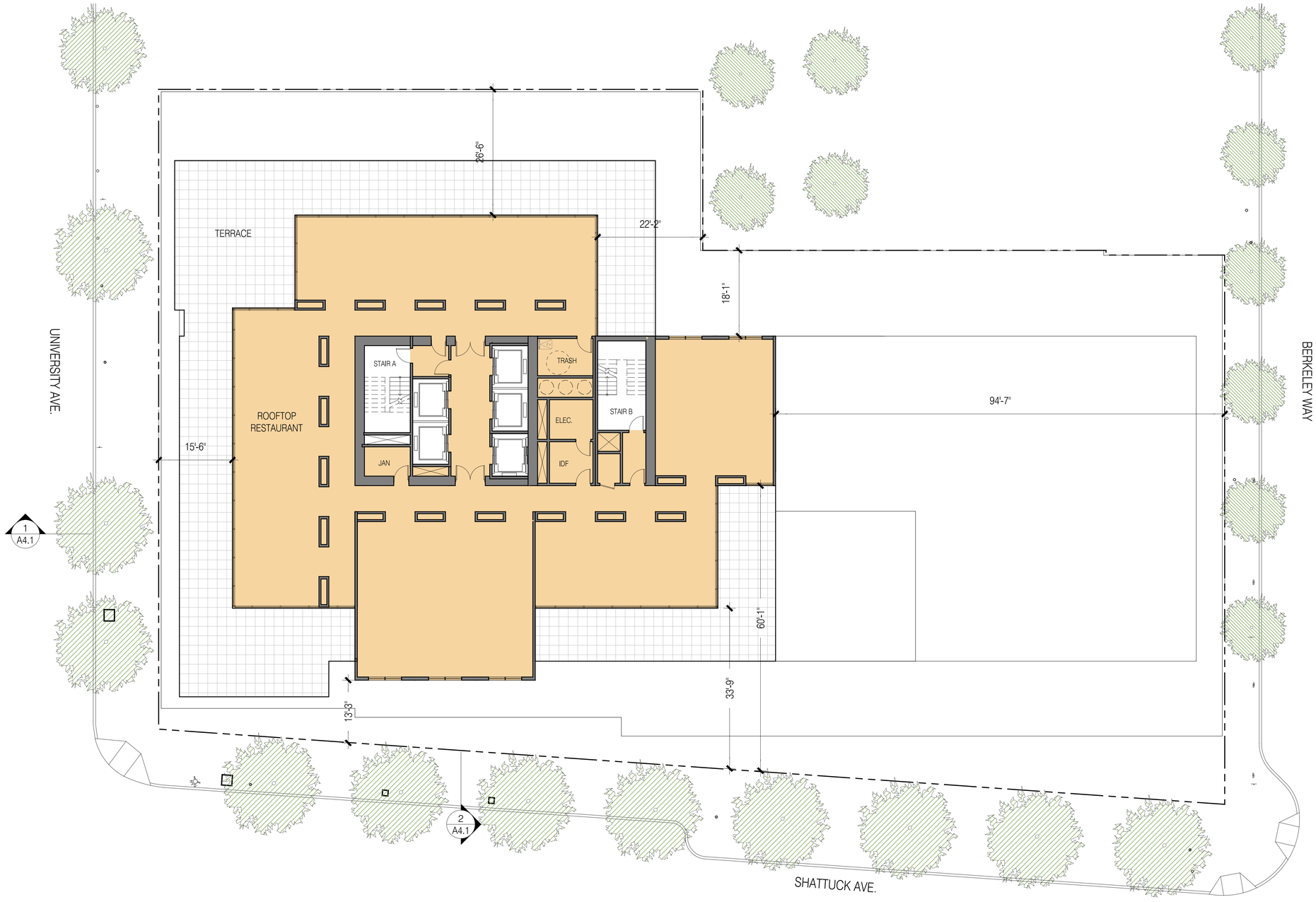

1 - PLAN AT LEVEL 28 ROOFTOP RESTAURANT

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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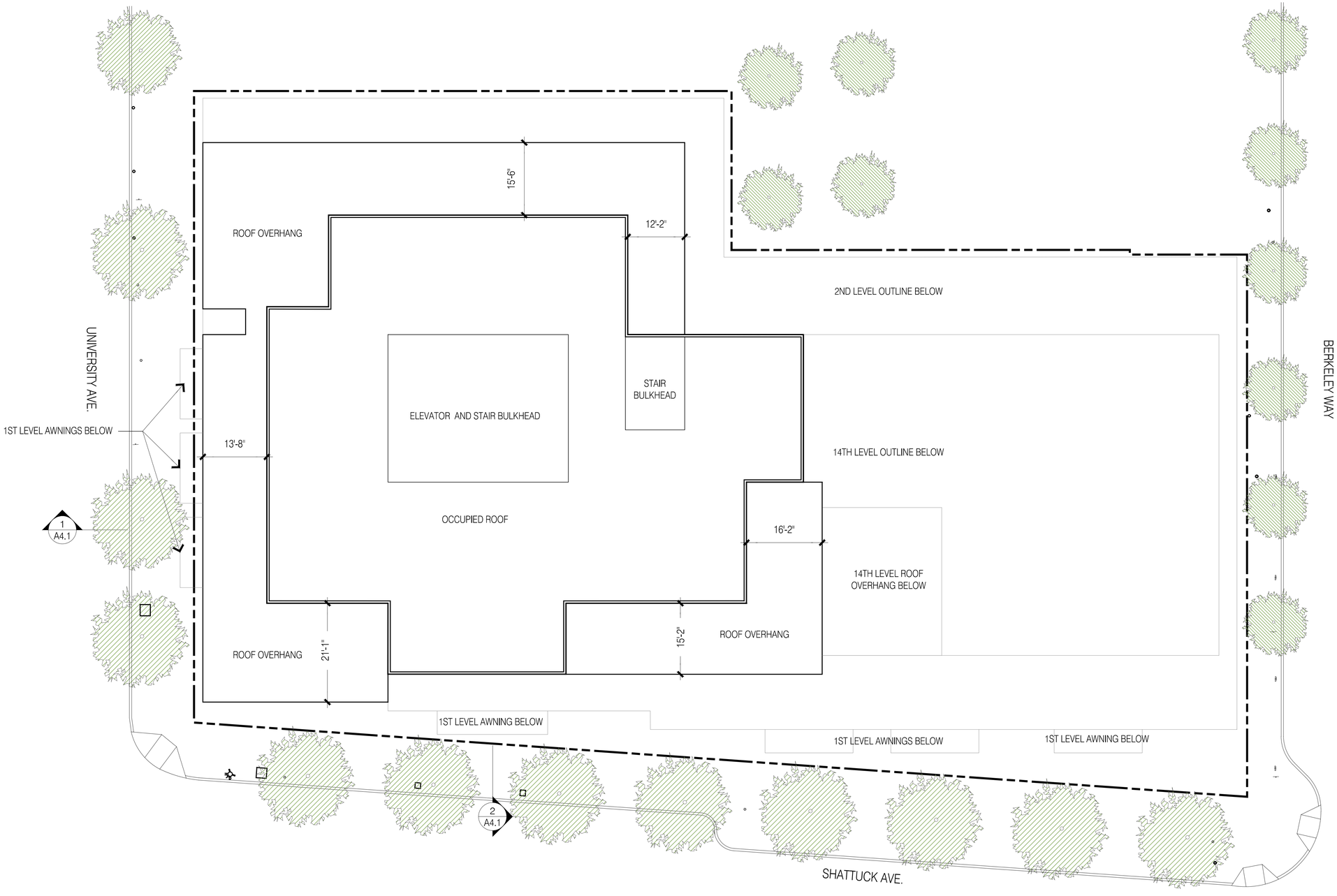
SHEET:

FLOOR PLANS

A2.6



1 - PLAN AT ROOF

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

ROOF PLAN

A2.7



2 - EAST ELEVATION

0 8 16 32



1 - SOUTH ELEVATION

0 8 16 32

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SHEET:

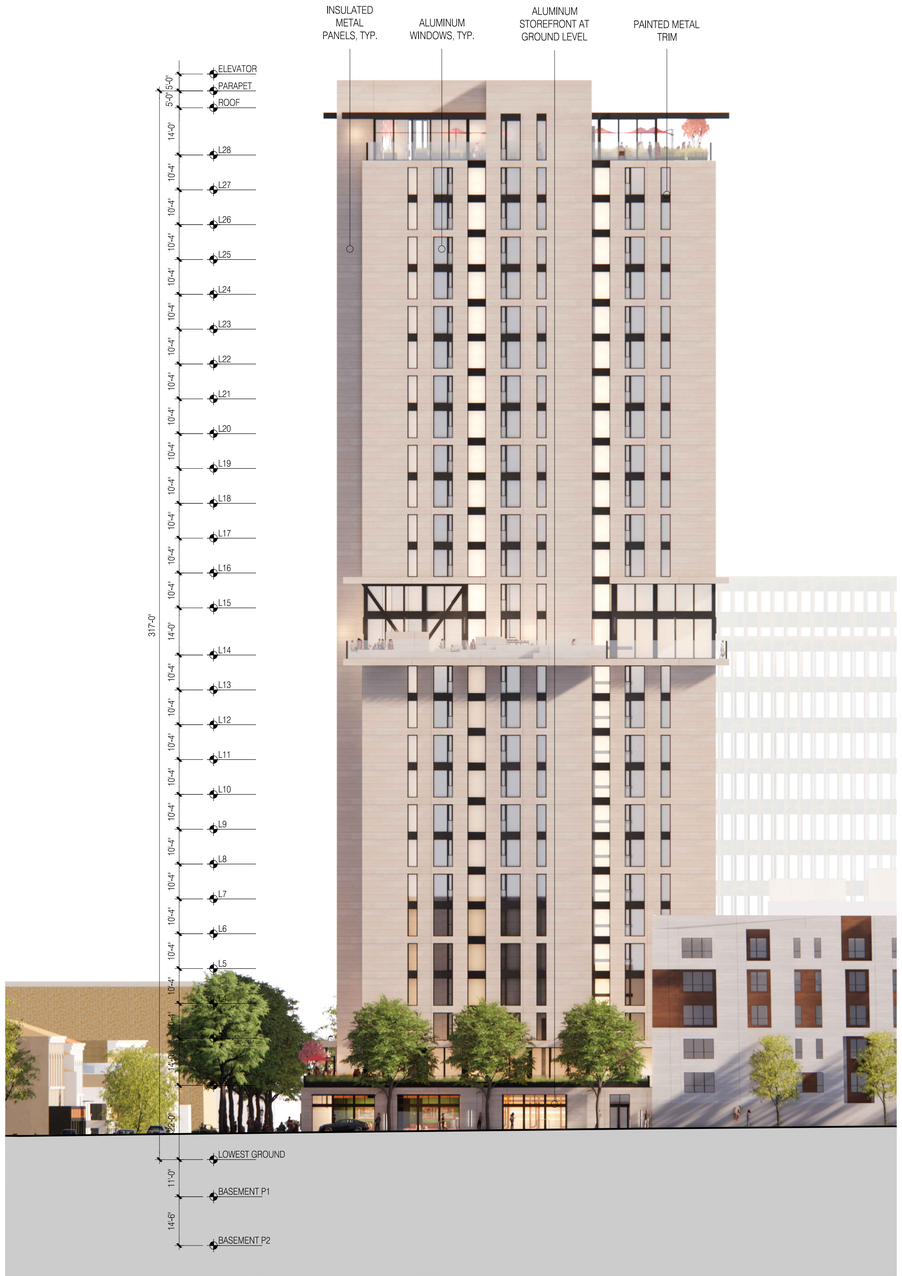
ELEVATIONS

A3.1



2 - WEST ELEVATION

0 8 16 32



1 - NORTH ELEVATION

0 8 16 32

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SHEET:

ELEVATIONS

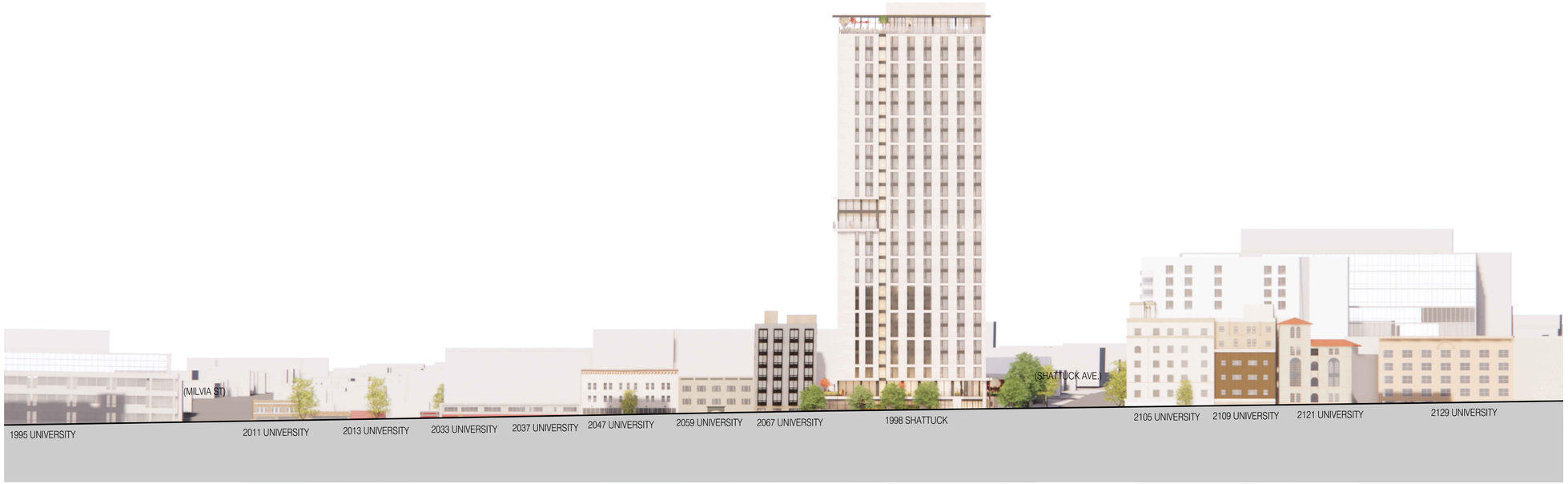
A3.2



2 - STREET STRIP ELEVATION @ SHATTUCK AVE

1/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64



1 - STREET STRIP ELEVATION @ UNIVERSITY AVE

3/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64

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SHEET:

STREET STRIP ELEVATIONS

A3.3



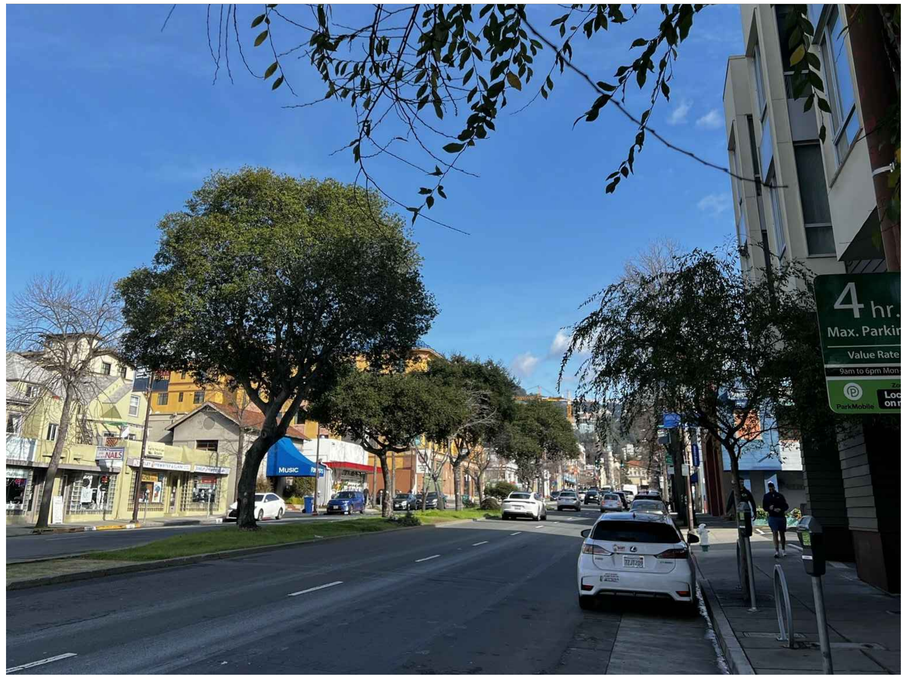
4 - UNIVERSITY LOOKING WEST - AFTER



2 - UNIVERSITY LOOKING EAST - AFTER



3 - UNIVERSITY LOOKING WEST - BEFORE



1 - UNIVERSITY LOOKING EAST - BEFORE

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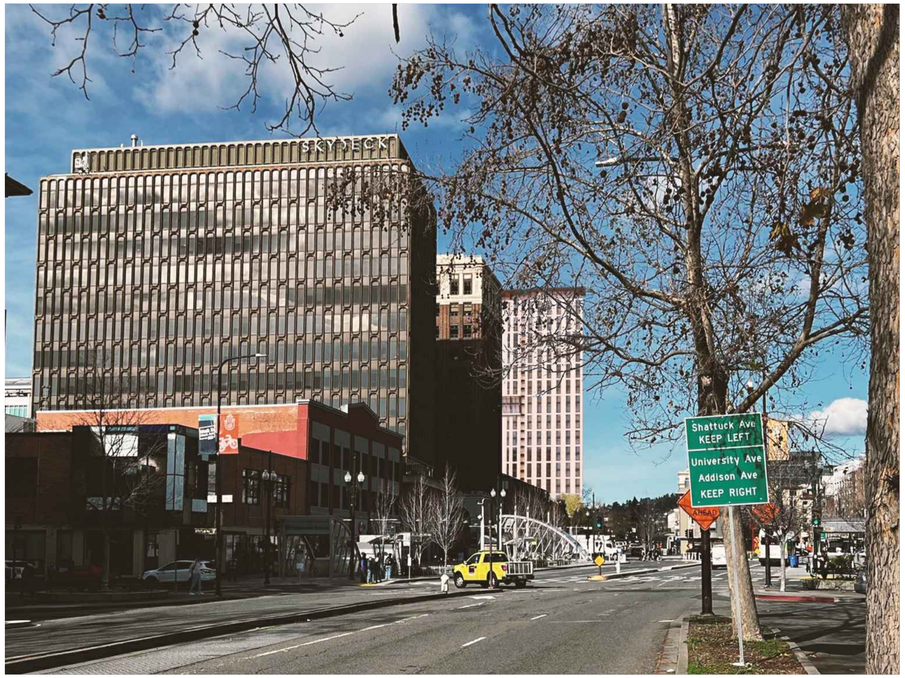
SHEET:

PHOTO CONTEXT VIEWS

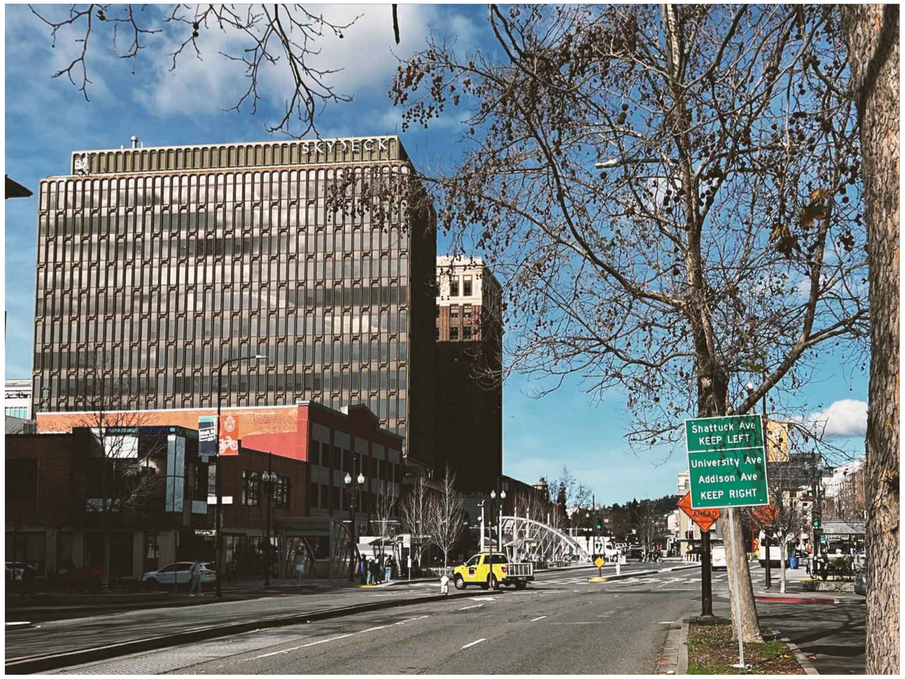
A3.4



4 - SHATTUCK LOOKING NORTH - AFTER



2 - SHATTUCK LOOKING SOUTH - AFTER



3 - SHATTUCK LOOKING NORTH - BEFORE



1 - SHATTUCK LOOKING SOUTH - BEFORE

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SHEET:

PHOTO CONTEXT VIEWS

A3.5



4 - BERKELEY LOOKING WEST - AFTER



2 - BERKELEY LOOKING EAST - AFTER



3 - BERKELEY LOOKING WEST - BEFORE



1 - BERKELEY LOOKING EAST - BEFORE

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SHEET:

PHOTO CONTEXT VIEWS

A3.6

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1 - VIEW LOOKING NORTH

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A3.7

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1 - VIEW LOOKING NORTH-WEST

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SHEET:

PRELIMINARY RENDERING

A3.8

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1
-
VIEW LOOKING SOUTH-WEST
-

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SHEET:

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A3.9

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1 - VIEW LOOKING SOUTH-EAST

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SHEET:

PRELIMINARY
RENDERING

A3.10

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1 - VIEW LOOKING NORTH-WEST AT SHATTUCK AND UNIVERSITY

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SHEET:

PRELIMINARY RENDERING

A3.11

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1 - VIEW LOOKING SOUTH-WEST ON SHATTUCK

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A3.12

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1 - VIEW LOOKING NORTH-EAST ON UNIVERSITY

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SHEET:

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A3.13



1 - SIDEWALK VIEW - UNIVERSITY LOOKING EAST

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SHEET:

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RENDERING

A3.14



1 - VIEW LOOKING SOUTH-WEST - SHATTUCK @ BERKELEY WAY

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SHEET:

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RENDERING

A3.15

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1 - SIDEWALK VIEW - SHATTUCK LOOKING SOUTH-WEST

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SHEET:

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A3.16

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SHEET:

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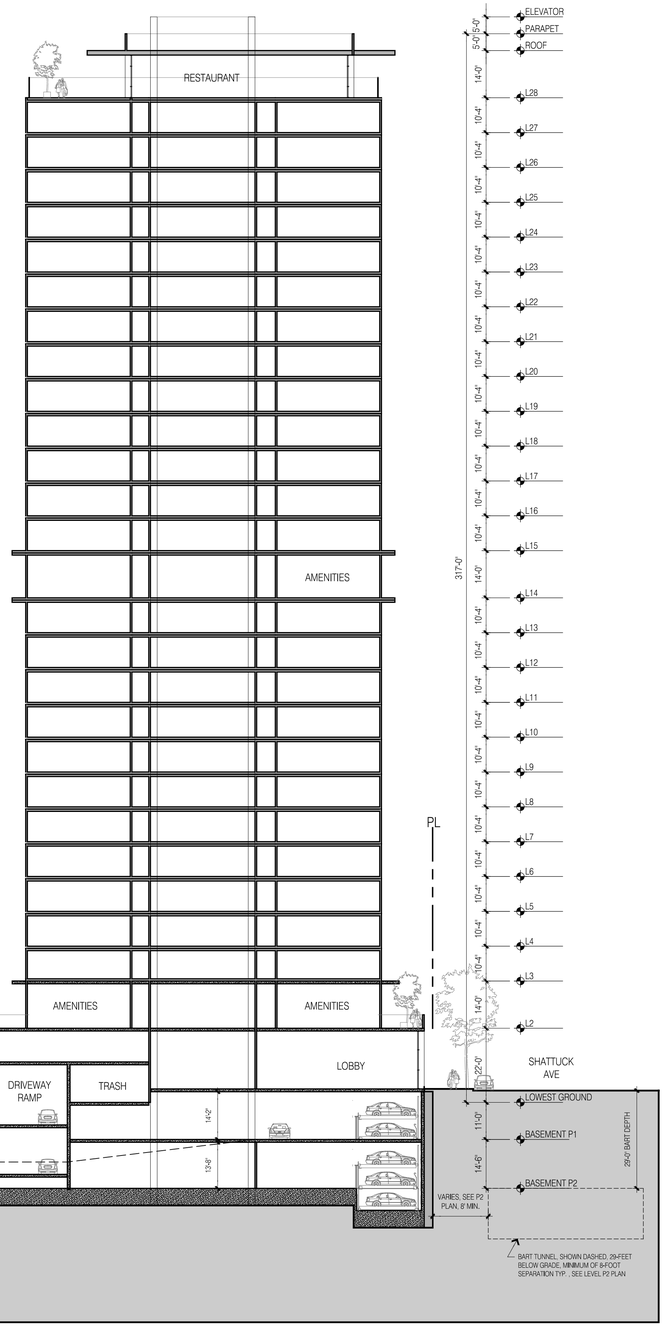
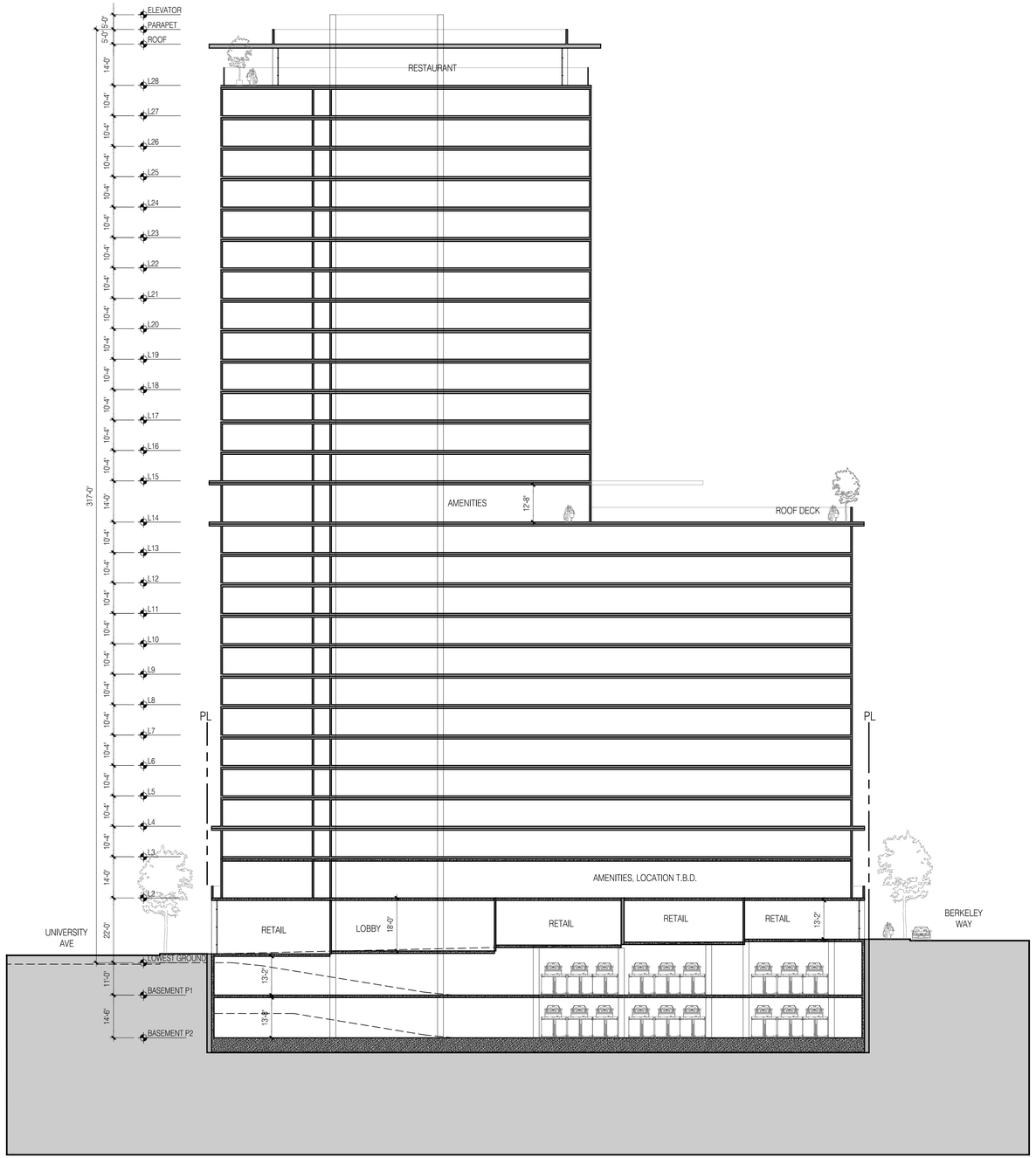
A3.17



2 - SECTION LOOKING NORTH

0 8 16 32



1 - SECTION LOOKING WEST

0 8 16 32

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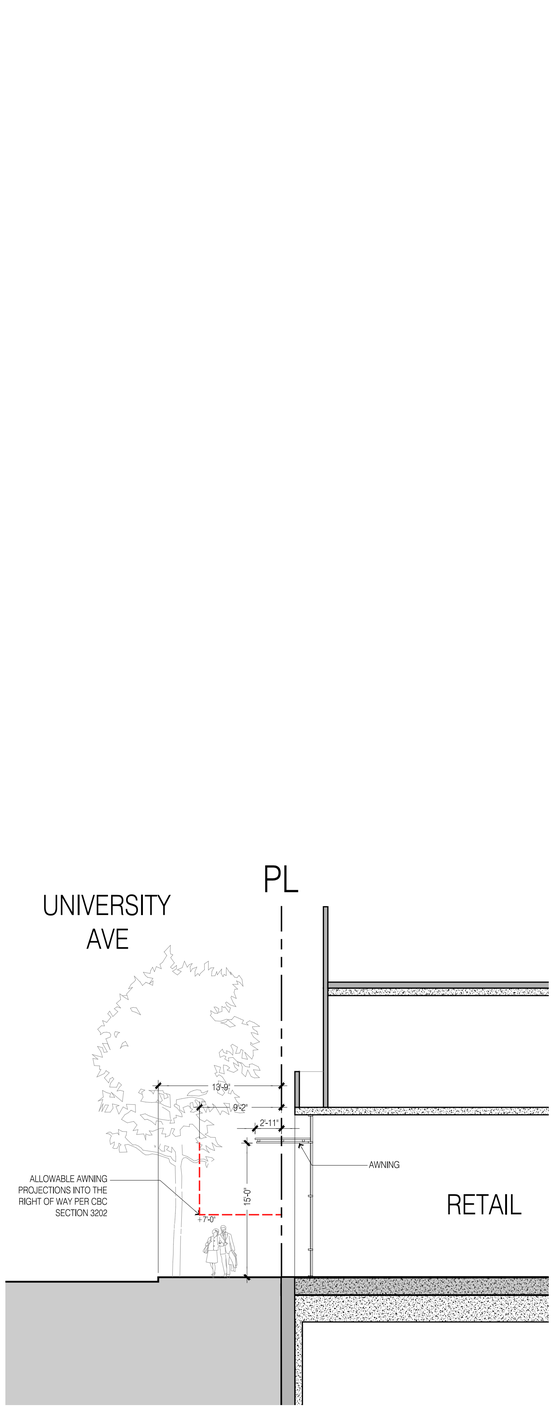
SHEET:

BUILDING SECTIONS

A4.1



2 - SECTION THROUGH UNIVERSITY AVE.
1/8" = 1'-0" -

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SHEET:

AWNING ENCROACHMENT DIAGRAM

A4.2

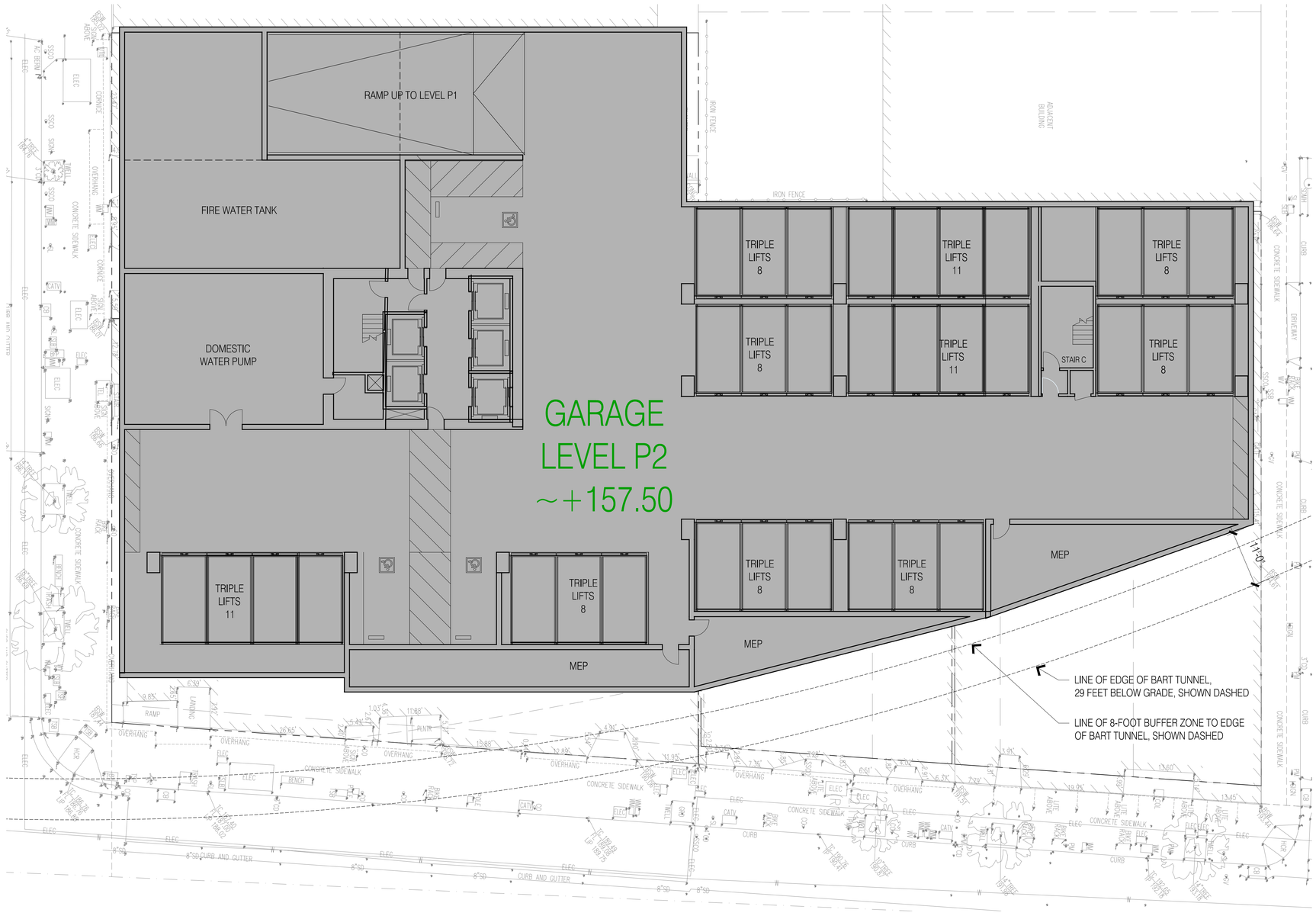
CUT AND FILL CALCULATIONS

	CUT/FILL AREA	AVERAGE CUT/FILL DEPTH (FT)	TOTAL VOLUME (CY)
PROPOSED BUILDING	23,262	37	31,878

EARTHWORK NOTES:

1. EARTHWORK QUATNITY IS A ROUGH ESTIMATE BASED ON APPROXIMATE DEPTH OF BOTTOM OF BASEMENT PARKING LEVEL.

2. EARTHWORK QUANTITIES DO NOT TAKE INTO ACCOUNT SOIL SHRINKAGE, SOIL SWELLING, TRENCH SPOILS, SITE OVER-EXCAVATION REQUIREMENTS.



1 - CONCEPTUAL GRADING PLAN

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

CONCEPTUAL GRADING PLAN

A5.0

1998 Shattuck — Preliminary Landscape Set

General Notes

1. The contractor shall inspect the site and be familiar with all existing site conditions prior to submitting bid. Contractor shall not willfully proceed with construction as shown when it is obvious that obstructions, landscape area and/or grade differences exist that may not have been known during design. Such conditions shall immediately be brought to the attention of the landscape architect. The contractor shall assume sole responsibility for all necessary revisions due to failure to give such notification. Contractor shall be responsible for making himself familiar with all underground utilities, pipes, structures and obstructions. Contractor shall assume sole responsibility for all costs incurred due to damage and/or replacement of these items. Contractor shall be responsible for coordination among trades and subcontractors as required to accomplish the work. The contractor shall be responsible for any damage to existing features caused by contractor's work. All repairs shall be made at no additional cost to the owner. Planting shall be installed in conformance with all applicable local codes and ordinances by experienced workmen and a licensed landscape contractor who shall obtain all necessary permits and pay all required fees. The garden is a pesticide and herbicide free zone. Contractor shall use organic material to fertilize and to maintain all plant material. No chemical fertilizer will be allowed.Contractor shall verify all grades, existing conditions and dimensions in the field prior to commencing work. All discrepancies or questions shall be brought to the attention of the landscape architect for resolution. Redirect work to avoid delay. All curves and all transitions between curves and straight edges shall be smooth. Take all dimensions perpendicular to any reference line, work line, face of building, face of wall or centerline.

2. Demolition
Contractor shall remove and carry all demolition materials off site. Protect (E) trees as indicated during construction. Contractor shall perform selective trimming of existing trees within the area of work per the direction of the owner.

3. Drainage/Grading
Contractor shall verify if existing drains are in good condition. All drainage systems shall be per City of Berkeley codes. Grade per indicated swales. Sleeving to be Schedule 40 PVC. Cover PVC pipe so that it not visible. All grading to be smooth to achieve a natural aspect. No finish grades shall exceed 2.5:1 slopes.

4. Soil preparation
Soil amendment shall be a minimum of 9 cy of organic compost per 1000 sf (1:4 ratio). The landscape contractor shall be responsible for finish grading and all planting area drainage. Positive drainage away from the building as per city codes shall be maintained. No low spots which hold standing water will be accepted. Where rototilling is not possible, incorporate soil amendments into top 6 inches with hand tools. After installation of irrigation system, all new planting areas are to be fine graded to within 2 inches and slightly mounded away from edges of top of planter, curb, walk, header, etc. and raked smooth with all rocks and debris over 1 inch in diameter removed. Verify existing grades and advice Landscape Architect of any discrepancies prior to start of grading.

5. Topsoil
If any planting areas require the importing of topsoil, the imported soil shall be clean, friable sandy loam; free of noxious weed seeds, sticks, stones over 1 inch in diameter or any materials that could inhibit growth. Incorporate imported topsoil into the top 6-8 inches of site soil by rototilling or hand cultivating as necessary.

6. Substitutions
Requests for substitutions of plant varieties shall be made to the landscape architect within 15 days after signing of contract.

7. Planting
Thoroughly water trees immediately after planting. Shrubs shall be spotted as per plan and the locations approved prior to the digging of the holes. Contractor shall locate and tag all trees at nursery at time of acceptance of contract to ensure availability of healthy specimens. Plant materials to be approved by landscape architect prior to site delivery.

8. Irrigation
The proposed irrigation shall be an automated, water efficient watering system compliant with the City of Berkeley codes & regulations. The contractor shall determine the static water pressure and design the system accordingly to achieve adequate regime for the proposed plantings. The following emitters shall be installed at each planting: (2) 1 gal emitters at each 1 gal sp.; (3) 5 gal. emitters at ea. 5 gal shrub.

9. Mulching
Mulch all planting areas with 3" of 'Forest Floor Bark' from American Soil and Stone, Richmond Ca (510) 292-3000.

10. Stone paving & stone work
See layout plan and detail for sub-base. Install stone paving with tight joints in front and flagstone in stabilized decomposed granite in back as show on sheet L1.0.

11. Concrete work
All concrete retaining walls greater than 3 feet in height shall be designed or reviewed and stamped by a structural engineer. All concrete footings shall be reviewed, approved and stamped by a structural engineer.

12. Electrical
Install light fixtures, conduits and controller per manufacturer recommendation. Locate controller per plan with light switch inside residence. Contractor to supply and install power supply - 2 outlets at outdoor kitchen area. Install power supply for outdoor kitchen equipment .

13. Wood work
All wood decking to match existing wood same size and layout at existing decks for deck extension. All vertical posts to be pressure treated 4x4 wood. SSD for final wood sizing, anchors and concrete footing. See note 14 for painting/staining.

14. Painting
All visible existing & new wood to be painted same color as the main residence, but with a lighter tone. Color to be reviewed & approved by owner/landscape architect.
Paint manufacturer: Sherwin Williams; exterior paint quality "duration" to be applied on all new & existing wood to be painted. Prep all wood surfaces per paint manufacturer's recommendations.

15. Maintenance
The contractor shall maintain the project for 90 days (or as requested by owner) following the approval to begin the maintenance period. During the entire maintenance period, watering, cultivating, weeding, mowing, repair/tightening of stakes and ties, provision of supplemental water by hand in addition to irrigation system as necessary. At the end of the 90 day maintenance period all areas are to be free of weed and all plant material is to be in a healthy, thriving condition.

16. Guarantee
All construction, trees and shrubs by the landscape contractor and/or his subcontractors shall be guaranteed for (1) one year after beginning of maintenance period. The contractor shall replace, at no expense to the owner, any and all landscape materials that are in an unacceptable condition for time of use, and trees or shrubs that are dead or not in a vigorous, healthy growing condition; within two weeks of notification of such condition. Replacement shall be of the same kind and size as the originally specified item and shall be replaced as originally described on the drawings. The contractor shall not be held liable for loss of plant materials during the guarantee period due to vandalism, accidental causes or acts of neglect by others than the contractor, his agents and employees.

17. Clean up
At the end of each work day, at the inspection for substantial completion and before acceptance of project, clean paved areas that are dirtied or stained by construction operations, by sweeping or washing, and remove defacements and stains. Remove construction equipment, excess materials and tools. Haul from owners property the debris resulting from construction, and dispose of legally. Remove remaining temporary protection at time of acceptance by owner unless otherwise agreed.

Project Team

Client
NX Ventures

Architect
Trachtenberg Architects
2421 Fourth Street
Berkeley, CA 94710
510.649.1414

Landscape Architect
InsideOut Design, Inc.
6000 Harwood Ave
Oakland CA 94618
510.655.7674

Contractor
TBD

Location Map



Legend

(PA)	Planting Area
(TS)	Top of stair
(BS)	Bottom of stair
(TW)	Top of wall
(BW)	Bottom of wall
R	Radius
POB	Layout Starting Point
SIM	Similar
(TYP.)	Typical
SAD	See Architectural Drawings
EQ	Equal
O.C.	On Center
(E)	Existing
›	Align
	90 Degrees angle
(824.76)	Existing spot elevation
824.76	Proposed spot elevation
	Existing contour line
	Proposed contour line
	Property line
	Existing retaining wall to be demolished

Sheet Index

L0.0	Cover Sheet
L1.0	Streetscape
L2.0	Podium
L3.0	Roof Deck
L3.1	Usable Open Space + Planting Notes
I0.0	Irr. Notes & Legend
I1.0	Irr. Plan - Street
I2.0	Irr. Plan - Podium
I3.0	Irr. Plan - Roof Deck
I3.1	Irr. Plan - POC
I4.0	Irrigation Details
I5.0	Irrigation Details
I6.0	Irrigation Details
I7.0	Irrigation Details

Plant List

Index	Latin Name	Common Name	Size	WELO	CA Nat.	Notes
Street Trees						
CC	Carpinus caroliniana	American Hornbeam	24" Box	M		University Ave
LC	Lophostemon confertus	Brisbane Box	24" Box	VL, L		Berkeley Way
PA	Platanus acerifolia 'Columbia'	Columbia' London Plane Tree	24" Box	L, M		Shattuck Ave
Trees						
BE	Brahea edulis	Guadalupe Palm	24" Box	L		Roof
BR	Beaucarnea recurvata	Pony Tail Palm	15 Gallon	VL		Roof
CO	Cercis occidentalis	Western Redbud	24" Box	VL	X	Podium FTP
CR	Ceanothus 'Ray Hartman'	Ray Hartman California Lilac	24" Box	L, ES	X	Podium
HG	Heteromeles arbutifolia 'Davis Gold	Davis Gold Toyon	24" Box	VL, L	X	Podium FTP
PR	Phoenix roebelenii	Pygmy Date Palm	24" Box	L		Roof
WF	Washingtonia filifera	California Fan Palm	24" Box	L, ES	X	Roof
Shrubs						
AD*	Agave deserti	Desert Agave	5 Gallon	VL, L	X	Roof
AP	Arctostaphylos pajaroensis 'Paradise	Paradise Pajaro Manzanita	15 Gallon	VL	X	Roof
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	Podium, Street
CF	Comus sericea, C. Stolonifera 'Hedgerow Gc	Hedgerow Gold Redtwig Dogwooc	15 Gallon	M, ES	X	Podium
HW*	Hesperoyucca whipplei	Our Lord's Candle	5 Gallon	VL	X	Roof
OB*	Opuntia basilaris	Prickly Pear	5 Gallon	VL		Roof
SM	Sabal minor	Dwarf Palmetto	15 Gallon	L		Roof
YP*	Yucca pallida	Pale Leaf Yucca	5 Gallon	VL, L, ES		Roof
ZF	Zamia furfuracea	Cardboard Palm	5 Gallon	M		Roof
Groundcovers						
AM	Armeria maritima	Sea Pink	1 Gallon	M	X	Roof
BM	Baileya multiradiata	Desert Marigold	1 Gallon	VL	X	Roof
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	Street
CM	Coreopsis maritima	Sea Dahlia	1 Gallon	L	X	Roof
DF	Dudleya farinosa	Coast Live Forever	1 Gallon	VL	X	Podium
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	Street
Podium FTP** *(1143 sf)*						
AS	Achillea 'Salmon Beauty'	Salmon Beauty Yarrow	1 Gallon	VL, L	X	
BG	Bouteloua gracilis 'Blonde Ambition'	Blonde Ambition Blue Grama	1 Gallon	L	X	
CB	Ceanothus thyrsiflorus 'Cool Blue'	Cool Blue Mountain Lilac	15 Gallon	L	X	
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	
CP	Ceanothus pallidus 'Marie Simon'	Pink Flowering Ceanothus	15 Gallon	VL, L	X	
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	
EF	Eriogonum fasciculatum	California Buckwheat	5 Gallon	VL, L	X	
EG	Elymus glaucus	Blue Wild Rye	1 Gallon	L	X	
ID	Iris douglasiana	Douglas Iris	1 Gallon	M, ES	X	
JE	Juncus effusus	Soft Rush	1 Gallon	VL, H, ES	X	
JP	Juncus patens 'Elk Blue'	Elk Blue California Gray Rush	1 Gallon	L, M, ES	X	
RC	Rudbeckia californica	California Coneflower	1 Gallon	M	X	
SA	Symphoricarpos albus var. laevigatus	Upright Snowberry	5 Gallon	VL, L, M	X	
Podium Grate Walks *(5370 sf)*						
SD	Sedum divergens	Cascade Stonecrop	Flat	L, ES	X	
SO	Sedum oreganum	Oregon Stonecrop	Flat	L, ES	X	
SS	Sedum spathulifolium 'Cape Blanco'	Cape Blanco Sedum	Flat	L	X	

**To be located with 3' min. between edge of mature plant and walkways or planter edges.*
***Species selected per Stormwater C.3 Guidebook (Dalziel et. al.).*

Note: *At least 80% of all plantings will be California natives.*

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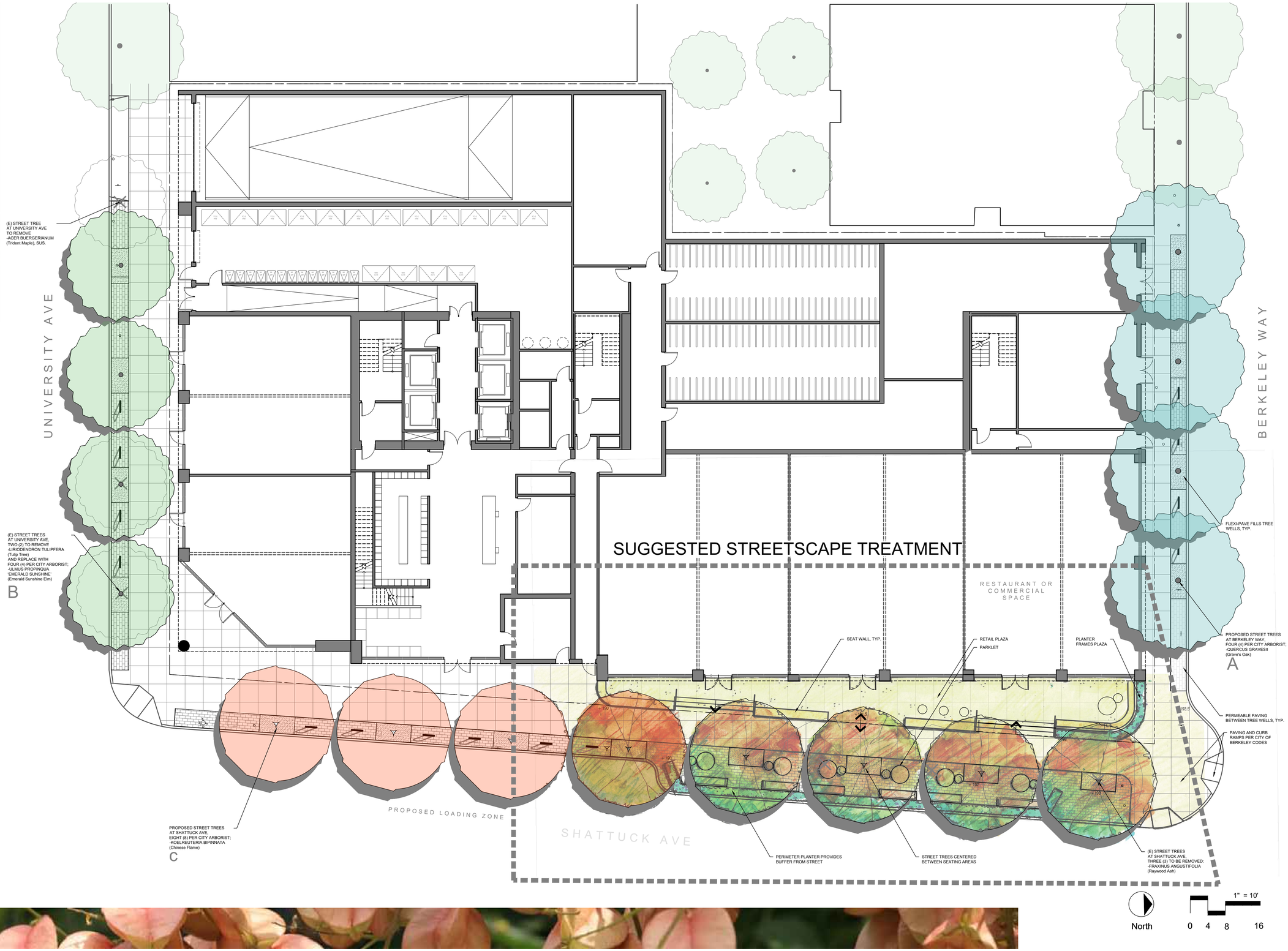
SHEET:

COVER SHEET,
NOTES, AND LEGEND

L0.0







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SHEET:

LANDSCAPE PLAN AT STREETSCAPE

L1.0



Permeable grate with groundcover below
- Precedent: ASLA HQ Green Roof
-Mix of 3 shade-tolerant sedums





Maintenance corridor

FTP, typ.
1,306 SF total

Flexible seating

NOTE: FLOW-THROUGH PLANTER AREA TOTALS 1,306 SF; REQUIRED FTP AREA EQUALS MIN 4% OF BUILDING FOOTPRINT'S IMPERVIOUS SURFACE.

BUILDING FOOTPRINT = 26,208 SF
REQUIRED FTP = 26,208 SF X 0.04 = 1,049 SF
PROVIDED FTP = 1,306 SF

Bistro tables

Raised planter with patio trees and wood benches

UNIVERSITY AVE

BERKELEY WAY

Low planting in raised flow-through planters (FTPs)

Flowering tree
-'Davis Gold' Toyon

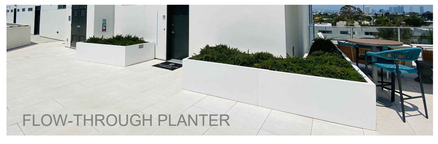
Small trees and accent plantings visible from street

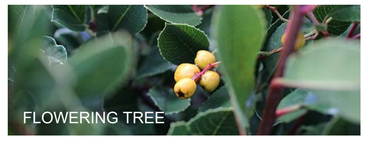
Podium seating overlooks ground-level plaza and parklet at Shattuck Ave

SHATTUCK AVE


PRECEDENT


VEGETATED GRATE


FLOW-THROUGH PLANTER


FLOWERING TREE

North

3/16"=1'-0"
0 2 4 8

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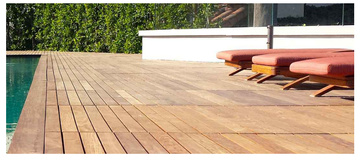
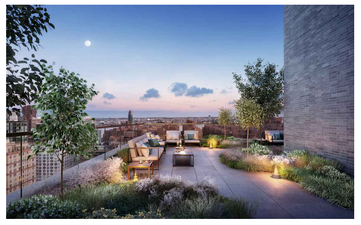
SECOND FLOOR PODIUM GARDENS

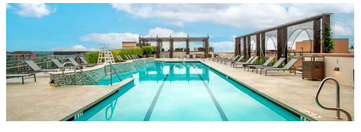
L2.0



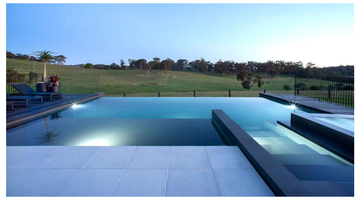


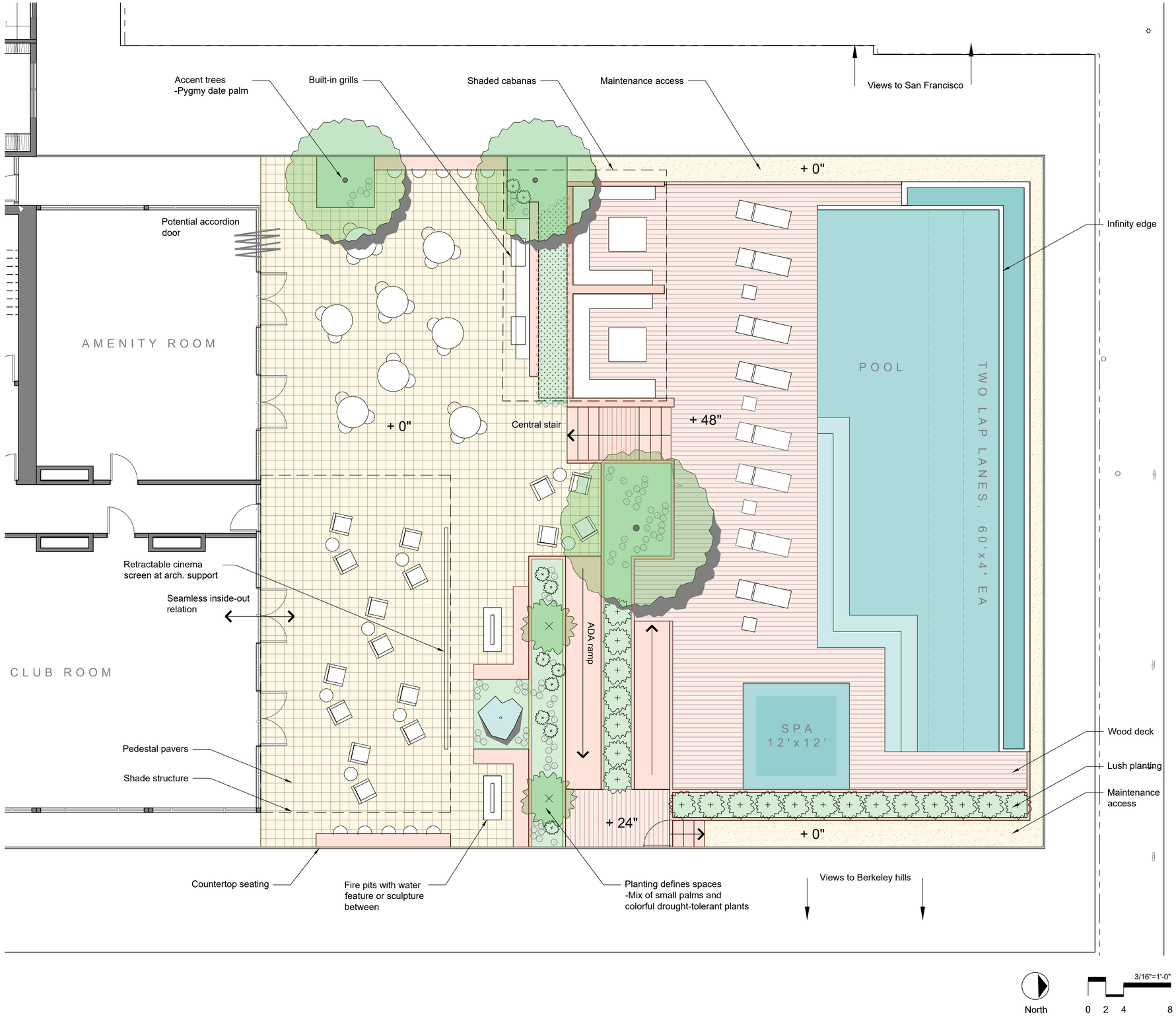












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JOB: 0000

SHEET:

FOURTEENTH FLOOR ROOF DECK

L3.0

PLANTING NOTES

SEE COVER SHEET L0.0 FOR GENERAL NOTES

GENERAL PLANTING NOTES:

1. SOIL PREPARATION: THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINISH GRADING AND ALL PLANTING AREA DRAINAGE. POSITIVE DRAINAGE AWAY FROM THE BUILDING AS PER CITY CODES SHALL BE MAINTAINED. NO LOW SPOTS WHICH HOLD STANDING WATER WILL BE ACCEPTED.
   THE LANDSCAPE CONTRACTOR SHALL INCORPORATE SOIL PREPARATION AMENDMENT INTO PLANTING AREAS AS NOTED BELOW. WHERE ROTO-TILLING IS NOT POSSIBLE, INCORPORATE SOIL AMENDMENTS INTO TOP 6 INCHES WITH HAND TOOLS. AFTER INSTALLATION OF IRRIGATION SYSTEM, ALL PLANTING AREAS ARE TO BE FINE GRADED TO WITHIN 2 INCHES AND SLIGHTLY MOUNDED AWAY FROM EDGES OF TOP OF PLANTER, CURB, WALK, HEADER, ETC. AND RAKED SMOOTH WITH ALL ROCKS AND DEBRIS OVER 1-INCH IN DIAMETER REMOVED.

2. SOIL PREPARATION AMENDMENTS AND BACKFILL MIX: THE LANDSCAPE CONTRACTOR SHALL AMEND EXISTING SOIL PER THE SOILS REPORT. NATIVE SOIL IS PREFERRED.

3. TREE PLANTING: TREES SHALL BE PLANTED PER DETAIL ON PLAN. TREES SHALL TYPICALLY BE LOCATED A MINIMUM OF 3 1/2 FEET FROM CURBS, WALKS, HEADERS, BUILDINGS, AND OVERHEAD STRUCTURES WITHIN THE PROJECT. BACKFILL PER SOILS REPORT. THOROUGHLY WATER TREES IMMEDIATELY AFTER PLANTING.

4. SHRUB PLANTING: THE SHRUBS SHALL BE SPOTTED AS PER PLAN, SPOTTED AT THE SHOWN LOCATIONS, AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO THE DIGGING OF THE HOLES. SHRUB BACKFILL SHALL BE PER SOILS REPORT. THOROUGHLY WATER SHRUBS IMMEDIATELY AFTER PLANTING. DO NOT PLANT ANY SHRUB WITHIN 2 FEET OF ANY BUILDING WALL.

5. MAINTENANCE: THE CONTRACTOR SHALL MAINTAIN THE PROJECT FOR 90 DAYS (OR AS REQUESTED BY OWNER) FOLLOWING THE APPROVAL TO BEGIN THE MAINTENANCE PERIOD. DURING THE ENTIRE MAINTENANCE PERIOD, WATERING, CULTIVATING, WEEDING, MOWING, REPAIR/TIGHTENING OF STAKES AND TIES, RESTORATION OF BASINS, PROVISION OF SUPPLEMENTAL WATER BY HAND IN ADDITION TO IRRIGATION SYSTEM IS REQUIRED AS NECESSARY. NO PRE-EMERGENCE HERBICIDES SHALL BE APPLIED - HAND REMOVE WEEDS. ONLY ORGANIC FERTILIZERS SHALL BE APPLIED SUCH AS THOSE SPECIFIED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. AT THE END OF THE 90 DAY MAINTENANCE PERIOD ALL AREAS ARE TO BE WEED FREE AND ALL PLANT MATERIAL SHALL BE IN A HEALTHY, THRIVING CONDITION. INTEGRATED PEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED.

6. SUBSTITUTIONS: REQUESTS FOR PLANT SUBSTITUTIONS SHALL BE MADE TO THE LANDSCAPE ARCHITECT WITHIN 15 DAYS AFTER SIGNING OF CONTRACT.

7. GUARANTEE: ALL CONSTRUCTION, TREES AND SHRUBS BY THE LANDSCAPE CONTRACTOR AND/OR SUBCONTRACTORS SHALL BE GUARANTEED FOR (1) ONE YEAR AFTER START OF MAINTENANCE PERIOD. THE CONTRACTOR SHALL REPLACE, AT NO EXPENSE TO THE OWNER, ANY AND ALL LANDSCAPE MATERIALS THAT ARE IN AN UNACCEPTABLE CONDITION FOR TIME OF USE, AND TREES OR SHRUBS THAT ARE DEAD OR NOT IN A VIGOROUS, HEALTHY GROWING CONDITION, WITHIN TWO WEEKS OF NOTIFICATION OF SUCH CONDITION. REPLACEMENT SHALL BE OF THE SAME KIND AND SIZE AS THE ORIGINALLY SPECIFIED ITEM AND SHALL BE REPLACED AS ORIGINALLY DESCRIBED ON THE DRAWINGS. THE CONTRACTOR SHALL NOT BE HELD LIABLE FOR LOSS OF PLANT MATERIALS DURING THE GUARANTEE PERIOD DUE TO VANDALISM, ACCIDENTAL CAUSES OR ACTS OF NEGLECT BY OTHERS THAN THE CONTRACTOR, HIS AGENTS AND EMPLOYEES.

8. CLEAN UP: AT THE END OF EACH WORK DAY, AT THE INSPECTION FOR SUBSTANTIAL COMPLETION, AND BEFORE ACCEPTANCE OF PROJECT - CLEAN
PAVED AREAS THAT ARE DIRTIED OR STAINED BY CONSTRUCTION OPERATIONS BY SWEEPING OR WASHING, AND REMOVE DEFACEMENTS AND STAINS.
REMOVE CONSTRUCTION EQUIPMENT, EXCESS MATERIALS AND TOOLS. HAUL FROM OWNERS PROPERTY ANY DEBRIS RESULTING FROM CONSTRUCTION, AND DISPOSE OF IT LEGALLY. REMOVE REMAINING TEMPORARY PROTECTION AT TIME OF ACCEPTANCE BY OWNER UNLESS OTHERWISE AGREED.

9. FERTILIZERS: AVAILABLE FROM CALIFORNIA ORGANIC FERTILIZERS, INC. 1-800-269-5690 WWW.ORGANICAG.COM.

STREET TREE PROTECTION NOTES:

1. ALL TREE PROTECTION REQUIREMENTS AND RESTRICTIONS SHALL BE INCLUDED IN THE CONSTRUCTION NOTES AND PRINTED ON ALL COPIES OF THE PLANS.

a) INCLUDE THE NAME AND PHONE NUMBER OF THE PARTY THAT WILL MONITOR THE SITE AND ENSURE THE TREE PROTECTION MEASURES ARE BEING FOLLOWED; AND WHAT THE MONITORING SCHEDULE WILL BE: **NAME / PHONE / SCHEDULE**

b) INSTALL 6 FOOT CHAIN-LINK FENCING TO PROTECT THE AREA WITHIN THE DRIP-LINE OF ANY PROTECTED TREE IN THE DEVELOPMENT AREA. FENCING SHALL BE MOUNTED TO POSTS THAT ARE DRIVEN INTO THE GROUND. WHERE THIS IS NOT POSSIBLE BECAUSE OF EXISTING STRUCTURES, TREE ROOTS, OR OTHER OBSTACLES, CHAIN-LINK PANELS MOUNTED TO STANCHIONS AND CONNECTED TO EACH OTHER MAY BE APPROVED. IN AREAS WHERE DIFFICULT TERRAIN MAKES THIS IMPRACTICAL, ORANGE CONSTRUCTION FENCING MAY BE APPROVED.

c) ALL FENCING SHALL HAVE SIGNAGE STATING THE REQUIREMENTS AND RESTRICTIONS, AND THE CONTACT INFORMATION FOR THE PROJECT ARBORIST.

d) WHEN ANY APPROVED CONSTRUCTION ACTIVITY WILL OCCUR WITHIN THE DRIP LINE OF A PROTECTED TREE THAT IS NOT SURROUNDED BY PROTECTIVE FENCING, THE TRUNK SHALL BE PROTECTED BY WRAPPING IT WITH STRAW TUBES (WATTLE) OR VERTICAL WOOD SLATS (EX. 2X4), UP TO A MINIMUM OF 8 FEET FROM GRADE (SEE FIGURE 1, PAGE 6). SLATS SHALL BE ANGLED TO PROTECT THE ROOT FLARE AT THE BASE OF THE TREE; AND CLOSED CELL FOAM OR EQUIVALENT MATERIAL SHALL BE USED TO PROTECT THE TRUNK OF THE TREE WHERE IT CONTACTS THE SLATS.
LATERAL BRANCHES BELOW 8 FEET SHALL ALSO BE PROTECTED. IN ADDITION, THE AREA SHALL BE COVERED WITH A 6 INCH LAYER OF MULCH TOPPED WITH 3/4 INCH PLYWOOD THAT IS FASTENED TOGETHER. IF ANY LARGE OR MOTORIZED EQUIPMENT (MINI EXCAVATOR, BOBCAT®, POWERED WHEELBARROW) WILL TRAVEL OVER THIS AREA, THE PLYWOOD MUST BE A MINIMUM OF 1 INCH AND ADEQUATE FOR THE WEIGHT OF THE EQUIPMENT THAT WILL TRAVEL OVER IT. IF LARGER EQUIPMENT (BACKHOE, TRACTOR) WILL BE USED, CONSULT THE CITY ARBORIST. ***CONSTRUCTION ACTIVITY REFERS TO ANY MOVEMENT OF PEOPLE, TOOLS, OR EQUIPMENT; OR STORAGE OF ANY TOOLS, EQUIPMENT, OR SUPPLIES.***

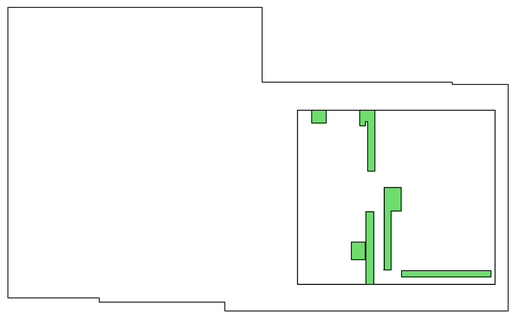
f) LOCATE AND EXPOSE ANY ROOTS 2 INCHES IN DIAMETER OR GREATER THAT MAY NEED TO BE PRUNED TO FACILITATE THE PROJECT. THIS INCLUDES ANY TRENCHING THAT WILL BE DONE AS PART OF FOUNDATION OR UTILITY INSTALLATION. CONTACT THE CITY ARBORIST IN ADVANCE TO LESSEN THE AMOUNT OF TIME THAT THE ROOTS WILL BE EXPOSED. IF ROOTS MUST BE LEFT EXPOSED FOR MORE THAN THREE DAYS, CONSULT THE CITY ARBORIST. **NOTE:** THE 2 INCH DIAMETER THRESHOLD FOR ROOTS IS A GUIDELINE THAT MAY BE ADJUSTED BY THE CITY ARBORIST DEPENDING ON THE SIZE AND CONDITION OF THE TREE, AND THE LOCATION OF THE ROOTS. THE CITY ARBORIST MAY INCREASE THE TPZ, OR IMPOSE OTHER RESTRICTIONS, WHEN THE DRIPLINE OF A TREE HAS BEEN ALTERED BY PRUNING OR UNUSUAL GROWTH PATTERNS.

g) NO STORAGE OF BUILDING MATERIALS, REFUSE, EXCAVATED SPOILS, OR DUMPING OF POISONOUS MATERIALS, IS PERMITTED WITHIN THE DRIP LINE OF ANY PROTECTED TREE. POISONOUS MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, PAINT, PETROLEUM PRODUCTS, CONCRETE OR STUCCO MIX, DIRTY WATER, OR ANY OTHER MATERIAL WHICH MAY BE DELETERIOUS TO TREE HEALTH.

STREET TREE PLANTING NOTES:

1. FOR NEW PLANTING:
   a. THE CITY ARBORIST SHALL BE NOTIFIED, BY CALLING (510) 981-6660, PRIOR TO THE DELIVERY OF THE TREES FOR INSPECTION OF THEIR SIZE AND STRUCTURE.
   b. EACH TREE SHALL BE PROPERLY PLANTED AT OR JUST BELOW GRADE (<1"). SOIL AMENDMENT IS NOT RECOMMENDED, AND NATIVE SOIL IS PREFERRED. NO CONSTRUCTION RUBBLE OR NON-ORGANIC MATERIAL SHALL BE WITHIN THE TREE WELL.
   c. THE SURROUNDING SOIL OUTSIDE THE CONTAINER (ROOT BALL) SHOULD BE LIGHTLY COMPACTED TO ABOUT 4 INCHES BELOW GRADE WITH THE ROOT BALL HIGHER THAN THAT.
   d. 2 TO 2.5 INCHES OF BASE ROCK SHOULD BE APPLIED AROUND THE ROOT BALL LEAVING 1.5 TO 2 INCHES LEFT FOR THE MATERIAL.
   e. 15G CONTAINERS ARE APPROXIMATELY 15-16 INCHES IN DIAMETER AND THE MATERIAL SHOULD BE APPLIED TO THE APPROXIMATE EDGE OF THE ROOT BALL WITH THE TOP GRADE OF THE ROOT BALL UP TO 1 INCH BELOW THE TOP OF THE MATERIAL THAT WILL BE APPLIED.
   f. EACH NEW TREE SHALL HAVE AUTOMATIC IRRIGATION INCLUDING TWO TREE BUBBLERS THAT CURVE OVER THE TOP OF THE TREES' ROOT BALL AND PROVIDE A MINIMUM OF 20 GALLONS PER WEEK BETWEEN MARCH 15 AND OCTOBER 15 FOR THE FIRST THREE YEARS. LARGER TREES MAY REQUIRE ADDITIONAL BUBBLERS. THE BUBBLERS SHOULD BE LOCATED ON TOP OF THE ROOT BALL WITHIN THIS 15-16 INCH CIRCLE AND NOT BE COVERED WITH MATERIAL.
   g. TREES THAT DIE WITHIN THE FIRST THREE YEARS MUST BE REPLACED AT THE PROPERTY OWNER'S EXPENSE.

USEABLE OPEN SPACE CALCULATIONS



ROOF DECK TOTAL USABLE AREA = 6,882 SF

(ROOF DECK HARDSCAPED = 6,297 SF)

ROOF DECK LANDSCAPED = 585 SF

ROOF DECK LANDSCAPED % = 9%

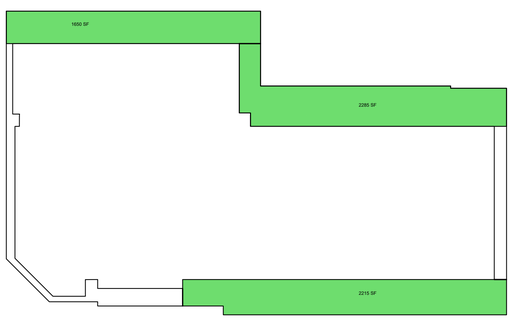
ROOF DECK USEABLE AREA (NTS)

1998 SHATTUCK TOTAL USABLE AREA = 13,032 SF

(TOTAL HARDSCAPED AREA = 6,297 SF)

TOTAL LANDSCAPED AREA = 6,735 SF

TOTAL LANDSCAPED AREA % = 52%



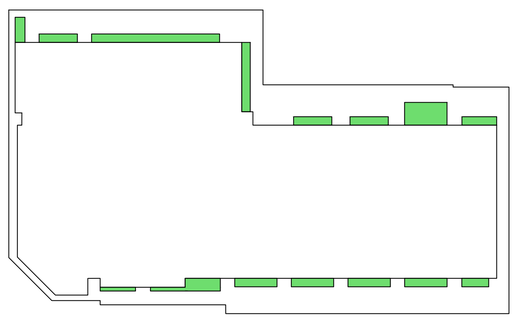
PODIUM TOTAL USABLE AREA = 6,150 SF

(PODIUM HARDSCAPED = 0 SF)

PODIUM LANDSCAPED = 6,150 SF

PODIUM LANDSCAPED % = 100%

PODIUM USEABLE AREA (NTS)



1998 SHATTUCK TOTAL ROOF AREA = 26,208 SF

4% FLOW-THROUGH PLANTER AREA NEEDED = 1,049 SF

CURRENT FLOW-THROUGH PLANTER AREA = 1,306 SF
(AT PODIUM)

FLOW-THROUGH PLANTER AREA (NTS)

TRACHTENBERG ARCHITECTS

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Berkeley, CA

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JOB: 0000

SHEET:

USABLE OPEN SPACE CALCULATIONS + PLANTING NOTES

L3.1

IRRIGATION NOTES

1. THESE IRRIGATION DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. ALL PIPING, VALVES, AND OTHER IRRIGATION COMPONENTS MAY BE SHOWN WITHIN PAVED AREAS FOR GRAPHIC CLARITY ONLY AND ARE TO BE INSTALLED WITHIN PLANTING AREAS. DUE TO THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, SLEEVES, CONDUIT, AND OTHER ITEMS WHICH MAY BE REQUIRED. INVESTIGATE THE STRUCTURAL AND FINISHED CONDITION AFFECTING THE CONTRACT WORK INCLUDING OBSTRUCTIONS, GRADE DIFFERENCES OR AREA DIMENSIONAL DIFFERENCES. IN THE EVENT OF FIELD DISCREPANCY WITH CONTRACT DOCUMENTS, PLAN THE INSTALLATION WORK ACCORDINGLY BY NOTIFICATION AND APPROVAL OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND ACCORDING TO THE CONTRACT SPECIFICATIONS. NOTIFY AND COORDINATE IRRIGATION CONTRACT WORK WITH APPLICABLE CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE, CONDUIT OR SLEEVES THROUGH OR UNDER WALLS, ROADWAYS, PAVING AND STRUCTURES BEFORE CONSTRUCTION. IN THE EVENT THESE NOTIFICATIONS ARE NOT PERFORMED, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR REQUIRED REVISIONS.

2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE; THE UNIFORM PLUMBING CODE, PUBLISHED BY THE WESTERN PLUMBING OFFICIALS ASSOCIATION; AND OTHER STATE OR LOCAL LAWS OR REGULATIONS. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR REGULATIONS. THE CONTRACTOR SHALL FURNISH WITHOUT ANY EXTRA CHARGE, ANY ADDITIONAL MATERIAL AND LABOR WHEN REQUIRED BY THE COMPLIANCE WITH THESE CODES AND REGULATIONS.

3. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF IRRIGATION SYSTEM WITH LAYOUT AND INSTALLATION OF THE PLANT MATERIALS TO INSURE THAT THERE WILL BE COMPLETE AND UNIFORM IRRIGATION COVERAGE OF PLANTING IN ACCORDANCE WITH THESE DRAWINGS, AND CONTRACT DOCUMENTS. THE IRRIGATION LAYOUT SHALL BE CHECKED BY THE CONTRACTOR AND OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO CONSTRUCTION TO DETERMINE IF ANY CHANGES, DELETIONS, OR ADDITIONS ARE REQUIRED. IRRIGATION SYSTEM SHALL BE INSTALLED AND TESTED PRIOR TO INSTALLATION OF PLANT MATERIAL.

4. THE INTENT OF THIS IRRIGATION SYSTEM IS TO PROVIDE THE MINIMUM AMOUNT OF WATER REQUIRED TO SUSTAIN GOOD PLANT HEALTH.

5. IT IS THE RESPONSIBILITY OF THE MAINTENANCE CONTRACTOR AND/OR OWNER TO PROGRAM THE IRRIGATION CONTROLLER(S) TO PROVIDE THE MINIMUM AMOUNT OF WATER NEEDED TO SUSTAIN GOOD PLANT HEALTH. THIS INCLUDES MAKING ADJUSTMENTS TO THE PROGRAM FOR SEASONAL WEATHER CHANGES, PLANT MATERIAL, WATER REQUIREMENTS, MOUNDS, SLOPES, SUN, SHADE AND WIND EXPOSURE.

6. IT IS THE RESPONSIBILITY OF A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120 VOLT A.C. (2.5 AMP DEMAND PER CONTROLLER) ELECTRICAL SERVICE TO THE CONTROLLER LOCATION(S). IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO COORDINATE THE ELECTRICAL SERVICE STUB-OUT TO THE CONTROLLER(S). PROVIDE PROPER GROUNDING PER CONTROLLER MANUFACTURER'S INSTRUCTIONS AND IN ACCORDANCE WITH LOCAL CODES.

7. PROVIDE EACH CONTROLLER WITH ITS OWN GROUND ROD. SEPARATE THE GROUND RODS BY A MINIMUM OF EIGHT FEET. THE GROUND ROD SHALL BE AN EIGHT FOOT LONG BY 5/8" DIAMETER U.L. APPROVED COPPER CLAD ROD. INSTALL NO MORE THAN 6" OF THE GROUND ROD ABOVE FINISH GRADE. CONNECT #6 GAUGE WIRE WITH A U.L. APPROVED GROUND ROD CLAMP TO ROD AND BACK TO GROUND SCREW AT BASE OF CONTROLLER WITH APPROPRIATE CONNECTOR. MAKE THIS WIRE AS SHORT AS POSSIBLE, AVOIDING KINKS OR BENDING.

8. INSTALL NEW BATTERIES IN THE IRRIGATION CONTROLLER(S) TO RETAIN PROGRAM IN MEMORY DURING TEMPORARY POWER FAILURES. USE QUANTITY, TYPE AND SIZE REQUIRED AS PER CONTROLLER MANUFACTURER'S INSTRUCTIONS.

9. SCHEDULE A MEETING WHICH INCLUDES REPRESENTATIVES OF THE IRRIGATION CONTROLLER MANUFACTURER, THE MAINTENANCE CONTRACTOR, THE OWNER AND THE IRRIGATION CONTRACTOR AT THE SITE FOR INSTRUCTION ON THE PROPER PROGRAMMING AND OPERATION OF THE IRRIGATION CONTROLLER.

10. PROVIDE EACH IRRIGATION CONTROLLER WITH ITS OWN INDEPENDENT LOW VOLTAGE COMMON GROUND WIRE.

11. IRRIGATION CONTROL WIRES: SOLID COPPER WITH U.L. APPROVAL FOR DIRECT BURIAL IN GROUND. COMMON GROUND WIRE: SIZE #12-1 WIRE WITH A WHITE INSULATING JACKET. CONTROL WIRE SERVICING REMOTE CONTROL VALVES: SIZE #14-1 WIRE WITH INSULATING JACKET OF COLOR OTHER THAN WHITE. SPLICES SHALL BE MADE WITH 3M-DBY SEAL PACKS OR APPROVED EQUAL.

12. INSTALL TWO SPARE CONTROL WIRES OF A DIFFERENT COLOR ALONG THE ENTIRE MAIN LINE. LOOP 36" EXCESS WIRE INTO EACH SINGLE VALVE BOX AND INTO ONE VALVE BOX IN EACH GROUP OF VALVES.

13. SPLICING OF LOW VOLTAGE WIRES IS PERMITTED IN VALVE BOXES ONLY. LEAVE A 36" LONG, 1" DIAMETER COIL OF EXCESS WIRE AT EACH SPLICE AND A 36" LONG EXPANSION LOOP EVERY 100 FEET ALONG WIRE RUN. TAPE WIRES TOGETHER EVERY TEN FEET. DO NOT TAPE WIRES TOGETHER WHERE CONTAINED WITHIN SLEEVING OR CONDUIT.

14. INSTALL GREEN PLASTIC VALVE BOXES WITH BOLT DOWN, NON HINGED COVER MARKED "IRRIGATION CONTROL VALVE". BOX BODY SHALL HAVE KNOCK OUTS. ACCEPTABLE VALVE BOX MANUFACTURER'S INCLUDE NDS, CARSON OR APPROVED EQUAL.

15. INSTALL REMOTE CONTROL VALVE BOXES 12" FROM WALK, CURB, BUILDING OR LANDSCAPE FEATURE. AT MULTIPLE VALVE BOX GROUPS, INSTALL EACH BOX AN EQUAL DISTANCE FROM THE WALK, CURB, BUILDING OR LANDSCAPE FEATURE AND PROVIDE 12" BETWEEN BOX TOPS. ALIGN THE SHORT SIDE OF RECTANGULAR VALVE BOXES PARALLEL TO WALK, CURB, BUILDING OR LANDSCAPE FEATURE.

16. VALVE LOCATIONS SHOWN ARE DIAGRAMMATIC. INSTALL IN GROUND COVER/SHRUB AREAS (AVOID LAWN AREAS WHERE POSSIBLE).

17. THE CONTRACTOR SHALL LABEL CONTROL LINE WIRE AT EACH REMOTE CONTROL VALVE WITH A 2 1/4" X 2 3/4" POLYURETHANE I.D. TAG, INDICATING IDENTIFICATION NUMBER OF VALVE (CONTROLLER AND STATION NUMBER). ATTACH LABEL TO CONTROL WIRE. THE CONTRACTOR SHALL PERMANENTLY STAMP ALL VALVE BOX LIDS WITH APPROPRIATE IDENTIFICATION AS NOTED IN CONSTRUCTION DETAILS.

18. FLUSH AND ADJUST IRRIGATION OUTLETS AND NOZZLES FOR OPTIMUM PERFORMANCE AND TO PREVENT OVER SPRAY ONTO WALKS, ROADWAYS, AND/OR BUILDINGS. SELECT THE BEST DEGREE OF THE ARC AND RADIUS TO FIT THE EXISTING SITE CONDITIONS AND THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH CONTROL ZONE.

19. SET SPRINKLER HEADS PERPENDICULAR TO FINISH GRADE.

20. LOCATE BUBBLERS ON UPHILL SIDE OF PLANT OR TREE.

21. INSTALL A HUNTER HCV SERIES, KBI CV SERIES, OR APPROVED EQUAL SPRING LOADED CHECK VALVE IN SPRINKLER RISER ASSEMBLIES WHERE LOW OUTLET DRAINAGE WILL CAUSE EROSION AND/OR EXCESS WATER.

22. WHERE IT IS NECESSARY TO EXCAVATE ADJACENT TO EXISTING TREES, USE CAUTION TO AVOID INJURY TO TREES AND TREE ROOTS. EXCAVATE BY HAND IN AREAS WHERE TWO (2) INCH AND LARGER ROOTS OCCUR. BACK FILL TRENCHES ADJACENT TO TREE WITHIN TWENTY-FOUR (24) HOURS. WHERE THIS IS NOT POSSIBLE, SHADE THE SIDE OF THE TRENCH ADJACENT TO THE TREE WITH WET BURLAP OR CANVAS.

23. NOTIFY LOCAL JURISDICTIONS FOR INSPECTION AND TESTING OF INSTALLED BACKFLOW PREVENTION DEVICE.

24. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE SHOWN ON THE IRRIGATION DRAWINGS. VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE.

25. IRRIGATION DEMAND: REFER TO PLANS.

26. THE EXISTING MAIN LINE SHOWN ON THE DRAWINGS IS DIAGRAMMATIC. VERIFY AND LOCATE EXISTING MAIN LINE IN FIELD. REPORT TO ARCHITECT IN WRITING ANY DEVIATION OF EXISTING MAIN LINE LOCATION FROM THAT SHOWN ON THE DRAWINGS.

27. PIPE SIZING SHOWN ON THE DRAWINGS IS TYPICAL. AS CHANGES IN LAYOUT OCCUR DURING STAKING AND CONSTRUCTION THE SIZE MAY NEED TO BE ADJUSTED ACCORDINGLY.

28. PIPE THREAD SEALANT COMPOUND SHALL BE RECTOR SEAL #5.

29. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MINOR CHANGES IN THE IRRIGATION LAYOUT DUE TO OBSTRUCTIONS NOT SHOWN ON THE IRRIGATION DRAWINGS SUCH AS LIGHTS, FIRE HYDRANTS, SIGNS, ELECTRICAL ENCLOSURES, ETC.

30. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CHANGES IN THE IRRIGATION LAYOUT AND VALVE ZONING DUE TO VARIATIONS IN THE EXISTING SITE CONDITIONS SUCH AS EXPOSURE FROM BUILDINGS, TRELLISES, TREES, ETC., AS WELL AS SLOPE AND SOIL CONDITIONS. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND IRRIGATION CONSULTANT OF THE PROPOSED CHANGES PRIOR TO INSTALLATION FOR APPROVAL.

31. WHEN WORK OF THIS SECTION HAS BEEN COMPLETED AND SUCH OTHER TIMES AS MAY BE DIRECTED, REMOVE ALL TRASH, DEBRIS, SURPLUS MATERIALS AND EQUIPMENT FROM SITE.

32. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLEMENTAL HAND WATERING OF ALL PLANT MATERIAL WITHIN DRIPLINE AREAS UNTIL THE PLANTS ARE SUFFICIENTLY ESTABLISHED.

33. VERIFY LOCATIONS OF ALL IRRIGATION COMPONENTS INSTALLED WITHIN A VALVE BOX WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. DO NOT INSTALL UNTIL LANDSCAPE ARCHITECT PROVIDES ACCEPTABLE LOCATIONS.

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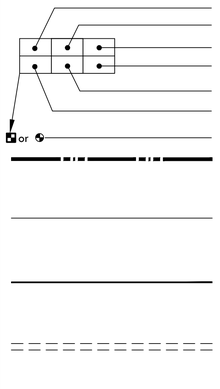
2760 Camino Diablo
Walnut Creek, CA 94597
tel 925.939.3985 ♦ fax 925.932.5671
www.rmairrigation.com

IRRIGATION LEGEND

SYMBOL	MODEL NUMBER	DESCRIPTION	NOZZLE GPM	OPERATING PSI	OPERATING RADIUS (FEET)
	PCB-25	HUNTER BUBBLER (SHRUB)	0.25	30	TRICKLE
■	PCB-25	HUNTER BUBBLER (TREE) MIN. 2 PER TREE. REFER TO BUBBLER DETAIL FOR QUANTITY OF BUBBLERS PER TREE SIZE.	0.25	30	TRICKLE
	WLT-0500-T	NDS SCH 40 BALL VALVE OR APPROVED EQUAL			
	ECO-ID	HUNTER ECO-INDICATOR			
	ICV-101/AS-40	HUNTER REMOTE CONTROL VALVE WITH 40 PSI PRESSURE REGULATOR			
	ICZ-101-40	HUNTER REMOTE CONTROL VALVE WITH A 40 PSI PRESSURE REGULATOR AND A 1" FILTER.			
	QB44RCAR10	BUCKNER 1" TWO-PIECE QUICK COUPLING VALVE (ANTI-ROTATION)			
	T-FP600A-LF-1"	NIBCO 1" BRASS BALL VALVE			
MV	WT-MV-100G-SNO	WeatherTRAK 1" BRASS MASTER VALVE (NORMALLY OPEN)			
FS	WTFLOW-HD-P-100	WeatherTRAK 1" FLOW SENSOR			
	975XL2SEU-1"	WILKINS REDUCED PRESSURE BACKFLOW ASSEMBL.			
SM	MODEL 55	BADGER SUB WATER METER			
A	WTLC-C-12-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 12 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			
B	WTLC-C-6-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 6 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			



CONTROLLER AND STATION NUMBER
REMOTE CONTROL VALVE SIZE (IN INCHES)
FLOW (GPM)
WATER USE CLASSIFICATION OF ZONE
APPLICATION RATE (IN/HR) or DRIPLINE SPACING
AREA (SQ. FT.)
ASSOCIATED REMOTE CONTROL VALVE

MAIN LINE: 1.25" THROUGHOUT:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 18" COVER.

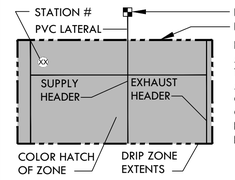
LATERAL LINE: 3/4" AND LARGER:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

DRIPLINE LATERAL LINE: 3/4" AND LARGER:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

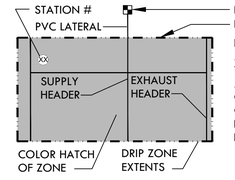
SLEEVING: SCHEDULE 40 PVC PLASTIC PIPE. COVER TO BE AS INDICATED IN SPECIFICATIONS OR AS INDICATED ABOVE FOR PIPE DEPTH OF COVER.

MAIN LINE: 1.25" THROUGHOUT:
TYPE 'K' COPPER PIPE WITH WROUGHT FITTINGS. SHOWN FOR REFERENCE ONLY, SEE PLUMBING PLANS FOR ROUTING THROUGH STRUCTURE.

ELECTRICAL CONDUIT: SHOWN FOR REFERENCE ONLY, SEE ELECTRICAL PLANS FOR ROUTING THROUGH STRUCTURE.



DRIPLINE REMOTE CONTROL VALVE
DRIP ZONE:
HUNTER HDL SERIES DRIPLINE WITH BUILT IN PRESSURE COMPENSATION AND CHECK VALVE, PART #HDL-06-12-250-CV. USE PLD FITTINGS. TUBING TO BE INSTALLED 4" BELOW GRADE IN A 12" O.C. GRID ACCORDING TO DETAILS. SIZE EXHAUST HEADERS AS FOLLOWS: 1": 0-10 GPM, 1.25": 11-20 GPM. ALL EXHAUST HEADERS SHALL BE 1" SCH 40 PVC OR 1" SCH 40 FLEXIBLE PVC. USE SCH. 40 PVC SOLVENT WELD FITTINGS. EXTEND PVC HEADERS TO THE ENDS OF ALL DRIP ZONES TO BALANCE FLOW IF REQUIRED. SEE DETAILS FOR FURTHER INFORMATION.



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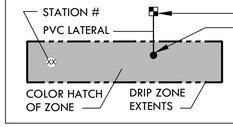

DRIPLINE REMOTE CONTROL VALVE
APPROXIMATE CONNECTION POINT BETWEEN DRIPLINE TUBING AND PVC SUPPLY WHEN DRIP ZONE IS LESS THAN 3 GPM AND NO PVC SUPPLY/EXHUST HEADERS ARE NEEDED. REFER TO DRIPLINE TUBING CONNECTION DETAIL FOR MORE INFORMATION.

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JOB: 0000

SHEET:

IRRIGATION NOTES & LEGEND

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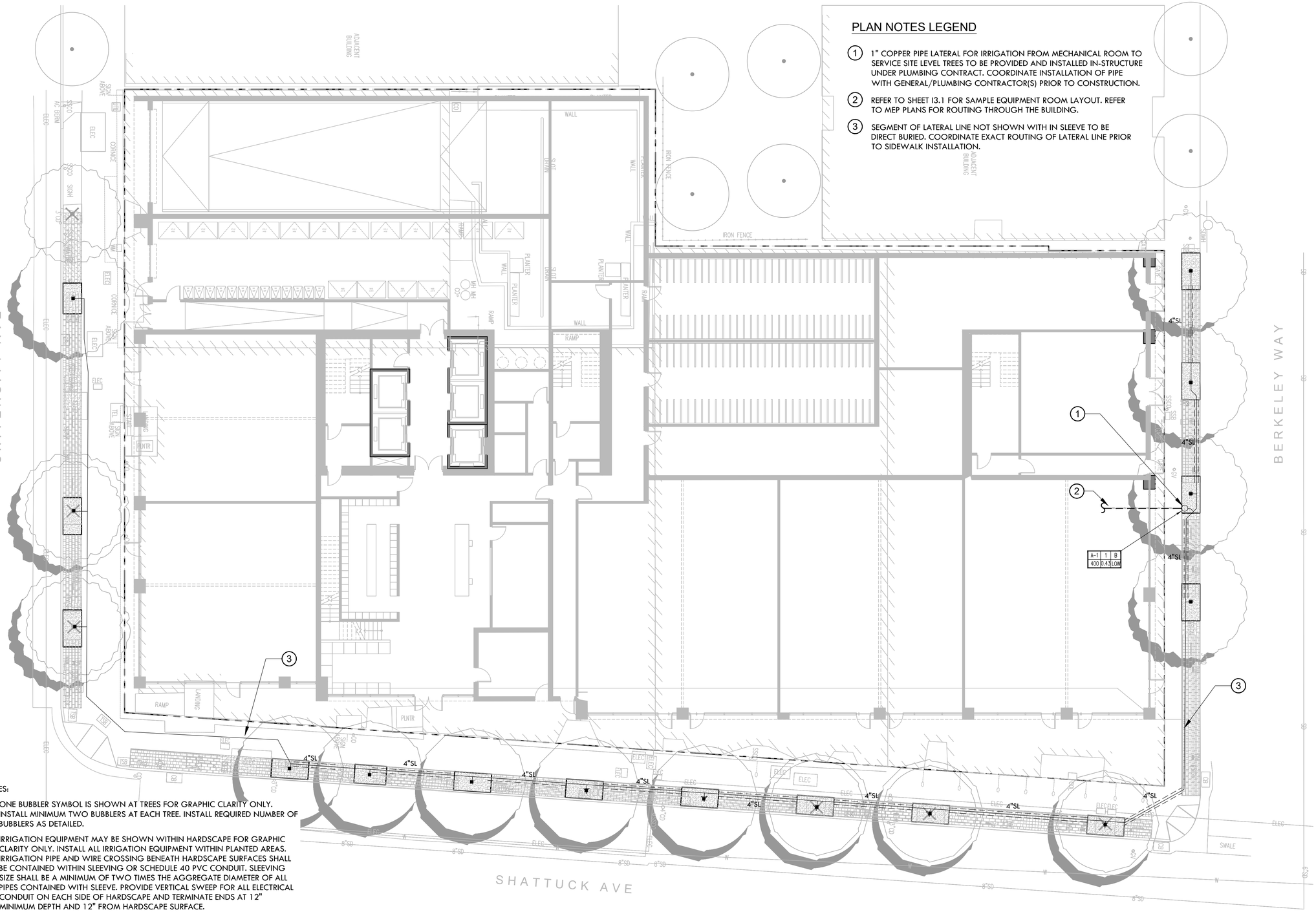

NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. IRRIGATION EQUIPMENT MAY BE SHOWN WITHIN HARDSCAPE FOR GRAPHIC CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT WITHIN PLANTED AREAS. IRRIGATION PIPE AND WIRE CROSSING BENEATH HARDSCAPE SURFACES SHALL BE CONTAINED WITHIN SLEEVING OR SCHEDULE 40 PVC CONDUIT. SLEEVING SIZE SHALL BE A MINIMUM OF TWO TIMES THE AGGREGATE DIAMETER OF ALL PIPES CONTAINED WITH SLEEVE. PROVIDE VERTICAL SWEEP FOR ALL ELECTRICAL CONDUIT ON EACH SIDE OF HARDSCAPE AND TERMINATE ENDS AT 12" MINIMUM DEPTH AND 12" FROM HARDSCAPE SURFACE.
3. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
4. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

0.75"	0-6 GPM
1"	7-12 GPM

North

1" = 10'
0 4 8 16

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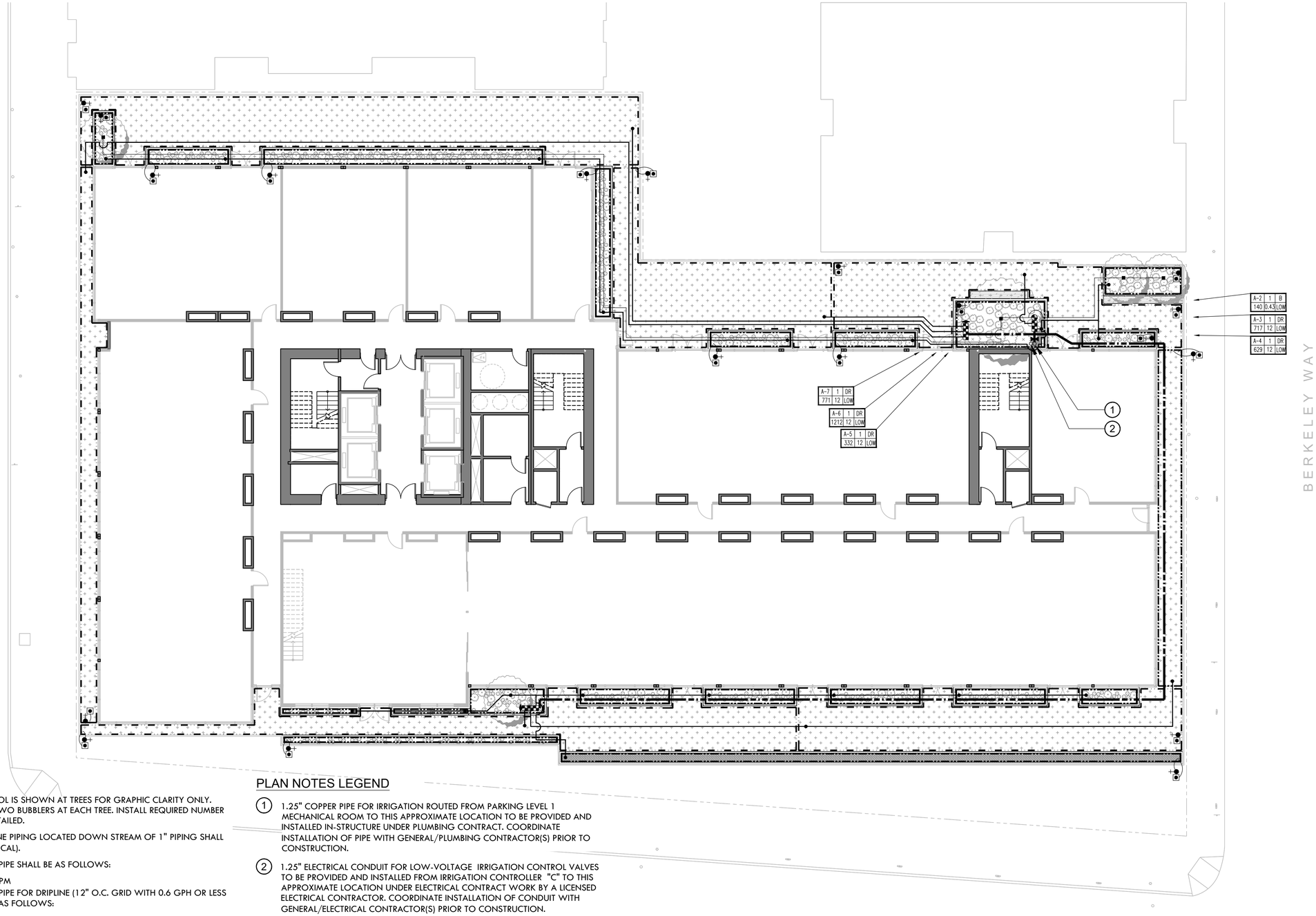
JOB: 0000

SHEET:

IRRIGATION PLAN
AT STREETSCAPE

I1.0



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2. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
3. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

   0.75" 0-6 GPM
4. SIZING OF LATERAL PIPE FOR DRIPLINE (12" O.C. GRID WITH 0.6 GPH OR LESS EMITTERS) SHALL BE AS FOLLOWS:

   0.75 0-500 FT
   1" 501-1100 FT

PLAN NOTES LEGEND

(1) 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.

(2) 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

North

3/16"=1'-0"
0 2 4 8

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JOB: 0000

SHEET:

IRRIGATION PLAN
SECOND FLOOR
PODIUM GARDENS

I2.0

NOTES:

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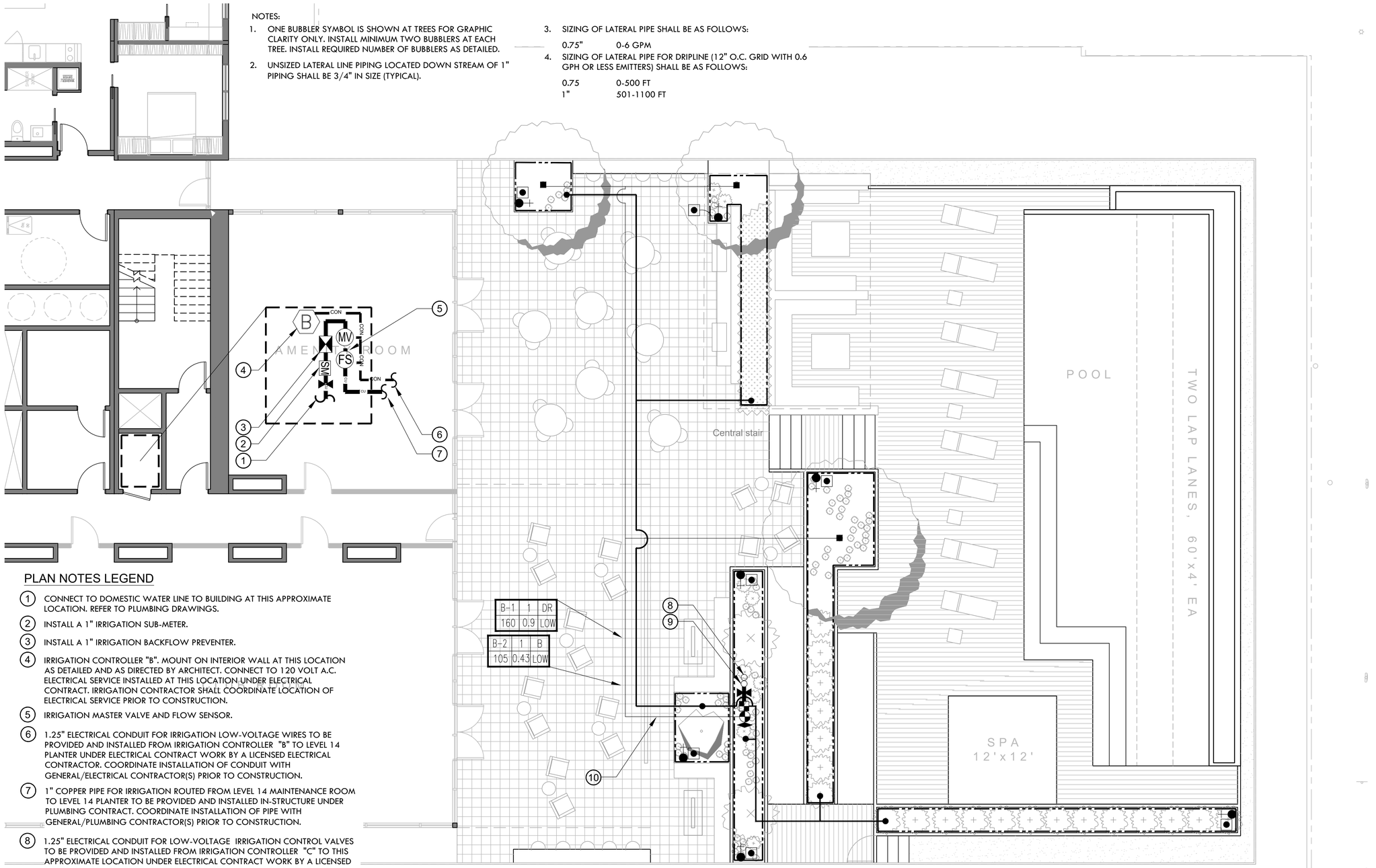

PLAN NOTES LEGEND

1. CONNECT TO DOMESTIC WATER LINE TO BUILDING AT THIS APPROXIMATE LOCATION. REFER TO PLUMBING DRAWINGS.
2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION CONTROLLER "B". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
5. IRRIGATION MASTER VALVE AND FLOW SENSOR.
6. 1.25" ELECTRICAL CONDUIT FOR IRRIGATION LOW-VOLTAGE WIRES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "B" TO LEVEL 14 PLANTER UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM LEVEL 14 MAINTENANCE ROOM TO LEVEL 14 PLANTER TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
9. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
10. ALL IRRIGATION LINES SHALL BE ROUTED UNDER PEDESTAL PAVERS.

27 FEB 2023

ALT E - REVISED

North

3/16"=1'-0"
0 2 4 8

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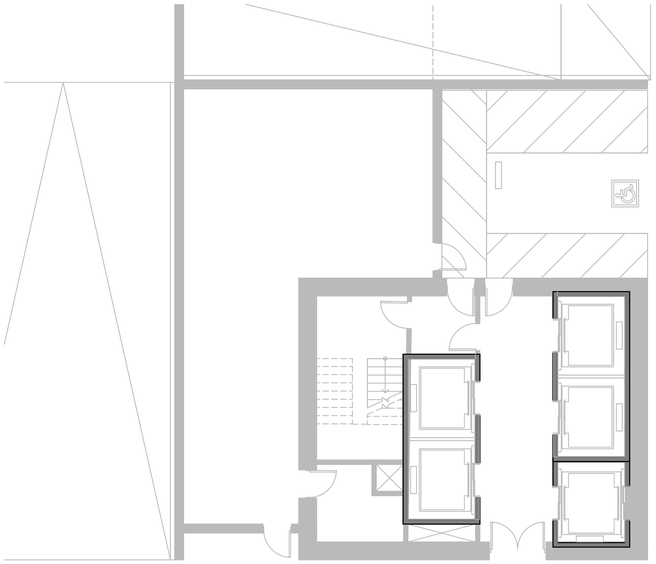
SHEET:

IRRIGATION PLAN
FOURTHEENTH
FLOOR ROOF DECK

I3.0



PLAN NOTES LEGEND

1. CONNECT TO DOMESTIC WATER LINE TO BUILDING AT THIS APPROXIMATE LOCATION. REFER TO PLUMBING DRAWINGS.
2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION MASTER VALVE AND FLOW SENSOR.
5. IRRIGATION CONTROLLER "C". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
6. 1" COPPER PIPE LATERAL FOR IRRIGATION FROM MECHANICAL ROOM TO SERVICE SITE LEVEL TREES TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM MECHANICAL ROOM TO PODIUM LEVEL PLANTERS TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO PODIUM LEVEL PLANTERS UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

27 FEB 2023

North 0 4 8 16 1/8"=1'-0"

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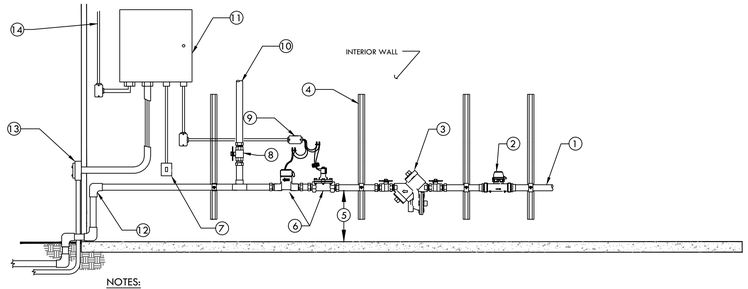
IRRIGATION POINT OF CONNECTION

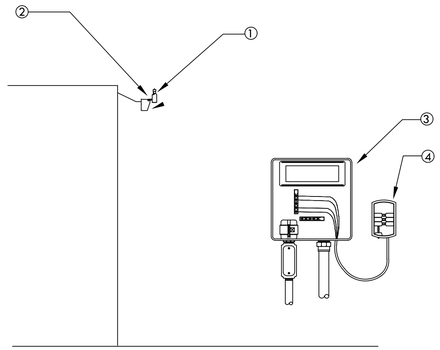
I3.1

① 1.25" COPPER MAIN LINE TO BACKFLOW IN EQUIPMENT ROOM. SHOWN ON MEP PLANS.
② SUB-METER FOR IRRIGATION.
③ 1.25" WILKENS REDUCED PRESSURE BACKFLOW ASSEMBLY.
④ UNI-STRUT SUPPORT BRACKET, THREADED EXTENSIONS AND CLAMPS, LENGTH AS REQUIRED. PROVIDE A MINIMUM OF 6" SEPARATION FOR THE VALVES AND PIPE FROM THE WALL.
⑤ MIN. 18" ± FROM FINISH FLOOR.
⑥ MASTER VALVE AND FLOW SENSOR.
⑦ 120 VOLT A.C. ELECTRICAL BY ELECTRICAL CONTRACTOR FOR CONTROLLER
⑧ 1.25" BRASS BALL VALVE.
⑨ 1" ELECTRICAL CONDUIT WITH JUNCTION BOXES FOR CONTROL WIRES FOR FLOW SENSOR & MASTER VALVE.
⑩ 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION(S). INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
⑪ IRRIGATION CONTROLLER BY IRRIGATION CONTRACTOR. MINIMUM 42" ABOVE FINISHED FLOOR.
⑫ 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION. INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
⑬ JUNCTION BOX BY ELECTRICAL CONTRACTOR FOR EXIT OF TWO WIRE SERVICING VALVES WITHIN ROOM.
⑭ 1.25" ELECTRICAL CONDUIT WITH REQUIRED JUNCTION BOXES ROUTED THROUGH STRUCTURE FROM CONTROLLER LOCATION TO EXTERIOR PLANTERS.



NOTES:
1. THIS LAYOUT IS TO PROVIDE INFORMATION ON EQUIPMENT AND TYPICAL DISTANCES REQUIRED BETWEEN THE EQUIPMENT. IT IS DIAGRAMMATIC AND WILL NEED TO BE ADJUSTED ACCORDING TO AVAILABLE FLOOR SPACE AND OTHER EQUIPMENT INSTALLED WITHIN THE ENCLOSURE. OFFSETS AND FITTINGS WILL BE REQUIRED FOR THESE ADJUSTMENTS.
2. MAINTAIN 6" OF CLEARANCE FROM BUILDING WALLS FOR EASE OF MAINTENANCE FOR ALL COPPER PIPING, VALVES, AND FITTINGS.
3. SEAL ALL PIPE PENETRATIONS THROUGH WALLS/STRUCTURE AS REQUIRED (BY PLUMBING CONTRACTOR). SEE PLUMBING/WATERPROOFING DRAWINGS.
4. ALL FITTINGS AND PIPING FOR WATER LINES WITHIN EQUIPMENT ROOM SHALL BE COPPER WITH WROT FITTINGS OR BRASS NIPPLES.

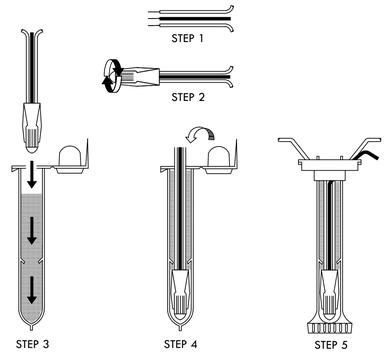
1 IRRIGATION EQUIPMENT LAYOUT DIAGRAM DETAIL
SCALE: NONE



NOTE: MAXIMUM LINE OF SIGHT FROM RAIN SENSOR TO RECEIVER IS 300 FT. DISTANCE IS LESS IF OBSTRUCTIONS EXIST. SENSOR MUST BE INSTALLED IN "CLEAR SPACE" WHERE IT IS EXPOSED TO UNOBSTRUCTED RAINFALL AND IS CLEAR OF IRRIGATION SPRAY.

① WIRELESS RAIN SENSOR TRANSMITTER (GUTTER MOUNTED)
② MOUNT RAIN SENSOR ON BUILDING WALL. ARCHITECT TO APPROVE LOCATION
③ CONTROLLER
④ RAIN SENSOR RECEIVER

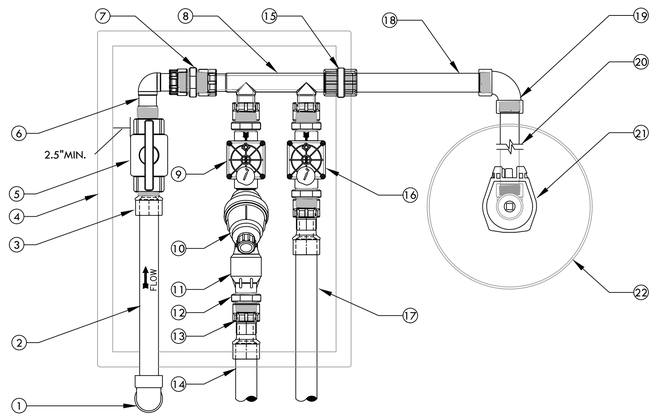
2 WIRELESS RAIN SENSOR-GUTTER MOUNT
SCALE: NONE



NOTE:
MAXIMUM # OF WIRES PER CONNECTOR:
- 3-#14 GAUGE
- 2-#12 GAUGE

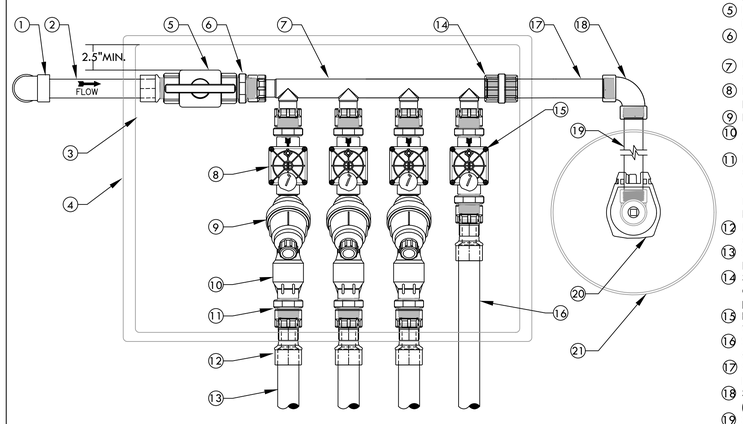
INSTRUCTIONS:
1. STRIP WIRES APPROXIMATELY 1/2" FROM ENDS TO EXPOSE WIRE.
2. TWIST CONNECTOR AROUND WIRES CLOCKWISE UNTIL HAND TIGHT, DO NOT OVERTIGHTEN.
3. INSERT WIRE ASSEMBLY TO BOTTOM OF GEL-FILLED TUBE. CHECK TO MAKE SURE CONNECTOR HAS BEEN PUSHED PAST LOCKING FINGERS AND IS SEATED AT THE BOTTOM OF THE TUBE.
4. PLACE WIRES WHICH EXIT TUBE IN WIRE EXIT HOLES AND CLOSE CAP UNTIL IT SNAPS.
5. INSPECT FINAL SPLICE ASSEMBLY THAT IT IS SECURED.

3 WEATHERPROOF WIRE SPLICE ASSEMBLY
SCALE: NONE



① SCH 40 PVC 90° ELBOW (SxS) FROM PVC MAIN LINE BELOW.
② SCH 40 PVC PIPE. LENGTH AS REQUIRED.
③ SCH 80 PVC MALE ADAPTER.
④ CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
⑤ NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
⑥ DURA 1" MIPT x 1" SWIVEL 90° (PART #306-009)
⑦ DURA 1"x1" THREADED ADAPTER (PART #08303) 4 TOTAL.
⑧ DURA 1" MULTI-PORT MANIFOLD (PART #301-010-2)
⑨ DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑩ FILTER. REFER TO LEGEND FOR MODEL.
⑪ 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
⑫ DURA 1" x 3/4" MALE ADAPTER (PART #08303-131). ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
⑬ DURA 1" SLIP X 1" SWIVEL (PART #329-011) 2 TOTAL.
⑭ SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION
⑮ SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
⑯ BUBBLER OR SPRINKLER REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑰ SCHEDULE 40 PVC LATERAL TO BUBBLER OR SPRAY IRRIGATION.
⑱ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑲ SCHEDULE 80 PVC 90° ELBOW (TxT).
⑳ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
㉑ QUICK COUPLING VALVE. INSTALL PER DETAIL.
㉒ 10" ROUND BOX. INSTALL PER DETAIL.

4 TWO REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE



① SCH 40 PVC 90° ELBOW (SxS) FROM PVC MAIN LINE BELOW.
② SCH 40 PVC PIPE. LENGTH AS REQUIRED.
③ SCH 80 PVC MALE ADAPTER.
④ CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
⑤ NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
⑥ DURA 1"x1" THREADED ADAPTER (PART #08303) 6 TOTAL.
⑦ DURA 1" MULTI-PORT MANIFOLD (PART #301-010-4)
⑧ DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑨ FILTER. REFER TO LEGEND FOR MODEL.
⑩ 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
⑪ DURA 1" x 3/4" MALE ADAPTER (PART #08303-131) 3 TOTAL. ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
⑫ DURA 1" SLIP X 1" SWIVEL (PART #329-011) 4 TOTAL.
⑬ SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION.
⑭ SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
⑮ BUBBLER OR SPRINKLER REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑯ SCHEDULE 40 PVC LATERAL TO BUBBLERS OR SPRAY IRRIGATION.
⑰ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑱ SCHEDULE 80 PVC 90° ELBOW (TxT).
⑲ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑳ QUICK COUPLING VALVE. INSTALL PER DETAIL.
㉑ 10" ROUND BOX. INSTALL PER DETAIL.

5 FOUR REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE

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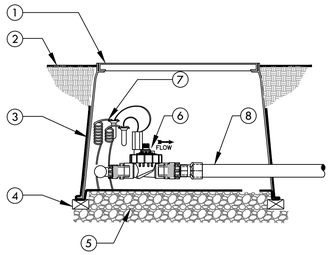
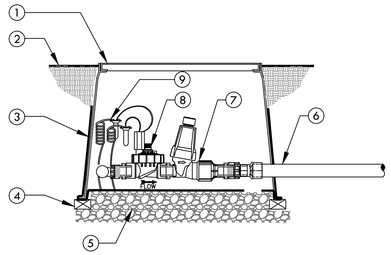
IRRIGATION DETAILS

I4.0



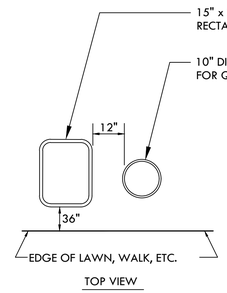
1. CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
2. FINISH GRADE
3. 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
4. BRICK-1 EACH CORNER
5. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
6. REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
7. VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL
8. SCH 40 PVC LATERAL LINE TO BUBBLERS OR SPRAY

1 BUBBLER OR SPRAY REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



1. CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
2. FINISH GRADE
3. 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
4. BRICK-1 EACH CORNER
5. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
6. SCH 40 PVC LATERAL LINE TO DRIPLINE OR DRIP.
7. DRIP FILTER AND REGULATOR
8. REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
9. VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL

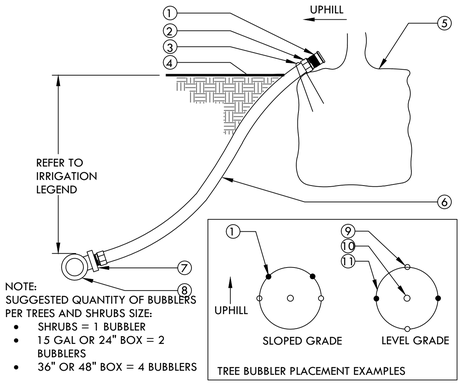
2 DRIP REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



TOP VIEW

INSTRUCTIONS:
1. CENTER VALVE BOX OVER REMOTE CONTROL VALVES TO FACILITATE SERVICING VALVE.
2. SET BOXES 1" ABOVE FINISH GRADE OR MULCH COVER IN GROUND COVER/SHRUB AREA AND FLUSH WITH FINISH GRADE IN TURF AREA.
3. SET RCV AND VALVE BOX ASSEMBLY IN GROUND COVER/SHRUB AREA WHERE POSSIBLE. INSTALL IN LAWN ONLY IF GROUND COVER DOES NOT EXIST ADJACENT TO LAWN.
4. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE OF LAWN, WALK, FENCE, CURB, ETC.
5. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOXES TO PREVENT COLLAPSE AND DEFORMATION OF VALVE BOX SIDES.
6. INSTALL EXTENSION BY VALVE BOX MANUFACTURER AS REQUIRED TO COMPLETELY ENCLOSE ASSEMBLY FOR EASY ACCESS.

3 VALVE BOX INSTALLATION
SCALE: NONE

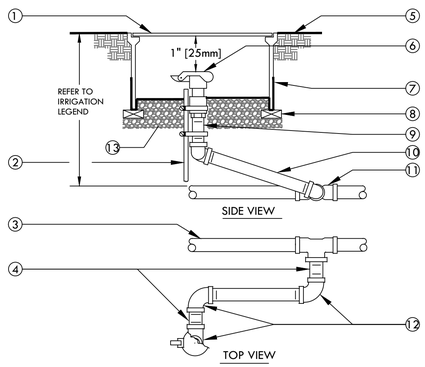


TREE BUBBLER PLACEMENT EXAMPLES

NOTE:
SUGGESTED QUANTITY OF BUBBLERS PER TREES AND SHRUBS SIZE:
- SHRUBS = 1 BUBBLER
- 15 GAL OR 24" BOX = 2 BUBBLERS
- 36" OR 48" BOX = 4 BUBBLERS

1. BUBBLER (TO BE INSTALLED ON TOP OF ROOTBALL).
2. 1/2" SCH. 40 MALE ADAPTER (2 TOTAL).
3. 6" STAPLE.
4. FINISH GRADE.
5. TREE OR SHRUB ROOTBALL.
6. 1/2" IPS FLEXIBLE PVC. USE WELD-ON 795 SOLVENT CEMENT OR EQUAL WHEN BONDING PVC HOSE TO FITTINGS.
7. PVC TEE (SST), ELBOW (ST) OR FEMALE ADAPTER.
8. PVC LATERAL LINE.
9. TREE STAKES.
10. TREE OR SHRUB.
11. EDGE OF ROOTBALL (TYPICAL).

4 TREE AND SHRUB BUBBLER
SCALE: NONE



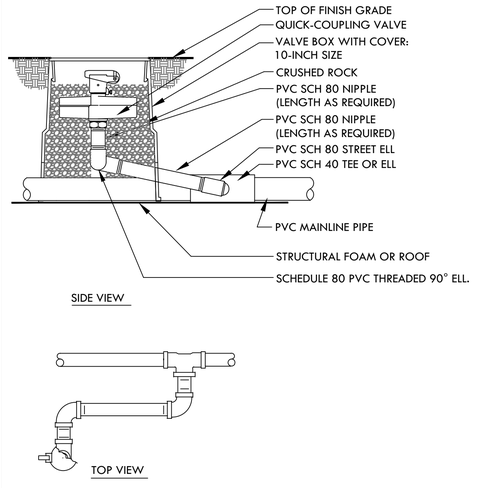
SIDE VIEW

TOP VIEW

1. 10" ROUND PLASTIC VALVE BOX WITH BOLT DOWN LID.
2. 1 1/4" x 1 1/4" x 3/16" [30mm x 30mm x 5mm] ANGLE IRON 30" [760mm] LONG W/2 STAINLESS STEEL STRAPS (ONE AROUND QCV).
3. PVC MAIN LINE.
4. 3" [75mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
5. FINISH GRADE.
6. QUICK COUPLING VALVE.
7. 19 GAUGE 1/2" [13mm] SQUARE WIRE MESH.
8. BRICK - 2 TOTAL.
9. SCHEDULE 80 PVC THREADED NIPPLE.
10. 10" [250mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
11. UPC APPROVED SCHEDULE 40 PVC TEE OR ELBOW.
12. SCHEDULE 80 PVC THREADED 90° ELL.
13. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" [100mm] DEEP BELOW VALVE (NO SOIL IN VALVE BOX).

NOTE:
NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.

5 QUICK COUPLING VALVE
SCALE: NONE

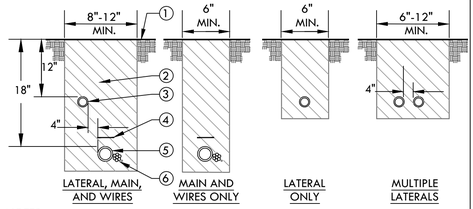


SIDE VIEW

TOP VIEW

NOTE:
1. NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.
2. TRIM VALVE BOX LENGTH AS NECESSARY TO BE FLUSH WITH TOP OF PLANTING TILES.
3. IF NECESSARY SLOT SIDES VALVE BOX TO ALLOW PASSAGE OF PIPE THROUGH BOTTOM OF VALVE BOX.

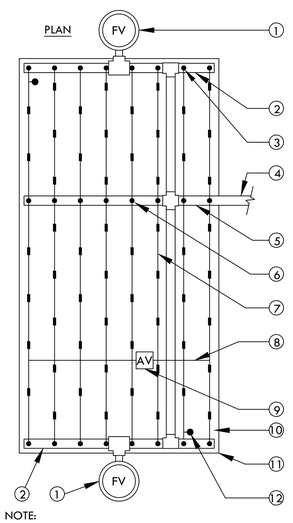
6 QUICK COUPLING VALVE-ON STRUCTURE
SCALE: NONE



NOTES:
1. ALL MAIN SUPPLY LINES AND LATERAL LINES SHALL BE PLACED IN SLEEVES UNDER PAVED SURFACES. INSTALL LOW VOLTAGE WIRES WITHIN A SEPARATE CONDUIT UNDER PAVED SURFACES. DO NOT TAPE WIRES WITHIN CONDUIT.
2. REUSE SALVAGED EXCAVATED FILL AND COMPACT TO ORIGINAL DENSITY IN LANDSCAPE AREAS. ALL OTHER AREAS SHALL BE AT 95% COMPACTION. BACKFILL MATERIAL SHALL BE THE EARTH EXCAVATED FROM THE TRENCHES, FREE FROM ROCKS (ANYTHING LARGER THAN 2"), CONCRETE CHUNKS, AND OTHER FOREIGN OR COARSE MATERIALS.
3. WHEN 12" POP-UP SPRINKLER HEADS ARE USED, INCREASE THE DEPTH OF LATERAL TO 18" AT THE SPRINKLER LOCATION ONLY.

1. FINISH GRADE.
2. CLEAN BACKFILL MATERIAL.
3. LATERAL LINE.
4. 3" DETECTABLE WARNING TAPE OVER MAIN LINE. INSTALL 3" ABOVE MAIN LINE. USE CHRISTY MODEL #TA-DT-3-BIRR FOR POTABLE IRRIGATION SYSTEMS OR #TA-DT-3-PRW FOR RECYCLED IRRIGATION WATER SYSTEMS
5. MAIN LINE.
6. LOW VOLTAGE CONTROL WIRES, TWO-WIRE CABLE, OR CONDUIT WITH WIRES. FOR MULTIPLE WIRES, TAPE AND BUNDLE WIRES AT 10 FT. INTERVALS. WIRING SHALL BE LAID OUT LOOSELY IN THE TRENCH.

7 TRENCHING
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
3. MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
5. PVC SUPPLY MANIFOLD. EXTEND TO END OF ZONE/EXHAUST HEADER.
6. MANIFOLD-TO-TEE CONNECTION.
7. DRIPLINE LATERAL.
8. AIR/VACUUM RELIEF LATERAL, BLANK POLY TUBING CENTERED ON MOUND OR BERM.
9. AIR/VACUUM RELIEF PLUMBED TO BLANK 5/8" POLY TUBING AT EACH HIGH POINT.
10. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
11. AREA PERIMETER.
12. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

8 HLD DRIPLINE CENTER FEED LAYOUT
SCALE: NONE

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IRRIGATION DETAILS

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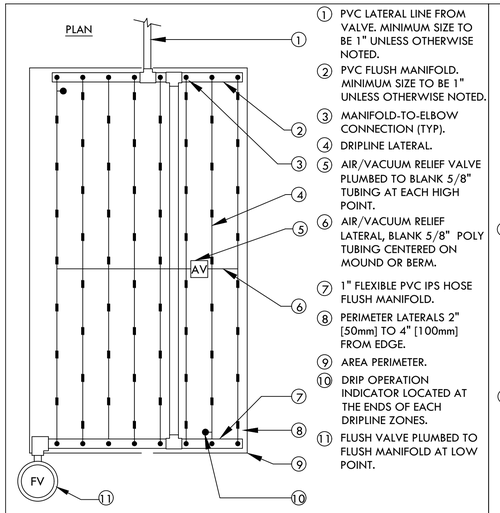
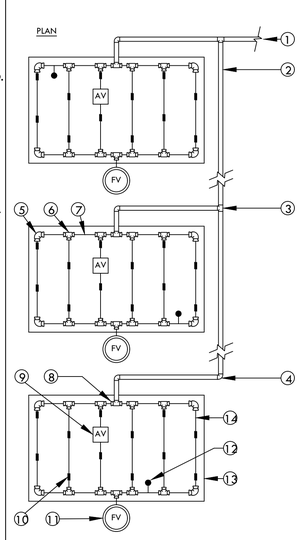


1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. DRIPLINE LATERAL.
5. AIR/VACUUM RELIEF VALVE PLUMBED TO BLANK 5/8" TUBING AT EACH HIGH POINT.
6. AIR/VACUUM RELIEF LATERAL, BLANK 5/8" POLY TUBING CENTERED ON MOUND OR BERM.
7. 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
8. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
9. AREA PERIMETER.
10. DRIP OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONES.
11. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

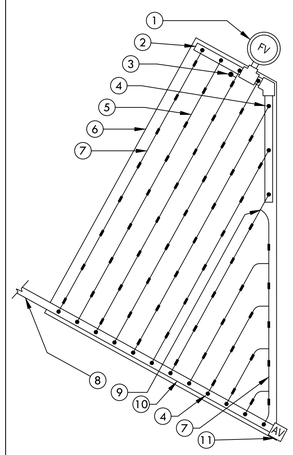
1 HLD DRIPLINE END FEED LAYOUT
SCALE: NONE



1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. PVC TEE (SxSxS).
4. PVC ELL (SxS).
5. HUNTER PLD-ELBOW (PLD-ELB)
6. HUNTER PLD-TEE (PLD-TEE).
7. BLANK 5/8" [16mm] POLY TUBING AT SUPPLY AND FLUSH END OF EACH ISLAND.
8. REFER TO DRIPLINE TO PVC CONNECTION DETAIL.
9. AIR/VACUUM RELIEF VALVE PLUMBED TO TUBING AT HIGH POINT.
10. DRIPLINE LATERAL.
11. MANUAL FLUSH VALVE PLUMBED TO TUBING AT LOW POINT.
12. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
13. ISLAND PERIMETER.
14. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.

NOTE:
1. THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

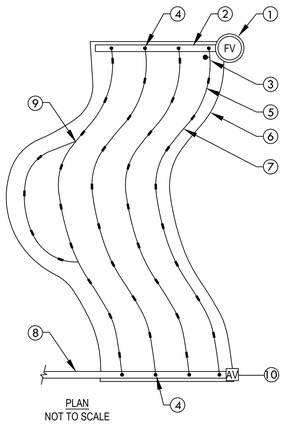
2 HLD DRIPLINE ISLAND LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. PVC SUPPLY MANIFOLD.
11. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

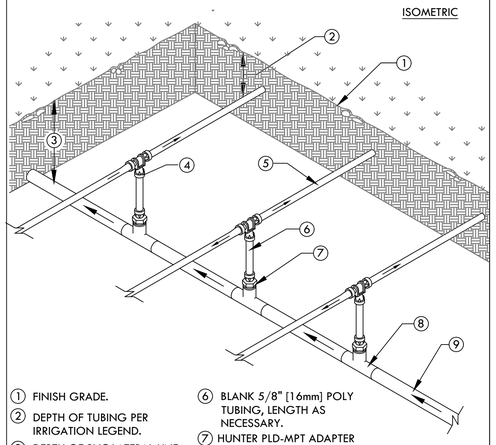
3 HLD DRIPLINE TRIANGULAR LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH/EXHAUST MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC SUPPLY LINE/HEADER FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

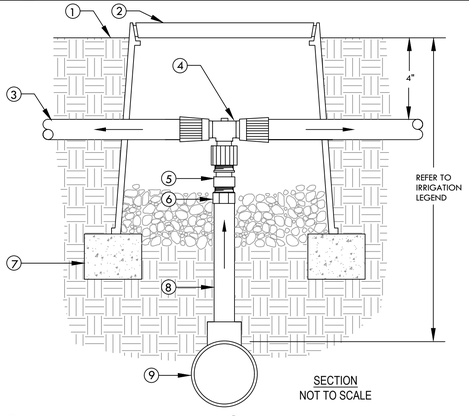
4 HLD DRIPLINE ODD CURVE LAYOUT
SCALE: NONE



1. FINISH GRADE.
2. DEPTH OF TUBING PER IRRIGATION LEGEND.
3. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND
4. HUNTER PLD-TEE (PLD-TEE)
5. DRIPLINE TUBING.
6. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
7. HUNTER PLD-MPT ADAPTER (PLD-050)
8. PVC TEE (SxSxT) WITH 1/2" [13mm] FPT OUTLET.
9. PVC LATERAL LINE FROM REMOTE CONTROL VALVE.

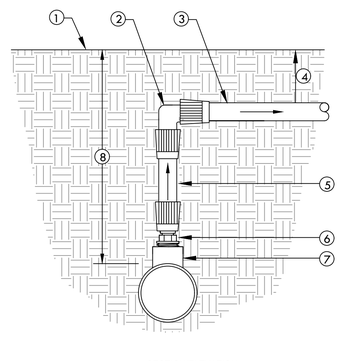
NOTE:
THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.

5 HLD DRIPLINE CENTER FEED MANIFOLD
SCALE: NONE



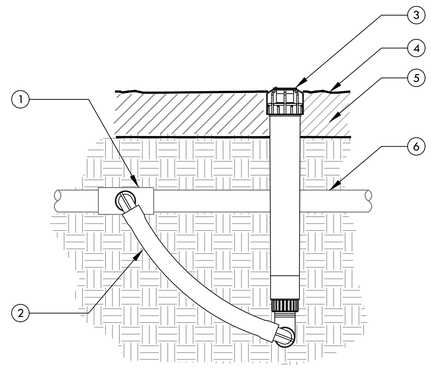
1. FINISH GRADE
2. CARSON 708 OR EQUAL. COLOR: BLACK. USE PURPLE FOR RECYCLED WATER SYSTEMS.
3. DRIPLINE TUBING
4. HUNTER PLD-TEE X 1/2" FPT ADAPTER
5. TORO 1/2" CHECK VALVE (PCV-500)
6. 1/2" SCH 40 MALE ADAPTER.
7. BRICK (1 OF 2)
8. 1/2" SCH 40 PVC (LENGTH AS REQUIRED)
9. PVC LATERAL LINE SUPPLY. MINIMUM SIZE TO BE 1" UNLESS SIZED DIFFERENTLY ON DRAWINGS. USE SCH 40 PVC 1"x1"x1/2" TEE OR 90° ELBOW.

6 DRIPLINE TO PVC CONNECTION
SCALE: NONE



1. FINISH GRADE
2. HUNTER PLD-ELBOW (PLD-ELB)
3. DRIPLINE TUBING
4. DEPTH OF TUBING PER IRRIGATION LEGEND.
5. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
6. HUNTER PLD-MPT ADAPTER (PLD-050)
7. SCH 40 PVC TEE (SxSxT) WITH 1/2" FPT OUTLET.
8. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND

7 DRIPLINE MANIFOLD TO ELBOW CONNECTION
SCALE: NONE



1. UPC APPROVED SCHEDULE 40 PVC TEE, ELBOW OR BARB x THREAD DRIP FITTING TEE OR ELBOW WITH 3/4" OUTLET.
2. 1/2" X 3/4" X 6" HUNTER SWING JOINT (SJ-7506)
3. ECO INDICATOR
4. FINISHED GRADE
5. MULCH
6. PVC LATERAL PIPE OR DRIPLINE

8 DRIPLINE OPERATION INDICATOR
SCALE: NONE

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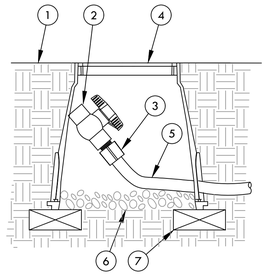
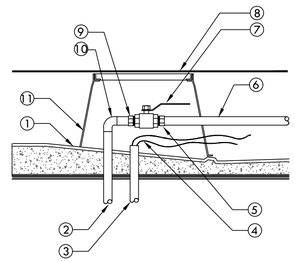


NOTE:
ALLOW A MINIMUM OF PVC HOSE IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

1. FINISH GRADE
2. 1/2" SCH 40 THREADED BALL VALVE.
3. 1/2" SCH 40 MALE ADAPTER.
4. 6" ROUND PLASTIC VALVE BOX.
5. 1" IPS PVC HOSE FROM EXHAUST HEADER.
6. PEA GRAVEL SUMP (6" DEEP).
7. BRICK (1 OF 2)

2 DRIPLINE-FLUSH POINT
SCALE: NONE



1. SLOPED ROOF BELOW PEDESTAL SYSTEM
2. COPPER PIPE THROUGH STRUCTURE PROVIDED BY PLUMBING CONTRACTOR. WATERPROOF ALL PENETRATIONS.
3. CONDUIT FOR CONTROL WIRES THROUGH STRUCTURE PROVIDED BY ELECTRICAL CONTRACTOR. WATERPROOF ALL PENETRATIONS
4. TWO-WIRE CABLE OR CONTROL WIRES
5. SCH 40 PVC MALE ADAPTER.
6. PVC MAIN LINE TO REMOTE CONTROL VALVES.
7. BRONZE BALL VALVE.
8. ROOF DECK PAVERS
9. COPPER MALE ADAPTER.
10. COPPER 90° ELBOW.
11. 10" ROUND PLASTIC VALVE BOX. CUT BOX TO FIT BELOW PEDESTAL PAVER SYSTEM

3 ON STRUCTURE STUB-OUT WITH BRONZE BALL VALVE
SCALE: NONE

IRRIGATION WATER USE CALCULATIONS

WATER USE ESTIMATION CONTROLLER "A"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	1,079	400	10,357	0.03	13.85	17%
2	GROUNDCOVER	LOW	0.3	BUBBLER	0.81	0.370	4,915	1,820	47,177	0.14	63.07	77%
3	TREES	LOW	0.3	BUBBLER	0.81	0.370	400	148	3,839	0.01	5.13	6%
					TOTALS		6,394	2,368	61,373	0.19	82.05	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME											
NA					1							0%
					TOTALS	0						0%

MAWA	GALLONS/YR	74,568
	ACRE FEET/YR	0.23
	HCF/YR	99.69

ETWU	GALLONS/YR	61,373
	ACRE FEET/YR	0.19
	HCF/YR	82.05

SITE IRRIGATION EFFICIENCY	SITE PLANT FACT0R	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	2,368
TOTAL AREA	6,394
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR

MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR

ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

WATER USE ESTIMATION CONTROLLER "B"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	160	59	1,536	0.00	2.05	60%
2	TREES	LOW	0.3	BUBBLER	0.81	0.370	105	39	1,008	0.00	1.35	40%
					TOTALS		265	98	2,544	0.01	3.40	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME											
NA					1							0%
					TOTALS	0						0%

MAWA	GALLONS/YR	3,090
	ACRE FEET/YR	0.01
	HCF/YR	4.13

ETWU	GALLONS/YR	2,544
	ACRE FEET/YR	0.01
	HCF/YR	3.40

SITE IRRIGATION EFFICIENCY	SITE PLANT FACT0R	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	98
TOTAL AREA	265
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR

MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR

ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

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SHEET:

IRRIGATION DETAILS

I7.0

REPORT

1998 SHATTUCK AVENUE

BERKELEY, CA

PEDESTRIAN WIND COMFORT ASSESSMENT

PROJECT #2302778
MARCH 20, 2023

SUBMITTED TO

Xin Jin
Manager

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1. INTRODUCTION

Rowan Williams Davies & Irwin Inc. (RWDI) was retained to conduct a pedestrian wind assessment for the proposed project at 1998 Shattuck Avenue in Berkeley, CA. The objective of this assessment is to provide an evaluation of the potential impact of the proposed development on pedestrian-level wind conditions.

The project site is located in downtown Berkeley, west of Shattuck Avenue, between Berkeley Way and University Avenue (Image 1). The site is surrounded by mid-rise buildings in all but the northwesterly directions, where there are mostly low-rise suburban neighborhoods. Outside the immediate area, surroundings comprise low-rise buildings in all directions.

The project will consist of a mixed-use residential development with a 28-story tower that steps down to 13 stories on the north side and includes a podium (Image 2). In addition to sidewalks and properties near the project site, key areas of interest for this assessment include building entrances at grade (Image 3).



Image 1: Aerial view of the existing site and surroundings.
Source: Google Maps



Image 2: Conceptual rendering of the proposed project (looking SW).

1. INTRODUCTION

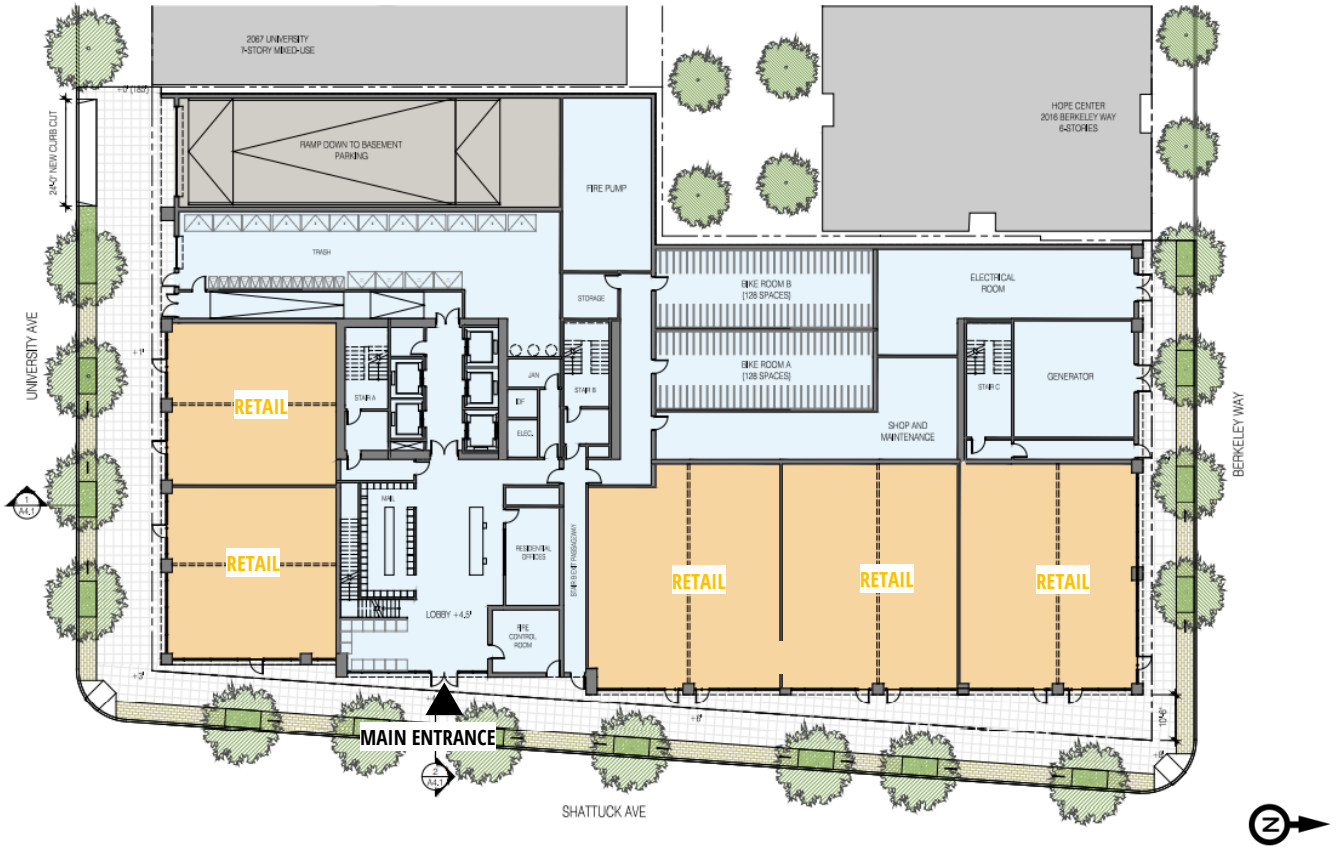


Image 3: Site plan highlighting the location of the main building entrance at grade.

2. METHODOLOGY

2.1 Objective

The objective of this assessment is to provide an evaluation of the potential impact of the proposed development on wind conditions in pedestrian areas on and around it based on Computational Fluid Dynamics (CFD) modelling. The assessment is based on the following:

- A review of the regional long-term meteorological data from the Metropolitan Oakland International Airport;
- 3D model of the proposed project received on January 20, 2023, and architectural drawings received on December 16, 2022;
- The use of *Orbital Stack*, an in-house CFD tool;
- RWDI's engineering judgment, experience, and expert knowledge of wind flows around buildings[1-3]; and,
- The RWDI wind comfort and safety criteria.

Note that other microclimate issues such as those relating to cladding and structural wind loads, door operability, air quality, snow impact, noise, vibration, etc. are not part of the scope of this assessment

2.2 CFD for Wind Simulation

CFD is a numerical technique that can be used for simulating wind flow in complex environments. For modeling winds around buildings, CFD techniques are used to generate a virtual wind tunnel where flows around the site, surroundings and the study building are simulated at full scale. The computational domain that covers the site and surroundings are divided into millions of small cells where calculations are performed, which allows for the "mapping" of wind conditions across the entire study domain. CFD excels as a tool for wind modeling and presentation for providing early design advice, comparing different design and site scenarios, resolving complex flow physics, and helping diagnose problematic wind conditions.

Gust conditions are infrequent but deserve special attention due to their potential impact on pedestrian safety. The computational modeling method used in the current assessment does not quantify the transient behavior of the wind, including wind gusts. The effect of gust, i.e., wind safety, is predicted qualitatively in this assessment using analytical methods and wind-tunnel-based empirical models[1]. The assessment has been conducted by experienced microclimate specialists in order to provide an accurate prediction of wind conditions.

In order to quantify the transient behavior of wind and refine any conceptual mitigation measures, more detailed assessment would be required using either boundary-layer wind tunnel or transient computational modeling.

2. METHODOLOGY

2.3 Simulation Model

CFD simulations were completed for two scenarios:

- **Existing**: Existing site and surroundings.
- **Proposed**: Proposed development with the existing surroundings

The computer model of the proposed building is shown in Image 4, and the Existing and Proposed configurations with the proximity model are shown in Images 5a and 5b, respectively. The 3D models were simplified to include only the necessary building and terrain details that would affect the local wind flows in the area and around the site. Landscaping and other smaller architectural and accessory features were not included in the computer model in order to provide more conservative wind conditions (as is the norm for this level of assessment).

The wind approaching the modelled area were simulated for 16 directions (starting at 0°, at 22.5° increments around the compass), accounting for the effects of the atmospheric boundary layer and terrain impacts. Wind data were obtained in the form of ratios of wind speeds at 5 ft above levels of interest, to the mean wind speed at a reference height. The data was then combined with meteorological records obtained from Metropolitan Oakland International Airport to determine the wind speeds and frequencies in the simulated areas.

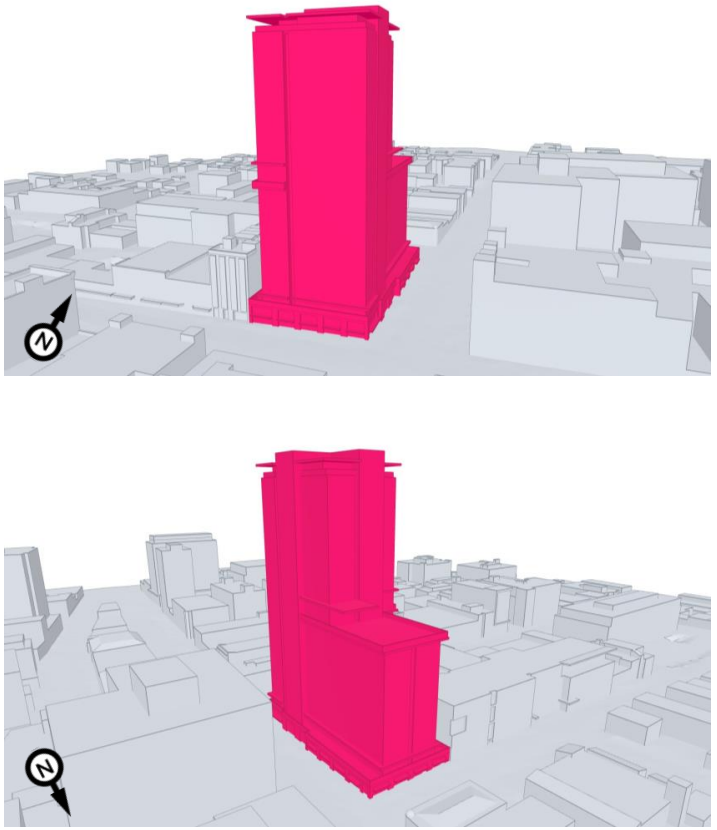


Image 4: Computational model of the proposed project.

2. METHODOLOGY

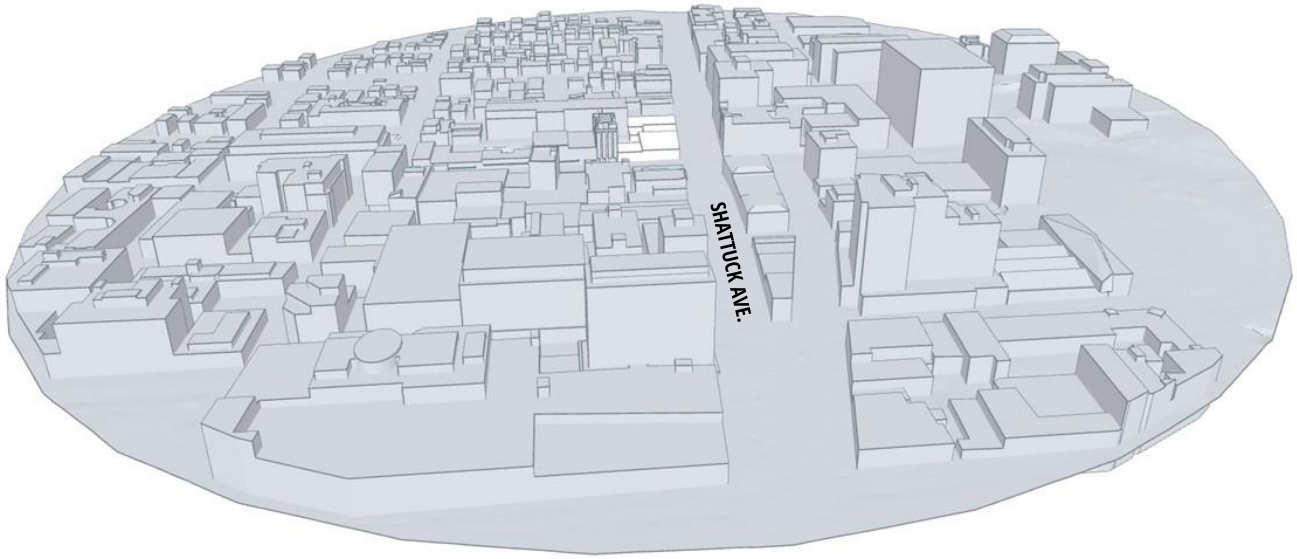


Image 5a: Computational model of the existing site and extended surroundings.

2. METHODOLOGY

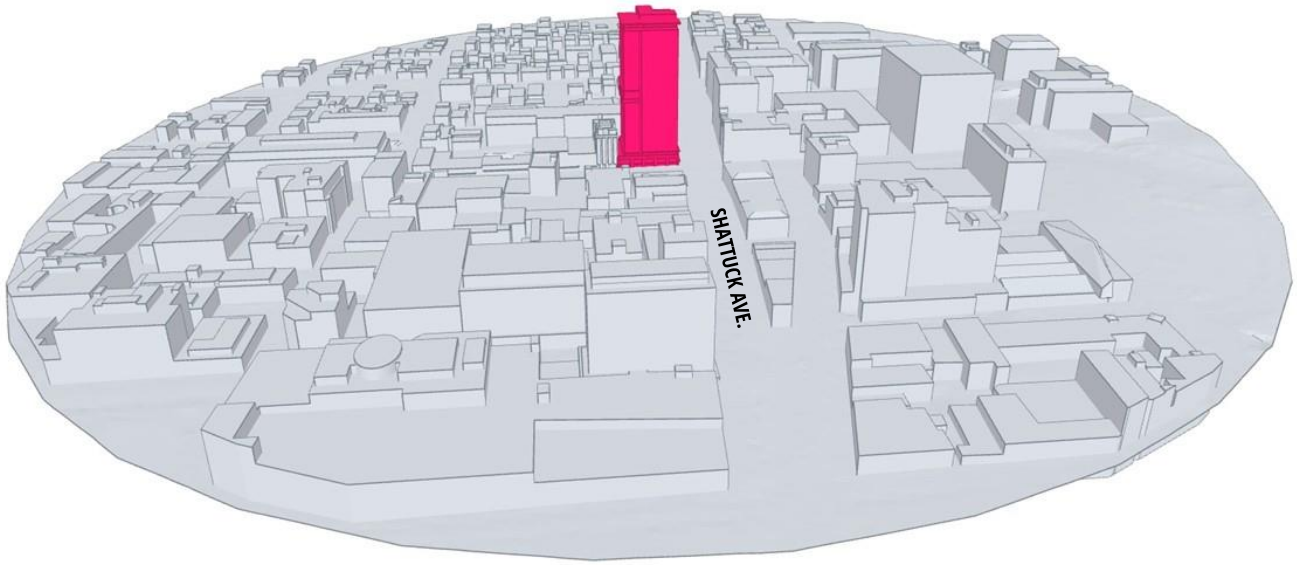


Image 5b: Computational model of proposed building and extended surroundings.

2. METHODOLOGY

2.4 Meteorological Data

Long-term wind data recorded at Metropolitan Oakland International Airport between 1990 and 2020 were analyzed for the summer (May to October) and winter (November to April) months. Image 6 graphically depicts the directional distributions of wind frequencies and speeds for these periods.

Winds from the west-southwest through northwest directions are predominant during both the summer and winter as indicated by the wind roses. Winds from the southeast are also frequent during the Winter. Winds are substantially more frequent in the summer; moderate to strong winds of a mean speed greater than 15 mph measured at the airport (at an anemometer height of 30 ft) could potentially interreact with tall buildings to result in a notable increase in ground-level winds. (yellow and red bands in Image 6).

Wind statistics were combined with the simulated data to predict the wind conditions at the project site and assessed against the wind criteria for pedestrian comfort.

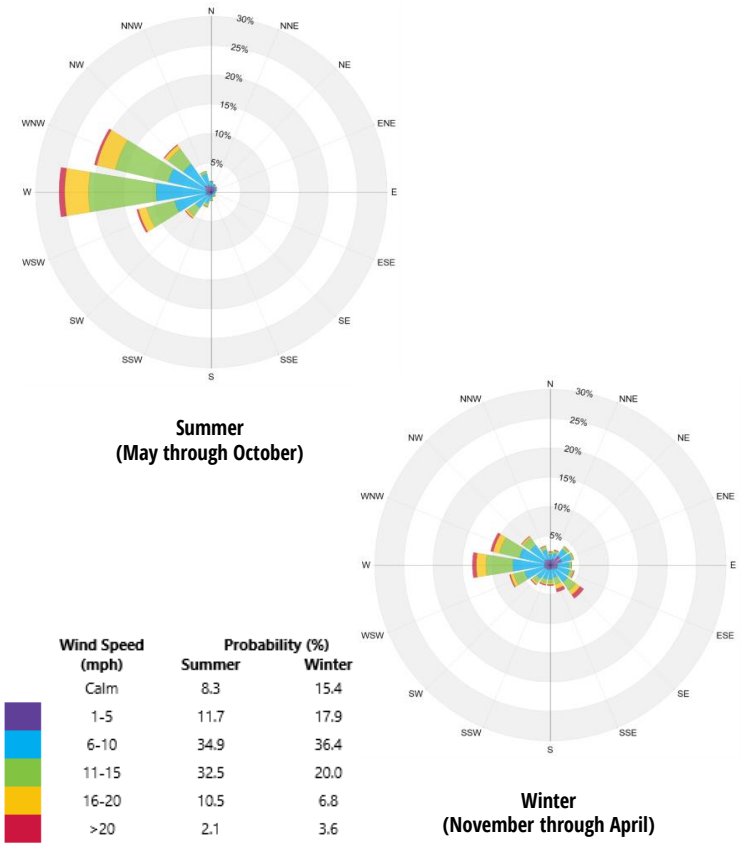


Image 6: Directional distribution of winds approaching Metropolitan Oakland International Airport from 1990 to 2020

3. WIND CRITERIA

The RWDI pedestrian wind criteria are used in the current study; the criteria presented in the table below, addresses pedestrian safety and comfort. These criteria have been developed by RWDI through research and consulting practice since 1974. They have also been widely accepted by municipal authorities, building designers and the city planning community.

3.1 Pedestrian Comfort

Pedestrian comfort is associated with common wind speeds conducive to different levels of human activity. Wind conditions are considered suitable for sitting, standing, strolling or walking if the associated mean wind speeds (see table) are expected for at least four out of five days (80% of the time). The assessment considers winds occurring between 6 AM and midnight. Limited usage of outdoor spaces is anticipated in the excluded period. Speeds that exceed the criterion for Walking are categorized Uncomfortable. These criteria for wind forces represent average wind tolerance. They are sometimes subjective and regional differences in wind climate and thermal conditions as well as variations in age, health, clothing, etc. can also affect people's perception of the wind climate.

Comfort Category	GEM Speed (mph)	Description (Based on seasonal compliance of 80%)
Sitting	≤ 6	Calm or light breezes desired for outdoor seating areas where one can read a paper without having it blown away
Standing	≤ 8	Gentle breezes suitable for main building entrances, bus stops, and other places where pedestrians may linger
Strolling	≤ 10	Moderate winds appropriate for window shopping and strolling along a downtown street, plaza or park
Walking	≤ 12	Relatively high speeds that can be tolerated if one's objective is to walk, run or cycle without lingering
Uncomfortable	> 12	Strong winds considered a nuisance for all pedestrian activities. Wind mitigation is typically recommended

3.2 Pedestrian Safety

Pedestrian safety is associated with excessive Gust Speeds that can adversely affect a person's balance and footing. These are usually infrequent events but deserve special attention due to the potential impact on pedestrian safety.

Safety Criterion	Gust Speed (mph)	Description (Based on annual exceedance of 9 hrs or 0.1% of time)
Exceeded	> 56	Excessive gusts that can adversely affect one's balance and footing. Wind mitigation is typically required.

4. RESULTS AND DISCUSSION

4.1 Presentation of Results

The results of the assessment are presented and discussed in detail in Sections 4.3 and 4.4. The graphical presentation is in the form of color contours of wind speeds calculated based on the wind comfort criteria described in Section 3.1, at 5 ft above the levels of interest (Images 8 and 9).

The assessment against the safety criterion (Section 3.2) was conducted qualitatively based on the predicted wind conditions and our extensive experience with wind tunnel assessments. **Favorably, wind conditions at all areas in the proximity of the site and at above-grade areas are expected to meet the safety criterion.**

Target Conditions

Wind speeds comfortable for walking or strolling are appropriate for sidewalks and walkways where pedestrians are likely to be active and moving intentionally. Lower wind speeds comfortable for standing are required for entrances and areas where people are expected to be engaged in passive activities. Calm wind speeds suitable for sitting are desired in areas where prolonged periods of passive activities are anticipated, such as outdoor amenity areas, seating areas etc., especially during the summer when these areas are typically in use.

4.2 General Wind Flow Mechanisms

Wind tends to flow over buildings of uniform height, without disruption. Buildings that are taller than their surroundings tend to intercept and redirect winds around them and to the ground level. The mechanism in which winds are directed down the height of a building is called *Downwashing*. These flows subsequently move around exposed building corners and in the gaps between buildings (Corner Acceleration and *Channeling Effect*). Podiums, canopies, and large trees can help reduce the impact of these effects at ground level. These flow patterns are illustrated in Image 7.

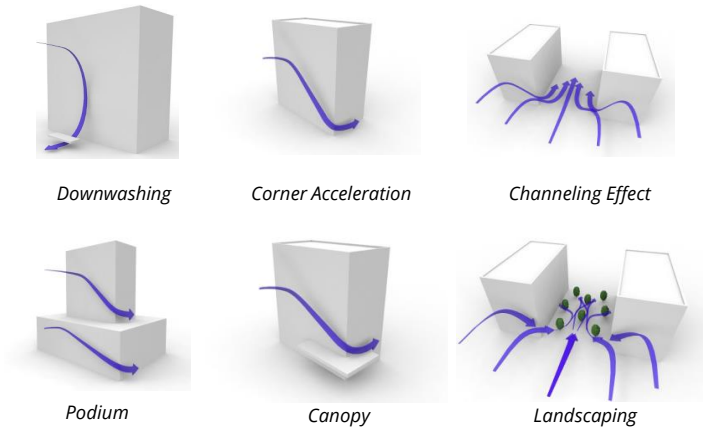
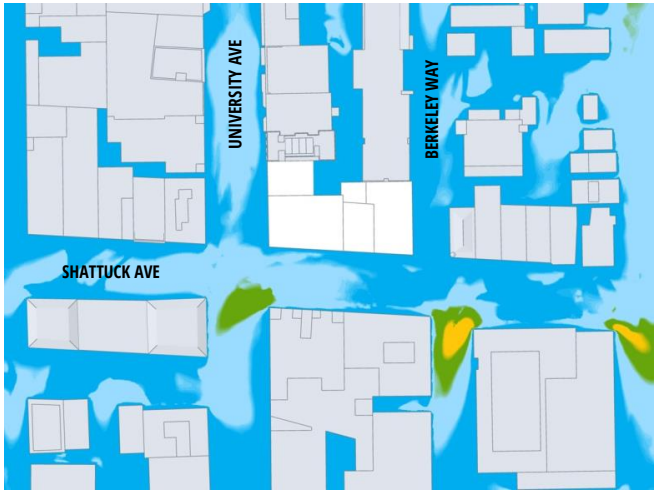
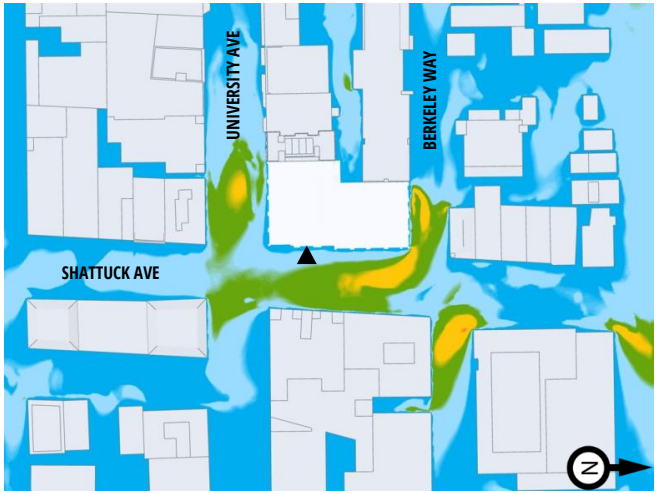


Image 7: Generalixed wind flow patterns

4. RESULTS AND DISCUSSION



(a) EXISTING



(b) PROPOSED

COMFORT: SITTING | STANDING | STROLLING | WALKING | UNCOMFORTABLE

MAIN ENTRANCE

Image 8: Predicted Wind Conditions at Grade Level – SUMMER (May through October)

4. RESULTS AND DISCUSSION



(a) EXISTING

(b) PROPOSED

COMFORT: SITTING | STANDING | STROLLING | WALKING | UNCOMFORTABLE

▶ MAIN ENTRANCE

Image 9: Predicted Wind Conditions at Grade Level – WINTER (November through April)

4. RESULTS AND DISCUSSION

4.3 Existing Scenario

The existing site is occupied by a building of low elevation, and the adjacent buildings to the west do not redirect winds to create any notable impact; taller buildings with wide west-facing facades on the east side of Shattuck Avenue intercept and redirect the predominant winds to create localized areas of high wind speeds around them.

Wind conditions on the sidewalks near the site are mostly comfortable for sitting or standing in the summer, with higher wind speeds comfortable for strolling or walking occurring around the corners of taller buildings on Shattuck Avenue (Image 8a). In the winter, wind speeds are normally lower in Berkeley, and conditions suitable for sitting or standing are expected at all locations in the vicinity of the project site (Image 9a). These conditions are suitable for sidewalks and walkways. Wind conditions at all areas near the project site are expected to meet the pedestrian wind safety criterion.

4.4 Proposed Scenario

The proposed building is taller than the surroundings in the prevailing wind directions (west-southwest through north-northwest) and includes a broad west-facing façade. Winds intercepted by the western façade of the tower at high elevations will downwash to ground level, accelerating around building corners. This effect is expected to be moderated, somewhat, by the low roofs of the adjacent buildings to the west, which act as a horizontal break for downwashing winds (see Image 7). As a result, wind speeds at grade are expected to be higher than existing conditions, but suitable for pedestrian use.

Wind conditions during the summer are anticipated to remain suitable for sitting or standing around most of the building perimeter (Image 8b). Higher wind speeds, comfortable for strolling or walking are expected between the proposed building and the adjacent buildings to the south on University Avenue and an area at the intersection of Shattuck Avenue and Berkeley Way. The highest wind speeds, comfortable for walking, are expected closer to the north corners of the proposed building. In the winter, lower wind speeds comfortable for sitting or standing are predicted for most locations around the project site, with marginally higher speeds occurring on the northeast side of the building (Image 9b). These conditions are suitable for sidewalks and walkways, and all areas near the proposed building are expected to meet the pedestrian wind safety criterion.

The predicted wind speeds near the retail entrances on the south and east sides of the building and the main entrance on Shattuck Avenue are also appropriate for the intended use. Wind speeds along the north side of the building are higher than desired for an entrance in the summer. Improved wind conditions can be obtained at the retail entrance on the north side by recessing it from the façade or by adding planters or wind screens to the west side of the entrance.

5. SUMMARY

RWDI was retained to provide an assessment of the potential pedestrian level wind impact of the proposed project at 1998 Shattuck Avenue in Berkeley, CA. The assessment was based on computational modeling, simulation and analysis of wind conditions for the proposed development design, in conjunction with the local wind climate data and the RWDI wind criteria for pedestrian comfort and safety. Findings from the assessment are summarized as follows:

1. The existing site is occupied by a building of low elevation, and the adjacent buildings to the west do not redirect winds to create any notable impact. As a result, wind speeds onsite are generally calm and considered suitable for pedestrian use. Higher wind speeds, (still appropriate for sidewalks and walkways), occur near the corners of mid-rise buildings with broad west-facing facades on the east side of Shattuck Avenue.
2. The proposed building is taller than the existing surroundings to the west and has a wide west-facing façade. As a result, the building will redirect winds around it to a notable degree. Increased wind speeds are expected on University Avenue and at the intersection of Shattuck Avenue and Berkeley way during the summer. However, these speeds are adequate for sidewalks and walkways.
3. In the winter, lower wind speeds are expected. Light breezes are predicted for most areas near the proposed development, with slightly higher wind speeds occurring around the east/northeast side of the building.
4. Favorably, the pedestrian wind safety criterion is predicted to be met at all locations near the project site

If necessary, RWDI can help guide the placement of wind control features, including landscaping, to achieve desired levels of wind comfort based on the programming of the various outdoor spaces. Based on the assessment herein, it does not appear that such mitigative features may be warranted.

6. DESIGN ASSUMPTIONS

The findings/recommendations in this report are based on the building geometry and architectural drawings communicated to RWDI between December of 2022 and January of 2023, listed below. Should the details of the proposed design and/or geometry of the building change significantly, results may vary.

File Name	File Type	Date Received (mm/dd/yyyy)
2.9 - 2209 - 2022.12.12 - SB300 Drawing Set	.PDF	12/16/2022
2209 - 2023.01.20 - 3D Model to Wind Consultant	.SKP	01/20/2023

Changes to the Design or Environment

It should be noted that wind comfort is subjective and can be sensitive to changes in building design and operation that are possible during the life of a building. These could be, for example: outdoor programming, operation of doors, elevators, and shafts pressurizing the tower, changes in furniture layout, etc.. In the event of changes to the design, construction, or operation of the building in the future, RWDI could provide an assessment of their impact on the discussions included in this report. It is the responsibility of Others to contact RWDI to initiate this process.

7. STATEMENT OF LIMITATIONS

This report was prepared by Rowan Williams Davies & Irwin Inc. for NX Ventures LLC ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein and authorized scope. The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

8. REFERENCES

1. H. Wu, C.J. Williams, H.A. Baker and W.F. Waechter (2004), "Knowledge-based Desk-Top Analysis of Pedestrian Wind Conditions", *ASCE Structure Congress 2004,* Nashville, Tennessee.

2. H. Wu and F. Kriksic (2012). "Designing for Pedestrian Comfort in Response to Local Climate", *Journal of Wind Engineering and Industrial Aerodynamics*, vol.104-106, pp.397-407.

3. C.J. Williams, H. Wu, W.F. Waechter and H.A. Baker (1999), "Experience with Remedial Solutions to Control Pedestrian Wind Problems", *10th International Conference on Wind Engineering*, Copenhagen, Denmark.

LANDMARKS PLANNER COMMENTS 8/17/23

SB330 Use Permit Application #ZP2023-0040 for 1950-1998 Shattuck Avenue

Global comments on all submitted DPR Forms

1. The prepared DPR forms combine "City of Berkeley Landmark and Structure of Merit Evaluation" into one paragraph. However, the Landmarks Preservation Ordinance has different sets of criteria for Landmarks (and Historic Districts) [BMC 3.24.110.A] and Structure of Merit [BMC 3.24.110.B]. The evaluations should include assessments under each set of criteria. The assessments provided to not accurately apply City of Berkeley Structure of Merit criteria.
2. Since the DPR Forms have not yet been deemed complete or accepted, the NRHP Status Codes should be noted as a *recommended* code in the conclusion on each form as: "the California Historical Resource Status Code (CHRSC) of "6Z" is recommended for the building, meaning that it was "Found ineligible for NR, CR or Local designation through survey evaluation."

1950 – 1958 Shattuck Ave.

1. Structure of Merit criteria has not been accurately assessed. See Global DPR Comment 1.
2. Was the archive at Berkeley Architectural Heritage Association (BAHA) searched for any historic photographs of the extant buildings?
3. No integrity assessment has been provided. The building appears to have several exterior alterations, which have been described on the DPR form. The analysis should conclude whether the extant structure(s) retain integrity from the period of significance or not.
4. The HRE states on p. 13 of 14, under City of Berkeley Landmark or Structure of Merit Evaluation, that: "The subject property at 1950-1958 Shattuck Avenue does not appear to be eligible as a City of Berkeley Landmark. The subject building is a good example of a one-block early 20th century commercial building that was constructed for use as a multi-tenant store in 1922 and has been moderately altered for use by subsequent tenants." "Good example…" should be assessed under City of Berkeley Structure of Merit Criterion 3.24.110.B.2(c).

2071 University Ave.

1. The DPR form indicates that a "false façade was removed and the original façade of 2017 University Avenue was repaired to its current appearance." Further, the City of Berkeley Landmark and Structure of Merit Evaluation section adds that "the most recent renovation partially restored the subject building's original appearance" (p.14). The photographs comparing the 1935 appearance of the building (Figure 20) and the current appearance (Figure 2) appear markedly similar. A full integrity analysis should be conducted to investigate whether the extant building in its current form was restored in a manner consistent with the SOI Standards and whether it can be considered to retain sufficient integrity to convey its significance from its period of significance.
2. Structure of Merit criteria has not been accurately assessed. City of Berkeley Landmark and Structure of Merit Evaluation (p.14) have been combined, yet they are two different sets of criteria which should be evaluated one by one. The evaluation states that "The subject building is a good example of an early 20th century commercial building…," which should be assessed under Structure of Merit Criteria 3.24.110.B.2(c).

3. Some of the statements in the City of Berkeley Landmark and Structure of Merit Evaluation section are arrived at without adequate explanation and as such are not justified. A complete analysis under City of Berkeley Landmark criteria [BMC 3.24.110.A] and Structure of Merit [BMC 3.24.110.B] criteria should be completed.

1974-1978 Shattuck Ave.

1. As a long running business at this location in Berkeley, the possible significance of the tenant Spats should be further investigated under California Register Criterion 1 - Events, and Criterion 2 - Persons. Published news articles have documented its history and possible associations – with prominent public figures such as Robin Williams, and the Grateful Dead, and possibly as the first establishment to serve liquor in Berkeley – which should be verified and assessed by the DPR form preparer. The assessment should at a minimum study the property under the theme of Entertainment and Nightlife.

1984 Shattuck Ave.

Clarify if the proposed project site excludes the parcel at 1984 Shattuck Ave. (APN 57-2053-3-2). No DPR form has been provided for the extant building on this site (current tenant: Turkish Kitchen). If it is part of the project site, a DPR Form is required with the resubmittal of the application.

Planning and Development
Land Use Planning Division

August 18, 2023

Isaiah Stackhouse
Trachtenberg Architects
2421 Fourth Street
Berkeley, CA 94710

Sent via email to:
isaiah@trachtenbergarch.com

RE: SB330 Use Permit Application #ZP2023-0040 for 1950-1998 Shattuck Avenue (APNs: 57-2053-4-2, 57-2053-3-1, 57-2053-3-2, 57-2053-2, 57-2053-1)

Dear Mr. Stackhouse,

Thank you for submitting the materials to support the proposal to demolish five existing commercial buildings; merge four lots; construct a 28-story, 411,610-square-foot, mixed-use building with 599 dwelling units (including 58 VLI) and 16,920 sq.ft. of commercial area in the C-DMU (Outer Core) Zoning District at 1950-1998 Shattuck Avenue.

Application – Based upon a preliminary review, the application appears to include the following approval requests:

1. Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
2. Density Bonus with the following requested reductions, waivers and concessions:

   Waivers

   a. Waiver of BMC Section 23.04.130(E)(1) to exceed building height limits – to be 317' to roof (plus 5' parapet), where 180 feet is the limit (plus 5-foot parapet, by right, with a use permit)

   b. Waiver of BMC Section 23.204.130(E)(3) to reduce the front, side and rear setback minimums (see plans for details)

   c. Waiver of BMC Section 23.204.130(E)(3)(b)(i) to exceed 120 feet in width in diagonal measurement (165')

   d. Waiver of BMC Section 23.204.130(E)(4) reduce usable open space minimum to 13,032 square feet, where 47,920 square feet is required

   Concessions [Three concessions permitted, per Government Code §65915(d)(2)]: None.

Staff has reviewed the application and has determined that the following **additional** approvals will be required for the proposed project. (See below for additional fees due):

1. Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
2. Use Permit under BMC Section 23.204.020(A) to construct dwelling units
3. Use Permit under BMC Section Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
4. Use Permit under BMC Section 23.204.130(E)(2) to construct a building that exceeds the district height limit, and that is over 120 feet but not more than 180 feet
5. Use Permit under BMC Section 23.204.130(E)(3)(b) to modify front, side, and rear setback requirements
6. Use Permit under BMC Section 23.204.130(E)(3)(b)(i) to exceed 120 feet in width in diagonal measurement
7. Administrative Use Permit under BMC Section 23.304.050(A) to allow architectural projections to exceed district height limits
8. Administrative Use Permit under BMC Section 23.302.070(E)(2) for a food service establishment over 3,000 square feet in area
9. Use Permit pursuant to BMC Section 23.310.020(B) to begin alcoholic beverage service (distilled spirits incidental to food service).
10. Administrative Use Permit pursuant to BMC Section 23.302.020(E)(4) for outdoor uses not abutting a residential district.

Incomplete Items – Staff has also determined that application is incomplete at this time. Please address the following items to continue with the application review:

1. Fees. The additional approvals listed above require a payment of fees for each. Fees for additional approvals will be due once they are finalized and an invoice will be sent to you. Please be aware that with the submittal of information requested by staff, additional approvals may be added to the permit and associated fees will be due.

2. **Additional Permits. Staff has identified ten additional permits to be added to the permit list and invoiced – including the UP to for distilled spirits for the restaurant, and the rooftop outdoor uses not abutting a residential district. Staff will also add a demolition referral fee for each of the 5 buildings to be demolished, and a traffic report review fee. I will attach the final invoice to the incomplete email, with payment instructions.**

3. Plans.

   a. **Please include the address/title 1950-1998 (1974) Shattuck on the plan set sheets for clarity.**

   b. Verify the proposed minimum setbacks in the Zoning Summary Table, and in the floorplans with dimensions – some dimensions don't appear correct. **Thank you. Please check diagonal tower measurement – plans still show 165', where table shows 134'.**

   c. Clarify if Sheet A0.2A is the Base Project Plans – some labels seem inaccurate. **Thank you.**

   d. Provide a calculation to demonstrate how the project meets the minimum requirement of 40% of landscaped usable open space area. **Thank you. If**

providing the POPOS in the project, the UP for POPOS in lieu fee can be removed.

e. Clarify if the project proposes the merger of four lots or five lots. City GIS data show five lots within the project boundaries, while the survey shows four. **Thank you. There are five parcels, and four lots. The fifth APN is likely a separation for tax purposes. Verify with Public Works whether the ~3-foot strip of land at 1950 and 1974 Shattuck sidewalk area can be included in the site area. The survey indicates that it is public right of way, and may need approval of an encroachment permit.**

f. On all floor plans where a residential amenity is shown, please describe the nature and description of the amenity proposed. Also, for the ground floor lobby/offices, please provide more detail on the uses of this area. **Thank you.**

g. Provide a roof plan, and show overhangs/awnings on each level. **Thank you.**

4. Density Bonus Diagrams/Calculations. Base Project = BP; Proposed Project = PP; AUS=Average Unit Size; QU=Qualifying Units; DBU=Density Bonus Units; RFA=Residential Floor Area.

    a. Show the location of Privately-Owned Public Open Space (POPOS) required in the BP diagrams. **Thank you.**

    b. Please show the property lines (dashed) on all of the density bonus diagrams in the BP and PP to demonstrate setback compliance on each floor. **Thank you.**

    c. If there is a distinction between residential and commercial trash area, be sure to show this on the plans and allocate the correct proportion to the total floor area of each use. **Thank you.**

5. Alcohol. Clarify whether the restaurant be serving distilled alcohol pursuant to BMC Section 23.310.030(A). **Since the existing building is to be demolished, and a new building/use constructed in its place, a new permit for alcohol must be obtained. This UP will be added to the permit**.

6. Net Commercial Area. Provide the amount of commercial area to be demolished to compare with the amount proposed in the new building to determine the net new commercial area and applicability of appropriate fees. **Thank you.**

7. Wind Study. Per BMC Section 23.204.130(E)(3)(b), a study is needed to analyze whether the proposed modifications to the setback standards will create significant increases in the wind experienced on the public sidewalk. Please provide this study. **Thank you.**

8. Community Benefit Package. The submittal is missing a Community Benefits package pro forma and cost estimate under BMC Section 23.204.130(E)(2)(c). Please note that per Council Resolution 67,172-N.S., a pro forma showing project pre-development soft and hard cost estimates and rate of return analysis, as well as a cost estimate for the community benefits package, are required to be included in the project application. The pro forma must be peer reviewed by a City consultant. **Thank you for the Community Benefits letter. While the community benefits analysis may not be entirely objective, the pro forma is a specific requirement for the discretionary permit, as described in the Council Resolution, and would inform the Board's overall consideration of the project:**

The application shall include a *pro forma* showing pre-development, soft, and hard cost estimates, as well as the projected rate of return the applicant expects the project to generate, based on revenues (sales price or rental income stream) anticipated once the project is completed. This analysis shall cover two scenarios: (1) a base case building of 75' or less; and (2) a high-rise building over 75'.

9. Zoning Application Submittal Requirements. The following required items are still required the application submittal:

   a. Letters of Authorization (LOA). Provide signed LOAs from these property owners: Edith Glynn Trust for 2071 University; Fifth Keil Co for 1984,1998 Shattuck; JLLJAR LLC for 1950 Shattuck. **Thank you.**

   b. Transportation Demand Management (TDM). Submit the TDM completed application https://cityofberkeley.info/sites/default/files/documents/TDM%20Supplemental%20Application.pdf **Thank you. Please show the car share calculation in the A0.1 data table, and show the designated car share spaces in the floor plans.**

   c. Historic Resource Evaluation. The demolition or substantial change of any building that is more than 40 years old requires further study. Submit State of California Department of Parks and Recreation (DPR) 523 forms: http://ohp.parks.ca.gov/?page_id=28351. These were not found in the application submittal package. **Thank you for the DPR forms. I will send comments from Landmarks Planners separately. Note that a fee for the demo referral will be charged for each building. Landmark staff identifies 5 buildings for demo evaluation. These fees will be added to the permit.**

   d. Transportation Impact Study. Required for projects that do not meet at least one of the City's screening criteria for determining if detailed VMT or vehicular parking analysis is necessary. Consult with the Transportation Division for a copy of the screening criteria and thresholds at (510) 981-7010. Submit when ready. **Thank you.**

   e. Tabulation Form. Please revise the Tabulation Form to reflect changes made in response to all other comments in this letter. **Thank you.**

   f. Design Review. DR comments will be sent to you separately. Please respond to these comments in your next submittal, and copy Anne Burns for all submittals.

Advisory Comments

1. Level CEQA of Review. Staff will determine the level of CEQA review for the project within 30 days of the application being deemed complete.

2. Interdepartmental Roundtable Meeting. An interdepartmental review will be scheduled as an opportunity for you to receive comments on the project from City departments such as Building and Safety, Transportation, Zero Waste, Parks, Toxics and Public Works. I will coordinate with you to schedule a time when you can attend. *Meetings are 2nd and 4th Wednesdays monthly at 1:00 p.m. or 2:30 p.m. Staff strongly recommends attending this meeting for the project.*

3. Community Benefits Package. The applicant shall pay the fee required for peer review of the package by a City-selected consultant. A fee proposal will sent to you for payment. Peer review comments will be sent to you separately.

Revised submittal items should be uploaded to the Box.com project folder link that was previously sent to you. If the link is no longer active, please email me to request a new link Submit responses to all requested items at once, and not incrementally. Also, please be aware of streamlining timelines under SB330, Government Code Section 65941.1(a)(d) that affect the validity of the project's SB 330 Preliminary Application.[1]

Should you have questions regarding this letter or your application, please feel free to contact me.

Sincerely,



Sharon Gong
Senior Planner
(510) 981-7429
sgong@cityofberkeley.info

[1] (1) Within 180 calendar days after submitting a preliminary application with all of the information required by subdivision (a) to a city, county, or city and county, the development proponent shall submit an application for a development project that includes all of the information required to process the development application consistent with Sections 65940, 65941, and 65941.5.
(2) If the public agency determines that the application for the development project is not complete pursuant to Section 65943, the development proponent shall submit the specific information needed to complete the application within 90 days of receiving the agency's written identification of the necessary information. If the development proponent does not submit this information within the 90-day period, then the preliminary application shall expire and have no further force or effect.

Civic Arts Program
Office of Economic Development
City Manager's Office

PUBLIC ART ON PRIVATE DEVELOPMENT PROGRAM
Allocation Declaration

(For Use by Applicant Only)

Project Address: 1950, 1974, 1984, 1998 Shattuck Avenue & 2071 University Ave	Project Title: 1998 Shattuck Ave.
Description of Project: New construction of a 28-story mixed-use housing development with 599 dwelling units and a rooftop restaurant over ground-level commercial and lobbies, with State of California Density Bonus.	Total Building Permit Valuation: $112,034,155
Point of Contact (Name & Title): Isaiah Stackhouse	Organization Name & Mailing Address: Trachtenberg Architects2421 Fourth St. Berkeley, CA 94710
Telephone: 510.649.1414 x124	Email: isaiah@trachtenbergarch.com

Declaration

I certify that I am the property owner, authorized agent of the property owner or other person having a legal right, interest, or entitlement to the use of the property that is the subject of this declaration. I declare that I shall comply with the requirements of City of Berkeley Municipal Code Section 23C.23.050 in the manner indicated below:

- ☐ Placement of artwork(s) on the premises valued at 1.75% of the total building permit valuation for the development. [1.75% = $_____]
- ☐ A combination: include on-site publicly accessible artwork valued at less than 1.75%, with an amount equal to 80% of the difference in value paid to the City as an in-lieu fee.
- ✓ ☐ Depositing into the City's Public Art Fund, payment of an in-lieu fee equal to 0.8% of the total building permit valuation for the development.[0.8% = $89,627,324]

Applicant Signature: _____ Isaiah Stackhouse _____ **Date:** 10/22/2023

(*For Use by City of Berkeley Only*)

☐ Apply an in-lieu fee of 0.8% equaling $_____	Authorized Signature, Title, Date:
☐ Approved for Public Art Plan	Authorized Signature, Title, Date:
☐ Apply Administrative Fee (5%) for On-Site Publicly Accessible Art	Authorized Signature, Title, Date:

TRACHTENBERG ARCHITECTS
2421 Fourth Street Berkeley, CA 94710
phone: 510.649.1414
www.TrachtenbergArch.com

November 15th, 2023
Attn: Sharon Gong
Land Use Planning, City of Berkeley

RE: August 18th, 2023 Incompleteness Letter for 1950-1998 (1974) Shattuck Ave.

Dear Sharon,

Please see our responses below in blue text for your incompleteness letter, dated August 18th, 2023. Please also see our revised applicant statement and the attached reports mentioned in the statement. Please review our drawing set and documents for Use Permits requested.

Items Required for Submittal or Correction:

1. Fees. The additional approvals listed above require a payment of fees for each. Fees for additional approvals will be due once they are finalized and an invoice will be sent to you. Please be aware that with the submittal of information requested by staff, additional approvals may be added to the permit and associated fees will be due.
Response: Fees paid. See attached receipt.

3. Plans.
a. Please include the address/title 1950-1998 (1974) Shattuck on the plan set sheets for clarity. Response: Plan set sheets have been revised.

b. Verify the proposed minimum setbacks in the Zoning Summary Table, and in the floorplans with dimensions – some dimensions don't appear correct. Thank you.
Please check diagonal tower measurement – plans still show 165', where table shows 134'.
Response: Please see revised table on sheet A0.1.

c. Clarify if Sheet A0.2A is the Base Project Plans – some labels seem inaccurate.
Thank you.

d. Provide a calculation to demonstrate how the project meets the minimum requirement of 40% of landscaped usable open space area. **Thank you. If providing the POPOS in the project, the UP for POPOS in lieu fee can be removed.**
Response: Please see revised table on sheet A0.1 with the UP for POPOS in lieu fee removed.

e. Clarify if the project proposes the merger of four lots or five lots. City GIS data show five lots within the project boundaries, while the survey shows four. **Thank you.** There are five parcels, and four lots. The fifth APN is likely a separation for tax purposes. **Verify with Public Works whether the ~3-foot strip of land at 1950 and 1974 Shattuck sidewalk area can be included in the site area. The survey indicates that it is public right of way, and may need approval of an encroachment permit.**
Response: The owner of the project has the rights to the 3' strip and we are waiting for quiet title action. We would like to request this to be a COA as these types of issues are usually handled with building permits as part of lot mergers.

f. On all floor plans where a residential amenity is shown, please describe the nature and description of the amenity proposed. Also, for the ground floor lobby/offices, please provide more detail on the uses of this area**. Thank you.**

g. Provide a roof plan, and show overhangs/awnings on each level. **Thank you.**

4. Density Bonus Diagrams/Calculations. Base Project = BP; Proposed Project = PP; AUS=Average Unit Size; QU=Qualifying Units; DBU=Density Bonus Units; RFA=Residential Floor Area.

a. Show the location of Privately-Owned Public Open Space (POPOS) required in the BP diagrams. **Thank you.**
b. Please show the property lines (dashed) on all of the density bonus diagrams in the BP and PP to demonstrate setback compliance on each floor. **Thank you.**
c. If there is a distinction between residential and commercial trash area, be sure to show this on the plans and allocate the correct proportion to the total floor area of each use. **Thank you.**

5. Alcohol. Clarify whether the restaurant be serving distilled alcohol pursuant to BMC Section 23.310.030(A). **Since the existing building is to be demolished, and a new building/use constructed in its place, a new permit for alcohol must be obtained. This UP will be added to the permit.**
Response: Pursuant to state law, use permit entitlements run with the land, not the building(s) that may be on the land. As a result, the project team is requesting that the use permits for alcohol sales and service (including distilled spirits) and live music be carried forward into the new project and specifically on the portion of land that is 1974 Shattuck Avenue. The outline of the land to which the use permits currently do and prospectively will apply are found on page A1.0 (Existing Site Plan) and A0.6C (survey).

6. Net Commercial Area. Provide the amount of commercial area to be demolished to compare with the amount proposed in the new building to determine the net new commercial area and applicability of appropriate fees. **Thank you.**

7. Wind Study. Per BMC Section 23.204.130(E)(3)(b), a study is needed to analyze whether the proposed modifications to the setback standards will create significant increases in the wind experienced on the public sidewalk. Please provide this study. **Thank you.**

8. Community Benefit Package. The submittal is missing a Community Benefits package pro forma and cost estimate under BMC Section 23.204.130(E)(2)(c). Please note that per Council Resolution 67,172-N.S., a pro forma showing project pre-development soft and hard cost estimates and rate of return analysis, as well as a cost estimate for the community benefits package, are required to be included in the project application. The pro forma must be peer reviewed by a City consultant. **Thank you for the Community Benefits letter. While the community benefits analysis may not be entirely objective, the pro forma is a specific requirement for the discretionary permit, as described in the Council Resolution, and would inform the Board's overall consideration of the project:**

> The application shall include a *pro forma* showing pre-development, soft, and hard cost estimates, as well as the projected rate of return the applicant expects the project to generate, based on revenues (sales price or rental income stream) anticipated once the project is completed. This analysis shall cover two scenarios: (1) a base case building of 75' or less; and (2) a high-rise building over 75'.

Response: Please see the attached Community Benefits package which includes pro formas.

9. Zoning Application Submittal Requirements. The following required items are still required the application submittal:
a. Letters of Authorization
(LOA). Provide signed LOAs from these property owners: Edith Glynn Trust for 2071 University; Fifth Keil Co for 1984,1998 Shattuck; JLLJAR LLC for 1950 Shattuck. **Thank you.**

b. Transportation Demand Management (TDM). Submit the TDM completed application

https://cityofberkeley.info/sites/default/files/documents/TDM%20Supplemental%20Application.pdf
Thank you. Please show the car share calculation in the A0.1 data table, and show the designated car share spaces in the floor plans.
Response: Please see car share calculation in the A0.1 data table and the designated car share spaces in the floor plans

c Historic Resource Evaluation. The demolition or substantial change of any building that is more than 40 years old requires further study. Submit State of California Department of Parks and Recreation (DPR) 523 forms: http://ohp.parks.ca.gov/?page_id=28351. These were not found in the application submittal package. **Thank you for the DPR forms. I will send comments from Landmarks Planners separately. Note that a fee for the demo referral will be charged for each building. Landmark staff identifies 5 buildings for demo evaluation. These fees will be added to the permit**.
Response: Please see attached revised DRP forms and 2023-09-18_Planning Comment Responses 1950-1998 Shattuck.

d. Transportation Impact Study. Required for projects that do not meet at least one of the City's screening criteria for determining if detailed VMT or vehicular parking analysis is necessary. Consult with the Transportation Division for a copy of the screening criteria and thresholds at (510) 981-7010. Submit when ready. **Thank you.**

e. Tabulation Form. Please revise the Tabulation Form to reflect changes made in response to all other comments in this letter. **Thank you.**

f. Design Review. DR comments will be sent to you separately. Please respond to these comments in your next submittal, and copy Anne Burns for all submittals.
Response: On Aug 18, 2023, we received an email from Anne Burns that she had deemed the design review application complete.

Advisory Comments
1. Level CEQA of Review. Staff will determine the level of CEQA review for the project within 30 days of the application being deemed complete. Noted.

2. Interdepartmental Roundtable Meeting. An interdepartmental review will be scheduled as an opportunity for you to receive comments on the project from City departments such as Building and Safety, Transportation, Zero Waste, Parks, Toxics and Public Works. I will coordinate with you to schedule a time when you can attend. Meetings are 2nd and 4th Wednesdays monthly at 1:00 p.m. or 2:30 p.m. Staff strongly recommends this meeting for the project. Noted

3. Community Benefits Package. The applicant shall pay the fee required for peer review of the package by a City-selected consultant. A fee proposal will sent to you for payment. Peer review comments will be sent to you separately. Noted

If you have any questions or comments, please feel free to contact me at (510) 649-1414 x124.

Sincerely,

Isaiah Stackhouse, Principal TRACHTENBERG ARCHITECTS

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code 6Z
Other Listings _____
Review Code _____ **Reviewer** _____ **Date** _____

Page 1 **of** 17 **Resource name(s) or number** (assigned by recorder) 1950-1958 Shattuck

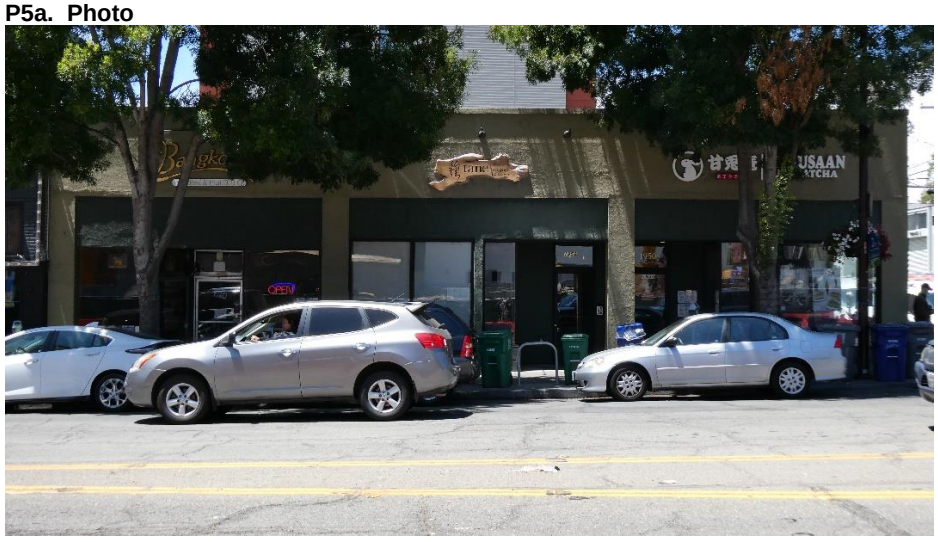
P1. Other Identifier: _____
***P2. Location:** ☐Not for Publication ☒Unrestricted ***a. County** Alameda
***b. USGS 7.5' Quad** Oakland West **Date** 2022
***c. Address** 1950-1958 Shattuck Avenue **City** Berkeley **Zip** 94704
***e. Other Locational Data:** Assessor's Parcel Number 57-2053-1

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.) 1950-1958 Shattuck Avenue (APN 57-2053-1) is a one-story commercial building set on a rectangular parcel at the southwest corner of Shattuck Avenue and Berkeley Way. It includes the address 2050 Berkeley Way at its north side **(Figure 1)**. The building has a rectangular footprint and covers the entire parcel. Originally built in 1922, the building was constructed by builder M. F. Hamilton for its first owner, F. D. Chase. No architect was listed on existing records.

The one-story building is built to its north, west, south and east lot lines and is constructed primarily of brick. It features a flat roof and three storefronts at the primary (east) façade. The primary façade storefronts use a combination of painted stucco, painted brick, and aluminum frame single pane windows over brick or tile bulkheads. Openings at the primary façade include three single-lite aluminum doors and large single-lite aluminum windows at each of the three entrances in a variety of heights over brick or tile bulkheads. **(Figure 2 through Figure 7)**. The north façade, overlooking Berkeley Way, has a combination of painted stucco storefronts and pairs of large single-pane aluminum windows **(Figure 8)**.On the north façade, just right (west) of the 1950 corner storefront are four former garage doors now filled in with a combination of opaque panels and transom windows of a variety of widths, and a single metal screen door covering a utility access point. To the right (west) is a secondary door to the 2050 Berkeley Way space and several large single-pane storefront windows over painted stucco bulkheads. At the right (west) end of the façade is the 2050 storefront, with single-pane glazed windows over stucco bulkheads and a single-pane glazed door. The south façade of the building is immediately adjacent with the neighboring structure, and has no visible openings**.** The rear (west) façade was previously visible from an adjacent parking lot until late 2020, but has recently been obscured by the construction of a large multifamily residence **(Figure 9)** (Refer to Continuation Sheet, page 2).

***P3b. Resource Attributes:** (list attributes and codes) HP6. 1-3 story commercial building
***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other

P5a. Photo



P5b. Photo: (view and date)
View of the primary façade, looking west, July 1, 2022

***P6. Date Constructed/Age and Sources:** ☒historic
1922 (original building permit)

***P7. Owner and Address:**
JLLJAR, LLC,
8 Brandt Dr
Moraga, CA 94556.

***P8. Recorded by:**
Page & Turnbull, Inc.
170 Maiden Lane, 5th Fl
San Francisco, CA 94010

***P9. Date Recorded:**
September 18, 2023

***P10. Survey Type:** Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none") None
***Attachments:** ☐None ☐Location Map ☐Sketch Map ☒Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (list)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # _____
HRI # _____
Trinomial _____

Page 2 **of** 17 **Resource Name or #** (Assigned by recorder) 1950-1958 Shattuck Avenue
***Recorded by** Page & Turnbull ***Date** September 18, 2023 ☒ Continuation ☐ Update

***P3a. Description (continued):**



Figure 1. Location of 1950-1958 Shattuck Avenue, subject building highlighted yellow. Source: Google Earth, 2020, edited by Page & Turnbull.

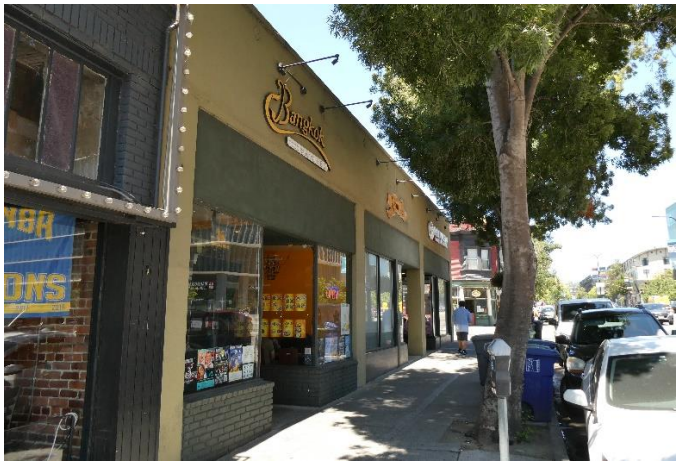


Figure 2: Oblique view of primary (east) façade. Looking north along Shattuck Avenue.



Figure 3: Oblique view of secondary (north) façade. Looking west along Berkeley Way.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
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Page 3 **of** 17 **Resource Name or #** (Assigned by recorder) 1950-1958 Shattuck Avenue
***Recorded by** Page & Turnbull ***Date** September 18, 2023 ☒ Continuation ☐ Update



Figure 4: Detail of storefront addressed 1958. Looking west.



Figure 5: Detail of storefront addressed 1956. Looking west.



Figure 6: Detail of storefront addressed 1950. Looking west.



Figure 7: Detail of storefront addressed 1958, showing brick bulkhead. Looking north.



Figure 8: Photo of secondary (north) façade of subject building, showing recently remodeled restaurant tenant space at 2050 Berkeley Way on right. Looking south. Source: Google Street View, 2020.

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Figure 9: Photo of rear (west) façade of subject building, partially showing nonextant parking lot. Looking east. Source: Google Street View, 2020.

The surrounding area contains a mixture of mixed-use multi-family residential buildings, commercial buildings including retail and restaurants, as well as hotels and a fire station. Buildings on the block frontage include commercial buildings dating between 1921 and 1998 **(**Figure 10 **and Figure 11)**. Further to the west of the subject building on the same block, contemporary multi-family housing has been developed in recent decades **(**Figure 12**)**. A recent multi-story commercial building is located to the northeast, across Shattuck Avenue and Berkeley Way **(Figure 13)**. To the east, across Shattuck Avenue, a one-story commercial block, 1951-1975 Shattuck Avenue, dating to 1922, was demolished in 2021-2022. The lot is currently under construction. Three City of Berkeley Landmark buildings are located on block frontages facing the block containing the subject property. The Morgan Building at 2053 Berkeley Way, at the northwest side of the intersection of Shattuck Avenue and Berkeley Way, was built in 1904 and designed by A. Dodge Coplin. It was designated as a City of Berkeley landmark in 2004 **(**Figure 14**)**. The United Stores Realty Corporation building at 1987 Shattuck Avenue, at the northeast corner of the intersection of Shattuck and University avenues, was built in 1925, designed by Earle Bertz and Lawton & Vezey. It was designated as a City of Berkeley landmark in 1986. However, the original building was demolished in 2018. The new six-story building has incorporated a decorative metal cornice with arched clerestory window openings from the demolished landmark building into its west and south facades **(Figure 15)**. 48 Shattuck Square, at the southeast side of the intersection of University Avenue and Shattuck Square, was built in 1926, designed by architects Pflueger and Miller **(**Figure 16**)**.[1] It was designated a City of Berkeley Landmark in 1984. This building, the Roos Bros. building at 64 Shattuck Square, and 84 Shattuck Square form a small grouping designed by Pflueger and Miller and built in 1926, oriented toward the north-south transportation corridor along what is now Kala Bagai Way and downtown commercial area. The buildings at 1987 Shattuck Avenue and 48 Shattuck Square are at the northwest extent of, and are considered contributors to, a proposed Shattuck Avenue Downtown Historic District defined by Archives & Architecture in 2015.[2]



Figure 10: One-story commercial buildings south of subject parcel on Shattuck Avenue. Looking northwest.



Figure 11. Subject building (at right) and neighboring one-story commercial building at 1974-1978 Shattuck Avenue, to its left (south). View southwest.

[1] The address 48 Shattuck Square, under which the Landmark is listed, corresponds to the current address 2000 Kala Bagai Way. 48 Shattuck Square is used in this report for consistency with Landmark documentation.
[2] Archives & Architecture, LLC, *Shattuck Avenue Commercial Corridor Historic Context and Survey* (San Jose: Prepared for the City of Berkeley, May 28, 2015).

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***Recorded by** Page & Turnbull ***Date** September 18, 2023 ☒ Continuation ☐ Update

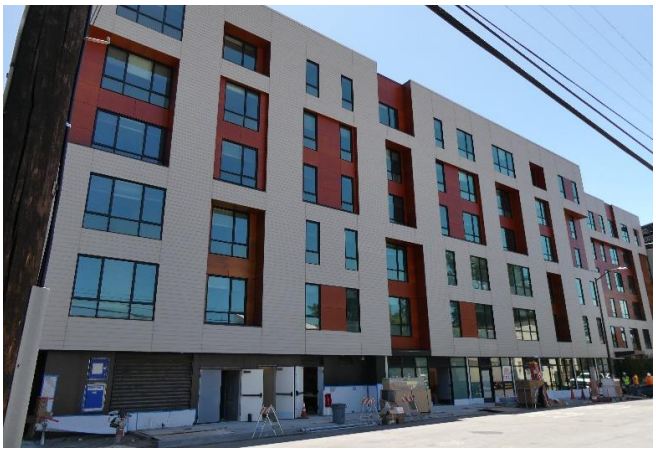


Figure 12: Adjacent six-story mixed-use building west of subject parcel on Berkeley Way. Looking southwest.



Figure 13: Multi-use office and commercial building at northeast corner of Shattuck Avenue and Berkeley Way. Looking northeast.

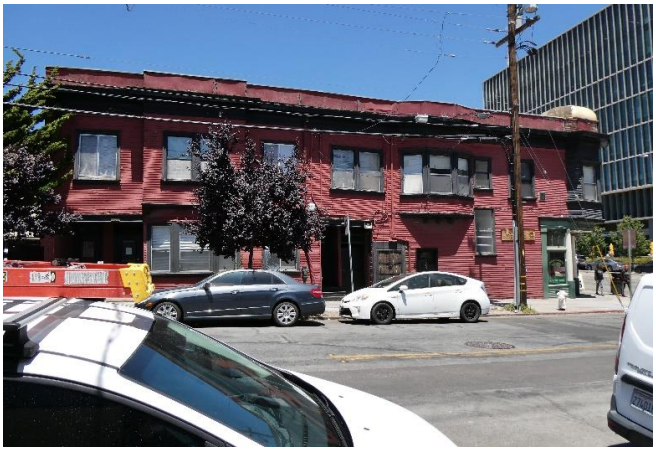


Figure 14: The George Morgan Building, Berkeley Landmark #268 at the northeast corner of Shattuck Avenue and Berkeley Way. Looking north.



Figure 15: : New building with original façade elements from the United Stores Reality Corporation Building, Berkeley Landmark #70 at the northeast corner of Shattuck and University Avenue. Looking east.



Figure 16: The Shattuck Square building, Berkeley Landmark #78 at the southeast corner of University Avenue and Shattuck Avenue. Looking southeast.

State of California — The Resources Agency **Primary #**_____
DEPARTMENT OF PARKS AND RECREATION **HRI#**_____

BUILDING, STRUCTURE, AND OBJECT RECORD

Page 6 **of** 17 ***NRHP Status Code** 6Z
***Resource Name or #** 1950-1958 Shattuck Avenue

B1. Historic name: 1950-1958 Shattuck Avenue
B2. Common name: 1950-1958 Shattuck Avenue
B3. Original Use: Commercial
B4. Present use: Commercial
***B5. Architectural Style**: Early 20th Century Commercial
***B6. Construction History:** (Construction date, alterations, and date of alterations)

Originally built in 1922 in the Early 20th Century Commercial style, the building was constructed as a multi-store one-block commercial building. M. F. Hamilton was the builder. The owner of the property was F.D. Chase, who owned a prominent local real estate company. Many major interior and exterior alterations have been made to the building since its construction in 1922.
(See Continuation Sheet, page 7)

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown Date:** _____ **Original Location:**_____
***B8. Related Features:** No B9a. Architect: Not Listed b. Builder: M. F. Hamilton
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity)

Historic Context – City of Berkeley
Early Twentieth Century History of Berkeley
During the early twentieth century, particularly in the years between the 1906 Earthquake and the Great Depression, both the University of California and the town of Berkeley grew rapidly. After 1906, Berkeley became one of the largest cities in California, mostly as the result of an influx of as many as 20,000 San Francisco earthquake refugees. The construction of the Key System of ferryboats and streetcars made transportation between Oakland, Berkeley, and San Francisco quick and affordable and spurred the development of numerous residential tracts in Berkeley and Oakland. In turn, this growth brought in more customers and thereby spurred intensive commercial development in downtown Berkeley.[3]

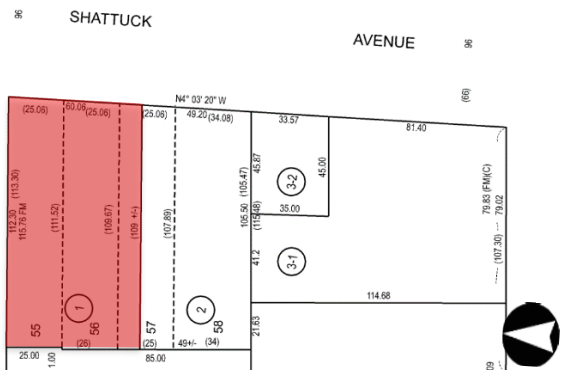
During the first decade of the twentieth century, downtown Berkeley evolved from a district of low-rise, wood-frame buildings into a substantial urban district, with numerous large masonry buildings and stately public facilities. The City Beautiful movement inspired local architects, and many buildings constructed during this era exhibited neoclassical design.

Meanwhile, the growth of the University of California under the patronage of influential people like University President Benjamin Ide Wheeler and donor Phoebe Apperson Hearst also encouraged the physical development of the city, as well as the growth of its identity and local culture. This period saw Berkeley begin to develop its reputation for progressiveness, unconventionality, and bohemianism – traits that were reflected in its architecture, especially the new First Bay Region-style houses built throughout the area that were designed by the likes of Bernard Maybeck, Julia Morgan, and John Galen Howard.[4]
(Refer to Continuation Sheet, page 10)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** Refer to Page 16
B13. Remarks: None
***B14. Evaluator:** Page & Turnbull, Inc.
***Date of Evaluation:** September 18, 2023

Source: Alameda County Assessor's Office, 2022. Property shaded red. Modified by Page & Turnbull.



(This space reserved for official comments.)

[3] Susan Dinkelspiel Cerny, *Berkeley Landmarks*: *An Illustrated Guide to Berkeley California's Architectural Heritage* (Berkeley: Berkeley Architectural Heritage Association, 1994), 64.
[4] Charles Wollenberg, *Berkeley, A City in History*, (Berkeley, University of California Press, 2002), 78.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
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***Recorded by** Page & Turnbull

Resource Name or # 1950-1958 Shattuck Avenue
***Date** September 18, 2023 ☒ Continuation ☐ Update

*B6. Construction History (continued):

Known alterations to the subject building that are documented by permits on file at the City of Berkeley Building and Safety Division and Berkeley Architectural Heritage Association are listed in **Table 1** (below).

Table 1: Permits for Construction and Alterations to 1950-1958 Shattuck Avenue

Permit #	Date	Address	Owner	Builder/Contractor	Description
12268	7-20-1922	N/A	F.D. Chase	M.F. Hamilton	Construction of a one-story, three room class C building for use as a Commission House.
94930	5-8-1962	1950	Phyllis Agler	H. Borison	Relocate Restroom, remove temporary partitions
103020	4-5-1965	1950	Phyllis Agler	Illegible	Install Door, construct new walls
B021379602	2-13-79	1958	Phyllis Agler	Illegible	Minor structural repairs, ceiling joists
0920851652	7-30-1985	1958	Vee Pramuaphol	Arthur Ng	Restaurant Remodeling
B2010-01065	4-1-2010	1950	Jerry Tsou	None listed	Seismic Improvements, two steel moment frames, new shot-crete columns and new wood frame shear walls
B2010-01825	5-25-2010	1950	Jerry Tsou	None listed	Tenant Improvements
B2017-00663	2-16-2017	2050	JLLJAR LLC	Tran Jr. Const.	Tenant Improvements

Documented major alterations include interior remodeling by commercial tenants and major changes to remove or add new storefronts to subdivide interior spaces. As original drawings and high-resolution early photographs have not been located, it is difficult to determine in detail how the appearance of the building has changed since its completion in 1922. As indicated by a ca. 1945 photograph, the building's original configuration appears to have included three structural bays and storefront glazing at the primary, east façade **(Figure 17)**. The configuration of bays and storefronts has been altered through time; as recently as 2010, the building accommodated two, rather than three, commercial entrances at its primary façade, with one entrance in the southern bay, one in the central bay, and storefront windows only in the northern bay **(Figure 18 and** Figure 19**)**. The alteration permit dated 2010 for 1950 Shattuck Avenue resulted in addition of a new entrance at the northern storefront bay and reconfiguration of the bulkhead at the central storefront bay from angled display windows to a squared display windows parallel to the pedestrian right-of-way **(**Figure 20 **and** Figure 21**)**. Other alterations that were identified through visual observation include the removal of awnings on the Shattuck storefronts, and the installation and later removal of garage doors in large openings at the Berkeley Way-facing north façade when some tenants operated auto repair or service shops.

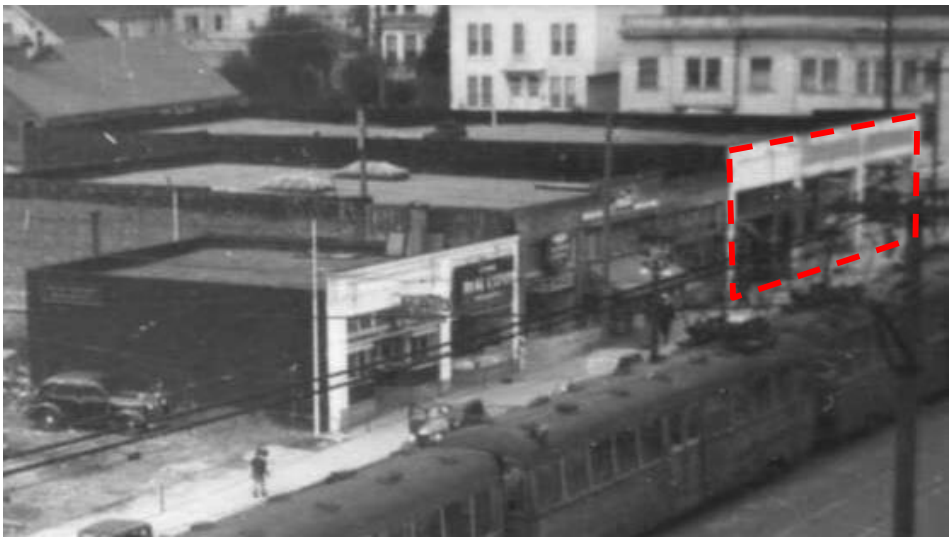

Figure 17. Historic photo showing 1950-1958, 1974-1978, 1984-1986 Shattuck Avenue circa 1945 The subject building storefront is outlined in dashed red. Looking northwest. Source: Berkeley Historical Society.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # _____
HRI # _____
Trinomial _____

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***Recorded by** Page & Turnbull

Resource Name or # 1950-1958 Shattuck Avenue
***Date** September 18, 2023 ☒ Continuation ☐ Update



Figure 18. Photograph dated circa 1980 showing 1950-1958 Shattuck, on the left. Source: 1973-1979 UP File 1974 Shattuck. On file with the City of Berkeley Planning and Development Division.



Figure 19: Street view of primary (east) façade from 2009, before the remodeling permit issued in 2010 (B2010-01825) was implemented, showing a combined 1950-1956 storefront. Source: Google Street View.

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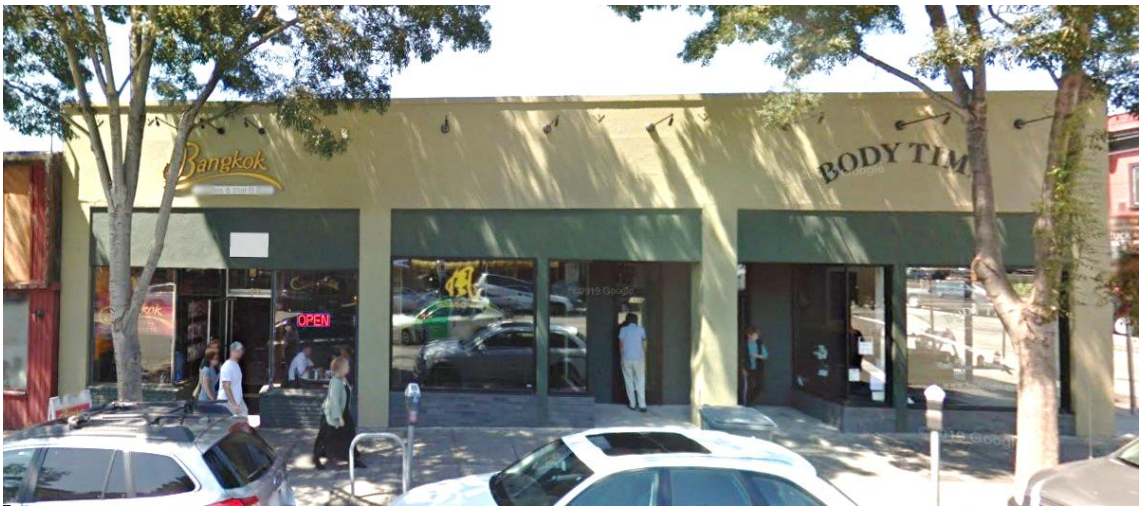

Figure 20. Street view of primary (east) façade from 2014, following alterations to include entrance in north storefront bay and reconfigure



Figure 21: Current photo of primary (east) façade, showing two separate entrances for 1950 and 1956. Note the repainting and new east storefront for 1950 with tile veneer bulkhead.

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***B10. Significance (continued):**

Historic Context – City of Berkeley

Early Twentieth Century History of Berkeley (continued)

Commercial and civic development continued through the 1920s in downtown Berkeley, with construction of several new downtown buildings including the city's first "skyscraper" – the twelve-story Chamber of Commerce (now Wells Fargo) building at the northwest corner of Shattuck Avenue and Center Street, designed by Walter H. Ratcliff, Jr. in 1925. Located just north of the downtown core, the vicinity of the subject property was served by public transit from the first decade of the twentieth century, with a rail service on University Avenue running between Shattuck and the Southern Pacific line at the city's western bay shore.[5] The blocks between downtown Berkeley and the campus and the more industrial developments around San Pablo Avenue nearer to San Francisco Bay, filled slowly during this time, with relatively sparse commercial and residential development north of University Avenue through the 1910s and 1920s **(Figure 22 and Figure 23).** In the 1920s the blocks surrounding the subject building were occupied by commercial and residential uses, though concentrated along and south of University Avenue.

The Great Depression and World War II

During the Great Depression, Berkeley's suffering was somewhat minimized by the presence of the University, which continued to provide employment for many citizens, although working-class neighborhoods in West Berkeley experienced more economic strain.

World War II brought a tremendous population boom to the entire Bay Area, and Berkeley was no exception. Wartime housing projects to accommodate military personnel were constructed in Berkeley, and facilities at the University itself were commandeered for military use. Civilian numbers also grew as people relocated to Berkeley for employment at local shipyards like the Moore Drydock on the Oakland Estuary and the Kaiser shipyards in Richmond. Transportation lines and other infrastructure in Berkeley expanded to make these workers' commutes easier.

Post-World War II

After the war, Berkeley experienced the same out-migration as many other large cities in the country, as families moved to the suburbs to take advantage of G.I. home loans and the increased ease of commuting by automobile. This led to a shift in the demographics of Berkeley, where larger working-class populations developed. G.I. benefits also resulted in soaring enrollment at the University of California, which meant that students flooded available housing around the campus. The large houses that had previously been subdivided to accommodate war workers were well-suited to housing students **(Figure 24).**

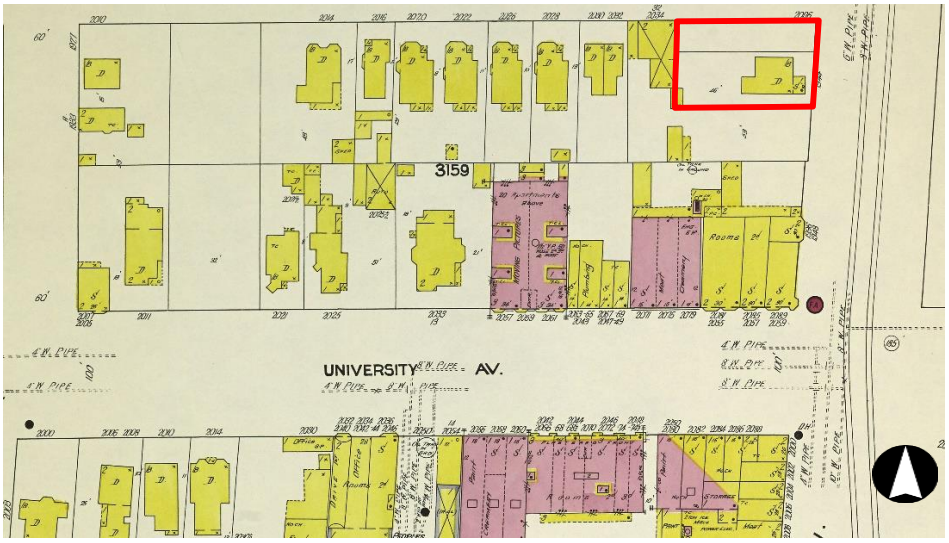

Figure 22. Detail from 1911 Sanborn Insurance Company Map for Berkeley, showing early twentieth century commercial and residential development on Shattuck and University Avenue. Future subject parcel outlined red.

[5] C. L. Huggins, Berkeley, California (map) (Berkeley, 1904) David Rumsey Map Collection, electronic resource at https://www.davidrumsey.com/luna/servlet/s/7s77tm, accessed April 26, 2022.

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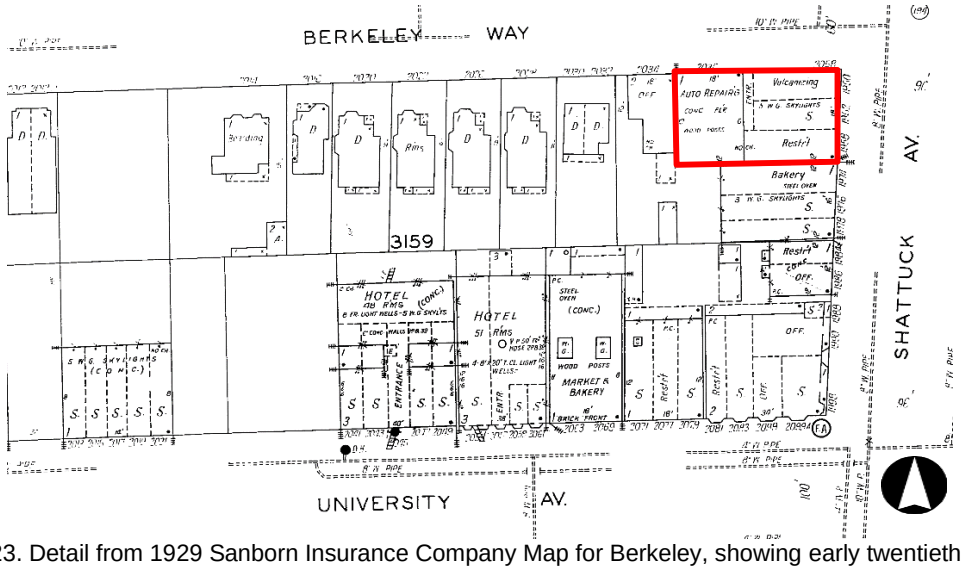

Figure 23. Detail from 1929 Sanborn Insurance Company Map for Berkeley, showing early twentieth century commercial and residential development on Shattuck and University Avenue. Subject parcel outlined red.

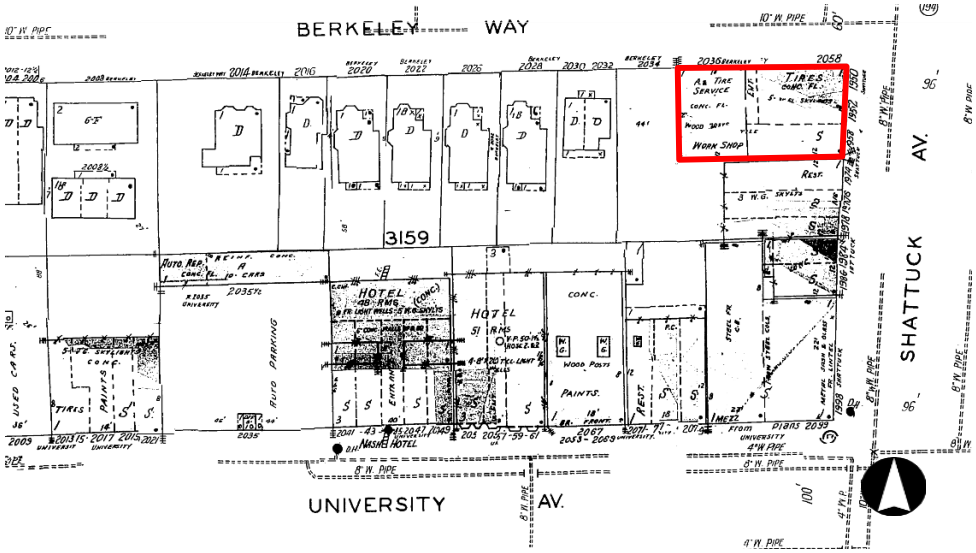

Figure 24. Detail from 1950 Sanborn Insurance Company Map for Berkeley, showing mid twentieth century commercial and residential development on Shattuck and University Avenue. Subject parcel outlined red.

In the decades following World War II, Berkeley's reputation as a liberal stronghold grew, particularly expressed by its Democratic-leaning academic community and African American and working-class populations. Civil Rights became an important topic, leading to struggles over fair-housing and segregation of schools. The Vietnam War affected the city tremendously, as it was heavily populated by young, working-class people and students who were eligible for the draft, spurring protests and demonstrations. Berkeley has remained a politically and culturally outspoken community that largely accepts and promotes progressive thinking. The University of California remains the centerpiece of the city, which is otherwise inhabited by a wide range of social, economic, and ethnic demographics.[6]

[6] City of Berkeley, *City of Berkeley Landmark Application for the Preservation of All Souls Church, Parish Hall and Courtyard, 2220 Cedar Street, Berkeley, CA*, on file at Berkeley Architectural Heritage.

Owner History of 1950-1958 Shattuck Avenue

At the time the subject building was constructed in 1922, the property was owned by F. D. Chase, who owned the F. D. Chase Real Estate and Lumber Company and was active in the early 20th century real estate market in the Bay Area, centered on Berkeley. The property was sold soon after completion and would change hands several times until being obtained by Helen Lutzi in 1945. Helen would gift the property to her daughter, Phyllis L. Agler, then Phyllis Lutzi, in 1946. Phyllis married Harry Agler, a fellow University of California Berkeley graduate and college football player, in 1949 **(Figure 25).** They would jointly own the subject property, but day-to-day management and administration was handled by Phyllis.[7] The Aglers moved to Fresno in the early 1950s, and while Phyllis managed 1950-1958 Shattuck, Harry rose from sales at the Container Corporation of America[8] to become general manager of their Fresno factory,[9] where the company made boxes and other packaging. The Aglers were very active in fundraising efforts all over the East Bay, raising funds for everything from the Valley Children's Hospital[10] to the local boy scout troop;[11] but especially for UC Berkeley sports.[12] Harry proudly missed attending only two UC Berkeley football games – instead watching them on the television.[13] After Phyllis passed away in 1989, Harry took over managing the subject property until he sold it to its current owner Jerry Tsou in 2009.



Figure 25. Historic photo showing Harry and Phyllis Agler in 1949, just before leaving on their honeymoon. Source: Oakland Tribune, March 9th 1949.

Table 2, below, lists known owners of 1950-1958 Shattuck Avenue from its initial construction in 1922 to the present day. Records were assembled through research at the Alameda County Clerk-Recorder, historical records at the Berkeley Architectural Heritage Association, and building permit records.

Occupancy History

Commercial tenants at the subject property included bakers, restaurants, auto parts stores, and various shops from the building's opening in 1922 through the 2000s. The most notable tenant was Radston's Office Supplies, which from 1962 to 2006 used the combined spaces of 1950 and 1952/56 Shattuck. From at least 1984 to 2006, Radston's also used the space at 2050 Berkeley Way. Following Radston's closure in 2006 and subsequent remodeling[14] to accommodate more tenants, most of 1950-1958 Shattuck's tenants have been restaurants. Starting in 2017, all spaces were occupied by restaurants.

Table 3, below, lists known commercial businesses at 1950-1958 Shattuck Avenue since 1923. Records were assembled through research in Alameda County Directories and historic newspaper archives.

[7] All building permits found during this time period are signed by Phyllis Agler or tenant; Harry Agler only appears after 1989.
[8] "CCA Sees Bright Future in Fresno." *The Fresno Bee.* May 11th, 1969. Page 37.
[9] "Retired but not Forgotten." *The Fresno Bee.* February 19th, 1988. Page 13.
[10] "Valley Childrens Hospital Holds Annual Election." *The Selma Enterprise.* February 5th, 1970. Page 7.
[11] "Agler Will Head Sequoia Scouts Drive For Funds." *The Fresno Bee.* February 18th, 1971. Page 20.
[12] "No dunces in Kapp's plan for Cal's football future." *The Fresno Bee.* June 25th, 1982. Page 63.
[13] Jill R. Dorson. "Sports, like life, have gotten chaotic: Ballparks no longer offer safe escape from reality." *The San Francisco Examiner.* March 21st, 1999. Page 99.
[14] Historic photos show the building permit B2010-01825, in 2010, was responsible for splitting the former Radston's space at 1950 Shattuck back into two smaller spaces at 1950 and 1952/56 Shattuck.

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Table 2. Ownership History of 1950-1958 Shattuck Avenue	
Year(s) of Ownership	**Owner**
1922-1920s	F. D. Chase
1920s-1930s	A Muller/ M Muller
1930s-1945	Philip J. Haver
1945-1946	Helen Lutzi
1946-1989	Phyllis L. Agler
1989-2009	Harry Agler
2009-Present	Jerry Tsou/JLLJAR LLC

Table 3. Occupancy History, Commercial Businesses at 1950-1958 Shattuck Avenue			
Address	**Year(s) of Occupation**	**Business / Proprietor Name**	**Use**
1950	1923	Julius Fripo	Fruits (Retail)
	1924	Max Rubin	Grocery
	1925	Chase Furniture	Furniture Refinishing and Repair
	1927-1930	H. L. Galbraith	Tire Store
	1935-1941*	Silvertown Goodrich Tires	Tire Store (auto parts?)
	ca.1940s-1962*	Goodrich B. F. Co. Tires	Tire Store
	1962-2006* **	Radston's Office Supply	Retail
	2014	Body Time	Fitness
	2019-Present	Amausaan Uji Matcha	Restaurant
1952/1956	1923-1924	Joseph Minster	Paints
	1924-1927	Harry Kern	Baker
	1930* **	G.E. Green, R.E. Klepper, D.G. McIvor, J.W. Sinclair	Real Estate
	2015-2020	Kaze Ramen Noodle	Restaurant
	2021-Present	Tane Vegan Izakaya	Restaurant
1958	1923	R.W. Garwood	Art Dealer
	1923-1925	DeForest & Haase / Berkeley Auto Electric Service	Automotive Electricians
	1925-1926	John J. Darrah	Restaurant
	1930-1941	E.M. Robertson, Arthur Robertson	Restaurant
	1950	Unknown	Store
	1978	Model Shoe Renew	Shoe Repair
	1985-Present	Thai Bar-B-Q	Restaurant
2038/2050 Berkeley Way	1927-1935	Alfred Melcer	Automotive Repair
	1935-1950**	Unknown	Automotive Repair
	2017-Present	Bonchon	Restaurant

*Between 1935 and 2006, the occupant of 1950 Shattuck combined the 1950-52/56 Shattuck Avenue space under their address.
**Between 1984 and 2006, the occupant of 1950 Shattuck combined the 1950-52/56 Shattuck Avenue and 2038 Berkeley Way spaces under their address.

Evaluation

California Register Evaluation

The property at 1950-1958 Shattuck Avenue is not currently listed in the National Register of Historic Places (National Register) or the California Register of Historical Resources (California Register). The building does not appear in the most recent version available of the State of California Office of Historic Preservation (OHP) Built Environment Resources Directory (BERD), issued March 2020, indicating that no record of a previous survey or evaluation is on file at an information center of the California Historical Resources Information System (CHRIS).[15] The subject building is not listed as a City of Berkeley Landmark or Structure of Merit.

[15] California State Office of Historic Preservation, Built Environment Resource Directory (BERD), Alameda County, updated March 2020.

Criterion 1 (Events)
1950-1958 Shattuck Avenue does not appear to be individually eligible for listing in the California Register under Criterion 1 (Events) for its association with any events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States. The subject building was constructed in 1922 as a commercial building. It was occupied by tenants operating retail and service businesses such as auto parts stores and restaurants, beginning at a time when commercial development in and around downtown Berkeley had been active for over three decades. No significant events are known to have taken place at the subject building that would allow the building to rise to the level of significance necessary to be individually eligible for the California Register.

Criterion 2 (Persons)
1950-1958 Shattuck Avenue does not appear to be individually eligible for listing in the California Register under Criterion 2 (Persons). The subject building was built by M. F. Hamilton for F. D. Chase to lease for multiple tenants. Neither any owners nor the tenant occupants of the subject building appear to have made significant contributions to the social and economic history of Berkeley, and little additional information was found regarding their personal achievements as they would relate to the subject property. None of the known businesses at 1950-1958 Shattuck Avenue were found to have made a significant impact on local, state, or national history such that the building could be found significant under Criterion 2.

Criterion 3 (Architecture)
1950-1958 Shattuck Avenue does not appear to be individually eligible for listing in the California Register under Criterion 3 (Architecture) as a building that embodies the distinctive characteristics of a type, period, or method of construction. Completed in 1922, erected by builder M. F. Hamilton, the building is a typical early 20th Century Commercial style brick construction designed to accommodate commercial occupants. While the craftsmanship is of decent quality and the structure contains many details once common of buildings in that era, 1950-1958 Shattuck Avenue lacks the scale, complexity, or surrounding context of other buildings of its period in Berkeley such as those south along Shattuck Avenue within the Downtown Berkeley Historic District.

Criterion 4 (Information Potential)
1950-1958 Shattuck Avenue does not appear to be individually eligible for listing in the California Register under Criterion 4 (Information Potential). The "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources. When California Register Criterion 4 (Information Potential) does relate to built resources, it is relevant for cases when the buildings themselves are the principal source of important construction-related information. The subject property does not appear to be individually significant under Criterion 4 as a building that has the potential to provide information important to the prehistory or history of the City of Berkeley, the state, or the nation. It does not appear to feature construction or material types, or embody engineering practices that would, with additional study, provide important information. Identification or evaluation of archaeological resources is beyond the scope of this study.

City of Berkeley Landmark and Structure of Merit Evaluation
The City of Berkeley maintains a list of properties designated as local Landmarks and Structures of Merit under Section 3.24.110 of the Berkeley Municipal Code. Much like the National and California Registers, the Municipal Code provides a number of criteria that must be met in order for a property to gain Landmark or Structure of Merit designation. Properties may be landmarked if they meet standards of architectural, cultural, educational, or historical significance, or if they are already listed in the National Register. A property may be designated as a Structure of Merit if it does not rise to the level of Landmark status, but has contextual importance and is worthy of preservation as part of a neighborhood, block or street frontage, or group of buildings that includes Landmark properties.

The designation criteria for Landmarks and Structures of Merit, and the applicability of these criteria to the subject property, are as follows:

Landmarks and Historic Districts.

1. *Architectural merit:*
   a. Property that is the first, last, only or most significant architectural property of its type in the region;
   b. Properties that are prototypes of or outstanding examples of periods, styles, architectural movements or construction, or examples of the more notable works of the best surviving work in a region of an architect, designer or master builder; or
   c. Architectural examples worth preserving for the exceptional values they add as part of the neighborhood fabric.

   Discussion: The building at 1950-1958 Shattuck Avenue is not the first, last, only, or most significant example of a one-story, multi-unit 1920s-era commercial building in Berkeley or the East Bay, and is neither an outstanding example of its type nor the work of an architect, designer, or builder of merit. Built in 1922 as a relatively simple commercial block and altered through its decades of use, the building represents the way many commercial buildings are changed to accommodate the economic

needs of their users more than it does a particular architectural style or type. As an architectural example it does not contribute exceptional value to the neighborhood fabric.

2. *Cultural value:* Structures, sites and areas associated with the movement or evolution of religious, cultural, governmental, social and economic developments of the City;

Discussion: Research into the history of 1950-1958 Shattuck Avenue did not identify associations with significant religious, cultural, governmental, social, or economic developments in Berkeley. Housing various businesses through its years of use, 1950-1958 served an economic and social role typical of many commercial buildings of its kind in downtown Berkeley and across the East Bay.

3. *Educational value*: Structures worth preserving for their usefulness as an educational force;

Discussion: The building at 1950-1958 Shattuck Avenue does not possess architectural qualities or significant historical associations which would contribute meaningfully to education in Berkeley. It does not uniquely represent a type or pattern of history such that its contribution to public outreach or educational curricula would be valuable.

4. *Historic value*: Preservation and enhancement of structures, sites and areas that embody and express the history of Berkeley/Alameda County/California/United States. History may be social, cultural, economic, political, religious or military;

Discussion: As discussed above with respect to California Register Criterion 1, the building at 1950-1958 Shattuck Avenue is not associated with significant events or patterns in the history of the city, county, state, or nation to a degree that would warrant designation as a Landmark. It does not uniquely represent a significant phase in the commercial development of downtown Berkeley, or a business type important in the city's history.

5. Any property which is listed on the National Register described in Section 470A of Title 16 of the United States Code.

Discussion: 1950-1958 Shattuck Avenue is not listed on the National Register.

Structures of Merit.

1. *General criteria* shall be architectural merit and/or cultural, educational, or historic interest or value. If upon assessment of a structure, the commission finds that the structure does not currently meet the criteria as set out for a landmark, but it is worthy of preservation as part of a neighborhood, a block or a street frontage, or as part of a group of buildings which includes landmarks, that structure may be designated a structure of merit.

Discussion: Consisting of buildings constructed between 1921 and 1998, the street frontage at the west side of Shattuck Avenue does not appear to be a cohesive grouping worthy of preservation. The four buildings are all one-story commercial blocks, though the group does not express a particular architectural character or cohesiveness of style. The two-story Morgan Building at 2053 Berkeley Way, a City of Berkeley Landmark located across Berkeley Way to the north of 1950-1958 Shattuck Avenue, was built in 1904 and represents an earlier era of commercial development in the vicinity. The subject property does not contribute substantially to the setting of this Landmark as part of a group of buildings.

2. *Specific criteria* include, but are not limited to one or more of the following:
   a. The age of the structure is contemporary with (1) a designated landmark within its neighborhood, block, street frontage, or group of buildings, or (2) an historic period or event of significance to the City, or to the structure's neighborhood, block, street frontage, or group of buildings.
   b. The structure is compatible in size, scale, style, materials or design with a designated landmark structure within its neighborhood, block, street frontage, or group of buildings.
   c. The structure is a good example of architectural design.
   d. The structure has historical significance to the City and/or to the structure's neighborhood, block, street frontage, or group of buildings. (Ord. 5686-NS § 1 (part), 1985: Ord. 4694-NS § 3.1, 1974)

Discussion: The age of 1950-1958 Shattuck Avenue, built in 1922, is not contemporary with the nearby City of Berkeley Landmark, the Morgan Building, which was built in 1904, or with a significant historic period or event in the neighborhood or city. The building predates the 1923 fire which devastated a nearby portion of north Berkeley and, though it was not destroyed by the conflagration, does not appear to have been otherwise associated with this significant event in a meaningful way. As a one-story, stucco-clad commercial block the building at 1950-1958 Shattuck Avenue is not compatible in size, scale, materials, or design with the Landmark building at 2053 Berkeley Way, which is a two-story, wood clad Edwardian commercial building completed in 1904. 1950-1958 Shattuck Avenue was a typical one-story commercial block when built, and is not a good

example of architectural design. It does not appear to have been associated with significant historical events or patterns, or to have historical significance to the block, neighborhood, or city.

The building at 1950-1958 Shattuck Avenue does not appear to meet any of the criteria for designation as a City of Berkeley Landmark, or the general and specific criteria for designation as a Structure of Merit.

Conclusion

The commercial building at 1950-1958 Shattuck Avenue, Berkeley, California, was built by M. F. Hamilton and completed in 1922 for owner F. D. Chase. The building was used for retail, restaurants, and auto shops until the early 1960s, after which it was mainly used for retail and restaurants. This evaluation is based on a site visit and analysis of available documentation pertaining to the subject building's ownership and occupant history, chronology of construction and alterations, and architectural characteristics. The subject property does not appear to be eligible for individual listing in the California Register under any criterion, nor does the subject property appear to be eligible for designation as a City of Berkeley Landmark or Structure of Merit. Based on this recommendation, the property would not qualify as a historic resource for the purposes of review under the California Environmental Quality Act (CEQA). As such, the California Historical Resource Status Code (CHRSC) of "6Z" is recommended for the building, meaning that it was "Found ineligible for NR, CR or Local designation through survey evaluation."[16]

***B12. References:**

"Agler Will Head Sequoia Scouts Drive for Funds." *The Fresno Bee* (Fresno, CA), February 18th, 1971.

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_____. *Technical Assistance Bulletin #8: User's Guide to the California Historical Resource Status Codes & Historical Resource Inventory Directory,* Sacramento, November 2004.

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Dorson, Jill R. "Sports, like life, have gotten chaotic: Ballparks no longer offer safe escape from reality." *The San Francisco Examiner* (San Francisco, CA), March 21st, 1999.

Huggins C. L., Berkeley, California. *Berkeley, 1904.* David Rumsey Map Collection, electronic resource at https://www.davidrumsey.com/luna/servlet/s/7s77tm, accessed April 26, 2022.

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"Retired but not Forgotten." *The Fresno Bee* (Fresno, CA), February 19th, 1988.

[16] California State Office of Historic Preservation Department of Parks and Recreation, *Technical Assistance Bulletin #8: User's Guide to the California Historical Resource Status Codes & Historical Resource Inventory Directory,* Sacramento, November 2004.

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Sanborn Map Company. *Insurance Maps of Berkeley, California*. New York, NY: Sanborn Map Company, Volume 1, Sheet 68, 1950.
_____. *Insurance Maps of Berkeley, California*. New York, NY: Sanborn Map Company, Volume 1, Sheet 68, 1929.
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PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code 6Z
Other Listings _____
Review Code _____ **Reviewer** _____ **Date** _____

Page 1 **of** 16 **Resource name(s) or number** (assigned by recorder) 1974-1978 Shattuck

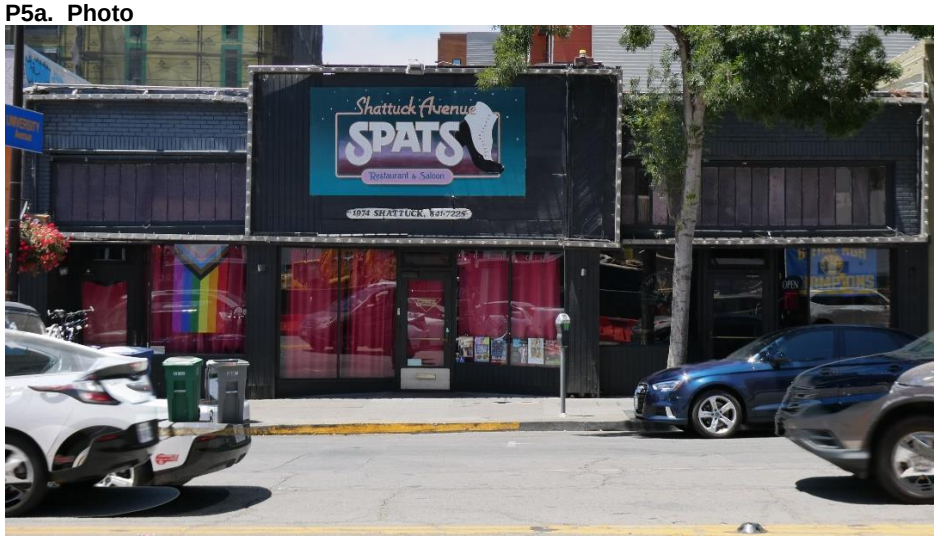
P1. Other Identifier: _____
***P2. Location:** ☐Not for Publication ☒Unrestricted ***a. County** Alameda
***b. USGS 7.5' Quad** Oakland West **Date** 2022
***c. Address** 1974-1978 Shattuck Avenue **City** Berkeley **Zip** 94704
***e. Other Locational Data:** Assessor's Parcel Number 57-2053-2

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.)
The parcel at 1974-1978 Shattuck Avenue (APN 57-2053-2) is rectangular in shape and is located to the north of downtown Berkeley at the west side of Shattuck Avenue between University Avenue and Berkeley Way **(Figure 1)**. The parcel contains a one-story building with a rectangular footprint covering the entire parcel. Originally built in 1921, the building was constructed by E.K. Building Co. for its first owner, Joseph Henry. No architect was listed on existing records.

The one-story building is built to its north, west and south lot lines and is constructed primarily of brick. It features a flat roof with a painted wood and brick marquee displaying the main tenant's business name at the primary (east) façade. The primary façade storefront uses a combination of vertical wood siding, tile, and brick. Openings at the primary façade include three single-lite wood doors, large single-lite aluminum windows at each of the three entrances in a variety of heights over brick bulkheads, transom windows over each door, and tall transom windows over the north and south entrances **(Figure 2 and Figure 3)**. The north and south façades of the building are immediately adjacent to the neighboring structures with no openings **(Figure 4 and Figure 5)**. Neither the north nor south façade is visible from the adjacent parcel. (Refer to Continuation Sheet, page 2)

***P3b. Resource Attributes:** (list attributes and codes) HP6. 1-3 story commercial building
***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other

P5a. Photo



P5b. Photo: (view and date)
View of the primary façade, looking west, July 1, 2022

***P6. Date Constructed/Age and Sources:** ☒historic
1921 (original building permit)

***P7. Owner and Address:**
1974 Shattuck Ave, LLC,
2140 Shattuck Ave, Ste 705,
Berkeley, CA 94704

***P8. Recorded by:**
Page & Turnbull, Inc.
170 Maiden Lane, 5th Fl
San Francisco, CA 94010

***P9. Date Recorded:**
September 18, 2023

***P10. Survey Type:** Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none") None
***Attachments:** ☐None ☐Location Map ☐Sketch Map ☒Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (list)

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***P3a. Description (continued):**



Figure 1. Location of 1974 Shattuck Avenue, subject building highlighted yellow. Source: Google Earth, 2020, edited by Page & Turnbull.

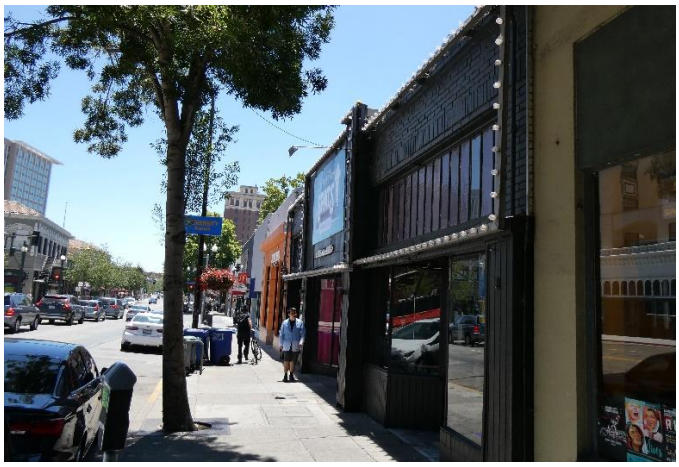

Figure 2: Oblique view of primary (east) façade. Looking south along Shattuck Avenue.

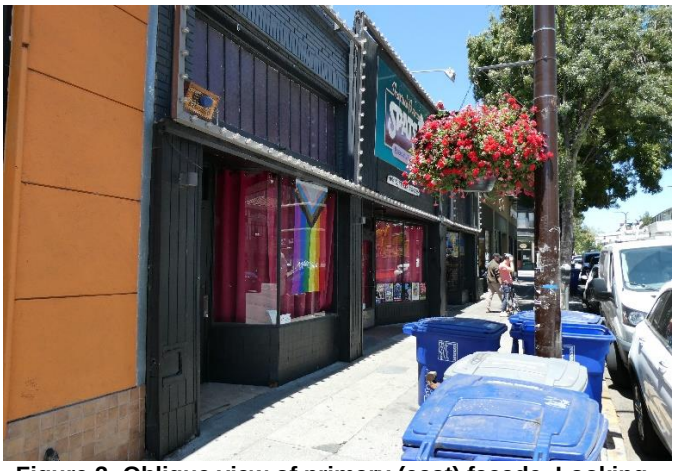

Figure 3: Oblique view of primary (east) façade. Looking north along Shattuck Avenue.

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Figure 4: Detail view of south (left) storefront, addressed 1978. Looking southwest.



Figure 5: Detail view of central storefront, addressed 1976. Looking west.

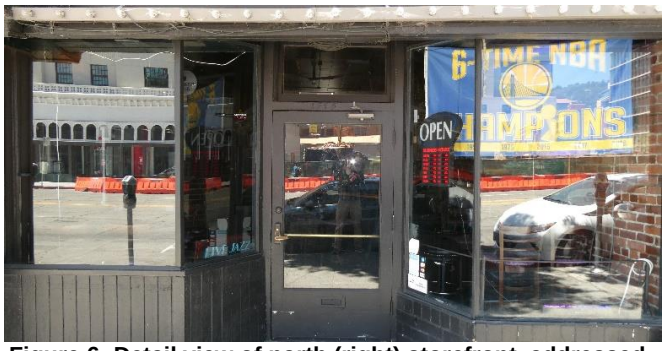

Figure 6: Detail view of north (right) storefront, addressed 1974. Looking west.



Figure 7: Detail view of transom windows over south storefront.

The rear of the subject building directly abuts the property line, and connects to a shared alleyway with the adjacent property. Until recently the rear of the building included a secondary entrance adjacent to a public parking lot **(Figure 8)**. The structure with a low slanted roof on the southwest corner of the lot, adjacent to the former parking lot, is a non-original addition built first as a covered patio in the early 70s, and later remodeled into additional interior seating.

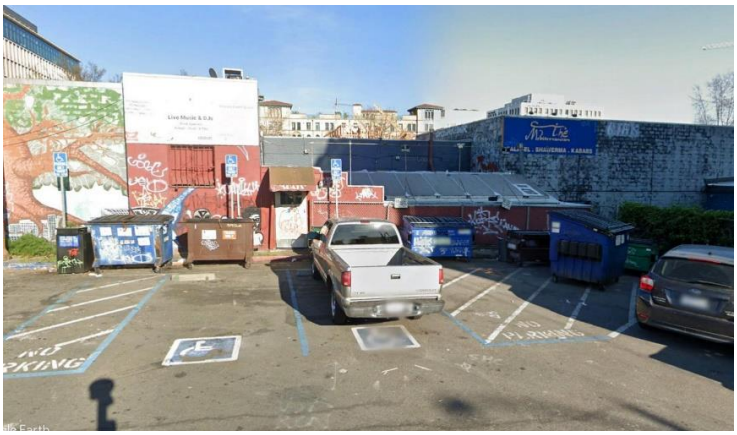

Figure 8: Photo of rear (west) façade of subject building, showing rear exit and nonextant parking lot. Looking east. Source: Google Street View, 2020.

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The surrounding area contains a mixture of mixed-use multi-family residential buildings, commercial buildings including retail and restaurants, as well as hotels and a fire station. Buildings on the block frontage include commercial buildings dating between 1921 and 1998 **(Figure 9 and Figure 10)**. Further to the west of the subject building on the same block, contemporary multi-family housing has been developed in recent decades **(Figure 11)**. A recent multi-story commercial building is located to the northeast, across Shattuck Avenue and Berkeley Way **(Figure 12)**. To the east, across Shattuck Avenue, a one-story commercial block, 1951-1975 Shattuck Avenue, dating to 1922, was demolished in 2021-2022. The lot is currently under construction. Three City of Berkeley Landmark buildings are located on block frontages facing the block containing the subject property. The Morgan Building at 2053 Berkeley Way, at the northwest side of the intersection of Shattuck Avenue and Berkeley Way, was built in 1904 and designed by A. Dodge Coplin. It was designated as a City of Berkeley landmark in 2004 **(Figure 13)**. The United Stores Realty Corporation building at 1987 Shattuck Avenue, at the northeast corner of the intersection of Shattuck and University avenues, was built in 1925, designed by Earle Bertz and Lawton & Vezey. It was designated as a City of Berkeley landmark in 1986. However, the original building was demolished in 2018. The new six-story building has incorporated a decorative metal cornice with arched clerestory window openings from the demolished landmark building into its west and south facades **(Figure 14)**. 48 Shattuck Square, at the southeast side of the intersection of University Avenue and Shattuck Square, was built in 1926, designed by architects Pflueger and Miller **(Figure 15)**.[1] It was designated a City of Berkeley Landmark in 1984. This building, the Roos Bros. building at 64 Shattuck Square, and 84 Shattuck Square form a small grouping designed by Pflueger and Miller and built in 1926, oriented toward the north-south transportation corridor along what is now Kala Bagai Way and the downtown commercial area. The buildings at 1987 Shattuck Avenue and 48 Shattuck Square are at the northwest extent of, and are considered contributors to, a proposed Shattuck Avenue Downtown Historic District defined by Archives & Architecture in 2015.[2]

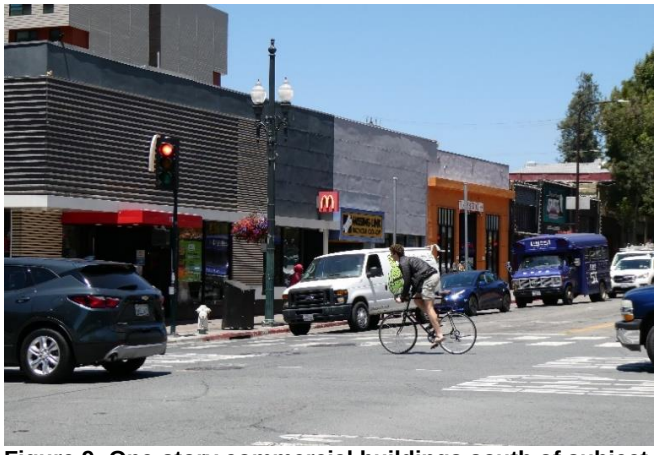

Figure 9: One-story commercial buildings south of subject parcel on Shattuck Avenue. Looking northwest.



Figure 10. One-story commercial building at 1950-1958 Shattuck Avenue, to the north of the subject parcel. View southwest.

[1] The address 48 Shattuck Square, under which the Landmark is listed, corresponds to the current address 2000 Kala Bagai Way. 48 Shattuck Square is used in this report for consistency with Landmark documentation.
[2] Archives & Architecture, LLC, *Shattuck Avenue Commercial Corridor Historic Context and Survey* (San Jose: Prepared for the City of Berkeley, May 28, 2015).

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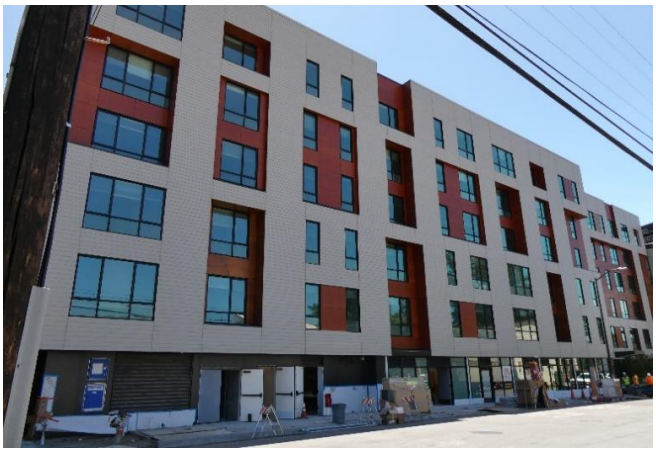

Figure 11: Adjacent six-story mixed-use building west of subject parcel on Berkeley Way. Looking southwest.



Figure 12: Multi-use office and commercial building at northeast corner of Shattuck Avenue and Berkeley Way. Looking northeast.

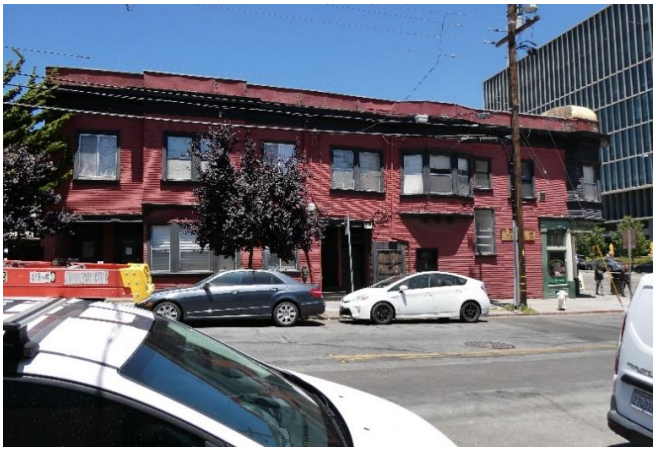

Figure 13: The George Morgan Building, Berkeley Landmark #268 at the northeast corner of Shattuck Avenue and Berkeley Way. Looking north.



Figure 14: : New building with original façade elements from the United Stores Reality Corporation Building, Berkeley Landmark #70 at the northeast corner of Shattuck and University Avenue. Looking east.



Figure 15: The Shattuck Square building, Berkeley Landmark #78 at the southeast corner of University Avenue and Shattuck Avenue. Looking southeast.

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BUILDING, STRUCTURE, AND OBJECT RECORD

Page 6 **of** 16 ***NRHP Status Code** 6Z
***Resource Name or #** 1974-1978 Shattuck Avenue

B1. Historic name: 1974-1978 Shattuck Avenue
B2. Common name: 1974-1978 Shattuck Avenue
B3. Original Use: Commercial
B4. Present use: Commercial
***B5. Architectural Style**: Early 20th Century Commercial
***B6. Construction History:** (Construction date, alterations, and date of alterations)

Originally built in 1921 in the Early 20th Century Commercial style, the building was constructed as a multi-unit commercial building. E. K. Nelson of the E. K. Building Company was the builder. The owner of the property was Joseph Henry. Few major permanent alterations have been made to the building since its construction in 1921 **(Figure 16)**.
(See Continuation Sheet, page 6)

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown Date:** _____ **Original Location:**_____
***B8. Related Features:** No B9a. Architect: Not Listed b. Builder: E. K. Building Co.
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity)

Historic Context – City of Berkeley
Early Twentieth Century History of Berkeley
During the early twentieth century, particularly in the years between the 1906 Earthquake and the Great Depression, both the University of California and the town of Berkeley grew rapidly. After 1906, Berkeley became one of the largest cities in California, mostly as the result of an influx of as many as 20,000 San Francisco earthquake refugees. The construction of the Key System of ferryboats and streetcars made transportation between Oakland, Berkeley, and San Francisco quick and affordable and spurred the development of numerous residential tracts in Berkeley and Oakland. In turn, this growth brought in more customers and thereby spurred intensive commercial development in downtown Berkeley.[3]

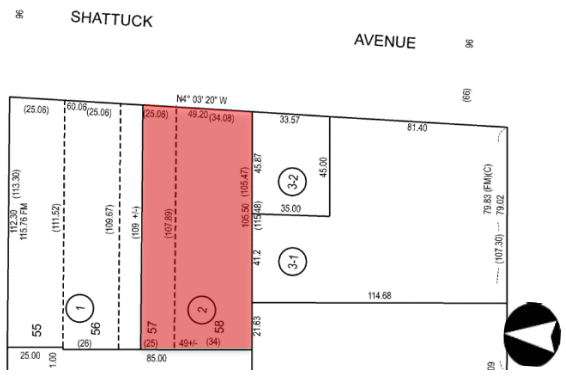
During the first decade of the twentieth century, downtown Berkeley evolved from a district of low-rise, wood-frame buildings into a substantial urban district, with numerous large masonry buildings and stately public facilities. The City Beautiful movement inspired local architects, and many buildings constructed during this era exhibited neoclassical design.

Meanwhile, the growth of the University of California under the patronage of influential people like University President Benjamin Ide Wheeler and donor Phoebe Apperson Hearst also encouraged the physical development of the city, as well as the growth of its identity and local culture. This period saw Berkeley begin to develop its reputation for progressiveness, unconventionality, and bohemianism – traits that were reflected in its architecture, especially the new First Bay Region-style houses built throughout the area that were designed by the likes of Bernard Maybeck, Julia Morgan, and John Galen Howard.[4]
(Refer to Continuation Sheet, page 8)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** Refer to Page 15
B13. Remarks: None
***B14. Evaluator:** Page & Turnbull, Inc.
***Date of Evaluation:** September 18, 2023

Source: Alameda County Assessor's Office, 2022. Property shaded red. Modified by Page & Turnbull.



(This space reserved for official comments.)

[3] Susan Dinkelspiel Cerny, *Berkeley Landmarks*: *An Illustrated Guide to Berkeley California's Architectural Heritage* (Berkeley: Berkeley Architectural Heritage Association, 1994), 64.
[4] Charles Wollenberg, *Berkeley, A City in History*, (Berkeley, University of California Press, 2002), 78.

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*B6. Construction History (continued):

Known alterations to the subject building that are documented by permits on file at the City of Berkeley Building and Safety Division are listed in **Table 1** (below).

Table 1: Alterations to 1974-1978 Shattuck Avenue

Permit #	Date	Address	Owner	Builder/Contractor	Description
9516	1921	1974	Joseph Henry	E. K. Building Co.	Initial Construction Permit
12991	1922	1976	Arthur Thompson	Hamilton, M. F.	Interior alterations, changing front window into a door from the outside
59238	1946	1976	Hatfield Stationary Co.	Stead, Frank A.	Add mezzanine to back of store approx. 18' x 23'
61026	1947	1974	Mr. Straus	Searne	Renovations, adding lights/fixtures, new door & doorframe
90170	1960	1976	California Typewriter Co.	Henry S.	Replace glass, door, install new footing under glass
092371830	1971	1974	Oleg Kaluzhny	Illegible	Construction of exit corridor, outdoor seating area
100571075	1971	1974	Oleg Kaluzhny	Not applicable	New painted sign
080773314	1973	1974	Oleg's Restaurant	Oliver Henderson	New seating area, kitchen work
091174661	1974	1978	Not listed	Not listed	Two six foot doorways, possibly interior
092674989	1974	1974	Oleg Kaluzhny	Owner	Wood façade additions
011674325	1974	1974	Oleg Kaluzhny	Oliver Henderson	New kitchen, seating area
B1214811859	1981	1974	Spats	K. Schipani	New sign
0831825089	1982	1974-76-78	John Nunes	Precision Roofing Co	Remove roofing materials to wood deck on original building footprint

As original drawings and detailed early photographs of the building at 1974-1978 Shattuck Avenue were not located, it is difficult to determine in detail how the building has changed from the time of its initial construction. However, based on comparison with a ca. 1940 photograph, the building appears to retain its overall massing, three-bay primary, east façade, flat parapet with a slightly higher central portion, and high transom windows over the storefront glazing. Documented alterations include changes to interior remodeling by commercial tenants and permits for the changing use of the property. The available permits do include details of changes to the exterior of the building, such as the replacement of windows and doors at different intervals between 1940 and 1960. Alterations that were identified through visual observation include the replacement of some transom panes, addition of exposed lightbulb arrangements framing the main tenant sign, and painting of the exterior brick and siding. Large portions of the wood façade elements added in 1974 **(Figure 17)** have been removed from the north and south storefronts. Non-original wood cladding remains at some bulkheads and pilasters framing the storefront systems.



Figure 16: Photograph of the subject building circa 1940, at the red arrow.
Source: Berkeley Historical Society.

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Figure 17: Photograph of the subject building circa 1980. Source: 1973-1979 UP File 1974 Shattuck. On file with the City of Berkeley Planning and Development Division. Note the different paint color, and the nonextant planters and wood cladding over transom windows to the left and right of the Spats marquee.

***B10. Significance (continued):**

Historic Context – City of Berkeley

Early Twentieth Century History of Berkeley (continued)

Commercial and civic development continued through the 1920s in downtown Berkeley, with construction of several new downtown buildings including the city's first "skyscraper" – the twelve-story Chamber of Commerce (now Wells Fargo) building at the northwest corner of Shattuck Avenue and Center Street, designed by Walter H. Ratcliff, Jr. in 1925. Located just north of the downtown core, the vicinity of the subject property was served by public transit from the first decade of the twentieth century, with a rail service on University Avenue running between Shattuck and the Southern Pacific line at the city's western bay shore.[5] The blocks between downtown Berkeley and the campus and the more industrial developments around San Pablo Avenue nearer to San Francisco Bay, filled slowly during this time, with relatively sparse commercial and residential development north of University Avenue through the 1910s and 1920s **(Figure 18 and Figure 19).** In the 1920s the blocks surrounding the subject building were occupied by commercial and residential uses, generally concentrated along and south of University Avenue

The Great Depression and World War II

During the Great Depression, Berkeley's suffering was somewhat minimized by the presence of the University, which continued to provide employment for many citizens, although working-class neighborhoods in West Berkeley experienced more economic strain.

World War II brought a tremendous population boom to the entire Bay Area, and Berkeley was no exception. Wartime housing projects to accommodate military personnel were constructed in Berkeley, and facilities at the University itself were commandeered for military use. Civilian numbers also grew as people relocated to Berkeley for employment at local shipyards like the Moore Drydock on the Oakland Estuary and the Kaiser shipyards in Richmond. Transportation lines and other infrastructure in Berkeley expanded to make these workers' commutes easier.

Post-World War II

After the war, Berkeley experienced the same out-migration as many other large cities in the country, as families moved to the suburbs to take advantage of G.I. home loans and the increased ease of commuting by automobile. This led to a shift in the demographics of Berkeley, where larger working-class populations developed. G.I. benefits also resulted in soaring enrollment at the University of California, which meant that students flooded available housing around the campus. The large houses that had previously been subdivided to accommodate war workers were well-suited to housing students **(Figure 20).**

[5] C. L. Huggins, Berkeley, California (map) (Berkeley, 1904) David Rumsey Map Collection, electronic resource at https://www.davidrumsey.com/luna/servlet/s/7s77tm, accessed April 26, 2022.

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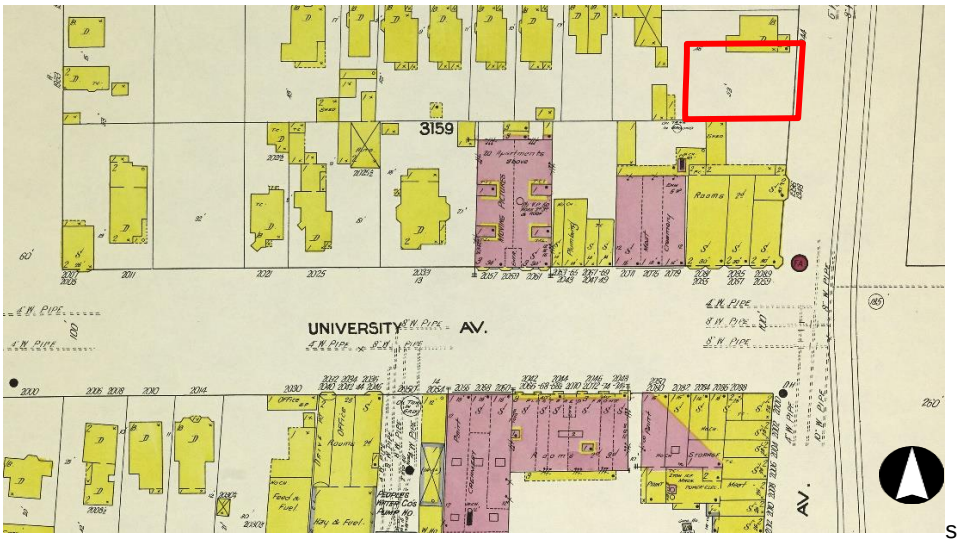

Figure 18. Detail from 1911 Sanborn Insurance Company Map for Berkeley, showing early twentieth century commercial and residential development on Shattuck and University Avenue. Subject parcel outlined red.

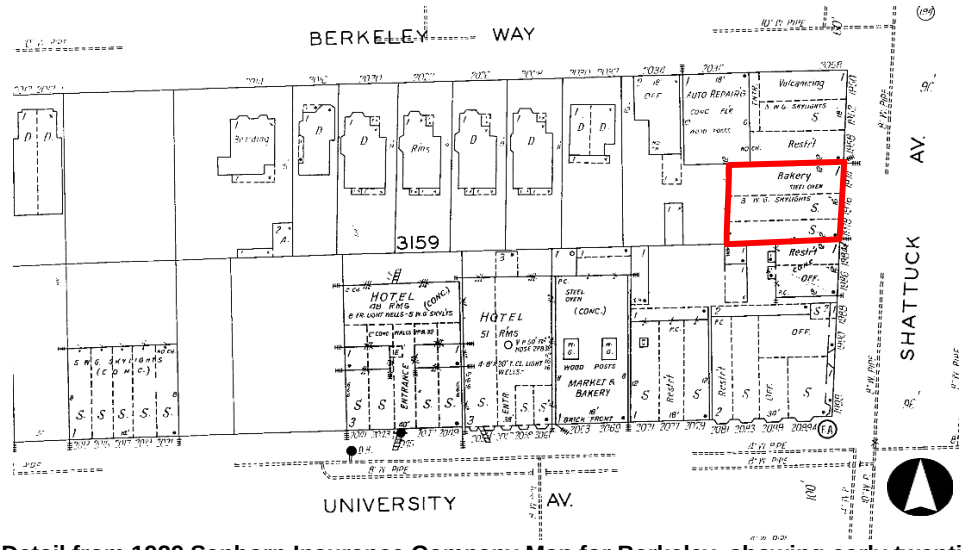

Figure 19. Detail from 1929 Sanborn Insurance Company Map for Berkeley, showing early twentieth century commercial and residential development on Shattuck and University Avenue. Subject parcel outlined red.

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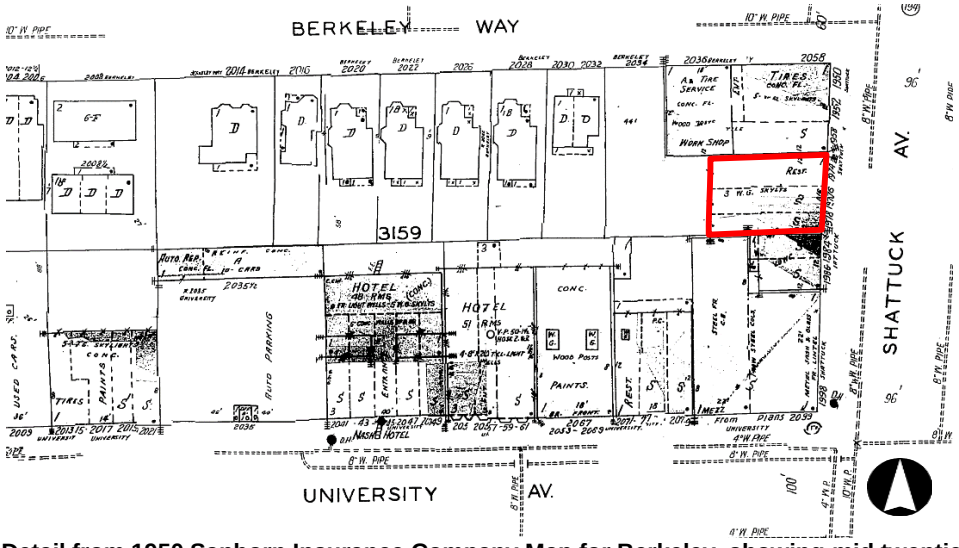

Figure 20. Detail from 1950 Sanborn Insurance Company Map for Berkeley, showing mid twentieth century commercial and residential development on Shattuck and University Avenue. Subject parcel outlined red.

In the decades following World War II, Berkeley's reputation as a liberal stronghold grew, particularly expressed by its Democratic-leaning academic community and African American and working-class populations. Civil Rights became an important topic, leading to struggles over fair-housing and segregation of schools. The Vietnam War affected the city tremendously, as it was heavily populated by young, working-class people and students who were eligible for the draft, spurring protests and demonstrations. Berkeley has remained a politically and culturally outspoken community that largely accepts and promotes progressive thinking. The University of California remains the centerpiece of the city, which is otherwise inhabited by a wide range of social, economic, and ethnic demographics.[6]

Owner History of 1974-1978 Shattuck Avenue

At the time the subject building was constructed in 1921, the property was owned by Joseph Henry. Few records could be found about Joseph Henry's life or profession. The property was sold just a few years after completion to Thomas and Annie Kohler, who owned the property until the 1950s. The property passed between several sets of owners between the 1950s and 1970s. In 1983, the building was sold to Karen and William Schipani, who had operated Shattuck Avenue Spats since 1979. They would own the building for the longest, forming the "Shattuck Avenue Spats LLC" in 1985. In 2014, the property was bought by 1974 Shattuck Ave LLC, who are the present owners.

Table 2, below, lists known owners of 1974-1978 Shattuck Avenue from its initial construction in 1921 to the present day. Records were assembled through research at the Alameda County Clerk-Recorder's online database, historical records at the Berkeley Architectural Heritage Association, and building permit records.

Occupancy History

Commercial tenants at the subject property included grocers, bakers, and barbers from the building's opening in 1921 through the 1940s. Between 1945 and the early 1970s, the commercial space addressed 1974 Shattuck Avenue was used for a restaurant, the space addressed 1976 Shattuck Avenue was a typewriter sales and repair shop, and the space addressed 1978 Shattuck Avenue was a tailor's shop. In 1973, Oleg's Restaurant, opened utilizing all three retail spaces and addressed as 1976 Shattuck Avenue. Operated by Oleg Kalushny, the restaurant became known for its whimsical décor, featuring a rear façade mural by artist Steve Hagen, and for serving exotic cocktails **(Figure 21 and Figure 22)**. The establishment is not known to have invented or initiated a particular, well-known recipe.[7] The owners of Oleg's declared bankruptcy in 1977 following a protracted labor dispute and closed in 1978.[8] Later that year, Shattuck Avenue Spats opened also utilizing the entire building as a restaurant and continuing to use the previous business' eclectic décor **(Figure 23)**. The name was chosen, according to owner William Schipani, to "evoke a memory of the old days."[9] While recent news articles suggest that celebrities such as Robin Williams and the members of the band, The

[6] City of Berkeley, *City of Berkeley Landmark Application for the Preservation of All Souls Church, Parish Hall and Courtyard, 2220 Cedar Street, Berkeley, CA*, on file at Berkeley Architectural Heritage.
[7] Bill Boyer, "Exotic Drinks: Mai tai or your tie?" *North East Bay Independent and Gazette*, August 25, 1978.
[8] *Berkeley Gazette*, "Oleg's For Sale After Bankruptcy Filing," March 29, 1978.
[9] Eleanor Edwards, "Oleg's Restaurant Purchased by one of Giovanni's Owners," *Berkeley Gazette*, April 15, 1978.

Grateful Dead, frequented Spats, documentation supporting such associations was not identified during research for this evaluation.[10]



Figure 21. Mural at rear façade of Oleg's Restaurant, *Berkeley Gazette*, July 8, 1975.

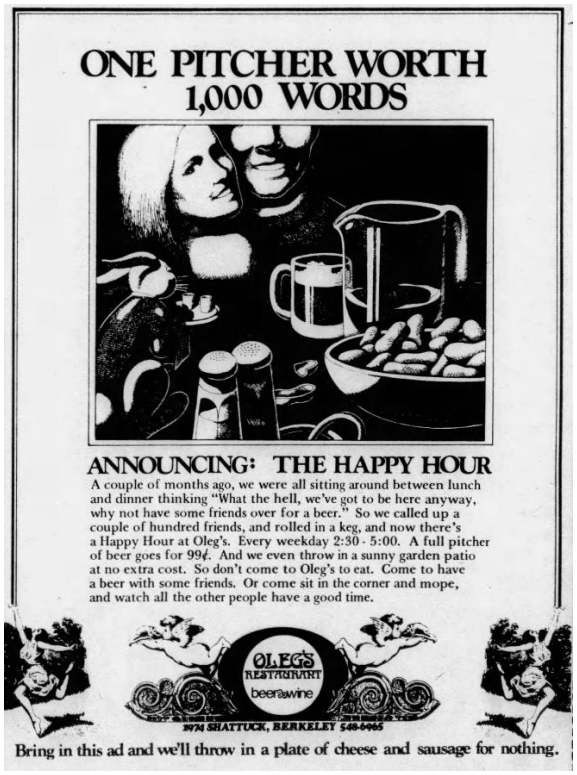

Figure 22. Advertisement for Oleg's Restaurant, *Berkeley Daily Gazette*, July 17, 1973



Figure 23. Advertisement for Shattuck Avenue Spats, *North East Bay Independent and Gazette*, August 11, 1978.

[10] Emilie Raguso, "New Berkeley Spats Owners Hope for Fall Opening." *Berkeleyside*, August 18, 2014, electronic resource at https://www.berkeleyside.org/2014/08/18/new-berkeley-spats-owners-hope-for-fall-opening.

Table 3, below, lists known commercial businesses at 1974-78 Shattuck Avenue since 1927. Records were assembled through research in Alameda County Directories and historic newspaper archives.

Table 2. Ownership History of 1974-1978 Shattuck Avenue	
Year(s) of Ownership	**Owner**
ca. 1921	Joseph Henry
1920s-1944	Theo A. & Annie Kohler
1944-1953	Melvin & Emma Jeffries
ca. 1953	Emma Jeffries
ca. 1959	Evalyn Pratt & George Elliot
1959-1983	Orville Pratt & Mary Elliot
1983-1985	William & Karen Schipani
1985-2014	Shattuck Ave Spats
2014-Present	1974 Shattuck LLC

Table 3. Occupancy History, Commercial Businesses at 1974-1978 Shattuck Avenue			
Address	**Year(s) of Occupation**	**Business Name**	**Use**
1974	ca. 1935	Chase M. Sorenson	Bakery
	1945-1960s	Ground Cow the Berkeley Store	Restaurant
	1965-1974	The Quest	Restaurant
	1974-1978	Oleg's Restaurant	Restaurant
	1978-Present	Shattuck Avenue Spats	Restaurant
1976	ca. 1927	Mutual Stores Inc.	Grocery
	ca. 1935	RW Harris	Confectionary/Ice Cream
	1945-1974*	California Typewriter Co.	Retail
1978	ca. 1935	Volney Simpson	Barber
	1945-1974*	Harry's Custom Tailoring	Tailor

*Starting in 1974, the occupant of 1974 Shattuck occupied 1974-76-78 Shattuck under their address alone.

E. K. Nelson, Builder

Everet Kristen Nelson (1880-1956) was a Finnish-born contractor who emigrated to San Francisco in the early twentieth century. Starting as a bricklayer, thus the all-brick construction and ornamentation on the subject building, he eventually was able to grow into general contracting. Although he usually conducted business under his own name as E. K. Nelson, he used the name "E. K. Building Company" for several years in the late 1910s and early 1920s. By the early 1930s, he was working as the chief officer of the "Golden Gate Construction Company" which operated throughout the Bay Area. Other projects by Nelson include the extant Burlingame Firehouse at 799 California Drive, numerous private residences, and several small schools in San Mateo County.

Evaluation

California Register Evaluation

The property at 1974-1978 Shattuck Avenue is not currently listed in the National Register of Historic Places (National Register) or the California Register of Historical Resources (California Register). The building does not appear in the most recent version available of the State of California Office of Historic Preservation (OHP) Built Environment Resources Directory (BERD), issued March 2020, indicating that no record of a previous survey or evaluation is on file at an information center of the California Historical Resources Information System (CHRIS).[11] The subject building is not listed as a City of Berkeley Landmark or Structure of Merit.

Criterion 1 (Events)

1974-1978 Shattuck Avenue does not appear to be individually eligible for listing in the California Register under Criterion 1 (Events) for its association with any events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States. The subject building was constructed in 1921 as a commercial building, at a time when commercial development in downtown Berkeley and the adjacent blocks had been ongoing for more than two decades. It thus does not appear to be associated with a significant period or pattern of development in Berkeley. Further,

[11] California State Office of Historic Preservation, Built Environment Resource Directory (BERD), Alameda County, updated March 2020.

during its subsequent years of use, no businesses operating at the property were found to have been associated with significant events or patterns in history. None of the commercial tenants was found to No significant events are known to have taken place at the subject building that would allow the building to rise to the level of significance necessary to be individually eligible for the California Register.

Criterion 2 (Persons)
1974-1978 Shattuck Avenue does not appear to be individually eligible for listing in the California Register under Criterion 2 (Persons). The subject building was constructed for owner Joseph Henry as a simple commercial building to be leased to multiple tenants. Neither any owners nor the tenant occupants of the subject building appear to have made significant contributions to the social and economic history of Berkeley, and little additional information was found regarding their personal achievements as they would relate to the subject property. While numerous patrons, some noteworthy in their own right, visited Oleg's and Spats during these establishments' years of operation beginning in 1973, these individuals were not strongly associated with the building or business and are better represented by other locations and buildings where their productive work or artistic contributions were undertaken. A well-documented association with significant individuals dating from within the last 50 years would necessarily be of exceptional importance for eligibility under this criterion. None of the known businesses at 1974-1978 Shattuck Avenue were found to have made a significant impact on local, state, or national history such that the building could be found significant under Criterion 2.

Criterion 3 (Architecture)
1974-1978 Shattuck Avenue does not appear to be individually eligible for listing in the California Register under Criterion 3 (Architecture) as a building that embodies the distinctive characteristics of a type, period, or method of construction. Completed in 1921, erected by E. K. Nelson's firm, the E. K. Building Company, the building is a typical Early 20th Century Commercial style brick construction designed to accommodate commercial occupants. While the structure contains many details once common to buildings in that era, 1974-1978 Shattuck Avenue lacks the scale, complexity, or surrounding context of other buildings of its period in Berkeley such as those south along Shattuck Avenue within the Downtown Berkeley Historic District. 1974-1978 Shattuck Avenue is similar in character and age to contributors to the nearby Downtown Berkeley Historic District, but the property lies one block north of the district's boundaries. Alteration and demolition of surrounding structures has degraded the setting of the subject property's block, thus diminishing any rationale for a northward extension of the district boundary.

Criterion 4 (Information Potential)
1974-1978 Shattuck Avenue does not appear to be individually eligible for listing in the California Register under Criterion 4 (Information Potential). The "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources. When California Register Criterion 4 (Information Potential) does relate to built resources, it is relevant for cases when the buildings themselves are the principal source of important construction-related information. The subject property does not appear to be individually significant under Criterion 4 as a building that has the potential to provide information important to the prehistory or history of the City of Berkeley, the state, or the nation. It does not appear to feature construction or material types, or embody engineering practices that would, with additional study, provide important information. Identification or evaluation of archaeological resources is beyond the scope of this study.

City of Berkeley Landmark and Structure of Merit Evaluation
The City of Berkeley maintains a list of properties designated as local Landmarks and Structures of Merit under Section 3.24.110 of the Berkeley Municipal Code. Much like the National and California Registers, the Municipal Code provides a number of criteria that must be met in order for a property to gain Landmark or Structure of Merit designation. Properties may be landmarked if they meet standards of architectural, cultural, educational, or historical significance, or if they are already listed in the National Register. A property may be designated as a Structure of Merit if it does not rise to the level of Landmark status, but has contextual importance and is worthy of preservation as part of a neighborhood, block or street frontage, or group of buildings that includes Landmark properties.

The designation criteria for Landmarks and Structures of Merit, and the applicability of these criteria to the subject property, are as follows:

Landmarks and Historic Districts.

1. *Architectural merit:*
   a. Property that is the first, last, only or most significant architectural property of its type in the region;
   b. Properties that are prototypes of or outstanding examples of periods, styles, architectural movements or construction, or examples of the more notable works of the best surviving work in a region of an architect, designer or master builder; or
   c. Architectural examples worth preserving for the exceptional values they add as part of the neighborhood fabric.

Discussion: The subject building is a typical example of an early 20th century commercial building that was constructed for use as a multi-tenant store in 1921 and has been altered minimally through use by subsequent tenants. The building is not an early or rare example of its type within the City of Berkeley and therefore does not demonstrate architectural merit such that it would qualify as a landmark. It does not provide architectural value to the surrounding neighborhood, which is characterized by a mixture of commercial and multi-family residential buildings of varied construction dates and architectural styles. As an architectural example it does not contribute exceptional value to the neighborhood fabric.

2. *Cultural value:* Structures, sites and areas associated with the movement or evolution of religious, cultural, governmental, social and economic developments of the City;

Discussion: 1974-1978 Shattuck Avenue was used for service and restaurant businesses during a time when this use was already a regular part of Berkeley life, and as such the building would not be eligible as a landmark for its cultural value. Research into the history of 1974-1978 Shattuck Avenue did not identify associations with significant religious, cultural, governmental, social, or economic developments in Berkeley to a degree that would warrant recognition through historic designation. While numerous patrons, some noteworthy in their own right, visited Oleg's and Spats during these establishments' years of operation, these individuals were not strongly associated with the building or business and are better represented by other locations and buildings where their productive work or artistic contributions were undertaken.

3. *Educational value*: Structures worth preserving for their usefulness as an educational force;

Discussion: The building at 1974-1978 Shattuck Avenue does not possess architectural qualities or significant historical associations which would contribute meaningfully to education in Berkeley. It does not uniquely represent a type or pattern of history such that its contribution to public outreach or educational curricula would be valuable.

4. *Historic value*: Preservation and enhancement of structures, sites and areas that embody and express the history of Berkeley/Alameda County/California/United States. History may be social, cultural, economic, political, religious or military;

Discussion: As discussed above with respect to California Register Criterion 1, the building at 1974-1978 Shattuck Avenue is not associated with significant events or patterns in the history of the city, county, state, or nation to a degree that would warrant designation as a Landmark. It does not uniquely represent a significant phase in the commercial development of downtown Berkeley, or as a noteworthy example of a business type important in the city's history.

5. Any property which is listed on the National Register described in Section 470A of Title 16 of the United States Code.

Discussion: 1974-1978 Shattuck Avenue is not listed on the National Register.

Structures of Merit.

1. *General criteria* shall be architectural merit and/or cultural, educational, or historic interest or value. If upon assessment of a structure, the commission finds that the structure does not currently meet the criteria as set out for a landmark, but it is worthy of preservation as part of a neighborhood, a block or a street frontage, or as part of a group of buildings which includes landmarks, that structure may be designated a structure of merit.

Discussion: Consisting of buildings constructed between 1921 and 1998, the street frontage at the west side of Shattuck Avenue does not appear to be a cohesive grouping worthy of preservation. The four buildings are all one-story commercial blocks, though the group does not express a particular architectural character or cohesiveness of style. The two-story Morgan Building at 2053 Berkeley Way, a City of Berkeley Landmark located across Berkeley Way to the north of the block in which 1974-1978 Shattuck Avenue is located, was built in 1904 and represents an earlier era of commercial development in the vicinity. The subject property does not contribute substantially to the setting of this Landmark as part of a group of buildings.

2. *Specific criteria* include, but are not limited to one or more of the following:
   a. The age of the structure is contemporary with (1) a designated landmark within its neighborhood, block, street frontage, or group of buildings, or (2) an historic period or event of significance to the City, or to the structure's neighborhood, block, street frontage, or group of buildings.
   b. The structure is compatible in size, scale, style, materials or design with a designated landmark structure within its neighborhood, block, street frontage, or group of buildings.
   c. The structure is a good example of architectural design.
   d. The structure has historical significance to the City and/or to the structure's neighborhood, block, street frontage, or group of buildings. (Ord. 5686-NS § 1 (part), 1985: Ord. 4694-NS § 3.1, 1974)

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Resource Name or # 1974-1978 Shattuck Avenue
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Discussion: The age of 1974-1978 Shattuck Avenue, built in 1921, is not contemporary with the nearby City of Berkeley Landmark, the Morgan Building, which was built in 1904, or with a significant historic period or event in the neighborhood or city. The building predates the 1923 fire which devastated a nearby portion of north Berkeley and, though it was not destroyed by the conflagration, does not appear to have been otherwise associated with this significant event in a meaningful way. As a one-story commercial block with broad glazing and brick, the building at 1974-1978 Shattuck Avenue is not compatible in size, scale, materials, or design with the Landmark building at 2053 Berkeley Way, which is a two-story, wood clad Edwardian commercial building completed in 1904. 1974-1978 Shattuck Avenue was a relatively simple one-story commercial block when built, and is not a good example of architectural design to the extent that would support designation as a Structure of Merit. While its restaurants were frequented by Berkeleyans and visitors with varying degrees of distinction, this building does not appear to have been associated with significant historical events or patterns, or to have historical significance to the block, neighborhood, or city.

The building at 1974-1978 Shattuck Avenue does not appear to meet any of the criteria for designation as a City of Berkeley Landmark, or the general and specific criteria for designation as a Structure of Merit.

Conclusion

The commercial building at 1974-1978 Shattuck Avenue, Berkeley, California, was built by E. K. Nelson of E. K. Building Company and completed in 1921 for owner Joseph Henry. The building was used by retail stores from its construction until the mid-1950s, after which it was occupied by a combination of restaurants and retail stores. This evaluation is based on a site visit and analysis of available documentation pertaining to the subject building's ownership and occupant history, chronology of construction and alterations, and architectural characteristics. The subject property does not appear to be eligible for individual listing in the California Register under any criterion, nor does it appear to be eligible for designation as a City of Berkeley Landmark or Structure of Merit. The property does not therefore appear to qualify as a historic resource for the purposes of review under the California Environmental Quality Act (CEQA). As such, the California Historical Resource Status Code (CHRSC) of "6Z" is recommended for the building, meaning that it was "Found ineligible for NR, CR or Local designation through survey evaluation."[12]

***B12. References:**

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_____. *Insurance Maps of Berkeley, California*. New York, NY: Sanborn Map Company, Volume 1, Sheet 72, 1911.

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PRIMARY RECORD

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HRI # _____
Trinomial _____
NRHP Status Code 6Z
Other Listings _____
Review Code _____ **Reviewer** _____ **Date** _____

Page 1 **of** 15 **Resource name(s) or number** (assigned by recorder) 1988-1998 Shattuck

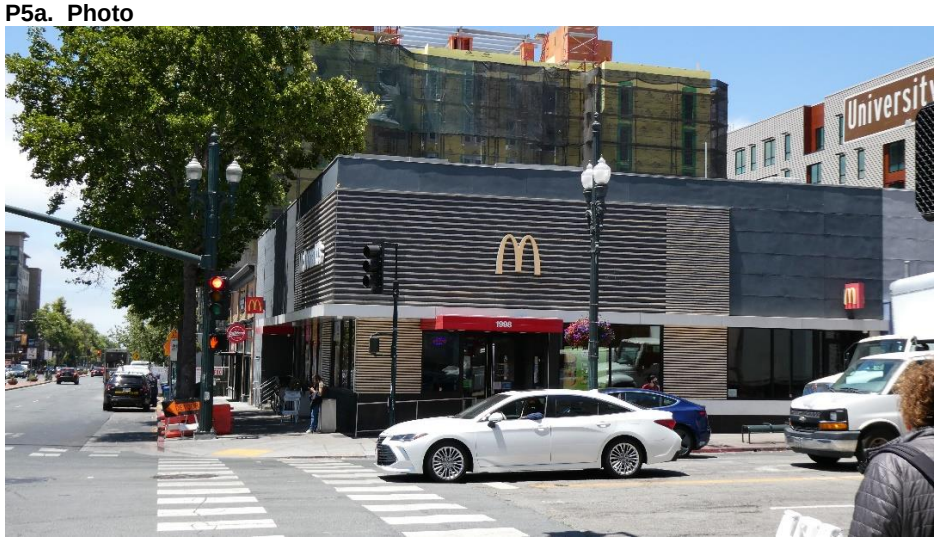
P1. Other Identifier: _____
***P2. Location:** ☐Not for Publication ☒Unrestricted ***a. County** Alameda
***b. USGS 7.5' Quad** Oakland West **Date** 2022
***c. Address** 1988-1998 Shattuck Avenue **City** Berkeley **Zip** 94704
***e. Other Locational Data:** Assessor's Parcel Number 57-2053-3-1

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.)
The parcel at 1988-1998 Shattuck Avenue (APN 57-2053-3-1) contains a two-story concrete building with an irregular footprint covering the entire parcel. The building is irregular in shape and located at the northwest of the intersection of Shattuck Avenue and University Avenue **(Figure 1)**. Originally built in 1951, the building was designed by architect Wally Reemelin and constructed by Chase A. Kring for the property owner Fifth Keil Reality Company.

The two-story building is built to its north and west lot lines, partially wrapping around its smaller neighboring parcel at 1986 Shattuck, and is constructed primarily of concrete. It features a flat roof with painted stucco façade tiles and a horizontal aluminum slat marquee displaying the McDonald's logo on the east façade, and the McDonald's name on the south façade. The sign for 1988's tenant is also on the east façade, with in its own painted brick marquee over its primary entrance. The primary(east) and secondary(south) façades use a combination of stucco panels, tile, and horizontal aluminum slats. Openings at the primary(east) façade include one single-lite aluminum door, one single-lite aluminum double door, and three sets of single-lite aluminum windows in a variety of sizes over tile bulkheads **(Figure 2).** Openings at the secondary(south) façade include one single-lite aluminum double door, and sets of one, two, and three one-lite aluminum windows of equal size (**Figure 3)**. The north and west façades of the building are immediately adjacent to the neighboring structures, and have no openings **(Figure 8)**. Neither the north nor west façade is visible from the adjacent parcel (Refer to Continuation Sheet, page 2).

***P3b. Resource Attributes:** (list attributes and codes) HP6. 1-3 story commercial building
***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other

P5a. Photo



P5b. Photo: (view and date)
View of the primary façade, looking west, July 1, 2022

***P6. Date Constructed/Age and Sources:** ☒historic
1951 (original building permit)

***P7. Owner and Address:**
Fifth Keil Reality Company,
244 Kearny Street.
San Francisco, CA 94108

***P8. Recorded by:**
Page & Turnbull, Inc.
170 Maiden Lane, 5th Fl
San Francisco, CA 94010

***P9. Date Recorded:**
September 18, 2023

***P10. Survey Type:** Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none") None
***Attachments:** ☐None ☐Location Map ☐Sketch Map ☒Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (list)

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***P3a. Description (continued):**



Figure 1. Location of 1988-1998 Shattuck Avenue, subject building highlighted yellow. Source: Google Earth, 2020, edited by Page & Turnbull.



Figure 2: Oblique view of primary (east) façade. Looking south along Shattuck Avenue.

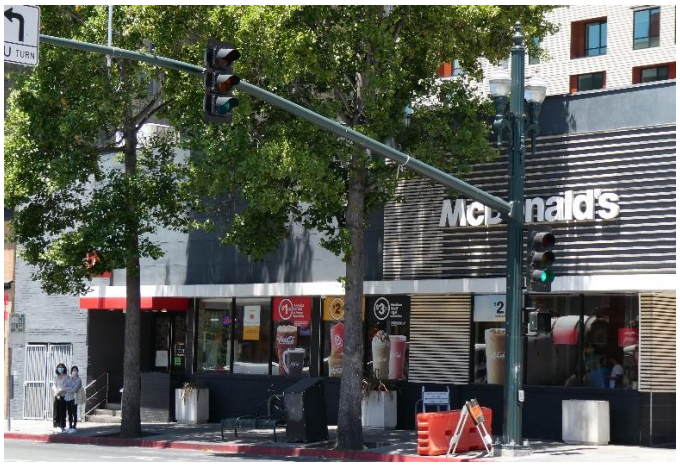

Figure 3: Oblique view of south façade. Looking northwest.

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Figure 4: Detail of secondary pedestrian entrance, on south façade. Looking northwest.

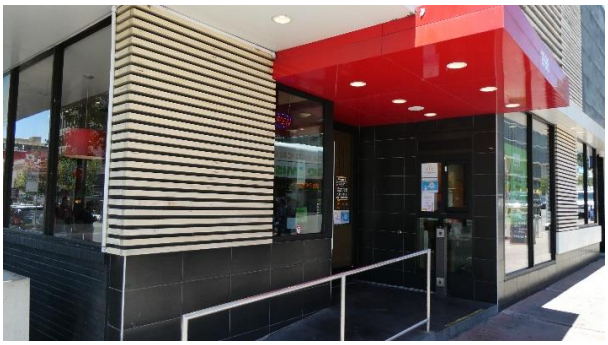

Figure 5: Detail of primary pedestrian entrance, on east façade. Looking northwest.



Figure 6: Detail of tertiary pedestrian entrance, on south façade. Looking northwest.



Figure 7: Detail of primary pedestrian entrance at 1990 Shattuck Avenue. Looking northwest.



Figure 8: Photo of rear (west) façade of subject building. Looking southeast. Source: Google Street View, 2020.

The surrounding area contains a mixture of mixed-use multi-family residential buildings, commercial buildings including retail and restaurants, as well as hotels and a fire station. Buildings on the block frontage include commercial buildings dating between 1921 and 1998 **(Figure 9 and Figure 10)**. Further to the west of the subject building on the same block, contemporary multi-family housing has been developed in recent decades. A recent multi-story commercial building is located to the northeast, across Shattuck Avenue and Berkeley Way **(Figure 11)**. To the northeast, across Shattuck Avenue, a one-story commercial block, 1951-1975 Shattuck Avenue, dating to 1922, was demolished in 2021-2022. The lot is currently under construction. Two City of Berkeley Landmark buildings are located on block frontages facing the subject property. The United Stores Realty Corporation building at 1987 Shattuck Avenue, at the northeast corner of the intersection of Shattuck and University avenues, was built in 1925, designed by Earle Bertz and Lawton & Vezey. It was designated as a City of Berkeley landmark in 1986. However, the original building was demolished in 2018. The new six-story building has incorporated a decorative metal cornice with arched clerestory window openings from the demolished landmark building into its west and south facades **(Figure 12)**. 48 Shattuck Square, at the southeast side of the intersection of University Avenue and Shattuck Square, was built in 1926, designed by architects Pflueger and Miller

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(Figure 13).[1] It was designated a City of Berkeley Landmark in 1984. This building, the Roos Bros. building at 64 Shattuck Square, and 84 Shattuck Square form a small grouping designed by Pflueger and Miller and built in 1926, oriented toward the north-south transportation corridor along what is now Kala Bagai Way and the downtown commercial area. The buildings at 1987 Shattuck Avenue and 48 Shattuck Square are at the northwest extent of, and are considered contributors to, a proposed Shattuck Avenue Downtown Historic District defined by Archives & Architecture in 2015.[2]



Figure 9: Adjacent one-story commercial buildings north of subject parcel on Shattuck Avenue. Looking northwest.



Figure 10: Adjacent one-story commercial buildings north of subject parcel on Shattuck Avenue. Looking west.



Figure 11: Multi-use office and commercial building at northeast corner of Shattuck Avenue and Berkeley Way. Looking northeast.



Figure 12: New building with original façade elements from the United Stores Reality Corporation Building, Berkeley Landmark #70 at the northeast corner of Shattuck and University Avenue. Looking east.

[1] The address 48 Shattuck Square, under which the Landmark is listed, corresponds to the current address 2000 Kala Bagai Way. 48 Shattuck Square is used in this report for consistency with Landmark documentation.
[2] Archives & Architecture, LLC, *Shattuck Avenue Commercial Corridor Historic Context and Survey* (San Jose: Prepared for the City of Berkeley, May 28, 2015).

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Figure 13: The Shattuck Square building, Berkeley Landmark #78 at the southeast corner of University Avenue and Shattuck Avenue. Looking southeast.

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BUILDING, STRUCTURE, AND OBJECT RECORD

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***Resource Name or #** 1988-1998 Shattuck Avenue

B1. Historic name: 1988-1998 Shattuck Avenue
B2. Common name: 1988-1998 Shattuck Avenue
B3. Original Use: Commercial
B4. Present use: Commercial
***B5. Architectural Style**: Early 20th Century Commercial
***B6. Construction History:** (Construction date, alterations, and date of alterations)

1988-1998 Shattuck was originally built in 1951 in the Midcentury Modern Commercial style as a single-tenant two-story department store. Chase A. Kring was the builder, and Wally Reemelin was the architect **(Figure 14)**. The owner of the property was the Fifth Keil Reality Company, who originally had the building constructed for a specific tenant: J. D. McDonald's department store. One major alteration was made to the building in 1977 for the McDonald's Restaurant, heavily altering the exterior and dividing the interior space for a second tenant, and appropriating the then-defunct 1988 Shattuck address for its use.
(See Continuation Sheet, page 6)

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown Date:** _____ **Original Location:**_____
***B8. Related Features:** No B9a. Architect: Wally Reemelin b. Builder: Chase A. Kring.
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity)

Historic Context – City of Berkeley
Early Twentieth Century History of Berkeley
During the early twentieth century, particularly in the years between the 1906 Earthquake and the Great Depression, both the University of California and the town of Berkeley grew rapidly. After 1906, Berkeley became one of the largest cities in California, mostly as the result of an influx of as many as 20,000 San Francisco earthquake refugees. The construction of the Key System of ferryboats and streetcars made transportation between Oakland, Berkeley, and San Francisco quick and affordable and spurred the development of numerous residential tracts in Berkeley and Oakland. In turn, this growth brought in more customers and thereby spurred intensive commercial development in downtown Berkeley.[3]

During the first decade of the twentieth century, downtown Berkeley evolved from a district of low-rise, wood-frame buildings into a substantial urban district, with numerous large masonry buildings and stately public facilities. The City Beautiful movement inspired local architects, and many buildings constructed during this era exhibited neoclassical design.

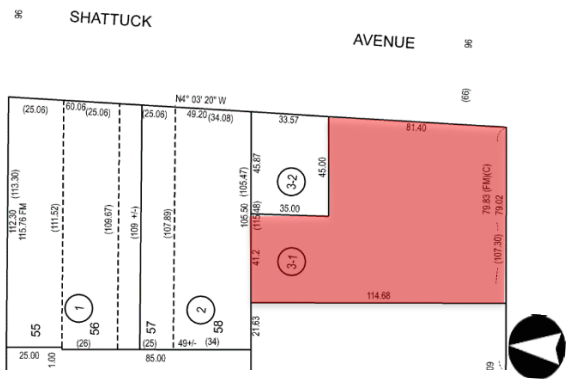
Meanwhile, the growth of the University of California under the patronage of influential people like University President Benjamin Ide Wheeler and donor Phoebe Apperson Hearst also encouraged the physical development of the city, as well as the growth of its identity and local culture. This period saw Berkeley begin to develop its reputation for progressiveness, unconventionality, and bohemianism – traits that were reflected in its architecture, especially the new First Bay Region-style houses built throughout the area that were designed by the likes of Bernard Maybeck, Julia Morgan, and John Galen Howard.[4]
(Refer to Continuation Sheet, page 8)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** Refer to Page 14
B13. Remarks: None
***B14. Evaluator:** Page & Turnbull, Inc.
***Date of Evaluation:** September 18, 2023

(This space reserved for official comments.)

Source: Alameda County Assessor's Office, 2022. Property shaded red. Modified by Page & Turnbull.



[3] Susan Dinkelspiel Cerny, *Berkeley Landmarks*: *An Illustrated Guide to Berkeley California's Architectural Heritage* (Berkeley: Berkeley Architectural Heritage Association, 1994), 64.
[4] Charles Wollenberg, *Berkeley, A City in History*, (Berkeley, University of California Press, 2002), 78.

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***B6. Construction History (continued):**

Documented alterations are mostly limited to interior remodeling by commercial tenants. The available permits indicate two major exterior alterations in 1977 and 2015.[5] In 1977 the building's façade was clad in wood slats and the interior subdivided for an additional tenant **(Figure 15)**. In 2015, the façade of 1998 was completely replaced along with new windows, doors, tile bulkheads instead of brick, a new horizontal aluminum slat marquee, and stucco panel cladding. The 2015 renovation also added a new tertiary pedestrian entrance at the north end of the McDonald's space along Shattuck Avenue.



Figure 14: Photograph of the subject building circa 1960. Source: Berkeley Historical Society. This shows the original construction of 1998 Shattuck as a one-tenant department store, "House of Harris." Looking south along Shattuck Avenue.



Figure 15: Photograph of the subject building circa 1980. Source: 1973-1979 UP File 1974 Shattuck. On file with the City of Berkeley Planning and Development Division. Note the different paint color, additional tenant (Missing Link Bicycles), and wood cladding.

[5] The 1977 remodel was constructed by H. L. Polk Inc., permit number B-0712577218. The 2015 Remodel was constructed by KDC Construction and designed by AECOM, permit number B2015-03679

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***B10. Significance (continued):**

Historic Context – City of Berkeley

Early Twentieth Century History of Berkeley (continued)

Commercial and civic development continued through the 1920s in downtown Berkeley, with construction of several new downtown buildings including the city's first "skyscraper" – the twelve-story Chamber of Commerce (now Wells Fargo) building at the northwest corner of Shattuck Avenue and Center Street, designed by Walter H. Ratcliff, Jr. in 1925. Located just north of the downtown core, the vicinity of the subject property was served by public transit from the first decade of the twentieth century, with a rail service on University Avenue running between Shattuck and the Southern Pacific line at the city's western bay shore.[6] The blocks between downtown Berkeley and the campus and the more industrial developments around San Pablo Avenue nearer to San Francisco Bay, filled slowly during this time, with relatively sparse commercial and residential development north of University Avenue through the 1910s and 1920s **(Figure 16 through Figure 18).** In the 1920s the blocks surrounding the subject building were occupied by commercial and residential uses, though concentrated along and south of University Avenue

The Great Depression and World War II

During the Great Depression, Berkeley's suffering was somewhat minimized by the presence of the University, which continued to provide employment for many citizens, although working-class neighborhoods in West Berkeley experienced more economic strain.

World War II brought a tremendous population boom to the entire Bay Area, and Berkeley was no exception. Wartime housing projects to accommodate military personnel were constructed in Berkeley, and facilities at the University itself were commandeered for military use. Civilian numbers also grew as people relocated to Berkeley for employment at local shipyards like the Moore Drydock on the Oakland Estuary and the Kaiser shipyards in Richmond. Transportation lines and other infrastructure in Berkeley expanded to make these workers' commutes easier.

Post-World War II

After the war, Berkeley experienced the same out-migration as many other large cities in the country, as families moved to the suburbs to take advantage of G.I. home loans and the increased ease of commuting by automobile. This led to a shift in the demographics of Berkeley, where larger working-class populations developed. G.I. benefits also resulted in soaring enrollment at the University of California, which meant that students flooded available housing around the campus. The large houses that had previously been subdivided to accommodate war workers were well-suited to housing students **(Figure 20).**

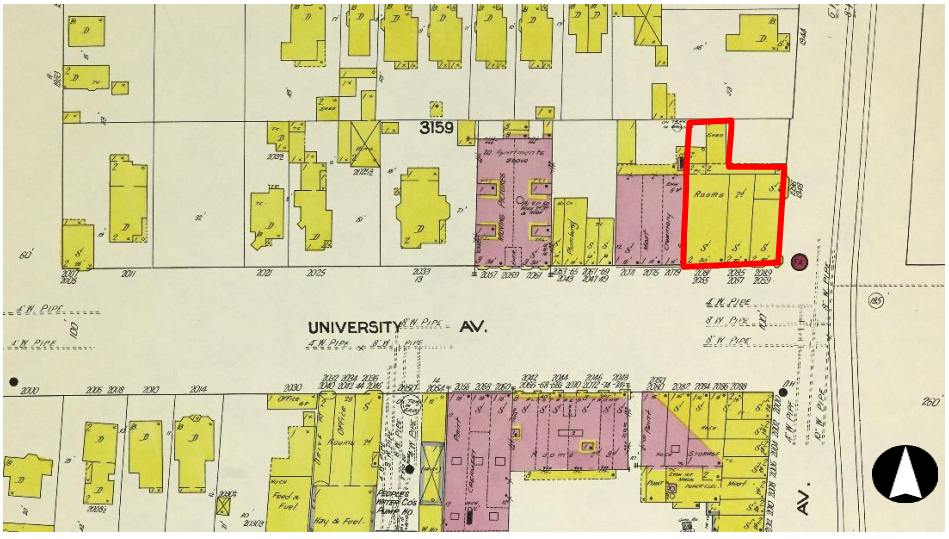

Figure 16. Detail from 1911 Sanborn Insurance Company Map for Berkeley, showing early twentieth century commercial and residential development on Shattuck and University Avenue. Future subject parcel outlined red.

[6] C. L. Huggins, Berkeley, California (map) (Berkeley, 1904) David Rumsey Map Collection, electronic resource at https://www.davidrumsey.com/luna/servlet/s/7s77tm, accessed April 26, 2022.

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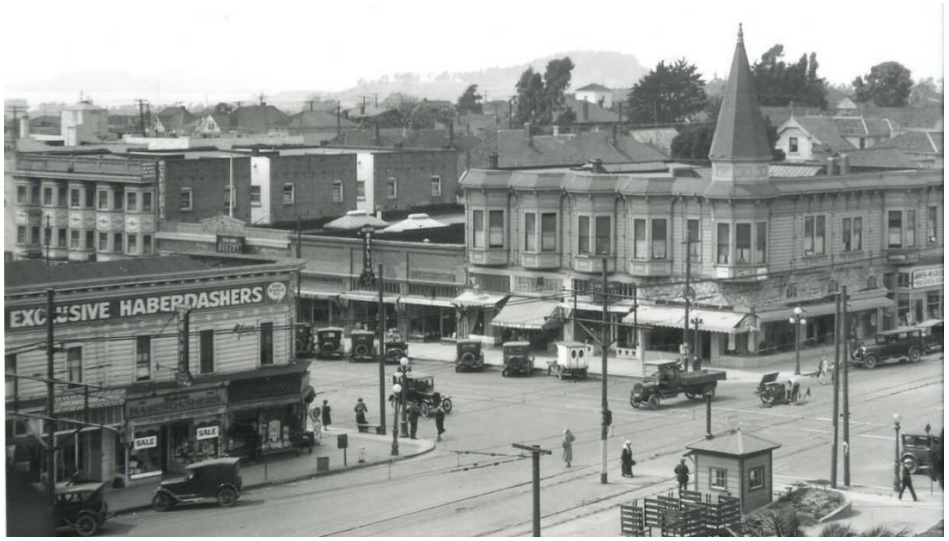

Figure 17. Historic photograph from 1920, showing early twentieth century commercial and residential development on Shattuck and University Avenue. Future site of 1988-1998 is the building on far corner with tall Victorian spire.

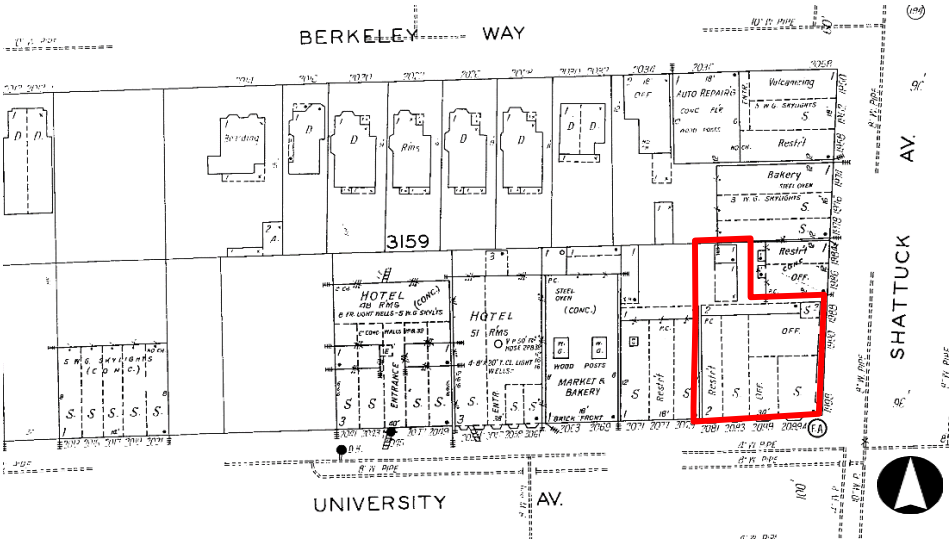

Figure 18. Detail from 1929 Sanborn Insurance Company Map for Berkeley, showing early twentieth century commercial and residential development on Shattuck and University Avenue. Subject parcel outlined red.

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Figure 19. Historic photograph from the 1940s, showing early twentieth century commercial development on the subject block. The subject parcel, later 1988-1998, is the drive-in restaurant, on the left.

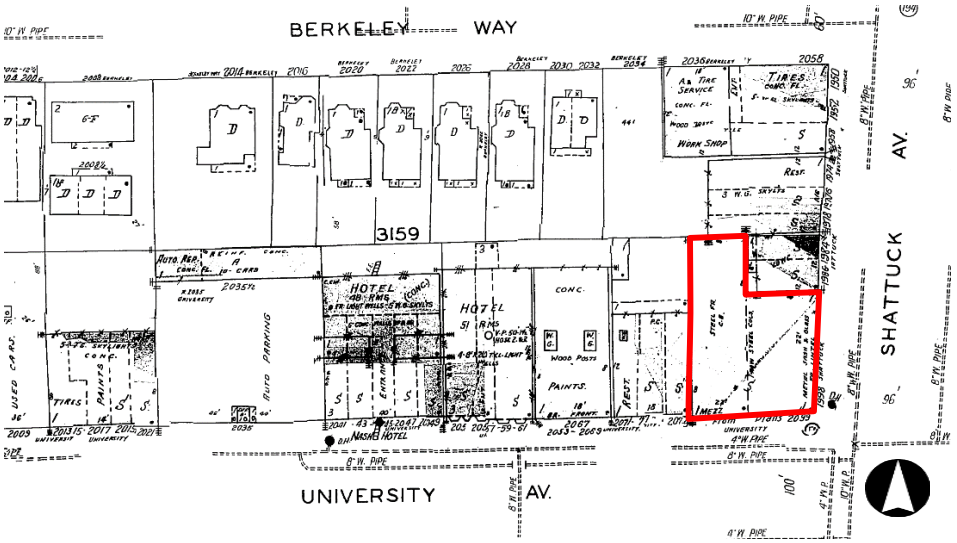

Figure 20. Detail from 1951 Sanborn Insurance Company Map for Berkeley, showing mid twentieth century commercial and residential development on Shattuck and University Avenue. Subject parcel outlined red.

In the decades following World War II, Berkeley's reputation as a liberal stronghold grew, particularly expressed by its Democratic-leaning academic community and African American and working-class populations. Civil Rights became an important topic, leading to struggles over fair-housing and segregation of schools. The Vietnam War affected the city tremendously, as it was heavily populated by young, working-class people and students who were eligible for the draft, spurring protests and demonstrations. Berkeley has remained a politically and culturally outspoken community that largely accepts and promotes progressive thinking. The University of California remains the centerpiece of the city, which is otherwise inhabited by a wide range of social, economic, and ethnic demographics.[7]

Owner History

At the time the subject building was constructed in 1951 it was owned by the Fifth Keil Reality Company, a property management firm based in San Francisco. It is still in operation and continues to own the subject parcel and the adjacent parcel at 1986 Shattuck.

[7] City of Berkeley, *City of Berkeley Landmark Application for the Preservation of All Souls Church, Parish Hall and Courtyard, 2220 Cedar Street, Berkeley, CA*, on file at Berkeley Architectural Heritage.

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Russell Keil(1915-1996), founder and president of the Fifth Keil Reality Company, was an executive and civic leader in San Francisco and Marin counties. From his home on the Tiburon Peninsula, he supported various philanthropic efforts and the preservation campaign for the Tiburon Landmark St. Hillary's Church.[8] He was an influential booster of San Francisco and its educational institutions as president of the Down Town Association and the Union Square Association in San Francisco, and as trustee of the University of San Francisco and member of the advisory board at Georgetown.[9] Although influential in wider Bay Area economic and real estate development, he had little direct impact on the history or economy of Berkeley.

Occupancy History

1988-1998 Shattuck only housed three commercial tenants from the building's completion in 1951 through the present. Between 1951 and Circa 1970, House of Harry's department store was the sole tenant. House of Harry's was one of the later additions to Berkeley's department store portfolio, preceded by Hink's Department Store at Shattuck and Durant Avenue and J. C. Penney's Department Store at Shattuck Avenue and Allston Way.[10]

In 1976, plans were submitted to the city of Berkeley to renovate the space for McDonald's as a primary tenant and subdivide the interior for a new secondary tenant.[11] Due to overwhelming negative letters, petitions, and protests from local business owners, the permit was initially denied but later approved after the applicant appealed.[12] In 1978, McDonald's opened in the primary space at 1998 and Missing Link Bicycle Co-op opened in the secondary space at 1988. Both tenants have occupied 1988-1998 Shattuck to the present day.

Wally Reemelin, Architect

Wally Reemelin(1919-2014) was not an architect by trade. Reemelin studied industrial design and mechanical engineering at the University of California, Berkeley, and based his practice there. His projects included the San Joaquin 1st Federal Savings and Loan Association building in Stockton[13] **(Figure 21)** and numerous cantilevered A-Frame residences on hillsides around the Bay Area. Leaning on his background in engineering, he created many cost-saving innovations to enable economical home building on steep slopes.[14]

It was Reemelin's A-Frames that would cement his legacy as an innovative Bay Area architect. He built some of the first A-Frame residences in 1948 for Berkeley student housing[15] **(Figure 22)** just before other architects across the nation began experimenting with A-Frame vacation homes. His belief in economical home engineering and fondness for the A-Frame made him of one of the pioneers of the style and many of his A-Frames in Berkeley remain to this day.



Figure 21: San Joaquin 1st Federal Savings and Loan Association building in Stockton, designed by Wally Reemelin in 1956. Source: Stockton Daily Evening Record, May 4 1957.



Figure 22: One of the first A-Frames ever built, designed by Wally Reemelin in 1948 as Berkeley student housing. Source: edificionado.com.

[8] Obituary -- Russell D. Keil. SFGATE. August 23, 1996, from https://www.sfgate.com/news/article/OBITUARY-Russell-D-Keil-2969857.php
[9] SFGATE.
[10] "J. C. Penney Co. Inc." *Oakland Tribune.* January 8th, 1932. Page 15.
[11] Permit number B-0712577218, on file with the City of Berkeley.
[12] Anne Duggan. "New McDonald's has Little Opposition." *The Daily Californian.* January 5th, 1978.
[13] "Northern California's Most Modern Savings & Loan." *Stockton Daily Evening Record.* May 4th, 1957. Page 9.
[14] Jack Gallagher, "Cantilever Design Lowers Building Cost on Hillside." *Redwood City Tribune.* October 24th, 1952. Page 5.
[15] Adam Martin, "Eichler for the Weekends" Eichler Network, March 27 2014, https://www.eichlernetwork.com/article/eichler-weekends

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Evaluation

California Register Evaluation

The property at 1988-1998 Shattuck Avenue is not currently listed in the National Register of Historic Places (National Register) or the California Register of Historical Resources (California Register). The building does not appear in the most recent version available of the State of California Office of Historic Preservation (OHP) Built Environment Resources Directory (BERD), issued March 2020, indicating that no record of a previous survey or evaluation is on file at an information center of the California Historical Resources Information System (CHRIS).[16] The subject building is not listed as a City of Berkeley Landmark or Structure of Merit.

Criterion 1 (Events)

1988-1998 Shattuck Avenue does not appear to be individually eligible for listing in the California Register under Criterion 1 (Events). 1988-1988 Shattuck is associated with a local event protesting a non-union McDonalds trying to occupy the space in 1977, but the protests were ultimately unsuccessful and did not make a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States. The subject building was constructed in 1951 as a department store after larger department stores were already established downtown. No significant events are known to have taken place at the subject building that would allow the building to rise to the level of significance necessary to be individually eligible for the California Register.

Criterion 2 (Persons)

1988-1998 Shattuck Avenue does not appear to be individually eligible for listing in the California Register under Criterion 2 (Persons). The subject building was constructed for owner Fifth Keil Co. as a small department store for lease. Russell Keil, owner and founder of the Fifth Keil Reality Company, was a booster of San Francisco's economy and educational institutions and built his fortune in Bay Area Real Estate. However, he did not make significant contributions to the social and economic history of Berkeley itself, and little additional information was found regarding their personal achievements as they would relate to the subject property. None of the known businesses at 1988-1998 Shattuck Avenue were found to have made a significant impact on local, state, or national history such that the building could be found significant under Criterion 2.

Criterion 3 (Architecture)

1988-1998 Shattuck Avenue does not appear to be individually eligible for listing in the California Register under Criterion 3 (Architecture) as a building that embodies the distinctive characteristics of a type, period, or method of construction. Completed in 1951, designed by Wally Reemelin and erected by builder Chase A. Kring, the building was designed as a modest example of a Midcentury Modern Commercial style department store with Late Moderne elements. The Late Moderne style is characterized by a clean aesthetic that blended elements of the earlier Streamline Moderne style with the minimalism of the International style. It was popular from approximately 1937 to 1960.[17] Characteristics of the style include strong horizontal elements, the use of spare surfaces, both present in the subject building's original design.[18] A signature feature lacking in the subject building's original design is the bezeled window or horizontal window groupings surrounded with projecting elements such as a canopy or frame. While the craftsmanship is of good quality, 1988-1998 Shattuck Avenue lacks the scale, complexity, or integrity to receive eligibility under Criterion 3.

Criterion 4 (Information Potential)

1988-1998 Shattuck Avenue does not appear to be individually eligible for listing in the California Register under Criterion 4 (Information Potential). The "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources. When California Register Criterion 4 (Information Potential) does relate to built resources, it is relevant for cases when the buildings themselves are the principal source of important construction-related information. The subject property does not appear to be individually significant under Criterion 4 as a building that has the potential to provide information important to the prehistory or history of the City of Berkeley, the state, or the nation. It does not appear to feature construction or material types, or embody engineering practices that would, with additional study, provide important information. Identification or evaluation of archaeological resources is beyond the scope of this study.

City of Berkeley Landmark and Structure of Merit Evaluation

The City of Berkeley maintains a list of properties designated as local Landmarks and Structures of Merit under Section 3.24.110 of the Berkeley Municipal Code. Much like the National and California Registers, the Municipal Code provides a number of criteria that must be met in order for a property to gain Landmark or Structure of Merit designation. Properties may be landmarked if they meet standards of architectural, cultural, educational, or historical significance, or if they are already listed in the National Register. A property may be designated as a Structure of Merit if it does not rise to the level of Landmark status, but has contextual

[16] California State Office of Historic Preservation, Built Environment Resource Directory (BERD), Alameda County, updated March 2020.
[17] City of Los Angeles, Department of City Planning, *SurveyLA Citywide Context Statement: Architecture and Engineering/L.A. Modernism, 1919-1980.* August 2021, 91. Accessed January 13, 2022, https://planning.lacity.org/odocument/4f67bd39-631a-4f26-9a52-cd5809a66655/LA_Modernism_1919-1980.pdf
[18] Paul Gleye, *The Architecture of Los Angeles* (Los Angeles: Rosebud Books, 1981), 149-151.

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importance and is worthy of preservation as part of a neighborhood, block or street frontage, or group of buildings that includes Landmark properties.

The designation criteria for Landmarks and Structures of Merit, and the applicability of these criteria to the subject property, are as follows:

Landmarks and Historic Districts.

1. *Architectural merit:*
   a. Property that is the first, last, only or most significant architectural property of its type in the region;
   b. Properties that are prototypes of or outstanding examples of periods, styles, architectural movements or construction, or examples of the more notable works of the best surviving work in a region of an architect, designer or master builder; or
   c. Architectural examples worth preserving for the exceptional values they add as part of the neighborhood fabric.

   Discussion: The subject building is a two story Midcentury Commercial style commercial building that was constructed for use as a department store in 1951 and has been permanently altered by subsequent tenants. The building is not an early or rare example of its type within the City of Berkeley and therefore does not demonstrate architectural merit such that it would qualify as a landmark. It does not provide architectural value to the surrounding neighborhood, which is characterized by a mixture of commercial and multi-family residential buildings of varied construction dates and architectural styles.

2. *Cultural value:* Structures, sites and areas associated with the movement or evolution of religious, cultural, governmental, social and economic developments of the City;

   Discussion: 1988-1998 Shattuck Avenue was used for retail, service and restaurant businesses during a time when this use was already a regular part of Berkeley life, and as such the building would not be eligible as a landmark for its cultural value. Research into the history of 1988-1998 Shattuck Avenue did not identify associations with significant religious, cultural, governmental, social, or economic developments in Berkeley to a degree that would warrant recognition through historic designation.

3. *Educational value*: Structures worth preserving for their usefulness as an educational force;

   Discussion: The building at 1988-1998 Shattuck Avenue does not possess architectural qualities or significant historical associations which would contribute meaningfully to education in Berkeley. It does not uniquely represent a type or pattern of history such that its contribution to public outreach or educational curricula would be valuable.

4. *Historic value*: Preservation and enhancement of structures, sites and areas that embody and express the history of Berkeley/Alameda County/California/United States. History may be social, cultural, economic, political, religious or military;

   Discussion: As discussed above with respect to California Register Criterion 1, the building at 1988-1998 Shattuck Avenue is not associated with significant events or patterns in the history of the city, county, state, or nation to a degree that would warrant designation as a Landmark. It does not uniquely represent a significant phase in the commercial development of downtown Berkeley, or as a noteworthy example of a business type important in the city's history.

5. Any property which is listed on the National Register described in Section 470A of Title 16 of the United States Code.

   Discussion: 1988-1998 Shattuck Avenue is not listed on the National Register.

Structures of Merit.

1. *General criteria* shall be architectural merit and/or cultural, educational, or historic interest or value. If upon assessment of a structure, the commission finds that the structure does not currently meet the criteria as set out for a landmark, but it is worthy of preservation as part of a neighborhood, a block or a street frontage, or as part of a group of buildings which includes landmarks, that structure may be designated a structure of merit.

   Discussion: Consisting of buildings constructed between 1921 and 1998, the street frontage at the west side of Shattuck Avenue does not appear to be a cohesive grouping worthy of preservation. The four buildings are all one-story commercial blocks, though the group does not express a particular architectural character or cohesiveness of style. Nearby landmarks include the former location of the United Stores Realty Corporation building at1987 Shattuck Avenue, substantially replaced by a new building, and the Shattuck Square building at 48 Shattuck Square. As a contributor to the proposed Shattuck Avenue Downtown Historic District, the Shattuck Square building is oriented toward its neighbors to the south and east, and does not

form or contribute to a grouping of which the subject building is a part. 1988-1998 Shattuck Avenue is not, therefore, part of a group of buildings which contribute to the setting of a Landmark.

2. *Specific criteria* include, but are not limited to one or more of the following:
   a. The age of the structure is contemporary with (1) a designated landmark within its neighborhood, block, street frontage, or group of buildings, or (2) an historic period or event of significance to the City, or to the structure's neighborhood, block, street frontage, or group of buildings.
   b. The structure is compatible in size, scale, style, materials or design with a designated landmark structure within its neighborhood, block, street frontage, or group of buildings.
   c. The structure is a good example of architectural design.
   d. The structure has historical significance to the City and/or to the structure's neighborhood, block, street frontage, or group of buildings. (Ord. 5686-NS § 1 (part), 1985: Ord. 4694-NS § 3.1, 1974)

Discussion: The age of 1988-1998 Shattuck Avenue, built in 1951, is not contemporary with nearby City of Berkeley Landmarks 1987 Shattuck Avenue, built in 1925 and demolished in 2018 save for a retained façade element; and 48 Shattuck Square, built in 1926. Built during the years of broad nationwide economic growth following World War II, the building is not associated with a historic period or event of specific significance to Berkeley or the neighborhood. The mid-20th-century one-story commercial building, currently clad with a grid of panels and horizontal wood slats, is not particularly compatible in size, scale, materials, or design with the Landmark building at 48 Shattuck Square, a two-story stucco-clad building which features ornate second-story window surrounds. 1988-1998 Shattuck Avenue was constructed for use as a department store in a restrained Mid-Century Modern tyle in 1951 and has been substantially altered by subsequent tenants. As originally constructed and in its current condition it is not a good example of historic architectural design to the extent that would support designation as a Structure of Merit. The building does not appear to have been associated with significant historical events or patterns, or to have historical significance to the block, neighborhood, or city.

The building at 1988-1998 Shattuck Avenue does not appear to meet any of the criteria for designation as a City of Berkeley Landmark, or the general and specific criteria for designation as a Structure of Merit.

Conclusion

The commercial building at 1988-1998 Shattuck Avenue, Berkeley, California, was designed by Wally Reemelin and completed in 1951 for owner Fifth Keil Co. The building was used as a department store from its construction until 1977, after which it was occupied by a restaurant and retail store. This evaluation is based on a site visit and analysis of available documentation pertaining to the subject building's ownership and occupant history, chronology of construction and alterations, and architectural characteristics. The subject property does not appear to be eligible for individual listing in the California Register under any criterion, nor does it appear to be eligible for designation as a City of Berkeley Landmark or Structure of Merit. The property does not therefore appear to qualify as a historic resource for the purposes of review under the California Environmental Quality Act (CEQA). As such, the California Historical Resource Status Code (CHRSC) of "6Z" is recommended for the building, meaning that it was "Found ineligible for NR, CR or Local designation through survey evaluation."[19]

***B12. References:**

Alameda County Directories, 1895-present, collections of Archive.org and the Berkeley Public Library.

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[19] California State Office of Historic Preservation Department of Parks and Recreation, *Technical Assistance Bulletin #8: User's Guide to the California Historical Resource Status Codes & Historical Resource Inventory Directory,* Sacramento, November 2004.

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PRIMARY RECORD

Primary # _____
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NRHP Status Code 6Z
Other Listings _____
Review Code _____ **Reviewer** _____ **Date** _____

Page 1 **of** 1717 **Resource name(s) or number** (assigned by recorder) 2071 University Avenue

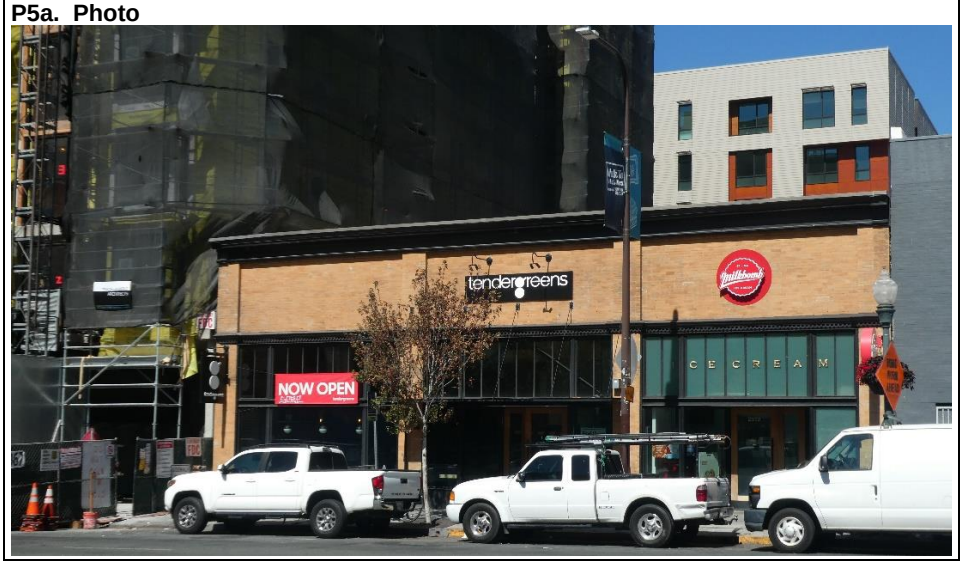
P1. Other Identifier: _____
***P2. Location:** ☐Not for Publication ☒Unrestricted ***a. County** Alameda
***b. USGS 7.5' Quad** Oakland West **Date** 2022
***c. Address** 2071 University Avenue **City** Berkeley **Zip** 94704
***e. Other Locational Data:** Assessor's Parcel Number 57-2053-4-2

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.)
The parcel at 2071 University Avenue (APN 57-2053-4-2) contains a one-story brick building with a rectangular footprint covering the south two-thirds of the parcel. The building is located north of downtown Berkeley on the north side of University Avenue, west of Shattuck Avenue **(Figure 1)**. Originally built in 1906, the building was constructed by contractor John Spencer for the property owners Simon Fischel and Jacob Bauml. No architect was listed on available records.

The one-story building is built to its east and west lot lines, includes a large back patio occupying between one quarter and one third of the lot, and is constructed primarily of brick. It features a flat roof, exposed brick, and large aluminum storefront windows with transoms, a black metal canopy below the center transom, and two painted concrete cornices; one with dentils at the roofline, and another with dentils above the transoms. Both cornices extend unbroken to the east and west edges of the primary, south façade. The storefronts and transoms are divided by four brick columns into three bays with identical dimensions. Currently, the west and central bay are occupied by the primary tenant addressed 2071 University Avenue, and the east bay is occupied by the tenant of the commercial unit at 2079 University Avenue. The sign for the subject building's primary tenant is centered above the building's primary entrance in the middle of the south façade, and the sign for the tenant of 2079 University Avenue is centered above the eastern storefront. Openings at the primary(south) façade include two single-lite wood-frame doors with single-lite wood-frame sidelights, large single-lite aluminum-frame storefront windows over black metal bulkheads, and three sets of aluminum-frame transoms **(Figure 2 through Figure 7).** The east and west façades of the building are immediately adjacent to the neighboring structures and have no visible openings. The north façade is painted stucco or concrete and is visible from some adjacent parcels (Refer to Continuation Sheet, page 2).

***P3b. Resource Attributes:** (list attributes and codes) HP6. 1-3 story commercial building
***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other

P5a. Photo



P5b. Photo: (view and date)
View of the primary façade, looking north, September 30, 2022

***P6. Date Constructed/Age and Sources:** ☒historic
1906 (Edwards Transactions Ledger)

***P7. Owner and Address:**
Edith W. Glynn Trust
444 Woodland Road
Kentfield, CA 94904

***P8. Recorded by:**
Page & Turnbull, Inc.
170 Maiden Lane, 5th Fl
San Francisco, CA 94010

***P9. Date Recorded:**
September 18, 2023

***P10. Survey Type:** Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none") None
***Attachments:** ☐None ☐Location Map ☐Sketch Map ☒Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (list)

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***P3a. Description (continued):**



Figure 1. Location of 2071 University Avenue, subject building highlighted yellow. Source: Google Earth, 2020, edited by Page & Turnbull.



Figure 2: View of primary (south) façade. Looking north across University Avenue.



Figure 3: Oblique view of south façade. Looking northwest.

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Figure 4: Detail of central storefront addressed 2071, on south façade. Looking north



Figure 5: Detail of east storefront, addressed 2079 on south façade. Looking north.



Figure 6: Detail of west third of south façade. Looking northwest.



Figure 7: Detail of brick construction and double cornice on south façade; one above transoms, one at roof line.

The north third of the subject parcel is an open-air seating area or patio, with connecting doors to both 2071 and 2079's interiors **(Figure 8).** It is currently clad in painted stucco or concrete and features large concrete planters on the west property line **(Figure 9).** The east side of the patio utilizes a ramped walkway to access the adjacent parcel to the north. Until recently this parcel was a public parking lot, but now is occupied by multi-family housing.

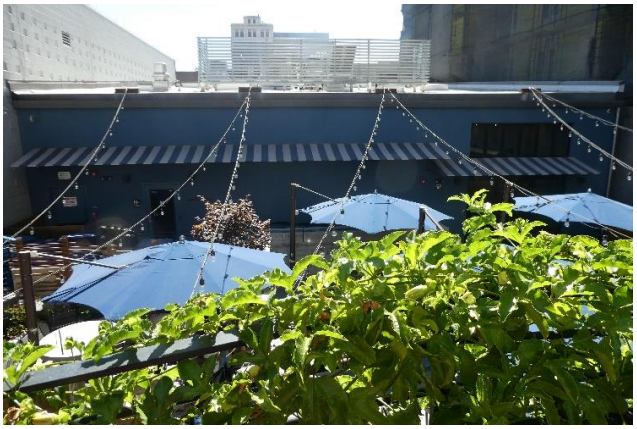

Figure 8: View of north façade and rear patio. Looking south.



Figure 9: View of west side of rear patio. Looking southwest.

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The surrounding area contains a mixture of mixed-use multi-family residential buildings and commercial buildings including retail, restaurants, and hotels. Buildings within the surrounding blocks include early to mid-twentieth century residential properties and commercial buildings, as well as several multi-story developments completed in the 2010s **(Figure 10 to Figure 16).** The adjacent western parcel is an under construction seven-story multi-family project. Further west and directly north of the subject building contemporary multi-family housing has been developed in recent years. No City of Berkeley Landmark buildings or Structures of Merit are located on the block face which includes 2071 University Avenue. The nearest Landmark building is the United Stores Realty Corporation building at 1987 Shattuck Avenue, at the northeast corner of the intersection of Shattuck and University avenues. Built in 1925, designed by Earle Bertz and Lawton & Vezey, it was designated as a City of Berkeley landmark in 1986. However, the original building was demolished in 2018. The new six-story building has incorporated a decorative metal cornice with arched clerestory window openings from the demolished landmark building into its west and south facades **(Figure 18)**. 48 Shattuck Square, at the southeast side of the intersection of University Avenue and Shattuck Square, was built in 1926, designed by architects Pflueger and Miller **(Figure 19)**.[1] It was designated a City of Berkeley Landmark in 1984. This building, the Roos Bros. building at 64 Shattuck Square, and 84 Shattuck Square form a small grouping designed by Pflueger and Miller and built in 1926, oriented toward the north-south transportation corridor along what is now Kala Bagai Way, and the downtown commercial area. The buildings at 1987 Shattuck Avenue and 48 Shattuck Square are at the northwest extent of, and are considered contributors to, a proposed Shattuck Avenue Downtown Historic District defined by Archives & Architecture in 2015.[2]Near the west end of the block face opposite 2071 University Avenue, the UC Theatre is a City of Berkeley Landmark designed by James Plachek, built in 1916, and designated in 2002 **(Figure 17)**.



Figure 10: Adjacent seven-story multi-family building and one to three story hotels, multi-family and commercial buildings west of subject parcel on University Avenue. Looking northwest.

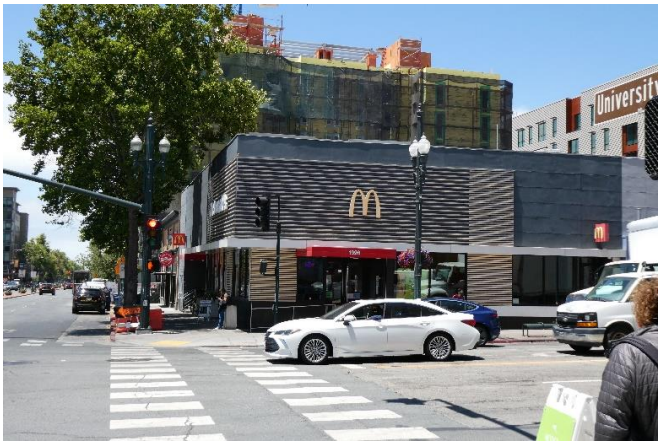

Figure 11: Adjacent two-story commercial building east of subject parcel on University Avenue. Looking west.

[1] The address 48 Shattuck Square, under which the Landmark is listed, corresponds to the current address 2000 Kala Bagai Way. 48 Shattuck Square is used in this report for consistency with Landmark documentation.
[2] Archives & Architecture, LLC, *Shattuck Avenue Commercial Corridor Historic Context and Survey* (San Jose: Prepared for the City of Berkeley, May 28, 2015).

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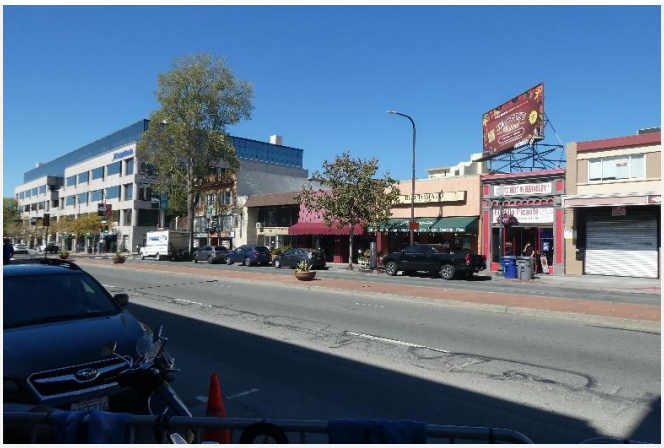

Figure 12: One and two-story office and commercial buildings west of subject parcel on University Avenue. Looking northwest.



Figure 13: The UC Berkeley Extension Building, a five-story office building at the northwest corner of University Avenue and Milvia Street. Looking northwest.



Figure 14: Recently built multi-family building at the southwest corner of University Avenue and Milvia Street. Looking southwest.

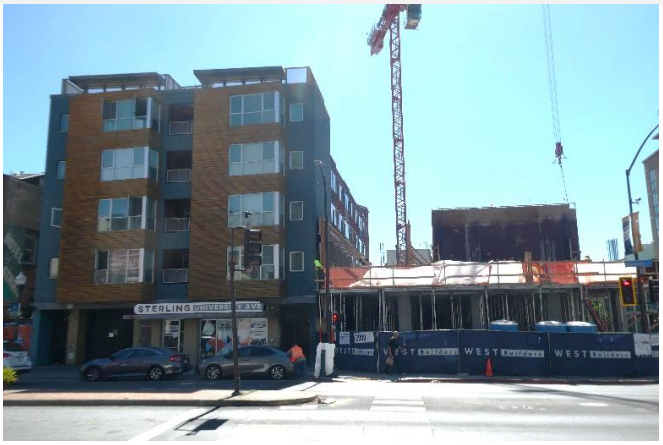

Figure 15: Recently built and under construction multi-family buildings at the southeast corner of University Avenue and Milvia Street. Looking northwest.

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Figure 16: One to three-story commercial and multi-family buildings south of the subject parcel, on the south side of University Avenue. Looking southeast.



Figure 17: Two to six-story commercial and office buildings southwest of the subject parcel, on the south side of University Avenue. Looking southeast.



Figure 18: New building with original façade elements from the United Stores Reality Corporation Building, Berkeley Landmark #70 at the northeast corner of Shattuck and University Avenue. Looking east.



Figure 19: The Shattuck Square building, Berkeley Landmark #78 at the southeast corner of University Avenue and Shattuck Avenue. Looking southeast.

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BUILDING, STRUCTURE, AND OBJECT RECORD

Page 7 **of** 17 ***NRHP Status Code** 6Z
***Resource Name or #** 2071 University Avenue

B1. Historic name: 2071 University Avenue
B2. Common name: 2071 University Avenue
B3. Original Use: Commercial
B4. Present use: Commercial
***B5. Architectural Style**: Early 20th Century Commercial
***B6. Construction History:** (Construction date, alterations, and date of alterations)

2071 University Avenue was originally built in 1906 by John Spencer in the early 20th Century Commercial style as a multi-tenant one-story building**.** According to the *Edwards Abstracts from Records* dated March 6th 1906, the owners of the property were Simon Fischel and Jacob Bauml.[3] Two major alterations were made to the subject building: at some point between 1950 and 2008, a false façade was erected in front of the two eastern storefronts to combine the space for a single tenant, Taiwan Restaurant. In 2015 and 2016, this false façade was removed and the original façade of 2071 University Avenue was repaired to its current appearance. These and other alterations are discussed in more detail below. (Refer to Continuation Sheet, page 8)

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown Date:** _____ **Original Location:**_____
***B8. Related Features:** No B9a. Architect: Unknown b. Builder: John Spencer.
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity)

Historic Context – City of Berkeley
Early Twentieth Century History of Berkeley
During the early twentieth century, particularly in the years between the 1906 Earthquake and the Great Depression, both the University of California and the town of Berkeley grew rapidly. After 1906, Berkeley became one of the largest cities in California, mostly as the result of an influx of as many as 20,000 San Francisco earthquake refugees. The construction of the Key System of ferryboats and streetcars made transportation between Oakland, Berkeley, and San Francisco quick and affordable and spurred the development of numerous residential tracts in Berkeley and Oakland. In turn, this growth brought in more customers and thereby spurred intensive commercial development in downtown Berkeley.[4]

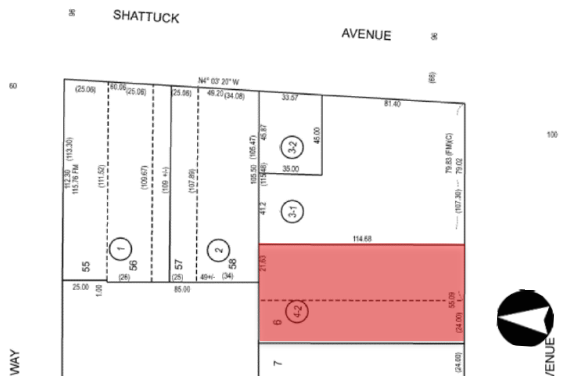
During the first decade of the twentieth century, downtown Berkeley evolved from a district of low-rise, wood-frame buildings into a substantial urban district, with numerous large masonry buildings and stately public facilities. The City Beautiful movement inspired local architects, and many buildings constructed during this era exhibited neoclassical design.

Meanwhile, the growth of the University of California under the patronage of influential people like University President Benjamin Ide Wheeler and donor Phoebe Apperson Hearst also encouraged the physical development of the city, as well as the growth of its identity and local culture. This period saw Berkeley begin to develop its reputation for progressiveness, unconventionality, and bohemianism – traits that were reflected in its architecture, especially the new First Bay Region-style houses built throughout the area that were designed by the likes of Bernard Maybeck, Julia Morgan, and John Galen Howard.[5]
(Refer to Continuation Sheet, page 9)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:** Refer to Page 17
B13. Remarks: None
***B14. Evaluator:** Page & Turnbull, Inc.
***Date of Evaluation:** September 18, 2023

Source: Alameda County Assessor's Office, 2022. Property shaded red. Modified by Page & Turnbull.



(This space reserved for official comments.)

[3] *Edwards Abstract from Records.* March 9, 1906. Accessed by the Berkeley Architectural Heritage Association.
[4] Susan Dinkelspiel Cerny, *Berkeley Landmarks*: *An Illustrated Guide to Berkeley California's Architectural Heritage* (Berkeley: Berkeley Architectural Heritage Association, 1994), 64.
[5] Charles Wollenberg, *Berkeley, A City in History*, (Berkeley, University of California Press, 2002), 78.

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***B6. Construction History (continued):**
Alterations to the subject building that are documented by permits on file at the City of Berkeley Building and Safety Division are listed in **Table 1** (below).

Table 1: Alterations to 2071 University Avenue

Permit #	Year	Address	Owner	Builder/Contractor	Description
65988	1949	2071	Maria Tong	Alt Construction Co	Replace plate glass, replace doors, build roman brick bulkheads under storefront window s
91256	1961	2071	Yee Dung Ying	Owner	Construct storage room
121671817	1971	2071	Henry Lin	Formal Building Co	New Front & Interior Repair & Alterations
211478251	1972	2071	Wieser	The Harold S. Choate Co	Repair fire damage
0710800392	1982	2071	Taiwan Restaurant	Keystone Construction Inc	Kitchen Renovations
B2015-05179	2015	2071	John Gordon/Janis Mitchell	Holland & Harley Construction	Remodel exterior façades, remove walls, fixtures, casework, remove exterior wall, renovate patio
B2015-05180	2015	2079	John Gordon/Janis Mitchell	Holland & Harley Construction	Remodel exterior façades, remove walls, fixtures, casework, remove exterior wall

Documented alterations are extensive and include the removal of all original storefront windows, transoms, and doors, and the construction of a new façade at 2071 University Avenue. Permit 65988, dated 1949, describes the removal of all original windows and doors on the primary façade, and the construction of new bulkheads under the replacement windows with roman bricks. The work described by building permit No. 121671817, dated 1971, is likely responsible for the drastically different façades depicted in photographs from 1935 and 2009 **(Figure 20 and Figure 21).** Although the 1971 permit description is extremely brief, it is the only permit with the correct scope within this time period. The two permits B2015-05179 and B2015-05180 are responsible for the renovations to the interior and exterior of the subject building resulting in its present condition. In 2015 the painted plywood façade at 2071 University Avenue, likely installed in 1971, was demolished to expose the original brick façade, and new windows, doors, transoms, and bulkheads were installed at all original openings in the primary façade.

The façade alterations designed by Trachtenberg Architects and implemented as part of the 2015 permit were recognized in 2017 by the Berkeley Architectural Heritage Association (BAHA) as a restoration and rehabilitation.[6] The historical significance of the building does not appear to have been evaluated at the time of project application and planning, and no initiation appears to have been made at this time for designation of the building as a City of Berkeley Landmark or Structure of Merit. The 2015 project does not appear to have been explicitly designed to adhere to or been evaluated according to the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, specifically the Standards for Rehabilitation, and design review was conducted at the staff level without public hearing.[7] A post-construction analysis of the 2015 project's adherence to the Standards for Rehabilitation, without a formal finding of significance, identification of a period of significance and character-defining features, and assessment of integrity prior to alteration is beyond the scope of this evaluation. However, it can be briefly noted that the façade renovation resulted in replacement of existing storefront systems with new materials compatible with the date and style of the building's original construction, with two rather than three commercial storefronts with recessed entrances. Although this is a sensitive storefront renovation which removed non-historic elements, the replacement of all storefront systems with new materials and installation of two rather than three new recessed entrances could be considered to have diminished the integrity of design and materials relative to the building's original appearance.

[6] Berkeley Architectural Heritage Association, BAHA Preservation Awards 2017, electronic resource at http://berkeleyheritage.com/awards/awards2017.1.html.
[7] City of Berkeley, Notice of Decision: Staff-Level Design Review DRSL2015-0019, 2071 University Avenue, November 20, 2015.

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Figure 20: 2071 University Avenue, circa 1935. Source: Berkeley Architectural and Historical Society.

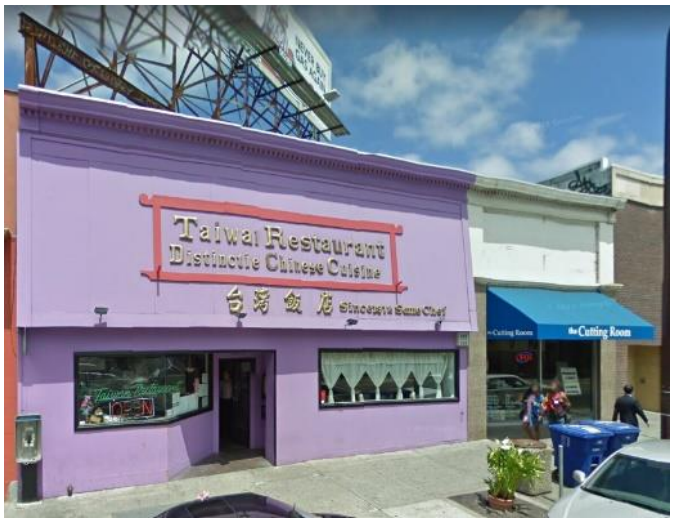

Figure 21: 2071 University Avenue, 2009. Note that the purple façade to the left, and the white and gray façade with the blue awning to the right, were both part of the subject building. Source: Google Streetview.

John Spencer, Builder

John Spencer (1846-1916) was a Swedish-born contractor who emigrated to San Francisco in the late nineteenth century. He served as the president of the Berkeley Odd Fellows' Hall Association in 1894, and conducted a brief expedition to Alaska in 1898 to find gold in the tributaries of the Yukon.[8] [9] By 1906 he returned to Berkeley in time to construct the subject building. Although newspapers describe Spencer as a "Leading Contractor" in Berkeley, little information could be found through research about his other works.[10]

*B10. Significance (continued):

Historic Context – City of Berkeley

Early Twentieth Century History of Berkeley (continued)

Commercial and civic development continued through the 1920s in downtown Berkeley, with construction of several new downtown buildings including the city's first "skyscraper" – the twelve-story Chamber of Commerce (now Wells Fargo) building at the northwest corner of Shattuck Avenue and Center Street, designed by Walter H. Ratcliff, Jr. in 1925. Located just north of the downtown core, the vicinity of the subject property was served by public transit from the first decade of the twentieth century, with a rail service on University Avenue running between Shattuck and the Southern Pacific line at the city's western bay shore.[11] The blocks between downtown Berkeley and the campus and the more industrial developments around San Pablo Avenue nearer to San Francisco Bay, filled slowly during this time, with relatively sparse commercial and residential development north of University Avenue through the 1910s and 1920s **(Figure 22 through Figure 24).** In the 1920s the blocks surrounding the subject building were occupied by commercial and residential uses, with greater density concentrated along and south of University Avenue

The Great Depression and World War II

During the Great Depression, Berkeley's suffering was somewhat minimized by the presence of the University, which continued to provide employment for many citizens, although working-class neighborhoods in West Berkeley experienced more economic strain.

World War II brought a tremendous population boom to the entire Bay Area, and Berkeley was no exception. Wartime housing projects to accommodate military personnel were constructed in Berkeley, and facilities at the University itself were commandeered for military use. Civilian numbers also grew as people relocated to Berkeley for employment at local shipyards like the Moore Drydock on the Oakland Estuary and the Kaiser shipyards in Richmond. Transportation lines and other infrastructure in Berkeley expanded to make these workers' commutes easier.

[8] "Notice of Annual Meeting." *The Berkeley Gazette.* December 31, 1894.
[9] "Local News." *The Berkeley Gazette.* May 25, 1898.
[10] "Local News."
[11] C. L. Huggins, Berkeley, California (map) (Berkeley, 1904) David Rumsey Map Collection, electronic resource at https://www.davidrumsey.com/luna/servlet/s/7s77tm, accessed April 26, 2022.

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Post-World War II

After the war, Berkeley experienced the same out-migration as many other large cities in the country, as families moved to the suburbs to take advantage of G.I. home loans and the increased ease of commuting by automobile. This led to a shift in the demographics of Berkeley, where larger working-class populations developed. G.I. benefits also resulted in soaring enrollment at the University of California, which meant that students flooded available housing around the campus. The large houses that had previously been subdivided to accommodate war workers were well-suited to housing students. By the early 1950s, the subject block was filled in with commercial developments facing University Avenue and Shattuck Avenue **(Figure 26).**

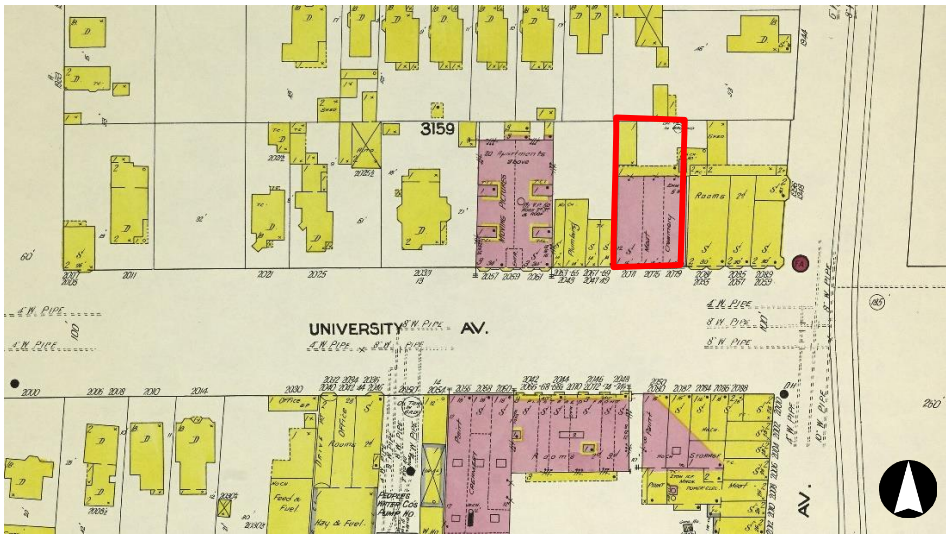

Figure 22. Detail from 1911 Sanborn Insurance Company Map for Berkeley, showing early twentieth century commercial and residential development on Shattuck and University Avenue. Future subject parcel outlined red.

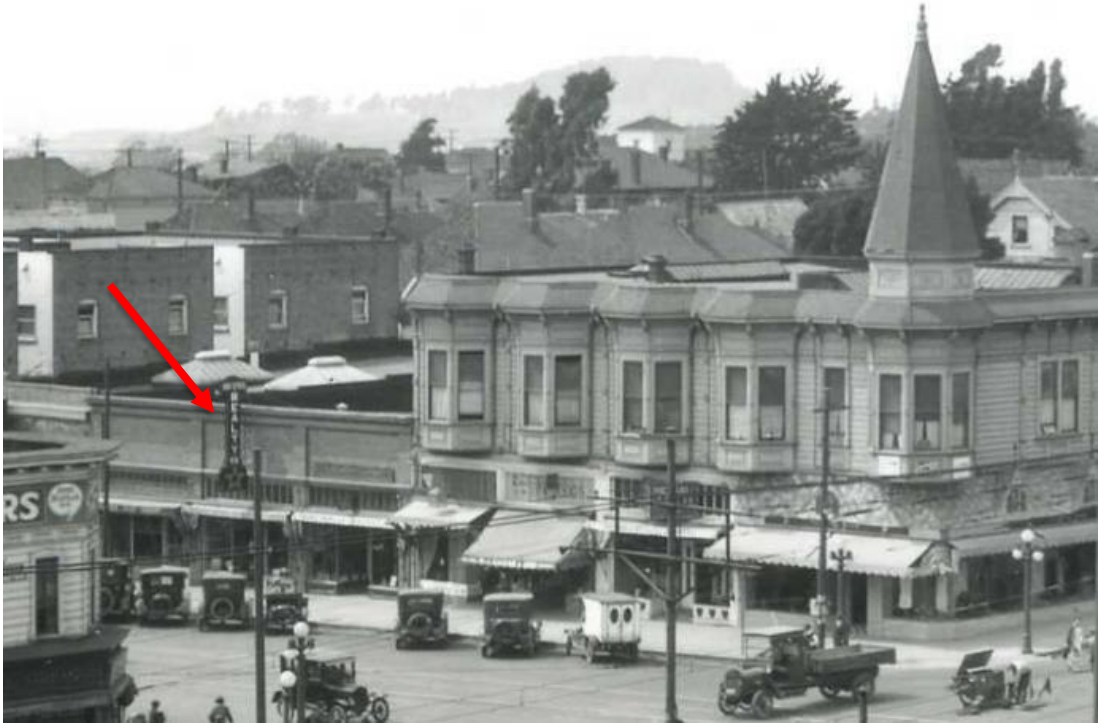

Figure 23. Historic photograph from 1920, showing early twentieth century commercial and residential development on Shattuck and University Avenue. 2071 University Avenue is at the red arrow. Source: Berkeley Historical Society.

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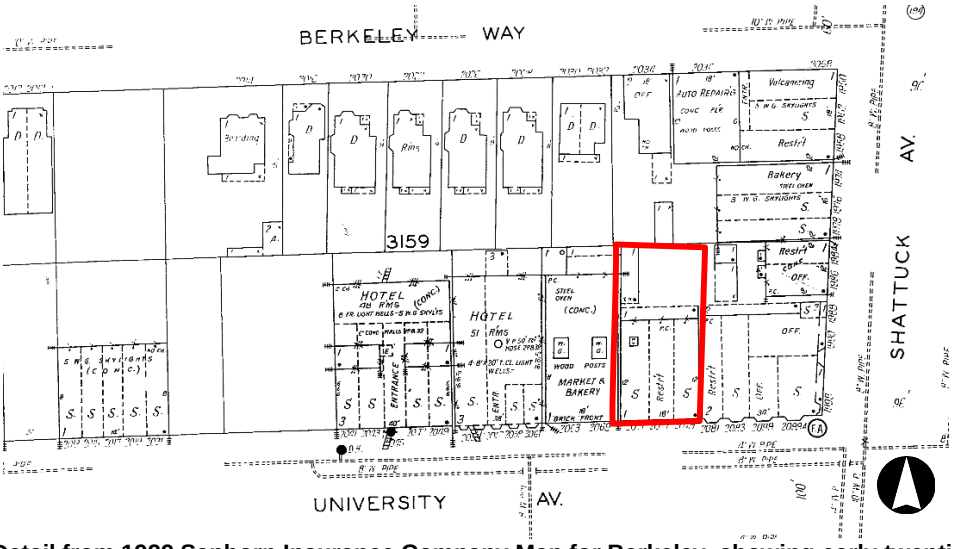

Figure 24. Detail from 1929 Sanborn Insurance Company Map for Berkeley, showing early twentieth century commercial and residential development on Shattuck and University Avenue. Subject parcel outlined red.

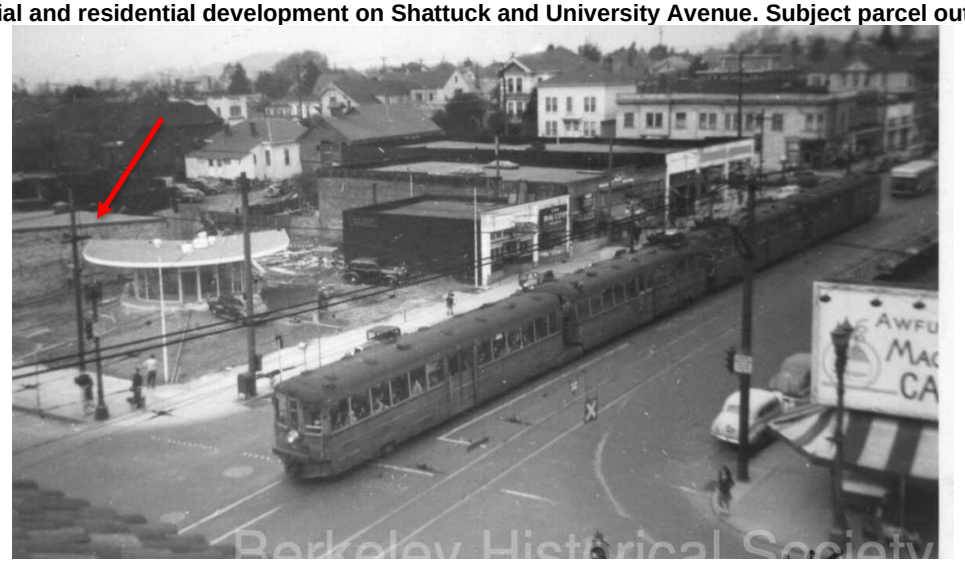

Figure 25. Historic photograph from the 1940s, showing early twentieth century commercial development on the subject block. 2071 University Avenue is partially visible, indicated by the red arrow.

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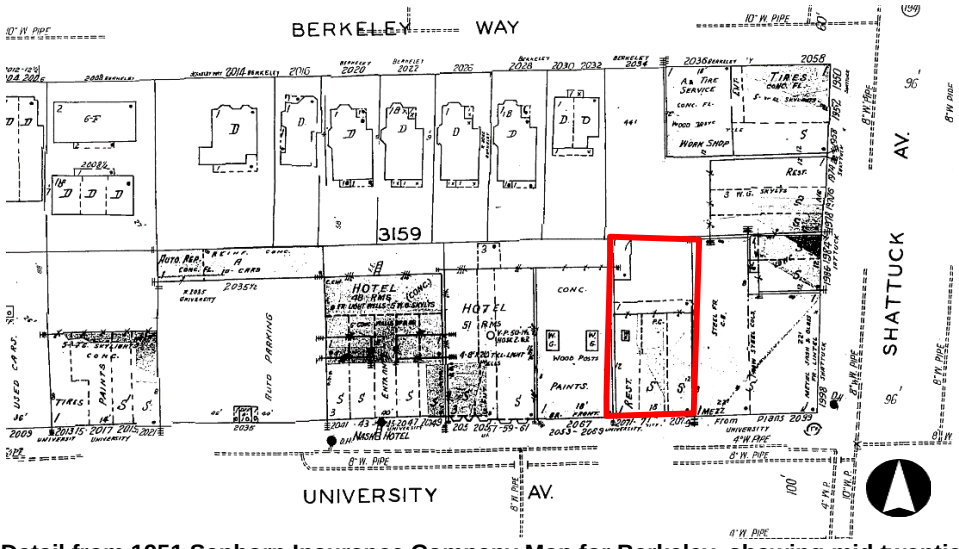

Figure 26. Detail from 1951 Sanborn Insurance Company Map for Berkeley, showing mid twentieth century commercial and residential development on Shattuck and University Avenue. Subject parcel outlined red.

In the decades following World War II, Berkeley's reputation as a liberal stronghold grew, particularly expressed by its Democratic-leaning academic community and African American and working-class populations. Civil Rights became an important topic, leading to struggles over fair-housing and segregation of schools. The Vietnam War affected the city tremendously, as it was heavily populated by young, working-class people and students who were eligible for the draft, spurring protests and demonstrations. Berkeley has remained a politically and culturally outspoken community that largely accepts and promotes progressive thinking. The University of California remains the centerpiece of the city, which is otherwise inhabited by a wide range of social, economic, and ethnic demographics.[12]

Owner History

At the time the subject building was constructed in 1906 it was owned by Simon Fischel and Jacob Bauml. The pair were well known in Berkeley for owning and operating Liberty Market since 1877, the first meat market in Berkeley.[13] Although Liberty Market once occupied the adjacent nonextant property to the east of the subject building, no direct connection between Fischel and Bauml's businesses and the subject property could be determined, and they never seemed to have used the building directly for their primary business.

Jacob Bauml died in 1932 and willed 2071 University Avenue to his wife, Lilly Bauml, who died in 1934 and willed the property to her daughter, Cora Harris. In 1964 Cora Harris died, and willed her share of the property to Edith Wieser, who by 1957 owned a partial share of the property. Edith Wieser, Jacob Bauml's granddaughter, continues to own the property through a trust to the present day.

Occupancy History

Commercial tenants at the subject property included grocers, bakers, retailers and realtors from the building's construction in 1906 through the 1950s. The subject building originally operated with three tenant spaces: 2071, 2073/2075, and 2079. However, by 1950 a restaurant operating under the name Canton Café occupied both 2071 and 2075 University Avenue and a single tenant would occupy both spaces simultaneously from then on. From at least 1950 to the present day, several restaurants under different owners and managers have occupied the space. 2079 University Avenue remained a separate tenant from the rest of the subject building from 1906 to the present day. While both the first known tenant and the most recent tenant of 2079 happen to be Ice Cream Parlors, for the majority of the subject building's history the space was occupied by a variety of retailers.

Table 3, below, lists documented commercial businesses at 2071, 2075, and 2079 University Avenue since 1906. Records were assembled through research in Alameda County Directories and historic newspaper archives.

[12] City of Berkeley, *City of Berkeley Landmark Application for the Preservation of All Souls Church, Parish Hall and Courtyard, 2220 Cedar Street, Berkeley, CA*, on file at Berkeley Architectural Heritage.
[13] "Announcement." *The Berkeley Gazette.* November 17, 1908.

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Table 3. Occupancy History, Commercial Businesses at 1974-1978 Shattuck Avenue

Address	Year(s) of Occupation	Occupant/Business Name	Use
2071	1906	Laugenor & Porter	Realty Office
	1909	Theodore Ziegler's Delicatessen	Bakery
	1912	Up-To-Date Bakery	Bakery
	1920-1930	Mae Anderson, Milliner	Retail
	1936	Styletex Hat Shop	Retail
	1949-1957	Canton Cafe	Restaurant
	1957-1972	Yee's Canton Restaurant	Restaurant
	1972-1976	Lin's Restaurant	Restaurant
	1976-2015	Taiwan Restaurant (Same owner as previous)	Restaurant
	2017-2022	Tender Greens	Restaurant
2075	1906-1907	Reed Realty	Realty Office
	1911-1914	Shuey Poultry Company	Poultry
	1925	Talbot Ware	Realty Office
	1928*	China Tea Garden	Cafe
2079	1911	Varsity Creamery Company	Ice Cream Parlor
	1936	Johnson H. A. Second Hand Books	Retail
	1950	The Electric Appliance Shop	Retail
	1964-1970	Public Finance Corp	Office
	1975-1980	Omar Khayam Oriental Rugs	Retail
	1984-2016	The Cutting Room	Hair Stylists
	2018	Ici Ice Cream	Ice Cream Parlor
	2019-2022	Milkbomb	Ice Cream Parlor

*Starting in the 1930s, the occupant of 2071 combined 2071 and 2075.

From at least 1957 to 2015, the subject building's primary tenants were Chinese restaurants owned by two separate chefs and restaurateurs: Yee Dung Ying (1903-1974), and Shui Ho Lin (1934-). Mr. Ying, born in the Canton province of China, served in the U.S. Navy for two decades before settling in Berkeley.[14] In 2071 University Avenue he operated Yee's Canton Restaurant from 1957 to 1972.

Shui Ho Lin was born in Taichung, Taipei, and immigrated to the United States in 1969.[15] He started his first restaurant, The Mandarin, by 1970 on the top floor of The Cannery in San Francisco's Fisherman's Wharf **(Figure 27).** At 2071 University Avenue, he operated Lin's Restaurant from 1972 to 1976, and Taiwan Restaurant from 1976 to 2015. Mr. Lin also opened a second location of Taiwan Restaurant from at least 1986 at 445 Clement Street in San Francisco, which is still in operation today.[16] Mr. Lin's San Francisco Taiwan Restaurant location was reviewed positively by multiple food columnists in the San Francisco Examiner in the 1990s and 2000s, notable for its clean interior, good service and excellent food at an affordable price.[17]

[14] "Restaurateur, Ying, 71, succumbs in Berkeley." *The Berkeley Gazette*. January 3, 1974.
[15] United States Naturalization Application Records. Shui Ho Lin.
[16] "Taiwan Restaurant." *The San Francisco Examiner.* October 31, 1986.
[17] "Dumpling Nirvana." *The San Francisco Examiner.* January 19, 2005.



Figure 27. Shui Ho Lin in 1970.
Source: *San Francisco Examiner*, April 13, 1970.

Evaluation

California Register Evaluation

The property at 2071 University Avenue is not currently listed in the National Register of Historic Places (National Register) or the California Register of Historical Resources (California Register). The building does not appear in the most recent version available of the State of California Office of Historic Preservation (OHP) Built Environment Resources Directory (BERD), issued March 2020, indicating that no record of a previous survey or evaluation is on file at an information center of the California Historical Resources Information System (CHRIS).[18] The subject building is not listed as a City of Berkeley Landmark or Structure of Merit.

Criterion 1 (Events)

2071 University Avenue does not appear to be individually eligible for listing in the California Register under Criterion 1 (Events). The subject property is not associated with events which made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States. The subject building was constructed in 1906 as a commercial building, at a time when commercial development in downtown Berkeley and the adjacent blocks had been ongoing for more than a decade. No significant events are known to have taken place at the subject building that would allow the building to rise to the level of significance necessary to be individually eligible for the California Register.

Criterion 2 (Persons)

2071 University Avenue does not appear to be individually eligible for listing in the California Register under Criterion 2 (Persons). The subject building was constructed for owners Simon Fischel and Jacob Bauml as a commercial building to be leased to multiple tenants. Simon Fischel and Jacob Bauml were prominent Berkeley citizens during their life and contributed to the early economy of Berkeley through the Liberty Market, founded in 1877. However, the subject building never housed the Liberty Market nor any of their other personal enterprises, and little additional information was found regarding their personal achievements as they would relate to the subject property. None of the other owners of 2071 University Avenue appear to have made significant contributions to the social and economic history of Berkeley. The most well-known and longest occupants of 2071, Shui Ho Lin's two restaurants from 1972 to 2015, were not the first Chinese restaurants in Berkeley nor the most influential, and Mr. Lin's achievements are more closely related to his other restaurants including the extant Taiwan Restaurant at 445 Clement Street in San Francisco. None of the other known businesses at 2071 University Avenue were found to have made a significant impact on local, state, or national history such that the building could be found significant under Criterion 2.

Criterion 3 (Architecture)

2071 University Avenue does not appear to be individually eligible for listing in the California Register under Criterion 3 (Architecture) as a building that embodies the distinctive characteristics of a type, period, or method of construction. Completed in 1906, erected by contractor John Spencer, the building is a typical example of an early 20th century commercial brick construction

[18] California State Office of Historic Preservation, Built Environment Resource Directory (BERD), Alameda County, updated March 2020.

designed to accommodate commercial occupants. The one-story building is quite simple in its composition, with few design elements communicating its 1906 date of construction and distinguishing it from other buildings of its type and era. 2071 University Avenue lacks the scale, complexity, or surrounding context of other buildings of its period in Berkeley such as those south along Shattuck Avenue within the Downtown Berkeley Historic District. 2071 University Avenue is similar in character and age to contributors to the nearby Downtown Berkeley Historic District, but the property lies one block north of the district's boundaries. Alteration and demolition of surrounding structures has degraded the setting of the subject property's block, thus diminishing any rationale for a northward extension of the district boundary. Although the current storefronts are appropriate for the period the building was constructed, they are not original and only the brick, cornices, and openings are original to the primary façade.

Criterion 4 (Information Potential)
2071 University Avenue does not appear to be individually eligible for listing in the California Register under Criterion 4 (Information Potential). The "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources. When California Register Criterion 4 (Information Potential) does relate to built resources, it is relevant for cases when the buildings themselves are the principal source of important construction-related information. The subject property does not appear to be individually significant under Criterion 4 as a building that has the potential to provide information important to the prehistory or history of the City of Berkeley, the state, or the nation. It does not appear to feature construction or material types, or embody engineering practices that would, with additional study, provide important information. Identification or evaluation of archaeological resources is beyond the scope of this study.

City of Berkeley Landmark and Structure of Merit Evaluation
The City of Berkeley maintains a list of properties designated as local Landmarks and Structures of Merit under Section 3.24.110 of the Berkeley Municipal Code. Much like the National and California Registers, the Municipal Code provides a number of criteria that must be met in order for a property to gain Landmark or Structure of Merit designation. Properties may be landmarked if they meet standards of architectural, cultural, educational, or historical significance, or if they are already listed in the National Register. A property may be designated as a Structure of Merit if it does not rise to the level of Landmark status, but has contextual importance and is worthy of preservation as part of a neighborhood, block or street frontage, or group of buildings that includes Landmark properties.

The designation criteria for Landmarks and Structures of Merit, and the applicability of these criteria to the subject property, are as follows:

Landmarks and Historic Districts.

1. *Architectural merit:*
   a. Property that is the first, last, only or most significant architectural property of its type in the region;
   b. Properties that are prototypes of or outstanding examples of periods, styles, architectural movements or construction, or examples of the more notable works of the best surviving work in a region of an architect, designer or master builder; or
   c. Architectural examples worth preserving for the exceptional values they add as part of the neighborhood fabric.

   Discussion: The subject building is a typical example of an early 20th century commercial building that was constructed in 1906 for use by multiple tenants. Though drastically altered by businesses operating at the building in the late 20th-century, the most recent renovation in 2015 partially restored the subject building's original appearance. The one-story commercial building has few stylistic details, and is not an early or rare example of its type in Berkeley or the East Bay. It does not demonstrate architectural merit to the extent that it would qualify as a Landmark. While attractive in its almost industrial simplicity with simple brickwork and new storefront fenestration, the building does not provide exceptional historic architectural value to the surrounding neighborhood, which is characterized by a mixture of commercial and multi-family residential buildings of varied construction dates and architectural styles, including several mid- to late-20th-century buildings. It does not appear to be a notable or best surviving work of an architect or builder of merit, or representative of a particular style or type.

2. *Cultural value:* Structures, sites and areas associated with the movement or evolution of religious, cultural, governmental, social and economic developments of the City;

   Discussion: 2071 University Avenue was used for offices, retail establishments, and restaurants during a time when this use was already a regular part of Berkeley life, and as such the building would not be eligible as a landmark for its cultural value. Research into the history of 2071 University Avenue did not identify associations with significant religious, cultural, governmental, social, or economic developments in Berkeley to a degree that would warrant recognition through historic designation.

3. *Educational value*: Structures worth preserving for their usefulness as an educational force;

Discussion: The building at 2071 University Avenue does not possess architectural qualities or significant historical associations which would contribute meaningfully to education in Berkeley. It does not uniquely represent a type or pattern of history such that its contribution to public outreach or educational curricula would be valuable.

4. *Historic value*: Preservation and enhancement of structures, sites and areas that embody and express the history of Berkeley/Alameda County/California/United States. History may be social, cultural, economic, political, religious or military;

Discussion: As discussed above with respect to California Register Criterion 1, the building at 2071 University Avenue is not documented to have been associated with significant events or patterns in the history of the city, county, state, or nation to a degree that would warrant designation as a Landmark. It does not uniquely represent a significant phase in the commercial development of downtown Berkeley, or as a noteworthy example of a business type important in the city's history.

5. Any property which is listed on the National Register described in Section 470A of Title 16 of the United States Code.

Discussion: 2071 University Avenue is not listed on the National Register.

Structures of Merit.

1. *General criteria* shall be architectural merit and/or cultural, educational, or historic interest or value. If upon assessment of a structure, the commission finds that the structure does not currently meet the criteria as set out for a landmark, but it is worthy of preservation as part of a neighborhood, a block or a street frontage, or as part of a group of buildings which includes landmarks, that structure may be designated a structure of merit.

Discussion: Consisting of buildings constructed between 1906 and the 2020s, the street frontage at the north side of University Avenue does not appear to be a cohesive grouping worthy of preservation. Until recently the buildings consist of one-story commercial blocks and mixed-use blocks reaching to three stories, though a new seven-story mixed-use building is currently under construction to the immediate west of 2071 University Avenue. As a group, the buildings at the north side of University Avenue between Shattuck Avenue and Milvia Street, particularly at the east side of the block near the subject building, does not express a particular architectural character or cohesiveness of style. Nearby landmarks include the Shattuck Square building at 48 Shattuck Square and the UC Theatre at 2018-2036 University Avenue. As a contributor to the proposed Shattuck Avenue Downtown Historic District, the Shattuck Square building is oriented toward its neighbors to the south and east, and does not form or contribute to a grouping of which the subject building is a part. Similarly, the UC Theatre building to the southwest is situated, like the subject property, in a portion of University Avenue which is characterized by a variety of building styles and construction dates representing different architectural styles from the early 20th century to the present day. The subject property does not contribute substantially to the setting of this Landmark as part of a group of buildings.

2. *Specific criteria* include, but are not limited to one or more of the following:
   a. The age of the structure is contemporary with (1) a designated landmark within its neighborhood, block, street frontage, or group of buildings, or (2) an historic period or event of significance to the City, or to the structure's neighborhood, block, street frontage, or group of buildings.
   b. The structure is compatible in size, scale, style, materials or design with a designated landmark structure within its neighborhood, block, street frontage, or group of buildings.
   c. The structure is a good example of architectural design.
   d. The structure has historical significance to the City and/or to the structure's neighborhood, block, street frontage, or group of buildings. (Ord. 5686-NS § 1 (part), 1985: Ord. 4694-NS § 3.1, 1974)

Discussion: The construction of 2071 University Avenue, built in 1906, predates that of nearby City of Berkeley Landmarks 1987 Shattuck Avenue, built in 1925 and demolished in 2018 save for a retained façade element; 48 Shattuck Square, built in 1926, and the UC Theatre at 2018-2036 University Avenue, built in 1916. While built the year of the devastating 1906 San Francisco earthquake which caused widespread damage across the Bay Area, the subject building is not documented to have been closely associated with this event in a meaningful way. The building at 2071 University Avenue is not incompatible with nearby Landmark buildings, having been present at the time of their construction and of a style typical of one-story commercial buildings, however it does not actively contribute to the settings of Landmark buildings. It is minimally visible from and when viewing the UC Theatre building approximately 200 feet to the southwest, and is not within the cohesive grouping formed by the Shattuck Square buildings of which 48 Shattuck Square is a part. The new building at 1987 Shattuck Avenue, with retained elements of the Landmark building which stood at its location prior to 2018 is visibly contemporary. With minimal architectural detail and simple, compatible yet contemporary storefront glazing, the building at 2071 University Avenue is appropriate for a pedestrian-focused urban streetscape, however it is not a distinctive or strong example of historic design relative to its period of construction. The building does not appear to have been associated with significant historical events or patterns, or to have historical significance to the block, neighborhood, or city.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # _____
HRI # _____
Trinomial _____

Page 17 **of** 17
*__Recorded by__ Page & Turnbull

Resource Name or # 2071 University Avenue
***Date** September 18, 2023 ☒ Continuation ☐ Update

The building at 2071 University Avenue does not appear to meet any of the criteria for designation as a City of Berkeley Landmark, or the general and specific criteria for designation as a Structure of Merit.

Conclusion

The commercial building at 2071 University Avenue, Berkeley, California, was constructed by John Spencer and completed in 1906 for owners Simon Fischel and Jacob Bauml. The building was used by retail and service businesses from its construction until 1950, after which it was occupied by a combination of restaurants and retail stores. This evaluation is based on a site visit and analysis of available documentation pertaining to the subject building's ownership and occupant history, chronology of construction and alterations, and architectural characteristics. The subject property does not appear to be eligible for individual listing in the California Register under any criterion, nor does it appear to be eligible for designation as a City of Berkeley Landmark or Structure of Merit. The property does not therefore appear to qualify as a historic resource for the purposes of review under the California Environmental Quality Act (CEQA). As such, the California Historical Resource Status Code (CHRSC) of "6Z" is recommended for the building, meaning that it was "Found ineligible for NR, CR or Local designation through survey evaluation."[19]

***B12. References:**

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_____. *Insurance Maps of Berkeley, California*. New York, NY: Sanborn Map Company, Volume 1, Sheet 72, 1911.

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[19] California State Office of Historic Preservation Department of Parks and Recreation, *Technical Assistance Bulletin #8: User's Guide to the California Historical Resource Status Codes & Historical Resource Inventory Directory,* Sacramento, November 2004.

1950-1958 Shattuck Avenue

City of Berkeley Comment	Page & Turnbull Response
The prepared DPR forms combine "City of Berkeley Landmark and Structure of Merit Evaluation" into one paragraph. However, the Landmarks Preservation Ordinance has different sets of criteria for Landmarks (and Historic Districts) [BMC 3.24.110.A] and Structure of Merit [BMC 3.24.110.B]. The evaluations should include assessments under each set of criteria. The assessments provided to not accurately apply City of Berkeley Structure of Merit criteria.	Evaluation revised to discuss each criterion for Landmark and Structure of Merit individually.
Since the DPR Forms have not yet been deemed complete or accepted, the NRHP Status Codes should be noted as a recommended code in the conclusion on each form as: "the California Historical Resource Status Code (CHRSC) of "6Z" is recommended for the building, meaning that it was "Found ineligible for NR, CR or Local designation through survey evaluation."	Revised to phrase as a recommendation rather than a determination.
Structure of Merit criteria has not been accurately assessed. See Global DPR Comment 1.	Evaluation revised to discuss each criterion for Landmark and Structure of Merit individually.
Was the archive at Berkeley Architectural Heritage Association (BAHA) searched for any historic photographs of the extant buildings?	Yes. Page & Turnbull visited the BAHA office on June 23, 2022 to research the history of the properties at 1950-1958, 1974-1978, 1984-1986, and 1990-1998 Shattuck Avenue. Page & Turnbull visited BAHA on October 6, 2022 to research the property at 2071 University Avenue.
No integrity assessment has been provided. The building appears to have several exterior alterations, which have been described on the DPR form. The analysis should conclude whether the extant structure(s) retain integrity from the period of significance or not.	A period of significance is typically only determined, and an integrity assessment is only provided when a property meets one or more of the significance criteria for listing. It is Page & Turnbull's opinion that the property does not meet any of the significance criteria. Additional discussion of documented and observed alterations provided in the Construction History section.
The HRE states on p. 13 of 14, under City of Berkeley Landmark or Structure of Merit Evaluation, that: "The subject property at 1950-1958 Shattuck Avenue does not appear to be eligible as a City of Berkeley Landmark. The subject building is a good example of a one-block early 20th century commercial building that was constructed for use as a multi-tenant store in 1922 and has been moderately altered for use by subsequent tenants." "Good example…" should be assessed under City of Berkeley Structure of Merit Criterion 3.24.110.B.2(c).	The Landmark and Structure of Merit evaluation has been revised. The term "good example" in the first version was perhaps too generous, as it was a typical example of its type following construction, and has since been modified. For this property, 1974-1978 Shattuck Avenue, and 2071 University Avenue our evaluation was informed in part by Michael Corbett's 2013 evaluation of the commercial block at 1951-1975 Shattuck Avenue (built 1922 and demolished 2021-2022). This was arguably a more interesting and architecturally detailed example of a one-story commercial block, but which was not recommended for designation as a Landmark or Structure of Merit.

1974-1978 Shattuck Avenue

City of Berkeley Comment	Page & Turnbull Response
The prepared DPR forms combine "City of Berkeley Landmark and Structure of Merit Evaluation" into one paragraph. However, the Landmarks Preservation Ordinance has different sets of criteria for Landmarks (and Historic Districts) [BMC 3.24.110.A] and Structure of Merit [BMC 3.24.110.B]. The evaluations should include assessments under each set of criteria. The assessments provided to not accurately apply City of Berkeley Structure of Merit criteria.	Evaluation revised to discuss each criterion for Landmark and Structure of Merit individually.
Since the DPR Forms have not yet been deemed complete or accepted, the NRHP Status Codes should be noted as a recommended code in the conclusion on each form as: "the California Historical Resource Status Code (CHRSC) of "6Z" is recommended for the building, meaning that it was "Found ineligible for NR, CR or Local designation through survey evaluation."	Revised to phrase as a recommendation rather than a determination.
As a long running business at this location in Berkeley, the possible significance of the tenant Spats should be further investigated under California Register Criterion 1 - Events, and Criterion 2 - Persons. Published news articles have documented its history and possible associations – with prominent public figures such as Robin Williams, and the Grateful Dead, and possibly as the first establishment to serve liquor in Berkeley – which should be verified and assessed by the DPR form preparer. The assessment should at a minimum study the property under the theme of Entertainment and Nightlife.	Added brief information about Oleg's and Spats. Shattuck Avenue Spats opened at the building in 1978, largely taking over the operation of the previous restaurant, Oleg's, which opened at the building in 1973. Spats was not the first establishment to serve liquor in Berkeley, nor does it appear to have been the first to serve liquor within a one-mile radius of UC Berkeley campus as a late 19th century law prohibiting such sale was relaxed during and after the 1930s. Oleg's, which operated at the location before Spats, served liquor. A brief search of news articles indicates that the Hotel Shattuck (about two blocks west of campus) served cocktails at least in 1968 (*Berkeley Daily Gazette*, November 26, 1968) and the Hotel Durant (one block south of campus) served cocktails at least in 1969 (*Berkeley Daily Gazette*, November 25, 1969). Both of these pre-date Oleg's. As, in our opinion, the question of how a business relates to Berkeley's early history of liquor prohibitions is not particularly relevant for restaurants operated in the 1970s, this has not been included in the DPR forms. With respect to patronage by celebrities, typically a property must be closely associated with the productive life of a significant person to be eligible under Criterion 2. Patronage of a business by artists or performers, particularly when not connected to the specific business'

City of Berkeley Comment	Page & Turnbull Response
	documented reputation as a meeting or gathering place (e.g. the Algonquin Hotel) or location for that artist's work, is generally insufficient for this criterion. Further, associations with the Grateful Dead (Oleg's) and Robin Williams (Spats) would need to be demonstrated as extraordinarily significant to confer significance within the last 50 years.

1984-1986 Shattuck Avenue

City of Berkeley Comment	Page & Turnbull Response
Clarify if the proposed project site excludes the parcel at 1984 Shattuck Ave. (APN 57-2053-3-2). No DPR form has been provided for the extant building on this site (current tenant: Turkish Kitchen). If it is part of the project site, a DPR Form is required with the resubmittal of the application.	The current building at 1984-1986 Shattuck Avenue was built in 1998 under permit 98-5542.

1988-1998 Shattuck Avenue

City of Berkeley Comment	Page & Turnbull Response
The prepared DPR forms combine "City of Berkeley Landmark and Structure of Merit Evaluation" into one paragraph. However, the Landmarks Preservation Ordinance has different sets of criteria for Landmarks (and Historic Districts) [BMC 3.24.110.A] and Structure of Merit [BMC 3.24.110.B]. The evaluations should include assessments under each set of criteria. The assessments provided to not accurately apply City of Berkeley Structure of Merit criteria.	Evaluation revised to discuss each criterion for Landmark and Structure of Merit individually.
Since the DPR Forms have not yet been deemed complete or accepted, the NRHP Status Codes should be noted as a recommended code in the conclusion on each form as: "the California Historical Resource Status Code (CHRSC) of "6Z" is recommended for the building, meaning that it was "Found ineligible for NR, CR or Local designation through survey evaluation."	Revised to phrase as a recommendation rather than a determination.

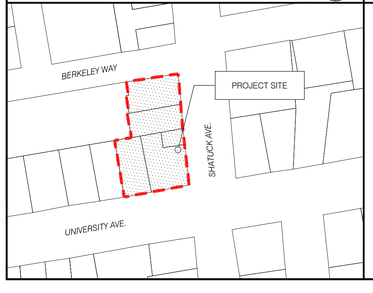
2071 University Avenue

City of Berkeley Comment	Page & Turnbull Response
The prepared DPR forms combine "City of Berkeley Landmark and Structure of Merit Evaluation" into one paragraph. However, the Landmarks Preservation Ordinance has different sets of criteria for Landmarks (and Historic Districts) [BMC 3.24.110.A] and Structure of Merit [BMC 3.24.110.B]. The evaluations	Evaluation revised to discuss each criterion for Landmark and Structure of Merit individually.

City of Berkeley Comment	Page & Turnbull Response
should include assessments under each set of criteria. The assessments provided to not accurately apply City of Berkeley Structure of Merit criteria.	
Since the DPR Forms have not yet been deemed complete or accepted, the NRHP Status Codes should be noted as a recommended code in the conclusion on each form as: "the California Historical Resource Status Code (CHRSC) of "6Z" is recommended for the building, meaning that it was "Found ineligible for NR, CR or Local designation through survey evaluation."	Revised to phrase as a recommendation rather than a determination.
The DPR form indicates that a "false façade was removed and the original façade of 2017 University Avenue was repaired to its current appearance." Further, the City of Berkeley Landmark and Structure of Merit Evaluation section adds that "the most recent renovation partially restored the subject building's original appearance" (p.14). The photographs comparing the 1935 appearance of the building (Figure 20) and the current appearance (Figure 2) appear markedly similar. A full integrity analysis should be conducted to investigate whether the extant building in its current form was restored in a manner consistent with the SOI Standards and whether it can be considered to retain sufficient integrity to convey its significance from its period of significance.	Additional discussion of 2015 alteration provided in Construction History section. A period of significance is typically only determined, and an integrity assessment is only provided when a property meets one or more of the significance criteria for listing. It is Page & Turnbull's opinion that the property does not meet any of the significance criteria. Further, an SOI Standards-compliant alteration is typically only required and implemented when a property has been found to be significant and designated and/or potentially eligible for listing at the state or national level.
Structure of Merit criteria has not been accurately assessed. City of Berkeley Landmark and Structure of Merit Evaluation (p.14) have been combined, yet they are two different sets of criteria which should be evaluated one by one. The evaluation states that "The subject building is a good example of an early 20th century commercial building…," which should be assessed under Structure of Merit Criteria 3.24.110.B.2(c).	Evaluation revised to discuss each criterion for Landmark and Structure of Merit individually.
Some of the statements in the City of Berkeley Landmark and Structure of Merit Evaluation section are arrived at without adequate explanation and as such are not justified. A complete analysis under City of Berkeley Landmark criteria [BMC 3.24.110.A] and Structure of Merit [BMC 3.24.110.B] criteria should be completed.	Evaluation revised to discuss each criterion for Landmark and Structure of Merit individually. In general, while the building became a nice element on the streetscape on this block of University Avenue following its 2015 renovation, we aren't of the opinion that its style or historic associations warrant designation as a Landmark or Structure of Merit.



VICINITY MAP



PROJECT DIRECTORY

OWNER/APPLICANT:
1974 Shattuck Ave, LLC
1958A University Ave
Berkeley, CA 94705

ARCHITECT:
Isaiah Stackhouse, Principal
TRACHTENBERG ARCHITECTS
2421 Fourth Street
Berkeley, CA 94710
510.649.1414
www.TrachtenbergArch.com

PROJECT DESCRIPTION

PROJECT ADDRESS: 1950-1998 Shattuck Ave. & 2071 University Ave. Berkeley, CA 94704
APNS:
057 205300100
057 205300200
057 205300301
057 205300302
057 205300402

SCOPE OF WORK:
REMOVAL OF EXISTING COMMERCIAL STRUCTURES & CONSTRUCTION OF A NEW 28-STORY MIXED-USE HOUSING DEVELOPMENT WITH 599 DWELLING UNITS AND A ROOFTOP RESTAURANT OVER GROUND-LEVEL COMMERCIAL AND LOBBIES, WITH STATE OF CALIFORNIA DENSITY BONUS.

DRAWING LIST

A0.0	GENERAL INFORMATION	A2.3	FLOOR PLANS	A3.12	PRELIMINARY RENDERING	I2.0	IRRIGATION PLAN SECOND FLOOR PODIUM GARDENS
A0.1	ZONING INFORMATION	A2.4	FLOOR PLANS	A3.13	PRELIMINARY RENDERING	I3.0	IRRIGATION PLAN FOURTEENTH FLOOR ROOF DECK
A0.2A	DENSITY BONUS DIAGRAMS	A2.5	FLOOR PLANS	A3.14	PRELIMINARY RENDERING	I3.1	IRRIGATION POINT OF CONNECTION
A0.2B	DENSITY BONUS DIAGRAMS	A2.6	FLOOR PLANS	A3.15	PRELIMINARY RENDERING	I4.0	IRRIGATION DETAILS
A0.4A	SHADOW STUDIES DECEMBER 21ST	A2.7	ROOF PLAN	A3.16	PRELIMINARY RENDERING	I5.0	IRRIGATION DETAILS
A0.4B	SHADOW STUDIES JUNE 21ST	A3.1	ELEVATIONS	A3.17	PRELIMINARY RENDERING	I6.0	IRRIGATION DETAILS
A0.4C	SHADOW STUDIES FEB 15TH	A3.2	ELEVATIONS	A4.1	BUILDING SECTIONS	I7.0	IRRIGATION DETAILS
A0.5	SITE CONTEXT PHOTOS	A3.3	STREET STRIP ELEVATIONS	A4.2	AWNING ENCROACHMENT DIAGRAM		
A0.6A	SURVEY	A3.4	PHOTO CONTEXT VIEWS	A5.0	CONCEPTUAL GRADING PLAN		
A0.6B	SURVEY	A3.5	PHOTO CONTEXT VIEWS	L0.0	COVER SHEET, NOTES, AND LEGEND		
A0.6C	SURVEY	A3.6	PHOTO CONTEXT VIEWS	L1.0	LANDSCAPE PLAN AT STREETSCAPE		
A1.0	EXISTING SITE PLAN	A3.7	PRELIMINARY RENDERING	L2.0	SECOND FLOOR PODIUM GARDENS		
A2.0a	FLOOR PLANS	A3.8	PRELIMINARY RENDERING	L3.0	FOURTEENTH FLOOR ROOF DECK		
A2.0b	FLOOR PLANS	A3.9	PRELIMINARY RENDERING	L3.1	USABLE OPEN SPACE CALCS & PLANTING NOTES		
A2.1	FLOOR PLANS	A3.10	PRELIMINARY RENDERING	I0.0	IRRIGATION NOTES & LEGEND		
A2.2	FLOOR PLANS	A3.11	PRELIMINARY RENDERING	I1.0	IRRIGATION PLAN AT STREETSCAPE		

TRACHTENBERG ARCHITECTS

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1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL

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JOB: 2209

SHEET:

GENERAL INFORMATION

A0.0

ZONING CODE DATA

ZONING SUMMARY TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	PROPOSED W/DENSITY BONUS	ZONING COMPLIANCE
ZONING	C-DMU Core			COMPLIES
TOTAL LOT SIZE (SQ. FT.)	28,319			COMPLIES
TOTAL LOT SIZE (ACRES)	0.65			COMPLIES
FLOOR AREA RATIO (FAR)	NA	NA	14.52	COMPLIES W/ SDB WAIVER
DWELLING UNITS (SEE TABLE)	NA	NA	599	COMPLIES
RESIDENTIAL BEDROOMS	NA	NA	709	COMPLIES
HEIGHT - FEET	60'-0"	120'	317'	COMPLIES W/ SDB WAIVER
HEIGHT - STORIES*	NA	NA	28	COMPLIES W/ SDB WAIVER
LOT COVERAGE	NA	NA	88%	COMPLIES
SETBACK - FRONT (UNIVERSITY) (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - STREET SIDE (SHATTUCK) (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - REAR (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - MAX. DIMENSION ABOVE 120'	120'	NOT LIMITED	165'	COMPLIES W/ SDB WAIVER
RESIDENTIAL PARKING (SEE TABLE)	0	0	130	COMPLIES
COMMERCIAL PARKING (SEE TABLE)	24	24	24	COMPLIES
RES. BIKE PARKING LONG TERM (SEE TABLE)	237	237	240	COMPLIES
RES. BIKE PARKING SHORT TERM (SEE TABLE)	18	18	18	COMPLIES
COM. BIKE PARKING SHORT TERM (SEE TABLE)	9	9	10	COMPLIES
RESIDENTIAL OPEN SPACE (SEE TABLE)	47,920	47,920	13,032	COMPLIES W/ SDB WAIVER
COMMERCIAL OPEN SPACE (SEE TABLE)	323	323	706	COMPLIES

* Community Benefit Required per BMC Section 23.204.130.E.2.c.

PARKING CALCULATIONS

	QNTY	CARS	PER	REQ'D	PROVIDED
RESIDENTIAL	599	0.5 MAX	1	0	130
COMMERCIAL	16,142	1.5	1,000	24	24
TOTAL					**154**

BICYCLE PARKING CALCULATIONS

	QNTY	BIKES	PER	REQ'D	PROVIDED
RESIDENTIAL (LONG TERM) (PER BEDROOM)	709	1	3	237	256
RESIDENTIAL (SHORT TERM) (PER BEDROOM)	709	1	40	18	18
COMMERCIAL (SHORT TERM) (PER SF)	16,142	1.0	2,000	9	10

ROOFTOP ARCHITECTURAL ELEMENTS CALCS

	ALLOWABLE	PROPOSED
AVERAGE AREA OF FLOORS		14,058
AREA OF ROOFTOP ARCHITECTURAL ELEMENTS	2,109	1,464
% AREA OF ROOFTOP ARCHITECTURAL FEATURES	15.0%	10.4%

OPEN SPACE CALCULATIONS

	UNITS	SF / UNIT	TOTAL REQ'D	MODIFICATION	TOTAL PROVIDED	COMMON	LANDSCAPE REQ'D (40%)	LANDSCAPE PROVIDED
RESIDENTIAL UNITS	599	80	47,920	34,888	13,032	13,032	5,213	6,735
COMMERCIAL OPEN SPACE	16,142	50	323	(383)	706			

AREA TABLE

	RESIDENTIAL	COMMERICAL	TOTAL
LEVEL 28		7,800	7,800
LEVEL 27	11,980		11,980
LEVEL 26	11,980		11,980
LEVEL 25	11,980		11,980
LEVEL 24	11,980		11,980
LEVEL 23	11,980		11,980
LEVEL 22	11,980		11,980
LEVEL 21	11,980		11,980
LEVEL 20	11,980		11,980
LEVEL 19	11,980		11,980
LEVEL 18	11,980		11,980
LEVEL 17	11,980		11,980
LEVEL 16	11,980		11,980
LEVEL 15	11,980		11,980
LEVEL 14	11,980		11,980
LEVEL 13	17,862		17,862
LEVEL 12	17,862		17,862
LEVEL 11	17,862		17,862
LEVEL 10	17,862		17,862
LEVEL 9	17,862		17,862
LEVEL 8	17,862		17,862
LEVEL 7	17,862		17,862
LEVEL 6	17,862		17,862
LEVEL 5	17,862		17,862
LEVEL 4	17,862		17,862
LEVEL 3	17,862		17,862
LEVEL 2	17,677		17,677
GROUND LEVEL	12,461	8,342	20,803
BASEMENT PARKING P1	424		424
BASEMENT PARKING P2	424		424
TOTAL	**395,188**	**16,142**	**411,330**

DWELLING UNIT TABLE

	STUDIO	2-BR	TOTAL
LEVEL 28			0
LEVEL 27	15	4	19
LEVEL 26	15	4	19
LEVEL 25	15	4	19
LEVEL 24	15	4	19
LEVEL 23	15	4	19
LEVEL 22	15	4	19
LEVEL 21	15	4	19
LEVEL 20	15	4	19
LEVEL 19	15	4	19
LEVEL 18	15	4	19
LEVEL 17	15	4	19
LEVEL 16	15	4	19
LEVEL 15	15	4	19
LEVEL 14	8	3	11
LEVEL 13	26	5	31
LEVEL 12	26	5	31
LEVEL 11	26	5	31
LEVEL 10	26	5	31
LEVEL 9	26	5	31
LEVEL 8	26	5	31
LEVEL 7	26	5	31
LEVEL 6	26	5	31
LEVEL 5	26	5	31
LEVEL 4	26	5	31
LEVEL 3	26	5	31
LEVEL 2			0
GROUND LEVEL			
TOTAL UNITS	**489**	**110**	**599**
BEDROOMS / UNIT	1	2	
TOTAL BEDROOMS	489	220	709

OPEN SPACE

6,882
6,150
-
13,032

SETBACKS TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	PROPOSED W/DENSITY BONUS	ZONING COMPLIANCE
SETBACK - FRONT (UNIVERSITY)				
0'-20'	0'	0'	2'	COMPLIES
21'-75'	0'	0'	3'-4" to 4'-4"	COMPLIES
76'-120'	15'	0'	3'-4" to 4'-4"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	3'-4" to 15'-6"	COMPLIES W/ SDB WAIVER
SETBACK - STREET SIDE (SHATTUCK)				
0'-20'	0'	0'	5'-3" to 14'-5"	COMPLIES
21'-75'	0'	0'	6'-10" to 29'-8"	COMPLIES
76'-120'	15'	0'	6'-10" to 29'-8"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	6'-10" to 60'-1"	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (<65' FROM FRONT)				
0'-20'	0'	0'	1'-6"	COMPLIES
21'-75'	0'	0'	15'	COMPLIES
76'-120'	5'	0'	15'	COMPLIES
> 120'	15'	0'	15' to 26'-6"	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (>65' FROM FRONT)				
0'-20'	0'	0'	6" to 1'-6"	COMPLIES
21'-75'	5'	0'	17'-1" to 18'-1"	COMPLIES
76'-120'	15'	0'	17'-1" to 18'-1"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	17'-1" to 18'-1"	COMPLIES W/ SDB WAIVER
SETBACK - REAR (BERKELEY WAY)				
0'-20'	0'	0'	2'	COMPLIES
21'-75'	5'	0'	6'	COMPLIES
76'-120'	15'	0'	6'	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	94'-7"	COMPLIES W/ SDB WAIVER
SETBACK - MAX. DIMENSION ABOVE 120'	120'	NOT LIMITED	165'	COMPLIES W/ SDB WAIVER

CAR SHARE CALCULATION

Number of Parking Spaces Provided
154
Minimum Number of Vehicle Sharing Spaces (3, plus one for every additional 60 spaces)
3+1 = **4**

STATE DENSITY BONUS TABLE (SEE A0.2A-B)

(SEE SHEETS A0.3A-A03.D)	
BASE PROJECT UNITS	411
PERCENT VLI UNITS PROVIDED	14%
NUMBER VLI UNITS PROVIDED (ROUNDS UP)	58
BONUS PERCENTAGE	46.25%
NUMBER BONUS UNITS (ROUNDS UP)	191
MAXIMUM DENSITY BONUS PROJECT	602
PROPOSED DENSITY BONUS PROJECT	599

LIST OF USE PERMITS AND AUP'S

PROPOSED DENSITY BONUS PROJECT USE PERMITS:

- Use Permit for construction for demolition of a non-residential building, under 23.326.070(A)
- Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Administrative Use Permit under BMC Section 23.304.050(A) to exceed building height limits with rooftop architectural elements which exceed the maximum height limit for the district.
- Use Permit under BMC Section 23.204.130.E.2 to construct a building that exceeds the district height limit, and that is over 75 feet but not more than 120 feet (Base Project).
- Use Permit under BMC Section 23.204.130.E.3(b) to modify front, side, and rear setback requirements
- Use Permit under BMC Section 23.204.130.E.3(b) to exceed 120 feet in width in diagonal measurement
- Use Permit under BMC Section 23.204.E.6 to pay a fee in lieu of providing privately owned public open space.
- Density Bonus with the following requested reductions, waivers and concessions below.

LIST OF DENSITY BONUS WAIVERS (SEE A0.2A-B)

- Waiver to increase the maximum building height from the base project maximum density height allowed with UP's and AUP's under the zoning ordinance of 120' (under BMC 23.204.130.E.2) to a density bonus height of 316' to accommodate the density bonus units.
- Waiver to allow a reduction in the required setbacks under BMC Section 23.204.130.E.3(b) to physically accomodate the density bonus units.
- Waiver to reduce the minimum required residential usable open space under BMC 23.204.130.E.4 to allow the construction of the density bonus units.

LIST OF DENSITY BONUS CONCESSIONS (SEE A0.2A-B)

- Athough the project is eligible for 2 concessions as a project that is providing 14% of the base units as Very-Low-Income Units, the project is not proposing any concessions.

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12.12.2022 SB-330 SUBMITTAL
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07.18.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL

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JOB: 2209

SHEET:

ZONING INFORMATION

A0.1

BASE PROJECT ZONING COMPLIANCE TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	CODE SECTION	PROPOSED BASE PROJECT	ZONING COMPLIANCE
ZONING	C-DMU Core				COMPLIES
TOTAL LOT SIZE (SQ. FT.)	28,319				COMPLIES
TOTAL LOT SIZE (ACRES)	0.65				COMPLIES
FLOOR AREA RATIO (FAR)	NA	NA		NA	COMPLIES
DWELLING UNITS (SEE TABLE)	NA	NA		411	COMPLIES
RESIDENTIAL BEDROOMS	NA	NA		446	COMPLIES
HEIGHT - FEET	60'-0"	120'-0"	23.204.130.E.2	120'-0"	COMPLIES
HEIGHT - STORIES	NA	NA		11	COMPLIES
LOT COVERAGE	NA	NA		0%	COMPLIES
SETBACK - FRONT (UNIVERSITY)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - STREET SIDE (SHATTUCK)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - INTERIOR SIDE	0' to 15'	0'	23.204.130.E.3(b)	0' to 6'	COMPLIES
SETBACK - REAR (BERKELEY WAY)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - MAX. DIMENSION ABOVE 120'	NA	NA			COMPLIES
RESIDENTIAL PARKING (SEE TABLE)	0	0		0	COMPLIES
COMMERCIAL PARKING (SEE TABLE)	25	0		0	COMPLIES
RES. BIKE PARKING LONG TERM (SEE TABLE)	149	149		152	COMPLIES
RES. BIKE PARKING SHORT TERM (SEE TABLE)	12	12		12	COMPLIES
COM. BIKE PARKING SHORT TERM (SEE TABLE)	9	9		9	COMPLIES
RESIDENTIAL OPEN SPACE (SEE TABLE)	32,880	32,880		33,950	COMPLIES
COMMERCIAL OPEN SPACE (SEE TABLE)	338	338		338	COMPLIES

LIST OF BASE PROJECT USE PERMITS AND AUP'S

Per August 2, 2021 Memorandum on Policy Changes to Objective Standards, HAA and Density Bonus

- Use Permit for construction for demolition of a non-residential building, under 23.326.070(A)
- Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Administrative Use Permit under BMC Section 23.304.050(A) to exceed building height limits w/ rooftop architectura elements.
- Use Permit under BMC Section 23.204.130.E.2 to construct a building up to 120 feet.
- Use Permit under BMC Section 23.204.130.E.3(b) to modify front, side, and rear setback requirements

PARKING CALCULATIONS

	QNTY	CARS	PER	REQ'D	PROVIDED
RESIDENTIAL	411	0	1	0	0
COMMERCIAL	16920	1.5	1,000	25	25

BICYCLE PARKING CALCULATIONS

	QNTY	BIKES	PER	REQ'D	PROVIDED
RESIDENTIAL (LONG TERM) (BEDROOMS)	446	1	3	149	152
RESIDENTIAL (SHORT TERM) (BEDROOMS)	446	1	40	12	12
COMMERCIAL (SHORT TERM)	16,920	1.0	2,000	9	9

OPEN SPACE CALCULATIONS

	UNITS	SF / UNIT	TOTAL REQ'D
RESIDENTIAL REQUIREMENT	411	80	32,880
TOTAL PROVIDED			33,950
ROOF DECK			25,630
BALCONIES (MAX 50%)	104	80	8,320
COMMERCIAL OPEN SPACE	16,920	50	338

ROOFTOP ARCHITECTURAL ELEMENTS CALCULATIONS

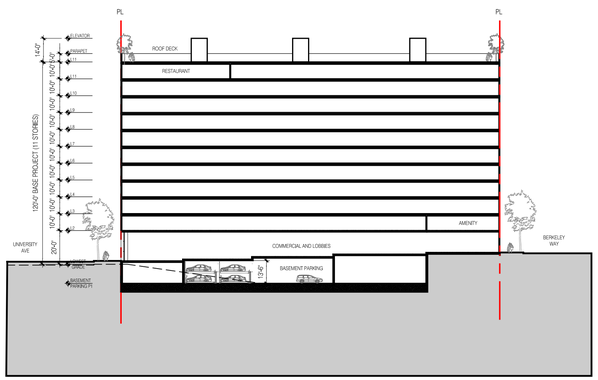
	ALLOWABLE	PROPOSED
AVERAGE AREA OF FLOORS	23,968	
AREA OF ROOFTOP ARCHITECTURAL ELEMENTS	3,595	600
% AREA OF ROOFTOP ARCHITECTURAL FEATURES	15.0%	2.5%

AREA TABLE

	RESIDENTIAL	COMMERICAL	TOTAL
LEVEL 11	18,430	7,800	26,230
LEVEL 10	26,230		26,230
LEVEL 9	26,230		26,230
LEVEL 8	26,230		26,230
LEVEL 7	26,230		26,230
LEVEL 6	26,230		26,230
LEVEL 5	26,230		26,230
LEVEL 4	26,230		26,230
LEVEL 3	26,230		26,230
LEVEL 2	26,230		26,230
GROUND LEVEL	15,922	9,120	25,042
BASEMENT P1	275		275
TOTAL	**270,697**	**16,920**	**287,617**

DWELLING UNIT TABLE

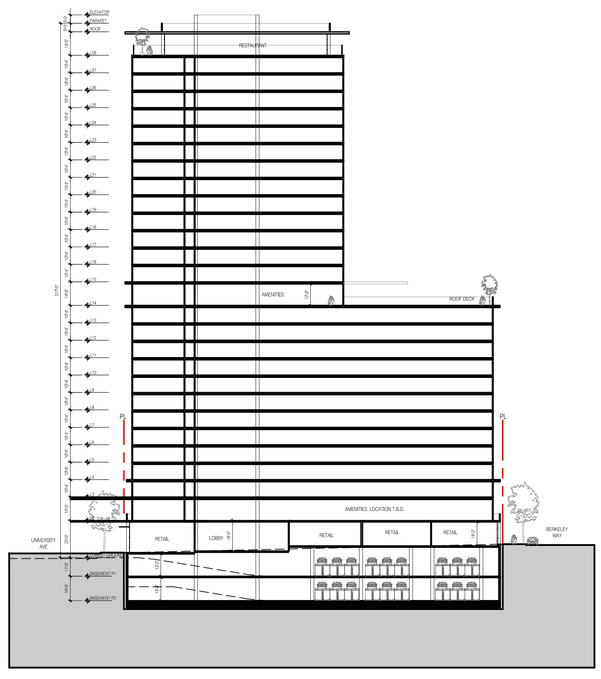
	STUDIO	2-BR	TOTAL
LEVEL 11	28	2	30
LEVEL 10	41	4	45
LEVEL 9	41	4	45
LEVEL 8	41	4	45
LEVEL 7	41	4	45
LEVEL 6	41	4	45
LEVEL 5	41	4	45
LEVEL 4	41	4	45
LEVEL 3	41	4	45
LEVEL 2	20	1	21
GROUND LEVEL			
TOTAL UNITS	**376**	**35**	**411**
BEDROOMS / UNIT	1	2	
TOTAL BEDROOMS	376	70	446


PL
PL
ELEVATOR
PARAPET
ROOF DECK
RESTAURANT
AMENITY
COMMERCIAL AND LOBBIES
BASEMENT PARKING
UNIVERSITY AVE
BERKELEY WAY
120'-0" BASE PROJECT (11 STORIES)
14'-0"
10'-0"
10'-0"
10

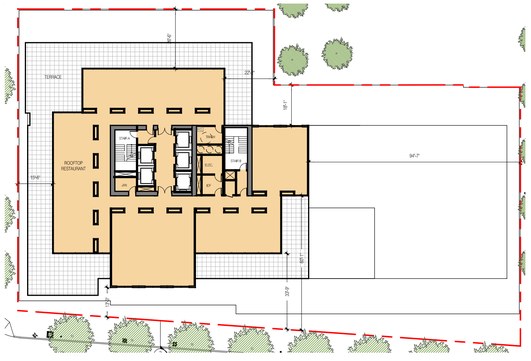
DENSITY BONUS TABLE

Base Project	Base	Base # Units	% VLI units	# VLI Units*	Bonus %	# DB Units	Maximum DB Project
sq. ft. - see calculation below	base project area / proposed avg. unit size	Base Units (rounds up)	VLI = Very Low Income <50 AMI	% VLI x Base # Units (rounds up)		%Bonus x Base # Units (rounds up)	Base + Bonus # Units
270,697	410.30	411	14%	58	46.25%	191	602

Base Project				Proposed Density Bonus Project		
Res GFA	Comm. GFA	Units	Floor	Res GFA	Comm. GFA	Units
			Level 28		7,800	
			Level 27	11,980		19
			Level 26	11,980		19
			Level 25	11,980		19
			Level 24	11,980		19
			Level 23	11,980		19
			Level 22	11,980		19
			Level 21	11,980		19
			Level 20	11,980		19
			Level 19	11,980		19
			Level 18	11,980		19
			Level 17	11,980		19
			Level 16	11,980		19
			Level 15	11,980		19
			Level 14	11,980		11
			Level 13	17,862		31
			Level 12	17,862		31
18,430	7,800	30	Level 11	17,862		31
26,230		45	Level 10	17,862		31
26,230		45	Level 9	17,862		31
26,230		45	Level 8	17,862		31
26,230		45	Level 7	17,862		31
26,230		45	Level 6	17,862		31
26,230		45	Level 5	17,862		31
26,230		45	Level 4	17,862		31
26,230		45	Level 3	17,862		31
26,230		21	Level 2	17,677		
15,922	8,342		Level 1	12,461	8,342	
275			Basement P1	424		
			Basement P2	424		
270,697	**16,142**	**411**	**Total**	**395,188**	**16,142**	**599**
659			**Avg. Unit Size**	**660**		



PROPOSED PROJECT SECTION



PLAN AT LEVEL 28



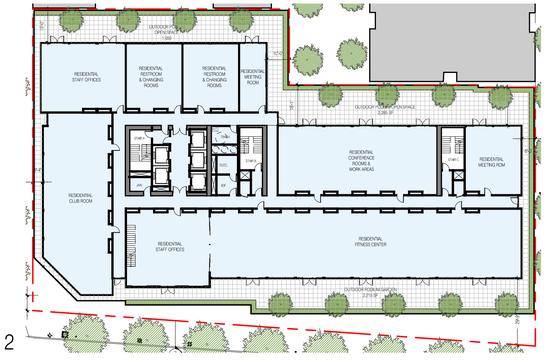
PLAN AT LEVELS 15-27



PLAN AT LEVEL 14



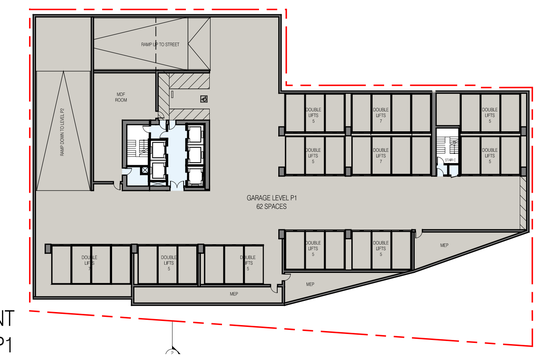
PLAN AT LEVELS 3-13



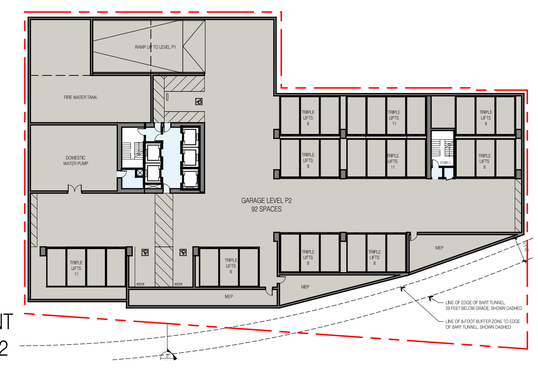
PLAN AT LEVEL 2



PLAN AT GROUND LEVEL



PLAN AT BASEMENT PARKING LEVEL P1



PLAN AT BASEMENT PARKING LEVEL P2

PROPOSED PROJECT PLANS

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SHEET:

DENSITY BONUS PROPOSED PROJECT

A0.2B

WINTER SOLSTICE
DEC 21ST:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

N

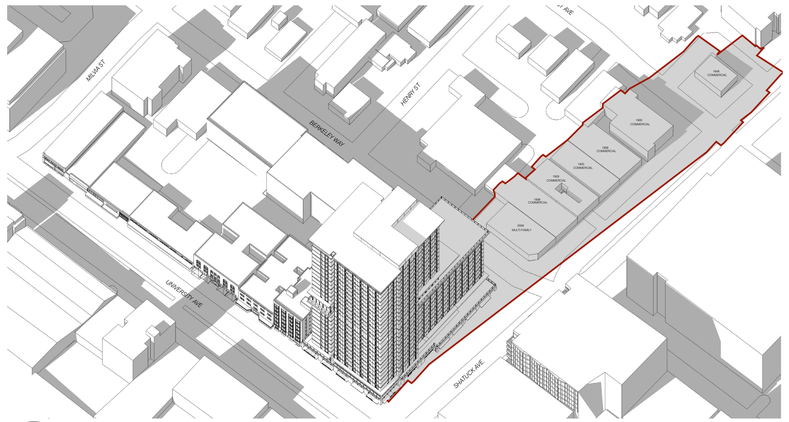
WINTER SOLSTICE
DEC 21ST:
NOON

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

N

WINTER SOLSTICE
DEC 21ST:
2-HRS AFTER SUNRISE (AM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

N

TRACHTENBERG
ARCHITECTS

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07.18.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL

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JOB: 2209

SHEET:

SHADOW STUDIES
DECEMBER 21ST

A0.4A

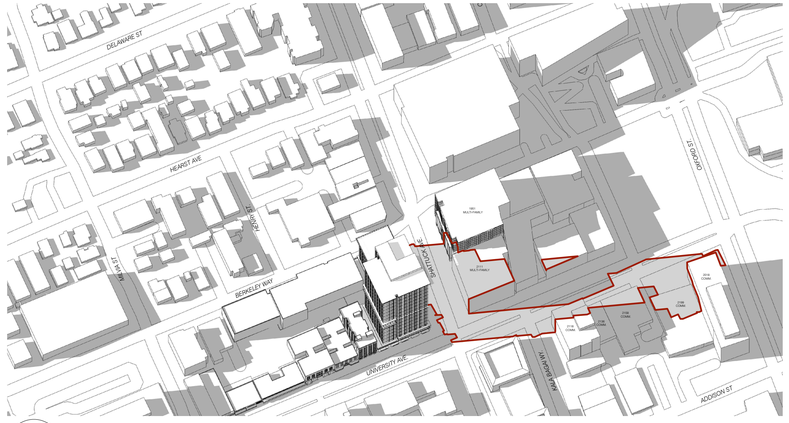
SUMMER SOLSTICE
JUN 21ST:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

N

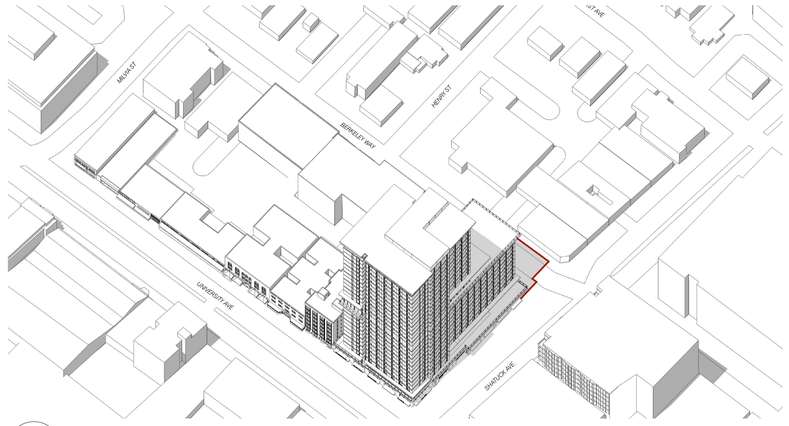
SUMMER SOLSTICE
JUN 21ST:
NOON

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

N

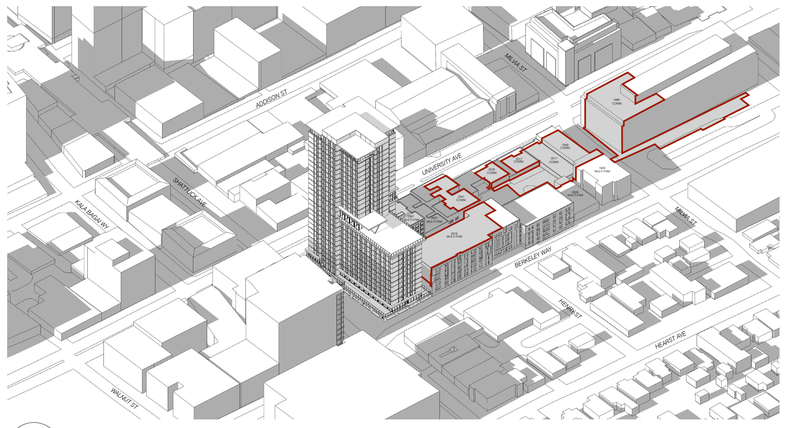
SUMMER SOLSTICE
JUN 21ST:
2-HRS AFTER SUNRISE (AM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

N

TRACHTENBERG
ARCHITECTS

2421 Fourth Street
Berkeley, California 94710
510.649.1414
www.TrachtenbergArch.com

1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL

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JOB: 2209

SHEET:

SHADOW STUDIES
JUNE 21ST

A0.4B

CURRENT
FEBRUARY 15TH:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

N

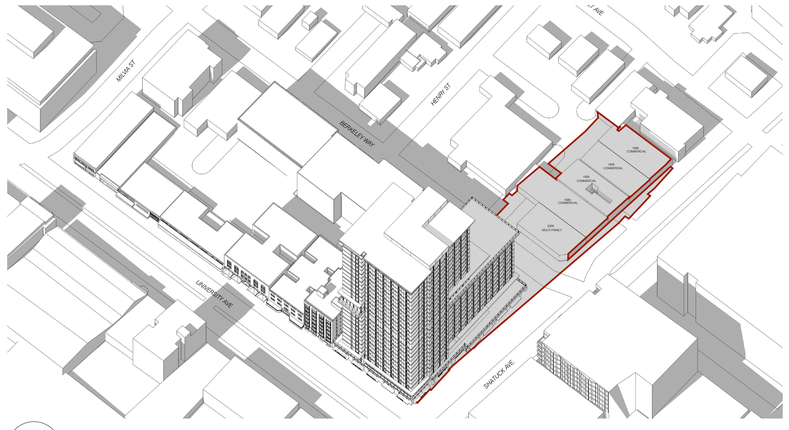
CURRENT
FEBRUARY 15TH:
NOON

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

N

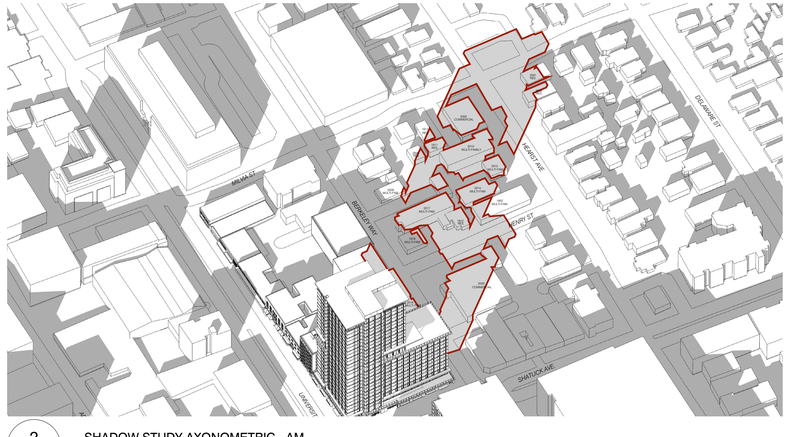
CURRENT
FEBRUARY 15TH:
2-HRS AFTER SUNRISE (AM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

N

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11.15.2023 ZONING RESUBMITTAL

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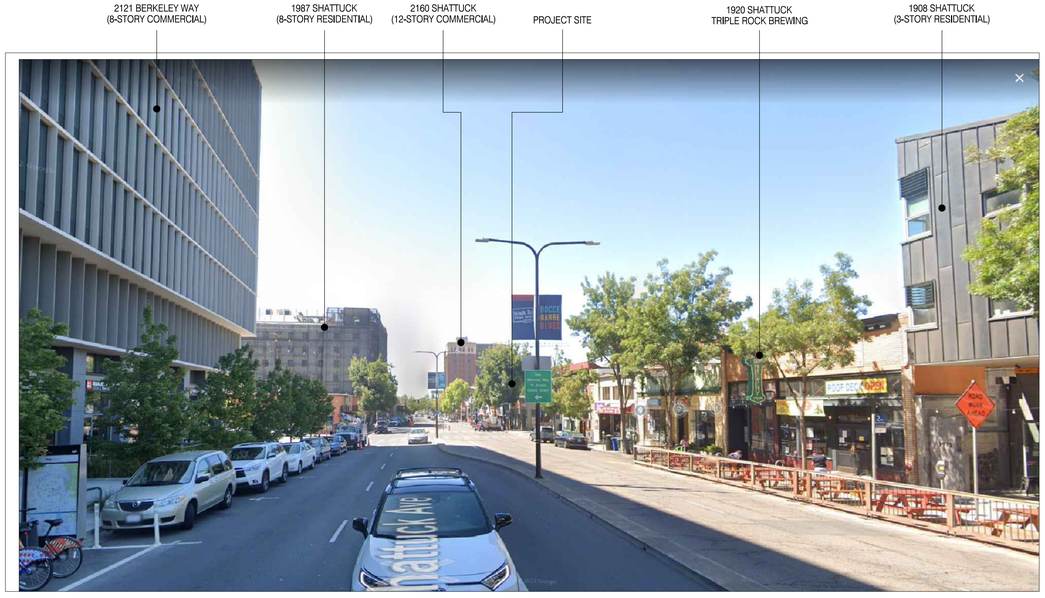
JOB: 2209

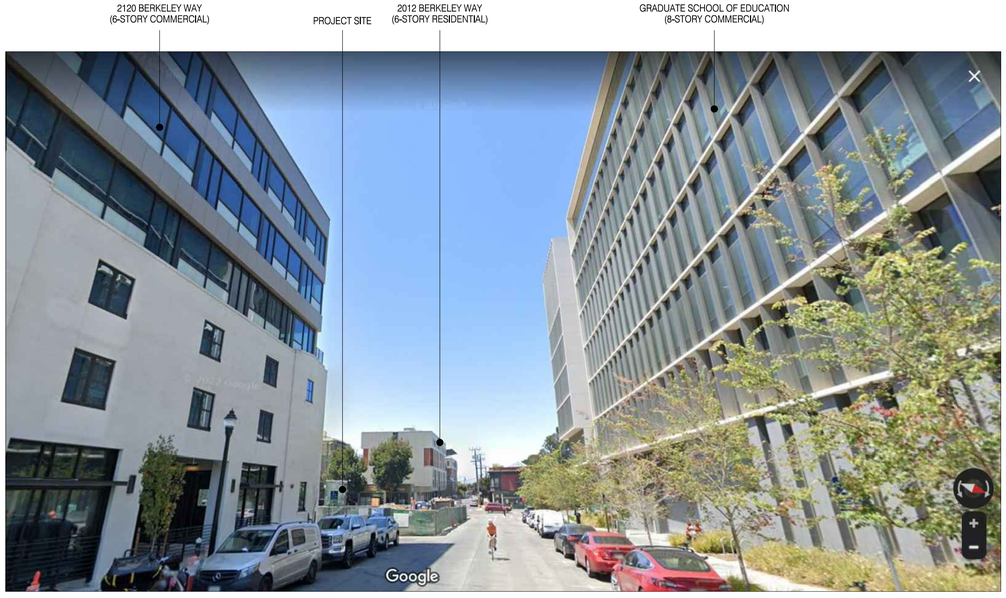
SHEET:

SHADOW STUDIES
FEB 15TH

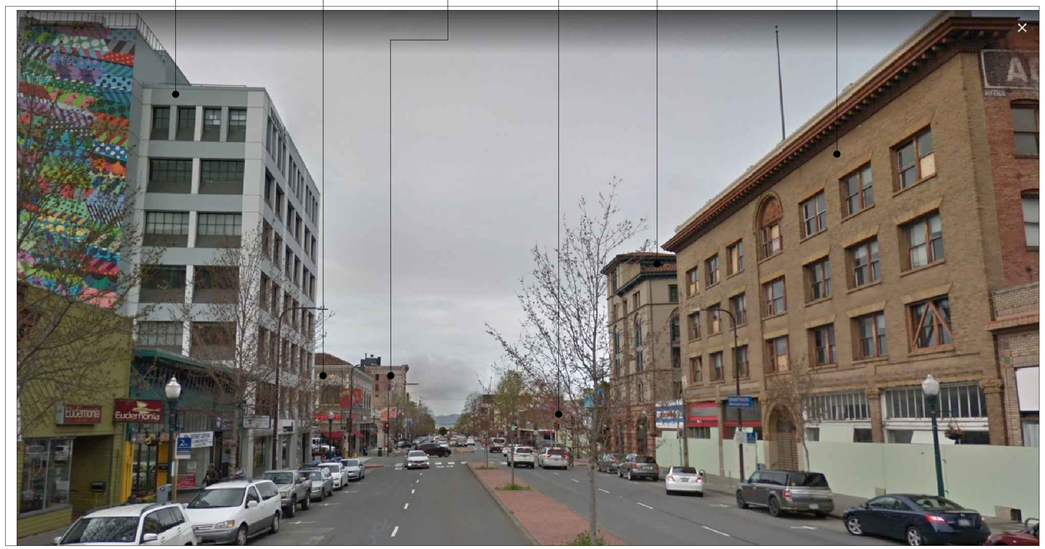
A0.4C



4 - VIEW FROM SHATTUCK LOOKING SOUTH



2 - VIEW FROM BERKELEY WAY LOOKING WEST



3 - VIEW FROM UNIVERSITY LOOKING WEST



1 - GOOGLE EARTH BIRD'S EYE CONTEXT VIEW

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07.18.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL

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JOB: 2209

SHEET:

SITE CONTEXT PHOTOS

A0.5

TITLE REPORT (1950 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170261-36--JM, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR1"

TITLE TO SAID ESTATE IS VESTED IN: (1950 SHATTUCK)

JILLIAR, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1950 SHATTUCK)

FEE

LEGAL DESCRIPTION (1950 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE WESTERN LINE OF SHATTUCK AVENUE, WITH THE SOUTHERN LINE OF BERKELEY WAY, AS SAID AVENUE AND WAY ARE SHOWN ON THE MAP HEREINAFTER REFERRED TO; RUNNING THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE, 60.06 FEET; THENCE WESTERLY PARALLEL WITH SAID LINE OF BERKELEY WAY, 109 FEET, MORE OR LESS, TO THE EASTERLY BOUNDARY LINE OF THE LAND DESCRIBED IN THE DEED EXECUTED BY F. D. CHASE AND ATLANTA U. CHASE, HIS WIFE, TO JACOB BAUM, DATED JULY 28, 1922, AND RECORDED IN LIBER 324 OF OFFICIAL RECORDS, AT PAGE 73, ALAMEDA COUNTY RECORDS; THENCE AT RIGHT ANGLES NORTHERLY ALONG SAID LAST NAMED BOUNDARY LINE 35 FEET, MORE OR LESS, TO THE SOUTHERN BOUNDARY LINE OF LOT 55, AS SAID LOT IS SHOWN ON THE SAID MAP; THENCE AT RIGHT ANGLES EASTERLY 8 INCHES; THENCE AT RIGHT ANGLES NORTHERLY PARALLEL WITH THE WESTERLY BOUNDARY LINE OF SAID LOT 55, AFORESAID, 25 FEET TO THE SOUTHERN LINE OF BERKELEY WAY; THENCE EASTERLY ALONG SAID LINE OF BERKELEY WAY, 112.30 FEET TO THE POINT OF BEGINNING.

BEING PORTIONS OF LOTS NOS. 55, 56 AND 57, AS SAID LOTS ARE DELINEATED AND AS DESIGNATED UPON THAT CERTAIN MAP ENTITLED, 'MAP OF COLLEGE TRACT, BERKELEY;' FILED JANUARY 31, 1890, IN LIBER 9 OF MAPS, PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

APN: 057-2053-001

EXCEPTIONS TO TITLE (1950 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS:, DISTRICT NO 2014-1, FOR CLEAN ENERGY DISCLOSED BY : ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR1 EXC. 3 – NOT PLOTTABLE).
2. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, RECORDED MAY 16, 1966 IN BOOK 1768 OF OFFICIAL RECORDS, PAGE 944 UNDER RECORDER'S SERIAL NUMBER AY61475, AFFECTS A PORTION (PTR1 EXC. 5 – PLOTTED).

TITLE REPORT (1974 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170261-35--JM, EFFECTIVE DATE SEPTEMBER 26, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR2"

TITLE TO SAID ESTATE IS VESTED IN: (1974 SHATTUCK)

1974 SHATTUCK AVENUE, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1974 SHATTUCK)

FEE

LEGAL DESCRIPTION (1974 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WESTERN LINE OF SHATTUCK AVENUE, DISTANT THEREON SOUTHERLY, 60.6 FEET FROM THE POINT OF INTERSECTION THEREOF, WITH THE SOUTHERN LINE OF BERKELEY WAY, AS SAID AVENUE AND WAY ARE SHOWN ON THE MAP HEREIN REFERRED TO; RUNNING THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE, 49.20 FEET; THENCE WESTERLY AND PARALLEL WITH SAID LINE OF BERKELEY WAY, 105.50 FEET, MORE OR LESS, TO A POINT WHICH WOULD BE INTERSECTED BY A LINE DRAWN SOUTHERLY FORM AND AT RIGHT ANGLES TO SAID LINE BERKELEY WAY FROM A POINT DISTANT THEREON, 113.30 FEET WESTERLY FROM THE WESTERN LINE OF SHATTUCK AVENUE; THENCE AT RIGHT ANGLES NORTHERLY, 49 FEET, MORE OR LESS, TO A POINT WHICH WOULD BE INTERSECTED BY A LINE DRAWN WESTERLY FROM SAID POINT OF BEGINNING AND PARALLEL WITH BERKELEY WAY; THENCE EASTERLY ALONG SAID PARALLEL LINE, 109 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

BEING A PORTION OF LOTS 57 AND 58, AS SAID LOTS ARE SHOWN ON THE "MAP OF THE COLLEGE TRACT, BERKELEY", FILED JANUARY 31, 1890, IN BOOK 9 OF MAPS, PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

APN: 057-2053-002

EXCEPTIONS TO TITLE (1974 SHATTUCK)

1. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING, GRANTED TO BAY AREA RAPID TRANSIT DISTRICT, A RAPID TRANSIT DISTRICT, FOR UNDERGROUND RAPID TRANSIT TUNNEL FACILITIES, RECORDED SEPTEMBER 23, 1966 IN BOOK 1846 OF OFFICIAL RECORDS, PAGE 53 UNDER RECORDER'S SERIAL NUMBER AY--111314 (PTR2 EXC. 4 – PLOTTED)

TITLE REPORT (1984 & 1998 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170254-33--JM, 1ST UPDATE, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR3"

TITLE TO SAID ESTATE IS VESTED IN: (1984 & 1998 SHATTUCK)

FIFTH KOII, CO., A CALIFORNIA CORPORATION

THE ESTATE OR INTEREST IN THE LAND IS: (1984 & 1998 SHATTUCK)

FEE

LEGAL DESCRIPTION (1984 & 1998 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

COMMENCING AT THE POINT OF INTERSECTION OF THE NORTHERN LINE OF UNIVERSITY AVENUE WITH THE WESTERN LINE OF SHATTUCK AVENUE AS SAID AVENUES NOW EXISTS; THENCE WESTERLY ALONG THE NORTHERN LINE OF UNIVERSITY AVENUE 79.00 FEET; THENCE AT RIGHT ANGLES NORTHERLY 114.68 FEET, MORE OR LESS, TO THE SOUTHERN LINE OF THE LAND NOW OR FORMERLY OF JOHN H. BOHLIG AND LOTTA BOHLIG; THENCE EASTERLY AND ALONG SAID LINE 87.07 FEET TO THE WESTERN LINE OF SHATTUCK AVENUE; THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE 114.97 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

APN'S: 057-2053-003-01 AND 057-2053-003-02

EXCEPTIONS TO TITLE (1984 & 1998 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014-1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR3 EXC. 4 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO PBD-2016, FOR BERKELEY DOWNTOWN PBD-2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR3 EXC. 5 – NOT PLOTTABLE).
3. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, DATED APRIL 6, 1967, RECORDED MAY 10, 1967 IN REEL 1961 OF OFFICIAL RECORDS, IMAGE 330 UNDER RECORDER'S SERIAL NUMBER AZ 43339, AFFECTS A PORTION OF THE PREMISES, THE PRESENT OWNERSHIP OF SAID EASEMENT AND OTHER MATTERS AFFECTING THE INTERESTS THERETO, IF ANY, ARE NOT SHOWN HEREIN (PTR3 EXC. 7 – PLOTTED).
4. A NOTICE AS FOLLOWS, ENTITLED NOTICE OF ASSESSMENT – DOWNTOWN BERKELEY PBD, BY CITY OF BERKELEY, DATED AUGUST 25, 2011, RECORDED AUGUST 30, 2011 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2012148358 (PTR3 EXC. 8 – NOT PLOTTABLE).

TITLE REPORT (2701 UNIVERSITY)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170261-37--JM, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR4"

TITLE TO SAID ESTATE IS VESTED IN: (2701 UNIVERSITY)

EDITH WIESER GLYNN, TRUSTEE OF THE EDITH WIESER GLYNN TRUST

THE ESTATE OR INTEREST IN THE LAND IS: (2701 UNIVERSITY)

FEE

LEGAL DESCRIPTION (2701 UNIVERSITY)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTHERN LINE OF BERKELEY WAY, AS SHOWN UPON THE MAP HEREINAFTER REFERRED TO, DISTANT THEREON ONE HUNDRED FIFTEEN AND 46/100 FEET WESTERLY FROM THE INTERSECTION THEREOF WITH THE WESTERN LINE OF SHATTUCK AVENUE AS ESTABLISHED BY BOARD OF TRUSTEES OF THE TOWN OF BERKELEY, JAN. 18, 1892, BY ORDINANCE NO. 387, SAID POINT BEING ONE FOOT EASTERLY ON SAID LINE OF BERKELEY WAY FROM THE LINE DIVIDING LOTS NUMBERED 54 AND 55 ACCORDING TO SAID MAP; RUNNING THENCE WESTERLY ALONG SAID LINE OF BERKELEY WAY THIRTY-NINE FEET TO THE LINE DIVIDING LOTS NUMBERED 55 AND 54 ACCORDING TO SAID MAP; THENCE AT RIGHT ANGLES SOUTHERLY ALONG SAID LINE ONE HUNDRED TEN FEET; THENCE AT RIGHT ANGLES EASTERLY THREE AND 73/100 FEET; THENCE AT RIGHT ANGLES SOUTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET TO THE NORTHERN LINE OF UNIVERSITY AVENUE; THENCE EASTERLY ALONG SAID LINE OF UNIVERSITY AVENUE FIFTY-FIVE AND 9/10 FEET; THENCEN AT RIGHT ANGLES NORTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET; THENCE AT RIGHT ANGLES WESTERLY TWENTY- ONE AND 63/100 FEET; THENCE AT RIGHT ANGLES NORTHERLY EIGHTY-FIVE FEET TO THE SOUTHWESTERN CORNER OF LOT NUMBERED 55, ACCORDING TO SAID MAP; THENCE AT RIGHT ANGLES EASTERLY ALONG THE SOUTHERN LINE OF SAID LOT ONE FOOT AND THENCE AT RIGHT ANGLES NORTHERLY TWENTY-FIVE FEET TO THE POINT OF BEGINNING.

BEING LOT NUMBERED 54, THE WESTERN ONE FOOT OF LOT NUMBERED 55, A PORTION OF LOT NUMBERED 6 AND A PARCEL ADJOINING SAID LOT NUMBER 6 ON THE EAST, AS ALL OF SAID LOTS ARE DELINEATED AND SO DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "MAP OF COLLEGE TRACT, BERKELEY", FILED MAY 24,1877, IN LIBER 5 OF MAPS AT PAGE 14, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

EXCEPTING THEREFROM THAT PORTION DESCRIBED IN THE DEED TO THE CITY OF BERKELEY, RECORDED SEPTEMBER 29,1955, BOOK 7798, PAGE 23, AS INSTRUMENT NO. AK-105619, OFFICIAL RECORDS.

APN: 057-2053-004-02

EXCEPTIONS TO TITLE (2701 UNIVERSITY)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014-1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR4 EXC. 3 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO CITY OF BERKELEY-DOWNTOWN PROPERTY AND BUSINESS IMPROVEMENT DISTRICT, FOR BERKELEY DOWNTOWN PBID-2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR4 EXC. 5 – NOT PLOTTABLE).
3. TERMS AND CONDITIONS CONTAINED IN THE EDITH WIESER GLYNN TRUST AS DISCLOSED BY GRANT DEED, RECORDED MAY 22, 1984 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 19840099372 (PTR4 EXC. 6 – NOT PLOTTABLE).
4. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED NONDISTURBANCE AND ATTORNMENT AGREEMENT, EXECUTED BY EDITH GLYNN AND T.Y.P. RESTAURANT GROUP, INC., A DELAWARE CORPORATION DBA TENDER GREENS, RECORDED MARCH 22, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016068695 (PTR4 EXC. 7 – NOT PLOTTABLE).
5. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED MINOR ENCROACHMENT PERMIT 17-03, EXECUTED BY EDITH M. GLYNN AND THE CITY OF BERKELEY, RECORDED MAY 24, 2017 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2017113477 (PTR 4 EXC. 8 – NOT PLOTTABLE)

NOTES

1. DATE OF FIELD SURVEY: DECEMBER 5, 9 AND 21, 2022 AS TO THE BOUNDARY AND TOPOGRAPHIC SURVEY OF THE SUBJECT PROPERTY.
2. THE UTILITIES SHOWN HEREON ARE BY SURFACE OBSERVATION AND RECORD INFORMATION ONLY AND NO WARRANTY IS GIVEN HEREIN AS TO THEIR EXACT LOCATION. IT IS THE RESPONSIBILITY OF THE DEVELOPER AND/OR CONTRACTOR TO VERIFY THE EXACT LOCATION OF THE UTILITIES WITH THE APPROPRIATE UTILITY COMPANY OR AGENCY.
3. UTILITY JURISDICTIONS / PROVIDERS ARE AS FOLLOWS:
   STORM DRAINS: CITY OF BERKELEY
   SANITARY SEWER: CITY OF BERKELEY
   WATER: EAST BAY MUNICIPAL UTILITY DISTRICT (EBMUD)
   ELECTRICITY: PACIFIC GAS & ELECTRIC CO.
   NATURAL GAS: PACIFIC GAS & ELECTRIC CO.
   TELEPHONE: AT&T
4. THERE ARE NO CEMETERIES ON OR WITHIN 100 FEET OF THE SUBJECT PROPERTY
5. THE SURVEYED PROPERTIES ARE THE SAME PROPERTIES DESCRIBED IN THE TITLE REPORT.
6. THE LEGAL DESCRIPTIONS AS SHOWN IN THE TITLE REPORTS MATHEMATICALLY CLOSE.
7. THERE IS NO OBSERVED EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL
8. THERE ARE NO WETLAND AREAS IN THE SUBJECT PROPERTIES

TABLE A NOTES

1. FOUND MONUMENTS ARE SHOWN ON THIS SHEET OF THE SURVEY.
2. THE STREET ADDRESS OF THE PROPERTY IS 1950, 1974, 1984, 1998 SHATTUCK AVENUE AND 2071 UNIVERSITY AVENUE, BERKELEY, CA 94704
3. FLOOD ZONE DESIGNATION: THE PREMISES ARE LOCATED IN ZONE "X" (NON-SHADED) DEFINED AS "AREAS OF MINIMAL FLOOD," PER FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 06001C0057G, EFFECTIVE DATE: AUGUST 3, 2009.
4. THE TOTAL GROSS LAND AREA IS:
   1950 SHATTUCK AVENUE: 6,635 SQUARE FEET +/– OR 0.152 ACRES MORE OR LESS.
   1974 SHATTUCK AVENUE: 5,264 SQUARE FEET +/– OR 0.121 ACRES MORE OR LESS
   1984 & 1998 SHATTUCK AVENUE: 9,527 SQUARE FEET +/– OR 0.219 ACRES MORE OR LESS
   2071 UNIVERSITY AVENUE: 6,411 SQUARE FEET +/– OR 0.147 ACRES MORE OR LESS
6. (A/B) ZONING REQUIREMENTS: PER THE CITY OF BERKELEY PLANNING AND ZONING DEPARTMENT, THE PROPERTIES ARE ZONED "C-DMU OUTER CORE" DEFINED AS "DOWNTOWN MIXED-USE DISTRICT."

   REFERENCE FOR "C-DMU" ZONING IS MADE HERE TO THE CITY OF BERKELEY CODE, CHAPTER 23.204.130, REGARDING PROPERTY DEVELOPMENT STANDARDS, BUILDING HEIGHT LIMITATION, MINIMUM BUILDING SETBACK AND PARKING REQUIREMENTS ARE AS FOLLOWS:

   SETBACKS
   MINIMUM FRONT: 0 FEET
   MINIMUM SIDE: 0 FEET
   MINIMUM REAR: 0 FEET

   MAXIMUM HEIGHT: 60 FEET, 75 FEET WITH USE PERMIT

   MINIMUM PARKING REQUIREMENTS: NONE REQUIRED
7. (A/B/C) EXTERIOR DIMENSIONS AND SQUARE FOOTAGE OF BUILDING AT GROUND LEVEL, AND NUMBER OF STORIES ARE SHOWN ON SHEET 3 OF THE SURVEY.
8. SUBSTANTIAL IMPROVEMENTS OBSERVED IN THE PROCESS OF CONDUCTING THE SURVEY ARE SHOWN ON SHEET 3.
9. THERE ARE NO PARKING SPACES LOCATED ON THE SUBJECT PROPERTIES.
10. THERE ARE NO DIVISIONS OR PARTY WALLS LOCATED ON THE SUBJECT PROPERTIES WITH RESPECT TO ADJOINING PROPERTIES.
11. (A) LOCATION OF UTILITIES EXISTING ON OR SERVING THE SURVEYED PROPERTIES AS DETERMINED BY OBSERVED EVIDENCE TOGETHER WITH EVIDENCE FROM PLAN OBTAINED FROM UTILITY COMPANIES OR PROVIDED BY CLIENT ARE SHOWN ON SHEET 3.
13. NAMES OF ADJOINING OWNERS OF PLATTED LANDS ARE SHOWN ON SHEET 2 OF THE SURVEY.
14. DISTANCE TO THE NEAREST INTERSECTING STREET IS SHOWN ON SHEET 2 OF THE SURVEY.
16. THERE IS NO OBSERVABLE EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
17. THERE IS NO OBSERVED EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
18. THERE ARE NO OFFSITE EASEMENTS TO THE SUBJECT PROPERTIES.
19. PROFESSIONAL LIABILITY INSURANCE IN THE AMOUNT OF $2,000,000 IS HELD BY THE SURVEYOR.

BASIS OF BEARINGS

THE BASIS OF BEARINGS OF THIS SURVEY IS TAKEN BETWEEN THE TWO FOUND STREET MONUMENTS ALONG BERKELEY WAY BETWEEN MILVIA STREET AND HENRY STREET AS SHOWN ON PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA. TAKEN AS NORTH 81°54'40" EAST.

REFERENCES

(R1) PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R2) PARCEL MAP P.M. 10119, FILED SEPTEMBER 28, 2016 IN BOOK 334 OF PARCEL MAPS, AT PAGES 2! TO 22, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R3) TRACT MAP T.M. 7888, FILED SEPTEMBER 03, 2009 IN BOOK 305 OF MAPS, AT PAGES 18 TO 29 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R4) UNRECORDED MAP, CITY OF BERKELEY CITY MONUMENT MAP, PLAN 1305, 306C-057.

(R5) "MAP OF THE COLLEGE TRACT, BERKELEY", FILED JANUARY 31, 1880 IN BOOK 9 OF MAPS, AT PAGES 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R6) GRANT DEED, RECORDED APRIL 15, 1966 IN REEL 1749, IMAGE 918, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R7) GRANT DEED, RECORDED JUNE 11, 2014 AS DOCUMENT NUMBER 2014-140054, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R8) GRANT DEED, RECORDED MAY 18, 2009 AS DOCUMENT NUMBER 2009-156779, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R9) DOCUMENT ENTITLED "NONDISTURBANCE AND ATTORNMENT AGREEMENT", RECORDED MARCH 22, 2016 AS DOCUMENT NUMBER 2016-068695, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

NOTES

(1) BEARING IS BASED ON THE MEAN BEARING OF THE RIGHT OF WAY LINES OF BERKELEY WAY AND UNIVERSITY AVENUE.
(2) BEARING IS BASED ON IMPROVEMENTS.
(3) (R8) HAS A DEED CALL OF 8 INCHES. IT IS BELIEVED TO BE AN ERROR. THE DISTANCE OF 1.00 FOOT PER (R1) IS BEING HELD BASED ON THE DEED CALL OF 112.30 FEET OF (R8).

SURVEYOR'S CERTIFICATE

TO VERNON A. NEFF AND BARBARA NEFF, AS TRUSTEES OF THE NEFF 2002 FAMILY TRUST; AND OLD REPUBLIC TITLE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6(A), 6(B), 7(A), 7(B1), 7(C), 8, 9, 10, 11(A), 13, 14, 16, 17, 18, AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 5, 9 AND 21, 2022.

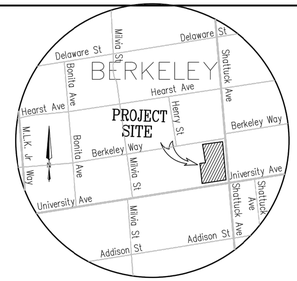
DATE DECEMBER 23, 2022

JACQUELINE LUK P.L.S. 8934
FOR LUK & ASSOCIATES, INC.

PROFESSIONAL LAND SURVEYOR — JACQUELINE LUK — L.S. 8934 — STATE OF CALIFORNIA

SHEET INDEX

1. NOTES
2. BOUNDARY SURVEY
3. TOPOGRAPHIC SURVEY



VICINITY MAP
NOT TO SCALE

ALTA/NSPS LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE AND 2071 UNIVERSITY AVENUE

CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA

DECEMBER 2022

PREPARED BY
LUK AND ASSOCIATES
CIVIL ENGINEER – LAND PLANNERS – LAND SURVEYORS
738 ALFRED NOBEL DRIVE
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(510) 724-3388

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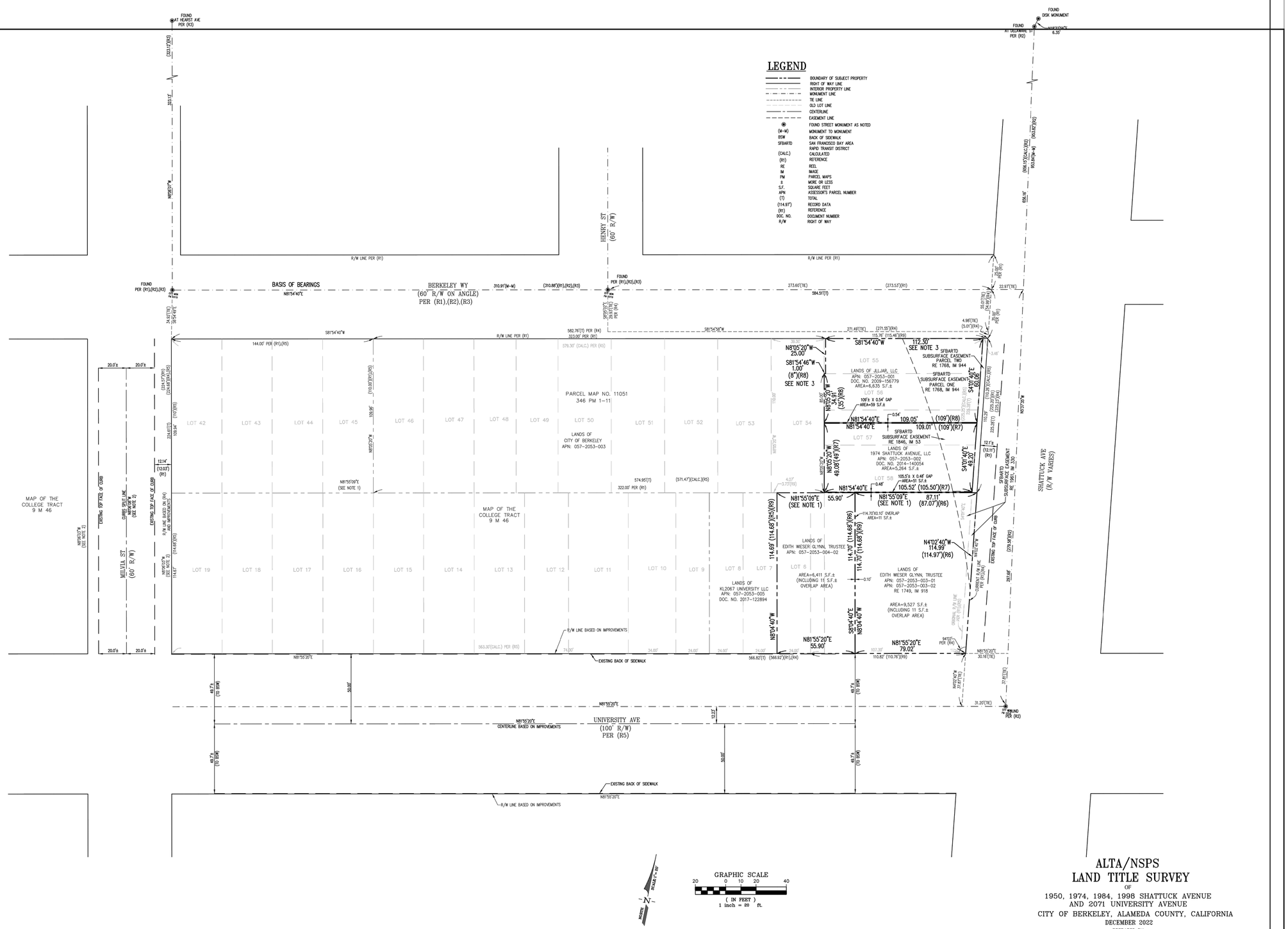
JOB: 2209

SHEET:

SURVEY

A0.6a



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OF

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SHEET 2 OF 3

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JOB NO.: 22117A10 PLOT DATE: DECEMBER 23, 2022

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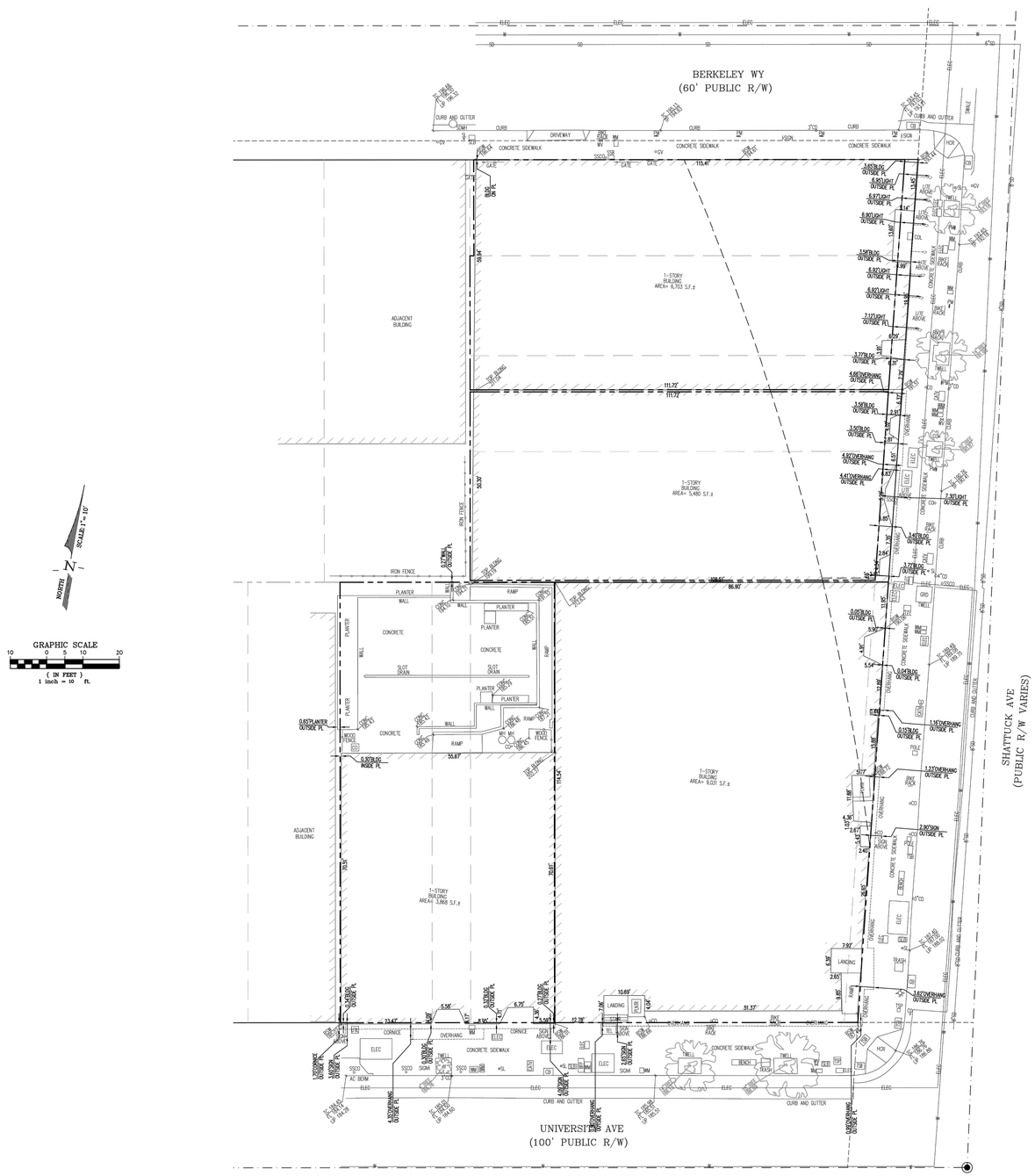
A0.6B



GRAPHIC SCALE
10 0 5 10 20
(IN FEET)
1 inch = 10 ft.

LEGEND

SYMBOLS	DESCRIPTION
	BOUNDARY OF SUBJECT PROPERTY
	RIGHT OF WAY LINE
	INTERIOR PROPERTY LINE
	MONUMENT LINE
	TIE LINE
	OLD LOT LINE
ELEC	ELECTRIC LINE
GAS	GAS LINE LINE
W	WATER LINE
SD	STORM DRAIN LINE
SS	SANITARY SEWER LINE
ELEC	ELECTRICITY BOX
AC BERM	ASPHALT BERM
SSCO	SANITARY SEWER CLEAN OUT
WM	WATER METER
HCR	HANDICAP RAMP
TWELL	TREE WELL
SL	STREET LIGHT
PLNTR	PLANTER BOX
CB	CATCH BASIN
TEL	TELECOMMUNICATION BOX
GV	GAS VALVE
SLB	STREET LIGHT BOX
CD	CURB DRAIN
CO	CLEAN OUT
BFP	BACK FLOW PREVENTER
TSB	TRAFFIC SIGNAL BOX
WV	WATER VALVE
CD	CURB DRAIN
PM	PARKING METER
COL	COLUMN
SSB	SANITARY SEWER BOX
SDMH	STORM DRAIN MAN HOLE
GRD	GROUND
SD	SLOT DRAIN
MH	MANHOLE
CONC 65.60	TOP OF CONCRETE ELEVATION
SIDW 65.60	BACK OF SIDEWALK ELEVATION
TC 65.64	TOP OF CURB ELEVATION
TP 65.64	TOP OF PAVEMENT ELEVATION
FL 65.64	FLOW LINE ELEVATION
TOP BLDG 65.64	TOP OF BUILDING ELEVATION
LIP 65.60	TOP OF LIP ELEVATION
	TREE

ALTA/NSPS LAND TITLE SURVEY

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SHEET 3 OF 3

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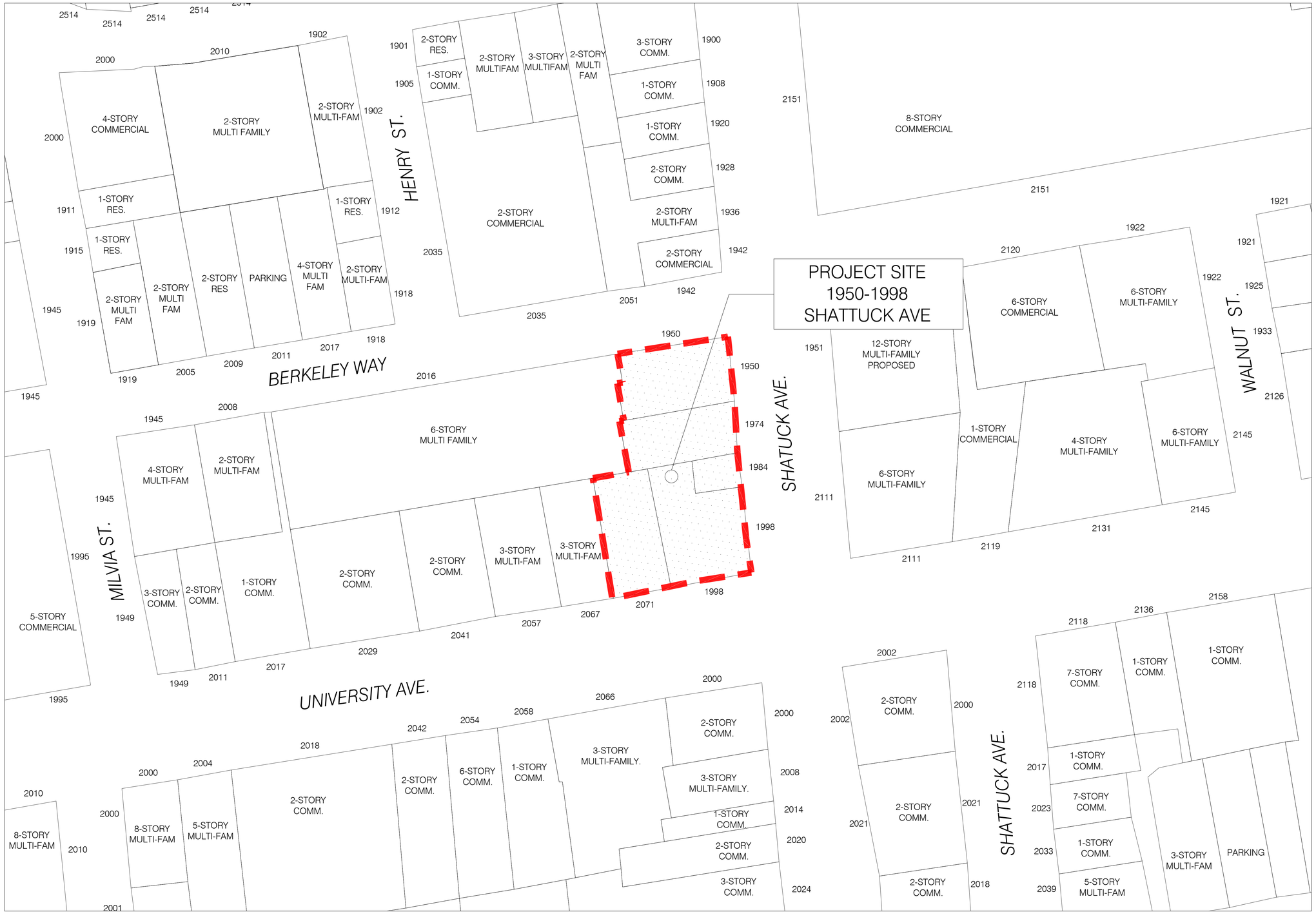
SURVEY

A0.6C



1 - VICINITY MAP
NTS

N

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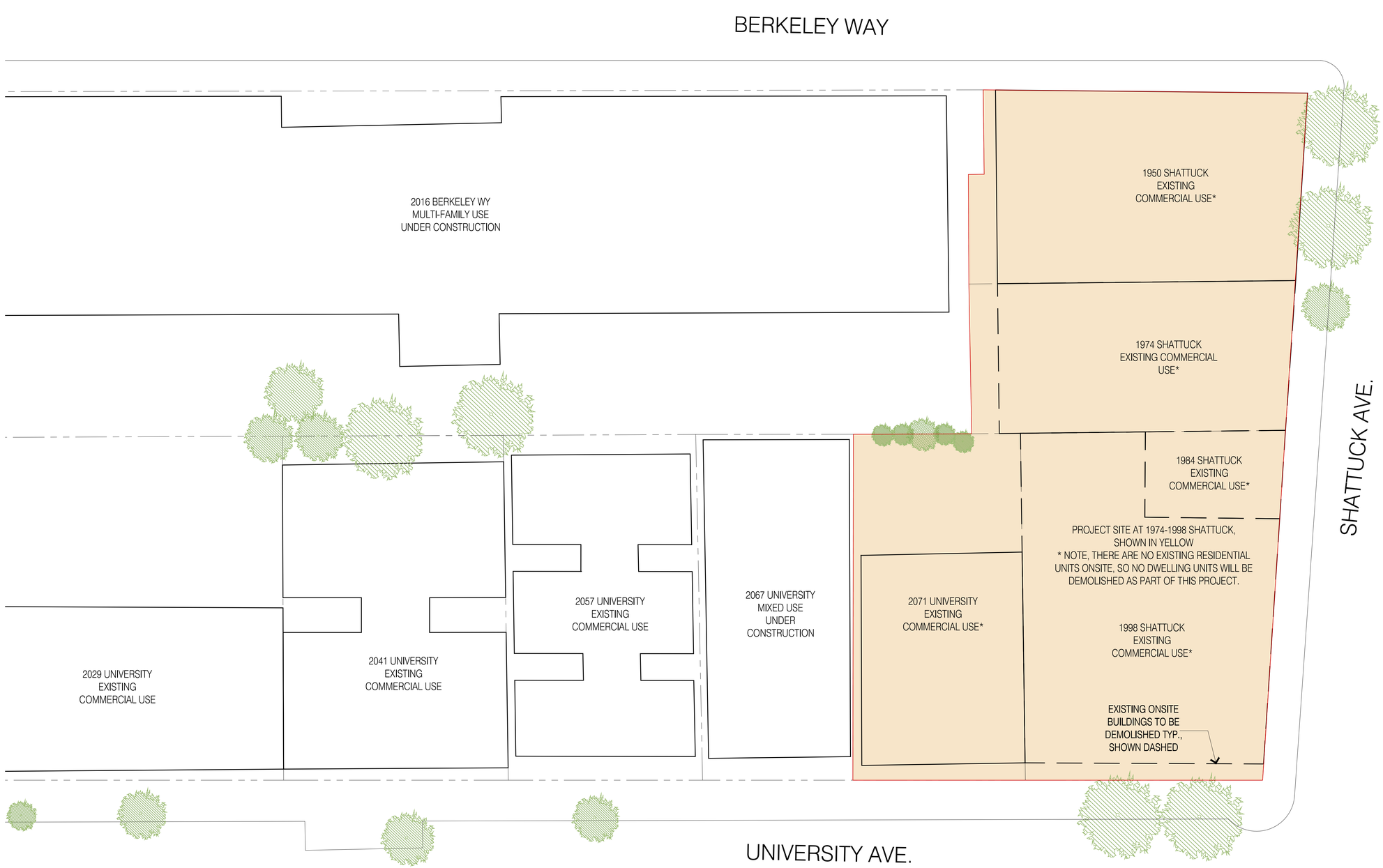
SHEET:

VICINITY MAP

A0.6



1 - EXISTING SITE PLAN
1/32"=1'-0" @ 11x17 1/16"=1'-0" @ 24x36

0 4 8 16 32

N

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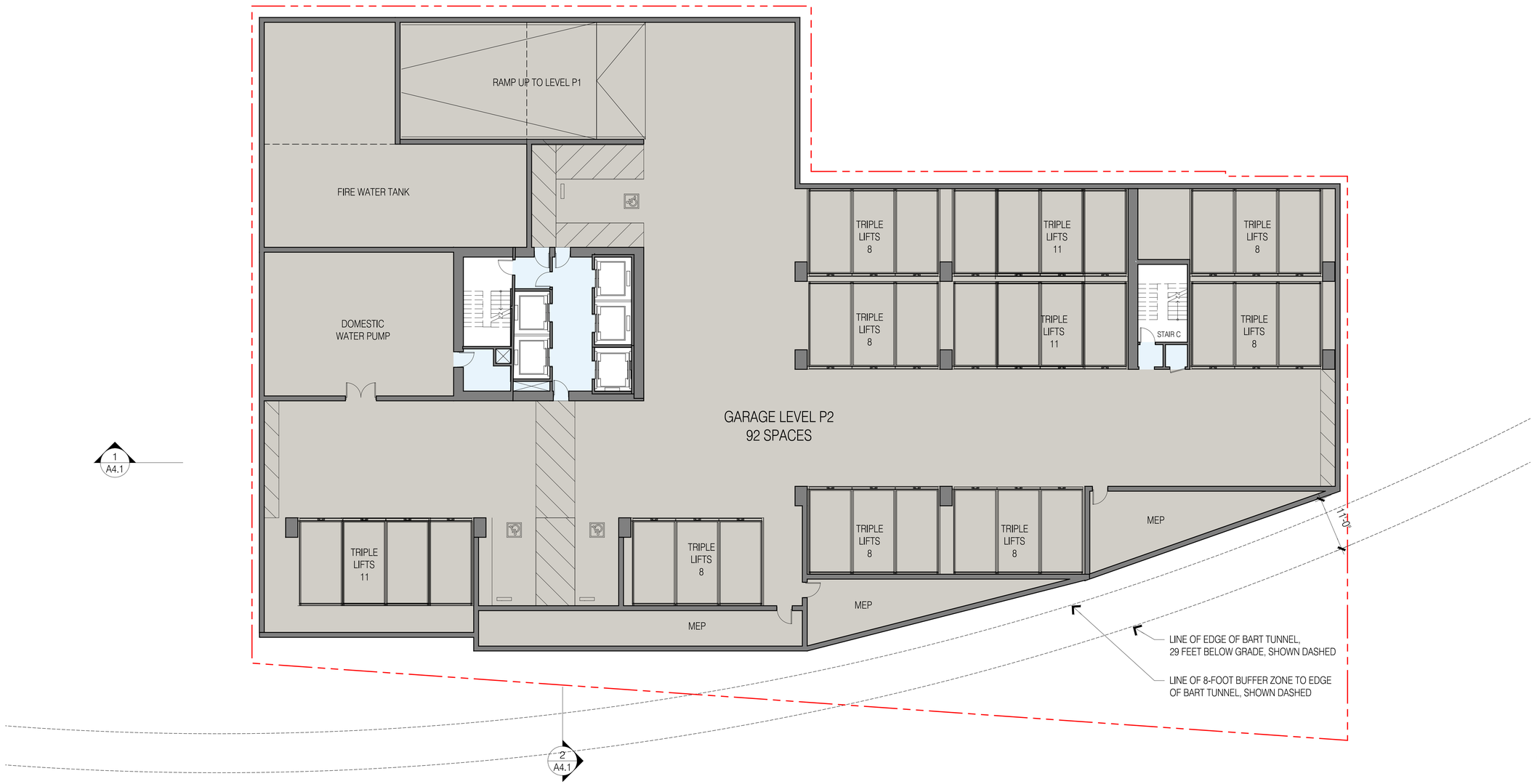
SHEET:

EXISTING
SITE PLAN

A1.0



1 PLAN AT BASEMENT PARKING LEVEL P2

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

FLOOR PLANS

A2.0a



1 / - PLAN AT BASEMENT PARKING LEVEL P1

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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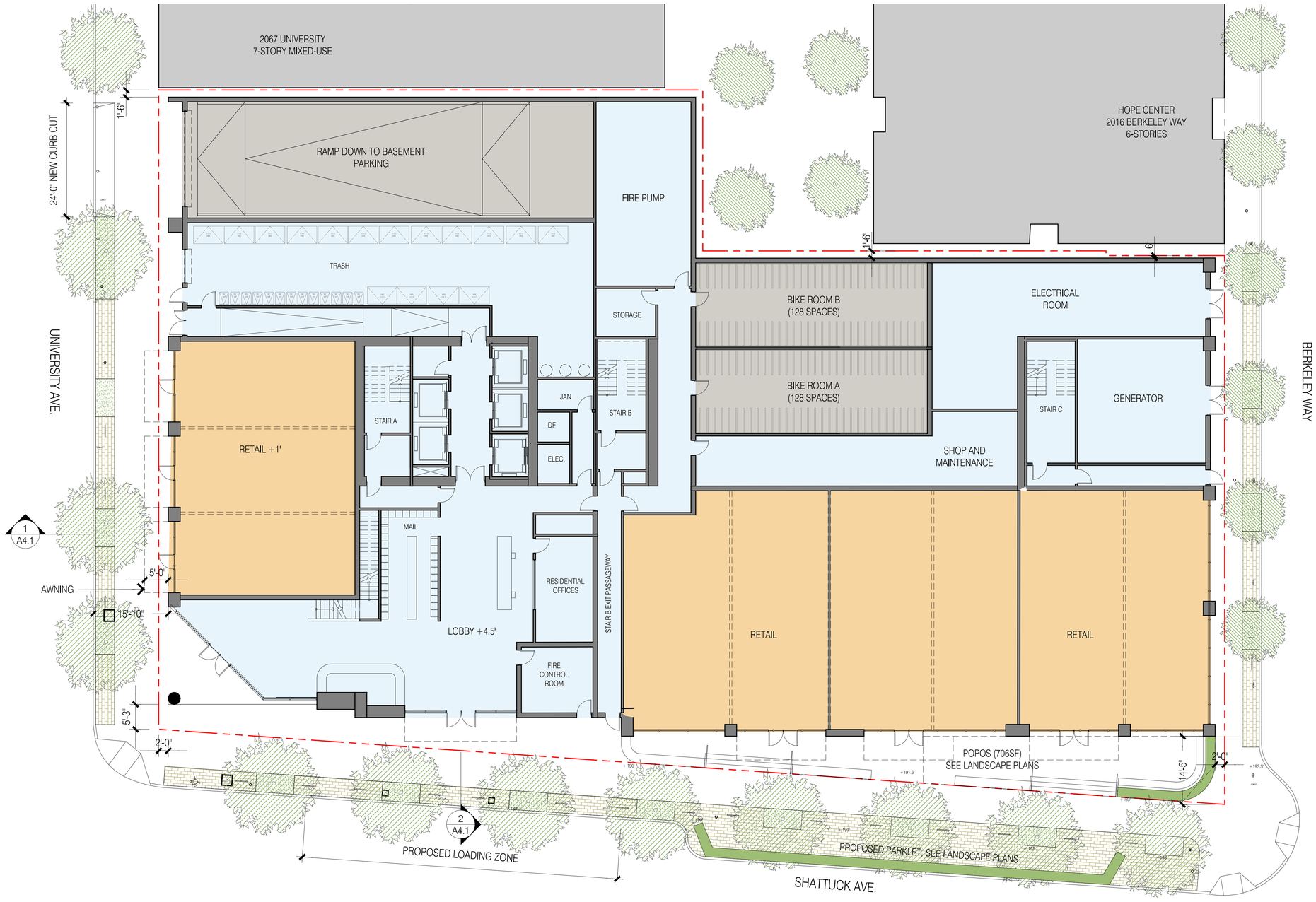
JOB: 2209

SHEET:

FLOOR PLANS

A2.0b



1 - SITE PLAN / PLAN AT GROUND FLOOR

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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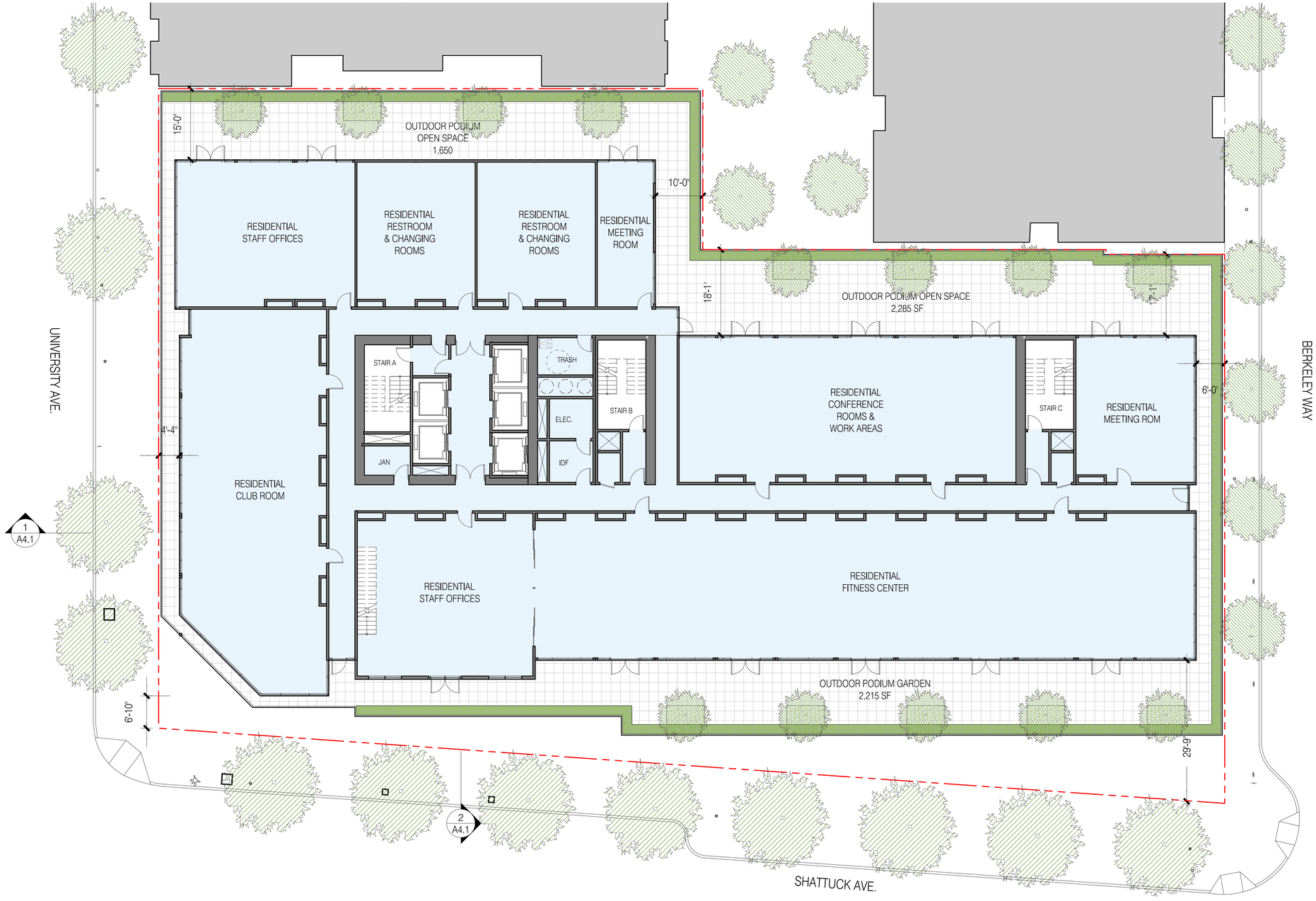
JOB: 2209

SHEET:

FLOOR PLANS

A2.1



1 / - PLAN AT LEVEL 2

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

FLOOR PLANS

A2.2



1 PLAN AT LEVELS 3-13
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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JOB: 2209

SHEET:

FLOOR PLANS

A2.3



1 PLAN AT LEVEL 14
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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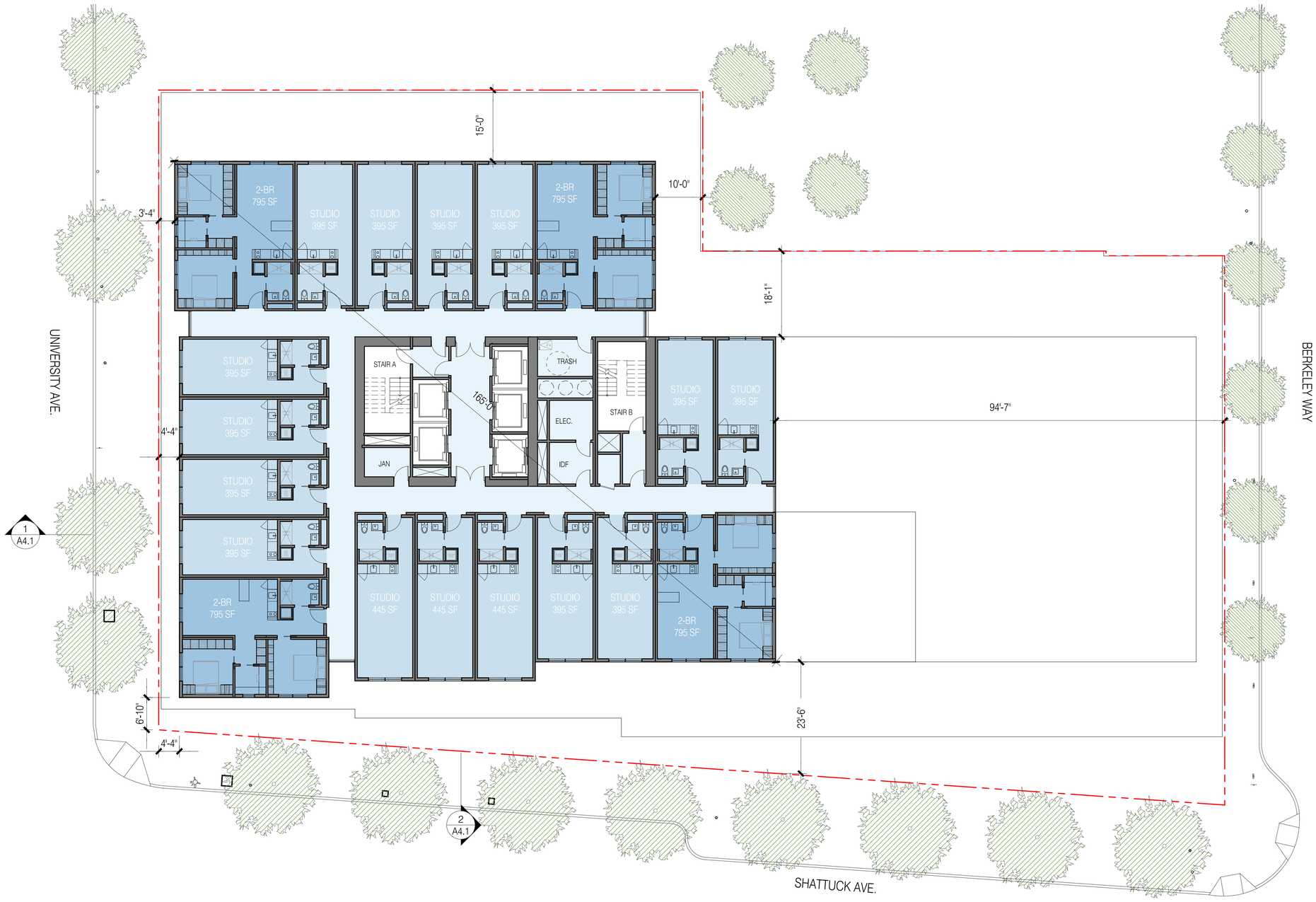
JOB: 2209

SHEET:

FLOOR PLANS

A2.4



1 PLAN AT LEVELS 15-27
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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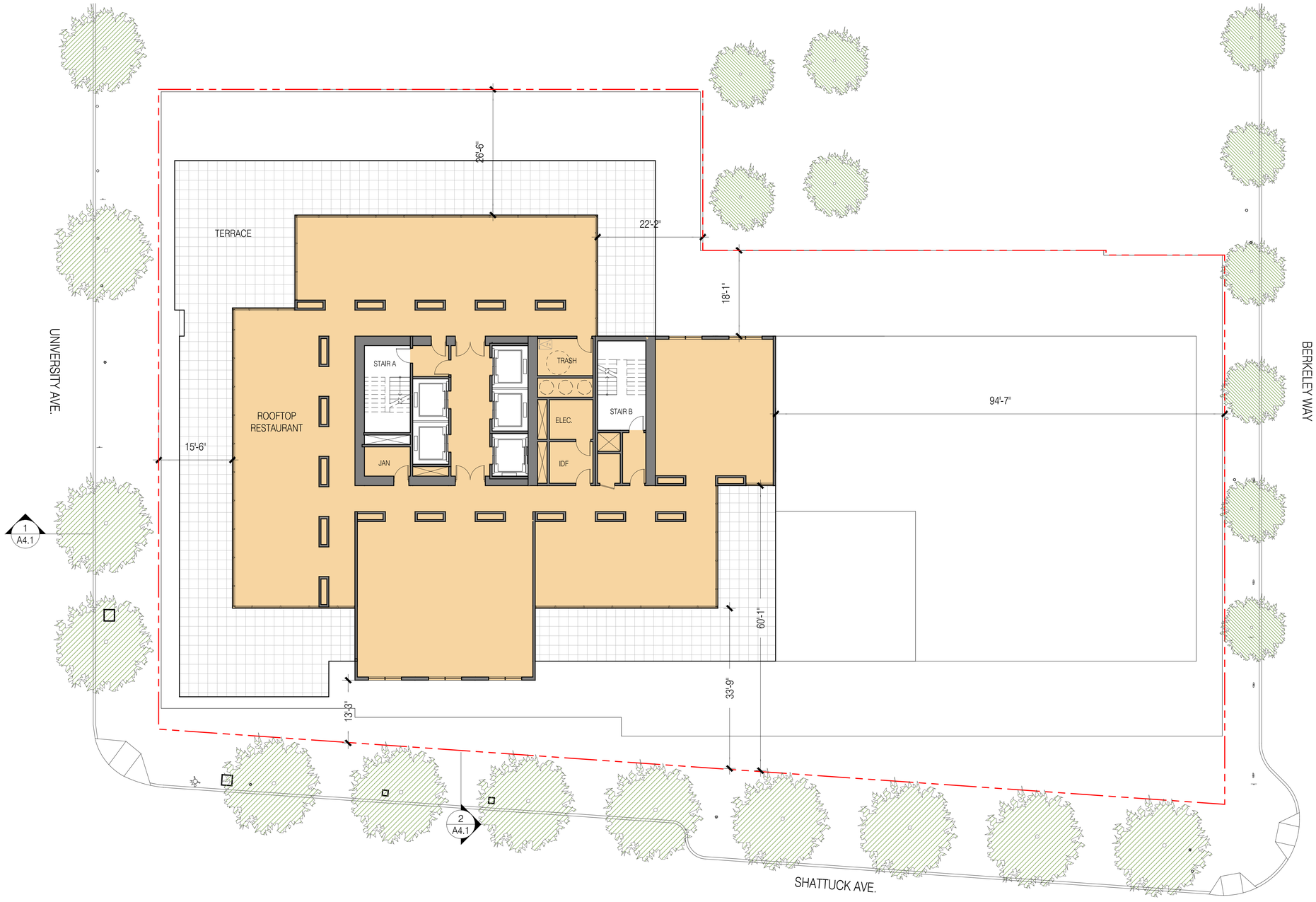
SHEET:

FLOOR PLANS

A2.5



1 / - PLAN AT LEVEL 28 ROOFTOP RESTAURANT

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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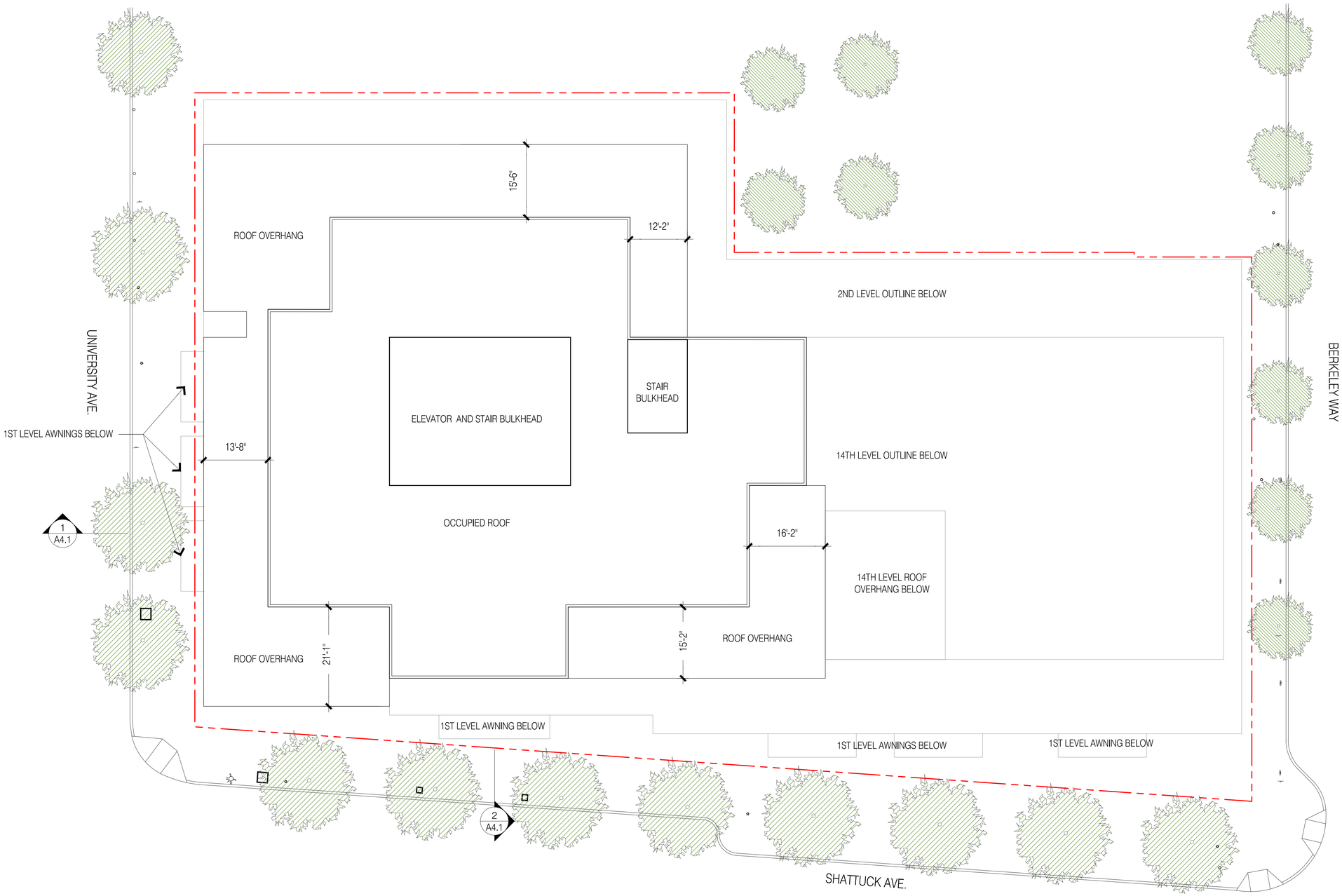
FLOOR PLANS

A2.6



1 PLAN AT ROOF
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

ROOF PLAN

A2.7



2 - EAST ELEVATION

0 8 16 32



1 - SOUTH ELEVATION

0 8 16 32

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SHEET:

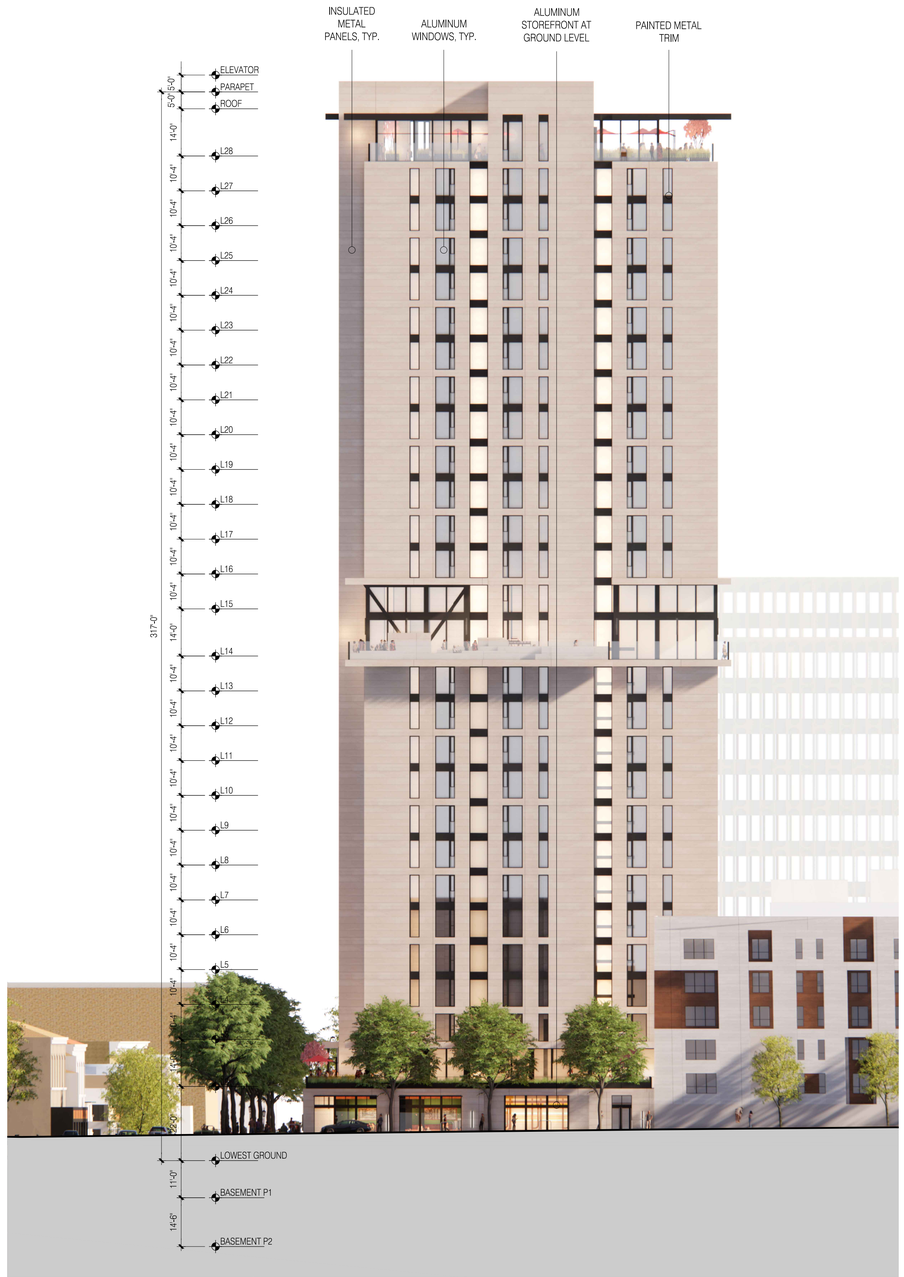
ELEVATIONS

A3.1



2 - WEST ELEVATION

0 8 16 32



1 - NORTH ELEVATION

0 8 16 32

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SHEET:

ELEVATIONS

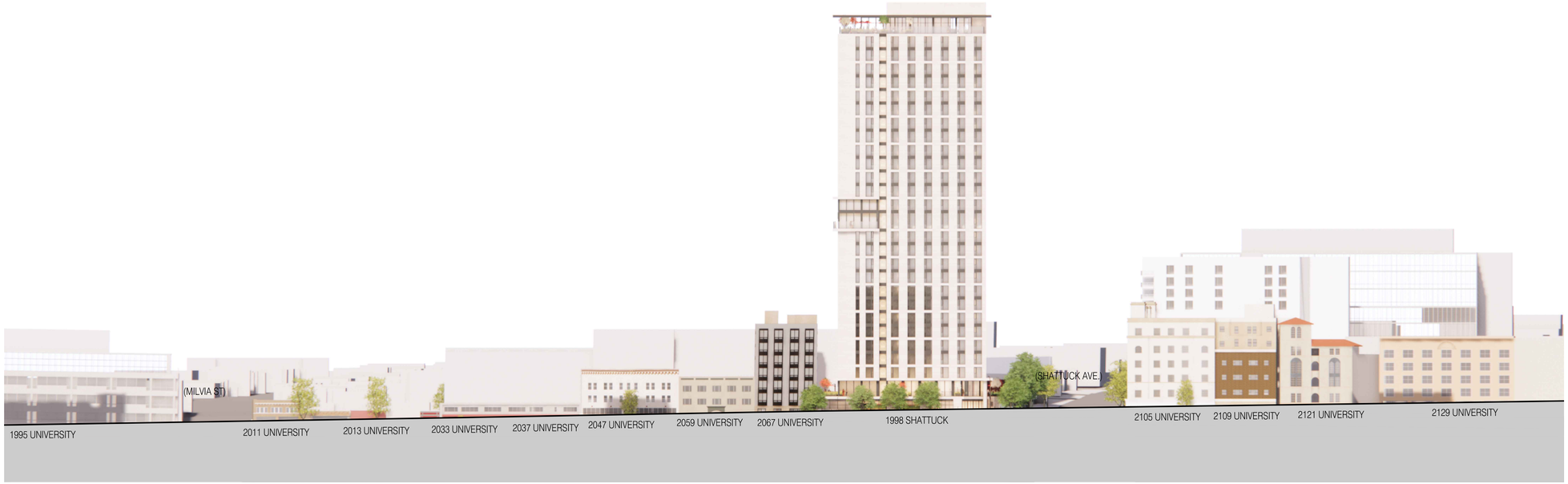
A3.2



2 - STREET STRIP ELEVATION @ SHATTUCK AVE

1/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64



1 - STREET STRIP ELEVATION @ UNIVERSITY AVE

3/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64

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SHEET:

STREET STRIP ELEVATIONS

A3.3



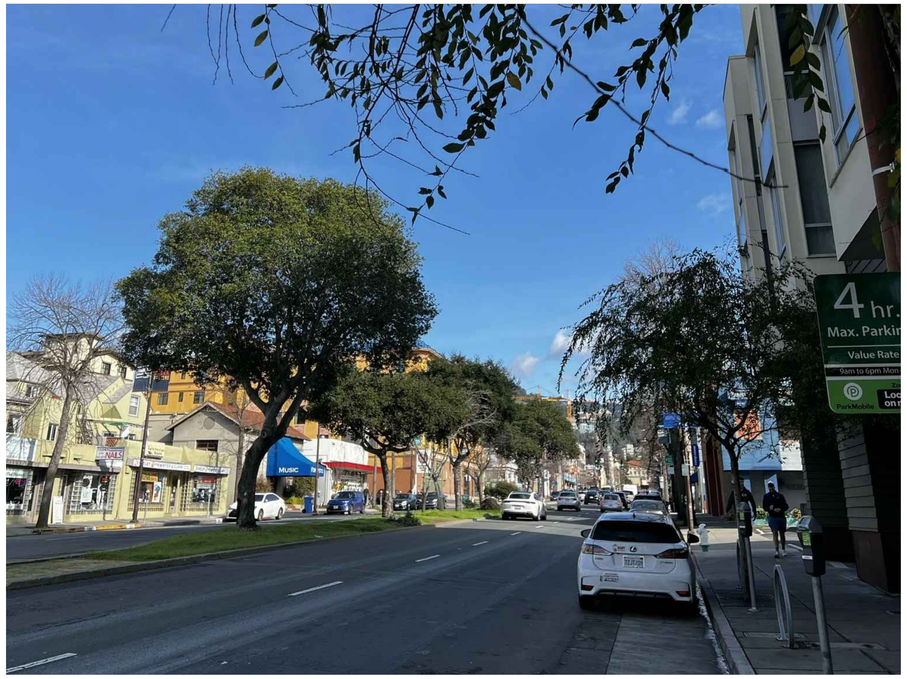
4 - UNIVERSITY LOOKING WEST - AFTER



2 - UNIVERSITY LOOKING EAST - AFTER



3 - UNIVERSITY LOOKING WEST - BEFORE



1 - UNIVERSITY LOOKING EAST - BEFORE

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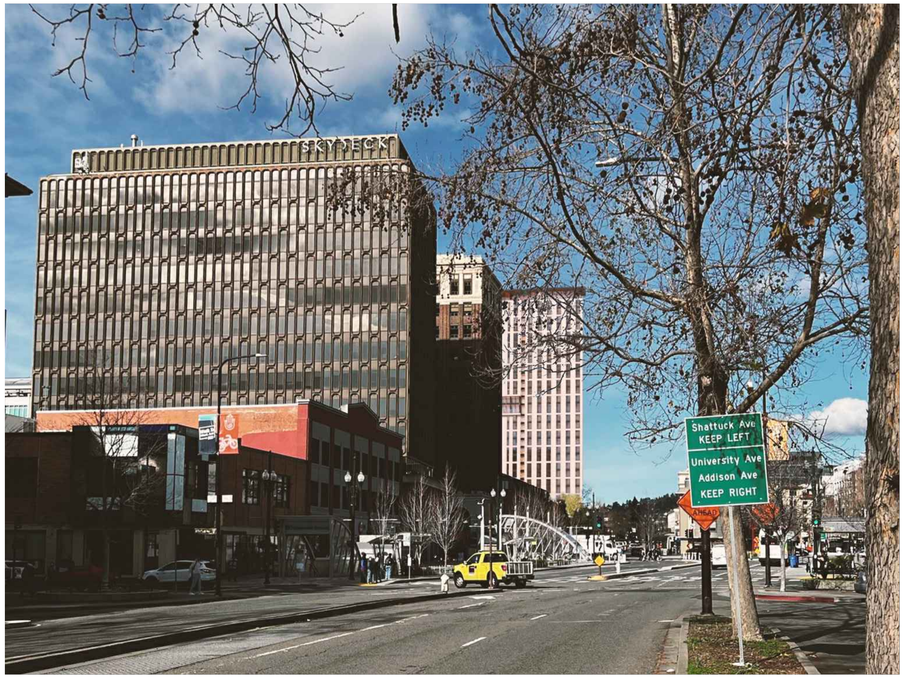
SHEET:

PHOTO CONTEXT VIEWS

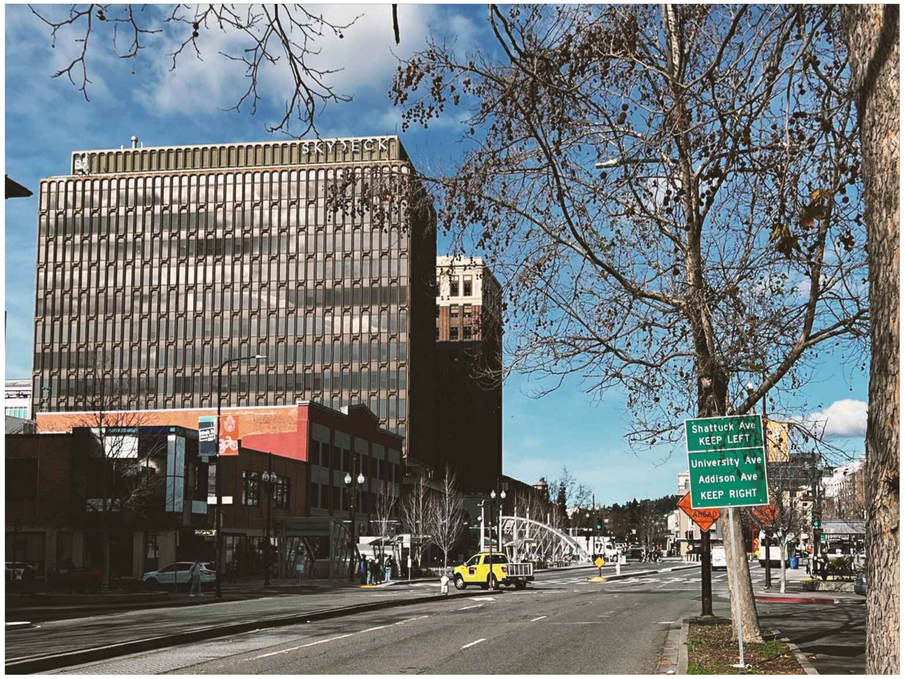
A3.4



4 - SHATTUCK LOOKING NORTH - AFTER



2 - SHATTUCK LOOKING SOUTH - AFTER



3 - SHATTUCK LOOKING NORTH - BEFORE



1 - SHATTUCK LOOKING SOUTH - BEFORE

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PHOTO CONTEXT VIEWS

A3.5



4 - BERKELEY LOOKING WEST - AFTER



2 - BERKELEY LOOKING EAST - AFTER



3 - BERKELEY LOOKING WEST - BEFORE



1 - BERKELEY LOOKING EAST - BEFORE

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PHOTO CONTEXT VIEWS

A3.6

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1 - VIEW LOOKING NORTH

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PRELIMINARY RENDERING

A3.7

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1 - VIEW LOOKING NORTH-WEST

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SHEET:

PRELIMINARY RENDERING

A3.8

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1
-
VIEW LOOKING SOUTH-WEST
-

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A3.9

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1 - VIEW LOOKING SOUTH-EAST

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A3.10

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1 VIEW LOOKING NORTH-WEST AT SHATTUCK AND UNIVERSITY

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SHEET:

PRELIMINARY RENDERING

A3.11

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1 - VIEW LOOKING SOUTH-WEST ON SHATTUCK

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A3.12

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1 - VIEW LOOKING NORTH-EAST ON UNIVERSITY

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A3.13

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1 - SIDEWALK VIEW - UNIVERSITY LOOKING EAST

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SHEET:

PRELIMINARY
RENDERING

A3.14



1 - VIEW LOOKING SOUTH-WEST - SHATTUCK @ BERKELEY WAY

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PRELIMINARY RENDERING

A3.15

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1
-
SIDEWALK VIEW - SHATTUCK LOOKING SOUTH-WEST
- -

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RENDERING

A3.16

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1 - SIDEWALK VIEW - SHATTUCK LOOKING NORTH-WEST

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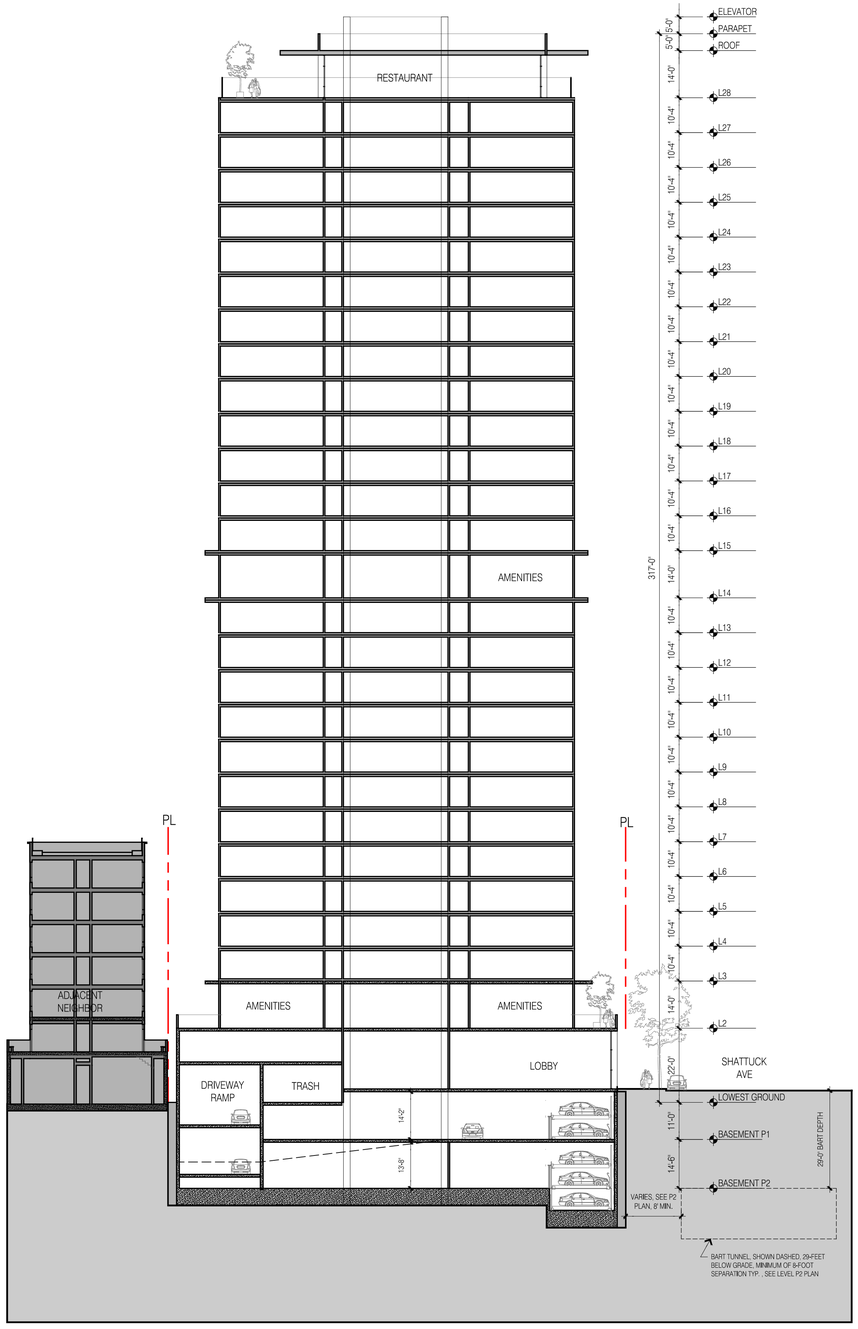
SHEET:

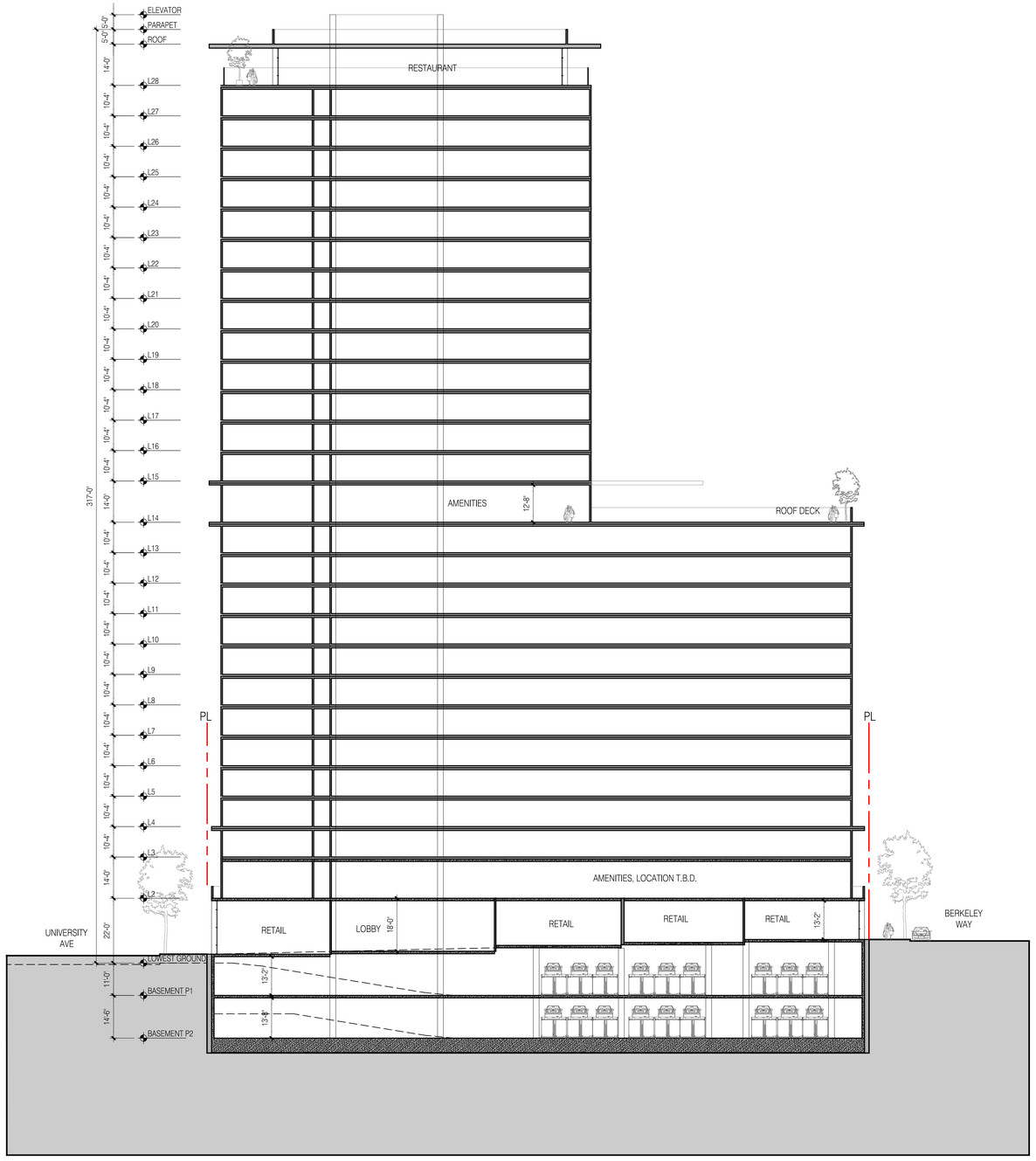
PRELIMINARY
RENDERING

A3.17



2 - SECTION LOOKING NORTH

0 8 16 32



1 - SECTION LOOKING WEST

0 8 16 32

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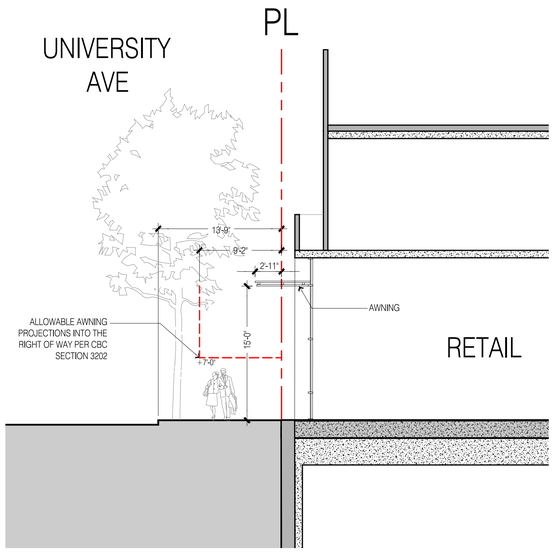
SHEET:

BUILDING SECTIONS

A4.1



2 - SECTION THROUGH UNIVERSITY AVE.
1/8" = 1'-0"

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SHEET:

AWNING
ENCROACHMENT
DIAGRAM

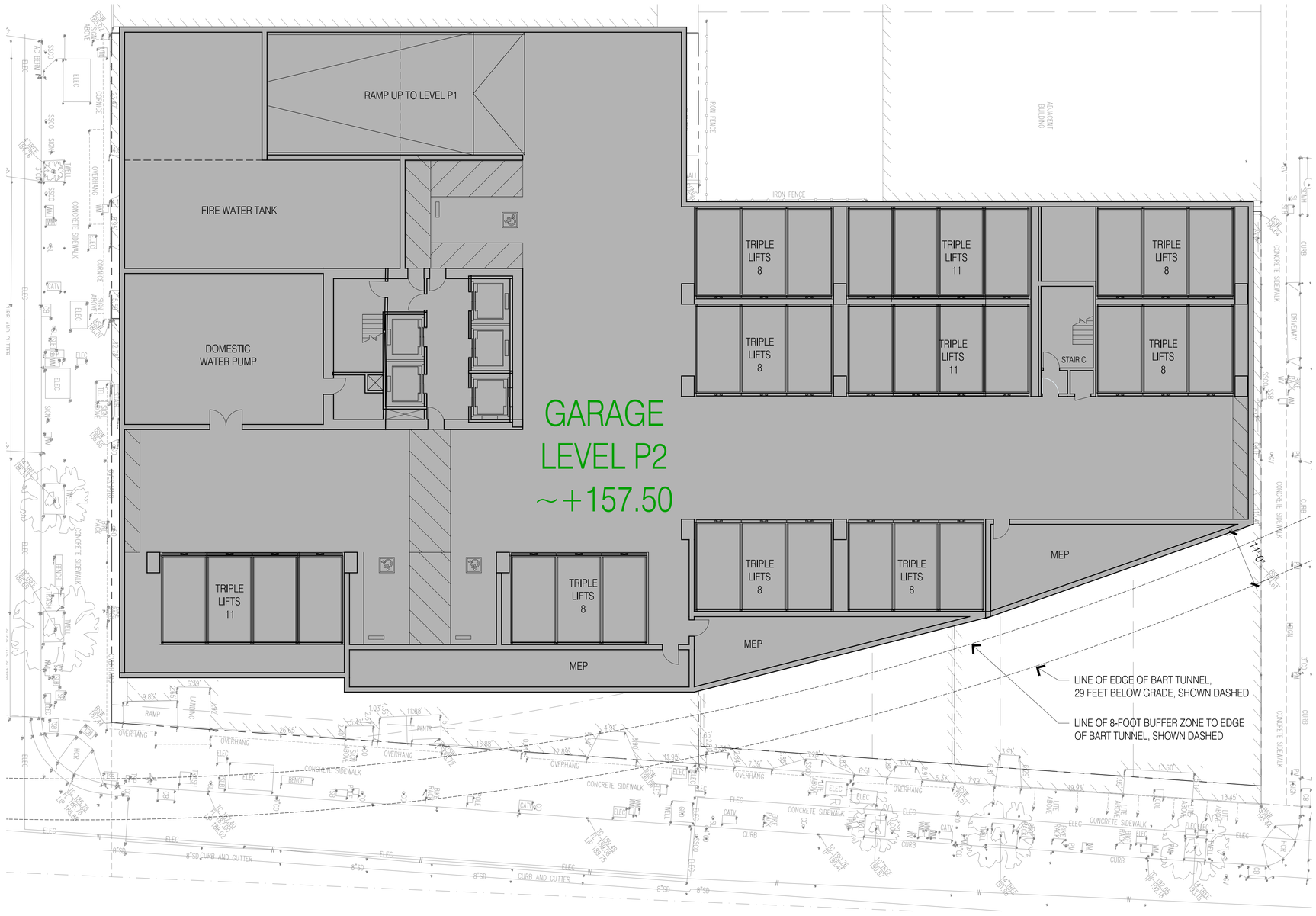
A4.2

CUT AND FILL CALCULATIONS

	CUT/FILL AREA	AVERAGE CUT/FILL DEPTH (FT)	TOTAL VOLUME (CY)
PROPOSED BUILDING	23,262	37	31,878

EARTHWORK NOTES:
1. EARTHWORK QUATNITY IS A ROUGH ESTIMATE BASED ON APPROXIMATE DEPTH OF BOTTOM OF BASEMENT PARKING LEVEL.

2. EARTHWORK QUANTITIES DO NOT TAKE INTO ACCOUNT SOIL SHRINKAGE, SOIL SWELLING, TRENCH SPOILS, SITE OVER-EXCAVATION REQUIREMENTS.



1 - CONCEPTUAL GRADING PLAN
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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SHEET:
CONCEPTUAL GRADING PLAN

A5.0

1998 Shattuck — Preliminary Landscape Set

General Notes

1. The contractor shall inspect the site and be familiar with all existing site conditions prior to submitting bid. Contractor shall not willfully proceed with construction as shown when it is obvious that obstructions, landscape area and/or grade differences exist that may not have been known during design. Such conditions shall immediately be brought to the attention of the landscape architect. The contractor shall assume sole responsibility for all necessary revisions due to failure to give such notification. Contractor shall be responsible for making himself familiar with all underground utilities, pipes, structures and obstructions. Contractor shall assume sole responsibility for all costs incurred due to damage and/or replacement of these items. Contractor shall be responsible for coordination among trades and subcontractors as required to accomplish the work. The contractor shall be responsible for any damage to existing features caused by contractor's work. All repairs shall be made at no additional cost to the owner. Planting shall be installed in conformance with all applicable local codes and ordinances by experienced workmen and a licensed landscape contractor who shall obtain all necessary permits and pay all required fees. The garden is a pesticide and herbicide free zone. Contractor shall use organic material to fertilize and to maintain all plant material. No chemical fertilizer will be allowed.Contractor shall verify all grades, existing conditions and dimensions in the field prior to commencing work. All discrepancies or questions shall be brought to the attention of the landscape architect for resolution. Redirect work to avoid delay. All curves and all transitions between curves and straight edges shall be smooth. Take all dimensions perpendicular to any reference line, work line, face of building, face of wall or centerline.

2. Demolition
Contractor shall remove and carry all demolition materials off site. Protect (E) trees as indicated during construction. Contractor shall perform selective trimming of existing trees within the area of work per the direction of the owner.

3. Drainage/Grading
Contractor shall verify if existing drains are in good condition. All drainage systems shall be per City of Berkeley codes. Grade per indicated swales. Sleeving to be Schedule 40 PVC. Cover PVC pipe so that it not visible. All grading to be smooth to achieve a natural aspect. No finish grades shall exceed 2.5:1 slopes.

4. Soil preparation
Soil amendment shall be a minimum of 9 cy of organic compost per 1000 sf (1:4 ratio). The landscape contractor shall be responsible for finish grading and all planting area drainage. Positive drainage away from the building as per city codes shall be maintained. No low spots which hold standing water will be accepted. Where rototilling is not possible, incorporate soil amendments into top 6 inches with hand tools. After installation of irrigation system, all new planting areas are to be fine graded to within 2 inches and slightly mounded away from edges of top of planter, curb, walk, header, etc. and raked smooth with all rocks and debris over 1 inch in diameter removed. Verify existing grades and advice Landscape Architect of any discrepancies prior to start of grading.

5. Topsoil
If any planting areas require the importing of topsoil, the imported soil shall be clean, friable sandy loam; free of noxious weed seeds, sticks, stones over 1 inch in diameter or any materials that could inhibit growth. Incorporate imported topsoil into the top 6-8 inches of site soil by rototilling or hand cultivating as necessary.

6. Substitutions
Requests for substitutions of plant varieties shall be made to the landscape architect within 15 days after signing of contract.

7. Planting
Thoroughly water trees immediately after planting. Shrubs shall be spotted as per plan and the locations approved prior to the digging of the holes. Contractor shall locate and tag all trees at nursery at time of acceptance of contract to ensure availability of healthy specimens. Plant materials to be approved by landscape architect prior to site delivery.

8. Irrigation
The proposed irrigation shall be an automated, water efficient watering system compliant with the City of Berkeley codes & regulations. The contractor shall determine the static water pressure and design the system accordingly to achieve adequate regime for the proposed plantings. The following emitters shall be installed at each planting: (2) 1 gal emitters at each 1 gal sp.; (3) 5 gal. emitters at ea. 5 gal shrub.

9. Mulching
Mulch all planting areas with 3" of 'Forest Floor Bark' from American Soil and Stone, Richmond Ca (510) 292-3000.

10. Stone paving & stone work
See layout plan and detail for sub-base. Install stone paving with tight joints in front and flagstone in stabilized decomposed granite in back as show on sheet L1.0.

11. Concrete work
All concrete retaining walls greater than 3 feet in height shall be designed or reviewed and stamped by a structural engineer. All concrete footings shall be reviewed, approved and stamped by a structural engineer.

12. Electrical
Install light fixtures, conduits and controller per manufacturer recommendation. Locate controller per plan with light switch inside residence. Contractor to supply and install power supply - 2 outlets at outdoor kitchen area. Install power supply for outdoor kitchen equipment .

13. Wood work
All wood decking to match existing wood same size and layout at existing decks for deck extension. All vertical posts to be pressure treated 4x4 wood. SSD for final wood sizing, anchors and concrete footing. See note 14 for painting/staining.

14. Painting
All visible existing & new wood to be painted same color as the main residence, but with a lighter tone. Color to be reviewed & approved by owner/landscape architect.
Paint manufacturer: Sherwin Williams; exterior paint quality "duration" to be applied on all new & existing wood to be painted. Prep all wood surfaces per paint manufacturer's recommendations.

15. Maintenance
The contractor shall maintain the project for 90 days (or as requested by owner) following the approval to begin the maintenance period. During the entire maintenance period, watering, cultivating, weeding, mowing, repair/tightening of stakes and ties, provision of supplemental water by hand in addition to irrigation system as necessary. At the end of the 90 day maintenance period all areas are to be free of weed and all plant material is to be in a healthy, thriving condition.

16. Guarantee
All construction, trees and shrubs by the landscape contractor and/or his subcontractors shall be guaranteed for (1) one year after beginning of maintenance period. The contractor shall replace, at no expense to the owner, any and all landscape materials that are in an unacceptable condition for time of use, and trees or shrubs that are dead or not in a vigorous, healthy growing condition; within two weeks of notification of such condition. Replacement shall be of the same kind and size as the originally specified item and shall be replaced as originally described on the drawings. The contractor shall not be held liable for loss of plant materials during the guarantee period due to vandalism, accidental causes or acts of neglect by others than the contractor, his agents and employees.

17. Clean up
At the end of each work day, at the inspection for substantial completion and before acceptance of project, clean paved areas that are dirtied or stained by construction operations, by sweeping or washing, and remove defacements and stains. Remove construction equipment, excess materials and tools. Haul from owners property the debris resulting from construction, and dispose of legally. Remove remaining temporary protection at time of acceptance by owner unless otherwise agreed.

Project Team

Client
NX Ventures

Architect
Trachtenberg Architects
2421 Fourth Street
Berkeley, CA 94710
510.649.1414

Landscape Architect
InsideOut Design, Inc.
6000 Harwood Ave
Oakland CA 94618
510.655.7674

Contractor
TBD

Location Map



Legend

(PA)	Planting Area
(TS)	Top of stair
(BS)	Bottom of stair
(TW)	Top of wall
(BW)	Bottom of wall
R	Radius
POB	Layout Starting Point
SIM	Similar
(TYP.)	Typical
SAD	See Architectural Drawings
EQ	Equal
O.C.	On Center
(E)	Existing
›	Align
	90 Degrees angle
(824.76)	Existing spot elevation
824.76	Proposed spot elevation
	Existing contour line
	Proposed contour line
	Property line
	Existing retaining wall to be demolished

Sheet Index

L0.0	Cover Sheet
L1.0	Streetscape
L2.0	Podium
L3.0	Roof Deck
L3.1	Usable Open Space + Planting Notes
I0.0	Irr. Notes & Legend
I1.0	Irr. Plan - Street
I2.0	Irr. Plan - Podium
I3.0	Irr. Plan - Roof Deck
I3.1	Irr. Plan - POC
I4.0	Irrigation Details
I5.0	Irrigation Details
I6.0	Irrigation Details
I7.0	Irrigation Details

Plant List

Index	Latin Name	Common Name	Size	WELO	CA Nat.	Notes
Street Trees						
CC	Carpinus caroliniana	American Hornbeam	24" Box	M		University Ave
LC	Lophostemon confertus	Brisbane Box	24" Box	VL, L		Berkeley Way
PA	Platanus acerifolia 'Columbia'	Columbia' London Plane Tree	24" Box	L, M		Shattuck Ave
Trees						
BE	Brahea edulis	Guadalupe Palm	24" Box	L		Roof
BR	Beaucarnea recurvata	Pony Tail Palm	15 Gallon	VL		Roof
CO	Cercis occidentalis	Western Redbud	24" Box	VL	X	Podium FTP
CR	Ceanothus 'Ray Hartman'	Ray Hartman California Lilac	24" Box	L, ES	X	Podium
HG	Heteromeles arbutifolia 'Davis Gold	Davis Gold Toyon	24" Box	VL, L	X	Podium FTP
PR	Phoenix roebelenii	Pygmy Date Palm	24" Box	L		Roof
WF	Washingtonia filifera	California Fan Palm	24" Box	L, ES	X	Roof
Shrubs						
AD*	Agave deserti	Desert Agave	5 Gallon	VL, L	X	Roof
AP	Arctostaphylos pajaroensis 'Paradise	Paradise Pajaro Manzanita	15 Gallon	VL	X	Roof
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	Podium, Street
CF	Comus sericea, C. Stolonifera 'Hedgerow Gc	Hedgerow Gold Redtwig Dogwooc	15 Gallon	M, ES	X	Podium
HW*	Hesperoyucca whipplei	Our Lord's Candle	5 Gallon	VL	X	Roof
OB*	Opuntia basilaris	Prickly Pear	5 Gallon	VL		Roof
SM	Sabal minor	Dwarf Palmetto	15 Gallon	L		Roof
YP*	Yucca pallida	Pale Leaf Yucca	5 Gallon	VL, L, ES		Roof
ZF	Zamia furfuracea	Cardboard Palm	5 Gallon	M		Roof
Groundcovers						
AM	Armeria maritima	Sea Pink	1 Gallon	M	X	Roof
BM	Baileya multiradiata	Desert Marigold	1 Gallon	VL	X	Roof
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	Street
CM	Coreopsis maritima	Sea Dahlia	1 Gallon	L	X	Roof
DF	Dudleya farinosa	Coast Live Forever	1 Gallon	VL	X	Podium
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	Street
Podium FTP** *(1143 sf)*						
AS	Achillea 'Salmon Beauty'	Salmon Beauty Yarrow	1 Gallon	VL, L	X	
BG	Bouteloua gracilis 'Blonde Ambition'	Blonde Ambition Blue Grama	1 Gallon	L	X	
CB	Ceanothus thyrsiflorus 'Cool Blue'	Cool Blue Mountain Lilac	15 Gallon	L	X	
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	
CP	Ceanothus pallidus 'Marie Simon'	Pink Flowering Ceanothus	15 Gallon	VL, L	X	
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	
EF	Eriogonum fasciculatum	California Buckwheat	5 Gallon	VL, L	X	
EG	Elymus glaucus	Blue Wild Rye	1 Gallon	L	X	
ID	Iris douglasiana	Douglas Iris	1 Gallon	M, ES	X	
JE	Juncus effusus	Soft Rush	1 Gallon	VL, H, ES	X	
JP	Juncus patens 'Elk Blue'	Elk Blue California Gray Rush	1 Gallon	L, M, ES	X	
RC	Rudbeckia californica	California Coneflower	1 Gallon	M	X	
SA	Symphoricarpos albus var. laevigatus	Upright Snowberry	5 Gallon	VL, L, M	X	
Podium Grate Walks *(5370 sf)*						
SD	Sedum divergens	Cascade Stonecrop	Flat	L, ES	X	
SO	Sedum oreganum	Oregon Stonecrop	Flat	L, ES	X	
SS	Sedum spathulifolium 'Cape Blanco'	Cape Blanco Sedum	Flat	L	X	

**To be located with 3' min. between edge of mature plant and walkways or planter edges.*
***Species selected per Stormwater C.3 Guidebook (Dalziel et. al.).*

Note: *At least 80% of all plantings will be California natives.*

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JOB: 0000

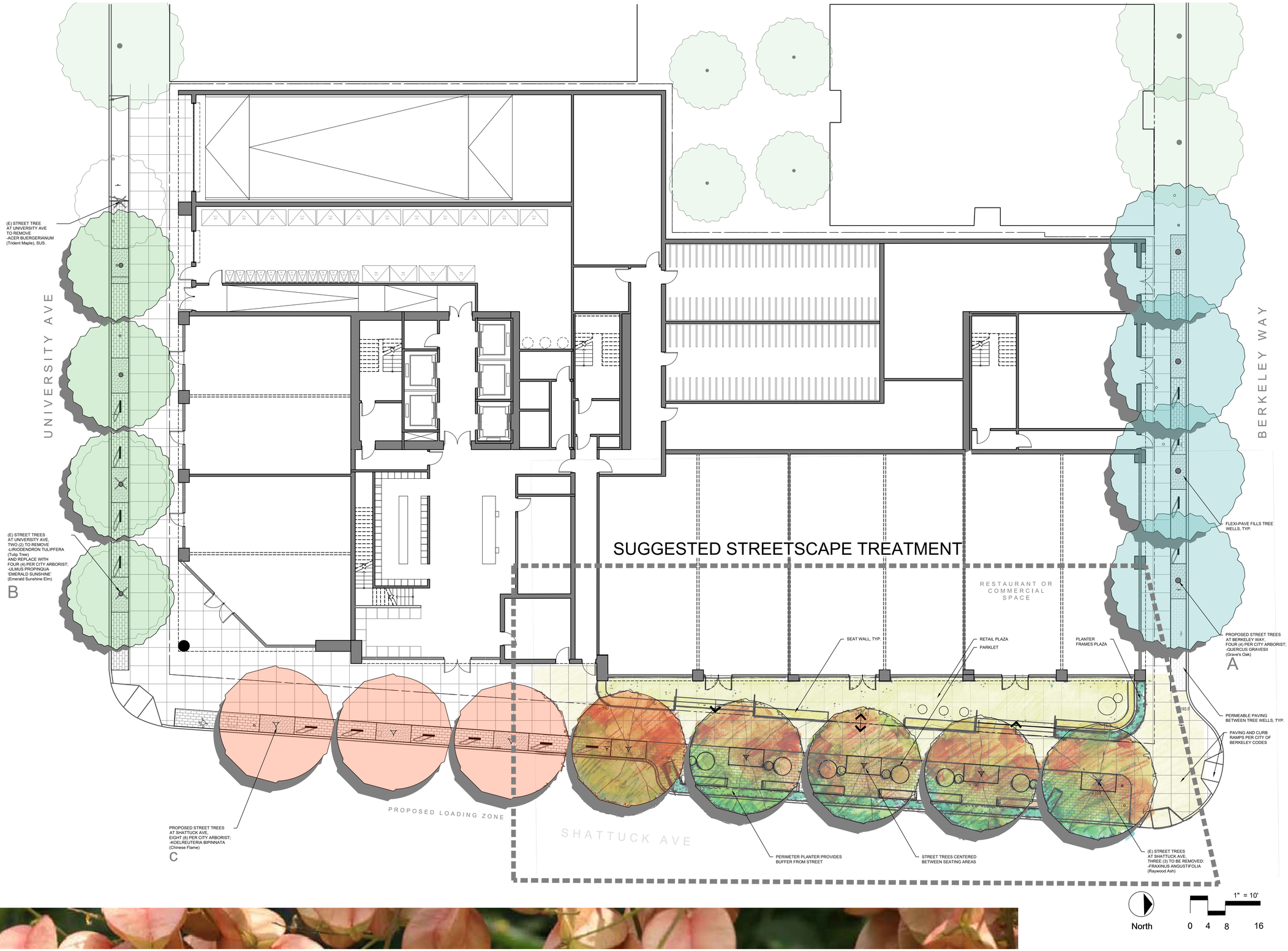
SHEET:

COVER SHEET, NOTES, AND LEGEND

L0.0







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JOB: 0000

SHEET:

LANDSCAPE PLAN AT STREETSCAPE

L1.0



Permeable grate with groundcover below
- Precedent: ASLA HQ Green Roof
-Mix of 3 shade-tolerant sedums





Maintenance corridor

FTP, typ.
1,306 SF total

Flexible seating

NOTE: FLOW-THROUGH PLANTER AREA TOTALS 1,306 SF; REQUIRED FTP AREA EQUALS MIN 4% OF BUILDING FOOTPRINT'S IMPERVIOUS SURFACE.

BUILDING FOOTPRINT = 26,208 SF
REQUIRED FTP = 26,208 SF X 0.04 = 1,049 SF
PROVIDED FTP = 1,306 SF

Bistro tables

Raised planter with patio trees and wood benches

UNIVERSITY AVE

BERKELEY WAY

Low planting in raised flow-through planters (FTPs)

Flowering tree
-'Davis Gold' Toyon

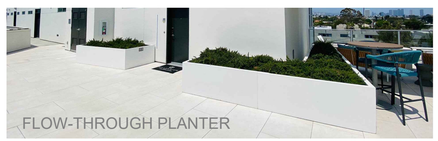
Small trees and accent plantings visible from street

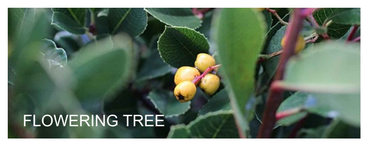
Podium seating overlooks ground-level plaza and parklet at Shattuck Ave

SHATTUCK AVE


PRECEDENT


VEGETATED GRATE


FLOW-THROUGH PLANTER


FLOWERING TREE

North

3/16"=1'-0"
0 2 4 8

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JOB: 0000

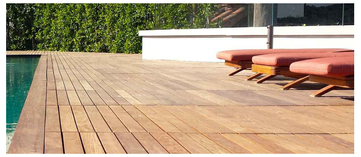
SHEET:

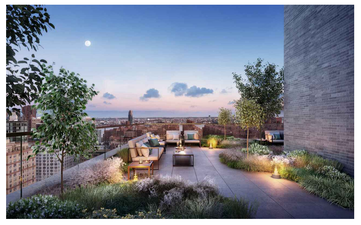
SECOND FLOOR
PODIUM GARDENS

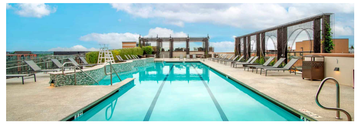
L2.0



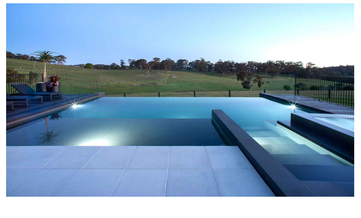


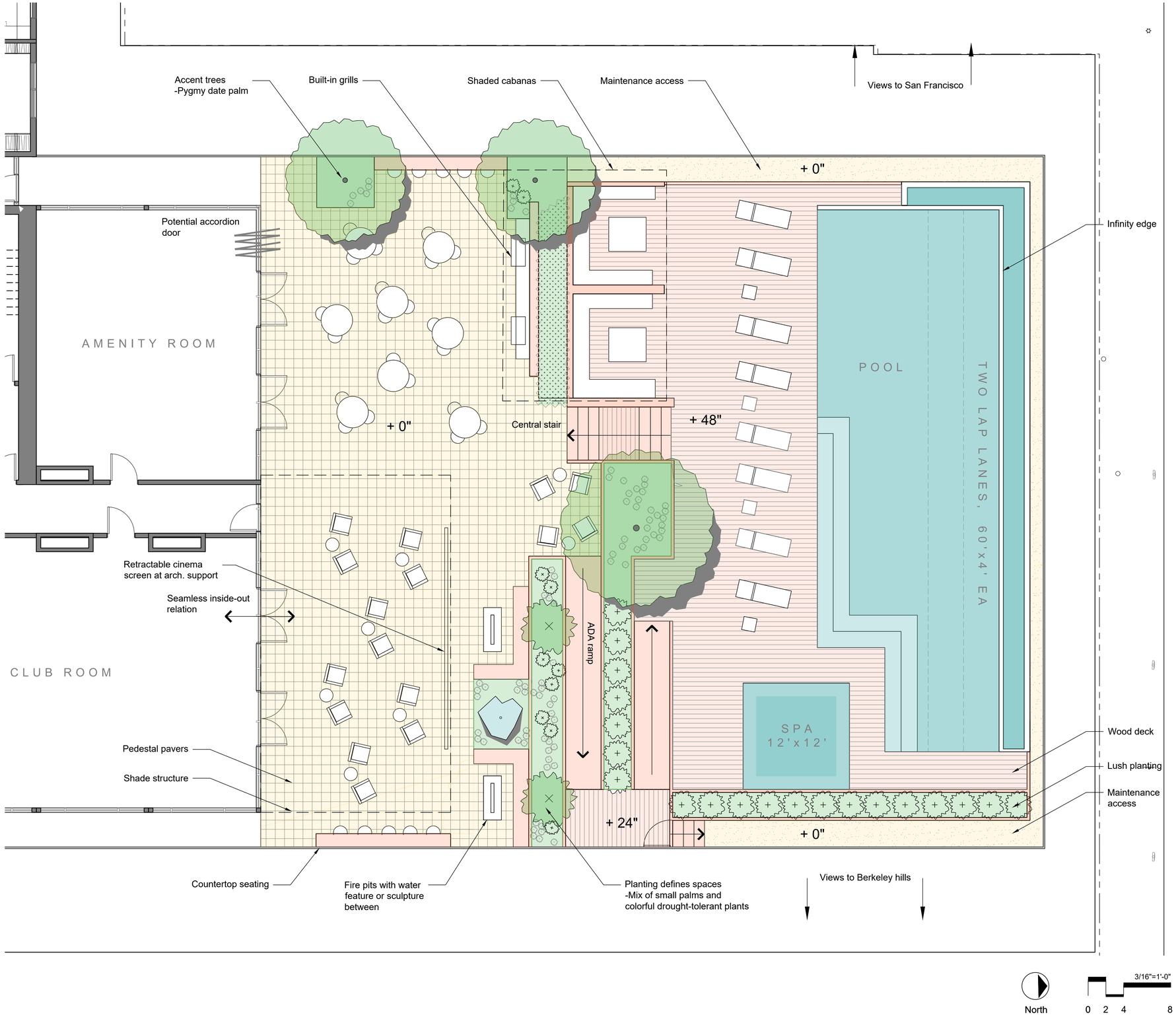












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JOB: 0000

SHEET:

FOURTEENTH FLOOR ROOF DECK

L3.0

PLANTING NOTES

SEE COVER SHEET L0.0 FOR GENERAL NOTES

GENERAL PLANTING NOTES:

1. SOIL PREPARATION: THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINISH GRADING AND ALL PLANTING AREA DRAINAGE. POSITIVE DRAINAGE AWAY FROM THE BUILDING AS PER CITY CODES SHALL BE MAINTAINED. NO LOW SPOTS WHICH HOLD STANDING WATER WILL BE ACCEPTED.
   THE LANDSCAPE CONTRACTOR SHALL INCORPORATE SOIL PREPARATION AMENDMENT INTO PLANTING AREAS AS NOTED BELOW. WHERE ROTO-TILLING IS NOT POSSIBLE, INCORPORATE SOIL AMENDMENTS INTO TOP 6 INCHES WITH HAND TOOLS. AFTER INSTALLATION OF IRRIGATION SYSTEM, ALL PLANTING AREAS ARE TO BE FINE GRADED TO WITHIN 2 INCHES AND SLIGHTLY MOUNDED AWAY FROM EDGES OF TOP OF PLANTER, CURB, WALK, HEADER, ETC. AND RAKED SMOOTH WITH ALL ROCKS AND DEBRIS OVER 1-INCH IN DIAMETER REMOVED.

2. SOIL PREPARATION AMENDMENTS AND BACKFILL MIX: THE LANDSCAPE CONTRACTOR SHALL AMEND EXISTING SOIL PER THE SOILS REPORT. NATIVE SOIL IS PREFERRED.

3. TREE PLANTING: TREES SHALL BE PLANTED PER DETAIL ON PLAN. TREES SHALL TYPICALLY BE LOCATED A MINIMUM OF 3 1/2 FEET FROM CURBS, WALKS, HEADERS, BUILDINGS, AND OVERHEAD STRUCTURES WITHIN THE PROJECT. BACKFILL PER SOILS REPORT. THOROUGHLY WATER TREES IMMEDIATELY AFTER PLANTING.

4. SHRUB PLANTING: THE SHRUBS SHALL BE SPOTTED AS PER PLAN, SPOTTED AT THE SHOWN LOCATIONS, AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO THE DIGGING OF THE HOLES. SHRUB BACKFILL SHALL BE PER SOILS REPORT. THOROUGHLY WATER SHRUBS IMMEDIATELY AFTER PLANTING. DO NOT PLANT ANY SHRUB WITHIN 2 FEET OF ANY BUILDING WALL.

5. MAINTENANCE: THE CONTRACTOR SHALL MAINTAIN THE PROJECT FOR 90 DAYS (OR AS REQUESTED BY OWNER) FOLLOWING THE APPROVAL TO BEGIN THE MAINTENANCE PERIOD. DURING THE ENTIRE MAINTENANCE PERIOD, WATERING, CULTIVATING, WEEDING, MOWING, REPAIR/TIGHTENING OF STAKES AND TIES, RESTORATION OF BASINS, PROVISION OF SUPPLEMENTAL WATER BY HAND IN ADDITION TO IRRIGATION SYSTEM IS REQUIRED AS NECESSARY. NO PRE-EMERGENCE HERBICIDES SHALL BE APPLIED - HAND REMOVE WEEDS. ONLY ORGANIC FERTILIZERS SHALL BE APPLIED SUCH AS THOSE SPECIFIED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. AT THE END OF THE 90 DAY MAINTENANCE PERIOD ALL AREAS ARE TO BE WEED FREE AND ALL PLANT MATERIAL SHALL BE IN A HEALTHY, THRIVING CONDITION. INTEGRATED PEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED.

6. SUBSTITUTIONS: REQUESTS FOR PLANT SUBSTITUTIONS SHALL BE MADE TO THE LANDSCAPE ARCHITECT WITHIN 15 DAYS AFTER SIGNING OF CONTRACT.

7. GUARANTEE: ALL CONSTRUCTION, TREES AND SHRUBS BY THE LANDSCAPE CONTRACTOR AND/OR SUBCONTRACTORS SHALL BE GUARANTEED FOR (1) ONE YEAR AFTER START OF MAINTENANCE PERIOD. THE CONTRACTOR SHALL REPLACE, AT NO EXPENSE TO THE OWNER, ANY AND ALL LANDSCAPE MATERIALS THAT ARE IN AN UNACCEPTABLE CONDITION FOR TIME OF USE, AND TREES OR SHRUBS THAT ARE DEAD OR NOT IN A VIGOROUS, HEALTHY GROWING CONDITION, WITHIN TWO WEEKS OF NOTIFICATION OF SUCH CONDITION. REPLACEMENT SHALL BE OF THE SAME KIND AND SIZE AS THE ORIGINALLY SPECIFIED ITEM AND SHALL BE REPLACED AS ORIGINALLY DESCRIBED ON THE DRAWINGS. THE CONTRACTOR SHALL NOT BE HELD LIABLE FOR LOSS OF PLANT MATERIALS DURING THE GUARANTEE PERIOD DUE TO VANDALISM, ACCIDENTAL CAUSES OR ACTS OF NEGLECT BY OTHERS THAN THE CONTRACTOR, HIS AGENTS AND EMPLOYEES.

8. CLEAN UP: AT THE END OF EACH WORK DAY, AT THE INSPECTION FOR SUBSTANTIAL COMPLETION, AND BEFORE ACCEPTANCE OF PROJECT - CLEAN
PAVED AREAS THAT ARE DIRTIED OR STAINED BY CONSTRUCTION OPERATIONS BY SWEEPING OR WASHING, AND REMOVE DEFACEMENTS AND STAINS.
REMOVE CONSTRUCTION EQUIPMENT, EXCESS MATERIALS AND TOOLS. HAUL FROM OWNERS PROPERTY ANY DEBRIS RESULTING FROM CONSTRUCTION, AND DISPOSE OF IT LEGALLY. REMOVE REMAINING TEMPORARY PROTECTION AT TIME OF ACCEPTANCE BY OWNER UNLESS OTHERWISE AGREED.

9. FERTILIZERS: AVAILABLE FROM CALIFORNIA ORGANIC FERTILIZERS, INC. 1-800-269-5690 WWW.ORGANICAG.COM.

STREET TREE PROTECTION NOTES:

1. ALL TREE PROTECTION REQUIREMENTS AND RESTRICTIONS SHALL BE INCLUDED IN THE CONSTRUCTION NOTES AND PRINTED ON ALL COPIES OF THE PLANS.

a) INCLUDE THE NAME AND PHONE NUMBER OF THE PARTY THAT WILL MONITOR THE SITE AND ENSURE THE TREE PROTECTION MEASURES ARE BEING FOLLOWED; AND WHAT THE MONITORING SCHEDULE WILL BE: **NAME / PHONE / SCHEDULE**

b) INSTALL 6 FOOT CHAIN-LINK FENCING TO PROTECT THE AREA WITHIN THE DRIP-LINE OF ANY PROTECTED TREE IN THE DEVELOPMENT AREA. FENCING SHALL BE MOUNTED TO POSTS THAT ARE DRIVEN INTO THE GROUND. WHERE THIS IS NOT POSSIBLE BECAUSE OF EXISTING STRUCTURES, TREE ROOTS, OR OTHER OBSTACLES, CHAIN-LINK PANELS MOUNTED TO STANCHIONS AND CONNECTED TO EACH OTHER MAY BE APPROVED. IN AREAS WHERE DIFFICULT TERRAIN MAKES THIS IMPRACTICAL, ORANGE CONSTRUCTION FENCING MAY BE APPROVED.

c) ALL FENCING SHALL HAVE SIGNAGE STATING THE REQUIREMENTS AND RESTRICTIONS, AND THE CONTACT INFORMATION FOR THE PROJECT ARBORIST.

d) WHEN ANY APPROVED CONSTRUCTION ACTIVITY WILL OCCUR WITHIN THE DRIP LINE OF A PROTECTED TREE THAT IS NOT SURROUNDED BY PROTECTIVE FENCING, THE TRUNK SHALL BE PROTECTED BY WRAPPING IT WITH STRAW TUBES (WATTLE) OR VERTICAL WOOD SLATS (EX. 2X4), UP TO A MINIMUM OF 8 FEET FROM GRADE (SEE FIGURE 1, PAGE 6). SLATS SHALL BE ANGLED TO PROTECT THE ROOT FLARE AT THE BASE OF THE TREE; AND CLOSED CELL FOAM OR EQUIVALENT MATERIAL SHALL BE USED TO PROTECT THE TRUNK OF THE TREE WHERE IT CONTACTS THE SLATS.
LATERAL BRANCHES BELOW 8 FEET SHALL ALSO BE PROTECTED. IN ADDITION, THE AREA SHALL BE COVERED WITH A 6 INCH LAYER OF MULCH TOPPED WITH 3/4 INCH PLYWOOD THAT IS FASTENED TOGETHER. IF ANY LARGE OR MOTORIZED EQUIPMENT (MINI EXCAVATOR, BOBCAT®, POWERED WHEELBARROW) WILL TRAVEL OVER THIS AREA, THE PLYWOOD MUST BE A MINIMUM OF 1 INCH AND ADEQUATE FOR THE WEIGHT OF THE EQUIPMENT THAT WILL TRAVEL OVER IT. IF LARGER EQUIPMENT (BACKHOE, TRACTOR) WILL BE USED, CONSULT THE CITY ARBORIST. ***CONSTRUCTION ACTIVITY REFERS TO ANY MOVEMENT OF PEOPLE, TOOLS, OR EQUIPMENT; OR STORAGE OF ANY TOOLS, EQUIPMENT, OR SUPPLIES.***

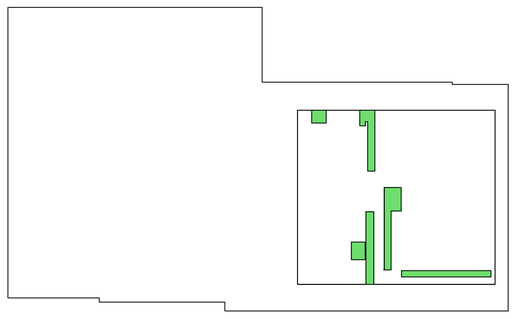
f) LOCATE AND EXPOSE ANY ROOTS 2 INCHES IN DIAMETER OR GREATER THAT MAY NEED TO BE PRUNED TO FACILITATE THE PROJECT. THIS INCLUDES ANY TRENCHING THAT WILL BE DONE AS PART OF FOUNDATION OR UTILITY INSTALLATION. CONTACT THE CITY ARBORIST IN ADVANCE TO LESSEN THE AMOUNT OF TIME THAT THE ROOTS WILL BE EXPOSED. IF ROOTS MUST BE LEFT EXPOSED FOR MORE THAN THREE DAYS, CONSULT THE CITY ARBORIST. **NOTE:** THE 2 INCH DIAMETER THRESHOLD FOR ROOTS IS A GUIDELINE THAT MAY BE ADJUSTED BY THE CITY ARBORIST DEPENDING ON THE SIZE AND CONDITION OF THE TREE, AND THE LOCATION OF THE ROOTS. THE CITY ARBORIST MAY INCREASE THE TPZ, OR IMPOSE OTHER RESTRICTIONS, WHEN THE DRIPLINE OF A TREE HAS BEEN ALTERED BY PRUNING OR UNUSUAL GROWTH PATTERNS.

g) NO STORAGE OF BUILDING MATERIALS, REFUSE, EXCAVATED SPOILS, OR DUMPING OF POISONOUS MATERIALS, IS PERMITTED WITHIN THE DRIP LINE OF ANY PROTECTED TREE. POISONOUS MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, PAINT, PETROLEUM PRODUCTS, CONCRETE OR STUCCO MIX, DIRTY WATER, OR ANY OTHER MATERIAL WHICH MAY BE DELETERIOUS TO TREE HEALTH.

STREET TREE PLANTING NOTES:

1. FOR NEW PLANTING:
   a. THE CITY ARBORIST SHALL BE NOTIFIED, BY CALLING (510) 981-6660, PRIOR TO THE DELIVERY OF THE TREES FOR INSPECTION OF THEIR SIZE AND STRUCTURE.
   b. EACH TREE SHALL BE PROPERLY PLANTED AT OR JUST BELOW GRADE (<1"). SOIL AMENDMENT IS NOT RECOMMENDED, AND NATIVE SOIL IS PREFERRED. NO CONSTRUCTION RUBBLE OR NON-ORGANIC MATERIAL SHALL BE WITHIN THE TREE WELL.
   c. THE SURROUNDING SOIL OUTSIDE THE CONTAINER (ROOT BALL) SHOULD BE LIGHTLY COMPACTED TO ABOUT 4 INCHES BELOW GRADE WITH THE ROOT BALL HIGHER THAN THAT.
   d. 2 TO 2.5 INCHES OF BASE ROCK SHOULD BE APPLIED AROUND THE ROOT BALL LEAVING 1.5 TO 2 INCHES LEFT FOR THE MATERIAL.
   e. 15G CONTAINERS ARE APPROXIMATELY 15-16 INCHES IN DIAMETER AND THE MATERIAL SHOULD BE APPLIED TO THE APPROXIMATE EDGE OF THE ROOT BALL WITH THE TOP GRADE OF THE ROOT BALL UP TO 1 INCH BELOW THE TOP OF THE MATERIAL THAT WILL BE APPLIED.
   f. EACH NEW TREE SHALL HAVE AUTOMATIC IRRIGATION INCLUDING TWO TREE BUBBLERS THAT CURVE OVER THE TOP OF THE TREES' ROOT BALL AND PROVIDE A MINIMUM OF 20 GALLONS PER WEEK BETWEEN MARCH 15 AND OCTOBER 15 FOR THE FIRST THREE YEARS. LARGER TREES MAY REQUIRE ADDITIONAL BUBBLERS. THE BUBBLERS SHOULD BE LOCATED ON TOP OF THE ROOT BALL WITHIN THIS 15-16 INCH CIRCLE AND NOT BE COVERED WITH MATERIAL.
   g. TREES THAT DIE WITHIN THE FIRST THREE YEARS MUST BE REPLACED AT THE PROPERTY OWNER'S EXPENSE.

USEABLE OPEN SPACE CALCULATIONS



ROOF DECK TOTAL USABLE AREA = 6,882 SF

(ROOF DECK HARDSCAPED = 6,297 SF)

ROOF DECK LANDSCAPED = 585 SF

ROOF DECK LANDSCAPED % = 9%

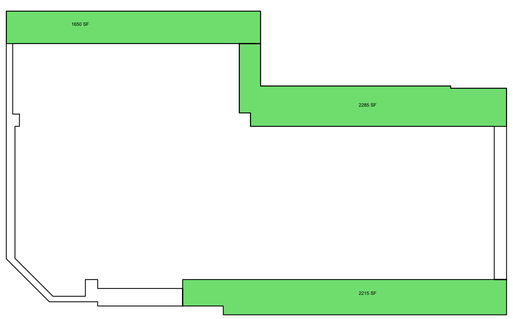
ROOF DECK USEABLE AREA (NTS)

1998 SHATTUCK TOTAL USABLE AREA = 13,032 SF

(TOTAL HARDSCAPED AREA = 6,297 SF)

TOTAL LANDSCAPED AREA = 6,735 SF

TOTAL LANDSCAPED AREA % = 52%



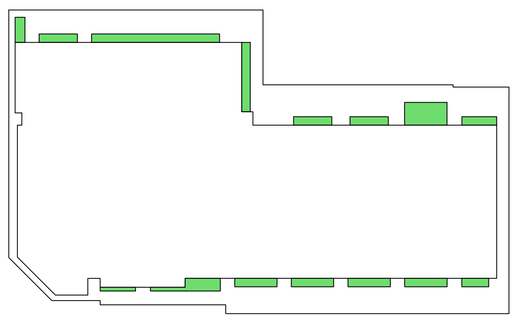
PODIUM TOTAL USABLE AREA = 6,150 SF

(PODIUM HARDSCAPED = 0 SF)

PODIUM LANDSCAPED = 6,150 SF

PODIUM LANDSCAPED % = 100%

PODIUM USEABLE AREA (NTS)



1998 SHATTUCK TOTAL ROOF AREA = 26,208 SF

4% FLOW-THROUGH PLANTER AREA NEEDED = 1,049 SF

CURRENT FLOW-THROUGH PLANTER AREA = 1,306 SF
(AT PODIUM)

FLOW-THROUGH PLANTER AREA (NTS)

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SHEET:

USABLE OPEN SPACE CALCULATIONS + PLANTING NOTES

L3.1

IRRIGATION NOTES

1. THESE IRRIGATION DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. ALL PIPING, VALVES, AND OTHER IRRIGATION COMPONENTS MAY BE SHOWN WITHIN PAVED AREAS FOR GRAPHIC CLARITY ONLY AND ARE TO BE INSTALLED WITHIN PLANTING AREAS. DUE TO THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, SLEEVES, CONDUIT, AND OTHER ITEMS WHICH MAY BE REQUIRED. INVESTIGATE THE STRUCTURAL AND FINISHED CONDITION AFFECTING THE CONTRACT WORK INCLUDING OBSTRUCTIONS, GRADE DIFFERENCES OR AREA DIMENSIONAL DIFFERENCES. IN THE EVENT OF FIELD DISCREPANCY WITH CONTRACT DOCUMENTS, PLAN THE INSTALLATION WORK ACCORDINGLY BY NOTIFICATION AND APPROVAL OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND ACCORDING TO THE CONTRACT SPECIFICATIONS. NOTIFY AND COORDINATE IRRIGATION CONTRACT WORK WITH APPLICABLE CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE, CONDUIT OR SLEEVES THROUGH OR UNDER WALLS, ROADWAYS, PAVING AND STRUCTURES BEFORE CONSTRUCTION. IN THE EVENT THESE NOTIFICATIONS ARE NOT PERFORMED, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR REQUIRED REVISIONS.

2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE; THE UNIFORM PLUMBING CODE, PUBLISHED BY THE WESTERN PLUMBING OFFICIALS ASSOCIATION; AND OTHER STATE OR LOCAL LAWS OR REGULATIONS. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR REGULATIONS. THE CONTRACTOR SHALL FURNISH WITHOUT ANY EXTRA CHARGE, ANY ADDITIONAL MATERIAL AND LABOR WHEN REQUIRED BY THE COMPLIANCE WITH THESE CODES AND REGULATIONS.

3. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF IRRIGATION SYSTEM WITH LAYOUT AND INSTALLATION OF THE PLANT MATERIALS TO INSURE THAT THERE WILL BE COMPLETE AND UNIFORM IRRIGATION COVERAGE OF PLANTING IN ACCORDANCE WITH THESE DRAWINGS, AND CONTRACT DOCUMENTS. THE IRRIGATION LAYOUT SHALL BE CHECKED BY THE CONTRACTOR AND OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO CONSTRUCTION TO DETERMINE IF ANY CHANGES, DELETIONS, OR ADDITIONS ARE REQUIRED. IRRIGATION SYSTEM SHALL BE INSTALLED AND TESTED PRIOR TO INSTALLATION OF PLANT MATERIAL.

4. THE INTENT OF THIS IRRIGATION SYSTEM IS TO PROVIDE THE MINIMUM AMOUNT OF WATER REQUIRED TO SUSTAIN GOOD PLANT HEALTH.

5. IT IS THE RESPONSIBILITY OF THE MAINTENANCE CONTRACTOR AND/OR OWNER TO PROGRAM THE IRRIGATION CONTROLLER(S) TO PROVIDE THE MINIMUM AMOUNT OF WATER NEEDED TO SUSTAIN GOOD PLANT HEALTH. THIS INCLUDES MAKING ADJUSTMENTS TO THE PROGRAM FOR SEASONAL WEATHER CHANGES, PLANT MATERIAL, WATER REQUIREMENTS, MOUNDS, SLOPES, SUN, SHADE AND WIND EXPOSURE.

6. IT IS THE RESPONSIBILITY OF A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120 VOLT A.C. (2.5 AMP DEMAND PER CONTROLLER) ELECTRICAL SERVICE TO THE CONTROLLER LOCATION(S). IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO COORDINATE THE ELECTRICAL SERVICE STUB-OUT TO THE CONTROLLER(S). PROVIDE PROPER GROUNDING PER CONTROLLER MANUFACTURER'S INSTRUCTIONS AND IN ACCORDANCE WITH LOCAL CODES.

7. PROVIDE EACH CONTROLLER WITH ITS OWN GROUND ROD. SEPARATE THE GROUND RODS BY A MINIMUM OF EIGHT FEET. THE GROUND ROD SHALL BE AN EIGHT FOOT LONG BY 5/8" DIAMETER U.L. APPROVED COPPER CLAD ROD. INSTALL NO MORE THAN 6" OF THE GROUND ROD ABOVE FINISH GRADE. CONNECT #6 GAUGE WIRE WITH A U.L. APPROVED GROUND ROD CLAMP TO ROD AND BACK TO GROUND SCREW AT BASE OF CONTROLLER WITH APPROPRIATE CONNECTOR. MAKE THIS WIRE AS SHORT AS POSSIBLE, AVOIDING KINKS OR BENDING.

8. INSTALL NEW BATTERIES IN THE IRRIGATION CONTROLLER(S) TO RETAIN PROGRAM IN MEMORY DURING TEMPORARY POWER FAILURES. USE QUANTITY, TYPE AND SIZE REQUIRED AS PER CONTROLLER MANUFACTURER'S INSTRUCTIONS.

9. SCHEDULE A MEETING WHICH INCLUDES REPRESENTATIVES OF THE IRRIGATION CONTROLLER MANUFACTURER, THE MAINTENANCE CONTRACTOR, THE OWNER AND THE IRRIGATION CONTRACTOR AT THE SITE FOR INSTRUCTION ON THE PROPER PROGRAMMING AND OPERATION OF THE IRRIGATION CONTROLLER.

10. PROVIDE EACH IRRIGATION CONTROLLER WITH ITS OWN INDEPENDENT LOW VOLTAGE COMMON GROUND WIRE.

11. IRRIGATION CONTROL WIRES: SOLID COPPER WITH U.L. APPROVAL FOR DIRECT BURIAL IN GROUND. COMMON GROUND WIRE: SIZE #12-1 WIRE WITH A WHITE INSULATING JACKET. CONTROL WIRE SERVICING REMOTE CONTROL VALVES: SIZE #14-1 WIRE WITH INSULATING JACKET OF COLOR OTHER THAN WHITE. SPLICES SHALL BE MADE WITH 3M-DBY SEAL PACKS OR APPROVED EQUAL.

12. INSTALL TWO SPARE CONTROL WIRES OF A DIFFERENT COLOR ALONG THE ENTIRE MAIN LINE. LOOP 36" EXCESS WIRE INTO EACH SINGLE VALVE BOX AND INTO ONE VALVE BOX IN EACH GROUP OF VALVES.

13. SPLICING OF LOW VOLTAGE WIRES IS PERMITTED IN VALVE BOXES ONLY. LEAVE A 36" LONG, 1" DIAMETER COIL OF EXCESS WIRE AT EACH SPLICE AND A 36" LONG EXPANSION LOOP EVERY 100 FEET ALONG WIRE RUN. TAPE WIRES TOGETHER EVERY TEN FEET. DO NOT TAPE WIRES TOGETHER WHERE CONTAINED WITHIN SLEEVING OR CONDUIT.

14. INSTALL GREEN PLASTIC VALVE BOXES WITH BOLT DOWN, NON HINGED COVER MARKED "IRRIGATION CONTROL VALVE". BOX BODY SHALL HAVE KNOCK OUTS. ACCEPTABLE VALVE BOX MANUFACTURER'S INCLUDE NDS, CARSON OR APPROVED EQUAL.

15. INSTALL REMOTE CONTROL VALVE BOXES 12" FROM WALK, CURB, BUILDING OR LANDSCAPE FEATURE. AT MULTIPLE VALVE BOX GROUPS, INSTALL EACH BOX AN EQUAL DISTANCE FROM THE WALK, CURB, BUILDING OR LANDSCAPE FEATURE AND PROVIDE 12" BETWEEN BOX TOPS. ALIGN THE SHORT SIDE OF RECTANGULAR VALVE BOXES PARALLEL TO WALK, CURB, BUILDING OR LANDSCAPE FEATURE.

16. VALVE LOCATIONS SHOWN ARE DIAGRAMMATIC. INSTALL IN GROUND COVER/SHRUB AREAS (AVOID LAWN AREAS WHERE POSSIBLE).

17. THE CONTRACTOR SHALL LABEL CONTROL LINE WIRE AT EACH REMOTE CONTROL VALVE WITH A 2 1/4" X 2 3/4" POLYURETHANE I.D. TAG, INDICATING IDENTIFICATION NUMBER OF VALVE (CONTROLLER AND STATION NUMBER). ATTACH LABEL TO CONTROL WIRE. THE CONTRACTOR SHALL PERMANENTLY STAMP ALL VALVE BOX LIDS WITH APPROPRIATE IDENTIFICATION AS NOTED IN CONSTRUCTION DETAILS.

18. FLUSH AND ADJUST IRRIGATION OUTLETS AND NOZZLES FOR OPTIMUM PERFORMANCE AND TO PREVENT OVER SPRAY ONTO WALKS, ROADWAYS, AND/OR BUILDINGS. SELECT THE BEST DEGREE OF THE ARC AND RADIUS TO FIT THE EXISTING SITE CONDITIONS AND THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH CONTROL ZONE.

19. SET SPRINKLER HEADS PERPENDICULAR TO FINISH GRADE.

20. LOCATE BUBBLERS ON UPHILL SIDE OF PLANT OR TREE.

21. INSTALL A HUNTER HCV SERIES, KBI CV SERIES, OR APPROVED EQUAL SPRING LOADED CHECK VALVE IN SPRINKLER RISER ASSEMBLIES WHERE LOW OUTLET DRAINAGE WILL CAUSE EROSION AND/OR EXCESS WATER.

22. WHERE IT IS NECESSARY TO EXCAVATE ADJACENT TO EXISTING TREES, USE CAUTION TO AVOID INJURY TO TREES AND TREE ROOTS. EXCAVATE BY HAND IN AREAS WHERE TWO (2) INCH AND LARGER ROOTS OCCUR. BACK FILL TRENCHES ADJACENT TO TREE WITHIN TWENTY-FOUR (24) HOURS. WHERE THIS IS NOT POSSIBLE, SHADE THE SIDE OF THE TRENCH ADJACENT TO THE TREE WITH WET BURLAP OR CANVAS.

23. NOTIFY LOCAL JURISDICTIONS FOR INSPECTION AND TESTING OF INSTALLED BACKFLOW PREVENTION DEVICE.

24. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE SHOWN ON THE IRRIGATION DRAWINGS. VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE.

25. IRRIGATION DEMAND: REFER TO PLANS.

26. THE EXISTING MAIN LINE SHOWN ON THE DRAWINGS IS DIAGRAMMATIC. VERIFY AND LOCATE EXISTING MAIN LINE IN FIELD. REPORT TO ARCHITECT IN WRITING ANY DEVIATION OF EXISTING MAIN LINE LOCATION FROM THAT SHOWN ON THE DRAWINGS.

27. PIPE SIZING SHOWN ON THE DRAWINGS IS TYPICAL. AS CHANGES IN LAYOUT OCCUR DURING STAKING AND CONSTRUCTION THE SIZE MAY NEED TO BE ADJUSTED ACCORDINGLY.

28. PIPE THREAD SEALANT COMPOUND SHALL BE RECTOR SEAL #5.

29. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MINOR CHANGES IN THE IRRIGATION LAYOUT DUE TO OBSTRUCTIONS NOT SHOWN ON THE IRRIGATION DRAWINGS SUCH AS LIGHTS, FIRE HYDRANTS, SIGNS, ELECTRICAL ENCLOSURES, ETC.

30. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CHANGES IN THE IRRIGATION LAYOUT AND VALVE ZONING DUE TO VARIATIONS IN THE EXISTING SITE CONDITIONS SUCH AS EXPOSURE FROM BUILDINGS, TRELLISES, TREES, ETC., AS WELL AS SLOPE AND SOIL CONDITIONS. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND IRRIGATION CONSULTANT OF THE PROPOSED CHANGES PRIOR TO INSTALLATION FOR APPROVAL.

31. WHEN WORK OF THIS SECTION HAS BEEN COMPLETED AND SUCH OTHER TIMES AS MAY BE DIRECTED, REMOVE ALL TRASH, DEBRIS, SURPLUS MATERIALS AND EQUIPMENT FROM SITE.

32. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLEMENTAL HAND WATERING OF ALL PLANT MATERIAL WITHIN DRIPLINE AREAS UNTIL THE PLANTS ARE SUFFICIENTLY ESTABLISHED.

33. VERIFY LOCATIONS OF ALL IRRIGATION COMPONENTS INSTALLED WITHIN A VALVE BOX WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. DO NOT INSTALL UNTIL LANDSCAPE ARCHITECT PROVIDES ACCEPTABLE LOCATIONS.

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Walnut Creek, CA 94597
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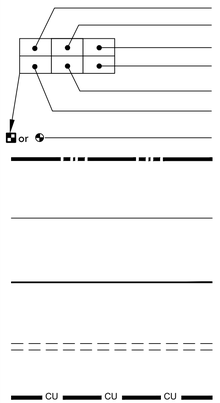
www.rmairrigation.com

IRRIGATION LEGEND

SYMBOL	MODEL NUMBER	DESCRIPTION	NOZZLE GPM	OPERATING PSI	OPERATING RADIUS (FEET)
	PCB-25	HUNTER BUBBLER (SHRUB)	0.25	30	TRICKLE
■	PCB-25	HUNTER BUBBLER (TREE) MIN. 2 PER TREE. REFER TO BUBBLER DETAIL FOR QUANTITY OF BUBBLERS PER TREE SIZE.	0.25	30	TRICKLE
	WLT-0500-T	NDS SCH 40 BALL VALVE OR APPROVED EQUAL			
	ECO-ID	HUNTER ECO-INDICATOR			
	ICV-101/AS-40	HUNTER REMOTE CONTROL VALVE WITH 40 PSI PRESSURE REGULATOR			
	ICZ-101-40	HUNTER REMOTE CONTROL VALVE WITH A 40 PSI PRESSURE REGULATOR AND A 1" FILTER.			
	QB44RCAR10	BUCKNER 1" TWO-PIECE QUICK COUPLING VALVE (ANTI-ROTATION)			
	T-FP600A-LF-1"	NIBCO 1" BRASS BALL VALVE			
MV	WT-MV-100G-SNO	WeatherTRAK 1" BRASS MASTER VALVE (NORMALLY OPEN)			
FS	WTFLOW-HD-P-100	WeatherTRAK 1" FLOW SENSOR			
	975XL2SEU-1"	WILKINS REDUCED PRESSURE BACKFLOW ASSEMBL.			
SM	MODEL 55	BADGER SUB WATER METER			
A	WTLC-C-12-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 12 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			
B	WTLC-C-6-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 6 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			



CONTROLLER AND STATION NUMBER
REMOTE CONTROL VALVE SIZE (IN INCHES)
FLOW (GPM)
WATER USE CLASSIFICATION OF ZONE
APPLICATION RATE (IN/HR) or DRIPLINE SPACING
AREA (SQ. FT.)
ASSOCIATED REMOTE CONTROL VALVE

MAIN LINE: 1.25" THROUGHOUT:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 18" COVER.

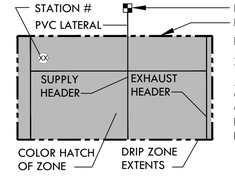
LATERAL LINE: 3/4" AND LARGER:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

DRIPLINE LATERAL LINE: 3/4" AND LARGER:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

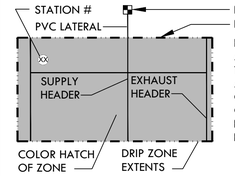
SLEEVING: SCHEDULE 40 PVC PLASTIC PIPE. COVER TO BE AS INDICATED IN SPECIFICATIONS OR AS INDICATED ABOVE FOR PIPE DEPTH OF COVER.

MAIN LINE: 1.25" THROUGHOUT:
TYPE 'K' COPPER PIPE WITH WROUGHT FITTINGS. SHOWN FOR REFERENCE ONLY, SEE PLUMBING PLANS FOR ROUTING THROUGH STRUCTURE.

ELECTRICAL CONDUIT: SHOWN FOR REFERENCE ONLY, SEE ELECTRICAL PLANS FOR ROUTING THROUGH STRUCTURE.



DRIPLINE REMOTE CONTROL VALVE
DRIP ZONE:
HUNTER HDL SERIES DRIPLINE WITH BUILT IN PRESSURE COMPENSATION AND CHECK VALVE, PART #HDL-06-12-250-CV. USE PLD FITTINGS. TUBING TO BE INSTALLED 4" BELOW GRADE IN A 12" O.C. GRID ACCORDING TO DETAILS. SIZE EXHAUST HEADERS AS FOLLOWS: 1": 0-10 GPM, 1.25": 11-20 GPM. ALL EXHAUST HEADERS SHALL BE 1" SCH 40 PVC OR 1" SCH 40 FLEXIBLE PVC. USE SCH. 40 PVC SOLVENT WELD FITTINGS. EXTEND PVC HEADERS TO THE ENDS OF ALL DRIP ZONES TO BALANCE FLOW IF REQUIRED. SEE DETAILS FOR FURTHER INFORMATION.



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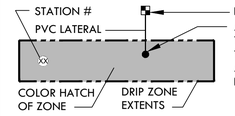

DRIPLINE REMOTE CONTROL VALVE
APPROXIMATE CONNECTION POINT BETWEEN DRIPLINE TUBING AND PVC SUPPLY WHEN DRIP ZONE IS LESS THAN 3 GPM AND NO PVC SUPPLY/EXHUST HEADERS ARE NEEDED. REFER TO DRIPLINE TUBING CONNECTION DETAIL FOR MORE INFORMATION.

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SHEET:

IRRIGATION NOTES & LEGEND

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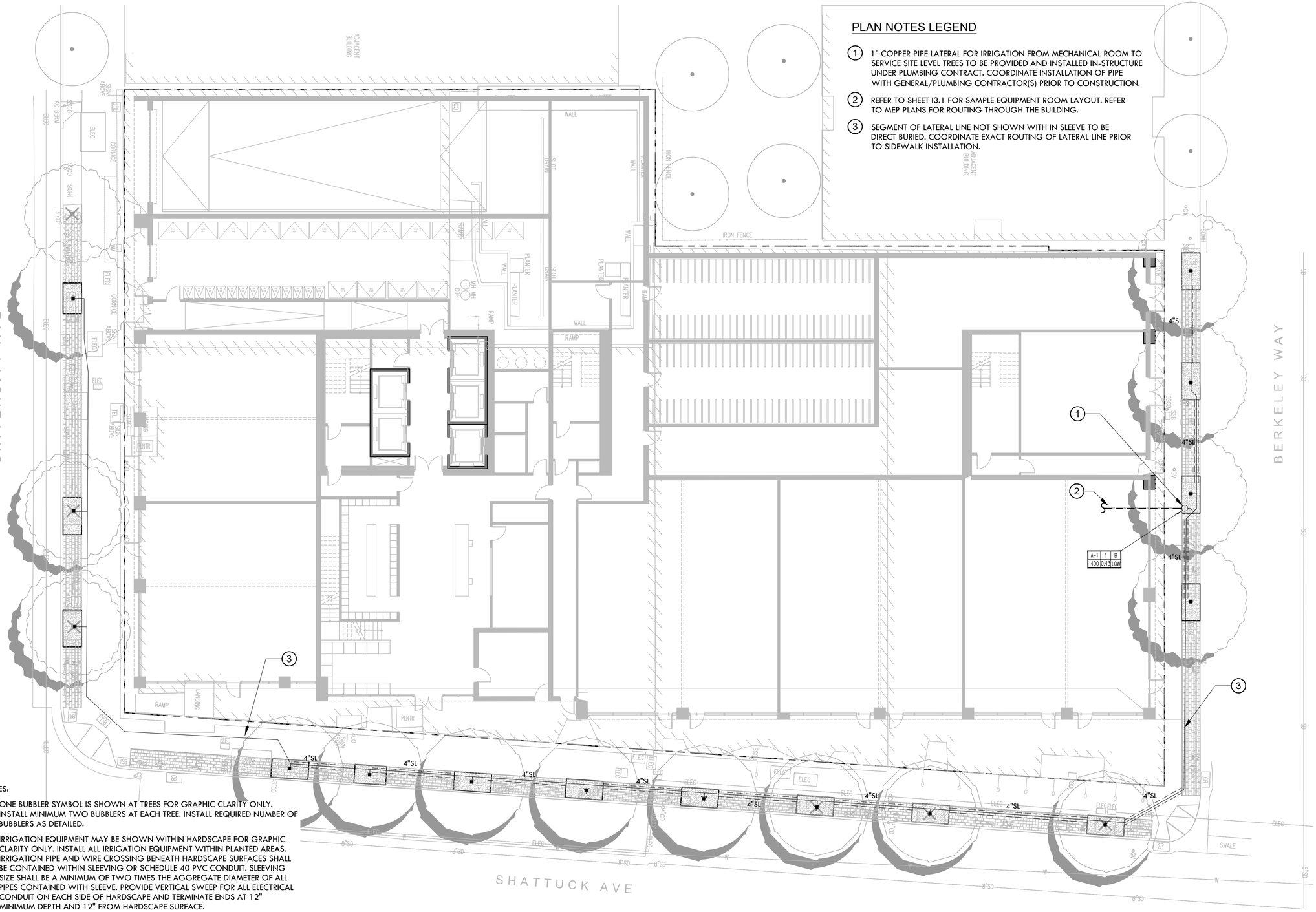

NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. IRRIGATION EQUIPMENT MAY BE SHOWN WITHIN HARDSCAPE FOR GRAPHIC CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT WITHIN PLANTED AREAS. IRRIGATION PIPE AND WIRE CROSSING BENEATH HARDSCAPE SURFACES SHALL BE CONTAINED WITHIN SLEEVING OR SCHEDULE 40 PVC CONDUIT. SLEEVING SIZE SHALL BE A MINIMUM OF TWO TIMES THE AGGREGATE DIAMETER OF ALL PIPES CONTAINED WITH SLEEVE. PROVIDE VERTICAL SWEEP FOR ALL ELECTRICAL CONDUIT ON EACH SIDE OF HARDSCAPE AND TERMINATE ENDS AT 12" MINIMUM DEPTH AND 12" FROM HARDSCAPE SURFACE.
3. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
4. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

0.75"	0-6 GPM
1"	7-12 GPM

North

1" = 10'
0 4 8 16

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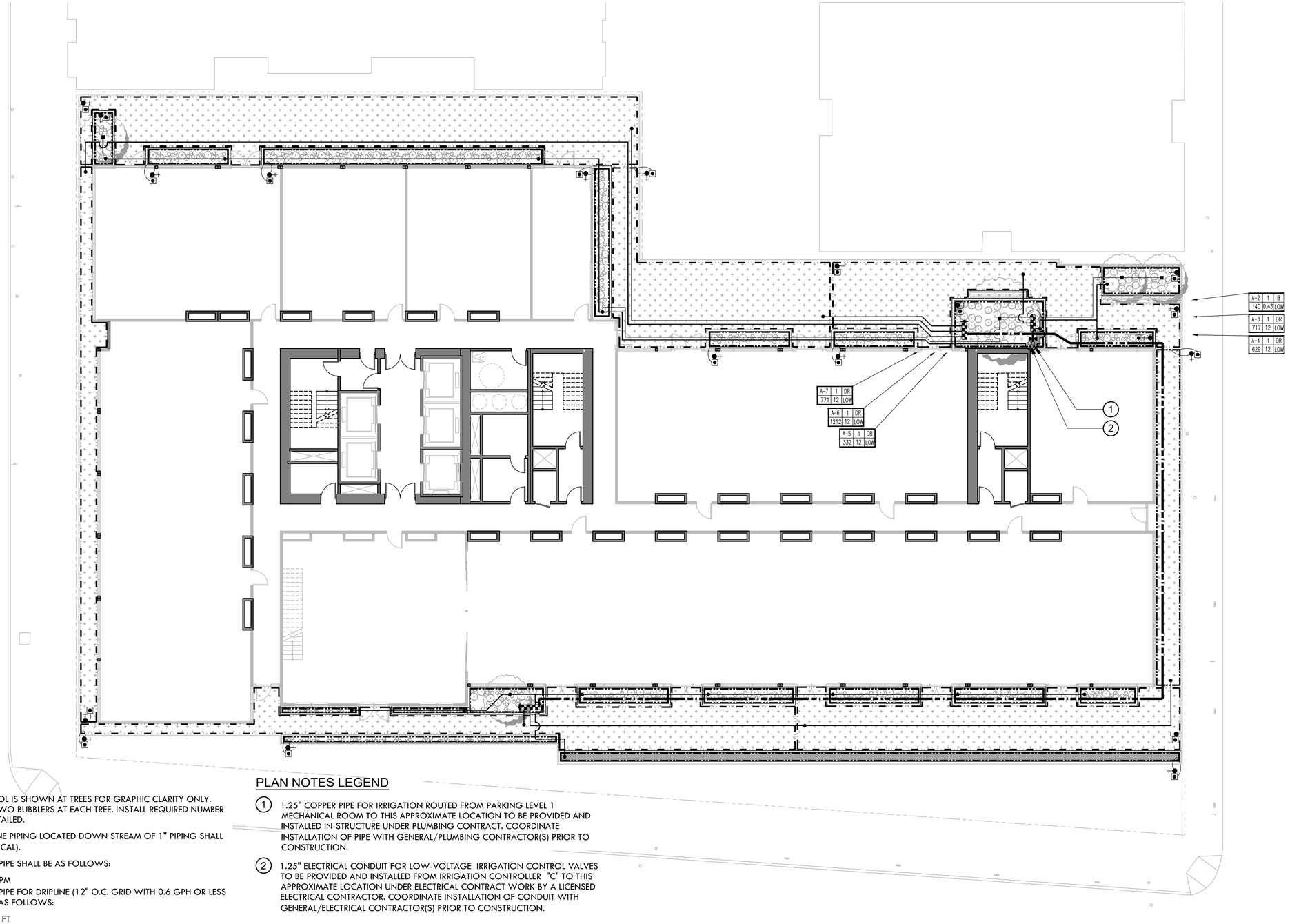
SHEET:

IRRIGATION PLAN AT STREETSCAPE ALT A

L1.0



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3. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

   0.75" 0-6 GPM
4. SIZING OF LATERAL PIPE FOR DRIPLINE (12" O.C. GRID WITH 0.6 GPH OR LESS EMITTERS) SHALL BE AS FOLLOWS:

   0.75 0-500 FT
   1" 501-1100 FT

PLAN NOTES LEGEND

(1) 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.

(2) 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

North

3/16"=1'-0"
0 2 4 8

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SHEET:

IRRIGATION PLAN
SECOND FLOOR
PODIUM GARDENS

L2.0

NOTES:

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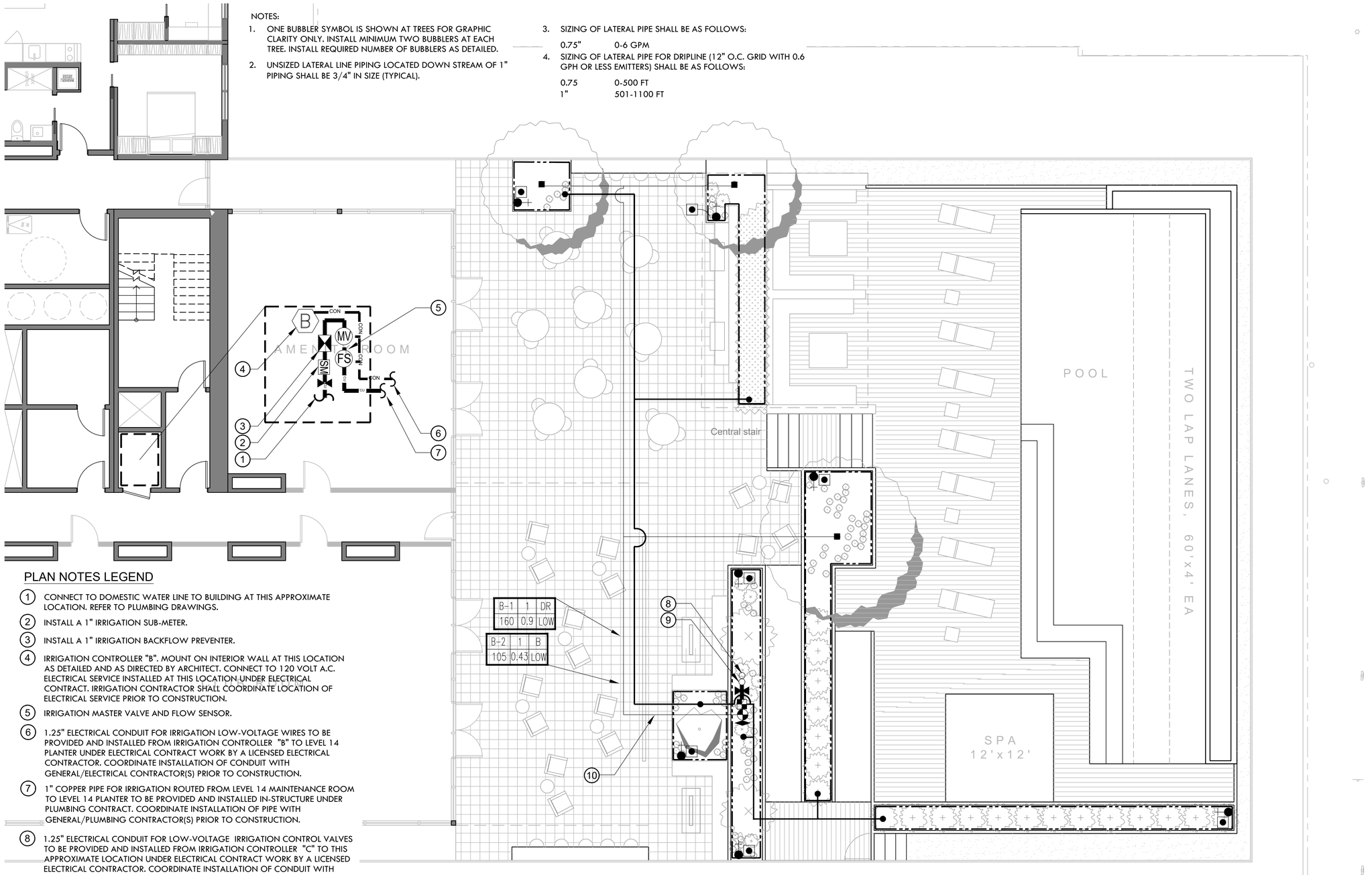

PLAN NOTES LEGEND

1. CONNECT TO DOMESTIC WATER LINE TO BUILDING AT THIS APPROXIMATE LOCATION. REFER TO PLUMBING DRAWINGS.
2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION CONTROLLER "B". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
5. IRRIGATION MASTER VALVE AND FLOW SENSOR.
6. 1.25" ELECTRICAL CONDUIT FOR IRRIGATION LOW-VOLTAGE WIRES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "B" TO LEVEL 14 PLANTER UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM LEVEL 14 MAINTENANCE ROOM TO LEVEL 14 PLANTER TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
9. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
10. ALL IRRIGATION LINES SHALL BE ROUTED UNDER PEDESTAL PAVERS.

27 FEB 2023

ALT E - REVISED

North

3/16"=1'-0"
0 2 4 8

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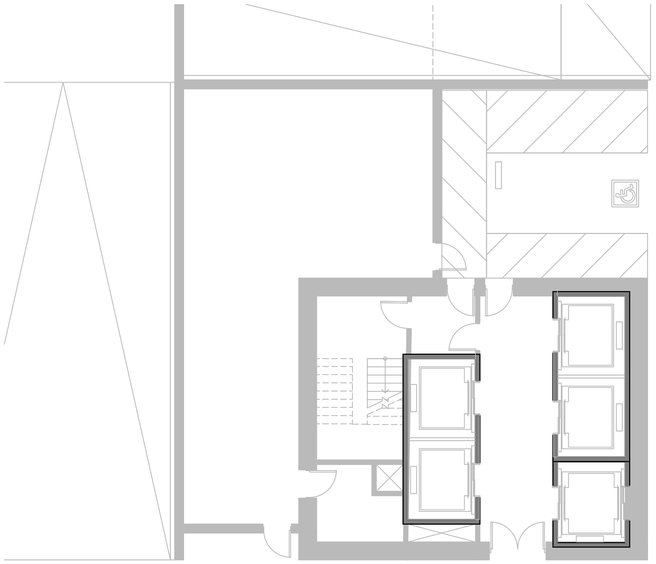
JOB: 0000

SHEET:

IRRIGATION PLAN
FOURTEENTH
FLOOR ROOF DECK
ALT E - REVISED

I3.0



PLAN NOTES LEGEND

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2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION MASTER VALVE AND FLOW SENSOR.
5. IRRIGATION CONTROLLER "C". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
6. 1" COPPER PIPE LATERAL FOR IRRIGATION FROM MECHANICAL ROOM TO SERVICE SITE LEVEL TREES TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM MECHANICAL ROOM TO PODIUM LEVEL PLANTERS TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO PODIUM LEVEL PLANTERS UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

27 FEB 2023

North 0 4 8 16 1/8"=1'-0"

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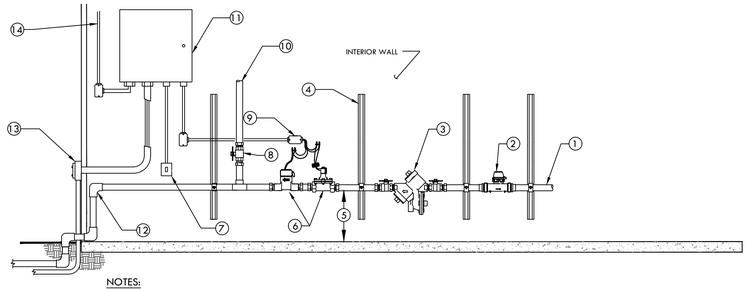
JOB: 0000

SHEET:

IRRIGATION POINT OF CONNECTION

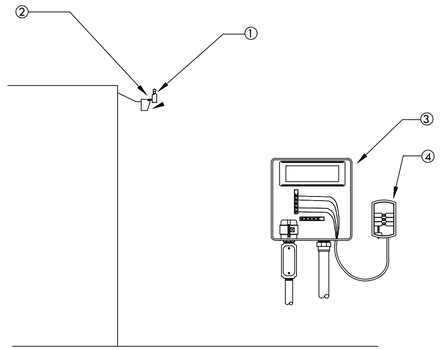
I3.1

① 1.25" COPPER MAIN LINE TO BACKFLOW IN EQUIPMENT ROOM. SHOWN ON MEP PLANS.
② SUB-METER FOR IRRIGATION.
③ 1.25" WILKENS REDUCED PRESSURE BACKFLOW ASSEMBLY.
④ UNI-STRUT SUPPORT BRACKET, THREADED EXTENSIONS AND CLAMPS, LENGTH AS REQUIRED. PROVIDE A MINIMUM OF 6" SEPARATION FOR THE VALVES AND PIPE FROM THE WALL.
⑤ MIN. 18" ± FROM FINISH FLOOR.
⑥ MASTER VALVE AND FLOW SENSOR.
⑦ 120 VOLT A.C. ELECTRICAL BY ELECTRICAL CONTRACTOR FOR CONTROLLER
⑧ 1.25" BRASS BALL VALVE.
⑨ 1" ELECTRICAL CONDUIT WITH JUNCTION BOXES FOR CONTROL WIRES FOR FLOW SENSOR & MASTER VALVE.
⑩ 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION(S). INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
⑪ IRRIGATION CONTROLLER BY IRRIGATION CONTRACTOR. MINIMUM 42" ABOVE FINISHED FLOOR.
⑫ 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION. INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
⑬ JUNCTION BOX BY ELECTRICAL CONTRACTOR FOR EXIT OF TWO WIRE SERVICING VALVES WITHIN ROOM.
⑭ 1.25" ELECTRICAL CONDUIT WITH REQUIRED JUNCTION BOXES ROUTED THROUGH STRUCTURE FROM CONTROLLER LOCATION TO EXTERIOR PLANTERS.



NOTES:
1. THIS LAYOUT IS TO PROVIDE INFORMATION ON EQUIPMENT AND TYPICAL DISTANCES REQUIRED BETWEEN THE EQUIPMENT. IT IS DIAGRAMMATIC AND WILL NEED TO BE ADJUSTED ACCORDING TO AVAILABLE FLOOR SPACE AND OTHER EQUIPMENT INSTALLED WITHIN THE ENCLOSURE. OFFSETS AND FITTINGS WILL BE REQUIRED FOR THESE ADJUSTMENTS.
2. MAINTAIN 6" OF CLEARANCE FROM BUILDING WALLS FOR EASE OF MAINTENANCE FOR ALL COPPER PIPING, VALVES, AND FITTINGS.
3. SEAL ALL PIPE PENETRATIONS THROUGH WALLS/STRUCTURE AS REQUIRED (BY PLUMBING CONTRACTOR). SEE PLUMBING/WATERPROOFING DRAWINGS.
4. ALL FITTINGS AND PIPING FOR WATER LINES WITHIN EQUIPMENT ROOM SHALL BE COPPER WITH WROT FITTINGS OR BRASS NIPPLES.

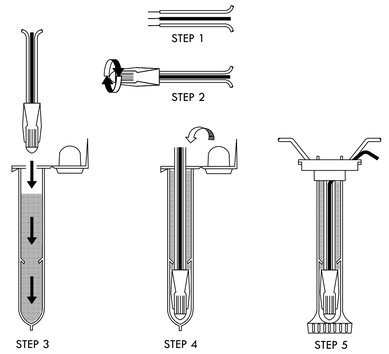
1 IRRIGATION EQUIPMENT LAYOUT DIAGRAM DETAIL
SCALE: NONE



NOTE: MAXIMUM LINE OF SIGHT FROM RAIN SENSOR TO RECEIVER IS 300 FT. DISTANCE IS LESS IF OBSTRUCTIONS EXIST. SENSOR MUST BE INSTALLED IN "CLEAR SPACE" WHERE IT IS EXPOSED TO UNOBSTRUCTED RAINFALL AND IS CLEAR OF IRRIGATION SPRAY.

① WIRELESS RAIN SENSOR TRANSMITTER (GUTTER MOUNTED)
② MOUNT RAIN SENSOR ON BUILDING WALL. ARCHITECT TO APPROVE LOCATION
③ CONTROLLER
④ RAIN SENSOR RECEIVER

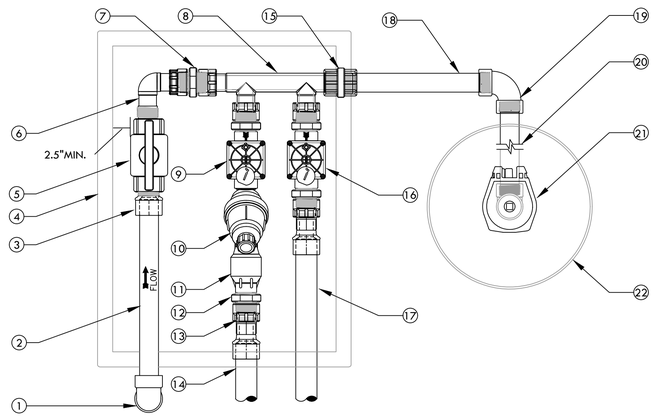
2 WIRELESS RAIN SENSOR-GUTTER MOUNT
SCALE: NONE



NOTE:
MAXIMUM # OF WIRES PER CONNECTOR:
- 3-#14 GAUGE
- 2-#12 GAUGE

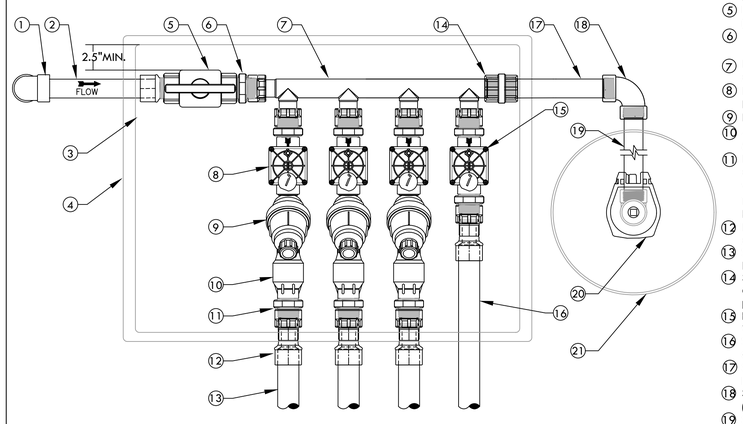
INSTRUCTIONS:
1. STRIP WIRES APPROXIMATELY 1/2" FROM ENDS TO EXPOSE WIRE.
2. TWIST CONNECTOR AROUND WIRES CLOCKWISE UNTIL HAND TIGHT, DO NOT OVERTIGHTEN.
3. INSERT WIRE ASSEMBLY TO BOTTOM OF GEL-FILLED TUBE. CHECK TO MAKE SURE CONNECTOR HAS BEEN PUSHED PAST LOCKING FINGERS AND IS SEATED AT THE BOTTOM OF THE TUBE.
4. PLACE WIRES WHICH EXIT TUBE IN WIRE EXIT HOLES AND CLOSE CAP UNTIL IT SNAPS.
5. INSPECT FINAL SPLICE ASSEMBLY THAT IT IS SECURED.

3 WEATHERPROOF WIRE SPLICE ASSEMBLY
SCALE: NONE



① SCH 40 PVC 90° ELBOW (SxS) FROM PVC MAIN LINE BELOW.
② SCH 40 PVC PIPE. LENGTH AS REQUIRED.
③ SCH 80 PVC MALE ADAPTER.
④ CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
⑤ NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
⑥ DURA 1" MIPT x 1" SWIVEL 90° (PART #306-009)
⑦ DURA 1"x1" THREADED ADAPTER (PART #08303) 4 TOTAL.
⑧ DURA 1" MULTI-PORT MANIFOLD (PART #301-010-2)
⑨ DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑩ FILTER. REFER TO LEGEND FOR MODEL.
⑪ 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
⑫ DURA 1" x 3/4" MALE ADAPTER (PART #08303-131). ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
⑬ DURA 1" SLIP X 1" SWIVEL (PART #329-011) 2 TOTAL.
⑭ SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION
⑮ SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
⑯ BUBBLER OR SPRINKLER REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑰ SCHEDULE 40 PVC LATERAL TO BUBBLER OR SPRAY IRRIGATION.
⑱ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑲ SCHEDULE 80 PVC 90° ELBOW (TxT).
⑳ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
㉑ QUICK COUPLING VALVE. INSTALL PER DETAIL.
㉒ 10" ROUND BOX. INSTALL PER DETAIL.

4 TWO REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE



① SCH 40 PVC 90° ELBOW (SxS) FROM PVC MAIN LINE BELOW.
② SCH 40 PVC PIPE. LENGTH AS REQUIRED.
③ SCH 80 PVC MALE ADAPTER.
④ CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
⑤ NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
⑥ DURA 1"x1" THREADED ADAPTER (PART #08303) 6 TOTAL.
⑦ DURA 1" MULTI-PORT MANIFOLD (PART #301-010-4)
⑧ DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑨ FILTER. REFER TO LEGEND FOR MODEL.
⑩ 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
⑪ DURA 1" x 3/4" MALE ADAPTER (PART #08303-131) 3 TOTAL. ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
⑫ DURA 1" SLIP X 1" SWIVEL (PART #329-011) 4 TOTAL.
⑬ SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION.
⑭ SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
⑮ BUBBLER OR SPRINKLER REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑯ SCHEDULE 40 PVC LATERAL TO BUBBLERS OR SPRAY IRRIGATION.
⑰ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑱ SCHEDULE 80 PVC 90° ELBOW (TxT).
⑲ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑳ QUICK COUPLING VALVE. INSTALL PER DETAIL.
㉑ 10" ROUND BOX. INSTALL PER DETAIL.

5 FOUR REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE

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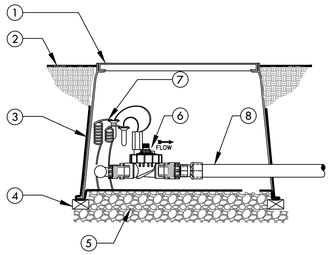
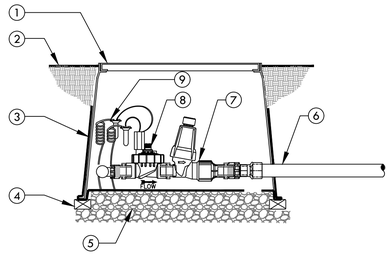


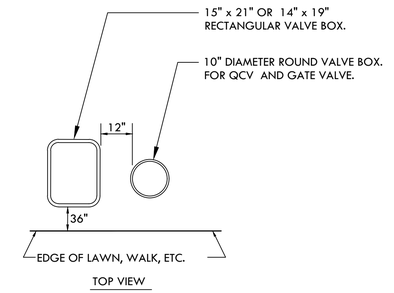
1. CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
2. FINISH GRADE
3. 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
4. BRICK-1 EACH CORNER
5. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
6. REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
7. VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL
8. SCH 40 PVC LATERAL LINE TO BUBBLERS OR SPRAY

1 BUBBLER OR SPRAY REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



1. CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
2. FINISH GRADE
3. 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
4. BRICK-1 EACH CORNER
5. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
6. SCH 40 PVC LATERAL LINE TO DRIPLINE OR DRIP.
7. DRIP FILTER AND REGULATOR
8. REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
9. VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL

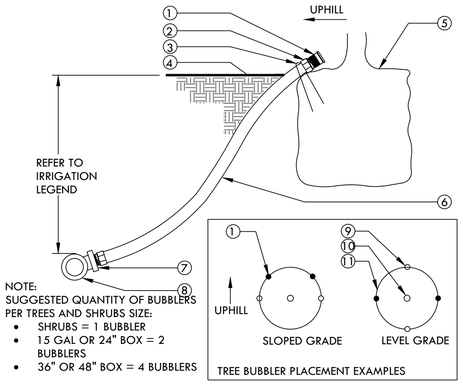
2 DRIP REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



TOP VIEW

INSTRUCTIONS:
1. CENTER VALVE BOX OVER REMOTE CONTROL VALVES TO FACILITATE SERVICING VALVE.
2. SET BOXES 1" ABOVE FINISH GRADE OR MULCH COVER IN GROUND COVER/SHRUB AREA AND FLUSH WITH FINISH GRADE IN TURF AREA.
3. SET RCV AND VALVE BOX ASSEMBLY IN GROUND COVER/SHRUB AREA WHERE POSSIBLE. INSTALL IN LAWN ONLY IF GROUND COVER DOES NOT EXIST ADJACENT TO LAWN.
4. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE OF LAWN, WALK, FENCE, CURB, ETC.
5. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOXES TO PREVENT COLLAPSE AND DEFORMATION OF VALVE BOX SIDES.
6. INSTALL EXTENSION BY VALVE BOX MANUFACTURER AS REQUIRED TO COMPLETELY ENCLOSE ASSEMBLY FOR EASY ACCESS.

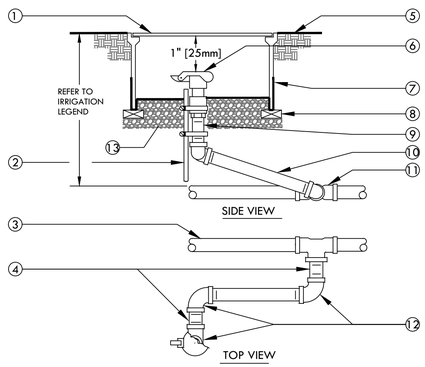
3 VALVE BOX INSTALLATION
SCALE: NONE



NOTE:
SUGGESTED QUANTITY OF BUBBLERS PER TREES AND SHRUBS SIZE:
- SHRUBS = 1 BUBBLER
- 15 GAL OR 24" BOX = 2 BUBBLERS
- 36" OR 48" BOX = 4 BUBBLERS

1. BUBBLER (TO BE INSTALLED ON TOP OF ROOTBALL).
2. 1/2" SCH. 40 MALE ADAPTER (2 TOTAL).
3. 6" STAPLE.
4. FINISH GRADE.
5. TREE OR SHRUB ROOTBALL.
6. 1/2" IPS FLEXIBLE PVC. USE WELD-ON 795 SOLVENT CEMENT OR EQUAL WHEN BONDING PVC HOSE TO FITTINGS.
7. PVC TEE (SST), ELBOW (ST) OR FEMALE ADAPTER.
8. PVC LATERAL LINE.
9. TREE STAKES.
10. TREE OR SHRUB.
11. EDGE OF ROOTBALL (TYPICAL).

4 TREE AND SHRUB BUBBLER
SCALE: NONE



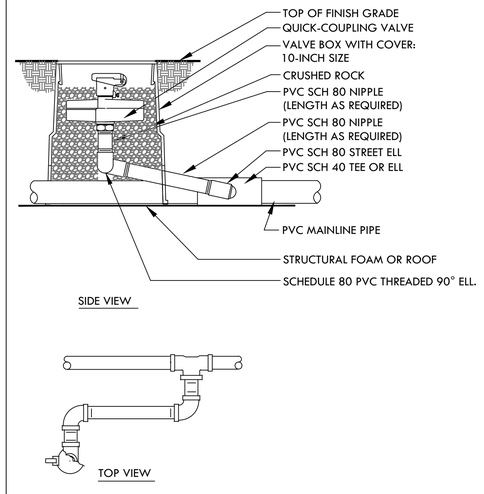
SIDE VIEW

TOP VIEW

1. 10" ROUND PLASTIC VALVE BOX WITH BOLT DOWN LID.
2. 1 1/4" x 1 1/4" x 3/16" [30mm x 30mm x 5mm] ANGLE IRON 30" [760mm] LONG W/2 STAINLESS STEEL STRAPS (ONE AROUND QCV).
3. PVC MAIN LINE.
4. 3" [75mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
5. FINISH GRADE.
6. QUICK COUPLING VALVE.
7. 19 GAUGE 1/2" [13mm] SQUARE WIRE MESH.
8. BRICK - 2 TOTAL.
9. SCHEDULE 80 PVC THREADED NIPPLE.
10. 10" [250mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
11. UPC APPROVED SCHEDULE 40 PVC TEE OR ELBOW.
12. SCHEDULE 80 PVC THREADED 90° ELL.
13. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" [100mm] DEEP BELOW VALVE (NO SOIL IN VALVE BOX).

NOTE:
NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.

5 QUICK COUPLING VALVE
SCALE: NONE

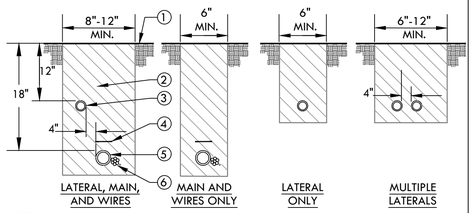


SIDE VIEW

TOP VIEW

NOTE:
1. NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.
2. TRIM VALVE BOX LENGTH AS NECESSARY TO BE FLUSH WITH TOP OF PLANTING TILES.
3. IF NECESSARY SLOT SIDES VALVE BOX TO ALLOW PASSAGE OF PIPE THROUGH BOTTOM OF VALVE BOX.

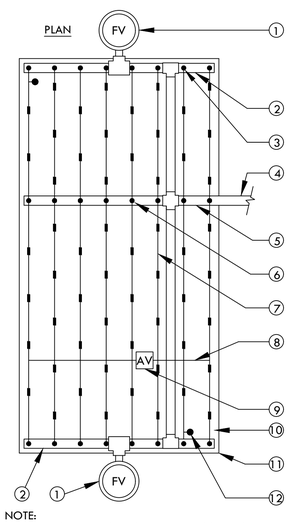
6 QUICK COUPLING VALVE-ON STRUCTURE
SCALE: NONE



NOTES:
1. ALL MAIN SUPPLY LINES AND LATERAL LINES SHALL BE PLACED IN SLEEVES UNDER PAVED SURFACES. INSTALL LOW VOLTAGE WIRES WITHIN A SEPARATE CONDUIT UNDER PAVED SURFACES. DO NOT TAPE WIRES WITHIN CONDUIT.
2. REUSE SALVAGED EXCAVATED FILL AND COMPACT TO ORIGINAL DENSITY IN LANDSCAPE AREAS. ALL OTHER AREAS SHALL BE AT 95% COMPACTION. BACKFILL MATERIAL SHALL BE THE EARTH EXCAVATED FROM THE TRENCHES, FREE FROM ROCKS (ANYTHING LARGER THAN 2"), CONCRETE CHUNKS, AND OTHER FOREIGN OR COARSE MATERIALS.
3. WHEN 12" POP-UP SPRINKLER HEADS ARE USED, INCREASE THE DEPTH OF LATERAL TO 18" AT THE SPRINKLER LOCATION ONLY.

1. FINISH GRADE.
2. CLEAN BACKFILL MATERIAL.
3. LATERAL LINE.
4. 3" DETECTABLE WARNING TAPE OVER MAIN LINE. INSTALL 3" ABOVE MAIN LINE. USE CHRISTY MODEL #TA-DT-3-BIRR FOR POTABLE IRRIGATION SYSTEMS OR #TA-DT-3-PRW FOR RECYCLED IRRIGATION WATER SYSTEMS
5. MAIN LINE.
6. LOW VOLTAGE CONTROL WIRES, TWO-WIRE CABLE, OR CONDUIT WITH WIRES. FOR MULTIPLE WIRES, TAPE AND BUNDLE WIRES AT 10 FT. INTERVALS. WIRING SHALL BE LAID OUT LOOSELY IN THE TRENCH.

7 TRENCHING
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
3. MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
5. PVC SUPPLY MANIFOLD. EXTEND TO END OF ZONE/EXHAUST HEADER.
6. MANIFOLD-TO-TEE CONNECTION.
7. DRIPLINE LATERAL.
8. AIR/VACUUM RELIEF LATERAL, BLANK POLY TUBING CENTERED ON MOUND OR BERM.
9. AIR/VACUUM RELIEF PLUMBED TO BLANK 5/8" POLY TUBING AT EACH HIGH POINT.
10. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
11. AREA PERIMETER.
12. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

8 HLD DRIPLINE CENTER FEED LAYOUT
SCALE: NONE

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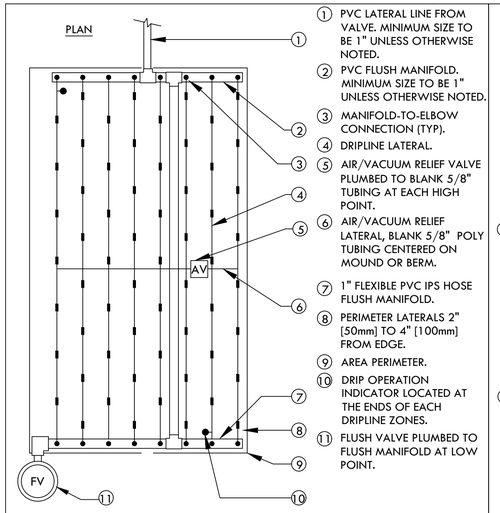
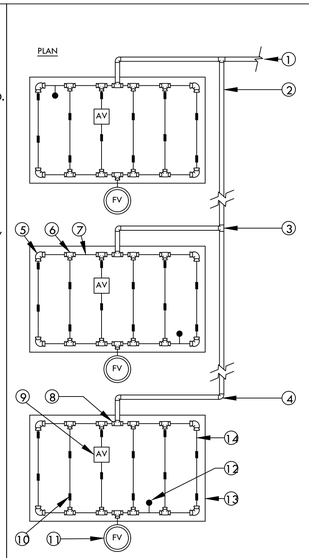


1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. DRIPLINE LATERAL.
5. AIR/VACUUM RELIEF VALVE PLUMBED TO BLANK 5/8" TUBING AT EACH HIGH POINT.
6. AIR/VACUUM RELIEF LATERAL, BLANK 5/8" POLY TUBING CENTERED ON MOUND OR BERM.
7. 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
8. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
9. AREA PERIMETER.
10. DRIP OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONES.
11. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

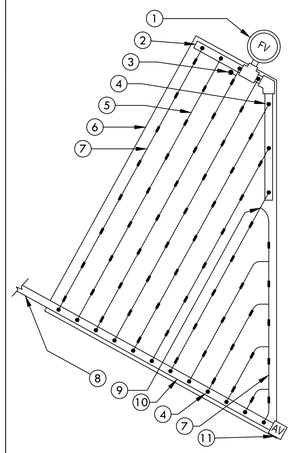
1 HLD DRIPLINE END FEED LAYOUT
SCALE: NONE



1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. PVC TEE (SxSxS).
4. PVC ELL (SxS).
5. HUNTER PLD-ELBOW (PLD-ELB)
6. HUNTER PLD-TEE (PLD-TEE).
7. BLANK 5/8" [16mm] POLY TUBING AT SUPPLY AND FLUSH END OF EACH ISLAND.
8. REFER TO DRIPLINE TO PVC CONNECTION DETAIL.
9. AIR/VACUUM RELIEF VALVE PLUMBED TO TUBING AT HIGH POINT.
10. DRIPLINE LATERAL.
11. MANUAL FLUSH VALVE PLUMBED TO TUBING AT LOW POINT.
12. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
13. ISLAND PERIMETER.
14. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.

NOTE:
1. THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

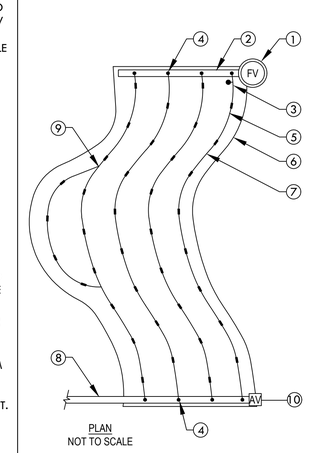
2 HLD DRIPLINE ISLAND LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. PVC SUPPLY MANIFOLD.
11. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

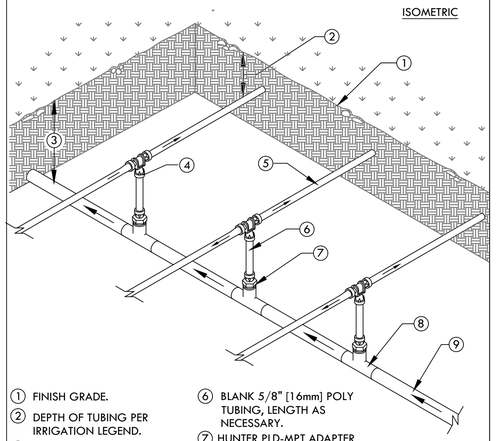
3 HLD DRIPLINE TRIANGULAR LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH/EXHAUST MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC SUPPLY LINE/HEADER FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

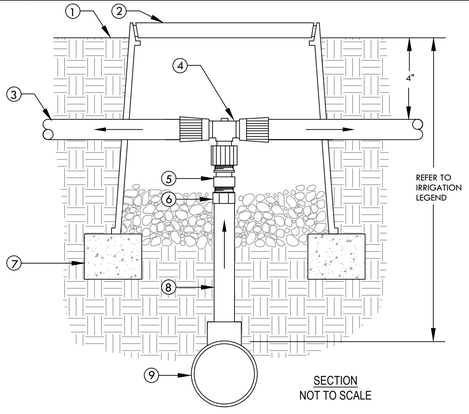
4 HLD DRIPLINE ODD CURVE LAYOUT
SCALE: NONE



1. FINISH GRADE.
2. DEPTH OF TUBING PER IRRIGATION LEGEND.
3. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND
4. HUNTER PLD-TEE (PLD-TEE)
5. DRIPLINE TUBING.
6. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
7. HUNTER PLD-MPT ADAPTER (PLD-050)
8. PVC TEE (SxSxT) WITH 1/2" [13mm] FPT OUTLET.
9. PVC LATERAL LINE FROM REMOTE CONTROL VALVE.

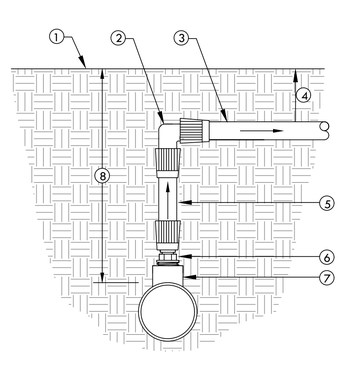
NOTE:
THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.

5 HLD DRIPLINE CENTER FEED MANIFOLD
SCALE: NONE



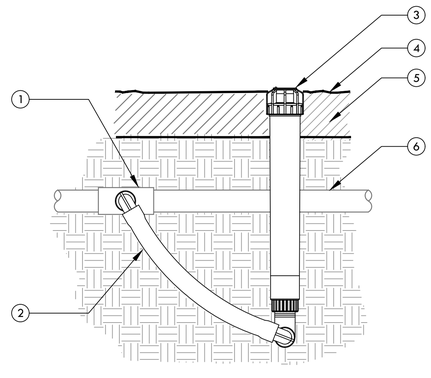
1. FINISH GRADE
2. CARSON 708 OR EQUAL. COLOR: BLACK. USE PURPLE FOR RECYCLED WATER SYSTEMS.
3. DRIPLINE TUBING
4. HUNTER PLD-TEE X 1/2" FPT ADAPTER
5. TORO 1/2" CHECK VALVE (PCV-500)
6. 1/2" SCH 40 MALE ADAPTER.
7. BRICK (1 OF 2)
8. 1/2" SCH 40 PVC (LENGTH AS REQUIRED)
9. PVC LATERAL LINE SUPPLY. MINIMUM SIZE TO BE 1" UNLESS SIZED DIFFERENTLY ON DRAWINGS. USE SCH 40 PVC 1"x1"x1/2" TEE OR 90° ELBOW.

6 DRIPLINE TO PVC CONNECTION
SCALE: NONE



1. FINISH GRADE
2. HUNTER PLD-ELBOW (PLD-ELB)
3. DRIPLINE TUBING
4. DEPTH OF TUBING PER IRRIGATION LEGEND.
5. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
6. HUNTER PLD-MPT ADAPTER (PLD-050)
7. SCH 40 PVC TEE (SxSxT) WITH 1/2" FPT OUTLET.
8. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND

7 DRIPLINE MANIFOLD TO ELBOW CONNECTION
SCALE: NONE



1. UPC APPROVED SCHEDULE 40 PVC TEE, ELBOW OR BARB x THREAD DRIP FITTING TEE OR ELBOW WITH 3/4" OUTLET.
2. 1/2" X 3/4" X 6" HUNTER SWING JOINT (SJ-7506)
3. ECO INDICATOR
4. FINISHED GRADE
5. MULCH
6. PVC LATERAL PIPE OR DRIPLINE

8 DRIPLINE OPERATION INDICATOR
SCALE: NONE

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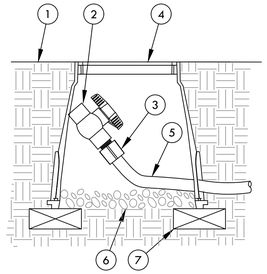
IRRIGATION DETAILS

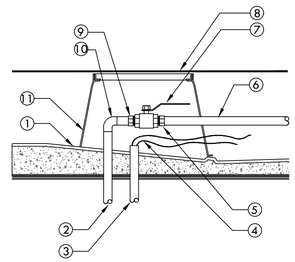
I6.0



NOTE:
ALLOW A MINIMUM OF PVC HOSE IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

1. FINISH GRADE
2. 1/2" SCH 40 THREADED BALL VALVE.
3. 1/2" SCH 40 MALE ADAPTER.
4. 6" ROUND PLASTIC VALVE BOX.
5. 1" IPS PVC HOSE FROM EXHAUST HEADER.
6. PEA GRAVEL SUMP (6" DEEP).
7. BRICK (1 OF 2)

2 DRIPLINE-FLUSH POINT
SCALE: NONE



1. SLOPED ROOF BELOW PEDESTAL SYSTEM
2. COPPER PIPE THROUGH STRUCTURE PROVIDED BY PLUMBING CONTRACTOR. WATERPROOF ALL PENETRATIONS.
3. CONDUIT FOR CONTROL WIRES THROUGH STRUCTURE PROVIDED BY ELECTRICAL CONTRACTOR. WATERPROOF ALL PENETRATIONS
4. TWO-WIRE CABLE OR CONTROL WIRES
5. SCH 40 PVC MALE ADAPTER.
6. PVC MAIN LINE TO REMOTE CONTROL VALVES.
7. BRONZE BALL VALVE.
8. ROOF DECK PAVERS
9. COPPER MALE ADAPTER.
10. COPPER 90° ELBOW.
11. 10" ROUND PLASTIC VALVE BOX. CUT BOX TO FIT BELOW PEDESTAL PAVER SYSTEM

3 ON STRUCTURE STUB-OUT WITH BRONZE BALL VALVE
SCALE: NONE

IRRIGATION WATER USE CALCULATIONS

WATER USE ESTIMATION CONTROLLER "A"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	1,079	400	10,357	0.03	13.85	17%
2	GROUNDCOVER	LOW	0.3	BUBBLER	0.81	0.370	4,915	1,820	47,177	0.14	63.07	77%
3	TREES	LOW	0.3	BUBBLER	0.81	0.370	400	148	3,839	0.01	5.13	6%
					TOTALS		6,394	2,368	61,373	0.19	82.05	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME											
NA						1						0%
					TOTALS	0						0%

MAWA	GALLONS/YR	74,568
	ACRE FEET/YR	0.23
	HCF/YR	99.69

ETWU	GALLONS/YR	61,373
	ACRE FEET/YR	0.19
	HCF/YR	82.05

SITE IRRIGATION EFFICIENCY	SITE PLANT FACT0R	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	2,368
TOTAL AREA	6,394
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR

MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR

ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

WATER USE ESTIMATION CONTROLLER "B"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	160	59	1,536	0.00	2.05	60%
2	TREES	LOW	0.3	BUBBLER	0.81	0.370	105	39	1,008	0.00	1.35	40%
					TOTALS		265	98	2,544	0.01	3.40	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME											
NA						1						0%
					TOTALS	0						0%

MAWA	GALLONS/YR	3,090
	ACRE FEET/YR	0.01
	HCF/YR	4.13

ETWU	GALLONS/YR	2,544
	ACRE FEET/YR	0.01
	HCF/YR	3.40

SITE IRRIGATION EFFICIENCY	SITE PLANT FACT0R	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	98
TOTAL AREA	265
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR

MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR

ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

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JOB: 0000

SHEET:

IRRIGATION DETAILS

I7.0

1998 Shattuck Avenue – University Corner

Preliminary Proposal for Community Benefits

Project Location: 2071 University Avenue, 1950, 1974, 1984, and 1998 Shattuck Avenue

November 14, 2023

The proposed University Corner housing development project makes a substantial contribution toward implementation of the community's vision captured in the Downtown Area Plan, that was overwhelmingly approved by Berkeley voters in 2010 and adopted by the City Council in 2012. Proposed under State Density Bonus Law and SB330, this project represents a Housing Development Project that is only required to meet objective standards. Tall buildings in the Downtown are required to provide community benefits. However, state law requires that those benefits be objective and knowable at the time of application.







The Zoning Ordinance language in the C-DMU has only one objective community benefit requirement - LEED Gold or equivalent rating. The other objective community benefit, which is not in the Zoning Ordinance, is the Council adopted requirement for a Project Labor Agreement. The project must comply with that requirement. There are no other stated objective standards for community relevant to the project.

This document outlines a preliminary set of benefits that accrue to the City of Berkeley community as a result of the development of this project. This document is provided for informational purposes. The consideration of undefined or additional community benefits for consideration by community members and decision-makers is not an objective standard exercise. As a result, approval or denial of this SB 330 housing development project cannot be based on these benefits. Community benefits are highlighted below.

AFFORDABLE HOUSING

The project includes two key affordable housing benefits:

- The housing development will provide 58 Very Low-Income units within the new project. There are no housing units on the site currently so there is no requirement to provide replacement units.

- Approximate $2.9 million contribution to the Affordable Housing Trust Fund (HTF) based on current fee levels and assuming 599 dwelling units with 58 VLI BMR units

The City of Berkeley's history of success with the use of the HTF is evident all over Berkeley. From an empirical perspective, the HTF has proven to be a far, far better generator of affordable housing units than through the process of inclusion in otherwise market rate projects. In otherwise market rate projects, the tenants of BMR units also are not provided services as they are in projects built using HTF monies. That includes funding for the Bridge Housing/Berkeley Food and Housing project right in the Downtown.



Bridge/Insight Affordable Housing Project - built with Housing Trust Fund monies.

Berkeley's recent history is an excellent measure of the potential for developing BMR units using the HTF. The construction of one of the City's HTF funded projects demonstrates this fact. 2142 Martin Luther King, Jr. Way was constructed by Satellite Affordable Housing Associates (SAHA) and completed in 2019. It contains 42 permanently affordable and service enriched units. The City of Berkeley provided a $2MM local grant from the HTF to help the project secure the balance of financing necessary for the project.

As currently proposed, the University Corners project would be required to provide 58 BMR units as a part of its affordable housing mitigation requirement. Those units would not be service enriched. The $2.9MM housing mitigation fee has the potential to fund close an additional 50+ permanently affordable and service enriched apartments using the SAHA example, above. As a result, the Berkeley community on aggregate can expect not just 599 new apartments (58 of them VLI) next to BART and the UC Berkeley Campus, but also provide seed funding for an additional 50+ BMR units. That's a likely total of 110 or more permanently affordable housing units.

GREEN BUILDING AND SUSTAINABILITY

The project anticipates achieving LEED Gold or equivalent standards, through building and resource efficiency. The project is proposed with all-electric systems and with up-to-date Green Building Code compliance. <u>These requirements were not in effect or envisioned by the Downtown Area Plan, C-DMU district findings, and Resolution 67,172; therefore, these project benefits are in excess of community benefit requirements.</u>

The project also proposes bird safe glass consistent with the City's ordinance as required, to reduce the potential for bird strikes. The project includes on-site stormwater management, where none exists today, along with low-flow fixtures that reduce per capita water use.

It should also be noted that the project's exceptional transit/walking/biking location is a significant environmental factor. The site receives 97/98 for walking/biking, and 72 for transit. The transit number

seems low given the outstanding access the project enjoys (see below). This transit and housing density connection is a very strong component of the project's overall sustainability.

OTHER FEES AND PUBLIC IMPROVEMENTS



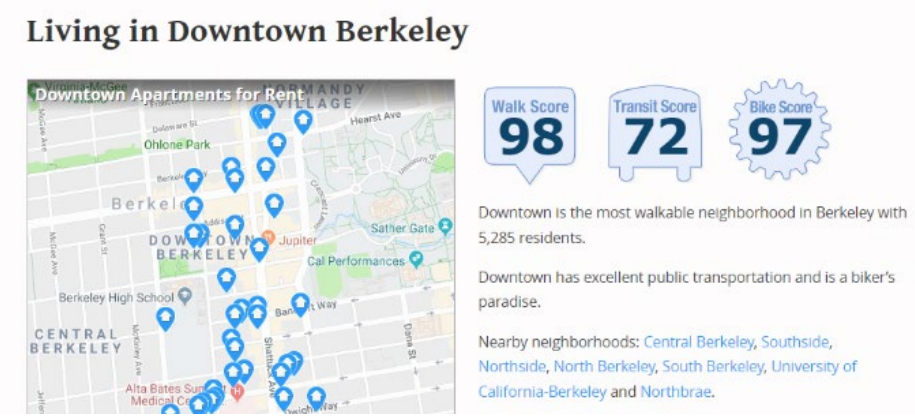
The project will generate the following fees for the Berkeley community:

- @ $890,000 to the Streets and Open Space Improvement Fund based on the unit count and commercial floor area
- @ $1,385,000 to the Berkeley Unified School District
- @$619,000 to the Civic Arts Fund
- Almost $6,000,000 in City of Berkeley entitlement and plan check review fees

ALTERNATIVE TRANSPORTATION

The project would provide:

- unlimited local bus transit passes/Clipper Cards or equivalent, to each unit and employee,
- unbundled parking
- 284 bike (and other personal mobility devices) parking spaces



Due to the project's location within Downtown Berkeley, most trips from the project site are expected to be walking trips. The project site is ideally located for a student-oriented housing project. It is one block from the main entrance of the UC Berkeley campus. It is one block from the Downtown Berkeley BART station entrance. Numerous AC Transit and UC transit busses have stops at or within a block of the project site. The site is proximal to full services, including grocery shopping, for residents. As noted above the site is considered a walk/bike "paradise".

ROOFTOP RESTAURANT/BAR

As an option, the project team is proposing a rooftop restaurant/bar on level 28. The restaurant/bar would be accessible to customers from the community at-large subject to permission, accessed from Shattuck Avenue. This would provide an opportunity for community members to take advantage of amazing views at level 28, as patrons of the restaurant/bar, and generate economic development benefits as a Downtown attraction.



Google Earth view from approximate height of 300 feet of Level 28 Restaurant/Bar

UNION LABOR



The project is committed to a Project Labor Agreement with all member trades of the Alameda County Building and Construction Trades Council. This Agreement will establish a commitment to union labor, including stipulations for apprentices and training. Based on actual labor costs, this Agreement represents are at least an approximate 20%-25% labor premium over nonunion construction costs (as described by the Alameda County Building Trades Council to the Berkeley City Council), which is well above the 5% threshold stated in City Council Resolution 67,172.

Pro Forma Financial Analysis Summary	11-story (7 + Density Bonus)	
DEVELOPMENT PROGRAM ASSUMPTIONS		
Dwelling Units		395
Gross Residential Area (Square Feet)	659 per Unit	259,953
Gross Retail Area (Square Feet)		16,920
Rentable Area (Square Feet)	75% of GBA	192,365
Structured Parking Spaces		25
Rentable Parking Spaces		0
ESTIMATED BUILDING VALUE		
Gross Potential Rent (Res.)	$6.75 per SF/Month	$15,581,583
Gross Potential Rent (Retail)	$4.50 per SF/Month (NNN)	$913,680
Losses to Vacancy	5.0% of GPR	($824,763)
Gross Revenue - Res. & Retail		$15,670,500
Operating Expenses	35% of Gross Revenue	($5,484,675)
Net Operating Income - Res. & Retail		$10,185,825
Net Operating Income - Res. Parking	$200.00 per Space/Month	$0
Net Operating Income		*$10,185,825*
Supportable Development Value	**5.75% Yield Requirement**	**$177,144,779**
ESTIMATED PROJECT COST		
Construction Costs		
Building Direct Cost		
	$475 Cost/SF (GBA)	$131,514,675
Tenant Improvement / Apartment FF&E	$85/SF (Retail), $19,000 FF&E (Res)	$8,943,200
LEED Cost Premium	0% of Total Const. Cost	$0
PLA Cost Premium	0% of Total Const. Cost	$0
Total Construction Cost	*$507 Cost/SF (GBA)*	*$140,457,875*
Soft Costs		
Architecture and Engineering	2.4% of Construction Cost	$3,370,989
Other Professional Services	1.2% of Construction Cost	$1,685,495
Permits and Fees	$50,000 per Dwelling Unit	$19,750,000
Taxes and Insurance	4.5% of Construction Cost	$6,320,604
Financing	11% of Construction Cost	$15,450,366
Marketing/Leasing	1% of Construction Cost	$1,404,579
Developer Overhead Fee	5% of Construction Cost	$7,022,894
Total Soft Costs		*$55,004,927*
Development Contingency	6.0% of Hard and Soft Costs	$11,727,768
Total Project Cost Excl. Land		**$207,190,570**
RESIDUAL LAND VALUE		
Residual Land Value		**($30,045,791)**

Table 1 **Pro Forma Financial Analysis Summary** **28-story**

DEVELOPMENT PROGRAM ASSUMPTIONS		
Dwelling Units		599
Gross Residential Area (Square Feet)	660 per Unit	395,188
Gross Retail Area (Square Feet)		16,142
Rentable Area (Square Feet)	72% of GBA	284,205
Structured Parking Spaces		154
Rentable Parking Spaces		130
ESTIMATED BUILDING VALUE		
Gross Potential Rent (Res.)	$7.55 per SF/Month	$25,748,973
Gross Potential Rent (Retail)	$6 per SF/Month (NNN)	$1,162,224
Losses to Vacancy	5.0% of GPR	($1,345,560)
Gross Revenue - Res. & Retail		$25,565,637
Operating Expenses	31% of Gross Revenue	($7,925,348)
Net Operating Income - Res. & Retail		$17,640,290
Net Operating Income - Res. Parking	$200.00 per Space/Month	$312,000
Net Operating Income		*$17,952,290*
Supportable Development Value	**5.6% Yield Requirement**	**$320,576,601**
ESTIMATED PROJECT COST		
Construction Costs		
Building Direct Cost	$405 Cost/SF (GBA)	$166,588,650
Tenant Improvement / Apartment FF&E	$85/SF (Retail), $17,500 FF&E (Res)	$11,854,570
LEED Cost Premium	10% of Total Const. Cost	$16,658,865
PLA Cost Premium	20% of Total Const. Cost	$33,317,730
Total Construction Cost	*$555 Cost/SF (GBA)*	*$228,419,815*
Soft Costs		
Architecture and Engineering	2.1% of Construction Cost	$4,796,816
Other Professional Services	0.8% of Construction Cost	$1,827,359
Permits and Fees	$40,000 per Dwelling Unit	$23,960,000
Taxes and Insurance	3.5% of Construction Cost	$7,994,694
Financing	9.2% of Construction Cost	$21,014,623
Marketing/Leasing	0.8% of Construction Cost	$1,827,359
Developer Overhead Fee	4% of Construction Cost	$9,136,793
Total Soft Costs		*$70,557,642*
Development Contingency	5% of Hard and Soft Costs	$14,948,873
Total Project Cost Excl. Land		**$313,926,330**
RESIDUAL LAND VALUE		
Residual Land Value		**$6,650,270**

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City of Berkeley, CA

Building Permits

Confirmation Number	Date & Time
01536G	**Wednesday, November 15, 2023 07:40AM PT**

Payment Method	Amount	Service Fee	Total
VISA **Ending in 2182**	**$12,955.00**	**$418.45**	**$13,373.45**

Account Information

Name	Nathan D George
Street Address	9101 Burning Tree Rd
City	Bethesda
State	MD
Zip code	20817
Country	United States
Daytime phone	(919) 272 - 8061
Email	nathan@ndgre.com
Unique ID	62343
NotiNumber	ZP2023-0040

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Planning and Development
Land Use Planning Division

December 15, 2023

Isaiah Stackhouse
Trachtenberg Architects
2421 Fourth Street
Berkeley, CA 94710

Sent via email to:
isaiah@trachtenbergarch.com

RE: SB330 Use Permit Application #ZP2023-0040 for 1950-1998 Shattuck Avenue (APNs: 57-2053-4-2, 57-2053-3-1, 57-2053-3-2, 57-2053-2, 57-2053-1)

Dear Mr. Stackhouse,

Thank you for submitting the materials to support the proposal to demolish five existing commercial buildings; merge four lots; construct a 28-story, 411,610-square-foot, mixed-use building with 599 dwelling units (including 58 VLI) and 16,920 sq.ft. of commercial area in the C-DMU (Outer Core) Zoning District at 1950-1998 Shattuck Avenue.

Application – Based upon a preliminary review, the application appears to include the following approval requests:

1. Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
2. Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
3. Use Permit under BMC Section 23.204.020(A) to construct dwelling units
4. Use Permit under BMC Section Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
5. Use Permit under BMC Section 23.204.130(E)(2) to construct a building that exceeds the district height limit, and that is over 120 feet but not more than 180 feet
6. Use Permit under BMC Section 23.204.130(E)(3)(b) to modify front, side, and rear setback requirements
7. Use Permit under BMC Section 23.204.130(E)(3)(b)(i) to exceed 120 feet in width in diagonal measurement
8. Administrative Use Permit under BMC Section 23.304.050(A) to allow architectural projections to exceed district height limits
9. Administrative Use Permit under BMC Section 23.302.070(E)(2) for a food service establishment over 3,000 square feet in area
10. Use Permit pursuant to BMC Section 23.310.020(B) to begin alcoholic beverage service (distilled spirits incidental to food service).

11. Administrative Use Permit pursuant to BMC Section 23.302.020(E)(4) for outdoor uses not abutting a residential district.

12. Density Bonus with the following requested reductions, waivers and concessions:

    Waivers

    a. Waiver of BMC Section 23.04.130(E)(1) to exceed building height limits – to be 317' to roof (plus 5' parapet), where 180 feet is the limit (plus 5-foot parapet, by right, with a use permit)

    b. Waiver of BMC Section 23.204.130(E)(3) to reduce the front, side and rear setback minimums (see plans for details)

    c. Waiver of BMC Section 23.204.130(E)(3)(b)(i) to exceed 120 feet in width in diagonal measurement (165')

    d. Waiver of BMC Section 23.204.130(E)(4) reduce usable open space minimum to 13,032 square feet, where 47,920 square feet is required

    Concessions [Three concessions permitted, per Government Code §65915(d)(2)]: None.

Staff has reviewed the application and has determined that the following **additional** approvals will be required for the proposed project. (See below for additional fees due):

1. Administrative Use Permit pursuant to BMC Section 23.302.020(D) for Amplified Live Entertainment in a commercial district

Incomplete Items – Staff has also determined that application is incomplete at this time. Please address the following items to continue with the application review:

1. Fees. The additional approvals listed above require a payment of fees for each. Fees for additional approvals will be due once they are finalized and an invoice will be sent to you. Please be aware that with the submittal of information requested by staff, additional approvals may be added to the permit and associated fees will be due. **Thank you for the payment. One additional permit has been identified for which a fee is due. An invoice for outstanding fees will be sent via email.**

2. Additional Permits. Staff has identified ten additional permits to be added to the permit list and invoiced – including the UP to for distilled spirits for the restaurant, and the rooftop outdoor uses not abutting a residential district. Staff will also add a demolition referral fee for each of the 5 buildings to be demolished, and a traffic report review fee. I will attach the final invoice to the incomplete email, with payment instructions. **Thank you. A fee will be invoiced and sent to you for the additional permit identified.**

3. Plans.

    a. Please include the address/title 1950-1998 (1974) Shattuck on the plan set sheets for clarity. **Thank you.**

    b. Verify the proposed minimum setbacks in the Zoning Summary Table, and in the floorplans with dimensions – some dimensions don't appear correct. **Thank you.**

Please check diagonal tower measurement – plans still show 165', where table shows 134'. **Thank you.**

c. Clarify if Sheet A0.2A is the Base Project Plans – some labels seem inaccurate. **Thank you.**

d. Provide a calculation to demonstrate how the project meets the minimum requirement of 40% of landscaped usable open space area. **Thank you.** If providing the POPOS in the project, the UP for POPOS in lieu fee can be removed. **Thank you.**

e. Clarify if the project proposes the merger of four lots or five lots. City GIS data show five lots within the project boundaries, while the survey shows four. **Thank you.** There are five parcels, and four lots. The fifth APN is likely a separation for tax purposes. Verify with Public Works whether the ~3-foot strip of land at 1950 and 1974 Shattuck sidewalk area can be included in the site area. The survey indicates that it is public right of way, and may need approval of an encroachment permit.

The area is labelled "SFBARTD subsurface easement parcel 2, RE 1768, IM 944", but is excluded from the parcel legal description and property line boundaries. Please provide documentation of ownership of the area; if not owned by the applicant, provide a letter of authorization from the owner to authorizing its inclusion in the development permit application.

f. On all floor plans where a residential amenity is shown, please describe the nature and description of the amenity proposed. Also, for the ground floor lobby/offices, please provide more detail on the uses of this area. **Thank you.**

g. Provide a roof plan, and show overhangs/awnings on each level. **Thank you.**

4. Density Bonus Diagrams/Calculations. Base Project = BP; Proposed Project = PP; AUS=Average Unit Size; QU=Qualifying Units; DBU=Density Bonus Units; RFA=Residential Floor Area.

   a. Show the location of Privately-Owned Public Open Space (POPOS) required in the BP diagrams. **Thank you.**

   b. Please show the property lines (dashed) on all of the density bonus diagrams in the BP and PP to demonstrate setback compliance on each floor. **Thank you.**

   c. If there is a distinction between residential and commercial trash area, be sure to show this on the plans and allocate the correct proportion to the total floor area of each use. **Thank you.**

5. Alcohol. Clarify whether the restaurant be serving distilled alcohol pursuant to BMC Section 23.310.030(A). **Since the existing building is to be demolished, and a new building/use constructed in its place, a new permit for alcohol must be obtained. This UP will be added to the permit**.

Pursuant to BMC Section 23.404.060(B)(1), "Approval Limited to Proposed Project. An approval authorizes only the proposed project described in the application. In no way does an approval authorize other uses, structures or activities not included in the project description." The previous use permit for alcohol sales and service with live music does not include future project proposals, and a new use permit must be obtained for the alcohol service with live music in the current use permit application.

In addition, a permit under BMC Section 23.302.020(D) for Amplified Live Entertainment will be added to the application.

6. Net Commercial Area. Provide the amount of commercial area to be demolished to compare with the amount proposed in the new building to determine the net new commercial area and applicability of appropriate fees. **Thank you.**

7. Wind Study. Per BMC Section 23.204.130(E)(3)(b), a study is needed to analyze whether the proposed modifications to the setback standards will create significant increases in the wind experienced on the public sidewalk. Please provide this study. **Thank you.**

8. Community Benefit Package. The submittal is missing a Community Benefits package pro forma and cost estimate under BMC Section 23.204.130(E)(2)(c). Please note that per Council Resolution 67,172-N.S., a pro forma showing project pre-development soft and hard cost estimates and rate of return analysis, as well as a cost estimate for the community benefits package, are required to be included in the project application. The pro forma must be peer reviewed by a City consultant. Thank you for the Community Benefits letter. While the community benefits analysis may not be entirely objective, the pro forma is a specific requirement for the discretionary permit, as described in the Council Resolution, and would inform the Board's overall consideration of the project:

   > The application shall include a *pro forma* showing pre-development, soft, and hard cost estimates, as well as the projected rate of return the applicant expects the project to generate, based on revenues (sales price or rental income stream) anticipated once the project is completed. This analysis shall cover two scenarios: (1) a base case building of 75' or less; and (2) a high-rise building over 75'.

   Thank you for the pro forma documents. Pursuant to the Council Resolution, a consultant will be obtained to perform a peer review of the document. Staff will send an invoice for the consultant fee for payment when received.

9. Zoning Application Submittal Requirements. The following required items are still required the application submittal:

   a. Letters of Authorization (LOA). Provide signed LOAs from these property owners: Edith Glynn Trust for 2071 University; Fifth Keil Co for 1984,1998 Shattuck; JLLJAR LLC for 1950 Shattuck. **Thank you.**

   b. Transportation Demand Management (TDM). Submit the TDM completed application https://cityofberkeley.info/sites/default/files/documents/TDM%20Supplemental%20Application.pdf **Thank you.** Please show the car share calculation in the A0.1 data table, and show the designated car share spaces in the floor plans. **Thank you.**

      Please note that pursuant to AB 2097, there is no longer a parking requirement for commercial uses for a site that is located within ½-mile of a major transit stop. You may reduce or eliminate the 24 spaces provided in the project for commercial parking. Indicate whether you will be revising the parking proposal in the project.

c. Historic Resource Evaluation. The demolition or substantial change of any building that is more than 40 years old requires further study. Submit State of California Department of Parks and Recreation (DPR) 523 forms: http://ohp.parks.ca.gov/?page_id=28351. These were not found in the application submittal package. Thank you for the DPR forms. I will send comments from Landmarks Planners separately. Note that a fee for the demo referral will be charged for each building. Landmark staff identifies 5 buildings for demo evaluation. These fees will be added to the permit. **Additional Landmark comments are below:**

- **The revised Historic Resources Evaluations (HRE) (4 DPR forms and response to comments) re-submitted with the application have been reviewed. The revisions have addressed prior comments provided in the incomplete letter, and no further comments remain on the completeness of the Forms at this time.**
- **Although the DPR Forms are considered complete at this time, staff does not necessarily concur with the conclusions arrived at in the HREs. In order to proceed with a review of impacts to historic resources, please be advised that further review of resource eligibility of the existing buildings pursuant to the California Environmental Quality Act (CEQA) may be warranted by a third-party consultant, at a cost to be borne by the applicant. Further information will be provided to the applicant at the time of or in advance of application completeness.**

d. Transportation Impact Study. Required for projects that do not meet at least one of the City's screening criteria for determining if detailed VMT or vehicular parking analysis is necessary. Consult with the Transportation Division for a copy of the screening criteria and thresholds at (510) 981-7010. Submit when ready. **Thank you.**

e. Tabulation Form. Please revise the Tabulation Form to reflect changes made in response to all other comments in this letter. **Thank you.**

f. Percent for Art. Thank you for submitting an updated form indicating payment of the in-lieu fee. It will be routed to the Civic Arts Department for review.

g. Design Review. DR comments will be sent to you separately. Please respond to these comments in your next submittal, and copy Anne Burns for all submittals. **Thank you. The DR application has been deemed complete. However, future changes to the project in response to this letter may trigger new DR comments.**

Advisory Comments

1. Level CEQA of Review. Staff will determine the level of CEQA review for the project within 30 days of the application being deemed complete.

2. Interdepartmental Roundtable Meeting. An interdepartmental review will be scheduled as an opportunity for you to receive comments on the project from City departments such as Building and Safety, Transportation, Zero Waste, Parks, Toxics and Public Works. I will coordinate with you to schedule a time when you can attend. *Meetings are 2nd and 4th Wednesdays monthly at 1:00 p.m. or 2:30 p.m. Staff strongly recommends attending this meeting for the project.*

3. Community Benefits Package. The applicant shall pay the fee required for peer review of the package by a City-selected consultant. A fee proposal will sent to you for payment. Peer review comments will be sent to you separately.

Revised submittal items should be uploaded to the Box.com project folder link that was previously sent to you. If the link is no longer active, please email me to request a new link Submit responses to all requested items at once, and not incrementally. Also, please be aware of streamlining timelines under SB330, Government Code Section 65941.1(a)(d) that affect the validity of the project's SB 330 Preliminary Application.[1]

Should you have questions regarding this letter or your application, please feel free to contact me.

Sincerely,



Sharon Gong
Senior Planner
(510) 981-7429
sgong@cityofberkeley.info

[1] (1) Within 180 calendar days after submitting a preliminary application with all of the information required by subdivision (a) to a city, county, or city and county, the development proponent shall submit an application for a development project that includes all of the information required to process the development application consistent with Sections 65940, 65941, and 65941.5.
(2) If the public agency determines that the application for the development project is not complete pursuant to Section 65943, the development proponent shall submit the specific information needed to complete the application within 90 days of receiving the agency's written identification of the necessary information. If the development proponent does not submit this information within the 90-day period, then the preliminary application shall expire and have no further force or effect.

TRACHTENBERG ARCHITECTS
2421 Fourth Street Berkeley, CA 94710
phone: 510.649.1414
www.TrachtenbergArch.com

University Corners **12 March 2024**
Applicant's Statement

Dear Sir/Madam:

We propose to construct a new 28-story mixed-use building at 1998 Shattuck Ave in Berkeley. The project, as generally described our "Zoning Submittal" drawings dated 01 March 2023, consists of 599 residential apartments over a 16,920 square foot commercial space. The project seeks to utilize a State of California Density Bonus and to provide Below Market Rate units. Please refer to the attached *Statement Regarding the Use of the California Density Bonus*

Zoning
The 28,319 sq. ft. lot is within the C-DMU Core Zone.

Use Permits Request

1. Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
2. Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
3. Use Permit under BMC Section 23.204.020(A) to construct dwelling units
4. Use Permit under BMC Section Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
5. Use Permit under BMC Section 23.204.130(E)(2) to construct a building that exceeds the district height limit
6. Use Permit under BMC Section 23.204.130(E)(3)(b) to modify front, side, and rear
7. setback requirements
8. Use Permit under BMC Section 23.204.130(E)(3)(b)(i) to exceed 120 feet in width in diagonal measurement
9. Administrative Use Permit under BMC Section 23.302.070(E)(2) for a food service establishment over 3,000 square feet in area
10. Use Permit pursuant to BMC Section 23.310.020(B) to begin alcoholic beverage service (distilled spirits incidental to food service).
11. Use Permit pursuant to BMC Section 23.302.020(D) for Amplified Live Entertainment for hard liquor, restaurant, live music up to 10,000sf.

The project will retain the existing distilled spirit and live music use permits that are currently in place for 1974 Shattuck Avenue (currently DBA Spats). The use permits will apply to the same footprint as the current yse permit.

Density Bonus with the following requested reductions, waivers and concessions:
Waivers
a. Waiver of BMC Section 23.04.130(E)(1) to exceed building height limits – to be 317' to roof (plus 5' parapet), where 180 feet is the limit (plus 5-foot parapet, by right, with a use permit)
b. Waiver of BMC Section 23.204.130(E)(3) to reduce front, side and rear setback minimums
c. Waiver of BMC Section 23.204.130(E)(3)(b)(i) to exceed 120 feet in width in diagonal measurement (165')
d. Waiver of BMC Section 23.204.130(E)(4) reduce usable open space minimum to 13,032 square feet, where 47,920 square feet is required

Concessions
[Three concessions permitted, per Government Code §65915(d)(2)]: None.

Parking
We propose 129 off-street residential parking spots and 25 off-street commercial parking spots in an underground parking garage within the property line for the project. The project will provide 274 long term bicycle parking spaces.

Building Height
The base project height allowed in C-DMU core is 120' (w/ AUP under BMC Section 23.304.050(A) and UP under BMC Section 23.204.130.E.2). As a State Density Bonus project with an increase in density of 46.25% above the maximum density allowed under the zoning code, this project proposes a height waiver for 317' in order to physically accommodate the additional density bonus units.

Setbacks/Yards
Setbacks are as follows in the C-DMU Core Zone:

Front		Interior Side		Street Side		Rear	
Required	Proposed	Required	Proposed	Required	Proposed	Required	Proposed
0'-15'	**Varies; 2' to 15'-6"**	Varies; 0' to 15'	**Varies; 5'-3" to 15'-0"**	Varies; 0' to 15'	**Varies 1'-6" to 26'-6"**	Varies; 0' to 15'	Varies; 2' to 94'-7"

Class 31 Exemption Analysis

CEQA Overview and Legislative Context

The housing crisis continues to have a significant impact on Californians across the state. The Government Code sections discussed below are state legislative efforts that recognize the severity of California's housing crisis and the difficulties associated with developing new housing at appropriately zoned, transit-oriented, and urbanized locations. These pieces of legislation are applicable to the proposed project:

- California Environmental Quality Act Class 31 Categorial Exemption for Historic Resources (CEQA Guideline § 15331)
- California Environmental Quality Act Class 32 Categorial Exemption for Infill Developments (CEQA Guideline § 15332)
- Permit Streamlining Act (Gov. Code § 65920 et seq.)
- State Density Bonus Law (Gov. Code § 65915)
- Housing Accountability Act (Gov. Code § 65589.5)
- Housing Crisis Act of 2019 (Gov. Code § 66300)
- Assembly Bill 2097 (Government Code § 65863.2)
- Assembly Bill 1633 (Gov. Code § 65589.5)

CEQA Class 32 Exemption, Infill Development
The proposed project is eligible for a Class 32 Exemption from the CEQA Guidelines (Section 15332). To qualify as a Class 32 Exemption, a project must meet the following standards:

a) "The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.
b) The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.
c) The project site has no value as habitat for endangered, rare, or threatened species.
d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.
e) The site can be adequately served by all required utilities and public services."

Source: California Environmental Quality Act Guidelines § 15532.

This section provides justification for a Class 32 Exemption, which must then be independently verified by the local agency.

a) The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.

The proposed project is a mixed-use project, which is an allowed use in the C-DMU zone, permitted with a Use Permit (and Public Hearing). The proposed project, with the density bonus, waivers, and concessions requested as part of this application, is otherwise consistent with all applicable, objective general plan policies, zoning, and design regulations.

b) The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.

The project is within the City Limits of Berkeley, located in the Downtown Area at the northwest corner of the intersection of University and Shattuck Avenues. The total lot area of the proposed project site is 28,319 SF, which is less than five acres. The project site is 100% surrounded by urbanized uses and development.

c) The project site has no value as habitat for endangered, rare or threatened species.

The existing condition of the project site is: operating retail and restaurant uses for well over 50 years. The site is 100% built out and there is no habitat value of any kind for any species (except humans), and the project site certainly does not contain any endangered, rare, or threatened species. The existing buildings have been on the site for nearly 100 years in some cases. The project site is located in the rapidly developing Downtown Area of Berkeley. The site does not contain, nor is it adjacent to, any habitat for rare, endangered, or threatened species.

d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

The project will not have any significant effects relating to traffic, noise, air quality, or water quality. Some parking will be built in a basement level garage taking access from University Avenue, and the site is located in the City of Berkeley's "low-VMT areas". The majority of trips are expected to be pedestrian, bicycle, or public transit trips, so the project will not result in significant effects relating to traffic or air quality.

The proposed project is not located near a stream or other body of water. It has direct access to storm and wastewater sewer connections. The proposed project will not include any long term sources of air or water pollution. A Stormwater Treatment Control Plan is included in the proposed project to remediate any stormwater runoff.

The proposed project is an allowed mixed residential and commercial use in the C-DMU zoning district. Mixed use projects are typical in this location and neighborhood context in the Downtown. As a mixed-use residential project, no significant noise sources will be generated by the project, with the exception of the construction period. The City of Berkeley's generally applicable conditions for construction and noise management will ensure the noise to a level of non-significance.

e) The site can be adequately served by all required utilities and public services.

The project site is within the service boundaries of all necessary utilities, none of which have declared a moratorium, or pending moratorium, on new services.

CEQA Categorical Exemption Exceptions

The proposed project does not trigger any of the following exceptions that would disqualify the project from CEQA's Categorical Exemptions.

> **"(a) Location.** Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located – a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply all instances, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.
> **(b) Cumulative Impact.** All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.

> **(c) Significant Effect.** A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.
> **(d) Scenic Highways.** A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.
> **(e) Hazardous Waste Sites.** A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.
> **(f) Historical Resources.** A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource."

None of the exceptions listed above apply to the proposed project, so it is still eligible for Categorical Exemptions under CEQA. Exception (a) is not applicable to the proposed project because it is seeking a Class 32 Categorical Exemption. The proposed impact will not contribute to any cumulative impacts on the environment. This is an infill development project that will not have a significant effect on any CEQA issues. The proposed project is at the intersection of University and Shattuck Avenues, which are not Scenic Highways. The proposed project is not on a hazardous waste site, as attested to in the "Hazardous Waste & Substances Statement" and detailed in the Environmental Site Assessment Reports.

These supportive documents are included as attachments in this application package. The proposed project does not contain a historic resource. In addition, the application now includes Historic Resource Evaluations from TWO reputable and qualified historic resource architects who have both concluded that none of the buildings or the buildings together constitute any historic resource potential. As a result, the City of Berkeley now possesses the substantial evidence necessary to support the Exemption. No additional peer review or analysis is warranted or permitted pursuant to AB 1633. We appreciate the staff's comment in the last letter that they reserve the right to disagree with the historic resource evaluation(s), however this is no longer a permissible construct given the implementation of AB 1633, as noted below.

Assembly Bill 1633 (AB 1633), which went into effect on January 1, 2024, establishes that if certain sites qualify for a Categorical Exemption under CEQA, and a local agency does not make an Exempt determination, it constitutes a violation under the Housing Accountability Act (HAA). To be eligible for the protections of AB 1633,

> "(I) The Project cannot be on an environmentally sensitive site or a site subject to certain environmental hazards;
> (II) The Project must be on a legal parcel, within an urbanized area, and provide certain green benefits;
> (III) The density of the housing development project meets or exceeds 15 dwelling units per acre; and
> (IV) There is substantial evidence in the record that the Project qualifies for an exemption, and that it is not subject to any exception to the exemption."

The proposed project meets each of these requirements. The subject site is an urban infill lot that has been developed for over 100 years and is not an environmentally sensitive or hazardous site. The proposed project is on legal parcels within an urbanized area.

The new project will provide green benefits by increasing the supply of housing and offices near public transit and the University. The new building will be constructed according to the Berkeley Green Code and Energy Code, as well as being natural gas free.

The project materials provided in this application package provide substantial evidence that the project qualifies for a Class 32 Categorical Exemption. As detailed above, the proposed project is not subject to any exceptions to the exemptions. By satisfying each of these eligibility requirements, the proposed project is subject to the protections and provisions of AB 1633.

BAAQMD provisions

In May 2022, BAAQMD adopted updated criteria thresholds to screen out projects that will have a significant impact on greenhouse gas emissions. If a project adopts certain design elements, it falls below the threshold of significance. These design elements are listed below:

- The project will not include natural gas appliances or natural gas plumbing.
- The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under Public Resources Code section 21100(b)(3) and section 15126.2(b) of the State CEQA Guidelines.
- The project will achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA: 15 percent below the existing VMT per capita (see Attachment 4E for the City of Berkeley's Map of Low VMT Area).
- The project will achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

Because it will meet all the BAAQMD greenhouse gas (GHG) threshold criteria, the proposed project does not result in any new or substantially more severe impacts related to GHGs.

Additional Studies Prepared For The Project

Geotechnical/Soils/Seismic Hazards – A geotechnical report was prepared for the project by Rockridge Geotechnical Engineers. The report is attached. The report provides an overview of the soils and provides design direction for the structural design of the project.

Structural Concept – BART Basis of Design Narrative prepared by Tipping Structural Engineers describes a preliminary concept design that uses a variety of strategies to satisfy BART guidelines in order to avoid loading the existing BART tunnel and Zone of Influence. A more detailed evaluation will of course be provided as the basis of foundation design.

Hazardous Materials – A Phase I Environmental Assessment was conducted by GEM Group, Inc. None of the addresses associated with the project are listed on the State of California "Cortese Lists." A Phase I Environmental Assessment was completed for all of the parcels associated with the development. It is our belief that the City of Berkeley's generally applicable conditions relevant to soil/contamination are adequate to address the minor follow up proposed in the Phase I assessment, which is typical for projects in Berkeley in commercial or industrial zones. The Executive Summary concludes as follows:

> Given the findings and conclusions of this Phase I ESA, GEM recommends, prior to or during future redevelopment, that potholing be conducted at the approximate location of the historical "oil tank in ground" to confirm its presence or absence. If present, then the tank should be removed following regulatory requirements. GEM also recommends limited soil sampling in the vicinity of the oil tank and at the automobile and tire service units for use in the preparation of a site management plan (SMP) to address potential residual contamination from historical site use. The SMP will address construction worker safety and proper handling/disposal of excavated soil.

Wind Assessment – A Pedestrian Wind Comfort Assessment has been prepared by Rowan Williams Davies and Irwin, Inc. It is attached. The project includes a wind assessment study conducted to ascertain the effects of the project on the pedestrian environment. In particular, the study looks at wind downwashing generated by the project's tall massing to see if that creates uncomfortable or significant wind at the pedestrian sidewalk level. The report, which is attached, found that with the current design the wind downwashing will not affect the comfort of pedestrians at ground level.

Project Community Benefits

The project makes a substantial contribution toward implementation of the community's vision captured in the Downtown Area Plan stamped approved by Berkeley voters in 2010 and adopted by the City Council in 2012. Proposed under State Density Bonus Law and SB330, the project represents a Housing Development Project that is only required to meet objective standards. Tall buildings in the Downtown are required to provide community benefits. State law requires that those benefits be objective and knowable at the time of application.

The Zoning Ordinance language in the C-DMU has only one objective community benefit requirement - LEED Gold or equivalent rating. The other objective community benefit, which is not in the Zoning Ordinance is the Council adopted requirement for a Project Labor Agreement. The project must comply with that requirement. There are no other stated objective standards for community relevant to the project.
Outside of any undefined "additional community benefits" the project has significant benefit for the Berkeley community. The project proposes a remarkable number of community benefits within the project and for the greater community.

Project benefits include, but are not limited to:

- Rooftop Restaurant/Bar: The project team is proposing a rooftop restaurant/bar on level 28. The restaurant/bar would be accessible to customers from the community at-large via an entrance and elevator, accessed from the building's main lobby. The lobby access fronts Shattuck Avenue. This would provide an opportunity for community members to take advantage of amazing views at level 28, as patrons of the restaurant/bar, and generate economic development benefits as a Downtown attraction.

- Green Building: The project anticipates to achieve LEED Gold or equivalent standards and sustainable building design never before seen in Berkeley at this scale. The project includes efficient all-electric building systems, air source heat pump water heaters in lieu of natural gas. The project will provide on-site stormwater management, where none exists today, along with low-flow fixtures that reduce per capita water use. These represent objectively required benefits.

- Streets and Open Space Impact Fees: The project would contribute to the Streets and Open Space Improvement Fund to expand pedestrian and open space infrastructure in the Downtown. Contribution to the SOSIP fund represents an objectively required benefit.

- Transportation Benefits: Capitalizing on its exceptional transit access, the project will provide unlimited local bus transit passes or equivalent to each unit and employee and unbundled parking. The project does not propose any on-site car share spaces because no company places them in private development projects any longer. A waiver per state density bonus law is requested for this circumstance. Over 170 bike parking spaces are proposed, along with a bike repair facility. Due to the project's location within Downtown Berkeley, and the replacement of on-site commercial uses, most trips from the project site are expected to be walking trips. These represent objectively required benefits.

- Affordable Housing: The project will include 58 apartment units affordable at 50% AMI within the project. Additionally, the project will contribute over $11 million into the Affordable Housing Trust Fund. Based on changes in the City's Affordable Housing Mitigation Fee and in-lieu requirements that went into effect in 2023, these fees are well in excess of what was envisioned by the Downtown Area Plan, C-DMU district, and Resolution 67,172. These contributions represent objectively required benefits.

- State Housing Targets: The project would help to reduce Berkeley and the region's housing crisis, by adding 599 units including 58 below-market rate units, in a transit-oriented service-rich location. This would help the City make substantial progress toward meeting the City's Regional Housing Needs Assessment (RHNA) target.

- Property Tax & Other Economic Benefits: Construction of the project will result in significant increases in property tax, new community investment, and other business tax revenue generation for the City. The project will contribute to the thriving Downtown Berkeley Association (DBA), which further provides beautification and security improvements to support local businesses, shopping, and community gathering.

- Project Labor Agreement: The project is committed to a Project Labor Agreement the Alameda County Building Trades Council to ensure union labor on the project. This agreement will establish a commitment

to union labor, including stipulations for apprentices and training. Based on actual labor costs, this agreement will represent a 15% premium over construction costs, well above the 5% threshold established by Council resolution. This represents an objectively required benefit.

Thank you for your consideration of this application.

Sincerely,



Isaiah Stackhouse, Principal
TRACHTENBERG ARCHITECTS

TRACHTENBERG ARCHITECTS
2421 Fourth Street Berkeley, CA 94710
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1998 Shattuck Mixed-Use
Berkeley, CA
March 12, 2024

Density Bonus Eligibility Statement

a. Number of "base project" units: 411 Units.
b. Number of affordable units and level of affordability: 58-Units (14%) affordable to Very Low-Income Households as defined in Section 50105 of the Health and Safety Code.
c. Percent density bonus requested and allowed under Section 65915: 46.25%.
d. Waivers or modifications of developments standards necessary to accommodate density bonus:
    - Increase the maximum building height to accommodate the density bonus units.
    - Increase the maximum number of building stories to accommodate the density bonus units.
    - Increase the maximum dimension above 120' to accommodate the density bonus units.
    - Reduce required setbacks to accommodate the density bonus units.
    - Reduce amount of Residential Open Space to accommodate the density bonus units.
e. Explanation of why each waiver or modification is needed to accommodate density bonus: Following the guidelines provided in the City's "*Conceptual Approach to Implementing Density Bonus Law In Berkeley, February 22, 2013",* the density bonus units are added to the Base Project which "reflects the proposed project's building separation, open space location, and parking location", via additional the following waivers or modifications to accommodate additional dwelling units:
    - Building height, building stories, setbacks, and open space waivers are needed to accommodate the density bonus units.

Request for Incentives or Concessions

Under Section 65917, as a project which provides 14 percent very low-income units, the project is eligible for two incentives or concession which results in identifiable and actual cost reductions. As such, the project proposes the following cost reduction concessions:

- Cost Reduction Concession #1. - The project requests a cost-reduction concession to eliminate the public art in-lieu fee of $89,627,324 in order to reduce actual, identifiable, and self-evident cost.
- Cost Reduction Concession #2. - Not used

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March 12th, 2024
Attn: Sharon Gong
Land Use Planning, City of Berkeley

RE: August 18th, 2023 Incompleteness Letter for 1950-1998 (1974) Shattuck Ave.

Dear Sharon,

Please see our responses below in blue text for your incompleteness letter, dated August 18th, 2023. Please also see our revised applicant statement and the attached documents as referenced in our responses. Also attached are Bird Safe Attestation Form, Bird Safe_Info Checklist, and University Commons_Affordable Housing Requirements.

Items Required for Submittal or Correction:

1. Fees. The additional approvals listed above require a payment of fees for each. Fees for additional approvals will be due once they are finalized and an invoice will be sent to you. Please be aware that with the submittal of information requested by staff, additional approvals may be added to the permit and associated fees will be due. **Thank you for the payment. One additional permit has been identified for which a fee is due. An invoice for outstanding fees will be sent via email.**
Response: All project payments made online. Please see attached email proof of payment.

2. Additional Permits. Staff has identified ten additional permits to be added to the permit list and invoiced – including the UP to for distilled spirits for the restaurant, and the rooftop outdoor uses not abutting a residential district. Staff will also add a demolition referral fee for each of the 5 buildings to be demolished, and a traffic report review fee. I will attach the final invoice to the incomplete email, with payment instructions. **Thank you. A fee will be invoiced and sent to you for the additional permit identified.**
Response: All project payments made online. Please see attached email proof of payment.

3. Plans.
a. Please include the address/title 1950-1998 (1974) Shattuck on the plan set sheets for clarity**.** **Thank you.**

b. Verify the proposed minimum setbacks in the Zoning Summary Table, and in the floorplans with dimensions – some dimensions don't appear correct. **Thank you.**
Please check diagonal tower measurement – plans still show 165', where table shows 134'. **Thank you.**
c. Clarify if Sheet A0.2A is the Base Project Plans – some labels seem inaccurate. **Thank you.**
d. Provide a calculation to demonstrate how the project meets the minimum requirement of 40% of landscaped usable open space area. **Thank you.** If providing the POPOS in the project, the UP for POPOS in lieu fee can be removed. **Thank you.**

e. Clarify if the project proposes the merger of four lots or five lots. City GIS data show five lots within the project boundaries, while the survey shows four. **Thank you.** There are five parcels, and four lots. The fifth APN is likely a separation for tax purposes. Verify with Public Works whether the ~3-foot strip of land at 1950 and 1974 Shattuck sidewalk area can be included in the site area. The survey indicates that it is public right of way, and may need approval of an encroachment permit. **The area is labelled "SFBARTD subsurface easement parcel 2, RE 1768, IM 944", but is excluded from the parcel legal description and property line boundaries. Please provide**

documentation of ownership of the area; if not owned by the applicant, provide a letter of authorization from the owner to authorizing its inclusion in the development permit application.
Response: The subsurface easement at Parcel 2 not a BART parcel. Please see the attached survey updated for clarification. Also see attached filed and stamped Quiet Title action for the 3-foot strip of land at 1950 and 1974 Shattuck sidewalk area, and the recently filed amendment. We are waiting on the stamped copy back from the county.

f. On all floor plans where a residential amenity is shown, please describe the nature and description of the amenity proposed. Also, for the ground floor lobby/offices, please provide more detail on the uses of this area. **Thank you.**

g. Provide a roof plan, and show overhangs/awnings on each level. **Thank you.**

4. Density Bonus Diagrams/Calculations. Base Project = BP; Proposed Project = PP; AUS=Average Unit Size; QU=Qualifying Units; DBU=Density Bonus Units; RFA=Residential Floor Area.
a. Show the location of Privately-Owned Public Open Space (POPOS) required in the BP diagrams. **Thank you.**

b. Please show the property lines (dashed) on all of the density bonus diagrams in the BP and PP to demonstrate setback compliance on each floor. **Thank you.**

c. If there is a distinction between residential and commercial trash area, be sure to show this on the plans and allocate the correct proportion to the total floor area of each use. **Thank you.**

5. Alcohol. Clarify whether the restaurant be serving distilled alcohol pursuant to BMC Section 23.310.030(A). **Since the existing building is to be demolished, and a new building/use constructed in its place, a new permit for alcohol must be obtained. This UP will be added to the permit.**
Pursuant to BMC Section 23.404.060(B)(1), "Approval Limited to Proposed Project. An approval authorizes only the proposed project described in the application. In no way does an approval authorize other uses, structures or activities not included in the project description." The previous use permit for alcohol sales and service with live music does not include future project proposals, and a new use permit must be obtained for the alcohol service with live music in the current use permit application.

In addition, a permit under BMC Section 23.302.020(D) for Amplified Live Entertainment will be added to the application.
Response: The project application requests use permit for hard liquor, restaurant, live music up to 10,000sf.

6. Net Commercial Area. Provide the amount of commercial area to be demolished to compare with the amount proposed in the new building to determine the net new commercial area and applicability of appropriate fees. **Thank you.**

7. Wind Study. Per BMC Section 23.204.130(E)(3)(b), a study is needed to analyze whether the proposed modifications to the setback standards will create significant increases in the wind experienced on the public sidewalk. Please provide this study. **Thank you.**

8. Community Benefit Package. The submittal is missing a Community Benefits package pro forma and cost estimate under BMC Section 23.204.130(E)(2)(c). Please note that per Council Resolution 67,172-N.S., a pro forma showing project pre-development soft and hard cost estimates and rate of return analysis, as well as a cost estimate for the community benefits package, are required to be included in the project application. The pro forma must be peer reviewed by a City consultant.
Thank you for the Community Benefits letter. While the community benefits analysis may not

be entirely objective, the pro forma is a specific requirement for the discretionary permit, as described in the Council Resolution, and would inform the Board's overall consideration of the project:

> The application shall include a *pro forma* showing pre-development, soft, and hard cost estimates, as well as the projected rate of return the applicant expects the project to generate, based on revenues (sales price or rental income stream) anticipated once the project is completed. This analysis shall cover two scenarios: (1) a base case building of 75' or less; and (2) a high-rise building over 75'.

Thank you for the pro forma documents. Pursuant to the Council Resolution, a consultant will be obtained to perform a peer review of the document. Staff will send an invoice for the consultant fee for payment when received.
Response: Noted.

9. Zoning Application Submittal Requirements. The following required items are still required the application submittal:
a. Letters of Authorization (LOA). Provide signed LOAs from these property owners: Edith Glynn Trust for 2071 University; Fifth Keil Co for 1984,1998 Shattuck; JLLJAR LLC for 1950 Shattuck.
Thank you.

b. Transportation Demand Management (TDM). Submit the TDM completed application https://cityofberkeley.info/sites/default/files/documents/TDM%20Supplemental%20Application.pdf
Please note that pursuant to AB 2097, there is no longer a parking requirement for commercial uses for a site that is located within ½-mile of a major transit stop. You may reduce or eliminate the 24 spaces provided in the project for commercial parking. Indicate whether you will be revising the parking proposal in the project.
Response: The project will **not** be revising the parking proposal in the project.

c Historic Resource Evaluation. The demolition or substantial change of any building that is more than 40 years old requires further study. Submit State of California Department of Parks and Recreation (DPR) 523 forms: http://ohp.parks.ca.gov/?page_id=28351. These were not found in the application submittal package. Thank you for the DPR forms. I will send comments from Landmarks Planners separately. Note that a fee for the demo referral will be charged for each building. Landmark staff identifies 5 buildings for demo evaluation. These fees will be added to the permit.
Additional Landmark comments are below:
• The revised Historic Resources Evaluations (HRE) (4 DPR forms and response to comments) re-submitted with the application have been reviewed. The revisions have addressed prior comments provided in the incomplete letter, and no further comments remain on the completeness of the Forms at this time.
• Although the DPR Forms are considered complete at this time, staff does not necessarily concur with the conclusions arrived at in the HREs. In order to proceed with a review of impacts to historic resources, please be advised that further review of resource eligibility of the existing buildings pursuant to the California Environmental Quality Act (CEQA) may be warranted by a third-party consultant, at a cost to be borne by the applicant. Further information will be provided to the applicant at the time of or in advance of application completeness.
Response: Please see the revised applicant statement which included CEQA Exemption text in the CEQA section. Please also see the attached Summary Historical Evaluations file (University-Shattuck-MHevals-030824).

f. Percent for Art. Thank you for submitting an updated form indicating payment of the in-lieu fee. It will be routed to the Civic Arts Department for review.
Response: The project application would like to ask for concession for the in-lieu fee. Please see the attached revised density bonus statement.

g. Design Review. DR comments will be sent to you separately. Please respond to these comments in your next submittal, and copy Anne Burns for all submittals. **Thank you. The DR application has been deemed complete. However, future changes to the project in response to this letter may trigger new DR comments.**
Response: Noted

Advisory Comments
1. Level CEQA of Review. Staff will determine the level of CEQA review for the project within 30 days of the application being deemed complete. Noted.

2. Interdepartmental Roundtable Meeting. An interdepartmental review will be scheduled as an opportunity for you to receive comments on the project from City departments such as Building and Safety, Transportation, Zero Waste, Parks, Toxics and Public Works. I will coordinate with you to schedule a time when you can attend. Meetings are 2nd and 4th Wednesdays monthly at 1:00 p.m. or 2:30 p.m. Staff strongly recommends this meeting for the project. Noted

3. Community Benefits Package. The applicant shall pay the fee required for peer review of the package by a City-selected consultant. A fee proposal will sent to you for payment. Peer review comments will be sent to you separately. Noted

If you have any questions or comments, please feel free to contact me at (510) 649-1414 x124.

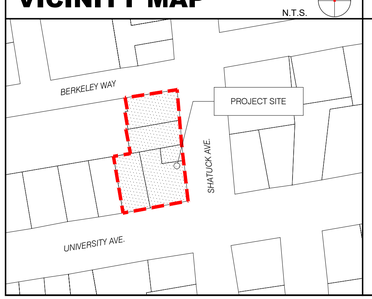
Sincerely,



Isaiah Stackhouse, Principal TRACHTENBERG ARCHITECTS



VICINITY MAP



PROJECT DIRECTORY

OWNER/APPLICANT:
1974 Shattuck Ave, LLC
1958A University Ave
Berkeley, CA 94705

ARCHITECT:
Isaiah Stackhouse, Principal
TRACHTENBERG ARCHITECTS
2421 Fourth Street
Berkeley, CA 94710
510.649.1414
www.TrachtenbergArch.com

PROJECT DESCRIPTION

PROJECT ADDRESS: 1950-1998 Shattuck Ave. & 2071 University Ave. Berkeley, CA 94704
APNS:
057 205300100
057 205300200
057 205300301
057 205300302
057 205300402

SCOPE OF WORK:
REMOVAL OF EXISTING COMMERCIAL STRUCTURES & CONSTRUCTION OF A NEW 28-STORY MIXED-USE HOUSING DEVELOPMENT WITH 599 DWELLING UNITS AND A ROOFTOP RESTAURANT OVER GROUND-LEVEL COMMERCIAL AND LOBBIES, WITH STATE OF CALIFORNIA DENSITY BONUS.

DRAWING LIST

A0.0	GENERAL INFORMATION	A2.1	FLOOR PLANS	A3.9	PRELIMINARY RENDERING	L3.1	USABLE OPEN SPACE CALCS & PLANTING NOTES
A0.1	ZONING INFORMATION	A2.2	FLOOR PLANS	A3.10	PRELIMINARY RENDERING	I0.0	IRRIGATION NOTES & LEGEND
A0.2A	DENSITY BONUS DIAGRAMS	A2.3	FLOOR PLANS	A3.11	PRELIMINARY RENDERING	I1.0	IRRIGATION PLAN AT STREETSCAPE
A0.2B	DENSITY BONUS DIAGRAMS	A2.4	FLOOR PLANS	A3.12	PRELIMINARY RENDERING	I2.0	IRRIGATION PLAN SECOND FLOOR PODIUM GARDENS
A0.2C	PRELIMINARY AHCP DIAGRAMS	A2.5	FLOOR PLANS	A3.13	PRELIMINARY RENDERING	I3.0	IRRIGATION PLAN FOURTEENTH FLOOR ROOF DECK
A0.3	DPRELIMINARY AHCP DIAGRAMS	A2.6	FLOOR PLANS	A3.14	PRELIMINARY RENDERING	I3.1	IRRIGATION POINT OF CONNECTION
A0.4A	SHADOW STUDIES DECEMBER 21ST	A2.7	ROOF PLAN	A3.15	PRELIMINARY RENDERING	I4.0	IRRIGATION DETAILS
A0.4B	SHADOW STUDIES JUNE 21ST	A3.1	ELEVATIONS	A3.16	PRELIMINARY RENDERING	I5.0	IRRIGATION DETAILS
A0.4C	SHADOW STUDIES FEB 15TH	A3.2	ELEVATIONS	A3.17	PRELIMINARY RENDERING	I6.0	IRRIGATION DETAILS
A0.5	SITE CONTEXT PHOTOS	A3.3	STREET STRIP ELEVATIONS	A4.1	BUILDING SECTIONS	I7.0	IRRIGATION DETAILS
A0.6A	SURVEY	A3.4	PHOTO CONTEXT VIEWS	A4.2	AWNING ENCROACHMENT DIAGRAM		
A0.6B	SURVEY	A3.5	PHOTO CONTEXT VIEWS	A5.0	CONCEPTUAL GRADING PLAN		
A0.6C	SURVEY	A3.6	PHOTO CONTEXT VIEWS	L0.0	COVER SHEET, NOTES, AND LEGEND		
A1.0	EXISTING SITE PLAN	A3.7	PRELIMINARY RENDERING	L1.0	LANDSCAPE PLAN AT STREETSCAPE		
A2.0a	FLOOR PLANS	A3.8	PRELIMINARY RENDERING	L2.0	SECOND FLOOR PODIUM GARDENS		
A2.0b	FLOOR PLANS			L3.0	FOURTEENTH FLOOR ROOF DECK		

TRACHTENBERG
ARCHITECTS

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1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ARCHITECT AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF TRACHTENBERG ARCHITECTS.

JOB: 2209

SHEET:

GENERAL INFORMATION

A0.0

ZONING CODE DATA

ZONING SUMMARY TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	PROPOSED W/DENSITY BONUS	ZONING COMPLIANCE
ZONING	C-DMU Core			COMPLIES
TOTAL LOT SIZE (SQ. FT.)	28,319			COMPLIES
TOTAL LOT SIZE (ACRES)	0.65			COMPLIES
FLOOR AREA RATIO (FAR)	NA	NA	14.52	COMPLIES W/ SDB WAIVER
DWELLING UNITS (SEE TABLE)	NA	NA	599	COMPLIES
RESIDENTIAL BEDROOMS	NA	NA	709	COMPLIES
HEIGHT - FEET	60'-0"	120'	317'	COMPLIES W/ SDB WAIVER
HEIGHT - STORIES*	NA	NA	28	COMPLIES W/ SDB WAIVER
LOT COVERAGE	NA	NA	88%	COMPLIES
SETBACK - FRONT (UNIVERSITY) (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - STREET SIDE (SHATTUCK) (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - REAR (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - MAX. DIMENSION ABOVE 120'	120'	NOT LIMITED	165'	COMPLIES W/ SDB WAIVER
RESIDENTIAL PARKING (SEE TABLE)	0	0	130	COMPLIES
COMMERCIAL PARKING (SEE TABLE)	24	24	24	COMPLIES
RES. BIKE PARKING LONG TERM (SEE TABLE)	237	237	240	COMPLIES
RES. BIKE PARKING SHORT TERM (SEE TABLE)	18	18	18	COMPLIES
COM. BIKE PARKING SHORT TERM (SEE TABLE)	9	9	10	COMPLIES
RESIDENTIAL OPEN SPACE (SEE TABLE)	47,920	47,920	13,032	COMPLIES W/ SDB WAIVER
COMMERCIAL OPEN SPACE (SEE TABLE)	323	323	706	COMPLIES

* Community Benefit Required per BMC Section 23.204.130.E.2.c.

PARKING CALCULATIONS

	QNTY	CARS	PER	REQ'D	PROVIDED
RESIDENTIAL	599	0.5 MAX	1	0	130
COMMERCIAL	16,142	1.5	1,000	24	24
TOTAL					**154**

BICYCLE PARKING CALCULATIONS

	QNTY	BIKES	PER	REQ'D	PROVIDED
RESIDENTIAL (LONG TERM) (PER BEDROOM)	709	1	3	237	256
RESIDENTIAL (SHORT TERM) (PER BEDROOM)	709	1	40	18	18
COMMERCIAL (SHORT TERM) (PER SF)	16,142	1.0	2,000	9	10

ROOFTOP ARCHITECTURAL ELEMENTS CALCS

	ALLOWABLE	PROPOSED
AVERAGE AREA OF FLOORS		14,058
AREA OF ROOFTOP ARCHITECTURAL ELEMENTS	2,109	1,464
% AREA OF ROOFTOP ARCHITECTURAL FEATURES	15.0%	10.4%

OPEN SPACE CALCULATIONS

	UNITS	SF / UNIT	TOTAL REQ'D	MODIFICATION	TOTAL PROVIDED	COMMON	LANDSCAPE REQ'D (40%)	LANDSCAPE PROVIDED
RESIDENTIAL UNITS	599	80	47,920	34,888	13,032	13,032	5,213	6,735
COMMERCIAL OPEN SPACE	16,142	50	323	(383)	706			

AREA TABLE

	RESIDENTIAL	COMMERICAL	TOTAL
LEVEL 28		7,800	7,800
LEVEL 27	11,980		11,980
LEVEL 26	11,980		11,980
LEVEL 25	11,980		11,980
LEVEL 24	11,980		11,980
LEVEL 23	11,980		11,980
LEVEL 22	11,980		11,980
LEVEL 21	11,980		11,980
LEVEL 20	11,980		11,980
LEVEL 19	11,980		11,980
LEVEL 18	11,980		11,980
LEVEL 17	11,980		11,980
LEVEL 16	11,980		11,980
LEVEL 15	11,980		11,980
LEVEL 14	11,980		11,980
LEVEL 13	17,862		17,862
LEVEL 12	17,862		17,862
LEVEL 11	17,862		17,862
LEVEL 10	17,862		17,862
LEVEL 9	17,862		17,862
LEVEL 8	17,862		17,862
LEVEL 7	17,862		17,862
LEVEL 6	17,862		17,862
LEVEL 5	17,862		17,862
LEVEL 4	17,862		17,862
LEVEL 3	17,862		17,862
LEVEL 2	17,677		17,677
GROUND LEVEL	12,461	8,342	20,803
BASEMENT PARKING P1	424		424
BASEMENT PARKING P2	424		424
TOTAL	**395,188**	**16,142**	**411,330**

DWELLING UNIT TABLE

	STUDIO	2-BR	TOTAL
LEVEL 28			0
LEVEL 27	15	4	19
LEVEL 26	15	4	19
LEVEL 25	15	4	19
LEVEL 24	15	4	19
LEVEL 23	15	4	19
LEVEL 22	15	4	19
LEVEL 21	15	4	19
LEVEL 20	15	4	19
LEVEL 19	15	4	19
LEVEL 18	15	4	19
LEVEL 17	15	4	19
LEVEL 16	15	4	19
LEVEL 15	15	4	19
LEVEL 14	8	3	11
LEVEL 13	26	5	31
LEVEL 12	26	5	31
LEVEL 11	26	5	31
LEVEL 10	26	5	31
LEVEL 9	26	5	31
LEVEL 8	26	5	31
LEVEL 7	26	5	31
LEVEL 6	26	5	31
LEVEL 5	26	5	31
LEVEL 4	26	5	31
LEVEL 3	26	5	31
LEVEL 2			0
GROUND LEVEL			
TOTAL UNITS	**489**	**110**	**599**
BEDROOMS / UNIT	1	2	
TOTAL BEDROOMS	489	220	709

OPEN SPACE

6,882
6,150
-
13,032

SETBACKS TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	PROPOSED W/DENSITY BONUS	ZONING COMPLIANCE
SETBACK - FRONT (UNIVERSITY)				
0'-20'	0'	0'	2'	COMPLIES
21'-75'	0'	0'	3'-4" to 4'-4"	COMPLIES
76'-120'	15'	0'	3'-4" to 4'-4"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	3'-4" to 15'-6"	COMPLIES W/ SDB WAIVER
SETBACK - STREET SIDE (SHATTUCK)				
0'-20'	0'	0'	5'-3" to 14'-5"	COMPLIES
21'-75'	0'	0'	6'-10" to 29'-8"	COMPLIES
76'-120'	15'	0'	6'-10" to 29'-8"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	6'-10" to 60'-1"	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (<65' FROM FRONT)				
0'-20'	0'	0'	1'-6"	COMPLIES
21'-75'	0'	0'	15'	COMPLIES
76'-120'	5'	0'	15'	COMPLIES
> 120'	15'	0'	15' to 26'-6"	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (>65' FROM FRONT)				
0'-20'	0'	0'	6" to 1'-6"	COMPLIES
21'-75'	5'	0'	17'-1" to 18'-1"	COMPLIES
76'-120'	15'	0'	17'-1" to 18'-1"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	17'-1" to 18'-1"	COMPLIES W/ SDB WAIVER
SETBACK - REAR (BERKELEY WAY)				
0'-20'	0'	0'	2'	COMPLIES
21'-75'	5'	0'	6'	COMPLIES
76'-120'	15'	0'	6'	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	94'-7"	COMPLIES W/ SDB WAIVER
SETBACK - MAX. DIMENSION ABOVE 120'	120'	NOT LIMITED	165'	COMPLIES W/ SDB WAIVER

CAR SHARE CALCULATION

Number of Parking Spaces Provided
154
Minimum Number of Vehicle Sharing Spaces (3, plus one for every additional 60 spaces)
3+1 = **4**

STATE DENSITY BONUS TABLE (SEE A0.2A-B)

(SEE SHEETS A0.3A-A03.D)	
BASE PROJECT UNITS	411
PERCENT VLI UNITS PROVIDED	14%
NUMBER VLI UNITS PROVIDED (ROUNDS UP)	58
BONUS PERCENTAGE	46.25%
NUMBER BONUS UNITS (ROUNDS UP)	191
MAXIMUM DENSITY BONUS PROJECT	602
PROPOSED DENSITY BONUS PROJECT	599

LIST OF USE PERMITS AND AUP'S

PROPOSED DENSITY BONUS PROJECT USE PERMITS:

- Use Permit for construction for demolition of a non-residential building, under 23.326.070(A)
- Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Administrative Use Permit under BMC Section 23.304.050(A) to exceed building height limits with rooftop architectural elements which exceed the maximum height limit for the district.
- Use Permit under BMC Section 23.204.130.E.2 to construct a building that exceeds the district height limit, and that is over 75 feet but not more than 120 feet (Base Project).
- Use Permit under BMC Section 23.204.130.E.3(b) to modify front, side, and rear setback requirements
- Use Permit under BMC Section 23.204.130.E.3(b) to exceed 120 feet in width in diagonal measurement
- Use Permit under BMC Section 23.204.E.6 to pay a fee in lieu of providing privately owned public open space.
- Density Bonus with the following requested reductions, waivers and concessions below.

LIST OF DENSITY BONUS WAIVERS (SEE A0.2A-B)

- Waiver to increase the maximum building height from the base project maximum density height allowed with UP's and AUP's under the zoning ordinance of 120' (under BMC 23.204.130.E.2) to a density bonus height of 316' to accommodate the density bonus units.
- Waiver to allow a reduction in the required setbacks under BMC Section 23.204.130.E.3(b) to physically accomodate the density bonus units.
- Waiver to reduce the minimum required residential usable open space under BMC 23.204.130.E.4 to allow the construction of the density bonus units.

LIST OF DENSITY BONUS CONCESSIONS (SEE A0.2A-B)

- Athough the project is eligible for 2 concessions as a project that is providing 14% of the base units as Very-Low-Income Units, the project is not proposing any concessions.

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ZONING INFORMATION

A0.1

BASE PROJECT ZONING COMPLIANCE TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	CODE SECTION	PROPOSED BASE PROJECT	ZONING COMPLIANCE
ZONING	C-DMU Core				COMPLIES
TOTAL LOT SIZE (SQ. FT.)	28,319				COMPLIES
TOTAL LOT SIZE (ACRES)	0.65				COMPLIES
FLOOR AREA RATIO (FAR)	NA	NA		NA	COMPLIES
DWELLING UNITS (SEE TABLE)	NA	NA		411	COMPLIES
RESIDENTIAL BEDROOMS	NA	NA		446	COMPLIES
HEIGHT - FEET	60'-0"	120'-0"	23.204.130.E.2	120'-0"	COMPLIES
HEIGHT - STORIES	NA	NA		11	COMPLIES
LOT COVERAGE	NA	NA		0%	COMPLIES
SETBACK - FRONT (UNIVERSITY)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - STREET SIDE (SHATTUCK)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - INTERIOR SIDE	0' to 15'	0'	23.204.130.E.3(b)	0' to 6'	COMPLIES
SETBACK - REAR (BERKELEY WAY)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - MAX. DIMENSION ABOVE 120'	NA	NA			COMPLIES
RESIDENTIAL PARKING (SEE TABLE)	0	0		0	COMPLIES
COMMERCIAL PARKING (SEE TABLE)	25	0		0	COMPLIES
RES. BIKE PARKING LONG TERM (SEE TABLE)	149	149		152	COMPLIES
RES. BIKE PARKING SHORT TERM (SEE TABLE)	12	12		12	COMPLIES
COM. BIKE PARKING SHORT TERM (SEE TABLE)	9	9		9	COMPLIES
RESIDENTIAL OPEN SPACE (SEE TABLE)	32,880	32,880		33,950	COMPLIES
COMMERCIAL OPEN SPACE (SEE TABLE)	338	338		338	COMPLIES

LIST OF BASE PROJECT USE PERMITS AND AUP'S

Per August 2, 2021 Memorandum on Policy Changes to Objective Standards, HAA and Density Bonus

- Use Permit for construction for demolition of a non-residential building, under 23.326.070(A)
- Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Administrative Use Permit under BMC Section 23.304.050(A) to exceed building height limits w/ rooftop architectura elements.
- Use Permit under BMC Section 23.204.130.E.2 to construct a building up to 120 feet.
- Use Permit under BMC Section 23.204.130.E.3(b) to modify front, side, and rear setback requirements

PARKING CALCULATIONS

	QNTY	CARS	PER	REQ'D	PROVIDED
RESIDENTIAL	411	0	1	0	0
COMMERCIAL	16920	1.5	1,000	25	25

BICYCLE PARKING CALCULATIONS

	QNTY	BIKES	PER	REQ'D	PROVIDED
RESIDENTIAL (LONG TERM) (BEDROOMS)	446	1	3	149	152
RESIDENTIAL (SHORT TERM) (BEDROOMS)	446	1	40	12	12
COMMERCIAL (SHORT TERM)	16,920	1.0	2,000	9	9

OPEN SPACE CALCULATIONS

	UNITS	SF / UNIT	TOTAL REQ'D
RESIDENTIAL REQUIREMENT	411	80	32,880
TOTAL PROVIDED			33,950
ROOF DECK			25,630
BALCONIES (MAX 50%)	104	80	8,320
COMMERCIAL OPEN SPACE	16,920	50	338

ROOFTOP ARCHITECTURAL ELEMENTS CALCULATIONS

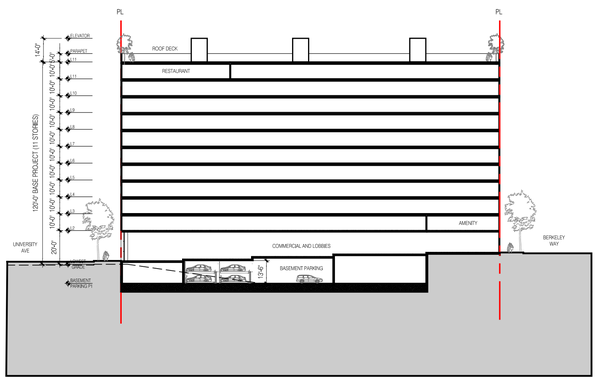
	ALLOWABLE	PROPOSED
AVERAGE AREA OF FLOORS	23,968	
AREA OF ROOFTOP ARCHITECTURAL ELEMENTS	3,595	600
% AREA OF ROOFTOP ARCHITECTURAL FEATURES	15.0%	2.5%

AREA TABLE

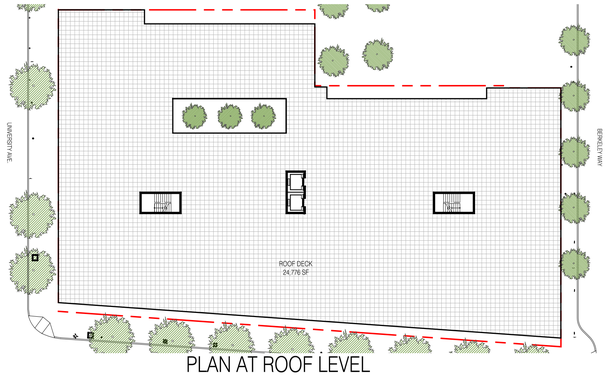
	RESIDENTIAL	COMMERICAL	TOTAL
LEVEL 11	18,430	7,800	26,230
LEVEL 10	26,230		26,230
LEVEL 9	26,230		26,230
LEVEL 8	26,230		26,230
LEVEL 7	26,230		26,230
LEVEL 6	26,230		26,230
LEVEL 5	26,230		26,230
LEVEL 4	26,230		26,230
LEVEL 3	26,230		26,230
LEVEL 2	26,230		26,230
GROUND LEVEL	15,922	9,120	25,042
BASEMENT P1	275		275
TOTAL	**270,697**	**16,920**	**287,617**

DWELLING UNIT TABLE

	STUDIO	2-BR	TOTAL
LEVEL 11	28	2	30
LEVEL 10	41	4	45
LEVEL 9	41	4	45
LEVEL 8	41	4	45
LEVEL 7	41	4	45
LEVEL 6	41	4	45
LEVEL 5	41	4	45
LEVEL 4	41	4	45
LEVEL 3	41	4	45
LEVEL 2	20	1	21
GROUND LEVEL			
TOTAL UNITS	**376**	**35**	**411**
BEDROOMS / UNIT	1	2	
TOTAL BEDROOMS	376	70	446



BASE PROJECT SECTION



PLAN AT ROOF LEVEL



PLAN AT LEVEL 2



PLAN AT LEVEL 11



PLAN AT GROUND LEVEL



PLAN AT LEVELS 3-10



PLAN AT PARKING LEVEL P1

BASE PROJECT PLANS

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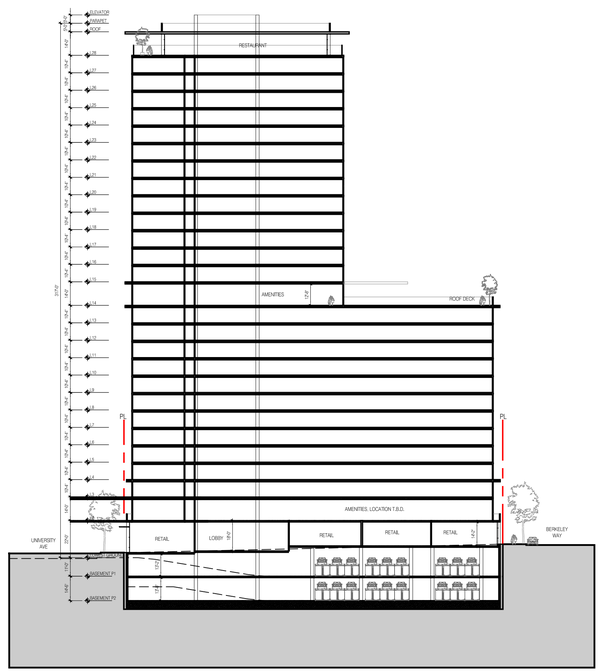
DENSITY BONUS
BASE PROJECT

A0.2A

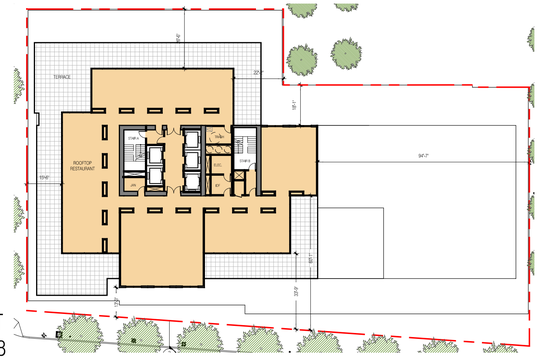
DENSITY BONUS TABLE

Base Project	Base	Base # Units	% VLI units	# VLI Units*	Bonus %	# DB Units	Maximum DB Project
sq. ft. - see calculation below	base project area / proposed avg. unit size	Base Units (rounds up)	VLI = Very Low Income <50 AMI	% VLI x Base # Units (rounds up)		%Bonus x Base # Units (rounds up)	Base + Bonus # Units
270,697	410.30	411	14%	58	46.25%	191	602

Base Project				Proposed Density Bonus Project		
Res GFA	Comm. GFA	Units	Floor	Res GFA	Comm. GFA	Units
			Level 28		7,800	
			Level 27	11,980		19
			Level 26	11,980		19
			Level 25	11,980		19
			Level 24	11,980		19
			Level 23	11,980		19
			Level 22	11,980		19
			Level 21	11,980		19
			Level 20	11,980		19
			Level 19	11,980		19
			Level 18	11,980		19
			Level 17	11,980		19
			Level 16	11,980		19
			Level 15	11,980		19
			Level 14	11,980		11
			Level 13	17,862		31
			Level 12	17,862		31
18,430	7,800	30	Level 11	17,862		31
26,230		45	Level 10	17,862		31
26,230		45	Level 9	17,862		31
26,230		45	Level 8	17,862		31
26,230		45	Level 7	17,862		31
26,230		45	Level 6	17,862		31
26,230		45	Level 5	17,862		31
26,230		45	Level 4	17,862		31
26,230		45	Level 3	17,862		31
26,230		21	Level 2	17,677		
15,922	8,342		Level 1	12,461	8,342	
275			Basement P1	424		
			Basement P2	424		
270,697	**16,142**	**411**	**Total**	**395,188**	**16,142**	**599**
659			**Avg. Unit Size**	**660**		



PROPOSED PROJECT SECTION



PLAN AT LEVEL 28



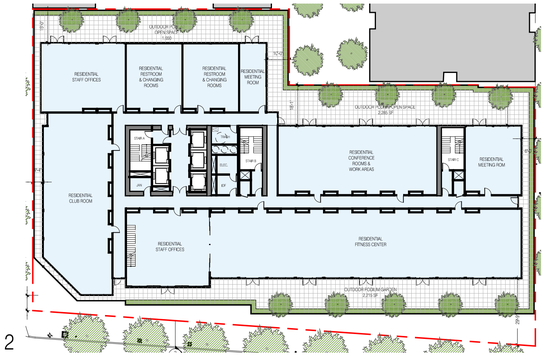
PLAN AT LEVELS 15-27



PLAN AT LEVEL 14



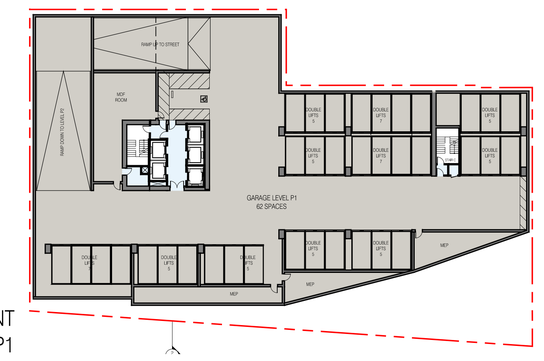
PLAN AT LEVELS 3-13



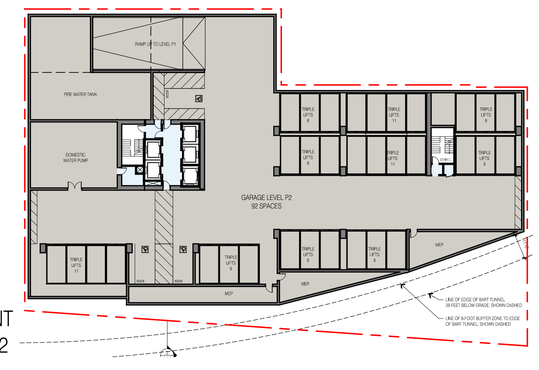
PLAN AT LEVEL 2



PLAN AT GROUND LEVEL



PLAN AT BASEMENT PARKING LEVEL P1



PLAN AT BASEMENT PARKING LEVEL P2

PROPOSED PROJECT PLANS

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DENSITY BONUS PROPOSED PROJECT

A0.2B

PROPOSED PROJECT AREA AND UNIT CALCULATIONS

Calculation of the Final Proposed Residential Unit Floor Area:

Floor	Proposed Project Res. Unit Area	Proposed Residential Studios	Proposed Residential 2Bedrooms
28th			
27th	8,327	15	4
26th	8,327	15	4
25th	8,327	15	4
24th	8,327	15	4
23rd	8,327	15	4
22nd	8,327	15	4
21st	8,327	15	4
20th	8,327	15	4
19th	8,327	15	4
18th	8,327	15	4
17th	8,327	15	4
16th	8,327	15	4
15th	8,327	15	4
14th	5,001	8	3
13th	12,919	26	5
12th	12,919	26	5
11th	12,919	26	5
10th	12,919	26	5
9th	12,919	26	5
8th	12,919	26	5
7th	12,919	26	5
6th	12,919	26	5
5th	12,919	26	5
4th	12,919	26	5
3rd	12,919	26	5
2nd	-	0	0
1st		0	0
Final Proposed Residential Unit Floor Area	**255,361**	**489**	**110**
Final Proposed Residential Unit Numbers	**599**	82%	18%

Calculation of Base Project Residential Floor Area:

Final Proposed DB Residential Unit Floor Area	255,361
	/
One plus the DB % (1 + 46.25%)	1.4625
	=
Base Project Residential Unit Floor Area	174,606

Calculation of the Affordable Housing Fee:

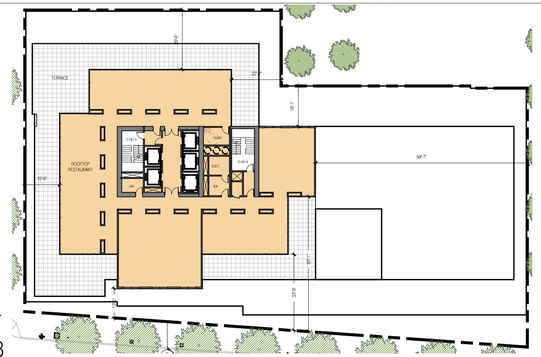
A	Total Base Project Residential Unit Floor Area	174,606
B	Total Base Project Units	411
C	Total BMR Requirements (20% of Base)	82.2
D	Total BMR Units Proposed	58
	Fee per Square Foot	$56.25
		X
	Total Base Project Residential Unit Floor Area	174,606
		X
	In Lieu Fee Percentage Calculation (C-D)/C)	29.4%
		=
	Total Fee Due	$2,891,510.48

LEGEND

- DWELLING UNIT RUFA
- RESIDENTIAL AMENITIES
- MISC. (MEP)
- COMMERCIAL

PROPOSED PROJECT RESIDENTIAL UNIT FLOOR AREA DIAGRAM

PLAN AT LEVEL 28



PLAN AT LEVELS 15-27



PLAN AT LEVEL 14

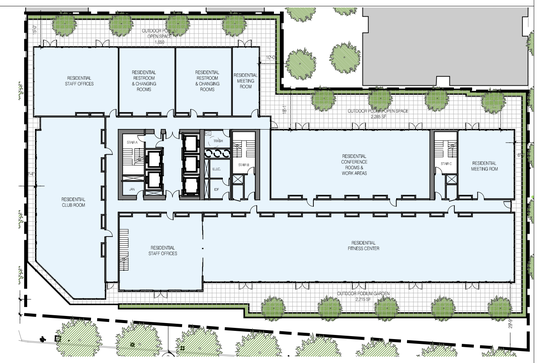


PLAN AT LEVELS 3-13

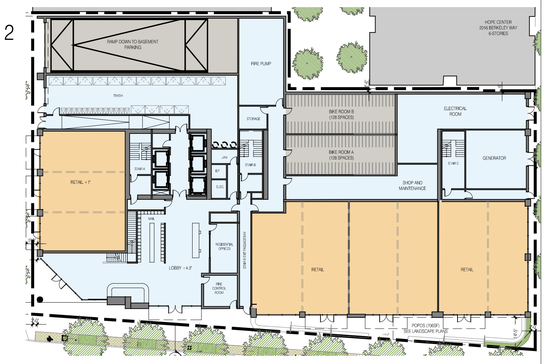


PROPOSED PROJECT PLANS

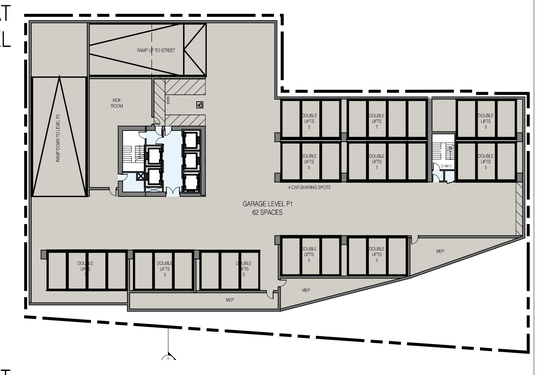
PLAN AT LEVEL 2



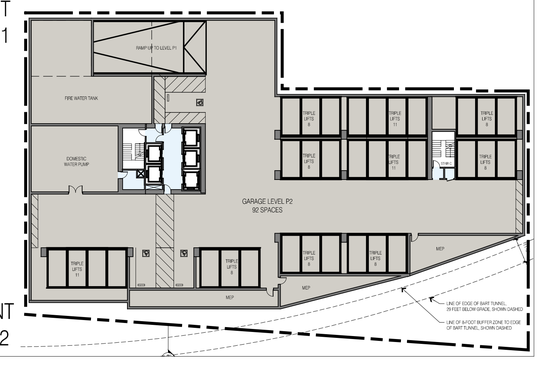
PLAN AT GROUND LEVEL



PLAN AT BASEMENT PARKING LEVEL P1



PLAN AT BASEMENT PARKING LEVEL P2



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PRELIMINARY AHCP DIAGRAMS

A0.2C

WINTER SOLSTICE
DEC 21ST:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

N

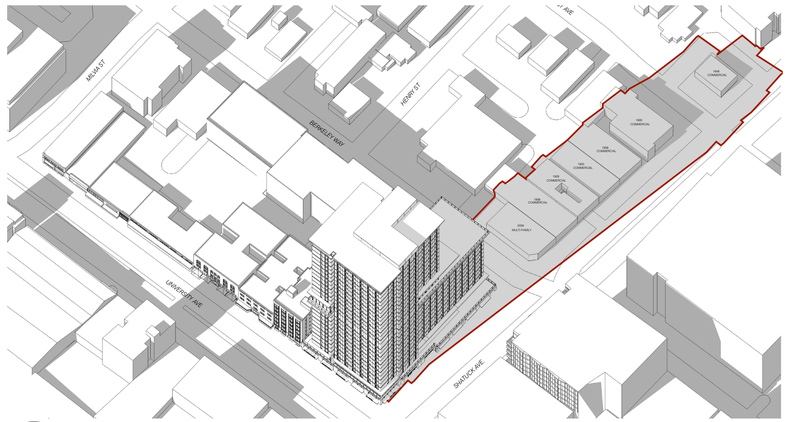
WINTER SOLSTICE
DEC 21ST:
NOON

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

N

WINTER SOLSTICE
DEC 21ST:
2-HRS AFTER SUNRISE (AM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

N

TRACHTENBERG
ARCHITECTS

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SHEET:
SHADOW STUDIES
DECEMBER 21ST

A0.4A

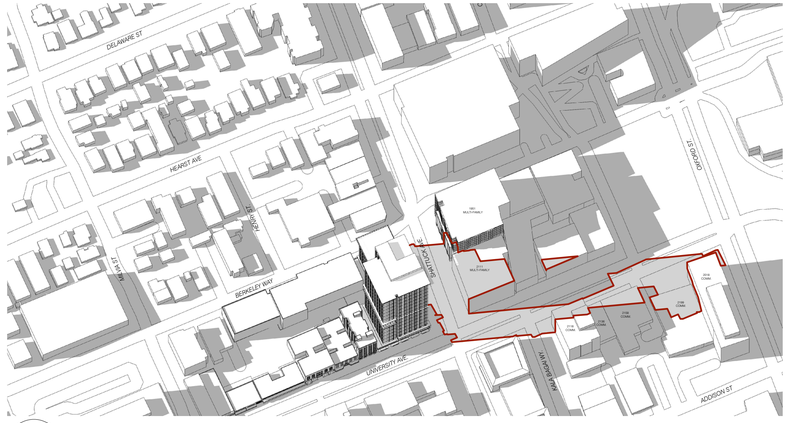
SUMMER SOLSTICE
JUN 21ST:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

N

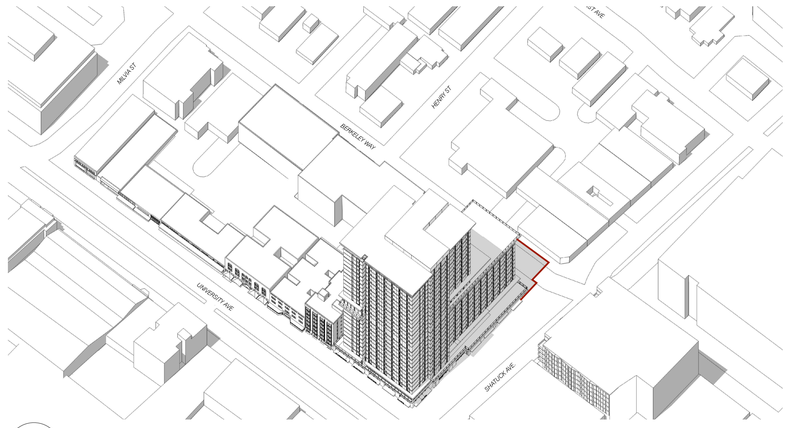
SUMMER SOLSTICE
JUN 21ST:
NOON

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

N

SUMMER SOLSTICE
JUN 21ST:
2-HRS AFTER SUNRISE (AM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

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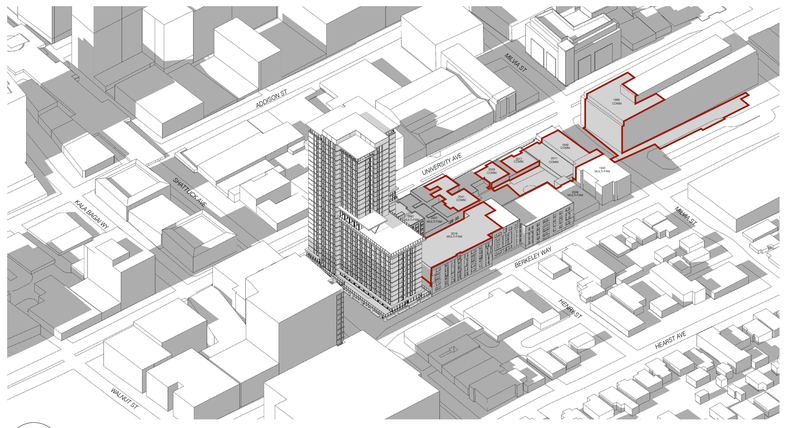

2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

N

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1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL

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JOB: 2209

SHEET:

SHADOW STUDIES
JUNE 21ST

A0.4B

CURRENT
FEBRUARY 15TH:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

N

CURRENT
FEBRUARY 15TH:
NOON

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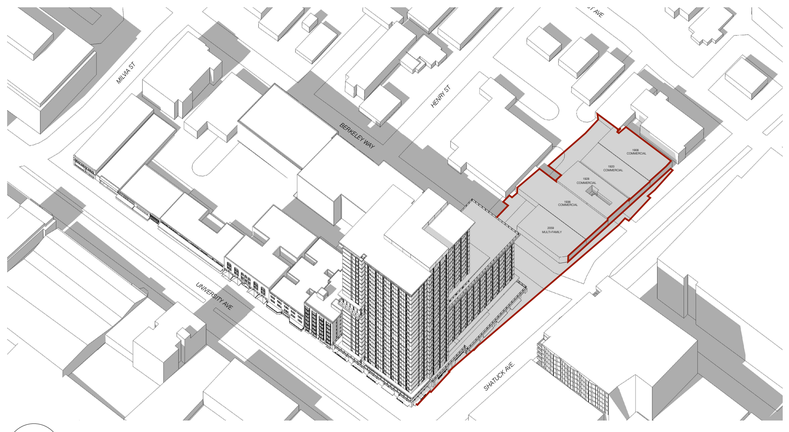

4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

N

CURRENT
FEBRUARY 15TH:
2-HRS AFTER SUNRISE (AM)

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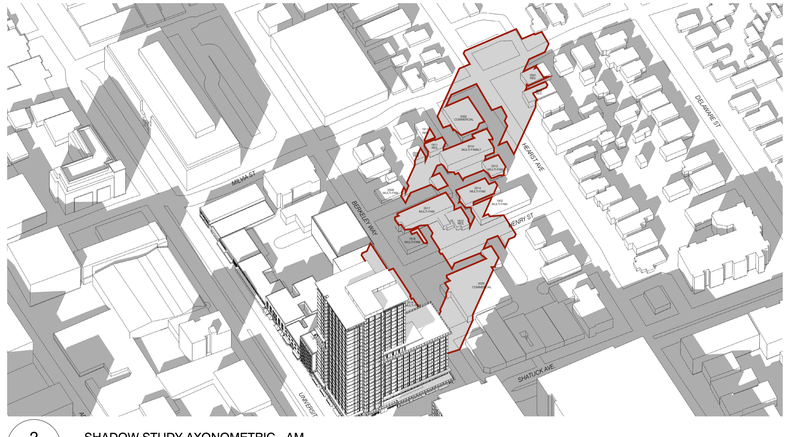
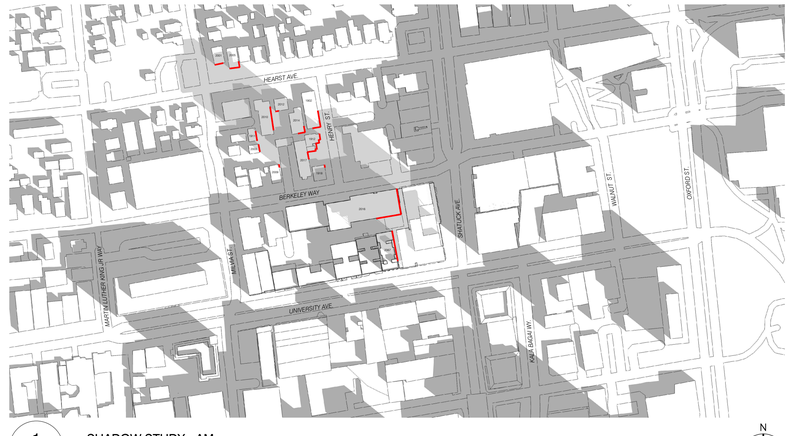


2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

N

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03.12.2024 ZONING RESUBMITTAL

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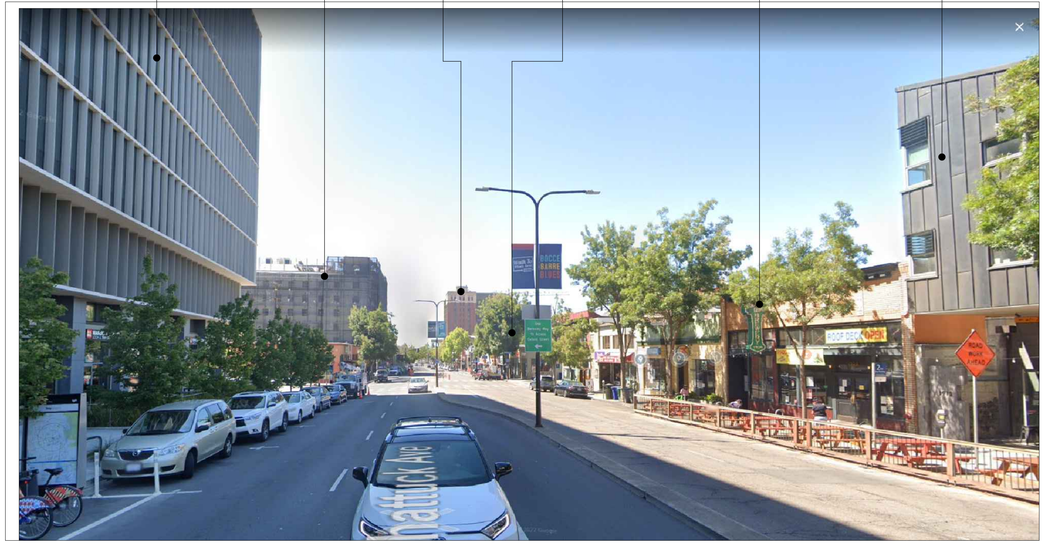
JOB: 2209

SHEET:

SHADOW STUDIES
FEB 15TH

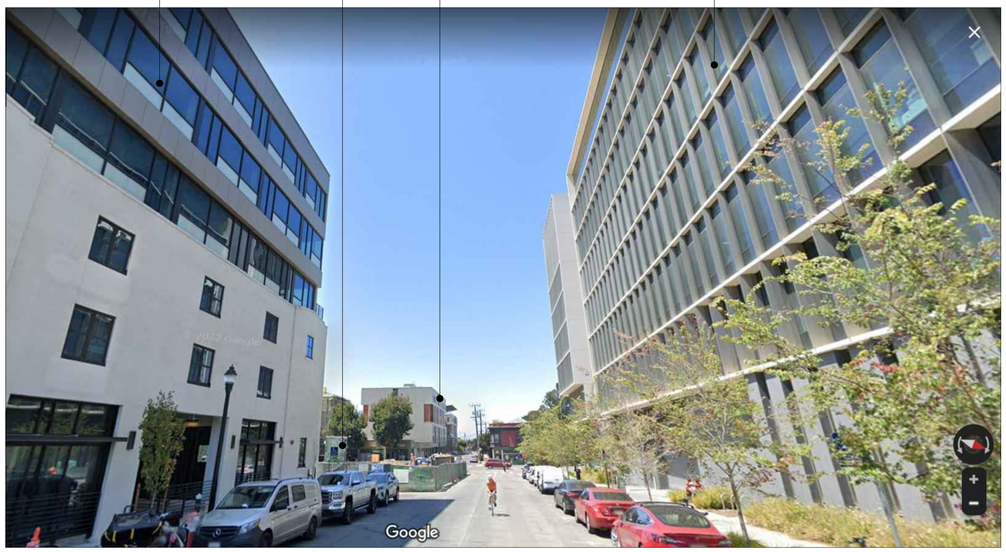
A0.4C

2121 BERKELEY WAY (8-STORY COMMERCIAL) | 1987 SHATTUCK (8-STORY RESIDENTIAL) | 2160 SHATTUCK (12-STORY COMMERCIAL) | PROJECT SITE | 1920 SHATTUCK TRIPLE ROCK BREWING | 1908 SHATTUCK (3-STORY RESIDENTIAL)



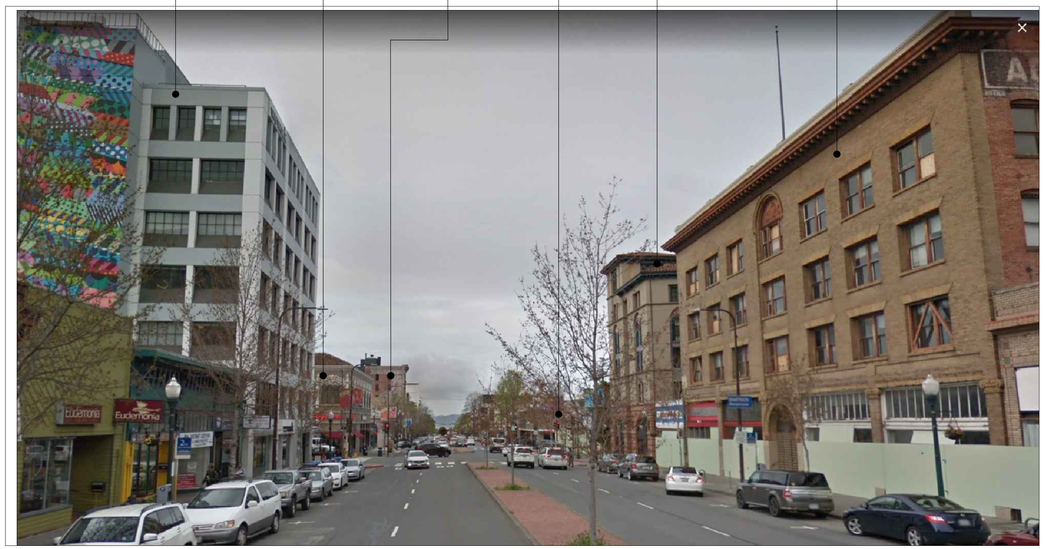
4 - VIEW FROM SHATTUCK LOOKING SOUTH

2120 BERKELEY WAY (6-STORY COMMERCIAL) | PROJECT SITE | 2012 BERKELEY WAY (6-STORY RESIDENTIAL) | GRADUATE SCHOOL OF EDUCATION (8-STORY COMMERCIAL)



2 - VIEW FROM BERKELEY WAY LOOKING WEST

2015 KALA BAGAI (7-STORY COMMERCIAL) | 2000 KALA BAGAI (2-STORY COMMERCIAL) | 2054 UNIVERSITY (6-STORY COMMERCIAL) | PROJECT SITE | 1987 SHATTUCK (6-STORY RESIDENTIAL) | 2125 UNIVERSITY (4-STORY RESIDENTIAL)



3 - VIEW FROM UNIVERSITY LOOKING WEST

PROJECT SITE



1 - GOOGLE EARTH BIRD'S EYE CONTEXT VIEW

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JOB: 2209

SHEET:

SITE CONTEXT PHOTOS

A0.5

TITLE REPORT (1950 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170261-36-JM, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR1"

TITLE TO SAID ESTATE IS VESTED IN: (1950 SHATTUCK)

JILLIAR, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1950 SHATTUCK)

FEE

LEGAL DESCRIPTION (1950 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE WESTERN LINE OF SHATTUCK AVENUE, WITH THE SOUTHERN LINE OF BERKELEY WAY, AS SAID AVENUE AND WAY ARE SHOWN ON THE MAP HEREINAFTER REFERRED TO; RUNNING THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE, 60.06 FEET; THENCE WESTERLY PARALLEL WITH SAID LINE OF BERKELEY WAY, 109 FEET, MORE OR LESS, TO THE EASTERLY BOUNDARY LINE OF THE LAND DESCRIBED IN THE DEED EXECUTED BY F. D. CHASE AND ATLANTA U. CHASE, HIS WIFE, TO JACOB BAUM, DATED JULY 28, 1922, AND RECORDED IN LIBER 324 OF OFFICIAL RECORDS, AT PAGE 73, ALAMEDA COUNTY RECORDS; THENCE AT RIGHT ANGLES NORTHERLY ALONG SAID LAST NAMED BOUNDARY LINE 35 FEET, MORE OR LESS, TO THE SOUTHERN BOUNDARY LINE OF LOT 55, AS SAID LOT IS SHOWN ON THE SAID MAP; THENCE AT RIGHT ANGLES EASTERLY 8 INCHES; THENCE AT RIGHT ANGLES NORTHERLY PARALLEL WITH THE WESTERLY BOUNDARY LINE OF SAID LOT 55, AFORESAID, 25 FEET TO THE SOUTHERN LINE OF BERKELEY WAY; THENCE EASTERLY ALONG SAID LINE OF BERKELEY WAY, 112.30 FEET TO THE POINT OF BEGINNING.

BEING PORTIONS OF LOTS NOS. 55, 56 AND 57, AS SAID LOTS ARE DELINEATED AND AS DESIGNATED UPON THAT CERTAIN MAP ENTITLED, 'MAP OF COLLEGE TRACT, BERKELEY;' FILED JANUARY 31, 1890, IN LIBER 9 OF MAPS, PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

APN: 057-2053-001

EXCEPTIONS TO TITLE (1950 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS:, DISTRICT NO 2014-1, FOR CLEAN ENERGY DISCLOSED BY : ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR1 EXC. 3 – NOT PLOTTABLE).
2. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, RECORDED MAY 16, 1966 IN BOOK 1788 OF OFFICIAL RECORDS, PAGE 944 UNDER RECORDER'S SERIAL NUMBER AY61475, AFFECTS A PORTION (PTR1 EXC. 5 – PLOTTED).

TITLE REPORT (1974 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170261-35-JM, EFFECTIVE DATE SEPTEMBER 26, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR2"

TITLE TO SAID ESTATE IS VESTED IN: (1974 SHATTUCK)

1974 SHATTUCK AVENUE, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1974 SHATTUCK)

FEE

LEGAL DESCRIPTION (1974 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WESTERN LINE OF SHATTUCK AVENUE, DISTANT THEREON SOUTHERLY, 60.6 FEET FROM THE POINT OF INTERSECTION THEREOF, WITH THE SOUTHERN LINE OF BERKELEY WAY, AS SAID AVENUE AND WAY ARE SHOWN ON THE MAP HEREIN REFERRED TO; RUNNING THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE, 49.20 FEET; THENCE WESTERLY AND PARALLEL WITH SAID LINE OF BERKELEY WAY, 105.50 FEET, MORE OR LESS, TO A POINT WHICH WOULD BE INTERSECTED BY A LINE DRAWN SOUTHERLY FORM AND AT RIGHT ANGLES TO SAID LINE BERKELEY WAY FROM A POINT DISTANT THEREON, 113.30 FEET WESTERLY FROM THE WESTERN LINE OF SHATTUCK AVENUE; THENCE AT RIGHT ANGLES NORTHERLY, 49 FEET, MORE OR LESS, TO A POINT WHICH WOULD BE INTERSECTED BY A LINE DRAWN WESTERLY FROM SAID POINT OF BEGINNING AND PARALLEL WITH BERKELEY WAY; THENCE EASTERLY ALONG SAID PARALLEL LINE, 109 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

BEING A PORTION OF LOTS 57 AND 58, AS SAID LOTS ARE SHOWN ON THE "MAP OF THE COLLEGE TRACT, BERKELEY", FILED JANUARY 31, 1890, IN BOOK 9 OF MAPS, PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

APN: 057-2053-002

EXCEPTIONS TO TITLE (1974 SHATTUCK)

1. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING, GRANTED TO BAY AREA RAPID TRANSIT DISTRICT, A RAPID TRANSIT DISTRICT, FOR UNDERGROUND RAPID TRANSIT TUNNEL FACILITIES, RECORDED SEPTEMBER 23, 1966 IN BOOK 1846 OF OFFICIAL RECORDS, PAGE 53 UNDER RECORDER'S SERIAL NUMBER AY-111314 (PTR2 EXC. 4 – PLOTTED)

TITLE REPORT (1984 & 1998 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170254-33-JM, 1ST UPDATE, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR3"

TITLE TO SAID ESTATE IS VESTED IN: (1984 & 1998 SHATTUCK)

FIFTH KOII, CO., A CALIFORNIA CORPORATION

THE ESTATE OR INTEREST IN THE LAND IS: (1984 & 1998 SHATTUCK)

FEE

LEGAL DESCRIPTION (1984 & 1998 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

COMMENCING AT THE POINT OF INTERSECTION OF THE NORTHERN LINE OF UNIVERSITY AVENUE WITH THE WESTERN LINE OF SHATTUCK AVENUE AS SAID AVENUES NOW EXISTS; THENCE WESTERLY ALONG THE NORTHERN LINE OF UNIVERSITY AVENUE 79.00 FEET; THENCE AT RIGHT ANGLES NORTHERLY 114.68 FEET, MORE OR LESS, TO THE SOUTHERN LINE OF THE LAND NOW OR FORMERLY OF JOHN H. BOHLIG AND LOTTA BOHLIG; THENCE EASTERLY AND ALONG SAID LINE 87.07 FEET TO THE WESTERN LINE OF SHATTUCK AVENUE; THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE 114.97 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

APN'S: 057-2053-003-01 AND 057-2053-003-02

EXCEPTIONS TO TITLE (1984 & 1998 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014-1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR3 EXC. 4 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO P80-2016, FOR BERKELEY DOWNTOWN P80-2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR3 EXC. 5 – NOT PLOTTABLE).
3. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, DATED APRIL 6, 1967, RECORDED MAY 10, 1967 IN REEL 1961 OF OFFICIAL RECORDS, IMAGE 330 UNDER RECORDER'S SERIAL NUMBER AZ 43339, AFFECTS A PORTION OF THE PREMISES, THE PRESENT OWNERSHIP OF SAID EASEMENT AND OTHER MATTERS AFFECTING THE INTERESTS THERETO, IF ANY, ARE NOT SHOWN HEREIN (PTR3 EXC. 7 – PLOTTED).
4. A NOTICE AS FOLLOWS, ENTITLED NOTICE OF ASSESSMENT – DOWNTOWN BERKELEY PBID, BY CITY OF BERKELEY, DATED AUGUST 25, 2011, RECORDED AUGUST 30, 2011 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2012148358 (PTR3 EXC. 8 – NOT PLOTTABLE).

TITLE REPORT (2701 UNIVERSITY)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170261-37-JM, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR4"

TITLE TO SAID ESTATE IS VESTED IN: (2701 UNIVERSITY)

EDITH WIESER GLYNN, TRUSTEE OF THE EDITH WIESER GLYNN TRUST

THE ESTATE OR INTEREST IN THE LAND IS: (2701 UNIVERSITY)

FEE

LEGAL DESCRIPTION (2701 UNIVERSITY)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTHERN LINE OF BERKELEY WAY, AS SHOWN UPON THE MAP HEREINAFTER REFERRED TO, DISTANT THEREON ONE HUNDRED FIFTEEN AND 46/100 FEET WESTERLY FROM THE INTERSECTION THEREOF WITH THE WESTERN LINE OF SHATTUCK AVENUE AS ESTABLISHED BY BOARD OF TRUSTEES OF THE TOWN OF BERKELEY, JAN. 18, 1892, BY ORDINANCE NO. 387, SAID POINT BEING ONE FOOT EASTERLY ON SAID LINE OF BERKELEY WAY FROM THE LINE DIVIDING LOTS NUMBERED 54 AND 55 ACCORDING TO SAID MAP; RUNNING THENCE WESTERLY ALONG SAID LINE OF BERKELEY WAY THIRTY-NINE FEET TO THE LINE DIVIDING LOTS NUMBERED 55 AND 54 ACCORDING TO SAID MAP; THENCE AT RIGHT ANGLES SOUTHERLY ALONG SAID LINE ONE HUNDRED TEN FEET; THENCE AT RIGHT ANGLES EASTERLY THREE AND 73/100 FEET; THENCE AT RIGHT ANGLES SOUTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET TO THE NORTHERN LINE OF UNIVERSITY AVENUE; THENCE EASTERLY ALONG SAID LINE OF UNIVERSITY AVENUE FIFTY-FIVE AND 9/10 FEET; THENCEN AT RIGHT ANGLES NORTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET; THENCE AT RIGHT ANGLES WESTERLY TWENTY- ONE AND 63/100 FEET; THENCE AT RIGHT ANGLES NORTHERLY EIGHTY-FIVE FEET TO THE SOUTHWESTERN CORNER OF LOT NUMBERED 55, ACCORDING TO SAID MAP; THENCE AT RIGHT ANGLES EASTERLY ALONG THE SOUTHERN LINE OF SAID LOT ONE FOOT AND THENCE AT RIGHT ANGLES NORTHERLY TWENTY-FIVE FEET TO THE POINT OF BEGINNING.

BEING LOT NUMBERED 54, THE WESTERN ONE FOOT OF LOT NUMBERED 55, A PORTION OF LOT NUMBERED 6 AND A PARCEL ADJOINING SAID LOT NUMBER 6 ON THE EAST, AS ALL OF SAID LOTS ARE DELINEATED AND SO DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "MAP OF COLLEGE TRACT, BERKELEY", FILED MAY 24,1877, IN LIBER 5 OF MAPS AT PAGE 14, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

EXCEPTING THEREFROM THAT PORTION DESCRIBED IN THE DEED TO THE CITY OF BERKELEY, RECORDED SEPTEMBER 29,1955, BOOK 7798, PAGE 23, AS INSTRUMENT NO. AK-105619, OFFICIAL RECORDS.

APN: 057-2053-004-02

EXCEPTIONS TO TITLE (2701 UNIVERSITY)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014-1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR4 EXC. 3 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO CITY OF BERKELEY-DOWNTOWN PROPERTY AND BUSINESS IMPROVEMENT DISTRICT, FOR BERKELEY DOWNTOWN PBID-2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR4 EXC. 5 – NOT PLOTTABLE).
3. TERMS AND CONDITIONS CONTAINED IN THE EDITH WIESER GLYNN TRUST AS DISCLOSED BY GRANT DEED, RECORDED MAY 22, 1984 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 1984099372 (PTR4 EXC. 6 – NOT PLOTTABLE).
4. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED NONDISTURBANCE AND ATTORNMENT AGREEMENT, EXECUTED BY EDITH GLYNN AND T.Y.P. RESTAURANT GROUP, INC., A DELAWARE CORPORATION DBA TENDER GREENS, RECORDED MARCH 22, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016068695 (PTR4 EXC. 7 – NOT PLOTTABLE).
5. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED MINOR ENCROACHMENT PERMIT 17-03, EXECUTED BY EDITH M. GLYNN AND THE CITY OF BERKELEY, RECORDED MAY 24, 2017 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2017113477 (PTR 4 EXC. 8 – NOT PLOTTABLE)

NOTES

1. DATE OF FIELD SURVEY: DECEMBER 5, 9 AND 21, 2022 AS TO THE BOUNDARY AND TOPOGRAPHIC SURVEY OF THE SUBJECT PROPERTY.
2. THE UTILITIES SHOWN HEREON ARE BY SURFACE OBSERVATION AND RECORD INFORMATION ONLY AND NO WARRANTY IS GIVEN HEREIN AS TO THEIR EXACT LOCATION. IT IS THE RESPONSIBILITY OF THE DEVELOPER AND/OR CONTRACTOR TO VERIFY THE EXACT LOCATION OF THE UTILITIES WITH THE APPROPRIATE UTILITY COMPANY OR AGENCY.
3. UTILITY JURISDICTIONS / PROVIDERS ARE AS FOLLOWS:
   STORM DRAINS: CITY OF BERKELEY
   SANITARY SEWER: CITY OF BERKELEY
   WATER: EAST BAY MUNICIPAL UTILITY DISTRICT (EBMUD)
   ELECTRICITY: PACIFIC GAS & ELECTRIC CO.
   NATURAL GAS: PACIFIC GAS & ELECTRIC CO.
   TELEPHONE: AT&T
4. THERE ARE NO CEMETERIES ON OR WITHIN 100 FEET OF THE SUBJECT PROPERTY
5. THE SURVEYED PROPERTIES ARE THE SAME PROPERTIES DESCRIBED IN THE TITLE REPORT.
6. THE LEGAL DESCRIPTIONS AS SHOWN IN THE TITLE REPORTS MATHEMATICALLY CLOSE.
7. THERE IS NO OBSERVED EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL
8. THERE ARE NO WETLAND AREAS IN THE SUBJECT PROPERTIES

TABLE A NOTES

1. FOUND MONUMENTS ARE SHOWN ON THIS SHEET OF THE SURVEY.
2. THE STREET ADDRESS OF THE PROPERTY IS 1950, 1974, 1984, 1998 SHATTUCK AVENUE AND 2071 UNIVERSITY AVENUE, BERKELEY, CA 94704
3. FLOOD ZONE DESIGNATION: THE PREMISES ARE LOCATED IN ZONE "X" (NON-SHADED) DEFINED AS "AREAS OF MINIMAL FLOOD," PER FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 06001C0057G, EFFECTIVE DATE: AUGUST 3, 2009.
4. THE TOTAL GROSS LAND AREA IS:
   1950 SHATTUCK AVENUE: 6,635 SQUARE FEET +/– OR 0.152 ACRES MORE OR LESS.
   1974 SHATTUCK AVENUE: 5,264 SQUARE FEET +/– OR 0.121 ACRES MORE OR LESS
   1984 & 1998 SHATTUCK AVENUE: 9,527 SQUARE FEET +/– OR 0.219 ACRES MORE OR LESS
   2071 UNIVERSITY AVENUE: 6,411 SQUARE FEET +/– OR 0.147 ACRES MORE OR LESS
6. (A/B) ZONING REQUIREMENTS: PER THE CITY OF BERKELEY PLANNING AND ZONING DEPARTMENT, THE PROPERTIES ARE ZONED "C-DMU OUTER CORE" DEFINED AS "DOWNTOWN MIXED-USE DISTRICT."

   REFERENCE FOR "C-DMU" ZONING IS MADE HERE TO THE CITY OF BERKELEY CODE, CHAPTER 23.204.130, REGARDING PROPERTY DEVELOPMENT STANDARDS, BUILDING HEIGHT LIMITATION, MINIMUM BUILDING SETBACK AND PARKING REQUIREMENTS ARE AS FOLLOWS:

   SETBACKS
   MINIMUM FRONT: 0 FEET
   MINIMUM SIDE: 0 FEET
   MINIMUM REAR: 0 FEET

   MAXIMUM HEIGHT: 60 FEET, 75 FEET WITH USE PERMIT

   MINIMUM PARKING REQUIREMENTS: NONE REQUIRED
7. (A/B/C) EXTERIOR DIMENSIONS AND SQUARE FOOTAGE OF BUILDING AT GROUND LEVEL, AND NUMBER OF STORIES ARE SHOWN ON SHEET 3 OF THE SURVEY.
8. SUBSTANTIAL IMPROVEMENTS OBSERVED IN THE PROCESS OF CONDUCTING THE SURVEY ARE SHOWN ON SHEET 3.
9. THERE ARE NO PARKING SPACES LOCATED ON THE SUBJECT PROPERTIES.
10. THERE ARE NO DIVISIONS OR PARTY WALLS LOCATED ON THE SUBJECT PROPERTIES WITH RESPECT TO ADJOINING PROPERTIES.
11. (A) LOCATION OF UTILITIES EXISTING ON OR SERVING THE SURVEYED PROPERTIES AS DETERMINED BY OBSERVED EVIDENCE TOGETHER WITH EVIDENCE FROM PLAN OBTAINED FROM UTILITY COMPANIES OR PROVIDED BY CLIENT ARE SHOWN ON SHEET 3.
13. NAMES OF ADJOINING OWNERS OF PLATTED LANDS ARE SHOWN ON SHEET 2 OF THE SURVEY.
14. DISTANCE TO THE NEAREST INTERSECTING STREET IS SHOWN ON SHEET 2 OF THE SURVEY.
16. THERE IS NO OBSERVABLE EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
17. THERE IS NO OBSERVED EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
18. THERE ARE NO OFFSITE EASEMENTS TO THE SUBJECT PROPERTIES.
19. PROFESSIONAL LIABILITY INSURANCE IN THE AMOUNT OF $2,000,000 IS HELD BY THE SURVEYOR.

BASIS OF BEARINGS

THE BASIS OF BEARINGS OF THIS SURVEY IS TAKEN BETWEEN THE TWO FOUND STREET MONUMENTS ALONG BERKELEY WAY BETWEEN MILVIA STREET AND HENRY STREET AS SHOWN ON PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 7 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA. TAKEN AS NORTH 81°54'40" EAST.

REFERENCES

(R1) PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R2) PARCEL MAP P.M. 10119, FILED SEPTEMBER 28, 2016 IN BOOK 334 OF PARCEL MAPS, AT PAGES 2! TO 22, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R3) TRACT MAP T.M. 7888, FILED SEPTEMBER 03, 2009 IN BOOK 305 OF MAPS, AT PAGES 18 TO 29 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R4) UNRECORDED MAP, CITY OF BERKELEY CITY MONUMENT MAP, PLAN 1305, 306C-057.

(R5) "MAP OF THE COLLEGE TRACT, BERKELEY", FILED JANUARY 31, 1880 IN BOOK 9 OF MAPS, AT PAGES 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R6) GRANT DEED, RECORDED APRIL 15, 1966 IN REEL 1749, IMAGE 918, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R7) GRANT DEED, RECORDED JUNE 11, 2014 AS DOCUMENT NUMBER 2014-140054, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R8) GRANT DEED, RECORDED MAY 18, 2009 AS DOCUMENT NUMBER 2009-156779, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R9) DOCUMENT ENTITLED "NONDISTURBANCE AND ATTORNMENT AGREEMENT", RECORDED MARCH 22, 2016 AS DOCUMENT NUMBER 2016-068695, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

NOTES

(1) BEARING IS BASED ON THE MEAN BEARING OF THE RIGHT OF WAY LINES OF BERKELEY WAY AND UNIVERSITY AVENUE.
(2) BEARING IS BASED ON IMPROVEMENTS.
(3) (R8) HAS A DEED CALL OF 8 INCHES. IT IS BELIEVED TO BE AN ERROR. THE DISTANCE OF 1.00 FOOT PER (R1) IS BEING HELD BASED ON THE DEED CALL OF 112.30 FEET OF (R8).

SURVEYOR'S CERTIFICATE

TO VERNON A. NEFF AND BARBARA NEFF, AS TRUSTEES OF THE NEFF 2002 FAMILY TRUST; AND OLD REPUBLIC TITLE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 8(A), 9(B), 7(A), 7(B1), 7(C), 8, 9, 10, 11(A), 13, 14, 16, 17, 18, AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 5, 9 AND 21, 2022.

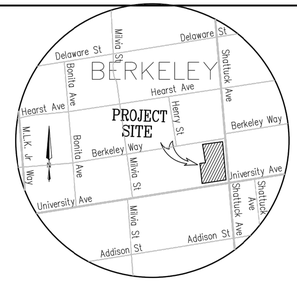
JACQUELINE LUK P.L.S. 8934
FOR LUK & ASSOCIATES, INC.

DATE DECEMBER 23, 2022

PROFESSIONAL LAND SURVEYOR — JACQUELINE LUK — L.S. 8934 — STATE OF CALIFORNIA

SHEET INDEX

1. NOTES
2. BOUNDARY SURVEY
3. TOPOGRAPHIC SURVEY



VICINITY MAP
NOT TO SCALE

ALTA/NSPS LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE AND 2071 UNIVERSITY AVENUE

CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA

DECEMBER 2022

PREPARED BY
LUK AND ASSOCIATES
CIVIL ENGINEER – LAND PLANNERS – LAND SURVEYORS
738 ALFRED NOBEL DRIVE
HERCULES, CALIFORNIA 94547
(510) 724-3388

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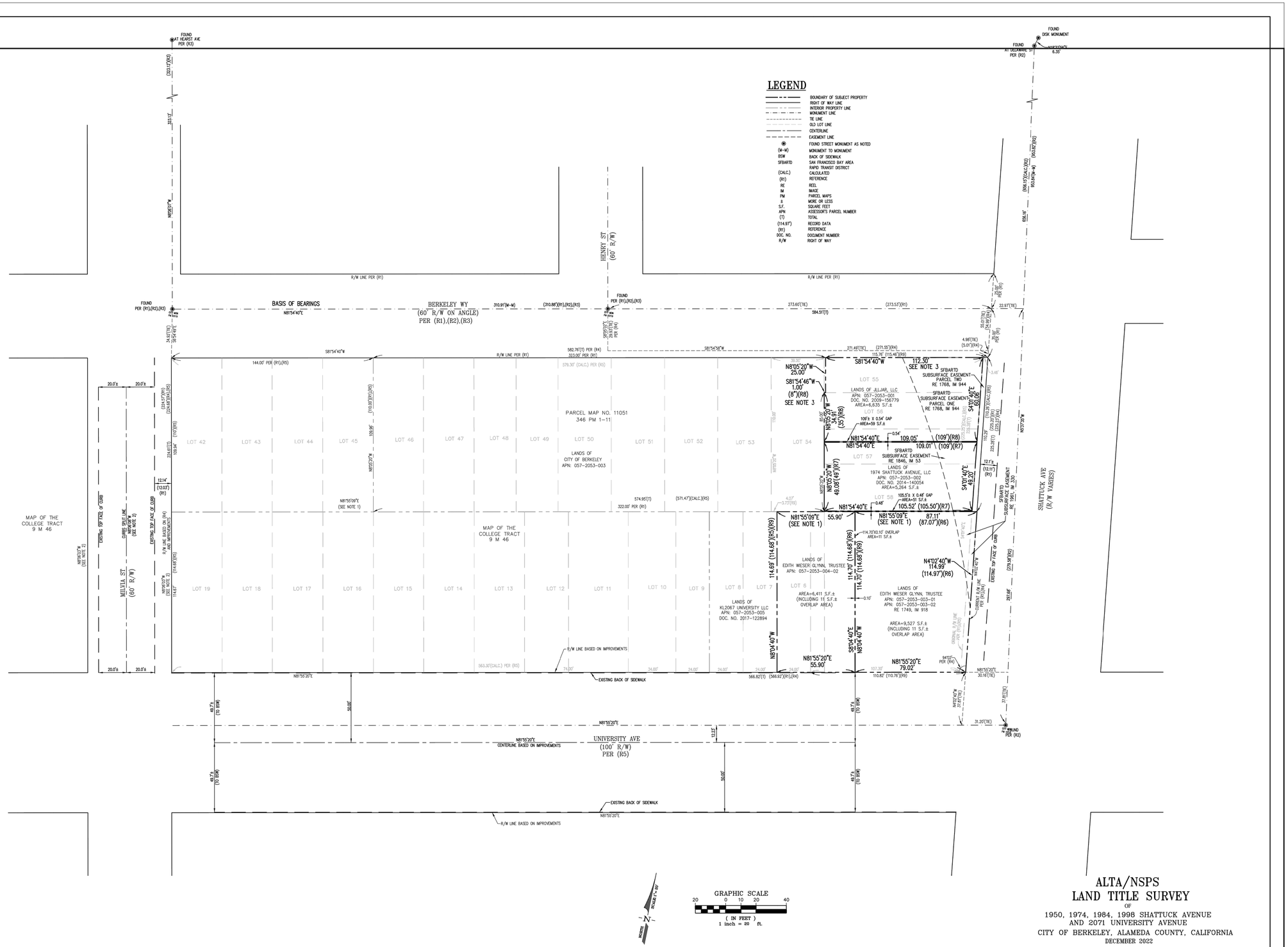
JOB: 2209

SHEET: SURVEY

A0.6a



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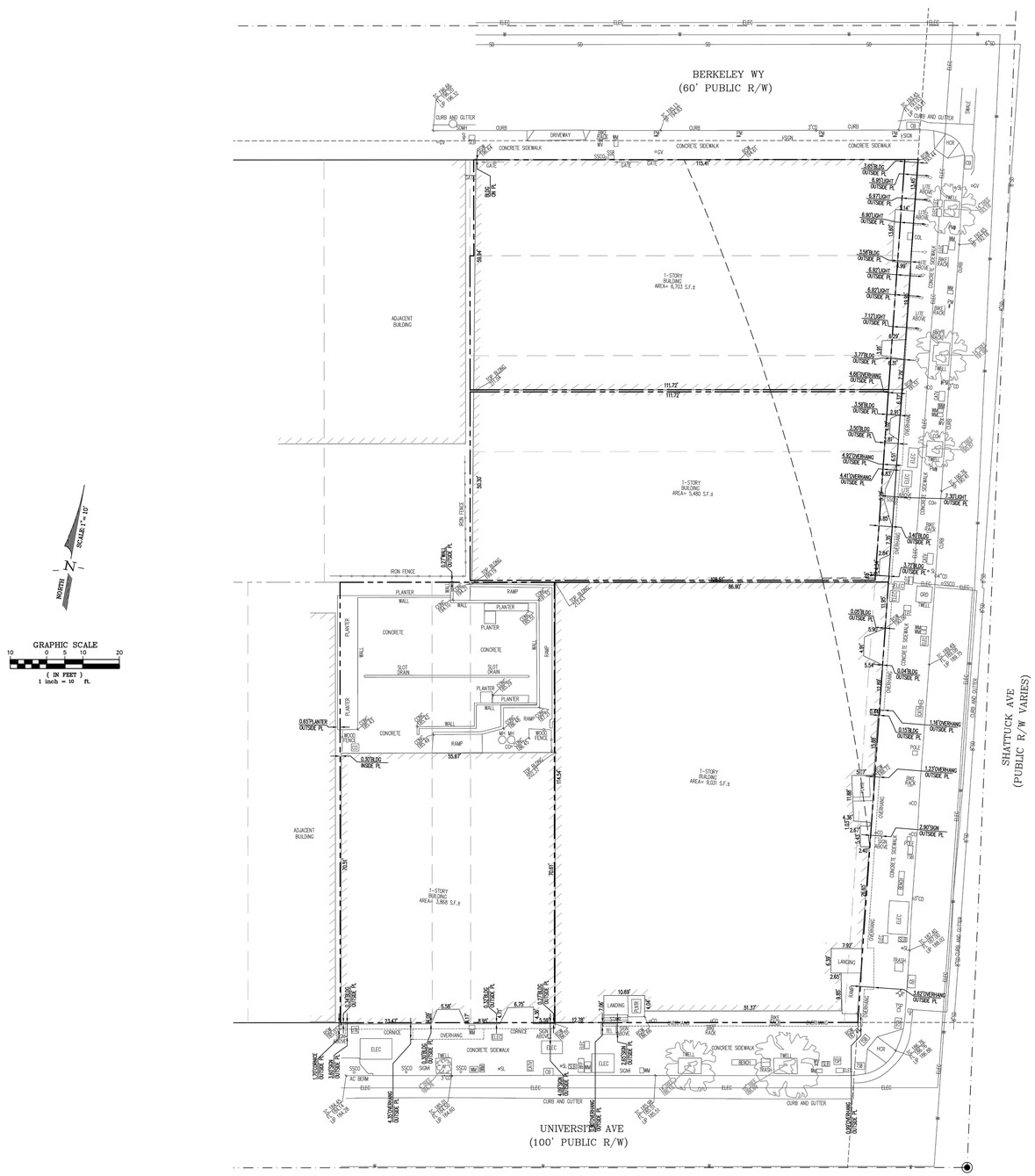
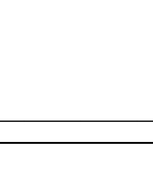
JOB: 2209

SHEET:

SURVEY

A0.6B





GRAPHIC SCALE
10 0 5 10 20
(IN FEET)
1 inch = 10 ft.

LEGEND

SYMBOLS	DESCRIPTION
	BOUNDARY OF SUBJECT PROPERTY
	RIGHT OF WAY LINE
	INTERIOR PROPERTY LINE
	MONUMENT LINE
	TIE LINE
	OLD LOT LINE
ELEC	ELECTRIC LINE
GAS	GAS LINE LINE
W	WATER LINE
SD	STORM DRAIN LINE
SS	SANITARY SEWER LINE
ELEC	ELECTRICITY BOX
AC BERM	ASPHALT BERM
SSCO	SANITARY SEWER CLEAN OUT
WM	WATER METER
HCR	HANDICAP RAMP
TWELL	TREE WELL
SL	STREET LIGHT
PLNTR	PLANTER BOX
CB	CATCH BASIN
TEL	TELECOMMUNICATION BOX
GV	GAS VALVE
SLB	STREET LIGHT BOX
CD	CURB DRAIN
CO	CLEAN OUT
BFP	BACK FLOW PREVENTER
TSB	TRAFFIC SIGNAL BOX
WV	WATER VALVE
CD	CURB DRAIN
PM	PARKING METER
COL	COLUMN
SSB	SANITARY SEWER BOX
SDMH	STORM DRAIN MAN HOLE
GRD	GROUND
SD	SLOT DRAIN
MH	MANHOLE
CONC 65.60	TOP OF CONCRETE ELEVATION
SIDW 65.60	BACK OF SIDEWALK ELEVATION
TC 65.64	TOP OF CURB ELEVATION
TP 65.64	TOP OF PAVEMENT ELEVATION
FL 65.64	FLOW LINE ELEVATION
TOP BLDG 65.64	TOP OF BUILDING ELEVATION
LIP 65.60	TOP OF LIP ELEVATION
	TREE

ALTA/NSPS
LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE
AND 2071 UNIVERSITY AVENUE
CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA
DECEMBER 2022

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SHEET 3 OF 3

F:\Jobs\FILE2022\22117A10\ALTA-22117A10.dwg

JOB NO.: 22117A10 PLOT DATE: DECEMBER 23, 2022

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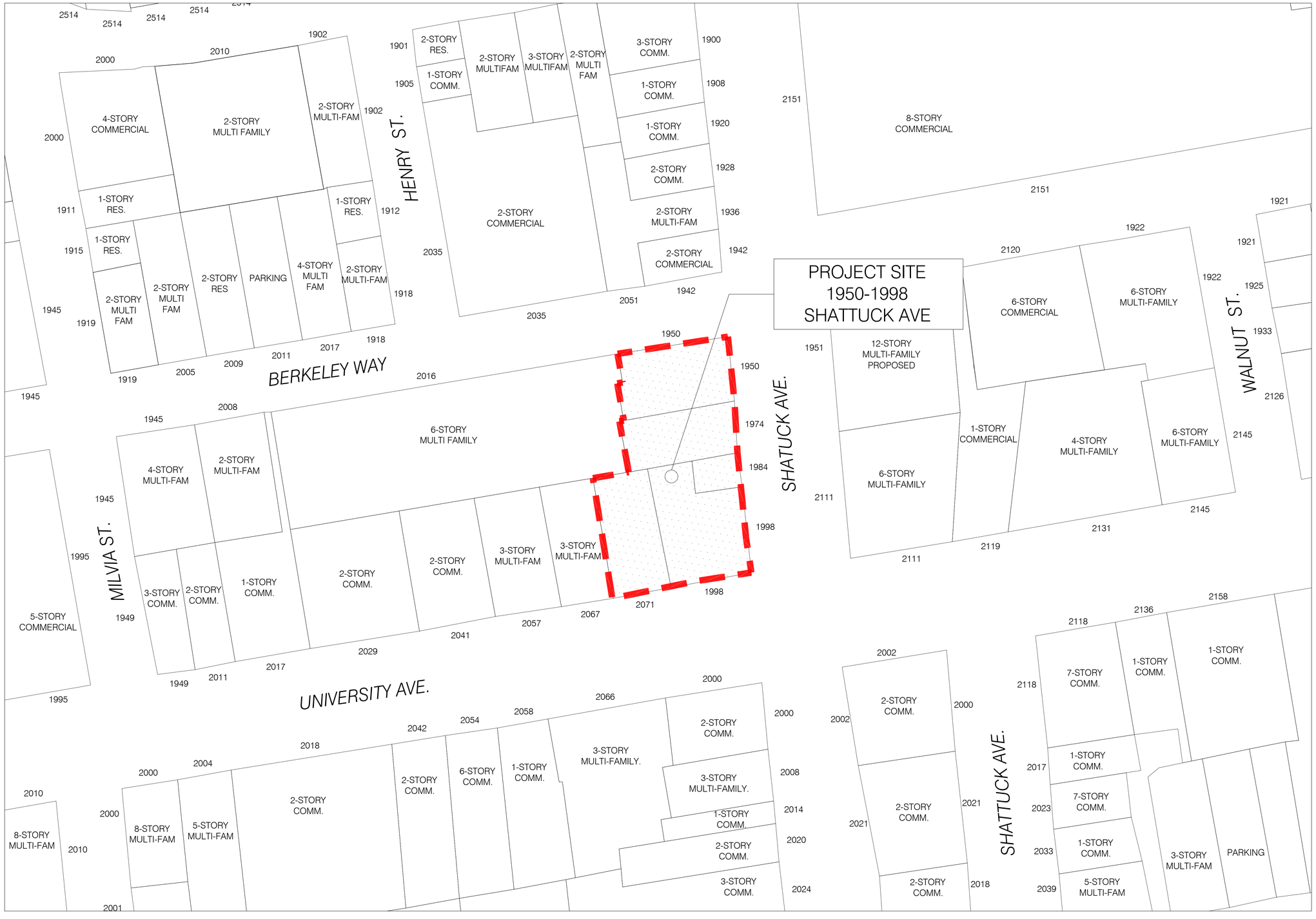
SHEET:

SURVEY

A0.6C



1 - VICINITY MAP
NTS

N

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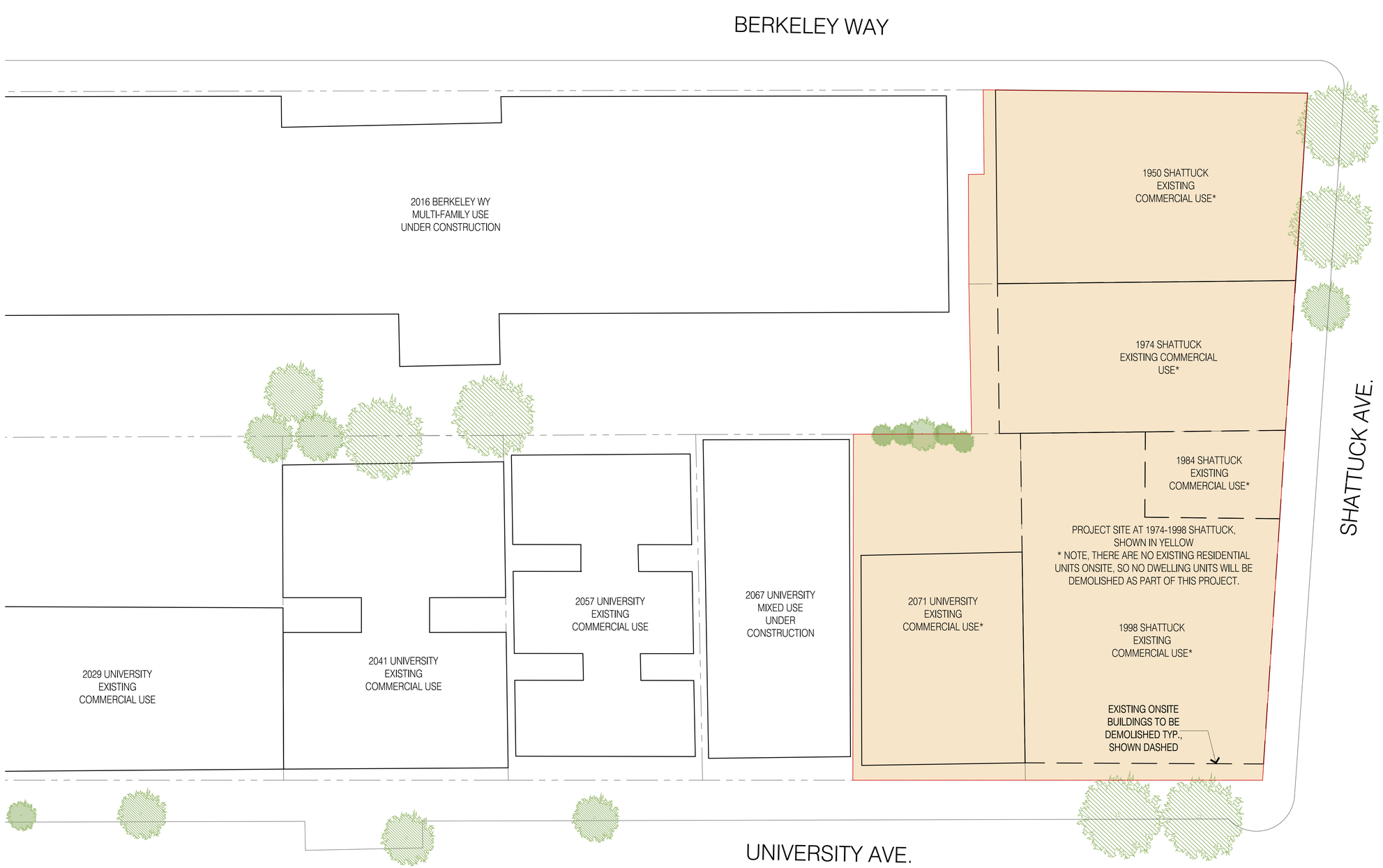
JOB: 2209

SHEET:

VICINITY MAP

A0.6



1 - EXISTING SITE PLAN
1/32"=1'-0" @ 11x17 1/16"=1'-0" @ 24x36

0 4 8 16 32

N

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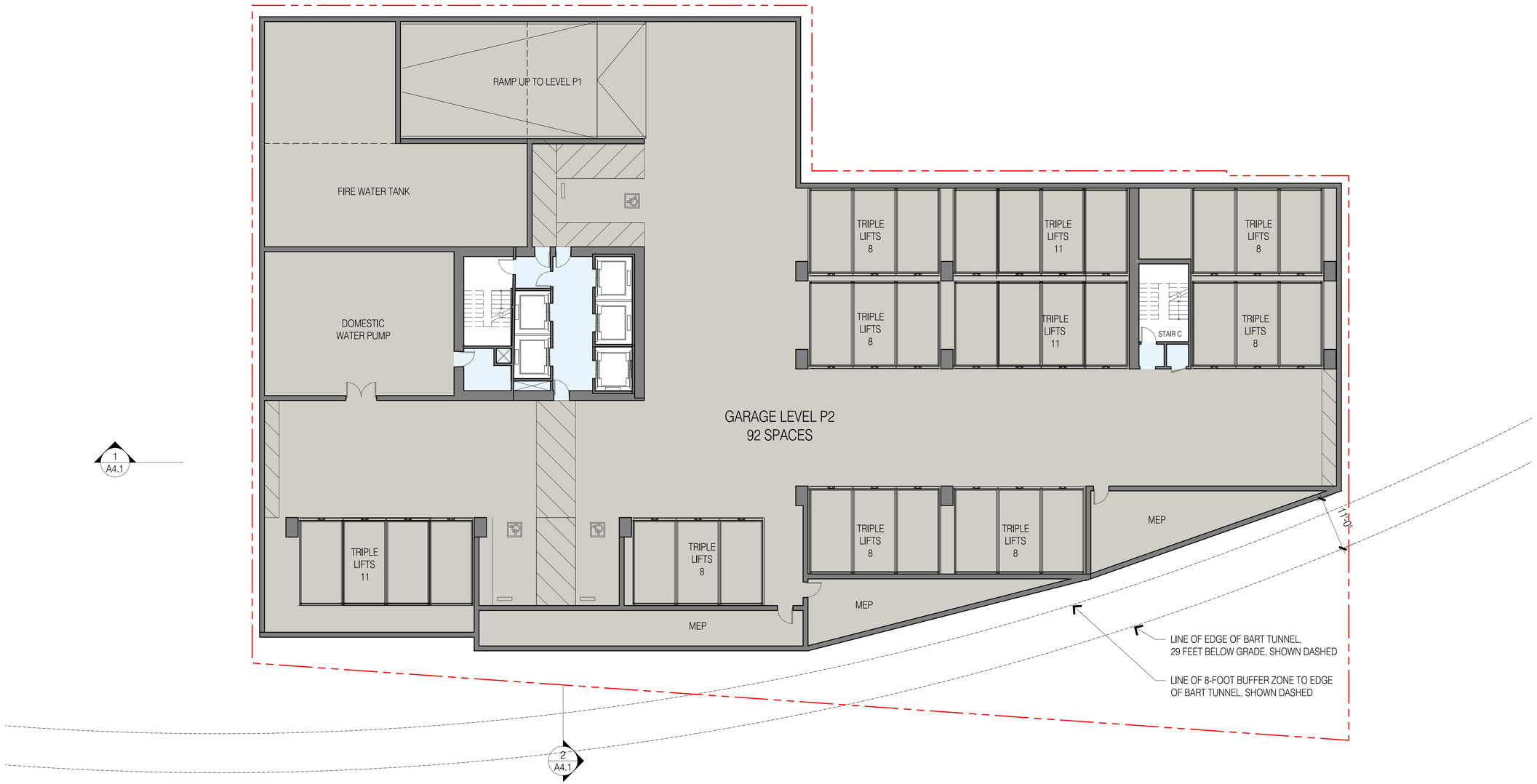
JOB: 2209

SHEET:

EXISTING
SITE PLAN

A1.0



1 PLAN AT BASEMENT PARKING LEVEL P2

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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JOB: 2209

SHEET:

FLOOR PLANS

A2.0a



1
-

PLAN AT BASEMENT PARKING LEVEL P1

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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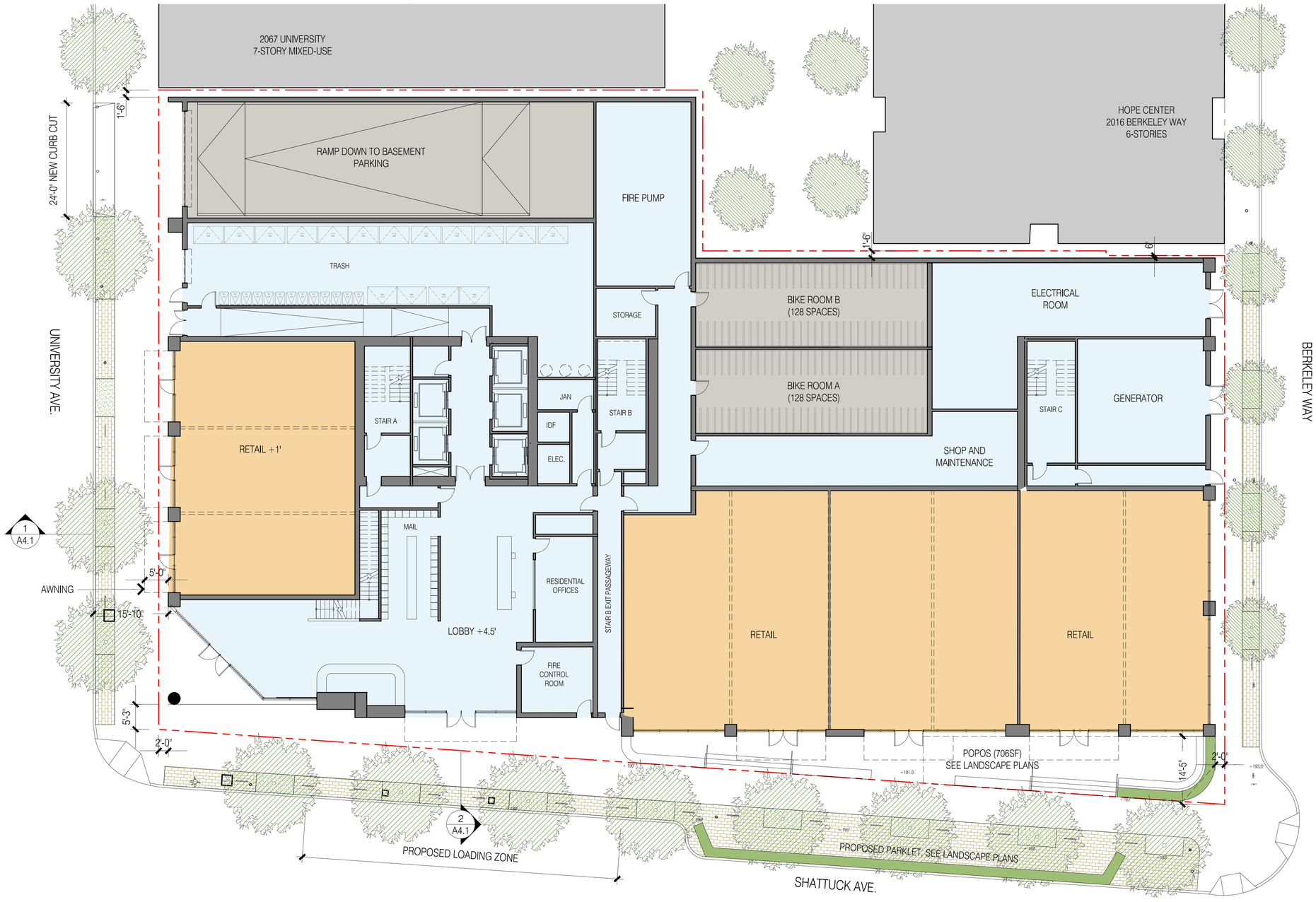
SHEET:

FLOOR PLANS

A2.0b



1 - SITE PLAN / PLAN AT GROUND FLOOR

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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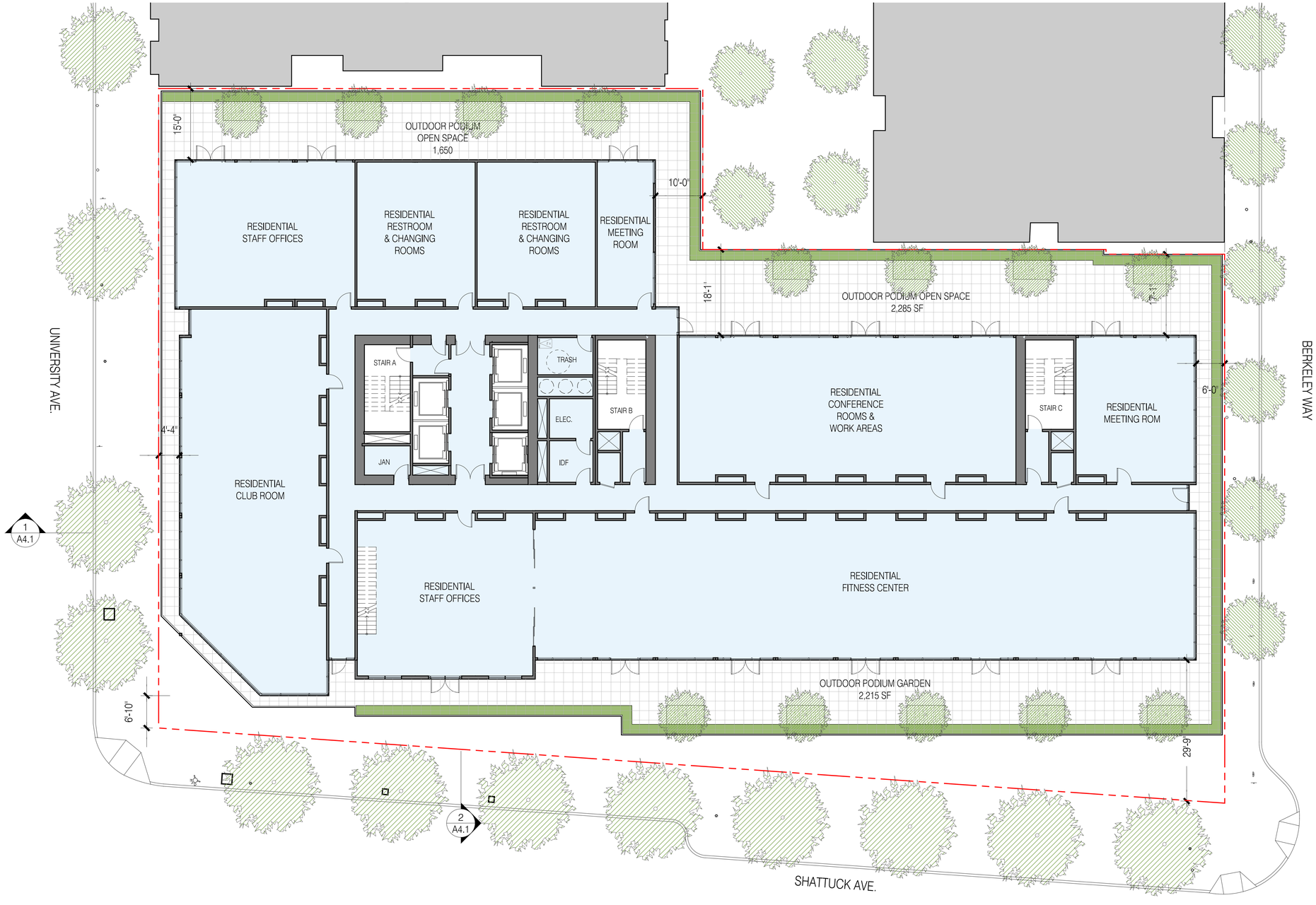
JOB: 2209

SHEET:

FLOOR PLANS

A2.1



1 PLAN AT LEVEL 2
1/- 3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

FLOOR PLANS

A2.2



1 PLAN AT LEVELS 3-13
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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JOB: 2209

SHEET:

FLOOR PLANS

A2.3



1 PLAN AT LEVEL 14

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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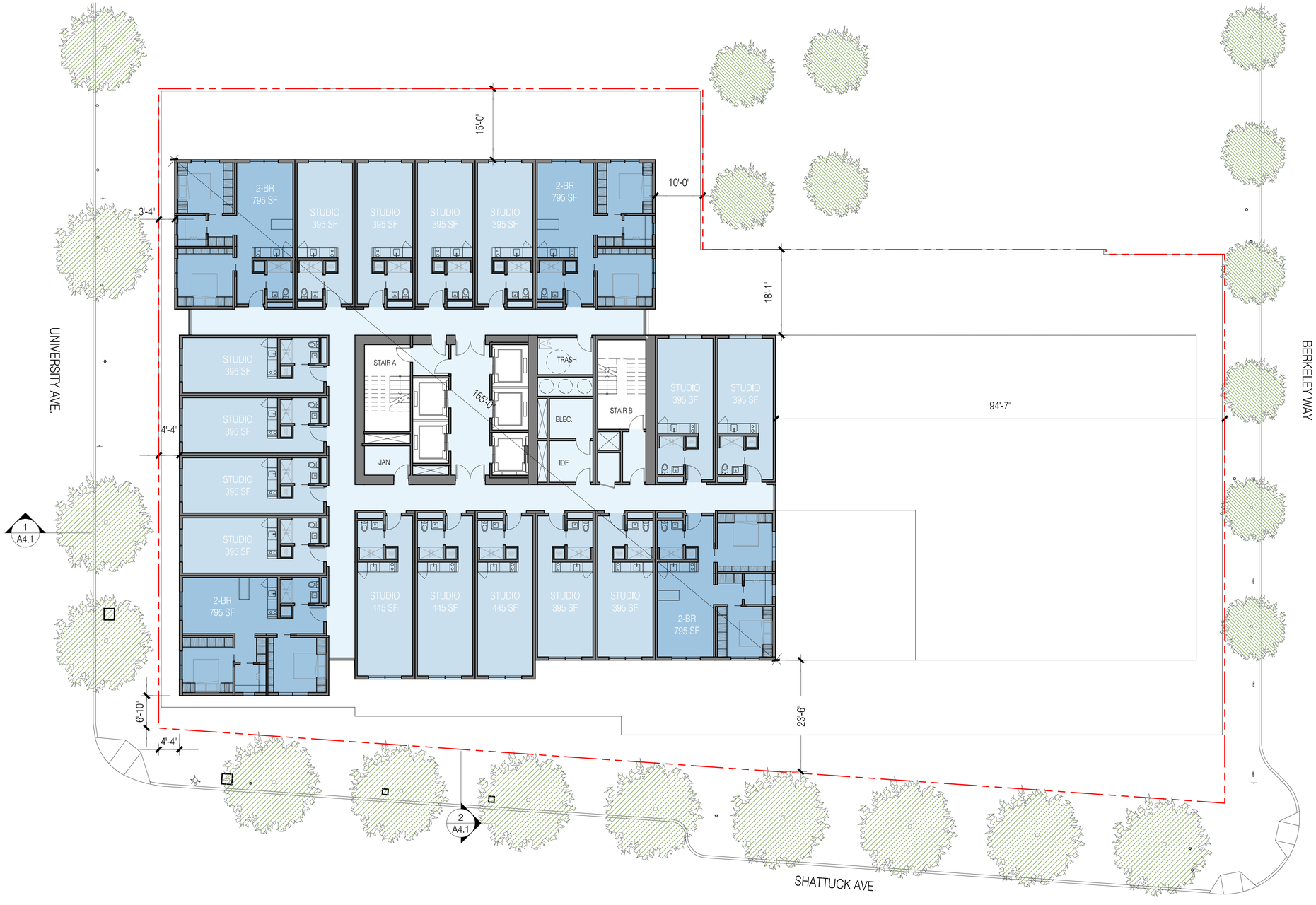
SHEET:

FLOOR PLANS

A2.4



1 PLAN AT LEVELS 15-27
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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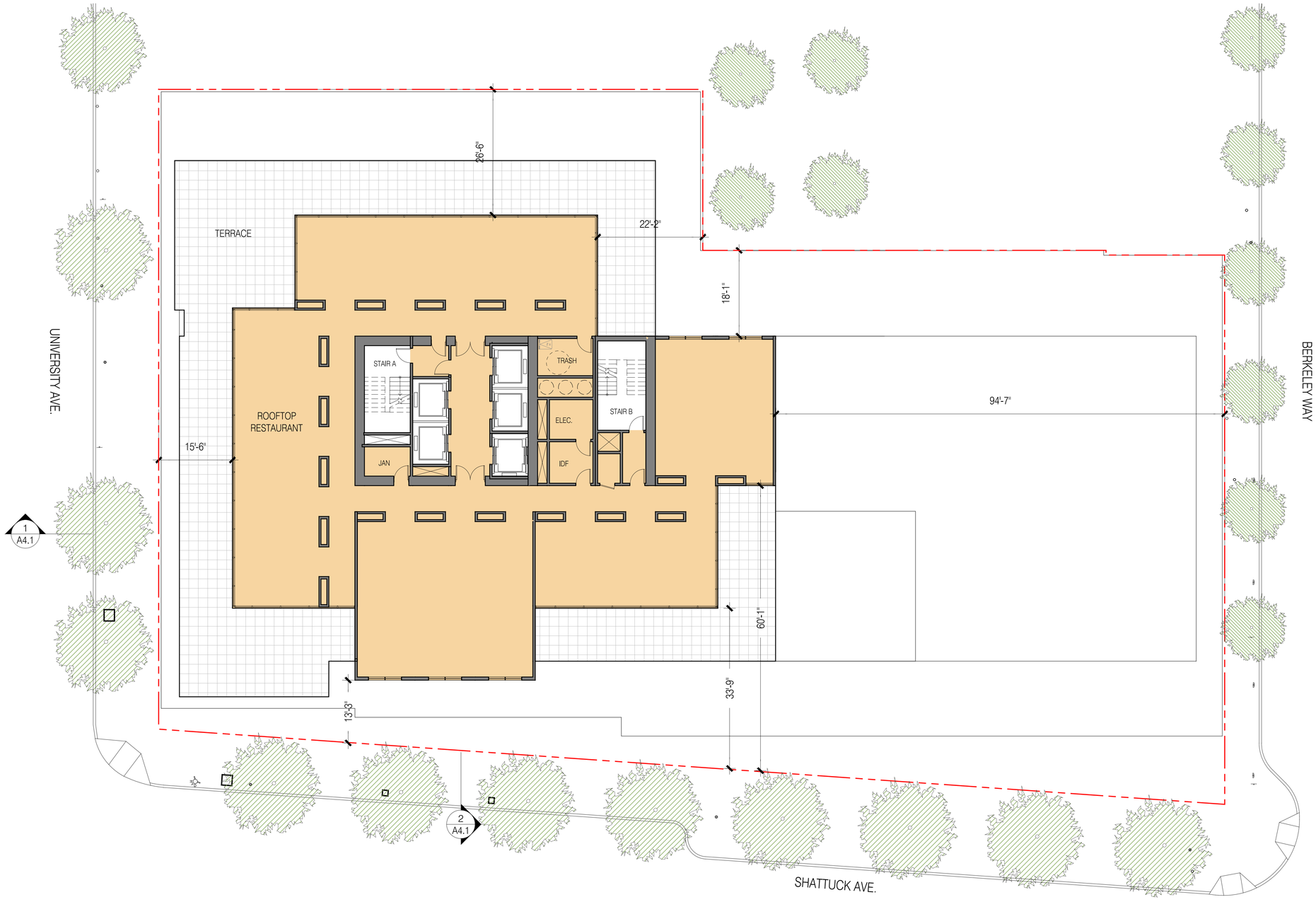
SHEET:

FLOOR PLANS

A2.5



1 - PLAN AT LEVEL 28 ROOFTOP RESTAURANT

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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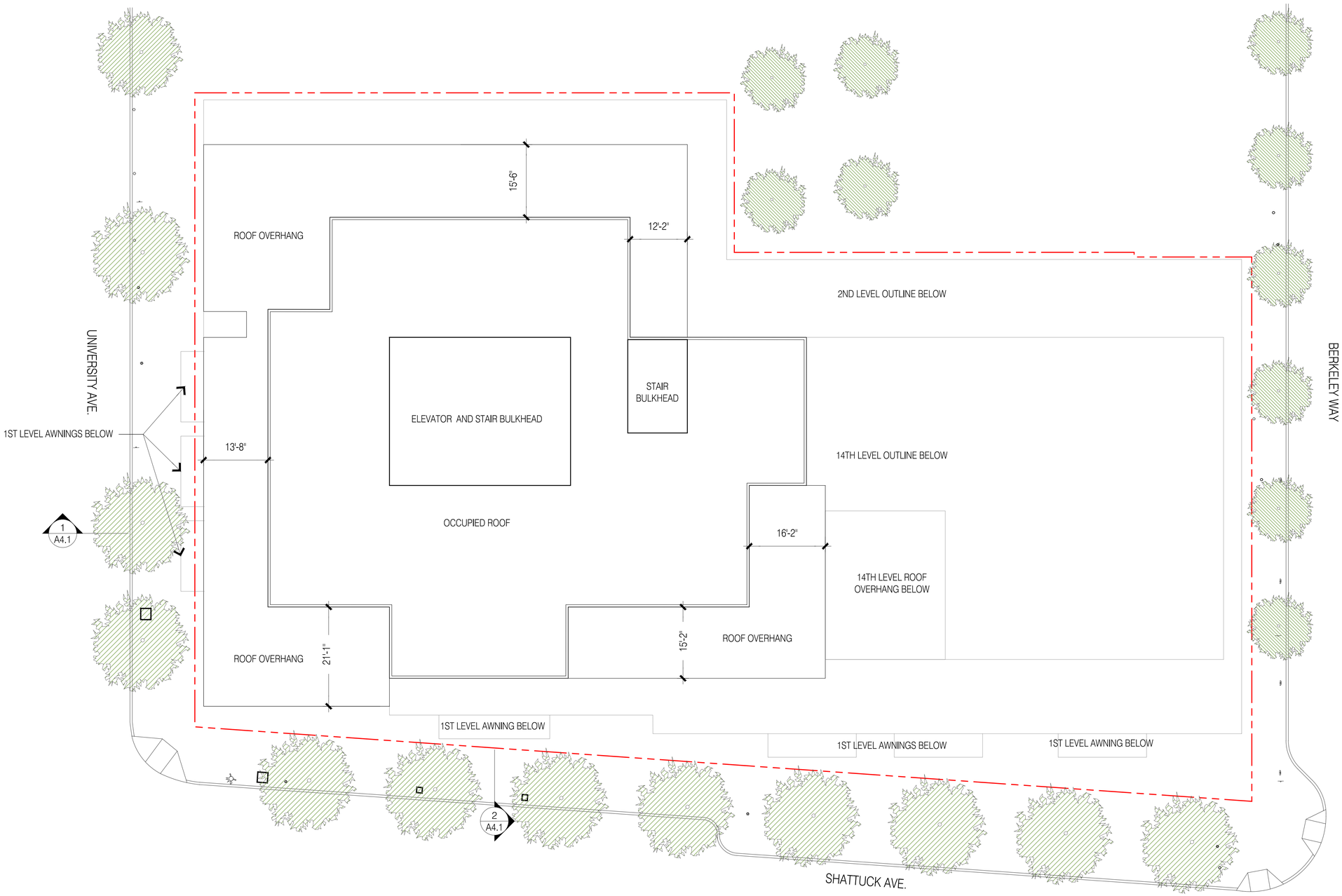
JOB: 2209

SHEET:

FLOOR PLANS

A2.6



1 PLAN AT ROOF
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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JOB: 2209

SHEET:

ROOF PLAN

A2.7



2 - EAST ELEVATION

0 8 16 32



1 - SOUTH ELEVATION

0 8 16 32

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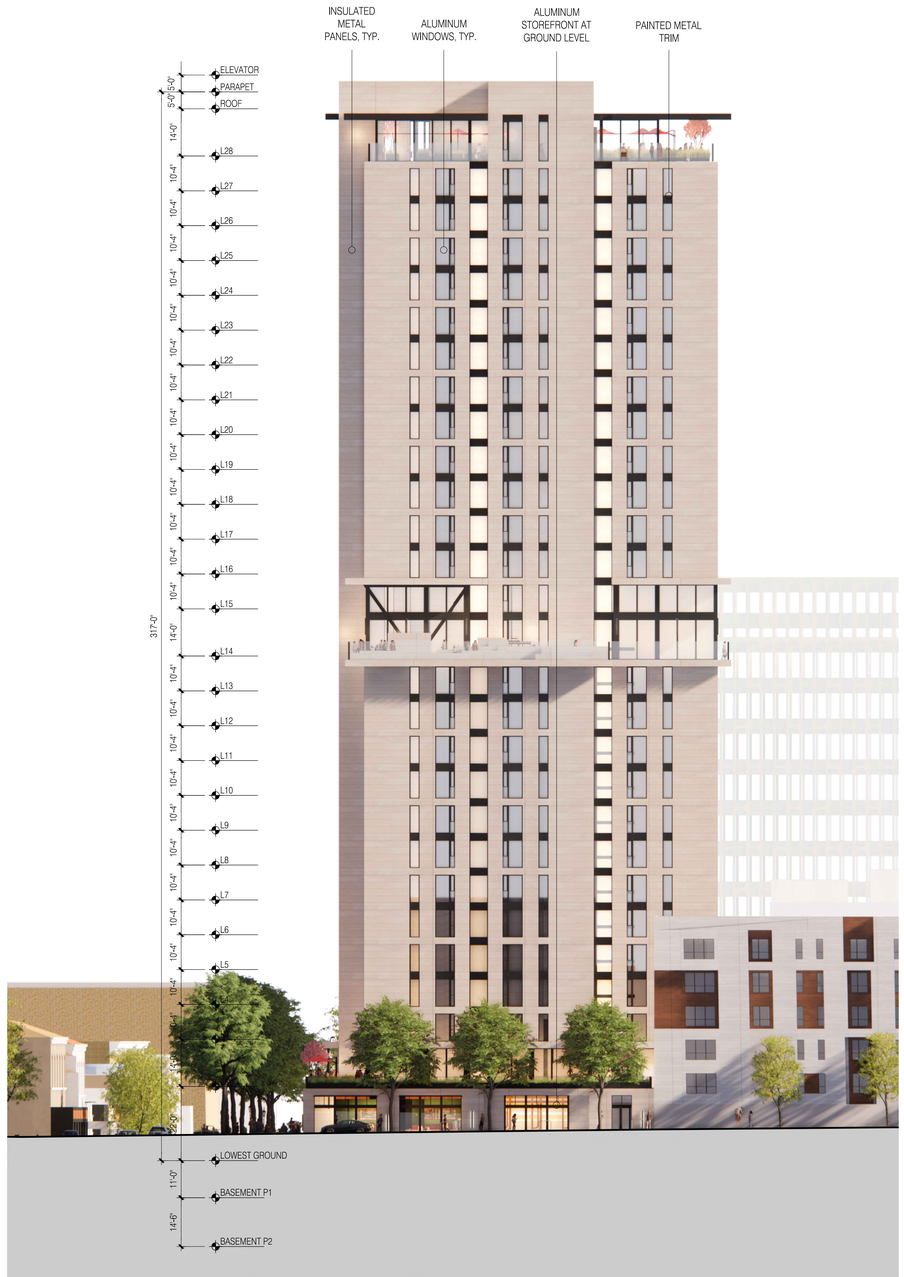
ELEVATIONS

A3.1



2 - WEST ELEVATION

0 8 16 32



1 - NORTH ELEVATION

0 8 16 32

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ELEVATIONS

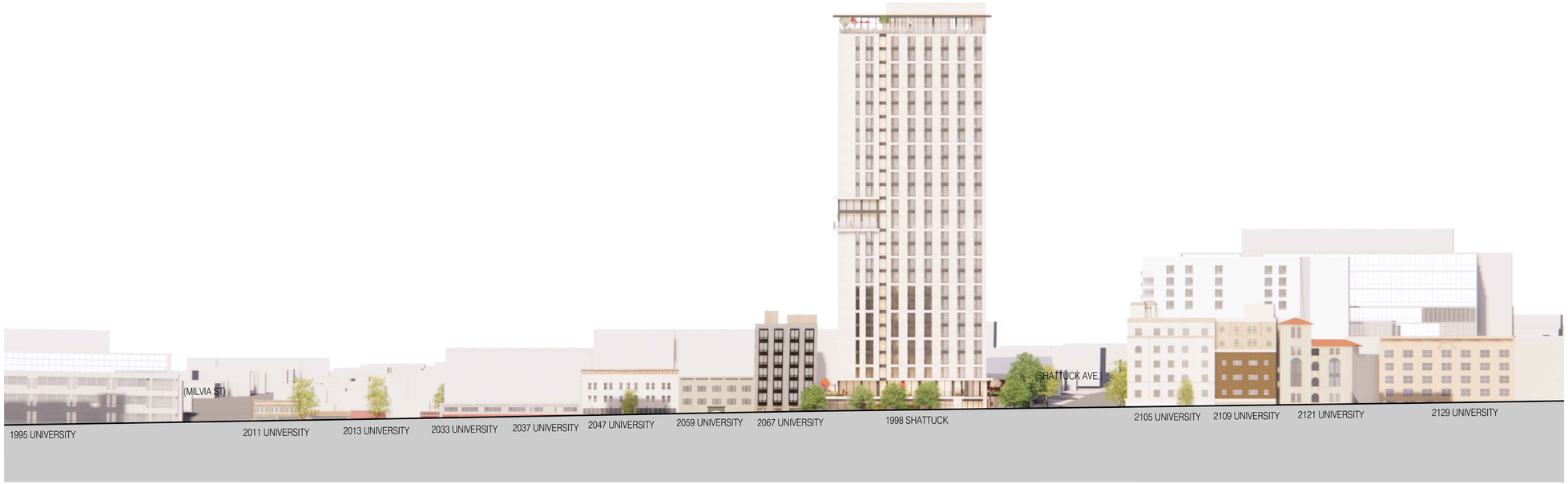
A3.2



2 - STREET STRIP ELEVATION @ SHATTUCK AVE

1/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64



1 - STREET STRIP ELEVATION @ UNIVERSITY AVE

3/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64

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SHEET:

STREET STRIP ELEVATIONS

A3.3



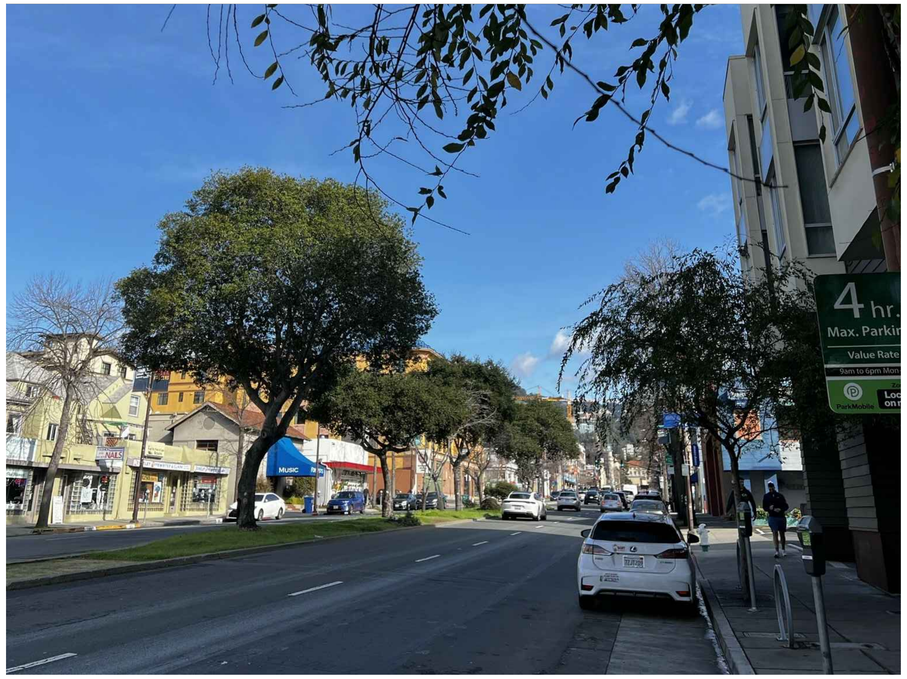
4 - UNIVERSITY LOOKING WEST - AFTER



2 - UNIVERSITY LOOKING EAST - AFTER



3 - UNIVERSITY LOOKING WEST - BEFORE



1 - UNIVERSITY LOOKING EAST - BEFORE

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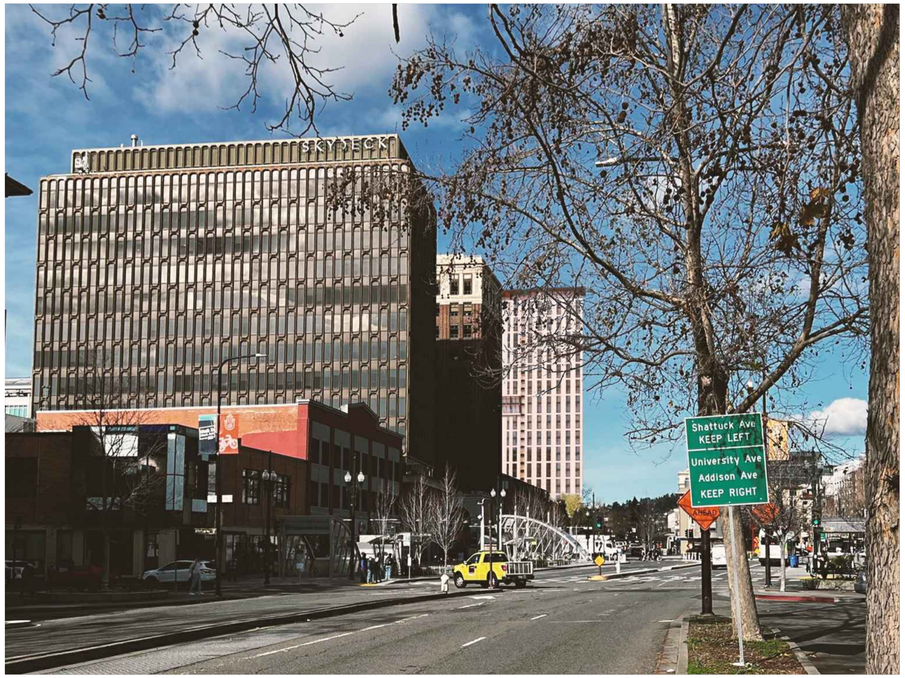
SHEET:

PHOTO CONTEXT VIEWS

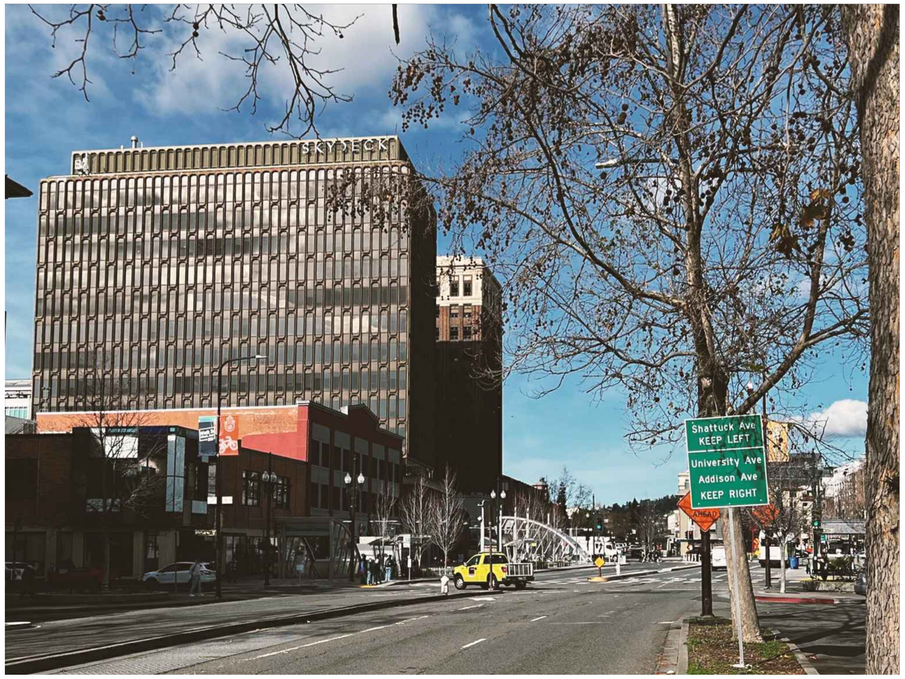
A3.4



4 - SHATTUCK LOOKING NORTH - AFTER



2 - SHATTUCK LOOKING SOUTH - AFTER



3 - SHATTUCK LOOKING NORTH - BEFORE



1 - SHATTUCK LOOKING SOUTH - BEFORE

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SHEET:

PHOTO CONTEXT VIEWS

A3.5



4 - BERKELEY LOOKING WEST - AFTER



2 - BERKELEY LOOKING EAST - AFTER



3 - BERKELEY LOOKING WEST - BEFORE



1 - BERKELEY LOOKING EAST - BEFORE

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SHEET:

PHOTO CONTEXT VIEWS

A3.6

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1 - VIEW LOOKING NORTH

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SHEET:

PRELIMINARY
RENDERING

A3.7

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1 - VIEW LOOKING NORTH-WEST

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SHEET:

PRELIMINARY
RENDERING

A3.8

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1
-
VIEW LOOKING SOUTH-WEST
-

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SHEET:

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A3.9

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1 - VIEW LOOKING SOUTH-EAST

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SHEET:

PRELIMINARY RENDERING

A3.10

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1 VIEW LOOKING NORTH-WEST AT SHATTUCK AND UNIVERSITY

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SHEET:

PRELIMINARY RENDERING

A3.11



1 - VIEW LOOKING SOUTH-WEST ON SHATTUCK

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PRELIMINARY RENDERING

A3.12

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1 - VIEW LOOKING NORTH-EAST ON UNIVERSITY

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SHEET:

PRELIMINARY
RENDERING

A3.13



1 - SIDEWALK VIEW - UNIVERSITY LOOKING EAST

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SHEET:

PRELIMINARY RENDERING

A3.14



1 - VIEW LOOKING SOUTH-WEST - SHATTUCK @ BERKELEY WAY

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SHEET:

PRELIMINARY RENDERING

A3.15

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1 - SIDEWALK VIEW - SHATTUCK LOOKING SOUTH-WEST

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SHEET:

PRELIMINARY RENDERING

A3.16

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1 - SIDEWALK VIEW - SHATTUCK LOOKING NORTH-WEST

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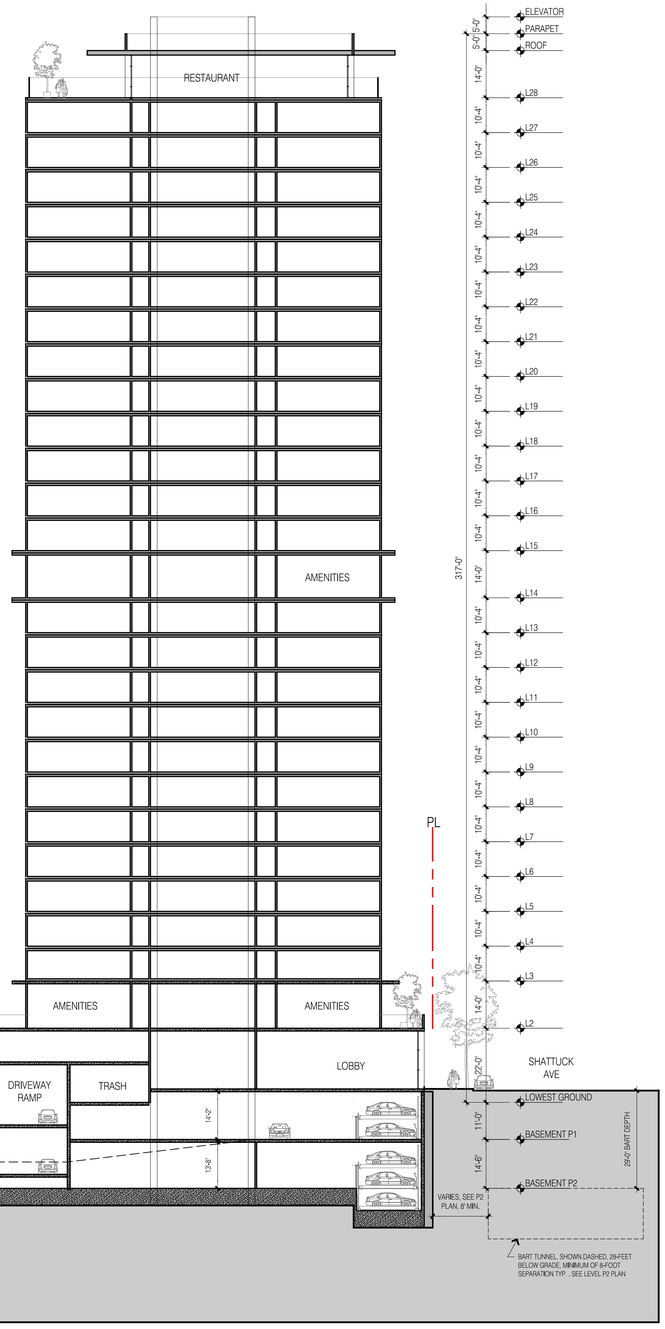
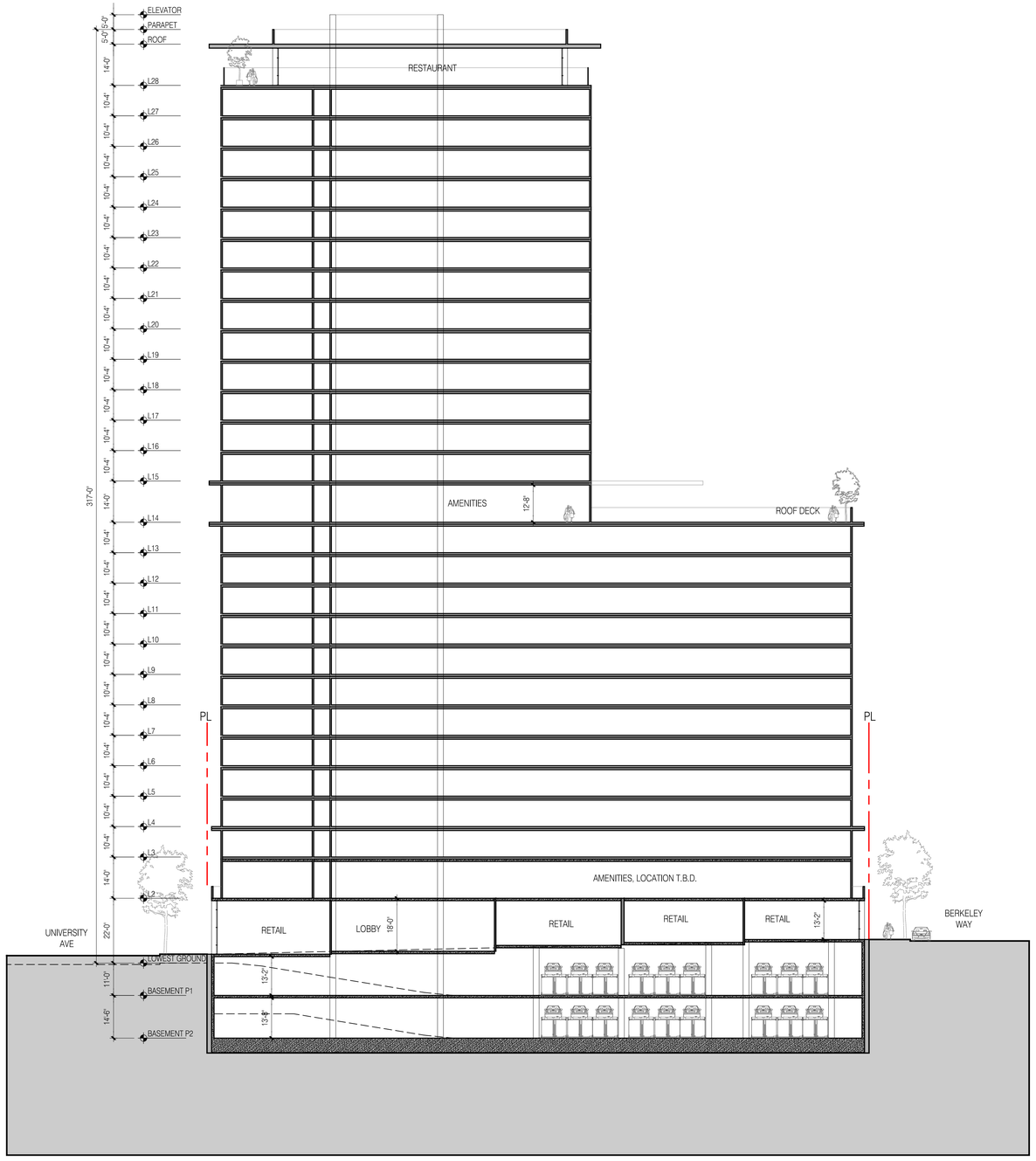
RENDERING

A3.17



2 - SECTION LOOKING NORTH

0 8 16 32



1 - SECTION LOOKING WEST

0 8 16 32

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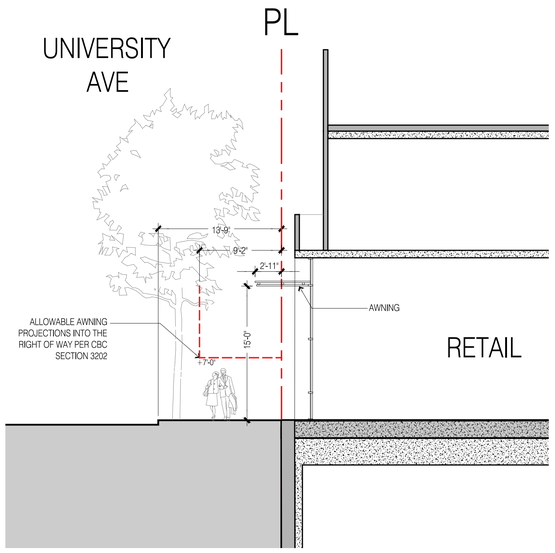
SHEET:

BUILDING SECTIONS

A4.1



2 - SECTION THROUGH UNIVERSITY AVE.
1/8" = 1'-0" -

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SHEET:

AWNING ENCROACHMENT DIAGRAM

A4.2

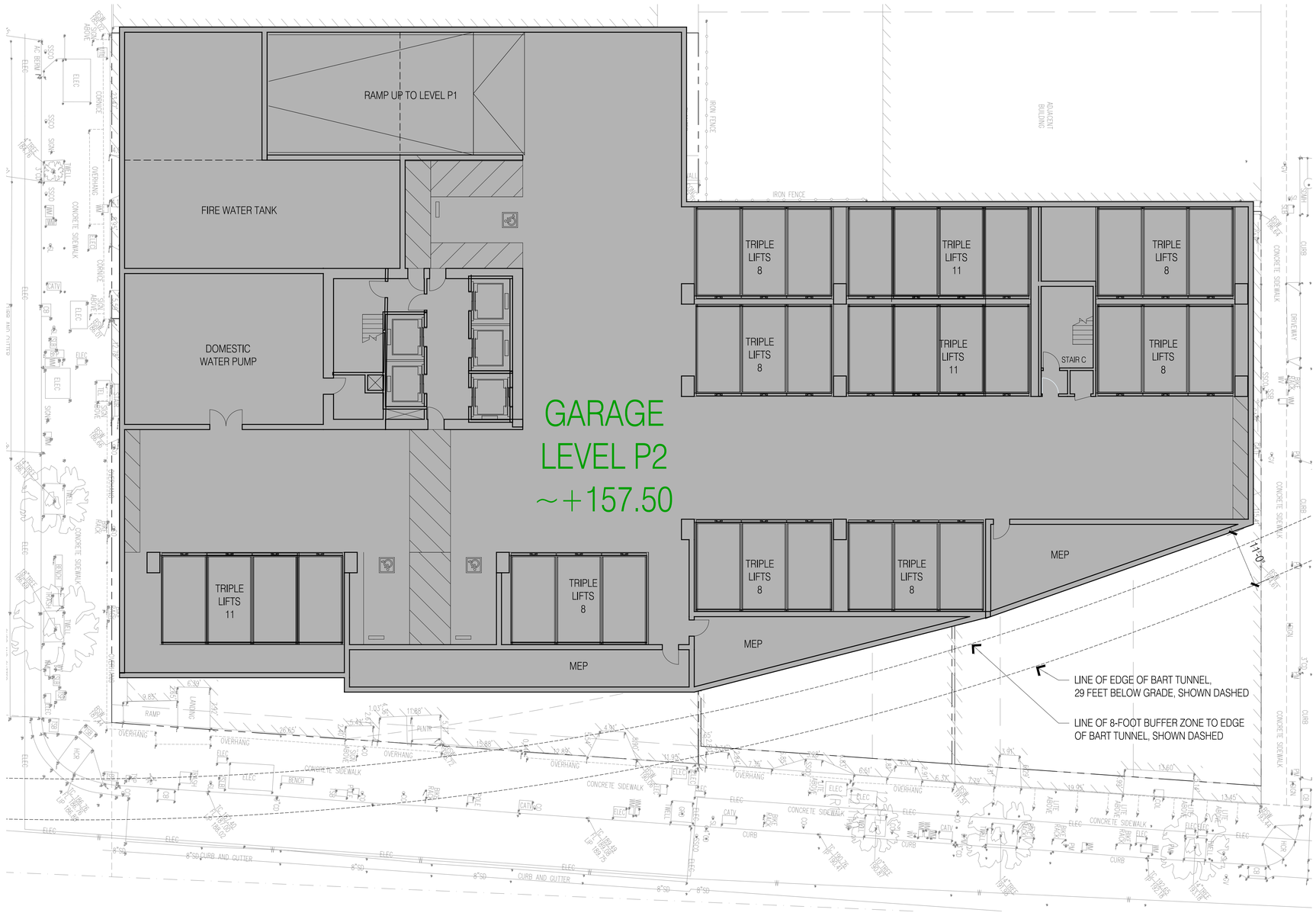
CUT AND FILL CALCULATIONS

	CUT/FILL AREA	AVERAGE CUT/FILL DEPTH (FT)	TOTAL VOLUME (CY)
PROPOSED BUILDING	23,262	37	31,878

EARTHWORK NOTES:

1. EARTHWORK QUATNITY IS A ROUGH ESTIMATE BASED ON APPROXIMATE DEPTH OF BOTTOM OF BASEMENT PARKING LEVEL.

2. EARTHWORK QUANTITIES DO NOT TAKE INTO ACCOUNT SOIL SHRINKAGE, SOIL SWELLING, TRENCH SPOILS, SITE OVER-EXCAVATION REQUIREMENTS.



1 - CONCEPTUAL GRADING PLAN

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

CONCEPTUAL GRADING PLAN

A5.0

1998 Shattuck — Preliminary Landscape Set

General Notes

1. The contractor shall inspect the site and be familiar with all existing site conditions prior to submitting bid. Contractor shall not willfully proceed with construction as shown when it is obvious that obstructions, landscape area and/or grade differences exist that may not have been known during design. Such conditions shall immediately be brought to the attention of the landscape architect. The contractor shall assume sole responsibility for all necessary revisions due to failure to give such notification. Contractor shall be responsible for making himself familiar with all underground utilities, pipes, structures and obstructions. Contractor shall assume sole responsibility for all costs incurred due to damage and/or replacement of these items. Contractor shall be responsible for coordination among trades and subcontractors as required to accomplish the work. The contractor shall be responsible for any damage to existing features caused by contractor's work. All repairs shall be made at no additional cost to the owner. Planting shall be installed in conformance with all applicable local codes and ordinances by experienced workmen and a licensed landscape contractor who shall obtain all necessary permits and pay all required fees. The garden is a pesticide and herbicide free zone. Contractor shall use organic material to fertilize and to maintain all plant material. No chemical fertilizer will be allowed.Contractor shall verify all grades, existing conditions and dimensions in the field prior to commencing work. All discrepancies or questions shall be brought to the attention of the landscape architect for resolution. Redirect work to avoid delay. All curves and all transitions between curves and straight edges shall be smooth. Take all dimensions perpendicular to any reference line, work line, face of building, face of wall or centerline.

2. Demolition
Contractor shall remove and carry all demolition materials off site. Protect (E) trees as indicated during construction. Contractor shall perform selective trimming of existing trees within the area of work per the direction of the owner.

3. Drainage/Grading
Contractor shall verify if existing drains are in good condition. All drainage systems shall be per City of Berkeley codes. Grade per indicated swales. Sleeving to be Schedule 40 PVC. Cover PVC pipe so that it not visible. All grading to be smooth to achieve a natural aspect. No finish grades shall exceed 2.5:1 slopes.

4. Soil preparation
Soil amendment shall be a minimum of 9 cy of organic compost per 1000 sf (1:4 ratio). The landscape contractor shall be responsible for finish grading and all planting area drainage. Positive drainage away from the building as per city codes shall be maintained. No low spots which hold standing water will be accepted. Where rototilling is not possible, incorporate soil amendments into top 6 inches with hand tools. After installation of irrigation system, all new planting areas are to be fine graded to within 2 inches and slightly mounded away from edges of top of planter, curb, walk, header, etc. and raked smooth with all rocks and debris over 1 inch in diameter removed. Verify existing grades and advice Landscape Architect of any discrepancies prior to start of grading.

5. Topsoil
If any planting areas require the importing of topsoil, the imported soil shall be clean, friable sandy loam; free of noxious weed seeds, sticks, stones over 1 inch in diameter or any materials that could inhibit growth. Incorporate imported topsoil into the top 6-8 inches of site soil by rototilling or hand cultivating as necessary.

6. Substitutions
Requests for substitutions of plant varieties shall be made to the landscape architect within 15 days after signing of contract.

7. Planting
Thoroughly water trees immediately after planting. Shrubs shall be spotted as per plan and the locations approved prior to the digging of the holes. Contractor shall locate and tag all trees at nursery at time of acceptance of contract to ensure availability of healthy specimens. Plant materials to be approved by landscape architect prior to site delivery.

8. Irrigation
The proposed irrigation shall be an automated, water efficient watering system compliant with the City of Berkeley codes & regulations. The contractor shall determine the static water pressure and design the system accordingly to achieve adequate regime for the proposed plantings. The following emitters shall be installed at each planting: (2) 1 gal emitters at each 1 gal sp.; (3) 5 gal. emitters at ea. 5 gal shrub.

9. Mulching
Mulch all planting areas with 3" of 'Forest Floor Bark' from American Soil and Stone, Richmond Ca (510) 292-3000.

10. Stone paving & stone work
See layout plan and detail for sub-base. Install stone paving with tight joints in front and flagstone in stabilized decomposed granite in back as show on sheet L1.0.

11. Concrete work
All concrete retaining walls greater than 3 feet in height shall be designed or reviewed and stamped by a structural engineer. All concrete footings shall be reviewed, approved and stamped by a structural engineer.

12. Electrical
Install light fixtures, conduits and controller per manufacturer recommendation. Locate controller per plan with light switch inside residence. Contractor to supply and install power supply - 2 outlets at outdoor kitchen area. Install power supply for outdoor kitchen equipment .

13. Wood work
All wood decking to match existing wood same size and layout at existing decks for deck extension. All vertical posts to be pressure treated 4x4 wood. SSD for final wood sizing, anchors and concrete footing. See note 14 for painting/staining.

14. Painting
All visible existing & new wood to be painted same color as the main residence, but with a lighter tone. Color to be reviewed & approved by owner/landscape architect.
Paint manufacturer: Sherwin Williams; exterior paint quality "duration" to be applied on all new & existing wood to be painted. Prep all wood surfaces per paint manufacturer's recommendations.

15. Maintenance
The contractor shall maintain the project for 90 days (or as requested by owner) following the approval to begin the maintenance period. During the entire maintenance period, watering, cultivating, weeding, mowing, repair/tightening of stakes and ties, provision of supplemental water by hand in addition to irrigation system as necessary. At the end of the 90 day maintenance period all areas are to be free of weed and all plant material is to be in a healthy, thriving condition.

16. Guarantee
All construction, trees and shrubs by the landscape contractor and/or his subcontractors shall be guaranteed for (1) one year after beginning of maintenance period. The contractor shall replace, at no expense to the owner, any and all landscape materials that are in an unacceptable condition for time of use, and trees or shrubs that are dead or not in a vigorous, healthy growing condition; within two weeks of notification of such condition. Replacement shall be of the same kind and size as the originally specified item and shall be replaced as originally described on the drawings. The contractor shall not be held liable for loss of plant materials during the guarantee period due to vandalism, accidental causes or acts of neglect by others than the contractor, his agents and employees.

17. Clean up
At the end of each work day, at the inspection for substantial completion and before acceptance of project, clean paved areas that are dirtied or stained by construction operations, by sweeping or washing, and remove defacements and stains. Remove construction equipment, excess materials and tools. Haul from owners property the debris resulting from construction, and dispose of legally. Remove remaining temporary protection at time of acceptance by owner unless otherwise agreed.

Project Team

Client
NX Ventures

Architect
Trachtenberg Architects
2421 Fourth Street
Berkeley, CA 94710
510.649.1414

Landscape Architect
InsideOut Design, Inc.
6000 Harwood Ave
Oakland CA 94618
510.655.7674

Contractor
TBD

Location Map



Legend

(PA)	Planting Area
(TS)	Top of stair
(BS)	Bottom of stair
(TW)	Top of wall
(BW)	Bottom of wall
R	Radius
POB	Layout Starting Point
SIM	Similar
(TYP.)	Typical
SAD	See Architectural Drawings
EQ	Equal
O.C.	On Center
(E)	Existing
›	Align
	90 Degrees angle
(824.76)	Existing spot elevation
824.76	Proposed spot elevation
	Existing contour line
	Proposed contour line
	Property line
	Existing retaining wall to be demolished

Sheet Index

L0.0	Cover Sheet
L1.0	Streetscape
L2.0	Podium
L3.0	Roof Deck
L3.1	Usable Open Space + Planting Notes
I0.0	Irr. Notes & Legend
I1.0	Irr. Plan - Street
I2.0	Irr. Plan - Podium
I3.0	Irr. Plan - Roof Deck
I3.1	Irr. Plan - POC
I4.0	Irrigation Details
I5.0	Irrigation Details
I6.0	Irrigation Details
I7.0	Irrigation Details

Plant List

Index	Latin Name	Common Name	Size	WELO	CA Nat.	Notes
Street Trees						
CC	Carpinus caroliniana	American Hornbeam	24" Box	M		University Ave
LC	Lophostemon confertus	Brisbane Box	24" Box	VL, L		Berkeley Way
PA	Platanus acerifolia 'Columbia'	Columbia' London Plane Tree	24" Box	L, M		Shattuck Ave
Trees						
BE	Brahea edulis	Guadalupe Palm	24" Box	L		Roof
BR	Beaucarnea recurvata	Pony Tail Palm	15 Gallon	VL		Roof
CO	Cercis occidentalis	Western Redbud	24" Box	VL	X	Podium FTP
CR	Ceanothus 'Ray Hartman'	Ray Hartman California Lilac	24" Box	L, ES	X	Podium
HG	Heteromeles arbutifolia 'Davis Gold	Davis Gold Toyon	24" Box	VL, L	X	Podium FTP
PR	Phoenix roebelenii	Pygmy Date Palm	24" Box	L		Roof
WF	Washingtonia filifera	California Fan Palm	24" Box	L, ES	X	Roof
Shrubs						
AD*	Agave deserti	Desert Agave	5 Gallon	VL, L	X	Roof
AP	Arctostaphylos pajaroensis 'Paradise	Paradise Pajaro Manzanita	15 Gallon	VL	X	Roof
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	Podium, Street
CF	Comus sericea, C. Stolonifera 'Hedgerow Gc	Hedgerow Gold Redtwig Dogwooc	15 Gallon	M, ES	X	Podium
HW*	Hesperoyucca whipplei	Our Lord's Candle	5 Gallon	VL	X	Roof
OB*	Opuntia basilaris	Prickly Pear	5 Gallon	VL		Roof
SM	Sabal minor	Dwarf Palmetto	15 Gallon	L		Roof
YP*	Yucca pallida	Pale Leaf Yucca	5 Gallon	VL, L, ES		Roof
ZF	Zamia furfuracea	Cardboard Palm	5 Gallon	M		Roof
Groundcovers						
AM	Armeria maritima	Sea Pink	1 Gallon	M	X	Roof
BM	Baileya multiradiata	Desert Marigold	1 Gallon	VL	X	Roof
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	Street
CM	Coreopsis maritima	Sea Dahlia	1 Gallon	L	X	Roof
DF	Dudleya farinosa	Coast Live Forever	1 Gallon	VL	X	Podium
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	Street
Podium FTP** *(1143 sf)*						
AS	Achillea 'Salmon Beauty'	Salmon Beauty Yarrow	1 Gallon	VL, L	X	
BG	Bouteloua gracilis 'Blonde Ambition'	Blonde Ambition Blue Grama	1 Gallon	L	X	
CB	Ceanothus thyrsiflorus 'Cool Blue'	Cool Blue Mountain Lilac	15 Gallon	L	X	
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	
CP	Ceanothus pallidus 'Marie Simon'	Pink Flowering Ceanothus	15 Gallon	VL, L	X	
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	
EF	Eriogonum fasciculatum	California Buckwheat	5 Gallon	VL, L	X	
EG	Elymus glaucus	Blue Wild Rye	1 Gallon	L	X	
ID	Iris douglasiana	Douglas Iris	1 Gallon	M, ES	X	
JE	Juncus effusus	Soft Rush	1 Gallon	VL, H, ES	X	
JP	Juncus patens 'Elk Blue'	Elk Blue California Gray Rush	1 Gallon	L, M, ES	X	
RC	Rudbeckia californica	California Coneflower	1 Gallon	M	X	
SA	Symphoricarpos albus var. laevigatus	Upright Snowberry	5 Gallon	VL, L, M	X	
Podium Grate Walks *(5370 sf)*						
SD	Sedum divergens	Cascade Stonecrop	Flat	L, ES	X	
SO	Sedum oreganum	Oregon Stonecrop	Flat	L, ES	X	
SS	Sedum spathulifolium 'Cape Blanco'	Cape Blanco Sedum	Flat	L	X	

**To be located with 3' min. between edge of mature plant and walkways or planter edges.*
***Species selected per Stormwater C.3 Guidebook (Dalziel et. al.).*

Note: *At least 80% of all plantings will be California natives.*

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JOB: 0000

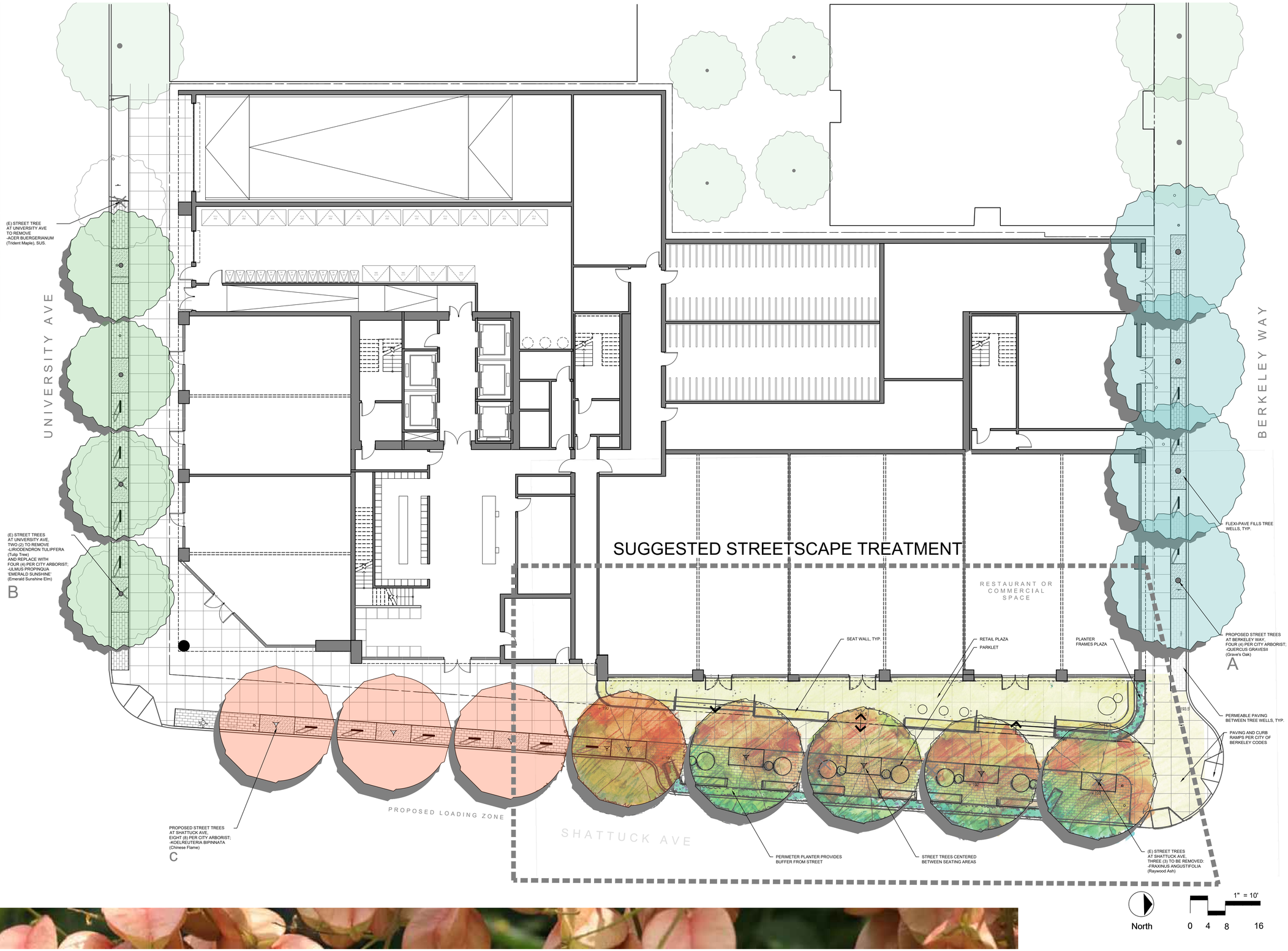
SHEET:

COVER SHEET, NOTES, AND LEGEND

L0.0







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LANDSCAPE PLAN AT STREETSCAPE

L1.0



Permeable grate with groundcover below
- Precedent: ASLA HQ Green Roof
-Mix of 3 shade-tolerant sedums





Maintenance corridor

FTP, typ.
1,306 SF total

Flexible seating

NOTE: FLOW-THROUGH PLANTER AREA TOTALS 1,306 SF; REQUIRED FTP AREA EQUALS MIN 4% OF BUILDING FOOTPRINT'S IMPERVIOUS SURFACE.

BUILDING FOOTPRINT = 26,208 SF
REQUIRED FTP = 26,208 SF X 0.04 = 1,049 SF
PROVIDED FTP = 1,306 SF

Bistro tables

Raised planter with patio trees and wood benches

UNIVERSITY AVE

BERKELEY WAY

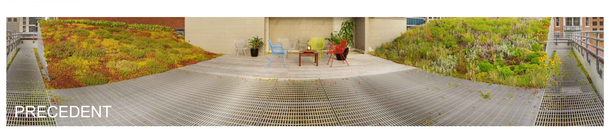
Low planting in raised flow-through planters (FTPs)

Flowering tree
-'Davis Gold' Toyon

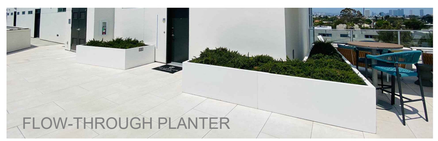
Small trees and accent plantings visible from street

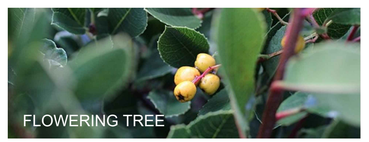
Podium seating overlooks ground-level plaza and parklet at Shattuck Ave

SHATTUCK AVE


PRECEDENT


VEGETATED GRATE


FLOW-THROUGH PLANTER


FLOWERING TREE

North

3/16"=1'-0"
0 2 4 8

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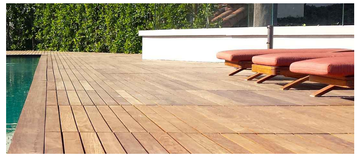
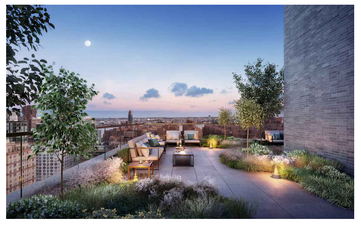
SECOND FLOOR PODIUM GARDENS

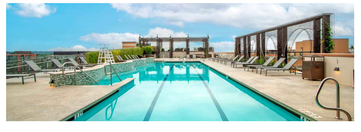
L2.0



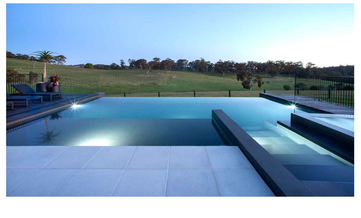


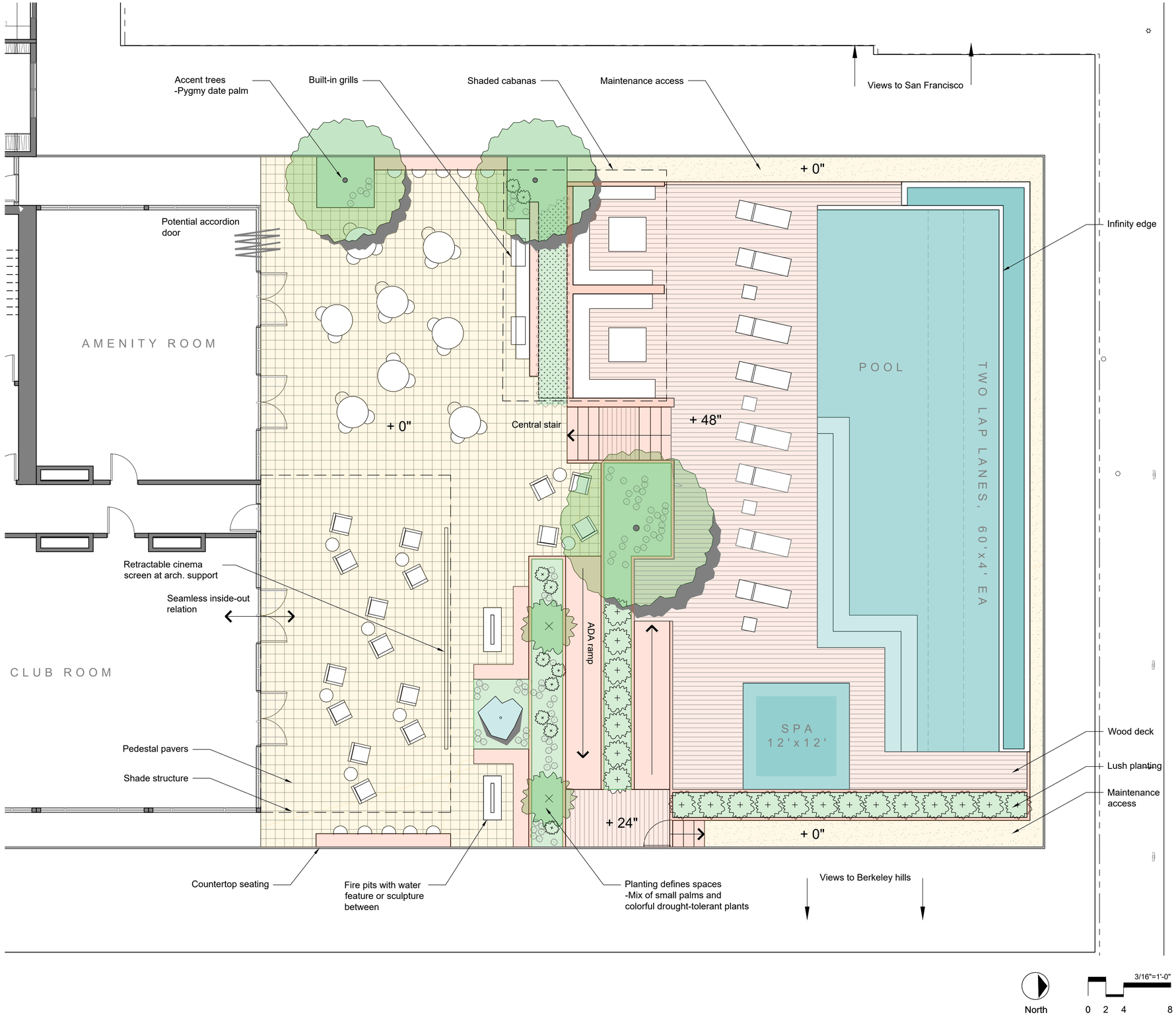












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SHEET:

FOURTEENTH FLOOR ROOF DECK

L3.0

PLANTING NOTES

SEE COVER SHEET L0.0 FOR GENERAL NOTES

GENERAL PLANTING NOTES:

1. SOIL PREPARATION: THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINISH GRADING AND ALL PLANTING AREA DRAINAGE. POSITIVE DRAINAGE AWAY FROM THE BUILDING AS PER CITY CODES SHALL BE MAINTAINED. NO LOW SPOTS WHICH HOLD STANDING WATER WILL BE ACCEPTED.
   THE LANDSCAPE CONTRACTOR SHALL INCORPORATE SOIL PREPARATION AMENDMENT INTO PLANTING AREAS AS NOTED BELOW. WHERE ROTO-TILLING IS NOT POSSIBLE, INCORPORATE SOIL AMENDMENTS INTO TOP 6 INCHES WITH HAND TOOLS. AFTER INSTALLATION OF IRRIGATION SYSTEM, ALL PLANTING AREAS ARE TO BE FINE GRADED TO WITHIN 2 INCHES AND SLIGHTLY MOUNDED AWAY FROM EDGES OF TOP OF PLANTER, CURB, WALK, HEADER, ETC. AND RAKED SMOOTH WITH ALL ROCKS AND DEBRIS OVER 1-INCH IN DIAMETER REMOVED.

2. SOIL PREPARATION AMENDMENTS AND BACKFILL MIX: THE LANDSCAPE CONTRACTOR SHALL AMEND EXISTING SOIL PER THE SOILS REPORT. NATIVE SOIL IS PREFERRED.

3. TREE PLANTING: TREES SHALL BE PLANTED PER DETAIL ON PLAN. TREES SHALL TYPICALLY BE LOCATED A MINIMUM OF 3 1/2 FEET FROM CURBS, WALKS, HEADERS, BUILDINGS, AND OVERHEAD STRUCTURES WITHIN THE PROJECT. BACKFILL PER SOILS REPORT. THOROUGHLY WATER TREES IMMEDIATELY AFTER PLANTING.

4. SHRUB PLANTING: THE SHRUBS SHALL BE SPOTTED AS PER PLAN, SPOTTED AT THE SHOWN LOCATIONS, AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO THE DIGGING OF THE HOLES. SHRUB BACKFILL SHALL BE PER SOILS REPORT. THOROUGHLY WATER SHRUBS IMMEDIATELY AFTER PLANTING. DO NOT PLANT ANY SHRUB WITHIN 2 FEET OF ANY BUILDING WALL.

5. MAINTENANCE: THE CONTRACTOR SHALL MAINTAIN THE PROJECT FOR 90 DAYS (OR AS REQUESTED BY OWNER) FOLLOWING THE APPROVAL TO BEGIN THE MAINTENANCE PERIOD. DURING THE ENTIRE MAINTENANCE PERIOD, WATERING, CULTIVATING, WEEDING, MOWING, REPAIR/TIGHTENING OF STAKES AND TIES, RESTORATION OF BASINS, PROVISION OF SUPPLEMENTAL WATER BY HAND IN ADDITION TO IRRIGATION SYSTEM IS REQUIRED AS NECESSARY. NO PRE-EMERGENCE HERBICIDES SHALL BE APPLIED - HAND REMOVE WEEDS. ONLY ORGANIC FERTILIZERS SHALL BE APPLIED SUCH AS THOSE SPECIFIED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. AT THE END OF THE 90 DAY MAINTENANCE PERIOD ALL AREAS ARE TO BE WEED FREE AND ALL PLANT MATERIAL SHALL BE IN A HEALTHY, THRIVING CONDITION. INTEGRATED PEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED.

6. SUBSTITUTIONS: REQUESTS FOR PLANT SUBSTITUTIONS SHALL BE MADE TO THE LANDSCAPE ARCHITECT WITHIN 15 DAYS AFTER SIGNING OF CONTRACT.

7. GUARANTEE: ALL CONSTRUCTION, TREES AND SHRUBS BY THE LANDSCAPE CONTRACTOR AND/OR SUBCONTRACTORS SHALL BE GUARANTEED FOR (1) ONE YEAR AFTER START OF MAINTENANCE PERIOD. THE CONTRACTOR SHALL REPLACE, AT NO EXPENSE TO THE OWNER, ANY AND ALL LANDSCAPE MATERIALS THAT ARE IN AN UNACCEPTABLE CONDITION FOR TIME OF USE, AND TREES OR SHRUBS THAT ARE DEAD OR NOT IN A VIGOROUS, HEALTHY GROWING CONDITION, WITHIN TWO WEEKS OF NOTIFICATION OF SUCH CONDITION. REPLACEMENT SHALL BE OF THE SAME KIND AND SIZE AS THE ORIGINALLY SPECIFIED ITEM AND SHALL BE REPLACED AS ORIGINALLY DESCRIBED ON THE DRAWINGS. THE CONTRACTOR SHALL NOT BE HELD LIABLE FOR LOSS OF PLANT MATERIALS DURING THE GUARANTEE PERIOD DUE TO VANDALISM, ACCIDENTAL CAUSES OR ACTS OF NEGLECT BY OTHERS THAN THE CONTRACTOR, HIS AGENTS AND EMPLOYEES.

8. CLEAN UP: AT THE END OF EACH WORK DAY, AT THE INSPECTION FOR SUBSTANTIAL COMPLETION, AND BEFORE ACCEPTANCE OF PROJECT - CLEAN
PAVED AREAS THAT ARE DIRTIED OR STAINED BY CONSTRUCTION OPERATIONS BY SWEEPING OR WASHING, AND REMOVE DEFACEMENTS AND STAINS.
REMOVE CONSTRUCTION EQUIPMENT, EXCESS MATERIALS AND TOOLS. HAUL FROM OWNERS PROPERTY ANY DEBRIS RESULTING FROM CONSTRUCTION, AND DISPOSE OF IT LEGALLY. REMOVE REMAINING TEMPORARY PROTECTION AT TIME OF ACCEPTANCE BY OWNER UNLESS OTHERWISE AGREED.

9. FERTILIZERS: AVAILABLE FROM CALIFORNIA ORGANIC FERTILIZERS, INC. 1-800-269-5690 WWW.ORGANICAG.COM.

STREET TREE PROTECTION NOTES:

1. ALL TREE PROTECTION REQUIREMENTS AND RESTRICTIONS SHALL BE INCLUDED IN THE CONSTRUCTION NOTES AND PRINTED ON ALL COPIES OF THE PLANS.

a) INCLUDE THE NAME AND PHONE NUMBER OF THE PARTY THAT WILL MONITOR THE SITE AND ENSURE THE TREE PROTECTION MEASURES ARE BEING FOLLOWED; AND WHAT THE MONITORING SCHEDULE WILL BE: **NAME / PHONE / SCHEDULE**

b) INSTALL 6 FOOT CHAIN-LINK FENCING TO PROTECT THE AREA WITHIN THE DRIP-LINE OF ANY PROTECTED TREE IN THE DEVELOPMENT AREA. FENCING SHALL BE MOUNTED TO POSTS THAT ARE DRIVEN INTO THE GROUND. WHERE THIS IS NOT POSSIBLE BECAUSE OF EXISTING STRUCTURES, TREE ROOTS, OR OTHER OBSTACLES, CHAIN-LINK PANELS MOUNTED TO STANCHIONS AND CONNECTED TO EACH OTHER MAY BE APPROVED. IN AREAS WHERE DIFFICULT TERRAIN MAKES THIS IMPRACTICAL, ORANGE CONSTRUCTION FENCING MAY BE APPROVED.

c) ALL FENCING SHALL HAVE SIGNAGE STATING THE REQUIREMENTS AND RESTRICTIONS, AND THE CONTACT INFORMATION FOR THE PROJECT ARBORIST.

d) WHEN ANY APPROVED CONSTRUCTION ACTIVITY WILL OCCUR WITHIN THE DRIP LINE OF A PROTECTED TREE THAT IS NOT SURROUNDED BY PROTECTIVE FENCING, THE TRUNK SHALL BE PROTECTED BY WRAPPING IT WITH STRAW TUBES (WATTLE) OR VERTICAL WOOD SLATS (EX. 2X4), UP TO A MINIMUM OF 8 FEET FROM GRADE (SEE FIGURE 1, PAGE 6). SLATS SHALL BE ANGLED TO PROTECT THE ROOT FLARE AT THE BASE OF THE TREE; AND CLOSED CELL FOAM OR EQUIVALENT MATERIAL SHALL BE USED TO PROTECT THE TRUNK OF THE TREE WHERE IT CONTACTS THE SLATS.
LATERAL BRANCHES BELOW 8 FEET SHALL ALSO BE PROTECTED. IN ADDITION, THE AREA SHALL BE COVERED WITH A 6 INCH LAYER OF MULCH TOPPED WITH 3/4 INCH PLYWOOD THAT IS FASTENED TOGETHER. IF ANY LARGE OR MOTORIZED EQUIPMENT (MINI EXCAVATOR, BOBCAT®, POWERED WHEELBARROW) WILL TRAVEL OVER THIS AREA, THE PLYWOOD MUST BE A MINIMUM OF 1 INCH AND ADEQUATE FOR THE WEIGHT OF THE EQUIPMENT THAT WILL TRAVEL OVER IT. IF LARGER EQUIPMENT (BACKHOE, TRACTOR) WILL BE USED, CONSULT THE CITY ARBORIST. ***CONSTRUCTION ACTIVITY REFERS TO ANY MOVEMENT OF PEOPLE, TOOLS, OR EQUIPMENT; OR STORAGE OF ANY TOOLS, EQUIPMENT, OR SUPPLIES.***

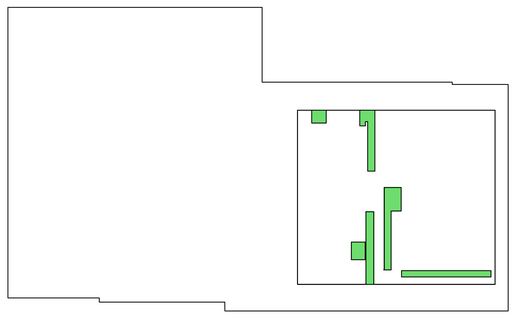
f) LOCATE AND EXPOSE ANY ROOTS 2 INCHES IN DIAMETER OR GREATER THAT MAY NEED TO BE PRUNED TO FACILITATE THE PROJECT. THIS INCLUDES ANY TRENCHING THAT WILL BE DONE AS PART OF FOUNDATION OR UTILITY INSTALLATION. CONTACT THE CITY ARBORIST IN ADVANCE TO LESSEN THE AMOUNT OF TIME THAT THE ROOTS WILL BE EXPOSED. IF ROOTS MUST BE LEFT EXPOSED FOR MORE THAN THREE DAYS, CONSULT THE CITY ARBORIST. **NOTE:** THE 2 INCH DIAMETER THRESHOLD FOR ROOTS IS A GUIDELINE THAT MAY BE ADJUSTED BY THE CITY ARBORIST DEPENDING ON THE SIZE AND CONDITION OF THE TREE, AND THE LOCATION OF THE ROOTS. THE CITY ARBORIST MAY INCREASE THE TPZ, OR IMPOSE OTHER RESTRICTIONS, WHEN THE DRIPLINE OF A TREE HAS BEEN ALTERED BY PRUNING OR UNUSUAL GROWTH PATTERNS.

g) NO STORAGE OF BUILDING MATERIALS, REFUSE, EXCAVATED SPOILS, OR DUMPING OF POISONOUS MATERIALS, IS PERMITTED WITHIN THE DRIP LINE OF ANY PROTECTED TREE. POISONOUS MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, PAINT, PETROLEUM PRODUCTS, CONCRETE OR STUCCO MIX, DIRTY WATER, OR ANY OTHER MATERIAL WHICH MAY BE DELETERIOUS TO TREE HEALTH.

STREET TREE PLANTING NOTES:

1. FOR NEW PLANTING:
   a. THE CITY ARBORIST SHALL BE NOTIFIED, BY CALLING (510) 981-6660, PRIOR TO THE DELIVERY OF THE TREES FOR INSPECTION OF THEIR SIZE AND STRUCTURE.
   b. EACH TREE SHALL BE PROPERLY PLANTED AT OR JUST BELOW GRADE (<1"). SOIL AMENDMENT IS NOT RECOMMENDED, AND NATIVE SOIL IS PREFERRED. NO CONSTRUCTION RUBBLE OR NON-ORGANIC MATERIAL SHALL BE WITHIN THE TREE WELL.
   c. THE SURROUNDING SOIL OUTSIDE THE CONTAINER (ROOT BALL) SHOULD BE LIGHTLY COMPACTED TO ABOUT 4 INCHES BELOW GRADE WITH THE ROOT BALL HIGHER THAN THAT.
   d. 2 TO 2.5 INCHES OF BASE ROCK SHOULD BE APPLIED AROUND THE ROOT BALL LEAVING 1.5 TO 2 INCHES LEFT FOR THE MATERIAL.
   e. 15G CONTAINERS ARE APPROXIMATELY 15-16 INCHES IN DIAMETER AND THE MATERIAL SHOULD BE APPLIED TO THE APPROXIMATE EDGE OF THE ROOT BALL WITH THE TOP GRADE OF THE ROOT BALL UP TO 1 INCH BELOW THE TOP OF THE MATERIAL THAT WILL BE APPLIED.
   f. EACH NEW TREE SHALL HAVE AUTOMATIC IRRIGATION INCLUDING TWO TREE BUBBLERS THAT CURVE OVER THE TOP OF THE TREES' ROOT BALL AND PROVIDE A MINIMUM OF 20 GALLONS PER WEEK BETWEEN MARCH 15 AND OCTOBER 15 FOR THE FIRST THREE YEARS. LARGER TREES MAY REQUIRE ADDITIONAL BUBBLERS. THE BUBBLERS SHOULD BE LOCATED ON TOP OF THE ROOT BALL WITHIN THIS 15-16 INCH CIRCLE AND NOT BE COVERED WITH MATERIAL.
   g. TREES THAT DIE WITHIN THE FIRST THREE YEARS MUST BE REPLACED AT THE PROPERTY OWNER'S EXPENSE.

USEABLE OPEN SPACE CALCULATIONS



ROOF DECK TOTAL USABLE AREA = 6,882 SF

(ROOF DECK HARDSCAPED = 6,297 SF)

ROOF DECK LANDSCAPED = 585 SF

ROOF DECK LANDSCAPED % = 9%

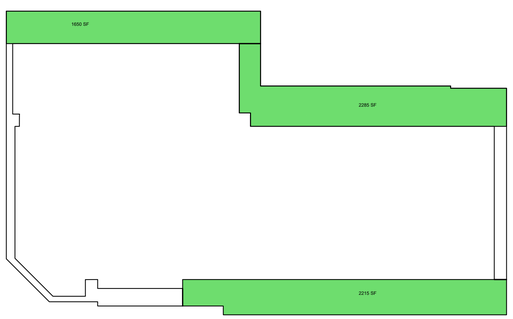
ROOF DECK USEABLE AREA (NTS)

1998 SHATTUCK TOTAL USABLE AREA = 13,032 SF

(TOTAL HARDSCAPED AREA = 6,297 SF)

TOTAL LANDSCAPED AREA = 6,735 SF

TOTAL LANDSCAPED AREA % = 52%



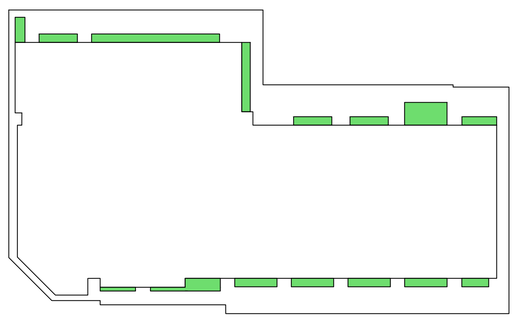
PODIUM TOTAL USABLE AREA = 6,150 SF

(PODIUM HARDSCAPED = 0 SF)

PODIUM LANDSCAPED = 6,150 SF

PODIUM LANDSCAPED % = 100%

PODIUM USEABLE AREA (NTS)



1998 SHATTUCK TOTAL ROOF AREA = 26,208 SF

4% FLOW-THROUGH PLANTER AREA NEEDED = 1,049 SF

CURRENT FLOW-THROUGH PLANTER AREA = 1,306 SF
(AT PODIUM)

FLOW-THROUGH PLANTER AREA (NTS)

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JOB: 0000

SHEET:

USABLE OPEN SPACE CALCULATIONS + PLANTING NOTES

L3.1

IRRIGATION NOTES

1. THESE IRRIGATION DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. ALL PIPING, VALVES, AND OTHER IRRIGATION COMPONENTS MAY BE SHOWN WITHIN PAVED AREAS FOR GRAPHIC CLARITY ONLY AND ARE TO BE INSTALLED WITHIN PLANTING AREAS. DUE TO THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, SLEEVES, CONDUIT, AND OTHER ITEMS WHICH MAY BE REQUIRED. INVESTIGATE THE STRUCTURAL AND FINISHED CONDITION AFFECTING THE CONTRACT WORK INCLUDING OBSTRUCTIONS, GRADE DIFFERENCES OR AREA DIMENSIONAL DIFFERENCES. IN THE EVENT OF FIELD DISCREPANCY WITH CONTRACT DOCUMENTS, PLAN THE INSTALLATION WORK ACCORDINGLY BY NOTIFICATION AND APPROVAL OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND ACCORDING TO THE CONTRACT SPECIFICATIONS. NOTIFY AND COORDINATE IRRIGATION CONTRACT WORK WITH APPLICABLE CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE, CONDUIT OR SLEEVES THROUGH OR UNDER WALLS, ROADWAYS, PAVING AND STRUCTURES BEFORE CONSTRUCTION. IN THE EVENT THESE NOTIFICATIONS ARE NOT PERFORMED, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR REQUIRED REVISIONS.

2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE; THE UNIFORM PLUMBING CODE, PUBLISHED BY THE WESTERN PLUMBING OFFICIALS ASSOCIATION; AND OTHER STATE OR LOCAL LAWS OR REGULATIONS. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR REGULATIONS. THE CONTRACTOR SHALL FURNISH WITHOUT ANY EXTRA CHARGE, ANY ADDITIONAL MATERIAL AND LABOR WHEN REQUIRED BY THE COMPLIANCE WITH THESE CODES AND REGULATIONS.

3. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF IRRIGATION SYSTEM WITH LAYOUT AND INSTALLATION OF THE PLANT MATERIALS TO INSURE THAT THERE WILL BE COMPLETE AND UNIFORM IRRIGATION COVERAGE OF PLANTING IN ACCORDANCE WITH THESE DRAWINGS, AND CONTRACT DOCUMENTS. THE IRRIGATION LAYOUT SHALL BE CHECKED BY THE CONTRACTOR AND OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO CONSTRUCTION TO DETERMINE IF ANY CHANGES, DELETIONS, OR ADDITIONS ARE REQUIRED. IRRIGATION SYSTEM SHALL BE INSTALLED AND TESTED PRIOR TO INSTALLATION OF PLANT MATERIAL.

4. THE INTENT OF THIS IRRIGATION SYSTEM IS TO PROVIDE THE MINIMUM AMOUNT OF WATER REQUIRED TO SUSTAIN GOOD PLANT HEALTH.

5. IT IS THE RESPONSIBILITY OF THE MAINTENANCE CONTRACTOR AND/OR OWNER TO PROGRAM THE IRRIGATION CONTROLLER(S) TO PROVIDE THE MINIMUM AMOUNT OF WATER NEEDED TO SUSTAIN GOOD PLANT HEALTH. THIS INCLUDES MAKING ADJUSTMENTS TO THE PROGRAM FOR SEASONAL WEATHER CHANGES, PLANT MATERIAL, WATER REQUIREMENTS, MOUNDS, SLOPES, SUN, SHADE AND WIND EXPOSURE.

6. IT IS THE RESPONSIBILITY OF A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120 VOLT A.C. (2.5 AMP DEMAND PER CONTROLLER) ELECTRICAL SERVICE TO THE CONTROLLER LOCATION(S). IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO COORDINATE THE ELECTRICAL SERVICE STUB-OUT TO THE CONTROLLER(S). PROVIDE PROPER GROUNDING PER CONTROLLER MANUFACTURER'S INSTRUCTIONS AND IN ACCORDANCE WITH LOCAL CODES.

7. PROVIDE EACH CONTROLLER WITH ITS OWN GROUND ROD. SEPARATE THE GROUND RODS BY A MINIMUM OF EIGHT FEET. THE GROUND ROD SHALL BE AN EIGHT FOOT LONG BY 5/8" DIAMETER U.L. APPROVED COPPER CLAD ROD. INSTALL NO MORE THAN 6" OF THE GROUND ROD ABOVE FINISH GRADE. CONNECT #6 GAUGE WIRE WITH A U.L. APPROVED GROUND ROD CLAMP TO ROD AND BACK TO GROUND SCREW AT BASE OF CONTROLLER WITH APPROPRIATE CONNECTOR. MAKE THIS WIRE AS SHORT AS POSSIBLE, AVOIDING KINKS OR BENDING.

8. INSTALL NEW BATTERIES IN THE IRRIGATION CONTROLLER(S) TO RETAIN PROGRAM IN MEMORY DURING TEMPORARY POWER FAILURES. USE QUANTITY, TYPE AND SIZE REQUIRED AS PER CONTROLLER MANUFACTURER'S INSTRUCTIONS.

9. SCHEDULE A MEETING WHICH INCLUDES REPRESENTATIVES OF THE IRRIGATION CONTROLLER MANUFACTURER, THE MAINTENANCE CONTRACTOR, THE OWNER AND THE IRRIGATION CONTRACTOR AT THE SITE FOR INSTRUCTION ON THE PROPER PROGRAMMING AND OPERATION OF THE IRRIGATION CONTROLLER.

10. PROVIDE EACH IRRIGATION CONTROLLER WITH ITS OWN INDEPENDENT LOW VOLTAGE COMMON GROUND WIRE.

11. IRRIGATION CONTROL WIRES: SOLID COPPER WITH U.L. APPROVAL FOR DIRECT BURIAL IN GROUND. COMMON GROUND WIRE: SIZE #12-1 WIRE WITH A WHITE INSULATING JACKET. CONTROL WIRE SERVICING REMOTE CONTROL VALVES: SIZE #14-1 WIRE WITH INSULATING JACKET OF COLOR OTHER THAN WHITE. SPLICES SHALL BE MADE WITH 3M-DBY SEAL PACKS OR APPROVED EQUAL.

12. INSTALL TWO SPARE CONTROL WIRES OF A DIFFERENT COLOR ALONG THE ENTIRE MAIN LINE. LOOP 36" EXCESS WIRE INTO EACH SINGLE VALVE BOX AND INTO ONE VALVE BOX IN EACH GROUP OF VALVES.

13. SPLICING OF LOW VOLTAGE WIRES IS PERMITTED IN VALVE BOXES ONLY. LEAVE A 36" LONG, 1" DIAMETER COIL OF EXCESS WIRE AT EACH SPLICE AND A 36" LONG EXPANSION LOOP EVERY 100 FEET ALONG WIRE RUN. TAPE WIRES TOGETHER EVERY TEN FEET. DO NOT TAPE WIRES TOGETHER WHERE CONTAINED WITHIN SLEEVING OR CONDUIT.

14. INSTALL GREEN PLASTIC VALVE BOXES WITH BOLT DOWN, NON HINGED COVER MARKED "IRRIGATION CONTROL VALVE". BOX BODY SHALL HAVE KNOCK OUTS. ACCEPTABLE VALVE BOX MANUFACTURER'S INCLUDE NDS, CARSON OR APPROVED EQUAL.

15. INSTALL REMOTE CONTROL VALVE BOXES 12" FROM WALK, CURB, BUILDING OR LANDSCAPE FEATURE. AT MULTIPLE VALVE BOX GROUPS, INSTALL EACH BOX AN EQUAL DISTANCE FROM THE WALK, CURB, BUILDING OR LANDSCAPE FEATURE AND PROVIDE 12" BETWEEN BOX TOPS. ALIGN THE SHORT SIDE OF RECTANGULAR VALVE BOXES PARALLEL TO WALK, CURB, BUILDING OR LANDSCAPE FEATURE.

16. VALVE LOCATIONS SHOWN ARE DIAGRAMMATIC. INSTALL IN GROUND COVER/SHRUB AREAS (AVOID LAWN AREAS WHERE POSSIBLE).

17. THE CONTRACTOR SHALL LABEL CONTROL LINE WIRE AT EACH REMOTE CONTROL VALVE WITH A 2 1/4" X 2 3/4" POLYURETHANE I.D. TAG, INDICATING IDENTIFICATION NUMBER OF VALVE (CONTROLLER AND STATION NUMBER). ATTACH LABEL TO CONTROL WIRE. THE CONTRACTOR SHALL PERMANENTLY STAMP ALL VALVE BOX LIDS WITH APPROPRIATE IDENTIFICATION AS NOTED IN CONSTRUCTION DETAILS.

18. FLUSH AND ADJUST IRRIGATION OUTLETS AND NOZZLES FOR OPTIMUM PERFORMANCE AND TO PREVENT OVER SPRAY ONTO WALKS, ROADWAYS, AND/OR BUILDINGS. SELECT THE BEST DEGREE OF THE ARC AND RADIUS TO FIT THE EXISTING SITE CONDITIONS AND THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH CONTROL ZONE.

19. SET SPRINKLER HEADS PERPENDICULAR TO FINISH GRADE.

20. LOCATE BUBBLERS ON UPHILL SIDE OF PLANT OR TREE.

21. INSTALL A HUNTER HCV SERIES, KBI CV SERIES, OR APPROVED EQUAL SPRING LOADED CHECK VALVE IN SPRINKLER RISER ASSEMBLIES WHERE LOW OUTLET DRAINAGE WILL CAUSE EROSION AND/OR EXCESS WATER.

22. WHERE IT IS NECESSARY TO EXCAVATE ADJACENT TO EXISTING TREES, USE CAUTION TO AVOID INJURY TO TREES AND TREE ROOTS. EXCAVATE BY HAND IN AREAS WHERE TWO (2) INCH AND LARGER ROOTS OCCUR. BACK FILL TRENCHES ADJACENT TO TREE WITHIN TWENTY-FOUR (24) HOURS. WHERE THIS IS NOT POSSIBLE, SHADE THE SIDE OF THE TRENCH ADJACENT TO THE TREE WITH WET BURLAP OR CANVAS.

23. NOTIFY LOCAL JURISDICTIONS FOR INSPECTION AND TESTING OF INSTALLED BACKFLOW PREVENTION DEVICE.

24. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE SHOWN ON THE IRRIGATION DRAWINGS. VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE.

25. IRRIGATION DEMAND: REFER TO PLANS.

26. THE EXISTING MAIN LINE SHOWN ON THE DRAWINGS IS DIAGRAMMATIC. VERIFY AND LOCATE EXISTING MAIN LINE IN FIELD. REPORT TO ARCHITECT IN WRITING ANY DEVIATION OF EXISTING MAIN LINE LOCATION FROM THAT SHOWN ON THE DRAWINGS.

27. PIPE SIZING SHOWN ON THE DRAWINGS IS TYPICAL. AS CHANGES IN LAYOUT OCCUR DURING STAKING AND CONSTRUCTION THE SIZE MAY NEED TO BE ADJUSTED ACCORDINGLY.

28. PIPE THREAD SEALANT COMPOUND SHALL BE RECTOR SEAL #5.

29. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MINOR CHANGES IN THE IRRIGATION LAYOUT DUE TO OBSTRUCTIONS NOT SHOWN ON THE IRRIGATION DRAWINGS SUCH AS LIGHTS, FIRE HYDRANTS, SIGNS, ELECTRICAL ENCLOSURES, ETC.

30. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CHANGES IN THE IRRIGATION LAYOUT AND VALVE ZONING DUE TO VARIATIONS IN THE EXISTING SITE CONDITIONS SUCH AS EXPOSURE FROM BUILDINGS, TRELLISES, TREES, ETC., AS WELL AS SLOPE AND SOIL CONDITIONS. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND IRRIGATION CONSULTANT OF THE PROPOSED CHANGES PRIOR TO INSTALLATION FOR APPROVAL.

31. WHEN WORK OF THIS SECTION HAS BEEN COMPLETED AND SUCH OTHER TIMES AS MAY BE DIRECTED, REMOVE ALL TRASH, DEBRIS, SURPLUS MATERIALS AND EQUIPMENT FROM SITE.

32. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLEMENTAL HAND WATERING OF ALL PLANT MATERIAL WITHIN DRIPLINE AREAS UNTIL THE PLANTS ARE SUFFICIENTLY ESTABLISHED.

33. VERIFY LOCATIONS OF ALL IRRIGATION COMPONENTS INSTALLED WITHIN A VALVE BOX WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. DO NOT INSTALL UNTIL LANDSCAPE ARCHITECT PROVIDES ACCEPTABLE LOCATIONS.

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Walnut Creek, CA 94597
tel 925.939.3985 ♦ fax 925.932.5671
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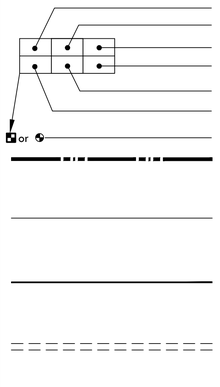
IRRIGATION LEGEND

SYMBOL	MODEL NUMBER	DESCRIPTION	NOZZLE GPM	OPERATING PSI	OPERATING RADIUS (FEET)
	PCB-25	HUNTER BUBBLER (SHRUB)	0.25	30	TRICKLE
■	PCB-25	HUNTER BUBBLER (TREE) MIN. 2 PER TREE. REFER TO BUBBLER DETAIL FOR QUANTITY OF BUBBLERS PER TREE SIZE.	0.25	30	TRICKLE
	WLT-0500-T	NDS SCH 40 BALL VALVE OR APPROVED EQUAL			
	ECO-ID	HUNTER ECO-INDICATOR			
	ICV-101/AS-40	HUNTER REMOTE CONTROL VALVE WITH 40 PSI PRESSURE REGULATOR			
	ICZ-101-40	HUNTER REMOTE CONTROL VALVE WITH A 40 PSI PRESSURE REGULATOR AND A 1" FILTER.			
	QB44RCAR10	BUCKNER 1" TWO-PIECE QUICK COUPLING VALVE (ANTI-ROTATION)			
	T-FP600A-LF-1"	NIBCO 1" BRASS BALL VALVE			
MV	WT-MV-100G-SNO	WeatherTRAK 1" BRASS MASTER VALVE (NORMALLY OPEN)			
FS	WTFLOW-HD-P-100	WeatherTRAK 1" FLOW SENSOR			
	975XL2SEU-1"	WILKINS REDUCED PRESSURE BACKFLOW ASSEMBL.			
SM	MODEL 55	BADGER SUB WATER METER			
A	WTLC-C-12-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 12 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			
B	WTLC-C-6-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 6 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			



CONTROLLER AND STATION NUMBER
REMOTE CONTROL VALVE SIZE (IN INCHES)
FLOW (GPM)
WATER USE CLASSIFICATION OF ZONE
APPLICATION RATE (IN/HR) or DRIPLINE SPACING
AREA (SQ. FT.)
ASSOCIATED REMOTE CONTROL VALVE

MAIN LINE: 1.25" THROUGHOUT:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 18" COVER.

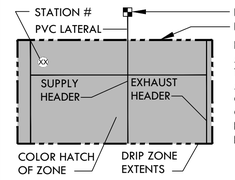
LATERAL LINE: 3/4" AND LARGER:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

DRIPLINE LATERAL LINE: 3/4" AND LARGER:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

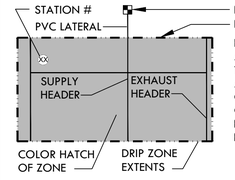
SLEEVING: SCHEDULE 40 PVC PLASTIC PIPE. COVER TO BE AS INDICATED IN SPECIFICATIONS OR AS INDICATED ABOVE FOR PIPE DEPTH OF COVER.

MAIN LINE: 1.25" THROUGHOUT:
TYPE 'K' COPPER PIPE WITH WROUGHT FITTINGS. SHOWN FOR REFERENCE ONLY, SEE PLUMBING PLANS FOR ROUTING THROUGH STRUCTURE.

ELECTRICAL CONDUIT: SHOWN FOR REFERENCE ONLY, SEE ELECTRICAL PLANS FOR ROUTING THROUGH STRUCTURE.



DRIPLINE REMOTE CONTROL VALVE
DRIP ZONE:
HUNTER HDL SERIES DRIPLINE WITH BUILT IN PRESSURE COMPENSATION AND CHECK VALVE, PART #HDL-06-12-250-CV. USE PLD FITTINGS. TUBING TO BE INSTALLED 4" BELOW GRADE IN A 12" O.C. GRID ACCORDING TO DETAILS. SIZE EXHAUST HEADERS AS FOLLOWS: 1": 0-10 GPM, 1.25": 11-20 GPM. ALL EXHAUST HEADERS SHALL BE 1" SCH 40 PVC OR 1" SCH 40 FLEXIBLE PVC. USE SCH. 40 PVC SOLVENT WELD FITTINGS. EXTEND PVC HEADERS TO THE ENDS OF ALL DRIP ZONES TO BALANCE FLOW IF REQUIRED. SEE DETAILS FOR FURTHER INFORMATION.



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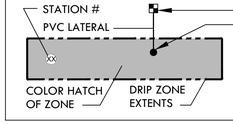

DRIPLINE REMOTE CONTROL VALVE
APPROXIMATE CONNECTION POINT BETWEEN DRIPLINE TUBING AND PVC SUPPLY WHEN DRIP ZONE IS LESS THAN 3 GPM AND NO PVC SUPPLY/EXHUST HEADERS ARE NEEDED. REFER TO DRIPLINE TUBING CONNECTION DETAIL FOR MORE INFORMATION.

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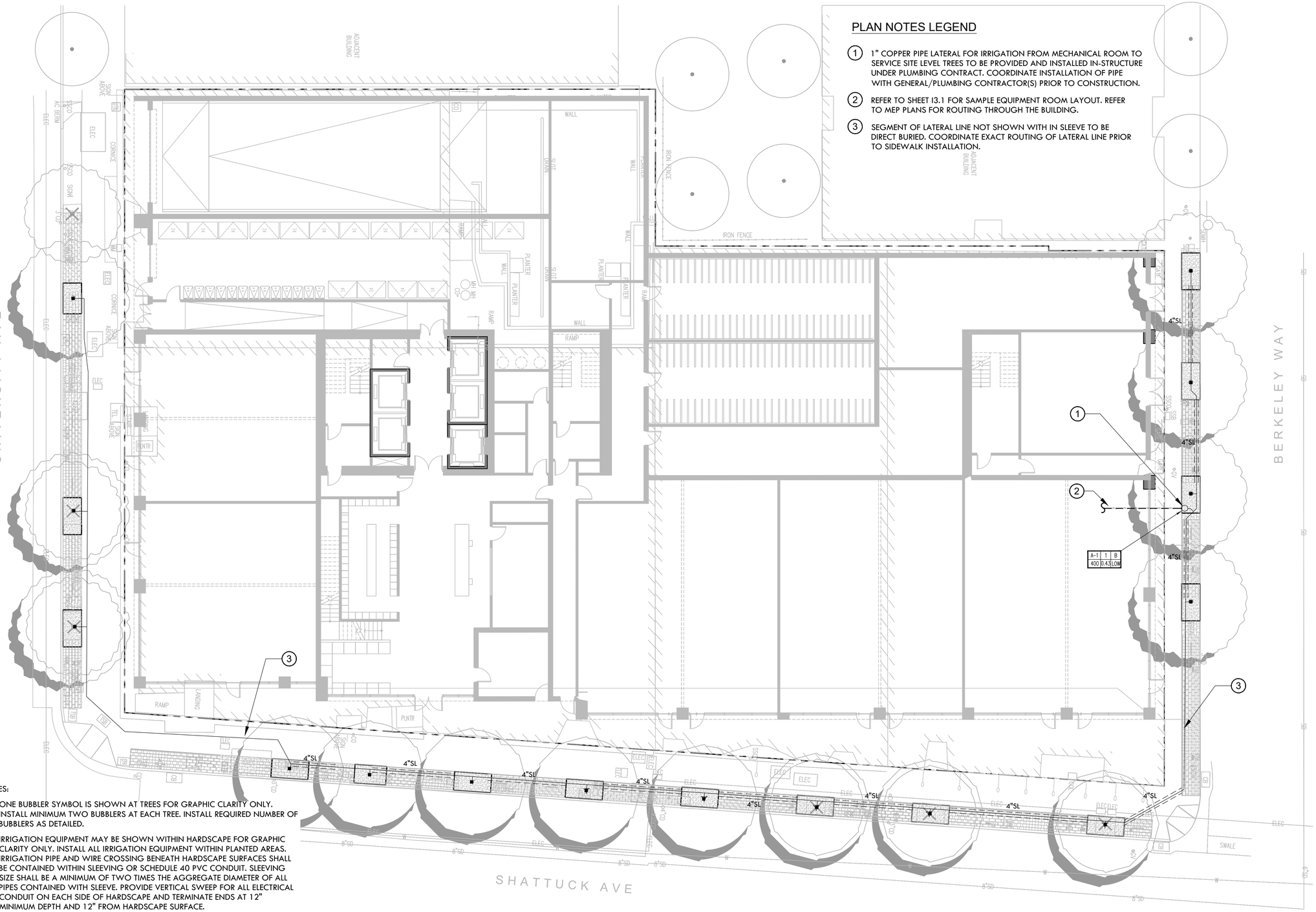
SHEET:

IRRIGATION NOTES & LEGEND

I0.0



NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. IRRIGATION EQUIPMENT MAY BE SHOWN WITHIN HARDSCAPE FOR GRAPHIC CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT WITHIN PLANTED AREAS. IRRIGATION PIPE AND WIRE CROSSING BENEATH HARDSCAPE SURFACES SHALL BE CONTAINED WITHIN SLEEVING OR SCHEDULE 40 PVC CONDUIT. SLEEVING SIZE SHALL BE A MINIMUM OF TWO TIMES THE AGGREGATE DIAMETER OF ALL PIPES CONTAINED WITH SLEEVE. PROVIDE VERTICAL SWEEP FOR ALL ELECTRICAL CONDUIT ON EACH SIDE OF HARDSCAPE AND TERMINATE ENDS AT 12" MINIMUM DEPTH AND 12" FROM HARDSCAPE SURFACE.
3. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
4. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

0.75"	0-6 GPM
1"	7-12 GPM

North

1" = 10'
0 4 8 16

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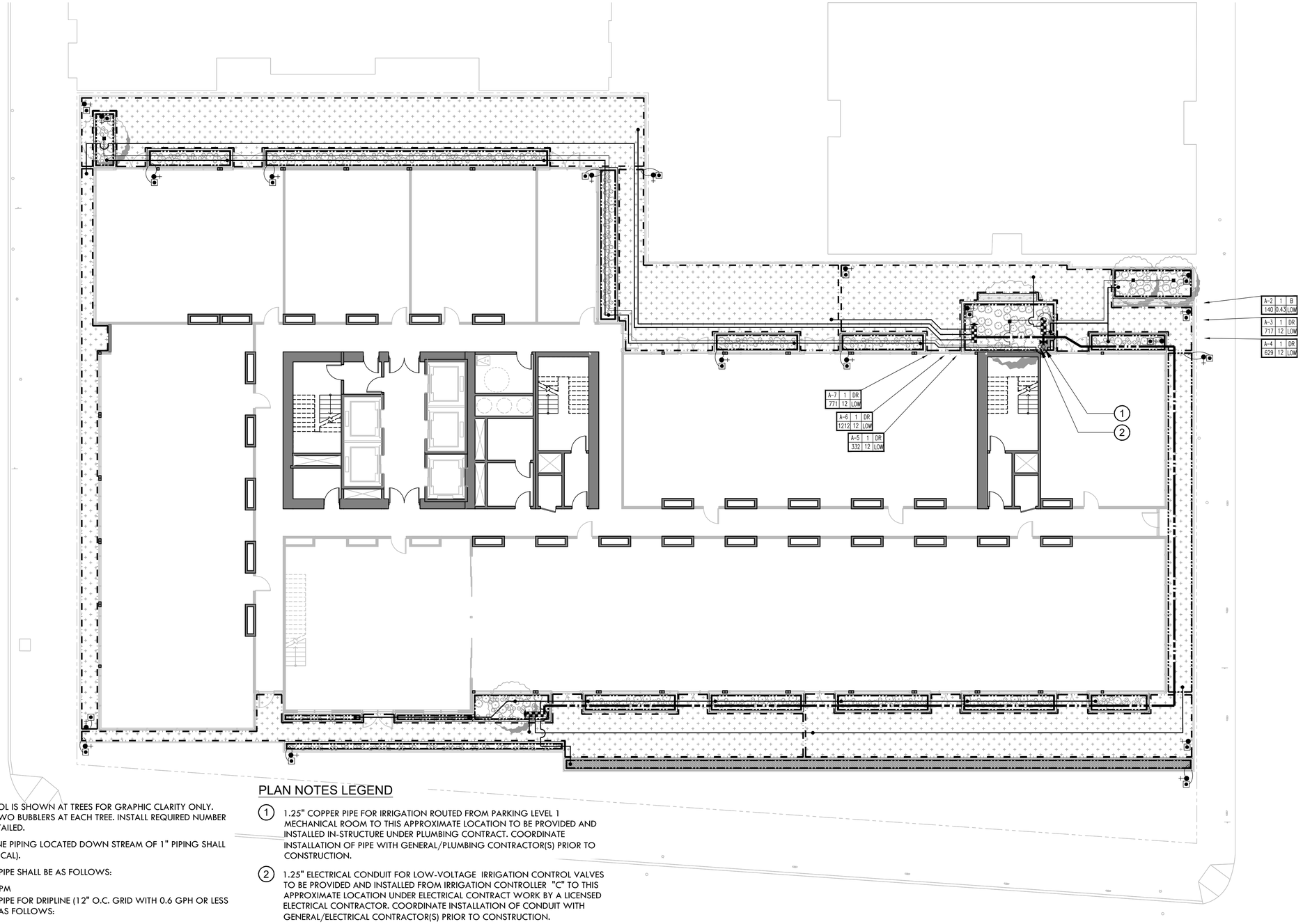
JOB: 0000

SHEET:

IRRIGATION PLAN AT STREETSCAPE ALT A

L1.0



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2. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
3. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

   0.75" 0-6 GPM
4. SIZING OF LATERAL PIPE FOR DRIPLINE (12" O.C. GRID WITH 0.6 GPH OR LESS EMITTERS) SHALL BE AS FOLLOWS:

   0.75 0-500 FT
   1" 501-1100 FT

PLAN NOTES LEGEND

(1) 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.

(2) 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

North

3/16"=1'-0"
0 2 4 8

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JOB: 0000

SHEET:

IRRIGATION PLAN
SECOND FLOOR
PODIUM GARDENS

L2.0

NOTES:

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   0.75" 0-6 GPM
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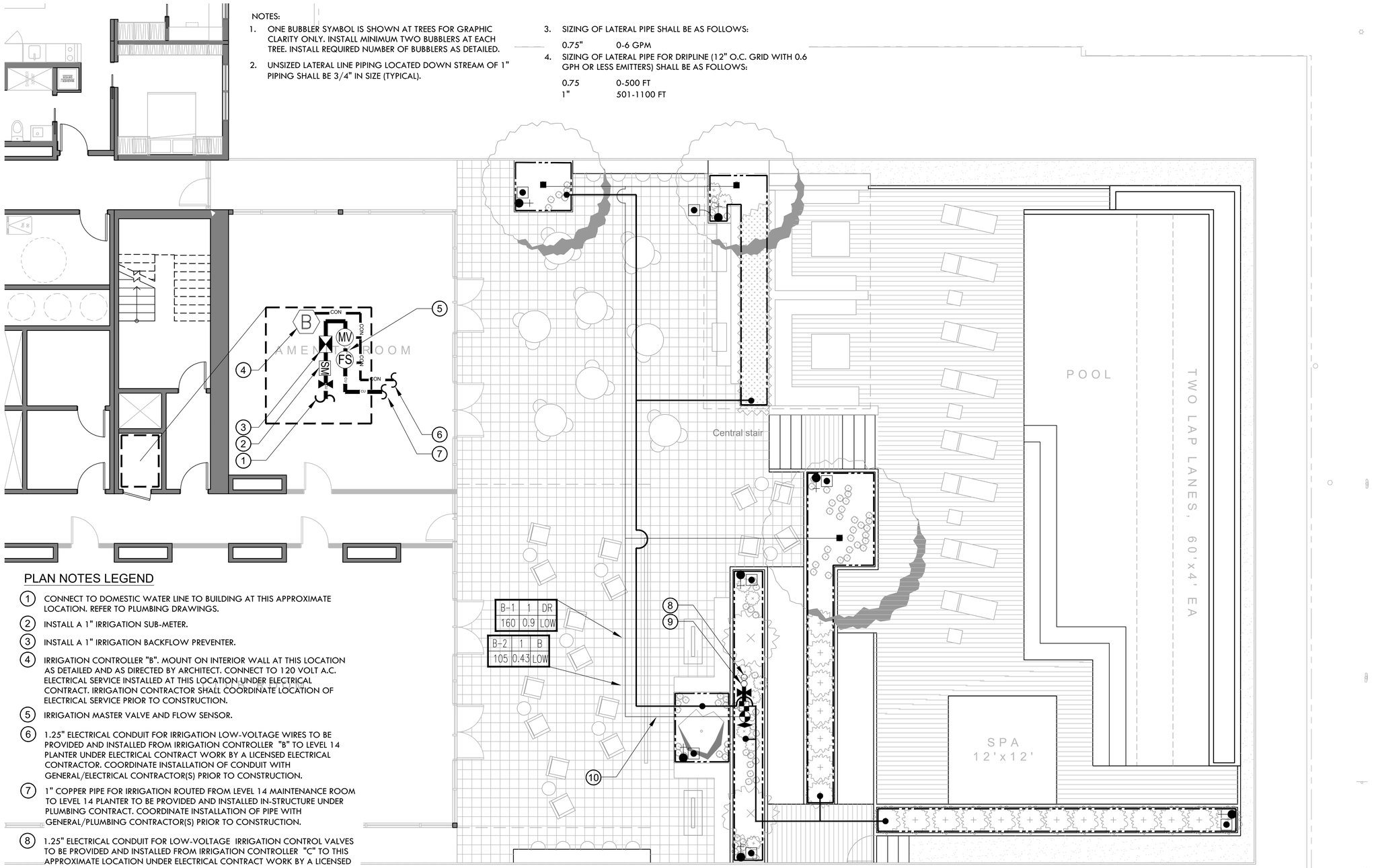
   1" 501-1100 FT



PLAN NOTES LEGEND

1. CONNECT TO DOMESTIC WATER LINE TO BUILDING AT THIS APPROXIMATE LOCATION. REFER TO PLUMBING DRAWINGS.
2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION CONTROLLER "B". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
5. IRRIGATION MASTER VALVE AND FLOW SENSOR.
6. 1.25" ELECTRICAL CONDUIT FOR IRRIGATION LOW-VOLTAGE WIRES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "B" TO LEVEL 14 PLANTER UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM LEVEL 14 MAINTENANCE ROOM TO LEVEL 14 PLANTER TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
9. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
10. ALL IRRIGATION LINES SHALL BE ROUTED UNDER PEDESTAL PAVERS.

27 FEB 2023

ALT E - REVISED

North

3/16"=1'-0"
0 2 4 8

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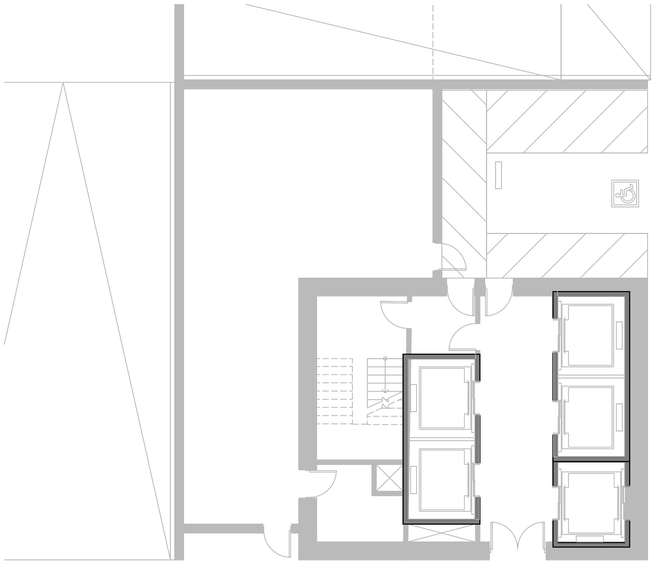
JOB: 0000

SHEET:

IRRIGATION PLAN
FOURTEENTH
FLOOR ROOF DECK
ALT E - REVISED

I3.0



PLAN NOTES LEGEND

1. CONNECT TO DOMESTIC WATER LINE TO BUILDING AT THIS APPROXIMATE LOCATION. REFER TO PLUMBING DRAWINGS.
2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION MASTER VALVE AND FLOW SENSOR.
5. IRRIGATION CONTROLLER "C". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
6. 1" COPPER PIPE LATERAL FOR IRRIGATION FROM MECHANICAL ROOM TO SERVICE SITE LEVEL TREES TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM MECHANICAL ROOM TO PODIUM LEVEL PLANTERS TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO PODIUM LEVEL PLANTERS UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

27 FEB 2023

North 0 4 8 16 1/8"=1'-0"

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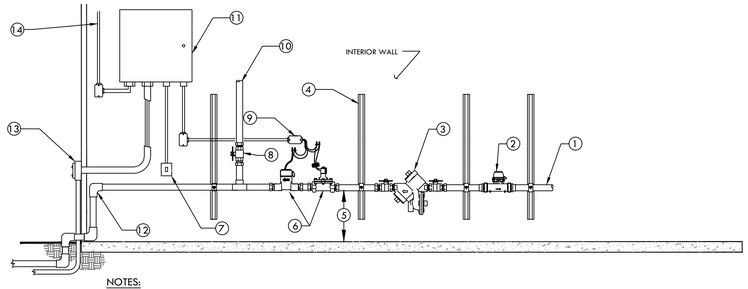
SHEET:

IRRIGATION POINT OF CONNECTION

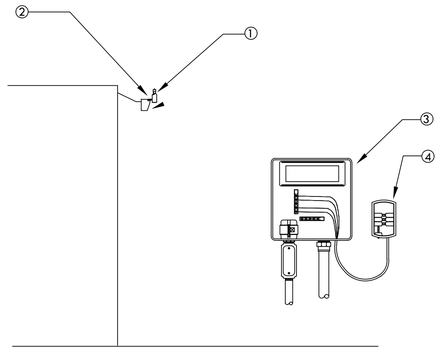
I3.1

① 1.25" COPPER MAIN LINE TO BACKFLOW IN EQUIPMENT ROOM. SHOWN ON MEP PLANS.
② SUB-METER FOR IRRIGATION.
③ 1.25" WILKENS REDUCED PRESSURE BACKFLOW ASSEMBLY.
④ UNI-STRUT SUPPORT BRACKET, THREADED EXTENSIONS AND CLAMPS, LENGTH AS REQUIRED. PROVIDE A MINIMUM OF 6" SEPARATION FOR THE VALVES AND PIPE FROM THE WALL.
⑤ MIN. 18" ± FROM FINISH FLOOR.
⑥ MASTER VALVE AND FLOW SENSOR.
⑦ 120 VOLT A.C. ELECTRICAL BY ELECTRICAL CONTRACTOR FOR CONTROLLER
⑧ 1.25" BRASS BALL VALVE.
⑨ 1" ELECTRICAL CONDUIT WITH JUNCTION BOXES FOR CONTROL WIRES FOR FLOW SENSOR & MASTER VALVE.
⑩ 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION(S). INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
⑪ IRRIGATION CONTROLLER BY IRRIGATION CONTRACTOR. MINIMUM 42" ABOVE FINISHED FLOOR.
⑫ 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION. INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
⑬ JUNCTION BOX BY ELECTRICAL CONTRACTOR FOR EXIT OF TWO WIRE SERVICING VALVES WITHIN ROOM.
⑭ 1.25" ELECTRICAL CONDUIT WITH REQUIRED JUNCTION BOXES ROUTED THROUGH STRUCTURE FROM CONTROLLER LOCATION TO EXTERIOR PLANTERS.



NOTES:
1. THIS LAYOUT IS TO PROVIDE INFORMATION ON EQUIPMENT AND TYPICAL DISTANCES REQUIRED BETWEEN THE EQUIPMENT. IT IS DIAGRAMMATIC AND WILL NEED TO BE ADJUSTED ACCORDING TO AVAILABLE FLOOR SPACE AND OTHER EQUIPMENT INSTALLED WITHIN THE ENCLOSURE. OFFSETS AND FITTINGS WILL BE REQUIRED FOR THESE ADJUSTMENTS.
2. MAINTAIN 6" OF CLEARANCE FROM BUILDING WALLS FOR EASE OF MAINTENANCE FOR ALL COPPER PIPING, VALVES, AND FITTINGS.
3. SEAL ALL PIPE PENETRATIONS THROUGH WALLS/STRUCTURE AS REQUIRED (BY PLUMBING CONTRACTOR). SEE PLUMBING/WATERPROOFING DRAWINGS.
4. ALL FITTINGS AND PIPING FOR WATER LINES WITHIN EQUIPMENT ROOM SHALL BE COPPER WITH WROT FITTINGS OR BRASS NIPPLES.

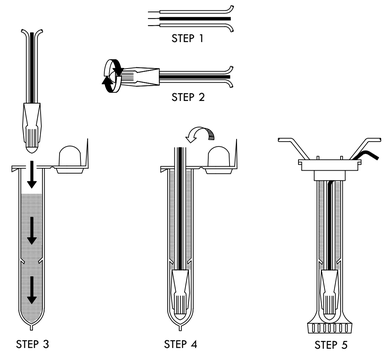
1 IRRIGATION EQUIPMENT LAYOUT DIAGRAM DETAIL
SCALE: NONE



NOTE: MAXIMUM LINE OF SIGHT FROM RAIN SENSOR TO RECEIVER IS 300 FT. DISTANCE IS LESS IF OBSTRUCTIONS EXIST. SENSOR MUST BE INSTALLED IN "CLEAR SPACE" WHERE IT IS EXPOSED TO UNOBSTRUCTED RAINFALL AND IS CLEAR OF IRRIGATION SPRAY.

① WIRELESS RAIN SENSOR TRANSMITTER (GUTTER MOUNTED)
② MOUNT RAIN SENSOR ON BUILDING WALL. ARCHITECT TO APPROVE LOCATION
③ CONTROLLER
④ RAIN SENSOR RECEIVER

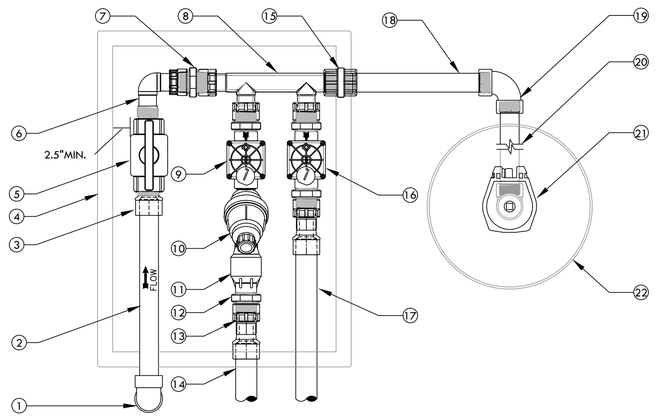
2 WIRELESS RAIN SENSOR-GUTTER MOUNT
SCALE: NONE



NOTE:
MAXIMUM # OF WIRES PER CONNECTOR:
- 3-#14 GAUGE
- 2-#12 GAUGE

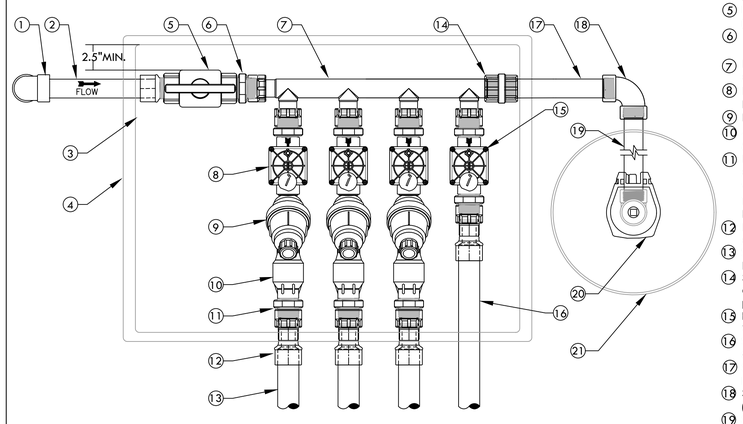
INSTRUCTIONS:
1. STRIP WIRES APPROXIMATELY 1/2" FROM ENDS TO EXPOSE WIRE.
2. TWIST CONNECTOR AROUND WIRES CLOCKWISE UNTIL HAND TIGHT, DO NOT OVERTIGHTEN.
3. INSERT WIRE ASSEMBLY TO BOTTOM OF GEL-FILLED TUBE. CHECK TO MAKE SURE CONNECTOR HAS BEEN PUSHED PAST LOCKING FINGERS AND IS SEATED AT THE BOTTOM OF THE TUBE.
4. PLACE WIRES WHICH EXIT TUBE IN WIRE EXIT HOLES AND CLOSE CAP UNTIL IT SNAPS.
5. INSPECT FINAL SPLICE ASSEMBLY THAT IT IS SECURED.

3 WEATHERPROOF WIRE SPLICE ASSEMBLY
SCALE: NONE



① SCH 40 PVC 90° ELBOW (SxS) FROM PVC MAIN LINE BELOW.
② SCH 40 PVC PIPE. LENGTH AS REQUIRED.
③ SCH 80 PVC MALE ADAPTER.
④ CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
⑤ NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
⑥ DURA 1" MIPT x 1" SWIVEL 90° (PART #306-009)
⑦ DURA 1"x1" THREADED ADAPTER (PART #08303) 4 TOTAL.
⑧ DURA 1" MULTI-PORT MANIFOLD (PART #301-010-2)
⑨ DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑩ FILTER. REFER TO LEGEND FOR MODEL.
⑪ 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
⑫ DURA 1" x 3/4" MALE ADAPTER (PART #08303-131). ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
⑬ DURA 1" SLIP X 1" SWIVEL (PART #329-011) 2 TOTAL.
⑭ SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION
⑮ SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
⑯ BUBBLER OR SPRINKLER REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑰ SCHEDULE 40 PVC LATERAL TO BUBBLER OR SPRAY IRRIGATION.
⑱ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑲ SCHEDULE 80 PVC 90° ELBOW (TxT).
⑳ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
㉑ QUICK COUPLING VALVE. INSTALL PER DETAIL.
㉒ 10" ROUND BOX. INSTALL PER DETAIL.

4 TWO REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE



① SCH 40 PVC 90° ELBOW (SxS) FROM PVC MAIN LINE BELOW.
② SCH 40 PVC PIPE. LENGTH AS REQUIRED.
③ SCH 80 PVC MALE ADAPTER.
④ CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
⑤ NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
⑥ DURA 1"x1" THREADED ADAPTER (PART #08303) 6 TOTAL.
⑦ DURA 1" MULTI-PORT MANIFOLD (PART #301-010-4)
⑧ DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑨ FILTER. REFER TO LEGEND FOR MODEL.
⑩ 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
⑪ DURA 1" x 3/4" MALE ADAPTER (PART #08303-131) 3 TOTAL. ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
⑫ DURA 1" SLIP X 1" SWIVEL (PART #329-011) 4 TOTAL.
⑬ SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION.
⑭ SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
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⑯ SCHEDULE 40 PVC LATERAL TO BUBBLERS OR SPRAY IRRIGATION.
⑰ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑱ SCHEDULE 80 PVC 90° ELBOW (TxT).
⑲ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑳ QUICK COUPLING VALVE. INSTALL PER DETAIL.
㉑ 10" ROUND BOX. INSTALL PER DETAIL.

5 FOUR REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE

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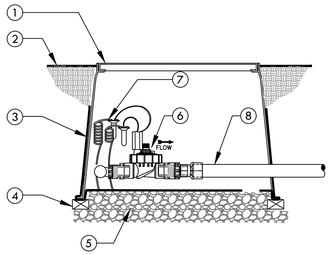
SHEET:

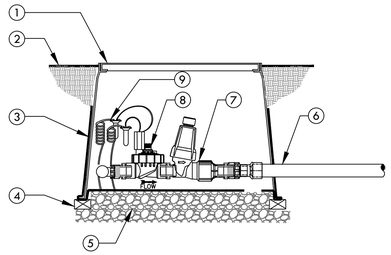
IRRIGATION DETAILS

I4.0



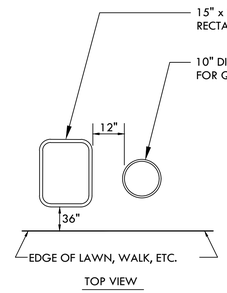
1. CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
2. FINISH GRADE
3. 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
4. BRICK-1 EACH CORNER
5. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
6. REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
7. VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL
8. SCH 40 PVC LATERAL LINE TO BUBBLERS OR SPRAY

1 BUBBLER OR SPRAY REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



1. CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
2. FINISH GRADE
3. 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
4. BRICK-1 EACH CORNER
5. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
6. SCH 40 PVC LATERAL LINE TO DRIPLINE OR DRIP.
7. DRIP FILTER AND REGULATOR
8. REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
9. VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL

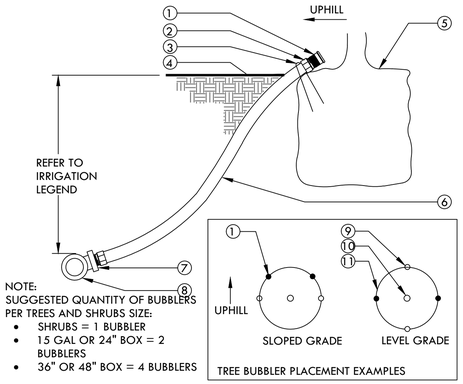
2 DRIP REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



TOP VIEW

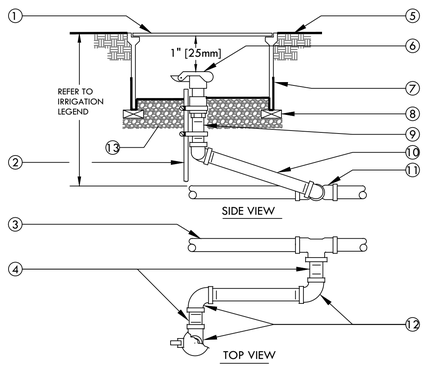
INSTRUCTIONS:
1. CENTER VALVE BOX OVER REMOTE CONTROL VALVES TO FACILITATE SERVICING VALVE.
2. SET BOXES 1" ABOVE FINISH GRADE OR MULCH COVER IN GROUND COVER/SHRUB AREA AND FLUSH WITH FINISH GRADE IN TURF AREA.
3. SET RCV AND VALVE BOX ASSEMBLY IN GROUND COVER/SHRUB AREA WHERE POSSIBLE. INSTALL IN LAWN ONLY IF GROUND COVER DOES NOT EXIST ADJACENT TO LAWN.
4. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE OF LAWN, WALK, FENCE, CURB, ETC.
5. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOXES TO PREVENT COLLAPSE AND DEFORMATION OF VALVE BOX SIDES.
6. INSTALL EXTENSION BY VALVE BOX MANUFACTURER AS REQUIRED TO COMPLETELY ENCLOSE ASSEMBLY FOR EASY ACCESS.

3 VALVE BOX INSTALLATION
SCALE: NONE



1. BUBBLER (TO BE INSTALLED ON TOP OF ROOTBALL).
2. 1/2" SCH. 40 MALE ADAPTER (2 TOTAL).
3. 6" STAPLE.
4. FINISH GRADE.
5. TREE OR SHRUB ROOTBALL.
6. 1/2" IPS FLEXIBLE PVC. USE WELD-ON 795 SOLVENT CEMENT OR EQUAL WHEN BONDING PVC HOSE TO FITTINGS.
7. PVC TEE (SST), ELBOW (ST) OR FEMALE ADAPTER.
8. PVC LATERAL LINE.
9. TREE STAKES.
10. TREE OR SHRUB.
11. EDGE OF ROOTBALL (TYPICAL).

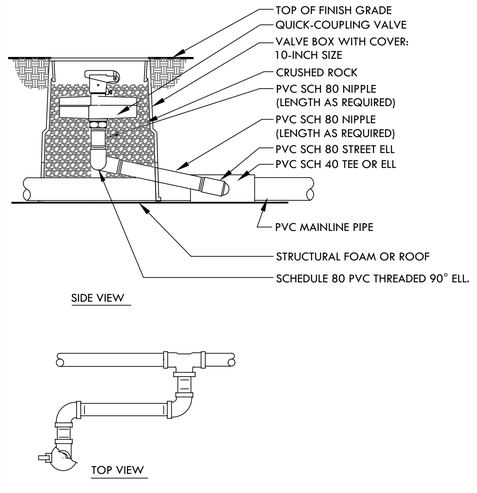
4 TREE AND SHRUB BUBBLER
SCALE: NONE



1. 10" ROUND PLASTIC VALVE BOX WITH BOLT DOWN LID.
2. 1 1/4" x 1 1/4" x 3/16" [30mm x 30mm x 5mm] ANGLE IRON 30" [760mm] LONG W/2 STAINLESS STEEL STRAPS (ONE AROUND QCV).
3. PVC MAIN LINE.
4. 3" [75mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
5. FINISH GRADE.
6. QUICK COUPLING VALVE.
7. 19 GAUGE 1/2" [13mm] SQUARE WIRE MESH.
8. BRICK - 2 TOTAL.
9. SCHEDULE 80 PVC THREADED NIPPLE.
10. 10" [250mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
11. UPC APPROVED SCHEDULE 40 PVC TEE OR ELBOW.
12. SCHEDULE 80 PVC THREADED 90° ELL.
13. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" [100mm] DEEP BELOW VALVE (NO SOIL IN VALVE BOX).

NOTE:
NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.

5 QUICK COUPLING VALVE
SCALE: NONE

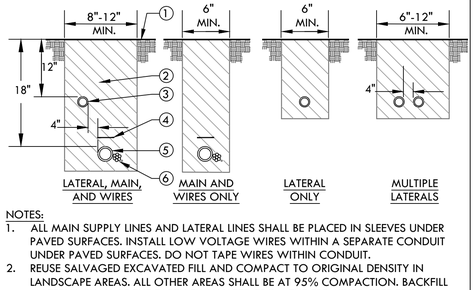


SIDE VIEW

TOP VIEW

NOTE:
1. NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.
2. TRIM VALVE BOX LENGTH AS NECESSARY TO BE FLUSH WITH TOP OF PLANTING TILES.
3. IF NECESSARY SLOT SIDES VALVE BOX TO ALLOW PASSAGE OF PIPE THROUGH BOTTOM OF VALVE BOX.

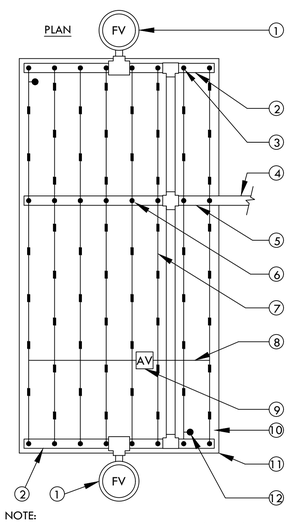
6 QUICK COUPLING VALVE-ON STRUCTURE
SCALE: NONE



NOTES:
1. ALL MAIN SUPPLY LINES AND LATERAL LINES SHALL BE PLACED IN SLEEVES UNDER PAVED SURFACES. INSTALL LOW VOLTAGE WIRES WITHIN A SEPARATE CONDUIT UNDER PAVED SURFACES. DO NOT TAPE WIRES WITHIN CONDUIT.
2. REUSE SALVAGED EXCAVATED FILL AND COMPACT TO ORIGINAL DENSITY IN LANDSCAPE AREAS. ALL OTHER AREAS SHALL BE AT 95% COMPACTION. BACKFILL MATERIAL SHALL BE THE EARTH EXCAVATED FROM THE TRENCHES, FREE FROM ROCKS (ANYTHING LARGER THAN 2"), CONCRETE CHUNKS, AND OTHER FOREIGN OR COARSE MATERIALS.
3. WHEN 12" POP-UP SPRINKLER HEADS ARE USED, INCREASE THE DEPTH OF LATERAL TO 18" AT THE SPRINKLER LOCATION ONLY.

1. FINISH GRADE.
2. CLEAN BACKFILL MATERIAL.
3. LATERAL LINE.
4. 3" DETECTABLE WARNING TAPE OVER MAIN LINE. INSTALL 3" ABOVE MAIN LINE. USE CHRISTY MODEL #TA-DT-3-BIRR FOR POTABLE IRRIGATION SYSTEMS OR #TA-DT-3-PRW FOR RECYCLED IRRIGATION WATER SYSTEMS
5. MAIN LINE.
6. LOW VOLTAGE CONTROL WIRES, TWO-WIRE CABLE, OR CONDUIT WITH WIRES. FOR MULTIPLE WIRES, TAPE AND BUNDLE WIRES AT 10 FT. INTERVALS. WIRING SHALL BE LAID OUT LOOSELY IN THE TRENCH.

7 TRENCHING
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
3. MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
5. PVC SUPPLY MANIFOLD. EXTEND TO END OF ZONE/EXHAUST HEADER.
6. MANIFOLD-TO-TEE CONNECTION.
7. DRIPLINE LATERAL.
8. AIR/VACUUM RELIEF LATERAL, BLANK POLY TUBING CENTERED ON MOUND OR BERM.
9. AIR/VACUUM RELIEF PLUMBED TO BLANK 5/8" POLY TUBING AT EACH HIGH POINT.
10. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
11. AREA PERIMETER.
12. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

8 HLD DRIPLINE CENTER FEED LAYOUT
SCALE: NONE

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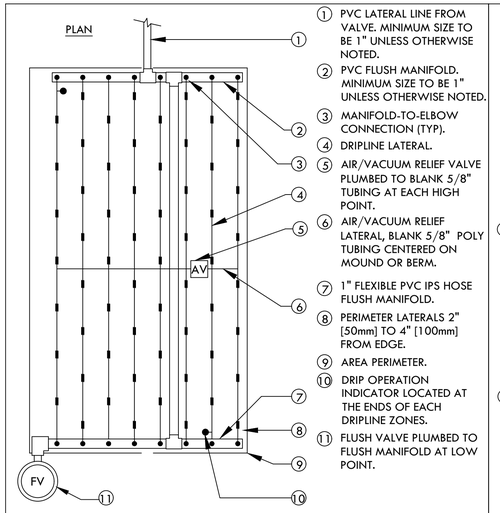
JOB: 0000

SHEET:

IRRIGATION
DETAILS

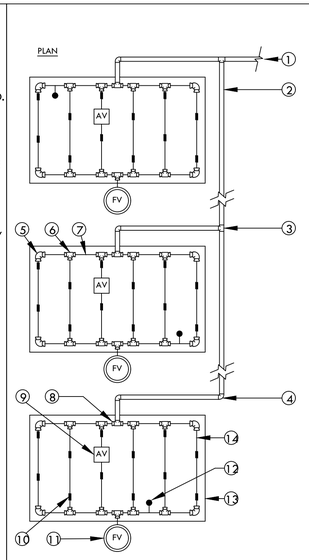
I5.0



1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. DRIPLINE LATERAL.
5. AIR/VACUUM RELIEF VALVE PLUMBED TO BLANK 5/8" TUBING AT EACH HIGH POINT.
6. AIR/VACUUM RELIEF LATERAL, BLANK 5/8" POLY TUBING CENTERED ON MOUND OR BERM.
7. 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
8. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
9. AREA PERIMETER.
10. DRIP OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONES.
11. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

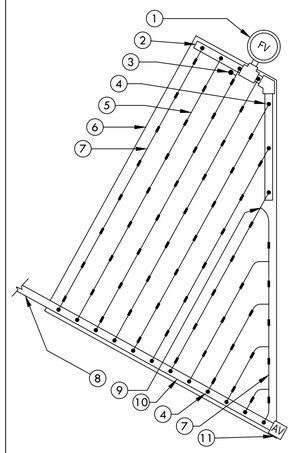
1 HLD DRIPLINE END FEED LAYOUT
SCALE: NONE



1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. PVC TEE (SxSxS).
4. PVC ELL (SxS).
5. HUNTER PLD-ELBOW (PLD-ELB)
6. HUNTER PLD-TEE (PLD-TEE).
7. BLANK 5/8" [16mm] POLY TUBING AT SUPPLY AND FLUSH END OF EACH ISLAND.
8. REFER TO DRIPLINE TO PVC CONNECTION DETAIL.
9. AIR/VACUUM RELIEF VALVE PLUMBED TO TUBING AT HIGH POINT.
10. DRIPLINE LATERAL.
11. MANUAL FLUSH VALVE PLUMBED TO TUBING AT LOW POINT.
12. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
13. ISLAND PERIMETER.
14. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.

NOTE:
1. THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

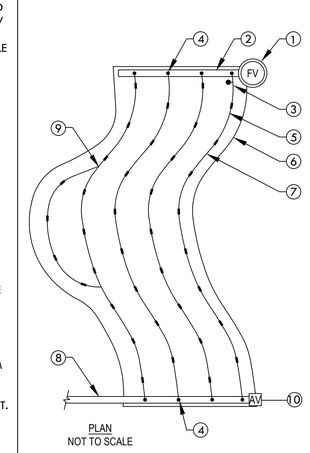
2 HLD DRIPLINE ISLAND LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. PVC SUPPLY MANIFOLD.
11. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

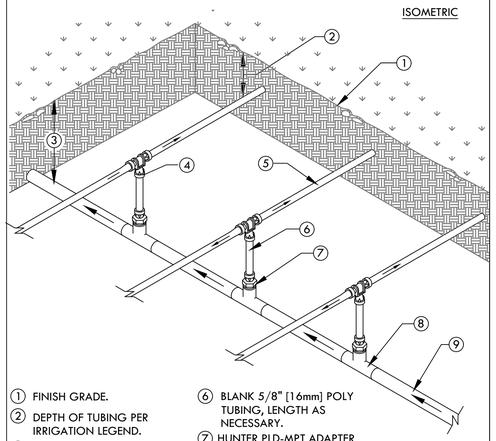
3 HLD DRIPLINE TRIANGULAR LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH/EXHAUST MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC SUPPLY LINE/HEADER FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

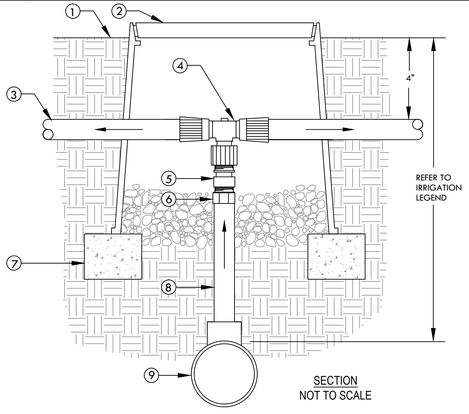
4 HLD DRIPLINE ODD CURVE LAYOUT
SCALE: NONE



1. FINISH GRADE.
2. DEPTH OF TUBING PER IRRIGATION LEGEND.
3. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND
4. HUNTER PLD-TEE (PLD-TEE)
5. DRIPLINE TUBING.
6. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
7. HUNTER PLD-MPT ADAPTER (PLD-050)
8. PVC TEE (SxSxT) WITH 1/2" [13mm] FPT OUTLET.
9. PVC LATERAL LINE FROM REMOTE CONTROL VALVE.

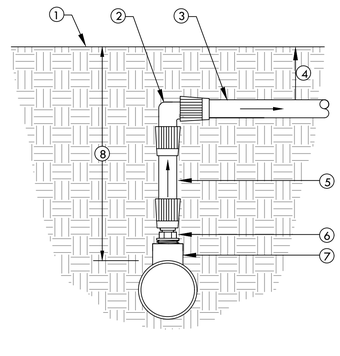
NOTE:
THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.

5 HLD DRIPLINE CENTER FEED MANIFOLD
SCALE: NONE



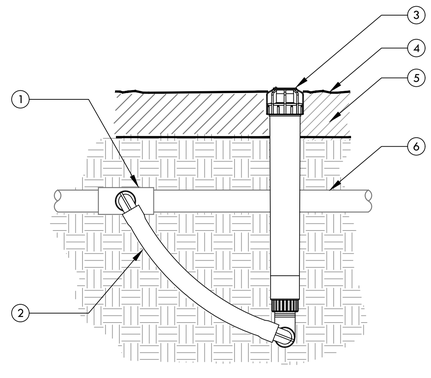
1. FINISH GRADE
2. CARSON 708 OR EQUAL. COLOR: BLACK. USE PURPLE FOR RECYCLED WATER SYSTEMS.
3. DRIPLINE TUBING
4. HUNTER PLD-TEE X 1/2" FPT ADAPTER
5. TORO 1/2" CHECK VALVE (PCV-500)
6. 1/2" SCH 40 MALE ADAPTER.
7. BRICK (1 OF 2)
8. 1/2" SCH 40 PVC (LENGTH AS REQUIRED)
9. PVC LATERAL LINE SUPPLY. MINIMUM SIZE TO BE 1" UNLESS SIZED DIFFERENTLY ON DRAWINGS. USE SCH 40 PVC 1"x1"x1/2" TEE OR 90° ELBOW.

6 DRIPLINE TO PVC CONNECTION
SCALE: NONE



1. FINISH GRADE
2. HUNTER PLD-ELBOW (PLD-ELB)
3. DRIPLINE TUBING
4. DEPTH OF TUBING PER IRRIGATION LEGEND.
5. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
6. HUNTER PLD-MPT ADAPTER (PLD-050)
7. SCH 40 PVC TEE (SxSxT) WITH 1/2" FPT OUTLET.
8. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND

7 DRIPLINE MANIFOLD TO ELBOW CONNECTION
SCALE: NONE



1. UPC APPROVED SCHEDULE 40 PVC TEE, ELBOW OR BARB x THREAD DRIP FITTING TEE OR ELBOW WITH 3/4" OUTLET.
2. 1/2" X 3/4" X 6" HUNTER SWING JOINT (SJ-7506)
3. ECO INDICATOR
4. FINISHED GRADE
5. MULCH
6. PVC LATERAL PIPE OR DRIPLINE

8 DRIPLINE OPERATION INDICATOR
SCALE: NONE

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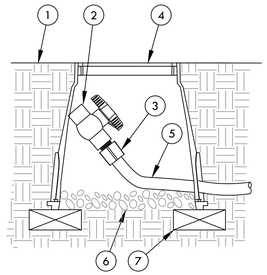
JOB: 0000

SHEET:

IRRIGATION DETAILS

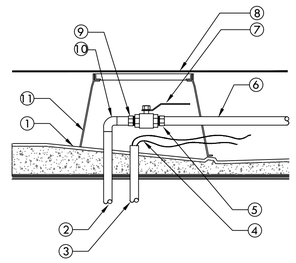
I6.0



NOTE:
ALLOW A MINIMUM OF PVC HOSE IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

1. FINISH GRADE
2. 1/2" SCH 40 THREADED BALL VALVE.
3. 1/2" SCH 40 MALE ADAPTER.
4. 6" ROUND PLASTIC VALVE BOX.
5. 1" IPS PVC HOSE FROM EXHAUST HEADER.
6. PEA GRAVEL SUMP (6" DEEP).
7. BRICK (1 OF 2)

2 DRIPLINE-FLUSH POINT
SCALE: NONE



1. SLOPED ROOF BELOW PEDESTAL SYSTEM
2. COPPER PIPE THROUGH STRUCTURE PROVIDED BY PLUMBING CONTRACTOR. WATERPROOF ALL PENETRATIONS.
3. CONDUIT FOR CONTROL WIRES THROUGH STRUCTURE PROVIDED BY ELECTRICAL CONTRACTOR. WATERPROOF ALL PENETRATIONS
4. TWO-WIRE CABLE OR CONTROL WIRES
5. SCH 40 PVC MALE ADAPTER.
6. PVC MAIN LINE TO REMOTE CONTROL VALVES.
7. BRONZE BALL VALVE.
8. ROOF DECK PAVERS
9. COPPER MALE ADAPTER.
10. COPPER 90° ELBOW.
11. 10" ROUND PLASTIC VALVE BOX. CUT BOX TO FIT BELOW PEDESTAL PAVER SYSTEM

3 ON STRUCTURE STUB-OUT WITH BRONZE BALL VALVE
SCALE: NONE

IRRIGATION WATER USE CALCULATIONS

WATER USE ESTIMATION CONTROLLER "A"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	1,079	400	10,357	0.03	13.85	17%
2	GROUNDCOVER	LOW	0.3	BUBBLER	0.81	0.370	4,915	1,820	47,177	0.14	63.07	77%
3	TREES	LOW	0.3	BUBBLER	0.81	0.370	400	148	3,839	0.01	5.13	6%
					TOTALS		6,394	2,368	61,373	0.19	82.05	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME											
NA					1							0%
					TOTALS	0						0%

MAWA	GALLONS/YR	74,568
	ACRE FEET/YR	0.23
	HCF/YR	99.69

ETWU	GALLONS/YR	61,373
	ACRE FEET/YR	0.19
	HCF/YR	82.05

SITE IRRIGATION EFFICIENCY	SITE PLANT FACT0R	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	2,368
TOTAL AREA	6,394
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR

MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR

ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

WATER USE ESTIMATION CONTROLLER "B"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	160	59	1,536	0.00	2.05	60%
2	TREES	LOW	0.3	BUBBLER	0.81	0.370	105	39	1,008	0.00	1.35	40%
					TOTALS		265	98	2,544	0.01	3.40	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME											
NA					1							0%
					TOTALS	0						0%

MAWA	GALLONS/YR	3,090
	ACRE FEET/YR	0.01
	HCF/YR	4.13

ETWU	GALLONS/YR	2,544
	ACRE FEET/YR	0.01
	HCF/YR	3.40

SITE IRRIGATION EFFICIENCY	SITE PLANT FACT0R	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	98
TOTAL AREA	265
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR

MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR

ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

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JOB: 0000

SHEET:

IRRIGATION DETAILS

I7.0

TITLE REPORT (1950 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117026136–JM, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR1"

TITLE TO SAID ESTATE IS VESTED IN: (1950 SHATTUCK)

JILLIAR, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1950 SHATTUCK)

FEE

LEGAL DESCRIPTION (1950 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE WESTERN LINE OF SHATTUCK AVENUE, WITH THE SOUTHERN LINE OF BERKELEY WAY, AS SAID AVENUE AND WAY ARE SHOWN ON THE MAP HEREINAFTER REFERRED TO; RUNNING THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE, 60.06 FEET; THENCE WESTERLY PARALLEL WITH SAID LINE OF BERKELEY WAY, 109 FEET, MORE OR LESS, TO THE EASTERLY BOUNDARY LINE OF THE LAND DESCRIBED IN THE DEED EXECUTED BY F. D. CHASE AND ATLANTA J. CHASE, HIS WIFE, TO JACOB BAUML, DATED JULY 28, 1922, AND RECORDED IN LIBER 324 OF OFFICIAL RECORDS, AT PAGE 73, ALAMEDA COUNTY RECORDS; THENCE AT RIGHT ANGLES NORTHERLY ALONG SAID LAST NAMED BOUNDARY LINE 35 FEET, MORE OR LESS, TO THE SOUTHERN BOUNDARY LINE OF LOT 55, AS SAID LOT IS SHOWN ON THE SAID MAP; THENCE AT RIGHT ANGLES EASTERLY 8 INCHES; THENCE AT RIGHT ANGLES NORTHERLY PARALLEL WITH THE WESTERLY BOUNDARY LINE OF SAID LOT 55, AFORESAID, 25 FEET TO THE SOUTHERN LINE OF BERKELEY WAY; THENCE EASTERLY ALONG SAID LINE OF BERKELEY WAY, 112.30 FEET TO THE POINT OF BEGINNING.

BEING PORTIONS OF LOTS NOS. 55, 56 AND 57, AS SAID LOTS ARE DELINEATED AND AS DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "MAP OF COLLEGE TRACT, BERKELEY", FILED JANUARY 31, 1890, IN LIBER 9 OF MAPS, PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

APN: 057–2053–001

EXCEPTIONS TO TITLE (1950 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS:, DISTRICT NO 2014–1, FOR CLEAN ENERGY DISCLOSED BY : ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR1 EXC. 3 – NOT PLOTTABLE).
2. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, RECORDED MAY 16, 1966 IN BOOK 1768 OF OFFICIAL RECORDS, PAGE 944 UNDER RECORDER'S SERIAL NUMBER AY614?5, AFFECTS A PORTION (PTR1 EXC. 5 – PLOTTED).

TITLE REPORT (1974 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117026135–JM, EFFECTIVE DATE SEPTEMBER 26, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR2"

TITLE TO SAID ESTATE IS VESTED IN: (1974 SHATTUCK)

1974 SHATTUCK AVENUE, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1974 SHATTUCK)

FEE

LEGAL DESCRIPTION (1974 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WESTERN LINE OF SHATTUCK AVENUE, DISTANT THEREON SOUTHERLY, 60.6 FEET FROM THE POINT OF INTERSECTION THEREOF, WITH THE SOUTHERN LINE OF BERKELEY WAY, AS SAID AVENUE AND WAY ARE SHOWN ON THE MAP HEREIN REFERRED TO; RUNNING THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE, 49.20 FEET; THENCE WESTERLY AND PARALLEL WITH SAID LINE OF BERKELEY WAY, 105.50 FEET, MORE OR LESS, TO A POINT WHICH WOULD BE INTERSECTED BY A LINE DRAWN SOUTHERLY FORM AND AT RIGHT ANGLES TO SAID LINE BERKELEY WAY FROM A POINT DISTANT THEREON, 113.30 FEET WESTERLY FROM THE WESTERN LINE OF SHATTUCK AVENUE; THENCE AT RIGHT ANGLES NORTHERLY, 49 FEET, MORE OR LESS, TO A POINT WHICH WOULD BE INTERSECTED BY A LINE DRAWN WESTERLY FROM SAID POINT OF BEGINNING AND PARALLEL WITH BERKELEY WAY; THENCE EASTERLY ALONG SAID PARALLEL LINE, 109 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

BEING A PORTION OF LOTS 57 AND 58, AS SAID LOTS ARE SHOWN ON THE "MAP OF THE COLLEGE TRACT, BERKELEY", FILED JANUARY 31, 1890, IN BOOK 9 OF MAPS, PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

APN: 057–2053–002

EXCEPTIONS TO TITLE (1974 SHATTUCK)

1. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING, GRANTED TO BAY AREA RAPID TRANSIT DISTRICT, A RAPID TRANSIT DISTRICT, FOR UNDERGROUND RAPID TRANSIT TUNNEL FACILITIES, RECORDED SEPTEMBER 23, 1966 IN BOOK 1846 OF OFFICIAL RECORDS, PAGE 53 UNDER RECORDER'S SERIAL NUMBER AY–111314 (PTR2 EXC. 4 – PLOTTED)

TITLE REPORT (1984 & 1998 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117025433–JM, 1ST UPDATE, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR3"

TITLE TO SAID ESTATE IS VESTED IN: (1984 & 1998 SHATTUCK)

FIFTH KEIL CO., A CALIFORNIA CORPORATION

THE ESTATE OR INTEREST IN THE LAND IS: (1984 & 1998 SHATTUCK)

FEE

LEGAL DESCRIPTION (1984 & 1998 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

COMMENCING AT THE POINT OF INTERSECTION OF THE NORTHERN LINE OF UNIVERSITY AVENUE WITH THE WESTERN LINE OF SHATTUCK AVENUE AS SAID AVENUES NOW EXISTS; THENCE WESTERLY ALONG THE NORTHERN LINE OF UNIVERSITY AVENUE 79.02 FEET; THENCE AT RIGHT ANGLES NORTHERLY 114.68 FEET, MORE OR LESS, TO THE SOUTHERN LINE OF THE LAND NOW OR FORMERLY OF JOHN H. BOHLIG AND LOTTA BOHLIG; THENCE EASTERLY AND ALONG SAID LINE 87.07 FEET TO THE WESTERN LINE OF SHATTUCK AVENUE; THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE 114.97 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

APN'S: 057–2053–003–01 AND 057–2053–003–02

EXCEPTIONS TO TITLE (1984 & 1998 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014–1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR3 EXC. 4 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO PBID–2016, FOR BERKELEY DOWNTOWN PBID–2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR3 EXC. 5 – NOT PLOTTABLE).
3. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, DATED APRIL 6, 1967, RECORDED MAY 10, 1967 IN REEL 1961 OF OFFICIAL RECORDS, IMAGE 330 UNDER RECORDER'S SERIAL NUMBER AZ 43339, AFFECTS A PORTION OF THE PREMISES, THE PRESENT OWNERSHIP OF SAID EASEMENT AND OTHER MATTERS AFFECTING THE INTERESTS THERETO, IF ANY, ARE NOT SHOWN HEREIN (PTR3 EXC. 7 – PLOTTED).
4. A NOTICE AS FOLLOWS, ENTITLED NOTICE OF ASSESSMENT – DOWNTOWN BERKELEY PBID, BY CITY OF BERKELEY, DATED AUGUST 25, 2011, RECORDED AUGUST 30, 2011 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2011248358 (PTR3 EXC. 8 – NOT PLOTTABLE).

TITLE REPORT (2701 UNIVERSITY)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117026137–JM, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR4"

TITLE TO SAID ESTATE IS VESTED IN: (2701 UNIVERSITY)

EDITH WIESER GLYNN, TRUSTEE OF THE EDITH WIESER GLYNN TRUST

THE ESTATE OR INTEREST IN THE LAND IS: (2701 UNIVERSITY)

FEE

LEGAL DESCRIPTION (2701 UNIVERSITY)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTHERN LINE OF BERKELEY WAY, AS SHOWN UPON THE MAP HEREINAFTER REFERRED TO, DISTANT THEREON ONE HUNDRED FIFTEEN AND 46/100 FEET WESTERLY FROM THE INTERSECTION THEREOF WITH THE WESTERN LINE OF SHATTUCK AVENUE AS ESTABLISHED BY BOARD OF TRUSTEES OF THE TOWN OF BERKELEY, JAN. 18, 1892, BY ORDINANCE NO. 387, SAID POINT BEING ONE FOOT EASTERLY ON SAID LINE OF BERKELEY WAY FROM THE LINE DIVIDING LOTS NUMBERED 54 AND 55 ACCORDING TO SAID MAP; RUNNING THENCE WESTERLY ALONG SAID LINE OF BERKELEY WAY THIRTY–NINE FEET TO THE LINE DIVIDING LOTS NUMBERED 55 AND 54 ACCORDING TO SAID MAP; THENCE AT RIGHT ANGLES SOUTHERLY ALONG SAID LINE ONE HUNDRED TEN FEET; THENCE AT RIGHT ANGLES EASTERLY THREE AND 73/100 FEET; THENCE AT RIGHT ANGLES SOUTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET TO THE NORTHERN LINE OF UNIVERSITY AVENUE; THENCE EASTERLY ALONG SAID LINE OF UNIVERSITY AVENUE FIFTY–FIVE AND 9/10 FEET; THENCEN AT RIGHT ANGLES NORTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET; THENCE AT RIGHT ANGLES WESTERLY TWENTY– ONE AND 63/100 FEET; THENCE AT RIGHT ANGLES NORTHERLY EIGHTY–FIVE FEET TO THE SOUTHWESTERN CORNER OF LOT NUMBERED 55, ACCORDING TO SAID MAP; THENCE AT RIGHT ANGLES EASTERLY ALONG THE SOUTHERN LINE OF SAID LOT ONE FOOT AND THENCE AT RIGHT ANGLES NORTHERLY TWENTY–FIVE FEET TO THE POINT OF BEGINNING.

BEING LOT NUMBERED 54, THE WESTERN ONE FOOT OF LOT NUMBERED 55, A PORTION OF LOT NUMBERED 6 AND A PARCEL ADJOINING SAID LOT NUMBER 6 ON THE EAST, AS ALL OF SAID LOTS ARE DELINEATED AND SO DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "MAP OF COLLEGE TRACT, BERKELEY", FILED MAY 24,1877, IN LIBER 5 OF MAPS AT PAGE 14, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

EXCEPTING THEREFROM THAT PORTION DESCRIBED IN THE DEED TO THE CITY OF BERKELEY, RECORDED SEPTEMBER 29,1955, BOOK 7798, PAGE 23, AS INSTRUMENT NO. AK–105619, OFFICIAL RECORDS.

APN: 057–2053–004–02

EXCEPTIONS TO TITLE (2701 UNIVERSITY)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014–1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR4 EXC. 3 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO CITY OF BERKELEY–DOWNTOWN PROPERTY AND BUSINESS IMPROVEMENT DISTRICT, FOR BERKELEY DOWNTOWN PBID–2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR4 EXC. 5 – NOT PLOTTABLE).
3. TERMS AND CONDITIONS CONTAINED IN THE EDITH WIESER GLYNN TRUST AS DISCLOSED BY GRANT DEED, RECORDED MAY 22, 1984 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 1984099372 (PTR4 EXC. 6 – NOT PLOTTABLE).
4. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED NONDISTURBANCE AND ATTORNMENT AGREEMENT, EXECUTED BY EDITH GLYNN AND T.Y.P. RESTAURANT GROUP, INC., A DELAWARE CORPORATION DBA TENDER GREENS, RECORDED MARCH 22, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016068695 (PTR4 EXC. 7 – NOT PLOTTABLE).
5. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED MINOR ENCROACHMENT PERMIT 17–03, EXECUTED BY EDITH W. GLYNN AND THE CITY OF BERKELEY, RECORDED MAY 24, 2017 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2017113477 (PTR 4 EXC. 8 – NOT PLOTTABLE)

NOTES

1. DATE OF FIELD SURVEY: DECEMBER 5, 9 AND 21, 2022 AS TO THE BOUNDARY AND TOPOGRAPHIC SURVEY OF THE SUBJECT PROPERTY.
2. THE UTILITIES SHOWN HEREON ARE BY SURFACE OBSERVATION AND RECORD INFORMATION ONLY AND NO WARRANTY IS GIVEN HEREIN AS TO THEIR EXACT LOCATION. IT IS THE RESPONSIBILITY OF THE DEVELOPER AND/OR CONTRACTOR TO VERIFY THE EXACT LOCATION OF THE UTILITIES WITH THE APPROPRIATE UTILITY COMPANY OR AGENCY.
3. UTILITY JURISDICTIONS / PROVIDERS ARE AS FOLLOWS:
   STORM DRAINS: CITY OF BERKELEY
   SANITARY SEWER: CITY OF BERKELEY
   WATER: EAST BAY MUNICIPAL UTILITY DISTRICT (EBMUD)
   ELECTRICITY: PACIFIC GAS & ELECTRIC CO.
   NATURAL GAS: PACIFIC GAS & ELECTRIC CO.
   TELEPHONE: AT&T
4. THERE ARE NO CEMETERIES ON OR WITHIN 100 FEET OF THE SUBJECT PROPERTY
5. THE SURVEYED PROPERTIES ARE THE SAME PROPERTIES DESCRIBED IN THE TITLE REPORT.
6. THE LEGAL DESCRIPTIONS AS SHOWN IN THE TITLE REPORTS MATHEMATICALLY CLOSE.
7. THERE IS NO OBSERVED EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL
8. THERE ARE NO WETLAND AREAS IN THE SUBJECT PROPERTIES

TABLE A NOTES

1. FOUND MONUMENTS ARE SHOWN ON THIS SHEET OF THE SURVEY.
2. THE STREET ADDRESS OF THE PROPERTY IS 1950, 1974, 1984, 1998 SHATTUCK AVENUE AND 2071 UNIVERSITY AVENUE, BERKELEY, CA 94704
3. FLOOD ZONE DESIGNATION: THE PREMISES ARE LOCATED IN ZONE "X" (NON–SHADED) DEFINED AS "AREAS OF MINIMAL FLOOD," PER FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 06001C0057G, EFFECTIVE DATE: AUGUST 3, 2009.
4. THE TOTAL GROSS LAND AREA IS:
   1950 SHATTUCK AVENUE: 6,635 SQUARE FEET +/– OR 0.152 ACRES MORE OR LESS.
   1974 SHATTUCK AVENUE: 5,264 SQUARE FEET +/– OR 0.121 ACRES MORE OR LESS
   1984 & 1998 SHATTUCK AVENUE: 9,527 SQUARE FEET +/– OR 0.219 ACRES MORE OR LESS
   2071 UNIVERSITY AVENUE: 6,411 SQUARE FEET +/– OR 0.147 ACRES MORE OR LESS
6. (A/B) ZONING REQUIREMENTS: PER THE CITY OF BERKELEY PLANNING AND ZONING DEPARTMENT, THE PROPERTIES ARE ZONED "C–DMU OUTER CORE" DEFINED AS "DOWNTOWN MIXED–USE DISTRICT."

   REFERENCE FOR "C–DMU" ZONING IS MADE HERE TO THE CITY OF BERKELEY CODE, CHAPTER 23.204.130, REGARDING PROPERTY DEVELOPMENT STANDARDS, BUILDING HEIGHT LIMITATION, MINIMUM BUILDING SETBACK AND PARKING REQUIREMENTS ARE AS FOLLOWS:

   SETBACKS
   MINIMUM FRONT: 0 FEET
   MINIMUM SIDE: 0 FEET
   MINIMUM REAR: 0 FEET

   MAXIMUM HEIGHT: 60 FEET, 75 FEET WITH USE PERMIT

   MINIMUM PARKING REQUIREMENTS: NONE REQUIRED
7. (A/B1/C) EXTERIOR DIMENSIONS AND SQUARE FOOTAGE OF BUILDING AT GROUND LEVEL, AND NUMBER OF STORIES ARE SHOWN ON SHEET 3 OF THE SURVEY.
8. SUBSTANTIAL IMPROVEMENTS OBSERVED IN THE PROCESS OF CONDUCTING THE SURVEY ARE SHOWN ON SHEET 3.
9. THERE ARE NO PARKING SPACES LOCATED ON THE SUBJECT PROPERTIES.
10. THERE ARE NO DIVISIONS OR PARTY WALLS LOCATED ON THE SUBJECT PROPERTIES WITH RESPECT TO ADJOINING PROPERTIES.
11. (A) LOCATION OF UTILITIES EXISTING ON OR SERVING THE SURVEYED PROPERTIES AS DETERMINED BY OBSERVED EVIDENCE TOGETHER WITH EVIDENCE FROM PLAN OBTAINED FROM UTILITY COMPANIES OR PROVIDED BY CLIENT ARE SHOWN ON SHEET 3.
13. NAMES OF ADJOINING OWNERS OF PLATTED LANDS ARE SHOWN ON SHEET 2 OF THE SURVEY.
14. DISTANCE TO THE NEAREST INTERSECTING STREET IS SHOWN ON SHEET 2 OF THE SURVEY.
16. THERE IS NO OBSERVABLE EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
17. THERE IS NO OBSERVED EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
18. THERE ARE NO OFFSITE EASEMENTS TO THE SUBJECT PROPERTIES.
19. PROFESSIONAL LIABILITY INSURANCE IN THE AMOUNT OF $2,000,000 IS HELD BY THE SURVEYOR.

BASIS OF BEARINGS

THE BASIS OF BEARINGS OF THIS SURVEY IS TAKEN BETWEEN THE TWO FOUND STREET MONUMENTS ALONG BERKELEY WAY BETWEEN MILVIA STREET AND HENRY STREET AS SHOWN ON PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA. TAKEN AS NORTH 81°54'40" EAST.

REFERENCES

(R1) PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R2) PARCEL MAP P.M. 10119, FILED SEPTEMBER 28, 2016 IN BOOK 334 OF PARCEL MAPS, AT PAGES 21 TO 22, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R3) TRACT MAP T.M. 7888, FILED SEPTEMBER 03, 2009 IN BOOK 305 OF MAPS, AT PAGES 18 TO 20 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R4) UNRECORDED MAP, CITY OF BERKELEY CITY MONUMENT MAP, PLAN 1305, 3086–057.

(R5) "MAP OF THE COLLEGE TRACT, BERKELEY", FILED JANUARY 31, 1880 IN BOOK 9 OF MAPS, AT PAGES 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R6) GRANT DEED, RECORDED APRIL 15, 1966 IN REEL 1749, IMAGE 918, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R7) GRANT DEED, RECORDED JUNE 11, 2014 AS DOCUMENT NUMBER 2014–140054, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R8) GRANT DEED, RECORDED MAY 18, 2009 AS DOCUMENT NUMBER 2009–156779, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R9) DOCUMENT ENTITLED "NONDISTURBANCE AND ATTORNMENT AGREEMENT", RECORDED MARCH 22, 2016 AS DOCUMENT NUMBER 2016–068695, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

NOTES

(1) BEARING IS BASED ON THE MEAN BEARING OF THE RIGHT OF WAY LINES OF BERKELEY WAY AND UNIVERSITY AVENUE.
(2) BEARING IS BASED ON IMPROVEMENTS.
(3) (R8) HAS A DEED CALL OF 8 INCHES. IT IS BELIEVED TO BE AN ERROR. THE DISTANCE OF 1.00 FOOT PER (R1) IS BEING HELD BASED ON THE DEED CALL OF 112.30 FEET OF (R8).

SURVEYOR'S CERTIFICATE

TO VERNON A. NEFF AND BARBARA NEFF, AS TRUSTEES OF THE NEFF 2002 FAMILY TRUST; AND OLD REPUBLIC TITLE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6(A), 6(B), 7(A), 7(B1), 7(C), 8, 9, 10, 11(A), 13, 14, 16, 17, 18, AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 5, 9 AND 21, 2022.

JACQUELINE LUK P.L.S. 8934
FOR LUK & ASSOCIATES, INC.

DATE DECEMBER 23, 2022

PROFESSIONAL LAND SURVEYOR
JACQUELINE LUK
L.S. 8934
STATE OF CALIFORNIA

SHEET INDEX

1. NOTES
2. BOUNDARY SURVEY
3. TOPOGRAPHIC SURVEY



VICINITY MAP

NOT TO SCALE

ALTA/NSPS LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE
AND 2071 UNIVERSITY AVENUE
CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA
DECEMBER 2022

PREPARED BY
LUK AND ASSOCIATES
CIVIL ENGINEER – LAND PLANNERS – LAND SURVEYORS
738 ALFRED NOBEL DRIVE
HERCULES, CALIFORNIA 94547
(510) 724–3388

LEGEND

- BOUNDARY OF SUBJECT PROPERTY
- RIGHT OF WAY LINE
- INTERIOR PROPERTY LINE
- MONUMENT LINE
- TIE LINE
- OLD LOT LINE
- CENTERLINE
- EASEMENT LINE
- FOUND STREET MONUMENT AS NOTED
- (M–M) MONUMENT TO MONUMENT
- BSW BACK OF SIDEWALK
- SFBARTD SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT
- (CALC.) CALCULATED
- (R1) REFERENCE
- RE REEL
- IM IMAGE
- PM PARCEL MAPS
- ± MORE OR LESS
- S.F. SQUARE FEET
- APN ASSESSOR'S PARCEL NUMBER
- (T) TOTAL
- (114.97') RECORD DATA
- (R1) REFERENCE
- DOC. NO. DOCUMENT NUMBER
- R/W RIGHT OF WAY

FOUND AT HEARST AVE PER (R3)

FOUND DISK MONUMENT AT DELAWARE ST PER (R2)

N18°32'56"E 6.35'

(323.13')(R3)

323.13'

N8°56'01"W

DETAIL "A" (NOT TO SCALE)

LANDS OF 1974 SHATTUCK AVENUE, LLC APN: 057–2053–002 DOC. NO. 2014–140054 AREA=5,323 S.F.±

85.00'(T) N8°05'20"W 84.52' 49.62' (49')(R7)

N81°54'40"E 105.52' (105.50')(R7)

N81°54'40"E 21.87' 21.87'X0.48' GAP AREA=10 S.F.± 21.87' S8°04'40"E 0.48' N81°54'40"E 87.14'

N81°55'09"E (SEE NOTE 1) 55.80' S8°04'40"E 0.48' SOUTHERLY LINE OF LOT 58

APN: 057–2053–004–02

LOT 58 LOT 54

HENRY ST (60' R/W)

(656.15')(CALC.)(R2) 658.16' (658.38')(R2) S53.84'(M–M)

R/W LINE PER (R1)

FOUND PER (R1),(R2),(R3)

BASIS OF BEARINGS N81°54'40"E

BERKELEY WY (60' R/W ON ANGLE) PER (R1),(R2),(R3)

310.91'(M–M) (310.88')(R1),(R2),(R3)

FOUND PER (R1),(R2),(R3)

273.60'(TIE) 584.51'(T) (273.53')(R1) 22.97'(TIE)

25.00' PER (R1)

S8°05'02"E 29.93'(TIE) PER (R4)

55.01'(TIE) (54.99')(R4) 55.00' PER (R1)

4.98'(TIE) (5.01')(R4)

34.92'(TIE) S8°54'49"E

S81°54'40"W 144.00' PER (R1),(R5)

R/W LINE PER (R1) 582.76'(T) PER (R4) 323.00' PER (R1) 579.30' (CALC.) PER (R5)

S81°54'58"W 271.49'(TIE) (271.55')(R4) 115.76' (115.46')(R9)

S81°54'40"W 112.30' SEE NOTE 3

N8°05'20"W 25.00'

S81°54'46"W 1.00' (8")(R8) SEE NOTE 3

SFBARTD SUBSURFACE EASEMENT (RE 1768, IM 944 PARCEL TWO)

SFBARTD SUBSURFACE EASEMENT (RE 1768, IM 944 PARCEL ONE)

LANDS OF JILJAR, LLC APN: 057–2053–001 DOC. NO. 2009–156779 AREA=6,635 S.F.±

N4°01'40"W 109.80'

20.0'± 20.0'±

(224.57')(R1) (224.65')(R4),(R5) 224.61'(T) (110')(R5) 109.94'

(110.00')(R1),(R5) 109.95'

PARCEL MAP NO. 11051 346 PM 1–11

LOT 55 LOT 56 LOT 57 LOT 58 LOT 42 LOT 43 LOT 44 LOT 45 LOT 46 LOT 47 LOT 48 LOT 49 LOT 50 LOT 51 LOT 52 LOT 53 LOT 54

LANDS OF CITY OF BERKELEY APN: 057–2053–003

85.00'(T) N8°05'20"W 84.52' 34.91' (35')(R8)

N81°54'40"E 109.05' (109')(R7),(R8)

SFBARTD SUBSURFACE EASEMENT RE 1846, IM 53

LANDS OF 1974 SHATTUCK AVENUE, LLC APN: 057–2053–002 DOC. NO. 2014–140054 AREA=5,323 S.F.±

(225.20')(R1) (225.27')(R4) 225.28'(T) 12.14' (12.11')(R1) 49.62' (49.20')(R7) 49.74'

N81°54'40"E 21.87' N81°54'40"E 3.46' N81°54'40"E

SFBARTD SUBSURFACE EASEMENT RE 1980, IM 330

N81°55'09"E (SEE NOTE 1) 55.80' SEE DETAIL "A" S8°04'40"E 0.48' 21.87'X0.48' GAP AREA=10 S.F.± N81°54'40"E 105.52' (105.50')(R7) 87.14' SOUTHERLY LINE OF LOT 58

N53°37'35"W

SHATTUCK AVE (R/W VARIES)

574.95'(T) 322.00' PER (R1) (571.47')(CALC.)(R5)

MAP OF THE COLLEGE TRACT 9 M 46

MAP OF THE COLLEGE TRACT 9 M 46

N8°05'03"W (SEE NOTE 2)

EXISTING TOP FACE OF CURB

CURB'S SPLIT LINE N8°05'20"W (SEE NOTE 4)

EXISTING TOP FACE OF CURB

R/W LINE BASED ON (R4) AND IMPROVEMENTS

N8°05'03"W (SEE NOTE 2) 114.67' (114.68')(R5)

114.69' (114.68')(R5)(R9) (114.68')(R5),(R9) 114.70' 115.18'(T)

LANDS OF EDITH WIESER GLYNN, TRUSTEE APN: 057–2053–004–02

LOT 6 AREA=6,400 S.F.±

LANDS OF EDITH WIESER GLYNN, TRUSTEE APN: 057–2053–003–01 APN: 057–2053–003–02 RE 1749, IM 918

AREA=9,570 S.F.±

N4°02'40"W 115.48' (114.97')(R6)

CURRENT R/W LINE PER (R4)

EXISTING TOP FACE OF CURB

(279.58')(R2) 297.65'

MILVIA ST (60' R/W)

LOT 19 LOT 18 LOT 17 LOT 16 LOT 15 LOT 14 LOT 13 LOT 12 LOT 11 LOT 10 LOT 9 LOT 8 LOT 7

LANDS OF KL2067 UNIVERSITY LLC APN: 057–2053–005 DOC. NO. 2017–122694

N8°04'40"W

S8°04'40"E N8°04'40"W

(55.90')(R9) N81°55'20"E 55.80'

N81°55'20"E

94°02' PER (R4)

N81°55'20"E 30.16'(TIE)

37.81'(TIE)

N4°02'40"W 37.87'(TIE)

FOUND PER (R2)

31.20'(TIE)

20.0'± 20.0'±

R/W LINE BASED ON IMPROVEMENTS

EXISTING BACK OF SIDEWALK

N81°55'20"E 563.30'(CALC.) PER (R5) 74.00' 74.00' 24.00' 24.00' 74.00' 566.82'(T) (566.92')(R1),(R4) 107.35' 79.02' 110.82' (110.76')(R9) 134.82'

49.7'± (TO BSW) 50.00' N81°55'20"E 12.23' 49.7'± (TO BSW)

N81°55'20"E CENTERLINE BASED ON IMPROVEMENTS

UNIVERSITY AVE (100' R/W) PER (R5)

49.7'± (TO BSW) 50.00' 49.7'± (TO BSW)

EXISTING BACK OF SIDEWALK

N81°55'20"E

R/W LINE BASED ON IMPROVEMENTS

SCALE 1" = 20'

NORTH

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

1 inch = 20 ft.

ALTA/NSPS LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE AND 2071 UNIVERSITY AVENUE

CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA

DECEMBER 2022

PREPARED BY

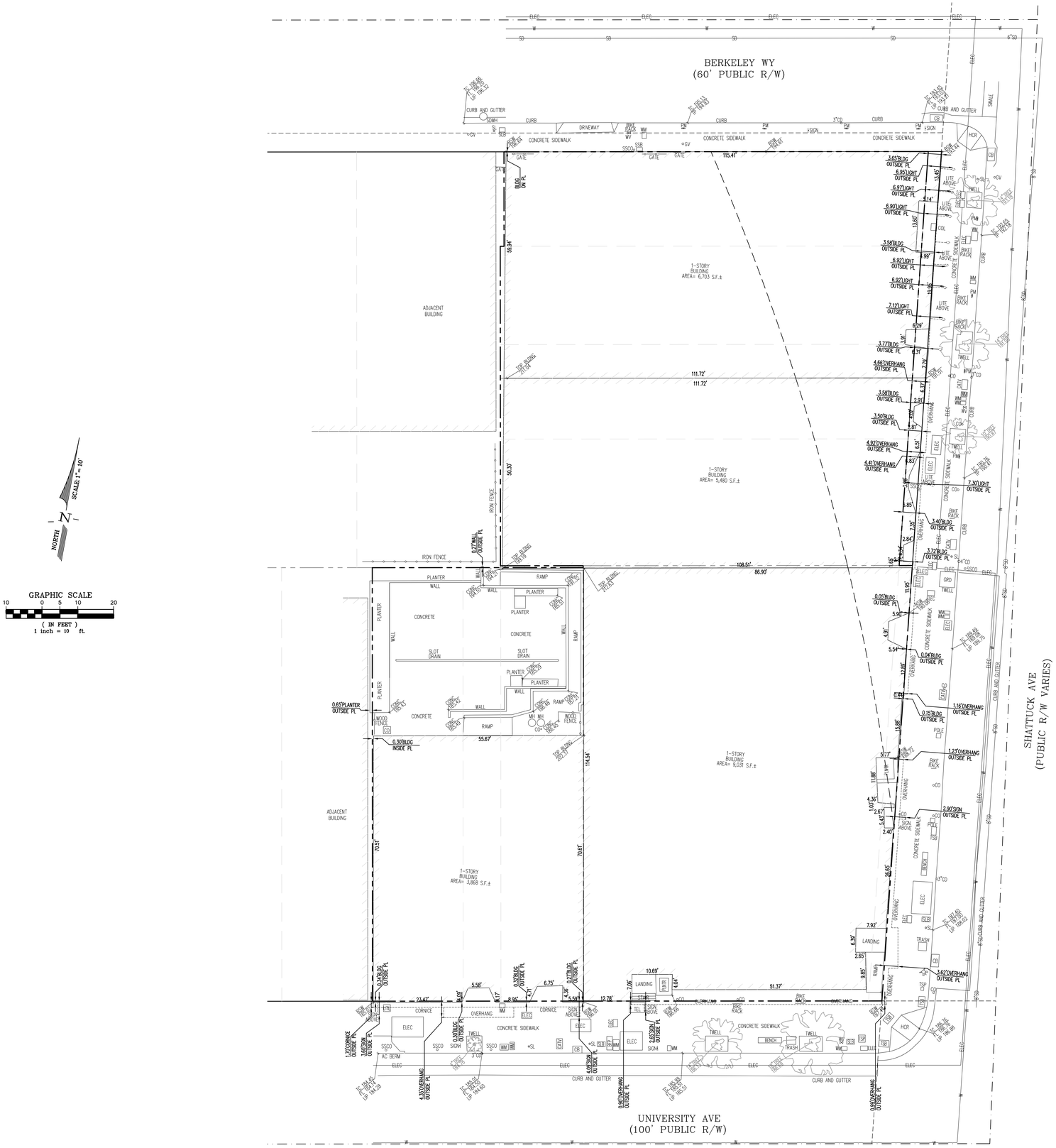
LUK AND ASSOCIATES

CIVIL ENGINEER – LAND PLANNERS – LAND SURVEYORS

738 ALFRED NOBEL DRIVE

HERCULES, CALIFORNIA 94547

(510) 724–3388



LEGEND

SYMBOLS	DESCRIPTION
	BOUNDARY OF SUBJECT PROPERTY
	RIGHT OF WAY LINE
	INTERIOR PROPERTY LINE
	MONUMENT LINE
	TIE LINE
	OLD LOT LINE
ELEC	ELECTRIC LINE
GAS	GAS LINE LINE
W	WATER LINE
SD	STORM DRAIN LINE
SS	SANITARY SEWER LINE
ELEC	ELECTRICITY BOX
AC BERM	ASPHALT BERM
SSCO	SANITARY SEWER CLEAN OUT
WM	WATER METER
HCR	HANDICAP RAMP
TWELL	TREE WELL
SL	STREET LIGHT
PLNTR	PLANTER BOX
CB	CATCH BASIN
TEL	TELECOMMUNICATION BOX
GV	GAS VALVE
SLB	STREET LIGHT BOX
CD	CURB DRAIN
CO	CLEAN OUT
BFP	BACK FLOW PREVENTER
TSB	TRAFFIC SIGNAL BOX
WV	WATER VALVE
CD	CURB DRAIN
PM	PARKING METER
COL	COLUMN
SSB	SANITARY SEWER BOX
SDMH	STORM DRAIN MAN HOLE
GRD	GROUND
SD	SLOT DRAIN
MH	MANHOLE
CONC 65.60	TOP OF CONCRETE ELEVATION
BSW 65.60	BACK OF SIDEWALK ELEVATION
TC 65.64	TOP OF CURB ELEVATION
TP 65.64	TOP OF PAVEMENT ELEVATION
FL 65.64	FLOW LINE ELEVATION
TOP BLDG 65.64	TOP OF BUILDING ELEVATION
LIP 65.60	TOP OF LIP ELEVATION
	TREE

ALTA/NSPS
LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE
AND 2071 UNIVERSITY AVENUE
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ATTESTATION FORM

BIRD SAFE BUILDING REQUIREMENTS

planning@berkeleyca.gov • Phone **(510) 981-7410,** TDD **(510) 981-7450**
Planning and Development, 1947 Center St, 2nd Floor, Berkeley, CA 94704

GENERAL INFORMATION

The City Council adopted new requirements for Bird Safe Buildings, effective July 27, 2023, to reduce bird mortality from collisions with windows and other transparent or reflective buildings or building features.

Bird Safe Requirements apply to *building permits* that include new or replaced windows or contain transparent or reflective materials.

MORE INFORMATION

Berkeley Municipal Code (BMC) Section 23.304.150

BIRD SAFE BUILDING REQUIREMENTS

All regulated transparent or reflective materials located between the ground and 75 feet above grade must meet Bird Safe Building requirements.

With the exception of exempt projects, any High-Risk Feature, as defined in BMC Section 23.304.150 shall meet Bird Safe Building Requirements, regardless of distance from grade.

☒ I acknowledge this requirement (or N/A) _____

BIRD SAFE BUILDING COMPLIANCE OPTION

Pursuant to BMC Section 23.304.150, any regulated transparent or reflective material must meet at least one of the following compliance options. Construction plans must provide confirmation of compliance with applicable requirements at the time of application for the building permit. Details on each compliance path can be found on *Bird Safe Building Requirements Information and Submittal Checklist:*

Option 1: American Bird Conservancy Threat Factor Rating of 30 or less;

Option 2: Patterned Glazing Treatment that meets the specifications included in BMC Section 23.304.150; or

Option 3: External Screen, Shutter or Shading Device permanently installed on the exterior of the building that meets the specifications included in BMC Section 23.304.150.

☒ I acknowledge these requirements (or N/A) _____

INFORMATION & SUBMITTAL CHECKLIST

BIRD SAFE BUILDING REQUIREMENTS

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Planning and Development, 1947 Center St, 2nd Floor, Berkeley, CA 94704

GENERAL INFORMATION

The City Council adopted **Berkeley Municipal Code Section (BMC) 23.304.150** for Bird Safe Buildings, effective July 27, 2023, to reduce bird mortality from collisions with windows and other transportation or reflective buildings or building features.

Bird Safe Requirements apply to *building permits* that include new or replaced windows or contain certain transparent or reflective materials.

DEFINITIONS
BMC 23.304.150(B)

High-Risk Features are transparent or reflective railings, awnings, windbreak or windscreen panels, acoustic barriers, skywalks, greenhouses, glass walls, rooftop appurtenances, balconies and exterior decorative panels, or signage.

Lower Hazard Facades. Facades where less than 30 percent of the façade area consists of transparent or reflective material.

WHAT PROJECTS REQUIRE BIRD SAFE MATERIALS?

Non-Residential Projects

- ❑ **New Construction or Addition.** All transparent or reflective material located in the first 75 feet above grade.
- ❑ **Existing Building.** New or replacement transparent or reflective material located in the first 75 feet above grade.
- ❑ **High-Risk Features** at any grade.

Residential or Mixed-Use Projects

- ❑ **New Construction or Addition.** New or replacement transparent or reflective material located in the first 75 feet above grade on buildings with both 10,000 square feet or more of gross floor area **and** an average building height greater than 35 feet.
- ❑ **Existing Building.** New or replacement transparent or reflective material located in the first 75 feet above grade on buildings with both 10,000 square feet or more of gross floor area **and** an average building height greater than 35 feet.
- ❑ **High-Risk Features** at any grade.

WHAT PROJECTS ARE *EXEMPT* FROM BIRD SAFEREQUIREMENTS?

- ❑ **Existing windows or transparent or reflective materials**, including repairs.
- ❑ **Projects that have vested under SB 330** prior to July 27, 2023, unless required by a Condition of Approval.
- ❑ **Affordable Housing.** Residential and mixed-use projects where more than 50 percent of the residential floor area is subject to recorded affordability restrictions. The exemption also applies to associated High-Risk Features and non-residential portions of a mixed-use building.
- ❑ **Historic Resources.** Designated landmarks or structures of merit (see BMC Ch. 3.24), including associated High-Risk Features.
- ❑ **Existing Non-Residential Buildings where each façade is a Lower Hazard Façade**. High-Risk Features must still meet requirements.
- ❑ **Existing Residential or Mixed-Use Buildings where each façade is a Lower Hazard Façade.** High-Risk Features must still meet requirements.

INFORMATION & SUBMITTAL CHECKLIST

BIRD SAFE BUILDING REQUIREMENTS

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WHAT QUALIFIES AS A BIRD SAFE MATERIAL? Compliance paths are:

Option 1: Threat Factor. A product listed in the American Bird Conservancy's Database with a Threat Factor of 30 or less; **OR**

Option 2: Patterned Glazing Treatment. Material that has all of the following:
- **Permanent patterning** that meets the specifications in BMC 23.304.150(C)(2)(a).
- **Visible light reflectance** of less than or equal to 15 percent.
- **Low-E coatings** located behind the pattern; **OR**

Option 3: External screen, shutter, or shading device, with no gap larger than 9 inches in any dimension.

ZONING PROJECT SUBMITTAL REQUIREMENTS (LAND USE ENTITLEMENTS)	
☒	**Bird Safe Building Requirements Attestation**: For projects subject to Bird Safe Requirements, a completed and signed Bird Safe Requirement Attestation Form.
☐	**Building Elevations:** For projects that include existing buildings, provide diagrams that show the percentage of façade area consisting of transparent or reflective material, such as windows, and High-Risk Features to document whether Bird Safe Requirements apply (see Example-Lower Hazard Façade Diagram, below).
BUILDING PERMIT SUBMITTAL REQUIREMENTS	
☐	**Bird Safe Building Requirements Attestation**: For projects subject to Bird Safe Requirements, a copy of completed and signed Bird Safe Requirement Attestation Form.
☐	**Bird Safe Product/Material Compliance:** Where bird safe materials are required, please indicate the compliance option(s) selected and the product name(s), including threat factor rating where applicable. Please label materials on plans and refer to Bird Safe Compliance Table (see Example – Bird Safe Compliance Table, below)
☐	**Building Elevations:** For projects that include existing buildings, provide diagrams that show the percentage of façade area consisting of transparent or reflective material, such as windows and High-Risk Features to document whether Bird Safe Requirements apply (see Example: Lower-Hazard Façade Diagram, below).

Example – Bird Safe Compliance Table

Label	Compliance Path	Type/Product Name	Threat Factor Rating (if known)
WIN-1	3	External insect screen	1
WIN-2 to WIN-7	1	Solyx SX-BSFH Bird Safety Film	10
WIN-3 to WIN-10	1	ORNILUX Mikado Adv N34	23
HRF-1	1	Natureholic Bird Tape 4	10

INFORMATION & SUBMITTAL CHECKLIST

BIRD SAFE BUILDING REQUIREMENTS

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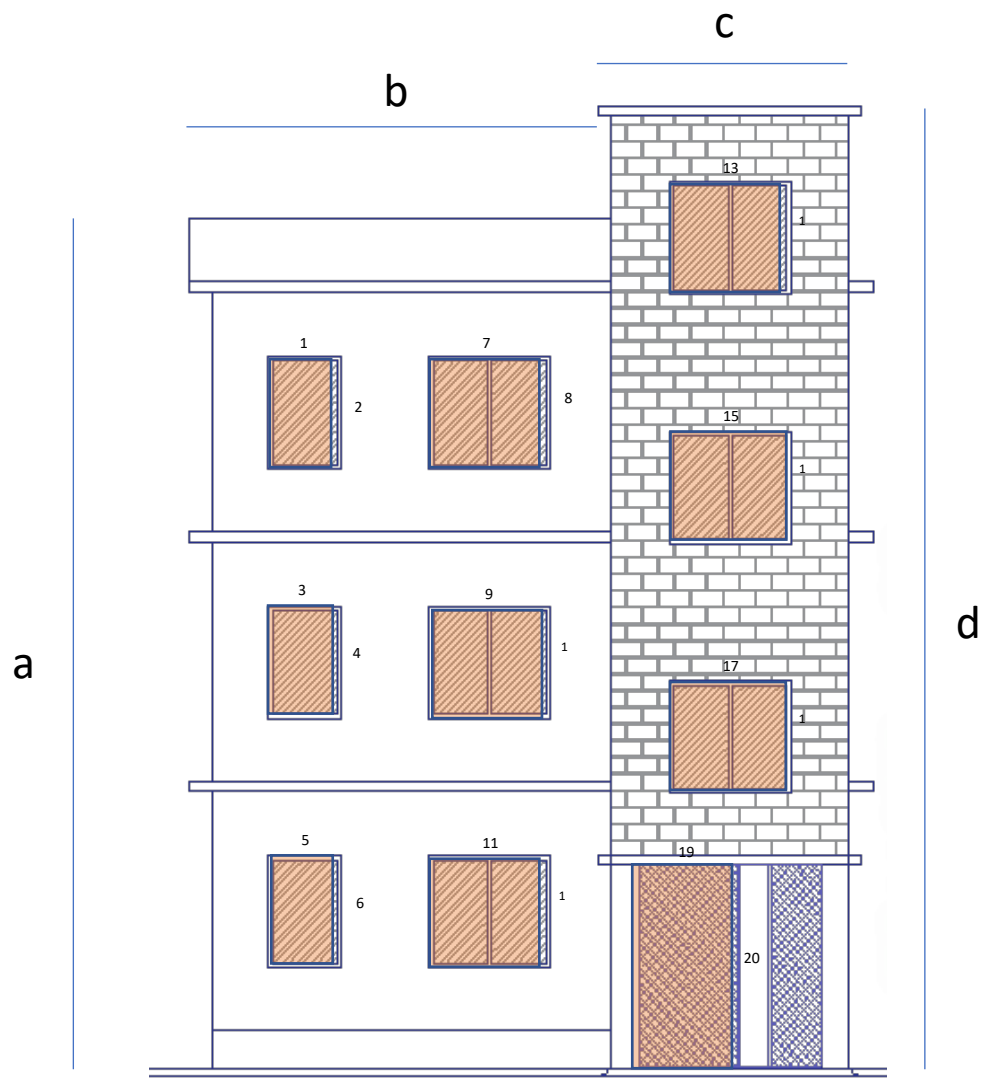
Example: Lower-Hazard Façade Diagram



$$\frac{\text{Total Transparent Area } (\textit{Orange}) \; [(1)(2) + (3)(4) + \ldots (19)(20)]}{\text{Total Façade Area } (a)(b) + (c)(d)} \times 100 = \text{Percentage of Façade that is transparent}$$

(Less than 30% = Lower Risk Façade)

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Attorneys for Plaintiff
JLLJAR, LLC

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF ALAMEDA

1974 SHATTUCK AVENUE, LLC, NX VENTURES, LLC, and JLLJAR, LLC, Plaintiffs, vs. WILLIAM DAVID HURD; JAMES RICHARD HURD; LUCY M. (HURD) FULTON; JON ROBERT HURD; JOHN WILLIAM HURD; DEENA M. (HURD) LAWRENCE; THE TESTATE AND INTESTATE SUCCESSORS OF ADELLA M. MULLER, BELIEVED TO BE DECEASED, AND ALL PERSONS CLAIMING BY, THROUGH, OR UNDER SUCH DECEDENT; SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT; ALL PERSONS UNKNOWN, CLAIMING ANY LEGAL OR EQUITABLE RIGHT, TITLE, ESTATE, LIEN, OR INTEREST IN THE PROPERTY DESCRIBED IN THE COMPLAINT ADVERSE TO PLAINTIFFS' TITLE, OR ANY CLOUD UPON PLAINTIFFS' TITLE TO THE PROPERTY; AND DOES 1-100, Defendants.	Case No. 24CV065234 VERIFIED COMPLAINT TO QUIET TITLE

Plaintiffs 1974 Shattuck Avenue, LLC ("1974 Shattuck"), NX Ventures, LLC ("NX Ventures") and JLLJAR, LLC ("JLLJAR") allege:

INTRODUCTION

1. This is an action to quiet title in Plaintiffs to an approximately three-foot strip of land (the "3-Foot Strip") along Shattuck Avenue in downtown Berkeley that Plaintiffs and their predecessors have openly possessed, occupied, improved, and treated as their own, without any claim or interest of any other person, for many decades. Plaintiffs are in the process of applying for a project (the "Project") that will provide greatly needed, transit-oriented housing in the public interest close to BART and bus lines in downtown Berkeley. As part of the Project, Plaintiffs seek a decree quieting title to the 3-Foot Strip to conform the legal descriptions of two parcels – Alameda County Assessor's Parcel No. 057-2053-001 (the "001 Parcel"), commonly known as 1950 Shattuck Avenue, and Alameda County Assessor's Parcel No. 057-2053-002 (the "002 Parcel"), commonly known as 1974 Shattuck Avenue (collectively, the "Parcels") – to the historical and undisputed usage of those Parcels, which include the 3-Foot Strip. A portion of a survey showing the 3-Foot Strip and its relation to the 001 Parcel and the 002 Parcel is attached to this Complaint as **Exhibit A** for reference. The current legal descriptions of the 001 Parcel and the 002 Parcel are attached to this Complaint as **Exhibit B**. The legal description of the 3-Foot Strip adjacent to the 001 Parcel (the "001 Strip") is attached to this Complaint as **Exhibit C**. The legal description of the 3-Foot Strip adjacent to the 002 Parcel (the "002 Strip") is attached to this Complaint as **Exhibit D**. For the purposes of this Complaint, the 001 Strip and 002 Strip together comprise the 3-Foot Strip.

JURISDICTION AND VENUE

2. This is an action *in rem* to quiet title to real property in favor of Plaintiffs. The real property is located in Alameda County, California. Accordingly, this Court has jurisdiction over the 3-Foot Strip, the parties and this dispute, and venue in this County is proper.

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PARTIES

3. JLLJAR, LLC is the current fee simple owner of all right, title and interest in the 001 Parcel, including its appurtenances. Plaintiff NX Ventures, LLC is under contract to acquire all right, title and interest in the 001 Parcel from JLLJAR, LLC.

4. Plaintiff 1974 Shattuck Avenue, LLC is the present owner in fee simple of all right, title and interest in the 002 Parcel, including its appurtenances.

5. Adella M. Muller is identified in a Litigation Guarantee obtained by Plaintiffs as having the most recent claim to ownership of the 001 Strip. Plaintiffs' due diligence shows Adella M. Muller died on August 23, 1980. Plaintiffs have performed due diligence regarding the descendants of Adella M. Muller and based thereon are informed and believe, and on that basis allege, that Defendants William David Hurd, James Richard Hurd, Lucy M. (Hurd) Fulton, Jon Robert Hurd, John William Hurd, and Deena M. (Hurd) Lawrence are the living adult descendants of Adella M. Muller, and on that basis may claim an interest in the 001 Strip adverse to Plaintiffs' title and occupancy. Pursuant to Cal. Civ. Proc. Code § 762.030(b)(2), Plaintiffs join as Defendants all testate and intestate successors of Adella M. Muller, deceased, and all persons claiming by, through, or under such decedent, even if not specifically named in this Complaint.

6. A Litigation Guarantee obtained by Plaintiffs for the 002 Strip identifies "The heirs and devisees of the Estate of Henry Durant" as having the most recent claim to ownership of the 002 Strip. Plaintiffs' due diligence shows that Henry Durant died intestate in 1875; that his one child predeceased him; that his spouse Mary E.B. Durant died in 1885; that Mary E. B. Durant's estate property was sold for cash; and that none of the real estate sold matched the location of the 002 Strip. Plaintiffs therefore are informed and believe that there is no identifiable successor to the 002 Strip.

7. Defendant San Francisco Bay Area Rapid Transit District ("BART") is a public agency formed to own and operate the BART transit system. BART is named as a Defendant in this action because the Litigation Guarantee obtained by Defendants reflects an Easement under the 3-Foot Strip in favor of BART recorded on May 16, 1966 at Reel

1768, Image 944 of the Official Records of Alameda County. Plaintiffs name BART as a Defendant in this Action to ensure that the BART Easement is preserved and attaches to the interest of Plaintiffs in the 3-Foot Strip.

8. Plaintiffs seek to quiet title in the 00I Strip against the following claims of the following named Defendants:

a. William David Hurd, James Richard Hurd, Lucy M. (Hurd) Fulton, Jon Robert Hurd, John William Hurd, and Deena M. (Hurd) Lawrence, as living adult descendants of Adella M. Muller, deceased, who has been identified as the last claimant to a fee simple interest in the 001 Strip due to the Decree Quieting Title in Alameda County Superior Court Action No. 115479 and recorded on January 5, 1931 as Book 2483 Page 330 in the Official Records of Alameda County, as described further below.

9. Defendants' claims are without any right, and Defendants have no right, title, estate, lien, or interest in the 3-Foot Strip or any part of it, except the following: BART holds a valid Easement, as described above, that Plaintiffs do not dispute.

10. For convenience, the above persons and public agencies identified by their proper names or aliases in this Complaint are referred to in this Complaint as the "Named Defendants."

11. Having conducted thorough and appropriate due diligence, Plaintiffs do not know the exact names, capacities, bases for liability, or interests in the 3-Foot Strip of other Defendants, which Plaintiffs designate for this action as "all persons unknown, claiming any legal or equitable right, title, estate, lien, or interest in the property described in the complaint adverse to Plaintiffs' title, or any cloud on Plaintiffs' title to the Property." Plaintiffs seek to quiet title in the 3-Foot Strip against the claim of each such Defendant, and each such Defendant has no right, title, estate, lien, or interest in the property or any part of it. Plaintiffs will serve this class of Defendants by publication as the Court allows.

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12. DOES 1-100, inclusive, are sued in this Complaint under fictitious names. Their true names, capacities, bases for liability, or interests are unknown to Plaintiffs. When that information is ascertained, Plaintiffs will amend this Complaint to insert their true names and capacities as Defendants in this action. Plaintiffs are informed and believe and thereon allege that each of these fictitiously named Defendants claims some right, title, estate, lien, or interest in the 001 Strip or 002 Strip, and that their claims, and each of them, constitute a cloud on Plaintiffs' title to the 3-Foot Strip.

13. Pursuant to Cal. Civ. Proc. Code § 762.060(a), Plaintiffs sue and seek a judgment binding all persons unknown, claiming any legal or equitable right, title, estate, lien, or interest in the 3-Foot Strip adverse to Plaintiffs' title, or asserting any interest creating any cloud upon Plaintiffs' title thereto.

FACTS

A. Facts Common to the 001 Strip and the 002 Strip

14. Plaintiffs are informed and believe that for nearly a century, and perhaps more, the owners and occupants of the 001 and 002 Parcels have possessed, occupied, and used the adjacent 3-Foot Strip as part of those Parcels. Both Parcels are improved with buildings, the facades of which many decades ago were built upon, and since their construction have exclusively occupied, the 3-Foot Strip all the way to the Shattuck Avenue public right-of-way. Plaintiffs and their predecessors have continuously constructed, maintained, paid for, and borne the liabilities and responsibilities associated with the improvements built on and under the 3-Foot Strip. Plaintiffs are informed and believe that the City of Berkeley and the public at all relevant times have treated the boundaries of the 001 and 002 Parcels as including the 3-Foot Strip. Plaintiffs are informed and believe that no person has objected to the presence of the buildings on the 3-Foot Strip or the occupancy by Plaintiffs or their predecessors in the 3-Foot Strip, nor has any person other than the owners of the 001 and 002 Parcels claimed any interest in the 3-Foot Strip or asserted that the 3-Foot Strip is being occupied with their consent. A portion

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of a December 2022 Survey showing the buildings occupying the 3-Foot Strip is attached to this Complaint as **Exhibit E**.

15. As shown on Exhibits A and E, the eastern boundary of the parcel immediately to the south of the 002 Parcel extends approximately three feet further to the east than the current boundary of the 002 Parcel, and thus fully to the Shattuck Avenue right-of-way, further confirming the intention and understanding of all involved that the property lines of the 001 Parcel and 002 were intended by all to extend to the Shattuck Avenue right-of-way and were to include the 3-Foot Strip.

B. Further Facts Regarding the 001 Strip

16. Plaintiffs are informed and believe and on that basis allege that on or about January 8, 1930, Philip J. Haver loaned money to Max Muller and Adella M. Muller and secured repayment of that loan by Deed of Trust recorded on January 8, 1930 at Book 2310 page 193 of the Official Records of Alameda County, a true and correct copy of which is attached as **Exhibit F** (the "Deed of Trust"); and that it was the intention of Philip J. Haver and Adella M. Muller to secure repayment of that loan with, and that the Deed of Trust encompass, all right, title and interest in the 001 Parcel, and all rights, tenements, hereditaments and appurtenances thereto then owned or thereafter acquired, which included the 001 Strip.

17. Plaintiffs are informed and believe and on that basis allege that the City of Berkeley by Quitclaim Deed, a true and correct copy of which is attached as **Exhibit G**, conveyed all right, title and interest in the 001 Strip to Adella M. Muller as of October 29, 1930. As a result of that conveyance, the 001 Strip formally became part of the property of Adella M. Muller subject to the Deed of Trust.

18. Plaintiffs are informed and believe and on that basis allege that a Decree Quieting Title in Alameda County Superior Court Action No. 115479 and recorded on January 5, 1931 as Book 2483 Page 330 in the Official Records of Alameda County confirmed all right, title and interest in the 001 Strip to Adella M. Muller and against all other persons and entities, including without limitation the City of Berkeley. A true and

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correct copy of that recorded Decree is attached to this Complaint as **Exhibit H**. This Decree confirmed the 001 Strip was part of the security encompassed within the Deed of Trust.

19. Plaintiffs are informed and believe and on that basis allege that Adella and Max Muller defaulted on payment of the loan secured by the Deed of Trust, and the loan was foreclosed upon by Beneficiary Philip J. Haver, who made the high bid of $15,000 at the Trustee's Sale pursuant to the Deed of Trust. As a result, on or about March 17, 1933 a Trustee's Deed was recorded at Book 2894 page 399 of the Official Records of Alameda County, conveying all right, title and interest in the 001 Parcel to Philip J. Haver, including all tenements, hereditaments and appurtenances associated with that 001 Parcel, which all intended to include the 001 Strip. Plaintiffs are informed and believe and on that basis allege that only by mutual mistake did the metes and bounds legal description in the Trustee's Deed fail to include the 001 Strip. A true and correct copy of the Trustee's Deed is attached to this Complaint as **Exhibit I**.

20. As a result of the Trustee's Deed attached as Exhibit I, Philip J. Haver became the owner in fee simple absolute of all right, title and interest in the 001 Parcel and the appurtenant 001 Strip. Plaintiff JLLJAR is the legal successor in interest to Philip J. Haver of all right, title and interest in the 001 Strip, to the exclusion of all other claimants, including the Defendants in this action. Plaintiff NX Ventures has a present equitable interest in the 001 Strip by virtue of its presently pending agreement for the purchase of all right, title and interest in the 001 Parcel and all its appurtenances, including the 001 Strip from Plaintiff JLLJAR.

21. Plaintiff JLLJAR and its predecessors for decades have, and continue to, openly and notoriously, and as of right, occupy and possess the 001 Strip, providing reasonable notice of their claim to the 001 Strip to any person claiming to have any right, title or interest in the 001 Strip.

22. Plaintiffs NX Ventures and JLLJAR are informed and believe, and on that basis allege, that JLLJAR and its predecessors have paid taxes on the 001 Strip for more

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than five years.

C. Further Facts Regarding the 002 Strip

23. Plaintiffs are informed and believe, and on that basis allege, that on January 31, 1890, a "Map of College Tract, Berkeley" was recorded creating the 002 Parcel, and all persons, entities and agencies having any right, title, interest or claim, or otherwise involved in the property thereafter intended the 002 Strip to be included in the 002 Parcel.

24. Plaintiff 1974 Shattuck and its predecessors in the 002 Parcel for decades have, and continue to, openly and notoriously, and as of right, occupy and possess the 002 Strip, providing reasonable notice of their claim to the 002 Strip to any person claiming to have any right, title or interest in the 002 Strip.

25. Plaintiff 1974 Shattuck is informed and believe, and on that basis alleges, that it and its predecessor have paid taxes on the 002 Strip for more than five years.

26. Based on the allegations set forth above, Plaintiffs seek the relief alleged in this Complaint.

FIRST CAUSE OF ACTION

(Quiet Title To The 001 Strip In Favor Of JLLJAR, LLC)

27. Plaintiffs NX Ventures and JLLJAR reallege and incorporate by reference Paragraphs 1-26, above into this cause of action.

28. By virtue of the foregoing allegations, Plaintiff JLLJAR is the owner by right of the 001 Strip, which was intended by all to be included within and part of the 001 Parcel, in fee simple absolute. The legal description of the 001 Parcel omits the 001 Strip contrary to the intentions of, and as a result of the mutual mistake of, the previous grantors and grantees and other predecessors in interest to the 001 Parcel.

29. Plaintiffs seek to quiet title against the claims of each Defendant, and any person claiming any right, title or interest in the 001 Strip. Each Defendant's claim is without any right whatsoever, and Defendants have no right, title, estate, lien, or interest whatever in the 001 Strip, or any part of that property.

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30. The title of Plaintiff JLLJAR is subject only to the Easement in favor of Defendant BART alleged in this Complaint and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

31. On this basis, Plaintiffs seek the relief set forth in the Prayer.

SECOND CAUSE OF ACTION

(Quiet Title by Adverse Possession to, or Prescriptive Easement in, the 001 Strip In Favor Of JLLJAR, LLC And Against All Defendants)

32. Plaintiffs NX Ventures and JLLJAR reallege and incorporate by reference Paragraphs 1-31, above into this cause of action.

33. The continuous possession of the 001 Strip by Plaintiff JLLJAR and its predecessors-in-interest has been open and notorious, as of right, and hostile and adverse to the claims of Defendants and to all other persons, resulting in title to the 001 Strip in Plaintiff JLLJAR, superior to all claims, right, title or interest of Defendants and all other persons, known or unknown. The title of Plaintiff JLLJAR is subject only to the Easement in favor of Defendant BART alleged in this Complaint, and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

34. Alternatively, the continuous possession of the 001 Strip by Plaintiff JLLJAR and its predecessors-in-interest has been open and notorious, as of right, and hostile and adverse to the claims of Defendants and to all other persons, resulting in a permanent and exclusive easement to the 001 Strip in favor of JLLJAR by prescription, superior to all claims, right, title or interest of Defendants and all other persons, known or unknown. The title of Plaintiff JLLJAR in the 001 Strip is subject only to the Easement in favor of Defendant BART alleged in this Complaint and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

35. On this basis, Plaintiffs seek the relief set forth in the Prayer.

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THIRD CAUSE OF ACTION

(Quiet Title To The 002 Strip In Favor Of 1974 Shattuck Avenue, LLC And Against All Defendants)

36. Plaintiff 1974 Shattuck realleges and incorporates by reference Paragraphs 1-35, above into this cause of action.

37. Plaintiff 1974 Shattuck is the owner by right of the 002 Parcel and the 002 Strip, by Grant Deed recorded June 11, 2014, a copy of which is attached to this Complaint and incorporated by reference as **Exhibit J**. The legal description of the 002 Parcel in the 002 Parcel Deed and its predecessor deeds and other instruments by which the title to the 002 Parcel was transferred was intended to include the 002 Strip, and omit the 002 Strip only due to the mutual mistake of the previous grantors and grantees and other predecessors in interest to the 002 Parcel.

38. Plaintiff seeks to quiet title against the claims of each Defendant, and any person claiming any right, title or interest in the 002 Strip. Each Defendant's claim is without any right whatsoever, and Defendants have no right, title, estate, lien, or interest whatever in the 002 Strip, or any part of that property.

39. The title of Plaintiff 1974 Shattuck in the 002 Strip is subject only to the Easement in favor of Defendant BART alleged in this Complaint and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

40. On this basis, Plaintiff seeks the relief set forth in the Prayer.

FOURTH CAUSE OF ACTION

(Quiet Title by Adverse Possession to, or Prescriptive Easement in, the 002 Strip In Favor Of 1974 Shattuck Avenue, LLC And Against All Defendants)

41. Plaintiff 1974 Shattuck realleges and incorporates by reference Paragraphs 1-40, above into this cause of action.

42. The continuous possession of the 002 Strip by Plaintiff 1974 Shattuck and its predecessors-in-interest in the 002 Parcel has been open and notorious, as of right, and hostile and adverse to the claims of Defendants and to all other persons, resulting in title to

the 002 Strip in Plaintiff 1974 Shattuck, superior to all claims, right, title or interest of Defendants and all other persons, known or unknown. The title of Plaintiff 1974 Shattuck is subject only to the Easement in favor of Defendant BART alleged in this Complaint, and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

43. Alternatively, the continuous possession of the 002 Strip by Plaintiff 1974 Shattuck and its predecessors-in-interest has been open and notorious, as of right, and hostile and adverse to the claims of Defendants and to all other persons, resulting in a permanent and exclusive easement to the 002 Strip in favor of 1974 Shattuck by prescription, superior to all claims, right, title or interest of Defendants and all other persons, known or unknown. The title of Plaintiff 1974 Shattuck in the 002 Strip is subject only to the Easement in favor of Defendant BART alleged in this Complaint and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

44. On this basis, Plaintiff seeks the relief set forth in the Prayer.

PRAYER

Plaintiffs pray for judgment against Defendants, and each of them, jointly and severally, as follows:

1. For a judgment quieting title, as of the date of filing this Complaint, in favor of Plaintiff JLLJAR, LLC, or any successor owners of the 001 Parcel, as the owner in fee simple absolute of the 001 Strip, and that Defendants have no estate, right, title or interest in the 001 Strip, except only for the Easement in favor of Defendant BART alleged in this Complaint and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

2. For a judgment amending the legal description of the 001 Parcel to include the 001 Strip.

3. Alternatively, for a judgment that, as of the date of filing this Complaint, Plaintiff JLLJAR, LLC is the owner of a permanent and exclusive easement to the 001

LAW OFFICES
atkins Leck Gamble

Strip for development, erection, operation, improvement and maintenance of structures and all related uses.

4. For a judgment quieting title, as of the date of filing this Complaint, in favor of Plaintiff 1974 Shattuck, LLC as the owner in fee simple absolute of the 002 Strip, and that Defendants have no estate, right, title or interest in the 002 Strip, except only for the Easement in favor of Defendant BART alleged in this Complaint and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

5. For a judgment amending the legal description of the 002 Parcel to include the 002 Strip.

6. Alternatively, for a judgment that, as of the date of filing this Complaint, Plaintiff 1974 Shattuck is the owner of a permanent and exclusive easement to the 002 Strip for development, erection, operation, improvement and maintenance of structures and all related uses.

7. For a judgment enjoining Defendants, and each of them, from claiming any estate, right, title or interest in the 3-Foot Strip or any portion of the 3-Foot Strip;

8. For costs of suit; and

9. For such other relief as the court may deem proper.

Dated: February 23, 2024

ALLEN MATKINS LECK GAMBLE MALLORY & NATSIS LLP

By: Marshall C. Wallace

MARSHALL C. WALLACE
KIMBERLY F. MACEY

Attorneys for Plaintiffs 1974 Shattuck Avenue, LLC and NX Ventures, LLC

LAW OFFICES
atkins Leck Gamble

Dated: February 23, 2024

JEFFER MANGELS BUTLER & MITCHELL LLP

By: */s/ Matthew S. Kenefick*
MATTHEW S. KENEFICK

Attorneys for Plaintiff JLLJAR, LLC

LAW OFFICES
atkins Leck Gamble

VERIFICATION

1974 Shattuck, LLC

I, Nathan D. George, am a Manager of 1974 Shattuck, LLC. I have read the foregoing Complaint and know the contents of the Complaint. The same is true of my own knowledge, except as to those matters that are therein alleged on information and belief, and as to those matters, I believe them to be true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Dated: February 23, 2024



Nathan D. George
Manager

VERIFICATION

NX Ventures, LLC

I, Nathan D. George, am a Manager of NX Ventures, LLC. I have read the foregoing Complaint and know the contents of the Complaint. The same is true of my own knowledge, except as to those matters that are therein alleged on information and belief, and as to those matters, I believe them to be true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Dated: February 23, 2024

Nathan D. George
Manager

DocuSign Envelope ID: 04B7A48D-9E01-46EB-99D0-96EB5B9A6BE2

VERIFICATION

JLLJAR, LLC

I, Jerry Tsou, am a Manager of JLLJAR, LLC. I have read the foregoing Complaint and know the contents of the Complaint. The same is true of my own knowledge, except as to those matters that are therein alleged on information and belief, and as to those matters, I believe them to be true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Dated: January __, 2024
2/20/2024

DocuSigned by:
Jerry Tsou
4830C919B1BD4C3...

owner
Title

EXHIBIT A

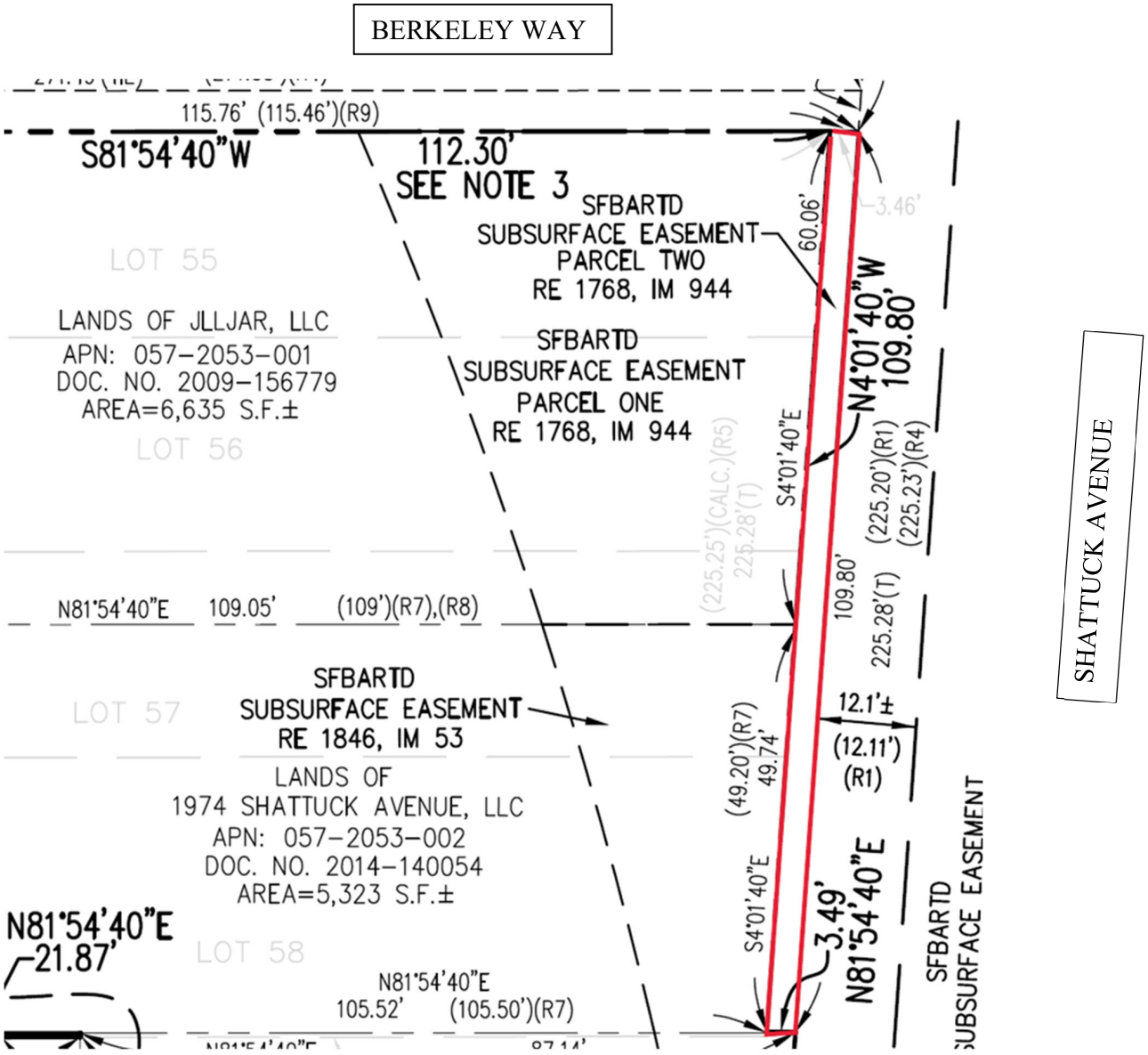

BERKELEY WAY
115.76' (115.46')(R9)
S81°54'40"W
112.30'
SEE NOTE 3
SFBARTD
SUBSURFACE EASEMENT
PARCEL TWO
RE 1768, IM 944
60.06'
3.46'
LOT 55
LANDS OF JLLJAR, LLC
APN: 057-2053-001
DOC. NO. 2009-156779
AREA=6,635 S.F.±
SFBARTD
SUBSURFACE EASEMENT
PARCEL ONE
RE 1768, IM 944
N4°01'40"W
109.80'
S4°01'40"E
(225.25')(CALC.)(R5)
225.28'(T)
(225.20')(R1)
(225.23')(R4)
LOT 56
N81°54'40"E 109.05' (109')(R7),(R8)
109.80'
225.28'(T)
SFBARTD
SUBSURFACE EASEMENT
RE 1846, IM 53
LOT 57
12.1'±
(12.11')
(R1)
(49.20')(R7)
49.74'
LANDS OF
1974 SHATTUCK AVENUE, LLC
APN: 057-2053-002
DOC. NO. 2014-140054
AREA=5,323 S.F.±
S4°01'40"E
3.49'
N81°54'40"E
SFBARTD
SUBSURFACE EASEMENT
N81°54'40"E
21.87'
LOT 58
N81°54'40"E
105.52' (105.50')(R7)
SHATTUCK AVENUE

EXHIBIT B

ORDER NO. : 1117026136

EXHIBIT A

The land referred to is situated in the County of Alameda, City of Berkeley, State of California, and is described as follows:

Beginning at the intersection of the Western line of Shattuck Avenue, with the Southern line of Berkeley Way, as said avenue and way are shown on the Map hereinafter referred to; running thence Southerly along said line of Shattuck Avenue, 60.06 feet; thence Westerly parallel with said line of Berkeley Way, 109 feet, more or less, to the Easterly boundary line of the land described in the Deed executed by F. D. Chase and Atlanta J. Chase, his wife, to Jacob Bauml, dated July 28, 1922, and recorded in Liber 324 of Official Records, at Page 73, Alameda County Records; thence at right angles Northerly along said last named boundary line 35 feet, more or less, to the Southern boundary line of Lot 55, as said Lot is shown on the said Map; thence at right angles Easterly 8 inches; thence at right angles Northerly parallel with the Westerly boundary line of said Lot 55, aforesaid, 25 feet to the Southern line of Berkeley Way; thence Easterly along said line of Berkeley Way, 112.30 feet to the point of beginning.

Being portions of Lots Nos. 55, 56 and 57, as said Lots are delineated and as designated upon that certain Map entitled, “Map of College Tract, Berkeley”, filed January 31, 1890, in Liber 9 of Maps, Page 46, in the Office of the County Recorder of Alameda County.

APN: 057-2053-001

ORDER NO. : 0147014348-SH

EXHIBIT A

The land referred to is situated in the County of Alameda, City of Berkeley, State of California, and is described as follows:

Beginning at a point on the Western line of Shattuck Avenue, distant thereon Southerly, 60.6 feet from the point of intersection thereof, with the Southern line of Berkeley Way, as said avenue and way are shown on the Map herein referred to; running thence Southerly along said line of Shattuck Avenue, 49.20 feet; thence Westerly and parallel with said line of Berkeley Way, 105.50 feet, more or less, to a point which would be intersected by a line drawn Southerly form and at right angles to said line Berkeley way from a point distant thereon, 113.30 feet Westerly from the Western line of Shattuck Avenue; thence at right angles Northerly, 49 feet, more or less, to a point which would be intersected by a line drawn Westerly from said point of beginning and parallel with Berkeley way; thence Easterly along said parallel line, 109 feet, more or less, to the point of beginning.

Being a portion of Lots 57 and 58, as said lots are shown on the "Map of the College Tract, Berkeley", filed January 31, 1890, in Book 9 of Maps, Page 46, in the Office of the County Recorder of Alameda County.

APN: 057-2053-002

EXHIBIT C

All that certain lot piece or parcel of land, situate, lying and being in the City of Berkeley, County of Alameda, State of California, and bounded and particularly described as follows, to-wit:

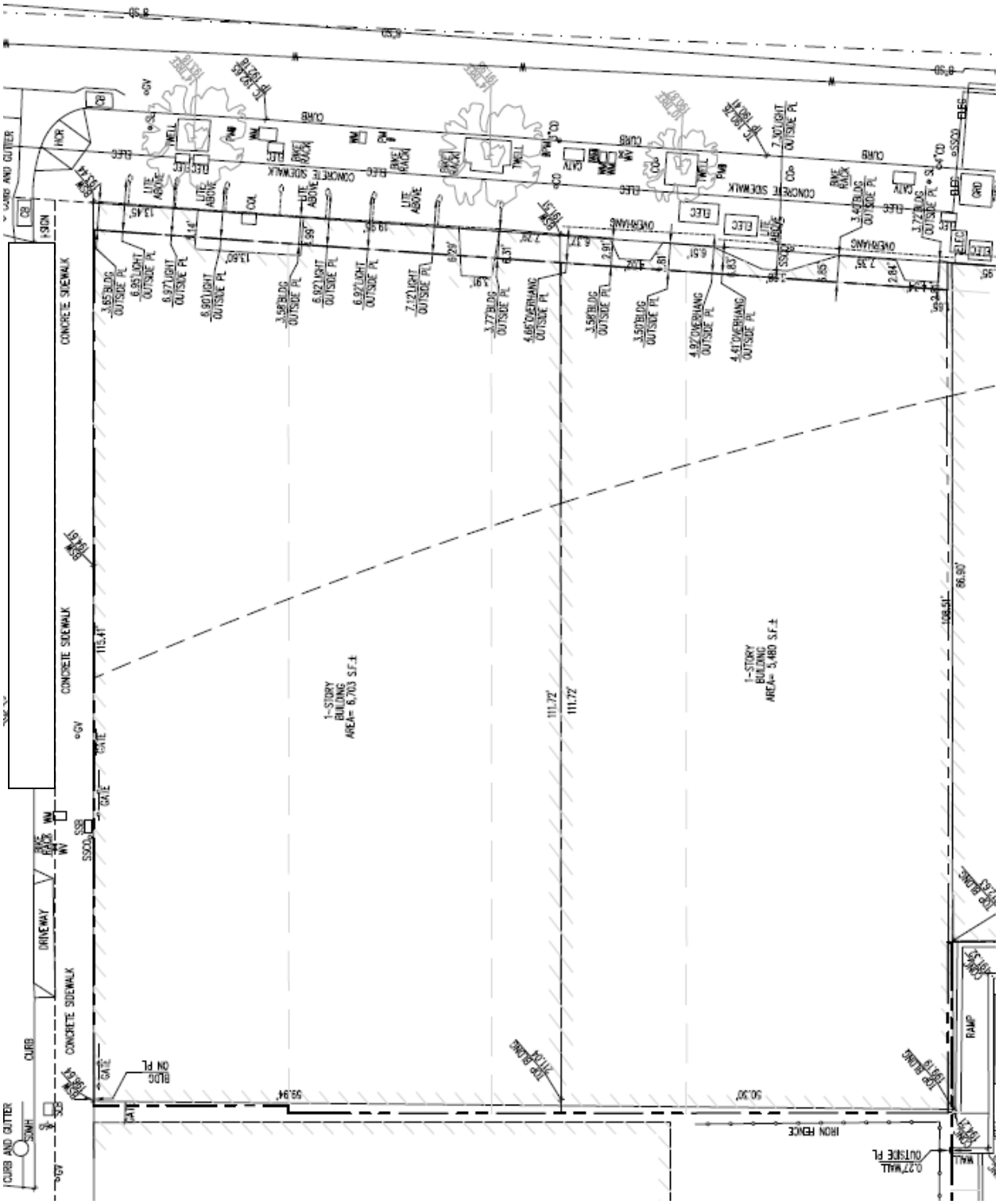
BEGINNING at the point of intersection of the Southern line of Berkeley Way with the Western line of Shattuck Avenue as said Avenue and Way are shown on that map entitled: “Map of the College Tract, Berkeley” filed in the office of the County Recorder of Alameda County January 31,1890, and running thence Easterly along the Southern line of Berkeley Way three feet more or less to the Western line of Shattuck Avenue as established by Ordinance No. 387, adopted by the Board of Trustees of the Town of Berkeley, January 18,1892; thence Southerly along said last described line sixty and 06/100 feet (60.06); thence Westerly parallel with the Southern line of Berkeley Way three (3) feet more or less to the Western line of Shattuck Avenue as shown on said Map of the College Tract; thence Northerly along said last described line to the point of beginning.

EXHIBIT D

All that certain lot piece or parcel of land, situate, lying and being in the City of Berkeley, County of Alameda, State of California, and bounded and particularly described as follows, to-wit:

BEGINNING at the point on the Western line of Shattuck Avenue, 60.6 feet Southerly of the intersection of the Southern line of Berkeley Way with the Western line of Shattuck Avenue as said Avenue and Way are shown on that map entitled: “Map of the College Tract, Berkeley” filed in the office of the County Recorder of Alameda County January 31,1890, and running thence Easterly along the Southern line of Berkeley Way three feet more or less to the Western line of Shattuck Avenue as established by Ordinance No. 387, adopted by the Board of Trustees of the Town of Berkeley, January 18,1892; thence Southerly along said last described line 49.20 feet; thence Westerly parallel with the Southern line of Berkeley Way three (3) feet more or less to the Western line of Shattuck Avenue as shown on said Map of the College Tract; thence Northerly along said last described line to the point of beginning.

EXHIBIT E



4876-2541-8897.1
391996.00009/11-16-23/mcw/mcw

EXHIBIT F

of said lands.

TO HAVE AND TO HOLD the same without any warranty, unto the said Walter F.Hundemer,(as his separate property) and assigns forever.

IN WITNESS WHEREOF,AMERICAN SECURITIES COMPANY has caused these presents to be executed and its corporate seal to be hereto affixed this Twenty-third day of July,1929

AMERICAN SECURITIES COMPANY,Trustee
By J.E.Hall Vice President
Wallace Merriam,Assistant Secretary.

(Corporate Seal)

STATE OF CALIFORNIA)
COUNTY OF ALAMEDA)SS On this 18th day of September 1929, before me,Ina M.Baird, a Notary Public in and for said Alameda County and State, residing therein,duly commissioned and sworn, personally appeared,J.E.Hall and Wallace Merriam known to me to be the Vic-President and Assistant-Secretary,respectively of American Securities Company Trustee , the corporation described in and that executed the within instrument ,and also known to me to be the persons who executed said instrument on behalf of said corporation therein named and they acknowledged to me that such corporation executed the same,and as Trustee as therein set forth;

IN WITNESS WHEREOF , I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Ina M.Baird, Notary Public.
(Notarial Seal) In and for said County of Alameda, State of California.

RECORDED AT REQUEST OF GRANTEE at 30 min past 11 A.M. Jan-7,1930
AA-1120 1.00

E.W.Bacon
COUNTY RECORDER.

Copied Jan-11,1930 , C.A.Jamieson

RELEASED OF RECORD, ETC. Liber 2542 Official Records Page 334

FOR SUBSTITUTION OF TRUSTEES Liber 2876 Official Records Page 314

FOR TRUSTEE'S DEED Liber 2724 Official Records Page 399

M.MULLER,ET AL

TO

ALAMEDA COUNTY TITLE INS.,CO.,TR.

THIS DEED OF TRUST,Made this 3rd day of January,1930;

By and Between MAX MULLER and ADELLA M.MULLER,his wife, hereinafter called The Grantor,and ALAMEDA COUNTY TITLE INSURANCE COMPANY, a corporation,herinafter called The Trustee, and PHILIP J.HAVER, hereinafter called The Lender.

WITNESSETH, That for the consideration hereinafter mentioned, The Grantor does hereby grant, bargain,sell,convey and confirm unto The Trustee,its successors or assigns, all that real property situate, lying and being in the City of Berkeley,County of Alameda, State of California, particularly described as follows, to-wit;

BEGINNING at the intersection of the Western line of Shattuck Avenue, with the Southern line of Berkeley Way,as said Avenue and Way are shown on the Map hereinafter reunning thence Southerly along said line of Shattuck Avenue 60.06 feet thence Westerly parallel with said line of Berkeley Way 109 feet, more or less, to the Easterly boundary line of land described in the Deed executed by F.D.Chase and AtlantaJ.Chase, his wife, to Jacob Bauml, dated July 28 1922 and recorded in Liber 824 of Official Records at page 73, Alameda County Records thence at right angles Northerly along said last named boundary line 35 feet, more or less to the Southern boundary line of Lot 55 as said lot is shown on the said Map thence at right angles Easterly 8 inches thence at right angles Northerly parallel with the Westerly boundary line of said lot 55,aforesaid 25 feet to the Southern line of Berkeley Way thence Easterly along said line of Berkeley Way 112,30 feet to the point of beginning.

BEING portions of Lots Nos.55,56 and 57,as said lots are delineated and so designated upon that certain map entitled "Map of College Tract,Berkeley," filed Jan.31 1890 in Liber 9 of Maps, page 46, in the Office of The County Recorder of Alameda County.

AND also all the estate in law and in equity which The Grantor now has or may hereafter acquire in and to the herein granted premises with the appurtenances;

TO HAVE AND TO HOLD the same unto The Trustee,as aforesaid,its successors or assigns, in Trust for the following purposes;

WHEREAS The Grantor has borrowed and received of The Lender the sum of Twelve Thousand and no/100 ($12,000.00) Dollars in Gold Coin of the United States,he hereby covenants and agrees to repay the same, with interest, according to the terms of a

certain promissory note of even date herewith, executed and delivered to The Lender by The Grantor and also to repay all further advances to The Grantor by the Lender that may be made or contracted as herein provided and also does hereby covenant and agree to pay all taxes,assessments and liens and all encumbrances now existing or which may hereafter exist or which may be imposed on the herein granted premises, or the debt hereby secured by State or other authority,and to protect said premises, from sale therefor, and to keep the buildings now erected, or which may hereafter be erected thereon, insured against loss by fire in such company as The Lender shall approve and in the sum of not less than $12,000.00 and by policies in which loss shall be made payable to The Lender or The Trustee; and to make such repairs on said premises as may be required by The Lender or The Trustee;

IF THE GRANTOR shall fail to pay at maturity any of the obligations or perform any of the covenants aforesaid, The Lender or his assigns, or The Trustee, its successors or assigns, may, without notice to and at the cost of The Grantor, pay and discharge all taxes,assessments, liens and encumbrances, agreed to be paid and discharged by The Grantor,and effect said insurance,and do all acts as they may deem best for the repair and protection of the said premises.

THE LENDER AND THE TRUSTEE, its successors or assigns,are hereby authorized without notice to, and at the cost of The Grantor, to prosecute, defend ,compromise, purchase and settle any adverse suits, liens, encumbrances, or claims, and perform all other covenants herein agreed to be performed by The Grantor;

AND THESE TRUSTS shall continue as security for repayment in Gold Coin of the United States of the money so borrowed and also for all advances to The Grantor by The Lender, that may be made or contracted hereafter, and for all money expended by virtue hereof, with the interest thereon at the rate of Twelve per cent per annum.

AND also for the sum of $500.00 in Gold Coin of The United States as counsel fees, which shall become due and payable to The Trustee its successors or assigns, upon any default hereunder made or suffered by The Grantor,

IF ALL INDEBTEDNESS due under the provisions of this Trust shall be paid and discharged, The Trustee, its successors or assigns, shall reconvey all,the premises. and estate derived to The Trustee hereunder unto The Grantor, his heirs and assigns at his request and costs;

BUT IF DEFAULT shall be made in the payment of any of said indebtedness or in the performance of any of the covenants herein, then, The Trustee, its successors or assigns, are hereby empowered to sell for Gold Coin of the United States, the premises and estates hereby granted or such part or parts thereof, or part at one time and part another as in their discretion it shall be deemed best, upon full compliance with the provisions of Section 2924 of The Civil Code of the State of California,, and Section 692 of the Code of Civil Procedure of the State of California;

THE TRUSTEE, its successors or assigns, may from time to time,postpone such sale to such time as they may elect by publication in the same newspaper as the original notice ,and on the day noticed for such sale , or to which said sale may be postponed, it may sell said property or any part thereof at public auction, at the time place so designated in said notice, to the highest bidder for Gold Coin of the United States and the owner of such indebtedness, or any other person may purchase at such sale, and upon payment therefor, The Trustee, its successors or assigns shall execute and deliver to the purchaser or purchasers a good and sufficient deed, or deeds, of the premises so sold,and out of the proceeds shall pay;

FIRST The expenses of executing this Trust, including counsel fees as aforesaid.

SECOND The remaining indebtedness secured under the provisions of this Trust;

THIRD, The surplus of such proceeds, if any, to The Grantor, his heirs and assigns.

IN THE EVENT OF THE SALE OF SAID PREMISES or any part thereof and the execution of a deed or deeds therefor by The Trustee, its successors or assigns the recitals therein of default, request to sell ,publication and posting of notice of the time and place of sale compliance with the provisions of Section 2924 of the Civil Code and Section 692 of the Code of Civil Procedure of the State of California, sale, postponement of sale, terms of sale, purchaser payment of purchase money, or of any other fact or facts affecting the regularity or validity of such sale, shall be conclusive evidence of all the facts in said deed or deeds recited against The Grantor herein, his heirs and assigns,and all other persons.

IT IS HEREBY COVENANTED THAT The Lender may, by an instrument in writing appoint another Trustee or Trustees to execute the trusts hereby created and upon such appointment, and a conveyance to it or them made by The Trustees their successors or assigns, or if for any reason,,the said Trustees, their successors or assigns,are unable to execute said conveyance, then upon the execution by The Lender of an instrument in writing appointing another Trustee or Trustees, to execute the trust hereby created, all the estate, powers and trusts in the premises hereby vested in The Trustees,shall immediately become vested in said substituted Trustee or Trustees and it or they shall thereupon become the successor or successors and assigns of The Trustees,and a copy of said instrument in writing duly acknowledged by The Lender his heirs,administrators, executors or assigns,and attached to the conveyance by said Trustees, unless as hereinbefore provided there shall be no such conveyance, shall be conclusive against The Grantor and all other persons that said substituted Trustee or Trustees have been duly appointed .

IT IS HEREBY COVENANTED that any or all,powers granted herein to The Trustee or Trustees may be exercised by either Trustee, if the other Trustee is unable or refuses, for any reason, to act,and any recital of such inability or refusal in any conveyance shall be conclusive against The Grantor, his heirs and assigns.

IT IS EXPRESSLY COVENANTED and Agreed that the Trustee , its successors or assigns may at any time. on the request of The Lender, his heirs or assigns,reconvey to the Grantor, his heirs or assigns, any portion of the herein granted premises without affecting the personal liability of any person for the payment of said indebtedness or the estate of The Trustee,its successors or assigns, in the remaining portions of said premises;

The words "Grantor" and "Lender" wherever used in this instrument shall be construed to include the plural as well as the singular number.

WITNESS the hands and seals of The Grantor the day and year first above written.

Adella M.Muller
Max Muller.

STATE OF CALIFORNIA)
COUNTY OF ALAMEDA)SS On this 3rd day of January in the year A.D.Nineteen Hundred and Thirty, before me, F.Jos. Lauck, a Notary Public in and for said County of Alameda, State of California, duly commissioned and sworn,personally appeared, Max Muller,and Adella M.Muller, his wife, known to me to be the persons described in and who executed and whose names are subscribed to the within instrument and they acknowledged to me that they executed the same;

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at my office in the said County of Alameda, the day and year in this certificate

first above written.

F.Jos,Lauck, Notary Public
(Notarial Seal) In and for the County of Alameda, State of California,

RECORDED AT REQUEST OF ALAMEDA COUNTY TITLE INSURANCE CO.,at 9 A.M. Jan-8, 1930
AA-1289 2.60 COMPARED BK. C.A.S. DOC L.F.L.

Copied Jan-13, 1930 C.A.Jamieson COUNTY RECORDER.

S.A.DEDRICK,ET AL
TO
ALAMEDA COUNTY TITLE INS.,CO. TR.,

THIS DEED OF TRUST Made this 14th day of Dec.,1929 By and Between S.A.DEDRICK and SARAH DEDRICK, his wife, hereinafter called the Grantor, and ALAMEDA COUNTY TITLE INSURANCE COMPANY, a corporation,hereinafter called The Trustee,and AMELIA S.MAXWELL, a married woman hereinafter called The Lender;

WITNESSETH that for the consideration hereinafter mentioned The Grantor does hereby grant,bargain, sell,convey and comfirm unto The Trustee,its successors or assigns, all that real property situate ,lying and being in the City of Oakland . County of Alameda, State of California, particularly described as follows, to-wit:

BEGINNING at a point on the Southern line of 45th Street,distant thereon 220 feet, Easterly from the intersection thereof with the Eastern line of Grove Street,as said streets are shown on the Map hereinafter referred to; running thence Easterly along said line of 45th Street, 30 feet, thence at right angle Southerly 100 feet, thence at right angles Westerly 30 feet and thence at right angle Northerly 100 feet to the point of beginning.

BEING the Eastern 20 feet of Lot Numbered 7 and the Western 10 feet of Lot Numbered 8 in Block Numbered 2101 as said Lots and Block are shown and delineated upon that certain Map entitled, "Map of the Alden Tract at Temescal etc." filed December 10th, 1869 in the office of the County Recorder of the County of Alameda,

AND also all the estate,in law and in equity which The Grantor now has or may hereafter acquire in and to the herein granted premises, with the appurtenances.

TO HAVE AND TO HOLD the same unto The Trustee,as aforesaid, its successors or assigns, in trust for the following purposes;

WHEREAS, The Grantor has borrowed and received of The Lender the sum of Six Hundred and Forty and 00/100 ($640.00) Dollars in Gold Coin of the United States he hereby covenants and agrees to repay the same, with interest, according to the terms of a certain promissory note of even date herewith, executed and delivered to The Lender by The Grantor and also to repay all further advances to The Grantor by The Lender that may be made or contracted as herein provided,and also does hereby covenant and agree to pay all taxes,assessments and liens and all encumbrances now existing or which may hereafter exist or which may be imposed on the herein granted premises, or the debt hereby secured,by State or other authority, and to protect said premises from sale therefor. and to keep the buildings now erected or which may hereafter be erected thereon insured against loss by fire in such company as The Lender shall approve and in the sum of not less than $640.00 and by policies in which loss shall be made payable to The Lender or The Trustee and to make such repairs on said premises as may be required by the Lender or the Trustee.

IF THE GRANTOR shall fail to pay at maturity any of the obligations or perform any of the covenants aforesaid, The Lender or his assigns or the Trustee, its successors or assigns may,without notice to and at the cost of The Grantor pay and discharge all taxes,assessments, liens and encumbrances agreed to be paid and discharged by the Grantor and effect said insurance and do all acts as they may deem best for the repair and protection of the said premises.

THE LENDER and the TRUSTEE, its successors or assigns, are hereby authorized, without notice to, and at the cost of the Grantor, to prosecute, defend, compromise, purchase and settle any adverse suits, liens, encumbrances or claims and perform all other covenants herein agreed to be performed by The Grantor.

EXHIBIT G

86

parallel with said line of Harold Street, twenty-five (25) feet, thence southerly, parallel with said line of Boston Avenue one hundred and twelve and 40/100(112 40/100) feet, to the point of commencement.

PARCEL NO. 2: The whole of Lot No. 8 and the western 4 and 73/100 feet of lot No.9, making in all 30 feet by the full length of said lots as the same are shown and delineated upon a certain map entitled "Map of Fruitvale Glen, Brooklyn Township, Alameda County, California" surveyed by George L.Nusbaumer, County Surveyor 1893, filed June 2,1893 in the office of the County Recorder of Alameda County.

TOGETHER with the tenements, hereditaments and appurtenances thereunto belonging or appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof.

TO HAVE AND TO HOLD the said premises, together with the appurtenances, unto the said party of the second part, and to its successors and assigns forever.

IN WITNESS WHEREOF, the party of the first part has hereunto subscribed his name the day and year first above written.

Arthur Stephen Fern

STATE OF CALIFORNIA)
COUNTY OF ALAMEDA)SS. On this 27th day of October,1930, before me, Alice McCue, a Notary Public in and for the County of Alameda, State of California, residing therein, duly commissioned and sworn, personally appeared Arthur Stephen Fern, personally known to me to be the person whose name is subscribed to and who executed the foregoing and annexed document, and he duly acknowledged to me that he executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at my office in the County of Alameda, State of California, the day and year in this certificate first above written.

Alice McCue, Notary Public
(Notarial Seal) In and for the County of Alameda, State of California

RECORDED at request of Bank of America of California at 2 min. past 11 A.M.Oct.29,1930
AA-65632 1.30 COMPARED DOC BK LAYTHAM BAKER 057-2053-001 Portion
W.M.Bacon COUNTY RECORDER 2479 OR 86
10-29-1930
COPIED Nov.3,1930 A.G.Pollard

CITY OF BERKELEY
TO
A.M.MULLER

QUITCLAIM DEED

THIS INDENTURE, Made this 19th day of August in the year of Our Lord one thousand nine hundred and thirty.

BETWEEN CITY OF BERKELEY, a municipal corporation, the party of the first part, and ADELLA M.MULLER, the party of the second part,

WITNESSETH: That the said party of the first part, for and in consideration of the sum of ten dollars ($10.00) in Gold Coin of the United States of America, to it in hand paid by the party of the second part, the receipt whereof is hereby acknowledged, does by these presents remise, release and forever Quitclaim unto the said party of the second part and to her heirs and assigns forever, All that certain lot piece or parcel of land, situate, lying and being in the City of Berkeley, County of Alameda, State of California, and bounded and particularly described as follows, to-wit:

3' sha Hack Ave

BEGINNING at the point of intersection of the southern line of Berkeley Way with the western line of Shattuck Avenue as said Avenue and Way are shown on that map entitled: "Map of the College Tract, Berkeley" filed in the office of the County Recorder of Alameda County January 31,1890, and running thence easterly along the southern line of Berkeley Way three feet more or less to the western line of Shattuck Avenue as established by Ordinance No.387, adopted by the Board of Trustees of the Town of Berkeley, January 18,1892; thence southerly along said last described line sixty and 06/100 feet (60.06);thence westerly parallel with the southern line of Berkeley Way three (3) feet more or less to the western line of Shattuck Avenue as shown on said Map of the College Tract; thence northerly along said last described line to the point of beginning.

TOGETHER with all and singular the tenements, hereditaments and appurtenances thereunto belonging or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof. And also all the estate, right, title, interest, possession, claim and demand whatsoever, as well in law as in

equity, of the said party of the first part, of, in, or to the above described premises, and every part or parcel thereof, with the appurtenances.

TO HAVE AND TO HOLD all and singular the above mentioned and described premises together with the appurtenances unto the said party of the second part her heirs and assigns forever.

IN WITNESS WHEREOF, the said party of the first part has hereunto set its corporate name and seal by its officers thereunto duly authorized.

Signed, Sealed and Delivered in the Presence of --- (Municipal Corporate Seal)

City of Berkeley (SEAL)
By T.E.Caldecott Mayor (SEAL)
By F.E.Turner City Clerk

STATE OF CALIFORNIA)
COUNTY OF ALAMEDA)SS. On this 19th day of August,1930, before me, R.Arthur Bellman, a Notary Public in and for said County of Alameda, State of California, residing therein, duly commissioned and sworn, personally appeared T.E.Caldecott, known to me to be the Mayor, and F.E.Turner, known to me to be the City Clerk of the Municipal Corporation that executed the within instrument and the officers who executed the within instrument on behalf of the Municipal Corporation therein named, and acknowledged to me that such Municipal Corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at my office in the County of Alameda, State of California, the day and year in this certificate first above written.

R.Arthur Bellman, Notary Public
(Notarial Seal) In and for the County of Alameda, State of California

RECORDED at request of Grantee Oct.29,1930 at 3 min. past 11 A.M.

AA-65633 1.20

COMPARED
CCC LAYTHAM BAKER
BK

COPIED Nov.3,1930 A.G.Pollard

COUNTY RECORDER

++++++

EXHIBIT H

2483-330

330

APN: 057-2053-001
ALL

1-5-1931

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE COUNTY OF ALAMEDA. COPY.

ADELLA M. MULLER,

Plaintiff,

vs

E. L. HANSON, as Administratrix of the Estate of HENRY DURANT, Deceased, ISABELLA McDONNELL, M.M. McDONNELL, ANGELO M. HEVERIN, THOMAS A. PETTUS, also known as T. A. PETTUS, LOUISA E. PETTUS, JOHN J. BONNIES, also known as JOHN J. BONVIES also known as JOHN J. BONNER, also known as J.J.BONNIER, LORING J.BARKER, as Administrator of the Estate of JAMES L. BARKER, Deceased, the CITY OF BERKELEY, a municipal corporation, FIRST DOE, SECOND DOE, THIRD DOE, FOURTH DOE, FIFTH DOE, SIXTH DOE, SEVENTH DOE, BLACK COMPANY a corporation, WHITE COMPANY, a corporation, also all other persons unknown, claiming any right title, estate, lien or interest in the real property described in the Complaint on file herein adverse to Plaintiff's ownership, or any cloud upon Plaintiff's title thereto,

Defendants.

NO.115479

DECREE QUIETING TITLE.

The above entitled matter coming on regularly to be heard before this Court on the 30th day of December 1930, and Oscar T. Barber, and R. Arthur Bellman, appearing as Attorneys for the Plaintiff and Earl J. Sinclair appearing as Attorney for defendant CITY OF BERKELEY, a municipal corporation, the other named defendants appearing not at all; and due proof having been made to the satisfaction of the Court that Summons and Complaint have been regularly served upon the Defendants, E. L. HANSON, as Administratrix of the Estate of HENRY DURANT, Deceased, ISABELLA McDONNELL M. M.McDONNELL, ANGELO M. HEVERIN, THOMAS A. PETTUS, also known as T. A. PETTUS, LOUISA E. PETTUS, JOHN J. BONNIES, also known as JOHN J. BONVIES, also known as JOHN J. BONNER, also known as J. J. BONNIER, LORING J. BARKER, as Administrator of the Estate of JAMES L. BARKER, Deceased, also all other persons unknown, claiming any right title, estate, lien or interest in the real property described in the Complaint on file herein adverse to Plaintiff's ownership, or any cloud upon Plaintiff's title thereto, and that said Defendants have and each of them has failed to appear or plead within the time allowed by law and that the plaintiff is entitled to have the default of said defendants and each of them entered as provided by law;

It is ordered by the Court that the said defendants last named are in default and hereby decreed to be in default for failure to appear or plead to the Complaint with the time allowed by law;

And the plaintiff having presented to the Court competent, admissable and sufficient evidence,both oral and documentary,to sustain and prove to the satisfaction of this Court each and all of the allegations in said Complaint contained, and said action having been submitted to this Court for its determination and decision, and the Court having examined the pleadings, papers and records in said action, and having heard the evidence herein given, and from the said pleadings, papers and records in said action and from the evidence given, it appears to the Court, and the Court now finds, as follows, to wit:

That the above entitled action has been duly and regularly brought under the provisions of Section 749, 750 and 751 of the Code of Civil Procedure of the State of California, and that within ten (10) days after the filing of the Complaint herein, and on the 20th day of August 1930, plaintiff caused to be filed in the office of the County Recorder of the County of Alameda, State of California, the County in which the real property in said Complaint and hereinafter described is situated, a Notice of the Pendency of said action, which Notice contains the names of the parties to this action, a statement of the object thereof, and a description of the property affected thereby;

That within one (1) year after the filing of the said Complaint, to wit, on the 20th day of August 1930, the Summons in said action was issued by the Clerk of said

Court which said Summons contains all the matters required to be contained therein by Section 407 of the Code of Civil Procedure and also a description of said real property, and a statement of the object of said action, and in which said Summons the unknown defendants were designated by the same names as in the said Complaint;

That on the 21st day of August 1930, and within thirty (30) days after the issuance of the said Summons the plaintiff herein caused to be posted two (2) copies of said Summons in conspicuous places on the said land described in said Complaint;

That all the defendants herein residing in the State of California whose place of residence is known to plaintiff have been personally served with said Summons and Complaint and that after service upon said defendants so residing had been made, one of the attorneys for the plaintiff made and filed an Affidavit in which said attorney states the names of the defendants herein who have been personally served with the said Summons, and the names of the defendants herein residing in or out of the said State of California, whose places of residence are unknown to the said plaintiff and to said attorney or to plaintiff's attorneys:

That after the filing of said affidavit this Court made an Order herein directing the said Summons to be served upon the defendants residing in or out of the State of California, whose places of residence are unknown to the said plaintiff, and upon all the unknown defendants named in said Complaint and the said Summons by a publication of the said Summons in a newspaper of general circulation, printed and published in said County of Alameda, State of California, to wit, THE SATURDAY PRESS:

That the said Summons was duly and regularly published in the said newspaper in all respects according to law and in all respects as prescribed in the said Order of Court, at least once a week for at least two (2) successive months prior to the date of this Decree. That a copy of the Summons and Complaint herein within ten (10) days after the making of said Order, properly addressed and with the postage thereon fully prepaid, was mailed to each of the defendants herein residing in or out of the State of California whose places of residence were unknown to plaintiff or to said attorneys and to all the other named defendants, addressed to them at the County Seat of said Alameda County, to wit: Oakland, California;

That each and all of the defendants above named have been served with the Summons and Complaint herein in the manner required by law, and in all respects according to law and according to the Order of this Court and the provisions of Section 750 of the Code of Civil Procedure of the State of California, and that each and all of the said defendants, other than those appearing as aforesaid, have failed to appear or answer herein within the time allowed by law or the Order of this Court, or otherwise, or at all, and that each and all of said defendants are in default;

That the Complaint and Summons herein included as defendants all other persons unknown to plaintiff claiming any right, interest, or lien in said lands, or cloud upon the title of plaintiff thereto and that the said unknown defendants were described in the Complaint and Summons as follows: "Also all other persons unknown claiming any right, title, estate, lien or interest in the real property described in the Complaint adverse to plaintiff's ownership, or any cloud upon plaintiff's title thereto;"

That the said plaintiff has duly and regularly taken each and all of the preliminary steps required by law and the provisions of said Sections of said Code of Civil Procedure to be taken to entitle the plaintiff to a judgment herein in accordance with law and the provisions of Section 751 of said Code of Civil Procedure and that each and all of the allegations contained in the said Complaint are true; that the said defendants, or either, or any of them have no right, title, estate, lien, claim or interest

in the real property described in the Complaint and hereinafter described; that on motion of the attorneys for the plaintiff said action was duly dismissed as to defendants FIRST DOE, SECOND DOE, THIRD DOE, FOURTH DOE, FIFTH DOE, SIXTH DOE, SEVENTH DOE, BLACK COMPANY, a corporation WHITE COMPANY, a corporation sued and joined in this action by said fictitious names; and findings of fact and conclusions of law having been waived by EARL J. SINCLAIR, attorney for the defendant CITY OF BERKELEY, a municipal corporation

WHEREFORE IT IS HEREBY ORDERED, ADJUDGED AND DECREED, that plaintiff have judgment as prayed for in her said Complaint against the defendants and each of them herein mentioned, to wit: E. L. HANSON, as Administratrix of the Estate of HENRY DURANT, Deceased, ISABELLA McDONNELL, M.M.McDONNELL, ANGELO M. HEVERIN, THOMAS A. PETTUS, also known as T. A. PETTUS, LOUISA E. PETTUS, JOHN J. BONNIES, also known as JOHN J.BONVIES , also known as JOHN J. BONNER,also known as J. J. BONNIER, LORING J. BARKER, as Administrator of the Estate of JAMES L. BARKER, Deceased, the CITY OF BERKELEY, a municipal corporation, also all other persons unknown, claiming any right, title, estate, lien, or interest in the real property described in the Complaint adverse to plaintiff's ownership, or any cloud upon plaintiff's title thereto;

AND IT IS FURTHER ORDERED, ADJUDGED AND DECREED, that each any all of the said defendants have no estate, right, title,lien or interest whatsoever in or to the said lands and premises described in said Complaint and hereinafter described, or in and to any part thereof, and that the title of said plaintiff to the said lands and premises be and the same is hereby decreed and adjudged to be good and valid and in fee simple absolute as against all of the said defendants and as against the whole world;

That each and all of the said defendants be and they are hereby enjoined and forever, debarred and restrained from asserting any claim whatever in or to the said lands and premises adverse to said plaintiff and the said defendants are, and each of them is, forever debarred and restrained from directly or indirectly instituting, prosecuting or carrying on any action in law or in equity, against the said plaintiff, in and to the said lands and premises by reason of any action or proceeding taken prior to the commencement of this action.

The lands and premises affected by this Decree and to which plaintiff's title is hereby quieted are situated in the City of Berkeley, County of Alameda, State of California, and more particularly described as follows, to wit:

Beginning at the point of intersection of the southern line of Berkeley Way (extended in a direct line easterly,) as said Berkeley Way is shown on the Map of College Tract hereinafter referred to, with the western line of Shattuck Avenue, as said line of Shattuck Avenue was established by Ordinance adopted by the Board of Trustees of the Town of Berkeley,January 18, 1892 by Ordinance No. 387, and as said line of Shattuck Avenue is shown upon the Map entitled, "Official Map of Shattuck Avenue," filed January 10, 1893, in Liber 18 of Maps, at page 21; thence southerly along said line of Shattuck Avenue sixty and 6/100 feet; thence westerly parallel with said line of Berkeley Way One hundred Twelve and 30/100 feet; more or less, to the eastern boundary line of the land described in the deed executed by F.D.Chase and Atlanta J.Chase his wife, to Jacob Bauml, dated July 28, 1922, recorded in Liber 324, page 75, Official Records of Alameda County; thence at right angles northerly along said last named boundary line thirty five feet more or less, to the southern boundary line of lot numbered 55, as said lot is shown on said map; thence at right angles easterly eight inches; thence at right angles northerly parallel with the western boundary line of lot numbered 55 aforesaid, Twenty-five feet to the southern line of Berkeley Way; thence easterly along said line of Berkeley Way One hundred fifteen and 30/100 feet,,more or less, to the point of beginning.

Being portion of lots numbered 55, 56 and 57, and a portion of Shattuck Avenue, as the said lots and avenue are delineated and so designated upon that certain Map entitled "Map of College Tract, Berkeley," filed May 24,1877 in Liber 5 of Maps, at page 14, in the office of the County Recorder of the said County of Alameda;

Done in open Court this 30th day of December 1930.
James C. Quinn,Judge of the Superior Court.

Endorsed
Filed Dec.30-1930
Geo. E. Gross, County Clerk
By Edw. Hadlen, Deputy.

The foregoing instrument is a correct copy of the original on file in this office
ATTEST: Dec.30-1930
GEO. E. GROSS, County Clerk and ex-officio Clerk of the Superior Court of the State of California in and for the County of Alameda
(Court Seal) By Edw. Hadlan.Deputy.

RECORDED AT REQUEST OF ATTORNEY AT 30 min past 10 A.M.DEC.30-1930
AA-77500 4.50

COMPARED
BK FARRELL
DOC McDONOUGH

L.M.Bacon
COUNTY RECORDER.

F.M.Nolan-Copied: Jan.5-1931.

F.PUSEY
TO
CENTRAL NAT'L BANK OF OAKLAND

DEED

THIS INDENTURE, Made this 3rd day of December in the year of our Lord One thousand nine hundred and thirty.

Between FRANCES PUSEY, a married woman (formerly Frances Mackinnon, a widow) the party of the first part, and CENTRAL NATIONAL BANK OF OAKLAND, a National Banking Association, organized and existing under and by virtue of the laws of the United States of America, the party of the second part.

WITNESSETH: That the said party of the first part, for and in consideration of the sum of Ten Dollars ($10.00) in gold coin of the United States of America, to her in hand paid by the party of the second part, at or before the ensealing and delivery of these presents, the receipt whereof is hereby acknowledged has granted, bargained, sold and conveyed and by these presents does grant, bargain, sell and convey unto the said party of the second part, and to its successors and assigns forever, All that certain lot, piece or parcel of land, situate, lying and being in the Town of Emeryville, County of Alameda, State of California, and bounded and particularly described as follows, to wit:

Beginning at the point of intersection of the eastern line of San Pablo Avenue with the southern line of 38th Street as said Avenue and Street are shown on the Map hereinafter referred to; running thence south 14° 30' East along said eastern line of San Pablo Avenue, 229.84 feet to the southern boundary line of lot No. 1 in Block lettered "A" as said lot and block are shown on the map hereinafter referred to; thence south 80° 12' East along said southern boundary line of said lot No. 1, 112.27 feet, to the eastern boundary line of said lot 1; thence north 11° 5' East along said eastern boundary line of said lot 1, 98.35 feet, to the northern boundary line of said lot No. 1; thence south 75° 30' West along said northern boundary line of said lot No. 1, 19.38 feet to the eastern boundary line of lot No. 2, in Block "A" as said lot is shown on the Map hereinafter referred to; thence north 14° 30' West along said eastern boundary line of said lot No.2 the eastern boundary line of said lot 3, in said Block "A" and the said Eastern boundary line of said lot 3, if extended northerly as said lot is shown on the Map hereinafter referred to 197.29 feet to a point in said southern line of said 38th Street distant thereon 125.39 feet easterly from said point of intersection of said southern line of said 38th Street with the said easterly line of said San Pablo Avenue; and thence south 75° 30' West along said southern line of said 38th Street 125.39 feet to the point of beginning.

Being all of lots Nos. 1, 2, 3, 4, 5 and 6 and portions of lots Nos. 7 and 8 in Block lettered "A" as the same are delineated and so designated on that certain Map entitled "Map of a portion of the Evoy Tract, in Emeryville & Oakland, Alameda County, California, etc., filed March 13,1906 in the office of the County Recorder of the County of Alameda.

TOGETHER WITH ALL and singular the tenements, hereditaments and appurtenances thereunto belonging or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof. And also all the estate, right, title, interest, possession, claim and demand whatsoever, as well in law as in equity of the said party of the first part, of, in or to the above described premises and every part or parcel thereof, with the appurtenances.

TO HAVE AND TO HOLD all and singular the above mentioned and described premises together with the appurtenances unto the said party of the second part, its successors and assigns forever.

IN WITNESS WHEREOF, the said party of the first part has hereunto set her hand

EXHIBIT I

a part hereof, and agrees to act as such Trustee and to hold the real property above mentioned subject to the respective Trusts set forth in said respective deeds of trust.

Oakland Title Insurance and Guaranty Company
Substituted Trustee
By H.A.Steinbach V.Pres.

Dated:December 29,1932. (Corporate Seal) By Charles D.Morando Asst. Secty.

STATE OF CALIFORNIA)SS. On this 29th day of December in the year One thousand nine hundred
COUNTY OF ALAMEDA) and thirty-two before me, Margaret L.Riggle a Notary Public in and for the County of Alameda, State of California, residing therein, duly commissioned and sworn, personally appeared H.A.Steinbach known to me to be the Vice President and Charles D.Morando known to me to be the Asst. Secretary of the Corporation that executed the within instrument and the officers who executed the within instrument on behalf of the Corporation therein named, and acknowledged to me that such Corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

(Notarial Seal) Margaret L.Riggle Notary Public
In and for said County of Alameda, State of California.

CONVEYANCE BY TRUSTEES UNDER DEEDS OF TRUST TO SUBSTITUTED TRUSTEE PURSUANT TO RESOLUTION OF BENEFICIARY AND ACCEPTANCE OF TRUST BY SUBSTITUTED TRUSTEE.

Pursuant to the foregoing resolution substituting trustees, dated December 29,1932, of the Board of Directors of Cosmopolitan Guarantee Building and Loan Association, beneficiary under the deeds of trust hereinbefore referred to and made a part hereof, F.A.Fletcher and Robert R.Rorke as Trustees under said deeds of trust hereby grant, without any warranty, to Oakland Title Insurance and Guaranty Company, a corporation, as substituted Trustee, all their right, title and interest as Trustees under said deeds of trust in and to all the real property therein described; to which deeds of trust and the records thereof reference is hereby made for a description of said real property.

Dated this 29th day of December 1932.

F.A.Fletcher Trustee
Robert R.Rorke Trustee

STATE OF CALIFORNIA)SS. On this 29th day of December in the year One thousand nine hundred
COUNTY OF ALAMEDA) and thirty-two, before me, Margaret L.Riggle a Notary Public in and for the County of Alameda, State of California, residing therein, duly commissioned and sworn personally appeared F.A.Fletcher and Robert R.Rorke known to me to be the persons described in and whose names are subscribed to the within instrument and they acknowledged to me that they executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

(Notarial Seal) Margaret L.Riggle Notary Public
In and for said County of Alameda, State of California.

Oakland Title Insurance and Guaranty Company, a corporation, substituted Trustee and grantee named in the above instrument, hereby accepts said substitution and appointment as Trustee under and pursuant to the terms of the deeds of trust, hereinbefore referred to and made a part hereof, and agrees to act as such Trustee and to hold the real property above mentioned subject to the respective Trusts set forth in said respective deeds of trust.

Oakland Title Insurance and Guaranty Company
Substituted Trustee
By H.A.Steinbach V.Pres.

Dated; December 29,1932 (Corporate Seal) By Charles D.Morando Asst. Secty.

STATE OF CALIFORNIA)SS. On this 29th day of December in the year One thousand nine hundred
COUNTY OF ALAMEDA) and thirty-two, before me, Margaret L.Riggle a Notary Public in and for the County of Alameda, State of California, residing therein, duly commissioned and sworn personally appeared H.A.Steinbach known to me to be the Vice President and Charles D.Morando known to me to be the Asst.Secretary of the Corporation that executed the within instrument and the officers who executed the within instrument on behalf of the Corporation therein named and acknowledged to me that such corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official Seal, the day and year in this certificate first above written.

(Notarial Seal) Margaret L.Riggle Notary Public
In and for said County of Alameda, State of California.

Recorded at request of Richmond-Martinez Abstract & Title Co. Feb 27,1933 at 25 min.past 11 A.M. in Vol. 344 Page 106 Official Records of Contra Costa County.

1770 2.10 C.H.Hayden County Recorder

Recorded at request of Oakland Title Insurance and Guaranty Company at 9 A.M. Mar 17,1933

DD-10267 2.70

Copied Mar 20, 1933 M.B.AMARAL County Recorder

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

BERKELEY MORTGAGE CO. SUB.TR. TRUSTEE'S DEED

TO

P.J.HAVER

This Indenture, made this 18th day of January, 1933, Between Berkeley Mortgage Company, a California, corporation substituted Trustee as hereinafter described, the party of the first part, and Philip J.Haver the party of the second part,

400

Witnesseth: That Whereas, Max Muller and Adelia M.Muller, his wife, hereinafter designated as Grantor, executed a certain Deed of Trust, dated January 3rd, 1930 and recorded January 8th, 1930, in the office of the County Recorder of the County of Alameda, State of California, in Liber 2310 of Official Records of said County, at page 193, and following, by which said Deed of Trust said Grantor conveyed to Alameda County Title Insurance Company, a corporation, as Trustee, its successors and assigns, upon the trusts, terms conditions and covenants therein expressed, in fee, with power of sale, the real property hereinafter described, to secure the payment of a certain promissory note and other indebtedness of said Grantor to Philip J.Haver, and which said note was executed and delivered by said Grantor to said Philip J.Haver; and

Whereas, said Philip J.Haver is now the owner and holder of said note and the beneficial interest under said Deed of Trust; and

Whereas, on the 13th day of December, 1932, the said Philip J.Haver, as holder and owner of said note and Deed of Trust, did substitute the undersigned, Berkeley Mortgage Company as Trustee, in place of Alameda County Title Insurance Company, a corporation Trustee as aforesaid in said Deed of Trust provided, all of which more fully appears in the records of said substitution recorded in Official Records of Alameda County, California; and

Whereas, said Berkeley Mortgage Company, a corporation, has ever since said 13th day of December, 1932, been, and now is the duly authorized and acting Trustee under said Deed of Trust; and

Whereas, said Deed of Trust provided that if default be made in the payment of said indebtedness or in the performance of any of the covenants contained in said Deed of Trust, said Trustee, its successors or assigns, thereupon became empowered to sell the property described in said Deed of Trust in the manner and upon the notice therein prescribed; and

Whereas, said Grantor defaulted in the payment of said indebtedness and in the performance of the covenants contained in said Deed of Trust, and during such default, and while said Philip J.Haver was still the owner and holder of said promissory note and said Deed of Trust, said Philip J.Haver declared that such default had been made, and thereupon exercised his option to, and did, declare the principal sum of said promissory note secured by said Deed of Trust to be due and payable, and elected to sell, or cause to be sold, the property described in and affected by said Deed of Trust; and

Whereas, notice of said default and breach of the obligation of said Deed of Trust and of the election of the lender, and of the undersigned, substituted Trustee, to cause said property described in said Deed of Trust to be sold to satisfy said indebtedness and said obligation, was recorded on the 14th day of September, 1932, in Liber 2349 of Official Records of the County Recorder of said Alameda County, California, at page 334, as required by Section 2924 of the Civil Code of the State of California; and

Whereas, the said Philip J.Haver the owner and holder of said note and said Deed of Trust did, on the 19th day of December, 1932, demand that the undersigned substituted Trustee under and by virtue of the power and authority conferred on it by said Deed of Trust, sell the real property in said Deed of Trust and hereinafter described or so much thereof as might be necessary to sell to satisfy the indebtedness secured to be paid by said deed of trust and the expenses incurred necessary to the execution of said trusts; and

Whereas, the party of the first part herein, substituted Trustee as aforesaid, in compliance with said demand of said Philip J.Haver, and in compliance with all the terms of said Deed of Trust, did give notice as required by said Deed of Trust, and by law, and in the manner and for a time not less than that required by law for sales of real property under the provisions of a Deed of Trust, that it would, as such substituted Trustee, under the provisions of said Deed of Trust, sell the real property in said Deed of Trust and in said notice and hereinafter described, at the time and place specified in said notice, to wit: on Wednesday, the 18th day of January, 1933, at the hour of 10:00 A.M of said day, at the entrance to the American Trust Building, known as 2140 Shattuck Avenue, in the City of Berkeley, County of Alameda, State of California, which notice contained a full and proper description of the lands to be sold; and

Whereas, one copy of said notice was, on the 21st day of December, 1932, posted in a conspicuous place on the property to be sold; and whereas on the said last mentioned day, copies of said notice were posted in three public places in the City of Berkeley, County of Alameda, State of California, being the City in which said property was to be sold, to wit: one copy of said notice was posted at the United States Postoffice, situated on the corner of Allston Way and Milvia Street, in the City of Berkeley, County of Alameda, State of California; one of said notices was posted at the main entrance of the City Hall, situated on the corner of Grove Street and Allston Way, in said City, County and State; and one of said notices was posted at the Public Library, situated at the corner of Kittredge Street and Shattuck Avenue, in said City, County and State; and whereas, said notice was published once a week for twenty (20) days prior to the date of sale specified in said notice in the Berkeley Daily Gazette, a newspaper of general circulation printed and published in the city where said property is situated; and

Whereas, the said party of the first part herein, as such substituted Trustee as aforesaid, did at the time and place so advertised, and at public auction, sell the following described lands and premises, being all the lands and premises in said Deed of Trust described to the party of the second part, he being the highest bidder therefor, at said sale, for the sum of Fifteen Thousand Dollars ($15,000.00) in Gold Coin of the United States;

Now, Therefore, Berkeley Mortgage Company, a corporation, as such substituted Trustee as aforesaid, in consideration of the premises and of the sum of Fifteen Thousand Dollars ($15,000.00) in United States gold coin to it in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, and by virtue of the authority derived to it through said Deed of Trust, has granted, bargained, sold, conveyed and confirmed, and by these presents does hereby grant, bargain, sell, convey and confirm ,but without any warranty whatsoever of the party of the first part, unto the party of the second part, all of the right, title and interest of the said party of the first part, as substituted Trustee as aforesaid, in and to that certain real property, situate in the City of Berkeley, County of Alameda, State of California, and particularly described as follows, to wit:

Beginning at the intersection of the Western line of Shattuck Avenue, with the Southern line of Berkeley Way, as said Avenue and Way are shown on the map hereinafter referred to; running thence Southerly along said line of Shattuck Avenue, 60.06 feet; thence Westerly parallel with said line of Berkeley Way, 109 feet,more or less, to the Easterly boundary line of the land described in the Deed executed by F.D.Chase and Atlanta J.Chase, his wife, to Jacob Bauml, dated July 28, 1922 and recorded in Liber 324 of Official Records, at page 73, Alameda County Records;thence at right angles Northerly along said last named boundary line 35 feet, more or less to the Southern boundary line of Lot 55, as said lot is shown on the said map;thence at right angles Easterly 8 inches; thence at right angles Northerly parallel with the Westerly boundary line of said lot 55, aforesaid 25 feet to the Southern line of Berkeley Way; thence Easterly along said line of Berkeley Way, 112.30 feet to the point of beginning.

Being portions of Lots Nos. 55, 56 and 57, as said lots are delineated and so designated upon that certain map entitled, "Map of College Tract,Berkeley",filed Jan. 31, 1890 in Liber 9 of Maps. page 46, in the office of the County Recorder of Alameda County.

Together with all and singular the tenements,hereditaments and appurtenances thereunto belonging or in anywise appertaining,

And being all of the lands and premises in said Deed of Trust described.

And also, all the right, title, interest, property, possession, claim and demand which the said party of the first part now has, of, in, to or out of said premises, or any part thereof, together with the appurtenances.

To Have and To Hold the same unto the said party of the second part, and to his heirs and assigns forever.

In Witness Whereof, the said party of the first part has caused this instrument to be executed and its corporate seal to be hereto affixed by its officers thereunto duly authorized the day and year first hereinabove written.

Berkeley Mortgage Company
Substituted Trustee
By F.R.Peake Vice President
(Corporate Seal) By Robt.R.Porter Secretary

STATE OF CALIFORNIA)ss. On this 13th day of January in the year One thousand nine hundred
COUNTY OF ALAMEDA) and Thirty-three before me, Lucille V.Smith a Notary Public in and for the County of Alameda, State of California, residing therein, duly commissioned and sworn personally appeared F.R.Peake known to me to be the Vice President and Robt.R.Porter known to me to be the Secretary of the Corporation that executed the within instrument and the officers who executed the within instrument on behalf of the Corporation therein named and acknowledged to me that such Corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

(Notarial Seal) Lucille V.Smith Notary Public
In and for said County of Alameda, State of California.

U.S.I.Rev. stamps $15.00 cancelled Mar 17-1933 C.R.A.C.
Recorded at request of Alameda County Title Insurance Co. at 9 A.M. Mar 17-1933
DD-10307 2.70

COMPARED BK DOC GLAZIER SCAPPELL

Copied Mar 22, 1933 M.B.AMARAL County Recorder

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

MASON-McDUFFIE CO. INC. SUB. TR.
TO
M.GLAZER ET AL

DEED OF RECONVEYANCE
MASON-McDUFFIE COMPANY INC.
(SUBSTITUTED TRUSTEE)

Whereas, the indebtedness secured to be paid by the Deed of Trust executed by M.Glazer and Rica Glazer, his wife, to Perry T.Tompkins, Will F.Morrish and Robert G.Sproul as Trustees dated February 23, 1928, and recorded in the office of the County Recorder of the County of Alameda, State of California, on March 6, 1928 in Liber 1823 of Official Records at page 175, and following has been fully paid;

And Whereas Mason-McDuffie Company, Inc. a corporation has been substituted as Trustee in place of the Trustees hereinbefore named.

Now Therefore, Mason-McDuffie Company, Inc., a corporation, Substituted Trustee, does hereby grant, remise, release and reconvey unto the present holders of the equitable title of said real property, without warranty, all of the right, title and estate derived to said

EXHIBIT J

First American

clarityfirst® Recorded Document

The Recorded Document images are displayed in the subsequent pages for following request:

State	County	Document Number
CA	**Alameda**	**2014.140054**

Limitation of Liability for Informational Report

IMPORTANT – READ CAREFULLY: THIS REPORT IS NOT AN INSURED PRODUCT OR SERVICE OR A REPRESENTATION OF THE CONDITION OF TITLE TO REAL PROPERTY. IT IS NOT AN ABSTRACT, LEGAL OPINION, OPINION OF TITLE, TITLE INSURANCE COMMITMENT OR PRELIMINARY REPORT, OR ANY FORM OF TITLE INSURANCE OR GUARANTY. THIS REPORT IS ISSUED EXCLUSIVELY FOR THE BENEFIT OF THE APPLICANT THEREFOR, AND MAY NOT BE USED OR RELIED UPON BY ANY OTHER PERSON. THIS REPORT MAY NOT BE REPRODUCED IN ANY MANNER WITHOUT FIRST AMERICAN'S PRIOR WRITTEN CONSENT. FIRST AMERICAN DOES NOT REPRESENT OR WARRANT THAT THE INFORMATION HEREIN IS COMPLETE OR FREE FROM ERROR, AND THE INFORMATION HEREIN IS PROVIDED WITHOUT ANY WARRANTIES OF ANY KIND, AS-IS, AND WITH ALL FAULTS. AS A MATERIAL PART OF THE CONSIDERATION GIVEN IN EXCHANGE FOR THE ISSUANCE OF THIS REPORT, RECIPIENT AGREES THAT FIRST AMERICAN'S SOLE LIABILITY FOR ANY LOSS OR DAMAGE CAUSED BY AN ERROR OR OMISSION DUE TO INACCURATE INFORMATION OR NEGLIGENCE IN PREPARING THIS REPORT SHALL BE LIMITED TO THE FEE CHARGED FOR THE REPORT. RECIPIENT ACCEPTS THIS REPORT WITH THIS LIMITATION AND AGREES THAT FIRST AMERICAN WOULD NOT HAVE ISSUED THIS REPORT BUT FOR THE LIMITATION OF LIABILITY DESCRIBED ABOVE. FIRST AMERICAN MAKES NO REPRESENTATION OR WARRANTY AS TO THE LEGALITY OR PROPRIETY OF RECIPIENT'S USE OF THE INFORMATION HEREIN.

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RECORDING REQUESTED BY:

Old Republic Title Company

Order No.: 0147014348-SH
APN: 057-2053-002

When Recorded Mail Document and Tax Statements to:

1974 Shattuck Avenue, LLC -C/O Nathan George
P.O. Box 1088
Berkeley CA 94704

2014140054 06/11/2014 12:53 PM
OFFICIAL RECORDS OF ALAMEDA COUNTY
PATRICK O'CONNELL
RECORDING FEE: 28.00
COUNTY TAX: 2288.00
CITY TAX: 31200.00
2 PGS

SPACE ABOVE THIS LINE IS FOR RECORDER'S USE

Grant Deed

The undersigned grantor(s) declare(s):
Documentary Transfer Tax is $2,288.00
(X) computed on full value of property conveyed, or
( ) computed on full value less of liens and encumbrances remaining at time of sale.
( ) Unincorporated area: (X) City of Berkeley $31,200.00

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
Shattuck Avenue Spats, a California general partnership

hereby GRANT(S) to
1974 Shattuck Avenue, LLC, a California limited liability company

that property in City of Berkeley, Alameda County, State of California, described as:
See "Exhibit A" attached hereto and made a part hereof.

Date: May 22, 2014

Shattuck Avenue Spats, a California general partnership

By: _____
Philip E. Taw, General Partner

State of CALIFORNIA
County of CONTRA COSTA

On JUNE 3, 2014 before me, CAROLINE S. CRUZ, a Notary Public, personally appeared PHILIP E. TAW, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

Name CAROLINE S. CRUZ
(typed or printed)

CAROLINE S. CRUZ
Commission # 1957299
Notary Public - California
Contra Costa County
My Comm. Expires Oct 28, 2015

(Area reserved for official notarial seal)

Grant Deed

MAIL TAX STATEMENTS AS DIRECTED ABOVE

ORDER NO. : 0147014348-SH

EXHIBIT A

The land referred to is situated in the County of Alameda, City of Berkeley, State of California, and is described as follows:

Beginning at a point on the Western line of Shattuck Avenue, distant thereon Southerly, 60.6 feet from the point of intersection thereof, with the Southern line of Berkeley Way, as said avenue and way are shown on the Map herein referred to; running thence Southerly along said line of Shattuck Avenue, 49.20 feet; thence Westerly and parallel with said line of Berkeley Way, 105.50 feet, more or less, to a point which would be intersected by a line drawn Southerly form and at right angles to said line Berkeley way from a point distant thereon, 113.30 feet Westerly from the Western line of Shattuck Avenue; thence at right angles Northerly, 49 feet, more or less, to a point which would be intersected by a line drawn Westerly from said point of beginning and parallel with Berkeley way; thence Easterly along said parallel line, 109 feet, more or less, to the point of beginning.

Being a portion of Lots 57 and 58, as said lots are shown on the "Map of the College Tract, Berkeley", filed January 31, 1890, in Book 9 of Maps, Page 46, in the Office of the County Recorder of Alameda County.

APN: 057-2053-002

TRACHTENBERG ARCHITECTS

Amy Chang <amy@trachtenbergarch.com>

FW: Confirmation of Electronic Check Payment

2 messages

Nathan D George <nathan@ndgre.com>
To: Amy Chang <amy@trachtenbergarch.com>

McSpats fees paid

Nathan D George | President & Founder | NDG Real Estate

From: ACI Payments, Inc. - Customer Service <customerservice@acipayonline.com>
Sent: Thursday, March 7, 2024 6:44 PM
To: Nathan D George <nathan@ndgre.com>
Subject: Confirmation of Electronic Check Payment

ACI PAYMENTS, INC.

Dear ACI Payments, Inc. Customer:

Thank you for selecting ACI Payments, Inc. for your electronic check payment of Building Permits. Your payment of $529.00 was sent to City of Berkeley on 03-07-2024. The confirmation number is C253H5TQA.

Please note: Successful completion of the payment transaction is conditional upon accurate and complete information being entered by you. It is subject to financial institution and biller acceptance, approval and authorization of the pa

Again, thank you for using ACI Payments, Inc. We hope you enjoy the convenience of using an electronic check for your future payment needs.

Customer Service

ACI Payments, Inc.

Questions? Call toll-free 1-800-487-4567.

IMPORTANT SECURITY INFORMATION FROM ACI Payments, Inc. Please keep in mind that ACI Payments, Inc. will never call and ask for personal information including financial account information and PIN, send e- mail containing

Make a payment See what I can pay

ACI Payments,
6060 Coventry I
Elkhorn, NE 68
acipayonline.c

Amy Chang <amy@trachtenbergarch.com> Thu, Mar 7, 2024 at 4:41 PM
To: Nathan D George <nathan@ndgre.com>

Great thanks.

Sent from my iPhone

> On Mar 7, 2024, at 3:48 PM, Nathan D George <nathan@ndgre.com> wrote:
>
> [Quoted text hidden]

APPLICATION CITY OF BERKELEY **LAND USE PLANNING**

AFFORDABLE HOUSING COMPLIANCE PLAN

planning@berkeleyca.gov • Phone (510) 981-7410, TDD (510) 981-7450

Planning and Development
1947 Center St, 2nd Floor
Berkeley, CA 94704

Affordable Housing Requirements

BERKELEY MUNICIPAL CODE CHAPTER 23.328

Berkeley Municipal Code (BMC) Chapter 23.328, Inclusionary Housing, requires Housing Development Projects[1] with more than 5,000 square feet of residential unit floor area to include at least 20 percent of the Residential Units[2] as permanently affordable units. All affordable units provided in the project will be established and monitored within the City's Below Market Rate (BMR) housing program, and are referred to as BMR Units. The housing development project must provide one of the following to comply with the City's Inclusionary Housing regulations:

A. Requirement to construct BMR units on-site

B. Option to pay an In-Lieu Fee

C. Combination of on-site BMR units and In-Lieu Fee

D. Other options allowed by the Chapter

Each option is described in more detail below.

A. REQUIREMENT TO CONSTRUCT AFFORDABLE UNITS

Projects must provide 20 percent of the total residential units as on-site BMR units. BMR units must have the same proportion of bedroom counts (except no affordable unit can have more than three bedrooms) and average unit size as the market rate units. BMR units must be reasonably dispersed throughout the project, be comparable to market-rate units in quality, and have access to the same amenities and common areas as market-rate units.

B. OPTION TO PAY AN IN-LIEU FEE

Applicants have the option to pay an In-Lieu Fee instead of providing the required BMR units.
The In-Lieu Fee applies to the residential unit floor area within the project (base project only if utilizing State Density Bonus provisions). The fee[3] is assessed on a square-foot basis according to the schedule listed in the table. The full fee must be paid prior to obtaining the Certificate of Occupancy, or, if a Certificate of Occupancy is not required, prior to the initial occupancy of the project. The fee is automatically adjusted every two years, beginning July 1, 2025, based on changes to the California Construction Cost Index.

Affordable Housing In-Lieu Fee Schedule

SQUARE FEET OF RESIDENTIAL UNIT FLOOR AREA	FEE PER SQUARE FOOT *(April 1, 2023 – June 30, 2025)*
12,000 square feet or more	$56.25
11,000-11,999 square feet	$53.75
10,000-10,999 square feet	$51.25
9,000-9,999 square feet	$48.75
8,000-8,999 square feet	$46.25
7,000-7,999 square feet	$43.75
6,000-6,999 square feet	$41.25
5,000-5,999 square feet	$38.75

NOTES

[1] **HOUSING DEVELOPMENT PROJECT** means a development project, including a Mixed-Use Residential project **(as defined in 23.502.020(M)(13)**, involving the new construction of at least one Residential Unit. Projects with one or more buildings or projects including multiple contiguous parcels under common ownership or control shall be considered as a sole Housing Development Project and not as individual projects **(BMC 23.328.020(E))**.

[2] **RESIDENTIAL UNIT** means any Dwelling Unit, any Live/Work Unit, or any bedroom of a Group Living Accommodation (GLA) except a GLA in a University-recognized fraternity, sorority or co-op; provided, however, that for purposes of this Chapter, "Residential Unit" shall not include any Accessory Dwelling Unit or Junior Accessory Dwelling Unit **(BMC 23.328.020(I))**.

[3] Resolution 70,698-N.S.

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1947 Center St, 2nd Floor
Berkeley, CA 94704

APPLICATION CITY OF BERKELEY **LAND USE PLANNING**

AFFORDABLE HOUSING COMPLIANCE PLAN

planning@berkeleyca.gov • Phone **(510) 981-7410,** TDD **(510) 981-7450**

C. COMBINATION OF BMR UNITS AND IN-LIEU FEE

Projects may provide less than the required 20 percent total residential units as on-site BMR units by paying a pro-rated In-Lieu Fee based on the schedule above. The fee amount per square foot is based on the total residential unit floor area of the project.

Formula to calculate the pro-rated in-lieu fee:

The Fee Per Square Foot *multiplied by* the **Total Residential Unit Floor Area** of a Housing Development Project, *multiplied by* the **Percentage of the Applicable Requirement Remaining** after accounting for any on-site Affordable Units provided.

For projects that utilize a State Density Bonus, only the base project is used in the pro-rated fee. Formula to determine the Base Project Residential Unit Floor Area:

The Final Residential Unit Floor Area (for the whole project) *divided by* **One** *plus* **the Density Bonus percentage taken.** (**Final Project Residential Unit Floor Area/(1+DB%)**)

D. OTHER OPTIONS ALLOWED BY BMC CHAPTER 23.328 – APPROVED AT THE CITY'S DISCRETION

Applicants may elect to fulfill the requirement to construct affordable housing via one of the options below. Unlike options A through C above, these options are approved at the City's discretion.

Alternative Unit Size Mix

In lieu of providing 20 percent of total residential units as on-site BMR units, an Applicant may propose an alternative mix of two-bedroom and/or three-bedroom BMR unit-types that comprise at least 20 percent of the residential unit floor area in the project.

Option to Dedicate Land

Affordable Housing requirements may be satisfied by dedicating land instead of constructing BMR units within the Housing Development Project if all the following criteria are met:

- The site is suitable for development of the Affordable Units
- Infrastructure to serve the dedicated site, including, but not limited to, streets and public utilities, are available at the property line and have adequate capacity to serve the maximum allowable residential density permitted under zoning regulations
- The site has been evaluated for the presence of hazardous materials
- The value of the site upon the date of the dedication is equal to or greater than the In-Lieu Fee that would otherwise be required.

APPLICATION CITY OF BERKELEY **LAND USE PLANNING**

AFFORDABLE HOUSING COMPLIANCE PLAN

Affordable Housing Compliance Plan Form

You are required to submit an Affordable Housing Compliance Plan (AHCP) for Housing Development Projects[4] that are subject to the affordable housing requirements of BMC Chapter 23.328, Inclusionary Housing. The AHCP is an enforceable commitment that identifies the number and type of affordable, or Below Market rate (BMR) units, the amount of In-Lieu Fees, and/or the parcels of land (or portions thereof) that will be provided and/or paid by the applicant to comply with those requirements.

The Department of Planning and Development's Land Use Division and the Department of Health, Housing, and Community Services use the information from this form and the related sheets to confirm which provisions of the City's affordable housing requirements apply to your project, and if the project complies.

Please complete the entire form. If a section doesn't apply, enter "n/a." If selecting the option to provide an alternative unit size mix or option to dedicate land, please complete the entire AHCP form and staff will contact you to discuss approval for these discretionary options.

You may be asked to revise this form to reflect the approved project during the permit review process and/or required plan sheets.

The Preliminary AHCP is required with a Zoning Permit or Zoning Certificate application. It is intended to provide estimates to the Applicant and City, and inform conditions of approval on discretionary zoning permits. See the **applicable pre-application and/or zoning submittal requirements** to determine if a Preliminary AHCP is needed for your project.

The Final AHCP is required with the first building permit application for construction, and will include the total fee amount due for projects electing to pay an In-Lieu Fee. The In-Lieu Fee can be paid any time prior to the issuance of the project's Certificate of Occupancy or Temporary Certificate of Occupancy (as applicable).

INDICATE AFFORDABLE HOUSING COMPLIANCE PLAN (AHCP) TYPE (CHECK ONE)

Preliminary Affordable Housing Requirements (Land Use Entitlement)

Final Affordable Housing Requirements (Building Permit)

---

1. PROJECT AND APPLICANT INFORMATION

Project Name:

Project Address:

Zoning Project Number:

Building Permit Number (Final AHCP only):

Applicant Name:

Applicant Email:

NOTES

[4] **HOUSING DEVELOPMENT PROJECT** means a development project, including a Mixed-Use Residential project **(as defined in 23.502.020(M)(13)**, involving the new construction of at least one Residential Unit. Projects with one or more buildings or projects including multiple contiguous parcels under common ownership or control shall be considered as a sole Housing Development Project and not as individual projects **(BMC 23.328.020(E))**.

APPLICATION CITY OF BERKELEY **LAND USE PLANNING**

AFFORDABLE HOUSING COMPLIANCE PLAN

2. PROJECT SUMMARY INFORMATION –
THIS INFORMATION IS USED TO ESTIMATE THE TOTAL NUMBER OF REQUIRED BMR UNITS

Does the project use Density Bonus?

YES **NO**

Total Density Bonus Units

Does the Demolition Ordinance (BMC 23.326) apply to the project?

YES **NO**

Total units to be demolished

Total affordable replacement units required

(separate calculation required, Gov. Code §65589.5)

Total units replaced (affordable and market-rate)

A **Total Residential Unit Floor Area[5] (square feet)**
(Entire proposed project)

B **Total Residential Units**
(Base Project only for density bonus projects)

C **Total BMR Units required (20% of B)**

D **Total BMR Units Proposed**

50% AMI (Very-Low Income)

80% AMI (Lower Income)

TOTAL BMR Units

E **Other Compliance Option**
(alternative unit size mix or option to dedicate land)

YES **NO**

Indicate Project Type (Check One) **Ownership** **Rental**

3. PLEASE INDICATE HOW THE PROJECT WILL FULFILL THE AFFORDABLE HOUSING REQUIREMENTS

3.A. PROVISION OF ON-SITE

The following provisions apply:

- BMR units cannot exceed three bedrooms
- At least 50 percent of the required Affordable Units in the Housing Development Project must be designated as affordable to Very-Low Income Households (round up for fractional numbers).
    - Up to a maximum requirement of 10 percent of the total units in the Housing Development Project if the project provides more Affordable Units than are required by BMC Chapter 23.328

Please complete the table by noting the number of units in each category.

PROJECT UNIT TYPES AND AFFORDABILITY LEVELS

Unit Type	Market Rate	Very-Low Income Affordable (50% AMI)	Low-Income Affordable (80% AMI)	TOTAL
Studio				
One Bedroom				
Two Bedroom				
Three Bedroom				
Four Bedroom				
Five Bedroom				
TOTAL				

[5] See BMC 23.328.020 Definitions

APPLICATION CITY OF BERKELEY **LAND USE PLANNING**

AFFORDABLE HOUSING COMPLIANCE PLAN

3.B. OPTION TO PAY AN IN-LIEU FEE

Housing Development Projects may provide less than the required number of on-site BMR units and pay a proportionately reduced In-Lieu Fee, calculated as follows:

The Fee Per Square Foot
multiplied by
the **Total Residential Unit Floor Area**
of a Housing Development Project,
multiplied by
the **Percentage of the Applicable Requirement Remaining** after accounting for any on-site Affordable Units provided.

Projects that do not provide any Affordable Units on-site will have an applicable requirement multiplier of one.

The in-lieu fee for Density Bonus Projects is calculated using the base project residential unit floor area only:

The Base Project Residential Unit Floor Area (BP RUFA)
is equal to:
the Final Residential Unit Floor Area (FP RUFA)
divided by
One plus the Density Bonus percentage taken (DB %)

BP RUFA = FP RUFA / (1+DB%)

AFFORDABLE HOUSING FEE DUE

Per Square Foot Fee
based on Total Residential Unit Floor Area, see Fee Schedule on Page 1) (Base Project only for density bonus projects)

X

Total Residential Unit Floor Area (square feet)
(Base Project only for density bonus projects)

X

In Lieu Fee percentage calculation*:
(Affordable Units required – affordable units provided) / Affordable Units required)

(*projects that provide no on-site Affordable Units have a multiplier of 1)

TOTAL FEE DUE

EXAMPLE CALCULATIONS:
50,000 square foot 100-unit project providing 15 Affordable Units

A **Total Residential Unit Floor Area[5] (square feet)**
RUFA (Base Project RUFA only for density projects)
50,000 square feet

B **Total Residential Units**
(Base Project only for density bonus projects)
100

C **Total BMR Units required (20% of B)**
20

D **Total BMR Units Proposed**

50% AMI (Very-Low Income)	**8**
80% AMI (Lower Income)	**7**
TOTAL BMR Units	**15**

Per Square Foot Fee
based on Total Residential Unit Floor Area
(Base Project only for density bonus projects)
$56.25

X

Total Residential Unit Floor Area (square feet)
(Base Project only for density bonus projects)
50,000 square feet

X

In Lieu Fee percentage calculation*:
(Affordable Units required – affordable units provided) / Affordable Units required)

(*projects that provide no on-site Affordable Units have a multiplier of 1)	**25%** ((20-15)/20 = 0.25)

TOTAL FEE DUE
$703,125

[5] See BMC 23.328.020 Definitions

APPLICATION CITY OF BERKELEY **LAND USE PLANNING**

AFFORDABLE HOUSING COMPLIANCE PLAN

SECTION 4 REQUIRED PLAN SHEETS (LAND USE ENTITLEMENT PLANS AND BUILDING PERMIT PLANS)

REQUIRED AHCP PLAN SHEETS

In addition to completing this form, the land use entitlement and building permit plans for your housing development project must demonstrate compliance with the applicable affordable housing provisions. If your project includes a discretionary zoning permit, the entitlement plans must include a Preliminary AHCP plan sheet(s), and all building permits for construction must include a Final AHCP plan sheet(s).

What needs to be in the plans to demonstrate compliance with the City's affordable housing regulations?

The applicable AHCP plan sheets with the applicable information (listed below) must be in sequential pages near the beginning of your plan set and labeled as "Preliminary or Final Affordable Housing Compliance Plan Sheet." Having this information together in the plans will make locating the information easier during project and plan review, and provide transparency to the public. A sample plan set page is attached for reference (see Exhibit A). You will receive corrections from your zoning reviewer if information is not displayed properly in the plan set.

ALL PROJECTS: APPLICABILITY AND REQUIREMENTS OF BMC CHAPTER 23.328 INCLUSIONARY HOUSING

- Residential unit floor area diagrams* showing the floor area that is included and excluded from calculation. Diagrams must be consistent with and separate from the architectural floor plans and include:
  - Schematic diagrams of each floor or level, including mezzanines
  - Indicate floor area by use with shading, color, and/or callouts
  - Dimension all areas of the project that qualify as residential unit floor area, and provide the square footage of each area
  - Tabulation of the total residential unit floor area according to the diagrams
- Calculation of the number of required and proposed BMR units (Base Project only for density bonus)
- Calculation of 100% In-Lieu fee (provide even if on-site units are proposed)

* Diagrams should reflect the whole project (base and bonus), and provide a calculation of the Base Project Residential Unit Floor Area (RUFA) for projects that utilize state density bonus. *(See page 5)*

ON-SITE BELOW MARKET RATE (BMR) UNITS (ALL OR COMBINATION)

Any on-site BMR units
(BMC 23.328.030(A) Requirement to Construct Affordable Units

- Unit summary table by floor of BMR and market-rate units, with bedroom counts
- Alternate mix of unit types, if applicable
  - Calculations for 20 percent of residential unit floor area (must be a mix of affordable units that are either two- or three-bedrooms)

IN-LIEU FEE (ALL OR COMBINATION)

Payment in-lieu of providing some or all required affordable units on-site (BMC Section 23.328.030(B) Option to Pay In-Lieu)

In-Lieu Fee per Resolution No. 70,698-N.S. calculated as follows: the fee per square foot multiplied by the total Residential Unit Floor Area of a Housing Development Project, multiplied by the percentage of the applicable requirement remaining after accounting for any on-site Affordable Units provided. Projects that do not provide any Affordable Units on-site will have an applicable requirement multiplier of one. *(See page 5)*

The In-Lieu Fee per square foot is based on the residential unit floor area of the project (base project only if utilizing State Density Bonus provisions). *(See page 5)*

STAFF ADMINISTRATION USE ONLY

This Affordable Housing Compliance Plan (AHCP) is certified in compliance with BMC Chapter 23.328, Inclusionary Housing.

LAND USE
Preliminary/Final AHCP
Name, Title:

Signature: Date:

HHCS
Preliminary/Final AHCP
Regulatory Agreement executed (due prior to issuance of first building permit for construction:
Yes No Not Applicable

In Lieu Fee payment complete (due prior to first occupancy):
Yes No Not Applicable

Name, Title:

Signature: Date:

APPLICATION CITY OF BERKELEY **LAND USE PLANNING**

AFFORDABLE HOUSING COMPLIANCE PLAN

EXAMPLE OF AN AFFORDABLE HOUSING COMPLIANCE PLAN SHEET

Example Affordable Housing Compliance Plan Sheet / Residential Unit Floor Area Diagrams / Calculations*

Affordable Housing requirements:

Total number of residential units in the example project: 17 (DU + L/W + GLA)
Total RUFA in the example project: 15, 375 sq. ft.

Option I: Providing the required number of BMR units (No in-lieu fee)
Total number of affordable units (VLI or LI): 4 (20% X 17 units = 3.4 Rounded up to 4)

Option II: Providing full in-lieu payment
15, 375 sq. ft. (RUFA) X $ 56.25= $864,843.75

Option III: Providing a combination of BMR units and in-lieu fee
((Required BMRs – Number of BMRs provided)/Total number of BMRS required) = X%
X% x (Total RUFA sq. ft.) = Y sq. ft.
Y sq. ft. X $56.25= $Z (Total In-Lieu fee required)

*For reference and illustrative purposes only

Affordable Housing
Compliance Plan Sheet

Internal

PRESERVATION ARCHITECTURE

March 8, 2024

2071-79 University Ave., 1988-98, 1974-78 and 1950-58 Shattuck Ave., Berkeley
Summary Historical Evaluations

This documentation effort intends to provide summary historical evaluations based on California and Berkeley historical criteria. The current evaluations have been based on previous and recent research (by Page & Turnbull, recorded in 4 sets of Department of Parks and Recreation [DPR] forms, each dated September 18, 2023) plus minimal additional research. The current effort did not, while in progress, review or depend upon the previous evaluation findings, as the intention has been to prepare independent conclusions. However, the previous findings were reviewed as a last step, which historical conclusions align with the current demonstration of findings. That the 2 independent sets of conclusions align is not, however, surprising, as the subject resources do not exhibit any historical or historic architectural importance, individually or collectively. Thus, none of the 4 subject resources have potential individual or collective historical significance per State of California or City of Berkeley criteria:

- None are associated with events or persons of identifiable historic importance locally or beyond.
- Each are small, basic commercial buildings, 2 (2071-79 University and 1974-78 Shattuck) partially intact from their origins, the other 2 (1950-58 and 1988-98 Shattuck) heavily altered.
- None have any potential design or construction distinction and none are the works of an important designer or builder, nor a good example of any individual designer or builder.
- While generally contemporaneous Berkeley landmarks stand in the direct vicinity, the subject buildings do not share characteristics and are lesser examples of period commercial buildings.
- None are individually preservation-worthy.

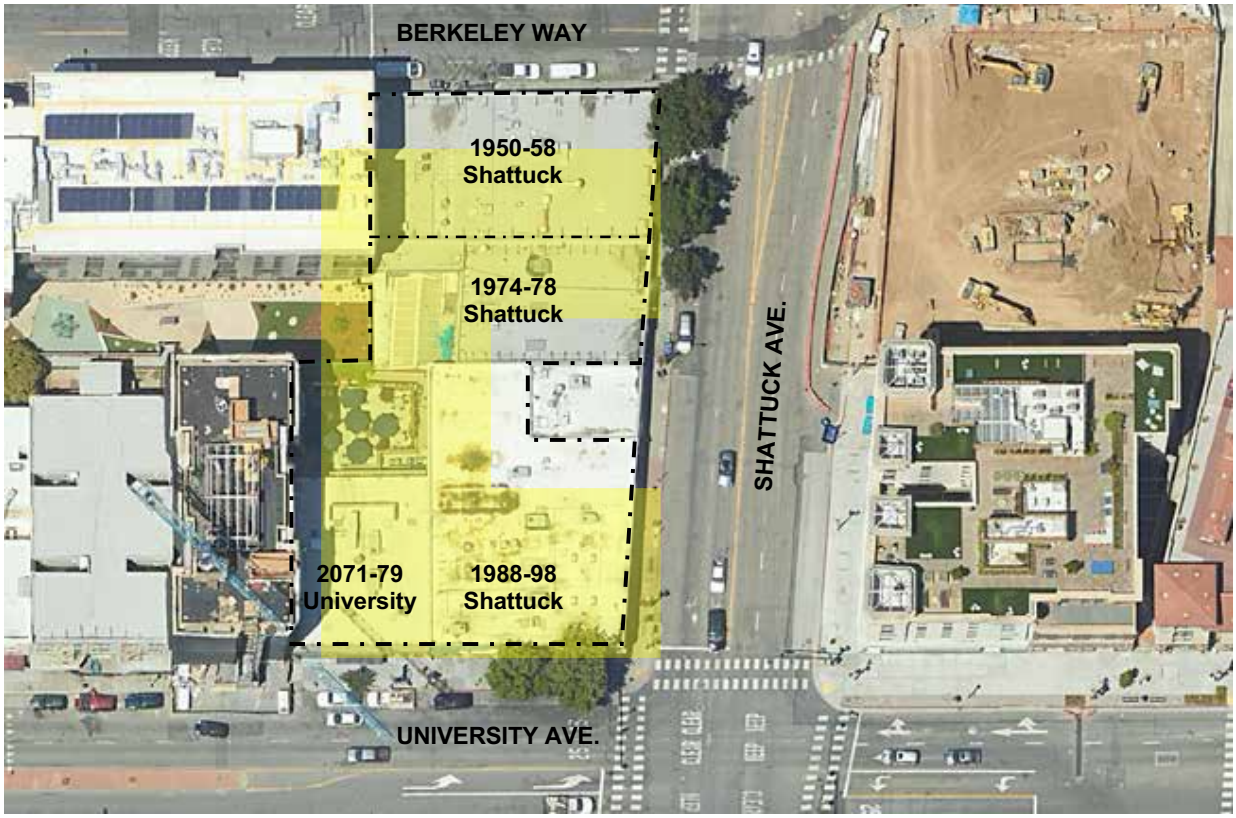


Fig.1 – Aerial view, north is up (Google Earth 2024)

446 17th Street #302 Oakland 94612
510 418 0285 mhulbert@earthlink.net

Summary Descriptions and Histories

The subject properties are 4 adjoined parcels and buildings located at the northwest corner of and fronting on University Ave. to the south and Shattuck Ave. to the east (fig.1).

Summaries of each follow beginning with the University Ave. building then, clockwise, the Shattuck Ave. buildings.

2071-75-79 University Ave. (APN 57-2053-4-2)



Fig.2 – 2071-75-79 University Ave. (figs.2-6, Google Earth 2024)

Standing on and largely filling an approximately 55 foot wide by 115 foot deep lot, this 1-1/2 story commercial building is a 3-part commercial block, its front brick enframed – 3 piers with a spandrel/parapet infilling the upper building, the full-height piers standing slightly forward of the brick faces above storefronts – and with ornamental sheet metal cornices, upper and lower, the upper at top of wall and the lower aligned with the tops of storefronts. The building's face brick is smooth, without ornamental treatment, presently unpainted and set in a plain running bond pattern. The three extant storefronts are metal framed and include metal aprons. A metal canopy hangs over the central bay. Current building signage for the 2 existing businesses includes 2 wall mounted signs centered in 2 of the 3 upper spandrels and 2 projecting signs at each end pier. The central sign is also illuminated by 2 wall mounted light fixtures. The building's brick sidewalls (partially visible at interior) stand directly against neighboring construction. The rear wall faces an interior court that is surrounded by adjacent buildings so not open to or visible from the public way. The roof is low slope and, again, not visible from the public way.

Per permit records, primary exterior alterations included altered storefronts and aprons in 1949; a new front covering 2 of the 3 bays in 1971; then the removal of the false front, repair of the existing brick front and the addition of new storefronts in 2015.

This 3-part commercial building was constructed in 1906 for owners Simm Fischel and Jacob Bauml, neither a building user, with contractor John Spencer. The property has remained in the Bauml family ever since.

Per the 1907 directory, the earliest tenants were Augenour & Porter, real estate, 2071 University; Cyrus H. Street, mining, 2071 University; Reed Realty Co, 2075 University; and Varsity Creamery Co., 2079 University.

In its earliest depiction in the 1911 Sanborn map, the building was demised into 3 stores, 2 specifically labeled “meat” and “creamery” at 2075 and 2071, respectively. In a c1920 photo, a large central projecting sign announced “Realtors.” Subsequent Sanborn maps again showed the 3 commercial spaces, in 1929 the central one labeled restaurant (“restr’t”) flanked by 2 unidentified stores; in 1951 a restaurant in 2071, the other 2 labeled stores. By 1981, the latest Sanborn revision, the building had given way to 2 commercial spaces, the 2071 and 2073 spaces by then occupied by the restaurant that had added the front in 1971. Overall, the building’s occupants have included realtors, a delicatessen, bakeries, restaurants (including currently), hats, meats, books, appliances, rugs, creameries (including currently), and a salon.

The recent (2015) alterations to 2071-79 University Ave. generally reinstated the surviving original/early brick front though the extant front is predominately new, including its lower cornice along with all new storefronts, signs, lighting and canopy. Nor is there evidence that the new work was undertaken with historical rehabilitation consideration. As such, the present building is a good example of current design.

1988-98 Shattuck Ave. (APN 57-2053-3-1)



Fig.3 – 1988-98 Shattuck Ave.

Located at the Shattuck and University streetcorner, thus with fronts on both, this tall 1-1/2 story commercial building of concrete construction additionally wraps around the small adjoining building to the north. Its site is thus a rectangle of some 115 feet (north-south) by 110 feet (east-west) yet with a notch at its northeast corner. A short rear exterior wall faces the open space behind 2071-75-79 University while the side walls, north and west, abut adjacent buildings (above which segments of their upper walls are partly visible).

From an historical perspective, the less written about this building the better. Built as a department store in the early 1950s, that department store was converted to a restaurant in 1977, when the store at 1988 Shattuck was separately created and when the building fronts were completely altered. In 2015, the facades were again substantially altered. At this juncture, what remains of the original department store building is its general form while the building exterior essentially dates to 2015 – though there is an exposed brick wall at the west end of the south façade that may be a vestige of 1 or the other previous building exterior.

The department store building was permitted in 1951 for the Fifth Keil Realty Co. with architect Wally Reemelin and builder Charles Kring. The House of Harry's department store originally occupied the building and where they remained into the 1970s, following which the building was subdivided, its primary space (1998) converted to a McDonald's restaurant. The first identified occupant of the smaller store (1988) was in the later 1980s with the Missing Link bicycle shop. McDonald's remains, behind the building's 2015, cement paneled with wood and metal slatted façade, while 1998 with its c1977 storefront is vacant, the bicycle shop having closed in 2022.

As noted, as there is at present no 1950s department store in evidence and minimal evidence of the 1977 restaurant building, the 1988-98 Shattuck Ave. building exterior dates to 2015.

1974-76-78 Shattuck Ave. (APN 57-2053-2)



Fig.4 – 1974-76-78 Shattuck Ave.

This building is a 1-story commercial block with a 3-part enframed front, its central bay and flanking storefronts presently a wooden façade yet presumed to conceal as well as reflect the shape of an underlying brick façade. The building and its rearward addition fill the approximately 49 foot wide (north-south) by 106 foot deep site. Permitted for 3 stores in 1921 for owner Joseph Henry with contractor E. K. Nelson/E. K. Building Co., a miscellany of commercial uses occupied its 3 stores from its origins until 1973 when, along with the rearward addition, the building was converted to a single restaurant space. In 1973, the restaurant was Oleg's; in 1978, Spat's, which restaurant/bar remain.

At its front, the wood façade added in the course of its 1970s conversion was in part removed above the 2 flanking storefronts, the removal exposing painted brick clad piers and a spandrel/parapet above along with wood sash transom windows within those 2 upper storefronts. At the southern storefront (1978), a molded steel sash shop window, tile apron and recessed wood entry door also appear to be original to the building, whereas the central storefront (1976) was evidently completely replaced and northern storefront (1974) in part replaced (the northern storefront window appears to remain).

Despite these several retained features and materials, in addition to what was and is a utilitarian façade, the building front has been heavily marred by the addition of wood cladding, marquee lighting and signage, as well as the alteration and replacement of storefronts. Additionally, the now relatively longstanding tenant, Spats, was not the first restaurant tenant – in 1979, Karen and William Schipani, the founders of Spats, assumed thus did not originate a previous restaurant/bar use or space, which consideration the surviving, pre-existing building exterior clearly exemplifies.

1950-52-58 Shattuck Ave., 2036 Berkeley Way (APN 57-2053-1)



Fig.5 – 1950-58 Shattuck Ave.

This 1 story commercial building stands at the southwest corner of the intersection of Shattuck Ave. (east) and Berkeley Way (north), with addresses and fronts on both streets, though the primary front faces Shattuck. The building fills its approximately 60 foot wide by 110 foot deep site, abuts the southern neighboring building and is separated by a narrow passage alongside its large western neighbor. Its east front is 3 bays wide, its north side 3 wide bays deep, each bay with storefronts or

partial storefronts, all storefront heavily modified, none original. The building exterior is stuccoed masonry, its masonry exterior construction evidenced by exposed anchor bolts at the parapets, the line of parapet slightly raised at the streetcorner and across the front. At the east front, the very rough stucco finish indicates ongoing deterioration and alteration.

1950-58 Shattuck Ave. was permitted in 1922 for owner F. D. Chase with contractor M. F. Hamilton. It had 3 addresses on Shattuck (1950, 52 and 58) and a fourth on Berkeley Way (2036). Auto garage uses predominated in all shops, some evidently combined, until c1960. In 1962, the overall building was converted to a stationary store, which use survived until 2006. Since and at present, there are again 4 retail spaces, all restaurant uses. In addition to the original owner, Helen Lutzi acquired the property and its building c1945, Phyllis Lutzi-Agler was the owner 1946-2009, and it has since been under the ownership of Harry Agler and Jerry Tsou.

The 1950-58 Shattuck Ave. building's existing exterior is utilitarian and roughly altered, its storefronts a mix of replacements that do not reflect any original potential.



Fig.6 – 2036 Berkeley Way

Historic Context Summary

Contextually, University and Shattuck avenues are a central crossroads in the City of Berkeley. Nonetheless, downtown Berkeley lies south of University Ave., and which downtown trickles out in the subject block, which lies north of University. In the downtown Berkeley development context, the late-19th century origins of the downtown paralleled the establishment and development of the University of CA Berkeley campus, upon which university campus the overall historical setting of Berkeley substantially depends. Relative to which, the subject resources span from the beginning into the middle of the 20th century. The earliest, dating to 1906, was part of a second wave of commercial development; those from the 1920s were part of a third wave and the latter, dating to the early 1950s, a fourth. Consequently, they are altogether a mix of early- to mid-20th century commercial resources.

Pre-1900, the subject block housed dwellings – with the exception of the building at the northwest

streetcorner, which then housed a c1890 Victorian era building, the California Hotel (and which the future 1988-98 Shattuck Ave. building replaced). The turn-of-the-20th century residential context reinforces the point that the blocks north of University Ave. stood outside a then growing commercial downtown. While commercial development on the subject block ensued in the early 1900s, even then, three-quarters of the block remained residential into the 1910s.

Further reinforcing its near-downtown context, the 1922 building at 1950-58 Shattuck was developed as an auto repair garage, which repair uses were typically located at the periphery of commercial zones.

As noted, the corner building (1988-98 Shattuck) was developed as a department store that replaced the late-1900s hotel building, thereby removing an early commercial building at a Berkeley crossroads while replacing it with another. In turn, that mid-20th century department store was converted and, in the process, altered beyond any recognition of its mid-20th century character.

Each of the 4 subject buildings adjoin – while a small fifth building partly interrupts – yet they are not an interrelated collection of uses or architectures. In previous downtown contexts, these 4 buildings were excluded. For example, a 2007 downtown survey stated that the “Shattuck Avenue Commercial Corridor runs along Shattuck Avenue from about Durant to University Avenue (maybe as far as Hearst Avenue)” (from ARG, *Downtown Berkeley Historic Resources Reconnaissance Survey,* January 2007, p8). A 2015 downtown context statement also excluded this block. Comparatively, directly across Shattuck Ave. stands a more solidly developed commercial block, recently substantially altered and added to though the cohesion of its early 20th century commercial architecture, inclusive of 3 Berkeley landmarks, has been retained. Moreover, those University and Shattuck avenue resources were included in previous downtown contexts.

No such cohesion or inclusion applies to the 4 subject resources. The only formal interrelationship is between the plain, 3-part brick fronted store buildings at 2071-79 University and 1974-78 Shattuck, the earlier 1906, the latter 1921, so developed in different periods. Those 2 store building fronts again relate to several in the east adjoining block, though the latter facades display far better design characteristics – to the extent that they were successfully retained in the recent redevelopment project.

Designers and Builders

Of the 4 subject buildings, 3 were evidently designed and built by contractors:

- 2071-79 University (1906) – John Spencer
- 1974-78 Shattuck (1921) – E. K. Nelson
- 1950-58 Shattuck (1922) – M. F. Hamilton

Based on the previous research, these builders are without identified or identifiable historic import. Prior research also confirmed that an architectural designer, Wally Reemelin, was the designer of the 1988-98 Shattuck Ave. (1951) department store building. Though that prior research indicated that Reemelin was in the forefront of A-frame residential design in the mid-20th century, there were others earlier and contemporaneous attributions to architects who developed A-frame residential designs (readily available examples include Rudolph Schindller and John Campbell, both historically important architects). Additionally, the contractor for the 1988-98 Shattuck building was Chase [Charles?] A. Kring, another builder of unidentifiable importance.

Summary Evaluations

The following summarily evaluates the potential historical significance of the 4 subject buildings based on California Register (from https://ohp.parks.ca.gov/?page_id=21238) and City of Berkeley Landmarks Preservation Ordinance (LPO) criteria (from BMC sec.*3.24.110 Landmarks, historic districts and structures of merit--Designation--Criteria for consideration*).

Per the *California Register of Historical Resources (CR)* evaluation criteria:

CR criterion 1 – In their early-to-mid 20th century development contexts, there are no development events or patterns of any potential historic importance associated with these small, local, commercial properties and buildings, so they do not meet *CR criterion 1.*

CR criterion 2 – Those directly associated with the development of the subject buildings were the range of identified original owners and occupants, none of whom are of identifiable historical importance. Subsequent owners and occupants, however longstanding (McDonald's, 1977-present Spats, 1979-present; Radstons, 1962-2006), were at most responsible for alterations, none of which have potential historical importance. Consequently, the subject properties and buildings do not meet *CR criterion 2.*

CR criterion 3 – None of the 4 subject resources have any identifiable design or construction distinction. As stated:

- 2071-79 University – The recent (2015) alterations to 2071-79 University Ave. generally reinstated the surviving original/early brick front, though the extant front is predominately new, including its lower cornice along with all new storefronts, signs, lighting and canopy. Nor is there evidence that the recent work was undertaken with historical rehabilitation consideration. As such, the present building is a good example of 2015 design.
- 1988-98 Shattuck – As there is at present no 1950s department store in evidence and minimal evidence of the 1977 restaurant building, the 1988-98 Shattuck Ave. building exterior dates to 2015.
- 1974-78 Shattuck – Despite several retained exterior features and materials, in addition to what was and is a utilitarian façade, the building front has been heavily marred by the addition of wood cladding, marquee lighting and signage, as well as the alteration and replacement of storefronts that do not reflect historical character.
- 1950-58 Shattuck – This building's existing exterior is utilitarian and roughly altered, its storefronts a mix of replacements that do not reflect any historical character.

Additionally, none of the identified original designers and/or builders are of identifiable historic importance and the properties do not embody any artistic values, so these resources do not meet *CR criterion 3*.

CR criterion 4 – Relative to potential historic architectural resources, the subject properties have not yielded and at this juncture, beyond the contents of current reports, do not have any potential to yield additional information of any historical importance. So, the 4 subject properties and buildings do not meet *CR criterion 4.*

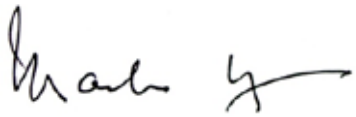
Based on the City's *LPO* criteria, per the information summarized herein, these 4 extant, minor and undistinguished commercial properties and buildings have no individual Landmark potential (per

LPO sec.3.24.110.A). Under the lesser and more contextual Structure of Merit criteria (LPO sec.3.24.110.B), the subject buildings:

- Are not worthy of preservation as part of the block and street frontages (LPO sec.B.1).
- While the 3 earlier subject buildings are generally contemporary with nearby landmarks (United Stores, 1908; Morgan Building, 1904; Nash Hotel, 1923; Shattuck Square, 1926), the subject buildings are not equivalent in size, scale, style, materials or design with any of those landmarks. Therefore, the subject buildings have no direct historical or historic architectural associations to or compatibility with any identified historic resources in the direct vicinity (LPO sec.B.2.a1 and sec.B.2b).
- Are not contemporary with an historic period or event of significance to the City or to this neighborhood, block, street frontage, or group of buildings (LPO sec.B.2.a2).
- Are not good examples of historic architectural design (LPO sec.B.2c).
- Are not historically significant to their block and street frontages (LPO sec.B.2d).

In conclusion, none of the 4 subject resources have potential historical significance per California Register or City of Berkeley criteria.

Signed:



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SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF ALAMEDA

1974 SHATTUCK AVENUE, LLC, NX VENTURES, LLC, and JLLJAR, LLC, Plaintiffs, vs. WILLIAM DAVID HURD; JAMES RICHARD HURD; LUCY M. (HURD) FULTON; JON ROBERT HURD; JOHN WILLIAM HURD; DEENA M. (HURD) LAWRENCE; THE TESTATE AND INTESTATE SUCCESSORS OF ADELLA M. MULLER, DECEASED, AND ALL PERSONS CLAIMING BY, THROUGH, OR UNDER SUCH DECEDENT; THE TESTATE AND INTESTATE SUCCESSORS OF THE ESTATE OF HENRY DURANT, DECEASED, AND ALL PERSONS CLAIMING BY, THROUGH, OR UNDER SUCH DECEDENT; SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT; DOES 1-50; AND ALL PERSONS UNKNOWN, CLAIMING ANY LEGAL OR EQUITABLE RIGHT, TITLE, ESTATE, LIEN, OR INTEREST IN THE PROPERTY DESCRIBED IN THE	Case No. 24CV065234 VERIFIED FIRST AMENDED COMPLAINT TO QUIET TITLE

COMPLAINT ADVERSE TO PLAINTIFFS' TITLE, OR ANY CLOUD UPON PLAINTIFFS' TITLE THERETO,

Defendants.

Plaintiffs 1974 Shattuck Avenue, LLC ("1974 Shattuck"), NX Ventures, LLC ("NX Ventures") and JLLJAR, LLC ("JLLJAR") allege:

INTRODUCTION

1. This is an action to quiet title in Plaintiffs to an approximately three-foot strip of land (the "3-Foot Strip") along Shattuck Avenue in downtown Berkeley that Plaintiffs and their predecessors have openly possessed, occupied, improved, and treated as their own, without any claim or interest of any other person, for many decades. Plaintiffs are in the process of applying for a project (the "Project") that will provide greatly needed, transit-oriented housing in the public interest close to BART and bus lines in downtown Berkeley. As part of the Project, Plaintiffs seek a decree quieting title to the 3-Foot Strip to conform the legal descriptions of two parcels – Alameda County Assessor's Parcel No. 057-2053-001 (the "001 Parcel"), commonly known as 1950 Shattuck Avenue, and Alameda County Assessor's Parcel No. 057-2053-002 (the "002 Parcel"), commonly known as 1974 Shattuck Avenue (collectively, the "Parcels") – to the historical and undisputed usage of those Parcels, which include the 3-Foot Strip. A portion of a survey showing the 3-Foot Strip and its relation to the 001 Parcel and the 002 Parcel is attached to this Complaint as **Exhibit A** for reference. The current legal descriptions of the 001 Parcel and the 002 Parcel are attached to this Complaint as **Exhibit B**. The legal description of the 3-Foot Strip adjacent to the 001 Parcel (the "001 Strip") is attached to this Complaint as **Exhibit C**. The legal description of the 3-Foot Strip adjacent to the 002 Parcel (the "002 Strip") is attached to this Complaint as **Exhibit D**. For the purposes of this Complaint, the 001 Strip and 002 Strip together comprise the 3-Foot Strip.

JURISDICTION AND VENUE

2. This is an action *in rem* to quiet title to real property in favor of Plaintiffs.

The real property is located in Alameda County, California. Accordingly, this Court has jurisdiction over the 3-Foot Strip, the parties and this dispute, and venue in this County is proper.

PARTIES

3. JLLJAR, LLC is the current fee simple owner of all right, title and interest in the 001 Parcel, including its appurtenances. Plaintiff NX Ventures, LLC is under contract to acquire all right, title and interest in the 001 Parcel from JLLJAR, LLC.

4. Plaintiff 1974 Shattuck Avenue, LLC is the present owner in fee simple of all right, title and interest in the 002 Parcel, including its appurtenances.

5. Adella M. Muller is identified in a Litigation Guarantee obtained by Plaintiffs as having the most recent claim to ownership of the 001 Strip. Plaintiffs' due diligence shows Adella M. Muller died on August 23, 1980. Plaintiffs have performed due diligence regarding the descendants of Adella M. Muller and based thereon are informed and believe, and on that basis allege, that Defendants William David Hurd, James Richard Hurd, Lucy M. (Hurd) Fulton, Jon Robert Hurd, John William Hurd, and Deena M. (Hurd) Lawrence are the living adult descendants of Adella M. Muller, and on that basis may claim an interest in the 001 Strip adverse to Plaintiffs' title and occupancy. Pursuant to Cal. Civ. Proc. Code § 762.030(b)(2), Plaintiffs join as Defendants all testate and intestate successors of Adella M. Muller, deceased, and all persons claiming by, through, or under such decedent, even if not specifically named in this Complaint, and seek to quiet title as to each of them.

6. A Litigation Guarantee obtained by Plaintiffs for the 002 Strip identifies "The heirs and devisees of the Estate of Henry Durant" as having the most recent claim to ownership of the 002 Strip. Plaintiffs' due diligence shows that Henry Durant died intestate in 1875; that his one child predeceased him; that his spouse Mary E.B. Durant died in 1885; that Mary E. B. Durant's estate property was sold for cash; and that none of the real estate sold matched the location of the 002 Strip. Plaintiffs therefore are informed and believe that there is no identifiable successor to the 002 Strip. Pursuant to Cal. Civ.

Proc. Code § 762.030(b)(2), Plaintiffs join as Defendants all testate and intestate successors of the Estate of Henry Durant, deceased, and all persons claiming by, through, or under such decedent, and seek to quiet title as to each of them.

7. Defendant San Francisco Bay Area Rapid Transit District ("BART") is a public agency formed to own and operate the BART transit system. BART is named as a Defendant in this action because the Litigation Guarantee obtained by Plaintiffs reflects an Easement under the 3-Foot Strip in favor of BART recorded on May 16, 1966 at Reel 1768, Image 944 of the Official Records of Alameda County. Plaintiffs name BART as a Defendant in this Action to ensure that the BART Easement is preserved and attaches to the interest of Plaintiffs in the 3-Foot Strip.

8. Plaintiffs seek to quiet title in the 001 Strip against the following claims of the following named Defendants:

a. William David Hurd, James Richard Hurd, Lucy M. (Hurd) Fulton, Jon Robert Hurd, John William Hurd, and Deena M. (Hurd) Lawrence, as living adult descendants of Adella M. Muller, deceased, who has been identified as the last claimant to a fee simple interest in the 001 Strip due to the Decree Quieting Title in Alameda County Superior Court Action No. 115479 and recorded on January 5, 1931 as Book 2483 Page 330 in the Official Records of Alameda County, as described further below.

9. Defendants' claims are without any right, and Defendants have no right, title, estate, lien, or interest in the 3-Foot Strip or any part of it, except the following: BART holds a valid Easement, as described above, that Plaintiffs do not dispute.

10. For convenience, the above persons and public agencies identified by their proper names or aliases in this Complaint are referred to in this Complaint as the "Named Defendants."

11. Having conducted thorough and appropriate due diligence, Plaintiffs do not know the exact names, capacities, bases for liability, or interests in the 3-Foot Strip of other Defendants, which Plaintiffs designate for this action as "all persons unknown,

claiming any legal or equitable right, title, estate, lien, or interest in the property described in the complaint adverse to Plaintiffs' title, or any cloud on Plaintiffs' title to the Property." Plaintiffs seek to quiet title in the 3-Foot Strip against the claim of each such Defendant, and each such Defendant has no right, title, estate, lien, or interest in the property or any part of it. Plaintiffs will serve this class of Defendants by publication as the Court allows.

12. DOES 1-50, inclusive, are sued in this Complaint under fictitious names. Their true names, capacities, bases for liability, or interests are unknown to Plaintiffs. When that information is ascertained, Plaintiffs will amend this Complaint to insert their true names and capacities as Defendants in this action. Plaintiffs are informed and believe and thereon allege that each of these fictitiously named Defendants claims some right, title, estate, lien, or interest in the 001 Strip or 002 Strip, and that their claims, and each of them, constitute a cloud on Plaintiffs' title to the 3-Foot Strip. Plaintiffs therefore seek to quiet title as to each of these fictitiously named Defendants.

13. Pursuant to Cal. Civ. Proc. Code § 762.060(a), Plaintiffs sue and seek a judgment binding all persons unknown, claiming any legal or equitable right, title, estate, lien, or interest in the 3-Foot Strip adverse to Plaintiffs' title, or asserting any interest creating any cloud upon Plaintiffs' title thereto.

FACTS

A. Facts Common to the 001 Strip and the 002 Strip

14. Plaintiffs are informed and believe that for nearly a century, and perhaps more, the owners and occupants of the 001 and 002 Parcels have possessed, occupied, and used the adjacent 3-Foot Strip as part of those Parcels. Both Parcels are improved with buildings, the facades of which many decades ago were built upon, and since their construction have exclusively occupied, the 3-Foot Strip all the way to the Shattuck Avenue public right-of-way. Plaintiffs and their predecessors have continuously constructed, maintained, paid for, and borne the liabilities and responsibilities associated with the improvements built on and under the 3-Foot Strip. Plaintiffs are informed and

believe that the City of Berkeley and the public at all relevant times have treated the boundaries of the 001 and 002 Parcels as including the 3-Foot Strip. Plaintiffs are informed and believe that no person has objected to the presence of the buildings on the 3-Foot Strip or the occupancy by Plaintiffs or their predecessors in the 3-Foot Strip, nor has any person other than the owners of the 001 and 002 Parcels claimed any interest in the 3-Foot Strip or asserted that the 3-Foot Strip is being occupied with their consent. A portion of a December 2022 Survey showing the buildings occupying the 3-Foot Strip is attached to this Complaint as **Exhibit E**.

15. As shown on Exhibits A and E, the eastern boundary of the parcel immediately to the south of the 002 Parcel extends approximately three feet further to the east than the current boundary of the 002 Parcel, and thus fully to the Shattuck Avenue right-of-way, further confirming the intention and understanding of all involved that the property lines of the 001 Parcel and 002 were intended by all to extend to the Shattuck Avenue right-of-way and were to include the 3-Foot Strip.

B. Further Facts Regarding the 001 Strip

16. Plaintiffs are informed and believe and on that basis allege that on or about January 8, 1930, Philip J. Haver loaned money to Max Muller and Adella M. Muller and secured repayment of that loan by Deed of Trust recorded on January 8, 1930 at Book 2310 page 193 of the Official Records of Alameda County, a true and correct copy of which is attached as **Exhibit F** (the "Deed of Trust"); and that it was the intention of Philip J. Haver and Adella M. Muller to secure repayment of that loan with, and that the Deed of Trust encompass, all right, title and interest in the 001 Parcel, and all rights, tenements, hereditaments and appurtenances thereto then owned or thereafter acquired, which included the 001 Strip.

17. Plaintiffs are informed and believe and on that basis allege that the City of Berkeley by Quitclaim Deed, a true and correct copy of which is attached as **Exhibit G**, conveyed all right, title and interest in the 001 Strip to Adella M. Muller as of October 29,

1930. As a result of that conveyance, the 001 Strip formally became part of the property of Adella M. Muller subject to the Deed of Trust.

18. Plaintiffs are informed and believe and on that basis allege that a Decree Quieting Title in Alameda County Superior Court Action No. 115479 and recorded on January 5, 1931 as Book 2483 Page 330 in the Official Records of Alameda County confirmed all right, title and interest in the 001 Strip to Adella M. Muller and against all other persons and entities, including without limitation the City of Berkeley. A true and correct copy of that recorded Decree is attached to this Complaint as **Exhibit H**. This Decree confirmed the 001 Strip was part of the security encompassed within the Deed of Trust.

19. Plaintiffs are informed and believe and on that basis allege that Adella and Max Muller defaulted on payment of the loan secured by the Deed of Trust, and the loan was foreclosed upon by Beneficiary Philip J. Haver, who made the high bid of $15,000 at the Trustee's Sale pursuant to the Deed of Trust. As a result, on or about March 17, 1933 a Trustee's Deed was recorded at Book 2894 page 399 of the Official Records of Alameda County, conveying all right, title and interest in the 001 Parcel to Philip J. Haver, including all tenements, hereditaments and appurtenances associated with that 001 Parcel, which all intended to include the 001 Strip. Plaintiffs are informed and believe and on that basis allege that only by mutual mistake did the metes and bounds legal description in the Trustee's Deed fail to include the 001 Strip. A true and correct copy of the Trustee's Deed is attached to this Complaint as **Exhibit I**.

20. As a result of the Trustee's Deed attached as Exhibit I, Philip J. Haver became the owner in fee simple absolute of all right, title and interest in the 001 Parcel and the appurtenant 001 Strip. Plaintiff JLLJAR is the legal successor in interest to Philip J. Haver of all right, title and interest in the 001 Strip, to the exclusion of all other claimants, including the Defendants in this action. Plaintiff NX Ventures has a present equitable interest in the 001 Strip by virtue of its presently pending agreement for the purchase of all

right, title and interest in the 001 Parcel and all its appurtenances, including the 001 Strip from Plaintiff JLLJAR.

21. Plaintiff JLLJAR and its predecessors for decades have, and continue to, openly and notoriously, and as of right, occupy and possess the 001 Strip, providing reasonable notice of their claim to the 001 Strip to any person claiming to have any right, title or interest in the 001 Strip.

22. Plaintiffs NX Ventures and JLLJAR are informed and believe, and on that basis allege, that JLLJAR and its predecessors have paid taxes on the 001 Strip for more than five years.

C. Further Facts Regarding the 002 Strip

23. Plaintiffs are informed and believe, and on that basis allege, that on January 31, 1890, a "Map of College Tract, Berkeley" was recorded creating the 002 Parcel, and all persons, entities and agencies having any right, title, interest or claim, or otherwise involved in the property thereafter intended the 002 Strip to be included in the 002 Parcel.

24. Plaintiff 1974 Shattuck and its predecessors in the 002 Parcel for decades have, and continue to, openly and notoriously, and as of right, occupy and possess the 002 Strip, providing reasonable notice of their claim to the 002 Strip to any person claiming to have any right, title or interest in the 002 Strip.

25. Plaintiff 1974 Shattuck is informed and believe, and on that basis alleges, that it and its predecessor have paid taxes on the 002 Strip for more than five years.

26. Based on the allegations set forth above, Plaintiffs seek the relief alleged in this Complaint.

FIRST CAUSE OF ACTION

(Quiet Title To The 001 Strip In Favor Of JLLJAR, LLC)

27. Plaintiffs NX Ventures and JLLJAR reallege and incorporate by reference Paragraphs 1-26, above into this cause of action.

28. By virtue of the foregoing allegations, Plaintiff JLLJAR is the owner by right of the 001 Strip, which was intended by all to be included within and part of the 001

Parcel, in fee simple absolute. The legal description of the 001 Parcel omits the 001 Strip contrary to the intentions of, and as a result of the mutual mistake of, the previous grantors and grantees and other predecessors in interest to the 001 Parcel.

29. Plaintiffs seek to quiet title against the claims of each Defendant, and any person claiming any right, title or interest in the 001 Strip. Each Defendant's claim is without any right whatsoever, and Defendants have no right, title, estate, lien, or interest whatever in the 001 Strip, or any part of that property.

30. The title of Plaintiff JLLJAR is subject only to the Easement in favor of Defendant BART alleged in this Complaint and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

31. On this basis, Plaintiffs seek the relief set forth in the Prayer.

SECOND CAUSE OF ACTION

(Quiet Title by Adverse Possession to, or Prescriptive Easement in, the 001 Strip In Favor Of JLLJAR, LLC And Against All Defendants)

32. Plaintiffs NX Ventures and JLLJAR reallege and incorporate by reference Paragraphs 1-31, above into this cause of action.

33. The continuous possession of the 001 Strip by Plaintiff JLLJAR and its predecessors-in-interest has been open and notorious, as of right, and hostile and adverse to the claims of Defendants and to all other persons, resulting in title to the 001 Strip in Plaintiff JLLJAR, superior to all claims, right, title or interest of Defendants and all other persons, known or unknown. The title of Plaintiff JLLJAR is subject only to the Easement in favor of Defendant BART alleged in this Complaint, and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

34. Alternatively, the continuous possession of the 001 Strip by Plaintiff JLLJAR and its predecessors-in-interest has been open and notorious, as of right, and hostile and adverse to the claims of Defendants and to all other persons, resulting in a permanent and exclusive easement to the 001 Strip in favor of JLLJAR by prescription, superior to all claims, right, title or interest of Defendants and all other persons, known or

unknown. The title of Plaintiff JLLJAR in the 001 Strip is subject only to the Easement in favor of Defendant BART alleged in this Complaint and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

35. On this basis, Plaintiffs seek the relief set forth in the Prayer.

THIRD CAUSE OF ACTION

(Quiet Title To The 002 Strip In Favor Of 1974 Shattuck Avenue, LLC And Against All Defendants)

36. Plaintiff 1974 Shattuck realleges and incorporates by reference Paragraphs 1-35, above into this cause of action.

37. Plaintiff 1974 Shattuck is the owner by right of the 002 Parcel and the 002 Strip, by Grant Deed recorded June 11, 2014, a copy of which is attached to this Complaint and incorporated by reference as **Exhibit J**. The legal description of the 002 Parcel in the 002 Parcel Deed and its predecessor deeds and other instruments by which the title to the 002 Parcel was transferred was intended to include the 002 Strip, and omit the 002 Strip only due to the mutual mistake of the previous grantors and grantees and other predecessors in interest to the 002 Parcel.

38. Plaintiff seeks to quiet title against the claims of each Defendant, and any person claiming any right, title or interest in the 002 Strip. Each Defendant's claim is without any right whatsoever, and Defendants have no right, title, estate, lien, or interest whatever in the 002 Strip, or any part of that property.

39. The title of Plaintiff 1974 Shattuck in the 002 Strip is subject only to the Easement in favor of Defendant BART alleged in this Complaint and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

40. On this basis, Plaintiff seeks the relief set forth in the Prayer.

FOURTH CAUSE OF ACTION

(Quiet Title by Adverse Possession to, or Prescriptive Easement in, the 002 Strip In Favor Of 1974 Shattuck Avenue, LLC And Against All Defendants)

41. Plaintiff 1974 Shattuck realleges and incorporates by reference Paragraphs 1-40, above into this cause of action.

42. The continuous possession of the 002 Strip by Plaintiff 1974 Shattuck and its predecessors-in-interest in the 002 Parcel has been open and notorious, as of right, and hostile and adverse to the claims of Defendants and to all other persons, resulting in title to the 002 Strip in Plaintiff 1974 Shattuck, superior to all claims, right, title or interest of Defendants and all other persons, known or unknown. The title of Plaintiff 1974 Shattuck is subject only to the Easement in favor of Defendant BART alleged in this Complaint, and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

43. Alternatively, the continuous possession of the 002 Strip by Plaintiff 1974 Shattuck and its predecessors-in-interest has been open and notorious, as of right, and hostile and adverse to the claims of Defendants and to all other persons, resulting in a permanent and exclusive easement to the 002 Strip in favor of 1974 Shattuck by prescription, superior to all claims, right, title or interest of Defendants and all other persons, known or unknown. The title of Plaintiff 1974 Shattuck in the 002 Strip is subject only to the Easement in favor of Defendant BART alleged in this Complaint and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

44. On this basis, Plaintiff seeks the relief set forth in the Prayer.

PRAYER

Plaintiffs pray for judgment against Defendants, and each of them, jointly and severally, as follows:

1. For a judgment quieting title, as of the date of filing this Complaint, in favor of Plaintiff JLLJAR, LLC, or any successor owners of the 001 Parcel, as the owner in fee simple absolute of the 001 Strip, and that Defendants have no estate, right, title or interest

in the 001 Strip, except only for the Easement in favor of Defendant BART alleged in this Complaint and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

2. For a judgment amending the legal description of the 001 Parcel to include the 001 Strip.

3. Alternatively, for a judgment that, as of the date of filing this Complaint, Plaintiff JLLJAR, LLC is the owner of a permanent and exclusive easement to the 001 Strip for development, erection, operation, improvement and maintenance of structures and all related uses.

4. For a judgment quieting title, as of the date of filing this Complaint, in favor of Plaintiff 1974 Shattuck, LLC as the owner in fee simple absolute of the 002 Strip, and that Defendants have no estate, right, title or interest in the 002 Strip, except only for the Easement in favor of Defendant BART alleged in this Complaint and any liens in favor of any public entity or district for taxes or assessments having priority by statute.

5. For a judgment amending the legal description of the 002 Parcel to include the 002 Strip.

6. Alternatively, for a judgment that, as of the date of filing this Complaint, Plaintiff 1974 Shattuck is the owner of a permanent and exclusive easement to the 002 Strip for development, erection, operation, improvement and maintenance of structures and all related uses.

7. For a judgment enjoining Defendants, and each of them, from claiming any estate, right, title or interest in the 3-Foot Strip or any portion of the 3-Foot Strip;

8. For costs of suit; and

9. For such other relief as the court may deem proper.

Dated: March 6, 2024

ALLEN MATKINS LECK GAMBLE MALLORY & NATSIS LLP

By: _____
MARSHALL C. WALLACE
KIMBERLY F. MACEY

Attorneys for Plaintiffs 1974 Shattuck Avenue, LLC and NX Ventures, LLC

Dated: March 6, 2024

JEFFER MANGELS BUTLER & MITCHELL LLP

By: _____
MATTHEW S. KENEFICK

Attorneys for Plaintiff JLLJAR, LLC

VERIFICATION

1974 Shattuck, LLC

I, Nathan D. George, am a Manager of 1974 Shattuck, LLC. I have read the foregoing Verified First Amended Complaint and know the contents of the Verified First Amended Complaint. The same are true of my own knowledge, except as to those matters that are therein alleged on information and belief, and as to those matters, I believe them to be true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Dated: March 6, 2024

Nathan D. George
Manager

VERIFICATION

NX Ventures, LLC

I, Nathan D. George, am a Manager of NX Ventures, LLC. I have read the foregoing Verified First Amended Complaint and know the contents of the Verified First Amended Complaint. The same are true of my own knowledge, except as to those matters that are therein alleged on information and belief, and as to those matters, I believe them to be true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Dated: March 6, 2024

Nathan D. George
Manager

DocuSign Envelope ID: 9E37852B-E265-4068-96D1-7C5E58393ADD

VERIFICATION

JLLJAR, LLC

I, Jerry Tsou, am a Manager of JLLJAR, LLC. I have read the foregoing Verified First Amended Complaint and know the contents of the Verified First Amended Complaint. The same are true of my own knowledge, except as to those matters that are therein alleged on information and belief, and as to those matters, I believe them to be true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Dated: March __, 2024
3/4/2024

DocuSigned by:
Jerry Tsou
4830C919B1BD4C3...

owner
Title

EXHIBIT A

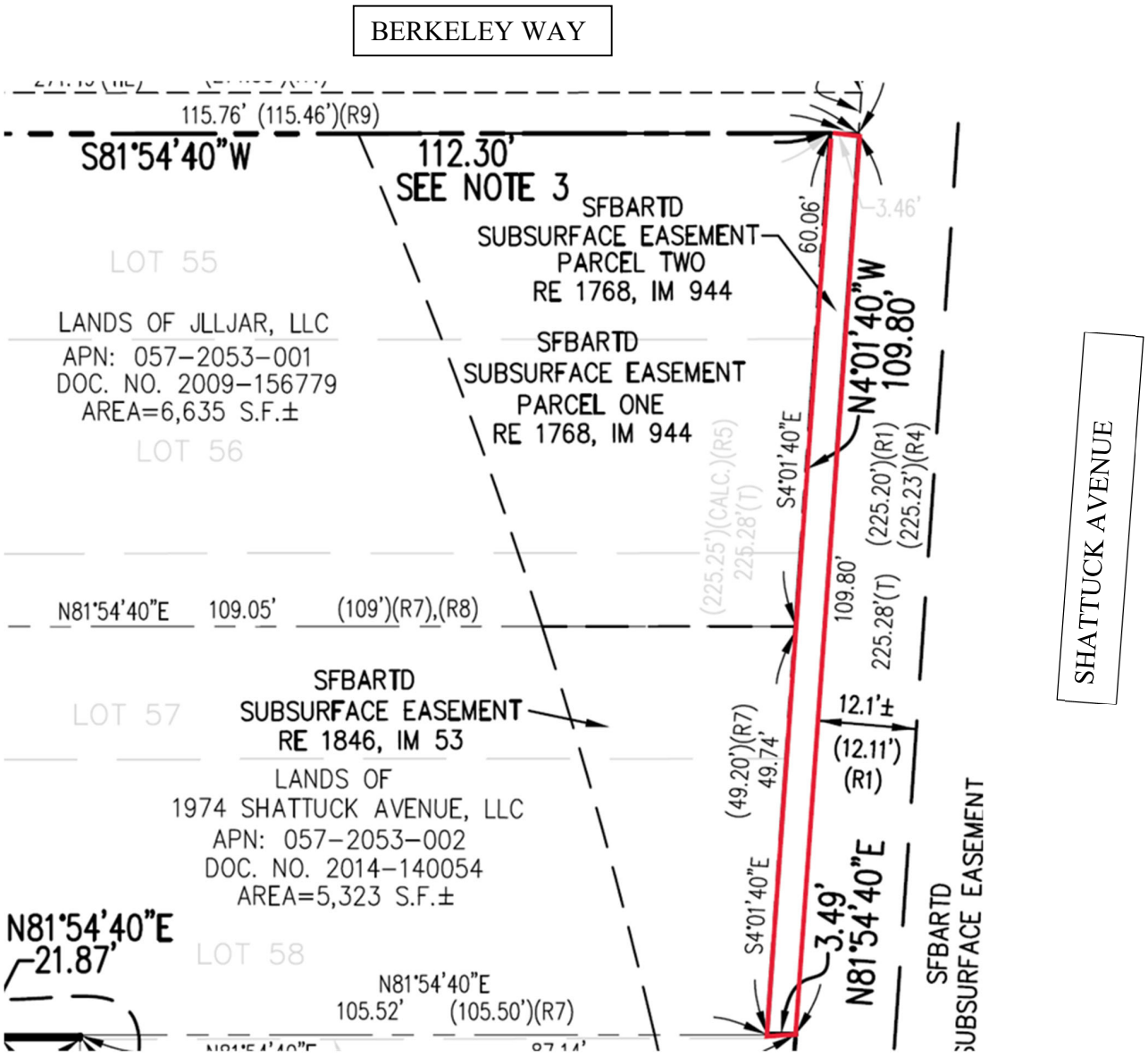

BERKELEY WAY
115.76' (115.46')(R9)
S81°54'40"W
112.30'
SEE NOTE 3
SFBARTD
SUBSURFACE EASEMENT
PARCEL TWO
RE 1768, IM 944
3.46'
60.06'
N4°01'40"W
109.80'
LOT 55
LANDS OF JLLJAR, LLC
APN: 057-2053-001
DOC. NO. 2009-156779
AREA=6,635 S.F.±
SFBARTD
SUBSURFACE EASEMENT
PARCEL ONE
RE 1768, IM 944
LOT 56
S4°01'40"E
(225.25')(CALC.)(R5)
225.28'(T)
(225.20')(R1)
(225.23')(R4)
N81°54'40"E 109.05' (109')(R7),(R8)
109.80'
225.28'(T)
SFBARTD
SUBSURFACE EASEMENT
RE 1846, IM 53
LOT 57
LANDS OF
1974 SHATTUCK AVENUE, LLC
APN: 057-2053-002
DOC. NO. 2014-140054
AREA=5,323 S.F.±
(49.20')(R7)
49.74'
12.1'±
(12.11')
(R1)
S4°01'40"E
3.49'
N81°54'40"E
SFBARTD
SUBSURFACE EASEMENT
N81°54'40"E
21.87'
LOT 58
N81°54'40"E
105.52' (105.50')(R7)
SHATTUCK AVENUE

EXHIBIT B

ORDER NO. : 1117026136

EXHIBIT A

The land referred to is situated in the County of Alameda, City of Berkeley, State of California, and is described as follows:

Beginning at the intersection of the Western line of Shattuck Avenue, with the Southern line of Berkeley Way, as said avenue and way are shown on the Map hereinafter referred to; running thence Southerly along said line of Shattuck Avenue, 60.06 feet; thence Westerly parallel with said line of Berkeley Way, 109 feet, more or less, to the Easterly boundary line of the land described in the Deed executed by F. D. Chase and Atlanta J. Chase, his wife, to Jacob Bauml, dated July 28, 1922, and recorded in Liber 324 of Official Records, at Page 73, Alameda County Records; thence at right angles Northerly along said last named boundary line 35 feet, more or less, to the Southern boundary line of Lot 55, as said Lot is shown on the said Map; thence at right angles Easterly 8 inches; thence at right angles Northerly parallel with the Westerly boundary line of said Lot 55, aforesaid, 25 feet to the Southern line of Berkeley Way; thence Easterly along said line of Berkeley Way, 112.30 feet to the point of beginning.

Being portions of Lots Nos. 55, 56 and 57, as said Lots are delineated and as designated upon that certain Map entitled, “Map of College Tract, Berkeley”, filed January 31, 1890, in Liber 9 of Maps, Page 46, in the Office of the County Recorder of Alameda County.

APN: 057-2053-001

ORDER NO. : 0147014348-SH

EXHIBIT A

The land referred to is situated in the County of Alameda, City of Berkeley, State of California, and is described as follows:

Beginning at a point on the Western line of Shattuck Avenue, distant thereon Southerly, 60.6 feet from the point of intersection thereof, with the Southern line of Berkeley Way, as said avenue and way are shown on the Map herein referred to; running thence Southerly along said line of Shattuck Avenue, 49.20 feet; thence Westerly and parallel with said line of Berkeley Way, 105.50 feet, more or less, to a point which would be intersected by a line drawn Southerly form and at right angles to said line Berkeley way from a point distant thereon, 113.30 feet Westerly from the Western line of Shattuck Avenue; thence at right angles Northerly, 49 feet, more or less, to a point which would be intersected by a line drawn Westerly from said point of beginning and parallel with Berkeley way; thence Easterly along said parallel line, 109 feet, more or less, to the point of beginning.

Being a portion of Lots 57 and 58, as said lots are shown on the "Map of the College Tract, Berkeley", filed January 31, 1890, in Book 9 of Maps, Page 46, in the Office of the County Recorder of Alameda County.

APN: 057-2053-002

EXHIBIT C

All that certain lot piece or parcel of land, situate, lying and being in the City of Berkeley, County of Alameda, State of California, and bounded and particularly described as follows, to-wit:

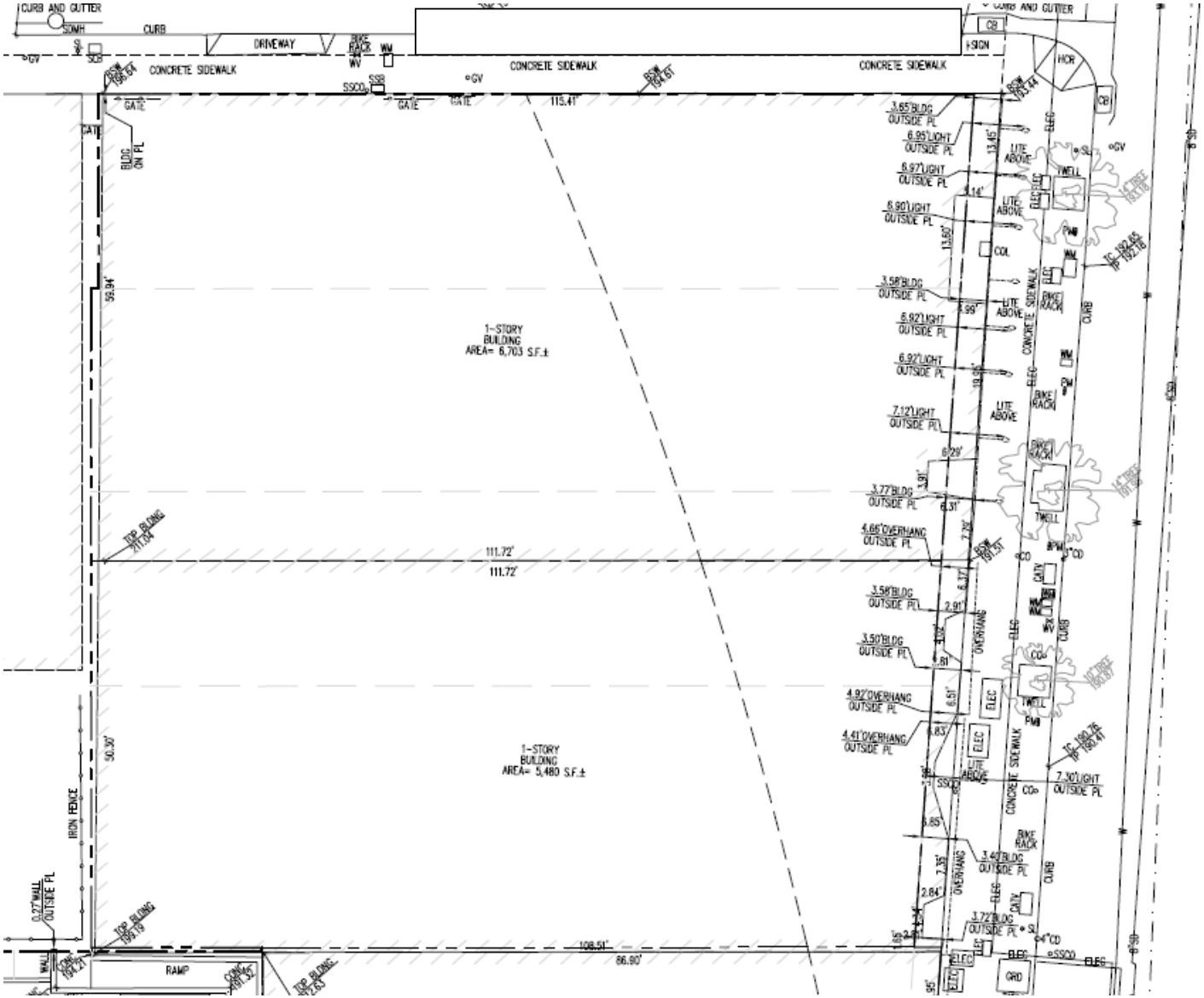
BEGINNING at the point of intersection of the Southern line of Berkeley Way with the Western line of Shattuck Avenue as said Avenue and Way are shown on that map entitled: “Map of the College Tract, Berkeley” filed in the office of the County Recorder of Alameda County January 31,1890, and running thence Easterly along the Southern line of Berkeley Way three feet more or less to the Western line of Shattuck Avenue as established by Ordinance No. 387, adopted by the Board of Trustees of the Town of Berkeley, January 18,1892; thence Southerly along said last described line sixty and 06/100 feet (60.06); thence Westerly parallel with the Southern line of Berkeley Way three (3) feet more or less to the Western line of Shattuck Avenue as shown on said Map of the College Tract; thence Northerly along said last described line to the point of beginning.

EXHIBIT D

All that certain lot piece or parcel of land, situate, lying and being in the City of Berkeley, County of Alameda, State of California, and bounded and particularly described as follows, to-wit:

BEGINNING at the point on the Western line of Shattuck Avenue, 60.6 feet Southerly of the intersection of the Southern line of Berkeley Way with the Western line of Shattuck Avenue as said Avenue and Way are shown on that map entitled: “Map of the College Tract, Berkeley” filed in the office of the County Recorder of Alameda County January 31,1890, and running thence Easterly along the Southern line of Berkeley Way three feet more or less to the Western line of Shattuck Avenue as established by Ordinance No. 387, adopted by the Board of Trustees of the Town of Berkeley, January 18,1892; thence Southerly along said last described line 49.20 feet; thence Westerly parallel with the Southern line of Berkeley Way three (3) feet more or less to the Western line of Shattuck Avenue as shown on said Map of the College Tract; thence Northerly along said last described line to the point of beginning.

EXHIBIT E



4876-2541-8897.1
391996.00009/11-16-23/mcw/mcw

EXHIBIT F

of said lands.

TO HAVE AND TO HOLD the same without any warranty, unto the said Walter F.Hundemer,(as his separate property) and assigns forever.

IN WITNESS WHEREOF,AMERICAN SECURITIES COMPANY has caused these presents to be executed and its corporate seal to be hereto affixed this Twenty-third day of July,1929

AMERICAN SECURITIES COMPANY,Trustee
By J.E.Hall Vice President
Wallace Merriam,Assistant Secretary.

(Corporate Seal)

STATE OF CALIFORNIA)
COUNTY OF ALAMEDA)SS On this 18th day of September 1929, before me,Ina M.Baird, a Notary Public in and for said Alameda County and State, residing therein,duly commissioned and sworn, personally appeared,J.E.Hall and Wallace Merriam known to me to be the Vic-President and Assistant-Secretary,respectively of American Securities Company Trustee , the corporation described in and that executed the within instrument ,and also known to me to be the persons who executed said instrument on behalf of said corporation therein named and they acknowledged to me that such corporation executed the same,and as Trustee as therein set forth;

IN WITNESS WHEREOF , I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Ina M.Baird, Notary Public.
(Notarial Seal) In and for said County of Alameda, State of California.

RECORDED AT REQUEST OF GRANTEE at 30 min past 11 A.M. Jan-7,1930
AA-1120 1.00

E.W.Bacon
COUNTY RECORDER.

Copied Jan-11,1930 , C.A.Jamieson

RELEASED OF RECORD, SEE Liber 2542 Official Records Page 334

M.MULLER,ET AL

TO

ALAMEDA COUNTY TITLE INS.,CO.,TR.

FOR SUBSTITUTION OF TRUSTEES Liber 2876 Official Records Page 314

FOR TRUSTEE'S DEED Liber 2724 Official Records Page 399

THIS DEED OF TRUST,Made this 3rd day of January,1930;

By and Between MAX MULLER and ADELLA M.MULLER,his wife, hereinafter called The Grantor,and ALAMEDA COUNTY TITLE INSURANCE COMPANY, a corporation,herinafter called The Trustee, and PHILIP J.HAVER, hereinafter called The Lender.

WITNESSETH, That for the consideration hereinafter mentioned, The Grantor does hereby grant, bargain,sell,convey and confirm unto The Trustee,its successors or assigns, all that real property situate, lying and being in the City of Berkeley,County of Alameda, State of California, particularly described as follows, to-wit;

BEGINNING at the intersection of the Western line of Shattuck Avenue, with the Southern line of Berkeley Way,as said Avenue and Way are shown on the Map hereinafter reunning thence Southerly along said line of Shattuck Avenue 60.06 feet thence Westerly parallel with said line of Berkeley Way 109 feet, more or less, to the Easterly boundary line of land described in the Deed executed by F.D.Chase and AtlantaJ.Chase, his wife, to Jacob Bauml, dated July 28 1922 and recorded in Liber 824 of Official Records at page 73, Alameda County Records thence at right angles Northerly along said last named boundary line 35 feet, more or less to the Southern boundary line of Lot 55 as said lot is shown on the said Map thence at right angles Easterly 8 inches thence at right angles Northerly parallel with the Westerly boundary line of said lot 55,aforesaid 25 feet to the Southern line of Berkeley Way thence Easterly along said line of Berkeley Way 112,30 feet to the point of beginning.

BEING portions of Lots Nos.55,56 and 57,as said lots are delineated and so designated upon that certain map entitled "Map of College Tract,Berkeley," filed Jan.31 1890 in Liber 9 of Maps, page 46, in the Office of The County Recorder of Alameda County.

AND also all the estate in law and in equity which The Grantor now has or may hereafter acquire in and to the herein granted premises with the appurtenances;

TO HAVE AND TO HOLD the same unto The Trustee,as aforesaid,its successors or assigns, in Trust for the following purposes;

WHEREAS The Grantor has borrowed and received of The Lender the sum of Twelve Thousand and no/100 ($12,000.00) Dollars in Gold Coin of the United States,he hereby covenants and agrees to repay the same, with interest, according to the terms of a

certain promissory note of even date herewith, executed and delivered to The Lender by The Grantor and also to repay all further advances to The Grantor by the Lender that may be made or contracted as herein provided and also does hereby covenant and agree to pay all taxes,assessments and liens and all encumbrances now existing or which may hereafter exist or which may be imposed on the herein granted premises, or the debt hereby secured by State or other authority,and to protect said premises, from sale therefor, and to keep the buildings now erected, or which may hereafter be erected thereon, insured against loss by fire in such company as The Lender shall approve and in the sum of not less than $12,000.00 and by policies in which loss shall be made payable to The Lender or The Trustee; and to make such repairs on said premises as may be required by The Lender or The Trustee;

IF THE GRANTOR shall fail to pay at maturity any of the obligations or perform any of the covenants aforesaid, The Lender or his assigns, or The Trustee, its successors or assigns, may, without notice to and at the cost of The Grantor, pay and discharge all taxes,assessments, liens and encumbrances, agreed to be paid and discharged by The Grantor,and effect said insurance,and do all acts as they may deem best for the repair and protection of the said premises.

THE LENDER AND THE TRUSTEE, its successors or assigns,are hereby authorized without notice to, and at the cost of The Grantor, to prosecute, defend ,compromise, purchase and settle any adverse suits, liens, encumbrances, or claims, and perform all other covenants herein agreed to be performed by The Grantor;

AND THESE TRUSTS shall continue as security for repayment in Gold Coin of the United States of the money so borrowed and also for all advances to The Grantor by The Lender, that may be made or contracted hereafter, and for all money expended by virtue hereof, with the interest thereon at the rate of Twelve per cent per annum.

AND also for the sum of $500.00 in Gold Coin of The United States as counsel fees, which shall become due and payable to The Trustee its successors or assigns, upon any default hereunder made or suffered by The Grantor,

IF ALL INDEBTEDNESS due under the provisions of this Trust shall be paid and discharged, The Trustee, its successors or assigns, shall reconvey all,the premises. and estate derived to The Trustee hereunder unto The Grantor, his heirs and assigns at his request and costs;

BUT IF DEFAULT shall be made in the payment of any of said indebtedness or in the performance of any of the covenants herein, then, The Trustee, its successors or assigns, are hereby empowered to sell for Gold Coin of the United States, the premises and estates hereby granted or such part or parts thereof, or part at one time and part another as in their discretion it shall be deemed best, upon full compliance with the provisions of Section 2924 of The Civil Code of the State of California,, and Section 692 of the Code of Civil Procedure of the State of California;

THE TRUSTEE, its successors or assigns, may from time to time,postpone such sale to such time as they may elect by publication in the same newspaper as the original notice ,and on the day noticed for such sale , or to which said sale may be postponed, it may sell said property or any part thereof at public auction, at the time place so designated in said notice, to the highest bidder for Gold Coin of the United States and the owner of such indebtedness, or any other person may purchase at such sale, and upon payment therefor, The Trustee, its successors or assigns shall execute and deliver to the purchaser or purchasers a good and sufficient deed, or deeds, of the premises so sold,and out of the proceeds shall pay;

FIRST The expenses of executing this Trust, including counsel fees as aforesaid.

SECOND The remaining indebtedness secured under the provisions of this Trust;

THIRD, The surplus of such proceeds, if any, to The Grantor, his heirs and assigns.

IN THE EVENT OF THE SALE OF SAID PREMISES or any part thereof and the execution of a deed or deeds therefor by The Trustee, its successors or assigns the recitals therein of default, request to sell ,publication and posting of notice of the time and place of sale compliance with the provisions of Section 2924 of the Civil Code and Section 692 of the Code of Civil Procedure of the State of California, sale, postponement of sale, terms of sale, purchaser payment of purchase money, or of any other fact or facts affecting the regularity or validity of such sale, shall be conclusive evidence of all the facts in said deed or deeds recited against The Grantor herein, his heirs and assigns,and all other persons.

IT IS HEREBY COVENANTED THAT The Lender may, by an instrument in writing appoint another Trustee or Trustees to execute the trusts hereby created and upon such appointment, and a conveyance to it or them made by The Trustees their successors or assigns, or if for any reason,,the said Trustees, their successors or assigns,are unable to execute said conveyance, then upon the execution by The Lender of an instrument in writing appointing another Trustee or Trustees, to execute the trust hereby created, all the estate, powers and trusts in the premises hereby vested in The Trustees,shall immediately become vested in said substituted Trustee or Trustees and it or they shall thereupon become the successor or successors and assigns of The Trustees,and a copy of said instrument in writing duly acknowledged by The Lender his heirs,administrators, executors or assigns,and attached to the conveyance by said Trustees, unless as hereinbefore provided there shall be no such conveyance, shall be conclusive against The Grantor and all other persons that said substituted Trustee or Trustees have been duly appointed .

IT IS HEREBY COVENANTED that any or all,powers granted herein to The Trustee or Trustees may be exercised by either Trustee, if the other Trustee is unable or refuses, for any reason, to act,and any recital of such inability or refusal in any conveyance shall be conclusive against The Grantor, his heirs and assigns.

IT IS EXPRESSLY COVENANTED and Agreed that the Trustee , its successors or assigns may at any time. on the request of The Lender, his heirs or assigns,reconvey to the Grantor, his heirs or assigns, any portion of the herein granted premises without affecting the personal liability of any person for the payment of said indebtedness or the estate of The Trustee,its successors or assigns, in the remaining portions of said premises;

The words "Grantor" and "Lender" wherever used in this instrument shall be construed to include the plural as well as the singular number.

WITNESS the hands and seals of The Grantor the day and year first above written.

Adella M.Muller
Max Muller.

STATE OF CALIFORNIA)
COUNTY OF ALAMEDA)SS On this 3rd day of January in the year A.D.Nineteen Hundred and Thirty, before me, F.Jos. Lauck, a Notary Public in and for said County of Alameda, State of California, duly commissioned and sworn,personally appeared, Max Muller,and Adella M.Muller, his wife, known to me to be the persons described in and who executed and whose names are subscribed to the within instrument and they acknowledged to me that they executed the same;

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at my office in the said County of Alameda, the day and year in this certificate

first above written.

F.Jos,Lauck, Notary Public
(Notarial Seal) In and for the County of Alameda, State of California,

RECORDED AT REQUEST OF ALAMEDA COUNTY TITLE INSURANCE CO.,at 9 A.M. Jan-8, 1930
AA-1289 2.60 COMPARED BK. C.A.S. DOC L.F.L.

Copied Jan-13, 1930 C.A.Jamieson COUNTY RECORDER.

S.A.DEDRICK,ET AL
TO
ALAMEDA COUNTY TITLE INS.,CO. TR.,

THIS DEED OF TRUST Made this 14th day of Dec.,1929
By and Between S.A.DEDRICK and SARAH DEDRICK, his wife, hereinafter called the Grantor, and ALAMEDA COUNTY TITLE INSURANCE COMPANY, a corporation,hereinafter called The Trustee,and AMELIA S.MAXWELL, a married woman hereinafter called The Lender;

WITNESSETH that for the consideration hereinafter mentioned The Grantor does hereby grant,bargain, sell,convey and comfirm unto The Trustee,its successors or assigns, all that real property situate ,lying and being in the City of Oakland . County of Alameda, State of California, particularly described as follows, to-wit:

BEGINNING at a point on the Southern line of 45th Street,distant thereon 220 feet, Easterly from the intersection thereof with the Eastern line of Grove Street,as said streets are shown on the Map hereinafter referred to; running thence Easterly along said line of 45th Street, 30 feet, thence at right angle Southerly 100 feet, thence at right angles Westerly 30 feet and thence at right angle Northerly 100 feet to the point of beginning.

BEING the Eastern 20 feet of Lot Numbered 7 and the Western 10 feet of Lot Numbered 8 in Block Numbered 2101 as said Lots and Block are shown and delineated upon that certain Map entitled, "Map of the Alden Tract at Temescal etc." filed December 10th, 1869 in the office of the County Recorder of the County of Alameda,

AND also all the estate,in law and in equity which The Grantor now has or may hereafter acquire in and to the herein granted premises, with the appurtenances.

TO HAVE AND TO HOLD the same unto The Trustee,as aforesaid, its successors or assigns, in trust for the following purposes;

WHEREAS, The Grantor has borrowed and received of The Lender the sum of Six Hundred and Forty and 00/100 ($640.00) Dollars in Gold Coin of the United States he hereby covenants and agrees to repay the same, with interest, according to the terms of a certain promissory note of even date herewith, executed and delivered to The Lender by The Grantor and also to repay all further advances to The Grantor by The Lender that may be made or contracted as herein provided,and also does hereby covenant and agree to pay all taxes,assessments and liens and all encumbrances now existing or which may hereafter exist or which may be imposed on the herein granted premises, or the debt hereby secured,by State or other authority, and to protect said premises from sale therefor. and to keep the buildings now erected or which may hereafter be erected thereon insured against loss by fire in such company as The Lender shall approve and in the sum of not less than $640.00 and by policies in which loss shall be made payable to The Lender or The Trustee and to make such repairs on said premises as may be required by the Lender or the Trustee.

IF THE GRANTOR shall fail to pay at maturity any of the obligations or perform any of the covenants aforesaid, The Lender or his assigns or the Trustee, its successors or assigns may,without notice to and at the cost of The Grantor pay and discharge all taxes,assessments, liens and encumbrances agreed to be paid and discharged by the Grantor and effect said insurance and do all acts as they may deem best for the repair and protection of the said premises.

THE LENDER and the TRUSTEE, its successors or assigns, are hereby authorized, without notice to, and at the cost of the Grantor, to prosecute, defend, compromise, purchase and settle any adverse suits, liens, encumbrances or claims and perform all other covenants herein agreed to be performed by The Grantor.

EXHIBIT G

86

parallel with said line of Harold Street, twenty-five (25) feet, thence southerly, parallel with said line of Boston Avenue one hundred and twelve and 40/100(112 40/100) feet, to the point of commencement.

PARCEL NO. 2: The whole of Lot No. 8 and the western 4 and 73/100 feet of lot No.9, making in all 30 feet by the full length of said lots as the same are shown and delineated upon a certain map entitled "Map of Fruitvale Glen, Brooklyn Township, Alameda County, California" surveyed by George L.Nusbaumer, County Surveyor 1893, filed June 2,1893 in the office of the County Recorder of Alameda County.

TOGETHER with the tenements, hereditaments and appurtenances thereunto belonging or appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof.

TO HAVE AND TO HOLD the said premises, together with the appurtenances, unto the said party of the second part, and to its successors and assigns forever.

IN WITNESS WHEREOF, the party of the first part has hereunto subscribed his name the day and year first above written.

Arthur Stephen Fern

STATE OF CALIFORNIA)
COUNTY OF ALAMEDA)SS. On this 27th day of October,1930, before me, Alice McCue, a Notary Public in and for the County of Alameda, State of California, residing therein, duly commissioned and sworn, personally appeared Arthur Stephen Fern, personally known to me to be the person whose name is subscribed to and who executed the foregoing and annexed document, and he duly acknowledged to me that he executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at my office in the County of Alameda, State of California, the day and year in this certificate first above written.

Alice McCue, Notary Public
(Notarial Seal) In and for the County of Alameda, State of California

RECORDED at request of Bank of America of California at 2 min. past 11 A.M.Oct.29,1930
AA-65632 1.30 COMPARED DOC BK LAYTHAM BAKER 057-2053-001 Portion
W.M.Bacon COUNTY RECORDER 2479 OR 86
10-29-1930
COPIED Nov.3,1930 A.G.Pollard

CITY OF BERKELEY
TO
A.M.MULLER

QUITCLAIM DEED

THIS INDENTURE, Made this 19th day of August in the year of Our Lord one thousand nine hundred and thirty.

BETWEEN CITY OF BERKELEY, a municipal corporation, the party of the first part, and ADELLA M.MULLER, the party of the second part,

WITNESSETH: That the said party of the first part, for and in consideration of the sum of ten dollars ($10.00) in Gold Coin of the United States of America, to it in hand paid by the party of the second part, the receipt whereof is hereby acknowledged, does by these presents remise, release and forever Quitclaim unto the said party of the second part and to her heirs and assigns forever, All that certain lot piece or parcel of land, situate, lying and being in the City of Berkeley, County of Alameda, State of California, and bounded and particularly described as follows, to-wit:

3' sha Hack Ave

BEGINNING at the point of intersection of the southern line of Berkeley Way with the western line of Shattuck Avenue as said Avenue and Way are shown on that map entitled: "Map of the College Tract, Berkeley" filed in the office of the County Recorder of Alameda County January 31,1890, and running thence easterly along the southern line of Berkeley Way three feet more or less to the western line of Shattuck Avenue as established by Ordinance No.387, adopted by the Board of Trustees of the Town of Berkeley, January 18,1892; thence southerly along said last described line sixty and 06/100 feet (60.06);thence westerly parallel with the southern line of Berkeley Way three (3) feet more or less to the western line of Shattuck Avenue as shown on said Map of the College Tract; thence northerly along said last described line to the point of beginning.

TOGETHER with all and singular the tenements, hereditaments and appurtenances thereunto belonging or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof. And also all the estate, right, title, interest, possession, claim and demand whatsoever, as well in law as in

equity, of the said party of the first part, of, in, or to the above described premises, and every part or parcel thereof, with the appurtenances.

TO HAVE AND TO HOLD all and singular the above mentioned and described premises together with the appurtenances unto the said party of the second part her heirs and assigns forever.

IN WITNESS WHEREOF, the said party of the first part has hereunto set its corporate name and seal by its officers thereunto duly authorized.

Signed, Sealed and Delivered in the Presence of ---
(Municipal Corporate Seal)

City of Berkeley (SEAL)
By T.E.Caldecott Mayor (SEAL)
By F.E.Turner City Clerk

STATE OF CALIFORNIA)
COUNTY OF ALAMEDA)SS. On this 19th day of August,1930, before me, R.Arthur Bellman, a Notary Public in and for said County of Alameda, State of California, residing therein, duly commissioned and sworn, personally appeared T.E.Caldecott, known to me to be the Mayor, and F.E.Turner, known to me to be the City Clerk of the Municipal Corporation that executed the within instrument and the officers who executed the within instrument on behalf of the Municipal Corporation therein named, and acknowledged to me that such Municipal Corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at my office in the County of Alameda, State of California, the day and year in this certificate first above written.

R.Arthur Bellman, Notary Public
(Notarial Seal) In and for the County of Alameda, State of California

RECORDED at request of Grantee Oct.29,1930 at 3 min. past 11 A.M.

AA-65633 1.20

COMPARED
CCC LAYTHAM BAKER
BK

COPIED Nov.3,1930 A.G.Pollard

COUNTY RECORDER

++++++

EXHIBIT H

2483-330

330

APN: 057-2053-001
ALL

1-5-1931

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE COUNTY OF ALAMEDA. COPY.

ADELLA M. MULLER,

Plaintiff,

vs

E. L. HANSON, as Administratrix of the Estate of HENRY DURANT, Deceased, ISABELLA McDONNELL, M.M. McDONNELL, ANGELO M. HEVERIN, THOMAS A. PETTUS, also known as T. A. PETTUS, LOUISA E. PETTUS, JOHN J. BONNIES, also known as JOHN J. BONVIES also known as JOHN J. BONNER, also known as J.J.BONNIER, LORING J.BARKER, as Administrator of the Estate of JAMES L. BARKER, Deceased, the CITY OF BERKELEY, a municipal corporation, FIRST DOE, SECOND DOE, THIRD DOE, FOURTH DOE, FIFTH DOE, SIXTH DOE, SEVENTH DOE, BLACK COMPANY a corporation, WHITE COMPANY, a corporation, also all other persons unknown, claiming any right title, estate, lien or interest in the real property described in the Complaint on file herein adverse to Plaintiff's ownership, or any cloud upon Plaintiff's title thereto,

Defendants.

NO.115479

DECREE QUIETING TITLE.

The above entitled matter coming on regularly to be heard before this Court on the 30th day of December 1930, and Oscar T. Barber, and R. Arthur Bellman, appearing as Attorneys for the Plaintiff and Earl J. Sinclair appearing as Attorney for defendant CITY OF BERKELEY, a municipal corporation, the other named defendants appearing not at all; and due proof having been made to the satisfaction of the Court that Summons and Complaint have been regularly served upon the Defendants, E. L. HANSON, as Administratrix of the Estate of HENRY DURANT, Deceased, ISABELLA McDONNELL M. M.McDONNELL, ANGELO M. HEVERIN, THOMAS A. PETTUS, also known as T. A. PETTUS, LOUISA E. PETTUS, JOHN J. BONNIES, also known as JOHN J. BONVIES, also known as JOHN J. BONNER, also known as J. J. BONNIER, LORING J. BARKER, as Administrator of the Estate of JAMES L. BARKER, Deceased, also all other persons unknown, claiming any right title, estate, lien or interest in the real property described in the Complaint on file herein adverse to Plaintiff's ownership, or any cloud upon Plaintiff's title thereto, and that said Defendants have and each of them has failed to appear or plead within the time allowed by law and that the plaintiff is entitled to have the default of said defendants and each of them entered as provided by law;

It is ordered by the Court that the said defendants last named are in default and hereby decreed to be in default for failure to appear or plead to the Complaint with the time allowed by law;

And the plaintiff having presented to the Court competent, admissable and sufficient evidence,both oral and documentary,to sustain and prove to the satisfaction of this Court each and all of the allegations in said Complaint contained, and said action having been submitted to this Court for its determination and decision, and the Court having examined the pleadings, papers and records in said action, and having heard the evidence herein given, and from the said pleadings, papers and records in said action and from the evidence given, it appears to the Court, and the Court now finds, as follows, to wit:

That the above entitled action has been duly and regularly brought under the provisions of Section 749, 750 and 751 of the Code of Civil Procedure of the State of California, and that within ten (10) days after the filing of the Complaint herein, and on the 20th day of August 1930, plaintiff caused to be filed in the office of the County Recorder of the County of Alameda, State of California, the County in which the real property in said Complaint and hereinafter described is situated, a Notice of the Pendency of said action, which Notice contains the names of the parties to this action, a statement of the object thereof, and a description of the property affected thereby;

That within one (1) year after the filing of the said Complaint, to wit, on the 20th day of August 1930, the Summons in said action was issued by the Clerk of said

Court which said Summons contains all the matters required to be contained therein by Section 407 of the Code of Civil Procedure and also a description of said real property, and a statement of the object of said action, and in which said Summons the unknown defendants were designated by the same names as in the said Complaint;

That on the 21st day of August 1930, and within thirty (30) days after the issuance of the said Summons the plaintiff herein caused to be posted two (2) copies of said Summons in conspicuous places on the said land described in said Complaint;

That all the defendants herein residing in the State of California whose place of residence is known to plaintiff have been personally served with said Summons and Complaint and that after service upon said defendants so residing had been made, one of the attorneys for the plaintiff made and filed an Affidavit in which said attorney states the names of the defendants herein who have been personally served with the said Summons, and the names of the defendants herein residing in or out of the said State of California, whose places of residence are unknown to the said plaintiff and to said attorney or to plaintiff's attorneys:

That after the filing of said affidavit this Court made an Order herein directing the said Summons to be served upon the defendants residing in or out of the State of California, whose places of residence are unknown to the said plaintiff, and upon all the unknown defendants named in said Complaint and the said Summons by a publication of the said Summons in a newspaper of general circulation, printed and published in said County of Alameda, State of California, to wit, THE SATURDAY PRESS:

That the said Summons was duly and regularly published in the said newspaper in all respects according to law and in all respects as prescribed in the said Order of Court, at least once a week for at least two (2) successive months prior to the date of this Decree. That a copy of the Summons and Complaint herein within ten (10) days after the making of said Order, properly addressed and with the postage thereon fully prepaid, was mailed to each of the defendants herein residing in or out of the State of California whose places of residence were unknown to plaintiff or to said attorneys and to all the other named defendants, addressed to them at the County Seat of said Alameda County, to wit: Oakland, California;

That each and all of the defendants above named have been served with the Summons and Complaint herein in the manner required by law, and in all respects according to law and according to the Order of this Court and the provisions of Section 750 of the Code of Civil Procedure of the State of California, and that each and all of the said defendants, other than those appearing as aforesaid, have failed to appear or answer herein within the time allowed by law or the Order of this Court, or otherwise, or at all, and that each and all of said defendants are in default;

That the Complaint and Summons herein included as defendants all other persons unknown to plaintiff claiming any right, interest, or lien in said lands, or cloud upon the title of plaintiff thereto and that the said unknown defendants were described in the Complaint and Summons as follows: "Also all other persons unknown claiming any right, title, estate, lien or interest in the real property described in the Complaint adverse to plaintiff's ownership, or any cloud upon plaintiff's title thereto;"

That the said plaintiff has duly and regularly taken each and all of the preliminary steps required by law and the provisions of said Sections of said Code of Civil Procedure to be taken to entitle the plaintiff to a judgment herein in accordance with law and the provisions of Section 751 of said Code of Civil Procedure and that each and all of the allegations contained in the said Complaint are true; that the said defendants, or either, or any of them have no right, title, estate, lien, claim or interest

in the real property described in the Complaint and hereinafter described; that on motion of the attorneys for the plaintiff said action was duly dismissed as to defendants FIRST DOE, SECOND DOE, THIRD DOE, FOURTH DOE, FIFTH DOE, SIXTH DOE, SEVENTH DOE, BLACK COMPANY, a corporation WHITE COMPANY, a corporation sued and joined in this action by said fictitious names; and findings of fact and conclusions of law having been waived by EARL J. SINCLAIR, attorney for the defendant CITY OF BERKELEY, a municipal corporation

WHEREFORE IT IS HEREBY ORDERED, ADJUDGED AND DECREED, that plaintiff have judgment as prayed for in her said Complaint against the defendants and each of them herein mentioned, to wit: E. L. HANSON, as Administratrix of the Estate of HENRY DURANT, Deceased, ISABELLA McDONNELL, M.M.McDONNELL, ANGELO M. HEVERIN, THOMAS A. PETTUS, also known as T. A. PETTUS, LOUISA E. PETTUS, JOHN J. BONNIES, also known as JOHN J.BONVIES , also known as JOHN J. BONNER,also known as J. J. BONNIER, LORING J. BARKER, as Administrator of the Estate of JAMES L. BARKER, Deceased, the CITY OF BERKELEY, a municipal corporation, also all other persons unknown, claiming any right, title, estate, lien, or interest in the real property described in the Complaint adverse to plaintiff's ownership, or any cloud upon plaintiff's title thereto;

AND IT IS FURTHER ORDERED, ADJUDGED AND DECREED, that each any all of the said defendants have no estate, right, title,lien or interest whatsoever in or to the said lands and premises described in said Complaint and hereinafter described, or in and to any part thereof, and that the title of said plaintiff to the said lands and premises be and the same is hereby decreed and adjudged to be good and valid and in fee simple absolute as against all of the said defendants and as against the whole world;

That each and all of the said defendants be and they are hereby enjoined and forever, debarred and restrained from asserting any claim whatever in or to the said lands and premises adverse to said plaintiff and the said defendants are, and each of them is, forever debarred and restrained from directly or indirectly instituting, prosecuting or carrying on any action in law or in equity, against the said plaintiff, in and to the said lands and premises by reason of any action or proceeding taken prior to the commencement of this action.

The lands and premises affected by this Decree and to which plaintiff's title is hereby quieted are situated in the City of Berkeley, County of Alameda, State of California, and more particularly described as follows, to wit:

Beginning at the point of intersection of the southern line of Berkeley Way (extended in a direct line easterly,) as said Berkeley Way is shown on the Map of College Tract hereinafter referred to, with the western line of Shattuck Avenue, as said line of Shattuck Avenue was established by Ordinance adopted by the Board of Trustees of the Town of Berkeley,January 18, 1892 by Ordinance No. 387, and as said line of Shattuck Avenue is shown upon the Map entitled, "Official Map of Shattuck Avenue," filed January 10, 1893, in Liber 18 of Maps, at page 21; thence southerly along said line of Shattuck Avenue sixty and 6/100 feet; thence westerly parallel with said line of Berkeley Way One hundred Twelve and 30/100 feet; more or less, to the eastern boundary line of the land described in the deed executed by F.D.Chase and Atlanta J.Chase his wife, to Jacob Bauml, dated July 28, 1922, recorded in Liber 324, page 75, Official Records of Alameda County; thence at right angles northerly along said last named boundary line thirty five feet more or less, to the southern boundary line of lot numbered 55, as said lot is shown on said map; thence at right angles easterly eight inches; thence at right angles northerly parallel with the western boundary line of lot numbered 55 aforesaid, Twenty-five feet to the southern line of Berkeley Way; thence easterly along said line of Berkeley Way One hundred fifteen and 30/100 feet,,more or less, to the point of beginning.

Being portion of lots numbered 55, 56 and 57, and a portion of Shattuck Avenue, as the said lots and avenue are delineated and so designated upon that certain Map entitled "Map of College Tract, Berkeley," filed May 24,1877 in Liber 5 of Maps, at page 14, in the office of the County Recorder of the said County of Alameda;

Done in open Court this 30th day of December 1930.
James C. Quinn,Judge of the Superior Court.

Endorsed
Filed Dec.30-1930
Geo. E. Gross, County Clerk
By Edw. Hadlen, Deputy.

The foregoing instrument is a correct copy of the original on file in this office
ATTEST: Dec.30-1930
GEO. E. GROSS, County Clerk and ex-officio Clerk of the Superior Court of the State of California in and for the County of Alameda
(Court Seal) By Edw. Hadlan.Deputy.

RECORDED AT REQUEST OF ATTORNEY AT 30 min past 10 A.M.DEC.30-1930
AA-77500 4.50

COMPARED
BK | FARRELL McDONOUGH
DOC |

COUNTY RECORDER.

F.M.Nolan-Copied: Jan.5-1931.

F.PUSEY

TO

CENTRAL NAT'L BANK OF OAKLAND

DEED

THIS INDENTURE, Made this 3rd day of December in the year of our Lord One thousand nine hundred and thirty.

Between FRANCES PUSEY, a married woman (formerly Frances Mackinnon, a widow) the party of the first part, and CENTRAL NATIONAL BANK OF OAKLAND, a National Banking Association, organized and existing under and by virtue of the laws of the United States of America, the party of the second part.

WITNESSETH: That the said party of the first part, for and in consideration of the sum of Ten Dollars ($10.00) in gold coin of the United States of America, to her in hand paid by the party of the second part, at or before the ensealing and delivery of these presents, the receipt whereof is hereby acknowledged has granted, bargained, sold and conveyed and by these presents does grant, bargain, sell and convey unto the said party of the second part, and to its successors and assigns forever, All that certain lot, piece or parcel of land, situate, lying and being in the Town of Emeryville, County of Alameda, State of California, and bounded and particularly described as follows, to wit:

Beginning at the point of intersection of the eastern line of San Pablo Avenue with the southern line of 38th Street as said Avenue and Street are shown on the Map hereinafter referred to; running thence south 14° 30' East along said eastern line of San Pablo Avenue, 229.84 feet to the southern boundary line of lot No. 1 in Block lettered "A" as said lot and block are shown on the map hereinafter referred to; thence south 80° 12' East along said southern boundary line of said lot No. 1, 112.27 feet, to the eastern boundary line of said lot 1; thence north 11° 5' East along said eastern boundary line of said lot 1, 98.35 feet, to the northern boundary line of said lot No. 1; thence south 75° 30' West along said northern boundary line of said lot No. 1, 19.38 feet to the eastern boundary line of lot No. 2, in Block "A" as said lot is shown on the Map hereinafter referred to; thence north 14° 30' West along said eastern boundary line of said lot No.2 the eastern boundary line of said lot 3, in said Block "A" and the said Eastern boundary line of said lot 3, if extended northerly as said lot is shown on the Map hereinafter referred to 197.29 feet to a point in said southern line of said 38th Street distant thereon 125.39 feet easterly from said point of intersection of said southern line of said 38th Street with the said easterly line of said San Pablo Avenue; and thence south 75° 30' West along said southern line of said 38th Street 125.39 feet to the point of beginning.

Being all of lots Nos. 1, 2, 3, 4, 5 and 6 and portions of lots Nos. 7 and 8 in Block lettered "A" as the same are delineated and so designated on that certain Map entitled "Map of a portion of the Evoy Tract, in Emeryville & Oakland, Alameda County, California, etc., filed March 13,1906 in the office of the County Recorder of the County of Alameda.

TOGETHER WITH ALL and singular the tenements, hereditaments and appurtenances thereunto belonging or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof. And also all the estate, right, title, interest, possession, claim and demand whatsoever, as well in law as in equity of the said party of the first part, of, in or to the above described premises and every part or parcel thereof, with the appurtenances.

TO HAVE AND TO HOLD all and singular the above mentioned and described premises together with the appurtenances unto the said party of the second part, its successors and assigns forever.

IN WITNESS WHEREOF, the said party of the first part has hereunto set her hand

EXHIBIT I

a part hereof, and agrees to act as such Trustee and to hold the real property above mentioned subject to the respective Trusts set forth in said respective deeds of trust.

Oakland Title Insurance and Guaranty Company
Substituted Trustee
By H.A.Steinbach V.Pres.
By Charles D.Morando Asst. Secty.

Dated:December 29,1932. (Corporate Seal)

STATE OF CALIFORNIA)SS. On this 29th day of December in the year One thousand nine hundred
COUNTY OF ALAMEDA) and thirty-two before me, Margaret L.Riggle a Notary Public in and for the County of Alameda, State of California, residing therein, duly commissioned and sworn, personally appeared H.A.Steinbach known to me to be the Vice President and Charles D.Morando known to me to be the Asst. Secretary of the Corporation that executed the within instrument and the officers who executed the within instrument on behalf of the Corporation therein named, and acknowledged to me that such Corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

(Notarial Seal)

Margaret L.Riggle Notary Public
In and for said County of Alameda, State of California.

CONVEYANCE BY TRUSTEES UNDER DEEDS OF TRUST TO SUBSTITUTED TRUSTEE PURSUANT TO RESOLUTION OF BENEFICIARY AND ACCEPTANCE OF TRUST BY SUBSTITUTED TRUSTEE.

Pursuant to the foregoing resolution substituting trustees, dated December 29,1932, of the Board of Directors of Cosmopolitan Guarantee Building and Loan Association, beneficiary under the deeds of trust hereinbefore referred to and made a part hereof, F.A.Fletcher and Robert R.Rorke as Trustees under said deeds of trust hereby grant, without any warranty, to Oakland Title Insurance and Guaranty Company, a corporation, as substituted Trustee, all their right, title and interest as Trustees under said deeds of trust in and to all the real property therein described; to which deeds of trust and the records thereof reference is hereby made for a description of said real property.

Dated this 29th day of December 1932.

F.A.Fletcher Trustee
Robert R.Rorke Trustee

STATE OF CALIFORNIA)SS. On this 29th day of December in the year One thousand nine hundred
COUNTY OF ALAMEDA) and thirty-two, before me, Margaret L.Riggle a Notary Public in and for the County of Alameda, State of California, residing therein, duly commissioned and sworn personally appeared F.A.Fletcher and Robert R.Rorke known to me to be the persons described in and whose names are subscribed to the within instrument and they acknowledged to me that they executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

(Notarial Seal)

Margaret L.Riggle Notary Public
In and for said County of Alameda, State of California.

Oakland Title Insurance and Guaranty Company, a corporation, substituted Trustee and grantee named in the above instrument, hereby accepts said substitution and appointment as Trustee under and pursuant to the terms of the deeds of trust, hereinbefore referred to and made a part hereof, and agrees to act as such Trustee and to hold the real property above mentioned subject to the respective Trusts set forth in said respective deeds of trust.

Oakland Title Insurance and Guaranty Company
Substituted Trustee
By H.A.Steinbach V.Pres.
By Charles D.Morando Asst. Secty.

Dated; December 29,1932

(Corporate Seal)

STATE OF CALIFORNIA)SS. On this 29th day of December in the year One thousand nine hundred
COUNTY OF ALAMEDA) and thirty-two, before me, Margaret L.Riggle a Notary Public in and for the County of Alameda, State of California, residing therein, duly commissioned and sworn personally appeared H.A.Steinbach known to me to be the Vice President and Charles D.Morando known to me to be the Asst.Secretary of the Corporation that executed the within instrument and the officers who executed the within instrument on behalf of the Corporation therein named and acknowledged to me that such corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official Seal, the day and year in this certificate first above written.

(Notarial Seal)

Margaret L.Riggle Notary Public
In and for said County of Alameda, State of California.

Recorded at request of Richmond-Martinez Abstract & Title Co. Feb 27,1933 at 25 min.past 11 A.M. in Vol. 344 Page 106 Official Records of Contra Costa County.

1770 2.10

C.H.Hayden County Recorder

Recorded at request of Oakland Title Insurance and Guaranty Company at 9 A.M. Mar 17,1933

DD-10267 2.70

Copied Mar 20, 1933 M.B.AMARAL

County Recorder

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

BERKELEY MORTGAGE CO. SUB.TR.

TO

P.J.HAVER

TRUSTEE'S DEED

This Indenture, made this 18th day of January, 1933, Between Berkeley Mortgage Company, a California, corporation substituted Trustee as hereinafter described, the party of the first part, and Philip J.Haver the party of the second part,

400

Witnesseth: That Whereas, Max Muller and Adelia M.Muller, his wife, hereinafter designated as Grantor, executed a certain Deed of Trust, dated January 3rd, 1930 and recorded January 8th, 1930, in the office of the County Recorder of the County of Alameda, State of California, in Liber 2310 of Official Records of said County, at page 193, and following, by which said Deed of Trust said Grantor conveyed to Alameda County Title Insurance Company, a corporation, as Trustee, its successors and assigns, upon the trusts, terms conditions and covenants therein expressed, in fee, with power of sale, the real property hereinafter described, to secure the payment of a certain promissory note and other indebtedness of said Grantor to Philip J.Haver, and which said note was executed and delivered by said Grantor to said Philip J.Haver; and

Whereas, said Philip J.Haver is now the owner and holder of said note and the beneficial interest under said Deed of Trust; and

Whereas, on the 13th day of December, 1932, the said Philip J.Haver, as holder and owner of said note and Deed of Trust, did substitute the undersigned, Berkeley Mortgage Company as Trustee, in place of Alameda County Title Insurance Company, a corporation Trustee as aforesaid in said Deed of Trust provided, all of which more fully appears in the records of said substitution recorded in Official Records of Alameda County, California; and

Whereas, said Berkeley Mortgage Company, a corporation, has ever since said 13th day of December, 1932, been, and now is the duly authorized and acting Trustee under said Deed of Trust; and

Whereas, said Deed of Trust provided that if default be made in the payment of said indebtedness or in the performance of any of the covenants contained in said Deed of Trust, said Trustee, its successors or assigns, thereupon became empowered to sell the property described in said Deed of Trust in the manner and upon the notice therein prescribed; and

Whereas, said Grantor defaulted in the payment of said indebtedness and in the performance of the covenants contained in said Deed of Trust, and during such default, and while said Philip J.Haver was still the owner and holder of said promissory note and said Deed of Trust, said Philip J.Haver declared that such default had been made, and thereupon exercised his option to, and did, declare the principal sum of said promissory note secured by said Deed of Trust to be due and payable, and elected to sell, or cause to be sold, the property described in and affected by said Deed of Trust; and

Whereas, notice of said default and breach of the obligation of said Deed of Trust and of the election of the lender, and of the undersigned, substituted Trustee, to cause said property described in said Deed of Trust to be sold to satisfy said indebtedness and said obligation, was recorded on the 14th day of September, 1932, in Liber 2349 of Official Records of the County Recorder of said Alameda County, California, at page 334, as required by Section 2924 of the Civil Code of the State of California; and

Whereas, the said Philip J.Haver the owner and holder of said note and said Deed of Trust did, on the 19th day of December, 1932, demand that the undersigned substituted Trustee under and by virtue of the power and authority conferred on it by said Deed of Trust, sell the real property in said Deed of Trust and hereinafter described or so much thereof as might be necessary to sell to satisfy the indebtedness secured to be paid by said deed of trust and the expenses incurred necessary to the execution of said trusts; and

Whereas, the party of the first part herein, substituted Trustee as aforesaid, in compliance with said demand of said Philip J.Haver, and in compliance with all the terms of said Deed of Trust, did give notice as required by said Deed of Trust, and by law, and in the manner and for a time not less than that required by law for sales of real property under the provisions of a Deed of Trust, that it would, as such substituted Trustee, under the provisions of said Deed of Trust, sell the real property in said Deed of Trust and in said notice and hereinafter described, at the time and place specified in said notice, to wit: on Wednesday, the 18th day of January, 1933, at the hour of 10:00 A.M of said day, at the entrance to the American Trust Building, known as 2140 Shattuck Avenue, in the City of Berkeley, County of Alameda, State of California, which notice contained a full and proper description of the lands to be sold; and

Whereas, one copy of said notice was, on the 21st day of December, 1932, posted in a conspicuous place on the property to be sold; and whereas on the said last mentioned day, copies of said notice were posted in three public places in the City of Berkeley, County of Alameda, State of California, being the City in which said property was to be sold, to wit: one copy of said notice was posted at the United States Postoffice, situated on the corner of Allston Way and Milvia Street, in the City of Berkeley, County of Alameda, State of California; one of said notices was posted at the main entrance of the City Hall, situated on the corner of Grove Street and Allston Way, in said City, County and State; and one of said notices was posted at the Public Library, situated at the corner of Kittredge Street and Shattuck Avenue, in said City, County and State; and whereas, said notice was published once a week for twenty (20) days prior to the date of sale specified in said notice in the Berkeley Daily Gazette, a newspaper of general circulation printed and published in the city where said property is situated; and

Whereas, the said party of the first part herein, as such substituted Trustee as aforesaid, did at the time and place so advertised, and at public auction, sell the following described lands and premises, being all the lands and premises in said Deed of Trust described to the party of the second part, he being the highest bidder therefor, at said sale, for the sum of Fifteen Thousand Dollars ($15,000.00) in Gold Coin of the United States;

Now, Therefore, Berkeley Mortgage Company, a corporation, as such substituted Trustee as aforesaid, in consideration of the premises and of the sum of Fifteen Thousand Dollars ($15,000.00) in United States gold coin to it in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, and by virtue of the authority derived to it through said Deed of Trust, has granted, bargained, sold, conveyed and confirmed, and by these presents does hereby grant, bargain, sell, convey and confirm ,but without any warranty whatsoever of the party of the first part, unto the party of the second part, all of the right, title and interest of the said party of the first part, as substituted Trustee as aforesaid, in and to that certain real property, situate in the City of Berkeley, County of Alameda, State of California, and particularly described as follows, to wit:

Beginning at the intersection of the Western line of Shattuck Avenue, with the Southern line of Berkeley Way, as said Avenue and Way are shown on the map hereinafter referred to; running thence Southerly along said line of Shattuck Avenue, 60.06 feet; thence Westerly parallel with said line of Berkeley Way, 109 feet,more or less, to the Easterly boundary line of the land described in the Deed executed by F.D.Chase and Atlanta J.Chase, his wife, to Jacob Bauml, dated July 28, 1922 and recorded in Liber 324 of Official Records, at page 73, Alameda County Records;thence at right angles Northerly along said last named boundary line 35 feet, more or less to the Southern boundary line of Lot 55, as said lot is shown on the said map;thence at right angles Easterly 8 inches; thence at right angles Northerly parallel with the Westerly boundary line of said lot 55, aforesaid 25 feet to the Southern line of Berkeley Way; thence Easterly along said line of Berkeley Way, 112.30 feet to the point of beginning.

Being portions of Lots Nos. 55, 56 and 57, as said lots are delineated and so designated upon that certain map entitled, "Map of College Tract,Berkeley",filed Jan. 31, 1890 in Liber 9 of Maps. page 46, in the office of the County Recorder of Alameda County.

Together with all and singular the tenements,hereditaments and appurtenances thereunto belonging or in anywise appertaining,

And being all of the lands and premises in said Deed of Trust described.

And also, all the right, title, interest, property, possession, claim and demand which the said party of the first part now has, of, in, to or out of said premises, or any part thereof, together with the appurtenances.

To Have and To Hold the same unto the said party of the second part, and to his heirs and assigns forever.

In Witness Whereof, the said party of the first part has caused this instrument to be executed and its corporate seal to be hereto affixed by its officers thereunto duly authorized the day and year first hereinabove written.

Berkeley Mortgage Company
Substituted Trustee
By F.R.Peake Vice President
(Corporate Seal) By Robt.R.Porter Secretary

STATE OF CALIFORNIA)ss. On this 13th day of January in the year One thousand nine hundred
COUNTY OF ALAMEDA) and Thirty-three before me, Lucille V.Smith a Notary Public in and for the County of Alameda, State of California, residing therein, duly commissioned and sworn personally appeared F.R.Peake known to me to be the Vice President and Robt.R.Porter known to me to be the Secretary of the Corporation that executed the within instrument and the officers who executed the within instrument on behalf of the Corporation therein named and acknowledged to me that such Corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

(Notarial Seal) Lucille V.Smith Notary Public
In and for said County of Alameda, State of California.

U.S.I.Rev. stamps $15.00 cancelled Mar 17-1933 C.R.A.C.
Recorded at request of Alameda County Title Insurance Co. at 9 A.M. Mar 17-1933
DD-10307 2.70

COMPARED BK DOC GLAZIER SCHNELL

Copied Mar 22, 1933 M.B.AMARAL County Recorder

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

MASON-McDUFFIE CO. INC. SUB. TR.
TO
M.GLAZER ET AL

DEED OF RECONVEYANCE
MASON-McDUFFIE COMPANY INC.
(SUBSTITUTED TRUSTEE)

Whereas, the indebtedness secured to be paid by the Deed of Trust executed by M.Glazer and Rica Glazer, his wife, to Perry T.Tompkins, Will F.Morrish and Robert G.Sproul as Trustees dated February 23, 1928, and recorded in the office of the County Recorder of the County of Alameda, State of California, on March 6, 1928 in Liber 1823 of Official Records at page 175, and following has been fully paid;

And Whereas Mason-McDuffie Company, Inc. a corporation has been substituted as Trustee in place of the Trustees hereinbefore named.

Now Therefore, Mason-McDuffie Company, Inc., a corporation, Substituted Trustee, does hereby grant, remise, release and reconvey unto the present holders of the equitable title of said real property, without warranty, all of the right, title and estate derived to said

EXHIBIT J

First American

clarityfirst® Recorded Document

The Recorded Document images are displayed in the subsequent pages for following request:

State	County	Document Number
CA	**Alameda**	**2014.140054**

Limitation of Liability for Informational Report

IMPORTANT – READ CAREFULLY: THIS REPORT IS NOT AN INSURED PRODUCT OR SERVICE OR A REPRESENTATION OF THE CONDITION OF TITLE TO REAL PROPERTY. IT IS NOT AN ABSTRACT, LEGAL OPINION, OPINION OF TITLE, TITLE INSURANCE COMMITMENT OR PRELIMINARY REPORT, OR ANY FORM OF TITLE INSURANCE OR GUARANTY. THIS REPORT IS ISSUED EXCLUSIVELY FOR THE BENEFIT OF THE APPLICANT THEREFOR, AND MAY NOT BE USED OR RELIED UPON BY ANY OTHER PERSON. THIS REPORT MAY NOT BE REPRODUCED IN ANY MANNER WITHOUT FIRST AMERICAN'S PRIOR WRITTEN CONSENT. FIRST AMERICAN DOES NOT REPRESENT OR WARRANT THAT THE INFORMATION HEREIN IS COMPLETE OR FREE FROM ERROR, AND THE INFORMATION HEREIN IS PROVIDED WITHOUT ANY WARRANTIES OF ANY KIND, AS-IS, AND WITH ALL FAULTS. AS A MATERIAL PART OF THE CONSIDERATION GIVEN IN EXCHANGE FOR THE ISSUANCE OF THIS REPORT, RECIPIENT AGREES THAT FIRST AMERICAN'S SOLE LIABILITY FOR ANY LOSS OR DAMAGE CAUSED BY AN ERROR OR OMISSION DUE TO INACCURATE INFORMATION OR NEGLIGENCE IN PREPARING THIS REPORT SHALL BE LIMITED TO THE FEE CHARGED FOR THE REPORT. RECIPIENT ACCEPTS THIS REPORT WITH THIS LIMITATION AND AGREES THAT FIRST AMERICAN WOULD NOT HAVE ISSUED THIS REPORT BUT FOR THE LIMITATION OF LIABILITY DESCRIBED ABOVE. FIRST AMERICAN MAKES NO REPRESENTATION OR WARRANTY AS TO THE LEGALITY OR PROPRIETY OF RECIPIENT'S USE OF THE INFORMATION HEREIN.

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RECORDING REQUESTED BY:

Old Republic Title Company

Order No.: 0147014348-SH
APN: 057-2053-002

When Recorded Mail Document and Tax Statements to:

1974 Shattuck Avenue, LLC -C/O Nathan George
P.O. Box 1088
Berkeley CA 94704

2014140054 06/11/2014 12:53 PM
OFFICIAL RECORDS OF ALAMEDA COUNTY
PATRICK O'CONNELL
RECORDING FEE: 28.00
COUNTY TAX: 2288.00
CITY TAX: 31200.00
2 PGS

SPACE ABOVE THIS LINE IS FOR RECORDER'S USE

Grant Deed

The undersigned grantor(s) declare(s):
Documentary Transfer Tax is $2,288.00
(X) computed on full value of property conveyed, or
( ) computed on full value less of liens and encumbrances remaining at time of sale.
( ) Unincorporated area: (X) City of Berkeley $31,200.00

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
Shattuck Avenue Spats, a California general partnership

hereby GRANT(S) to
1974 Shattuck Avenue, LLC, a California limited liability company

that property in City of Berkeley, Alameda County, State of California, described as:
See "Exhibit A" attached hereto and made a part hereof.

Date: May 22, 2014

Shattuck Avenue Spats, a California general partnership

By: _____
Philip E. Taw, General Partner

State of CALIFORNIA
County of CONTRA COSTA

On JUNE 3, 2014 before me, CAROLINE S. CRUZ, a Notary Public, personally appeared PHILIP E. TAW, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

Name CAROLINE S. CRUZ
(typed or printed)

CAROLINE S. CRUZ
Commission # 1957299
Notary Public - California
Contra Costa County
My Comm. Expires Oct 28, 2015

(Area reserved for official notarial seal)

Grant Deed

MAIL TAX STATEMENTS AS DIRECTED ABOVE

ORDER NO. : 0147014348-SH

EXHIBIT A

The land referred to is situated in the County of Alameda, City of Berkeley, State of California, and is described as follows:

Beginning at a point on the Western line of Shattuck Avenue, distant thereon Southerly, 60.6 feet from the point of intersection thereof, with the Southern line of Berkeley Way, as said avenue and way are shown on the Map herein referred to; running thence Southerly along said line of Shattuck Avenue, 49.20 feet; thence Westerly and parallel with said line of Berkeley Way, 105.50 feet, more or less, to a point which would be intersected by a line drawn Southerly form and at right angles to said line Berkeley way from a point distant thereon, 113.30 feet Westerly from the Western line of Shattuck Avenue; thence at right angles Northerly, 49 feet, more or less, to a point which would be intersected by a line drawn Westerly from said point of beginning and parallel with Berkeley way; thence Easterly along said parallel line, 109 feet, more or less, to the point of beginning.

Being a portion of Lots 57 and 58, as said lots are shown on the "Map of the College Tract, Berkeley", filed January 31, 1890, in Book 9 of Maps, Page 46, in the Office of the County Recorder of Alameda County.

APN: 057-2053-002

Planning and Development
Land Use Planning Division

April 11, 2024

Isaiah Stackhouse
Trachtenberg Architects
2421 Fourth Street
Berkeley, CA 94710

Sent via email to:
isaiah@trachtenbergarch.com

RE: Application Status Complete – Use Permit Application #ZP2023-0040 for 1950-1998 Shattuck Avenue / 2071 University (APNs: 57-2053-4-2, 57-2053-3-1, 57-2053-3-2, 57-2053-2, 57-2053-1)

Dear Mr. Stackhouse,

Thank you for submitting the materials to support the proposal to demolish five existing commercial buildings; merge four lots; construct a 28-story, 411,610-square-foot, mixed-use building with 599 dwelling units (including 58 VLI) and 16,920 sq.ft. of commercial area in the C-DMU (Outer Core) Zoning District at 1950-1998 Shattuck Avenue.

Pursuant to the Permit Streamlining Act (Government Code Chapter 4.5 Title 7), the application has been deemed complete as of April 11, 2024.

Permits – Based upon staff's review, the application includes the following approval requests:

1. Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
2. Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
3. Use Permit under BMC Section 23.204.020(A) to construct dwelling units
4. Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
5. Use Permit under BMC Section 23.204.130(E)(2) to construct a building that exceeds the district height limit, and that is over 120 feet but not more than 180 feet
6. Use Permit under BMC Section 23.204.130(E)(3)(b) to modify front, side, and rear setback requirements
7. Use Permit under BMC Section 23.204.130(E)(3)(b)(i) to exceed 120 feet in width in diagonal measurement
8. Administrative Use Permit under BMC Section 23.304.050(A) to allow architectural projections to exceed district height limits
9. Administrative Use Permit under BMC Section 23.302.070(E)(2) for a food service establishment over 3,000 square feet in area

10. Administrative Use Permit pursuant to BMC Section 23.302.020(D) for Amplified Live Entertainment in a commercial district

11. Use Permit pursuant to BMC Section 23.310.020(B) to begin alcoholic beverage service (distilled spirits incidental to food service).
12. Administrative Use Permit pursuant to BMC Section 23.302.020(E)(4) for outdoor uses not abutting a residential district.

13. Density Bonus with the following requested reductions, waivers and concessions:

    Waivers

    a. Waiver of BMC Section 23.04.130(E)(1) to exceed building height limits – to be 317' to roof (plus 5' parapet), where 180 feet is the limit (plus 5-foot parapet, by right, with a use permit)

    b. Waiver of BMC Section 23.204.130(E)(3) to reduce the front, side and rear setback minimums (see plans for details)

    c. Waiver of BMC Section 23.204.130(E)(3)(b)(i) to exceed 120 feet in width in diagonal measurement (165')

    d. Waiver of BMC Section 23.204.130(E)(4) reduce usable open space minimum to 13,032 square feet, where 47,920 square feet is required

    Concessions [Three concessions permitted, per Government Code §65915(d)(2)]:

    a. Concession to eliminate the Percentage for Public Art on Private Projects requirement

Level of Review Under the California Environmental Quality Act

Under the California Environmental Quality Act (CEQA), staff determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration will be required, depending on the type of project. This determination will be made within 30 days of an application being deemed complete. If a project is exempt from CEQA, staff recommends an exemption determination to the Zoning Officer or the Zoning Adjustments Board (ZAB).

Action Items – Corrections, Clarifications, and/or Supplemental Information Required

1. Bird Safe Building. Projects that are New Construction with 10,000 sq. ft. or more of gross floor area and an average building height greater than 35 ft. are subject to this ordinance section (https://berkeley.municipal.codes/BMC/23.328.030). **Thank you for submitting the required forms.**

2. Inclusionary Housing. Projects proposing to construct one or more residential units are subject to this ordinance section (https://berkeley.municipal.codes/BMC/23.304.150). Please revise the Housing Affordability Statement to demonstrate how the project complies with this section. **Thank you for submitting the Affordable Housing Compliance Plan (AHCP). Staff calculates 175,217 SF as the Base Project Residential Unit Floor Area (RUFA). Revise the calculations in step 3.B if needed per the correct RUFA.**

3. Historic Resource Evaluation. **Thank you for the "Summary of Historical Evaluations" by Preservation Architecture, dated March 8, 2024. Staff has reviewed the submitted document. Please note that this document does not satisfy any regulatory requirements related to historic resource evaluations or peer reviews.**

Although the application is considered complete at this time, please note the prior comment (from Incomplete Letter December 15, 2023) still stands: staff does not necessarily concur with the conclusions arrived at in the HREs. In order to proceed with a review of impacts to historic resources, please be advised that further review of resource eligibility of the existing buildings pursuant to the California Environmental Quality Act (CEQA) may be warranted by a third-party consultant, at a cost to be borne by the applicant. Further information will be provided to the applicant at the time CEQA path determination.

4. Plans.

   a. Clarify if the project proposes the merger of four lots or five lots. City GIS data show five lots within the project boundaries, while the survey shows four. *Thank you.* There are five parcels, and four lots. The fifth APN is likely a separation for tax purposes. Verify with Public Works whether the ~3-foot strip of land at 1950 and 1974 Shattuck sidewalk area can be included in the site area. The survey indicates that it is public right of way, and may need approval of an encroachment permit.

   The area is labelled "SFBARTD subsurface easement parcel 2, RE 1768, IM 944", but is excluded from the parcel legal description and property line boundaries. Please provide documentation of ownership of the area; if not owned by the applicant, provide a letter of authorization from the owner to authorizing its inclusion in the development permit application.

   Thank you for the Quiet Title Complaint document. Please indicate when a ruling is anticipated on the case. Any entitlements obtained for development on the disputed parcel may be affected by the outcome of the case. If the matter is not settled before the entitlement hearing, a Condition of Approval will be attached to the permit for this contingency.

   Also, in your response, you mentioned that the survey was revised, but I don't see how the survey has been revised, and it shows the same date of preparation by the licensed surveyor – December 2022.

5. Community Benefit Package. The submittal is missing a Community Benefits package pro forma and cost estimate under BMC Section 23.204.130(E)(2)(c). Please note that per Council Resolution 67,172-N.S., a pro forma showing project pre-development soft and hard cost estimates and rate of return analysis, as well as a cost estimate for the community benefits package, are required to be included in the project application. The pro forma must be peer reviewed by a City consultant. Thank you for the Community Benefits letter. While the community benefits analysis may not be entirely objective, the pro forma is a specific requirement for the discretionary permit, as described in the Council Resolution, and would inform the Board's overall consideration of the project:

> The application shall include a *pro forma* showing pre-development, soft, and hard cost estimates, as well as the projected rate of return the applicant expects the project to generate, based on revenues (sales price or rental income stream) anticipated once the project is completed. This analysis shall cover two scenarios: (1) a base case building of 75' or less; and (2) a high-rise building over 75'.

Thank you for the pro forma documents. Pursuant to the Council Resolution, a consultant will be obtained to perform a peer review of the document. Staff will send an invoice for the consultant fee for payment when received.

Please make a payment on the attached invoice and return the signed Confirmation of Service to me.

Advisory Comments

1. During the course of review, the project planner may request that the applicant correct, clarify, amplify, or otherwise supplement the details provided in the application according to the Zoning Project Application Submittal Requirements. This may result in revisions to the information provided with your submittal, additional fees for zoning permits, CEQA review costs, and other processes/reviews, as needed based on the City's adopted fee schedule.

2. Interdepartmental Roundtable Meeting. An interdepartmental review will be scheduled as an opportunity for you to receive comments on the project from City departments such as Building and Safety, Transportation, Zero Waste, Parks, Toxics and Public Works. I will coordinate with you to schedule a time when you can attend. Meetings are 2nd and 4th Wednesdays monthly at 1:00 p.m. or 2:30 p.m.

Next Steps

Please submit responses to all requested items at once, and not incrementally. Be sure to include a written response and pay the attached invoice. Please be aware that under SB330 (Government Code Section 65941.1(a)(d)(2)), the applicant must submit the information in this incomplete letter within 90 days of the date of this letter. If the applicant does not submit this information within the 90-day period, then the preliminary application shall expire and have no further force or effect. Please use this BOX link for your project and email me when you've uploaded. Once revised information is submitted, staff will review the application within 30 days.

If you have any questions about the requested information, please reach out to me directly. Thank you in advance for your cooperation.

Sincerely,



Sharon Gong
Senior Planner
(510) 981-7429
sgong@cityofberkeley.info

Planning and Development
Land Use Planning Division

May 16, 2024

Isaiah Stackhouse
Trachtenberg Architects
2421 Fourth Street
Berkeley, CA 94710

Sent via email to:
isaiah@trachtenbergarch.com

RE: California Environmental Quality Act (CEQA) and Additional Information Required – Use Permit Application #ZP2023-0040 for 1950-1998 Shattuck Avenue / 2071 University (APNs: 57-2053-4-2, 57-2053-3-1, 57-2053-3-2, 57-2053-2, 57-2053-1)

Dear Mr. Stackhouse,

Thank you for submitting the materials to support the proposal to demolish five existing commercial buildings; merge four lots; construct a 28-story, 411,610-square-foot, mixed-use building with 599 dwelling units (including 58 VLI) and 16,920 sq.ft. of commercial area in the C-DMU (Outer Core) Zoning District at 1950-1998 Shattuck Avenue.

Pursuant to the Permit Streamlining Act (Government Code Chapter 4.5 Title 7), the application has been deemed complete as of April 11, 2024.

Level of Review Under the California Environmental Quality Act

Under the California Environmental Quality Act (CEQA), staff determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration will be required, depending on the type of project proposed. Staff recommends that the appropriate level of CEQA review will be Infill Environmental Checklist with a potential for an Infill Environmental Impact Report.

Action Items – Corrections, Clarifications, and/or Supplemental Information Required

1. Loading Space. Indicate on the site plan the location of the required off-street loading space, per BMC Section 23.322.100.

Permits – Based upon staff's review, the application includes the following approval requests:

1. Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
2. Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
3. Use Permit under BMC Section 23.204.020(A) to construct dwelling units

4. Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
5. Use Permit under BMC Section 23.204.130(E)(2) to construct a building that exceeds the district height limit, and that is over 120 feet but not more than 180 feet
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7. Use Permit under BMC Section 23.204.130(E)(3)(b)(i) to exceed 120 feet in width in diagonal measurement
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    a. Concession to eliminate the Percentage for Public Art on Private Projects requirement

Advisory Comments

1. During the course of review, the project planner may request that the applicant correct, clarify, amplify, or otherwise supplement the details provided in the application according to the Zoning Project Application Submittal Requirements. This may result in revisions to the information provided with your submittal, additional fees for zoning permits, CEQA review costs, and other processes/reviews, as needed based on the City's adopted fee schedule.

2. Interdepartmental Roundtable Meeting. This meeting occurred on May 1, 2024. Please work with each department to resolve any outstanding comments.

Next Steps

Please submit responses to all requested items at once, and not incrementally. Be sure to include a written response and pay the attached invoice. Please be aware that under SB330 (Government Code Section 65941.1(a)(d)(2)), the applicant must submit the information in this incomplete letter within 90 days of the date of this letter. If the applicant does not submit this information within the 90-day period, then the preliminary application shall expire and have no further force or effect. Please use this BOX link for your project and email me when you've uploaded. Once revised information is submitted, staff will review the application within 30 days.

If you have any questions about the requested information, please reach out to me directly. Thank you in advance for your cooperation.

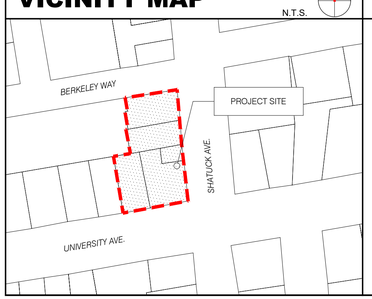
Sincerely,



Sharon Gong
Senior Planner
(510) 981-7429
sgong@cityofberkeley.info



VICINITY MAP



PROJECT DIRECTORY

OWNER/APPLICANT:
1974 Shattuck Ave, LLC
1958A University Ave
Berkeley, CA 94705

ARCHITECT:
Isaiah Stackhouse, Principal
TRACHTENBERG ARCHITECTS
2421 Fourth Street
Berkeley, CA 94710
510.649.1414
www.TrachtenbergArch.com

PROJECT DESCRIPTION

PROJECT ADDRESS: 1950-1998 Shattuck Ave. & 2071 University Ave. Berkeley, CA 94704
APNS:
057 205300100
057 205300200
057 205300301
057 205300302
057 205300402

SCOPE OF WORK:
REMOVAL OF EXISTING COMMERCIAL STRUCTURES & CONSTRUCTION OF A NEW 28-STORY MIXED-USE HOUSING DEVELOPMENT WITH 599 DWELLING UNITS AND A ROOFTOP RESTAURANT OVER GROUND-LEVEL COMMERCIAL AND LOBBIES, WITH STATE OF CALIFORNIA DENSITY BONUS.

DRAWING LIST

A0.0	GENERAL INFORMATION			A3.9	PRELIMINARY RENDERING	L3.1	USABLE OPEN SPACE CALCS & PLANTING NOTES
A0.1	ZONING INFORMATION	A2.1	FLOOR PLANS	A3.10	PRELIMINARY RENDERING	I0.0	IRRIGATION NOTES & LEGEND
A0.2A	DENSITY BONUS DIAGRAMS	A2.2	FLOOR PLANS	A3.11	PRELIMINARY RENDERING	I1.0	IRRIGATION PLAN AT STREETSCAPE
A0.2B	DENSITY BONUS DIAGRAMS	A2.3	FLOOR PLANS	A3.12	PRELIMINARY RENDERING	I2.0	IRRIGATION PLAN SECOND FLOOR PODIUM GARDENS
A0.2C	PRELIMINARY AHCP DIAGRAMS	A2.4	FLOOR PLANS	A3.13	PRELIMINARY RENDERING	I3.0	IRRIGATION PLAN FOURTEENTH FLOOR ROOF DECK
A0.3	DPRELIMINARY AHCP DIAGRAMS	A2.5	FLOOR PLANS	A3.14	PRELIMINARY RENDERING	I3.1	IRRIGATION POINT OF CONNECTION
A0.4A	SHADOW STUDIES DECEMBER 21ST	A2.6	FLOOR PLANS	A3.15	PRELIMINARY RENDERING	I4.0	IRRIGATION DETAILS
A0.4B	SHADOW STUDIES JUNE 21ST	A2.7	ROOF PLAN	A3.16	PRELIMINARY RENDERING	I5.0	IRRIGATION DETAILS
A0.4C	SHADOW STUDIES FEB 15TH	A3.1	ELEVATIONS	A3.17	PRELIMINARY RENDERING	I6.0	IRRIGATION DETAILS
A0.5	SITE CONTEXT PHOTOS	A3.2	ELEVATIONS	A4.1	BUILDING SECTIONS	I7.0	IRRIGATION DETAILS
A0.6A	SURVEY	A3.3	STREET STRIP ELEVATIONS	A4.2	AWNING ENCROACHMENT DIAGRAM		
A0.6B	SURVEY	A3.4	PHOTO CONTEXT VIEWS	A5.0	CONCEPTUAL GRADING PLAN		
A0.6C	SURVEY	A3.5	PHOTO CONTEXT VIEWS	L0.0	COVER SHEET, NOTES, AND LEGEND		
A1.0	EXISTING SITE PLAN	A3.6	PHOTO CONTEXT VIEWS	L1.0	LANDSCAPE PLAN AT STREETSCAPE		
A2.0a	FLOOR PLANS	A3.7	PRELIMINARY RENDERING	L2.0	SECOND FLOOR PODIUM GARDENS		
A2.0b	FLOOR PLANS	A3.8	PRELIMINARY RENDERING	L3.0	FOURTEENTH FLOOR ROOF DECK		

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GENERAL INFORMATION

A0.0

ZONING CODE DATA

ZONING SUMMARY TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	PROPOSED W/DENSITY BONUS	ZONING COMPLIANCE
ZONING	C-DMU Core			COMPLIES
TOTAL LOT SIZE (SQ. FT.)	28,319			COMPLIES
TOTAL LOT SIZE (ACRES)	0.65			COMPLIES
FLOOR AREA RATIO (FAR)	NA	NA	14.52	COMPLIES W/ SDB WAIVER
DWELLING UNITS (SEE TABLE)	NA	NA	599	COMPLIES
RESIDENTIAL BEDROOMS	NA	NA	709	COMPLIES
HEIGHT - FEET	60'-0"	120'	317'	COMPLIES W/ SDB WAIVER
HEIGHT - STORIES*	NA	NA	28	COMPLIES W/ SDB WAIVER
LOT COVERAGE	NA	NA	88%	COMPLIES
SETBACK - FRONT (UNIVERSITY) (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - STREET SIDE (SHATTUCK) (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - REAR (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - MAX. DIMENSION ABOVE 120'	120'	NOT LIMITED	165'	COMPLIES W/ SDB WAIVER
RESIDENTIAL PARKING (SEE TABLE)	0	0	130	COMPLIES
COMMERCIAL PARKING (SEE TABLE)	24	24	24	COMPLIES
RES. BIKE PARKING LONG TERM (SEE TABLE)	237	237	240	COMPLIES
RES. BIKE PARKING SHORT TERM (SEE TABLE)	18	18	18	COMPLIES
COM. BIKE PARKING SHORT TERM (SEE TABLE)	9	9	10	COMPLIES
RESIDENTIAL OPEN SPACE (SEE TABLE)	47,920	47,920	13,032	COMPLIES W/ SDB WAIVER
COMMERCIAL OPEN SPACE (SEE TABLE)	323	323	706	COMPLIES

* Community Benefit Required per BMC Section 23.204.130.E.2.c.

PARKING CALCULATIONS

	QNTY	CARS	PER	REQ'D	PROVIDED
RESIDENTIAL	599	0.5 MAX	1	0	130
COMMERCIAL	16,142	1.5	1,000	24	24
TOTAL					**154**

BICYCLE PARKING CALCULATIONS

	QNTY	BIKES	PER	REQ'D	PROVIDED
RESIDENTIAL (LONG TERM) (PER BEDROOM)	709	1	3	237	256
RESIDENTIAL (SHORT TERM) (PER BEDROOM)	709	1	40	18	18
COMMERCIAL (SHORT TERM) (PER SF)	16,142	1.0	2,000	9	10

ROOFTOP ARCHITECTURAL ELEMENTS CALCS

	ALLOWABLE	PROPOSED
AVERAGE AREA OF FLOORS		14,058
AREA OF ROOFTOP ARCHITECTURAL ELEMENTS	2,109	1,464
% AREA OF ROOFTOP ARCHITECTURAL FEATURES	15.0%	10.4%

OPEN SPACE CALCULATIONS

	UNITS	SF / UNIT	TOTAL REQ'D	MODIFICATION	TOTAL PROVIDED	COMMON	LANDSCAPE REQ'D (40%)	LANDSCAPE PROVIDED
RESIDENTIAL UNITS	599	80	47,920	34,888	13,032	13,032	5,213	6,735
COMMERCIAL OPEN SPACE	16,142	50	323	(383)	706			

AREA TABLE

	RESIDENTIAL	COMMERICAL	TOTAL
LEVEL 28		7,800	7,800
LEVEL 27	11,980		11,980
LEVEL 26	11,980		11,980
LEVEL 25	11,980		11,980
LEVEL 24	11,980		11,980
LEVEL 23	11,980		11,980
LEVEL 22	11,980		11,980
LEVEL 21	11,980		11,980
LEVEL 20	11,980		11,980
LEVEL 19	11,980		11,980
LEVEL 18	11,980		11,980
LEVEL 17	11,980		11,980
LEVEL 16	11,980		11,980
LEVEL 15	11,980		11,980
LEVEL 14	11,980		11,980
LEVEL 13	17,862		17,862
LEVEL 12	17,862		17,862
LEVEL 11	17,862		17,862
LEVEL 10	17,862		17,862
LEVEL 9	17,862		17,862
LEVEL 8	17,862		17,862
LEVEL 7	17,862		17,862
LEVEL 6	17,862		17,862
LEVEL 5	17,862		17,862
LEVEL 4	17,862		17,862
LEVEL 3	17,862		17,862
LEVEL 2	17,677		17,677
GROUND LEVEL	12,461	8,342	20,803
BASEMENT PARKING P1	424		424
BASEMENT PARKING P2	424		424
TOTAL	**395,188**	**16,142**	**411,330**

DWELLING UNIT TABLE

	STUDIO	2-BR	TOTAL
LEVEL 28			0
LEVEL 27	15	4	19
LEVEL 26	15	4	19
LEVEL 25	15	4	19
LEVEL 24	15	4	19
LEVEL 23	15	4	19
LEVEL 22	15	4	19
LEVEL 21	15	4	19
LEVEL 20	15	4	19
LEVEL 19	15	4	19
LEVEL 18	15	4	19
LEVEL 17	15	4	19
LEVEL 16	15	4	19
LEVEL 15	15	4	19
LEVEL 14	8	3	11
LEVEL 13	26	5	31
LEVEL 12	26	5	31
LEVEL 11	26	5	31
LEVEL 10	26	5	31
LEVEL 9	26	5	31
LEVEL 8	26	5	31
LEVEL 7	26	5	31
LEVEL 6	26	5	31
LEVEL 5	26	5	31
LEVEL 4	26	5	31
LEVEL 3	26	5	31
LEVEL 2			0
GROUND LEVEL			
TOTAL UNITS	**489**	**110**	**599**
BEDROOMS / UNIT	1	2	
TOTAL BEDROOMS	489	220	709

OPEN SPACE

6,882
6,150
-
13,032

SETBACKS TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	PROPOSED W/DENSITY BONUS	ZONING COMPLIANCE
SETBACK - FRONT (UNIVERSITY)				
0'-20'	0'	0'	2'	COMPLIES
21'-75'	0'	0'	3'-4" to 4'-4"	COMPLIES
76'-120'	15'	0'	3'-4" to 4'-4"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	3'-4" to 15'-6"	COMPLIES W/ SDB WAIVER
SETBACK - STREET SIDE (SHATTUCK)				
0'-20'	0'	0'	5'-3" to 14'-5"	COMPLIES
21'-75'	0'	0'	6'-10" to 29'-8"	COMPLIES
76'-120'	15'	0'	6'-10" to 29'-8"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	6'-10" to 60'-1"	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (<65' FROM FRONT)				
0'-20'	0'	0'	1'-6"	COMPLIES
21'-75'	0'	0'	15'	COMPLIES
76'-120'	5'	0'	15'	COMPLIES
> 120'	15'	0'	15' to 26'-6"	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (>65' FROM FRONT)				
0'-20'	0'	0'	6" to 1'-6"	COMPLIES
21'-75'	5'	0'	17'-1" to 18'-1"	COMPLIES
76'-120'	15'	0'	17'-1" to 18'-1"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	17'-1" to 18'-1"	COMPLIES W/ SDB WAIVER
SETBACK - REAR (BERKELEY WAY)				
0'-20'	0'	0'	2'	COMPLIES
21'-75'	5'	0'	6'	COMPLIES
76'-120'	15'	0'	6'	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	94'-7"	COMPLIES W/ SDB WAIVER
SETBACK - MAX. DIMENSION ABOVE 120'	120'	NOT LIMITED	165'	COMPLIES W/ SDB WAIVER

CAR SHARE CALCULATION

Number of Parking Spaces Provided
154
Minimum Number of Vehicle Sharing Spaces (3, plus one for every additional 60 spaces)
3+1 = **4**

STATE DENSITY BONUS TABLE (SEE A0.2A-B)

(SEE SHEETS A0.3A-A03.D)	
BASE PROJECT UNITS	411
PERCENT VLI UNITS PROVIDED	14%
NUMBER VLI UNITS PROVIDED (ROUNDS UP)	58
BONUS PERCENTAGE	46.25%
NUMBER BONUS UNITS (ROUNDS UP)	191
MAXIMUM DENSITY BONUS PROJECT	602
PROPOSED DENSITY BONUS PROJECT	599

LIST OF USE PERMITS AND AUP'S

PROPOSED DENSITY BONUS PROJECT USE PERMITS:

- Use Permit for construction for demolition of a non-residential building, under 23.326.070(A)
- Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Administrative Use Permit under BMC Section 23.304.050(A) to exceed building height limits with rooftop architectural elements which exceed the maximum height limit for the district.
- Use Permit under BMC Section 23.204.130.E.2 to construct a building that exceeds the district height limit, and that is over 75 feet but not more than 120 feet (Base Project).
- Use Permit under BMC Section 23.204.130.E.3(b) to modify front, side, and rear setback requirements
- Use Permit under BMC Section 23.204.130.E.3(b) to exceed 120 feet in width in diagonal measurement
- Use Permit under BMC Section 23.204.E.6 to pay a fee in lieu of providing privately owned public open space.
- Density Bonus with the following requested reductions, waivers and concessions below.

LIST OF DENSITY BONUS WAIVERS (SEE A0.2A-B)

- Waiver to increase the maximum building height from the base project maximum density height allowed with UP's and AUP's under the zoning ordinance of 120' (under BMC 23.204.130.E.2) to a density bonus height of 316' to accommodate the density bonus units.
- Waiver to allow a reduction in the required setbacks under BMC Section 23.204.130.E.3(b) to physically accomodate the density bonus units.
- Waiver to reduce the minimum required residential usable open space under BMC 23.204.130.E.4 to allow the construction of the density bonus units.

LIST OF DENSITY BONUS CONCESSIONS (SEE A0.2A-B)

- Athough the project is eligible for 2 concessions as a project that is providing 14% of the base units as Very-Low-Income Units, the project is not proposing any concessions.

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ZONING INFORMATION

A0.1

BASE PROJECT ZONING COMPLIANCE TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	CODE SECTION	PROPOSED BASE PROJECT	ZONING COMPLIANCE
ZONING	C-DMU Core				COMPLIES
TOTAL LOT SIZE (SQ. FT.)	28,319				COMPLIES
TOTAL LOT SIZE (ACRES)	0.65				COMPLIES
FLOOR AREA RATIO (FAR)	NA	NA		NA	COMPLIES
DWELLING UNITS (SEE TABLE)	NA	NA		411	COMPLIES
RESIDENTIAL BEDROOMS	NA	NA		446	COMPLIES
HEIGHT - FEET	60'-0"	120'-0"	23.204.130.E.2	120'-0"	COMPLIES
HEIGHT - STORIES	NA	NA		11	COMPLIES
LOT COVERAGE	NA	NA		0%	COMPLIES
SETBACK - FRONT (UNIVERSITY)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - STREET SIDE (SHATTUCK)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - INTERIOR SIDE	0' to 15'	0'	23.204.130.E.3(b)	0' to 6'	COMPLIES
SETBACK - REAR (BERKELEY WAY)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - MAX. DIMENSION ABOVE 120'	NA	NA			COMPLIES
RESIDENTIAL PARKING (SEE TABLE)	0	0		0	COMPLIES
COMMERCIAL PARKING (SEE TABLE)	25	0		0	COMPLIES
RES. BIKE PARKING LONG TERM (SEE TABLE)	149	149		152	COMPLIES
RES. BIKE PARKING SHORT TERM (SEE TABLE)	12	12		12	COMPLIES
COM. BIKE PARKING SHORT TERM (SEE TABLE)	9	9		9	COMPLIES
RESIDENTIAL OPEN SPACE (SEE TABLE)	32,880	32,880		33,950	COMPLIES
COMMERCIAL OPEN SPACE (SEE TABLE)	338	338		338	COMPLIES

LIST OF BASE PROJECT USE PERMITS AND AUP'S

Per August 2, 2021 Memorandum on Policy Changes to Objective Standards, HAA and Density Bonus

- Use Permit for construction for demolition of a non-residential building, under 23.326.070(A)
- Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Administrative Use Permit under BMC Section 23.304.050(A) to exceed building height limits w/ rooftop architectura elements.
- Use Permit under BMC Section 23.204.130.E.2 to construct a building up to 120 feet.
- Use Permit under BMC Section 23.204.130.E.3(b) to modify front, side, and rear setback requirements

PARKING CALCULATIONS

	QNTY	CARS	PER	REQ'D	PROVIDED
RESIDENTIAL	411	0	1	0	0
COMMERCIAL	16920	1.5	1,000	25	25

BICYCLE PARKING CALCULATIONS

	QNTY	BIKES	PER	REQ'D	PROVIDED
RESIDENTIAL (LONG TERM) (BEDROOMS)	446	1	3	149	152
RESIDENTIAL (SHORT TERM) (BEDROOMS)	446	1	40	12	12
COMMERCIAL (SHORT TERM)	16,920	1.0	2,000	9	9

OPEN SPACE CALCULATIONS

	UNITS	SF / UNIT	TOTAL REQ'D
RESIDENTIAL REQUIREMENT	411	80	32,880
TOTAL PROVIDED			33,950
ROOF DECK			25,630
BALCONIES (MAX 50%)	104	80	8,320
COMMERCIAL OPEN SPACE	16,920	50	338

ROOFTOP ARCHITECTURAL ELEMENTS CALCULATIONS

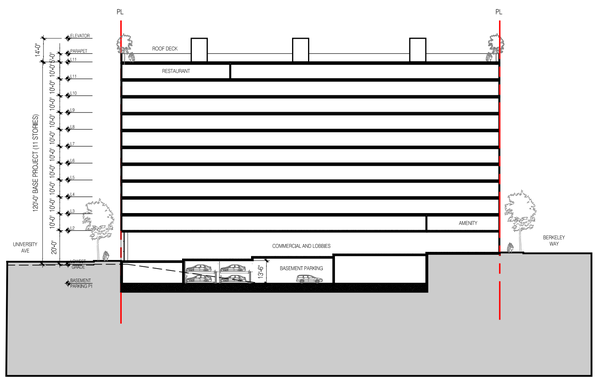
	ALLOWABLE	PROPOSED
AVERAGE AREA OF FLOORS	23,968	
AREA OF ROOFTOP ARCHITECTURAL ELEMENTS	3,595	600
% AREA OF ROOFTOP ARCHITECTURAL FEATURES	15.0%	2.5%

AREA TABLE

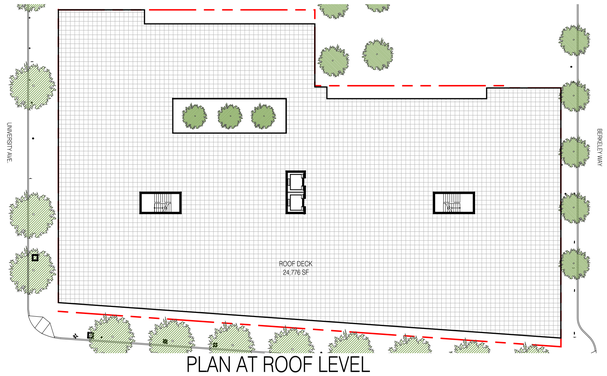
	RESIDENTIAL	COMMERICAL	TOTAL
LEVEL 11	18,430	7,800	26,230
LEVEL 10	26,230		26,230
LEVEL 9	26,230		26,230
LEVEL 8	26,230		26,230
LEVEL 7	26,230		26,230
LEVEL 6	26,230		26,230
LEVEL 5	26,230		26,230
LEVEL 4	26,230		26,230
LEVEL 3	26,230		26,230
LEVEL 2	26,230		26,230
GROUND LEVEL	15,922	9,120	25,042
BASEMENT P1	275		275
TOTAL	**270,697**	**16,920**	**287,617**

DWELLING UNIT TABLE

	STUDIO	2-BR	TOTAL
LEVEL 11	28	2	30
LEVEL 10	41	4	45
LEVEL 9	41	4	45
LEVEL 8	41	4	45
LEVEL 7	41	4	45
LEVEL 6	41	4	45
LEVEL 5	41	4	45
LEVEL 4	41	4	45
LEVEL 3	41	4	45
LEVEL 2	20	1	21
GROUND LEVEL			
TOTAL UNITS	**376**	**35**	**411**
BEDROOMS / UNIT	1	2	
TOTAL BEDROOMS	376	70	446



BASE PROJECT SECTION



PLAN AT ROOF LEVEL



PLAN AT LEVEL 2



PLAN AT LEVEL 11



PLAN AT GROUND LEVEL



PLAN AT LEVELS 3-10



PLAN AT PARKING LEVEL P1

BASE PROJECT PLANS

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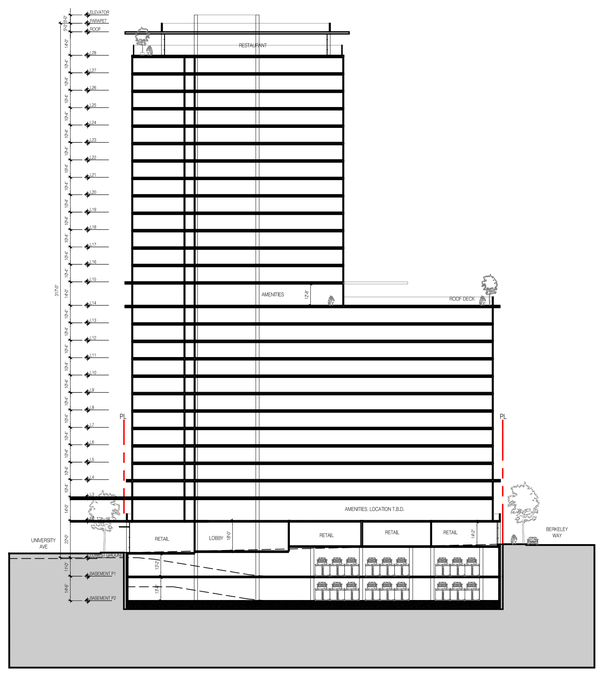
DENSITY BONUS
BASE PROJECT

A0.2A

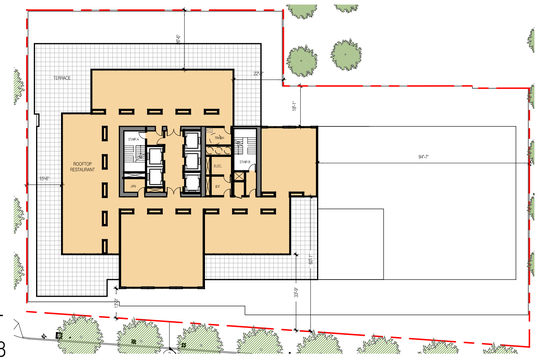
DENSITY BONUS TABLE

Base Project	Base	Base # Units	% VLI units	# VLI Units*	Bonus %	# DB Units	Maximum DB Project
sq. ft. - see calculation below	base project area / proposed avg. unit size	Base Units (rounds up)	VLI = Very Low Income <50 AMI	% VLI x Base # Units (rounds up)		%Bonus x Base # Units (rounds up)	Base + Bonus # Units
270,697	410.30	411	14%	58	46.25%	191	602

Base Project				Proposed Density Bonus Project		
Res GFA	Comm. GFA	Units	Floor	Res GFA	Comm. GFA	Units
			Level 28		7,800	
			Level 27	11,980		19
			Level 26	11,980		19
			Level 25	11,980		19
			Level 24	11,980		19
			Level 23	11,980		19
			Level 22	11,980		19
			Level 21	11,980		19
			Level 20	11,980		19
			Level 19	11,980		19
			Level 18	11,980		19
			Level 17	11,980		19
			Level 16	11,980		19
			Level 15	11,980		19
			Level 14	11,980		11
			Level 13	17,862		31
			Level 12	17,862		31
18,430	7,800	30	Level 11	17,862		31
26,230		45	Level 10	17,862		31
26,230		45	Level 9	17,862		31
26,230		45	Level 8	17,862		31
26,230		45	Level 7	17,862		31
26,230		45	Level 6	17,862		31
26,230		45	Level 5	17,862		31
26,230		45	Level 4	17,862		31
26,230		45	Level 3	17,862		31
26,230		21	Level 2	17,677		
15,922	8,342		Level 1	12,461	8,342	
275			Basement P1	424		
			Basement P2	424		
270,697	**16,142**	**411**	**Total**	**395,188**	**16,142**	**599**
659			**Avg. Unit Size**	**660**		



PROPOSED PROJECT SECTION



PLAN AT LEVEL 28



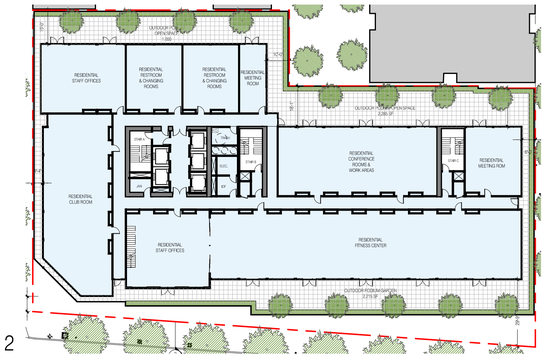
PLAN AT LEVELS 15-27



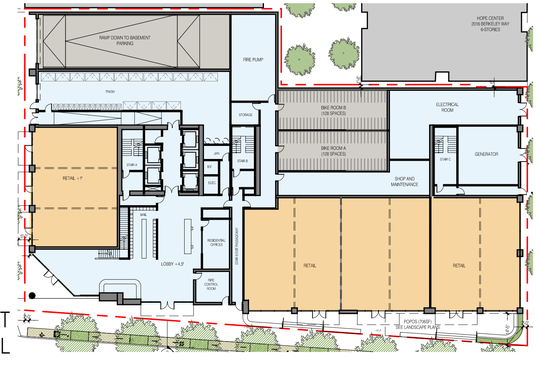
PLAN AT LEVEL 14



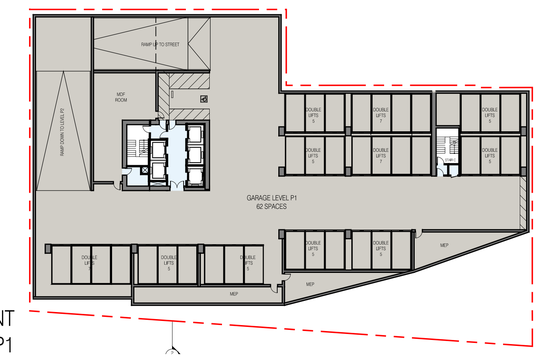
PLAN AT LEVELS 3-13



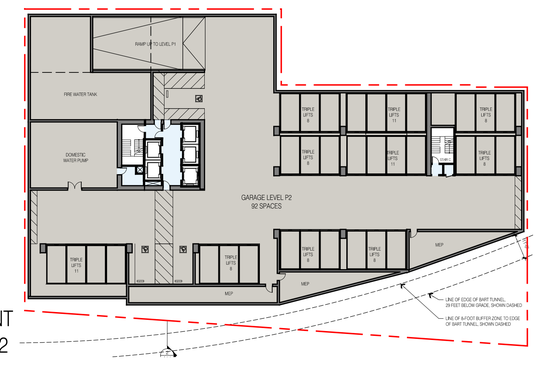
PLAN AT LEVEL 2



PLAN AT GROUND LEVEL



PLAN AT BASEMENT PARKING LEVEL P1



PLAN AT BASEMENT PARKING LEVEL P2

PROPOSED PROJECT PLANS

TRACHTENBERG ARCHITECTS

2421 Fourth Street
Berkeley, California 94710
510.649.1414
www.TrachtenbergArch.com

1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
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JOB: 2209

SHEET:

DENSITY BONUS PROPOSED PROJECT

A0.2B

PROPOSED PROJECT AREA AND UNIT CALCULATIONS

Calculation of the Final Proposed Residential Unit Floor Area:

Floor	Proposed Project Res. Unit Area	Proposed Residential Studios	Proposed Residential 2Bedrooms
28th			
27th	8,364	15	4
26th	8,364	15	4
25th	8,364	15	4
24th	8,364	15	4
23rd	8,364	15	4
22nd	8,364	15	4
21st	8,364	15	4
20th	8,364	15	4
19th	8,364	15	4
18th	8,364	15	4
17th	8,364	15	4
16th	8,364	15	4
15th	8,362	15	4
14th	5,042	8	3
13th	12,953	26	5
12th	12,953	26	5
11th	12,953	26	5
10th	12,953	26	5
9th	12,953	26	5
8th	12,953	26	5
7th	12,953	26	5
6th	12,953	26	5
5th	12,953	26	5
4th	12,953	26	5
3rd	12,953	26	5
2nd	-	0	0
1st		0	0
Final Proposed Residential Unit Floor Area	**256,255**	**489**	**110**
Final Proposed Residential Unit Numbers	**599**	82%	18%

Calculation of Base Project Residential Floor Area:

Final Proposed DB Residential Unit Floor Area	256,255
	/
One plus the DB % (1 + 46.25%)	1.4625
	=
Base Project Residential Unit Floor Area	175,217

Calculation of the Affordable Housing Fee:

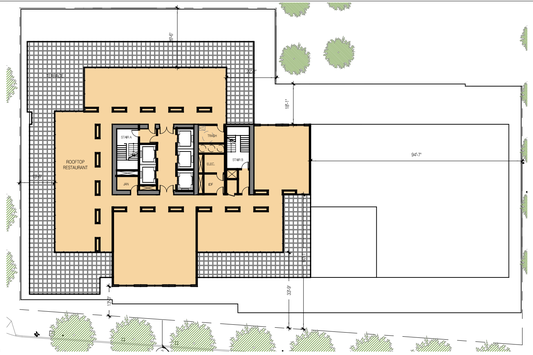
A	Total Base Project Residential Unit Floor Area	175,217
B	Total Base Project Units	411
C	Total BMR Requirements (20% of Base)	82.2
D	Total BMR Units Proposed	58
	Fee per Square Foot	$56.25
		X
	Total Base Project Residential Unit Floor Area	175,217
		X
	In Lieu Fee Percentage Calculation (C-D)/C)	29.4%
		=
	Total Fee Due	$2,901,633.45

LEGEND

- DWELLING UNIT RUFA
- RESIDENTIAL AMENITIES
- MISC. (MEP)
- COMMERCIAL

PROPOSED PROJECT RESIDENTIAL UNIT FLOOR AREA DIAGRAM

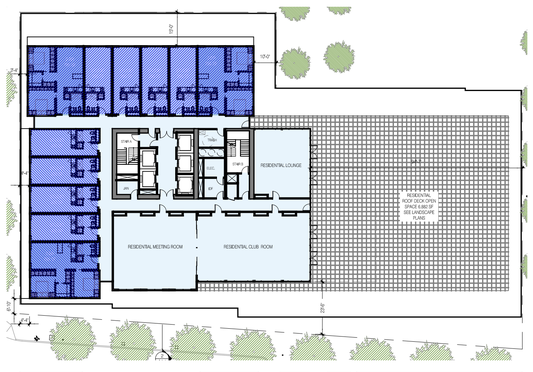
PLAN AT LEVEL 28



PLAN AT LEVELS 15-27



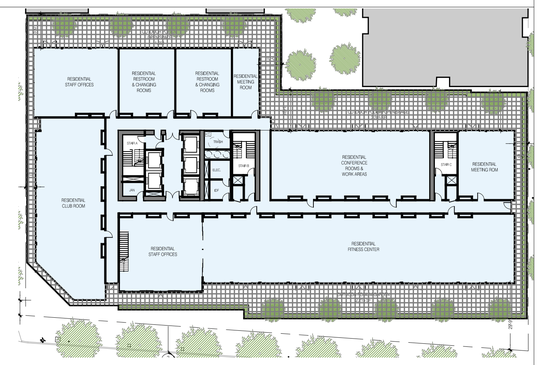
PLAN AT LEVEL 14



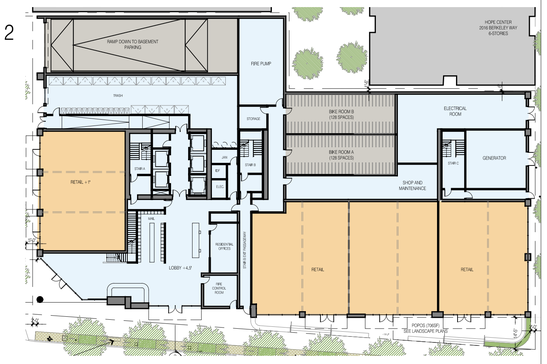
PLAN AT LEVELS 3-13



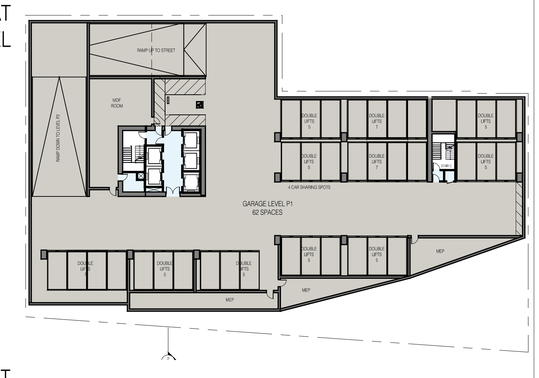
PLAN AT LEVEL 2



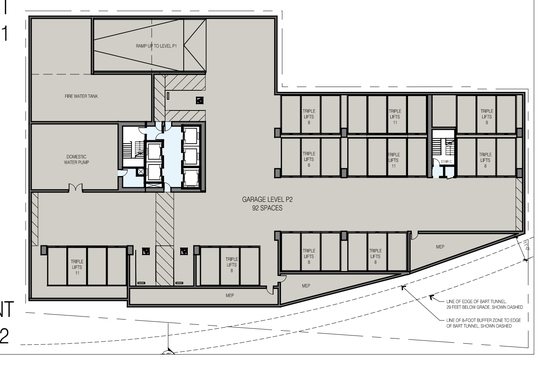
PLAN AT GROUND LEVEL



PLAN AT BASEMENT PARKING LEVEL P1



PLAN AT BASEMENT PARKING LEVEL P2



PROPOSED PROJECT PLANS

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JOB: 2209

SHEET:

PRELIMINARY AHCP DIAGRAMS

A0.2C

WINTER SOLSTICE
DEC 21ST:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

WINTER SOLSTICE
DEC 21ST:
NOON

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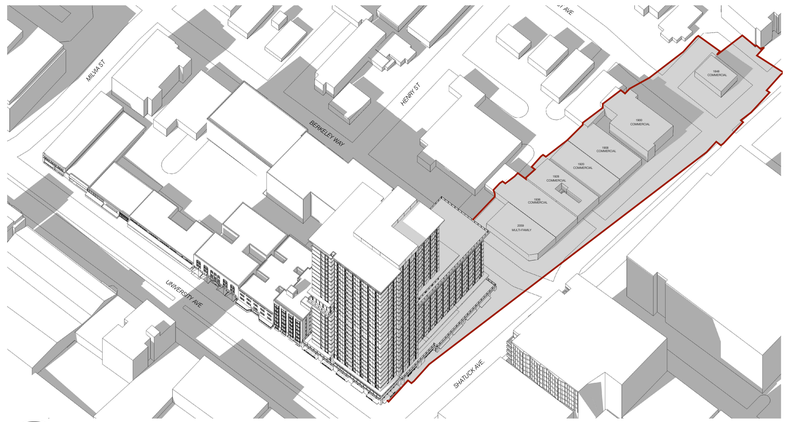

4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

WINTER SOLSTICE
DEC 21ST:
2-HRS AFTER SUNRISE (AM)

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2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

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JOB: 2209

SHEET:
SHADOW STUDIES
DECEMBER 21ST

A0.4A

SUMMER SOLSTICE
JUN 21ST:
2-HRS BEFORE SUNSET (PM)

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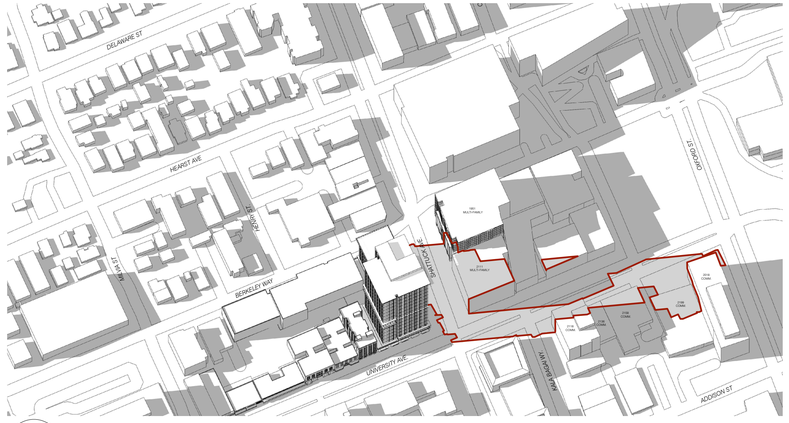

6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

N

SUMMER SOLSTICE
JUN 21ST:
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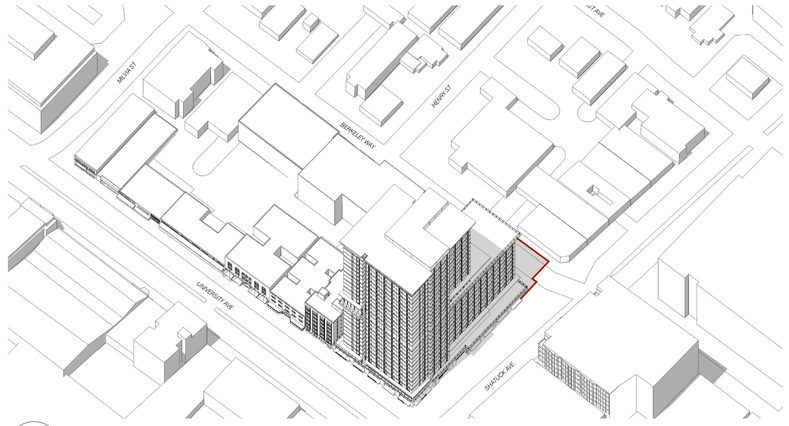

4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

N

SUMMER SOLSTICE
JUN 21ST:
2-HRS AFTER SUNRISE (AM)

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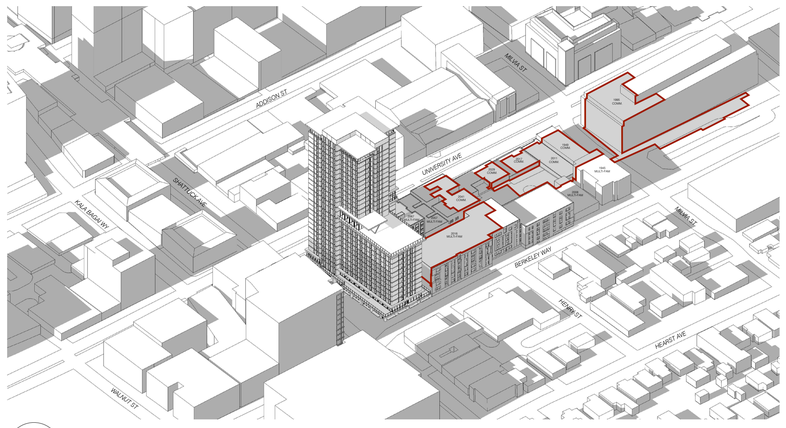

2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

N

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JOB: 2209

SHEET:

SHADOW STUDIES
JUNE 21ST

A0.4B

CURRENT
FEBRUARY 15TH:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

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6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

N

CURRENT
FEBRUARY 15TH:
NOON

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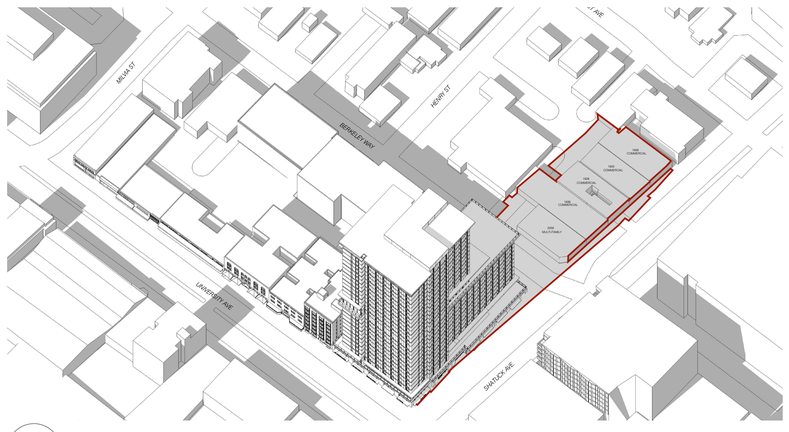

4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

N

CURRENT
FEBRUARY 15TH:
2-HRS AFTER SUNRISE (AM)

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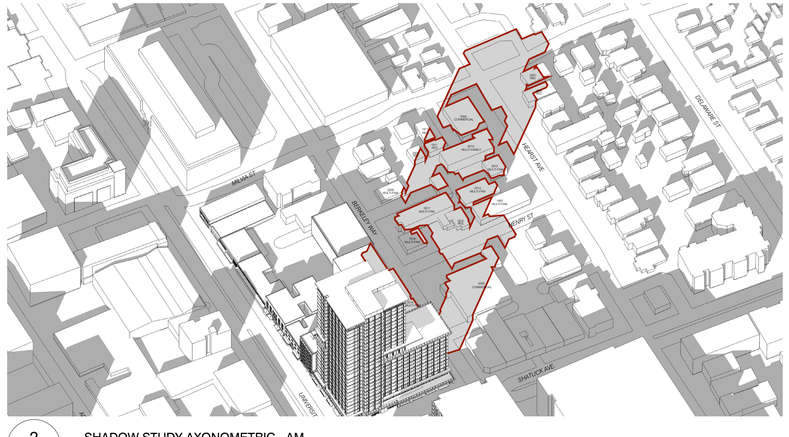

2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

N

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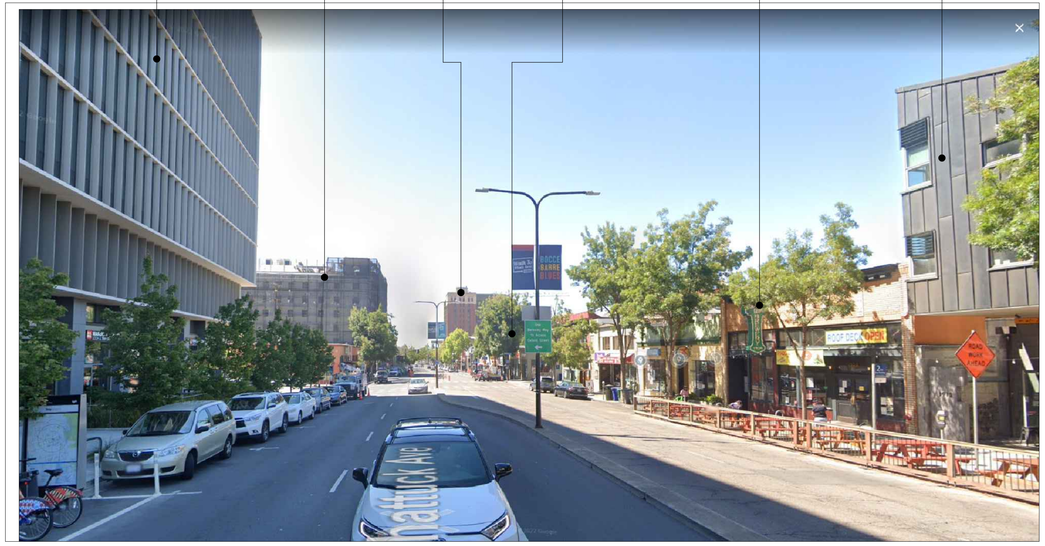
JOB: 2209

SHEET:

SHADOW STUDIES
FEB 15TH

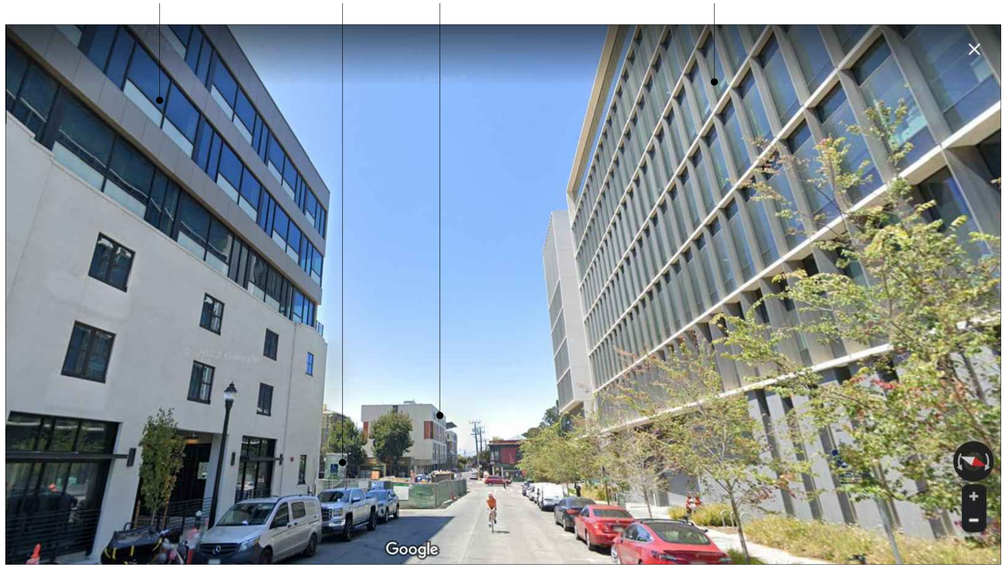
A0.4C

2121 BERKELEY WAY (8-STORY COMMERCIAL) | 1987 SHATTUCK (8-STORY RESIDENTIAL) | 2160 SHATTUCK (12-STORY COMMERCIAL) | PROJECT SITE | 1920 SHATTUCK TRIPLE ROCK BREWING | 1908 SHATTUCK (3-STORY RESIDENTIAL)



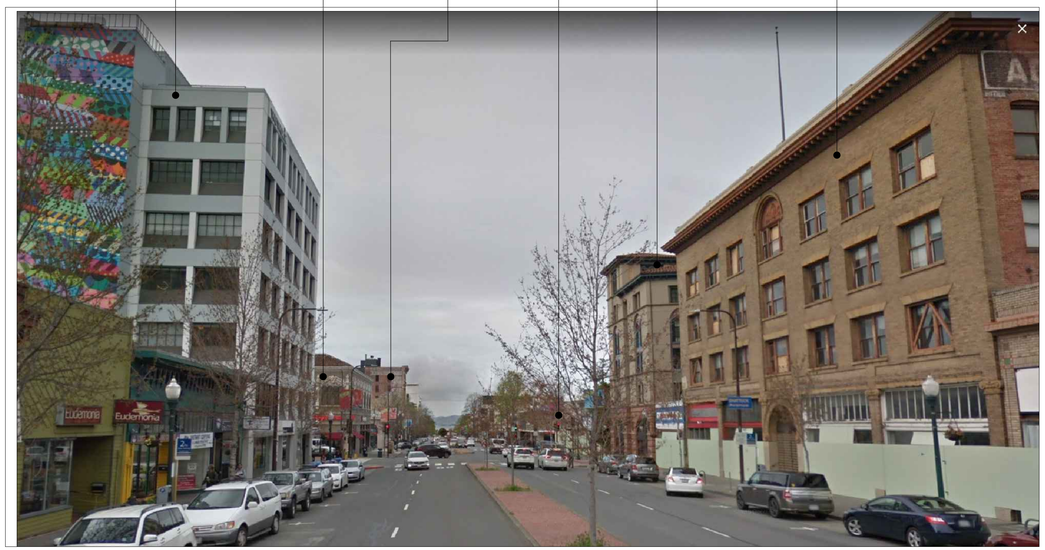
4 - VIEW FROM SHATTUCK LOOKING SOUTH

2120 BERKELEY WAY (6-STORY COMMERCIAL) | PROJECT SITE | 2012 BERKELEY WAY (6-STORY RESIDENTIAL) | GRADUATE SCHOOL OF EDUCATION (8-STORY COMMERCIAL)



2 - VIEW FROM BERKELEY WAY LOOKING WEST

2015 KALA BAGAI (7-STORY COMMERCIAL) | 2000 KALA BAGAI (2-STORY COMMERCIAL) | 2054 UNIVERSITY (6-STORY COMMERCIAL) | PROJECT SITE | 1987 SHATTUCK (6-STORY RESIDENTIAL) | 2125 UNIVERSITY (4-STORY RESIDENTIAL)



3 - VIEW FROM UNIVERSITY LOOKING WEST

PROJECT SITE



1 - GOOGLE EARTH BIRD'S EYE CONTEXT VIEW

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JOB: 2209

SHEET:

SITE CONTEXT PHOTOS

A0.5

TITLE REPORT (1950 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170261.36–JM, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR1"

TITLE TO SAID ESTATE IS VESTED IN: (1950 SHATTUCK)

JILLIAR, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1950 SHATTUCK)

FEE

LEGAL DESCRIPTION (1950 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE WESTERN LINE OF SHATTUCK AVENUE, WITH THE SOUTHERN LINE OF BERKELEY WAY, AS SAID AVENUE AND WAY ARE SHOWN ON THE MAP HEREINAFTER REFERRED TO; RUNNING THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE, 60.06 FEET; THENCE WESTERLY PARALLEL WITH SAID LINE OF BERKELEY WAY, 109 FEET, MORE OR LESS, TO THE EASTERLY BOUNDARY LINE OF THE LAND DESCRIBED IN THE DEED EXECUTED BY F. D. CHASE AND ATLANTA J. CHASE, HIS WIFE, TO JACOB BAUML, DATED JULY 28, 1922, AND RECORDED IN LIBER 324 OF OFFICIAL RECORDS, AT PAGE 72, ALAMEDA COUNTY RECORDS; THENCE AT RIGHT ANGLES NORTHERLY ALONG SAID LAST NAMED BOUNDARY LINE 35 FEET, MORE OR LESS, TO THE SOUTHERN BOUNDARY LINE OF LOT 55, AS SAID LOT IS SHOWN ON THE SAID MAP; THENCE AT RIGHT ANGLES EASTERLY 8 INCHES; THENCE AT RIGHT ANGLES NORTHERLY PARALLEL WITH THE WESTERLY BOUNDARY LINE OF SAID LOT 55, AFORESAID, 25 FEET TO THE SOUTHERN LINE OF BERKELEY WAY; THENCE EASTERLY ALONG SAID LINE OF BERKELEY WAY, 112.30 FEET TO THE POINT OF BEGINNING.

BEING PORTIONS OF LOTS NOS. 55, 56 AND 57, AS SAID LOTS ARE DELINEATED AND AS DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "MAP OF COLLEGE TRACT, BERKELEY," FILED JANUARY 31, 1890, IN LIBER 9 OF MAPS, PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

APN: 057–2053–001

EXCEPTIONS TO TITLE (1950 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS:, DISTRICT NO 2014–1, FOR CLEAN ENERGY DISCLOSED BY : ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR1 EXC. 3 – NOT PLOTTABLE).
2. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, RECORDED MAY 16, 1966 IN BOOK 1768 OF OFFICIAL RECORDS, PAGE 944 UNDER RECORDER'S SERIAL NUMBER AY61475, AFFECTS A PORTION (PTR1 EXC. 5 – PLOTTED).

TITLE REPORT (1974 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170261.35–JM, EFFECTIVE DATE SEPTEMBER 26, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR2"

TITLE TO SAID ESTATE IS VESTED IN: (1974 SHATTUCK)

1974 SHATTUCK AVENUE, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1974 SHATTUCK)

FEE

LEGAL DESCRIPTION (1974 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WESTERN LINE OF SHATTUCK AVENUE, DISTANT THEREON SOUTHERLY, 60.6 FEET FROM THE POINT OF INTERSECTION THEREOF, WITH THE SOUTHERN LINE OF BERKELEY WAY, AS SAID AVENUE AND WAY ARE SHOWN ON THE MAP HEREIN REFERRED TO; RUNNING THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE, 49.20 FEET; THENCE WESTERLY AND PARALLEL WITH SAID LINE OF BERKELEY WAY, 105.50 FEET, MORE OR LESS, TO A POINT WHICH WOULD BE INTERSECTED BY A LINE DRAWN SOUTHERLY FORM AND AT RIGHT ANGLES TO SAID LINE BERKELEY WAY FROM A POINT DISTANT THEREON, 113.30 FEET WESTERLY FROM THE WESTERN LINE OF SHATTUCK AVENUE; THENCE AT RIGHT ANGLES NORTHERLY, 49 FEET, MORE OR LESS, TO A POINT WHICH WOULD BE INTERSECTED BY A LINE DRAWN WESTERLY FROM SAID POINT OF BEGINNING AND PARALLEL WITH BERKELEY WAY; THENCE EASTERLY ALONG SAID PARALLEL LINE, 109 FEET, MORE OR LESS, TO THE PONT OF BEGINNING.

BEING A PORTION OF LOTS 57 AND 58, AS SAID LOTS ARE SHOWN ON THE "MAP OF THE COLLEGE TRACT, BERKELEY", FILED JANUARY 31, 1890, IN BOOK 9 OF MAPS, PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

APN: 057–2053–002

EXCEPTIONS TO TITLE (1974 SHATTUCK)

1. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING, GRANTED TO BAY AREA RAPID TRANSIT DISTRICT, A RAPID TRANSIT DISTRICT, FOR UNDERGROUND RAPID TRANSIT TUNNEL FACILITIES, RECORDED SEPTEMBER 23, 1966 IN BOOK 1846 OF OFFICIAL RECORDS, PAGE 53 UNDER RECORDER'S SERIAL NUMBER AY–111314 (PTR2 EXC. 4 – PLOTTED)

TITLE REPORT (1984 & 1998 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170254.53–JM, 1ST UPDATE, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR3"

TITLE TO SAID ESTATE IS VESTED IN: (1984 & 1998 SHATTUCK)

FIFTH KEIL CO., A CALIFORNIA CORPORATION

THE ESTATE OR INTEREST IN THE LAND IS: (1984 & 1998 SHATTUCK)

FEE

LEGAL DESCRIPTION (1984 & 1998 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

COMMENCING AT THE POINT OF INTERSECTION OF THE NORTHERN LINE OF UNIVERSITY AVENUE WITH THE WESTERN LINE OF SHATTUCK AVENUE; AS SAID AVENUES NOW EXISTS; THENCE WESTERLY ALONG THE NORTHERN LINE OF UNIVERSITY AVENUE 79.02 FEET; THENCE AT RIGHT ANGLES NORTHERLY 114.68 FEET, MORE OR LESS, TO THE SOUTHERN LINE OF THE LAND NOW OR FORMERLY OF JOHN H. BOHLIG AND LOTTA BOHLIG; THENCE EASTERLY AND ALONG SAID LINE 87.07 FEET TO THE WESTERN LINE OF SHATTUCK AVENUE; THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE 114.97 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

APN'S: 057–2053–003–01 AND 057–2053–003–02

EXCEPTIONS TO TITLE (1984 & 1998 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014–1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR3 EXC. 4 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO PBID–2016, FOR BERKELEY DOWNTOWN PBID–2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR3 EXC. 5 – NOT PLOTTABLE).
3. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, DATED APRIL 6, 1967, RECORDED MAY 10, 1967 IN REEL 1961 OF OFFICIAL RECORDS, IMAGE 330 UNDER RECORDER'S SERIAL NUMBER AZ 43339, AFFECTS A PORTION OF THE PREMISES; THE PRESENT OWNERSHIP OF SAID EASEMENT AND OTHER MATTERS AFFECTING THE INTERESTS THERETO, IF ANY, ARE NOT SHOWN HEREIN (PTR3 EXC. 7 – PLOTTED).
4. A NOTICE AS FOLLOWS, ENTITLED NOTICE OF ASSESSMENT – DOWNTOWN BERKELEY PBID, BY CITY OF BERKELEY, DATED AUGUST 25, 2011, RECORDED AUGUST 30, 2011 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2011248358 (PTR3 EXC. 8 – NOT PLOTTABLE).

TITLE REPORT (2701 UNIVERSITY)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170261.37–JM, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR4"

TITLE TO SAID ESTATE IS VESTED IN: (2701 UNIVERSITY)

EDITH WIESER GLYNN, TRUSTEE OF THE EDITH WIESER GLYNN TRUST

THE ESTATE OR INTEREST IN THE LAND IS: (2701 UNIVERSITY)

FEE

LEGAL DESCRIPTION (2701 UNIVERSITY)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTHERN LINE OF BERKELEY WAY, AS SHOWN UPON THE MAP HEREINAFTER REFERRED TO, DISTANT THEREON ONE HUNDRED FIFTEEN AND 46/100 FEET WESTERLY FROM THE INTERSECTION THEREOF WITH THE WESTERN LINE OF SHATTUCK AVENUE AS ESTABLISHED BY BOARD OF TRUSTEES OF THE TOWN OF BERKELEY, JAN. 18, 1892, BY ORDINANCE NO. 387, SAID POINT BEING ONE FOOT EASTERLY ON SAID LINE OF BERKELEY WAY FROM THE LINE DIVIDING LOTS NUMBERED 54 AND 55 ACCORDING TO SAID MAP; RUNNING THENCE WESTERLY ALONG SAID LINE OF BERKELEY WAY THIRTY–NINE FEET TO THE LINE DIVIDING LOTS NUMBERED 55 AND 54 ACCORDING TO SAID MAP; THENCE AT RIGHT ANGLES SOUTHERLY ALONG SAID LINE ONE HUNDRED TEN FEET; THENCE AT RIGHT ANGLES EASTERLY THREE AND 73/100 FEET; THENCE AT RIGHT ANGLES SOUTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET TO THE NORTHERN LINE OF UNIVERSITY AVENUE; THENCE EASTERLY ALONG SAID LINE OF UNIVERSITY AVENUE FIFTY–FIVE AND 9/10 FEET; THENCEN AT RIGHT ANGLES NORTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET; THENCE AT RIGHT ANGLES WESTERLY TWENTY– ONE AND 63/100 FEET; THENCE AT RIGHT ANGLES NORTHERLY EIGHTY–FIVE FEET TO THE SOUTHWESTERN CORNER OF LOT NUMBERED 55, ACCORING TO SAID MAP; THENCE AT RIGHT ANGLES EASTERLY ALONG THE SOUTHERN LINE OF SAID LOT ONE FOOT AND THENCE AT RIGHT ANGLES NORTHERLY TWENTY–FIVE FEET TO THE POINT OF BEGINNING.

BEING LOT NUMBERED 54, THE WESTERN ONE FOOT OF LOT NUMBERED 55, A PORTION OF LOT NUMBERED 6 AND A PARCEL ADJOINING SAID LOT NUMBER 6 ON THE EAST, AS ALL OF SAID LOTS ARE DELINEATED AND SO DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "MAP OF COLLEGE TRACT, BERKELEY", FILED MAY 24,1877, IN LIBER 5 OF MAPS AT PAGE 14, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

EXCEPTING THEREFROM THAT PORTION DESCRIBED IN THE DEED TO THE CITY OF BERKELEY, RECORDED SEPTEMBER 29,1955, BOOK 7798, PAGE 23, AS INSTRUMENT NO. AK–105619, OFFICIAL RECORDS.

APN: 057–2053–004–02

EXCEPTIONS TO TITLE (2701 UNIVERSITY)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014–1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR4 EXC. 3 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO CITY OF BERKELEY–DOWNTOWN PROPERTY AND BUSINESS IMPROVEMENT DISTRICT, FOR BERKELEY DOWNTOWN PBID–2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR4 EXC. 5 – NOT PLOTTABLE).
3. TERMS AND CONDITIONS CONTAINED IN THE EDITH WIESER GLYNN TRUST AS DISCLOSED BY GRANT DEED, RECORDED MAY 22, 1984 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 1984099372 (PTR4 EXC. 6 – NOT PLOTTABLE).
4. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED NONDISTURBANCE AND ATTORNMENT AGREEMENT, EXECUTED BY EDITH GLYNN AND T.Y.P. RESTAURANT GROUP, INC., A DELAWARE CORPORATION DBA TENDER GREENS, RECORDED MARCH 22, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016066695 (PTR4 EXC. 7 – NOT PLOTTABLE).
5. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED MINOR ENCROACHMENT PERMIT 17–03, EXECUTED BY EDITH W. GLYNN AND THE CITY OF BERKELEY, RECORDED MAY 24, 2017 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2017113477 (PTR 4 EXC. 8 – NOT PLOTTABLE)

NOTES

1. DATE OF FIELD SURVEY: DECEMBER 5, 9 AND 21, 2022 AS TO THE BOUNDARY AND TOPOGRAPHIC SURVEY OF THE SUBJECT PROPERTY.
2. THE UTILITIES SHOWN HEREON ARE BY SURFACE OBSERVATION AND RECORD INFORMATION ONLY AND NO WARRANTY IS GIVEN HEREIN AS TO THEIR EXACT LOCATION. IT IS THE RESPONSIBILITY OF THE DEVELOPER AND/OR CONTRACTOR TO VERIFY THE EXACT LOCATION OF THE UTILITIES WITH THE APPROPRIATE UTILITY COMPANY OR AGENCY.
3. UTILITY JURISDICTIONS / PROVIDERS ARE AS FOLLOWS:
   STORM DRAINS: CITY OF BERKELEY
   SANITARY SEWER: CITY OF BERKELEY
   WATER: EAST BAY MUNICIPAL UTILITY DISTRICT (EBMUD)
   ELECTRICITY: PACIFIC GAS & ELECTRIC CO.
   NATURAL GAS: PACIFIC GAS & ELECTRIC CO.
   TELEPHONE: AT&T
4. THERE ARE NO CEMETERIES ON OR WITHIN 100 FEET OF THE SUBJECT PROPERTY
5. THE SURVEYED PROPERTIES ARE THE SAME PROPERTIES DESCRIBED IN THE TITLE REPORT.
6. THE LEGAL DESCRIPTIONS AS SHOWN IN THE TITLE REPORTS MATHEMATICALLY CLOSE.
7. THERE IS NO OBSERVED EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL
8. THERE ARE NO WETLAND AREAS IN THE SUBJECT PROPERTIES

TABLE A NOTES

1. FOUND MONUMENTS ARE SHOWN ON THIS SHEET OF THE SURVEY.
2. THE STREET ADDRESS OF THE PROPERTY IS 1950, 1974, 1984, 1998 SHATTUCK AVENUE AND 2071 UNIVERSITY AVENUE, BERKELEY, CA 94704
3. FLOOD ZONE DESIGNATION: THE PREMISES ARE LOCATED IN ZONE "X" (NON–SHADED) DEFINED AS "AREAS OF MINIMAL FLOOD," PER FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 06001C0057G, EFFECTIVE DATE: AUGUST 3, 2009.
4. THE TOTAL GROSS LAND AREA IS:
   1950 SHATTUCK AVENUE: 6,635 SQUARE FEET +/– OR 0.152 ACRES MORE OR LESS.
   1974 SHATTUCK AVENUE: 5,264 SQUARE FEET +/– OR 0.121 ACRES MORE OR LESS
   1984 & 1998 SHATTUCK AVENUE: 9,527 SQUARE FEET +/– OR 0.219 ACRES MORE OR LESS
   2071 UNIVERSITY AVENUE: 6,411 SQUARE FEET +/– OR 0.147 ACRES MORE OR LESS
6. (A/B) ZONING REQUIREMENTS: PER THE CITY OF BERKELEY PLANNING AND ZONING DEPARTMENT, THE PROPERTIES ARE ZONED "C–DMU OUTER CORE." DEFINED AS "DOWNTOWN MIXED–USE DISTRICT."

   REFERENCE FOR "C–DMU" ZONING IS MADE HERE TO THE CITY OF BERKELEY CODE, CHAPTER 23.204.130, REGARDING PROPERTY DEVELOPMENT STANDARDS, BUILDING HEIGHT LIMITATION, MINIMUM BUILDING SETBACK AND PARKING REQUIREMENTS ARE AS FOLLOWS:

   SETBACKS
   MINIMUM FRONT: 0 FEET
   MINIMUM SIDE: 0 FEET
   MINIMUM REAR: 0 FEET

   MAXIMUM HEIGHT: 60 FEET, 75 FEET WITH USE PERMIT

   MINIMUM PARKING REQUIREMENTS: NONE REQUIRED
7. (A/B1/C) EXTERIOR DIMENSIONS AND SQUARE FOOTAGE OF BUILDING AT GROUND LEVEL, AND NUMBER OF STORIES ARE SHOWN ON SHEET 3 OF THE SURVEY.
8. SUBSTANTIAL IMPROVEMENTS OBSERVED IN THE PROCESS OF CONDUCTING THE SURVEY ARE SHOWN ON SHEET 3.
9. THERE ARE NO PARKING SPACES LOCATED ON THE SUBJECT PROPERTIES.
10. THERE ARE NO DIVISIONS OR PARTY WALLS LOCATED ON THE SUBJECT PROPERTIES WITH RESPECT TO ADJOINING PROPERTIES.
11. (A) LOCATION OF UTILITIES EXISTING ON OR SERVING THE SURVEYED PROPERTIES AS DETERMINED BY OBSERVED EVIDENCE TOGETHER WITH EVIDENCE FROM PLAN OBTAINED FROM UTILITY COMPANIES OR PROVIDED BY CLIENT ARE SHOWN ON SHEET 3.
13. NAMES OF ADJOINING OWNERS OF PLATTED LANDS ARE SHOWN ON SHEET 2 OF THE SURVEY.
14. DISTANCE TO THE NEAREST INTERSECTING STREET IS SHOWN ON SHEET 2 OF THE SURVEY.
16. THERE IS NO OBSERVABLE EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
17. THERE IS NO OBSERVED EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
18. THERE ARE NO OFFSITE EASEMENTS TO THE SUBJECT PROPERTIES.
19. PROFESSIONAL LIABILITY INSURANCE IN THE AMOUNT OF $2,000,000 IS HELD BY THE SURVEYOR.

BASIS OF BEARINGS

THE BASIS OF BEARINGS OF THIS SURVEY IS TAKEN BETWEEN THE TWO FOUND STREET MONUMENTS ALONG BERKELEY WAY BETWEEN MILVIA STREET AND HENRY STREET AS SHOWN ON PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA. TAKEN AS NORTH 81°54'40" EAST.

REFERENCES

(R1) PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R2) PARCEL MAP P.M. 10119, FILED SEPTEMBER 28, 2016 IN BOOK 334 OF PARCEL MAPS, AT PAGES 21 TO 22, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R3) TRACT MAP T.M. 7888, FILED SEPTEMBER 03, 2009 IN BOOK 305 OF MAPS, AT PAGES 18 TO 20 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R4) UNRECORDED MAP, CITY OF BERKELEY CITY MONUMENT MAP, PLAN 1305, 306C–057.

(R5) "MAP OF THE COLLEGE TRACT, BERKELEY", FILED JANUARY 31, 1880 IN BOOK 9 OF MAPS, AT PAGES 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R6) GRANT DEED, RECORDED APRIL 15, 1966 IN REEL 1749, IMAGE 918, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R7) GRANT DEED, RECORDED JUNE 11, 2014 AS DOCUMENT NUMBER 2014–140054, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R8) GRANT DEED, RECORDED MAY 18, 2009 AS DOCUMENT NUMBER 2009–156779, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R9) DOCUMENT ENTITLED "NONDISTURBANCE AND ATTORNMENT AGREEMENT", RECORDED MARCH 22, 2016 AS DOCUMENT NUMBER 2016–068695, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

NOTES

(1) BEARING IS BASED ON THE MEAN BEARING OF THE RIGHT OF WAY LINES OF BERKELEY WAY AND UNIVERSITY AVENUE.
(2) BEARING IS BASED ON IMPROVEMENTS.
(3) (R8) HAS A DEED CALL OF 8 INCHES. IT IS BELIEVED TO BE AN ERROR. THE DISTANCE OF 1.00 FOOT PER (R1) IS BEING HELD BASED ON THE DEED CALL OF 112.30 FEET OF (R8).

SURVEYOR'S CERTIFICATE

TO VERNON A. NEFF AND BARBARA NEFF, AS TRUSTEES OF THE NEFF 2002 FAMILY TRUST; AND OLD REPUBLIC TITLE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6(A), 6(B), 7(A), 7(B1), 7(C), 8, 9, 10, 11(A), 13, 14, 16, 17, 18, AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 5, 9 AND 21, 2022.

JACQUELINE LUK P.L.S. 8934
FOR LUK & ASSOCIATES, INC.

DATE DECEMBER 23, 2022

PROFESSIONAL LAND SURVEYOR — JACQUELINE LUK — L.S. 8934 — STATE OF CALIFORNIA

SHEET INDEX

1. NOTES
2. BOUNDARY SURVEY
3. TOPOGRAPHIC SURVEY



VICINITY MAP
NOT TO SCALE

ALTA/NSPS
LAND TITLE SURVEY
OF
1950, 1974, 1984, 1998 SHATTUCK AVENUE
AND 2071 UNIVERSITY AVENUE
CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA
DECEMBER 2022

PREPARED BY
LUK AND ASSOCIATES
CIVIL ENGINEER – LAND PLANNERS – LAND SURVEYORS
738 ALFRED NOBEL DRIVE
HERCULES, CALIFORNIA 94547
(510) 724–3388

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1950-1998 (1974) SHATTUCK

Berkeley, CA

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03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL
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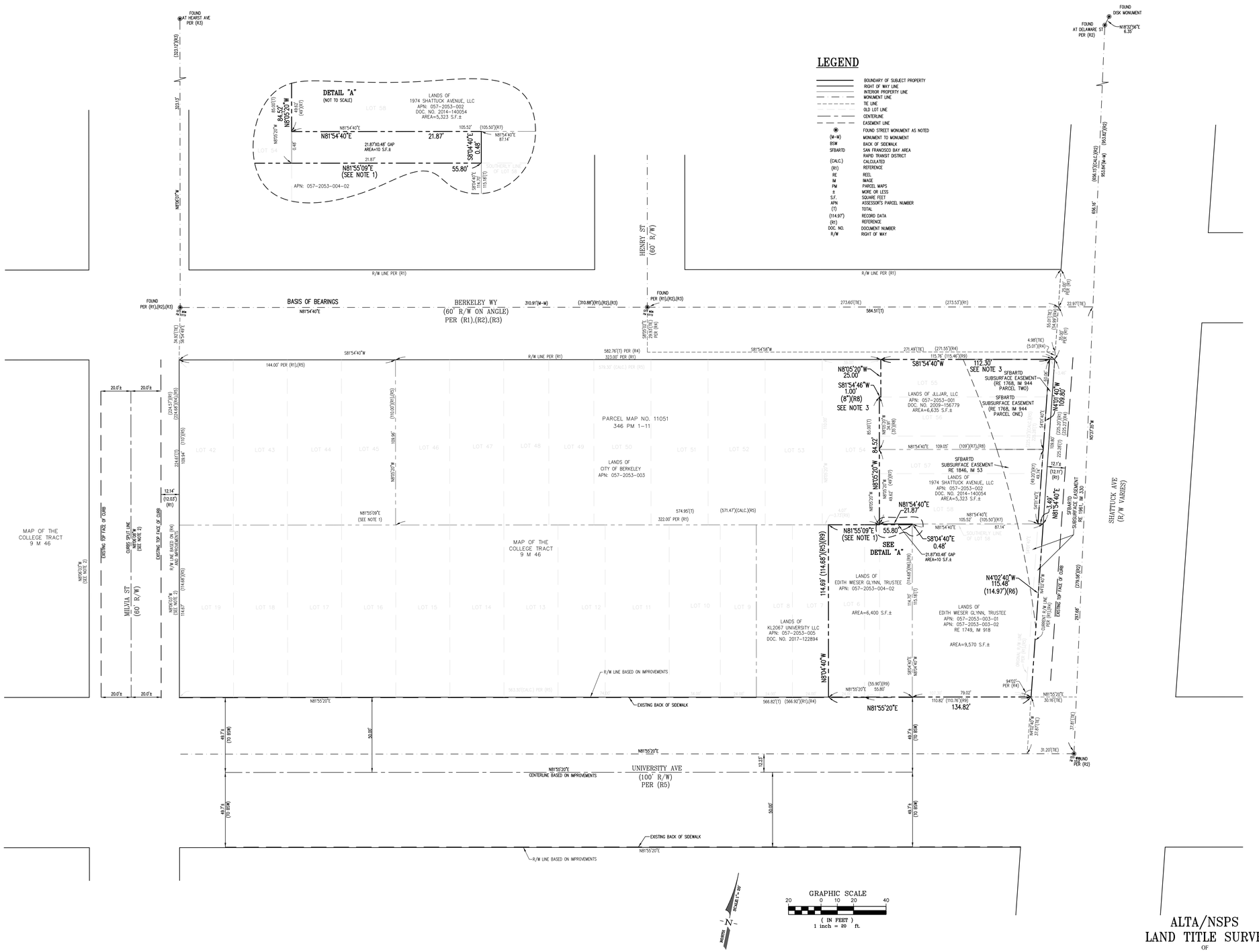
JOB: 2209

SHEET:

SURVEY

A0.6a



ALTA/NSPS
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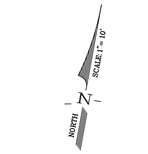
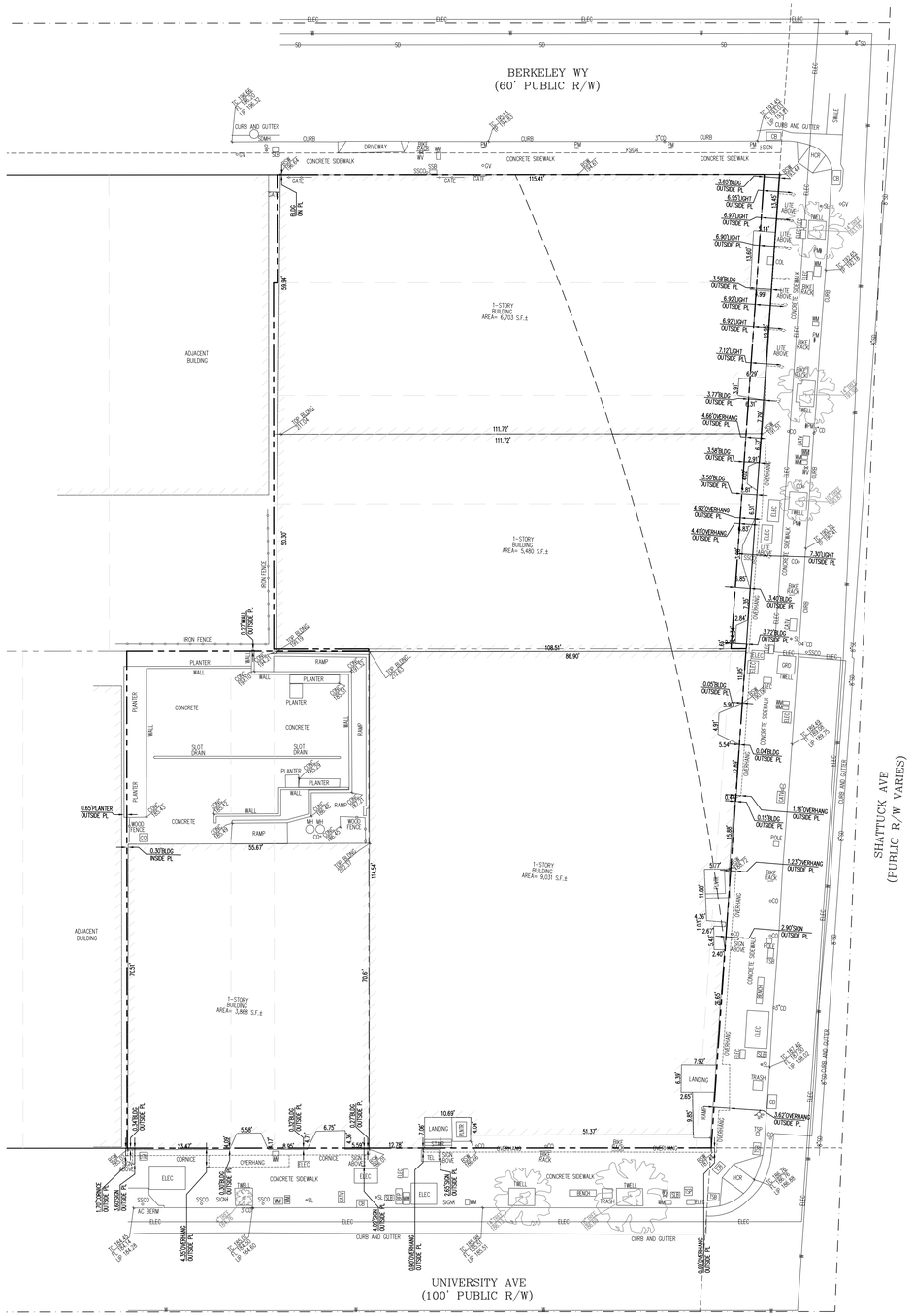
A0.6B



GRAPHIC SCALE
10 0 5 10 20
(IN FEET)
1 inch = 10 ft.



LEGEND

SYMBOLS	DESCRIPTION
	BOUNDARY OF SUBJECT PROPERTY
	RIGHT OF WAY LINE
	INTERIOR PROPERTY LINE
	MONUMENT LINE
	TIE LINE
	OLD LOT LINE
ELEC	ELECTRIC LINE
GAS	GAS LINE LINE
W	WATER LINE
SD	STORM DRAIN LINE
SS	SANITARY SEWER LINE
ELEC	ELECTRICITY BOX
AC BERM	ASPHALT BERM
SSCO	SANITARY SEWER CLEAN OUT
WM	WATER METER
HCR	HANDICAP RAMP
TWELL	TREE WELL
SL	STREET LIGHT
PLNTR	PLANTER BOX
CB	CATCH BASIN
TEL	TELECOMMUNICATION BOX
GV	GAS VALVE
SLB	STREET LIGHT BOX
CD	CURB DRAIN
CO	CLEAN OUT
BFP	BACK FLOW PREVENTER
TSB	TRAFFIC SIGNAL BOX
WV	WATER VALVE
CD	CURB DRAIN
PM	PARKING METER
COL	COLUMN
SSB	SANITARY SEWER BOX
SDMH	STORM DRAIN MAN HOLE
GRD	GROUND
SD	SLOT DRAIN
MH	MANHOLE
CONC 65.60	TOP OF CONCRETE ELEVATION
BSW 65.60	BACK OF SIDEWALK ELEVATION
TC 65.64	TOP OF CURB ELEVATION
TP 65.64	TOP OF PAVEMENT ELEVATION
FL 65.64	FLOW LINE ELEVATION
TOP BLDG 65.64	TOP OF BUILDING ELEVATION
LIP 65.60	TOP OF LIP ELEVATION
	TREE

ALTA/NSPS LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE
AND 2071 UNIVERSITY AVENUE
CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA
DECEMBER 2022

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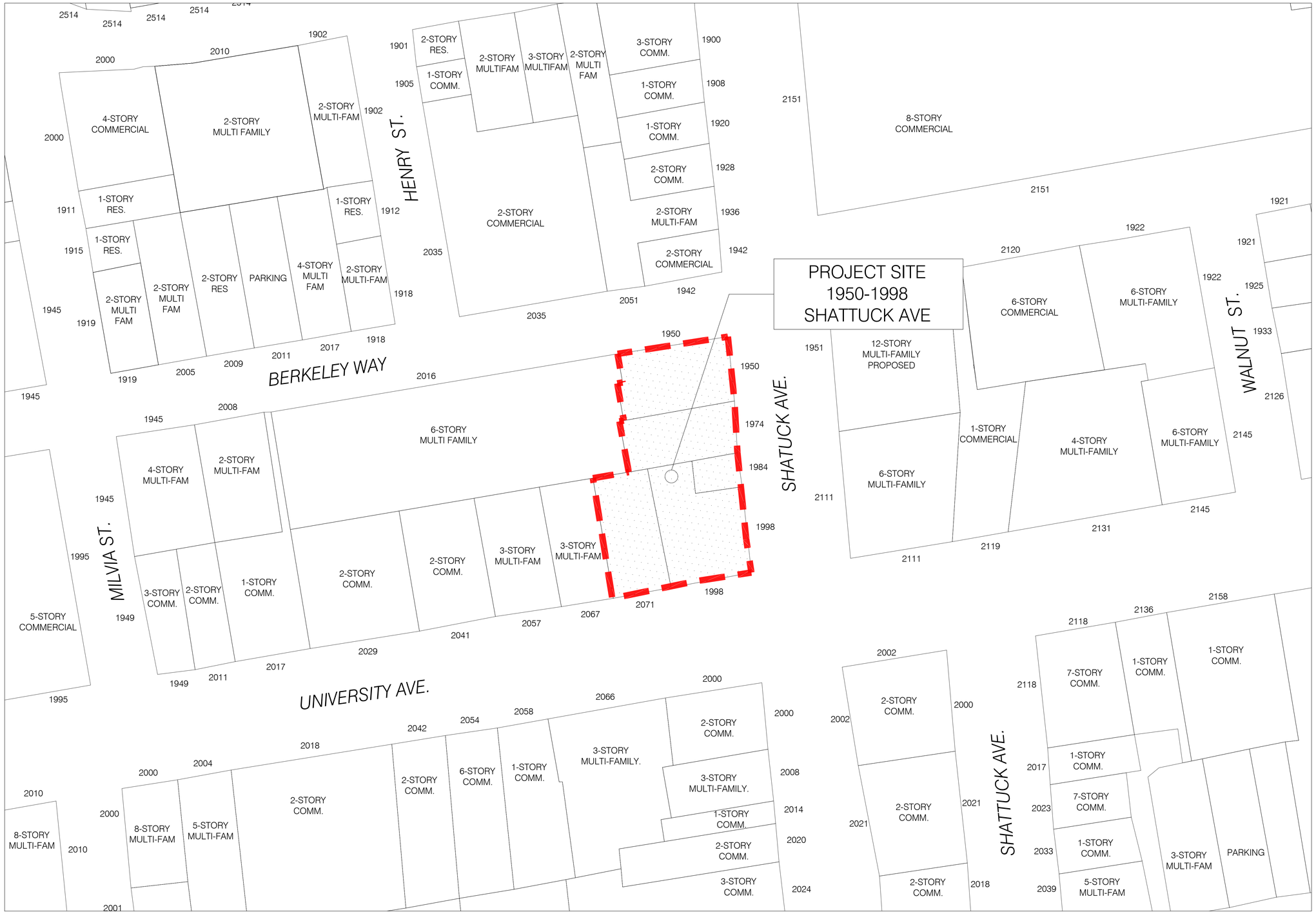

1 - VICINITY MAP
NTS

N

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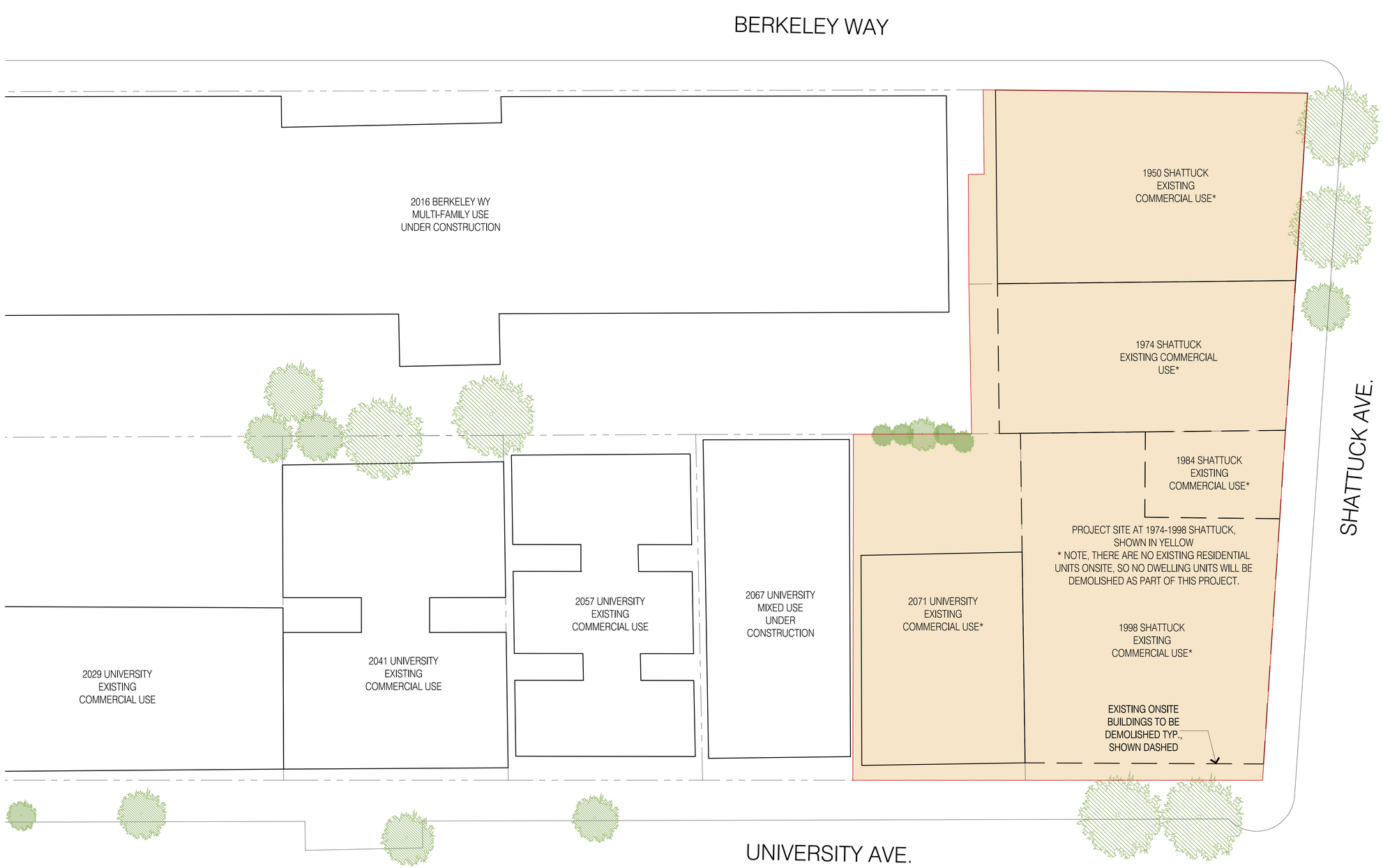
VICINITY MAP

A0.6



1 - EXISTING SITE PLAN
1/32"=1'-0" @ 11x17 1/16"=1'-0" @ 24x36

0 4 8 16 32

N

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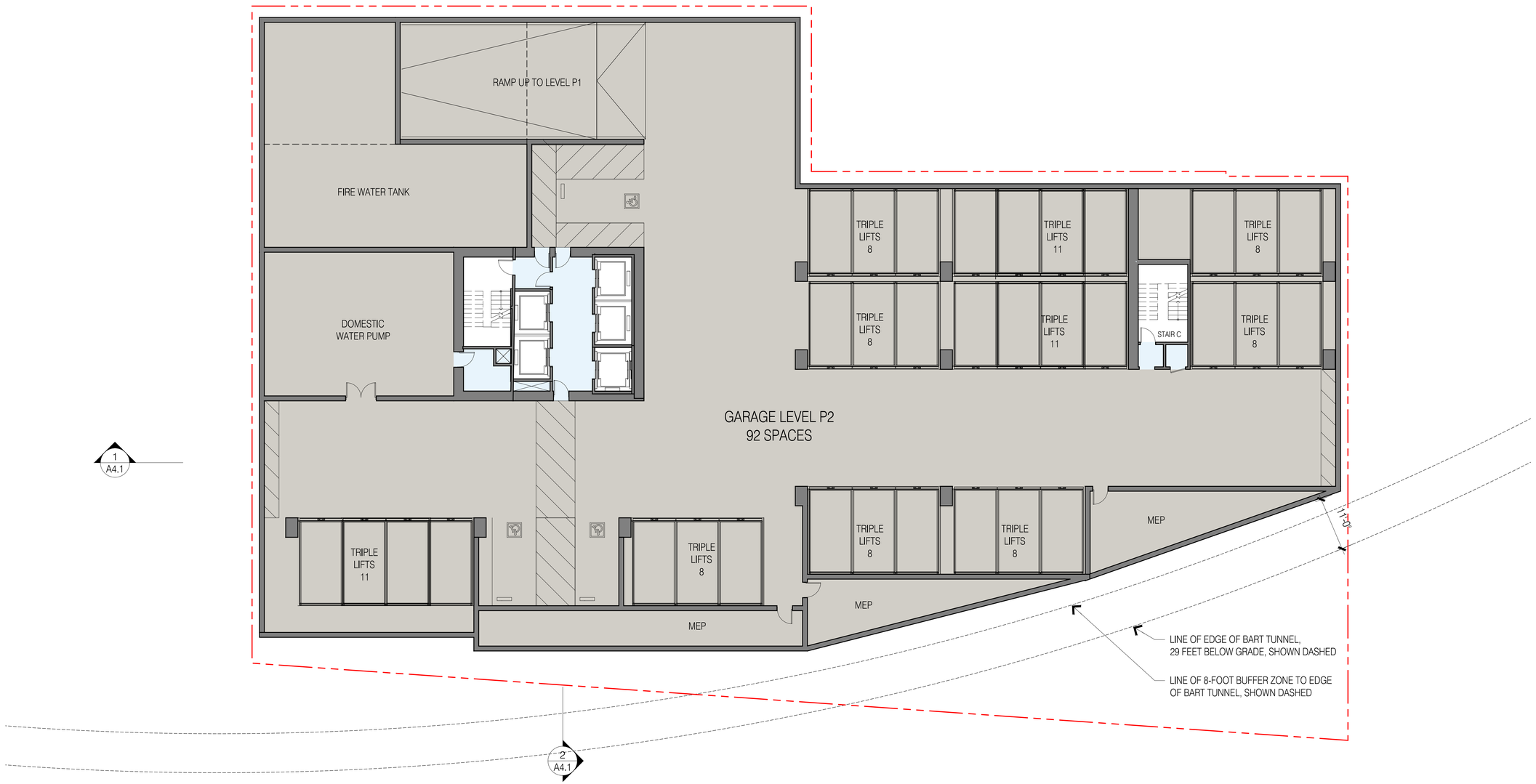
SHEET:

EXISTING
SITE PLAN

A1.0



1 / - PLAN AT BASEMENT PARKING LEVEL P2

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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SHEET:

FLOOR PLANS

A2.0a



1
-

PLAN AT BASEMENT PARKING LEVEL P1

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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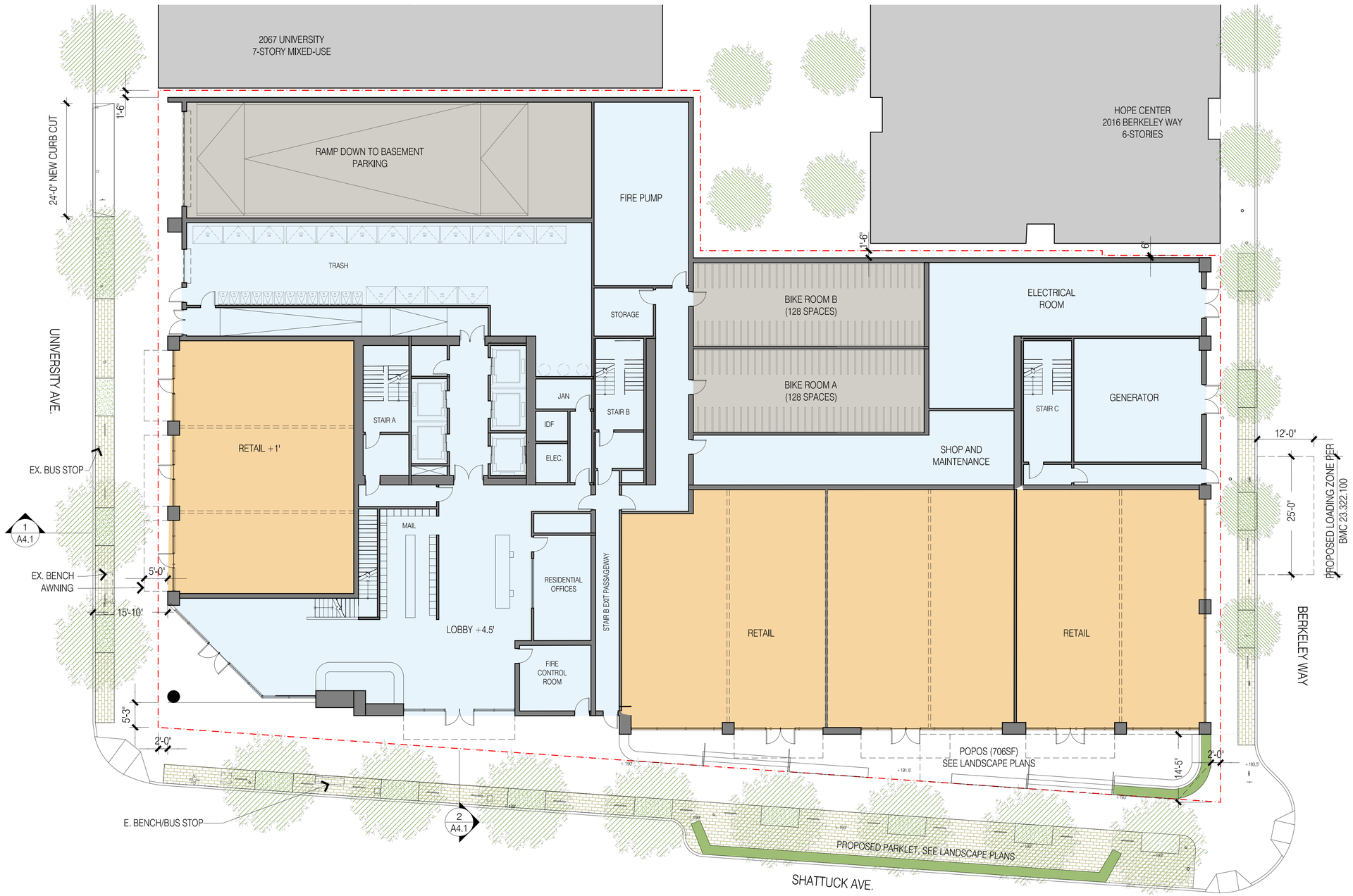
SHEET:

FLOOR PLANS

A2.0b



1
-

SITE PLAN / PLAN AT GROUND FLOOR

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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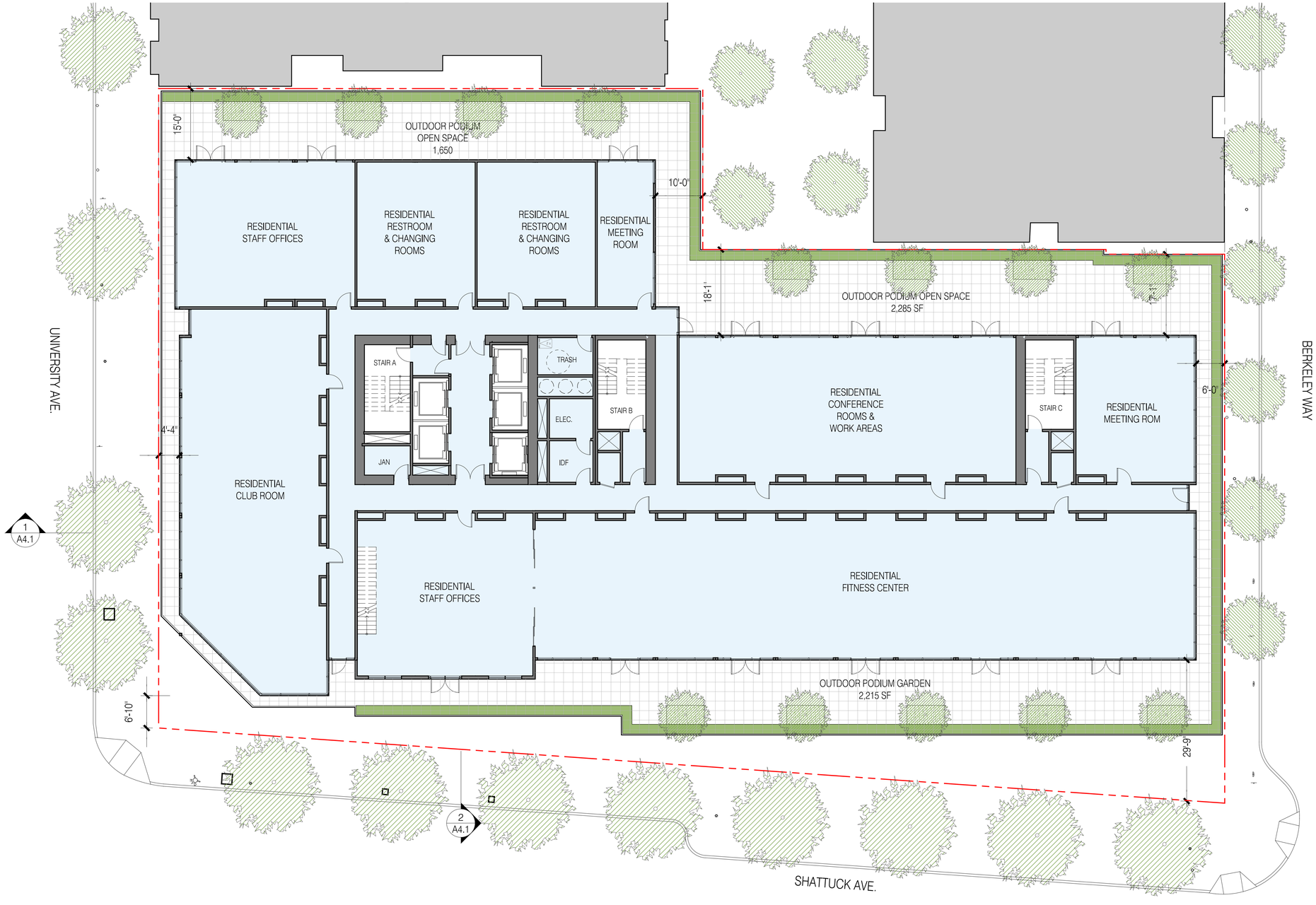
SHEET:

FLOOR PLANS

A2.1



1 - PLAN AT LEVEL 2

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

FLOOR PLANS

A2.2



1 - PLAN AT LEVELS 3-13

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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SHEET:

FLOOR PLANS

A2.3



1 PLAN AT LEVEL 14

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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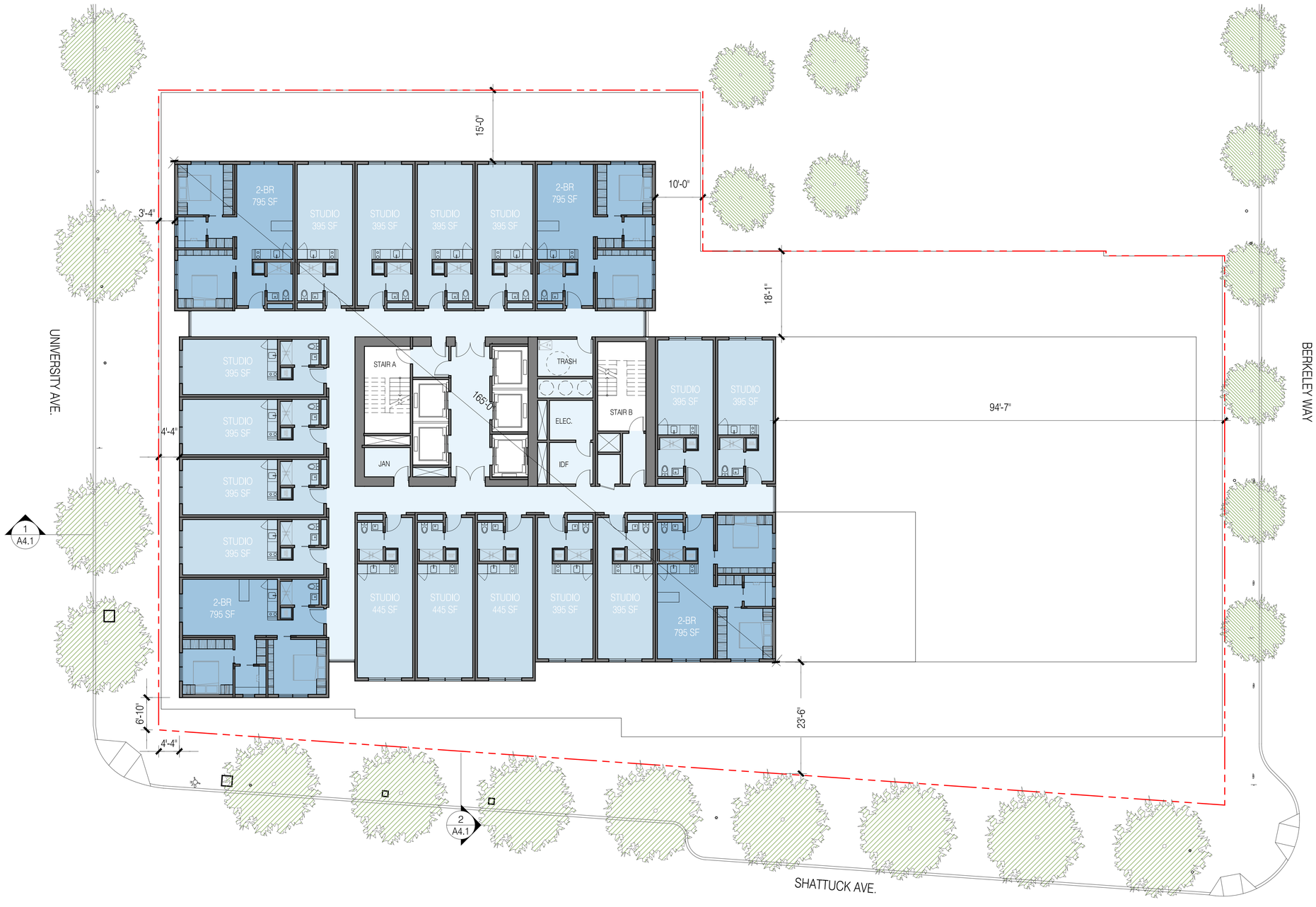
SHEET:

FLOOR PLANS

A2.4



1 PLAN AT LEVELS 15-27
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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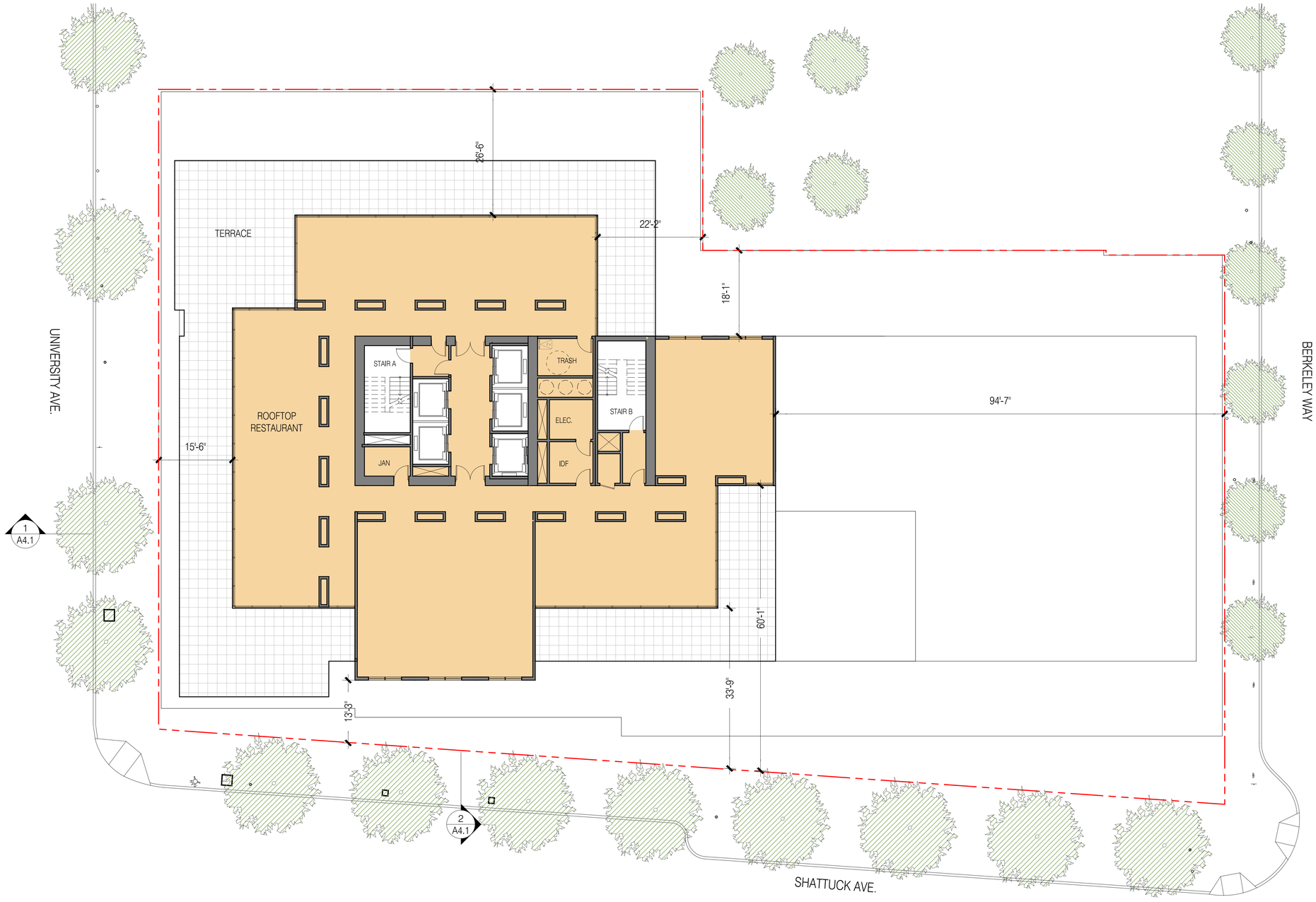
SHEET:

FLOOR PLANS

A2.5



1 - PLAN AT LEVEL 28 ROOFTOP RESTAURANT

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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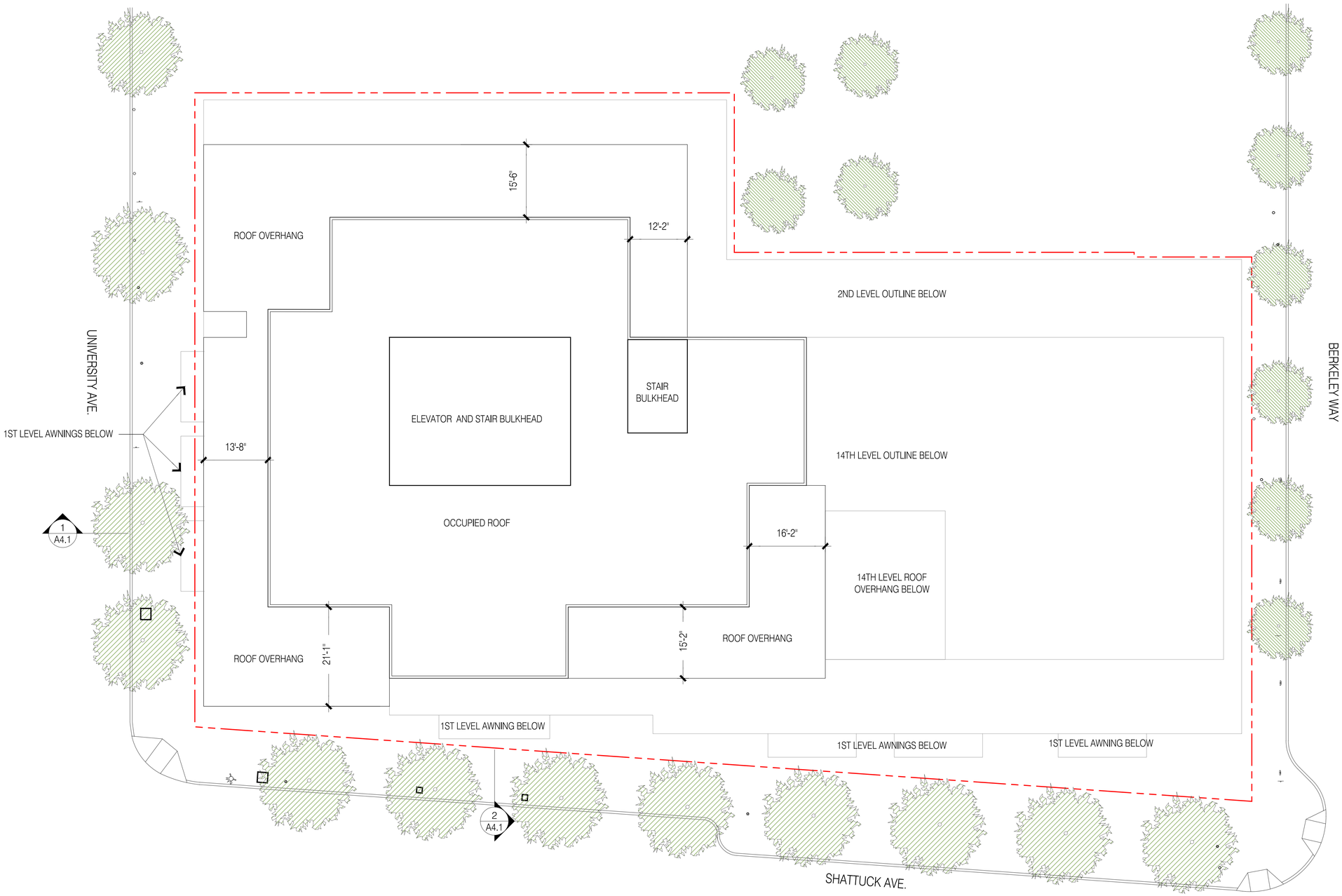
SHEET:

FLOOR PLANS

A2.6



1 PLAN AT ROOF
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

ROOF PLAN

A2.7



2 - EAST ELEVATION

0 8 16 32



1 - SOUTH ELEVATION

0 8 16 32

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SHEET:

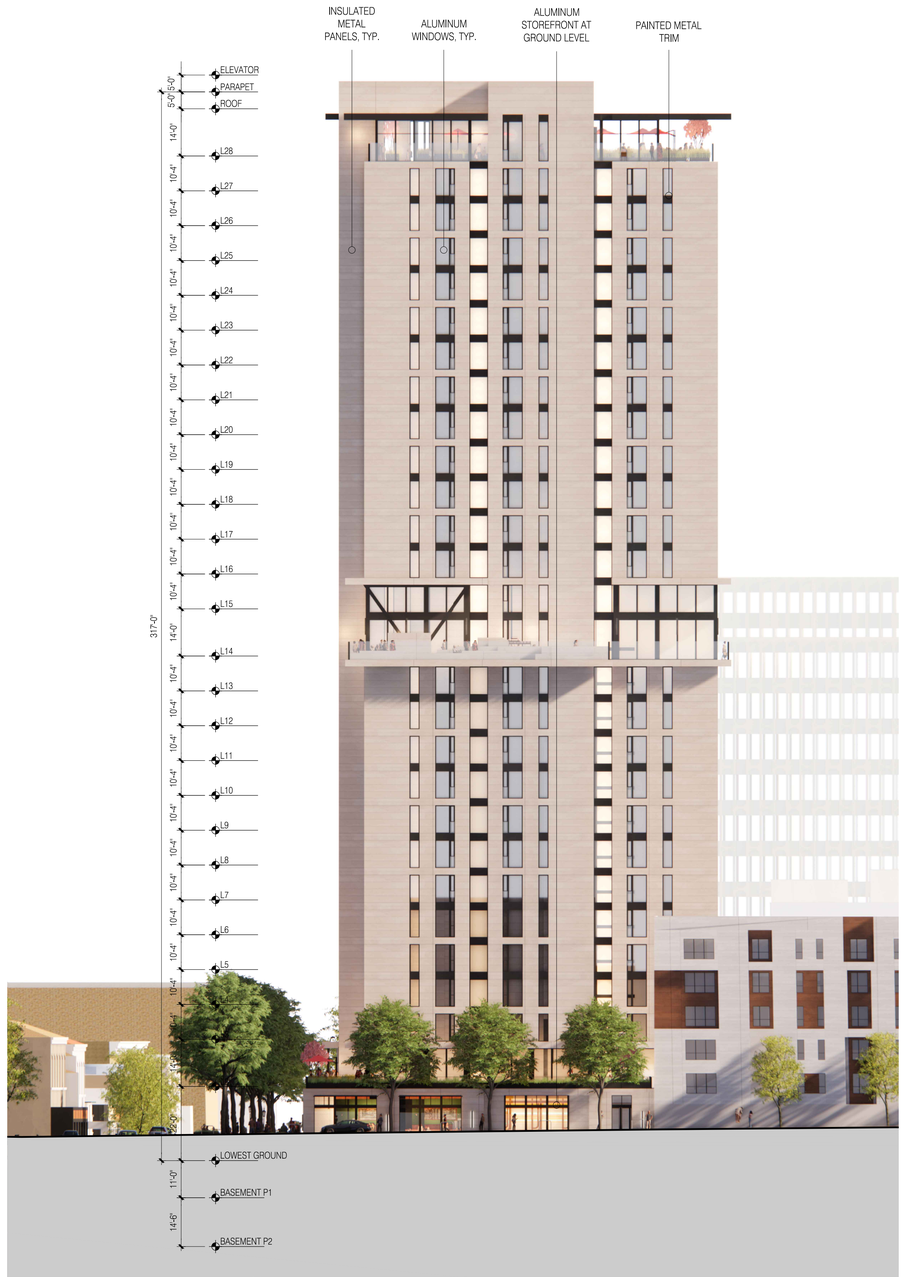
ELEVATIONS

A3.1



2 - WEST ELEVATION

0 8 16 32



1 - NORTH ELEVATION

0 8 16 32

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JOB: 2209

SHEET:

ELEVATIONS

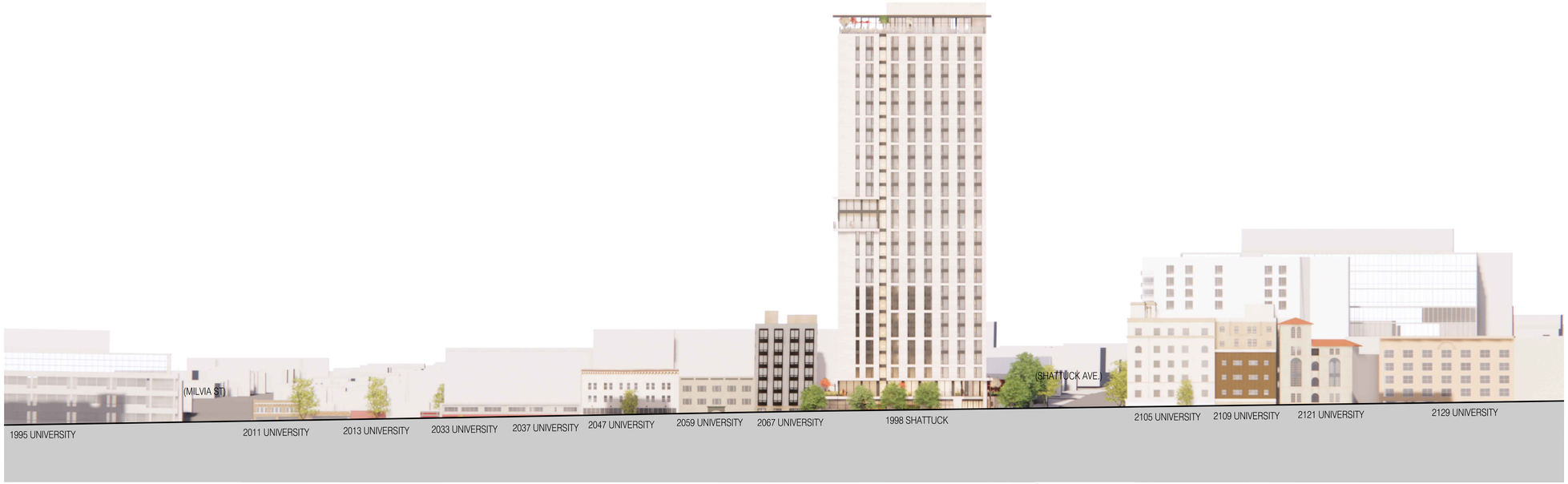
A3.2



2 - STREET STRIP ELEVATION @ SHATTUCK AVE

1/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64



1 - STREET STRIP ELEVATION @ UNIVERSITY AVE

3/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64

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SHEET:

STREET STRIP ELEVATIONS

A3.3



4 - UNIVERSITY LOOKING WEST - AFTER



2 - UNIVERSITY LOOKING EAST - AFTER



3 - UNIVERSITY LOOKING WEST - BEFORE



1 - UNIVERSITY LOOKING EAST - BEFORE

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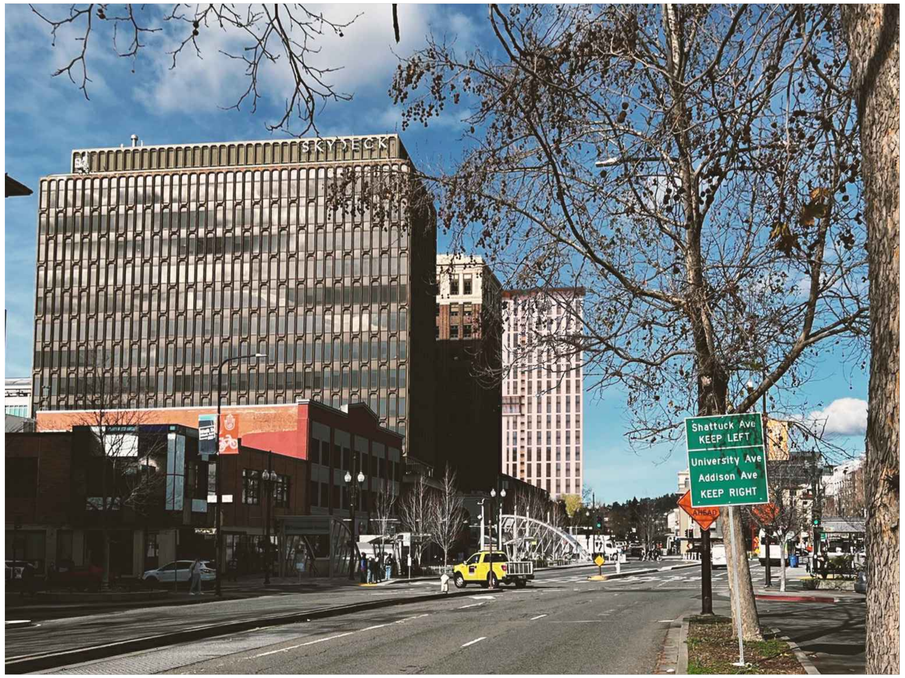
SHEET:

PHOTO CONTEXT VIEWS

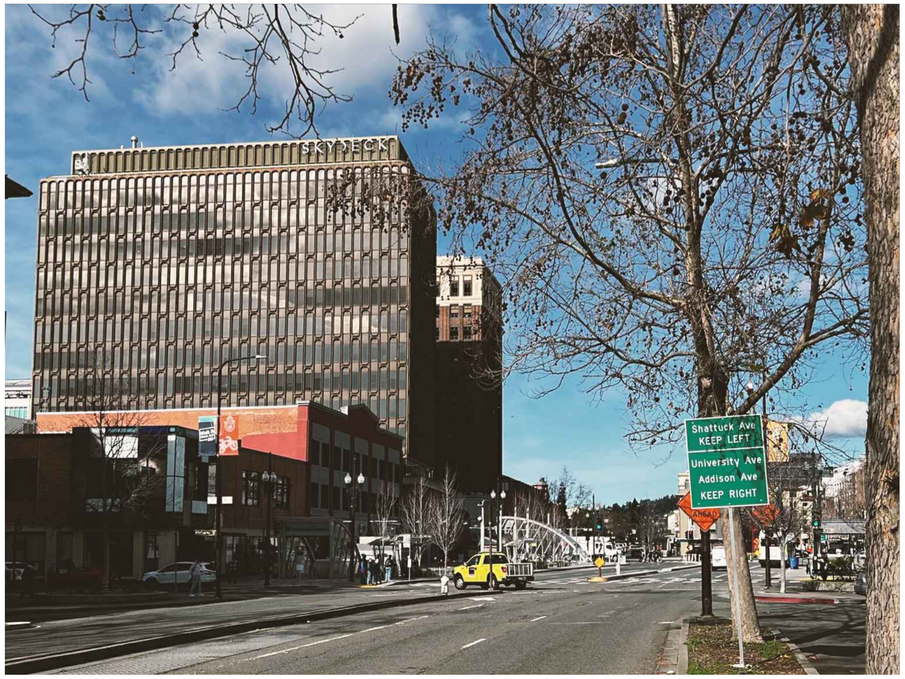
A3.4



4 - SHATTUCK LOOKING NORTH - AFTER



2 - SHATTUCK LOOKING SOUTH - AFTER



3 - SHATTUCK LOOKING NORTH - BEFORE



1 - SHATTUCK LOOKING SOUTH - BEFORE

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SHEET:

PHOTO CONTEXT VIEWS

A3.5



4 - BERKELEY LOOKING WEST - AFTER



2 - BERKELEY LOOKING EAST - AFTER



3 - BERKELEY LOOKING WEST - BEFORE



1 - BERKELEY LOOKING EAST - BEFORE

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PHOTO CONTEXT VIEWS

A3.6

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1 - VIEW LOOKING NORTH

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A3.7

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1 - VIEW LOOKING NORTH-WEST

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1
-
VIEW LOOKING SOUTH-WEST
-

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1 - VIEW LOOKING SOUTH-EAST

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A3.10

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1 VIEW LOOKING NORTH-WEST AT SHATTUCK AND UNIVERSITY

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SHEET:

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A3.11

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1 - VIEW LOOKING SOUTH-WEST ON SHATTUCK

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A3.12

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1 - VIEW LOOKING NORTH-EAST ON UNIVERSITY

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A3.13

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1 - SIDEWALK VIEW - UNIVERSITY LOOKING EAST

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PRELIMINARY
RENDERING

A3.14



1 - VIEW LOOKING SOUTH-WEST - SHATTUCK @ BERKELEY WAY

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A3.15

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1 - SIDEWALK VIEW - SHATTUCK LOOKING SOUTH-WEST

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PRELIMINARY RENDERING

A3.16

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1 - SIDEWALK VIEW - SHATTUCK LOOKING NORTH-WEST

1950-1998 (1974) SHATTUCK

Berkeley, CA

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03.01.2023 ZONING SUBMITTAL
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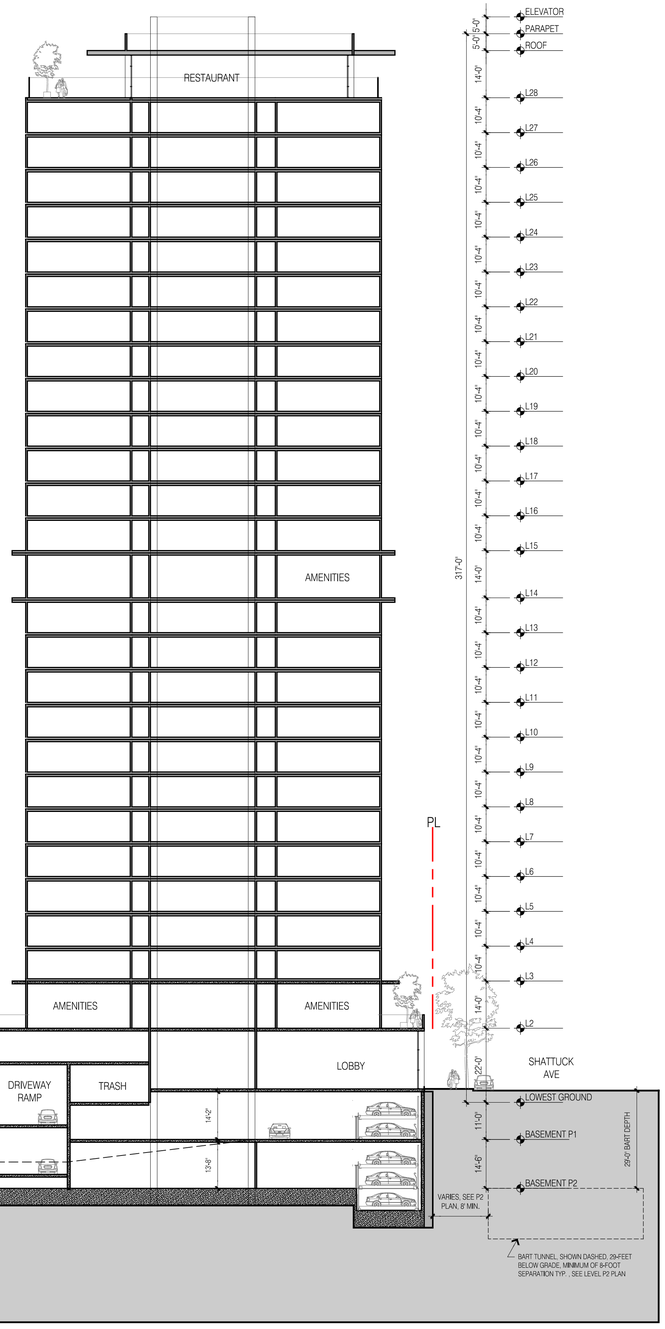
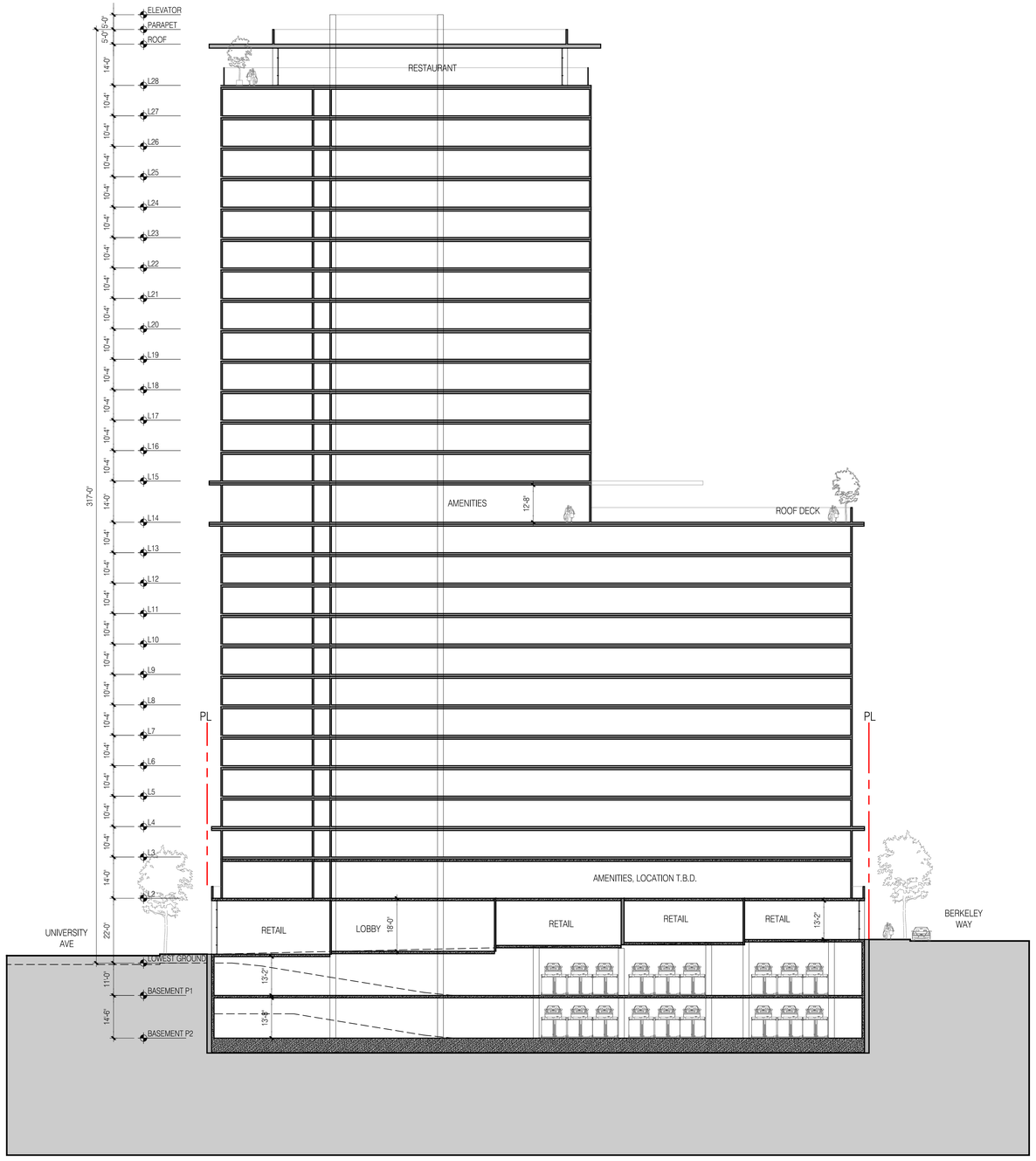
RENDERING

A3.17



2 - SECTION LOOKING NORTH

0 8 16 32



1 - SECTION LOOKING WEST

0 8 16 32

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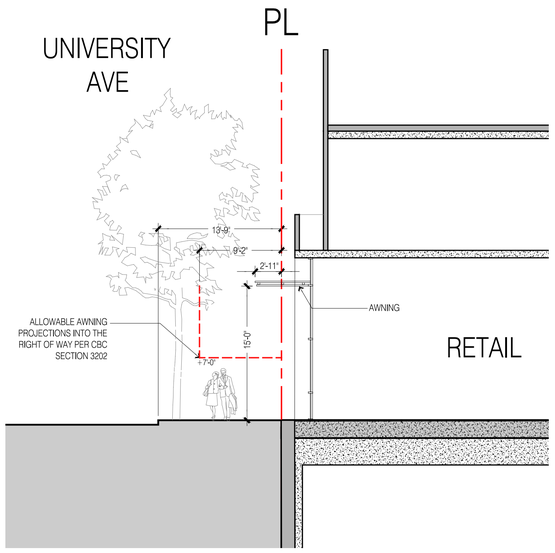
BUILDING SECTIONS

A4.1



2 - SECTION THROUGH UNIVERSITY AVE.
1/8" = 1'-0" -

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AWNING ENCROACHMENT DIAGRAM

A4.2

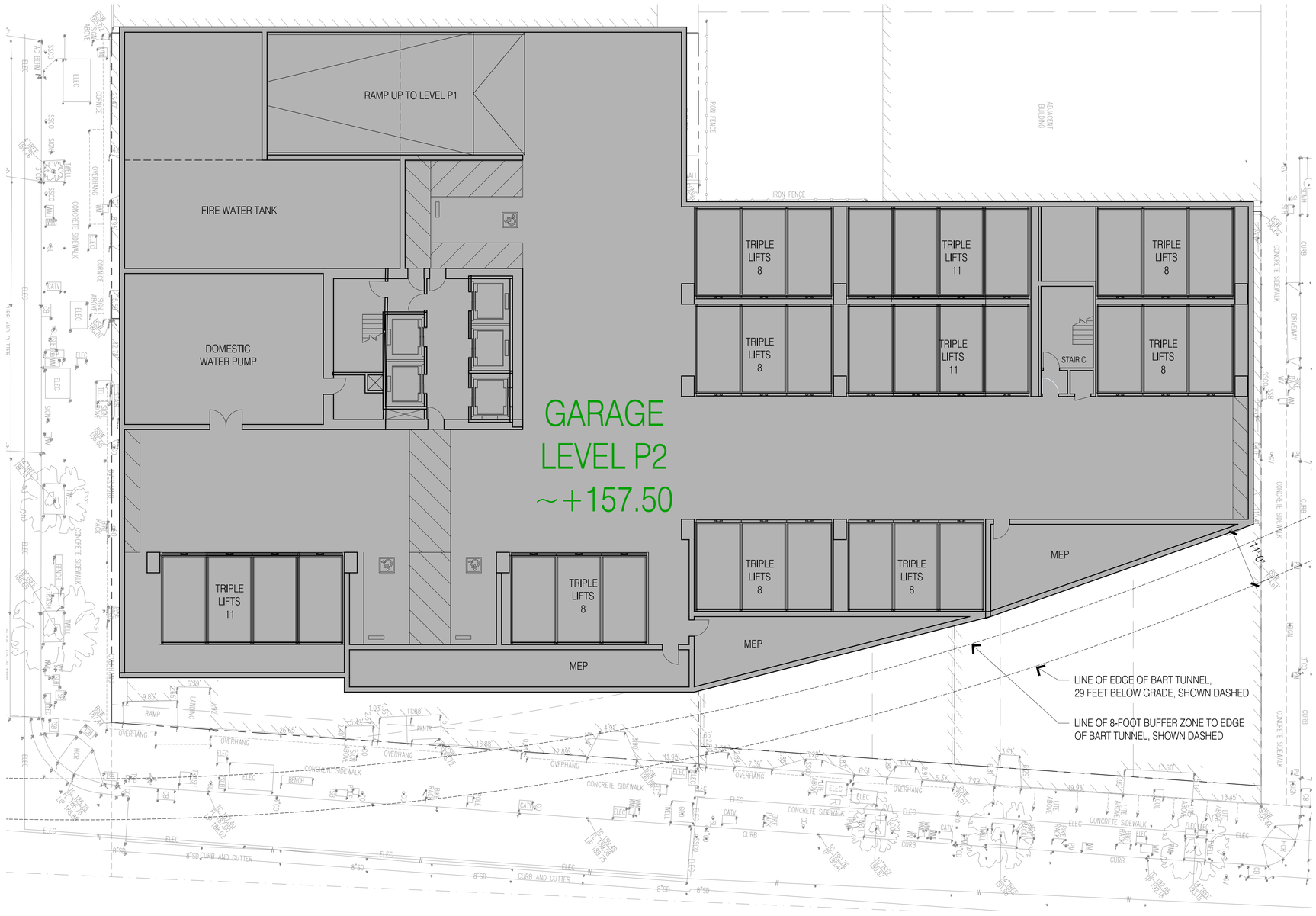
CUT AND FILL CALCULATIONS

	CUT/FILL AREA	AVERAGE CUT/FILL DEPTH (FT)	TOTAL VOLUME (CY)
PROPOSED BUILDING	23,262	37	31,878

EARTHWORK NOTES:

1. EARTHWORK QUATNITY IS A ROUGH ESTIMATE BASED ON APPROXIMATE DEPTH OF BOTTOM OF BASEMENT PARKING LEVEL.

2. EARTHWORK QUANTITIES DO NOT TAKE INTO ACCOUNT SOIL SHRINKAGE, SOIL SWELLING, TRENCH SPOILS, SITE OVER-EXCAVATION REQUIREMENTS.



1 - CONCEPTUAL GRADING PLAN

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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CONCEPTUAL GRADING PLAN

A5.0

1998 Shattuck — Preliminary Landscape Set

General Notes

1. The contractor shall inspect the site and be familiar with all existing site conditions prior to submitting bid. Contractor shall not willfully proceed with construction as shown when it is obvious that obstructions, landscape area and/or grade differences exist that may not have been known during design. Such conditions shall immediately be brought to the attention of the landscape architect. The contractor shall assume sole responsibility for all necessary revisions due to failure to give such notification. Contractor shall be responsible for making himself familiar with all underground utilities, pipes, structures and obstructions. Contractor shall assume sole responsibility for all costs incurred due to damage and/or replacement of these items. Contractor shall be responsible for coordination among trades and subcontractors as required to accomplish the work. The contractor shall be responsible for any damage to existing features caused by contractor's work. All repairs shall be made at no additional cost to the owner. Planting shall be installed in conformance with all applicable local codes and ordinances by experienced workmen and a licensed landscape contractor who shall obtain all necessary permits and pay all required fees. The garden is a pesticide and herbicide free zone. Contractor shall use organic material to fertilize and to maintain all plant material. No chemical fertilizer will be allowed.Contractor shall verify all grades, existing conditions and dimensions in the field prior to commencing work. All discrepancies or questions shall be brought to the attention of the landscape architect for resolution. Redirect work to avoid delay. All curves and all transitions between curves and straight edges shall be smooth. Take all dimensions perpendicular to any reference line, work line, face of building, face of wall or centerline.

2. Demolition
Contractor shall remove and carry all demolition materials off site. Protect (E) trees as indicated during construction. Contractor shall perform selective trimming of existing trees within the area of work per the direction of the owner.

3. Drainage/Grading
Contractor shall verify if existing drains are in good condition. All drainage systems shall be per City of Berkeley codes. Grade per indicated swales. Sleeving to be Schedule 40 PVC. Cover PVC pipe so that it not visible. All grading to be smooth to achieve a natural aspect. No finish grades shall exceed 2.5:1 slopes.

4. Soil preparation
Soil amendment shall be a minimum of 9 cy of organic compost per 1000 sf (1:4 ratio). The landscape contractor shall be responsible for finish grading and all planting area drainage. Positive drainage away from the building as per city codes shall be maintained. No low spots which hold standing water will be accepted. Where rototilling is not possible, incorporate soil amendments into top 6 inches with hand tools. After installation of irrigation system, all new planting areas are to be fine graded to within 2 inches and slightly mounded away from edges of top of planter, curb, walk, header, etc. and raked smooth with all rocks and debris over 1 inch in diameter removed. Verify existing grades and advice Landscape Architect of any discrepancies prior to start of grading.

5. Topsoil
If any planting areas require the importing of topsoil, the imported soil shall be clean, friable sandy loam; free of noxious weed seeds, sticks, stones over 1 inch in diameter or any materials that could inhibit growth. Incorporate imported topsoil into the top 6-8 inches of site soil by rototilling or hand cultivating as necessary.

6. Substitutions
Requests for substitutions of plant varieties shall be made to the landscape architect within 15 days after signing of contract.

7. Planting
Thoroughly water trees immediately after planting. Shrubs shall be spotted as per plan and the locations approved prior to the digging of the holes. Contractor shall locate and tag all trees at nursery at time of acceptance of contract to ensure availability of healthy specimens. Plant materials to be approved by landscape architect prior to site delivery.

8. Irrigation
The proposed irrigation shall be an automated, water efficient watering system compliant with the City of Berkeley codes & regulations. The contractor shall determine the static water pressure and design the system accordingly to achieve adequate regime for the proposed plantings. The following emitters shall be installed at each planting: (2) 1 gal emitters at each 1 gal sp.; (3) 5 gal. emitters at ea. 5 gal shrub.

9. Mulching
Mulch all planting areas with 3" of 'Forest Floor Bark' from American Soil and Stone, Richmond Ca (510) 292-3000.

10. Stone paving & stone work
See layout plan and detail for sub-base. Install stone paving with tight joints in front and flagstone in stabilized decomposed granite in back as show on sheet L1.0.

11. Concrete work
All concrete retaining walls greater than 3 feet in height shall be designed or reviewed and stamped by a structural engineer. All concrete footings shall be reviewed, approved and stamped by a structural engineer.

12. Electrical
Install light fixtures, conduits and controller per manufacturer recommendation. Locate controller per plan with light switch inside residence. Contractor to supply and install power supply - 2 outlets at outdoor kitchen area. Install power supply for outdoor kitchen equipment .

13. Wood work
All wood decking to match existing wood same size and layout at existing decks for deck extension. All vertical posts to be pressure treated 4x4 wood. SSD for final wood sizing, anchors and concrete footing. See note 14 for painting/staining.

14. Painting
All visible existing & new wood to be painted same color as the main residence, but with a lighter tone. Color to be reviewed & approved by owner/landscape architect.
Paint manufacturer: Sherwin Williams; exterior paint quality "duration" to be applied on all new & existing wood to be painted. Prep all wood surfaces per paint manufacturer's recommendations.

15. Maintenance
The contractor shall maintain the project for 90 days (or as requested by owner) following the approval to begin the maintenance period. During the entire maintenance period, watering, cultivating, weeding, mowing, repair/tightening of stakes and ties, provision of supplemental water by hand in addition to irrigation system as necessary. At the end of the 90 day maintenance period all areas are to be free of weed and all plant material is to be in a healthy, thriving condition.

16. Guarantee
All construction, trees and shrubs by the landscape contractor and/or his subcontractors shall be guaranteed for (1) one year after beginning of maintenance period. The contractor shall replace, at no expense to the owner, any and all landscape materials that are in an unacceptable condition for time of use, and trees or shrubs that are dead or not in a vigorous, healthy growing condition; within two weeks of notification of such condition. Replacement shall be of the same kind and size as the originally specified item and shall be replaced as originally described on the drawings. The contractor shall not be held liable for loss of plant materials during the guarantee period due to vandalism, accidental causes or acts of neglect by others than the contractor, his agents and employees.

17. Clean up
At the end of each work day, at the inspection for substantial completion and before acceptance of project, clean paved areas that are dirtied or stained by construction operations, by sweeping or washing, and remove defacements and stains. Remove construction equipment, excess materials and tools. Haul from owners property the debris resulting from construction, and dispose of legally. Remove remaining temporary protection at time of acceptance by owner unless otherwise agreed.

Project Team

Client
NX Ventures

Architect
Trachtenberg Architects
2421 Fourth Street
Berkeley, CA 94710
510.649.1414

Landscape Architect
InsideOut Design, Inc.
6000 Harwood Ave
Oakland CA 94618
510.655.7674

Contractor
TBD

Location Map



Legend

(PA)	Planting Area
(TS)	Top of stair
(BS)	Bottom of stair
(TW)	Top of wall
(BW)	Bottom of wall
R	Radius
POB	Layout Starting Point
SIM	Similar
(TYP.)	Typical
SAD	See Architectural Drawings
EQ	Equal
O.C.	On Center
(E)	Existing
›	Align
	90 Degrees angle
(824.76)	Existing spot elevation
824.76	Proposed spot elevation
	Existing contour line
	Proposed contour line
	Property line
	Existing retaining wall to be demolished

Sheet Index

L0.0	Cover Sheet
L1.0	Streetscape
L2.0	Podium
L3.0	Roof Deck
L3.1	Usable Open Space + Planting Notes
I0.0	Irr. Notes & Legend
I1.0	Irr. Plan - Street
I2.0	Irr. Plan - Podium
I3.0	Irr. Plan - Roof Deck
I3.1	Irr. Plan - POC
I4.0	Irrigation Details
I5.0	Irrigation Details
I6.0	Irrigation Details
I7.0	Irrigation Details

Plant List

Index	Latin Name	Common Name	Size	WELO	CA Nat.	Notes
Street Trees						
CC	Carpinus caroliniana	American Hornbeam	24" Box	M		University Ave
LC	Lophostemon confertus	Brisbane Box	24" Box	VL, L		Berkeley Way
PA	Platanus acerifolia 'Columbia'	Columbia' London Plane Tree	24" Box	L, M		Shattuck Ave
Trees						
BE	Brahea edulis	Guadalupe Palm	24" Box	L		Roof
BR	Beaucarnea recurvata	Pony Tail Palm	15 Gallon	VL		Roof
CO	Cercis occidentalis	Western Redbud	24" Box	VL	X	Podium FTP
CR	Ceanothus 'Ray Hartman'	Ray Hartman California Lilac	24" Box	L, ES	X	Podium
HG	Heteromeles arbutifolia 'Davis Gold	Davis Gold Toyon	24" Box	VL, L	X	Podium FTP
PR	Phoenix roebelenii	Pygmy Date Palm	24" Box	L		Roof
WF	Washingtonia filifera	California Fan Palm	24" Box	L, ES	X	Roof
Shrubs						
AD*	Agave deserti	Desert Agave	5 Gallon	VL, L	X	Roof
AP	Arctostaphylos pajaroensis 'Paradise	Paradise Pajaro Manzanita	15 Gallon	VL	X	Roof
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	Podium, Street
CF	Comus sericea, C. Stolonifera 'Hedgerow Gc	Hedgerow Gold Redtwig Dogwooc	15 Gallon	M, ES	X	Podium
HW*	Hesperoyucca whipplei	Our Lord's Candle	5 Gallon	VL	X	Roof
OB*	Opuntia basilaris	Prickly Pear	5 Gallon	VL		Roof
SM	Sabal minor	Dwarf Palmetto	15 Gallon	L		Roof
YP*	Yucca pallida	Pale Leaf Yucca	5 Gallon	VL, L, ES		Roof
ZF	Zamia furfuracea	Cardboard Palm	5 Gallon	M		Roof
Groundcovers						
AM	Armeria maritima	Sea Pink	1 Gallon	M	X	Roof
BM	Baileya multiradiata	Desert Marigold	1 Gallon	VL	X	Roof
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	Street
CM	Coreopsis maritima	Sea Dahlia	1 Gallon	L	X	Roof
DF	Dudleya farinosa	Coast Live Forever	1 Gallon	VL	X	Podium
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	Street
Podium FTP** *(1143 sf)*						
AS	Achillea 'Salmon Beauty'	Salmon Beauty Yarrow	1 Gallon	VL, L	X	
BG	Bouteloua gracilis 'Blonde Ambition'	Blonde Ambition Blue Grama	1 Gallon	L	X	
CB	Ceanothus thyrsiflorus 'Cool Blue'	Cool Blue Mountain Lilac	15 Gallon	L	X	
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	
CP	Ceanothus pallidus 'Marie Simon'	Pink Flowering Ceanothus	15 Gallon	VL, L	X	
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	
EF	Eriogonum fasciculatum	California Buckwheat	5 Gallon	VL, L	X	
EG	Elymus glaucus	Blue Wild Rye	1 Gallon	L	X	
ID	Iris douglasiana	Douglas Iris	1 Gallon	M, ES	X	
JE	Juncus effusus	Soft Rush	1 Gallon	VL, H, ES	X	
JP	Juncus patens 'Elk Blue'	Elk Blue California Gray Rush	1 Gallon	L, M, ES	X	
RC	Rudbeckia californica	California Coneflower	1 Gallon	M	X	
SA	Symphoricarpos albus var. laevigatus	Upright Snowberry	5 Gallon	VL, L, M	X	
Podium Grate Walks *(5370 sf)*						
SD	Sedum divergens	Cascade Stonecrop	Flat	L, ES	X	
SO	Sedum oreganum	Oregon Stonecrop	Flat	L, ES	X	
SS	Sedum spathulifolium 'Cape Blanco'	Cape Blanco Sedum	Flat	L	X	

**To be located with 3' min. between edge of mature plant and walkways or planter edges.*
***Species selected per Stormwater C.3 Guidebook (Dalziel et. al.).*

Note: *At least 80% of all plantings will be California natives.*

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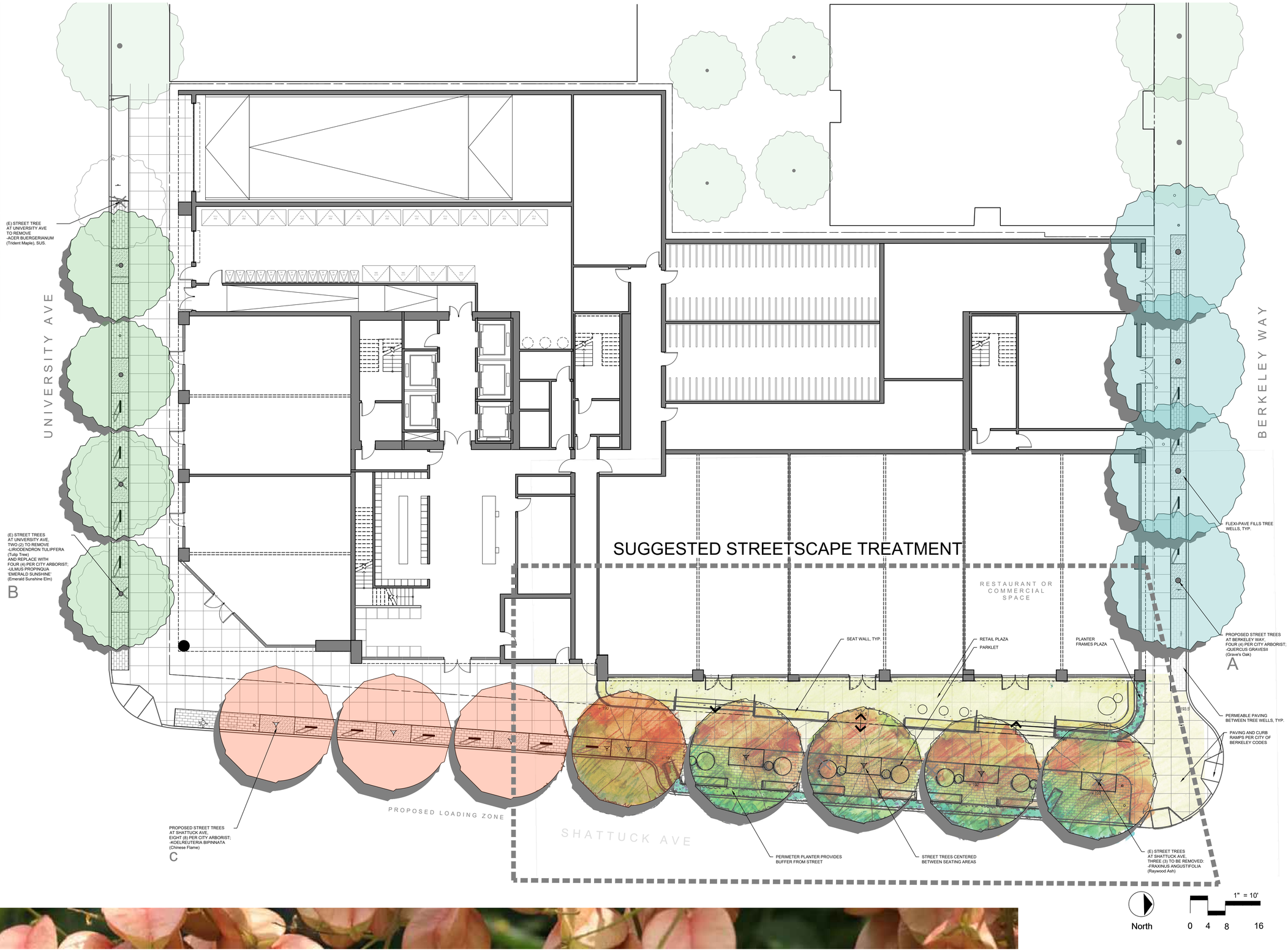
SHEET:

COVER SHEET, NOTES, AND LEGEND

L0.0







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LANDSCAPE PLAN AT STREETSCAPE

L1.0



Permeable grate with groundcover below
- Precedent: ASLA HQ Green Roof
-Mix of 3 shade-tolerant sedums





Maintenance corridor

FTP, typ.
1,306 SF total

Flexible seating

NOTE: FLOW-THROUGH PLANTER AREA TOTALS 1,306 SF;
REQUIRED FTP AREA EQUALS MIN 4% OF BUILDING FOOTPRINT'S IMPERVIOUS SURFACE.

BUILDING FOOTPRINT = 26,208 SF
REQUIRED FTP = 26,208 SF X 0.04 = 1,049 SF
PROVIDED FTP = 1,306 SF

Bistro tables

Raised planter with patio trees and wood benches

UNIVERSITY AVE

BERKELEY WAY

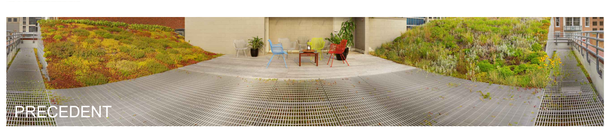
Low planting in raised flow-through planters (FTPs)

Flowering tree
-'Davis Gold' Toyon

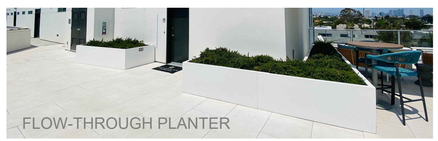
Small trees and accent plantings visible from street

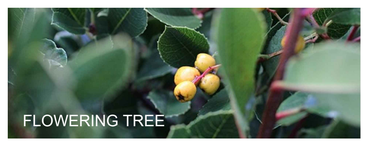
Podium seating overlooks ground-level plaza and parklet at Shattuck Ave

SHATTUCK AVE


PRECEDENT


VEGETATED GRATE


FLOW-THROUGH PLANTER


FLOWERING TREE

North

3/16"=1'-0"
0 2 4 8

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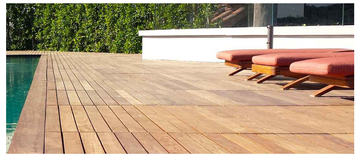
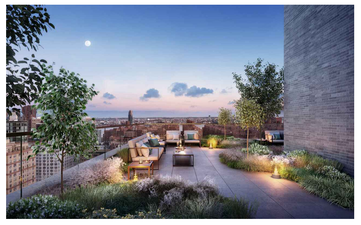
SECOND FLOOR PODIUM GARDENS

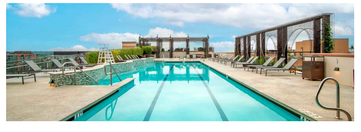
L2.0



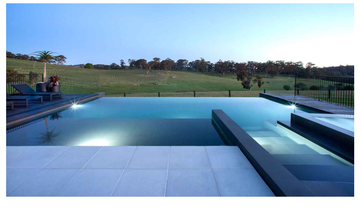


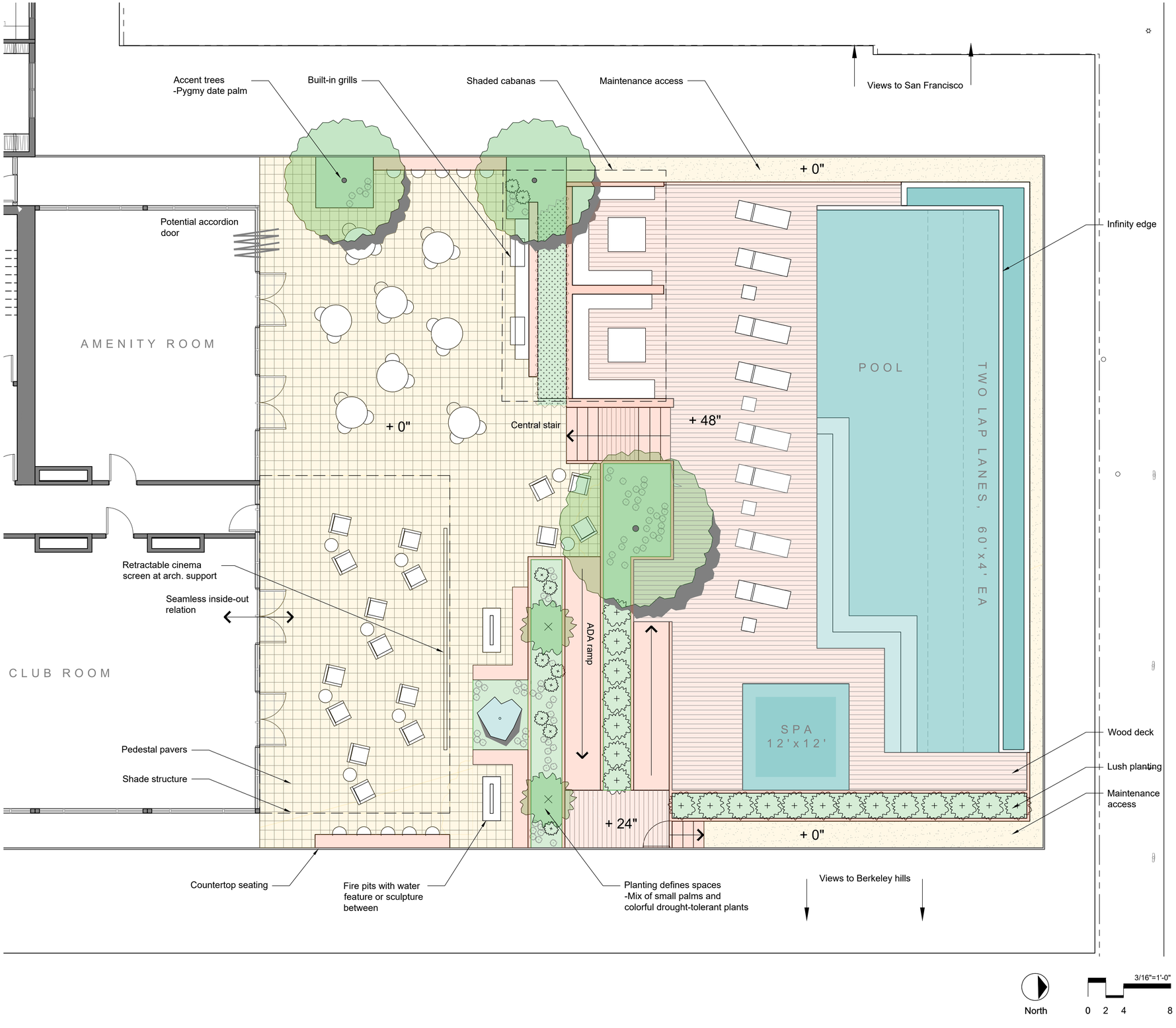












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FOURTEENTH FLOOR ROOF DECK

L3.0

PLANTING NOTES

SEE COVER SHEET L0.0 FOR GENERAL NOTES

GENERAL PLANTING NOTES:

1. SOIL PREPARATION: THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINISH GRADING AND ALL PLANTING AREA DRAINAGE. POSITIVE DRAINAGE AWAY FROM THE BUILDING AS PER CITY CODES SHALL BE MAINTAINED. NO LOW SPOTS WHICH HOLD STANDING WATER WILL BE ACCEPTED.
   THE LANDSCAPE CONTRACTOR SHALL INCORPORATE SOIL PREPARATION AMENDMENT INTO PLANTING AREAS AS NOTED BELOW. WHERE ROTO-TILLING IS NOT POSSIBLE, INCORPORATE SOIL AMENDMENTS INTO TOP 6 INCHES WITH HAND TOOLS. AFTER INSTALLATION OF IRRIGATION SYSTEM, ALL PLANTING AREAS ARE TO BE FINE GRADED TO WITHIN 2 INCHES AND SLIGHTLY MOUNDED AWAY FROM EDGES OF TOP OF PLANTER, CURB, WALK, HEADER, ETC. AND RAKED SMOOTH WITH ALL ROCKS AND DEBRIS OVER 1-INCH IN DIAMETER REMOVED.

2. SOIL PREPARATION AMENDMENTS AND BACKFILL MIX: THE LANDSCAPE CONTRACTOR SHALL AMEND EXISTING SOIL PER THE SOILS REPORT. NATIVE SOIL IS PREFERRED.

3. TREE PLANTING: TREES SHALL BE PLANTED PER DETAIL ON PLAN. TREES SHALL TYPICALLY BE LOCATED A MINIMUM OF 3 1/2 FEET FROM CURBS, WALKS, HEADERS, BUILDINGS, AND OVERHEAD STRUCTURES WITHIN THE PROJECT. BACKFILL PER SOILS REPORT. THOROUGHLY WATER TREES IMMEDIATELY AFTER PLANTING.

4. SHRUB PLANTING: THE SHRUBS SHALL BE SPOTTED AS PER PLAN, SPOTTED AT THE SHOWN LOCATIONS, AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO THE DIGGING OF THE HOLES. SHRUB BACKFILL SHALL BE PER SOILS REPORT. THOROUGHLY WATER SHRUBS IMMEDIATELY AFTER PLANTING. DO NOT PLANT ANY SHRUB WITHIN 2 FEET OF ANY BUILDING WALL.

5. MAINTENANCE: THE CONTRACTOR SHALL MAINTAIN THE PROJECT FOR 90 DAYS (OR AS REQUESTED BY OWNER) FOLLOWING THE APPROVAL TO BEGIN THE MAINTENANCE PERIOD. DURING THE ENTIRE MAINTENANCE PERIOD, WATERING, CULTIVATING, WEEDING, MOWING, REPAIR/TIGHTENING OF STAKES AND TIES, RESTORATION OF BASINS, PROVISION OF SUPPLEMENTAL WATER BY HAND IN ADDITION TO IRRIGATION SYSTEM IS REQUIRED AS NECESSARY. NO PRE-EMERGENCE HERBICIDES SHALL BE APPLIED - HAND REMOVE WEEDS. ONLY ORGANIC FERTILIZERS SHALL BE APPLIED SUCH AS THOSE SPECIFIED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. AT THE END OF THE 90 DAY MAINTENANCE PERIOD ALL AREAS ARE TO BE WEED FREE AND ALL PLANT MATERIAL SHALL BE IN A HEALTHY, THRIVING CONDITION. INTEGRATED PEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED.

6. SUBSTITUTIONS: REQUESTS FOR PLANT SUBSTITUTIONS SHALL BE MADE TO THE LANDSCAPE ARCHITECT WITHIN 15 DAYS AFTER SIGNING OF CONTRACT.

7. GUARANTEE: ALL CONSTRUCTION, TREES AND SHRUBS BY THE LANDSCAPE CONTRACTOR AND/OR SUBCONTRACTORS SHALL BE GUARANTEED FOR (1) ONE YEAR AFTER START OF MAINTENANCE PERIOD. THE CONTRACTOR SHALL REPLACE, AT NO EXPENSE TO THE OWNER, ANY AND ALL LANDSCAPE MATERIALS THAT ARE IN AN UNACCEPTABLE CONDITION FOR TIME OF USE, AND TREES OR SHRUBS THAT ARE DEAD OR NOT IN A VIGOROUS, HEALTHY GROWING CONDITION, WITHIN TWO WEEKS OF NOTIFICATION OF SUCH CONDITION. REPLACEMENT SHALL BE OF THE SAME KIND AND SIZE AS THE ORIGINALLY SPECIFIED ITEM AND SHALL BE REPLACED AS ORIGINALLY DESCRIBED ON THE DRAWINGS. THE CONTRACTOR SHALL NOT BE HELD LIABLE FOR LOSS OF PLANT MATERIALS DURING THE GUARANTEE PERIOD DUE TO VANDALISM, ACCIDENTAL CAUSES OR ACTS OF NEGLECT BY OTHERS THAN THE CONTRACTOR, HIS AGENTS AND EMPLOYEES.

8. CLEAN UP: AT THE END OF EACH WORK DAY, AT THE INSPECTION FOR SUBSTANTIAL COMPLETION, AND BEFORE ACCEPTANCE OF PROJECT - CLEAN
PAVED AREAS THAT ARE DIRTIED OR STAINED BY CONSTRUCTION OPERATIONS BY SWEEPING OR WASHING, AND REMOVE DEFACEMENTS AND STAINS.
REMOVE CONSTRUCTION EQUIPMENT, EXCESS MATERIALS AND TOOLS. HAUL FROM OWNERS PROPERTY ANY DEBRIS RESULTING FROM CONSTRUCTION, AND DISPOSE OF IT LEGALLY. REMOVE REMAINING TEMPORARY PROTECTION AT TIME OF ACCEPTANCE BY OWNER UNLESS OTHERWISE AGREED.

9. FERTILIZERS: AVAILABLE FROM CALIFORNIA ORGANIC FERTILIZERS, INC. 1-800-269-5690 WWW.ORGANICAG.COM.

STREET TREE PROTECTION NOTES:

1. ALL TREE PROTECTION REQUIREMENTS AND RESTRICTIONS SHALL BE INCLUDED IN THE CONSTRUCTION NOTES AND PRINTED ON ALL COPIES OF THE PLANS.

a) INCLUDE THE NAME AND PHONE NUMBER OF THE PARTY THAT WILL MONITOR THE SITE AND ENSURE THE TREE PROTECTION MEASURES ARE BEING FOLLOWED; AND WHAT THE MONITORING SCHEDULE WILL BE: **NAME / PHONE / SCHEDULE**

b) INSTALL 6 FOOT CHAIN-LINK FENCING TO PROTECT THE AREA WITHIN THE DRIP-LINE OF ANY PROTECTED TREE IN THE DEVELOPMENT AREA. FENCING SHALL BE MOUNTED TO POSTS THAT ARE DRIVEN INTO THE GROUND. WHERE THIS IS NOT POSSIBLE BECAUSE OF EXISTING STRUCTURES, TREE ROOTS, OR OTHER OBSTACLES, CHAIN-LINK PANELS MOUNTED TO STANCHIONS AND CONNECTED TO EACH OTHER MAY BE APPROVED. IN AREAS WHERE DIFFICULT TERRAIN MAKES THIS IMPRACTICAL, ORANGE CONSTRUCTION FENCING MAY BE APPROVED.

c) ALL FENCING SHALL HAVE SIGNAGE STATING THE REQUIREMENTS AND RESTRICTIONS, AND THE CONTACT INFORMATION FOR THE PROJECT ARBORIST.

d) WHEN ANY APPROVED CONSTRUCTION ACTIVITY WILL OCCUR WITHIN THE DRIP LINE OF A PROTECTED TREE THAT IS NOT SURROUNDED BY PROTECTIVE FENCING, THE TRUNK SHALL BE PROTECTED BY WRAPPING IT WITH STRAW TUBES (WATTLE) OR VERTICAL WOOD SLATS (EX. 2X4), UP TO A MINIMUM OF 8 FEET FROM GRADE (SEE FIGURE 1, PAGE 6). SLATS SHALL BE ANGLED TO PROTECT THE ROOT FLARE AT THE BASE OF THE TREE; AND CLOSED CELL FOAM OR EQUIVALENT MATERIAL SHALL BE USED TO PROTECT THE TRUNK OF THE TREE WHERE IT CONTACTS THE SLATS.
LATERAL BRANCHES BELOW 8 FEET SHALL ALSO BE PROTECTED. IN ADDITION, THE AREA SHALL BE COVERED WITH A 6 INCH LAYER OF MULCH TOPPED WITH 3/4 INCH PLYWOOD THAT IS FASTENED TOGETHER. IF ANY LARGE OR MOTORIZED EQUIPMENT (MINI EXCAVATOR, BOBCAT®, POWERED WHEELBARROW) WILL TRAVEL OVER THIS AREA, THE PLYWOOD MUST BE A MINIMUM OF 1 INCH AND ADEQUATE FOR THE WEIGHT OF THE EQUIPMENT THAT WILL TRAVEL OVER IT. IF LARGER EQUIPMENT (BACKHOE, TRACTOR) WILL BE USED, CONSULT THE CITY ARBORIST. ***CONSTRUCTION ACTIVITY REFERS TO ANY MOVEMENT OF PEOPLE, TOOLS, OR EQUIPMENT; OR STORAGE OF ANY TOOLS, EQUIPMENT, OR SUPPLIES.***

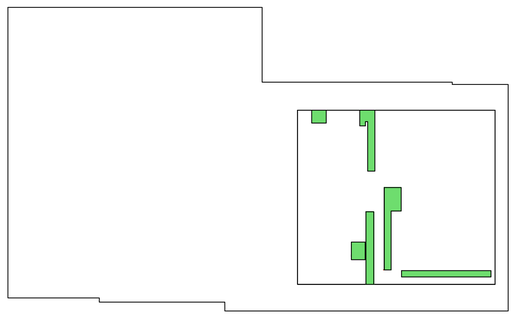
f) LOCATE AND EXPOSE ANY ROOTS 2 INCHES IN DIAMETER OR GREATER THAT MAY NEED TO BE PRUNED TO FACILITATE THE PROJECT. THIS INCLUDES ANY TRENCHING THAT WILL BE DONE AS PART OF FOUNDATION OR UTILITY INSTALLATION. CONTACT THE CITY ARBORIST IN ADVANCE TO LESSEN THE AMOUNT OF TIME THAT THE ROOTS WILL BE EXPOSED. IF ROOTS MUST BE LEFT EXPOSED FOR MORE THAN THREE DAYS, CONSULT THE CITY ARBORIST. **NOTE:** THE 2 INCH DIAMETER THRESHOLD FOR ROOTS IS A GUIDELINE THAT MAY BE ADJUSTED BY THE CITY ARBORIST DEPENDING ON THE SIZE AND CONDITION OF THE TREE, AND THE LOCATION OF THE ROOTS. THE CITY ARBORIST MAY INCREASE THE TPZ, OR IMPOSE OTHER RESTRICTIONS, WHEN THE DRIPLINE OF A TREE HAS BEEN ALTERED BY PRUNING OR UNUSUAL GROWTH PATTERNS.

g) NO STORAGE OF BUILDING MATERIALS, REFUSE, EXCAVATED SPOILS, OR DUMPING OF POISONOUS MATERIALS, IS PERMITTED WITHIN THE DRIP LINE OF ANY PROTECTED TREE. POISONOUS MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, PAINT, PETROLEUM PRODUCTS, CONCRETE OR STUCCO MIX, DIRTY WATER, OR ANY OTHER MATERIAL WHICH MAY BE DELETERIOUS TO TREE HEALTH.

STREET TREE PLANTING NOTES:

1. FOR NEW PLANTING:
   a. THE CITY ARBORIST SHALL BE NOTIFIED, BY CALLING (510) 981-6660, PRIOR TO THE DELIVERY OF THE TREES FOR INSPECTION OF THEIR SIZE AND STRUCTURE.
   b. EACH TREE SHALL BE PROPERLY PLANTED AT OR JUST BELOW GRADE (<1"). SOIL AMENDMENT IS NOT RECOMMENDED, AND NATIVE SOIL IS PREFERRED. NO CONSTRUCTION RUBBLE OR NON-ORGANIC MATERIAL SHALL BE WITHIN THE TREE WELL.
   c. THE SURROUNDING SOIL OUTSIDE THE CONTAINER (ROOT BALL) SHOULD BE LIGHTLY COMPACTED TO ABOUT 4 INCHES BELOW GRADE WITH THE ROOT BALL HIGHER THAN THAT.
   d. 2 TO 2.5 INCHES OF BASE ROCK SHOULD BE APPLIED AROUND THE ROOT BALL LEAVING 1.5 TO 2 INCHES LEFT FOR THE MATERIAL.
   e. 15G CONTAINERS ARE APPROXIMATELY 15-16 INCHES IN DIAMETER AND THE MATERIAL SHOULD BE APPLIED TO THE APPROXIMATE EDGE OF THE ROOT BALL WITH THE TOP GRADE OF THE ROOT BALL UP TO 1 INCH BELOW THE TOP OF THE MATERIAL THAT WILL BE APPLIED.
   f. EACH NEW TREE SHALL HAVE AUTOMATIC IRRIGATION INCLUDING TWO TREE BUBBLERS THAT CURVE OVER THE TOP OF THE TREES' ROOT BALL AND PROVIDE A MINIMUM OF 20 GALLONS PER WEEK BETWEEN MARCH 15 AND OCTOBER 15 FOR THE FIRST THREE YEARS. LARGER TREES MAY REQUIRE ADDITIONAL BUBBLERS. THE BUBBLERS SHOULD BE LOCATED ON TOP OF THE ROOT BALL WITHIN THIS 15-16 INCH CIRCLE AND NOT BE COVERED WITH MATERIAL.
   g. TREES THAT DIE WITHIN THE FIRST THREE YEARS MUST BE REPLACED AT THE PROPERTY OWNER'S EXPENSE.

USEABLE OPEN SPACE CALCULATIONS



ROOF DECK TOTAL USABLE AREA = 6,882 SF

(ROOF DECK HARDSCAPED = 6,297 SF)

ROOF DECK LANDSCAPED = 585 SF

ROOF DECK LANDSCAPED % = 9%

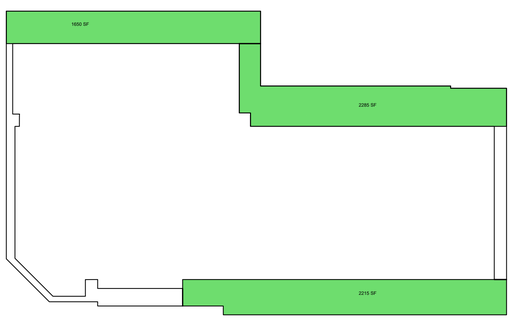
ROOF DECK USEABLE AREA (NTS)

1998 SHATTUCK TOTAL USABLE AREA = 13,032 SF

(TOTAL HARDSCAPED AREA = 6,297 SF)

TOTAL LANDSCAPED AREA = 6,735 SF

TOTAL LANDSCAPED AREA % = 52%



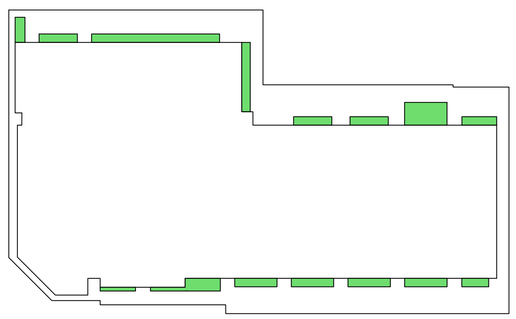
PODIUM TOTAL USABLE AREA = 6,150 SF

(PODIUM HARDSCAPED = 0 SF)

PODIUM LANDSCAPED = 6,150 SF

PODIUM LANDSCAPED % = 100%

PODIUM USEABLE AREA (NTS)



1998 SHATTUCK TOTAL ROOF AREA = 26,208 SF

4% FLOW-THROUGH PLANTER AREA NEEDED = 1,049 SF

CURRENT FLOW-THROUGH PLANTER AREA = 1,306 SF
(AT PODIUM)

FLOW-THROUGH PLANTER AREA (NTS)

TRACHTENBERG ARCHITECTS

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1998 SHATTUCK

1998 Shattuck Ave
Berkeley, CA

03.01.2023 ZONING SUBMITTAL
06.23.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ARCHITECT AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF TRACHTENBERG ARCHITECTS.

JOB: 0000

SHEET:

USABLE OPEN SPACE CALCULATIONS + PLANTING NOTES

L3.1

IRRIGATION NOTES

1. THESE IRRIGATION DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. ALL PIPING, VALVES, AND OTHER IRRIGATION COMPONENTS MAY BE SHOWN WITHIN PAVED AREAS FOR GRAPHIC CLARITY ONLY AND ARE TO BE INSTALLED WITHIN PLANTING AREAS. DUE TO THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, SLEEVES, CONDUIT, AND OTHER ITEMS WHICH MAY BE REQUIRED. INVESTIGATE THE STRUCTURAL AND FINISHED CONDITION AFFECTING THE CONTRACT WORK INCLUDING OBSTRUCTIONS, GRADE DIFFERENCES OR AREA DIMENSIONAL DIFFERENCES. IN THE EVENT OF FIELD DISCREPANCY WITH CONTRACT DOCUMENTS, PLAN THE INSTALLATION WORK ACCORDINGLY BY NOTIFICATION AND APPROVAL OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND ACCORDING TO THE CONTRACT SPECIFICATIONS. NOTIFY AND COORDINATE IRRIGATION CONTRACT WORK WITH APPLICABLE CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE, CONDUIT OR SLEEVES THROUGH OR UNDER WALLS, ROADWAYS, PAVING AND STRUCTURES BEFORE CONSTRUCTION. IN THE EVENT THESE NOTIFICATIONS ARE NOT PERFORMED, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR REQUIRED REVISIONS.

2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE; THE UNIFORM PLUMBING CODE, PUBLISHED BY THE WESTERN PLUMBING OFFICIALS ASSOCIATION; AND OTHER STATE OR LOCAL LAWS OR REGULATIONS. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR REGULATIONS. THE CONTRACTOR SHALL FURNISH WITHOUT ANY EXTRA CHARGE, ANY ADDITIONAL MATERIAL AND LABOR WHEN REQUIRED BY THE COMPLIANCE WITH THESE CODES AND REGULATIONS.

3. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF IRRIGATION SYSTEM WITH LAYOUT AND INSTALLATION OF THE PLANT MATERIALS TO INSURE THAT THERE WILL BE COMPLETE AND UNIFORM IRRIGATION COVERAGE OF PLANTING IN ACCORDANCE WITH THESE DRAWINGS, AND CONTRACT DOCUMENTS. THE IRRIGATION LAYOUT SHALL BE CHECKED BY THE CONTRACTOR AND OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO CONSTRUCTION TO DETERMINE IF ANY CHANGES, DELETIONS, OR ADDITIONS ARE REQUIRED. IRRIGATION SYSTEM SHALL BE INSTALLED AND TESTED PRIOR TO INSTALLATION OF PLANT MATERIAL.

4. THE INTENT OF THIS IRRIGATION SYSTEM IS TO PROVIDE THE MINIMUM AMOUNT OF WATER REQUIRED TO SUSTAIN GOOD PLANT HEALTH.

5. IT IS THE RESPONSIBILITY OF THE MAINTENANCE CONTRACTOR AND/OR OWNER TO PROGRAM THE IRRIGATION CONTROLLER(S) TO PROVIDE THE MINIMUM AMOUNT OF WATER NEEDED TO SUSTAIN GOOD PLANT HEALTH. THIS INCLUDES MAKING ADJUSTMENTS TO THE PROGRAM FOR SEASONAL WEATHER CHANGES, PLANT MATERIAL, WATER REQUIREMENTS, MOUNDS, SLOPES, SUN, SHADE AND WIND EXPOSURE.

6. IT IS THE RESPONSIBILITY OF A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120 VOLT A.C. (2.5 AMP DEMAND PER CONTROLLER) ELECTRICAL SERVICE TO THE CONTROLLER LOCATION(S). IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO COORDINATE THE ELECTRICAL SERVICE STUB-OUT TO THE CONTROLLER(S). PROVIDE PROPER GROUNDING PER CONTROLLER MANUFACTURER'S INSTRUCTIONS AND IN ACCORDANCE WITH LOCAL CODES.

7. PROVIDE EACH CONTROLLER WITH ITS OWN GROUND ROD. SEPARATE THE GROUND RODS BY A MINIMUM OF EIGHT FEET. THE GROUND ROD SHALL BE AN EIGHT FOOT LONG BY 5/8" DIAMETER U.L. APPROVED COPPER CLAD ROD. INSTALL NO MORE THAN 6" OF THE GROUND ROD ABOVE FINISH GRADE. CONNECT #6 GAUGE WIRE WITH A U.L. APPROVED GROUND ROD CLAMP TO ROD AND BACK TO GROUND SCREW AT BASE OF CONTROLLER WITH APPROPRIATE CONNECTOR. MAKE THIS WIRE AS SHORT AS POSSIBLE, AVOIDING KINKS OR BENDING.

8. INSTALL NEW BATTERIES IN THE IRRIGATION CONTROLLER(S) TO RETAIN PROGRAM IN MEMORY DURING TEMPORARY POWER FAILURES. USE QUANTITY, TYPE AND SIZE REQUIRED AS PER CONTROLLER MANUFACTURER'S INSTRUCTIONS.

9. SCHEDULE A MEETING WHICH INCLUDES REPRESENTATIVES OF THE IRRIGATION CONTROLLER MANUFACTURER, THE MAINTENANCE CONTRACTOR, THE OWNER AND THE IRRIGATION CONTRACTOR AT THE SITE FOR INSTRUCTION ON THE PROPER PROGRAMMING AND OPERATION OF THE IRRIGATION CONTROLLER.

10. PROVIDE EACH IRRIGATION CONTROLLER WITH ITS OWN INDEPENDENT LOW VOLTAGE COMMON GROUND WIRE.

11. IRRIGATION CONTROL WIRES: SOLID COPPER WITH U.L. APPROVAL FOR DIRECT BURIAL IN GROUND. COMMON GROUND WIRE: SIZE #12-1 WIRE WITH A WHITE INSULATING JACKET. CONTROL WIRE SERVICING REMOTE CONTROL VALVES: SIZE #14-1 WIRE WITH INSULATING JACKET OF COLOR OTHER THAN WHITE. SPLICES SHALL BE MADE WITH 3M-DBY SEAL PACKS OR APPROVED EQUAL.

12. INSTALL TWO SPARE CONTROL WIRES OF A DIFFERENT COLOR ALONG THE ENTIRE MAIN LINE. LOOP 36" EXCESS WIRE INTO EACH SINGLE VALVE BOX AND INTO ONE VALVE BOX IN EACH GROUP OF VALVES.

13. SPLICING OF LOW VOLTAGE WIRES IS PERMITTED IN VALVE BOXES ONLY. LEAVE A 36" LONG, 1" DIAMETER COIL OF EXCESS WIRE AT EACH SPLICE AND A 36" LONG EXPANSION LOOP EVERY 100 FEET ALONG WIRE RUN. TAPE WIRES TOGETHER EVERY TEN FEET. DO NOT TAPE WIRES TOGETHER WHERE CONTAINED WITHIN SLEEVING OR CONDUIT.

14. INSTALL GREEN PLASTIC VALVE BOXES WITH BOLT DOWN, NON HINGED COVER MARKED "IRRIGATION CONTROL VALVE". BOX BODY SHALL HAVE KNOCK OUTS. ACCEPTABLE VALVE BOX MANUFACTURER'S INCLUDE NDS, CARSON OR APPROVED EQUAL.

15. INSTALL REMOTE CONTROL VALVE BOXES 12" FROM WALK, CURB, BUILDING OR LANDSCAPE FEATURE. AT MULTIPLE VALVE BOX GROUPS, INSTALL EACH BOX AN EQUAL DISTANCE FROM THE WALK, CURB, BUILDING OR LANDSCAPE FEATURE AND PROVIDE 12" BETWEEN BOX TOPS. ALIGN THE SHORT SIDE OF RECTANGULAR VALVE BOXES PARALLEL TO WALK, CURB, BUILDING OR LANDSCAPE FEATURE.

16. VALVE LOCATIONS SHOWN ARE DIAGRAMMATIC. INSTALL IN GROUND COVER/SHRUB AREAS (AVOID LAWN AREAS WHERE POSSIBLE).

17. THE CONTRACTOR SHALL LABEL CONTROL LINE WIRE AT EACH REMOTE CONTROL VALVE WITH A 2 1/4" X 2 3/4" POLYURETHANE I.D. TAG, INDICATING IDENTIFICATION NUMBER OF VALVE (CONTROLLER AND STATION NUMBER). ATTACH LABEL TO CONTROL WIRE. THE CONTRACTOR SHALL PERMANENTLY STAMP ALL VALVE BOX LIDS WITH APPROPRIATE IDENTIFICATION AS NOTED IN CONSTRUCTION DETAILS.

18. FLUSH AND ADJUST IRRIGATION OUTLETS AND NOZZLES FOR OPTIMUM PERFORMANCE AND TO PREVENT OVER SPRAY ONTO WALKS, ROADWAYS, AND/OR BUILDINGS. SELECT THE BEST DEGREE OF THE ARC AND RADIUS TO FIT THE EXISTING SITE CONDITIONS AND THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH CONTROL ZONE.

19. SET SPRINKLER HEADS PERPENDICULAR TO FINISH GRADE.

20. LOCATE BUBBLERS ON UPHILL SIDE OF PLANT OR TREE.

21. INSTALL A HUNTER HCV SERIES, KBI CV SERIES, OR APPROVED EQUAL SPRING LOADED CHECK VALVE IN SPRINKLER RISER ASSEMBLIES WHERE LOW OUTLET DRAINAGE WILL CAUSE EROSION AND/OR EXCESS WATER.

22. WHERE IT IS NECESSARY TO EXCAVATE ADJACENT TO EXISTING TREES, USE CAUTION TO AVOID INJURY TO TREES AND TREE ROOTS. EXCAVATE BY HAND IN AREAS WHERE TWO (2) INCH AND LARGER ROOTS OCCUR. BACK FILL TRENCHES ADJACENT TO TREE WITHIN TWENTY-FOUR (24) HOURS. WHERE THIS IS NOT POSSIBLE, SHADE THE SIDE OF THE TRENCH ADJACENT TO THE TREE WITH WET BURLAP OR CANVAS.

23. NOTIFY LOCAL JURISDICTIONS FOR INSPECTION AND TESTING OF INSTALLED BACKFLOW PREVENTION DEVICE.

24. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE SHOWN ON THE IRRIGATION DRAWINGS. VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE.

25. IRRIGATION DEMAND: REFER TO PLANS.

26. THE EXISTING MAIN LINE SHOWN ON THE DRAWINGS IS DIAGRAMMATIC. VERIFY AND LOCATE EXISTING MAIN LINE IN FIELD. REPORT TO ARCHITECT IN WRITING ANY DEVIATION OF EXISTING MAIN LINE LOCATION FROM THAT SHOWN ON THE DRAWINGS.

27. PIPE SIZING SHOWN ON THE DRAWINGS IS TYPICAL. AS CHANGES IN LAYOUT OCCUR DURING STAKING AND CONSTRUCTION THE SIZE MAY NEED TO BE ADJUSTED ACCORDINGLY.

28. PIPE THREAD SEALANT COMPOUND SHALL BE RECTOR SEAL #5.

29. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MINOR CHANGES IN THE IRRIGATION LAYOUT DUE TO OBSTRUCTIONS NOT SHOWN ON THE IRRIGATION DRAWINGS SUCH AS LIGHTS, FIRE HYDRANTS, SIGNS, ELECTRICAL ENCLOSURES, ETC.

30. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CHANGES IN THE IRRIGATION LAYOUT AND VALVE ZONING DUE TO VARIATIONS IN THE EXISTING SITE CONDITIONS SUCH AS EXPOSURE FROM BUILDINGS, TRELLISES, TREES, ETC., AS WELL AS SLOPE AND SOIL CONDITIONS. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND IRRIGATION CONSULTANT OF THE PROPOSED CHANGES PRIOR TO INSTALLATION FOR APPROVAL.

31. WHEN WORK OF THIS SECTION HAS BEEN COMPLETED AND SUCH OTHER TIMES AS MAY BE DIRECTED, REMOVE ALL TRASH, DEBRIS, SURPLUS MATERIALS AND EQUIPMENT FROM SITE.

32. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLEMENTAL HAND WATERING OF ALL PLANT MATERIAL WITHIN DRIPLINE AREAS UNTIL THE PLANTS ARE SUFFICIENTLY ESTABLISHED.

33. VERIFY LOCATIONS OF ALL IRRIGATION COMPONENTS INSTALLED WITHIN A VALVE BOX WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. DO NOT INSTALL UNTIL LANDSCAPE ARCHITECT PROVIDES ACCEPTABLE LOCATIONS.

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Walnut Creek, CA 94597
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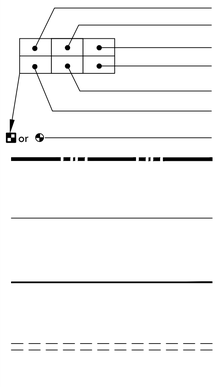
IRRIGATION LEGEND

SYMBOL	MODEL NUMBER	DESCRIPTION	NOZZLE GPM	OPERATING PSI	OPERATING RADIUS (FEET)
	PCB-25	HUNTER BUBBLER (SHRUB)	0.25	30	TRICKLE
■	PCB-25	HUNTER BUBBLER (TREE) MIN. 2 PER TREE. REFER TO BUBBLER DETAIL FOR QUANTITY OF BUBBLERS PER TREE SIZE.	0.25	30	TRICKLE
	WLT-0500-T	NDS SCH 40 BALL VALVE OR APPROVED EQUAL			
	ECO-ID	HUNTER ECO-INDICATOR			
	ICV-101/AS-40	HUNTER REMOTE CONTROL VALVE WITH 40 PSI PRESSURE REGULATOR			
	ICZ-101-40	HUNTER REMOTE CONTROL VALVE WITH A 40 PSI PRESSURE REGULATOR AND A 1" FILTER.			
	QB44RCAR10	BUCKNER 1" TWO-PIECE QUICK COUPLING VALVE (ANTI-ROTATION)			
	T-FP600A-LF-1"	NIBCO 1" BRASS BALL VALVE			
MV	WT-MV-100G-SNO	WeatherTRAK 1" BRASS MASTER VALVE (NORMALLY OPEN)			
FS	WTFLOW-HD-P-100	WeatherTRAK 1" FLOW SENSOR			
	975XL2SEU-1"	WILKINS REDUCED PRESSURE BACKFLOW ASSEMBL.			
SM	MODEL 55	BADGER SUB WATER METER			
A	WTLC-C-12-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 12 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			
B	WTLC-C-6-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 6 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			



CONTROLLER AND STATION NUMBER
REMOTE CONTROL VALVE SIZE (IN INCHES)
FLOW (GPM)
WATER USE CLASSIFICATION OF ZONE
APPLICATION RATE (IN/HR) or DRIPLINE SPACING
AREA (SQ. FT.)
ASSOCIATED REMOTE CONTROL VALVE

MAIN LINE: 1.25" THROUGHOUT:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 18" COVER.

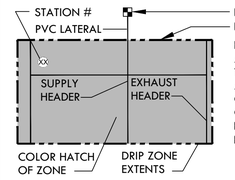
LATERAL LINE: 3/4" AND LARGER:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

DRIPLINE LATERAL LINE: 3/4" AND LARGER:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

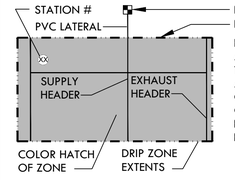
SLEEVING: SCHEDULE 40 PVC PLASTIC PIPE. COVER TO BE AS INDICATED IN SPECIFICATIONS OR AS INDICATED ABOVE FOR PIPE DEPTH OF COVER.

MAIN LINE: 1.25" THROUGHOUT:
TYPE 'K' COPPER PIPE WITH WROUGHT FITTINGS. SHOWN FOR REFERENCE ONLY, SEE PLUMBING PLANS FOR ROUTING THROUGH STRUCTURE.

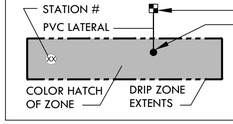
ELECTRICAL CONDUIT: SHOWN FOR REFERENCE ONLY, SEE ELECTRICAL PLANS FOR ROUTING THROUGH STRUCTURE.



DRIPLINE REMOTE CONTROL VALVE
DRIP ZONE:
HUNTER HDL SERIES DRIPLINE WITH BUILT IN PRESSURE COMPENSATION AND CHECK VALVE, PART #HDL-06-12-250-CV. USE PLD FITTINGS. TUBING TO BE INSTALLED 4" BELOW GRADE IN A 12" O.C. GRID ACCORDING TO DETAILS. SIZE EXHAUST HEADERS AS FOLLOWS: 1": 0-10 GPM, 1.25": 11-20 GPM. ALL EXHAUST HEADERS SHALL BE 1" SCH 40 PVC OR 1" SCH 40 FLEXIBLE PVC. USE SCH. 40 PVC SOLVENT WELD FITTINGS. EXTEND PVC HEADERS TO THE ENDS OF ALL DRIP ZONES TO BALANCE FLOW IF REQUIRED. SEE DETAILS FOR FURTHER INFORMATION.



DRIPLINE REMOTE CONTROL VALVE
DRIP ZONE:
HUNTER HDL SERIES DRIPLINE WITH BUILT IN PRESSURE COMPENSATION AND CHECK VALVE, PART #HDL-06-12-250-CV. USE PLD FITTINGS. TUBING TO BE INSTALLED 4" BELOW GRADE IN A 8" O.C. GRID ACCORDING TO DETAILS. SIZE EXHAUST HEADERS AS FOLLOWS: 1": 0-10 GPM, 1.25": 11-20 GPM. ALL EXHAUST HEADERS SHALL BE 1" SCH 40 PVC OR 1" SCH 40 FLEXIBLE PVC. USE SCH. 40 PVC SOLVENT WELD FITTINGS. EXTEND PVC HEADERS TO THE ENDS OF ALL DRIP ZONES TO BALANCE FLOW IF REQUIRED. SEE DETAILS FOR FURTHER INFORMATION.



DRIPLINE REMOTE CONTROL VALVE
APPROXIMATE CONNECTION POINT BETWEEN DRIPLINE TUBING AND PVC SUPPLY WHEN DRIP ZONE IS LESS THAN 3 GPM AND NO PVC SUPPLY/EXHUST HEADERS ARE NEEDED. REFER TO DRIPLINE TUBING CONNECTION DETAIL FOR MORE INFORMATION.

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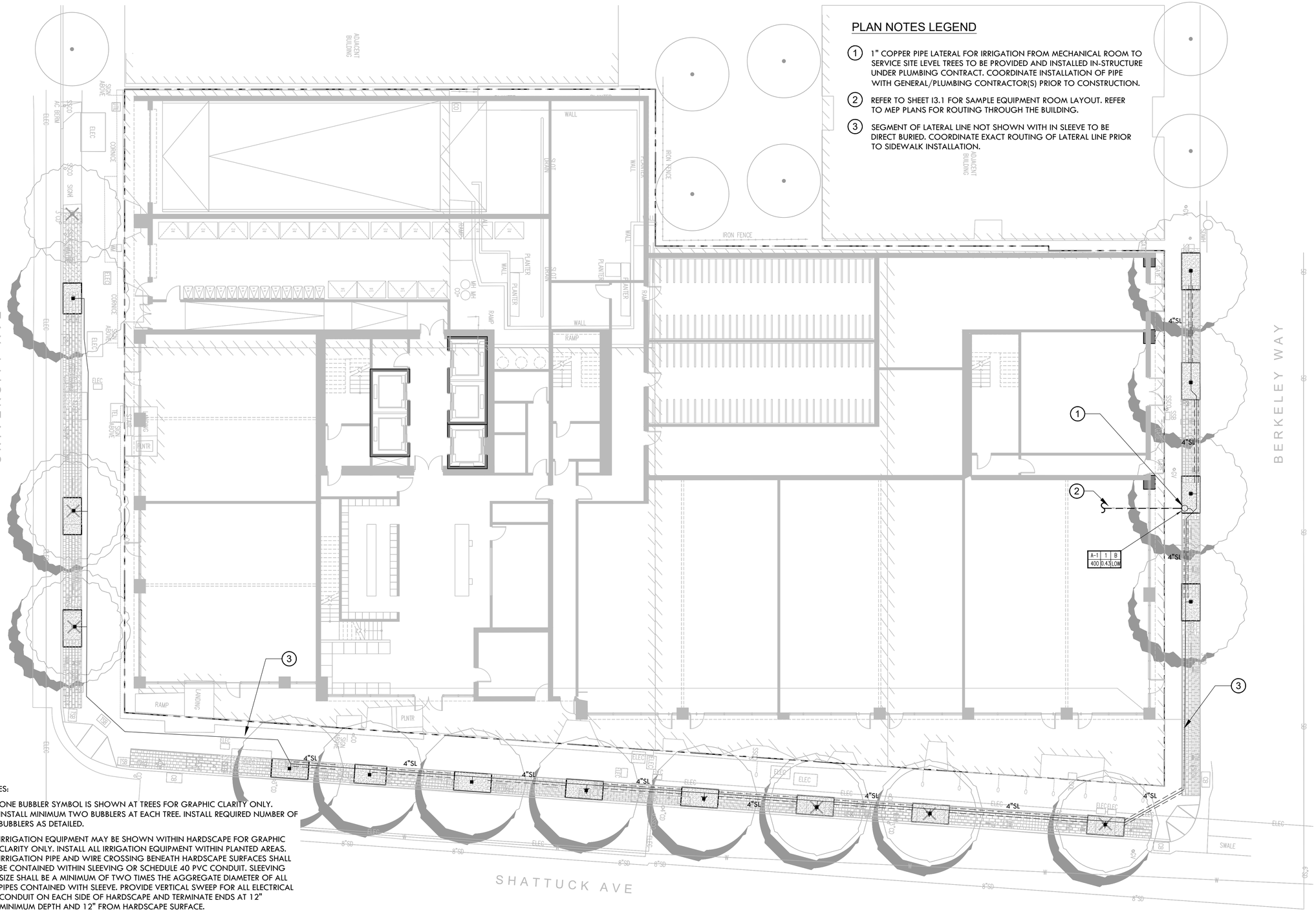
JOB: 0000

SHEET:

IRRIGATION NOTES & LEGEND

I0.0



NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. IRRIGATION EQUIPMENT MAY BE SHOWN WITHIN HARDSCAPE FOR GRAPHIC CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT WITHIN PLANTED AREAS. IRRIGATION PIPE AND WIRE CROSSING BENEATH HARDSCAPE SURFACES SHALL BE CONTAINED WITHIN SLEEVING OR SCHEDULE 40 PVC CONDUIT. SLEEVING SIZE SHALL BE A MINIMUM OF TWO TIMES THE AGGREGATE DIAMETER OF ALL PIPES CONTAINED WITH SLEEVE. PROVIDE VERTICAL SWEEP FOR ALL ELECTRICAL CONDUIT ON EACH SIDE OF HARDSCAPE AND TERMINATE ENDS AT 12" MINIMUM DEPTH AND 12" FROM HARDSCAPE SURFACE.
3. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
4. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

0.75"	0-6 GPM
1"	7-12 GPM

North

1" = 10'
0 4 8 16

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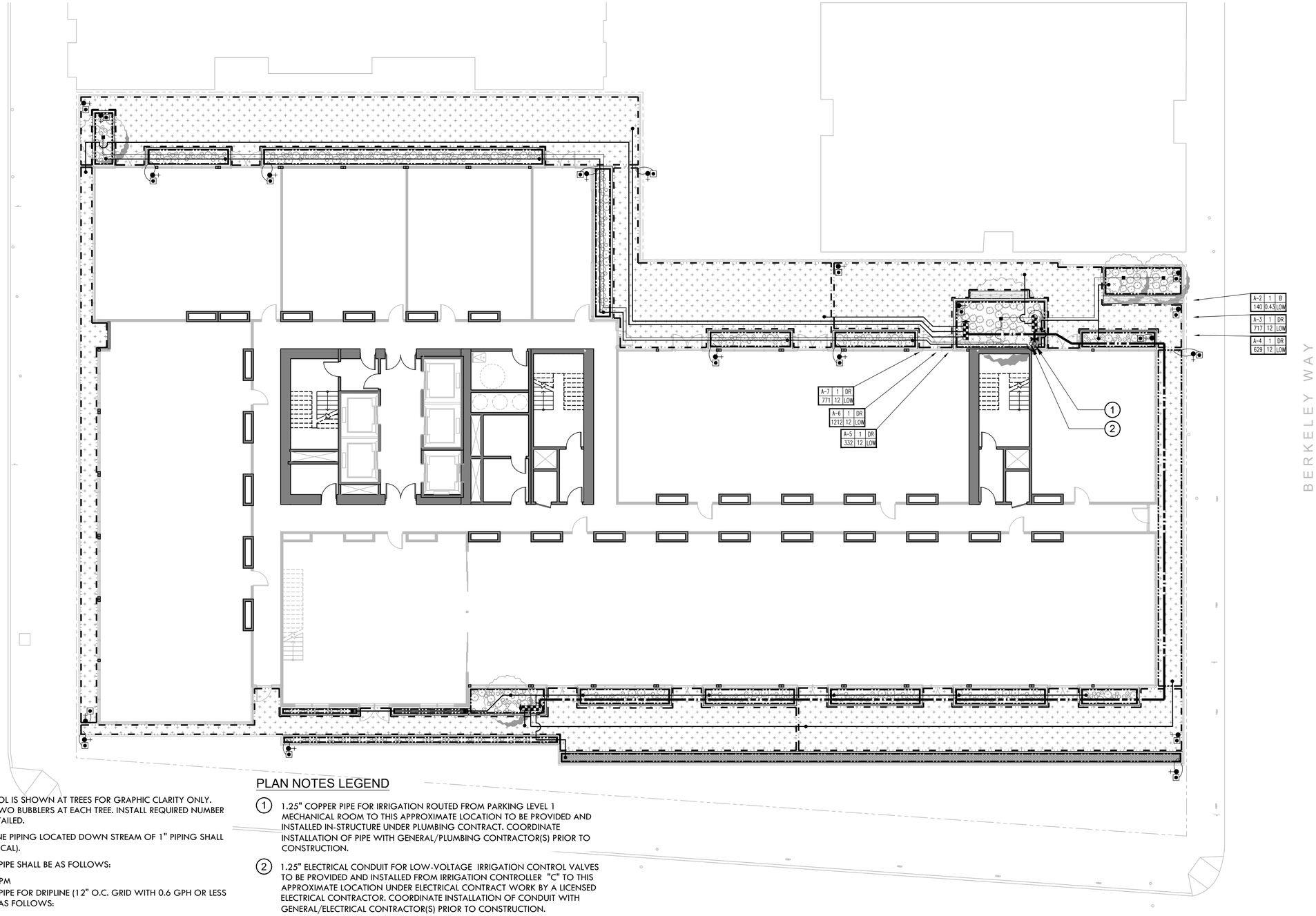
JOB: 0000

SHEET:

IRRIGATION PLAN AT STREETSCAPE ALT A

L1.0



NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
3. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

   0.75" 0-6 GPM
4. SIZING OF LATERAL PIPE FOR DRIPLINE (12" O.C. GRID WITH 0.6 GPH OR LESS EMITTERS) SHALL BE AS FOLLOWS:

   0.75 0-500 FT
   1" 501-1100 FT

PLAN NOTES LEGEND

(1) 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.

(2) 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

North

3/16"=1'-0"
0 2 4 8

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JOB: 0000

SHEET:

IRRIGATION PLAN
SECOND FLOOR
PODIUM GARDENS

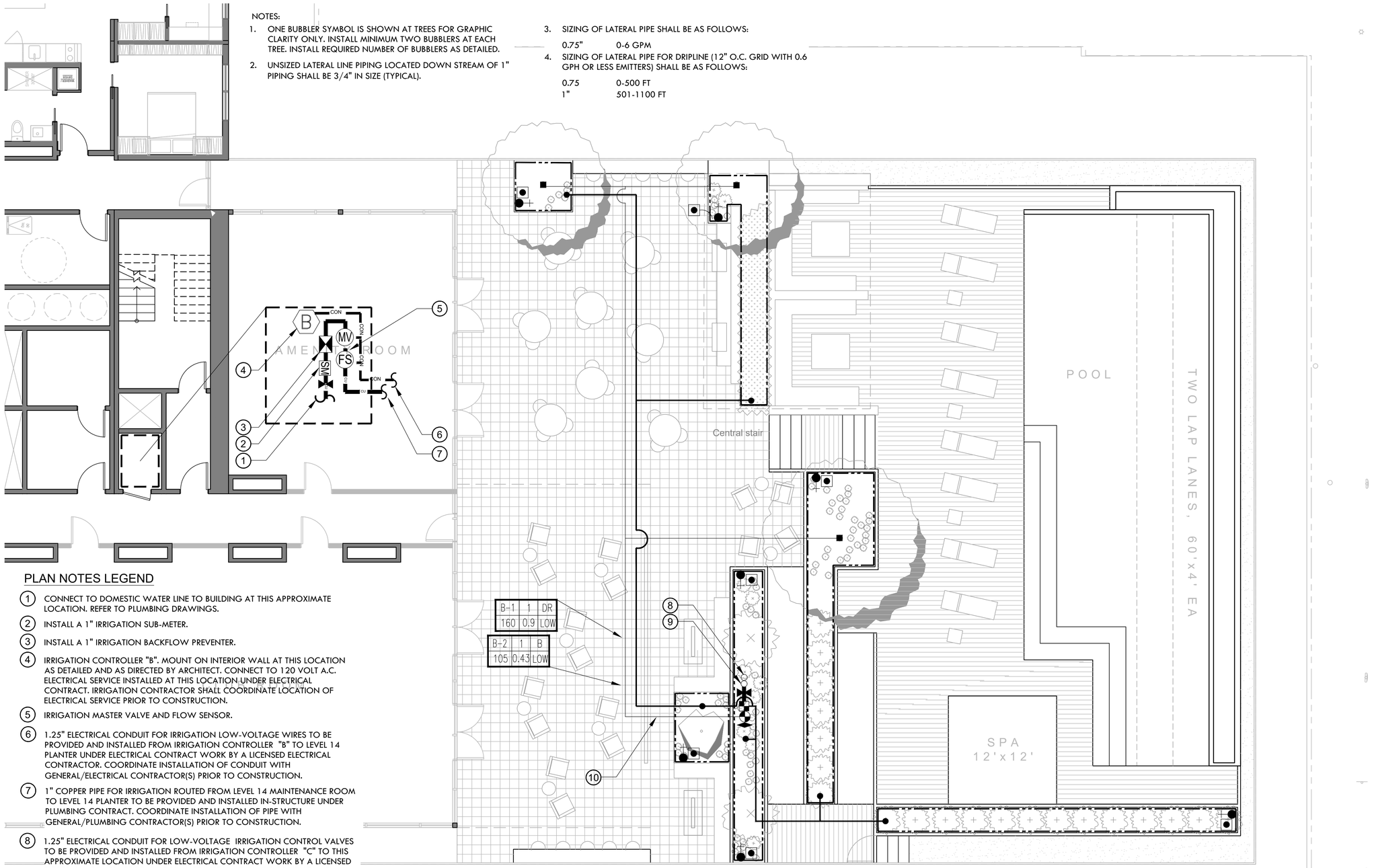
L2.0

NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
3. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

   0.75" 0-6 GPM
4. SIZING OF LATERAL PIPE FOR DRIPLINE (12" O.C. GRID WITH 0.6 GPH OR LESS EMITTERS) SHALL BE AS FOLLOWS:

   0.75 0-500 FT
   1" 501-1100 FT



PLAN NOTES LEGEND

1. CONNECT TO DOMESTIC WATER LINE TO BUILDING AT THIS APPROXIMATE LOCATION. REFER TO PLUMBING DRAWINGS.
2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION CONTROLLER "B". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
5. IRRIGATION MASTER VALVE AND FLOW SENSOR.
6. 1.25" ELECTRICAL CONDUIT FOR IRRIGATION LOW-VOLTAGE WIRES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "B" TO LEVEL 14 PLANTER UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM LEVEL 14 MAINTENANCE ROOM TO LEVEL 14 PLANTER TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
9. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
10. ALL IRRIGATION LINES SHALL BE ROUTED UNDER PEDESTAL PAVERS.

27 FEB 2023

ALT E - REVISED

North

3/16"=1'-0"
0 2 4 8

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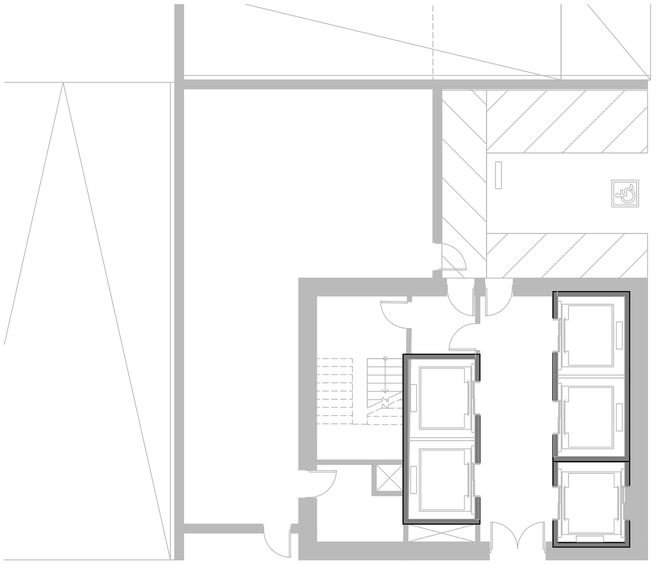
JOB: 0000

SHEET:

IRRIGATION PLAN
FOURTEENTH
FLOOR ROOF DECK
ALT E - REVISED

I3.0



PLAN NOTES LEGEND

1. CONNECT TO DOMESTIC WATER LINE TO BUILDING AT THIS APPROXIMATE LOCATION. REFER TO PLUMBING DRAWINGS.
2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION MASTER VALVE AND FLOW SENSOR.
5. IRRIGATION CONTROLLER "C". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
6. 1" COPPER PIPE LATERAL FOR IRRIGATION FROM MECHANICAL ROOM TO SERVICE SITE LEVEL TREES TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM MECHANICAL ROOM TO PODIUM LEVEL PLANTERS TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO PODIUM LEVEL PLANTERS UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

27 FEB 2023

North 0 4 8 16 1/8"=1'-0"

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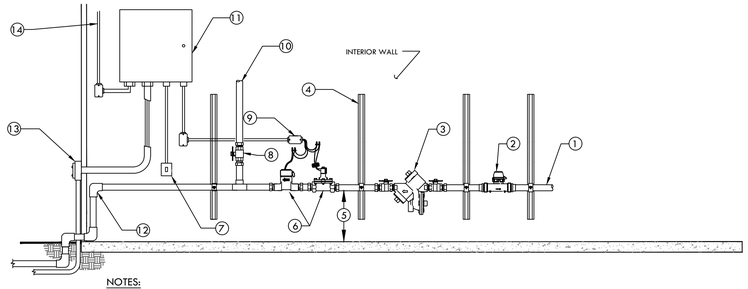
JOB: 0000

SHEET:

IRRIGATION POINT OF CONNECTION

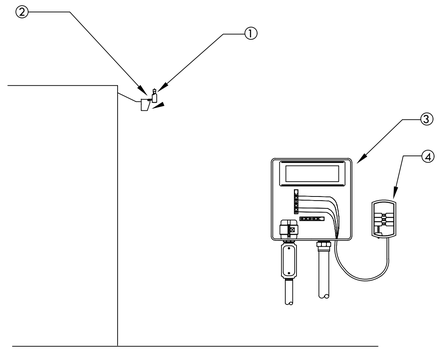
I3.1

① 1.25" COPPER MAIN LINE TO BACKFLOW IN EQUIPMENT ROOM. SHOWN ON MEP PLANS.
② SUB-METER FOR IRRIGATION.
③ 1.25" WILKENS REDUCED PRESSURE BACKFLOW ASSEMBLY.
④ UNI-STRUT SUPPORT BRACKET, THREADED EXTENSIONS AND CLAMPS, LENGTH AS REQUIRED. PROVIDE A MINIMUM OF 6" SEPARATION FOR THE VALVES AND PIPE FROM THE WALL.
⑤ MIN. 18" ± FROM FINISH FLOOR.
⑥ MASTER VALVE AND FLOW SENSOR.
⑦ 120 VOLT A.C. ELECTRICAL BY ELECTRICAL CONTRACTOR FOR CONTROLLER
⑧ 1.25" BRASS BALL VALVE.
⑨ 1" ELECTRICAL CONDUIT WITH JUNCTION BOXES FOR CONTROL WIRES FOR FLOW SENSOR & MASTER VALVE.
⑩ 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION(S). INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
⑪ IRRIGATION CONTROLLER BY IRRIGATION CONTRACTOR. MINIMUM 42" ABOVE FINISHED FLOOR.
⑫ 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION. INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
⑬ JUNCTION BOX BY ELECTRICAL CONTRACTOR FOR EXIT OF TWO WIRE SERVICING VALVES WITHIN ROOM.
⑭ 1.25" ELECTRICAL CONDUIT WITH REQUIRED JUNCTION BOXES ROUTED THROUGH STRUCTURE FROM CONTROLLER LOCATION TO EXTERIOR PLANTERS.



NOTES:
1. THIS LAYOUT IS TO PROVIDE INFORMATION ON EQUIPMENT AND TYPICAL DISTANCES REQUIRED BETWEEN THE EQUIPMENT. IT IS DIAGRAMMATIC AND WILL NEED TO BE ADJUSTED ACCORDING TO AVAILABLE FLOOR SPACE AND OTHER EQUIPMENT INSTALLED WITHIN THE ENCLOSURE. OFFSETS AND FITTINGS WILL BE REQUIRED FOR THESE ADJUSTMENTS.
2. MAINTAIN 6" OF CLEARANCE FROM BUILDING WALLS FOR EASE OF MAINTENANCE FOR ALL COPPER PIPING, VALVES, AND FITTINGS.
3. SEAL ALL PIPE PENETRATIONS THROUGH WALLS/STRUCTURE AS REQUIRED (BY PLUMBING CONTRACTOR). SEE PLUMBING/WATERPROOFING DRAWINGS.
4. ALL FITTINGS AND PIPING FOR WATER LINES WITHIN EQUIPMENT ROOM SHALL BE COPPER WITH WROT FITTINGS OR BRASS NIPPLES.

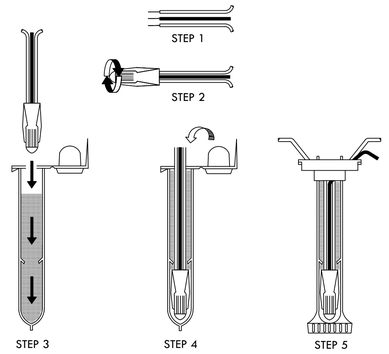
1 IRRIGATION EQUIPMENT LAYOUT DIAGRAM DETAIL
SCALE: NONE



NOTE: MAXIMUM LINE OF SIGHT FROM RAIN SENSOR TO RECEIVER IS 300 FT. DISTANCE IS LESS IF OBSTRUCTIONS EXIST. SENSOR MUST BE INSTALLED IN "CLEAR SPACE" WHERE IT IS EXPOSED TO UNOBSTRUCTED RAINFALL AND IS CLEAR OF IRRIGATION SPRAY.

① WIRELESS RAIN SENSOR TRANSMITTER (GUTTER MOUNTED)
② MOUNT RAIN SENSOR ON BUILDING WALL. ARCHITECT TO APPROVE LOCATION
③ CONTROLLER
④ RAIN SENSOR RECEIVER

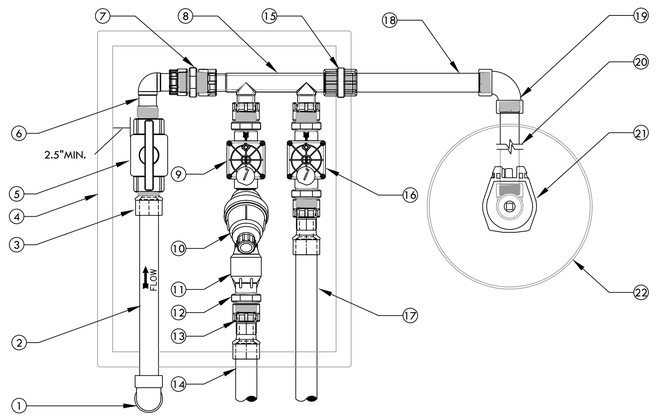
2 WIRELESS RAIN SENSOR-GUTTER MOUNT
SCALE: NONE



NOTE:
MAXIMUM # OF WIRES PER CONNECTOR:
- 3-#14 GAUGE
- 2-#12 GAUGE

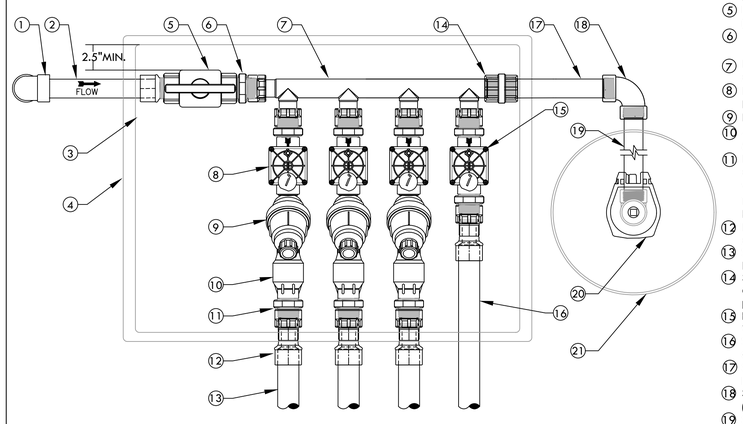
INSTRUCTIONS:
1. STRIP WIRES APPROXIMATELY 1/2" FROM ENDS TO EXPOSE WIRE.
2. TWIST CONNECTOR AROUND WIRES CLOCKWISE UNTIL HAND TIGHT, DO NOT OVERTIGHTEN.
3. INSERT WIRE ASSEMBLY TO BOTTOM OF GEL-FILLED TUBE. CHECK TO MAKE SURE CONNECTOR HAS BEEN PUSHED PAST LOCKING FINGERS AND IS SEATED AT THE BOTTOM OF THE TUBE.
4. PLACE WIRES WHICH EXIT TUBE IN WIRE EXIT HOLES AND CLOSE CAP UNTIL IT SNAPS.
5. INSPECT FINAL SPLICE ASSEMBLY THAT IT IS SECURED.

3 WEATHERPROOF WIRE SPLICE ASSEMBLY
SCALE: NONE



① SCH 40 PVC 90° ELBOW (SxS) FROM PVC MAIN LINE BELOW.
② SCH 40 PVC PIPE. LENGTH AS REQUIRED.
③ SCH 80 PVC MALE ADAPTER.
④ CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
⑤ NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
⑥ DURA 1" MIPT x 1" SWIVEL 90° (PART #306-009)
⑦ DURA 1"x1" THREADED ADAPTER (PART #08303) 4 TOTAL.
⑧ DURA 1" MULTI-PORT MANIFOLD (PART #301-010-2)
⑨ DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑩ FILTER. REFER TO LEGEND FOR MODEL.
⑪ 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
⑫ DURA 1" x 3/4" MALE ADAPTER (PART #08303-131). ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
⑬ DURA 1" SLIP X 1" SWIVEL (PART #329-011) 2 TOTAL.
⑭ SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION
⑮ SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
⑯ BUBBLER OR SPRINKLER REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑰ SCHEDULE 40 PVC LATERAL TO BUBBLER OR SPRAY IRRIGATION.
⑱ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑲ SCHEDULE 80 PVC 90° ELBOW (TxT).
⑳ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
㉑ QUICK COUPLING VALVE. INSTALL PER DETAIL.
㉒ 10" ROUND BOX. INSTALL PER DETAIL.

4 TWO REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE



① SCH 40 PVC 90° ELBOW (SxS) FROM PVC MAIN LINE BELOW.
② SCH 40 PVC PIPE. LENGTH AS REQUIRED.
③ SCH 80 PVC MALE ADAPTER.
④ CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
⑤ NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
⑥ DURA 1"x1" THREADED ADAPTER (PART #08303) 6 TOTAL.
⑦ DURA 1" MULTI-PORT MANIFOLD (PART #301-010-4)
⑧ DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑨ FILTER. REFER TO LEGEND FOR MODEL.
⑩ 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
⑪ DURA 1" x 3/4" MALE ADAPTER (PART #08303-131) 3 TOTAL. ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
⑫ DURA 1" SLIP X 1" SWIVEL (PART #329-011) 4 TOTAL.
⑬ SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION.
⑭ SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
⑮ BUBBLER OR SPRINKLER REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑯ SCHEDULE 40 PVC LATERAL TO BUBBLERS OR SPRAY IRRIGATION.
⑰ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑱ SCHEDULE 80 PVC 90° ELBOW (TxT).
⑲ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑳ QUICK COUPLING VALVE. INSTALL PER DETAIL.
㉑ 10" ROUND BOX. INSTALL PER DETAIL.

5 FOUR REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE

TRACHTENBERG ARCHITECTS

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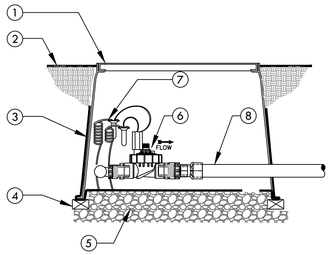
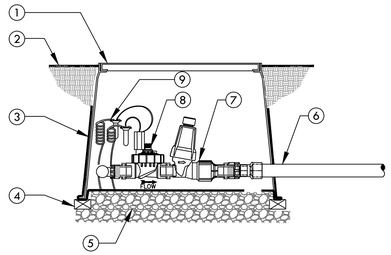


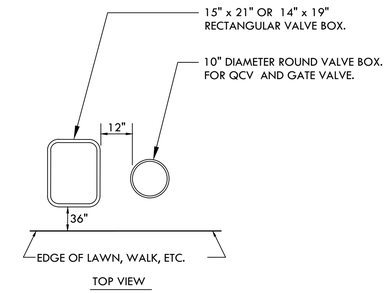
1. CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
2. FINISH GRADE
3. 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
4. BRICK-1 EACH CORNER
5. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
6. REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
7. VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL
8. SCH 40 PVC LATERAL LINE TO BUBBLERS OR SPRAY

1 BUBBLER OR SPRAY REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



1. CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
2. FINISH GRADE
3. 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
4. BRICK-1 EACH CORNER
5. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
6. SCH 40 PVC LATERAL LINE TO DRIPLINE OR DRIP.
7. DRIP FILTER AND REGULATOR
8. REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
9. VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL

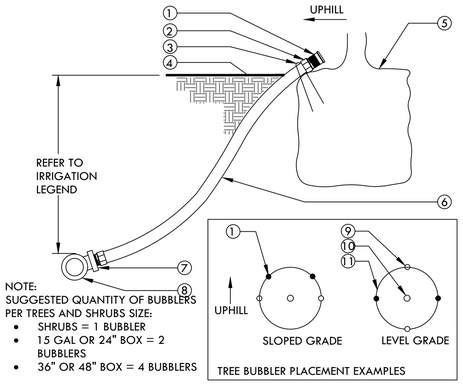
2 DRIP REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



TOP VIEW

INSTRUCTIONS:
1. CENTER VALVE BOX OVER REMOTE CONTROL VALVES TO FACILITATE SERVICING VALVE.
2. SET BOXES 1" ABOVE FINISH GRADE OR MULCH COVER IN GROUND COVER/SHRUB AREA AND FLUSH WITH FINISH GRADE IN TURF AREA.
3. SET RCV AND VALVE BOX ASSEMBLY IN GROUND COVER/SHRUB AREA WHERE POSSIBLE. INSTALL IN LAWN ONLY IF GROUND COVER DOES NOT EXIST ADJACENT TO LAWN.
4. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE OF LAWN, WALK, FENCE, CURB, ETC.
5. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOXES TO PREVENT COLLAPSE AND DEFORMATION OF VALVE BOX SIDES.
6. INSTALL EXTENSION BY VALVE BOX MANUFACTURER AS REQUIRED TO COMPLETELY ENCLOSE ASSEMBLY FOR EASY ACCESS.

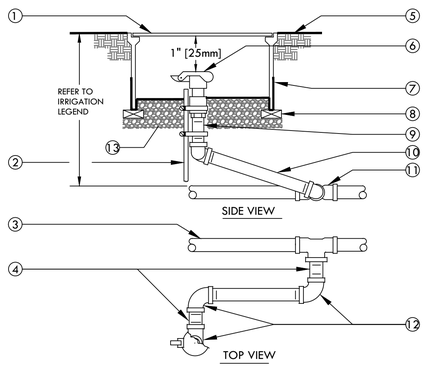
3 VALVE BOX INSTALLATION
SCALE: NONE



NOTE:
SUGGESTED QUANTITY OF BUBBLERS PER TREES AND SHRUBS SIZE:
- SHRUBS = 1 BUBBLER
- 15 GAL OR 24" BOX = 2 BUBBLERS
- 36" OR 48" BOX = 4 BUBBLERS

1. BUBBLER (TO BE INSTALLED ON TOP OF ROOTBALL).
2. 1/2" SCH. 40 MALE ADAPTER (2 TOTAL).
3. 6" STAPLE.
4. FINISH GRADE.
5. TREE OR SHRUB ROOTBALL.
6. 1/2" IPS FLEXIBLE PVC. USE WELD-ON 795 SOLVENT CEMENT OR EQUAL WHEN BONDING PVC HOSE TO FITTINGS.
7. PVC TEE (SST), ELBOW (ST) OR FEMALE ADAPTER.
8. PVC LATERAL LINE.
9. TREE STAKES.
10. TREE OR SHRUB.
11. EDGE OF ROOTBALL (TYPICAL).

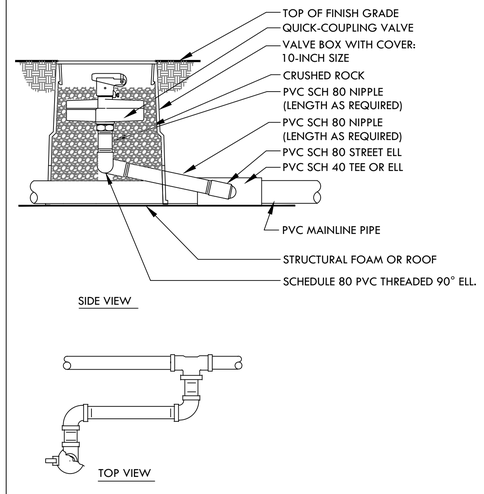
4 TREE AND SHRUB BUBBLER
SCALE: NONE



1. 10" ROUND PLASTIC VALVE BOX WITH BOLT DOWN LID.
2. 1 1/4" x 1 1/4" x 3/16" [30mm x 30mm x 5mm] ANGLE IRON 30" [760mm] LONG W/2 STAINLESS STEEL STRAPS (ONE AROUND QCV).
3. PVC MAIN LINE.
4. 3" [75mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
5. FINISH GRADE.
6. QUICK COUPLING VALVE.
7. 19 GAUGE 1/2" [13mm] SQUARE WIRE MESH.
8. BRICK - 2 TOTAL.
9. SCHEDULE 80 PVC THREADED NIPPLE.
10. 10" [250mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
11. UPC APPROVED SCHEDULE 40 PVC TEE OR ELBOW.
12. SCHEDULE 80 PVC THREADED 90° ELL.
13. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" [100mm] DEEP BELOW VALVE (NO SOIL IN VALVE BOX).

NOTE:
NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.

5 QUICK COUPLING VALVE
SCALE: NONE

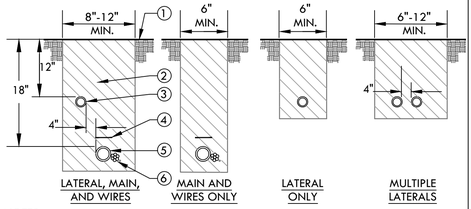


SIDE VIEW

TOP VIEW

NOTE:
1. NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.
2. TRIM VALVE BOX LENGTH AS NECESSARY TO BE FLUSH WITH TOP OF PLANTING TILES.
3. IF NECESSARY SLOT SIDES VALVE BOX TO ALLOW PASSAGE OF PIPE THROUGH BOTTOM OF VALVE BOX.

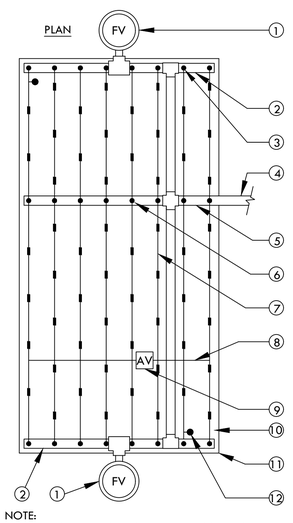
6 QUICK COUPLING VALVE-ON STRUCTURE
SCALE: NONE



NOTES:
1. ALL MAIN SUPPLY LINES AND LATERAL LINES SHALL BE PLACED IN SLEEVES UNDER PAVED SURFACES. INSTALL LOW VOLTAGE WIRES WITHIN A SEPARATE CONDUIT UNDER PAVED SURFACES. DO NOT TAPE WIRES WITHIN CONDUIT.
2. REUSE SALVAGED EXCAVATED FILL AND COMPACT TO ORIGINAL DENSITY IN LANDSCAPE AREAS. ALL OTHER AREAS SHALL BE AT 95% COMPACTION. BACKFILL MATERIAL SHALL BE THE EARTH EXCAVATED FROM THE TRENCHES, FREE FROM ROCKS (ANYTHING LARGER THAN 2"), CONCRETE CHUNKS, AND OTHER FOREIGN OR COARSE MATERIALS.
3. WHEN 12" POP-UP SPRINKLER HEADS ARE USED, INCREASE THE DEPTH OF LATERAL TO 18" AT THE SPRINKLER LOCATION ONLY.

1. FINISH GRADE.
2. CLEAN BACKFILL MATERIAL.
3. LATERAL LINE.
4. 3" DETECTABLE WARNING TAPE OVER MAIN LINE. INSTALL 3" ABOVE MAIN LINE. USE CHRISTY MODEL #TA-DT-3-BIRR FOR POTABLE IRRIGATION SYSTEMS OR #TA-DT-3-PRW FOR RECYCLED IRRIGATION WATER SYSTEMS
5. MAIN LINE.
6. LOW VOLTAGE CONTROL WIRES, TWO-WIRE CABLE, OR CONDUIT WITH WIRES. FOR MULTIPLE WIRES, TAPE AND BUNDLE WIRES AT 10 FT. INTERVALS. WIRING SHALL BE LAID OUT LOOSELY IN THE TRENCH.

7 TRENCHING
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
3. MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
5. PVC SUPPLY MANIFOLD. EXTEND TO END OF ZONE/EXHAUST HEADER.
6. MANIFOLD-TO-TEE CONNECTION.
7. DRIPLINE LATERAL.
8. AIR/VACUUM RELIEF LATERAL, BLANK POLY TUBING CENTERED ON MOUND OR BERM.
9. AIR/VACUUM RELIEF PLUMBED TO BLANK 5/8" POLY TUBING AT EACH HIGH POINT.
10. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
11. AREA PERIMETER.
12. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

8 HLD DRIPLINE CENTER FEED LAYOUT
SCALE: NONE

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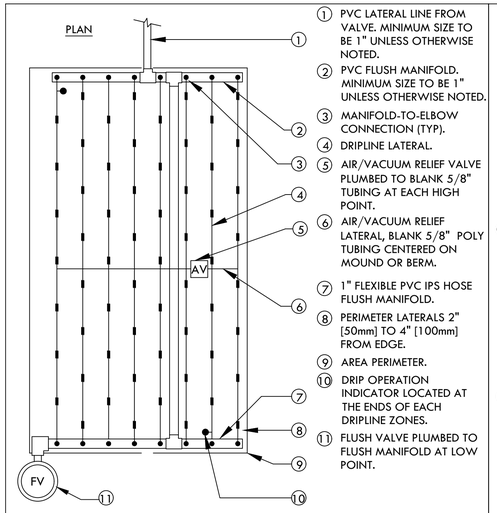
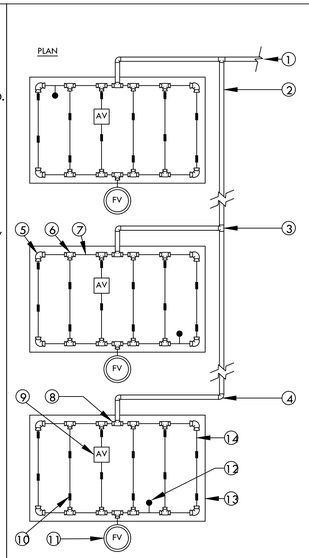


1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. DRIPLINE LATERAL.
5. AIR/VACUUM RELIEF VALVE PLUMBED TO BLANK 5/8" TUBING AT EACH HIGH POINT.
6. AIR/VACUUM RELIEF LATERAL, BLANK 5/8" POLY TUBING CENTERED ON MOUND OR BERM.
7. 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
8. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
9. AREA PERIMETER.
10. DRIP OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONES.
11. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

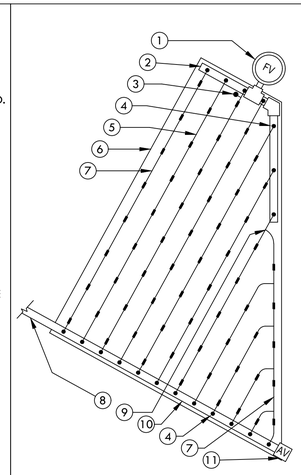
1 HLD DRIPLINE END FEED LAYOUT
SCALE: NONE



1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. PVC TEE (SxSxS).
4. PVC ELL (SxS).
5. HUNTER PLD-ELBOW (PLD-ELB)
6. HUNTER PLD-TEE (PLD-TEE).
7. BLANK 5/8" [16mm] POLY TUBING AT SUPPLY AND FLUSH END OF EACH ISLAND.
8. REFER TO DRIPLINE TO PVC CONNECTION DETAIL.
9. AIR/VACUUM RELIEF VALVE PLUMBED TO TUBING AT HIGH POINT.
10. DRIPLINE LATERAL.
11. MANUAL FLUSH VALVE PLUMBED TO TUBING AT LOW POINT.
12. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
13. ISLAND PERIMETER.
14. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.

NOTE:
1. THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

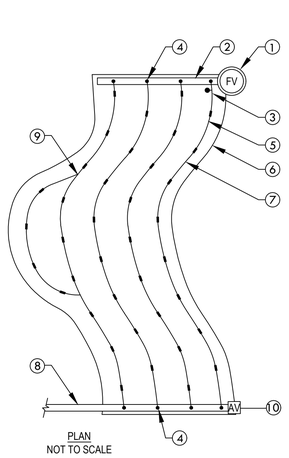
2 HLD DRIPLINE ISLAND LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. PVC SUPPLY MANIFOLD.
11. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

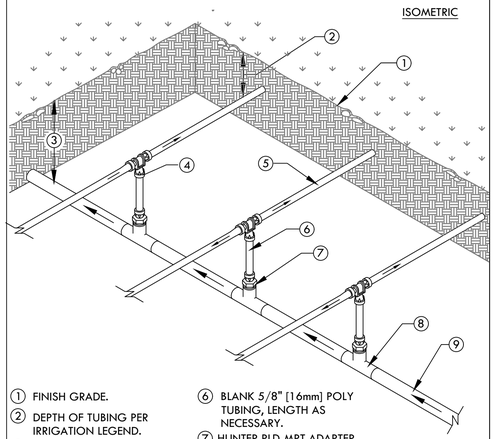
3 HLD DRIPLINE TRIANGULAR LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH/EXHAUST MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC SUPPLY LINE/HEADER FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

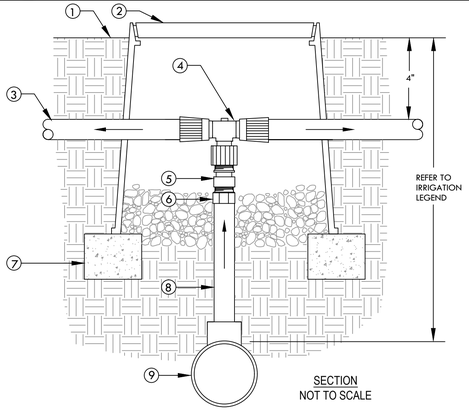
4 HLD DRIPLINE ODD CURVE LAYOUT
SCALE: NONE



1. FINISH GRADE.
2. DEPTH OF TUBING PER IRRIGATION LEGEND.
3. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND
4. HUNTER PLD-TEE (PLD-TEE)
5. DRIPLINE TUBING.
6. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
7. HUNTER PLD-MPT ADAPTER (PLD-050)
8. PVC TEE (SxSxT) WITH 1/2" [13mm] FPT OUTLET.
9. PVC LATERAL LINE FROM REMOTE CONTROL VALVE.

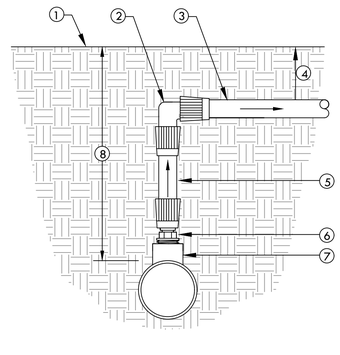
NOTE:
THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.

5 HLD DRIPLINE CENTER FEED MANIFOLD
SCALE: NONE



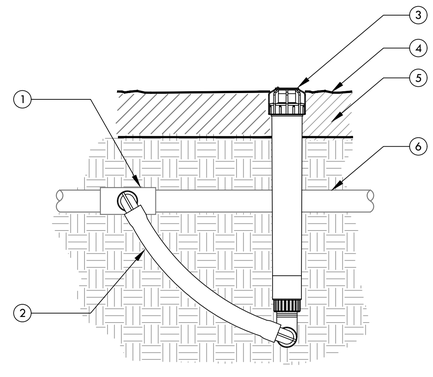
1. FINISH GRADE
2. CARSON 708 OR EQUAL. COLOR: BLACK. USE PURPLE FOR RECYCLED WATER SYSTEMS.
3. DRIPLINE TUBING
4. HUNTER PLD-TEE X 1/2" FPT ADAPTER
5. TORO 1/2" CHECK VALVE (PCV-500)
6. 1/2" SCH 40 MALE ADAPTER.
7. BRICK (1 OF 2)
8. 1/2" SCH 40 PVC (LENGTH AS REQUIRED)
9. PVC LATERAL LINE SUPPLY. MINIMUM SIZE TO BE 1" UNLESS SIZED DIFFERENTLY ON DRAWINGS. USE SCH 40 PVC 1"x1"x1/2" TEE OR 90° ELBOW.

6 DRIPLINE TO PVC CONNECTION
SCALE: NONE



1. FINISH GRADE
2. HUNTER PLD-ELBOW (PLD-ELB)
3. DRIPLINE TUBING
4. DEPTH OF TUBING PER IRRIGATION LEGEND.
5. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
6. HUNTER PLD-MPT ADAPTER (PLD-050)
7. SCH 40 PVC TEE (SxSxT) WITH 1/2" FPT OUTLET.
8. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND

7 DRIPLINE MANIFOLD TO ELBOW CONNECTION
SCALE: NONE



1. UPC APPROVED SCHEDULE 40 PVC TEE, ELBOW OR BARB x THREAD DRIP FITTING TEE OR ELBOW WITH 3/4" OUTLET.
2. 1/2" X 3/4" X 6" HUNTER SWING JOINT (SJ-7506)
3. ECO INDICATOR
4. FINISHED GRADE
5. MULCH
6. PVC LATERAL PIPE OR DRIPLINE

8 DRIPLINE OPERATION INDICATOR
SCALE: NONE

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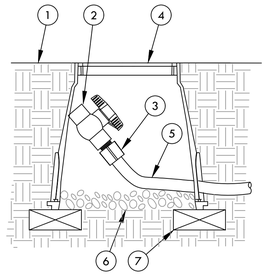
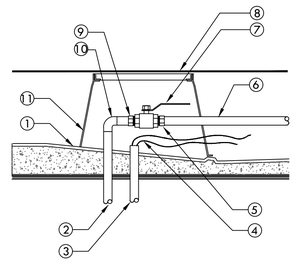


NOTE:
ALLOW A MINIMUM OF PVC HOSE IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

1. FINISH GRADE
2. 1/2" SCH 40 THREADED BALL VALVE.
3. 1/2" SCH 40 MALE ADAPTER.
4. 6" ROUND PLASTIC VALVE BOX.
5. 1" IPS PVC HOSE FROM EXHAUST HEADER.
6. PEA GRAVEL SUMP (6" DEEP).
7. BRICK (1 OF 2)

2 DRIPLINE-FLUSH POINT
SCALE: NONE



1. SLOPED ROOF BELOW PEDESTAL SYSTEM
2. COPPER PIPE THROUGH STRUCTURE PROVIDED BY PLUMBING CONTRACTOR. WATERPROOF ALL PENETRATIONS.
3. CONDUIT FOR CONTROL WIRES THROUGH STRUCTURE PROVIDED BY ELECTRICAL CONTRACTOR. WATERPROOF ALL PENETRATIONS
4. TWO-WIRE CABLE OR CONTROL WIRES
5. SCH 40 PVC MALE ADAPTER.
6. PVC MAIN LINE TO REMOTE CONTROL VALVES.
7. BRONZE BALL VALVE.
8. ROOF DECK PAVERS
9. COPPER MALE ADAPTER.
10. COPPER 90° ELBOW.
11. 10" ROUND PLASTIC VALVE BOX. CUT BOX TO FIT BELOW PEDESTAL PAVER SYSTEM

3 ON STRUCTURE STUB-OUT WITH BRONZE BALL VALVE
SCALE: NONE

IRRIGATION WATER USE CALCULATIONS

WATER USE ESTIMATION CONTROLLER "A"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	1,079	400	10,357	0.03	13.85	17%
2	GROUNDCOVER	LOW	0.3	BUBBLER	0.81	0.370	4,915	1,820	47,177	0.14	63.07	77%
3	TREES	LOW	0.3	BUBBLER	0.81	0.370	400	148	3,839	0.01	5.13	6%
					TOTALS		6,394	2,368	61,373	0.19	82.05	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME											
NA					1							0%
					TOTALS	0						0%

MAWA	GALLONS/YR	74,568
	ACRE FEET/YR	0.23
	HCF/YR	99.69

ETWU	GALLONS/YR	61,373
	ACRE FEET/YR	0.19
	HCF/YR	82.05

SITE IRRIGATION EFFICIENCY	SITE PLANT FACT0R	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	2,368
TOTAL AREA	6,394
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR

MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR

ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

WATER USE ESTIMATION CONTROLLER "B"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	160	59	1,536	0.00	2.05	60%
2	TREES	LOW	0.3	BUBBLER	0.81	0.370	105	39	1,008	0.00	1.35	40%
					TOTALS		265	98	2,544	0.01	3.40	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME											
NA					1							0%
					TOTALS	0						0%

MAWA	GALLONS/YR	3,090
	ACRE FEET/YR	0.01
	HCF/YR	4.13

ETWU	GALLONS/YR	2,544
	ACRE FEET/YR	0.01
	HCF/YR	3.40

SITE IRRIGATION EFFICIENCY	SITE PLANT FACT0R	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	98
TOTAL AREA	265
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR

MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR

ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

TRACHTENBERG ARCHITECTS

2421 Fourth Street
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1998 SHATTUCK

1998 Shattuck Ave
Berkeley, CA

03.01.2023 ZONING SUBMITTAL
11.15.2023 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ARCHITECT AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF TRACHTENBERG ARCHITECTS.

JOB: 0000

SHEET:

IRRIGATION DETAILS

I7.0

APPLICATION CITY OF BERKELEY **LAND USE PLANNING**

AFFORDABLE HOUSING COMPLIANCE PLAN

planning@berkeleyca.gov • Phone (510) 981-7410, TDD (510) 981-7450

Planning and Development
1947 Center St, 2nd Floor
Berkeley, CA 94704

Affordable Housing Requirements

BERKELEY MUNICIPAL CODE CHAPTER 23.328

Berkeley Municipal Code (BMC) Chapter 23.328, Inclusionary Housing, requires Housing Development Projects[1] with more than 5,000 square feet of residential unit floor area to include at least 20 percent of the Residential Units[2] as permanently affordable units. All affordable units provided in the project will be established and monitored within the City's Below Market Rate (BMR) housing program, and are referred to as BMR Units. The housing development project must provide one of the following to comply with the City's Inclusionary Housing regulations:

A. Requirement to construct BMR units on-site

B. Option to pay an In-Lieu Fee

C. Combination of on-site BMR units and In-Lieu Fee

D. Other options allowed by the Chapter

Each option is described in more detail below.

A. REQUIREMENT TO CONSTRUCT AFFORDABLE UNITS

Projects must provide 20 percent of the total residential units as on-site BMR units. BMR units must have the same proportion of bedroom counts (except no affordable unit can have more than three bedrooms) and average unit size as the market rate units. BMR units must be reasonably dispersed throughout the project, be comparable to market-rate units in quality, and have access to the same amenities and common areas as market-rate units.

B. OPTION TO PAY AN IN-LIEU FEE

Applicants have the option to pay an In-Lieu Fee instead of providing the required BMR units.
The In-Lieu Fee applies to the residential unit floor area within the project (base project only if utilizing State Density Bonus provisions). The fee[3] is assessed on a square-foot basis according to the schedule listed in the table. The full fee must be paid prior to obtaining the Certificate of Occupancy, or, if a Certificate of Occupancy is not required, prior to the initial occupancy of the project. The fee is automatically adjusted every two years, beginning July 1, 2025, based on changes to the California Construction Cost Index.

Affordable Housing In-Lieu Fee Schedule

SQUARE FEET OF RESIDENTIAL UNIT FLOOR AREA	FEE PER SQUARE FOOT *(April 1, 2023 – June 30, 2025)*
12,000 square feet or more	$56.25
11,000-11,999 square feet	$53.75
10,000-10,999 square feet	$51.25
9,000-9,999 square feet	$48.75
8,000-8,999 square feet	$46.25
7,000-7,999 square feet	$43.75
6,000-6,999 square feet	$41.25
5,000-5,999 square feet	$38.75

NOTES

[1] **HOUSING DEVELOPMENT PROJECT** means a development project, including a Mixed-Use Residential project **(as defined in 23.502.020(M)(13)**, involving the new construction of at least one Residential Unit. Projects with one or more buildings or projects including multiple contiguous parcels under common ownership or control shall be considered as a sole Housing Development Project and not as individual projects **(BMC 23.328.020(E))**.

[2] **RESIDENTIAL UNIT** means any Dwelling Unit, any Live/Work Unit, or any bedroom of a Group Living Accommodation (GLA) except a GLA in a University-recognized fraternity, sorority or co-op; provided, however, that for purposes of this Chapter, "Residential Unit" shall not include any Accessory Dwelling Unit or Junior Accessory Dwelling Unit **(BMC 23.328.020(I))**.

[3] Resolution 70,698-N.S.

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1947 Center St, 2nd Floor
Berkeley, CA 94704

APPLICATION CITY OF BERKELEY **LAND USE PLANNING**

AFFORDABLE HOUSING COMPLIANCE PLAN

planning@berkeleyca.gov • Phone **(510) 981-7410,** TDD **(510) 981-7450**

C. COMBINATION OF BMR UNITS AND IN-LIEU FEE

Projects may provide less than the required 20 percent total residential units as on-site BMR units by paying a pro-rated In-Lieu Fee based on the schedule above. The fee amount per square foot is based on the total residential unit floor area of the project.

Formula to calculate the pro-rated in-lieu fee:

The Fee Per Square Foot *multiplied by* the **Total Residential Unit Floor Area** of a Housing Development Project, *multiplied by* the **Percentage of the Applicable Requirement Remaining** after accounting for any on-site Affordable Units provided.

For projects that utilize a State Density Bonus, only the base project is used in the pro-rated fee. Formula to determine the Base Project Residential Unit Floor Area:

The Final Residential Unit Floor Area (for the whole project) *divided by* **One** *plus* **the Density Bonus percentage taken.** (**Final Project Residential Unit Floor Area/(1+DB%)**)

D. OTHER OPTIONS ALLOWED BY BMC CHAPTER 23.328 – APPROVED AT THE CITY'S DISCRETION

Applicants may elect to fulfill the requirement to construct affordable housing via one of the options below. Unlike options A through C above, these options are approved at the City's discretion.

Alternative Unit Size Mix

In lieu of providing 20 percent of total residential units as on-site BMR units, an Applicant may propose an alternative mix of two-bedroom and/or three-bedroom BMR unit-types that comprise at least 20 percent of the residential unit floor area in the project.

Option to Dedicate Land

Affordable Housing requirements may be satisfied by dedicating land instead of constructing BMR units within the Housing Development Project if all the following criteria are met:

- The site is suitable for development of the Affordable Units
- Infrastructure to serve the dedicated site, including, but not limited to, streets and public utilities, are available at the property line and have adequate capacity to serve the maximum allowable residential density permitted under zoning regulations
- The site has been evaluated for the presence of hazardous materials
- The value of the site upon the date of the dedication is equal to or greater than the In-Lieu Fee that would otherwise be required.

Affordable Housing Compliance Plan Form

You are required to submit an Affordable Housing Compliance Plan (AHCP) for Housing Development Projects[4] that are subject to the affordable housing requirements of BMC Chapter 23.328, Inclusionary Housing. The AHCP is an enforceable commitment that identifies the number and type of affordable, or Below Market rate (BMR) units, the amount of In-Lieu Fees, and/or the parcels of land (or portions thereof) that will be provided and/or paid by the applicant to comply with those requirements.

The Department of Planning and Development's Land Use Division and the Department of Health, Housing, and Community Services use the information from this form and the related sheets to confirm which provisions of the City's affordable housing requirements apply to your project, and if the project complies.

Please complete the entire form. If a section doesn't apply, enter "n/a." If selecting the option to provide an alternative unit size mix or option to dedicate land, please complete the entire AHCP form and staff will contact you to discuss approval for these discretionary options.

You may be asked to revise this form to reflect the approved project during the permit review process and/or required plan sheets.

The Preliminary AHCP is required with a Zoning Permit or Zoning Certificate application. It is intended to provide estimates to the Applicant and City, and inform conditions of approval on discretionary zoning permits. See the **applicable pre-application and/or zoning submittal requirements** to determine if a Preliminary AHCP is needed for your project.

The Final AHCP is required with the first building permit application for construction, and will include the total fee amount due for projects electing to pay an In-Lieu Fee. The In-Lieu Fee can be paid any time prior to the issuance of the project's Certificate of Occupancy or Temporary Certificate of Occupancy (as applicable).

INDICATE AFFORDABLE HOUSING COMPLIANCE PLAN (AHCP) TYPE (CHECK ONE)

Preliminary Affordable Housing Requirements (Land Use Entitlement)

Final Affordable Housing Requirements (Building Permit)

---

1. PROJECT AND APPLICANT INFORMATION

Project Name:

Project Address:

Zoning Project Number:

Building Permit Number (Final AHCP only):

Applicant Name:

Applicant Email:

NOTES

[4] **HOUSING DEVELOPMENT PROJECT** means a development project, including a Mixed-Use Residential project **(as defined in 23.502.020(M)(13)**, involving the new construction of at least one Residential Unit. Projects with one or more buildings or projects including multiple contiguous parcels under common ownership or control shall be considered as a sole Housing Development Project and not as individual projects **(BMC 23.328.020(E))**.

APPLICATION CITY OF BERKELEY **LAND USE PLANNING**

AFFORDABLE HOUSING COMPLIANCE PLAN

2. PROJECT SUMMARY INFORMATION –
THIS INFORMATION IS USED TO ESTIMATE THE TOTAL NUMBER OF REQUIRED BMR UNITS

Does the project use Density Bonus?

YES **NO**

Total Density Bonus Units

Does the Demolition Ordinance (BMC 23.326) apply to the project?

YES **NO**

Total units to be demolished

Total affordable replacement units required

(separate calculation required, Gov. Code §65589.5)

Total units replaced (affordable and market-rate)

A **Total Residential Unit Floor Area[5] (square feet)**
(Entire proposed project)

B **Total Residential Units**
(Base Project only for density bonus projects)

C **Total BMR Units required (20% of B)**

D **Total BMR Units Proposed**

50% AMI (Very-Low Income)

80% AMI (Lower Income)

TOTAL BMR Units

E **Other Compliance Option**
(alternative unit size mix or option to dedicate land)

YES **NO**

Indicate Project Type (Check One) **Ownership** **Rental**

3. PLEASE INDICATE HOW THE PROJECT WILL FULFILL THE AFFORDABLE HOUSING REQUIREMENTS

3.A. PROVISION OF ON-SITE

The following provisions apply:

- BMR units cannot exceed three bedrooms
- At least 50 percent of the required Affordable Units in the Housing Development Project must be designated as affordable to Very-Low Income Households (round up for fractional numbers).
    - Up to a maximum requirement of 10 percent of the total units in the Housing Development Project if the project provides more Affordable Units than are required by BMC Chapter 23.328

Please complete the table by noting the number of units in each category.

PROJECT UNIT TYPES AND AFFORDABILITY LEVELS

Unit Type	Market Rate	Very-Low Income Affordable (50% AMI)	Low-Income Affordable (80% AMI)	TOTAL
Studio				
One Bedroom				
Two Bedroom				
Three Bedroom				
Four Bedroom				
Five Bedroom				
TOTAL				

[5] See BMC 23.328.020 Definitions

APPLICATION CITY OF BERKELEY **LAND USE PLANNING**

AFFORDABLE HOUSING COMPLIANCE PLAN

3.B. OPTION TO PAY AN IN-LIEU FEE

Housing Development Projects may provide less than the required number of on-site BMR units and pay a proportionately reduced In-Lieu Fee, calculated as follows:

The Fee Per Square Foot
multiplied by
the **Total Residential Unit Floor Area**
of a Housing Development Project,
multiplied by
the **Percentage of the Applicable Requirement Remaining** after accounting for any on-site Affordable Units provided.

Projects that do not provide any Affordable Units on-site will have an applicable requirement multiplier of one.

The in-lieu fee for Density Bonus Projects is calculated using the base project residential unit floor area only:

The Base Project Residential Unit Floor Area (BP RUFA)
is equal to:
the Final Residential Unit Floor Area (FP RUFA)
divided by
One plus the Density Bonus percentage taken (DB %)

BP RUFA = FP RUFA / (1+DB%)

AFFORDABLE HOUSING FEE DUE

Per Square Foot Fee
based on Total Residential Unit Floor Area, see Fee Schedule on Page 1) (Base Project only for density bonus projects)

X

Total Residential Unit Floor Area (square feet)
(Base Project only for density bonus projects)

X

In Lieu Fee percentage calculation*:
(Affordable Units required – affordable units provided) / Affordable Units required)

(*projects that provide no on-site Affordable Units have a multiplier of 1)

TOTAL FEE DUE

EXAMPLE CALCULATIONS:
50,000 square foot 100-unit project providing 15 Affordable Units

A	**Total Residential Unit Floor Area[5] (square feet)** **RUFA** (Base Project RUFA only for density projects)	**50,000 square feet**
B	**Total Residential Units** (Base Project only for density bonus projects)	**100**
C	**Total BMR Units required (20% of B)**	**20**
D	**Total BMR Units Proposed**	
	50% AMI (Very-Low Income)	**8**
	80% AMI (Lower Income)	**7**
	TOTAL BMR Units	**15**

Per Square Foot Fee
based on Total Residential Unit Floor Area
(Base Project only for density bonus projects)
$56.25

X

Total Residential Unit Floor Area (square feet)
(Base Project only for density bonus projects)
50,000 square feet

X

In Lieu Fee percentage calculation*:
(Affordable Units required – affordable units provided) / Affordable Units required)

(*projects that provide no on-site Affordable Units have a multiplier of 1) — **25%** ((20-15)/20 = 0.25)

TOTAL FEE DUE
$703,125

[5] See BMC 23.328.020 Definitions

APPLICATION CITY OF BERKELEY **LAND USE PLANNING**

AFFORDABLE HOUSING COMPLIANCE PLAN

SECTION 4 REQUIRED PLAN SHEETS (LAND USE ENTITLEMENT PLANS AND BUILDING PERMIT PLANS)

REQUIRED AHCP PLAN SHEETS

In addition to completing this form, the land use entitlement and building permit plans for your housing development project must demonstrate compliance with the applicable affordable housing provisions. If your project includes a discretionary zoning permit, the entitlement plans must include a Preliminary AHCP plan sheet(s), and all building permits for construction must include a Final AHCP plan sheet(s).

What needs to be in the plans to demonstrate compliance with the City's affordable housing regulations?

The applicable AHCP plan sheets with the applicable information (listed below) must be in sequential pages near the beginning of your plan set and labeled as "Preliminary or Final Affordable Housing Compliance Plan Sheet." Having this information together in the plans will make locating the information easier during project and plan review, and provide transparency to the public. A sample plan set page is attached for reference (see Exhibit A). You will receive corrections from your zoning reviewer if information is not displayed properly in the plan set.

ALL PROJECTS: APPLICABILITY AND REQUIREMENTS OF BMC CHAPTER 23.328 INCLUSIONARY HOUSING

- Residential unit floor area diagrams* showing the floor area that is included and excluded from calculation. Diagrams must be consistent with and separate from the architectural floor plans and include:
  - Schematic diagrams of each floor or level, including mezzanines
  - Indicate floor area by use with shading, color, and/or callouts
  - Dimension all areas of the project that qualify as residential unit floor area, and provide the square footage of each area
  - Tabulation of the total residential unit floor area according to the diagrams
- Calculation of the number of required and proposed BMR units (Base Project only for density bonus)
- Calculation of 100% In-Lieu fee (provide even if on-site units are proposed)

* Diagrams should reflect the whole project (base and bonus), and provide a calculation of the Base Project Residential Unit Floor Area (RUFA) for projects that utilize state density bonus. *(See page 5)*

ON-SITE BELOW MARKET RATE (BMR) UNITS (ALL OR COMBINATION)

Any on-site BMR units
(BMC 23.328.030(A) Requirement to Construct Affordable Units

- Unit summary table by floor of BMR and market-rate units, with bedroom counts
- Alternate mix of unit types, if applicable
  - Calculations for 20 percent of residential unit floor area (must be a mix of affordable units that are either two- or three-bedrooms)

IN-LIEU FEE (ALL OR COMBINATION)

Payment in-lieu of providing some or all required affordable units on-site (BMC Section 23.328.030(B) Option to Pay In-Lieu)

In-Lieu Fee per Resolution No. 70,698-N.S. calculated as follows: the fee per square foot multiplied by the total Residential Unit Floor Area of a Housing Development Project, multiplied by the percentage of the applicable requirement remaining after accounting for any on-site Affordable Units provided. Projects that do not provide any Affordable Units on-site will have an applicable requirement multiplier of one. *(See page 5)*

The In-Lieu Fee per square foot is based on the residential unit floor area of the project (base project only if utilizing State Density Bonus provisions). *(See page 5)*

STAFF ADMINISTRATION USE ONLY

This Affordable Housing Compliance Plan (AHCP) is certified in compliance with BMC Chapter 23.328, Inclusionary Housing.

LAND USE
Preliminary/Final AHCP
Name, Title:

Signature: Date:

HHCS
Preliminary/Final AHCP
Regulatory Agreement executed (due prior to issuance of first building permit for construction:
Yes No Not Applicable

In Lieu Fee payment complete (due prior to first occupancy):
Yes No Not Applicable

Name, Title:

Signature: Date:

APPLICATION CITY OF BERKELEY **LAND USE PLANNING**

AFFORDABLE HOUSING COMPLIANCE PLAN

EXAMPLE OF AN AFFORDABLE HOUSING COMPLIANCE PLAN SHEET

Example Affordable Housing Compliance Plan Sheet / Residential Unit Floor Area Diagrams / Calculations*

Affordable Housing requirements:

Total number of residential units in the example project: 17 (DU + L/W + GLA)
Total RUFA in the example project: 15, 375 sq. ft.

Option I: Providing the required number of BMR units (No in-lieu fee)
Total number of affordable units (VLI or LI): 4 (20% X 17 units = 3.4 Rounded up to 4)

Option II: Providing full in-lieu payment
15, 375 sq. ft. (RUFA) X $56.25= $864,843.75

Option III: Providing a combination of BMR units and in-lieu fee
((Required BMRs – Number of BMRs provided)/Total number of BMRS required) = X%
X% x (Total RUFA sq. ft.) = Y sq. ft.
Y sq. ft. X $56.25= $Z (Total In-Lieu fee required)

*For reference and illustrative purposes only

Affordable Housing
Compliance Plan Sheet

Internal

TRACHTENBERG ARCHITECTS
2421 Fourth Street Berkeley, CA 94710
phone: 510.649.1414
www.TrachtenbergArch.com

July 10th, 2024
Attn: Sharon Gong
Land Use Planning, City of Berkeley

RE: April 11, 2024 Completeness Letter Action Items for Application #ZP2023-0040 for 1950-1998 Shattuck Avenue / 2071 University

Dear Sharon,

Please see our responses below in blue text for your Completeness Letter Action Items, dated April 11th, 2024. Please also see our revised attached documents as referenced in our responses.

Items Required for Submittal or Correction:

1. Bird Safe Building. Projects that are New Construction with 10,000 sq. ft. or more of gross floor area and an average building height greater than 35 ft. are subject to this ordinance section (https://berkeley.municipal.codes/BMC/23.328.030). **Thank you for submitting the required forms.**

2. Inclusionary Housing. Projects proposing to construct one or more residential units are subject to this ordinance section (https://berkeley.municipal.codes/BMC/23.304.150). Please revise the Housing Affordability Statement to demonstrate how the project complies with this section. **Thank you for submitting the Affordable Housing Compliance Plan (AHCP). Staff calculates 175,217 SF as the Base Project Residential Unit Floor Area (RUFA). Revise the calculations in step 3.B if needed per the correct RUFA.**
Response: Sheet A0.3 revised. And Housing Affordability Statement also revised.

3. Historic Resource Evaluation. **Thank you for the "Summary of Historical Evaluations" by Preservation Architecture, dated March 8, 2024. Staff has reviewed the submitted document. Please note that this document does not satisfy any regulatory requirements related to historic resource evaluations or peer reviews.**
Although the application is considered complete at this time, please note the prior comment (from Incomplete Letter December 15, 2023) still stands: staff does not necessarily concur with the conclusions arrived at in the HREs. In order to proceed with a review of impacts to historic resources, please be advised that further review of resource eligibility of the existing buildings pursuant to the California Environmental Quality Act (CEQA) may be warranted by a third-party consultant, at a cost to be borne by the applicant. Further information will be provided to the applicant at the time CEQA path determination.
Response: Noted

4. Plans.
a. Clarify if the project proposes the merger of four lots or five lots. City GIS data show five lots within the project boundaries, while the survey shows four. Thank you. There are five parcels, and four lots. The fifth APN is likely a separation for tax purposes. Verify with Public Works whether the ~3-foot strip of land at 1950 and 1974 Shattuck sidewalk area can be included in the site area. The survey indicates that it is public right of way and may need approval of an encroachment permit. The area is labelled "SFBARTD subsurface easement parcel 2, RE 1768, IM 944", but is excluded from the parcel legal description and property line boundaries. Please provide documentation of

ownership of the area; if not owned by the applicant, provide a letter of authorization from the owner to authorizing its inclusion in the development permit application.
Thank you for the Quiet Title Complaint document. Please indicate when a ruling is anticipated on the case. Any entitlements obtained for development on the disputed parcel may be affected by the outcome of the case. If the matter is not settled before the entitlement hearing, a Condition of Approval will be attached to the permit for this contingency. Also, in your response, you mentioned that the survey was revised, but I don't see how the survey has been revised, and it shows the same date of preparation by the licensed surveyor – December 2022.
Response: Quiet Title matter will be settled in November, 2024, we request a Condition of Approval to be attached to the permit for this contingency. Sheet A0.2C revised with updated survey.

5. Community Benefit Package. The submittal is missing a Community Benefits package pro forma and cost estimate under BMC Section 23.204.130(E)(2)(c). Please note that per Council Resolution 67,172-N.S., a pro forma showing project pre-development soft and hard cost estimates and rate of return analysis, as well as a cost estimate for the community benefits package, are required to be included in the project application. The pro forma must be peer reviewed by a City consultant.
Thank you for the Community Benefits letter. While the community benefits analysis may not be entirely objective, the pro forma is a specific requirement for the discretionary permit, as described in the Council Resolution, and would inform the Board's overall consideration of the project:

> *Thank you for the pro forma documents. Pursuant to the Council Resolution, a consultant will be obtained to perform a peer review of the document. Staff will send an invoice for the consultant fee for payment when received.*

Thank you for the pro forma documents. Pursuant to the Council Resolution, a consultant will be obtained to perform a peer review of the document. Staff will send an invoice for the consultant fee for payment when received.
Please make a payment on the attached invoice and return the signed Confirmation of Service to me.
Response: Noted. Invoice will be paid.

If you have any questions or comments, please feel free to contact me at (510) 649-1414 x124.

Sincerely,

Isaiah Stackhouse, Principal TRACHTENBERG ARCHITECTS

Planning and Development
Land Use Planning Division

August 20, 2024

Isaiah Stackhouse
Trachtenberg Architects
2421 Fourth Street
Berkeley, CA 94710

Sent via email to:
isaiah@trachtenbergarch.com

RE: Clarifications – Use Permit Application #ZP2023-0040 for 1950-1998 Shattuck Avenue / 2071 University (APNs: 57-2053-4-2, 57-2053-3-1, 57-2053-3-2, 57-2053-2, 57-2053-1)

Dear Mr. Stackhouse,

Thank you for submitting the materials to support the proposal to demolish five existing commercial buildings; merge four lots; construct a 28-story, 411,610-square-foot, mixed-use building with 599 dwelling units (including 58 VLI) and 16,920 sq.ft. of commercial area in the C-DMU (Outer Core) Zoning District at 1950-1998 Shattuck Avenue.

Pursuant to the Permit Streamlining Act (Government Code Chapter 4.5 Title 7), the application has been deemed complete as of April 11, 2024.

Permits – Based upon staff's review, the application includes the following approval requests:

1. Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
2. Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
3. Use Permit under BMC Section 23.204.020(A) to construct dwelling units
4. Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
5. Use Permit under BMC Section 23.204.130(E)(2) to construct a building that exceeds the district height limit, and that is over 120 feet but not more than 180 feet
6. Use Permit under BMC Section 23.204.130(E)(3)(b) to modify front, side, and rear setback requirements
7. Use Permit under BMC Section 23.204.130(E)(3)(b)(i) to exceed 120 feet in width in diagonal measurement
8. Administrative Use Permit under BMC Section 23.304.050(A) to allow architectural projections to exceed district height limits
9. Administrative Use Permit under BMC Section 23.302.070(E)(2) for a food service establishment over 3,000 square feet in area

10. Administrative Use Permit pursuant to BMC Section 23.302.020(D) for Amplified Live Entertainment in a commercial district

11. Use Permit pursuant to BMC Section 23.310.020(B) to begin alcoholic beverage service (distilled spirits incidental to food service).
12. Administrative Use Permit pursuant to BMC Section 23.302.020(E)(4) for outdoor uses not abutting a residential district.

13. Density Bonus with the following requested reductions, waivers and concessions:

    Waivers

    a. Waiver of BMC Section 23.04.130(E)(1) to exceed building height limits – to be 317' to roof (plus 5' parapet), where 180 feet is the limit (plus 5-foot parapet, by right, with a use permit)

    b. Waiver of BMC Section 23.204.130(E)(3) to reduce the front, side and rear setback minimums (see plans for details)

    c. Waiver of BMC Section 23.204.130(E)(3)(b)(i) to exceed 120 feet in width in diagonal measurement (165')

    d. Waiver of BMC Section 23.204.130(E)(4) reduce usable open space minimum to 13,032 square feet, where 47,920 square feet is required

    Concessions [Three concessions permitted, per Government Code §65915(d)(2)]:

    a. Concession to eliminate the Percentage for Public Art on Private Projects requirement

Level of Review Under the California Environmental Quality Act

Under the California Environmental Quality Act (CEQA), staff determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration will be required, depending on the type of project proposed. Staff recommends that the appropriate level of CEQA review will be Infill Environmental Checklist with a potential for an Infill Environmental Impact Report.

Action Items – Corrections, Clarifications, and/or Supplemental Information Required

1. Bird Safe Building. Projects that are New Construction with 10,000 sq. ft. or more of gross floor area and an average building height greater than 35 ft. are subject to this ordinance section (https://berkeley.municipal.codes/BMC/23.328.030). **Thank you for submitting the required forms.**

2. Inclusionary Housing. Projects proposing to construct one or more residential units are subject to this ordinance section (https://berkeley.municipal.codes/BMC/23.304.150). Please revise the Housing Affordability Statement to demonstrate how the project complies with this section. *Thank you for submitting the Affordable Housing Compliance Plan (AHCP). Staff calculates 175,217 SF as the Base Project Residential Unit Floor Area (RUFA). Revise the calculations in step 3.B if needed per the correct RUFA.*

   Thank you. The AHCP will be routed to Housing Services for review. Any comments will be forwarded to you.

3. Historic Resource Evaluation. *Thank you for the "Summary of Historical Evaluations" by Preservation Architecture, dated March 8, 2024. Staff has reviewed the submitted document. Please note that this document does not satisfy any regulatory requirements related to historic resource evaluations or peer reviews.*

Although the application is considered complete at this time, please note the prior comment (from Incomplete Letter December 15, 2023) still stands: staff does not necessarily concur with the conclusions arrived at in the HREs. In order to proceed with a review of impacts to historic resources, please be advised that further review of resource eligibility of the existing buildings pursuant to the California Environmental Quality Act (CEQA) may be warranted by a third-party consultant, at a cost to be borne by the applicant. Further information will be provided to the applicant at the time CEQA path determination. **Thank you for the acknowledgment.**

4. Plans.

   a. Clarify if the project proposes the merger of four lots or five lots. City GIS data show five lots within the project boundaries, while the survey shows four. *Thank you.* There are five parcels, and four lots. The fifth APN is likely a separation for tax purposes. Verify with Public Works whether the ~3-foot strip of land at 1950 and 1974 Shattuck sidewalk area can be included in the site area. The survey indicates that it is public right of way, and may need approval of an encroachment permit.

   The area is labelled "SFBARTD subsurface easement parcel 2, RE 1768, IM 944", but is excluded from the parcel legal description and property line boundaries. Please provide documentation of ownership of the area; if not owned by the applicant, provide a letter of authorization from the owner to authorizing its inclusion in the development permit application.

   Thank you for the Quiet Title Complaint document. Please indicate when a ruling is anticipated on the case. Any entitlements obtained for development on the disputed parcel may be affected by the outcome of the case. If the matter is not settled before the entitlement hearing, a Condition of Approval will be attached to the permit for this contingency.

   Also, in your response, you mentioned that the survey was revised, but I don't see how the survey has been revised, and it shows the same date of preparation by the licensed surveyor – December 2022. **This comment stands – no revisions found.**

5. Community Benefit Package. The submittal is missing a Community Benefits package pro forma and cost estimate under BMC Section 23.204.130(E)(2)(c). Please note that per Council Resolution 67,172-N.S., a pro forma showing project pre-development soft and hard cost estimates and rate of return analysis, as well as a cost estimate for the community benefits package, are required to be included in the project application. The pro forma must be peer reviewed by a City consultant. Thank you for the Community Benefits letter. While the community benefits analysis may not be entirely objective, the pro forma is a specific requirement for the discretionary permit, as described in the Council Resolution, and would inform the Board's overall consideration of the project:

The application shall include a *pro forma* showing pre-development, soft, and hard cost estimates, as well as the projected rate of return the applicant expects the project to generate, based on revenues (sales price or rental income stream) anticipated once the project is completed. This analysis shall cover two scenarios: (1) a base case building of 75' or less; and (2) a high-rise building over 75'.

Thank you for the pro forma documents. Pursuant to the Council Resolution, a consultant will be obtained to perform a peer review of the document. Staff will send an invoice for the consultant fee for payment when received.

Please make a payment on the attached invoice and return the signed Confirmation of Service to me. **This comment stands – payments are still outstanding.**

6. **Loading Space. Indicate on the site plan the location of the required off-street loading space, per BMC Section 23.322.100. This clarification item was provided in the CEQA Review Letter sent to you on May 16, 2024.**

7. **CEQA Supplemental Information. Additional reports are required per our meeting on June 19, 2024, including: an up-to-date traffic impact analysis, air quality report, noise impact analysis, and water quality impact analysis.**

Advisory Comments

1. During the course of review, the project planner may request that the applicant correct, clarify, amplify, or otherwise supplement the details provided in the application according to the Zoning Project Application Submittal Requirements. This may result in revisions to the information provided with your submittal, additional fees for zoning permits, CEQA review costs, and other processes/reviews, as needed based on the City's adopted fee schedule.

2. Interdepartmental Roundtable Meeting. An interdepartmental review will be scheduled as an opportunity for you to receive comments on the project from City departments such as Building and Safety, Transportation, Zero Waste, Parks, Toxics and Public Works. I will coordinate with you to schedule a time when you can attend. Meetings are 2nd and 4th Wednesdays monthly at 1:00 p.m. or 2:30 p.m.

Next Steps

Please submit responses to all requested items at once, and not incrementally. Be sure to include a written response and pay the attached invoice. Please be aware that under SB330 (Government Code Section 65941.1(a)(d)(2)), the applicant must submit the information in this incomplete letter within 90 days of the date of this letter. If the applicant does not submit this information within the 90-day period, then the preliminary application shall expire and have no further force or effect. Please use this BOX link for your project and email me when you've uploaded. Once revised information is submitted, staff will review the application within 30 days.

If you have any questions about the requested information, please reach out to me directly. Thank you in advance for your cooperation.

Sincerely,



Sharon Gong
Senior Planner
(510) 981-7429
sgong@cityofberkeley.info

FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Memorandum

Date: August 30, 2024

To: Mia Perkins, McSpats, LLC C/O Rhoades Planning Group

From: Tsui Li, Senior Air Quality Scientist, FirstCarbon Solutions
Philip Ault, Director of Noise and Air Quality, FirstCarbon Solutions

Subject: Air Quality Impacts Analysis for the 1974 Shattuck Avenue Mixed Use Project in Berkeley, California

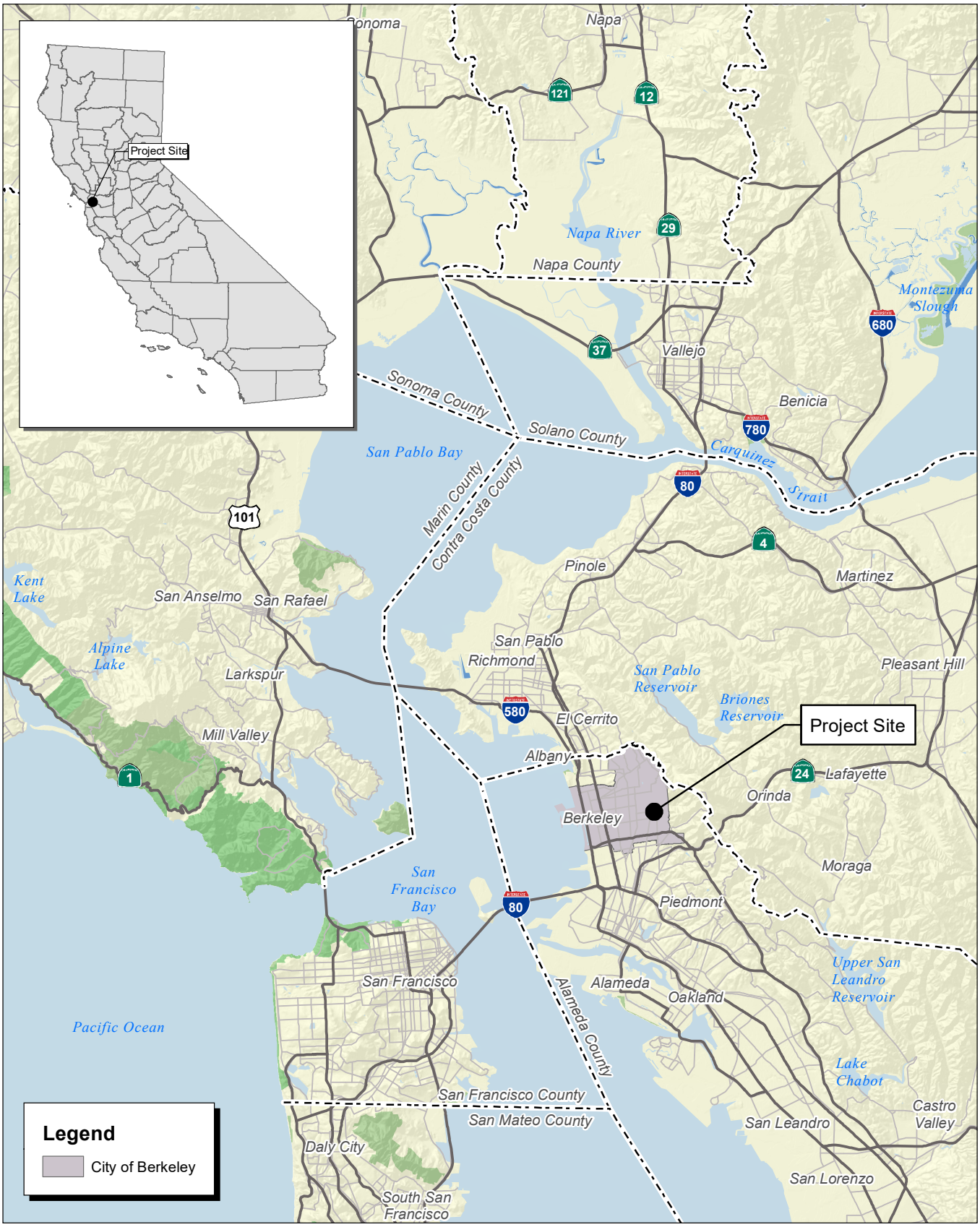
FirstCarbon Solutions (FCS) prepared this memorandum to summarize findings of the Air Quality analysis prepared for the proposed 1974 Shattuck Avenue Mixed Use Project (proposed project). The project site is located in the City of Berkeley, in Alameda County, California (Exhibit 1). More specifically, the site is located on Shattuck Avenue in Downtown Berkeley. (Exhibit 2).

PROJECT DESCRIPTION

The project applicant proposes to demolish the existing commercial structures to construct a 28-story mixed-use building with 599 multi-family apartment dwelling units, ground level lobbies, a rooftop restaurant, and commercial space (Exhibit 3). The outdoor space would consist of 13,032 square feet of residential open space, 706 square feet of commercial open space, and a 5,840-square-foot roof deck with 6,735 square feet of landscaping across the residential units. The project site consists of Assessor's Parcel Numbers (APN) 057-205-300-100, 057-205-300-200, 057-205-300-301, 057-205-300-302, 057-205-300-402, at 1950-1998 Shattuck Avenue. Vehicle access to and from the site is provided from a garage off University Ave.

The project site is bounded Shattuck Avenue to the east, multi-family apartments to the west, University Avenue to the south, and residential uses and Berkeley Way to the north.

The project site is designated as "Downtown" by the City of Berkeley General Plan (General Plan) and is zoned Downtown Mixed-Use District "C-DMU" by the City of Berkeley Zoning Ordinance. The C-DMU zoning district permits residential uses with a Use Permit and retail uses with a Zoning Certificate.



Source: Census 2000 Data, The California Spatial Information Library (CaSIL).

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5 2.5 0 5 Miles

Exhibit 1
Regional Location Map

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AMI LLC
2660 BANCROFT WAY MIXED USE PROJECT
AIR QUALITY IMPACTS ANALYSIS



Source: Bing Aerial Imagery. County of Alameda.

FIRSTCARBON SOLUTIONS™

1,000 500 0 1,000 Feet

Exhibit 2
Local Vicinity Map

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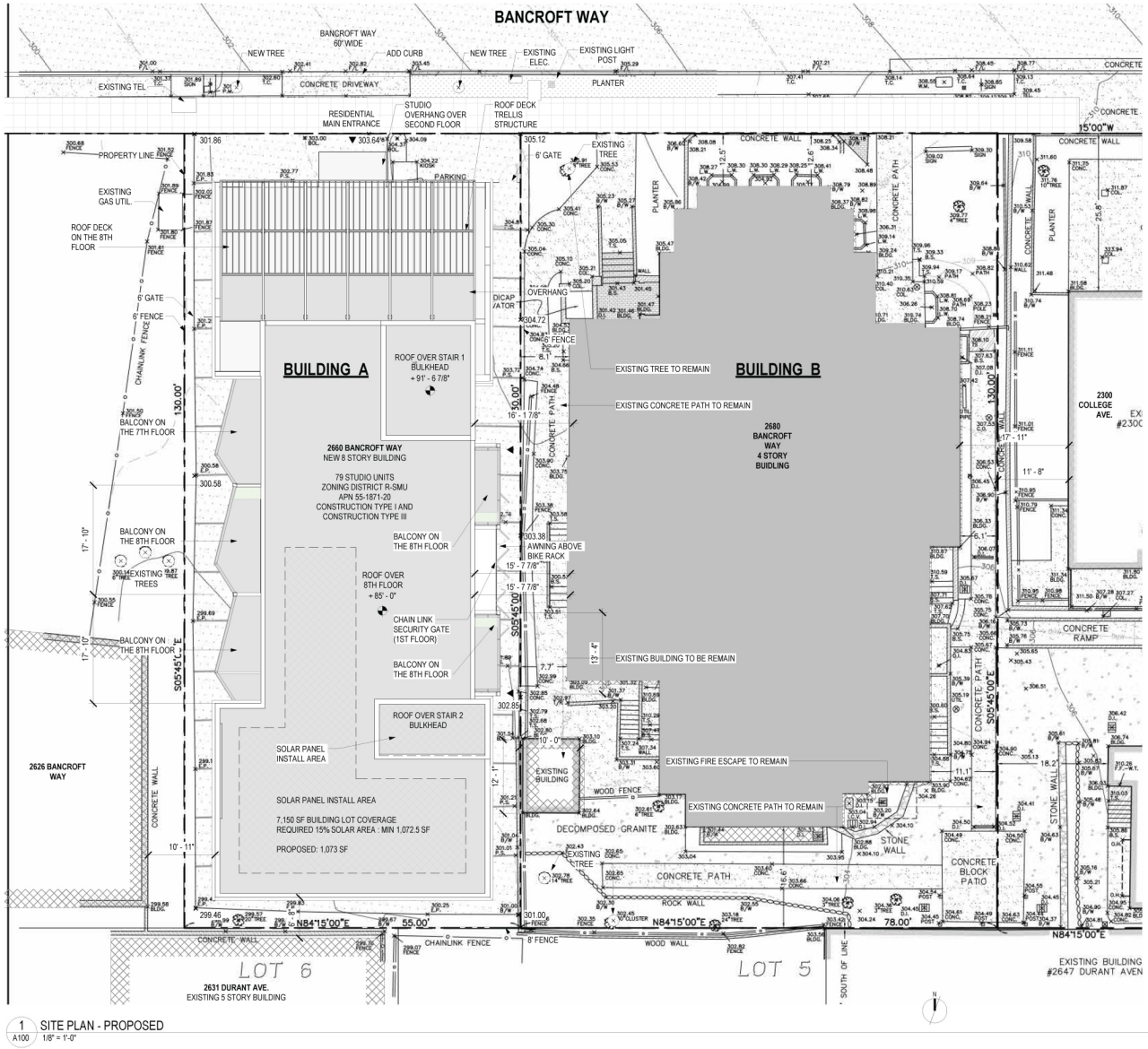

Source: Studio KDA, 2/28/2024.

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Exhibit 3
Site Plan

The proposed project is anticipated to be categorically exempt (Class 32 Infill Exemption) from California Environmental Quality Act (CEQA).

SETTING AND REGULATORY FRAMEWORK

Air Quality Regulatory Framework

The proposed project is in the City of Berkeley and within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), which regulates air quality in the San Francisco Bay Area Air Basin (Air Basin). Within the Air Basin, ambient air quality standards for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter with an aerodynamic diameter of 2.5 microns and smaller ($PM_{2.5}$) and 10 microns and smaller (PM_{10}), and lead (Pb) have been established by both the California Environmental Protection Agency (Cal/EPA) and the United States Environmental Protection Agency (EPA).[1] California has also set standards for sulfate concentrations and atmospheric visibility.

The EPA and the California Air Resources Board (ARB) designate air basins, or specific areas within an air basin where ambient air quality standards are exceeded, as "nonattainment." If standards are met, the area is designated as "attainment." If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

The Air Basin is classified as a nonattainment area for the State ozone and particulate matter standards and as nonattainment for federal ozone 8-hour and $PM_{2.5}$ 24-hour standards. This indicates that the BAAQMD has not achieved compliance with these State and federal standards in the Air Basin.

In addition to regulating criteria pollutants for attainment of State and federal standards, ARB and the BAAQMD regulate and control emissions of toxic air contaminants (TACs) to further protect human health. TACs are a class of pollutants that includes hundreds of chemicals hazardous to human health. Long-term exposure to TACs may cause more severe health effects such as neurological damage, hormone disruption, developmental defects and cancer. TAC emissions are highly localized and are emitted from mobile sources such as cars, trucks, and marine and rail sources as well as stationary and area sources. The ARB and BAAQMD addressed their emissions via mobile source strategies, stationary source permitting requirements and health risk thresholds for new development under review in the California Environmental Quality Act (CEQA) process. The average cancer risk from TACs in the Bay Area has been reduced by 80 percent since 1990.[2] Diesel exhaust is the primary TAC contributor to health risk in the Bay Area.

[1] The United States Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for six of the most common air pollutants—carbon monoxide, lead, ground level ozone, particulate matter, nitrogen dioxide, and sulfur dioxide—known as "criteria" air pollutants (or simply "criteria pollutants").

[2] Bay Area Air Quality Management District (BAAQMD). 2017. Final 2017 Clean Air Plan. August 28.

For CEQA, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the proposed project's significance impact determinations related to air quality from criteria pollutants and TACs.

Thresholds of Significance

The significance criteria established or recommended by the BAAQMD were used to make CEQA significance determinations related to the proposed project's impacts on air quality. The BAAQMD has adopted standards of significance for construction and operation. Table 1 shows the thresholds of significance. In developing the thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts on the region's existing air quality conditions.

Table 1: BAAQMD Thresholds of Significance

Pollutant	Construction Thresholds Average Daily Emissions (pounds/day)	Operational Thresholds	
		Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/day)
Criteria Air Pollutants			
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance, other Best Management Practices (BAAQMD Basic Construction Mitigation Measures)	Not Applicable	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	10 per one million	10 per one million	
Chronic or 1-hour Acute Hazard Index	1.0	1.0	
Incremental annual average $PM_{2.5}$	0.3 µg/m^3	0.3 µg/m^3	
Health Risks and Hazards for Sensitive Receptors (Cumulative from All Sources within 1,000-foot Zone of Influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	100 per 1 million		
Chronic Hazard Index	10.0		
Annual Average $PM_{2.5}$	0.8 µg/m^3		

Pollutant	Construction Thresholds Average Daily Emissions (pounds/day)	Operational Thresholds	
		Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/day)
Notes: $\mu g/m^3$ = micrograms per cubic meter CO = carbon monoxide NO_X = nitrogen oxides PM_{10} = particulate matter, including dust, 10 micrometers or less in diameter $PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter ppm = parts per million ROG = reactive organic gases Source: Bay Area Air Quality Management District (BAAQMD). 2022. CEQA Air Quality Guidelines. April 20.			

Berkeley General Plan

The General Plan includes policies to avoid or mitigate impacts resulting from planned development projects with the City. The following policies are specific to air quality and apply to the proposed project.

Policy EM-18 **Regional Air Quality Action.** Continue working with the Bay Area Air Quality Management District and other regional agencies to:

1) Improve air quality through pollution prevention methods.
2) Ensure enforcement of air emission standards.
3) Reduce local and regional traffic (the single largest source of air pollution in the City) and promote public transit.
4) Promote regional air pollution prevention plans for business and industry.
5) Promote strategies to reduce particulate pollution from residential fireplaces and wood-burning stoves.
6) Locate parking appropriately and provide adequate signage to reduce unnecessary "circling" and searching for parking.

Policy EM-19 **15 percent Emission Reduction: Global Warming Plan.** Make efforts to reduce local emissions by 15 percent by the year 2010. Continue to support and implement local emission reduction programs, such as the City of Berkeley Employee Fleet Bicycle Program, the Police Bicycle Program, and the actions recommended in the City of Berkeley Resource Conservation and Global Warming Abatement Plan.

Policy EM-21 **Alternative Fuels.** Work with the University of California, the Berkeley Unified School District, and other agencies to establish natural gas fueling and electric vehicle recharging stations accessible to the public.

Policy EM-22 **Public Awareness Increase.** Increase public awareness of air quality problems, rules, and solutions through use of City publications and networks. Action:

A. Work on a local and regional level to improve air quality for Berkeley residents and the region.

Policy T-19 **Air Quality Impacts.** Continue to encourage innovative technologies and programs such as clean-fuel, electric, and low-emission cars that reduce the air quality impacts of the automobile. (Also see Environmental Management Policies EM-18 through EM-22.)

Actions

A. Establish bicycle and low-emission vehicle preferred parking areas.
B. Install electric vehicle charging stations in all City-owned parking facilities Downtown and at major parking facilities and employment centers.
C. Where appropriate, install timed signals on major streets to allow traffic to move at a steady 25 miles an hour on major and collector streets, and a steady 15 or 20 miles an hour on neighborhood streets to minimize air quality impacts from "stop and go" traffic.

Policy T-29 **Infrastructure Improvements.** Facilitate mobility and the flow of traffic on major and collector streets (shown on the Vehicular Circulation Network map at the end of the Element), reduce the air quality impacts of congestion, improve pedestrian and bicycle access, and speed public transportation throughout the City by making improvements to the existing physical infrastructure. Actions:

A. Provide timely pavement maintenance and eliminate hazards on bicycle routes.
B. Designate or add transit-priority lanes or transit-only lanes.
C. Add or eliminate left turn lanes.
D. Establish commute period parking restrictions.
E. Regularly maintain pavement.
F. Improve freeway approaches and interchanges at Ashby Avenue (including removal of Potter Street ramp) and Gilman Street (to improve pedestrian and bicycle circulation to the waterfront and facilitate truck access to West Berkeley).
G. Complete the San Pablo Avenue Corridor Plan improvements designed in cooperation with the surrounding cities.
H. Time traffic signals on major transit corridors to give priority to and speed movement of transit vehicles.

Downtown Area Plan

The Downtown Area Plan includes policies to avoid or mitigate impacts resulting from planned development projects within the City. The following policies are specific to air quality and apply to the proposed project.

Policy ES-4.4 **Green Materials.** Encourage use of environmentally preferable materials for building construction and maintenance to: maintain healthful indoor air quality; reduce exposure

to harmful materials during their production; install and disposal; protect threatened and endangered species; and reduce consumption of natural resources.

a) Establish building requirements and/or incentives for performance in these areas.
b) Inform builders and landowners of standards and guidelines for preferable construction products, such as those developed by LEED®, Green Seal, Stopwaste, and the Healthy Building Network.
c) Encourage reused, reclaimed or recycled materials, and responsibly harvested wood products, such as those certified by the Forest Steward Council (FSC). Provide builders with information on these options.
d) Encourage preferable construction materials by developing a new "green building materials checklist" for Downtown projects. Consider creating a "worst in class" list of materials to avoid. Consider incentives for construction projects that conform significantly to this checklist.
   - Inform building owners and managers of standards and guidelines for preferable maintenance products and operations, such as integrated pest management, and environmental purchasing and waste reduction strategies.

City of Berkeley Standard Conditions of Approval

Approval and development of the proposed project would be subject to the City of Berkeley's Standard Conditions of Approval (COAs), pursuant to the City's Municipal Code Section 23.406.040 and General Plan Policy EM-18 which requires that the BAAQMD emission standards be applied on all projects where the City is the lead agency under CEQA. In implementing Policy EM-18, the City of Berkeley has the following standard COAs relevant to air quality, which would apply to the proposed project. Unless otherwise discussed in this analysis, the proposed project is assumed to be required to incorporate these COAs.

Public Works–Apply BAAQMD-Recommended Measures During Construction

For all proposed projects, BAAQMD recommends implementing all the Basic Construction Mitigation Measures,[2] listed below to meet the Best Management Practices threshold for fugitive dust:

A. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

B. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

C. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

D. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

[2] Bay Area Air Quality Management District (BAAQMD) Basic Construction Mitigation Measures are considered standard construction measures, and do not constitute any project-specific mitigation.

E. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

F. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure [ATCM] Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.

G. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

H. Post a publicly visible sign with the telephone number and person to contact at the City of Berkeley regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Air Quality–Diesel Particulate Matter Controls During Construction

All off-road construction equipment used for projects with construction lasting more than 2 months shall comply with one of the following measures:

A. The project applicant shall prepare a Health Risk Assessment (HRA) that demonstrates the project's on-site emissions of diesel particulate matter during construction will not exceed health risk screening criteria after a screening-level health risk assessment is conducted in accordance with current guidance from BAAQMD and Office of Environmental Health Hazard Assessment (OEHHA). The HRA shall be submitted to the Public Works Department for review and approval prior to the issuance of building permits.

B. All construction equipment shall be equipped with Tier 2 or higher engines and the most effective Verified Diesel Emission Control Strategies (VDECS) available for the engine type (Tier 4 engines automatically meet this requirement) as certified by the ARB. The equipment shall be properly maintained and tuned in accordance with manufacturer specifications.

C. In addition, a Construction Emissions Minimization Plan (Emissions Plan) shall be prepared that includes the following:
    1. An equipment inventory summarizing the type of off-road equipment required for each phase of construction, including the equipment manufacturer, equipment identification number, engine model year, engine certification (tier rating), horsepower, and engine serial number. For all VDECS, the equipment inventory shall also include the technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date.
    2. A Certification Statement that the Contractor agrees to comply fully with the Emissions Plan and acknowledges that a significant violation of the Emissions Plan shall constitute a

material breach of contract. The Emissions Plan shall be submitted to the Public Works Department for review and approval prior to the issuance of building permits.

Construction and Demolition Diversion

The project applicant shall divert debris according to proposed project's Construction Waste Management Plan and collect required documentation. The project applicant shall get construction debris receipts from sorting facilities in order to verify diversion requirements. Recycling and disposal receipts shall be uploaded if using Green Halo and submitted online for City review and approval prior to final inspection. Alternatively, complete the second page of the original Construction Waste Management Plan and present it, along with your construction debris receipts, to the Building Inspector by the final inspection to demonstrate diversion rate compliance. The Zoning Officer may request summary reports at more frequent intervals, as necessary to ensure compliance with this requirement.

Low Carbon Concrete

The proposed project shall verify compliance with the Berkeley Green Code, located under Municipal Code Chapter 19.37, including use of concrete mix design with a cement reduction of at least 25 percent. Documentation on concrete mix design shall be available at all times at the construction site for review by City Staff.

AIR QUALITY EMISSIONS IMPACT ANALYSIS

According to CEQA Guidelines Appendix G, to determine whether impacts related to air quality are significant environmental effects, the following questions are analyzed and evaluated.

Impact AIR-1:	**Would the project conflict with or obstruct implementation of the applicable air quality plan?**

Less than significant impact. The project site is located in the San Francisco Bay Area Air Basin, where the BAAQMD regulates air quality. The EPA is responsible for identifying nonattainment and attainment areas for each criteria pollutant within the Air Basin. The Air Basin is designated nonattainment for State standards for 1-hour and 8-hour ozone, 24-hour respirable particulate matter (PM_{10}), annual PM_{10}, and annual fine particulate matter ($PM_{2.5}$).[3]

The BAAQMD has adopted several air quality policies and plans to address regional air quality standards, the most recent of which is the 2017 Clean Air Plan. The 2017 Clean Air Plan was adopted in April of 2017 and serves as the regional Air Quality Plan (AQP) for the Air Basin for attaining NAAQS. The primary goals of the 2017 Clean Air Plan are to protect public health and protect the climate. The 2017 Clean Air Plan acknowledges that the BAAQMD's two stated goals of protection are closely related. As such, the 2017 Clean Air Plan identifies a wide range of control measures intended to decrease both criteria

[3] Bay Area Air Quality Management District (BAAQMD). 2022. CEQA Air Quality Guidelines. April 20.

pollutants[4] and greenhouse gas (GHG) emissions.[5] The 2017 Clean Air Plan also accounts for projections of population growth provided by Association of Bay Area Governments (ABAG) and Vehicle Miles Traveled (VMT) projections provided by the Metropolitan Transportation Commission (MTC), and identifies strategies to bring regional emissions into compliance with federal and State air quality standards. A project would be judged to conflict with or obstruct implementation of the 2017 Clean Air Plan if it would result in substantial new regional emissions not foreseen in the air quality planning process.

The BAAQMD does not provide a numerical threshold of significance for project-level consistency analysis with AQPs. Therefore, the following criteria will be used for determining a project's consistency with the AQP.

- **Criterion 1:** Does the project support the primary goals of the AQP?
- **Criterion 2:** Does the project include applicable control measures from the AQP?
- **Criterion 3:** Does the project disrupt or hinder the implementation of any AQP control measures?

Criterion 1

The primary goals of the 2017 Clean Air Plan, the current AQP to date, are to:

- Attain air quality standards;
- Reduce population exposure to unhealthy air and protect public health in the Bay Area; and
- Reduce GHG emissions and protect the climate.

A measure for determining whether the proposed project supports the primary goals of the AQP is if the project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. This measure is determined by comparing project emissions to the significance thresholds identified by the BAAQMD for construction- and operation-related pollutants. These significance thresholds are applied in the evaluation of Impact AIR-2, below. As discussed under Impact AIR-2 and Impact AIR-3, the proposed project would not significantly contribute to cumulative nonattainment pollutant violations or expose sensitive receptors to substantial pollutant concentrations after incorporating the City's Standard COAs.

Fugitive dust control measures would be required to be implemented during the construction of the proposed project in order to reduce localized dust impacts. Impacts related to fugitive dust from the proposed project's construction would be potentially significant without the inclusion of sufficient dust control measures. City Standard COA "Public Works–Apply BAAQMD-Recommended Measures During Construction" requires the inclusion of Best Management Practices (BMPs) recommended by the

[4] The EPA has established National Ambient Air Quality Standards (NAAQS) for six of the most common air pollutants—carbon monoxide, lead, ground level ozone, particulate matter, nitrogen dioxide, and sulfur dioxide—known as "criteria" air pollutants (or simply "criteria pollutants").

[5] A greenhouse gas (GHG) is any gaseous compound in the atmosphere that is capable of absorbing infrared radiation, thereby trapping and holding heat in the atmosphere. By increasing the heat in the atmosphere, greenhouse gases are responsible for the greenhouse effect, which ultimately leads to global warming.

BAAQMD to reduce potential impacts related to fugitive dust emissions from use of construction equipment. In addition, construction exhaust emissions would result in potentially significant health risk impacts. The proposed project would be required to apply City Standard COA "Air Quality–Diesel Particulate Matter Controls During Construction," which would require the proposed project to prepare an HRA that demonstrates the project's on-site construction-related diesel particulate matter (DPM) emissions will not exceed health risk screening criteria in accordance with current guidance from BAAQMD and OEHHA, or require the proposed project to utilize equipped with Tier 2 or higher engines and the most effective VDECS available for the engine type. Tier 4 engines would automatically meet this requirement. Accordingly, as discussed in more detail below, the proposed project would use construction equipment with Tier 4 interim engines.

With the application of the City Standard COAs "Public Works–Apply BAAQMD-Recommended Measures During Construction" and "Air Quality–Diesel Particulate Matter Controls During Construction," the proposed project would be consistent with Criterion 1.

Criterion 2

Another measure for determining whether a project is consistent with the AQP is to determine whether the project is inconsistent with the growth assumptions incorporated into the AQP and, thus, whether it would interfere with the region's ability to comply with federal and California air quality standards. The development of the AQP is based in part on the land use general plan determinations of the various cities and counties that constitute the Air Basin. The project site has a land use designation of "Downtown" in the City's General Plan and "Corridor" in the Downtown Area Plan, and is zoned C-DMU.

The C-DMU zoning district is intended to implement the vision and goals of the Downtown Area Plan, which aims to generate more pedestrian activity Downtown, include ground floor retail uses, increase economic revitalization in the area, and promote Berkeley's regional leadership in the arts. The C-DMU zoning district includes allowances for high-density residential uses. The proposed project would be consistent with the C-DMU zoning district of the site.

As such, the proposed project falls within the land uses contemplated for development by the City. Considering this information, the proposed project would not directly or indirectly result in substantial unplanned population growth. Therefore, the overall development of the project site would generally be consistent with the growth assumptions incorporated into the Clean Air Plan.

The AQPs also assume that all mandatory regulations to reduce air pollution would be adhered to. Therefore, to conform to the assumptions in the AQP, a project must be consistent with all applicable measures contained in the applicable AQP. The Clean Air Plan contains 85 control measures to reduce air pollutants and GHGs at the local, regional, and global levels. Along with the traditional stationary, area, mobile source, and transportation control measures, the Clean Air Plan contains several control measures designed to protect the climate, promote mixed-use, and compact development to reduce vehicle emissions and exposure to pollutants from stationary and mobile sources. The Clean Air Plan also includes an account of the implementation status of control measures identified in the 2010 Clean Air Plan.

Table 2 lists the Clean Air Plan policies relevant to the proposed project and evaluates the proposed project's consistency with the policies. As shown below, the proposed project would be consistent with applicable measures.

Table 2: Project Consistency with Applicable Clean Air Plan Control Measures

Control Measure	Project Consistency
Buildings Control Measures	
BL1: Green Buildings	**Consistent**. The proposed project would not conflict with the implementation of this measure. The proposed project will comply with the latest energy efficiency standards and incorporate applicable energy efficiency features designed to reduce project energy consumption.
BL4: Urban Heat Island Mitigation	**Consistent.** The proposed project would incorporate landscaping throughout the site. The proposed project would provide a landscaped ground level, 11th floor, and roof including trees and planters according to City standards that would reduce the urban heat island effect.
Energy Control Measures	
EN1: Decarbonize Electricity Generation	**Consistent.** The proposed project would not conflict with the implementation of this measure. The proposed project would comply with the latest energy efficiency standards and incorporate applicable energy efficiency features designed to reduce project energy consumption. In addition, as a high-rise residential development, the proposed project would be required to comply with the standards contained in the 2022 California Building Standards Code (CBC), Title 24, Part 6, Subchapter 8, which includes rooftop solar panels. Furthermore, the proposed residential units would be all-electric in design and would not include natural gas plumbing. The proposed project would be consistent with this measure.
EN2: Decrease Electricity Demand	**Consistent.** The proposed project would be required to conform to the energy efficiency requirements of the CBC, also known as Title 24, which was adopted to meet an Executive Order in the Green Building Initiative to improve the energy efficiency of buildings through aggressive standards. The 2022 Title 24 Standards are the current State building regulations, which went into effect on January 1, 2023. Proposed project buildings would be subject to the Title 24 Standards in effect at the time of building permit issuance.
Natural and Working Lands Control Measures	
NW2: Urban Tree Planting	**Consistent.** The proposed project would incorporate new landscaping, including new trees along Shattuck Avenue, Berkeley Way, and University Avenue, and new planters within the 11th floor and rooftop landscaped areas of the proposed building.
WA3: Green Waste Diversion	**Consistent.** The waste service provider for the proposed project will be required to meet the Assembly Bill (AB) 341 and Senate Bill (SB) 939 and SB 1374 requirements that require waste service providers to divert green waste. All plant refuse generated during operations of the proposed project would be recycled off-site.

Control Measure	Project Consistency
WA4: Recycling and Waste Reduction	**Consistent.** The waste service provider for the proposed project will be required to meet the AB 341 and SB 939 and SB 1374 requirements that require waste to be recycled.
Stationary Control Measures	
SS36: Particulate Matter from Trackout	**Consistent.** Mud and dirt that may be tracked out onto the nearby public roads during construction activities shall be removed promptly by the Contractor based on the BAAQMD's requirements. City Standard COA "Public Works–Apply BAAQMD-Recommended Measures During Construction" requires the proposed project to implement BMPs recommended by the BAAQMD for fugitive dust emissions during construction.
SS37: Particulate Matter from Asphalt Operations	**Consistent.** Asphalt used during project construction would be subject to BAAQMD Regulation 8, Rule 15-Emulsified and Liquid Asphalts. Although this rule does not directly apply to the proposed project, it does limit the reactive organic gas (ROG) content of asphalt available for use during construction by regulating the sale and use of asphalt. By using asphalt from facilities that meet BAAQMD regulations, the proposed project would be consistent with this Clean Air Plan measure.
Transportation Control Measures	
TR9: Bicycle and Pedestrian Access and Facilities	**Consistent.** The proposed project would be directly accessible to sidewalks on University Avenue and Shattuck Avenue. Several bus stops are located adjacent to the site, including two bus stops serving eight bus routes on the corner of Shattuck Avenue and University Avenue. In addition, the proposed project would be approximately 500 feet south of the Downtown Berkeley stop of the Bay Area Regional Transportation light rail system. The proposed project would also be located approximately 500 feet east of the Milvia Street Class IV protected bicycle lane and would provide 240 long-term and 18 short-term bicycle parking spaces. Therefore, the proposed project would not conflict with and would be consistent with the BAAQMD's effort to encourage planning for bicycle and pedestrian facilities.
Source: Bay Area Air Quality Management District (BAAQMD). 2017. Final 2017 Clean Air Plan. April 19.	

In summary, the proposed project would not conflict with any applicable measures under the 2017 Clean Air Plan given the application of City Standard COA "Public Works – Apply BAAQMD-Recommended Measures During Construction"; therefore, the proposed project would be consistent with Criterion 2.

Criterion 3

The proposed project would not preclude extension of a transit line or bike path, propose excessive parking beyond parking requirements, or otherwise create an impediment or disruption to implementation of any AQP control measures. As shown in Table 2 above, the proposed project would incorporate several AQP control measures as project design features, such as utilizing asphalt which

would be compliant with BAAQMD regulations, complying with energy efficiency standards contained in the 2022 California Building Standards Code (CBC), and installing landscaping across the project site. Considering this information, the proposed project would not disrupt or hinder the implementation of any AQP control measures. The proposed project is therefore consistent with Criterion 3.

Summary

As discussed above, the proposed project would be consistent with all three criteria after incorporating the City Standard COAs "Public Works–Apply BAAQMD-Recommended Measures During Construction" and "Air Quality–Diesel Particulate Matter Controls During Construction." Thus, the proposed project would not conflict with the 2017 Clean Air Plan. Therefore, impacts associated with conflicting with or obstructing the 2017 Clean Air Plan would be less than significant.

Impact AIR-2:	**Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?**

Less than significant impact. This impact is related to the cumulative effect of a project's criteria pollutant emissions. By its nature, air pollution is largely a cumulative impact resulting from emissions generated over a large geographic region. The nonattainment status of regional pollutants results from past and present development within the Air Basin, and this regional impact is a cumulative impact. Therefore, new development projects (such as the proposed project) within the Air Basin would contribute to this impact only on a cumulative basis. No single project would be sufficient in size, by itself, to result in nonattainment of regional air quality standards. Instead, a project's emissions may be individually limited, but cumulatively considerable when evaluated in combination with past, present, and future development projects.

Potential regional impacts could result in exceedances of State or federal standards for NO_X, particulate matter (PM_{10} and $PM_{2.5}$), or CO. NO_X emissions are of concern because of potential health impacts from exposure to NO_X emissions during both construction and operation and as a precursor in the formation of airborne ozone. PM_{10} and $PM_{2.5}$ are of concern during construction because of the potential to emit exhaust emissions from the operation of off-road construction equipment and fugitive dust during earth-disturbing activities (construction fugitive dust). CO emissions are of concern during project operation because operational CO hotspots are related to increases in on-road vehicle congestion and resulting health effects.

Reactive organic gas (ROG) emissions are also important because of their participation in the formation of ground level ozone. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, elderly, and young children.

The cumulative analysis focuses on whether a specific project would result in cumulatively considerable emissions. According to Section 15064(h)(4) of the CEQA Guidelines, the existence of significant

cumulative impacts caused by other projects alone does not constitute substantial evidence that the project's incremental effects would be cumulatively considerable. Rather, the determination of cumulative air quality impacts for construction and operational emissions is based on whether the proposed project would result in emissions that exceed the BAAQMD thresholds of significance for construction and operations on a project level. The thresholds of significance represent the allowable emissions each project can generate without generating a cumulatively considerable contribution to regional air quality impacts. Therefore, a project that would not exceed the BAAQMD thresholds of significance on the project level also would not be considered to result in a cumulatively considerable contribution to these regional air quality impacts. Construction and operational emissions are discussed separately below.

Construction Emissions

During construction, fugitive dust would principally be generated from demolition, site grading and other earthmoving activities. The majority of fugitive dust would remain localized and would be deposited near the project site; however, the potential for impacts from fugitive dust exists. Exhaust emissions would also be generated from the operation of the off-road construction equipment and on-road construction vehicles.

Construction Fugitive Dust

PM_{10} and $PM_{2.5}$ (fugitive dust) is recognized to impact local communities. Construction-related activities, such as soil disturbance, grading, and material hauling, can also result in fugitive dust emissions (e.g., $PM_{2.5}$ and PM_{10}). The BAAQMD does not have a numerical threshold for fugitive dust particulate matter emissions. Instead, the BAAQMD bases the determination of significance for fugitive dust on implementing effective control measures. In order for a project to have a less than significant criteria air pollutant impact related to construction-related fugitive dust emissions, it must implement all BAAQMD basic BMPs. The City applies BAAQMD BMPs as standard conditions to all projects, pursuant to General Plan Policy EM-18. These air pollution control measures shall be applied during construction activities as outlined in City Standard COA "Public Works–Apply BAAQMD-Recommended Measures During Construction". With the application of this condition, short-term construction fugitive dust impacts would be less than significant. In addition, the proposed project would comply with all applicable district rules, including Regulation 6, Rule 1 (General Requirements) and Regulation 6, Rule 6 (Prohibition of Trackout) which require dust generating operations to limit particulate matter emissions. Therefore, project construction would have a less than significant impact with respect to fugitive dust.

Construction Air Pollutant Emissions: ROG, NO_X, Exhaust PM_{10}, and Exhaust $PM_{2.5}$

California Emissions Estimator Model (CalEEMod) Version 2022.1 was used to estimate the proposed project's construction emissions. CalEEMod provides a consistent platform for estimating construction and operational emissions from a wide variety of land use projects and is the model recommended by the BAAQMD for estimating project emissions. Estimated construction emissions are compared with the applicable thresholds of significance established by the BAAQMD to assess ROG, NO_X, exhaust PM_{10}, and exhaust $PM_{2.5}$ construction emissions to determine significance for this criterion.

For the purpose of this air quality analysis, construction of the proposed project is estimated to begin in January 2026 and conclude in June 2028. Construction emissions would likely decrease if the construction schedule is deferred to later years because of improvements in technology and more stringent regulatory requirements. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as CEQA Guidelines require. The preliminary construction schedule is presented in Table 3.

Table 3: Preliminary Construction Schedule

Phase	Phase Start Date	Phase End Date	Working Days per Week	Total Number of Working Days
Demolition	1/5/2026	2/13/2026	5	30
Grading	2/16/2026	5/8/2026	5	60
Building Construction	5/11/2026	11/19/2027	5	400
Paving	11/22/2027	11/26/2027	5	5
Architectural Coating	11/29/2027	6/23/2028	5	150

The calculations of pollutant emissions from the construction equipment account for the type of equipment, horsepower and load factors of the equipment, and the duration of equipment use. As discussed in greater detail in Impact AIR-3, the proposed project would be subject to City Standard COA "Air Quality–Diesel Particulate Matter Controls During Construction," which the proposed project would fulfill by using construction equipment with Tier 4 interim engines. As indicated in Table 4, construction emissions from all construction activities would be below the recommended thresholds of significance; therefore, the proposed project's construction would have less than significant impact related to emissions of ROG, NO_X, exhaust PM_{10}, and exhaust $PM_{2.5}$.

Table 4: Construction Emissions (Average Daily Rate)

Parameter	Air Pollutants[1] (tons/year)				
	Year	ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Project Construction					
Demolition	2026	0.003	0.101	0.002	0.001
Grading	2026	0.010	0.374	0.006	0.005
Building Construction	2026	0.125	0.652	0.004	0.004
	2027	0.165	0.871	0.006	0.006
Architectural Coating	2027	0.001	0.012	0.000	0.000
	2028	0.451	0.015	0.000	0.000
Paving	2027	2.391	0.079	0.002	0.002

Parameter	Air Pollutants[1] (tons/year)				
	Year	ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Total Emissions (tons)		3.14	2.10	0.02	0.02
Daily Average					
Total Emissions (lbs/year)		6,289.9	4,207.1	39.2	35.9
Average Daily Emissions (lbs/day)[2]		9.75	6.52	0.06	0.06
Significance Threshold (lbs/day)		**54**	**54**	**82**	**54**
Exceeds Significance Threshold?		**No**	**No**	**No**	**No**

Notes:
lbs = pounds
NO_X = oxides of nitrogen
PM_{10} = particulate matter, including dust, 10 micrometers or less in diameter
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
ROG = reactive organic gases
[1] Totals may not add up due to rounding. Calculations use unrounded totals.
[2] Calculated by dividing the total lbs of emissions by the total number of nonoverlapping working days of construction (645 workdays).
Source: CalEEMod Output (see Attachment A).

In summary, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant during construction. Impacts would be less than significant.

Operational Emissions

Operational Air Pollutant Emissions: ROG, NO_X, PM_{10}, and $PM_{2.5}$

Operational emissions would include area, energy, mobile, and stationary sources. Area sources would include emissions from architectural coatings, consumer products, and landscape equipment. Regarding energy sources, the proposed project could include natural gas use for the restaurant and pool heating, but the residential and retail components of the proposed project would be all electric. Mobile sources include exhaust and road dust emissions from the vehicles that would travel to and from the project site.

Regarding stationary sources, the proposed project would include the use of an emergency generator with a power level above 50 horsepower. The BAAQMD has determined that emergency generators typically have a testing and maintenance schedule of running for approximately 30 minutes in a day, once a week.[6] The operation of the emergency generator and its associated emissions are included in the emission calculations.

[6] Bay Area Air Quality Management District (BAAQMD). 2019. Required Items for Engine Applications. Website: https://www.baaqmd.gov/~/media/files/engineering/ic-engine-permits/required-items-for-engine-application-final-draft-103119-pdf.pdf?sc_lang=en.

A detailed assessment of the criteria emissions estimated to occur due to existing operations are presented in Table 5. As shown in Table 5, the proposed project would not exceed any of the BAAQMD's thresholds of significance for regional daily operational emissions.

Table 5: Operational Regional Pollutant Emissions

Emissions Source	ROG	NO_X	PM_{10} Total	$PM_{2.5}$ Total
	Tons per Year			
Project Operation				
Mobile	0.89	0.77	1.73	0.45
Area	2.16	0.03	0.00	0.00
Energy–Natural Gas	0.00	0.05	0.00	0.00
Stationary - Emergency Generator	0.02	0.07	0.00	0.00
Total (tons/year)	3.07	0.92	1.74	0.46
Significance Threshold (Tons/Year)	**10**	**10**	**15**	**10**
Exceeds Significance Threshold?	**No**	**No**	**No**	**No**
Total (pounds/year)	6,143	1,842	3,483	912
Total Average (pounds/day)	16.83	5.05	*9.54*	*2.50*
Significance Threshold (Pounds/Day)	**54**	**54**	**82**	**54**
Exceeds Significance Threshold?	**No**	**No**	**No**	**No**

Notes:
BAAQMD = Bay Area Air Quality Management District
NO_X = nitrogen oxides
PM_{10} = particulate matter, including dust, 10 micrometers or less in diameter
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
ROG = reactive organic gases

Totals were summed using unrounded numbers and may not appear to sum exactly due to rounding.

Source: Attachment A.

Operational Carbon Monoxide Hotspot

The CO emissions from traffic generated by the proposed project are a concern at the local level because congested intersections can result in high, localized concentrations of CO (referred to as a CO hotspot).

The BAAQMD screening criteria[7] were used to determine whether implementing the proposed project could result in local carbon monoxide emissions that exceed the thresholds of significance. If all the following screening criteria are met, operation of the proposed project would result in a less than significant impact related to carbon monoxide:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, the Regional Transportation Plan, and local congestion management agency plans.
- Project-generated traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- Project-generated traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Consistency with an Applicable Congestion Management Program

A project Transportation Impact Analysis was prepared by Abram Associates on May 19, 2023, in accordance with the City's Guidelines for Development of Traffic Impact Reports. All of the study intersections would continue to have acceptable conditions (level of service [LOS] D or better) during the weekday AM and PM peak hours with the exception of Shattuck Avenue and Berkeley Way, which is forecast to continue operating at LOS F, regardless of whether or not the proposed project is implemented. However, a traffic signal is already planned to be installed at this intersection. Once construction of the planned traffic signal is completed, this intersection is forecast to have acceptable operations with the addition of traffic from the proposed project. Therefore, the addition of project traffic would not be considered an operational impact according to City of Berkeley guidelines, and the proposed project would be consistent with applicable congestion management plans.

Increase Traffic Volumes at Affected Intersections to No More Than 44,000 Vehicles Per Hour

Based on the project Transportation Impact Analysis, the existing plus project traffic volumes on the nearby local residential streets would not experience hourly traffic levels above 24,000 and 44,000 vehicles per hour cited in the BAAQMD criteria. Specifically, Exhibit 8 of the traffic analysis shows the existing plus project peak turning volumes at six studied intersections. None of the studied intersection would experience traffic volume remotely close to 24,000 or 44,000 vehicles per hour. At most, the studied intersections would experience approximately 1,000 to 2,000 vehicle trips during AM or PM peak hour. Therefore, the peak-hours trip volume experienced at this intersection is significantly below the threshold levels of 24,000 and 44,000 vehicles per hour. Therefore, the proposed project would meet all the CO screening criteria and would result in a less than significant impact related to carbon monoxide.

Increase Traffic Volumes Where Vertical and/or Horizontal Mixing Is Substantially Limited

Nonetheless, CO hotspots can occur when a transportation facility's design or orientation prevents the adequate dispersion of CO emissions from vehicles, resulting in the accumulation of local CO

[7] Bay Area Air Quality Management District (BAAQMD). 2022. CEQA Air Quality Guidelines. April 20.

concentrations. The design or orientation of a transportation facility that may prevent the dispersion of CO emissions include tunnels, parking garages, bridge underpasses, natural or urban canyons, below-grade roadways, or other features where vertical or horizontal atmospheric mixing is substantially limited. Adjacent roadways that would receive new vehicle trips generated by the proposed project do not include roadway segments where vertical or horizontal atmospheric mixing is substantially limited.

Therefore, based on the above criteria, the proposed project would not exceed the CO screening criteria and would have a less than significant impact related to CO.

In summary, the proposed project would have a less than significant construction and operation impact related to a cumulatively considerable net increase of any criteria pollutant.

Impact AIR-3: Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than significant impact. The BAAQMD defines a sensitive receptor as the following: "Facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and residential areas." As specified by the BAAQMD, health risk and hazard impacts should be analyzed for sensitive receptors within a 1,000-foot radius of the project site.[8] The closest existing sensitive receptors to the project site include the following:

- The Berkeley Place, an apartment complex located adjacent to the west and south of the project.
- ACE Berkeley Student Apartments, located adjacent to the east of the project boundary, as well as to the northeast of the project site.
- Berkeley Way Properties & Apartments, located adjacent to the west and north of the project.

The proposed project would result in a potentially significant impact on sensitive receptors if any of following criteria are met:

- **Criterion 1:** Construction and operation of the proposed project would result in cancer or non-cancer health risk levels of TACs and $PM_{2.5}$ concentrations that exceed the BAAQMD health risk significance thresholds.
- **Criterion 2:** The proposed project, in combination with existing sources of TAC and $PM_{2.5}$ emissions, would result in impacts would result in cancer or non-cancer health risk levels of TACs and $PM_{2.5}$ concentrations that exceed the cumulative BAAQMD health risk significance thresholds.
- **Criterion 3:** The proposed project would contribute to CO hot spots; those exposed to CO hotspots may have a greater likelihood of developing adverse health effects.

[8] Bay Area Air Quality Management District (BAAQMD). 2022. CEQA Air Quality Guidelines. April 20.

Criterion 1: Project Toxic Air Pollutants

Construction

An assessment was made of the potential health impacts on surrounding sensitive receptors resulting from TAC emissions during construction. The assessment is provided below, while Attachment A provides the detailed assumptions and modeling parameters.

Diesel particulate matter (DPM) has been identified by the ARB as a carcinogenic substance. Major sources of DPM include off-road construction equipment and heavy-duty delivery and vendor trucks and worker activities. For purposes of this analysis, DPM is represented as exhaust emissions of PM_{10}. $PM_{2.5}$ concentrations were calculated using the $PM_{2.5}$ emission rates using the dispersion modeling methods used for the PM_{10} and the HRA.

Estimation of Construction DPM Emissions

Construction DPM (represented as PM_{10} exhaust) and $PM_{2.5}$ emissions were estimated using CalEEMod, Version 2022.1, as described under Impact AIR-2. Construction was assumed to begin in January 2026 and conclude in June 2028. Project construction emissions were assumed to be distributed over the project site with a working schedule of 8 hours per day, 5 days per week. Table 4 summarizes the emission rates of DPM emissions during construction of the proposed project and DPM emissions during construction of the proposed project with application of City Standard COA "Air Quality–Diesel Particulate Matter Controls During Construction." Specifically, in accordance with this COA, the proposed project would use construction equipment with Tier 4 interim engine and the analysis evaluates health risk impacts with the use of Tier 4 interim construction equipment.

Estimation of Cancer Risks

The BAAQMD has developed a set of guidelines for estimating cancer risks resulting from exposure to TACs.[9] Methodologies used in this analysis were followed in this analysis. The Hotspots Analysis and Reporting Program (HARP2) software was used to identify the cancer risk associated with DPM generated during construction activities. See Attachment A for specific input assumptions.

Estimation of Non-Cancer Chronic Hazards

An evaluation of the potential non-cancer effects of chronic chemical exposures was also conducted. Adverse health effects are evaluated by comparing the annual receptor concentration of each chemical compound with the appropriate reference exposure limit. Available reference exposure limits promulgated by OEHHA were considered in the assessment.

Risk characterization for non-cancer health hazards from TACs is expressed as a hazard index (HI). The HI is a ratio of the predicted concentration of the proposed project's emissions to a concentration considered acceptable to public health professionals, termed the reference exposure limit. The HI assumes that chronic sub-threshold exposures adversely affect a specific organ or organ system (toxicological endpoint). For each discrete chemical exposure, target organs presented in regulatory guidance were used. Each chemical concentration or dose is divided by the appropriate toxicity

[9] Bay Area Air Quality Management District (BAAQMD). 2020. BAAQMD Health Risk Assessment Modeling Protocol. December.

reference exposure level to calculate the HI. For compounds affecting the same toxicological endpoint, this ratio is summed. Where the total equals or exceeds 1, a health hazard is presumed to exist. For purposes of this assessment, the TAC of concern is DPM for which the OEHHA has defined a reference exposure limit for DPM of 5 micrograms per cubic meter ($\mu g/m^3$). The principal toxicological endpoint assumed in this assessment was through inhalation.

The area surrounding the project site contains a mix of high-density residential uses, commercial uses, and public uses within 1,000 feet of the proposed project boundary. Evaluation at the identified Maximally Exposed Individual Receptor (MEIR) provides a health-conservative result for all other receptors within the 1,000 feet buffer zone. To conduct a conservative estimate of health risk impacts, all receptors were treated as residential receptors, as detailed in Attachment A. Impacts at the MEIR (which was found to be a receptor at 37°52'21.2"N 122°16'05.2"W, east of the project site, across Shattuck Avenue) were found to be less than below the BAAQMD's single-source thresholds. All other receptors would be less than the MEIR and decrease with increasing distance from the project site.

Table 6 summarizes the cancer risk and chronic HI results for project construction at the MEIR, which is a multi-family apartment residence located approximately 200 feet northeast of the project site at 2259 Bancroft Way. As mentioned above, the proposed project would be required to comply with City Standard COA "Air Quality–Diesel Particulate Matter Controls During Construction," which would require that the proposed project's construction equipment fleet be cleaner than the "Statewide average" fleet. As such, the resultant cancer risk and chronic hazards from DPM and maximum annual $PM_{2.5}$ are below the BAAQMD thresholds of significance.

Table 6: Estimated Cancer Risks and Chronic Non-Cancer Hazards

Cancer Risk Scenario[1]	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
Maximum Exposed Individual Receptor[1]	8.94	0.00496	0.10520
Thresholds of Significance	**10**	**1**	**0.3**
Exceeds Individual Source Threshold?	**No**	**No**	**No**

Notes:
$\mu g/m^3$ = micrograms per cubic meter
MEIR = Maximally Exposed Individual Receptor
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
[1] The MEIR was found to be a receptor at 37°52'21.2"N 122°16'05.2"W, east of the project site, across Shattuck Avenue. The project construction cancer risk, chronic non-cancer hazard, and PM2.5 concentration estimates reflect compliance with the City Standard COA "Air Quality–Diesel Particulate Matter Controls During Construction." Specifically, in accordance with this COA, the proposed project would use construction equipment with Tier 4 interim engine and the analysis evaluates health risk impacts with the use of Tier 4 interim construction equipment.
Emissions Source: Attachment A.
Thresholds Source: Bay Area Air Quality Management District (BAAQMD). 2022. CEQA Air Quality Guidelines. April 20.

As noted in Table 6 above, the proposed project's construction emissions would not exceed any applicable BAAQMD significance threshold after incorporating City Standard COA "Air Quality–Diesel

Particulate Matter Controls During Construction." Therefore, project construction would not result in significant health impacts to nearby sensitive receptors with incorporation of the identified City Standard COAs.

Project Operational Toxic Air Pollutants

While the proposed project is a mixed-use project primarily consisting of residential and retail uses, it would install an emergency generator on-site, which is a stationary operational emissions source of TACs during its operation. Since this proposed generator would a standby emergency generator, its operation would be limited to testing and emergency hours and as such are not expected to be a significant source of TAC emissions to the surroundings. Risk-based permitting requirements (Rule 5-2 New Source Review for Toxics). However, following BAAQMD emergency generator Potential to Emit (PTE) assumptions, the proposed emergency generator would likely not exceed 50 hours of emergency operation per year. As demonstrated in Table 5, Operational Regional Emissions, the proposed project emergency generator would not generate a level of criteria pollutant emissions above BAAQMD significance thresholds. In addition, as a permitted source, the project applicant would be required to demonstrate operational emissions compliance with BAAQMD standards through a separately issued Engine Permit prior to operations per Rule 5-2 New Source Review for Toxics. In addition, the intermittent and infrequent use of the emergency generator would ensure that it would not generate a significant amount of localized TAC emissions over time. Traffic generated by the mixed-use residential and commercial project would consist of mostly light-duty gasoline powered vehicles, which are not a significant source of TAC and air pollutant emissions. Thus, the proposed project would not generate a significant amount of DPM or other TAC emissions during operation and would not result in significant health impacts to nearby sensitive receptors during operation.

Criterion 2: Cumulative Health Risk Assessment

The BAAQMD recommends assessing the potential cumulative impacts from sources of TACs within 1,000 feet of a project. As a result, a cumulative HRA was performed that examined the cumulative impacts of the proposed project's construction emissions and sources of TAC emissions within 1,000 feet of the proposed project. As previously discussed, the MEIR was determined to be a receptor at 37°52'21.2"N 122°16'05.2"W, east of the project, across Shattuck Avenue.

For a project-level analysis, BAAQMD provides several tools for use in screening potential sources of TACs. This includes the Stationary Source Screening Map[10] which provides all the stationary sources permitted by the Air District with risk and hazard estimates; Roadway Screening Data Layers providing estimated cancer risks, hazards, and $PM_{2.5}$ concentrations for all Bay Area highways and surface streets; and Rail and Railyard Screening Data Layers providing estimated cancer risks, hazards, and $PM_{2.5}$ concentrations from diesel locomotives and select railyards.

The cumulative health risk results during project construction, including health risks from the existing stationary sources, roadway, and rail data from the BAAQMD sources above, are summarized in Table 7.

[10] Bay Area Air Quality Management District (BAAQMD). 2024. Stationary Source Screening Map. Website: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3. Accessed August 29, 2024.

No rail sources were identified within 1,000 feet of the project site and the BAAQMD Railyard Screening Layers had no data for rail sources at the site. Outputs from the BAAQMD screening tools are documented in Attachment A, with the HRA results.

Table 7: Summary of the Cumulative Health Impacts at the MEIR during Construction

Source	Source Name/Type	Cancer Risk (per million)	Chronic Hazard Index	Maximum Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Project				
Construction with COAs	Diesel Construction Equipment	8.94	0.00496	0.10520
Stationary Sources				
Facility ID 19070	Golden Bear Center	0.75	0	0
Facility ID 21118	City of Berkeley Fire Station #2	3.11	0	0
Facility ID 17864	Peralta Community College District	23.75	0.01	0.03
Facility ID 200903	Center Street Parking Garage	3.25	0	0
Facility ID 201406	Residence Inn Berkeley	32.06	0.01	0.04
Facility ID 201576	Regency 2120 Berkeley Way LLC	3.97	0	0.01
Facility ID 200623	Stonefire Apartments	9.63	0	0.01
Facility ID 59-110	University of California Berkeley	3.79	0	0.01
Facility ID 59-118	University of California Berkeley	3.97	0	0.01
Facility ID 59-144	University of California Berkeley	2.61	0	0
Facility ID 59-149	University of California Berkeley	5.93	0	0.01
Facility ID 59-63	University of California Berkeley	4.56	0	0.01
Facility ID 59-REM	University of California Berkeley	165.74	0.84	128.58
Existing Roadways				
Existing Roadways		40.58	0.0951	0.4886
Existing Rail				
Existing Railways and Rail Yards		No Data	No Data	No Data
Cumulative Health Risks without Project Construction				
Cumulative Total without Project Construction		**303.70**	**0.96**	**129.20**
BAAQMD Cumulative Thresholds of Significance		**100**	**10**	**0.8**
Threshold Exceedance?		**Yes**	**No**	**Yes**
Cumulative Health Risks with Project Construction				
Cumulative Total with Project Construction		**312.64**	**0.96**	**129.30**

Source	Source Name/Type	Cancer Risk (per million)	Chronic Hazard Index	Maximum Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
BAAQMD Cumulative Thresholds of Significance		**100**	**10**	**0.8**
Threshold Exceedance?		**Yes**	**No**	**Yes**

Notes:
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
$\mu g/m^3$ = micrograms per cubic meter
BAAQMD = Bay Area Air Quality Management District
MEIR = Maximally Exposed Individual Receptor
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
TAC = toxic air contaminant
All Risks and Hazards for Permitted Stationary Sources are maximum values and not adjusted for distance from MEIR
Source: Attachment A

As noted in Table 7, the cumulative impacts at the MER would exceed the BAAQMD's cumulative thresholds of significance for cancer risk and annual $PM_{2.5}$ concentrations with and without contributions from project construction. Although there is an existing cumulative impact, a project's contribution to a significant cumulative impact can be less than a cumulatively considerable contribution and thus is not significant. In this case, the proposed project's individual contribution to $PM_{2.5}$ concentration with uses of equipment engines of Tier 4 interim standards is 0.009 $\mu g/m^3$ and to cancer risk with uses of equipment engines of Tier 4 interim standards is 8.94 per million.

The proposed project does not exceed the BAAQMD's single source threshold for $PM_{2.5}$ of 0.3 $\mu g/m^3$ and cancer risk of 10 in a million (see Table 6). By using Tier 4 interim construction equipment, the proposed project implements its fair share of minimization measures. Therefore, the proposed project's health risk impacts related to $PM_{2.5}$ concentration and cancer risk is not considered cumulatively considerable.

Criterion 3: CO Hotspot

As discussed under Impact AIR-2, the proposed project's operational CO hotspot impact would be less than significant.

Summary

As discussed above, the proposed project would be consistent with all three criteria after incorporating the City Standard COAs "Public Works–Apply BAAQMD-Recommended Measures During Construction" and "Air Quality–Diesel Particulate Matter Controls During Construction." In summary, the proposed project would not expose sensitive receptors to substantial pollutant concentrations during construction or operation. Impacts would be less than significant.

Impact AIR-4:	**Would the project result in other emissions (such as those leading to odors or) adversely affecting a substantial number of people?**

Less than significant impact. The ability to detect odors varies considerably among the populations and is subjective. The BAAQMD does not have a recommended odor threshold for construction activities. However, the BAAQMD recommends operational screening criteria based on the distance between receptors and types of sources known to generate odors.

Project construction would generate diesel exhaust and ROGs; however, these emissions would disperse rapidly from the project site and therefore would not create significant odors affecting a substantial number of people. As such, construction odor impacts would be less than significant.

Land uses typically associated with objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities, as shown in Table 8.[11]

Table 8: BAAQMD Odor Screening-level Distances Thresholds

Land Use/Type of Operation	Project Screening Distance
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations	1 mile
Rendering Plant	2 miles
Coffee Roaster	1 mile
Food Processing Facility	1 mile
Confined Animal Facility/Feed Lot/Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Metal Smelting Plants	2 miles
Source: Bay Area Air Quality Management District (BAAQMD) 2022.	

[11] Bay Area Air Quality Management District (BAAQMD). 2022. BAAQMD CEQA Guidelines, Chapter 5 Project-level Air Quality Impacts, Table 5-4, Odor Screening Distances. April 20.

The proposed project would involve the development of residences whose operations could lead to odors from associated laundry cleaning, vehicle exhaust, outdoor cooking, and waste disposal. However, such odors generated by project operation would be small in quantity and duration and would not pose an objectionable odor impact to future and existing receptors.

The proposed project would also generate diesel exhaust associated with the operation of the emergency generator. However, operation of this generator would be infrequent, and odors associated with this emission would disperse rapidly from the project site and therefore would not create significant odors affecting a substantial number of people. As such, operational odor impacts would be less than significant.

Recommended Measures

Standard Conditions of Approval

Public Works–Apply BAAQMD-Recommended Measures During Construction

For all proposed projects, BAAQMD recommends implementing all the Basic Construction Mitigation Measures,[12] listed below to meet the Best Management Practices threshold for fugitive dust:

A. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

B. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

C. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

D. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

E. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

F. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure [ATCM] Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.

G. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

I. Post a publicly visible sign with the telephone number and person to contact at the City of Berkeley regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

[12] Bay Area Air Quality Management District (BAAQMD) Basic Construction Mitigation Measures are considered standard construction measures, and do not constitute any project-specific mitigation.

Air Quality–Diesel Particulate Matter Controls During Construction

All off-road construction equipment used for projects with construction lasting more than 2 months shall comply with one of the following measures:

A. The project applicant shall prepare a Health Risk Assessment (HRA) that demonstrates the project's on-site emissions of diesel particulate matter during construction will not exceed health risk screening criteria after a screening-level health risk assessment is conducted in accordance with current guidance from BAAQMD and Office of Environmental Health Hazard Assessment (OEHHA). The HRA shall be submitted to the Public Works Department for review and approval prior to the issuance of building permits.

B. All construction equipment shall be equipped with Tier 2 or higher engines and the most effective Verified Diesel Emission Control Strategies (VDECS) available for the engine type (Tier 4 engines automatically meet this requirement) as certified by the ARB. The equipment shall be properly maintained and tuned in accordance with manufacturer specifications.

    Project-specific clarification: The proposed project would use construction equipment equipped with Tier 4 interim engines to satisfy this requirement.

C. In addition, a Construction Emissions Minimization Plan (Emissions Plan) shall be prepared that includes the following:
    1. An equipment inventory summarizing the type of off-road equipment required for each phase of construction, including the equipment manufacturer, equipment identification number, engine model year, engine certification (tier rating), horsepower, and engine serial number. For all VDECS, the equipment inventory shall also include the technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date.
    2. A Certification Statement that the Contractor agrees to comply fully with the Emissions Plan and acknowledges that a significant violation of the Emissions Plan shall constitute a material breach of contract. The Emissions Plan shall be submitted to the Public Works Department for review and approval prior to the issuance of building permits.

Mitigation Measures

None.

CONCLUSION

Based on the project understanding described above, the proposed project would result in less than significant impacts to air quality after incorporation of the City's Standard COAs "Public Works –Apply BAAQMD-Recommended Measures During Construction" and "Air Quality–Diesel Particulate Matter Controls During Construction."

Thank you for the opportunity to conduct an air quality impacts analysis. Please feel free to contact Phil Ault (559.930.6191 or pault@fcs-intl.com) should you have any questions.

Sincerely,



Philip Ault, Director of Noise and Air Quality
FirstCarbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

Attachment A: Air Quality Supporting Information and Modeling Results

FIRSTCARBON
SOLUTIONS
FCS INTERNATIONAL, INC.

Attachment A:
Air Quality Supporting Information and Modeling Results

Attachment A: Air Quality Supporting Information

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Shattuck Avenue Mixed Use Project w COAs
Construction Start Date	1/5/2026
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	44.2
Location	1950 Shattuck Ave., Berkeley, CA 94704, USA
County	Alameda
City	Berkeley
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1537
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.26

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Apartments High Rise	599	Dwelling Unit	0.65	392,612	6,735	0.00	1,689	Building SF includes total building sf minus commercial, restaurant, parking, and pool. # of dwelling units conservatively increased from 598 (site plan) to 599 (traffic study) to be consistent with the trip data from traffic study
Supermarket	8.34	1000sqft	0.00	8,342	0.00	0.00	—	Commercial space, selected supermarket as the most fitting option for a ground level retail use
Enclosed Parking Structure	0.80	1000sqft	0.00	848	0.00	0.00	—	Parking levels
Recreational Swimming Pool	1.50	1000sqft	0.00	1,500	0.00	0.00	—	Swimming Pool, separated out to account for its electricity/water use. The square footage is a conservative estimate based on site plan
High Turnover (Sit Down Restaurant)	7.80	1000sqft	0.00	7,800	0.00	0.00	—	Restaurant sqft broken out consistent with traffic study
Other Non-Asphalt Surfaces	0.15	Acre	0.15	0.00	0.00	0.00	—	Off site improvement per RFI info

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	38.3	38.3	12.2	24.9	0.05	0.19	4.10	4.14	0.15	1.41	1.56	—	7,087	7,087	0.36	0.87	18.3	7,368
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	38.3	38.3	12.6	23.0	0.05	0.19	4.10	4.14	0.15	1.41	1.56	—	7,084	7,084	0.36	0.87	0.48	7,354
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	13.1	13.1	6.18	14.1	0.02	0.06	2.60	2.66	0.06	0.70	0.76	—	4,422	4,422	0.16	0.36	4.66	4,538
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.39	2.39	1.13	2.56	< 0.005	0.01	0.47	0.49	0.01	0.13	0.14	—	732	732	0.03	0.06	0.77	751

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.76	1.55	12.2	24.9	0.05	0.19	4.10	4.14	0.15	1.41	1.56	—	7,087	7,087	0.36	0.87	18.3	7,368
2027	1.70	1.49	7.33	23.8	0.02	0.05	4.10	4.14	0.05	0.98	1.03	—	6,679	6,679	0.18	0.41	16.7	6,824
2028	38.3	38.3	1.23	3.76	< 0.005	0.03	0.72	0.76	0.03	0.17	0.20	—	851	851	0.02	0.01	2.22	856

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.72	1.49	12.6	23.0	0.05	0.19	4.10	4.14	0.15	1.41	1.56	—	7,084	7,084	0.36	0.87	0.48	7,354
2027	38.3	38.3	7.74	22.1	0.02	0.05	4.10	4.14	0.05	0.98	1.03	—	6,417	6,417	0.21	0.42	0.43	6,549
2028	38.3	38.3	1.26	3.42	< 0.005	0.03	0.72	0.76	0.03	0.17	0.20	—	800	800	0.02	0.03	0.06	809
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.92	0.76	6.18	12.9	0.02	0.06	2.60	2.66	0.06	0.70	0.76	—	4,422	4,422	0.16	0.36	4.66	4,538
2027	3.52	3.38	4.92	14.1	0.02	0.03	2.57	2.60	0.03	0.61	0.65	—	4,145	4,145	0.13	0.26	4.64	4,231
2028	13.1	13.1	0.43	1.15	< 0.005	0.01	0.24	0.25	0.01	0.06	0.07	—	275	275	0.01	0.01	0.33	279
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.17	0.14	1.13	2.35	< 0.005	0.01	0.47	0.49	0.01	0.13	0.14	—	732	732	0.03	0.06	0.77	751
2027	0.64	0.62	0.90	2.56	< 0.005	0.01	0.47	0.47	0.01	0.11	0.12	—	686	686	0.02	0.04	0.77	701
2028	2.39	2.39	0.08	0.21	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	45.6	45.6	< 0.005	< 0.005	0.05	46.2

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	21.5	20.7	10.1	81.0	0.12	0.39	10.2	10.6	0.39	2.59	2.97	366	15,004	15,370	37.6	0.65	1,776	18,281
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	18.1	17.4	10.5	44.7	0.11	0.38	10.2	10.6	0.37	2.59	2.96	366	14,289	14,655	37.7	0.69	1,745	17,550
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	17.4	16.8	5.05	53.7	0.10	0.11	9.43	9.54	0.11	2.39	2.50	366	12,973	13,339	37.6	0.65	1,758	16,230

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.17	3.07	0.92	9.81	0.02	0.02	1.72	1.74	0.02	0.44	0.46	60.6	2,148	2,208	6.23	0.11	291	2,687

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.78	5.36	4.05	41.0	0.11	0.07	10.2	10.3	0.06	2.59	2.65	—	11,096	11,096	0.44	0.48	31.9	11,282
Area	13.6	13.4	0.33	34.8	< 0.005	0.02	—	0.02	0.01	—	0.01	0.00	93.9	93.9	< 0.005	< 0.005	—	94.2
Energy	0.03	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	2,716	2,716	0.42	0.05	—	2,741
Water	—	—	—	—	—	—	—	—	—	—	—	47.4	89.8	137	4.88	0.12	—	294
Waste	—	—	—	—	—	—	—	—	—	—	—	319	0.00	319	31.9	0.00	—	1,115
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,744	1,744
Stationary	2.16	1.97	5.50	5.02	0.01	0.29	0.00	0.29	0.29	0.00	0.29	0.00	1,007	1,007	0.04	0.01	0.00	1,011
Total	21.5	20.7	10.1	81.0	0.12	0.39	10.2	10.6	0.39	2.59	2.97	366	15,004	15,370	37.6	0.65	1,776	18,281
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.60	5.15	4.73	39.5	0.10	0.07	10.2	10.3	0.06	2.59	2.65	—	10,475	10,475	0.50	0.52	0.83	10,644
Area	10.3	10.3	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.03	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	2,716	2,716	0.42	0.05	—	2,741
Water	—	—	—	—	—	—	—	—	—	—	—	47.4	89.8	137	4.88	0.12	—	294
Waste	—	—	—	—	—	—	—	—	—	—	—	319	0.00	319	31.9	0.00	—	1,115
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,744	1,744
Stationary	2.16	1.97	5.50	5.02	0.01	0.29	0.00	0.29	0.29	0.00	0.29	0.00	1,007	1,007	0.04	0.01	0.00	1,011
Total	18.1	17.4	10.5	44.7	0.11	0.38	10.2	10.6	0.37	2.59	2.96	366	14,289	14,655	37.7	0.69	1,745	17,550

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.26	4.85	4.25	36.0	0.10	0.06	9.43	9.49	0.06	2.39	2.45	—	10,005	10,005	0.45	0.48	13.1	10,173
Area	11.9	11.8	0.16	17.2	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	92.6	92.6	0.01	< 0.005	—	93.2
Energy	0.03	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	2,716	2,716	0.42	0.05	—	2,741
Water	—	—	—	—	—	—	—	—	—	—	—	47.4	89.8	137	4.88	0.12	—	294
Waste	—	—	—	—	—	—	—	—	—	—	—	319	0.00	319	31.9	0.00	—	1,115
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,744	1,744
Stationary	0.15	0.13	0.38	0.34	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	69.0	69.0	< 0.005	< 0.005	0.00	69.2
Total	17.4	16.8	5.05	53.7	0.10	0.11	9.43	9.54	0.11	2.39	2.50	366	12,973	13,339	37.6	0.65	1,758	16,230
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.96	0.89	0.77	6.57	0.02	0.01	1.72	1.73	0.01	0.44	0.45	—	1,656	1,656	0.07	0.08	2.17	1,684
Area	2.17	2.16	0.03	3.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	15.3	15.3	< 0.005	< 0.005	—	15.4
Energy	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	450	450	0.07	0.01	—	454
Water	—	—	—	—	—	—	—	—	—	—	—	7.85	14.9	22.7	0.81	0.02	—	48.7
Waste	—	—	—	—	—	—	—	—	—	—	—	52.8	0.00	52.8	5.27	0.00	—	185
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	289	289
Stationary	0.03	0.02	0.07	0.06	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	11.4	11.4	< 0.005	< 0.005	0.00	11.5
Total	3.17	3.07	0.92	9.81	0.02	0.02	1.72	1.74	0.02	0.44	0.46	60.6	2,148	2,208	6.23	0.11	291	2,687

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.12	4.12	5.63	0.01	0.07	—	0.07	0.06	—	0.06	—	852	852	0.03	0.01	—	855
Demolition	—	—	—	—	—	—	1.78	1.78	—	0.27	0.27	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.34	0.46	< 0.005	0.01	—	0.01	0.01	—	0.01	—	70.0	70.0	< 0.005	< 0.005	—	70.3
Demolition	—	—	—	—	—	—	0.15	0.15	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.6	11.6	< 0.005	< 0.005	—	11.6
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.32	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	78.8	78.8	< 0.005	< 0.005	0.01	79.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.16	0.05	2.67	1.03	0.01	0.04	0.57	0.61	0.03	0.16	0.18	—	2,118	2,118	0.11	0.33	0.12	2,221
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.52	6.52	< 0.005	< 0.005	0.01	6.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.22	0.08	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	174	174	0.01	0.03	0.16	183
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.08	1.08	< 0.005	< 0.005	< 0.005	1.10
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.8	28.8	< 0.005	< 0.005	0.03	30.2

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.20	5.73	8.80	0.01	0.09	—	0.09	0.08	—	0.08	—	1,571	1,571	0.06	0.01	—	1,577
Dust From Material Movement	—	—	—	—	—	—	1.94	1.94	—	0.99	0.99	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.20	5.73	8.80	0.01	0.09	—	0.09	0.08	—	0.08	—	1,571	1,571	0.06	0.01	—	1,577
Dust From Material Movement	—	—	—	—	—	—	1.94	1.94	—	0.99	0.99	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.94	1.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	258	258	0.01	< 0.005	—	259
Dust From Material Movement	—	—	—	—	—	—	0.32	0.32	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.17	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	42.8	42.8	< 0.005	< 0.005	—	42.9
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.36	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.0	85.0	< 0.005	< 0.005	0.31	86.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.42	0.12	6.48	2.61	0.04	0.10	1.46	1.57	0.07	0.40	0.47	—	5,431	5,431	0.29	0.86	11.6	5,705
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.32	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	78.8	78.8	< 0.005	< 0.005	0.01	79.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.41	0.12	6.85	2.64	0.04	0.10	1.46	1.57	0.07	0.40	0.47	—	5,434	5,434	0.29	0.86	0.30	5,697
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.0	13.0	< 0.005	< 0.005	0.02	13.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.02	1.10	0.43	0.01	0.02	0.24	0.25	0.01	0.06	0.08	—	893	893	0.05	0.14	0.83	937
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.16	2.16	< 0.005	< 0.005	< 0.005	2.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.20	0.08	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.14	155

3.5. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.18	0.18	4.50	8.10	0.01	0.02	—	0.02	0.02	—	0.02	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.18	4.50	8.10	0.01	0.02	—	0.02	0.02	—	0.02	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	2.07	3.73	0.01	0.01	—	0.01	0.01	—	0.01	—	600	600	0.02	< 0.005	—	602
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.38	0.68	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	99.3	99.3	< 0.005	< 0.005	—	99.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.45	1.31	0.94	15.9	0.00	0.00	3.62	3.62	0.00	0.85	0.85	—	3,723	3,723	0.07	0.14	13.7	3,780
Vendor	0.13	0.06	2.10	0.93	0.01	0.02	0.47	0.50	0.02	0.13	0.16	—	1,756	1,756	0.07	0.26	4.60	1,840
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.41	1.26	1.23	13.9	0.00	0.00	3.62	3.62	0.00	0.85	0.85	—	3,454	3,454	0.09	0.15	0.36	3,502
Vendor	0.13	0.05	2.22	0.94	0.01	0.02	0.47	0.50	0.02	0.13	0.16	—	1,757	1,757	0.07	0.26	0.12	1,837
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.65	0.58	0.50	6.21	0.00	0.00	1.62	1.62	0.00	0.38	0.38	—	1,599	1,599	0.04	0.07	2.72	1,622
Vendor	0.06	0.03	1.00	0.43	0.01	0.01	0.21	0.22	0.01	0.06	0.07	—	808	808	0.03	0.12	0.91	845
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.09	1.13	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	265	265	0.01	0.01	0.45	269
Vendor	0.01	< 0.005	0.18	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	0.01	0.02	0.15	140
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.18	4.50	8.10	0.01	0.02	—	0.02	0.02	—	0.02	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.18	0.18	4.50	8.10	0.01	0.02	—	0.02	0.02	—	0.02	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.11	0.11	2.84	5.12	0.01	0.02	—	0.02	0.02	—	0.02	—	824	824	0.03	0.01	—	827
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.02	0.02	0.52	0.93	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	137	137	0.01	< 0.005	—	137
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.40	1.25	0.82	14.8	0.00	0.00	3.62	3.62	0.00	0.85	0.85	—	3,654	3,654	0.06	0.14	12.4	3,710
Vendor	0.13	0.06	2.01	0.89	0.01	0.02	0.47	0.50	0.02	0.13	0.16	—	1,721	1,721	0.07	0.26	4.30	1,805
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.37	1.21	1.10	13.1	0.00	0.00	3.62	3.62	0.00	0.85	0.85	—	3,390	3,390	0.09	0.15	0.32	3,438
Vendor	0.13	0.05	2.14	0.92	0.01	0.02	0.47	0.50	0.02	0.13	0.16	—	1,723	1,723	0.07	0.26	0.11	1,802
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.85	0.76	0.61	8.03	0.00	0.00	2.22	2.22	0.00	0.52	0.52	—	2,157	2,157	0.05	0.09	3.38	2,189
Vendor	0.08	0.03	1.32	0.57	0.01	0.02	0.29	0.31	0.02	0.08	0.10	—	1,088	1,088	0.05	0.16	1.18	1,140
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.14	0.11	1.47	0.00	0.00	0.41	0.41	0.00	0.09	0.09	—	357	357	0.01	0.01	0.56	362
Vendor	0.01	0.01	0.24	0.10	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	180	180	0.01	0.03	0.20	189
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.14	4.34	6.67	0.01	0.04	—	0.04	0.04	—	0.04	—	1,121	1,121	0.05	0.01	—	1,125
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.4	15.4	< 0.005	< 0.005	—	15.4
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.54	2.54	< 0.005	< 0.005	—	2.55
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.60	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	155	155	< 0.005	0.01	0.01	157
Vendor	0.02	0.01	0.41	0.18	< 0.005	< 0.005	0.09	0.10	< 0.005	0.03	0.03	—	334	334	0.01	0.05	0.02	349
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.13	2.13	< 0.005	< 0.005	< 0.005	2.16
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	< 0.005	4.79
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.36
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.76	0.76	< 0.005	< 0.005	< 0.005	0.79
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	1.07	0.96	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	38.0	38.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.07	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.62	8.62	< 0.005	< 0.005	—	8.65
Architectural Coatings	2.45	2.45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.43

Architectural Coating	0.45	0.45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.24	0.22	2.62	0.00	0.00	0.72	0.72	0.00	0.17	0.17	—	678	678	0.02	0.03	0.06	688
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.16	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	44.1	44.1	< 0.005	< 0.005	0.07	44.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.30	7.30	< 0.005	< 0.005	0.01	7.40
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.02	0.02	1.07	0.96	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	38.0	38.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	1.07	0.96	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	38.0	38.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.37	0.33	< 0.005	0.01	—	0.01	0.01	—	0.01	—	45.7	45.7	< 0.005	< 0.005	—	45.9
Architectural Coatings	13.0	13.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.07	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.57	7.57	< 0.005	< 0.005	—	7.60

Architect Coatings	2.37	2.37	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.24	0.16	2.79	0.00	0.00	0.72	0.72	0.00	0.17	0.17	—	718	718	0.01	0.01	2.22	722
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.24	0.19	2.46	0.00	0.00	0.72	0.72	0.00	0.17	0.17	—	666	666	0.02	0.03	0.06	675
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	0.82	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	230	230	< 0.005	0.01	0.33	233
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.01	0.15	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	38.0	38.0	< 0.005	< 0.005	0.05	38.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	1.50	1.41	0.93	9.10	0.02	0.01	2.12	2.13	0.01	0.54	0.55	—	2,321	2,321	0.11	0.11	6.61	2,362
Supermarket	1.86	1.72	1.36	13.8	0.04	0.02	3.51	3.54	0.02	0.89	0.91	—	3,807	3,807	0.14	0.16	11.0	3,870
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	2.42	2.24	1.77	18.1	0.05	0.03	4.58	4.61	0.03	1.16	1.19	—	4,968	4,968	0.19	0.21	14.3	5,050
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	5.78	5.36	4.05	41.0	0.11	0.07	10.2	10.3	0.06	2.59	2.65	—	11,096	11,096	0.44	0.48	31.9	11,282
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments High Rise	1.45	1.35	1.08	9.07	0.02	0.01	2.12	2.13	0.01	0.54	0.55	—	2,193	2,193	0.12	0.12	0.17	2,231
Supermarket	1.80	1.65	1.58	13.2	0.04	0.02	3.51	3.54	0.02	0.89	0.91	—	3,593	3,593	0.16	0.18	0.28	3,650
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	2.35	2.15	2.06	17.2	0.05	0.03	4.58	4.61	0.03	1.16	1.19	—	4,689	4,689	0.21	0.23	0.37	4,763
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	5.60	5.15	4.73	39.5	0.10	0.07	10.2	10.3	0.06	2.59	2.65	—	10,475	10,475	0.50	0.52	0.83	10,644
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	0.26	0.24	0.19	1.57	< 0.005	< 0.005	0.38	0.38	< 0.005	0.10	0.10	—	365	365	0.02	0.02	0.47	371
Supermarket	0.32	0.30	0.27	2.32	0.01	< 0.005	0.62	0.63	< 0.005	0.16	0.16	—	598	598	0.03	0.03	0.78	608
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Recreational Swimming	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	0.38	0.34	0.32	2.69	0.01	< 0.005	0.72	0.73	< 0.005	0.18	0.19	—	694	694	0.03	0.03	0.91	705
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.96	0.89	0.77	6.57	0.02	0.01	1.72	1.73	0.01	0.44	0.45	—	1,656	1,656	0.07	0.08	2.17	1,684

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,973	1,973	0.32	0.04	—	1,993
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	244	244	0.04	< 0.005	—	246
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	1.66	1.66	< 0.005	< 0.005	—	1.68

Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	184	184	0.03	< 0.005	—	186
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,403	2,403	0.39	0.05	—	2,427
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,973	1,973	0.32	0.04	—	1,993
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	244	244	0.04	< 0.005	—	246
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	1.66	1.66	< 0.005	< 0.005	—	1.68
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	184	184	0.03	< 0.005	—	186

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,403	2,403	0.39	0.05	—	2,427
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	327	327	0.05	0.01	—	330
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	40.4	40.4	0.01	< 0.005	—	40.8
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	0.27	0.27	< 0.005	< 0.005	—	0.28
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	30.4	30.4	< 0.005	< 0.005	—	30.7
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	398	398	0.06	0.01	—	402

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Supermarket	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
High Turnover (Sit Down Restaurant)	0.03	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	313	313	0.03	< 0.005	—	314
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.03	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	313	313	0.03	< 0.005	—	314
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Supermarket	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
High Turnover (Sit Down Restaurant)	0.03	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	313	313	0.03	< 0.005	—	314
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.03	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	313	313	0.03	< 0.005	—	314
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Supermarket	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
High Turnover (Sit Down Restaurant)	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	51.9	51.9	< 0.005	< 0.005	—	52.0

Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	51.9	51.9	< 0.005	< 0.005	—	52.0

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	8.75	8.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	1.56	1.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	3.26	3.08	0.33	34.8	< 0.005	0.02	—	0.02	0.01	—	0.01	—	93.9	93.9	< 0.005	< 0.005	—	94.2
Total	13.6	13.4	0.33	34.8	< 0.005	0.02	—	0.02	0.01	—	0.01	0.00	93.9	93.9	< 0.005	< 0.005	—	94.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	8.75	8.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architect Coatings	1.56	1.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	10.3	10.3	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	7.67	7.67	< 0.005	< 0.005	—	7.74
Consumer Products	1.60	1.60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.28	0.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.29	0.28	0.03	3.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.67	7.67	< 0.005	< 0.005	—	7.69
Total	2.17	2.16	0.03	3.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	15.3	15.3	< 0.005	< 0.005	—	15.4

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	40.8	77.2	118	4.19	0.10	—	253
Supermarket	—	—	—	—	—	—	—	—	—	—	—	1.97	3.72	5.69	0.20	< 0.005	—	12.2

Enclosed	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.17	0.32	0.49	0.02	< 0.005	—	1.05
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	4.54	8.57	13.1	0.47	0.01	—	28.1
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	47.4	89.8	137	4.88	0.12	—	294
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	40.8	77.2	118	4.19	0.10	—	253
Supermarket	—	—	—	—	—	—	—	—	—	—	—	1.97	3.72	5.69	0.20	< 0.005	—	12.2
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.17	0.32	0.49	0.02	< 0.005	—	1.05
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	4.54	8.57	13.1	0.47	0.01	—	28.1

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	47.4	89.8	137	4.88	0.12	—	294
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	6.75	12.8	19.5	0.69	0.02	—	41.9
Supermarket	—	—	—	—	—	—	—	—	—	—	—	0.33	0.62	0.94	0.03	< 0.005	—	2.02
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.03	0.05	0.08	< 0.005	< 0.005	—	0.17
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	0.75	1.42	2.17	0.08	< 0.005	—	4.65
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	7.85	14.9	22.7	0.81	0.02	—	48.7

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	239	0.00	239	23.9	0.00	—	835
Supermarket	—	—	—	—	—	—	—	—	—	—	—	25.4	0.00	25.4	2.53	0.00	—	88.7
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	4.61	0.00	4.61	0.46	0.00	—	16.1
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	50.0	0.00	50.0	5.00	0.00	—	175
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	319	0.00	319	31.9	0.00	—	1,115
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	239	0.00	239	23.9	0.00	—	835
Supermarket	—	—	—	—	—	—	—	—	—	—	—	25.4	0.00	25.4	2.53	0.00	—	88.7

Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	4.61	0.00	4.61	0.46	0.00	—	16.1
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	50.0	0.00	50.0	5.00	0.00	—	175
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	319	0.00	319	31.9	0.00	—	1,115
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	39.5	0.00	39.5	3.95	0.00	—	138
Supermarket	—	—	—	—	—	—	—	—	—	—	—	4.20	0.00	4.20	0.42	0.00	—	14.7
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.76	0.00	0.76	0.08	0.00	—	2.67
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	8.28	0.00	8.28	0.83	0.00	—	29.0

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	52.8	0.00	52.8	5.27	0.00	—	185

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.81	2.81
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,729	1,729
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.2	12.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,744	1,744
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.81	2.81
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,729	1,729
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.2	12.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,744	1,744
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	286	286
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.02	2.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	289	289

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	2.16	1.97	5.50	5.02	0.01	0.29	0.00	0.29	0.29	0.00	0.29	0.00	1,007	1,007	0.04	0.01	0.00	1,011
Total	2.16	1.97	5.50	5.02	0.01	0.29	0.00	0.29	0.29	0.00	0.29	0.00	1,007	1,007	0.04	0.01	0.00	1,011

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	2.16	1.97	5.50	5.02	0.01	0.29	0.00	0.29	0.29	0.00	0.29	0.00	1,007	1,007	0.04	0.01	0.00	1,011
Total	2.16	1.97	5.50	5.02	0.01	0.29	0.00	0.29	0.29	0.00	0.29	0.00	1,007	1,007	0.04	0.01	0.00	1,011
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.03	0.02	0.07	0.06	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	11.4	11.4	< 0.005	< 0.005	0.00	11.5
Total	0.03	0.02	0.07	0.06	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	11.4	11.4	< 0.005	< 0.005	0.00	11.5

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/5/2026	2/13/2026	5.00	30.0	—
Grading	Grading	2/16/2026	5/8/2026	5.00	60.0	—
Building Construction	Building Construction	5/11/2026	11/19/2027	5.00	400	—
Paving	Paving	11/22/2027	11/26/2027	5.00	5.00	—
Architectural Coating	Architectural Coating	11/29/2027	6/23/2028	5.00	150	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	6.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	1.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Interim	1.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Tier 4 Interim	0.00	1.00	36.0	0.38
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	6.00	367	0.40

Grading	Tractors/Loaders/Back	Diesel	Tier 4 Interim	1.00	7.00	84.0	0.37
Grading	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Interim	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Back hoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Paving	Tractors/Loaders/Back hoes	Diesel	Tier 4 Interim	1.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Tier 4 Interim	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Tier 4 Interim	4.00	6.00	10.0	0.56
Paving	Paving Equipment	Diesel	Tier 4 Interim	1.00	8.00	89.0	0.36
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	30.8	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	78.9	20.0	HHDT
Grading	Onsite truck	—	—	HHDT

Building Construction	—	—	—	—
Building Construction	Worker	438	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	67.1	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	20.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	13.0	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	87.6	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	795,039	265,013	24,213	8,071	392

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	3,689	—
Grading	0.00	37,878	25.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.32

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments High Rise	0.17	0%
Supermarket	0.00	0%
Enclosed Parking Structure	0.00	100%
Recreational Swimming Pool	0.00	0%
High Turnover (Sit Down Restaurant)	0.00	0%
Other Non-Asphalt Surfaces	0.15	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	204	0.03	< 0.005

2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments High Rise	491	491	491	179,281	3,000	3,000	3,000	1,094,880
Supermarket	562	562	562	205,161	4,976	4,976	4,976	1,816,163
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	654	734	561	238,013	5,789	6,493	4,969	2,106,987
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments High Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	306

No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
795039.2999999999	265,013	24,213	8,071	392

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments High Rise	3,530,776	204	0.0330	0.0040	0.00
Supermarket	436,694	204	0.0330	0.0040	0.00
Enclosed Parking Structure	2,969	204	0.0330	0.0040	0.00
Recreational Swimming Pool	0.00	204	0.0330	0.0040	0.00
High Turnover (Sit Down Restaurant)	328,996	204	0.0330	0.0040	978,177
Other Non-Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments High Rise	21,270,999	93,522
Supermarket	1,028,303	0.00
Enclosed Parking Structure	0.00	0.00
Recreational Swimming Pool	88,715	0.00
High Turnover (Sit Down Restaurant)	2,367,563	0.00
Other Non-Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments High Rise	443	—
Supermarket	47.0	—
Enclosed Parking Structure	0.00	—
Recreational Swimming Pool	8.55	—
High Turnover (Sit Down Restaurant)	92.8	—
Other Non-Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

Apartments High Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments High Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Supermarket	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Supermarket	Supermarket refrigeration and condensing units	R-404A	3,922	26.5	16.5	16.5	18.0
Recreational Swimming Pool	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Recreational Swimming Pool	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
High Turnover (Sit Down Restaurant)	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
High Turnover (Sit Down Restaurant)	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
High Turnover (Sit Down Restaurant)	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

Emergency Generator	Diesel	1.00	2.00	50.0	300	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	7.10	annual days of extreme heat
Extreme Precipitation	7.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	1	1	3
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	3.12
AQ-PM	40.2
AQ-DPM	74.8
Drinking Water	4.21

Lead Risk Housing	40.2
Pesticides	0.00
Toxic Releases	59.3
Traffic	16.1
Effect Indicators	—
CleanUp Sites	64.9
Groundwater	77.5
Haz Waste Facilities/Generators	94.9
Impaired Water Bodies	23.9
Solid Waste	0.00
Sensitive Population	—
Asthma	10.9
Cardio-vascular	10.6
Low Birth Weights	10.9
Socioeconomic Factor Indicators	—
Education	3.52
Housing	94.4
Linguistic	42.8
Poverty	63.9
Unemployment	57.2

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	43.66739381
Employed	73.4377005
Median HI	41.57577313

Education	—
Bachelor's or higher	99.74335943
High school enrollment	100
Preschool enrollment	95.7141024
Transportation	—
Auto Access	2.810214295
Active commuting	99.69203131
Social	—
2-parent households	42.08905428
Voting	46.52893622
Neighborhood	—
Alcohol availability	4.516874118
Park access	81.35506224
Retail density	96.59951238
Supermarket access	94.25125112
Tree canopy	61.52957783
Housing	—
Homeownership	4.914667009
Housing habitability	32.15706403
Low-inc homeowner severe housing cost burden	60.33619915
Low-inc renter severe housing cost burden	32.54202489
Uncrowded housing	73.51469267
Health Outcomes	—
Insured adults	95.90658283
Arthritis	98.3
Asthma ER Admissions	90.6
High Blood Pressure	98.8
Cancer (excluding skin)	89.7

Asthma	72.9
Coronary Heart Disease	97.8
Chronic Obstructive Pulmonary Disease	97.7
Diagnosed Diabetes	98.7
Life Expectancy at Birth	97.6
Cognitively Disabled	94.6
Physically Disabled	97.9
Heart Attack ER Admissions	91.3
Mental Health Not Good	83.6
Chronic Kidney Disease	98.6
Obesity	97.0
Pedestrian Injuries	73.2
Physical Health Not Good	98.5
Stroke	97.8
Health Risk Behaviors	—
Binge Drinking	14.4
Current Smoker	88.4
No Leisure Time for Physical Activity	94.4
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	95.8
Elderly	55.7
English Speaking	36.9
Foreign-born	74.2
Outdoor Workers	89.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	13.2

Traffic Density	35.5
Traffic Access	87.4
Other Indices	—
Hardship	10.3
Other Decision Support	—
2016 Voting	52.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	25.0
Healthy Places Index Score for Project Location (b)	89.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Land uses broken out based on the site plans and RFI from the client
Construction: Construction Phases	Schedule is scaled per RFI info and similar high rise project in Berkeley

Construction: Off-Road Equipment	The equipment list is adjusted to account for small lot size, excavation needed for subterranean parking, and coating period needed for high rise. Tier 4 interim is selected in accordance with City of Berkeley condition of approval related to health risk assessment.
Construction: Dust From Material Movement	Export of soil for underground parking per the RFI
Construction: Trips and VMT	Adjustments made to Vendor in Paving to account for the total trips during the paving phase
Operations: Vehicle Data	Trip Rates are based on Traffic Study which provides weekday vehicle trip rates. ITE 11th manual is crossed checked. For land use that has a higher weekend vehicle rate, in this instance the Restaurant land use, the trip rates are adjusted per ITE manual.
Operations: Hearths	CalEEMod default is 51 percent natural gas fireplace and 49 percent none. Since all-electric, assumed 59 percent (306) electric fire places in lieu of natural gas
Operations: Energy Use	Residential and commercial are all electric, but restaurant and swimming pool may use natural gas

Shattuck Avenue Mixed Use Residential Project
Demolition Debris Calculations

Description	Area [1] (square feet)	height/depth (ft)	Volume (ft3)	Demolition Waste Fraction	Demolition Volume[1] (ft^3)	Demolition Waste Density (tons/cy)	Demolition Weight (tons)
Buildings[2]	37,550	20	751,000	0.25	187,750	0.50	3,477
Pavement	5,664	0.5	2,832	1	2,832	2.025	212
Totals	**43,214**	-	-		-		**3,689**

Notes:
cy = cubic yard
cf = cubic feet
sf = square feet

Building demolition estimates are based on methods used in CalEEMod (CAPCOA, 2022), based on 1 story building , assume 10 ft per floor where 1 sf = 10 cf of building volume, and 1 cf of building volume = 0.25 cf of waste. This approach can be used to estimate demolition for multiple story buildings. It also assumes 1 cubic yard building waste = 0.5 ton weight

1 cubic yard of asphalt = 2.025 tons or 4050 lbs.

[1] Source: FCS. 2024. Building and Pavement Demolition Quantities obtained from Applicant.

[1] Source: California Air Pollution Control Officers Association (CAPCOA). 2022. Appendix C Emission Calculation Details for CalEEMod. April.

Shattuck Avenue Mixed Use Residential Project
Asphalt Paving Construction Trips Calculation

Paved area (sf)	13,836
Asphalt volume (cube feet) assume 6 inch pavement	6,918
Asphalt volume (cy)	256
Capacity per vendor truck (CY per truck)	16
Trips	**32.03**
Days in paving phase	**5**
One-way Vendor Trips per day	13

Shattuck Avenue Mixed Use Residential Project
All-Electric Measure Electricity Adjustment to Replace NG Usage

CEC Electricity Demand Forecast Zone (EDFZ) **1**

Building Type / LandUse	Amount	Units	Electric End Use per Unit (DU or KSF)				Additional Energy for Electricity		Caleemod Electricity Usage	Electricity including replacement of NG Enduses
			Water Heater	Primary Heat	Cooking	Dryer	(per Unit)	Total		
							kWhr/yr	kWhr/yr	kWhr/yr	kWhr/yr
Apartments High Rise	599	Dwelling Units	1146	757	246	334	2,483	1,487,317	2,043,459	3,530,776
Supermarket	8.342	1000	253	606	84	0	860	7,174	429,520	436,694
Enclosed Parking Structure	0.800	1,000 sqft	0	0	0	0	0	0	2,801	2,801
Recreational Swimming Pool	1.500	1,000 sqft	0	0	0	0	0	0	0	0
High Turnover (Sit Down Restaurant)	7.800	1,000 sqft	93	804	5459	0	898	7,004	353,955	360,959
Other Non-Asphalt Surfaces	0.150	Acre	0	0	0	0	0	0	0	0

Calculational Method is from Measure E-15 of the CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity
Emission Factors are From Data Tables E=15.2 from Appendix C of the Handbook

References:

CAPCOA, 2021. Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity. Available at: Available at: https://www.airquality.org/ClimateChange/Documents/Final%20Handbook_AB434.pdf.

CAPCOA. 2021. Appendix C : Emission Factors and Data Tables from Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity.. Available at: https://www.caleemod.com/documents/handbook/appendices/appendix_c.pdf

1974 Shattuck Ave Construction (Tier 4 Interim Equipment Scenario) - DPM

Estimation of Annual On-site Construction Emissions - DPM as PM10 Exhaust

Start of Construction	1/5/2026	
End of Construction	6/23/2028	**Total**
Number of Days	900	900
Number of Hours	21,600	21,600

Size of the construction area source: **2,549.9** **sq-meters**

Run	Year	On-site Construction Activity	Tier 4 On-site DPM (pounds)
Project Construction	2026	Demolition	2.0008
Project Construction	2026	Grading	5.2168
Project Construction	2026	Building Construction	4.1440
Project Construction	2027	Building Construction	5.6957
Project Construction	2027	Paving	0.2157
Project Construction	2027	Architectural Coating	0.7199
Project Construction	2028	Architectural Coating	3.8175

Total DPM (On-site) 2.181E+01 pounds

Factor in AERMOD to Account for 5 days per week/8 hours per day: 4.2

Average Emission for AREA	9.902E+03	grams
	1.273E-04	grams/sec
	4.994E-08	grams/m2-sec

Pounds/Construction Period	2.181E+01
Pounds/Day	2.423E-02
Pounds/Hour	1.010E-03
Pounds/Year	8.845E+00
Years	2.46575

1974 Shattuck Ave Construction (Tier 4 Interim Equipment Scenario) - DPM

Estimation of Annual Offsite Construction DPM Emissions (Unmitigated)

Start of Construction		1/5/2026				
End of Construction		6/23/2028				**Total**
Number of Days		900				900
Number of Hours		21,600				21,600
	2026	2026	2026+2027	2027	2027+2028	
	Project Construction	Project Construction	Project Construction	Project Construction	Project Construction	
Construction Trip Type	Demolition	Grading	Building Construction	Paving	Architectural Coating	**Total (pounds)**
Total (pounds)	1.22092	6.26333	9.90003	0.024074479	0.00000	**17.40836**

	Haul Truck	**Vendor Truck**	**Worker**	**Total**
Demolition (2026)	923.00	0.00	300.00	1,223.00
Grading (2026)	4,735.00	0.00	600.00	5,335.00
Building Construction (2026+2027)	0.00	26,825.44	175,284.64	202,110.08
Paving (2027)	0.00	65.00	100.00	165.00
Architectural Coating (2027+2028)	0.00	0.00	13,146.35	13,146.35
Total	**5,658.00**	**26,890.44**	**189,430.99**	**221,979.43**

	Haul Truck (pounds)	**Vendor Truck (pounds)**	**Worker (pounds)**	**Total (pounds)**
Total DPM	4.437E-01	2.109E+00	1.486E+01	1.741E+01

Average Emissions				
Grams	2.014E+02	9.574E+02	6.745E+03	
Grams/sec	2.591E-06	1.231E-05	8.674E-05	
Default Distance	20	8.40	11.41	Default Vehicle Travel Distance in CalEEMod
Vehicle Travel Distances in the Construction HRA (miles)				
Off-site Road Segment 1	0.36	0.36	0.36	miles
Off-site Road Segment 2	0.36	0.36	0.36	miles
Off-site Road Segment 3	0.34	0.34	0.34	miles
Off-site Road Segment 4	0.37	0.37	0.37	miles
Off-site Road Segment 5	0.37	0.37	0.37	miles
Off-site Road Segment 6	0.37	0.37	0.37	miles
On-site Construction Travel	0.06	0.06	0.06	miles
Trip Distribution (percent)				
Off-site Road Segment 1	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 2	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 3	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 4	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 5	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 6	16.7%	16.7%	16.7%	off-site
On-site Construction Travel	100.0%	100.0%	100.0%	on-site

Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)				**Total**	
Off-site Road Segment 1	7.770E-09	8.792E-08	4.560E-07	5.517E-07	Off-site Road Segment 1
Off-site Road Segment 2	7.777E-09	8.800E-08	4.564E-07	5.522E-07	Off-site Road Segment 2
Off-site Road Segment 3	7.311E-09	1.400E-08	4.291E-07	4.504E-07	Off-site Road Segment 3
Off-site Road Segment 4	8.018E-09	0.000E+00	4.706E-07	4.786E-07	Off-site Road Segment 4
Off-site Road Segment 5	7.883E-09	0.000E+00	4.626E-07	4.705E-07	Off-site Road Segment 5
Off-site Road Segment 6	8.018E-09	4.072E-08	4.706E-07	5.193E-07	Off-site Road Segment 6
On-site Construction Travel	7.423E-09	2.443E-07	4.356E-07	6.873E-07	On-site, on-road construction vehicle travel

	Grams/sec	Pounds/Hour	Pounds/Day	Pounds/year	Tons/year
Off-site Road Segment 1	5.517E-07	4.379E-06	1.051E-04	3.836E-02	1.918E-05
Off-site Road Segment 2	5.522E-07	4.382E-06	1.052E-04	3.839E-02	1.919E-05
Off-site Road Segment 3	4.504E-07	3.574E-06	8.579E-05	3.131E-02	1.566E-05
Off-site Road Segment 4	4.786E-07	3.798E-06	9.116E-05	3.327E-02	1.664E-05
Off-site Road Segment 5	4.705E-07	3.734E-06	8.962E-05	3.271E-02	1.636E-05
Off-site Road Segment 6	5.193E-07	4.121E-06	9.891E-05	3.610E-02	1.805E-05
On-site Construction Travel	6.873E-07	5.455E-06	1.309E-04	4.779E-02	2.389E-05

Summary of HARP2 Results Construction DPM

Shattuck Construction (Tier 4 Interim Equipment Scenario)

	RISK_SUM	Cancer Risk/million	MAXHI NonCancer Chronic	MAXHI Acute
Maximum Risk	8.9443E-06	8.94	4.9637E-03	0.00E+00

	X	Y
MER UTM	564369.91	4191927.60
Lat/Long	37°52'21.2"N 122°16'05.2"W	
Receptor # 664		

*HARP - HRACalc v22118 8/30/2024 7:23:57 AM - Cancer Risk - Input File: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM T4HRAInput.hra
*HARP - HRACalc v22118 8/30/2024 7:23:57 AM - Chronic Risk - Input File: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM T4HRAInput.hra
*HARP - HRACalc v22118 8/30/2024 7:23:57 AM - Acute Risk - Input File: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM T4HRAInput.hra

REC	GRP	X	Y	RISK_SUM	SCENARIO	MAXHI NonCancerChronic	MAXHI Acute
1	ALL	564370.77	4191948.94	7.28900E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0451E-03	0.00E+00
2	ALL	564394.16	4191952.37	4.78970E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6581E-03	0.00E+00
3	ALL	564385.58	4192025.27	1.19670E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.6413E-04	0.00E+00
4	ALL	564358.04	4192045.11	8.85530E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.9144E-04	0.00E+00
5	ALL	564417.55	4191955.81	3.31060E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8372E-03	0.00E+00
6	ALL	564408.96	4192028.71	9.93830E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.5154E-04	0.00E+00
7	ALL	564371.86	4192064.29	6.32270E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5089E-04	0.00E+00
8	ALL	564440.93	4191959.24	2.38120E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3215E-03	0.00E+00
9	ALL	564438.09	4192022.69	9.46890E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.2549E-04	0.00E+00
10	ALL	564415.12	4192060.48	5.92830E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2900E-04	0.00E+00
11	ALL	564360.53	4192089.20	4.46070E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4755E-04	0.00E+00
12	ALL	564461.05	4191984.90	1.40850E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.8166E-04	0.00E+00
13	ALL	564467.58	4191940.44	1.92260E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0669E-03	0.00E+00
14	ALL	564450.95	4192043.44	6.54480E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6321E-04	0.00E+00
15	ALL	564428.62	4192080.18	4.41120E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4481E-04	0.00E+00
16	ALL	564396.50	4192103.33	3.59130E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9930E-04	0.00E+00
17	ALL	564354.58	4192112.87	3.34010E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8536E-04	0.00E+00
18	ALL	564487.70	4191966.10	1.32710E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.3651E-04	0.00E+00
19	ALL	564475.02	4192045.75	5.62820E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1234E-04	0.00E+00
20	ALL	564453.15	4192081.74	4.02560E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2340E-04	0.00E+00
21	ALL	564410.74	4192122.41	2.82550E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5680E-04	0.00E+00
22	ALL	564369.68	4192131.76	2.69550E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4959E-04	0.00E+00
23	ALL	564511.09	4191969.54	1.02970E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.7145E-04	0.00E+00
24	ALL	564498.92	4192048.34	4.85240E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6929E-04	0.00E+00
25	ALL	564477.39	4192083.77	3.61400E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0056E-04	0.00E+00
26	ALL	564455.86	4192119.19	2.69450E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4953E-04	0.00E+00
27	ALL	564424.88	4192141.51	2.29030E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2710E-04	0.00E+00
28	ALL	564384.46	4192150.72	2.21250E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2279E-04	0.00E+00
29	ALL	564344.04	4192159.93	2.13680E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1858E-04	0.00E+00
30	ALL	564534.48	4191972.97	8.12550E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5093E-04	0.00E+00
31	ALL	564522.70	4192051.12	4.22900E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3469E-04	0.00E+00
32	ALL	564501.44	4192086.11	3.25740E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8077E-04	0.00E+00
33	ALL	564480.17	4192121.10	2.50520E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3903E-04	0.00E+00
34	ALL	564438.95	4192160.63	1.88850E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0481E-04	0.00E+00
35	ALL	564399.03	4192169.72	1.83010E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0156E-04	0.00E+00
36	ALL	564359.11	4192178.82	1.78390E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.8997E-05	0.00E+00
37	ALL	564557.86	4191976.40	6.63500E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6822E-04	0.00E+00
38	ALL	564564.39	4191931.93	7.20380E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9978E-04	0.00E+00
39	ALL	564567.46	4192019.39	4.54880E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5244E-04	0.00E+00
40	ALL	564546.41	4192054.03	3.68560E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0454E-04	0.00E+00
41	ALL	564525.35	4192088.66	2.92140E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6212E-04	0.00E+00
42	ALL	564504.30	4192123.30	2.30120E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2771E-04	0.00E+00
43	ALL	564483.25	4192157.94	1.78860E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.9261E-05	0.00E+00
44	ALL	564452.96	4192179.76	1.56210E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.6691E-05	0.00E+00
45	ALL	564413.44	4192188.77	1.53740E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.5322E-05	0.00E+00
46	ALL	564373.92	4192197.77	1.50980E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.3790E-05	0.00E+00
47	ALL	564294.88	4192215.77	1.35190E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.5025E-05	0.00E+00
48	ALL	564581.25	4191979.83	5.50910E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.0573E-04	0.00E+00
49	ALL	564587.77	4191935.37	5.99050E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3245E-04	0.00E+00
50	ALL	564619.22	4192028.79	3.09090E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7153E-04	0.00E+00
51	ALL	564596.16	4192066.74	2.58080E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4323E-04	0.00E+00
52	ALL	564573.09	4192104.69	2.12790E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1809E-04	0.00E+00
53	ALL	564550.03	4192142.63	1.71220E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.5021E-05	0.00E+00
54	ALL	564526.97	4192180.58	1.36290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.5636E-05	0.00E+00
55	ALL	564482.25	4192223.46	1.09710E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.0884E-05	0.00E+00
56	ALL	564438.95	4192233.33	1.09250E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.0628E-05	0.00E+00
57	ALL	564395.66	4192243.19	1.06940E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.9347E-05	0.00E+00
58	ALL	564352.36	4192253.06	1.10490E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.1319E-05	0.00E+00
59	ALL	564634.02	4191987.58	3.69680E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0516E-04	0.00E+00
60	ALL	564640.54	4191943.11	4.10920E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2804E-04	0.00E+00

61	ALL	564672.10	4192036.35	2.31050E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2822E-04	0.00E+00
62	ALL	564649.26	4192073.92	1.97530E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0962E-04	0.00E+00
63	ALL	564626.43	4192111.50	1.67550E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.2984E-05	0.00E+00
64	ALL	564603.59	4192149.08	1.41110E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.8310E-05	0.00E+00
65	ALL	564580.75	4192186.65	1.17410E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.5156E-05	0.00E+00
66	ALL	564557.92	4192224.23	9.61900E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.3382E-05	0.00E+00
67	ALL	564513.64	4192266.69	8.01160E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.4461E-05	0.00E+00
68	ALL	564470.77	4192276.45	8.06430E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.4754E-05	0.00E+00
69	ALL	564427.90	4192286.22	7.85540E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3594E-05	0.00E+00
70	ALL	564385.02	4192295.99	7.92220E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3965E-05	0.00E+00
71	ALL	564342.15	4192305.75	8.74710E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8543E-05	0.00E+00
72	ALL	564686.78	4191995.32	2.66310E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4779E-04	0.00E+00
73	ALL	564693.31	4191950.86	2.92290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6221E-04	0.00E+00
74	ALL	564724.95	4192043.95	1.77930E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.8746E-05	0.00E+00
75	ALL	564702.28	4192081.26	1.57420E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.7362E-05	0.00E+00
76	ALL	564679.61	4192118.56	1.34570E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.4680E-05	0.00E+00
77	ALL	564656.94	4192155.86	1.15330E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.4003E-05	0.00E+00
78	ALL	564634.27	4192193.17	9.78080E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.4280E-05	0.00E+00
79	ALL	564611.60	4192230.47	8.42680E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6766E-05	0.00E+00
80	ALL	564588.93	4192267.77	6.99480E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8818E-05	0.00E+00
81	ALL	564544.97	4192309.92	6.01030E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3355E-05	0.00E+00
82	ALL	564502.41	4192319.62	6.13270E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4034E-05	0.00E+00
83	ALL	564459.85	4192329.32	6.07090E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3691E-05	0.00E+00
84	ALL	564417.29	4192339.01	6.04930E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3572E-05	0.00E+00
85	ALL	564374.73	4192348.71	6.19520E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4381E-05	0.00E+00
86	ALL	564332.17	4192358.40	7.25100E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0240E-05	0.00E+00
87	ALL	564739.55	4192003.07	2.00680E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1137E-04	0.00E+00
88	ALL	564746.08	4191958.60	2.21240E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2278E-04	0.00E+00
89	ALL	564777.78	4192051.59	1.40460E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.7952E-05	0.00E+00
90	ALL	564755.24	4192088.69	1.27260E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.0625E-05	0.00E+00
91	ALL	564732.70	4192125.78	1.11250E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.1738E-05	0.00E+00
92	ALL	564710.15	4192162.88	9.51020E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.2778E-05	0.00E+00
93	ALL	564687.61	4192199.97	8.25070E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5788E-05	0.00E+00
94	ALL	564665.06	4192237.07	7.19340E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9921E-05	0.00E+00
95	ALL	564642.52	4192274.16	6.16230E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4198E-05	0.00E+00
96	ALL	564619.98	4192311.25	5.24470E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9106E-05	0.00E+00
97	ALL	564576.27	4192353.17	4.62690E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5677E-05	0.00E+00
98	ALL	564533.95	4192362.81	4.83900E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6855E-05	0.00E+00
99	ALL	564491.62	4192372.45	4.83220E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6817E-05	0.00E+00
100	ALL	564449.30	4192382.09	4.77690E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6510E-05	0.00E+00
101	ALL	564406.98	4192391.73	4.82950E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6802E-05	0.00E+00
102	ALL	564364.65	4192401.38	5.20980E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8912E-05	0.00E+00
103	ALL	564322.33	4192411.02	6.49330E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6035E-05	0.00E+00
104	ALL	564792.32	4192010.81	1.55630E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.6370E-05	0.00E+00
105	ALL	564798.85	4191966.35	1.70880E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.4831E-05	0.00E+00
106	ALL	564830.60	4192059.26	1.15170E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.3917E-05	0.00E+00
107	ALL	564808.16	4192096.19	1.04070E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.7756E-05	0.00E+00
108	ALL	564785.71	4192133.12	9.26460E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1415E-05	0.00E+00
109	ALL	564763.27	4192170.05	8.07300E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.4802E-05	0.00E+00
110	ALL	564740.83	4192206.97	7.10070E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9406E-05	0.00E+00
111	ALL	564718.38	4192243.90	6.18630E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4331E-05	0.00E+00
112	ALL	564695.94	4192280.83	5.40220E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9980E-05	0.00E+00
113	ALL	564673.50	4192317.76	4.67240E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5930E-05	0.00E+00
114	ALL	564651.05	4192354.69	4.06900E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2581E-05	0.00E+00
115	ALL	564607.54	4192396.42	3.72150E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0653E-05	0.00E+00
116	ALL	564565.41	4192406.02	3.86450E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1446E-05	0.00E+00
117	ALL	564523.27	4192415.62	3.91400E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1721E-05	0.00E+00
118	ALL	564481.14	4192425.22	3.85590E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1399E-05	0.00E+00
119	ALL	564439.00	4192434.81	3.83750E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1296E-05	0.00E+00
120	ALL	564396.87	4192444.41	3.98140E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2095E-05	0.00E+00
121	ALL	564354.73	4192454.01	4.46660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4788E-05	0.00E+00
122	ALL	564312.60	4192463.61	5.93810E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2954E-05	0.00E+00
123	ALL	564270.46	4192473.21	4.59910E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5523E-05	0.00E+00
124	ALL	564845.09	4192018.56	1.26410E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.0153E-05	0.00E+00
125	ALL	564851.61	4191974.09	1.36630E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.5824E-05	0.00E+00
126	ALL	564883.41	4192066.94	9.63470E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.3469E-05	0.00E+00
127	ALL	564861.05	4192103.73	8.64520E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.7977E-05	0.00E+00
128	ALL	564838.69	4192140.53	7.77050E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3123E-05	0.00E+00
129	ALL	564816.32	4192177.32	6.91920E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8399E-05	0.00E+00
130	ALL	564793.96	4192214.12	6.16810E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4231E-05	0.00E+00
131	ALL	564771.60	4192250.91	5.42650E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.0115E-05	0.00E+00
132	ALL	564749.24	4192287.71	4.78110E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6533E-05	0.00E+00
133	ALL	564726.87	4192324.51	4.17340E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3160E-05	0.00E+00
134	ALL	564704.51	4192361.30	3.67860E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0415E-05	0.00E+00
135	ALL	564682.15	4192398.10	3.26900E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8142E-05	0.00E+00
136	ALL	564638.79	4192439.67	3.06780E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7025E-05	0.00E+00
137	ALL	564596.81	4192449.24	3.21670E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7851E-05	0.00E+00
138	ALL	564554.83	4192458.80	3.23710E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7964E-05	0.00E+00
139	ALL	564512.85	4192468.37	3.19770E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7746E-05	0.00E+00
140	ALL	564470.86	4192477.93	3.13430E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7394E-05	0.00E+00

141	ALL	564428.88	4192487.49	3.12640E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7350E-05	0.00E+00
142	ALL	564386.90	4192497.06	3.24170E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7990E-05	0.00E+00
143	ALL	564344.92	4192506.62	3.60980E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0033E-05	0.00E+00
144	ALL	564302.93	4192516.18	4.52150E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5093E-05	0.00E+00
145	ALL	564260.95	4192525.75	3.28060E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8206E-05	0.00E+00
146	ALL	564897.85	4192026.30	1.05840E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.8738E-05	0.00E+00
147	ALL	564904.38	4191981.84	1.13180E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.2812E-05	0.00E+00
148	ALL	564311.38	4191853.27	1.02320E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.6782E-04	0.00E+00
149	ALL	564378.72	4191845.07	1.79050E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.9365E-04	0.00E+00
150	ALL	564324.03	4191823.87	5.23960E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9078E-04	0.00E+00
151	ALL	564384.03	4191813.22	7.25820E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0280E-04	0.00E+00
152	ALL	564425.58	4191868.79	2.26870E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2591E-03	0.00E+00
153	ALL	564328.80	4191800.72	3.47580E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9289E-04	0.00E+00
154	ALL	564379.83	4191794.96	4.51290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5045E-04	0.00E+00
155	ALL	564431.36	4191846.81	1.59940E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.8763E-04	0.00E+00
156	ALL	564439.41	4191880.79	2.19770E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2197E-03	0.00E+00
157	ALL	564333.57	4191777.57	2.46690E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3690E-04	0.00E+00
158	ALL	564376.65	4191770.22	2.79940E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5536E-04	0.00E+00
159	ALL	564429.18	4191804.74	7.51280E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1693E-04	0.00E+00
160	ALL	564456.35	4191857.03	1.46990E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.1572E-04	0.00E+00
161	ALL	564338.33	4191754.42	1.86500E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0350E-04	0.00E+00
162	ALL	564380.93	4191746.75	2.06380E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1453E-04	0.00E+00
163	ALL	564430.40	4191768.75	3.70670E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0571E-04	0.00E+00
164	ALL	564449.03	4191791.51	5.99460E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3267E-04	0.00E+00
165	ALL	564470.75	4191822.52	9.24120E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1285E-04	0.00E+00
166	ALL	564480.14	4191862.17	1.22850E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.8178E-04	0.00E+00
167	ALL	564343.10	4191731.27	1.47970E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.2117E-05	0.00E+00
168	ALL	564385.35	4191723.37	1.62710E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.0300E-05	0.00E+00
169	ALL	564418.71	4191745.29	2.43710E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3525E-04	0.00E+00
170	ALL	564452.06	4191767.21	3.90740E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1685E-04	0.00E+00
171	ALL	564490.01	4191808.55	7.19620E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9936E-04	0.00E+00
172	ALL	564499.21	4191847.39	9.39970E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.2165E-04	0.00E+00
173	ALL	564508.42	4191886.23	1.06210E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.8943E-04	0.00E+00
174	ALL	564347.87	4191708.12	1.20660E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.6960E-05	0.00E+00
175	ALL	564386.85	4191709.82	1.45730E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.0876E-05	0.00E+00
176	ALL	564422.69	4191721.63	1.81090E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0050E-04	0.00E+00
177	ALL	564455.52	4191743.21	2.66690E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4800E-04	0.00E+00
178	ALL	564488.36	4191764.79	4.07430E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2611E-04	0.00E+00
179	ALL	564509.30	4191794.69	5.76240E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1979E-04	0.00E+00
180	ALL	564518.36	4191832.92	7.40820E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1112E-04	0.00E+00
181	ALL	564527.42	4191871.16	8.28040E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5953E-04	0.00E+00
182	ALL	564352.64	4191684.97	9.98480E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.5412E-05	0.00E+00
183	ALL	564426.85	4191698.08	1.41470E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.8512E-05	0.00E+00
184	ALL	564459.28	4191719.39	1.89850E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0536E-04	0.00E+00
185	ALL	564491.71	4191740.70	2.86150E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5880E-04	0.00E+00
186	ALL	564528.61	4191780.90	4.72580E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6226E-04	0.00E+00
187	ALL	564537.55	4191818.66	5.99610E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3276E-04	0.00E+00
188	ALL	564546.50	4191856.42	6.61480E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6709E-04	0.00E+00
189	ALL	564555.44	4191894.18	7.14120E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9631E-04	0.00E+00
190	ALL	564357.41	4191661.82	8.52200E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.7294E-05	0.00E+00
191	ALL	564431.13	4191674.61	1.14780E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.3700E-05	0.00E+00
192	ALL	564463.24	4191695.71	1.42680E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.9181E-05	0.00E+00
193	ALL	564495.34	4191716.81	2.06240E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1446E-04	0.00E+00
194	ALL	564527.44	4191737.91	2.92590E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6237E-04	0.00E+00
195	ALL	564547.92	4191767.15	3.92530E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1784E-04	0.00E+00
196	ALL	564556.78	4191804.53	4.92680E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7342E-04	0.00E+00
197	ALL	564565.63	4191841.91	5.41500E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.0051E-04	0.00E+00
198	ALL	564574.49	4191879.29	5.79160E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2141E-04	0.00E+00
199	ALL	564362.17	4191638.67	7.57590E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.2043E-05	0.00E+00
200	ALL	564411.32	4191602.28	8.26240E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5853E-05	0.00E+00
201	ALL	564446.49	4191625.39	7.85260E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3579E-05	0.00E+00
202	ALL	564481.67	4191648.51	9.20510E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1085E-05	0.00E+00
203	ALL	564516.84	4191671.63	1.24560E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.9126E-05	0.00E+00
204	ALL	564552.01	4191694.75	1.78620E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.9126E-05	0.00E+00
205	ALL	564592.03	4191738.34	2.77210E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5384E-04	0.00E+00
206	ALL	564601.73	4191779.29	3.43740E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9076E-04	0.00E+00
207	ALL	564611.43	4191820.25	3.72320E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0662E-04	0.00E+00
208	ALL	564621.14	4191861.20	3.92980E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1809E-04	0.00E+00
209	ALL	564630.84	4191902.16	4.22410E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3442E-04	0.00E+00
210	ALL	564421.91	4191549.93	6.26790E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4784E-05	0.00E+00
211	ALL	564456.73	4191572.82	5.73230E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1812E-05	0.00E+00
212	ALL	564491.56	4191595.71	6.19560E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4383E-05	0.00E+00
213	ALL	564526.39	4191618.60	7.56630E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1990E-05	0.00E+00
214	ALL	564561.21	4191641.49	1.01450E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.6302E-05	0.00E+00
215	ALL	564596.04	4191664.38	1.39020E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.7150E-05	0.00E+00
216	ALL	564635.67	4191707.54	2.00920E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1150E-04	0.00E+00
217	ALL	564645.27	4191748.10	2.47250E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3721E-04	0.00E+00
218	ALL	564654.88	4191788.65	2.71400E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5062E-04	0.00E+00
219	ALL	564664.49	4191829.20	2.81300E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5611E-04	0.00E+00
220	ALL	564674.10	4191869.75	2.95870E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6419E-04	0.00E+00

221	ALL	564683.70	4191910.31	3.07330E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7056E-04	0.00E+00
222	ALL	564432.54	4191497.61	5.00940E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7800E-05	0.00E+00
223	ALL	564467.11	4191520.33	4.44590E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4673E-05	0.00E+00
224	ALL	564501.69	4191543.05	4.56560E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5337E-05	0.00E+00
225	ALL	564536.26	4191565.78	5.12780E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8457E-05	0.00E+00
226	ALL	564570.83	4191588.50	6.33570E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5160E-05	0.00E+00
227	ALL	564605.40	4191611.22	8.35190E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6350E-05	0.00E+00
228	ALL	564639.98	4191633.95	1.08380E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.0148E-05	0.00E+00
229	ALL	564679.32	4191676.80	1.50920E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.3755E-05	0.00E+00
230	ALL	564688.85	4191717.06	1.84820E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0257E-04	0.00E+00
231	ALL	564698.39	4191757.32	2.05870E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1425E-04	0.00E+00
232	ALL	564707.93	4191797.57	2.15580E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1964E-04	0.00E+00
233	ALL	564717.47	4191837.83	2.22330E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2338E-04	0.00E+00
234	ALL	564727.00	4191878.09	2.32690E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2914E-04	0.00E+00
235	ALL	564736.54	4191918.35	2.35870E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3090E-04	0.00E+00
236	ALL	564443.20	4191445.31	4.12370E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2885E-05	0.00E+00
237	ALL	564477.58	4191467.90	3.58510E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9896E-05	0.00E+00
238	ALL	564511.96	4191490.50	3.56690E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9795E-05	0.00E+00
239	ALL	564546.34	4191513.09	3.85290E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1382E-05	0.00E+00
240	ALL	564580.72	4191535.69	4.39420E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4386E-05	0.00E+00
241	ALL	564615.10	4191558.29	5.37190E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9812E-05	0.00E+00
242	ALL	564649.48	4191580.88	6.87520E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8155E-05	0.00E+00
243	ALL	564683.85	4191603.48	8.71970E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8391E-05	0.00E+00
244	ALL	564722.98	4191646.09	1.18580E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.5810E-05	0.00E+00
245	ALL	564732.46	4191686.12	1.43240E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.9491E-05	0.00E+00
246	ALL	564741.94	4191726.16	1.59350E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.8432E-05	0.00E+00
247	ALL	564751.43	4191766.19	1.66640E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.2478E-05	0.00E+00
248	ALL	564760.91	4191806.22	1.71740E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.5310E-05	0.00E+00
249	ALL	564770.39	4191846.25	1.78130E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.8858E-05	0.00E+00
250	ALL	564779.88	4191886.28	1.85070E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0271E-04	0.00E+00
251	ALL	564789.36	4191926.32	1.86300E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0339E-04	0.00E+00
252	ALL	564453.89	4191393.02	3.01600E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6738E-05	0.00E+00
253	ALL	564488.11	4191415.51	2.84190E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5771E-05	0.00E+00
254	ALL	564522.34	4191438.01	2.84760E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5803E-05	0.00E+00
255	ALL	564556.56	4191460.51	3.00490E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6676E-05	0.00E+00
256	ALL	564590.79	4191483.00	3.29320E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8276E-05	0.00E+00
257	ALL	564625.01	4191505.50	3.78660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1014E-05	0.00E+00
258	ALL	564659.24	4191527.99	4.59510E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5501E-05	0.00E+00
259	ALL	564693.47	4191550.49	5.77480E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2048E-05	0.00E+00
260	ALL	564727.69	4191572.99	7.17820E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9836E-05	0.00E+00
261	ALL	564766.64	4191615.41	9.55470E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.3025E-05	0.00E+00
262	ALL	564776.08	4191655.26	1.14030E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.3281E-05	0.00E+00
263	ALL	564785.52	4191695.12	1.26360E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.0125E-05	0.00E+00
264	ALL	564794.96	4191734.97	1.33140E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.3885E-05	0.00E+00
265	ALL	564804.41	4191774.82	1.36520E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.5765E-05	0.00E+00
266	ALL	564813.85	4191814.68	1.38670E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.6956E-05	0.00E+00
267	ALL	564823.29	4191854.53	1.43480E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.9624E-05	0.00E+00
268	ALL	564832.73	4191894.39	1.49650E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.3052E-05	0.00E+00
269	ALL	564842.17	4191934.24	1.48910E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.2641E-05	0.00E+00
270	ALL	564464.58	4191340.74	1.83750E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0198E-05	0.00E+00
271	ALL	564498.68	4191363.16	2.06960E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1486E-05	0.00E+00
272	ALL	564532.79	4191385.57	2.22740E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2361E-05	0.00E+00
273	ALL	564566.89	4191407.98	2.37840E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3199E-05	0.00E+00
274	ALL	564600.99	4191430.40	2.57910E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4313E-05	0.00E+00
275	ALL	564635.09	4191452.81	2.87210E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5939E-05	0.00E+00
276	ALL	564669.19	4191475.23	3.29820E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8303E-05	0.00E+00
277	ALL	564703.30	4191497.64	3.97650E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2068E-05	0.00E+00
278	ALL	564737.40	4191520.06	4.90390E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7215E-05	0.00E+00
279	ALL	564771.50	4191542.47	6.00480E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3324E-05	0.00E+00
280	ALL	564810.31	4191584.74	7.77980E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3175E-05	0.00E+00
281	ALL	564819.71	4191624.45	9.22430E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1191E-05	0.00E+00
282	ALL	564829.12	4191664.16	1.02720E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.7007E-05	0.00E+00
283	ALL	564838.53	4191703.87	1.08080E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.9979E-05	0.00E+00
284	ALL	564847.94	4191743.58	1.10560E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.1355E-05	0.00E+00
285	ALL	564857.34	4191783.29	1.11700E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.1991E-05	0.00E+00
286	ALL	564866.75	4191823.00	1.13720E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.3111E-05	0.00E+00
287	ALL	564876.16	4191862.71	1.19060E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.6074E-05	0.00E+00
288	ALL	564885.57	4191902.42	1.23650E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.8620E-05	0.00E+00
289	ALL	564894.97	4191942.13	1.21730E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.7556E-05	0.00E+00
290	ALL	564426.73	4191325.25	1.64350E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.1209E-06	0.00E+00
291	ALL	564269.63	4191886.77	2.35100E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3047E-03	0.00E+00
292	ALL	564265.35	4191908.62	2.99800E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6638E-03	0.00E+00
293	ALL	564257.14	4191929.48	2.67490E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4845E-03	0.00E+00
294	ALL	564271.31	4191942.89	3.78200E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0989E-03	0.00E+00
295	ALL	564280.55	4191846.24	8.36370E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6415E-04	0.00E+00
296	ALL	564238.20	4191902.62	1.44880E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.0402E-04	0.00E+00
297	ALL	564233.92	4191925.06	1.42920E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.9313E-04	0.00E+00
298	ALL	564248.09	4191938.46	2.07350E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1507E-03	0.00E+00
299	ALL	564267.40	4191826.60	5.36410E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9768E-04	0.00E+00
300	ALL	564215.97	4191882.10	8.46500E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6978E-04	0.00E+00

301	ALL	564210.71	4191920.63	8.70320E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8299E-04	0.00E+00
302	ALL	564224.88	4191934.03	1.17020E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.4944E-04	0.00E+00
303	ALL	564226.28	4191825.67	5.08330E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8210E-04	0.00E+00
304	ALL	564254.26	4191806.95	3.79450E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1058E-04	0.00E+00
305	ALL	564290.08	4191799.94	3.09870E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7197E-04	0.00E+00
306	ALL	564192.75	4191877.67	5.88900E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2682E-04	0.00E+00
307	ALL	564187.49	4191916.20	5.83290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2370E-04	0.00E+00
308	ALL	564180.07	4191931.57	5.23620E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9059E-04	0.00E+00
309	ALL	564198.02	4191828.85	4.45150E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4704E-04	0.00E+00
310	ALL	564267.98	4191782.05	2.44400E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3564E-04	0.00E+00
311	ALL	564168.55	4191889.33	4.36390E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4218E-04	0.00E+00
312	ALL	564164.27	4191911.77	4.21000E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3364E-04	0.00E+00
313	ALL	564159.99	4191934.21	3.99050E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2146E-04	0.00E+00
314	ALL	564185.89	4191807.69	3.28470E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8229E-04	0.00E+00
315	ALL	564231.56	4191766.96	2.15200E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1943E-04	0.00E+00
316	ALL	564274.54	4191758.55	1.75750E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.7536E-05	0.00E+00
317	ALL	564145.33	4191884.90	3.34170E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8545E-04	0.00E+00
318	ALL	564141.05	4191907.34	3.21290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7831E-04	0.00E+00
319	ALL	564136.77	4191929.78	3.05280E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6942E-04	0.00E+00
320	ALL	564161.66	4191804.78	2.77610E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5406E-04	0.00E+00
321	ALL	564185.17	4191769.27	2.17750E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2084E-04	0.00E+00
322	ALL	564217.82	4191747.43	1.71700E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.5287E-05	0.00E+00
323	ALL	564259.61	4191739.25	1.43920E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.9871E-05	0.00E+00
324	ALL	564301.40	4191731.08	1.29930E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.2106E-05	0.00E+00
325	ALL	564122.12	4191880.47	2.65510E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4735E-04	0.00E+00
326	ALL	564117.84	4191902.91	2.53700E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4080E-04	0.00E+00
327	ALL	564113.56	4191925.35	2.41140E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3383E-04	0.00E+00
328	ALL	564137.72	4191801.44	2.33910E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2981E-04	0.00E+00
329	ALL	564160.75	4191766.65	1.98290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1004E-04	0.00E+00
330	ALL	564204.25	4191727.87	1.41250E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.8386E-05	0.00E+00
331	ALL	564245.19	4191719.86	1.20080E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.6639E-05	0.00E+00
332	ALL	564286.13	4191711.85	1.06580E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.9147E-05	0.00E+00
333	ALL	564098.90	4191876.04	2.16680E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2025E-04	0.00E+00
334	ALL	564094.62	4191898.48	2.06510E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1460E-04	0.00E+00
335	ALL	564090.34	4191920.92	1.97270E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0948E-04	0.00E+00
336	ALL	564113.97	4191797.82	1.99350E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1063E-04	0.00E+00
337	ALL	564136.63	4191763.58	1.76880E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.8161E-05	0.00E+00
338	ALL	564159.30	4191729.35	1.42870E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.9287E-05	0.00E+00
339	ALL	564190.79	4191708.29	1.18030E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.5501E-05	0.00E+00
340	ALL	564231.09	4191700.40	1.02400E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.6826E-05	0.00E+00
341	ALL	564271.39	4191692.51	8.99110E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.9897E-05	0.00E+00
342	ALL	564311.68	4191684.63	8.76920E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8665E-05	0.00E+00
343	ALL	564075.68	4191871.62	1.81130E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0052E-04	0.00E+00
344	ALL	564071.40	4191894.05	1.72020E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.5464E-05	0.00E+00
345	ALL	564067.12	4191916.49	1.64290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.1174E-05	0.00E+00
346	ALL	564081.93	4191806.71	1.74280E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.6716E-05	0.00E+00
347	ALL	564107.12	4191768.67	1.61770E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.9774E-05	0.00E+00
348	ALL	564132.31	4191730.62	1.37200E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.6141E-05	0.00E+00
349	ALL	564144.90	4191711.60	1.21140E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.7227E-05	0.00E+00
350	ALL	564179.88	4191688.20	9.93340E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.5127E-05	0.00E+00
351	ALL	564202.27	4191683.82	9.27280E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1461E-05	0.00E+00
352	ALL	564247.05	4191675.06	7.98840E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.4333E-05	0.00E+00
353	ALL	564291.82	4191666.30	7.38870E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1004E-05	0.00E+00
354	ALL	564314.21	4191661.92	7.41140E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1130E-05	0.00E+00
355	ALL	564052.46	4191867.19	1.54380E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.5673E-05	0.00E+00
356	ALL	564048.18	4191889.62	1.46180E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.1126E-05	0.00E+00
357	ALL	564043.90	4191912.06	1.39520E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.7429E-05	0.00E+00
358	ALL	564070.47	4191784.53	1.46370E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.1229E-05	0.00E+00
359	ALL	564095.10	4191747.33	1.35800E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.5363E-05	0.00E+00
360	ALL	564119.73	4191710.13	1.14880E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.3754E-05	0.00E+00
361	ALL	564166.24	4191668.65	8.54060E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.7397E-05	0.00E+00
362	ALL	564210.03	4191660.09	7.51650E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1714E-05	0.00E+00
363	ALL	564253.81	4191651.52	6.62390E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6760E-05	0.00E+00
364	ALL	564297.59	4191642.95	6.31810E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5063E-05	0.00E+00
365	ALL	564029.25	4191862.76	1.33860E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.4289E-05	0.00E+00
366	ALL	564024.97	4191885.19	1.25850E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.9842E-05	0.00E+00
367	ALL	564020.69	4191907.63	1.20420E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.6829E-05	0.00E+00
368	ALL	564017.56	4191775.31	1.09140E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.0567E-05	0.00E+00
369	ALL	564041.85	4191738.64	1.04960E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.8249E-05	0.00E+00
370	ALL	564066.13	4191701.96	9.54490E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.2970E-05	0.00E+00
371	ALL	564090.42	4191665.28	8.15290E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5246E-05	0.00E+00
372	ALL	564136.28	4191624.38	6.32050E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5076E-05	0.00E+00
373	ALL	564179.45	4191615.94	5.68660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1558E-05	0.00E+00
374	ALL	564222.62	4191607.49	5.07230E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8150E-05	0.00E+00
375	ALL	564265.79	4191599.04	4.69510E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6056E-05	0.00E+00
376	ALL	564308.96	4191590.60	4.70110E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6089E-05	0.00E+00
377	ALL	563976.86	4191852.76	1.01740E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.6464E-05	0.00E+00
378	ALL	563972.58	4191875.20	9.43200E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.2344E-05	0.00E+00
379	ALL	563968.30	4191897.64	8.97870E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.9828E-05	0.00E+00
380	ALL	563964.82	4191765.86	8.41240E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6686E-05	0.00E+00

381	ALL	563988.86	4191729.54	8.17230E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5353E-05	0.00E+00
382	ALL	564012.91	4191693.23	7.79890E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3281E-05	0.00E+00
383	ALL	564036.95	4191656.91	7.06210E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9192E-05	0.00E+00
384	ALL	564061.00	4191620.59	6.09190E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3808E-05	0.00E+00
385	ALL	564106.42	4191580.10	4.86400E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6993E-05	0.00E+00
386	ALL	564149.16	4191571.73	4.45340E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4715E-05	0.00E+00
387	ALL	564191.91	4191563.37	4.03660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2402E-05	0.00E+00
388	ALL	564234.65	4191555.00	3.70300E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0550E-05	0.00E+00
389	ALL	564277.40	4191546.64	3.55940E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9753E-05	0.00E+00
390	ALL	564320.14	4191538.28	3.71280E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0604E-05	0.00E+00
391	ALL	563924.47	4191842.77	8.10110E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.4958E-05	0.00E+00
392	ALL	563920.19	4191865.21	7.38710E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0996E-05	0.00E+00
393	ALL	563915.91	4191887.64	7.00740E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8888E-05	0.00E+00
394	ALL	563912.17	4191756.26	6.65910E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6956E-05	0.00E+00
395	ALL	563936.04	4191720.21	6.49440E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6042E-05	0.00E+00
396	ALL	563959.91	4191684.16	6.36800E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5340E-05	0.00E+00
397	ALL	563983.78	4191648.11	6.01410E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3376E-05	0.00E+00
398	ALL	564007.65	4191612.05	5.43590E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.0167E-05	0.00E+00
399	ALL	564031.52	4191576.00	4.74080E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6310E-05	0.00E+00
400	ALL	564076.61	4191535.80	3.88050E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1535E-05	0.00E+00
401	ALL	564119.04	4191527.49	3.58870E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9916E-05	0.00E+00
402	ALL	564161.48	4191519.19	3.28890E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8252E-05	0.00E+00
403	ALL	564203.91	4191510.89	3.03060E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6819E-05	0.00E+00
404	ALL	564246.34	4191502.58	2.84550E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5792E-05	0.00E+00
405	ALL	564288.78	4191494.28	2.82820E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5695E-05	0.00E+00
406	ALL	564331.21	4191485.98	3.04720E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6911E-05	0.00E+00
407	ALL	563872.08	4191832.78	6.56790E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6449E-05	0.00E+00
408	ALL	563867.80	4191855.21	5.92410E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2877E-05	0.00E+00
409	ALL	563863.52	4191877.65	5.61360E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1153E-05	0.00E+00
410	ALL	563859.58	4191746.57	5.22680E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9007E-05	0.00E+00
411	ALL	563883.31	4191710.72	5.21620E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8948E-05	0.00E+00
412	ALL	563907.05	4191674.87	5.23690E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9063E-05	0.00E+00
413	ALL	563930.79	4191639.02	5.09360E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8268E-05	0.00E+00
414	ALL	563954.53	4191603.17	4.78670E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6564E-05	0.00E+00
415	ALL	563978.26	4191567.32	4.33780E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4073E-05	0.00E+00
416	ALL	564002.00	4191531.47	3.81360E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1164E-05	0.00E+00
417	ALL	564046.83	4191491.49	3.17660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7629E-05	0.00E+00
418	ALL	564089.03	4191483.24	2.96250E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6441E-05	0.00E+00
419	ALL	564131.23	4191474.98	2.74060E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5209E-05	0.00E+00
420	ALL	564173.42	4191466.72	2.54490E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4123E-05	0.00E+00
421	ALL	564215.62	4191458.46	2.37060E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3156E-05	0.00E+00
422	ALL	564257.82	4191450.21	2.27960E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2651E-05	0.00E+00
423	ALL	564300.01	4191441.95	2.30260E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2779E-05	0.00E+00
424	ALL	564342.21	4191433.69	2.53970E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4094E-05	0.00E+00
425	ALL	563819.69	4191822.78	5.19230E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8815E-05	0.00E+00
426	ALL	563815.41	4191845.22	4.76980E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6471E-05	0.00E+00
427	ALL	563811.13	4191867.66	4.56770E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5349E-05	0.00E+00
428	ALL	563796.53	4191752.68	4.12850E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2911E-05	0.00E+00
429	ALL	563809.00	4191733.84	4.16630E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3121E-05	0.00E+00
430	ALL	563821.47	4191715.01	4.23060E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3478E-05	0.00E+00
431	ALL	563833.94	4191696.17	4.29030E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3809E-05	0.00E+00
432	ALL	563846.42	4191677.33	4.34620E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4119E-05	0.00E+00
433	ALL	563858.89	4191658.50	4.36320E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4214E-05	0.00E+00
434	ALL	563871.36	4191639.66	4.35450E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4166E-05	0.00E+00
435	ALL	563883.83	4191620.82	4.29900E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3858E-05	0.00E+00
436	ALL	563896.30	4191601.99	4.22590E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3452E-05	0.00E+00
437	ALL	563908.78	4191583.15	4.11320E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2827E-05	0.00E+00
438	ALL	563921.25	4191564.31	3.95980E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1975E-05	0.00E+00
439	ALL	563933.72	4191545.48	3.79470E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1059E-05	0.00E+00
440	ALL	563946.19	4191526.64	3.59960E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9976E-05	0.00E+00
441	ALL	563958.67	4191507.80	3.38630E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8793E-05	0.00E+00
442	ALL	563971.14	4191488.96	3.16810E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7582E-05	0.00E+00
443	ALL	563983.61	4191470.13	2.94440E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6340E-05	0.00E+00
444	ALL	564018.25	4191446.95	2.65930E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4758E-05	0.00E+00
445	ALL	564040.42	4191442.61	2.57400E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4285E-05	0.00E+00
446	ALL	564062.60	4191438.28	2.48560E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3794E-05	0.00E+00
447	ALL	564084.77	4191433.94	2.40010E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3319E-05	0.00E+00
448	ALL	564106.94	4191429.60	2.30790E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2808E-05	0.00E+00
449	ALL	564129.11	4191425.26	2.22380E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2341E-05	0.00E+00
450	ALL	564151.28	4191420.92	2.14250E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1890E-05	0.00E+00
451	ALL	564173.45	4191416.58	2.06690E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1470E-05	0.00E+00
452	ALL	564195.62	4191412.25	1.99520E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1073E-05	0.00E+00
453	ALL	564217.79	4191407.91	1.93580E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0743E-05	0.00E+00
454	ALL	564239.96	4191403.57	1.89310E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0506E-05	0.00E+00
455	ALL	564262.14	4191399.23	1.86830E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0368E-05	0.00E+00
456	ALL	564284.31	4191394.89	1.86840E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0369E-05	0.00E+00
457	ALL	564306.48	4191390.55	1.89520E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0517E-05	0.00E+00
458	ALL	564328.65	4191386.22	1.95190E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0832E-05	0.00E+00
459	ALL	564350.82	4191381.88	2.04930E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1373E-05	0.00E+00
460	ALL	564372.99	4191377.54	2.22810E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2365E-05	0.00E+00

461	ALL	563767.30	4191812.79	3.85380E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1387E-05	0.00E+00
462	ALL	563763.02	4191835.23	3.80870E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1137E-05	0.00E+00
463	ALL	563758.74	4191857.66	3.74560E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0786E-05	0.00E+00
464	ALL	563756.28	4191724.35	3.43940E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9087E-05	0.00E+00
465	ALL	563781.00	4191687.01	3.59490E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9950E-05	0.00E+00
466	ALL	563805.73	4191649.67	3.69670E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0515E-05	0.00E+00
467	ALL	563830.45	4191612.33	3.70530E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0563E-05	0.00E+00
468	ALL	563855.17	4191574.99	3.61490E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0061E-05	0.00E+00
469	ALL	563879.90	4191537.65	3.42790E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9024E-05	0.00E+00
470	ALL	563904.62	4191500.31	3.15860E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7529E-05	0.00E+00
471	ALL	563929.34	4191462.97	2.83530E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5735E-05	0.00E+00
472	ALL	563954.07	4191425.63	2.49000E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3819E-05	0.00E+00
473	ALL	563988.40	4191402.66	2.26660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2579E-05	0.00E+00
474	ALL	564032.35	4191394.06	2.13060E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1824E-05	0.00E+00
475	ALL	564076.30	4191385.46	1.99280E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1059E-05	0.00E+00
476	ALL	564120.25	4191376.86	1.86070E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0326E-05	0.00E+00
477	ALL	564164.20	4191368.26	1.74200E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.6674E-06	0.00E+00
478	ALL	564208.15	4191359.66	1.63660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.0823E-06	0.00E+00
479	ALL	564252.10	4191351.06	1.56910E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.7076E-06	0.00E+00
480	ALL	564296.05	4191342.46	1.56030E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.6591E-06	0.00E+00
481	ALL	564340.00	4191333.86	1.59130E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.8312E-06	0.00E+00
482	ALL	564383.95	4191325.26	1.60000E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.8793E-06	0.00E+00
483	ALL	563714.91	4191802.80	3.16170E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7546E-05	0.00E+00
484	ALL	563710.63	4191825.23	3.15260E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7496E-05	0.00E+00
485	ALL	563706.35	4191847.67	3.13300E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7387E-05	0.00E+00
486	ALL	564271.93	4191979.62	2.51510E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3958E-03	0.00E+00
487	ALL	564291.82	4191991.48	2.43610E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3519E-03	0.00E+00
488	ALL	564316.59	4191987.58	3.22200E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7881E-03	0.00E+00
489	ALL	564252.46	4191993.02	1.49100E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.2746E-04	0.00E+00
490	ALL	564290.12	4192006.87	1.67170E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.2772E-04	0.00E+00
491	ALL	564248.32	4192016.29	1.00680E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.5872E-04	0.00E+00
492	ALL	564213.93	4191978.73	8.64510E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.7977E-04	0.00E+00
493	ALL	564285.97	4192030.14	1.00600E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.5830E-04	0.00E+00
494	ALL	564308.30	4192034.12	1.04180E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.7814E-04	0.00E+00
495	ALL	564244.17	4192039.56	6.90390E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8314E-04	0.00E+00
496	ALL	564213.53	4192019.83	6.73270E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.7364E-04	0.00E+00
497	ALL	564194.46	4191992.13	6.05880E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3624E-04	0.00E+00
498	ALL	564281.82	4192053.41	6.61530E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6712E-04	0.00E+00
499	ALL	564240.02	4192062.83	4.87530E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7056E-04	0.00E+00
500	ALL	564209.38	4192043.10	5.24640E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9116E-04	0.00E+00
501	ALL	564174.99	4192005.54	4.45840E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4742E-04	0.00E+00
502	ALL	564167.49	4191969.87	4.31270E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3934E-04	0.00E+00
503	ALL	564277.67	4192076.68	4.67060E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5920E-04	0.00E+00
504	ALL	564300.75	4192085.17	4.45630E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4731E-04	0.00E+00
505	ALL	564232.81	4192084.13	3.64580E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0233E-04	0.00E+00
506	ALL	564177.65	4192048.61	3.84060E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1314E-04	0.00E+00
507	ALL	564150.27	4191993.97	3.40200E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8880E-04	0.00E+00
508	ALL	564278.79	4192089.42	3.95790E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1965E-04	0.00E+00
509	ALL	564229.17	4192107.73	2.77850E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5420E-04	0.00E+00
510	ALL	564193.42	4192084.71	3.21690E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7852E-04	0.00E+00
511	ALL	564157.68	4192061.69	3.02050E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6763E-04	0.00E+00
512	ALL	564135.43	4192029.37	2.74470E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5232E-04	0.00E+00
513	ALL	564126.68	4191987.76	2.63730E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4636E-04	0.00E+00
514	ALL	564269.38	4192123.22	2.64090E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4656E-04	0.00E+00
515	ALL	564225.39	4192131.23	2.18620E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2133E-04	0.00E+00
516	ALL	564190.37	4192108.68	2.55310E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4169E-04	0.00E+00
517	ALL	564155.35	4192086.13	2.59080E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4378E-04	0.00E+00
518	ALL	564116.05	4192043.20	2.24150E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2439E-04	0.00E+00
519	ALL	564107.48	4192002.44	2.16200E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1998E-04	0.00E+00
520	ALL	564098.91	4191961.68	2.05840E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1423E-04	0.00E+00
521	ALL	564265.23	4192146.49	2.09180E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1609E-04	0.00E+00
522	ALL	564287.56	4192150.47	2.14970E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1930E-04	0.00E+00
523	ALL	564221.52	4192154.68	1.72280E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.5609E-05	0.00E+00
524	ALL	564187.04	4192132.48	2.04610E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1355E-04	0.00E+00
525	ALL	564152.57	4192110.28	2.18850E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2145E-04	0.00E+00
526	ALL	564118.10	4192088.08	2.00170E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1109E-04	0.00E+00
527	ALL	564096.65	4192056.92	1.86320E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0340E-04	0.00E+00
528	ALL	564088.21	4192016.80	1.81090E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0050E-04	0.00E+00
529	ALL	564079.77	4191976.67	1.72530E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.5747E-05	0.00E+00
530	ALL	564261.08	4192169.76	1.69540E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.4086E-05	0.00E+00
531	ALL	564217.58	4192178.08	1.41820E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.8704E-05	0.00E+00
532	ALL	564183.54	4192156.16	1.65990E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.2119E-05	0.00E+00
533	ALL	564149.49	4192134.24	1.83660E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0192E-04	0.00E+00
534	ALL	564115.44	4192112.31	1.77610E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.8564E-05	0.00E+00
535	ALL	564077.23	4192070.57	1.57700E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.7517E-05	0.00E+00
536	ALL	564068.90	4192030.95	1.53730E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.5317E-05	0.00E+00
537	ALL	564060.57	4191991.32	1.47030E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.1594E-05	0.00E+00
538	ALL	564046.48	4191947.21	1.38030E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.6603E-05	0.00E+00
539	ALL	564256.94	4192193.03	1.40310E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.7867E-05	0.00E+00
540	ALL	564279.27	4192197.01	1.45320E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.0646E-05	0.00E+00

541	ALL	564211.73	4192200.26	1.17200E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.5041E-05	0.00E+00
542	ALL	564155.56	4192164.08	1.50550E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.3547E-05	0.00E+00
543	ALL	564118.10	4192139.97	1.57090E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.7178E-05	0.00E+00
544	ALL	564080.65	4192115.85	1.44290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.0077E-05	0.00E+00
545	ALL	564057.35	4192082.00	1.34710E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.4758E-05	0.00E+00
546	ALL	564043.60	4192016.61	1.27860E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.0955E-05	0.00E+00
547	ALL	564048.18	4191967.26	1.37230E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.6159E-05	0.00E+00
548	ALL	564252.79	4192216.30	1.19220E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.6163E-05	0.00E+00
549	ALL	564202.64	4192252.93	8.24940E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5781E-05	0.00E+00
550	ALL	564165.71	4192229.15	9.43620E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.2367E-05	0.00E+00
551	ALL	564128.78	4192205.37	1.09870E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.0974E-05	0.00E+00
552	ALL	564091.85	4192181.59	1.15490E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.4095E-05	0.00E+00
553	ALL	564054.93	4192157.82	1.10480E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.1313E-05	0.00E+00
554	ALL	564013.48	4192112.55	9.96920E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.5325E-05	0.00E+00
555	ALL	564004.44	4192069.56	9.71240E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.3900E-05	0.00E+00
556	ALL	563995.41	4192026.58	9.31430E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1691E-05	0.00E+00
557	ALL	563986.37	4191983.60	9.12340E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.0631E-05	0.00E+00
558	ALL	563977.33	4191940.62	9.07250E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.0349E-05	0.00E+00
559	ALL	564243.43	4192268.80	8.42140E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6735E-05	0.00E+00
560	ALL	564265.76	4192272.78	8.77990E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8725E-05	0.00E+00
561	ALL	564193.46	4192305.55	6.18940E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4349E-05	0.00E+00
562	ALL	564156.89	4192282.01	6.79980E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.7736E-05	0.00E+00
563	ALL	564120.33	4192258.46	7.83800E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3498E-05	0.00E+00
564	ALL	564083.76	4192234.92	8.68480E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8197E-05	0.00E+00
565	ALL	564047.20	4192211.37	8.82010E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8948E-05	0.00E+00
566	ALL	564010.64	4192187.83	8.40400E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6639E-05	0.00E+00
567	ALL	563969.60	4192143.00	7.66140E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.2518E-05	0.00E+00
568	ALL	563960.65	4192100.44	7.50570E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1653E-05	0.00E+00
569	ALL	563951.70	4192057.88	7.21630E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0048E-05	0.00E+00
570	ALL	563942.75	4192015.32	7.04890E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9119E-05	0.00E+00
571	ALL	563933.80	4191972.76	7.02680E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8996E-05	0.00E+00
572	ALL	563924.86	4191930.20	7.01660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8939E-05	0.00E+00
573	ALL	564234.07	4192321.31	6.38670E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5444E-05	0.00E+00
574	ALL	564256.40	4192325.29	6.64800E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6894E-05	0.00E+00
575	ALL	564184.23	4192358.15	4.86980E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7026E-05	0.00E+00
576	ALL	564147.93	4192334.77	5.16030E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8638E-05	0.00E+00
577	ALL	564111.64	4192311.40	5.86370E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2541E-05	0.00E+00
578	ALL	564075.34	4192288.02	6.59210E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6584E-05	0.00E+00
579	ALL	564039.04	4192264.65	6.96320E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8643E-05	0.00E+00
580	ALL	564002.74	4192241.27	6.95650E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8606E-05	0.00E+00
581	ALL	563966.44	4192217.90	6.66450E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6986E-05	0.00E+00
582	ALL	563925.70	4192173.40	6.09500E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3825E-05	0.00E+00
583	ALL	563916.82	4192131.15	5.98660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3223E-05	0.00E+00
584	ALL	563907.93	4192088.90	5.78620E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2111E-05	0.00E+00
585	ALL	563899.05	4192046.65	5.63700E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1283E-05	0.00E+00
586	ALL	563890.17	4192004.40	5.59890E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1072E-05	0.00E+00
587	ALL	563881.29	4191962.15	5.60250E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1092E-05	0.00E+00
588	ALL	563872.40	4191919.90	5.62330E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1207E-05	0.00E+00
589	ALL	564224.71	4192373.81	5.04880E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8019E-05	0.00E+00
590	ALL	564247.04	4192377.79	5.28110E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9308E-05	0.00E+00
591	ALL	564174.98	4192410.72	3.93530E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1839E-05	0.00E+00
592	ALL	564138.88	4192387.47	4.08520E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2671E-05	0.00E+00
593	ALL	564102.79	4192364.23	4.52850E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5132E-05	0.00E+00
594	ALL	564066.69	4192340.99	5.07070E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8141E-05	0.00E+00
595	ALL	564030.60	4192317.74	5.52770E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.0677E-05	0.00E+00
596	ALL	563994.50	4192294.50	5.70390E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1654E-05	0.00E+00
597	ALL	563958.40	4192271.26	5.65620E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1390E-05	0.00E+00
598	ALL	563922.31	4192248.01	5.39610E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9946E-05	0.00E+00
599	ALL	563881.80	4192203.76	4.97430E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7606E-05	0.00E+00
600	ALL	563872.96	4192161.75	4.90090E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7198E-05	0.00E+00
601	ALL	563864.13	4192119.74	4.75660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6397E-05	0.00E+00
602	ALL	563855.30	4192077.72	4.62320E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5657E-05	0.00E+00
603	ALL	563846.46	4192035.71	4.55710E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5290E-05	0.00E+00
604	ALL	563837.63	4191993.70	4.57620E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5396E-05	0.00E+00
605	ALL	563828.80	4191951.68	4.58820E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5463E-05	0.00E+00
606	ALL	563819.96	4191909.67	4.58990E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5472E-05	0.00E+00
607	ALL	564215.35	4192426.32	4.10370E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2774E-05	0.00E+00
608	ALL	564237.68	4192430.30	4.29870E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3856E-05	0.00E+00
609	ALL	564164.70	4192462.63	3.23790E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7969E-05	0.00E+00
610	ALL	564145.73	4192450.42	3.26120E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8098E-05	0.00E+00
611	ALL	564126.77	4192438.21	3.33550E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8510E-05	0.00E+00
612	ALL	564107.80	4192425.99	3.46920E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9253E-05	0.00E+00
613	ALL	564088.84	4192413.78	3.65610E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0290E-05	0.00E+00
614	ALL	564069.87	4192401.57	3.87820E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1523E-05	0.00E+00
615	ALL	564050.91	4192389.36	4.09640E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2733E-05	0.00E+00
616	ALL	564012.98	4192364.93	4.49560E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4949E-05	0.00E+00
617	ALL	563994.01	4192352.72	4.62100E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5645E-05	0.00E+00
618	ALL	563975.04	4192340.50	4.70100E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6089E-05	0.00E+00
619	ALL	563956.08	4192328.29	4.73830E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6295E-05	0.00E+00
620	ALL	563937.11	4192316.08	4.74460E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6331E-05	0.00E+00

621	ALL	563918.15	4192303.86	4.70600E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6116E-05	0.00E+00
622	ALL	563880.22	4192279.44	4.47530E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4836E-05	0.00E+00
623	ALL	563861.25	4192267.23	4.31200E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3930E-05	0.00E+00
624	ALL	563837.64	4192232.94	4.14190E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2986E-05	0.00E+00
625	ALL	563833.00	4192210.86	4.12630E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2899E-05	0.00E+00
626	ALL	563823.72	4192166.71	4.02890E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2359E-05	0.00E+00
627	ALL	563814.44	4192122.56	3.89500E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1616E-05	0.00E+00
628	ALL	563805.15	4192078.41	3.81930E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1196E-05	0.00E+00
629	ALL	563800.51	4192056.34	3.79850E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1080E-05	0.00E+00
630	ALL	563791.23	4192012.19	3.80430E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1112E-05	0.00E+00
631	ALL	563786.59	4191990.11	3.82020E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1201E-05	0.00E+00
632	ALL	563777.31	4191945.96	3.84400E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1333E-05	0.00E+00
633	ALL	563768.02	4191901.81	3.82720E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1239E-05	0.00E+00
634	ALL	564206.00	4192478.83	3.36380E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8668E-05	0.00E+00
635	ALL	564228.33	4192482.81	3.49150E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9376E-05	0.00E+00
636	ALL	564155.51	4192515.25	2.68790E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4917E-05	0.00E+00
637	ALL	564117.91	4192491.04	2.74120E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5212E-05	0.00E+00
638	ALL	564080.32	4192466.83	2.96580E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6459E-05	0.00E+00
639	ALL	564042.72	4192442.62	3.31190E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8380E-05	0.00E+00
640	ALL	564005.13	4192418.41	3.65890E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0306E-05	0.00E+00
641	ALL	563967.53	4192394.20	3.89400E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1610E-05	0.00E+00
642	ALL	563929.94	4192369.99	4.00610E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2232E-05	0.00E+00
643	ALL	563892.34	4192345.78	4.00480E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2225E-05	0.00E+00
644	ALL	563854.75	4192321.57	3.87510E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1505E-05	0.00E+00
645	ALL	563817.15	4192297.36	3.64130E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0208E-05	0.00E+00
646	ALL	563793.76	4192263.38	3.50910E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9474E-05	0.00E+00
647	ALL	563784.56	4192219.62	3.46500E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9229E-05	0.00E+00
648	ALL	563775.36	4192175.86	3.37150E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8710E-05	0.00E+00
649	ALL	563766.16	4192132.10	3.27830E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8194E-05	0.00E+00
650	ALL	563756.96	4192088.34	3.22720E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7910E-05	0.00E+00
651	ALL	563747.75	4192044.58	3.21620E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7849E-05	0.00E+00
652	ALL	563738.55	4192000.83	3.24420E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8004E-05	0.00E+00
653	ALL	563729.35	4191957.07	3.25860E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8084E-05	0.00E+00
654	ALL	563720.15	4191913.31	3.25100E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8042E-05	0.00E+00
655	ALL	564196.64	4192531.33	2.75510E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5290E-05	0.00E+00
656	ALL	564218.97	4192535.31	2.81320E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5612E-05	0.00E+00
657	ALL	564267.85	4191898.74	2.83870E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5754E-03	0.00E+00
658	ALL	564251.36	4191903.25	2.00760E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1141E-03	0.00E+00
659	ALL	564244.10	4191885.78	1.43190E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.9465E-04	0.00E+00
660	ALL	564255.28	4191886.57	1.81380E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0066E-03	0.00E+00
661	ALL	564228.79	4191884.02	1.05920E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.8780E-04	0.00E+00
662	ALL	564183.25	4191884.02	5.24190E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9090E-04	0.00E+00
663	ALL	564209.95	4191931.32	8.63900E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.7943E-04	0.00E+00
664	ALL	564369.91	4191927.60	8.94430E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.9637E-03	0.00E+00
665	ALL	564371.08	4191918.09	8.86350E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.9189E-03	0.00E+00
666	ALL	564371.91	4191907.25	8.22090E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5623E-03	0.00E+00
667	ALL	564398.10	4191909.58	5.24300E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9096E-03	0.00E+00
668	ALL	564386.76	4191909.08	6.41940E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5625E-03	0.00E+00
669	ALL	564386.76	4191918.59	6.69430E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.7151E-03	0.00E+00
670	ALL	564394.77	4191927.93	5.72520E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1773E-03	0.00E+00
671	ALL	564378.75	4191927.60	7.65060E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.2458E-03	0.00E+00
672	ALL	564378.42	4191939.95	7.09250E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9361E-03	0.00E+00
673	ALL	564391.43	4191941.28	5.62510E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1217E-03	0.00E+00
674	ALL	564410.12	4191909.75	4.25990E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3641E-03	0.00E+00
675	ALL	564412.12	4191920.09	4.24970E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3584E-03	0.00E+00
676	ALL	564413.62	4191937.44	4.04710E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2460E-03	0.00E+00
677	ALL	564425.46	4191929.60	3.46400E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9224E-03	0.00E+00
678	ALL	564429.47	4191913.75	3.19750E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7745E-03	0.00E+00
679	ALL	564447.49	4191916.42	2.49790E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3862E-03	0.00E+00
680	ALL	564444.65	4191932.77	2.63710E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4635E-03	0.00E+00
681	ALL	564438.81	4191922.76	2.85890E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5866E-03	0.00E+00
682	ALL	564467.84	4191918.42	1.91730E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0640E-03	0.00E+00
683	ALL	564468.01	4191930.44	1.93930E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0762E-03	0.00E+00
684	ALL	564371.91	4191964.30	5.37990E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9856E-03	0.00E+00
685	ALL	564386.43	4191957.30	4.98380E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7658E-03	0.00E+00
686	ALL	564398.44	4191968.81	3.47060E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9260E-03	0.00E+00
687	ALL	564413.62	4191977.98	2.47760E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3750E-03	0.00E+00
688	ALL	564428.63	4191980.15	2.05690E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1415E-03	0.00E+00
689	ALL	564424.13	4191968.31	2.59160E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4382E-03	0.00E+00
690	ALL	564440.81	4191981.99	1.78160E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.8874E-04	0.00E+00
691	ALL	564452.16	4191973.15	1.78870E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.9266E-04	0.00E+00
692	ALL	564450.82	4191952.29	2.23640E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2411E-03	0.00E+00
693	ALL	564464.50	4191957.30	1.82470E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0126E-03	0.00E+00
694	ALL	564452.99	4191964.30	1.95800E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0866E-03	0.00E+00
695	ALL	564515.26	4191949.23	1.10470E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.1306E-04	0.00E+00
696	ALL	564520.05	4191926.22	1.08370E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.0139E-04	0.00E+00
697	ALL	564548.18	4191931.65	8.29780E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6049E-04	0.00E+00
698	ALL	564546.90	4191956.58	7.99510E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.4370E-04	0.00E+00
699	ALL	564508.55	4191985.02	9.26120E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1396E-04	0.00E+00
700	ALL	564537.95	4191989.18	7.06290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9196E-04	0.00E+00

701	ALL	564378.47	4192007.40	1.79990E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.9885E-04	0.00E+00
702	ALL	564404.04	4192014.11	1.33130E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.3882E-04	0.00E+00
703	ALL	564423.85	4192014.75	1.16750E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.4792E-04	0.00E+00
704	ALL	564454.56	4192063.95	4.94310E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7432E-04	0.00E+00
705	ALL	564485.52	4192066.61	4.20470E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3335E-04	0.00E+00
706	ALL	564514.27	4192073.68	3.49640E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9404E-04	0.00E+00
707	ALL	564310.11	4191982.50	3.49460E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9394E-03	0.00E+00
708	ALL	564201.18	4192015.37	5.99010E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3243E-04	0.00E+00
709	ALL	564187.86	4192030.31	4.71620E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6173E-04	0.00E+00
710	ALL	564173.47	4192022.44	4.16990E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3141E-04	0.00E+00
711	ALL	564303.87	4192049.06	7.81620E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3377E-04	0.00E+00
712	ALL	564307.13	4192020.81	1.36270E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.5623E-04	0.00E+00
713	ALL	564306.31	4192007.77	1.82380E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0122E-03	0.00E+00
714	ALL	564301.69	4191997.44	2.26590E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2575E-03	0.00E+00
715	ALL	564269.64	4191995.27	1.80370E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0010E-03	0.00E+00
716	ALL	564188.14	4191971.91	5.77330E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2040E-04	0.00E+00
717	ALL	564224.27	4191970.00	1.07660E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.9749E-04	0.00E+00
718	ALL	564216.12	4192001.25	7.97580E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.4263E-04	0.00E+00
719	ALL	564153.20	4191965.48	3.60690E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0017E-04	0.00E+00
720	ALL	564122.84	4191954.61	2.59560E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4404E-04	0.00E+00
721	ALL	564117.09	4191980.18	2.40730E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3360E-04	0.00E+00
722	ALL	564083.85	4191945.67	1.83990E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0210E-04	0.00E+00
723	ALL	564013.21	4191939.27	1.11810E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.2049E-05	0.00E+00
724	ALL	563997.87	4191938.95	1.02130E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.6679E-05	0.00E+00
725	ALL	564007.46	4191974.75	1.04180E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.7814E-05	0.00E+00
726	ALL	564042.30	4191992.33	1.28640E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.1392E-05	0.00E+00
727	ALL	563988.58	4191902.55	9.99200E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.5452E-05	0.00E+00
728	ALL	564014.53	4191894.28	1.17110E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.4989E-05	0.00E+00
729	ALL	563957.75	4191938.27	8.18460E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5421E-05	0.00E+00
730	ALL	563944.97	4191935.64	7.69020E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.2678E-05	0.00E+00
731	ALL	563876.15	4191870.59	5.98160E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3195E-05	0.00E+00
732	ALL	563897.96	4191930.75	6.20720E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4448E-05	0.00E+00
733	ALL	564329.17	4191858.88	1.68560E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.3544E-04	0.00E+00
734	ALL	564324.28	4191848.82	1.03480E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.7425E-04	0.00E+00
735	ALL	564317.76	4191834.70	6.45960E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5848E-04	0.00E+00
736	ALL	564332.70	4191834.70	7.48960E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1564E-04	0.00E+00
737	ALL	564295.75	4191849.10	8.78500E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8753E-04	0.00E+00
738	ALL	564293.85	4191824.91	4.92470E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7330E-04	0.00E+00
739	ALL	564258.53	4191840.94	7.45220E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1357E-04	0.00E+00
740	ALL	564271.30	4191814.59	4.18300E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3214E-04	0.00E+00
741	ALL	564292.12	4191781.68	2.35540E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3072E-04	0.00E+00
742	ALL	564318.97	4191786.48	2.65150E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4715E-04	0.00E+00
743	ALL	564379.50	4191863.64	3.08440E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7117E-03	0.00E+00
744	ALL	564380.04	4191829.13	1.10700E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.1437E-04	0.00E+00
745	ALL	564441.99	4191869.89	1.91700E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0639E-03	0.00E+00
746	ALL	564429.49	4191826.96	1.15940E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.4342E-04	0.00E+00
747	ALL	564444.16	4191829.68	1.15690E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.4203E-04	0.00E+00
748	ALL	564444.16	4191802.78	7.33630E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0714E-04	0.00E+00
749	ALL	564459.92	4191819.35	9.31880E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1716E-04	0.00E+00
750	ALL	564258.43	4191982.64	1.89880E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0538E-03	0.00E+00
751	ALL	564270.54	4192043.38	7.29710E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0496E-04	0.00E+00
752	ALL	564260.81	4192040.73	7.26780E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0333E-04	0.00E+00
753	ALL	564506.93	4192025.65	6.03590E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3497E-04	0.00E+00
754	ALL	564521.97	4192028.30	5.38420E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9880E-04	0.00E+00
755	ALL	564170.33	4192068.11	3.20500E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7786E-04	0.00E+00
756	ALL	564186.13	4192072.25	3.45030E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9148E-04	0.00E+00
757	ALL	564209.07	4192077.14	3.69180E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0488E-04	0.00E+00
758	ALL	564220.35	4192078.64	3.77180E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0932E-04	0.00E+00
759	ALL	564136.48	4192067.74	2.48590E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3796E-04	0.00E+00
760	ALL	564243.67	4192085.79	3.67240E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0380E-04	0.00E+00
761	ALL	564254.95	4192089.93	3.63090E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0150E-04	0.00E+00
762	ALL	564266.99	4192092.56	3.69850E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0525E-04	0.00E+00

HARP2 - HRACalc (dated 22118) 8/30/2024 7:23:57 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: All
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 2.47

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 0.47
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True

Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed

```
Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM
T4CancerRisk.csv
Cancer risk total by receptor saved to: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM
T4CancerRiskSumByRec.csv
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM
T4NCChronicRisk.csv
Chronic risk total by receptor saved to: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM
T4NCChronicRiskSumByRec.csv
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM
T4NCAcuteRisk.csv
Acute risk total by receptor saved to: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM
T4NCAcuteRiskSumByRec.csv
HRA ran successfully
```

Summary of PM2.5 Construction Emissions

Shattuck Construction (Tier 4 Interim Equipment Scenario) - PM2.5

		Pounds PM2.5E		Pounds PM2.5 Dust		Pounds PM
		Onsite	Offsite	Onsite	Offsite	Onsite
2026	Demolition	1.873312	0.813947	8.083226	5.15622	9.956538
2026	Grading	4.927226	4.175555	59.30955	24.68709	64.23677
2026	Building Construction	4.14395	4.169369	0	159.6529	4.14395
2027	Building Construction	5.695727	5.730664	0	219.4379	5.695727
2027	Paving	0.205156	0.024074	0	0.311697	0.205156
2027	Architectural Coating	0.664501	0	0	3.881722	0.664501
2028	Architectural Coating	3.523869	0	0	20.58489	3.523869

PM2.5 Total Offsite
5.970167
28.86264
163.8223
225.1685
0.335772
3.881722
20.58489

1974 Shattuck Ave Construction (Tier 4 Interim Equipment Scenario) - PM2.5

Estimation of Annual On-site Construction Emissions - PM2.5 Total

Start of Construction	1/5/2026	
End of Construction	6/23/2028	**Total**
Number of Days	900	900
Number of Hours	21,600	21,600

Size of the construction area source: **2,549.9** **sq-meters**

Run	Year	On-site Construction Activity	Tier 4 On-site PM2.5 (pounds)
Project Construction	2026	Demolition	9.9565
Project Construction	2026	Grading	64.2368
Project Construction	2026	Building Construction	4.1440
Project Construction	2027	Building Construction	5.6957
Project Construction	2027	Paving	0.2052
Project Construction	2027	Architectural Coating	0.6645
Project Construction	2028	Architectural Coating	3.5239

Total Unmitigated PM2.5 (On-site) 8.843E+01 pounds

Factor in AERMOD to Account for 5 days per week/8 hours per day: 4.2

Average Emission for AREA	4.015E+04	grams
	5.163E-04	grams/sec
	2.025E-07	grams/m2-sec

Pounds/Construction Period	8.843E+01
Pounds/Day	9.825E-02
Pounds/Hour	4.094E-03
Pounds/Year	3.586E+01
Years	2.46575

1974 Shattuck Ave Construction (Tier 4 Interim Equipment Scenario) - PM2.5

Estimation of Annual Offsite Construction PM2.5 Emissions

Start of Construction		1/5/2026				
End of Construction		6/23/2028				**Total**
Number of Days		900				900
Number of Hours		21,600				21,600

	2026 Project Construction	2026 Project Construction	2026+2027 Project Construction	2027 Project Construction	2027+2028 Project Construction	
Construction Trip Type	Demolition	Grading	Building Construction	Paving	Architectural Coating	**Total (pounds)**
Total (pounds)	5.97017	28.86264	388.99082	0.33577	24.46661	**448.62601**

	Haul Truck	**Vendor Truck**	**Worker**	**Total**
Demolition (2026)	923.00	0.00	300.00	1,223.00
Grading (2026)	4,735.00	0.00	600.00	5,335.00
Building Construction (2026+2027)	0.00	26,825.44	175,284.64	202,110.08
Paving (2027)	0.00	65.00	100.00	165.00
Architectural Coating (2027+2028)	0.00	0.00	13,146.35	13,146.35
Total	**5,658.00**	**26,890.44**	**189,430.99**	**221,979.43**

	Haul Truck (pounds)	**Vendor Truck (pounds)**	**Worker (pounds)**	**Total (pounds)**
Total DPM	1.143E+01	5.435E+01	3.828E+02	4.486E+02

Average Emissions				
Grams	5.191E+03	2.467E+04	1.738E+05	
Grams/sec	6.676E-05	3.173E-04	2.235E-03	
Default Distance	20	8.40	11.41	Default Vehicle Travel Distance in CalEEMod

Vehicle Travel Distances in the Construction HRA (miles)				
Off-site Road Segment 1	0.36	0.36	0.36	miles
Off-site Road Segment 2	0.36	0.36	0.36	miles
Off-site Road Segment 3	0.34	0.34	0.34	miles
Off-site Road Segment 4	0.37	0.37	0.37	miles
Off-site Road Segment 5	0.37	0.37	0.37	miles
Off-site Road Segment 6	0.37	0.37	0.37	miles
On-site Construction Travel	0.06	0.06	0.06	miles
Trip Distribution (percent)				
Off-site Road Segment 1	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 2	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 3	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 4	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 5	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 6	16.7%	16.7%	16.7%	off-site
On-site Construction Travel	100.0%	100.0%	100.0%	on-site

Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)				**Total**	
Off-site Road Segment 1	2.002E-07	2.266E-06	1.175E-05	1.422E-05	Off-site Road Segment 1
Off-site Road Segment 2	2.004E-07	2.268E-06	1.176E-05	1.423E-05	Off-site Road Segment 2
Off-site Road Segment 3	1.884E-07	3.608E-07	1.106E-05	1.161E-05	Off-site Road Segment 3
Off-site Road Segment 4	2.066E-07	0.000E+00	1.213E-05	1.233E-05	Off-site Road Segment 4
Off-site Road Segment 5	2.031E-07	0.000E+00	1.192E-05	1.212E-05	Off-site Road Segment 5
Off-site Road Segment 6	2.066E-07	1.049E-06	1.213E-05	1.338E-05	Off-site Road Segment 6
On-site Construction Travel	1.913E-07	6.296E-06	1.123E-05	1.771E-05	On-site, on-road construction vehicle travel

	Grams/sec	Pounds/Hour	Pounds/Day	Pounds/year	Tons/year
Off-site Road Segment 1	1.422E-05	1.128E-04	2.708E-03	9.885E-01	4.942E-04
Off-site Road Segment 2	1.423E-05	1.129E-04	2.710E-03	9.893E-01	4.947E-04
Off-site Road Segment 3	1.161E-05	9.212E-05	2.211E-03	8.069E-01	4.035E-04
Off-site Road Segment 4	1.233E-05	9.788E-05	2.349E-03	8.575E-01	4.287E-04
Off-site Road Segment 5	1.212E-05	9.623E-05	2.310E-03	8.430E-01	4.215E-04
Off-site Road Segment 6	1.338E-05	1.062E-04	2.549E-03	9.304E-01	4.652E-04
On-site Construction Travel	1.771E-05	1.406E-04	3.374E-03	1.231E+00	6.157E-04

Highest PM2.5 Concentration 0.10520

* AERMOD (23132): F:\AERMOD\61000001 Shattuck\PM25\PM25.isc 8/30/2024
* AERMET (18081): 7:28:59 AM
* MODELING OPTIONS USED: Reg DFAULT CONC ELEV FLGP
* PLOT FILE OF PERIOD VALUES AVERAGED ACROSS YEARS FOR SOURCE GROUP: ALL
* FOR A TOTAL OF 762 RECEPTORS.
* FORMAT: (3(1X,F13.5),3(1X,F8.2),2X,A6,2X,A8,2X,I8.8,2X,A8)

* X	Y	AVERAGE CONC	ZELEV	ZHILL	ZFLAG	AVE	GRP	NUM HRS	NET ID
564370.77	4191948.94	0.08606	60.66	355	1.5	PERIOD	ALL	78888	
564394.16	4191952.37	0.05670	61.2	355	1.5	PERIOD	ALL	78888	
564385.58	4192025.27	0.01513	62.7	355	1.5	PERIOD	ALL	78888	
564358.04	4192045.11	0.01207	63.29	355	1.5	PERIOD	ALL	78888	
564417.55	4191955.81	0.03931	61.31	355	1.5	PERIOD	ALL	78888	
564408.96	4192028.71	0.01244	63.59	355	1.5	PERIOD	ALL	78888	
564371.86	4192064.29	0.00873	63.93	355	1.5	PERIOD	ALL	78888	
564440.93	4191959.24	0.02837	61.43	355	1.5	PERIOD	ALL	78888	
564438.09	4192022.69	0.01167	63.54	355	1.5	PERIOD	ALL	78888	
564415.12	4192060.48	0.00768	64.8	355	1.5	PERIOD	ALL	78888	
564360.53	4192089.20	0.00676	64.76	355	1.5	PERIOD	ALL	78888	
564461.05	4191984.90	0.01694	62.87	355	1.5	PERIOD	ALL	78888	
564467.58	4191940.44	0.02296	61.8	355	1.5	PERIOD	ALL	78888	
564450.95	4192043.44	0.00819	64.49	355	1.5	PERIOD	ALL	78888	
564428.62	4192080.18	0.00580	65.46	355	1.5	PERIOD	ALL	78888	
564396.50	4192103.33	0.00510	65.67	355	1.5	PERIOD	ALL	78888	
564354.58	4192112.87	0.00553	65.55	355	1.5	PERIOD	ALL	78888	
564487.70	4191966.10	0.01591	63.13	355	1.5	PERIOD	ALL	78888	
564475.02	4192045.75	0.00702	65.36	355	1.5	PERIOD	ALL	78888	
564453.15	4192081.74	0.00522	65.84	355	1.5	PERIOD	ALL	78888	
564410.74	4192122.41	0.00404	66.78	355	1.5	PERIOD	ALL	78888	
564369.68	4192131.76	0.00440	66.18	355	1.5	PERIOD	ALL	78888	
564511.09	4191969.54	0.01238	64.28	355	1.5	PERIOD	ALL	78888	
564498.92	4192048.34	0.00604	66.25	355	1.5	PERIOD	ALL	78888	
564477.39	4192083.77	0.00465	66.63	355	1.5	PERIOD	ALL	78888	
564455.86	4192119.19	0.00364	66.86	355	1.5	PERIOD	ALL	78888	
564424.88	4192141.51	0.00330	67.5	355	1.5	PERIOD	ALL	78888	
564384.46	4192150.72	0.00357	66.85	355	1.5	PERIOD	ALL	78888	
564344.04	4192159.93	0.00430	66.72	355	1.5	PERIOD	ALL	78888	
564534.48	4191972.97	0.00980	65.92	355	1.5	PERIOD	ALL	78888	
564522.70	4192051.12	0.00526	66.82	355	1.5	PERIOD	ALL	78888	
564501.44	4192086.11	0.00417	66.98	355	1.5	PERIOD	ALL	78888	
564480.17	4192121.10	0.00334	67.18	355	1.5	PERIOD	ALL	78888	
564438.95	4192160.63	0.00275	68.26	355	1.5	PERIOD	ALL	78888	
564399.03	4192169.72	0.00294	67.96	355	1.5	PERIOD	ALL	78888	
564359.11	4192178.82	0.00345	67.14	355	1.5	PERIOD	ALL	78888	
564557.86	4191976.40	0.00803	66.81	355	1.5	PERIOD	ALL	78888	
564564.39	4191931.93	0.00871	66.03	355	1.5	PERIOD	ALL	78888	
564567.46	4192019.39	0.00557	67.76	355	1.5	PERIOD	ALL	78888	
564546.41	4192054.03	0.00459	67.69	355	1.5	PERIOD	ALL	78888	
564525.35	4192088.66	0.00372	67.54	355	1.5	PERIOD	ALL	78888	
564504.30	4192123.30	0.00304	67.93	355	1.5	PERIOD	ALL	78888	
564483.25	4192157.94	0.00248	68.78	355	1.5	PERIOD	ALL	78888	
564452.96	4192179.76	0.00229	69.81	355	1.5	PERIOD	ALL	78888	
564413.44	4192188.77	0.00246	69	355	1.5	PERIOD	ALL	78888	
564373.92	4192197.77	0.00283	67.68	355	1.5	PERIOD	ALL	78888	
564294.88	4192215.77	0.00261	66.04	355	1.5	PERIOD	ALL	78888	
564581.25	4191979.83	0.00668	67.66	355	1.5	PERIOD	ALL	78888	
564587.77	4191935.37	0.00726	66.81	355	1.5	PERIOD	ALL	78888	
564619.22	4192028.79	0.00380	73.07	355	1.5	PERIOD	ALL	78888	
564596.16	4192066.74	0.00323	72.18	355	1.5	PERIOD	ALL	78888	

564573.09	4192104.69	0.00272	70.34	355	1.5	PERIOD	ALL	78888
564550.03	4192142.63	0.00226	70.89	355	1.5	PERIOD	ALL	78888
564526.97	4192180.58	0.00188	71.59	355	1.5	PERIOD	ALL	78888
564482.25	4192223.46	0.00164	71.52	355	1.5	PERIOD	ALL	78888
564438.95	4192233.33	0.00177	70.41	355	1.5	PERIOD	ALL	78888
564395.66	4192243.19	0.00200	69.3	355	1.5	PERIOD	ALL	78888
564352.36	4192253.06	0.00263	68.17	355	1.5	PERIOD	ALL	78888
564634.02	4191987.58	0.00451	71.67	355	1.5	PERIOD	ALL	78888
564640.54	4191943.11	0.00500	69.03	355	1.5	PERIOD	ALL	78888
564672.10	4192036.35	0.00286	75.62	355	1.5	PERIOD	ALL	78888
564649.26	4192073.92	0.00247	75.72	355	1.5	PERIOD	ALL	78888
564626.43	4192111.50	0.00214	73.7	355	1.5	PERIOD	ALL	78888
564603.59	4192149.08	0.00185	72.84	355	1.5	PERIOD	ALL	78888
564580.75	4192186.65	0.00158	73.58	355	1.5	PERIOD	ALL	78888
564557.92	4192224.23	0.00135	74.28	355	1.5	PERIOD	ALL	78888
564513.64	4192266.69	0.00121	74.24	355	1.5	PERIOD	ALL	78888
564470.77	4192276.45	0.00131	73.01	355	1.5	PERIOD	ALL	78888
564427.90	4192286.22	0.00142	72.45	355	1.5	PERIOD	ALL	78888
564385.02	4192295.99	0.00170	70.73	355	1.5	PERIOD	ALL	78888
564342.15	4192305.75	0.00246	69.22	355	1.5	PERIOD	ALL	78888
564686.78	4191995.32	0.00327	74.74	355	1.5	PERIOD	ALL	78888
564693.31	4191950.86	0.00358	72.63	355	1.5	PERIOD	ALL	78888
564724.95	4192043.95	0.00221	78.48	355	1.5	PERIOD	ALL	78888
564702.28	4192081.26	0.00197	77.94	355	1.5	PERIOD	ALL	78888
564679.61	4192118.56	0.00172	77.42	355	1.5	PERIOD	ALL	78888
564656.94	4192155.86	0.00150	76.33	355	1.5	PERIOD	ALL	78888
564634.27	4192193.17	0.00130	77.71	355	1.5	PERIOD	ALL	78888
564611.60	4192230.47	0.00116	77.35	355	1.5	PERIOD	ALL	78888
564588.93	4192267.77	0.00100	78.87	355	1.5	PERIOD	ALL	78888
564544.97	4192309.92	0.00092	78.33	355	1.5	PERIOD	ALL	78888
564502.41	4192319.62	0.00099	76.4	355	1.5	PERIOD	ALL	78888
564459.85	4192329.32	0.00107	74.96	355	1.5	PERIOD	ALL	78888
564417.29	4192339.01	0.00123	73.21	355	1.5	PERIOD	ALL	78888
564374.73	4192348.71	0.00151	72.94	355	1.5	PERIOD	ALL	78888
564332.17	4192358.40	0.00235	71.42	355	1.5	PERIOD	ALL	78888
564739.55	4192003.07	0.00247	77.53	355	1.5	PERIOD	ALL	78888
564746.08	4191958.60	0.00272	74.29	355	1.5	PERIOD	ALL	78888
564777.78	4192051.59	0.00175	81.72	355	1.5	PERIOD	ALL	78888
564755.24	4192088.69	0.00160	80.79	355	1.5	PERIOD	ALL	78888
564732.70	4192125.78	0.00142	80.27	355	1.5	PERIOD	ALL	78888
564710.15	4192162.88	0.00123	81	355	1.5	PERIOD	ALL	78888
564687.61	4192199.97	0.00109	81.27	355	1.5	PERIOD	ALL	78888
564665.06	4192237.07	0.00097	82.36	355	1.5	PERIOD	ALL	78888
564642.52	4192274.16	0.00086	84.25	355	1.5	PERIOD	ALL	78888
564619.98	4192311.25	0.00075	84.98	355	1.5	PERIOD	ALL	78888
564576.27	4192353.17	0.00070	83.57	355	1.5	PERIOD	ALL	78888
564533.95	4192362.81	0.00077	79.04	355	1.5	PERIOD	ALL	78888
564491.62	4192372.45	0.00083	77.28	355	1.5	PERIOD	ALL	78888
564449.30	4192382.09	0.00092	75.71	355	1.5	PERIOD	ALL	78888
564406.98	4192391.73	0.00109	74.66	355	1.5	PERIOD	ALL	78888
564364.65	4192401.38	0.00145	73.54	355	1.5	PERIOD	ALL	78888
564322.33	4192411.02	0.00241	71.96	355	1.5	PERIOD	ALL	78888
564792.32	4192010.81	0.00193	80.87	355	1.5	PERIOD	ALL	78888
564798.85	4191966.35	0.00211	77.17	355	1.5	PERIOD	ALL	78888
564830.60	4192059.26	0.00144	83	355	1.5	PERIOD	ALL	78888
564808.16	4192096.19	0.00131	84.46	355	1.5	PERIOD	ALL	78888
564785.71	4192133.12	0.00118	84.04	355	1.5	PERIOD	ALL	78888
564763.27	4192170.05	0.00104	84.42	355	1.5	PERIOD	ALL	78888
564740.83	4192206.97	0.00094	83.91	355	1.5	PERIOD	ALL	78888
564718.38	4192243.90	0.00083	86.68	355	1.5	PERIOD	ALL	78888
564695.94	4192280.83	0.00074	89.98	355	1.5	PERIOD	ALL	78888

564673.50	4192317.76	0.00065	92.5	355	1.5	PERIOD	ALL	78888
564651.05	4192354.69	0.00058	91.88	355	1.5	PERIOD	ALL	78888
564607.54	4192396.42	0.00056	86.85	355	1.5	PERIOD	ALL	78888
564565.41	4192406.02	0.00060	83.1	355	1.5	PERIOD	ALL	78888
564523.27	4192415.62	0.00065	79.95	355	1.5	PERIOD	ALL	78888
564481.14	4192425.22	0.00070	78.21	355	1.5	PERIOD	ALL	78888
564439.00	4192434.81	0.00078	76.85	355	1.5	PERIOD	ALL	78888
564396.87	4192444.41	0.00096	75.44	355	1.5	PERIOD	ALL	78888
564354.73	4192454.01	0.00136	74.04	355	1.5	PERIOD	ALL	78888
564312.60	4192463.61	0.00243	72.35	355	1.5	PERIOD	ALL	78888
564270.46	4192473.21	0.00148	71.13	355	1.5	PERIOD	ALL	78888
564845.09	4192018.56	0.00157	81.65	355	1.5	PERIOD	ALL	78888
564851.61	4191974.09	0.00169	79.1	355	1.5	PERIOD	ALL	78888
564883.41	4192066.94	0.00121	83.75	355	1.5	PERIOD	ALL	78888
564861.05	4192103.73	0.00109	88.39	355	1.5	PERIOD	ALL	78888
564838.69	4192140.53	0.00099	88.9	355	1.5	PERIOD	ALL	78888
564816.32	4192177.32	0.00089	88.38	355	1.5	PERIOD	ALL	78888
564793.96	4192214.12	0.00081	87.03	355	1.5	PERIOD	ALL	78888
564771.60	4192250.91	0.00072	89.47	355	1.5	PERIOD	ALL	78888
564749.24	4192287.71	0.00064	94.02	355	1.5	PERIOD	ALL	78888
564726.87	4192324.51	0.00057	100.22	355	1.5	PERIOD	ALL	78888
564704.51	4192361.30	0.00051	101.2	355	1.5	PERIOD	ALL	78888
564682.15	4192398.10	0.00047	98.54	355	1.5	PERIOD	ALL	78888
564638.79	4192439.67	0.00045	89.87	355	1.5	PERIOD	ALL	78888
564596.81	4192449.24	0.00049	84.26	355	1.5	PERIOD	ALL	78888
564554.83	4192458.80	0.00052	82.44	355	1.5	PERIOD	ALL	78888
564512.85	4192468.37	0.00054	80.02	355	1.5	PERIOD	ALL	78888
564470.86	4192477.93	0.00058	78.63	355	1.5	PERIOD	ALL	78888
564428.88	4192487.49	0.00064	77.55	355	1.5	PERIOD	ALL	78888
564386.90	4192497.06	0.00077	76.15	355	1.5	PERIOD	ALL	78888
564344.92	4192506.62	0.00106	74.19	355	1.5	PERIOD	ALL	78888
564302.93	4192516.18	0.00172	72.31	355	1.5	PERIOD	ALL	78888
564260.95	4192525.75	0.00083	70.94	355	1.5	PERIOD	ALL	78888
564897.85	4192026.30	0.00132	80.61	355	1.5	PERIOD	ALL	78888
564904.38	4191981.84	0.00141	78.82	355	1.5	PERIOD	ALL	78888
564311.38	4191853.27	0.01386	57.9	355	1.5	PERIOD	ALL	78888
564378.72	4191845.07	0.02255	58.94	355	1.5	PERIOD	ALL	78888
564324.03	4191823.87	0.00724	57.02	355	1.5	PERIOD	ALL	78888
564384.03	4191813.22	0.00985	59.01	355	1.5	PERIOD	ALL	78888
564425.58	4191868.79	0.02797	60.41	355	1.5	PERIOD	ALL	78888
564328.80	4191800.72	0.00496	57.18	355	1.5	PERIOD	ALL	78888
564379.83	4191794.96	0.00660	58.83	355	1.5	PERIOD	ALL	78888
564431.36	4191846.81	0.02000	60.41	355	1.5	PERIOD	ALL	78888
564439.41	4191880.79	0.02681	60.87	355	1.5	PERIOD	ALL	78888
564333.57	4191777.57	0.00369	56.71	355	1.5	PERIOD	ALL	78888
564376.65	4191770.22	0.00460	57.9	355	1.5	PERIOD	ALL	78888
564429.18	4191804.74	0.01009	59.66	355	1.5	PERIOD	ALL	78888
564456.35	4191857.03	0.01810	61	355	1.5	PERIOD	ALL	78888
564338.33	4191754.42	0.00295	56.5	355	1.5	PERIOD	ALL	78888
564380.93	4191746.75	0.00370	57.92	355	1.5	PERIOD	ALL	78888
564430.40	4191768.75	0.00559	59.57	355	1.5	PERIOD	ALL	78888
564449.03	4191791.51	0.00800	60.16	355	1.5	PERIOD	ALL	78888
564470.75	4191822.52	0.01159	60.91	355	1.5	PERIOD	ALL	78888
564480.14	4191862.17	0.01505	61.27	355	1.5	PERIOD	ALL	78888
564343.10	4191731.27	0.00249	56.66	355	1.5	PERIOD	ALL	78888
564385.35	4191723.37	0.00321	57.63	355	1.5	PERIOD	ALL	78888
564418.71	4191745.29	0.00431	59.05	355	1.5	PERIOD	ALL	78888
564452.06	4191767.21	0.00551	60.01	355	1.5	PERIOD	ALL	78888
564490.01	4191808.55	0.00905	61.55	355	1.5	PERIOD	ALL	78888
564499.21	4191847.39	0.01156	61.86	355	1.5	PERIOD	ALL	78888
564508.42	4191886.23	0.01291	63.16	355	1.5	PERIOD	ALL	78888

564347.87	4191708.12	0.00215	56.81	355	1.5	PERIOD	ALL	78888
564386.85	4191709.82	0.00307	57.23	355	1.5	PERIOD	ALL	78888
564422.69	4191721.63	0.00348	58.66	355	1.5	PERIOD	ALL	78888
564455.52	4191743.21	0.00401	59.54	355	1.5	PERIOD	ALL	78888
564488.36	4191764.79	0.00540	60.5	355	1.5	PERIOD	ALL	78888
564509.30	4191794.69	0.00727	61.95	355	1.5	PERIOD	ALL	78888
564518.36	4191832.92	0.00915	62.61	355	1.5	PERIOD	ALL	78888
564527.42	4191871.16	0.01011	63.7	355	1.5	PERIOD	ALL	78888
564352.64	4191684.97	0.00187	56.28	355	1.5	PERIOD	ALL	78888
564426.85	4191698.08	0.00293	58.45	355	1.5	PERIOD	ALL	78888
564459.28	4191719.39	0.00306	59.53	355	1.5	PERIOD	ALL	78888
564491.71	4191740.70	0.00395	60.61	355	1.5	PERIOD	ALL	78888
564528.61	4191780.90	0.00598	61.92	355	1.5	PERIOD	ALL	78888
564537.55	4191818.66	0.00743	63.02	355	1.5	PERIOD	ALL	78888
564546.50	4191856.42	0.00811	64.44	355	1.5	PERIOD	ALL	78888
564555.44	4191894.18	0.00869	65.47	355	1.5	PERIOD	ALL	78888
564357.41	4191661.82	0.00170	56.13	355	1.5	PERIOD	ALL	78888
564431.13	4191674.61	0.00254	58.55	355	1.5	PERIOD	ALL	78888
564463.24	4191695.71	0.00246	59.43	355	1.5	PERIOD	ALL	78888
564495.34	4191716.81	0.00299	60.25	355	1.5	PERIOD	ALL	78888
564527.44	4191737.91	0.00387	61.04	355	1.5	PERIOD	ALL	78888
564547.92	4191767.15	0.00498	62.5	355	1.5	PERIOD	ALL	78888
564556.78	4191804.53	0.00612	63.83	355	1.5	PERIOD	ALL	78888
564565.63	4191841.91	0.00667	65.11	355	1.5	PERIOD	ALL	78888
564574.49	4191879.29	0.00708	66.22	355	1.5	PERIOD	ALL	78888
564362.17	4191638.67	0.00165	56.29	355	1.5	PERIOD	ALL	78888
564411.32	4191602.28	0.00250	57	355	1.5	PERIOD	ALL	78888
564446.49	4191625.39	0.00185	58.1	355	1.5	PERIOD	ALL	78888
564481.67	4191648.51	0.00171	59.27	355	1.5	PERIOD	ALL	78888
564516.84	4191671.63	0.00193	60.45	355	1.5	PERIOD	ALL	78888
564552.01	4191694.75	0.00246	61.62	355	1.5	PERIOD	ALL	78888
564592.03	4191738.34	0.00353	63.06	355	1.5	PERIOD	ALL	78888
564601.73	4191779.29	0.00429	64.98	355	1.5	PERIOD	ALL	78888
564611.43	4191820.25	0.00461	67	355	1.5	PERIOD	ALL	78888
564621.14	4191861.20	0.00484	67.92	355	1.5	PERIOD	ALL	78888
564630.84	4191902.16	0.00516	67.85	355	1.5	PERIOD	ALL	78888
564421.91	4191549.93	0.00201	57.28	355	1.5	PERIOD	ALL	78888
564456.73	4191572.82	0.00145	58.44	355	1.5	PERIOD	ALL	78888
564491.56	4191595.71	0.00127	59.6	355	1.5	PERIOD	ALL	78888
564526.39	4191618.60	0.00130	60.06	355	1.5	PERIOD	ALL	78888
564561.21	4191641.49	0.00152	60.99	355	1.5	PERIOD	ALL	78888
564596.04	4191664.38	0.00190	61.72	355	1.5	PERIOD	ALL	78888
564635.67	4191707.54	0.00258	64.84	355	1.5	PERIOD	ALL	78888
564645.27	4191748.10	0.00311	66.12	355	1.5	PERIOD	ALL	78888
564654.88	4191788.65	0.00338	66.95	355	1.5	PERIOD	ALL	78888
564664.49	4191829.20	0.00349	68.09	355	1.5	PERIOD	ALL	78888
564674.10	4191869.75	0.00365	69.31	355	1.5	PERIOD	ALL	78888
564683.70	4191910.31	0.00377	70.8	355	1.5	PERIOD	ALL	78888
564432.54	4191497.61	0.00169	57.64	355	1.5	PERIOD	ALL	78888
564467.11	4191520.33	0.00119	58.79	355	1.5	PERIOD	ALL	78888
564501.69	4191543.05	0.00101	59.94	355	1.5	PERIOD	ALL	78888
564536.26	4191565.78	0.00096	61	355	1.5	PERIOD	ALL	78888
564570.83	4191588.50	0.00104	61.23	355	1.5	PERIOD	ALL	78888
564605.40	4191611.22	0.00123	61.9	355	1.5	PERIOD	ALL	78888
564639.98	4191633.95	0.00148	64.1	355	1.5	PERIOD	ALL	78888
564679.32	4191676.80	0.00194	67.73	355	1.5	PERIOD	ALL	78888
564688.85	4191717.06	0.00234	67.71	355	1.5	PERIOD	ALL	78888
564698.39	4191757.32	0.00258	66.8	355	1.5	PERIOD	ALL	78888
564707.93	4191797.57	0.00269	66.05	355	1.5	PERIOD	ALL	78888
564717.47	4191837.83	0.00276	67.38	355	1.5	PERIOD	ALL	78888
564727.00	4191878.09	0.00288	69.45	355	1.5	PERIOD	ALL	78888

564736.54	4191918.35	0.00290	71.85	355	1.5	PERIOD	ALL	78888
564443.20	4191445.31	0.00144	56.99	355	1.5	PERIOD	ALL	78888
564477.58	4191467.90	0.00102	58.19	355	1.5	PERIOD	ALL	78888
564511.96	4191490.50	0.00083	59.86	355	1.5	PERIOD	ALL	78888
564546.34	4191513.09	0.00077	60.43	355	1.5	PERIOD	ALL	78888
564580.72	4191535.69	0.00078	61.58	355	1.5	PERIOD	ALL	78888
564615.10	4191558.29	0.00085	62.72	355	1.5	PERIOD	ALL	78888
564649.48	4191580.88	0.00100	63.87	355	1.5	PERIOD	ALL	78888
564683.85	4191603.48	0.00119	66.01	355	1.5	PERIOD	ALL	78888
564722.98	4191646.09	0.00153	68.31	355	1.5	PERIOD	ALL	78888
564732.46	4191686.12	0.00182	68.63	355	1.5	PERIOD	ALL	78888
564741.94	4191726.16	0.00201	68.32	355	1.5	PERIOD	ALL	78888
564751.43	4191766.19	0.00209	68	355	1.5	PERIOD	ALL	78888
564760.91	4191806.22	0.00215	67.19	355	1.5	PERIOD	ALL	78888
564770.39	4191846.25	0.00222	68.56	355	1.5	PERIOD	ALL	78888
564779.88	4191886.28	0.00229	70.99	355	1.5	PERIOD	ALL	78888
564789.36	4191926.32	0.00230	72.51	355	1.5	PERIOD	ALL	78888
564453.89	4191393.02	0.00097	56.71	355	1.5	PERIOD	ALL	78888
564488.11	4191415.51	0.00079	58.13	355	1.5	PERIOD	ALL	78888
564522.34	4191438.01	0.00068	59.63	355	1.5	PERIOD	ALL	78888
564556.56	4191460.51	0.00063	60.77	355	1.5	PERIOD	ALL	78888
564590.79	4191483.00	0.00061	61.91	355	1.5	PERIOD	ALL	78888
564625.01	4191505.50	0.00064	63.05	355	1.5	PERIOD	ALL	78888
564659.24	4191527.99	0.00071	64.19	355	1.5	PERIOD	ALL	78888
564693.47	4191550.49	0.00083	65.6	355	1.5	PERIOD	ALL	78888
564727.69	4191572.99	0.00098	67.48	355	1.5	PERIOD	ALL	78888
564766.64	4191615.41	0.00124	68.77	355	1.5	PERIOD	ALL	78888
564776.08	4191655.26	0.00146	69.36	355	1.5	PERIOD	ALL	78888
564785.52	4191695.12	0.00160	70	355	1.5	PERIOD	ALL	78888
564794.96	4191734.97	0.00168	69.05	355	1.5	PERIOD	ALL	78888
564804.41	4191774.82	0.00172	68.04	355	1.5	PERIOD	ALL	78888
564813.85	4191814.68	0.00174	69.91	355	1.5	PERIOD	ALL	78888
564823.29	4191854.53	0.00179	72.26	355	1.5	PERIOD	ALL	78888
564832.73	4191894.39	0.00186	72.96	355	1.5	PERIOD	ALL	78888
564842.17	4191934.24	0.00184	74.36	355	1.5	PERIOD	ALL	78888
564464.58	4191340.74	0.00039	55.71	355	1.5	PERIOD	ALL	78888
564498.68	4191363.16	0.00047	57.4	355	1.5	PERIOD	ALL	78888
564532.79	4191385.57	0.00049	59.28	355	1.5	PERIOD	ALL	78888
564566.89	4191407.98	0.00048	61.12	355	1.5	PERIOD	ALL	78888
564600.99	4191430.40	0.00049	62.2	355	1.5	PERIOD	ALL	78888
564635.09	4191452.81	0.00050	63.39	355	1.5	PERIOD	ALL	78888
564669.19	4191475.23	0.00053	64.53	355	1.5	PERIOD	ALL	78888
564703.30	4191497.64	0.00060	65.66	355	1.5	PERIOD	ALL	78888
564737.40	4191520.06	0.00070	67.6	355	1.5	PERIOD	ALL	78888
564771.50	4191542.47	0.00081	68.94	355	1.5	PERIOD	ALL	78888
564810.31	4191584.74	0.00101	71.24	355	1.5	PERIOD	ALL	78888
564819.71	4191624.45	0.00118	71.27	355	1.5	PERIOD	ALL	78888
564829.12	4191664.16	0.00130	70.86	355	1.5	PERIOD	ALL	78888
564838.53	4191703.87	0.00137	71.01	355	1.5	PERIOD	ALL	78888
564847.94	4191743.58	0.00139	70.33	355	1.5	PERIOD	ALL	78888
564857.34	4191783.29	0.00141	71.16	355	1.5	PERIOD	ALL	78888
564866.75	4191823.00	0.00143	73.79	355	1.5	PERIOD	ALL	78888
564876.16	4191862.71	0.00149	74.42	355	1.5	PERIOD	ALL	78888
564885.57	4191902.42	0.00154	74.2	355	1.5	PERIOD	ALL	78888
564894.97	4191942.13	0.00151	75.77	355	1.5	PERIOD	ALL	78888
564426.73	4191325.25	0.00029	55	355	1.5	PERIOD	ALL	78888
564269.63	4191886.77	0.02914	58.01	355	1.5	PERIOD	ALL	78888
564265.35	4191908.62	0.03586	58.74	355	1.5	PERIOD	ALL	78888
564257.14	4191929.48	0.03181	58.88	355	1.5	PERIOD	ALL	78888
564271.31	4191942.89	0.04496	59.23	355	1.5	PERIOD	ALL	78888
564280.55	4191846.24	0.01142	57.23	355	1.5	PERIOD	ALL	78888

564238.20	4191902.62	0.01781	57.7	355	1.5	PERIOD	ALL	78888
564233.92	4191925.06	0.01726	58.3	355	1.5	PERIOD	ALL	78888
564248.09	4191938.46	0.02471	58.86	355	1.5	PERIOD	ALL	78888
564267.40	4191826.60	0.00734	56.14	355	1.5	PERIOD	ALL	78888
564215.97	4191882.10	0.01130	56.92	355	1.5	PERIOD	ALL	78888
564210.71	4191920.63	0.01074	58.14	355	1.5	PERIOD	ALL	78888
564224.88	4191934.03	0.01415	58.59	355	1.5	PERIOD	ALL	78888
564226.28	4191825.67	0.00706	55.98	355	1.5	PERIOD	ALL	78888
564254.26	4191806.95	0.00520	55.8	355	1.5	PERIOD	ALL	78888
564290.08	4191799.94	0.00435	56.1	355	1.5	PERIOD	ALL	78888
564192.75	4191877.67	0.00832	56.46	355	1.5	PERIOD	ALL	78888
564187.49	4191916.20	0.00739	57.46	355	1.5	PERIOD	ALL	78888
564180.07	4191931.57	0.00657	57.73	355	1.5	PERIOD	ALL	78888
564198.02	4191828.85	0.00654	55.83	355	1.5	PERIOD	ALL	78888
564267.98	4191782.05	0.00342	55.59	355	1.5	PERIOD	ALL	78888
564168.55	4191889.33	0.00604	56.1	355	1.5	PERIOD	ALL	78888
564164.27	4191911.77	0.00550	56.85	355	1.5	PERIOD	ALL	78888
564159.99	4191934.21	0.00508	57.59	355	1.5	PERIOD	ALL	78888
564185.89	4191807.69	0.00469	55.16	355	1.5	PERIOD	ALL	78888
564231.56	4191766.96	0.00297	54.94	355	1.5	PERIOD	ALL	78888
564274.54	4191758.55	0.00252	55.27	355	1.5	PERIOD	ALL	78888
564145.33	4191884.90	0.00484	55.95	355	1.5	PERIOD	ALL	78888
564141.05	4191907.34	0.00433	56.64	355	1.5	PERIOD	ALL	78888
564136.77	4191929.78	0.00398	57.22	355	1.5	PERIOD	ALL	78888
564161.66	4191804.78	0.00410	54.72	355	1.5	PERIOD	ALL	78888
564185.17	4191769.27	0.00301	54.1	355	1.5	PERIOD	ALL	78888
564217.82	4191747.43	0.00238	54.18	355	1.5	PERIOD	ALL	78888
564259.61	4191739.25	0.00206	54.88	355	1.5	PERIOD	ALL	78888
564301.40	4191731.08	0.00196	55.27	355	1.5	PERIOD	ALL	78888
564122.12	4191880.47	0.00403	55.8	355	1.5	PERIOD	ALL	78888
564117.84	4191902.91	0.00354	56.08	355	1.5	PERIOD	ALL	78888
564113.56	4191925.35	0.00323	56.3	355	1.5	PERIOD	ALL	78888
564137.72	4191801.44	0.00360	54.14	355	1.5	PERIOD	ALL	78888
564160.75	4191766.65	0.00278	53.59	355	1.5	PERIOD	ALL	78888
564204.25	4191727.87	0.00196	54	355	1.5	PERIOD	ALL	78888
564245.19	4191719.86	0.00172	54.18	355	1.5	PERIOD	ALL	78888
564286.13	4191711.85	0.00161	54.8	355	1.5	PERIOD	ALL	78888
564098.90	4191876.04	0.00347	55.34	355	1.5	PERIOD	ALL	78888
564094.62	4191898.48	0.00299	55.63	355	1.5	PERIOD	ALL	78888
564090.34	4191920.92	0.00271	56.15	355	1.5	PERIOD	ALL	78888
564113.97	4191797.82	0.00319	54	355	1.5	PERIOD	ALL	78888
564136.63	4191763.58	0.00252	53	355	1.5	PERIOD	ALL	78888
564159.30	4191729.35	0.00197	53.4	355	1.5	PERIOD	ALL	78888
564190.79	4191708.29	0.00164	53.61	355	1.5	PERIOD	ALL	78888
564231.09	4191700.40	0.00147	53.98	355	1.5	PERIOD	ALL	78888
564271.39	4191692.51	0.00135	54.27	355	1.5	PERIOD	ALL	78888
564311.68	4191684.63	0.00142	55.61	355	1.5	PERIOD	ALL	78888
564075.68	4191871.62	0.00305	54.87	355	1.5	PERIOD	ALL	78888
564071.40	4191894.05	0.00259	55.15	355	1.5	PERIOD	ALL	78888
564067.12	4191916.49	0.00232	55.46	355	1.5	PERIOD	ALL	78888
564081.93	4191806.71	0.00325	53.34	355	1.5	PERIOD	ALL	78888
564107.12	4191768.67	0.00240	53.06	355	1.5	PERIOD	ALL	78888
564132.31	4191730.62	0.00191	52.93	355	1.5	PERIOD	ALL	78888
564144.90	4191711.60	0.00167	53.01	355	1.5	PERIOD	ALL	78888
564179.88	4191688.20	0.00138	53.08	355	1.5	PERIOD	ALL	78888
564202.27	4191683.82	0.00131	53.24	355	1.5	PERIOD	ALL	78888
564247.05	4191675.06	0.00118	54	355	1.5	PERIOD	ALL	78888
564291.82	4191666.30	0.00117	54.95	355	1.5	PERIOD	ALL	78888
564314.21	4191661.92	0.00124	55.36	355	1.5	PERIOD	ALL	78888
564052.46	4191867.19	0.00274	54.35	355	1.5	PERIOD	ALL	78888
564048.18	4191889.62	0.00228	54.84	355	1.5	PERIOD	ALL	78888

564043.90	4191912.06	0.00202	54.95	355	1.5	PERIOD	ALL	78888
564070.47	4191784.53	0.00244	52.83	355	1.5	PERIOD	ALL	78888
564095.10	4191747.33	0.00196	52.61	355	1.5	PERIOD	ALL	78888
564119.73	4191710.13	0.00159	52.31	355	1.5	PERIOD	ALL	78888
564166.24	4191668.65	0.00119	52.56	355	1.5	PERIOD	ALL	78888
564210.03	4191660.09	0.00108	53.22	355	1.5	PERIOD	ALL	78888
564253.81	4191651.52	0.00101	54	355	1.5	PERIOD	ALL	78888
564297.59	4191642.95	0.00104	55	355	1.5	PERIOD	ALL	78888
564029.25	4191862.76	0.00249	54.04	355	1.5	PERIOD	ALL	78888
564024.97	4191885.19	0.00204	54.05	355	1.5	PERIOD	ALL	78888
564020.69	4191907.63	0.00179	54.64	355	1.5	PERIOD	ALL	78888
564017.56	4191775.31	0.00195	51.86	355	1.5	PERIOD	ALL	78888
564041.85	4191738.64	0.00157	51.64	355	1.5	PERIOD	ALL	78888
564066.13	4191701.96	0.00133	50.91	355	1.5	PERIOD	ALL	78888
564090.42	4191665.28	0.00111	51.15	355	1.5	PERIOD	ALL	78888
564136.28	4191624.38	0.00087	51.76	355	1.5	PERIOD	ALL	78888
564179.45	4191615.94	0.00081	52.2	355	1.5	PERIOD	ALL	78888
564222.62	4191607.49	0.00076	53	355	1.5	PERIOD	ALL	78888
564265.79	4191599.04	0.00075	54.08	355	1.5	PERIOD	ALL	78888
564308.96	4191590.60	0.00084	55	355	1.5	PERIOD	ALL	78888
563976.86	4191852.76	0.00214	52.39	355	1.5	PERIOD	ALL	78888
563972.58	4191875.20	0.00165	52.93	355	1.5	PERIOD	ALL	78888
563968.30	4191897.64	0.00142	53.16	355	1.5	PERIOD	ALL	78888
563964.82	4191765.86	0.00160	50.05	355	1.5	PERIOD	ALL	78888
563988.86	4191729.54	0.00126	49.97	355	1.5	PERIOD	ALL	78888
564012.91	4191693.23	0.00110	49.85	355	1.5	PERIOD	ALL	78888
564036.95	4191656.91	0.00096	49.64	355	1.5	PERIOD	ALL	78888
564061.00	4191620.59	0.00082	50.04	355	1.5	PERIOD	ALL	78888
564106.42	4191580.10	0.00066	50.61	355	1.5	PERIOD	ALL	78888
564149.16	4191571.73	0.00062	51.19	355	1.5	PERIOD	ALL	78888
564191.91	4191563.37	0.00059	52.14	355	1.5	PERIOD	ALL	78888
564234.65	4191555.00	0.00057	53.04	355	1.5	PERIOD	ALL	78888
564277.40	4191546.64	0.00061	53.83	355	1.5	PERIOD	ALL	78888
564320.14	4191538.28	0.00073	54.89	355	1.5	PERIOD	ALL	78888
563924.47	4191842.77	0.00186	51.25	355	1.5	PERIOD	ALL	78888
563920.19	4191865.21	0.00138	51.69	355	1.5	PERIOD	ALL	78888
563915.91	4191887.64	0.00116	52.02	355	1.5	PERIOD	ALL	78888
563912.17	4191756.26	0.00129	49.19	355	1.5	PERIOD	ALL	78888
563936.04	4191720.21	0.00100	49.04	355	1.5	PERIOD	ALL	78888
563959.91	4191684.16	0.00089	48.91	355	1.5	PERIOD	ALL	78888
563983.78	4191648.11	0.00081	48.7	355	1.5	PERIOD	ALL	78888
564007.65	4191612.05	0.00072	48.47	355	1.5	PERIOD	ALL	78888
564031.52	4191576.00	0.00063	49	355	1.5	PERIOD	ALL	78888
564076.61	4191535.80	0.00052	49.77	355	1.5	PERIOD	ALL	78888
564119.04	4191527.49	0.00049	50.19	355	1.5	PERIOD	ALL	78888
564161.48	4191519.19	0.00047	50.9	355	1.5	PERIOD	ALL	78888
564203.91	4191510.89	0.00045	52.01	355	1.5	PERIOD	ALL	78888
564246.34	4191502.58	0.00046	52.55	355	1.5	PERIOD	ALL	78888
564288.78	4191494.28	0.00051	53.85	355	1.5	PERIOD	ALL	78888
564331.21	4191485.98	0.00066	54.74	355	1.5	PERIOD	ALL	78888
563872.08	4191832.78	0.00158	49.96	355	1.5	PERIOD	ALL	78888
563867.80	4191855.21	0.00114	49.99	355	1.5	PERIOD	ALL	78888
563863.52	4191877.65	0.00095	50.47	355	1.5	PERIOD	ALL	78888
563859.58	4191746.57	0.00093	48.18	355	1.5	PERIOD	ALL	78888
563883.31	4191710.72	0.00078	48.05	355	1.5	PERIOD	ALL	78888
563907.05	4191674.87	0.00072	47.96	355	1.5	PERIOD	ALL	78888
563930.79	4191639.02	0.00068	47.69	355	1.5	PERIOD	ALL	78888
563954.53	4191603.17	0.00063	47.7	355	1.5	PERIOD	ALL	78888
563978.26	4191567.32	0.00057	47.68	355	1.5	PERIOD	ALL	78888
564002.00	4191531.47	0.00050	48.05	355	1.5	PERIOD	ALL	78888
564046.83	4191491.49	0.00042	48.65	355	1.5	PERIOD	ALL	78888

564089.03	4191483.24	0.00040	49.1	355	1.5	PERIOD	ALL	78888
564131.23	4191474.98	0.00038	49.71	355	1.5	PERIOD	ALL	78888
564173.42	4191466.72	0.00037	51	355	1.5	PERIOD	ALL	78888
564215.62	4191458.46	0.00036	51.41	355	1.5	PERIOD	ALL	78888
564257.82	4191450.21	0.00038	52.81	355	1.5	PERIOD	ALL	78888
564300.01	4191441.95	0.00042	53.36	355	1.5	PERIOD	ALL	78888
564342.21	4191433.69	0.00057	54.63	355	1.5	PERIOD	ALL	78888
563819.69	4191822.78	0.00116	48.9	355	1.5	PERIOD	ALL	78888
563815.41	4191845.22	0.00087	49.04	355	1.5	PERIOD	ALL	78888
563811.13	4191867.66	0.00075	49.35	355	1.5	PERIOD	ALL	78888
563796.53	4191752.68	0.00069	47.24	355	1.5	PERIOD	ALL	78888
563809.00	4191733.84	0.00065	46.99	355	1.5	PERIOD	ALL	78888
563821.47	4191715.01	0.00063	47.08	355	1.5	PERIOD	ALL	78888
563833.94	4191696.17	0.00061	46.89	355	1.5	PERIOD	ALL	78888
563846.42	4191677.33	0.00060	47	355	1.5	PERIOD	ALL	78888
563858.89	4191658.50	0.00059	46.71	355	1.5	PERIOD	ALL	78888
563871.36	4191639.66	0.00058	46.72	355	1.5	PERIOD	ALL	78888
563883.83	4191620.82	0.00057	46.44	355	1.5	PERIOD	ALL	78888
563896.30	4191601.99	0.00056	46.76	355	1.5	PERIOD	ALL	78888
563908.78	4191583.15	0.00054	46.91	355	1.5	PERIOD	ALL	78888
563921.25	4191564.31	0.00052	46.7	355	1.5	PERIOD	ALL	78888
563933.72	4191545.48	0.00049	47	355	1.5	PERIOD	ALL	78888
563946.19	4191526.64	0.00047	47	355	1.5	PERIOD	ALL	78888
563958.67	4191507.80	0.00044	46.9	355	1.5	PERIOD	ALL	78888
563971.14	4191488.96	0.00041	47	355	1.5	PERIOD	ALL	78888
563983.61	4191470.13	0.00039	47	355	1.5	PERIOD	ALL	78888
564018.25	4191446.95	0.00035	47.83	355	1.5	PERIOD	ALL	78888
564040.42	4191442.61	0.00035	48	355	1.5	PERIOD	ALL	78888
564062.60	4191438.28	0.00034	48.31	355	1.5	PERIOD	ALL	78888
564084.77	4191433.94	0.00033	48.92	355	1.5	PERIOD	ALL	78888
564106.94	4191429.60	0.00032	48.95	355	1.5	PERIOD	ALL	78888
564129.11	4191425.26	0.00031	49.33	355	1.5	PERIOD	ALL	78888
564151.28	4191420.92	0.00031	49.62	355	1.5	PERIOD	ALL	78888
564173.45	4191416.58	0.00030	50	355	1.5	PERIOD	ALL	78888
564195.62	4191412.25	0.00030	50.14	355	1.5	PERIOD	ALL	78888
564217.79	4191407.91	0.00030	50.53	355	1.5	PERIOD	ALL	78888
564239.96	4191403.57	0.00030	51.2	355	1.5	PERIOD	ALL	78888
564262.14	4191399.23	0.00031	51.73	355	1.5	PERIOD	ALL	78888
564284.31	4191394.89	0.00032	52.31	355	1.5	PERIOD	ALL	78888
564306.48	4191390.55	0.00034	52.91	355	1.5	PERIOD	ALL	78888
564328.65	4191386.22	0.00038	53.5	355	1.5	PERIOD	ALL	78888
564350.82	4191381.88	0.00043	54.1	355	1.5	PERIOD	ALL	78888
564372.99	4191377.54	0.00053	54.67	355	1.5	PERIOD	ALL	78888
563767.30	4191812.79	0.00062	47.76	355	1.5	PERIOD	ALL	78888
563763.02	4191835.23	0.00060	48.09	355	1.5	PERIOD	ALL	78888
563758.74	4191857.66	0.00057	48.21	355	1.5	PERIOD	ALL	78888
563756.28	4191724.35	0.00050	45.69	355	1.5	PERIOD	ALL	78888
563781.00	4191687.01	0.00050	45.92	355	1.5	PERIOD	ALL	78888
563805.73	4191649.67	0.00050	45.77	355	1.5	PERIOD	ALL	78888
563830.45	4191612.33	0.00049	45.57	355	1.5	PERIOD	ALL	78888
563855.17	4191574.99	0.00047	45.77	355	1.5	PERIOD	ALL	78888
563879.90	4191537.65	0.00044	46	355	1.5	PERIOD	ALL	78888
563904.62	4191500.31	0.00041	46.01	355	1.5	PERIOD	ALL	78888
563929.34	4191462.97	0.00037	45.98	355	1.5	PERIOD	ALL	78888
563954.07	4191425.63	0.00033	46	355	1.5	PERIOD	ALL	78888
563988.40	4191402.66	0.00030	46.73	355	1.5	PERIOD	ALL	78888
564032.35	4191394.06	0.00029	47.18	355	1.5	PERIOD	ALL	78888
564076.30	4191385.46	0.00027	47.83	355	1.5	PERIOD	ALL	78888
564120.25	4191376.86	0.00026	48.24	355	1.5	PERIOD	ALL	78888
564164.20	4191368.26	0.00025	49	355	1.5	PERIOD	ALL	78888
564208.15	4191359.66	0.00025	49.6	355	1.5	PERIOD	ALL	78888

564252.10	4191351.06	0.00025	50.68	355	1.5	PERIOD	ALL	78888
564296.05	4191342.46	0.00026	52.08	355	1.5	PERIOD	ALL	78888
564340.00	4191333.86	0.00028	52.81	355	1.5	PERIOD	ALL	78888
564383.95	4191325.26	0.00028	54.02	355	1.5	PERIOD	ALL	78888
563714.91	4191802.80	0.00045	46.15	355	1.5	PERIOD	ALL	78888
563710.63	4191825.23	0.00044	46.55	355	1.5	PERIOD	ALL	78888
563706.35	4191847.67	0.00044	46.83	355	1.5	PERIOD	ALL	78888
564271.93	4191979.62	0.02994	60.11	355	1.5	PERIOD	ALL	78888
564291.82	4191991.48	0.02919	60.5	355	1.5	PERIOD	ALL	78888
564316.59	4191987.58	0.03882	60.86	355	1.5	PERIOD	ALL	78888
564252.46	4191993.02	0.01781	60.55	355	1.5	PERIOD	ALL	78888
564290.12	4192006.87	0.02016	61.02	355	1.5	PERIOD	ALL	78888
564248.32	4192016.29	0.01211	61.16	355	1.5	PERIOD	ALL	78888
564213.93	4191978.73	0.01041	59.43	355	1.5	PERIOD	ALL	78888
564285.97	4192030.14	0.01233	61.79	355	1.5	PERIOD	ALL	78888
564308.30	4192034.12	0.01310	61.92	355	1.5	PERIOD	ALL	78888
564244.17	4192039.56	0.00840	61.46	355	1.5	PERIOD	ALL	78888
564213.53	4192019.83	0.00813	60.63	355	1.5	PERIOD	ALL	78888
564194.46	4191992.13	0.00735	59.52	355	1.5	PERIOD	ALL	78888
564281.82	4192053.41	0.00827	62.57	355	1.5	PERIOD	ALL	78888
564240.02	4192062.83	0.00601	62.1	355	1.5	PERIOD	ALL	78888
564209.38	4192043.10	0.00638	61.22	355	1.5	PERIOD	ALL	78888
564174.99	4192005.54	0.00544	59.97	355	1.5	PERIOD	ALL	78888
564167.49	4191969.87	0.00533	58.63	355	1.5	PERIOD	ALL	78888
564277.67	4192076.68	0.00597	63.16	355	1.5	PERIOD	ALL	78888
564300.75	4192085.17	0.00604	63.63	355	1.5	PERIOD	ALL	78888
564232.81	4192084.13	0.00455	62.58	355	1.5	PERIOD	ALL	78888
564177.65	4192048.61	0.00469	60.55	355	1.5	PERIOD	ALL	78888
564150.27	4191993.97	0.00421	58.81	355	1.5	PERIOD	ALL	78888
564278.79	4192089.42	0.00515	63.39	355	1.5	PERIOD	ALL	78888
564229.17	4192107.73	0.00353	62.91	355	1.5	PERIOD	ALL	78888
564193.42	4192084.71	0.00397	61.87	355	1.5	PERIOD	ALL	78888
564157.68	4192061.69	0.00371	60.4	355	1.5	PERIOD	ALL	78888
564135.43	4192029.37	0.00339	59.5	355	1.5	PERIOD	ALL	78888
564126.68	4191987.76	0.00331	58.17	355	1.5	PERIOD	ALL	78888
564269.38	4192123.22	0.00356	64.09	355	1.5	PERIOD	ALL	78888
564225.39	4192131.23	0.00283	63.16	355	1.5	PERIOD	ALL	78888
564190.37	4192108.68	0.00319	62.23	355	1.5	PERIOD	ALL	78888
564155.35	4192086.13	0.00320	61.06	355	1.5	PERIOD	ALL	78888
564116.05	4192043.20	0.00279	59.29	355	1.5	PERIOD	ALL	78888
564107.48	4192002.44	0.00273	57.97	355	1.5	PERIOD	ALL	78888
564098.91	4191961.68	0.00267	57.26	355	1.5	PERIOD	ALL	78888
564265.23	4192146.49	0.00290	64.69	355	1.5	PERIOD	ALL	78888
564287.56	4192150.47	0.00321	64.96	355	1.5	PERIOD	ALL	78888
564221.52	4192154.68	0.00228	63.94	355	1.5	PERIOD	ALL	78888
564187.04	4192132.48	0.00259	62.66	355	1.5	PERIOD	ALL	78888
564152.57	4192110.28	0.00272	61.63	355	1.5	PERIOD	ALL	78888
564118.10	4192088.08	0.00248	60.72	355	1.5	PERIOD	ALL	78888
564096.65	4192056.92	0.00233	59.3	355	1.5	PERIOD	ALL	78888
564088.21	4192016.80	0.00229	58.35	355	1.5	PERIOD	ALL	78888
564079.77	4191976.67	0.00224	57.01	355	1.5	PERIOD	ALL	78888
564261.08	4192169.76	0.00241	65.37	355	1.5	PERIOD	ALL	78888
564217.58	4192178.08	0.00191	64.34	355	1.5	PERIOD	ALL	78888
564183.54	4192156.16	0.00213	63.33	355	1.5	PERIOD	ALL	78888
564149.49	4192134.24	0.00230	62.26	355	1.5	PERIOD	ALL	78888
564115.44	4192112.31	0.00221	61.53	355	1.5	PERIOD	ALL	78888
564077.23	4192070.57	0.00198	59.14	355	1.5	PERIOD	ALL	78888
564068.90	4192030.95	0.00195	58.33	355	1.5	PERIOD	ALL	78888
564060.57	4191991.32	0.00191	57.12	355	1.5	PERIOD	ALL	78888
564046.48	4191947.21	0.00187	55.8	355	1.5	PERIOD	ALL	78888
564256.94	4192193.03	0.00206	66	355	1.5	PERIOD	ALL	78888

564279.27	4192197.01	0.00234	66	355	1.5	PERIOD	ALL	78888
564211.73	4192200.26	0.00161	66	355	1.5	PERIOD	ALL	78888
564155.56	4192164.08	0.00192	63.1	355	1.5	PERIOD	ALL	78888
564118.10	4192139.97	0.00197	62.07	355	1.5	PERIOD	ALL	78888
564080.65	4192115.85	0.00181	60.59	355	1.5	PERIOD	ALL	78888
564057.35	4192082.00	0.00169	59.52	355	1.5	PERIOD	ALL	78888
564043.60	4192016.61	0.00165	57.01	355	1.5	PERIOD	ALL	78888
564048.18	4191967.26	0.00182	56.52	355	1.5	PERIOD	ALL	78888
564252.79	4192216.30	0.00180	66	355	1.5	PERIOD	ALL	78888
564202.64	4192252.93	0.00119	67.18	355	1.5	PERIOD	ALL	78888
564165.71	4192229.15	0.00127	64.48	355	1.5	PERIOD	ALL	78888
564128.78	4192205.37	0.00142	63	355	1.5	PERIOD	ALL	78888
564091.85	4192181.59	0.00146	62.24	355	1.5	PERIOD	ALL	78888
564054.93	4192157.82	0.00139	61.09	355	1.5	PERIOD	ALL	78888
564013.48	4192112.55	0.00126	58.36	355	1.5	PERIOD	ALL	78888
564004.44	4192069.56	0.00124	57.43	355	1.5	PERIOD	ALL	78888
563995.41	4192026.58	0.00122	56.04	355	1.5	PERIOD	ALL	78888
563986.37	4191983.60	0.00123	55	355	1.5	PERIOD	ALL	78888
563977.33	4191940.62	0.00129	54.27	355	1.5	PERIOD	ALL	78888
564243.43	4192268.80	0.00135	67.92	355	1.5	PERIOD	ALL	78888
564265.76	4192272.78	0.00157	67.82	355	1.5	PERIOD	ALL	78888
564193.46	4192305.55	0.00093	67.65	355	1.5	PERIOD	ALL	78888
564156.89	4192282.01	0.00095	65.63	355	1.5	PERIOD	ALL	78888
564120.33	4192258.46	0.00104	63.63	355	1.5	PERIOD	ALL	78888
564083.76	4192234.92	0.00112	62.62	355	1.5	PERIOD	ALL	78888
564047.20	4192211.37	0.00112	61.79	355	1.5	PERIOD	ALL	78888
564010.64	4192187.83	0.00106	60.57	355	1.5	PERIOD	ALL	78888
563969.60	4192143.00	0.00098	57.76	355	1.5	PERIOD	ALL	78888
563960.65	4192100.44	0.00097	56.91	355	1.5	PERIOD	ALL	78888
563951.70	4192057.88	0.00094	55.44	355	1.5	PERIOD	ALL	78888
563942.75	4192015.32	0.00094	54.52	355	1.5	PERIOD	ALL	78888
563933.80	4191972.76	0.00097	53.88	355	1.5	PERIOD	ALL	78888
563924.86	4191930.20	0.00103	52.85	355	1.5	PERIOD	ALL	78888
564234.07	4192321.31	0.00108	68.51	355	1.5	PERIOD	ALL	78888
564256.40	4192325.29	0.00127	68.91	355	1.5	PERIOD	ALL	78888
564184.23	4192358.15	0.00076	67.35	355	1.5	PERIOD	ALL	78888
564147.93	4192334.77	0.00074	66.14	355	1.5	PERIOD	ALL	78888
564111.64	4192311.40	0.00080	64.16	355	1.5	PERIOD	ALL	78888
564075.34	4192288.02	0.00086	63.28	355	1.5	PERIOD	ALL	78888
564039.04	4192264.65	0.00090	62.31	355	1.5	PERIOD	ALL	78888
564002.74	4192241.27	0.00089	61.13	355	1.5	PERIOD	ALL	78888
563966.44	4192217.90	0.00085	59.1	355	1.5	PERIOD	ALL	78888
563925.70	4192173.40	0.00078	57.31	355	1.5	PERIOD	ALL	78888
563916.82	4192131.15	0.00077	56.07	355	1.5	PERIOD	ALL	78888
563907.93	4192088.90	0.00076	55.11	355	1.5	PERIOD	ALL	78888
563899.05	4192046.65	0.00075	54.2	355	1.5	PERIOD	ALL	78888
563890.17	4192004.40	0.00076	53.49	355	1.5	PERIOD	ALL	78888
563881.29	4191962.15	0.00079	52.26	355	1.5	PERIOD	ALL	78888
563872.40	4191919.90	0.00084	51.97	355	1.5	PERIOD	ALL	78888
564224.71	4192373.81	0.00090	68.7	355	1.5	PERIOD	ALL	78888
564247.04	4192377.79	0.00107	69.17	355	1.5	PERIOD	ALL	78888
564174.98	4192410.72	0.00063	67.05	355	1.5	PERIOD	ALL	78888
564138.88	4192387.47	0.00060	65.84	355	1.5	PERIOD	ALL	78888
564102.79	4192364.23	0.00063	64.64	355	1.5	PERIOD	ALL	78888
564066.69	4192340.99	0.00068	63.44	355	1.5	PERIOD	ALL	78888
564030.60	4192317.74	0.00072	62.23	355	1.5	PERIOD	ALL	78888
563994.50	4192294.50	0.00073	61.03	355	1.5	PERIOD	ALL	78888
563958.40	4192271.26	0.00072	59.66	355	1.5	PERIOD	ALL	78888
563922.31	4192248.01	0.00069	57.66	355	1.5	PERIOD	ALL	78888
563881.80	4192203.76	0.00064	56.27	355	1.5	PERIOD	ALL	78888
563872.96	4192161.75	0.00063	55.16	355	1.5	PERIOD	ALL	78888

563864.13	4192119.74	0.00062	54.47	355	1.5	PERIOD	ALL	78888
563855.30	4192077.72	0.00061	53.4	355	1.5	PERIOD	ALL	78888
563846.46	4192035.71	0.00061	52.1	355	1.5	PERIOD	ALL	78888
563837.63	4191993.70	0.00063	51.81	355	1.5	PERIOD	ALL	78888
563828.80	4191951.68	0.00065	50.69	355	1.5	PERIOD	ALL	78888
563819.96	4191909.67	0.00069	50.17	355	1.5	PERIOD	ALL	78888
564215.35	4192426.32	0.00075	68.39	355	1.5	PERIOD	ALL	78888
564237.68	4192430.30	0.00090	69.15	355	1.5	PERIOD	ALL	78888
564164.70	4192462.63	0.00052	66.76	355	1.5	PERIOD	ALL	78888
564145.73	4192450.42	0.00050	66.07	355	1.5	PERIOD	ALL	78888
564126.77	4192438.21	0.00050	65.44	355	1.5	PERIOD	ALL	78888
564107.80	4192425.99	0.00050	65	355	1.5	PERIOD	ALL	78888
564088.84	4192413.78	0.00051	64.65	355	1.5	PERIOD	ALL	78888
564069.87	4192401.57	0.00053	64.09	355	1.5	PERIOD	ALL	78888
564050.91	4192389.36	0.00055	63.7	355	1.5	PERIOD	ALL	78888
564012.98	4192364.93	0.00059	62.61	355	1.5	PERIOD	ALL	78888
563994.01	4192352.72	0.00060	62.01	355	1.5	PERIOD	ALL	78888
563975.04	4192340.50	0.00061	61.38	355	1.5	PERIOD	ALL	78888
563956.08	4192328.29	0.00061	60.68	355	1.5	PERIOD	ALL	78888
563937.11	4192316.08	0.00061	59.52	355	1.5	PERIOD	ALL	78888
563918.15	4192303.86	0.00060	58.44	355	1.5	PERIOD	ALL	78888
563880.22	4192279.44	0.00057	56.32	355	1.5	PERIOD	ALL	78888
563861.25	4192267.23	0.00055	55.59	355	1.5	PERIOD	ALL	78888
563837.64	4192232.94	0.00053	54.71	355	1.5	PERIOD	ALL	78888
563833.00	4192210.86	0.00053	54.29	355	1.5	PERIOD	ALL	78888
563823.72	4192166.71	0.00052	53.46	355	1.5	PERIOD	ALL	78888
563814.44	4192122.56	0.00051	52.06	355	1.5	PERIOD	ALL	78888
563805.15	4192078.41	0.00051	51.56	355	1.5	PERIOD	ALL	78888
563800.51	4192056.34	0.00051	50.95	355	1.5	PERIOD	ALL	78888
563791.23	4192012.19	0.00052	50.26	355	1.5	PERIOD	ALL	78888
563786.59	4191990.11	0.00053	50.11	355	1.5	PERIOD	ALL	78888
563777.31	4191945.96	0.00054	49.8	355	1.5	PERIOD	ALL	78888
563768.02	4191901.81	0.00056	49.25	355	1.5	PERIOD	ALL	78888
564206.00	4192478.83	0.00061	68.14	355	1.5	PERIOD	ALL	78888
564228.33	4192482.81	0.00071	69.55	355	1.5	PERIOD	ALL	78888
564155.51	4192515.25	0.00042	67.38	355	1.5	PERIOD	ALL	78888
564117.91	4192491.04	0.00041	66.14	355	1.5	PERIOD	ALL	78888
564080.32	4192466.83	0.00042	64.89	355	1.5	PERIOD	ALL	78888
564042.72	4192442.62	0.00045	63.64	355	1.5	PERIOD	ALL	78888
564005.13	4192418.41	0.00049	62.38	355	1.5	PERIOD	ALL	78888
563967.53	4192394.20	0.00051	61.13	355	1.5	PERIOD	ALL	78888
563929.94	4192369.99	0.00052	59.88	355	1.5	PERIOD	ALL	78888
563892.34	4192345.78	0.00051	57.82	355	1.5	PERIOD	ALL	78888
563854.75	4192321.57	0.00050	56.06	355	1.5	PERIOD	ALL	78888
563817.15	4192297.36	0.00047	54.12	355	1.5	PERIOD	ALL	78888
563793.76	4192263.38	0.00045	53.05	355	1.5	PERIOD	ALL	78888
563784.56	4192219.62	0.00045	52.04	355	1.5	PERIOD	ALL	78888
563775.36	4192175.86	0.00044	51.21	355	1.5	PERIOD	ALL	78888
563766.16	4192132.10	0.00043	50.42	355	1.5	PERIOD	ALL	78888
563756.96	4192088.34	0.00043	49.85	355	1.5	PERIOD	ALL	78888
563747.75	4192044.58	0.00043	49	355	1.5	PERIOD	ALL	78888
563738.55	4192000.83	0.00044	48.91	355	1.5	PERIOD	ALL	78888
563729.35	4191957.07	0.00045	48.2	355	1.5	PERIOD	ALL	78888
563720.15	4191913.31	0.00045	47.89	355	1.5	PERIOD	ALL	78888
564196.64	4192531.33	0.00047	69.27	355	1.5	PERIOD	ALL	78888
564218.97	4192535.31	0.00052	70.14	355	1.5	PERIOD	ALL	78888
564267.85	4191898.74	0.03426	58.41	355	1.5	PERIOD	ALL	78888
564251.36	4191903.25	0.02435	58.16	355	1.5	PERIOD	ALL	78888
564244.10	4191885.78	0.01818	57.35	355	1.5	PERIOD	ALL	78888
564255.28	4191886.57	0.02269	57.73	355	1.5	PERIOD	ALL	78888
564228.79	4191884.02	0.01380	56.99	355	1.5	PERIOD	ALL	78888

564183.25	4191884.02	0.00726	56.3	355	1.5	PERIOD	ALL	78888
564209.95	4191931.32	0.01057	58.5	355	1.5	PERIOD	ALL	78888
564369.91	4191927.60	0.10520	60.21	355	1.5	PERIOD	ALL	78888
564371.08	4191918.09	0.10470	60.03	355	1.5	PERIOD	ALL	78888
564371.91	4191907.25	0.09796	59.88	355	1.5	PERIOD	ALL	78888
564398.10	4191909.58	0.06259	60.38	355	1.5	PERIOD	ALL	78888
564386.76	4191909.08	0.07650	60.08	355	1.5	PERIOD	ALL	78888
564386.76	4191918.59	0.07924	60.18	355	1.5	PERIOD	ALL	78888
564394.77	4191927.93	0.06764	60.62	355	1.5	PERIOD	ALL	78888
564378.75	4191927.60	0.09011	60.32	355	1.5	PERIOD	ALL	78888
564378.42	4191939.95	0.08352	60.65	355	1.5	PERIOD	ALL	78888
564391.43	4191941.28	0.06638	60.87	355	1.5	PERIOD	ALL	78888
564410.12	4191909.75	0.05094	60.69	355	1.5	PERIOD	ALL	78888
564412.12	4191920.09	0.05052	60.96	355	1.5	PERIOD	ALL	78888
564413.62	4191937.44	0.04792	61	355	1.5	PERIOD	ALL	78888
564425.46	4191929.60	0.04115	61	355	1.5	PERIOD	ALL	78888
564429.47	4191913.75	0.03824	60.96	355	1.5	PERIOD	ALL	78888
564447.49	4191916.42	0.02991	61.14	355	1.5	PERIOD	ALL	78888
564444.65	4191932.77	0.03141	61.04	355	1.5	PERIOD	ALL	78888
564438.81	4191922.76	0.03411	61	355	1.5	PERIOD	ALL	78888
564467.84	4191918.42	0.02300	61.81	355	1.5	PERIOD	ALL	78888
564468.01	4191930.44	0.02319	61.82	355	1.5	PERIOD	ALL	78888
564371.91	4191964.30	0.06417	61.21	355	1.5	PERIOD	ALL	78888
564386.43	4191957.30	0.05910	61.36	355	1.5	PERIOD	ALL	78888
564398.44	4191968.81	0.04140	61.75	355	1.5	PERIOD	ALL	78888
564413.62	4191977.98	0.02969	62.05	355	1.5	PERIOD	ALL	78888
564428.63	4191980.15	0.02467	62.13	355	1.5	PERIOD	ALL	78888
564424.13	4191968.31	0.03092	61.73	355	1.5	PERIOD	ALL	78888
564440.81	4191981.99	0.02139	62.19	355	1.5	PERIOD	ALL	78888
564452.16	4191973.15	0.02141	62.18	355	1.5	PERIOD	ALL	78888
564450.82	4191952.29	0.02664	61.44	355	1.5	PERIOD	ALL	78888
564464.50	4191957.30	0.02179	62.07	355	1.5	PERIOD	ALL	78888
564452.99	4191964.30	0.02338	61.92	355	1.5	PERIOD	ALL	78888
564515.26	4191949.23	0.01327	63.88	355	1.5	PERIOD	ALL	78888
564520.05	4191926.22	0.01305	63.74	355	1.5	PERIOD	ALL	78888
564548.18	4191931.65	0.01002	65.24	355	1.5	PERIOD	ALL	78888
564546.90	4191956.58	0.00964	65.79	355	1.5	PERIOD	ALL	78888
564508.55	4191985.02	0.01117	64.58	355	1.5	PERIOD	ALL	78888
564537.95	4191989.18	0.00855	66.15	355	1.5	PERIOD	ALL	78888
564378.47	4192007.40	0.02232	61.87	355	1.5	PERIOD	ALL	78888
564404.04	4192014.11	0.01644	62.94	355	1.5	PERIOD	ALL	78888
564423.85	4192014.75	0.01434	63.28	355	1.5	PERIOD	ALL	78888
564454.56	4192063.95	0.00629	65.29	355	1.5	PERIOD	ALL	78888
564485.52	4192066.61	0.00532	66.41	355	1.5	PERIOD	ALL	78888
564514.27	4192073.68	0.00442	67.09	355	1.5	PERIOD	ALL	78888
564310.11	4191982.50	0.04200	60.65	355	1.5	PERIOD	ALL	78888
564201.18	4192015.37	0.00725	60.28	355	1.5	PERIOD	ALL	78888
564187.86	4192030.31	0.00574	60.38	355	1.5	PERIOD	ALL	78888
564173.47	4192022.44	0.00509	60	355	1.5	PERIOD	ALL	78888
564303.87	4192049.06	0.00998	62.42	355	1.5	PERIOD	ALL	78888
564307.13	4192020.81	0.01680	61.48	355	1.5	PERIOD	ALL	78888
564306.31	4192007.77	0.02217	61.05	355	1.5	PERIOD	ALL	78888
564301.69	4191997.44	0.02729	60.78	355	1.5	PERIOD	ALL	78888
564269.64	4191995.27	0.02155	60.63	355	1.5	PERIOD	ALL	78888
564188.14	4191971.91	0.00705	58.92	355	1.5	PERIOD	ALL	78888
564224.27	4191970.00	0.01292	59.55	355	1.5	PERIOD	ALL	78888
564216.12	4192001.25	0.00960	60.25	355	1.5	PERIOD	ALL	78888
564153.20	4191965.48	0.00451	58.21	355	1.5	PERIOD	ALL	78888
564122.84	4191954.61	0.00333	57.5	355	1.5	PERIOD	ALL	78888
564117.09	4191980.18	0.00305	58.02	355	1.5	PERIOD	ALL	78888
564083.85	4191945.67	0.00244	56.98	355	1.5	PERIOD	ALL	78888

564013.21	4191939.27	0.00156	54.92	355	1.5	PERIOD	ALL	78888
563997.87	4191938.95	0.00144	54.79	355	1.5	PERIOD	ALL	78888
564007.46	4191974.75	0.00140	55.44	355	1.5	PERIOD	ALL	78888
564042.30	4191992.33	0.00168	56.63	355	1.5	PERIOD	ALL	78888
563988.58	4191902.55	0.00154	53.84	355	1.5	PERIOD	ALL	78888
564014.53	4191894.28	0.00183	54.18	355	1.5	PERIOD	ALL	78888
563957.75	4191938.27	0.00117	53.59	355	1.5	PERIOD	ALL	78888
563944.97	4191935.64	0.00111	53.25	355	1.5	PERIOD	ALL	78888
563876.15	4191870.59	0.00106	50.56	355	1.5	PERIOD	ALL	78888
563897.96	4191930.75	0.00091	52.39	355	1.5	PERIOD	ALL	78888
564329.17	4191858.88	0.02177	58.26	355	1.5	PERIOD	ALL	78888
564324.28	4191848.82	0.01377	57.78	355	1.5	PERIOD	ALL	78888
564317.76	4191834.70	0.00883	57.28	355	1.5	PERIOD	ALL	78888
564332.70	4191834.70	0.01010	57.59	355	1.5	PERIOD	ALL	78888
564295.75	4191849.10	0.01200	57.76	355	1.5	PERIOD	ALL	78888
564293.85	4191824.91	0.00680	56.95	355	1.5	PERIOD	ALL	78888
564258.53	4191840.94	0.01022	56.48	355	1.5	PERIOD	ALL	78888
564271.30	4191814.59	0.00576	56.16	355	1.5	PERIOD	ALL	78888
564292.12	4191781.68	0.00336	55.98	355	1.5	PERIOD	ALL	78888
564318.97	4191786.48	0.00383	56.57	355	1.5	PERIOD	ALL	78888
564379.50	4191863.64	0.03799	59.21	355	1.5	PERIOD	ALL	78888
564380.04	4191829.13	0.01441	58.9	355	1.5	PERIOD	ALL	78888
564441.99	4191869.89	0.02351	60.95	355	1.5	PERIOD	ALL	78888
564429.49	4191826.96	0.01487	60.01	355	1.5	PERIOD	ALL	78888
564444.16	4191829.68	0.01461	60.13	355	1.5	PERIOD	ALL	78888
564444.16	4191802.78	0.00964	60.02	355	1.5	PERIOD	ALL	78888
564459.92	4191819.35	0.01178	60.55	355	1.5	PERIOD	ALL	78888
564258.43	4191982.64	0.02262	60.21	355	1.5	PERIOD	ALL	78888
564270.54	4192043.38	0.00898	62.23	355	1.5	PERIOD	ALL	78888
564260.81	4192040.73	0.00889	62.06	355	1.5	PERIOD	ALL	78888
564506.93	4192025.65	0.00741	65.76	355	1.5	PERIOD	ALL	78888
564521.97	4192028.30	0.00661	66.35	355	1.5	PERIOD	ALL	78888
564170.33	4192068.11	0.00393	60.95	355	1.5	PERIOD	ALL	78888
564186.13	4192072.25	0.00424	61.54	355	1.5	PERIOD	ALL	78888
564209.07	4192077.14	0.00455	62.07	355	1.5	PERIOD	ALL	78888
564220.35	4192078.64	0.00467	62.23	355	1.5	PERIOD	ALL	78888
564136.48	4192067.74	0.00307	60.04	355	1.5	PERIOD	ALL	78888
564243.67	4192085.79	0.00462	62.77	355	1.5	PERIOD	ALL	78888
564254.95	4192089.93	0.00461	62.94	355	1.5	PERIOD	ALL	78888
564266.99	4192092.56	0.00476	63.1	355	1.5	PERIOD	ALL	78888

** CONCUNIT ug/m^3

** DEPUNIT g/m^2

Permitted Sources within 1,000 Feet of the Project Boundary

FID	Facility ID	Facility Name	Address	City	State	Zip	County	Latitude	Longitude	Source Det	NAICS Nun	NAICS Sector	NAICS Subsector	NAICS Industry	Cancer Risk	Chronic Hazard Index	PM 2.5	x	y
2974	19070	Golden Bear Center	1995 University Ave	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	531120	Real Estate and Rental and Leasing	Real Estate	Lessors of Nonresidential Buildings (except Miniwarehouses)	0.75	0	0	-1.4E+07	4561348
4546	21118	City of Berkeley Fire Station #2	2029 Berkeley Way	Berkeley	CA	94705	Alameda	37.87	-122.27	Generator	922160	Public Administration	Justice, Public Order, and Safety Activities	Fire Protection	3.11	0	0	-1.4E+07	4561522
4977	17864	Peralta Community College District	2050 Center Street	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	611210	Educational Services	Educational Services	Junior Colleges	23.75	0.01	0.03	-1.4E+07	4561101
5817	200903	Center Street Parking Garage	2025 CENTER ST	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	921190	Public Administration	Executive, Legislative, and Other General Government Support	Other General Government Support	3.25	0	0	-1.4E+07	4561131
6127	201406	Residence Inn Berkeley	2129 SHATTUCK AVE	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	721110	Accommodation and Food Services	Accommodation	Hotels (except Casino Hotels) and Motels	32.06	0.01	0.04	-1.4E+07	4561190
6288	201576	Regency 2120 Berkeley Way LLC	2120 BERKELEY WAY	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	541110	Professional, Scientific, and Technical Services	Professional, Scientific, and Technical Services	Offices of Lawyers	3.97	0	0.01	-1.4E+07	4561496
7389	200623	Stonefire Apartments	1974 UNIVERSITY AVE	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	531110	Real Estate and Rental and Leasing	Real Estate	Lessors of Residential Buildings and Dwellings	9.63	0	0.01	-1.4E+07	4561278
9243	59-110	University of California Berkeley	Berkeley Campus	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Educational Services	Educational Services	Colleges, Universities, and Professional Schools	3.79	0	0.01	-1.4E+07	4561633
9267	59-118	University of California Berkeley	Berkeley Campus	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Educational Services	Educational Services	Colleges, Universities, and Professional Schools	3.97	0	0.01	-1.4E+07	4561634
9309	59-144	University of California Berkeley	Berkeley Campus	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Educational Services	Educational Services	Colleges, Universities, and Professional Schools	2.61	0	0	-1.4E+07	4561699
9321	59-149	University of California Berkeley	Berkeley Campus	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Educational Services	Educational Services	Colleges, Universities, and Professional Schools	5.93	0	0.01	-1.4E+07	4561566
9343	59-63	University of California Berkeley	Berkeley Campus	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Educational Services	Educational Services	Colleges, Universities, and Professional Schools	4.56	0	0.01	-1.4E+07	4561636
9352	59-REM	University of California Berkeley	Berkeley Campus	Berkeley	CA	94720	Alameda	37.87	-122.27	No Data	611310	Educational Services	Educational Services	Colleges, Universities, and Professional Schools	165.74	0.84	128.58	-1.4E+07	4561414

FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Memorandum

Date: August 30, 2024

To: Mark Rhoades, McSpats, LLC c/o Rhoades Planning Group

From: Philip Ault, Director of Noise and Air Quality, FirstCarbon Solutions

Subject: Noise Impact Analysis for the Proposed 1974 Shattuck Avenue Mixed Use Project in Berkeley, California

On behalf McSpats, LLC (project applicant), FirstCarbon Solutions (FCS), prepared this memorandum to evaluate noise impacts that could result from construction and operations of the proposed 1974 Mixed Use Project (proposed project). Supporting documents such as calculation worksheets and other modeling outputs are included as attachments to this memorandum.

PROJECT DESCRIPTION

The project applicant proposes to demolish the existing commercial structures to construct a 28-story mixed-use building with 599 multi-family apartment dwelling units, ground level lobbies, a rooftop restaurant over ground level lobbies, and commercial space. The outdoor space would consist of 13,032 square feet of residential open space, 706 square feet of commercial open space, and a 5,840-square-foot roof deck with 6,735 square feet of landscaping across the residential units. The project site consists of Assessor's Parcel Numbers (APN) 057-205-300-100, 057-205-300-200, 057-205-300-301, 057-205-300-302, and 057-205-300-402, at 1950–1998 Shattuck Avenue in the City of Berkeley (City).

The project site is bounded Shattuck Avenue to the east, multi-family apartments to the west, commercial uses and University Avenue to the south, and Berkeley Way and commercial uses to the north (Exhibit 1).

The project site is designated as "Downtown" by the City of Berkeley General Plan (General Plan) and is zoned Downtown Mixed-Use District "C-DMU" by the City of Berkeley Zoning Ordinance. The C-DMU zoning district permits residential uses with a Use Permit and retail uses with a Zoning Certificate.

NOISE AND VIBRATION FUNDAMENTALS

A summary of the fundamentals of noise and vibration are provided as an attachment to this document.



Source: Bing Aerial Imagery. City of Berkeley. TRACHTENBERG ARCHITECTS, Inc. 03/2024.

FIRSTCARBON SOLUTIONS™

40 20 0 40
Feet

Project Site - Overlay Map

REGULATORY SETTING

Federal Regulations

Currently, no federal noise standards directly regulate environmental noise associated with temporary construction activities or the long-term operations of development projects.

Federal Transit Administration

Though not regulatory in nature, vibration impact criteria for buildings and other structures have been established by the Federal Transit Authority (FTA), as building and structural damages are generally the foremost concern when evaluating the impacts of construction-related vibrations. For the evaluation of the proposed project's construction-related vibration impacts, the following FTA vibration impact criteria, shown in Table 1, are used given the absence of applicable federal, State, and City standards specific to temporary construction activities and their potential to result in building and structural damages.[1]

Table 1: Federal Transit Administration Construction Vibration Impact Criteria

Building Category	PPV (in/sec)
I. Reinforced—Concrete, Steel or Timber (no plaster)	0.5
II. Engineered Concrete and Masonry (no plaster)	0.3
III. Nonengineered Timber and Masonry Buildings	0.2
IV. Buildings Extremely Susceptible to Vibration Damage	0.12

Notes:
PPV = peak particle velocity
VdB = vibration measured as root mean square (rms) velocity in decibels of 1 microinch per second
Source: Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual.

The FTA has also established criteria for the assessment of construction noise impacts. The FTA's daytime and nighttime criteria are shown in Table 2. To be discussed later, the City has adopted these criteria for assessment of the proposed project's construction noise impacts. According to the FTA, exceedances of these criteria may result in adverse community reaction.

[1] Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual.

Table 2: Federal Transit Administration Construction Noise Impact Criteria

Land Use	$L_{eq\ equipment\ (8hr)}$	
	Day	Night
Residential	80	70
Commercial	85	85
Industrial	90	90

Notes:
$L_{eq\ equipment\ (8hr)}$ = equipment noise level in L_{eq} (equivalent noise/sound level) over an 8-hour time period. The analysis assumes that the L_{eq} over this time period would be approximately equal to the L_{eq} over a single construction workday, from start to finish of that day's activities.

Source: Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. Detailed Analysis Construction Noise Criteria.

State Regulations

2017 General Plan Guidelines

The State of California's 2017 General Plan Guidelines propose county and city standards for acceptable exterior noise levels based on land use. These standards are incorporated into land use planning processes to prevent or reduce noise and land use incompatibilities. The State's suggested compatibility considerations between various land uses and exterior noise levels are not regulatory in nature but are recommendations intended to aid communities in determining their own noise-acceptability standards.

Assembly Bill 1307

Assembly Bill (AB) 1307 went into effect January 1, 2024. This bill clarifies that "for residential projects, the effects of noise generated by project occupants and their guests on human beings is not a significant effect on the environment." Therefore, this analysis does not address potential noise impacts from future occupants and their guests on sensitive receptors in the project vicinity.

Local Regulations

The project site is located within the City of Berkeley. The General Plan and Berkeley Municipal Code (Municipal Code) contain guidelines, standards, and regulations for the control of noise.

Berkeley General Plan

The Environmental Management (EM) Element of the General Plan serves as the City's noise element and contains several noise policies which require that standard noise conditions be imposed on all planning decisions.[2] The General Plan does not establish any quantitative noise standards or thresholds

[2] City of Berkeley. 2002. Berkeley General Plan.

of significance, though Policy EM-47 includes residences, child care centers, hospitals, nursing homes, schools, and parks as noise-sensitive uses. The General Plan includes the following noise-related policies:

Policy EM-43 **Noise Reduction:** Reduce significant noise levels and minimize new sources of noise.

Policy EM-44 **Noise Prevention and Elimination:** Protect public health and welfare by eliminating existing noise problems where feasible and by preventing significant future degradation of the acoustic environment.

Actions

A. Incorporate noise considerations into land use planning decisions.
B. Ensure the effective enforcement of City, State, and federal noise levels by appropriate City departments.
C. Coordinate with the California Occupational Safety and Health Administration (Cal-OSHA) to provide information on and enforcement of occupational noise requirements within the City of Berkeley.
D. Support federal and State legislation to lower allowable noise levels on all motor vehicles.

Policy EM-45 **Traffic Noise:** Work with local and regional agencies to reduce local and regional traffic, which is the single largest source of unacceptable noise in the City.

Policy EM-46 **Noise Mitigation:** Require operational limitations and all feasible noise buffering for new uses that generate significant noise impacts near residential, institutional, or recreational uses.

Policy EM-47 **Land Use Compatibility:** Ensure that noise-sensitive uses, including, but not limited to, residences, child care centers, hospitals, and nursing homes, are protected from detrimental noise levels.

Berkeley Municipal Code

The Municipal Code establishes a number of regulations that would apply to the proposed project's temporary construction activities and long-term operations. Section 13.40.050 contains the Municipal Code's exterior noise standards.

Section 13.40.050–Exterior Noise Standards

A. Maximum permissible sound levels shall be determined by the zoning district of the property subject to the noise, not the property from which the noise originates.
    1. The noise standards for the various categories of land use in Table 13.40-1 [see Table 3] or 13.40-2 [see Table 4] shall, unless otherwise specifically indicated in other codes, apply to all such property within a designated zone.

2. No person shall operate or cause to be operated any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the sound level when measured on any other property to exceed:
   a) The noise standard for that land use as specified in Table 13.40-1 [see Table 3] for a cumulative period of more than 30 minutes in any hour; or
   b) The noise standard for that land use as specified in Table 13.40-1 [see Table 3] plus 5 dBA for a cumulative period of more than 15 minutes in any hour; or
   c) The noise standard for that land use as specified in Table 13.40-1 [see Table 3] plus 10 dBA for a cumulative period of more than 5 minutes in any hour; or
   d) The noise standard for that land use as specified in Table 13.40-1 [see Table 3] plus 15 dBA for a cumulative period of more than 1 minute in any hour; or
   e) The noise standard for that land use as specified in Table 13.40-1 [see Table 2] plus 20 dBA for any period of time.

Table 3: Exterior Noise Limits–Levels not to be exceeded more than 30 minutes any hour

Zoning District	Time Period	Noise Level (dBA)
R-1, R-2, R-1A, R-2A, and ESR	7:00 a.m.–10:00 p.m.	55
	10:00 p.m.–7:00 a.m.	45
R-3 and above	7:00 a.m.–10:00 p.m.	60
	10:00 p.m.–7:00 a.m.	55
Commercial	7:00 a.m.–10:00 p.m.	65
	10:00 p.m.–7:00 a.m.	60
Industry	Anytime	70
Notes: dBA = A-weighted decibel Source: Berkeley Municipal Code. Table 13.40-1: Exterior Noise Limits.		

3. If the measured ambient noise level is greater than the level permissible within any of the noise limit categories above, the sound level when measured on any other property shall not exceed:
   a) The ambient noise level for a cumulative period of more than 30 minutes in any hour; or
   b) The ambient noise level plus 5 dBA for a cumulative period of more than 15 minutes in any hour; or
   c) The ambient noise level plus 10 dBA for a cumulative period of more than 5 minutes in any hour; or

d) The ambient noise level plus 15 dBA for a cumulative period of more than 1 minute in any hour; or
e) The ambient noise level plus 20 dBA for any period of time.

4. If the measurement location is on a boundary between two different zones, the sound level limit applicable to the quieter noise zone shall apply.
5. If possible, the ambient noise level may be measured at the same location along the property line utilized in subsection A.2 of this section with the alleged offending noise source inoperative. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the ambient noise level may be determined by traveling away from the noise source to a point where a steady state decibel reading is achieved. If this test is not possible, the noise level measured while the source is in operation shall be compared directly to the noise level standards.

B. The classification of additional areas of the community not listed in Table 13.40-1 [see Table 3] in terms of environmental noise zones shall be determined by the EHD. Industrial noise limits are intended primarily for use at the boundary of industrial zones rather than for noise reduction within the zone.

Section 13.40.060 contains the Municipal Code's interior noise standards.

Section 13.40.060–Interior Noise Standards

A. Maximum Permissible Dwelling Interior Sound Levels
1. The interior noise standards for multi-family residential dwellings as presented in Table 13.40-2 [see Table 4] shall apply, unless otherwise specifically indicated in other codes, within all such dwellings with windows in their normal seasonal configuration.

Table 4: Interior Noise Limits

Zoning District	Time Interval	Allowable Interior Noise Level (dBA)
All	10:00 p.m.–7:00 a.m.	40
	7:00 a. m.–10:00 p.m.	45
Notes: dBA = A-weighted decibels Source: Berkeley Municipal Code. Table 13.40-2: Interior Noise Limits.		

2. No person shall operate or cause to be operated within a multi-family dwelling unit any source of sound or allow the creation of any noise which causes the sound level when measured inside a neighboring dwelling unit to exceed:
a) The noise standard as specified in Table 13.40-2 [see Table 4] for a cumulative period of more than 5 minutes in any hour; or

b) The noise standard as specified in Table 13.40-2 [see Table 4] plus 5 dBA for a cumulative period of more than one minute in any hour; or
c) The noise standard as specified in Table 13.40-2 [see Table 4] plus 10 dBA for any period of time.

3. If the measured ambient noise level is greater than the level permissible within any of the noise limit categories above, the sound level when measured on the other property shall not exceed:
   a) The ambient noise level for a cumulative period of more than 5 minutes in any hour; or
   b) The ambient noise level plus 5 dBA for a cumulative period of more than 1 minute in any hour; or
   c) The ambient noise level plus 10 dBA for any period of time.

Section 13.40.070(B)(7) contains regulations specific to construction and demolition activities.

Section 13.40.070(B)(7)–Construction/Demolition

a) Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work before 7:00 a.m. on a weekday (or before 9:00 a.m. on a weekend or holiday) or after 7:00 p.m. on a weekday (or after 8:00 p.m. on a weekend or holiday) such that the sound therefrom across a residential or commercial real property line violates Section 13.40.050 or 13.40.060, except for emergency work of public service utilities or by variance issued by the EHD. (This section shall not apply to the use of domestic power tools as specified in subsection B.11 of this section.)

(b) *Noise Restrictions at Affected Properties.* Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum sound levels at affected properties will not exceed those listed in the following schedule:

Mobile Equipment. Maximum sound levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment [see Table 5]:

Table 5: Mobile Equipment Noise Limits

	R-1, R-2 Residential	R-3 and above Multi-family Residential	Commercial/ Industrial
Weekdays 7:00 a.m. to 7:00 p.m.	75 dBA	80 dBA	85 dBA
Weekends 9:00 a.m. to 8:00 p.m. and legal holidays	60 dBA	65 dBA	70 dBA
Notes: dBA = A-weighted decibels Source: Berkeley Municipal Code. Table 13.40-3.			

Stationary Equipment. Maximum sound levels for repetitively scheduled and relatively long-term operation (period of 10 days or more) of stationary equipment [see Table 6]:

Table 6: Stationary Equipment Noise Limits

	R-1, R-2 Residential	R-3 and above Multi-family Residential	Commercial/ Industrial
Weekdays 7:00 a.m. to 7:00 p.m.	60 dBA	65 dBA	70 dBA
Weekends 9:00 a.m. to 8:00 p.m. and legal holidays	50 dBA	55 dBA	60 dBA
Notes: dBA = A-weighted decibels Source: Berkeley Municipal Code. Table 13.40-4.			

Section 13.40.070(B)(8)–Vibration

Operating or permitting the operation of any device that creates a vibration, which annoys or disturbs at least two or more reasonable persons of normal sensitiveness who reside in separate residences (including apartments and condominiums) at or beyond the property boundary of the source, if on private property, or at least 150 feet (46 meters) from the source, if on a public space or public right-of-way.

Berkeley Standard Conditions of Approval

The City has established the following Standard Conditions of Approval that it imposes on projects and which would apply to construction of the proposed project.

Construction Hours (Residential Zoning Districts)

Construction activity shall be limited to between the hours of 8:00 a.m. and 6:00 p.m. on Monday through Friday and between 9:00 a.m. and noon on Saturday. No construction-related activity shall occur on Sundays or any federal holiday.

Construction Hours (Nonresidential Districts)

Construction activity shall be limited to between the hours of 7:00 a.m. and 6:00 p.m. on Monday through Friday and between 9:00 a.m. and 4:00 p.m. on Saturday. No construction-related activity shall occur on Sundays or any federal holiday.

Construction Hours (Exceptions)

It is recognized that certain construction activities, such as the placement of concrete, must be performed in a continuous manner and may require an extension of these work hours. Prior to initiating any activity that might require a longer period, the developer must notify the Zoning Officer and request

an exception for a finite period of time. If the Zoning Officer approves the request, then 2 weeks prior to the expanded schedule, the developer shall notify businesses and residents within 500 feet of the project site, describing the expanded construction hours. A copy of such notice and methodology for distributing the notice shall be provided in advance to the City for review and approval. The project shall not be allowed more than 15 extended working days.

Construction Noise Reduction Program

The applicant shall develop a site-specific noise reduction program prepared by a qualified acoustical consultant to reduce construction noise impacts to the maximum extent feasible, subject to review and approval of the Zoning Officer. The noise reduction program shall include the time limits for construction listed above, as measures needed to ensure that construction complies with Berkeley Municipal Code, Section 13.40.070. The noise reduction program should include, but shall not be limited to, the following available controls to reduce construction noise levels as low as practical:

A. Construction equipment should be well maintained and used judiciously to be as quiet as practical.

B. Equip all internal combustion engine-drive equipment with mufflers, which are in good condition and appropriate for the equipment.

C. Utilize “quiet” models of air compressors and other stationary noise sources where technology exists. Select hydraulically or electrically powered equipment and avoid pneumatically powered equipment where feasible.

D. Locate stationary noise-generating equipment as far as possible from sensitive receptors when adjoining construction sites. Construct temporary noise barriers or partial enclosures to acoustically shield such equipment where feasible.

E. Prohibit unnecessary idling of internal combustion engines.

F. If impact pile driving is required, pre-drill foundation pile holes to minimize the number of impacts required to seat the pile.

G. Construct solid plywood fences around construction sites adjacent to operational business, residences, or other noise-sensitive land uses where the noise control plan analysis determines that a barrier would be effective at reducing noise.

H. Erect temporary noise control blanket barriers, if necessary, along building façades facing construction sites. This mitigation would only be necessary if conflicts occurred which were irresolvable by proper scheduling. Noise control blanket barriers can be rented and quickly erected.

I. Route construction-related traffic along major roadways and away from sensitive receptors where feasible.

Construction Noise Management–Public Notice Required

At least 2 weeks prior to initiating any construction activities at the site, the applicant shall provide notice to businesses and residents within **500 feet** of the project site. This notice shall at a minimum provide the following: (1) project description, (2) description of construction activities, (3) daily construction schedule (i.e., time of day) and expected duration (number of months), (4) the name and phone number of the Project Liaison for the project that is responsible for responding to any local complaints, (5) commitment to notify neighbors at least 4 days in advance of authorized extended work hours and the reason for extended hours, and (6) that construction work is about to commence. The liaison would determine the cause of all construction-related complaints (e.g., starting too early, bad muffler, worker parking, etc.) and institute reasonable measures to correct the problem. A copy of such notice and methodology for distributing the notice shall be provided in advance to the City for review and approval.

Noise Reduction Plan

Applicants are required to develop a site-specific noise reduction program prepared by a qualified acoustical consultant to reduce construction noise impacts to the maximum extent feasible. The noise reduction program would include several elements that would reduce the exposure of sensitive receptors to construction noise, such as the following:

- Equipping all internal combustion engine-driven equipment with mufflers in good condition
- Pre-drilling foundation pile holes to minimize the use of pile drivers
- Installing solid plywood fences around construction sites adjacent to sensitive receptors
- Erecting temporary noise control blanket barriers along building façades facing construction sites.

HVAC Noise Reduction

Prior to the issuance of building permits, the project applicant shall submit plans that show the location, type, and design of proposed heating, ventilation, and air conditioning (HVAC) equipment. In addition, the applicant shall provide product specification sheets or a report from a qualified acoustical consultant showing that operation of the proposed HVAC equipment will meet the City's exterior noise requirements in Municipal Code Section 13.40.050. The City's Planning and Development Department shall review the submitted plans, including the selected HVAC equipment, to verify compliance with exterior noise standards.

Loading

All loading/unloading activities associated with deliveries to all uses shall be restricted to the hours of 7:00 a.m. to 10:00 p.m. daily.

Project Construction Website

The applicant shall establish a project construction website with the following information clearly accessible and updated monthly or more frequently as changes warrant:

- Contact information (i.e., “hotline” phone number and email address) for the project construction manager.
- Calendar and schedule of daily/weekly/monthly construction activities.
- The final Conditions of Approval, Mitigation Monitoring and Reporting Program, Transportation Construction Plan, Construction Noise Reduction Program, and any other reports or programs related to construction noise, air quality, and traffic.

Damage Due to Construction Vibration

The project applicant shall submit screening level analysis prior to, or concurrent with, demolition building permit. If a screening level analysis shows that the project has the potential to result in damage to structures, a structural engineer or other appropriate professional shall be retained to prepare a vibration impact assessment (assessment). The assessment shall take into account project-specific information such as the composition of the structures, location of the various types of equipment used during each phase of the project, as well as the soil characteristics in the project area, in order to determine whether project construction may cause damage to any of the structures identified as potentially impacted in the screening level analysis. If the assessment finds that the project may cause damage to nearby structures, the structural engineer or other appropriate professional shall recommend design means and methods of construction that avoid the potential damage, if feasible. The assessment and its recommendations shall be reviewed and approved by the Building and Safety Division and the Zoning Officer. If there are no feasible design means or methods to eliminate the potential for damage, the structural engineer or other appropriate professional shall undertake an existing conditions study (study) of any structures (or, in case of large buildings, of the portions of the structures) that may experience damage. This study shall:

- Establish the baseline condition of these structures, including, but not limited to, the location and extent of any visible cracks or spalls; and
- Include written descriptions and photographs.

The baseline study shall be reviewed and approved by the Building and Safety Division and the Zoning Officer prior to issuance of a grading permit. Upon completion of the project, the structures (or in case of large buildings, of the portions of the structures) previously inspected will be resurveyed, and any new cracks or other changes shall be compared to the pre-construction conditions and a determination shall be made as to whether the proposed project caused the damage. The findings shall be submitted to the Building and Safety Division and the Zoning Officer for review. If it is determined that project construction has resulted in damage to the structure, the damage shall be repaired to the pre-existing condition by the project sponsor, provided that the property owner approves of the repair.

EXISTING NOISE CONDITIONS

Ambient Noise

Figure 21 of the General Plan EM Element indicates that ambient noise levels at and in the vicinity of the project site are approximately 65 A-weighted decibels (dBA) day/night average sound level (L_{dn}) based on transportation sources such as vehicle traffic along Shattuck Avenue.[3]

On August 14, 2024, noise measurements were obtained at multiple locations near the project site along Shattuck Avenue to further aid in the characterization of daytime ambient noise conditions surrounding the proposed project and nearby sensitive receptors. The measurements ranged between 58.5 dBA and 70.1 dBA equivalent noise/sound level (L_{eq}). Noise sources were primarily vehicle traffic along Shattuck Avenue, as well as pedestrian and commercial activity. These ambient noise measurements correlate well with the General Plan's 65 dBA L_{dn} estimate for the project site. The noise measurements were recorded by FCS staff using a Larson Davis LxT Sound Level Meter positioned approximately 5 feet above ground and away from reflective surfaces, as appropriate. Weather conditions were mostly clear and sunny with negligible wind. Noise measurement data sheets are provided in Attachment B.

THRESHOLDS OF SIGNIFICANCE AND IMPACT ANALYSIS

Thresholds of Significance

According to the California Environmental Quality Act (CEQA) Guidelines, Appendix G, to determine whether impacts related to noise and vibration are significant environmental effects, the following questions are analyzed and evaluated.

Would the proposed project:

a) Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b) Generate excessive groundborne vibration or groundborne noise levels?

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

[3] City of Berkeley. 2002. Berkeley General Plan. Figure 21: Noise Contours.

Substantial Noise Increase in Excess of Standards

Construction Noise Impacts

For purposes of this analysis, a significant impact would occur if construction activities would generate a substantial temporary increase in ambient noise levels in the vicinity of the proposed project in excess of standards established in the local general plan or noise ordinance or the applicable standards of other agencies. To quantitatively evaluate construction noise impacts pursuant to this standard, the City as Lead Agency adopts the FTA's construction noise criteria for residential land uses shown in Table 2, which is an 80 dBA L_{eq} threshold for daytime construction activities.

On-site Construction Noise Impact

Construction of the proposed project would generate noise during the approximately 29-month schedule of demolition, grading, building construction, finishing, and other construction activities. The proposed project is anticipated to utilize a standard 5-day work week, and construction would occur during acceptable daytime hours set forth by the City's Municipal Code and Standard Conditions of Approval.

The proposed project is surrounded by multiple noise-sensitive receptors located near Shattuck Avenue and the Berkeley Way and University Avenue cross streets bracketing the project site. The Berkeley Way Apartments and Hope Center are side-by-side residential uses (with the latter containing a homeless shelter with related services) located at 2012 Berkeley Way, directly west of the project site. Ace Berkeley Student Apartments is a student housing facility located approximately 95 feet east of the project site at 2108 Berkeley Way. Modera Berkeley is a multi-family residential building also located approximately 95 feet east of the project site at 1922 Walnut Street. The Berkeley Place is a multi-family residential building located directly west of the project site at 2067 University Avenue. Though not a residential use per se, Berkeley Fire Station No. 2 also contains overnight living accommodations and can be considered a residential-type sensitive receptor for this reason. It is located at 2029 Berkeley Way, approximately 90 feet north of the project site. Other sensitive receptors are located farther from the project site and would experience reduced impacts. Therefore, the following analysis focuses on The Berkeley Way Apartments and Hope Center, Ace Berkeley Student Apartments, Modera Berkeley, The Berkeley Place, and Berkeley Fire Station No. 2 for assessment of the proposed project's construction noise impact.

Construction is a dynamic process and daily activities can vary widely, even within the same construction phase or subphase. To streamline the impact analysis, the analyzed construction activity noise impacts relate to the following phases: demolition, grading, building construction, paving, and architectural coating.

The following impact analysis focuses on the demolition, grading, and building construction phases as these would have the greatest potential to result in significant noise impacts.

Demolition

Demolition for the proposed project would involve the demolition and removal of the site's existing buildings and related improvements. The majority of the proposed project's demolition activities would be characterized by a bulldozer and either backhoes or skid steer loaders conducting the demolition work and transferring debris to dumpsters or haul trucks for off-site removal. Some vehicles would be outfitted with breaker attachments. As these vehicles work across the approximately 0.65-acre project site, their construction noise levels at surrounding receptors would fluctuate depending on their distances from the receptors. Noise levels would be greater when these vehicles work near receptors and lower when farther away. Given these considerations, noise impacts associated with the proposed project's demolition activities have been evaluated by modeling noise levels at receptors that would be associated with two backhoes and a bulldozer operating across the 0.65-acre parcel. The 0.65-acre figure area reflects the footprint of the proposed project's construction area. This modeling approach simulates noise levels that would result from the daily activities of two backhoes and a bulldozer working across the project site.

Table 7 shows the proposed project's estimated demolition-related noise levels at the ground level and upper floors of nearby receptors. As shown, demolition-related noise levels would be below the FTA's 80 dBA L_{eq} criteria that is utilized as the threshold of significance. Therefore, impacts from on-site demolition activities would be less than significant.

Table 7: Construction Noise Levels–Demolition

Receptor	Construction Noise Level (dBA L_{eq})	Significance Criteria (dBA L_{eq})	Significant?
Berkeley Way Apartments and Hope Center–Ground Level	69.0	80	No
Berkeley Way Apartments and Hope Center–Upper Levels	74.0	80	No
Ace Berkeley Student Apartments–Ground Level	60.7	80	No
Ace Berkeley Student Apartments–Upper Levels	65.7	80	No
Modera Berkeley–Ground Level	60.7	80	No
Modera Berkeley–Upper Levels	65.7	80	No
The Berkeley Place–Ground Level	69.1	80	No
The Berkeley Place–Upper Levels	74.1	80	No
Berkeley Fire Station No. 2–Ground Level	59.8	80	No
Berkeley Fire Station No. 2–Upper Level	64.8	80	No

Notes:
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level

Grading

Grading for the proposed project would involve the excavation of approximately 37,878 cubic yards of "cut" material for the proposed project's subterranean levels and foundations. The majority of grading would be bulk excavation characterized by excavators and a bulldozer excavating the "cut" material from the site and transferring it to haul trucks for off-site removal. Similar to demolition, these vehicles would work across the approximately 0.65-acre project site, and construction noise levels at surrounding receptors would fluctuate depending on the distances between construction equipment and receptors. Noise impacts associated with grading have therefore been evaluated by modeling noise levels at receptors that would be associated with two excavators and a bulldozer operating across a 0.65-acre parcel that is similar to the footprint of the proposed project's construction area.

Table 8 shows the proposed project's estimated grading-related noise levels at the ground level and upper floors of nearby receptors. As shown, grading-related noise levels would be below the FTA's 80 dBA L_{eq} criteria that is utilized as the threshold of significance. Therefore, impacts from on-site grading activities would be less than significant.

Table 8: Construction Noise Levels–Grading

Receptor	Construction Noise Level (dBA L_{eq})	Significance Criteria (dBA L_{eq})	Significant?
Berkeley Way Apartments and Hope Center–Ground Level	71.8	80	No
Berkeley Way Apartments and Hope Center–Upper Levels	76.8	80	No
Ace Berkeley Student Apartments–Ground Level	63.5	80	No
Ace Berkeley Student Apartments–Upper Levels	68.5	80	No
Modera Berkeley–Ground Level	63.5	80	No
Modera Berkeley–Upper Levels	68.5	80	No
The Berkeley Place–Ground Level	71.9	80	No
The Berkeley Place–Upper Levels	76.9	80	No
Berkeley Fire Station No. 2–Ground Level	62.6	80	No
Berkeley Fire Station No. 2–Upper Level	67.6	80	No

Notes:
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level

Building Construction

This phase entails the buildout of the proposed project's structure and interior. The most impactful construction equipment utilized during these phases would be a tower crane and handheld equipment powered by air compressors. Unlike equipment for the previous construction phases, which would move

about the site on a daily basis, this equipment would be more stationary when operating. Therefore, noise impacts associated with building construction have been evaluated by modeling noise levels at receptors that would be associated with a tower crane and two air compressors operating at minimum distances to receptors.

Table 9 shows the proposed project's estimated building construction-related noise levels at nearby receptors. Because noise from the assumed equipment may emanate from upper floors of the proposed project, noise barriers may not attenuate their noise levels. As a result, noise impacts to the ground and upper floors of receptors may be similar. In any case, building-related noise levels would be below the FTA's 80 dBA L_{eq} criteria that is utilized as the threshold of significance. Therefore, impacts from on-site building construction activities would be less than significant.

Table 9: Construction Noise Levels–Building Construction

Receptor	Construction Noise Level (dBA L_{eq})	Significance Criteria (dBA L_{eq})	Significant?
Berkeley Way Apartments and Hope Center	74.5	80	No
Ace Berkeley Student Apartments	62.5	80	No
Modera Berkeley	62.5	80	No
The Berkeley Place	74.5	80	No
Berkeley Fire Station No. 2	62.5	80	No

Notes:
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level

Off-site Construction Noise Impact (Construction Traffic)

Haul truck trips, construction worker vehicle trips, and other construction-related trips would occur over the course of the proposed project's construction. Haul truck trips typically have the greatest potential to result in substantial off-site noise increases along nearby roadways. The previously discussed Municipal Code noise limits have no applicability to road-legal trucks operating on public roads, but the following analysis nevertheless demonstrates that the proposed project's haul trucks would have a nominal and less than significant impact on roadside noise levels in the vicinity of the project site.

Given the proposed project's modest demolition and excavation, the proposed project is not estimated to generate more than several haul truck trips per hour on any workday. Construction also would not generate more than several vendor truck trips per hour. The project site is located in an area with existing high levels of transportation noise, around 65 dBA L_{eq}. Typically, an approximate doubling of traffic volumes is required to cause 3 dBA noise increases, which are considered barely noticeable. The proposed project's construction trucks would represent a small fraction of daily traffic, far below the numbers necessary to generate barely noticeable noise increases. As such, the proposed project's haul

trucks would not result in noticeable (much less substantial) noise increases along surrounding roadways, and this impact would be less than significant.

Operational Noise Impacts

On-site Operational Noise Impact

For the purposes of this analysis, a significant impact would occur if the proposed project's on-site noise sources (i.e., mechanical equipment, parking lot operations, etc.) would generate a substantial permanent increase in ambient noise levels surrounding the proposed project. The Municipal Code includes quantitative noise limits that would apply to the proposed project's operational noise sources. Municipal Code Section 13.40.050 and Section 13.40.060 contain exterior and interior noise limits (respectively) that would apply to noise generated by the proposed project on-site. Therefore, the proposed project's noise impact from on-site operational sources would be considered significant if any of the following were to occur:

- Noise levels would exceed the exterior noise limits established by Municipal Code Section 13.40.050.
- Noise levels would exceed the interior noise limits established by Municipal Code Section 13.40.060.

The proposed project's on-site noise sources and their potential to result in significant noise impacts are discussed below. As demonstrated, the proposed project would not result in substantial sources of on-site noise, and this impact would be less than significant.

Parking

The proposed project would include two levels of basement parking wholly contained within the parking structure, which would shield parking lot activity noise levels from impacting sensitive receptors in the project vicinity. Reasonable worst-case parking lot activity noise levels would be reduced to below 52 dBA L_{eq} at the parking garage entrance which faces the street. Therefore, parking lot activity noise levels would not exceed existing ambient noise levels as measured at nearby sensitive receptors and would, therefore, not exceed the City's Municipal Code Section 13.4.050 exterior noise limits, and this impact would be less than significant.

Ground Floor Retail Spaces

The proposed project would not contain any outdoor retail spaces that would generate noise from seating or gathering. Reasonable use of the indoor retail spaces would not be expected to result in audible exterior noise impacts.

Mechanical Equipment

Implementation of the proposed project would include operation of new mechanical ventilation equipment. The proposed project would have commercial-grade mechanical ventilation equipment atop

the multi-story mixed-use housing development. Noise levels for commercial-grade mechanical ventilation equipment systems range up to approximately 78 dBA L_{eq} at a distance of 3 feet.

The proposed project is surrounded by multiple noise-sensitive receptors located near Shattuck Avenue and the Berkeley Way and University Avenue cross streets bordering the project site. The following analysis focuses on the closest sensitive receptor, The Berkeley Place, a multi-family residential building located directly west of the project site. The façade of this receptor would be a minimum of 10 feet away from the nearest operational rooftop mechanical ventilation equipment. At this distance, and assuming minimal reduction for rooftop parapet shielding, the combined reasonable worst-case operational noise level of multiple rooftop mechanical ventilation systems operating simultaneously would be 58 dBA L_{eq}, as measured at the nearest off-site residential receptor. The noise calculation sheet is provided in Appendix B of this report.

These noise levels are below ambient noise levels for the location and surrounding receptors, which range from approximately 58.5 dBA to 70.1 dBA L_{eq}. Therefore, these calculated operational noise levels would not exceed existing ambient noise levels in the project vicinity.

Municipal Code Section 13.40.050 establishes minimum 65 dBA daytime and 60 dBA nighttime exterior noise limits that would apply to noise generated by the proposed project's HVAC systems. There is no potential for the proposed project's daytime HVAC noise levels to exceed the minimum 65 dBA daytime standard at adjacent receptors. Given the height of the proposed project, and assuming minimal reduction for rooftop parapet shielding, the calculated proposed project's nighttime HVAC noise levels would not exceed the 60 dBA nighttime exterior noise limit at these receptors either. In any case, the City's Standard Conditions of Approval involving HVAC noise reduction would prevent the proposed project's HVAC equipment from exceeding the Section 13.40.050 daytime and nighttime exterior noise limits. Prior to the issuance of building permits, the project applicant would be required to submit plans showing the location, type, and design of the proposed project's HVAC equipment. The project applicant would also be required to submit HVAC product specification sheets demonstrating that HVAC equipment would achieve the Municipal Code's noise limits or provide an acoustical report demonstrating the same compliance. The City's Planning and Development Department would review these materials and verify the proposed project's compliance with the Municipal Code's noise limits before issuing building permits. Therefore, the proposed project's HVAC systems would not result in exceedances of the Municipal Code's noise limits at nearby receptors.

Regarding Municipal Code Section 13.40.060, the proposed project's exterior HVAC noise levels up to 58 dBA L_{eq} would not result in interior noise levels in excess of the minimum 40 dBA standard at surrounding residential receptors, as windows typically provide a minimum 20 dBA of exterior-to-interior noise reduction (and with modern construction, exterior-to-interior noise reduction is closer to 30 dBA or greater). Impacts to more distant noise-sensitive receptors would be reduced and similarly below Municipal Code noise limits.

Given these considerations, the proposed project's HVAC system operational noise would not result in substantial permanent increases in ambient noise levels, and this impact would be less than significant.

Off-site Operational Noise Impact (Traffic)

For the purposes of this analysis, a significant impact would occur if the proposed project's off-site operational sources (i.e., traffic) would generate a substantial permanent increase in ambient noise levels surrounding the proposed project and any nearby roadways. The City has not adopted traffic-related noise thresholds for CEQA consideration, and neither the Berkeley General Plan nor the Municipal Code contain noise limits, standards, or other thresholds that would apply to traffic generated by the proposed project. However, it is evident that the proposed project would not generate substantial increases in ambient noise levels due to traffic generation. The proposed project is an infill development in a walkable area that is well-served by high-quality regional and local transit options. The proposed project would only include internal underground parking, which will not create exterior noise. Given these considerations, the proposed project reasonably would not result in substantial traffic generation capable of noticeably increasing noise levels on the surrounding roadways, which already experience high levels of traffic and resultant noise levels (as noted, measured ambient noise levels range up to 70.1 dBA L_{eq}). The proposed project would not generate the approximate doubling of traffic necessary to increase existing ambient noise levels by 3 dBA, which represents a barely perceptible noise increase. Overall, the proposed project is the type of project that is encouraged by local, regional, and State planning agencies to reduce traffic levels and the environmental impacts (i.e., noise) associated therewith. Given these considerations, the proposed project would not result in substantial permanent increases in roadways noise levels, and this impact would be less than significant.

EXCESSIVE GROUNDBORNE VIBRATION LEVELS

Construction Vibration Impacts

There are no federal, State, or City standards that would regulate the proposed project's vibration impacts from temporary construction activities, nor are there quantitative thresholds. Therefore, the criteria identified by the FTA in its 2018 Transit Noise and Vibration Impact Assessment Manual are used where applicable and relevant to assist in evaluating the proposed project's vibration impacts to surrounding buildings. The proposed project's vibration impacts would be considered significant if the proposed project would generate groundborne vibration levels in excess of the FTA criteria shown in Table 1.

Construction of the proposed project would require a variety of large, steel-tracked earthmoving vehicles. According to the FTA, large bulldozers and similar heavy equipment can generate groundborne vibration levels up to 0.089 inches per second (in/sec) peak particle velocity (PPV) at a reference distance of 25 feet. While there are numerous buildings that directly abut the project site boundaries, the types of vehicles capable of generating these vibration levels (e.g., large steel-tracked bulldozers and excavators) generally maintain a positional setback distance of at least 10 feet from nearby buildings when operating. At 10 feet, groundborne vibration levels from these vehicles are approximately 0.244

in/sec PPV or lower. This is below the FTA's 0.3 in/sec PPV criteria for engineered concrete and masonry buildings that is applicable to most buildings abutting and surrounding the project site.

However, as noted previously, adjacent structures are located approximately five feet or less from the project construction footprint. At these distances, groundborne vibration levels from heavy equipment operating on-site could exceed FTA damage criteria for these buildings. However, the proposed project's compliance with the City's Standard Conditions of Approval would eliminate the potential for surrounding buildings to experience potentially damaging levels of groundborne vibration. Prior to or concurrent with the issuance of a demolition building permit, the proposed project would be required to prepare a vibration impact assessment that determines whether project construction may cause damage to any of the structures identified in this analysis. The assessment would be required to identify and implement design features or alternative construction techniques for avoiding vibration-induced damage. The assessment and its recommendations would be reviewed and approved by the Building and Safety Division and the Zoning Officer prior to the issuance of demolition permits. It is expected that the proposed project would be able to avoid damaging surrounding buildings via measures such as utilizing smaller, less impactful construction equipment and practices when within 10 feet of surrounding buildings. This is a common measure for avoiding vibration damage that is frequently implemented for similar infill projects with adjacent structures built to the lot line. Given these considerations, this impact would be less than significant.

Operational Vibration Impacts

The proposed project would not contain any significant stationary sources of groundborne vibration, such as heavy equipment or industrial operations. Related vehicle travel (i.e., passenger vehicle trips, delivery trucks, etc.) also would not be considered a significant source of vibration as vehicle travel rarely generates perceptible, much less substantial, groundborne vibration. Therefore, this impact would be less than significant.

EXCESSIVE NOISE LEVELS FROM AIRPORT ACTIVITY

A significant impact would occur if the proposed project would expose people residing or working in the project area to excessive noise levels within the vicinity of a private airstrip or airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport.

The project site is not located within the vicinity of a private airstrip. The nearest public airport to the project site is San Francisco Bay Oakland International Airport, located approximately 10 miles south of the project site. Because of the distance to the airport and the orientation of the runways, the project site lies outside of the 60 dBA CNEL noise contours of the airport. Although aircraft noise is occasionally audible on the project site, nearby airport activity would not expose people residing or working near the project site to excessive noise levels. Therefore, implementation of the project would not expose persons residing or working in the project vicinity to noise levels from airport activity that would be in

excess of normally acceptable standards for the proposed land use development, and no impact would occur.

CONCLUSION

Based on the project understanding described above, the proposed project would result in less than significant impacts related to noise. Thank you for the opportunity to conduct this noise impact analysis. Please feel free to contact Phil Ault (559.930.6191 or pault@fcs-intl.com) should you have any questions.

Sincerely,



Philip Ault, Director of Noise and Air Quality
FirstCarbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

Attachment A: Fundamentals of Noise
Attachment B: Noise Monitoring and Modeling Data

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Attachment A:
Fundamentals of Noise

NOISE AND VIBRATION FUNDAMENTALS

Characteristics of Noise and Descriptors

Sound can be described in terms of its loudness (amplitude) and frequency (pitch). The standard unit of measurement for sound is the decibel, abbreviated dB. Because the human ear is not equally sensitive to sound at all frequencies, the A-weighted scale (dBA) is used to reflect the normal hearing sensitivity range of the human ear. Table 1 provides examples of A-weighted noise levels from common sources. Although the terms "sound" and "noise" are often used synonymously, noise is commonly defined as sound that is either loud, unpleasant, unexpected, or undesired.[1] Because decibels are logarithmic units, they cannot be simply added or subtracted. For example, two cars each producing 60 dBA of noise would not produce a combined 120 dBA.

Table 1: A-Weighted Decibel Scale

Common Noise Sources	Sound Level, dBA
Near Jet Engine	130
Rock and Roll Band	110
Jet Flyover at 1,000 feet	100
Power Motor	90
Food Blender	80
Living Room Music	70
Human Voice at 3 feet	60
Residential Air Conditioner at 50 feet	50
Bird Calls	40
Quiet Living Room	30
Average Whisper	20
Rustling Leaves	10

Notes:
These noise levels are approximations intended for general reference and information use. They do not meet the standard required for detailed noise analysis but are provided for the reader to gain a rudimentary concept of various noise levels.
Source: Cowan, James P. 1993. Handbook of Environmental Acoustics.

Table 2 briefly defines common noise measurement descriptors and other sound terminology used in this memorandum.

[1] California Department of Transportation (Caltrans). 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol.

Table 2: Sound Terminology

Term	Definition
Sound	A vibratory disturbance created by a vibrating object which, when transmitted by pressure waves through a medium such as air, can be detected by a receiving mechanism such as the human ear or a microphone.
Noise	Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
Ambient Noise	The composite of noise from all sources near and far in a given environment.
Decibel (dB)	A unitless measure of sound on a logarithmic scale which represents the squared ratio of sound pressure amplitude to a reference sound pressure. The reference pressure is 20 micropascals, representing the threshold of human hearing (0 dB).
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level that approximates the frequency response of the human ear.
Equivalent Noise Level (L_{eq})	The average sound energy occurring over a specified time period. In effect, L_{eq} is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that actually occurs during the same period.
Maximum and Minimum Noise Levels (L_{max} and L_{min})	The maximum or minimum instantaneous sound level measured during a measurement period.
Day-Night Level (DNL or L_{dn})	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m. (nighttime).
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring between 7:00 p.m. and 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m.
Statistical Descriptor (L_X)	L_X is used to represent the noise level exceeded X% of a specified time period. For example, L_{90} represents the noise level that is exceeded 90% of a specified time period. L_{90} is commonly used to represent ambient or background steady-state noise levels.
Source: Data compiled by FirstCarbon Solutions (FCS) 2024.	

Effects of Environmental Noise

The degree to which noise can impact an environment ranges from levels that interfere with speech and sleep to levels that can cause adverse health effects. Most human response to noise is subjective. Factors that influence individual responses may include the intensity, frequency, and pattern of noise;

the amount of background or existing noise present; and the nature of work or human activity that is exposed to intruding noise.

According to the National Institute of Health (NIH), extended or repeated exposure to sounds at or above 85 dB can cause hearing loss. Sounds of 75 dBA or less, even after continuous and repeated exposure, are unlikely to cause hearing loss.[2] The World Health Organization (WHO) reports that adults should not be exposed to sudden "impulse" noise events of 140 dB or greater. For children, this limit is 120 dB.[3]

Exposure to elevated nighttime noise levels can disrupt sleep, leading to increased levels of fatigue and decreased work or school performance. For the preservation of healthy sleeping environments, the WHO recommends that continuous interior noise levels should not exceed 30 dBA L_{eq} and that individual noise events of 45 dBA or higher be limited.[4]

Some epidemiological studies have shown a weak association between long-term exposure to noise levels of 65 to 70 dBA L_{eq} or greater and cardiovascular effects, including ischemic heart disease and hypertension. However, at this time, the relationship is largely inconclusive.

It is generally accepted that people with normal hearing sensitivity can barely perceive a 3 dBA change in noise levels, though if changes occur to the character of a sound (i.e., changes to the frequency content), then changes less than 3 dBA may be more noticeable.[5] Changes of 5 dBA may be readily perceptible, and changes of 10 dBA are perceived as a doubling in loudness.[6] However, few people are highly annoyed by daytime noise levels below 55 dBA.[7]

Loud noises, such as those from construction activities, can interfere with peoples' abilities to effectively communicate via speech, as well as other activities, resulting in annoyance or inconvenience. The EPA has found that a home interior noise level of 45 dBA L_{eq} generally protects speech and communication by providing 100 percent intelligibility of speech sounds.[8] Other common daily activities that may be disrupted by elevated interior noise levels include watching television, listening to music, or activities requiring concentration (such as reading). The EPA has determined that, given the preservation of an indoor noise level associated with 100 percent speech intelligibility (i.e., 45 dBA L_{eq}), the average community reaction is not evident and "7 dBA below levels associated with significant complaints and threats of legal action." Any complaints and annoyance are dependent on "attitude and other non-level related factors."

Noise Attenuation

Generally speaking, noise levels decrease, or "attenuate," as distances from noise sources to receivers increases. For each doubling of distance, noise from stationary or small, localized sources, commonly

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2 National Institute of Health (NIH), National Institute on Deafness and Other Communication. www.nidcd.nih.gov/health/noise-induced-hearing-loss.
3 World Health Organization (WHO). 1999. Guidelines for Community Noise.
4 Ibid.
5 California Department of Transportation (Caltrans). 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol.
6 Ibid.
7 World Health Organization (WHO). 1999. Guidelines for Community Noise.
8 United States Environmental Protection Agency (EPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.

referred to as “point sources,” may attenuate at a rate of 6 dBA for each doubling of distance. This attenuation is referred to as the inverse square law. For example, if a point source emits a noise level of 80 dBA at a reference distance of 50 feet, its noise level would be approximately 74 dBA at a distance of 100 feet, 68 dBA at a distance of 200 feet, etc. Noise emitted by “line” sources, such as highways, attenuates at the rate of 3 dBA for each doubling of distance.[9]

Factors such as ground absorption and atmospheric effects may also affect the propagation of noise. In particular, ground attenuation by non-reflective surfaces, such as soft dirt or grass, may contribute to increased attenuation rates of up to an additional 8-10 dBA per doubling of distance.[10]

Noise is most audible when traveling by direct line of sight, an unobstructed visual path between a noise source and a receiver. Barriers that break the line of sight between noise sources and receivers, such as walls and buildings, can greatly reduce source noise levels by allowing noise to reach receivers by diffraction only. Barriers can reduce source noise levels by up to 20 dBA, though it is generally infeasible for temporary barriers to reduce source noise levels by more than 15 dBA.[11] In cases where the noise path from source to receiver is direct but grazes the top of a barrier, noise attenuation of up to 5 dBA may still occur.[12]

Characteristics of Vibration and Descriptors

Vibration is an oscillatory motion that can be described in terms of displacement, velocity, and acceleration.[13] Unlike noise, vibration is not a common environmental issue, as it is unusual for vibration from vehicle sources to be perceptible. Common sources of vibration may include trains, construction activities, and certain industrial operations.

Table 3 briefly defines common vibration measurement descriptors and other terminology used in this analysis.

Table 3: Vibration Terminology

Term	Definition
Peak Particle Velocity (PPV)	PPV is commonly used to describe and quantify vibration impacts to buildings and other structures. PPV levels represent the maximum instantaneous peak of a vibration signal and are generally measured in inches per second (in/sec).
Vibration Decibels (VdB)	The vibration velocity level in decibel scale.
Source: Data compiled by FirstCarbon Solutions (FCS) 2024.	

9 California Department of Transportation (Caltrans). 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol.
10 Ibid.
11 Ibid.
12 Ibid.
13 Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment.

Effects of Vibration

High levels of vibration may cause damage to buildings or even physical personal injury. However, vibration levels rarely affect human health outside the personal operation of certain construction equipment or industrial tools. Instead, most people consider environmental vibration to be an annoyance that may affect concentration or disturb sleep. Background vibration in residential areas is usually not perceptible, and perceptible indoor vibrations are generally caused by sources within buildings themselves, such as slamming doors or heavy footsteps. Vibration from traffic on smooth roadways is rarely perceptible, even from larger vehicles such as buses or trucks.[14] The threshold of human perception of vibration is approximately 0.01-0.02 in/sec peak particle velocity (PPV).[15]

[14] California Department of Transportation (Caltrans). 2020. Transportation and Construction Vibration Guidance Manual.
[15] Ibid.

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Attachment B:
Noise Monitoring and Modeling Data

Construction Noise Impact Analysis

Berkeley Way Apartments and Hope Center: Buildling Construction

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Crane at 25ft	80.2	0.16	72.2
Air Compressor at 25ft	71.6	0.4	67.6
Air Compressor at 25ft	71.6	0.4	67.6
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	74.5

Construction Noise Impact

Combined Equipment Noise Level	74.5 dBA Leq
Ground Factor	0
Construction Noise Level	74.5 dBA Leq

Notes:
[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming the given receptor distances.

Construction Noise Impact Analysis

Ace Berkeley Student Apartments: Building Construction

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Crane at 100ft	68.2	0.16	60.2
Air Compressor at 100ft	59.6	0.4	55.6
Air Compressor at 100ft	59.6	0.4	55.6
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	62.5

Construction Noise Impact

Combined Equipment Noise Level	62.5 dBA Leq
Ground Factor	0
Construction Noise Level	62.5 dBA Leq

Notes:
[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming the given receptor distances.

Construction Noise Impact Analysis

Modera Berkeley: Building Construction

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Crane at 100ft	68.2	0.16	60.2
Air Compressor at 100ft	59.6	0.4	55.6
Air Compressor at 100ft	59.6	0.4	55.6
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	62.5

Construction Noise Impact

Combined Equipment Noise Level	62.5 dBA Leq
Ground Factor	0
Construction Noise Level	62.5 dBA Leq

Notes:
[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming the given receptor distances.

Construction Noise Impact Analysis

The Berkeley Place: Building Construction

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Crane at 25ft	80.2	0.16	72.2
Air Compressor at 25ft	71.6	0.4	67.6
Air Compressor at 25ft	71.6	0.4	67.6
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	74.5

Construction Noise Impact

Combined Equipment Noise Level	74.5 dBA Leq
Ground Factor	0
Construction Noise Level	74.5 dBA Leq

Notes:
[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming the given receptor distances.

Construction Noise Impact Analysis

Berkeley Fire Station No. 2: Building Construction

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Crane at 100ft	68.2	0.16	60.2
Air Compressor at 100ft	59.6	0.4	55.6
Air Compressor at 100ft	59.6	0.4	55.6
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	62.5

Construction Noise Impact

Combined Equipment Noise Level	62.5 dBA Leq
Ground Factor	0
Construction Noise Level	62.5 dBA Leq

Notes:
[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming the given receptor distances.

Construction Noise Impact Analysis

Berkeley Way Apartments and Hope Center: Demolition

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Backhoe	74.1	0.4	70.1
Backhoe	74.1	0.4	70.1
Loader	70.8	0.4	66.8
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	74.0

Construction Noise Impact

Combined Equipment Noise Level	74.0 dBA Leq
Ground Factor	0
Construction Noise Level	74.0 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Ace Berkeley Student Apartments: Demolition

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Backhoe	65.8	0.4	61.8
Backhoe	65.8	0.4	61.8
Loader	62.4	0.4	58.4
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	65.7

Construction Noise Impact

Combined Equipment Noise Level	65.7 dBA Leq
Ground Factor	0
Construction Noise Level	65.7 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Modera Berkeley: Demolition

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Backhoe	65.8	0.4	61.8
Backhoe	65.8	0.4	61.8
Loader	62.4	0.4	58.4
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	65.7

Construction Noise Impact

Combined Equipment Noise Level	65.7 dBA Leq
Ground Factor	0
Construction Noise Level	65.7 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

The Berkeley Place: Demolition

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Backhoe	74.2	0.4	70.2
Backhoe	74.2	0.4	70.2
Loader	70.8	0.4	66.8
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	74.1

Construction Noise Impact

Combined Equipment Noise Level	74.1 dBA Leq
Ground Factor	0
Construction Noise Level	74.1 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Berkeley Fire Station No. 2: Demolition

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Backhoe	64.9	0.4	60.9
Backhoe	64.9	0.4	60.9
Loader	61.5	0.4	57.5
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	64.8

Construction Noise Impact

Combined Equipment Noise Level	64.8 dBA Leq
Ground Factor	0
Construction Noise Level	64.8 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Berkeley Way Apartments and Hope Center: Grading

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Excavator	74.2	0.4	70.2
Excavator	74.2	0.4	70.2
Bulldozer	78.3	0.4	74.3
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	76.8

Construction Noise Impact

Combined Equipment Noise Level	76.8 dBA Leq
Ground Factor	0
Construction Noise Level	76.8 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Ace Berkeley Student Apartments: Grading

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Excavator	65.9	0.4	61.9
Excavator	65.9	0.4	61.9
Bulldozer	70	0.4	66.0
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	68.5

Construction Noise Impact

Combined Equipment Noise Level	68.5 dBA Leq
Ground Factor	0
Construction Noise Level	68.5 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Modera Berkeley: Grading

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Excavator	65.9	0.4	61.9
Excavator	65.9	0.4	61.9
Bulldozer	70	0.4	66.0
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	68.5

Construction Noise Impact

Combined Equipment Noise Level	68.5 dBA Leq
Ground Factor	0
Construction Noise Level	68.5 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

The Berkeley Place: Grading

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Excavator	74.3	0.4	70.3
Excavator	74.3	0.4	70.3
Bulldozer	78.4	0.4	74.4
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	76.9

Construction Noise Impact

Combined Equipment Noise Level	76.9 dBA Leq
Ground Factor	0
Construction Noise Level	76.9 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Berkeley Fire Station No. 2: Grading

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Excavator	65.0	0.4	61.0
Excavator	65.0	0.4	61.0
Bulldozer	69.1	0.4	65.1
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	67.6

Construction Noise Impact

Combined Equipment Noise Level	67.6 dBA Leq
Ground Factor	0
Construction Noise Level	67.6 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Commercial-Grade Mechanical Equipment

Receptor:	Nearest Residential Receptor	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
		Reference (dBA) 3 ft		Usage	Distance to	Ground	Shielding	Calculated (dBA)		
No.	Equipment Description	Lmax	Quantity	factor[1]	Receptor	Effect[2]	(dBA)[3]	Lmax	Leq	Energy
1	Commercial grade mechanical ventilation equipment	78	1	80	10	1	3	64.5	58.3	683051.9746
2	Commercial grade mechanical ventilation equipment	78	1	80	35	1	3	53.7	42.0	15931.24139
3	Commercial grade mechanical ventilation equipment	78	1	80	60	1	3	49.0	35.0	3162.27766
4										
5										
6										
7										
8										
9										
10										
									Leq	58

Notes:
[1] Percentage of time activity occurs each hour
[2] Soft ground terrain between project site and receptor
[3] Shielding due to rooftop parapet/structural shielding

FIRSTCARBON SOLUTIONS
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Project Number: 6100.0001 Sheet ___of ___
Project Name: 1974 Shattuck Ave & Berkeley Tech Reports
Test Personnel: Brandon Carroll

NOISE MEASUREMENT SURVEY

Site Number: ST1 Date: 8/14/2024 Time: From 1:00pm To 1:15pm

Site Location: On Berkeley Way facing north, approximately 140 feet west of Berkeley Way/Shattuck Ave.
In front of 84 Viet (restaurant), across fire station

Primary Noise Sources: Traffic, pedestrians, light music, closing doors, and humming from building AC unit.

Measurement Results

	dBA
L_{eq}	58.5
L_{max}	72.9
L_{min}	52.4
L_{peak}	
L_5	63.3
L_{10}	61.4
L_{50}	55.9
L_{90}	53.4
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA
1:04	large, noisy crowd	
1:10	Airplane	
1:13	bicyclists near mic	

Comments:

Equipment: LxT 2 Measured Difference: 0.09 dBA
Settings: A-Weighted ☐ Other☐ Slow☐ Fast☐ Windscreen■

Atmospheric Conditions:

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	Relative Humidity (%)	
~4	~4	~67		
Comments:				

FIRSTCARBON SOLUTIONS
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Photos Taken:

Photo Number	Location/Description
1	Photo facing north
2	Photo facing east
3	Photo facing south
4	Photo facing west

Traffic Description:

Roadway	# Lanes	Posted Speed	Average Speed	NB/EB Counts	SB/WB Counts
Berkeley Way	2	25	`20-25	3	9

Diagram/Further Comments:

FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Project Number: 6100.0001 Sheet ___of ___
Project Name: 1974 Shattuck Avenue & Berkeley Tech Studies
Test Personnel: Brandon Carroll

NOISE MEASUREMENT SURVEY

Site Number: ST2 Date: 8/14/2024 Time: From 1:20pm To 1:35pm

Site Location: Corner of Berkeley Way and Shattuck Avenue, facing north

Primary Noise Sources: Traffic, car door locks, pedestrians, music from cars, people talking, fire truck driving by (no sirens), and noise from fire station/trucks.

Measurement Results

	dBA
L_{eq}	64.7
L_{max}	79.2
L_{min}	52.4
L_{peak}	
L_5	69.8
L_{10}	68.0
L_{50}	62.1
L_{90}	56.4
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA

Comments:

Equipment: LxT 2 Measured Difference: 0.09 dBA
Settings: A-Weighted ☐ Other☐ Slow☐ Fast☐ Windscreen■

Atmospheric Conditions:

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	Relative Humidity (%)	
~4	~4	~67		
Comments:				

FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Photos Taken:

Photo Number	Location/Description
1	Photo facing north
2	Photo facing east
3	Photo facing south
4	Photo facing west

Traffic Description:

Roadway	# Lanes	Posted Speed	Average Speed	NB/EB Counts	SB/WB Counts
Berkeley Way	2	25	20-25	10	6
Shattuck Avenue	4	25	25	82	106

Diagram/Further Comments:

FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Project Number: 6100.0001 Sheet ___of ___
Project Name: 1974 Shattuck Ave & Berkeley Tech Studies
Test Personnel: Brandon Carroll

NOISE MEASUREMENT SURVEY

Site Number: ST3 Date: 8/14/2024 Time: From 1:40pm To 1:45pm

Site Location: Corner of Shattuck Avenue and University Avenue, in front of McDonalds

Primary Noise Sources: Crosswalk indicator beeping, traffic, pedestrians, people talking, music from stores, slamming doors, loud bus noises, and car horns

Measurement Results

	dBA
L_{eq}	70.1
L_{max}	80.4
L_{min}	61.1
L_{peak}	
L_5	75.7
L_{10}	73.3
L_{50}	67.3
L_{90}	64.0
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA

Comments:

Equipment: LxT 2 Measured Difference: 0.09 dBA
Settings: A-Weighted ☐ Other☐ Slow☐ Fast☐ Windscreen■

Atmospheric Conditions:

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	Relative Humidity (%)	
~4	~4	~67		
Comments:				

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FCS INTERNATIONAL, INC.

Photos Taken:

Photo Number	Location/Description
1	Photo facing north
2	Photo facing east
3	Photo facing south
4	Photo facing west

Traffic Description:

Roadway	# Lanes	Posted Speed	Average Speed	NB/EB Counts	SB/WB Counts
Shattuck Avenue	4	25	25	64	66
University Avenue	4	25	25	95	97

Diagram/Further Comments:

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Memorandum

Date: August 22, 2024

To: Mia Perkins, McSpats, LLC c/o Rhoades Planning Group

From: Henrique Zhu, Assistant Project Manager, FirstCarbon Solutions
Philip Ault, Associate Director, FirstCarbon Solutions

Subject: Water Quality Memorandum for the Proposed 1974 Shattuck Avenue Mixed Use Project in Berkeley, California

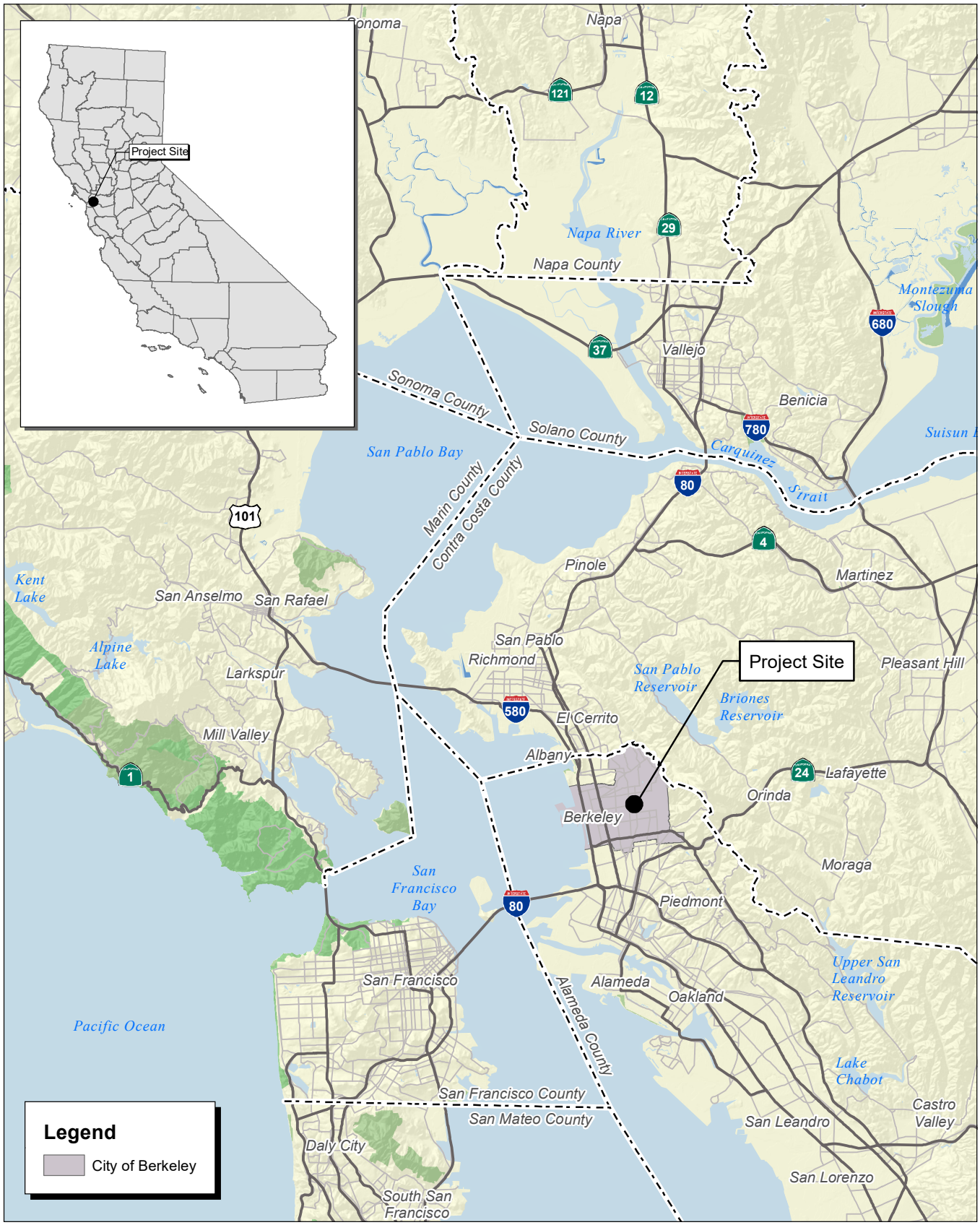
At the request of McSpats, LLC c/o Rhoades Planning Group (project applicant), FirstCarbon Solutions (FCS) prepared this water quality memorandum to describe and summarize findings relating to water quality for the proposed 1974 Shattuck Avenue Mixed Use Project (proposed project).

PROJECT UNDERSTANDING

The project site is located at 1950–1998 Shattuck Avenue, in the City of Berkeley, and consists of Assessor's Parcel Numbers (APNs) 057-205-300-100, 057-205-300-200, 057-205-300-301, 057-205-300-302, and 057-205-300-402 (Exhibit 1). The site is bounded by Shattuck Avenue to the east, multi-family apartments to the west, University Avenue to the south, and Berkeley Way and commercial uses to the north (Exhibit 2). The project site is designated as "Downtown" by the City of Berkeley General Plan (General Plan) and is zoned Downtown Mixed-Use District (C-DMU) by the City of Berkeley Zoning Ordinance. The C-DMU zoning district permits residential uses with a Use Permit and retail uses with a Zoning Certificate.

The project applicant proposes to demolish the existing commercial structures to construct a 28-story mixed-use building with 599 dwelling units, a rooftop restaurant, ground level commercial space, and lobbies, with 16,142 square feet of commercial space on an approximately 0.65-acre site. The proposed project would also consist of approximately 706 square feet of privately owned public open space (POPOS) on the ground floor, 6,150 square feet of podium open space on the second floor, a 6,882-square-foot roof deck on the 14th floor, and 4,200 square feet of rooftop terrace space on the 28th floor. The site would be accessed from Berkeley Way and University Avenue (Exhibit 3).

The project site has a maximum allowed density of 411 dwelling units, but the proposed project would be eligible for a maximum of 602 dwelling units through a State Density Bonus by providing 58 very low-income affordable units (equivalent to 14 percent of the base allowed density). The proposed project does not include any concessions. However, the proposed project would implement three waivers to allow for the construction of the proposed project at the increased residential density by increasing the maximum allowed building height by the C-DMU zoning on-site from 120 feet to 316 feet and reducing setback and residential usable open space requirements under the C-DMU zoning designation.



Source: Census 2000 Data, The California Spatial Information Library (CaSIL).

FIRSTCARBON SOLUTIONS™

5 2.5 0 5 Miles

Exhibit 1
Regional Location Map

61000001 • 08/2024 | 1_regional.mxd

MCSPATS, LLC C/O RHOADES PLANNING GROUP
1974 SHATTUCK AVENUE
WATER QUALITY MEMORANDUM



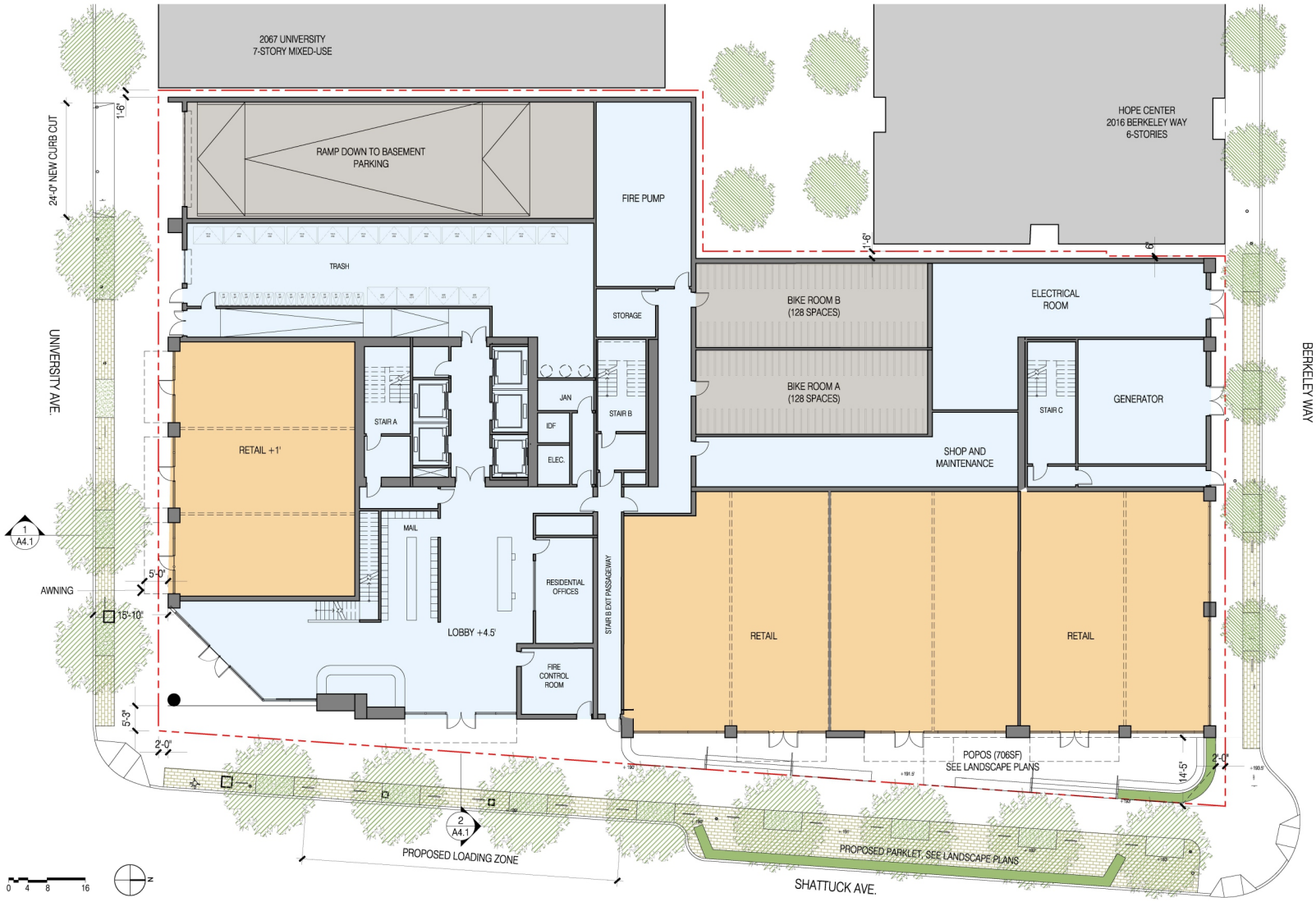
Source: Bing Aerial Imagery. Trachtenberg Architects, 03/12/2024.

FIRSTCARBON SOLUTIONS™

1,000 500 0 1,000 Feet

Exhibit 2
Local Vicinity Map

61000001 • 08/2024 | 2_local_vicinity.mxd



Source: Trachtenberg Architects, 03/12/2024.

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Exhibit 3
Site Plan

WATER QUALITY ANALYSIS

The proposed project is in the City of Berkeley and within the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB), which implements the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan).[1] The Basin Plan designates beneficial uses for surface water bodies and groundwater that the California State Water Resources Control Board (State Water Board) will protect, as well as water quality objectives and strategies for achieving these objectives, such as discharge prohibitions to attain water quality goals. The Basin Plan identifies key pollutants of concern to monitor and reduce in the San Francisco Bay, including pesticides, diazinon, mercury, polychlorinated biphenyls (PCBs), selenium, bacteria, pathogens, and sediment.[2] The San Francisco Bay RWQCB enforces the National Pollutant Discharge Elimination System (NPDES) permit system, Water Discharge Requirements (WDRs), Clean Water Act Section 401 water quality certifications, and other water quality-related approvals in the San Francisco Bay Area, including the project site.

The proposed project would be served with water and wastewater services provided by the East Bay Municipal Utility District (EBMUD). As part of their Annual Water Quality Report, EBMUD conducts water quality sampling for several contaminants at their Water Treatment Plants (WTPs), including those for Walnut Creek, Lafayette, Orinda, Sobrante, and Upper San Leandro.[3] The 2022 Annual Water Quality Report measured the EBMUD's water at WTPs for levels of microbiological pollutants, inorganic pollutants, disinfection byproducts, chloride, odor, dissolved solids, ionic compounds, sulfates, and other parameters of interest.[4] The EBMUD determined that water quality standards surpassed every public health requirement set by the State Water Board and the United States Environmental Protection Agency (EPA).[5]

The project site is located the East Bay Plain Subbasin groundwater basin, which is managed by the EBMUD Groundwater Sustainability Agency (GSA) and the City of Hayward GSA under the East Bay Plain Subbasin Groundwater Sustainability Plan (GSP).[6] As of 2023, 3,600 acre-feet of groundwater was extracted within the East Bay Plain Subbasin. Between 2015 and 2023, total water use within the East Bay Plain Subbasin has ranged between 93,500 and 100,500 acre-feet per year, with approximately 3.7 percent of the supplied water being groundwater.[7]

The project site is currently occupied by retail commercial uses and is entirely covered with impervious surfaces. In addition, the area surrounding the project site is also mostly covered with impervious hardscaped surfaces, with stormwater drains connecting to the City's stormwater drainage system. The

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1 California State Water Resources Control Board (State Water Board). 2023. Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin. Website: https://www.waterboards.ca.gov/sanfranciscobay/basin_planning.html. Accessed August 13, 2024.
2 Ibid.
3 East Bay Municipal Utility District (EBMUD). 2023. 2022 Annual Water Quality Report. March.
4 Ibid.
5 Ibid.
6 East Bay Municipal Utility District (EBMUD) and City of Hayward. 2024. East Bay Plain Subbasin Groundwater Sustainability Plan Water Year 2023 Annual Report. March.
7 Ibid.

proposed project would construct 6,150 square feet of landscaping on the second floor, which would include 1,306 square feet of flow-through planters, as well as 585 square feet of landscaping on the 14th floor roof deck. As such, the proposed project would construct a total of 6,735 square feet of pervious landscaping, which would decrease impervious surfaces on-site by approximately 24 percent from existing conditions, decreasing the amount of stormwater runoff from the project site compared to existing conditions.[8] In addition, the proposed project's flow-through planters would reduce the pollutant load from stormwater runoff into the City's stormwater drainage system, preventing water quality standard violations.

Construction and operation of the proposed project would be subject to federal and State water quality regulations, which are enforced by the San Francisco Bay RWQCB. The City of Berkeley is a permittee under the Municipal Regional Stormwater NPDES Permit (MRP) Order R2-2009-0074, NPDES Permit No. CAS612008. In accordance with the MRP, the City establishes quality and monitoring requirements for discharging urban runoff. These requirements include the use of Best Management Practices (BMPs) for new and significant redevelopment projects, public education and outreach, industrial inspections, and guidance to the City's own Public Works staff to reduce or remove pollutant loads from urban runoff to the maximum extent practicable.

To comply with the MRP, the City requires that all development plans that replace or construct over 2,500 square feet, including the proposed project, meet standards contained in the C.3 and C.6 Stormwater Requirements Checklist.[9] In addition, the proposed project would also be required to obtain a State General Construction Permit, which requires the proposed project to submit a Storm Water Pollution Prevention Plan (SWPPP) to the City prior to the issuance of a building permit. As the proposed project would also construct over 500 square feet of landscaping, the proposed project would further be required to comply with the State's Model Water Efficient Landscape Ordinance (MWELO), as well as the EBMUD's Section 31 Water Efficiency Requirements and MWELO Compliance document.

Furthermore, the proposed project would be required to comply with applicable regulations, policies, and actions relating to water quality contained in the City's General Plan, Downtown Area Plan, and Municipal Code. The proposed project would additionally be required to comply with the City's Standard Conditions of Approval (COAs) prior to the acquisition of a building permit. Conformance with existing permits and the application of existing local and State regulations would prevent water quality standard violations and increases in surface runoff. Local policies, actions, and regulations applicable to the proposed project and relevant to water quality include, but are not limited to, the following.

[8] The project site is approximately 0.65 acre, or approximately 28,319 square feet. The proposed project would construct approximately 6,735 square feet of pervious surfaces across the 2nd floor and rooftop, resulting in an approximately 24 percent increase of pervious surfaces on-site.

[9] City of Berkeley. 2016. Stormwater Requirements Checklist. January 14.

General Plan Policies and Actions

Policy EM-5 "**Green" Buildings.** Promote and encourage compliance with "green" building standards.

Actions

A. Encourage, and where appropriate require, new construction and major remodel projects to be sited, designed, constructed, and operated to enhance the well-being of their occupants and to minimize present and future impacts on the community and the natural environment.
B. Encourage landscaping for water and energy efficiency.
C. Encourage buildings to incorporate renewable energy and energy- and water-efficient technologies.
D. Encourage use of recycled-content construction materials.
E. Encourage efforts to improve indoor air quality and to provide a comfortable and healthy environment.
F. Encourage reduction of construction and demolition waste.
G. Encourage construction of durable buildings.
H. Establish a green design assistance and green building certification program.

Policy EM-24 **Sewers and Storm Sewers.** Protect and improve water quality by improving the citywide sewer system.

Actions

E. Ensure that new development pays its fair share of improvements to the storm sewerage system necessary to accommodate increased flows from the development.

Policy EM-25 **Groundwater.** Protect local groundwater by promoting enforcement of State water quality laws that ensure nondegradation and beneficial use of groundwater.

Policy EM-26 **Water Conservation.** Promote water conservation through City programs and requirements.

Actions

A. Encourage drought-tolerant landscaping and low-flow irrigation systems.
B. Consider participation in the East Bay Municipal Utility District's East Bay-shore Recycled Water Project to make recycled water available for irrigation and other nonpotable uses.

Policy EM-31 **Landscaping.** Encourage drought-resistant, rodent-resistant, and fire-resistant plants to reduce water use, prevent erosion of soils, improve habitat, lessen fire danger, and minimize degradation of resources.

Downtown Area Plan Policies and Actions

Policy ES-4.3 **Water Conservation, Reuse and Retention.** Promote best practices for substantial water conservation, reuse, and retention as part of new construction, renovations, site improvements, and landscaping.

A. Require on-site water conservation and stormwater retention features, and establish development incentives for performance in this area.
B. Development projects should generate no new net rainwater runoff.
C. Work with East Bay Municipal Utility Districts to provide incentives for the installation and/or replacement of water fixtures for greater efficiency.
D. Encourage the use of innovative water conservation technologies, such as waterless urinals and water reuse, through the development of local guidelines and/or alternative building code requirements.
E. Encourage cisterns and devices to retain and make use of rainwater (see policies under Goals ES-5 and OS-2).
F. Encourage water recycling through the use of graywater for flushing toilets, irrigation, and other purposes, by working to reform existing regulations that may discourage such practices, and by developing guidelines to illustrate opportunities and design considerations.

Policy OS-2.5 **Water Conservation.** New landscaping and retrofits should incorporate effective water conservation and water reuse features.

A. Establish water conservation and recycling standards for new landscaping. Require use of drought-tolerant plants and advanced irrigation systems to substantially reduce water usage.

Policy ES-2.4 **Downtown Energy and Water Facilities.** Consider sustainable infrastructure that serves several parcels or blocks in Downtown and abutting areas.

Municipal Code Ordinances

Chapter 7.76–Clean Stormwater Fund

Municipal Code Chapter 7.76 requires that all property owners within the City connecting to the City's stormwater drainage system pay a fee for clean stormwater activities, which allows the City to raise the income and revenue necessary to improve the quality of stormwater discharged from the City's stormwater drainage system.

Chapter 17.16–Construction Requirements for Sanitary Sewers and Storm Drains

Municipal Code Chapter 17.16 establishes requirements for the connection and operation of new private development in the City to the City's sanitary sewer lines and storm drains.

Chapter 17.20–Reduction of Stormwater Pollution

Municipal Code Chapter 17.20 establishes requirements to eliminate non-stormwater discharges to the City's storm drain system as well as to reduce the contamination of stormwater by pollutants to the maximum extent practicable. Specifically, this chapter introduces required practices and mandatory compliance with federal, State, and City BMPs during construction and development activities.

City Standard Conditions of Approval

As discussed above, approval and development of the proposed project would be subject to the City of Berkeley's Standard COAs, pursuant to the City's Municipal Code Section 23.406.040 and, as applicable here, the City's MRP. The City of Berkeley has the following Standard COAs relevant to water quality, which would apply to the proposed project. Unless otherwise discussed, the proposed project is assumed to incorporate these COAs.

Stormwater Requirements

The applicant shall demonstrate compliance with the requirements of the City's NPDES permit as described in Municipal Code Chapter 17.20. The following conditions apply:

A. The project plans shall identify and show site-specific Best Management Practices (BMPs) appropriate to activities conducted on-site to limit to the maximum extent practicable the discharge of pollutants to the City's storm drainage system, regardless of season or weather conditions.

B. Trash enclosures and/or recycling area(s) shall be covered; no other area shall drain onto this area. Drains in any wash or process area shall not discharge to the storm drain system; these drains should connect to the sanitary sewer. Applicant shall contact the City of Berkeley and the East Bay Municipal Utility District (EBMUD) for specific connection and discharge requirements. Discharges to the sanitary sewer are subject to the review, approval, and conditions of the City of Berkeley and EBMUD.

C. Landscaping shall be designed with efficient irrigation to reduce runoff, promote surface infiltration, and minimize the use of fertilizers and pesticides that contribute to stormwater pollution. Where feasible, landscaping should be designed and operated to treat runoff. When and where possible, xeriscape and drought-tolerant plants shall be incorporated into new development plans.

D. Design, location, and maintenance requirements and schedules for any stormwater quality treatment structural controls shall be submitted to the Department of Public Works for review with respect to reasonable adequacy of the controls. The review does not relieve the property owner of the responsibility for complying with Municipal Code Chapter 17.20 and future revisions to the City's overall stormwater quality ordinances. This review shall be conducted prior to the issuance of a building permit.

E. All paved outdoor storage areas must be designed to reduce/limit the potential for runoff to contact pollutants.

F. All on-site storm drain inlets/catch basins must be cleaned at least once a year immediately prior to the rainy season. The property owner shall be responsible for all costs associated with proper operation and maintenance of all storm drainage facilities (pipelines, inlets, catch basins, outlets, etc.) associated with the project, unless the City accepts such facilities by Council action. Additional cleaning may be required by City of Berkeley Public Works Engineering Dept.

G. All private or public projects that create and/or replace 10,000 square feet or more of impervious surface must comply with Provision C.3 of the Alameda County NPDES permit and must incorporate stormwater controls to enhance water quality. Permit submittals shall include a Stormwater Requirement Checklist and detailed information showing how the proposed project will meet Provision C.3 stormwater requirements, including (a) site design measures to reduce impervious surfaces, promote infiltration, and reduce water quality impacts; (b) Source Control Measures to keep pollutants out of stormwater runoff; (c) stormwater treatment measures that are hydraulically sized to remove pollutants from stormwater; (d) an Operations and Maintenance (O and M) agreement for all stormwater treatment devices and installations; and (e) engineering calculations for all stormwater devices (both mechanical and biological).

H. All on-site storm drain inlets must be labeled “No Dumping–Drains to Bay” or equivalent using methods approved by the City.

I. Most washing and/or steam cleaning must be done at an appropriately equipped facility that drains to the sanitary sewer. Any outdoor washing or pressure washing must be managed in such a way that there is no discharge or soaps or other pollutants to the storm drain. Sanitary connections are subject to the review, approval, and conditions of the sanitary district with jurisdiction for receiving the discharge.

J. Sidewalks and parking lots shall be swept regularly to prevent the accumulation of litter and debris. If pressure washed, debris must be trapped and collected to prevent entry to the storm drain system. If any cleaning agent or degreaser is used, wash water shall not discharge to the storm drains; wash waters should be collected and discharged to the sanitary sewer. Discharges to the sanitary sewer are subject to the review, approval, and conditions of the sanitary district with jurisdiction for receiving the discharge.

K. The applicant is responsible for ensuring that all contractors and sub-contractors are aware of and implement all stormwater quality control measures. Failure to comply with the approved construction BMPs shall result in the issuance of correction notices, citations, or a project stop work order.

Public Works

- All piles of debris, soil, sand, or other loose materials shall be covered at night and during rainy weather with plastic at least one-eighth millimeter thick and secured to the ground.
- The applicant shall ensure that all excavation takes into account surface and subsurface waters and underground streams so as not to adversely affect adjacent properties and right-of-way.
- The project sponsor shall maintain sandbags or other devices around the site perimeter during the rainy season to prevent on-site soils from being washed off-site and into the storm drain system. The project sponsor shall comply with all City ordinances regarding construction and grading.
- Prior to any excavation, grading, clearing, or other activities involving soil disturbance during the rainy season, the applicant shall obtain approval of an erosion prevention plan by the Building and Safety Division and the Public Works Department. The applicant shall be responsible for following these and any other measures required by the Building and Safety Division and the Public Works Department.

Summary of Impacts

Potential impacts related to the proposed project are identified and analyzed below in accordance with guidance questions contained in Appendix G of the California Environmental Quality Act (CEQA) Guidelines regarding water quality.

No streams or rivers are located on or immediately adjacent to the project site. Furthermore, according to the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), the project site is not located within an area with flood risks.[10] The project site is also not located in a tsunami hazard area.[11] As stated above, water would be provided to the proposed project by the EBMUD. Water supplied within the East Bay Plain Subbasin by the EBMUD consists of approximately 3.7 percent groundwater.[12]

Since no portion of the project site is located on a shoreline susceptible to tsunamis or near streams or rivers, the proposed project would not result in substantial inundation by seiche, tsunami, or stream or river flooding and no impact would occur related to a release of pollutants due to related inundation.

During construction activity, runoff carrying eroded soils and pollutants could enter storm drainage systems and enter nearby waterbodies, increasing sedimentation and degrading downstream water quality. The sediments could also seep into the associated groundwater table. This would represent a potentially significant construction impact related to surface and groundwater quality. However,

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[10] Federal Emergency Management Agency (FEMA). 2009. FEMA's National Flood Hazard Layer (NFHL) Viewer. Website: https://www.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. Accessed June 27, 2024.

[11] California Department of Conservation. 2022. CGS Information Warehouse: Tsunami Hazard Area Map. Website: https://maps.conservation.ca.gov/cgs/informationwarehouse/ts_evacuation/. Accessed June 27, 2024.

[12] East Bay Municipal Utility District (EBMUD) and City of Hayward. 2024. East Bay Plain Subbasin Groundwater Sustainability Plan Water Year 2023 Annual Report. March.

construction of the proposed project would be required to adhere to the MRP through the mandatory submission of a SWPPP, which would ensure that stormwater runoff during construction contains a less than significant level of pollutant load. In addition, the proposed project would be required to comply with the City's Standard COAs, which mandate that construction of the proposed project implement BMPs on-site to limit the discharge of stormwater pollutants to the maximum extent practicable.

As described above, the proposed project would decrease impervious surfaces on-site by approximately 24 percent from existing conditions, decreasing the amount of stormwater runoff from the project site compared to the existing project site, which is completely covered by impervious surfaces. Additionally, the proposed stormwater drainage system would be designed and constructed in accordance with the requirements of the City's NPDES permit described in Municipal Code Chapter 17.20. The proposed project would also comply with all applicable federal, State, and local regulations, policies, and actions pertaining to water quality. Operation of the proposed project would mandatorily comply with the City's Standard COAs, which require that the proposed project provide appropriate stormwater quality treatment, subject to review by the City's Public Works Department. As such, the proposed project would be consistent with stormwater requirements in Provision C.3 of the Alameda County NPDES permit. Moreover, the proposed project would mandatorily comply with Municipal Code Chapter 7.76, Clean Stormwater Fund, which requires that all property owners within the City connecting to the City's stormwater drainage system pay a fee to the City for the maintenance and improvement of the City's stormwater infrastructure.

Given the above, the proposed project would not substantially degrade water quality, violate any water quality standards, or substantially alter the existing drainage pattern of the project area such as to cause erosion and/or siltation on- and off-site, both during construction activities and operation of the proposed project. Furthermore, the proposed project would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, both during construction activities and during operation of the proposed project.

The project site does not contain any active groundwater wells, nor are any proposed. Additionally, the proposed project would result in a reduction in impervious surfaces from existing on-site conditions by approximately 24 percent and would be serviced by the EBMUD for water supply. Furthermore, the proposed project would comply with all applicable federal, State, and local regulations, policies, and actions pertaining to water quality. As such, the proposed project would not result in any significant effects relating to groundwater.

In summary, the project site does not contain flood or tsunami hazards and is not adjacent to any streams or rivers. The proposed project would also reduce the existing impervious surfaces by 24 percent. In addition, the proposed project would comply with all applicable federal, State, and local regulations, policies, and actions pertaining to water quality, including the San Francisco Bay RWQCB Basin Plan, subject to review and approval by the City's Public Works Department. As such, approval of

the proposed project would not result in any significant effects relating to water quality, and impacts relating to water quality would be less than significant.

CONCLUSION

Based on the project understanding described above, the proposed project would result in less than significant impacts to water quality after incorporation of the City's Standard COAs, compliance with the federal and State regulations, and compliance with City's above-listed plans, policies, and regulations.

Thank you for the opportunity to conduct this water quality impacts analysis. Please feel free to contact Phil Ault (pault@fcs-intl.com) should you have any questions.

Sincerely,



Philip Ault, Associate Director
FirstCarbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

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FCS
An ADEC Innovation

Memorandum

Date: August 30, 2024
Revised: October 10, 2024

To: Mark Rhoades, McSpats, LLC c/o Rhoades Planning Group

From: Philip Ault, Director of Noise and Air Quality, FirstCarbon Solutions

Subject: Noise Impact Analysis for the Proposed 1974 Shattuck Avenue Mixed Use Project in Berkeley, California

On behalf McSpats, LLC (project applicant), FirstCarbon Solutions (FCS), prepared this memorandum to evaluate noise impacts that could result from construction and operations of the proposed 1974 Mixed Use Project (proposed project). Supporting documents such as calculation worksheets and other modeling outputs are included as attachments to this memorandum.

PROJECT DESCRIPTION

The project applicant proposes to demolish the existing commercial structures to construct a 28-story mixed-use building with 599 multi-family apartment dwelling units, ground level lobbies, a rooftop restaurant over ground level lobbies, and commercial space. The outdoor space would consist of 13,032 square feet of residential open space, 706 square feet of commercial open space, and a 5,840-square-foot roof deck with 6,735 square feet of landscaping across the residential units. The project site consists of Assessor's Parcel Numbers (APN) 057-205-300-100, 057-205-300-200, 057-205-300-301, 057-205-300-302, and 057-205-300-402, at 1950–1998 Shattuck Avenue in the City of Berkeley (City).

The project site is bounded Shattuck Avenue to the east, multi-family apartments to the west, commercial uses and University Avenue to the south, and Berkeley Way and commercial uses to the north (Exhibit 1).

The project site is designated as "Downtown" by the City of Berkeley General Plan (General Plan) and is zoned Downtown Mixed-Use District "C-DMU" by the City of Berkeley Zoning Ordinance. The C-DMU zoning district permits residential uses with a Use Permit and retail uses with a Zoning Certificate.

NOISE AND VIBRATION FUNDAMENTALS

A summary of the fundamentals of noise and vibration are provided as an attachment to this document.



Source: Bing Aerial Imagery. City of Berkeley. TRACHTENBERG ARCHITECTS, Inc. 03/2024.

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40 20 0 40
Feet

Project Site - Overlay Map

REGULATORY SETTING

Federal Regulations

Currently, no federal noise standards directly regulate environmental noise associated with temporary construction activities or the long-term operations of development projects.

Federal Transit Administration

Though not regulatory in nature, vibration impact criteria for buildings and other structures have been established by the Federal Transit Authority (FTA), as building and structural damages are generally the foremost concern when evaluating the impacts of construction-related vibrations. For the evaluation of the proposed project's construction-related vibration impacts, the following FTA vibration impact criteria, shown in Table 1, are used given the absence of applicable federal, State, and City standards specific to temporary construction activities and their potential to result in building and structural damages.[1]

Table 1: Federal Transit Administration Construction Vibration Impact Criteria

Building Category	PPV (in/sec)
I. Reinforced—Concrete, Steel or Timber (no plaster)	0.5
II. Engineered Concrete and Masonry (no plaster)	0.3
III. Nonengineered Timber and Masonry Buildings	0.2
IV. Buildings Extremely Susceptible to Vibration Damage	0.12

Notes:
PPV = peak particle velocity
VdB = vibration measured as root mean square (rms) velocity in decibels of 1 microinch per second
Source: Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual.

The FTA has also established criteria for the assessment of construction noise impacts. The FTA's daytime and nighttime criteria are shown in Table 2. To be discussed later, the City staff has determined that FTA's criteria for assessment of the proposed project's construction noise impacts are appropriate thresholds. According to the FTA, exceedances of these criteria may result in adverse community reaction.

[1] Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual.

Table 2: Federal Transit Administration Construction Noise Impact Criteria

Land Use	$L_{eq\ equipment\ (8hr)}$	
	Day	Night
Residential	80	70
Commercial	85	85
Industrial	90	90

Notes:
$L_{eq\ equipment\ (8hr)}$ = equipment noise level in L_{eq} (equivalent noise/sound level) over an 8-hour time period. The analysis assumes that the L_{eq} over this time period would be approximately equal to the L_{eq} over a single construction workday, from start to finish of that day's activities.

Source: Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. Detailed Analysis Construction Noise Criteria.

State Regulations

2017 General Plan Guidelines

The State of California's 2017 General Plan Guidelines propose county and city standards for acceptable exterior noise levels based on land use. These standards are incorporated into land use planning processes to prevent or reduce noise and land use incompatibilities. The State's suggested compatibility considerations between various land uses and exterior noise levels are not regulatory in nature but are recommendations intended to aid communities in determining their own noise-acceptability standards.

Assembly Bill 1307

Assembly Bill (AB) 1307 went into effect January 1, 2024. This bill clarifies that "for residential projects, the effects of noise generated by project occupants and their guests on human beings is not a significant effect on the environment." Therefore, this analysis does not address potential noise impacts from future occupants and their guests on sensitive receptors in the project vicinity.

Local Regulations

The project site is located within the City of Berkeley. The General Plan and Berkeley Municipal Code (Municipal Code) contain guidelines, standards, and regulations for the control of noise.

Berkeley General Plan

The Environmental Management (EM) Element of the General Plan serves as the City's noise element and contains several noise policies which require that standard noise conditions be imposed on all planning decisions.[2] The General Plan does not establish any quantitative noise standards or thresholds

[2] City of Berkeley. 2002. Berkeley General Plan.

of significance, though Policy EM-47 includes residences, child care centers, hospitals, nursing homes, schools, and parks as noise-sensitive uses. The General Plan includes the following noise-related policies:

Policy EM-43 **Noise Reduction:** Reduce significant noise levels and minimize new sources of noise.

Policy EM-44 **Noise Prevention and Elimination:** Protect public health and welfare by eliminating existing noise problems where feasible and by preventing significant future degradation of the acoustic environment.

Actions

A. Incorporate noise considerations into land use planning decisions.
B. Ensure the effective enforcement of City, State, and federal noise levels by appropriate City departments.
C. Coordinate with the California Occupational Safety and Health Administration (Cal-OSHA) to provide information on and enforcement of occupational noise requirements within the City of Berkeley.
D. Support federal and State legislation to lower allowable noise levels on all motor vehicles.

Policy EM-45 **Traffic Noise:** Work with local and regional agencies to reduce local and regional traffic, which is the single largest source of unacceptable noise in the City.

Policy EM-46 **Noise Mitigation:** Require operational limitations and all feasible noise buffering for new uses that generate significant noise impacts near residential, institutional, or recreational uses.

Policy EM-47 **Land Use Compatibility:** Ensure that noise-sensitive uses, including, but not limited to, residences, child care centers, hospitals, and nursing homes, are protected from detrimental noise levels.

Berkeley Municipal Code

The Municipal Code establishes a number of regulations that would apply to the proposed project's temporary construction activities and long-term operations. Section 13.40.050 contains the Municipal Code's exterior noise standards.

Section 13.40.050–Exterior Noise Standards

A. Maximum permissible sound levels shall be determined by the zoning district of the property subject to the noise, not the property from which the noise originates.
   1. The noise standards for the various categories of land use in Table 13.40-1 [see Table 3] or 13.40-2 [see Table 4] shall, unless otherwise specifically indicated in other codes, apply to all such property within a designated zone.

2. No person shall operate or cause to be operated any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the sound level when measured on any other property to exceed:
   a) The noise standard for that land use as specified in Table 13.40-1 [see Table 3] for a cumulative period of more than 30 minutes in any hour; or
   b) The noise standard for that land use as specified in Table 13.40-1 [see Table 3] plus 5 dBA for a cumulative period of more than 15 minutes in any hour; or
   c) The noise standard for that land use as specified in Table 13.40-1 [see Table 3] plus 10 dBA for a cumulative period of more than 5 minutes in any hour; or
   d) The noise standard for that land use as specified in Table 13.40-1 [see Table 3] plus 15 dBA for a cumulative period of more than 1 minute in any hour; or
   e) The noise standard for that land use as specified in Table 13.40-1 [see Table 2] plus 20 dBA for any period of time.

Table 3: Exterior Noise Limits–Levels not to be exceeded more than 30 minutes any hour

Zoning District	Time Period	Noise Level (dBA)
R-1, R-2, R-1A, R-2A, and ESR	7:00 a.m.–10:00 p.m.	55
	10:00 p.m.–7:00 a.m.	45
R-3 and above	7:00 a.m.–10:00 p.m.	60
	10:00 p.m.–7:00 a.m.	55
Commercial	7:00 a.m.–10:00 p.m.	65
	10:00 p.m.–7:00 a.m.	60
Industry	Anytime	70
Notes: dBA = A-weighted decibel Source: Berkeley Municipal Code. Table 13.40-1: Exterior Noise Limits.		

3. If the measured ambient noise level is greater than the level permissible within any of the noise limit categories above, the sound level when measured on any other property shall not exceed:
   a) The ambient noise level for a cumulative period of more than 30 minutes in any hour; or
   b) The ambient noise level plus 5 dBA for a cumulative period of more than 15 minutes in any hour; or
   c) The ambient noise level plus 10 dBA for a cumulative period of more than 5 minutes in any hour; or

d) The ambient noise level plus 15 dBA for a cumulative period of more than 1 minute in any hour; or
e) The ambient noise level plus 20 dBA for any period of time.

4. If the measurement location is on a boundary between two different zones, the sound level limit applicable to the quieter noise zone shall apply.
5. If possible, the ambient noise level may be measured at the same location along the property line utilized in subsection A.2 of this section with the alleged offending noise source inoperative. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the ambient noise level may be determined by traveling away from the noise source to a point where a steady state decibel reading is achieved. If this test is not possible, the noise level measured while the source is in operation shall be compared directly to the noise level standards.

B. The classification of additional areas of the community not listed in Table 13.40-1 [see Table 3] in terms of environmental noise zones shall be determined by the EHD. Industrial noise limits are intended primarily for use at the boundary of industrial zones rather than for noise reduction within the zone.

Section 13.40.060 contains the Municipal Code's interior noise standards.

Section 13.40.060–Interior Noise Standards

A. Maximum Permissible Dwelling Interior Sound Levels
1. The interior noise standards for multi-family residential dwellings as presented in Table 13.40-2 [see Table 4] shall apply, unless otherwise specifically indicated in other codes, within all such dwellings with windows in their normal seasonal configuration.

Table 4: Interior Noise Limits

Zoning District	Time Interval	Allowable Interior Noise Level (dBA)
All	10:00 p.m.–7:00 a.m.	40
	7:00 a. m.–10:00 p.m.	45
Notes: dBA = A-weighted decibels Source: Berkeley Municipal Code. Table 13.40-2: Interior Noise Limits.		

2. No person shall operate or cause to be operated within a multi-family dwelling unit any source of sound or allow the creation of any noise which causes the sound level when measured inside a neighboring dwelling unit to exceed:
a) The noise standard as specified in Table 13.40-2 [see Table 4] for a cumulative period of more than 5 minutes in any hour; or

b) The noise standard as specified in Table 13.40-2 [see Table 4] plus 5 dBA for a cumulative period of more than one minute in any hour; or
c) The noise standard as specified in Table 13.40-2 [see Table 4] plus 10 dBA for any period of time.

3. If the measured ambient noise level is greater than the level permissible within any of the noise limit categories above, the sound level when measured on the other property shall not exceed:
   a) The ambient noise level for a cumulative period of more than 5 minutes in any hour; or
   b) The ambient noise level plus 5 dBA for a cumulative period of more than 1 minute in any hour; or
   c) The ambient noise level plus 10 dBA for any period of time.

Section 13.40.070(B)(7) contains regulations specific to construction and demolition activities.

Section 13.40.070(B)(7)–Construction/Demolition

a) Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work before 7:00 a.m. on a weekday (or before 9:00 a.m. on a weekend or holiday) or after 7:00 p.m. on a weekday (or after 8:00 p.m. on a weekend or holiday) such that the sound therefrom across a residential or commercial real property line violates Section 13.40.050 or 13.40.060, except for emergency work of public service utilities or by variance issued by the EHD. (This section shall not apply to the use of domestic power tools as specified in subsection B.11 of this section.)

(b) *Noise Restrictions at Affected Properties.* Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum sound levels at affected properties will not exceed those listed in the following schedule:

Mobile Equipment. Maximum sound levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment [see Table 5]:

Table 5: Mobile Equipment Noise Limits

	R-1, R-2 Residential	R-3 and above Multi-family Residential	Commercial/ Industrial
Weekdays 7:00 a.m. to 7:00 p.m.	75 dBA	80 dBA	85 dBA
Weekends 9:00 a.m. to 8:00 p.m. and legal holidays	60 dBA	65 dBA	70 dBA
Notes: dBA = A-weighted decibels Source: Berkeley Municipal Code. Table 13.40-3.			

Stationary Equipment. Maximum sound levels for repetitively scheduled and relatively long-term operation (period of 10 days or more) of stationary equipment [see Table 6]:

Table 6: Stationary Equipment Noise Limits

	R-1, R-2 Residential	R-3 and above Multi-family Residential	Commercial/ Industrial
Weekdays 7:00 a.m. to 7:00 p.m.	60 dBA	65 dBA	70 dBA
Weekends 9:00 a.m. to 8:00 p.m. and legal holidays	50 dBA	55 dBA	60 dBA
Notes: dBA = A-weighted decibels Source: Berkeley Municipal Code. Table 13.40-4.			

Section 13.40.070(B)(8)–Vibration

Operating or permitting the operation of any device that creates a vibration, which annoys or disturbs at least two or more reasonable persons of normal sensitiveness who reside in separate residences (including apartments and condominiums) at or beyond the property boundary of the source, if on private property, or at least 150 feet (46 meters) from the source, if on a public space or public right-of-way.

Berkeley Standard Conditions of Approval

The City has established the following Standard Conditions of Approval that it imposes on projects and which would apply to construction of the proposed project.

Construction Hours (Residential Zoning Districts)

Construction activity shall be limited to between the hours of 8:00 a.m. and 6:00 p.m. on Monday through Friday and between 9:00 a.m. and noon on Saturday. No construction-related activity shall occur on Sundays or any federal holiday.

Construction Hours (Nonresidential Districts)

Construction activity shall be limited to between the hours of 7:00 a.m. and 6:00 p.m. on Monday through Friday and between 9:00 a.m. and 4:00 p.m. on Saturday. No construction-related activity shall occur on Sundays or any federal holiday.

Construction Hours (Exceptions)

It is recognized that certain construction activities, such as the placement of concrete, must be performed in a continuous manner and may require an extension of these work hours. Prior to initiating any activity that might require a longer period, the developer must notify the Zoning Officer and request

an exception for a finite period of time. If the Zoning Officer approves the request, then 2 weeks prior to the expanded schedule, the developer shall notify businesses and residents within 500 feet of the project site, describing the expanded construction hours. A copy of such notice and methodology for distributing the notice shall be provided in advance to the City for review and approval. The project shall not be allowed more than 15 extended working days.

Construction Noise Reduction Program

The applicant shall develop a site-specific noise reduction program prepared by a qualified acoustical consultant to reduce construction noise impacts to the maximum extent feasible, subject to review and approval of the Zoning Officer. The noise reduction program shall include the time limits for construction listed above, as measures needed to ensure that construction complies with Berkeley Municipal Code, Section 13.40.070. The noise reduction program should include, but shall not be limited to, the following available controls to reduce construction noise levels as low as practical:

A. Construction equipment should be well maintained and used judiciously to be as quiet as practical.

B. Equip all internal combustion engine-drive equipment with mufflers, which are in good condition and appropriate for the equipment.

C. Utilize “quiet” models of air compressors and other stationary noise sources where technology exists. Select hydraulically or electrically powered equipment and avoid pneumatically powered equipment where feasible.

D. Locate stationary noise-generating equipment as far as possible from sensitive receptors when adjoining construction sites. Construct temporary noise barriers or partial enclosures to acoustically shield such equipment where feasible.

E. Prohibit unnecessary idling of internal combustion engines.

F. If impact pile driving is required, pre-drill foundation pile holes to minimize the number of impacts required to seat the pile.

G. Construct solid plywood fences around construction sites adjacent to operational business, residences, or other noise-sensitive land uses where the noise control plan analysis determines that a barrier would be effective at reducing noise.

H. Erect temporary noise control blanket barriers, if necessary, along building façades facing construction sites. This mitigation would only be necessary if conflicts occurred which were irresolvable by proper scheduling. Noise control blanket barriers can be rented and quickly erected.

I. Route construction-related traffic along major roadways and away from sensitive receptors where feasible.

Construction Noise Management–Public Notice Required

At least 2 weeks prior to initiating any construction activities at the site, the applicant shall provide notice to businesses and residents within **500 feet** of the project site. This notice shall at a minimum provide the following: (1) project description, (2) description of construction activities, (3) daily construction schedule (i.e., time of day) and expected duration (number of months), (4) the name and phone number of the Project Liaison for the project that is responsible for responding to any local complaints, (5) commitment to notify neighbors at least 4 days in advance of authorized extended work hours and the reason for extended hours, and (6) that construction work is about to commence. The liaison would determine the cause of all construction-related complaints (e.g., starting too early, bad muffler, worker parking, etc.) and institute reasonable measures to correct the problem. A copy of such notice and methodology for distributing the notice shall be provided in advance to the City for review and approval.

Noise Reduction Plan

Applicants are required to develop a site-specific noise reduction program prepared by a qualified acoustical consultant to reduce construction noise impacts to the maximum extent feasible. The noise reduction program would include several elements that would reduce the exposure of sensitive receptors to construction noise, such as the following:

- Equipping all internal combustion engine-driven equipment with mufflers in good condition
- Pre-drilling foundation pile holes to minimize the use of pile drivers
- Installing solid plywood fences around construction sites adjacent to sensitive receptors
- Erecting temporary noise control blanket barriers along building façades facing construction sites.

HVAC Noise Reduction

Prior to the issuance of building permits, the project applicant shall submit plans that show the location, type, and design of proposed heating, ventilation, and air conditioning (HVAC) equipment. In addition, the applicant shall provide product specification sheets or a report from a qualified acoustical consultant showing that operation of the proposed HVAC equipment will meet the City's exterior noise requirements in Municipal Code Section 13.40.050. The City's Planning and Development Department shall review the submitted plans, including the selected HVAC equipment, to verify compliance with exterior noise standards.

Loading

All loading/unloading activities associated with deliveries to all uses shall be restricted to the hours of 7:00 a.m. to 10:00 p.m. daily.

Project Construction Website

The applicant shall establish a project construction website with the following information clearly accessible and updated monthly or more frequently as changes warrant:

- Contact information (i.e., “hotline” phone number and email address) for the project construction manager.
- Calendar and schedule of daily/weekly/monthly construction activities.
- The final Conditions of Approval, Mitigation Monitoring and Reporting Program, Transportation Construction Plan, Construction Noise Reduction Program, and any other reports or programs related to construction noise, air quality, and traffic.

Damage Due to Construction Vibration

The project applicant shall submit screening level analysis prior to, or concurrent with, demolition building permit. If a screening level analysis shows that the project has the potential to result in damage to structures, a structural engineer or other appropriate professional shall be retained to prepare a vibration impact assessment (assessment). The assessment shall take into account project-specific information such as the composition of the structures, location of the various types of equipment used during each phase of the project, as well as the soil characteristics in the project area, in order to determine whether project construction may cause damage to any of the structures identified as potentially impacted in the screening level analysis. If the assessment finds that the project may cause damage to nearby structures, the structural engineer or other appropriate professional shall recommend design means and methods of construction that avoid the potential damage, if feasible. The assessment and its recommendations shall be reviewed and approved by the Building and Safety Division and the Zoning Officer. If there are no feasible design means or methods to eliminate the potential for damage, the structural engineer or other appropriate professional shall undertake an existing conditions study (study) of any structures (or, in case of large buildings, of the portions of the structures) that may experience damage. This study shall:

- Establish the baseline condition of these structures, including, but not limited to, the location and extent of any visible cracks or spalls; and
- Include written descriptions and photographs.

The baseline study shall be reviewed and approved by the Building and Safety Division and the Zoning Officer prior to issuance of a grading permit. Upon completion of the project, the structures (or in case of large buildings, of the portions of the structures) previously inspected will be resurveyed, and any new cracks or other changes shall be compared to the pre-construction conditions and a determination shall be made as to whether the proposed project caused the damage. The findings shall be submitted to the Building and Safety Division and the Zoning Officer for review. If it is determined that project construction has resulted in damage to the structure, the damage shall be repaired to the pre-existing condition by the project sponsor, provided that the property owner approves of the repair.

EXISTING NOISE CONDITIONS

Ambient Noise

Figure 21 of the General Plan EM Element indicates that ambient noise levels at and in the vicinity of the project site are approximately 65 A-weighted decibels (dBA) day/night average sound level (L_{dn}) based on transportation sources such as vehicle traffic along Shattuck Avenue.[3]

On August 14, 2024, noise measurements were obtained at multiple locations near the project site along Shattuck Avenue to further aid in the characterization of daytime ambient noise conditions surrounding the proposed project and nearby sensitive receptors. The measurements ranged between 58.5 dBA and 70.1 dBA equivalent noise/sound level (L_{eq}). Noise sources were primarily vehicle traffic along Shattuck Avenue, as well as pedestrian and commercial activity. These ambient noise measurements correlate well with the General Plan's 65 dBA L_{dn} estimate for the project site. The noise measurements were recorded by FCS staff using a Larson Davis LxT Sound Level Meter positioned approximately 5 feet above ground and away from reflective surfaces, as appropriate. Weather conditions were mostly clear and sunny with negligible wind. Noise measurement data sheets are provided in Attachment B.

THRESHOLDS OF SIGNIFICANCE AND IMPACT ANALYSIS

Thresholds of Significance

According to the California Environmental Quality Act (CEQA) Guidelines, Appendix G, to determine whether impacts related to noise and vibration are significant environmental effects, the following questions are analyzed and evaluated.

Would the proposed project:

a) Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b) Generate excessive groundborne vibration or groundborne noise levels?

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

[3] City of Berkeley. 2002. Berkeley General Plan. Figure 21: Noise Contours.

Substantial Noise Increase in Excess of Standards

Construction Noise Impacts

For purposes of this analysis, a significant impact would occur if construction activities would generate a substantial temporary increase in ambient noise levels in the vicinity of the proposed project in excess of standards established in the local general plan or noise ordinance or the applicable standards of other agencies. To quantitatively evaluate construction noise impacts pursuant to this standard, the City staff has determined that the FTA's construction noise criteria for residential land uses shown in Table 2, which is an 80 dBA L_{eq} threshold for daytime construction activities, is an appropriate threshold.

A worst-case scenario was analyzed assuming each piece of modeled equipment would operate simultaneously at the nearest reasonable locations to the closest noise-sensitive receptor for the loudest phase of construction. Noise emission levels recommended by the Federal Highway Administration (FHWA)s Highway Construction Noise Handbook were used to ascertain the noise generated by specific types of construction equipment.

On-site Construction Noise Impact

Construction of the proposed project would generate noise during the approximately 29-month schedule of demolition, grading, building construction, finishing, and other construction activities. The proposed project is anticipated to utilize a standard 5-day work week, and construction would occur during acceptable daytime hours set forth by the City's Municipal Code and Standard Conditions of Approval.

The proposed project is surrounded by multiple noise-sensitive receptors located near Shattuck Avenue and the Berkeley Way and University Avenue cross streets bracketing the project site. The Berkeley Way Apartments and Hope Center are side-by-side residential uses (with the latter containing a homeless shelter with related services) located at 2012 Berkeley Way, directly west of the project site. Ace Berkeley Student Apartments is a student housing facility located approximately 95 feet east of the project site at 2108 Berkeley Way. Modera Berkeley is a multi-family residential building also located approximately 95 feet east of the project site at 1922 Walnut Street. The Berkeley Place is a multi-family residential building located directly west of the project site at 2067 University Avenue. Though not a residential use per se, Berkeley Fire Station No. 2 also contains overnight living accommodations and can be considered a residential-type sensitive receptor for this reason. It is located at 2029 Berkeley Way, approximately 90 feet north of the project site. Other sensitive receptors are located farther from the project site and would experience reduced impacts. Therefore, the following analysis focuses on The Berkeley Way Apartments and Hope Center, Ace Berkeley Student Apartments, Modera Berkeley, The Berkeley Place, and Berkeley Fire Station No. 2 for assessment of the proposed project's construction noise impact.

Construction is a dynamic process and daily activities can vary widely, even within the same construction phase or subphase. To streamline the impact analysis, the analyzed construction activity noise impacts

relate to the following phases: demolition, grading, building construction, paving, and architectural coating.

The following impact analysis focuses on the demolition, grading, and building construction phases as these would have the greatest potential to result in significant noise impacts.

Demolition

Demolition for the proposed project would involve the demolition and removal of the site's existing buildings and related improvements. The majority of the proposed project's demolition activities would be characterized by a bulldozer and either backhoes or skid steer loaders conducting the demolition work and transferring debris to dumpsters or haul trucks for off-site removal. Some vehicles would be outfitted with breaker attachments. As these vehicles work across the approximately 0.65-acre project site, their construction noise levels at surrounding receptors would fluctuate depending on their distances from the receptors. Noise levels would be greater when these vehicles work near receptors and lower when farther away. Given these considerations, noise impacts associated with the proposed project's demolition activities have been evaluated by modeling noise levels at receptors that would be associated with two backhoes and a bulldozer operating across the 0.65-acre parcel. The 0.65-acre figure area reflects the footprint of the proposed project's construction area. This modeling approach simulates noise levels that would result from the daily activities of two backhoes and a bulldozer working across the project site.

Table 7 shows the proposed project's estimated demolition-related noise levels at the ground level and upper floors of nearby receptors. As shown, demolition-related noise levels would be below the FTA's 80 dBA L_{eq} criteria that is utilized as the threshold of significance. Therefore, impacts from on-site demolition activities would be less than significant.

Table 7: Construction Noise Levels–Demolition

Receptor	Construction Noise Level (dBA L_{eq})	Significance Criteria (dBA L_{eq})	Significant?
Berkeley Way Apartments and Hope Center–Ground Level	69.0	80	No
Berkeley Way Apartments and Hope Center–Upper Levels	74.0	80	No
Ace Berkeley Student Apartments–Ground Level	60.7	80	No
Ace Berkeley Student Apartments–Upper Levels	65.7	80	No
Modera Berkeley–Ground Level	60.7	80	No
Modera Berkeley–Upper Levels	65.7	80	No
The Berkeley Place–Ground Level	69.1	80	No
The Berkeley Place–Upper Levels	74.1	80	No
Berkeley Fire Station No. 2–Ground Level	59.8	80	No

Receptor	Construction Noise Level (dBA L_{eq})	Significance Criteria (dBA L_{eq})	Significant?
Berkeley Fire Station No. 2–Upper Level	64.8	80	No
Notes: dBA = A-weighted decibel L_{eq} = equivalent continuous sound level			

Grading

Grading for the proposed project would involve the excavation of approximately 37,878 cubic yards of "cut" material for the proposed project's subterranean levels and foundations. The majority of grading would be bulk excavation characterized by excavators and a bulldozer excavating the "cut" material from the site and transferring it to haul trucks for off-site removal. Similar to demolition, these vehicles would work across the approximately 0.65-acre project site, and construction noise levels at surrounding receptors would fluctuate depending on the distances between construction equipment and receptors. Noise impacts associated with grading have therefore been evaluated by modeling noise levels at receptors that would be associated with two excavators and a bulldozer operating across a 0.65-acre parcel that is similar to the footprint of the proposed project's construction area.

Table 8 shows the proposed project's estimated grading-related noise levels at the ground level and upper floors of nearby receptors. As shown, grading-related noise levels would be below the FTA's 80 dBA L_{eq} criteria that is utilized as the threshold of significance. Therefore, impacts from on-site grading activities would be less than significant.

Table 8: Construction Noise Levels–Grading

Receptor	Construction Noise Level (dBA L_{eq})	Significance Criteria (dBA L_{eq})	Significant?
Berkeley Way Apartments and Hope Center–Ground Level	71.8	80	No
Berkeley Way Apartments and Hope Center–Upper Levels	76.8	80	No
Ace Berkeley Student Apartments–Ground Level	63.5	80	No
Ace Berkeley Student Apartments–Upper Levels	68.5	80	No
Modera Berkeley–Ground Level	63.5	80	No
Modera Berkeley–Upper Levels	68.5	80	No
The Berkeley Place–Ground Level	71.9	80	No
The Berkeley Place–Upper Levels	76.9	80	No
Berkeley Fire Station No. 2–Ground Level	62.6	80	No
Berkeley Fire Station No. 2–Upper Level	67.6	80	No

Receptor	Construction Noise Level (dBA L_{eq})	Significance Criteria (dBA L_{eq})	Significant?
Notes: dBA = A-weighted decibel L_{eq} = equivalent continuous sound level			

Building Construction

This phase entails the buildout of the proposed project's structure and interior. The most impactful construction equipment utilized during these phases would be a tower crane and handheld equipment powered by air compressors. Unlike equipment for the previous construction phases, which would move about the site on a daily basis, this equipment would be more stationary when operating. Therefore, noise impacts associated with building construction have been evaluated by modeling noise levels at receptors that would be associated with a tower crane and two air compressors operating at minimum distances to receptors.

Table 9 shows the proposed project's estimated building construction-related noise levels at nearby receptors. Because noise from the assumed equipment may emanate from upper floors of the proposed project, noise barriers may not attenuate their noise levels. As a result, noise impacts to the ground and upper floors of receptors may be similar. In any case, building-related noise levels would be below the FTA's 80 dBA L_{eq} criteria that is utilized as the threshold of significance. Therefore, impacts from on-site building construction activities would be less than significant.

Table 9: Construction Noise Levels–Building Construction

Receptor	Construction Noise Level (dBA L_{eq})	Significance Criteria (dBA L_{eq})	Significant?
Berkeley Way Apartments and Hope Center	74.5	80	No
Ace Berkeley Student Apartments	62.5	80	No
Modera Berkeley	62.5	80	No
The Berkeley Place	74.5	80	No
Berkeley Fire Station No. 2	62.5	80	No
Notes: dBA = A-weighted decibel L_{eq} = equivalent continuous sound level			

Off-site Construction Noise Impact (Construction Traffic)

Haul truck trips, construction worker vehicle trips, and other construction-related trips would occur over the course of the proposed project's construction. Haul truck trips typically have the greatest potential

to result in substantial off-site noise increases along nearby roadways. The previously discussed Municipal Code noise limits have no applicability to road-legal trucks operating on public roads, but the following analysis nevertheless demonstrates that the proposed project's haul trucks would have a nominal and less than significant impact on roadside noise levels in the vicinity of the project site.

Given the proposed project's modest demolition and excavation, the proposed project is not estimated to generate more than several haul truck trips per hour on any workday. Construction also would not generate more than several vendor truck trips per hour. The project site is located in an area with existing high levels of transportation noise, around 65 dBA L_{eq}. Typically, an approximate doubling of traffic volumes is required to cause 3 dBA noise increases, which are considered barely noticeable. The proposed project's construction trucks would represent a small fraction of daily traffic, far below the numbers necessary to generate barely noticeable noise increases. As such, the proposed project's haul trucks would not result in noticeable (much less substantial) noise increases along surrounding roadways, and this impact would be less than significant.

Operational Noise Impacts

On-site Operational Noise Impact

For the purposes of this analysis, a significant impact would occur if the proposed project's on-site noise sources (i.e., mechanical equipment, parking lot operations, etc.) would generate a substantial permanent increase in ambient noise levels surrounding the proposed project. The Municipal Code includes quantitative noise limits that would apply to the proposed project's operational noise sources. Municipal Code Section 13.40.050 and Section 13.40.060 contain exterior and interior noise limits (respectively) that would apply to noise generated by the proposed project on-site. Therefore, the proposed project's noise impact from on-site operational sources would be considered significant if any of the following were to occur:

- Noise levels would exceed the exterior noise limits established by Municipal Code Section 13.40.050.
- Noise levels would exceed the interior noise limits established by Municipal Code Section 13.40.060.

The proposed project's on-site noise sources and their potential to result in significant noise impacts are discussed below. As demonstrated, the proposed project would not result in substantial sources of on-site noise, and this impact would be less than significant.

Parking

The proposed project would include two levels of basement parking wholly contained within the parking structure, which would shield parking lot activity noise levels from impacting sensitive receptors in the project vicinity. Reasonable worst-case parking lot activity noise levels would be reduced to below 52 dBA L_{eq} at the parking garage entrance which faces the street. Therefore, parking lot activity noise levels

would not exceed existing ambient noise levels as measured at nearby sensitive receptors and would, therefore, not exceed the City's Municipal Code Section 13.4.050 exterior noise limits, and this impact would be less than significant.

Ground Floor Retail Spaces

The proposed project would not contain any outdoor retail spaces that would generate noise from seating or gathering. Reasonable use of the indoor retail spaces would not be expected to result in audible exterior noise impacts.

Mechanical Equipment

Implementation of the proposed project would include operation of new mechanical ventilation equipment. The proposed project would have commercial-grade mechanical ventilation equipment atop the multi-story mixed-use housing development. Noise levels for commercial-grade mechanical ventilation equipment systems range up to approximately 78 dBA L_{eq} at a distance of 3 feet. This reference noise level is based on a comparison of manufacturer specifications of equipment currently on the market. As equipment becomes increasingly efficient due to energy efficiency regulations, quieter models are increasingly available and louder, less-efficient models are being phased out. To provide a conservative analysis, the highest end of the range of reference noise levels for these stationary noise sources, the usage factors of these activities, and the distance to the nearest sensitive receptor land uses were used to calculate the reasonable worst-case hourly average noise levels from each noise source as measured at the nearest sensitive receptor land uses.

The proposed project is surrounded by multiple noise-sensitive receptors located near Shattuck Avenue and the Berkeley Way and University Avenue cross streets bordering the project site. The following analysis focuses on the closest sensitive receptor, The Berkeley Place, a multi-family residential building located directly west of the project site. The façade of this receptor would be a minimum of 10 feet away from the nearest operational rooftop mechanical ventilation equipment. At this distance, and assuming minimal reduction for rooftop parapet shielding, the combined reasonable worst-case operational noise level of multiple rooftop mechanical ventilation systems operating simultaneously would be 58 dBA L_{eq}, as measured at the nearest off-site residential receptor. The noise calculation sheet is provided in Appendix B of this report.

These noise levels are below ambient noise levels for the location and surrounding receptors, which range from approximately 58.5 dBA to 70.1 dBA L_{eq}. Therefore, these calculated operational noise levels would not exceed existing ambient noise levels in the project vicinity.

Municipal Code Section 13.40.050 establishes minimum 65 dBA daytime and 60 dBA nighttime exterior noise limits that would apply to noise generated by the proposed project's HVAC systems. There is no potential for the proposed project's daytime HVAC noise levels to exceed the minimum 65 dBA daytime standard at adjacent receptors. Given the height of the proposed project, approximately 317 feet, and assuming minimal reduction for rooftop parapet shielding, the calculated proposed project's nighttime HVAC noise levels would not exceed the 60 dBA nighttime exterior noise limit at these receptors either.

In any case, the City's Standard Conditions of Approval involving HVAC noise reduction would prevent the proposed project's HVAC equipment from exceeding the Section 13.40.050 daytime and nighttime exterior noise limits. Prior to the issuance of building permits, the project applicant would be required to submit plans showing the location, type, and design of the proposed project's HVAC equipment. The project applicant would also be required to submit HVAC product specification sheets demonstrating that HVAC equipment would achieve the Municipal Code's noise limits or provide an acoustical report demonstrating the same compliance. The City's Planning and Development Department would review these materials and verify the proposed project's compliance with the Municipal Code's noise limits before issuing building permits. Therefore, the proposed project's HVAC systems would not result in exceedances of the Municipal Code's noise limits at nearby receptors.

Regarding Municipal Code Section 13.40.060, the proposed project's exterior HVAC noise levels up to 58 dBA L_{eq} would not result in interior noise levels in excess of the minimum 40 dBA standard at surrounding residential receptors, as windows typically provide a minimum 20 dBA of exterior-to-interior noise reduction (and with modern construction, exterior-to-interior noise reduction is closer to 30 dBA or greater). Impacts to more distant noise-sensitive receptors would be reduced and similarly below Municipal Code noise limits.

Given these considerations, the proposed project's HVAC system operational noise would not result in substantial permanent increases in ambient noise levels, and this impact would be less than significant.

Off-site Operational Noise Impact (Traffic)

For the purposes of this analysis, a significant impact would occur if the proposed project's off-site operational sources (i.e., traffic) would generate a substantial permanent increase in ambient noise levels surrounding the proposed project and any nearby roadways. The City has not adopted traffic-related noise thresholds for CEQA consideration, and neither the Berkeley General Plan nor the Municipal Code contain noise limits, standards, or other thresholds that would apply to traffic generated by the proposed project. However, it is evident that the proposed project would not generate substantial increases in ambient noise levels due to traffic generation. The proposed project is an infill development in a walkable area that is well-served by high-quality regional and local transit options. The proposed project would only include internal underground parking, which will not create exterior noise. Given these considerations, the proposed project reasonably would not result in substantial traffic generation capable of noticeably increasing noise levels on the surrounding roadways, which already experience high levels of traffic and resultant noise levels (as noted, measured ambient noise levels range up to 70.1 dBA L_{eq}). The proposed project would not generate the approximate doubling of traffic necessary to increase existing ambient noise levels by 3 dBA, which represents a barely perceptible noise increase. Overall, the proposed project is the type of project that is encouraged by local, regional, and State planning agencies to reduce traffic levels and the environmental impacts (i.e., noise) associated therewith. Given these considerations, the proposed project would not result in substantial permanent increases in roadways noise levels, and this impact would be less than significant.

EXCESSIVE GROUNDBORNE VIBRATION LEVELS

Construction Vibration Impacts

There are no federal, State, or City standards that would regulate the proposed project's vibration impacts from temporary construction activities, nor are there quantitative thresholds. Therefore, the criteria identified by the FTA in its 2018 Transit Noise and Vibration Impact Assessment Manual are used where applicable and relevant to assist in evaluating the proposed project's vibration impacts to surrounding buildings. The proposed project's vibration impacts would be considered significant if the proposed project would generate groundborne vibration levels in excess of the FTA criteria shown in Table 1.

Construction of the proposed project would require a variety of large, steel-tracked earthmoving vehicles. According to the FTA, large bulldozers and similar heavy equipment can generate groundborne vibration levels up to 0.089 inches per second (in/sec) peak particle velocity (PPV) at a reference distance of 25 feet. While there are numerous buildings that directly abut the project site boundaries, the types of vehicles capable of generating these vibration levels (e.g., large steel-tracked bulldozers and excavators) generally maintain a positional setback distance of at least 10 feet from nearby buildings when operating. At 10 feet, groundborne vibration levels from these vehicles are approximately 0.244 in/sec PPV or lower. This is below the FTA's 0.3 in/sec PPV criteria for engineered concrete and masonry buildings that is applicable to most buildings abutting and surrounding the project site.

However, as noted previously, adjacent structures are located approximately five feet or less from the project construction footprint. At these distances, groundborne vibration levels from heavy equipment operating on-site could exceed FTA damage criteria for these buildings. However, the proposed project's compliance with the City's Standard Conditions of Approval would eliminate the potential for surrounding buildings to experience potentially damaging levels of groundborne vibration. Prior to or concurrent with the issuance of a demolition building permit, the proposed project would be required to prepare a vibration impact assessment that determines whether project construction may cause damage to any of the structures identified in this analysis. The assessment would be required to identify and implement design features or alternative construction techniques for avoiding vibration-induced damage. The assessment and its recommendations would be reviewed and approved by the Building and Safety Division and the Zoning Officer prior to the issuance of demolition permits. It is expected that the proposed project would be able to avoid damaging surrounding buildings via measures such as utilizing smaller, less impactful construction equipment and practices when within 10 feet of surrounding buildings. This is a common measure for avoiding vibration damage that is frequently implemented for similar infill projects with adjacent structures built to the lot line. Given these considerations, this impact would be less than significant.

Operational Vibration Impacts

The proposed project would not contain any significant stationary sources of groundborne vibration, such as heavy equipment or industrial operations. Related vehicle travel (i.e., passenger vehicle trips, delivery trucks, etc.) also would not be considered a significant source of vibration as vehicle travel rarely generates perceptible, much less substantial, groundborne vibration. Therefore, this impact would be less than significant.

EXCESSIVE NOISE LEVELS FROM AIRPORT ACTIVITY

A significant impact would occur if the proposed project would expose people residing or working in the project area to excessive noise levels within the vicinity of a private airstrip or airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport.

The project site is not located within the vicinity of a private airstrip. The nearest public airport to the project site is San Francisco Bay Oakland International Airport, located approximately 10 miles south of the project site. Because of the distance to the airport and the orientation of the runways, the project site lies outside of the 60 dBA CNEL noise contours of the airport. Although aircraft noise is occasionally audible on the project site, nearby airport activity would not expose people residing or working near the project site to excessive noise levels. Therefore, implementation of the project would not expose persons residing or working in the project vicinity to noise levels from airport activity that would be in excess of normally acceptable standards for the proposed land use development, and no impact would occur.

CONCLUSION

Based on the project understanding described above, the proposed project would result in less than significant impacts related to noise. Thank you for the opportunity to conduct this noise impact analysis. Please feel free to contact Phil Ault (559.930.6191 or pault@fcs-intl.com) should you have any questions.

Sincerely,

Philip Ault, Director of Noise and Air Quality
FirstCarbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

Attachment A: Fundamentals of Noise
Attachment B: Noise Monitoring and Modeling Data

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Attachment A:
Fundamentals of Noise

NOISE AND VIBRATION FUNDAMENTALS

Characteristics of Noise and Descriptors

Sound can be described in terms of its loudness (amplitude) and frequency (pitch). The standard unit of measurement for sound is the decibel, abbreviated dB. Because the human ear is not equally sensitive to sound at all frequencies, the A-weighted scale (dBA) is used to reflect the normal hearing sensitivity range of the human ear. Table 1 provides examples of A-weighted noise levels from common sources. Although the terms "sound" and "noise" are often used synonymously, noise is commonly defined as sound that is either loud, unpleasant, unexpected, or undesired.[1] Because decibels are logarithmic units, they cannot be simply added or subtracted. For example, two cars each producing 60 dBA of noise would not produce a combined 120 dBA.

Table 1: A-Weighted Decibel Scale

Common Noise Sources	Sound Level, dBA
Near Jet Engine	130
Rock and Roll Band	110
Jet Flyover at 1,000 feet	100
Power Motor	90
Food Blender	80
Living Room Music	70
Human Voice at 3 feet	60
Residential Air Conditioner at 50 feet	50
Bird Calls	40
Quiet Living Room	30
Average Whisper	20
Rustling Leaves	10

Notes:
These noise levels are approximations intended for general reference and information use. They do not meet the standard required for detailed noise analysis but are provided for the reader to gain a rudimentary concept of various noise levels.
Source: Cowan, James P. 1993. Handbook of Environmental Acoustics.

Table 2 briefly defines common noise measurement descriptors and other sound terminology used in this memorandum.

[1] California Department of Transportation (Caltrans). 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol.

Table 2: Sound Terminology

Term	Definition
Sound	A vibratory disturbance created by a vibrating object which, when transmitted by pressure waves through a medium such as air, can be detected by a receiving mechanism such as the human ear or a microphone.
Noise	Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
Ambient Noise	The composite of noise from all sources near and far in a given environment.
Decibel (dB)	A unitless measure of sound on a logarithmic scale which represents the squared ratio of sound pressure amplitude to a reference sound pressure. The reference pressure is 20 micropascals, representing the threshold of human hearing (0 dB).
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level that approximates the frequency response of the human ear.
Equivalent Noise Level (L_{eq})	The average sound energy occurring over a specified time period. In effect, L_{eq} is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that actually occurs during the same period.
Maximum and Minimum Noise Levels (L_{max} and L_{min})	The maximum or minimum instantaneous sound level measured during a measurement period.
Day-Night Level (DNL or L_{dn})	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m. (nighttime).
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring between 7:00 p.m. and 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m.
Statistical Descriptor (L_X)	L_X is used to represent the noise level exceeded X% of a specified time period. For example, L_{90} represents the noise level that is exceeded 90% of a specified time period. L_{90} is commonly used to represent ambient or background steady-state noise levels.
Source: Data compiled by FirstCarbon Solutions (FCS) 2024.	

Effects of Environmental Noise

The degree to which noise can impact an environment ranges from levels that interfere with speech and sleep to levels that can cause adverse health effects. Most human response to noise is subjective. Factors that influence individual responses may include the intensity, frequency, and pattern of noise;

the amount of background or existing noise present; and the nature of work or human activity that is exposed to intruding noise.

According to the National Institute of Health (NIH), extended or repeated exposure to sounds at or above 85 dB can cause hearing loss. Sounds of 75 dBA or less, even after continuous and repeated exposure, are unlikely to cause hearing loss.[2] The World Health Organization (WHO) reports that adults should not be exposed to sudden "impulse" noise events of 140 dB or greater. For children, this limit is 120 dB.[3]

Exposure to elevated nighttime noise levels can disrupt sleep, leading to increased levels of fatigue and decreased work or school performance. For the preservation of healthy sleeping environments, the WHO recommends that continuous interior noise levels should not exceed 30 dBA L_{eq} and that individual noise events of 45 dBA or higher be limited.[4]

Some epidemiological studies have shown a weak association between long-term exposure to noise levels of 65 to 70 dBA L_{eq} or greater and cardiovascular effects, including ischemic heart disease and hypertension. However, at this time, the relationship is largely inconclusive.

It is generally accepted that people with normal hearing sensitivity can barely perceive a 3 dBA change in noise levels, though if changes occur to the character of a sound (i.e., changes to the frequency content), then changes less than 3 dBA may be more noticeable.[5] Changes of 5 dBA may be readily perceptible, and changes of 10 dBA are perceived as a doubling in loudness.[6] However, few people are highly annoyed by daytime noise levels below 55 dBA.[7]

Loud noises, such as those from construction activities, can interfere with peoples' abilities to effectively communicate via speech, as well as other activities, resulting in annoyance or inconvenience. The EPA has found that a home interior noise level of 45 dBA L_{eq} generally protects speech and communication by providing 100 percent intelligibility of speech sounds.[8] Other common daily activities that may be disrupted by elevated interior noise levels include watching television, listening to music, or activities requiring concentration (such as reading). The EPA has determined that, given the preservation of an indoor noise level associated with 100 percent speech intelligibility (i.e., 45 dBA L_{eq}), the average community reaction is not evident and "7 dBA below levels associated with significant complaints and threats of legal action." Any complaints and annoyance are dependent on "attitude and other non-level related factors."

Noise Attenuation

Generally speaking, noise levels decrease, or "attenuate," as distances from noise sources to receivers increases. For each doubling of distance, noise from stationary or small, localized sources, commonly

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2 National Institute of Health (NIH), National Institute on Deafness and Other Communication. www.nidcd.nih.gov/health/noise-induced-hearing-loss.
3 World Health Organization (WHO). 1999. Guidelines for Community Noise.
4 Ibid.
5 California Department of Transportation (Caltrans). 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol.
6 Ibid.
7 World Health Organization (WHO). 1999. Guidelines for Community Noise.
8 United States Environmental Protection Agency (EPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.

referred to as “point sources,” may attenuate at a rate of 6 dBA for each doubling of distance. This attenuation is referred to as the inverse square law. For example, if a point source emits a noise level of 80 dBA at a reference distance of 50 feet, its noise level would be approximately 74 dBA at a distance of 100 feet, 68 dBA at a distance of 200 feet, etc. Noise emitted by “line” sources, such as highways, attenuates at the rate of 3 dBA for each doubling of distance.[9]

Factors such as ground absorption and atmospheric effects may also affect the propagation of noise. In particular, ground attenuation by non-reflective surfaces, such as soft dirt or grass, may contribute to increased attenuation rates of up to an additional 8-10 dBA per doubling of distance.[10]

Noise is most audible when traveling by direct line of sight, an unobstructed visual path between a noise source and a receiver. Barriers that break the line of sight between noise sources and receivers, such as walls and buildings, can greatly reduce source noise levels by allowing noise to reach receivers by diffraction only. Barriers can reduce source noise levels by up to 20 dBA, though it is generally infeasible for temporary barriers to reduce source noise levels by more than 15 dBA.[11] In cases where the noise path from source to receiver is direct but grazes the top of a barrier, noise attenuation of up to 5 dBA may still occur.[12]

Characteristics of Vibration and Descriptors

Vibration is an oscillatory motion that can be described in terms of displacement, velocity, and acceleration.[13] Unlike noise, vibration is not a common environmental issue, as it is unusual for vibration from vehicle sources to be perceptible. Common sources of vibration may include trains, construction activities, and certain industrial operations.

Table 3 briefly defines common vibration measurement descriptors and other terminology used in this analysis.

Table 3: Vibration Terminology

Term	Definition
Peak Particle Velocity (PPV)	PPV is commonly used to describe and quantify vibration impacts to buildings and other structures. PPV levels represent the maximum instantaneous peak of a vibration signal and are generally measured in inches per second (in/sec).
Vibration Decibels (VdB)	The vibration velocity level in decibel scale.
Source: Data compiled by FirstCarbon Solutions (FCS) 2024.	

9 California Department of Transportation (Caltrans). 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol.
10 Ibid.
11 Ibid.
12 Ibid.
13 Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment.

Effects of Vibration

High levels of vibration may cause damage to buildings or even physical personal injury. However, vibration levels rarely affect human health outside the personal operation of certain construction equipment or industrial tools. Instead, most people consider environmental vibration to be an annoyance that may affect concentration or disturb sleep. Background vibration in residential areas is usually not perceptible, and perceptible indoor vibrations are generally caused by sources within buildings themselves, such as slamming doors or heavy footsteps. Vibration from traffic on smooth roadways is rarely perceptible, even from larger vehicles such as buses or trucks.[14] The threshold of human perception of vibration is approximately 0.01-0.02 in/sec peak particle velocity (PPV).[15]

[14] California Department of Transportation (Caltrans). 2020. Transportation and Construction Vibration Guidance Manual.
[15] Ibid.

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Attachment B:
Noise Monitoring and Modeling Data

Construction Noise Impact Analysis

Berkeley Way Apartments and Hope Center: Buildling Construction

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Crane at 25ft	80.2	0.16	72.2
Air Compressor at 25ft	71.6	0.4	67.6
Air Compressor at 25ft	71.6	0.4	67.6
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	74.5

Construction Noise Impact

Combined Equipment Noise Level	74.5 dBA Leq
Ground Factor	0
Construction Noise Level	74.5 dBA Leq

Notes:
[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming the given receptor distances.

Construction Noise Impact Analysis

Ace Berkeley Student Apartments: Building Construction

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Crane at 100ft	68.2	0.16	60.2
Air Compressor at 100ft	59.6	0.4	55.6
Air Compressor at 100ft	59.6	0.4	55.6
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	62.5

Construction Noise Impact

Combined Equipment Noise Level	62.5 dBA Leq
Ground Factor	0
Construction Noise Level	62.5 dBA Leq

Notes:
[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming the given receptor distances.

Construction Noise Impact Analysis

Modera Berkeley: Building Construction

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Crane at 100ft	68.2	0.16	60.2
Air Compressor at 100ft	59.6	0.4	55.6
Air Compressor at 100ft	59.6	0.4	55.6
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	62.5

Construction Noise Impact

Combined Equipment Noise Level	62.5 dBA Leq
Ground Factor	0
Construction Noise Level	62.5 dBA Leq

Notes:
[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming the given receptor distances.

Construction Noise Impact Analysis

The Berkeley Place: Building Construction

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Crane at 25ft	80.2	0.16	72.2
Air Compressor at 25ft	71.6	0.4	67.6
Air Compressor at 25ft	71.6	0.4	67.6
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	74.5

Construction Noise Impact

Combined Equipment Noise Level	74.5 dBA Leq
Ground Factor	0
Construction Noise Level	74.5 dBA Leq

Notes:
[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming the given receptor distances.

Construction Noise Impact Analysis

Berkeley Fire Station No. 2: Building Construction

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Crane at 100ft	68.2	0.16	60.2
Air Compressor at 100ft	59.6	0.4	55.6
Air Compressor at 100ft	59.6	0.4	55.6
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	62.5

Construction Noise Impact

Combined Equipment Noise Level	62.5 dBA Leq
Ground Factor	0
Construction Noise Level	62.5 dBA Leq

Notes:
[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming the given receptor distances.

Construction Noise Impact Analysis

Berkeley Way Apartments and Hope Center: Demolition

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Backhoe	74.1	0.4	70.1
Backhoe	74.1	0.4	70.1
Loader	70.8	0.4	66.8
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	74.0

Construction Noise Impact

Combined Equipment Noise Level	74.0 dBA Leq
Ground Factor	0
Construction Noise Level	74.0 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Ace Berkeley Student Apartments: Demolition

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Backhoe	65.8	0.4	61.8
Backhoe	65.8	0.4	61.8
Loader	62.4	0.4	58.4
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	65.7

Construction Noise Impact

Combined Equipment Noise Level	65.7 dBA Leq
Ground Factor	0
Construction Noise Level	65.7 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Modera Berkeley: Demolition

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Backhoe	65.8	0.4	61.8
Backhoe	65.8	0.4	61.8
Loader	62.4	0.4	58.4
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	65.7

Construction Noise Impact

Combined Equipment Noise Level	65.7 dBA Leq
Ground Factor	0
Construction Noise Level	65.7 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

The Berkeley Place: Demolition

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Backhoe	74.2	0.4	70.2
Backhoe	74.2	0.4	70.2
Loader	70.8	0.4	66.8
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	74.1

Construction Noise Impact

Combined Equipment Noise Level	74.1 dBA Leq
Ground Factor	0
Construction Noise Level	74.1 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Berkeley Fire Station No. 2: Demolition

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Backhoe	64.9	0.4	60.9
Backhoe	64.9	0.4	60.9
Loader	61.5	0.4	57.5
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	64.8

Construction Noise Impact

Combined Equipment Noise Level	64.8 dBA Leq
Ground Factor	0
Construction Noise Level	64.8 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Berkeley Way Apartments and Hope Center: Grading

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Excavator	74.2	0.4	70.2
Excavator	74.2	0.4	70.2
Bulldozer	78.3	0.4	74.3
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	76.8

Construction Noise Impact

Combined Equipment Noise Level	76.8 dBA Leq
Ground Factor	0
Construction Noise Level	76.8 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Ace Berkeley Student Apartments: Grading

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Excavator	65.9	0.4	61.9
Excavator	65.9	0.4	61.9
Bulldozer	70	0.4	66.0
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	68.5

Construction Noise Impact

Combined Equipment Noise Level	68.5 dBA Leq
Ground Factor	0
Construction Noise Level	68.5 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Modera Berkeley: Grading

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Excavator	65.9	0.4	61.9
Excavator	65.9	0.4	61.9
Bulldozer	70	0.4	66.0
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	68.5

Construction Noise Impact

Combined Equipment Noise Level	68.5 dBA Leq
Ground Factor	0
Construction Noise Level	68.5 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

The Berkeley Place: Grading

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Excavator	74.3	0.4	70.3
Excavator	74.3	0.4	70.3
Bulldozer	78.4	0.4	74.4
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	76.9

Construction Noise Impact

Combined Equipment Noise Level	76.9 dBA Leq
Ground Factor	0
Construction Noise Level	76.9 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Berkeley Fire Station No. 2: Grading

Equipment Noise Levels

Equipment [1]	Noise Level - dBA Leq	Usage %	Workday Noise Level - dBA Leq
Excavator	65.0	0.4	61.0
Excavator	65.0	0.4	61.0
Bulldozer	69.1	0.4	65.1
-	0	1	0.0
-	0	1	0.0
		Combined dBA Leq:	67.6

Construction Noise Impact

Combined Equipment Noise Level	67.6 dBA Leq
Ground Factor	0
Construction Noise Level	67.6 dBA Leq

Notes:

[1] Reference noise levels and usage factors based on FHWA RCNM 2.0 data. Noise levels were modeled assuming a 230ftx120ft rectangular equipment activity area, approximating the Project's construction footprint. A grid spacing of 10ft was utilized. The resultant noise levels from equipment are summed in this table.

Construction Noise Impact Analysis

Typical Construction Equipment Maximum Noise Levels

Type of Equipment	Impact Device? (Yes/No)	Specification Maximum Sound Levels for Analysis (dBA at 50 feet)
Impact Pile Driver	Yes	95
Auger Drill Rig	No	85
Vibratory Pile Driver	No	95
Jackhammers	Yes	85
Pneumatic Tools	No	85
Pumps	No	77
Scrapers	No	85
Cranes	No	85
Portable Generators	No	82
Rollers	No	85
Bulldozers	No	85
Tractors	No	84
Front-End Loaders	No	80
Backhoe	No	80
Excavators	No	85
Graders	No	85
Air Compressors	No	80
Dump Truck	No	84
Concrete Mixer Truck	No	85
Pickup Truck	No	55

Notes:
dBA = A-weighted decibel
Source: Federal Highway Administration (FHWA) 2006. Highway Construction Noise Handbook, August.

Commercial-Grade Mechanical Equipment

Receptor:	Nearest Residential Receptor	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
		Reference (dBA) 3 ft		Usage	Distance to	Ground	Shielding	Calculated (dBA)		
No.	Equipment Description	Lmax	Quantity	factor[1]	Receptor	Effect[2]	(dBA)[3]	Lmax	Leq	Energy
1	Commercial grade mechanical ventilation equipment	78	1	80	10	1	3	64.5	58.3	683051.9746
2	Commercial grade mechanical ventilation equipment	78	1	80	35	1	3	53.7	42.0	15931.24139
3	Commercial grade mechanical ventilation equipment	78	1	80	60	1	3	49.0	35.0	3162.27766
4										
5										
6										
7										
8										
9										
10										
									Leq	58

Notes:
[1] Percentage of time activity occurs each hour
[2] Soft ground terrain between project site and receptor
[3] Shielding due to rooftop parapet/structural shielding

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Project Number: 6100.0001 Sheet ___of ___
Project Name: 1974 Shattuck Ave & Berkeley Tech Reports
Test Personnel: Brandon Carroll

NOISE MEASUREMENT SURVEY

Site Number: ST1 Date: 8/14/2024 Time: From 1:00pm To 1:15pm

Site Location: On Berkeley Way facing north, approximately 140 feet west of Berkeley Way/Shattuck Ave.
In front of 84 Viet (restaurant), across fire station

Primary Noise Sources: Traffic, pedestrians, light music, closing doors, and humming from building AC unit.

Measurement Results

	dBA
L_{eq}	58.5
L_{max}	72.9
L_{min}	52.4
L_{peak}	
L_5	63.3
L_{10}	61.4
L_{50}	55.9
L_{90}	53.4
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA
1:04	large, noisy crowd	
1:10	Airplane	
1:13	bicyclists near mic	

Comments:

Equipment: LxT 2 Measured Difference: 0.09 dBA
Settings: A-Weighted ☐ Other☐ Slow☐ Fast☐ Windscreen■

Atmospheric Conditions:

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	Relative Humidity (%)	
~4	~4	~67		
Comments:				

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Photos Taken:

Photo Number	Location/Description
1	Photo facing north
2	Photo facing east
3	Photo facing south
4	Photo facing west

Traffic Description:

Roadway	# Lanes	Posted Speed	Average Speed	NB/EB Counts	SB/WB Counts
Berkeley Way	2	25	`20-25	3	9

Diagram/Further Comments:

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Project Number: 6100.0001 Sheet ___of ___
Project Name: 1974 Shattuck Avenue & Berkeley Tech Studies
Test Personnel: Brandon Carroll

NOISE MEASUREMENT SURVEY

Site Number: ST2 Date: 8/14/2024 Time: From 1:20pm To 1:35pm

Site Location: Corner of Berkeley Way and Shattuck Avenue, facing north

Primary Noise Sources: Traffic, car door locks, pedestrians, music from cars, people talking, fire truck driving by (no sirens), and noise from fire station/trucks.

Measurement Results

	dBA
L_{eq}	64.7
L_{max}	79.2
L_{min}	52.4
L_{peak}	
L_5	69.8
L_{10}	68.0
L_{50}	62.1
L_{90}	56.4
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA

Comments:

Equipment: LxT 2 Measured Difference: 0.09 dBA
Settings: A-Weighted ☐ Other☐ Slow☐ Fast☐ Windscreen■

Atmospheric Conditions:

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	Relative Humidity (%)	
~4	~4	~67		
Comments:				

FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Photos Taken:

Photo Number	Location/Description
1	Photo facing north
2	Photo facing east
3	Photo facing south
4	Photo facing west

Traffic Description:

Roadway	# Lanes	Posted Speed	Average Speed	NB/EB Counts	SB/WB Counts
Berkeley Way	2	25	20-25	10	6
Shattuck Avenue	4	25	25	82	106

Diagram/Further Comments:

FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Project Number: 6100.0001 Sheet ___of ___
Project Name: 1974 Shattuck Ave & Berkeley Tech Studies
Test Personnel: Brandon Carroll

NOISE MEASUREMENT SURVEY

Site Number: ST3 Date: 8/14/2024 Time: From 1:40pm To 1:45pm

Site Location: Corner of Shattuck Avenue and University Avenue, in front of McDonalds

Primary Noise Sources: Crosswalk indicator beeping, traffic, pedestrians, people talking, music from stores, slamming doors, loud bus noises, and car horns

Measurement Results

	dBA
L_{eq}	70.1
L_{max}	80.4
L_{min}	61.1
L_{peak}	
L_5	75.7
L_{10}	73.3
L_{50}	67.3
L_{90}	64.0
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA

Comments:

Equipment: LxT 2 Measured Difference: 0.09 dBA
Settings: A-Weighted ☐ Other☐ Slow☐ Fast☐ Windscreen■

Atmospheric Conditions:

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	Relative Humidity (%)	
~4	~4	~67		
Comments:				

FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Photos Taken:

Photo Number	Location/Description
1	Photo facing north
2	Photo facing east
3	Photo facing south
4	Photo facing west

Traffic Description:

Roadway	# Lanes	Posted Speed	Average Speed	NB/EB Counts	SB/WB Counts
Shattuck Avenue	4	25	25	64	66
University Avenue	4	25	25	95	97

Diagram/Further Comments:

FCS
An ADEC Innovation

Memorandum

Date: August 30, 2024
Revised October 18, 2024

To: Mia Perkins, McSpats, LLC C/O Rhoades Planning Group

From: Tsui Li, Senior Air Quality Scientist, FirstCarbon Solutions
Philip Ault, Director of Noise and Air Quality, FirstCarbon Solutions

Subject: Air Quality Impacts Analysis for the 1974 Shattuck Avenue Mixed Use Project in Berkeley, California

FirstCarbon Solutions (FCS) prepared this memorandum to summarize findings of the Air Quality analysis prepared for the proposed 1974 Shattuck Avenue Mixed Use Project (proposed project). The project site is located in the City of Berkeley (City), in Alameda County, California (Exhibit 1). More specifically, the site is located on Shattuck Avenue in Downtown Berkeley. (Exhibit 2).

PROJECT DESCRIPTION

The project applicant proposes to demolish the existing commercial structures to construct a 28-story mixed-use building with 599 multi-family apartment dwelling units, ground level lobbies, a rooftop restaurant, and commercial space (Exhibit 3). The project site is 0.65 acre and is associated with Assessor's Parcel Numbers (APN) 057-205-300-100, 057-205-300-200, 057-205-300-301, 057-205-300-302, and 057-205-300-402, at 1950–1998 Shattuck Avenue. Vehicle access to and from the site is provided from a garage off University Avenue. The project site is bounded Shattuck Avenue to the east, multi-family apartments to the west, University Avenue to the south, and residential uses and Berkeley Way to the north.

The project site is designated as "Downtown" by the City of Berkeley General Plan (General Plan) and is zoned Downtown Mixed-Use District "C-DMU" by the City of Berkeley Zoning Ordinance. The C-DMU zoning district permits residential uses with a Use Permit and retail uses with a Zoning Certificate.

The proposed mixed-use building has a total square footage of 411,330 square feet and a footprint of 20,803 square feet. The ground level would have 8,342 square feet of commercial space, and there would be a 7,800-square-foot rooftop restaurant. There are two levels of basement parking totaling 848 square feet. The proposed project would also include 0.15 acre of off-site sidewalk improvement. Full project parameters can be found in the modeling input document in Attachment A.

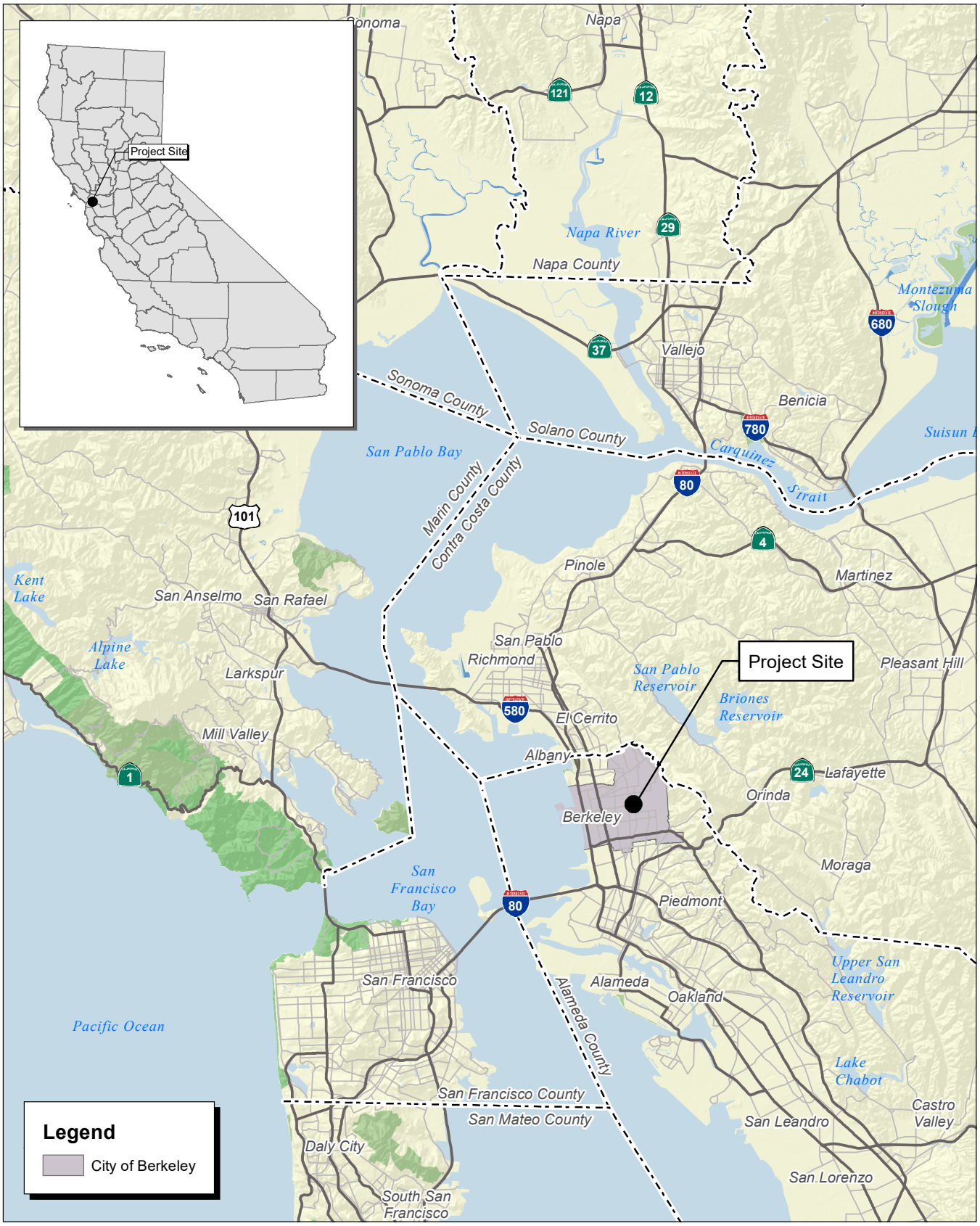
The applicant has committed to using Tier 4 interim engines for diesel construction equipment and equipping the proposed emergency generator with a diesel particulate filter during operation. These project design features (PDFs) are listed in detail below.

PDF AIR-1 Use of Tier 4 Construction Equipment

Prior to the issuance of any demolition, grading, or building permits (whichever occurs earliest), the project applicant and/or construction contractor shall prepare a construction operations plan that, during construction activities, requires all off-road equipment with engines greater than 25 horsepower to meet particulate matter emissions standards for Tier 4 interim engines at the minimum. The construction contractor shall maintain records documenting its efforts to comply with this requirement, including equipment lists. Off-road equipment descriptions and information shall include, but are not limited to, equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, and engine serial number. The project applicant and/or construction contractor shall submit the construction operations plan and records of compliance to the City.

PDF AIR-2 Use of Diesel Particulate Filter for Emergency Generator during Project Operation

The proposed emergency generator engine shall be equipped with Best Available Control Technology (BACT) devices including a California Air Resources Board (ARB) certified Level 3 Diesel Particulate Filter or equivalent, unless certified by engine manufacturers that the use of such devices is not practical for specific engine types. The project applicant shall submit to Bay Area Air Quality Management District (BAAQMD), prior to initiation of construction, information in writing on why particulate filters are not practical.



Source: Census 2000 Data, The California Spatial Information Library (CaSIL).

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5 2.5 0 5 Miles

Exhibit 1
Regional Location Map

61000001 • 08/2024 | 1_regional.mxd

MCSPATS, LLC C/O RHOADES PLANNING GROUP
1974 SHATTUCK AVENUE
AIR QUALITY ANALYSIS



Source: Bing Aerial Imagery. Trachtenberg Architects, 03/12/2024.

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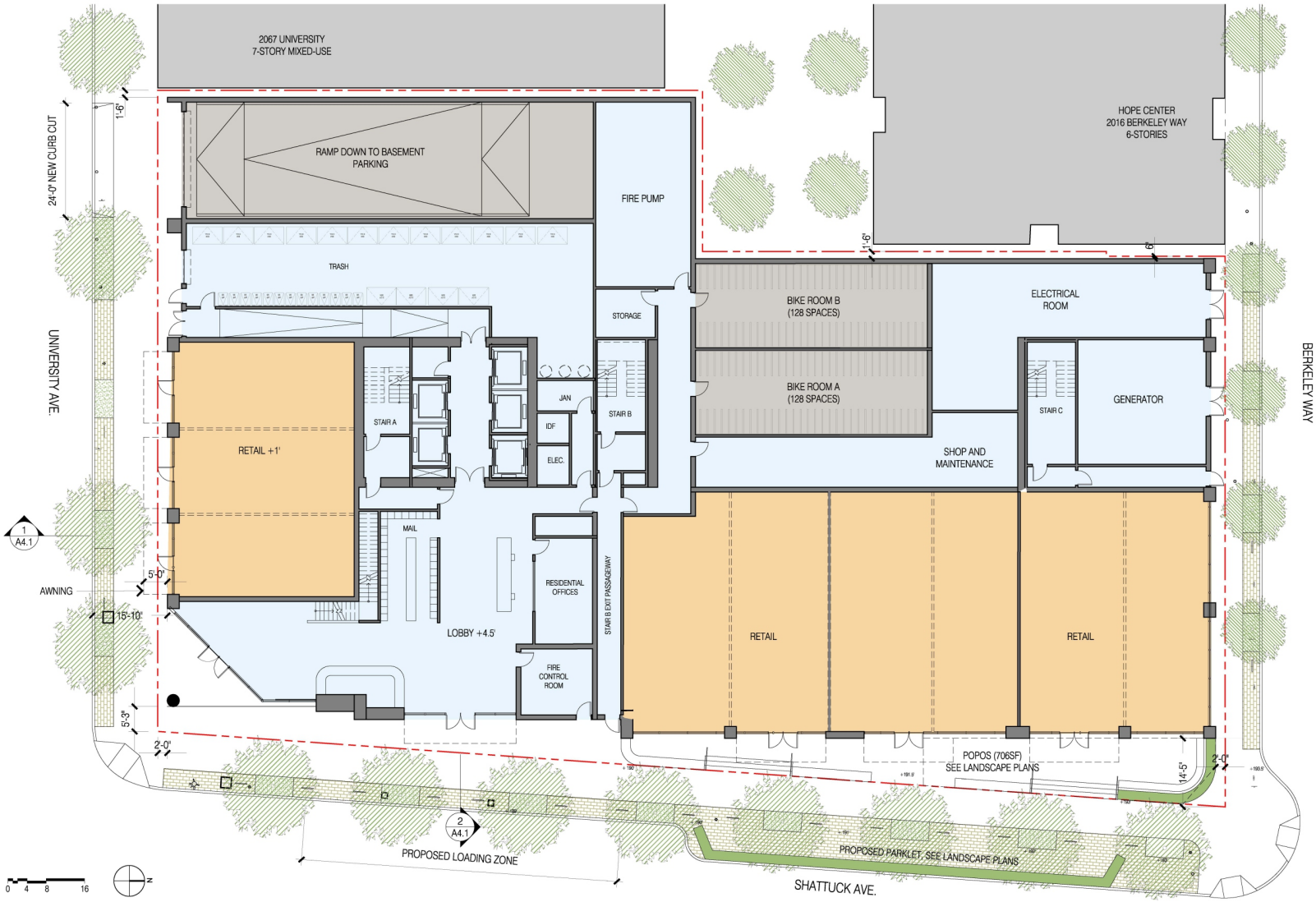
1,000 500 0 1,000 Feet

Exhibit 2
Local Vicinity Map

61000001 • 08/2024 | 2_local_vicinity.mxd

MCSPATS, LLC C/O RHOADES PLANNING GROUP
1974 SHATTUCK AVENUE
AIR QUALITY ANALYSIS



Source: Trachtenberg Architects, 03/12/2024.

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Exhibit 3
Site Plan

The proposed project is anticipated to be categorically exempt (Class 32 Infill Exemption) from California Environmental Quality Act (CEQA).

SETTING AND REGULATORY FRAMEWORK

Air Quality Regulatory Framework

The proposed project is in the City of Berkeley and within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), which regulates air quality in the San Francisco Bay Area Air Basin (Air Basin). Within the Air Basin, ambient air quality standards for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter with an aerodynamic diameter of 2.5 microns and smaller ($PM_{2.5}$) and 10 microns and smaller (PM_{10}), and lead (Pb) have been established by both the California Environmental Protection Agency (Cal/EPA) and the United States Environmental Protection Agency (EPA).[1] California has also set standards for sulfate concentrations and atmospheric visibility.

The EPA and the California Air Resources Board (ARB) designate air basins, or specific areas within an air basin where ambient air quality standards are exceeded, as "nonattainment." If standards are met, the area is designated as "attainment." If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

The Air Basin is classified as a nonattainment area for the State ozone and particulate matter standards and as nonattainment for federal ozone 8-hour and $PM_{2.5}$ 24-hour standards. This indicates that the BAAQMD has not achieved compliance with these State and federal standards in the Air Basin.

In addition to regulating criteria pollutants for attainment of State and federal standards, ARB and the BAAQMD regulate and control emissions of toxic air contaminants (TACs) to further protect human health. TACs are a class of pollutants that includes hundreds of chemicals hazardous to human health. Long-term exposure to TACs may cause more severe health effects, such as neurological damage, hormone disruption, developmental defects, and cancer. TAC emissions are highly localized and are emitted from mobile sources such as cars, trucks, and marine and rail sources, as well as stationary and area sources. The ARB and BAAQMD address their emissions via mobile source strategies, stationary source permitting requirements and health risk thresholds for new development under review in the CEQA process. The average cancer risk from TACs in the Bay Area has been reduced by 80 percent since 1990.[2] Diesel exhaust is the primary TAC contributor to health risk in the Bay Area.

[1] The United States Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for six of the most common air pollutants—carbon monoxide, lead, ground level ozone, particulate matter, nitrogen dioxide, and sulfur dioxide—known as "criteria" air pollutants (or simply "criteria pollutants").

[2] Bay Area Air Quality Management District (BAAQMD). 2017. Final 2017 Clean Air Plan. August 28.

For CEQA, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the proposed project's significance impact determinations related to air quality from criteria pollutants and TACs.

Thresholds of Significance

The significance criteria established or recommended by the BAAQMD were used to make CEQA significance determinations related to the proposed project's impacts on air quality. The BAAQMD has adopted standards of significance for construction and operation. Table 1 shows the thresholds of significance. In developing the thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts on the region's existing air quality conditions.

Table 1: BAAQMD Thresholds of Significance

Pollutant	Construction Thresholds Average Daily Emissions (pounds/day)	Operational Thresholds	
		Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/day)
Criteria Air Pollutants			
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance, other Best Management Practices (BAAQMD Basic Construction Mitigation Measures)	Not Applicable	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	10 per one million	10 per one million	
Chronic or 1-hour Acute Hazard Index	1.0	1.0	
Incremental annual average $PM_{2.5}$	0.3 µg/m^3	0.3 µg/m^3	
Health Risks and Hazards for Sensitive Receptors (Cumulative from All Sources within 1,000-foot Zone of Influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	100 per 1 million		
Chronic Hazard Index	10.0		

Pollutant	Construction Thresholds Average Daily Emissions (pounds/day)	Operational Thresholds	
		Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/day)
Annual Average $PM_{2.5}$	0.8 µg/m^3		

Notes:
µg/m^3 = micrograms per cubic meter
CO = carbon monoxide
NO_X = nitrogen oxides
PM_{10} = particulate matter, including dust, 10 micrometers or less in diameter
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
ppm = parts per million
ROG = reactive organic gases
Source: Bay Area Air Quality Management District (BAAQMD). 2022. CEQA Air Quality Guidelines. April 20.

Berkeley General Plan

The General Plan includes policies to avoid or mitigate impacts resulting from planned development projects with the City. The following policies are specific to air quality and apply to the proposed project.

Policy EM-18 **Regional Air Quality Action.** Continue working with the Bay Area Air Quality Management District and other regional agencies to:

1) Improve air quality through pollution prevention methods.
2) Ensure enforcement of air emission standards.
3) Reduce local and regional traffic (the single largest source of air pollution in the City) and promote public transit.
4) Promote regional air pollution prevention plans for business and industry.
5) Promote strategies to reduce particulate pollution from residential fireplaces and wood-burning stoves.
6) Locate parking appropriately and provide adequate signage to reduce unnecessary "circling" and searching for parking.

Policy EM-19 **15 percent Emission Reduction: Global Warming Plan.** Make efforts to reduce local emissions by 15 percent by the year 2010. Continue to support and implement local emission reduction programs, such as the City of Berkeley Employee Fleet Bicycle Program, the Police Bicycle Program, and the actions recommended in the City of Berkeley Resource Conservation and Global Warming Abatement Plan.

Policy EM-21 **Alternative Fuels.** Work with the University of California, the Berkeley Unified School District, and other agencies to establish natural gas fueling and electric vehicle recharging stations accessible to the public.

Policy EM-22 **Public Awareness Increase.** Increase public awareness of air quality problems, rules, and solutions through use of City publications and networks. Action:

A. Work on a local and regional level to improve air quality for Berkeley residents and the region.

Policy T-19 **Air Quality Impacts.** Continue to encourage innovative technologies and programs such as clean-fuel, electric, and low-emission cars that reduce the air quality impacts of the automobile. (Also see Environmental Management Policies EM-18 through EM-22.)

Actions

A. Establish bicycle and low-emission vehicle preferred parking areas.
B. Install electric vehicle charging stations in all City-owned parking facilities Downtown and at major parking facilities and employment centers.
C. Where appropriate, install timed signals on major streets to allow traffic to move at a steady 25 miles an hour on major and collector streets, and a steady 15 or 20 miles an hour on neighborhood streets to minimize air quality impacts from "stop and go" traffic.

Policy T-29 **Infrastructure Improvements.** Facilitate mobility and the flow of traffic on major and collector streets (shown on the Vehicular Circulation Network map at the end of the Element), reduce the air quality impacts of congestion, improve pedestrian and bicycle access, and speed public transportation throughout the City by making improvements to the existing physical infrastructure. Actions:

A. Provide timely pavement maintenance and eliminate hazards on bicycle routes.
B. Designate or add transit-priority lanes or transit-only lanes.
C. Add or eliminate left turn lanes.
D. Establish commute period parking restrictions.
E. Regularly maintain pavement.
F. Improve freeway approaches and interchanges at Ashby Avenue (including removal of Potter Street ramp) and Gilman Street (to improve pedestrian and bicycle circulation to the waterfront and facilitate truck access to West Berkeley).
G. Complete the San Pablo Avenue Corridor Plan improvements designed in cooperation with the surrounding cities.
H. Time traffic signals on major transit corridors to give priority to and speed movement of transit vehicles.

Downtown Area Plan

The Downtown Area Plan includes policies to avoid or mitigate impacts resulting from planned development projects within the City. The following policies are specific to air quality and apply to the proposed project.

Policy ES-4.4 **Green Materials.** Encourage use of environmentally preferable materials for building construction and maintenance to: maintain healthful indoor air quality; reduce exposure to harmful materials during their production; install and disposal; protect threatened and endangered species; and reduce consumption of natural resources.

a) Establish building requirements and/or incentives for performance in these areas.
b) Inform builders and landowners of standards and guidelines for preferable construction products, such as those developed by LEED®, Green Seal, Stopwaste, and the Healthy Building Network.
c) Encourage reused, reclaimed or recycled materials, and responsibly harvested wood products, such as those certified by the Forest Steward Council (FSC). Provide builders with information on these options.
d) Encourage preferable construction materials by developing a new "green building materials checklist" for Downtown projects. Consider creating a "worst in class" list of materials to avoid. Consider incentives for construction projects that conform significantly to this checklist.
    - Inform building owners and managers of standards and guidelines for preferable maintenance products and operations, such as integrated pest management, and environmental purchasing and waste reduction strategies.

City of Berkeley Standard Conditions of Approval

Approval and development of the proposed project would be subject to the City of Berkeley's Standard Conditions of Approval (COAs), pursuant to the City's Municipal Code Section 23.406.040 and General Plan Policy EM-18 which requires that the BAAQMD emission standards be applied on all projects where the City is the lead agency under CEQA. In implementing Policy EM-18, the City of Berkeley has the following standard COAs relevant to air quality, which would apply to the proposed project. Unless otherwise discussed in this analysis, the proposed project is assumed to be required to incorporate these COAs.

Public Works–Apply BAAQMD-Recommended Measures During Construction

For all proposed projects, BAAQMD recommends implementing all the Basic Construction Mitigation Measures,[2] listed below to meet the Best Management Practices threshold for fugitive dust:

[2] Bay Area Air Quality Management District (BAAQMD) Basic Construction Mitigation Measures are considered standard construction measures and do not constitute any project-specific mitigation.

A. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

B. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

C. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

D. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

E. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

F. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure [ATCM] Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.

G. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

H. Post a publicly visible sign with the telephone number and person to contact at the City of Berkeley regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Air Quality–Diesel Particulate Matter Controls During Construction

All off-road construction equipment used for projects with construction lasting more than 2 months shall comply with one of the following measures:

A. The project applicant shall prepare a Health Risk Assessment (HRA) that demonstrates the project's on-site emissions of diesel particulate matter during construction will not exceed health risk screening criteria after a screening-level HRA is conducted in accordance with current guidance from BAAQMD and Office of Environmental Health Hazard Assessment (OEHHA). The HRA shall be submitted to the Public Works Department for review and approval prior to the issuance of building permits.

B. All construction equipment shall be equipped with Tier 2 or higher engines and the most effective Verified Diesel Emission Control Strategies (VDECS) available for the engine type (Tier 4 engines automatically meet this requirement) as certified by the ARB. The equipment shall be properly maintained and tuned in accordance with manufacturer specifications.

C. In addition, a Construction Emissions Minimization Plan (Emissions Plan) shall be prepared that includes the following:

1. An equipment inventory summarizing the type of off-road equipment required for each phase of construction, including the equipment manufacturer, equipment identification number, engine model year, engine certification (tier rating), horsepower, and engine serial number. For all VDECS, the equipment inventory shall also include the technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date.
2. A Certification Statement that the Contractor agrees to comply fully with the Emissions Plan and acknowledges that a significant violation of the Emissions Plan shall constitute a material breach of contract. The Emissions Plan shall be submitted to the Public Works Department for review and approval prior to the issuance of building permits.

Construction and Demolition Diversion

The project applicant shall divert debris according to proposed project's Construction Waste Management Plan and collect required documentation. The project applicant shall get construction debris receipts from sorting facilities in order to verify diversion requirements. Recycling and disposal receipts shall be uploaded if using Green Halo and submitted online for City review and approval prior to final inspection. Alternatively, the project applicant may complete the second page of the original Construction Waste Management Plan and present it, along with construction debris receipts, to the Building Inspector by the final inspection to demonstrate diversion rate compliance. The Zoning Officer may request summary reports at more frequent intervals as necessary to ensure compliance with this requirement.

Low Carbon Concrete

The proposed project shall verify compliance with the Berkeley Green Code, located under Municipal Code Chapter 19.37, including the use of a concrete mix design with a cement reduction of at least 25 percent. Documentation on concrete mix design shall be available at all times at the construction site for review by City Staff.

AIR QUALITY EMISSIONS IMPACT ANALYSIS

According to CEQA Guidelines Appendix G, to determine whether impacts related to air quality are significant environmental effects, the following questions are analyzed and evaluated.

Impact AIR-1:	**Would the project conflict with or obstruct implementation of the applicable air quality plan?**

Less than significant impact. The project site is located in the San Francisco Bay Area Air Basin, where the BAAQMD regulates air quality. The EPA is responsible for identifying nonattainment and attainment areas for each criteria pollutant within the Air Basin. The Air Basin is designated nonattainment for State

standards for 1-hour and 8-hour ozone, 24-hour respirable particulate matter (PM_{10}), annual PM_{10}, and annual fine particulate matter ($PM_{2.5}$).[3]

The BAAQMD has adopted several air quality policies and plans to address regional air quality standards, the most recent of which is the 2017 Clean Air Plan. The 2017 Clean Air Plan was adopted in April of 2017 and serves as the regional Air Quality Plan (AQP) for the Air Basin for attaining National Ambient Air Quality Standards (NAAQS). The primary goals of the 2017 Clean Air Plan are to protect public health and protect the climate. The 2017 Clean Air Plan acknowledges that the BAAQMD's two stated goals of protection are closely related. As such, the 2017 Clean Air Plan identifies a wide range of control measures intended to decrease both criteria pollutants and greenhouse gas (GHG) emissions.[4] The 2017 Clean Air Plan also accounts for projections of population growth provided by Association of Bay Area Governments (ABAG) and Vehicle Miles Traveled (VMT) projections provided by the Metropolitan Transportation Commission (MTC) and identifies strategies to bring regional emissions into compliance with federal and State air quality standards. A project would be judged to conflict with or obstruct implementation of the 2017 Clean Air Plan if it would result in substantial new regional emissions not foreseen in the air quality planning process.

The BAAQMD does not provide a numerical threshold of significance for project-level consistency analysis with AQPs. Therefore, the following criteria will be used for determining a project's consistency with the AQP.

- **Criterion 1:** Does the project support the primary goals of the AQP?
- **Criterion 2:** Does the project include applicable control measures from the AQP?
- **Criterion 3:** Does the project disrupt or hinder the implementation of any AQP control measures?

Criterion 1

The primary goals of the 2017 Clean Air Plan, the current AQP to date, are to:

- Attain air quality standards;
- Reduce population exposure to unhealthy air and protect public health in the Bay Area; and
- Reduce GHG emissions and protect the climate.

A measure for determining whether the proposed project supports the primary goals of the AQP is if the proposed project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. This measure is determined by comparing project emissions to the significance thresholds identified by the BAAQMD for construction- and operation-related pollutants. These significance thresholds are applied in the evaluation of Impact

[3] Bay Area Air Quality Management District (BAAQMD). 2022. CEQA Air Quality Guidelines. April 20.
[4] A greenhouse gas (GHG) is any gaseous compound in the atmosphere that is capable of absorbing infrared radiation, thereby trapping and holding heat in the atmosphere. By increasing the heat in the atmosphere, greenhouse gases are responsible for the greenhouse effect, which ultimately leads to global warming.

AIR-2, below. As discussed under Impact AIR-2 and Impact AIR-3, the proposed project would not significantly contribute to cumulative nonattainment pollutant violations or expose sensitive receptors to substantial pollutant concentrations after incorporating the City's Standard COAs.

Fugitive dust control measures would be required to be implemented during the construction of the proposed project in order to reduce localized dust impacts. Impacts related to fugitive dust from the proposed project's construction would be potentially significant without the inclusion of sufficient dust control measures. City Standard COA "Public Works–Apply BAAQMD-Recommended Measures During Construction" requires the inclusion of Best Management Practices (BMPs) recommended by the BAAQMD to reduce potential impacts related to fugitive dust emissions from use of construction equipment. In addition, construction exhaust emissions would result in potentially significant health risk impacts. The proposed project would be required to apply City Standard COA "Air Quality–Diesel Particulate Matter Controls During Construction," which would require the proposed project to prepare an HRA that demonstrates the proposed project's on-site construction-related diesel particulate matter (DPM) emissions will not exceed health risk screening criteria in accordance with current guidance from BAAQMD and OEHHA, or require the proposed project to utilize equipped with Tier 2 or higher engines and the most effective VDECS available for the engine type. Tier 4 engines would automatically meet this requirement. Per PDF AIR-1, the proposed project would use construction equipment with Tier 4 interim engines.

With the application of the City Standard COAs "Public Works–Apply BAAQMD-Recommended Measures During Construction" and PDF AIR-1, the proposed project would be consistent with Criterion 1.

Criterion 2

Another measure for determining whether a project is consistent with the AQP is to determine whether the project is inconsistent with the growth assumptions incorporated into the AQP and, thus, whether it would interfere with the region's ability to comply with federal and California air quality standards. The development of the AQP is based in part on the land use general plan determinations of the various cities and counties that constitute the Air Basin. The project site has a land use designation of "Downtown" in the City's General Plan and "Corridor" in the Downtown Area Plan and is zoned C-DMU.

The C-DMU zoning district is intended to implement the vision and goals of the Downtown Area Plan, which aims to generate more pedestrian activity Downtown, include ground floor retail uses, increase economic revitalization in the area, and promote Berkeley's regional leadership in the arts. The C-DMU zoning district includes allowances for high-density residential uses. The proposed project would be consistent with the C-DMU zoning district of the site.

As such, the proposed project falls within the land uses contemplated for development by the City. Considering this information, the proposed project would not directly or indirectly result in substantial unplanned population growth. Therefore, the overall development of the project site would generally be consistent with the growth assumptions incorporated into the Clean Air Plan.

The AQPs also assume adherence to all mandatory regulations to reduce air pollution. Therefore, to conform to the assumptions in the AQP, a project must be consistent with all applicable measures contained in the applicable AQP. The Clean Air Plan contains 85 control measures to reduce air pollutants and GHGs at the local, regional, and global levels. Along with the traditional stationary, area, mobile source, and transportation control measures, the Clean Air Plan contains several control measures designed to protect the climate, promote mixed-use, and compact development to reduce vehicle emissions and exposure to pollutants from stationary and mobile sources. The Clean Air Plan also includes an account of the implementation status of control measures identified in the 2010 Clean Air Plan.

Table 2 lists the Clean Air Plan policies relevant to the proposed project and evaluates the proposed project's consistency with the policies. As shown below, the proposed project would be consistent with applicable measures.

Table 2: Project Consistency with Applicable Clean Air Plan Control Measures

Control Measure	Project Consistency
Buildings Control Measures	
BL1: Green Buildings	**Consistent**. The proposed project would not conflict with the implementation of this measure. The proposed project will comply with the latest energy efficiency standards and incorporate applicable energy efficiency features designed to reduce project energy consumption.
BL4: Urban Heat Island Mitigation	**Consistent.** The proposed project would incorporate landscaping throughout the site. The proposed project would provide a landscaped ground level, 11th floor, and roof, including trees and planters, according to City standards that would reduce the urban heat island effect.
Energy Control Measures	
EN1: Decarbonize Electricity Generation	**Consistent.** The proposed project would not conflict with the implementation of this measure. The proposed project would comply with the latest energy efficiency standards and incorporate applicable energy efficiency features designed to reduce project energy consumption. In addition, as a high-rise residential development, the proposed project would be required to comply with the standards contained in the 2022 California Building Standards Code (CBC), Title 24, Part 6, Subchapter 8, which includes rooftop solar panels. Furthermore, the proposed residential units would be all-electric in design and would not include natural gas plumbing. The proposed project would be consistent with this measure.
EN2: Decrease Electricity Demand	**Consistent.** The proposed project would be required to conform to the energy efficiency requirements of the CBC, also known as Title 24, which was adopted to meet an Executive Order in the Green Building Initiative to improve the energy efficiency of buildings through aggressive standards. The 2022 Title 24 Standards are the current State building regulations, which went into effect on January 1, 2023. Proposed project buildings

Control Measure	Project Consistency
	would be subject to the Title 24 Standards in effect at the time of building permit issuance.
Natural and Working Lands Control Measures	
NW2: Urban Tree Planting	**Consistent.** The proposed project would incorporate new landscaping, including new trees along Shattuck Avenue, Berkeley Way, and University Avenue and new planters within the 11th floor and rooftop landscaped areas of the proposed building.
WA3: Green Waste Diversion	**Consistent.** The waste service provider for the proposed project will be required to meet the Assembly Bill (AB) 341 and Senate Bill (SB) 939 and SB 1374 requirements that require waste service providers to divert green waste. All plant refuse generated during operations of the proposed project would be recycled off-site.
WA4: Recycling and Waste Reduction	**Consistent.** The waste service provider for the proposed project will be required to meet the AB 341, SB 939, and SB 1374 requirements that require waste to be recycled.
Stationary Control Measures	
SS36: Particulate Matter from Trackout	**Consistent.** Mud and dirt that may be tracked out onto the nearby public roads during construction activities shall be removed promptly by the Contractor based on the BAAQMD's requirements. City Standard COA "Public Works–Apply BAAQMD-Recommended Measures During Construction" requires the proposed project to implement Best Management Practices (BMPs) recommended by the Bay Area Air Quality Management District (BAAQMD) for fugitive dust emissions during construction.
SS37: Particulate Matter from Asphalt Operations	**Consistent.** Asphalt used during project construction would be subject to BAAQMD Regulation 8, Rule 15-Emulsified and Liquid Asphalts. Although this rule does not directly apply to the proposed project, it does limit the reactive organic gas (ROG) content of asphalt available for use during construction by regulating the sale and use of asphalt. By using asphalt from facilities that meet BAAQMD regulations, the proposed project would be consistent with this Clean Air Plan measure.
Transportation Control Measures	
TR9: Bicycle and Pedestrian Access and Facilities	**Consistent.** The proposed project would be directly accessible to sidewalks on University Avenue and Shattuck Avenue. Several bus stops are located adjacent to the site, including two bus stops serving eight bus routes on the corner of Shattuck Avenue and University Avenue. In addition, the proposed project would be approximately 500 feet south of the Downtown Berkeley stop of the Bay Area Regional Transportation light rail system. The proposed project would also be located approximately 500 feet east of the Milvia Street Class IV protected bicycle lane and would provide 240 long-term and 18 short-term bicycle parking spaces.

Control Measure	Project Consistency
	Therefore, the proposed project would not conflict with and would be consistent with the BAAQMD's effort to encourage planning for bicycle and pedestrian facilities.
Source: Bay Area Air Quality Management District (BAAQMD). 2017. Final 2017 Clean Air Plan. April 19.	

In summary, the proposed project would not conflict with any applicable measures under the 2017 Clean Air Plan given the application of City Standard COA "Public Works – Apply BAAQMD-Recommended Measures During Construction"; therefore, the proposed project would be consistent with Criterion 2.

Criterion 3

The proposed project would not preclude extension of a transit line or bike path, propose excessive parking beyond parking requirements, or otherwise create an impediment or disruption to implementation of any AQP control measures. As shown in Table 2 above, the proposed project would incorporate several AQP control measures as project design features, such as utilizing asphalt which would be compliant with BAAQMD regulations, complying with energy efficiency standards contained in the 2022 California Building Standards Code (CBC), and installing landscaping across the project site. Considering this information, the proposed project would not disrupt or hinder the implementation of any AQP control measures. The proposed project is therefore consistent with Criterion 3.

Summary

As discussed above, the proposed project would be consistent with all three criteria after incorporating the City Standard COAs "Public Works–Apply BAAQMD-Recommended Measures During Construction" and PDF AIR-1 Thus, the proposed project would not conflict with the 2017 Clean Air Plan. Therefore, impacts associated with conflicting with or obstructing the 2017 Clean Air Plan would be less than significant.

Impact AIR-2:	**Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?**

Less than significant impact. This impact is related to the cumulative effect of a project's criteria pollutant emissions. By its nature, air pollution is largely a cumulative impact resulting from emissions generated over a large geographic region. The nonattainment status of regional pollutants results from past and present development within the Air Basin, and this regional impact is a cumulative impact. Therefore, new development projects (such as the proposed project) within the Air Basin would contribute to this impact only on a cumulative basis. No single project would be sufficient in size, by itself, to result in nonattainment of regional air quality standards. Instead, a project's emissions may be individually limited but cumulatively considerable when evaluated in combination with past, present, and future development projects.

Potential regional impacts could result in exceedances of State or federal standards for nitrogen oxide (NO_X), particulate matter (PM_{10} and $PM_{2.5}$), or CO. NO_X emissions are of concern because of potential health impacts from exposure to NO_X emissions during both construction and operation and as a precursor in the formation of airborne ozone. PM_{10} and $PM_{2.5}$ are of concern during construction because of the Potential to Emit (PTE) exhaust emissions from the operation of off-road construction equipment and fugitive dust during earth-disturbing activities (construction fugitive dust). CO emissions are of concern during project operation because operational CO hotspots are related to increases in on-road vehicle congestion and resulting health effects.

Reactive organic gas (ROG) emissions are also important because of their participation in the formation of ground level ozone. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, elderly, and young children.

The cumulative analysis focuses on whether a specific project would result in cumulatively considerable emissions. According to Section 15064(h)(4) of the CEQA Guidelines, the existence of significant cumulative impacts caused by other projects alone does not constitute substantial evidence that the project's incremental effects would be cumulatively considerable. Rather, the determination of cumulative air quality impacts for construction and operational emissions is based on whether the proposed project would result in emissions that exceed the BAAQMD thresholds of significance for construction and operations on a project level. The thresholds of significance represent the allowable emissions each project can generate without generating a cumulatively considerable contribution to regional air quality impacts. Therefore, a project that would not exceed the BAAQMD thresholds of significance on the project level also would not be considered to result in a cumulatively considerable contribution to these regional air quality impacts. Construction and operational emissions are discussed separately below.

Construction Emissions

During construction, fugitive dust would principally be generated from demolition, site grading, and other earthmoving activities. The majority of fugitive dust would remain localized and would be deposited near the project site; however, the potential for impacts from fugitive dust exists. Exhaust emissions would also be generated from the operation of the off-road construction equipment and on-road construction vehicles.

Construction Fugitive Dust

PM_{10} and $PM_{2.5}$ (fugitive dust) is recognized to impact local communities. Construction-related activities, such as soil disturbance, grading, and material hauling, can also result in fugitive dust emissions (e.g., $PM_{2.5}$ and PM_{10}). The BAAQMD does not have a numerical threshold for fugitive dust particulate matter emissions. Instead, the BAAQMD bases the determination of significance for fugitive dust on implementing effective control measures. In order for a project to have a less than significant criteria air

pollutant impact related to construction-related fugitive dust emissions, it must implement all BAAQMD basic BMPs. The City applies BAAQMD BMPs as standard conditions to all projects, pursuant to General Plan Policy EM-18. These air pollution control measures shall be applied during construction activities as outlined in City Standard COA "Public Works–Apply BAAQMD-Recommended Measures During Construction." With the application of this condition, short-term construction fugitive dust impacts would be less than significant. In addition, the proposed project would comply with all applicable district rules, including Regulation 6, Rule 1 (General Requirements) and Regulation 6, Rule 6 (Prohibition of Trackout) which require dust generating operations to limit particulate matter emissions. Therefore, project construction would have a less than significant impact with respect to fugitive dust.

Construction Air Pollutant Emissions: ROG, NO_X, Exhaust PM_{10}, and Exhaust $PM_{2.5}$

California Emissions Estimator Model (CalEEMod) Version 2022.1 was used to estimate the proposed project's construction emissions. CalEEMod provides a consistent platform for estimating construction and operational emissions from a wide variety of land use projects and is the model recommended by the BAAQMD for estimating project emissions. Estimated construction emissions are compared with the applicable thresholds of significance established by the BAAQMD to assess ROG, NO_X, exhaust PM_{10}, and exhaust $PM_{2.5}$ construction emissions to determine significance for this criterion.

For the purpose of this air quality analysis, construction of the proposed project is estimated to begin in January 2026 and conclude in June 2028. Construction emissions would likely decrease if the construction schedule is deferred to later years because of improvements in technology and more stringent regulatory requirements. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as CEQA Guidelines require. The preliminary construction schedule is presented in Table 3.

Table 3: Preliminary Construction Schedule

Phase	Phase Start Date	Phase End Date	Working Days per Week	Total Number of Working Days
Demolition	1/5/2026	2/13/2026	5	30
Grading	2/16/2026	5/8/2026	5	60
Building Construction	5/11/2026	11/19/2027	5	400
Paving	11/22/2027	11/26/2027	5	5
Architectural Coating	11/29/2027	6/23/2028	5	150

The calculations of pollutant emissions from the construction equipment account for the type of equipment, horsepower, and load factors of the equipment and the duration of equipment use. As discussed in greater detail in Impact AIR-3, the proposed project would be subject to City Standard COA "Air Quality–Diesel Particulate Matter Controls During Construction," which the proposed project would

fulfill by using construction equipment with Tier 4 interim engines. This is included in the proposed project as PDF AIR-1. As indicated in Table 4, construction emissions from all construction activities would be below the recommended thresholds of significance; therefore, the proposed project's construction would have less than significant impact related to emissions of ROG, NO_X, exhaust PM_{10}, and exhaust $PM_{2.5}$.

Table 4: Construction Emissions (Average Daily Rate)

Parameter	Year	Air Pollutants[1] (tons/year) ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Project Construction					
Demolition	2026	0.003	0.101	0.002	0.001
Grading	2026	0.010	0.374	0.006	0.005
Building Construction	2026	0.125	0.652	0.004	0.004
	2027	0.165	0.871	0.006	0.006
Architectural Coating	2027	0.001	0.012	0.000	0.000
	2028	0.451	0.015	0.000	0.000
Paving	2027	2.391	0.079	0.002	0.002
Total Emissions (tons)		3.14	2.10	0.02	0.02
Daily Average					
Total Emissions (lbs/year)		6,289.9	4,207.1	39.2	35.9
Average Daily Emissions (lbs/day)[2]		9.75	6.52	0.06	0.06
Significance Threshold (lbs/day)		**54**	**54**	**82**	**54**
Exceeds Significance Threshold?		**No**	**No**	**No**	**No**

Notes:
lbs = pounds
NO_X = oxides of nitrogen
PM_{10} = particulate matter, including dust, 10 micrometers or less in diameter
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
ROG = reactive organic gases
[1] Totals may not add up due to rounding. Calculations use unrounded totals.
[2] Calculated by dividing the total lbs of emissions by the total number of nonoverlapping working days of construction (645 workdays).
Source: CalEEMod Output (see Attachment A).

In summary, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant during construction. Impacts would be less than significant.

Operational Emissions

Operational Air Pollutant Emissions: ROG, NO_X, PM_{10}, and $PM_{2.5}$

Operational emissions would include area, energy, mobile, and stationary sources. Area sources would include emissions from architectural coatings, consumer products, and landscape equipment. Regarding energy sources, the proposed project could include natural gas use for the restaurant and pool heating, but the residential and retail components of the proposed project would be all electric. Mobile sources include exhaust and road dust emissions from the vehicles that would travel to and from the project site.

Regarding stationary sources, the proposed project would include the use of an emergency generator with a power level above 50 horsepower. The BAAQMD has determined that emergency generators typically have a testing and maintenance schedule of running for approximately 30 minutes in a day, once a week.[5] Per PDF AIR-2, the applicant would equip the proposed emergency generator with a diesel particulate filter. The operation of the emergency generator (with filter) and its associated emissions are included in the emission calculations.

A detailed assessment of the criteria emissions estimated to occur due to existing operations are presented in Table 5. As shown in Table 5, the proposed project would not exceed any of the BAAQMD's thresholds of significance for regional daily operational emissions.

Table 5: Operational Regional Pollutant Emissions

Emissions Source	ROG	NO_X	PM_{10} Total	$PM_{2.5}$ Total
	Tons per Year			
Project Operation				
Mobile	0.89	0.77	1.73	0.45
Area	2.16	0.03	0.00	0.00
Energy–Natural Gas	0.00	0.05	0.00	0.00
Stationary - Emergency Generator	0.01	0.03	0.00	0.00
Total (tons/year)	3.06	0.89	1.74	0.45
Significance Threshold (Tons/Year)	**10**	**10**	**15**	**10**
Exceeds Significance Threshold?	**No**	**No**	**No**	**No**
Total (pounds/year)	6,118	1,774	3,476	905

[5] Bay Area Air Quality Management District (BAAQMD). 2019. Required Items for Engine Applications. Website: https://www.baaqmd.gov/~/media/files/engineering/ic-engine-permits/required-items-for-engine-application-final-draft-103119-pdf.pdf?sc_lang=en. Accessed September 2, 2024.

Emissions Source	ROG	NO_X	PM_{10} Total	$PM_{2.5}$ Total
	Tons per Year			
Total Average (pounds/day)	16.76	4.86	9.52	2.48
Significance Threshold (Pounds/Day)	**54**	**54**	**82**	**54**
Exceeds Significance Threshold?	**No**	**No**	**No**	**No**

Notes:
BAAQMD = Bay Area Air Quality Management District
NO_X = nitrogen oxides
PM_{10} = particulate matter, including dust, 10 micrometers or less in diameter
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
ROG = reactive organic gases

Totals were summed using unrounded numbers and may not appear to sum exactly due to rounding.

Source: Attachment A.

Operational Carbon Monoxide Hotspot

The CO emissions from traffic generated by the proposed project are a concern at the local level because congested intersections can result in high localized concentrations of CO (referred to as a CO hotspot).

The BAAQMD screening criteria[6] were used to determine whether implementing the proposed project could result in local carbon monoxide emissions that exceed the thresholds of significance. If all the following screening criteria are met, operation of the proposed project would result in a less than significant impact related to carbon monoxide:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, the Regional Transportation Plan, and local congestion management agency plans.
- Project-generated traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- Project-generated traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Consistency with an Applicable Congestion Management Program

A project Transportation Impact Analysis was prepared by Abram Associates on May 19, 2023, in accordance with the City's Guidelines for Development of Traffic Impact Reports. All of the study

[6] Bay Area Air Quality Management District (BAAQMD). 2022. CEQA Air Quality Guidelines. April 20.

intersections would continue to have acceptable conditions (level of service [LOS] D or better) during the weekday AM and PM peak-hours, with the exception of Shattuck Avenue and Berkeley Way, which is forecast to continue operating at LOS F regardless of whether or not the proposed project is implemented. However, a traffic signal is already planned to be installed at this intersection. Once construction of the planned traffic signal is completed, this intersection is forecast to have acceptable operations with the addition of traffic from the proposed project. Therefore, the addition of project traffic would not be considered an operational impact according to City of Berkeley guidelines, and the proposed project would be consistent with applicable congestion management plans.

Increase Traffic Volumes at Affected Intersections to No More Than 44,000 Vehicles Per Hour

Based on the project Transportation Impact Analysis, the existing plus project traffic volumes on the nearby local residential streets would not experience hourly traffic levels above 24,000 and 44,000 vehicles per hour cited in the BAAQMD criteria. Specifically, Exhibit 8 of the traffic analysis shows the existing plus project peak turning volumes at six studied intersections. None of the studied intersection would experience traffic volume remotely close to 24,000 or 44,000 vehicles per hour. At most, the studied intersections would experience approximately 1,000 to 2,000 vehicle trips during AM or PM peak-hour. Therefore, the peak-hours trip volume experienced at this intersection is significantly below the threshold levels of 24,000 and 44,000 vehicles per hour. Therefore, the proposed project would meet all the CO screening criteria and would result in a less than significant impact related to carbon monoxide.

Increase Traffic Volumes Where Vertical and/or Horizontal Mixing Is Substantially Limited

Nonetheless, CO hotspots can occur when a transportation facility's design or orientation prevents the adequate dispersion of CO emissions from vehicles, resulting in the accumulation of local CO concentrations. The design or orientation of a transportation facility that may prevent the dispersion of CO emissions include tunnels, parking garages, bridge underpasses, natural or urban canyons, below-grade roadways, or other features where vertical or horizontal atmospheric mixing is substantially limited. Adjacent roadways that would receive new vehicle trips generated by the proposed project do not include roadway segments where vertical or horizontal atmospheric mixing is substantially limited.

Therefore, based on the above criteria, the proposed project would not exceed the CO screening criteria and would have a less than significant impact related to CO.

In summary, the proposed project would have a less than significant construction and operation impact related to a cumulatively considerable net increase of any criteria pollutant.

Impact AIR-3:	**Would the project expose sensitive receptors to substantial pollutant concentrations?**

Less than significant impact. The BAAQMD defines a sensitive receptor as the following: "Facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and residential areas." As specified by the BAAQMD, health risk and hazard impacts should be analyzed

for sensitive receptors within a 1,000-foot radius of the project site.[7] The closest existing sensitive receptors to the project site include the following:

- The Berkeley Place, an apartment complex located adjacent to the west and south of the project site.
- ACE Berkeley Student Apartments, located adjacent to the east of the project boundary, as well as to the northeast of the project site.
- Berkeley Way Properties & Apartments, located adjacent to the west and north of the project site.

The proposed project would result in a potentially significant impact on sensitive receptors if any of following criteria are met:

- **Criterion 1:** Construction and operation of the proposed project would result in cancer or non-cancer health risk levels of TACs and $PM_{2.5}$ concentrations that exceed the BAAQMD health risk significance thresholds.
- **Criterion 2:** The proposed project, in combination with existing sources of TAC and $PM_{2.5}$ emissions, would result in impacts would result in cancer or non-cancer health risk levels of TACs and $PM_{2.5}$ concentrations that exceed the cumulative BAAQMD health risk significance thresholds.
- **Criterion 3:** The proposed project would contribute to CO hot spots; those exposed to CO hotspots may have a greater likelihood of developing adverse health effects.

Criterion 1: Project Toxic Air Pollutants

Construction

An assessment was made of the potential health impacts on surrounding sensitive receptors resulting from TAC emissions during construction. The assessment is provided below, while Attachment A provides the detailed assumptions and modeling parameters.

DPM has been identified by the ARB as a carcinogenic substance. Major sources of DPM include off-road construction equipment and heavy-duty delivery and vendor trucks and worker activities. For purposes of this analysis, DPM is represented as exhaust emissions of PM_{10}. $PM_{2.5}$ concentrations were calculated using the $PM_{2.5}$ emission rates using the dispersion modeling methods used for the PM_{10} and the HRA.

Estimation of Construction DPM Emissions

Construction DPM (represented as PM_{10} exhaust) and $PM_{2.5}$ emissions were estimated using CalEEMod, Version 2022.1, as described under Impact AIR-2. Construction was assumed to begin in January 2026 and conclude in June 2028. Project construction emissions were assumed to be distributed over the project site with a working schedule of 8 hours per day, 5 days per week. Table 4 summarizes the emission rates of DPM emissions during construction of the proposed project and DPM emissions during

[7] Bay Area Air Quality Management District (BAAQMD). 2022. CEQA Air Quality Guidelines. April 20.

construction of the proposed project with PDF AIR-1. Specifically, the proposed project would use construction equipment with Tier 4 interim engine and the analysis evaluates health risk impacts with the use of Tier 4 interim construction equipment.

Estimation of Cancer Risks

The BAAQMD has developed a set of guidelines for estimating cancer risks resulting from exposure to TACs.[8] Methodologies used in this analysis were followed in this analysis. The Hotspots Analysis and Reporting Program (HARP2) software was used to identify the cancer risk associated with DPM generated during construction activities. See Attachment A for specific input assumptions.

Estimation of Non-Cancer Chronic Hazards

An evaluation of the potential non-cancer effects of chronic chemical exposures was also conducted. Adverse health effects are evaluated by comparing the annual receptor concentration of each chemical compound with the appropriate reference exposure limit. Available reference exposure limits promulgated by OEHHA were considered in the assessment.

Risk characterization for non-cancer health hazards from TACs is expressed as a hazard index (HI). The HI is a ratio of the predicted concentration of the proposed project's emissions to a concentration considered acceptable to public health professionals, termed the reference exposure limit. The HI assumes that chronic sub-threshold exposures adversely affect a specific organ or organ system (toxicological endpoint). For each discrete chemical exposure, target organs presented in regulatory guidance were used. Each chemical concentration or dose is divided by the appropriate toxicity reference exposure level to calculate the HI. For compounds affecting the same toxicological endpoint, this ratio is summed. Where the total equals or exceeds 1, a health hazard is presumed to exist. For purposes of this assessment, the TAC of concern is DPM for which the OEHHA has defined a reference exposure limit for DPM of 5 micrograms per cubic meter ($\mu g/m^3$). The principal toxicological endpoint assumed in this assessment was through inhalation.

The area surrounding the project site contains a mix of high-density residential uses, commercial uses, and public uses within 1,000 feet of the proposed project boundary. Evaluation at the identified Maximally Exposed Individual Receptor (MEIR) provides a health-conservative result for all other receptors within the 1,000 feet buffer zone. To conduct a conservative estimate of health risk impacts, all receptors were treated as residential receptors, with exposure starting in third trimester for the duration of the construction period, as detailed in Attachment A. Impacts at the MEIR (which was found to be a receptor at 37°52'21.2"N 122°16'05.2"W, east of the project site, across Shattuck Avenue) were found to be less than below the BAAQMD's single source thresholds. All other receptors would be less than the MEIR and decrease with increasing distance from the project site.

[8] Bay Area Air Quality Management District (BAAQMD). 2020. BAAQMD Health Risk Assessment Modeling Protocol. December.

Project Operational Toxic Air Pollutants

Traffic generated by the mixed-use residential and commercial project would consist of mostly light-duty gasoline powered vehicles, which are not a significant source of TAC and air pollutant emissions. While the proposed project is a mixed-use project primarily consisting of residential and retail uses, it would install on-site an emergency generator, which is a stationary operational emissions source of TACs during its operation. Since this proposed generator would be a standby emergency generator, its operation would be limited to testing and emergency hours and as such are not expected to be a significant source of TAC emissions to the surroundings. Risk-based permitting requirements (Rule 5-2 New Source Review for Toxics). However, following BAAQMD emergency generator PTE assumptions, the proposed emergency generator would likely not exceed 50 hours of emergency operation per year. In addition, as a permitted source, the project applicant would be required to demonstrate operational emissions compliance with BAAQMD standards through a separately issued Engine Permit prior to operations per Rule 5-2 New Source Review for Toxics. In addition, the intermittent and infrequent use of the emergency generator would ensure that it would not generate a significant amount of localized TAC emissions over time.

Nonetheless, the California Air Pollution Control Officers Association (CAPCOA) Diesel Internal Combustion Engine (DICE) Risk Tool was used to perform a Screening Risk Assessment for operational emissions associated with the emergency generator for the proposed project. The DICE risk tool was designed to assist local Air Pollution Control Districts and Air Quality Management Districts in California with performing screening HRAs for toxic emissions from diesel internal combustion engines. This tool provides a user-friendly interface for entering project, engine, building, and receptor information, and it calculates potential health risks following the guidelines set by the ARB. Additionally, the tool ensures consistency with the methodologies and procedures outlined in the Office of Environmental Health Hazard Assessment's (OEHHA) 2015 Air Toxic Hot Spots Program Guidance Manual and district HRA protocols. Users can perform customized HRAs based on specific project details and local conditions, and the tool generates detailed reports that include risk assessment results and supporting data. This alignment with OEHHA, BAAQMD, the CAPCOA, and ARB protocols helps ensure compliance with air quality regulations and protects public health by accurately assessing the impact of diesel engine emissions.

CalEEMod estimates of DPM (PM exhaust) and $PM_{2.5}$ emissions for a 300-horsepower generator are 0.326 pounds/year (Attachment A). Since the diesel generator is the single source of operational emissions of fine particulate exhaust, PM_{10}, $PM_{2.5}$, and DPM emissions and concentrations are one-in-the-same.

The modeling results are shown in Table 6 below. Modeling parameters and output can be found in Attachment A.

Results

Table 6 summarizes the cancer risk and chronic HI results for project construction and operation at the MEIR, which is a multi-family apartment residence located approximately 200 feet northeast of the

project site at 1985 Shattuck Avenue. As such, the resultant cancer risk and chronic hazards from DPM and maximum annual $PM_{2.5}$ are below the BAAQMD thresholds of significance.

Table 6: Estimated Cancer Risks and Chronic Non-Cancer Hazards

Cancer Risk Scenario[1]	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index	Acute Non-Cancer Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
Construction Risks to Maximum Exposed Individual Receptor[1]	8.94	0.00496	—	0.10520
Operation Risks to Maximum Exposed Individual Receptor[1]	0.2	<0.001	—	0.00027
Thresholds of Significance	**10**	**1**	**1**	**0.3**
Exceeds Individual Source Threshold?	**No**	**No**	**No**	**No**

Notes:
$\mu g/m^3$ = micrograms per cubic meter
MEIR = Maximally Exposed Individual Receptor
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
[1] The MEIR was found to be a receptor at 37°52'21.2"N 122°16'05.2"W, east of the project site, across Shattuck Avenue.
The project construction cancer risk, chronic non-cancer hazard, and $PM_{2.5}$ concentration estimates reflect implementation of PDF AIR-1. The proposed project would use construction equipment with Tier 4 interim engine and the analysis evaluates health risk impacts with the use of Tier 4 interim construction equipment.
Risk was evaluated for Diesel Exhaust Particulate Matter, which does not have an established Acute Reference Exposure Level
Emissions
Source: Attachment A.
Thresholds Source: Bay Area Air Quality Management District (BAAQMD). 2022. CEQA Air Quality Guidelines. April 20.

Therefore, project construction and operation would not result in significant health impacts to nearby sensitive receptors.

Criterion 2: Cumulative Health Risk Assessment

The BAAQMD recommends assessing the potential cumulative impacts from sources of TACs within 1,000 feet of a proposed project. As a result, a cumulative HRA was performed that examined the cumulative impacts of the proposed project's construction emissions and sources of TAC emissions within 1,000 feet of the proposed project. As previously discussed, the MEIR was determined to be a receptor at 37°52'21.2"N 122°16'05.2"W, east of the project, across Shattuck Avenue.

For a project-level analysis, BAAQMD provides several tools for use in screening potential sources of TACs. This includes the Stationary Source Screening Map,[9] which provides all the stationary sources permitted by the Air District with risk and hazard estimates; Roadway Screening Data Layers providing estimated cancer risks, hazards, and $PM_{2.5}$ concentrations for all Bay Area highways and surface streets; and Rail and Railyard Screening Data Layers providing estimated cancer risks, hazards, and $PM_{2.5}$ concentrations from diesel locomotives and select railyards.

The cumulative health risk results during project construction, including health risks from the existing stationary sources, roadway, and rail data from the BAAQMD sources above, are summarized in Table 7. No rail sources were identified within 1,000 feet of the project site and the BAAQMD Railyard Screening Layers had no data for rail sources at the site. Outputs from the BAAQMD screening tools are documented in Attachment A, with the HRA results.

Table 7: Summary of the Cumulative Health Impacts at the MEIR

Source	Source Name/Type	Cancer Risk (per million)	Chronic Hazard Index	Acute Hazard Index	Maximum Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Project					
Proposed Project	Diesel Equipment	9.14	0.00496	—	0.10547
Stationary Sources					
Facility ID 19070	Golden Bear Center	0.045	0	—	0
Facility ID 21118	City of Berkeley Fire Station #2	0.4976	0	—	0
Facility ID 17864	Peralta Community College District	0.95	0.0004	—	0.0012
Facility ID 200903	Center Street Parking Garage	0.13	0	—	0
Facility ID 201406	Residence Inn Berkeley	2.5648	0.0008	—	0.0032
Facility ID 201576	Regency 2120 Berkeley Way LLC	1.6277	0	—	0.0041
Facility ID 200623	Stonefire Apartments	0.11556	0	—	0.00012
Facility ID 59-110	University of California Berkeley	0.2274	0	—	0.0006
Facility ID 59-118	University of California Berkeley	0.4764	0	—	0.0012
Facility ID 59-144	University of California Berkeley	0.1827	0	—	0
Facility ID 59-149	University of California Berkeley	0.2965	0	—	0.0005
Facility ID 59-63	University of California Berkeley	0.5472	0	—	0.0012
Facility ID 59-REM	University of California Berkeley	64.47286	0.32676		50.01762

[9] Bay Area Air Quality Management District (BAAQMD). 2024. Stationary Source Screening Map. Website: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3. Accessed August 29, 2024.

Source	Source Name/Type	Cancer Risk (per million)	Chronic Hazard Index	Acute Hazard Index	Maximum Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Existing Roadways					
Existing Roadways		40.58	0.32796	—	50.02974
Existing Rail					
Existing Railways and Rail Yards		No Data	No Data	—	No Data
Cumulative Health Risks without Project					
Cumulative Total without Project		**72.134**	**0.96**	**—**	**50.21**
BAAQMD Cumulative Thresholds of Significance		**100**	**10**	**10**	**0.8**
Threshold Exceedance?		**No**	**No**	**No**	**Yes**
Cumulative Health Risks with Project					
Cumulative Total with Project		**81.27**	**0.332**	**—**	**50.315**
BAAQMD Cumulative Thresholds of Significance		**100**	**10**	**10**	**0.8**
Threshold Exceedance?		**No**	**No**	**No**	**Yes**

Notes:
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
$\mu g/m^3$ = micrograms per cubic meter
BAAQMD = Bay Area Air Quality Management District
MEIR = Maximally Exposed Individual Receptor
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
TAC = toxic air contaminant

All Risks and Hazards for Permitted Stationary Sources are adjusted for distance from MEIR, using Diesel Engine Decay Factors for all sources except Facility ID 59-REM where a generic decay factor was used as the source type was not specified. See detailed calculations in Attachment A.

Project and stationary source risks and hazards are for diesel exhaust which does not have an established Acute Reference Exposure Level.

Source: Attachment A

As noted in Table 7, the cumulative impacts at the MEIR would exceed the BAAQMD's cumulative thresholds of significance for annual $PM_{2.5}$ concentrations with and without contributions from the proposed project. Although there is an existing cumulative impact, a project's contribution to a significant cumulative impact can be less than a cumulatively considerable contribution (it is less than 0.5 percent of the resulting $PM_{2.5}$ annual concentration of 50.32 $\mu g/m^3$) and thus is not significant.

The proposed project does not exceed the BAAQMD's single source threshold for $PM_{2.5}$ of 0.3 $\mu g/m^3$ and cancer risk of 10 in a million (see Table 6). By using Tier 4 interim construction equipment and diesel particulate filter on the emergency generator during operation, the proposed project would implement

its fair share of minimization measures. Therefore, the proposed project's health risk impacts related to $PM_{2.5}$ concentration are not considered cumulatively considerable.

Criterion 3: CO Hotspot

As discussed under Impact AIR-2, the proposed project's operational CO hotspot impact would be less than significant.

Summary

As discussed above, the proposed project would be consistent with all three criteria after incorporating the City Standard COAs "Public Works–Apply BAAQMD-Recommended Measures During Construction" and PDF AIR-1. In summary, the proposed project would not expose sensitive receptors to substantial pollutant concentrations during construction or operation. Impacts would be less than significant.

Impact AIR-4: Would the project result in other emissions (such as those leading to odors or) adversely affecting a substantial number of people?

Less than significant impact. The ability to detect odors varies considerably among the populations and is subjective. The BAAQMD does not have a recommended odor threshold for construction activities. However, the BAAQMD recommends operational screening criteria based on the distance between receptors and types of sources known to generate odors.

Project construction would generate diesel exhaust and ROGs; however, these emissions would disperse rapidly from the project site and therefore would not create significant odors affecting a substantial number of people. As such, construction odor impacts would be less than significant.

Land uses typically associated with objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities, as shown in Table 8.[10]

Table 8: BAAQMD Odor Screening-level Distances Thresholds

Land Use/Type of Operation	Project Screening Distance
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile

[10] Bay Area Air Quality Management District (BAAQMD). 2022. BAAQMD CEQA Guidelines, Chapter 5 Project-level Air Quality Impacts, Table 5-4, Odor Screening Distances. April 20.

Land Use/Type of Operation	Project Screening Distance
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations	1 mile
Rendering Plant	2 miles
Coffee Roaster	1 mile
Food Processing Facility	1 mile
Confined Animal Facility/Feed Lot/Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Metal Smelting Plants	2 miles
Source: Bay Area Air Quality Management District (BAAQMD). 2022.	

The proposed project would involve the development of residences whose operations could lead to odors from associated laundry cleaning, vehicle exhaust, outdoor cooking, and waste disposal. However, such odors generated by project operation would be small in quantity and duration and would not pose an objectionable odor impact to future and existing receptors.

The proposed project would also generate diesel exhaust associated with the operation of the emergency generator. However, operation of this generator would be infrequent, and odors associated with this emission would disperse rapidly from the project site and therefore would not create significant odors affecting a substantial number of people. As such, operational odor impacts would be less than significant.

Recommended Measures

Standard Conditions of Approval

Public Works–Apply BAAQMD-Recommended Measures During Construction

For all proposed projects, BAAQMD recommends implementing all the Basic Construction Mitigation Measures,[11] listed below to meet the BMP threshold for fugitive dust:

A. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

[11] Bay Area Air Quality Management District (BAAQMD) Basic Construction Mitigation Measures are considered standard construction measures and do not constitute any project-specific mitigation.

B. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

C. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

D. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

E. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

F. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure [ATCM] Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.

G. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

I. Post a publicly visible sign with the telephone number and person to contact at the City of Berkeley regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Air Quality–Diesel Particulate Matter Controls During Construction

All off-road construction equipment used for projects with construction lasting more than 2 months shall comply with one of the following measures:

A. The project applicant shall prepare a Health Risk Assessment (HRA) that demonstrates the project's on-site emissions of DPM during construction will not exceed health risk screening criteria after a screening-level HRA is conducted in accordance with current guidance from BAAQMD and Office of Environmental Health Hazard Assessment (OEHHA). The HRA shall be submitted to the Public Works Department for review and approval prior to the issuance of building permits.

B. All construction equipment shall be equipped with Tier 2 or higher engines and the most effective Verified Diesel Emission Control Strategies (VDECS) available for the engine type (Tier 4 engines automatically meet this requirement) as certified by the ARB. The equipment shall be properly maintained and tuned in accordance with manufacturer specifications.

- **Project-specific clarification:** Incorporated as PDF AIR-1, the proposed project would use construction equipment equipped with Tier 4 interim engines to satisfy this requirement.

C. In addition, a Construction Emissions Minimization Plan (Emissions Plan) shall be prepared that includes the following:

1. An equipment inventory summarizing the type of off-road equipment required for each phase of construction, including the equipment manufacturer, equipment identification

number, engine model year, engine certification (tier rating), horsepower, and engine serial number. For all VDECS, the equipment inventory shall also include the technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date.

2. A Certification Statement that the Contractor agrees to comply fully with the Emissions Plan and acknowledges that a significant violation of the Emissions Plan shall constitute a material breach of contract. The Emissions Plan shall be submitted to the Public Works Department for review and approval prior to the issuance of building permits.

Mitigation Measures

None.

CONCLUSION

Based on the project understanding described above, the proposed project would result in less than significant impacts to air quality after incorporation of the City's Standard COAs "Public Works –Apply BAAQMD-Recommended Measures During Construction" and "Air Quality–Diesel Particulate Matter Controls During Construction."

Thank you for the opportunity to conduct an air quality impacts analysis. Please feel free to contact Phil Ault (559.930.6191 or pault@fcs-intl.com) should you have any questions.

Sincerely,



Philip Ault, Director of Noise and Air Quality
FirstCarbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

Attachment A: Air Quality Supporting Information and Modeling Results

FCS
An ADEC Innovation

Attachment A:
Air Quality Supporting Information and Modeling Results

Attachment A: Air Quality Supporting Information

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CalEEMod Input Summary

Official Project Name	Shattuck Avenue Mixed Use Residential Project	**Construction Start Date:**	1/5/2026
Address	1950 Shattuck Avenue		Monday
City	Berkeley	**Working Days per Week:**	5
County	Alameda		
		Demolition?	No
CEC Electricity Demand Forecast Zone (EDFZ)	1	**Soil Import/Export?**	Yes
Electric Utility Provider:	Pacific Gas & Electric Company		
		Operational Start Date/Year	2028
Air District	Bay Area AQMD	**Emergency Generator?**	Yes
Air Basin	San Francisco Bay Area	**All-Electric Project?**	No
			all electric res but potential NG for restaurant and pool heating

Shattuck Avenue Mixed Use Residential Project

Land use	Subtype	Unit	Number or Size	Lot Acreage	Building SF	Landscaping (sq ft)	Special Landscaping (sq ft)	Description
Residential	Apartments High Rise	Dwelling Units	599	0.65	392,840	6,735	-	Building SF includes total building sf minus commercial, restaurant, parking, and pool.
Retail	Supermarket	1,000	8.342		8,342			Commercial space, selected supermarket as the most fitting option for a ground level retail use
Parking	Enclosed Parking Structure	1,000 sqft	0.800		848			Parking levels
Recreational	Recreational Swimming Pool	1,000 sqft	1.500		1,500			Swimming Pool, separated out to account for its electricity/water use. The square footage is a conservative estimate based on site plan
Recreational	High Turnover (Sit Down Restaurant)	1,000 sqft	7.800		7,800.00			Restaurant sqft is broken out per traffic study approach. Sqft is from site plan since TIA is older (assuming newest site plan is accurate)
Parking	Other Non-Asphalt Surfaces	Acre	0.150	0.150	-			Off site improvement per RFI info
			Total	0.80	411,330	6,735	-	

Construction Starts 2026 lasts approx 30-36 months

Changes to Default — Construction Construction Phases

					Acres < =	1		
Phase Name	Phase Type	Start Date	End Date	Days Per Week	CalEEMod Default Work Days	Modeled Work Days	Override Default / Notes
Demolition	Demolition	1/5/2026	2/13/2026	5	10	30	schedule is scaled per RFI info and similar high rise project in Berkeley
Grading	Grading	2/16/2026	5/8/2026	5	2	60	
Building Construction	Building Construction	5/11/2026	11/19/2027	5	100	400	
Paving	Paving	11/22/2027	11/26/2027	5	5	5	
Architectural Coating	Architectural Coating	11/29/2027	6/23/2028	5	5	150	

Changes to Default — Construction Off-Road Equipment

Construction Off-Road Equipment	Changes to Defaults
Demolition	revised list to suit high rise and small site construction
Site Preparation	
Grading	
Building Construction	
Paving	
Architectural Coating	

Default — Construction Off-Road Equipment Emission Factors

Construction Off-Road Equipment	Changes to Defaults
Demolition	
Site Preparation	
Grading	
Building Construction	
Paving	
Architectural Coating	

Changes to Default — Construction Material Movement

Water Disturbed Area: Activate — 2 — times per day

Phase Type	Size Metric	Import	Export	
	CY	0		
Grading	CY	0	37,878	per applicant information

Changes to Default — Construction Demolition

Water Demolished Area: 2 Times Per Day

Construction Demolition	Amount	
tons of debris	3,689	per applicant information

Changes to Default — Construction Trips and VMT (Edits only)

Construction Activity	Add'l One-Way Trips/Day	Trip Type	Trip Length	Vehicle Class
Paving	13	Vendor	default	HHDT

Note: VOC Content (g/L) (left side of column on caleemod page) is based on district rule and regulations and is not edited. the interior/exterior area sqft as shown below is for the right side of the columns in CalEEMOD.

Default — Construction Architectural Coatings

	Interior Area (sq ft)		Exterior Area (sq ft)		
Construction Activity	Residential	Non-Residential	Residential	Non-Residential	Notes
Architectural Coating	default	default	default	default	Not Applicable

Changes to Default — Construction Paved Area

Construction Activity	Paved Area Acres	% Asphalt	VOC Off-gassing Emission Factor	
Apartments High Rise	0.170	default	default	to account for hardscape surrounding building. Site area - footprint
Supermarket	default	default	default	.
Enclosed Parking Structure	default	default	default	
Recreational Swimming Pool	default	default	default	
High Turnover (Sit Down Restaurant)	default	default	default	
Other Non-Asphalt Surfaces	default	default	default	

Default — Construction Electricity

Construction Year	GHG Intensity Factor lb/MW/hr			Construction Electricity kW/hr
	CO2	CH4	N2O	
2026	default	default	default	0
2027	default	default	default	0
2028	default	default	default	
2029	default	default	default	

Default — Operations GHG Emission Factors

Pacific Gas & Electric Company	GHG Intensity Factor		
	CO2	CH4	N2O
2028 Forecasted	CalEEMod	CalEEMod	CalEEMod
2019 Reported	default	default	default

Description to add to CalEEMod: Trip Rates adjusted from Traffic Study
All Trips counted as Primary Trips since traffic study makes pass-by and internal capture adjustments

Trip Rates are based on Traffic Study which provides weekday vehicle trip rates. ITE 11th manual is crossed checked. For land use that has a higher weekend vehicle rate, in this instance the Restaurant land use, the trip rates are adjusted per ITE manual.

Changes to Default — Operations Vehicle Data — Rates and Lengths

Land Use Subtype	Size	Units	Weekday Trip Rate (size/day)	Saturday Trip Rate (size/day)	Sunday Trip Rate (size/day)	Res H-W Trip Length (miles)	Res H-S Trip Length (miles)	Res H-O Trip Length (miles)	Non Res H-W Trip Length (miles)	Non Res W-O Trip Length (miles)	Non Res O-O Trip Length (miles)
Apartments High Rise	599	Dwelling Units	0.820	0.820	0.820	default	default	default	default	default	default
Supermarket	8.342	1000	67.380	67.380	67.380	default	default	default	default	default	default
Enclosed Parking Structure	0.800	1,000 sqft	-	-	-	default	default	default	default	default	default
Recreational Swimming Pool	1.500	1,000 sqft			-	default	default	default	default	default	default
High Turnover (Sit Down Restaurant)	7.800	1,000 sqft	83.840	94.040	71.970	default	default	default	default	default	default
Other Non-Asphalt Surfaces	0.150	Acre	default	default	default	default	default	default	default	default	default

Changes to Default — Operations Vehicle Data — Purposes and Percentages

Land Use Subtype	Size	Size	Weekday Primary Trip %	Weekday Divert Trip %	Weekday Pass-by Trip %	Saturday Primary Trip %	Saturday Divert Trip %	Saturday Pass-by Trip %	Sunday Primary Trip %	Sunday Divert Trip %	Sunday Pass-by Trip %
Apartments High Rise	599	Dwelling Units	**100.000**								
Supermarket	8.342	1000	**100.000**								
Enclosed Parking Structure	0.800	1,000 sqft									
Recreational Swimming Pool	1.500	1,000 sqft									
High Turnover (Sit Down Restaurant)	7.800	1,000 sqft	**100.000**								
Other Non-Asphalt Surfaces	0.150	Acre									

Default — Operations Fleet Mix

Land Use Subtype	Season	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Apartments High Rise	A,S,W	1.41%	51.92%	3.94%	22.91%	2.47%	0.60%	2.24%	12.65%	0.20%	1.44%	0.08%	0.05%	0.09%
Supermarket	A,S,W	1.41%	51.92%	3.94%	22.91%	2.47%	0.60%	2.24%	12.65%	0.20%	1.44%	0.08%	0.05%	0.09%
Enclosed Parking Structure	A,S,W	1.41%	51.92%	3.94%	22.91%	2.47%	0.60%	2.24%	12.65%	0.20%	1.44%	0.08%	0.05%	0.09%
Recreational Swimming Pool	A,S,W	1.41%	51.92%	3.94%	22.91%	2.47%	0.60%	2.24%	12.65%	0.20%	1.44%	0.08%	0.05%	0.09%
High Turnover (Sit Down Restaurant)	A,S,W	1.41%	51.92%	3.94%	22.91%	2.47%	0.60%	2.24%	12.65%	0.20%	1.44%	0.08%	0.05%	0.09%
Other Non-Asphalt Surfaces	A,S,W	1.41%	51.92%	3.94%	22.91%	2.47%	0.60%	2.24%	12.65%	0.20%	1.44%	0.08%	0.05%	0.09%

Changes to Default — Operations Hearths

Fireplaces

Land Use Subtype	# Wood	# Gas	# Propane	# Electric	# Without	Hours/ Day	Days/ Yr	Wood mass/ yr	
Zero Wood Mass	0	0	0	306	0	0	0	0	CalEEMod default is 51 percent natural gas fireplace and 49 percent none. Since all-electric, assumed 51 percent (306) electric fire places in lieu of natural gas

Woodstoves

Land Use Subtype	# Wood	# Gas	# Propane	# Electric	# Without	Hours/ Day	Days/ Yr	Wood mass/ yr
Zero This	0	0	0	0	0	0	0	0

Default — Operations Consumer Products

Emission Factors (lb VOC/sq ft/day)	
General Category	default
City Park/Golf Course, Pesticide/Fertilizers	default
Parking Degreaser	default

Changes to Default — Operations Energy Use

Land Use Subtype	Electricity (kW/yr)	NG (BTU/yr)	
Apartments High Rise	default	see tab for #	electric
Supermarket	default	see tab for #	electric
Enclosed Parking Structure	default	default	electric
Recreational Swimming Pool	default	keep default	applicant may apply for gas for this land use
High Turnover (Sit Down Restaurant)	default	keep default	applicant may apply for gas for this land use
Other Non-Asphalt Surfaces	default	default	

Default — Operations Water and Wastewater

Land Use Subtype	Indoor Use (gal/yr)	Outdoor Use (gal/yr)	% of Total WS by Process			% of WW Solids by Process	
			Septic	Aerobic	Lagoons	Combust	Cogen
Apartments High Rise	default	default	default	default	default	default	default
Supermarket	default	default	default	default	default	default	default
Enclosed Parking Structure	default	default	default	default	default	default	default
Recreational Swimming Pool	default	default	default	default	default	default	default
High Turnover (Sit Down Restaurant)	default	default	default	default	default	default	default
Other Non-Asphalt Surfaces	default	default	default	default	default	default	default

Default — Operations Solid Waste

Land Use Subtype	Unit	Size	Generation Rate		Landfill Gas Treatment		
			ton/yr/Unit	ton/yr	No Cap%	Cap %	Recovery%
Apartments High Rise	Dwelling Units	599	default	default	default	default	default
Supermarket	1,000	8.342	default	default	default	default	default
Enclosed Parking Structure	1,000 sqft	0.800	default	default	default	default	default
Recreational Swimming Pool	1,000 sqft	1.500	default	default	default	default	default
High Turnover (Sit Down Restaurant)	1,000 sqft	7.800	default	default	default	default	default
Other Non-Asphalt Surfaces	Acre	0.150	default	default	default	default	default

Changes to Default — Operations Emergency Generators and Fire Pumps

Equipment Type	Fuel	#	Hrs/day	Hrs/Yr	HP	Load	Description
Emergency Generator	Diesel	1	2.00	50	300	0.73	Emergency generator for elevator

Default — Generators and Fire Pumps Emission Factors

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10e	PM2.5e	CO2	CH4	N2O
Emergency Generator	default	default	default	default	default	default	default	default	default	default

Shattuck Avenue Mixed Use Project w COAs Custom Report

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5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Shattuck Avenue Mixed Use Project w COAs
Construction Start Date	1/5/2026
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	44.2
Location	1950 Shattuck Ave., Berkeley, CA 94704, USA
County	Alameda
City	Berkeley
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1537
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.28

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Apartments High Rise	599	Dwelling Unit	0.65	392,612	6,735	0.00	1,689	Building SF includes total building sf minus commercial, restaurant, parking, and pool.
Supermarket	8.34	1000sqft	0.00	8,342	0.00	0.00	—	Commercial space, selected supermarket as the most fitting option for a ground level retail use
Enclosed Parking Structure	0.80	1000sqft	0.00	848	0.00	0.00	—	Parking levels
Recreational Swimming Pool	1.50	1000sqft	0.00	1,500	0.00	0.00	—	Swimming Pool, separated out to account for its electricity/water use. The square footage is a conservative estimate based on site plan
High Turnover (Sit Down Restaurant)	7.80	1000sqft	0.00	7,800	0.00	0.00	—	Restaurant sqft broken out consistent with traffic study
Other Non-Asphalt Surfaces	0.15	Acre	0.15	0.00	0.00	0.00	—	Off site improvement per RFI info

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	38.3	38.3	12.2	24.9	0.05	0.19	4.10	4.14	0.15	1.41	1.56	—	7,087	7,087	0.36	0.87	18.3	7,368
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	38.3	38.3	12.6	23.0	0.05	0.19	4.10	4.14	0.15	1.41	1.56	—	7,084	7,084	0.36	0.87	0.48	7,354
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	13.1	13.1	6.18	14.1	0.02	0.06	2.60	2.66	0.06	0.70	0.76	—	4,422	4,422	0.16	0.36	4.66	4,538
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.39	2.39	1.13	2.56	< 0.005	0.01	0.47	0.49	0.01	0.13	0.14	—	732	732	0.03	0.06	0.77	751

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.76	1.55	12.2	24.9	0.05	0.19	4.10	4.14	0.15	1.41	1.56	—	7,087	7,087	0.36	0.87	18.3	7,368
2027	1.70	1.49	7.33	23.8	0.02	0.05	4.10	4.14	0.05	0.98	1.03	—	6,679	6,679	0.18	0.41	16.7	6,824
2028	38.3	38.3	1.23	3.76	< 0.005	0.03	0.72	0.76	0.03	0.17	0.20	—	851	851	0.02	0.01	2.22	856
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.72	1.49	12.6	23.0	0.05	0.19	4.10	4.14	0.15	1.41	1.56	—	7,084	7,084	0.36	0.87	0.48	7,354
2027	38.3	38.3	7.74	22.1	0.02	0.05	4.10	4.14	0.05	0.98	1.03	—	6,417	6,417	0.21	0.42	0.43	6,549
2028	38.3	38.3	1.26	3.42	< 0.005	0.03	0.72	0.76	0.03	0.17	0.20	—	800	800	0.02	0.03	0.06	809

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.92	0.76	6.18	12.9	0.02	0.06	2.60	2.66	0.06	0.70	0.76	—	4,422	4,422	0.16	0.36	4.66	4,538
2027	3.52	3.38	4.92	14.1	0.02	0.03	2.57	2.60	0.03	0.61	0.65	—	4,145	4,145	0.13	0.26	4.64	4,231
2028	13.1	13.1	0.43	1.15	< 0.005	0.01	0.24	0.25	0.01	0.06	0.07	—	275	275	0.01	0.01	0.33	279
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.17	0.14	1.13	2.35	< 0.005	0.01	0.47	0.49	0.01	0.13	0.14	—	732	732	0.03	0.06	0.77	751
2027	0.64	0.62	0.90	2.56	< 0.005	0.01	0.47	0.47	0.01	0.11	0.12	—	686	686	0.02	0.04	0.77	701
2028	2.39	2.39	0.08	0.21	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	45.6	45.6	< 0.005	< 0.005	0.05	46.2

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	20.5	19.8	7.40	78.5	0.12	0.12	10.2	10.3	0.11	2.59	2.70	366	14,500	14,866	37.6	0.65	1,776	17,776
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	17.0	16.5	7.74	42.2	0.11	0.10	10.2	10.3	0.10	2.59	2.69	366	13,785	14,151	37.7	0.69	1,745	17,044
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	17.3	16.8	4.86	53.6	0.10	0.09	9.43	9.52	0.09	2.39	2.48	366	12,938	13,304	37.6	0.65	1,758	16,195
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.15	3.06	0.89	9.78	0.02	0.02	1.72	1.74	0.02	0.44	0.45	60.6	2,142	2,203	6.23	0.11	291	2,681

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.78	5.36	4.05	41.0	0.11	0.07	10.2	10.3	0.06	2.59	2.65	—	11,096	11,096	0.44	0.48	31.9	11,282
Area	13.6	13.4	0.33	34.8	< 0.005	0.02	—	0.02	0.01	—	0.01	0.00	93.9	93.9	< 0.005	< 0.005	—	94.2
Energy	0.03	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	2,716	2,716	0.42	0.05	—	2,741
Water	—	—	—	—	—	—	—	—	—	—	—	47.4	89.8	137	4.88	0.12	—	294
Waste	—	—	—	—	—	—	—	—	—	—	—	319	0.00	319	31.9	0.00	—	1,115
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,744	1,744
Stationary	1.08	0.98	2.75	2.51	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	504	504	0.02	< 0.005	0.00	505
Total	20.5	19.8	7.40	78.5	0.12	0.12	10.2	10.3	0.11	2.59	2.70	366	14,500	14,866	37.6	0.65	1,776	17,776
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.60	5.15	4.73	39.5	0.10	0.07	10.2	10.3	0.06	2.59	2.65	—	10,475	10,475	0.50	0.52	0.83	10,644
Area	10.3	10.3	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.03	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	2,716	2,716	0.42	0.05	—	2,741
Water	—	—	—	—	—	—	—	—	—	—	—	47.4	89.8	137	4.88	0.12	—	294
Waste	—	—	—	—	—	—	—	—	—	—	—	319	0.00	319	31.9	0.00	—	1,115
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,744	1,744
Stationary	1.08	0.98	2.75	2.51	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	504	504	0.02	< 0.005	0.00	505
Total	17.0	16.5	7.74	42.2	0.11	0.10	10.2	10.3	0.10	2.59	2.69	366	13,785	14,151	37.7	0.69	1,745	17,044
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.26	4.85	4.25	36.0	0.10	0.06	9.43	9.49	0.06	2.39	2.45	—	10,005	10,005	0.45	0.48	13.1	10,173
Area	11.9	11.8	0.16	17.2	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	92.6	92.6	0.01	< 0.005	—	93.2
Energy	0.03	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	2,716	2,716	0.42	0.05	—	2,741
Water	—	—	—	—	—	—	—	—	—	—	—	47.4	89.8	137	4.88	0.12	—	294

Waste	—	—	—	—	—	—	—	—	—	—	—	319	0.00	319	31.9	0.00	—	1,115
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,744	1,744
Stationary	0.07	0.07	0.19	0.17	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	34.5	34.5	< 0.005	< 0.005	0.00	34.6
Total	17.3	16.8	4.86	53.6	0.10	0.09	9.43	9.52	0.09	2.39	2.48	366	12,938	13,304	37.6	0.65	1,758	16,195
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.96	0.89	0.77	6.57	0.02	0.01	1.72	1.73	0.01	0.44	0.45	—	1,656	1,656	0.07	0.08	2.17	1,684
Area	2.17	2.16	0.03	3.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	15.3	15.3	< 0.005	< 0.005	—	15.4
Energy	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	450	450	0.07	0.01	—	454
Water	—	—	—	—	—	—	—	—	—	—	—	7.85	14.9	22.7	0.81	0.02	—	48.7
Waste	—	—	—	—	—	—	—	—	—	—	—	52.8	0.00	52.8	5.27	0.00	—	185
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	289	289
Stationary	0.01	0.01	0.03	0.03	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	5.71	5.71	< 0.005	< 0.005	0.00	5.73
Total	3.15	3.06	0.89	9.78	0.02	0.02	1.72	1.74	0.02	0.44	0.45	60.6	2,142	2,203	6.23	0.11	291	2,681

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.12	0.12	4.12	5.63	0.01	0.07	—	0.07	0.06	—	0.06	—	852	852	0.03	0.01	—	855
Demolition	—	—	—	—	—	—	1.78	1.78	—	0.27	0.27	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.34	0.46	< 0.005	0.01	—	0.01	0.01	—	0.01	—	70.0	70.0	< 0.005	< 0.005	—	70.3
Demolition	—	—	—	—	—	—	0.15	0.15	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.6	11.6	< 0.005	< 0.005	—	11.6
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.32	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	78.8	78.8	< 0.005	< 0.005	0.01	79.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.16	0.05	2.67	1.03	0.01	0.04	0.57	0.61	0.03	0.16	0.18	—	2,118	2,118	0.11	0.33	0.12	2,221
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.52	6.52	< 0.005	< 0.005	0.01	6.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.22	0.08	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	174	174	0.01	0.03	0.16	183
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.08	1.08	< 0.005	< 0.005	< 0.005	1.10
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.8	28.8	< 0.005	< 0.005	0.03	30.2

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.20	5.73	8.80	0.01	0.09	—	0.09	0.08	—	0.08	—	1,571	1,571	0.06	0.01	—	1,577
Dust From Material Movement	—	—	—	—	—	—	1.94	1.94	—	0.99	0.99	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.20	0.20	5.73	8.80	0.01	0.09	—	0.09	0.08	—	0.08	—	1,571	1,571	0.06	0.01	—	1,577
Dust From Material Movement	—	—	—	—	—	—	1.94	1.94	—	0.99	0.99	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.94	1.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	258	258	0.01	< 0.005	—	259
Dust From Material Movement	—	—	—	—	—	—	0.32	0.32	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.17	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	42.8	42.8	< 0.005	< 0.005	—	42.9
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.36	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.0	85.0	< 0.005	< 0.005	0.31	86.3

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.42	0.12	6.48	2.61	0.04	0.10	1.46	1.57	0.07	0.40	0.47	—	5,431	5,431	0.29	0.86	11.6	5,705
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.32	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	78.8	78.8	< 0.005	< 0.005	0.01	79.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.41	0.12	6.85	2.64	0.04	0.10	1.46	1.57	0.07	0.40	0.47	—	5,434	5,434	0.29	0.86	0.30	5,697
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.0	13.0	< 0.005	< 0.005	0.02	13.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.02	1.10	0.43	0.01	0.02	0.24	0.25	0.01	0.06	0.08	—	893	893	0.05	0.14	0.83	937
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.16	2.16	< 0.005	< 0.005	< 0.005	2.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.20	0.08	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.14	155

3.5. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.18	4.50	8.10	0.01	0.02	—	0.02	0.02	—	0.02	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.18	4.50	8.10	0.01	0.02	—	0.02	0.02	—	0.02	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	2.07	3.73	0.01	0.01	—	0.01	0.01	—	0.01	—	600	600	0.02	< 0.005	—	602
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.38	0.68	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	99.3	99.3	< 0.005	< 0.005	—	99.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.45	1.31	0.94	15.9	0.00	0.00	3.62	3.62	0.00	0.85	0.85	—	3,723	3,723	0.07	0.14	13.7	3,780
Vendor	0.13	0.06	2.10	0.93	0.01	0.02	0.47	0.50	0.02	0.13	0.16	—	1,756	1,756	0.07	0.26	4.60	1,840
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.41	1.26	1.23	13.9	0.00	0.00	3.62	3.62	0.00	0.85	0.85	—	3,454	3,454	0.09	0.15	0.36	3,502

Vendor	0.13	0.05	2.22	0.94	0.01	0.02	0.47	0.50	0.02	0.13	0.16	—	1,757	1,757	0.07	0.26	0.12	1,837
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.65	0.58	0.50	6.21	0.00	0.00	1.62	1.62	0.00	0.38	0.38	—	1,599	1,599	0.04	0.07	2.72	1,622
Vendor	0.06	0.03	1.00	0.43	0.01	0.01	0.21	0.22	0.01	0.06	0.07	—	808	808	0.03	0.12	0.91	845
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.09	1.13	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	265	265	0.01	0.01	0.45	269
Vendor	0.01	< 0.005	0.18	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	134	134	0.01	0.02	0.15	140
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.18	4.50	8.10	0.01	0.02	—	0.02	0.02	—	0.02	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.18	4.50	8.10	0.01	0.02	—	0.02	0.02	—	0.02	—	1,304	1,304	0.05	0.01	—	1,309

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.11	2.84	5.12	0.01	0.02	—	0.02	0.02	—	0.02	—	824	824	0.03	0.01	—	827
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.52	0.93	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	137	137	0.01	< 0.005	—	137
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.40	1.25	0.82	14.8	0.00	0.00	3.62	3.62	0.00	0.85	0.85	—	3,654	3,654	0.06	0.14	12.4	3,710
Vendor	0.13	0.06	2.01	0.89	0.01	0.02	0.47	0.50	0.02	0.13	0.16	—	1,721	1,721	0.07	0.26	4.30	1,805
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.37	1.21	1.10	13.1	0.00	0.00	3.62	3.62	0.00	0.85	0.85	—	3,390	3,390	0.09	0.15	0.32	3,438
Vendor	0.13	0.05	2.14	0.92	0.01	0.02	0.47	0.50	0.02	0.13	0.16	—	1,723	1,723	0.07	0.26	0.11	1,802
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.85	0.76	0.61	8.03	0.00	0.00	2.22	2.22	0.00	0.52	0.52	—	2,157	2,157	0.05	0.09	3.38	2,189
Vendor	0.08	0.03	1.32	0.57	0.01	0.02	0.29	0.31	0.02	0.08	0.10	—	1,088	1,088	0.05	0.16	1.18	1,140

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.14	0.11	1.47	0.00	0.00	0.41	0.41	0.00	0.09	0.09	—	357	357	0.01	0.01	0.56	362
Vendor	0.01	0.01	0.24	0.10	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	180	180	0.01	0.03	0.20	189
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.14	4.34	6.67	0.01	0.04	—	0.04	0.04	—	0.04	—	1,121	1,121	0.05	0.01	—	1,125
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.4	15.4	< 0.005	< 0.005	—	15.4
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.54	2.54	< 0.005	< 0.005	—	2.55
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.60	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	155	155	< 0.005	0.01	0.01	157
Vendor	0.02	0.01	0.41	0.18	< 0.005	< 0.005	0.09	0.10	< 0.005	0.03	0.03	—	334	334	0.01	0.05	0.02	349
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.13	2.13	< 0.005	< 0.005	< 0.005	2.16
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	< 0.005	4.79
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.36
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.76	0.76	< 0.005	< 0.005	< 0.005	0.79
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	1.07	0.96	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	38.0	38.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.07	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.62	8.62	< 0.005	< 0.005	—	8.65
Architectural Coatings	2.45	2.45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.43
Architectural Coatings	0.45	0.45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.24	0.22	2.62	0.00	0.00	0.72	0.72	0.00	0.17	0.17	—	678	678	0.02	0.03	0.06	688
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.16	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	44.1	44.1	< 0.005	< 0.005	0.07	44.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.30	7.30	< 0.005	< 0.005	0.01	7.40
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.02	1.07	0.96	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	38.0	38.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	1.07	0.96	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	38.0	38.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.37	0.33	< 0.005	0.01	—	0.01	0.01	—	0.01	—	45.7	45.7	< 0.005	< 0.005	—	45.9
Architectural Coatings	13.0	13.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	< 0.005	< 0.005	0.07	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.57	7.57	< 0.005	< 0.005	—	7.60
Architectural Coatings	2.37	2.37	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.24	0.16	2.79	0.00	0.00	0.72	0.72	0.00	0.17	0.17	—	718	718	0.01	0.01	2.22	722
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.24	0.19	2.46	0.00	0.00	0.72	0.72	0.00	0.17	0.17	—	666	666	0.02	0.03	0.06	675
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	0.82	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	230	230	< 0.005	0.01	0.33	233
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.01	0.15	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	38.0	38.0	< 0.005	< 0.005	0.05	38.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	1.50	1.41	0.93	9.10	0.02	0.01	2.12	2.13	0.01	0.54	0.55	—	2,321	2,321	0.11	0.11	6.61	2,362
Supermarket	1.86	1.72	1.36	13.8	0.04	0.02	3.51	3.54	0.02	0.89	0.91	—	3,807	3,807	0.14	0.16	11.0	3,870
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	2.42	2.24	1.77	18.1	0.05	0.03	4.58	4.61	0.03	1.16	1.19	—	4,968	4,968	0.19	0.21	14.3	5,050
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	5.78	5.36	4.05	41.0	0.11	0.07	10.2	10.3	0.06	2.59	2.65	—	11,096	11,096	0.44	0.48	31.9	11,282

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	1.45	1.35	1.08	9.07	0.02	0.01	2.12	2.13	0.01	0.54	0.55	—	2,193	2,193	0.12	0.12	0.17	2,231
Supermarket	1.80	1.65	1.58	13.2	0.04	0.02	3.51	3.54	0.02	0.89	0.91	—	3,593	3,593	0.16	0.18	0.28	3,650
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	2.35	2.15	2.06	17.2	0.05	0.03	4.58	4.61	0.03	1.16	1.19	—	4,689	4,689	0.21	0.23	0.37	4,763
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	5.60	5.15	4.73	39.5	0.10	0.07	10.2	10.3	0.06	2.59	2.65	—	10,475	10,475	0.50	0.52	0.83	10,644
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	0.26	0.24	0.19	1.57	< 0.005	< 0.005	0.38	0.38	< 0.005	0.10	0.10	—	365	365	0.02	0.02	0.47	371
Supermarket	0.32	0.30	0.27	2.32	0.01	< 0.005	0.62	0.63	< 0.005	0.16	0.16	—	598	598	0.03	0.03	0.78	608
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Recreati Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	0.38	0.34	0.32	2.69	0.01	< 0.005	0.72	0.73	< 0.005	0.18	0.19	—	694	694	0.03	0.03	0.91	705
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.96	0.89	0.77	6.57	0.02	0.01	1.72	1.73	0.01	0.44	0.45	—	1,656	1,656	0.07	0.08	2.17	1,684

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,973	1,973	0.32	0.04	—	1,993
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	244	244	0.04	< 0.005	—	246
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	1.66	1.66	< 0.005	< 0.005	—	1.68
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	184	184	0.03	< 0.005	—	186
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,403	2,403	0.39	0.05	—	2,427
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,973	1,973	0.32	0.04	—	1,993
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	244	244	0.04	< 0.005	—	246
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	1.66	1.66	< 0.005	< 0.005	—	1.68
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	184	184	0.03	< 0.005	—	186
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,403	2,403	0.39	0.05	—	2,427
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments	—	—	—	—	—	—	—	—	—	—	—	—	327	327	0.05	0.01	—	330
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	40.4	40.4	0.01	< 0.005	—	40.8
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	0.27	0.27	< 0.005	< 0.005	—	0.28
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	30.4	30.4	< 0.005	< 0.005	—	30.7
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	398	398	0.06	0.01	—	402

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Supermarket	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
High Turnover (Sit Down Restaurant)	0.03	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	313	313	0.03	< 0.005	—	314
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.03	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	313	313	0.03	< 0.005	—	314
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Supermarket	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

High Turnover (Sit Down Restaurant)	0.03	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	313	313	0.03	< 0.005	—	314
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.03	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	313	313	0.03	< 0.005	—	314
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Supermarket	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
High Turnover (Sit Down Restaurant)	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	51.9	51.9	< 0.005	< 0.005	—	52.0
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	51.9	51.9	< 0.005	< 0.005	—	52.0

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	8.75	8.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	1.56	1.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	3.26	3.08	0.33	34.8	< 0.005	0.02	—	0.02	0.01	—	0.01	—	93.9	93.9	< 0.005	< 0.005	—	94.2
Total	13.6	13.4	0.33	34.8	< 0.005	0.02	—	0.02	0.01	—	0.01	0.00	93.9	93.9	< 0.005	< 0.005	—	94.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	8.75	8.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	1.56	1.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	10.3	10.3	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	7.67	7.67	< 0.005	< 0.005	—	7.74

Consum Products	1.60	1.60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.28	0.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.29	0.28	0.03	3.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.67	7.67	< 0.005	< 0.005	—	7.69
Total	2.17	2.16	0.03	3.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	15.3	15.3	< 0.005	< 0.005	—	15.4

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	40.8	77.2	118	4.19	0.10	—	253
Supermarket	—	—	—	—	—	—	—	—	—	—	—	1.97	3.72	5.69	0.20	< 0.005	—	12.2
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.17	0.32	0.49	0.02	< 0.005	—	1.05

High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	4.54	8.57	13.1	0.47	0.01	—	28.1
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	47.4	89.8	137	4.88	0.12	—	294
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	40.8	77.2	118	4.19	0.10	—	253
Supermarket	—	—	—	—	—	—	—	—	—	—	—	1.97	3.72	5.69	0.20	< 0.005	—	12.2
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.17	0.32	0.49	0.02	< 0.005	—	1.05
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	4.54	8.57	13.1	0.47	0.01	—	28.1
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	47.4	89.8	137	4.88	0.12	—	294
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments	—	—	—	—	—	—	—	—	—	—	—	6.75	12.8	19.5	0.69	0.02	—	41.9
Supermarket	—	—	—	—	—	—	—	—	—	—	—	0.33	0.62	0.94	0.03	< 0.005	—	2.02
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.03	0.05	0.08	< 0.005	< 0.005	—	0.17
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	0.75	1.42	2.17	0.08	< 0.005	—	4.65
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	7.85	14.9	22.7	0.81	0.02	—	48.7

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	239	0.00	239	23.9	0.00	—	835

Superm	—	—	—	—	—	—	—	—	—	—	—	25.4	0.00	25.4	2.53	0.00	—	88.7
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	4.61	0.00	4.61	0.46	0.00	—	16.1
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	50.0	0.00	50.0	5.00	0.00	—	175
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	319	0.00	319	31.9	0.00	—	1,115
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	239	0.00	239	23.9	0.00	—	835
Supermarket	—	—	—	—	—	—	—	—	—	—	—	25.4	0.00	25.4	2.53	0.00	—	88.7
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	4.61	0.00	4.61	0.46	0.00	—	16.1

High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	50.0	0.00	50.0	5.00	0.00	—	175
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	319	0.00	319	31.9	0.00	—	1,115
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	39.5	0.00	39.5	3.95	0.00	—	138
Supermarket	—	—	—	—	—	—	—	—	—	—	—	4.20	0.00	4.20	0.42	0.00	—	14.7
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.76	0.00	0.76	0.08	0.00	—	2.67
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	8.28	0.00	8.28	0.83	0.00	—	29.0
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	52.8	0.00	52.8	5.27	0.00	—	185

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.81	2.81
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,729	1,729
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.2	12.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,744	1,744
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.81	2.81
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,729	1,729

Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.2	12.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,744	1,744
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47	0.47
Supermarket	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	286	286
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.02	2.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	289	289

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	1.08	0.98	2.75	2.51	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	504	504	0.02	< 0.005	0.00	505
Total	1.08	0.98	2.75	2.51	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	504	504	0.02	< 0.005	0.00	505
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	1.08	0.98	2.75	2.51	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	504	504	0.02	< 0.005	0.00	505
Total	1.08	0.98	2.75	2.51	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	504	504	0.02	< 0.005	0.00	505

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.01	0.01	0.03	0.03	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	5.71	5.71	< 0.005	< 0.005	0.00	5.73
Total	0.01	0.01	0.03	0.03	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	5.71	5.71	< 0.005	< 0.005	0.00	5.73

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/5/2026	2/13/2026	5.00	30.0	—
Grading	Grading	2/16/2026	5/8/2026	5.00	60.0	—
Building Construction	Building Construction	5/11/2026	11/19/2027	5.00	400	—
Paving	Paving	11/22/2027	11/26/2027	5.00	5.00	—
Architectural Coating	Architectural Coating	11/29/2027	6/23/2028	5.00	150	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	6.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	1.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Interim	1.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Tier 4 Interim	0.00	1.00	36.0	0.38
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	6.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	7.00	84.0	0.37
Grading	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Interim	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37

Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Tier 4 Interim	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Tier 4 Interim	4.00	6.00	10.0	0.56
Paving	Paving Equipment	Diesel	Tier 4 Interim	1.00	8.00	89.0	0.36
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	30.8	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	78.9	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	438	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	67.1	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—

Paving	Worker	20.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	13.0	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	87.6	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	795,039	265,013	24,213	8,071	392

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	3,689	—

Grading	0.00	37,878	25.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.32

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments High Rise	0.17	0%
Supermarket	0.00	0%
Enclosed Parking Structure	0.00	100%
Recreational Swimming Pool	0.00	0%
High Turnover (Sit Down Restaurant)	0.00	0%
Other Non-Asphalt Surfaces	0.15	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments High Rise	491	491	491	179,281	3,000	3,000	3,000	1,094,880
Supermarket	562	562	562	205,161	4,976	4,976	4,976	1,816,163
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	654	734	561	238,013	5,789	6,493	4,969	2,106,987
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments High Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	306
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
795039.2999999999	265,013	24,213	8,071	392

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments High Rise	3,530,776	204	0.0330	0.0040	0.00
Supermarket	436,694	204	0.0330	0.0040	0.00
Enclosed Parking Structure	2,969	204	0.0330	0.0040	0.00
Recreational Swimming Pool	0.00	204	0.0330	0.0040	0.00
High Turnover (Sit Down Restaurant)	328,996	204	0.0330	0.0040	978,177
Other Non-Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments High Rise	21,270,999	93,522

Supermarket	1,028,303	0.00
Enclosed Parking Structure	0.00	0.00
Recreational Swimming Pool	88,715	0.00
High Turnover (Sit Down Restaurant)	2,367,563	0.00
Other Non-Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments High Rise	443	—
Supermarket	47.0	—
Enclosed Parking Structure	0.00	—
Recreational Swimming Pool	8.55	—
High Turnover (Sit Down Restaurant)	92.8	—
Other Non-Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments High Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments High Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Supermarket	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

Supermarket	Supermarket refrigeration and condensing units	R-404A	3,922	26.5	16.5	16.5	18.0
Recreational Swimming Pool	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Recreational Swimming Pool	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
High Turnover (Sit Down Restaurant)	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
High Turnover (Sit Down Restaurant)	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
High Turnover (Sit Down Restaurant)	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	2.00	50.0	300	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Land Use	Land uses broken out based on the site plans and traffic study from the client
Construction: Construction Phases	Schedule is scaled per RFI info and similar high rise project in Berkeley
Construction: Off-Road Equipment	The equipment list is adjusted to account for small lot size, excavation needed for subterranean parking, and coating period needed for high rise. Tier 4 interim is selected in accordance with City of Berkeley condition of approval related to health risk assessment.
Construction: Dust From Material Movement	Export of soil for underground parking per the RFI
Construction: Trips and VMT	Adjustments made to Vendor in Paving to account for the total trips during the paving phase

Operations: Vehicle Data	Trip Rates are based on Traffic Study which provides weekday vehicle trip rates. ITE 11th manual is crossed checked. For land use that has a higher weekend vehicle rate, in this instance the Restaurant land use, the trip rates are adjusted per ITE manual.
Operations: Hearths	CalEEMod default is 51 percent natural gas fireplace and 49 percent none. Since all-electric, assumed 51 percent (306) electric fire places in lieu of natural gas
Operations: Energy Use	Residential and commercial are all electric, but restaurant and swimming pool may use natural gas. Additional electricity calculated using methods from Measure E-15 of the CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity, Table E-15.2
Operations: Generators + Pumps EF	Client project design feature to install DPM filter for generator meeting Tier 4 DPM standards. Emission factor consistent with Appendix A Non-Road PM Emission Standards (Federal) of ARB Non-Vehicular Diesel Engine Risk Assessment Guidance.

Shattuck Avenue Mixed Use Residential Project
Demolition Debris Calculations

Description	Area [1] (square feet)	height/depth (ft)	Volume (ft3)	Demolition Waste Fraction	Demolition Volume[1] (ft^3)	Demolition Waste Density (tons/cy)	Demolition Weight (tons)
Buildings[2]	37,550	20	751,000	0.25	187,750	0.50	3,477
Pavement	5,664	0.5	2,832	1	2,832	2.025	212
Totals	**43,214**	-	-		-		**3,689**

Notes:
cy = cubic yard
cf = cubic feet
sf = square feet

Building demolition estimates are based on methods used in CalEEMod (CAPCOA, 2022), based on 1 story building , assume 10 ft per floor where 1 sf = 10 cf of building volume, and 1 cf of building volume = 0.25 cf of waste. This approach can be used to estimate demolition for multiple story buildings. It also assumes 1 cubic yard building waste = 0.5 ton weight

1 cubic yard of asphalt = 2.025 tons or 4050 lbs.

[1] Source: FCS. 2024. Building and Pavement Demolition Quantities obtained from Applicant.

[1] Source: California Air Pollution Control Officers Association (CAPCOA). 2022. Appendix C Emission Calculation Details for CalEEMod. April.

Shattuck Avenue Mixed Use Residential Project
Asphalt Paving Construction Trips Calculation

Paved area (sf)	13,836
Asphalt volume (cube feet) assume 6 inch pavement	6,918
Asphalt volume (cy)	256
Capacity per vendor truck (CY per truck)	16
Trips	**32.03**
Days in paving phase	**5**
One-way Vendor Trips per day	13

Shattuck Avenue Mixed Use Residential Project
All-Electric Measure Electricity Adjustment to Replace NG Usage

CEC Electricity Demand Forecast Zone (EDFZ) **1**

Building Type / LandUse	Amount	Units	Electric End Use per Unit (DU or KSF)				Additional Energy for Electricity		Caleemod Electricity Usage	Electricity including replacement of NG Enduses
			Water Heater	Primary Heat	Cooking	Dryer	(per Unit)	Total		
							kWhr/yr	kWhr/yr	kWhr/yr	kWhr/yr
Apartments High Rise	599	Dwelling Units	1146	757	246	334	2,483	1,487,317	2,043,459	3,530,776
Supermarket	8.342	1000	253	606	84	0	860	7,174	429,520	436,694
Enclosed Parking Structure	0.800	1,000 sqft	0	0	0	0	0	0	2,801	2,801
Recreational Swimming Pool	1.500	1,000 sqft	0	0	0	0	0	0	0	0
High Turnover (Sit Down Restaurant)	7.800	1,000 sqft	93	804	5459	0	898	7,004	353,955	360,959
Other Non-Asphalt Surfaces	0.150	Acre	0	0	0	0	0	0	0	0

Calculational Method is from Measure E-15 of the CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity
Emission Factors are From Data Tables E=15.2 from Appendix C of the Handbook

References:

CAPCOA, 2021. Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity. Available at: Available at: https://www.airquality.org/ClimateChange/Documents/Final%20Handbook_AB434.pdf.

CAPCOA. 2021. Appendix C : Emission Factors and Data Tables from Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity.. Available at: https://www.caleemod.com/documents/handbook/appendices/appendix_c.pdf

1974 Shattuck Ave Construction (Tier 4 Interim Equipment Scenario) - DPM

Estimation of Annual On-site Construction Emissions - DPM as PM10 Exhaust

Start of Construction	1/5/2026	
End of Construction	6/23/2028	**Total**
Number of Days	900	900
Number of Hours	21,600	21,600

Size of the construction area source: **2,549.9** **sq-meters**

Run	Year	On-site Construction Activity	Tier 4 On-site DPM (pounds)
Project Construction	2026	Demolition	2.0008
Project Construction	2026	Grading	5.2168
Project Construction	2026	Building Construction	4.1440
Project Construction	2027	Building Construction	5.6957
Project Construction	2027	Paving	0.2157
Project Construction	2027	Architectural Coating	0.7199
Project Construction	2028	Architectural Coating	3.8175

Total DPM (On-site) 2.181E+01 pounds

Factor in AERMOD to Account for 5 days per week/8 hours per day: 4.2

Average Emission for AREA	9.902E+03	grams
	1.273E-04	grams/sec
	4.994E-08	grams/m2-sec

Pounds/Construction Period	2.181E+01
Pounds/Day	2.423E-02
Pounds/Hour	1.010E-03
Pounds/Year	8.845E+00
Years	2.46575

1974 Shattuck Ave Construction (Tier 4 Interim Equipment Scenario) - DPM

Estimation of Annual Offsite Construction DPM Emissions (Unmitigated)

Start of Construction		1/5/2026				
End of Construction		6/23/2028				**Total**
Number of Days		900				900
Number of Hours		21,600				21,600
	2026	2026	2026+2027	2027	2027+2028	
	Project Construction	Project Construction	Project Construction	Project Construction	Project Construction	
Construction Trip Type	Demolition	Grading	Building Construction	Paving	Architectural Coating	**Total (pounds)**
Total (pounds)	1.22092	6.26333	9.90003	0.024074479	0.00000	**17.40836**

	Haul Truck	**Vendor Truck**	**Worker**	**Total**
Demolition (2026)	923.00	0.00	300.00	1,223.00
Grading (2026)	4,735.00	0.00	600.00	5,335.00
Building Construction (2026+2027)	0.00	26,825.44	175,284.64	202,110.08
Paving (2027)	0.00	65.00	100.00	165.00
Architectural Coating (2027+2028)	0.00	0.00	13,146.35	13,146.35
Total	**5,658.00**	**26,890.44**	**189,430.99**	**221,979.43**

	Haul Truck (pounds)	**Vendor Truck (pounds)**	**Worker (pounds)**	**Total (pounds)**
Total DPM	4.437E-01	2.109E+00	1.486E+01	1.741E+01

Average Emissions				
Grams	2.014E+02	9.574E+02	6.745E+03	
Grams/sec	2.591E-06	1.231E-05	8.674E-05	
Default Distance	20	8.40	11.41	Default Vehicle Travel Distance in CalEEMod
Vehicle Travel Distances in the Construction HRA (miles)				
Off-site Road Segment 1	0.36	0.36	0.36	miles
Off-site Road Segment 2	0.36	0.36	0.36	miles
Off-site Road Segment 3	0.34	0.34	0.34	miles
Off-site Road Segment 4	0.37	0.37	0.37	miles
Off-site Road Segment 5	0.37	0.37	0.37	miles
Off-site Road Segment 6	0.37	0.37	0.37	miles
On-site Construction Travel	0.06	0.06	0.06	miles
Trip Distribution (percent)				
Off-site Road Segment 1	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 2	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 3	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 4	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 5	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 6	16.7%	16.7%	16.7%	off-site
On-site Construction Travel	100.0%	100.0%	100.0%	on-site

Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)				**Total**	
Off-site Road Segment 1	7.770E-09	8.792E-08	4.560E-07	5.517E-07	Off-site Road Segment 1
Off-site Road Segment 2	7.777E-09	8.800E-08	4.564E-07	5.522E-07	Off-site Road Segment 2
Off-site Road Segment 3	7.311E-09	1.400E-08	4.291E-07	4.504E-07	Off-site Road Segment 3
Off-site Road Segment 4	8.018E-09	0.000E+00	4.706E-07	4.786E-07	Off-site Road Segment 4
Off-site Road Segment 5	7.883E-09	0.000E+00	4.626E-07	4.705E-07	Off-site Road Segment 5
Off-site Road Segment 6	8.018E-09	4.072E-08	4.706E-07	5.193E-07	Off-site Road Segment 6
On-site Construction Travel	7.423E-09	2.443E-07	4.356E-07	6.873E-07	On-site, on-road construction vehicle travel

	Grams/sec	Pounds/Hour	Pounds/Day	Pounds/year	Tons/year
Off-site Road Segment 1	5.517E-07	4.379E-06	1.051E-04	3.836E-02	1.918E-05
Off-site Road Segment 2	5.522E-07	4.382E-06	1.052E-04	3.839E-02	1.919E-05
Off-site Road Segment 3	4.504E-07	3.574E-06	8.579E-05	3.131E-02	1.566E-05
Off-site Road Segment 4	4.786E-07	3.798E-06	9.116E-05	3.327E-02	1.664E-05
Off-site Road Segment 5	4.705E-07	3.734E-06	8.962E-05	3.271E-02	1.636E-05
Off-site Road Segment 6	5.193E-07	4.121E-06	9.891E-05	3.610E-02	1.805E-05
On-site Construction Travel	6.873E-07	5.455E-06	1.309E-04	4.779E-02	2.389E-05

Summary of HARP2 Results Construction DPM

Shattuck Construction (Tier 4 Interim Equipment Scenario)

	RISK_SUM	Cancer Risk/million	MAXHI NonCancer Chronic	MAXHI Acute
Maximum Risk	8.9443E-06	8.94	4.9637E-03	0.00E+00

	X	Y
MER UTM	564369.91	4191927.60
Lat/Long	37°52'21.2"N 122°16'05.2"W	
Receptor # 664		

*HARP - HRACalc v22118 8/30/2024 7:23:57 AM - Cancer Risk - Input File: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM T4HRAInput.hra
*HARP - HRACalc v22118 8/30/2024 7:23:57 AM - Chronic Risk - Input File: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM T4HRAInput.hra
*HARP - HRACalc v22118 8/30/2024 7:23:57 AM - Acute Risk - Input File: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM T4HRAInput.hra

REC	GRP	X	Y	RISK_SUM	SCENARIO	MAXHI NonCancerChronic	MAXHI Acute
1	ALL	564370.77	4191948.94	7.28900E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0451E-03	0.00E+00
2	ALL	564394.16	4191952.37	4.78970E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6581E-03	0.00E+00
3	ALL	564385.58	4192025.27	1.19670E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.6413E-04	0.00E+00
4	ALL	564358.04	4192045.11	8.85530E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.9144E-04	0.00E+00
5	ALL	564417.55	4191955.81	3.31060E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8372E-03	0.00E+00
6	ALL	564408.96	4192028.71	9.93830E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.5154E-04	0.00E+00
7	ALL	564371.86	4192064.29	6.32270E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5089E-04	0.00E+00
8	ALL	564440.93	4191959.24	2.38120E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3215E-03	0.00E+00
9	ALL	564438.09	4192022.69	9.46890E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.2549E-04	0.00E+00
10	ALL	564415.12	4192060.48	5.92830E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2900E-04	0.00E+00
11	ALL	564360.53	4192089.20	4.46070E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4755E-04	0.00E+00
12	ALL	564461.05	4191984.90	1.40850E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.8166E-04	0.00E+00
13	ALL	564467.58	4191940.44	1.92260E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0669E-03	0.00E+00
14	ALL	564450.95	4192043.44	6.54480E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6321E-04	0.00E+00
15	ALL	564428.62	4192080.18	4.41120E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4481E-04	0.00E+00
16	ALL	564396.50	4192103.33	3.59130E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9930E-04	0.00E+00
17	ALL	564354.58	4192112.87	3.34010E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8536E-04	0.00E+00
18	ALL	564487.70	4191966.10	1.32710E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.3651E-04	0.00E+00
19	ALL	564475.02	4192045.75	5.62820E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1234E-04	0.00E+00
20	ALL	564453.15	4192081.74	4.02560E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2340E-04	0.00E+00
21	ALL	564410.74	4192122.41	2.82550E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5680E-04	0.00E+00
22	ALL	564369.68	4192131.76	2.69550E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4959E-04	0.00E+00
23	ALL	564511.09	4191969.54	1.02970E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.7145E-04	0.00E+00
24	ALL	564498.92	4192048.34	4.85240E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6929E-04	0.00E+00
25	ALL	564477.39	4192083.77	3.61400E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0056E-04	0.00E+00
26	ALL	564455.86	4192119.19	2.69450E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4953E-04	0.00E+00
27	ALL	564424.88	4192141.51	2.29030E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2710E-04	0.00E+00
28	ALL	564384.46	4192150.72	2.21250E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2279E-04	0.00E+00
29	ALL	564344.04	4192159.93	2.13680E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1858E-04	0.00E+00
30	ALL	564534.48	4191972.97	8.12550E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5093E-04	0.00E+00
31	ALL	564522.70	4192051.12	4.22900E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3469E-04	0.00E+00
32	ALL	564501.44	4192086.11	3.25740E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8077E-04	0.00E+00
33	ALL	564480.17	4192121.10	2.50520E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3903E-04	0.00E+00
34	ALL	564438.95	4192160.63	1.88850E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0481E-04	0.00E+00
35	ALL	564399.03	4192169.72	1.83010E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0156E-04	0.00E+00
36	ALL	564359.11	4192178.82	1.78390E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.8997E-05	0.00E+00
37	ALL	564557.86	4191976.40	6.63500E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6822E-04	0.00E+00
38	ALL	564564.39	4191931.93	7.20380E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9978E-04	0.00E+00
39	ALL	564567.46	4192019.39	4.54880E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5244E-04	0.00E+00
40	ALL	564546.41	4192054.03	3.68560E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0454E-04	0.00E+00
41	ALL	564525.35	4192088.66	2.92140E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6212E-04	0.00E+00
42	ALL	564504.30	4192123.30	2.30120E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2771E-04	0.00E+00
43	ALL	564483.25	4192157.94	1.78860E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.9261E-05	0.00E+00
44	ALL	564452.96	4192179.76	1.56210E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.6691E-05	0.00E+00
45	ALL	564413.44	4192188.77	1.53740E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.5322E-05	0.00E+00
46	ALL	564373.92	4192197.77	1.50980E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.3790E-05	0.00E+00
47	ALL	564294.88	4192215.77	1.35190E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.5025E-05	0.00E+00
48	ALL	564581.25	4191979.83	5.50910E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.0573E-04	0.00E+00
49	ALL	564587.77	4191935.37	5.99050E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3245E-04	0.00E+00
50	ALL	564619.22	4192028.79	3.09090E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7153E-04	0.00E+00
51	ALL	564596.16	4192066.74	2.58080E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4323E-04	0.00E+00
52	ALL	564573.09	4192104.69	2.12790E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1809E-04	0.00E+00
53	ALL	564550.03	4192142.63	1.71220E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.5021E-05	0.00E+00
54	ALL	564526.97	4192180.58	1.36290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.5636E-05	0.00E+00
55	ALL	564482.25	4192223.46	1.09710E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.0884E-05	0.00E+00
56	ALL	564438.95	4192233.33	1.09250E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.0628E-05	0.00E+00
57	ALL	564395.66	4192243.19	1.06940E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.9347E-05	0.00E+00
58	ALL	564352.36	4192253.06	1.10490E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.1319E-05	0.00E+00
59	ALL	564634.02	4191987.58	3.69680E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0516E-04	0.00E+00
60	ALL	564640.54	4191943.11	4.10920E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2804E-04	0.00E+00

61	ALL	564672.10	4192036.35	2.31050E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2822E-04	0.00E+00
62	ALL	564649.26	4192073.92	1.97530E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0962E-04	0.00E+00
63	ALL	564626.43	4192111.50	1.67550E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.2984E-05	0.00E+00
64	ALL	564603.59	4192149.08	1.41110E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.8310E-05	0.00E+00
65	ALL	564580.75	4192186.65	1.17410E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.5156E-05	0.00E+00
66	ALL	564557.92	4192224.23	9.61900E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.3382E-05	0.00E+00
67	ALL	564513.64	4192266.69	8.01160E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.4461E-05	0.00E+00
68	ALL	564470.77	4192276.45	8.06430E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.4754E-05	0.00E+00
69	ALL	564427.90	4192286.22	7.85540E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3594E-05	0.00E+00
70	ALL	564385.02	4192295.99	7.92220E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3965E-05	0.00E+00
71	ALL	564342.15	4192305.75	8.74710E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8543E-05	0.00E+00
72	ALL	564686.78	4191995.32	2.66310E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4779E-04	0.00E+00
73	ALL	564693.31	4191950.86	2.92290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6221E-04	0.00E+00
74	ALL	564724.95	4192043.95	1.77930E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.8746E-05	0.00E+00
75	ALL	564702.28	4192081.26	1.57420E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.7362E-05	0.00E+00
76	ALL	564679.61	4192118.56	1.34570E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.4680E-05	0.00E+00
77	ALL	564656.94	4192155.86	1.15330E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.4003E-05	0.00E+00
78	ALL	564634.27	4192193.17	9.78080E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.4280E-05	0.00E+00
79	ALL	564611.60	4192230.47	8.42680E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6766E-05	0.00E+00
80	ALL	564588.93	4192267.77	6.99480E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8818E-05	0.00E+00
81	ALL	564544.97	4192309.92	6.01030E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3355E-05	0.00E+00
82	ALL	564502.41	4192319.62	6.13270E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4034E-05	0.00E+00
83	ALL	564459.85	4192329.32	6.07090E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3691E-05	0.00E+00
84	ALL	564417.29	4192339.01	6.04930E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3572E-05	0.00E+00
85	ALL	564374.73	4192348.71	6.19520E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4381E-05	0.00E+00
86	ALL	564332.17	4192358.40	7.25100E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0240E-05	0.00E+00
87	ALL	564739.55	4192003.07	2.00680E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1137E-04	0.00E+00
88	ALL	564746.08	4191958.60	2.21240E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2278E-04	0.00E+00
89	ALL	564777.78	4192051.59	1.40460E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.7952E-05	0.00E+00
90	ALL	564755.24	4192088.69	1.27260E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.0625E-05	0.00E+00
91	ALL	564732.70	4192125.78	1.11250E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.1738E-05	0.00E+00
92	ALL	564710.15	4192162.88	9.51020E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.2778E-05	0.00E+00
93	ALL	564687.61	4192199.97	8.25070E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5788E-05	0.00E+00
94	ALL	564665.06	4192237.07	7.19340E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9921E-05	0.00E+00
95	ALL	564642.52	4192274.16	6.16230E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4198E-05	0.00E+00
96	ALL	564619.98	4192311.25	5.24470E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9106E-05	0.00E+00
97	ALL	564576.27	4192353.17	4.62690E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5677E-05	0.00E+00
98	ALL	564533.95	4192362.81	4.83900E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6855E-05	0.00E+00
99	ALL	564491.62	4192372.45	4.83220E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6817E-05	0.00E+00
100	ALL	564449.30	4192382.09	4.77690E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6510E-05	0.00E+00
101	ALL	564406.98	4192391.73	4.82950E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6802E-05	0.00E+00
102	ALL	564364.65	4192401.38	5.20980E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8912E-05	0.00E+00
103	ALL	564322.33	4192411.02	6.49330E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6035E-05	0.00E+00
104	ALL	564792.32	4192010.81	1.55630E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.6370E-05	0.00E+00
105	ALL	564798.85	4191966.35	1.70880E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.4831E-05	0.00E+00
106	ALL	564830.60	4192059.26	1.15170E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.3917E-05	0.00E+00
107	ALL	564808.16	4192096.19	1.04070E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.7756E-05	0.00E+00
108	ALL	564785.71	4192133.12	9.26460E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1415E-05	0.00E+00
109	ALL	564763.27	4192170.05	8.07300E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.4802E-05	0.00E+00
110	ALL	564740.83	4192206.97	7.10070E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9406E-05	0.00E+00
111	ALL	564718.38	4192243.90	6.18630E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4331E-05	0.00E+00
112	ALL	564695.94	4192280.83	5.40220E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9980E-05	0.00E+00
113	ALL	564673.50	4192317.76	4.67240E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5930E-05	0.00E+00
114	ALL	564651.05	4192354.69	4.06900E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2581E-05	0.00E+00
115	ALL	564607.54	4192396.42	3.72150E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0653E-05	0.00E+00
116	ALL	564565.41	4192406.02	3.86450E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1446E-05	0.00E+00
117	ALL	564523.27	4192415.62	3.91400E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1721E-05	0.00E+00
118	ALL	564481.14	4192425.22	3.85590E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1399E-05	0.00E+00
119	ALL	564439.00	4192434.81	3.83750E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1296E-05	0.00E+00
120	ALL	564396.87	4192444.41	3.98140E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2095E-05	0.00E+00
121	ALL	564354.73	4192454.01	4.46660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4788E-05	0.00E+00
122	ALL	564312.60	4192463.61	5.93810E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2954E-05	0.00E+00
123	ALL	564270.46	4192473.21	4.59910E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5523E-05	0.00E+00
124	ALL	564845.09	4192018.56	1.26410E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.0153E-05	0.00E+00
125	ALL	564851.61	4191974.09	1.36630E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.5824E-05	0.00E+00
126	ALL	564883.41	4192066.94	9.63470E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.3469E-05	0.00E+00
127	ALL	564861.05	4192103.73	8.64520E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.7977E-05	0.00E+00
128	ALL	564838.69	4192140.53	7.77050E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3123E-05	0.00E+00
129	ALL	564816.32	4192177.32	6.91920E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8399E-05	0.00E+00
130	ALL	564793.96	4192214.12	6.16810E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4231E-05	0.00E+00
131	ALL	564771.60	4192250.91	5.42650E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.0115E-05	0.00E+00
132	ALL	564749.24	4192287.71	4.78110E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6533E-05	0.00E+00
133	ALL	564726.87	4192324.51	4.17340E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3160E-05	0.00E+00
134	ALL	564704.51	4192361.30	3.67860E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0415E-05	0.00E+00
135	ALL	564682.15	4192398.10	3.26900E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8142E-05	0.00E+00
136	ALL	564638.79	4192439.67	3.06780E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7025E-05	0.00E+00
137	ALL	564596.81	4192449.24	3.21670E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7851E-05	0.00E+00
138	ALL	564554.83	4192458.80	3.23710E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7964E-05	0.00E+00
139	ALL	564512.85	4192468.37	3.19770E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7746E-05	0.00E+00
140	ALL	564470.86	4192477.93	3.13430E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7394E-05	0.00E+00

141	ALL	564428.88	4192487.49	3.12640E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7350E-05	0.00E+00
142	ALL	564386.90	4192497.06	3.24170E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7990E-05	0.00E+00
143	ALL	564344.92	4192506.62	3.60980E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0033E-05	0.00E+00
144	ALL	564302.93	4192516.18	4.52150E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5093E-05	0.00E+00
145	ALL	564260.95	4192525.75	3.28060E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8206E-05	0.00E+00
146	ALL	564897.85	4192026.30	1.05840E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.8738E-05	0.00E+00
147	ALL	564904.38	4191981.84	1.13180E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.2812E-05	0.00E+00
148	ALL	564311.38	4191853.27	1.02320E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.6782E-04	0.00E+00
149	ALL	564378.72	4191845.07	1.79050E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.9365E-04	0.00E+00
150	ALL	564324.03	4191823.87	5.23960E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9078E-04	0.00E+00
151	ALL	564384.03	4191813.22	7.25820E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0280E-04	0.00E+00
152	ALL	564425.58	4191868.79	2.26870E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2591E-03	0.00E+00
153	ALL	564328.80	4191800.72	3.47580E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9289E-04	0.00E+00
154	ALL	564379.83	4191794.96	4.51290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5045E-04	0.00E+00
155	ALL	564431.36	4191846.81	1.59940E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.8763E-04	0.00E+00
156	ALL	564439.41	4191880.79	2.19770E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2197E-03	0.00E+00
157	ALL	564333.57	4191777.57	2.46690E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3690E-04	0.00E+00
158	ALL	564376.65	4191770.22	2.79940E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5536E-04	0.00E+00
159	ALL	564429.18	4191804.74	7.51280E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1693E-04	0.00E+00
160	ALL	564456.35	4191857.03	1.46990E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.1572E-04	0.00E+00
161	ALL	564338.33	4191754.42	1.86500E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0350E-04	0.00E+00
162	ALL	564380.93	4191746.75	2.06380E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1453E-04	0.00E+00
163	ALL	564430.40	4191768.75	3.70670E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0571E-04	0.00E+00
164	ALL	564449.03	4191791.51	5.99460E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3267E-04	0.00E+00
165	ALL	564470.75	4191822.52	9.24120E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1285E-04	0.00E+00
166	ALL	564480.14	4191862.17	1.22850E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.8178E-04	0.00E+00
167	ALL	564343.10	4191731.27	1.47970E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.2117E-05	0.00E+00
168	ALL	564385.35	4191723.37	1.62710E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.0300E-05	0.00E+00
169	ALL	564418.71	4191745.29	2.43710E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3525E-04	0.00E+00
170	ALL	564452.06	4191767.21	3.90740E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1685E-04	0.00E+00
171	ALL	564490.01	4191808.55	7.19620E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9936E-04	0.00E+00
172	ALL	564499.21	4191847.39	9.39970E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.2165E-04	0.00E+00
173	ALL	564508.42	4191886.23	1.06210E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.8943E-04	0.00E+00
174	ALL	564347.87	4191708.12	1.20660E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.6960E-05	0.00E+00
175	ALL	564386.85	4191709.82	1.45730E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.0876E-05	0.00E+00
176	ALL	564422.69	4191721.63	1.81090E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0050E-04	0.00E+00
177	ALL	564455.52	4191743.21	2.66690E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4800E-04	0.00E+00
178	ALL	564488.36	4191764.79	4.07430E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2611E-04	0.00E+00
179	ALL	564509.30	4191794.69	5.76240E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1979E-04	0.00E+00
180	ALL	564518.36	4191832.92	7.40820E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1112E-04	0.00E+00
181	ALL	564527.42	4191871.16	8.28040E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5953E-04	0.00E+00
182	ALL	564352.64	4191684.97	9.98480E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.5412E-05	0.00E+00
183	ALL	564426.85	4191698.08	1.41470E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.8512E-05	0.00E+00
184	ALL	564459.28	4191719.39	1.89850E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0536E-04	0.00E+00
185	ALL	564491.71	4191740.70	2.86150E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5880E-04	0.00E+00
186	ALL	564528.61	4191780.90	4.72580E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6226E-04	0.00E+00
187	ALL	564537.55	4191818.66	5.99610E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3276E-04	0.00E+00
188	ALL	564546.50	4191856.42	6.61480E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6709E-04	0.00E+00
189	ALL	564555.44	4191894.18	7.14120E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9631E-04	0.00E+00
190	ALL	564357.41	4191661.82	8.52200E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.7294E-05	0.00E+00
191	ALL	564431.13	4191674.61	1.14780E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.3700E-05	0.00E+00
192	ALL	564463.24	4191695.71	1.42680E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.9181E-05	0.00E+00
193	ALL	564495.34	4191716.81	2.06240E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1446E-04	0.00E+00
194	ALL	564527.44	4191737.91	2.92590E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6237E-04	0.00E+00
195	ALL	564547.92	4191767.15	3.92530E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1784E-04	0.00E+00
196	ALL	564556.78	4191804.53	4.92680E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7342E-04	0.00E+00
197	ALL	564565.63	4191841.91	5.41500E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.0051E-04	0.00E+00
198	ALL	564574.49	4191879.29	5.79160E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2141E-04	0.00E+00
199	ALL	564362.17	4191638.67	7.57590E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.2043E-05	0.00E+00
200	ALL	564411.32	4191602.28	8.26240E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5853E-05	0.00E+00
201	ALL	564446.49	4191625.39	7.85260E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3579E-05	0.00E+00
202	ALL	564481.67	4191648.51	9.20510E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1085E-05	0.00E+00
203	ALL	564516.84	4191671.63	1.24560E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.9126E-05	0.00E+00
204	ALL	564552.01	4191694.75	1.78620E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.9126E-05	0.00E+00
205	ALL	564592.03	4191738.34	2.77210E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5384E-04	0.00E+00
206	ALL	564601.73	4191779.29	3.43740E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9076E-04	0.00E+00
207	ALL	564611.43	4191820.25	3.72320E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0662E-04	0.00E+00
208	ALL	564621.14	4191861.20	3.92980E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1809E-04	0.00E+00
209	ALL	564630.84	4191902.16	4.22410E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3442E-04	0.00E+00
210	ALL	564421.91	4191549.93	6.26790E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4784E-05	0.00E+00
211	ALL	564456.73	4191572.82	5.73230E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1812E-05	0.00E+00
212	ALL	564491.56	4191595.71	6.19560E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4383E-05	0.00E+00
213	ALL	564526.39	4191618.60	7.56630E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1990E-05	0.00E+00
214	ALL	564561.21	4191641.49	1.01450E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.6302E-05	0.00E+00
215	ALL	564596.04	4191664.38	1.39020E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.7150E-05	0.00E+00
216	ALL	564635.67	4191707.54	2.00920E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1150E-04	0.00E+00
217	ALL	564645.27	4191748.10	2.47250E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3721E-04	0.00E+00
218	ALL	564654.88	4191788.65	2.71400E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5062E-04	0.00E+00
219	ALL	564664.49	4191829.20	2.81300E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5611E-04	0.00E+00
220	ALL	564674.10	4191869.75	2.95870E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6419E-04	0.00E+00

221	ALL	564683.70	4191910.31	3.07330E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7056E-04	0.00E+00
222	ALL	564432.54	4191497.61	5.00940E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7800E-05	0.00E+00
223	ALL	564467.11	4191520.33	4.44590E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4673E-05	0.00E+00
224	ALL	564501.69	4191543.05	4.56560E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5337E-05	0.00E+00
225	ALL	564536.26	4191565.78	5.12780E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8457E-05	0.00E+00
226	ALL	564570.83	4191588.50	6.33570E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5160E-05	0.00E+00
227	ALL	564605.40	4191611.22	8.35190E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6350E-05	0.00E+00
228	ALL	564639.98	4191633.95	1.08380E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.0148E-05	0.00E+00
229	ALL	564679.32	4191676.80	1.50920E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.3755E-05	0.00E+00
230	ALL	564688.85	4191717.06	1.84820E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0257E-04	0.00E+00
231	ALL	564698.39	4191757.32	2.05870E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1425E-04	0.00E+00
232	ALL	564707.93	4191797.57	2.15580E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1964E-04	0.00E+00
233	ALL	564717.47	4191837.83	2.22330E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2338E-04	0.00E+00
234	ALL	564727.00	4191878.09	2.32690E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2914E-04	0.00E+00
235	ALL	564736.54	4191918.35	2.35870E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3090E-04	0.00E+00
236	ALL	564443.20	4191445.31	4.12370E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2885E-05	0.00E+00
237	ALL	564477.58	4191467.90	3.58510E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9896E-05	0.00E+00
238	ALL	564511.96	4191490.50	3.56690E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9795E-05	0.00E+00
239	ALL	564546.34	4191513.09	3.85290E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1382E-05	0.00E+00
240	ALL	564580.72	4191535.69	4.39420E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4386E-05	0.00E+00
241	ALL	564615.10	4191558.29	5.37190E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9812E-05	0.00E+00
242	ALL	564649.48	4191580.88	6.87520E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8155E-05	0.00E+00
243	ALL	564683.85	4191603.48	8.71970E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8391E-05	0.00E+00
244	ALL	564722.98	4191646.09	1.18580E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.5810E-05	0.00E+00
245	ALL	564732.46	4191686.12	1.43240E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.9491E-05	0.00E+00
246	ALL	564741.94	4191726.16	1.59350E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.8432E-05	0.00E+00
247	ALL	564751.43	4191766.19	1.66640E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.2478E-05	0.00E+00
248	ALL	564760.91	4191806.22	1.71740E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.5310E-05	0.00E+00
249	ALL	564770.39	4191846.25	1.78130E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.8858E-05	0.00E+00
250	ALL	564779.88	4191886.28	1.85070E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0271E-04	0.00E+00
251	ALL	564789.36	4191926.32	1.86300E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0339E-04	0.00E+00
252	ALL	564453.89	4191393.02	3.01600E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6738E-05	0.00E+00
253	ALL	564488.11	4191415.51	2.84190E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5771E-05	0.00E+00
254	ALL	564522.34	4191438.01	2.84760E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5803E-05	0.00E+00
255	ALL	564556.56	4191460.51	3.00490E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6676E-05	0.00E+00
256	ALL	564590.79	4191483.00	3.29320E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8276E-05	0.00E+00
257	ALL	564625.01	4191505.50	3.78660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1014E-05	0.00E+00
258	ALL	564659.24	4191527.99	4.59510E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5501E-05	0.00E+00
259	ALL	564693.47	4191550.49	5.77480E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2048E-05	0.00E+00
260	ALL	564727.69	4191572.99	7.17820E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9836E-05	0.00E+00
261	ALL	564766.64	4191615.41	9.55470E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.3025E-05	0.00E+00
262	ALL	564776.08	4191655.26	1.14030E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.3281E-05	0.00E+00
263	ALL	564785.52	4191695.12	1.26360E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.0125E-05	0.00E+00
264	ALL	564794.96	4191734.97	1.33140E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.3885E-05	0.00E+00
265	ALL	564804.41	4191774.82	1.36520E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.5765E-05	0.00E+00
266	ALL	564813.85	4191814.68	1.38670E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.6956E-05	0.00E+00
267	ALL	564823.29	4191854.53	1.43480E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.9624E-05	0.00E+00
268	ALL	564832.73	4191894.39	1.49650E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.3052E-05	0.00E+00
269	ALL	564842.17	4191934.24	1.48910E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.2641E-05	0.00E+00
270	ALL	564464.58	4191340.74	1.83750E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0198E-05	0.00E+00
271	ALL	564498.68	4191363.16	2.06960E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1486E-05	0.00E+00
272	ALL	564532.79	4191385.57	2.22740E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2361E-05	0.00E+00
273	ALL	564566.89	4191407.98	2.37840E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3199E-05	0.00E+00
274	ALL	564600.99	4191430.40	2.57910E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4313E-05	0.00E+00
275	ALL	564635.09	4191452.81	2.87210E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5939E-05	0.00E+00
276	ALL	564669.19	4191475.23	3.29820E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8303E-05	0.00E+00
277	ALL	564703.30	4191497.64	3.97650E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2068E-05	0.00E+00
278	ALL	564737.40	4191520.06	4.90390E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7215E-05	0.00E+00
279	ALL	564771.50	4191542.47	6.00480E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3324E-05	0.00E+00
280	ALL	564810.31	4191584.74	7.77980E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3175E-05	0.00E+00
281	ALL	564819.71	4191624.45	9.22430E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1191E-05	0.00E+00
282	ALL	564829.12	4191664.16	1.02720E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.7007E-05	0.00E+00
283	ALL	564838.53	4191703.87	1.08080E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.9979E-05	0.00E+00
284	ALL	564847.94	4191743.58	1.10560E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.1355E-05	0.00E+00
285	ALL	564857.34	4191783.29	1.11700E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.1991E-05	0.00E+00
286	ALL	564866.75	4191823.00	1.13720E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.3111E-05	0.00E+00
287	ALL	564876.16	4191862.71	1.19060E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.6074E-05	0.00E+00
288	ALL	564885.57	4191902.42	1.23650E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.8620E-05	0.00E+00
289	ALL	564894.97	4191942.13	1.21730E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.7556E-05	0.00E+00
290	ALL	564426.73	4191325.25	1.64350E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.1209E-06	0.00E+00
291	ALL	564269.63	4191886.77	2.35100E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3047E-03	0.00E+00
292	ALL	564265.35	4191908.62	2.99800E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6638E-03	0.00E+00
293	ALL	564257.14	4191929.48	2.67490E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4845E-03	0.00E+00
294	ALL	564271.31	4191942.89	3.78200E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0989E-03	0.00E+00
295	ALL	564280.55	4191846.24	8.36370E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6415E-04	0.00E+00
296	ALL	564238.20	4191902.62	1.44880E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.0402E-04	0.00E+00
297	ALL	564233.92	4191925.06	1.42920E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.9313E-04	0.00E+00
298	ALL	564248.09	4191938.46	2.07350E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1507E-03	0.00E+00
299	ALL	564267.40	4191826.60	5.36410E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9768E-04	0.00E+00
300	ALL	564215.97	4191882.10	8.46500E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6978E-04	0.00E+00

301	ALL	564210.71	4191920.63	8.70320E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8299E-04	0.00E+00
302	ALL	564224.88	4191934.03	1.17020E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.4944E-04	0.00E+00
303	ALL	564226.28	4191825.67	5.08330E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8210E-04	0.00E+00
304	ALL	564254.26	4191806.95	3.79450E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1058E-04	0.00E+00
305	ALL	564290.08	4191799.94	3.09870E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7197E-04	0.00E+00
306	ALL	564192.75	4191877.67	5.88900E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2682E-04	0.00E+00
307	ALL	564187.49	4191916.20	5.83290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2370E-04	0.00E+00
308	ALL	564180.07	4191931.57	5.23620E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9059E-04	0.00E+00
309	ALL	564198.02	4191828.85	4.45150E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4704E-04	0.00E+00
310	ALL	564267.98	4191782.05	2.44400E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3564E-04	0.00E+00
311	ALL	564168.55	4191889.33	4.36390E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4218E-04	0.00E+00
312	ALL	564164.27	4191911.77	4.21000E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3364E-04	0.00E+00
313	ALL	564159.99	4191934.21	3.99050E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2146E-04	0.00E+00
314	ALL	564185.89	4191807.69	3.28470E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8229E-04	0.00E+00
315	ALL	564231.56	4191766.96	2.15200E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1943E-04	0.00E+00
316	ALL	564274.54	4191758.55	1.75750E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.7536E-05	0.00E+00
317	ALL	564145.33	4191884.90	3.34170E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8545E-04	0.00E+00
318	ALL	564141.05	4191907.34	3.21290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7831E-04	0.00E+00
319	ALL	564136.77	4191929.78	3.05280E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6942E-04	0.00E+00
320	ALL	564161.66	4191804.78	2.77610E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5406E-04	0.00E+00
321	ALL	564185.17	4191769.27	2.17750E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2084E-04	0.00E+00
322	ALL	564217.82	4191747.43	1.71700E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.5287E-05	0.00E+00
323	ALL	564259.61	4191739.25	1.43920E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.9871E-05	0.00E+00
324	ALL	564301.40	4191731.08	1.29930E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.2106E-05	0.00E+00
325	ALL	564122.12	4191880.47	2.65510E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4735E-04	0.00E+00
326	ALL	564117.84	4191902.91	2.53700E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4080E-04	0.00E+00
327	ALL	564113.56	4191925.35	2.41140E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3383E-04	0.00E+00
328	ALL	564137.72	4191801.44	2.33910E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2981E-04	0.00E+00
329	ALL	564160.75	4191766.65	1.98290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1004E-04	0.00E+00
330	ALL	564204.25	4191727.87	1.41250E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.8386E-05	0.00E+00
331	ALL	564245.19	4191719.86	1.20080E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.6639E-05	0.00E+00
332	ALL	564286.13	4191711.85	1.06580E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.9147E-05	0.00E+00
333	ALL	564098.90	4191876.04	2.16680E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2025E-04	0.00E+00
334	ALL	564094.62	4191898.48	2.06510E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1460E-04	0.00E+00
335	ALL	564090.34	4191920.92	1.97270E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0948E-04	0.00E+00
336	ALL	564113.97	4191797.82	1.99350E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1063E-04	0.00E+00
337	ALL	564136.63	4191763.58	1.76880E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.8161E-05	0.00E+00
338	ALL	564159.30	4191729.35	1.42870E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.9287E-05	0.00E+00
339	ALL	564190.79	4191708.29	1.18030E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.5501E-05	0.00E+00
340	ALL	564231.09	4191700.40	1.02400E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.6826E-05	0.00E+00
341	ALL	564271.39	4191692.51	8.99110E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.9897E-05	0.00E+00
342	ALL	564311.68	4191684.63	8.76920E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8665E-05	0.00E+00
343	ALL	564075.68	4191871.62	1.81130E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0052E-04	0.00E+00
344	ALL	564071.40	4191894.05	1.72020E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.5464E-05	0.00E+00
345	ALL	564067.12	4191916.49	1.64290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.1174E-05	0.00E+00
346	ALL	564081.93	4191806.71	1.74280E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.6716E-05	0.00E+00
347	ALL	564107.12	4191768.67	1.61770E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.9774E-05	0.00E+00
348	ALL	564132.31	4191730.62	1.37200E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.6141E-05	0.00E+00
349	ALL	564144.90	4191711.60	1.21140E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.7227E-05	0.00E+00
350	ALL	564179.88	4191688.20	9.93340E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.5127E-05	0.00E+00
351	ALL	564202.27	4191683.82	9.27280E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1461E-05	0.00E+00
352	ALL	564247.05	4191675.06	7.98840E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.4333E-05	0.00E+00
353	ALL	564291.82	4191666.30	7.38870E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1004E-05	0.00E+00
354	ALL	564314.21	4191661.92	7.41140E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1130E-05	0.00E+00
355	ALL	564052.46	4191867.19	1.54380E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.5673E-05	0.00E+00
356	ALL	564048.18	4191889.62	1.46180E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.1126E-05	0.00E+00
357	ALL	564043.90	4191912.06	1.39520E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.7429E-05	0.00E+00
358	ALL	564070.47	4191784.53	1.46370E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.1229E-05	0.00E+00
359	ALL	564095.10	4191747.33	1.35800E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.5363E-05	0.00E+00
360	ALL	564119.73	4191710.13	1.14880E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.3754E-05	0.00E+00
361	ALL	564166.24	4191668.65	8.54060E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.7397E-05	0.00E+00
362	ALL	564210.03	4191660.09	7.51650E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1714E-05	0.00E+00
363	ALL	564253.81	4191651.52	6.62390E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6760E-05	0.00E+00
364	ALL	564297.59	4191642.95	6.31810E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5063E-05	0.00E+00
365	ALL	564029.25	4191862.76	1.33860E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.4289E-05	0.00E+00
366	ALL	564024.97	4191885.19	1.25850E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.9842E-05	0.00E+00
367	ALL	564020.69	4191907.63	1.20420E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.6829E-05	0.00E+00
368	ALL	564017.56	4191775.31	1.09140E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.0567E-05	0.00E+00
369	ALL	564041.85	4191738.64	1.04960E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.8249E-05	0.00E+00
370	ALL	564066.13	4191701.96	9.54490E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.2970E-05	0.00E+00
371	ALL	564090.42	4191665.28	8.15290E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5246E-05	0.00E+00
372	ALL	564136.28	4191624.38	6.32050E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5076E-05	0.00E+00
373	ALL	564179.45	4191615.94	5.68660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1558E-05	0.00E+00
374	ALL	564222.62	4191607.49	5.07230E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8150E-05	0.00E+00
375	ALL	564265.79	4191599.04	4.69510E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6056E-05	0.00E+00
376	ALL	564308.96	4191590.60	4.70110E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6089E-05	0.00E+00
377	ALL	563976.86	4191852.76	1.01740E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.6464E-05	0.00E+00
378	ALL	563972.58	4191875.20	9.43200E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.2344E-05	0.00E+00
379	ALL	563968.30	4191897.64	8.97870E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.9828E-05	0.00E+00
380	ALL	563964.82	4191765.86	8.41240E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6686E-05	0.00E+00

381	ALL	563988.86	4191729.54	8.17230E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5353E-05	0.00E+00
382	ALL	564012.91	4191693.23	7.79890E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3281E-05	0.00E+00
383	ALL	564036.95	4191656.91	7.06210E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9192E-05	0.00E+00
384	ALL	564061.00	4191620.59	6.09190E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3808E-05	0.00E+00
385	ALL	564106.42	4191580.10	4.86400E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6993E-05	0.00E+00
386	ALL	564149.16	4191571.73	4.45340E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4715E-05	0.00E+00
387	ALL	564191.91	4191563.37	4.03660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2402E-05	0.00E+00
388	ALL	564234.65	4191555.00	3.70300E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0550E-05	0.00E+00
389	ALL	564277.40	4191546.64	3.55940E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9753E-05	0.00E+00
390	ALL	564320.14	4191538.28	3.71280E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0604E-05	0.00E+00
391	ALL	563924.47	4191842.77	8.10110E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.4958E-05	0.00E+00
392	ALL	563920.19	4191865.21	7.38710E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0996E-05	0.00E+00
393	ALL	563915.91	4191887.64	7.00740E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8888E-05	0.00E+00
394	ALL	563912.17	4191756.26	6.65910E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6956E-05	0.00E+00
395	ALL	563936.04	4191720.21	6.49440E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6042E-05	0.00E+00
396	ALL	563959.91	4191684.16	6.36800E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5340E-05	0.00E+00
397	ALL	563983.78	4191648.11	6.01410E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3376E-05	0.00E+00
398	ALL	564007.65	4191612.05	5.43590E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.0167E-05	0.00E+00
399	ALL	564031.52	4191576.00	4.74080E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6310E-05	0.00E+00
400	ALL	564076.61	4191535.80	3.88050E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1535E-05	0.00E+00
401	ALL	564119.04	4191527.49	3.58870E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9916E-05	0.00E+00
402	ALL	564161.48	4191519.19	3.28890E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8252E-05	0.00E+00
403	ALL	564203.91	4191510.89	3.03060E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6819E-05	0.00E+00
404	ALL	564246.34	4191502.58	2.84550E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5792E-05	0.00E+00
405	ALL	564288.78	4191494.28	2.82820E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5695E-05	0.00E+00
406	ALL	564331.21	4191485.98	3.04720E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6911E-05	0.00E+00
407	ALL	563872.08	4191832.78	6.56790E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6449E-05	0.00E+00
408	ALL	563867.80	4191855.21	5.92410E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2877E-05	0.00E+00
409	ALL	563863.52	4191877.65	5.61360E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1153E-05	0.00E+00
410	ALL	563859.58	4191746.57	5.22680E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9007E-05	0.00E+00
411	ALL	563883.31	4191710.72	5.21620E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8948E-05	0.00E+00
412	ALL	563907.05	4191674.87	5.23690E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9063E-05	0.00E+00
413	ALL	563930.79	4191639.02	5.09360E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8268E-05	0.00E+00
414	ALL	563954.53	4191603.17	4.78670E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6564E-05	0.00E+00
415	ALL	563978.26	4191567.32	4.33780E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4073E-05	0.00E+00
416	ALL	564002.00	4191531.47	3.81360E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1164E-05	0.00E+00
417	ALL	564046.83	4191491.49	3.17660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7629E-05	0.00E+00
418	ALL	564089.03	4191483.24	2.96250E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6441E-05	0.00E+00
419	ALL	564131.23	4191474.98	2.74060E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5209E-05	0.00E+00
420	ALL	564173.42	4191466.72	2.54490E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4123E-05	0.00E+00
421	ALL	564215.62	4191458.46	2.37060E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3156E-05	0.00E+00
422	ALL	564257.82	4191450.21	2.27960E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2651E-05	0.00E+00
423	ALL	564300.01	4191441.95	2.30260E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2779E-05	0.00E+00
424	ALL	564342.21	4191433.69	2.53970E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4094E-05	0.00E+00
425	ALL	563819.69	4191822.78	5.19230E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8815E-05	0.00E+00
426	ALL	563815.41	4191845.22	4.76980E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6471E-05	0.00E+00
427	ALL	563811.13	4191867.66	4.56770E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5349E-05	0.00E+00
428	ALL	563796.53	4191752.68	4.12850E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2911E-05	0.00E+00
429	ALL	563809.00	4191733.84	4.16630E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3121E-05	0.00E+00
430	ALL	563821.47	4191715.01	4.23060E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3478E-05	0.00E+00
431	ALL	563833.94	4191696.17	4.29030E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3809E-05	0.00E+00
432	ALL	563846.42	4191677.33	4.34620E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4119E-05	0.00E+00
433	ALL	563858.89	4191658.50	4.36320E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4214E-05	0.00E+00
434	ALL	563871.36	4191639.66	4.35450E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4166E-05	0.00E+00
435	ALL	563883.83	4191620.82	4.29900E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3858E-05	0.00E+00
436	ALL	563896.30	4191601.99	4.22590E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3452E-05	0.00E+00
437	ALL	563908.78	4191583.15	4.11320E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2827E-05	0.00E+00
438	ALL	563921.25	4191564.31	3.95980E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1975E-05	0.00E+00
439	ALL	563933.72	4191545.48	3.79470E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1059E-05	0.00E+00
440	ALL	563946.19	4191526.64	3.59960E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9976E-05	0.00E+00
441	ALL	563958.67	4191507.80	3.38630E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8793E-05	0.00E+00
442	ALL	563971.14	4191488.96	3.16810E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7582E-05	0.00E+00
443	ALL	563983.61	4191470.13	2.94440E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6340E-05	0.00E+00
444	ALL	564018.25	4191446.95	2.65930E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4758E-05	0.00E+00
445	ALL	564040.42	4191442.61	2.57400E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4285E-05	0.00E+00
446	ALL	564062.60	4191438.28	2.48560E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3794E-05	0.00E+00
447	ALL	564084.77	4191433.94	2.40010E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3319E-05	0.00E+00
448	ALL	564106.94	4191429.60	2.30790E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2808E-05	0.00E+00
449	ALL	564129.11	4191425.26	2.22380E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2341E-05	0.00E+00
450	ALL	564151.28	4191420.92	2.14250E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1890E-05	0.00E+00
451	ALL	564173.45	4191416.58	2.06690E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1470E-05	0.00E+00
452	ALL	564195.62	4191412.25	1.99520E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1073E-05	0.00E+00
453	ALL	564217.79	4191407.91	1.93580E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0743E-05	0.00E+00
454	ALL	564239.96	4191403.57	1.89310E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0506E-05	0.00E+00
455	ALL	564262.14	4191399.23	1.86830E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0368E-05	0.00E+00
456	ALL	564284.31	4191394.89	1.86840E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0369E-05	0.00E+00
457	ALL	564306.48	4191390.55	1.89520E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0517E-05	0.00E+00
458	ALL	564328.65	4191386.22	1.95190E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0832E-05	0.00E+00
459	ALL	564350.82	4191381.88	2.04930E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1373E-05	0.00E+00
460	ALL	564372.99	4191377.54	2.22810E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2365E-05	0.00E+00

461	ALL	563767.30	4191812.79	3.85380E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1387E-05	0.00E+00
462	ALL	563763.02	4191835.23	3.80870E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1137E-05	0.00E+00
463	ALL	563758.74	4191857.66	3.74560E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0786E-05	0.00E+00
464	ALL	563756.28	4191724.35	3.43940E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9087E-05	0.00E+00
465	ALL	563781.00	4191687.01	3.59490E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9950E-05	0.00E+00
466	ALL	563805.73	4191649.67	3.69670E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0515E-05	0.00E+00
467	ALL	563830.45	4191612.33	3.70530E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0563E-05	0.00E+00
468	ALL	563855.17	4191574.99	3.61490E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0061E-05	0.00E+00
469	ALL	563879.90	4191537.65	3.42790E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9024E-05	0.00E+00
470	ALL	563904.62	4191500.31	3.15860E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7529E-05	0.00E+00
471	ALL	563929.34	4191462.97	2.83530E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5735E-05	0.00E+00
472	ALL	563954.07	4191425.63	2.49000E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3819E-05	0.00E+00
473	ALL	563988.40	4191402.66	2.26660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2579E-05	0.00E+00
474	ALL	564032.35	4191394.06	2.13060E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1824E-05	0.00E+00
475	ALL	564076.30	4191385.46	1.99280E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1059E-05	0.00E+00
476	ALL	564120.25	4191376.86	1.86070E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0326E-05	0.00E+00
477	ALL	564164.20	4191368.26	1.74200E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.6674E-06	0.00E+00
478	ALL	564208.15	4191359.66	1.63660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.0823E-06	0.00E+00
479	ALL	564252.10	4191351.06	1.56910E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.7076E-06	0.00E+00
480	ALL	564296.05	4191342.46	1.56030E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.6591E-06	0.00E+00
481	ALL	564340.00	4191333.86	1.59130E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.8312E-06	0.00E+00
482	ALL	564383.95	4191325.26	1.60000E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.8793E-06	0.00E+00
483	ALL	563714.91	4191802.80	3.16170E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7546E-05	0.00E+00
484	ALL	563710.63	4191825.23	3.15260E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7496E-05	0.00E+00
485	ALL	563706.35	4191847.67	3.13300E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7387E-05	0.00E+00
486	ALL	564271.93	4191979.62	2.51510E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3958E-03	0.00E+00
487	ALL	564291.82	4191991.48	2.43610E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3519E-03	0.00E+00
488	ALL	564316.59	4191987.58	3.22200E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7881E-03	0.00E+00
489	ALL	564252.46	4191993.02	1.49100E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.2746E-04	0.00E+00
490	ALL	564290.12	4192006.87	1.67170E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.2772E-04	0.00E+00
491	ALL	564248.32	4192016.29	1.00680E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.5872E-04	0.00E+00
492	ALL	564213.93	4191978.73	8.64510E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.7977E-04	0.00E+00
493	ALL	564285.97	4192030.14	1.00600E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.5830E-04	0.00E+00
494	ALL	564308.30	4192034.12	1.04180E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.7814E-04	0.00E+00
495	ALL	564244.17	4192039.56	6.90390E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8314E-04	0.00E+00
496	ALL	564213.53	4192019.83	6.73270E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.7364E-04	0.00E+00
497	ALL	564194.46	4191992.13	6.05880E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3624E-04	0.00E+00
498	ALL	564281.82	4192053.41	6.61530E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6712E-04	0.00E+00
499	ALL	564240.02	4192062.83	4.87530E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7056E-04	0.00E+00
500	ALL	564209.38	4192043.10	5.24640E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9116E-04	0.00E+00
501	ALL	564174.99	4192005.54	4.45840E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4742E-04	0.00E+00
502	ALL	564167.49	4191969.87	4.31270E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3934E-04	0.00E+00
503	ALL	564277.67	4192076.68	4.67060E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5920E-04	0.00E+00
504	ALL	564300.75	4192085.17	4.45630E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4731E-04	0.00E+00
505	ALL	564232.81	4192084.13	3.64580E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0233E-04	0.00E+00
506	ALL	564177.65	4192048.61	3.84060E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1314E-04	0.00E+00
507	ALL	564150.27	4191993.97	3.40200E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8880E-04	0.00E+00
508	ALL	564278.79	4192089.42	3.95790E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1965E-04	0.00E+00
509	ALL	564229.17	4192107.73	2.77850E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5420E-04	0.00E+00
510	ALL	564193.42	4192084.71	3.21690E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7852E-04	0.00E+00
511	ALL	564157.68	4192061.69	3.02050E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6763E-04	0.00E+00
512	ALL	564135.43	4192029.37	2.74470E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5232E-04	0.00E+00
513	ALL	564126.68	4191987.76	2.63730E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4636E-04	0.00E+00
514	ALL	564269.38	4192123.22	2.64090E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4656E-04	0.00E+00
515	ALL	564225.39	4192131.23	2.18620E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2133E-04	0.00E+00
516	ALL	564190.37	4192108.68	2.55310E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4169E-04	0.00E+00
517	ALL	564155.35	4192086.13	2.59080E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4378E-04	0.00E+00
518	ALL	564116.05	4192043.20	2.24150E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2439E-04	0.00E+00
519	ALL	564107.48	4192002.44	2.16200E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1998E-04	0.00E+00
520	ALL	564098.91	4191961.68	2.05840E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1423E-04	0.00E+00
521	ALL	564265.23	4192146.49	2.09180E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1609E-04	0.00E+00
522	ALL	564287.56	4192150.47	2.14970E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1930E-04	0.00E+00
523	ALL	564221.52	4192154.68	1.72280E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.5609E-05	0.00E+00
524	ALL	564187.04	4192132.48	2.04610E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1355E-04	0.00E+00
525	ALL	564152.57	4192110.28	2.18850E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2145E-04	0.00E+00
526	ALL	564118.10	4192088.08	2.00170E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1109E-04	0.00E+00
527	ALL	564096.65	4192056.92	1.86320E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0340E-04	0.00E+00
528	ALL	564088.21	4192016.80	1.81090E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0050E-04	0.00E+00
529	ALL	564079.77	4191976.67	1.72530E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.5747E-05	0.00E+00
530	ALL	564261.08	4192169.76	1.69540E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.4086E-05	0.00E+00
531	ALL	564217.58	4192178.08	1.41820E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.8704E-05	0.00E+00
532	ALL	564183.54	4192156.16	1.65990E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.2119E-05	0.00E+00
533	ALL	564149.49	4192134.24	1.83660E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0192E-04	0.00E+00
534	ALL	564115.44	4192112.31	1.77610E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.8564E-05	0.00E+00
535	ALL	564077.23	4192070.57	1.57700E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.7517E-05	0.00E+00
536	ALL	564068.90	4192030.95	1.53730E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.5317E-05	0.00E+00
537	ALL	564060.57	4191991.32	1.47030E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.1594E-05	0.00E+00
538	ALL	564046.48	4191947.21	1.38030E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.6603E-05	0.00E+00
539	ALL	564256.94	4192193.03	1.40310E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.7867E-05	0.00E+00
540	ALL	564279.27	4192197.01	1.45320E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.0646E-05	0.00E+00

541	ALL	564211.73	4192200.26	1.17200E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.5041E-05	0.00E+00
542	ALL	564155.56	4192164.08	1.50550E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.3547E-05	0.00E+00
543	ALL	564118.10	4192139.97	1.57090E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.7178E-05	0.00E+00
544	ALL	564080.65	4192115.85	1.44290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	8.0077E-05	0.00E+00
545	ALL	564057.35	4192082.00	1.34710E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.4758E-05	0.00E+00
546	ALL	564043.60	4192016.61	1.27860E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.0955E-05	0.00E+00
547	ALL	564048.18	4191967.26	1.37230E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.6159E-05	0.00E+00
548	ALL	564252.79	4192216.30	1.19220E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.6163E-05	0.00E+00
549	ALL	564202.64	4192252.93	8.24940E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5781E-05	0.00E+00
550	ALL	564165.71	4192229.15	9.43620E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.2367E-05	0.00E+00
551	ALL	564128.78	4192205.37	1.09870E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.0974E-05	0.00E+00
552	ALL	564091.85	4192181.59	1.15490E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.4095E-05	0.00E+00
553	ALL	564054.93	4192157.82	1.10480E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.1313E-05	0.00E+00
554	ALL	564013.48	4192112.55	9.96920E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.5325E-05	0.00E+00
555	ALL	564004.44	4192069.56	9.71240E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.3900E-05	0.00E+00
556	ALL	563995.41	4192026.58	9.31430E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1691E-05	0.00E+00
557	ALL	563986.37	4191983.60	9.12340E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.0631E-05	0.00E+00
558	ALL	563977.33	4191940.62	9.07250E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.0349E-05	0.00E+00
559	ALL	564243.43	4192268.80	8.42140E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6735E-05	0.00E+00
560	ALL	564265.76	4192272.78	8.77990E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8725E-05	0.00E+00
561	ALL	564193.46	4192305.55	6.18940E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4349E-05	0.00E+00
562	ALL	564156.89	4192282.01	6.79980E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.7736E-05	0.00E+00
563	ALL	564120.33	4192258.46	7.83800E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3498E-05	0.00E+00
564	ALL	564083.76	4192234.92	8.68480E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8197E-05	0.00E+00
565	ALL	564047.20	4192211.37	8.82010E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8948E-05	0.00E+00
566	ALL	564010.64	4192187.83	8.40400E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6639E-05	0.00E+00
567	ALL	563969.60	4192143.00	7.66140E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.2518E-05	0.00E+00
568	ALL	563960.65	4192100.44	7.50570E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1653E-05	0.00E+00
569	ALL	563951.70	4192057.88	7.21630E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0048E-05	0.00E+00
570	ALL	563942.75	4192015.32	7.04890E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9119E-05	0.00E+00
571	ALL	563933.80	4191972.76	7.02680E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8996E-05	0.00E+00
572	ALL	563924.86	4191930.20	7.01660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8939E-05	0.00E+00
573	ALL	564234.07	4192321.31	6.38670E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5444E-05	0.00E+00
574	ALL	564256.40	4192325.29	6.64800E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6894E-05	0.00E+00
575	ALL	564184.23	4192358.15	4.86980E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7026E-05	0.00E+00
576	ALL	564147.93	4192334.77	5.16030E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8638E-05	0.00E+00
577	ALL	564111.64	4192311.40	5.86370E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2541E-05	0.00E+00
578	ALL	564075.34	4192288.02	6.59210E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6584E-05	0.00E+00
579	ALL	564039.04	4192264.65	6.96320E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8643E-05	0.00E+00
580	ALL	564002.74	4192241.27	6.95650E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.8606E-05	0.00E+00
581	ALL	563966.44	4192217.90	6.66450E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.6986E-05	0.00E+00
582	ALL	563925.70	4192173.40	6.09500E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3825E-05	0.00E+00
583	ALL	563916.82	4192131.15	5.98660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3223E-05	0.00E+00
584	ALL	563907.93	4192088.90	5.78620E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2111E-05	0.00E+00
585	ALL	563899.05	4192046.65	5.63700E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1283E-05	0.00E+00
586	ALL	563890.17	4192004.40	5.59890E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1072E-05	0.00E+00
587	ALL	563881.29	4191962.15	5.60250E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1092E-05	0.00E+00
588	ALL	563872.40	4191919.90	5.62330E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1207E-05	0.00E+00
589	ALL	564224.71	4192373.81	5.04880E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8019E-05	0.00E+00
590	ALL	564247.04	4192377.79	5.28110E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9308E-05	0.00E+00
591	ALL	564174.98	4192410.72	3.93530E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1839E-05	0.00E+00
592	ALL	564138.88	4192387.47	4.08520E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2671E-05	0.00E+00
593	ALL	564102.79	4192364.23	4.52850E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5132E-05	0.00E+00
594	ALL	564066.69	4192340.99	5.07070E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.8141E-05	0.00E+00
595	ALL	564030.60	4192317.74	5.52770E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.0677E-05	0.00E+00
596	ALL	563994.50	4192294.50	5.70390E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1654E-05	0.00E+00
597	ALL	563958.40	4192271.26	5.65620E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1390E-05	0.00E+00
598	ALL	563922.31	4192248.01	5.39610E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9946E-05	0.00E+00
599	ALL	563881.80	4192203.76	4.97430E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7606E-05	0.00E+00
600	ALL	563872.96	4192161.75	4.90090E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7198E-05	0.00E+00
601	ALL	563864.13	4192119.74	4.75660E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6397E-05	0.00E+00
602	ALL	563855.30	4192077.72	4.62320E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5657E-05	0.00E+00
603	ALL	563846.46	4192035.71	4.55710E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5290E-05	0.00E+00
604	ALL	563837.63	4191993.70	4.57620E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5396E-05	0.00E+00
605	ALL	563828.80	4191951.68	4.58820E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5463E-05	0.00E+00
606	ALL	563819.96	4191909.67	4.58990E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5472E-05	0.00E+00
607	ALL	564215.35	4192426.32	4.10370E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2774E-05	0.00E+00
608	ALL	564237.68	4192430.30	4.29870E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3856E-05	0.00E+00
609	ALL	564164.70	4192462.63	3.23790E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7969E-05	0.00E+00
610	ALL	564145.73	4192450.42	3.26120E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8098E-05	0.00E+00
611	ALL	564126.77	4192438.21	3.33550E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8510E-05	0.00E+00
612	ALL	564107.80	4192425.99	3.46920E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9253E-05	0.00E+00
613	ALL	564088.84	4192413.78	3.65610E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0290E-05	0.00E+00
614	ALL	564069.87	4192401.57	3.87820E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1523E-05	0.00E+00
615	ALL	564050.91	4192389.36	4.09640E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2733E-05	0.00E+00
616	ALL	564012.98	4192364.93	4.49560E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4949E-05	0.00E+00
617	ALL	563994.01	4192352.72	4.62100E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.5645E-05	0.00E+00
618	ALL	563975.04	4192340.50	4.70100E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6089E-05	0.00E+00
619	ALL	563956.08	4192328.29	4.73830E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6295E-05	0.00E+00
620	ALL	563937.11	4192316.08	4.74460E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6331E-05	0.00E+00

621	ALL	563918.15	4192303.86	4.70600E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6116E-05	0.00E+00
622	ALL	563880.22	4192279.44	4.47530E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.4836E-05	0.00E+00
623	ALL	563861.25	4192267.23	4.31200E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3930E-05	0.00E+00
624	ALL	563837.64	4192232.94	4.14190E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2986E-05	0.00E+00
625	ALL	563833.00	4192210.86	4.12630E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2899E-05	0.00E+00
626	ALL	563823.72	4192166.71	4.02890E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2359E-05	0.00E+00
627	ALL	563814.44	4192122.56	3.89500E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1616E-05	0.00E+00
628	ALL	563805.15	4192078.41	3.81930E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1196E-05	0.00E+00
629	ALL	563800.51	4192056.34	3.79850E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1080E-05	0.00E+00
630	ALL	563791.23	4192012.19	3.80430E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1112E-05	0.00E+00
631	ALL	563786.59	4191990.11	3.82020E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1201E-05	0.00E+00
632	ALL	563777.31	4191945.96	3.84400E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1333E-05	0.00E+00
633	ALL	563768.02	4191901.81	3.82720E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1239E-05	0.00E+00
634	ALL	564206.00	4192478.83	3.36380E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8668E-05	0.00E+00
635	ALL	564228.33	4192482.81	3.49150E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9376E-05	0.00E+00
636	ALL	564155.51	4192515.25	2.68790E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4917E-05	0.00E+00
637	ALL	564117.91	4192491.04	2.74120E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5212E-05	0.00E+00
638	ALL	564080.32	4192466.83	2.96580E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.6459E-05	0.00E+00
639	ALL	564042.72	4192442.62	3.31190E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8380E-05	0.00E+00
640	ALL	564005.13	4192418.41	3.65890E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0306E-05	0.00E+00
641	ALL	563967.53	4192394.20	3.89400E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1610E-05	0.00E+00
642	ALL	563929.94	4192369.99	4.00610E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2232E-05	0.00E+00
643	ALL	563892.34	4192345.78	4.00480E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2225E-05	0.00E+00
644	ALL	563854.75	4192321.57	3.87510E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.1505E-05	0.00E+00
645	ALL	563817.15	4192297.36	3.64130E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0208E-05	0.00E+00
646	ALL	563793.76	4192263.38	3.50910E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9474E-05	0.00E+00
647	ALL	563784.56	4192219.62	3.46500E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9229E-05	0.00E+00
648	ALL	563775.36	4192175.86	3.37150E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8710E-05	0.00E+00
649	ALL	563766.16	4192132.10	3.27830E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8194E-05	0.00E+00
650	ALL	563756.96	4192088.34	3.22720E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7910E-05	0.00E+00
651	ALL	563747.75	4192044.58	3.21620E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7849E-05	0.00E+00
652	ALL	563738.55	4192000.83	3.24420E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8004E-05	0.00E+00
653	ALL	563729.35	4191957.07	3.25860E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8084E-05	0.00E+00
654	ALL	563720.15	4191913.31	3.25100E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.8042E-05	0.00E+00
655	ALL	564196.64	4192531.33	2.75510E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5290E-05	0.00E+00
656	ALL	564218.97	4192535.31	2.81320E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5612E-05	0.00E+00
657	ALL	564267.85	4191898.74	2.83870E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5754E-03	0.00E+00
658	ALL	564251.36	4191903.25	2.00760E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1141E-03	0.00E+00
659	ALL	564244.10	4191885.78	1.43190E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.9465E-04	0.00E+00
660	ALL	564255.28	4191886.57	1.81380E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0066E-03	0.00E+00
661	ALL	564228.79	4191884.02	1.05920E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.8780E-04	0.00E+00
662	ALL	564183.25	4191884.02	5.24190E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9090E-04	0.00E+00
663	ALL	564209.95	4191931.32	8.63900E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.7943E-04	0.00E+00
664	ALL	564369.91	4191927.60	8.94430E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.9637E-03	0.00E+00
665	ALL	564371.08	4191918.09	8.86350E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.9189E-03	0.00E+00
666	ALL	564371.91	4191907.25	8.22090E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5623E-03	0.00E+00
667	ALL	564398.10	4191909.58	5.24300E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9096E-03	0.00E+00
668	ALL	564386.76	4191909.08	6.41940E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5625E-03	0.00E+00
669	ALL	564386.76	4191918.59	6.69430E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.7151E-03	0.00E+00
670	ALL	564394.77	4191927.93	5.72520E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1773E-03	0.00E+00
671	ALL	564378.75	4191927.60	7.65060E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.2458E-03	0.00E+00
672	ALL	564378.42	4191939.95	7.09250E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9361E-03	0.00E+00
673	ALL	564391.43	4191941.28	5.62510E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.1217E-03	0.00E+00
674	ALL	564410.12	4191909.75	4.25990E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3641E-03	0.00E+00
675	ALL	564412.12	4191920.09	4.24970E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3584E-03	0.00E+00
676	ALL	564413.62	4191937.44	4.04710E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.2460E-03	0.00E+00
677	ALL	564425.46	4191929.60	3.46400E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9224E-03	0.00E+00
678	ALL	564429.47	4191913.75	3.19750E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7745E-03	0.00E+00
679	ALL	564447.49	4191916.42	2.49790E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3862E-03	0.00E+00
680	ALL	564444.65	4191932.77	2.63710E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4635E-03	0.00E+00
681	ALL	564438.81	4191922.76	2.85890E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.5866E-03	0.00E+00
682	ALL	564467.84	4191918.42	1.91730E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0640E-03	0.00E+00
683	ALL	564468.01	4191930.44	1.93930E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0762E-03	0.00E+00
684	ALL	564371.91	4191964.30	5.37990E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9856E-03	0.00E+00
685	ALL	564386.43	4191957.30	4.98380E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7658E-03	0.00E+00
686	ALL	564398.44	4191968.81	3.47060E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9260E-03	0.00E+00
687	ALL	564413.62	4191977.98	2.47760E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3750E-03	0.00E+00
688	ALL	564428.63	4191980.15	2.05690E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.1415E-03	0.00E+00
689	ALL	564424.13	4191968.31	2.59160E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4382E-03	0.00E+00
690	ALL	564440.81	4191981.99	1.78160E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.8874E-04	0.00E+00
691	ALL	564452.16	4191973.15	1.78870E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.9266E-04	0.00E+00
692	ALL	564450.82	4191952.29	2.23640E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2411E-03	0.00E+00
693	ALL	564464.50	4191957.30	1.82470E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0126E-03	0.00E+00
694	ALL	564452.99	4191964.30	1.95800E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0866E-03	0.00E+00
695	ALL	564515.26	4191949.23	1.10470E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.1306E-04	0.00E+00
696	ALL	564520.05	4191926.22	1.08370E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.0139E-04	0.00E+00
697	ALL	564548.18	4191931.65	8.29780E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.6049E-04	0.00E+00
698	ALL	564546.90	4191956.58	7.99510E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.4370E-04	0.00E+00
699	ALL	564508.55	4191985.02	9.26120E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1396E-04	0.00E+00
700	ALL	564537.95	4191989.18	7.06290E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.9196E-04	0.00E+00

701	ALL	564378.47	4192007.40	1.79990E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.9885E-04	0.00E+00
702	ALL	564404.04	4192014.11	1.33130E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.3882E-04	0.00E+00
703	ALL	564423.85	4192014.75	1.16750E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.4792E-04	0.00E+00
704	ALL	564454.56	4192063.95	4.94310E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7432E-04	0.00E+00
705	ALL	564485.52	4192066.61	4.20470E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3335E-04	0.00E+00
706	ALL	564514.27	4192073.68	3.49640E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9404E-04	0.00E+00
707	ALL	564310.11	4191982.50	3.49460E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9394E-03	0.00E+00
708	ALL	564201.18	4192015.37	5.99010E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3243E-04	0.00E+00
709	ALL	564187.86	4192030.31	4.71620E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.6173E-04	0.00E+00
710	ALL	564173.47	4192022.44	4.16990E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3141E-04	0.00E+00
711	ALL	564303.87	4192049.06	7.81620E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.3377E-04	0.00E+00
712	ALL	564307.13	4192020.81	1.36270E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.5623E-04	0.00E+00
713	ALL	564306.31	4192007.77	1.82380E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0122E-03	0.00E+00
714	ALL	564301.69	4191997.44	2.26590E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.2575E-03	0.00E+00
715	ALL	564269.64	4191995.27	1.80370E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0010E-03	0.00E+00
716	ALL	564188.14	4191971.91	5.77330E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.2040E-04	0.00E+00
717	ALL	564224.27	4191970.00	1.07660E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.9749E-04	0.00E+00
718	ALL	564216.12	4192001.25	7.97580E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.4263E-04	0.00E+00
719	ALL	564153.20	4191965.48	3.60690E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0017E-04	0.00E+00
720	ALL	564122.84	4191954.61	2.59560E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4404E-04	0.00E+00
721	ALL	564117.09	4191980.18	2.40730E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3360E-04	0.00E+00
722	ALL	564083.85	4191945.67	1.83990E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0210E-04	0.00E+00
723	ALL	564013.21	4191939.27	1.11810E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.2049E-05	0.00E+00
724	ALL	563997.87	4191938.95	1.02130E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.6679E-05	0.00E+00
725	ALL	564007.46	4191974.75	1.04180E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.7814E-05	0.00E+00
726	ALL	564042.30	4191992.33	1.28640E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	7.1392E-05	0.00E+00
727	ALL	563988.58	4191902.55	9.99200E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.5452E-05	0.00E+00
728	ALL	564014.53	4191894.28	1.17110E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.4989E-05	0.00E+00
729	ALL	563957.75	4191938.27	8.18460E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.5421E-05	0.00E+00
730	ALL	563944.97	4191935.64	7.69020E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.2678E-05	0.00E+00
731	ALL	563876.15	4191870.59	5.98160E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3195E-05	0.00E+00
732	ALL	563897.96	4191930.75	6.20720E-08	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.4448E-05	0.00E+00
733	ALL	564329.17	4191858.88	1.68560E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	9.3544E-04	0.00E+00
734	ALL	564324.28	4191848.82	1.03480E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.7425E-04	0.00E+00
735	ALL	564317.76	4191834.70	6.45960E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.5848E-04	0.00E+00
736	ALL	564332.70	4191834.70	7.48960E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1564E-04	0.00E+00
737	ALL	564295.75	4191849.10	8.78500E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.8753E-04	0.00E+00
738	ALL	564293.85	4191824.91	4.92470E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.7330E-04	0.00E+00
739	ALL	564258.53	4191840.94	7.45220E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.1357E-04	0.00E+00
740	ALL	564271.30	4191814.59	4.18300E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.3214E-04	0.00E+00
741	ALL	564292.12	4191781.68	2.35540E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3072E-04	0.00E+00
742	ALL	564318.97	4191786.48	2.65150E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.4715E-04	0.00E+00
743	ALL	564379.50	4191863.64	3.08440E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7117E-03	0.00E+00
744	ALL	564380.04	4191829.13	1.10700E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.1437E-04	0.00E+00
745	ALL	564441.99	4191869.89	1.91700E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0639E-03	0.00E+00
746	ALL	564429.49	4191826.96	1.15940E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.4342E-04	0.00E+00
747	ALL	564444.16	4191829.68	1.15690E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	6.4203E-04	0.00E+00
748	ALL	564444.16	4191802.78	7.33630E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0714E-04	0.00E+00
749	ALL	564459.92	4191819.35	9.31880E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	5.1716E-04	0.00E+00
750	ALL	564258.43	4191982.64	1.89880E-06	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.0538E-03	0.00E+00
751	ALL	564270.54	4192043.38	7.29710E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0496E-04	0.00E+00
752	ALL	564260.81	4192040.73	7.26780E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	4.0333E-04	0.00E+00
753	ALL	564506.93	4192025.65	6.03590E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	3.3497E-04	0.00E+00
754	ALL	564521.97	4192028.30	5.38420E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.9880E-04	0.00E+00
755	ALL	564170.33	4192068.11	3.20500E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.7786E-04	0.00E+00
756	ALL	564186.13	4192072.25	3.45030E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.9148E-04	0.00E+00
757	ALL	564209.07	4192077.14	3.69180E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0488E-04	0.00E+00
758	ALL	564220.35	4192078.64	3.77180E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0932E-04	0.00E+00
759	ALL	564136.48	4192067.74	2.48590E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	1.3796E-04	0.00E+00
760	ALL	564243.67	4192085.79	3.67240E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0380E-04	0.00E+00
761	ALL	564254.95	4192089.93	3.63090E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0150E-04	0.00E+00
762	ALL	564266.99	4192092.56	3.69850E-07	2.47YrCancerDerived_InhSoilDermMMilkCrops	2.0525E-04	0.00E+00

HARP2 - HRACalc (dated 22118) 8/30/2024 7:23:57 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: All
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 2.47

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 0.47
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True

Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed

```
Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM
T4CancerRisk.csv
Cancer risk total by receptor saved to: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM
T4CancerRiskSumByRec.csv
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM
T4NCChronicRisk.csv
Chronic risk total by receptor saved to: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM
T4NCChronicRiskSumByRec.csv
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM
T4NCAcuteRisk.csv
Acute risk total by receptor saved to: F:\AERMOD\61000001 Shattuck\HARP\DPM T4\hra\DPM
T4NCAcuteRiskSumByRec.csv
HRA ran successfully
```

Summary of PM2.5 Construction Emissions

Shattuck Construction (Tier 4 Interim Equipment Scenario) - PM2.5

		Pounds PM2.5E		Pounds PM2.5 Dust		Pounds PM2.5 Total	
		Onsite	Offsite	Onsite	Offsite	Onsite	Offsite
2026	Demolition	1.873312	0.813947	8.083226	5.15622	9.956538	5.970167
2026	Grading	4.927226	4.175555	59.30955	24.68709	64.23677	28.86264
2026	Building Construction	4.14395	4.169369	0	159.6529	4.14395	163.8223
2027	Building Construction	5.695727	5.730664	0	219.4379	5.695727	225.1685
2027	Paving	0.205156	0.024074	0	0.311697	0.205156	0.335772
2027	Architectural Coating	0.664501	0	0	3.881722	0.664501	3.881722
2028	Architectural Coating	3.523869	0	0	20.58489	3.523869	20.58489

1974 Shattuck Ave Construction (Tier 4 Interim Equipment Scenario) - PM2.5

Estimation of Annual On-site Construction Emissions - PM2.5 Total

Start of Construction	1/5/2026	
End of Construction	6/23/2028	**Total**
Number of Days	900	900
Number of Hours	21,600	21,600

Size of the construction area source: **2,549.9** **sq-meters**

Run	Year	On-site Construction Activity	Tier 4 On-site PM2.5 (pounds)
Project Construction	2026	Demolition	9.9565
Project Construction	2026	Grading	64.2368
Project Construction	2026	Building Construction	4.1440
Project Construction	2027	Building Construction	5.6957
Project Construction	2027	Paving	0.2052
Project Construction	2027	Architectural Coating	0.6645
Project Construction	2028	Architectural Coating	3.5239

Total Unmitigated PM2.5 (On-site) 8.843E+01 pounds

Factor in AERMOD to Account for 5 days per week/8 hours per day: 4.2

Average Emission for AREA	4.015E+04	grams
	5.163E-04	grams/sec
	2.025E-07	grams/m2-sec

Pounds/Construction Period	8.843E+01
Pounds/Day	9.825E-02
Pounds/Hour	4.094E-03
Pounds/Year	3.586E+01
Years	2.46575

1974 Shattuck Ave Construction (Tier 4 Interim Equipment Scenario) - PM2.5

Estimation of Annual Offsite Construction PM2.5 Emissions

Start of Construction		1/5/2026			
End of Construction		6/23/2028			**Total**
Number of Days		900			900
Number of Hours		21,600			21,600

	2026 Project Construction	2026 Project Construction	2026+2027 Project Construction	2027 Project Construction	2027+2028 Project Construction	
Construction Trip Type	Demolition	Grading	Building Construction	Paving	Architectural Coating	**Total (pounds)**
Total (pounds)	5.97017	28.86264	388.99082	0.33577	24.46661	**448.62601**

	Haul Truck	**Vendor Truck**	**Worker**	**Total**
Demolition (2026)	923.00	0.00	300.00	1,223.00
Grading (2026)	4,735.00	0.00	600.00	5,335.00
Building Construction (2026+2027)	0.00	26,825.44	175,284.64	202,110.08
Paving (2027)	0.00	65.00	100.00	165.00
Architectural Coating (2027+2028)	0.00	0.00	13,146.35	13,146.35
Total	**5,658.00**	**26,890.44**	**189,430.99**	**221,979.43**

	Haul Truck (pounds)	**Vendor Truck (pounds)**	**Worker (pounds)**	**Total (pounds)**
Total DPM	1.143E+01	5.435E+01	3.828E+02	4.486E+02

Average Emissions				
Grams	5.191E+03	2.467E+04	1.738E+05	
Grams/sec	6.676E-05	3.173E-04	2.235E-03	
Default Distance	20	8.40	11.41	Default Vehicle Travel Distance in CalEEMod

Vehicle Travel Distances in the Construction HRA (miles)				
Off-site Road Segment 1	0.36	0.36	0.36	miles
Off-site Road Segment 2	0.36	0.36	0.36	miles
Off-site Road Segment 3	0.34	0.34	0.34	miles
Off-site Road Segment 4	0.37	0.37	0.37	miles
Off-site Road Segment 5	0.37	0.37	0.37	miles
Off-site Road Segment 6	0.37	0.37	0.37	miles
On-site Construction Travel	0.06	0.06	0.06	miles
Trip Distribution (percent)				
Off-site Road Segment 1	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 2	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 3	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 4	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 5	16.7%	16.7%	16.7%	off-site
Off-site Road Segment 6	16.7%	16.7%	16.7%	off-site
On-site Construction Travel	100.0%	100.0%	100.0%	on-site

Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)				**Total**	
Off-site Road Segment 1	2.002E-07	2.266E-06	1.175E-05	1.422E-05	Off-site Road Segment 1
Off-site Road Segment 2	2.004E-07	2.268E-06	1.176E-05	1.423E-05	Off-site Road Segment 2
Off-site Road Segment 3	1.884E-07	3.608E-07	1.106E-05	1.161E-05	Off-site Road Segment 3
Off-site Road Segment 4	2.066E-07	0.000E+00	1.213E-05	1.233E-05	Off-site Road Segment 4
Off-site Road Segment 5	2.031E-07	0.000E+00	1.192E-05	1.212E-05	Off-site Road Segment 5
Off-site Road Segment 6	2.066E-07	1.049E-06	1.213E-05	1.338E-05	Off-site Road Segment 6
On-site Construction Travel	1.913E-07	6.296E-06	1.123E-05	1.771E-05	On-site, on-road construction vehicle travel

	Grams/sec	Pounds/Hour	Pounds/Day	Pounds/year	Tons/year
Off-site Road Segment 1	1.422E-05	1.128E-04	2.708E-03	9.885E-01	4.942E-04
Off-site Road Segment 2	1.423E-05	1.129E-04	2.710E-03	9.893E-01	4.947E-04
Off-site Road Segment 3	1.161E-05	9.212E-05	2.211E-03	8.069E-01	4.035E-04
Off-site Road Segment 4	1.233E-05	9.788E-05	2.349E-03	8.575E-01	4.287E-04
Off-site Road Segment 5	1.212E-05	9.623E-05	2.310E-03	8.430E-01	4.215E-04
Off-site Road Segment 6	1.338E-05	1.062E-04	2.549E-03	9.304E-01	4.652E-04
On-site Construction Travel	1.771E-05	1.406E-04	3.374E-03	1.231E+00	6.157E-04

Highest PM2.5 Concentration 0.10520

* AERMOD (23132): F:\AERMOD\61000001 Shattuck\PM25\PM25.isc 8/30/2024
* AERMET (18081): 7:28:59 AM
* MODELING OPTIONS USED: Reg DFAULT CONC ELEV FLGP
* PLOT FILE OF PERIOD VALUES AVERAGED ACROSS YEARS FOR SOURCE GROUP: ALL
* FOR A TOTAL OF 762 RECEPTORS.
* FORMAT: (3(1X,F13.5),3(1X,F8.2),2X,A6,2X,A8,2X,I8.8,2X,A8)

* X	Y	AVERAGE CONC	ZELEV	ZHILL	ZFLAG	AVE	GRP	NUM HRS	NET ID
564370.77	4191948.94	0.08606	60.66	355	1.5	PERIOD	ALL	78888	
564394.16	4191952.37	0.05670	61.2	355	1.5	PERIOD	ALL	78888	
564385.58	4192025.27	0.01513	62.7	355	1.5	PERIOD	ALL	78888	
564358.04	4192045.11	0.01207	63.29	355	1.5	PERIOD	ALL	78888	
564417.55	4191955.81	0.03931	61.31	355	1.5	PERIOD	ALL	78888	
564408.96	4192028.71	0.01244	63.59	355	1.5	PERIOD	ALL	78888	
564371.86	4192064.29	0.00873	63.93	355	1.5	PERIOD	ALL	78888	
564440.93	4191959.24	0.02837	61.43	355	1.5	PERIOD	ALL	78888	
564438.09	4192022.69	0.01167	63.54	355	1.5	PERIOD	ALL	78888	
564415.12	4192060.48	0.00768	64.8	355	1.5	PERIOD	ALL	78888	
564360.53	4192089.20	0.00676	64.76	355	1.5	PERIOD	ALL	78888	
564461.05	4191984.90	0.01694	62.87	355	1.5	PERIOD	ALL	78888	
564467.58	4191940.44	0.02296	61.8	355	1.5	PERIOD	ALL	78888	
564450.95	4192043.44	0.00819	64.49	355	1.5	PERIOD	ALL	78888	
564428.62	4192080.18	0.00580	65.46	355	1.5	PERIOD	ALL	78888	
564396.50	4192103.33	0.00510	65.67	355	1.5	PERIOD	ALL	78888	
564354.58	4192112.87	0.00553	65.55	355	1.5	PERIOD	ALL	78888	
564487.70	4191966.10	0.01591	63.13	355	1.5	PERIOD	ALL	78888	
564475.02	4192045.75	0.00702	65.36	355	1.5	PERIOD	ALL	78888	
564453.15	4192081.74	0.00522	65.84	355	1.5	PERIOD	ALL	78888	
564410.74	4192122.41	0.00404	66.78	355	1.5	PERIOD	ALL	78888	
564369.68	4192131.76	0.00440	66.18	355	1.5	PERIOD	ALL	78888	
564511.09	4191969.54	0.01238	64.28	355	1.5	PERIOD	ALL	78888	
564498.92	4192048.34	0.00604	66.25	355	1.5	PERIOD	ALL	78888	
564477.39	4192083.77	0.00465	66.63	355	1.5	PERIOD	ALL	78888	
564455.86	4192119.19	0.00364	66.86	355	1.5	PERIOD	ALL	78888	
564424.88	4192141.51	0.00330	67.5	355	1.5	PERIOD	ALL	78888	
564384.46	4192150.72	0.00357	66.85	355	1.5	PERIOD	ALL	78888	
564344.04	4192159.93	0.00430	66.72	355	1.5	PERIOD	ALL	78888	
564534.48	4191972.97	0.00980	65.92	355	1.5	PERIOD	ALL	78888	
564522.70	4192051.12	0.00526	66.82	355	1.5	PERIOD	ALL	78888	
564501.44	4192086.11	0.00417	66.98	355	1.5	PERIOD	ALL	78888	
564480.17	4192121.10	0.00334	67.18	355	1.5	PERIOD	ALL	78888	
564438.95	4192160.63	0.00275	68.26	355	1.5	PERIOD	ALL	78888	
564399.03	4192169.72	0.00294	67.96	355	1.5	PERIOD	ALL	78888	
564359.11	4192178.82	0.00345	67.14	355	1.5	PERIOD	ALL	78888	
564557.86	4191976.40	0.00803	66.81	355	1.5	PERIOD	ALL	78888	
564564.39	4191931.93	0.00871	66.03	355	1.5	PERIOD	ALL	78888	
564567.46	4192019.39	0.00557	67.76	355	1.5	PERIOD	ALL	78888	
564546.41	4192054.03	0.00459	67.69	355	1.5	PERIOD	ALL	78888	
564525.35	4192088.66	0.00372	67.54	355	1.5	PERIOD	ALL	78888	
564504.30	4192123.30	0.00304	67.93	355	1.5	PERIOD	ALL	78888	
564483.25	4192157.94	0.00248	68.78	355	1.5	PERIOD	ALL	78888	
564452.96	4192179.76	0.00229	69.81	355	1.5	PERIOD	ALL	78888	
564413.44	4192188.77	0.00246	69	355	1.5	PERIOD	ALL	78888	
564373.92	4192197.77	0.00283	67.68	355	1.5	PERIOD	ALL	78888	
564294.88	4192215.77	0.00261	66.04	355	1.5	PERIOD	ALL	78888	
564581.25	4191979.83	0.00668	67.66	355	1.5	PERIOD	ALL	78888	
564587.77	4191935.37	0.00726	66.81	355	1.5	PERIOD	ALL	78888	
564619.22	4192028.79	0.00380	73.07	355	1.5	PERIOD	ALL	78888	
564596.16	4192066.74	0.00323	72.18	355	1.5	PERIOD	ALL	78888	

564573.09	4192104.69	0.00272	70.34	355	1.5	PERIOD	ALL	78888
564550.03	4192142.63	0.00226	70.89	355	1.5	PERIOD	ALL	78888
564526.97	4192180.58	0.00188	71.59	355	1.5	PERIOD	ALL	78888
564482.25	4192223.46	0.00164	71.52	355	1.5	PERIOD	ALL	78888
564438.95	4192233.33	0.00177	70.41	355	1.5	PERIOD	ALL	78888
564395.66	4192243.19	0.00200	69.3	355	1.5	PERIOD	ALL	78888
564352.36	4192253.06	0.00263	68.17	355	1.5	PERIOD	ALL	78888
564634.02	4191987.58	0.00451	71.67	355	1.5	PERIOD	ALL	78888
564640.54	4191943.11	0.00500	69.03	355	1.5	PERIOD	ALL	78888
564672.10	4192036.35	0.00286	75.62	355	1.5	PERIOD	ALL	78888
564649.26	4192073.92	0.00247	75.72	355	1.5	PERIOD	ALL	78888
564626.43	4192111.50	0.00214	73.7	355	1.5	PERIOD	ALL	78888
564603.59	4192149.08	0.00185	72.84	355	1.5	PERIOD	ALL	78888
564580.75	4192186.65	0.00158	73.58	355	1.5	PERIOD	ALL	78888
564557.92	4192224.23	0.00135	74.28	355	1.5	PERIOD	ALL	78888
564513.64	4192266.69	0.00121	74.24	355	1.5	PERIOD	ALL	78888
564470.77	4192276.45	0.00131	73.01	355	1.5	PERIOD	ALL	78888
564427.90	4192286.22	0.00142	72.45	355	1.5	PERIOD	ALL	78888
564385.02	4192295.99	0.00170	70.73	355	1.5	PERIOD	ALL	78888
564342.15	4192305.75	0.00246	69.22	355	1.5	PERIOD	ALL	78888
564686.78	4191995.32	0.00327	74.74	355	1.5	PERIOD	ALL	78888
564693.31	4191950.86	0.00358	72.63	355	1.5	PERIOD	ALL	78888
564724.95	4192043.95	0.00221	78.48	355	1.5	PERIOD	ALL	78888
564702.28	4192081.26	0.00197	77.94	355	1.5	PERIOD	ALL	78888
564679.61	4192118.56	0.00172	77.42	355	1.5	PERIOD	ALL	78888
564656.94	4192155.86	0.00150	76.33	355	1.5	PERIOD	ALL	78888
564634.27	4192193.17	0.00130	77.71	355	1.5	PERIOD	ALL	78888
564611.60	4192230.47	0.00116	77.35	355	1.5	PERIOD	ALL	78888
564588.93	4192267.77	0.00100	78.87	355	1.5	PERIOD	ALL	78888
564544.97	4192309.92	0.00092	78.33	355	1.5	PERIOD	ALL	78888
564502.41	4192319.62	0.00099	76.4	355	1.5	PERIOD	ALL	78888
564459.85	4192329.32	0.00107	74.96	355	1.5	PERIOD	ALL	78888
564417.29	4192339.01	0.00123	73.21	355	1.5	PERIOD	ALL	78888
564374.73	4192348.71	0.00151	72.94	355	1.5	PERIOD	ALL	78888
564332.17	4192358.40	0.00235	71.42	355	1.5	PERIOD	ALL	78888
564739.55	4192003.07	0.00247	77.53	355	1.5	PERIOD	ALL	78888
564746.08	4191958.60	0.00272	74.29	355	1.5	PERIOD	ALL	78888
564777.78	4192051.59	0.00175	81.72	355	1.5	PERIOD	ALL	78888
564755.24	4192088.69	0.00160	80.79	355	1.5	PERIOD	ALL	78888
564732.70	4192125.78	0.00142	80.27	355	1.5	PERIOD	ALL	78888
564710.15	4192162.88	0.00123	81	355	1.5	PERIOD	ALL	78888
564687.61	4192199.97	0.00109	81.27	355	1.5	PERIOD	ALL	78888
564665.06	4192237.07	0.00097	82.36	355	1.5	PERIOD	ALL	78888
564642.52	4192274.16	0.00086	84.25	355	1.5	PERIOD	ALL	78888
564619.98	4192311.25	0.00075	84.98	355	1.5	PERIOD	ALL	78888
564576.27	4192353.17	0.00070	83.57	355	1.5	PERIOD	ALL	78888
564533.95	4192362.81	0.00077	79.04	355	1.5	PERIOD	ALL	78888
564491.62	4192372.45	0.00083	77.28	355	1.5	PERIOD	ALL	78888
564449.30	4192382.09	0.00092	75.71	355	1.5	PERIOD	ALL	78888
564406.98	4192391.73	0.00109	74.66	355	1.5	PERIOD	ALL	78888
564364.65	4192401.38	0.00145	73.54	355	1.5	PERIOD	ALL	78888
564322.33	4192411.02	0.00241	71.96	355	1.5	PERIOD	ALL	78888
564792.32	4192010.81	0.00193	80.87	355	1.5	PERIOD	ALL	78888
564798.85	4191966.35	0.00211	77.17	355	1.5	PERIOD	ALL	78888
564830.60	4192059.26	0.00144	83	355	1.5	PERIOD	ALL	78888
564808.16	4192096.19	0.00131	84.46	355	1.5	PERIOD	ALL	78888
564785.71	4192133.12	0.00118	84.04	355	1.5	PERIOD	ALL	78888
564763.27	4192170.05	0.00104	84.42	355	1.5	PERIOD	ALL	78888
564740.83	4192206.97	0.00094	83.91	355	1.5	PERIOD	ALL	78888
564718.38	4192243.90	0.00083	86.68	355	1.5	PERIOD	ALL	78888
564695.94	4192280.83	0.00074	89.98	355	1.5	PERIOD	ALL	78888

564673.50	4192317.76	0.00065	92.5	355	1.5	PERIOD	ALL	78888
564651.05	4192354.69	0.00058	91.88	355	1.5	PERIOD	ALL	78888
564607.54	4192396.42	0.00056	86.85	355	1.5	PERIOD	ALL	78888
564565.41	4192406.02	0.00060	83.1	355	1.5	PERIOD	ALL	78888
564523.27	4192415.62	0.00065	79.95	355	1.5	PERIOD	ALL	78888
564481.14	4192425.22	0.00070	78.21	355	1.5	PERIOD	ALL	78888
564439.00	4192434.81	0.00078	76.85	355	1.5	PERIOD	ALL	78888
564396.87	4192444.41	0.00096	75.44	355	1.5	PERIOD	ALL	78888
564354.73	4192454.01	0.00136	74.04	355	1.5	PERIOD	ALL	78888
564312.60	4192463.61	0.00243	72.35	355	1.5	PERIOD	ALL	78888
564270.46	4192473.21	0.00148	71.13	355	1.5	PERIOD	ALL	78888
564845.09	4192018.56	0.00157	81.65	355	1.5	PERIOD	ALL	78888
564851.61	4191974.09	0.00169	79.1	355	1.5	PERIOD	ALL	78888
564883.41	4192066.94	0.00121	83.75	355	1.5	PERIOD	ALL	78888
564861.05	4192103.73	0.00109	88.39	355	1.5	PERIOD	ALL	78888
564838.69	4192140.53	0.00099	88.9	355	1.5	PERIOD	ALL	78888
564816.32	4192177.32	0.00089	88.38	355	1.5	PERIOD	ALL	78888
564793.96	4192214.12	0.00081	87.03	355	1.5	PERIOD	ALL	78888
564771.60	4192250.91	0.00072	89.47	355	1.5	PERIOD	ALL	78888
564749.24	4192287.71	0.00064	94.02	355	1.5	PERIOD	ALL	78888
564726.87	4192324.51	0.00057	100.22	355	1.5	PERIOD	ALL	78888
564704.51	4192361.30	0.00051	101.2	355	1.5	PERIOD	ALL	78888
564682.15	4192398.10	0.00047	98.54	355	1.5	PERIOD	ALL	78888
564638.79	4192439.67	0.00045	89.87	355	1.5	PERIOD	ALL	78888
564596.81	4192449.24	0.00049	84.26	355	1.5	PERIOD	ALL	78888
564554.83	4192458.80	0.00052	82.44	355	1.5	PERIOD	ALL	78888
564512.85	4192468.37	0.00054	80.02	355	1.5	PERIOD	ALL	78888
564470.86	4192477.93	0.00058	78.63	355	1.5	PERIOD	ALL	78888
564428.88	4192487.49	0.00064	77.55	355	1.5	PERIOD	ALL	78888
564386.90	4192497.06	0.00077	76.15	355	1.5	PERIOD	ALL	78888
564344.92	4192506.62	0.00106	74.19	355	1.5	PERIOD	ALL	78888
564302.93	4192516.18	0.00172	72.31	355	1.5	PERIOD	ALL	78888
564260.95	4192525.75	0.00083	70.94	355	1.5	PERIOD	ALL	78888
564897.85	4192026.30	0.00132	80.61	355	1.5	PERIOD	ALL	78888
564904.38	4191981.84	0.00141	78.82	355	1.5	PERIOD	ALL	78888
564311.38	4191853.27	0.01386	57.9	355	1.5	PERIOD	ALL	78888
564378.72	4191845.07	0.02255	58.94	355	1.5	PERIOD	ALL	78888
564324.03	4191823.87	0.00724	57.02	355	1.5	PERIOD	ALL	78888
564384.03	4191813.22	0.00985	59.01	355	1.5	PERIOD	ALL	78888
564425.58	4191868.79	0.02797	60.41	355	1.5	PERIOD	ALL	78888
564328.80	4191800.72	0.00496	57.18	355	1.5	PERIOD	ALL	78888
564379.83	4191794.96	0.00660	58.83	355	1.5	PERIOD	ALL	78888
564431.36	4191846.81	0.02000	60.41	355	1.5	PERIOD	ALL	78888
564439.41	4191880.79	0.02681	60.87	355	1.5	PERIOD	ALL	78888
564333.57	4191777.57	0.00369	56.71	355	1.5	PERIOD	ALL	78888
564376.65	4191770.22	0.00460	57.9	355	1.5	PERIOD	ALL	78888
564429.18	4191804.74	0.01009	59.66	355	1.5	PERIOD	ALL	78888
564456.35	4191857.03	0.01810	61	355	1.5	PERIOD	ALL	78888
564338.33	4191754.42	0.00295	56.5	355	1.5	PERIOD	ALL	78888
564380.93	4191746.75	0.00370	57.92	355	1.5	PERIOD	ALL	78888
564430.40	4191768.75	0.00559	59.57	355	1.5	PERIOD	ALL	78888
564449.03	4191791.51	0.00800	60.16	355	1.5	PERIOD	ALL	78888
564470.75	4191822.52	0.01159	60.91	355	1.5	PERIOD	ALL	78888
564480.14	4191862.17	0.01505	61.27	355	1.5	PERIOD	ALL	78888
564343.10	4191731.27	0.00249	56.66	355	1.5	PERIOD	ALL	78888
564385.35	4191723.37	0.00321	57.63	355	1.5	PERIOD	ALL	78888
564418.71	4191745.29	0.00431	59.05	355	1.5	PERIOD	ALL	78888
564452.06	4191767.21	0.00551	60.01	355	1.5	PERIOD	ALL	78888
564490.01	4191808.55	0.00905	61.55	355	1.5	PERIOD	ALL	78888
564499.21	4191847.39	0.01156	61.86	355	1.5	PERIOD	ALL	78888
564508.42	4191886.23	0.01291	63.16	355	1.5	PERIOD	ALL	78888

564347.87	4191708.12	0.00215	56.81	355	1.5	PERIOD	ALL	78888
564386.85	4191709.82	0.00307	57.23	355	1.5	PERIOD	ALL	78888
564422.69	4191721.63	0.00348	58.66	355	1.5	PERIOD	ALL	78888
564455.52	4191743.21	0.00401	59.54	355	1.5	PERIOD	ALL	78888
564488.36	4191764.79	0.00540	60.5	355	1.5	PERIOD	ALL	78888
564509.30	4191794.69	0.00727	61.95	355	1.5	PERIOD	ALL	78888
564518.36	4191832.92	0.00915	62.61	355	1.5	PERIOD	ALL	78888
564527.42	4191871.16	0.01011	63.7	355	1.5	PERIOD	ALL	78888
564352.64	4191684.97	0.00187	56.28	355	1.5	PERIOD	ALL	78888
564426.85	4191698.08	0.00293	58.45	355	1.5	PERIOD	ALL	78888
564459.28	4191719.39	0.00306	59.53	355	1.5	PERIOD	ALL	78888
564491.71	4191740.70	0.00395	60.61	355	1.5	PERIOD	ALL	78888
564528.61	4191780.90	0.00598	61.92	355	1.5	PERIOD	ALL	78888
564537.55	4191818.66	0.00743	63.02	355	1.5	PERIOD	ALL	78888
564546.50	4191856.42	0.00811	64.44	355	1.5	PERIOD	ALL	78888
564555.44	4191894.18	0.00869	65.47	355	1.5	PERIOD	ALL	78888
564357.41	4191661.82	0.00170	56.13	355	1.5	PERIOD	ALL	78888
564431.13	4191674.61	0.00254	58.55	355	1.5	PERIOD	ALL	78888
564463.24	4191695.71	0.00246	59.43	355	1.5	PERIOD	ALL	78888
564495.34	4191716.81	0.00299	60.25	355	1.5	PERIOD	ALL	78888
564527.44	4191737.91	0.00387	61.04	355	1.5	PERIOD	ALL	78888
564547.92	4191767.15	0.00498	62.5	355	1.5	PERIOD	ALL	78888
564556.78	4191804.53	0.00612	63.83	355	1.5	PERIOD	ALL	78888
564565.63	4191841.91	0.00667	65.11	355	1.5	PERIOD	ALL	78888
564574.49	4191879.29	0.00708	66.22	355	1.5	PERIOD	ALL	78888
564362.17	4191638.67	0.00165	56.29	355	1.5	PERIOD	ALL	78888
564411.32	4191602.28	0.00250	57	355	1.5	PERIOD	ALL	78888
564446.49	4191625.39	0.00185	58.1	355	1.5	PERIOD	ALL	78888
564481.67	4191648.51	0.00171	59.27	355	1.5	PERIOD	ALL	78888
564516.84	4191671.63	0.00193	60.45	355	1.5	PERIOD	ALL	78888
564552.01	4191694.75	0.00246	61.62	355	1.5	PERIOD	ALL	78888
564592.03	4191738.34	0.00353	63.06	355	1.5	PERIOD	ALL	78888
564601.73	4191779.29	0.00429	64.98	355	1.5	PERIOD	ALL	78888
564611.43	4191820.25	0.00461	67	355	1.5	PERIOD	ALL	78888
564621.14	4191861.20	0.00484	67.92	355	1.5	PERIOD	ALL	78888
564630.84	4191902.16	0.00516	67.85	355	1.5	PERIOD	ALL	78888
564421.91	4191549.93	0.00201	57.28	355	1.5	PERIOD	ALL	78888
564456.73	4191572.82	0.00145	58.44	355	1.5	PERIOD	ALL	78888
564491.56	4191595.71	0.00127	59.6	355	1.5	PERIOD	ALL	78888
564526.39	4191618.60	0.00130	60.06	355	1.5	PERIOD	ALL	78888
564561.21	4191641.49	0.00152	60.99	355	1.5	PERIOD	ALL	78888
564596.04	4191664.38	0.00190	61.72	355	1.5	PERIOD	ALL	78888
564635.67	4191707.54	0.00258	64.84	355	1.5	PERIOD	ALL	78888
564645.27	4191748.10	0.00311	66.12	355	1.5	PERIOD	ALL	78888
564654.88	4191788.65	0.00338	66.95	355	1.5	PERIOD	ALL	78888
564664.49	4191829.20	0.00349	68.09	355	1.5	PERIOD	ALL	78888
564674.10	4191869.75	0.00365	69.31	355	1.5	PERIOD	ALL	78888
564683.70	4191910.31	0.00377	70.8	355	1.5	PERIOD	ALL	78888
564432.54	4191497.61	0.00169	57.64	355	1.5	PERIOD	ALL	78888
564467.11	4191520.33	0.00119	58.79	355	1.5	PERIOD	ALL	78888
564501.69	4191543.05	0.00101	59.94	355	1.5	PERIOD	ALL	78888
564536.26	4191565.78	0.00096	61	355	1.5	PERIOD	ALL	78888
564570.83	4191588.50	0.00104	61.23	355	1.5	PERIOD	ALL	78888
564605.40	4191611.22	0.00123	61.9	355	1.5	PERIOD	ALL	78888
564639.98	4191633.95	0.00148	64.1	355	1.5	PERIOD	ALL	78888
564679.32	4191676.80	0.00194	67.73	355	1.5	PERIOD	ALL	78888
564688.85	4191717.06	0.00234	67.71	355	1.5	PERIOD	ALL	78888
564698.39	4191757.32	0.00258	66.8	355	1.5	PERIOD	ALL	78888
564707.93	4191797.57	0.00269	66.05	355	1.5	PERIOD	ALL	78888
564717.47	4191837.83	0.00276	67.38	355	1.5	PERIOD	ALL	78888
564727.00	4191878.09	0.00288	69.45	355	1.5	PERIOD	ALL	78888

564736.54	4191918.35	0.00290	71.85	355	1.5	PERIOD	ALL	78888
564443.20	4191445.31	0.00144	56.99	355	1.5	PERIOD	ALL	78888
564477.58	4191467.90	0.00102	58.19	355	1.5	PERIOD	ALL	78888
564511.96	4191490.50	0.00083	59.86	355	1.5	PERIOD	ALL	78888
564546.34	4191513.09	0.00077	60.43	355	1.5	PERIOD	ALL	78888
564580.72	4191535.69	0.00078	61.58	355	1.5	PERIOD	ALL	78888
564615.10	4191558.29	0.00085	62.72	355	1.5	PERIOD	ALL	78888
564649.48	4191580.88	0.00100	63.87	355	1.5	PERIOD	ALL	78888
564683.85	4191603.48	0.00119	66.01	355	1.5	PERIOD	ALL	78888
564722.98	4191646.09	0.00153	68.31	355	1.5	PERIOD	ALL	78888
564732.46	4191686.12	0.00182	68.63	355	1.5	PERIOD	ALL	78888
564741.94	4191726.16	0.00201	68.32	355	1.5	PERIOD	ALL	78888
564751.43	4191766.19	0.00209	68	355	1.5	PERIOD	ALL	78888
564760.91	4191806.22	0.00215	67.19	355	1.5	PERIOD	ALL	78888
564770.39	4191846.25	0.00222	68.56	355	1.5	PERIOD	ALL	78888
564779.88	4191886.28	0.00229	70.99	355	1.5	PERIOD	ALL	78888
564789.36	4191926.32	0.00230	72.51	355	1.5	PERIOD	ALL	78888
564453.89	4191393.02	0.00097	56.71	355	1.5	PERIOD	ALL	78888
564488.11	4191415.51	0.00079	58.13	355	1.5	PERIOD	ALL	78888
564522.34	4191438.01	0.00068	59.63	355	1.5	PERIOD	ALL	78888
564556.56	4191460.51	0.00063	60.77	355	1.5	PERIOD	ALL	78888
564590.79	4191483.00	0.00061	61.91	355	1.5	PERIOD	ALL	78888
564625.01	4191505.50	0.00064	63.05	355	1.5	PERIOD	ALL	78888
564659.24	4191527.99	0.00071	64.19	355	1.5	PERIOD	ALL	78888
564693.47	4191550.49	0.00083	65.6	355	1.5	PERIOD	ALL	78888
564727.69	4191572.99	0.00098	67.48	355	1.5	PERIOD	ALL	78888
564766.64	4191615.41	0.00124	68.77	355	1.5	PERIOD	ALL	78888
564776.08	4191655.26	0.00146	69.36	355	1.5	PERIOD	ALL	78888
564785.52	4191695.12	0.00160	70	355	1.5	PERIOD	ALL	78888
564794.96	4191734.97	0.00168	69.05	355	1.5	PERIOD	ALL	78888
564804.41	4191774.82	0.00172	68.04	355	1.5	PERIOD	ALL	78888
564813.85	4191814.68	0.00174	69.91	355	1.5	PERIOD	ALL	78888
564823.29	4191854.53	0.00179	72.26	355	1.5	PERIOD	ALL	78888
564832.73	4191894.39	0.00186	72.96	355	1.5	PERIOD	ALL	78888
564842.17	4191934.24	0.00184	74.36	355	1.5	PERIOD	ALL	78888
564464.58	4191340.74	0.00039	55.71	355	1.5	PERIOD	ALL	78888
564498.68	4191363.16	0.00047	57.4	355	1.5	PERIOD	ALL	78888
564532.79	4191385.57	0.00049	59.28	355	1.5	PERIOD	ALL	78888
564566.89	4191407.98	0.00048	61.12	355	1.5	PERIOD	ALL	78888
564600.99	4191430.40	0.00049	62.2	355	1.5	PERIOD	ALL	78888
564635.09	4191452.81	0.00050	63.39	355	1.5	PERIOD	ALL	78888
564669.19	4191475.23	0.00053	64.53	355	1.5	PERIOD	ALL	78888
564703.30	4191497.64	0.00060	65.66	355	1.5	PERIOD	ALL	78888
564737.40	4191520.06	0.00070	67.6	355	1.5	PERIOD	ALL	78888
564771.50	4191542.47	0.00081	68.94	355	1.5	PERIOD	ALL	78888
564810.31	4191584.74	0.00101	71.24	355	1.5	PERIOD	ALL	78888
564819.71	4191624.45	0.00118	71.27	355	1.5	PERIOD	ALL	78888
564829.12	4191664.16	0.00130	70.86	355	1.5	PERIOD	ALL	78888
564838.53	4191703.87	0.00137	71.01	355	1.5	PERIOD	ALL	78888
564847.94	4191743.58	0.00139	70.33	355	1.5	PERIOD	ALL	78888
564857.34	4191783.29	0.00141	71.16	355	1.5	PERIOD	ALL	78888
564866.75	4191823.00	0.00143	73.79	355	1.5	PERIOD	ALL	78888
564876.16	4191862.71	0.00149	74.42	355	1.5	PERIOD	ALL	78888
564885.57	4191902.42	0.00154	74.2	355	1.5	PERIOD	ALL	78888
564894.97	4191942.13	0.00151	75.77	355	1.5	PERIOD	ALL	78888
564426.73	4191325.25	0.00029	55	355	1.5	PERIOD	ALL	78888
564269.63	4191886.77	0.02914	58.01	355	1.5	PERIOD	ALL	78888
564265.35	4191908.62	0.03586	58.74	355	1.5	PERIOD	ALL	78888
564257.14	4191929.48	0.03181	58.88	355	1.5	PERIOD	ALL	78888
564271.31	4191942.89	0.04496	59.23	355	1.5	PERIOD	ALL	78888
564280.55	4191846.24	0.01142	57.23	355	1.5	PERIOD	ALL	78888

564238.20	4191902.62	0.01781	57.7	355	1.5	PERIOD	ALL	78888
564233.92	4191925.06	0.01726	58.3	355	1.5	PERIOD	ALL	78888
564248.09	4191938.46	0.02471	58.86	355	1.5	PERIOD	ALL	78888
564267.40	4191826.60	0.00734	56.14	355	1.5	PERIOD	ALL	78888
564215.97	4191882.10	0.01130	56.92	355	1.5	PERIOD	ALL	78888
564210.71	4191920.63	0.01074	58.14	355	1.5	PERIOD	ALL	78888
564224.88	4191934.03	0.01415	58.59	355	1.5	PERIOD	ALL	78888
564226.28	4191825.67	0.00706	55.98	355	1.5	PERIOD	ALL	78888
564254.26	4191806.95	0.00520	55.8	355	1.5	PERIOD	ALL	78888
564290.08	4191799.94	0.00435	56.1	355	1.5	PERIOD	ALL	78888
564192.75	4191877.67	0.00832	56.46	355	1.5	PERIOD	ALL	78888
564187.49	4191916.20	0.00739	57.46	355	1.5	PERIOD	ALL	78888
564180.07	4191931.57	0.00657	57.73	355	1.5	PERIOD	ALL	78888
564198.02	4191828.85	0.00654	55.83	355	1.5	PERIOD	ALL	78888
564267.98	4191782.05	0.00342	55.59	355	1.5	PERIOD	ALL	78888
564168.55	4191889.33	0.00604	56.1	355	1.5	PERIOD	ALL	78888
564164.27	4191911.77	0.00550	56.85	355	1.5	PERIOD	ALL	78888
564159.99	4191934.21	0.00508	57.59	355	1.5	PERIOD	ALL	78888
564185.89	4191807.69	0.00469	55.16	355	1.5	PERIOD	ALL	78888
564231.56	4191766.96	0.00297	54.94	355	1.5	PERIOD	ALL	78888
564274.54	4191758.55	0.00252	55.27	355	1.5	PERIOD	ALL	78888
564145.33	4191884.90	0.00484	55.95	355	1.5	PERIOD	ALL	78888
564141.05	4191907.34	0.00433	56.64	355	1.5	PERIOD	ALL	78888
564136.77	4191929.78	0.00398	57.22	355	1.5	PERIOD	ALL	78888
564161.66	4191804.78	0.00410	54.72	355	1.5	PERIOD	ALL	78888
564185.17	4191769.27	0.00301	54.1	355	1.5	PERIOD	ALL	78888
564217.82	4191747.43	0.00238	54.18	355	1.5	PERIOD	ALL	78888
564259.61	4191739.25	0.00206	54.88	355	1.5	PERIOD	ALL	78888
564301.40	4191731.08	0.00196	55.27	355	1.5	PERIOD	ALL	78888
564122.12	4191880.47	0.00403	55.8	355	1.5	PERIOD	ALL	78888
564117.84	4191902.91	0.00354	56.08	355	1.5	PERIOD	ALL	78888
564113.56	4191925.35	0.00323	56.3	355	1.5	PERIOD	ALL	78888
564137.72	4191801.44	0.00360	54.14	355	1.5	PERIOD	ALL	78888
564160.75	4191766.65	0.00278	53.59	355	1.5	PERIOD	ALL	78888
564204.25	4191727.87	0.00196	54	355	1.5	PERIOD	ALL	78888
564245.19	4191719.86	0.00172	54.18	355	1.5	PERIOD	ALL	78888
564286.13	4191711.85	0.00161	54.8	355	1.5	PERIOD	ALL	78888
564098.90	4191876.04	0.00347	55.34	355	1.5	PERIOD	ALL	78888
564094.62	4191898.48	0.00299	55.63	355	1.5	PERIOD	ALL	78888
564090.34	4191920.92	0.00271	56.15	355	1.5	PERIOD	ALL	78888
564113.97	4191797.82	0.00319	54	355	1.5	PERIOD	ALL	78888
564136.63	4191763.58	0.00252	53	355	1.5	PERIOD	ALL	78888
564159.30	4191729.35	0.00197	53.4	355	1.5	PERIOD	ALL	78888
564190.79	4191708.29	0.00164	53.61	355	1.5	PERIOD	ALL	78888
564231.09	4191700.40	0.00147	53.98	355	1.5	PERIOD	ALL	78888
564271.39	4191692.51	0.00135	54.27	355	1.5	PERIOD	ALL	78888
564311.68	4191684.63	0.00142	55.61	355	1.5	PERIOD	ALL	78888
564075.68	4191871.62	0.00305	54.87	355	1.5	PERIOD	ALL	78888
564071.40	4191894.05	0.00259	55.15	355	1.5	PERIOD	ALL	78888
564067.12	4191916.49	0.00232	55.46	355	1.5	PERIOD	ALL	78888
564081.93	4191806.71	0.00325	53.34	355	1.5	PERIOD	ALL	78888
564107.12	4191768.67	0.00240	53.06	355	1.5	PERIOD	ALL	78888
564132.31	4191730.62	0.00191	52.93	355	1.5	PERIOD	ALL	78888
564144.90	4191711.60	0.00167	53.01	355	1.5	PERIOD	ALL	78888
564179.88	4191688.20	0.00138	53.08	355	1.5	PERIOD	ALL	78888
564202.27	4191683.82	0.00131	53.24	355	1.5	PERIOD	ALL	78888
564247.05	4191675.06	0.00118	54	355	1.5	PERIOD	ALL	78888
564291.82	4191666.30	0.00117	54.95	355	1.5	PERIOD	ALL	78888
564314.21	4191661.92	0.00124	55.36	355	1.5	PERIOD	ALL	78888
564052.46	4191867.19	0.00274	54.35	355	1.5	PERIOD	ALL	78888
564048.18	4191889.62	0.00228	54.84	355	1.5	PERIOD	ALL	78888

564043.90	4191912.06	0.00202	54.95	355	1.5	PERIOD	ALL	78888
564070.47	4191784.53	0.00244	52.83	355	1.5	PERIOD	ALL	78888
564095.10	4191747.33	0.00196	52.61	355	1.5	PERIOD	ALL	78888
564119.73	4191710.13	0.00159	52.31	355	1.5	PERIOD	ALL	78888
564166.24	4191668.65	0.00119	52.56	355	1.5	PERIOD	ALL	78888
564210.03	4191660.09	0.00108	53.22	355	1.5	PERIOD	ALL	78888
564253.81	4191651.52	0.00101	54	355	1.5	PERIOD	ALL	78888
564297.59	4191642.95	0.00104	55	355	1.5	PERIOD	ALL	78888
564029.25	4191862.76	0.00249	54.04	355	1.5	PERIOD	ALL	78888
564024.97	4191885.19	0.00204	54.05	355	1.5	PERIOD	ALL	78888
564020.69	4191907.63	0.00179	54.64	355	1.5	PERIOD	ALL	78888
564017.56	4191775.31	0.00195	51.86	355	1.5	PERIOD	ALL	78888
564041.85	4191738.64	0.00157	51.64	355	1.5	PERIOD	ALL	78888
564066.13	4191701.96	0.00133	50.91	355	1.5	PERIOD	ALL	78888
564090.42	4191665.28	0.00111	51.15	355	1.5	PERIOD	ALL	78888
564136.28	4191624.38	0.00087	51.76	355	1.5	PERIOD	ALL	78888
564179.45	4191615.94	0.00081	52.2	355	1.5	PERIOD	ALL	78888
564222.62	4191607.49	0.00076	53	355	1.5	PERIOD	ALL	78888
564265.79	4191599.04	0.00075	54.08	355	1.5	PERIOD	ALL	78888
564308.96	4191590.60	0.00084	55	355	1.5	PERIOD	ALL	78888
563976.86	4191852.76	0.00214	52.39	355	1.5	PERIOD	ALL	78888
563972.58	4191875.20	0.00165	52.93	355	1.5	PERIOD	ALL	78888
563968.30	4191897.64	0.00142	53.16	355	1.5	PERIOD	ALL	78888
563964.82	4191765.86	0.00160	50.05	355	1.5	PERIOD	ALL	78888
563988.86	4191729.54	0.00126	49.97	355	1.5	PERIOD	ALL	78888
564012.91	4191693.23	0.00110	49.85	355	1.5	PERIOD	ALL	78888
564036.95	4191656.91	0.00096	49.64	355	1.5	PERIOD	ALL	78888
564061.00	4191620.59	0.00082	50.04	355	1.5	PERIOD	ALL	78888
564106.42	4191580.10	0.00066	50.61	355	1.5	PERIOD	ALL	78888
564149.16	4191571.73	0.00062	51.19	355	1.5	PERIOD	ALL	78888
564191.91	4191563.37	0.00059	52.14	355	1.5	PERIOD	ALL	78888
564234.65	4191555.00	0.00057	53.04	355	1.5	PERIOD	ALL	78888
564277.40	4191546.64	0.00061	53.83	355	1.5	PERIOD	ALL	78888
564320.14	4191538.28	0.00073	54.89	355	1.5	PERIOD	ALL	78888
563924.47	4191842.77	0.00186	51.25	355	1.5	PERIOD	ALL	78888
563920.19	4191865.21	0.00138	51.69	355	1.5	PERIOD	ALL	78888
563915.91	4191887.64	0.00116	52.02	355	1.5	PERIOD	ALL	78888
563912.17	4191756.26	0.00129	49.19	355	1.5	PERIOD	ALL	78888
563936.04	4191720.21	0.00100	49.04	355	1.5	PERIOD	ALL	78888
563959.91	4191684.16	0.00089	48.91	355	1.5	PERIOD	ALL	78888
563983.78	4191648.11	0.00081	48.7	355	1.5	PERIOD	ALL	78888
564007.65	4191612.05	0.00072	48.47	355	1.5	PERIOD	ALL	78888
564031.52	4191576.00	0.00063	49	355	1.5	PERIOD	ALL	78888
564076.61	4191535.80	0.00052	49.77	355	1.5	PERIOD	ALL	78888
564119.04	4191527.49	0.00049	50.19	355	1.5	PERIOD	ALL	78888
564161.48	4191519.19	0.00047	50.9	355	1.5	PERIOD	ALL	78888
564203.91	4191510.89	0.00045	52.01	355	1.5	PERIOD	ALL	78888
564246.34	4191502.58	0.00046	52.55	355	1.5	PERIOD	ALL	78888
564288.78	4191494.28	0.00051	53.85	355	1.5	PERIOD	ALL	78888
564331.21	4191485.98	0.00066	54.74	355	1.5	PERIOD	ALL	78888
563872.08	4191832.78	0.00158	49.96	355	1.5	PERIOD	ALL	78888
563867.80	4191855.21	0.00114	49.99	355	1.5	PERIOD	ALL	78888
563863.52	4191877.65	0.00095	50.47	355	1.5	PERIOD	ALL	78888
563859.58	4191746.57	0.00093	48.18	355	1.5	PERIOD	ALL	78888
563883.31	4191710.72	0.00078	48.05	355	1.5	PERIOD	ALL	78888
563907.05	4191674.87	0.00072	47.96	355	1.5	PERIOD	ALL	78888
563930.79	4191639.02	0.00068	47.69	355	1.5	PERIOD	ALL	78888
563954.53	4191603.17	0.00063	47.7	355	1.5	PERIOD	ALL	78888
563978.26	4191567.32	0.00057	47.68	355	1.5	PERIOD	ALL	78888
564002.00	4191531.47	0.00050	48.05	355	1.5	PERIOD	ALL	78888
564046.83	4191491.49	0.00042	48.65	355	1.5	PERIOD	ALL	78888

564089.03	4191483.24	0.00040	49.1	355	1.5	PERIOD	ALL	78888
564131.23	4191474.98	0.00038	49.71	355	1.5	PERIOD	ALL	78888
564173.42	4191466.72	0.00037	51	355	1.5	PERIOD	ALL	78888
564215.62	4191458.46	0.00036	51.41	355	1.5	PERIOD	ALL	78888
564257.82	4191450.21	0.00038	52.81	355	1.5	PERIOD	ALL	78888
564300.01	4191441.95	0.00042	53.36	355	1.5	PERIOD	ALL	78888
564342.21	4191433.69	0.00057	54.63	355	1.5	PERIOD	ALL	78888
563819.69	4191822.78	0.00116	48.9	355	1.5	PERIOD	ALL	78888
563815.41	4191845.22	0.00087	49.04	355	1.5	PERIOD	ALL	78888
563811.13	4191867.66	0.00075	49.35	355	1.5	PERIOD	ALL	78888
563796.53	4191752.68	0.00069	47.24	355	1.5	PERIOD	ALL	78888
563809.00	4191733.84	0.00065	46.99	355	1.5	PERIOD	ALL	78888
563821.47	4191715.01	0.00063	47.08	355	1.5	PERIOD	ALL	78888
563833.94	4191696.17	0.00061	46.89	355	1.5	PERIOD	ALL	78888
563846.42	4191677.33	0.00060	47	355	1.5	PERIOD	ALL	78888
563858.89	4191658.50	0.00059	46.71	355	1.5	PERIOD	ALL	78888
563871.36	4191639.66	0.00058	46.72	355	1.5	PERIOD	ALL	78888
563883.83	4191620.82	0.00057	46.44	355	1.5	PERIOD	ALL	78888
563896.30	4191601.99	0.00056	46.76	355	1.5	PERIOD	ALL	78888
563908.78	4191583.15	0.00054	46.91	355	1.5	PERIOD	ALL	78888
563921.25	4191564.31	0.00052	46.7	355	1.5	PERIOD	ALL	78888
563933.72	4191545.48	0.00049	47	355	1.5	PERIOD	ALL	78888
563946.19	4191526.64	0.00047	47	355	1.5	PERIOD	ALL	78888
563958.67	4191507.80	0.00044	46.9	355	1.5	PERIOD	ALL	78888
563971.14	4191488.96	0.00041	47	355	1.5	PERIOD	ALL	78888
563983.61	4191470.13	0.00039	47	355	1.5	PERIOD	ALL	78888
564018.25	4191446.95	0.00035	47.83	355	1.5	PERIOD	ALL	78888
564040.42	4191442.61	0.00035	48	355	1.5	PERIOD	ALL	78888
564062.60	4191438.28	0.00034	48.31	355	1.5	PERIOD	ALL	78888
564084.77	4191433.94	0.00033	48.92	355	1.5	PERIOD	ALL	78888
564106.94	4191429.60	0.00032	48.95	355	1.5	PERIOD	ALL	78888
564129.11	4191425.26	0.00031	49.33	355	1.5	PERIOD	ALL	78888
564151.28	4191420.92	0.00031	49.62	355	1.5	PERIOD	ALL	78888
564173.45	4191416.58	0.00030	50	355	1.5	PERIOD	ALL	78888
564195.62	4191412.25	0.00030	50.14	355	1.5	PERIOD	ALL	78888
564217.79	4191407.91	0.00030	50.53	355	1.5	PERIOD	ALL	78888
564239.96	4191403.57	0.00030	51.2	355	1.5	PERIOD	ALL	78888
564262.14	4191399.23	0.00031	51.73	355	1.5	PERIOD	ALL	78888
564284.31	4191394.89	0.00032	52.31	355	1.5	PERIOD	ALL	78888
564306.48	4191390.55	0.00034	52.91	355	1.5	PERIOD	ALL	78888
564328.65	4191386.22	0.00038	53.5	355	1.5	PERIOD	ALL	78888
564350.82	4191381.88	0.00043	54.1	355	1.5	PERIOD	ALL	78888
564372.99	4191377.54	0.00053	54.67	355	1.5	PERIOD	ALL	78888
563767.30	4191812.79	0.00062	47.76	355	1.5	PERIOD	ALL	78888
563763.02	4191835.23	0.00060	48.09	355	1.5	PERIOD	ALL	78888
563758.74	4191857.66	0.00057	48.21	355	1.5	PERIOD	ALL	78888
563756.28	4191724.35	0.00050	45.69	355	1.5	PERIOD	ALL	78888
563781.00	4191687.01	0.00050	45.92	355	1.5	PERIOD	ALL	78888
563805.73	4191649.67	0.00050	45.77	355	1.5	PERIOD	ALL	78888
563830.45	4191612.33	0.00049	45.57	355	1.5	PERIOD	ALL	78888
563855.17	4191574.99	0.00047	45.77	355	1.5	PERIOD	ALL	78888
563879.90	4191537.65	0.00044	46	355	1.5	PERIOD	ALL	78888
563904.62	4191500.31	0.00041	46.01	355	1.5	PERIOD	ALL	78888
563929.34	4191462.97	0.00037	45.98	355	1.5	PERIOD	ALL	78888
563954.07	4191425.63	0.00033	46	355	1.5	PERIOD	ALL	78888
563988.40	4191402.66	0.00030	46.73	355	1.5	PERIOD	ALL	78888
564032.35	4191394.06	0.00029	47.18	355	1.5	PERIOD	ALL	78888
564076.30	4191385.46	0.00027	47.83	355	1.5	PERIOD	ALL	78888
564120.25	4191376.86	0.00026	48.24	355	1.5	PERIOD	ALL	78888
564164.20	4191368.26	0.00025	49	355	1.5	PERIOD	ALL	78888
564208.15	4191359.66	0.00025	49.6	355	1.5	PERIOD	ALL	78888

564252.10	4191351.06	0.00025	50.68	355	1.5	PERIOD	ALL	78888
564296.05	4191342.46	0.00026	52.08	355	1.5	PERIOD	ALL	78888
564340.00	4191333.86	0.00028	52.81	355	1.5	PERIOD	ALL	78888
564383.95	4191325.26	0.00028	54.02	355	1.5	PERIOD	ALL	78888
563714.91	4191802.80	0.00045	46.15	355	1.5	PERIOD	ALL	78888
563710.63	4191825.23	0.00044	46.55	355	1.5	PERIOD	ALL	78888
563706.35	4191847.67	0.00044	46.83	355	1.5	PERIOD	ALL	78888
564271.93	4191979.62	0.02994	60.11	355	1.5	PERIOD	ALL	78888
564291.82	4191991.48	0.02919	60.5	355	1.5	PERIOD	ALL	78888
564316.59	4191987.58	0.03882	60.86	355	1.5	PERIOD	ALL	78888
564252.46	4191993.02	0.01781	60.55	355	1.5	PERIOD	ALL	78888
564290.12	4192006.87	0.02016	61.02	355	1.5	PERIOD	ALL	78888
564248.32	4192016.29	0.01211	61.16	355	1.5	PERIOD	ALL	78888
564213.93	4191978.73	0.01041	59.43	355	1.5	PERIOD	ALL	78888
564285.97	4192030.14	0.01233	61.79	355	1.5	PERIOD	ALL	78888
564308.30	4192034.12	0.01310	61.92	355	1.5	PERIOD	ALL	78888
564244.17	4192039.56	0.00840	61.46	355	1.5	PERIOD	ALL	78888
564213.53	4192019.83	0.00813	60.63	355	1.5	PERIOD	ALL	78888
564194.46	4191992.13	0.00735	59.52	355	1.5	PERIOD	ALL	78888
564281.82	4192053.41	0.00827	62.57	355	1.5	PERIOD	ALL	78888
564240.02	4192062.83	0.00601	62.1	355	1.5	PERIOD	ALL	78888
564209.38	4192043.10	0.00638	61.22	355	1.5	PERIOD	ALL	78888
564174.99	4192005.54	0.00544	59.97	355	1.5	PERIOD	ALL	78888
564167.49	4191969.87	0.00533	58.63	355	1.5	PERIOD	ALL	78888
564277.67	4192076.68	0.00597	63.16	355	1.5	PERIOD	ALL	78888
564300.75	4192085.17	0.00604	63.63	355	1.5	PERIOD	ALL	78888
564232.81	4192084.13	0.00455	62.58	355	1.5	PERIOD	ALL	78888
564177.65	4192048.61	0.00469	60.55	355	1.5	PERIOD	ALL	78888
564150.27	4191993.97	0.00421	58.81	355	1.5	PERIOD	ALL	78888
564278.79	4192089.42	0.00515	63.39	355	1.5	PERIOD	ALL	78888
564229.17	4192107.73	0.00353	62.91	355	1.5	PERIOD	ALL	78888
564193.42	4192084.71	0.00397	61.87	355	1.5	PERIOD	ALL	78888
564157.68	4192061.69	0.00371	60.4	355	1.5	PERIOD	ALL	78888
564135.43	4192029.37	0.00339	59.5	355	1.5	PERIOD	ALL	78888
564126.68	4191987.76	0.00331	58.17	355	1.5	PERIOD	ALL	78888
564269.38	4192123.22	0.00356	64.09	355	1.5	PERIOD	ALL	78888
564225.39	4192131.23	0.00283	63.16	355	1.5	PERIOD	ALL	78888
564190.37	4192108.68	0.00319	62.23	355	1.5	PERIOD	ALL	78888
564155.35	4192086.13	0.00320	61.06	355	1.5	PERIOD	ALL	78888
564116.05	4192043.20	0.00279	59.29	355	1.5	PERIOD	ALL	78888
564107.48	4192002.44	0.00273	57.97	355	1.5	PERIOD	ALL	78888
564098.91	4191961.68	0.00267	57.26	355	1.5	PERIOD	ALL	78888
564265.23	4192146.49	0.00290	64.69	355	1.5	PERIOD	ALL	78888
564287.56	4192150.47	0.00321	64.96	355	1.5	PERIOD	ALL	78888
564221.52	4192154.68	0.00228	63.94	355	1.5	PERIOD	ALL	78888
564187.04	4192132.48	0.00259	62.66	355	1.5	PERIOD	ALL	78888
564152.57	4192110.28	0.00272	61.63	355	1.5	PERIOD	ALL	78888
564118.10	4192088.08	0.00248	60.72	355	1.5	PERIOD	ALL	78888
564096.65	4192056.92	0.00233	59.3	355	1.5	PERIOD	ALL	78888
564088.21	4192016.80	0.00229	58.35	355	1.5	PERIOD	ALL	78888
564079.77	4191976.67	0.00224	57.01	355	1.5	PERIOD	ALL	78888
564261.08	4192169.76	0.00241	65.37	355	1.5	PERIOD	ALL	78888
564217.58	4192178.08	0.00191	64.34	355	1.5	PERIOD	ALL	78888
564183.54	4192156.16	0.00213	63.33	355	1.5	PERIOD	ALL	78888
564149.49	4192134.24	0.00230	62.26	355	1.5	PERIOD	ALL	78888
564115.44	4192112.31	0.00221	61.53	355	1.5	PERIOD	ALL	78888
564077.23	4192070.57	0.00198	59.14	355	1.5	PERIOD	ALL	78888
564068.90	4192030.95	0.00195	58.33	355	1.5	PERIOD	ALL	78888
564060.57	4191991.32	0.00191	57.12	355	1.5	PERIOD	ALL	78888
564046.48	4191947.21	0.00187	55.8	355	1.5	PERIOD	ALL	78888
564256.94	4192193.03	0.00206	66	355	1.5	PERIOD	ALL	78888

564279.27	4192197.01	0.00234	66	355	1.5	PERIOD	ALL	78888
564211.73	4192200.26	0.00161	66	355	1.5	PERIOD	ALL	78888
564155.56	4192164.08	0.00192	63.1	355	1.5	PERIOD	ALL	78888
564118.10	4192139.97	0.00197	62.07	355	1.5	PERIOD	ALL	78888
564080.65	4192115.85	0.00181	60.59	355	1.5	PERIOD	ALL	78888
564057.35	4192082.00	0.00169	59.52	355	1.5	PERIOD	ALL	78888
564043.60	4192016.61	0.00165	57.01	355	1.5	PERIOD	ALL	78888
564048.18	4191967.26	0.00182	56.52	355	1.5	PERIOD	ALL	78888
564252.79	4192216.30	0.00180	66	355	1.5	PERIOD	ALL	78888
564202.64	4192252.93	0.00119	67.18	355	1.5	PERIOD	ALL	78888
564165.71	4192229.15	0.00127	64.48	355	1.5	PERIOD	ALL	78888
564128.78	4192205.37	0.00142	63	355	1.5	PERIOD	ALL	78888
564091.85	4192181.59	0.00146	62.24	355	1.5	PERIOD	ALL	78888
564054.93	4192157.82	0.00139	61.09	355	1.5	PERIOD	ALL	78888
564013.48	4192112.55	0.00126	58.36	355	1.5	PERIOD	ALL	78888
564004.44	4192069.56	0.00124	57.43	355	1.5	PERIOD	ALL	78888
563995.41	4192026.58	0.00122	56.04	355	1.5	PERIOD	ALL	78888
563986.37	4191983.60	0.00123	55	355	1.5	PERIOD	ALL	78888
563977.33	4191940.62	0.00129	54.27	355	1.5	PERIOD	ALL	78888
564243.43	4192268.80	0.00135	67.92	355	1.5	PERIOD	ALL	78888
564265.76	4192272.78	0.00157	67.82	355	1.5	PERIOD	ALL	78888
564193.46	4192305.55	0.00093	67.65	355	1.5	PERIOD	ALL	78888
564156.89	4192282.01	0.00095	65.63	355	1.5	PERIOD	ALL	78888
564120.33	4192258.46	0.00104	63.63	355	1.5	PERIOD	ALL	78888
564083.76	4192234.92	0.00112	62.62	355	1.5	PERIOD	ALL	78888
564047.20	4192211.37	0.00112	61.79	355	1.5	PERIOD	ALL	78888
564010.64	4192187.83	0.00106	60.57	355	1.5	PERIOD	ALL	78888
563969.60	4192143.00	0.00098	57.76	355	1.5	PERIOD	ALL	78888
563960.65	4192100.44	0.00097	56.91	355	1.5	PERIOD	ALL	78888
563951.70	4192057.88	0.00094	55.44	355	1.5	PERIOD	ALL	78888
563942.75	4192015.32	0.00094	54.52	355	1.5	PERIOD	ALL	78888
563933.80	4191972.76	0.00097	53.88	355	1.5	PERIOD	ALL	78888
563924.86	4191930.20	0.00103	52.85	355	1.5	PERIOD	ALL	78888
564234.07	4192321.31	0.00108	68.51	355	1.5	PERIOD	ALL	78888
564256.40	4192325.29	0.00127	68.91	355	1.5	PERIOD	ALL	78888
564184.23	4192358.15	0.00076	67.35	355	1.5	PERIOD	ALL	78888
564147.93	4192334.77	0.00074	66.14	355	1.5	PERIOD	ALL	78888
564111.64	4192311.40	0.00080	64.16	355	1.5	PERIOD	ALL	78888
564075.34	4192288.02	0.00086	63.28	355	1.5	PERIOD	ALL	78888
564039.04	4192264.65	0.00090	62.31	355	1.5	PERIOD	ALL	78888
564002.74	4192241.27	0.00089	61.13	355	1.5	PERIOD	ALL	78888
563966.44	4192217.90	0.00085	59.1	355	1.5	PERIOD	ALL	78888
563925.70	4192173.40	0.00078	57.31	355	1.5	PERIOD	ALL	78888
563916.82	4192131.15	0.00077	56.07	355	1.5	PERIOD	ALL	78888
563907.93	4192088.90	0.00076	55.11	355	1.5	PERIOD	ALL	78888
563899.05	4192046.65	0.00075	54.2	355	1.5	PERIOD	ALL	78888
563890.17	4192004.40	0.00076	53.49	355	1.5	PERIOD	ALL	78888
563881.29	4191962.15	0.00079	52.26	355	1.5	PERIOD	ALL	78888
563872.40	4191919.90	0.00084	51.97	355	1.5	PERIOD	ALL	78888
564224.71	4192373.81	0.00090	68.7	355	1.5	PERIOD	ALL	78888
564247.04	4192377.79	0.00107	69.17	355	1.5	PERIOD	ALL	78888
564174.98	4192410.72	0.00063	67.05	355	1.5	PERIOD	ALL	78888
564138.88	4192387.47	0.00060	65.84	355	1.5	PERIOD	ALL	78888
564102.79	4192364.23	0.00063	64.64	355	1.5	PERIOD	ALL	78888
564066.69	4192340.99	0.00068	63.44	355	1.5	PERIOD	ALL	78888
564030.60	4192317.74	0.00072	62.23	355	1.5	PERIOD	ALL	78888
563994.50	4192294.50	0.00073	61.03	355	1.5	PERIOD	ALL	78888
563958.40	4192271.26	0.00072	59.66	355	1.5	PERIOD	ALL	78888
563922.31	4192248.01	0.00069	57.66	355	1.5	PERIOD	ALL	78888
563881.80	4192203.76	0.00064	56.27	355	1.5	PERIOD	ALL	78888
563872.96	4192161.75	0.00063	55.16	355	1.5	PERIOD	ALL	78888

563864.13	4192119.74	0.00062	54.47	355	1.5	PERIOD	ALL	78888
563855.30	4192077.72	0.00061	53.4	355	1.5	PERIOD	ALL	78888
563846.46	4192035.71	0.00061	52.1	355	1.5	PERIOD	ALL	78888
563837.63	4191993.70	0.00063	51.81	355	1.5	PERIOD	ALL	78888
563828.80	4191951.68	0.00065	50.69	355	1.5	PERIOD	ALL	78888
563819.96	4191909.67	0.00069	50.17	355	1.5	PERIOD	ALL	78888
564215.35	4192426.32	0.00075	68.39	355	1.5	PERIOD	ALL	78888
564237.68	4192430.30	0.00090	69.15	355	1.5	PERIOD	ALL	78888
564164.70	4192462.63	0.00052	66.76	355	1.5	PERIOD	ALL	78888
564145.73	4192450.42	0.00050	66.07	355	1.5	PERIOD	ALL	78888
564126.77	4192438.21	0.00050	65.44	355	1.5	PERIOD	ALL	78888
564107.80	4192425.99	0.00050	65	355	1.5	PERIOD	ALL	78888
564088.84	4192413.78	0.00051	64.65	355	1.5	PERIOD	ALL	78888
564069.87	4192401.57	0.00053	64.09	355	1.5	PERIOD	ALL	78888
564050.91	4192389.36	0.00055	63.7	355	1.5	PERIOD	ALL	78888
564012.98	4192364.93	0.00059	62.61	355	1.5	PERIOD	ALL	78888
563994.01	4192352.72	0.00060	62.01	355	1.5	PERIOD	ALL	78888
563975.04	4192340.50	0.00061	61.38	355	1.5	PERIOD	ALL	78888
563956.08	4192328.29	0.00061	60.68	355	1.5	PERIOD	ALL	78888
563937.11	4192316.08	0.00061	59.52	355	1.5	PERIOD	ALL	78888
563918.15	4192303.86	0.00060	58.44	355	1.5	PERIOD	ALL	78888
563880.22	4192279.44	0.00057	56.32	355	1.5	PERIOD	ALL	78888
563861.25	4192267.23	0.00055	55.59	355	1.5	PERIOD	ALL	78888
563837.64	4192232.94	0.00053	54.71	355	1.5	PERIOD	ALL	78888
563833.00	4192210.86	0.00053	54.29	355	1.5	PERIOD	ALL	78888
563823.72	4192166.71	0.00052	53.46	355	1.5	PERIOD	ALL	78888
563814.44	4192122.56	0.00051	52.06	355	1.5	PERIOD	ALL	78888
563805.15	4192078.41	0.00051	51.56	355	1.5	PERIOD	ALL	78888
563800.51	4192056.34	0.00051	50.95	355	1.5	PERIOD	ALL	78888
563791.23	4192012.19	0.00052	50.26	355	1.5	PERIOD	ALL	78888
563786.59	4191990.11	0.00053	50.11	355	1.5	PERIOD	ALL	78888
563777.31	4191945.96	0.00054	49.8	355	1.5	PERIOD	ALL	78888
563768.02	4191901.81	0.00056	49.25	355	1.5	PERIOD	ALL	78888
564206.00	4192478.83	0.00061	68.14	355	1.5	PERIOD	ALL	78888
564228.33	4192482.81	0.00071	69.55	355	1.5	PERIOD	ALL	78888
564155.51	4192515.25	0.00042	67.38	355	1.5	PERIOD	ALL	78888
564117.91	4192491.04	0.00041	66.14	355	1.5	PERIOD	ALL	78888
564080.32	4192466.83	0.00042	64.89	355	1.5	PERIOD	ALL	78888
564042.72	4192442.62	0.00045	63.64	355	1.5	PERIOD	ALL	78888
564005.13	4192418.41	0.00049	62.38	355	1.5	PERIOD	ALL	78888
563967.53	4192394.20	0.00051	61.13	355	1.5	PERIOD	ALL	78888
563929.94	4192369.99	0.00052	59.88	355	1.5	PERIOD	ALL	78888
563892.34	4192345.78	0.00051	57.82	355	1.5	PERIOD	ALL	78888
563854.75	4192321.57	0.00050	56.06	355	1.5	PERIOD	ALL	78888
563817.15	4192297.36	0.00047	54.12	355	1.5	PERIOD	ALL	78888
563793.76	4192263.38	0.00045	53.05	355	1.5	PERIOD	ALL	78888
563784.56	4192219.62	0.00045	52.04	355	1.5	PERIOD	ALL	78888
563775.36	4192175.86	0.00044	51.21	355	1.5	PERIOD	ALL	78888
563766.16	4192132.10	0.00043	50.42	355	1.5	PERIOD	ALL	78888
563756.96	4192088.34	0.00043	49.85	355	1.5	PERIOD	ALL	78888
563747.75	4192044.58	0.00043	49	355	1.5	PERIOD	ALL	78888
563738.55	4192000.83	0.00044	48.91	355	1.5	PERIOD	ALL	78888
563729.35	4191957.07	0.00045	48.2	355	1.5	PERIOD	ALL	78888
563720.15	4191913.31	0.00045	47.89	355	1.5	PERIOD	ALL	78888
564196.64	4192531.33	0.00047	69.27	355	1.5	PERIOD	ALL	78888
564218.97	4192535.31	0.00052	70.14	355	1.5	PERIOD	ALL	78888
564267.85	4191898.74	0.03426	58.41	355	1.5	PERIOD	ALL	78888
564251.36	4191903.25	0.02435	58.16	355	1.5	PERIOD	ALL	78888
564244.10	4191885.78	0.01818	57.35	355	1.5	PERIOD	ALL	78888
564255.28	4191886.57	0.02269	57.73	355	1.5	PERIOD	ALL	78888
564228.79	4191884.02	0.01380	56.99	355	1.5	PERIOD	ALL	78888

564183.25	4191884.02	0.00726	56.3	355	1.5	PERIOD	ALL	78888
564209.95	4191931.32	0.01057	58.5	355	1.5	PERIOD	ALL	78888
564369.91	4191927.60	0.10520	60.21	355	1.5	PERIOD	ALL	78888
564371.08	4191918.09	0.10470	60.03	355	1.5	PERIOD	ALL	78888
564371.91	4191907.25	0.09796	59.88	355	1.5	PERIOD	ALL	78888
564398.10	4191909.58	0.06259	60.38	355	1.5	PERIOD	ALL	78888
564386.76	4191909.08	0.07650	60.08	355	1.5	PERIOD	ALL	78888
564386.76	4191918.59	0.07924	60.18	355	1.5	PERIOD	ALL	78888
564394.77	4191927.93	0.06764	60.62	355	1.5	PERIOD	ALL	78888
564378.75	4191927.60	0.09011	60.32	355	1.5	PERIOD	ALL	78888
564378.42	4191939.95	0.08352	60.65	355	1.5	PERIOD	ALL	78888
564391.43	4191941.28	0.06638	60.87	355	1.5	PERIOD	ALL	78888
564410.12	4191909.75	0.05094	60.69	355	1.5	PERIOD	ALL	78888
564412.12	4191920.09	0.05052	60.96	355	1.5	PERIOD	ALL	78888
564413.62	4191937.44	0.04792	61	355	1.5	PERIOD	ALL	78888
564425.46	4191929.60	0.04115	61	355	1.5	PERIOD	ALL	78888
564429.47	4191913.75	0.03824	60.96	355	1.5	PERIOD	ALL	78888
564447.49	4191916.42	0.02991	61.14	355	1.5	PERIOD	ALL	78888
564444.65	4191932.77	0.03141	61.04	355	1.5	PERIOD	ALL	78888
564438.81	4191922.76	0.03411	61	355	1.5	PERIOD	ALL	78888
564467.84	4191918.42	0.02300	61.81	355	1.5	PERIOD	ALL	78888
564468.01	4191930.44	0.02319	61.82	355	1.5	PERIOD	ALL	78888
564371.91	4191964.30	0.06417	61.21	355	1.5	PERIOD	ALL	78888
564386.43	4191957.30	0.05910	61.36	355	1.5	PERIOD	ALL	78888
564398.44	4191968.81	0.04140	61.75	355	1.5	PERIOD	ALL	78888
564413.62	4191977.98	0.02969	62.05	355	1.5	PERIOD	ALL	78888
564428.63	4191980.15	0.02467	62.13	355	1.5	PERIOD	ALL	78888
564424.13	4191968.31	0.03092	61.73	355	1.5	PERIOD	ALL	78888
564440.81	4191981.99	0.02139	62.19	355	1.5	PERIOD	ALL	78888
564452.16	4191973.15	0.02141	62.18	355	1.5	PERIOD	ALL	78888
564450.82	4191952.29	0.02664	61.44	355	1.5	PERIOD	ALL	78888
564464.50	4191957.30	0.02179	62.07	355	1.5	PERIOD	ALL	78888
564452.99	4191964.30	0.02338	61.92	355	1.5	PERIOD	ALL	78888
564515.26	4191949.23	0.01327	63.88	355	1.5	PERIOD	ALL	78888
564520.05	4191926.22	0.01305	63.74	355	1.5	PERIOD	ALL	78888
564548.18	4191931.65	0.01002	65.24	355	1.5	PERIOD	ALL	78888
564546.90	4191956.58	0.00964	65.79	355	1.5	PERIOD	ALL	78888
564508.55	4191985.02	0.01117	64.58	355	1.5	PERIOD	ALL	78888
564537.95	4191989.18	0.00855	66.15	355	1.5	PERIOD	ALL	78888
564378.47	4192007.40	0.02232	61.87	355	1.5	PERIOD	ALL	78888
564404.04	4192014.11	0.01644	62.94	355	1.5	PERIOD	ALL	78888
564423.85	4192014.75	0.01434	63.28	355	1.5	PERIOD	ALL	78888
564454.56	4192063.95	0.00629	65.29	355	1.5	PERIOD	ALL	78888
564485.52	4192066.61	0.00532	66.41	355	1.5	PERIOD	ALL	78888
564514.27	4192073.68	0.00442	67.09	355	1.5	PERIOD	ALL	78888
564310.11	4191982.50	0.04200	60.65	355	1.5	PERIOD	ALL	78888
564201.18	4192015.37	0.00725	60.28	355	1.5	PERIOD	ALL	78888
564187.86	4192030.31	0.00574	60.38	355	1.5	PERIOD	ALL	78888
564173.47	4192022.44	0.00509	60	355	1.5	PERIOD	ALL	78888
564303.87	4192049.06	0.00998	62.42	355	1.5	PERIOD	ALL	78888
564307.13	4192020.81	0.01680	61.48	355	1.5	PERIOD	ALL	78888
564306.31	4192007.77	0.02217	61.05	355	1.5	PERIOD	ALL	78888
564301.69	4191997.44	0.02729	60.78	355	1.5	PERIOD	ALL	78888
564269.64	4191995.27	0.02155	60.63	355	1.5	PERIOD	ALL	78888
564188.14	4191971.91	0.00705	58.92	355	1.5	PERIOD	ALL	78888
564224.27	4191970.00	0.01292	59.55	355	1.5	PERIOD	ALL	78888
564216.12	4192001.25	0.00960	60.25	355	1.5	PERIOD	ALL	78888
564153.20	4191965.48	0.00451	58.21	355	1.5	PERIOD	ALL	78888
564122.84	4191954.61	0.00333	57.5	355	1.5	PERIOD	ALL	78888
564117.09	4191980.18	0.00305	58.02	355	1.5	PERIOD	ALL	78888
564083.85	4191945.67	0.00244	56.98	355	1.5	PERIOD	ALL	78888

564013.21	4191939.27	0.00156	54.92	355	1.5	PERIOD	ALL	78888
563997.87	4191938.95	0.00144	54.79	355	1.5	PERIOD	ALL	78888
564007.46	4191974.75	0.00140	55.44	355	1.5	PERIOD	ALL	78888
564042.30	4191992.33	0.00168	56.63	355	1.5	PERIOD	ALL	78888
563988.58	4191902.55	0.00154	53.84	355	1.5	PERIOD	ALL	78888
564014.53	4191894.28	0.00183	54.18	355	1.5	PERIOD	ALL	78888
563957.75	4191938.27	0.00117	53.59	355	1.5	PERIOD	ALL	78888
563944.97	4191935.64	0.00111	53.25	355	1.5	PERIOD	ALL	78888
563876.15	4191870.59	0.00106	50.56	355	1.5	PERIOD	ALL	78888
563897.96	4191930.75	0.00091	52.39	355	1.5	PERIOD	ALL	78888
564329.17	4191858.88	0.02177	58.26	355	1.5	PERIOD	ALL	78888
564324.28	4191848.82	0.01377	57.78	355	1.5	PERIOD	ALL	78888
564317.76	4191834.70	0.00883	57.28	355	1.5	PERIOD	ALL	78888
564332.70	4191834.70	0.01010	57.59	355	1.5	PERIOD	ALL	78888
564295.75	4191849.10	0.01200	57.76	355	1.5	PERIOD	ALL	78888
564293.85	4191824.91	0.00680	56.95	355	1.5	PERIOD	ALL	78888
564258.53	4191840.94	0.01022	56.48	355	1.5	PERIOD	ALL	78888
564271.30	4191814.59	0.00576	56.16	355	1.5	PERIOD	ALL	78888
564292.12	4191781.68	0.00336	55.98	355	1.5	PERIOD	ALL	78888
564318.97	4191786.48	0.00383	56.57	355	1.5	PERIOD	ALL	78888
564379.50	4191863.64	0.03799	59.21	355	1.5	PERIOD	ALL	78888
564380.04	4191829.13	0.01441	58.9	355	1.5	PERIOD	ALL	78888
564441.99	4191869.89	0.02351	60.95	355	1.5	PERIOD	ALL	78888
564429.49	4191826.96	0.01487	60.01	355	1.5	PERIOD	ALL	78888
564444.16	4191829.68	0.01461	60.13	355	1.5	PERIOD	ALL	78888
564444.16	4191802.78	0.00964	60.02	355	1.5	PERIOD	ALL	78888
564459.92	4191819.35	0.01178	60.55	355	1.5	PERIOD	ALL	78888
564258.43	4191982.64	0.02262	60.21	355	1.5	PERIOD	ALL	78888
564270.54	4192043.38	0.00898	62.23	355	1.5	PERIOD	ALL	78888
564260.81	4192040.73	0.00889	62.06	355	1.5	PERIOD	ALL	78888
564506.93	4192025.65	0.00741	65.76	355	1.5	PERIOD	ALL	78888
564521.97	4192028.30	0.00661	66.35	355	1.5	PERIOD	ALL	78888
564170.33	4192068.11	0.00393	60.95	355	1.5	PERIOD	ALL	78888
564186.13	4192072.25	0.00424	61.54	355	1.5	PERIOD	ALL	78888
564209.07	4192077.14	0.00455	62.07	355	1.5	PERIOD	ALL	78888
564220.35	4192078.64	0.00467	62.23	355	1.5	PERIOD	ALL	78888
564136.48	4192067.74	0.00307	60.04	355	1.5	PERIOD	ALL	78888
564243.67	4192085.79	0.00462	62.77	355	1.5	PERIOD	ALL	78888
564254.95	4192089.93	0.00461	62.94	355	1.5	PERIOD	ALL	78888
564266.99	4192092.56	0.00476	63.1	355	1.5	PERIOD	ALL	78888

** CONCUNIT ug/m^3
** DEPUNIT g/m^2

HARP Project Summary Report 10/15/2024 1:44:49 PM

PROJECT INFORMATION
HARP Version: 22118
Project Name: DPM T4
Project Output Directory: F:\Jobs\61000001\HARP\DPM T4
HARP Database: NA

EMISSION INVENTORY
No. of Pollutants:8
No. of Background Pollutants:0

Emissions

ScrID	StkID	ProID	PolID	PolAbbrev	Multi	Annual Ems (lbs/yr)	MaxHr Ems (lbs/hr)	MWAF
AREA	0	0	9901	DieselExhPM	1	8.84529564741539	0.00100973694605198	1
OFF1	0	0	9901	DieselExhPM	1	0.0383559732258924	4.37853575638041E-06	1
OFF2	0	0	9901	DieselExhPM	1	0.0383890901083185	4.38231622241078E-06	1
OFF3	0	0	9901	DieselExhPM	1	0.0313120983694886	3.57444045313797E-06	1
OFF4	0	0	9901	DieselExhPM	1	0.033273060131369	3.79829453554441E-06	1
OFF5	0	0	9901	DieselExhPM	1	0.0327107142355745	3.73409979858156E-06	1
OFF6	0	0	9901	DieselExhPM	1	0.0361038149647471	4.12144006446884E-06	1
ON	0	0	9901	DieselExhPM	1	0.0477854943025997	5.4549651030365E-06	1

Background

PolID	PolAbbrev	Conc (ug/m^3)	MWAF

Ground level concentration files (\glc\)

9901MAXHR.txt
9901PER.txt

POLLUTANT HEALTH INFORMATION
Health Database: C:\HARP2\Tables\HEALTH17320.mdb
Health Table Version: HEALTH23279
Official: True

PolID	PolAbbrev	InhCancer	OralCancer	AcuteREL	InhChronicREL	OralChronicREL	InhChronic8HRREL
9901	DieselExhPM	1.1			5		

Control Pathway

AERMOD

Dispersion Options

Titles

F:\AERMOD\61000001 Shattuck\61000001 Shattuck.isc

Dispersion Options

☑ Regulatory Default ☐ Non-Default Options

Dispersion Coefficient

Urban

Population:
Name (Optional):
Roughness Length:

Output Type

☑ Concentration
☐ Total Deposition (Dry & Wet)
☐ Dry Deposition
☐ Wet Deposition

Plume Depletion

☐ Dry Removal
☐ Wet Removal

Output Warnings

☐ No Output Warnings
☐ Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

OTHER - DPM

Averaging Time Options

Hours ☑ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 6 ☐ 8 ☐ 12 ☐ 24

☐ Month ☑ Period ☐ Annual

Exponential Decay

Half-life of 4 hours will be used

Terrain Height Options

☐ Flat ☑ Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

☑ Yes ☐ No

Default Height = 1.50 m

Control Pathway

AERMOD

Optional Files

Re-Start File	Init File	Multi-Year Analyses	Event Input File	Error Listing File
☐	☐	☐	☐	■

Detailed Error Listing File

Filename: 61000001 Shattuck.err

Source Pathway - Source Inputs

AERMOD

Polygon Area Sources

Source Type: AREA POLY

Source: PAREA1 (Construction Area)

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
59.87	5.00	0.00039		6	564287.09	4191958.20
		0.00039			564321.38	4191964.01
		0.00039			564327.90	4191895.57
		0.00039			564288.65	4191888.48
		0.00039			564282.98	4191919.94
		0.00039			564293.04	4191921.50

Source Pathway - Source Inputs

AERMOD

Line Volume Sources

Source Type: LINE VOLUME

Source: SLINE1 (Route 1 – From Project Site Towards North)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9.00	1.00000		564321.73	4191959.32	60.00	3.11
			564337.33	4191962.44	60.88	3.11
			564338.89	4191966.60	60.92	3.11
			564338.89	4191976.49	60.97	3.11
			564337.33	4191990.01	61.05	3.11
			564338.37	4191999.90	61.04	3.11
			564336.81	4192021.23	62.11	3.11
			564331.61	4192079.49	63.27	3.11
			564323.81	4192151.27	65.98	3.11
			564307.68	4192321.90	69.46	3.11
			564287.42	4192522.69	71.87	3.11

Source Type: LINE VOLUME

Source: SLINE2 (Route 2 – From North To Project Site)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9.00	1.00000		564277.66	4192515.19	71.39	3.11
			564285.18	4192440.01	71.13	3.11
			564296.46	4192320.11	68.84	3.11
			564313.37	4192158.87	65.65	3.11
			564325.02	4192031.07	62.00	3.11
			564329.91	4191991.23	61.00	3.11
			564332.17	4191985.59	60.99	3.11
			564335.55	4191981.83	60.98	3.11
			564339.68	4191969.43	60.94	3.11
			564339.31	4191958.53	60.08	3.11
			564332.92	4191956.65	60.05	3.11
			564321.64	4191957.03	60.00	3.11

Source Pathway - Source Inputs

AERMOD

Source Type: LINE VOLUME
Source: SLINE3 (Route 3 – From Project Site Towards South)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9.00	1.00000		564327.66	4191904.41	59.80	0.00
			564338.18	4191905.53	59.86	0.00
			564340.43	4191905.53	59.84	0.00
			564342.31	4191904.03	59.81	0.00
			564351.71	4191805.55	57.88	0.00
			564359.60	4191719.48	56.80	0.00
			564368.25	4191692.79	57.05	0.00
			564376.52	4191678.51	56.86	0.00
			564377.24	4191673.43	56.90	0.00
			564380.23	4191663.38	56.94	0.00
			564382.13	4191651.97	56.96	0.00
			564380.23	4191622.65	56.86	0.00
			564379.91	4191559.05	56.86	0.00
			564379.86	4191549.59	56.85	0.00
			564396.51	4191380.27	55.04	0.00

Source Pathway - Source Inputs

AERMOD

Source Type: LINE VOLUME
Source: SLINE4 (Route 4 – From South To Project Site)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9.00	1.00000		564408.94	4191383.86	55.07	0.00
			564398.37	4191481.90	56.59	0.00
			564391.40	4191578.10	57.02	0.00
			564391.57	4191601.10	57.04	0.00
			564392.18	4191621.56	57.03	0.00
			564392.99	4191642.47	57.09	0.00
			564394.08	4191652.79	57.22	0.00
			564395.71	4191658.49	57.35	0.00
			564398.97	4191668.00	57.51	0.00
			564399.78	4191681.58	57.55	0.00
			564402.23	4191700.31	57.68	0.00
			564405.48	4191754.90	58.83	0.00
			564406.84	4191774.18	58.84	0.00
			564404.94	4191797.81	59.05	0.00
			564394.35	4191896.11	60.05	0.00
			564384.03	4191893.94	59.85	0.00
			564351.71	4191888.51	59.03	0.00
			564343.57	4191887.69	59.05	0.00
			564341.67	4191899.64	59.09	0.00
			564340.58	4191905.34	59.84	0.00
			564327.27	4191904.53	59.80	0.00

Source Pathway - Source Inputs

AERMOD

Source Type: LINE VOLUME
Source: SLINE5 (Route 5 – From Project Site Towards West)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9.00	1.00000		564327.33	4191907.36	59.90	3.11
			564339.82	4191908.45	59.89	3.11
			564341.45	4191907.09	59.86	3.11
			564343.35	4191899.76	59.09	3.11
			564344.17	4191888.35	59.05	3.11
			564333.03	4191885.09	59.02	3.11
			564196.69	4191861.46	56.06	3.11
			564148.89	4191854.67	55.01	3.11
			564056.25	4191838.22	53.80	3.11
			564047.98	4191835.59	53.71	3.11
			564039.71	4191831.83	53.42	3.11
			564029.56	4191829.20	52.99	3.11
			563957.76	4191818.67	51.76	3.11
			563943.85	4191816.41	51.17	3.11
			563935.21	4191816.04	50.90	3.11
			563925.43	4191817.54	50.70	3.11
			563799.13	4191796.87	48.04	3.11

Source Pathway - Source Inputs

AERMOD

Source Type: LINE VOLUME
Source: SLINE6 (Route 6 – From West To Project Site)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9.00	1.00000		563804.39	4191784.46	48.06	3.11
			563872.05	4191796.11	49.02	3.11
			563921.67	4191804.01	50.07	3.11
			563925.43	4191805.14	50.08	3.11
			563928.44	4191805.89	50.09	3.11
			563931.07	4191809.65	50.12	3.11
			563934.83	4191814.91	50.87	3.11
			564039.34	4191829.57	53.39	3.11
			564046.48	4191829.20	53.74	3.11
			564055.88	4191827.32	53.97	3.11
			564082.57	4191833.33	53.95	3.11
			564335.55	4191875.81	59.04	3.11
			564343.05	4191876.30	59.06	3.11
			564344.14	4191877.11	59.05	3.11
			564343.32	4191890.96	59.06	3.11
			564343.05	4191903.46	59.80	3.11
			564342.78	4191904.00	59.81	3.11
			564342.24	4191907.80	59.87	3.11
			564327.57	4191905.90	59.86	3.11

Source Type: LINE VOLUME
Source: SLINE7 (On-site Construction Trucks)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9.00	1.00000		564320.73	4191953.43	60.00	3.11
			564298.18	4191950.21	59.93	3.11
			564304.33	4191903.07	59.23	3.11
			564326.00	4191906.29	59.87	3.11

Source Pathway - Source Inputs

AERMOD

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000001	564326.14	4191960.20	60.46	3.11	0.01563	9.00		4.19	2.89
	L0000002	564334.96	4191961.97	60.52	3.11	0.01563	9.00		4.19	2.89
	L0000003	564338.89	4191968.75	60.74	3.11	0.01563	9.00		4.19	2.89
	L0000004	564338.75	4191977.74	61.00	3.11	0.01563	9.00		4.19	2.89
	L0000005	564337.72	4191986.68	61.00	3.11	0.01563	9.00		4.19	2.89
	L0000006	564337.92	4191995.62	61.00	3.11	0.01563	9.00		4.19	2.89
	L0000007	564338.03	4192004.59	61.00	3.11	0.01563	9.00		4.19	2.89
	L0000008	564337.37	4192013.56	61.35	3.11	0.01563	9.00		4.19	2.89
	L0000009	564336.69	4192022.54	61.78	3.11	0.01563	9.00		4.19	2.89
	L0000010	564335.89	4192031.50	62.18	3.11	0.01563	9.00		4.19	2.89
	L0000011	564335.09	4192040.47	62.52	3.11	0.01563	9.00		4.19	2.89
	L0000012	564334.29	4192049.43	62.80	3.11	0.01563	9.00		4.19	2.89
	L0000013	564333.49	4192058.40	63.07	3.11	0.01563	9.00		4.19	2.89
	L0000014	564332.69	4192067.36	63.34	3.11	0.01563	9.00		4.19	2.89
	L0000015	564331.89	4192076.32	63.61	3.11	0.01563	9.00		4.19	2.89
	L0000016	564330.98	4192085.28	63.88	3.11	0.01563	9.00		4.19	2.89
	L0000017	564330.01	4192094.23	64.15	3.11	0.01563	9.00		4.19	2.89
	L0000018	564329.03	4192103.17	64.41	3.11	0.01563	9.00		4.19	2.89
	L0000019	564328.06	4192112.12	64.68	3.11	0.01563	9.00		4.19	2.89
	L0000020	564327.09	4192121.07	64.94	3.11	0.01563	9.00		4.19	2.89
	L0000021	564326.12	4192130.01	65.21	3.11	0.01563	9.00		4.19	2.89
	L0000022	564325.14	4192138.96	65.48	3.11	0.01563	9.00		4.19	2.89
	L0000023	564324.17	4192147.91	65.74	3.11	0.01563	9.00		4.19	2.89
	L0000024	564323.28	4192156.86	66.01	3.11	0.01563	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000025	564322.43	4192165.82	66.28	3.11	0.01563	9.00		4.19	2.89
	L0000026	564321.58	4192174.78	66.55	3.11	0.01563	9.00		4.19	2.89
	L0000027	564320.74	4192183.74	66.82	3.11	0.01563	9.00		4.19	2.89
	L0000028	564319.89	4192192.70	66.88	3.11	0.01563	9.00		4.19	2.89
	L0000029	564319.04	4192201.66	66.85	3.11	0.01563	9.00		4.19	2.89
	L0000030	564318.20	4192210.62	66.82	3.11	0.01563	9.00		4.19	2.89
	L0000031	564317.35	4192219.58	66.81	3.11	0.01563	9.00		4.19	2.89
	L0000032	564316.50	4192228.55	66.86	3.11	0.01563	9.00		4.19	2.89
	L0000033	564315.66	4192237.51	66.92	3.11	0.01563	9.00		4.19	2.89
	L0000034	564314.81	4192246.47	67.00	3.11	0.01563	9.00		4.19	2.89
	L0000035	564313.96	4192255.43	67.00	3.11	0.01563	9.00		4.19	2.89
	L0000036	564313.12	4192264.39	67.00	3.11	0.01563	9.00		4.19	2.89
	L0000037	564312.27	4192273.35	67.00	3.11	0.01563	9.00		4.19	2.89
	L0000038	564311.42	4192282.31	67.20	3.11	0.01563	9.00		4.19	2.89
	L0000039	564310.58	4192291.27	67.50	3.11	0.01563	9.00		4.19	2.89
	L0000040	564309.73	4192300.23	67.80	3.11	0.01563	9.00		4.19	2.89
	L0000041	564308.88	4192309.19	68.19	3.11	0.01563	9.00		4.19	2.89
	L0000042	564308.04	4192318.15	68.77	3.11	0.01563	9.00		4.19	2.89
	L0000043	564307.16	4192327.10	69.32	3.11	0.01563	9.00		4.19	2.89
	L0000044	564306.25	4192336.06	69.82	3.11	0.01563	9.00		4.19	2.89
	L0000045	564305.35	4192345.01	69.96	3.11	0.01563	9.00		4.19	2.89
	L0000046	564304.45	4192353.97	70.10	3.11	0.01563	9.00		4.19	2.89
	L0000047	564303.54	4192362.92	70.25	3.11	0.01563	9.00		4.19	2.89
	L0000048	564302.64	4192371.88	70.48	3.11	0.01563	9.00		4.19	2.89
	L0000049	564301.73	4192380.83	70.75	3.11	0.01563	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000050	564300.83	4192389.78	71.02	3.11	0.01563	9.00		4.19	2.89
	L0000051	564299.93	4192398.74	71.21	3.11	0.01563	9.00		4.19	2.89
	L0000052	564299.02	4192407.69	71.18	3.11	0.01563	9.00		4.19	2.89
	L0000053	564298.12	4192416.65	71.15	3.11	0.01563	9.00		4.19	2.89
	L0000054	564297.22	4192425.60	71.12	3.11	0.01563	9.00		4.19	2.89
	L0000055	564296.31	4192434.56	71.11	3.11	0.01563	9.00		4.19	2.89
	L0000056	564295.41	4192443.51	71.09	3.11	0.01563	9.00		4.19	2.89
	L0000057	564294.51	4192452.47	71.06	3.11	0.01563	9.00		4.19	2.89
	L0000058	564293.60	4192461.42	71.17	3.11	0.01563	9.00		4.19	2.89
	L0000059	564292.70	4192470.38	71.45	3.11	0.01563	9.00		4.19	2.89
	L0000060	564291.80	4192479.33	71.72	3.11	0.01563	9.00		4.19	2.89
	L0000061	564290.89	4192488.28	71.91	3.11	0.01563	9.00		4.19	2.89
	L0000062	564289.99	4192497.24	71.88	3.11	0.01563	9.00		4.19	2.89
	L0000063	564289.09	4192506.19	71.85	3.11	0.01563	9.00		4.19	2.89
	L0000064	564288.18	4192515.15	71.82	3.11	0.01563	9.00		4.19	2.89

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000065	564278.11	4192510.71	71.48	3.11	0.01563	9.00		4.19	2.89
	L0000066	564279.01	4192501.75	71.51	3.11	0.01563	9.00		4.19	2.89
	L0000067	564279.90	4192492.80	71.54	3.11	0.01563	9.00		4.19	2.89
	L0000068	564280.80	4192483.84	71.52	3.11	0.01563	9.00		4.19	2.89
	L0000069	564281.69	4192474.89	71.37	3.11	0.01563	9.00		4.19	2.89
	L0000070	564282.59	4192465.93	71.20	3.11	0.01563	9.00		4.19	2.89
	L0000071	564283.49	4192456.98	71.01	3.11	0.01563	9.00		4.19	2.89
	L0000072	564284.38	4192448.02	70.91	3.11	0.01563	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000073	564285.27	4192439.07	70.84	3.11	0.01563	9.00		4.19	2.89
	L0000074	564286.11	4192430.11	70.78	3.11	0.01563	9.00		4.19	2.89
	L0000075	564286.96	4192421.15	70.78	3.11	0.01563	9.00		4.19	2.89
	L0000076	564287.80	4192412.19	70.81	3.11	0.01563	9.00		4.19	2.89
	L0000077	564288.64	4192403.22	70.83	3.11	0.01563	9.00		4.19	2.89
	L0000078	564289.48	4192394.26	70.79	3.11	0.01563	9.00		4.19	2.89
	L0000079	564290.33	4192385.30	70.52	3.11	0.01563	9.00		4.19	2.89
	L0000080	564291.17	4192376.34	70.25	3.11	0.01563	9.00		4.19	2.89
	L0000081	564292.01	4192367.38	69.98	3.11	0.01563	9.00		4.19	2.89
	L0000082	564292.86	4192358.42	69.72	3.11	0.01563	9.00		4.19	2.89
	L0000083	564293.70	4192349.46	69.44	3.11	0.01563	9.00		4.19	2.89
	L0000084	564294.54	4192340.50	69.20	3.11	0.01563	9.00		4.19	2.89
	L0000085	564295.38	4192331.54	68.94	3.11	0.01563	9.00		4.19	2.89
	L0000086	564296.23	4192322.58	68.63	3.11	0.01563	9.00		4.19	2.89
	L0000087	564297.14	4192313.63	68.30	3.11	0.01563	9.00		4.19	2.89
	L0000088	564298.08	4192304.68	67.94	3.11	0.01563	9.00		4.19	2.89
	L0000089	564299.02	4192295.73	67.65	3.11	0.01563	9.00		4.19	2.89
	L0000090	564299.96	4192286.77	67.35	3.11	0.01563	9.00		4.19	2.89
	L0000091	564300.89	4192277.82	67.05	3.11	0.01563	9.00		4.19	2.89
	L0000092	564301.83	4192268.87	67.00	3.11	0.01563	9.00		4.19	2.89
	L0000093	564302.77	4192259.92	67.00	3.11	0.01563	9.00		4.19	2.89
	L0000094	564303.71	4192250.97	67.00	3.11	0.01563	9.00		4.19	2.89
	L0000095	564304.65	4192242.02	66.91	3.11	0.01563	9.00		4.19	2.89
	L0000096	564305.59	4192233.07	66.73	3.11	0.01563	9.00		4.19	2.89
	L0000097	564306.53	4192224.12	66.58	3.11	0.01563	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000098	564307.47	4192215.17	66.46	3.11	0.01563	9.00		4.19	2.89
	L0000099	564308.41	4192206.22	66.49	3.11	0.01563	9.00		4.19	2.89
	L0000100	564309.34	4192197.27	66.52	3.11	0.01563	9.00		4.19	2.89
	L0000101	564310.28	4192188.31	66.56	3.11	0.01563	9.00		4.19	2.89
	L0000102	564311.22	4192179.36	66.36	3.11	0.01563	9.00		4.19	2.89
	L0000103	564312.16	4192170.41	66.09	3.11	0.01563	9.00		4.19	2.89
	L0000104	564313.10	4192161.46	65.82	3.11	0.01563	9.00		4.19	2.89
	L0000105	564313.95	4192152.50	65.60	3.11	0.01563	9.00		4.19	2.89
	L0000106	564314.77	4192143.54	65.41	3.11	0.01563	9.00		4.19	2.89
	L0000107	564315.59	4192134.58	65.20	3.11	0.01563	9.00		4.19	2.89
	L0000108	564316.40	4192125.61	64.97	3.11	0.01563	9.00		4.19	2.89
	L0000109	564317.22	4192116.65	64.68	3.11	0.01563	9.00		4.19	2.89
	L0000110	564318.04	4192107.69	64.38	3.11	0.01563	9.00		4.19	2.89
	L0000111	564318.86	4192098.73	64.08	3.11	0.01563	9.00		4.19	2.89
	L0000112	564319.67	4192089.76	63.78	3.11	0.01563	9.00		4.19	2.89
	L0000113	564320.49	4192080.80	63.48	3.11	0.01563	9.00		4.19	2.89
	L0000114	564321.31	4192071.84	63.18	3.11	0.01563	9.00		4.19	2.89
	L0000115	564322.12	4192062.87	62.88	3.11	0.01563	9.00		4.19	2.89
	L0000116	564322.94	4192053.91	62.58	3.11	0.01563	9.00		4.19	2.89
	L0000117	564323.76	4192044.95	62.30	3.11	0.01563	9.00		4.19	2.89
	L0000118	564324.58	4192035.99	62.02	3.11	0.01563	9.00		4.19	2.89
	L0000119	564325.52	4192027.04	61.74	3.11	0.01563	9.00		4.19	2.89
	L0000120	564326.61	4192018.10	61.43	3.11	0.01563	9.00		4.19	2.89
	L0000121	564327.71	4192009.17	61.11	3.11	0.01563	9.00		4.19	2.89
	L0000122	564328.81	4192000.24	61.00	3.11	0.01563	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000123	564329.90	4191991.30	61.00	3.11	0.01563	9.00		4.19	2.89
	L0000124	564334.07	4191983.47	61.00	3.11	0.01563	9.00		4.19	2.89
	L0000125	564337.70	4191975.39	60.97	3.11	0.01563	9.00		4.19	2.89
	L0000126	564339.59	4191966.71	60.68	3.11	0.01563	9.00		4.19	2.89
	L0000127	564338.52	4191958.30	60.40	3.11	0.01563	9.00		4.19	2.89
	L0000128	564329.76	4191956.76	60.35	3.11	0.01563	9.00		4.19	2.89

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE3	L0000129	564332.13	4191904.89	59.62	0.00	0.01639	9.00		4.19	2.89
	L0000130	564340.95	4191905.12	59.62	0.00	0.01639	9.00		4.19	2.89
	L0000131	564343.00	4191896.81	59.35	0.00	0.01639	9.00		4.19	2.89
	L0000132	564343.86	4191887.85	59.05	0.00	0.01639	9.00		4.19	2.89
	L0000133	564344.71	4191878.89	58.93	0.00	0.01639	9.00		4.19	2.89
	L0000134	564345.57	4191869.93	58.86	0.00	0.01639	9.00		4.19	2.89
	L0000135	564346.42	4191860.97	58.80	0.00	0.01639	9.00		4.19	2.89
	L0000136	564347.28	4191852.01	58.65	0.00	0.01639	9.00		4.19	2.89
	L0000137	564348.13	4191843.05	58.38	0.00	0.01639	9.00		4.19	2.89
	L0000138	564348.99	4191834.09	58.11	0.00	0.01639	9.00		4.19	2.89
	L0000139	564349.84	4191825.13	57.88	0.00	0.01639	9.00		4.19	2.89
	L0000140	564350.70	4191816.18	57.91	0.00	0.01639	9.00		4.19	2.89
	L0000141	564351.55	4191807.22	57.94	0.00	0.01639	9.00		4.19	2.89
	L0000142	564352.38	4191798.25	57.97	0.00	0.01639	9.00		4.19	2.89
	L0000143	564353.20	4191789.29	57.76	0.00	0.01639	9.00		4.19	2.89
	L0000144	564354.02	4191780.33	57.48	0.00	0.01639	9.00		4.19	2.89
	L0000145	564354.85	4191771.37	57.21	0.00	0.01639	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE3	L0000146	564355.67	4191762.40	57.07	0.00	0.01639	9.00		4.19	2.89
	L0000147	564356.49	4191753.44	57.10	0.00	0.01639	9.00		4.19	2.89
	L0000148	564357.31	4191744.48	57.13	0.00	0.01639	9.00		4.19	2.89
	L0000149	564358.13	4191735.52	57.15	0.00	0.01639	9.00		4.19	2.89
	L0000150	564358.95	4191726.56	57.12	0.00	0.01639	9.00		4.19	2.89
	L0000151	564360.19	4191717.68	57.08	0.00	0.01639	9.00		4.19	2.89
	L0000152	564362.96	4191709.12	57.03	0.00	0.01639	9.00		4.19	2.89
	L0000153	564365.73	4191700.55	56.89	0.00	0.01639	9.00		4.19	2.89
	L0000154	564368.67	4191692.06	56.77	0.00	0.01639	9.00		4.19	2.89
	L0000155	564373.18	4191684.27	56.75	0.00	0.01639	9.00		4.19	2.89
	L0000156	564376.85	4191676.19	56.78	0.00	0.01639	9.00		4.19	2.89
	L0000157	564379.01	4191667.48	56.85	0.00	0.01639	9.00		4.19	2.89
	L0000158	564381.01	4191658.72	56.92	0.00	0.01639	9.00		4.19	2.89
	L0000159	564381.99	4191649.82	56.95	0.00	0.01639	9.00		4.19	2.89
	L0000160	564381.41	4191640.84	56.93	0.00	0.01639	9.00		4.19	2.89
	L0000161	564380.83	4191631.86	56.91	0.00	0.01639	9.00		4.19	2.89
	L0000162	564380.24	4191622.88	56.89	0.00	0.01639	9.00		4.19	2.89
	L0000163	564380.18	4191613.88	56.89	0.00	0.01639	9.00		4.19	2.89
	L0000164	564380.14	4191604.88	56.89	0.00	0.01639	9.00		4.19	2.89
	L0000165	564380.09	4191595.88	56.89	0.00	0.01639	9.00		4.19	2.89

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000166	564408.46	4191388.33	55.33	0.00	0.01515	9.00		4.19	2.89
	L0000167	564407.49	4191397.28	55.56	0.00	0.01515	9.00		4.19	2.89
	L0000168	564406.53	4191406.23	55.77	0.00	0.01515	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000169	564405.56	4191415.18	55.81	0.00	0.01515	9.00		4.19	2.89
	L0000170	564404.60	4191424.12	55.88	0.00	0.01515	9.00		4.19	2.89
	L0000171	564403.63	4191433.07	55.96	0.00	0.01515	9.00		4.19	2.89
	L0000172	564402.67	4191442.02	56.12	0.00	0.01515	9.00		4.19	2.89
	L0000173	564401.70	4191450.97	56.30	0.00	0.01515	9.00		4.19	2.89
	L0000174	564400.74	4191459.92	56.45	0.00	0.01515	9.00		4.19	2.89
	L0000175	564399.78	4191468.87	56.55	0.00	0.01515	9.00		4.19	2.89
	L0000176	564398.81	4191477.81	56.51	0.00	0.01515	9.00		4.19	2.89
	L0000177	564398.02	4191486.78	56.49	0.00	0.01515	9.00		4.19	2.89
	L0000178	564397.37	4191495.75	56.46	0.00	0.01515	9.00		4.19	2.89
	L0000179	564396.72	4191504.73	56.44	0.00	0.01515	9.00		4.19	2.89
	L0000180	564396.07	4191513.71	56.42	0.00	0.01515	9.00		4.19	2.89
	L0000181	564395.42	4191522.68	56.40	0.00	0.01515	9.00		4.19	2.89
	L0000182	564394.76	4191531.66	56.49	0.00	0.01515	9.00		4.19	2.89
	L0000183	564394.11	4191540.64	56.66	0.00	0.01515	9.00		4.19	2.89
	L0000184	564393.46	4191549.61	56.85	0.00	0.01515	9.00		4.19	2.89
	L0000185	564392.81	4191558.59	57.00	0.00	0.01515	9.00		4.19	2.89
	L0000186	564392.16	4191567.57	57.00	0.00	0.01515	9.00		4.19	2.89
	L0000187	564391.51	4191576.54	57.00	0.00	0.01515	9.00		4.19	2.89
	L0000188	564391.45	4191585.54	57.00	0.00	0.01515	9.00		4.19	2.89
	L0000189	564391.52	4191594.54	57.00	0.00	0.01515	9.00		4.19	2.89
	L0000190	564391.64	4191603.54	57.00	0.00	0.01515	9.00		4.19	2.89
	L0000191	564391.91	4191612.53	57.00	0.00	0.01515	9.00		4.19	2.89
	L0000192	564392.18	4191621.53	57.05	0.00	0.01515	9.00		4.19	2.89
	L0000193	564392.53	4191630.52	57.14	0.00	0.01515	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000194	564392.88	4191639.51	57.24	0.00	0.01515	9.00		4.19	2.89
	L0000195	564393.62	4191648.48	57.34	0.00	0.01515	9.00		4.19	2.89
	L0000196	564395.36	4191657.28	57.40	0.00	0.01515	9.00		4.19	2.89
	L0000197	564398.22	4191665.81	57.49	0.00	0.01515	9.00		4.19	2.89
	L0000198	564399.37	4191674.67	57.53	0.00	0.01515	9.00		4.19	2.89
	L0000199	564400.05	4191683.64	57.55	0.00	0.01515	9.00		4.19	2.89
	L0000200	564401.21	4191692.57	57.59	0.00	0.01515	9.00		4.19	2.89
	L0000201	564402.30	4191701.50	57.63	0.00	0.01515	9.00		4.19	2.89
	L0000202	564402.83	4191710.48	57.78	0.00	0.01515	9.00		4.19	2.89
	L0000203	564403.37	4191719.47	58.10	0.00	0.01515	9.00		4.19	2.89
	L0000204	564403.91	4191728.45	58.42	0.00	0.01515	9.00		4.19	2.89
	L0000205	564404.44	4191737.43	58.70	0.00	0.01515	9.00		4.19	2.89
	L0000206	564404.98	4191746.42	58.72	0.00	0.01515	9.00		4.19	2.89
	L0000207	564405.52	4191755.40	58.74	0.00	0.01515	9.00		4.19	2.89
	L0000208	564406.15	4191764.38	58.76	0.00	0.01515	9.00		4.19	2.89

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE5	L0000209	564331.81	4191907.75	59.71	3.11	0.01538	9.00		4.19	2.89
	L0000210	564340.56	4191907.83	59.71	3.11	0.01538	9.00		4.19	2.89
	L0000211	564343.37	4191899.50	59.44	3.11	0.01538	9.00		4.19	2.89
	L0000212	564344.01	4191890.52	59.14	3.11	0.01538	9.00		4.19	2.89
	L0000213	564337.62	4191886.43	59.00	3.11	0.01538	9.00		4.19	2.89
	L0000214	564328.87	4191884.37	58.94	3.11	0.01538	9.00		4.19	2.89
	L0000215	564320.00	4191882.83	58.78	3.11	0.01538	9.00		4.19	2.89
	L0000216	564311.13	4191881.30	58.49	3.11	0.01538	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE5	L0000217	564302.27	4191879.76	58.23	3.11	0.01538	9.00		4.19	2.89
	L0000218	564293.40	4191878.22	58.00	3.11	0.01538	9.00		4.19	2.89
	L0000219	564284.53	4191876.69	57.90	3.11	0.01538	9.00		4.19	2.89
	L0000220	564275.66	4191875.15	57.78	3.11	0.01538	9.00		4.19	2.89
	L0000221	564266.79	4191873.61	57.62	3.11	0.01538	9.00		4.19	2.89
	L0000222	564257.93	4191872.08	57.43	3.11	0.01538	9.00		4.19	2.89
	L0000223	564249.06	4191870.54	57.25	3.11	0.01538	9.00		4.19	2.89
	L0000224	564240.19	4191869.00	57.09	3.11	0.01538	9.00		4.19	2.89
	L0000225	564231.32	4191867.46	56.96	3.11	0.01538	9.00		4.19	2.89
	L0000226	564222.46	4191865.93	56.75	3.11	0.01538	9.00		4.19	2.89
	L0000227	564213.59	4191864.39	56.51	3.11	0.01538	9.00		4.19	2.89
	L0000228	564204.72	4191862.85	56.25	3.11	0.01538	9.00		4.19	2.89
	L0000229	564195.85	4191861.34	56.12	3.11	0.01538	9.00		4.19	2.89
	L0000230	564186.94	4191860.08	56.06	3.11	0.01538	9.00		4.19	2.89
	L0000231	564178.03	4191858.81	56.01	3.11	0.01538	9.00		4.19	2.89
	L0000232	564169.12	4191857.55	55.86	3.11	0.01538	9.00		4.19	2.89
	L0000233	564160.21	4191856.28	55.56	3.11	0.01538	9.00		4.19	2.89
	L0000234	564151.30	4191855.01	55.25	3.11	0.01538	9.00		4.19	2.89
	L0000235	564142.42	4191853.52	55.00	3.11	0.01538	9.00		4.19	2.89
	L0000236	564133.56	4191851.95	54.95	3.11	0.01538	9.00		4.19	2.89
	L0000237	564124.70	4191850.38	54.87	3.11	0.01538	9.00		4.19	2.89
	L0000238	564115.84	4191848.80	54.77	3.11	0.01538	9.00		4.19	2.89
	L0000239	564106.98	4191847.23	54.69	3.11	0.01538	9.00		4.19	2.89
	L0000240	564098.11	4191845.65	54.64	3.11	0.01538	9.00		4.19	2.89
	L0000241	564089.25	4191844.08	54.59	3.11	0.01538	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE5	L0000242	564080.39	4191842.51	54.48	3.11	0.01538	9.00		4.19	2.89
	L0000243	564071.53	4191840.93	54.29	3.11	0.01538	9.00		4.19	2.89
	L0000244	564062.67	4191839.36	54.13	3.11	0.01538	9.00		4.19	2.89
	L0000245	564053.89	4191837.46	54.01	3.11	0.01538	9.00		4.19	2.89
	L0000246	564045.43	4191834.43	53.80	3.11	0.01538	9.00		4.19	2.89
	L0000247	564037.08	4191831.14	53.54	3.11	0.01538	9.00		4.19	2.89
	L0000248	564028.34	4191829.02	53.24	3.11	0.01538	9.00		4.19	2.89
	L0000249	564019.44	4191827.71	52.91	3.11	0.01538	9.00		4.19	2.89
	L0000250	564010.53	4191826.41	52.57	3.11	0.01538	9.00		4.19	2.89
	L0000251	564001.63	4191825.10	52.26	3.11	0.01538	9.00		4.19	2.89
	L0000252	563992.72	4191823.79	52.00	3.11	0.01538	9.00		4.19	2.89
	L0000253	563983.82	4191822.49	51.96	3.11	0.01538	9.00		4.19	2.89
	L0000254	563974.91	4191821.18	51.89	3.11	0.01538	9.00		4.19	2.89
	L0000255	563966.01	4191819.88	51.80	3.11	0.01538	9.00		4.19	2.89
	L0000256	563957.10	4191818.56	51.53	3.11	0.01538	9.00		4.19	2.89
	L0000257	563948.22	4191817.12	51.18	3.11	0.01538	9.00		4.19	2.89
	L0000258	563939.28	4191816.22	50.86	3.11	0.01538	9.00		4.19	2.89
	L0000259	563930.34	4191816.79	50.61	3.11	0.01538	9.00		4.19	2.89
	L0000260	563921.45	4191816.89	50.41	3.11	0.01538	9.00		4.19	2.89
	L0000261	563912.57	4191815.44	50.19	3.11	0.01538	9.00		4.19	2.89
	L0000262	563903.69	4191813.98	50.01	3.11	0.01538	9.00		4.19	2.89
	L0000263	563894.81	4191812.53	49.87	3.11	0.01538	9.00		4.19	2.89
	L0000264	563885.93	4191811.07	49.70	3.11	0.01538	9.00		4.19	2.89
	L0000265	563877.04	4191809.62	49.51	3.11	0.01538	9.00		4.19	2.89
	L0000266	563868.16	4191808.17	49.32	3.11	0.01538	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE5	L0000267	563859.28	4191806.71	49.18	3.11	0.01538	9.00		4.19	2.89
	L0000268	563850.40	4191805.26	49.07	3.11	0.01538	9.00		4.19	2.89
	L0000269	563841.52	4191803.81	48.95	3.11	0.01538	9.00		4.19	2.89
	L0000270	563832.64	4191802.35	48.71	3.11	0.01538	9.00		4.19	2.89
	L0000271	563823.75	4191800.90	48.44	3.11	0.01538	9.00		4.19	2.89
	L0000272	563814.87	4191799.44	48.14	3.11	0.01538	9.00		4.19	2.89
	L0000273	563805.99	4191797.99	48.04	3.11	0.01538	9.00		4.19	2.89

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE6	L0000274	563808.82	4191785.23	47.94	3.11	0.01515	9.00		4.19	2.89
	L0000275	563817.69	4191786.75	48.10	3.11	0.01515	9.00		4.19	2.89
	L0000276	563826.56	4191788.28	48.32	3.11	0.01515	9.00		4.19	2.89
	L0000277	563835.43	4191789.81	48.57	3.11	0.01515	9.00		4.19	2.89
	L0000278	563844.30	4191791.34	48.84	3.11	0.01515	9.00		4.19	2.89
	L0000279	563853.17	4191792.86	48.92	3.11	0.01515	9.00		4.19	2.89
	L0000280	563862.04	4191794.39	48.97	3.11	0.01515	9.00		4.19	2.89
	L0000281	563870.91	4191795.92	49.00	3.11	0.01515	9.00		4.19	2.89
	L0000282	563879.80	4191797.35	49.24	3.11	0.01515	9.00		4.19	2.89
	L0000283	563888.68	4191798.76	49.55	3.11	0.01515	9.00		4.19	2.89
	L0000284	563897.57	4191800.17	49.83	3.11	0.01515	9.00		4.19	2.89
	L0000285	563906.46	4191801.59	50.02	3.11	0.01515	9.00		4.19	2.89
	L0000286	563915.35	4191803.00	50.09	3.11	0.01515	9.00		4.19	2.89
	L0000287	563924.16	4191804.75	50.19	3.11	0.01515	9.00		4.19	2.89
	L0000288	563931.06	4191809.63	50.41	3.11	0.01515	9.00		4.19	2.89
	L0000289	563937.32	4191815.26	50.76	3.11	0.01515	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE6	L0000290	563946.23	4191816.51	51.10	3.11	0.01515	9.00		4.19	2.89
	L0000291	563955.15	4191817.76	51.44	3.11	0.01515	9.00		4.19	2.89
	L0000292	563964.06	4191819.01	51.76	3.11	0.01515	9.00		4.19	2.89
	L0000293	563972.97	4191820.26	51.86	3.11	0.01515	9.00		4.19	2.89
	L0000294	563981.89	4191821.51	51.94	3.11	0.01515	9.00		4.19	2.89
	L0000295	563990.80	4191822.76	51.99	3.11	0.01515	9.00		4.19	2.89
	L0000296	563999.71	4191824.01	52.19	3.11	0.01515	9.00		4.19	2.89
	L0000297	564008.62	4191825.26	52.49	3.11	0.01515	9.00		4.19	2.89
	L0000298	564017.54	4191826.51	52.81	3.11	0.01515	9.00		4.19	2.89
	L0000299	564026.45	4191827.76	53.14	3.11	0.01515	9.00		4.19	2.89
	L0000300	564035.36	4191829.01	53.45	3.11	0.01515	9.00		4.19	2.89
	L0000301	564044.32	4191829.31	53.73	3.11	0.01515	9.00		4.19	2.89
	L0000302	564053.18	4191827.85	53.99	3.11	0.01515	9.00		4.19	2.89
	L0000303	564061.97	4191828.69	54.02	3.11	0.01515	9.00		4.19	2.89
	L0000304	564070.75	4191830.67	54.08	3.11	0.01515	9.00		4.19	2.89
	L0000305	564079.53	4191832.65	54.18	3.11	0.01515	9.00		4.19	2.89
	L0000306	564088.38	4191834.31	54.26	3.11	0.01515	9.00		4.19	2.89
	L0000307	564097.25	4191835.80	54.31	3.11	0.01515	9.00		4.19	2.89
	L0000308	564106.13	4191837.29	54.36	3.11	0.01515	9.00		4.19	2.89
	L0000309	564115.00	4191838.78	54.44	3.11	0.01515	9.00		4.19	2.89
	L0000310	564123.88	4191840.27	54.65	3.11	0.01515	9.00		4.19	2.89
	L0000311	564132.75	4191841.76	54.83	3.11	0.01515	9.00		4.19	2.89
	L0000312	564141.63	4191843.25	54.97	3.11	0.01515	9.00		4.19	2.89
	L0000313	564150.51	4191844.74	55.14	3.11	0.01515	9.00		4.19	2.89
	L0000314	564159.38	4191846.23	55.35	3.11	0.01515	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE6	L0000315	564168.26	4191847.72	55.59	3.11	0.01515	9.00		4.19	2.89
	L0000316	564177.13	4191849.21	55.79	3.11	0.01515	9.00		4.19	2.89
	L0000317	564186.01	4191850.70	55.89	3.11	0.01515	9.00		4.19	2.89
	L0000318	564194.89	4191852.19	55.96	3.11	0.01515	9.00		4.19	2.89
	L0000319	564203.76	4191853.68	56.01	3.11	0.01515	9.00		4.19	2.89
	L0000320	564212.64	4191855.17	56.29	3.11	0.01515	9.00		4.19	2.89
	L0000321	564221.51	4191856.66	56.61	3.11	0.01515	9.00		4.19	2.89
	L0000322	564230.39	4191858.15	56.90	3.11	0.01515	9.00		4.19	2.89
	L0000323	564239.26	4191859.64	57.02	3.11	0.01515	9.00		4.19	2.89
	L0000324	564248.14	4191861.13	57.08	3.11	0.01515	9.00		4.19	2.89
	L0000325	564257.02	4191862.62	57.16	3.11	0.01515	9.00		4.19	2.89
	L0000326	564265.89	4191864.11	57.32	3.11	0.01515	9.00		4.19	2.89
	L0000327	564274.77	4191865.60	57.57	3.11	0.01515	9.00		4.19	2.89
	L0000328	564283.64	4191867.09	57.79	3.11	0.01515	9.00		4.19	2.89
	L0000329	564292.52	4191868.58	57.98	3.11	0.01515	9.00		4.19	2.89
	L0000330	564301.39	4191870.07	58.12	3.11	0.01515	9.00		4.19	2.89
	L0000331	564310.27	4191871.56	58.28	3.11	0.01515	9.00		4.19	2.89
	L0000332	564319.15	4191873.05	58.48	3.11	0.01515	9.00		4.19	2.89
	L0000333	564328.02	4191874.54	58.67	3.11	0.01515	9.00		4.19	2.89
	L0000334	564336.91	4191875.90	58.81	3.11	0.01515	9.00		4.19	2.89
	L0000335	564344.05	4191878.60	58.92	3.11	0.01515	9.00		4.19	2.89
	L0000336	564343.52	4191887.58	59.04	3.11	0.01515	9.00		4.19	2.89
	L0000337	564343.20	4191896.58	59.34	3.11	0.01515	9.00		4.19	2.89
	L0000338	564342.57	4191905.49	59.64	3.11	0.01515	9.00		4.19	2.89
	L0000339	564335.62	4191906.94	59.68	3.11	0.01515	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE3	L0000340	564380.05	4191586.88	56.89	0.00	0.01639	9.00		4.19	2.89
	L0000341	564380.00	4191577.88	56.89	0.00	0.01639	9.00		4.19	2.89
	L0000342	564379.96	4191568.88	56.88	0.00	0.01639	9.00		4.19	2.89
	L0000343	564379.91	4191559.88	56.88	0.00	0.01639	9.00		4.19	2.89
	L0000344	564379.87	4191550.88	56.72	0.00	0.01639	9.00		4.19	2.89
	L0000345	564380.62	4191541.91	56.47	0.00	0.01639	9.00		4.19	2.89
	L0000346	564381.50	4191532.96	56.20	0.00	0.01639	9.00		4.19	2.89
	L0000347	564382.38	4191524.00	56.00	0.00	0.01639	9.00		4.19	2.89
	L0000348	564383.26	4191515.04	56.00	0.00	0.01639	9.00		4.19	2.89
	L0000349	564384.14	4191506.09	56.02	0.00	0.01639	9.00		4.19	2.89
	L0000350	564385.02	4191497.13	56.05	0.00	0.01639	9.00		4.19	2.89
	L0000351	564385.90	4191488.17	56.08	0.00	0.01639	9.00		4.19	2.89
	L0000352	564386.78	4191479.22	56.11	0.00	0.01639	9.00		4.19	2.89
	L0000353	564387.66	4191470.26	56.14	0.00	0.01639	9.00		4.19	2.89
	L0000354	564388.54	4191461.30	56.14	0.00	0.01639	9.00		4.19	2.89
	L0000355	564389.43	4191452.35	56.11	0.00	0.01639	9.00		4.19	2.89
	L0000356	564390.31	4191443.39	56.05	0.00	0.01639	9.00		4.19	2.89
	L0000357	564391.19	4191434.43	55.95	0.00	0.01639	9.00		4.19	2.89
	L0000358	564392.07	4191425.48	55.74	0.00	0.01639	9.00		4.19	2.89
	L0000359	564392.95	4191416.52	55.55	0.00	0.01639	9.00		4.19	2.89
	L0000360	564393.83	4191407.56	55.37	0.00	0.01639	9.00		4.19	2.89
	L0000361	564394.71	4191398.61	55.28	0.00	0.01639	9.00		4.19	2.89
	L0000362	564395.59	4191389.65	55.18	0.00	0.01639	9.00		4.19	2.89
	L0000363	564396.47	4191380.69	55.06	0.00	0.01639	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000364	564406.78	4191773.36	58.83	0.00	0.01515	9.00		4.19	2.89
	L0000365	564406.19	4191782.33	58.89	0.00	0.01515	9.00		4.19	2.89
	L0000366	564405.46	4191791.30	58.95	0.00	0.01515	9.00		4.19	2.89
	L0000367	564404.68	4191800.27	59.09	0.00	0.01515	9.00		4.19	2.89
	L0000368	564403.71	4191809.21	59.29	0.00	0.01515	9.00		4.19	2.89
	L0000369	564402.75	4191818.16	59.47	0.00	0.01515	9.00		4.19	2.89
	L0000370	564401.78	4191827.11	59.61	0.00	0.01515	9.00		4.19	2.89
	L0000371	564400.82	4191836.06	59.58	0.00	0.01515	9.00		4.19	2.89
	L0000372	564399.86	4191845.01	59.55	0.00	0.01515	9.00		4.19	2.89
	L0000373	564398.89	4191853.95	59.52	0.00	0.01515	9.00		4.19	2.89
	L0000374	564397.93	4191862.90	59.60	0.00	0.01515	9.00		4.19	2.89
	L0000375	564396.96	4191871.85	59.73	0.00	0.01515	9.00		4.19	2.89
	L0000376	564396.00	4191880.80	59.89	0.00	0.01515	9.00		4.19	2.89
	L0000377	564395.04	4191889.75	60.04	0.00	0.01515	9.00		4.19	2.89
	L0000378	564391.81	4191895.58	60.09	0.00	0.01515	9.00		4.19	2.89
	L0000379	564382.99	4191893.76	59.99	0.00	0.01515	9.00		4.19	2.89
	L0000380	564374.12	4191892.27	59.75	0.00	0.01515	9.00		4.19	2.89
	L0000381	564365.24	4191890.78	59.48	0.00	0.01515	9.00		4.19	2.89
	L0000382	564356.37	4191889.29	59.18	0.00	0.01515	9.00		4.19	2.89
	L0000383	564347.45	4191888.08	59.06	0.00	0.01515	9.00		4.19	2.89
	L0000384	564342.77	4191892.73	59.21	0.00	0.01515	9.00		4.19	2.89
	L0000385	564341.29	4191901.60	59.51	0.00	0.01515	9.00		4.19	2.89
	L0000386	564335.40	4191905.03	59.62	0.00	0.01515	9.00		4.19	2.89

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE7	L0000387	564316.27	4191952.80	60.16	3.11	0.10000	9.00		4.19	2.89
	L0000388	564307.36	4191951.52	60.08	3.11	0.10000	9.00		4.19	2.89
	L0000389	564298.45	4191950.25	60.02	3.11	0.10000	9.00		4.19	2.89
	L0000390	564299.31	4191941.56	59.87	3.11	0.10000	9.00		4.19	2.89
	L0000391	564300.47	4191932.64	59.65	3.11	0.10000	9.00		4.19	2.89
	L0000392	564301.64	4191923.71	59.45	3.11	0.10000	9.00		4.19	2.89
	L0000393	564302.80	4191914.79	59.26	3.11	0.10000	9.00		4.19	2.89
	L0000394	564303.97	4191905.86	59.00	3.11	0.10000	9.00		4.19	2.89
	L0000395	564310.45	4191903.98	59.15	3.11	0.10000	9.00		4.19	2.89
	L0000396	564319.35	4191905.31	59.49	3.11	0.10000	9.00		4.19	2.89

Source Pathway

AERMOD

Building Downwash Information

Option not in use

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Source Groups

Source Group ID:	List of Sources in Group (Source Range or Single Sources)
On	SLINE7
Off6	SLINE6
Off5	SLINE5
Off4	SLINE4
Off3	SLINE3
Off2	SLINE2
Off1	SLINE1
Area	PAREA1
ALL	All Sources Included

Variable Emissions

Source Pathway

AERMOD

Source Pathway

Hour-of-Day / Day-of-Week Emission Rate Variation

Scenario: Scenario 2

Source ID:	**PAREA1**						
Weekdays							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00
	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**SLINE1**						
Weekdays							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00
	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**SLINE2**						
Weekdays							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00
	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**SLINE3**						
Weekdays							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00
	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00

Source Pathway

AERMOD

Scenario: Scenario 2

Source ID:	**SLINE3**							
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**SLINE4**							
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00
	Day	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**SLINE5**							
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00
	Day	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**SLINE6**							
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00
	Day	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Source Pathway

AERMOD

Scenario: Scenario 2

Source ID:	**SLINE6**							
Sunday								
Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**SLINE7**							
Weekdays								
Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
of	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00
Day	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Receptor Pathway

AERMOD

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Discrete Receptors

Discrete Cartesian Receptors

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	564370.77	4191948.94	FENCEGRD	60.66	
2	564394.16	4191952.37	FENCEGRD	61.20	
3	564385.58	4192025.27	FENCEGRD	62.70	
4	564358.04	4192045.11	FENCEGRD	63.29	
5	564417.55	4191955.81	FENCEGRD	61.31	
6	564408.96	4192028.71	FENCEGRD	63.59	
7	564371.86	4192064.29	FENCEGRD	63.93	
8	564440.93	4191959.24	FENCEGRD	61.43	
9	564438.09	4192022.69	FENCEGRD	63.54	
10	564415.12	4192060.48	FENCEGRD	64.80	
11	564360.53	4192089.20	FENCEGRD	64.76	
12	564461.05	4191984.90	FENCEGRD	62.87	
13	564467.58	4191940.44	FENCEGRD	61.80	
14	564450.95	4192043.44	FENCEGRD	64.49	
15	564428.62	4192080.18	FENCEGRD	65.46	
16	564396.50	4192103.33	FENCEGRD	65.67	
17	564354.58	4192112.87	FENCEGRD	65.55	
18	564487.70	4191966.10	FENCEGRD	63.13	
19	564475.02	4192045.75	FENCEGRD	65.36	
20	564453.15	4192081.74	FENCEGRD	65.84	
21	564410.74	4192122.41	FENCEGRD	66.78	
22	564369.68	4192131.76	FENCEGRD	66.18	
23	564511.09	4191969.54	FENCEGRD	64.28	
24	564498.92	4192048.34	FENCEGRD	66.25	
25	564477.39	4192083.77	FENCEGRD	66.63	
26	564455.86	4192119.19	FENCEGRD	66.86	
27	564424.88	4192141.51	FENCEGRD	67.50	
28	564384.46	4192150.72	FENCEGRD	66.85	
29	564344.04	4192159.93	FENCEGRD	66.72	
30	564534.48	4191972.97	FENCEGRD	65.92	

Receptor Pathway

AERMOD

31	564522.70	4192051.12	FENCEGRD	66.82
32	564501.44	4192086.11	FENCEGRD	66.98
33	564480.17	4192121.10	FENCEGRD	67.18
34	564438.95	4192160.63	FENCEGRD	68.26
35	564399.03	4192169.72	FENCEGRD	67.96
36	564359.11	4192178.82	FENCEGRD	67.14
37	564557.86	4191976.40	FENCEGRD	66.81
38	564564.39	4191931.93	FENCEGRD	66.03
39	564567.46	4192019.39	FENCEGRD	67.76
40	564546.41	4192054.03	FENCEGRD	67.69
41	564525.35	4192088.66	FENCEGRD	67.54
42	564504.30	4192123.30	FENCEGRD	67.93
43	564483.25	4192157.94	FENCEGRD	68.78
44	564452.96	4192179.76	FENCEGRD	69.81
45	564413.44	4192188.77	FENCEGRD	69.00
46	564373.92	4192197.77	FENCEGRD	67.68
47	564294.88	4192215.77	FENCEGRD	66.04
48	564581.25	4191979.83	FENCEGRD	67.66
49	564587.77	4191935.37	FENCEGRD	66.81
50	564619.22	4192028.79	FENCEGRD	73.07
51	564596.16	4192066.74	FENCEGRD	72.18
52	564573.09	4192104.69	FENCEGRD	70.34
53	564550.03	4192142.63	FENCEGRD	70.89
54	564526.97	4192180.58	FENCEGRD	71.59
55	564482.25	4192223.46	FENCEGRD	71.52
56	564438.95	4192233.33	FENCEGRD	70.41
57	564395.66	4192243.19	FENCEGRD	69.30
58	564352.36	4192253.06	FENCEGRD	68.17
59	564634.02	4191987.58	FENCEGRD	71.67
60	564640.54	4191943.11	FENCEGRD	69.03
61	564672.10	4192036.35	FENCEGRD	75.62
62	564649.26	4192073.92	FENCEGRD	75.72
63	564626.43	4192111.50	FENCEGRD	73.70
64	564603.59	4192149.08	FENCEGRD	72.84
65	564580.75	4192186.65	FENCEGRD	73.58
66	564557.92	4192224.23	FENCEGRD	74.28
67	564513.64	4192266.69	FENCEGRD	74.24
68	564470.77	4192276.45	FENCEGRD	73.01

Receptor Pathway

AERMOD

69	564427.90	4192286.22	FENCEGRD	72.45
70	564385.02	4192295.99	FENCEGRD	70.73
71	564342.15	4192305.75	FENCEGRD	69.22
72	564686.78	4191995.32	FENCEGRD	74.74
73	564693.31	4191950.86	FENCEGRD	72.63
74	564724.95	4192043.95	FENCEGRD	78.48
75	564702.28	4192081.26	FENCEGRD	77.94
76	564679.61	4192118.56	FENCEGRD	77.42
77	564656.94	4192155.86	FENCEGRD	76.33
78	564634.27	4192193.17	FENCEGRD	77.71
79	564611.60	4192230.47	FENCEGRD	77.35
80	564588.93	4192267.77	FENCEGRD	78.87
81	564544.97	4192309.92	FENCEGRD	78.33
82	564502.41	4192319.62	FENCEGRD	76.40
83	564459.85	4192329.32	FENCEGRD	74.96
84	564417.29	4192339.01	FENCEGRD	73.21
85	564374.73	4192348.71	FENCEGRD	72.94
86	564332.17	4192358.40	FENCEGRD	71.42
87	564739.55	4192003.07	FENCEGRD	77.53
88	564746.08	4191958.60	FENCEGRD	74.29
89	564777.78	4192051.59	FENCEGRD	81.72
90	564755.24	4192088.69	FENCEGRD	80.79
91	564732.70	4192125.78	FENCEGRD	80.27
92	564710.15	4192162.88	FENCEGRD	81.00
93	564687.61	4192199.97	FENCEGRD	81.27
94	564665.06	4192237.07	FENCEGRD	82.36
95	564642.52	4192274.16	FENCEGRD	84.25
96	564619.98	4192311.25	FENCEGRD	84.98
97	564576.27	4192353.17	FENCEGRD	83.57
98	564533.95	4192362.81	FENCEGRD	79.04
99	564491.62	4192372.45	FENCEGRD	77.28
100	564449.30	4192382.09	FENCEGRD	75.71
101	564406.98	4192391.73	FENCEGRD	74.66
102	564364.65	4192401.38	FENCEGRD	73.54
103	564322.33	4192411.02	FENCEGRD	71.96
104	564792.32	4192010.81	FENCEGRD	80.87
105	564798.85	4191966.35	FENCEGRD	77.17
106	564830.60	4192059.26	FENCEGRD	83.00

Receptor Pathway

AERMOD

107	564808.16	4192096.19	FENCEGRD	84.46
108	564785.71	4192133.12	FENCEGRD	84.04
109	564763.27	4192170.05	FENCEGRD	84.42
110	564740.83	4192206.97	FENCEGRD	83.91
111	564718.38	4192243.90	FENCEGRD	86.68
112	564695.94	4192280.83	FENCEGRD	89.98
113	564673.50	4192317.76	FENCEGRD	92.50
114	564651.05	4192354.69	FENCEGRD	91.88
115	564607.54	4192396.42	FENCEGRD	86.85
116	564565.41	4192406.02	FENCEGRD	83.10
117	564523.27	4192415.62	FENCEGRD	79.95
118	564481.14	4192425.22	FENCEGRD	78.21
119	564439.00	4192434.81	FENCEGRD	76.85
120	564396.87	4192444.41	FENCEGRD	75.44
121	564354.73	4192454.01	FENCEGRD	74.04
122	564312.60	4192463.61	FENCEGRD	72.35
123	564270.46	4192473.21	FENCEGRD	71.13
124	564845.09	4192018.56	FENCEGRD	81.65
125	564851.61	4191974.09	FENCEGRD	79.10
126	564883.41	4192066.94	FENCEGRD	83.75
127	564861.05	4192103.73	FENCEGRD	88.39
128	564838.69	4192140.53	FENCEGRD	88.90
129	564816.32	4192177.32	FENCEGRD	88.38
130	564793.96	4192214.12	FENCEGRD	87.03
131	564771.60	4192250.91	FENCEGRD	89.47
132	564749.24	4192287.71	FENCEGRD	94.02
133	564726.87	4192324.51	FENCEGRD	100.22
134	564704.51	4192361.30	FENCEGRD	101.20
135	564682.15	4192398.10	FENCEGRD	98.54
136	564638.79	4192439.67	FENCEGRD	89.87
137	564596.81	4192449.24	FENCEGRD	84.26
138	564554.83	4192458.80	FENCEGRD	82.44
139	564512.85	4192468.37	FENCEGRD	80.02
140	564470.86	4192477.93	FENCEGRD	78.63
141	564428.88	4192487.49	FENCEGRD	77.55
142	564386.90	4192497.06	FENCEGRD	76.15
143	564344.92	4192506.62	FENCEGRD	74.19
144	564302.93	4192516.18	FENCEGRD	72.31

Receptor Pathway

AERMOD

145	564260.95	4192525.75	FENCEGRD	70.94
146	564897.85	4192026.30	FENCEGRD	80.61
147	564904.38	4191981.84	FENCEGRD	78.82
148	564311.38	4191853.27	FENCEGRD	57.90
149	564378.72	4191845.07	FENCEGRD	58.94
150	564324.03	4191823.87	FENCEGRD	57.02
151	564384.03	4191813.22	FENCEGRD	59.01
152	564425.58	4191868.79	FENCEGRD	60.41
153	564328.80	4191800.72	FENCEGRD	57.18
154	564379.83	4191794.96	FENCEGRD	58.83
155	564431.36	4191846.81	FENCEGRD	60.41
156	564439.41	4191880.79	FENCEGRD	60.87
157	564333.57	4191777.57	FENCEGRD	56.71
158	564376.65	4191770.22	FENCEGRD	57.90
159	564429.18	4191804.74	FENCEGRD	59.66
160	564456.35	4191857.03	FENCEGRD	61.00
161	564338.33	4191754.42	FENCEGRD	56.50
162	564380.93	4191746.75	FENCEGRD	57.92
163	564430.40	4191768.75	FENCEGRD	59.57
164	564449.03	4191791.51	FENCEGRD	60.16
165	564470.75	4191822.52	FENCEGRD	60.91
166	564480.14	4191862.17	FENCEGRD	61.27
167	564343.10	4191731.27	FENCEGRD	56.66
168	564385.35	4191723.37	FENCEGRD	57.63
169	564418.71	4191745.29	FENCEGRD	59.05
170	564452.06	4191767.21	FENCEGRD	60.01
171	564490.01	4191808.55	FENCEGRD	61.55
172	564499.21	4191847.39	FENCEGRD	61.86
173	564508.42	4191886.23	FENCEGRD	63.16
174	564347.87	4191708.12	FENCEGRD	56.81
175	564386.85	4191709.82	FENCEGRD	57.23
176	564422.69	4191721.63	FENCEGRD	58.66
177	564455.52	4191743.21	FENCEGRD	59.54
178	564488.36	4191764.79	FENCEGRD	60.50
179	564509.30	4191794.69	FENCEGRD	61.95
180	564518.36	4191832.92	FENCEGRD	62.61
181	564527.42	4191871.16	FENCEGRD	63.70
182	564352.64	4191684.97	FENCEGRD	56.28

Receptor Pathway

AERMOD

183	564426.85	4191698.08	FENCEGRD	58.45
184	564459.28	4191719.39	FENCEGRD	59.53
185	564491.71	4191740.70	FENCEGRD	60.61
186	564528.61	4191780.90	FENCEGRD	61.92
187	564537.55	4191818.66	FENCEGRD	63.02
188	564546.50	4191856.42	FENCEGRD	64.44
189	564555.44	4191894.18	FENCEGRD	65.47
190	564357.41	4191661.82	FENCEGRD	56.13
191	564431.13	4191674.61	FENCEGRD	58.55
192	564463.24	4191695.71	FENCEGRD	59.43
193	564495.34	4191716.81	FENCEGRD	60.25
194	564527.44	4191737.91	FENCEGRD	61.04
195	564547.92	4191767.15	FENCEGRD	62.50
196	564556.78	4191804.53	FENCEGRD	63.83
197	564565.63	4191841.91	FENCEGRD	65.11
198	564574.49	4191879.29	FENCEGRD	66.22
199	564362.17	4191638.67	FENCEGRD	56.29
200	564411.32	4191602.28	FENCEGRD	57.00
201	564446.49	4191625.39	FENCEGRD	58.10
202	564481.67	4191648.51	FENCEGRD	59.27
203	564516.84	4191671.63	FENCEGRD	60.45
204	564552.01	4191694.75	FENCEGRD	61.62
205	564592.03	4191738.34	FENCEGRD	63.06
206	564601.73	4191779.29	FENCEGRD	64.98
207	564611.43	4191820.25	FENCEGRD	67.00
208	564621.14	4191861.20	FENCEGRD	67.92
209	564630.84	4191902.16	FENCEGRD	67.85
210	564421.91	4191549.93	FENCEGRD	57.28
211	564456.73	4191572.82	FENCEGRD	58.44
212	564491.56	4191595.71	FENCEGRD	59.60
213	564526.39	4191618.60	FENCEGRD	60.06
214	564561.21	4191641.49	FENCEGRD	60.99
215	564596.04	4191664.38	FENCEGRD	61.72
216	564635.67	4191707.54	FENCEGRD	64.84
217	564645.27	4191748.10	FENCEGRD	66.12
218	564654.88	4191788.65	FENCEGRD	66.95
219	564664.49	4191829.20	FENCEGRD	68.09
220	564674.10	4191869.75	FENCEGRD	69.31

Receptor Pathway

AERMOD

221	564683.70	4191910.31	FENCEGRD	70.80
222	564432.54	4191497.61	FENCEGRD	57.64
223	564467.11	4191520.33	FENCEGRD	58.79
224	564501.69	4191543.05	FENCEGRD	59.94
225	564536.26	4191565.78	FENCEGRD	61.00
226	564570.83	4191588.50	FENCEGRD	61.23
227	564605.40	4191611.22	FENCEGRD	61.90
228	564639.98	4191633.95	FENCEGRD	64.10
229	564679.32	4191676.80	FENCEGRD	67.73
230	564688.85	4191717.06	FENCEGRD	67.71
231	564698.39	4191757.32	FENCEGRD	66.80
232	564707.93	4191797.57	FENCEGRD	66.05
233	564717.47	4191837.83	FENCEGRD	67.38
234	564727.00	4191878.09	FENCEGRD	69.45
235	564736.54	4191918.35	FENCEGRD	71.85
236	564443.20	4191445.31	FENCEGRD	56.99
237	564477.58	4191467.90	FENCEGRD	58.19
238	564511.96	4191490.50	FENCEGRD	59.86
239	564546.34	4191513.09	FENCEGRD	60.43
240	564580.72	4191535.69	FENCEGRD	61.58
241	564615.10	4191558.29	FENCEGRD	62.72
242	564649.48	4191580.88	FENCEGRD	63.87
243	564683.85	4191603.48	FENCEGRD	66.01
244	564722.98	4191646.09	FENCEGRD	68.31
245	564732.46	4191686.12	FENCEGRD	68.63
246	564741.94	4191726.16	FENCEGRD	68.32
247	564751.43	4191766.19	FENCEGRD	68.00
248	564760.91	4191806.22	FENCEGRD	67.19
249	564770.39	4191846.25	FENCEGRD	68.56
250	564779.88	4191886.28	FENCEGRD	70.99
251	564789.36	4191926.32	FENCEGRD	72.51
252	564453.89	4191393.02	FENCEGRD	56.71
253	564488.11	4191415.51	FENCEGRD	58.13
254	564522.34	4191438.01	FENCEGRD	59.63
255	564556.56	4191460.51	FENCEGRD	60.77
256	564590.79	4191483.00	FENCEGRD	61.91
257	564625.01	4191505.50	FENCEGRD	63.05
258	564659.24	4191527.99	FENCEGRD	64.19

Receptor Pathway

AERMOD

259	564693.47	4191550.49	FENCEGRD	65.60
260	564727.69	4191572.99	FENCEGRD	67.48
261	564766.64	4191615.41	FENCEGRD	68.77
262	564776.08	4191655.26	FENCEGRD	69.36
263	564785.52	4191695.12	FENCEGRD	70.00
264	564794.96	4191734.97	FENCEGRD	69.05
265	564804.41	4191774.82	FENCEGRD	68.04
266	564813.85	4191814.68	FENCEGRD	69.91
267	564823.29	4191854.53	FENCEGRD	72.26
268	564832.73	4191894.39	FENCEGRD	72.96
269	564842.17	4191934.24	FENCEGRD	74.36
270	564464.58	4191340.74	FENCEGRD	55.71
271	564498.68	4191363.16	FENCEGRD	57.40
272	564532.79	4191385.57	FENCEGRD	59.28
273	564566.89	4191407.98	FENCEGRD	61.12
274	564600.99	4191430.40	FENCEGRD	62.20
275	564635.09	4191452.81	FENCEGRD	63.39
276	564669.19	4191475.23	FENCEGRD	64.53
277	564703.30	4191497.64	FENCEGRD	65.66
278	564737.40	4191520.06	FENCEGRD	67.60
279	564771.50	4191542.47	FENCEGRD	68.94
280	564810.31	4191584.74	FENCEGRD	71.24
281	564819.71	4191624.45	FENCEGRD	71.27
282	564829.12	4191664.16	FENCEGRD	70.86
283	564838.53	4191703.87	FENCEGRD	71.01
284	564847.94	4191743.58	FENCEGRD	70.33
285	564857.34	4191783.29	FENCEGRD	71.16
286	564866.75	4191823.00	FENCEGRD	73.79
287	564876.16	4191862.71	FENCEGRD	74.42
288	564885.57	4191902.42	FENCEGRD	74.20
289	564894.97	4191942.13	FENCEGRD	75.77
290	564426.73	4191325.25	FENCEGRD	55.00
291	564269.63	4191886.77	FENCEGRD	58.01
292	564265.35	4191908.62	FENCEGRD	58.74
293	564257.14	4191929.48	FENCEGRD	58.88
294	564271.31	4191942.89	FENCEGRD	59.23
295	564280.55	4191846.24	FENCEGRD	57.23
296	564238.20	4191902.62	FENCEGRD	57.70

Receptor Pathway

297	564233.92	4191925.06	FENCEGRD	58.30
298	564248.09	4191938.46	FENCEGRD	58.86
299	564267.40	4191826.60	FENCEGRD	56.14
300	564215.97	4191882.10	FENCEGRD	56.92
301	564210.71	4191920.63	FENCEGRD	58.14
302	564224.88	4191934.03	FENCEGRD	58.59
303	564226.28	4191825.67	FENCEGRD	55.98
304	564254.26	4191806.95	FENCEGRD	55.80
305	564290.08	4191799.94	FENCEGRD	56.10
306	564192.75	4191877.67	FENCEGRD	56.46
307	564187.49	4191916.20	FENCEGRD	57.46
308	564180.07	4191931.57	FENCEGRD	57.73
309	564198.02	4191828.85	FENCEGRD	55.83
310	564267.98	4191782.05	FENCEGRD	55.59
311	564168.55	4191889.33	FENCEGRD	56.10
312	564164.27	4191911.77	FENCEGRD	56.85
313	564159.99	4191934.21	FENCEGRD	57.59
314	564185.89	4191807.69	FENCEGRD	55.16
315	564231.56	4191766.96	FENCEGRD	54.94
316	564274.54	4191758.55	FENCEGRD	55.27
317	564145.33	4191884.90	FENCEGRD	55.95
318	564141.05	4191907.34	FENCEGRD	56.64
319	564136.77	4191929.78	FENCEGRD	57.22
320	564161.66	4191804.78	FENCEGRD	54.72
321	564185.17	4191769.27	FENCEGRD	54.10
322	564217.82	4191747.43	FENCEGRD	54.18
323	564259.61	4191739.25	FENCEGRD	54.88
324	564301.40	4191731.08	FENCEGRD	55.27
325	564122.12	4191880.47	FENCEGRD	55.80
326	564117.84	4191902.91	FENCEGRD	56.08
327	564113.56	4191925.35	FENCEGRD	56.30
328	564137.72	4191801.44	FENCEGRD	54.14
329	564160.75	4191766.65	FENCEGRD	53.59
330	564204.25	4191727.87	FENCEGRD	54.00
331	564245.19	4191719.86	FENCEGRD	54.18
332	564286.13	4191711.85	FENCEGRD	54.80
333	564098.90	4191876.04	FENCEGRD	55.34
334	564094.62	4191898.48	FENCEGRD	55.63

Receptor Pathway

AERMOD

335	564090.34	4191920.92	FENCEGRD	56.15
336	564113.97	4191797.82	FENCEGRD	54.00
337	564136.63	4191763.58	FENCEGRD	53.00
338	564159.30	4191729.35	FENCEGRD	53.40
339	564190.79	4191708.29	FENCEGRD	53.61
340	564231.09	4191700.40	FENCEGRD	53.98
341	564271.39	4191692.51	FENCEGRD	54.27
342	564311.68	4191684.63	FENCEGRD	55.61
343	564075.68	4191871.62	FENCEGRD	54.87
344	564071.40	4191894.05	FENCEGRD	55.15
345	564067.12	4191916.49	FENCEGRD	55.46
346	564081.93	4191806.71	FENCEGRD	53.34
347	564107.12	4191768.67	FENCEGRD	53.06
348	564132.31	4191730.62	FENCEGRD	52.93
349	564144.90	4191711.60	FENCEGRD	53.01
350	564179.88	4191688.20	FENCEGRD	53.08
351	564202.27	4191683.82	FENCEGRD	53.24
352	564247.05	4191675.06	FENCEGRD	54.00
353	564291.82	4191666.30	FENCEGRD	54.95
354	564314.21	4191661.92	FENCEGRD	55.36
355	564052.46	4191867.19	FENCEGRD	54.35
356	564048.18	4191889.62	FENCEGRD	54.84
357	564043.90	4191912.06	FENCEGRD	54.95
358	564070.47	4191784.53	FENCEGRD	52.83
359	564095.10	4191747.33	FENCEGRD	52.61
360	564119.73	4191710.13	FENCEGRD	52.31
361	564166.24	4191668.65	FENCEGRD	52.56
362	564210.03	4191660.09	FENCEGRD	53.22
363	564253.81	4191651.52	FENCEGRD	54.00
364	564297.59	4191642.95	FENCEGRD	55.00
365	564029.25	4191862.76	FENCEGRD	54.04
366	564024.97	4191885.19	FENCEGRD	54.05
367	564020.69	4191907.63	FENCEGRD	54.64
368	564017.56	4191775.31	FENCEGRD	51.86
369	564041.85	4191738.64	FENCEGRD	51.64
370	564066.13	4191701.96	FENCEGRD	50.91
371	564090.42	4191665.28	FENCEGRD	51.15
372	564136.28	4191624.38	FENCEGRD	51.76

Receptor Pathway

AERMOD

373	564179.45	4191615.94	FENCEGRD	52.20
374	564222.62	4191607.49	FENCEGRD	53.00
375	564265.79	4191599.04	FENCEGRD	54.08
376	564308.96	4191590.60	FENCEGRD	55.00
377	563976.86	4191852.76	FENCEGRD	52.39
378	563972.58	4191875.20	FENCEGRD	52.93
379	563968.30	4191897.64	FENCEGRD	53.16
380	563964.82	4191765.86	FENCEGRD	50.05
381	563988.86	4191729.54	FENCEGRD	49.97
382	564012.91	4191693.23	FENCEGRD	49.85
383	564036.95	4191656.91	FENCEGRD	49.64
384	564061.00	4191620.59	FENCEGRD	50.04
385	564106.42	4191580.10	FENCEGRD	50.61
386	564149.16	4191571.73	FENCEGRD	51.19
387	564191.91	4191563.37	FENCEGRD	52.14
388	564234.65	4191555.00	FENCEGRD	53.04
389	564277.40	4191546.64	FENCEGRD	53.83
390	564320.14	4191538.28	FENCEGRD	54.89
391	563924.47	4191842.77	FENCEGRD	51.25
392	563920.19	4191865.21	FENCEGRD	51.69
393	563915.91	4191887.64	FENCEGRD	52.02
394	563912.17	4191756.26	FENCEGRD	49.19
395	563936.04	4191720.21	FENCEGRD	49.04
396	563959.91	4191684.16	FENCEGRD	48.91
397	563983.78	4191648.11	FENCEGRD	48.70
398	564007.65	4191612.05	FENCEGRD	48.47
399	564031.52	4191576.00	FENCEGRD	49.00
400	564076.61	4191535.80	FENCEGRD	49.77
401	564119.04	4191527.49	FENCEGRD	50.19
402	564161.48	4191519.19	FENCEGRD	50.90
403	564203.91	4191510.89	FENCEGRD	52.01
404	564246.34	4191502.58	FENCEGRD	52.55
405	564288.78	4191494.28	FENCEGRD	53.85
406	564331.21	4191485.98	FENCEGRD	54.74
407	563872.08	4191832.78	FENCEGRD	49.96
408	563867.80	4191855.21	FENCEGRD	49.99
409	563863.52	4191877.65	FENCEGRD	50.47
410	563859.58	4191746.57	FENCEGRD	48.18

Receptor Pathway

AERMOD

411	563883.31	4191710.72	FENCEGRD	48.05
412	563907.05	4191674.87	FENCEGRD	47.96
413	563930.79	4191639.02	FENCEGRD	47.69
414	563954.53	4191603.17	FENCEGRD	47.70
415	563978.26	4191567.32	FENCEGRD	47.68
416	564002.00	4191531.47	FENCEGRD	48.05
417	564046.83	4191491.49	FENCEGRD	48.65
418	564089.03	4191483.24	FENCEGRD	49.10
419	564131.23	4191474.98	FENCEGRD	49.71
420	564173.42	4191466.72	FENCEGRD	51.00
421	564215.62	4191458.46	FENCEGRD	51.41
422	564257.82	4191450.21	FENCEGRD	52.81
423	564300.01	4191441.95	FENCEGRD	53.36
424	564342.21	4191433.69	FENCEGRD	54.63
425	563819.69	4191822.78	FENCEGRD	48.90
426	563815.41	4191845.22	FENCEGRD	49.04
427	563811.13	4191867.66	FENCEGRD	49.35
428	563796.53	4191752.68	FENCEGRD	47.24
429	563809.00	4191733.84	FENCEGRD	46.99
430	563821.47	4191715.01	FENCEGRD	47.08
431	563833.94	4191696.17	FENCEGRD	46.89
432	563846.42	4191677.33	FENCEGRD	47.00
433	563858.89	4191658.50	FENCEGRD	46.71
434	563871.36	4191639.66	FENCEGRD	46.72
435	563883.83	4191620.82	FENCEGRD	46.44
436	563896.30	4191601.99	FENCEGRD	46.76
437	563908.78	4191583.15	FENCEGRD	46.91
438	563921.25	4191564.31	FENCEGRD	46.70
439	563933.72	4191545.48	FENCEGRD	47.00
440	563946.19	4191526.64	FENCEGRD	47.00
441	563958.67	4191507.80	FENCEGRD	46.90
442	563971.14	4191488.96	FENCEGRD	47.00
443	563983.61	4191470.13	FENCEGRD	47.00
444	564018.25	4191446.95	FENCEGRD	47.83
445	564040.42	4191442.61	FENCEGRD	48.00
446	564062.60	4191438.28	FENCEGRD	48.31
447	564084.77	4191433.94	FENCEGRD	48.92
448	564106.94	4191429.60	FENCEGRD	48.95

Receptor Pathway

449	564129.11	4191425.26	FENCEGRD	49.33
450	564151.28	4191420.92	FENCEGRD	49.62
451	564173.45	4191416.58	FENCEGRD	50.00
452	564195.62	4191412.25	FENCEGRD	50.14
453	564217.79	4191407.91	FENCEGRD	50.53
454	564239.96	4191403.57	FENCEGRD	51.20
455	564262.14	4191399.23	FENCEGRD	51.73
456	564284.31	4191394.89	FENCEGRD	52.31
457	564306.48	4191390.55	FENCEGRD	52.91
458	564328.65	4191386.22	FENCEGRD	53.50
459	564350.82	4191381.88	FENCEGRD	54.10
460	564372.99	4191377.54	FENCEGRD	54.67
461	563767.30	4191812.79	FENCEGRD	47.76
462	563763.02	4191835.23	FENCEGRD	48.09
463	563758.74	4191857.66	FENCEGRD	48.21
464	563756.28	4191724.35	FENCEGRD	45.69
465	563781.00	4191687.01	FENCEGRD	45.92
466	563805.73	4191649.67	FENCEGRD	45.77
467	563830.45	4191612.33	FENCEGRD	45.57
468	563855.17	4191574.99	FENCEGRD	45.77
469	563879.90	4191537.65	FENCEGRD	46.00
470	563904.62	4191500.31	FENCEGRD	46.01
471	563929.34	4191462.97	FENCEGRD	45.98
472	563954.07	4191425.63	FENCEGRD	46.00
473	563988.40	4191402.66	FENCEGRD	46.73
474	564032.35	4191394.06	FENCEGRD	47.18
475	564076.30	4191385.46	FENCEGRD	47.83
476	564120.25	4191376.86	FENCEGRD	48.24
477	564164.20	4191368.26	FENCEGRD	49.00
478	564208.15	4191359.66	FENCEGRD	49.60
479	564252.10	4191351.06	FENCEGRD	50.68
480	564296.05	4191342.46	FENCEGRD	52.08
481	564340.00	4191333.86	FENCEGRD	52.81
482	564383.95	4191325.26	FENCEGRD	54.02
483	563714.91	4191802.80	FENCEGRD	46.15
484	563710.63	4191825.23	FENCEGRD	46.55
485	563706.35	4191847.67	FENCEGRD	46.83
486	564271.93	4191979.62	FENCEGRD	60.11

Receptor Pathway

AERMOD

487	564291.82	4191991.48	FENCEGRD	60.50
488	564316.59	4191987.58	FENCEGRD	60.86
489	564252.46	4191993.02	FENCEGRD	60.55
490	564290.12	4192006.87	FENCEGRD	61.02
491	564248.32	4192016.29	FENCEGRD	61.16
492	564213.93	4191978.73	FENCEGRD	59.43
493	564285.97	4192030.14	FENCEGRD	61.79
494	564308.30	4192034.12	FENCEGRD	61.92
495	564244.17	4192039.56	FENCEGRD	61.46
496	564213.53	4192019.83	FENCEGRD	60.63
497	564194.46	4191992.13	FENCEGRD	59.52
498	564281.82	4192053.41	FENCEGRD	62.57
499	564240.02	4192062.83	FENCEGRD	62.10
500	564209.38	4192043.10	FENCEGRD	61.22
501	564174.99	4192005.54	FENCEGRD	59.97
502	564167.49	4191969.87	FENCEGRD	58.63
503	564277.67	4192076.68	FENCEGRD	63.16
504	564300.75	4192085.17	FENCEGRD	63.63
505	564232.81	4192084.13	FENCEGRD	62.58
506	564177.65	4192048.61	FENCEGRD	60.55
507	564150.27	4191993.97	FENCEGRD	58.81
508	564278.79	4192089.42	FENCEGRD	63.39
509	564229.17	4192107.73	FENCEGRD	62.91
510	564193.42	4192084.71	FENCEGRD	61.87
511	564157.68	4192061.69	FENCEGRD	60.40
512	564135.43	4192029.37	FENCEGRD	59.50
513	564126.68	4191987.76	FENCEGRD	58.17
514	564269.38	4192123.22	FENCEGRD	64.09
515	564225.39	4192131.23	FENCEGRD	63.16
516	564190.37	4192108.68	FENCEGRD	62.23
517	564155.35	4192086.13	FENCEGRD	61.06
518	564116.05	4192043.20	FENCEGRD	59.29
519	564107.48	4192002.44	FENCEGRD	57.97
520	564098.91	4191961.68	FENCEGRD	57.26
521	564265.23	4192146.49	FENCEGRD	64.69
522	564287.56	4192150.47	FENCEGRD	64.96
523	564221.52	4192154.68	FENCEGRD	63.94
524	564187.04	4192132.48	FENCEGRD	62.66

Receptor Pathway

AERMOD

525	564152.57	4192110.28	FENCEGRD	61.63
526	564118.10	4192088.08	FENCEGRD	60.72
527	564096.65	4192056.92	FENCEGRD	59.30
528	564088.21	4192016.80	FENCEGRD	58.35
529	564079.77	4191976.67	FENCEGRD	57.01
530	564261.08	4192169.76	FENCEGRD	65.37
531	564217.58	4192178.08	FENCEGRD	64.34
532	564183.54	4192156.16	FENCEGRD	63.33
533	564149.49	4192134.24	FENCEGRD	62.26
534	564115.44	4192112.31	FENCEGRD	61.53
535	564077.23	4192070.57	FENCEGRD	59.14
536	564068.90	4192030.95	FENCEGRD	58.33
537	564060.57	4191991.32	FENCEGRD	57.12
538	564046.48	4191947.21	FENCEGRD	55.80
539	564256.94	4192193.03	FENCEGRD	66.00
540	564279.27	4192197.01	FENCEGRD	66.00
541	564211.73	4192200.26	FENCEGRD	66.00
542	564155.56	4192164.08	FENCEGRD	63.10
543	564118.10	4192139.97	FENCEGRD	62.07
544	564080.65	4192115.85	FENCEGRD	60.59
545	564057.35	4192082.00	FENCEGRD	59.52
546	564043.60	4192016.61	FENCEGRD	57.01
547	564048.18	4191967.26	FENCEGRD	56.52
548	564252.79	4192216.30	FENCEGRD	66.00
549	564202.64	4192252.93	FENCEGRD	67.18
550	564165.71	4192229.15	FENCEGRD	64.48
551	564128.78	4192205.37	FENCEGRD	63.00
552	564091.85	4192181.59	FENCEGRD	62.24
553	564054.93	4192157.82	FENCEGRD	61.09
554	564013.48	4192112.55	FENCEGRD	58.36
555	564004.44	4192069.56	FENCEGRD	57.43
556	563995.41	4192026.58	FENCEGRD	56.04
557	563986.37	4191983.60	FENCEGRD	55.00
558	563977.33	4191940.62	FENCEGRD	54.27
559	564243.43	4192268.80	FENCEGRD	67.92
560	564265.76	4192272.78	FENCEGRD	67.82
561	564193.46	4192305.55	FENCEGRD	67.65
562	564156.89	4192282.01	FENCEGRD	65.63

Receptor Pathway

563	564120.33	4192258.46	FENCEGRD	63.63
564	564083.76	4192234.92	FENCEGRD	62.62
565	564047.20	4192211.37	FENCEGRD	61.79
566	564010.64	4192187.83	FENCEGRD	60.57
567	563969.60	4192143.00	FENCEGRD	57.76
568	563960.65	4192100.44	FENCEGRD	56.91
569	563951.70	4192057.88	FENCEGRD	55.44
570	563942.75	4192015.32	FENCEGRD	54.52
571	563933.80	4191972.76	FENCEGRD	53.88
572	563924.86	4191930.20	FENCEGRD	52.85
573	564234.07	4192321.31	FENCEGRD	68.51
574	564256.40	4192325.29	FENCEGRD	68.91
575	564184.23	4192358.15	FENCEGRD	67.35
576	564147.93	4192334.77	FENCEGRD	66.14
577	564111.64	4192311.40	FENCEGRD	64.16
578	564075.34	4192288.02	FENCEGRD	63.28
579	564039.04	4192264.65	FENCEGRD	62.31
580	564002.74	4192241.27	FENCEGRD	61.13
581	563966.44	4192217.90	FENCEGRD	59.10
582	563925.70	4192173.40	FENCEGRD	57.31
583	563916.82	4192131.15	FENCEGRD	56.07
584	563907.93	4192088.90	FENCEGRD	55.11
585	563899.05	4192046.65	FENCEGRD	54.20
586	563890.17	4192004.40	FENCEGRD	53.49
587	563881.29	4191962.15	FENCEGRD	52.26
588	563872.40	4191919.90	FENCEGRD	51.97
589	564224.71	4192373.81	FENCEGRD	68.70
590	564247.04	4192377.79	FENCEGRD	69.17
591	564174.98	4192410.72	FENCEGRD	67.05
592	564138.88	4192387.47	FENCEGRD	65.84
593	564102.79	4192364.23	FENCEGRD	64.64
594	564066.69	4192340.99	FENCEGRD	63.44
595	564030.60	4192317.74	FENCEGRD	62.23
596	563994.50	4192294.50	FENCEGRD	61.03
597	563958.40	4192271.26	FENCEGRD	59.66
598	563922.31	4192248.01	FENCEGRD	57.66
599	563881.80	4192203.76	FENCEGRD	56.27
600	563872.96	4192161.75	FENCEGRD	55.16

Receptor Pathway

601	563864.13	4192119.74	FENCEGRD	54.47
602	563855.30	4192077.72	FENCEGRD	53.40
603	563846.46	4192035.71	FENCEGRD	52.10
604	563837.63	4191993.70	FENCEGRD	51.81
605	563828.80	4191951.68	FENCEGRD	50.69
606	563819.96	4191909.67	FENCEGRD	50.17
607	564215.35	4192426.32	FENCEGRD	68.39
608	564237.68	4192430.30	FENCEGRD	69.15
609	564164.70	4192462.63	FENCEGRD	66.76
610	564145.73	4192450.42	FENCEGRD	66.07
611	564126.77	4192438.21	FENCEGRD	65.44
612	564107.80	4192425.99	FENCEGRD	65.00
613	564088.84	4192413.78	FENCEGRD	64.65
614	564069.87	4192401.57	FENCEGRD	64.09
615	564050.91	4192389.36	FENCEGRD	63.70
616	564012.98	4192364.93	FENCEGRD	62.61
617	563994.01	4192352.72	FENCEGRD	62.01
618	563975.04	4192340.50	FENCEGRD	61.38
619	563956.08	4192328.29	FENCEGRD	60.68
620	563937.11	4192316.08	FENCEGRD	59.52
621	563918.15	4192303.86	FENCEGRD	58.44
622	563880.22	4192279.44	FENCEGRD	56.32
623	563861.25	4192267.23	FENCEGRD	55.59
624	563837.64	4192232.94	FENCEGRD	54.71
625	563833.00	4192210.86	FENCEGRD	54.29
626	563823.72	4192166.71	FENCEGRD	53.46
627	563814.44	4192122.56	FENCEGRD	52.06
628	563805.15	4192078.41	FENCEGRD	51.56
629	563800.51	4192056.34	FENCEGRD	50.95
630	563791.23	4192012.19	FENCEGRD	50.26
631	563786.59	4191990.11	FENCEGRD	50.11
632	563777.31	4191945.96	FENCEGRD	49.80
633	563768.02	4191901.81	FENCEGRD	49.25
634	564206.00	4192478.83	FENCEGRD	68.14
635	564228.33	4192482.81	FENCEGRD	69.55
636	564155.51	4192515.25	FENCEGRD	67.38
637	564117.91	4192491.04	FENCEGRD	66.14
638	564080.32	4192466.83	FENCEGRD	64.89

Receptor Pathway

639	564042.72	4192442.62	FENCEGRD	63.64
640	564005.13	4192418.41	FENCEGRD	62.38
641	563967.53	4192394.20	FENCEGRD	61.13
642	563929.94	4192369.99	FENCEGRD	59.88
643	563892.34	4192345.78	FENCEGRD	57.82
644	563854.75	4192321.57	FENCEGRD	56.06
645	563817.15	4192297.36	FENCEGRD	54.12
646	563793.76	4192263.38	FENCEGRD	53.05
647	563784.56	4192219.62	FENCEGRD	52.04
648	563775.36	4192175.86	FENCEGRD	51.21
649	563766.16	4192132.10	FENCEGRD	50.42
650	563756.96	4192088.34	FENCEGRD	49.85
651	563747.75	4192044.58	FENCEGRD	49.00
652	563738.55	4192000.83	FENCEGRD	48.91
653	563729.35	4191957.07	FENCEGRD	48.20
654	563720.15	4191913.31	FENCEGRD	47.89
655	564196.64	4192531.33	FENCEGRD	69.27
656	564218.97	4192535.31	FENCEGRD	70.14
657	564267.85	4191898.74		58.41
658	564251.36	4191903.25		58.16
659	564244.10	4191885.78		57.35
660	564255.28	4191886.57		57.73
661	564228.79	4191884.02		56.99
662	564183.25	4191884.02		56.30
663	564209.95	4191931.32		58.50
664	564369.91	4191927.60	FENCEGRD	60.21
665	564371.08	4191918.09	FENCEGRD	60.03
666	564371.91	4191907.25	FENCEGRD	59.88
667	564398.10	4191909.58	FENCEGRD	60.38
668	564386.76	4191909.08	FENCEGRD	60.08
669	564386.76	4191918.59	FENCEGRD	60.18
670	564394.77	4191927.93	FENCEGRD	60.62
671	564378.75	4191927.60	FENCEGRD	60.32
672	564378.42	4191939.95	FENCEGRD	60.65
673	564391.43	4191941.28	FENCEGRD	60.87
674	564410.12	4191909.75	FENCEGRD	60.69
675	564412.12	4191920.09	FENCEGRD	60.96
676	564413.62	4191937.44	FENCEGRD	61.00

Receptor Pathway

677	564425.46	4191929.60	FENCEGRD	61.00
678	564429.47	4191913.75	FENCEGRD	60.96
679	564447.49	4191916.42	FENCEGRD	61.14
680	564444.65	4191932.77	FENCEGRD	61.04
681	564438.81	4191922.76	FENCEGRD	61.00
682	564467.84	4191918.42	FENCEGRD	61.81
683	564468.01	4191930.44	FENCEGRD	61.82
684	564371.91	4191964.30	FENCEGRD	61.21
685	564386.43	4191957.30	FENCEGRD	61.36
686	564398.44	4191968.81	FENCEGRD	61.75
687	564413.62	4191977.98	FENCEGRD	62.05
688	564428.63	4191980.15	FENCEGRD	62.13
689	564424.13	4191968.31	FENCEGRD	61.73
690	564440.81	4191981.99	FENCEGRD	62.19
691	564452.16	4191973.15	FENCEGRD	62.18
692	564450.82	4191952.29	FENCEGRD	61.44
693	564464.50	4191957.30	FENCEGRD	62.07
694	564452.99	4191964.30	FENCEGRD	61.92
695	564515.26	4191949.23	FENCEGRD	63.88
696	564520.05	4191926.22	FENCEGRD	63.74
697	564548.18	4191931.65	FENCEGRD	65.24
698	564546.90	4191956.58	FENCEGRD	65.79
699	564508.55	4191985.02	FENCEGRD	64.58
700	564537.95	4191989.18	FENCEGRD	66.15
701	564378.47	4192007.40	FENCEGRD	61.87
702	564404.04	4192014.11	FENCEGRD	62.94
703	564423.85	4192014.75	FENCEGRD	63.28
704	564454.56	4192063.95	FENCEGRD	65.29
705	564485.52	4192066.61	FENCEGRD	66.41
706	564514.27	4192073.68	FENCEGRD	67.09
707	564310.11	4191982.50	FENCEGRD	60.65
708	564201.18	4192015.37	FENCEGRD	60.28
709	564187.86	4192030.31	FENCEGRD	60.38
710	564173.47	4192022.44	FENCEGRD	60.00
711	564303.87	4192049.06	FENCEGRD	62.42
712	564307.13	4192020.81	FENCEGRD	61.48
713	564306.31	4192007.77	FENCEGRD	61.05
714	564301.69	4191997.44	FENCEGRD	60.78

Receptor Pathway

AERMOD

715	564269.64	4191995.27	FENCEGRD	60.63
716	564188.14	4191971.91	FENCEGRD	58.92
717	564224.27	4191970.00	FENCEGRD	59.55
718	564216.12	4192001.25	FENCEGRD	60.25
719	564153.20	4191965.48	FENCEGRD	58.21
720	564122.84	4191954.61	FENCEGRD	57.50
721	564117.09	4191980.18	FENCEGRD	58.02
722	564083.85	4191945.67	FENCEGRD	56.98
723	564013.21	4191939.27	FENCEGRD	54.92
724	563997.87	4191938.95	FENCEGRD	54.79
725	564007.46	4191974.75	FENCEGRD	55.44
726	564042.30	4191992.33	FENCEGRD	56.63
727	563988.58	4191902.55	FENCEGRD	53.84
728	564014.53	4191894.28	FENCEGRD	54.18
729	563957.75	4191938.27	FENCEGRD	53.59
730	563944.97	4191935.64	FENCEGRD	53.25
731	563876.15	4191870.59	FENCEGRD	50.56
732	563897.96	4191930.75	FENCEGRD	52.39
733	564329.17	4191858.88	FENCEGRD	58.26
734	564324.28	4191848.82	FENCEGRD	57.78
735	564317.76	4191834.70	FENCEGRD	57.28
736	564332.70	4191834.70	FENCEGRD	57.59
737	564295.75	4191849.10	FENCEGRD	57.76
738	564293.85	4191824.91	FENCEGRD	56.95
739	564258.53	4191840.94	FENCEGRD	56.48
740	564271.30	4191814.59	FENCEGRD	56.16
741	564292.12	4191781.68	FENCEGRD	55.98
742	564318.97	4191786.48	FENCEGRD	56.57
743	564379.50	4191863.64	FENCEGRD	59.21
744	564380.04	4191829.13	FENCEGRD	58.90
745	564441.99	4191869.89	FENCEGRD	60.95
746	564429.49	4191826.96	FENCEGRD	60.01
747	564444.16	4191829.68	FENCEGRD	60.13
748	564444.16	4191802.78	FENCEGRD	60.02
749	564459.92	4191819.35	FENCEGRD	60.55
750	564258.43	4191982.64	FENCEGRD	60.21
751	564270.54	4192043.38	FENCEGRD	62.23
752	564260.81	4192040.73	FENCEGRD	62.06

Receptor Pathway

753	564506.93	4192025.65	FENCEGRD	65.76	
754	564521.97	4192028.30	FENCEGRD	66.35	
755	564170.33	4192068.11	FENCEGRD	60.95	
756	564186.13	4192072.25	FENCEGRD	61.54	
757	564209.07	4192077.14	FENCEGRD	62.07	
758	564220.35	4192078.64	FENCEGRD	62.23	
759	564136.48	4192067.74	FENCEGRD	60.04	
760	564243.67	4192085.79	FENCEGRD	62.77	
761	564254.95	4192089.93	FENCEGRD	62.94	
762	564266.99	4192092.56	FENCEGRD	63.10	

Plant Boundary Receptors

Receptor Groups

Record Number	Group ID	Group Description
1	FENCEPRI	Cartesian plant boundary Primary Receptors
2	FENCEGRD	Receptors generated from Fenceline Grid
3	SS	BAAQMD Stationary Source
4	2974	
5	4546	
6	4977	
7	5817	
8	6127	
9	6288	
10	7389	
11	9243	
12	9267	
13	9309	
14	9321	
15	9343	
16	9352	

Meteorology Pathway

AERMOD

Met Input Data

Surface Met Data

Filename: MET_data\KOAK_Compiled.SFC
Format Type: Default AERMET format

Profile Met Data

Filename: MET_data\KOAK_Compiled.PFL
Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 1.80 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2009			OAKLAND/WSO AP
Upper Air		2009			OAKLAND/WSO AP

Data Period

Data Period to Process

Start Date: 1/1/2009 Start Hour: 1 End Date: 12/31/2017 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Output Pathway

AERMOD

Tabular Printed Outputs

Short Term Averaging Period	RECTABLE Highest Values Table										MAXTABLE Maximum Values Table	DAYTABLE Daily Values Table
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th		
1	■	☐	☐	☐	☐	☐	☐	☐	☐	☐		No

Contour Plot Files (PLOTFILE)

Path for PLOTFILES: 61000001 Shattuck.AD

Averaging Period	Source Group ID	High Value	File Name
1	ALL	1st	01H1GALL.PLT
1	Area	1st	01H1G001.PLT
1	Off1	1st	01H1G002.PLT
1	Off2	1st	01H1G003.PLT
1	Off3	1st	01H1G004.PLT
1	Off4	1st	01H1G005.PLT
1	Off5	1st	01H1G006.PLT
1	Off6	1st	01H1G007.PLT
1	On	1st	01H1G008.PLT
Period	ALL	N/A	PE00GALL.PLT
Period	Area	N/A	PE00G001.PLT
Period	Off1	N/A	PE00G002.PLT
Period	Off2	N/A	PE00G003.PLT
Period	Off3	N/A	PE00G004.PLT
Period	Off4	N/A	PE00G005.PLT
Period	Off5	N/A	PE00G006.PLT
Period	Off6	N/A	PE00G007.PLT
Period	On	N/A	PE00G008.PLT

Control Pathway

AERMOD

Dispersion Options

Titles

F:\AERMOD\61000001 Shattuck\PM25\PM25.isc

Dispersion Options

☑ Regulatory Default ☐ Non-Default Options

Dispersion Coefficient

Urban

Population:
Name (Optional):
Roughness Length:

Output Type

☑ Concentration
☐ Total Deposition (Dry & Wet)
☐ Dry Deposition
☐ Wet Deposition

Plume Depletion

☐ Dry Removal
☐ Wet Removal

Output Warnings

☐ No Output Warnings
☐ Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

OTHER - DPM

Averaging Time Options

Hours ☑ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 6 ☐ 8 ☐ 12 ☐ 24

☐ Month ☑ Period ☐ Annual

Exponential Decay

Half-life of 4 hours will be used

Terrain Height Options

☐ Flat ☑ Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

☑ Yes ☐ No

Default Height = 1.50 m

Control Pathway

AERMOD

Optional Files

☐ Re-Start File ☐ Init File ☐ Multi-Year Analyses ☐ Event Input File ☑ Error Listing File

Detailed Error Listing File

Filename: PM25.err

Source Pathway - Source Inputs

AERMOD

Polygon Area Sources

Source Type: AREA POLY

Source: PAREA1 (Construction Area)

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
59.87	5.00	2.02E-7		6	564287.09	4191958.20
		2.02E-7			564321.38	4191964.01
		2.02E-7			564327.90	4191895.57
		2.02E-7			564288.65	4191888.48
		2.02E-7			564282.98	4191919.94
		2.02E-7			564293.04	4191921.50

Source Pathway - Source Inputs

AERMOD

Line Volume Sources

Source Type: LINE VOLUME

Source: SLINE1 (Route 1 – From Project Site Towards North)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9.00	0.00001		564321.73	4191959.32	60.00	3.11
			564337.33	4191962.44	60.88	3.11
			564338.89	4191966.60	60.92	3.11
			564338.89	4191976.49	60.97	3.11
			564337.33	4191990.01	61.05	3.11
			564338.37	4191999.90	61.04	3.11
			564336.81	4192021.23	62.11	3.11
			564331.61	4192079.49	63.27	3.11
			564323.81	4192151.27	65.98	3.11
			564307.68	4192321.90	69.46	3.11
			564287.42	4192522.69	71.87	3.11

Source Type: LINE VOLUME

Source: SLINE2 (Route 2 – From North To Project Site)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9.00	0.00001		564277.66	4192515.19	71.39	3.11
			564285.18	4192440.01	71.13	3.11
			564296.46	4192320.11	68.84	3.11
			564313.37	4192158.87	65.65	3.11
			564325.02	4192031.07	62.00	3.11
			564329.91	4191991.23	61.00	3.11
			564332.17	4191985.59	60.99	3.11
			564335.55	4191981.83	60.98	3.11
			564339.68	4191969.43	60.94	3.11
			564339.31	4191958.53	60.08	3.11
			564332.92	4191956.65	60.05	3.11
			564321.64	4191957.03	60.00	3.11

Source Pathway - Source Inputs

AERMOD

Source Type: LINE VOLUME
Source: SLINE3 (Route 3 – From Project Site Towards South)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9.00	0.00001		564327.66	4191904.41	59.80	3.11
			564338.18	4191905.53	59.86	3.11
			564340.43	4191905.53	59.84	3.11
			564342.31	4191904.03	59.81	3.11
			564351.71	4191805.55	57.88	3.11
			564359.60	4191719.48	56.80	3.11
			564368.25	4191692.79	57.05	3.11
			564376.52	4191678.51	56.86	3.11
			564377.24	4191673.43	56.90	3.11
			564380.23	4191663.38	56.94	3.11
			564382.13	4191651.97	56.96	3.11
			564380.23	4191622.65	56.86	3.11
			564379.91	4191559.05	56.86	3.11
			564379.86	4191549.59	56.85	3.11
			564396.51	4191380.27	55.04	3.11

Source Pathway - Source Inputs

AERMOD

Source Type: LINE VOLUME
Source: SLINE4 (Route 4 – From South To Project Site)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9.00	0.00001		564408.94	4191383.86	55.07	3.11
			564398.37	4191481.90	56.59	3.11
			564391.40	4191578.10	57.02	3.11
			564391.57	4191601.10	57.04	3.11
			564392.18	4191621.56	57.03	3.11
			564392.99	4191642.47	57.09	3.11
			564394.08	4191652.79	57.22	3.11
			564395.71	4191658.49	57.35	3.11
			564398.97	4191668.00	57.51	3.11
			564399.78	4191681.58	57.55	3.11
			564402.23	4191700.31	57.68	3.11
			564405.48	4191754.90	58.83	3.11
			564406.84	4191774.18	58.84	3.11
			564404.94	4191797.81	59.05	3.11
			564394.35	4191896.11	60.05	3.11
			564384.03	4191893.94	59.85	3.11
			564351.71	4191888.51	59.03	3.11
			564343.57	4191887.69	59.05	3.11
			564341.67	4191899.64	59.09	3.11
			564340.58	4191905.34	59.84	3.11
			564327.27	4191904.53	59.80	3.11

Source Pathway - Source Inputs

AERMOD

Source Type: LINE VOLUME
Source: SLINE5 (Route 5 – From Project Site Towards West)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9.00	0.00001		564327.33	4191907.36	59.90	3.11
			564339.82	4191908.45	59.89	3.11
			564341.45	4191907.09	59.86	3.11
			564343.35	4191899.76	59.09	3.11
			564344.17	4191888.35	59.05	3.11
			564333.03	4191885.09	59.02	3.11
			564196.69	4191861.46	56.06	3.11
			564148.89	4191854.67	55.01	3.11
			564056.25	4191838.22	53.80	3.11
			564047.98	4191835.59	53.71	3.11
			564039.71	4191831.83	53.42	3.11
			564029.56	4191829.20	52.99	3.11
			563957.76	4191818.67	51.76	3.11
			563943.85	4191816.41	51.17	3.11
			563935.21	4191816.04	50.90	3.11
			563925.43	4191817.54	50.70	3.11
			563799.13	4191796.87	48.04	3.11

Source Pathway - Source Inputs

AERMOD

Source Type: LINE VOLUME
Source: SLINE6 (Route 6 – From West To Project Site)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9.00	0.00001		563804.39	4191784.46	48.06	3.11
			563872.05	4191796.11	49.02	3.11
			563921.67	4191804.01	50.07	3.11
			563925.43	4191805.14	50.08	3.11
			563928.44	4191805.89	50.09	3.11
			563931.07	4191809.65	50.12	3.11
			563934.83	4191814.91	50.87	3.11
			564039.34	4191829.57	53.39	3.11
			564046.48	4191829.20	53.74	3.11
			564055.88	4191827.32	53.97	3.11
			564082.57	4191833.33	53.95	3.11
			564335.55	4191875.81	59.04	3.11
			564343.05	4191876.30	59.06	3.11
			564344.14	4191877.11	59.05	3.11
			564343.32	4191890.96	59.06	3.11
			564343.05	4191903.46	59.80	3.11
			564342.78	4191904.00	59.81	3.11
			564342.24	4191907.80	59.87	3.11
			564327.57	4191905.90	59.86	3.11

Source Type: LINE VOLUME
Source: SLINE7 (On-site Construction Trucks)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9.00	0.00002		564320.73	4191953.43	60.00	3.11
			564298.18	4191950.21	59.93	3.11
			564304.33	4191903.07	59.23	3.11
			564326.00	4191906.29	59.87	3.11

Source Pathway - Source Inputs

AERMOD

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000397	564326.14	4191960.20	60.46	3.11	2.22E-7	9.00		4.19	2.89
	L0000398	564334.96	4191961.97	60.52	3.11	2.22E-7	9.00		4.19	2.89
	L0000399	564338.89	4191968.75	60.74	3.11	2.22E-7	9.00		4.19	2.89
	L0000400	564338.75	4191977.74	61.00	3.11	2.22E-7	9.00		4.19	2.89
	L0000401	564337.72	4191986.68	61.00	3.11	2.22E-7	9.00		4.19	2.89
	L0000402	564337.92	4191995.62	61.00	3.11	2.22E-7	9.00		4.19	2.89
	L0000403	564338.03	4192004.59	61.00	3.11	2.22E-7	9.00		4.19	2.89
	L0000404	564337.37	4192013.56	61.35	3.11	2.22E-7	9.00		4.19	2.89
	L0000405	564336.69	4192022.54	61.78	3.11	2.22E-7	9.00		4.19	2.89
	L0000406	564335.89	4192031.50	62.18	3.11	2.22E-7	9.00		4.19	2.89
	L0000407	564335.09	4192040.47	62.52	3.11	2.22E-7	9.00		4.19	2.89
	L0000408	564334.29	4192049.43	62.80	3.11	2.22E-7	9.00		4.19	2.89
	L0000409	564333.49	4192058.40	63.07	3.11	2.22E-7	9.00		4.19	2.89
	L0000410	564332.69	4192067.36	63.34	3.11	2.22E-7	9.00		4.19	2.89
	L0000411	564331.89	4192076.32	63.61	3.11	2.22E-7	9.00		4.19	2.89
	L0000412	564330.98	4192085.28	63.88	3.11	2.22E-7	9.00		4.19	2.89
	L0000413	564330.01	4192094.23	64.15	3.11	2.22E-7	9.00		4.19	2.89
	L0000414	564329.03	4192103.17	64.41	3.11	2.22E-7	9.00		4.19	2.89
	L0000415	564328.06	4192112.12	64.68	3.11	2.22E-7	9.00		4.19	2.89
	L0000416	564327.09	4192121.07	64.94	3.11	2.22E-7	9.00		4.19	2.89
	L0000417	564326.12	4192130.01	65.21	3.11	2.22E-7	9.00		4.19	2.89
	L0000418	564325.14	4192138.96	65.48	3.11	2.22E-7	9.00		4.19	2.89
	L0000419	564324.17	4192147.91	65.74	3.11	2.22E-7	9.00		4.19	2.89
	L0000420	564323.28	4192156.86	66.01	3.11	2.22E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000421	564322.43	4192165.82	66.28	3.11	2.22E-7	9.00		4.19	2.89
	L0000422	564321.58	4192174.78	66.55	3.11	2.22E-7	9.00		4.19	2.89
	L0000423	564320.74	4192183.74	66.82	3.11	2.22E-7	9.00		4.19	2.89
	L0000424	564319.89	4192192.70	66.88	3.11	2.22E-7	9.00		4.19	2.89
	L0000425	564319.04	4192201.66	66.85	3.11	2.22E-7	9.00		4.19	2.89
	L0000426	564318.20	4192210.62	66.82	3.11	2.22E-7	9.00		4.19	2.89
	L0000427	564317.35	4192219.58	66.81	3.11	2.22E-7	9.00		4.19	2.89
	L0000428	564316.50	4192228.55	66.86	3.11	2.22E-7	9.00		4.19	2.89
	L0000429	564315.66	4192237.51	66.92	3.11	2.22E-7	9.00		4.19	2.89
	L0000430	564314.81	4192246.47	67.00	3.11	2.22E-7	9.00		4.19	2.89
	L0000431	564313.96	4192255.43	67.00	3.11	2.22E-7	9.00		4.19	2.89
	L0000432	564313.12	4192264.39	67.00	3.11	2.22E-7	9.00		4.19	2.89
	L0000433	564312.27	4192273.35	67.00	3.11	2.22E-7	9.00		4.19	2.89
	L0000434	564311.42	4192282.31	67.20	3.11	2.22E-7	9.00		4.19	2.89
	L0000435	564310.58	4192291.27	67.50	3.11	2.22E-7	9.00		4.19	2.89
	L0000436	564309.73	4192300.23	67.80	3.11	2.22E-7	9.00		4.19	2.89
	L0000437	564308.88	4192309.19	68.19	3.11	2.22E-7	9.00		4.19	2.89
	L0000438	564308.04	4192318.15	68.77	3.11	2.22E-7	9.00		4.19	2.89
	L0000439	564307.16	4192327.10	69.32	3.11	2.22E-7	9.00		4.19	2.89
	L0000440	564306.25	4192336.06	69.82	3.11	2.22E-7	9.00		4.19	2.89
	L0000441	564305.35	4192345.01	69.96	3.11	2.22E-7	9.00		4.19	2.89
	L0000442	564304.45	4192353.97	70.10	3.11	2.22E-7	9.00		4.19	2.89
	L0000443	564303.54	4192362.92	70.25	3.11	2.22E-7	9.00		4.19	2.89
	L0000444	564302.64	4192371.88	70.48	3.11	2.22E-7	9.00		4.19	2.89
	L0000445	564301.73	4192380.83	70.75	3.11	2.22E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000446	564300.83	4192389.78	71.02	3.11	2.22E-7	9.00		4.19	2.89
	L0000447	564299.93	4192398.74	71.21	3.11	2.22E-7	9.00		4.19	2.89
	L0000448	564299.02	4192407.69	71.18	3.11	2.22E-7	9.00		4.19	2.89
	L0000449	564298.12	4192416.65	71.15	3.11	2.22E-7	9.00		4.19	2.89
	L0000450	564297.22	4192425.60	71.12	3.11	2.22E-7	9.00		4.19	2.89
	L0000451	564296.31	4192434.56	71.11	3.11	2.22E-7	9.00		4.19	2.89
	L0000452	564295.41	4192443.51	71.09	3.11	2.22E-7	9.00		4.19	2.89
	L0000453	564294.51	4192452.47	71.06	3.11	2.22E-7	9.00		4.19	2.89
	L0000454	564293.60	4192461.42	71.17	3.11	2.22E-7	9.00		4.19	2.89
	L0000455	564292.70	4192470.38	71.45	3.11	2.22E-7	9.00		4.19	2.89
	L0000456	564291.80	4192479.33	71.72	3.11	2.22E-7	9.00		4.19	2.89
	L0000457	564290.89	4192488.28	71.91	3.11	2.22E-7	9.00		4.19	2.89
	L0000458	564289.99	4192497.24	71.88	3.11	2.22E-7	9.00		4.19	2.89
	L0000459	564289.09	4192506.19	71.85	3.11	2.22E-7	9.00		4.19	2.89
	L0000460	564288.18	4192515.15	71.82	3.11	2.22E-7	9.00		4.19	2.89

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000461	564278.11	4192510.71	71.48	3.11	2.22E-7	9.00		4.19	2.89
	L0000462	564279.01	4192501.75	71.51	3.11	2.22E-7	9.00		4.19	2.89
	L0000463	564279.90	4192492.80	71.54	3.11	2.22E-7	9.00		4.19	2.89
	L0000464	564280.80	4192483.84	71.52	3.11	2.22E-7	9.00		4.19	2.89
	L0000465	564281.69	4192474.89	71.37	3.11	2.22E-7	9.00		4.19	2.89
	L0000466	564282.59	4192465.93	71.20	3.11	2.22E-7	9.00		4.19	2.89
	L0000467	564283.49	4192456.98	71.01	3.11	2.22E-7	9.00		4.19	2.89
	L0000468	564284.38	4192448.02	70.91	3.11	2.22E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000469	564285.27	4192439.07	70.84	3.11	2.22E-7	9.00		4.19	2.89
	L0000470	564286.11	4192430.11	70.78	3.11	2.22E-7	9.00		4.19	2.89
	L0000471	564286.96	4192421.15	70.78	3.11	2.22E-7	9.00		4.19	2.89
	L0000472	564287.80	4192412.19	70.81	3.11	2.22E-7	9.00		4.19	2.89
	L0000473	564288.64	4192403.22	70.83	3.11	2.22E-7	9.00		4.19	2.89
	L0000474	564289.48	4192394.26	70.79	3.11	2.22E-7	9.00		4.19	2.89
	L0000475	564290.33	4192385.30	70.52	3.11	2.22E-7	9.00		4.19	2.89
	L0000476	564291.17	4192376.34	70.25	3.11	2.22E-7	9.00		4.19	2.89
	L0000477	564292.01	4192367.38	69.98	3.11	2.22E-7	9.00		4.19	2.89
	L0000478	564292.86	4192358.42	69.72	3.11	2.22E-7	9.00		4.19	2.89
	L0000479	564293.70	4192349.46	69.44	3.11	2.22E-7	9.00		4.19	2.89
	L0000480	564294.54	4192340.50	69.20	3.11	2.22E-7	9.00		4.19	2.89
	L0000481	564295.38	4192331.54	68.94	3.11	2.22E-7	9.00		4.19	2.89
	L0000482	564296.23	4192322.58	68.63	3.11	2.22E-7	9.00		4.19	2.89
	L0000483	564297.14	4192313.63	68.30	3.11	2.22E-7	9.00		4.19	2.89
	L0000484	564298.08	4192304.68	67.94	3.11	2.22E-7	9.00		4.19	2.89
	L0000485	564299.02	4192295.73	67.65	3.11	2.22E-7	9.00		4.19	2.89
	L0000486	564299.96	4192286.77	67.35	3.11	2.22E-7	9.00		4.19	2.89
	L0000487	564300.89	4192277.82	67.05	3.11	2.22E-7	9.00		4.19	2.89
	L0000488	564301.83	4192268.87	67.00	3.11	2.22E-7	9.00		4.19	2.89
	L0000489	564302.77	4192259.92	67.00	3.11	2.22E-7	9.00		4.19	2.89
	L0000490	564303.71	4192250.97	67.00	3.11	2.22E-7	9.00		4.19	2.89
	L0000491	564304.65	4192242.02	66.91	3.11	2.22E-7	9.00		4.19	2.89
	L0000492	564305.59	4192233.07	66.73	3.11	2.22E-7	9.00		4.19	2.89
	L0000493	564306.53	4192224.12	66.58	3.11	2.22E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000494	564307.47	4192215.17	66.46	3.11	2.22E-7	9.00		4.19	2.89
	L0000495	564308.41	4192206.22	66.49	3.11	2.22E-7	9.00		4.19	2.89
	L0000496	564309.34	4192197.27	66.52	3.11	2.22E-7	9.00		4.19	2.89
	L0000497	564310.28	4192188.31	66.56	3.11	2.22E-7	9.00		4.19	2.89
	L0000498	564311.22	4192179.36	66.36	3.11	2.22E-7	9.00		4.19	2.89
	L0000499	564312.16	4192170.41	66.09	3.11	2.22E-7	9.00		4.19	2.89
	L0000500	564313.10	4192161.46	65.82	3.11	2.22E-7	9.00		4.19	2.89
	L0000501	564313.95	4192152.50	65.60	3.11	2.22E-7	9.00		4.19	2.89
	L0000502	564314.77	4192143.54	65.41	3.11	2.22E-7	9.00		4.19	2.89
	L0000503	564315.59	4192134.58	65.20	3.11	2.22E-7	9.00		4.19	2.89
	L0000504	564316.40	4192125.61	64.97	3.11	2.22E-7	9.00		4.19	2.89
	L0000505	564317.22	4192116.65	64.68	3.11	2.22E-7	9.00		4.19	2.89
	L0000506	564318.04	4192107.69	64.38	3.11	2.22E-7	9.00		4.19	2.89
	L0000507	564318.86	4192098.73	64.08	3.11	2.22E-7	9.00		4.19	2.89
	L0000508	564319.67	4192089.76	63.78	3.11	2.22E-7	9.00		4.19	2.89
	L0000509	564320.49	4192080.80	63.48	3.11	2.22E-7	9.00		4.19	2.89
	L0000510	564321.31	4192071.84	63.18	3.11	2.22E-7	9.00		4.19	2.89
	L0000511	564322.12	4192062.87	62.88	3.11	2.22E-7	9.00		4.19	2.89
	L0000512	564322.94	4192053.91	62.58	3.11	2.22E-7	9.00		4.19	2.89
	L0000513	564323.76	4192044.95	62.30	3.11	2.22E-7	9.00		4.19	2.89
	L0000514	564324.58	4192035.99	62.02	3.11	2.22E-7	9.00		4.19	2.89
	L0000515	564325.52	4192027.04	61.74	3.11	2.22E-7	9.00		4.19	2.89
	L0000516	564326.61	4192018.10	61.43	3.11	2.22E-7	9.00		4.19	2.89
	L0000517	564327.71	4192009.17	61.11	3.11	2.22E-7	9.00		4.19	2.89
	L0000518	564328.81	4192000.24	61.00	3.11	2.22E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000519	564329.90	4191991.30	61.00	3.11	2.22E-7	9.00		4.19	2.89
	L0000520	564334.07	4191983.47	61.00	3.11	2.22E-7	9.00		4.19	2.89
	L0000521	564337.70	4191975.39	60.97	3.11	2.22E-7	9.00		4.19	2.89
	L0000522	564339.59	4191966.71	60.68	3.11	2.22E-7	9.00		4.19	2.89
	L0000523	564338.52	4191958.30	60.40	3.11	2.22E-7	9.00		4.19	2.89
	L0000524	564329.76	4191956.76	60.35	3.11	2.22E-7	9.00		4.19	2.89

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE3	L0000525	564332.13	4191904.89	59.62	3.11	1.90E-7	9.00		4.19	2.89
	L0000526	564340.95	4191905.12	59.62	3.11	1.90E-7	9.00		4.19	2.89
	L0000527	564343.00	4191896.81	59.35	3.11	1.90E-7	9.00		4.19	2.89
	L0000528	564343.86	4191887.85	59.05	3.11	1.90E-7	9.00		4.19	2.89
	L0000529	564344.71	4191878.89	58.93	3.11	1.90E-7	9.00		4.19	2.89
	L0000530	564345.57	4191869.93	58.86	3.11	1.90E-7	9.00		4.19	2.89
	L0000531	564346.42	4191860.97	58.80	3.11	1.90E-7	9.00		4.19	2.89
	L0000532	564347.28	4191852.01	58.65	3.11	1.90E-7	9.00		4.19	2.89
	L0000533	564348.13	4191843.05	58.38	3.11	1.90E-7	9.00		4.19	2.89
	L0000534	564348.99	4191834.09	58.11	3.11	1.90E-7	9.00		4.19	2.89
	L0000535	564349.84	4191825.13	57.88	3.11	1.90E-7	9.00		4.19	2.89
	L0000536	564350.70	4191816.18	57.91	3.11	1.90E-7	9.00		4.19	2.89
	L0000537	564351.55	4191807.22	57.94	3.11	1.90E-7	9.00		4.19	2.89
	L0000538	564352.38	4191798.25	57.97	3.11	1.90E-7	9.00		4.19	2.89
	L0000539	564353.20	4191789.29	57.76	3.11	1.90E-7	9.00		4.19	2.89
	L0000540	564354.02	4191780.33	57.48	3.11	1.90E-7	9.00		4.19	2.89
	L0000541	564354.85	4191771.37	57.21	3.11	1.90E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE3	L0000542	564355.67	4191762.40	57.07	3.11	1.90E-7	9.00		4.19	2.89
	L0000543	564356.49	4191753.44	57.10	3.11	1.90E-7	9.00		4.19	2.89
	L0000544	564357.31	4191744.48	57.13	3.11	1.90E-7	9.00		4.19	2.89
	L0000545	564358.13	4191735.52	57.15	3.11	1.90E-7	9.00		4.19	2.89
	L0000546	564358.95	4191726.56	57.12	3.11	1.90E-7	9.00		4.19	2.89
	L0000547	564360.19	4191717.68	57.08	3.11	1.90E-7	9.00		4.19	2.89
	L0000548	564362.96	4191709.12	57.03	3.11	1.90E-7	9.00		4.19	2.89
	L0000549	564365.73	4191700.55	56.89	3.11	1.90E-7	9.00		4.19	2.89
	L0000550	564368.67	4191692.06	56.77	3.11	1.90E-7	9.00		4.19	2.89
	L0000551	564373.18	4191684.27	56.75	3.11	1.90E-7	9.00		4.19	2.89
	L0000552	564376.85	4191676.19	56.78	3.11	1.90E-7	9.00		4.19	2.89
	L0000553	564379.01	4191667.48	56.85	3.11	1.90E-7	9.00		4.19	2.89
	L0000554	564381.01	4191658.72	56.92	3.11	1.90E-7	9.00		4.19	2.89
	L0000555	564381.99	4191649.82	56.95	3.11	1.90E-7	9.00		4.19	2.89
	L0000556	564381.41	4191640.84	56.93	3.11	1.90E-7	9.00		4.19	2.89
	L0000557	564380.83	4191631.86	56.91	3.11	1.90E-7	9.00		4.19	2.89
	L0000558	564380.24	4191622.88	56.89	3.11	1.90E-7	9.00		4.19	2.89
	L0000559	564380.18	4191613.88	56.89	3.11	1.90E-7	9.00		4.19	2.89
	L0000560	564380.14	4191604.88	56.89	3.11	1.90E-7	9.00		4.19	2.89
	L0000561	564380.09	4191595.88	56.89	3.11	1.90E-7	9.00		4.19	2.89
	L0000562	564380.05	4191586.88	56.89	3.11	1.90E-7	9.00		4.19	2.89
	L0000563	564380.00	4191577.88	56.89	3.11	1.90E-7	9.00		4.19	2.89
	L0000564	564379.96	4191568.88	56.88	3.11	1.90E-7	9.00		4.19	2.89
	L0000565	564379.91	4191559.88	56.88	3.11	1.90E-7	9.00		4.19	2.89
	L0000566	564379.87	4191550.88	56.72	3.11	1.90E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE3	L0000567	564380.62	4191541.91	56.47	3.11	1.90E-7	9.00		4.19	2.89
	L0000568	564381.50	4191532.96	56.20	3.11	1.90E-7	9.00		4.19	2.89
	L0000569	564382.38	4191524.00	56.00	3.11	1.90E-7	9.00		4.19	2.89
	L0000570	564383.26	4191515.04	56.00	3.11	1.90E-7	9.00		4.19	2.89
	L0000571	564384.14	4191506.09	56.02	3.11	1.90E-7	9.00		4.19	2.89
	L0000572	564385.02	4191497.13	56.05	3.11	1.90E-7	9.00		4.19	2.89
	L0000573	564385.90	4191488.17	56.08	3.11	1.90E-7	9.00		4.19	2.89
	L0000574	564386.78	4191479.22	56.11	3.11	1.90E-7	9.00		4.19	2.89
	L0000575	564387.66	4191470.26	56.14	3.11	1.90E-7	9.00		4.19	2.89
	L0000576	564388.54	4191461.30	56.14	3.11	1.90E-7	9.00		4.19	2.89
	L0000577	564389.43	4191452.35	56.11	3.11	1.90E-7	9.00		4.19	2.89
	L0000578	564390.31	4191443.39	56.05	3.11	1.90E-7	9.00		4.19	2.89
	L0000579	564391.19	4191434.43	55.95	3.11	1.90E-7	9.00		4.19	2.89
	L0000580	564392.07	4191425.48	55.74	3.11	1.90E-7	9.00		4.19	2.89
	L0000581	564392.95	4191416.52	55.55	3.11	1.90E-7	9.00		4.19	2.89
	L0000582	564393.83	4191407.56	55.37	3.11	1.90E-7	9.00		4.19	2.89
	L0000583	564394.71	4191398.61	55.28	3.11	1.90E-7	9.00		4.19	2.89
	L0000584	564395.59	4191389.65	55.18	3.11	1.90E-7	9.00		4.19	2.89
	L0000585	564396.47	4191380.69	55.06	3.11	1.90E-7	9.00		4.19	2.89

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000586	564408.46	4191388.33	55.33	3.11	1.87E-7	9.00		4.19	2.89
	L0000587	564407.49	4191397.28	55.56	3.11	1.87E-7	9.00		4.19	2.89
	L0000588	564406.53	4191406.23	55.77	3.11	1.87E-7	9.00		4.19	2.89
	L0000589	564405.56	4191415.18	55.81	3.11	1.87E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000590	564404.60	4191424.12	55.88	3.11	1.87E-7	9.00		4.19	2.89
	L0000591	564403.63	4191433.07	55.96	3.11	1.87E-7	9.00		4.19	2.89
	L0000592	564402.67	4191442.02	56.12	3.11	1.87E-7	9.00		4.19	2.89
	L0000593	564401.70	4191450.97	56.30	3.11	1.87E-7	9.00		4.19	2.89
	L0000594	564400.74	4191459.92	56.45	3.11	1.87E-7	9.00		4.19	2.89
	L0000595	564399.78	4191468.87	56.55	3.11	1.87E-7	9.00		4.19	2.89
	L0000596	564398.81	4191477.81	56.51	3.11	1.87E-7	9.00		4.19	2.89
	L0000597	564398.02	4191486.78	56.49	3.11	1.87E-7	9.00		4.19	2.89
	L0000598	564397.37	4191495.75	56.46	3.11	1.87E-7	9.00		4.19	2.89
	L0000599	564396.72	4191504.73	56.44	3.11	1.87E-7	9.00		4.19	2.89
	L0000600	564396.07	4191513.71	56.42	3.11	1.87E-7	9.00		4.19	2.89
	L0000601	564395.42	4191522.68	56.40	3.11	1.87E-7	9.00		4.19	2.89
	L0000602	564394.76	4191531.66	56.49	3.11	1.87E-7	9.00		4.19	2.89
	L0000603	564394.11	4191540.64	56.66	3.11	1.87E-7	9.00		4.19	2.89
	L0000604	564393.46	4191549.61	56.85	3.11	1.87E-7	9.00		4.19	2.89
	L0000605	564392.81	4191558.59	57.00	3.11	1.87E-7	9.00		4.19	2.89
	L0000606	564392.16	4191567.57	57.00	3.11	1.87E-7	9.00		4.19	2.89
	L0000607	564391.51	4191576.54	57.00	3.11	1.87E-7	9.00		4.19	2.89
	L0000608	564391.45	4191585.54	57.00	3.11	1.87E-7	9.00		4.19	2.89
	L0000609	564391.52	4191594.54	57.00	3.11	1.87E-7	9.00		4.19	2.89
	L0000610	564391.64	4191603.54	57.00	3.11	1.87E-7	9.00		4.19	2.89
	L0000611	564391.91	4191612.53	57.00	3.11	1.87E-7	9.00		4.19	2.89
	L0000612	564392.18	4191621.53	57.05	3.11	1.87E-7	9.00		4.19	2.89
	L0000613	564392.53	4191630.52	57.14	3.11	1.87E-7	9.00		4.19	2.89
	L0000614	564392.88	4191639.51	57.24	3.11	1.87E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000615	564393.62	4191648.48	57.34	3.11	1.87E-7	9.00		4.19	2.89
	L0000616	564395.36	4191657.28	57.40	3.11	1.87E-7	9.00		4.19	2.89
	L0000617	564398.22	4191665.81	57.49	3.11	1.87E-7	9.00		4.19	2.89
	L0000618	564399.37	4191674.67	57.53	3.11	1.87E-7	9.00		4.19	2.89
	L0000619	564400.05	4191683.64	57.55	3.11	1.87E-7	9.00		4.19	2.89
	L0000620	564401.21	4191692.57	57.59	3.11	1.87E-7	9.00		4.19	2.89
	L0000621	564402.30	4191701.50	57.63	3.11	1.87E-7	9.00		4.19	2.89
	L0000622	564402.83	4191710.48	57.78	3.11	1.87E-7	9.00		4.19	2.89
	L0000623	564403.37	4191719.47	58.10	3.11	1.87E-7	9.00		4.19	2.89
	L0000624	564403.91	4191728.45	58.42	3.11	1.87E-7	9.00		4.19	2.89
	L0000625	564404.44	4191737.43	58.70	3.11	1.87E-7	9.00		4.19	2.89
	L0000626	564404.98	4191746.42	58.72	3.11	1.87E-7	9.00		4.19	2.89
	L0000627	564405.52	4191755.40	58.74	3.11	1.87E-7	9.00		4.19	2.89
	L0000628	564406.15	4191764.38	58.76	3.11	1.87E-7	9.00		4.19	2.89
	L0000629	564406.78	4191773.36	58.83	3.11	1.87E-7	9.00		4.19	2.89
	L0000630	564406.19	4191782.33	58.89	3.11	1.87E-7	9.00		4.19	2.89
	L0000631	564405.46	4191791.30	58.95	3.11	1.87E-7	9.00		4.19	2.89
	L0000632	564404.68	4191800.27	59.09	3.11	1.87E-7	9.00		4.19	2.89
	L0000633	564403.71	4191809.21	59.29	3.11	1.87E-7	9.00		4.19	2.89
	L0000634	564402.75	4191818.16	59.47	3.11	1.87E-7	9.00		4.19	2.89
	L0000635	564401.78	4191827.11	59.61	3.11	1.87E-7	9.00		4.19	2.89
	L0000636	564400.82	4191836.06	59.58	3.11	1.87E-7	9.00		4.19	2.89
	L0000637	564399.86	4191845.01	59.55	3.11	1.87E-7	9.00		4.19	2.89
	L0000638	564398.89	4191853.95	59.52	3.11	1.87E-7	9.00		4.19	2.89
	L0000639	564397.93	4191862.90	59.60	3.11	1.87E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000640	564396.96	4191871.85	59.73	3.11	1.87E-7	9.00		4.19	2.89
	L0000641	564396.00	4191880.80	59.89	3.11	1.87E-7	9.00		4.19	2.89
	L0000642	564395.04	4191889.75	60.04	3.11	1.87E-7	9.00		4.19	2.89
	L0000643	564391.81	4191895.58	60.09	3.11	1.87E-7	9.00		4.19	2.89
	L0000644	564382.99	4191893.76	59.99	3.11	1.87E-7	9.00		4.19	2.89
	L0000645	564374.12	4191892.27	59.75	3.11	1.87E-7	9.00		4.19	2.89
	L0000646	564365.24	4191890.78	59.48	3.11	1.87E-7	9.00		4.19	2.89
	L0000647	564356.37	4191889.29	59.18	3.11	1.87E-7	9.00		4.19	2.89
	L0000648	564347.45	4191888.08	59.06	3.11	1.87E-7	9.00		4.19	2.89
	L0000649	564342.77	4191892.73	59.21	3.11	1.87E-7	9.00		4.19	2.89
	L0000650	564341.29	4191901.60	59.51	3.11	1.87E-7	9.00		4.19	2.89
	L0000651	564335.40	4191905.03	59.62	3.11	1.87E-7	9.00		4.19	2.89

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE5	L0000652	564331.81	4191907.75	59.71	3.11	1.87E-7	9.00		4.19	2.89
	L0000653	564340.56	4191907.83	59.71	3.11	1.87E-7	9.00		4.19	2.89
	L0000654	564343.37	4191899.50	59.44	3.11	1.87E-7	9.00		4.19	2.89
	L0000655	564344.01	4191890.52	59.14	3.11	1.87E-7	9.00		4.19	2.89
	L0000656	564337.62	4191886.43	59.00	3.11	1.87E-7	9.00		4.19	2.89
	L0000657	564328.87	4191884.37	58.94	3.11	1.87E-7	9.00		4.19	2.89
	L0000658	564320.00	4191882.83	58.78	3.11	1.87E-7	9.00		4.19	2.89
	L0000659	564311.13	4191881.30	58.49	3.11	1.87E-7	9.00		4.19	2.89
	L0000660	564302.27	4191879.76	58.23	3.11	1.87E-7	9.00		4.19	2.89
	L0000661	564293.40	4191878.22	58.00	3.11	1.87E-7	9.00		4.19	2.89
	L0000662	564284.53	4191876.69	57.90	3.11	1.87E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE5	L0000663	564275.66	4191875.15	57.78	3.11	1.87E-7	9.00		4.19	2.89
	L0000664	564266.79	4191873.61	57.62	3.11	1.87E-7	9.00		4.19	2.89
	L0000665	564257.93	4191872.08	57.43	3.11	1.87E-7	9.00		4.19	2.89
	L0000666	564249.06	4191870.54	57.25	3.11	1.87E-7	9.00		4.19	2.89
	L0000667	564240.19	4191869.00	57.09	3.11	1.87E-7	9.00		4.19	2.89
	L0000668	564231.32	4191867.46	56.96	3.11	1.87E-7	9.00		4.19	2.89
	L0000669	564222.46	4191865.93	56.75	3.11	1.87E-7	9.00		4.19	2.89
	L0000670	564213.59	4191864.39	56.51	3.11	1.87E-7	9.00		4.19	2.89
	L0000671	564204.72	4191862.85	56.25	3.11	1.87E-7	9.00		4.19	2.89
	L0000672	564195.85	4191861.34	56.12	3.11	1.87E-7	9.00		4.19	2.89
	L0000673	564186.94	4191860.08	56.06	3.11	1.87E-7	9.00		4.19	2.89
	L0000674	564178.03	4191858.81	56.01	3.11	1.87E-7	9.00		4.19	2.89
	L0000675	564169.12	4191857.55	55.86	3.11	1.87E-7	9.00		4.19	2.89
	L0000676	564160.21	4191856.28	55.56	3.11	1.87E-7	9.00		4.19	2.89
	L0000677	564151.30	4191855.01	55.25	3.11	1.87E-7	9.00		4.19	2.89
	L0000678	564142.42	4191853.52	55.00	3.11	1.87E-7	9.00		4.19	2.89
	L0000679	564133.56	4191851.95	54.95	3.11	1.87E-7	9.00		4.19	2.89
	L0000680	564124.70	4191850.38	54.87	3.11	1.87E-7	9.00		4.19	2.89
	L0000681	564115.84	4191848.80	54.77	3.11	1.87E-7	9.00		4.19	2.89
	L0000682	564106.98	4191847.23	54.69	3.11	1.87E-7	9.00		4.19	2.89
	L0000683	564098.11	4191845.65	54.64	3.11	1.87E-7	9.00		4.19	2.89
	L0000684	564089.25	4191844.08	54.59	3.11	1.87E-7	9.00		4.19	2.89
	L0000685	564080.39	4191842.51	54.48	3.11	1.87E-7	9.00		4.19	2.89
	L0000686	564071.53	4191840.93	54.29	3.11	1.87E-7	9.00		4.19	2.89
	L0000687	564062.67	4191839.36	54.13	3.11	1.87E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE5	L0000688	564053.89	4191837.46	54.01	3.11	1.87E-7	9.00		4.19	2.89
	L0000689	564045.43	4191834.43	53.80	3.11	1.87E-7	9.00		4.19	2.89
	L0000690	564037.08	4191831.14	53.54	3.11	1.87E-7	9.00		4.19	2.89
	L0000691	564028.34	4191829.02	53.24	3.11	1.87E-7	9.00		4.19	2.89
	L0000692	564019.44	4191827.71	52.91	3.11	1.87E-7	9.00		4.19	2.89
	L0000693	564010.53	4191826.41	52.57	3.11	1.87E-7	9.00		4.19	2.89
	L0000694	564001.63	4191825.10	52.26	3.11	1.87E-7	9.00		4.19	2.89
	L0000695	563992.72	4191823.79	52.00	3.11	1.87E-7	9.00		4.19	2.89
	L0000696	563983.82	4191822.49	51.96	3.11	1.87E-7	9.00		4.19	2.89
	L0000697	563974.91	4191821.18	51.89	3.11	1.87E-7	9.00		4.19	2.89
	L0000698	563966.01	4191819.88	51.80	3.11	1.87E-7	9.00		4.19	2.89
	L0000699	563957.10	4191818.56	51.53	3.11	1.87E-7	9.00		4.19	2.89
	L0000700	563948.22	4191817.12	51.18	3.11	1.87E-7	9.00		4.19	2.89
	L0000701	563939.28	4191816.22	50.86	3.11	1.87E-7	9.00		4.19	2.89
	L0000702	563930.34	4191816.79	50.61	3.11	1.87E-7	9.00		4.19	2.89
	L0000703	563921.45	4191816.89	50.41	3.11	1.87E-7	9.00		4.19	2.89
	L0000704	563912.57	4191815.44	50.19	3.11	1.87E-7	9.00		4.19	2.89
	L0000705	563903.69	4191813.98	50.01	3.11	1.87E-7	9.00		4.19	2.89
	L0000706	563894.81	4191812.53	49.87	3.11	1.87E-7	9.00		4.19	2.89
	L0000707	563885.93	4191811.07	49.70	3.11	1.87E-7	9.00		4.19	2.89
	L0000708	563877.04	4191809.62	49.51	3.11	1.87E-7	9.00		4.19	2.89
	L0000709	563868.16	4191808.17	49.32	3.11	1.87E-7	9.00		4.19	2.89
	L0000710	563859.28	4191806.71	49.18	3.11	1.87E-7	9.00		4.19	2.89
	L0000711	563850.40	4191805.26	49.07	3.11	1.87E-7	9.00		4.19	2.89
	L0000712	563841.52	4191803.81	48.95	3.11	1.87E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

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Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE5	L0000713	563832.64	4191802.35	48.71	3.11	1.87E-7	9.00		4.19	2.89
	L0000714	563823.75	4191800.90	48.44	3.11	1.87E-7	9.00		4.19	2.89
	L0000715	563814.87	4191799.44	48.14	3.11	1.87E-7	9.00		4.19	2.89
	L0000716	563805.99	4191797.99	48.04	3.11	1.87E-7	9.00		4.19	2.89

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE6	L0000717	563808.82	4191785.23	47.94	3.11	2.03E-7	9.00		4.19	2.89
	L0000718	563817.69	4191786.75	48.10	3.11	2.03E-7	9.00		4.19	2.89
	L0000719	563826.56	4191788.28	48.32	3.11	2.03E-7	9.00		4.19	2.89
	L0000720	563835.43	4191789.81	48.57	3.11	2.03E-7	9.00		4.19	2.89
	L0000721	563844.30	4191791.34	48.84	3.11	2.03E-7	9.00		4.19	2.89
	L0000722	563853.17	4191792.86	48.92	3.11	2.03E-7	9.00		4.19	2.89
	L0000723	563862.04	4191794.39	48.97	3.11	2.03E-7	9.00		4.19	2.89
	L0000724	563870.91	4191795.92	49.00	3.11	2.03E-7	9.00		4.19	2.89
	L0000725	563879.80	4191797.35	49.24	3.11	2.03E-7	9.00		4.19	2.89
	L0000726	563888.68	4191798.76	49.55	3.11	2.03E-7	9.00		4.19	2.89
	L0000727	563897.57	4191800.17	49.83	3.11	2.03E-7	9.00		4.19	2.89
	L0000728	563906.46	4191801.59	50.02	3.11	2.03E-7	9.00		4.19	2.89
	L0000729	563915.35	4191803.00	50.09	3.11	2.03E-7	9.00		4.19	2.89
	L0000730	563924.16	4191804.75	50.19	3.11	2.03E-7	9.00		4.19	2.89
	L0000731	563931.06	4191809.63	50.41	3.11	2.03E-7	9.00		4.19	2.89
	L0000732	563937.32	4191815.26	50.76	3.11	2.03E-7	9.00		4.19	2.89
	L0000733	563946.23	4191816.51	51.10	3.11	2.03E-7	9.00		4.19	2.89
	L0000734	563955.15	4191817.76	51.44	3.11	2.03E-7	9.00		4.19	2.89
	L0000735	563964.06	4191819.01	51.76	3.11	2.03E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE6	L0000736	563972.97	4191820.26	51.86	3.11	2.03E-7	9.00		4.19	2.89
	L0000737	563981.89	4191821.51	51.94	3.11	2.03E-7	9.00		4.19	2.89
	L0000738	563990.80	4191822.76	51.99	3.11	2.03E-7	9.00		4.19	2.89
	L0000739	563999.71	4191824.01	52.19	3.11	2.03E-7	9.00		4.19	2.89
	L0000740	564008.62	4191825.26	52.49	3.11	2.03E-7	9.00		4.19	2.89
	L0000741	564017.54	4191826.51	52.81	3.11	2.03E-7	9.00		4.19	2.89
	L0000742	564026.45	4191827.76	53.14	3.11	2.03E-7	9.00		4.19	2.89
	L0000743	564035.36	4191829.01	53.45	3.11	2.03E-7	9.00		4.19	2.89
	L0000744	564044.32	4191829.31	53.73	3.11	2.03E-7	9.00		4.19	2.89
	L0000745	564053.18	4191827.85	53.99	3.11	2.03E-7	9.00		4.19	2.89
	L0000746	564061.97	4191828.69	54.02	3.11	2.03E-7	9.00		4.19	2.89
	L0000747	564070.75	4191830.67	54.08	3.11	2.03E-7	9.00		4.19	2.89
	L0000748	564079.53	4191832.65	54.18	3.11	2.03E-7	9.00		4.19	2.89
	L0000749	564088.38	4191834.31	54.26	3.11	2.03E-7	9.00		4.19	2.89
	L0000750	564097.25	4191835.80	54.31	3.11	2.03E-7	9.00		4.19	2.89
	L0000751	564106.13	4191837.29	54.36	3.11	2.03E-7	9.00		4.19	2.89
	L0000752	564115.00	4191838.78	54.44	3.11	2.03E-7	9.00		4.19	2.89
	L0000753	564123.88	4191840.27	54.65	3.11	2.03E-7	9.00		4.19	2.89
	L0000754	564132.75	4191841.76	54.83	3.11	2.03E-7	9.00		4.19	2.89
	L0000755	564141.63	4191843.25	54.97	3.11	2.03E-7	9.00		4.19	2.89
	L0000756	564150.51	4191844.74	55.14	3.11	2.03E-7	9.00		4.19	2.89
	L0000757	564159.38	4191846.23	55.35	3.11	2.03E-7	9.00		4.19	2.89
	L0000758	564168.26	4191847.72	55.59	3.11	2.03E-7	9.00		4.19	2.89
	L0000759	564177.13	4191849.21	55.79	3.11	2.03E-7	9.00		4.19	2.89
	L0000760	564186.01	4191850.70	55.89	3.11	2.03E-7	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE6	L0000761	564194.89	4191852.19	55.96	3.11	2.03E-7	9.00		4.19	2.89
	L0000762	564203.76	4191853.68	56.01	3.11	2.03E-7	9.00		4.19	2.89
	L0000763	564212.64	4191855.17	56.29	3.11	2.03E-7	9.00		4.19	2.89
	L0000764	564221.51	4191856.66	56.61	3.11	2.03E-7	9.00		4.19	2.89
	L0000765	564230.39	4191858.15	56.90	3.11	2.03E-7	9.00		4.19	2.89
	L0000766	564239.26	4191859.64	57.02	3.11	2.03E-7	9.00		4.19	2.89
	L0000767	564248.14	4191861.13	57.08	3.11	2.03E-7	9.00		4.19	2.89
	L0000768	564257.02	4191862.62	57.16	3.11	2.03E-7	9.00		4.19	2.89
	L0000769	564265.89	4191864.11	57.32	3.11	2.03E-7	9.00		4.19	2.89
	L0000770	564274.77	4191865.60	57.57	3.11	2.03E-7	9.00		4.19	2.89
	L0000771	564283.64	4191867.09	57.79	3.11	2.03E-7	9.00		4.19	2.89
	L0000772	564292.52	4191868.58	57.98	3.11	2.03E-7	9.00		4.19	2.89
	L0000773	564301.39	4191870.07	58.12	3.11	2.03E-7	9.00		4.19	2.89
	L0000774	564310.27	4191871.56	58.28	3.11	2.03E-7	9.00		4.19	2.89
	L0000775	564319.15	4191873.05	58.48	3.11	2.03E-7	9.00		4.19	2.89
	L0000776	564328.02	4191874.54	58.67	3.11	2.03E-7	9.00		4.19	2.89
	L0000777	564336.91	4191875.90	58.81	3.11	2.03E-7	9.00		4.19	2.89
	L0000778	564344.05	4191878.60	58.92	3.11	2.03E-7	9.00		4.19	2.89
	L0000779	564343.52	4191887.58	59.04	3.11	2.03E-7	9.00		4.19	2.89
	L0000780	564343.20	4191896.58	59.34	3.11	2.03E-7	9.00		4.19	2.89
	L0000781	564342.57	4191905.49	59.64	3.11	2.03E-7	9.00		4.19	2.89
	L0000782	564335.62	4191906.94	59.68	3.11	2.03E-7	9.00		4.19	2.89

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE7	L0000783	564316.27	4191952.80	60.16	3.11	1.77E-6	9.00		4.19	2.89

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE7	L0000784	564307.36	4191951.52	60.08	3.11	1.77E-6	9.00		4.19	2.89
	L0000785	564298.45	4191950.25	60.02	3.11	1.77E-6	9.00		4.19	2.89
	L0000786	564299.31	4191941.56	59.87	3.11	1.77E-6	9.00		4.19	2.89
	L0000787	564300.47	4191932.64	59.65	3.11	1.77E-6	9.00		4.19	2.89
	L0000788	564301.64	4191923.71	59.45	3.11	1.77E-6	9.00		4.19	2.89
	L0000789	564302.80	4191914.79	59.26	3.11	1.77E-6	9.00		4.19	2.89
	L0000790	564303.97	4191905.86	59.00	3.11	1.77E-6	9.00		4.19	2.89
	L0000791	564310.45	4191903.98	59.15	3.11	1.77E-6	9.00		4.19	2.89
	L0000792	564319.35	4191905.31	59.49	3.11	1.77E-6	9.00		4.19	2.89

Source Pathway

AERMOD

Building Downwash Information

Option not in use

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Source Groups

Source Group ID:	List of Sources in Group (Source Range or Single Sources)
On	SLINE7
Off6	SLINE6
Off5	SLINE5
Off4	SLINE4
Off3	SLINE3
Off2	SLINE2
Off1	SLINE1
Area	PAREA1
ALL	All Sources Included

Variable Emissions

Source Pathway

AERMOD

Source Pathway

Hour-of-Day / Day-of-Week Emission Rate Variation

Scenario: Scenario 2

Source ID:	**PAREA1**							
Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00	
	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00	
	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00	
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00	
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00	
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00	
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00	
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00	
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00	
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00	
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00	
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00	
Source ID:	**SLINE1**							
Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00	
	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00	
	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00	
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00	
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00	
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00	
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00	
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00	
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00	
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00	
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00	
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00	
Source ID:	**SLINE2**							
Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00	
	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00	
	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00	
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00	
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00	
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00	
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00	
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00	
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00	
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00	
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00	
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00	
Source ID:	**SLINE3**							
Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00	
	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00	
	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00	

Source Pathway

AERMOD

Scenario: Scenario 2

Source ID:	**SLINE3**							
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**SLINE4**							
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00
	Day	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**SLINE5**							
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00
	Day	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**SLINE6**							
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00
	Day	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Source Pathway

AERMOD

Scenario: Scenario 2

Source ID:	**SLINE6**							
Sunday								
Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**SLINE7**							
Weekdays								
Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
of	7 - 12	0.00	4.20	4.20	4.20	4.20	0.00
Day	13 - 18	4.20	4.20	4.20	4.20	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Receptor Pathway

AERMOD

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Discrete Receptors

Discrete Cartesian Receptors

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	564370.77	4191948.94	FENCEGRD	60.66	
2	564394.16	4191952.37	FENCEGRD	61.20	
3	564385.58	4192025.27	FENCEGRD	62.70	
4	564358.04	4192045.11	FENCEGRD	63.29	
5	564417.55	4191955.81	FENCEGRD	61.31	
6	564408.96	4192028.71	FENCEGRD	63.59	
7	564371.86	4192064.29	FENCEGRD	63.93	
8	564440.93	4191959.24	FENCEGRD	61.43	
9	564438.09	4192022.69	FENCEGRD	63.54	
10	564415.12	4192060.48	FENCEGRD	64.80	
11	564360.53	4192089.20	FENCEGRD	64.76	
12	564461.05	4191984.90	FENCEGRD	62.87	
13	564467.58	4191940.44	FENCEGRD	61.80	
14	564450.95	4192043.44	FENCEGRD	64.49	
15	564428.62	4192080.18	FENCEGRD	65.46	
16	564396.50	4192103.33	FENCEGRD	65.67	
17	564354.58	4192112.87	FENCEGRD	65.55	
18	564487.70	4191966.10	FENCEGRD	63.13	
19	564475.02	4192045.75	FENCEGRD	65.36	
20	564453.15	4192081.74	FENCEGRD	65.84	
21	564410.74	4192122.41	FENCEGRD	66.78	
22	564369.68	4192131.76	FENCEGRD	66.18	
23	564511.09	4191969.54	FENCEGRD	64.28	
24	564498.92	4192048.34	FENCEGRD	66.25	
25	564477.39	4192083.77	FENCEGRD	66.63	
26	564455.86	4192119.19	FENCEGRD	66.86	
27	564424.88	4192141.51	FENCEGRD	67.50	
28	564384.46	4192150.72	FENCEGRD	66.85	
29	564344.04	4192159.93	FENCEGRD	66.72	
30	564534.48	4191972.97	FENCEGRD	65.92	

Receptor Pathway

AERMOD

31	564522.70	4192051.12	FENCEGRD	66.82
32	564501.44	4192086.11	FENCEGRD	66.98
33	564480.17	4192121.10	FENCEGRD	67.18
34	564438.95	4192160.63	FENCEGRD	68.26
35	564399.03	4192169.72	FENCEGRD	67.96
36	564359.11	4192178.82	FENCEGRD	67.14
37	564557.86	4191976.40	FENCEGRD	66.81
38	564564.39	4191931.93	FENCEGRD	66.03
39	564567.46	4192019.39	FENCEGRD	67.76
40	564546.41	4192054.03	FENCEGRD	67.69
41	564525.35	4192088.66	FENCEGRD	67.54
42	564504.30	4192123.30	FENCEGRD	67.93
43	564483.25	4192157.94	FENCEGRD	68.78
44	564452.96	4192179.76	FENCEGRD	69.81
45	564413.44	4192188.77	FENCEGRD	69.00
46	564373.92	4192197.77	FENCEGRD	67.68
47	564294.88	4192215.77	FENCEGRD	66.04
48	564581.25	4191979.83	FENCEGRD	67.66
49	564587.77	4191935.37	FENCEGRD	66.81
50	564619.22	4192028.79	FENCEGRD	73.07
51	564596.16	4192066.74	FENCEGRD	72.18
52	564573.09	4192104.69	FENCEGRD	70.34
53	564550.03	4192142.63	FENCEGRD	70.89
54	564526.97	4192180.58	FENCEGRD	71.59
55	564482.25	4192223.46	FENCEGRD	71.52
56	564438.95	4192233.33	FENCEGRD	70.41
57	564395.66	4192243.19	FENCEGRD	69.30
58	564352.36	4192253.06	FENCEGRD	68.17
59	564634.02	4191987.58	FENCEGRD	71.67
60	564640.54	4191943.11	FENCEGRD	69.03
61	564672.10	4192036.35	FENCEGRD	75.62
62	564649.26	4192073.92	FENCEGRD	75.72
63	564626.43	4192111.50	FENCEGRD	73.70
64	564603.59	4192149.08	FENCEGRD	72.84
65	564580.75	4192186.65	FENCEGRD	73.58
66	564557.92	4192224.23	FENCEGRD	74.28
67	564513.64	4192266.69	FENCEGRD	74.24
68	564470.77	4192276.45	FENCEGRD	73.01

Receptor Pathway

AERMOD

69	564427.90	4192286.22	FENCEGRD	72.45
70	564385.02	4192295.99	FENCEGRD	70.73
71	564342.15	4192305.75	FENCEGRD	69.22
72	564686.78	4191995.32	FENCEGRD	74.74
73	564693.31	4191950.86	FENCEGRD	72.63
74	564724.95	4192043.95	FENCEGRD	78.48
75	564702.28	4192081.26	FENCEGRD	77.94
76	564679.61	4192118.56	FENCEGRD	77.42
77	564656.94	4192155.86	FENCEGRD	76.33
78	564634.27	4192193.17	FENCEGRD	77.71
79	564611.60	4192230.47	FENCEGRD	77.35
80	564588.93	4192267.77	FENCEGRD	78.87
81	564544.97	4192309.92	FENCEGRD	78.33
82	564502.41	4192319.62	FENCEGRD	76.40
83	564459.85	4192329.32	FENCEGRD	74.96
84	564417.29	4192339.01	FENCEGRD	73.21
85	564374.73	4192348.71	FENCEGRD	72.94
86	564332.17	4192358.40	FENCEGRD	71.42
87	564739.55	4192003.07	FENCEGRD	77.53
88	564746.08	4191958.60	FENCEGRD	74.29
89	564777.78	4192051.59	FENCEGRD	81.72
90	564755.24	4192088.69	FENCEGRD	80.79
91	564732.70	4192125.78	FENCEGRD	80.27
92	564710.15	4192162.88	FENCEGRD	81.00
93	564687.61	4192199.97	FENCEGRD	81.27
94	564665.06	4192237.07	FENCEGRD	82.36
95	564642.52	4192274.16	FENCEGRD	84.25
96	564619.98	4192311.25	FENCEGRD	84.98
97	564576.27	4192353.17	FENCEGRD	83.57
98	564533.95	4192362.81	FENCEGRD	79.04
99	564491.62	4192372.45	FENCEGRD	77.28
100	564449.30	4192382.09	FENCEGRD	75.71
101	564406.98	4192391.73	FENCEGRD	74.66
102	564364.65	4192401.38	FENCEGRD	73.54
103	564322.33	4192411.02	FENCEGRD	71.96
104	564792.32	4192010.81	FENCEGRD	80.87
105	564798.85	4191966.35	FENCEGRD	77.17
106	564830.60	4192059.26	FENCEGRD	83.00

Receptor Pathway

AERMOD

107	564808.16	4192096.19	FENCEGRD	84.46
108	564785.71	4192133.12	FENCEGRD	84.04
109	564763.27	4192170.05	FENCEGRD	84.42
110	564740.83	4192206.97	FENCEGRD	83.91
111	564718.38	4192243.90	FENCEGRD	86.68
112	564695.94	4192280.83	FENCEGRD	89.98
113	564673.50	4192317.76	FENCEGRD	92.50
114	564651.05	4192354.69	FENCEGRD	91.88
115	564607.54	4192396.42	FENCEGRD	86.85
116	564565.41	4192406.02	FENCEGRD	83.10
117	564523.27	4192415.62	FENCEGRD	79.95
118	564481.14	4192425.22	FENCEGRD	78.21
119	564439.00	4192434.81	FENCEGRD	76.85
120	564396.87	4192444.41	FENCEGRD	75.44
121	564354.73	4192454.01	FENCEGRD	74.04
122	564312.60	4192463.61	FENCEGRD	72.35
123	564270.46	4192473.21	FENCEGRD	71.13
124	564845.09	4192018.56	FENCEGRD	81.65
125	564851.61	4191974.09	FENCEGRD	79.10
126	564883.41	4192066.94	FENCEGRD	83.75
127	564861.05	4192103.73	FENCEGRD	88.39
128	564838.69	4192140.53	FENCEGRD	88.90
129	564816.32	4192177.32	FENCEGRD	88.38
130	564793.96	4192214.12	FENCEGRD	87.03
131	564771.60	4192250.91	FENCEGRD	89.47
132	564749.24	4192287.71	FENCEGRD	94.02
133	564726.87	4192324.51	FENCEGRD	100.22
134	564704.51	4192361.30	FENCEGRD	101.20
135	564682.15	4192398.10	FENCEGRD	98.54
136	564638.79	4192439.67	FENCEGRD	89.87
137	564596.81	4192449.24	FENCEGRD	84.26
138	564554.83	4192458.80	FENCEGRD	82.44
139	564512.85	4192468.37	FENCEGRD	80.02
140	564470.86	4192477.93	FENCEGRD	78.63
141	564428.88	4192487.49	FENCEGRD	77.55
142	564386.90	4192497.06	FENCEGRD	76.15
143	564344.92	4192506.62	FENCEGRD	74.19
144	564302.93	4192516.18	FENCEGRD	72.31

Receptor Pathway

145	564260.95	4192525.75	FENCEGRD	70.94
146	564897.85	4192026.30	FENCEGRD	80.61
147	564904.38	4191981.84	FENCEGRD	78.82
148	564311.38	4191853.27	FENCEGRD	57.90
149	564378.72	4191845.07	FENCEGRD	58.94
150	564324.03	4191823.87	FENCEGRD	57.02
151	564384.03	4191813.22	FENCEGRD	59.01
152	564425.58	4191868.79	FENCEGRD	60.41
153	564328.80	4191800.72	FENCEGRD	57.18
154	564379.83	4191794.96	FENCEGRD	58.83
155	564431.36	4191846.81	FENCEGRD	60.41
156	564439.41	4191880.79	FENCEGRD	60.87
157	564333.57	4191777.57	FENCEGRD	56.71
158	564376.65	4191770.22	FENCEGRD	57.90
159	564429.18	4191804.74	FENCEGRD	59.66
160	564456.35	4191857.03	FENCEGRD	61.00
161	564338.33	4191754.42	FENCEGRD	56.50
162	564380.93	4191746.75	FENCEGRD	57.92
163	564430.40	4191768.75	FENCEGRD	59.57
164	564449.03	4191791.51	FENCEGRD	60.16
165	564470.75	4191822.52	FENCEGRD	60.91
166	564480.14	4191862.17	FENCEGRD	61.27
167	564343.10	4191731.27	FENCEGRD	56.66
168	564385.35	4191723.37	FENCEGRD	57.63
169	564418.71	4191745.29	FENCEGRD	59.05
170	564452.06	4191767.21	FENCEGRD	60.01
171	564490.01	4191808.55	FENCEGRD	61.55
172	564499.21	4191847.39	FENCEGRD	61.86
173	564508.42	4191886.23	FENCEGRD	63.16
174	564347.87	4191708.12	FENCEGRD	56.81
175	564386.85	4191709.82	FENCEGRD	57.23
176	564422.69	4191721.63	FENCEGRD	58.66
177	564455.52	4191743.21	FENCEGRD	59.54
178	564488.36	4191764.79	FENCEGRD	60.50
179	564509.30	4191794.69	FENCEGRD	61.95
180	564518.36	4191832.92	FENCEGRD	62.61
181	564527.42	4191871.16	FENCEGRD	63.70
182	564352.64	4191684.97	FENCEGRD	56.28

Receptor Pathway

183	564426.85	4191698.08	FENCEGRD	58.45
184	564459.28	4191719.39	FENCEGRD	59.53
185	564491.71	4191740.70	FENCEGRD	60.61
186	564528.61	4191780.90	FENCEGRD	61.92
187	564537.55	4191818.66	FENCEGRD	63.02
188	564546.50	4191856.42	FENCEGRD	64.44
189	564555.44	4191894.18	FENCEGRD	65.47
190	564357.41	4191661.82	FENCEGRD	56.13
191	564431.13	4191674.61	FENCEGRD	58.55
192	564463.24	4191695.71	FENCEGRD	59.43
193	564495.34	4191716.81	FENCEGRD	60.25
194	564527.44	4191737.91	FENCEGRD	61.04
195	564547.92	4191767.15	FENCEGRD	62.50
196	564556.78	4191804.53	FENCEGRD	63.83
197	564565.63	4191841.91	FENCEGRD	65.11
198	564574.49	4191879.29	FENCEGRD	66.22
199	564362.17	4191638.67	FENCEGRD	56.29
200	564411.32	4191602.28	FENCEGRD	57.00
201	564446.49	4191625.39	FENCEGRD	58.10
202	564481.67	4191648.51	FENCEGRD	59.27
203	564516.84	4191671.63	FENCEGRD	60.45
204	564552.01	4191694.75	FENCEGRD	61.62
205	564592.03	4191738.34	FENCEGRD	63.06
206	564601.73	4191779.29	FENCEGRD	64.98
207	564611.43	4191820.25	FENCEGRD	67.00
208	564621.14	4191861.20	FENCEGRD	67.92
209	564630.84	4191902.16	FENCEGRD	67.85
210	564421.91	4191549.93	FENCEGRD	57.28
211	564456.73	4191572.82	FENCEGRD	58.44
212	564491.56	4191595.71	FENCEGRD	59.60
213	564526.39	4191618.60	FENCEGRD	60.06
214	564561.21	4191641.49	FENCEGRD	60.99
215	564596.04	4191664.38	FENCEGRD	61.72
216	564635.67	4191707.54	FENCEGRD	64.84
217	564645.27	4191748.10	FENCEGRD	66.12
218	564654.88	4191788.65	FENCEGRD	66.95
219	564664.49	4191829.20	FENCEGRD	68.09
220	564674.10	4191869.75	FENCEGRD	69.31

Receptor Pathway

AERMOD

221	564683.70	4191910.31	FENCEGRD	70.80
222	564432.54	4191497.61	FENCEGRD	57.64
223	564467.11	4191520.33	FENCEGRD	58.79
224	564501.69	4191543.05	FENCEGRD	59.94
225	564536.26	4191565.78	FENCEGRD	61.00
226	564570.83	4191588.50	FENCEGRD	61.23
227	564605.40	4191611.22	FENCEGRD	61.90
228	564639.98	4191633.95	FENCEGRD	64.10
229	564679.32	4191676.80	FENCEGRD	67.73
230	564688.85	4191717.06	FENCEGRD	67.71
231	564698.39	4191757.32	FENCEGRD	66.80
232	564707.93	4191797.57	FENCEGRD	66.05
233	564717.47	4191837.83	FENCEGRD	67.38
234	564727.00	4191878.09	FENCEGRD	69.45
235	564736.54	4191918.35	FENCEGRD	71.85
236	564443.20	4191445.31	FENCEGRD	56.99
237	564477.58	4191467.90	FENCEGRD	58.19
238	564511.96	4191490.50	FENCEGRD	59.86
239	564546.34	4191513.09	FENCEGRD	60.43
240	564580.72	4191535.69	FENCEGRD	61.58
241	564615.10	4191558.29	FENCEGRD	62.72
242	564649.48	4191580.88	FENCEGRD	63.87
243	564683.85	4191603.48	FENCEGRD	66.01
244	564722.98	4191646.09	FENCEGRD	68.31
245	564732.46	4191686.12	FENCEGRD	68.63
246	564741.94	4191726.16	FENCEGRD	68.32
247	564751.43	4191766.19	FENCEGRD	68.00
248	564760.91	4191806.22	FENCEGRD	67.19
249	564770.39	4191846.25	FENCEGRD	68.56
250	564779.88	4191886.28	FENCEGRD	70.99
251	564789.36	4191926.32	FENCEGRD	72.51
252	564453.89	4191393.02	FENCEGRD	56.71
253	564488.11	4191415.51	FENCEGRD	58.13
254	564522.34	4191438.01	FENCEGRD	59.63
255	564556.56	4191460.51	FENCEGRD	60.77
256	564590.79	4191483.00	FENCEGRD	61.91
257	564625.01	4191505.50	FENCEGRD	63.05
258	564659.24	4191527.99	FENCEGRD	64.19

Receptor Pathway

259	564693.47	4191550.49	FENCEGRD	65.60
260	564727.69	4191572.99	FENCEGRD	67.48
261	564766.64	4191615.41	FENCEGRD	68.77
262	564776.08	4191655.26	FENCEGRD	69.36
263	564785.52	4191695.12	FENCEGRD	70.00
264	564794.96	4191734.97	FENCEGRD	69.05
265	564804.41	4191774.82	FENCEGRD	68.04
266	564813.85	4191814.68	FENCEGRD	69.91
267	564823.29	4191854.53	FENCEGRD	72.26
268	564832.73	4191894.39	FENCEGRD	72.96
269	564842.17	4191934.24	FENCEGRD	74.36
270	564464.58	4191340.74	FENCEGRD	55.71
271	564498.68	4191363.16	FENCEGRD	57.40
272	564532.79	4191385.57	FENCEGRD	59.28
273	564566.89	4191407.98	FENCEGRD	61.12
274	564600.99	4191430.40	FENCEGRD	62.20
275	564635.09	4191452.81	FENCEGRD	63.39
276	564669.19	4191475.23	FENCEGRD	64.53
277	564703.30	4191497.64	FENCEGRD	65.66
278	564737.40	4191520.06	FENCEGRD	67.60
279	564771.50	4191542.47	FENCEGRD	68.94
280	564810.31	4191584.74	FENCEGRD	71.24
281	564819.71	4191624.45	FENCEGRD	71.27
282	564829.12	4191664.16	FENCEGRD	70.86
283	564838.53	4191703.87	FENCEGRD	71.01
284	564847.94	4191743.58	FENCEGRD	70.33
285	564857.34	4191783.29	FENCEGRD	71.16
286	564866.75	4191823.00	FENCEGRD	73.79
287	564876.16	4191862.71	FENCEGRD	74.42
288	564885.57	4191902.42	FENCEGRD	74.20
289	564894.97	4191942.13	FENCEGRD	75.77
290	564426.73	4191325.25	FENCEGRD	55.00
291	564269.63	4191886.77	FENCEGRD	58.01
292	564265.35	4191908.62	FENCEGRD	58.74
293	564257.14	4191929.48	FENCEGRD	58.88
294	564271.31	4191942.89	FENCEGRD	59.23
295	564280.55	4191846.24	FENCEGRD	57.23
296	564238.20	4191902.62	FENCEGRD	57.70

Receptor Pathway

297	564233.92	4191925.06	FENCEGRD	58.30
298	564248.09	4191938.46	FENCEGRD	58.86
299	564267.40	4191826.60	FENCEGRD	56.14
300	564215.97	4191882.10	FENCEGRD	56.92
301	564210.71	4191920.63	FENCEGRD	58.14
302	564224.88	4191934.03	FENCEGRD	58.59
303	564226.28	4191825.67	FENCEGRD	55.98
304	564254.26	4191806.95	FENCEGRD	55.80
305	564290.08	4191799.94	FENCEGRD	56.10
306	564192.75	4191877.67	FENCEGRD	56.46
307	564187.49	4191916.20	FENCEGRD	57.46
308	564180.07	4191931.57	FENCEGRD	57.73
309	564198.02	4191828.85	FENCEGRD	55.83
310	564267.98	4191782.05	FENCEGRD	55.59
311	564168.55	4191889.33	FENCEGRD	56.10
312	564164.27	4191911.77	FENCEGRD	56.85
313	564159.99	4191934.21	FENCEGRD	57.59
314	564185.89	4191807.69	FENCEGRD	55.16
315	564231.56	4191766.96	FENCEGRD	54.94
316	564274.54	4191758.55	FENCEGRD	55.27
317	564145.33	4191884.90	FENCEGRD	55.95
318	564141.05	4191907.34	FENCEGRD	56.64
319	564136.77	4191929.78	FENCEGRD	57.22
320	564161.66	4191804.78	FENCEGRD	54.72
321	564185.17	4191769.27	FENCEGRD	54.10
322	564217.82	4191747.43	FENCEGRD	54.18
323	564259.61	4191739.25	FENCEGRD	54.88
324	564301.40	4191731.08	FENCEGRD	55.27
325	564122.12	4191880.47	FENCEGRD	55.80
326	564117.84	4191902.91	FENCEGRD	56.08
327	564113.56	4191925.35	FENCEGRD	56.30
328	564137.72	4191801.44	FENCEGRD	54.14
329	564160.75	4191766.65	FENCEGRD	53.59
330	564204.25	4191727.87	FENCEGRD	54.00
331	564245.19	4191719.86	FENCEGRD	54.18
332	564286.13	4191711.85	FENCEGRD	54.80
333	564098.90	4191876.04	FENCEGRD	55.34
334	564094.62	4191898.48	FENCEGRD	55.63

Receptor Pathway

335	564090.34	4191920.92	FENCEGRD	56.15
336	564113.97	4191797.82	FENCEGRD	54.00
337	564136.63	4191763.58	FENCEGRD	53.00
338	564159.30	4191729.35	FENCEGRD	53.40
339	564190.79	4191708.29	FENCEGRD	53.61
340	564231.09	4191700.40	FENCEGRD	53.98
341	564271.39	4191692.51	FENCEGRD	54.27
342	564311.68	4191684.63	FENCEGRD	55.61
343	564075.68	4191871.62	FENCEGRD	54.87
344	564071.40	4191894.05	FENCEGRD	55.15
345	564067.12	4191916.49	FENCEGRD	55.46
346	564081.93	4191806.71	FENCEGRD	53.34
347	564107.12	4191768.67	FENCEGRD	53.06
348	564132.31	4191730.62	FENCEGRD	52.93
349	564144.90	4191711.60	FENCEGRD	53.01
350	564179.88	4191688.20	FENCEGRD	53.08
351	564202.27	4191683.82	FENCEGRD	53.24
352	564247.05	4191675.06	FENCEGRD	54.00
353	564291.82	4191666.30	FENCEGRD	54.95
354	564314.21	4191661.92	FENCEGRD	55.36
355	564052.46	4191867.19	FENCEGRD	54.35
356	564048.18	4191889.62	FENCEGRD	54.84
357	564043.90	4191912.06	FENCEGRD	54.95
358	564070.47	4191784.53	FENCEGRD	52.83
359	564095.10	4191747.33	FENCEGRD	52.61
360	564119.73	4191710.13	FENCEGRD	52.31
361	564166.24	4191668.65	FENCEGRD	52.56
362	564210.03	4191660.09	FENCEGRD	53.22
363	564253.81	4191651.52	FENCEGRD	54.00
364	564297.59	4191642.95	FENCEGRD	55.00
365	564029.25	4191862.76	FENCEGRD	54.04
366	564024.97	4191885.19	FENCEGRD	54.05
367	564020.69	4191907.63	FENCEGRD	54.64
368	564017.56	4191775.31	FENCEGRD	51.86
369	564041.85	4191738.64	FENCEGRD	51.64
370	564066.13	4191701.96	FENCEGRD	50.91
371	564090.42	4191665.28	FENCEGRD	51.15
372	564136.28	4191624.38	FENCEGRD	51.76

Receptor Pathway

373	564179.45	4191615.94	FENCEGRD	52.20
374	564222.62	4191607.49	FENCEGRD	53.00
375	564265.79	4191599.04	FENCEGRD	54.08
376	564308.96	4191590.60	FENCEGRD	55.00
377	563976.86	4191852.76	FENCEGRD	52.39
378	563972.58	4191875.20	FENCEGRD	52.93
379	563968.30	4191897.64	FENCEGRD	53.16
380	563964.82	4191765.86	FENCEGRD	50.05
381	563988.86	4191729.54	FENCEGRD	49.97
382	564012.91	4191693.23	FENCEGRD	49.85
383	564036.95	4191656.91	FENCEGRD	49.64
384	564061.00	4191620.59	FENCEGRD	50.04
385	564106.42	4191580.10	FENCEGRD	50.61
386	564149.16	4191571.73	FENCEGRD	51.19
387	564191.91	4191563.37	FENCEGRD	52.14
388	564234.65	4191555.00	FENCEGRD	53.04
389	564277.40	4191546.64	FENCEGRD	53.83
390	564320.14	4191538.28	FENCEGRD	54.89
391	563924.47	4191842.77	FENCEGRD	51.25
392	563920.19	4191865.21	FENCEGRD	51.69
393	563915.91	4191887.64	FENCEGRD	52.02
394	563912.17	4191756.26	FENCEGRD	49.19
395	563936.04	4191720.21	FENCEGRD	49.04
396	563959.91	4191684.16	FENCEGRD	48.91
397	563983.78	4191648.11	FENCEGRD	48.70
398	564007.65	4191612.05	FENCEGRD	48.47
399	564031.52	4191576.00	FENCEGRD	49.00
400	564076.61	4191535.80	FENCEGRD	49.77
401	564119.04	4191527.49	FENCEGRD	50.19
402	564161.48	4191519.19	FENCEGRD	50.90
403	564203.91	4191510.89	FENCEGRD	52.01
404	564246.34	4191502.58	FENCEGRD	52.55
405	564288.78	4191494.28	FENCEGRD	53.85
406	564331.21	4191485.98	FENCEGRD	54.74
407	563872.08	4191832.78	FENCEGRD	49.96
408	563867.80	4191855.21	FENCEGRD	49.99
409	563863.52	4191877.65	FENCEGRD	50.47
410	563859.58	4191746.57	FENCEGRD	48.18

Receptor Pathway

411	563883.31	4191710.72	FENCEGRD	48.05
412	563907.05	4191674.87	FENCEGRD	47.96
413	563930.79	4191639.02	FENCEGRD	47.69
414	563954.53	4191603.17	FENCEGRD	47.70
415	563978.26	4191567.32	FENCEGRD	47.68
416	564002.00	4191531.47	FENCEGRD	48.05
417	564046.83	4191491.49	FENCEGRD	48.65
418	564089.03	4191483.24	FENCEGRD	49.10
419	564131.23	4191474.98	FENCEGRD	49.71
420	564173.42	4191466.72	FENCEGRD	51.00
421	564215.62	4191458.46	FENCEGRD	51.41
422	564257.82	4191450.21	FENCEGRD	52.81
423	564300.01	4191441.95	FENCEGRD	53.36
424	564342.21	4191433.69	FENCEGRD	54.63
425	563819.69	4191822.78	FENCEGRD	48.90
426	563815.41	4191845.22	FENCEGRD	49.04
427	563811.13	4191867.66	FENCEGRD	49.35
428	563796.53	4191752.68	FENCEGRD	47.24
429	563809.00	4191733.84	FENCEGRD	46.99
430	563821.47	4191715.01	FENCEGRD	47.08
431	563833.94	4191696.17	FENCEGRD	46.89
432	563846.42	4191677.33	FENCEGRD	47.00
433	563858.89	4191658.50	FENCEGRD	46.71
434	563871.36	4191639.66	FENCEGRD	46.72
435	563883.83	4191620.82	FENCEGRD	46.44
436	563896.30	4191601.99	FENCEGRD	46.76
437	563908.78	4191583.15	FENCEGRD	46.91
438	563921.25	4191564.31	FENCEGRD	46.70
439	563933.72	4191545.48	FENCEGRD	47.00
440	563946.19	4191526.64	FENCEGRD	47.00
441	563958.67	4191507.80	FENCEGRD	46.90
442	563971.14	4191488.96	FENCEGRD	47.00
443	563983.61	4191470.13	FENCEGRD	47.00
444	564018.25	4191446.95	FENCEGRD	47.83
445	564040.42	4191442.61	FENCEGRD	48.00
446	564062.60	4191438.28	FENCEGRD	48.31
447	564084.77	4191433.94	FENCEGRD	48.92
448	564106.94	4191429.60	FENCEGRD	48.95

Receptor Pathway

449	564129.11	4191425.26	FENCEGRD	49.33
450	564151.28	4191420.92	FENCEGRD	49.62
451	564173.45	4191416.58	FENCEGRD	50.00
452	564195.62	4191412.25	FENCEGRD	50.14
453	564217.79	4191407.91	FENCEGRD	50.53
454	564239.96	4191403.57	FENCEGRD	51.20
455	564262.14	4191399.23	FENCEGRD	51.73
456	564284.31	4191394.89	FENCEGRD	52.31
457	564306.48	4191390.55	FENCEGRD	52.91
458	564328.65	4191386.22	FENCEGRD	53.50
459	564350.82	4191381.88	FENCEGRD	54.10
460	564372.99	4191377.54	FENCEGRD	54.67
461	563767.30	4191812.79	FENCEGRD	47.76
462	563763.02	4191835.23	FENCEGRD	48.09
463	563758.74	4191857.66	FENCEGRD	48.21
464	563756.28	4191724.35	FENCEGRD	45.69
465	563781.00	4191687.01	FENCEGRD	45.92
466	563805.73	4191649.67	FENCEGRD	45.77
467	563830.45	4191612.33	FENCEGRD	45.57
468	563855.17	4191574.99	FENCEGRD	45.77
469	563879.90	4191537.65	FENCEGRD	46.00
470	563904.62	4191500.31	FENCEGRD	46.01
471	563929.34	4191462.97	FENCEGRD	45.98
472	563954.07	4191425.63	FENCEGRD	46.00
473	563988.40	4191402.66	FENCEGRD	46.73
474	564032.35	4191394.06	FENCEGRD	47.18
475	564076.30	4191385.46	FENCEGRD	47.83
476	564120.25	4191376.86	FENCEGRD	48.24
477	564164.20	4191368.26	FENCEGRD	49.00
478	564208.15	4191359.66	FENCEGRD	49.60
479	564252.10	4191351.06	FENCEGRD	50.68
480	564296.05	4191342.46	FENCEGRD	52.08
481	564340.00	4191333.86	FENCEGRD	52.81
482	564383.95	4191325.26	FENCEGRD	54.02
483	563714.91	4191802.80	FENCEGRD	46.15
484	563710.63	4191825.23	FENCEGRD	46.55
485	563706.35	4191847.67	FENCEGRD	46.83
486	564271.93	4191979.62	FENCEGRD	60.11

Receptor Pathway

487	564291.82	4191991.48	FENCEGRD	60.50
488	564316.59	4191987.58	FENCEGRD	60.86
489	564252.46	4191993.02	FENCEGRD	60.55
490	564290.12	4192006.87	FENCEGRD	61.02
491	564248.32	4192016.29	FENCEGRD	61.16
492	564213.93	4191978.73	FENCEGRD	59.43
493	564285.97	4192030.14	FENCEGRD	61.79
494	564308.30	4192034.12	FENCEGRD	61.92
495	564244.17	4192039.56	FENCEGRD	61.46
496	564213.53	4192019.83	FENCEGRD	60.63
497	564194.46	4191992.13	FENCEGRD	59.52
498	564281.82	4192053.41	FENCEGRD	62.57
499	564240.02	4192062.83	FENCEGRD	62.10
500	564209.38	4192043.10	FENCEGRD	61.22
501	564174.99	4192005.54	FENCEGRD	59.97
502	564167.49	4191969.87	FENCEGRD	58.63
503	564277.67	4192076.68	FENCEGRD	63.16
504	564300.75	4192085.17	FENCEGRD	63.63
505	564232.81	4192084.13	FENCEGRD	62.58
506	564177.65	4192048.61	FENCEGRD	60.55
507	564150.27	4191993.97	FENCEGRD	58.81
508	564278.79	4192089.42	FENCEGRD	63.39
509	564229.17	4192107.73	FENCEGRD	62.91
510	564193.42	4192084.71	FENCEGRD	61.87
511	564157.68	4192061.69	FENCEGRD	60.40
512	564135.43	4192029.37	FENCEGRD	59.50
513	564126.68	4191987.76	FENCEGRD	58.17
514	564269.38	4192123.22	FENCEGRD	64.09
515	564225.39	4192131.23	FENCEGRD	63.16
516	564190.37	4192108.68	FENCEGRD	62.23
517	564155.35	4192086.13	FENCEGRD	61.06
518	564116.05	4192043.20	FENCEGRD	59.29
519	564107.48	4192002.44	FENCEGRD	57.97
520	564098.91	4191961.68	FENCEGRD	57.26
521	564265.23	4192146.49	FENCEGRD	64.69
522	564287.56	4192150.47	FENCEGRD	64.96
523	564221.52	4192154.68	FENCEGRD	63.94
524	564187.04	4192132.48	FENCEGRD	62.66

Receptor Pathway

525	564152.57	4192110.28	FENCEGRD	61.63
526	564118.10	4192088.08	FENCEGRD	60.72
527	564096.65	4192056.92	FENCEGRD	59.30
528	564088.21	4192016.80	FENCEGRD	58.35
529	564079.77	4191976.67	FENCEGRD	57.01
530	564261.08	4192169.76	FENCEGRD	65.37
531	564217.58	4192178.08	FENCEGRD	64.34
532	564183.54	4192156.16	FENCEGRD	63.33
533	564149.49	4192134.24	FENCEGRD	62.26
534	564115.44	4192112.31	FENCEGRD	61.53
535	564077.23	4192070.57	FENCEGRD	59.14
536	564068.90	4192030.95	FENCEGRD	58.33
537	564060.57	4191991.32	FENCEGRD	57.12
538	564046.48	4191947.21	FENCEGRD	55.80
539	564256.94	4192193.03	FENCEGRD	66.00
540	564279.27	4192197.01	FENCEGRD	66.00
541	564211.73	4192200.26	FENCEGRD	66.00
542	564155.56	4192164.08	FENCEGRD	63.10
543	564118.10	4192139.97	FENCEGRD	62.07
544	564080.65	4192115.85	FENCEGRD	60.59
545	564057.35	4192082.00	FENCEGRD	59.52
546	564043.60	4192016.61	FENCEGRD	57.01
547	564048.18	4191967.26	FENCEGRD	56.52
548	564252.79	4192216.30	FENCEGRD	66.00
549	564202.64	4192252.93	FENCEGRD	67.18
550	564165.71	4192229.15	FENCEGRD	64.48
551	564128.78	4192205.37	FENCEGRD	63.00
552	564091.85	4192181.59	FENCEGRD	62.24
553	564054.93	4192157.82	FENCEGRD	61.09
554	564013.48	4192112.55	FENCEGRD	58.36
555	564004.44	4192069.56	FENCEGRD	57.43
556	563995.41	4192026.58	FENCEGRD	56.04
557	563986.37	4191983.60	FENCEGRD	55.00
558	563977.33	4191940.62	FENCEGRD	54.27
559	564243.43	4192268.80	FENCEGRD	67.92
560	564265.76	4192272.78	FENCEGRD	67.82
561	564193.46	4192305.55	FENCEGRD	67.65
562	564156.89	4192282.01	FENCEGRD	65.63

Receptor Pathway

563	564120.33	4192258.46	FENCEGRD	63.63
564	564083.76	4192234.92	FENCEGRD	62.62
565	564047.20	4192211.37	FENCEGRD	61.79
566	564010.64	4192187.83	FENCEGRD	60.57
567	563969.60	4192143.00	FENCEGRD	57.76
568	563960.65	4192100.44	FENCEGRD	56.91
569	563951.70	4192057.88	FENCEGRD	55.44
570	563942.75	4192015.32	FENCEGRD	54.52
571	563933.80	4191972.76	FENCEGRD	53.88
572	563924.86	4191930.20	FENCEGRD	52.85
573	564234.07	4192321.31	FENCEGRD	68.51
574	564256.40	4192325.29	FENCEGRD	68.91
575	564184.23	4192358.15	FENCEGRD	67.35
576	564147.93	4192334.77	FENCEGRD	66.14
577	564111.64	4192311.40	FENCEGRD	64.16
578	564075.34	4192288.02	FENCEGRD	63.28
579	564039.04	4192264.65	FENCEGRD	62.31
580	564002.74	4192241.27	FENCEGRD	61.13
581	563966.44	4192217.90	FENCEGRD	59.10
582	563925.70	4192173.40	FENCEGRD	57.31
583	563916.82	4192131.15	FENCEGRD	56.07
584	563907.93	4192088.90	FENCEGRD	55.11
585	563899.05	4192046.65	FENCEGRD	54.20
586	563890.17	4192004.40	FENCEGRD	53.49
587	563881.29	4191962.15	FENCEGRD	52.26
588	563872.40	4191919.90	FENCEGRD	51.97
589	564224.71	4192373.81	FENCEGRD	68.70
590	564247.04	4192377.79	FENCEGRD	69.17
591	564174.98	4192410.72	FENCEGRD	67.05
592	564138.88	4192387.47	FENCEGRD	65.84
593	564102.79	4192364.23	FENCEGRD	64.64
594	564066.69	4192340.99	FENCEGRD	63.44
595	564030.60	4192317.74	FENCEGRD	62.23
596	563994.50	4192294.50	FENCEGRD	61.03
597	563958.40	4192271.26	FENCEGRD	59.66
598	563922.31	4192248.01	FENCEGRD	57.66
599	563881.80	4192203.76	FENCEGRD	56.27
600	563872.96	4192161.75	FENCEGRD	55.16

Receptor Pathway

601	563864.13	4192119.74	FENCEGRD	54.47
602	563855.30	4192077.72	FENCEGRD	53.40
603	563846.46	4192035.71	FENCEGRD	52.10
604	563837.63	4191993.70	FENCEGRD	51.81
605	563828.80	4191951.68	FENCEGRD	50.69
606	563819.96	4191909.67	FENCEGRD	50.17
607	564215.35	4192426.32	FENCEGRD	68.39
608	564237.68	4192430.30	FENCEGRD	69.15
609	564164.70	4192462.63	FENCEGRD	66.76
610	564145.73	4192450.42	FENCEGRD	66.07
611	564126.77	4192438.21	FENCEGRD	65.44
612	564107.80	4192425.99	FENCEGRD	65.00
613	564088.84	4192413.78	FENCEGRD	64.65
614	564069.87	4192401.57	FENCEGRD	64.09
615	564050.91	4192389.36	FENCEGRD	63.70
616	564012.98	4192364.93	FENCEGRD	62.61
617	563994.01	4192352.72	FENCEGRD	62.01
618	563975.04	4192340.50	FENCEGRD	61.38
619	563956.08	4192328.29	FENCEGRD	60.68
620	563937.11	4192316.08	FENCEGRD	59.52
621	563918.15	4192303.86	FENCEGRD	58.44
622	563880.22	4192279.44	FENCEGRD	56.32
623	563861.25	4192267.23	FENCEGRD	55.59
624	563837.64	4192232.94	FENCEGRD	54.71
625	563833.00	4192210.86	FENCEGRD	54.29
626	563823.72	4192166.71	FENCEGRD	53.46
627	563814.44	4192122.56	FENCEGRD	52.06
628	563805.15	4192078.41	FENCEGRD	51.56
629	563800.51	4192056.34	FENCEGRD	50.95
630	563791.23	4192012.19	FENCEGRD	50.26
631	563786.59	4191990.11	FENCEGRD	50.11
632	563777.31	4191945.96	FENCEGRD	49.80
633	563768.02	4191901.81	FENCEGRD	49.25
634	564206.00	4192478.83	FENCEGRD	68.14
635	564228.33	4192482.81	FENCEGRD	69.55
636	564155.51	4192515.25	FENCEGRD	67.38
637	564117.91	4192491.04	FENCEGRD	66.14
638	564080.32	4192466.83	FENCEGRD	64.89

Receptor Pathway

639	564042.72	4192442.62	FENCEGRD	63.64
640	564005.13	4192418.41	FENCEGRD	62.38
641	563967.53	4192394.20	FENCEGRD	61.13
642	563929.94	4192369.99	FENCEGRD	59.88
643	563892.34	4192345.78	FENCEGRD	57.82
644	563854.75	4192321.57	FENCEGRD	56.06
645	563817.15	4192297.36	FENCEGRD	54.12
646	563793.76	4192263.38	FENCEGRD	53.05
647	563784.56	4192219.62	FENCEGRD	52.04
648	563775.36	4192175.86	FENCEGRD	51.21
649	563766.16	4192132.10	FENCEGRD	50.42
650	563756.96	4192088.34	FENCEGRD	49.85
651	563747.75	4192044.58	FENCEGRD	49.00
652	563738.55	4192000.83	FENCEGRD	48.91
653	563729.35	4191957.07	FENCEGRD	48.20
654	563720.15	4191913.31	FENCEGRD	47.89
655	564196.64	4192531.33	FENCEGRD	69.27
656	564218.97	4192535.31	FENCEGRD	70.14
657	564267.85	4191898.74		58.41
658	564251.36	4191903.25		58.16
659	564244.10	4191885.78		57.35
660	564255.28	4191886.57		57.73
661	564228.79	4191884.02		56.99
662	564183.25	4191884.02		56.30
663	564209.95	4191931.32		58.50
664	564369.91	4191927.60	FENCEGRD	60.21
665	564371.08	4191918.09	FENCEGRD	60.03
666	564371.91	4191907.25	FENCEGRD	59.88
667	564398.10	4191909.58	FENCEGRD	60.38
668	564386.76	4191909.08	FENCEGRD	60.08
669	564386.76	4191918.59	FENCEGRD	60.18
670	564394.77	4191927.93	FENCEGRD	60.62
671	564378.75	4191927.60	FENCEGRD	60.32
672	564378.42	4191939.95	FENCEGRD	60.65
673	564391.43	4191941.28	FENCEGRD	60.87
674	564410.12	4191909.75	FENCEGRD	60.69
675	564412.12	4191920.09	FENCEGRD	60.96
676	564413.62	4191937.44	FENCEGRD	61.00

Receptor Pathway

677	564425.46	4191929.60	FENCEGRD	61.00
678	564429.47	4191913.75	FENCEGRD	60.96
679	564447.49	4191916.42	FENCEGRD	61.14
680	564444.65	4191932.77	FENCEGRD	61.04
681	564438.81	4191922.76	FENCEGRD	61.00
682	564467.84	4191918.42	FENCEGRD	61.81
683	564468.01	4191930.44	FENCEGRD	61.82
684	564371.91	4191964.30	FENCEGRD	61.21
685	564386.43	4191957.30	FENCEGRD	61.36
686	564398.44	4191968.81	FENCEGRD	61.75
687	564413.62	4191977.98	FENCEGRD	62.05
688	564428.63	4191980.15	FENCEGRD	62.13
689	564424.13	4191968.31	FENCEGRD	61.73
690	564440.81	4191981.99	FENCEGRD	62.19
691	564452.16	4191973.15	FENCEGRD	62.18
692	564450.82	4191952.29	FENCEGRD	61.44
693	564464.50	4191957.30	FENCEGRD	62.07
694	564452.99	4191964.30	FENCEGRD	61.92
695	564515.26	4191949.23	FENCEGRD	63.88
696	564520.05	4191926.22	FENCEGRD	63.74
697	564548.18	4191931.65	FENCEGRD	65.24
698	564546.90	4191956.58	FENCEGRD	65.79
699	564508.55	4191985.02	FENCEGRD	64.58
700	564537.95	4191989.18	FENCEGRD	66.15
701	564378.47	4192007.40	FENCEGRD	61.87
702	564404.04	4192014.11	FENCEGRD	62.94
703	564423.85	4192014.75	FENCEGRD	63.28
704	564454.56	4192063.95	FENCEGRD	65.29
705	564485.52	4192066.61	FENCEGRD	66.41
706	564514.27	4192073.68	FENCEGRD	67.09
707	564310.11	4191982.50	FENCEGRD	60.65
708	564201.18	4192015.37	FENCEGRD	60.28
709	564187.86	4192030.31	FENCEGRD	60.38
710	564173.47	4192022.44	FENCEGRD	60.00
711	564303.87	4192049.06	FENCEGRD	62.42
712	564307.13	4192020.81	FENCEGRD	61.48
713	564306.31	4192007.77	FENCEGRD	61.05
714	564301.69	4191997.44	FENCEGRD	60.78

Receptor Pathway

715	564269.64	4191995.27	FENCEGRD	60.63
716	564188.14	4191971.91	FENCEGRD	58.92
717	564224.27	4191970.00	FENCEGRD	59.55
718	564216.12	4192001.25	FENCEGRD	60.25
719	564153.20	4191965.48	FENCEGRD	58.21
720	564122.84	4191954.61	FENCEGRD	57.50
721	564117.09	4191980.18	FENCEGRD	58.02
722	564083.85	4191945.67	FENCEGRD	56.98
723	564013.21	4191939.27	FENCEGRD	54.92
724	563997.87	4191938.95	FENCEGRD	54.79
725	564007.46	4191974.75	FENCEGRD	55.44
726	564042.30	4191992.33	FENCEGRD	56.63
727	563988.58	4191902.55	FENCEGRD	53.84
728	564014.53	4191894.28	FENCEGRD	54.18
729	563957.75	4191938.27	FENCEGRD	53.59
730	563944.97	4191935.64	FENCEGRD	53.25
731	563876.15	4191870.59	FENCEGRD	50.56
732	563897.96	4191930.75	FENCEGRD	52.39
733	564329.17	4191858.88	FENCEGRD	58.26
734	564324.28	4191848.82	FENCEGRD	57.78
735	564317.76	4191834.70	FENCEGRD	57.28
736	564332.70	4191834.70	FENCEGRD	57.59
737	564295.75	4191849.10	FENCEGRD	57.76
738	564293.85	4191824.91	FENCEGRD	56.95
739	564258.53	4191840.94	FENCEGRD	56.48
740	564271.30	4191814.59	FENCEGRD	56.16
741	564292.12	4191781.68	FENCEGRD	55.98
742	564318.97	4191786.48	FENCEGRD	56.57
743	564379.50	4191863.64	FENCEGRD	59.21
744	564380.04	4191829.13	FENCEGRD	58.90
745	564441.99	4191869.89	FENCEGRD	60.95
746	564429.49	4191826.96	FENCEGRD	60.01
747	564444.16	4191829.68	FENCEGRD	60.13
748	564444.16	4191802.78	FENCEGRD	60.02
749	564459.92	4191819.35	FENCEGRD	60.55
750	564258.43	4191982.64	FENCEGRD	60.21
751	564270.54	4192043.38	FENCEGRD	62.23
752	564260.81	4192040.73	FENCEGRD	62.06

Receptor Pathway

753	564506.93	4192025.65	FENCEGRD	65.76	
754	564521.97	4192028.30	FENCEGRD	66.35	
755	564170.33	4192068.11	FENCEGRD	60.95	
756	564186.13	4192072.25	FENCEGRD	61.54	
757	564209.07	4192077.14	FENCEGRD	62.07	
758	564220.35	4192078.64	FENCEGRD	62.23	
759	564136.48	4192067.74	FENCEGRD	60.04	
760	564243.67	4192085.79	FENCEGRD	62.77	
761	564254.95	4192089.93	FENCEGRD	62.94	
762	564266.99	4192092.56	FENCEGRD	63.10	

Plant Boundary Receptors

Receptor Groups

Record Number	Group ID	Group Description
1	FENCEPRI	Cartesian plant boundary Primary Receptors
2	FENCEGRD	Receptors generated from Fenceline Grid

Meteorology Pathway

AERMOD

Met Input Data

Surface Met Data

Filename: MET_data\KOAK_Compiled.SFC
Format Type: Default AERMET format

Profile Met Data

Filename: MET_data\KOAK_Compiled.PFL
Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 1.80 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2009			OAKLAND/WSO AP
Upper Air		2009			OAKLAND/WSO AP

Data Period

Data Period to Process

Start Date: 1/1/2009 Start Hour: 1 End Date: 12/31/2017 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Output Pathway

AERMOD

Tabular Printed Outputs

Short Term Averaging Period	RECTABLE Highest Values Table										MAXTABLE Maximum Values Table	DAYTABLE Daily Values Table
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th		
1	■	☐	☐	☐	☐	☐	☐	☐	☐	☐		No

Contour Plot Files (PLOTFILE)

Path for PLOTFILES: PM25.AD

Averaging Period	Source Group ID	High Value	File Name
1	ALL	1st	01H1GALL.PLT
1	Area	1st	01H1G001.PLT
1	Off1	1st	01H1G002.PLT
1	Off2	1st	01H1G003.PLT
1	Off3	1st	01H1G004.PLT
1	Off4	1st	01H1G005.PLT
1	Off5	1st	01H1G006.PLT
1	Off6	1st	01H1G007.PLT
1	On	1st	01H1G008.PLT
Period	ALL	N/A	PE00GALL.PLT
Period	Area	N/A	PE00G001.PLT
Period	Off1	N/A	PE00G002.PLT
Period	Off2	N/A	PE00G003.PLT
Period	Off3	N/A	PE00G004.PLT
Period	Off4	N/A	PE00G005.PLT
Period	Off5	N/A	PE00G006.PLT
Period	Off6	N/A	PE00G007.PLT
Period	On	N/A	PE00G008.PLT

Results Summary

F:\AERMOD\61000001 Shattuck\PM25\PM25.isc

DPM - Concentration - Source Group: ALL

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	9.14768	ug/m^3	564310.11	4191982.50	60.65	1.50	355.00	1/25/2012, 9
PERIOD		0.10520	ug/m^3	564369.91	4191927.60	60.21	1.50	355.00	

DPM - Concentration - Source Group: AREA

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	8.92599	ug/m^3	564310.11	4191982.50	60.65	1.50	355.00	1/25/2012, 9
PERIOD		0.09985	ug/m^3	564369.91	4191927.60	60.21	1.50	355.00	

DPM - Concentration - Source Group: OFF1

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	0.03878	ug/m^3	564312.60	4192463.61	72.35	1.50	355.00	1/25/2012, 9
PERIOD		0.00114	ug/m^3	564344.04	4192159.93	66.72	1.50	355.00	

DPM - Concentration - Source Group: OFF2

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	0.04560	ug/m^3	564270.46	4192473.21	71.13	1.50	355.00	11/24/2017, 8
PERIOD		0.00095	ug/m^3	564344.04	4192159.93	66.72	1.50	355.00	

Results Summary

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DPM - Concentration - Source Group: OFF3

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	0.03182	ug/m^3	564332.70	4191834.70	57.59	1.50	355.00	11/21/2013, 9
PERIOD		0.00099	ug/m^3	564386.85	4191709.82	57.23	1.50	355.00	

DPM - Concentration - Source Group: OFF4

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	0.04783	ug/m^3	564386.76	4191909.08	60.08	1.50	355.00	4/2/2013, 8
PERIOD		0.00112	ug/m^3	564418.71	4191745.29	59.05	1.50	355.00	

DPM - Concentration - Source Group: OFF5

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	0.03506	ug/m^3	564371.91	4191907.25	59.88	1.50	355.00	1/23/2013, 8
PERIOD		0.00107	ug/m^3	564269.63	4191886.77	58.01	1.50	355.00	

DPM - Concentration - Source Group: OFF6

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	0.03655	ug/m^3	564371.91	4191907.25	59.88	1.50	355.00	1/23/2013, 8
PERIOD		0.00115	ug/m^3	564329.17	4191858.88	58.26	1.50	355.00	

Results Summary

F:\AERMOD\61000001 Shattuck\PM25\PM25.isc

DPM - Concentration - Source Group: ON

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	0.20255	ug/m^3	564310.11	4191982.50	60.65	1.50	355.00	11/28/2013, 8
PERIOD		0.00338	ug/m^3	564369.91	4191927.60	60.21	1.50	355.00	

Non-Vehicular Diesel Engine Risk Screening Tool Results

Table 1. Results Summary						
Receptor	Cancer		Chronic		Acute	
	Risk (in a million)	Receptor Distance (m)	Hazard Index (HI)	Receptor Distance (m)	Hazard Index (HI)	Receptor Distance (m)
Resident (MEIR)	0.2	40	0	40	-	-
Worker (MEIW)	0	20	0	20	-	-
Maximum (PMI)	0.3	50	0	50	-	-

Table 2. Inputs		
Project Information		
Project Name:	1974 Shattuck Avenue Mixed Use Project	
Agency Jurisdiction:	Bay Area AQMD	
Project Output Directory:	C:\DICE\Shattuck Mixed Use Project	
Date Assessment Conducted:	10/8/2024 5:27:03 PM	
Inventory Year:		
Tool Version:	23312	
Meteorological Data		
Surface Met Data File (*.SFC):	C:\DICE\Metdata\KOAK13_17.SFC	
Profile Met Data File (*.PFL):	C:\DICE\Metdata\KOAK13_17.PFL	
Base Elevation (m):	1.8	
Dispersion Coefficients:	Urban	
Building Downwash:	No	
Engine Information		
Engine Horsepower:	300	
Engine Load Factor (%):	73	
Engine Annual Usage:	50	hours
Diesel PM10 Emission Factor:	0.015	g/bhp-hr
Diesel PM10 Emissions (lb/yr):	0.36135	
Stack Height (m):	3	
Stack Diameter (m):	0.13	
Stack Temperature (K):	789	
Stack Exit Velocity (m/s):	57.4	
Risk Settings		
Use District Defaults:	Yes	
Flagpole Receptor Height (m):	0	
Deposition Rate (g/s):	NA	
Receptor Type:	Resident	Worker
Exposure Duration (yrs):	30	25
Intake Rate Percentile:	OEHHA Derived	OEHHA Derived
Time Away from Home <16:	No	-
Time Away from Home =>16:	No	-
Use 8-Hour Breathing Rate:	No	No
Enabled Pathways:	Inhalation Only	Inhalation Only

Table 3. DPM Concentration and Risk by Receptor Distance							
Receptor Distance (m)	DPM Concentration ($\mu g/m^3$)	Resident			Worker		
		Cancer Risk (in a million)	Chronic HI	Acute HI	Cancer Risk (in a million)	Chronic HI	Acute HI
10	2.027552E-06	0	0	-	0	0	-
20	7.210582E-05	0.1	0	-	0	0	-
30	0.0001989935	0.2	0	-	0	0	-
40	0.0002670144	0.2	0	-	0	0	-
50	0.0002827646	0.3	0	-	0	0	-
60	0.0002725211	0.2	0	-	0	0	-
70	0.0002539876	0.2	0	-	0	0	-
80	0.0002338251	0.2	0	-	0	0	-
90	0.0002145493	0.2	0	-	0	0	-
100	0.0001968336	0.2	0	-	0	0	-
110	0.0001818363	0.2	0	-	0	0	-
120	0.0001682233	0.1	0	-	0	0	-
130	0.0001559539	0.1	0	-	0	0	-
140	0.0001448737	0.1	0	-	0	0	-
150	0.0001348404	0.1	0	-	0	0	-
160	0.0001257633	0.1	0	-	0	0	-
170	0.0001177876	0.1	0	-	0	0	-
180	0.0001106796	0.1	0	-	0	0	-
190	0.0001041911	0.1	0	-	0	0	-
200	9.825543E-05	0.1	0	-	0	0	-
210	9.281782E-05	0.1	0	-	0	0	-
220	8.782786E-05	0.1	0	-	0	0	-
230	8.323737E-05	0.1	0	-	0	0	-
240	7.900395E-05	0.1	0	-	0	0	-
250	7.509239E-05	0.1	0	-	0	0	-
260	7.14694E-05	0.1	0	-	0	0	-
270	6.810659E-05	0.1	0	-	0	0	-
280	6.497953E-05	0.1	0	-	0	0	-
290	6.206505E-05	0.1	0	-	0	0	-
300	5.934354E-05	0.1	0	-	0	0	-
350	4.809821E-05	0	0	-	0	0	-
400	3.983401E-05	0	0	-	0	0	-
450	3.358389E-05	0	0	-	0	0	-
500	2.873847E-05	0	0	-	0	0	-
600	2.181259E-05	0	0	-	0	0	-
700	1.718931E-05	0	0	-	0	0	-
800	1.394245E-05	0	0	-	0	0	-
900	1.15698E-05	0	0	-	0	0	-
1000	9.77992E-06	0	0	-	0	0	-
1150	7.814997E-06	0	0	-	0	0	-

Table 3. DPM Concentration and Risk by Receptor Distance							
Receptor Distance (m)	DPM Concentration ($\mu g/m^3$)	Resident			Worker		
		Cancer Risk (in a million)	Chronic HI	Acute HI	Cancer Risk (in a million)	Chronic HI	Acute HI
1300	6.413418E-06	0	0	-	0	0	-
1450	5.375916E-06	0	0	-	0	0	-
1600	4.584665E-06	0	0	-	0	0	-
1750	3.966229E-06	0	0	-	0	0	-
1900	3.472737E-06	0	0	-	0	0	-
2050	3.072019E-06	0	0	-	0	0	-
2250	2.64443E-06	0	0	-	0	0	-
2450	2.306444E-06	0	0	-	0	0	-
2650	2.034205E-06	0	0	-	0	0	-
2850	1.811185E-06	0	0	-	0	0	-
3050	1.625898E-06	0	0	-	0	0	-
3250	1.47008E-06	0	0	-	0	0	-
3450	1.337547E-06	0	0	-	0	0	-
3650	1.223828E-06	0	0	-	0	0	-
3850	1.125338E-06	0	0	-	0	0	-
4050	1.039425E-06	0	0	-	0	0	-
4250	9.639072E-07	0	0	-	0	0	-
4450	8.971726E-07	0	0	-	0	0	-
4650	8.378186E-07	0	0	-	0	0	-
4850	7.848051E-07	0	0	-	0	0	-

Permitted Sources within 1,000 Feet of the Project Boundary

FID	Facility ID	Facility Name	Address	City	State	Zip	County	Latitude	Longitude	Source Det	NAICS Nun	NAICS Sector	NAICS Subsector	NAICS Industry	Cancer Risk	Chronic Hazard Index	PM 2.5	x	y
2974	19070	Golden Bear Center	1995 University Ave	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	531120	Real Estate and Rental and Leasing	Real Estate	Lessors of Nonresidential Buildings (except Miniwarehouses)	0.75	0	0	-1.4E+07	4561348
4546	21118	City of Berkeley Fire Station #2	2029 Berkeley Way	Berkeley	CA	94705	Alameda	37.87	-122.27	Generator	922160	Public Administration	Justice, Public Order, and Safety Activities	Fire Protection	3.11	0	0	-1.4E+07	4561522
4977	17864	Peralta Community College District	2050 Center Street	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	611210	Educational Services	Educational Services	Junior Colleges	23.75	0.01	0.03	-1.4E+07	4561101
5817	200903	Center Street Parking Garage	2025 CENTER ST	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	921190	Public Administration	Executive, Legislative, and Other General Government Support	Other General Government Support	3.25	0	0	-1.4E+07	4561131
6127	201406	Residence Inn Berkeley	2129 SHATTUCK AVE	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	721110	Accommodation and Food Services	Accommodation	Hotels (except Casino Hotels) and Motels	32.06	0.01	0.04	-1.4E+07	4561190
6288	201576	Regency 2120 Berkeley Way LLC	2120 BERKELEY WAY	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	541110	Professional, Scientific, and Technical Services	Professional, Scientific, and Technical Services	Offices of Lawyers	3.97	0	0.01	-1.4E+07	4561496
7389	200623	Stonefire Apartments	1974 UNIVERSITY AVE	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	531110	Real Estate and Rental and Leasing	Real Estate	Lessors of Residential Buildings and Dwellings	9.63	0	0.01	-1.4E+07	4561278
9243	59-110	University of California Berkeley	Berkeley Campus	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Educational Services	Educational Services	Colleges, Universities, and Professional Schools	3.79	0	0.01	-1.4E+07	4561633
9267	59-118	University of California Berkeley	Berkeley Campus	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Educational Services	Educational Services	Colleges, Universities, and Professional Schools	3.97	0	0.01	-1.4E+07	4561634
9309	59-144	University of California Berkeley	Berkeley Campus	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Educational Services	Educational Services	Colleges, Universities, and Professional Schools	2.61	0	0	-1.4E+07	4561699
9321	59-149	University of California Berkeley	Berkeley Campus	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Educational Services	Educational Services	Colleges, Universities, and Professional Schools	5.93	0	0.01	-1.4E+07	4561566
9343	59-63	University of California Berkeley	Berkeley Campus	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Educational Services	Educational Services	Colleges, Universities, and Professional Schools	4.56	0	0.01	-1.4E+07	4561636
9352	59-REM	University of California Berkeley	Berkeley Campus	Berkeley	CA	94720	Alameda	37.87	-122.27	No Data	611310	Educational Services	Educational Services	Colleges, Universities, and Professional Schools	165.74	0.84	128.58	-1.4E+07	4561414

Shattuck Permitted Stationary Source with Decay Factor Applied

FID	Facility ID	Facility Name	Address	City	State	Zip	County	Latitude	Longitude	Source Detail	NAICS Nu	NAICS Se	NAICS Su	NAICS Inc	Cancer Ris	Chronic Hi	PM 2.5	x	y	UTM E	UTM N	distance from MEIR (m)	ft	decay factor	Adjusted Cancer Risk	Adjusted Chronic Hazard Index	Adjusted PM 2.5
2974	19070	Golden Bear Center	1995 Univ	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	531120	Real Estate	Real Estate	Lessors of	0.75	0	0	-13611120	4561348	564136	4191855	244.9	804	0.06	0.045	0	0
4546	21118	City of Berkeley Fire Stati	2029 Berk	Berkeley	CA	94705	Alameda	37.87	-122.27	Generator	922160	Public Adr	Justice, Pu	Fire Protec	3.11	0	0	-13610958	4561522	564262.9	4191992	125.2	411	0.16	0.4976	0	0
4977	17864	Peralta Community Colleg	2050 Cent	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	611210	Education	Education	Junior Coll	23.75	0.01	0.03	-13610959.4	4561101	564264.3	4191662	286.0	938	0.04	0.95	0.0004	0.0012
5817	200903	Center Street Parking Gara	2025 CEN	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	921190	Public Adr	Executive,	Other Gen	3.25	0	0	-13611028.6	4561131	564209.5	4191685	291.1	955	0.04	0.13	0	0
6127	201406	Residence Inn Berkeley	2129 SHA	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	721110	Accommo	Accommo	Hotels (ex	32.06	0.01	0.04	-13610742.3	4561190	564435.4	4191733	205.3	673	0.08	2.5648	0.0008	0.0032
6288	201576	Regency 2120 Berkeley W	2120 BER	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	541110	Profession	Profession	Offices of	3.97	0	0.01	-13610772.3	4561496	564409.7	4191974	60.9	200	0.41	1.6277	0	0.0041
7389	200623	Stonefire Apartments	1974 UNI	Berkeley	CA	94704	Alameda	37.87	-122.27	Generator	531110	Real Estate	Real Estate	Lessors of	9.63	0	0.01	-13611168.9	4561278	564097.7	4191799	301.0	987	0.012	0.11556	0	0.00012
9243	59-110	University of California B	Berkeley C	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Education	Education	Colleges, U	3.79	0	0.01	-13610561.2	4561633	564575.7	4192083	257.8	846	0.06	0.2274	0	0.0006
9267	59-118	University of California B	Berkeley C	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Education	Education	Colleges, U	3.97	0	0.01	-13610791.6	4561634	564393.6	4192082	156.5	513	0.12	0.4764	0	0.0012
9309	59-144	University of California B	Berkeley C	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Education	Education	Colleges, U	2.61	0	0	-13610700	4561699	564465.7	4192134	227.4	746	0.07	0.1827	0	0
9321	59-149	University of California B	Berkeley C	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Education	Education	Colleges, U	5.93	0	0.01	-13610509.7	4561566	564616.8	4192030	267.3	877	0.05	0.2965	0	0.0005
9343	59-63	University of California B	Berkeley C	Berkeley	CA	94720	Alameda	37.87	-122.27	Generator	611310	Education	Education	Colleges, U	4.56	0	0.01	-13610809.1	4561636	564379.8	4192084	156.5	513	0.12	0.5472	0	0.0012
9352	59-REM	University of California B	Berkeley C	Berkeley	CA	94720	Alameda	37.87	-122.27	No Data	611310	Education	Education	Colleges, U	165.74	0.84	128.58	-13610653.6	4561414	564504	4191910	135.2	444	0.389	64.47286	0.32676	50.01762
																									72.13372	0.32796	50.02974
																									81.27372	0.33292	50.13474
																											0.210373

Table 32 Diesel Engine Decay Factors

Distance (feet)	Decay Factor (unitless)	Distance (feet)	Decay Factor (unitless)
82	0.8500	492	0.1200
98.4	0.7300	525	0.1000
115	0.6400	590	0.0900
131	0.5800	656	0.0800
164	0.5000	722	0.0700
197	0.4100	787	0.0600
230	0.3100	853	0.0500
262	0.2800	918	0.0400
295	0.2500	984	0.0155
328	0.2200	1,050	0.0120
361	0.1800	1,115	0.0092
394	0.1600	1,181	0.0071
426	0.1500	1,246	0.0054
459	0.1400		

Table 33 Generic Decay Factors

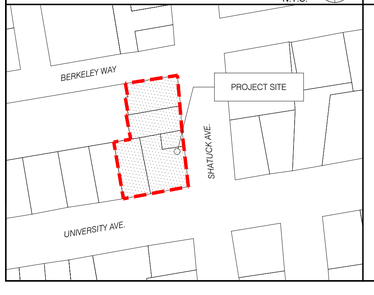
Distance (feet)	Decay Factor (unitless)	Distance (feet)	Decay Factor (unitless)
33	0.883	525	0.330
49	0.855	541	0.319
66	0.827	558	0.309
82	0.801	574	0.299
98	0.775	591	0.290
115	0.750	607	0.280
131	0.726	623	0.271
148	0.702	640	0.262
164	0.679	656	0.254
180	0.658	673	0.246
197	0.636	689	0.238
213	0.616	705	0.230
230	0.596	722	0.223
246	0.577	738	0.216
262	0.558	755	0.209
279	0.540	771	0.202
295	0.523	787	0.195
312	0.506	804	0.189
328	0.489	820	0.183
344	0.474	837	0.177
361	0.458	853	0.171
377	0.444	869	0.166
394	0.429	886	0.160
410	0.415	902	0.155
427	0.402	919	0.150
443	0.389	935	0.145
459	0.376	951	0.141
476	0.364	968	0.136
492	0.353	984	0.132
509	0.341		



VICINITY MAP

N

N.T.S.



PROJECT DIRECTORY

OWNER/APPLICANT:
1974 Shattuck Ave, LLC
1958A University Ave
Berkeley, CA 94705

ARCHITECT:
Isaiah Stackhouse, Principal
TRACHTENBERG ARCHITECTS
2421 Fourth Street
Berkeley, CA 94710
510.649.1414
www.TrachtenbergArch.com

PROJECT DESCRIPTION

PROJECT ADDRESS: 1950-1998 Shattuck Ave. & 2071 University Ave. Berkeley, CA 94704
APNS:
057 205300100
057 205300200
057 205300301
057 205300302
057 205300402

SCOPE OF WORK:
REMOVAL OF EXISTING COMMERCIAL STRUCTURES & CONSTRUCTION OF A NEW 28-STORY MIXED-USE HOUSING DEVELOPMENT WITH 599 DWELLING UNITS AND A ROOFTOP RESTAURANT OVER GROUND-LEVEL COMMERCIAL AND LOBBIES, WITH STATE OF CALIFORNIA DENSITY BONUS.

DRAWING LIST

A0.0	GENERAL INFORMATION			A3.9	PRELIMINARY RENDERING	L3.1	USABLE OPEN SPACE CALCS & PLANTING NOTES
A0.1	ZONING INFORMATION	A2.1	FLOOR PLANS	A3.10	PRELIMINARY RENDERING	I0.0	IRRIGATION NOTES & LEGEND
A0.2A	DENSITY BONUS DIAGRAMS	A2.2	FLOOR PLANS	A3.11	PRELIMINARY RENDERING	I1.0	IRRIGATION PLAN AT STREETSCAPE
A0.2B	DENSITY BONUS DIAGRAMS	A2.3	FLOOR PLANS	A3.12	PRELIMINARY RENDERING	I2.0	IRRIGATION PLAN SECOND FLOOR PODIUM GARDENS
A0.2C	PRELIMINARY AHCP DIAGRAMS	A2.4	FLOOR PLANS	A3.13	PRELIMINARY RENDERING	I3.0	IRRIGATION PLAN FOURTEENTH FLOOR ROOF DECK
A0.3	DPRELIMINARY AHCP DIAGRAMS	A2.5	FLOOR PLANS	A3.14	PRELIMINARY RENDERING	I3.1	IRRIGATION POINT OF CONNECTION
A0.4A	SHADOW STUDIES DECEMBER 21ST	A2.6	FLOOR PLANS	A3.15	PRELIMINARY RENDERING	I4.0	IRRIGATION DETAILS
A0.4B	SHADOW STUDIES JUNE 21ST	A2.7	ROOF PLAN	A3.16	PRELIMINARY RENDERING	I5.0	IRRIGATION DETAILS
A0.4C	SHADOW STUDIES FEB 15TH	A3.1	ELEVATIONS	A3.17	PRELIMINARY RENDERING	I6.0	IRRIGATION DETAILS
A0.5	SITE CONTEXT PHOTOS	A3.2	ELEVATIONS	A4.1	BUILDING SECTIONS	I7.0	IRRIGATION DETAILS
A0.6A	SURVEY	A3.3	STREET STRIP ELEVATIONS	A4.2	AWNING ENCROACHMENT DIAGRAM		
A0.6B	SURVEY	A3.4	PHOTO CONTEXT VIEWS	A5.0	CONCEPTUAL GRADING PLAN		
A0.6C	SURVEY	A3.5	PHOTO CONTEXT VIEWS	L0.0	COVER SHEET, NOTES, AND LEGEND		
A1.0	EXISTING SITE PLAN	A3.6	PHOTO CONTEXT VIEWS	L1.0	LANDSCAPE PLAN AT STREETSCAPE		
A2.0a	FLOOR PLANS	A3.7	PRELIMINARY RENDERING	L2.0	SECOND FLOOR PODIUM GARDENS		
A2.0b	FLOOR PLANS	A3.8	PRELIMINARY RENDERING	L3.0	FOURTEENTH FLOOR ROOF DECK		

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GENERAL INFORMATION

A0.0

ZONING CODE DATA

ZONING SUMMARY TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	PROPOSED W/DENSITY BONUS	ZONING COMPLIANCE
ZONING	C-DMU Core			COMPLIES
TOTAL LOT SIZE (SQ. FT.)	28,319			COMPLIES
TOTAL LOT SIZE (ACRES)	0.65			COMPLIES
FLOOR AREA RATIO (FAR)	NA	NA	14.52	COMPLIES W/ SDB WAIVER
DWELLING UNITS (SEE TABLE)	NA	NA	599	COMPLIES
RESIDENTIAL BEDROOMS	NA	NA	709	COMPLIES
HEIGHT - FEET	60'-0"	120'	317'	COMPLIES W/ SDB WAIVER
HEIGHT - STORIES*	NA	NA	28	COMPLIES W/ SDB WAIVER
LOT COVERAGE	NA	NA	88%	COMPLIES
SETBACK - FRONT (UNIVERSITY) (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - STREET SIDE (SHATTUCK) (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - REAR (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - MAX. DIMENSION ABOVE 120'	120'	NOT LIMITED	165'	COMPLIES W/ SDB WAIVER
RESIDENTIAL PARKING (SEE TABLE)	0	0	130	COMPLIES
COMMERCIAL PARKING (SEE TABLE)	24	24	24	COMPLIES
RES. BIKE PARKING LONG TERM (SEE TABLE)	237	237	240	COMPLIES
RES. BIKE PARKING SHORT TERM (SEE TABLE)	18	18	18	COMPLIES
COM. BIKE PARKING SHORT TERM (SEE TABLE)	9	9	10	COMPLIES
RESIDENTIAL OPEN SPACE (SEE TABLE)	47,920	47,920	13,032	COMPLIES W/ SDB WAIVER
COMMERCIAL OPEN SPACE (SEE TABLE)	323	323	706	COMPLIES

* Community Benefit Required per BMC Section 23.204.130.E.2.c.

PARKING CALCULATIONS

	QNTY	CARS	PER	REQ'D	PROVIDED
RESIDENTIAL	599	0.5 MAX	1	0	130
COMMERCIAL	16,142	1.5	1,000	24	24
TOTAL					**154**

BICYCLE PARKING CALCULATIONS

	QNTY	BIKES	PER	REQ'D	PROVIDED
RESIDENTIAL (LONG TERM) (PER BEDROOM)	709	1	3	237	256
RESIDENTIAL (SHORT TERM) (PER BEDROOM)	709	1	40	18	18
COMMERCIAL (SHORT TERM) (PER SF)	16,142	1.0	2,000	9	10

ROOFTOP ARCHITECTURAL ELEMENTS CALCS

	ALLOWABLE	PROPOSED
AVERAGE AREA OF FLOORS		14,058
AREA OF ROOFTOP ARCHITECTURAL ELEMENTS	2,109	1,464
% AREA OF ROOFTOP ARCHITECTURAL FEATURES	15.0%	10.4%

OPEN SPACE CALCULATIONS

	UNITS	SF / UNIT	TOTAL REQ'D	MODIFICATION	TOTAL PROVIDED	COMMON	LANDSCAPE REQ'D (40%)	LANDSCAPE PROVIDED
RESIDENTIAL UNITS	599	80	47,920	34,888	13,032	13,032	5,213	6,735
COMMERCIAL OPEN SPACE	16,142	50	323	(383)	706			

AREA TABLE

	RESIDENTIAL	COMMERICAL	TOTAL
LEVEL 28		7,800	7,800
LEVEL 27	11,980		11,980
LEVEL 26	11,980		11,980
LEVEL 25	11,980		11,980
LEVEL 24	11,980		11,980
LEVEL 23	11,980		11,980
LEVEL 22	11,980		11,980
LEVEL 21	11,980		11,980
LEVEL 20	11,980		11,980
LEVEL 19	11,980		11,980
LEVEL 18	11,980		11,980
LEVEL 17	11,980		11,980
LEVEL 16	11,980		11,980
LEVEL 15	11,980		11,980
LEVEL 14	11,980		11,980
LEVEL 13	17,862		17,862
LEVEL 12	17,862		17,862
LEVEL 11	17,862		17,862
LEVEL 10	17,862		17,862
LEVEL 9	17,862		17,862
LEVEL 8	17,862		17,862
LEVEL 7	17,862		17,862
LEVEL 6	17,862		17,862
LEVEL 5	17,862		17,862
LEVEL 4	17,862		17,862
LEVEL 3	17,862		17,862
LEVEL 2	17,677		17,677
GROUND LEVEL	12,461	8,342	20,803
BASEMENT PARKING P1	424		424
BASEMENT PARKING P2	424		424
TOTAL	**395,188**	**16,142**	**411,330**

DWELLING UNIT TABLE

	STUDIO	2-BR	TOTAL
LEVEL 28			0
LEVEL 27	15	4	19
LEVEL 26	15	4	19
LEVEL 25	15	4	19
LEVEL 24	15	4	19
LEVEL 23	15	4	19
LEVEL 22	15	4	19
LEVEL 21	15	4	19
LEVEL 20	15	4	19
LEVEL 19	15	4	19
LEVEL 18	15	4	19
LEVEL 17	15	4	19
LEVEL 16	15	4	19
LEVEL 15	15	4	19
LEVEL 14	8	3	11
LEVEL 13	26	5	31
LEVEL 12	26	5	31
LEVEL 11	26	5	31
LEVEL 10	26	5	31
LEVEL 9	26	5	31
LEVEL 8	26	5	31
LEVEL 7	26	5	31
LEVEL 6	26	5	31
LEVEL 5	26	5	31
LEVEL 4	26	5	31
LEVEL 3	26	5	31
LEVEL 2			0
GROUND LEVEL			
TOTAL UNITS	**489**	**110**	**599**
BEDROOMS / UNIT	1	2	
TOTAL BEDROOMS	489	220	709

OPEN SPACE

6,882
6,150
-
13,032

SETBACKS TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	PROPOSED W/DENSITY BONUS	ZONING COMPLIANCE
SETBACK - FRONT (UNIVERSITY)				
0'-20'	0'	0'	2'	COMPLIES
21'-75'	0'	0'	3'-4" to 4'-4"	COMPLIES
76'-120'	15'	0'	3'-4" to 4'-4"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	3'-4" to 15'-6"	COMPLIES W/ SDB WAIVER
SETBACK - STREET SIDE (SHATTUCK)				
0'-20'	0'	0'	5'-3" to 14'-5"	COMPLIES
21'-75'	0'	0'	6'-10" to 29'-8"	COMPLIES
76'-120'	15'	0'	6'-10" to 29'-8"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	6'-10" to 60'-1"	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (<65' FROM FRONT)				
0'-20'	0'	0'	1'-6"	COMPLIES
21'-75'	0'	0'	15'	COMPLIES
76'-120'	5'	0'	15'	COMPLIES
> 120'	15'	0'	15' to 26'-6"	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (>65' FROM FRONT)				
0'-20'	0'	0'	6" to 1'-6"	COMPLIES
21'-75'	5'	0'	17'-1" to 18'-1"	COMPLIES
76'-120'	15'	0'	17'-1" to 18'-1"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	17'-1" to 18'-1"	COMPLIES W/ SDB WAIVER
SETBACK - REAR (BERKELEY WAY)				
0'-20'	0'	0'	2'	COMPLIES
21'-75'	5'	0'	6'	COMPLIES
76'-120'	15'	0'	6'	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	94'-7"	COMPLIES W/ SDB WAIVER
SETBACK - MAX. DIMENSION ABOVE 120'	120'	NOT LIMITED	165'	COMPLIES W/ SDB WAIVER

CAR SHARE CALCULATION

Number of Parking Spaces Provided
154
Minimum Number of Vehicle Sharing Spaces (3, plus one for every additional 60 spaces)
3+1 = **4**

STATE DENSITY BONUS TABLE (SEE A0.2A-B)

(SEE SHEETS A0.3A-A03.D)	
BASE PROJECT UNITS	411
PERCENT VLI UNITS PROVIDED	14%
NUMBER VLI UNITS PROVIDED (ROUNDS UP)	58
BONUS PERCENTAGE	46.25%
NUMBER BONUS UNITS (ROUNDS UP)	191
MAXIMUM DENSITY BONUS PROJECT	602
PROPOSED DENSITY BONUS PROJECT	599

LIST OF USE PERMITS AND AUP'S

PROPOSED DENSITY BONUS PROJECT USE PERMITS:

- Use Permit for construction for demolition of a non-residential building, under 23.326.070(A)
- Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Administrative Use Permit under BMC Section 23.304.050(A) to exceed building height limits with rooftop architectural elements which exceed the maximum height limit for the district.
- Use Permit under BMC Section 23.204.130.E.2 to construct a building that exceeds the district height limit, and that is over 75 feet but not more than 120 feet (Base Project).
- Use Permit under BMC Section 23.204.130.E.3(b) to modify front, side, and rear setback requirements
- Use Permit under BMC Section 23.204.130.E.3(b) to exceed 120 feet in width in diagonal measurement
- Use Permit under BMC Section 23.204.E.6 to pay a fee in lieu of providing privately owned public open space.
- Density Bonus with the following requested reductions, waivers and concessions below.

LIST OF DENSITY BONUS WAIVERS (SEE A0.2A-B)

- Waiver to increase the maximum building height from the base project maximum density height allowed with UP's and AUP's under the zoning ordinance of 120' (under BMC 23.204.130.E.2) to a density bonus height of 316' to accommodate the density bonus units.
- Waiver to allow a reduction in the required setbacks under BMC Section 23.204.130.E.3(b) to physically accomodate the density bonus units.
- Waiver to reduce the minimum required residential usable open space under BMC 23.204.130.E.4 to allow the construction of the density bonus units.

LIST OF DENSITY BONUS CONCESSIONS (SEE A0.2A-B)

- Athough the project is eligible for 2 concessions as a project that is providing 14% of the base units as Very-Low-Income Units, the project is not proposing any concessions.

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ZONING INFORMATION

A0.1

BASE PROJECT ZONING COMPLIANCE TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	CODE SECTION	PROPOSED BASE PROJECT	ZONING COMPLIANCE
ZONING	C-DMU Core				COMPLIES
TOTAL LOT SIZE (SQ. FT.)	28,319				COMPLIES
TOTAL LOT SIZE (ACRES)	0.65				COMPLIES
FLOOR AREA RATIO (FAR)	NA	NA		NA	COMPLIES
DWELLING UNITS (SEE TABLE)	NA	NA		411	COMPLIES
RESIDENTIAL BEDROOMS	NA	NA		446	COMPLIES
HEIGHT - FEET	60'-0"	120'-0"	23.204.130.E.2	120'-0"	COMPLIES
HEIGHT - STORIES	NA	NA		11	COMPLIES
LOT COVERAGE	NA	NA		0%	COMPLIES
SETBACK - FRONT (UNIVERSITY)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - STREET SIDE (SHATTUCK)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - INTERIOR SIDE	0' to 15'	0'	23.204.130.E.3(b)	0' to 6'	COMPLIES
SETBACK - REAR (BERKELEY WAY)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - MAX. DIMENSION ABOVE 120'	NA	NA			COMPLIES
RESIDENTIAL PARKING (SEE TABLE)	0	0		0	COMPLIES
COMMERCIAL PARKING (SEE TABLE)	25	0		0	COMPLIES
RES. BIKE PARKING LONG TERM (SEE TABLE)	149	149		152	COMPLIES
RES. BIKE PARKING SHORT TERM (SEE TABLE)	12	12		12	COMPLIES
COM. BIKE PARKING SHORT TERM (SEE TABLE)	9	9		9	COMPLIES
RESIDENTIAL OPEN SPACE (SEE TABLE)	32,880	32,880		33,950	COMPLIES
COMMERCIAL OPEN SPACE (SEE TABLE)	338	338		338	COMPLIES

LIST OF BASE PROJECT USE PERMITS AND AUP'S

Per August 2, 2021 Memorandum on Policy Changes to Objective Standards, HAA and Density Bonus

- Use Permit for construction for demolition of a non-residential building, under 23.326.070(A)
- Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Administrative Use Permit under BMC Section 23.304.050(A) to exceed building height limits w/ rooftop architectura elements.
- Use Permit under BMC Section 23.204.130.E.2 to construct a building up to 120 feet.
- Use Permit under BMC Section 23.204.130.E.3(b) to modify front, side, and rear setback requirements

PARKING CALCULATIONS

	QNTY	CARS	PER	REQ'D	PROVIDED
RESIDENTIAL	411	0	1	0	0
COMMERCIAL	16920	1.5	1,000	25	25

BICYCLE PARKING CALCULATIONS

	QNTY	BIKES	PER	REQ'D	PROVIDED
RESIDENTIAL (LONG TERM) (BEDROOMS)	446	1	3	149	152
RESIDENTIAL (SHORT TERM) (BEDROOMS)	446	1	40	12	12
COMMERCIAL (SHORT TERM)	16,920	1.0	2,000	9	9

OPEN SPACE CALCULATIONS

	UNITS	SF / UNIT	TOTAL REQ'D
RESIDENTIAL REQUIREMENT	411	80	32,880
TOTAL PROVIDED			33,950
ROOF DECK			25,630
BALCONIES (MAX 50%)	104	80	8,320
COMMERCIAL OPEN SPACE	16,920	50	338

ROOFTOP ARCHITECTURAL ELEMENTS CALCULATIONS

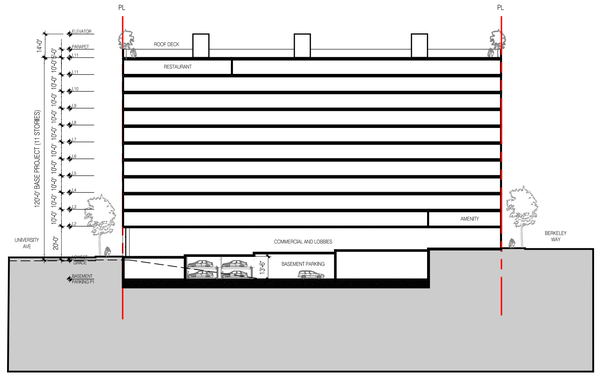
	ALLOWABLE	PROPOSED
AVERAGE AREA OF FLOORS	23,968	
AREA OF ROOFTOP ARCHITECTURAL ELEMENTS	3,595	600
% AREA OF ROOFTOP ARCHITECTURAL FEATURES	15.0%	2.5%

AREA TABLE

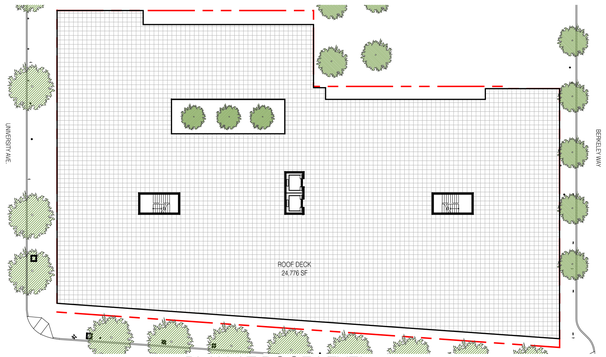
	RESIDENTIAL	COMMERICAL	TOTAL
LEVEL 11	18,430	7,800	26,230
LEVEL 10	26,230		26,230
LEVEL 9	26,230		26,230
LEVEL 8	26,230		26,230
LEVEL 7	26,230		26,230
LEVEL 6	26,230		26,230
LEVEL 5	26,230		26,230
LEVEL 4	26,230		26,230
LEVEL 3	26,230		26,230
LEVEL 2	26,230		26,230
GROUND LEVEL	15,922	9,120	25,042
BASEMENT P1	275		275
TOTAL	**270,697**	**16,920**	**287,617**

DWELLING UNIT TABLE

	STUDIO	2-BR	TOTAL
LEVEL 11	28	2	30
LEVEL 10	41	4	45
LEVEL 9	41	4	45
LEVEL 8	41	4	45
LEVEL 7	41	4	45
LEVEL 6	41	4	45
LEVEL 5	41	4	45
LEVEL 4	41	4	45
LEVEL 3	41	4	45
LEVEL 2	20	1	21
GROUND LEVEL			
TOTAL UNITS	**376**	**35**	**411**
BEDROOMS / UNIT	1	2	
TOTAL BEDROOMS	376	70	446



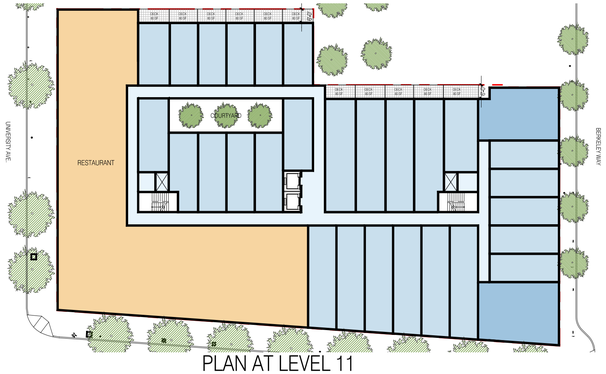
BASE PROJECT SECTION



PLAN AT ROOF LEVEL



PLAN AT LEVEL 2



PLAN AT LEVEL 11



PLAN AT GROUND LEVEL



PLAN AT LEVELS 3-10



PLAN AT PARKING LEVEL P1

BASE PROJECT PLANS

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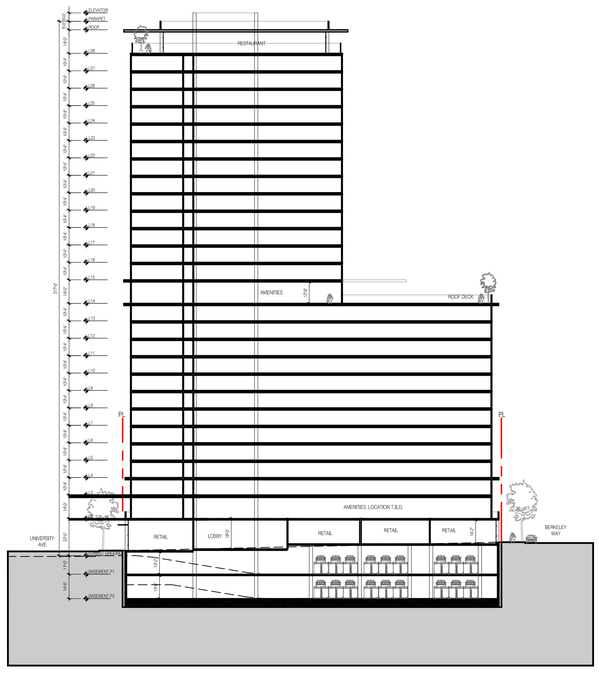
DENSITY BONUS
BASE PROJECT

A0.2A

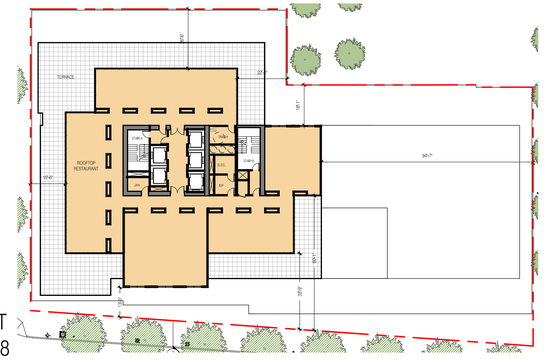
DENSITY BONUS TABLE

Base Project	Base	Base # Units	% VLI units	# VLI Units*	Bonus %	# DB Units	Maximum DB Project
sq. ft. - see calculation below	base project area / proposed avg. unit size	Base Units (rounds up)	VLI = Very Low Income <50 AMI	% VLI x Base # Units (rounds up)		%Bonus x Base # Units (rounds up)	Base + Bonus # Units
270,697	410.30	411	14%	58	46.25%	191	602

Base Project				Proposed Density Bonus Project		
Res GFA	Comm. GFA	Units	Floor	Res GFA	Comm. GFA	Units
			Level 28		7,800	
			Level 27	11,980		19
			Level 26	11,980		19
			Level 25	11,980		19
			Level 24	11,980		19
			Level 23	11,980		19
			Level 22	11,980		19
			Level 21	11,980		19
			Level 20	11,980		19
			Level 19	11,980		19
			Level 18	11,980		19
			Level 17	11,980		19
			Level 16	11,980		19
			Level 15	11,980		19
			Level 14	11,980		11
			Level 13	17,862		31
			Level 12	17,862		31
18,430	7,800	30	Level 11	17,862		31
26,230		45	Level 10	17,862		31
26,230		45	Level 9	17,862		31
26,230		45	Level 8	17,862		31
26,230		45	Level 7	17,862		31
26,230		45	Level 6	17,862		31
26,230		45	Level 5	17,862		31
26,230		45	Level 4	17,862		31
26,230		45	Level 3	17,862		31
26,230		21	Level 2	17,677		
15,922	8,342		Level 1	12,461	8,342	
275			Basement P1	424		
			Basement P2	424		
270,697	**16,142**	**411**	**Total**	**395,188**	**16,142**	**599**
659			**Avg. Unit Size**	**660**		



PROPOSED PROJECT SECTION



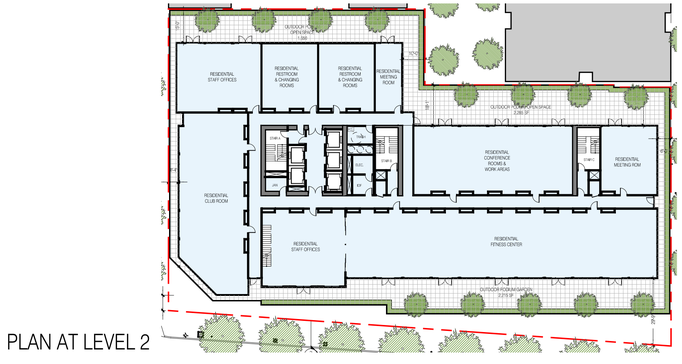
PLAN AT LEVEL 28



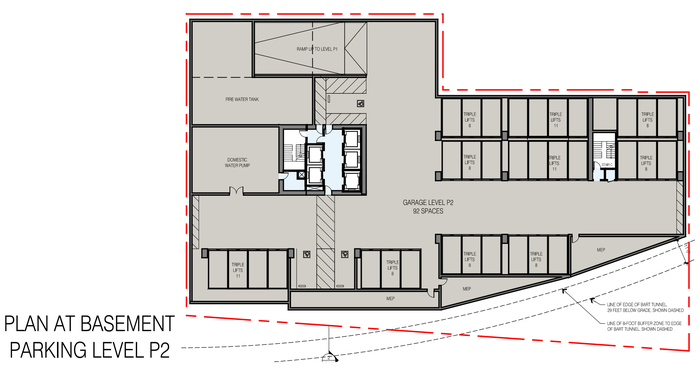
PLAN AT LEVEL 14



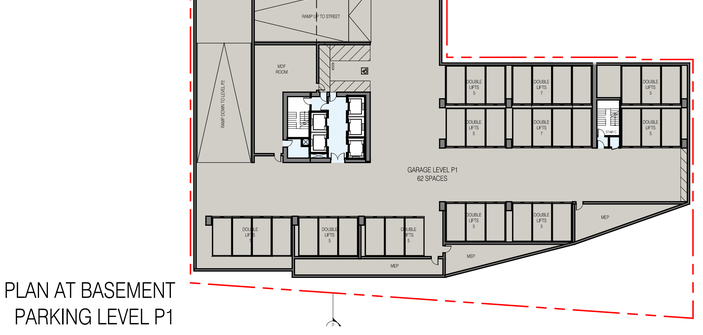
PLAN AT GROUND LEVEL



PLAN AT LEVEL 2



PLAN AT BASEMENT PARKING LEVEL P1





PLAN AT LEVELS 3-13

PLAN AT BASEMENT PARKING LEVEL P2

PROPOSED PROJECT PLANS

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DENSITY BONUS PROPOSED PROJECT

A0.2B

PROPOSED PROJECT AREA AND UNIT CALCULATIONS

Calculation of the Final Proposed Residential Unit Floor Area:

Floor	Proposed Project Res. Unit Area	Proposed Residential Studios	Proposed Residential 2Bedrooms
28th			
27th	8,327	15	4
26th	8,327	15	4
25th	8,327	15	4
24th	8,327	15	4
23rd	8,327	15	4
22nd	8,327	15	4
21st	8,327	15	4
20th	8,327	15	4
19th	8,327	15	4
18th	8,327	15	4
17th	8,327	15	4
16th	8,327	15	4
15th	8,327	15	4
14th	5,001	8	3
13th	12,919	26	5
12th	12,919	26	5
11th	12,919	26	5
10th	12,919	26	5
9th	12,919	26	5
8th	12,919	26	5
7th	12,919	26	5
6th	12,919	26	5
5th	12,919	26	5
4th	12,919	26	5
3rd	12,919	26	5
2nd	-	0	0
1st		0	0
Final Proposed Residential Unit Floor Area	**255,361**	**489**	**110**
Final Proposed Residential Unit Numbers	**599**	82%	18%

Calculation of Base Project Residential Floor Area:

Final Proposed DB Residential Unit Floor Area	255,361
	/
One plus the DB % (1 + 46.25%)	1.4625
	=
Base Project Residential Unit Floor Area	174,606

Calculation of the Affordable Housing Fee:

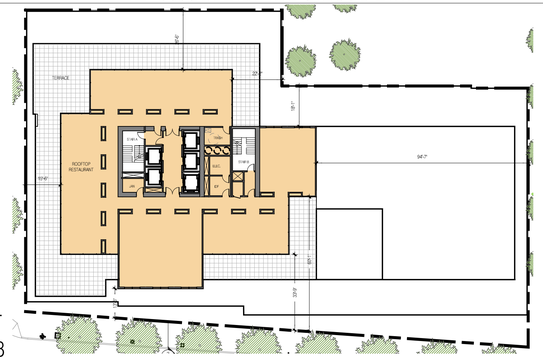
A	Total Base Project Residential Unit Floor Area	174,606
B	Total Base Project Units	411
C	Total BMR Requirements (20% of Base)	82.2
D	Total BMR Units Proposed	58
	Fee per Square Foot	$56.25
		X
	Total Base Project Residential Unit Floor Area	174,606
		X
	In Lieu Fee Percentage Calculation (C-D)/C)	29.4%
		=
	Total Fee Due	$2,891,510.48

LEGEND

- DWELLING UNIT RUFA
- RESIDENTIAL AMENITIES
- MISC. (MEP)
- COMMERCIAL

PROPOSED PROJECT RESIDENTIAL UNIT FLOOR AREA DIAGRAM

PLAN AT LEVEL 28



PLAN AT LEVELS 15-27



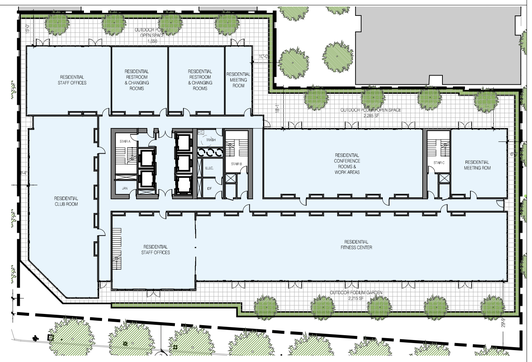
PLAN AT LEVEL 14



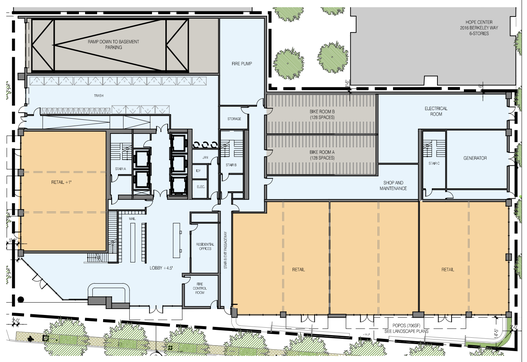
PLAN AT LEVELS 3-13



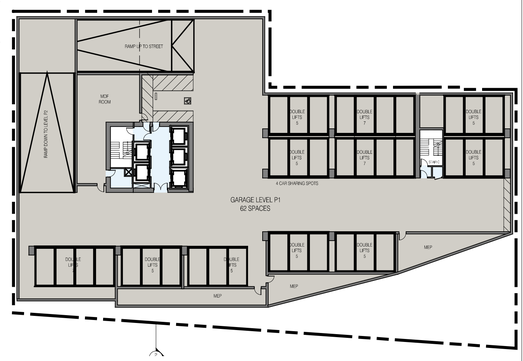
PLAN AT LEVEL 2



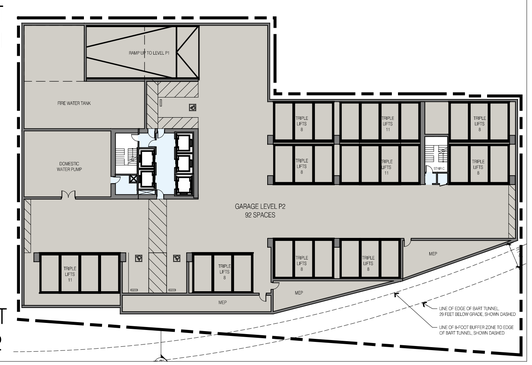
PLAN AT GROUND LEVEL



PLAN AT BASEMENT PARKING LEVEL P1



PLAN AT BASEMENT PARKING LEVEL P2



PROPOSED PROJECT PLANS

TRACHTENBERG ARCHITECTS

2421 Fourth Street
Berkeley, California 94710
510.649.1414
www.TrachtenbergArch.com

1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL

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JOB: 2209

SHEET:

PRELIMINARY AHCP DIAGRAMS

A0.2C

WINTER SOLSTICE
DEC 21ST:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

WINTER SOLSTICE
DEC 21ST:
NOON

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

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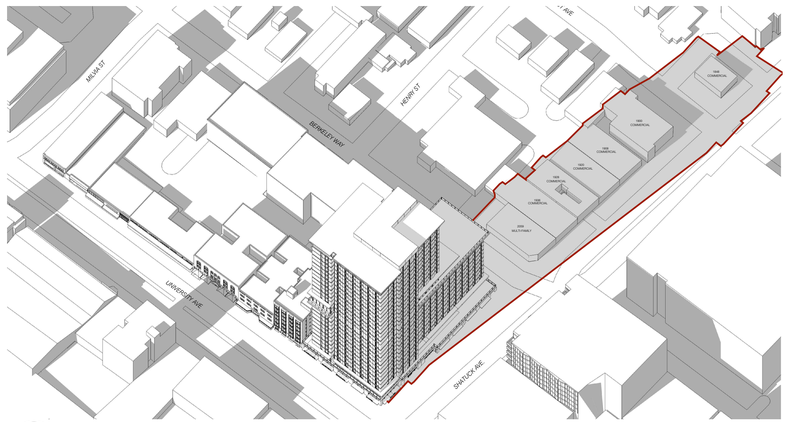

4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

WINTER SOLSTICE
DEC 21ST:
2-HRS AFTER SUNRISE (AM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

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2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

TRACHTENBERG ARCHITECTS

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1950-1998 (1974) SHATTUCK

Berkeley, CA

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JOB: 2209

SHEET:

SHADOW STUDIES
DECEMBER 21ST

A0.4A

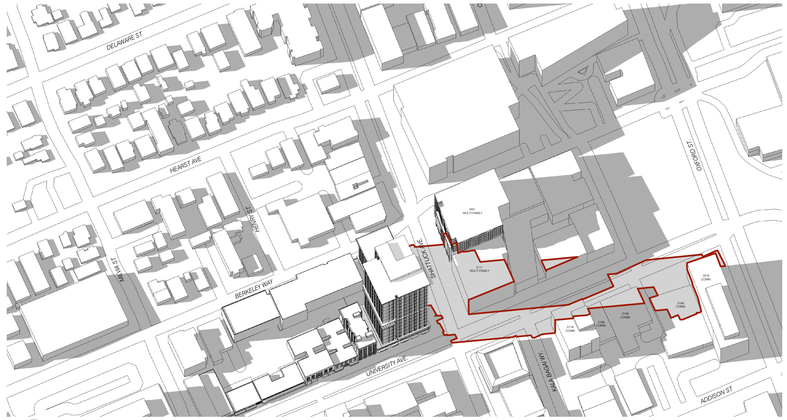
SUMMER SOLSTICE
JUN 21ST:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

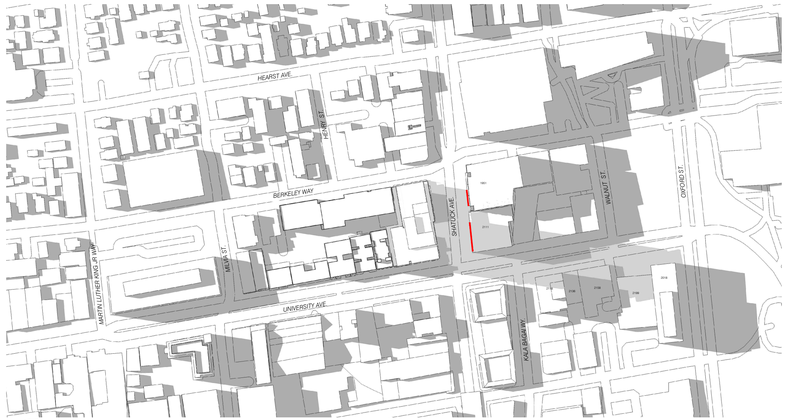
LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

N

SUMMER SOLSTICE
JUN 21ST:
NOON

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

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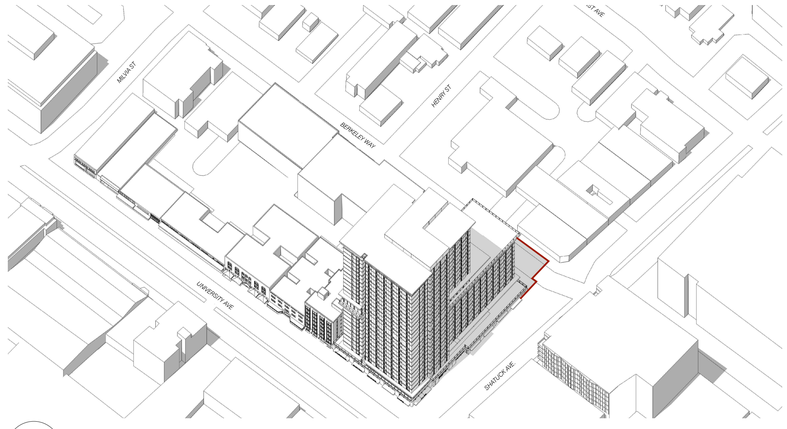

4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

N

SUMMER SOLSTICE
JUN 21ST:
2-HRS AFTER SUNRISE (AM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

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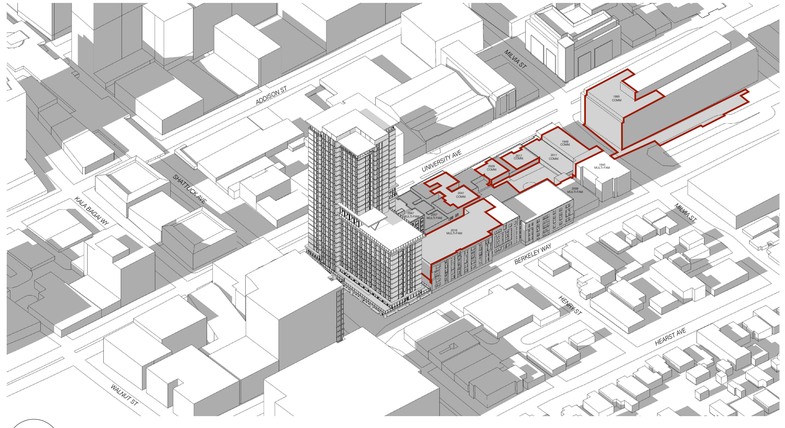
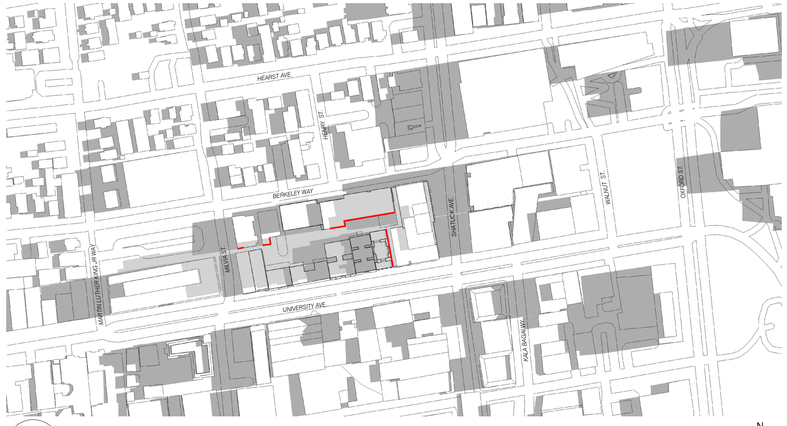


2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

N

TRACHTENBERG ARCHITECTS

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1950-1998 (1974) SHATTUCK

Berkeley, CA

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07.18.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL

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JOB: 2209

SHEET:

SHADOW STUDIES
JUNE 21ST

A0.4B

CURRENT
FEBRUARY 15TH:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

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6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

N

CURRENT
FEBRUARY 15TH:
NOON

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

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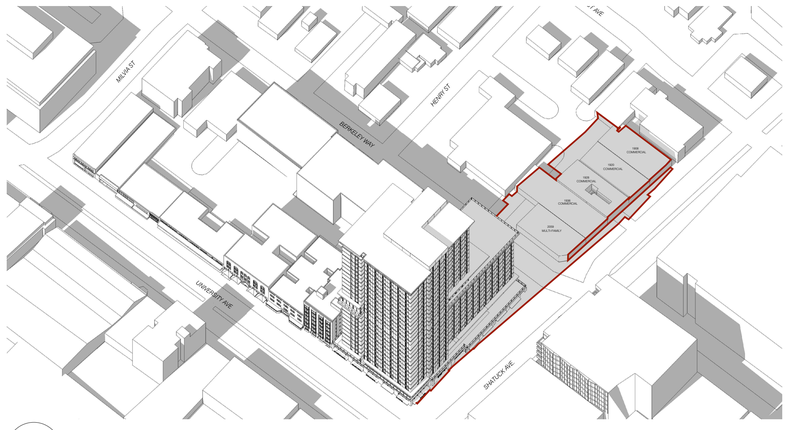

4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

N

CURRENT
FEBRUARY 15TH:
2-HRS AFTER SUNRISE (AM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

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2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

N

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Berkeley, CA

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JOB: 2209

SHEET:

SHADOW STUDIES
FEB 15TH

A0.4C

TRACHTENBERG
ARCHITECTS

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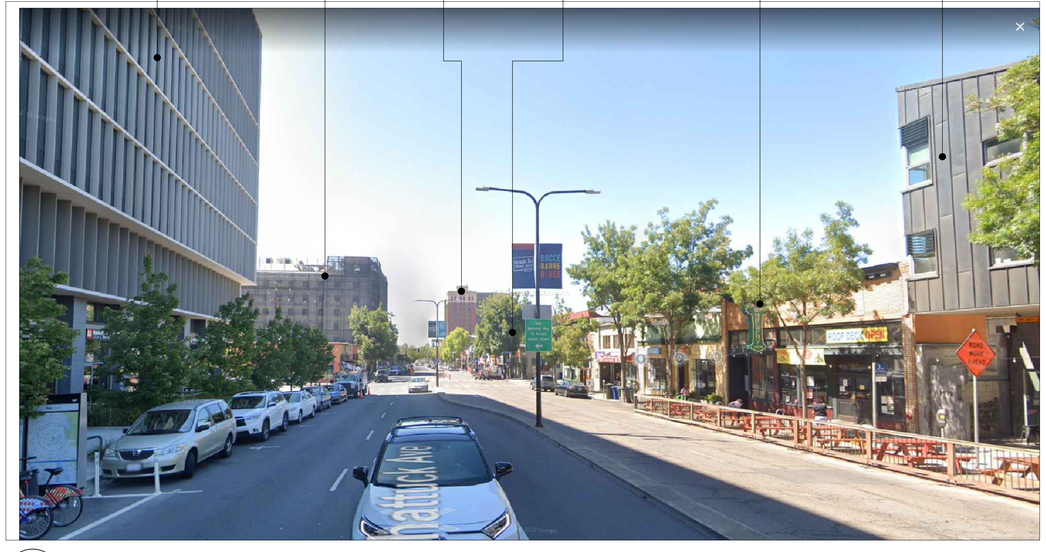
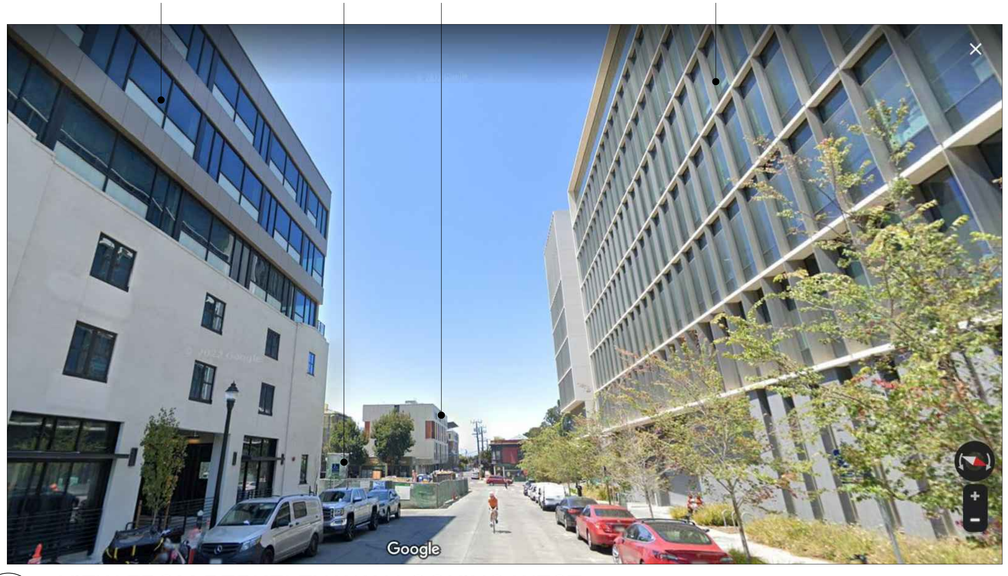
Berkeley, California 94710
510.649.1414
www.TrachtenbergArch.com

2121 BERKELEY WAY (8-STORY COMMERCIAL) | 1987 SHATTUCK (8-STORY RESIDENTIAL) | 2160 SHATTUCK (12-STORY COMMERCIAL) | PROJECT SITE | 1920 SHATTUCK TRIPLE ROCK BREWING | 1908 SHATTUCK (3-STORY RESIDENTIAL)



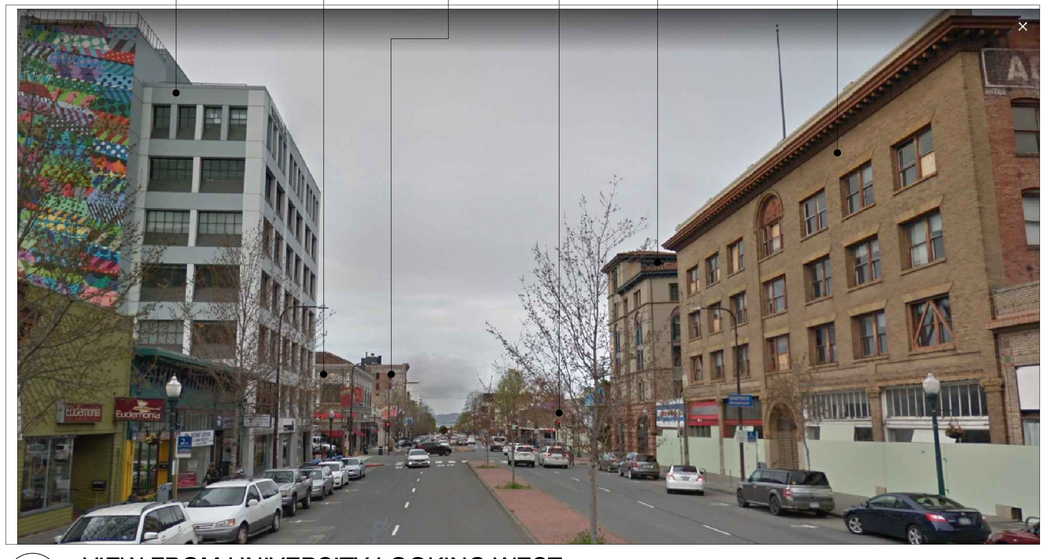
4 - VIEW FROM SHATTUCK LOOKING SOUTH

2120 BERKELEY WAY (6-STORY COMMERCIAL) | PROJECT SITE | 2012 BERKELEY WAY (6-STORY RESIDENTIAL) | GRADUATE SCHOOL OF EDUCATION (8-STORY COMMERCIAL)



2 - VIEW FROM BERKELEY WAY LOOKING WEST

2015 KALA BAGAI (7-STORY COMMERCIAL) | 2000 KALA BAGAI (2-STORY COMMERCIAL) | 2054 UNIVERSITY (6-STORY COMMERCIAL) | PROJECT SITE | 1987 SHATTUCK (6-STORY RESIDENTIAL) | 2125 UNIVERSITY (4-STORY RESIDENTIAL)



3 - VIEW FROM UNIVERSITY LOOKING WEST

PROJECT SITE



1 - GOOGLE EARTH BIRD'S EYE CONTEXT VIEW

1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL

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JOB: 2209

SHEET:

SITE CONTEXT PHOTOS

A0.5

TITLE REPORT (1950 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117026136-JM, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR1"

TITLE TO SAID ESTATE IS VESTED IN: (1950 SHATTUCK)

JILLIAR, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1950 SHATTUCK)

FEE

LEGAL DESCRIPTION (1950 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE WESTERN LINE OF SHATTUCK AVENUE, WITH THE SOUTHERN LINE OF BERKELEY WAY, AS SAID AVENUE AND WAY ARE SHOWN ON THE MAP HEREINAFTER REFERRED TO; RUNNING THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE, 60.06 FEET; THENCE WESTERLY PARALLEL WITH SAID LINE OF BERKELEY WAY, 109 FEET, MORE OR LESS, TO THE EASTERLY BOUNDARY LINE OF THE LAND DESCRIBED IN THE DEED EXECUTED BY F. D. CHASE AND ATLANTA J. CHASE, HIS WIFE, TO JACOB BAUML, DATED JULY 28, 1922, AND RECORDED IN LIBER 324 OF OFFICIAL RECORDS, AT PAGE 73, ALAMEDA COUNTY RECORDS; THENCE AT RIGHT ANGLES NORTHERLY ALONG SAID LAST NAMED BOUNDARY LINE 35 FEET, MORE OR LESS, TO THE SOUTHERN BOUNDARY LINE OF LOT 55, AS SAID LOT IS SHOWN ON THE SAID MAP; THENCE AT RIGHT ANGLES EASTERLY 8 INCHES; THENCE AT RIGHT ANGLES NORTHERLY PARALLEL WITH THE WESTERLY BOUNDARY LINE OF SAID LOT 55, AFORESAID, 25 FEET TO THE SOUTHERN LINE OF BERKELEY WAY; THENCE EASTERLY ALONG SAID LINE OF BERKELEY WAY, 112.30 FEET TO THE POINT OF BEGINNING.

BEING PORTIONS OF LOTS NOS. 55, 56 AND 57, AS SAID LOTS ARE DELINEATED AND AS DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "MAP OF COLLEGE TRACT, BERKELEY," FILED JANUARY 31, 1890, IN LIBER 9 OF MAPS, PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

APN: 057-2053-001

EXCEPTIONS TO TITLE (1950 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014-1, FOR CLEAN ENERGY DISCLOSED BY : ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR1 EXC. 3 – NOT PLOTTABLE).
2. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, RECORDED MAY 15, 1968 IN BOOK 1768 OF OFFICIAL RECORDS, PAGE 844 UNDER RECORDER'S SERIAL NUMBER AY161475, AFFECTS A PORTION (PTR1 EXC. 5 – PLOTTED).

TITLE REPORT (1974 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117026135-JM, EFFECTIVE DATE SEPTEMBER 26, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR2"

TITLE TO SAID ESTATE IS VESTED IN: (1974 SHATTUCK)

1974 SHATTUCK AVENUE, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1974 SHATTUCK)

FEE

LEGAL DESCRIPTION (1974 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WESTERN LINE OF SHATTUCK AVENUE, DISTANT THEREON SOUTHERLY, 60.6 FEET FROM THE POINT OF INTERSECTION THEREOF, WITH THE SOUTHERN LINE OF BERKELEY WAY, AS SAID AVENUE AND WAY ARE SHOWN ON THE MAP HEREIN REFERRED TO; RUNNING THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE, 49.20 FEET; THENCE WESTERLY AND PARALLEL WITH SAID LINE OF BERKELEY WAY, 105.50 FEET, MORE OR LESS, TO A POINT WHICH WOULD BE INTERSECTED BY A LINE DRAWN SOUTHERLY FROM AND AT RIGHT ANGLES TO SAID LINE BERKELEY WAY FROM A POINT DISTANT THEREON, 113.30 FEET WESTERLY FROM THE WESTERN LINE OF SHATTUCK AVENUE; THENCE AT RIGHT ANGLES NORTHERLY, 49 FEET, MORE OR LESS, TO A POINT WHICH WOULD BE INTERSECTED BY A LINE DRAWN WESTERLY FROM SAID POINT OF BEGINNING AND PARALLEL WITH BERKELEY WAY; THENCE EASTERLY ALONG SAID PARALLEL LINE, 109 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

BEING A PORTION OF LOTS 57 AND 58, AS SAID LOTS ARE SHOWN ON THE "MAP OF THE COLLEGE TRACT, BERKELEY," FILED JANUARY 31, 1890, IN BOOK 9 OF MAPS, PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

APN: 057-2053-002

EXCEPTIONS TO TITLE (1974 SHATTUCK)

1. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING, GRANTED TO BAY AREA RAPID TRANSIT DISTRICT, A RAPID TRANSIT DISTRICT, FOR UNDERGROUND RAPID TRANSIT TUNNEL FACILITIES, RECORDED SEPTEMBER 23, 1966 IN BOOK 1846 OF OFFICIAL RECORDS, PAGE 53 UNDER RECORDER'S SERIAL NUMBER AY-111314 (PTR2 EXC. 4 – PLOTTED)

TITLE REPORT (1984 & 1998 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117025433-JM, 1ST UPDATE, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR3"

TITLE TO SAID ESTATE IS VESTED IN: (1984 & 1998 SHATTUCK)

FIFTH KEIL CO., A CALIFORNIA CORPORATION

THE ESTATE OR INTEREST IN THE LAND IS: (1984 & 1998 SHATTUCK)

FEE

LEGAL DESCRIPTION (1984 & 1998 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

COMMENCING AT THE POINT OF INTERSECTION OF THE NORTHERN LINE OF UNIVERSITY AVENUE WITH THE WESTERN LINE OF SHATTUCK AVENUE AS SAID AVENUES NOW EXISTS; THENCE WESTERLY ALONG THE NORTHERN LINE OF UNIVERSITY AVENUE 79.02 FEET; THENCE AT RIGHT ANGLES NORTHERLY 114.68 FEET, MORE OR LESS, TO THE SOUTHERN LINE OF THE LAND NOW OR FORMERLY OF JOHN H. BOHLIG AND LOTTA BOHLIG; THENCE EASTERLY AND ALONG SAID LINE 87.07 FEET TO THE WESTERN LINE OF SHATTUCK AVENUE; THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE 114.97 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

APN'S: 057-2053-003-01 AND 057-2053-003-02

EXCEPTIONS TO TITLE (1984 & 1998 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014-1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR3 EXC. 4 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO PBD-2016, FOR BERKELEY DOWNTOWN PBD-2016, DISCLOSED BY NOTICE OF ASSESMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR3 EXC. 5 – NOT PLOTTABLE).
3. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, DATED APRIL 6, 1967, RECORDED MAY 10, 1967 IN REEL 1961 OF OFFICIAL RECORDS, IMAGE 330 UNDER RECORDER'S SERIAL NUMBER AZ 43329, AFFECTS A PORTION OF THE PREMISES, THE PRESENT OWNERSHIP OF SAID EASEMENT AND OTHER MATTERS AFFECTING THE INTERESTS THERETO, IF ANY, ARE NOT SHOWN HEREIN (PTR3 EXC. 7 – PLOTTED).
4. A NOTICE AS FOLLOWS, ENTITLED NOTICE OF ASSESSMENT – DOWNTOWN BERKELEY PBD, BY CITY OF BERKELEY, DATED AUGUST 25, 2011, RECORDED AUGUST 30, 2011 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2011248358 (PTR3 EXC. 8 – NOT PLOTTABLE).

TITLE REPORT (2701 UNIVERSITY)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117026137-JM, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR4"

TITLE TO SAID ESTATE IS VESTED IN: (2701 UNIVERSITY)

EDITH WIESER GLYNN, TRUSTEE OF THE EDITH WIESER GLYNN TRUST

THE ESTATE OR INTEREST IN THE LAND IS: (2701 UNIVERSITY)

FEE

LEGAL DESCRIPTION (2701 UNIVERSITY)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTHERN LINE OF BERKELEY WAY, AS SHOWN UPON THE MAP HEREINAFTER REFERRED TO, DISTANT THEREON ONE HUNDRED FIFTEEN AND 46/100 FEET WESTERLY FROM THE INTERSECTION THEREOF WITH THE WESTERN LINE OF SHATTUCK AVENUE AS ESTABLISHED BY BOARD OF TRUSTEES OF THE TOWN OF BERKELEY, JAN. 18, 1892, BY ORDINANCE NO. 387, SAID POINT BEING ONE FOOT EASTERLY ON SAID LINE OF BERKELEY WAY FROM THE LINE DIVIDING LOTS NUMBERED 54 AND 55, ACCORDING TO SAID MAP; RUNNING THENCE WESTERLY ALONG SAID LINE OF BERKELEY WAY THIRTY-NINE FEET TO THE LINE DIVIDING LOTS NUMBERED 55 AND 54 ACCORDING TO SAID MAP; THENCE AT RIGHT ANGLES SOUTHERLY ALONG SAID LINE ONE HUNDRED TEN FEET; THENCE AT RIGHT ANGLES EASTERLY THREE AND 73/100 FEET; THENCE AT RIGHT ANGLES SOUTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET TO THE NORTHERN LINE OF UNIVERSITY AVENUE; THENCE EASTERLY ALONG SAID LINE OF UNIVERSITY AVENUE FIFTY-FIVE AND 9/10 FEET; THENCEN AT RIGHT ANGLES NORTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET; THENCE AT RIGHT ANGLES WESTERLY TWENTY- ONE AND 63/100 FEET; THENCE AT RIGHT ANGLES NORTHERLY EIGHTY-FIVE FEET TO THE SOUTHWESTERN CORNER OF LOT NUMBERED 55, ACCORDING TO SAID MAP; THENCE AT RIGHT ANGLES EASTERLY ALONG THE SOUTHERN LINE OF SAID LOT ONE FOOT AND THENCE AT RIGHT ANGLES NORTHERLY TWENTY-FIVE FEET TO THE POINT OF BEGINNING.

BEING LOT NUMBERED 54, THE WESTERN ONE FOOT OF LOT NUMBERED 55, A PORTION OF LOT NUMBERED 6 AND A PARCEL ADJOINING SAID LOT NUMBER 6 ON THE EAST, AS ALL OF SAID LOTS ARE DELINEATED AND SO DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "MAP OF COLLEGE TRACT, BERKELEY", FILED MAY 24,1877, IN LIBER 5 OF MAPS AT PAGE 14, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

EXCEPTING THEREFROM THAT PORTION DESCRIBED IN THE DEED TO THE CITY OF BERKELEY, RECORDED SEPTEMBER 29,1955, BOOK 7798, PAGE 23, AS INSTRUMENT NO. AK-105619, OFFICIAL RECORDS.

APN: 057-2053-004-02

EXCEPTIONS TO TITLE (2701 UNIVERSITY)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014-1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR4 EXC. 3 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO CITY OF BERKELEY-DOWNTOWN PROPERTY AND BUSINESS IMPROVEMENT DISTRICT, FOR BERKELEY DOWNTOWN PBID-2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR4 EXC. 5 – NOT PLOTTABLE).
3. TERMS AND CONDITIONS CONTAINED IN THE EDITH WIESER GLYNN TRUST AS DISCLOSED BY GRANT DEED, RECORDED MAY 22, 1984 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 1984099372 (PTR4 EXC. 6 – NOT PLOTTABLE).
4. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED NONDISTURBANCE AND ATTORNMENT AGREEMENT, EXECUTED BY EDITH GLYNN AND T.Y.P. RESTAURANT GROUP, INC., A DELAWARE CORPORATION DBA TENDER GREENS, RECORDED MARCH 22, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016068695 (PTR4 EXC. 7 – NOT PLOTTABLE).
5. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED MINOR ENCROACHMENT PERMIT 17-03, EXCUTED BY EDITH W. GLYNN AND THE CITY OF BERKELEY, RECORDED MAY 24, 2017 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2017113477 (PTR 4 EXC. 8 – NOT PLOTTABLE)

NOTES

1. DATE OF FIELD SURVEY: DECEMBER 5, 9 AND 21, 2022 AS TO THE BOUNDARY AND TOPOGRAPHIC SURVEY OF THE SUBJECT PROPERTY.
2. THE UTILITIES SHOWN HEREON ARE BY SURFACE OBSERVATION AND RECORD INFORMATION ONLY AND NO WARRANTY IS GIVEN HEREIN AS TO THEIR EXACT LOCATION. IT IS THE RESPONSIBILITY OF THE DEVELOPER AND/OR CONTRACTOR TO VERIFY THE EXACT LOCATION OF THE UTILITIES WITH THE APPROPRIATE UTILITY COMPANY OR AGENCY.
3. UTILITY JURISDICTIONS / PROVIDERS ARE AS FOLLOWS:
   STORM DRAINS: CITY OF BERKELEY
   SANITARY SEWER: CITY OF BERKELEY
   WATER: EAST BAY MUNICIPAL UTILITY DISTRICT (EBMUD)
   ELECTRICITY: PACIFIC GAS & ELECTRIC CO.
   NATURAL GAS: PACIFIC GAS & ELECTRIC CO.
   TELEPHONE: AT&T
4. THERE ARE NO CEMETERIES ON OR WITHIN 100 FEET OF THE SUBJECT PROPERTY
5. THE SURVEYED PROPERTIES ARE THE SAME PROPERTIES DESCRIBED IN THE TITLE REPORT.
6. THE LEGAL DESCRIPTIONS AS SHOWN IN THE TITLE REPORTS MATHEMATICALLY CLOSE.
7. THERE IS NO OBSERVED EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL
8. THERE ARE NO WETLAND AREAS IN THE SUBJECT PROPERTIES

TABLE A NOTES

1. FOUND MONUMENTS ARE SHOWN ON THIS SHEET OF THE SURVEY.
2. THE STREET ADDRESS OF THE PROPERTY IS 1950, 1974, 1984, 1998 SHATTUCK AVENUE AND 2071 UNIVERSITY AVENUE, BERKELEY, CA 94704
3. FLOOD ZONE DESIGNATION: THE PREMISES ARE LOCATED IN ZONE "X" (NON-SHADED) DEFINED AS "AREAS OF MINIMAL FLOOD," PER FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 06001C0057G, EFFECTIVE DATE: AUGUST 3, 2009.
4. THE TOTAL GROSS LAND AREA IS:
   1950 SHATTUCK AVENUE: 6,635 SQUARE FEET +/- OR 0.152 ACRES MORE OR LESS.
   1974 SHATTUCK AVENUE: 5,264 SQUARE FEET +/- OR 0.121 ACRES MORE OR LESS
   1984 & 1998 SHATTUCK AVENUE: 9,527 SQUARE FEET +/- OR 0.219 ACRES MORE OR LESS
   2071 UNIVERSITY AVENUE: 6,411 SQUARE FEET +/- OR 0.147 ACRES MORE OR LESS
5. (A/B) ZONING REQUIREMENTS: PER THE CITY OF BERKELEY PLANNING AND ZONING DEPARTMENT, THE PROPERTIES ARE ZONED "C-DMU DOWTOWN CORE" DEFINED AS "DOWNTOWN MIXED-USE DISTRICT."

   REFERENCE FOR "C-DMU" ZONING IS MADE HERE TO THE CITY OF BERKELEY CODE, CHAPTER 23.204.130, REGARDING PROPERTY DEVELOPMENT STANDARDS, BUILDING HEIGHT LIMITATION, MINIMUM BUILDING SETBACK AND PARKING REQUIREMENTS ARE AS FOLLOWS:

   SETBACKS
   MINIMUM FRONT: 0 FEET
   MINIMUM SIDE: 0 FEET
   MINIMUM REAR: 0 FEET

   MAXIMUM HEIGHT: 60 FEET, 75 FEET WITH USE PERMIT

   MINIMUM PARKING REQUIREMENTS: NONE REQUIRED
6. (A/B/C) EXTERIOR DIMENSIONS AND SQUARE FOOTAGE OF BUILDING AT GROUND LEVEL, AND NUMBER OF STORIES ARE SHOWN ON SHEET 3 OF THE SURVEY.
7. SUBSTANTIAL IMPROVEMENTS OBSERVED IN THE PROCESS OF CONDUCTING THE SURVEY ARE SHOWN ON SHEET 3.
8. THERE ARE NO PARKING SPACES LOCATED ON THE SUBJECT PROPERTIES.
9. THERE ARE NO DIVISIONS OR PARTY WALLS LOCATED ON THE SUBJECT PROPERTIES WITH RESPECT TO ADJOINING PROPERTIES.
10. (A) LOCATION OF UTILITIES EXISTING ON OR SERVING THE SURVEYED PROPERTIES AS DETERMINED BY OBSERVED EVIDENCE TOGETHER WITH EVIDENCE FROM PLAN OBTAINED FROM UTILITY COMPANIES OR PROVIDED BY CLIENT ARE SHOWN ON SHEET 3.
11. NAMES OF ADJOINING OWNERS OF PLATTED LANDS ARE SHOWN ON SHEET 2 OF THE SURVEY.
12. DISTANCE TO THE NEAREST INTERSECTING STREET IS SHOWN ON SHEET 2 OF THE SURVEY.
13. THERE IS NO OBSERVABLE EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
14. THERE IS NO OBSERVED EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
15. THERE ARE NO OFFSITE EASEMENTS TO THE SUBJECT PROPERTIES.
16. PROFESSIONAL LIABILITY INSURANCE IN THE AMOUNT OF $2,000,000 IS HELD BY THE SURVEYOR.

BASIS OF BEARINGS

THE BASIS OF BEARINGS OF THIS SURVEY IS TAKEN BETWEEN THE TWO FOUND STREET MONUMENTS ALONG BERKELEY WAY BETWEEN MILVIA STREET AND HENRY STREET AS SHOWN ON PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA. TAKEN AS NORTH 81°54'40" EAST.

REFERENCES

(R1) PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R2) PARCEL MAP P.M. 10119, FILED SEPTEMBER 28, 2016 IN BOOK 334 OF PARCEL MAPS, AT PAGES 21 TO 22, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R3) TRACT MAP T.M. 7888, FILED SEPTEMBER 03, 2009 IN BOOK 305 OF MAPS, AT PAGES 18 TO 20 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R4) UNRECORDED MAP, CITY OF BERKELEY CITY MONUMENT MAP, PLAN 1305, 3062-057.

(R5) "MAP OF THE COLLEGE TRACT, BERKELEY", FILED JANUARY 31, 1890 IN BOOK 9 OF MAPS, AT PAGES 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R6) GRANT DEED, RECORDED APRIL 15, 1966 IN REEL 1749, IMAGE 918, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R7) GRANT DEED, RECORDED JUNE 11, 2014 AS DOCUMENT NUMBER 2014-140054, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R8) GRANT DEED, RECORDED MAY 18, 2009 AS DOCUMENT NUMBER 2009-156779, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R9) DOCUMENT ENTITLED "NONDISTURBANCE AND ATTORNMENT AGREEMENT", RECORDED MARCH 22, 2016 AS DOCUMENT NUMBER 2016-068695, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

NOTES

(1) BEARING IS BASED ON THE MEAN BEARING OF THE RIGHT OF WAY LINES OF BERKELEY WAY AND UNIVERSITY AVENUE.
(2) BEARING IS BASED ON IMPROVEMENTS.
(3) (R6) HAS A DEED CALL OF 8 INCHES. IT IS BELIEVED TO BE AN ERROR. THE DISTANCE OF 1.09 FOOT PER (R1) IS BEING HELD BASED ON THE DEED CALL OF 112.30 FEET OF (R8).

SURVEYOR'S CERTIFICATE

TO VERNON A. NEFF AND BARBARA NEFF, AS TRUSTEES OF THE NEFF 2002 FAMILY TRUST; AND OLD REPUBLIC TITLE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6(A), 6(B), 7(A), 7(B1), 7(C), 8, 9, 10, 11(A), 13, 14, 16, 17, 18, AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 5, 9 AND 21, 2022.

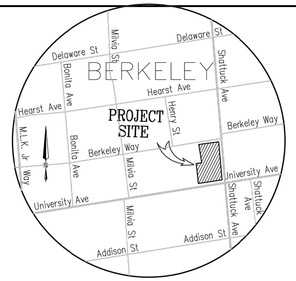
JACQUELINE LUK P.L.S. 8934
FOR LUK & ASSOCIATES, INC.

DATE DECEMBER 23, 2022

PROFESSIONAL LAND SURVEYOR — JACQUELINE LUK — L.S. 8934 — STATE OF CALIFORNIA

SHEET INDEX

1. NOTES
2. BOUNDARY SURVEY
3. TOPOGRAPHIC SURVEY



VICINITY MAP

NOT TO SCALE

ALTA/NSPS LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE
AND 2071 UNIVERSITY AVENUE
CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA
DECEMBER 2022

PREPARED BY
LUK AND ASSOCIATES
CIVIL ENGINEER – LAND PLANNERS – LAND SURVEYORS
738 ALFRED NOBEL DRIVE
HERCULES, CALIFORNIA 94547
(510) 724-3388

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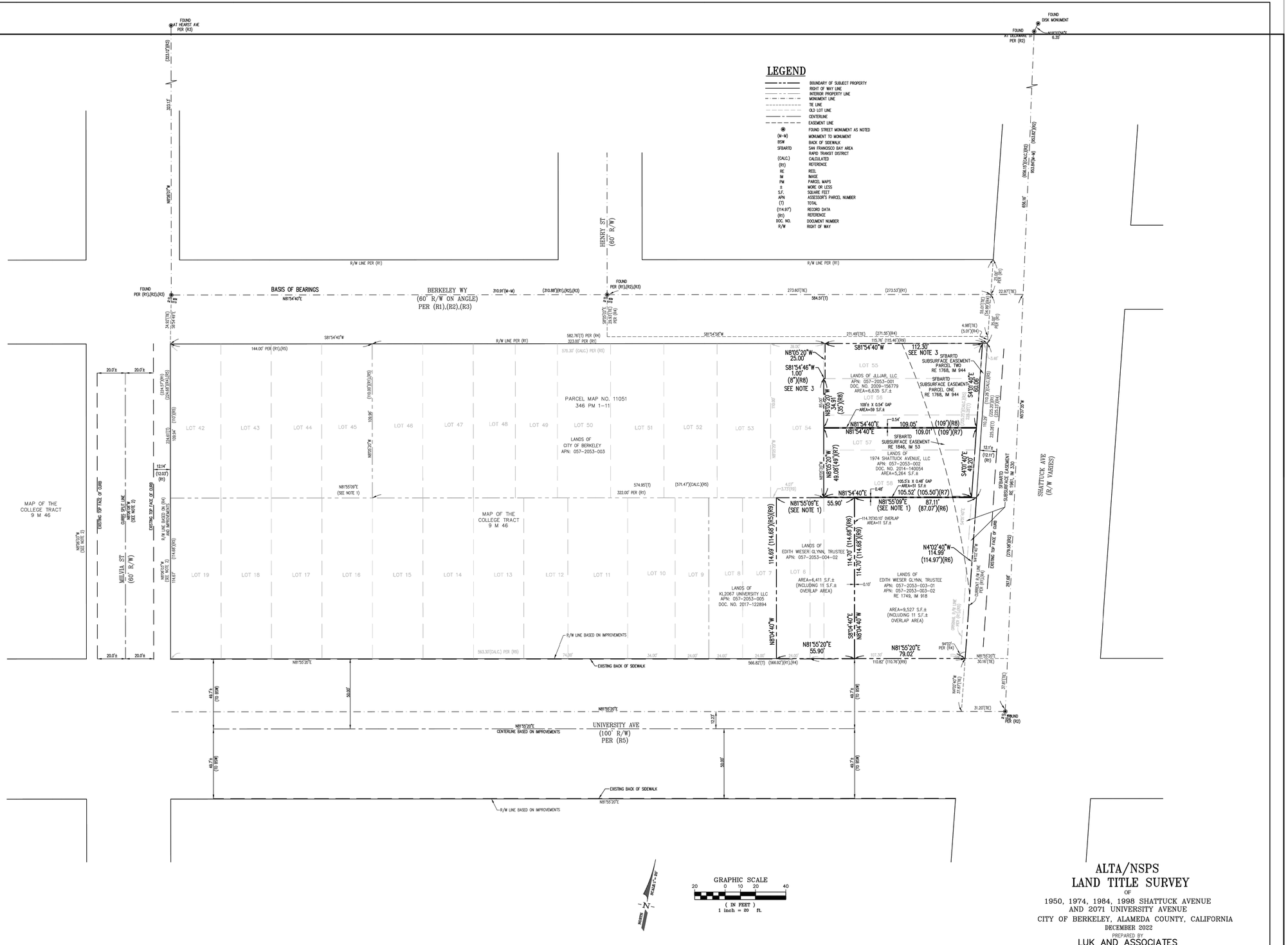
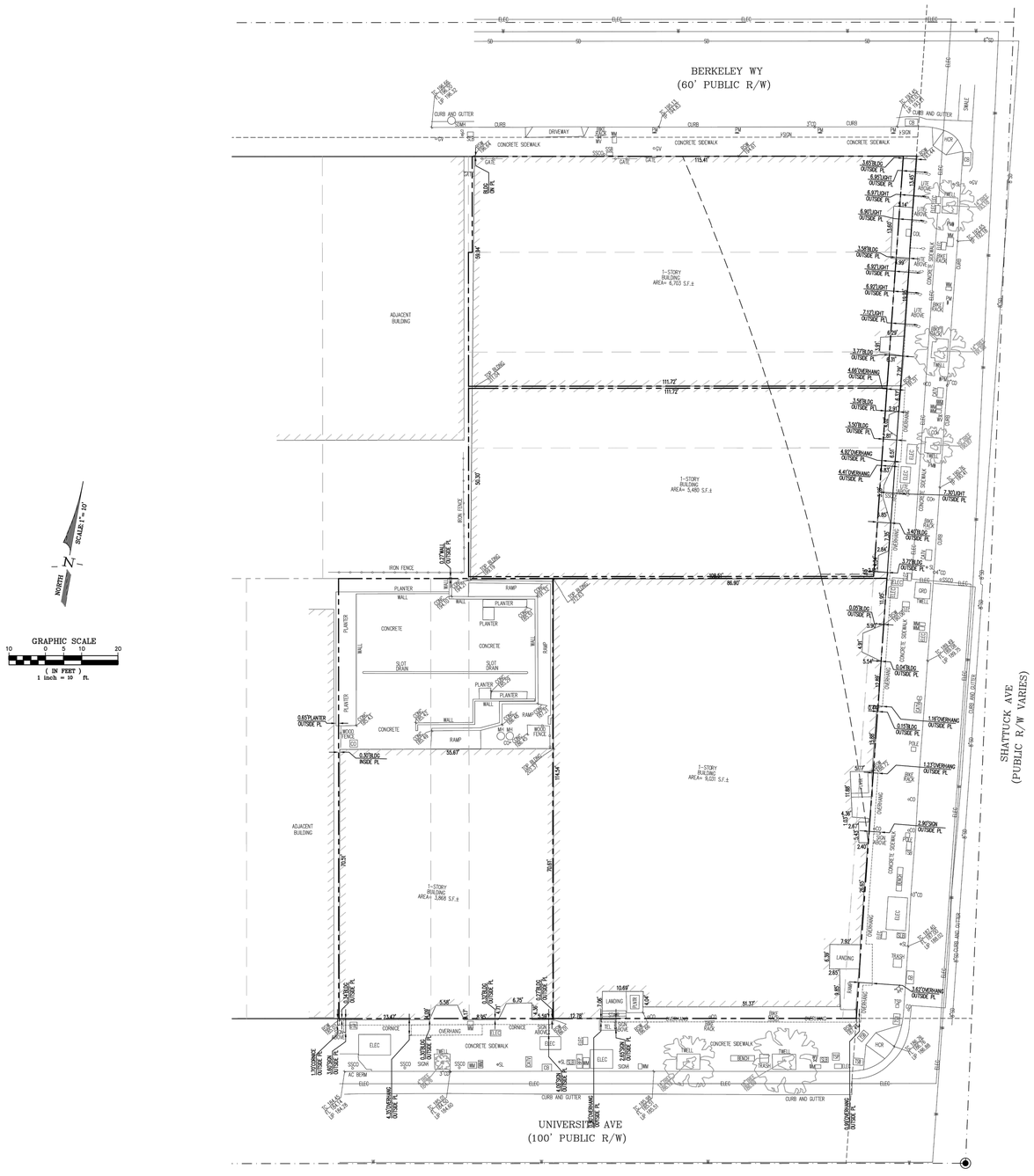
JOB: 2209

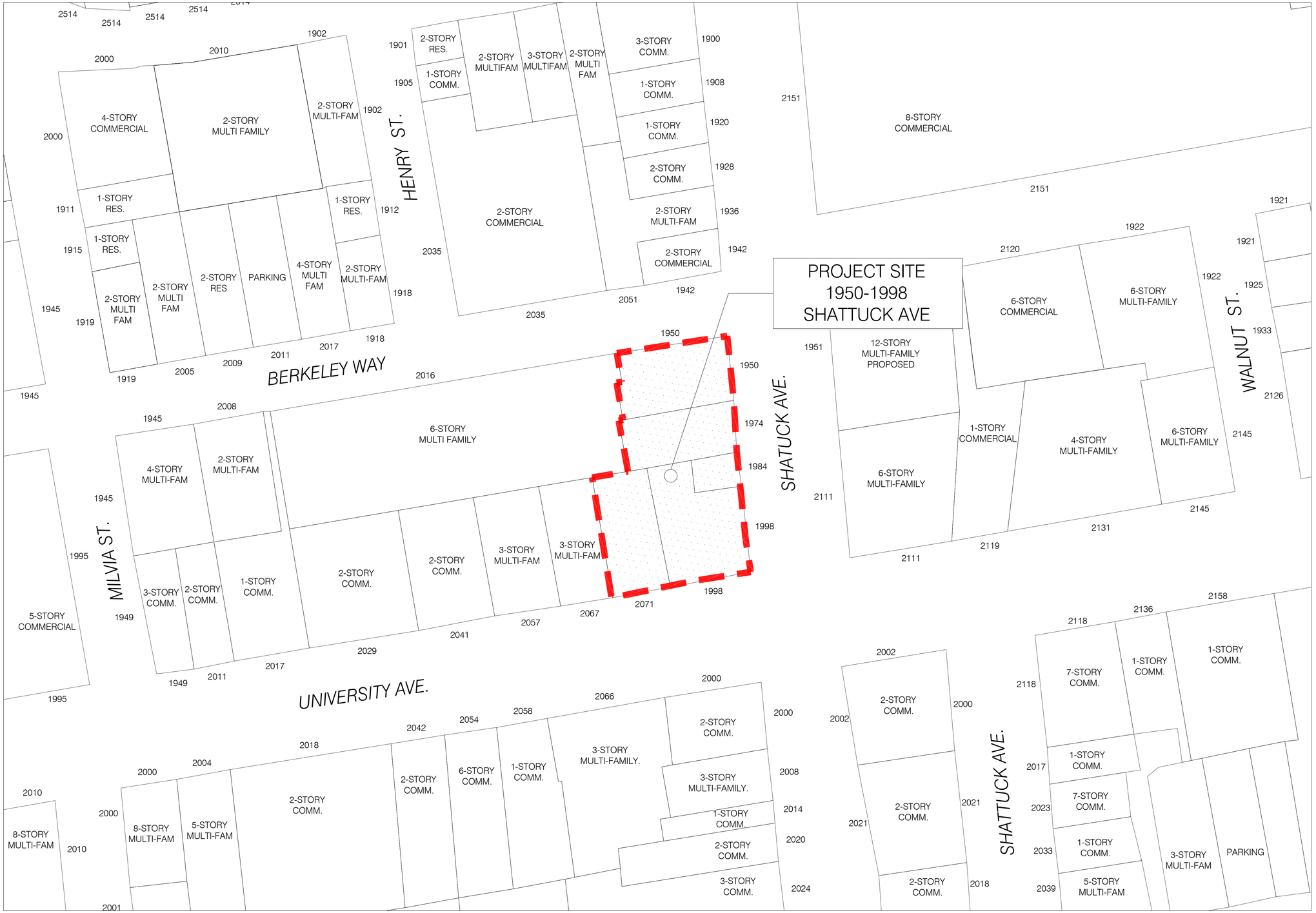
SHEET:

SURVEY

A0.6a


LEGEND
BOUNDARY OF SUBJECT PROPERTY
RIGHT OF WAY LINE
INTERIOR PROPERTY LINE
MONUMENT LINE
TIE LINE
OLD LOT LINE
CENTERLINE
EASEMENT LINE
FOUND STREET MONUMENT AS NOTED
(M-M) MONUMENT TO MONUMENT
BSW BACK OF SIDEWALK
SFBARTD SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT
(CALC.) CALCULATED
(R1) REFERENCE
RE REEL
IM IMAGE
PM PARCEL MAPS
± MORE OR LESS
S.F. SQUARE FEET
APN ASSESSOR'S PARCEL NUMBER
(T) TOTAL
(114.97') RECORD DATA
(R1) REFERENCE
DOC. NO. DOCUMENT NUMBER
R/W RIGHT OF WAY
FOUND AT NEAREST AVE PER (R3)
FOUND DESK MONUMENT
FOUND PER (R1),(R2),(R3)
BASIS OF BEARINGS N81°54'40"E
BERKELEY WY (60' R/W ON ANGLE) PER (R1),(R2),(R3)
HENRY ST (60' R/W)
R/W LINE PER (R1)
SHATTUCK AVE (R/W VARIES)
PARCEL MAP NO. 11051 346 PM 1-11
LOT 42
LOT 43
LOT 44
LOT 45
LOT 46
LOT 47
LOT 48
LOT 49
LOT 50
LOT 51
LOT 52
LOT 53
LOT 54
LOT 55
LOT 57
LOT 58
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
LOT 11
LOT 12
LOT 13
LOT 14
LOT 15
LOT 16
LOT 17
LOT 18
LOT 19
LANDS OF CITY OF BERKELEY APN: 057-2053-003
LANDS OF JLLIAR, LLC APN: 057-2053-001 DOC. NO. 2009-156779 AREA=6,635 S.F.±
LANDS OF 1974 SHATTUCK AVENUE, LLC APN: 057-2053-002 DOC. NO. 2014-140054 AREA=5,264 S.F.±
LANDS OF EDITH WIESER GLYNN, TRUSTEE APN: 057-2053-004-02
LANDS OF EDITH WIESER GLYNN, TRUSTEE APN: 057-2053-003-01 APN: 057-2053-003-02 RE 1749, IM 918 AREA=9,527 S.F.± (INCLUDING 11 S.F.± OVERLAP AREA)
LANDS OF KL2067 UNIVERSITY LLC APN: 057-2053-005 DOC. NO. 2017-122894 AREA=6,411 S.F.± (INCLUDING 11 S.F.± OVERLAP AREA)
SFBARTD SUBSURFACE EASEMENT PARCEL TWO RE 17768, IM 944
SFBARTD SUBSURFACE EASEMENT PARCEL ONE RE 17768, IM 944
SFBARTD SUBSURFACE EASEMENT RE 1846, IM 53
SFBARTD SUBSURFACE EASEMENT RE 1951, IM 330
MAP OF THE COLLEGE TRACT 9 M 46
MILVIA ST (60' R/W)
UNIVERSITY AVE (100' R/W) PER (R5)
EXISTING BACK OF SIDEWALK
R/W LINE BASED ON IMPROVEMENTS
CENTERLINE BASED ON IMPROVEMENTS
EXISTING TOP FACE OF CURB
CURB SPLIT LINE
R/W LINE BASED ON (R4)
N81°54'40"E 333.15'(R3)
N8°05'20"W 333.15'
S81°54'40"W 144.00' PER (R1),(R5)
S81°54'46"W 1.00' (8')(R8) SEE NOTE 3
N81°55'09"E (SEE NOTE 1)
N81°54'40"E 109.05' (109')(R8)
N81°54'40"E 109.01' (109')(R7)
N81°54'40"E 105.52' (105.50')(R7)
N81°55'09"E 55.90'
N81°55'09"E 87.11' (87.07')(R6)
N4°02'40"W 114.99' (114.97')(R6)
N81°55'20"E 55.90'
N81°55'20"E 79.02'
N81°55'20"E 30.16'(TIE)
S4°02'40"E 60.06'
S4°02'40"E 49.42'
N8°04'40"W 114.70' (114.68')(R6)
S8°04'40"E 114.70' (114.68')(R6)
N8°04'40"W 114.69' (114.68')(R5)(R9)
N8°05'20"W 25.00'
N8°05'20"W 34.91' (35')(R8)
N8°05'20"W 49.66'(49')(R7)
S8°05'20"E 49.66'(49')(R7)
112.50' SEE NOTE 3
115.76' (115.46')(R9)
271.49'(TIE) (271.55')(R4)
273.60'(TIE) (273.57')(R1)
584.59'(T)
582.76'(T) PER (R4) 323.00' PER (R1)
574.95'(T) 322.00' PER (R1)
576.33' (CALC.) PER (R5)
571.47'(CALC.)(R5)
563.30'(CALC.) PER (R5)
566.82'(T) (566.92')(R1),(R4)
656.54'
656.54'(CALC)(R2) S53.82'(R-M) (656.55')(R2)
N8°05'20"W 310.88'(R1),(R2),(R3)
310.91'(M-M)
N81°54'40"E 273.57'(R1)
22.97'(TIE)
4.98'(TIE) (5.01')(R4)
2.00' PER (R1)
N8°05'20"W 2.00' PER (R1)
S81°54'58"W
N81°55'09"E (SEE NOTE 1)
N81°55'20"E
N81°55'20"E 74.00'
N81°55'20"E 34.00'
N81°55'20"E 24.00'
N81°55'20"E 24.00'
N81°55'20"E 24.00'
N81°55'20"E 107.30'
N81°55'20"E 110.82' (110.76')(R9)
N81°55'20"E 94.02' PER (R4)
N81°55'20"E 31.20'(TIE)
N81°55'20"E 27.87'(TIE)
N81°55'20"E 27.87'(TIE)
N81°55'20"E 27.87


BERKELEY WY
(60' PUBLIC R/W)
UNIVERSITY AVE
(100' PUBLIC R/W)
SHATTUCK AVE
(PUBLIC R/W VARIES)
1-STORY BUILDING AREA= 8,703 S.F.±
1-STORY BUILDING AREA= 9,480 S.F.±
1-STORY BUILDING AREA= 9,031 S.F.±
1-STORY BUILDING AREA= 1,868 S.F.±
ADJACENT BUILDING
IRON FENCE
CONCRETE SIDEWALK
CURB AND GUTTER
DRIVEWAY
PLANTER
RAMP
CONCRETE
SLOT DRAIN
WOOD FENCE
GATE
LANDING
TRASH
BENCH
OVERHANG
SIGN ABOVE
115.49'
111.72'
111.72'
59.94'
56.30'
56.87'
108.66'
96.90'
115.47'
55.37'
10.69'
27.47'
6.58'
8.76'
6.75'
13.78'
11.98'
7.97'
6.36'
2.65'
9.95'
2.40'
2.67'
4.36'
5.54'
5.82'
5.17'
2.85'
2.64'
3.64'
4.64'
4.65'
4.67'
4.67'
4.67



1 - VICINITY MAP
NTS

N

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1950-1998 (1974) SHATTUCK

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07.18.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL
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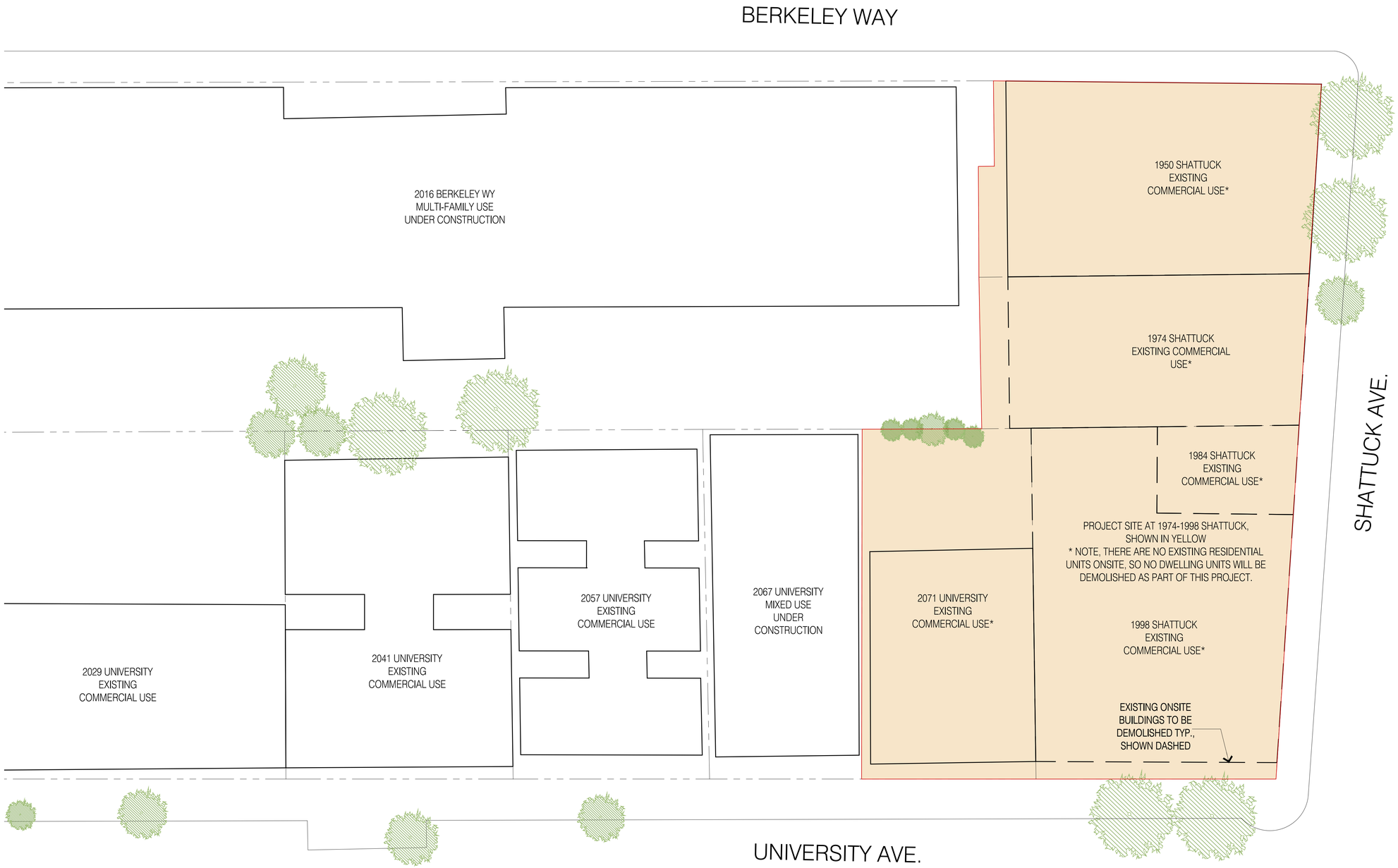
JOB: 2209

SHEET:

VICINITY MAP

A0.6



1 - EXISTING SITE PLAN
1/32"=1'-0" @ 11x17 1/16"=1'-0" @ 24x36

0 4 8 16 32

N

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JOB: 2209

SHEET:

EXISTING
SITE PLAN

A1.0

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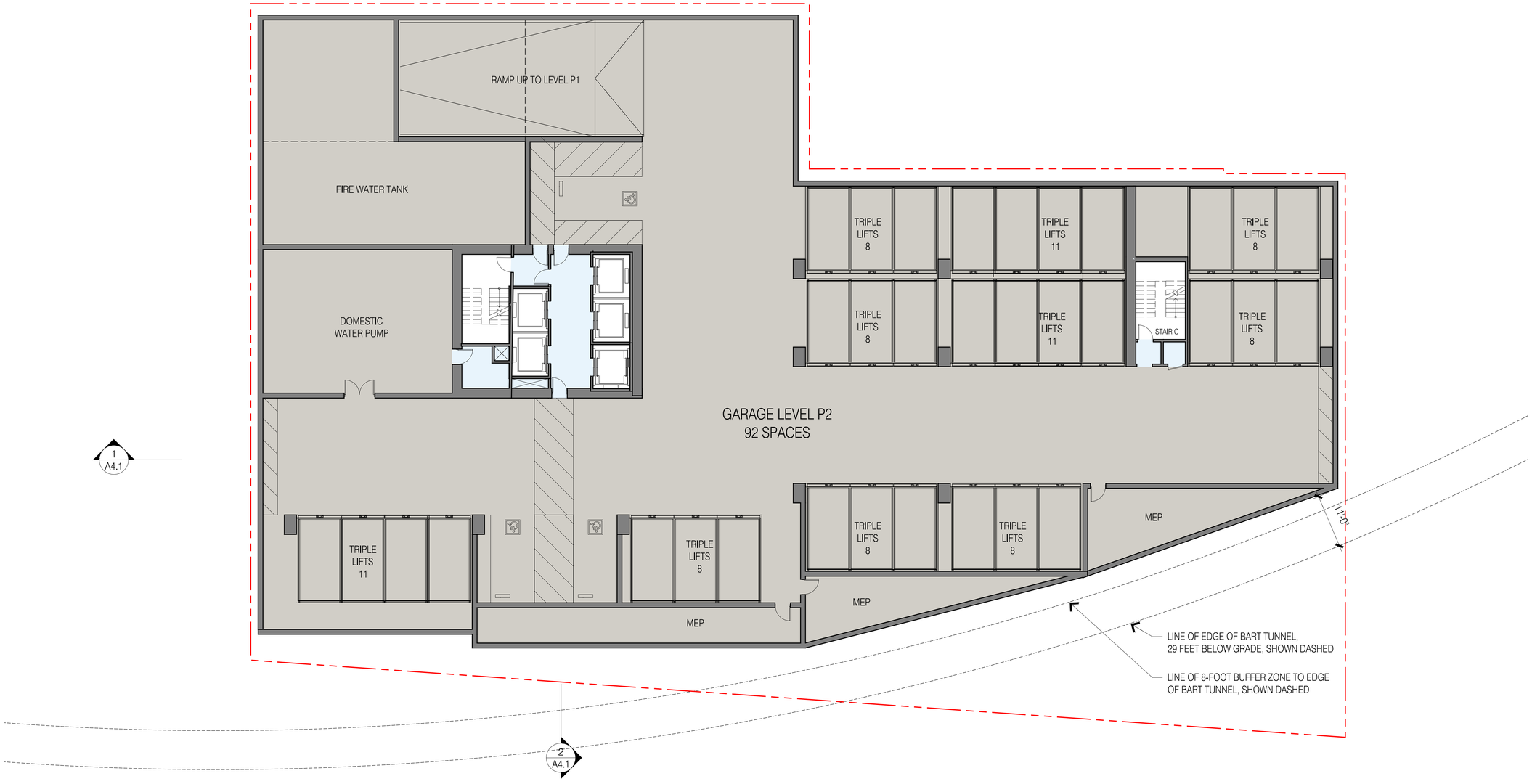

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SHEET:

FLOOR PLANS

A2.0a

1 / - PLAN AT BASEMENT PARKING LEVEL P2

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N



1 A4.1

2 A4.1

1 - PLAN AT BASEMENT PARKING LEVEL P1

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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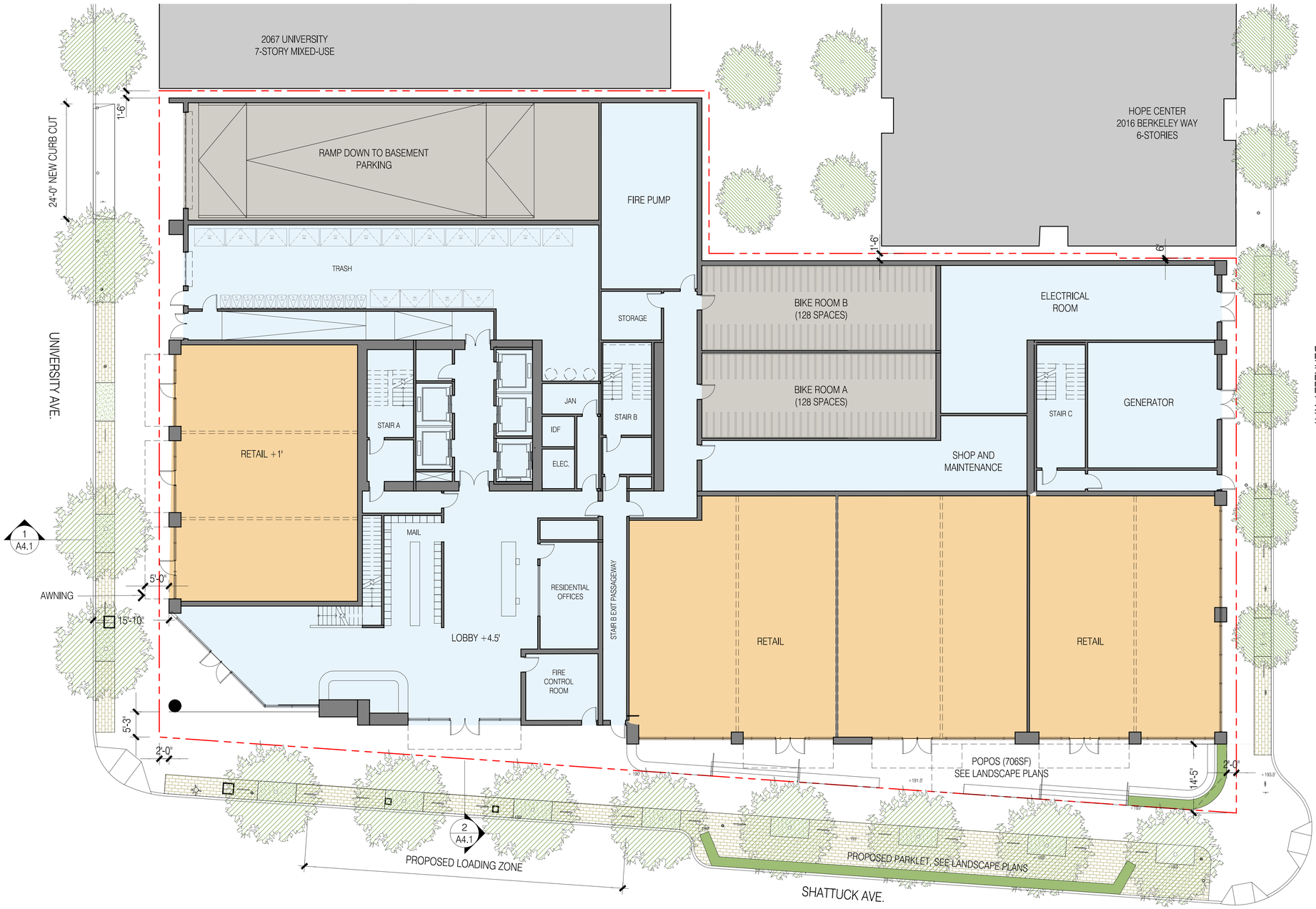
SHEET:

FLOOR PLANS

A2.0b



1 SITE PLAN / PLAN AT GROUND FLOOR
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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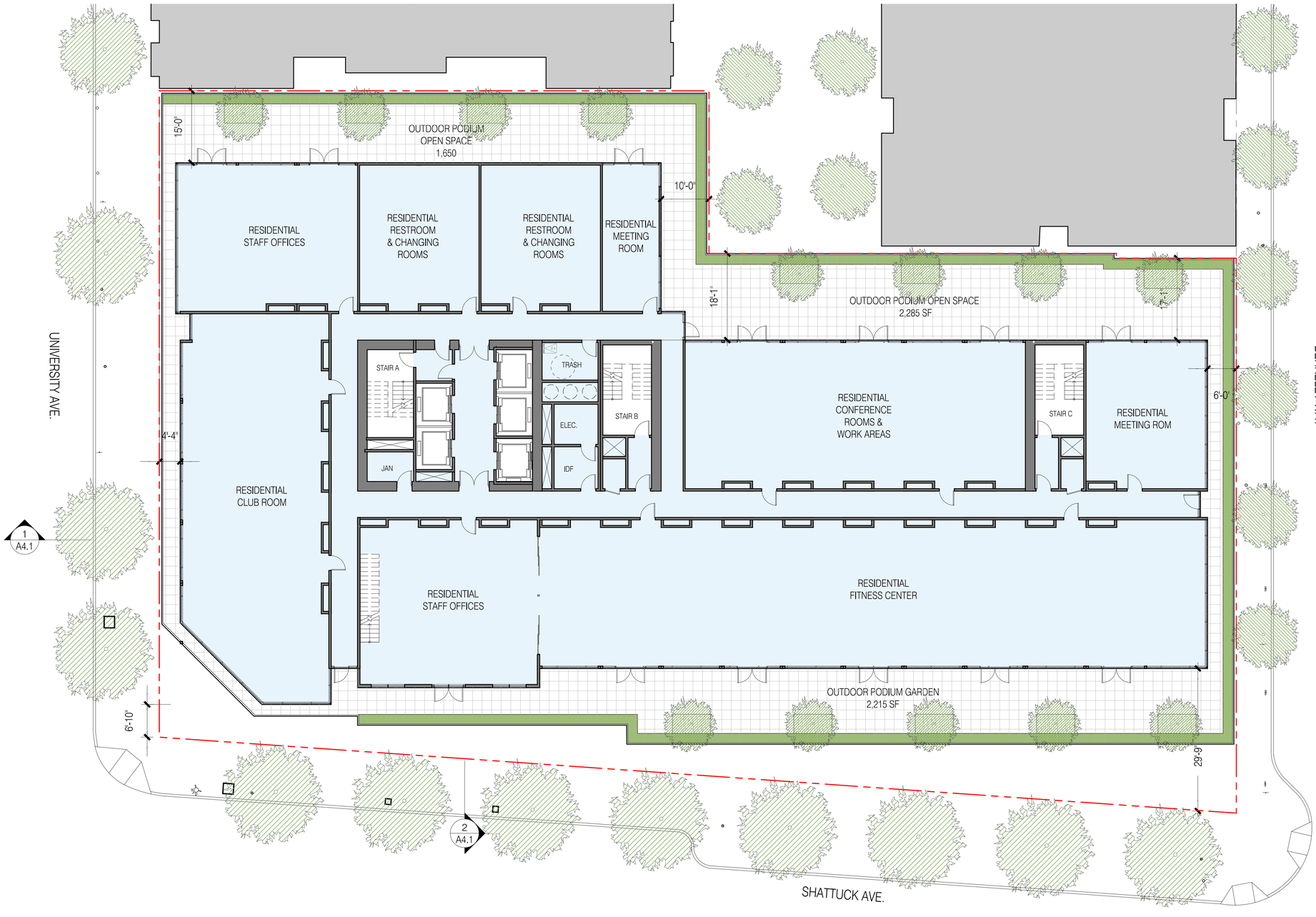
SHEET:

FLOOR PLANS

A2.1



1 PLAN AT LEVEL 2
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

FLOOR PLANS

A2.2



1 - PLAN AT LEVELS 3-13

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

FLOOR PLANS

A2.3



1
-

PLAN AT LEVEL 14

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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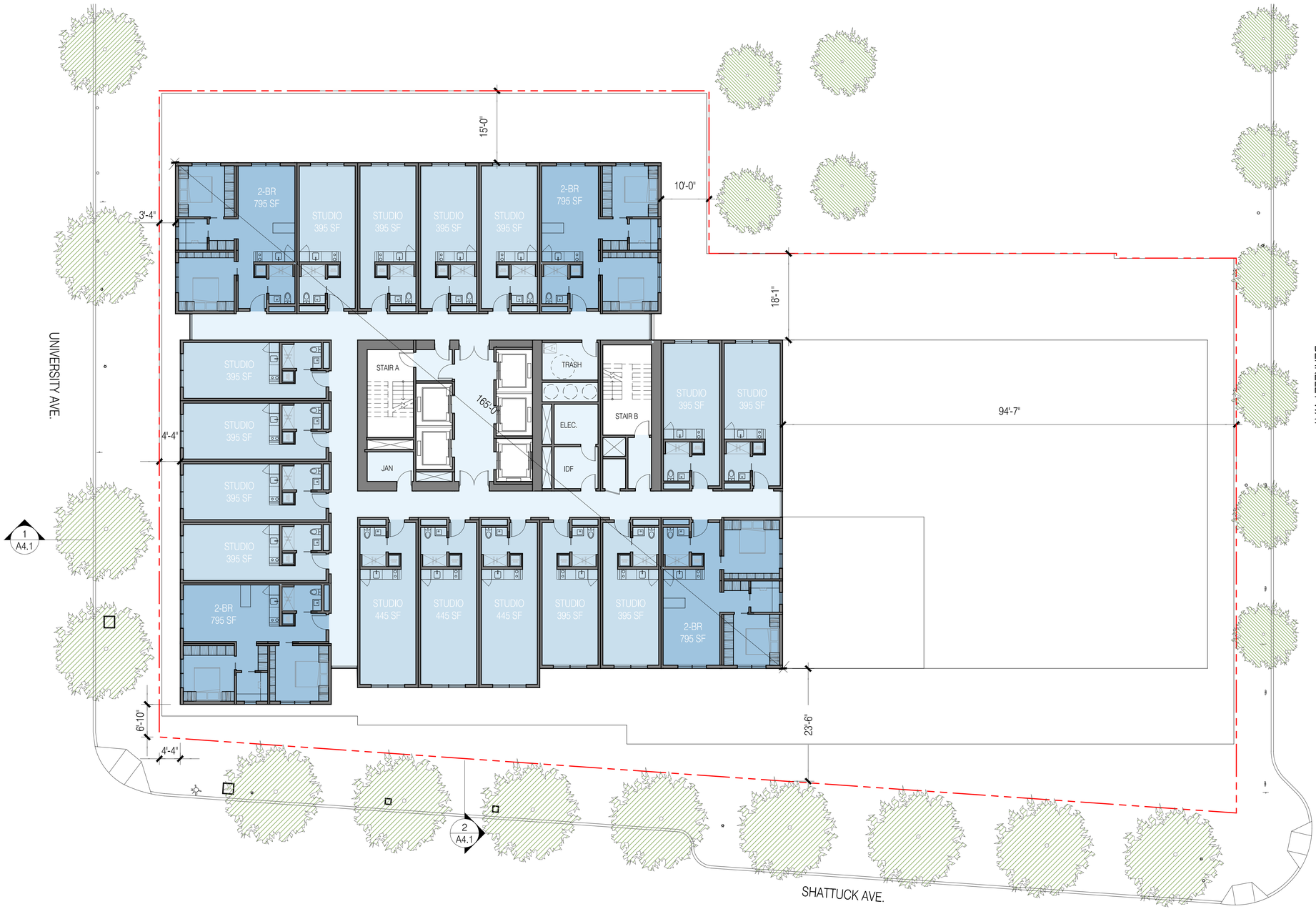
SHEET:

FLOOR PLANS

A2.4



1 / - PLAN AT LEVELS 15-27

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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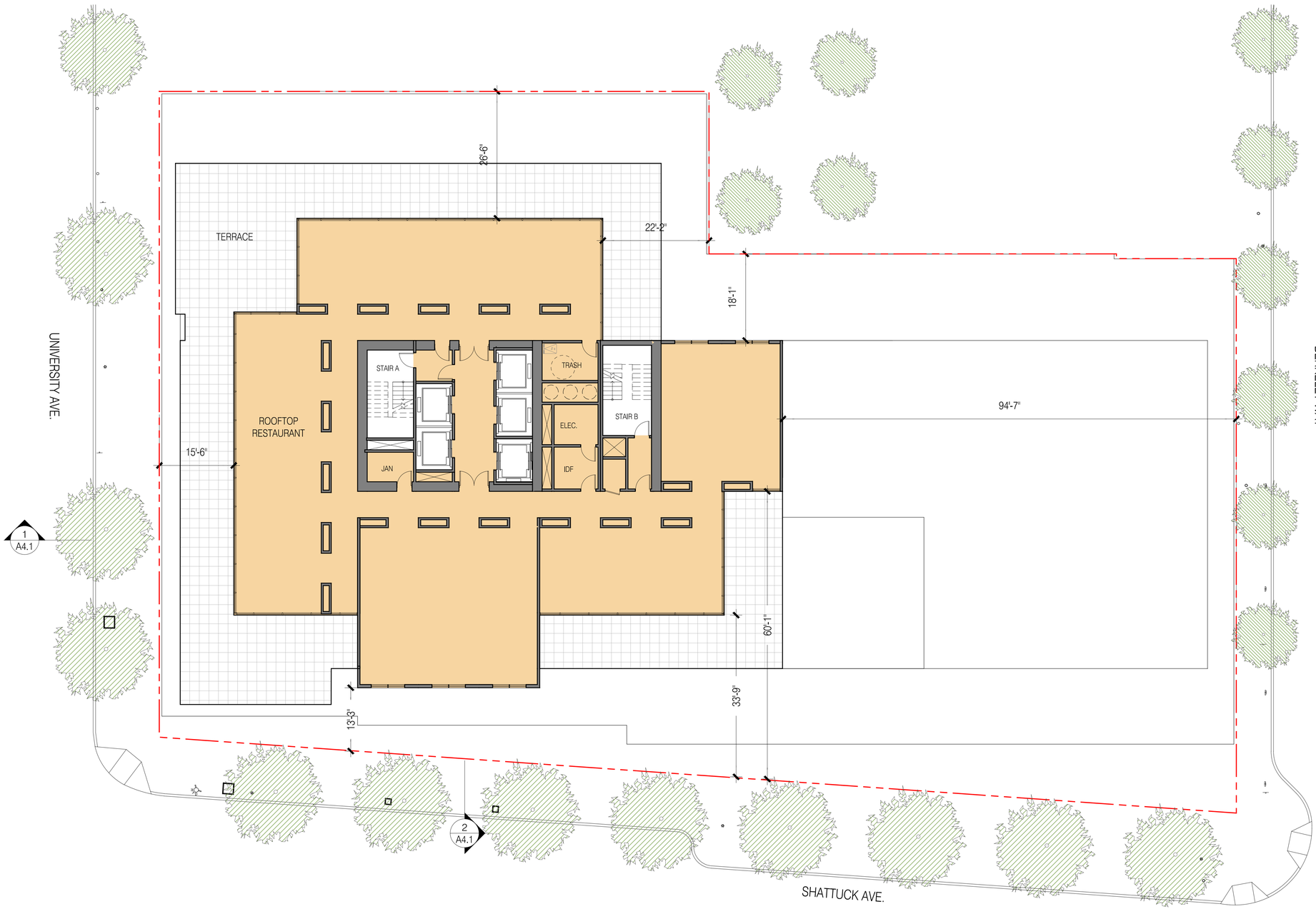
SHEET:

FLOOR PLANS

A2.5



1 PLAN AT LEVEL 28 ROOFTOP RESTAURANT
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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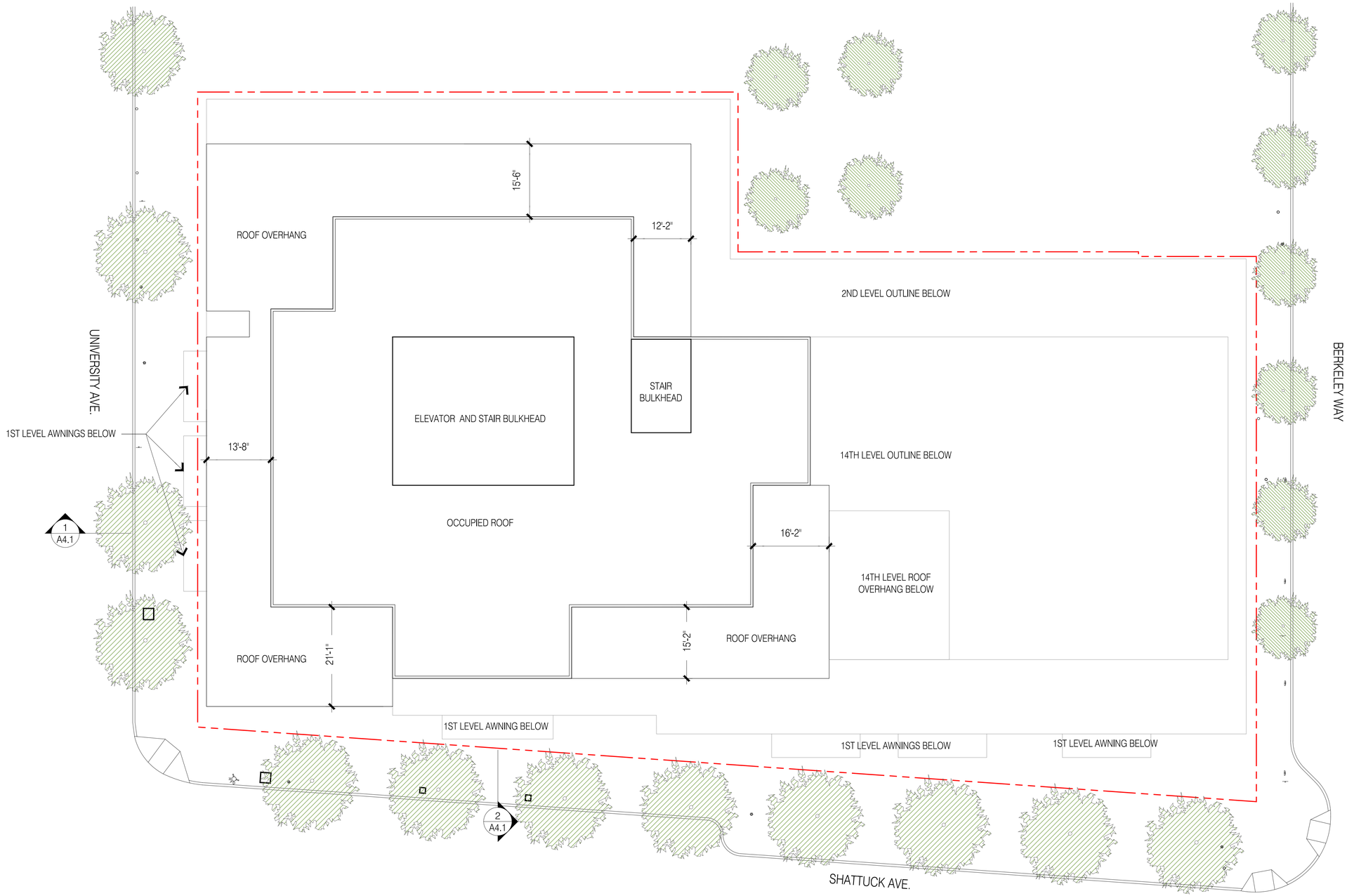
SHEET:

FLOOR PLANS

A2.6



1 / - PLAN AT ROOF

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

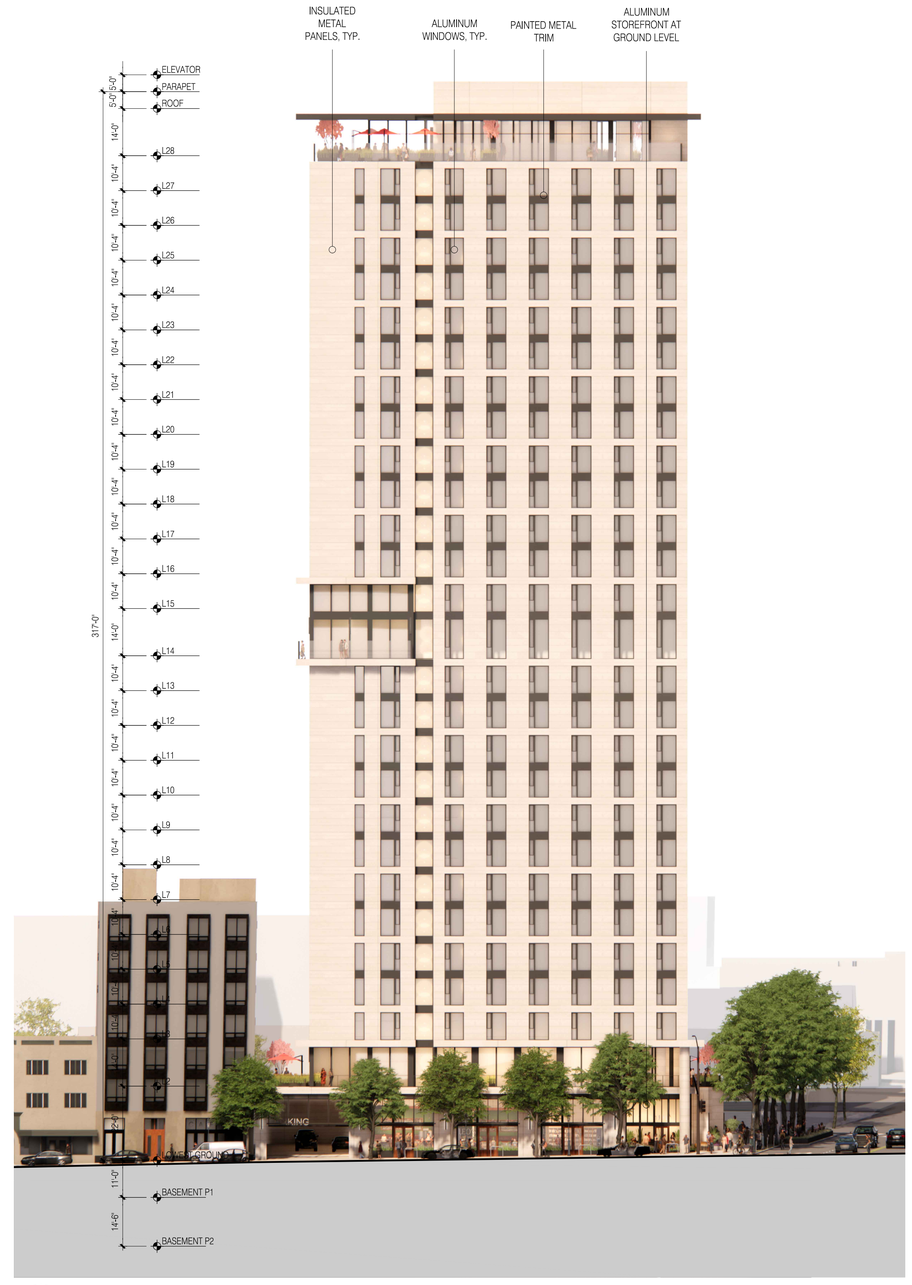
ROOF PLAN

A2.7



2 - EAST ELEVATION

0 8 16 32



1 - SOUTH ELEVATION

0 8 16 32

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SHEET:

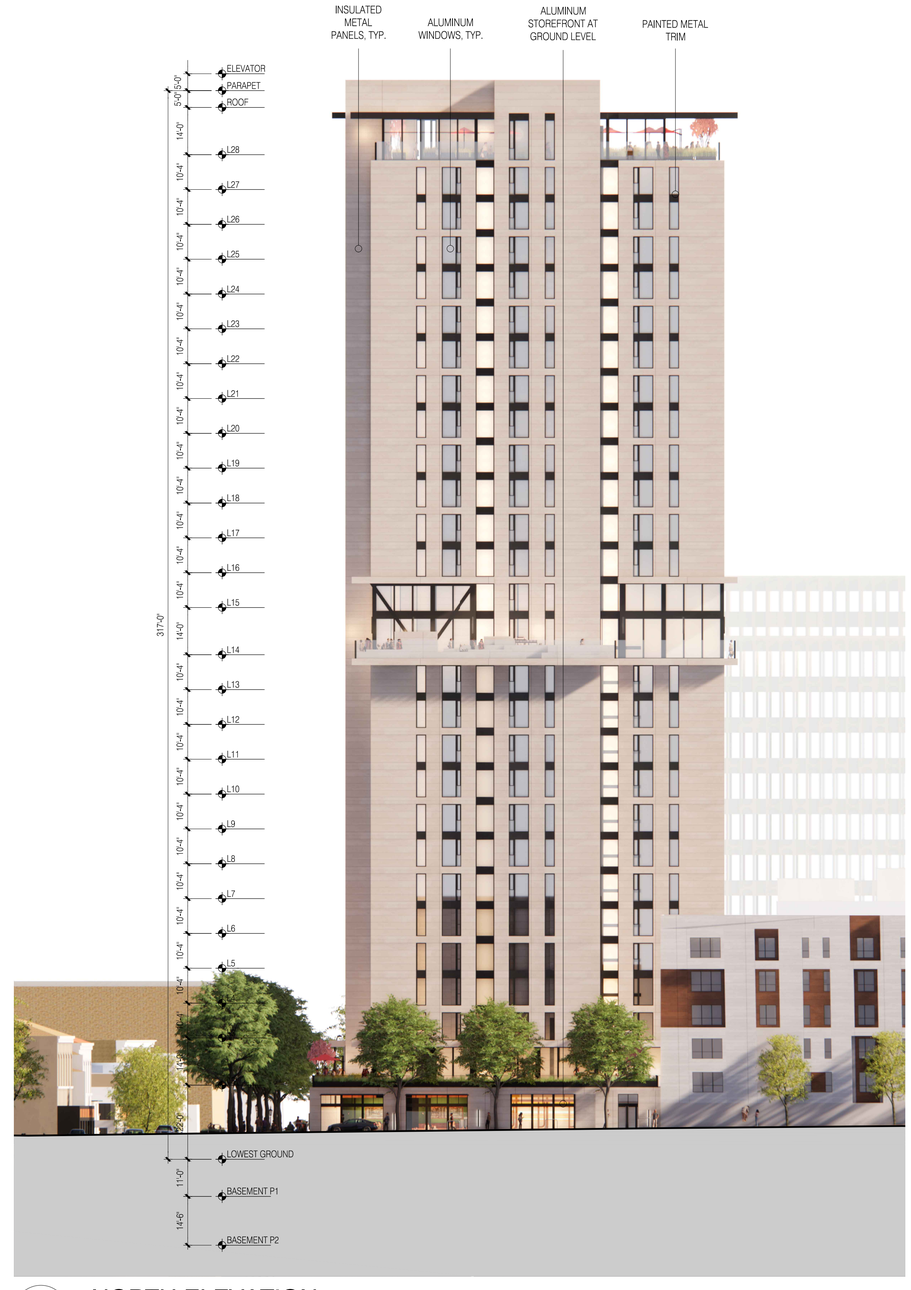
ELEVATIONS

A3.1



2 - WEST ELEVATION

0 8 16 32



1 - NORTH ELEVATION

0 8 16 32

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SHEET:

ELEVATIONS

A3.2



2
-

STREET STRIP ELEVATION @ SHATTUCK AVE

1/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64



1
-

STREET STRIP ELEVATION @ UNIVERSITY AVE

3/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64

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SHEET:

STREET STRIP ELEVATIONS

A3.3



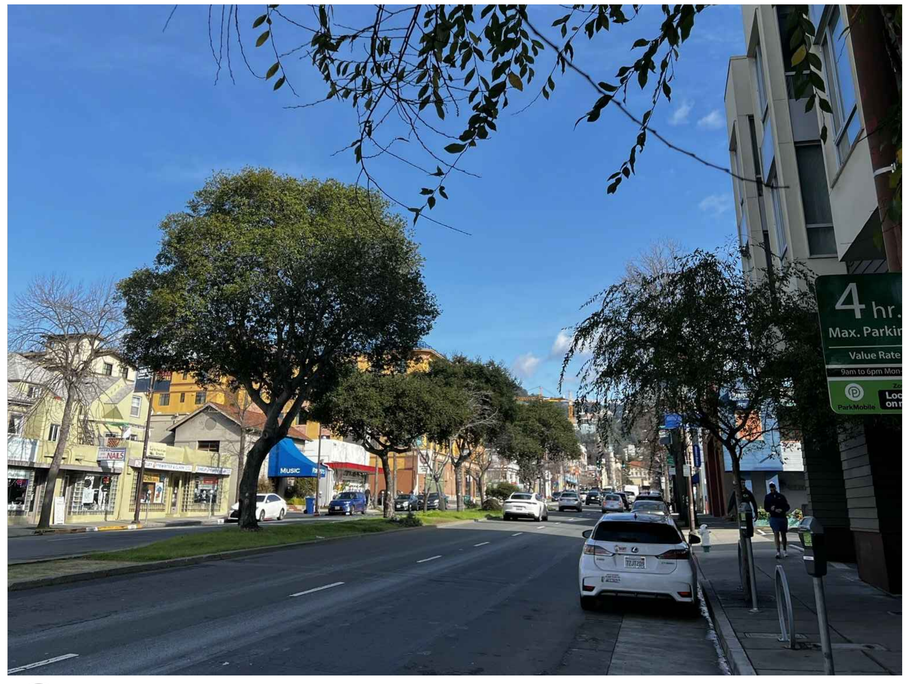
4 - UNIVERSITY LOOKING WEST - AFTER



2 - UNIVERSITY LOOKING EAST - AFTER



3 - UNIVERSITY LOOKING WEST - BEFORE



1 - UNIVERSITY LOOKING EAST - BEFORE

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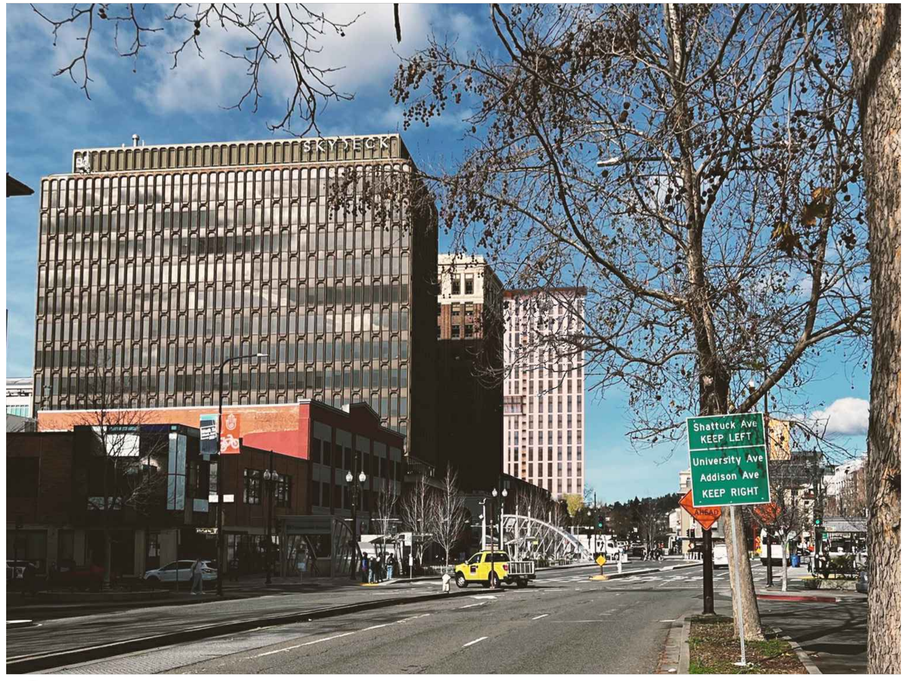
SHEET:

PHOTO CONTEXT VIEWS

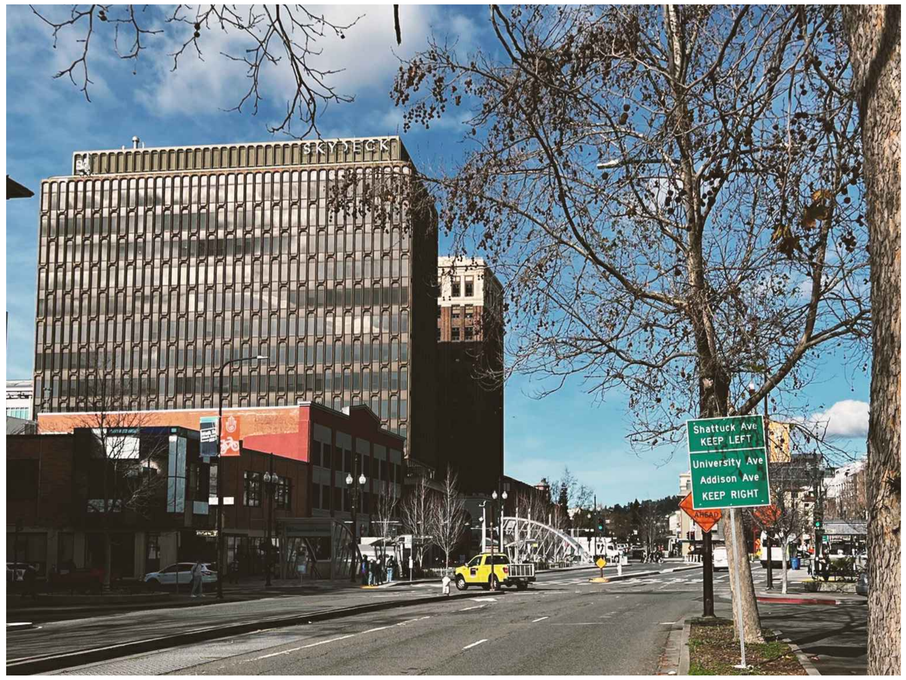
A3.4



4 - SHATTUCK LOOKING NORTH - AFTER



2 - SHATTUCK LOOKING SOUTH - AFTER



3 - SHATTUCK LOOKING NORTH - BEFORE



1 - SHATTUCK LOOKING SOUTH - BEFORE

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SHEET:

PHOTO CONTEXT VIEWS

A3.5



4 - BERKELEY LOOKING WEST - AFTER



2 - BERKELEY LOOKING EAST - AFTER



3 - BERKELEY LOOKING WEST - BEFORE



1 - BERKELEY LOOKING EAST - BEFORE

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SHEET:

PHOTO CONTEXT VIEWS

A3.6

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1 - VIEW LOOKING NORTH

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SHEET:

PRELIMINARY
RENDERING

A3.7

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1
-
VIEW LOOKING NORTH-WEST
- -

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SHEET:

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RENDERING

A3.8

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1
-
VIEW LOOKING SOUTH-WEST
- -

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SHEET:

PRELIMINARY
RENDERING

A3.9

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1
-
VIEW LOOKING SOUTH-EAST
- -

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SHEET:

PRELIMINARY
RENDERING

A3.10

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1
-
VIEW LOOKING NORTH-WEST AT SHATTUCK AND UNIVERSITY
- -

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SHEET:

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A3.11

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1 - VIEW LOOKING SOUTH-WEST ON SHATTUCK
- -

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SHEET:

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1 - VIEW LOOKING NORTH-EAST ON UNIVERSITY

- -

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SHEET:

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A3.13

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1 - SIDEWALK VIEW - UNIVERSITY LOOKING EAST

1950-1998 (1974) SHATTUCK

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A3.14

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1
-
VIEW LOOKING SOUTH-WEST - SHATTUCK @ BERKELEY WAY
- -

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1 - SIDEWALK VIEW - SHATTUCK LOOKING SOUTH-WEST

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Berkeley, CA

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1 - SIDEWALK VIEW - SHATTUCK LOOKING NORTH-WEST

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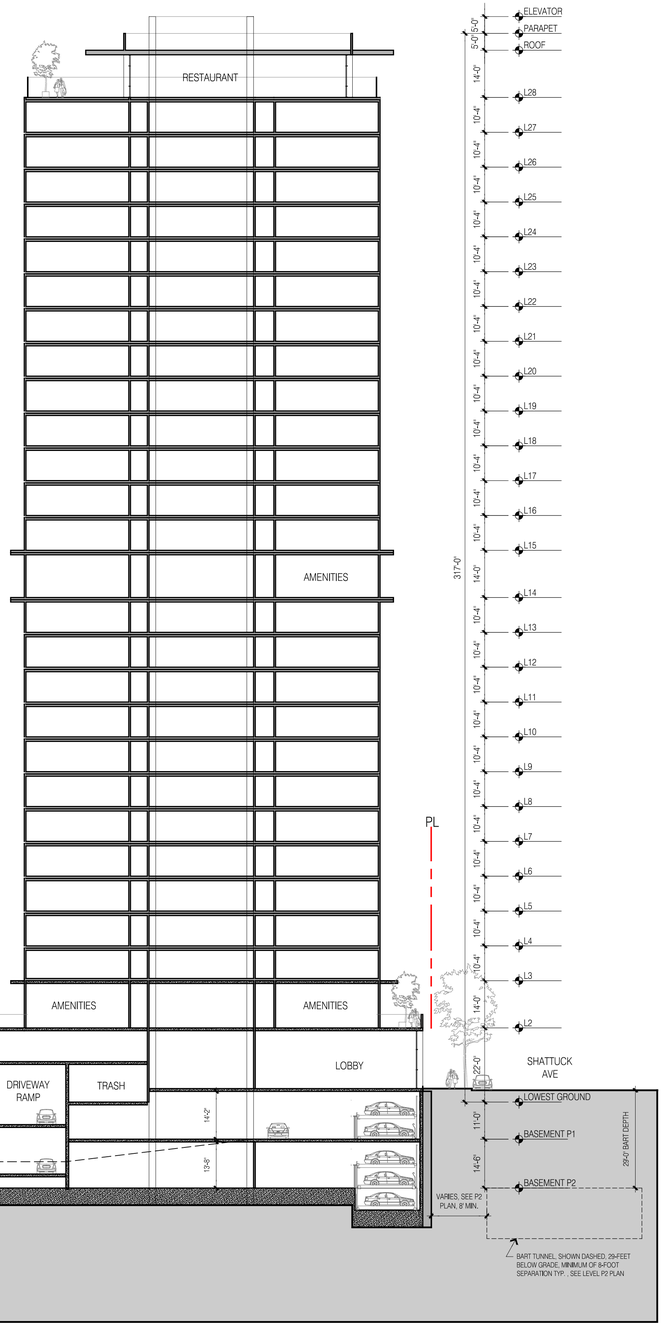
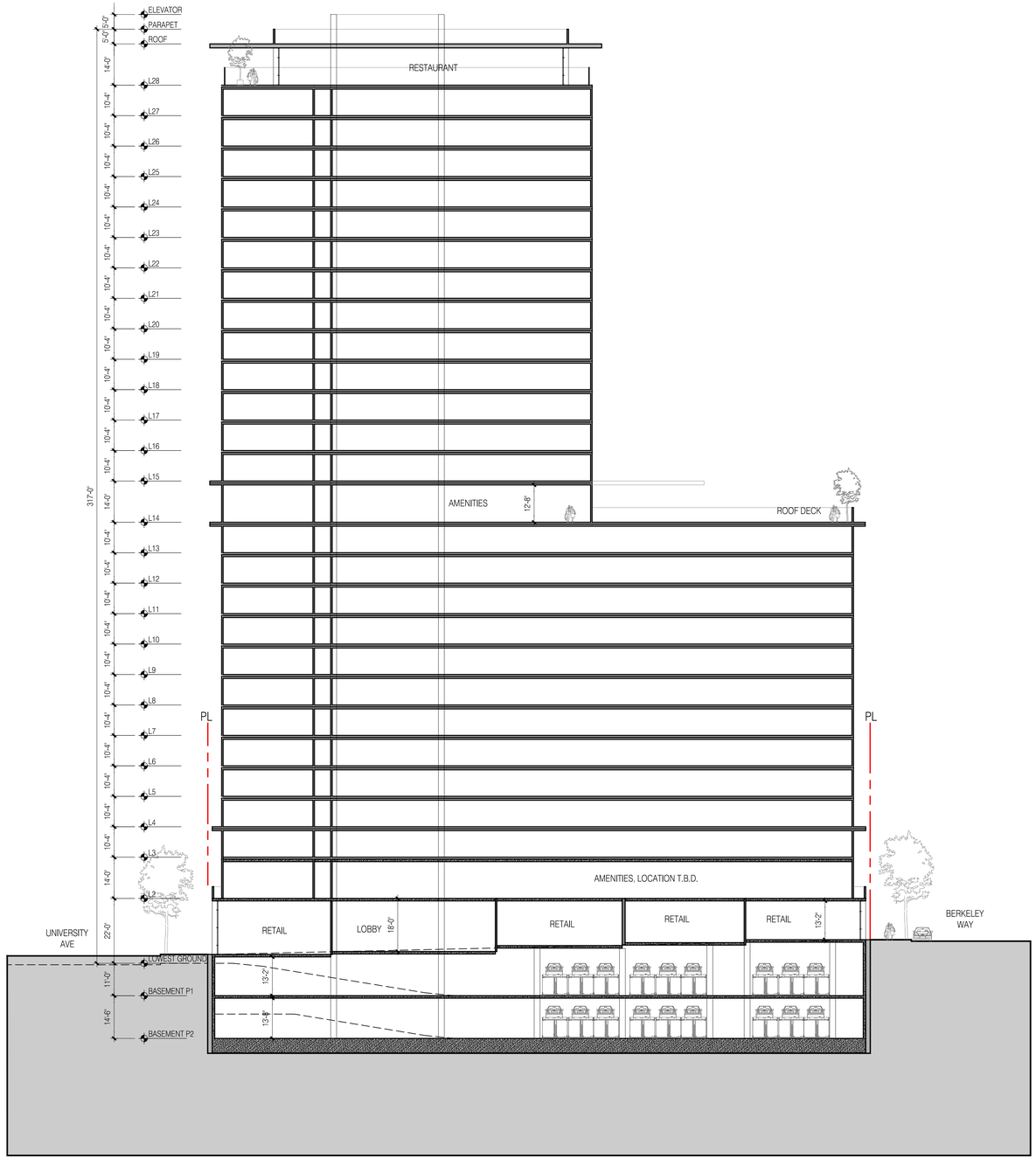


2 - SECTION LOOKING NORTH

- - 0 8 16 32



1 - SECTION LOOKING WEST

- - 0 8 16 32

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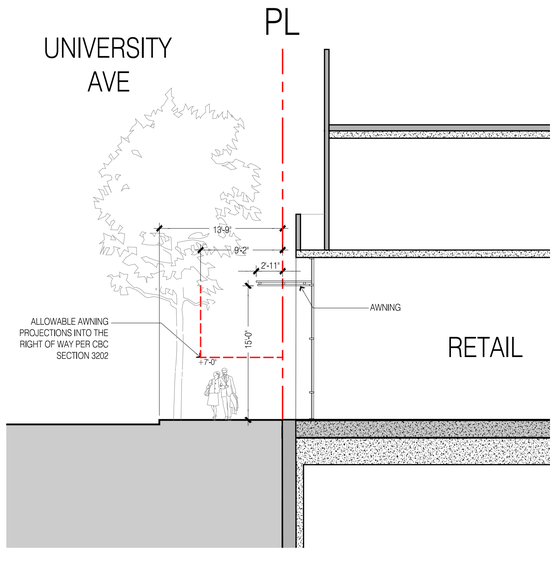
BUILDING SECTIONS

A4.1



2 - SECTION THROUGH UNIVERSITY AVE.

1/8" = 1'-0"

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AWNING ENCROACHMENT DIAGRAM

A4.2

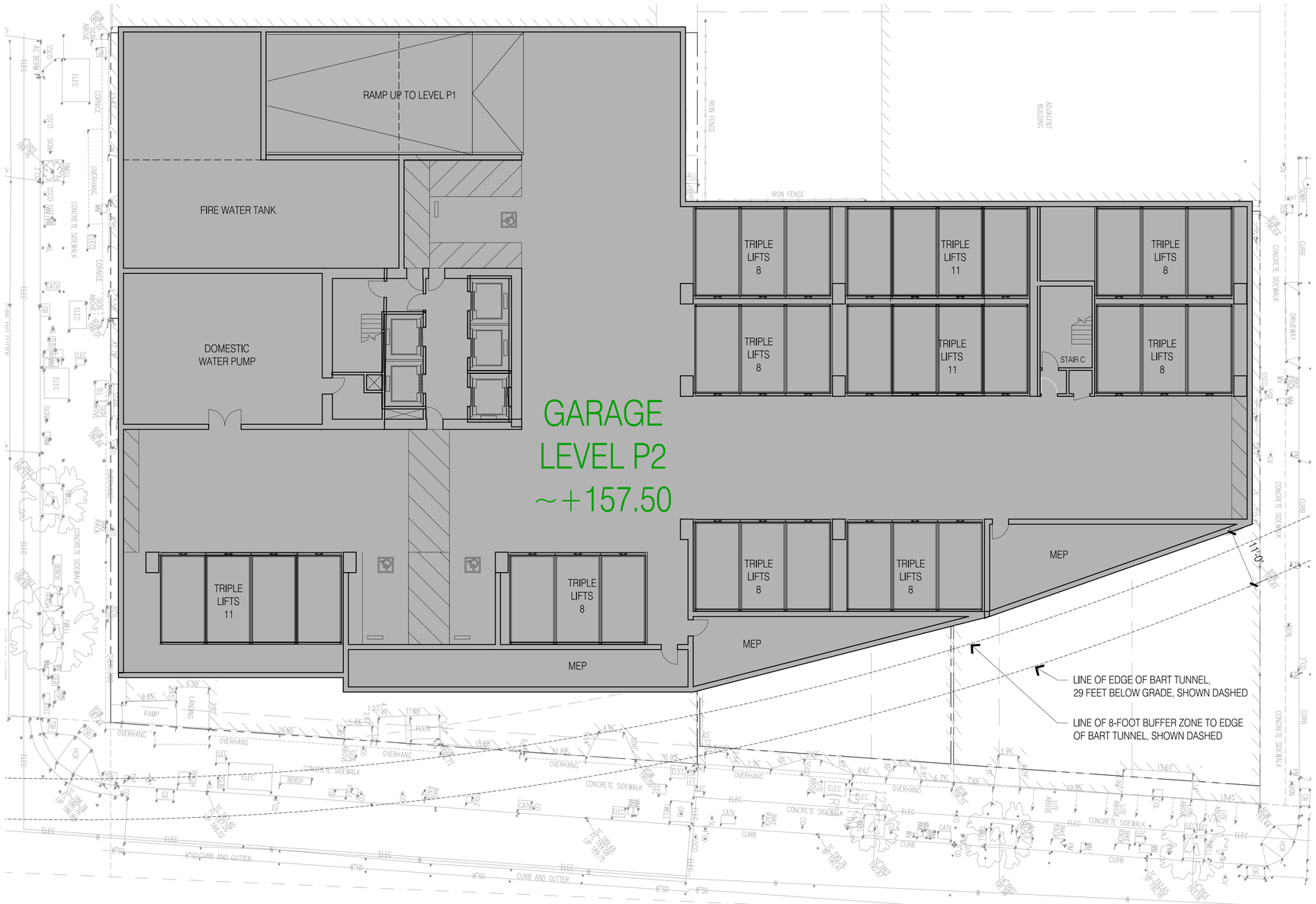
CUT AND FILL CALCULATIONS

	CUT/FILL AREA	AVERAGE CUT/FILL DEPTH (FT)	TOTAL VOLUME (CY)
PROPOSED BUILDING	23,262	37	31,878

EARTHWORK NOTES:

1. EARTHWORK QUATNITY IS A ROUGH ESTIMATE BASED ON APPROXIMATE DEPTH OF BOTTOM OF BASEMENT PARKING LEVEL.

2. EARTHWORK QUANTITIES DO NOT TAKE INTO ACCOUNT SOIL SHRINKAGE, SOIL SWELLING, TRENCH SPOILS, SITE OVER-EXCAVATION REQUIREMENTS.



1 - CONCEPTUAL GRADING PLAN

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

CONCEPTUAL GRADING PLAN

A5.0

1998 Shattuck — Preliminary Landscape Set

General Notes

1. The contractor shall inspect the site and be familiar with all existing site conditions prior to submitting bid. Contractor shall not willfully proceed with construction as shown when it is obvious that obstructions, landscape area and/or grade differences exist that may not have been known during design. Such conditions shall immediately be brought to the attention of the landscape architect. The contractor shall assume sole responsibility for all necessary revisions due to failure to give such notification. Contractor shall be responsible for making himself familiar with all underground utilities, pipes, structures and obstructions. Contractor shall assume sole responsibility for all costs incurred due to damage and/or replacement of these items. Contractor shall be responsible for coordination among trades and subcontractors as required to accomplish the work. The contractor shall be responsible for any damage to existing features caused by contractor's work. All repairs shall be made at no additional cost to the owner. Planting shall be installed in conformance with all applicable local codes and ordinances by experienced workmen and a licensed landscape contractor who shall obtain all necessary permits and pay all required fees. The garden is a pesticide and herbicide free zone. Contractor shall use organic material to fertilize and to maintain all plant material. No chemical fertilizer will be allowed.Contractor shall verify all grades, existing conditions and dimensions in the field prior to commencing work. All discrepancies or questions shall be brought to the attention of the landscape architect for resolution. Redirect work to avoid delay. All curves and all transitions between curves and straight edges shall be smooth. Take all dimensions perpendicular to any reference line, work line, face of building, face of wall or centerline.

2. Demolition
Contractor shall remove and carry all demolition materials off site. Protect (E) trees as indicated during construction. Contractor shall perform selective trimming of existing trees within the area of work per the direction of the owner.

3. Drainage/Grading
Contractor shall verify if existing drains are in good condition. All drainage systems shall be per City of Berkeley codes. Grade per indicated swales. Sleeving to be Schedule 40 PVC. Cover PVC pipe so that it not visible. All grading to be smooth to achieve a natural aspect. No finish grades shall exceed 2.5:1 slopes.

4. Soil preparation
Soil amendment shall be a minimum of 9 cy of organic compost per 1000 sf (1:4 ratio). The landscape contractor shall be responsible for finish grading and all planting area drainage. Positive drainage away from the building as per city codes shall be maintained. No low spots which hold standing water will be accepted. Where rototilling is not possible, incorporate soil amendments into top 6 inches with hand tools. After installation of irrigation system, all new planting areas are to be fine graded to within 2 inches and slightly mounded away from edges of top of planter, curb, walk, header, etc. and raked smooth with all rocks and debris over 1 inch in diameter removed. Verify existing grades and advice Landscape Architect of any discrepancies prior to start of grading.

5. Topsoil
If any planting areas require the importing of topsoil, the imported soil shall be clean, friable sandy loam; free of noxious weed seeds, sticks, stones over 1 inch in diameter or any materials that could inhibit growth. Incorporate imported topsoil into the top 6-8 inches of site soil by rototilling or hand cultivating as necessary.

6. Substitutions
Requests for substitutions of plant varieties shall be made to the landscape architect within 15 days after signing of contract.

7. Planting
Thoroughly water trees immediately after planting. Shrubs shall be spotted as per plan and the locations approved prior to the digging of the holes. Contractor shall locate and tag all trees at nursery at time of acceptance of contract to ensure availability of healthy specimens. Plant materials to be approved by landscape architect prior to site delivery.

8. Irrigation
The proposed irrigation shall be an automated, water efficient watering system compliant with the City of Berkeley codes & regulations. The contractor shall determine the static water pressure and design the system accordingly to achieve adequate regime for the proposed plantings. The following emitters shall be installed at each planting: (2) 1 gal emitters at each 1 gal sp.; (3) 5 gal. emitters at ea. 5 gal shrub.

9. Mulching
Mulch all planting areas with 3" of 'Forest Floor Bark' from American Soil and Stone, Richmond Ca (510) 292-3000.

10. Stone paving & stone work
See layout plan and detail for sub-base. Install stone paving with tight joints in front and flagstone in stabilized decomposed granite in back as show on sheet L1.0.

11. Concrete work
All concrete retaining walls greater than 3 feet in height shall be designed or reviewed and stamped by a structural engineer. All concrete footings shall be reviewed, approved and stamped by a structural engineer.

12. Electrical
Install light fixtures, conduits and controller per manufacturer recommendation. Locate controller per plan with light switch inside residence. Contractor to supply and install power supply - 2 outlets at outdoor kitchen area. Install power supply for outdoor kitchen equipment .

13. Wood work
All wood decking to match existing wood same size and layout at existing decks for deck extension. All vertical posts to be pressure treated 4x4 wood. SSD for final wood sizing, anchors and concrete footing. See note 14 for painting/staining.

14. Painting
All visible existing & new wood to be painted same color as the main residence, but with a lighter tone. Color to be reviewed & approved by owner/landscape architect.
Paint manufacturer: Sherwin Williams; exterior paint quality "duration" to be applied on all new & existing wood to be painted. Prep all wood surfaces per paint manufacturer's recommendations.

15. Maintenance
The contractor shall maintain the project for 90 days (or as requested by owner) following the approval to begin the maintenance period. During the entire maintenance period, watering, cultivating, weeding, mowing, repair/tightening of stakes and ties, provision of supplemental water by hand in addition to irrigation system as necessary. At the end of the 90 day maintenance period all areas are to be free of weed and all plant material is to be in a healthy, thriving condition.

16. Guarantee
All construction, trees and shrubs by the landscape contractor and/or his subcontractors shall be guaranteed for (1) one year after beginning of maintenance period. The contractor shall replace, at no expense to the owner, any and all landscape materials that are in an unacceptable condition for time of use, and trees or shrubs that are dead or not in a vigorous, healthy growing condition; within two weeks of notification of such condition. Replacement shall be of the same kind and size as the originally specified item and shall be replaced as originally described on the drawings. The contractor shall not be held liable for loss of plant materials during the guarantee period due to vandalism, accidental causes or acts of neglect by others than the contractor, his agents and employees.

17. Clean up
At the end of each work day, at the inspection for substantial completion and before acceptance of project, clean paved areas that are dirtied or stained by construction operations, by sweeping or washing, and remove defacements and stains. Remove construction equipment, excess materials and tools. Haul from owners property the debris resulting from construction, and dispose of legally. Remove remaining temporary protection at time of acceptance by owner unless otherwise agreed.

Project Team

Client
NX Ventures

Architect
Trachtenberg Architects
2421 Fourth Street
Berkeley, CA 94710
510.649.1414

Landscape Architect
InsideOut Design, Inc.
6000 Harwood Ave
Oakland CA 94618
510.655.7674

Contractor
TBD

Location Map



Legend

(PA)	Planting Area
(TS)	Top of stair
(BS)	Bottom of stair
(TW)	Top of wall
(BW)	Bottom of wall
R	Radius
POB	Layout Starting Point
SIM	Similar
(TYP.)	Typical
SAD	See Architectural Drawings
EQ	Equal
O.C.	On Center
(E)	Existing
›	Align
	90 Degrees angle
(824.76)	Existing spot elevation
824.76	Proposed spot elevation
	Existing contour line
	Proposed contour line
	Property line
	Existing retaining wall to be demolished

Sheet Index

L0.0	Cover Sheet
L1.0	Streetscape
L2.0	Podium
L3.0	Roof Deck
L3.1	Usable Open Space + Planting Notes
I0.0	Irr. Notes & Legend
I1.0	Irr. Plan - Street
I2.0	Irr. Plan - Podium
I3.0	Irr. Plan - Roof Deck
I3.1	Irr. Plan - POC
I4.0	Irrigation Details
I5.0	Irrigation Details
I6.0	Irrigation Details
I7.0	Irrigation Details

Plant List

Index	Latin Name	Common Name	Size	WELO	CA Nat.	Notes
Street Trees						
CC	Carpinus caroliniana	American Hornbeam	24" Box	M		University Ave
LC	Lophostemon confertus	Brisbane Box	24" Box	VL, L		Berkeley Way
PA	Platanus acerifolia 'Columbia'	Columbia' London Plane Tree	24" Box	L, M		Shattuck Ave
Trees						
BE	Brahea edulis	Guadalupe Palm	24" Box	L		Roof
BR	Beaucarnea recurvata	Pony Tail Palm	15 Gallon	VL		Roof
CO	Cercis occidentalis	Western Redbud	24" Box	VL	X	Podium FTP
CR	Ceanothus 'Ray Hartman'	Ray Hartman California Lilac	24" Box	L, ES	X	Podium
HG	Heteromeles arbutifolia 'Davis Gold	Davis Gold Toyon	24" Box	VL, L	X	Podium FTP
PR	Phoenix roebelenii	Pygmy Date Palm	24" Box	L		Roof
WF	Washingtonia filifera	California Fan Palm	24" Box	L, ES	X	Roof
Shrubs						
AD*	Agave deserti	Desert Agave	5 Gallon	VL, L	X	Roof
AP	Arctostaphylos pajaroensis 'Paradise	Paradise Pajaro Manzanita	15 Gallon	VL	X	Roof
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	Podium, Street
CF	Comus sericea, C. Stolonifera 'Hedgerow Gc	Hedgerow Gold Redtwig Dogwooc	15 Gallon	M, ES	X	Podium
HW*	Hesperoyucca whipplei	Our Lord's Candle	5 Gallon	VL	X	Roof
OB*	Opuntia basilaris	Prickly Pear	5 Gallon	VL		Roof
SM	Sabal minor	Dwarf Palmetto	15 Gallon	L		Roof
YP*	Yucca pallida	Pale Leaf Yucca	5 Gallon	VL, L, ES		Roof
ZF	Zamia furfuracea	Cardboard Palm	5 Gallon	M		Roof
Groundcovers						
AM	Armeria maritima	Sea Pink	1 Gallon	M	X	Roof
BM	Baileya multiradiata	Desert Marigold	1 Gallon	VL	X	Roof
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	Street
CM	Coreopsis maritima	Sea Dahlia	1 Gallon	L	X	Roof
DF	Dudleya farinosa	Coast Live Forever	1 Gallon	VL	X	Podium
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	Street
Podium FTP** *(1143 sf)*						
AS	Achillea 'Salmon Beauty'	Salmon Beauty Yarrow	1 Gallon	VL, L	X	
BG	Bouteloua gracilis 'Blonde Ambition'	Blonde Ambition Blue Grama	1 Gallon	L	X	
CB	Ceanothus thyrsiflorus 'Cool Blue'	Cool Blue Mountain Lilac	15 Gallon	L	X	
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	
CP	Ceanothus pallidus 'Marie Simon'	Pink Flowering Ceanothus	15 Gallon	VL, L	X	
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	
EF	Eriogonum fasciculatum	California Buckwheat	5 Gallon	VL, L	X	
EG	Elymus glaucus	Blue Wild Rye	1 Gallon	L	X	
ID	Iris douglasiana	Douglas Iris	1 Gallon	M, ES	X	
JE	Juncus effusus	Soft Rush	1 Gallon	VL, H, ES	X	
JP	Juncus patens 'Elk Blue'	Elk Blue California Gray Rush	1 Gallon	L, M, ES	X	
RC	Rudbeckia californica	California Coneflower	1 Gallon	M	X	
SA	Symphoricarpos albus var. laevigatus	Upright Snowberry	5 Gallon	VL, L, M	X	
Podium Grate Walks *(5370 sf)*						
SD	Sedum divergens	Cascade Stonecrop	Flat	L, ES	X	
SO	Sedum oreganum	Oregon Stonecrop	Flat	L, ES	X	
SS	Sedum spathulifolium 'Cape Blanco'	Cape Blanco Sedum	Flat	L	X	

**To be located with 3' min. between edge of mature plant and walkways or planter edges.*
***Species selected per Stormwater C.3 Guidebook (Dalziel et. al.).*

Note: *At least 80% of all plantings will be California natives.*

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1998 SHATTUCK

1998 Shattuck Ave
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JOB: 0000

SHEET:

COVER SHEET, NOTES, AND LEGEND

L0.0









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LANDSCAPE PLAN AT STREETSCAPE

L1.0



Permeable grate with groundcover below
- Precedent: ASLA HQ Green Roof
-Mix of 3 shade-tolerant sedums





Maintenance corridor

FTP, typ.
1,306 SF total

Flexible seating

NOTE: FLOW-THROUGH PLANTER AREA TOTALS 1,306 SF; REQUIRED FTP AREA EQUALS MIN 4% OF BUILDING FOOTPRINT'S IMPERVIOUS SURFACE.

BUILDING FOOTPRINT = 26,208 SF
REQUIRED FTP = 26,208 SF X 0.04 = 1,049 SF
PROVIDED FTP = 1,306 SF

Bistro tables

Raised planter with patio trees and wood benches

UNIVERSITY AVE

BERKELEY WAY

Low planting in raised flow-through planters (FTPs)

Flowering tree
-'Davis Gold' Toyon

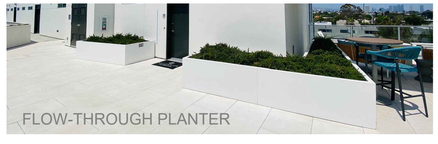
Small trees and accent plantings visible from street

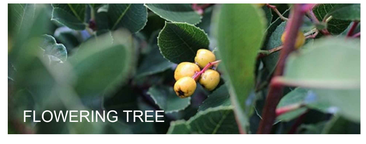
Podium seating overlooks ground-level plaza and parklet at Shattuck Ave

SHATTUCK AVE


PRECEDENT


VEGETATED GRATE


FLOW-THROUGH PLANTER


FLOWERING TREE

North

3/16"=1'-0"
0 2 4 8

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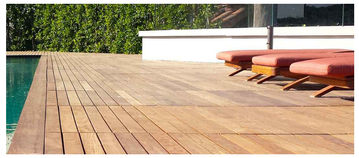
SECOND FLOOR PODIUM GARDENS

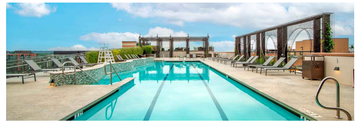
L2.0

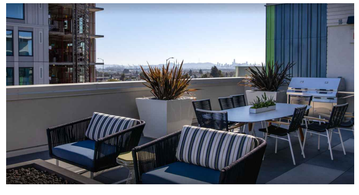


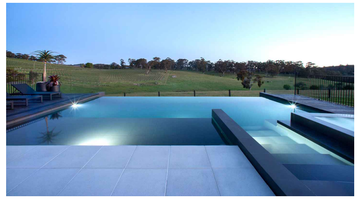


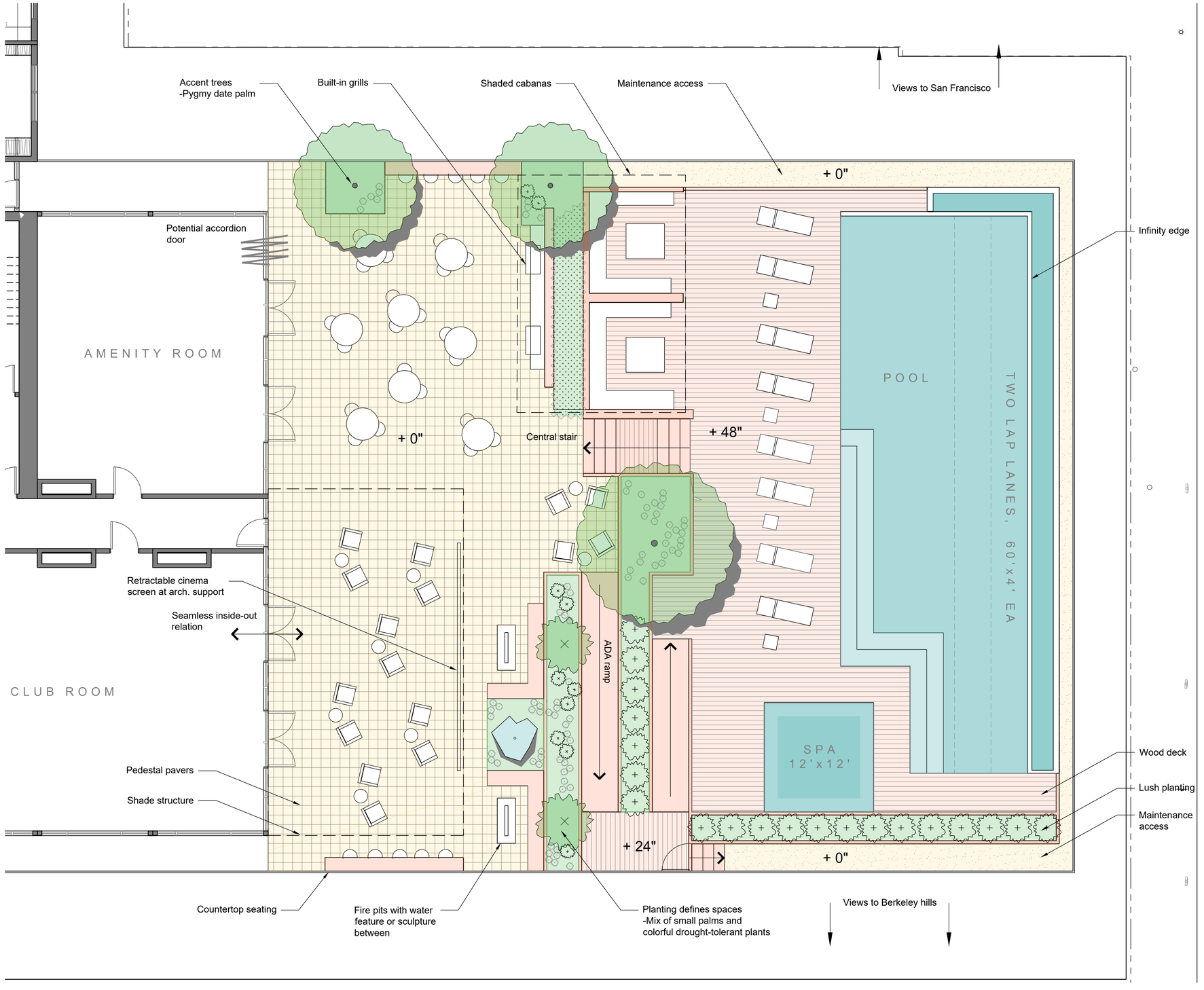












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1998 SHATTUCK

1998 Shattuck Ave
Berkeley, CA

03.01.2023 ZONING SUBMITTAL
06.23.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL
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JOB: 0000

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PLANTING NOTES

SEE COVER SHEET L0.0 FOR GENERAL NOTES

GENERAL PLANTING NOTES:

1. SOIL PREPARATION: THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINISH GRADING AND ALL PLANTING AREA DRAINAGE. POSITIVE DRAINAGE AWAY FROM THE BUILDING AS PER CITY CODES SHALL BE MAINTAINED. NO LOW SPOTS WHICH HOLD STANDING WATER WILL BE ACCEPTED.
   THE LANDSCAPE CONTRACTOR SHALL INCORPORATE SOIL PREPARATION AMENDMENT INTO PLANTING AREAS AS NOTED BELOW. WHERE ROTO-TILLING IS NOT POSSIBLE, INCORPORATE SOIL AMENDMENTS INTO TOP 6 INCHES WITH HAND TOOLS. AFTER INSTALLATION OF IRRIGATION SYSTEM, ALL PLANTING AREAS ARE TO BE FINE GRADED TO WITHIN 2 INCHES AND SLIGHTLY MOUNDED AWAY FROM EDGES OF TOP OF PLANTER, CURB, WALK, HEADER, ETC. AND RAKED SMOOTH WITH ALL ROCKS AND DEBRIS OVER 1-INCH IN DIAMETER REMOVED.

2. SOIL PREPARATION AMENDMENTS AND BACKFILL MIX: THE LANDSCAPE CONTRACTOR SHALL AMEND EXISTING SOIL PER THE SOILS REPORT. NATIVE SOIL IS PREFERRED.

3. TREE PLANTING: TREES SHALL BE PLANTED PER DETAIL ON PLAN. TREES SHALL TYPICALLY BE LOCATED A MINIMUM OF 3 1/2 FEET FROM CURBS, WALKS, HEADERS, BUILDINGS, AND OVERHEAD STRUCTURES WITHIN THE PROJECT. BACKFILL PER SOILS REPORT. THOROUGHLY WATER TREES IMMEDIATELY AFTER PLANTING.

4. SHRUB PLANTING: THE SHRUBS SHALL BE SPOTTED AS PER PLAN, SPOTTED AT THE SHOWN LOCATIONS, AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO THE DIGGING OF THE HOLES. SHRUB BACKFILL SHALL BE PER SOILS REPORT. THOROUGHLY WATER SHRUBS IMMEDIATELY AFTER PLANTING. DO NOT PLANT ANY SHRUB WITHIN 2 FEET OF ANY BUILDING WALL.

5. MAINTENANCE: THE CONTRACTOR SHALL MAINTAIN THE PROJECT FOR 90 DAYS (OR AS REQUESTED BY OWNER) FOLLOWING THE APPROVAL TO BEGIN THE MAINTENANCE PERIOD. DURING THE ENTIRE MAINTENANCE PERIOD, WATERING, CULTIVATING, WEEDING, MOWING, REPAIR/TIGHTENING OF STAKES AND TIES, RESTORATION OF BASINS, PROVISION OF SUPPLEMENTAL WATER BY HAND IN ADDITION TO IRRIGATION SYSTEM IS REQUIRED AS NECESSARY. NO PRE-EMERGENCE HERBICIDES SHALL BE APPLIED - HAND REMOVE WEEDS. ONLY ORGANIC FERTILIZERS SHALL BE APPLIED SUCH AS THOSE SPECIFIED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. AT THE END OF THE 90 DAY MAINTENANCE PERIOD ALL AREAS ARE TO BE WEED FREE AND ALL PLANT MATERIAL SHALL BE IN A HEALTHY, THRIVING CONDITION. INTEGRATED PEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED.

6. SUBSTITUTIONS: REQUESTS FOR PLANT SUBSTITUTIONS SHALL BE MADE TO THE LANDSCAPE ARCHITECT WITHIN 15 DAYS AFTER SIGNING OF CONTRACT.

7. GUARANTEE: ALL CONSTRUCTION, TREES AND SHRUBS BY THE LANDSCAPE CONTRACTOR AND/OR SUBCONTRACTORS SHALL BE GUARANTEED FOR (1) ONE YEAR AFTER START OF MAINTENANCE PERIOD. THE CONTRACTOR SHALL REPLACE, AT NO EXPENSE TO THE OWNER, ANY AND ALL LANDSCAPE MATERIALS THAT ARE IN AN UNACCEPTABLE CONDITION FOR TIME OF USE, AND TREES OR SHRUBS THAT ARE DEAD OR NOT IN A VIGOROUS, HEALTHY GROWING CONDITION, WITHIN TWO WEEKS OF NOTIFICATION OF SUCH CONDITION. REPLACEMENT SHALL BE OF THE SAME KIND AND SIZE AS THE ORIGINALLY SPECIFIED ITEM AND SHALL BE REPLACED AS ORIGINALLY DESCRIBED ON THE DRAWINGS. THE CONTRACTOR SHALL NOT BE HELD LIABLE FOR LOSS OF PLANT MATERIALS DURING THE GUARANTEE PERIOD DUE TO VANDALISM, ACCIDENTAL CAUSES OR ACTS OF NEGLECT BY OTHERS THAN THE CONTRACTOR, HIS AGENTS AND EMPLOYEES.

8. CLEAN UP: AT THE END OF EACH WORK DAY, AT THE INSPECTION FOR SUBSTANTIAL COMPLETION, AND BEFORE ACCEPTANCE OF PROJECT - CLEAN
PAVED AREAS THAT ARE DIRTIED OR STAINED BY CONSTRUCTION OPERATIONS BY SWEEPING OR WASHING, AND REMOVE DEFACEMENTS AND STAINS.
REMOVE CONSTRUCTION EQUIPMENT, EXCESS MATERIALS AND TOOLS. HAUL FROM OWNERS PROPERTY ANY DEBRIS RESULTING FROM CONSTRUCTION, AND DISPOSE OF IT LEGALLY. REMOVE REMAINING TEMPORARY PROTECTION AT TIME OF ACCEPTANCE BY OWNER UNLESS OTHERWISE AGREED.

9. FERTILIZERS: AVAILABLE FROM CALIFORNIA ORGANIC FERTILIZERS, INC. 1-800-269-5690 WWW.ORGANICAG.COM.

STREET TREE PROTECTION NOTES:

1. ALL TREE PROTECTION REQUIREMENTS AND RESTRICTIONS SHALL BE INCLUDED IN THE CONSTRUCTION NOTES AND PRINTED ON ALL COPIES OF THE PLANS.

a) INCLUDE THE NAME AND PHONE NUMBER OF THE PARTY THAT WILL MONITOR THE SITE AND ENSURE THE TREE PROTECTION MEASURES ARE BEING FOLLOWED; AND WHAT THE MONITORING SCHEDULE WILL BE: **NAME / PHONE / SCHEDULE**

b) INSTALL 6 FOOT CHAIN-LINK FENCING TO PROTECT THE AREA WITHIN THE DRIP-LINE OF ANY PROTECTED TREE IN THE DEVELOPMENT AREA. FENCING SHALL BE MOUNTED TO POSTS THAT ARE DRIVEN INTO THE GROUND. WHERE THIS IS NOT POSSIBLE BECAUSE OF EXISTING STRUCTURES, TREE ROOTS, OR OTHER OBSTACLES, CHAIN-LINK PANELS MOUNTED TO STANCHIONS AND CONNECTED TO EACH OTHER MAY BE APPROVED. IN AREAS WHERE DIFFICULT TERRAIN MAKES THIS IMPRACTICAL, ORANGE CONSTRUCTION FENCING MAY BE APPROVED.

c) ALL FENCING SHALL HAVE SIGNAGE STATING THE REQUIREMENTS AND RESTRICTIONS, AND THE CONTACT INFORMATION FOR THE PROJECT ARBORIST.

d) WHEN ANY APPROVED CONSTRUCTION ACTIVITY WILL OCCUR WITHIN THE DRIP LINE OF A PROTECTED TREE THAT IS NOT SURROUNDED BY PROTECTIVE FENCING, THE TRUNK SHALL BE PROTECTED BY WRAPPING IT WITH STRAW TUBES (WATTLE) OR VERTICAL WOOD SLATS (EX. 2X4), UP TO A MINIMUM OF 8 FEET FROM GRADE (SEE FIGURE 1, PAGE 6). SLATS SHALL BE ANGLED TO PROTECT THE ROOT FLARE AT THE BASE OF THE TREE; AND CLOSED CELL FOAM OR EQUIVALENT MATERIAL SHALL BE USED TO PROTECT THE TRUNK OF THE TREE WHERE IT CONTACTS THE SLATS. LATERAL BRANCHES BELOW 8 FEET SHALL ALSO BE PROTECTED. IN ADDITION, THE AREA SHALL BE COVERED WITH A 6 INCH LAYER OF MULCH TOPPED WITH 3/4 INCH PLYWOOD THAT IS FASTENED TOGETHER. IF ANY LARGE OR MOTORIZED EQUIPMENT (MINI EXCAVATOR, BOBCAT®, POWERED WHEELBARROW) WILL TRAVEL OVER THIS AREA, THE PLYWOOD MUST BE A MINIMUM OF 1 INCH AND ADEQUATE FOR THE WEIGHT OF THE EQUIPMENT THAT WILL TRAVEL OVER IT. IF LARGER EQUIPMENT (BACKHOE, TRACTOR) WILL BE USED, CONSULT THE CITY ARBORIST. ***CONSTRUCTION ACTIVITY REFERS TO ANY MOVEMENT OF PEOPLE, TOOLS, OR EQUIPMENT; OR STORAGE OF ANY TOOLS, EQUIPMENT, OR SUPPLIES.***

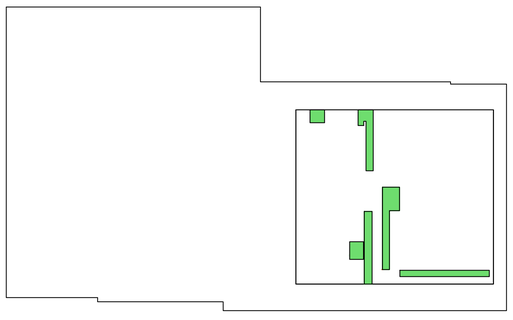
f) LOCATE AND EXPOSE ANY ROOTS 2 INCHES IN DIAMETER OR GREATER THAT MAY NEED TO BE PRUNED TO FACILITATE THE PROJECT. THIS INCLUDES ANY TRENCHING THAT WILL BE DONE AS PART OF FOUNDATION OR UTILITY INSTALLATION. CONTACT THE CITY ARBORIST IN ADVANCE TO LESSEN THE AMOUNT OF TIME THAT THE ROOTS WILL BE EXPOSED. IF ROOTS MUST BE LEFT EXPOSED FOR MORE THAN THREE DAYS, CONSULT THE CITY ARBORIST. **NOTE:** THE 2 INCH DIAMETER THRESHOLD FOR ROOTS IS A GUIDELINE THAT MAY BE ADJUSTED BY THE CITY ARBORIST DEPENDING ON THE SIZE AND CONDITION OF THE TREE, AND THE LOCATION OF THE ROOTS. THE CITY ARBORIST MAY INCREASE THE TPZ, OR IMPOSE OTHER RESTRICTIONS, WHEN THE DRIPLINE OF A TREE HAS BEEN ALTERED BY PRUNING OR UNUSUAL GROWTH PATTERNS.

g) NO STORAGE OF BUILDING MATERIALS, REFUSE, EXCAVATED SPOILS, OR DUMPING OF POISONOUS MATERIALS, IS PERMITTED WITHIN THE DRIP LINE OF ANY PROTECTED TREE. POISONOUS MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, PAINT, PETROLEUM PRODUCTS, CONCRETE OR STUCCO MIX, DIRTY WATER, OR ANY OTHER MATERIAL WHICH MAY BE DELETERIOUS TO TREE HEALTH.

STREET TREE PLANTING NOTES:

1. FOR NEW PLANTING:
   a. THE CITY ARBORIST SHALL BE NOTIFIED, BY CALLING (510) 981-6660, PRIOR TO THE DELIVERY OF THE TREES FOR INSPECTION OF THEIR SIZE AND STRUCTURE.
   b. EACH TREE SHALL BE PROPERLY PLANTED AT OR JUST BELOW GRADE (<1"). SOIL AMENDMENT IS NOT RECOMMENDED, AND NATIVE SOIL IS PREFERRED. NO CONSTRUCTION RUBBLE OR NON-ORGANIC MATERIAL SHALL BE WITHIN THE TREE WELL.
   c. THE SURROUNDING SOIL OUTSIDE THE CONTAINER (ROOT BALL) SHOULD BE LIGHTLY COMPACTED TO ABOUT 4 INCHES BELOW GRADE WITH THE ROOT BALL HIGHER THAN THAT.
   d. 2 TO 2.5 INCHES OF BASE ROCK SHOULD BE APPLIED AROUND THE ROOT BALL LEAVING 1.5 TO 2 INCHES LEFT FOR THE MATERIAL.
   e. 15G CONTAINERS ARE APPROXIMATELY 15-16 INCHES IN DIAMETER AND THE MATERIAL SHOULD BE APPLIED TO THE APPROXIMATE EDGE OF THE ROOT BALL WITH THE TOP GRADE OF THE ROOT BALL UP TO 1 INCH BELOW THE TOP OF THE MATERIAL THAT WILL BE APPLIED.
   f. EACH NEW TREE SHALL HAVE AUTOMATIC IRRIGATION INCLUDING TWO TREE BUBBLERS THAT CURVE OVER THE TOP OF THE TREES' ROOT BALL AND PROVIDE A MINIMUM OF 20 GALLONS PER WEEK BETWEEN MARCH 15 AND OCTOBER 15 FOR THE FIRST THREE YEARS. LARGER TREES MAY REQUIRE ADDITIONAL BUBBLERS. THE BUBBLERS SHOULD BE LOCATED ON TOP OF THE ROOT BALL WITHIN THIS 15-16 INCH CIRCLE AND NOT BE COVERED WITH MATERIAL.
   g. TREES THAT DIE WITHIN THE FIRST THREE YEARS MUST BE REPLACED AT THE PROPERTY OWNER'S EXPENSE.

USEABLE OPEN SPACE CALCULATIONS



ROOF DECK TOTAL USABLE AREA = 6,882 SF

(ROOF DECK HARDSCAPED = 6,297 SF)

ROOF DECK LANDSCAPED = 585 SF

ROOF DECK LANDSCAPED % = 9%

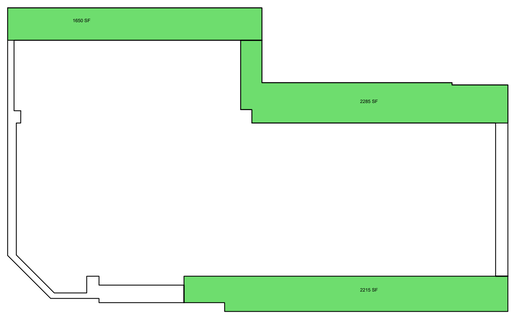
ROOF DECK USEABLE AREA (NTS)

1998 SHATTUCK TOTAL USABLE AREA = 13,032 SF

(TOTAL HARDSCAPED AREA = 6,297 SF)

TOTAL LANDSCAPED AREA = 6,735 SF

TOTAL LANDSCAPED AREA % = 52%



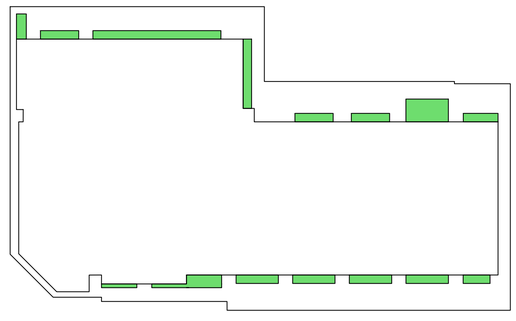
PODIUM TOTAL USABLE AREA = 6,150 SF

(PODIUM HARDSCAPED = 0 SF)

PODIUM LANDSCAPED = 6,150 SF

PODIUM LANDSCAPED % = 100%

PODIUM USEABLE AREA (NTS)



1998 SHATTUCK TOTAL ROOF AREA = 26,208 SF

4% FLOW-THROUGH PLANTER AREA NEEDED = 1,049 SF

CURRENT FLOW-THROUGH PLANTER AREA = 1,306 SF
(AT PODIUM)

FLOW-THROUGH PLANTER AREA (NTS)

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USABLE OPEN SPACE CALCULATIONS + PLANTING NOTES

L3.1

IRRIGATION NOTES

1. THESE IRRIGATION DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. ALL PIPING, VALVES, AND OTHER IRRIGATION COMPONENTS MAY BE SHOWN WITHIN PAVED AREAS FOR GRAPHIC CLARITY ONLY AND ARE TO BE INSTALLED WITHIN PLANTING AREAS. DUE TO THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, SLEEVES, CONDUIT, AND OTHER ITEMS WHICH MAY BE REQUIRED. INVESTIGATE THE STRUCTURAL AND FINISHED CONDITION AFFECTING THE CONTRACT WORK INCLUDING OBSTRUCTIONS, GRADE DIFFERENCES OR AREA DIMENSIONAL DIFFERENCES. IN THE EVENT OF FIELD DISCREPANCY WITH CONTRACT DOCUMENTS, PLAN THE INSTALLATION WORK ACCORDINGLY BY NOTIFICATION AND APPROVAL OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND ACCORDING TO THE CONTRACT SPECIFICATIONS. NOTIFY AND COORDINATE IRRIGATION CONTRACT WORK WITH APPLICABLE CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE, CONDUIT OR SLEEVES THROUGH OR UNDER WALLS, ROADWAYS, PAVING AND STRUCTURES BEFORE CONSTRUCTION. IN THE EVENT THESE NOTIFICATIONS ARE NOT PERFORMED, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR REQUIRED REVISIONS.

2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE; THE UNIFORM PLUMBING CODE, PUBLISHED BY THE WESTERN PLUMBING OFFICIALS ASSOCIATION; AND OTHER STATE OR LOCAL LAWS OR REGULATIONS. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR REGULATIONS. THE CONTRACTOR SHALL FURNISH WITHOUT ANY EXTRA CHARGE, ANY ADDITIONAL MATERIAL AND LABOR WHEN REQUIRED BY THE COMPLIANCE WITH THESE CODES AND REGULATIONS.

3. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF IRRIGATION SYSTEM WITH LAYOUT AND INSTALLATION OF THE PLANT MATERIALS TO INSURE THAT THERE WILL BE COMPLETE AND UNIFORM IRRIGATION COVERAGE OF PLANTING IN ACCORDANCE WITH THESE DRAWINGS, AND CONTRACT DOCUMENTS. THE IRRIGATION LAYOUT SHALL BE CHECKED BY THE CONTRACTOR AND OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO CONSTRUCTION TO DETERMINE IF ANY CHANGES, DELETIONS, OR ADDITIONS ARE REQUIRED. IRRIGATION SYSTEM SHALL BE INSTALLED AND TESTED PRIOR TO INSTALLATION OF PLANT MATERIAL.

4. THE INTENT OF THIS IRRIGATION SYSTEM IS TO PROVIDE THE MINIMUM AMOUNT OF WATER REQUIRED TO SUSTAIN GOOD PLANT HEALTH.

5. IT IS THE RESPONSIBILITY OF THE MAINTENANCE CONTRACTOR AND/OR OWNER TO PROGRAM THE IRRIGATION CONTROLLER(S) TO PROVIDE THE MINIMUM AMOUNT OF WATER NEEDED TO SUSTAIN GOOD PLANT HEALTH. THIS INCLUDES MAKING ADJUSTMENTS TO THE PROGRAM FOR SEASONAL WEATHER CHANGES, PLANT MATERIAL, WATER REQUIREMENTS, MOUNDS, SLOPES, SUN, SHADE AND WIND EXPOSURE.

6. IT IS THE RESPONSIBILITY OF A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120 VOLT A.C. (2.5 AMP DEMAND PER CONTROLLER) ELECTRICAL SERVICE TO THE CONTROLLER LOCATION(S). IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO COORDINATE THE ELECTRICAL SERVICE STUB-OUT TO THE CONTROLLER(S). PROVIDE PROPER GROUNDING PER CONTROLLER MANUFACTURER'S INSTRUCTIONS AND IN ACCORDANCE WITH LOCAL CODES.

7. PROVIDE EACH CONTROLLER WITH ITS OWN GROUND ROD. SEPARATE THE GROUND RODS BY A MINIMUM OF EIGHT FEET. THE GROUND ROD SHALL BE AN EIGHT FOOT LONG BY 5/8" DIAMETER U.L. APPROVED COPPER CLAD ROD. INSTALL NO MORE THAN 6" OF THE GROUND ROD ABOVE FINISH GRADE. CONNECT #6 GAUGE WIRE WITH A U.L. APPROVED GROUND ROD CLAMP TO ROD AND BACK TO GROUND SCREW AT BASE OF CONTROLLER WITH APPROPRIATE CONNECTOR. MAKE THIS WIRE AS SHORT AS POSSIBLE, AVOIDING KINKS OR BENDING.

8. INSTALL NEW BATTERIES IN THE IRRIGATION CONTROLLER(S) TO RETAIN PROGRAM IN MEMORY DURING TEMPORARY POWER FAILURES. USE QUANTITY, TYPE AND SIZE REQUIRED AS PER CONTROLLER MANUFACTURER'S INSTRUCTIONS.

9. SCHEDULE A MEETING WHICH INCLUDES REPRESENTATIVES OF THE IRRIGATION CONTROLLER MANUFACTURER, THE MAINTENANCE CONTRACTOR, THE OWNER AND THE IRRIGATION CONTRACTOR AT THE SITE FOR INSTRUCTION ON THE PROPER PROGRAMMING AND OPERATION OF THE IRRIGATION CONTROLLER.

10. PROVIDE EACH IRRIGATION CONTROLLER WITH ITS OWN INDEPENDENT LOW VOLTAGE COMMON GROUND WIRE.

11. IRRIGATION CONTROL WIRES: SOLID COPPER WITH U.L. APPROVAL FOR DIRECT BURIAL IN GROUND. COMMON GROUND WIRE: SIZE #12-1 WIRE WITH A WHITE INSULATING JACKET. CONTROL WIRE SERVICING REMOTE CONTROL VALVES: SIZE #14-1 WIRE WITH INSULATING JACKET OF COLOR OTHER THAN WHITE. SPLICES SHALL BE MADE WITH 3M-DBY SEAL PACKS OR APPROVED EQUAL.

12. INSTALL TWO SPARE CONTROL WIRES OF A DIFFERENT COLOR ALONG THE ENTIRE MAIN LINE. LOOP 36" EXCESS WIRE INTO EACH SINGLE VALVE BOX AND INTO ONE VALVE BOX IN EACH GROUP OF VALVES.

13. SPLICING OF LOW VOLTAGE WIRES IS PERMITTED IN VALVE BOXES ONLY. LEAVE A 36" LONG, 1" DIAMETER COIL OF EXCESS WIRE AT EACH SPLICE AND A 36" LONG EXPANSION LOOP EVERY 100 FEET ALONG WIRE RUN. TAPE WIRES TOGETHER EVERY TEN FEET. DO NOT TAPE WIRES TOGETHER WHERE CONTAINED WITHIN SLEEVING OR CONDUIT.

14. INSTALL GREEN PLASTIC VALVE BOXES WITH BOLT DOWN, NON HINGED COVER MARKED "IRRIGATION CONTROL VALVE". BOX BODY SHALL HAVE KNOCK OUTS. ACCEPTABLE VALVE BOX MANUFACTURER'S INCLUDE NDS, CARSON OR APPROVED EQUAL.

15. INSTALL REMOTE CONTROL VALVE BOXES 12" FROM WALK, CURB, BUILDING OR LANDSCAPE FEATURE. AT MULTIPLE VALVE BOX GROUPS, INSTALL EACH BOX AN EQUAL DISTANCE FROM THE WALK, CURB, BUILDING OR LANDSCAPE FEATURE AND PROVIDE 12" BETWEEN BOX TOPS. ALIGN THE SHORT SIDE OF RECTANGULAR VALVE BOXES PARALLEL TO WALK, CURB, BUILDING OR LANDSCAPE FEATURE.

16. VALVE LOCATIONS SHOWN ARE DIAGRAMMATIC. INSTALL IN GROUND COVER/SHRUB AREAS (AVOID LAWN AREAS WHERE POSSIBLE).

17. THE CONTRACTOR SHALL LABEL CONTROL LINE WIRE AT EACH REMOTE CONTROL VALVE WITH A 2 1/4" X 2 3/4" POLYURETHANE I.D. TAG, INDICATING IDENTIFICATION NUMBER OF VALVE (CONTROLLER AND STATION NUMBER). ATTACH LABEL TO CONTROL WIRE. THE CONTRACTOR SHALL PERMANENTLY STAMP ALL VALVE BOX LIDS WITH APPROPRIATE IDENTIFICATION AS NOTED IN CONSTRUCTION DETAILS.

18. FLUSH AND ADJUST IRRIGATION OUTLETS AND NOZZLES FOR OPTIMUM PERFORMANCE AND TO PREVENT OVER SPRAY ONTO WALKS, ROADWAYS, AND/OR BUILDINGS. SELECT THE BEST DEGREE OF THE ARC AND RADIUS TO FIT THE EXISTING SITE CONDITIONS AND THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH CONTROL ZONE.

19. SET SPRINKLER HEADS PERPENDICULAR TO FINISH GRADE.

20. LOCATE BUBBLERS ON UPHILL SIDE OF PLANT OR TREE.

21. INSTALL A HUNTER HCV SERIES, KBI CV SERIES, OR APPROVED EQUAL SPRING LOADED CHECK VALVE IN SPRINKLER RISER ASSEMBLIES WHERE LOW OUTLET DRAINAGE WILL CAUSE EROSION AND/OR EXCESS WATER.

22. WHERE IT IS NECESSARY TO EXCAVATE ADJACENT TO EXISTING TREES, USE CAUTION TO AVOID INJURY TO TREES AND TREE ROOTS. EXCAVATE BY HAND IN AREAS WHERE TWO (2) INCH AND LARGER ROOTS OCCUR. BACK FILL TRENCHES ADJACENT TO TREE WITHIN TWENTY-FOUR (24) HOURS. WHERE THIS IS NOT POSSIBLE, SHADE THE SIDE OF THE TRENCH ADJACENT TO THE TREE WITH WET BURLAP OR CANVAS.

23. NOTIFY LOCAL JURISDICTIONS FOR INSPECTION AND TESTING OF INSTALLED BACKFLOW PREVENTION DEVICE.

24. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE SHOWN ON THE IRRIGATION DRAWINGS. VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE.

25. IRRIGATION DEMAND: REFER TO PLANS.

26. THE EXISTING MAIN LINE SHOWN ON THE DRAWINGS IS DIAGRAMMATIC. VERIFY AND LOCATE EXISTING MAIN LINE IN FIELD. REPORT TO ARCHITECT IN WRITING ANY DEVIATION OF EXISTING MAIN LINE LOCATION FROM THAT SHOWN ON THE DRAWINGS.

27. PIPE SIZING SHOWN ON THE DRAWINGS IS TYPICAL. AS CHANGES IN LAYOUT OCCUR DURING STAKING AND CONSTRUCTION THE SIZE MAY NEED TO BE ADJUSTED ACCORDINGLY.

28. PIPE THREAD SEALANT COMPOUND SHALL BE RECTOR SEAL #5.

29. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MINOR CHANGES IN THE IRRIGATION LAYOUT DUE TO OBSTRUCTIONS NOT SHOWN ON THE IRRIGATION DRAWINGS SUCH AS LIGHTS, FIRE HYDRANTS, SIGNS, ELECTRICAL ENCLOSURES, ETC.

30. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CHANGES IN THE IRRIGATION LAYOUT AND VALVE ZONING DUE TO VARIATIONS IN THE EXISTING SITE CONDITIONS SUCH AS EXPOSURE FROM BUILDINGS, TRELLISES, TREES, ETC., AS WELL AS SLOPE AND SOIL CONDITIONS. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND IRRIGATION CONSULTANT OF THE PROPOSED CHANGES PRIOR TO INSTALLATION FOR APPROVAL.

31. WHEN WORK OF THIS SECTION HAS BEEN COMPLETED AND SUCH OTHER TIMES AS MAY BE DIRECTED, REMOVE ALL TRASH, DEBRIS, SURPLUS MATERIALS AND EQUIPMENT FROM SITE.

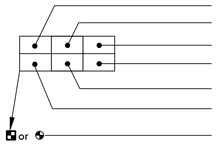
32. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLEMENTAL HAND WATERING OF ALL PLANT MATERIAL WITHIN DRIPLINE AREAS UNTIL THE PLANTS ARE SUFFICIENTLY ESTABLISHED.

33. VERIFY LOCATIONS OF ALL IRRIGATION COMPONENTS INSTALLED WITHIN A VALVE BOX WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. DO NOT INSTALL UNTIL LANDSCAPE ARCHITECT PROVIDES ACCEPTABLE LOCATIONS.

Irrigation Consultant:
Russell D. Mitchell Associates, Inc.
2760 Camino Diablo
Walnut Creek, CA 94597
tel 925.939.3985 ♦ fax 925.932.5671
www.rmairrigation.com

IRRIGATION LEGEND

SYMBOL	MODEL NUMBER	DESCRIPTION	NOZZLE GPM	OPERATING PSI	OPERATING RADIUS (FEET)
	PCB-25	HUNTER BUBBLER (SHRUB)	0.25	30	TRICKLE
■	PCB-25	HUNTER BUBBLER (TREE) MIN. 2 PER TREE. REFER TO BUBBLER DETAIL FOR QUANTITY OF BUBBLERS PER TREE SIZE.	0.25	30	TRICKLE
	WLT-0500-T	NDS SCH 40 BALL VALVE OR APPROVED EQUAL			
	ECO-ID	HUNTER ECO-INDICATOR			
	ICV-101/AS-40	HUNTER REMOTE CONTROL VALVE WITH 40 PSI PRESSURE REGULATOR			
	ICZ-101-40	HUNTER REMOTE CONTROL VALVE WITH A 40 PSI PRESSURE REGULATOR AND A 1" FILTER.			
	QB44RCAR10	BUCKNER 1" TWO-PIECE QUICK COUPLING VALVE (ANTI-ROTATION)			
	T-FP600A-LF-1"	NIBCO 1" BRASS BALL VALVE			
MV	WT-MV-100G-SNO	WeatherTRAK 1" BRASS MASTER VALVE (NORMALLY OPEN)			
FS	WTFLOW-HD-P-100	WeatherTRAK 1" FLOW SENSOR			
	975XL2SEU-1"	WILKINS REDUCED PRESSURE BACKFLOW ASSEMBL.			
SM	MODEL 55	BADGER SUB WATER METER			
A	WTLC-C-12-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 12 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			
B	WTLC-C-6-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 6 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			



CONTROLLER AND STATION NUMBER
REMOTE CONTROL VALVE SIZE (IN INCHES)
FLOW (GPM)
WATER USE CLASSIFICATION OF ZONE
APPLICATION RATE (IN/HR) or DRIPLINE SPACING
AREA (SQ. FT.)
ASSOCIATED REMOTE CONTROL VALVE

MAIN LINE: 1.25" THROUGHOUT: 1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 18" COVER.

LATERAL LINE: 3/4" AND LARGER: 1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

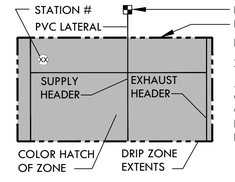
DRIPLINE LATERAL LINE: 3/4" AND LARGER: 1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

SLEEVING: SCHEDULE 40 PVC PLASTIC PIPE. COVER TO BE AS INDICATED IN SPECIFICATIONS OR AS INDICATED ABOVE FOR PIPE DEPTH OF COVER.

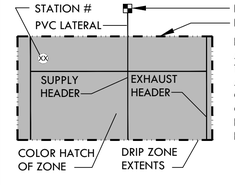
CU — CU — CU

MAIN LINE: 1.25" THROUGHOUT: TYPE 'K' COPPER PIPE WITH WROUGHT FITTINGS. SHOWN FOR REFERENCE ONLY, SEE PLUMBING PLANS FOR ROUTING THROUGH STRUCTURE.

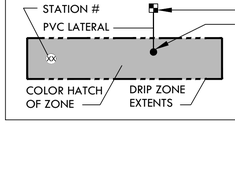
ELECTRICAL CONDUIT: SHOWN FOR REFERENCE ONLY, SEE ELECTRICAL PLANS FOR ROUTING THROUGH STRUCTURE.



DRIPLINE REMOTE CONTROL VALVE
DRIP ZONE:
HUNTER HDL SERIES DRIPLINE WITH BUILT IN PRESSURE COMPENSATION AND CHECK VALVE, PART #HDL-06-12-250-CV. USE PLD FITTINGS. TUBING TO BE INSTALLED 4" BELOW GRADE IN A 12" O.C. GRID ACCORDING TO DETAILS. SIZE EXHAUST HEADERS AS FOLLOWS: 1": 0-10 GPM, 1.25": 11-20 GPM. ALL EXHAUST HEADERS SHALL BE 1" SCH 40 PVC OR 1" SCH 40 FLEXIBLE PVC. USE SCH. 40 PVC SOLVENT WELD FITTINGS. EXTEND PVC HEADERS TO THE ENDS OF ALL DRIP ZONES TO BALANCE FLOW IF REQUIRED. SEE DETAILS FOR FURTHER INFORMATION.



DRIPLINE REMOTE CONTROL VALVE
DRIP ZONE:
HUNTER HDL SERIES DRIPLINE WITH BUILT IN PRESSURE COMPENSATION AND CHECK VALVE, PART #HDL-06-12-250-CV. USE PLD FITTINGS. TUBING TO BE INSTALLED 4" BELOW GRADE IN A 8" O.C. GRID ACCORDING TO DETAILS. SIZE EXHAUST HEADERS AS FOLLOWS: 1": 0-10 GPM, 1.25": 11-20 GPM. ALL EXHAUST HEADERS SHALL BE 1" SCH 40 PVC OR 1" SCH 40 FLEXIBLE PVC. USE SCH. 40 PVC SOLVENT WELD FITTINGS. EXTEND PVC HEADERS TO THE ENDS OF ALL DRIP ZONES TO BALANCE FLOW IF REQUIRED. SEE DETAILS FOR FURTHER INFORMATION.



DRIPLINE REMOTE CONTROL VALVE
APPROXIMATE CONNECTION POINT BETWEEN DRIPLINE TUBING AND PVC SUPPLY WHEN DRIP ZONE IS LESS THAN 3 GPM AND NO PVC SUPPLY/EXHUST HEADERS ARE NEEDED. REFER TO DRIPLINE TUBING CONNECTION DETAIL FOR MORE INFORMATION.

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JOB: 0000

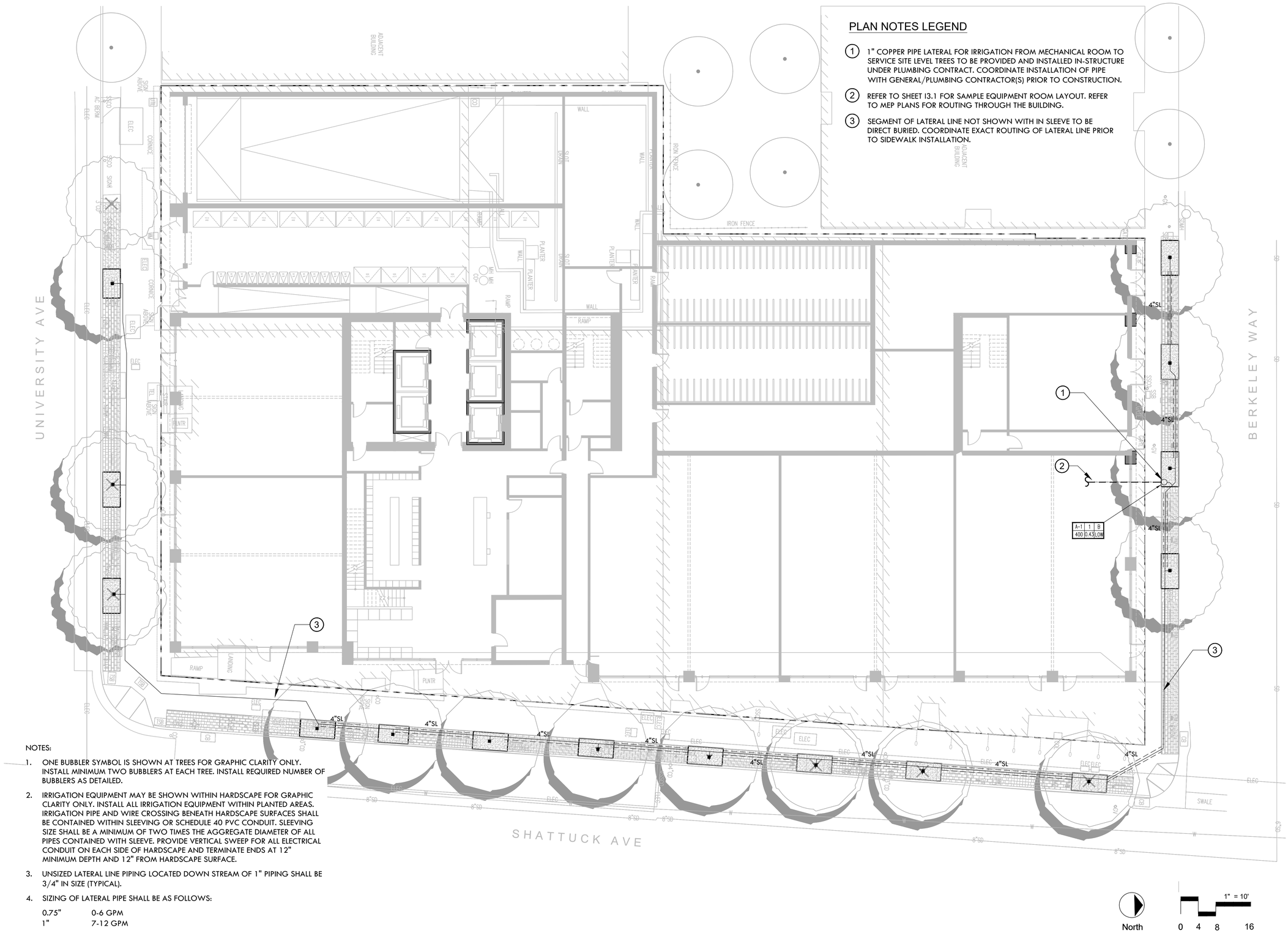
SHEET:

IRRIGATION NOTES & LEGEND

I0.0

PLAN NOTES LEGEND

1. 1" COPPER PIPE LATERAL FOR IRRIGATION FROM MECHANICAL ROOM TO SERVICE SITE LEVEL TREES TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
2. REFER TO SHEET I3.1 FOR SAMPLE EQUIPMENT ROOM LAYOUT. REFER TO MEP PLANS FOR ROUTING THROUGH THE BUILDING.
3. SEGMENT OF LATERAL LINE NOT SHOWN WITH IN SLEEVE TO BE DIRECT BURIED. COORDINATE EXACT ROUTING OF LATERAL LINE PRIOR TO SIDEWALK INSTALLATION.



NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. IRRIGATION EQUIPMENT MAY BE SHOWN WITHIN HARDSCAPE FOR GRAPHIC CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT WITHIN PLANTED AREAS. IRRIGATION PIPE AND WIRE CROSSING BENEATH HARDSCAPE SURFACES SHALL BE CONTAINED WITHIN SLEEVING OR SCHEDULE 40 PVC CONDUIT. SLEEVING SIZE SHALL BE A MINIMUM OF TWO TIMES THE AGGREGATE DIAMETER OF ALL PIPES CONTAINED WITH SLEEVE. PROVIDE VERTICAL SWEEP FOR ALL ELECTRICAL CONDUIT ON EACH SIDE OF HARDSCAPE AND TERMINATE ENDS AT 12" MINIMUM DEPTH AND 12" FROM HARDSCAPE SURFACE.
3. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
4. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

0.75"	0-6 GPM
1"	7-12 GPM

North

1" = 10'

0 4 8 16

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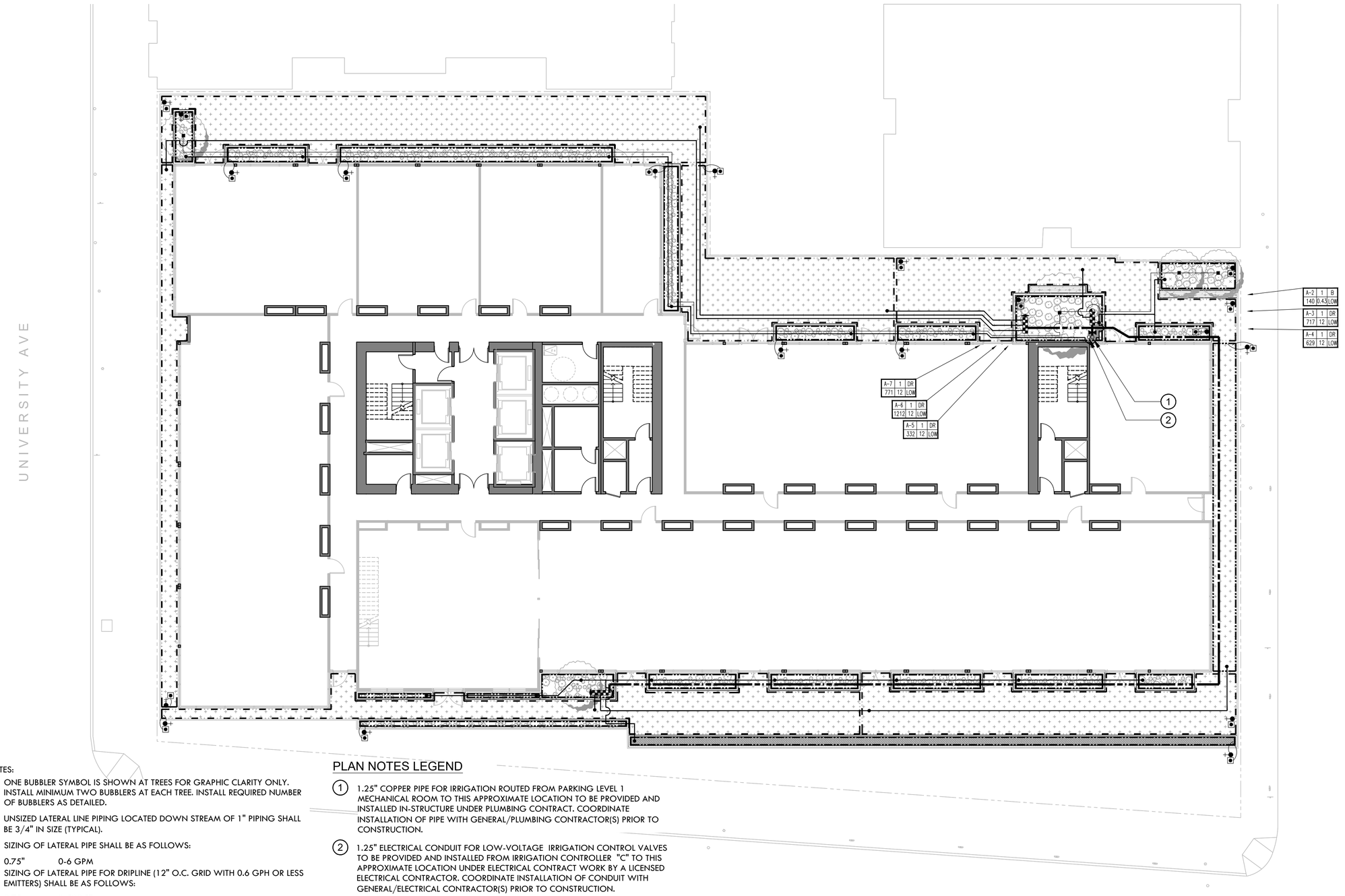
JOB: 0000

SHEET:

IRRIGATION PLAN AT STREETSCAPE ALT A

L1.0



NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
3. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

   0.75" 0-6 GPM
4. SIZING OF LATERAL PIPE FOR DRIPLINE (12" O.C. GRID WITH 0.6 GPH OR LESS EMITTERS) SHALL BE AS FOLLOWS:

   0.75 0-500 FT
   1" 501-1100 FT

PLAN NOTES LEGEND

(1) 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.

(2) 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

North

3/16"=1'-0"
0 2 4 8

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JOB: 0000

SHEET:

IRRIGATION PLAN
SECOND FLOOR
PODIUM GARDENS

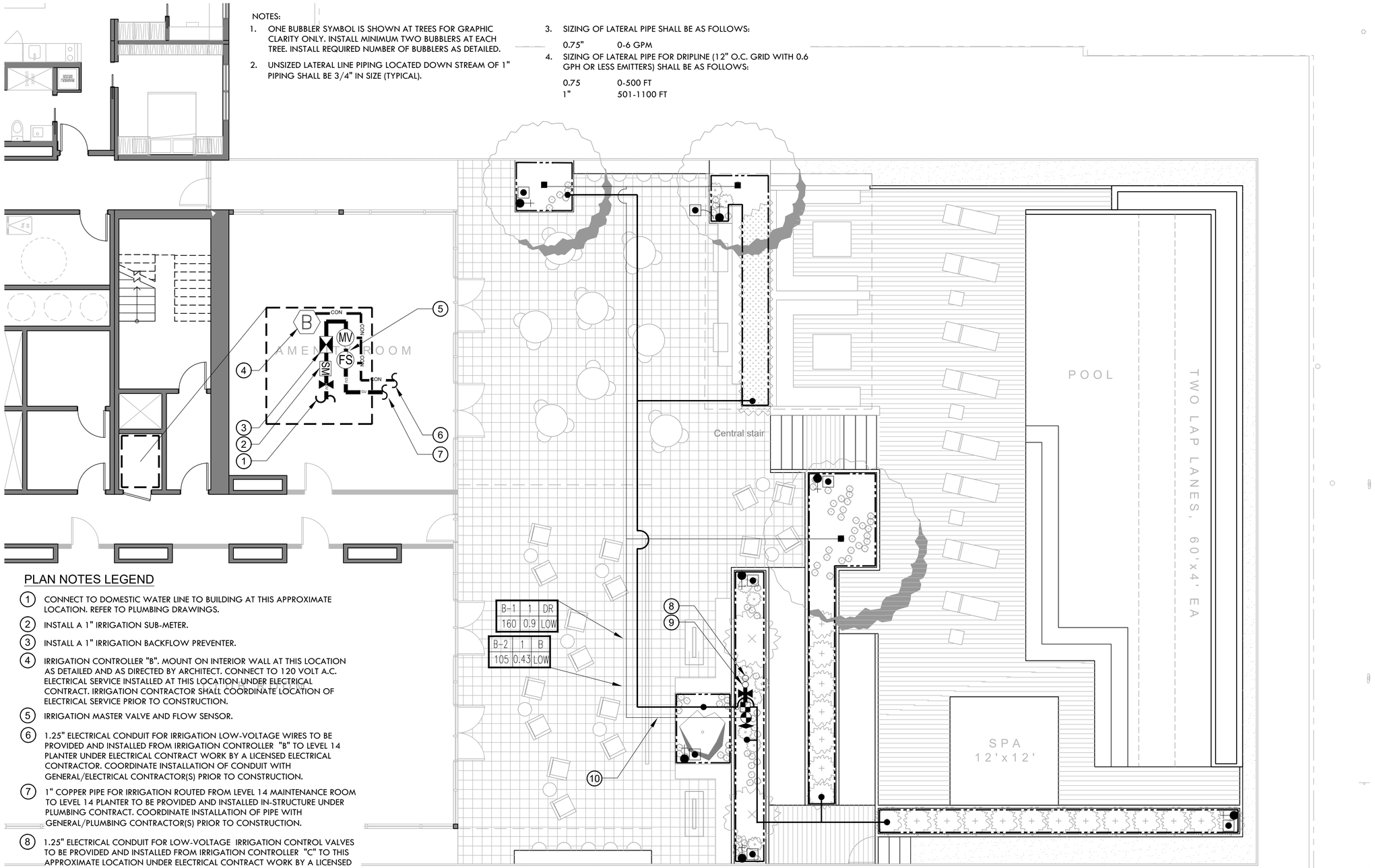
L2.0

NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
3. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

   0.75" 0-6 GPM
4. SIZING OF LATERAL PIPE FOR DRIPLINE (12" O.C. GRID WITH 0.6 GPH OR LESS EMITTERS) SHALL BE AS FOLLOWS:

   0.75 0-500 FT
   1" 501-1100 FT



PLAN NOTES LEGEND

1. CONNECT TO DOMESTIC WATER LINE TO BUILDING AT THIS APPROXIMATE LOCATION. REFER TO PLUMBING DRAWINGS.
2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION CONTROLLER "B". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
5. IRRIGATION MASTER VALVE AND FLOW SENSOR.
6. 1.25" ELECTRICAL CONDUIT FOR IRRIGATION LOW-VOLTAGE WIRES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "B" TO LEVEL 14 PLANTER UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM LEVEL 14 MAINTENANCE ROOM TO LEVEL 14 PLANTER TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
9. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
10. ALL IRRIGATION LINES SHALL BE ROUTED UNDER PEDESTAL PAVERS.

27 FEB 2023

ALT E - REVISED

North

3/16"=1'-0"
0 2 4 8

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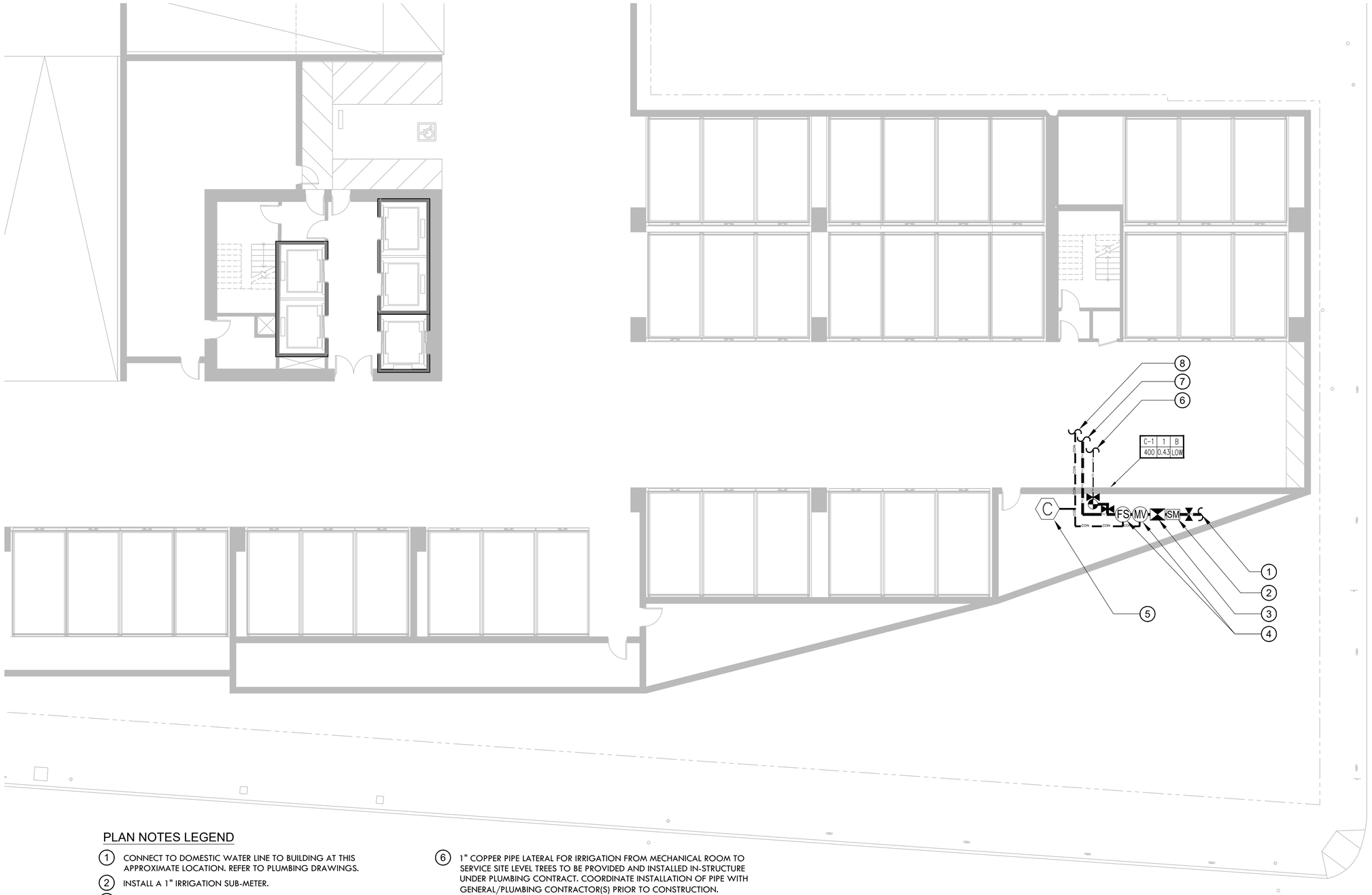
JOB: 0000

SHEET:

IRRIGATION PLAN
FOURTEENTH
FLOOR ROOF DECK
ALT E - REVISED

I3.0



PLAN NOTES LEGEND

1. CONNECT TO DOMESTIC WATER LINE TO BUILDING AT THIS APPROXIMATE LOCATION. REFER TO PLUMBING DRAWINGS.
2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION MASTER VALVE AND FLOW SENSOR.
5. IRRIGATION CONTROLLER "C". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
6. 1" COPPER PIPE LATERAL FOR IRRIGATION FROM MECHANICAL ROOM TO SERVICE SITE LEVEL TREES TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM MECHANICAL ROOM TO PODIUM LEVEL PLANTERS TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO PODIUM LEVEL PLANTERS UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

27 FEB 2023

North 0 4 8 16 1/8"=1'-0"

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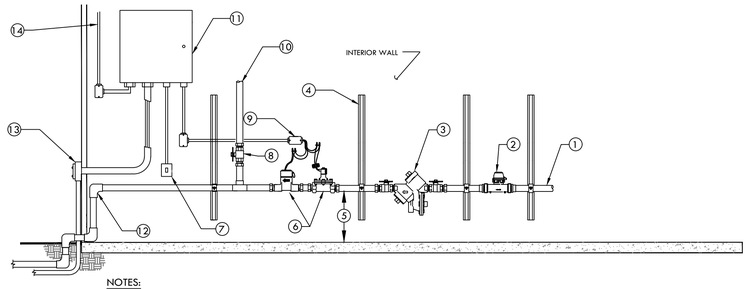
JOB: 0000

SHEET:

IRRIGATION POINT OF CONNECTION

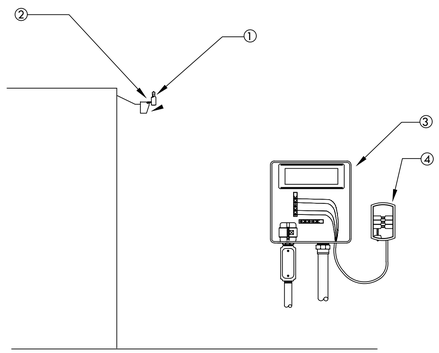
I3.1

① 1.25" COPPER MAIN LINE TO BACKFLOW IN EQUIPMENT ROOM. SHOWN ON MEP PLANS.
② SUB-METER FOR IRRIGATION.
③ 1.25" WILKENS REDUCED PRESSURE BACKFLOW ASSEMBLY.
④ UNI-STRUT SUPPORT BRACKET, THREADED EXTENSIONS AND CLAMPS, LENGTH AS REQUIRED. PROVIDE A MINIMUM OF 6" SEPARATION FOR THE VALVES AND PIPE FROM THE WALL.
⑤ MIN. 18" ± FROM FINISH FLOOR.
⑥ MASTER VALVE AND FLOW SENSOR.
⑦ 120 VOLT A.C. ELECTRICAL BY ELECTRICAL CONTRACTOR FOR CONTROLLER
⑧ 1.25" BRASS BALL VALVE.
⑨ 1" ELECTRICAL CONDUIT WITH JUNCTION BOXES FOR CONTROL WIRES FOR FLOW SENSOR & MASTER VALVE.
⑩ 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION(S). INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
⑪ IRRIGATION CONTROLLER BY IRRIGATION CONTRACTOR. MINIMUM 42" ABOVE FINISHED FLOOR.
⑫ 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION. INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
⑬ JUNCTION BOX BY ELECTRICAL CONTRACTOR FOR EXIT OF TWO WIRE SERVICING VALVES WITHIN ROOM.
⑭ 1.25" ELECTRICAL CONDUIT WITH REQUIRED JUNCTION BOXES ROUTED THROUGH STRUCTURE FROM CONTROLLER LOCATION TO EXTERIOR PLANTERS.



NOTES:
1. THIS LAYOUT IS TO PROVIDE INFORMATION ON EQUIPMENT AND TYPICAL DISTANCES REQUIRED BETWEEN THE EQUIPMENT. IT IS DIAGRAMMATIC AND WILL NEED TO BE ADJUSTED ACCORDING TO AVAILABLE FLOOR SPACE AND OTHER EQUIPMENT INSTALLED WITHIN THE ENCLOSURE. OFFSETS AND FITTINGS WILL BE REQUIRED FOR THESE ADJUSTMENTS.
2. MAINTAIN 6" OF CLEARANCE FROM BUILDING WALLS FOR EASE OF MAINTENANCE FOR ALL COPPER PIPING, VALVES, AND FITTINGS.
3. SEAL ALL PIPE PENETRATIONS THROUGH WALLS/STRUCTURE AS REQUIRED (BY PLUMBING CONTRACTOR). SEE PLUMBING/WATERPROOFING DRAWINGS.
4. ALL FITTINGS AND PIPING FOR WATER LINES WITHIN EQUIPMENT ROOM SHALL BE COPPER WITH WROT FITTINGS OR BRASS NIPPLES.

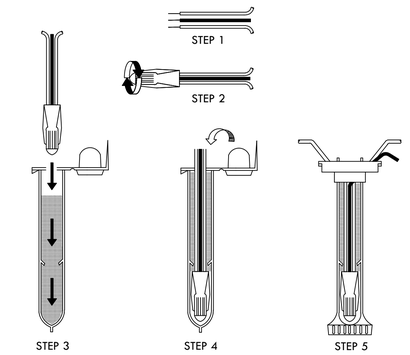
1 IRRIGATION EQUIPMENT LAYOUT DIAGRAM DETAIL
SCALE: NONE



NOTE: MAXIMUM LINE OF SIGHT FROM RAIN SENSOR TO RECEIVER IS 300 FT. DISTANCE IS LESS IF OBSTRUCTIONS EXIST. SENSOR MUST BE INSTALLED IN "CLEAR SPACE" WHERE IT IS EXPOSED TO UNOBSTRUCTED RAINFALL AND IS CLEAR OF IRRIGATION SPRAY.

① WIRELESS RAIN SENSOR TRANSMITTER (GUTTER MOUNTED)
② MOUNT RAIN SENSOR ON BUILDING WALL. ARCHITECT TO APPROVE LOCATION
③ CONTROLLER
④ RAIN SENSOR RECEIVER

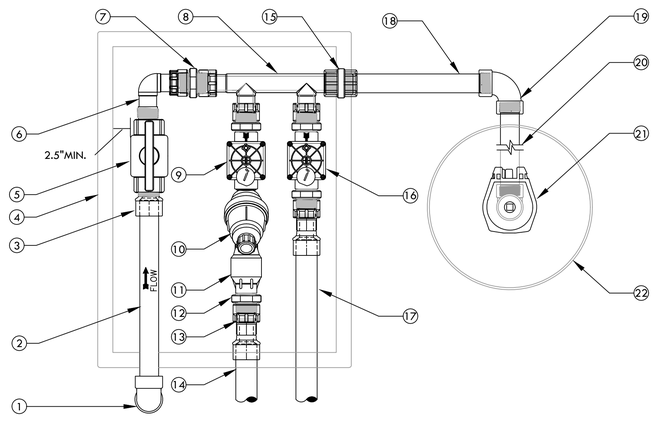
2 WIRELESS RAIN SENSOR-GUTTER MOUNT
SCALE: NONE



NOTE:
MAXIMUM # OF WIRES PER CONNECTOR:
- 3-#14 GAUGE
- 2-#12 GAUGE

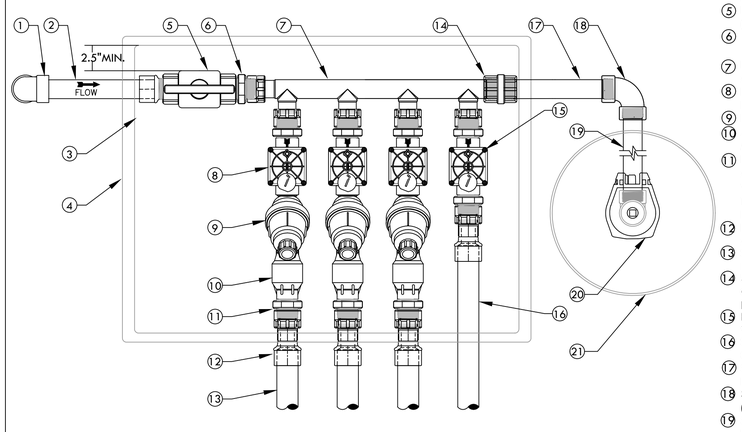
INSTRUCTIONS:
1. STRIP WIRES APPROXIMATELY 1/2" FROM ENDS TO EXPOSE WIRE.
2. TWIST CONNECTOR AROUND WIRES CLOCKWISE UNTIL HAND TIGHT, DO NOT OVERTIGHTEN.
3. INSERT WIRE ASSEMBLY TO BOTTOM OF GEL-FILLED TUBE. CHECK TO MAKE SURE CONNECTOR HAS BEEN PUSHED PAST LOCKING FINGERS AND IS SEATED AT THE BOTTOM OF THE TUBE.
4. PLACE WIRES WHICH EXIT TUBE IN WIRE EXIT HOLES AND CLOSE CAP UNTIL IT SNAPS.
5. INSPECT FINAL SPLICE ASSEMBLY THAT IT IS SECURED.

3 WEATHERPROOF WIRE SPLICE ASSEMBLY
SCALE: NONE



① SCH 40 PVC 90° ELBOW (SxS) FROM PVC MAIN LINE BELOW.
② SCH 40 PVC PIPE. LENGTH AS REQUIRED.
③ SCH 80 PVC MALE ADAPTER.
④ CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
⑤ NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
⑥ DURA 1" MIPT x 1" SWIVEL 90° (PART #306-009)
⑦ DURA 1"x1" THREADED ADAPTER (PART #08303) 4 TOTAL.
⑧ DURA 1" MULTI-PORT MANIFOLD (PART #301-010-2)
⑨ DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑩ FILTER. REFER TO LEGEND FOR MODEL.
⑪ 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
⑫ DURA 1" x 3/4" MALE ADAPTER (PART #08303-131). ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
⑬ DURA 1" SLIP X 1" SWIVEL (PART #329-011) 2 TOTAL.
⑭ SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION
⑮ SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
⑯ BUBBLER OR SPRINKLER REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑰ SCHEDULE 40 PVC LATERAL TO BUBBLER OR SPRAY IRRIGATION.
⑱ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑲ SCHEDULE 80 PVC 90° ELBOW (TxT).
⑳ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
㉑ QUICK COUPLING VALVE. INSTALL PER DETAIL.
㉒ 10" ROUND BOX. INSTALL PER DETAIL.

4 TWO REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE



① SCH 40 PVC 90° ELBOW (SxS) FROM PVC MAIN LINE BELOW.
② SCH 40 PVC PIPE. LENGTH AS REQUIRED.
③ SCH 80 PVC MALE ADAPTER.
④ CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
⑤ NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
⑥ DURA 1"x1" THREADED ADAPTER (PART #08303) 6 TOTAL.
⑦ DURA 1" MULTI-PORT MANIFOLD (PART #301-010-4)
⑧ DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑨ FILTER. REFER TO LEGEND FOR MODEL.
⑩ 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
⑪ DURA 1" x 3/4" MALE ADAPTER (PART #08303-131) 3 TOTAL. ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
⑫ DURA 1" SLIP X 1" SWIVEL (PART #329-011) 4 TOTAL.
⑬ SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION.
⑭ SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
⑮ BUBBLER OR SPRINKLER REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑯ SCHEDULE 40 PVC LATERAL TO BUBBLERS OR SPRAY IRRIGATION.
⑰ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑱ SCHEDULE 80 PVC 90° ELBOW (TxT).
⑲ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑳ QUICK COUPLING VALVE. INSTALL PER DETAIL.
㉑ 10" ROUND BOX. INSTALL PER DETAIL.

5 FOUR REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE

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IRRIGATION DETAILS

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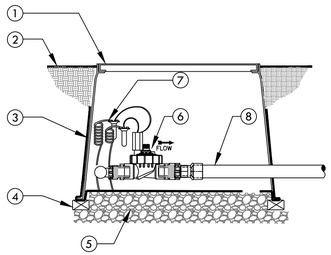
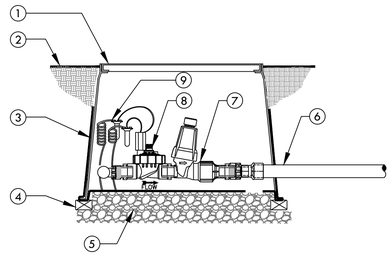


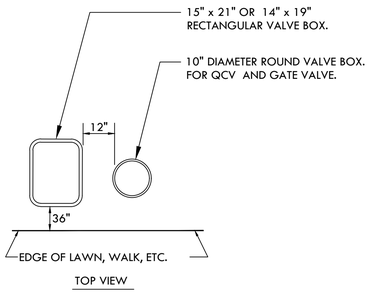
1. CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
2. FINISH GRADE
3. 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
4. BRICK-1 EACH CORNER
5. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
6. REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
7. VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL
8. SCH 40 PVC LATERAL LINE TO BUBBLERS OR SPRAY

1 BUBBLER OR SPRAY REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



1. CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
2. FINISH GRADE
3. 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
4. BRICK-1 EACH CORNER
5. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
6. SCH 40 PVC LATERAL LINE TO DRIPLINE OR DRIP.
7. DRIP FILTER AND REGULATOR
8. REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
9. VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL

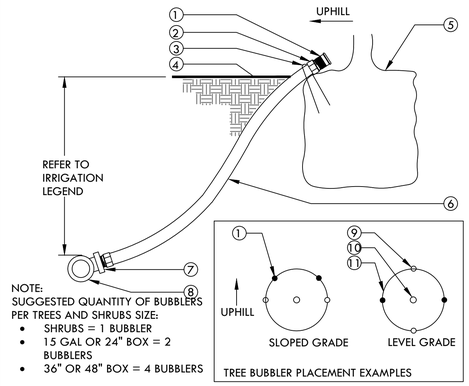
2 DRIP REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



TOP VIEW

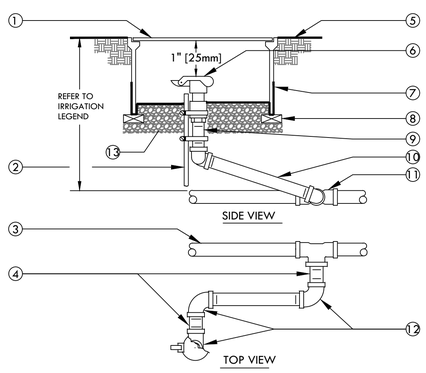
INSTRUCTIONS:
1. CENTER VALVE BOX OVER REMOTE CONTROL VALVES TO FACILITATE SERVICING VALVE.
2. SET BOXES 1" ABOVE FINISH GRADE OR MULCH COVER IN GROUND COVER/SHRUB AREA AND FLUSH WITH FINISH GRADE IN TURF AREA.
3. SET RCV AND VALVE BOX ASSEMBLY IN GROUND COVER/SHRUB AREA WHERE POSSIBLE. INSTALL IN LAWN ONLY IF GROUND COVER DOES NOT EXIST ADJACENT TO LAWN.
4. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE OF LAWN, WALK, FENCE, CURB, ETC.
5. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOXES TO PREVENT COLLAPSE AND DEFORMATION OF VALVE BOX SIDES.
6. INSTALL EXTENSION BY VALVE BOX MANUFACTURER AS REQUIRED TO COMPLETELY ENCLOSE ASSEMBLY FOR EASY ACCESS.

3 VALVE BOX INSTALLATION
SCALE: NONE



1. BUBBLER (TO BE INSTALLED ON TOP OF ROOTBALL).
2. 1/2" SCH. 40 MALE ADAPTER (2 TOTAL).
3. 6" STAPLE.
4. FINISH GRADE.
5. TREE OR SHRUB ROOTBALL.
6. 1/2" IPS FLEXIBLE PVC. USE WELD-ON 795 SOLVENT CEMENT OR EQUAL WHEN BONDING PVC HOSE TO FITTINGS.
7. PVC TEE (SST), ELBOW (ST) OR FEMALE ADAPTER.
8. PVC LATERAL LINE.
9. TREE STAKES.
10. TREE OR SHRUB.
11. EDGE OF ROOTBALL (TYPICAL).

4 TREE AND SHRUB BUBBLER
SCALE: NONE



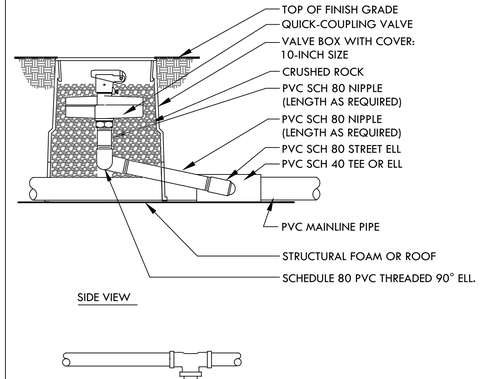
SIDE VIEW

TOP VIEW

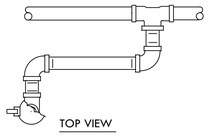
1. 10" ROUND PLASTIC VALVE BOX WITH BOLT DOWN LID.
2. 1 1/4" x 1 1/4" x 3/16" [30mm x 30mm x 5mm] ANGLE IRON 30" [760mm] LONG W/2 STAINLESS STEEL STRAPS (ONE AROUND QCV).
3. PVC MAIN LINE.
4. 3" [75mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
5. FINISH GRADE.
6. QUICK COUPLING VALVE.
7. 19 GAUGE 1/2" [13mm] SQUARE WIRE MESH.
8. BRICK - 2 TOTAL.
9. SCHEDULE 80 PVC THREADED NIPPLE.
10. 10" [250mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
11. UPC APPROVED SCHEDULE 40 PVC TEE OR ELBOW.
12. SCHEDULE 80 PVC THREADED 90° ELL.
13. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" [100mm] DEEP BELOW VALVE (NO SOIL IN VALVE BOX).

NOTE:
NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.

5 QUICK COUPLING VALVE
SCALE: NONE



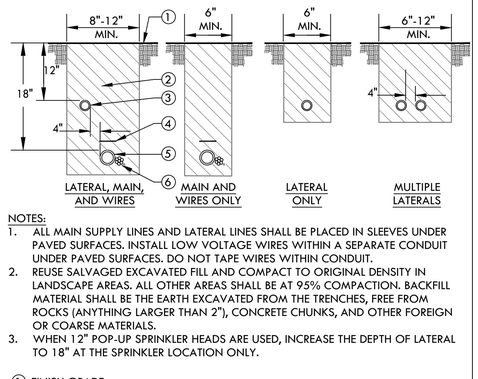
SIDE VIEW



TOP VIEW

NOTE:
1. NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.
2. TRIM VALVE BOX LENGTH AS NECESSARY TO BE FLUSH WITH TOP OF PLANTING TILES.
3. IF NECESSARY SLOT SIDES VALVE BOX TO ALLOW PASSAGE OF PIPE THROUGH BOTTOM OF VALVE BOX.

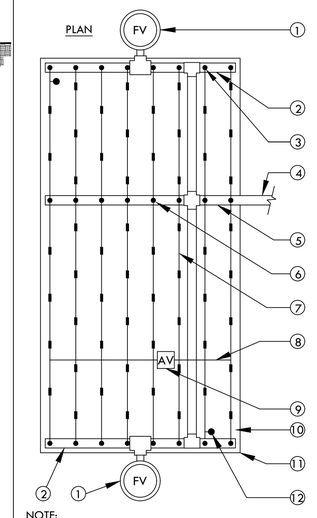
6 QUICK COUPLING VALVE-ON STRUCTURE
SCALE: NONE



NOTES:
1. ALL MAIN SUPPLY LINES AND LATERAL LINES SHALL BE PLACED IN SLEEVES UNDER PAVED SURFACES. INSTALL LOW VOLTAGE WIRES WITHIN A SEPARATE CONDUIT UNDER PAVED SURFACES. DO NOT TAPE WIRES WITHIN CONDUIT.
2. REUSE SALVAGED EXCAVATED FILL AND COMPACT TO ORIGINAL DENSITY IN LANDSCAPE AREAS. ALL OTHER AREAS SHALL BE AT 95% COMPACTION. BACKFILL MATERIAL SHALL BE THE EARTH EXCAVATED FROM THE TRENCHES, FREE FROM ROCKS (ANYTHING LARGER THAN 2"), CONCRETE CHUNKS, AND OTHER FOREIGN OR COARSE MATERIALS.
3. WHEN 12" POP-UP SPRINKLER HEADS ARE USED, INCREASE THE DEPTH OF LATERAL TO 18" AT THE SPRINKLER LOCATION ONLY.

1. FINISH GRADE.
2. CLEAN BACKFILL MATERIAL.
3. LATERAL LINE.
4. 3" DETECTABLE WARNING TAPE OVER MAIN LINE. INSTALL 3" ABOVE MAIN LINE. USE CHRISTY MODEL #TA-DT-3-BIRR FOR POTABLE IRRIGATION SYSTEMS OR #TA-DT-3-PRW FOR RECYCLED IRRIGATION WATER SYSTEMS
5. MAIN LINE.
6. LOW VOLTAGE CONTROL WIRES, TWO-WIRE CABLE, OR CONDUIT WITH WIRES. FOR MULTIPLE WIRES, TAPE AND BUNDLE WIRES AT 10 FT. INTERVALS. WIRING SHALL BE LAID OUT LOOSELY IN THE TRENCH.

7 TRENCHING
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
3. MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
5. PVC SUPPLY MANIFOLD. EXTEND TO END OF ZONE/EXHAUST HEADER.
6. MANIFOLD-TO-TEE CONNECTION.
7. DRIPLINE LATERAL.
8. AIR/VACUUM RELIEF LATERAL, BLANK POLY TUBING CENTERED ON MOUND OR BERM.
9. AIR/VACUUM RELIEF PLUMBED TO BLANK 5/8" POLY TUBING AT EACH HIGH POINT.
10. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
11. AREA PERIMETER.
12. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

8 HLD DRIPLINE CENTER FEED LAYOUT
SCALE: NONE

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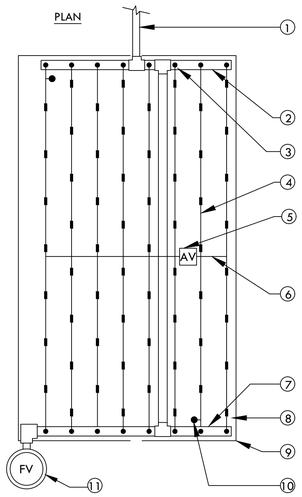
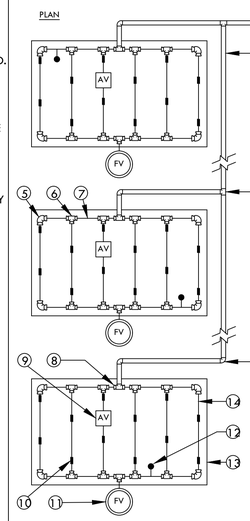


1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. DRIPLINE LATERAL.
5. AIR/VACUUM RELIEF VALVE PLUMBED TO BLANK 5/8" TUBING AT EACH HIGH POINT.
6. AIR/VACUUM RELIEF LATERAL, BLANK 5/8" POLY TUBING CENTERED ON MOUND OR BERM.
7. 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
8. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
9. AREA PERIMETER.
10. DRIP OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONES.
11. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

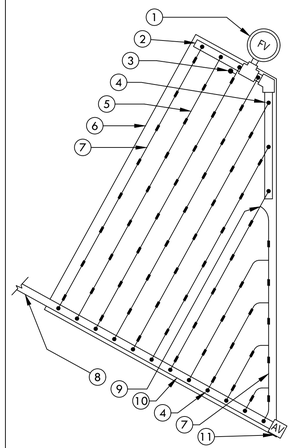
1 HLD DRIPLINE END FEED LAYOUT
SCALE: NONE



1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. PVC TEE (SxSxS).
4. PVC ELL (SxS).
5. HUNTER PLD-ELBOW (PLD-ELB)
6. HUNTER PLD-TEE (PLD-TEE).
7. BLANK 5/8" [16mm] POLY TUBING AT SUPPLY AND FLUSH END OF EACH ISLAND.
8. REFER TO DRIPLINE TO PVC CONNECTION DETAIL.
9. AIR/VACUUM RELIEF VALVE PLUMBED TO TUBING AT HIGH POINT.
10. DRIPLINE LATERAL.
11. MANUAL FLUSH VALVE PLUMBED TO TUBING AT LOW POINT.
12. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
13. ISLAND PERIMETER.
14. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.

NOTE:
1. THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

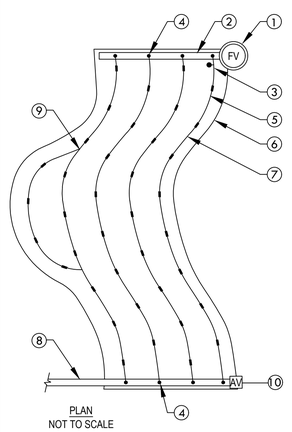
2 HLD DRIPLINE ISLAND LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. PVC SUPPLY MANIFOLD.
11. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

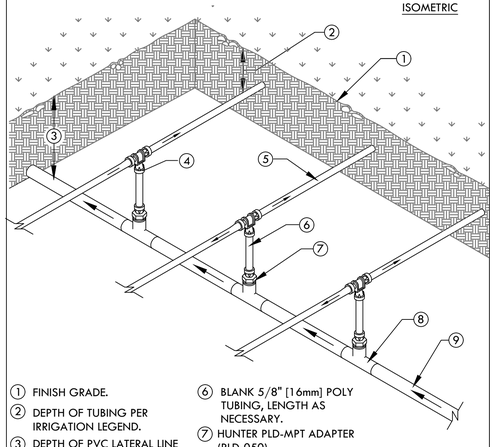
3 HLD DRIPLINE TRIANGULAR LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH/EXHAUST MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC SUPPLY LINE/HEADER FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

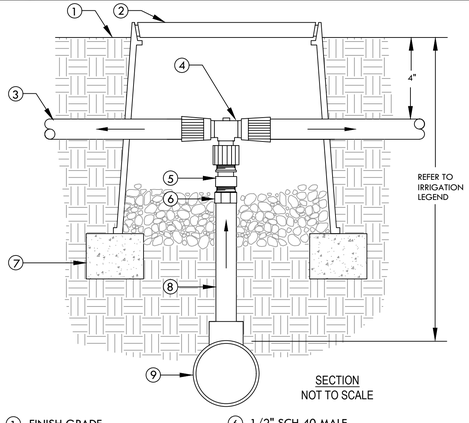
4 HLD DRIPLINE ODD CURVE LAYOUT
SCALE: NONE



1. FINISH GRADE.
2. DEPTH OF TUBING PER IRRIGATION LEGEND.
3. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND
4. HUNTER PLD-TEE (PLD-TEE)
5. DRIPLINE TUBING.
6. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
7. HUNTER PLD-MPT ADAPTER (PLD-050)
8. PVC TEE (SxSxT) WITH 1/2" [13mm] FPT OUTLET.
9. PVC LATERAL LINE FROM REMOTE CONTROL VALVE.

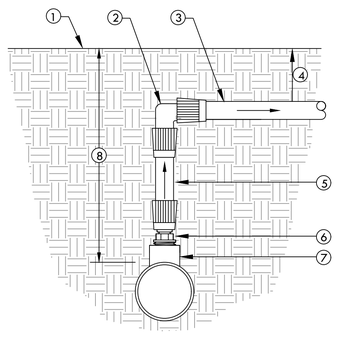
NOTE:
THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.

5 HLD DRIPLINE CENTER FEED MANIFOLD
SCALE: NONE



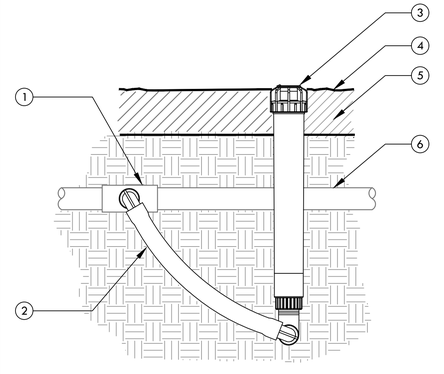
1. FINISH GRADE
2. CARSON 708 OR EQUAL. COLOR: BLACK. USE PURPLE FOR RECYCLED WATER SYSTEMS.
3. DRIPLINE TUBING
4. HUNTER PLD-TEE X 1/2" FPT ADAPTER
5. TORO 1/2" CHECK VALVE (PCV-500)
6. 1/2" SCH 40 MALE ADAPTER.
7. BRICK (1 OF 2)
8. 1/2" SCH 40 PVC (LENGTH AS REQUIRED)
9. PVC LATERAL LINE SUPPLY. MINIMUM SIZE TO BE 1" UNLESS SIZED DIFFERENTLY ON DRAWINGS. USE SCH 40 PVC 1"x1"x1/2" TEE OR 90° ELBOW.

6 DRIPLINE TO PVC CONNECTION
SCALE: NONE



1. FINISH GRADE
2. HUNTER PLD-ELBOW (PLD-ELB)
3. DRIPLINE TUBING
4. DEPTH OF TUBING PER IRRIGATION LEGEND.
5. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
6. HUNTER PLD-MPT ADAPTER (PLD-050)
7. SCH 40 PVC TEE (SxSxT) WITH 1/2" FPT OUTLET.
8. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND

7 DRIPLINE MANIFOLD TO ELBOW CONNECTION
SCALE: NONE



1. UPC APPROVED SCHEDULE 40 PVC TEE, ELBOW OR BARB x THREAD DRIP FITTING TEE OR ELBOW WITH 3/4" OUTLET.
2. 1/2" X 3/4" X 6" HUNTER SWING JOINT (SJ-7506)
3. ECO INDICATOR
4. FINISHED GRADE
5. MULCH
6. PVC LATERAL PIPE OR DRIPLINE

8 DRIPLINE OPERATION INDICATOR
SCALE: NONE

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www.TrachtenbergArch.com

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landscape architecture
6000 Harwood Ave
Oakland CA 94618
www.aboutinsideout.com

1998 SHATTUCK

1998 Shattuck Ave
Berkeley, CA

03.01.2023 ZONING SUBMITTAL
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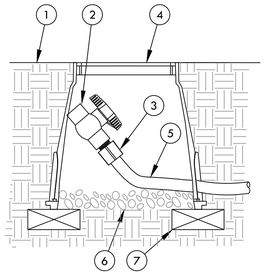
JOB: 0000

SHEET:

IRRIGATION DETAILS

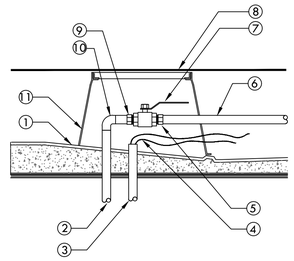
I6.0



NOTE:
ALLOW A MINIMUM OF PVC HOSE IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

1. FINISH GRADE
2. 1/2" SCH 40 THREADED BALL VALVE.
3. 1/2" SCH 40 MALE ADAPTER.
4. 6" ROUND PLASTIC VALVE BOX.
5. 1" IPS PVC HOSE FROM EXHAUST HEADER.
6. PEA GRAVEL SUMP (6" DEEP).
7. BRICK (1 OF 2)

2 DRIPLINE-FLUSH POINT
SCALE: NONE



1. SLOPED ROOF BELOW PEDESTAL SYSTEM
2. COPPER PIPE THROUGH STRUCTURE PROVIDED BY PLUMBING CONTRACTOR. WATERPROOF ALL PENETRATIONS.
3. CONDUIT FOR CONTROL WIRES THROUGH STRUCTURE PROVIDED BY ELECTRICAL CONTRACTOR. WATERPROOF ALL PENETRATIONS
4. TWO-WIRE CABLE OR CONTROL WIRES
5. SCH 40 PVC MALE ADAPTER.
6. PVC MAIN LINE TO REMOTE CONTROL VALVES.
7. BRONZE BALL VALVE.
8. ROOF DECK PAVERS
9. COPPER MALE ADAPTER.
10. COPPER 90° ELBOW.
11. 10" ROUND PLASTIC VALVE BOX. CUT BOX TO FIT BELOW PEDESTAL PAVER SYSTEM

3 ON STRUCTURE STUB-OUT WITH BRONZE BALL VALVE
SCALE: NONE

IRRIGATION WATER USE CALCULATIONS

WATER USE ESTIMATION CONTROLLER "A"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	1,079	400	10,357	0.03	13.85	17%
2	GROUNDCOVER	LOW	0.3	BUBBLER	0.81	0.370	4,915	1,820	47,177	0.14	63.07	77%
3	TREES	LOW	0.3	BUBBLER	0.81	0.370	400	148	3,839	0.01	5.13	6%
					TOTALS		6,394	2,368	61,373	0.19	82.05	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME											
NA						1						0%
					TOTALS		0					0%

MAWA		
	GALLONS/YR	74,568
	ACRE FEET/YR	0.23
	HCF/YR	99.69

ETWU		
	GALLONS/YR	61,373
	ACRE FEET/YR	0.19
	HCF/YR	82.05

SITE IRRIGATION EFFICIENCY	SITE PLANT FACTOR	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	2,368
TOTAL AREA	6,394
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR
MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR
ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

WATER USE ESTIMATION CONTROLLER "B"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	160	59	1,536	0.00	2.05	60%
2	TREES	LOW	0.3	BUBBLER	0.81	0.370	105	39	1,008	0.00	1.35	40%
					TOTALS		265	98	2,544	0.01	3.40	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME											
NA						1						0%
					TOTALS		0					0%

MAWA		
	GALLONS/YR	3,090
	ACRE FEET/YR	0.01
	HCF/YR	4.13

ETWU		
	GALLONS/YR	2,544
	ACRE FEET/YR	0.01
	HCF/YR	3.40

SITE IRRIGATION EFFICIENCY	SITE PLANT FACTOR	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	98
TOTAL AREA	265
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR
MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR
ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

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IRRIGATION DETAILS

I7.0

Shattuck Avenue Mixed Use Residential Project

Operational Vehicle Trip Generation Rate Adjustments

Trip-Generating Land Use	Traffic Study & ITE Trip Generation Rates and CalEEMod Inputs										
	Size Metric	Size	ITE Code	Weekday Daily Rate[1,2] (trips/DU)	Saturday Daily Rate[2] (trips/DU)	Sunday Daily Rate[2] (trips/DU)	Vehicle Mode Share Reduction[1]	Project - Specific Trip Reduction[1]	Weekday Adjusted Daily Rate (trips/DU)	Saturday Adjusted Daily Rate (trips/DU)	Sunday Adjusted Daily Rate (trips/DU)
Residential	units	599		0.82	0.82	0.82					
Commercial	1000 sqft	9.12		67.38	67.38	67.38					
Restaurant	1000 sqft	7.25		83.84	90.04	71.97					

Notes:
DU = Dwelling Unit
trip = one-way end trip

1 Source: Traffic Study Reference.
2 Source: ITE Trip Generation Manual, 11th Edition, 2021.

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TABLE 4
TRIP GENERATION CALCULATIONS

Land Use	ITE Code	Size	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Currently Proposed Project									
ITE High-Rise Apartment Rates - Center City Core, Close to Rail Transit - Trips per unit	222		0.82	0.05	0.06	0.10	0.10	0.04	0.14
Residential Trip Generation		***599 units***	***491***	***27***	***33***	***60***	***62***	***22***	***84***
ITE Fine Dining Restaurant Trip Rates Trips per ksf	931		83.84	0.38	0.35	0.73	5.23	2.57	7.80
Rooftop Restaurant Trip Generation		**7,250 sq. ft.**	608	3	2	5	38	19	57
Reduction for Pass-By / Non-Auto Trips – 43%			261	1	1	2	16	8	24
Rooftop Restaurant Trip Generation			***346***	***2***	***1***	***3***	***22***	***11***	***33***
ITE Strip Retail Trip Rates Trips per ksf	822		67.38	1.78	1.19	2.97	4.00	4.00	8.00
Ground Floor Retail Trip Generation		**9,120 sq. ft.**	615	16	11	27	37	36	73
Reduction for Pass-By / Non-Auto Trips – 34%			209	6	4	10	13	12	25
Ground Floor Retail Trip Generation			***405***	***10***	***7***	***17***	***24***	***24***	***48***
Proposed Project Total Trip Generation			**1,242**	**39**	**41**	**80**	**108**	**57**	**165**

Show/Hide Settings

No Sat/sun VEHICLE rate avail on ITE

Looked up on ITE for sat sun rates

No Sat/sun rate avail on ITE

Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
90.04	53.63 - 126.78	32.81

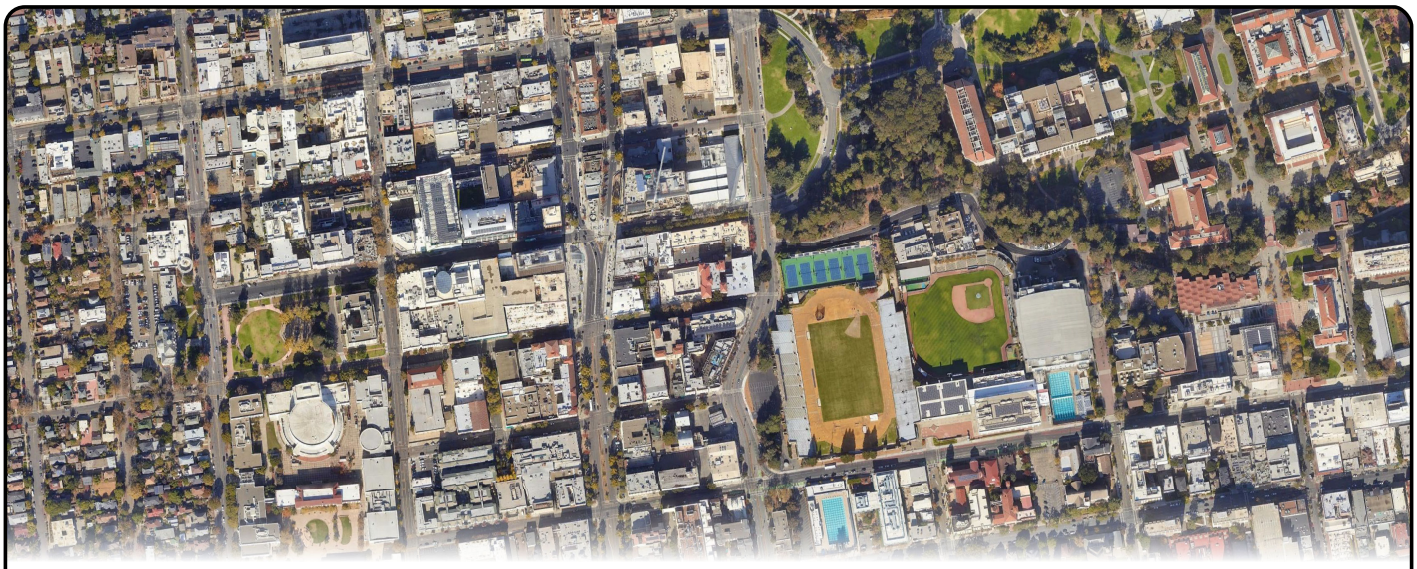
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Sunday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
71.97	41.38 - 120.59	26.30



Traffic Impact Analysis

1998 Shattuck Avenue Mixed-Use Project

City of Berkeley

Prepared by:
Abrams Associates
1875 Olympic Boulevard, Suite 210
Walnut Creek CA 94596

Abrams Associates
TRAFFIC ENGINEERING, INC.

May 19, 2023

Abrams Associates
TRAFFIC ENGINEERING, INC.

1998 Shattuck Avenue Mixed-Use Project
in the
City of Berkeley

TRAFFIC IMPACT ANALYSIS

1) EXECUTIVE SUMMARY

The 1998 Shattuck Avenue mixed-use project would involve construction of a twenty-eight-story building with a total of 599 apartments and 16,370 square feet of commercial space on the ground floor with a rooftop restaurant. The only driveway to the project will be from University Avenue, which will provide access to a parking garage with 154 parking spaces. The site currently has four buildings that would be demolished as part of the project. The existing buildings have about 37,550 square feet of commercial and office space, but only 29,600 square feet is currently occupied. **Figure 1** shows the location of the project and the surrounding roadway network. **Figure 2** shows the ground floor site plan for the project**.** Based on the trip generation forecasts the project would generate about 41 vehicle trips during the AM peak hour and about 54 trips during the PM peak hour. The project would have a less than significant impact on vehicle miles traveled (VMT) according to the City's adopted standards.[1] A detailed review of the project's design and an analysis conducted according to the City's guidelines indicated there would be no significant traffic impacts according to the City's significance criteria. Intersection #1 (Shattuck Avenue at Berkeley Way) is forecast to operate at LOS F under near-term conditions, regardless of whether or not the project is implemented.[2] Once construction of the planned traffic signal is completed, this intersection is forecast to have acceptable operations with the addition of traffic from the proposed project.

2) INTRODUCTION

This traffic impact report describes the transportation and circulation conditions both with and without the proposed project. The study presents information on the roadway network, the pedestrian and transit conditions, and provides an analysis of the effects on transportation facilities associated with the project. This study also describes the regulatory setting; the criterion used for determining the significance of environmental impacts; and summarizes potential environmental impacts and appropriate mitigation measures when necessary. This study has been conducted in accordance with the requirements and methodologies set forth by the City of Berkeley, Alameda County, Caltrans, and the applicable provisions of CEQA.

[1] *General Plan Amendment: Vehicle Miles Traveled (VMT) for Transportation Impact Analysis under the California Environmental Quality Act (CEQA)*, Planning Commission Staff Report, Planning and Development Department, City of Berkeley, September 2, 2020.
[2] *Guide for Development of Traffic Impact Reports*, City of Berkeley Office of Transportation, Berkeley, CA, January, 2009.

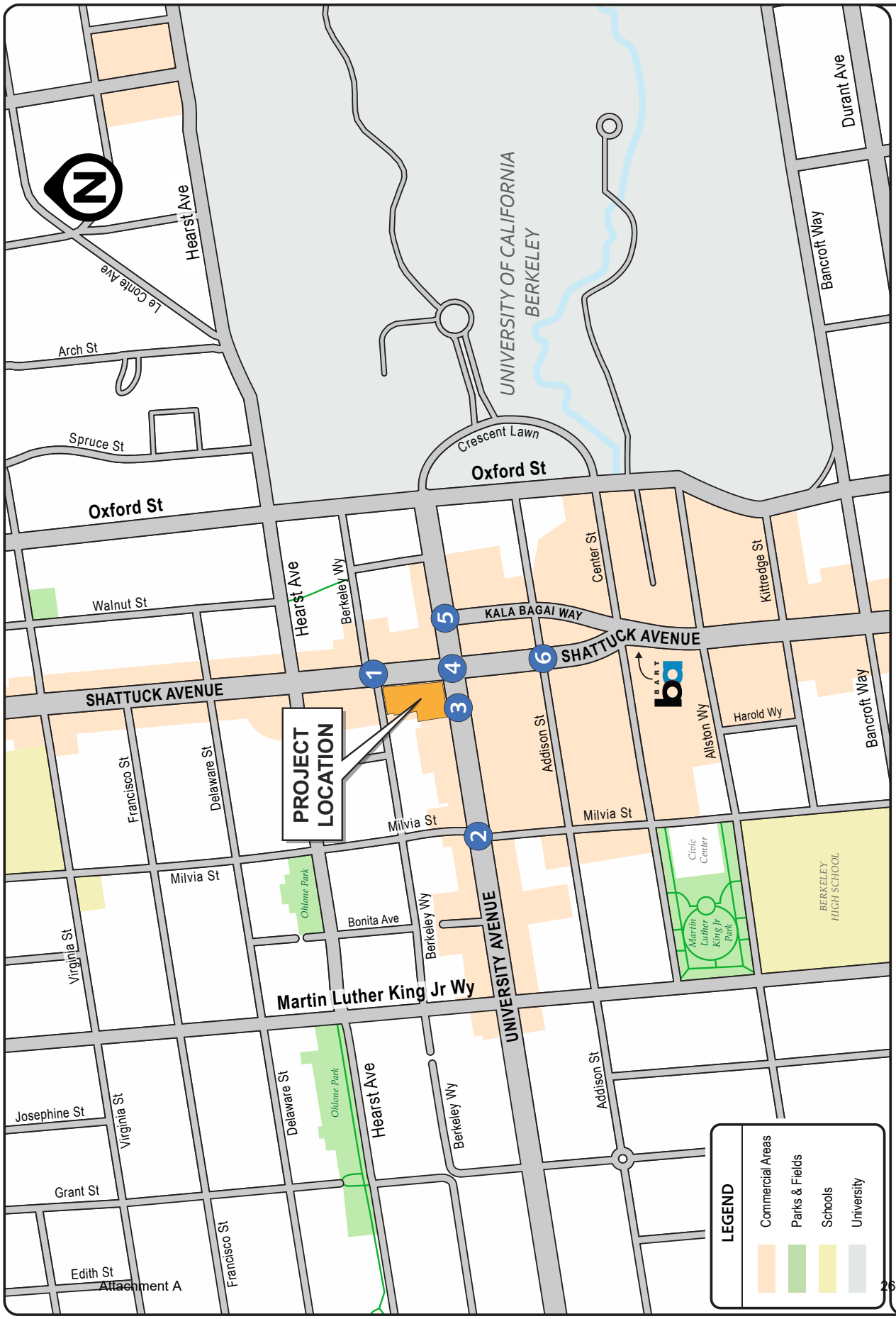


FIGURE 1 | PROJECT LOCATION AND PROPOSED STUDY INTERSECTIONS
TRAFFIC IMPACT ANALYSIS
1998 Shattuck Avenue Mixed-Use Project
City of Berkeley

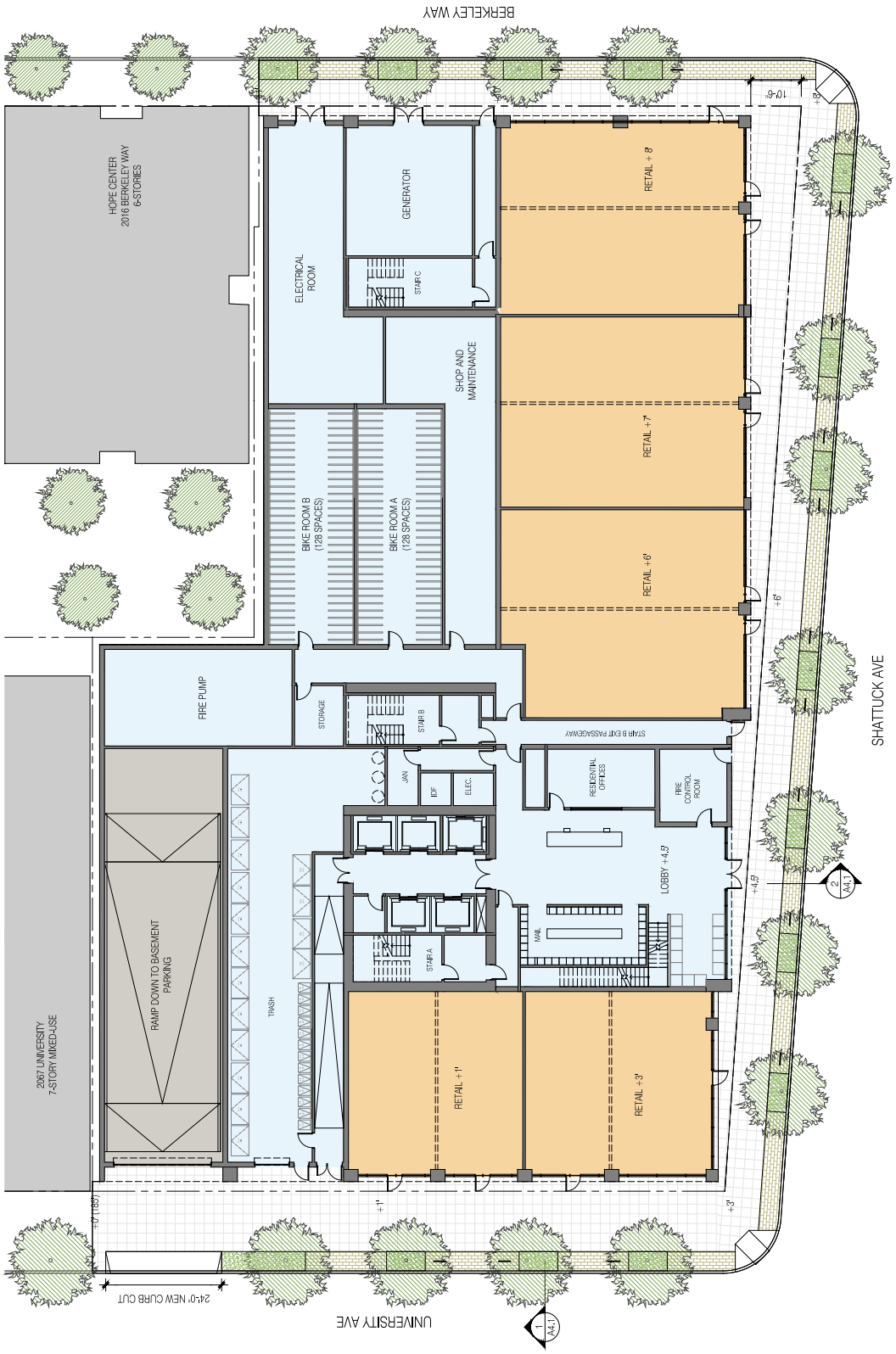


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FIGURE 2 | SITE PLAN
TRAFFIC IMPACT ANALYSIS
1998 Shattuck Avenue Mixed-Use Project
City of Berkeley

3) ENVIRONMENTAL SETTING

This section of the report describes the roadways, traffic conditions and other existing transportation characteristics in the vicinity of the project. The primary basis for the traffic operations portion of the analysis is the peak hour level of service at the key study intersections. In this report, these peak commute hours will be identified as the AM and PM peak hours.

3.3 Project Study Intersections

To provide a baseline for identification of impacts on the local roadway network, existing traffic operating conditions have been determined for the key local intersections that may be affected by the project. For this analysis six study intersections were selected in coordination with City staff based on the City's Guidelines for Development of Traffic Impact Reports and their potential to be impacted by the proposed project. The six study intersections are:

1. *Shattuck Avenue at Berkeley Way*
2. *University Avenue at Milvia Street*
3. *University Avenue at the Project Entrance*
4. *University Avenue at Shattuck Avenue*
5. *University Avenue at Kala Bagui Way*
6. *Shattuck Avenue at Addison Street*

3.2 Traffic Analysis Scenarios

The study intersections were evaluated for the following four scenarios:

- Scenario 1: *Existing Conditions* – Level of Service (LOS) based on existing peak hour volumes and existing intersection configurations.

- Scenario 2: *Existing Plus Project* – Existing traffic volumes plus trips from the proposed project.

- Scenario 3: *Baseline (No Project) Conditions* – The Baseline scenario is based on Existing Conditions plus a 20% increase to the existing traffic volumes to account for approved projects and background traffic growth.

- Scenario 4: *Baseline Plus Project Conditions* – This scenario is based on the Baseline traffic volumes plus the trips that would be generated by the proposed project.

3.3 Existing Roadway Network

As shown on **Figure 1**, the roads that would be primarily affected by the project are Shattuck Avenue, University Avenue, Addison Street, Milvia Street, and Berkeley Way. The following is a

brief description of these roadways:

- **Shattuck Avenue** – Shattuck Avenue is a four-lane arterial roadway extending south from Vine Street to terminate to the south at Telegraph Avenue in the City of Oakland. It serves school, residential and commercial traffic and is an important north-south travel route. It is designated as a major street and a primary transit route in the City's General Plan.

- **University Avenue –** University Avenue is a major four-lane arterial roadway in the City of Berkeley. It extends east from the Marina area and terminates at the UC Berkeley Campus. There are traffic signals at all major intersections and these generally have additional turn lanes. It is designated as a major street and a primary transit route in the City's General Plan. There is a raised median for most of its length.

- **Addison Street** – Addison Street is a two-lane local east-west roadway in the City of Berkeley. It extends east from Bolivar Drive to terminate at the UC Berkeley campus at Oxford Street. This roadway serves school, residential and commercial traffic.

- **Milvia Street** – Milvia Street is a two-lane collector street extending north from Russell Road to Yolo Avenue. It serves school, residential and commercial traffic and is designated as an important north-south bicycle boulevard.

- **Berkeley Way –** Berkeley Way is a two-lane local east-west roadway in the City of Berkeley. It extends east from Chestnut Street to terminate at the UC Berkeley campus at Oxford Street. This roadway serves school, residential and commercial traffic.

3.4 Accident History

Caltrans has established restrictions on the use of multi-way stop signs and the California Manual of Uniform Traffic Control Devices (MUTCD) provides detailed guidance on when multi-way stop applications and traffic signals are appropriate.[1] Caltrans' guidelines state that a traffic signal or all-way stop control shall be considered if: "*Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash*". A detailed review of the accident history in the study area (back to 2012) was conducted using data available from the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS). This data is included in the technical appendix and verifies the existing accident history in the area would not warrant installation of additional traffic signals, multi-way stop control, or other safety measures.

[1] *California MUTCD*, Chapter 2B, Caltrans, Sacramento, CA, November 7, 2014.

3.5 Intersection Analysis Methodology

Existing operational conditions at the study intersection were evaluated according to the requirements set forth by the City of Berkeley. Analysis of traffic operations was conducted using the 6th Edition of the *Highway Capacity Manual* (*HCM*) Level of Service (LOS) methodology with Synchro software.[1]

Level of service is an expression, in the form of a scale, of the relationship between the capacity of an intersection (or roadway segment) to accommodate the volume of traffic and the traffic moving through it at any given time. The level of service scale describes traffic flow with six ratings ranging from A to F, with "A" indicating relatively free flow of traffic and "F" indicating stop-and-go traffic characterized by traffic jams. As the amount of traffic moving through a given intersection or roadway segment increases, the traffic flow conditions that motorists experience rapidly deteriorate as the capacity of the intersection or roadway segment is reached. Under such conditions, there is general instability in the traffic flow, which means that relatively small incidents (e.g., momentary engine stall) can cause considerable fluctuations in speeds and delays that lead to traffic congestion. This near-capacity situation is labeled level of service (LOS) E. Beyond LOS E, the intersection or roadway segment capacity has effectively been exceeded, and arriving traffic will exceed the ability of the intersection to accommodate it. **Table 1** summarizes the relationship between LOS, average control delay, and the volume to capacity ratio at signalized intersections. **Table 2** summarizes the relationship between LOS and delay at unsignalized intersections

For signalized intersections, The City of Berkeley's LOS standards are based on the average delay for the entire intersection. The *HCM* methodology determines the capacity of each lane group approaching the intersection. The LOS is then based on average control delay (in seconds per vehicle) for the various movements within the intersection. A combined weighted average control delay and LOS are presented for the intersection. A summary of the HCM results and copies of the detailed HCM LOS calculations are included in the appendix to this report.

For unsignalized (all-way stop controlled and two-way stop controlled) intersections, the average control delay and LOS operating conditions are calculated by approach (e.g., northbound) and movement (e.g., northbound left-turn) for those movements that are subject to delay. Operating conditions for unsignalized intersections are presented for the worst approach.

[1] *6th Edition of the Highway Capacity Manual*, Transportation Research Board, Washington D.C., 2016.

TABLE 1
SIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Description of Operations	Average Delay (sec/veh)	Volume to Capacity Ratio
A	Insignificant Delays: No approach phase is fully used and no vehicle waits longer than one red indication.	≤ 10	< 0.60
B	Minimal Delays: An occasional approach phase is fully used. Drivers begin to feel restricted.	> 10 to 20	> 0.61 to 0.70
C	Acceptable Delays: Major approach phase may become fully used. Most drivers feel somewhat restricted.	> 20 to 35	> 0.71 to 0.80
D	Tolerable Delays: Drivers may wait through no more than one red indication. Queues may develop but dissipate rapidly without excessive delays.	> 35 to 55	> 0.81 to 0.90
E	Significant Delays: Volumes approaching capacity. Vehicles may wait through several signal cycles and long vehicle queues from upstream.	> 55 to 80	> 0.91 to 1.00
F	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	> 80	> 1.00

SOURCES: *Highway Capacity Manual, Sixth Edition*, Transportation Research Board, 2016.

TABLE 2
UNSIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Description of Operations	Average Delay (seconds/vehicle)
A	No delay for stop-controlled approaches.	0 to 10
B	Operations with minor delays.	> 10 to 15
C	Operations with moderate delays.	> 15 to 25
D	Operations with some delays.	> 25 to 35
E	Operations with high delays and long queues.	> 35 to 50
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers.	> 50

SOURCE: *Highway Capacity Manual, Sixth Edition*, Transportation Research Board, 2016.

3.6 Existing Intersection Capacity Conditions

The existing intersection geometry at the project study intersections is presented in **Figure 3**. The existing traffic volumes at these intersections for the weekday AM and PM peak hours are presented in **Figure 4**. Traffic counts at the intersection were conducted in January and March of 2023 when UC Berkeley was in session. **Table 3** summarizes the associated LOS computation results for the existing weekday AM and PM peak hour conditions at these intersections. As shown in **Table 3**, all of the study intersections currently have acceptable conditions (LOS D or better) with the exception of Shattuck Avenue and Berkeley Way, which currently operates at LOS F. However, a traffic signal is already planned to be installed at this intersection. Please note the detailed LOS calculations are included in the appendix to this report**.**

TABLE 3
EXISTING INTERSECTION LEVEL OF SERVICE CONDITIONS

INTERSECTION		CONTROL	PEAK HOUR	EXISTING	
				Delay	LOS
1	SHATTUCK AVENUE & BERKELEY WAY	Side Street Stop	AM	**> 50.0**	**F**
			PM	**> 50.0**	**F**
2	UNIVERSITY AVENEUE & MILVIA STREET	Signalized	AM	16.6	B
			PM	15.0	B
3	UNIVERSITY AVENUE & PROJECT LOCATION	Side Street Stop	AM	N/A	N/A
			PM	N/A	N/A
4	UNIVERSITY AVENEUE & SHATTUCK AVENUE	Signalized	AM	37.8	D
			PM	36.2	D
5	UNIVERSITY AVENEUE & KALA BAGAI WAY	Signalized	AM	40.0	D
			PM	37.5	D
6	SHATTUCK AVENUE & ADDISON STREET	Signalized	AM	8.6	A
			PM	7.3	A

SOURCE: Abrams Associates, 2023

NOTES: HCM LOS results are presented in terms of average intersection delay in seconds per vehicle.

3.7 Pedestrian and Bicycle Facilities

Bicycle paths, lanes and routes are typical examples of bicycle transportation facilities, which are defined by Caltrans as being in one of the following five classes:

Class I – Provides a completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.
Class II – Provides a restricted right-of-way designated lane for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross-flows by pedestrians and motorists permitted.

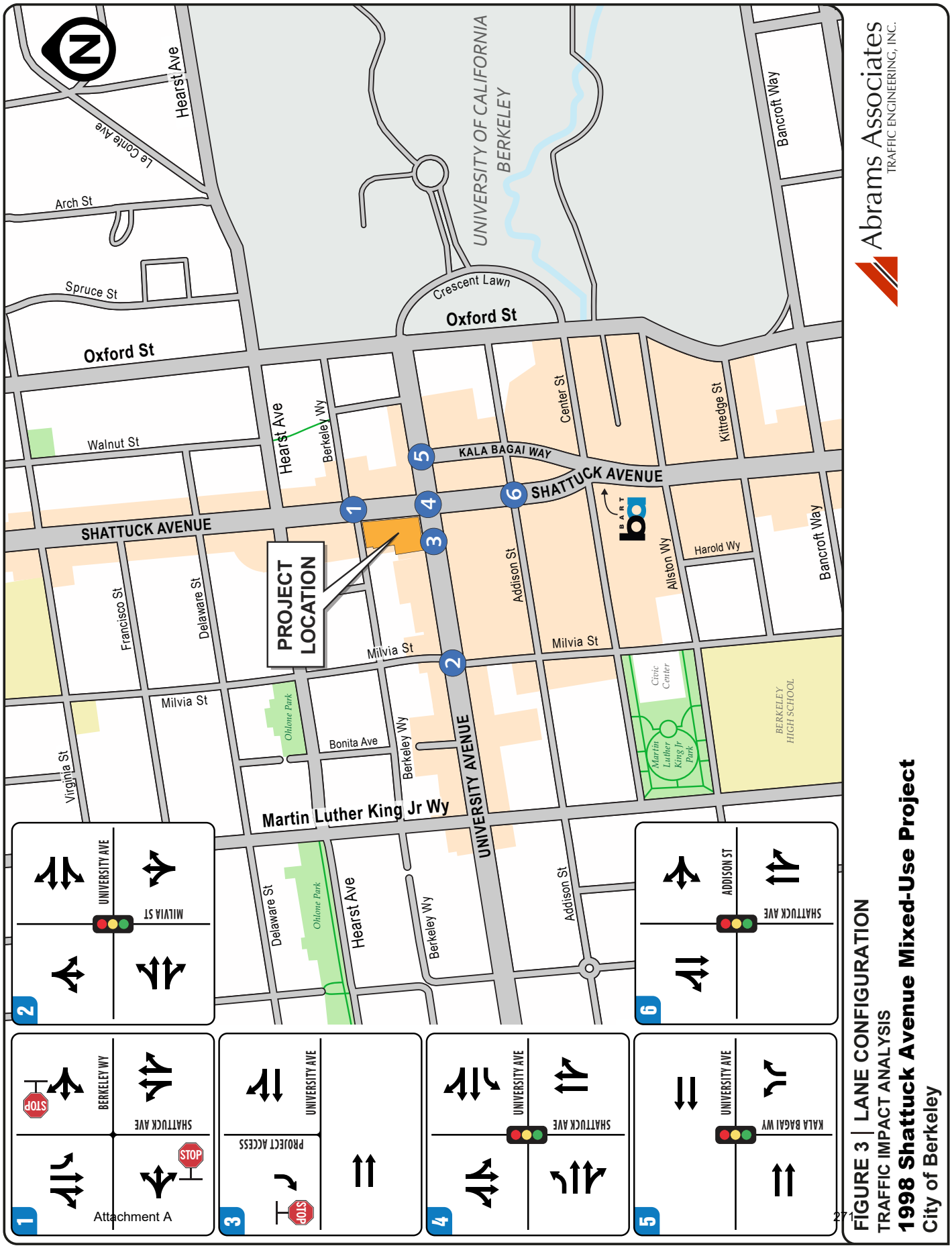

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FIGURE 3 | LANE CONFIGURATION
TRAFFIC IMPACT ANALYSIS
1998 Shattuck Avenue Mixed-Use Project
City of Berkeley

Attachment A

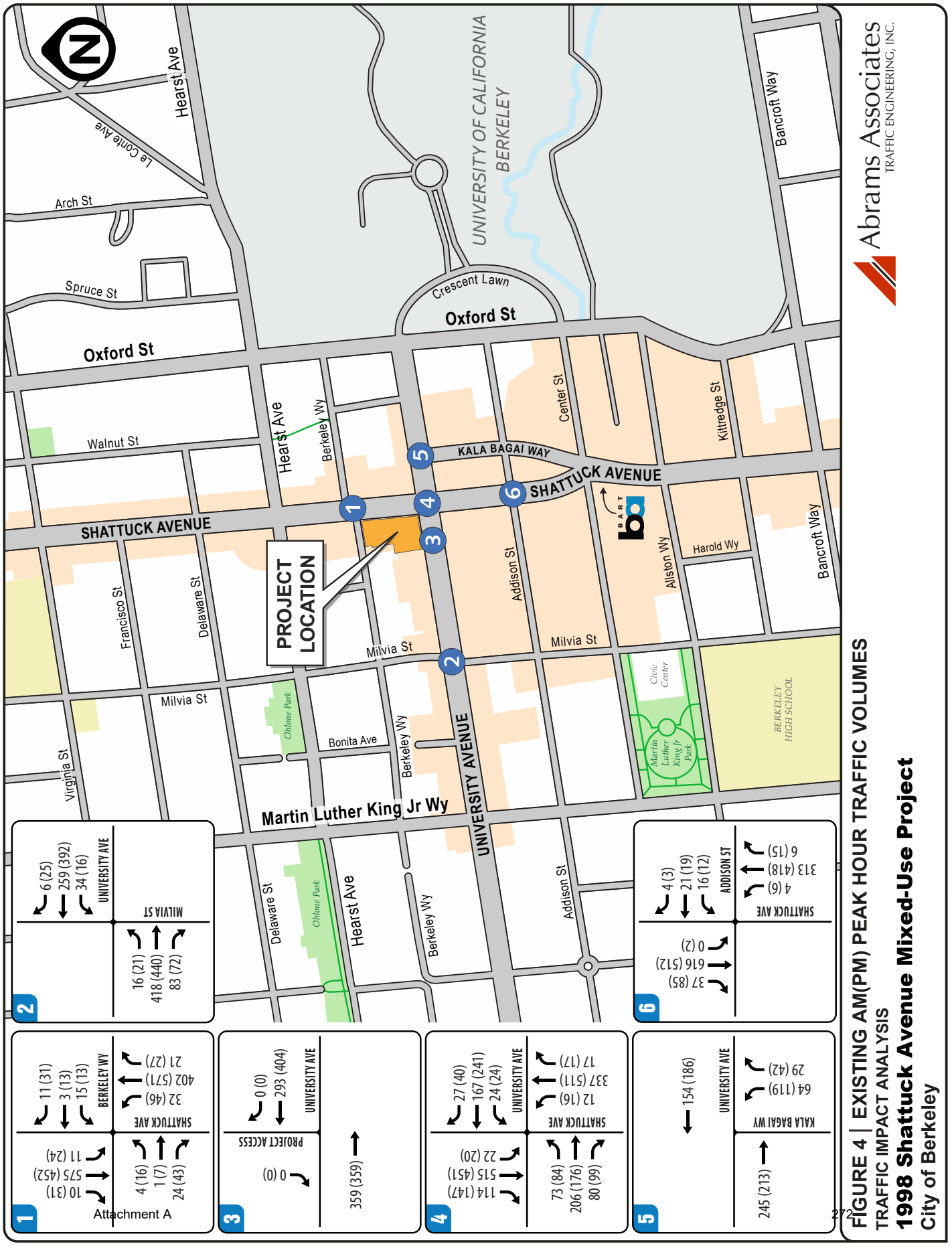

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FIGURE 4 | EXISTING AM(PM) PEAK HOUR TRAFFIC VOLUMES
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Class III – Provides a right-of-way designated by signs or permanent markings and shared with pedestrians and motorists.
Class IV – Provides an adjacent bike lane or bikeway that is physically separated from motor vehicle traffic.

In the vicinity of the project Hearst Avenue and Milvia Street are Class II bike routes with bike lanes. Milvia Street is also designated as a bicycle boulevard. There are sidewalks in most areas and there are also marked crosswalks, pedestrian push buttons, and pedestrian signals provided at all nearby signalized intersections. In general, the overall network of sidewalks and crosswalks in the study area provides pedestrians with safe routes to BART and nearby transit stops.

3.8 Transit Service

The Downtown Berkeley BART station is located less than seven hundred feet from the project site. This station is located on the Richmond-Fremont Line which connected to other destinations in the Bay Area at the MacArthur Station. There is also direct service to Downtown San Francisco as well as continuing service to Milbrae. There is also extensive bus transit service provided by Alameda-Contra Costa County Transit (AC Transit) at the BART Station. In addition to local bus routes 6, 18, 51B, and 79, the following special lines operate less than a block from the project:

> **800:** (All Nighter) Richmond BART to Market St. and Van Ness Ave, S.F., via Macdonald Ave, San Pablo Ave, University Ave, Telegraph Ave and downtown Oakland. Returns via Market St. and West Oakland BART.
> **851:** (All Nighter) Downtown Berkeley to Fruitvale BART via Southside Berkeley (UC campus), College Ave., Broadway, downtown Oakland, Webster St., Santa Clara Ave., Broadway, and Fruitvale Ave.
> **F:** (Transbay) UC Campus to Transbay Temporary Terminal, San Francisco via Shattuck Ave, Adeline St and 40th St.

Please note the nearest bus stops are directly adjacent to the project site on Shattuck Avenue and University Avenue.

4) REGULATORY CONTEXT

Existing policies, laws and regulations that apply to the proposed project are summarized below.

4.1 State

The California Department of Transportation (Caltrans) has jurisdiction over State highways and any improvements to these roadways would require Caltrans' approval.

4.2 Local

City of Berkeley General Plan - The Transportation and Circulation Element the City of Berkeley General Plan addresses the location and extent of existing and planned transportation routes, terminals, and other local public utilities and facilities. The General Plan identifies roadway and transit goals and policies that have been adopted to ensure that the transportation system of the City will have adequate capacity to serve planned growth. These goals and policies are intended to provide a plan and implementation measures for an integrated, multi-modal transportation system that will safely and efficiently meet the transportation needs of all economic and social segments of the City.

4.3 Significance Criteria

It is important to note that this project has not been found to have any significant impacts according to CEQA and the CEQA criteria at the bottom of this section are presented for informational purposes only. In addition, the level of service criteria described below are based on the City's General Plan standards, not CEQA, and any proposed mitigations are intended to address the City standards. Traffic improvements to improve traffic operations at the project study intersections are not considered to be required mitigations under CEQA. The City's General Plan states that the traffic from a project could cause an intersection to exceed City standards if the LOS at the intersection is reduced from LOS A, B, C, or D to LOS E (with the addition of two (2) seconds of average delay) for signalized intersections. Improvement measures to improve the LOS should be considered at intersections that exceed this service level threshold. Exceptions to the LOS D standard arise when the project is not expected to add more than two seconds at an intersection going from LOS D to LOS E or more than three seconds of delay at an intersection that is already operating at LOS E. In addition, improvement measures would also need to be considered if a project would increase the volume to capacity (V/C) ratio by more than 0.01 at a signalized intersection that is already operating at LOS F. For unsignalized intersections, additional considerations are involved, including the number of vehicles on the critical approach, vehicles contributed by the proposed project, and signal warrant analysis. At an unsignalized intersection, improvement measures are required if a movement is LOS F, the peak hour signal warrant is met, and a minimum of 10 vehicles are added to the critical movement. This project has not been found to have any significant impacts but according to CEQA guidelines, a project could have a significant impact if it would:

- Conflict with a plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, including transit, roadway, bicycle and pedestrian facilities.
- Would the project conflict with or be inconsistent with CEQA Guidelines Section 15064.3 subdivision (b)?
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment).
- Result in inadequate emergency vehicle access.

5) IMPACT ANALYSIS AND MITIGATION MEASURES

5.1 Project Trip Generation

As noted above, the proposed project would involve construction of a twenty-eight-story building with a total of 599 apartments and 16,370 square feet of commercial space on the ground floor with a rooftop restaurant. The site currently has four buildings that would be demolished as part of the project. The existing buildings have about 37,550 square feet of commercial and office space, but only 29,600 square feet is currently occupied. The resulting trip generation calculations are shown in **Table 4**. The trip generation rates are based on the ITE rates for high-rise apartments in the center city core, close to rail transit (Land Use Code 222) and for retail/restaurant uses (Land Use Code 822), and a Fine Dining Restaurant (Land Use Code 921) taken from the 11th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. As shown in **Table 4**, the proposed project is forecast to generate a net increase in traffic of approximately 41 trips during the AM peak hour and 54 trips during the PM peak hour.

5.2 Project Trip Distribution

The trip distribution assumptions have been based on the existing traffic count data including daily directional volume and peak-hour turning movements, the Alameda County travel demand model, and knowledge of the surrounding area such as commute patterns and the overall land use patterns in the area. **Figure 5** shows the project traffic that would be added at the project study intersections.

5.3 Existing Plus Project Intersection Capacity Conditions

This scenario evaluates the existing conditions with the addition of traffic from the proposed project. A comparison of the capacity calculations for the conditions with the addition of traffic from the project is shown in **Table 5**. **Figure 6** presents the existing plus project volumes used in the analysis. The corresponding LOS analysis calculation sheets are presented in the Traffic Analysis Appendix. As shown in **Table 5**, all of the study intersections would continue to have acceptable conditions (LOS D or better) during the weekday AM and PM peak hours, with the exception of Shattuck Avenue and Berkeley Way, which is forecast to continue operating at LOS F, regardless of whether or not the proposed project is implemented. However, a traffic signal is already planned to be installed at this intersection. Once construction of the planned traffic signal is completed, this intersection is forecast to have acceptable operations with the addition of traffic from the proposed project. Therefore, the addition of project traffic would not be considered an operational impact according to City of Berkeley guidelines.

TABLE 4
TRIP GENERATION CALCULATIONS

Land Use	ITE Code	Size	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Currently Proposed Project									
ITE High-Rise Apartment Rates - Center City Core, Close to Rail Transit - Trips per unit	222		0.82	0.05	0.06	0.10	0.10	0.04	0.14
Residential Trip Generation		***599 units***	***491***	***27***	***33***	***60***	***62***	***22***	***84***
ITE Fine Dining Restaurant Trip Rates Trips per ksf	931		83.84	0.38	0.35	0.73	5.23	2.57	7.80
Rooftop Restaurant Trip Generation		**7,250 sq. ft.**	608	3	2	5	38	19	57
Reduction for Pass-By / Non-Auto Trips – 43%			261	1	1	2	16	8	24
Rooftop Restaurant Trip Generation			***346***	***2***	***1***	***3***	***22***	***11***	***33***
ITE Strip Retail Trip Rates Trips per ksf	822		67.38	1.78	1.19	2.97	4.00	4.00	8.00
Ground Floor Retail Trip Generation		**9,120 sq. ft.**	615	16	11	27	37	36	73
Reduction for Pass-By / Non-Auto Trips – 34%			209	6	4	10	13	12	25
Ground Floor Retail Trip Generation			***405***	***10***	***7***	***17***	***24***	***24***	***48***
Proposed Project Total Trip Generation			**1,242**	**39**	**41**	**80**	**108**	**57**	**165**
Existing Land Uses on the Project Site to be Removed									
ITE Strip Retail Trip Rates Trips per ksf	822		49.96	1.19	0.80	1.99	2.84	2.84	5.68
Restaurant and Retail Trip Generation		**29,600 sq. ft.**	1,479	35	24	59	84	84	168
Reduction for Pass-By / Non-Auto Trips – 34%			503	12	8	20	28	29	57
Existing Site Trip Generation			***976***	***23***	***16***	***39***	***56***	**55**	***111***
Net Increase in Trip Generation with the Proposed Project			**266**	**15**	**26**	**41**	**52**	**2**	**54**

SOURCE: Institute of Transportation Engineers Trip Generation Manual (11th Edition).
NOTES: [1] There is currently 37,550 square feet of existing ground floor commercial space but only 29,600 square feet was occupied at the time the traffic counts were taken.

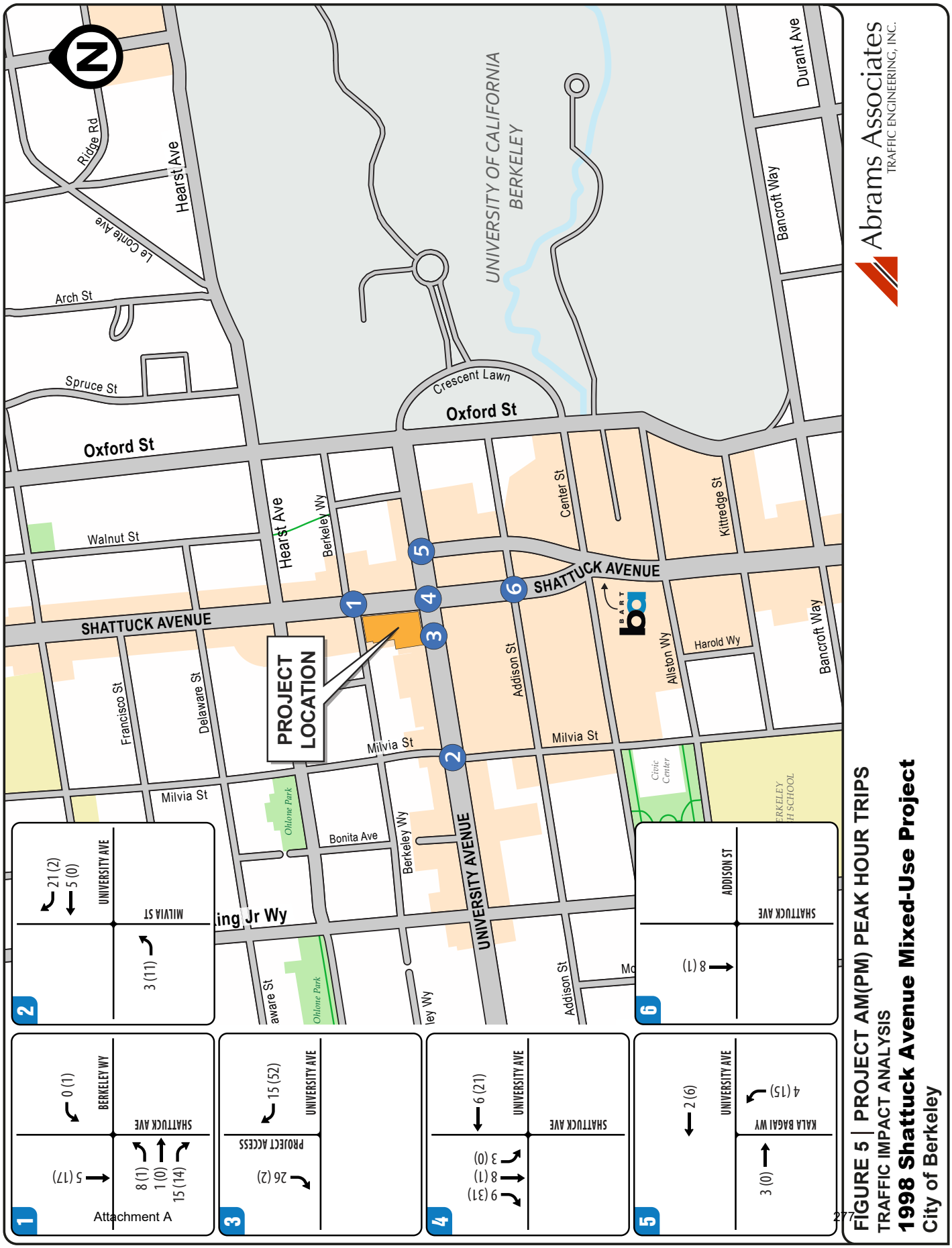

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FIGURE 5 | PROJECT AM(PM) PEAK HOUR TRIPS
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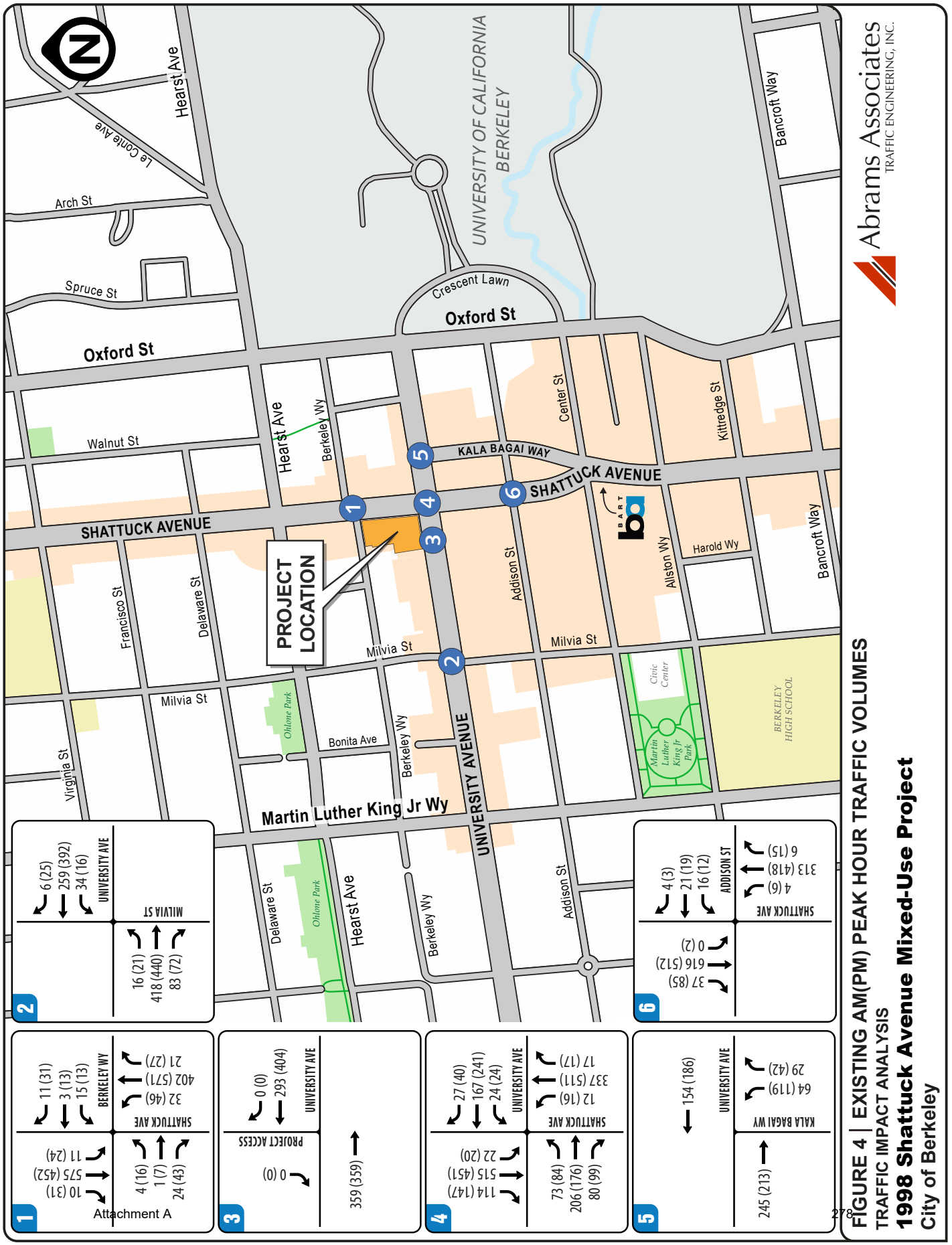

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FIGURE 4 | EXISTING AM(PM) PEAK HOUR TRAFFIC VOLUMES
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5.4 Baseline Intersection Capacity Conditions

For background conditions the pre-Covid volumes from traffic counts taken in 2018 were used. These were substantially higher than the existing traffic counts and represent a conservative estimate of post-pandemic conditions. **Figure 7** presents the resulting baseline volumes at each of the project study intersections **Table 6** summarizes the LOS results for the Baseline and Baseline Plus Project weekday AM and PM peak hour conditions. The corresponding LOS analysis calculation sheets are presented in the *Traffic Analysis Appendix*. As shown in **Table 6**, all of the study intersections currently have acceptable conditions (LOS D or better) during the weekday AM and PM peak hours with the exception of Shattuck Avenue and Berkeley Way, which is forecast to continue operating at LOS F. However, a traffic signal is already planned to be installed at this intersection.

TABLE 5
EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE CONDITIONS

	INTERSECTION	CONTROL	PEAK HOUR	EXISTING		EXISTING PLUS PROJECT	
				Delay	LOS	Delay	LOS
1	SHATTUCK AVENUE & BERKELEY WAY	Side Street Stop	AM	**> 50.0**	**F**	**> 50.0**	**F**
			PM	**> 50.0**	**F**	**> 50.0**	**F**
2	UNIVERSITY AVENEUE & MILVIA STREET	Signalized	AM	16.6	B	16.4	B
			PM	15.0	B	15.3	B
3	UNIVERSITY AVENUE & PROJECT LOCATION	Side Street Stop	AM	N/A	N/A	12.6	B
			PM	N/A	N/A	13.1	B
4	UNIVERSITY AVENEUE & SHATTUCK AVENUE	Signalized	AM	37.8	D	37.6	D
			PM	36.2	D	36.2	D
5	UNIVERSITY AVENEUE & KALA BAGAI WAY	Signalized	AM	40.0	D	39.7	D
			PM	37.5	D	36.9	D
6	SHATTUCK AVENUE & ADDISON STREET	Signalized	AM	8.6	A	8.6	A
			PM	7.3	A	7.3	A

SOURCE: Abrams Associates, 2023

NOTES: HCM LOS results are presented in terms of average intersection delay in seconds per vehicle.

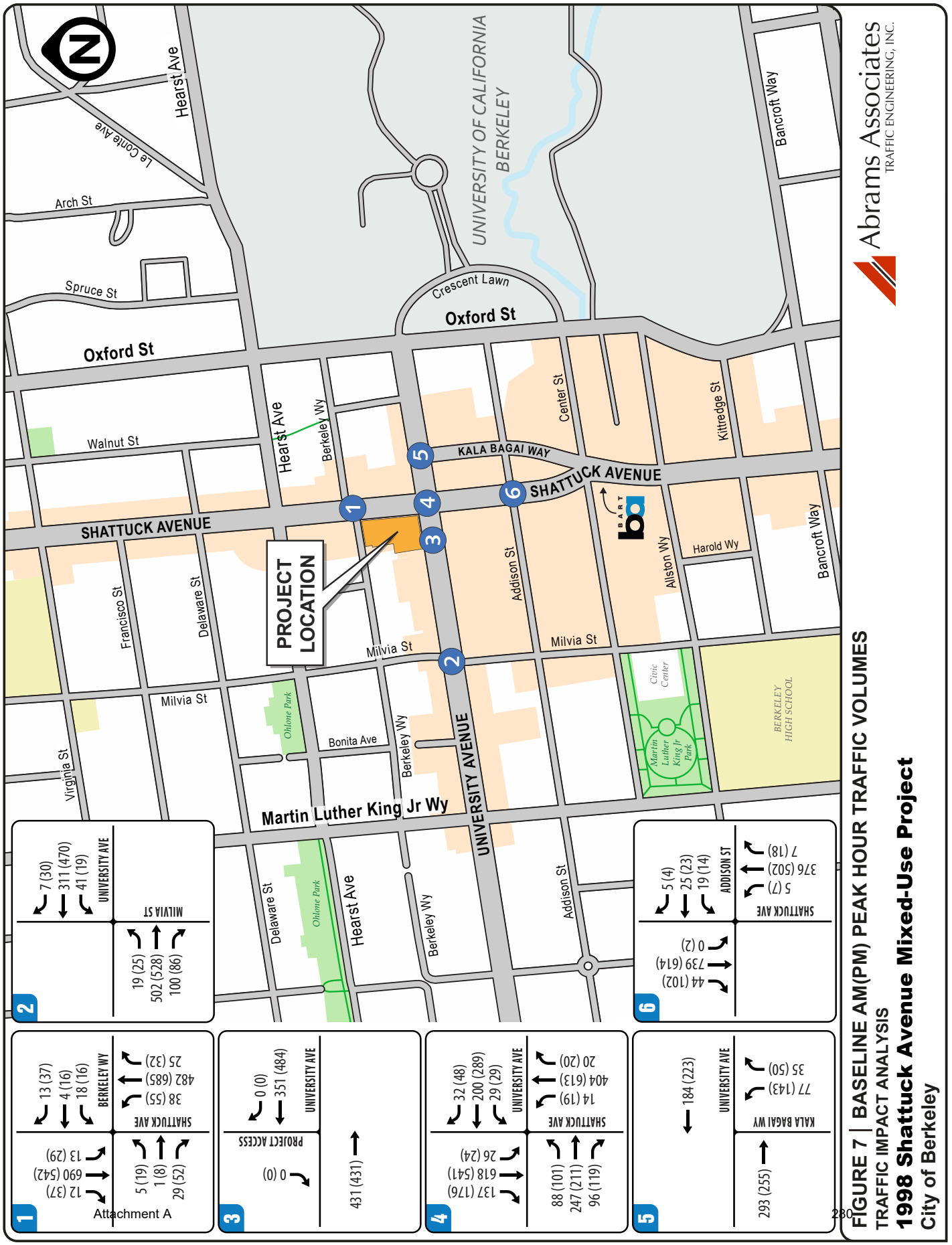

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FIGURE 7 | BASELINE AM(PM) PEAK HOUR TRAFFIC VOLUMES
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TABLE 6
BASELINE PLUS PROJECT INTERSECTION LEVEL OF SERVICE CONDITIONS

	INTERSECTION	CONTROL	PEAK HOUR	BASELINE		BASELINE PLUS PROJECT	
				Delay	LOS	Delay	LOS
1	SHATTUCK AVENUE & BERKELEY WAY	Side Street Stop	AM	**> 50.0**	**F**	**> 50.0**	**F**
			PM	**> 50.0**	**F**	**> 50.0**	**F**
2	UNIVERSITY AVENEUE & MILVIA STREET	Signalized	AM	18.5	B	18.4	B
			PM	16.4	B	16.7	B
3	UNIVERSITY AVENUE & PROJECT LOCATION	Side Street Stop	AM	N/A	N/A	13.0	B
			PM	N/A	N/A	13.7	B
4	UNIVERSITY AVENEUE & SHATTUCK AVENUE	Signalized	AM	36.2	D	36.1	D
			PM	35.4	D	35.5	D
5	UNIVERSITY AVENEUE & KALA BAGAI WAY	Signalized	AM	38.2	D	37.9	D
			PM	36.3	D	35.8	D
6	SHATTUCK AVENUE & ADDISON STREET	Signalized	AM	9.3	A	9.4	A
			PM	7.9	A	7.9	A

SOURCE: Abrams Associates, 2023

NOTES: HCM LOS results are presented in terms of seconds per vehicle.

5.5 Baseline *Plus Project* Intersection Capacity Conditions

The Baseline plus proposed project traffic forecasts were developed by adding project-related traffic to the baseline traffic volumes. As noted above, **Table 6** summarizes the LOS results for the Baseline Plus Project weekday AM and PM peak hour conditions (i.e. the existing roadway network). **Figure 8** presents the resulting baseline plus project volumes at each of the project study intersections. Please note that the corresponding LOS analysis calculation sheets are presented in the appendix. As shown in **Table 6**, all of the study intersections would continue to have acceptable conditions (LOS D or better) during the weekday AM and PM peak hours with the exception of Shattuck Avenue and Berkeley Way, which is forecast to continue operating at LOS F, regardless of whether or not the proposed project is implemented. However, a traffic signal is already planned to be installed at this intersection. Once construction of the planned traffic signal is completed, this intersection is forecast to have acceptable operations with the addition of traffic from the proposed project. Therefore, the addition of project traffic would not be considered an operational impact according to City of Berkeley guidelines.

5.6 Internal Circulation and Access

No site circulation or access issues have been identified that would cause any traffic safety issues or any unusual traffic congestion or delay. However, to prevent illegal left turns out of the project driveway it is recommended that the existing raised median on University Avenue just west of the project site be extended to Shattuck Avenue along the project frontage adjacent to the eastbound left turn lane. Accident records for surrounding streets within a block of the project site and for each of the study intersections are included in the technical appendix to this report. Per City of Berkeley guidelines, the project will need to maintain a minimum five foot by five-foot sight distance triangle at the garage entrance/exit. It is expected the project will also be

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FIGURE 8 | BASELINE PLUS PROJECT AM(PM) PEAK HOUR TRAFFIC VOLUMES
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required to provide visual and/or audio warning devices that alert pedestrians when vehicles are exiting the driveway.

5.7 Parking

This section discusses the City of Berkeley's zoning and estimated parking demand for the project. Section 23.322.030 of the Berkeley Municipal Code specifies that no parking spaces are required for residential uses within commercial districts, and a maximum of 0.5 spaces per unit may be provided. The proposed project is proposing to provide 129 spaces for the residential portion of the project. For the commercial portion of the project the City's municipal code requires a minimum of 25 parking spaces and the project is proposing to provide 25 spaces, for a total parking supply of 154 off-street parking spaces. It should also be noted that that according to the City's bicycle parking standards the project would require 237 long term bicycle parking spaces and also 27 short term spaces. The project is proposing to provide 256 long-term bicycle parking spaces while also providing another 28 short-term bicycle parking spaces provided with bicycle racks and through expansion of the on-street bicycle corral. A review of sight distance at the project driveway indicates that on-street parking should be prohibited on University Avenue for approximately 50 feet to the east of the project driveway to maintain adequate sight distance. The project is not currently proposing to include any on-street passenger or commercial loading spaces.

Parking Demand in Berkeley - For this location on a major bus route the parking demand would be less than the typical ITE rate in the Parking Generation Manual. This is based on many of the same characteristics that are discussed in the trip generation section. The availability of transit, the use of bicycles, and the attractiveness of walking in a mixed-use environment clearly results in reduced vehicle trip generation and an associated reduction in the need for parking. Since Berkeley has numerous opportunities for public transportation and the apartment residents are not all expected to have personal vehicles, it is anticipated that a substantial portion of all travel will occur by walking, bicycling, and through the use of public transit. Please note in addition to being less than two blocks from a BART station there are bus stops near the site that include access to local routes as well as transbay and all-nighter bus routes.

Summary of Findings on Parking - Based on these the above factors, the residential parking could still meet the City's zoning requirements, subject to approval by the City. With an approved use permit the zoning could allow the project to proceed with the proposed 154 space parking garage. The following are considerations that may affect the parking demand and shortfall:

1) The availability of transit has been shown to result in a significant reduction in the demand for parking and the project is being required to provide one free monthly transit

pass for each apartment unit and for each employee.[1] The Downtown Berkeley BART station is located less than two blocks from the site. This station is located on the Richmond-Fremont Line which connects to other destinations in the Bay Area, including San Francisco, at the MacArthur Station. There is also extensive bus transit service provided by Alameda-Contra Costa County (AC) Transit at the BART Station. Please note the nearest bus stops are less than a block from the site at Shattuck Avenue and Center Street. Therefore, for this project it is anticipated that a higher portion of travel will occur by walking and through the use of public transit.[2] As a result, it is also expected that some of the apartment residents will forego owning a car, or having an extra car, because of the close proximity to transit, downtown amenities, and UC Berkeley.[3]

2) The project is proposing to provide to provide 256 long-term bicycle parking spaces plus another 28 short-term bicycle parking spaces that would be provided on-street with bicycle racks and through expansion of the existing on-street bicycle corral.

3) There are numerous existing car sharing locations in the area and the project would provide three designated parking spaces for car share vehicles.

5.8 Pedestrian and Bicycle Conditions

The proposed project would not generate a significant increase in pedestrian traffic in the area (in comparison to the existing volumes) given the size of the proposed project. Based on ITE data and data from MTC's Bay Area Travel Survey for projects within 1/2 mile of a BART station during the peak commute hours the project would be forecast to generate approximately 114 transit trips, 35 bicycle trips and 257 pedestrian trips. In addition to the relatively low increase in vehicle trip generation, the proposed project would not be forecast to significantly impact or change the design of any existing pedestrian facilities and should not create any new safety problems in the area. California Highway Patrol accident records (SWITRS) for surrounding streets within a block of the project site and for each of the study intersections are included in the technical appendix to this report. A detailed review of pedestrian and bicycle collisions in the area was conducted to assist the City in the review of potential improvements.

The proposed project would not be forecast to significantly impact any existing bicycle facilities. The project will add some pedestrians and bicyclists who will utilize sidewalks and bicycle facilities in the area. Please note there are existing sidewalks and crosswalks along the route from the project to the BART station. In relation to the existing conditions, the proposed project would not cause substantial changes to the pedestrian or bicycle traffic in the area and would

[1] *Evaluating the Impact of Transit Service on Parking Demand and Requirements*, Transportation Research Board, Washington D.C., 2010.
[2] *Trip and Parking Generation at Transit-Oriented Developments: Five US Case Studies*, University of Utah, Salt Lake City, UT, 2016.
[3] *Effects of TOD on Housing, Parking, and Travel*, Transportation Research Board, Washington D.C., 2010.

not substantially impact or require changes to the design of any existing bicycle or pedestrian facilities.

With respect to planned pedestrian and bicycle facilities in the project area, the City's Pedestrian Plan has identified the nearby segment of University Avenue from San Pablo Avenue to Oxford Street as a priority street segment for improvements due to the high number of pedestrian accidents. At the adjacent study intersection of University Avenue at Shattuck Avenue proposed improvements in the Pedestrian Plan include restricting right turns on red, median refuges for pedestrians, curb extensions, a hardened centerline, an all-way pedestrian crossing (a.k.a. pedestrian scramble), and widening of the sidewalk at the existing bus stops. At the study intersection of University Avenue at Milvia Street proposed improvements in the Pedestrian Plan include restricting right turns on red, improving sightlines, median refuges for pedestrians, curb extensions, and realigning of the intersection. The City's Pedestrian Plan identifies a rectangular rapid flashing beacon (RRFB) for the mid-block crosswalk on University Avenue between Milvia Street and Shattuck Avenue.

In the project study area the City's Bicycle Plan identifies a protected intersection at University Avenue and Milvia Street. Protected intersections typically require the use of bicycle signals to isolate bicycle movements from conflicting vehicle movements. Bicycle signal phases can be added to the traffic signals to isolate bicycle movements from conflicting vehicle movements. The Bicycle Plan also specifies that University Avenue, Oxford Street, Shattuck Avenue, should be studied for potential cycletracks and Addison Street should be studied for a potential bicycle boulevard.

5.9 Transit

The proposed project would not interfere with any existing bus routes and would not remove or relocate any existing bus stops. The proposed Project also would not conflict with any transit plans or goals of the City of Berkeley. Based on the analysis of intersection operations and roadway segment speeds the project is not forecast to cause a degradation of the level of service (or a substantial increase in delay) on any roadway segments currently being utilized by bus transit in the area and, as such, no adverse effects to transit are expected. However, it is recommended that bus stop shelters and improved lighting be installed at the two bus stops adjacent to the project site on University Avenue and Shattuck Avenue, consistent with the recommendations in the AC Transit Multimodal Corridor Guidelines.[1]

5.10 Vehicle Miles Traveled

The vehicle miles traveled (VMT) in an area is one performance measure that can be used to quantify potential changes in travel from a project. This letter presents the extent of the VMT-related transportation impacts forecast to be caused by the Project. VMT is a particularly useful metric for evaluating the impacts of growth on greenhouse gas (GHG) emissions because it can

[1] *AC Transit Multimodal Corridor Guidelines*, AC Transit, Oakland, CA, April, 2018.

be used to estimate fuel consumption by motor vehicles. Increases in VMT cause proportional increases in greenhouse gas emissions and air pollution. The Office of Planning and Research (OPR) released their final guidelines in a Technical Advisory on Evaluating Transportation Impacts in CEQA, dated December 2018. This analysis is based on the City of Berkeley's adopted guidelines as set forth in a staff report to the planning commission on September 2, 2020.[1]

VMT is typically estimated using an area-wide travel demand model from a regional transportation agency that calculates VMT based on the number of vehicles multiplied by the typical distance traveled by each vehicle originating from or driving to a certain area. The volume of traffic and distance traveled depends on land use types, density, and location as well as the existing and planned future supporting transportation system, including availability of public transportation. A travel demand model attempts to represent this relationship when forecasting vehicle trips and VMT. This analysis uses the Alameda County Transportation Commission (ACTC) Travel Demand Model data on VMT per capita for various areas within the City of Berkeley. The Travel Demand Model divides areas within ACTC's jurisdiction into transportation analysis zones, or TAZs. TAZs are used in transportation planning models for transportation analysis and other planning purposes. The apartments and commercial space proposed to be built by the Project would be expected to have similar VMT as other developments in the same TAZ. The VMT per resident and per employee estimated by the ACTC Travel Model for the Project's TAZ would therefore be assumed represent the approximate VMT that would be generated by the Project as well.

As per Attachment 1 of the September 2, 2020 Planning Commission staff report, the proposed project is located in a transit priority area (TPA) and also is within an area with an average VMT per resident and per worker that is at least 15% below the respective Bay Area averages. OPR's 2018 Technical Advisory also states the following: "*Presumption of Less Than Significant Impact Near Transit Stations - Proposed CEQA Guideline Section 15064.3, subdivision (b)(1), states that lead agencies generally should presume that certain projects (including residential, retail, and office projects, as well as projects that are a mix of these uses) proposed within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor will have a less-than-significant impact on VMT*." However, the City of Berkeley VMT analysis guidelines specify that the presumption of a less-than-significant VMT impact might not be appropriate if the project:

- Has a floor area ratio (FAR) of less than 0.75.
- Includes more than 200,000 square feet of office or commercial space.
- Includes more parking supply than the project's estimated demand
- Is inconsistent with the City's General Plan, an applicable Specific Plan, or an applicable Sustainable Communities Strategy (as determined by the City, with input from the MTC).
- Replaces affordable residential units with market-rate residential units.

[1] *General Plan Amendment: Vehicle Miles Traveled (VMT) for Transportation Impact Analysis under the California Environmental Quality Act (CEQA)*, Planning Commission Staff Report, Planning and Development Department, City of Berkeley, September 2, 2020.

- Has project-specific or location-specific information that indicates that the project will generate significant levels of VMT.

Subject to City approval, none of the above factors would apply to the proposed project. The project is located less than 700 feet from the Downtown Berkeley BART station and is located near bus stops for numerous bus lines at the adjacent intersection of Shattuck Avenue and University Avenue. The project also meets the other screening criteria described above and therefore, subject to City approval, this project would be assumed to have a less than significant impact on VMT in the area.

6) SUMMARY OF IMPACTS AND IMPROVEMENT MEASURES

TR-1 The project would contribute to the existing safety problems at the following intersection:

University Avenue at Shattuck Avenue (Intersection #4)

The addition of traffic from the proposed project would contribute to the safety problems at this intersection in the plus project scenarios. In the past five years there have been 29 reported accidents at this intersection, including two involving bicycles and one involving a pedestrian. Although the safety problems at this intersection (and along the adjacent segment of University Avenue) would exist regardless of whether or not the proposed project is implemented, with implementation of the recommended improvement measures below the proposed project could improve safety in the area.

Improvement Measure #1

The improvements listed below are not currently included in the City's 5-year capital improvement program so funding has not yet been identified. Prior to construction of the identified improvements, the project would mitigate its potential contribution to safety impacts at this intersection by implementing them and/or paying a proportionate share of the construction costs. The intersection improvement measures proposed to maintain safety with the proposed project at this intersection include the following:

IM 1a *University Avenue at Shattuck Avenue* – To prevent illegal left turns out of the project driveway it is recommended that the existing raised median on University Avenue just west of the project site be extended to Shattuck Avenue along the project frontage. The raised median is recommended to be constructed adjacent to the eastbound left turn lane on the University Avenue approach to Shattuck Avenue. As part of this improvement, it is also recommended that a median refuge for pedestrians be provided for the western crosswalk across University Avenue at Shattuck Avenue, as proposed in the City's Pedestrian Plan.

IM 1b *University Avenue Mid-Block Crosswalk – Payment of a proportionate share of the cost to install rapid rectangular flashing beacons (RRFB's) for the existing University Avenue mid-block crosswalk between Shattuck Avenue and Milvia Street, meeting the City's requirements.*

TR-2 Demolition and construction activities associated with the proposed project would result in an increase in traffic to and from the site and would require an appropriate construction management plan developed and approved by the City of Berkeley, consistent with the already existing and broadly applicable standard conditions that apply to projects similar in nature.

The increase in traffic as a result of demolition and construction activities associated with the proposed project has been quantified assuming single phase construction period of 18 months.

Heavy Equipment

Heavy equipment transport to and from the site could cause traffic impacts in the vicinity of the project site during construction. However, each overweight/oversized load would be required to obtain all necessary permits, which would include conditions. Prior to issuance of grading and building permits, the project applicant would be required to submit and have approved a Traffic Control Plan.

The requirements within the Traffic Control Plan include, but are not limited to, the following: truck drivers would be notified of and required to use the most direct route between the site and the freeway, as determined by the City Traffic Engineering Department; all site ingress and egress would occur only at the main driveway to the project site and construction activities may require temporary traffic controls as determined by the City Engineer. Please note construction traffic will be directed to use University Avenue as the City has a goal of minimizing construction traffic on local streets. Specifically, designated travel routes for large vehicles would be monitored and controlled by flaggers for large construction vehicle ingress and egress. Any debris and mud caused by trucks would be monitored daily and may require instituting a street cleaning program. In addition, several loads of heavy equipment being hauled to and from the site each month would be short-term and temporary.

Employees

The weekday work is expected to begin around 7:00 AM and end around 4:00 PM. The construction worker arrival peak would occur between 6:30 AM and 7:30 AM, and the departure peak would occur between 4:00 PM and 5:00 PM. These peak hours are slightly before the citywide commute peaks. It should be noted that the trips generated during construction would be temporary

Based on past construction of similar projects, construction workers could require parking for up to 75 vehicles during the peak construction period. Additionally, deliveries, visits, and other activities may generate peak non-worker parking demand of 5 to 10 trucks and automobiles per day. Therefore, up to 85 vehicle parking spaces may be required during the peak construction period for the construction employees. It should be noted the developer and their construction team are required to provide off-street parking for their employees on the site, if possible. Furthermore, the Traffic Control Plan requires that if construction employee parking cannot be provided on the project site, then other provisions will need to be made for off-site parking, subject to approval of the City Traffic Engineering Department.

Construction Material Import

The project would also require the importation of construction material, including raw materials for the building pads, the buildings, the parking area, and landscaping. Based on past construction of similar projects, importing this material is estimated to require substantial amounts of truck traffic. Under the provisions of the Traffic Control Plan, if importation and exportation of material becomes a traffic nuisance, then the City Engineer may limit the hours the activities can take place.

Impacts of Construction on Pedestrians and Bicyclists

The project would most likely require temporary closures of sidewalks and/or vehicle lanes adjacent to the site for safety. This would require a detailed plan for detouring pedestrian and bicycle traffic. This plan will need to be reviewed and approved by the City Engineer. The analysis of traffic operations at the driveway indicates there would be no significant changes to the traffic volumes, delay, or safety on the study roadways with the addition of traffic from the proposed project. The City requires permission to close sidewalks and an acceptable traffic control plan for closures to be permitted. In general, the pedestrian and bicycle operations in the area would not be expected to change significantly during construction beyond the addition of truck traffic to the area.

Traffic Control Plan

The Traffic Control Plan would indicate how parking for construction workers would be provided during construction and ensure a safe flow of traffic in the project area during construction. This analysis assumed construction of the entire project in one phase to identify the potential worst-case traffic effects. Each phase will be subject to a Traffic Control Plan and oversight by the City Engineer and construction traffic is not forecast to exceed the post construction traffic conditions created by the proposed project. As a result, the potential construction traffic impacts have been adequately addressed through the project impact analysis. The goal of the conditional requirements of the City is to make construction impacts less than significant. There is some increase in traffic associated with all construction projects, however the required traffic management plan

is intended to ensure the effects of construction are acceptable to the City. Therefore, the demolition and construction activities associated with the proposed project or its individual phases would be expected to result in a ***less-than-significant*** impact.

Mitigation Measure(s)
None required.

TR-3 Impacts related to site access and circulation.

Based on a review of the proposed site plan it was determined that the internal garage circulation should function well and should not cause any safety or operational problems. The project site design has been required to conform to City design standards and is not expected to create any significant impacts to pedestrians or bicyclists. To prevent illegal left turns out of the project driveway it is recommended that the existing raised median on University Avenue just west of the project site be extended to Shattuck Avenue along the project frontage. This improvement measure is listed above as Improvement Measure IM 1a. A review of sight distance at the project driveway indicates that on-street parking should be prohibited on University Avenue for approximately 50 feet to the east of the project driveway to maintain adequate sight distance. With these recommended improvement measures the impacts related to site access and circulation would be ***less-than-significant***.

Improvement Measure #2

Prior to construction of the identified improvements, the project would mitigate its potential sight distance/driveway safety impacts by prohibiting parking for approximately 50 feet to the east of the project driveway. The improvement measure proposed to maintain safety at the project driveway includes the following:

IM 2a *University Avenue at the Project Driveway* – Prohibit on-street parking on the north side of University Avenue for approximately 50 feet to the east of the project driveway to maintain adequate sight distance.

TR-4 Impacts regarding emergency vehicle access on and surrounding the proposed project site.

Sufficient emergency access is determined by factors such as number of access points, roadway width, and proximity to fire stations. The land use plan for the proposed project would be subject to approval of the fire department. All lane widths adjacent to the project would meet the minimum width that can accommodate an emergency vehicle; therefore, the width of the roadways would be adequate. Therefore, the development of the proposed project is expected to have ***less-than-significant*** impacts regarding emergency vehicle access.

Mitigation Measure(s)
None required.

Fine Dining Restaurant
(931)

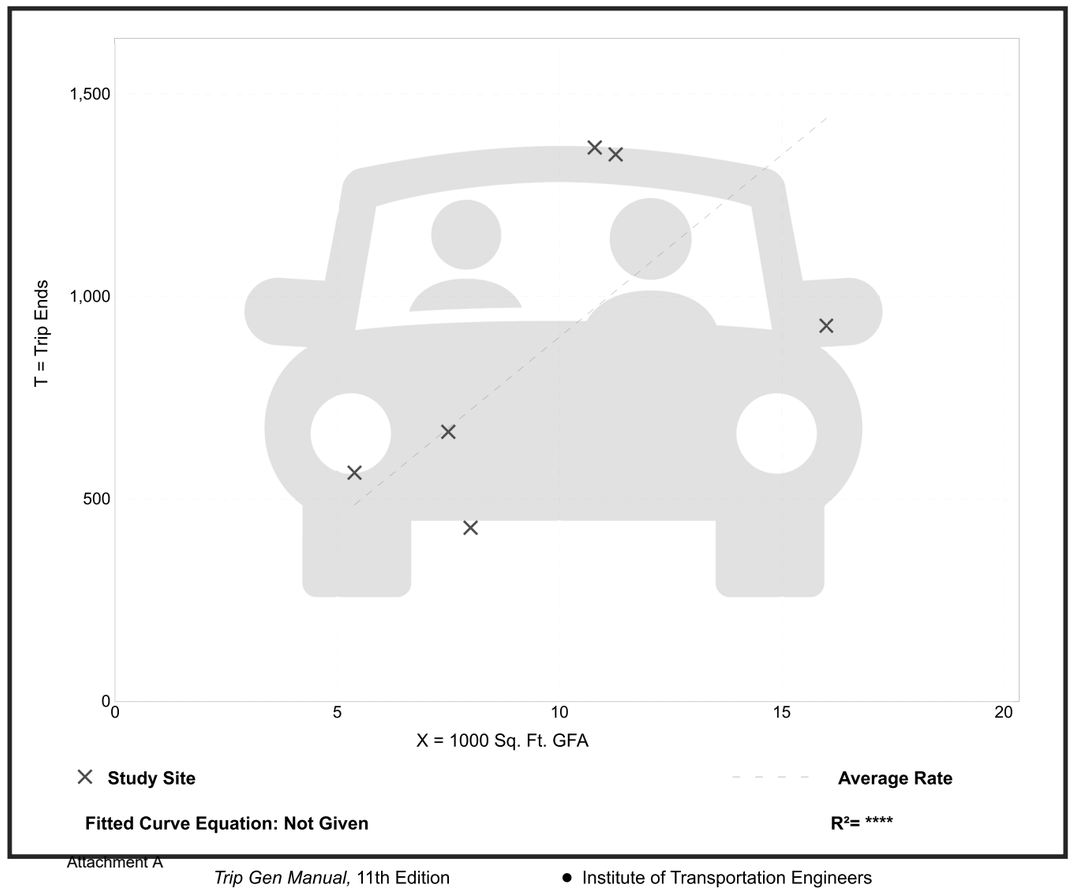
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
90.04	53.63 - 126.78	32.81

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

Fine Dining Restaurant
(931)

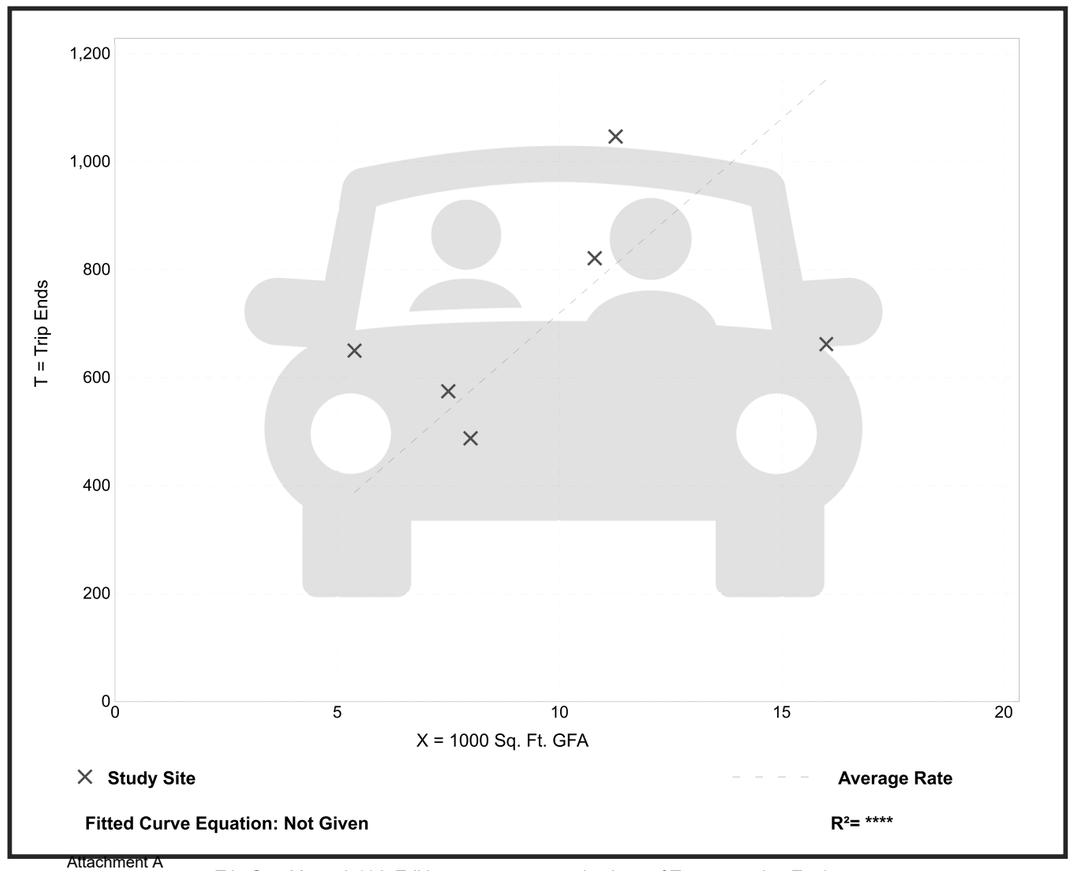
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Sunday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
71.97	41.38 - 120.59	26.30

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

STRATEGICECONOMICS

MEMORANDUM

To: Sharon Gong, City of Berkeley

From: Dena Belzer and Jake Cummings, Strategic Economics

Date: November 7, 2024

Subject: Peer Review of Pro Forma Assumptions for University Corners

BACKGROUND AND PURPOSE

The City of Berkeley retained Strategic Economics to conduct a peer review of the financial pro forma for the University Corners development proposal in downtown Berkeley ("applicant proposal"). The development site is at the corner of University and Shattuck Avenues and consists of five parcels spanning the addresses 1071 to 1079 University Avenue and 1950 to 1988 Shattuck Avenue. The applicant proposes to redevelop the site into a 28-story building that will include 599 residential units (489 studios and 110 two-bedrooms), ground floor and rooftop retail totaling 16,142 square feet, and 154 parking spaces. The specific details of this development program may be revised as the applicant proceeds through the entitlement process.

For this study, Strategic Economics reviewed available market data and conducted independent research to verify that the key assumptions in the applicant's pro forma are consistent with current market conditions and standard development practice. The pro forma assumptions under review include ongoing revenues and expenses for the project, construction ("hard") costs, soft costs, and municipal fees. Strategic Economics gathered current market data from CoStar and other sources. Strategic Economics also spoke with two developers that were interviewed for a similar study, performed for the City in 2023, to get updated estimates for development costs and ongoing expenses. Because the applicant proposal's land cost is not available, Strategic Economics was unable to verify this element of the pro forma; however, this report includes an estimate of market land costs for similar developments in Berkeley.

Memo Organization

The first section summarizes the results of the pro forma review and includes a discussion of the robustness of the results related to any potential future changes in the applicant's development program. The second section contains a detailed discussion of the methodology Strategic Economics applied to verify each of the key assumptions and arrive at the findings.

SUMMARY OF RESULTS

For each of the key pro forma assumptions, Strategic Economics developed an independently researched range of likely values to compare with the assumptions provided in the applicant's pro forma. Strategic Economics' researched values are *untrended* estimates of costs and revenues in the current market. Conditions are subject to change over the multi-year period of development and lease-up. The comparison of pro forma assumptions is summarized in Figure 1.

The applicant's residential revenue assumptions are optimistic compared to current market rents. As shown in Figure 1, the residential market rent assumption of $8.03 per square foot is higher than Strategic Economics' estimated range of rents attainable in the market today. This assumption implies gross potential revenues for the project's residential area would be approximately 13 percent higher than the midpoint of the rent range for existing projects. The operating expense ratio of 31 percent and standard vacancy assumption of five percent are within Strategic Economics' estimated ranges, but in both cases toward the lower end of the range. Taken together, the applicant's assumptions result in a net operating income of $16.5 million on the project's residential area, approximately 20 higher than Strategic Economics' midpoint estimate. Strategic Economics' analysis, corroborated by developer interviews, indicates that the market is currently softer than in recent years due to the pace of new units entering the market. However, the applicant's higher revenue performance assumptions may reflect a belief that conditions will improve by the time the project starts leasing in the coming years.

Revenue assumptions for the retail area and parking are within the estimated ranges based on current market conditions. The retail rent assumption of $6.00 per square foot, triple net, is at the very top of the estimated range by Strategic Economics, while the assumption for parking at $200 per month is at the bottom of the range. The retail assumption may be conditioned on the ultimate retail uses and the cost of tenant improvements that might be offered to help lease the space. The low monthly parking rates may reflect the relative attractiveness of parking with mechanical stackers. In both cases, the potential variation in retail and parking revenues constitute a small share of project revenues and are unlikely to have a significant impact on overall project performance.

The applicant's development costs are within the range of current market values, but at the lower end of the range. The applicant's pro forma assumes construction costs will be $555 per square foot. For a high-rise development with a high unit density of furnished units, basement parking, and a project labor agreement, Strategic Economics estimates construction costs of $550 to $600 per square foot. The soft cost assumption is similarly low, but within the estimated ranges, at 20 percent of hard construction costs.

Strategic Economics estimated municipal fees of $35,638 per unit, approximately ten percent lower than the applicant's pro forma assumption of $40,000 per unit. While Strategic Economics estimated the main categories of fees for the project, it is possible other municipal fees may apply to the applicant's proposal, or that the applicant is assuming a contingency in its budget for fees.

While land costs for the applicant proposal were unavailable, Strategic Economics estimates the market value of land for high rise development in downtown Berkeley to be $70,000 to $120,000 per unit. The applicant reports that the development site is controlled by a purchase and sale agreement, of unknown value, that has been negotiated with the separate entities that own different portions of the development site.

FIGURE 1: COMPARISON OF KEY PRO FORMA ASSUMPTIONS TO VALUES ESTIMATED BY STRATEGIC ECONOMICS

	Strategic Economics Estimated Value	Applicant Pro Forma Assumption
Residential Monthly Rent Market Rate Units, per sf	$6.50 to $7.75	$8.03
Retail Monthly Rent per sf (NNN)	$4.50 to $6.00	$6.00
Parking Monthly Rent per space	$200 to $250	$200
Vacancy and Collections Loss	5% to 10%	5%
Operating Expenses	30% to 35%	31%
Construction Costs per gsf	$550 to $600	$555
Soft Costs (excl. Fees) per gsf (% of constr. Costs)	$110 to $150 (20% to 25%)	$113 (20%)
Municipal Fees per unit	$35,638	$40,000
Land Cost per unit	$70,000 to $120,000	not available

Source: Strategic Economics, 2024.

Applicability of Results to Proposal Revisions

For this study, Strategic Economics evaluated a working development proposal that may be revised as the applicant proceeds through the entitlement process. Within the context of the current market, limited modifications in the applicant's proposed programming and design would not change the general conclusions of the peer review, provided these modifications retain the key defining characteristics of the development that determine market revenues, costs, and fees. Some of these defining characteristics include:

- High-rise construction of at least 180 feet in height;
- Includes a project labor agreement;
- Any retail is high quality ground floor retail or other retail that constitutes a minor component of the overall development;
- Includes subterranean parking, at similar parking ratios, utilizing mechanical stackers;
- Residential units are furnished and generally targeted to the student housing market, with a small average unit size (300 to 600 square feet).

A significant deviation from these development characteristics would affect the pro forma assumptions applied to this study. For example, a significant increase in unit sizes would reduce the cost of utility systems and furnishings while also impacting the achievable rent per square foot for the project.

REVIEW OF KEY ASSUMPTIONS

The following section reviews the approach and sources of information used to verify each key assumption.

Rental Rates for Residential

The applicant expects $25.7 million in gross potential revenues per year for the residential portion of the development, equivalent to $7.55 per rentable square foot. This average rental rate is a blended number that includes both market rent assumptions and below market rents, which are set not by the market or the developer but by federal housing policy where rents are set based on a fixed percentage of area median incomes. To evaluate the market rent assumption, Strategic Economics disaggregated this blended rental rate to establish the average rental rate assumed only for the market rate units in the project. By subtracting out the portion of rental revenues from the below market rate units (Figure 2), the balance of revenues was attributed to the market rate units (Figure 3). This calculation yields an average monthly rent assumption of approximately $3,800 per market rate unit, or $8.00 per rentable square foot.

FIGURE 2: CALCULATION OF GROSS POTENTIAL REVENUE FOR BELOW MARKET RATE UNITS

	Total Dwelling Units	Below Market Rate Units	Percent Below Market Rate Units	Below Market Monthly Rent	Annual Income from BMR Units
Studio	489	48	10%	$1,411	$812,736
2-BR	110	10	9%	$1,558	$186,960
Total	**599**	**58**	**10%**		**$999,696**

Note: Below Market Rents were calculated as 30 percent of Alameda County Area Median Income Limits for Very Low (50% of AMI) Income households, with an assumed household size equal to the number of bedrooms plus one person.

Sources: Project Application Packet, City of Berkeley, 2024; U.S. Department of Housing and Urban Development, 2024; Strategic Economics, 2024.

FIGURE 3: CALCULATION OF MARKET RATE POTENTIAL REVENUE AND AVERAGE RENTS

	All Units	Below Market Rate Units	Market Rate Units
Gross Potential Rent	$25,748,973	$999,696	$24,749,277
Dwelling Units	599	58	541
Rentable Square Feet per Unit	475	475	475
Total Rentable Square Feet	284,535	27,551	256,984
Average Rent			
Per dwelling unit	$3,582	$1,436	**$3,812**
Per net sf	$7.55	$3.02	**$8.03**

Sources: Project Application Packet, City of Berkeley, 2022; Strategic Economics, 2023.

To validate the market rent assumption, Strategic Economics reviewed average rents from CoStar for comparable developments in downtown Berkeley (Figures 4 and 5) and interviewed area developers. According to developers, student housing represents the highest and best use for the site. Student housing in Berkeley is generally offered fully furnished and often with multiple occupancy bedrooms

(two or more residents per bedroom). The applicant's pro forma includes a line for fixtures, furnishings, and equipment, which further suggests the development will be marketed as student housing.

As shown in Figure 4, CoStar reports the average rent in comparable student housing to be $6.69 per square foot; however, the reported rent performance among the developments varies significantly, from $4.05 to $8.52 per square foot. Figure 5, which plots the rent assumption for the applicant proposal against the comparable developments, shows that the rent assumption of $8.03 is on the high side of a wide range of average rents for comparable developments. Considering the size of the units, the rent assumption is approximately 15 percent higher than what would be predicted by a trend line for the proposal's average unit size of 475 square feet.

The applicant's high rent assumption could be explained by the potential to charge a rent premium on the upper floors of the development. However, since no comparable existing development is higher than 12 stories, there is little evidence available to support the higher assumption. Developers interviewed for this study were mixed on the potential for a significant view premium. In past studies, Strategic Economics has estimated the assumption for average rents could rise up to ten percent for a building of this height, but the rent premium could be negligible when considering the limited depth in the ultra-premium segment of the student housing market.

A second concern, expressed in developer interviews, is whether the market rents as reported by CoStar adequately account for the significant concessions that student housing properties often need to offer to attract tenants in the current market. As shown in Figure 6, average effective rents declined by more than 20 percent between 2023 and 2024, while vacancy rates have inched up from nine to 12 percent. In the past ten years, 3,300 new units have been added to Berkeley's student housing inventory (Figure 7), while the cumulative absorption of these units lags 12 percent behind that number. These trends point to a softening of the student housing market, with achievable rents that may be lower than the available data would suggest.

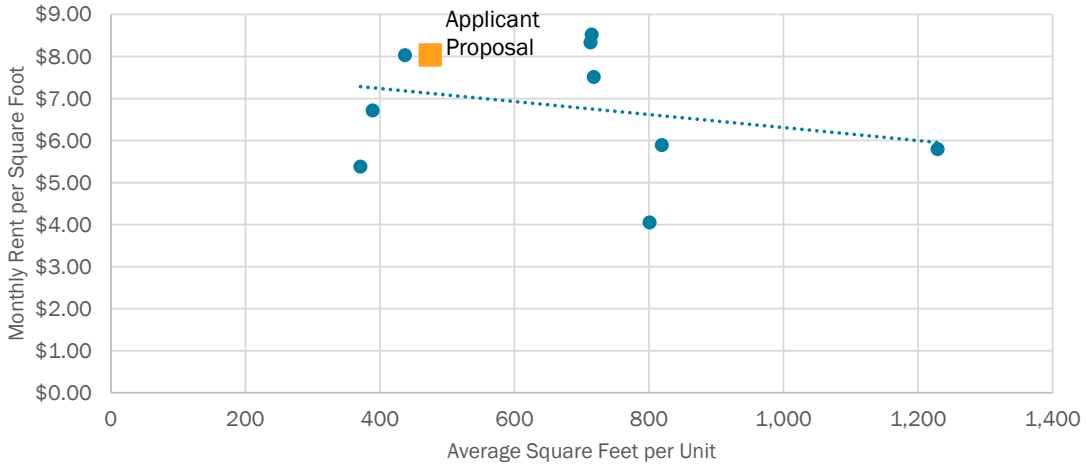
Owing to the factors above, Strategic Economics estimates that the achievable rent for the applicant's proposal under current market conditions is between $6.50 and $7.75 per square foot ($3,100 to $3,700 per unit). This range represents a rental rate of $7.14 per square foot as predicted in Figure 5, plus or minus approximately ten percent. The upside of this range accounts for the potential for view premiums, while the downside accounts for the rent concessions and discounts likely necessary to absorb the excess supply in today's market. As demand catches up to new supply over the upcoming period in which the development begins leasing, more favorable conditions could lift average rents to $8.00 as assumed in the applicant's proposal.

FIGURE 4: COMPARABLE STUDENT HOUSING DEVELOPMENTS IN BERKELEY*

Property Name	Year Built	Number Of Units	Number Of Stories	Avg Unit SF	Avg Effective Rent per Unit	Avg Effective Rent per SF
The Panoramic Berkeley	2019	70	6	718	$5,397	$7.51
The Durant	2020	56	5	437	$3,515	$8.03
The Standard at Berkeley	2021	318	8	715	$6,098	$8.52
The Den	2021	40	7	1,229	$5,111	$5.79
Identity Logan Park	2022	204	8	819	$4,826	$5.89
Rise at Berkeley	2023	48	7	371	$1,995	$5.38
Ace Berkeley	2024	163	12	801	$3,244	$4.05
HUB Bancroft	2024	87	8	713	$5,939	$8.33
Aquatic	2024	74	8	389	$2,614	$6.71
Average				**688**	**$4,304**	**$6.69**

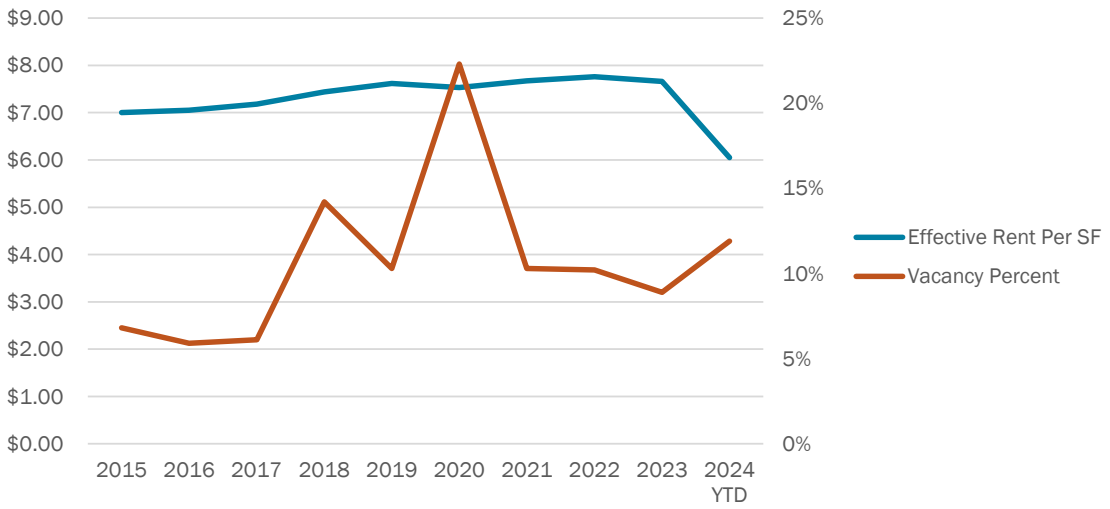
* Comparable developments are student housing developments in Berkeley of at least 25 units and built in 2019 or later.
Sources: CoStar, 2024; Strategic Economics, 2024.

FIGURE 5: AVERAGE UNIT SIZE AND AVERAGE MONTHLY RENT FOR APPLICANT PROPOSAL AND COMPARABLE DEVELOPMENTS*



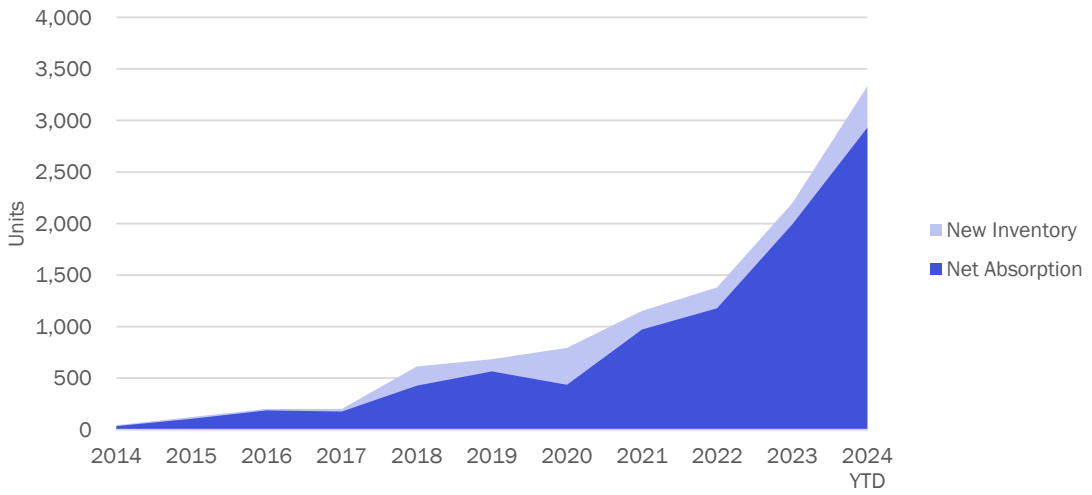
* Comparable developments are student housing developments in Berkeley of at least 25 units and built in 2019 or later.
Sources: CoStar, 2024; Strategic Economics, 2024.

FIGURE 6: AVERAGE RENT PER SQUARE FOOT AND AVERAGE VACANCY OF STUDENT HOUSING IN BERKELEY, 2015 TO 2024



Sources: CoStar, 2024; Strategic Economics, 2024.

FIGURE 7: CUMULATIVE NEW STUDENT HOUSING INVENTORY AND NET ABSORPTION SINCE 2014



Sources: CoStar, 2024; Strategic Economics, 2024.

Rental Rates for Retail

Strategic Economics developed assumptions for retail rental rates by speaking with two brokers familiar with leasing in downtown Berkeley. While no data was available for recently constructed retail spaces or rooftop restaurants in downtown Berkeley, brokers estimated that achievable rents in the current market would range from $4.50 to $6.00 per square foot on a triple net basis, depending on

factors such as type of retail or restaurant use, tenant improvement allowance, and the size of spaces offered.

Rental Rates for Parking

Strategic Economics collected pricing information from three parking garages in downtown Berkeley that offer parking at a monthly rate. As shown in Figure 8, monthly parking rates range from $210 per space to $250 per space. The applicant's assumption for parking prices at $200 per space is slightly below the range in parking rates at nearby garages, but this may be an appropriate assumption considering the reduced convenience of parking using mechanical stackers.

FIGURE 8: COMPARABLE RENTS FOR GARAGE PARKING IN DOWNTOWN BERKELEY

	Monthly Rent per Space
Center Street Garage	$250
2020 Kittredge Street (resident unreserved parking)	$210
1922 Walnut St (Modera)	$225

Source: Parking garage websites, interviews, 2024; Strategic Economics, 2024.

Vacancy and Collection Loss

The applicant's pro forma assumes an average vacancy and collection loss rate of five percent. This is a standard assumption for residential development in the San Francisco Bay Area; however, interviews with developers indicated that vacancy rates for student housing could be higher than five percent in the current market. The average vacancy reported by CoStar for comparable buildings, (excluding those built in 2023 or 2024, which may still be in their lease-up periods) currently stands at 7.2 percent. Therefore, Strategic Economics expects the stabilized vacancy rate for new developments to be five to ten percent under current market conditions.

Retail space typically has a higher stabilized vacancy rate than five percent, while below market rate units generally have a lower rate. Because these uses represent a minor source of revenue for the project, substantial variations from the five percent vacancy assumption are not expected to significantly impact the net operating income for the overall project.

Operating Expenses

Based on developer interviews, Strategic Economics expects operating expenses to range between 30 and 35 percent of gross revenues, with the upper end of the range likely for buildings with higher personnel costs associated with around-the-clock security and desk attendant. At 31 percent, the applicant's pro forma is consistent with this range of values.

Construction Costs

To estimate construction costs, Strategic Economics updated its assumptions for a similar study in 2023 by interviewing two developers experienced with high rise residential construction in Berkeley.

Based on these interviews, Strategic Economics estimates a range of construction costs of $550 to $600 per square foot of gross building area for the applicant's proposal. The applicant's pro forma assumes $555 per square foot of gross building area, which is consistent with, but at the lower end of, the estimated range.

Major considerations for this range of costs include:

- The project labor agreement, which is expected to elevate average costs by 20 to 30 percent over nonunion labor;
- The additional costs for furniture, fixtures, and equipment;
- The average unit size of 475 square feet, reflecting a unit mix with 80 percent studios. Smaller units tend to increase per square foot construction costs due to the greater density of utility systems, fixtures, furnishings, and equipment;
- Parking is provided below ground in two basements levels, which tends to be significantly more expensive than above ground parking;
- Finally, the additional costs of LEED enhancements and certification were judged to be negligible, according to developers interviewed for this study.

Soft Costs

According to developers, soft costs for high rise construction, before considering municipal fees, tend to total approximately 20 to 25 percent of hard costs. On a construction budget of $550 to $600 per square foot, soft costs would then typically range between $110 to $150 per square foot excluding municipal fees, which are discussed in the next section. The applicant reports total soft costs of $70.6 million, of which $24.0 million is budgeted for municipal fees, leaving $46.6 million in other soft costs. This equates to $113 per square foot, within the lower end of the range estimated by Strategic Economics.

Municipal Fees

Strategic Economics estimated the major categories of municipal fees for the project using the City's online reference materials and fee estimators, as shown in Figure 9. Because detailed technical specifications to calculate sewer connection fees for the building were unavailable, Strategic Economics estimated these fees based on the average per unit fees from a recent project (2352 Shattuck Avenue).

Strategic Economics estimated municipal fees of $35,638 per unit, approximately ten percent lower than the applicant's pro forma assumption of $40,000 per unit.. While Strategic Economics estimated the main categories of fees for the project, it is possible other municipal fees may apply to the applicant's proposal, or that the applicant is assuming a contingency in its budget for fees.

FIGURE 9: CALCULATION OF MUNICIPAL FEES

Fee	Calculated Amount	Notes
BUSD Developer Fee	$2,056,681	$5.17 per sf residential, $0.84 per sf commercial
Building Permit Fees	$5,025,272	From online calculator
Plan Check Fees	$3,266,427	From online calculator
Other Permit Fees (Fire Plan, etc)	$2,400,772	From online calculator
Affordable Housing Mitigation Fee	$2,968,663	From Affordable Housing Compliance Plan
SOSIP (Residential) Fee	$881,269	$2.23 per net new sf residential
SOSIP (Commercial) Fee	$0	No net new commercial sf
Sewer Connection	$2,236,929	Assumes $3,734 per unit based on similar projects
1% Arts Fee	$2,511,411	0.8% of construction costs
Total	**$21,347,424**	
Per Unit	**$35,638**	
Per sf	**$52**	

Sources: City of Berkeley Development Fee Schedule, August 2024; City of Berkeley Online Fee Estimator, 2024; Applicant packet, 2024; Strategic Economics, 2024.

Land Costs

According to public documents, the five parcels that constitute the development site are currently owned by four separate entities; however, the entire site is controlled by the development group under a Purchase and Sale Agreement with the fee owners. Because the negotiated value of this PSA has not been made public, the land cost for the applicant proposal is not known.

For a similar study in 2023, Strategic Economics prepared a set of comparable land sales for high rise development in downtown Berkeley. These comparable sales (no other relevant sales have occurred since the 2023 study), are provided in Figure 10 below as supporting information, but without the details of the applicant's ownership agreements, Strategic Economics was unable to make a land value comparison.

Based on comparable land sales, Strategic Economics estimates current market values for land to be $70,000 to $120,000 per unit. Three land sales for high-rise development in downtown Berkeley in the last ten years were available: 2190 Shattuck Avenue ($70,552 per unit), 1951 Shattuck Avenue ($82,209 per unit), and 2274 Shattuck Avenue ($29,289 per unit). Of these, the land cost for 2274 Shattuck appears to be an anomaly and is inconsistent with general land costs for high-rise development in the Bay Area. This may be because of additional cost burdens, such as historical landmarking, associated with redevelopment of the site. Representing an upper bound on land values, an 83-unit mid-rise development at 2538 Durant had a land cost of $120,484 per unit.

FIGURE 10: COMPARABLE LAND SALES IN DOWNTOWN BERKELEY

Property Address	Building Type	Sale Date	Sale Price	Units	Sale Price per Unit
2190 Shattuck Ave	High-rise	2015	$23,000,000	326	$70,552
1951 Shattuck Ave	High-rise	2017	$13,400,000	163	$82,209
2274 Shattuck Ave	High-rise	2022	$7,000,000	239	$29,289
2538 Durant Ave	Mid-rise	2022	$10,000,000	83	$120,482

Source: Costar, 2023; Strategic Economics, 2024.

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October 8, 2024

Sharon Gong - Senior Planner
City of Berkeley Planning Department
1947 Center Street, 3rd Floor
Berkeley, CA 94704

Re: **1950-1998 Shattuck Avenue - Eligibility for CEQA Exemption**

Dear Sharon,

We represent McSpats, LLC (the "Applicant") in connection with its proposed mixed-use development at 1950-1998 Shattuck Avenue (the "Project Site") in Berkeley (the "City") with Application No. ZP2023-0040 (the "Project"). We understand that on April 11, 2024, the City determined the Project's application to be complete for processing. We further understand that in a May 16, 2024 letter and in other subsequent communication with the Applicant, the City has indicated a Class 32 Infill Exemption is the appropriate route for California Environmental Quality Act ("CEQA") compliance, subject to confirmation that the Project qualifies with all eligibility criteria, and that none of the exceptions to the exemption apply.

To support the City's determination, the Applicant has specifically prepared and submitted technical reports to demonstrate that the Project would not cause significant water quality impacts,[1] noise impacts,[2] and air quality impacts[3] (in addition to the Traffic Impact Analysis and other technical reports that were previously submitted for the Project). We understand that the City has also expressed a desire for further documentation of the Project's failure to cause cumulatively significant impacts. Accordingly, the purposes of this letter are threefold:

1. To provide the City with the requested support indicating that the Project will not have a significant cumulative impact resulting from "successive projects of the same type in the same place, over time";

[1] See FirstCarbon Solutions, Inc.'s report entitled "Water Quality Memorandum for the Proposed 1974 Shattuck Avenue Mixed Use Project in Berkeley, California," dated August 22, 2024.
[2] See FirstCarbon Solutions, Inc.'s report entitled "Noise Impact Analysis for the Proposed 1974 Shattuck Avenue Mixed Use Project in Berkeley, California," dated August 30, 2024.
[3] See FirstCarbon Solutions, Inc.'s report entitled" Air Quality Impacts Analysis for the 1974 Shattuck Avenue Mixed Use Project in Berkeley, California," dated August 30, 2024.

2. To remind the City of the limited scope of CEQA review as it applies to Housing Accountability Act ("HAA") projects; and

3. To briefly document the Project's eligibility for the protections of Assembly Bill 1633 ("AB 1633"), should they be needed in the future.

Support for Class 32 Infill Exemption Due to Lack of Significant Cumulative Impacts

CEQA limits the use of Class 32 Infill Exemptions in situations where a development would cause significant cumulative impacts that are specifically from "*successive projects of the same type in the same place, over time*."[4]

It is our understanding that "in the same place" is best understood to mean the Project Site, and at most the sites immediately surrounding it. Potential construction impacts of the Project would be temporary and confined to the vicinity of the Project Site; moreover, potential impacts would be subject to local, regional, and State regulations to reduce effects during construction. No successive projects on the Project Site are known or expected to occur over time that would result in cumulatively considerable impacts. Rather, the Project is a single residential development that will exist in this location for at least several decades, and that will occupy the entirety of the Project Site. Finally, the technical reports that the Applicant had prepared and submitted to the City for air quality, water quality, noise, document the lack of cumulative impacts in these areas specifically.

We understand that with approval of the Project, the City will have exceeded the number of residential units that the Downtown Area Plan EIR assumed for the area. However, this fact alone says nothing about the Project's tendency to cause significant cumulative impacts. Rather, the Project is subject to its own, independent CEQA compliance requirement separate from the Downtown Area Plan, and there is no evidence available to indicate that this specific residential development would cause such impacts, where previous developments that fit within the Downtown Area Plan assumptions did not. Finally, whether other applicants apply for and the City is required by State law to approve additional residential units in the area after the Project, is also not affected in any way by the Project, but rather is a matter of State law.

For all of the above reasons, the Project will not cause significant cumulative impacts from "successive projects of the same type in the same place, over time."

CEQA Compliance for HAA Eligible Projects

The Project's status as an HAA protected affordable housing development project limits the scope of the City's review of the Project under CEQA. As the leading treatise states: "When the discretion a lead agency may exercise in granting an approval for a project is confined, CEQA

[4] CEQA Guidelines Section 15300.2(b).

review for that approval may be limited to match the scope of that discretion." *Practice Under the California Environmental Quality Act* (2d ed. Cal. CEB 2023) §12.8.

This legal principle was affirmed in a recent, lengthy discussion by the First District Court of Appeal in *Tiburon Open Space Committee v. County of Marin* (2022) 78 Cal.App.5th 700 ("*Tiburon*"). The *Tiburon* court's full discussion is illuminating:

> "CEQA ... recognizes that an agency's discretion is limited by its own legal obligations. **Accordingly, where a legal obligation limits an agency's discretion, the scope of environmental review likewise is limited.** (See, e.g., *Sequoyah Hills Homeowners Association v. City of Oakland* (1993) 23 Cal.App.4th 704, 714-716, 29 Cal.Rptr.2d 182.) This is also consistent with CEQA's requirement that an agency exercise its discretionary powers in a manner 'consistent with express or implied limitations provided by other laws.' CEQA Guidelines, § 15040, subd. (e). …Where a lead agency's discretion already is limited by legal obligations, therefore, the scope of environmental review adjusts in relation to the amount of discretion. …
>
> Accordingly, an EIR must reflect any applicable legal obligations that limit the agency's discretionary authority, and thus the scope of review. And while CEQA imposes a duty on lead agencies to avoid or mitigate significant environmental impacts caused by projects, such duty exists only to the extent feasible. … Mitigation measures that conflict with legal obligations are legally infeasible and 'need not be proposed or analyzed.' CEQA Guidelines § 15126.4, subd. (a)(5); *see also* § 21004. Alternatives that conflict with obligations also are legally infeasible and need not be analyzed. CEQA Guidelines § 15126.6, subd. (a) ('An EIR is not required to consider alternatives which are infeasible ...')."

Tiburon, 78 Cal.App.5th at 732-33 (internal quotations omitted) (emphasis added). *See also Practice Under the California Environmental Quality Act* (2d ed. Cal. CEB 2023) §19.39 ("The agency is not required to assess environmental impacts that are outside the scope of its discretionary authority."); *San Diego Navy Broadway Complex Coalition v. City of San Diego* (2010) 185 Cal.App.4th 924, 938 ("Where an agency has no authority to modify a project based on the analysis contained in the EIR, there is no basis for requiring the agency to prepare the EIR.").

As such, regardless of what the proper scope of CEQA review would typically be, for this Project it is significantly limited by the HAA. To that end, the City should ensure that environmental review is confined to those issues over which it possesses discretionary authority – specifically, potential health and safety impacts, as discussed above, and it is entirely appropriate for the Project to proceed using a Class 32 Infill exemption, as also detailed above.

The Project's Eligibility for AB 1633

The new protections afforded by AB 1633 further confine the City's environmental review of the Project. AB 1633 established new violations of the HAA. It is now a violation of the HAA to fail to grant qualifying projects a CEQA exemption, where there is substantial evidence in the record that the project is eligible for such an exemption. AB 1633 limits the City's authority to require analysis that is not legally required and beyond the limited scope of its discretion.

As detailed in **Attachment A** to this letter, the Project's site satisfies all the criteria necessary to be eligible for AB 1633, and the Project is *not* within any of the following locations of environmental concern:

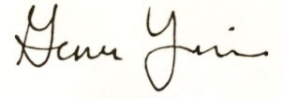
- Coastal zone
- Prime farmland
- Wetlands
- Sites on the Cortese List
- A state-delineated earthquake fault zone
- A special flood hazard area subject to a 100-year flood
- A Federal Emergency Management Agency ("FEMA") designated floodway
- A site designated for conservation
- Habitat for protected species
- A site encumbered by a conservation easement
- A very high fire hazard severity zone

Therefore, the City must adhere to the procedural requirements governing consideration of the Project's eligibility for an exemption. The Applicant seeks to ensure that the City's CEQA review proceeds in strict conformance with these heightened standards to help streamline the delivery of much needed housing in Berkeley, in line with the goal of addressing the state's housing crisis.

We appreciate your continued attention to this Project.

Sincerely,

HOLLAND & KNIGHT LLP



Genna Yarkin

ATTACHMENT A

Analysis of Project Eligibility for AB 1633 Protections

FAILURE TO MAKE CEQA EXEMPTION DETERMINATION	
ELIGIBILITY CRITERIA	**PROJECT CONSISTENCY**
(1) "*[S]ubstantial evidence in the record before the local agency that the* ***housing development project*** *is* ***not*** *located . . .*" in the following areas:[5]	
Within specified areas of a coastal zone[6]	*The Project site is not located within the coastal zone.*
"Either prime farmland or farmland of statewide importance . . . designated on the maps prepared by the Farmland Mapping and Monitoring Program of the Department of Conservation, or land zoned or designated for agricultural protection or preservation by a local ballot measure that was approved by the voters of that jurisdiction."[7]	*The Project site is not designated prime farmland or farmland of statewide importance by the California Department of Conservation.* *Rather, the Project site is in an infill location zoned for urban development.*
Wetlands[8]	*The Project site is fully developed with urban uses and does not contain wetlands.*
A hazardous waste site listed on the Cortese List "or a hazardous waste site designated by the Department of Toxic Substances Control," unless the Department of Toxic Substances Control has cleared the site for residential or residential mixed uses.[9]	*The Project site is not listed on the Cortese List and it is not designated by the Department of Toxic Substances Control as a hazardous waste site.*[10]
Within a state-delineated earthquake fault zone, "unless the development complies with applicable seismic protection building	*The Project site is not located within a state-delineated earthquake fault zone.*[12]

[5] Gov. Code § 65589.5(h)(6)(D)(i)(I) ("(ia) On a site specified in subparagraphs (A) to (C), inclusive, or subparagraphs (E) to (K), inclusive, of paragraph (6) of subdivision (a) of Section 65913.4"; and "(ib) Within a very high fire hazard severity zone, as determined by the Department of Forestry and Fire Protection pursuant to Section 51178, or within a high or very high fire hazard severity zone as indicated on maps adopted by the Department of Forestry and Fire Protection pursuant to Section 4202 of the Public Resources Code.").
[6] Gov. Code § 65913.4(a)(6)(A) (as amended by SB 423 (2023)).
[7] Gov. Code § 65913.4(a)(6)(B).
[8] Gov. Code § 65913.4(a)(6)(C) ("as defined in the United States Fish and Wildlife Service Manual, Part 660 FW 2 (June 21, 1993)").
[9] Gov. Code § 65913.4(a)(6)(E).
[10] See https://calepa.ca.gov/sitecleanup/corteselist/; see also the Project's Phase I Environmental Site Assessment.
[12] See City GIS.

code standards adopted by the California Building Standards Commission . . ., and by any local building department . . ..”[11]	
“Within a special flood hazard area subject to inundation by the 1 percent chance of flood,” unless the project has been issued a Letter of Map Revision or flood plain development permit.[13]	*The Project site is not within a special flood hazard area.*[14]
Within a floodway, unless the project has received a no-rise certification.[15]	*The Project site is not located within a floodway.*[16]
“Lands identified for conservation in an adopted natural community conservation plan . . ., habitat conservation plan . . ., or other adopted natural resource protection plan.”[17]	*The Project site is developed for and planned for urban uses and is not within a conservation plan area.*
“Habitat for protected species identified as candidate, sensitive, or species of special status by state or federal agencies, fully protected species, or species protected by the Federal Endangered Species Act . . ., the California Endangered Species Act . . ., or the Native Plant Protection Act . . ..”[18]	*The Project site is developed with urban uses and entirely surrounded by urban uses. It does not serve as habitat for protected species.*
“Lands under conservation easement.”[19]	*There are no conservation easements recorded on the property, as demonstrated by the Project site’s title report.*
“Within a very high fire hazard severity zone, as determined by the Department of Forestry and Fire Protection.”[20]	*The Project site is not located within a Very High Fire Hazard Severity Zone.*[21]

[11] Gov. Code § 65913.4(a)(6)(F).
[13] Gov. Code § 65913.4(a)(6)(G).
[14] See City GIS.
[15] Gov. Code § 65913.4(a)(6)(H).
[16] See City GIS.
[17] Gov. Code § 65913.4(a)(6)(I).
[18] Gov. Code § 65913.4(a)(6)(J).
[19] Gov. Code § 65913.4(a)(6)(K).
[20] Gov. Code § 65589.5(h)(6)(D)(i)(I)(ib) (“Within a very high fire hazard severity zone, as determined by the Department of Forestry and Fire Protection pursuant to Section 51178, or within a high or very high fire hazard severity zone as indicated on maps adopted by the Department of Forestry and Fire Protection pursuant to Section 4202 of the Public Resources Code.”).
[21] See City GIS.

(2) *The project's parcel(s) is legal*[22] *and located "within an urbanized area*[23] *and meets* ***one or the more*** *of the following criteria . . .."*[24]	
Located within 0.5 mile "walking distance" of "a high quality transit corridor," as defined in Public Resources Code Section 21155(b), or "a major transit stop," as defined in Public Resources Code Section 21064.3.[25]	*The site is within 0.5 mile walking distance of the Downtown Berkeley BART Station.*
"[L]ocated in a very low vehicle travel area"[26]	*The site is located in the City of Berkeley's "low-VMT areas."*
"[P]roximal to six or more amenities . . . as of the date of the" application's submittal.[27] A project is proximal an amenity if it is within: • .5 mile of "[a] bus station" or "[a] ferry terminal"; **OR** • 1 mile of "[a] supermarket or grocery store," "public park," "community center," "pharmacy or drugstore," "medical clinic or hospital," "public library," or school serving any grade - kindergarten to 12th grade.[28]	*The Project is within 0.5 mile of a BART station, and is within 1 mile proximity to other listed amenities as well including public parks, grocery stores, pharmacies and drugstores, a museum, a high school and elementary school, and more.*

[22] The Project site is on legal parcels.
[23] A parcel is within an urbanized area if it meets the definition provided in Public Resources. Code Section 21071. Gov. Code § 65589.5(h)(6)(D)(ii)(V). The Project site is located in an urbanized area because Berkeley is a qualifying incorporated city with a population greater than 100,000.
[24] Gov. Code § 65589.5(h)(6)(D)(i)(II).
[25] Gov. Code § 65589.5(h)(6)(D)(i)(II)(ia).
[26] Gov. Code § 65589.5(h)(6)(D)(i)(II)(ib). "'Very low vehicle travel area' means an urbanized area, as designated by the United States Census Bureau, where the existing residential development generates vehicle miles traveled per capita that is below 85 percent of either regional vehicle miles traveled per capita or city vehicle miles traveled per capita." Gov. Code § 65589.5(h)(6)(ii)(VI)(ia). "'[A]rea' may include a travel analysis zone, hexagon, or grid." Gov. Code § 65589.5(h)(6)(ii)(VI)(ib). "For the purposes of determining 'regional vehicle miles traveled per capita' . . ., a 'region' is the entirety of incorporated and unincorporated areas governed by a multicounty or single-county metropolitan planning organization, or the entirety of the incorporated and unincorporated areas of an individual county that is not part of a metropolitan planning organization." Gov. Code § 65589.5(h)(6)(ii)(VI)(ic).
[27] Gov. Code § 65589.5(h)(6)(D)(i)(II)(ic).
[28] Gov. Code § 65589.5(h)(6)(D)(ii)(IV).

75% of the project site's perimeter (or 3 sides of a 4 sided project site) is adjoined by urban uses.[29]	*The Project site is adjoined on all four sides by urban uses.*
(3) *The project's density meets the following criteria*	
"[M]eets or exceeds 15 dwelling units per acre."[30]	*The Project far exceeds the requirement for at least 15 du/acre.*
(4) *"There is substantial evidence in the record that"*[31]	
• The "project is eligible for an exemption"[32]; **AND** • That any categorical exemption sought is not barred by an applicable exception.[33]	*The Project qualifies for the Class 32 Urban Infill Exemption and is not barred by any applicable exception - see Applicant Statement and the body of the above letter.*

[29] Gov. Code § 65589.5(h)(6)(D)(i)(II)(id).
[30] Gov. Code § 65589.5(h)(6)(D)(i)(III).
[31] Gov. Code §§ 65589.5(h)(6)(D)(i)(IV)(ia), (ib).
[32] Gov. Code § 65589.5(h)(6)(D)(i)(IV)(ia).
[33] Gov. Code § 65589.5(h)(6)(D)(i)(IV)(ib).

Rincon Consultants, Inc.
66 Franklin Street, Suite 300
Oakland, California 94607
510-834-4455

RINCON CONSULTANTS, INC. SINCE 1994

November 8, 2024
Project No: 24-16191

Sharon Gong, Senior Planner
Planning and Development Department
1947 Center St., 2nd Floor
Berkeley, California 94704
Via email: SGong@berkeleyca.gov

Subject: Summary of the Peer Review Process for Technical Studies
1950-1998 Shattuck Avenue Mixed Use Project

Dear Ms. Gong:

In September of 2024, the City of Berkeley engaged Rincon Consultants, Inc. to peer review three applicant-prepared technical reports for the 1950-1998 Shattuck Avenue Mixed Use Project: an Air Quality Impact Analysis, a Noise Impact Analysis, and a Water Quality Memorandum. The purpose of the peer reviews was to evaluate whether the technical reports were adequate for supporting a determination by the City regarding compliance with Section 15332(d) of the CEQA Guidelines, which specifies that a project may not result in "significant effects relating to…noise, air quality, or water quality" to be eligible for an In-Fill Development Projects Categorical Exemption. Rincon completed the peer reviews and provided our comments in late September 2024. In October of 2024, Rincon received an updated Air Quality Impact Analysis and an updated Noise Impact Analysis, both revised in response to our comments. An updated Water Quality Memorandum was not necessary, as we did not identify deficiencies that would make the first version we reviewed inadequate to support a determination under CEQA Guidelines Section 15332(d) in relation to water quality.

Rincon reviewed the revised Air Quality Impact Analysis and Noise Impact Analysis and found that the revised reports generally reflected our comments from September and appear to be adequate to support a determination under CEQA Guidelines Section 15332(d) in relation to air quality and noise impacts, respectively.

If you have any questions or would like to discuss the peer review process or our comments, please do not hesitate to contact me at aleider@rinconconsultants.com or 510-671-0175.

Sincerely,
Rincon Consultants, Inc.

Abe Leider, AICP CEP
Principal

Planning and Development
Land Use Planning Division

November 19, 2024

Genna Yarkin
Holland & Knight, LLP
560 Mission Street, Suite 1900
San Francisco, CA 94105

Sent via email to:
Genna.Yarkin@hklaw.com

RE: CEQA Determination for Use Permit Application #ZP2023-0040 for 1950-1998 Shattuck Avenue / 2071 University

Dear Genna Yarkin,

The City of Berkeley ("City") has received the letter in support of a CEQA Exemption for the project, prepared by Holland & Knight, LLP, dated October 8, 2024. The City has also has also received separately, technical reports to support a CEQA Exemption (Traffic Impact Analysis, Phase I Environmental Site Assessment Report, Summary Historical Evaluations, Air Quality Impact Analysis, Noise Impact Analysis, and Water Quality Memorandum).

Staff has determined that this project meets the criteria for a Categorical exemption pursuant to CEQA Guidelines, Section 15332, "In-Fill Development Projects" (Class 32).

Next Steps

1. ZAB Decision. Pursuant to Government Code Section 65950, the project shall be approved or disapproved within 60 days of staff's determination that the project is exempt from CEQA (on November 19, 2024). However, the Berkeley Municipal Code requires the permit application to undergo a Demolition Referral at a public meeting before the Landmarks Preservation Commission (LPC) and Preliminary Design Review (DRCP2023-0003) at a public meeting before the Design Review Committee (DRC) prior to a decision on the use permit (ZP2023-0040) by the Zoning Adjustments Board (ZAB). The earliest that a Demolition Referral can be scheduled before the LPC is January 6, 2025, with DRC review to follow on January 16, 2025. Following the DRC review, the earliest that the permit application can be scheduled for a decision hearing before the ZAB is February 27, 2025.

   Pursuant to Government Code Section 65957, the project applicant and lead agency may extend the time limit once, up to 90 days, by mutual written agreement. To meet the time limits afforded by Section 65950, staff is recommending a time extension agreement to allow the LPC meeting to occur on January 6, 2025, the DRC meeting to occur on January 16, 2025, and ZAB hearing to occur on February 27, 2025.

Please provide written confirmation that you agree to an extension of the time limit set forth in Government Code section 65950.

2. Notice of Exemption. The City will be filing the Notice of Exemption (NOE) for projects that go to the ZAB or City Council. Filing the NOE starts a 35-day statute of limitations period on legal challenges to the agency's decision that a project is exempt from CEQA. If the NOE is not filed, a 180-day statute of limitations applies. The NOE needs to be filed with the State Clearinghouse and with the County Clerk's office. The City will post with the State Clearinghouse, but the posting with the County Clerk's office can be done by either the City or the applicant. If the City completes the posting, there is a fee of $920. Otherwise, the applicant can file with the County and provide the $50 filing fee directly to the County. The NOE is filed after the use permit becomes effective.

   Please complete the attached form to state your preference and return it to me via email.

Note that additional information may be required to correct, clarify, or amplify the materials submitted in the application, to prepare the project for a ZAB decision hearing. Please provide the information requested by staff in a timely manner in order to maintain the discussed project schedule.

Please feel free to contact me with any questions regarding this letter or your application.

Sincerely,



Sharon Gong
Senior Planner
(510) 981-7429
sgong@berkeleyca.gov

Cc:
Mia Perkins, Rhoades Planning Group
Mark Rhoades, Rhoades Planning Group
Nathan George, NX Ventures
Xin Jin
Farimah Brown, City Attorney, City of Berkeley
Sara Stephens, Deputy City Attorney, City of Berkeley
Jordan Klein, Director of Department of Planning and Development, City of Berkeley
Anne Hersch, Land Use Planning Manager, City of Berkeley

Attachment:
Notice of Exemption Filing Preference Form

PLANNING & DEVELOPMENT
1947 Center St., 2nd Floor • Berkeley, CA 94704 • (510) 981-7400 • TDD: (510) 981-7474 • planning@berkeleyca.gov

To: Applicant

From: City of Berkeley Planning & Development

Project Address/Permit # (ZP): _____

Subject: Private Projects – Filing Notice of Exemption (NOE) form with the Alameda County Clerk-Recorder

---

Following decision-maker approval of a project exempt from the provisions of the California Environmental Quality Act (CEQA), a NOE may be filed with the Alameda County Clerk-Recorder. It is strongly recommended that the NOE be filed in a timely manner. The filing of a NOE starts a 35-day statute of limitations period on legal challenges to the agency's decision that the project is exempt from the provisions of CEQA. If the NOE is not filed a 180-day statute of limitations will apply, refer to CEQA Guidelines Section 15062(d). Please note that recent legislation requires the City to file the NOE with the State Clearinghouse in the Office of Planning and Research.

Please review the attached NOE and indicate how you would like to proceed with filing by selecting one of the options below:

- ☐ **Berkeley Planning & Development to file the NOE**: Within 30-days of deeming the project complete, the Applicant will be invoiced for the NOE filing fee, refer to the current fee schedule linked here. Please note that Berkeley Planning staff will schedule the public hearing once all outstanding fees are paid. Once the project receives final approval and after the 14-day appeal period expires, Berkeley Planning staff will file the NOE with the Alameda County Clerk-Recorder and the State Clearinghouse.
- ☐ **Applicant to file the NOE**: Applicant shall submit a copy to the Alameda County Clerk-Recorder in accordance with CEQA Guidelines Section 15062 after the project receives final approval and the 14-day appeal period expires. The Office of the County Clerk-Recorder is located at 1106 Madison Street, Oakland, CA 94607. The Clerk will stamp the NOE, return the original set, and post the NOE for a period of 30 days. Once recorded, the applicant shall provide a stamped copy to the Berkeley Planning staff person assigned to the project. Refer to Alameda County Clerk-Recorder's website linked here for more information on hours of operation, fees, and payment methods.

Applicant Name (please print): _____

Applicant Signature: _____

Date: _____

Please note that categorical exemptions are not subject to the California Department of Fish and Wildlife environmental document filing fee and do not require a no effect determination (Cal. Code Regs., tit. 14, §§ 15260-15333; Fish & Game Code §711.4, subd. (d)(1)).

TRACHTENBERG ARCHITECTS
2421 Fourth Street Berkeley, CA 94710
phone: 510.649.1414
www.TrachtenbergArch.com

July 19th, 2024
Attn: Sharon Gong
Land Use Planning, City of Berkeley

RE: August 20th, 2024 Clarification Letter Action Items for Application #ZP2023-0040 for 1950-1998 Shattuck Avenue / 2071 University

Dear Sharon,

Please see our responses below in blue text for your Completeness Letter Action Items, dated August 19th, 2024. Please also see our revised attached documents as referenced in our responses.

Action Items – Corrections, Clarifications, and/or Supplemental Information Required

1. Bird Safe Building. Projects that are New Construction with 10,000 sq. ft. or more of gross floor area and an average building height greater than 35 ft. are subject to this ordinance section (https://berkeley.municipal.codes/BMC/23.328.030). **Thank you for submitting the required forms.**

2. Inclusionary Housing. Projects proposing to construct one or more residential units are subject to this ordinance section (https://berkeley.municipal.codes/BMC/23.304.150). Please revise the Housing Affordability Statement to demonstrate how the project complies with this section. *Thank you for submitting the Affordable Housing Compliance Plan (AHCP). Staff calculates 175,217 SF as the Base Project Residential Unit Floor Area (RUFA). Revise the calculations in step 3.B if needed per the correct RUFA.*
Thank you. The AHCP will be routed to Housing Services for review. Any comments will be forwarded to you.

3. Historic Resource Evaluation. *Thank you for the "Summary of Historical Evaluations" by Preservation Architecture, dated March 8, 2024. Staff has reviewed the submitted document. Please note that this document does not satisfy any regulatory requirements related to historic resource evaluations or peer reviews.*
Although the application is considered complete at this time, please note the prior comment (from Incomplete Letter December 15, 2023) still stands: staff does not necessarily concur with the conclusions arrived at in the HREs. In order to proceed with a review of impacts to historic resources, please be advised that further review of resource eligibility of the existing buildings pursuant to the California Environmental Quality Act (CEQA) may be warranted by a third-party consultant, at a cost to be borne by the applicant. Further information will be provided to the applicant at the time CEQA path determination. **Thank you for the acknowledgment.**

4. Plans.
a. Clarify if the project proposes the merger of four lots or five lots. City GIS data show five lots within the project boundaries, while the survey shows four. Thank you. There are five parcels, and four lots. The fifth APN is likely a separation for tax purposes. Verify with Public Works whether the ~3-foot strip of land at 1950 and 1974 Shattuck sidewalk area can be included in the site area. The survey indicates that it is public right of way and may need approval of an encroachment permit. *The area is labelled "SFBARTD subsurface easement parcel 2, RE 1768, IM 944", but is excluded from the parcel legal description and property line boundaries. Please provide documentation of*

ownership of the area; if not owned by the applicant, provide a letter of authorization from the owner to authorizing its inclusion in the development permit application.
Thank you for the Quiet Title Complaint document. Please indicate when a ruling is anticipated on the case. Any entitlements obtained for development on the disputed parcel may be affected by the outcome of the case. If the matter is not settled before the entitlement hearing, a Condition of Approval will be attached to the permit for this contingency.

Also, in your response, you mentioned that the survey was revised, but I don't see how the survey has been revised, and it shows the same date of preparation by the licensed surveyor – December 2022. **This comment stands – no revisions found.**
Response: Sheet A0.6b is attached with updated survey.

5. Community Benefit Package. The submittal is missing a Community Benefits package pro forma and cost estimate under BMC Section 23.204.130(E)(2)(c). Please note that per Council Resolution 67,172-N.S., a pro forma showing project pre-development soft and hard cost estimates and rate of return analysis, as well as a cost estimate for the community benefits package, are required to be included in the project application. The pro forma must be peer reviewed by a City consultant. Thank you for the Community Benefits letter. While the community benefits analysis may not be entirely objective, the pro forma is a specific requirement for the discretionary permit, as described in the Council Resolution, and would inform the Board's overall consideration of the project:

> *Thank you for the pro forma documents. Pursuant to the Council Resolution, a consultant will be obtained to perform a peer review of the document. Staff will send an invoice for the consultant fee for payment when received.*

Thank you for the pro forma documents. Pursuant to the Council Resolution, a consultant will be obtained to perform a peer review of the document. Staff will send an invoice for the consultant fee for payment when received.
This comment stands – payments are still outstanding.
Response: Invoice paid.

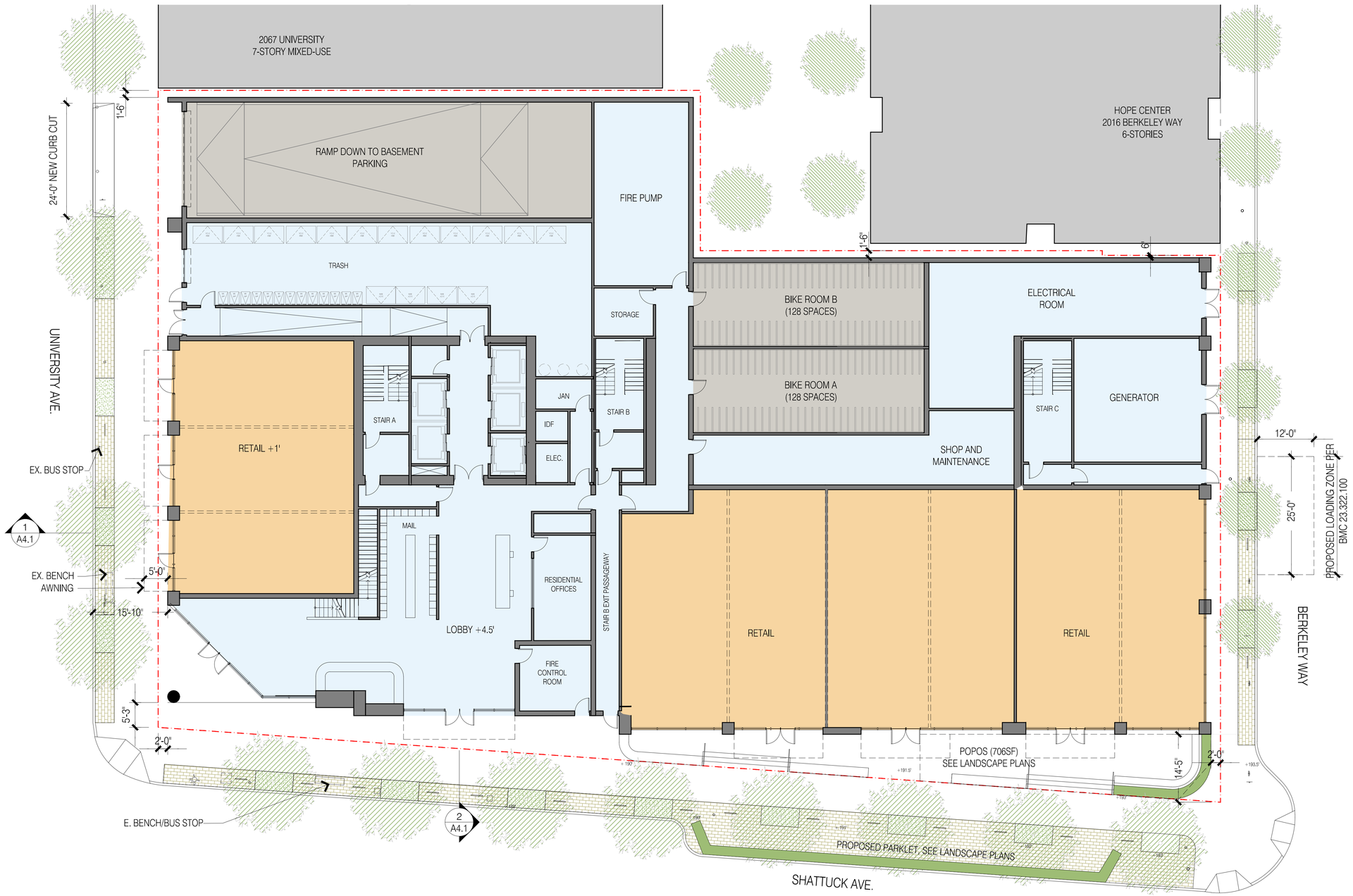
6. Loading Space. Indicate on the site plan the location of the required off-street loading space, per BMC Section 23.322.100. This clarification item was provided in the CEQA Review Letter sent to you on May 16, 2024.
Response: Please see attached Sheet A2.1 for off-street loading space.

7. CEQA Supplemental Information. Additional reports are required per our meeting on June 19, 2024, including: an up-to-date traffic impact analysis, air quality report, noise impact analysis, and water quality impact analysis.
Response: Additional reports submitted were peer reviewed and accepted.

If you have any questions or comments, please feel free to contact me at (510) 649-1414 x124.

Sincerely,

Isaiah Stackhouse, Principal TRACHTENBERG ARCHITECTS



1 / - SITE PLAN / PLAN AT GROUND FLOOR

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

TRACHTENBERG ARCHITECTS

2421 Fourth Street
Berkeley, California 94710
510.649.1414
www.TrachtenbergArch.com

1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL

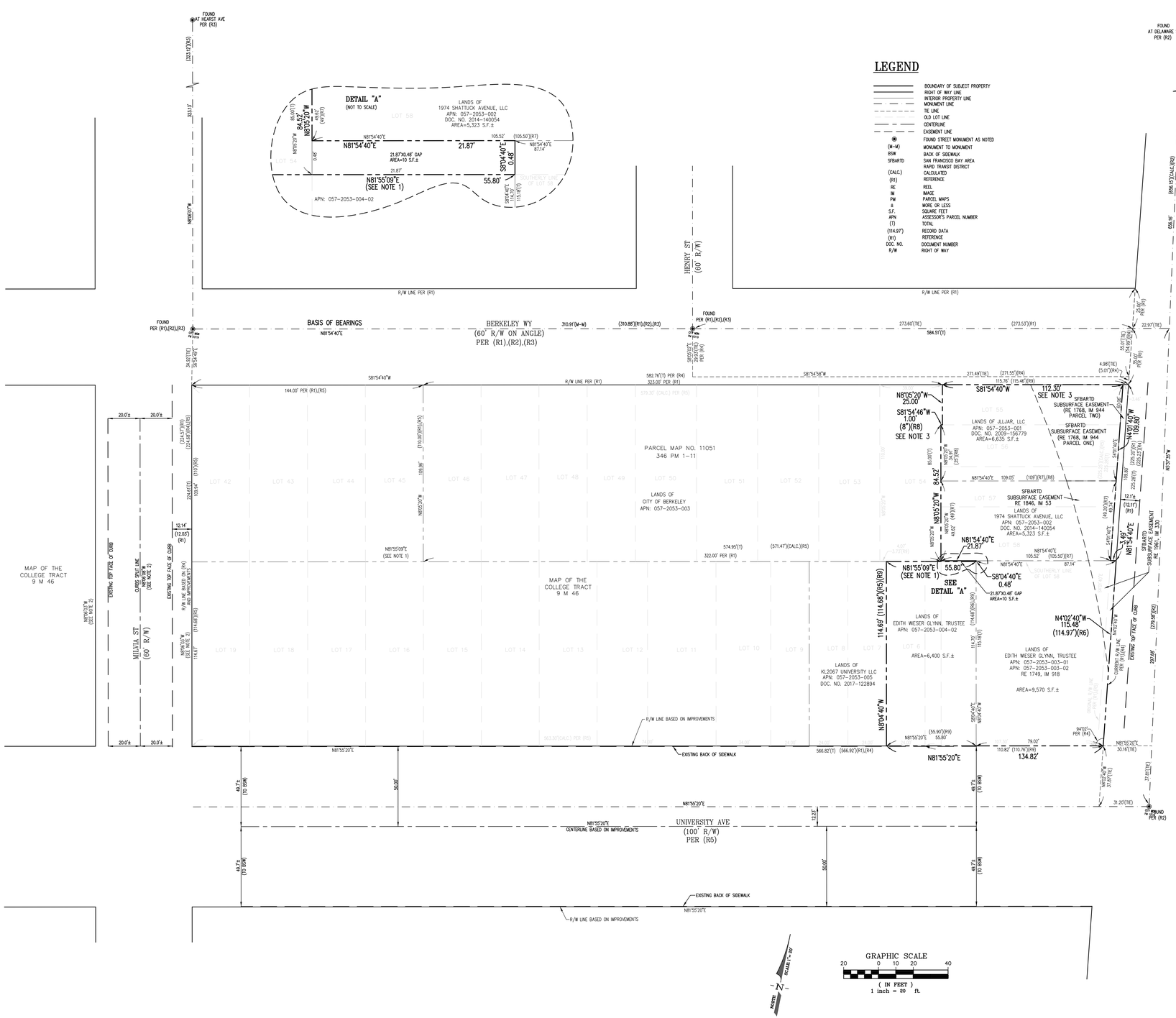
ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ARCHITECT AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF TRACHTENBERG ARCHITECTS.

JOB: 2209

SHEET:

FLOOR PLANS

A2.1



ALTA/NSPS LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE
AND 2071 UNIVERSITY AVENUE
CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA

DECEMBER 2022

PREPARED BY

LUK AND ASSOCIATES
CIVIL ENGINEER – LAND PLANNERS – LAND SURVEYORS
738 ALFRED NOBEL DRIVE
HERCULES, CALIFORNIA 94547
(510) 724-3388

SHEET 2 OF 3

TRACHTENBERG ARCHITECTS

2421 Fourth Street
Berkeley, California 94710
510.649.1414
www.TrachtenbergArch.com

1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL

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JOB: 2209

SHEET:

SURVEY

A0.6B

Gong, Sharon

From: Gong, Sharon
Sent: Wednesday, December 4, 2024 10:39 AM
To: Gong, Sharon
Subject: FW: 1950-98 Shattuck (1974)/ 2071 University - ZP2023-0040 - Type 47 Alcohol Use Permit

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From: Greenwald, Cynthia <CGreenwald@berkeleyca.gov>
Sent: Wednesday, December 4, 2024 10:31 AM
To: Gong, Sharon <SGong@berkeleyca.gov>
Subject: RE: 1950-98 Shattuck (1974)/ 2071 University - ZP2023-0040 - Type 47 Alcohol Use Permit

Internal

Hi Sharon,

After conducting our research, the Berkeley Police Department (BPD) has concluded that there are no history of alcohol related problems with the business owners on these parcels.
For address 1974 Shattuck Ave- they had multiple service calls for loud music, and people showing signs of intoxicated which is common when there is alcohol being sold in an establishment.
Overall, there were no violations of alcohol or public safety.

Thank you.

CSO Cynthia Greenwald
Berkeley Police Department
Community Service Bureau
(510) 981-5769

Follow us on:



PLANNING & DEVELOPMENT
1947 Center St., 2nd Floor • Berkeley, CA 94704 • (510) 981-7400 • TDD: (510) 981-7474 • planning@berkeleyca.gov

To: Applicant

From: City of Berkeley Planning & Development

Project Address/Permit # (ZP): _2023-0040

Subject: Private Projects – Filing Notice of Exemption (NOE) form with the Alameda County Clerk-Recorder

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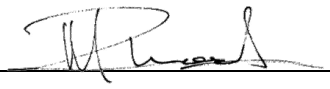
Following decision-maker approval of a project exempt from the provisions of the California Environmental Quality Act (CEQA), a NOE may be filed with the Alameda County Clerk-Recorder. It is strongly recommended that the NOE be filed in a timely manner. The filing of a NOE starts a 35-day statute of limitations period on legal challenges to the agency's decision that the project is exempt from the provisions of CEQA. If the NOE is not filed a 180-day statute of limitations will apply, refer to CEQA Guidelines Section 15062(d). Please note that recent legislation requires the City to file the NOE with the State Clearinghouse in the Office of Planning and Research.

Please review the attached NOE and indicate how you would like to proceed with filing by selecting one of the options below:

- ☐ **Berkeley Planning & Development to file the NOE**: Within 30-days of deeming the project complete, the Applicant will be invoiced for the NOE filing fee, refer to the current fee schedule linked here. Please note that Berkeley Planning staff will schedule the public hearing once all outstanding fees are paid. Once the project receives final approval and after the 14-day appeal period expires, Berkeley Planning staff will file the NOE with the Alameda County Clerk-Recorder and the State Clearinghouse.
- X **Applicant to file the NOE**: Applicant shall submit a copy to the Alameda County Clerk-Recorder in accordance with CEQA Guidelines Section 15062 after the project receives final approval and the 14-day appeal period expires. The Office of the County Clerk-Recorder is located at 1106 Madison Street, Oakland, CA 94607. The Clerk will stamp the NOE, return the original set, and post the NOE for a period of 30 days. Once recorded, the applicant shall provide a stamped copy to the Berkeley Planning staff person assigned to the project. Refer to Alameda County Clerk-Recorder's website linked here for more information on hours of operation, fees, and payment methods.

Applicant Name (please print): McSpats, LLC c/o Mark Rhoades, Rhoades Planning Group

Applicant Signature: 

Date: December 9, 2024

Please note that categorical exemptions are not subject to the California Department of Fish and Wildlife environmental document filing fee and do not require a no effect determination (Cal. Code Regs., tit. 14, §§ 15260-15333; Fish & Game Code §711.4, subd. (d)(1)).

DRC SUMMARY – January 16, 2025

1950-1998 SHATTUCK AVENUE [at University] (DRCP2023-0003): Preliminary Design Review to demolish five existing commercial buildings; merge four lots; construct a 28-story, 411,610 square-foot, mixed-use building with 599 dwelling units (including 58 VLI) and 16,920 square feet of commercial area. (Plans dated January 16, 2025)

Preliminary Design Review received a favorable recommendation to ZAB with the following recommendations for Final Design Review (FDR): *MOTION (Tam, Gaffney) VOTE (6-0-0-1) Kahn – absent.*

Recommendations

Site Design

- *Refine the design at the corner of University and Shattuck Avenues to enhance the pedestrian realm and develop it to be as strong as the design at Shattuck Avenue and Berkeley Way.*
- *Refine the column design at the corner of University and Shattuck Avenues.*
- *Provide a rendering from the sidewalk that shows the top floor.*

Exterior Details

- *Refine details at the 14th and top floors with consideration of the guardrails and railings*
- *Look at resolution of color palette and materials and present final details and material samples at FDR. Details to include metal panels, horizontal bands, parapets, metal awnings, garage gate, windows, railings, and lighting.*

Landscaping

- *Increase the landscaping on the 14th floor with native plants that are also wind and drought tolerant.*
- *Consider a green wall on Berkeley Way, as well as the column at University and Shattuck Avenues.*
- *Consider adding a green edge at the second floor.*

Windows / Additional Details

- *Add as much depth and interest as possible with detail development.*
- *Consider adding bird safe glass, especially at railings.*
- *Recess windows at the end of the corridor on the north façade.*

Miscellaneous

- *Consider reallocation of lobby space.*
- *Recommendation for a pool cover.*

TRACHTENBERG ARCHITECTS
2421 Fourth Street Berkeley, CA 94710
phone: 510.649.1414
www.TrachtenbergArch.com

Jan 8th, 2025
Attn: Sharon Gong
Land Use Planning, City of Berkeley

Dear Sharon,

Please see our responses below in blue text for your clarification items, dated Jan 6th, 2025. Please also see our revised attached documents as referenced in our responses.

Clarification Information Required

1. The loading space needs to be on site. https://berkeley.municipal.codes/BMC/23.322.100(C) Your site plan shows an on-street loading space.
   Response: Plan set has been revised with the loading space at P1 Level within project site.

2. Your usable open space amount (13,032 SF) appears to include areas that should be excluded from the UOS definition (i.e. circulation areas). Please recalculate per the definition. https://berkeley.municipal.codes/BMC/23.304.090
   Response: The usable open space has been revised and recalculated per BMC definition.

3. Explain how your privately owned public open space meets the requirements in https://berkeley.municipal.codes/BMC/23.204.130(E)(5), i.e., signage to notify the public of usage hours and maintenance, verify that the area is no more than 3' from the public sidewalk.
   Response: Project sponsor will include signage in the privately owned public open space to notify the public of usage hours and maintenance. The area is separated from the grade of the public sidewalk by a height no greater than 3 vertical feet.

4. Your base project includes a use permit to reduce the setback requirements. Please submit a wind study to assist staff in making the findings for the use permit.
   Response: Please see the attached wind study.

5. Indicate on the parking floorplan where the designated 4 carshare spaces. Are these included in the 154 total parking spaces, or are they separate?
   Response: 4 carshare spaces are indicated on P1 Level (sheet A2.0b) They are included in the 154 total parking spaces.

6. When will the updated survey be ready?
   Response: The updated survey will be ready in a week or so and I'll forward once completed.

7. Please provide a full PDF set with the latest revised sheets.
   Response: Please see the full pdf with the latest revised sheets.

If you have any questions or comments, please feel free to contact me at (510) 649-1414 x124.

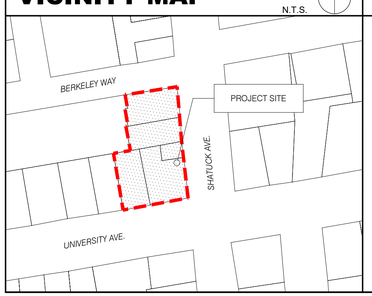
Sincerely,



Isaiah Stackhouse, Principal TRACHTENBERG ARCHITECTS



VICINITY MAP



PROJECT DIRECTORY

OWNER/APPLICANT:
1974 Shattuck Ave, LLC
1958A University Ave
Berkeley, CA 94705

ARCHITECT:
Isaiah Stackhouse, Principal
TRACHTENBERG ARCHITECTS
2421 Fourth Street
Berkeley, CA 94710
510.649.1414
www.TrachtenbergArch.com

PROJECT DESCRIPTION

PROJECT ADDRESS: 1950-1998 Shattuck Ave. & 2071 University Ave. Berkeley, CA 94704
APNS:
057 205300100
057 205300200
057 205300301
057 205300302
057 205300402

SCOPE OF WORK:
REMOVAL OF EXISTING COMMERCIAL STRUCTURES & CONSTRUCTION OF A NEW 28-STORY MIXED-USE HOUSING DEVELOPMENT WITH 599 DWELLING UNITS AND A ROOFTOP RESTAURANT OVER GROUND-LEVEL COMMERCIAL AND LOBBIES, WITH STATE OF CALIFORNIA DENSITY BONUS.

DRAWING LIST

A0.0	GENERAL INFORMATION			A3.9	PRELIMINARY RENDERING	L3.1	USABLE OPEN SPACE CALCS & PLANTING NOTES
A0.1	ZONING INFORMATION	A2.1	FLOOR PLANS	A3.10	PRELIMINARY RENDERING	I0.0	IRRIGATION NOTES & LEGEND
A0.2A	DENSITY BONUS DIAGRAMS	A2.2	FLOOR PLANS	A3.11	PRELIMINARY RENDERING	I1.0	IRRIGATION PLAN AT STREETSCAPE
A0.2B	DENSITY BONUS DIAGRAMS	A2.3	FLOOR PLANS	A3.12	PRELIMINARY RENDERING	I2.0	IRRIGATION PLAN SECOND FLOOR PODIUM GARDENS
A0.2C	PRELIMINARY AHCP DIAGRAMS	A2.4	FLOOR PLANS	A3.13	PRELIMINARY RENDERING	I3.0	IRRIGATION PLAN FOURTEENTH FLOOR ROOF DECK
A0.4A	SHADOW STUDIES DECEMBER 21ST	A2.5	FLOOR PLANS	A3.14	PRELIMINARY RENDERING	I3.1	IRRIGATION POINT OF CONNECTION
A0.4B	SHADOW STUDIES JUNE 21ST	A2.6	FLOOR PLANS	A3.15	PRELIMINARY RENDERING	I4.0	IRRIGATION DETAILS
A0.4C	SHADOW STUDIES FEB 15TH	A2.7	ROOF PLAN	A3.16	PRELIMINARY RENDERING	I5.0	IRRIGATION DETAILS
A0.5	SITE CONTEXT PHOTOS	A3.1	ELEVATIONS	A3.17	PRELIMINARY RENDERING	I6.0	IRRIGATION DETAILS
A0.6	VICINITY MAP	A3.2	ELEVATIONS	A4.1	BUILDING SECTIONS	I7.0	IRRIGATION DETAILS
A0.6A	SURVEY	A3.3	STREET STRIP ELEVATIONS	A4.2	AWNING ENCROACHMENT DIAGRAM		
A0.6B	SURVEY	A3.4	PHOTO CONTEXT VIEWS	A5.0	CONCEPTUAL GRADING PLAN		
A0.6C	SURVEY	A3.5	PHOTO CONTEXT VIEWS	L0.0	COVER SHEET, NOTES, AND LEGEND		
A1.0	EXISTING SITE PLAN	A3.6	PHOTO CONTEXT VIEWS	L1.0	LANDSCAPE PLAN AT STREETSCAPE		
A2.0a	FLOOR PLANS	A3.7	PRELIMINARY RENDERING	L2.0	SECOND FLOOR PODIUM GARDENS		
A2.0b	FLOOR PLANS	A3.8	PRELIMINARY RENDERING	L3.0	FOURTEENTH FLOOR ROOF DECK		

TRACHTENBERG
ARCHITECTS

2421 Fourth Street
Berkeley, California 94710
510.649.1414
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LICENSED ARCHITECT
DAVID TRACHTENBERG
C20926
4/30/20 25
RENEWAL DATE
STATE OF CALIFORNIA

1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL
01.16.2025 PRELIM DRC HEARING SET

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JOB: 2209

SHEET:

GENERAL INFORMATION

A0.0

ZONING CODE DATA

ZONING SUMMARY TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	PROPOSED W/DENSITY BONUS	ZONING COMPLIANCE
ZONING	C-DMU Core			COMPLIES
TOTAL LOT SIZE (SQ. FT.)	28,319			COMPLIES
TOTAL LOT SIZE (ACRES)	0.65			COMPLIES
FLOOR AREA RATIO (FAR)	NA	NA	14.52	COMPLIES W/ SDB WAIVER
DWELLING UNITS (SEE TABLE)	NA	NA	599	COMPLIES
RESIDENTIAL BEDROOMS	NA	NA	709	COMPLIES
HEIGHT - FEET	60'-0"	120'	317'	COMPLIES W/ SDB WAIVER
HEIGHT - STORIES*	NA	NA	28	COMPLIES W/ SDB WAIVER
LOT COVERAGE	NA	NA	88%	COMPLIES
SETBACK - FRONT (UNIVERSITY) (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - STREET SIDE (SHATTUCK) (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - REAR (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - MAX. DIMENSION ABOVE 120'	120'	NOT LIMITED	165'	COMPLIES W/ SDB WAIVER
RESIDENTIAL PARKING (SEE TABLE)	0	0	130	COMPLIES
COMMERCIAL PARKING (SEE TABLE)	24	24	24	COMPLIES
RES. BIKE PARKING LONG TERM (SEE TABLE)	237	237	240	COMPLIES
RES. BIKE PARKING SHORT TERM (SEE TABLE)	18	18	18	COMPLIES
COM. BIKE PARKING SHORT TERM (SEE TABLE)	9	9	10	COMPLIES
RESIDENTIAL OPEN SPACE (SEE TABLE)	47,920	47,920	12,491	COMPLIES W/ SDB WAIVER
COMMERCIAL OPEN SPACE (SEE TABLE)	323	323	706	COMPLIES

* Community Benefit Required per BMC Section 23.204.130.E.2.c.

PARKING CALCULATIONS

	QNTY	CARS	PER	REQ'D	PROVIDED
RESIDENTIAL	599	0.5 MAX	1	0	130
COMMERCIAL	16,142	1.5	1,000	24	24
TOTAL					**154**

BICYCLE PARKING CALCULATIONS

	QNTY	BIKES	PER	REQ'D	PROVIDED
RESIDENTIAL (LONG TERM) (PER BEDROOM)	709	1	3	237	256
RESIDENTIAL (SHORT TERM) (PER BEDROOM)	709	1	40	18	18
COMMERCIAL (SHORT TERM) (PER SF)	16,142	1.0	2,000	9	10

ROOFTOP ARCHITECTURAL ELEMENTS CALCS

	ALLOWABLE	PROPOSED
AVERAGE AREA OF FLOORS		14,058
AREA OF ROOFTOP ARCHITECTURAL ELEMENTS	2,109	1,464
% AREA OF ROOFTOP ARCHITECTURAL FEATURES	15.0%	10.4%

OPEN SPACE CALCULATIONS

	UNITS	SF / UNIT	TOTAL REQ'D	MODIFICATION	TOTAL PROVIDED	COMMON	LANDSCAPE REQ'D (40%)	LANDSCAPE PROVIDED
RESIDENTIAL UNITS	599	80	47,920	35,429	12,491	12,491	4,996	6,735
COMMERCIAL OPEN SPACE	16,142	50	323	(383)	706			

AREA TABLE

	RESIDENTIAL	COMMERICAL	TOTAL
LEVEL 28		7,800	7,800
LEVEL 27	11,980		11,980
LEVEL 26	11,980		11,980
LEVEL 25	11,980		11,980
LEVEL 24	11,980		11,980
LEVEL 23	11,980		11,980
LEVEL 22	11,980		11,980
LEVEL 21	11,980		11,980
LEVEL 20	11,980		11,980
LEVEL 19	11,980		11,980
LEVEL 18	11,980		11,980
LEVEL 17	11,980		11,980
LEVEL 16	11,980		11,980
LEVEL 15	11,980		11,980
LEVEL 14	11,980		11,980
LEVEL 13	17,862		17,862
LEVEL 12	17,862		17,862
LEVEL 11	17,862		17,862
LEVEL 10	17,862		17,862
LEVEL 9	17,862		17,862
LEVEL 8	17,862		17,862
LEVEL 7	17,862		17,862
LEVEL 6	17,862		17,862
LEVEL 5	17,862		17,862
LEVEL 4	17,862		17,862
LEVEL 3	17,862		17,862
LEVEL 2	17,677		17,677
GROUND LEVEL	12,461	8,342	20,803
BASEMENT PARKING P1	424		424
BASEMENT PARKING P2	424		424
TOTAL	**395,188**	**16,142**	**411,330**

DWELLING UNIT TABLE

	STUDIO	2-BR	TOTAL
LEVEL 28			0
LEVEL 27	15	4	19
LEVEL 26	15	4	19
LEVEL 25	15	4	19
LEVEL 24	15	4	19
LEVEL 23	15	4	19
LEVEL 22	15	4	19
LEVEL 21	15	4	19
LEVEL 20	15	4	19
LEVEL 19	15	4	19
LEVEL 18	15	4	19
LEVEL 17	15	4	19
LEVEL 16	15	4	19
LEVEL 15	15	4	19
LEVEL 14	8	3	11
LEVEL 13	26	5	31
LEVEL 12	26	5	31
LEVEL 11	26	5	31
LEVEL 10	26	5	31
LEVEL 9	26	5	31
LEVEL 8	26	5	31
LEVEL 7	26	5	31
LEVEL 6	26	5	31
LEVEL 5	26	5	31
LEVEL 4	26	5	31
LEVEL 3	26	5	31
LEVEL 2			0
GROUND LEVEL			
TOTAL UNITS	**489**	**110**	**599**
BEDROOMS / UNIT	1	2	
TOTAL BEDROOMS	489	220	709

OPEN SPACE

6,882
5,609
-
12,491

SETBACKS TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	PROPOSED W/DENSITY BONUS	ZONING COMPLIANCE
SETBACK - FRONT (UNIVERSITY)				
0'-20'	0'	0'	2'	COMPLIES
21'-75'	0'	0'	3'-4" to 4'-4"	COMPLIES
76'-120'	15'	0'	3'-4" to 4'-4"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	3'-4" to 15'-6"	COMPLIES W/ SDB WAIVER
SETBACK - STREET SIDE (SHATTUCK)				
0'-20'	0'	0'	5'-3" to 14'-5"	COMPLIES
21'-75'	0'	0'	6'-10" to 29'-8"	COMPLIES
76'-120'	15'	0'	6'-10" to 29'-8"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	6'-10" to 60'-1"	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (<65' FROM FRONT)				
0'-20'	0'	0'	1'-6"	COMPLIES
21'-75'	0'	0'	15'	COMPLIES
76'-120'	5'	0'	15'	COMPLIES
> 120'	15'	0'	15' to 26'-6"	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (>65' FROM FRONT)				
0'-20'	0'	0'	6" to 1'-6"	COMPLIES
21'-75'	5'	0'	17'-1" to 18'-1"	COMPLIES
76'-120'	15'	0'	17'-1" to 18'-1"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	17'-1" to 18'-1"	COMPLIES W/ SDB WAIVER
SETBACK - REAR (BERKELEY WAY)				
0'-20'	0'	0'	2'	COMPLIES
21'-75'	5'	0'	6'	COMPLIES
76'-120'	15'	0'	6'	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	94'-7"	COMPLIES W/ SDB WAIVER
SETBACK - MAX. DIMENSION ABOVE 120'	120'	NOT LIMITED	165'	COMPLIES W/ SDB WAIVER

CAR SHARE CALCULATION

Number of Parking Spaces Provided
154
Minimum Number of Vehicle Sharing Spaces (3, plus one for every additional 60 spaces)
3+1 = **4**

STATE DENSITY BONUS TABLE (SEE A0.2A-B)

(SEE SHEETS A0.3A-A03.D)	
BASE PROJECT UNITS	411
PERCENT VLI UNITS PROVIDED	14%
NUMBER VLI UNITS PROVIDED (ROUNDS UP)	58
BONUS PERCENTAGE	46.25%
NUMBER BONUS UNITS (ROUNDS UP)	191
MAXIMUM DENSITY BONUS PROJECT	602
PROPOSED DENSITY BONUS PROJECT	599

LIST OF USE PERMITS AND AUP'S

PROPOSED DENSITY BONUS PROJECT USE PERMITS:

- Use Permit for construction for demolition of a non-residential building, under 23.326.070(A)
- Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Administrative Use Permit under BMC Section 23.304.050(A) to exceed building height limits with rooftop architectural elements which exceed the maximum height limit for the district.
- Use Permit under BMC Section 23.204.130.E.2 to construct a building that exceeds the district height limit, and that is over 75 feet but not more than 120 feet (Base Project).
- Use Permit under BMC Section 23.204.130.E.3(b) to modify front, side, and rear setback requirements
- Use Permit under BMC Section 23.204.130.E.3(b) to exceed 120 feet in width in diagonal measurement
- Use Permit under BMC Section 23.204.E.6 to pay a fee in lieu of providing privately owned public open space.
- Density Bonus with the following requested reductions, waivers and concessions below.

LIST OF DENSITY BONUS WAIVERS (SEE A0.2A-B)

- Waiver to increase the maximum building height from the base project maximum density height allowed with UP's and AUP's under the zoning ordinance of 120' (under BMC 23.204.130.E.2) to a density bonus height of 316' to accommodate the density bonus units.
- Waiver to allow a reduction in the required setbacks under BMC Section 23.204.130.E.3(b) to physically accomodate the density bonus units.
- Waiver to reduce the minimum required residential usable open space under BMC 23.204.130.E.4 to allow the construction of the density bonus units.

LIST OF DENSITY BONUS CONCESSIONS (SEE A0.2A-B)

- Athough the project is eligible for 2 concessions as a project that is providing 14% of the base units as Very-Low-Income Units, the project is not proposing any concessions.

TRACHTENBERG ARCHITECTS

2421 Fourth Street
Berkeley, California 94710
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1950-1998 (1974) SHATTUCK

Berkeley, CA

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JOB: 2209

SHEET:

ZONING INFORMATION

A0.1

BASE PROJECT ZONING COMPLIANCE TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	CODE SECTION	PROPOSED BASE PROJECT	ZONING COMPLIANCE
ZONING	C-DMU Core				COMPLIES
TOTAL LOT SIZE (SQ. FT.)	28,319				COMPLIES
TOTAL LOT SIZE (ACRES)	0.65				COMPLIES
FLOOR AREA RATIO (FAR)	NA	NA		NA	COMPLIES
DWELLING UNITS (SEE TABLE)	NA	NA		411	COMPLIES
RESIDENTIAL BEDROOMS	NA	NA		446	COMPLIES
HEIGHT - FEET	60'-0"	120'-0"	23.204.130.E.2	120'-0"	COMPLIES
HEIGHT - STORIES	NA	NA		11	COMPLIES
LOT COVERAGE	NA	NA		0%	COMPLIES
SETBACK - FRONT (UNIVERSITY)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - STREET SIDE (SHATTUCK)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - INTERIOR SIDE	0' to 15'	0'	23.204.130.E.3(b)	0' to 6'	COMPLIES
SETBACK - REAR (BERKELEY WAY)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - MAX. DIMENSION ABOVE 120'	NA	NA			COMPLIES
RESIDENTIAL PARKING (SEE TABLE)	0	0		0	COMPLIES
COMMERCIAL PARKING (SEE TABLE)	25	0		0	COMPLIES
RES. BIKE PARKING LONG TERM (SEE TABLE)	149	149		152	COMPLIES
RES. BIKE PARKING SHORT TERM (SEE TABLE)	12	12		12	COMPLIES
COM. BIKE PARKING SHORT TERM (SEE TABLE)	9	9		9	COMPLIES
RESIDENTIAL OPEN SPACE (SEE TABLE)	32,880	32,880		33,950	COMPLIES
COMMERCIAL OPEN SPACE (SEE TABLE)	338	338		338	COMPLIES

LIST OF BASE PROJECT USE PERMITS AND AUP'S

Per August 2, 2021 Memorandum on Policy Changes to Objective Standards, HAA and Density Bonus

- Use Permit for construction for demolition of a non-residential building, under 23.326.070(A)
- Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Administrative Use Permit under BMC Section 23.304.050(A) to exceed building height limits w/ rooftop architectura elements.
- Use Permit under BMC Section 23.204.130.E.2 to construct a building up to 120 feet.
- Use Permit under BMC Section 23.204.130.E.3(b) to modify front, side, and rear setback requirements

PARKING CALCULATIONS

	QNTY	CARS	PER	REQ'D	PROVIDED
RESIDENTIAL	411	0	1	0	0
COMMERCIAL	16920	1.5	1,000	25	25

BICYCLE PARKING CALCULATIONS

	QNTY	BIKES	PER	REQ'D	PROVIDED
RESIDENTIAL (LONG TERM) (BEDROOMS)	446	1	3	149	152
RESIDENTIAL (SHORT TERM) (BEDROOMS)	446	1	40	12	12
COMMERCIAL (SHORT TERM)	16,920	1.0	2,000	9	9

OPEN SPACE CALCULATIONS

	UNITS	SF / UNIT	TOTAL REQ'D
RESIDENTIAL REQUIREMENT	411	80	32,880
TOTAL PROVIDED			33,950
ROOF DECK			25,630
BALCONIES (MAX 50%)	104	80	8,320
COMMERCIAL OPEN SPACE	16,920	50	338

ROOFTOP ARCHITECTURAL ELEMENTS CALCULATIONS

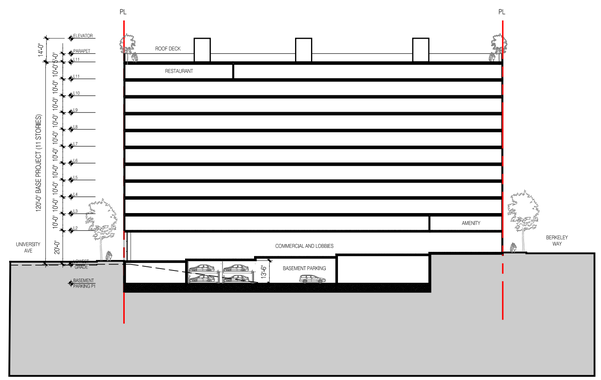
	ALLOWABLE	PROPOSED
AVERAGE AREA OF FLOORS	23,968	
AREA OF ROOFTOP ARCHITECTURAL ELEMENTS	3,595	600
% AREA OF ROOFTOP ARCHITECTURAL FEATURES	15.0%	2.5%

AREA TABLE

	RESIDENTIAL	COMMERICAL	TOTAL
LEVEL 11	18,430	7,800	26,230
LEVEL 10	26,230		26,230
LEVEL 9	26,230		26,230
LEVEL 8	26,230		26,230
LEVEL 7	26,230		26,230
LEVEL 6	26,230		26,230
LEVEL 5	26,230		26,230
LEVEL 4	26,230		26,230
LEVEL 3	26,230		26,230
LEVEL 2	26,230		26,230
GROUND LEVEL	15,922	9,120	25,042
BASEMENT P1	275		275
TOTAL	**270,697**	**16,920**	**287,617**

DWELLING UNIT TABLE

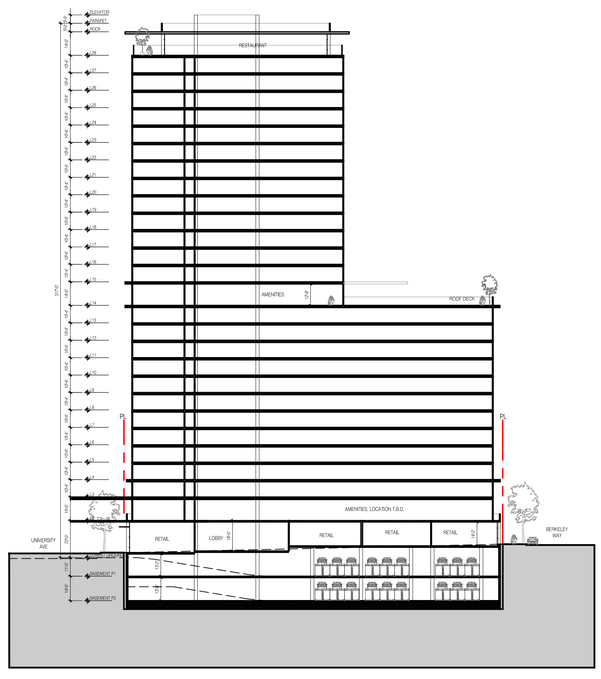
	STUDIO	2-BR	TOTAL
LEVEL 11	28	2	30
LEVEL 10	41	4	45
LEVEL 9	41	4	45
LEVEL 8	41	4	45
LEVEL 7	41	4	45
LEVEL 6	41	4	45
LEVEL 5	41	4	45
LEVEL 4	41	4	45
LEVEL 3	41	4	45
LEVEL 2	20	1	21
GROUND LEVEL			
TOTAL UNITS	**376**	**35**	**411**
BEDROOMS / UNIT	1	2	
TOTAL BEDROOMS	376	70	446


PL
PL
ELEVATOR
PARAPET
ROOF DECK
RESTAURANT
120'-0" BASE PROJECT (11 STORIES)
14'-0"
10'-0"
10'-0"
10

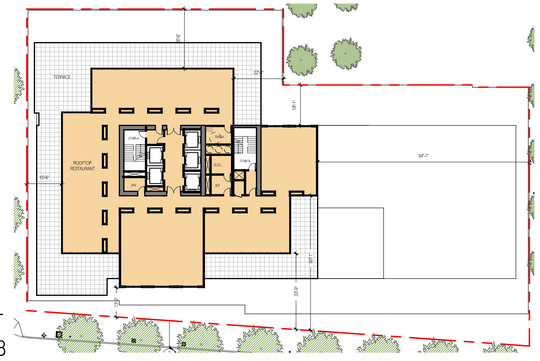
DENSITY BONUS TABLE

Base Project	Base	Base # Units	% VLI units	# VLI Units*	Bonus %	# DB Units	Maximum DB Project
sq. ft. - see calculation below	base project area / proposed avg. unit size	Base Units (rounds up)	VLI = Very Low Income <50 AMI	% VLI x Base # Units (rounds up)		%Bonus x Base # Units (rounds up)	Base + Bonus # Units
270,697	410.30	411	14%	58	46.25%	191	602

Base Project				Proposed Density Bonus Project		
Res GFA	Comm. GFA	Units	Floor	Res GFA	Comm. GFA	Units
			Level 28		7,800	
			Level 27	11,980		19
			Level 26	11,980		19
			Level 25	11,980		19
			Level 24	11,980		19
			Level 23	11,980		19
			Level 22	11,980		19
			Level 21	11,980		19
			Level 20	11,980		19
			Level 19	11,980		19
			Level 18	11,980		19
			Level 17	11,980		19
			Level 16	11,980		19
			Level 15	11,980		19
			Level 14	11,980		11
			Level 13	17,862		31
			Level 12	17,862		31
18,430	7,800	30	Level 11	17,862		31
26,230		45	Level 10	17,862		31
26,230		45	Level 9	17,862		31
26,230		45	Level 8	17,862		31
26,230		45	Level 7	17,862		31
26,230		45	Level 6	17,862		31
26,230		45	Level 5	17,862		31
26,230		45	Level 4	17,862		31
26,230		45	Level 3	17,862		31
26,230		21	Level 2	17,677		
15,922	8,342		Level 1	12,461	8,342	
275			Basement P1	424		
			Basement P2	424		
270,697	**16,142**	**411**	**Total**	**395,188**	**16,142**	**599**
659			**Avg. Unit Size**	**660**		



PROPOSED PROJECT SECTION



PLAN AT LEVEL 28



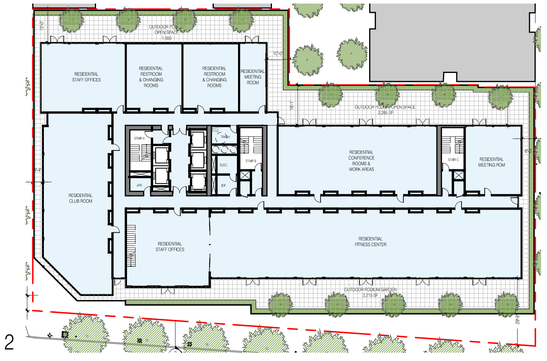
PLAN AT LEVELS 15-27



PLAN AT LEVEL 14



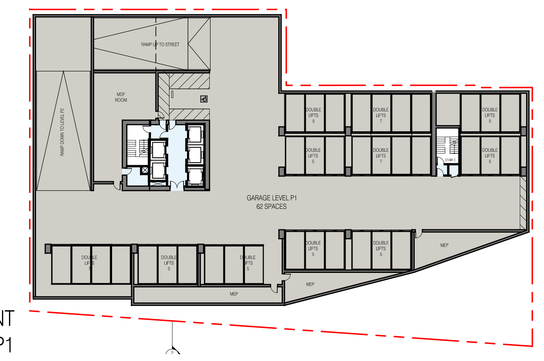
PLAN AT LEVELS 3-13



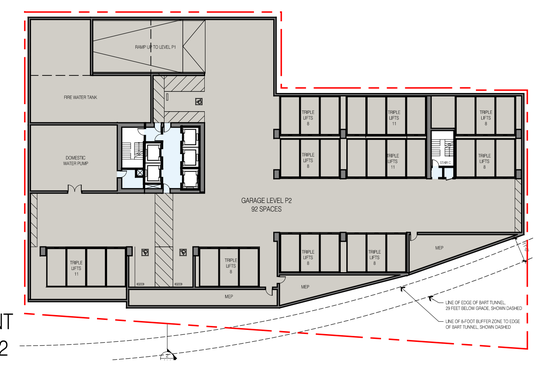
PLAN AT LEVEL 2



PLAN AT GROUND LEVEL



PLAN AT BASEMENT PARKING LEVEL P1



PLAN AT BASEMENT PARKING LEVEL P2

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DENSITY BONUS PROPOSED PROJECT

A0.2B

PROPOSED PROJECT AREA AND UNIT CALCULATIONS

Calculation of the Final Proposed Residential Unit Floor Area:

Floor	Proposed Project Res. Unit Area	Proposed Residential Studios	Proposed Residential 2Bedrooms
28th			
27th	8,364	15	4
26th	8,364	15	4
25th	8,364	15	4
24th	8,364	15	4
23rd	8,364	15	4
22nd	8,364	15	4
21st	8,364	15	4
20th	8,364	15	4
19th	8,364	15	4
18th	8,364	15	4
17th	8,364	15	4
16th	8,364	15	4
15th	8,362	15	4
14th	5,042	8	3
13th	12,953	26	5
12th	12,953	26	5
11th	12,953	26	5
10th	12,953	26	5
9th	12,953	26	5
8th	12,953	26	5
7th	12,953	26	5
6th	12,953	26	5
5th	12,953	26	5
4th	12,953	26	5
3rd	12,953	26	5
2nd	-	0	0
1st		0	0
Final Proposed Residential Unit Floor Area	**256,255**	**489**	**110**
Final Proposed Residential Unit Numbers	**599**	82%	18%

Calculation of Base Project Residential Floor Area:

Final Proposed DB Residential Unit Floor Area	256,255
	/
One plus the DB % (1 + 46.25%)	1.4625
	=
Base Project Residential Unit Floor Area	175,217

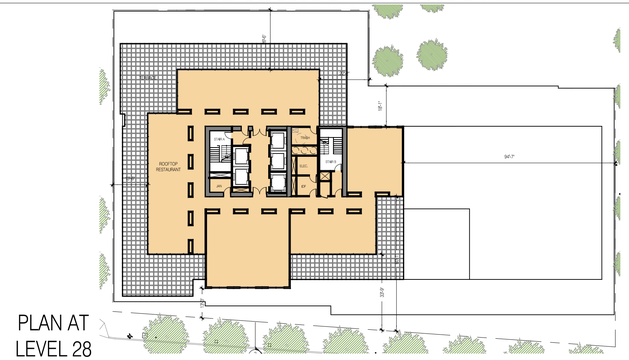
Calculation of the Affordable Housing Fee:

A	Total Base Project Residential Unit Floor Area	175,217
B	Total Base Project Units	411
C	Total BMR Requirements (20% of Base)	82.2
D	Total BMR Units Proposed	58
	Fee per Square Foot	$56.25
		X
	Total Base Project Residential Unit Floor Area	175,217
		X
	In Lieu Fee Percentage Calculation (C-D)/C)	29.4%
		=
	Total Fee Due	$2,901,633.45

LEGEND

- DWELLING UNIT RUFA
- RESIDENTIAL AMENITIES
- MISC. (MEP)
- COMMERCIAL

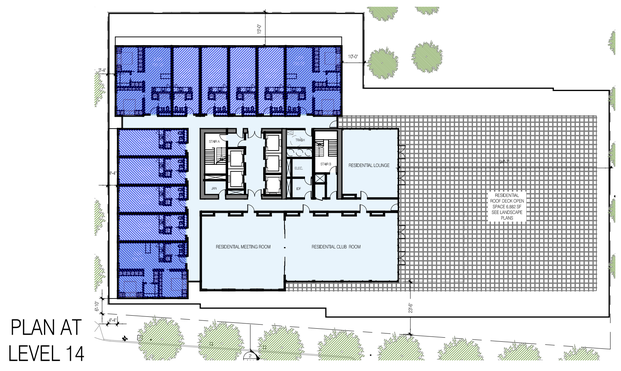
PROPOSED PROJECT RESIDENTIAL UNIT FLOOR AREA DIAGRAM



PLAN AT LEVEL 28



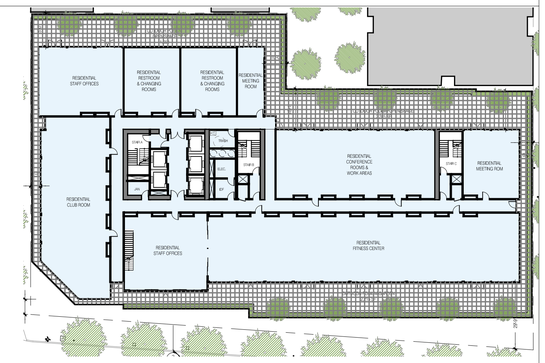
PLAN AT LEVELS 15-27



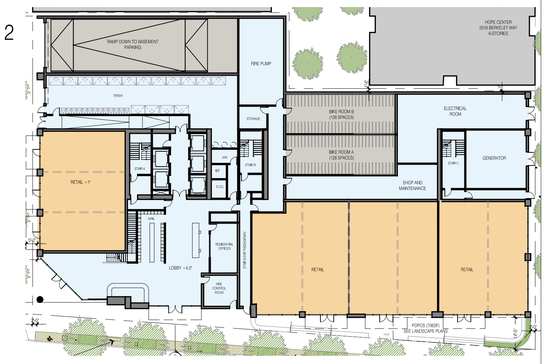
PLAN AT LEVEL 14



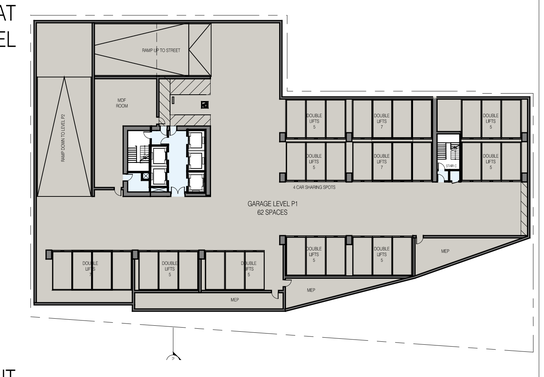
PLAN AT LEVELS 3-13



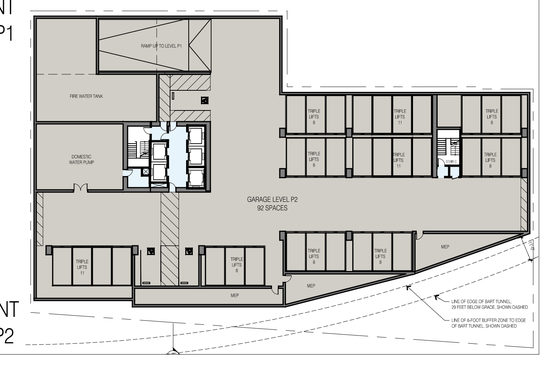
PLAN AT LEVEL 2



PLAN AT GROUND LEVEL



PLAN AT BASEMENT PARKING LEVEL P1



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PRELIMINARY AHCP DIAGRAMS

A0.2C

WINTER SOLSTICE
DEC 21ST:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

N

WINTER SOLSTICE
DEC 21ST:
NOON

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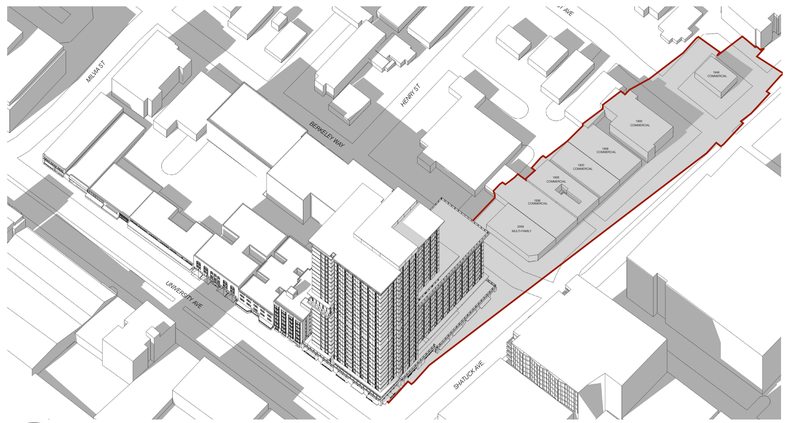

4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

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WINTER SOLSTICE
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SHADOW STUDIES
DECEMBER 21ST

A0.4A

SUMMER SOLSTICE
JUN 21ST:
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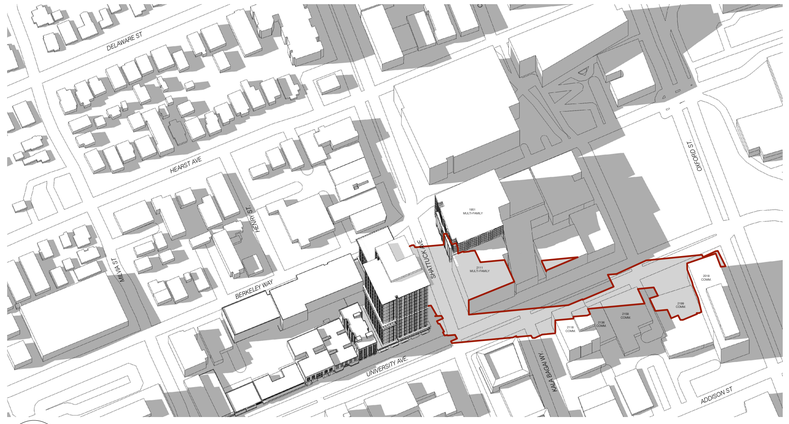

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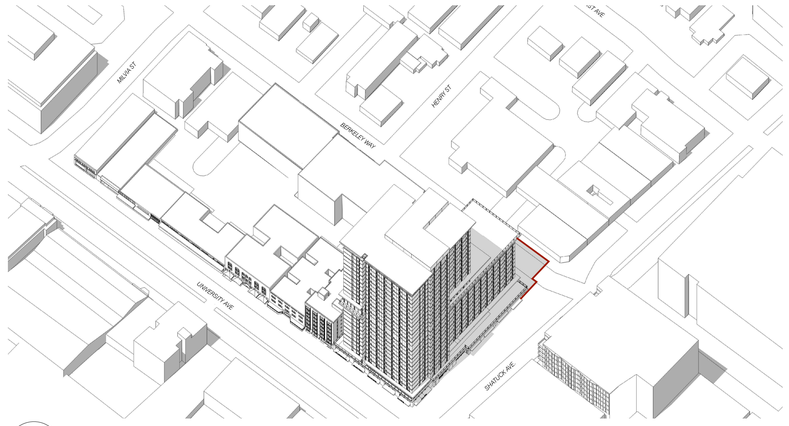

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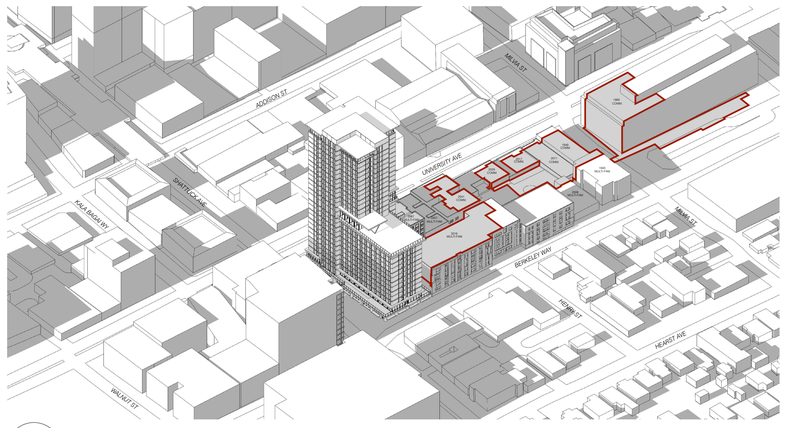

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SHADOW STUDIES
JUNE 21ST

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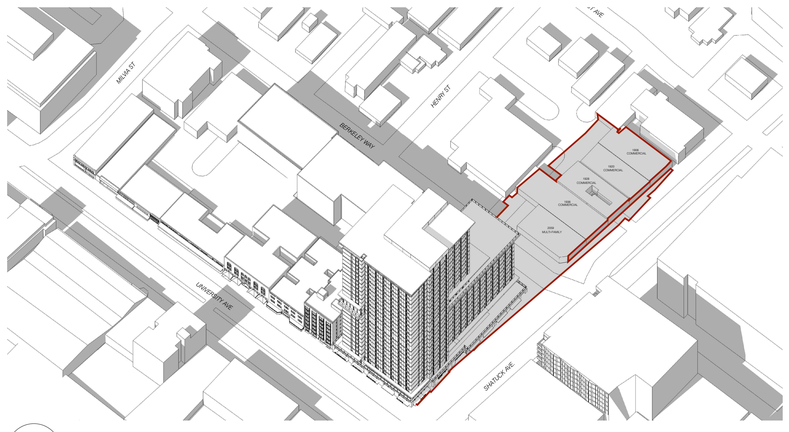

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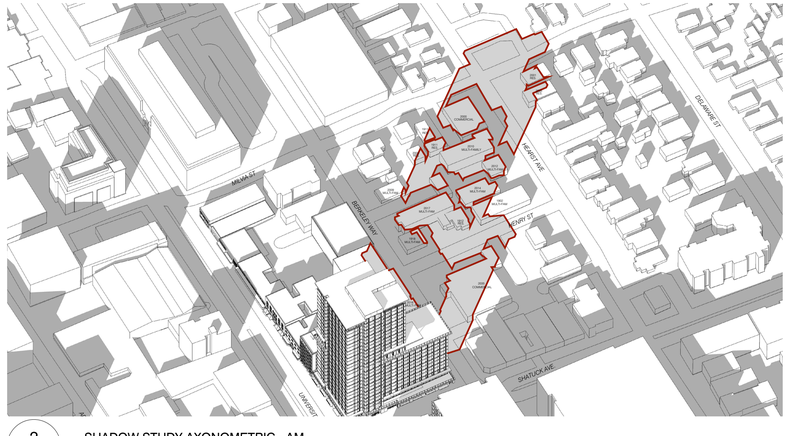

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01.16.2025 PRELIM DRC HEARING SET

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ARCHITECT AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF TRACHTENBERG ARCHITECTS.

JOB: 2209

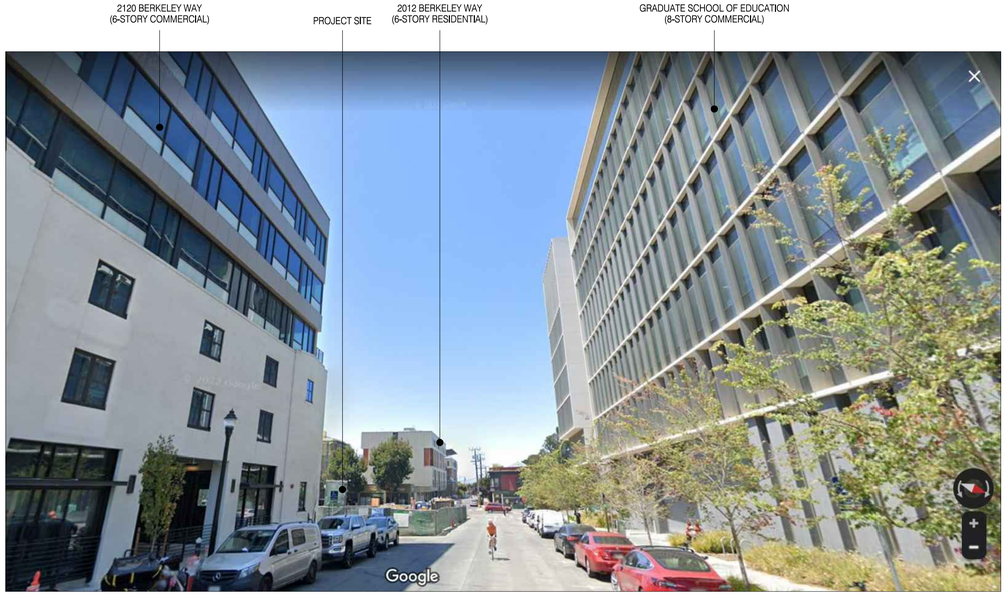
SHEET:

SHADOW STUDIES
FEB 15TH

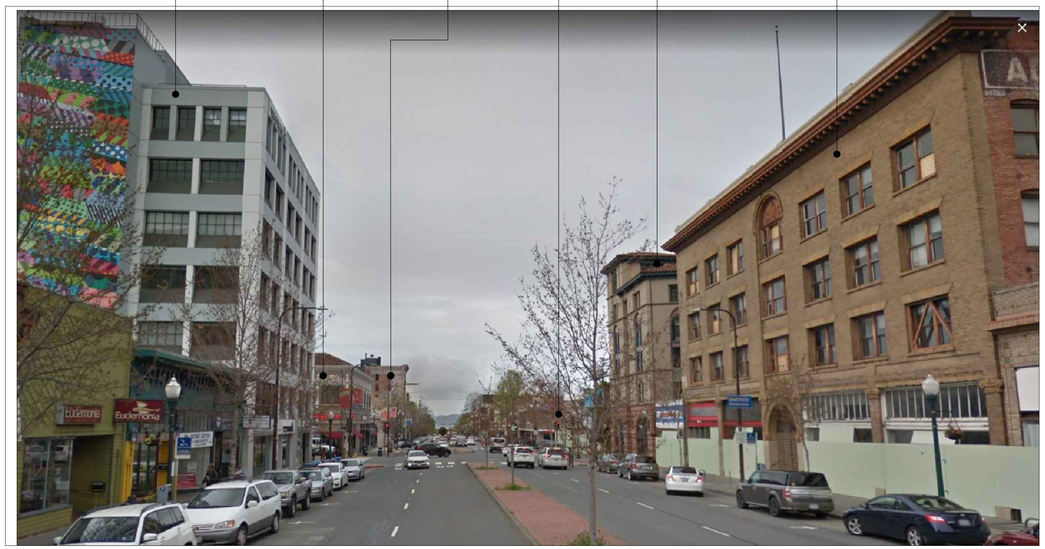
A0.4C



4 - VIEW FROM SHATTUCK LOOKING SOUTH



2 - VIEW FROM BERKELEY WAY LOOKING WEST



3 - VIEW FROM UNIVERSITY LOOKING WEST



1 - GOOGLE EARTH BIRD'S EYE CONTEXT VIEW

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RENEWAL DATE
STATE OF CALIFORNIA

1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL
01.16.2025 PRELIM DRC HEARING SET

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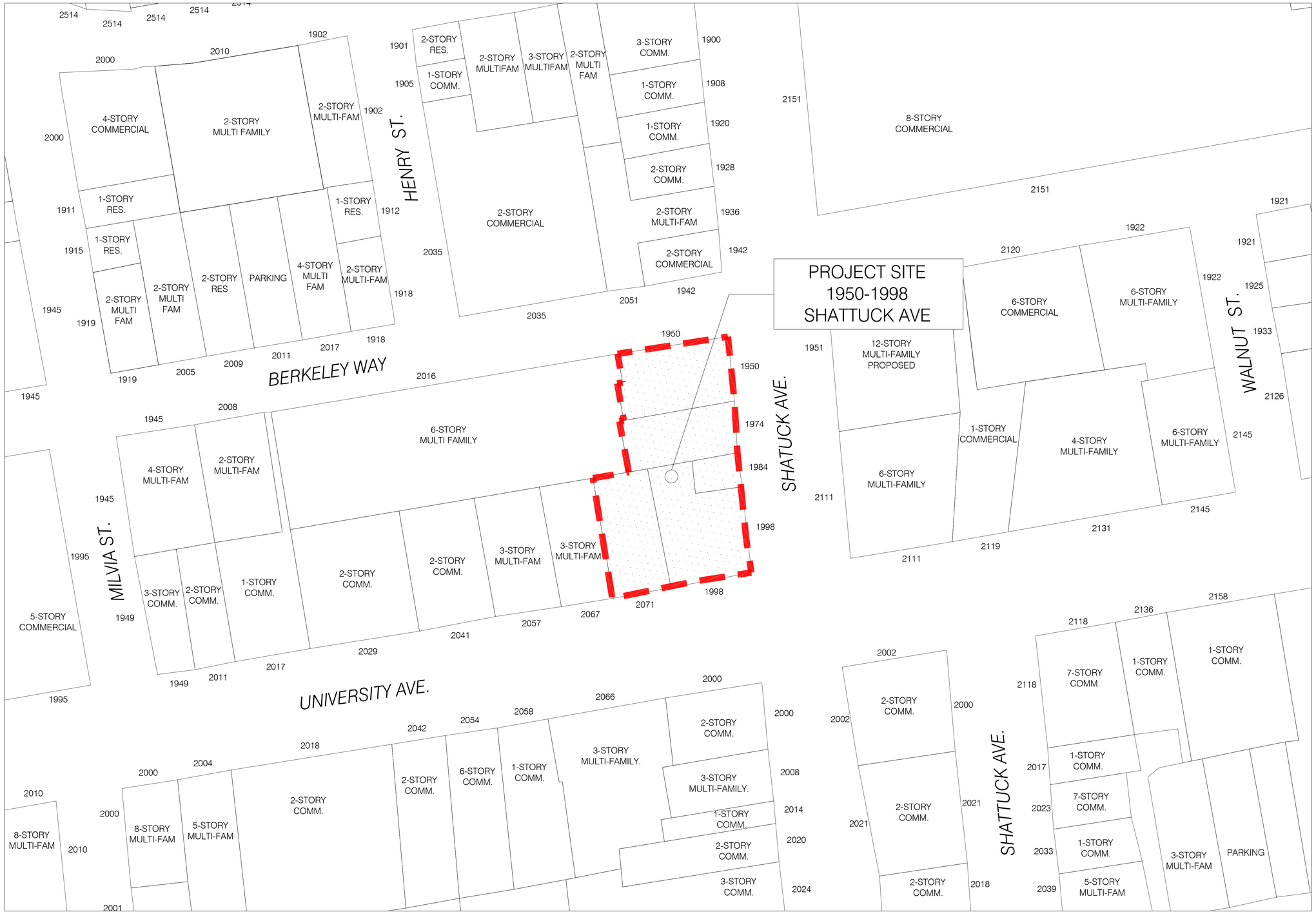
JOB: 2209

SHEET:

SITE CONTEXT PHOTOS

A0.5



1 - VICINITY MAP
NTS

N

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JOB: 2209

SHEET:

VICINITY MAP

A0.6

TITLE REPORT (1950 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170261.36–JM, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR1"

TITLE TO SAID ESTATE IS VESTED IN: (1950 SHATTUCK)

JILLIAR, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1950 SHATTUCK)

FEE

LEGAL DESCRIPTION (1950 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE WESTERN LINE OF SHATTUCK AVENUE, WITH THE SOUTHERN LINE OF BERKELEY WAY, AS SAID AVENUE AND WAY ARE SHOWN ON THE MAP HEREINAFTER REFERRED TO; RUNNING THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE, 60.06 FEET; THENCE WESTERLY PARALLEL WITH SAID LINE OF BERKELEY WAY, 109 FEET, MORE OR LESS, TO THE EASTERLY BOUNDARY LINE OF THE LAND DESCRIBED IN THE DEED EXECUTED BY F. D. CHASE AND ATLANTA J. CHASE, HIS WIFE, TO JACOB BAUML, DATED JULY 28, 1922, AND RECORDED IN LIBER 324 OF OFFICIAL RECORDS, AT PAGE 72, ALAMEDA COUNTY RECORDS; THENCE AT RIGHT ANGLES NORTHERLY ALONG SAID LAST NAMED BOUNDARY LINE 35 FEET, MORE OR LESS, TO THE SOUTHERN BOUNDARY LINE OF LOT 55, AS SAID LOT IS SHOWN ON THE SAID MAP; THENCE AT RIGHT ANGLES EASTERLY 8 INCHES; THENCE AT RIGHT ANGLES NORTHERLY PARALLEL WITH THE WESTERLY BOUNDARY LINE OF SAID LOT 55, AFORESAID, 25 FEET TO THE SOUTHERN LINE OF BERKELEY WAY; THENCE EASTERLY ALONG SAID LINE OF BERKELEY WAY, 112.30 FEET TO THE POINT OF BEGINNING.

BEING PORTIONS OF LOTS NOS. 55, 56 AND 57, AS SAID LOTS ARE DELINEATED AND AS DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "MAP OF COLLEGE TRACT, BERKELEY," FILED JANUARY 31, 1890, IN LIBER 9 OF MAPS, PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

APN: 057–2053–001

EXCEPTIONS TO TITLE (1950 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS:, DISTRICT NO 2014–1, FOR CLEAN ENERGY DISCLOSED BY : ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR1 EXC. 3 – NOT PLOTTABLE).
2. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, RECORDED MAY 16, 1966 IN BOOK 1768 OF OFFICIAL RECORDS, PAGE 944 UNDER RECORDER'S SERIAL NUMBER AY61475, AFFECTS A PORTION (PTR1 EXC. 5 – PLOTTED).

TITLE REPORT (1974 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170261.35–JM, EFFECTIVE DATE SEPTEMBER 26, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR2"

TITLE TO SAID ESTATE IS VESTED IN: (1974 SHATTUCK)

1974 SHATTUCK AVENUE, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1974 SHATTUCK)

FEE

LEGAL DESCRIPTION (1974 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WESTERN LINE OF SHATTUCK AVENUE, DISTANT THEREON SOUTHERLY, 60.6 FEET FROM THE POINT OF INTERSECTION THEREOF, WITH THE SOUTHERN LINE OF BERKELEY WAY, AS SAID AVENUE AND WAY ARE SHOWN ON THE MAP HEREIN REFERRED TO; RUNNING THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE, 49.20 FEET; THENCE WESTERLY AND PARALLEL WITH SAID LINE OF BERKELEY WAY, 105.50 FEET, MORE OR LESS, TO A POINT WHICH WOULD BE INTERSECTED BY A LINE DRAWN SOUTHERLY FORM AND AT RIGHT ANGLES TO SAID LINE BERKELEY WAY FROM A POINT DISTANT THEREON, 113.30 FEET WESTERLY FROM THE WESTERN LINE OF SHATTUCK AVENUE; THENCE AT RIGHT ANGLES NORTHERLY, 49 FEET, MORE OR LESS, TO A POINT WHICH WOULD BE INTERSECTED BY A LINE DRAWN WESTERLY FROM SAID POINT OF BEGINNING AND PARALLEL WITH BERKELEY WAY; THENCE EASTERLY ALONG SAID PARALLEL LINE, 109 FEET, MORE OR LESS, TO THE PONT OF BEGINNING.

BEING A PORTION OF LOTS 57 AND 58, AS SAID LOTS ARE SHOWN ON THE "MAP OF THE COLLEGE TRACT, BERKELEY", FILED JANUARY 31, 1890, IN BOOK 9 OF MAPS, PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

APN: 057–2053–002

EXCEPTIONS TO TITLE (1974 SHATTUCK)

1. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING, GRANTED TO BAY AREA RAPID TRANSIT DISTRICT, A RAPID TRANSIT DISTRICT, FOR UNDERGROUND RAPID TRANSIT TUNNEL FACILITIES, RECORDED SEPTEMBER 23, 1966 IN BOOK 1846 OF OFFICIAL RECORDS, PAGE 53 UNDER RECORDER'S SERIAL NUMBER AY–111314 (PTR2 EXC. 4 – PLOTTED)

TITLE REPORT (1984 & 1998 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170254.53–JM, 1ST UPDATE, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR3"

TITLE TO SAID ESTATE IS VESTED IN: (1984 & 1998 SHATTUCK)

FIFTH KEIL CO., A CALIFORNIA CORPORATION

THE ESTATE OR INTEREST IN THE LAND IS: (1984 & 1998 SHATTUCK)

FEE

LEGAL DESCRIPTION (1984 & 1998 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

COMMENCING AT THE POINT OF INTERSECTION OF THE NORTHERN LINE OF UNIVERSITY AVENUE WITH THE WESTERN LINE OF SHATTUCK AVENUE, AS SAID AVENUES NOW EXISTS; THENCE WESTERLY ALONG THE NORTHERN LINE OF UNIVERSITY AVENUE 79.02 FEET; THENCE AT RIGHT ANGLES NORTHERLY 114.68 FEET, MORE OR LESS, TO THE SOUTHERN LINE OF THE LAND NOW OR FORMERLY OF JOHN H. BOHLIG AND LOTTA BOHLIG; THENCE EASTERLY AND ALONG SAID LINE 87.07 FEET TO THE WESTERN LINE OF SHATTUCK AVENUE; THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE 114.97 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

APN'S: 057–2053–003–01 AND 057–2053–003–02

EXCEPTIONS TO TITLE (1984 & 1998 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014–1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR3 EXC. 4 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO PBID–2016, FOR BERKELEY DOWNTOWN PBID–2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR3 EXC. 5 – NOT PLOTTABLE).
3. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, DATED APRIL 6, 1967, RECORDED MAY 10, 1967 IN REEL 1961 OF OFFICIAL RECORDS, IMAGE 330 UNDER RECORDER'S SERIAL NUMBER AZ 43339, AFFECTS A PORTION OF THE PREMISES, THE PRESENT OWNERSHIP OF SAID EASEMENT AND OTHER MATTERS AFFECTING THE INTERESTS THERETO, IF ANY, ARE NOT SHOWN HEREIN (PTR3 EXC. 7 – PLOTTED).
4. A NOTICE AS FOLLOWS, ENTITLED NOTICE OF ASSESSMENT – DOWNTOWN BERKELEY PBID, BY CITY OF BERKELEY, DATED AUGUST 25, 2011, RECORDED AUGUST 30, 2011 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2011248358 (PTR3 EXC. 8 – NOT PLOTTABLE).

TITLE REPORT (2701 UNIVERSITY)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 11170261.37–JM, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR4"

TITLE TO SAID ESTATE IS VESTED IN: (2701 UNIVERSITY)

EDITH WIESER GLYNN, TRUSTEE OF THE EDITH WIESER GLYNN TRUST

THE ESTATE OR INTEREST IN THE LAND IS: (2701 UNIVERSITY)

FEE

LEGAL DESCRIPTION (2701 UNIVERSITY)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTHERN LINE OF BERKELEY WAY, AS SHOWN UPON THE MAP HEREINAFTER REFERRED TO, DISTANT THEREON ONE HUNDRED FIFTEEN AND 46/100 FEET WESTERLY FROM THE INTERSECTION THEREOF WITH THE WESTERN LINE OF SHATTUCK AVENUE AS ESTABLISHED BY BOARD OF TRUSTEES OF THE TOWN OF BERKELEY, JAN. 18, 1892, BY ORDINANCE NO. 387, SAID POINT BEING ONE FOOT EASTERLY ON SAID LINE OF BERKELEY WAY FROM THE LINE DIVIDING LOTS NUMBERED 54 AND 55 ACCORDING TO SAID MAP; RUNNING THENCE WESTERLY ALONG SAID LINE OF BERKELEY WAY THIRTY–NINE FEET TO THE LINE DIVIDING LOTS NUMBERED 55 AND 54 ACCORDING TO SAID MAP; THENCE AT RIGHT ANGLES SOUTHERLY ALONG SAID LINE ONE HUNDRED TEN FEET; THENCE AT RIGHT ANGLES EASTERLY THREE AND 73/100 FEET; THENCE AT RIGHT ANGLES SOUTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET TO THE NORTHERN LINE OF UNIVERSITY AVENUE; THENCE EASTERLY ALONG SAID LINE OF UNIVERSITY AVENUE FIFTY–FIVE AND 9/10 FEET; THENCEN AT RIGHT ANGLES NORTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET; THENCE AT RIGHT ANGLES WESTERLY TWENTY– ONE AND 63/100 FEET; THENCE AT RIGHT ANGLES NORTHERLY EIGHTY–FIVE FEET TO THE SOUTHWESTERN CORNER OF LOT NUMBERED 55, ACCORING TO SAID MAP; THENCE AT RIGHT ANGLES EASTERLY ALONG THE SOUTHERN LINE OF SAID LOT ONE FOOT AND THENCE AT RIGHT ANGLES NORTHERLY TWENTY–FIVE FEET TO THE POINT OF BEGINNING.

BEING LOT NUMBERED 54, THE WESTERN ONE FOOT OF LOT NUMBERED 55, A PORTION OF LOT NUMBERED 6 AND A PARCEL ADJOINING SAID LOT NUMBER 6 ON THE EAST, AS ALL OF SAID LOTS ARE DELINEATED AND SO DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "MAP OF COLLEGE TRACT, BERKELEY", FILED MAY 24,1877, IN LIBER 5 OF MAPS AT PAGE 14, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

EXCEPTING THEREFROM THAT PORTION DESCRIBED IN THE DEED TO THE CITY OF BERKELEY, RECORDED SEPTEMBER 29,1955, BOOK 7798, PAGE 23, AS INSTRUMENT NO. AK–105619, OFFICIAL RECORDS.

APN: 057–2053–004–02

EXCEPTIONS TO TITLE (2701 UNIVERSITY)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014–1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR4 EXC. 3 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO CITY OF BERKELEY–DOWNTOWN PROPERTY AND BUSINESS IMPROVEMENT DISTRICT, FOR BERKELEY DOWNTOWN PBID–2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR4 EXC. 5 – NOT PLOTTABLE).
3. TERMS AND CONDITIONS CONTAINED IN THE EDITH WIESER GLYNN TRUST AS DISCLOSED BY GRANT DEED, RECORDED MAY 22, 1984 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 1984099372 (PTR4 EXC. 6 – NOT PLOTTABLE).
4. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED NONDISTURBANCE AND ATTORNMENT AGREEMENT, EXECUTED BY EDITH GLYNN AND T.Y.P. RESTAURANT GROUP, INC., A DELAWARE CORPORATION DBA TENDER GREENS, RECORDED MARCH 22, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016066695 (PTR4 EXC. 7 – NOT PLOTTABLE).
5. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED MINOR ENCROACHMENT PERMIT 17–03, EXECUTED BY EDITH W. GLYNN AND THE CITY OF BERKELEY, RECORDED MAY 24, 2017 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2017113477 (PTR 4 EXC. 8 – NOT PLOTTABLE)

NOTES

1. DATE OF FIELD SURVEY: DECEMBER 5, 9 AND 21, 2022 AS TO THE BOUNDARY AND TOPOGRAPHIC SURVEY OF THE SUBJECT PROPERTY.
2. THE UTILITIES SHOWN HEREON ARE BY SURFACE OBSERVATION AND RECORD INFORMATION ONLY AND NO WARRANTY IS GIVEN HEREIN AS TO THEIR EXACT LOCATION. IT IS THE RESPONSIBILITY OF THE DEVELOPER AND/OR CONTRACTOR TO VERIFY THE EXACT LOCATION OF THE UTILITIES WITH THE APPROPRIATE UTILITY COMPANY OR AGENCY.
3. UTILITY JURISDICTIONS / PROVIDERS ARE AS FOLLOWS:
   STORM DRAINS: CITY OF BERKELEY
   SANITARY SEWER: CITY OF BERKELEY
   WATER: EAST BAY MUNICIPAL UTILITY DISTRICT (EBMUD)
   ELECTRICITY: PACIFIC GAS & ELECTRIC CO.
   NATURAL GAS: PACIFIC GAS & ELECTRIC CO.
   TELEPHONE: AT&T
4. THERE ARE NO CEMETERIES ON OR WITHIN 100 FEET OF THE SUBJECT PROPERTY
5. THE SURVEYED PROPERTIES ARE THE SAME PROPERTIES DESCRIBED IN THE TITLE REPORT.
6. THE LEGAL DESCRIPTIONS AS SHOWN IN THE TITLE REPORTS MATHEMATICALLY CLOSE.
7. THERE IS NO OBSERVED EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL
8. THERE ARE NO WETLAND AREAS IN THE SUBJECT PROPERTIES

TABLE A NOTES

1. FOUND MONUMENTS ARE SHOWN ON THIS SHEET OF THE SURVEY.
2. THE STREET ADDRESS OF THE PROPERTY IS 1950, 1974, 1984, 1998 SHATTUCK AVENUE AND 2071 UNIVERSITY AVENUE, BERKELEY, CA 94704
3. FLOOD ZONE DESIGNATION: THE PREMISES ARE LOCATED IN ZONE "X" (NON–SHADED) DEFINED AS "AREAS OF MINIMAL FLOOD," PER FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 06001C0057G, EFFECTIVE DATE: AUGUST 3, 2009.
4. THE TOTAL GROSS LAND AREA IS:
   1950 SHATTUCK AVENUE: 6,635 SQUARE FEET +/– OR 0.152 ACRES MORE OR LESS.
   1974 SHATTUCK AVENUE: 5,264 SQUARE FEET +/– OR 0.121 ACRES MORE OR LESS
   1984 & 1998 SHATTUCK AVENUE: 9,527 SQUARE FEET +/– OR 0.219 ACRES MORE OR LESS
   2071 UNIVERSITY AVENUE: 6,411 SQUARE FEET +/– OR 0.147 ACRES MORE OR LESS
6. (A/B) ZONING REQUIREMENTS: PER THE CITY OF BERKELEY PLANNING AND ZONING DEPARTMENT, THE PROPERTIES ARE ZONED "C–DMU OUTER CORE." DEFINED AS "DOWNTOWN MIXED–USE DISTRICT."

   REFERENCE FOR "C–DMU" ZONING IS MADE HERE TO THE CITY OF BERKELEY CODE, CHAPTER 23.204.130, REGARDING PROPERTY DEVELOPMENT STANDARDS, BUILDING HEIGHT LIMITATION, MINIMUM BUILDING SETBACK AND PARKING REQUIREMENTS ARE AS FOLLOWS:

   SETBACKS
   MINIMUM FRONT: 0 FEET
   MINIMUM SIDE: 0 FEET
   MINIMUM REAR: 0 FEET

   MAXIMUM HEIGHT: 60 FEET, 75 FEET WITH USE PERMIT

   MINIMUM PARKING REQUIREMENTS: NONE REQUIRED
7. (A/B1/C) EXTERIOR DIMENSIONS AND SQUARE FOOTAGE OF BUILDING AT GROUND LEVEL, AND NUMBER OF STORIES ARE SHOWN ON SHEET 3 OF THE SURVEY.
8. SUBSTANTIAL IMPROVEMENTS OBSERVED IN THE PROCESS OF CONDUCTING THE SURVEY ARE SHOWN ON SHEET 3.
9. THERE ARE NO PARKING SPACES LOCATED ON THE SUBJECT PROPERTIES.
10. THERE ARE NO DIVISIONS OR PARTY WALLS LOCATED ON THE SUBJECT PROPERTIES WITH RESPECT TO ADJOINING PROPERTIES.
11. (A) LOCATION OF UTILITIES EXISTING ON OR SERVING THE SURVEYED PROPERTIES AS DETERMINED BY OBSERVED EVIDENCE TOGETHER WITH EVIDENCE FROM PLAN OBTAINED FROM UTILITY COMPANIES OR PROVIDED BY CLIENT ARE SHOWN ON SHEET 3.
13. NAMES OF ADJOINING OWNERS OF PLATTED LANDS ARE SHOWN ON SHEET 2 OF THE SURVEY.
14. DISTANCE TO THE NEAREST INTERSECTING STREET IS SHOWN ON SHEET 2 OF THE SURVEY.
16. THERE IS NO OBSERVABLE EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
17. THERE IS NO OBSERVED EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
18. THERE ARE NO OFFSITE EASEMENTS TO THE SUBJECT PROPERTIES.
19. PROFESSIONAL LIABILITY INSURANCE IN THE AMOUNT OF $2,000,000 IS HELD BY THE SURVEYOR.

BASIS OF BEARINGS

THE BASIS OF BEARINGS OF THIS SURVEY IS TAKEN BETWEEN THE TWO FOUND STREET MONUMENTS ALONG BERKELEY WAY BETWEEN MILVIA STREET AND HENRY STREET AS SHOWN ON PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA. TAKEN AS NORTH 81°54'40" EAST.

REFERENCES

(R1) PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R2) PARCEL MAP P.M. 10119, FILED SEPTEMBER 28, 2016 IN BOOK 334 OF PARCEL MAPS, AT PAGES 21 TO 22, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R3) TRACT MAP T.M. 7888, FILED SEPTEMBER 03, 2009 IN BOOK 305 OF MAPS, AT PAGES 18 TO 20 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R4) UNRECORDED MAP, CITY OF BERKELEY CITY MONUMENT MAP, PLAN 1305, 306C–057.

(R5) "MAP OF THE COLLEGE TRACT, BERKELEY", FILED JANUARY 31, 1880 IN BOOK 9 OF MAPS, AT PAGES 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R6) GRANT DEED, RECORDED APRIL 15, 1966 IN REEL 1749, IMAGE 918, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R7) GRANT DEED, RECORDED JUNE 11, 2014 AS DOCUMENT NUMBER 2014–140054, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R8) GRANT DEED, RECORDED MAY 18, 2009 AS DOCUMENT NUMBER 2009–156779, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R9) DOCUMENT ENTITLED "NONDISTURBANCE AND ATTORNMENT AGREEMENT", RECORDED MARCH 22, 2016 AS DOCUMENT NUMBER 2016–068695, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

NOTES

(1) BEARING IS BASED ON THE MEAN BEARING OF THE RIGHT OF WAY LINES OF BERKELEY WAY AND UNIVERSITY AVENUE.
(2) BEARING IS BASED ON IMPROVEMENTS.
(3) (R8) HAS A DEED CALL OF 8 INCHES. IT IS BELIEVED TO BE AN ERROR. THE DISTANCE OF 1.00 FOOT PER (R1) IS BEING HELD BASED ON THE DEED CALL OF 112.30 FEET OF (R8).

SURVEYOR'S CERTIFICATE

TO VERNON A. NEFF AND BARBARA NEFF, AS TRUSTEES OF THE NEFF 2002 FAMILY TRUST; AND OLD REPUBLIC TITLE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6(A), 6(B), 7(A), 7(B1), 7(C), 8, 9, 10, 11(A), 13, 14, 16, 17, 18, AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 5, 9 AND 21, 2022.

JACQUELINE LUK P.L.S. 8934
FOR LUK & ASSOCIATES, INC.

DATE DECEMBER 23, 2022

PROFESSIONAL LAND SURVEYOR — JACQUELINE LUK — L.S. 8934 — STATE OF CALIFORNIA

SHEET INDEX

1. NOTES
2. BOUNDARY SURVEY
3. TOPOGRAPHIC SURVEY



VICINITY MAP
NOT TO SCALE

ALTA/NSPS LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE
AND 2071 UNIVERSITY AVENUE
CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA
DECEMBER 2022

PREPARED BY
LUK AND ASSOCIATES
CIVIL ENGINEER – LAND PLANNERS – LAND SURVEYORS
738 ALFRED NOBEL DRIVE
HERCULES, CALIFORNIA 94547
(510) 724–3388

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LICENSED ARCHITECT — DAVID TRACHTENBERG — C20926 — 4/30/20 25 — RENEWAL DATE — STATE OF CALIFORNIA

1950-1998 (1974) SHATTUCK

Berkeley, CA

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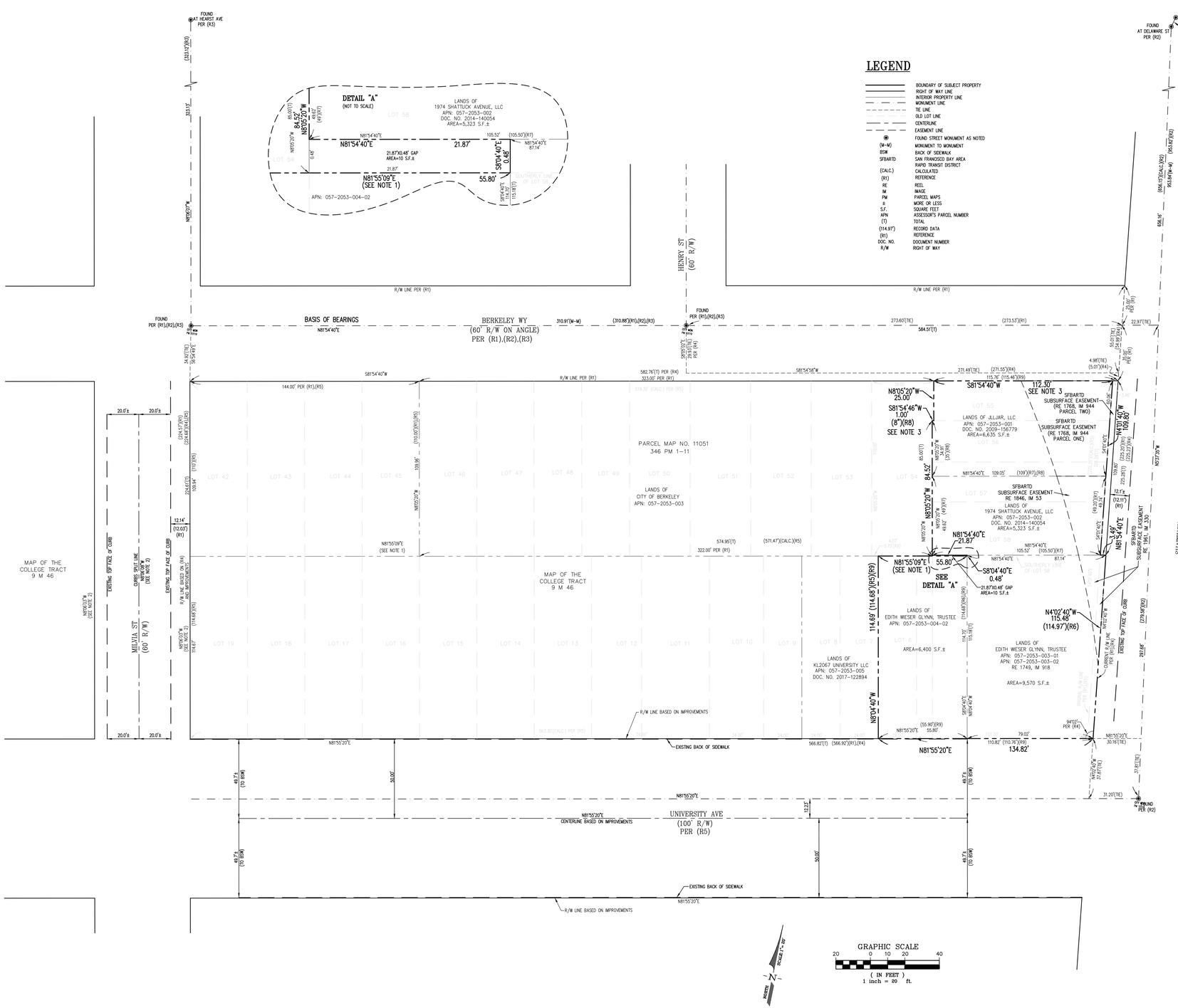
JOB: 2209

SHEET:

SURVEY

A0.6a



ALTA/NSPS LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE
AND 2071 UNIVERSITY AVENUE
CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA

DECEMBER 2022

PREPARED BY
LUK AND ASSOCIATES
CIVIL ENGINEER – LAND PLANNERS – LAND SURVEYORS
738 ALFRED NOBEL DRIVE
HERCULES, CALIFORNIA 94547
(510) 724-3388

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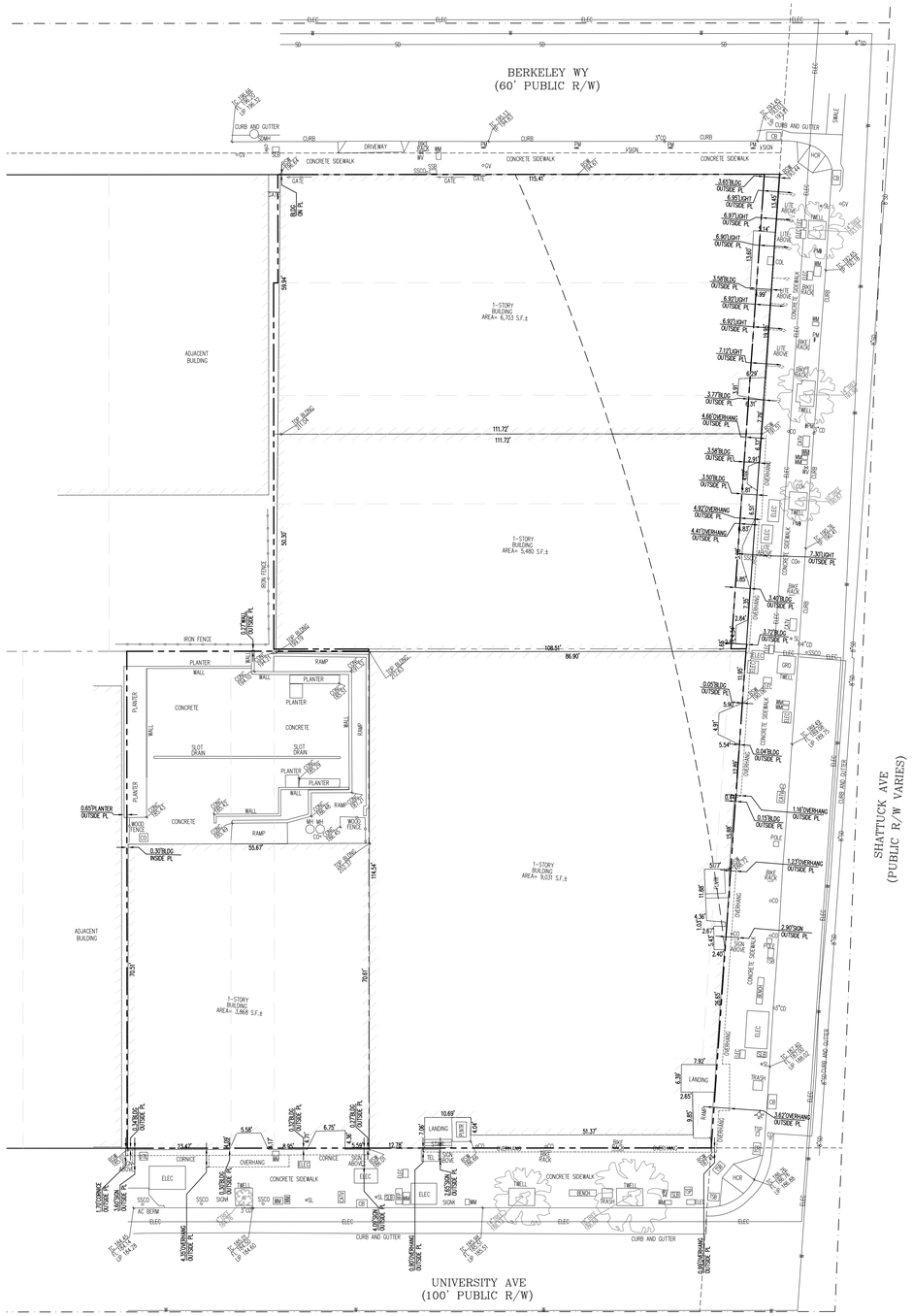
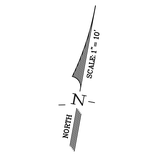
A0.6B





GRAPHIC SCALE
10 0 5 10 20
(IN FEET)
1 inch = 10 ft.

LEGEND

SYMBOLS	DESCRIPTION
	BOUNDARY OF SUBJECT PROPERTY
	RIGHT OF WAY LINE
	INTERIOR PROPERTY LINE
	MONUMENT LINE
	TIE LINE
	OLD LOT LINE
ELEC	ELECTRIC LINE
GAS	GAS LINE LINE
W	WATER LINE
SD	STORM DRAIN LINE
SS	SANITARY SEWER LINE
ELEC	ELECTRICITY BOX
AC BERM	ASPHALT BERM
SSCO	SANITARY SEWER CLEAN OUT
WM	WATER METER
HCR	HANDICAP RAMP
TWELL	TREE WELL
SL	STREET LIGHT
PLNTR	PLANTER BOX
CB	CATCH BASIN
TEL	TELECOMMUNICATION BOX
GV	GAS VALVE
SLB	STREET LIGHT BOX
CD	CURB DRAIN
CO	CLEAN OUT
BFP	BACK FLOW PREVENTER
TSB	TRAFFIC SIGNAL BOX
WV	WATER VALVE
CD	CURB DRAIN
PM	PARKING METER
COL	COLUMN
SSB	SANITARY SEWER BOX
SDMH	STORM DRAIN MAN HOLE
GRD	GROUND
SD	SLOT DRAIN
MH	MANHOLE
CONC 65.60	TOP OF CONCRETE ELEVATION
BSW 65.60	BACK OF SIDEWALK ELEVATION
TC 65.64	TOP OF CURB ELEVATION
TP 65.64	TOP OF PAVEMENT ELEVATION
FL 65.64	FLOW LINE ELEVATION
TOP BLDG 65.64	TOP OF BUILDING ELEVATION
LIP 65.60	TOP OF LIP ELEVATION
	TREE

ALTA/NSPS
LAND TITLE SURVEY

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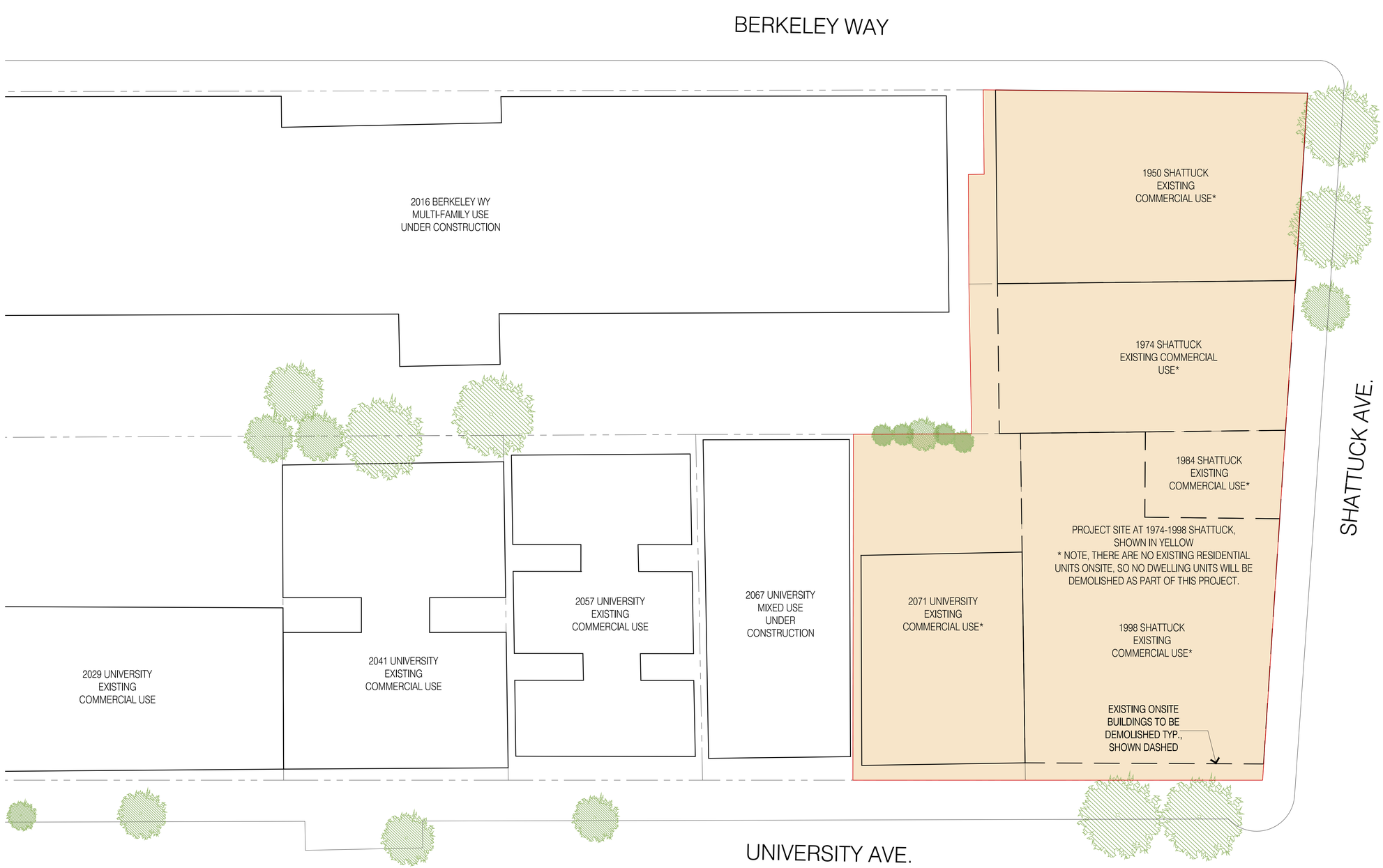
SURVEY

A0.6C



1 - EXISTING SITE PLAN
1/32"=1'-0" @ 11x17 1/16"=1'-0" @ 24x36

0 4 8 16 32

N

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SHEET:

EXISTING
SITE PLAN

A1.0



1 / - PLAN AT BASEMENT PARKING LEVEL P2

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

FLOOR PLANS

A2.0a



1 / A4.1

2 / A4.1

1 / -

PLAN AT BASEMENT PARKING LEVEL P1

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

FLOOR PLANS

A2.0b



1 / - SITE PLAN / PLAN AT GROUND FLOOR

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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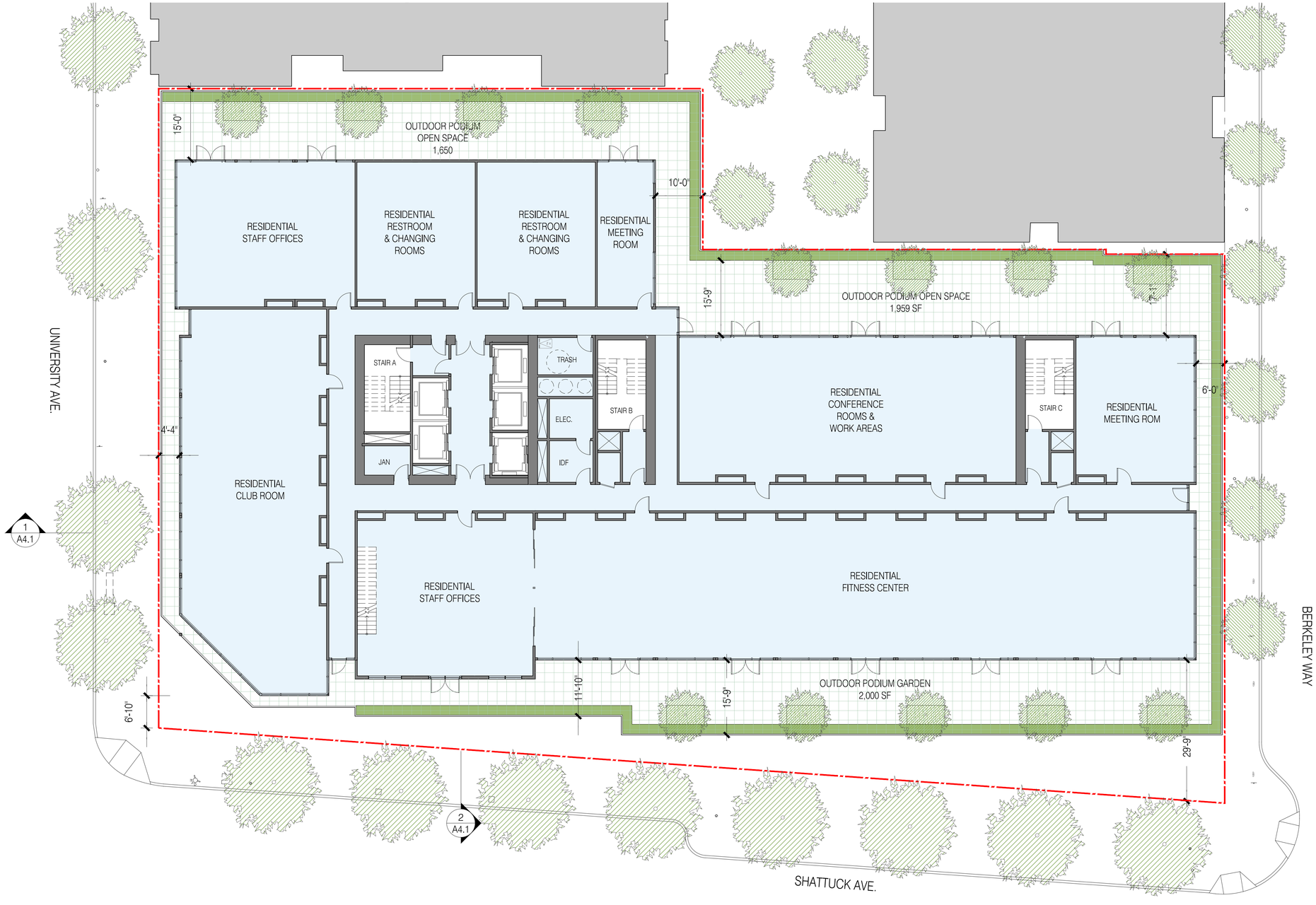
SHEET:

FLOOR PLANS

A2.1



1 / - PLAN AT LEVEL 2

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

FLOOR PLANS

A2.2



1 - PLAN AT LEVELS 3-13

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

FLOOR PLANS

A2.3



1 PLAN AT LEVEL 14

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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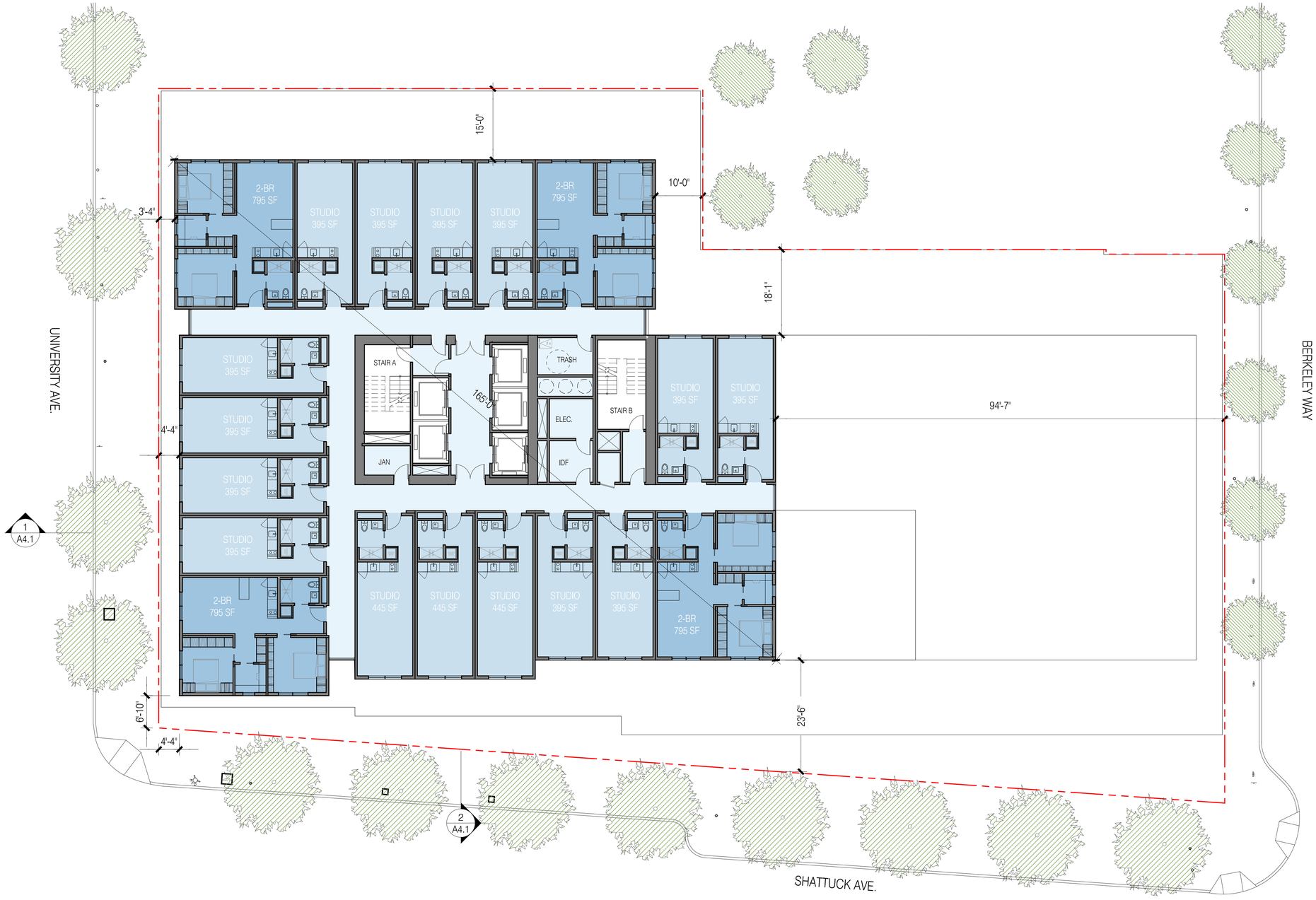
SHEET:

FLOOR PLANS

A2.4



1 PLAN AT LEVELS 15-27
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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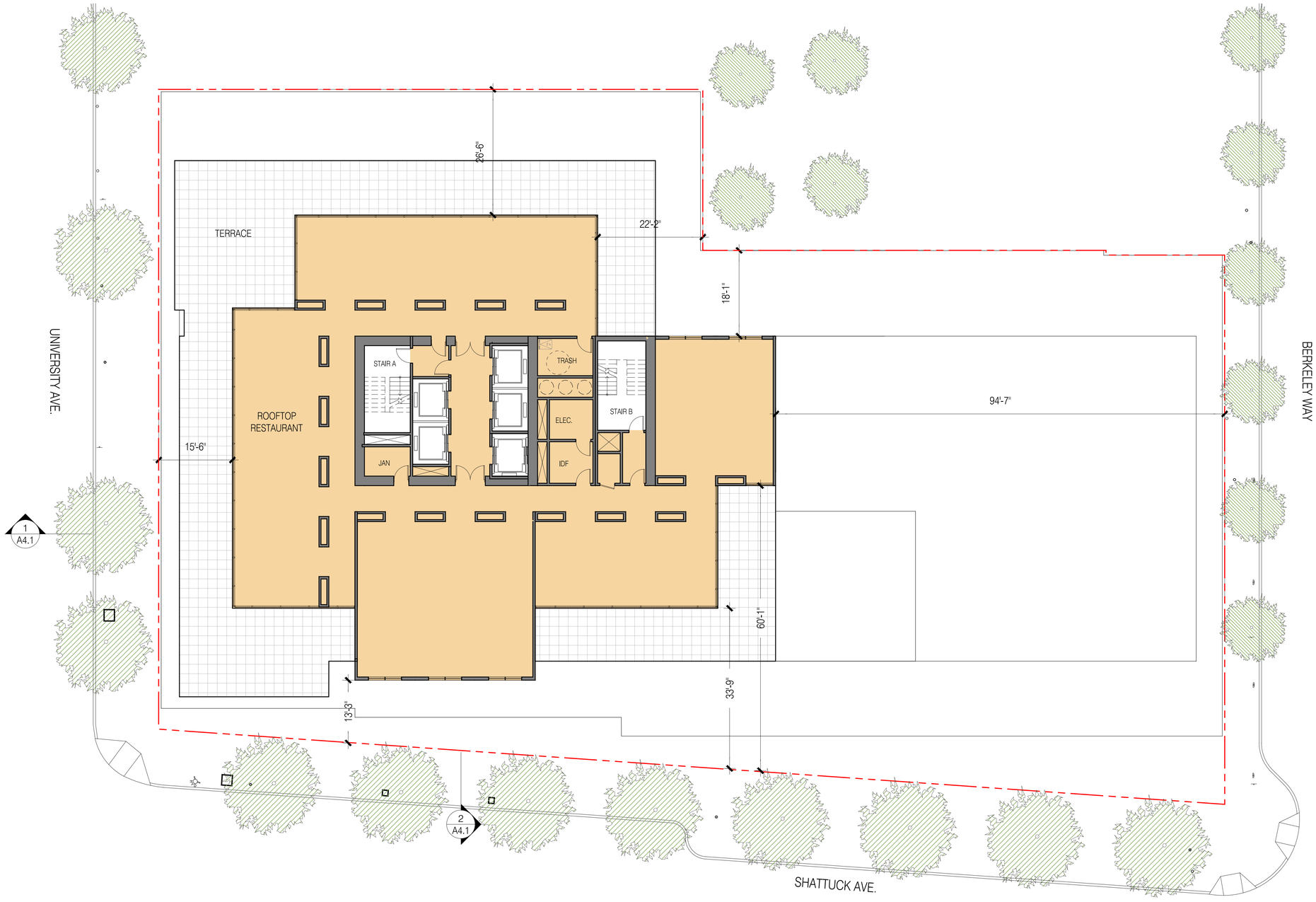
SHEET:

FLOOR PLANS

A2.5



1 - PLAN AT LEVEL 28 ROOFTOP RESTAURANT

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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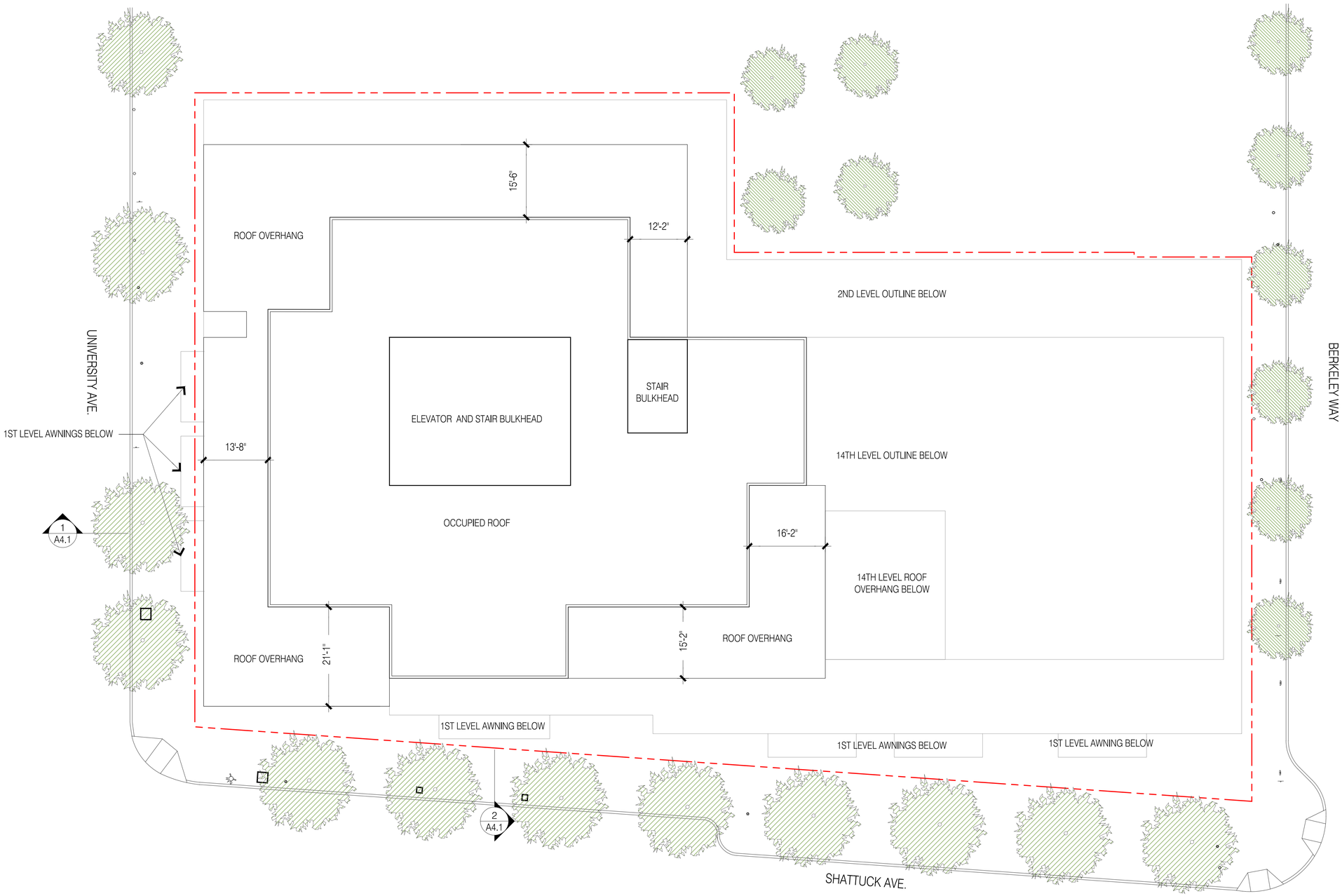
SHEET:

FLOOR PLANS

A2.6



1 PLAN AT ROOF
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

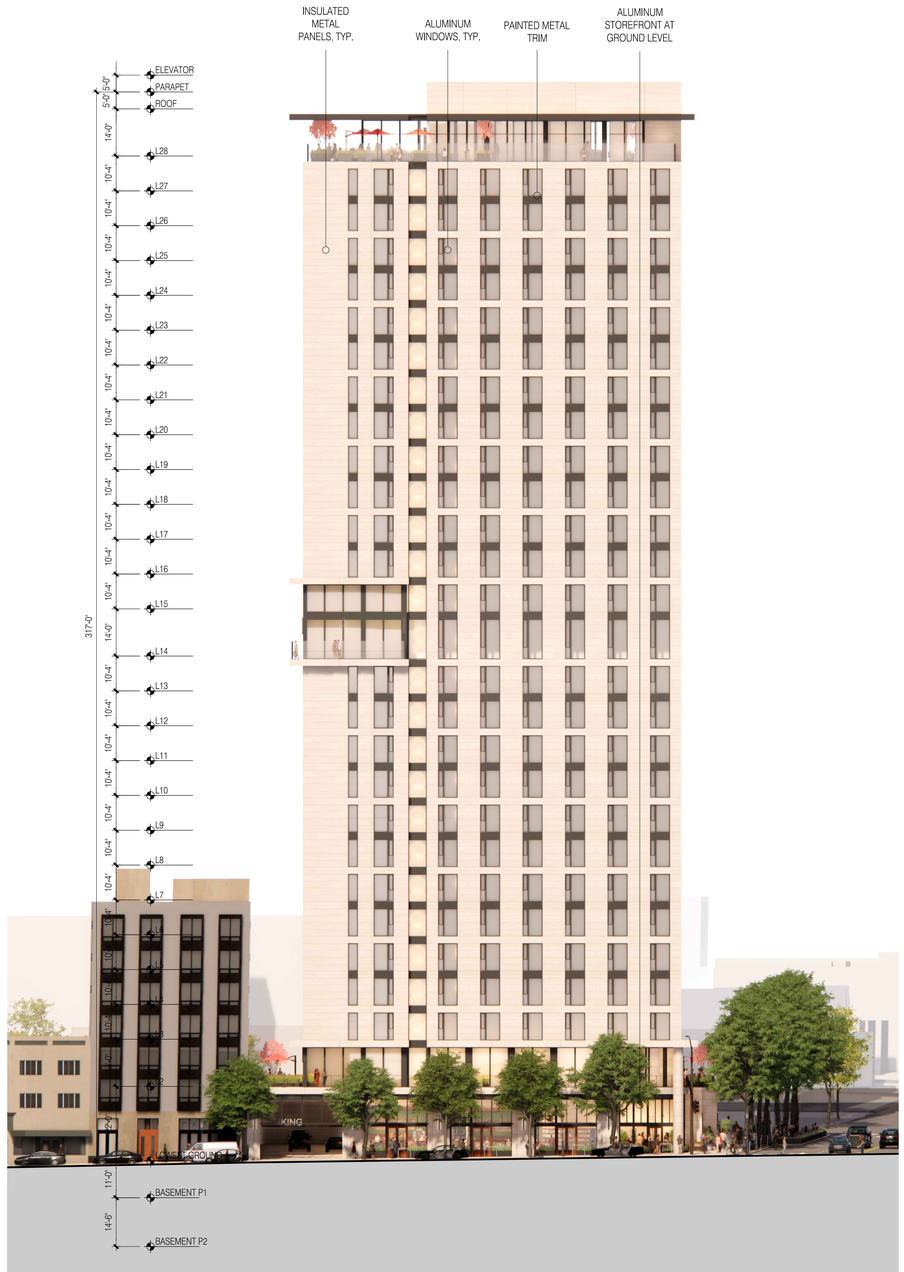
ROOF PLAN

A2.7



2 - EAST ELEVATION

0 8 16 32



1 - SOUTH ELEVATION

0 8 16 32

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SHEET:

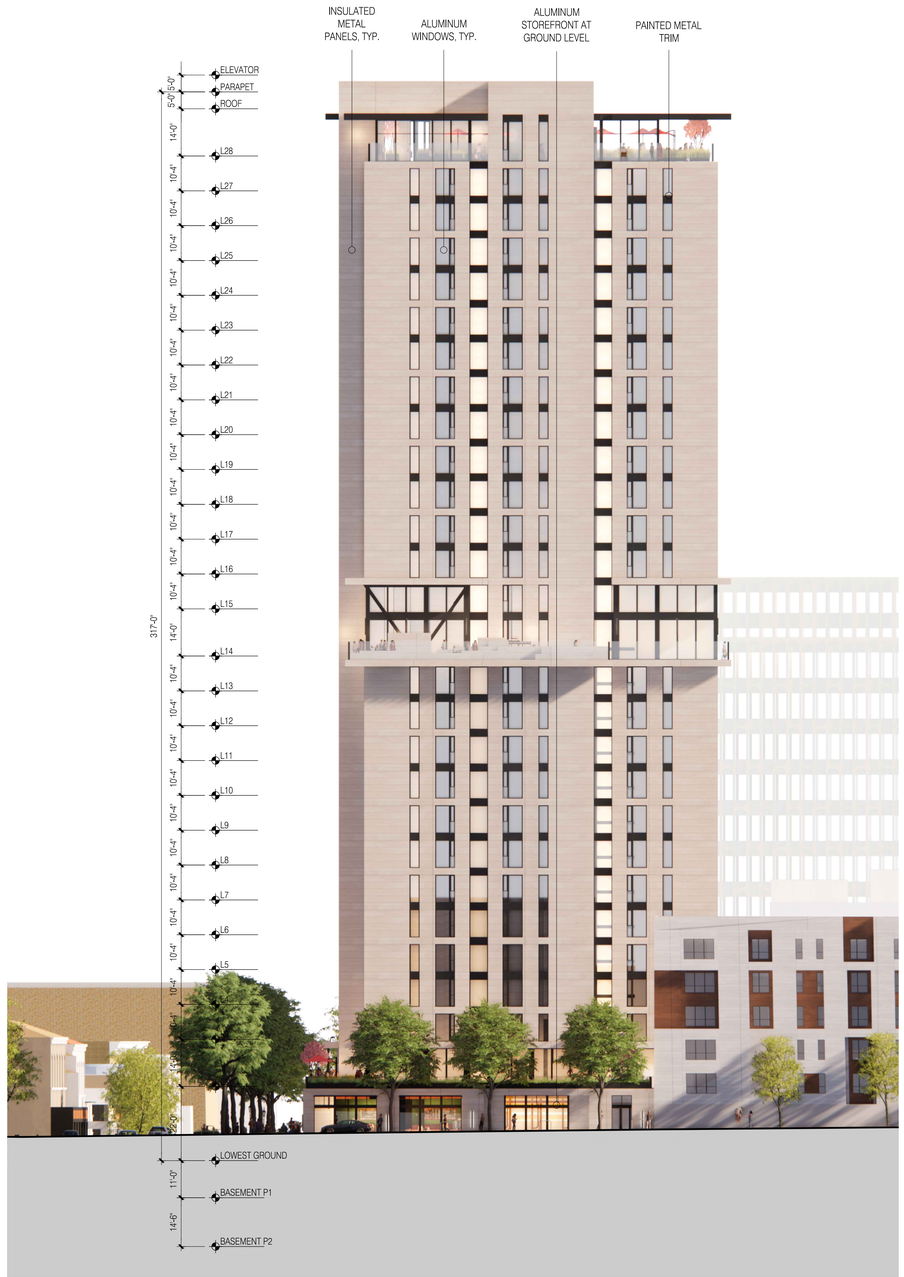
ELEVATIONS

A3.1



2 - WEST ELEVATION

0 8 16 32



1 - NORTH ELEVATION

0 8 16 32

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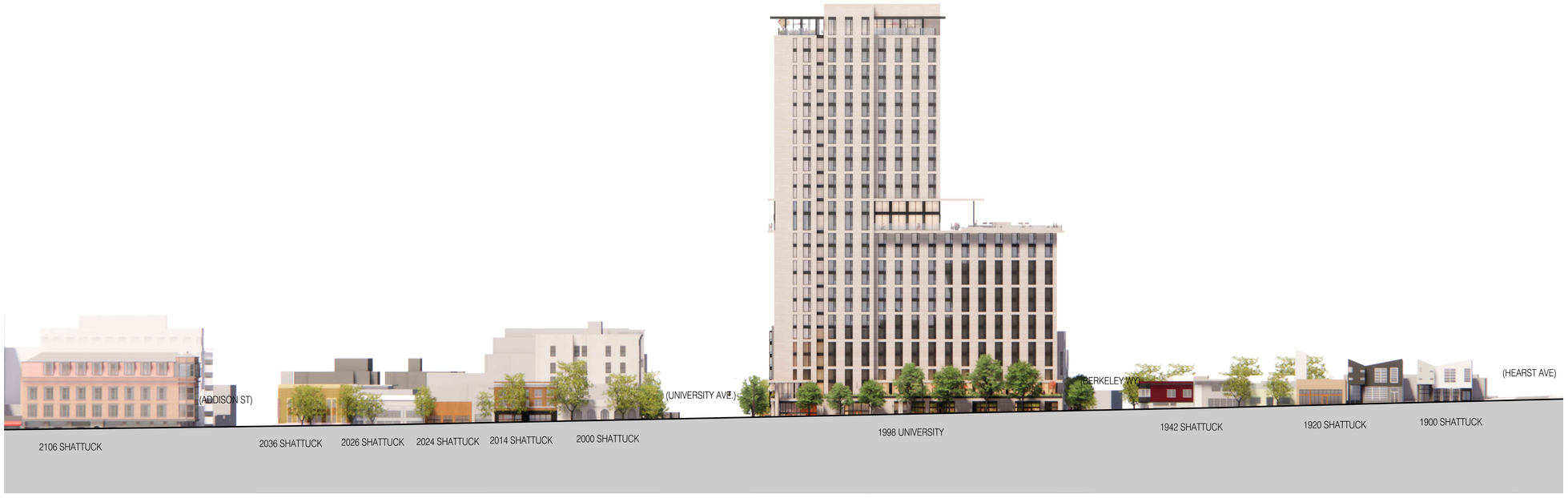
ELEVATIONS

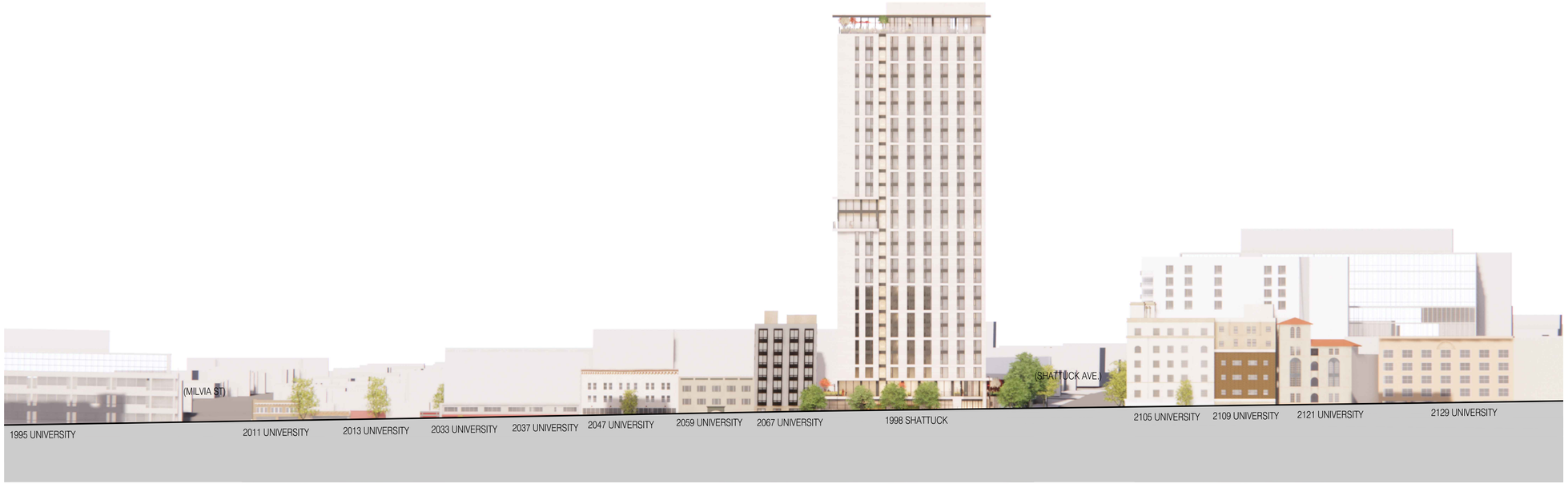
A3.2



2 - STREET STRIP ELEVATION @ SHATTUCK AVE

1/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64



1 - STREET STRIP ELEVATION @ UNIVERSITY AVE

3/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64

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STREET STRIP ELEVATIONS

A3.3



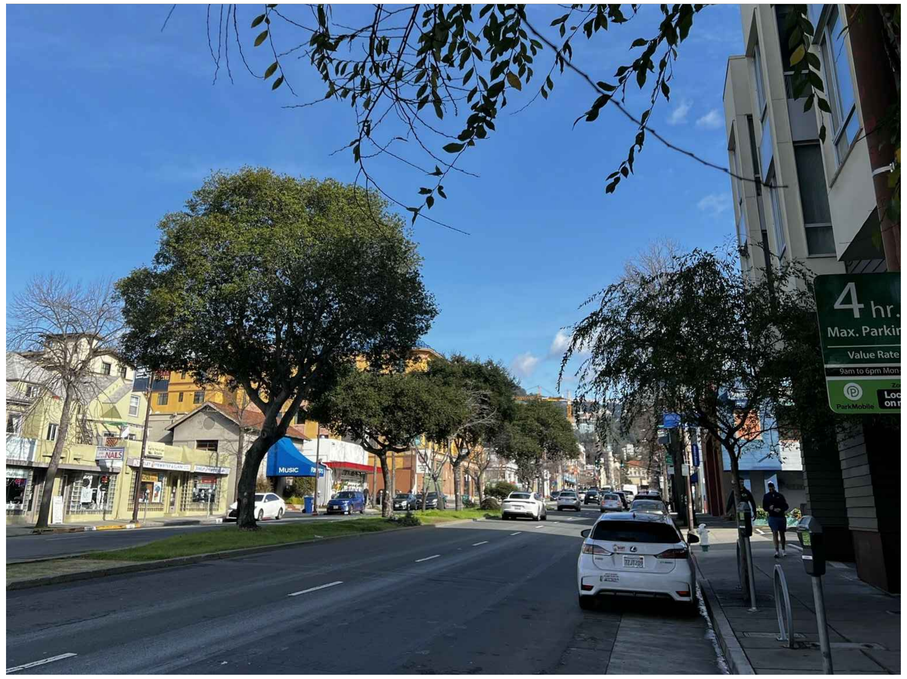
4 - UNIVERSITY LOOKING WEST - AFTER



2 - UNIVERSITY LOOKING EAST - AFTER



3 - UNIVERSITY LOOKING WEST - BEFORE



1 - UNIVERSITY LOOKING EAST - BEFORE

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PHOTO CONTEXT VIEWS

A3.4



4 - SHATTUCK LOOKING NORTH - AFTER



2 - SHATTUCK LOOKING SOUTH - AFTER



3 - SHATTUCK LOOKING NORTH - BEFORE



1 - SHATTUCK LOOKING SOUTH - BEFORE

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A3.5



4 - BERKELEY LOOKING WEST - AFTER



2 - BERKELEY LOOKING EAST - AFTER



3 - BERKELEY LOOKING WEST - BEFORE



1 - BERKELEY LOOKING EAST - BEFORE

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PHOTO CONTEXT VIEWS

A3.6

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A3.7

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1
-
VIEW LOOKING SOUTH-WEST
-

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1 VIEW LOOKING SOUTH-EAST

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1 VIEW LOOKING NORTH-WEST AT SHATTUCK AND UNIVERSITY

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A3.12



1 - VIEW LOOKING SOUTH-WEST ON SHATTUCK

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1 - VIEW LOOKING NORTH-EAST ON UNIVERSITY

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1 SIDEWALK VIEW - UNIVERSITY LOOKING EAST

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A3.14



1 - VIEW LOOKING SOUTH-WEST - SHATTUCK @ BERKELEY WAY

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1 - SIDEWALK VIEW - SHATTUCK LOOKING SOUTH-WEST

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A3.16



1 - SIDEWALK VIEW - SHATTUCK LOOKING NORTH-WEST

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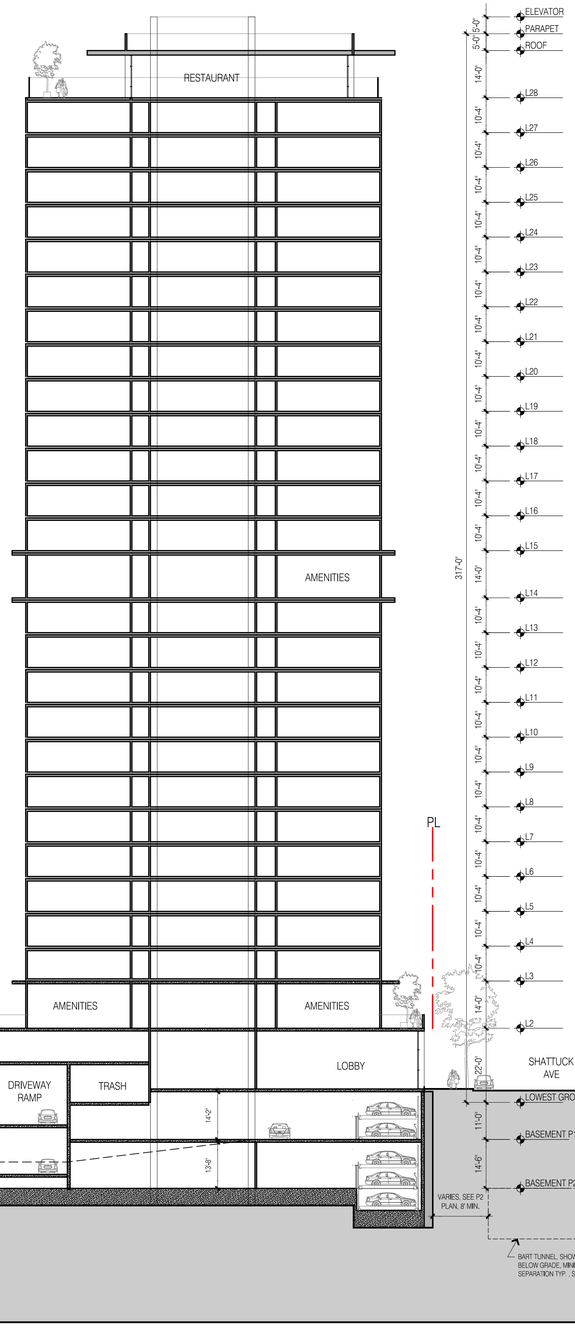
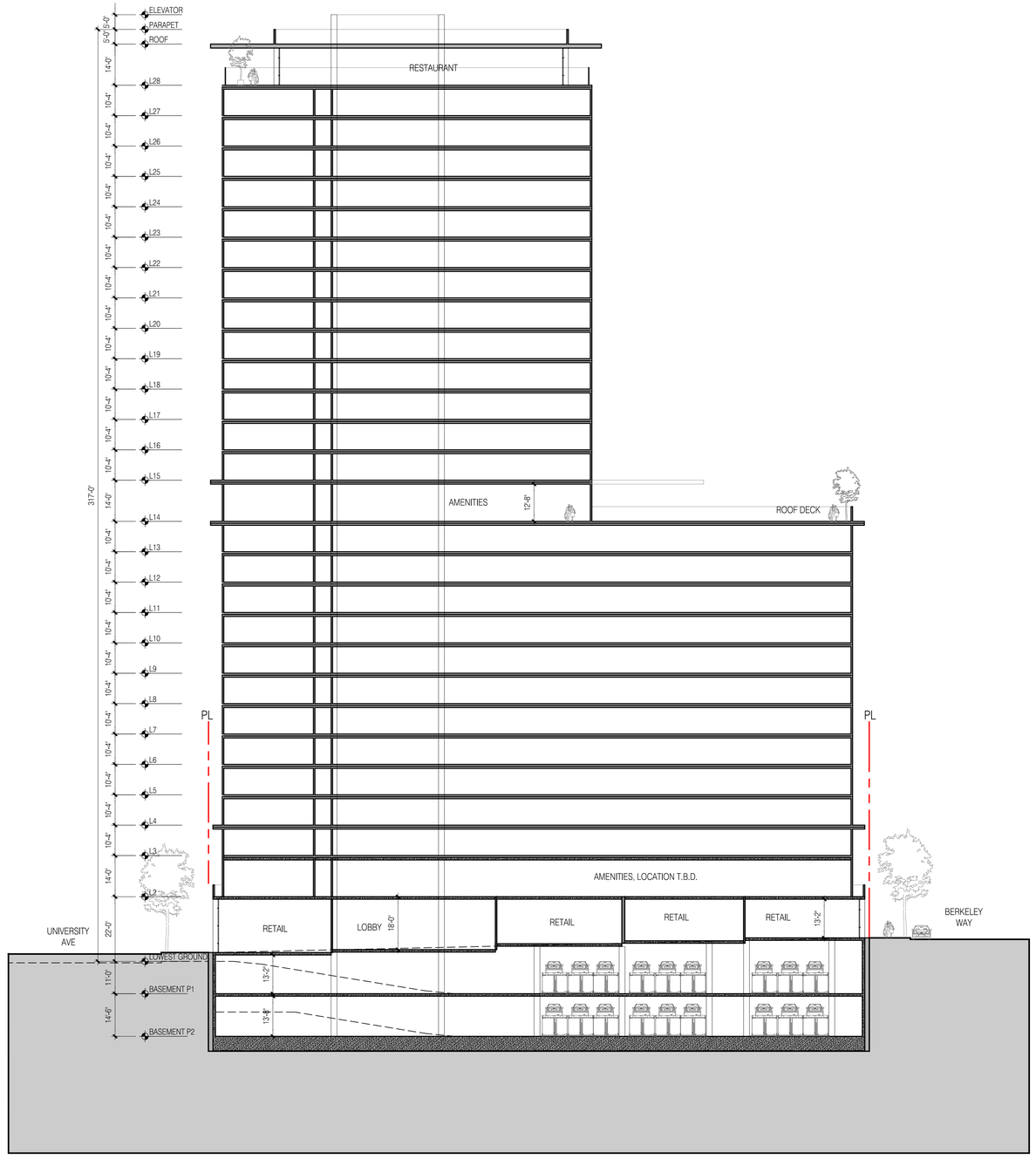
PRELIMINARY RENDERING

A3.17



2 - SECTION LOOKING NORTH

0 8 16 32



1 - SECTION LOOKING WEST

0 8 16 32

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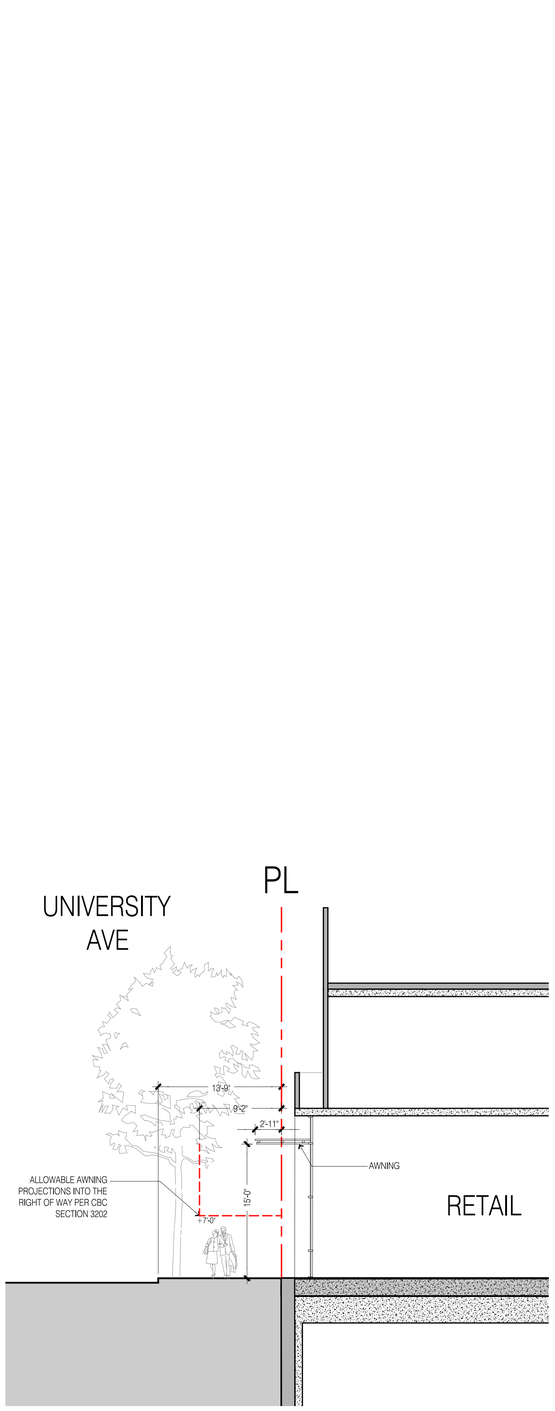
BUILDING SECTIONS

A4.1



2 - SECTION THROUGH UNIVERSITY AVE.
1/8" = 1'-0" -

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AWNING ENCROACHMENT DIAGRAM

A4.2

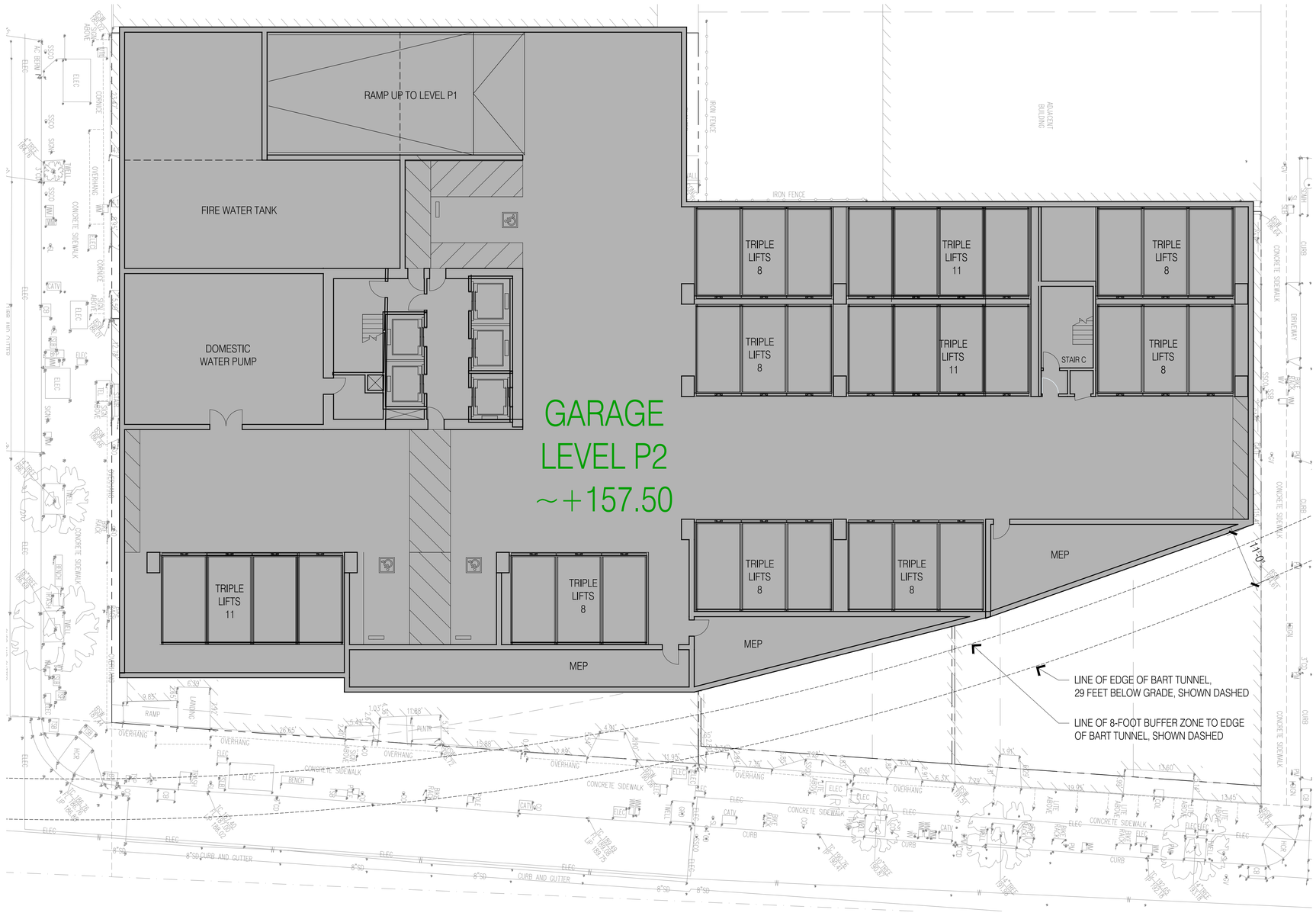
CUT AND FILL CALCULATIONS

	CUT/FILL AREA	AVERAGE CUT/FILL DEPTH (FT)	TOTAL VOLUME (CY)
PROPOSED BUILDING	23,262	37	31,878

EARTHWORK NOTES:

1. EARTHWORK QUATNITY IS A ROUGH ESTIMATE BASED ON APPROXIMATE DEPTH OF BOTTOM OF BASEMENT PARKING LEVEL.

2. EARTHWORK QUANTITIES DO NOT TAKE INTO ACCOUNT SOIL SHRINKAGE, SOIL SWELLING, TRENCH SPOILS, SITE OVER-EXCAVATION REQUIREMENTS.



1 - CONCEPTUAL GRADING PLAN

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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CONCEPTUAL GRADING PLAN

A5.0

1998 Shattuck — Preliminary Landscape Set

General Notes

1. The contractor shall inspect the site and be familiar with all existing site conditions prior to submitting bid. Contractor shall not willfully proceed with construction as shown when it is obvious that obstructions, landscape area and/or grade differences exist that may not have been known during design. Such conditions shall immediately be brought to the attention of the landscape architect. The contractor shall assume sole responsibility for all necessary revisions due to failure to give such notification. Contractor shall be responsible for making himself familiar with all underground utilities, pipes, structures and obstructions. Contractor shall assume sole responsibility for all costs incurred due to damage and/or replacement of these items. Contractor shall be responsible for coordination among trades and subcontractors as required to accomplish the work. The contractor shall be responsible for any damage to existing features caused by contractor's work. All repairs shall be made at no additional cost to the owner. Planting shall be installed in conformance with all applicable local codes and ordinances by experienced workmen and a licensed landscape contractor who shall obtain all necessary permits and pay all required fees. The garden is a pesticide and herbicide free zone. Contractor shall use organic material to fertilize and to maintain all plant material. No chemical fertilizer will be allowed.Contractor shall verify all grades, existing conditions and dimensions in the field prior to commencing work. All discrepancies or questions shall be brought to the attention of the landscape architect for resolution. Redirect work to avoid delay. All curves and all transitions between curves and straight edges shall be smooth. Take all dimensions perpendicular to any reference line, work line, face of building, face of wall or centerline.

2. Demolition
Contractor shall remove and carry all demolition materials off site. Protect (E) trees as indicated during construction. Contractor shall perform selective trimming of existing trees within the area of work per the direction of the owner.

3. Drainage/Grading
Contractor shall verify if existing drains are in good condition. All drainage systems shall be per City of Berkeley codes. Grade per indicated swales. Sleeving to be Schedule 40 PVC. Cover PVC pipe so that it not visible. All grading to be smooth to achieve a natural aspect. No finish grades shall exceed 2.5:1 slopes.

4. Soil preparation
Soil amendment shall be a minimum of 9 cy of organic compost per 1000 sf (1:4 ratio). The landscape contractor shall be responsible for finish grading and all planting area drainage. Positive drainage away from the building as per city codes shall be maintained. No low spots which hold standing water will be accepted. Where rototilling is not possible, incorporate soil amendments into top 6 inches with hand tools. After installation of irrigation system, all new planting areas are to be fine graded to within 2 inches and slightly mounded away from edges of top of planter, curb, walk, header, etc. and raked smooth with all rocks and debris over 1 inch in diameter removed. Verify existing grades and advice Landscape Architect of any discrepancies prior to start of grading.

5. Topsoil
If any planting areas require the importing of topsoil, the imported soil shall be clean, friable sandy loam; free of noxious weed seeds, sticks, stones over 1 inch in diameter or any materials that could inhibit growth. Incorporate imported topsoil into the top 6-8 inches of site soil by rototilling or hand cultivating as necessary.

6. Substitutions
Requests for substitutions of plant varieties shall be made to the landscape architect within 15 days after signing of contract.

7. Planting
Thoroughly water trees immediately after planting. Shrubs shall be spotted as per plan and the locations approved prior to the digging of the holes. Contractor shall locate and tag all trees at nursery at time of acceptance of contract to ensure availability of healthy specimens. Plant materials to be approved by landscape architect prior to site delivery.

8. Irrigation
The proposed irrigation shall be an automated, water efficient watering system compliant with the City of Berkeley codes & regulations. The contractor shall determine the static water pressure and design the system accordingly to achieve adequate regime for the proposed plantings. The following emitters shall be installed at each planting: (2) 1 gal emitters at each 1 gal sp.; (3) 5 gal. emitters at ea. 5 gal shrub.

9. Mulching
Mulch all planting areas with 3" of 'Forest Floor Bark' from American Soil and Stone, Richmond Ca (510) 292-3000.

10. Stone paving & stone work
See layout plan and detail for sub-base. Install stone paving with tight joints in front and flagstone in stabilized decomposed granite in back as show on sheet L1.0.

11. Concrete work
All concrete retaining walls greater than 3 feet in height shall be designed or reviewed and stamped by a structural engineer. All concrete footings shall be reviewed, approved and stamped by a structural engineer.

12. Electrical
Install light fixtures, conduits and controller per manufacturer recommendation. Locate controller per plan with light switch inside residence. Contractor to supply and install power supply - 2 outlets at outdoor kitchen area. Install power supply for outdoor kitchen equipment .

13. Wood work
All wood decking to match existing wood same size and layout at existing decks for deck extension. All vertical posts to be pressure treated 4x4 wood. SSD for final wood sizing, anchors and concrete footing. See note 14 for painting/staining.

14. Painting
All visible existing & new wood to be painted same color as the main residence, but with a lighter tone. Color to be reviewed & approved by owner/landscape architect.
Paint manufacturer: Sherwin Williams; exterior paint quality "duration" to be applied on all new & existing wood to be painted. Prep all wood surfaces per paint manufacturer's recommendations.

15. Maintenance
The contractor shall maintain the project for 90 days (or as requested by owner) following the approval to begin the maintenance period. During the entire maintenance period, watering, cultivating, weeding, mowing, repair/tightening of stakes and ties, provision of supplemental water by hand in addition to irrigation system as necessary. At the end of the 90 day maintenance period all areas are to be free of weed and all plant material is to be in a healthy, thriving condition.

16. Guarantee
All construction, trees and shrubs by the landscape contractor and/or his subcontractors shall be guaranteed for (1) one year after beginning of maintenance period. The contractor shall replace, at no expense to the owner, any and all landscape materials that are in an unacceptable condition for time of use, and trees or shrubs that are dead or not in a vigorous, healthy growing condition; within two weeks of notification of such condition. Replacement shall be of the same kind and size as the originally specified item and shall be replaced as originally described on the drawings. The contractor shall not be held liable for loss of plant materials during the guarantee period due to vandalism, accidental causes or acts of neglect by others than the contractor, his agents and employees.

17. Clean up
At the end of each work day, at the inspection for substantial completion and before acceptance of project, clean paved areas that are dirtied or stained by construction operations, by sweeping or washing, and remove defacements and stains. Remove construction equipment, excess materials and tools. Haul from owners property the debris resulting from construction, and dispose of legally. Remove remaining temporary protection at time of acceptance by owner unless otherwise agreed.

Project Team

Client
NX Ventures

Architect
Trachtenberg Architects
2421 Fourth Street
Berkeley, CA 94710
510.649.1414

Landscape Architect
InsideOut Design, Inc.
6000 Harwood Ave
Oakland CA 94618
510.655.7674

Contractor
TBD

Location Map



Legend

(PA)	Planting Area
(TS)	Top of stair
(BS)	Bottom of stair
(TW)	Top of wall
(BW)	Bottom of wall
R	Radius
POB	Layout Starting Point
SIM	Similar
(TYP.)	Typical
SAD	See Architectural Drawings
EQ	Equal
O.C.	On Center
(E)	Existing
›	Align
	90 Degrees angle
(824.76)	Existing spot elevation
824.76	Proposed spot elevation
	Existing contour line
	Proposed contour line
	Property line
	Existing retaining wall to be demolished

Sheet Index

L0.0	Cover Sheet
L1.0	Streetscape
L2.0	Podium
L3.0	Roof Deck
L3.1	Usable Open Space + Planting Notes
I0.0	Irr. Notes & Legend
I1.0	Irr. Plan - Street
I2.0	Irr. Plan - Podium
I3.0	Irr. Plan - Roof Deck
I3.1	Irr. Plan - POC
I4.0	Irrigation Details
I5.0	Irrigation Details
I6.0	Irrigation Details
I7.0	Irrigation Details

Plant List

Index	Latin Name	Common Name	Size	WELO	CA Nat.	Notes
Street Trees						
CC	Carpinus caroliniana	American Hornbeam	24" Box	M		University Ave
LC	Lophostemon confertus	Brisbane Box	24" Box	VL, L		Berkeley Way
PA	Platanus acerifolia 'Columbia'	Columbia' London Plane Tree	24" Box	L, M		Shattuck Ave
Trees						
BE	Brahea edulis	Guadalupe Palm	24" Box	L		Roof
BR	Beaucarnea recurvata	Pony Tail Palm	15 Gallon	VL		Roof
CO	Cercis occidentalis	Western Redbud	24" Box	VL	X	Podium FTP
CR	Ceanothus 'Ray Hartman'	Ray Hartman California Lilac	24" Box	L, ES	X	Podium
HG	Heteromeles arbutifolia 'Davis Gold	Davis Gold Toyon	24" Box	VL, L	X	Podium FTP
PR	Phoenix roebelenii	Pygmy Date Palm	24" Box	L		Roof
WF	Washingtonia filifera	California Fan Palm	24" Box	L, ES	X	Roof
Shrubs						
AD*	Agave deserti	Desert Agave	5 Gallon	VL, L	X	Roof
AP	Arctostaphylos pajaroensis 'Paradise	Paradise Pajaro Manzanita	15 Gallon	VL	X	Roof
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	Podium, Street
CF	Comus sericea, C. Stolonifera 'Hedgerow Gc	Hedgerow Gold Redtwig Dogwooc	15 Gallon	M, ES	X	Podium
HW*	Hesperoyucca whipplei	Our Lord's Candle	5 Gallon	VL	X	Roof
OB*	Opuntia basilaris	Prickly Pear	5 Gallon	VL		Roof
SM	Sabal minor	Dwarf Palmetto	15 Gallon	L		Roof
YP*	Yucca pallida	Pale Leaf Yucca	5 Gallon	VL, L, ES		Roof
ZF	Zamia furfuracea	Cardboard Palm	5 Gallon	M		Roof
Groundcovers						
AM	Armeria maritima	Sea Pink	1 Gallon	M	X	Roof
BM	Baileya multiradiata	Desert Marigold	1 Gallon	VL	X	Roof
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	Street
CM	Coreopsis maritima	Sea Dahlia	1 Gallon	L	X	Roof
DF	Dudleya farinosa	Coast Live Forever	1 Gallon	VL	X	Podium
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	Street
Podium FTP** *(1143 sf)*						
AS	Achillea 'Salmon Beauty'	Salmon Beauty Yarrow	1 Gallon	VL, L	X	
BG	Bouteloua gracilis 'Blonde Ambition'	Blonde Ambition Blue Grama	1 Gallon	L	X	
CB	Ceanothus thyrsiflorus 'Cool Blue'	Cool Blue Mountain Lilac	15 Gallon	L	X	
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	
CP	Ceanothus pallidus 'Marie Simon'	Pink Flowering Ceanothus	15 Gallon	VL, L	X	
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	
EF	Eriogonum fasciculatum	California Buckwheat	5 Gallon	VL, L	X	
EG	Elymus glaucus	Blue Wild Rye	1 Gallon	L	X	
ID	Iris douglasiana	Douglas Iris	1 Gallon	M, ES	X	
JE	Juncus effusus	Soft Rush	1 Gallon	VL, H, ES	X	
JP	Juncus patens 'Elk Blue'	Elk Blue California Gray Rush	1 Gallon	L, M, ES	X	
RC	Rudbeckia californica	California Coneflower	1 Gallon	M	X	
SA	Symphoricarpos albus var. laevigatus	Upright Snowberry	5 Gallon	VL, L, M	X	
Podium Grate Walks *(5370 sf)*						
SD	Sedum divergens	Cascade Stonecrop	Flat	L, ES	X	
SO	Sedum oreganum	Oregon Stonecrop	Flat	L, ES	X	
SS	Sedum spathulifolium 'Cape Blanco'	Cape Blanco Sedum	Flat	L	X	

**To be located with 3' min. between edge of mature plant and walkways or planter edges.*
***Species selected per Stormwater C.3 Guidebook (Dalziel et. al.).*

Note: *At least 80% of all plantings will be California natives.*

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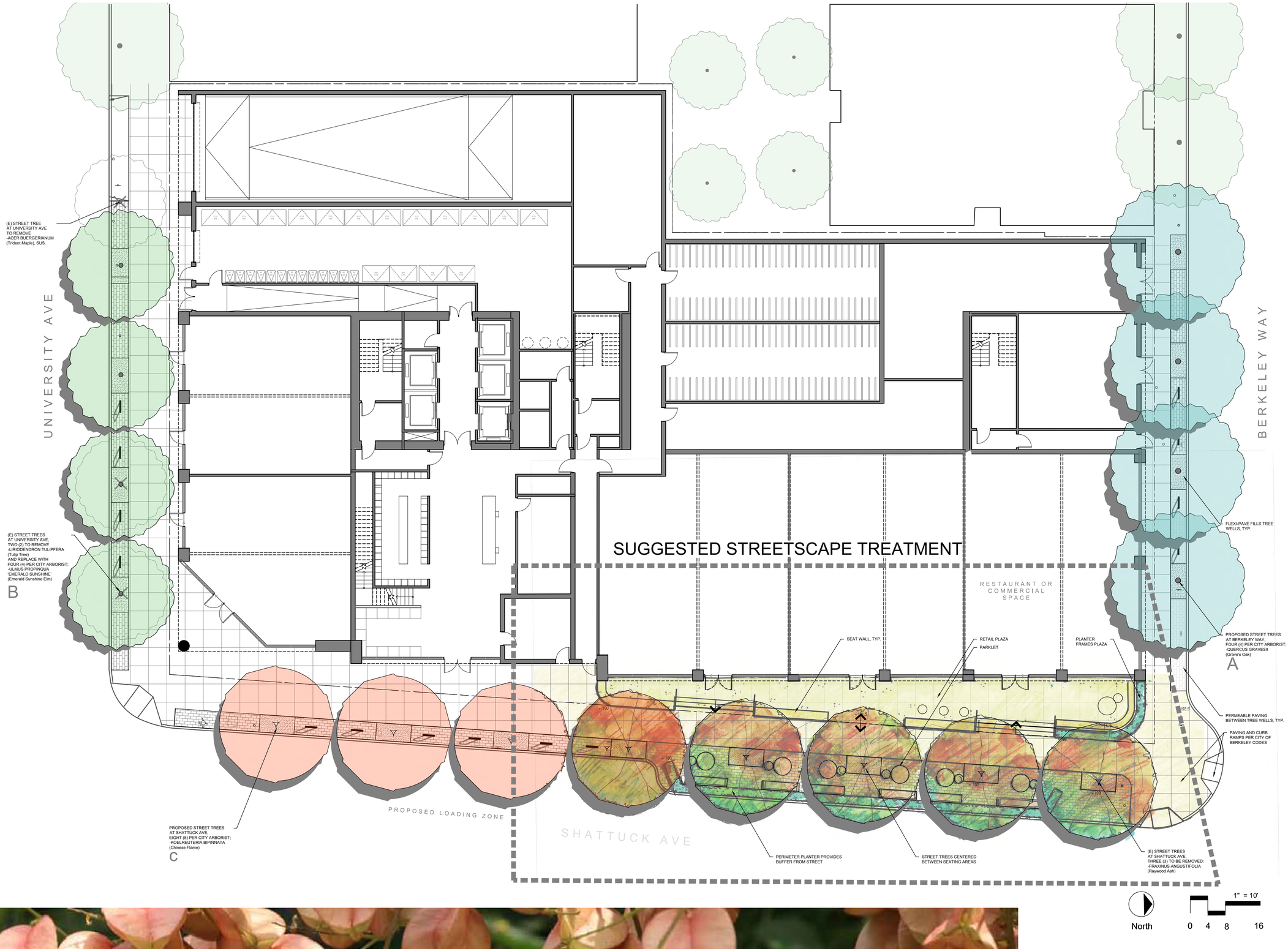
COVER SHEET, NOTES, AND LEGEND

L0.0







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LANDSCAPE PLAN AT STREETSCAPE

L1.0



Permeable grate with groundcover below
- Precedent: ASLA HQ Green Roof
-Mix of 3 shade-tolerant sedums





Maintenance corridor

FTP, typ.
1,306 SF total

Flexible seating

NOTE: FLOW-THROUGH PLANTER AREA TOTALS 1,306 SF; REQUIRED FTP AREA EQUALS MIN 4% OF BUILDING FOOTPRINT'S IMPERVIOUS SURFACE.

BUILDING FOOTPRINT = 26,208 SF
REQUIRED FTP = 26,208 SF X 0.04 = 1,049 SF
PROVIDED FTP = 1,306 SF

Bistro tables

Raised planter with patio trees and wood benches

UNIVERSITY AVE

BERKELEY WAY

Low planting in raised flow-through planters (FTPs)

Flowering tree
-'Davis Gold' Toyon

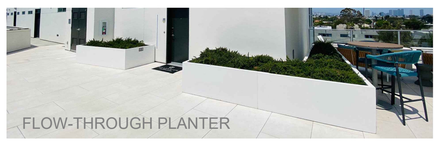
Small trees and accent plantings visible from street

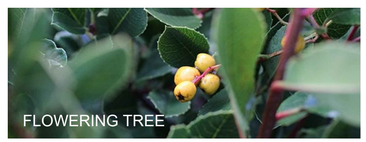
Podium seating overlooks ground-level plaza and parklet at Shattuck Ave

SHATTUCK AVE


PRECEDENT


VEGETATED GRATE


FLOW-THROUGH PLANTER


FLOWERING TREE

North

3/16"=1'-0"
0 2 4 8

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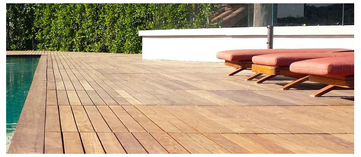
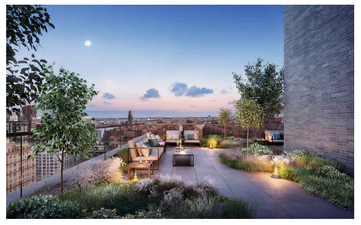
SECOND FLOOR PODIUM GARDENS

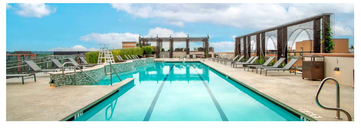
L2.0



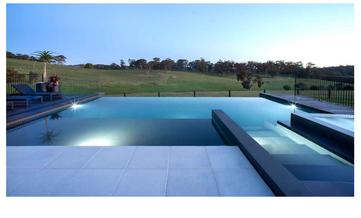


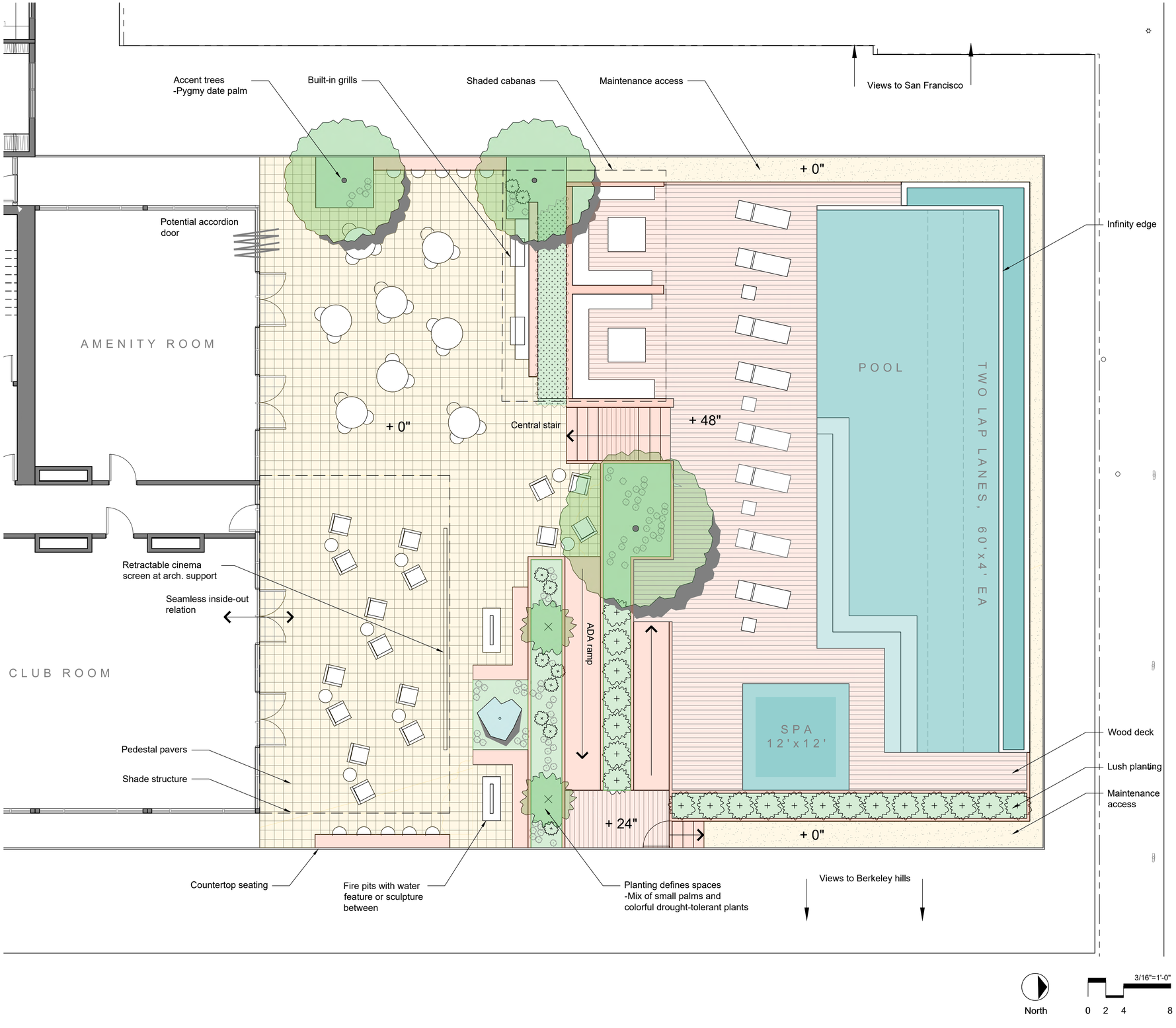












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FOURTEENTH FLOOR ROOF DECK

L3.0

PLANTING NOTES

SEE COVER SHEET L0.0 FOR GENERAL NOTES

GENERAL PLANTING NOTES:

1. SOIL PREPARATION: THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINISH GRADING AND ALL PLANTING AREA DRAINAGE. POSITIVE DRAINAGE AWAY FROM THE BUILDING AS PER CITY CODES SHALL BE MAINTAINED. NO LOW SPOTS WHICH HOLD STANDING WATER WILL BE ACCEPTED.
   THE LANDSCAPE CONTRACTOR SHALL INCORPORATE SOIL PREPARATION AMENDMENT INTO PLANTING AREAS AS NOTED BELOW. WHERE ROTO-TILLING IS NOT POSSIBLE, INCORPORATE SOIL AMENDMENTS INTO TOP 6 INCHES WITH HAND TOOLS. AFTER INSTALLATION OF IRRIGATION SYSTEM, ALL PLANTING AREAS ARE TO BE FINE GRADED TO WITHIN 2 INCHES AND SLIGHTLY MOUNDED AWAY FROM EDGES OF TOP OF PLANTER, CURB, WALK, HEADER, ETC. AND RAKED SMOOTH WITH ALL ROCKS AND DEBRIS OVER 1-INCH IN DIAMETER REMOVED.

2. SOIL PREPARATION AMENDMENTS AND BACKFILL MIX: THE LANDSCAPE CONTRACTOR SHALL AMEND EXISTING SOIL PER THE SOILS REPORT. NATIVE SOIL IS PREFERRED.

3. TREE PLANTING: TREES SHALL BE PLANTED PER DETAIL ON PLAN. TREES SHALL TYPICALLY BE LOCATED A MINIMUM OF 3 1/2 FEET FROM CURBS, WALKS, HEADERS, BUILDINGS, AND OVERHEAD STRUCTURES WITHIN THE PROJECT. BACKFILL PER SOILS REPORT. THOROUGHLY WATER TREES IMMEDIATELY AFTER PLANTING.

4. SHRUB PLANTING: THE SHRUBS SHALL BE SPOTTED AS PER PLAN, SPOTTED AT THE SHOWN LOCATIONS, AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO THE DIGGING OF THE HOLES. SHRUB BACKFILL SHALL BE PER SOILS REPORT. THOROUGHLY WATER SHRUBS IMMEDIATELY AFTER PLANTING. DO NOT PLANT ANY SHRUB WITHIN 2 FEET OF ANY BUILDING WALL.

5. MAINTENANCE: THE CONTRACTOR SHALL MAINTAIN THE PROJECT FOR 90 DAYS (OR AS REQUESTED BY OWNER) FOLLOWING THE APPROVAL TO BEGIN THE MAINTENANCE PERIOD. DURING THE ENTIRE MAINTENANCE PERIOD, WATERING, CULTIVATING, WEEDING, MOWING, REPAIR/TIGHTENING OF STAKES AND TIES, RESTORATION OF BASINS, PROVISION OF SUPPLEMENTAL WATER BY HAND IN ADDITION TO IRRIGATION SYSTEM IS REQUIRED AS NECESSARY. NO PRE-EMERGENCE HERBICIDES SHALL BE APPLIED - HAND REMOVE WEEDS. ONLY ORGANIC FERTILIZERS SHALL BE APPLIED SUCH AS THOSE SPECIFIED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. AT THE END OF THE 90 DAY MAINTENANCE PERIOD ALL AREAS ARE TO BE WEED FREE AND ALL PLANT MATERIAL SHALL BE IN A HEALTHY, THRIVING CONDITION. INTEGRATED PEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED.

6. SUBSTITUTIONS: REQUESTS FOR PLANT SUBSTITUTIONS SHALL BE MADE TO THE LANDSCAPE ARCHITECT WITHIN 15 DAYS AFTER SIGNING OF CONTRACT.

7. GUARANTEE: ALL CONSTRUCTION, TREES AND SHRUBS BY THE LANDSCAPE CONTRACTOR AND/OR SUBCONTRACTORS SHALL BE GUARANTEED FOR (1) ONE YEAR AFTER START OF MAINTENANCE PERIOD. THE CONTRACTOR SHALL REPLACE, AT NO EXPENSE TO THE OWNER, ANY AND ALL LANDSCAPE MATERIALS THAT ARE IN AN UNACCEPTABLE CONDITION FOR TIME OF USE, AND TREES OR SHRUBS THAT ARE DEAD OR NOT IN A VIGOROUS, HEALTHY GROWING CONDITION, WITHIN TWO WEEKS OF NOTIFICATION OF SUCH CONDITION. REPLACEMENT SHALL BE OF THE SAME KIND AND SIZE AS THE ORIGINALLY SPECIFIED ITEM AND SHALL BE REPLACED AS ORIGINALLY DESCRIBED ON THE DRAWINGS. THE CONTRACTOR SHALL NOT BE HELD LIABLE FOR LOSS OF PLANT MATERIALS DURING THE GUARANTEE PERIOD DUE TO VANDALISM, ACCIDENTAL CAUSES OR ACTS OF NEGLECT BY OTHERS THAN THE CONTRACTOR, HIS AGENTS AND EMPLOYEES.

8. CLEAN UP: AT THE END OF EACH WORK DAY, AT THE INSPECTION FOR SUBSTANTIAL COMPLETION, AND BEFORE ACCEPTANCE OF PROJECT - CLEAN
PAVED AREAS THAT ARE DIRTIED OR STAINED BY CONSTRUCTION OPERATIONS BY SWEEPING OR WASHING, AND REMOVE DEFACEMENTS AND STAINS.
REMOVE CONSTRUCTION EQUIPMENT, EXCESS MATERIALS AND TOOLS. HAUL FROM OWNERS PROPERTY ANY DEBRIS RESULTING FROM CONSTRUCTION, AND DISPOSE OF IT LEGALLY. REMOVE REMAINING TEMPORARY PROTECTION AT TIME OF ACCEPTANCE BY OWNER UNLESS OTHERWISE AGREED.

9. FERTILIZERS: AVAILABLE FROM CALIFORNIA ORGANIC FERTILIZERS, INC. 1-800-269-5690 WWW.ORGANICAG.COM.

STREET TREE PROTECTION NOTES:

1. ALL TREE PROTECTION REQUIREMENTS AND RESTRICTIONS SHALL BE INCLUDED IN THE CONSTRUCTION NOTES AND PRINTED ON ALL COPIES OF THE PLANS.

a) INCLUDE THE NAME AND PHONE NUMBER OF THE PARTY THAT WILL MONITOR THE SITE AND ENSURE THE TREE PROTECTION MEASURES ARE BEING FOLLOWED; AND WHAT THE MONITORING SCHEDULE WILL BE: **NAME / PHONE / SCHEDULE**

b) INSTALL 6 FOOT CHAIN-LINK FENCING TO PROTECT THE AREA WITHIN THE DRIP-LINE OF ANY PROTECTED TREE IN THE DEVELOPMENT AREA. FENCING SHALL BE MOUNTED TO POSTS THAT ARE DRIVEN INTO THE GROUND. WHERE THIS IS NOT POSSIBLE BECAUSE OF EXISTING STRUCTURES, TREE ROOTS, OR OTHER OBSTACLES, CHAIN-LINK PANELS MOUNTED TO STANCHIONS AND CONNECTED TO EACH OTHER MAY BE APPROVED. IN AREAS WHERE DIFFICULT TERRAIN MAKES THIS IMPRACTICAL, ORANGE CONSTRUCTION FENCING MAY BE APPROVED.

c) ALL FENCING SHALL HAVE SIGNAGE STATING THE REQUIREMENTS AND RESTRICTIONS, AND THE CONTACT INFORMATION FOR THE PROJECT ARBORIST.

d) WHEN ANY APPROVED CONSTRUCTION ACTIVITY WILL OCCUR WITHIN THE DRIP LINE OF A PROTECTED TREE THAT IS NOT SURROUNDED BY PROTECTIVE FENCING, THE TRUNK SHALL BE PROTECTED BY WRAPPING IT WITH STRAW TUBES (WATTLE) OR VERTICAL WOOD SLATS (EX. 2X4), UP TO A MINIMUM OF 8 FEET FROM GRADE (SEE FIGURE 1, PAGE 6). SLATS SHALL BE ANGLED TO PROTECT THE ROOT FLARE AT THE BASE OF THE TREE; AND CLOSED CELL FOAM OR EQUIVALENT MATERIAL SHALL BE USED TO PROTECT THE TRUNK OF THE TREE WHERE IT CONTACTS THE SLATS.
LATERAL BRANCHES BELOW 8 FEET SHALL ALSO BE PROTECTED. IN ADDITION, THE AREA SHALL BE COVERED WITH A 6 INCH LAYER OF MULCH TOPPED WITH 3/4 INCH PLYWOOD THAT IS FASTENED TOGETHER. IF ANY LARGE OR MOTORIZED EQUIPMENT (MINI EXCAVATOR, BOBCAT®, POWERED WHEELBARROW) WILL TRAVEL OVER THIS AREA, THE PLYWOOD MUST BE A MINIMUM OF 1 INCH AND ADEQUATE FOR THE WEIGHT OF THE EQUIPMENT THAT WILL TRAVEL OVER IT. IF LARGER EQUIPMENT (BACKHOE, TRACTOR) WILL BE USED, CONSULT THE CITY ARBORIST. ***CONSTRUCTION ACTIVITY REFERS TO ANY MOVEMENT OF PEOPLE, TOOLS, OR EQUIPMENT; OR STORAGE OF ANY TOOLS, EQUIPMENT, OR SUPPLIES.***

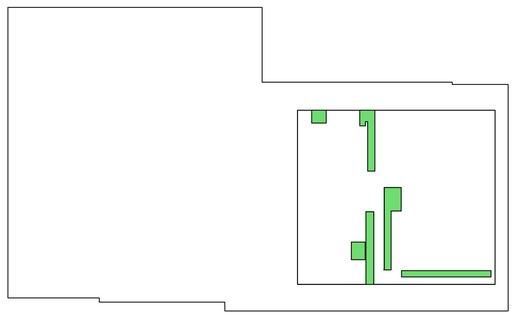
f) LOCATE AND EXPOSE ANY ROOTS 2 INCHES IN DIAMETER OR GREATER THAT MAY NEED TO BE PRUNED TO FACILITATE THE PROJECT. THIS INCLUDES ANY TRENCHING THAT WILL BE DONE AS PART OF FOUNDATION OR UTILITY INSTALLATION. CONTACT THE CITY ARBORIST IN ADVANCE TO LESSEN THE AMOUNT OF TIME THAT THE ROOTS WILL BE EXPOSED. IF ROOTS MUST BE LEFT EXPOSED FOR MORE THAN THREE DAYS, CONSULT THE CITY ARBORIST. **NOTE:** THE 2 INCH DIAMETER THRESHOLD FOR ROOTS IS A GUIDELINE THAT MAY BE ADJUSTED BY THE CITY ARBORIST DEPENDING ON THE SIZE AND CONDITION OF THE TREE, AND THE LOCATION OF THE ROOTS. THE CITY ARBORIST MAY INCREASE THE TPZ, OR IMPOSE OTHER RESTRICTIONS, WHEN THE DRIPLINE OF A TREE HAS BEEN ALTERED BY PRUNING OR UNUSUAL GROWTH PATTERNS.

g) NO STORAGE OF BUILDING MATERIALS, REFUSE, EXCAVATED SPOILS, OR DUMPING OF POISONOUS MATERIALS, IS PERMITTED WITHIN THE DRIP LINE OF ANY PROTECTED TREE. POISONOUS MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, PAINT, PETROLEUM PRODUCTS, CONCRETE OR STUCCO MIX, DIRTY WATER, OR ANY OTHER MATERIAL WHICH MAY BE DELETERIOUS TO TREE HEALTH.

STREET TREE PLANTING NOTES:

1. FOR NEW PLANTING:
   a. THE CITY ARBORIST SHALL BE NOTIFIED, BY CALLING (510) 981-6660, PRIOR TO THE DELIVERY OF THE TREES FOR INSPECTION OF THEIR SIZE AND STRUCTURE.
   b. EACH TREE SHALL BE PROPERLY PLANTED AT OR JUST BELOW GRADE (<1"). SOIL AMENDMENT IS NOT RECOMMENDED, AND NATIVE SOIL IS PREFERRED. NO CONSTRUCTION RUBBLE OR NON-ORGANIC MATERIAL SHALL BE WITHIN THE TREE WELL.
   c. THE SURROUNDING SOIL OUTSIDE THE CONTAINER (ROOT BALL) SHOULD BE LIGHTLY COMPACTED TO ABOUT 4 INCHES BELOW GRADE WITH THE ROOT BALL HIGHER THAN THAT.
   d. 2 TO 2.5 INCHES OF BASE ROCK SHOULD BE APPLIED AROUND THE ROOT BALL LEAVING 1.5 TO 2 INCHES LEFT FOR THE MATERIAL.
   e. 15G CONTAINERS ARE APPROXIMATELY 15-16 INCHES IN DIAMETER AND THE MATERIAL SHOULD BE APPLIED TO THE APPROXIMATE EDGE OF THE ROOT BALL WITH THE TOP GRADE OF THE ROOT BALL UP TO 1 INCH BELOW THE TOP OF THE MATERIAL THAT WILL BE APPLIED.
   f. EACH NEW TREE SHALL HAVE AUTOMATIC IRRIGATION INCLUDING TWO TREE BUBBLERS THAT CURVE OVER THE TOP OF THE TREES' ROOT BALL AND PROVIDE A MINIMUM OF 20 GALLONS PER WEEK BETWEEN MARCH 15 AND OCTOBER 15 FOR THE FIRST THREE YEARS. LARGER TREES MAY REQUIRE ADDITIONAL BUBBLERS. THE BUBBLERS SHOULD BE LOCATED ON TOP OF THE ROOT BALL WITHIN THIS 15-16 INCH CIRCLE AND NOT BE COVERED WITH MATERIAL.
   g. TREES THAT DIE WITHIN THE FIRST THREE YEARS MUST BE REPLACED AT THE PROPERTY OWNER'S EXPENSE.

USEABLE OPEN SPACE CALCULATIONS



ROOF DECK TOTAL USABLE AREA = 6,882 SF

(ROOF DECK HARDSCAPED = 6,297 SF)

ROOF DECK LANDSCAPED = 585 SF

ROOF DECK LANDSCAPED % = 9%

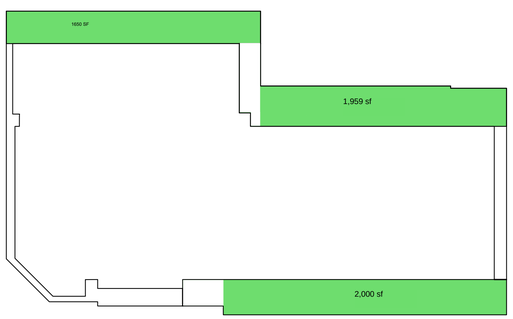
ROOF DECK USEABLE AREA (NTS)

1998 SHATTUCK TOTAL USABLE AREA = 12,491 sf

(TOTAL HARDSCAPED AREA = 6,297 SF)

TOTAL LANDSCAPED AREA = 6,735 SF

TOTAL LANDSCAPED AREA % = 54%



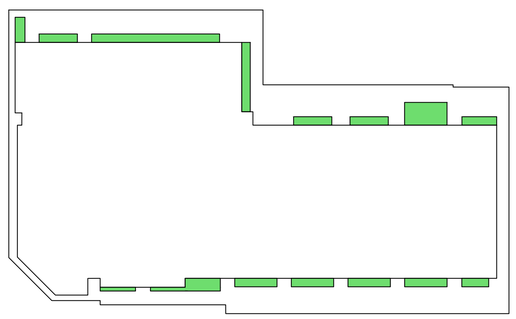
PODIUM TOTAL USABLE AREA = 5,609 sf

(PODIUM HARDSCAPED = 0 SF)

PODIUM LANDSCAPED = 5,609 sf

PODIUM LANDSCAPED % = 100%

PODIUM USEABLE AREA (NTS)



1998 SHATTUCK TOTAL ROOF AREA = 26,208 SF

4% FLOW-THROUGH PLANTER AREA NEEDED = 1,049 SF

CURRENT FLOW-THROUGH PLANTER AREA = 1,306 SF
(AT PODIUM)

FLOW-THROUGH PLANTER AREA (NTS)

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USABLE OPEN SPACE CALCULATIONS + PLANTING NOTES

L3.1

IRRIGATION NOTES

1. THESE IRRIGATION DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. ALL PIPING, VALVES, AND OTHER IRRIGATION COMPONENTS MAY BE SHOWN WITHIN PAVED AREAS FOR GRAPHIC CLARITY ONLY AND ARE TO BE INSTALLED WITHIN PLANTING AREAS. DUE TO THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, SLEEVES, CONDUIT, AND OTHER ITEMS WHICH MAY BE REQUIRED. INVESTIGATE THE STRUCTURAL AND FINISHED CONDITION AFFECTING THE CONTRACT WORK INCLUDING OBSTRUCTIONS, GRADE DIFFERENCES OR AREA DIMENSIONAL DIFFERENCES. IN THE EVENT OF FIELD DISCREPANCY WITH CONTRACT DOCUMENTS, PLAN THE INSTALLATION WORK ACCORDINGLY BY NOTIFICATION AND APPROVAL OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND ACCORDING TO THE CONTRACT SPECIFICATIONS. NOTIFY AND COORDINATE IRRIGATION CONTRACT WORK WITH APPLICABLE CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE, CONDUIT OR SLEEVES THROUGH OR UNDER WALLS, ROADWAYS, PAVING AND STRUCTURES BEFORE CONSTRUCTION. IN THE EVENT THESE NOTIFICATIONS ARE NOT PERFORMED, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR REQUIRED REVISIONS.

2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE; THE UNIFORM PLUMBING CODE, PUBLISHED BY THE WESTERN PLUMBING OFFICIALS ASSOCIATION; AND OTHER STATE OR LOCAL LAWS OR REGULATIONS. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR REGULATIONS. THE CONTRACTOR SHALL FURNISH WITHOUT ANY EXTRA CHARGE, ANY ADDITIONAL MATERIAL AND LABOR WHEN REQUIRED BY THE COMPLIANCE WITH THESE CODES AND REGULATIONS.

3. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF IRRIGATION SYSTEM WITH LAYOUT AND INSTALLATION OF THE PLANT MATERIALS TO INSURE THAT THERE WILL BE COMPLETE AND UNIFORM IRRIGATION COVERAGE OF PLANTING IN ACCORDANCE WITH THESE DRAWINGS, AND CONTRACT DOCUMENTS. THE IRRIGATION LAYOUT SHALL BE CHECKED BY THE CONTRACTOR AND OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO CONSTRUCTION TO DETERMINE IF ANY CHANGES, DELETIONS, OR ADDITIONS ARE REQUIRED. IRRIGATION SYSTEM SHALL BE INSTALLED AND TESTED PRIOR TO INSTALLATION OF PLANT MATERIAL.

4. THE INTENT OF THIS IRRIGATION SYSTEM IS TO PROVIDE THE MINIMUM AMOUNT OF WATER REQUIRED TO SUSTAIN GOOD PLANT HEALTH.

5. IT IS THE RESPONSIBILITY OF THE MAINTENANCE CONTRACTOR AND/OR OWNER TO PROGRAM THE IRRIGATION CONTROLLER(S) TO PROVIDE THE MINIMUM AMOUNT OF WATER NEEDED TO SUSTAIN GOOD PLANT HEALTH. THIS INCLUDES MAKING ADJUSTMENTS TO THE PROGRAM FOR SEASONAL WEATHER CHANGES, PLANT MATERIAL, WATER REQUIREMENTS, MOUNDS, SLOPES, SUN, SHADE AND WIND EXPOSURE.

6. IT IS THE RESPONSIBILITY OF A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120 VOLT A.C. (2.5 AMP DEMAND PER CONTROLLER) ELECTRICAL SERVICE TO THE CONTROLLER LOCATION(S). IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO COORDINATE THE ELECTRICAL SERVICE STUB-OUT TO THE CONTROLLER(S). PROVIDE PROPER GROUNDING PER CONTROLLER MANUFACTURER'S INSTRUCTIONS AND IN ACCORDANCE WITH LOCAL CODES.

7. PROVIDE EACH CONTROLLER WITH ITS OWN GROUND ROD. SEPARATE THE GROUND RODS BY A MINIMUM OF EIGHT FEET. THE GROUND ROD SHALL BE AN EIGHT FOOT LONG BY 5/8" DIAMETER U.L. APPROVED COPPER CLAD ROD. INSTALL NO MORE THAN 6" OF THE GROUND ROD ABOVE FINISH GRADE. CONNECT #6 GAUGE WIRE WITH A U.L. APPROVED GROUND ROD CLAMP TO ROD AND BACK TO GROUND SCREW AT BASE OF CONTROLLER WITH APPROPRIATE CONNECTOR. MAKE THIS WIRE AS SHORT AS POSSIBLE, AVOIDING KINKS OR BENDING.

8. INSTALL NEW BATTERIES IN THE IRRIGATION CONTROLLER(S) TO RETAIN PROGRAM IN MEMORY DURING TEMPORARY POWER FAILURES. USE QUANTITY, TYPE AND SIZE REQUIRED AS PER CONTROLLER MANUFACTURER'S INSTRUCTIONS.

9. SCHEDULE A MEETING WHICH INCLUDES REPRESENTATIVES OF THE IRRIGATION CONTROLLER MANUFACTURER, THE MAINTENANCE CONTRACTOR, THE OWNER AND THE IRRIGATION CONTRACTOR AT THE SITE FOR INSTRUCTION ON THE PROPER PROGRAMMING AND OPERATION OF THE IRRIGATION CONTROLLER.

10. PROVIDE EACH IRRIGATION CONTROLLER WITH ITS OWN INDEPENDENT LOW VOLTAGE COMMON GROUND WIRE.

11. IRRIGATION CONTROL WIRES: SOLID COPPER WITH U.L. APPROVAL FOR DIRECT BURIAL IN GROUND. COMMON GROUND WIRE: SIZE #12-1 WIRE WITH A WHITE INSULATING JACKET. CONTROL WIRE SERVICING REMOTE CONTROL VALVES: SIZE #14-1 WIRE WITH INSULATING JACKET OF COLOR OTHER THAN WHITE. SPLICES SHALL BE MADE WITH 3M-DBY SEAL PACKS OR APPROVED EQUAL.

12. INSTALL TWO SPARE CONTROL WIRES OF A DIFFERENT COLOR ALONG THE ENTIRE MAIN LINE. LOOP 36" EXCESS WIRE INTO EACH SINGLE VALVE BOX AND INTO ONE VALVE BOX IN EACH GROUP OF VALVES.

13. SPLICING OF LOW VOLTAGE WIRES IS PERMITTED IN VALVE BOXES ONLY. LEAVE A 36" LONG, 1" DIAMETER COIL OF EXCESS WIRE AT EACH SPLICE AND A 36" LONG EXPANSION LOOP EVERY 100 FEET ALONG WIRE RUN. TAPE WIRES TOGETHER EVERY TEN FEET. DO NOT TAPE WIRES TOGETHER WHERE CONTAINED WITHIN SLEEVING OR CONDUIT.

14. INSTALL GREEN PLASTIC VALVE BOXES WITH BOLT DOWN, NON HINGED COVER MARKED "IRRIGATION CONTROL VALVE". BOX BODY SHALL HAVE KNOCK OUTS. ACCEPTABLE VALVE BOX MANUFACTURER'S INCLUDE NDS, CARSON OR APPROVED EQUAL.

15. INSTALL REMOTE CONTROL VALVE BOXES 12" FROM WALK, CURB, BUILDING OR LANDSCAPE FEATURE. AT MULTIPLE VALVE BOX GROUPS, INSTALL EACH BOX AN EQUAL DISTANCE FROM THE WALK, CURB, BUILDING OR LANDSCAPE FEATURE AND PROVIDE 12" BETWEEN BOX TOPS. ALIGN THE SHORT SIDE OF RECTANGULAR VALVE BOXES PARALLEL TO WALK, CURB, BUILDING OR LANDSCAPE FEATURE.

16. VALVE LOCATIONS SHOWN ARE DIAGRAMMATIC. INSTALL IN GROUND COVER/SHRUB AREAS (AVOID LAWN AREAS WHERE POSSIBLE).

17. THE CONTRACTOR SHALL LABEL CONTROL LINE WIRE AT EACH REMOTE CONTROL VALVE WITH A 2 1/4" X 2 3/4" POLYURETHANE I.D. TAG, INDICATING IDENTIFICATION NUMBER OF VALVE (CONTROLLER AND STATION NUMBER). ATTACH LABEL TO CONTROL WIRE. THE CONTRACTOR SHALL PERMANENTLY STAMP ALL VALVE BOX LIDS WITH APPROPRIATE IDENTIFICATION AS NOTED IN CONSTRUCTION DETAILS.

18. FLUSH AND ADJUST IRRIGATION OUTLETS AND NOZZLES FOR OPTIMUM PERFORMANCE AND TO PREVENT OVER SPRAY ONTO WALKS, ROADWAYS, AND/OR BUILDINGS. SELECT THE BEST DEGREE OF THE ARC AND RADIUS TO FIT THE EXISTING SITE CONDITIONS AND THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH CONTROL ZONE.

19. SET SPRINKLER HEADS PERPENDICULAR TO FINISH GRADE.

20. LOCATE BUBBLERS ON UPHILL SIDE OF PLANT OR TREE.

21. INSTALL A HUNTER HCV SERIES, KBI CV SERIES, OR APPROVED EQUAL SPRING LOADED CHECK VALVE IN SPRINKLER RISER ASSEMBLIES WHERE LOW OUTLET DRAINAGE WILL CAUSE EROSION AND/OR EXCESS WATER.

22. WHERE IT IS NECESSARY TO EXCAVATE ADJACENT TO EXISTING TREES, USE CAUTION TO AVOID INJURY TO TREES AND TREE ROOTS. EXCAVATE BY HAND IN AREAS WHERE TWO (2) INCH AND LARGER ROOTS OCCUR. BACK FILL TRENCHES ADJACENT TO TREE WITHIN TWENTY-FOUR (24) HOURS. WHERE THIS IS NOT POSSIBLE, SHADE THE SIDE OF THE TRENCH ADJACENT TO THE TREE WITH WET BURLAP OR CANVAS.

23. NOTIFY LOCAL JURISDICTIONS FOR INSPECTION AND TESTING OF INSTALLED BACKFLOW PREVENTION DEVICE.

24. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE SHOWN ON THE IRRIGATION DRAWINGS. VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE.

25. IRRIGATION DEMAND: REFER TO PLANS.

26. THE EXISTING MAIN LINE SHOWN ON THE DRAWINGS IS DIAGRAMMATIC. VERIFY AND LOCATE EXISTING MAIN LINE IN FIELD. REPORT TO ARCHITECT IN WRITING ANY DEVIATION OF EXISTING MAIN LINE LOCATION FROM THAT SHOWN ON THE DRAWINGS.

27. PIPE SIZING SHOWN ON THE DRAWINGS IS TYPICAL. AS CHANGES IN LAYOUT OCCUR DURING STAKING AND CONSTRUCTION THE SIZE MAY NEED TO BE ADJUSTED ACCORDINGLY.

28. PIPE THREAD SEALANT COMPOUND SHALL BE RECTOR SEAL #5.

29. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MINOR CHANGES IN THE IRRIGATION LAYOUT DUE TO OBSTRUCTIONS NOT SHOWN ON THE IRRIGATION DRAWINGS SUCH AS LIGHTS, FIRE HYDRANTS, SIGNS, ELECTRICAL ENCLOSURES, ETC.

30. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CHANGES IN THE IRRIGATION LAYOUT AND VALVE ZONING DUE TO VARIATIONS IN THE EXISTING SITE CONDITIONS SUCH AS EXPOSURE FROM BUILDINGS, TRELLISES, TREES, ETC., AS WELL AS SLOPE AND SOIL CONDITIONS. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND IRRIGATION CONSULTANT OF THE PROPOSED CHANGES PRIOR TO INSTALLATION FOR APPROVAL.

31. WHEN WORK OF THIS SECTION HAS BEEN COMPLETED AND SUCH OTHER TIMES AS MAY BE DIRECTED, REMOVE ALL TRASH, DEBRIS, SURPLUS MATERIALS AND EQUIPMENT FROM SITE.

32. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLEMENTAL HAND WATERING OF ALL PLANT MATERIAL WITHIN DRIPLINE AREAS UNTIL THE PLANTS ARE SUFFICIENTLY ESTABLISHED.

33. VERIFY LOCATIONS OF ALL IRRIGATION COMPONENTS INSTALLED WITHIN A VALVE BOX WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. DO NOT INSTALL UNTIL LANDSCAPE ARCHITECT PROVIDES ACCEPTABLE LOCATIONS.

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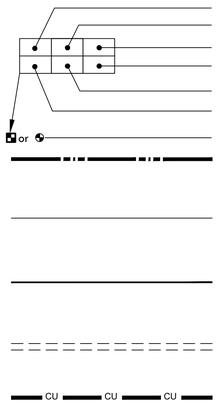
IRRIGATION LEGEND

SYMBOL	MODEL NUMBER	DESCRIPTION	NOZZLE GPM	OPERATING PSI	OPERATING RADIUS (FEET)
	PCB-25	HUNTER BUBBLER (SHRUB)	0.25	30	TRICKLE
■	PCB-25	HUNTER BUBBLER (TREE) MIN. 2 PER TREE. REFER TO BUBBLER DETAIL FOR QUANTITY OF BUBBLERS PER TREE SIZE.	0.25	30	TRICKLE
	WLT-0500-T	NDS SCH 40 BALL VALVE OR APPROVED EQUAL			
	ECO-ID	HUNTER ECO-INDICATOR			
	ICV-101/AS-40	HUNTER REMOTE CONTROL VALVE WITH 40 PSI PRESSURE REGULATOR			
	ICZ-101-40	HUNTER REMOTE CONTROL VALVE WITH A 40 PSI PRESSURE REGULATOR AND A 1" FILTER.			
	QB44RCAR10	BUCKNER 1" TWO-PIECE QUICK COUPLING VALVE (ANTI-ROTATION)			
	T-FP600A-LF-1"	NIBCO 1" BRASS BALL VALVE			
MV	WT-MV-100G-SNO	WeatherTRAK 1" BRASS MASTER VALVE (NORMALLY OPEN)			
FS	WTFLOW-HD-P-100	WeatherTRAK 1" FLOW SENSOR			
	975XL2SEU-1"	WILKINS REDUCED PRESSURE BACKFLOW ASSEMBL.			
SM	MODEL 55	BADGER SUB WATER METER			
A	WTLC-C-12-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 12 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			
B	WTLC-C-6-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 6 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			



CONTROLLER AND STATION NUMBER
REMOTE CONTROL VALVE SIZE (IN INCHES)
FLOW (GPM)
WATER USE CLASSIFICATION OF ZONE
APPLICATION RATE (IN/HR) or DRIPLINE SPACING
AREA (SQ. FT.)
ASSOCIATED REMOTE CONTROL VALVE

MAIN LINE: 1.25" THROUGHOUT:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 18" COVER.

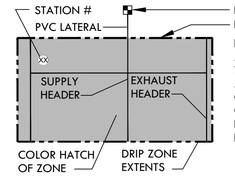
LATERAL LINE: 3/4" AND LARGER:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

DRIPLINE LATERAL LINE: 3/4" AND LARGER:
1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

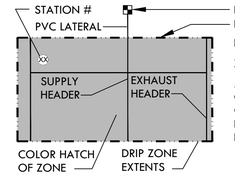
SLEEVING: SCHEDULE 40 PVC PLASTIC PIPE. COVER TO BE AS INDICATED IN SPECIFICATIONS OR AS INDICATED ABOVE FOR PIPE DEPTH OF COVER.

MAIN LINE: 1.25" THROUGHOUT:
TYPE 'K' COPPER PIPE WITH WROUGHT FITTINGS. SHOWN FOR REFERENCE ONLY, SEE PLUMBING PLANS FOR ROUTING THROUGH STRUCTURE.

ELECTRICAL CONDUIT: SHOWN FOR REFERENCE ONLY, SEE ELECTRICAL PLANS FOR ROUTING THROUGH STRUCTURE.



DRIPLINE REMOTE CONTROL VALVE
DRIP ZONE:
HUNTER HDL SERIES DRIPLINE WITH BUILT IN PRESSURE COMPENSATION AND CHECK VALVE, PART #HDL-06-12-250-CV. USE PLD FITTINGS. TUBING TO BE INSTALLED 4" BELOW GRADE IN A 12" O.C. GRID ACCORDING TO DETAILS. SIZE EXHAUST HEADERS AS FOLLOWS: 1": 0-10 GPM, 1.25": 11-20 GPM. ALL EXHAUST HEADERS SHALL BE 1" SCH 40 PVC OR 1" SCH 40 FLEXIBLE PVC. USE SCH. 40 PVC SOLVENT WELD FITTINGS. EXTEND PVC HEADERS TO THE ENDS OF ALL DRIP ZONES TO BALANCE FLOW IF REQUIRED. SEE DETAILS FOR FURTHER INFORMATION.



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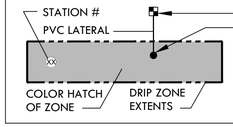

DRIPLINE REMOTE CONTROL VALVE
APPROXIMATE CONNECTION POINT BETWEEN DRIPLINE TUBING AND PVC SUPPLY WHEN DRIP ZONE IS LESS THAN 3 GPM AND NO PVC SUPPLY/EXHUST HEADERS ARE NEEDED. REFER TO DRIPLINE TUBING CONNECTION DETAIL FOR MORE INFORMATION.

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IRRIGATION NOTES & LEGEND

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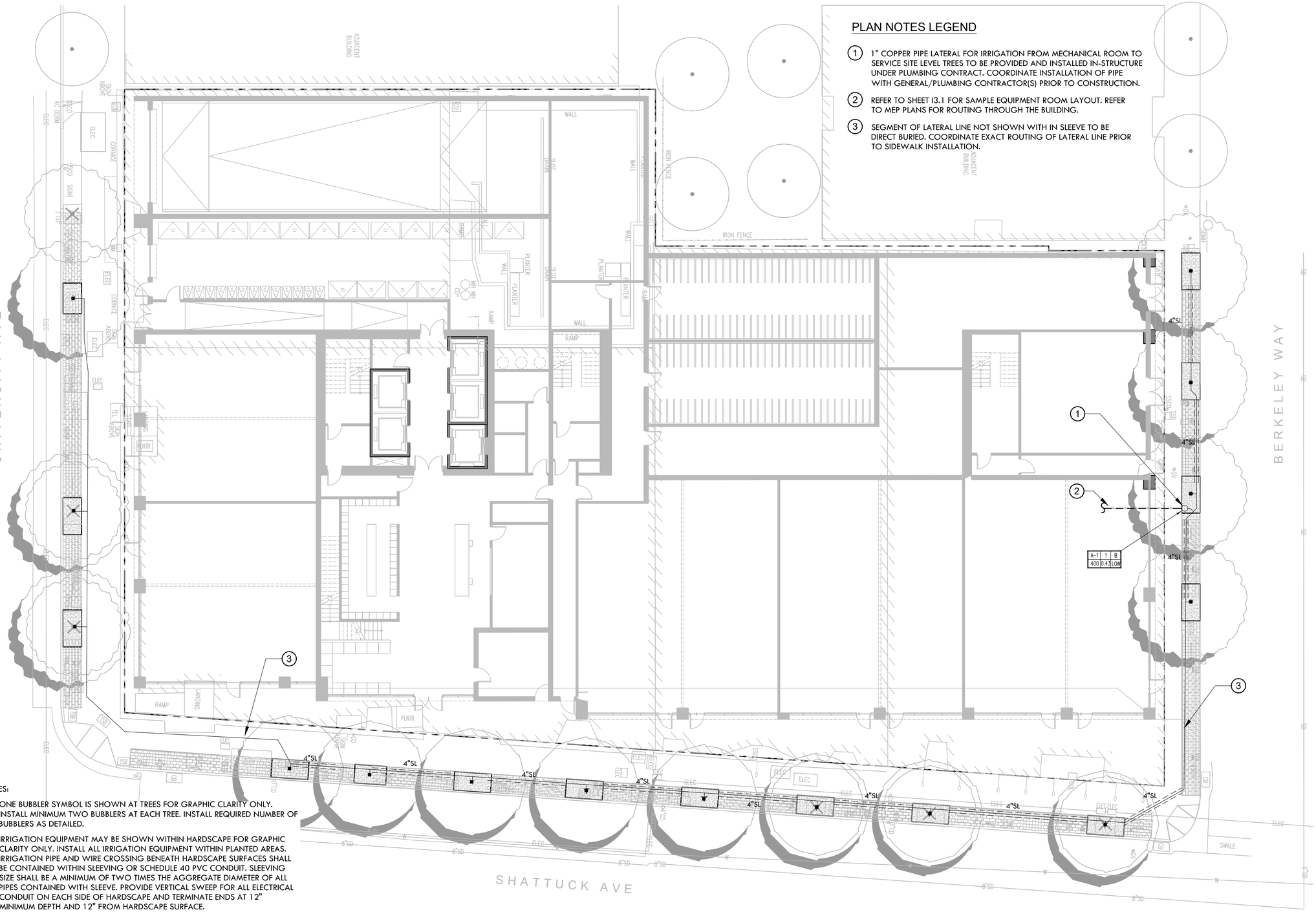

NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. IRRIGATION EQUIPMENT MAY BE SHOWN WITHIN HARDSCAPE FOR GRAPHIC CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT WITHIN PLANTED AREAS. IRRIGATION PIPE AND WIRE CROSSING BENEATH HARDSCAPE SURFACES SHALL BE CONTAINED WITHIN SLEEVING OR SCHEDULE 40 PVC CONDUIT. SLEEVING SIZE SHALL BE A MINIMUM OF TWO TIMES THE AGGREGATE DIAMETER OF ALL PIPES CONTAINED WITH SLEEVE. PROVIDE VERTICAL SWEEP FOR ALL ELECTRICAL CONDUIT ON EACH SIDE OF HARDSCAPE AND TERMINATE ENDS AT 12" MINIMUM DEPTH AND 12" FROM HARDSCAPE SURFACE.
3. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
4. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

0.75"	0-6 GPM
1"	7-12 GPM

North

1" = 10'
0 4 8 16

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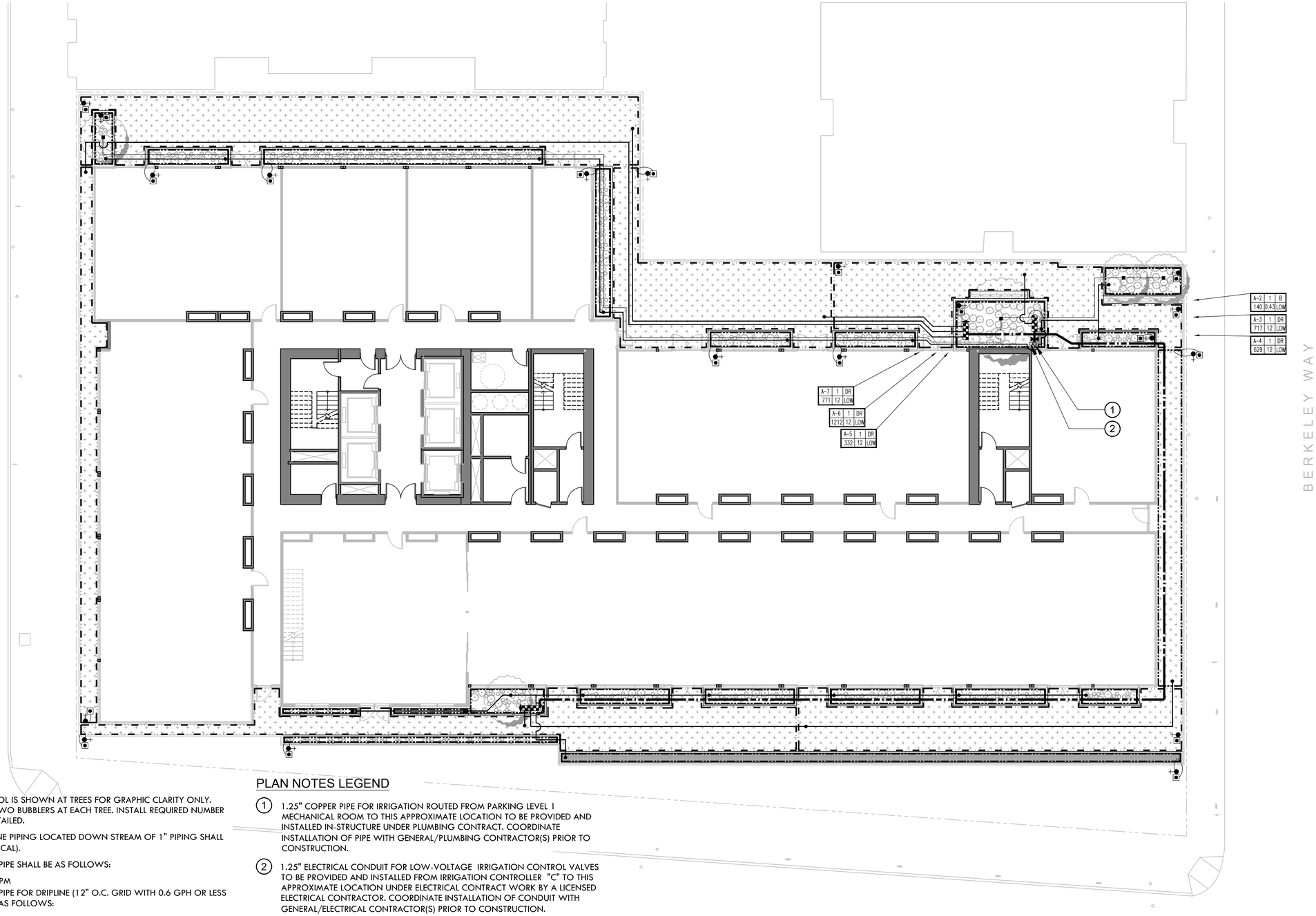
IRRIGATION PLAN AT STREETSCAPE ALT A

L1.0



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3. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

   0.75" 0-6 GPM
4. SIZING OF LATERAL PIPE FOR DRIPLINE (12" O.C. GRID WITH 0.6 GPH OR LESS EMITTERS) SHALL BE AS FOLLOWS:

   0.75 0-500 FT
   1" 501-1100 FT

PLAN NOTES LEGEND

(1) 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.

(2) 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

North

3/16"=1'-0"
0 2 4 8

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IRRIGATION PLAN
SECOND FLOOR
PODIUM GARDENS

L2.0

NOTES:

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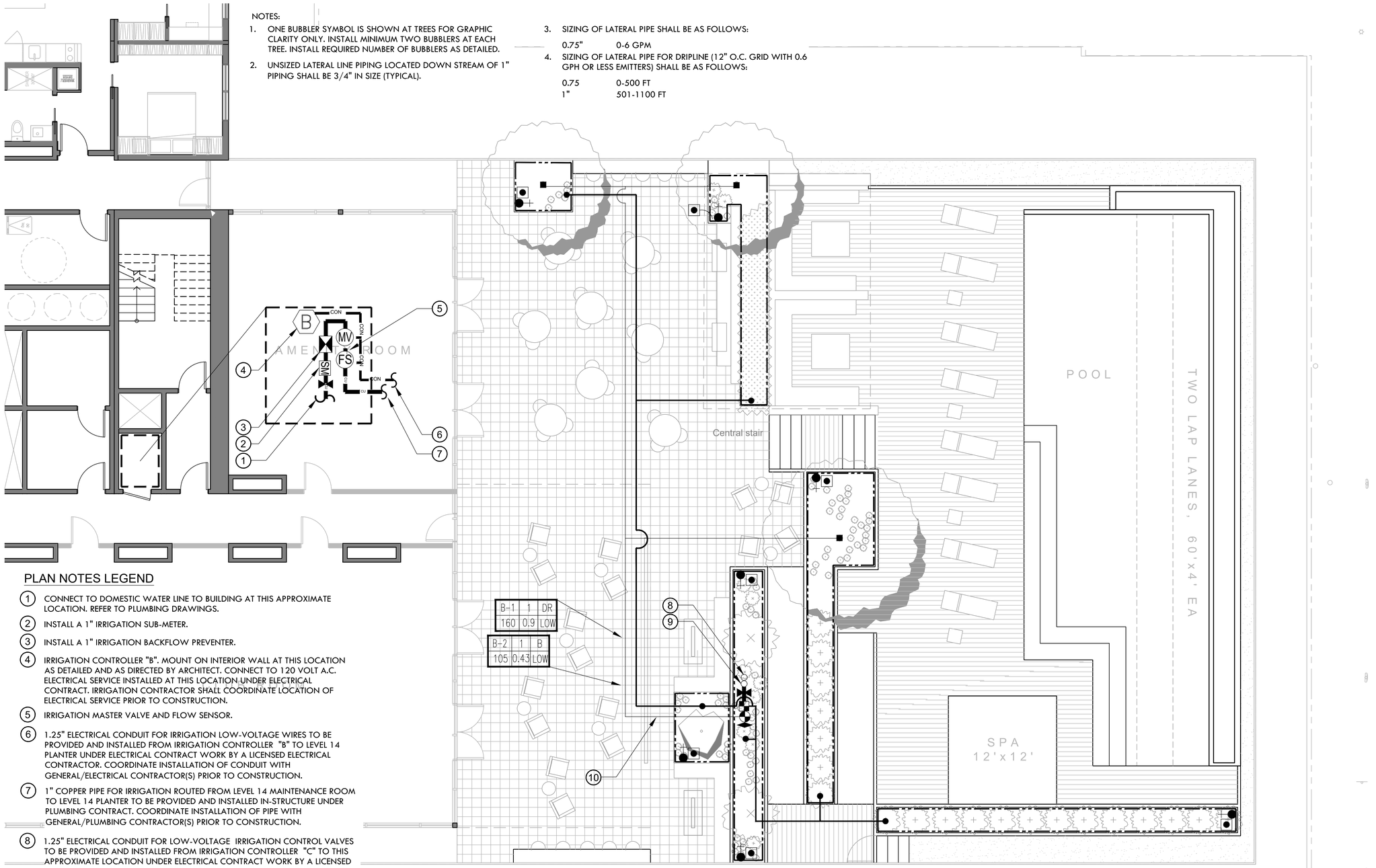

PLAN NOTES LEGEND

1. CONNECT TO DOMESTIC WATER LINE TO BUILDING AT THIS APPROXIMATE LOCATION. REFER TO PLUMBING DRAWINGS.
2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION CONTROLLER "B". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
5. IRRIGATION MASTER VALVE AND FLOW SENSOR.
6. 1.25" ELECTRICAL CONDUIT FOR IRRIGATION LOW-VOLTAGE WIRES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "B" TO LEVEL 14 PLANTER UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM LEVEL 14 MAINTENANCE ROOM TO LEVEL 14 PLANTER TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
9. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
10. ALL IRRIGATION LINES SHALL BE ROUTED UNDER PEDESTAL PAVERS.

27 FEB 2023

ALT E - REVISED

North

3/16"=1'-0"
0 2 4 8

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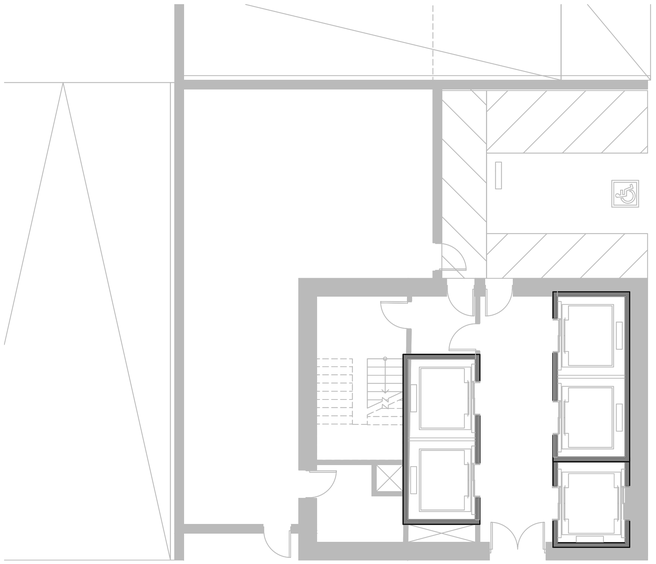
JOB: 0000

SHEET:

IRRIGATION PLAN
FOURTEENTH
FLOOR ROOF DECK
ALT E - REVISED

I3.0



PLAN NOTES LEGEND

1. CONNECT TO DOMESTIC WATER LINE TO BUILDING AT THIS APPROXIMATE LOCATION. REFER TO PLUMBING DRAWINGS.
2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION MASTER VALVE AND FLOW SENSOR.
5. IRRIGATION CONTROLLER "C". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
6. 1" COPPER PIPE LATERAL FOR IRRIGATION FROM MECHANICAL ROOM TO SERVICE SITE LEVEL TREES TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM MECHANICAL ROOM TO PODIUM LEVEL PLANTERS TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO PODIUM LEVEL PLANTERS UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

27 FEB 2023

North 0 4 8 16 1/8"=1'-0"

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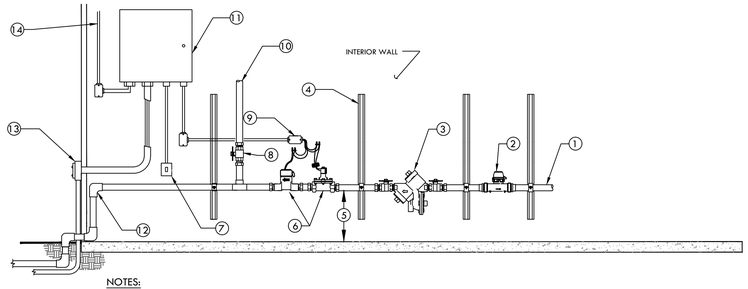
JOB: 0000

SHEET:

IRRIGATION POINT OF CONNECTION

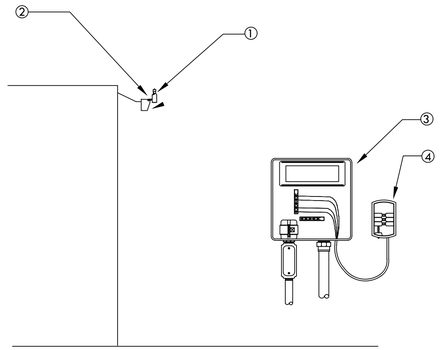
I3.1

① 1.25" COPPER MAIN LINE TO BACKFLOW IN EQUIPMENT ROOM. SHOWN ON MEP PLANS.
② SUB-METER FOR IRRIGATION.
③ 1.25" WILKENS REDUCED PRESSURE BACKFLOW ASSEMBLY.
④ UNI-STRUT SUPPORT BRACKET, THREADED EXTENSIONS AND CLAMPS, LENGTH AS REQUIRED. PROVIDE A MINIMUM OF 6" SEPARATION FOR THE VALVES AND PIPE FROM THE WALL.
⑤ MIN. 18" ± FROM FINISH FLOOR.
⑥ MASTER VALVE AND FLOW SENSOR.
⑦ 120 VOLT A.C. ELECTRICAL BY ELECTRICAL CONTRACTOR FOR CONTROLLER
⑧ 1.25" BRASS BALL VALVE.
⑨ 1" ELECTRICAL CONDUIT WITH JUNCTION BOXES FOR CONTROL WIRES FOR FLOW SENSOR & MASTER VALVE.
⑩ 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION(S). INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
⑪ IRRIGATION CONTROLLER BY IRRIGATION CONTRACTOR. MINIMUM 42" ABOVE FINISHED FLOOR.
⑫ 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION. INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
⑬ JUNCTION BOX BY ELECTRICAL CONTRACTOR FOR EXIT OF TWO WIRE SERVICING VALVES WITHIN ROOM.
⑭ 1.25" ELECTRICAL CONDUIT WITH REQUIRED JUNCTION BOXES ROUTED THROUGH STRUCTURE FROM CONTROLLER LOCATION TO EXTERIOR PLANTERS.



NOTES:
1. THIS LAYOUT IS TO PROVIDE INFORMATION ON EQUIPMENT AND TYPICAL DISTANCES REQUIRED BETWEEN THE EQUIPMENT. IT IS DIAGRAMMATIC AND WILL NEED TO BE ADJUSTED ACCORDING TO AVAILABLE FLOOR SPACE AND OTHER EQUIPMENT INSTALLED WITHIN THE ENCLOSURE. OFFSETS AND FITTINGS WILL BE REQUIRED FOR THESE ADJUSTMENTS.
2. MAINTAIN 6" OF CLEARANCE FROM BUILDING WALLS FOR EASE OF MAINTENANCE FOR ALL COPPER PIPING, VALVES, AND FITTINGS.
3. SEAL ALL PIPE PENETRATIONS THROUGH WALLS/STRUCTURE AS REQUIRED (BY PLUMBING CONTRACTOR). SEE PLUMBING/WATERPROOFING DRAWINGS.
4. ALL FITTINGS AND PIPING FOR WATER LINES WITHIN EQUIPMENT ROOM SHALL BE COPPER WITH WROT FITTINGS OR BRASS NIPPLES.

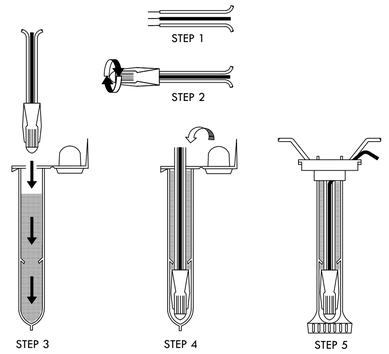
1 IRRIGATION EQUIPMENT LAYOUT DIAGRAM DETAIL
SCALE: NONE



NOTE: MAXIMUM LINE OF SIGHT FROM RAIN SENSOR TO RECEIVER IS 300 FT. DISTANCE IS LESS IF OBSTRUCTIONS EXIST. SENSOR MUST BE INSTALLED IN "CLEAR SPACE" WHERE IT IS EXPOSED TO UNOBSTRUCTED RAINFALL AND IS CLEAR OF IRRIGATION SPRAY.

① WIRELESS RAIN SENSOR TRANSMITTER (GUTTER MOUNTED)
② MOUNT RAIN SENSOR ON BUILDING WALL. ARCHITECT TO APPROVE LOCATION
③ CONTROLLER
④ RAIN SENSOR RECEIVER

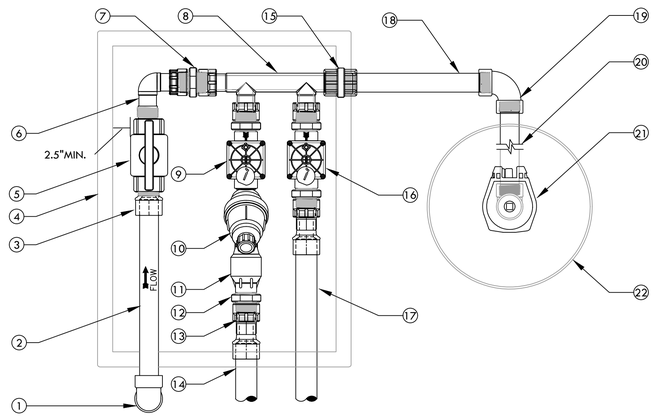
2 WIRELESS RAIN SENSOR-GUTTER MOUNT
SCALE: NONE



NOTE:
MAXIMUM # OF WIRES PER CONNECTOR:
- 3-#14 GAUGE
- 2-#12 GAUGE

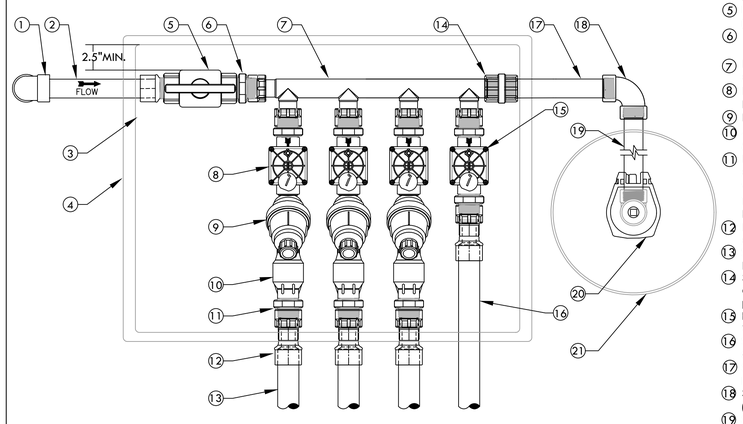
INSTRUCTIONS:
1. STRIP WIRES APPROXIMATELY 1/2" FROM ENDS TO EXPOSE WIRE.
2. TWIST CONNECTOR AROUND WIRES CLOCKWISE UNTIL HAND TIGHT, DO NOT OVERTIGHTEN.
3. INSERT WIRE ASSEMBLY TO BOTTOM OF GEL-FILLED TUBE. CHECK TO MAKE SURE CONNECTOR HAS BEEN PUSHED PAST LOCKING FINGERS AND IS SEATED AT THE BOTTOM OF THE TUBE.
4. PLACE WIRES WHICH EXIT TUBE IN WIRE EXIT HOLES AND CLOSE CAP UNTIL IT SNAPS.
5. INSPECT FINAL SPLICE ASSEMBLY THAT IT IS SECURED.

3 WEATHERPROOF WIRE SPLICE ASSEMBLY
SCALE: NONE



① SCH 40 PVC 90° ELBOW (SxS) FROM PVC MAIN LINE BELOW.
② SCH 40 PVC PIPE. LENGTH AS REQUIRED.
③ SCH 80 PVC MALE ADAPTER.
④ CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
⑤ NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
⑥ DURA 1" MIPT x 1" SWIVEL 90° (PART #306-009)
⑦ DURA 1"x1" THREADED ADAPTER (PART #08303) 4 TOTAL.
⑧ DURA 1" MULTI-PORT MANIFOLD (PART #301-010-2)
⑨ DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑩ FILTER. REFER TO LEGEND FOR MODEL.
⑪ 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
⑫ DURA 1" x 3/4" MALE ADAPTER (PART #08303-131). ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
⑬ DURA 1" SLIP X 1" SWIVEL (PART #329-011) 2 TOTAL.
⑭ SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION
⑮ SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
⑯ BUBBLER OR SPRINKLER REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑰ SCHEDULE 40 PVC LATERAL TO BUBBLER OR SPRAY IRRIGATION.
⑱ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑲ SCHEDULE 80 PVC 90° ELBOW (TxT).
⑳ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
㉑ QUICK COUPLING VALVE. INSTALL PER DETAIL.
㉒ 10" ROUND BOX. INSTALL PER DETAIL.

4 TWO REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE



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② SCH 40 PVC PIPE. LENGTH AS REQUIRED.
③ SCH 80 PVC MALE ADAPTER.
④ CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
⑤ NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
⑥ DURA 1"x1" THREADED ADAPTER (PART #08303) 6 TOTAL.
⑦ DURA 1" MULTI-PORT MANIFOLD (PART #301-010-4)
⑧ DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
⑨ FILTER. REFER TO LEGEND FOR MODEL.
⑩ 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
⑪ DURA 1" x 3/4" MALE ADAPTER (PART #08303-131) 3 TOTAL. ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
⑫ DURA 1" SLIP X 1" SWIVEL (PART #329-011) 4 TOTAL.
⑬ SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION.
⑭ SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
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⑯ SCHEDULE 40 PVC LATERAL TO BUBBLERS OR SPRAY IRRIGATION.
⑰ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑱ SCHEDULE 80 PVC 90° ELBOW (TxT).
⑲ SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
⑳ QUICK COUPLING VALVE. INSTALL PER DETAIL.
㉑ 10" ROUND BOX. INSTALL PER DETAIL.

5 FOUR REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE

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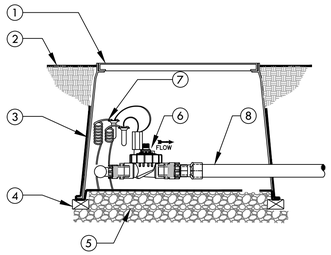
SHEET:

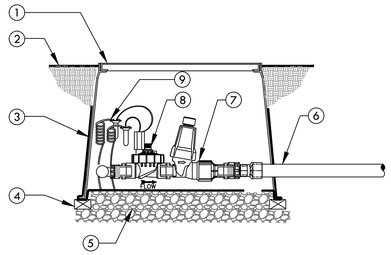
IRRIGATION DETAILS

I4.0



1. CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
2. FINISH GRADE
3. 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
4. BRICK-1 EACH CORNER
5. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
6. REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
7. VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL
8. SCH 40 PVC LATERAL LINE TO BUBBLERS OR SPRAY

1 BUBBLER OR SPRAY REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



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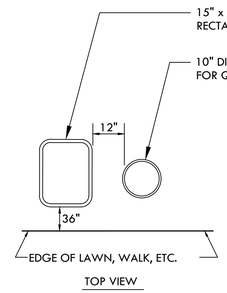
2. FINISH GRADE
3. 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
4. BRICK-1 EACH CORNER
5. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
6. SCH 40 PVC LATERAL LINE TO DRIPLINE OR DRIP.
7. DRIP FILTER AND REGULATOR
8. REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
9. VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL

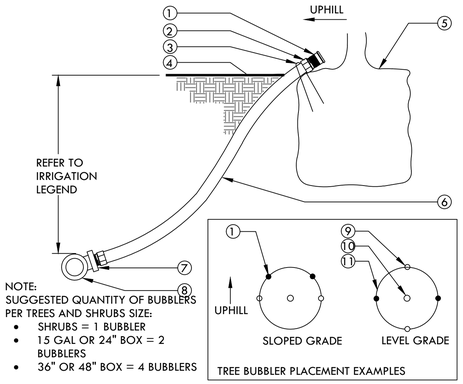
2 DRIP REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



TOP VIEW

INSTRUCTIONS:
1. CENTER VALVE BOX OVER REMOTE CONTROL VALVES TO FACILITATE SERVICING VALVE.
2. SET BOXES 1" ABOVE FINISH GRADE OR MULCH COVER IN GROUND COVER/SHRUB AREA AND FLUSH WITH FINISH GRADE IN TURF AREA.
3. SET RCV AND VALVE BOX ASSEMBLY IN GROUND COVER/SHRUB AREA WHERE POSSIBLE. INSTALL IN LAWN ONLY IF GROUND COVER DOES NOT EXIST ADJACENT TO LAWN.
4. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE OF LAWN, WALK, FENCE, CURB, ETC.
5. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOXES TO PREVENT COLLAPSE AND DEFORMATION OF VALVE BOX SIDES.
6. INSTALL EXTENSION BY VALVE BOX MANUFACTURER AS REQUIRED TO COMPLETELY ENCLOSE ASSEMBLY FOR EASY ACCESS.

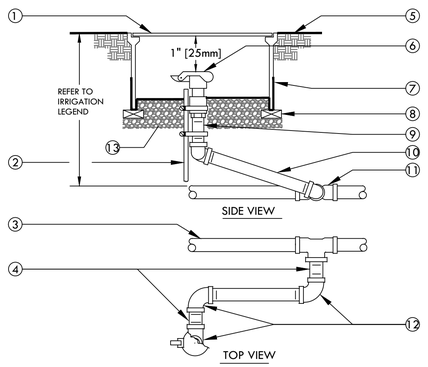
3 VALVE BOX INSTALLATION
SCALE: NONE



NOTE:
SUGGESTED QUANTITY OF BUBBLERS PER TREES AND SHRUBS SIZE:
- SHRUBS = 1 BUBBLER
- 15 GAL OR 24" BOX = 2 BUBBLERS
- 36" OR 48" BOX = 4 BUBBLERS

1. BUBBLER (TO BE INSTALLED ON TOP OF ROOTBALL).
2. 1/2" SCH. 40 MALE ADAPTER (2 TOTAL).
3. 6" STAPLE.
4. FINISH GRADE.
5. TREE OR SHRUB ROOTBALL.
6. 1/2" IPS FLEXIBLE PVC. USE WELD-ON 795 SOLVENT CEMENT OR EQUAL WHEN BONDING PVC HOSE TO FITTINGS.
7. PVC TEE (SST), ELBOW (ST) OR FEMALE ADAPTER.
8. PVC LATERAL LINE.
9. TREE STAKES.
10. TREE OR SHRUB.
11. EDGE OF ROOTBALL (TYPICAL).

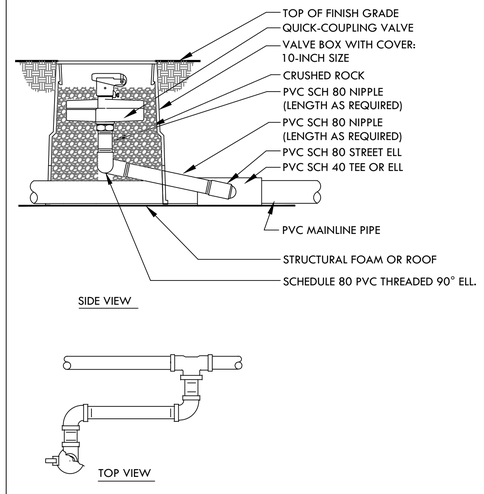
4 TREE AND SHRUB BUBBLER
SCALE: NONE



1. 10" ROUND PLASTIC VALVE BOX WITH BOLT DOWN LID.
2. 1 1/4" x 1 1/4" x 3/16" [30mm x 30mm x 5mm] ANGLE IRON 30" [760mm] LONG W/2 STAINLESS STEEL STRAPS (ONE AROUND QCV).
3. PVC MAIN LINE.
4. 3" [75mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
5. FINISH GRADE.
6. QUICK COUPLING VALVE.
7. 19 GAUGE 1/2" [13mm] SQUARE WIRE MESH.
8. BRICK - 2 TOTAL.
9. SCHEDULE 80 PVC THREADED NIPPLE.
10. 10" [250mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
11. UPC APPROVED SCHEDULE 40 PVC TEE OR ELBOW.
12. SCHEDULE 80 PVC THREADED 90° ELL.
13. PEA GRAVEL OR 3/4" DRAIN ROCK- 4" [100mm] DEEP BELOW VALVE (NO SOIL IN VALVE BOX).

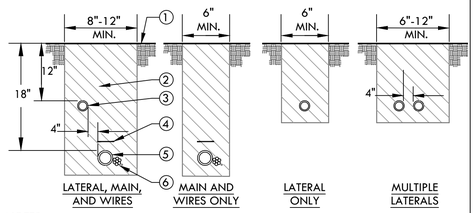
NOTE:
NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.

5 QUICK COUPLING VALVE
SCALE: NONE



NOTE:
1. NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.
2. TRIM VALVE BOX LENGTH AS NECESSARY TO BE FLUSH WITH TOP OF PLANTING TILES.
3. IF NECESSARY SLOT SIDES VALVE BOX TO ALLOW PASSAGE OF PIPE THROUGH BOTTOM OF VALVE BOX.

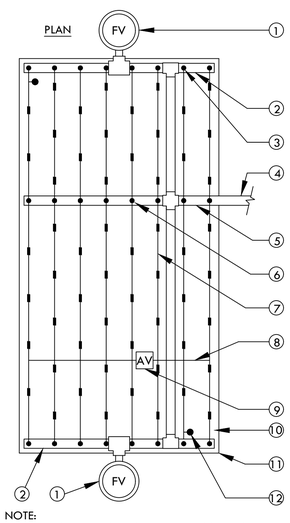
6 QUICK COUPLING VALVE-ON STRUCTURE
SCALE: NONE



NOTES:
1. ALL MAIN SUPPLY LINES AND LATERAL LINES SHALL BE PLACED IN SLEEVES UNDER PAVED SURFACES. INSTALL LOW VOLTAGE WIRES WITHIN A SEPARATE CONDUIT UNDER PAVED SURFACES. DO NOT TAPE WIRES WITHIN CONDUIT.
2. REUSE SALVAGED EXCAVATED FILL AND COMPACT TO ORIGINAL DENSITY IN LANDSCAPE AREAS. ALL OTHER AREAS SHALL BE AT 95% COMPACTION. BACKFILL MATERIAL SHALL BE THE EARTH EXCAVATED FROM THE TRENCHES, FREE FROM ROCKS (ANYTHING LARGER THAN 2"), CONCRETE CHUNKS, AND OTHER FOREIGN OR COARSE MATERIALS.
3. WHEN 12" POP-UP SPRINKLER HEADS ARE USED, INCREASE THE DEPTH OF LATERAL TO 18" AT THE SPRINKLER LOCATION ONLY.

1. FINISH GRADE.
2. CLEAN BACKFILL MATERIAL.
3. LATERAL LINE.
4. 3" DETECTABLE WARNING TAPE OVER MAIN LINE. INSTALL 3" ABOVE MAIN LINE. USE CHRISTY MODEL #TA-DT-3-BIRR FOR POTABLE IRRIGATION SYSTEMS OR #TA-DT-3-PRW FOR RECYCLED IRRIGATION WATER SYSTEMS
5. MAIN LINE.
6. LOW VOLTAGE CONTROL WIRES, TWO-WIRE CABLE, OR CONDUIT WITH WIRES. FOR MULTIPLE WIRES, TAPE AND BUNDLE WIRES AT 10 FT. INTERVALS. WIRING SHALL BE LAID OUT LOOSELY IN THE TRENCH.

7 TRENCHING
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
3. MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
5. PVC SUPPLY MANIFOLD. EXTEND TO END OF ZONE/EXHAUST HEADER.
6. MANIFOLD-TO-TEE CONNECTION.
7. DRIPLINE LATERAL.
8. AIR/VACUUM RELIEF LATERAL, BLANK POLY TUBING CENTERED ON MOUND OR BERM.
9. AIR/VACUUM RELIEF PLUMBED TO BLANK 5/8" POLY TUBING AT EACH HIGH POINT.
10. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
11. AREA PERIMETER.
12. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

8 HLD DRIPLINE CENTER FEED LAYOUT
SCALE: NONE

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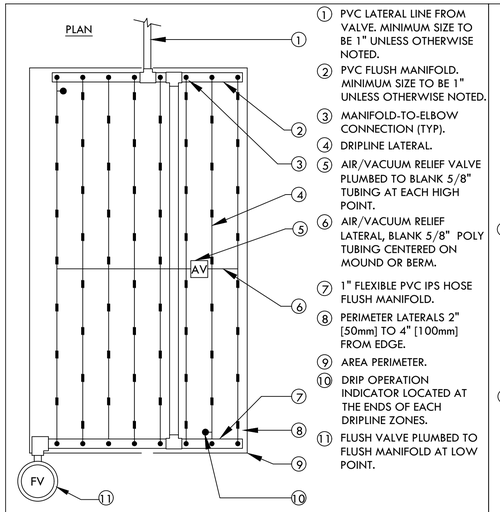
IRRIGATION DETAILS

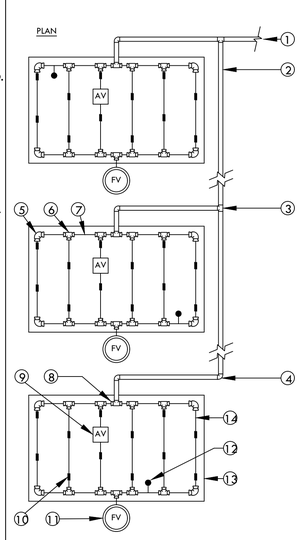
I5.0



1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. DRIPLINE LATERAL.
5. AIR/VACUUM RELIEF VALVE PLUMBED TO BLANK 5/8" TUBING AT EACH HIGH POINT.
6. AIR/VACUUM RELIEF LATERAL, BLANK 5/8" POLY TUBING CENTERED ON MOUND OR BERM.
7. 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
8. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
9. AREA PERIMETER.
10. DRIP OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONES.
11. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

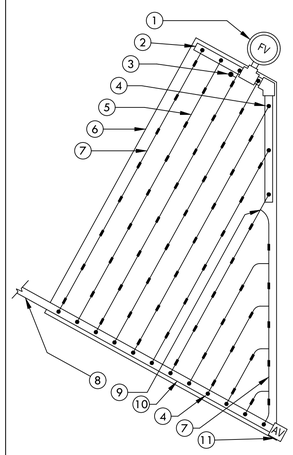
1 HLD DRIPLINE END FEED LAYOUT
SCALE: NONE



1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. PVC TEE (SxSxS).
4. PVC ELL (SxS).
5. HUNTER PLD-ELBOW (PLD-ELB)
6. HUNTER PLD-TEE (PLD-TEE).
7. BLANK 5/8" [16mm] POLY TUBING AT SUPPLY AND FLUSH END OF EACH ISLAND.
8. REFER TO DRIPLINE TO PVC CONNECTION DETAIL.
9. AIR/VACUUM RELIEF VALVE PLUMBED TO TUBING AT HIGH POINT.
10. DRIPLINE LATERAL.
11. MANUAL FLUSH VALVE PLUMBED TO TUBING AT LOW POINT.
12. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
13. ISLAND PERIMETER.
14. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.

NOTE:
1. THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

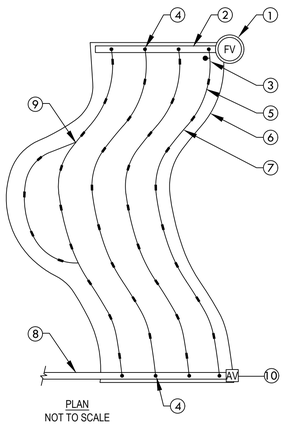
2 HLD DRIPLINE ISLAND LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. PVC SUPPLY MANIFOLD.
11. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

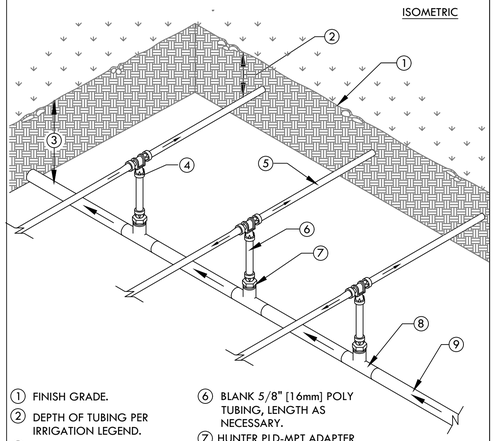
3 HLD DRIPLINE TRIANGULAR LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH/EXHAUST MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC SUPPLY LINE/HEADER FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

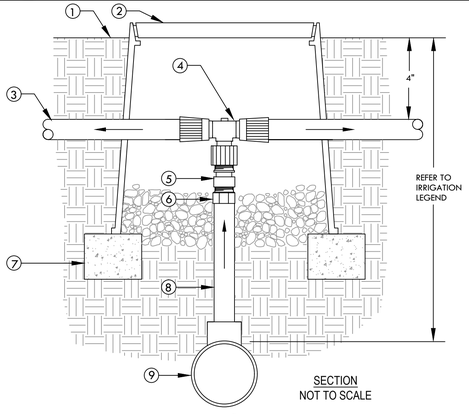
4 HLD DRIPLINE ODD CURVE LAYOUT
SCALE: NONE



1. FINISH GRADE.
2. DEPTH OF TUBING PER IRRIGATION LEGEND.
3. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND
4. HUNTER PLD-TEE (PLD-TEE)
5. DRIPLINE TUBING.
6. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
7. HUNTER PLD-MPT ADAPTER (PLD-050)
8. PVC TEE (SxSxT) WITH 1/2" [13mm] FPT OUTLET.
9. PVC LATERAL LINE FROM REMOTE CONTROL VALVE.

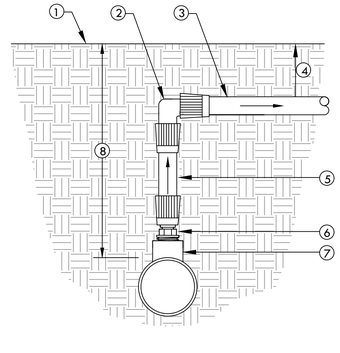
NOTE:
THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.

5 HLD DRIPLINE CENTER FEED MANIFOLD
SCALE: NONE



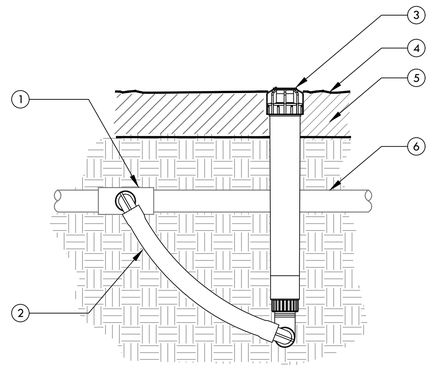
1. FINISH GRADE
2. CARSON 708 OR EQUAL. COLOR: BLACK. USE PURPLE FOR RECYCLED WATER SYSTEMS.
3. DRIPLINE TUBING
4. HUNTER PLD-TEE X 1/2" FPT ADAPTER
5. TORO 1/2" CHECK VALVE (PCV-500)
6. 1/2" SCH 40 MALE ADAPTER.
7. BRICK (1 OF 2)
8. 1/2" SCH 40 PVC (LENGTH AS REQUIRED)
9. PVC LATERAL LINE SUPPLY. MINIMUM SIZE TO BE 1" UNLESS SIZED DIFFERENTLY ON DRAWINGS. USE SCH 40 PVC 1"x1"x1/2" TEE OR 90° ELBOW.

6 DRIPLINE TO PVC CONNECTION
SCALE: NONE



1. FINISH GRADE
2. HUNTER PLD-ELBOW (PLD-ELB)
3. DRIPLINE TUBING
4. DEPTH OF TUBING PER IRRIGATION LEGEND.
5. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
6. HUNTER PLD-MPT ADAPTER (PLD-050)
7. SCH 40 PVC TEE (SxSxT) WITH 1/2" FPT OUTLET.
8. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND

7 DRIPLINE MANIFOLD TO ELBOW CONNECTION
SCALE: NONE



1. UPC APPROVED SCHEDULE 40 PVC TEE, ELBOW OR BARB x THREAD DRIP FITTING TEE OR ELBOW WITH 3/4" OUTLET.
2. 1/2" X 3/4" X 6" HUNTER SWING JOINT (SJ-7506)
3. ECO INDICATOR
4. FINISHED GRADE
5. MULCH
6. PVC LATERAL PIPE OR DRIPLINE

8 DRIPLINE OPERATION INDICATOR
SCALE: NONE

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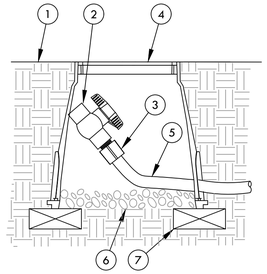
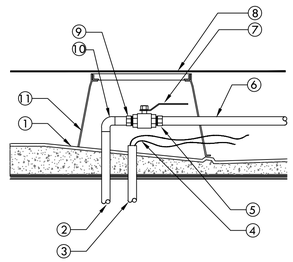


NOTE:
ALLOW A MINIMUM OF PVC HOSE IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

1. FINISH GRADE
2. 1/2" SCH 40 THREADED BALL VALVE.
3. 1/2" SCH 40 MALE ADAPTER.
4. 6" ROUND PLASTIC VALVE BOX.
5. 1" IPS PVC HOSE FROM EXHAUST HEADER.
6. PEA GRAVEL SUMP (6" DEEP).
7. BRICK (1 OF 2)

2 DRIPLINE-FLUSH POINT
SCALE: NONE



1. SLOPED ROOF BELOW PEDESTAL SYSTEM
2. COPPER PIPE THROUGH STRUCTURE PROVIDED BY PLUMBING CONTRACTOR. WATERPROOF ALL PENETRATIONS.
3. CONDUIT FOR CONTROL WIRES THROUGH STRUCTURE PROVIDED BY ELECTRICAL CONTRACTOR. WATERPROOF ALL PENETRATIONS
4. TWO-WIRE CABLE OR CONTROL WIRES
5. SCH 40 PVC MALE ADAPTER.
6. PVC MAIN LINE TO REMOTE CONTROL VALVES.
7. BRONZE BALL VALVE.
8. ROOF DECK PAVERS
9. COPPER MALE ADAPTER.
10. COPPER 90° ELBOW.
11. 10" ROUND PLASTIC VALVE BOX. CUT BOX TO FIT BELOW PEDESTAL PAVER SYSTEM

3 ON STRUCTURE STUB-OUT WITH BRONZE BALL VALVE
SCALE: NONE

IRRIGATION WATER USE CALCULATIONS

WATER USE ESTIMATION CONTROLLER "A"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	1,079	400	10,357	0.03	13.85	17%
2	GROUNDCOVER	LOW	0.3	BUBBLER	0.81	0.370	4,915	1,820	47,177	0.14	63.07	77%
3	TREES	LOW	0.3	BUBBLER	0.81	0.370	400	148	3,839	0.01	5.13	6%
					TOTALS		6,394	2,368	61,373	0.19	82.05	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME										
NA					1						0%
					TOTALS	0					0%

MAWA	GALLONS/YR	74,568
	ACRE FEET/YR	0.23
	HCF/YR	99.69

ETWU	GALLONS/YR	61,373
	ACRE FEET/YR	0.19
	HCF/YR	82.05

SITE IRRIGATION EFFICIENCY	SITE PLANT FACTOR	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	2,368
TOTAL AREA	6,394
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR

MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR

ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

WATER USE ESTIMATION CONTROLLER "B"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	160	59	1,536	0.00	2.05	60%
2	TREES	LOW	0.3	BUBBLER	0.81	0.370	105	39	1,008	0.00	1.35	40%
					TOTALS		265	98	2,544	0.01	3.40	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME										
NA					1						0%
					TOTALS	0					0%

MAWA	GALLONS/YR	3,090
	ACRE FEET/YR	0.01
	HCF/YR	4.13

ETWU	GALLONS/YR	2,544
	ACRE FEET/YR	0.01
	HCF/YR	3.40

SITE IRRIGATION EFFICIENCY	SITE PLANT FACTOR	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	98
TOTAL AREA	265
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR

MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR

ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

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IRRIGATION DETAILS

I7.0

REPORT

1998 SHATTUCK AVENUE

BERKELEY, CA

PEDESTRIAN WIND COMFORT ASSESSMENT

PROJECT #2302778
MARCH 20, 2023

SUBMITTED TO

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Manager

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1. INTRODUCTION

Rowan Williams Davies & Irwin Inc. (RWDI) was retained to conduct a pedestrian wind assessment for the proposed project at 1998 Shattuck Avenue in Berkeley, CA. The objective of this assessment is to provide an evaluation of the potential impact of the proposed development on pedestrian-level wind conditions.

The project site is located in downtown Berkeley, west of Shattuck Avenue, between Berkeley Way and University Avenue (Image 1). The site is surrounded by mid-rise buildings in all but the northwesterly directions, where there are mostly low-rise suburban neighborhoods. Outside the immediate area, surroundings comprise low-rise buildings in all directions.

The project will consist of a mixed-use residential development with a 28-story tower that steps down to 13 stories on the north side and includes a podium (Image 2). In addition to sidewalks and properties near the project site, key areas of interest for this assessment include building entrances at grade (Image 3).



Image 1: Aerial view of the existing site and surroundings.
Source: Google Maps



Image 2: Conceptual rendering of the proposed project (looking SW).

1. INTRODUCTION

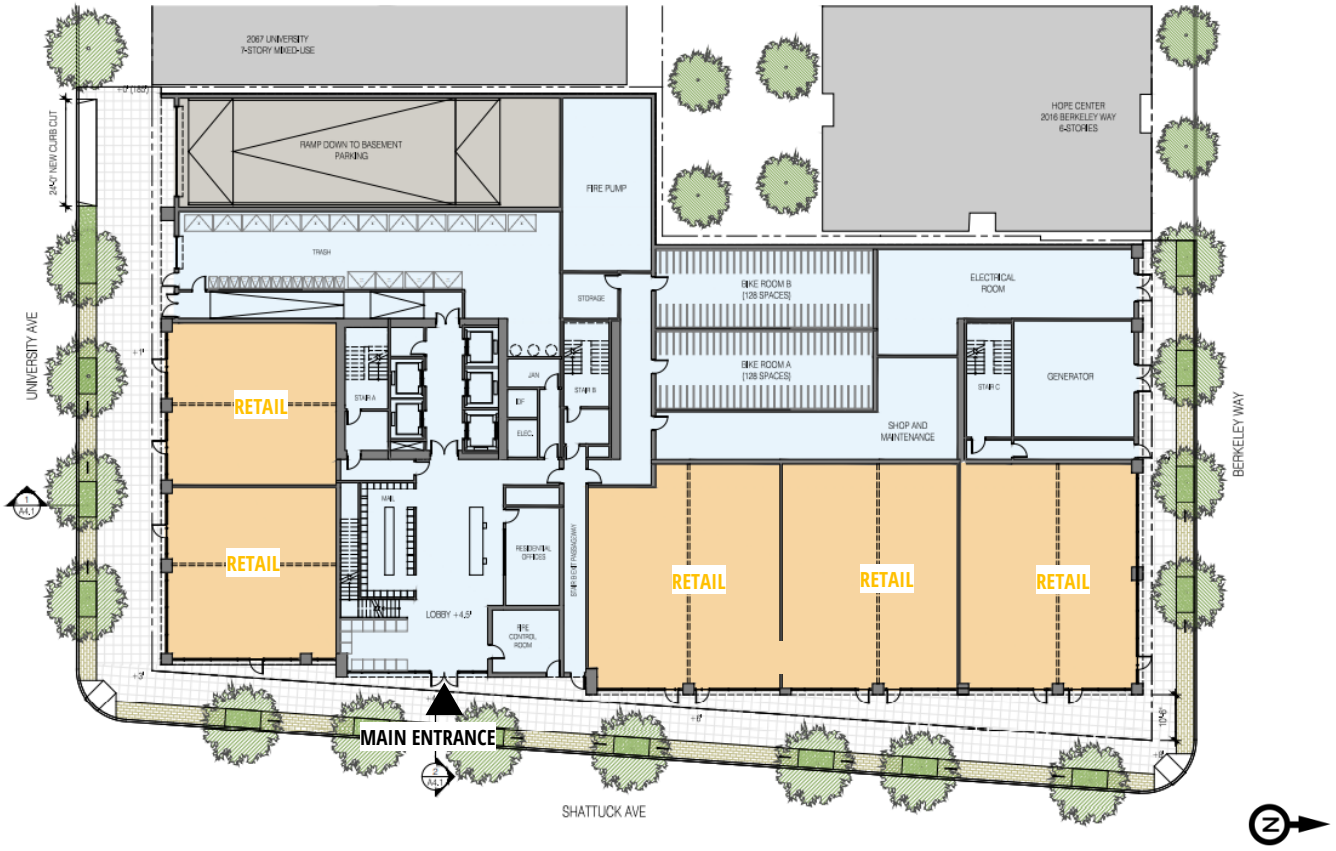


Image 3: Site plan highlighting the location of the main building entrance at grade.

2. METHODOLOGY

2.1 Objective

The objective of this assessment is to provide an evaluation of the potential impact of the proposed development on wind conditions in pedestrian areas on and around it based on Computational Fluid Dynamics (CFD) modelling. The assessment is based on the following:

- A review of the regional long-term meteorological data from the Metropolitan Oakland International Airport;
- 3D model of the proposed project received on January 20, 2023, and architectural drawings received on December 16, 2022;
- The use of *Orbital Stack*, an in-house CFD tool;
- RWDI's engineering judgment, experience, and expert knowledge of wind flows around buildings[1-3]; and,
- The RWDI wind comfort and safety criteria.

Note that other microclimate issues such as those relating to cladding and structural wind loads, door operability, air quality, snow impact, noise, vibration, etc. are not part of the scope of this assessment

2.2 CFD for Wind Simulation

CFD is a numerical technique that can be used for simulating wind flow in complex environments. For modeling winds around buildings, CFD techniques are used to generate a virtual wind tunnel where flows around the site, surroundings and the study building are simulated at full scale. The computational domain that covers the site and surroundings are divided into millions of small cells where calculations are performed, which allows for the "mapping" of wind conditions across the entire study domain. CFD excels as a tool for wind modeling and presentation for providing early design advice, comparing different design and site scenarios, resolving complex flow physics, and helping diagnose problematic wind conditions.

Gust conditions are infrequent but deserve special attention due to their potential impact on pedestrian safety. The computational modeling method used in the current assessment does not quantify the transient behavior of the wind, including wind gusts. The effect of gust, i.e., wind safety, is predicted qualitatively in this assessment using analytical methods and wind-tunnel-based empirical models[1]. The assessment has been conducted by experienced microclimate specialists in order to provide an accurate prediction of wind conditions.

In order to quantify the transient behavior of wind and refine any conceptual mitigation measures, more detailed assessment would be required using either boundary-layer wind tunnel or transient computational modeling.

2. METHODOLOGY

2.3 Simulation Model

CFD simulations were completed for two scenarios:

- **Existing**: Existing site and surroundings.
- **Proposed**: Proposed development with the existing surroundings

The computer model of the proposed building is shown in Image 4, and the Existing and Proposed configurations with the proximity model are shown in Images 5a and 5b, respectively. The 3D models were simplified to include only the necessary building and terrain details that would affect the local wind flows in the area and around the site. Landscaping and other smaller architectural and accessory features were not included in the computer model in order to provide more conservative wind conditions (as is the norm for this level of assessment).

The wind approaching the modelled area were simulated for 16 directions (starting at 0°, at 22.5° increments around the compass), accounting for the effects of the atmospheric boundary layer and terrain impacts. Wind data were obtained in the form of ratios of wind speeds at 5 ft above levels of interest, to the mean wind speed at a reference height. The data was then combined with meteorological records obtained from Metropolitan Oakland International Airport to determine the wind speeds and frequencies in the simulated areas.

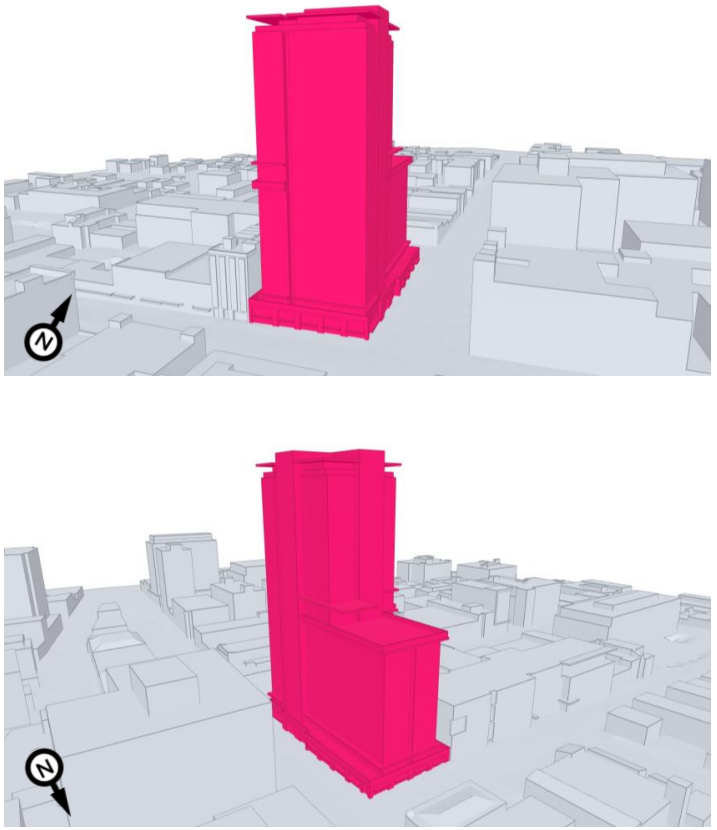


Image 4: Computational model of the proposed project.

2. METHODOLOGY

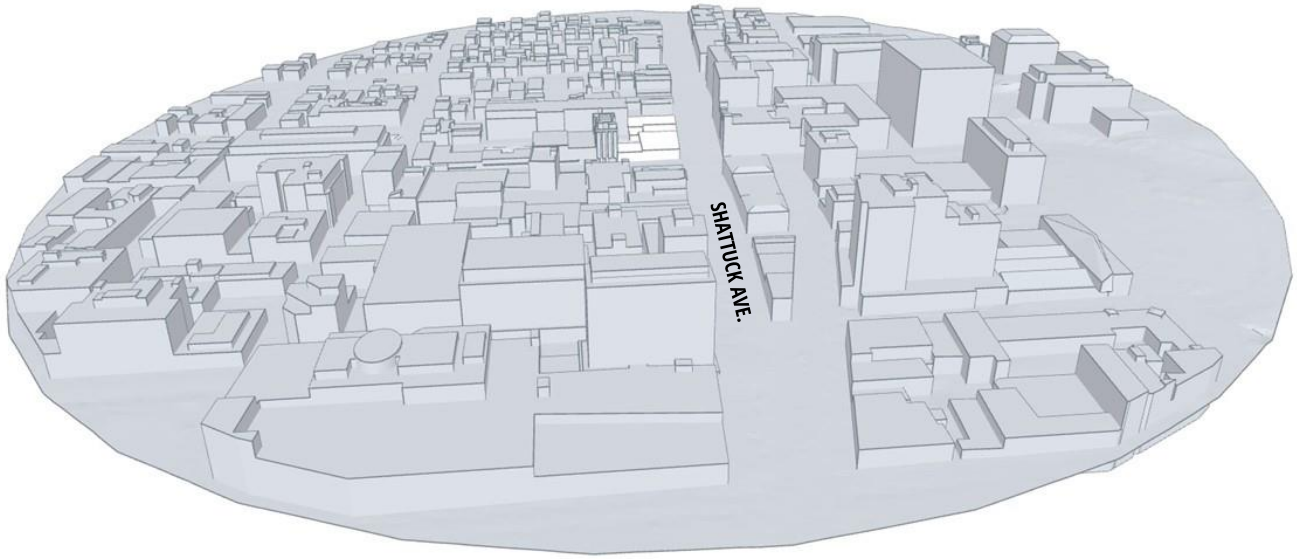


Image 5a: Computational model of the existing site and extended surroundings.

2. METHODOLOGY

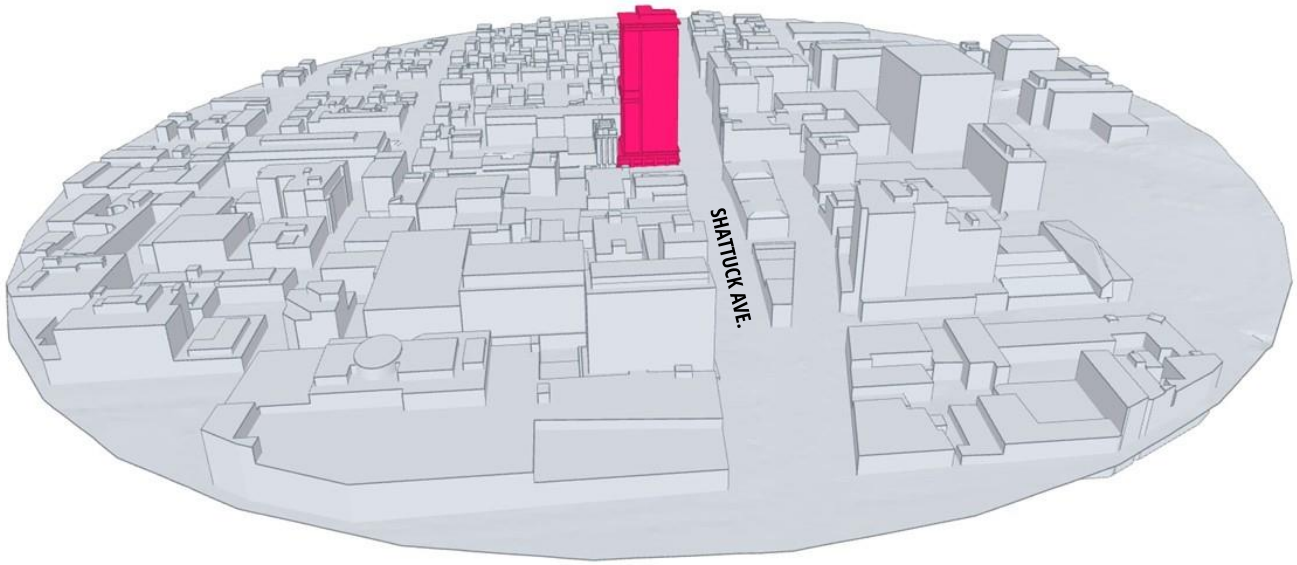


Image 5b: Computational model of proposed building and extended surroundings.

2. METHODOLOGY

2.4 Meteorological Data

Long-term wind data recorded at Metropolitan Oakland International Airport between 1990 and 2020 were analyzed for the summer (May to October) and winter (November to April) months. Image 6 graphically depicts the directional distributions of wind frequencies and speeds for these periods.

Winds from the west-southwest through northwest directions are predominant during both the summer and winter as indicated by the wind roses. Winds from the southeast are also frequent during the Winter. Winds are substantially more frequent in the summer; moderate to strong winds of a mean speed greater than 15 mph measured at the airport (at an anemometer height of 30 ft) could potentially interreact with tall buildings to result in a notable increase in ground-level winds. (yellow and red bands in Image 6).

Wind statistics were combined with the simulated data to predict the wind conditions at the project site and assessed against the wind criteria for pedestrian comfort.

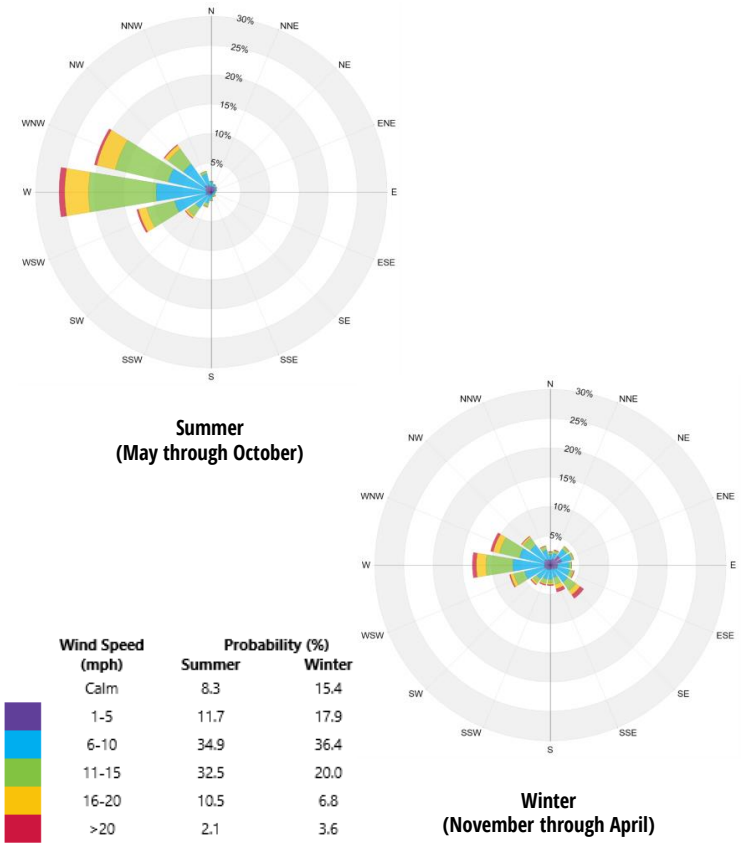


Image 6: Directional distribution of winds approaching Metropolitan Oakland International Airport from 1990 to 2020

3. WIND CRITERIA

The RWDI pedestrian wind criteria are used in the current study; the criteria presented in the table below, addresses pedestrian safety and comfort. These criteria have been developed by RWDI through research and consulting practice since 1974. They have also been widely accepted by municipal authorities, building designers and the city planning community.

3.1 Pedestrian Comfort

Pedestrian comfort is associated with common wind speeds conducive to different levels of human activity. Wind conditions are considered suitable for sitting, standing, strolling or walking if the associated mean wind speeds (see table) are expected for at least four out of five days (80% of the time). The assessment considers winds occurring between 6 AM and midnight. Limited usage of outdoor spaces is anticipated in the excluded period. Speeds that exceed the criterion for Walking are categorized Uncomfortable. These criteria for wind forces represent average wind tolerance. They are sometimes subjective and regional differences in wind climate and thermal conditions as well as variations in age, health, clothing, etc. can also affect people's perception of the wind climate.

Comfort Category	GEM Speed (mph)	Description (Based on seasonal compliance of 80%)
Sitting	≤ 6	Calm or light breezes desired for outdoor seating areas where one can read a paper without having it blown away
Standing	≤ 8	Gentle breezes suitable for main building entrances, bus stops, and other places where pedestrians may linger
Strolling	≤ 10	Moderate winds appropriate for window shopping and strolling along a downtown street, plaza or park
Walking	≤ 12	Relatively high speeds that can be tolerated if one's objective is to walk, run or cycle without lingering
Uncomfortable	> 12	Strong winds considered a nuisance for all pedestrian activities. Wind mitigation is typically recommended

3.2 Pedestrian Safety

Pedestrian safety is associated with excessive Gust Speeds that can adversely affect a person's balance and footing. These are usually infrequent events but deserve special attention due to the potential impact on pedestrian safety.

Safety Criterion	Gust Speed (mph)	Description (Based on annual exceedance of 9 hrs or 0.1% of time)
Exceeded	> 56	Excessive gusts that can adversely affect one's balance and footing. Wind mitigation is typically required.

4. RESULTS AND DISCUSSION

4.1 Presentation of Results

The results of the assessment are presented and discussed in detail in Sections 4.3 and 4.4. The graphical presentation is in the form of color contours of wind speeds calculated based on the wind comfort criteria described in Section 3.1, at 5 ft above the levels of interest (Images 8 and 9).

The assessment against the safety criterion (Section 3.2) was conducted qualitatively based on the predicted wind conditions and our extensive experience with wind tunnel assessments. **Favorably, wind conditions at all areas in the proximity of the site and at above-grade areas are expected to meet the safety criterion.**

Target Conditions

Wind speeds comfortable for walking or strolling are appropriate for sidewalks and walkways where pedestrians are likely to be active and moving intentionally. Lower wind speeds comfortable for standing are required for entrances and areas where people are expected to be engaged in passive activities. Calm wind speeds suitable for sitting are desired in areas where prolonged periods of passive activities are anticipated, such as outdoor amenity areas, seating areas etc., especially during the summer when these areas are typically in use.

4.2 General Wind Flow Mechanisms

Wind tends to flow over buildings of uniform height, without disruption. Buildings that are taller than their surroundings tend to intercept and redirect winds around them and to the ground level. The mechanism in which winds are directed down the height of a building is called *Downwashing*. These flows subsequently move around exposed building corners and in the gaps between buildings (Corner Acceleration and *Channeling Effect*). Podiums, canopies, and large trees can help reduce the impact of these effects at ground level. These flow patterns are illustrated in Image 7.

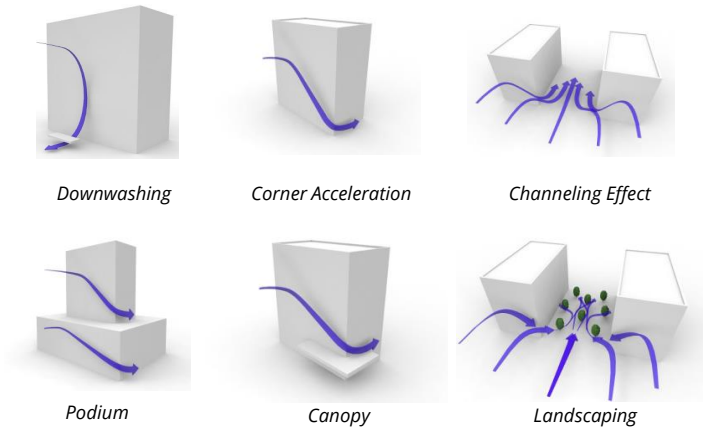
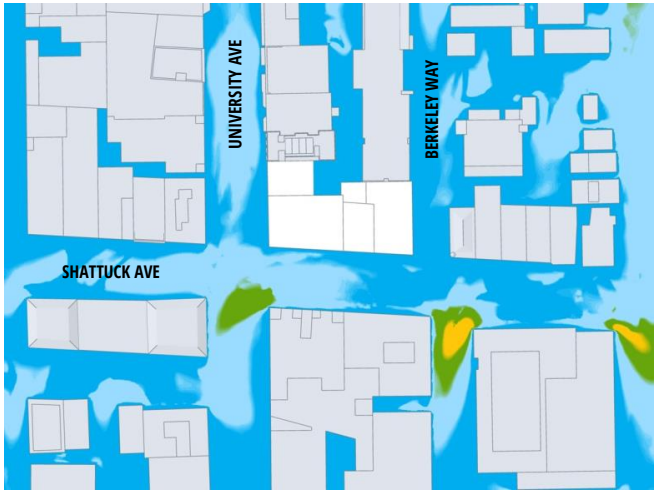
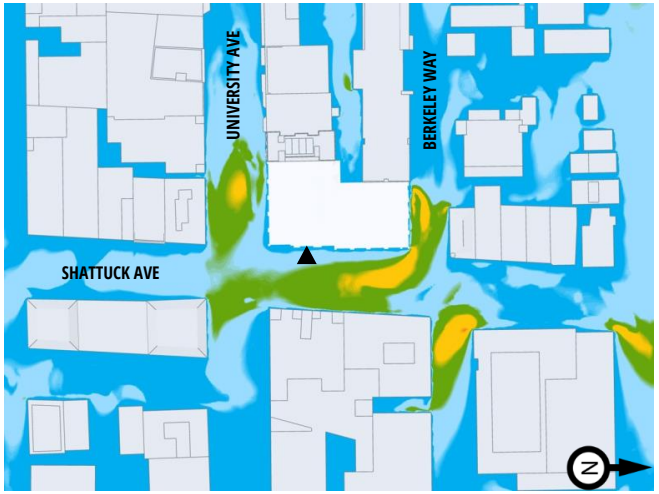


Image 7: Generalixed wind flow patterns

4. RESULTS AND DISCUSSION



(a) EXISTING



(b) PROPOSED

COMFORT: SITTING | STANDING | STROLLING | WALKING | UNCOMFORTABLE

MAIN ENTRANCE

Image 8: Predicted Wind Conditions at Grade Level – SUMMER (May through October)

4. RESULTS AND DISCUSSION



(a) EXISTING

(b) PROPOSED

COMFORT: SITTING | STANDING | STROLLING | WALKING | UNCOMFORTABLE

MAIN ENTRANCE

Image 9: Predicted Wind Conditions at Grade Level – WINTER (November through April)

4. RESULTS AND DISCUSSION

4.3 Existing Scenario

The existing site is occupied by a building of low elevation, and the adjacent buildings to the west do not redirect winds to create any notable impact; taller buildings with wide west-facing facades on the east side of Shattuck Avenue intercept and redirect the predominant winds to create localized areas of high wind speeds around them.

Wind conditions on the sidewalks near the site are mostly comfortable for sitting or standing in the summer, with higher wind speeds comfortable for strolling or walking occurring around the corners of taller buildings on Shattuck Avenue (Image 8a). In the winter, wind speeds are normally lower in Berkeley, and conditions suitable for sitting or standing are expected at all locations in the vicinity of the project site (Image 9a). These conditions are suitable for sidewalks and walkways. Wind conditions at all areas near the project site are expected to meet the pedestrian wind safety criterion.

4.4 Proposed Scenario

The proposed building is taller than the surroundings in the prevailing wind directions (west-southwest through north-northwest) and includes a broad west-facing façade. Winds intercepted by the western façade of the tower at high elevations will downwash to ground level, accelerating around building corners. This effect is expected to be moderated, somewhat, by the low roofs of the adjacent buildings to the west, which act as a horizontal break for downwashing winds (see Image 7). As a result, wind speeds at grade are expected to be higher than existing conditions, but suitable for pedestrian use.

Wind conditions during the summer are anticipated to remain suitable for sitting or standing around most of the building perimeter (Image 8b). Higher wind speeds, comfortable for strolling or walking are expected between the proposed building and the adjacent buildings to the south on University Avenue and an area at the intersection of Shattuck Avenue and Berkeley Way. The highest wind speeds, comfortable for walking, are expected closer to the north corners of the proposed building. In the winter, lower wind speeds comfortable for sitting or standing are predicted for most locations around the project site, with marginally higher speeds occurring on the northeast side of the building (Image 9b). These conditions are suitable for sidewalks and walkways, and all areas near the proposed building are expected to meet the pedestrian wind safety criterion.

The predicted wind speeds near the retail entrances on the south and east sides of the building and the main entrance on Shattuck Avenue are also appropriate for the intended use. Wind speeds along the north side of the building are higher than desired for an entrance in the summer. Improved wind conditions can be obtained at the retail entrance on the north side by recessing it from the façade or by adding planters or wind screens to the west side of the entrance.

5. SUMMARY

RWDI was retained to provide an assessment of the potential pedestrian level wind impact of the proposed project at 1998 Shattuck Avenue in Berkeley, CA. The assessment was based on computational modeling, simulation and analysis of wind conditions for the proposed development design, in conjunction with the local wind climate data and the RWDI wind criteria for pedestrian comfort and safety. Findings from the assessment are summarized as follows:

1. The existing site is occupied by a building of low elevation, and the adjacent buildings to the west do not redirect winds to create any notable impact. As a result, wind speeds onsite are generally calm and considered suitable for pedestrian use. Higher wind speeds, (still appropriate for sidewalks and walkways), occur near the corners of mid-rise buildings with broad west-facing facades on the east side of Shattuck Avenue.
2. The proposed building is taller than the existing surroundings to the west and has a wide west-facing façade. As a result, the building will redirect winds around it to a notable degree. Increased wind speeds are expected on University Avenue and at the intersection of Shattuck Avenue and Berkeley way during the summer. However, these speeds are adequate for sidewalks and walkways.
3. In the winter, lower wind speeds are expected. Light breezes are predicted for most areas near the proposed development, with slightly higher wind speeds occurring around the east/northeast side of the building.
4. Favorably, the pedestrian wind safety criterion is predicted to be met at all locations near the project site

If necessary, RWDI can help guide the placement of wind control features, including landscaping, to achieve desired levels of wind comfort based on the programming of the various outdoor spaces. Based on the assessment herein, it does not appear that such mitigative features may be warranted.

6. DESIGN ASSUMPTIONS

The findings/recommendations in this report are based on the building geometry and architectural drawings communicated to RWDI between December of 2022 and January of 2023, listed below. Should the details of the proposed design and/or geometry of the building change significantly, results may vary.

File Name	File Type	Date Received (mm/dd/yyyy)
2.9 - 2209 - 2022.12.12 - SB300 Drawing Set	.PDF	12/16/2022
2209 - 2023.01.20 - 3D Model to Wind Consultant	.SKP	01/20/2023

Changes to the Design or Environment

It should be noted that wind comfort is subjective and can be sensitive to changes in building design and operation that are possible during the life of a building. These could be, for example: outdoor programming, operation of doors, elevators, and shafts pressurizing the tower, changes in furniture layout, etc.. In the event of changes to the design, construction, or operation of the building in the future, RWDI could provide an assessment of their impact on the discussions included in this report. It is the responsibility of Others to contact RWDI to initiate this process.

7. STATEMENT OF LIMITATIONS

This report was prepared by Rowan Williams Davies & Irwin Inc. for NX Ventures LLC ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein and authorized scope. The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

8. REFERENCES

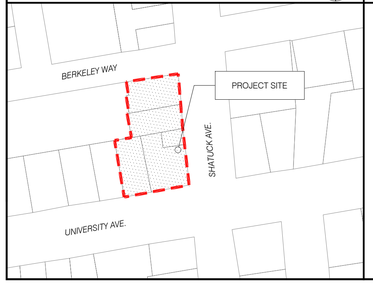
1. H. Wu, C.J. Williams, H.A. Baker and W.F. Waechter (2004), "Knowledge-based Desk-Top Analysis of Pedestrian Wind Conditions", *ASCE Structure Congress 2004,* Nashville, Tennessee.

2. H. Wu and F. Kriksic (2012). "Designing for Pedestrian Comfort in Response to Local Climate", *Journal of Wind Engineering and Industrial Aerodynamics*, vol.104-106, pp.397-407.

3. C.J. Williams, H. Wu, W.F. Waechter and H.A. Baker (1999), "Experience with Remedial Solutions to Control Pedestrian Wind Problems", *10th International Conference on Wind Engineering*, Copenhagen, Denmark.



VICINITY MAP



PROJECT DIRECTORY

OWNER/APPLICANT:
1974 Shattuck Ave, LLC
1958A University Ave
Berkeley, CA 94705

ARCHITECT:
Isaiah Stackhouse, Principal
TRACHTENBERG ARCHITECTS
2421 Fourth Street
Berkeley, CA 94710
510.649.1414
www.TrachtenbergArch.com

PROJECT DESCRIPTION

PROJECT ADDRESS: 1950-1998 Shattuck Ave. & 2071 University Ave. Berkeley, CA 94704
APNS:
057 205300100
057 205300200
057 205300301
057 205300302
057 205300402

SCOPE OF WORK:
REMOVAL OF EXISTING COMMERCIAL STRUCTURES & CONSTRUCTION OF A NEW 28-STORY MIXED-USE HOUSING DEVELOPMENT WITH 599 DWELLING UNITS AND A ROOFTOP RESTAURANT OVER GROUND-LEVEL COMMERCIAL AND LOBBIES, WITH STATE OF CALIFORNIA DENSITY BONUS.

DRAWING LIST

A0.0	GENERAL INFORMATION			A3.9	PRELIMINARY RENDERING	L3.1	USABLE OPEN SPACE CALCS & PLANTING NOTES
A0.1	ZONING INFORMATION	A2.1	FLOOR PLANS	A3.10	PRELIMINARY RENDERING	I0.0	IRRIGATION NOTES & LEGEND
A0.2A	DENSITY BONUS DIAGRAMS	A2.2	FLOOR PLANS	A3.11	PRELIMINARY RENDERING	I1.0	IRRIGATION PLAN AT STREETSCAPE
A0.2B	DENSITY BONUS DIAGRAMS	A2.3	FLOOR PLANS	A3.12	PRELIMINARY RENDERING	I2.0	IRRIGATION PLAN SECOND FLOOR PODIUM GARDENS
A0.2C	PRELIMINARY AHCP DIAGRAMS	A2.4	FLOOR PLANS	A3.13	PRELIMINARY RENDERING	I3.0	IRRIGATION PLAN FOURTEENTH FLOOR ROOF DECK
A0.3	DPRELIMINARY AHCP DIAGRAMS	A2.5	FLOOR PLANS	A3.14	PRELIMINARY RENDERING	I3.1	IRRIGATION POINT OF CONNECTION
A0.4A	SHADOW STUDIES DECEMBER 21ST	A2.6	FLOOR PLANS	A3.15	PRELIMINARY RENDERING	I4.0	IRRIGATION DETAILS
A0.4B	SHADOW STUDIES JUNE 21ST	A2.7	ROOF PLAN	A3.16	PRELIMINARY RENDERING	I5.0	IRRIGATION DETAILS
A0.4C	SHADOW STUDIES FEB 15TH	A3.1	ELEVATIONS	A3.17	PRELIMINARY RENDERING	I6.0	IRRIGATION DETAILS
A0.5	SITE CONTEXT PHOTOS	A3.2	ELEVATIONS	A4.1	BUILDING SECTIONS	I7.0	IRRIGATION DETAILS
A0.6A	SURVEY	A3.3	STREET STRIP ELEVATIONS	A4.2	AWNING ENCROACHMENT DIAGRAM		
A0.6B	SURVEY	A3.4	PHOTO CONTEXT VIEWS	A5.0	CONCEPTUAL GRADING PLAN		
A0.6C	SURVEY	A3.5	PHOTO CONTEXT VIEWS	L0.0	COVER SHEET, NOTES, AND LEGEND		
A1.0	EXISTING SITE PLAN	A3.6	PHOTO CONTEXT VIEWS	L1.0	LANDSCAPE PLAN AT STREETSCAPE		
A2.0a	FLOOR PLANS	A3.7	PRELIMINARY RENDERING	L2.0	SECOND FLOOR PODIUM GARDENS		
A2.0b	FLOOR PLANS	A3.8	PRELIMINARY RENDERING	L3.0	FOURTEENTH FLOOR ROOF DECK		

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LICENSED ARCHITECT
DAVID TRACHTENBERG
C20926
4/30/20 25
RENEWAL DATE
STATE OF CALIFORNIA

1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
11.15.2024 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL
01.16.2025 PRELIM DRC HEARING SET
02.27.2025 ZAB HEARING SET

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ARCHITECT AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF TRACHTENBERG ARCHITECTS.

JOB: 2209

SHEET:
GENERAL INFORMATION

A0.0

ZONING CODE DATA

ZONING SUMMARY TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	PROPOSED W/DENSITY BONUS	ZONING COMPLIANCE
ZONING	C-DMU Core			COMPLIES
TOTAL LOT SIZE (SQ. FT.)	28,319			COMPLIES
TOTAL LOT SIZE (ACRES)	0.65			COMPLIES
FLOOR AREA RATIO (FAR)	NA	NA	14.52	COMPLIES W/ SDB WAIVER
DWELLING UNITS (SEE TABLE)	NA	NA	599	COMPLIES
RESIDENTIAL BEDROOMS	NA	NA	709	COMPLIES
HEIGHT - FEET	60'-0"	120'	317'	COMPLIES W/ SDB WAIVER
HEIGHT - STORIES*	NA	NA	28	COMPLIES W/ SDB WAIVER
LOT COVERAGE	NA	NA	88%	COMPLIES
SETBACK - FRONT (UNIVERSITY) (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - STREET SIDE (SHATTUCK) (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - REAR (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - MAX. DIMENSION ABOVE 120'	120'	NOT LIMITED	239'-10"	COMPLIES W/ SDB WAIVER
RESIDENTIAL PARKING (SEE TABLE)	0	0	130	COMPLIES
COMMERCIAL PARKING (SEE TABLE)	24	24	24	COMPLIES
RES. BIKE PARKING LONG TERM (SEE TABLE)	237	237	240	COMPLIES
RES. BIKE PARKING SHORT TERM (SEE TABLE)	18	18	18	COMPLIES
COM. BIKE PARKING SHORT TERM (SEE TABLE)	9	9	10	COMPLIES
RESIDENTIAL OPEN SPACE (SEE TABLE)	47,920	47,920	12,491	COMPLIES W/ SDB WAIVER
COMMERCIAL OPEN SPACE (SEE TABLE)	323	323	706	COMPLIES

* Community Benefit Required per BMC Section 23.204.130.E.2.c.

PARKING CALCULATIONS

	QNTY	CARS	PER	REQ'D	PROVIDED
RESIDENTIAL	599	0.5 MAX	1	0	130
COMMERCIAL	16,142	1.5	1,000	24	24
TOTAL					**154**

BICYCLE PARKING CALCULATIONS

	QNTY	BIKES	PER	REQ'D	PROVIDED
RESIDENTIAL (LONG TERM) (PER BEDROOM)	709	1	3	237	256
RESIDENTIAL (SHORT TERM) (PER BEDROOM)	709	1	40	18	18
COMMERCIAL (SHORT TERM) (PER SF)	16,142	1.0	2,000	9	10

ROOFTOP ARCHITECTURAL ELEMENTS CALCS

	ALLOWABLE	PROPOSED
AVERAGE AREA OF FLOORS		14,058
AREA OF ROOFTOP ARCHITECTURAL ELEMENTS	2,109	1,464
% AREA OF ROOFTOP ARCHITECTURAL FEATURES	15.0%	10.4%

OPEN SPACE CALCULATIONS

	UNITS	SF / UNIT	TOTAL REQ'D	MODIFICATION	TOTAL PROVIDED	COMMON	LANDSCAPE REQ'D (40%)	LANDSCAPE PROVIDED
RESIDENTIAL UNITS	599	80	47,920	35,429	12,491	12,491	4,996	6,735
COMMERCIAL OPEN SPACE	16,142	50	323	(383)	706			

AREA TABLE

	RESIDENTIAL	COMMERICAL	TOTAL
LEVEL 28		7,800	7,800
LEVEL 27	11,980		11,980
LEVEL 26	11,980		11,980
LEVEL 25	11,980		11,980
LEVEL 24	11,980		11,980
LEVEL 23	11,980		11,980
LEVEL 22	11,980		11,980
LEVEL 21	11,980		11,980
LEVEL 20	11,980		11,980
LEVEL 19	11,980		11,980
LEVEL 18	11,980		11,980
LEVEL 17	11,980		11,980
LEVEL 16	11,980		11,980
LEVEL 15	11,980		11,980
LEVEL 14	11,980		11,980
LEVEL 13	17,862		17,862
LEVEL 12	17,862		17,862
LEVEL 11	17,862		17,862
LEVEL 10	17,862		17,862
LEVEL 9	17,862		17,862
LEVEL 8	17,862		17,862
LEVEL 7	17,862		17,862
LEVEL 6	17,862		17,862
LEVEL 5	17,862		17,862
LEVEL 4	17,862		17,862
LEVEL 3	17,862		17,862
LEVEL 2	17,677		17,677
GROUND LEVEL	12,461	8,342	20,803
BASEMENT PARKING P1	424		424
BASEMENT PARKING P2	424		424
TOTAL	**395,188**	**16,142**	**411,330**

DWELLING UNIT TABLE

	STUDIO	2-BR	TOTAL
LEVEL 28			0
LEVEL 27	15	4	19
LEVEL 26	15	4	19
LEVEL 25	15	4	19
LEVEL 24	15	4	19
LEVEL 23	15	4	19
LEVEL 22	15	4	19
LEVEL 21	15	4	19
LEVEL 20	15	4	19
LEVEL 19	15	4	19
LEVEL 18	15	4	19
LEVEL 17	15	4	19
LEVEL 16	15	4	19
LEVEL 15	15	4	19
LEVEL 14	8	3	11
LEVEL 13	26	5	31
LEVEL 12	26	5	31
LEVEL 11	26	5	31
LEVEL 10	26	5	31
LEVEL 9	26	5	31
LEVEL 8	26	5	31
LEVEL 7	26	5	31
LEVEL 6	26	5	31
LEVEL 5	26	5	31
LEVEL 4	26	5	31
LEVEL 3	26	5	31
LEVEL 2			0
GROUND LEVEL			
TOTAL UNITS	**489**	**110**	**599**
BEDROOMS / UNIT	1	2	
TOTAL BEDROOMS	489	220	709

OPEN SPACE

6,882
5,609
-
12,491

SETBACKS TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	PROPOSED W/DENSITY BONUS	ZONING COMPLIANCE
SETBACK - FRONT (UNIVERSITY)				
0'-20'	0'	0'	2'	COMPLIES
21'-75'	0'	0'	3'-4" to 4'-4"	COMPLIES
76'-120'	15'	0'	3'-4" to 4'-4"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	3'-4" to 15'-6"	COMPLIES W/ SDB WAIVER
SETBACK - STREET SIDE (SHATTUCK)				
0'-20'	0'	0'	5'-3" to 14'-5"	COMPLIES
21'-75'	0'	0'	6'-10" to 29'-8"	COMPLIES
76'-120'	15'	0'	6'-10" to 29'-8"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	6'-10" to 60'-1"	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (<65' FROM FRONT)				
0'-20'	0'	0'	1'-6"	COMPLIES
21'-75'	0'	0'	15'	COMPLIES
76'-120'	5'	0'	15'	COMPLIES
> 120'	15'	0'	15' to 26'-6"	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (>65' FROM FRONT)				
0'-20'	0'	0'	6" to 1'-6"	COMPLIES
21'-75'	5'	0'	17'-1" to 18'-1"	COMPLIES
76'-120'	15'	0'	17'-1" to 18'-1"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	17'-1" to 18'-1"	COMPLIES W/ SDB WAIVER
SETBACK - REAR (BERKELEY WAY)				
0'-20'	0'	0'	2'	COMPLIES
21'-75'	5'	0'	6'	COMPLIES
76'-120'	15'	0'	6'	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	94'-7"	COMPLIES W/ SDB WAIVER
SETBACK - MAX. DIMENSION ABOVE 120'	120'	NOT LIMITED	165'	COMPLIES W/ SDB WAIVER

CAR SHARE CALCULATION

Number of Parking Spaces Provided
154
Minimum Number of Vehicle Sharing Spaces (3, plus one for every additional 60 spaces)
3+1 = **4**

STATE DENSITY BONUS TABLE (SEE A0.2A-B)

(SEE SHEETS A0.3A-A03.D)	
BASE PROJECT UNITS	411
PERCENT VLI UNITS PROVIDED	14%
NUMBER VLI UNITS PROVIDED (ROUNDS UP)	58
BONUS PERCENTAGE	46.25%
NUMBER BONUS UNITS (ROUNDS UP)	191
MAXIMUM DENSITY BONUS PROJECT	602
PROPOSED DENSITY BONUS PROJECT	599

LIST OF USE PERMITS AND AUP'S

PROPOSED DENSITY BONUS PROJECT USE PERMITS:

- Use Permit for construction for demolition of a non-residential building, under 23.326.070(A)
- Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Administrative Use Permit under BMC Section 23.304.050(A) to exceed building height limits with rooftop architectural elements which exceed the maximum height limit for the district.
- Use Permit under BMC Section 23.204.130.E.2 to construct a building that exceeds the district height limit, and that is over 75 feet but not more than 120 feet (Base Project).
- Use Permit under BMC Section 23.204.130.E.3(b) to modify front, side, and rear setback requirements
- Use Permit under BMC Section 23.204.130.E.3(b) to exceed 120 feet in width in diagonal measurement
- Use Permit under BMC Section 23.204.E.6 to pay a fee in lieu of providing privately owned public open space.
- Density Bonus with the following requested reductions, waivers and concessions below.

LIST OF DENSITY BONUS WAIVERS (SEE A0.2A-B)

- Waiver to increase the maximum building height from the base project maximum density height allowed with UP's and AUP's under the zoning ordinance of 120' (under BMC 23.204.130.E.2) to a density bonus height of 316' to accommodate the density bonus units.
- Waiver to allow a reduction in the required setbacks under BMC Section 23.204.130.E.3(b) to physically accomodate the density bonus units.
- Waiver to reduce the minimum required residential usable open space under BMC 23.204.130.E.4 to allow the construction of the density bonus units.

LIST OF DENSITY BONUS CONCESSIONS (SEE A0.2A-B)

- Athough the project is eligible for 2 concessions as a project that is providing 14% of the base units as Very-Low-Income Units, the project is not proposing any concessions.

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ZONING INFORMATION

A0.1

BASE PROJECT ZONING COMPLIANCE TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	CODE SECTION	PROPOSED BASE PROJECT	ZONING COMPLIANCE
ZONING	C-DMU Core				COMPLIES
TOTAL LOT SIZE (SQ. FT.)	28,319				COMPLIES
TOTAL LOT SIZE (ACRES)	0.65				COMPLIES
FLOOR AREA RATIO (FAR)	NA	NA		NA	COMPLIES
DWELLING UNITS (SEE TABLE)	NA	NA		411	COMPLIES
RESIDENTIAL BEDROOMS	NA	NA		446	COMPLIES
HEIGHT - FEET	60'-0"	120'-0"	23.204.130.E.2	120'-0"	COMPLIES
HEIGHT - STORIES	NA	NA		11	COMPLIES
LOT COVERAGE	NA	NA		0%	COMPLIES
SETBACK - FRONT (UNIVERSITY)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - STREET SIDE (SHATTUCK)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - INTERIOR SIDE	0' to 15'	0'	23.204.130.E.3(b)	0' to 6'	COMPLIES
SETBACK - REAR (BERKELEY WAY)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - MAX. DIMENSION ABOVE 120'	NA	NA			COMPLIES
RESIDENTIAL PARKING (SEE TABLE)	0	0		0	COMPLIES
COMMERCIAL PARKING (SEE TABLE)	25	0		0	COMPLIES
RES. BIKE PARKING LONG TERM (SEE TABLE)	149	149		152	COMPLIES
RES. BIKE PARKING SHORT TERM (SEE TABLE)	12	12		12	COMPLIES
COM. BIKE PARKING SHORT TERM (SEE TABLE)	9	9		9	COMPLIES
RESIDENTIAL OPEN SPACE (SEE TABLE)	32,880	32,880		33,950	COMPLIES
COMMERCIAL OPEN SPACE (SEE TABLE)	338	338		338	COMPLIES

LIST OF BASE PROJECT USE PERMITS AND AUP'S

Per August 2, 2021 Memorandum on Policy Changes to Objective Standards, HAA and Density Bonus

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- Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Administrative Use Permit under BMC Section 23.304.050(A) to exceed building height limits w/ rooftop architectura elements.
- Use Permit under BMC Section 23.204.130.E.2 to construct a building up to 120 feet.
- Use Permit under BMC Section 23.204.130.E.3(b) to modify front, side, and rear setback requirements

PARKING CALCULATIONS

	QNTY	CARS	PER	REQ'D	PROVIDED
RESIDENTIAL	411	0	1	0	0
COMMERCIAL	16920	1.5	1,000	25	25

BICYCLE PARKING CALCULATIONS

	QNTY	BIKES	PER	REQ'D	PROVIDED
RESIDENTIAL (LONG TERM) (BEDROOMS)	446	1	3	149	152
RESIDENTIAL (SHORT TERM) (BEDROOMS)	446	1	40	12	12
COMMERCIAL (SHORT TERM)	16,920	1.0	2,000	9	9

OPEN SPACE CALCULATIONS

	UNITS	SF / UNIT	TOTAL REQ'D
RESIDENTIAL REQUIREMENT	411	80	32,880
TOTAL PROVIDED			33,950
ROOF DECK			25,630
BALCONIES (MAX 50%)	104	80	8,320
COMMERCIAL OPEN SPACE	16,920	50	338

ROOFTOP ARCHITECTURAL ELEMENTS CALCULATIONS

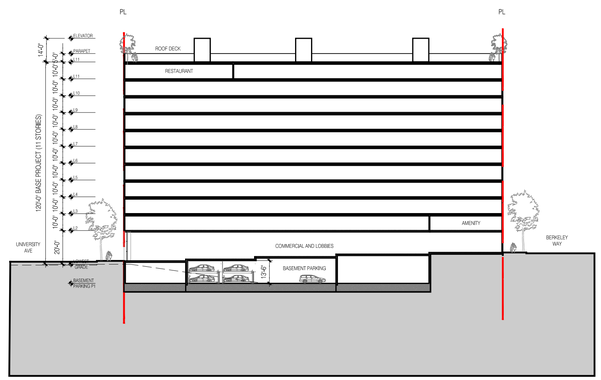
	ALLOWABLE	PROPOSED
AVERAGE AREA OF FLOORS	23,968	
AREA OF ROOFTOP ARCHITECTURAL ELEMENTS	3,595	600
% AREA OF ROOFTOP ARCHITECTURAL FEATURES	15.0%	2.5%

AREA TABLE

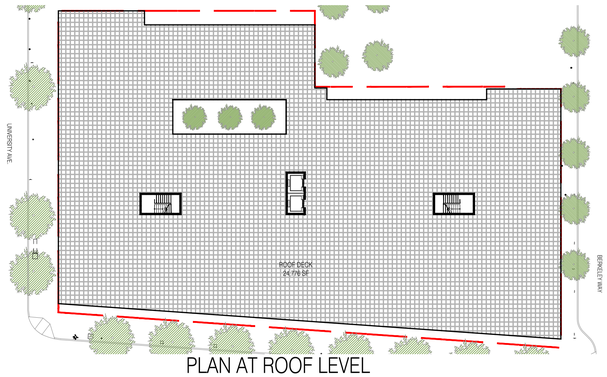
	RESIDENTIAL	COMMERICAL	TOTAL
LEVEL 11	18,430	7,800	26,230
LEVEL 10	26,230		26,230
LEVEL 9	26,230		26,230
LEVEL 8	26,230		26,230
LEVEL 7	26,230		26,230
LEVEL 6	26,230		26,230
LEVEL 5	26,230		26,230
LEVEL 4	26,230		26,230
LEVEL 3	26,230		26,230
LEVEL 2	26,230		26,230
GROUND LEVEL	15,922	9,120	25,042
BASEMENT P1	275		275
TOTAL	**270,697**	**16,920**	**287,617**

DWELLING UNIT TABLE

	STUDIO	2-BR	TOTAL
LEVEL 11	28	2	30
LEVEL 10	41	4	45
LEVEL 9	41	4	45
LEVEL 8	41	4	45
LEVEL 7	41	4	45
LEVEL 6	41	4	45
LEVEL 5	41	4	45
LEVEL 4	41	4	45
LEVEL 3	41	4	45
LEVEL 2	20	1	21
GROUND LEVEL			
TOTAL UNITS	**376**	**35**	**411**
BEDROOMS / UNIT	1	2	
TOTAL BEDROOMS	376	70	446



BASE PROJECT SECTION



PLAN AT ROOF LEVEL



PLAN AT LEVEL 2



PLAN AT LEVEL 11



PLAN AT GROUND LEVEL



PLAN AT LEVELS 3-10



PLAN AT PARKING LEVEL P1

BASE PROJECT PLANS

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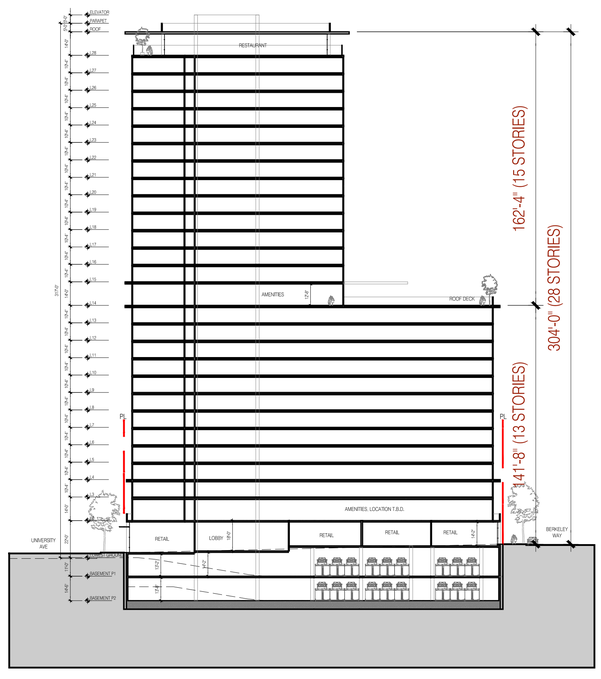
DENSITY BONUS
BASE PROJECT

A0.2A

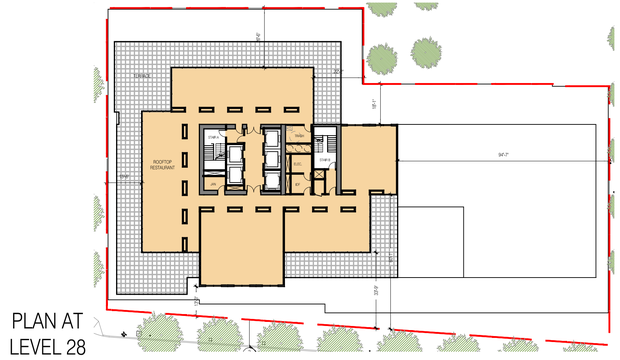
DENSITY BONUS TABLE

Base Project	Base	Base # Units	% VLI units	# VLI Units*	Bonus %	# DB Units	Maximum DB Project
sq. ft. - see calculation below	base project area / proposed avg. unit size	Base Units (rounds up)	VLI = Very Low Income <50 AMI	% VLI x Base # Units (rounds up)		%Bonus x Base # Units (rounds up)	Base + Bonus # Units
270,697	410.30	411	14%	58	46.25%	191	602

Base Project				Proposed Density Bonus Project		
Res GFA	Comm. GFA	Units	Floor	Res GFA	Comm. GFA	Units
			Level 28		7,800	
			Level 27	11,980		19
			Level 26	11,980		19
			Level 25	11,980		19
			Level 24	11,980		19
			Level 23	11,980		19
			Level 22	11,980		19
			Level 21	11,980		19
			Level 20	11,980		19
			Level 19	11,980		19
			Level 18	11,980		19
			Level 17	11,980		19
			Level 16	11,980		19
			Level 15	11,980		19
			Level 14	11,980		11
			Level 13	17,862		31
			Level 12	17,862		31
18,430	7,800	30	Level 11	17,862		31
26,230		45	Level 10	17,862		31
26,230		45	Level 9	17,862		31
26,230		45	Level 8	17,862		31
26,230		45	Level 7	17,862		31
26,230		45	Level 6	17,862		31
26,230		45	Level 5	17,862		31
26,230		45	Level 4	17,862		31
26,230		45	Level 3	17,862		31
26,230		21	Level 2	17,677		
15,922	8,342		Level 1	12,461	8,342	
275			Basement P1	424		
			Basement P2	424		
270,697	**16,142**	**411**	**Total**	**395,188**	**16,142**	**599**
659			**Avg. Unit Size**	**660**		



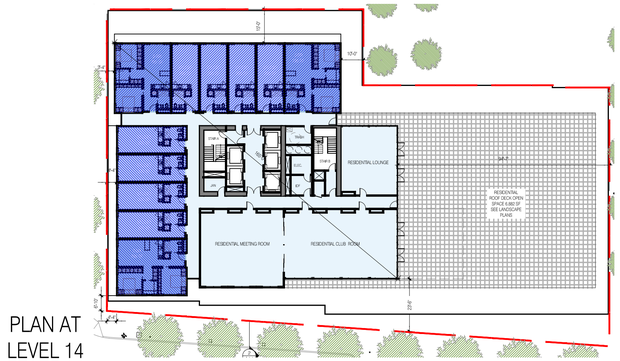
PROPOSED PROJECT SECTION



PLAN AT LEVEL 28



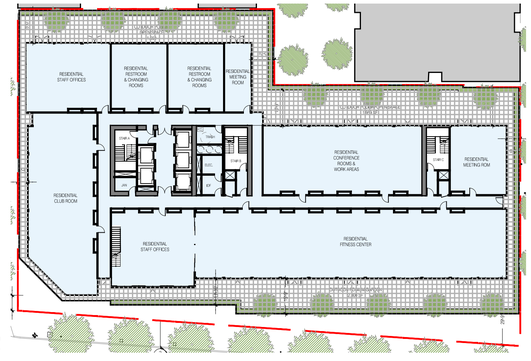
PLAN AT LEVELS 15-27



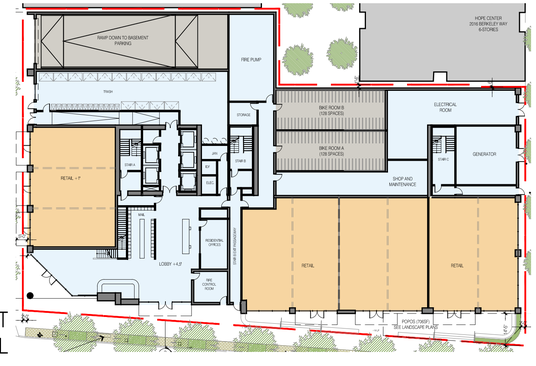
PLAN AT LEVEL 14



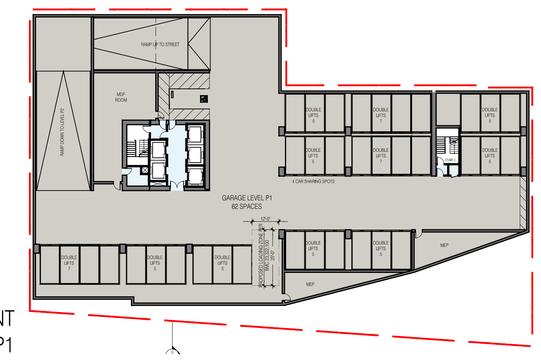
PLAN AT LEVELS 3-13



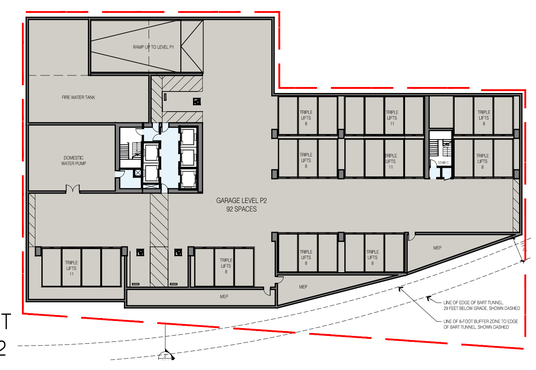
PLAN AT LEVEL 2



PLAN AT GROUND LEVEL



PLAN AT BASEMENT PARKING LEVEL P1



PLAN AT BASEMENT PARKING LEVEL P2

PROPOSED PROJECT PLANS

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DENSITY BONUS PROPOSED PROJECT

A0.2B

WINTER SOLSTICE
DEC 21ST:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

WINTER SOLSTICE
DEC 21ST:
NOON

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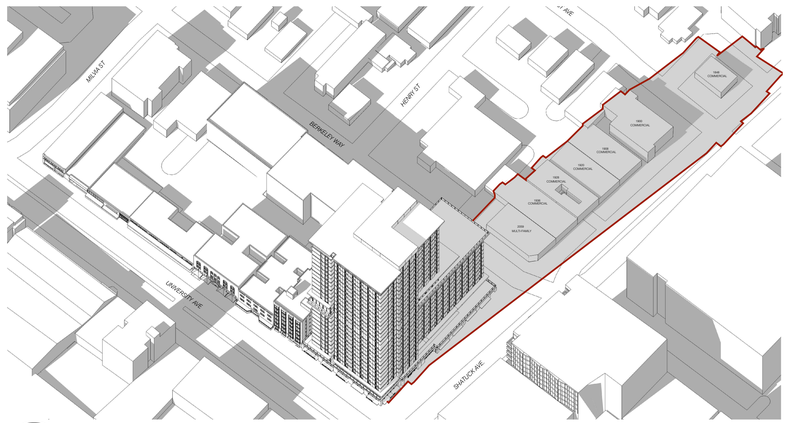

4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
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WINTER SOLSTICE
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SHADOW STUDIES
DECEMBER 21ST

A0.4A

SUMMER SOLSTICE
JUN 21ST:
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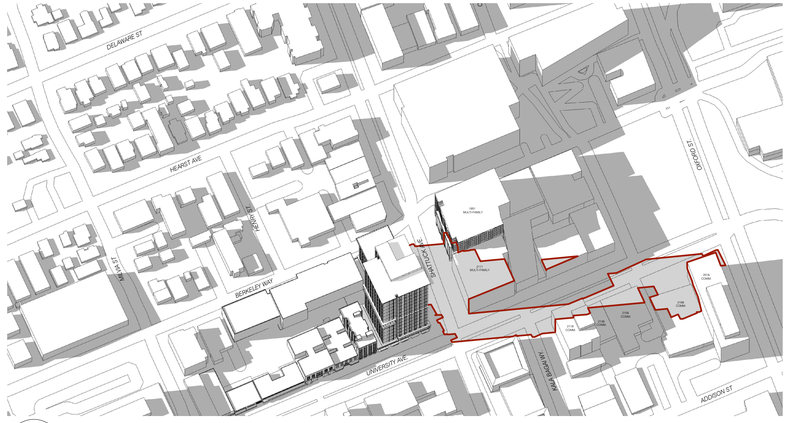

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N

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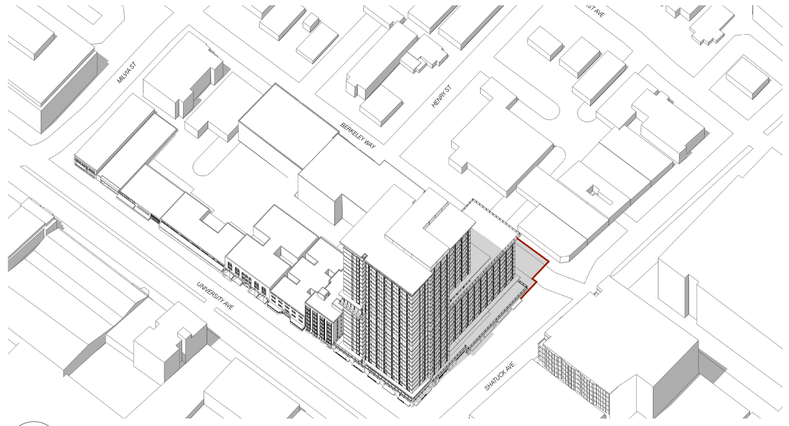

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NT.S.



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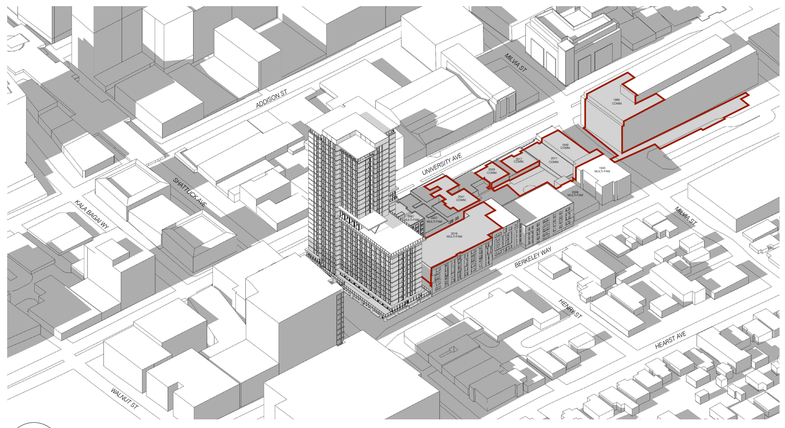

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SHADOW STUDIES
JUNE 21ST

A0.4B

CURRENT
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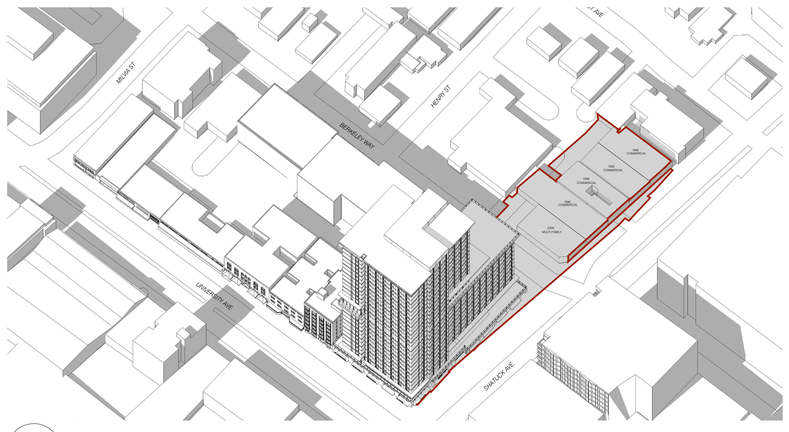

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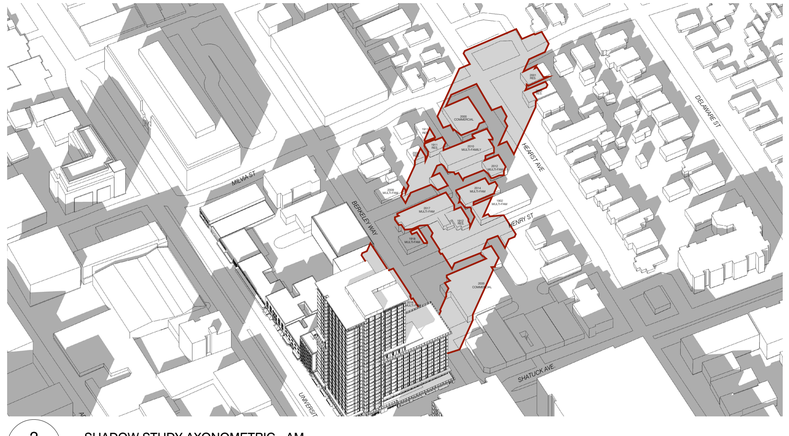
NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

N

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LICENSED ARCHITECT
DAVID TRACHTENBERG
C20926
4/30/20 25
RENEWAL DATE
STATE OF CALIFORNIA

1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
11.15.2024 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL
01.16.2025 PRELIM DRC HEARING SET
02.27.2025 ZAB HEARING SET

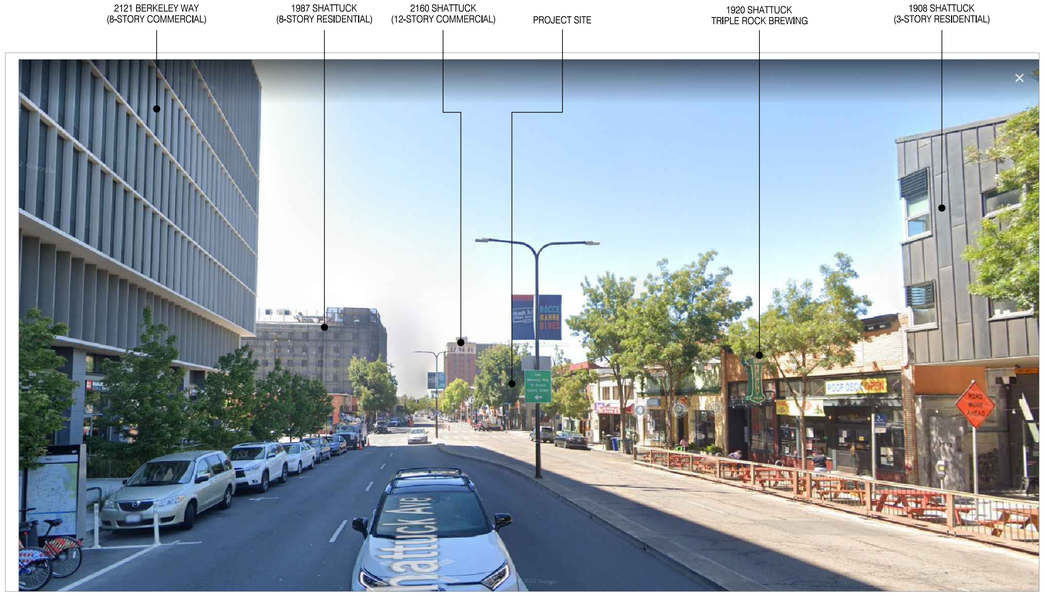
ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ARCHITECT AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF TRACHTENBERG ARCHITECTS.

JOB: 2209

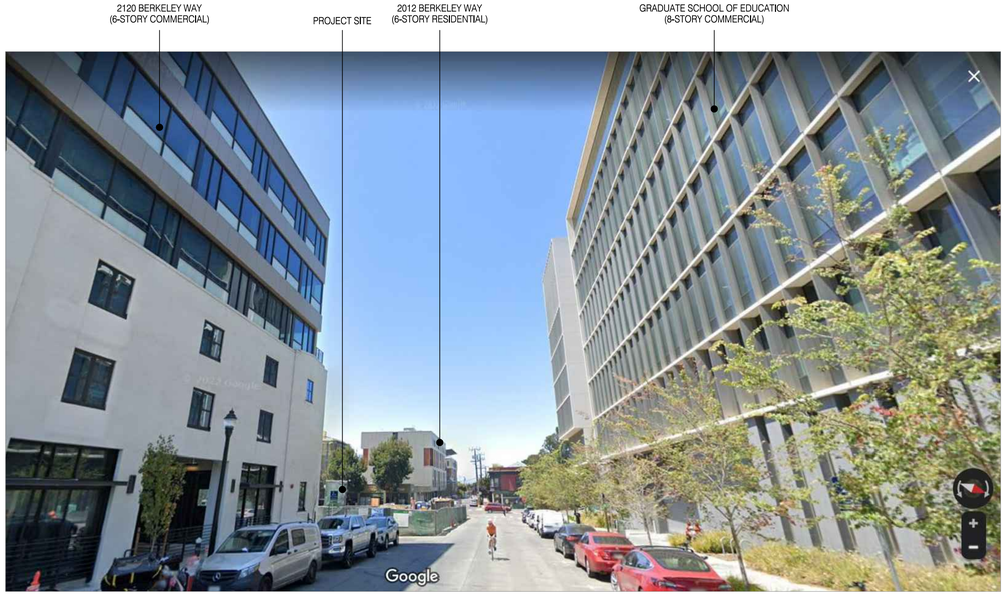
SHEET:

SHADOW STUDIES
FEB 15TH

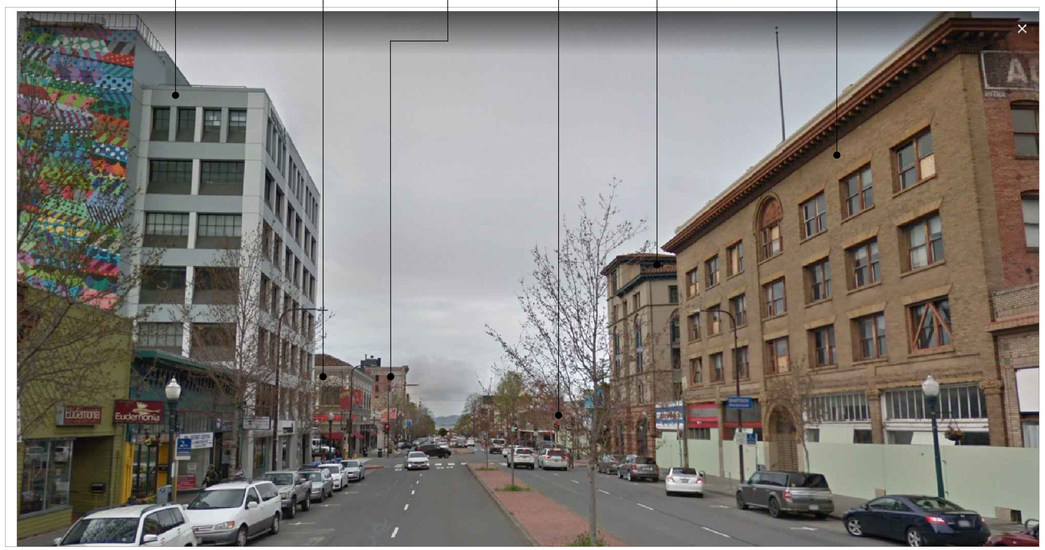
A0.4C



4 - VIEW FROM SHATTUCK LOOKING SOUTH



2 - VIEW FROM BERKELEY WAY LOOKING WEST



3 - VIEW FROM UNIVERSITY LOOKING WEST



1 - GOOGLE EARTH BIRD'S EYE CONTEXT VIEW

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1950-1998 (1974) SHATTUCK

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JOB: 2209

SHEET:

SITE CONTEXT PHOTOS

A0.5

TITLE REPORT (1950 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117026135-JM, FOURTH UPDATED REPORT, EFFECTIVE DATE NOVEMBER 21, 2024 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR3"

TITLE TO SAID ESTATE IS VESTED IN: (1950 SHATTUCK)

JILLIAR, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1950 SHATTUCK)

FEE

LEGAL DESCRIPTION (1950 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

ALL THAT REAL PROPERTY SITUATED IN THE CITY OF BERKELEY, COUNTY OF ALAMEDA, STATE OF CALIFORNIA, BEING THOSE PORTIONS OF LOTS 55, 56, AND 57 AS SHOWN ON THAT CERTAIN MAP ENTITLED 'MAP OF THE COLLEGE TRACT', FILED JANUARY 31, 1890 IN BOOK 9 OF MAPS, AT PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA AND A PORTION OF SHATTUCK AVENUE AS SHOWN ON SAID MAP, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF BERKELEY WAY AS SHOWN ON SAID MAP WITH THE WESTERLY LINE OF SHATTUCK AVENUE AS ESTABLISHED BY ORDINANCE NO. 387 ADOPTED BY THE BOARD OF TRUSTEES OF THE TOWN OF BERKELEY ON JANUARY 18, 1892; THENCE ALONG SAID WESTERLY LINE, SOUTH 04°02'40" EAST, 60.06 FEET; THENCE PARALLEL WITH THE SOUTHERLY LINE OF SAID BERKELEY WAY, SOUTH 81°54'40" WEST, 112.52 FEET TO THE EASTERLY LINE OF THE LAND DESCRIBED IN THE DEED EXECUTED BY F. D. CHASE AND ATLANTA J. CHASE, HIS WIFE, TO JACOB BAUM, DATED JULY 28, 1922, AND RECORDED IN LIBER 324 OF OFFICIAL RECORDS, AT PAGE 73, OFFICIAL RECORDS OF ALAMEDA COUNTY; THENCE ALONG LAST SAID LINE, NORTH 08°05'20" WEST, 34.91 FEET TO THE SOUTHERLY LINE OF SAID LOT 55; THENCE ALONG LAST SAID LINE, NORTH 81°54'46" EAST, 1.00 FOOT; THENCE PARALLEL WITH THE WESTERLY LINE OF SAID LOT 55, NORTH 08°05'29 WEST, 25.00 FEET TO THE SOUTHERLY LINE OF SAID BERKELEY WAY; THENCE ALONG LAST SAID LINE AND ITS EASTERLY PROLONGATION, NORTH 81°54'40" EAST, 115.76 FEET TO THE POINT OF BEGINNING.

APN: 57-2053-1

EXCEPTIONS TO TITLE (1950 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS:, DISTRICT NO 2014-1, FOR CLEAN ENERGY DISCLOSED BY : ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR1 EXC. 3 – NOT PLOTTABLE).
2. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, RECORDED MAY 16, 1966 IN BOOK 1785 OF OFFICIAL RECORDS, PAGE 944 UNDER RECORDER'S SERIAL NUMBER AY61475, AFFECTS A PORTION (PTR1 EXC. 5 – PLOTTED).

TITLE REPORT (1974 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117026135-JM, FOURTH UPDATED REPORT, EFFECTIVE DATE NOVEMBER 21, 2024 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR2"

TITLE TO SAID ESTATE IS VESTED IN: (1974 SHATTUCK)

1974 SHATTUCK AVENUE, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1974 SHATTUCK)

FEE

LEGAL DESCRIPTION (1974 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

ALL THAT REAL PROPERTY SITUATED IN THE CITY OF BERKELEY, COUNTY OF ALAMEDA, STATE OF CALIFORNIA, BEING THOSE PORTIONS OF LOTS 57 AND 58 AS SHOWN ON THAT CERTAIN MAP ENTITLED 'MAP OF THE COLLEGE TRACT', FILED JANUARY 31, 1890 IN BOOK 9 OF MAPS, AT PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA AND A PORTION OF SHATTUCK AVENUE AS SHOWN ON SAID MAP, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE INTERSECTION OF THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF BERKELEY WAY AS SHOWN ON SAID MAP WITH THE WESTERLY LINE OF SHATTUCK AVENUE AS ESTABLISHED BY ORDINANCE NO. 387 ADOPTED BY THE BOARD OF TRUSTEES OF THE TOWN OF BERKELEY ON JANUARY 18, 1892; THENCE ALONG SAID WESTERLY LINE, SOUTH 04°02'40" EAST, 60.06 FEET TO THE POINT OF BEGINNING AND CONTINUING SOUTH 04°02'40" EAST, 50.23 FEET TO THE SOUTHERLY LINE OF SAID LOT 58; THENCE ALONG LAST SAID LINE, SOUTH 81°55'59" WEST, 108.98 TO THE WESTERLY LINE OF SAID LOT 58; THENCE ALONG LAST SAID LINE AND THE WESTERLY LINE OF SAID LOT 57, NORTH 08°05'20" WEST, 50.09 FEET TO A LINE THAT IS DRAWN PARALLEL WITH THE SOUTHERLY LINE OF SAID BERKELEY WAY FROM THE POINT OF BEGINNING; THENCE ALONG LAST SAID LINE, NORTH 81°54'40" EAST, 112.52 FEET TO THE POINT OF BEGINNING.

APN: 57-2053-2

EXCEPTIONS TO TITLE (1974 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, DISTRICT NO 2014-1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMETN MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR2 EXC. 3 – NOT PLOTTABLE).
2. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING, GRANTED TO BAY AREA RAPID TRANSIT DISTRICT, A RAPID TRANSIT DISTRICT, FOR UNDERGROUND RAPID TRANSIT TUNNEL FACILITIES, RECORDED SEPTEMBER 23, 1966 IN BOOK 1846 OF OFFICIAL RECORDS, PAGE 53 UNDER RECORDER'S SERIAL NUMBER AY-11314 (PTR2 EXC. 5 – PLOTTED)

TITLE REPORT (1984 & 1998 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117025433-JM, 1ST UPDATE, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR3"

TITLE TO SAID ESTATE IS VESTED IN: (1984 & 1998 SHATTUCK)

FIFTH KEIL CO., A CALIFORNIA CORPORATION

THE ESTATE OR INTEREST IN THE LAND IS: (1984 & 1998 SHATTUCK)

FEE

LEGAL DESCRIPTION (1984 & 1998 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

COMMENCING AT THE POINT OF INTERSECTION OF THE NORTHERN LINE OF UNIVERSITY AVENUE WITH THE WESTERN LINE OF SHATTUCK AVENUE AS SAID AVENUES NOW EXISTS; THENCE WESTERLY ALONG THE NORTHERN LINE OF UNIVERSITY AVENUE 79.00 FEET; THENCE AT RIGHT ANGLES NORTHERLY 114.68 FEET, MORE OR LESS, TO THE SOUTHERN LINE OF THE LAND NOW OR FORMERLY OF JOHN H. BOHLIG AND LOTTA BOHLIG; THENCE EASTERLY AND ALONG SAID LINE 87.07 FEET TO THE WESTERN LINE OF SHATTUCK AVENUE; THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE 114.97 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

APN'S: 057-2053-003-01 AND 057-2053-003-02

EXCEPTIONS TO TITLE (1984 & 1998 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014-1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR3 EXC. 4 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO P180-2016, FOR BERKELEY DOWNTOWN P180-2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR3 EXC. 5 – NOT PLOTTABLE).
3. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, DATED APRIL 6, 1967, RECORDED MAY 10, 1967 IN REEL 1961 OF OFFICIAL RECORDS, IMAGE 330 UNDER RECORDER'S SERIAL NUMBER AZ 43339, AFFECTS A PORTION OF THE PREMISES, THE PRESENT OWNERSHIP OF SAID EASEMENT AND OTHER MATTERS AFFECTING THE INTERESTS THERETO, IF ANY, ARE NOT SHOWN HEREIN (PTR3 EXC. 7 – PLOTTED).
4. A NOTICE AS FOLLOWS, ENTITLED NOTICE OF ASSESSMENT – DOWNTOWN BERKELEY PBID, BY CITY OF BERKELEY, DATED AUGUST 25, 2011, RECORDED AUGUST 30, 2011 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2012248358 (PTR3 EXC. 8 – NOT PLOTTABLE).

TITLE REPORT (2701 UNIVERSITY)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117026137-JM, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR4"

TITLE TO SAID ESTATE IS VESTED IN: (2701 UNIVERSITY)

EDITH WIESER GLYNN, TRUSTEE OF THE EDITH WIESER GLYNN TRUST

THE ESTATE OR INTEREST IN THE LAND IS: (2701 UNIVERSITY)

FEE

LEGAL DESCRIPTION (2701 UNIVERSITY)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTHERN LINE OF BERKELEY WAY, AS SHOWN UPON THE MAP HEREINAFTER REFERRED TO, DISTANT THEREON ONE HUNDRED FIFTEEN AND 46/100 FEET WESTERLY FROM THE INTERSECTION THEREOF WITH THE WESTERN LINE OF SHATTUCK AVENUE AS ESTABLISHED BY BOARD OF TRUSTEES OF THE TOWN OF BERKELEY, JAN. 18, 1892, BY ORDINANCE NO. 387, SAID POINT BEING ONE FOOT EASTERLY ON SAID LINE OF BERKELEY WAY FROM THE LINE DIVIDING LOTS NUMBERED 54 AND 55 ACCORDING TO SAID MAP; RUNNING THENCE WESTERLY ALONG SAID LINE OF BERKELEY WAY THIRTY-NINE FEET TO THE LINE DIVIDING LOTS NUMBERED 55 AND 54 ACCORDING TO SAID MAP; THENCE AT RIGHT ANGLES SOUTHERLY ALONG SAID LINE ONE HUNDRED TEN FEET; THENCE AT RIGHT ANGLES EASTERLY THREE AND 73/100 FEET; THENCE AT RIGHT ANGLES SOUTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET TO THE NORTHERN LINE OF UNIVERSITY AVENUE; THENCE EASTERLY ALONG SAID LINE OF UNIVERSITY AVENUE FIFTY-FIVE AND 3/10 FEET; THENCEN AT RIGHT ANGLES NORTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET; THENCE AT RIGHT ANGLES WESTERLY TWENTY- ONE AND 63/100 FEET; THENCE AT RIGHT ANGLES NORTHERLY EIGHTY-FIVE FEET TO THE SOUTHWESTERN CORNER OF LOT NUMBERED 55, ACCORDING TO SAID MAP; THENCE AT RIGHT ANGLES EASTERLY ALONG THE SOUTHERN LINE OF SAID LOT ONE FOOT AND THENCE AT RIGHT ANGLES NORTHERLY TWENTY-FIVE FEET TO THE POINT OF BEGINNING.

BEING LOT NUMBERED 54, THE WESTERN ONE FOOT OF LOT NUMBERED 55, A PORTION OF LOT NUMBERED 6 AND A PARCEL ADJOINING SAID LOT NUMBER 6 ON THE EAST, AS ALL OF SAID LOTS ARE DELINEATED AND SO DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "MAP OF COLLEGE TRACT, BERKELEY", FILED MAY 24,1877, IN LIBER 5 OF MAPS AT PAGE 14, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

EXCEPTING THEREFROM THAT PORTION DESCRIBED IN THE DEED TO THE CITY OF BERKELEY, RECORDED SEPTEMBER 29,1955, BOOK 7795, PAGE 23, AS INSTRUMENT NO. AK-105819, OFFICIAL RECORDS.

APN: 057-2053-004-02

EXCEPTIONS TO TITLE (2701 UNIVERSITY)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014-1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR4 EXC. 3 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO CITY OF BERKELEY-DOWNTOWN PROPERTY AND BUSINESS IMPROVEMENT DISTRICT, FOR BERKELEY DOWNTOWN PBID-2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR4 EXC. 5 – NOT PLOTTABLE).
3. TERMS AND CONDITIONS CONTAINED IN THE EDITH WIESER GLYNN TRUST AS DISCLOSED BY GRANT DEED, RECORDED MAY 22, 1984 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 1984099372 (PTR4 EXC. 6 – NOT PLOTTABLE).
4. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED NONDISTURBANCE AND ATTORNMENT AGREEMENT, EXECUTED BY EDITH GLYNN AND T.Y.P. RESTAURANT GROUP, INC., A DELAWARE CORPORATION DBA TENDER GREENS, RECORDED MARCH 22, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016068690 (PTR4 EXC. 7 – NOT PLOTTABLE).
5. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED MINOR ENCROACHMENT PERMIT 17-03, EXECUTED BY EDITH W. GLYNN AND THE CITY OF BERKELEY, RECORDED MAY 24, 2017 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2017113477 (PTR 4 EXC. 8 – NOT PLOTTABLE)

NOTES

1. DATE OF FIELD SURVEY: DECEMBER 5, 9 AND 21, 2022 AS TO THE BOUNDARY AND TOPOGRAPHIC SURVEY OF THE SUBJECT PROPERTY.
2. THE UTILITIES SHOWN HEREON ARE BY SURFACE OBSERVATION AND RECORD INFORMATION ONLY AND NO WARRANTY IS GIVEN HEREIN AS TO THEIR EXACT LOCATION. IT IS THE RESPONSIBILITY OF THE DEVELOPER AND/OR CONTRACTOR TO VERIFY THE EXACT LOCATION OF THE UTILITIES WITH THE APPROPRIATE UTILITY COMPANY OR AGENCY.
3. UTILITY JURISDICTIONS / PROVIDERS ARE AS FOLLOWS:
   STORM DRAINS: CITY OF BERKELEY
   SANITARY SEWER: CITY OF BERKELEY
   WATER: EAST BAY MUNICIPAL UTILITY DISTRICT (EBMUD)
   ELECTRICITY: PACIFIC GAS & ELECTRIC CO.
   NATURAL GAS: PACIFIC GAS & ELECTRIC CO.
   TELEPHONE: AT&T
4. THERE ARE NO CEMETERIES ON OR WITHIN 100 FEET OF THE SUBJECT PROPERTY
5. THE SURVEYED PROPERTIES ARE THE SAME PROPERTIES DESCRIBED IN THE TITLE REPORTS.
6. THE LEGAL DESCRIPTIONS AS SHOWN IN THE TITLE REPORTS MATHEMATICALLY CLOSE.
7. THERE IS NO OBSERVED EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL
8. THERE ARE NO WETLAND AREAS IN THE SUBJECT PROPERTIES

TABLE A NOTES

1. FOUND MONUMENTS ARE SHOWN ON THIS SHEET OF THE SURVEY.
2. THE STREET ADDRESS OF THE PROPERTY IS 1950, 1974, 1984, 1998 SHATTUCK AVENUE AND 2071 UNIVERSITY AVENUE, BERKELEY, CA 94704
3. FLOOD ZONE DESIGNATION: THE PREMISES ARE LOCATED IN ZONE "X" (NON-SHADED) DEFINED AS "AREAS OF MINIMAL FLOOD," PER FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 06001C0057G, EFFECTIVE DATE: AUGUST 3, 2009.
4. THE TOTAL GROSS LAND AREA IS:
   1950 SHATTUCK AVENUE: 6,635 SQUARE FEET +/- OR 0.152 ACRES MORE OR LESS.
   1974 SHATTUCK AVENUE: 5,264 SQUARE FEET +/- OR 0.121 ACRES MORE OR LESS
   1984 & 1998 SHATTUCK AVENUE: 9,527 SQUARE FEET +/- OR 0.219 ACRES MORE OR LESS
   2071 UNIVERSITY AVENUE: 6,411 SQUARE FEET +/- OR 0.147 ACRES MORE OR LESS
6. (A/B) ZONING REQUIREMENTS: PER THE CITY OF BERKELEY PLANNING AND ZONING DEPARTMENT, THE PROPERTIES ARE ZONED "C-DMU OUTER CORE" DEFINED AS "DOWNTOWN MIXED-USE DISTRICT."

   REFERENCE FOR "C-DMU" ZONING IS MADE HERE TO THE CITY OF BERKELEY CODE, CHAPTER 23.204.130, REGARDING PROPERTY DEVELOPMENT STANDARDS, BUILDING HEIGHT LIMITATION, MINIMUM BUILDING SETBACK AND PARKING REQUIREMENTS ARE AS FOLLOWS:

   SETBACKS
   MINIMUM FRONT: 0 FEET
   MINIMUM SIDE: 0 FEET
   MINIMUM REAR: 0 FEET

   MAXIMUM HEIGHT: 60 FEET, 75 FEET WITH USE PERMIT

   MINIMUM PARKING REQUIREMENTS: NONE REQUIRED
7. (A/B/C) EXTERIOR DIMENSIONS AND SQUARE FOOTAGE OF BUILDING AT GROUND LEVEL, AND NUMBER OF STORIES ARE SHOWN ON SHEET 3 OF THE SURVEY.
8. SUBSTANTIAL IMPROVEMENTS OBSERVED IN THE PROCESS OF CONDUCTING THE SURVEY ARE SHOWN ON SHEET 3.
9. THERE ARE NO PARKING SPACES LOCATED ON THE SUBJECT PROPERTIES.
10. THERE ARE NO DIVISIONS OR PARTY WALLS LOCATED ON THE SUBJECT PROPERTIES WITH RESPECT TO ADJOINING PROPERTIES.
11. (A) LOCATION OF UTILITIES EXISTING ON OR SERVING THE SURVEYED PROPERTIES AS DETERMINED BY OBSERVED EVIDENCE TOGETHER WITH EVIDENCE FROM PLAN OBTAINED FROM UTILITY COMPANIES OR PROVIDED BY CLIENT ARE SHOWN ON SHEET 3.
13. NAMES OF ADJOINING OWNERS OF PLATTED LANDS ARE SHOWN ON SHEET 2 OF THE SURVEY.
14. DISTANCE TO THE NEAREST INTERSECTING STREET IS SHOWN ON SHEET 2 OF THE SURVEY.
16. THERE IS NO OBSERVABLE EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
17. THERE IS NO OBSERVED EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
18. THERE ARE NO OFFSITE EASEMENTS TO THE SUBJECT PROPERTIES.
19. PROFESSIONAL LIABILITY INSURANCE IN THE AMOUNT OF $2,000,000 IS HELD BY THE SURVEYOR.

BASIS OF BEARINGS

THE BASIS OF BEARINGS OF THIS SURVEY IS TAKEN BETWEEN THE TWO FOUND STREET MONUMENTS ALONG BERKELEY WAY BETWEEN MILVIA STREET AND HENRY STREET AS SHOWN ON PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA. TAKEN AS NORTH 81°54'40" EAST.

REFERENCES

(R1) PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R2) PARCEL MAP P.M. 10119, FILED SEPTEMBER 28, 2016 IN BOOK 334 OF PARCEL MAPS, AT PAGES 2! TO 22, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R3) TRACT MAP T.M. 7888, FILED SEPTEMBER 03, 2009 IN BOOK 305 OF MAPS, AT PAGES 18 TO 29 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R4) UNRECORDED MAP, CITY OF BERKELEY CITY MONUMENT MAP, PLAN 1305, 306C-057.

(R5) "MAP OF THE COLLEGE TRACT, BERKELEY", FILED JANUARY 31, 1880 IN BOOK 9 OF MAPS, AT PAGES 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R6) GRANT DEED, RECORDED APRIL 15, 1966 IN REEL 1749, IMAGE 918, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R7) JUDGMENT QUIETING TITLE, CASE NO. 24CV065234, FILED NOVEMBER 19, 2024 WITH SUPERIOR COURT OF CALIFORNIA FOR ALAMEDA COUNTY.

(R8) DOCUMENT ENTITLED "NONDISTURBANCE AND ATTORNMENT AGREEMENT", RECORDED MARCH 22, 2016 AS DOCUMENT NUMBER 2016-068690, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

SURVEYOR'S CERTIFICATE

TO JILLIAR, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY; 1974 SHATTUCK AVENUE, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY; FIFTH KEIL CO., A CALIFORNIA CORPORATION; EDITH WIESER GLYNN, TRUSTEE OF THE EDITH WIESER GLYNN TRUST; AND OLD REPUBLIC TITLE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6(A), 6(B), 7(A), 7(B1), 7(C), 8, 9, 10, 11(A), 13, 14, 16, 17, 18, AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 5, 9 AND 21, 2022.

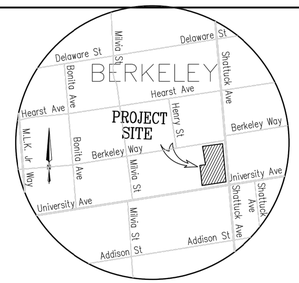
JACQUELINE LUK P.L.S. 8934
FOR LUK & ASSOCIATES, INC.

DATE DECEMBER 13, 2024

PROFESSIONAL LAND SURVEYOR — JACQUELINE LUK — No. 8934 — STATE OF CALIFORNIA

SHEET INDEX

1. NOTES
2. BOUNDARY SURVEY
3. TOPOGRAPHIC SURVEY



VICINITY MAP
NOT TO SCALE

ALTA/NSPS LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE
AND 2071 UNIVERSITY AVENUE
CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA
DECEMBER 2024

PREPARED BY
LUK AND ASSOCIATES
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738 ALFRED NOBEL DRIVE
HERCULES, CALIFORNIA 94547
(510) 724-3388

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JOB NO.: 22117A10 PLOT DATE: DECEMBER 13, 2024

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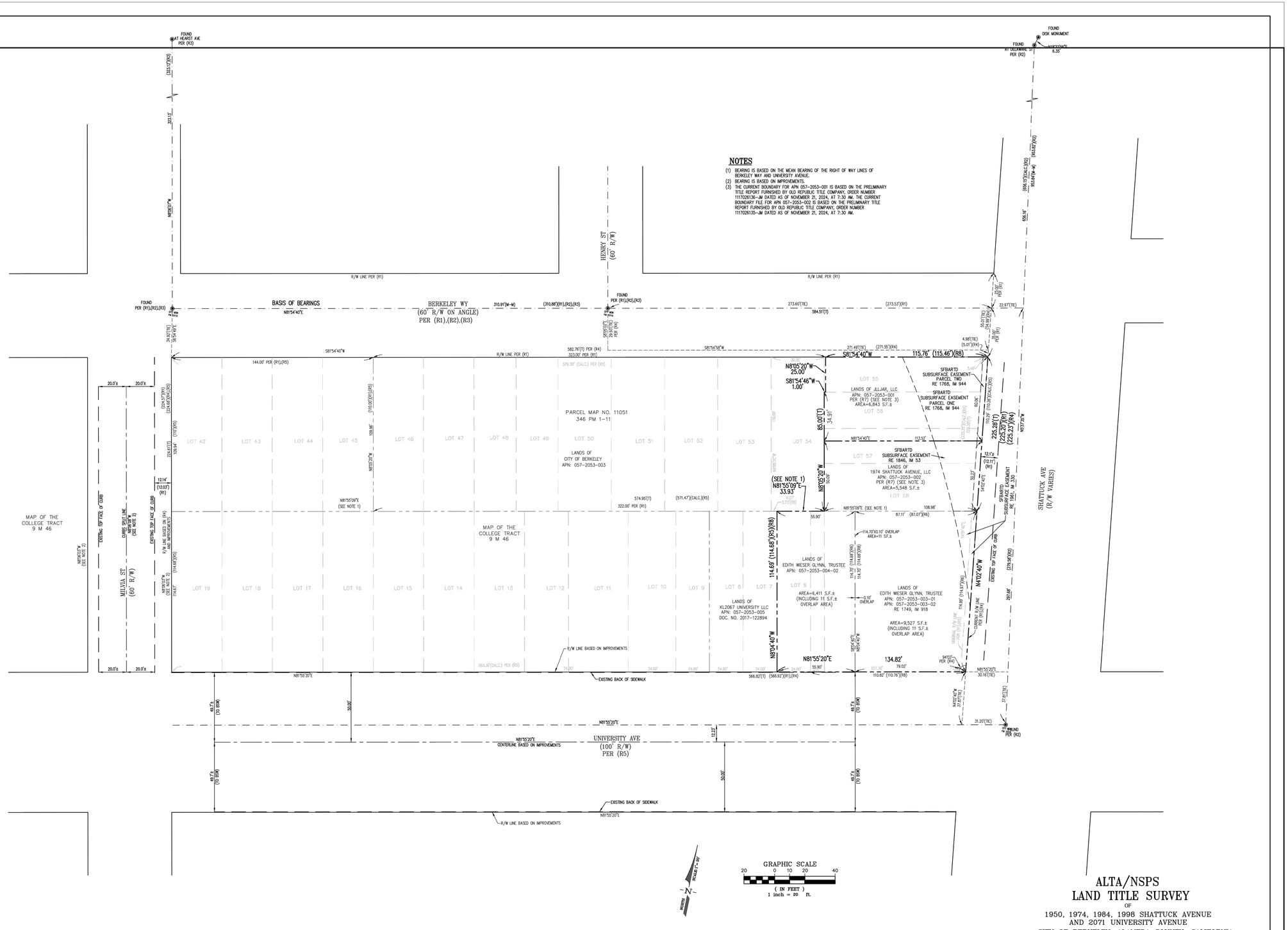
JOB: 2209

SHEET:

SURVEY

A0.6a



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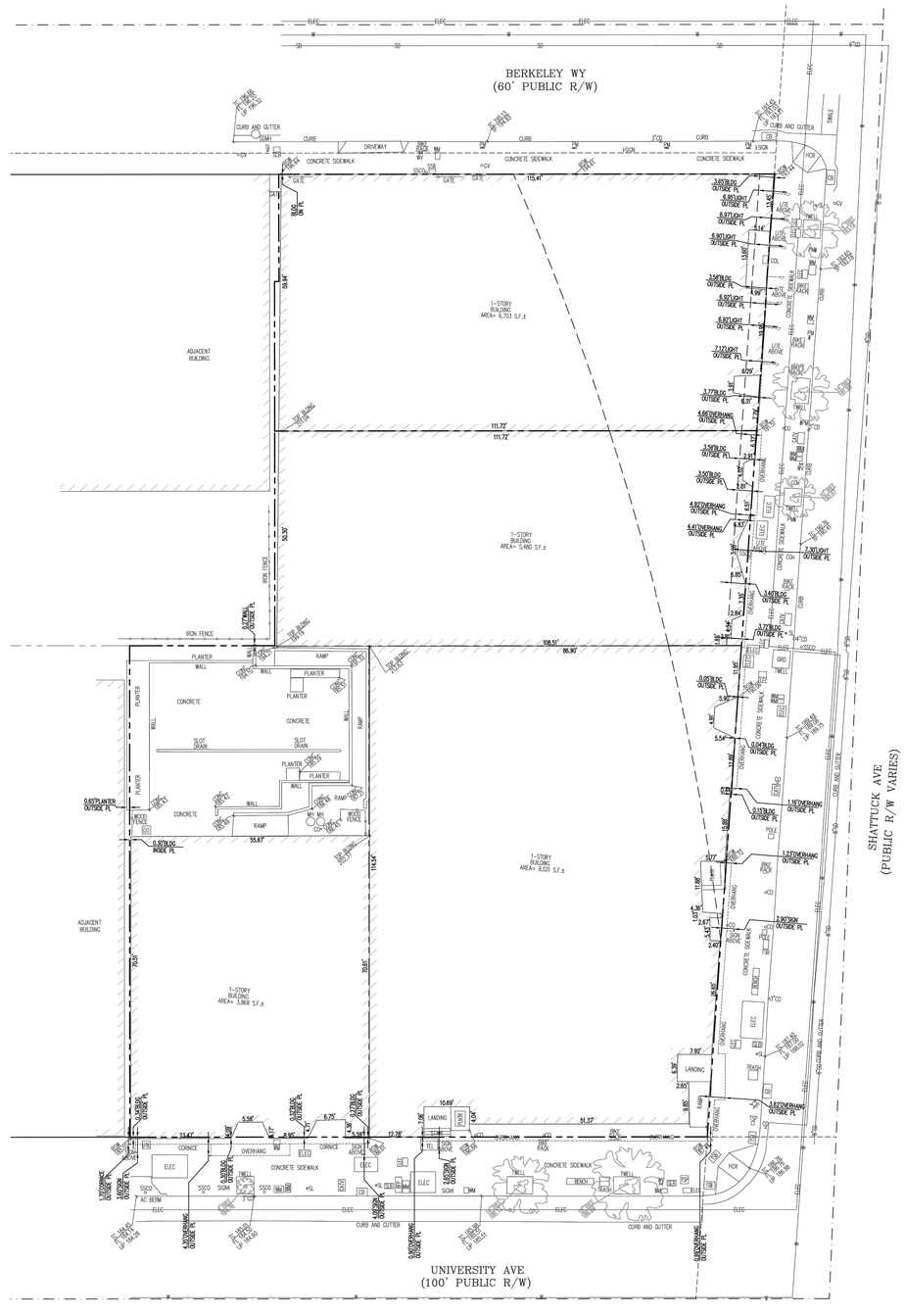
A0.6B



LEGEND

SYMBOLS	DESCRIPTION
	BOUNDARY OF SUBJECT PROPERTY
	RIGHT OF WAY LINE
	INTERIOR PROPERTY LINE
	MONUMENT LINE
	TIE LINE
	OLD LOT LINE
ELEC	ELECTRIC LINE
GAS	GAS LINE LINE
W	WATER LINE
SD	STORM DRAIN LINE
SS	SANITARY SEWER LINE
ELEC	ELECTRICITY BOX
AC BERM	ASPHALT BERM
SSCO	SANITARY SEWER CLEAN OUT
WM	WATER METER
HCR	HANDICAP RAMP
TWELL	TREE WELL
SL	STREET LIGHT
PLNTR	PLANTER BOX
CB	CATCH BASIN
TEL	TELECOMMUNICATION BOX
GV	GAS VALVE
SLB	STREET LIGHT BOX
CD	CURB DRAIN
CO	CLEAN OUT
BFP	BACK FLOW PREVENTER
TSB	TRAFFIC SIGNAL BOX
WV	WATER VALVE
CD	CURB DRAIN
PM	PARKING METER
COL	COLUMN
SSB	SANITARY SEWER BOX
SDMH	STORM DRAIN MAN HOLE
GRD	GROUND
SD	SLOT DRAIN
MH	MANHOLE
TC 65.64	TOP OF CONCRETE ELEVATION
BSW 65.60	BACK OF SIDEWALK ELEVATION
TC 65.64	TOP OF CURB ELEVATION
TP 65.64	TOP OF PAVEMENT ELEVATION
FL 65.64	FLOW LINE ELEVATION
TOP BLDG 65.64	TOP OF BUILDING ELEVATION
LIP 65.60	TOP OF LIP ELEVATION
	TREE

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SHEET 3 OF 3

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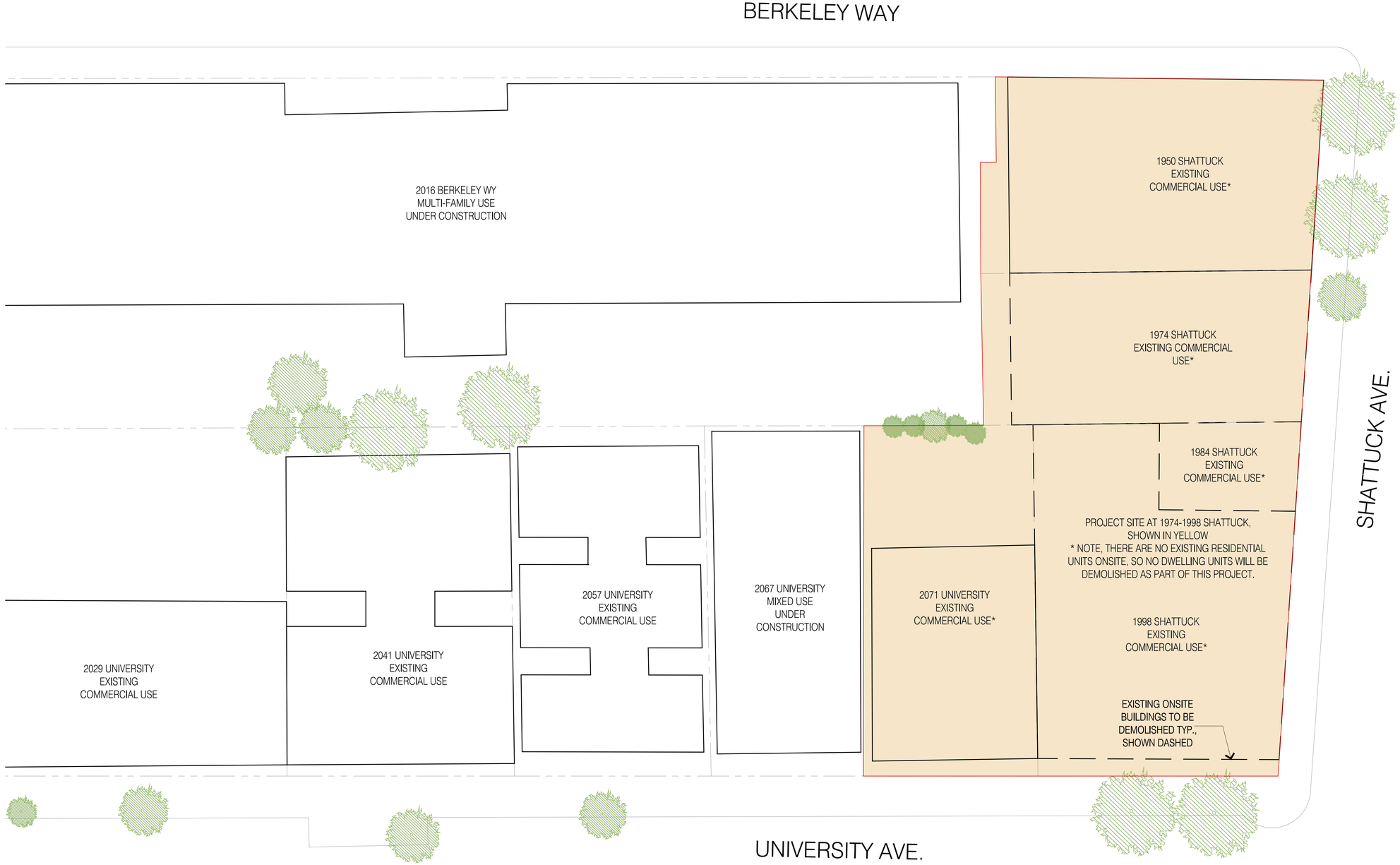
A0.6C



1 - EXISTING SITE PLAN

1/32"=1'-0" @ 11x17 1/16"=1'-0" @ 24x36

0 4 8 16 32

N

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SHEET:

EXISTING
SITE PLAN

A1.0



1 PLAN AT BASEMENT PARKING LEVEL P2

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

FLOOR PLANS

A2.0a



1 / A4.1

2 / A4.1

1 / -

PLAN AT BASEMENT PARKING LEVEL P1

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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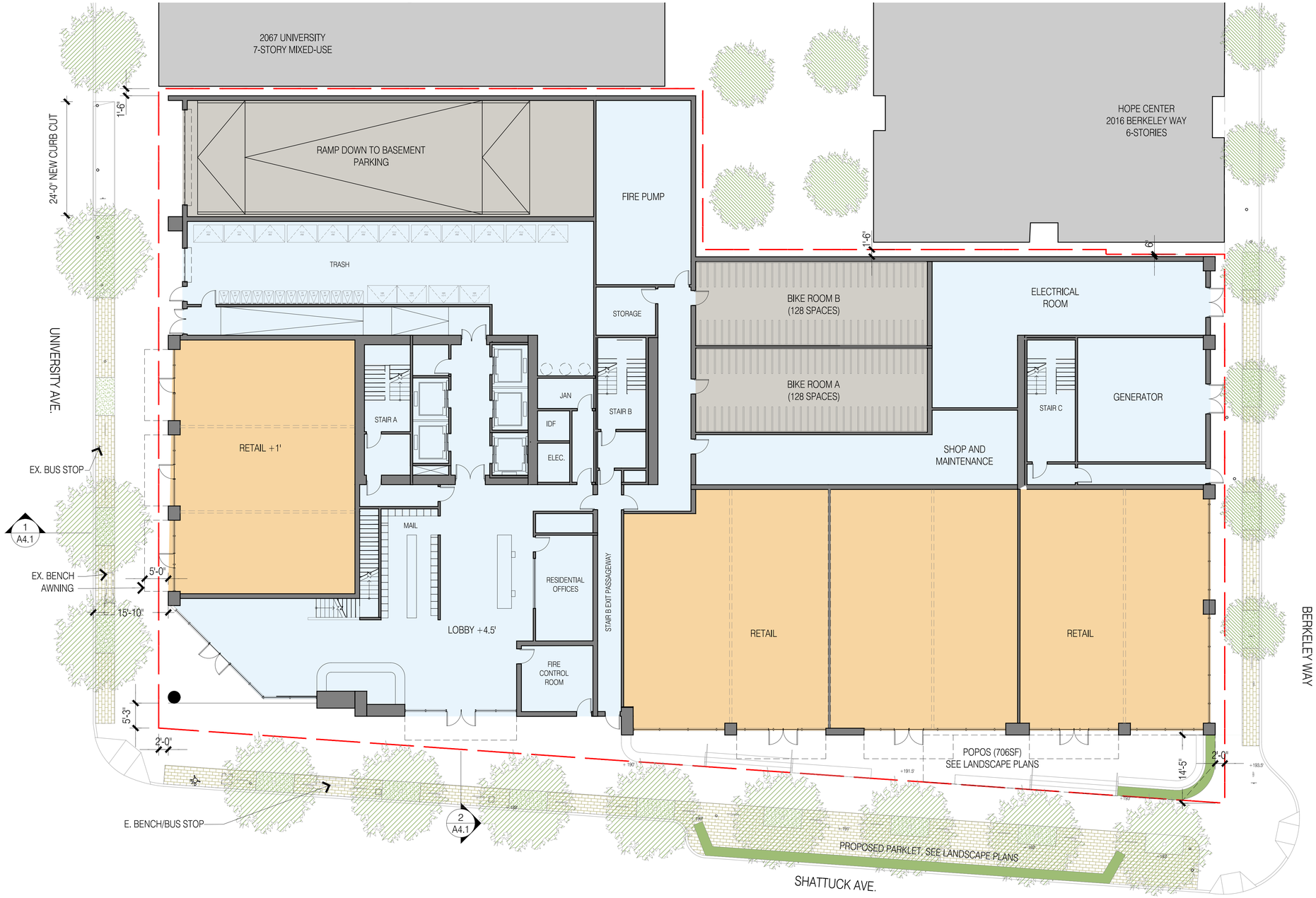
SHEET:

FLOOR PLANS

A2.0b



1 / - SITE PLAN / PLAN AT GROUND FLOOR

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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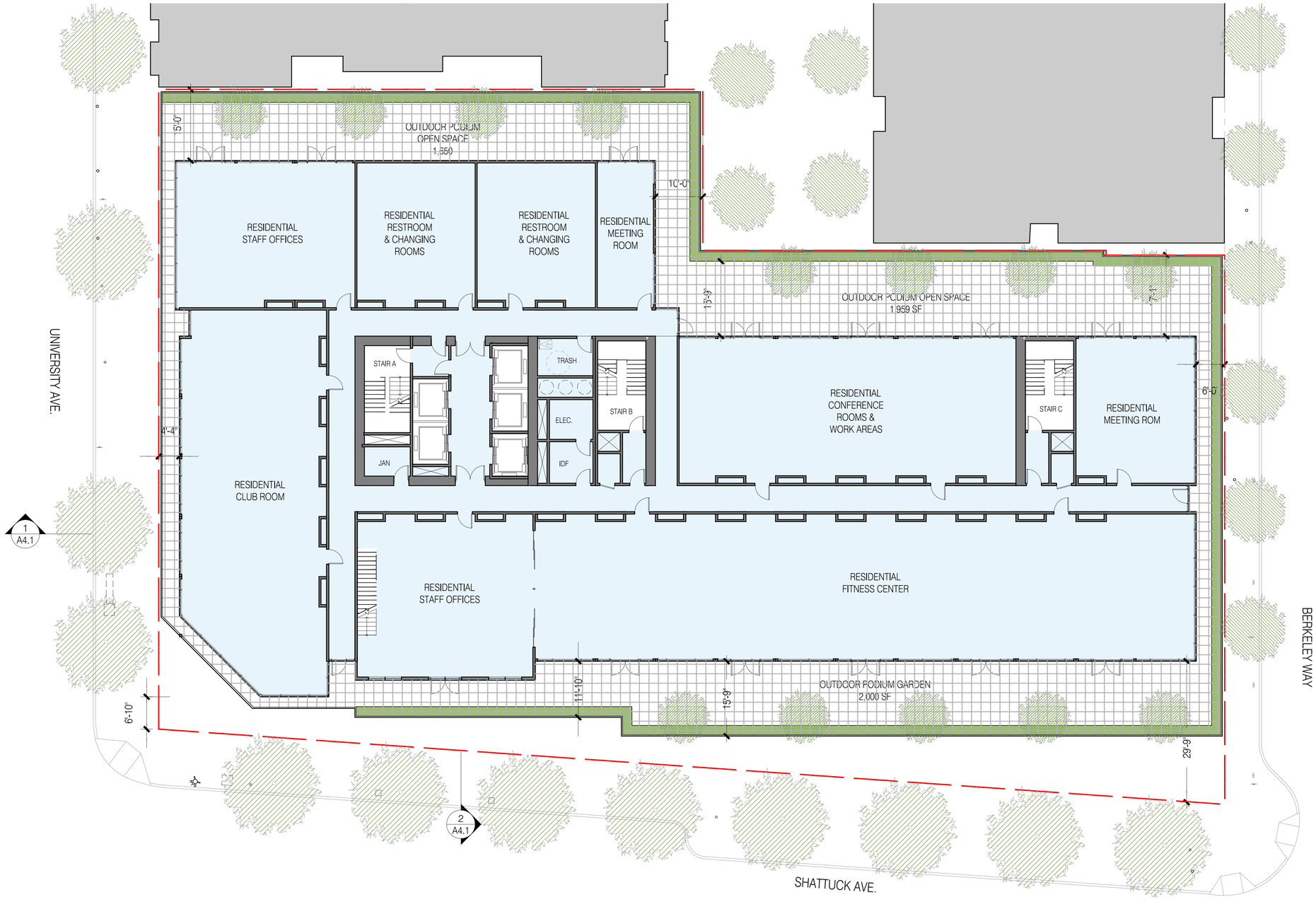
SHEET:

FLOOR PLANS

A2.1



1 PLAN AT LEVEL 2
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

FLOOR PLANS

A2.2



1 PLAN AT LEVELS 3-13
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

FLOOR PLANS

A2.3



1 / - PLAN AT LEVEL 14

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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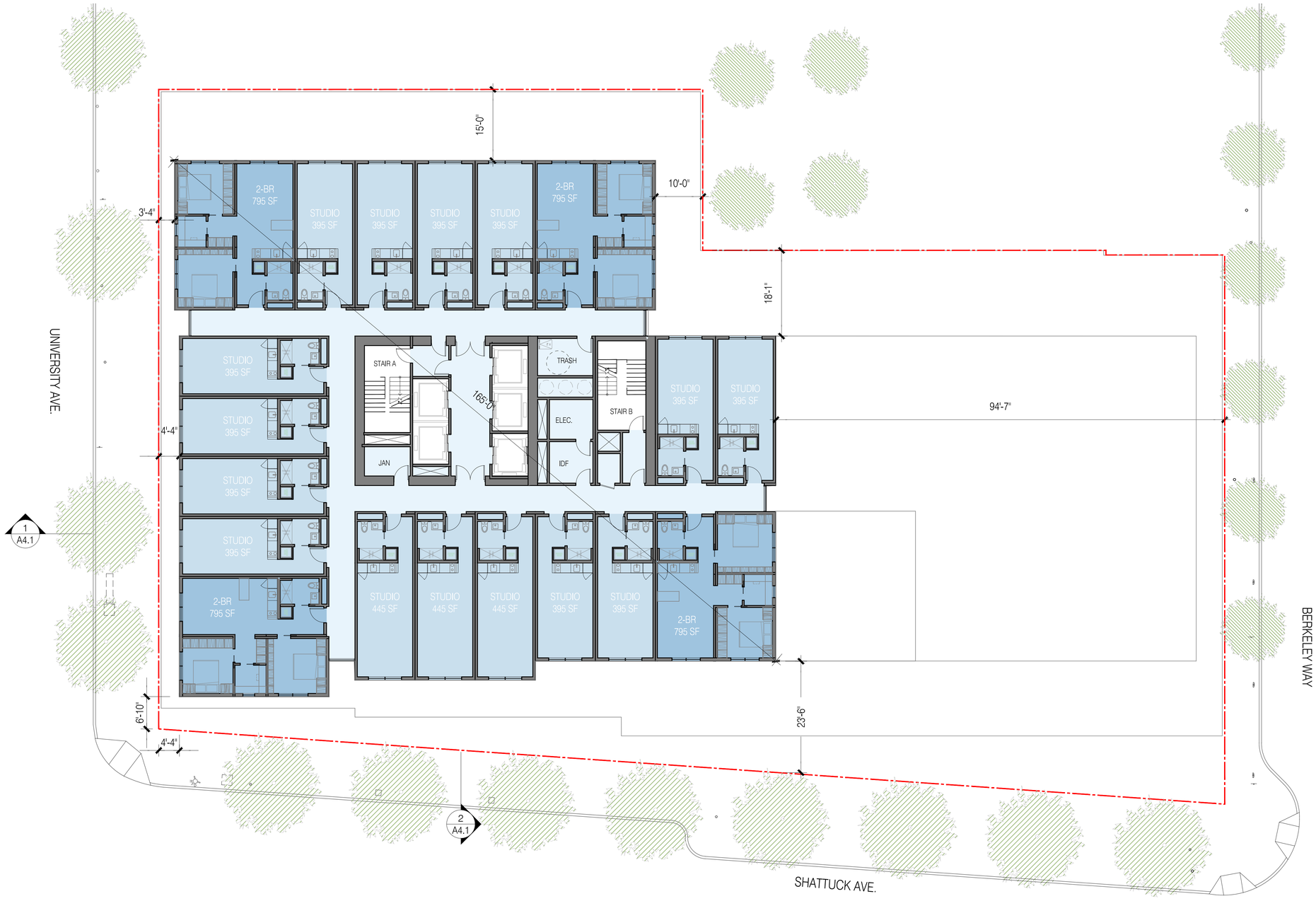
A2.4



1 / - PLAN AT LEVELS 15-27

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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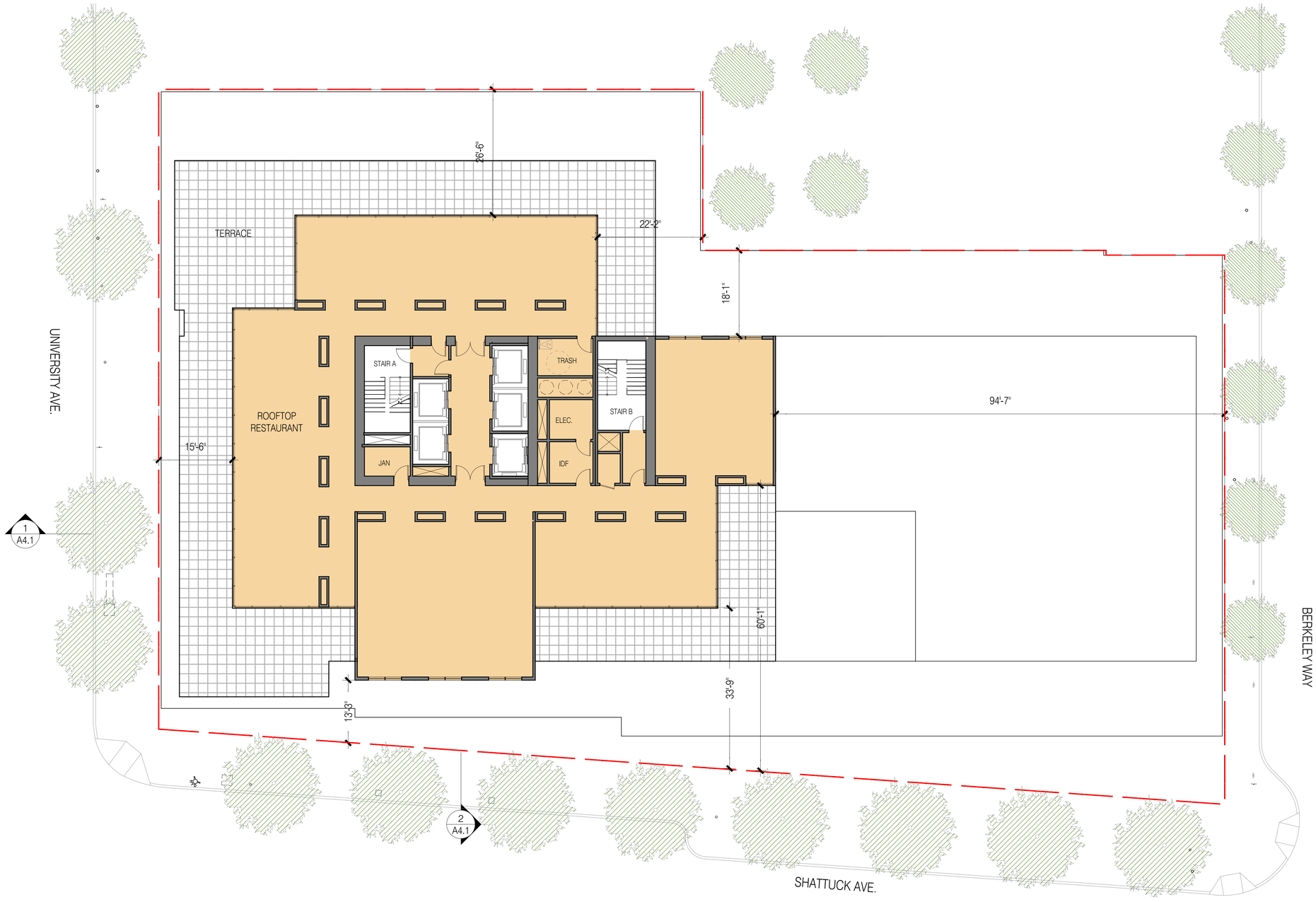
FLOOR PLANS

A2.5



1 / - PLAN AT LEVEL 28 ROOFTOP RESTAURANT

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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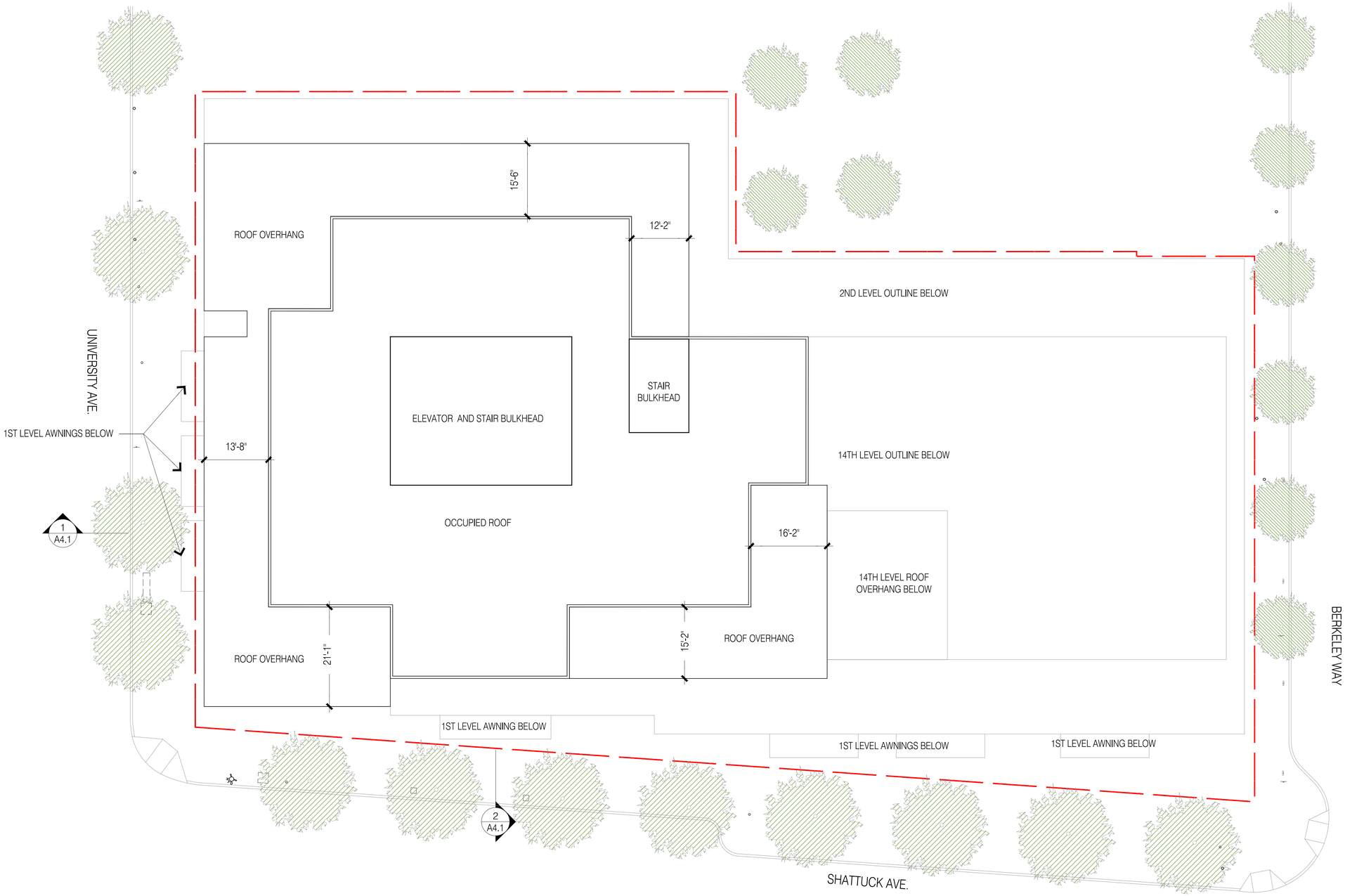
FLOOR PLANS

A2.6



1 / - PLAN AT ROOF

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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SHEET:

ROOF PLAN

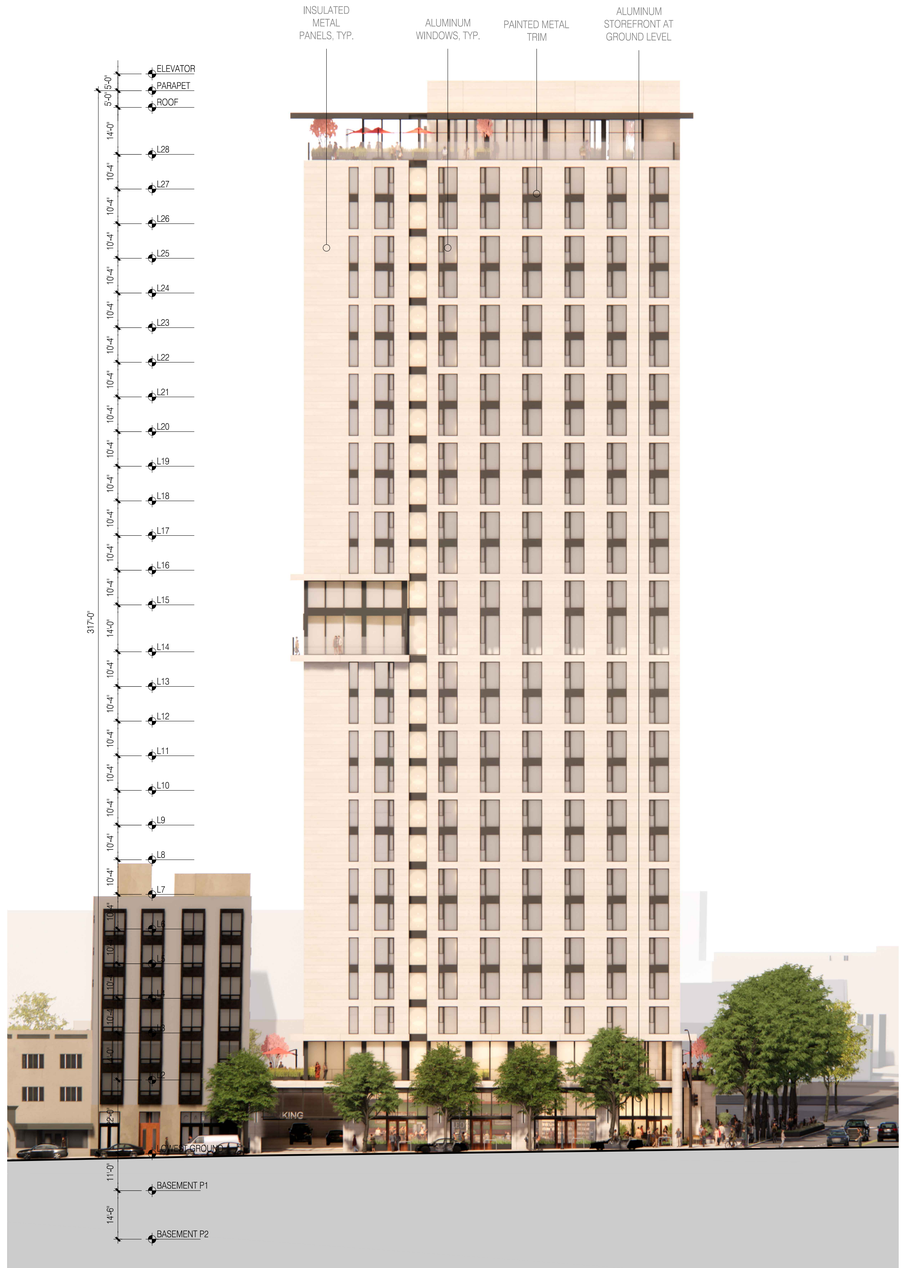
A2.7



2 - EAST ELEVATION

3/128" = 1'-0" @ 11X17 3/64"=1'-0" @ 24x36

0 8 16 32



1 - SOUTH ELEVATION

3/128" = 1'-0" @ 11X17 3/64"=1'-0" @ 24x36

0 8 16 32

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ELEVATIONS

A3.1

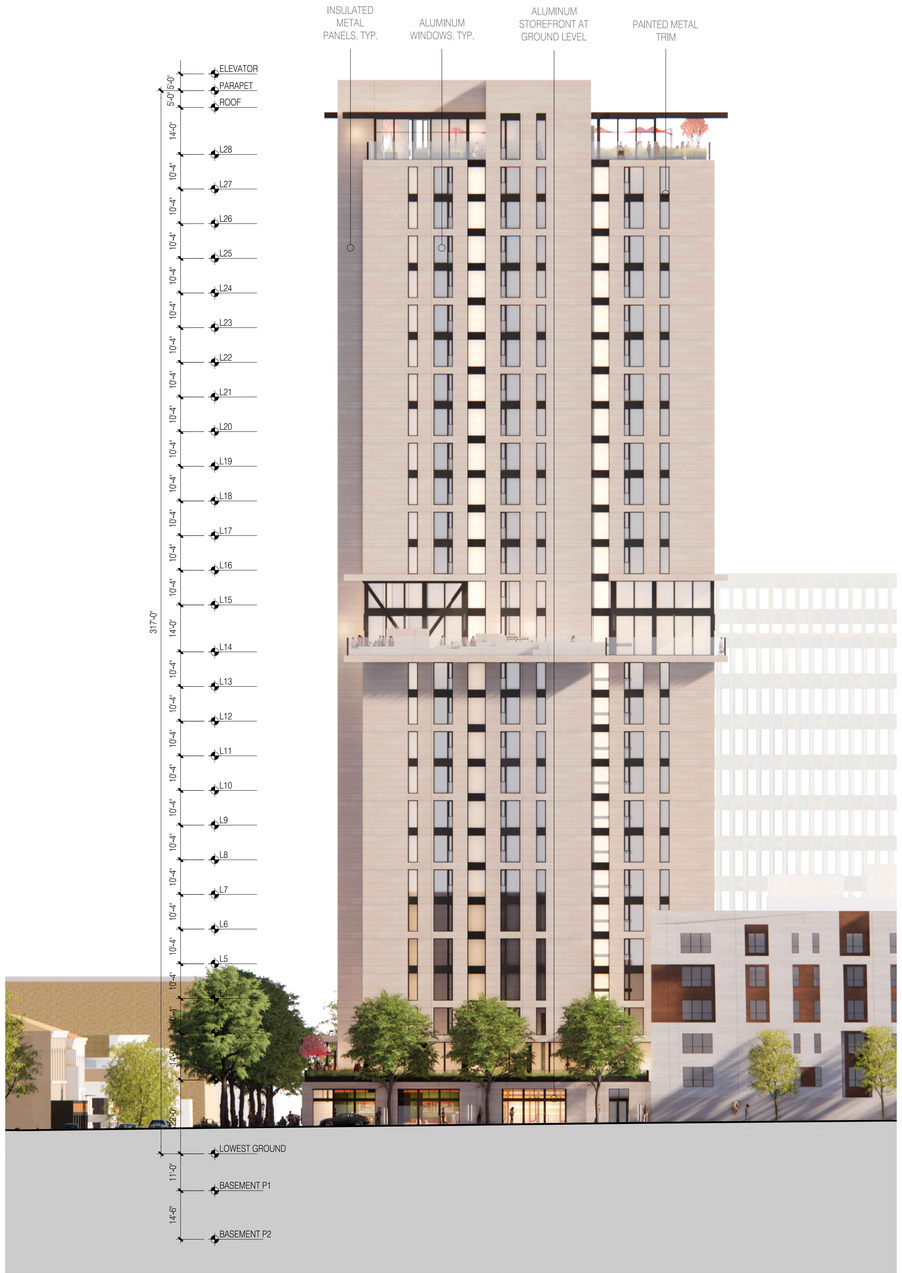


2
-

WEST ELEVATION

3/128" = 1'-0" @ 11X17 3/64"=1'-0" @ 24x36

0 8 16 32



1
-

NORTH ELEVATION

3/128" = 1'-0" @ 11X17 3/64"=1'-0" @ 24x36

0 8 16 32

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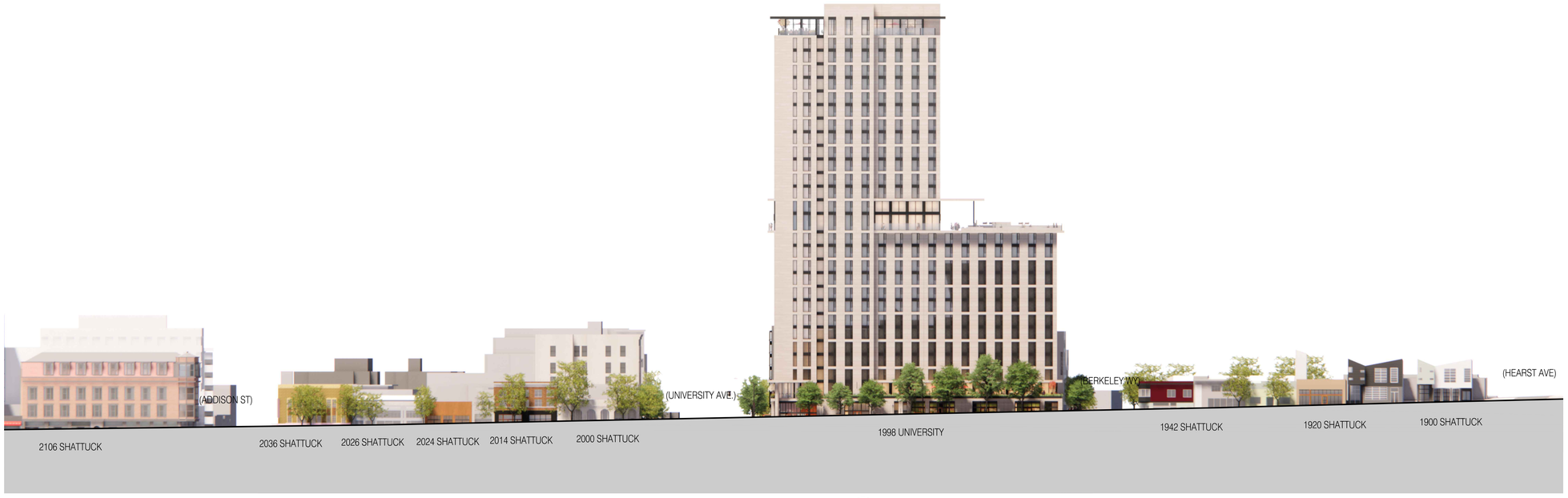
ELEVATIONS

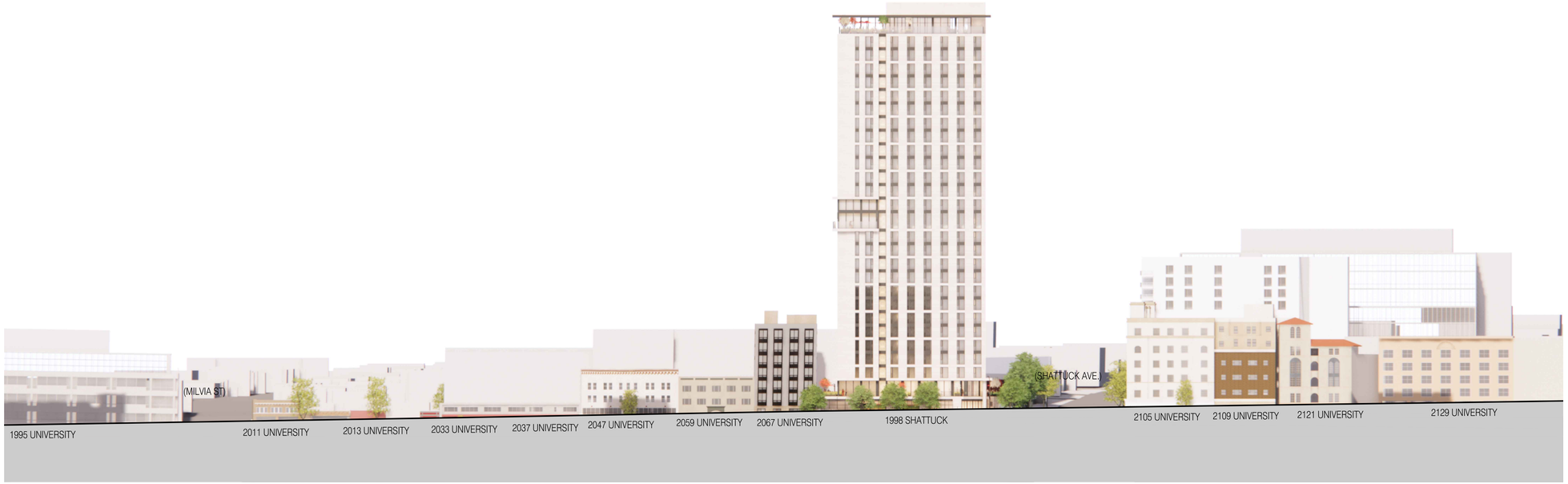
A3.2



2 - STREET STRIP ELEVATION @ SHATTUCK AVE

1/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64



1 - STREET STRIP ELEVATION @ UNIVERSITY AVE

3/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64

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SHEET:

STREET STRIP ELEVATIONS

A3.3



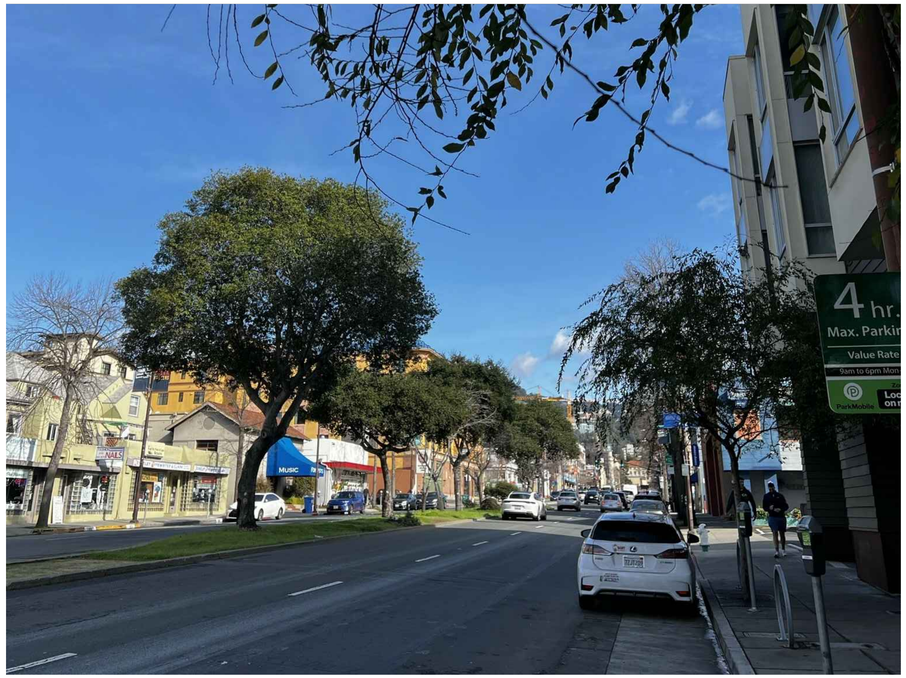
4 - UNIVERSITY LOOKING WEST - AFTER



2 - UNIVERSITY LOOKING EAST - AFTER



3 - UNIVERSITY LOOKING WEST - BEFORE



1 - UNIVERSITY LOOKING EAST - BEFORE

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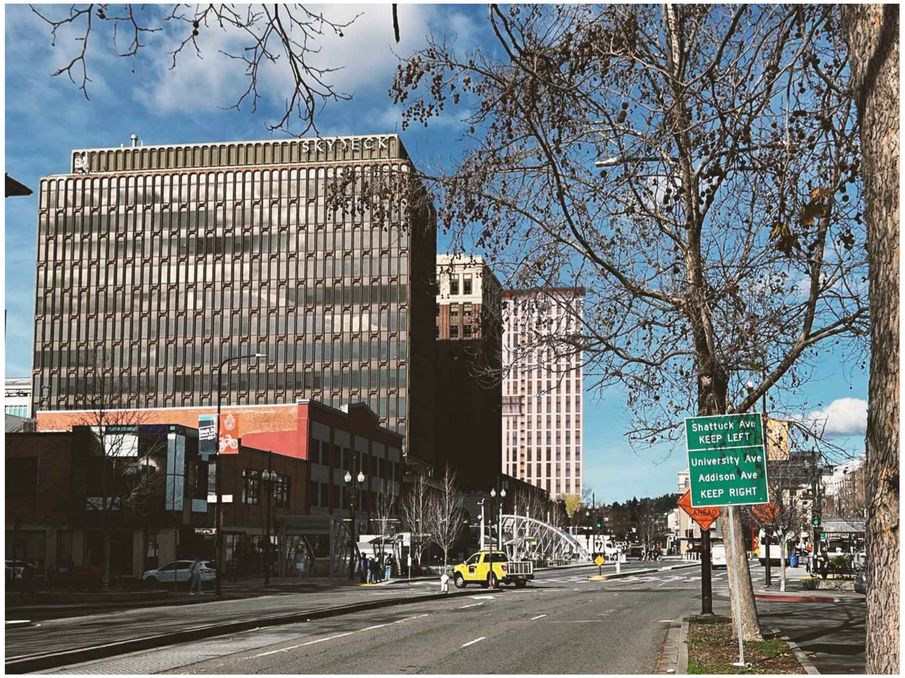
PHOTO CONTEXT VIEWS

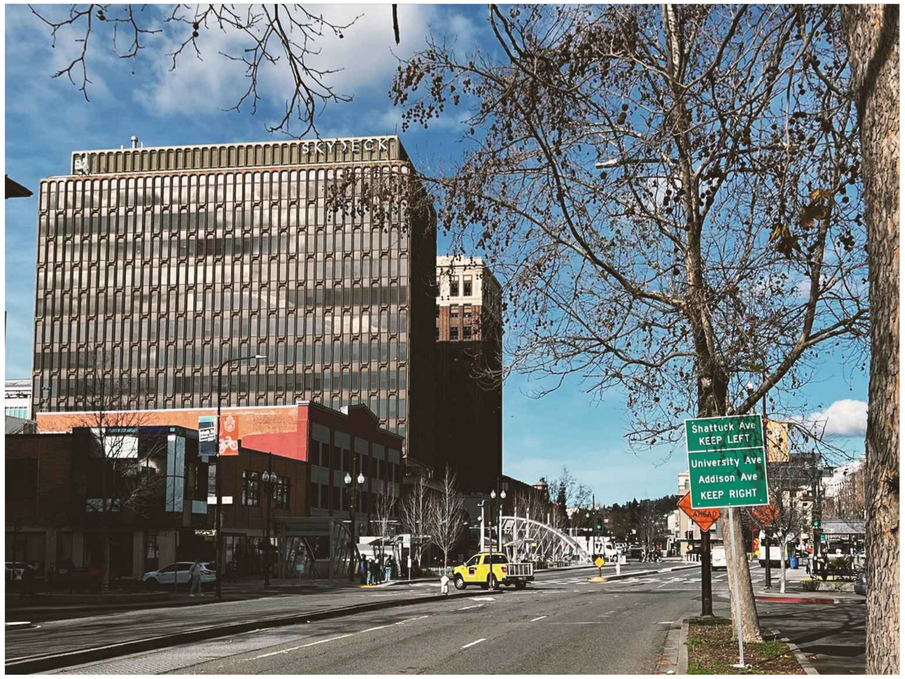
A3.4



4 - SHATTUCK LOOKING NORTH - AFTER



2 - SHATTUCK LOOKING SOUTH - AFTER



3 - SHATTUCK LOOKING NORTH - BEFORE



1 - SHATTUCK LOOKING SOUTH - BEFORE

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PHOTO CONTEXT VIEWS

A3.5



4 - BERKELEY LOOKING WEST - AFTER



2 - BERKELEY LOOKING EAST - AFTER



3 - BERKELEY LOOKING WEST - BEFORE



1 - BERKELEY LOOKING EAST - BEFORE

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PHOTO CONTEXT VIEWS

A3.6

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1 - VIEW LOOKING NORTH

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PRELIMINARY RENDERING

A3.7



1 - VIEW LOOKING NORTH-WEST

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A3.8

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A3.9

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PRELIMINARY RENDERING

A3.10



1 VIEW LOOKING NORTH-WEST AT SHATTUCK AND UNIVERSITY

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SHEET:

PRELIMINARY RENDERING

A3.11



1 - VIEW LOOKING SOUTH-WEST ON SHATTUCK

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A3.12



1 - VIEW LOOKING NORTH-EAST ON UNIVERSITY

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A3.13



1 - SIDEWALK VIEW - UNIVERSITY LOOKING EAST

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A3.14



1 - VIEW LOOKING SOUTH-WEST - SHATTUCK @ BERKELEY WAY

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PRELIMINARY RENDERING

A3.15

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1 - SIDEWALK VIEW - SHATTUCK LOOKING SOUTH-WEST

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1 - SIDEWALK VIEW - SHATTUCK LOOKING NORTH-WEST

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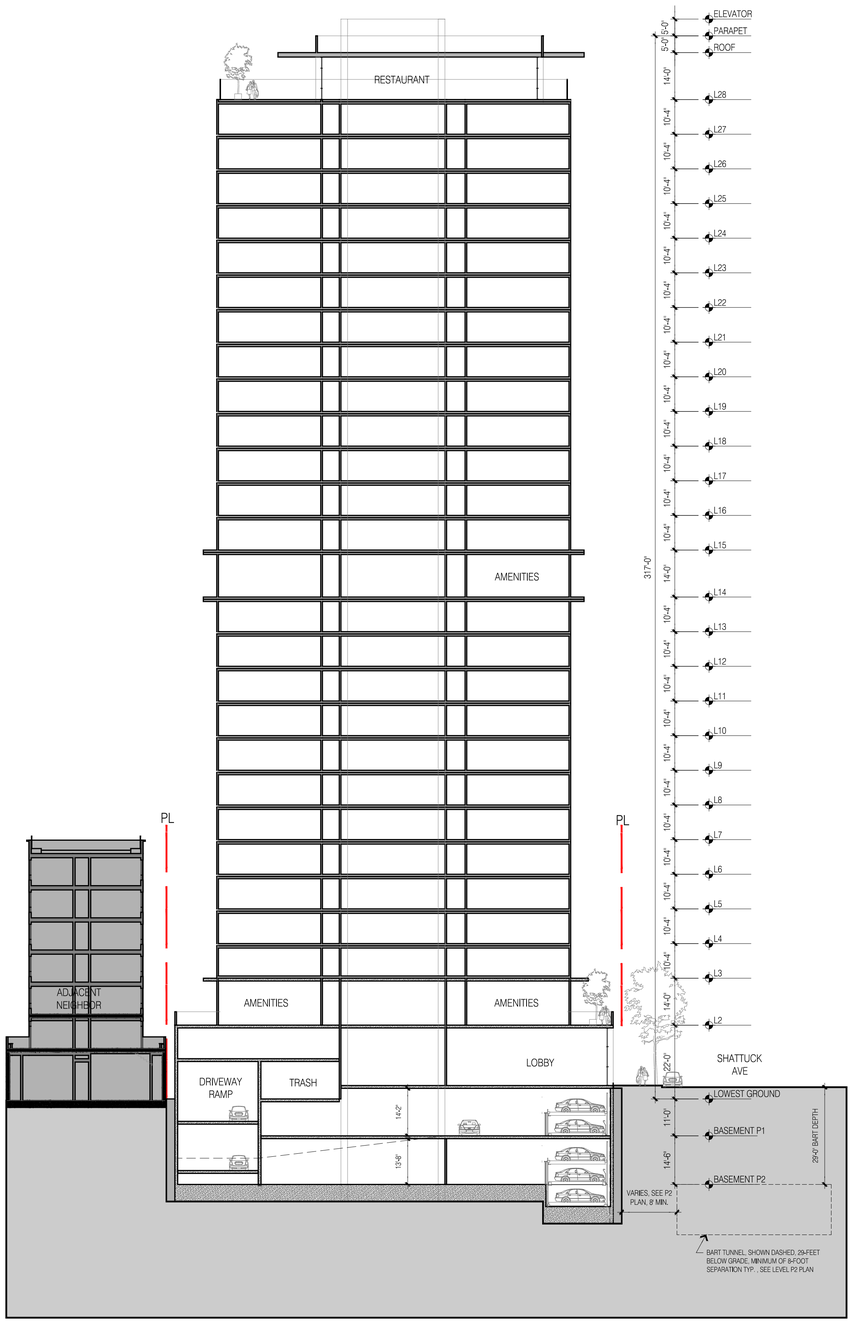
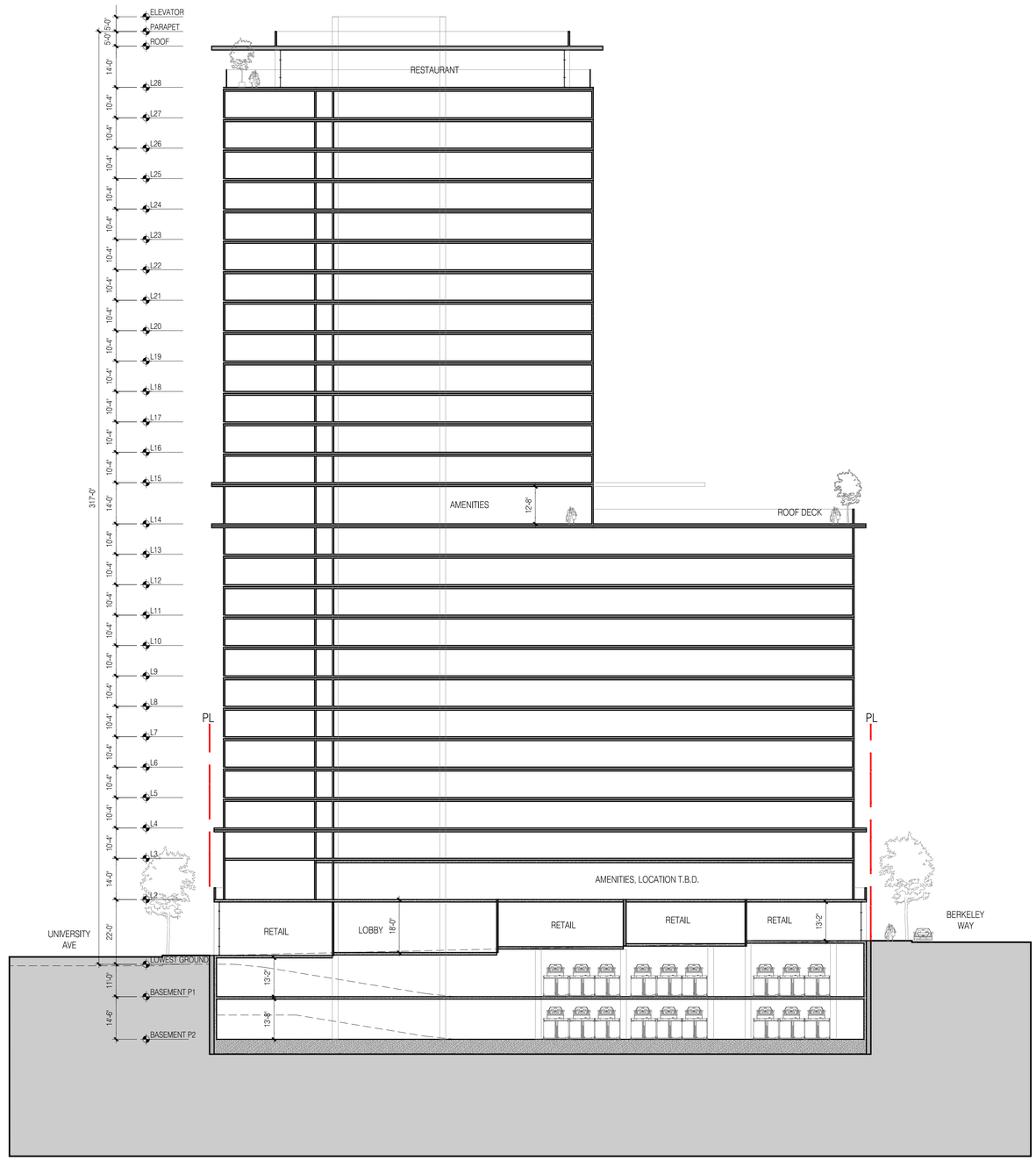
A3.17



2 - SECTION LOOKING NORTH

3/128" = 1'-0" @ 11X17 ·3/64"=1'-0" @ 24x36

0 8 16 32



1 - SECTION LOOKING WEST

3/128" = 1'-0" @ 11X17 ·3/64"=1'-0" @ 24x36

0 8 16 32

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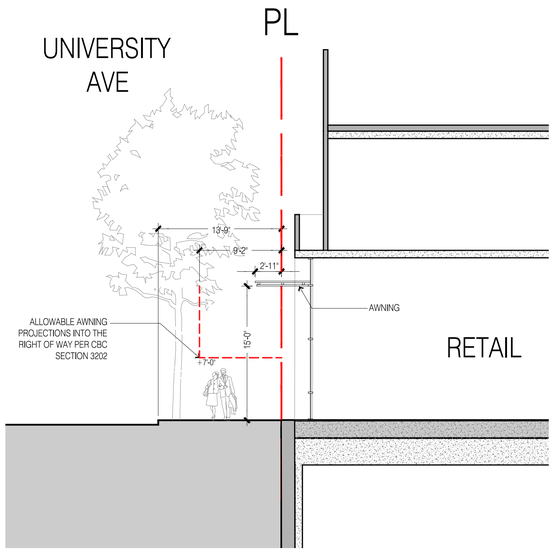
BUILDING SECTIONS

A4.1



2 - SECTION THROUGH UNIVERSITY AVE.
1/8" = 1'-0" -

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AWNING ENCROACHMENT DIAGRAM

A4.2

CUT AND FILL CALCULATIONS

	CUT/FILL AREA	AVERAGE CUT/FILL DEPTH (FT)	TOTAL VOLUME (CY)
PROPOSED BUILDING	23,262	37	31,878

EARTHWORK NOTES:

1. EARTHWORK QUATNITY IS A ROUGH ESTIMATE BASED ON APPROXIMATE DEPTH OF BOTTOM OF BASEMENT PARKING LEVEL.

2. EARTHWORK QUANTITIES DO NOT TAKE INTO ACCOUNT SOIL SHRINKAGE, SOIL SWELLING, TRENCH SPOILS, SITE OVER-EXCAVATION REQUIREMENTS.



1 - CONCEPTUAL GRADING PLAN

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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CONCEPTUAL GRADING PLAN

A5.0

1998 Shattuck — Preliminary Landscape Set

General Notes

1. The contractor shall inspect the site and be familiar with all existing site conditions prior to submitting bid. Contractor shall not willfully proceed with construction as shown when it is obvious that obstructions, landscape area and/or grade differences exist that may not have been known during design. Such conditions shall immediately be brought to the attention of the landscape architect. The contractor shall assume sole responsibility for all necessary revisions due to failure to give such notification. Contractor shall be responsible for making himself familiar with all underground utilities, pipes, structures and obstructions. Contractor shall assume sole responsibility for all costs incurred due to damage and/or replacement of these items. Contractor shall be responsible for coordination among trades and subcontractors as required to accomplish the work. The contractor shall be responsible for any damage to existing features caused by contractor's work. All repairs shall be made at no additional cost to the owner. Planting shall be installed in conformance with all applicable local codes and ordinances by experienced workmen and a licensed landscape contractor who shall obtain all necessary permits and pay all required fees. The garden is a pesticide and herbicide free zone. Contractor shall use organic material to fertilize and to maintain all plant material. No chemical fertilizer will be allowed.Contractor shall verify all grades, existing conditions and dimensions in the field prior to commencing work. All discrepancies or questions shall be brought to the attention of the landscape architect for resolution. Redirect work to avoid delay. All curves and all transitions between curves and straight edges shall be smooth. Take all dimensions perpendicular to any reference line, work line, face of building, face of wall or centerline.

2. Demolition
Contractor shall remove and carry all demolition materials off site. Protect (E) trees as indicated during construction. Contractor shall perform selective trimming of existing trees within the area of work per the direction of the owner.

3. Drainage/Grading
Contractor shall verify if existing drains are in good condition. All drainage systems shall be per City of Berkeley codes. Grade per indicated swales. Sleeving to be Schedule 40 PVC. Cover PVC pipe so that it not visible. All grading to be smooth to achieve a natural aspect. No finish grades shall exceed 2.5:1 slopes.

4. Soil preparation
Soil amendment shall be a minimum of 9 cy of organic compost per 1000 sf (1:4 ratio). The landscape contractor shall be responsible for finish grading and all planting area drainage. Positive drainage away from the building as per city codes shall be maintained. No low spots which hold standing water will be accepted. Where rototilling is not possible, incorporate soil amendments into top 6 inches with hand tools. After installation of irrigation system, all new planting areas are to be fine graded to within 2 inches and slightly mounded away from edges of top of planter, curb, walk, header, etc. and raked smooth with all rocks and debris over 1 inch in diameter removed. Verify existing grades and advice Landscape Architect of any discrepancies prior to start of grading.

5. Topsoil
If any planting areas require the importing of topsoil, the imported soil shall be clean, friable sandy loam; free of noxious weed seeds, sticks, stones over 1 inch in diameter or any materials that could inhibit growth. Incorporate imported topsoil into the top 6-8 inches of site soil by rototilling or hand cultivating as necessary.

6. Substitutions
Requests for substitutions of plant varieties shall be made to the landscape architect within 15 days after signing of contract.

7. Planting
Thoroughly water trees immediately after planting. Shrubs shall be spotted as per plan and the locations approved prior to the digging of the holes. Contractor shall locate and tag all trees at nursery at time of acceptance of contract to ensure availability of healthy specimens. Plant materials to be approved by landscape architect prior to site delivery.

8. Irrigation
The proposed irrigation shall be an automated, water efficient watering system compliant with the City of Berkeley codes & regulations. The contractor shall determine the static water pressure and design the system accordingly to achieve adequate regime for the proposed plantings. The following emitters shall be installed at each planting: (2) 1 gal emitters at each 1 gal sp.; (3) 5 gal. emitters at ea. 5 gal shrub.

9. Mulching
Mulch all planting areas with 3" of 'Forest Floor Bark' from American Soil and Stone, Richmond Ca (510) 292-3000.

10. Stone paving & stone work
See layout plan and detail for sub-base. Install stone paving with tight joints in front and flagstone in stabilized decomposed granite in back as show on sheet L1.0.

11. Concrete work
All concrete retaining walls greater than 3 feet in height shall be designed or reviewed and stamped by a structural engineer. All concrete footings shall be reviewed, approved and stamped by a structural engineer.

12. Electrical
Install light fixtures, conduits and controller per manufacturer recommendation. Locate controller per plan with light switch inside residence. Contractor to supply and install power supply - 2 outlets at outdoor kitchen area. Install power supply for outdoor kitchen equipment .

13. Wood work
All wood decking to match existing wood same size and layout at existing decks for deck extension. All vertical posts to be pressure treated 4x4 wood. SSD for final wood sizing, anchors and concrete footing. See note 14 for painting/staining.

14. Painting
All visible existing & new wood to be painted same color as the main residence, but with a lighter tone. Color to be reviewed & approved by owner/landscape architect.
Paint manufacturer: Sherwin Williams; exterior paint quality "duration" to be applied on all new & existing wood to be painted. Prep all wood surfaces per paint manufacturer's recommendations.

15. Maintenance
The contractor shall maintain the project for 90 days (or as requested by owner) following the approval to begin the maintenance period. During the entire maintenance period, watering, cultivating, weeding, mowing, repair/tightening of stakes and ties, provision of supplemental water by hand in addition to irrigation system as necessary. At the end of the 90 day maintenance period all areas are to be free of weed and all plant material is to be in a healthy, thriving condition.

16. Guarantee
All construction, trees and shrubs by the landscape contractor and/or his subcontractors shall be guaranteed for (1) one year after beginning of maintenance period. The contractor shall replace, at no expense to the owner, any and all landscape materials that are in an unacceptable condition for time of use, and trees or shrubs that are dead or not in a vigorous, healthy growing condition; within two weeks of notification of such condition. Replacement shall be of the same kind and size as the originally specified item and shall be replaced as originally described on the drawings. The contractor shall not be held liable for loss of plant materials during the guarantee period due to vandalism, accidental causes or acts of neglect by others than the contractor, his agents and employees.

17. Clean up
At the end of each work day, at the inspection for substantial completion and before acceptance of project, clean paved areas that are dirtied or stained by construction operations, by sweeping or washing, and remove defacements and stains. Remove construction equipment, excess materials and tools. Haul from owners property the debris resulting from construction, and dispose of legally. Remove remaining temporary protection at time of acceptance by owner unless otherwise agreed.

Project Team

Client
NX Ventures

Architect
Trachtenberg Architects
2421 Fourth Street
Berkeley, CA 94710
510.649.1414

Landscape Architect
InsideOut Design, Inc.
6000 Harwood Ave
Oakland CA 94618
510.655.7674

Contractor
TBD

Location Map



Legend

(PA)	Planting Area
(TS)	Top of stair
(BS)	Bottom of stair
(TW)	Top of wall
(BW)	Bottom of wall
R	Radius
POB	Layout Starting Point
SIM	Similar
(TYP.)	Typical
SAD	See Architectural Drawings
EQ	Equal
O.C.	On Center
(E)	Existing
›	Align
	90 Degrees angle
(824.76)	Existing spot elevation
824.76	Proposed spot elevation
	Existing contour line
	Proposed contour line
	Property line
	Existing retaining wall to be demolished

Sheet Index

L0.0	Cover Sheet
L1.0	Streetscape
L2.0	Podium
L3.0	Roof Deck
L3.1	Usable Open Space + Planting Notes
I0.0	Irr. Notes & Legend
I1.0	Irr. Plan - Street
I2.0	Irr. Plan - Podium
I3.0	Irr. Plan - Roof Deck
I3.1	Irr. Plan - POC
I4.0	Irrigation Details
I5.0	Irrigation Details
I6.0	Irrigation Details
I7.0	Irrigation Details

Plant List

Index	Latin Name	Common Name	Size	WELO	CA Nat.	Notes
Street Trees						
CC	Carpinus caroliniana	American Hornbeam	24" Box	M		University Ave
LC	Lophostemon confertus	Brisbane Box	24" Box	VL, L		Berkeley Way
PA	Platanus acerifolia 'Columbia'	Columbia' London Plane Tree	24" Box	L, M		Shattuck Ave
Trees						
BE	Brahea edulis	Guadalupe Palm	24" Box	L		Roof
BR	Beaucarnea recurvata	Pony Tail Palm	15 Gallon	VL		Roof
CO	Cercis occidentalis	Western Redbud	24" Box	VL	X	Podium FTP
CR	Ceanothus 'Ray Hartman'	Ray Hartman California Lilac	24" Box	L, ES	X	Podium
HG	Heteromeles arbutifolia 'Davis Gold	Davis Gold Toyon	24" Box	VL, L	X	Podium FTP
PR	Phoenix roebelenii	Pygmy Date Palm	24" Box	L		Roof
WF	Washingtonia filifera	California Fan Palm	24" Box	L, ES	X	Roof
Shrubs						
AD*	Agave deserti	Desert Agave	5 Gallon	VL, L	X	Roof
AP	Arctostaphylos pajaroensis 'Paradise	Paradise Pajaro Manzanita	15 Gallon	VL	X	Roof
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	Podium, Street
CF	Comus sericea, C. Stolonifera 'Hedgerow Gc	Hedgerow Gold Redtwig Dogwooc	15 Gallon	M, ES	X	Podium
HW*	Hesperoyucca whipplei	Our Lord's Candle	5 Gallon	VL	X	Roof
OB*	Opuntia basilaris	Prickly Pear	5 Gallon	VL		Roof
SM	Sabal minor	Dwarf Palmetto	15 Gallon	L		Roof
YP*	Yucca pallida	Pale Leaf Yucca	5 Gallon	VL, L, ES		Roof
ZF	Zamia furfuracea	Cardboard Palm	5 Gallon	M		Roof
Groundcovers						
AM	Armeria maritima	Sea Pink	1 Gallon	M	X	Roof
BM	Baileya multiradiata	Desert Marigold	1 Gallon	VL	X	Roof
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	Street
CM	Coreopsis maritima	Sea Dahlia	1 Gallon	L	X	Roof
DF	Dudleya farinosa	Coast Live Forever	1 Gallon	VL	X	Podium
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	Street
Podium FTP** *(1143 sf)*						
AS	Achillea 'Salmon Beauty'	Salmon Beauty Yarrow	1 Gallon	VL, L	X	
BG	Bouteloua gracilis 'Blonde Ambition'	Blonde Ambition Blue Grama	1 Gallon	L	X	
CB	Ceanothus thyrsiflorus 'Cool Blue'	Cool Blue Mountain Lilac	15 Gallon	L	X	
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	
CP	Ceanothus pallidus 'Marie Simon'	Pink Flowering Ceanothus	15 Gallon	VL, L	X	
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	
EF	Eriogonum fasciculatum	California Buckwheat	5 Gallon	VL, L	X	
EG	Elymus glaucus	Blue Wild Rye	1 Gallon	L	X	
ID	Iris douglasiana	Douglas Iris	1 Gallon	M, ES	X	
JE	Juncus effusus	Soft Rush	1 Gallon	VL, H, ES	X	
JP	Juncus patens 'Elk Blue'	Elk Blue California Gray Rush	1 Gallon	L, M, ES	X	
RC	Rudbeckia californica	California Coneflower	1 Gallon	M	X	
SA	Symphoricarpos albus var. laevigatus	Upright Snowberry	5 Gallon	VL, L, M	X	
Podium Grate Walks *(5370 sf)*						
SD	Sedum divergens	Cascade Stonecrop	Flat	L, ES	X	
SO	Sedum oreganum	Oregon Stonecrop	Flat	L, ES	X	
SS	Sedum spathulifolium 'Cape Blanco'	Cape Blanco Sedum	Flat	L	X	

**To be located with 3' min. between edge of mature plant and walkways or planter edges.*
***Species selected per Stormwater C.3 Guidebook (Dalziel et. al.).*

Note: *At least 80% of all plantings will be California natives.*

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JOB: 0000

SHEET:

COVER SHEET,
NOTES, AND LEGEND

L0.0





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LANDSCAPE PLAN
AT STREETSCAPE

L1.0



Permeable grate with groundcover below
- Precedent: ASLA HQ Green Roof
-Mix of 3 shade-tolerant sedums





Maintenance corridor

UNIVERSITY AVE

FTP, typ.
1,306 SF total

Flexible seating

NOTE: FLOW-THROUGH PLANTER AREA TOTALS 1,306 SF; REQUIRED FTP AREA EQUALS MIN 4% OF BUILDING FOOTPRINT'S IMPERVIOUS SURFACE.

BUILDING FOOTPRINT = 26,208 SF
REQUIRED FTP = 26,208 SF X 0.04 = 1,049 SF
PROVIDED FTP = 1,306 SF

Bistro tables

Raised planter with patio trees and wood benches

Low planting in raised flow-through planters (FTPs)

Flowering tree
-'Davis Gold' Toyon

Small trees and accent plantings visible from street

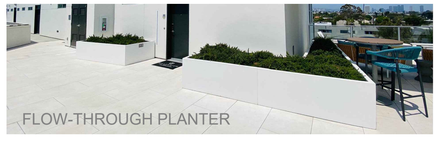
Podium seating overlooks ground-level plaza and parklet at Shattuck Ave

BERKELEY WAY

SHATTUCK AVE


PRECEDENT


VEGETATED GRATE


FLOW-THROUGH PLANTER


FLOWERING TREE

North

3/16"=1'-0"
0 2 4 8

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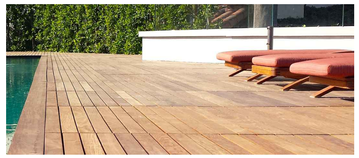
SHEET:

SECOND FLOOR
PODIUM GARDENS

L2.0

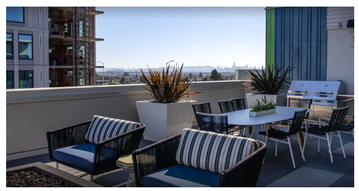


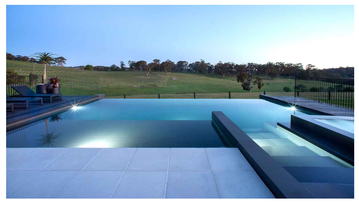


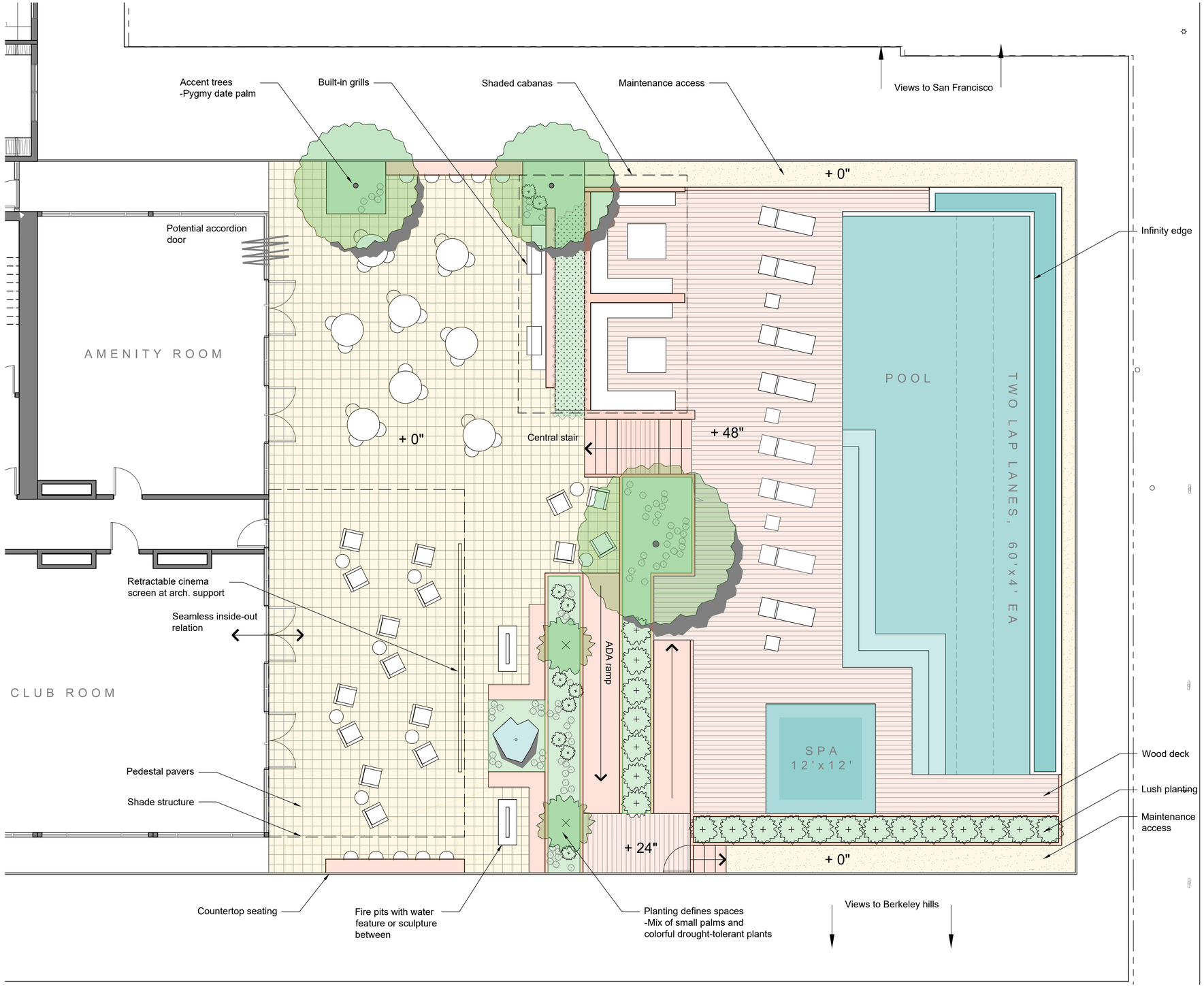












North

3/16"=1'-0"

0 2 4 8

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JOB: 0000

SHEET:

FOURTEENTH
FLOOR ROOF DECK

L3.0

PLANTING NOTES

SEE COVER SHEET L0.0 FOR GENERAL NOTES

GENERAL PLANTING NOTES:

1. SOIL PREPARATION: THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINISH GRADING AND ALL PLANTING AREA DRAINAGE. POSITIVE DRAINAGE AWAY FROM THE BUILDING AS PER CITY CODES SHALL BE MAINTAINED. NO LOW SPOTS WHICH HOLD STANDING WATER WILL BE ACCEPTED.

THE LANDSCAPE CONTRACTOR SHALL INCORPORATE SOIL PREPARATION AMENDMENT INTO PLANTING AREAS AS NOTED BELOW. WHERE ROTO-TILLING IS NOT POSSIBLE, INCORPORATE SOIL AMENDMENTS INTO TOP 6 INCHES WITH HAND TOOLS. AFTER INSTALLATION OF IRRIGATION SYSTEM, ALL PLANTING AREAS ARE TO BE FINE GRADED TO WITHIN 2 INCHES AND SLIGHTLY MOUNDED AWAY FROM EDGES OF TOP OF PLANTER, CURB, WALK, HEADER, ETC. AND RAKED SMOOTH WITH ALL ROCKS AND DEBRIS OVER 1-INCH IN DIAMETER REMOVED.

2. SOIL PREPARATION AMENDMENTS AND BACKFILL MIX: THE LANDSCAPE CONTRACTOR SHALL AMEND EXISTING SOIL PER THE SOILS REPORT. NATIVE SOIL IS PREFERRED.

3. TREE PLANTING: TREES SHALL BE PLANTED PER DETAIL ON PLAN. TREES SHALL TYPICALLY BE LOCATED A MINIMUM OF 3 1/2 FEET FROM CURBS, WALKS, HEADERS, BUILDINGS, AND OVERHEAD STRUCTURES WITHIN THE PROJECT. BACKFILL PER SOILS REPORT. THOROUGHLY WATER TREES IMMEDIATELY AFTER PLANTING.

4. SHRUB PLANTING: THE SHRUBS SHALL BE SPOTTED AS PER PLAN, SPOTTED AT THE SHOWN LOCATIONS, AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO THE DIGGING OF THE HOLES. SHRUB BACKFILL SHALL BE PER SOILS REPORT. THOROUGHLY WATER SHRUBS IMMEDIATELY AFTER PLANTING. DO NOT PLANT ANY SHRUB WITHIN 2 FEET OF ANY BUILDING WALL.

5. MAINTENANCE: THE CONTRACTOR SHALL MAINTAIN THE PROJECT FOR 90 DAYS (OR AS REQUESTED BY OWNER) FOLLOWING THE APPROVAL TO BEGIN THE MAINTENANCE PERIOD. DURING THE ENTIRE MAINTENANCE PERIOD, WATERING, CULTIVATING, WEEDING, MOWING, REPAIR/TIGHTENING OF STAKES AND TIES, RESTORATION OF BASINS, PROVISION OF SUPPLEMENTAL WATER BY HAND IN ADDITION TO IRRIGATION SYSTEM IS REQUIRED AS NECESSARY. NO PRE-EMERGENCE HERBICIDES SHALL BE APPLIED - HAND REMOVE WEEDS. ONLY ORGANIC FERTILIZERS SHALL BE APPLIED SUCH AS THOSE SPECIFIED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. AT THE END OF THE 90 DAY MAINTENANCE PERIOD ALL AREAS ARE TO BE WEED FREE AND ALL PLANT MATERIAL SHALL BE IN A HEALTHY, THRIVING CONDITION. INTEGRATED PEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED.

6. SUBSTITUTIONS: REQUESTS FOR PLANT SUBSTITUTIONS SHALL BE MADE TO THE LANDSCAPE ARCHITECT WITHIN 15 DAYS AFTER SIGNING OF CONTRACT.

7. GUARANTEE: ALL CONSTRUCTION, TREES AND SHRUBS BY THE LANDSCAPE CONTRACTOR AND/OR SUBCONTRACTORS SHALL BE GUARANTEED FOR (1) ONE YEAR AFTER START OF MAINTENANCE PERIOD. THE CONTRACTOR SHALL REPLACE, AT NO EXPENSE TO THE OWNER, ANY AND ALL LANDSCAPE MATERIALS THAT ARE IN AN UNACCEPTABLE CONDITION FOR TIME OF USE, AND TREES OR SHRUBS THAT ARE DEAD OR NOT IN A VIGOROUS, HEALTHY GROWING CONDITION, WITHIN TWO WEEKS OF NOTIFICATION OF SUCH CONDITION. REPLACEMENT SHALL BE OF THE SAME KIND AND SIZE AS THE ORIGINALLY SPECIFIED ITEM AND SHALL BE REPLACED AS ORIGINALLY DESCRIBED ON THE DRAWINGS. THE CONTRACTOR SHALL NOT BE HELD LIABLE FOR LOSS OF PLANT MATERIALS DURING THE GUARANTEE PERIOD DUE TO VANDALISM, ACCIDENTAL CAUSES OR ACTS OF NEGLECT BY OTHERS THAN THE CONTRACTOR, HIS AGENTS AND EMPLOYEES.

8. CLEAN UP: AT THE END OF EACH WORK DAY, AT THE INSPECTION FOR SUBSTANTIAL COMPLETION, AND BEFORE ACCEPTANCE OF PROJECT - CLEAN

PAVED AREAS THAT ARE DIRTIED OR STAINED BY CONSTRUCTION OPERATIONS BY SWEEPING OR WASHING, AND REMOVE DEFACEMENTS AND STAINS.

REMOVE CONSTRUCTION EQUIPMENT, EXCESS MATERIALS AND TOOLS. HAUL FROM OWNERS PROPERTY ANY DEBRIS RESULTING FROM CONSTRUCTION, AND DISPOSE OF IT LEGALLY. REMOVE REMAINING TEMPORARY PROTECTION AT TIME OF ACCEPTANCE BY OWNER UNLESS OTHERWISE AGREED.

9. FERTILIZERS: AVAILABLE FROM CALIFORNIA ORGANIC FERTILIZERS, INC. 1-800-269-5690 WWW.ORGANICAG.COM.

STREET TREE PROTECTION NOTES:

1. ALL TREE PROTECTION REQUIREMENTS AND RESTRICTIONS SHALL BE INCLUDED IN THE CONSTRUCTION NOTES AND PRINTED ON ALL COPIES OF THE PLANS.

a) INCLUDE THE NAME AND PHONE NUMBER OF THE PARTY THAT WILL MONITOR THE SITE AND ENSURE THE TREE PROTECTION MEASURES ARE BEING FOLLOWED; AND WHAT THE MONITORING SCHEDULE WILL BE: **NAME / PHONE / SCHEDULE**

b) INSTALL 6 FOOT CHAIN-LINK FENCING TO PROTECT THE AREA WITHIN THE DRIP-LINE OF ANY PROTECTED TREE IN THE DEVELOPMENT AREA. FENCING SHALL BE MOUNTED TO POSTS THAT ARE DRIVEN INTO THE GROUND. WHERE THIS IS NOT POSSIBLE BECAUSE OF EXISTING STRUCTURES, TREE ROOTS, OR OTHER OBSTACLES, CHAIN-LINK PANELS MOUNTED TO STANCHIONS AND CONNECTED TO EACH OTHER MAY BE APPROVED. IN AREAS WHERE DIFFICULT TERRAIN MAKES THIS IMPRACTICAL, ORANGE CONSTRUCTION FENCING MAY BE APPROVED.

c) ALL FENCING SHALL HAVE SIGNAGE STATING THE REQUIREMENTS AND RESTRICTIONS, AND THE CONTACT INFORMATION FOR THE PROJECT ARBORIST.

d) WHEN ANY APPROVED CONSTRUCTION ACTIVITY WILL OCCUR WITHIN THE DRIP LINE OF A PROTECTED TREE THAT IS NOT SURROUNDED BY PROTECTIVE FENCING, THE TRUNK SHALL BE PROTECTED BY WRAPPING IT WITH STRAW TUBES (WATTLE) OR VERTICAL WOOD SLATS (EX. 2X4), UP TO A MINIMUM OF 8 FEET FROM GRADE (SEE FIGURE 1, PAGE 6). SLATS SHALL BE ANGLED TO PROTECT THE ROOT FLARE AT THE BASE OF THE TREE; AND CLOSED CELL FOAM OR EQUIVALENT MATERIAL SHALL BE USED TO PROTECT THE TRUNK OF THE TREE WHERE IT CONTACTS THE SLATS. LATERAL BRANCHES BELOW 8 FEET SHALL ALSO BE PROTECTED. IN ADDITION, THE AREA SHALL BE COVERED WITH A 6 INCH LAYER OF MULCH TOPPED WITH 3/4 INCH PLYWOOD THAT IS FASTENED TOGETHER. IF ANY LARGE OR MOTORIZED EQUIPMENT (MINI EXCAVATOR, BOBCAT®, POWERED WHEELBARROW) WILL TRAVEL OVER THIS AREA, THE PLYWOOD MUST BE A MINIMUM OF 1 INCH AND ADEQUATE FOR THE WEIGHT OF THE EQUIPMENT THAT WILL TRAVEL OVER IT. IF LARGER EQUIPMENT (BACKHOE, TRACTOR) WILL BE USED, CONSULT THE CITY ARBORIST. ***CONSTRUCTION ACTIVITY REFERS TO ANY MOVEMENT OF PEOPLE, TOOLS, OR EQUIPMENT; OR STORAGE OF ANY TOOLS, EQUIPMENT, OR SUPPLIES.***

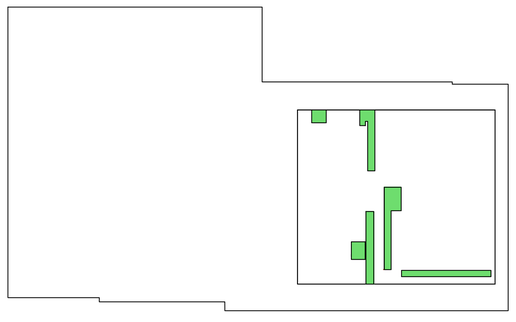
f) LOCATE AND EXPOSE ANY ROOTS 2 INCHES IN DIAMETER OR GREATER THAT MAY NEED TO BE PRUNED TO FACILITATE THE PROJECT. THIS INCLUDES ANY TRENCHING THAT WILL BE DONE AS PART OF FOUNDATION OR UTILITY INSTALLATION. CONTACT THE CITY ARBORIST IN ADVANCE TO LESSEN THE AMOUNT OF TIME THAT THE ROOTS WILL BE EXPOSED. IF ROOTS MUST BE LEFT EXPOSED FOR MORE THAN THREE DAYS, CONSULT THE CITY ARBORIST. **NOTE:** THE 2 INCH DIAMETER THRESHOLD FOR ROOTS IS A GUIDELINE THAT MAY BE ADJUSTED BY THE CITY ARBORIST DEPENDING ON THE SIZE AND CONDITION OF THE TREE, AND THE LOCATION OF THE ROOTS. THE CITY ARBORIST MAY INCREASE THE TPZ, OR IMPOSE OTHER RESTRICTIONS, WHEN THE DRIPLINE OF A TREE HAS BEEN ALTERED BY PRUNING OR UNUSUAL GROWTH PATTERNS.

g) NO STORAGE OF BUILDING MATERIALS, REFUSE, EXCAVATED SPOILS, OR DUMPING OF POISONOUS MATERIALS, IS PERMITTED WITHIN THE DRIP LINE OF ANY PROTECTED TREE. POISONOUS MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, PAINT, PETROLEUM PRODUCTS, CONCRETE OR STUCCO MIX, DIRTY WATER, OR ANY OTHER MATERIAL WHICH MAY BE DELETERIOUS TO TREE HEALTH.

STREET TREE PLANTING NOTES:

1. FOR NEW PLANTING:
   a. THE CITY ARBORIST SHALL BE NOTIFIED, BY CALLING (510) 981-6660, PRIOR TO THE DELIVERY OF THE TREES FOR INSPECTION OF THEIR SIZE AND STRUCTURE.
   b. EACH TREE SHALL BE PROPERLY PLANTED AT OR JUST BELOW GRADE (<1"). SOIL AMENDMENT IS NOT RECOMMENDED, AND NATIVE SOIL IS PREFERRED. NO CONSTRUCTION RUBBLE OR NON-ORGANIC MATERIAL SHALL BE WITHIN THE TREE WELL.
   c. THE SURROUNDING SOIL OUTSIDE THE CONTAINER (ROOT BALL) SHOULD BE LIGHTLY COMPACTED TO ABOUT 4 INCHES BELOW GRADE WITH THE ROOT BALL HIGHER THAN THAT.
   d. 2 TO 2.5 INCHES OF BASE ROCK SHOULD BE APPLIED AROUND THE ROOT BALL LEAVING 1.5 TO 2 INCHES LEFT FOR THE MATERIAL.
   e. 15G CONTAINERS ARE APPROXIMATELY 15-16 INCHES IN DIAMETER AND THE MATERIAL SHOULD BE APPLIED TO THE APPROXIMATE EDGE OF THE ROOT BALL WITH THE TOP GRADE OF THE ROOT BALL UP TO 1 INCH BELOW THE TOP OF THE MATERIAL THAT WILL BE APPLIED.
   f. EACH NEW TREE SHALL HAVE AUTOMATIC IRRIGATION INCLUDING TWO TREE BUBBLERS THAT CURVE OVER THE TOP OF THE TREES' ROOT BALL AND PROVIDE A MINIMUM OF 20 GALLONS PER WEEK BETWEEN MARCH 15 AND OCTOBER 15 FOR THE FIRST THREE YEARS. LARGER TREES MAY REQUIRE ADDITIONAL BUBBLERS. THE BUBBLERS SHOULD BE LOCATED ON TOP OF THE ROOT BALL WITHIN THIS 15-16 INCH CIRCLE AND NOT BE COVERED WITH MATERIAL.
   g. TREES THAT DIE WITHIN THE FIRST THREE YEARS MUST BE REPLACED AT THE PROPERTY OWNER'S EXPENSE.

USEABLE OPEN SPACE CALCULATIONS



ROOF DECK TOTAL USABLE AREA = 6,882 SF

(ROOF DECK HARDSCAPED = 6,297 SF)

ROOF DECK LANDSCAPED = 585 SF

ROOF DECK LANDSCAPED % = 9%

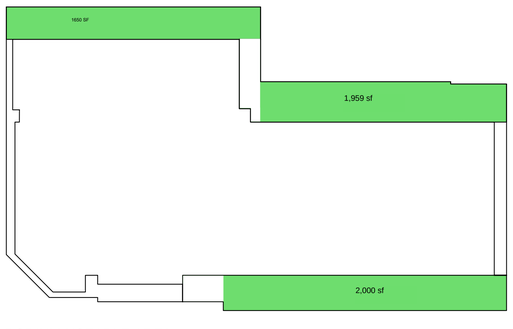
ROOF DECK USEABLE AREA (NTS)

1998 SHATTUCK TOTAL USABLE AREA = 12,491 sf

(TOTAL HARDSCAPED AREA = 6,297 SF)

TOTAL LANDSCAPED AREA = 6,735 SF

TOTAL LANDSCAPED AREA % = 54%



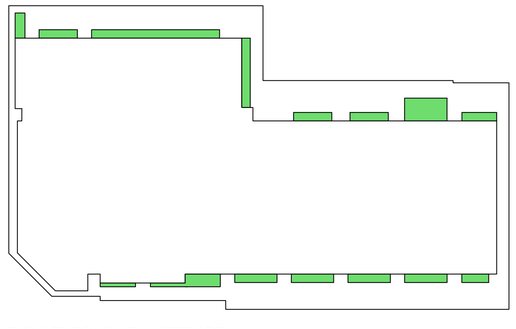
PODIUM TOTAL USABLE AREA = 5,609 sf

(PODIUM HARDSCAPED = 0 SF)

PODIUM LANDSCAPED = 5,609 sf

PODIUM LANDSCAPED % = 100%

PODIUM USEABLE AREA (NTS)



1998 SHATTUCK TOTAL ROOF AREA = 26,208 SF

4% FLOW-THROUGH PLANTER AREA NEEDED = 1,049 SF

CURRENT FLOW-THROUGH PLANTER AREA = 1,306 SF
(AT PODIUM)

FLOW-THROUGH PLANTER AREA (NTS)

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06.23.2023 ZONING RESUBMITTAL
11.15.2023 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL
01.16.2025 PRELIM DRC HEARING SET
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JOB: 0000

SHEET:

USABLE OPEN SPACE CALCULATIONS + PLANTING NOTES

L3.1

IRRIGATION NOTES

1. THESE IRRIGATION DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. ALL PIPING, VALVES, AND OTHER IRRIGATION COMPONENTS MAY BE SHOWN WITHIN PAVED AREAS FOR GRAPHIC CLARITY ONLY AND ARE TO BE INSTALLED WITHIN PLANTING AREAS. DUE TO THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, SLEEVES, CONDUIT, AND OTHER ITEMS WHICH MAY BE REQUIRED. INVESTIGATE THE STRUCTURAL AND FINISHED CONDITION AFFECTING THE CONTRACT WORK INCLUDING OBSTRUCTIONS, GRADE DIFFERENCES OR AREA DIMENSIONAL DIFFERENCES. IN THE EVENT OF FIELD DISCREPANCY WITH CONTRACT DOCUMENTS, PLAN THE INSTALLATION WORK ACCORDINGLY BY NOTIFICATION AND APPROVAL OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND ACCORDING TO THE CONTRACT SPECIFICATIONS. NOTIFY AND COORDINATE IRRIGATION CONTRACT WORK WITH APPLICABLE CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE, CONDUIT OR SLEEVES THROUGH OR UNDER WALLS, ROADWAYS, PAVING AND STRUCTURES BEFORE CONSTRUCTION. IN THE EVENT THESE NOTIFICATIONS ARE NOT PERFORMED, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR REQUIRED REVISIONS.

2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE; THE UNIFORM PLUMBING CODE, PUBLISHED BY THE WESTERN PLUMBING OFFICIALS ASSOCIATION; AND OTHER STATE OR LOCAL LAWS OR REGULATIONS. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR REGULATIONS. THE CONTRACTOR SHALL FURNISH WITHOUT ANY EXTRA CHARGE, ANY ADDITIONAL MATERIAL AND LABOR WHEN REQUIRED BY THE COMPLIANCE WITH THESE CODES AND REGULATIONS.

3. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF IRRIGATION SYSTEM WITH LAYOUT AND INSTALLATION OF THE PLANT MATERIALS TO INSURE THAT THERE WILL BE COMPLETE AND UNIFORM IRRIGATION COVERAGE OF PLANTING IN ACCORDANCE WITH THESE DRAWINGS, AND CONTRACT DOCUMENTS. THE IRRIGATION LAYOUT SHALL BE CHECKED BY THE CONTRACTOR AND OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO CONSTRUCTION TO DETERMINE IF ANY CHANGES, DELETIONS, OR ADDITIONS ARE REQUIRED. IRRIGATION SYSTEM SHALL BE INSTALLED AND TESTED PRIOR TO INSTALLATION OF PLANT MATERIAL.

4. THE INTENT OF THIS IRRIGATION SYSTEM IS TO PROVIDE THE MINIMUM AMOUNT OF WATER REQUIRED TO SUSTAIN GOOD PLANT HEALTH.

5. IT IS THE RESPONSIBILITY OF THE MAINTENANCE CONTRACTOR AND/OR OWNER TO PROGRAM THE IRRIGATION CONTROLLER(S) TO PROVIDE THE MINIMUM AMOUNT OF WATER NEEDED TO SUSTAIN GOOD PLANT HEALTH. THIS INCLUDES MAKING ADJUSTMENTS TO THE PROGRAM FOR SEASONAL WEATHER CHANGES, PLANT MATERIAL, WATER REQUIREMENTS, MOUNDS, SLOPES, SUN, SHADE AND WIND EXPOSURE.

6. IT IS THE RESPONSIBILITY OF A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120 VOLT A.C. (2.5 AMP DEMAND PER CONTROLLER) ELECTRICAL SERVICE TO THE CONTROLLER LOCATION(S). IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO COORDINATE THE ELECTRICAL SERVICE STUB-OUT TO THE CONTROLLER(S). PROVIDE PROPER GROUNDING PER CONTROLLER MANUFACTURER'S INSTRUCTIONS AND IN ACCORDANCE WITH LOCAL CODES.

7. PROVIDE EACH CONTROLLER WITH ITS OWN GROUND ROD. SEPARATE THE GROUND RODS BY A MINIMUM OF EIGHT FEET. THE GROUND ROD SHALL BE AN EIGHT FOOT LONG BY 5/8" DIAMETER U.L. APPROVED COPPER CLAD ROD. INSTALL NO MORE THAN 6" OF THE GROUND ROD ABOVE FINISH GRADE. CONNECT #6 GAUGE WIRE WITH A U.L. APPROVED GROUND ROD CLAMP TO ROD AND BACK TO GROUND SCREW AT BASE OF CONTROLLER WITH APPROPRIATE CONNECTOR. MAKE THIS WIRE AS SHORT AS POSSIBLE, AVOIDING KINKS OR BENDING.

8. INSTALL NEW BATTERIES IN THE IRRIGATION CONTROLLER(S) TO RETAIN PROGRAM IN MEMORY DURING TEMPORARY POWER FAILURES. USE QUANTITY, TYPE AND SIZE REQUIRED AS PER CONTROLLER MANUFACTURER'S INSTRUCTIONS.

9. SCHEDULE A MEETING WHICH INCLUDES REPRESENTATIVES OF THE IRRIGATION CONTROLLER MANUFACTURER, THE MAINTENANCE CONTRACTOR, THE OWNER AND THE IRRIGATION CONTRACTOR AT THE SITE FOR INSTRUCTION ON THE PROPER PROGRAMMING AND OPERATION OF THE IRRIGATION CONTROLLER.

10. PROVIDE EACH IRRIGATION CONTROLLER WITH ITS OWN INDEPENDENT LOW VOLTAGE COMMON GROUND WIRE.

11. IRRIGATION CONTROL WIRES: SOLID COPPER WITH U.L. APPROVAL FOR DIRECT BURIAL IN GROUND. COMMON GROUND WIRE: SIZE #12-1 WIRE WITH A WHITE INSULATING JACKET. CONTROL WIRE SERVICING REMOTE CONTROL VALVES: SIZE #14-1 WIRE WITH INSULATING JACKET OF COLOR OTHER THAN WHITE. SPLICES SHALL BE MADE WITH 3M-DBY SEAL PACKS OR APPROVED EQUAL.

12. INSTALL TWO SPARE CONTROL WIRES OF A DIFFERENT COLOR ALONG THE ENTIRE MAIN LINE. LOOP 36" EXCESS WIRE INTO EACH SINGLE VALVE BOX AND INTO ONE VALVE BOX IN EACH GROUP OF VALVES.

13. SPLICING OF LOW VOLTAGE WIRES IS PERMITTED IN VALVE BOXES ONLY. LEAVE A 36" LONG, 1" DIAMETER COIL OF EXCESS WIRE AT EACH SPLICE AND A 36" LONG EXPANSION LOOP EVERY 100 FEET ALONG WIRE RUN. TAPE WIRES TOGETHER EVERY TEN FEET. DO NOT TAPE WIRES TOGETHER WHERE CONTAINED WITHIN SLEEVING OR CONDUIT.

14. INSTALL GREEN PLASTIC VALVE BOXES WITH BOLT DOWN, NON HINGED COVER MARKED "IRRIGATION CONTROL VALVE". BOX BODY SHALL HAVE KNOCK OUTS. ACCEPTABLE VALVE BOX MANUFACTURER'S INCLUDE NDS, CARSON OR APPROVED EQUAL.

15. INSTALL REMOTE CONTROL VALVE BOXES 12" FROM WALK, CURB, BUILDING OR LANDSCAPE FEATURE. AT MULTIPLE VALVE BOX GROUPS, INSTALL EACH BOX AN EQUAL DISTANCE FROM THE WALK, CURB, BUILDING OR LANDSCAPE FEATURE AND PROVIDE 12" BETWEEN BOX TOPS. ALIGN THE SHORT SIDE OF RECTANGULAR VALVE BOXES PARALLEL TO WALK, CURB, BUILDING OR LANDSCAPE FEATURE.

16. VALVE LOCATIONS SHOWN ARE DIAGRAMMATIC. INSTALL IN GROUND COVER/SHRUB AREAS (AVOID LAWN AREAS WHERE POSSIBLE).

17. THE CONTRACTOR SHALL LABEL CONTROL LINE WIRE AT EACH REMOTE CONTROL VALVE WITH A 2 1/4" X 2 3/4" POLYURETHANE I.D. TAG, INDICATING IDENTIFICATION NUMBER OF VALVE (CONTROLLER AND STATION NUMBER). ATTACH LABEL TO CONTROL WIRE. THE CONTRACTOR SHALL PERMANENTLY STAMP ALL VALVE BOX LIDS WITH APPROPRIATE IDENTIFICATION AS NOTED IN CONSTRUCTION DETAILS.

18. FLUSH AND ADJUST IRRIGATION OUTLETS AND NOZZLES FOR OPTIMUM PERFORMANCE AND TO PREVENT OVER SPRAY ONTO WALKS, ROADWAYS, AND/OR BUILDINGS. SELECT THE BEST DEGREE OF THE ARC AND RADIUS TO FIT THE EXISTING SITE CONDITIONS AND THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH CONTROL ZONE.

19. SET SPRINKLER HEADS PERPENDICULAR TO FINISH GRADE.

20. LOCATE BUBBLERS ON UPHILL SIDE OF PLANT OR TREE.

21. INSTALL A HUNTER HCV SERIES, KBI CV SERIES, OR APPROVED EQUAL SPRING LOADED CHECK VALVE IN SPRINKLER RISER ASSEMBLIES WHERE LOW OUTLET DRAINAGE WILL CAUSE EROSION AND/OR EXCESS WATER.

22. WHERE IT IS NECESSARY TO EXCAVATE ADJACENT TO EXISTING TREES, USE CAUTION TO AVOID INJURY TO TREES AND TREE ROOTS. EXCAVATE BY HAND IN AREAS WHERE TWO (2) INCH AND LARGER ROOTS OCCUR. BACK FILL TRENCHES ADJACENT TO TREE WITHIN TWENTY-FOUR (24) HOURS. WHERE THIS IS NOT POSSIBLE, SHADE THE SIDE OF THE TRENCH ADJACENT TO THE TREE WITH WET BURLAP OR CANVAS.

23. NOTIFY LOCAL JURISDICTIONS FOR INSPECTION AND TESTING OF INSTALLED BACKFLOW PREVENTION DEVICE.

24. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE SHOWN ON THE IRRIGATION DRAWINGS. VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE.

25. IRRIGATION DEMAND: REFER TO PLANS.

26. THE EXISTING MAIN LINE SHOWN ON THE DRAWINGS IS DIAGRAMMATIC. VERIFY AND LOCATE EXISTING MAIN LINE IN FIELD. REPORT TO ARCHITECT IN WRITING ANY DEVIATION OF EXISTING MAIN LINE LOCATION FROM THAT SHOWN ON THE DRAWINGS.

27. PIPE SIZING SHOWN ON THE DRAWINGS IS TYPICAL. AS CHANGES IN LAYOUT OCCUR DURING STAKING AND CONSTRUCTION THE SIZE MAY NEED TO BE ADJUSTED ACCORDINGLY.

28. PIPE THREAD SEALANT COMPOUND SHALL BE RECTOR SEAL #5.

29. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MINOR CHANGES IN THE IRRIGATION LAYOUT DUE TO OBSTRUCTIONS NOT SHOWN ON THE IRRIGATION DRAWINGS SUCH AS LIGHTS, FIRE HYDRANTS, SIGNS, ELECTRICAL ENCLOSURES, ETC.

30. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CHANGES IN THE IRRIGATION LAYOUT AND VALVE ZONING DUE TO VARIATIONS IN THE EXISTING SITE CONDITIONS SUCH AS EXPOSURE FROM BUILDINGS, TRELLISES, TREES, ETC., AS WELL AS SLOPE AND SOIL CONDITIONS. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND IRRIGATION CONSULTANT OF THE PROPOSED CHANGES PRIOR TO INSTALLATION FOR APPROVAL.

31. WHEN WORK OF THIS SECTION HAS BEEN COMPLETED AND SUCH OTHER TIMES AS MAY BE DIRECTED, REMOVE ALL TRASH, DEBRIS, SURPLUS MATERIALS AND EQUIPMENT FROM SITE.

32. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLEMENTAL HAND WATERING OF ALL PLANT MATERIAL WITHIN DRIPLINE AREAS UNTIL THE PLANTS ARE SUFFICIENTLY ESTABLISHED.

33. VERIFY LOCATIONS OF ALL IRRIGATION COMPONENTS INSTALLED WITHIN A VALVE BOX WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. DO NOT INSTALL UNTIL LANDSCAPE ARCHITECT PROVIDES ACCEPTABLE LOCATIONS.

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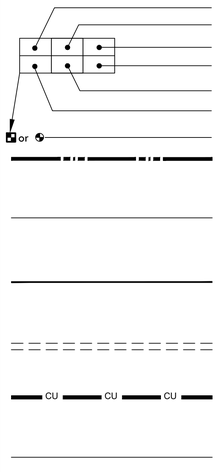
2760 Camino Diablo
Walnut Creek, CA 94597
tel 925.939.3985 ♦ fax 925.932.5671
www.rmairrigation.com

IRRIGATION LEGEND

SYMBOL	MODEL NUMBER	DESCRIPTION	NOZZLE GPM	OPERATING PSI	OPERATING RADIUS (FEET)
	PCB-25	HUNTER BUBBLER (SHRUB)	0.25	30	TRICKLE
	PCB-25	HUNTER BUBBLER (TREE) MIN. 2 PER TREE. REFER TO BUBBLER DETAIL FOR QUANTITY OF BUBBLERS PER TREE SIZE.	0.25	30	TRICKLE
	WLT-0500-T	NDS SCH 40 BALL VALVE OR APPROVED EQUAL			
	ECO-ID	HUNTER ECO-INDICATOR			
	ICV-101/AS-40	HUNTER REMOTE CONTROL VALVE WITH 40 PSI PRESSURE REGULATOR			
	ICZ-101-40	HUNTER REMOTE CONTROL VALVE WITH A 40 PSI PRESSURE REGULATOR AND A 1" FILTER.			
	QB44RCAR10	BUCKNER 1" TWO-PIECE QUICK COUPLING VALVE (ANTI-ROTATION)			
	T-FP600A-LF-1"	NIBCO 1" BRASS BALL VALVE			
MV	WT-MV-100G-SNO	WeatherTRAK 1" BRASS MASTER VALVE (NORMALLY OPEN)			
FS	WTFLOW-HD-P-100	WeatherTRAK 1" FLOW SENSOR			
	975XL2SEU-1"	WILKINS REDUCED PRESSURE BACKFLOW ASSEMBL.			
SM	MODEL 55	BADGER SUB WATER METER			
A	WTLC-C-12-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 12 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			
B	WTLC-C-6-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 6 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			



CONTROLLER AND STATION NUMBER
REMOTE CONTROL VALVE SIZE (IN INCHES)
FLOW (GPM)
WATER USE CLASSIFICATION OF ZONE
APPLICATION RATE (IN/HR) or DRIPLINE SPACING
AREA (SQ. FT.)
ASSOCIATED REMOTE CONTROL VALVE

MAIN LINE: 1.25" THROUGHOUT: 1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 18" COVER.

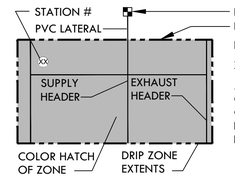
LATERAL LINE: 3/4" AND LARGER: 1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

DRIPLINE LATERAL LINE: 3/4" AND LARGER: 1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

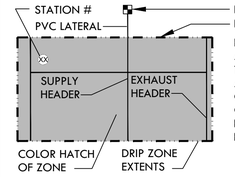
SLEEVING: SCHEDULE 40 PVC PLASTIC PIPE. COVER TO BE AS INDICATED IN SPECIFICATIONS OR AS INDICATED ABOVE FOR PIPE DEPTH OF COVER.

MAIN LINE: 1.25" THROUGHOUT: TYPE 'K' COPPER PIPE WITH WROUGHT FITTINGS. SHOWN FOR REFERENCE ONLY, SEE PLUMBING PLANS FOR ROUTING THROUGH STRUCTURE.

ELECTRICAL CONDUIT: SHOWN FOR REFERENCE ONLY, SEE ELECTRICAL PLANS FOR ROUTING THROUGH STRUCTURE.



DRIPLINE REMOTE CONTROL VALVE
DRIP ZONE:
HUNTER HDL SERIES DRIPLINE WITH BUILT IN PRESSURE COMPENSATION AND CHECK VALVE, PART #HDL-06-12-250-CV. USE PLD FITTINGS. TUBING TO BE INSTALLED 4" BELOW GRADE IN A 12" O.C. GRID ACCORDING TO DETAILS. SIZE EXHAUST HEADERS AS FOLLOWS: 1": 0-10 GPM, 1.25": 11-20 GPM. ALL EXHAUST HEADERS SHALL BE 1" SCH 40 PVC OR 1" SCH 40 FLEXIBLE PVC. USE SCH. 40 PVC SOLVENT WELD FITTINGS. EXTEND PVC HEADERS TO THE ENDS OF ALL DRIP ZONES TO BALANCE FLOW IF REQUIRED. SEE DETAILS FOR FURTHER INFORMATION.



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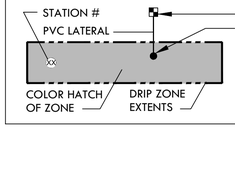

DRIPLINE REMOTE CONTROL VALVE
APPROXIMATE CONNECTION POINT BETWEEN DRIPLINE TUBING AND PVC SUPPLY WHEN DRIP ZONE IS LESS THAN 3 GPM AND NO PVC SUPPLY/EXHUST HEADERS ARE NEEDED. REFER TO DRIPLINE TUBING CONNECTION DETAIL FOR MORE INFORMATION.

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SHEET:

IRRIGATION
NOTES & LEGEND

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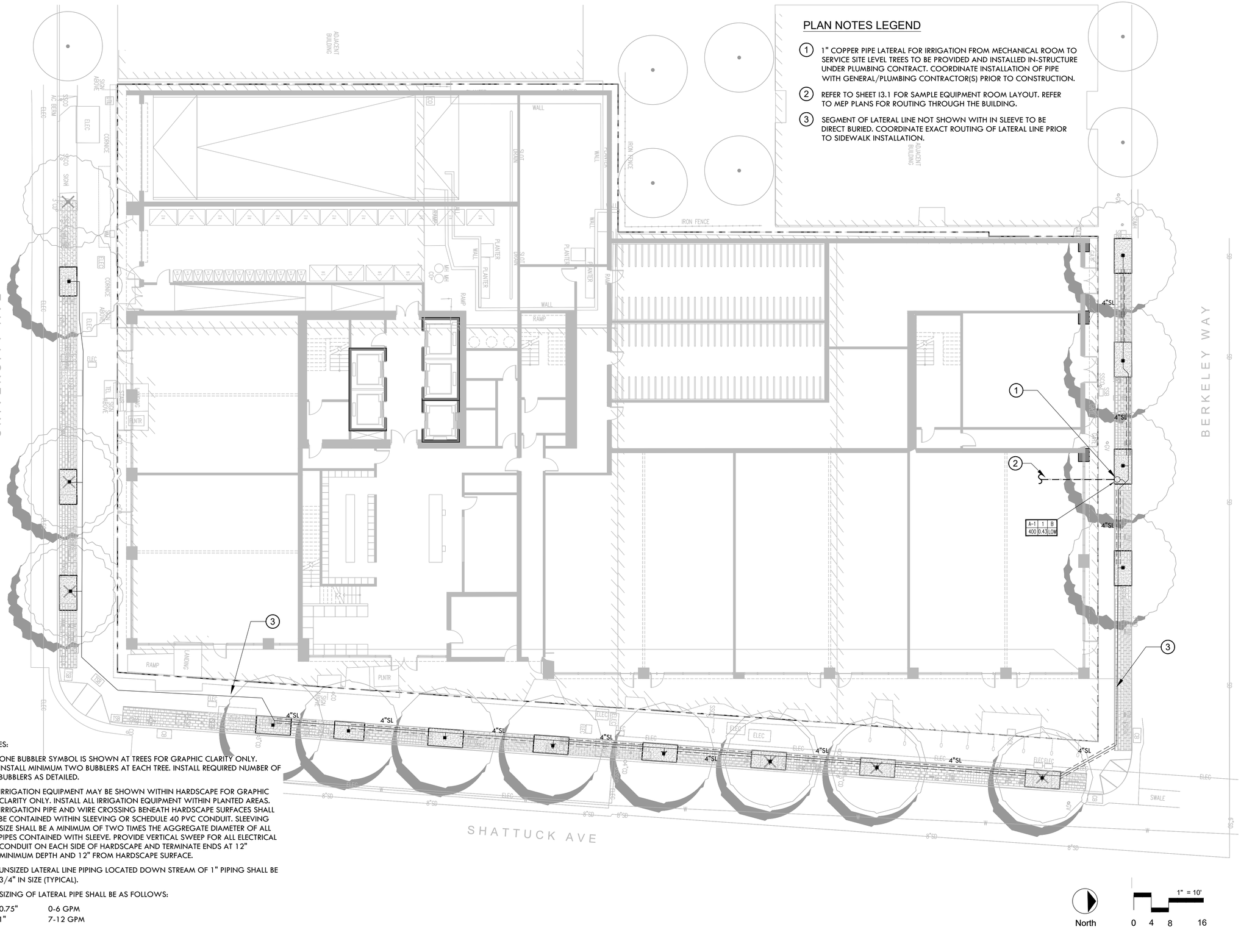

NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. IRRIGATION EQUIPMENT MAY BE SHOWN WITHIN HARDSCAPE FOR GRAPHIC CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT WITHIN PLANTED AREAS. IRRIGATION PIPE AND WIRE CROSSING BENEATH HARDSCAPE SURFACES SHALL BE CONTAINED WITHIN SLEEVING OR SCHEDULE 40 PVC CONDUIT. SLEEVING SIZE SHALL BE A MINIMUM OF TWO TIMES THE AGGREGATE DIAMETER OF ALL PIPES CONTAINED WITH SLEEVE. PROVIDE VERTICAL SWEEP FOR ALL ELECTRICAL CONDUIT ON EACH SIDE OF HARDSCAPE AND TERMINATE ENDS AT 12" MINIMUM DEPTH AND 12" FROM HARDSCAPE SURFACE.
3. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
4. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

0.75"	0-6 GPM
1"	7-12 GPM

North

1" = 10'
0 4 8 16

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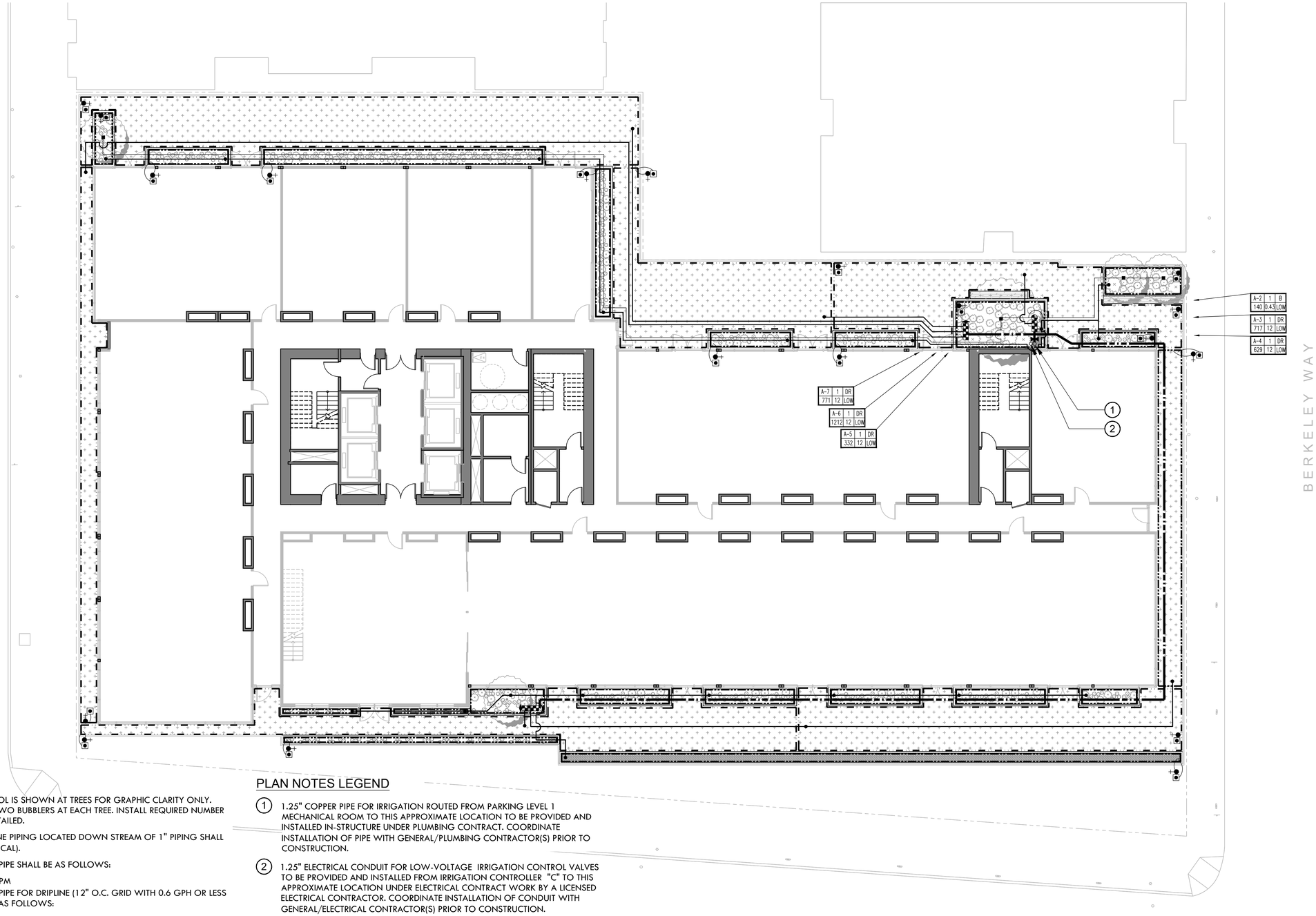
JOB: 0000

SHEET:

IRRIGATION PLAN
AT STREETSCAPE
ALT A

L1.0



NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
3. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

   0.75" 0-6 GPM
4. SIZING OF LATERAL PIPE FOR DRIPLINE (12" O.C. GRID WITH 0.6 GPH OR LESS EMITTERS) SHALL BE AS FOLLOWS:

   0.75 0-500 FT
   1" 501-1100 FT

PLAN NOTES LEGEND

(1) 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.

(2) 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

North

3/16"=1'-0"
0 2 4 8

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JOB: 0000

SHEET:

IRRIGATION PLAN
SECOND FLOOR
PODIUM GARDENS

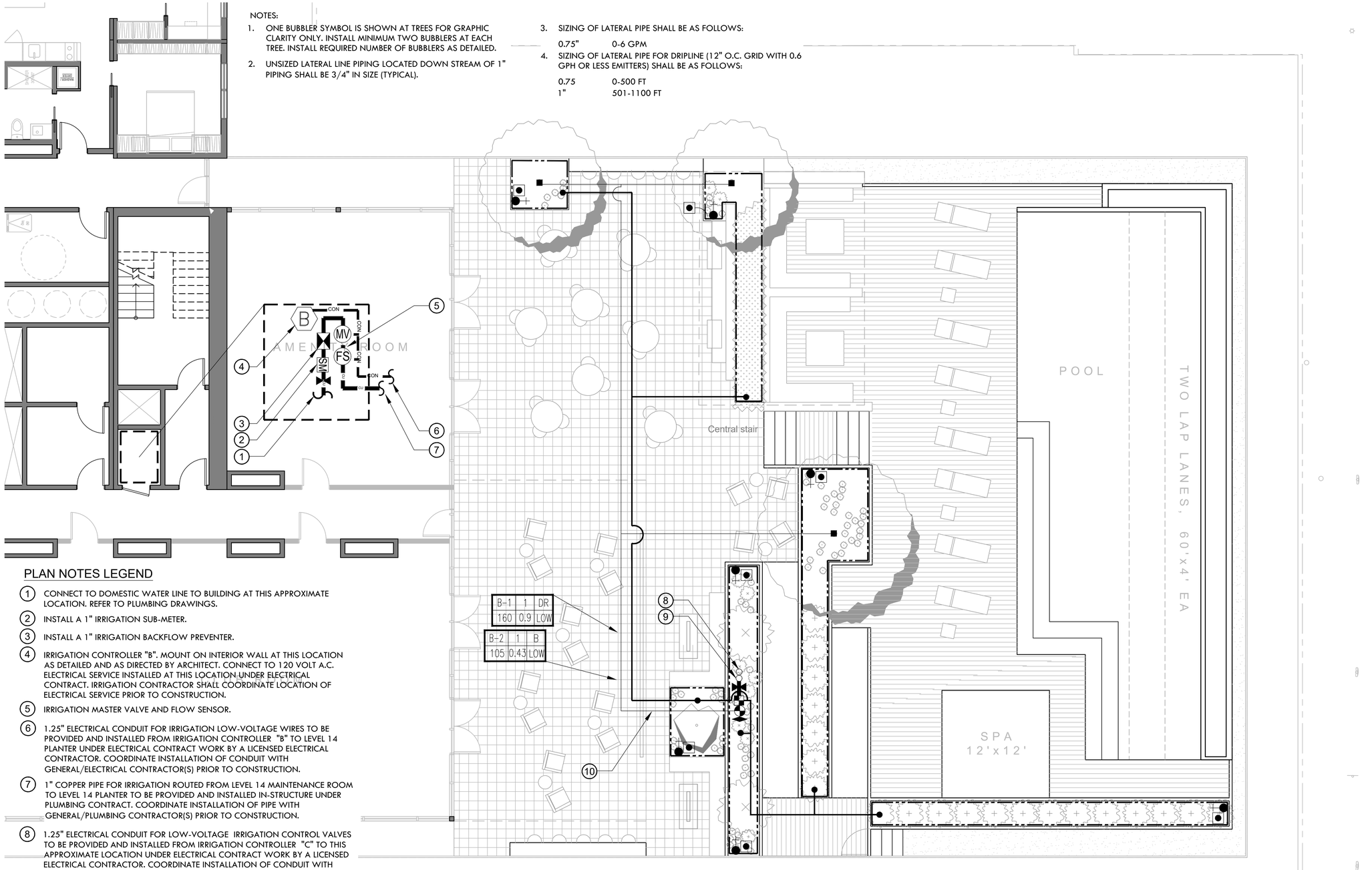
L2.0

NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
3. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

   0.75" 0-6 GPM
4. SIZING OF LATERAL PIPE FOR DRIPLINE (12" O.C. GRID WITH 0.6 GPH OR LESS EMITTERS) SHALL BE AS FOLLOWS:

   0.75 0-500 FT
   1" 501-1100 FT



PLAN NOTES LEGEND

1. CONNECT TO DOMESTIC WATER LINE TO BUILDING AT THIS APPROXIMATE LOCATION. REFER TO PLUMBING DRAWINGS.
2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION CONTROLLER "B". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
5. IRRIGATION MASTER VALVE AND FLOW SENSOR.
6. 1.25" ELECTRICAL CONDUIT FOR IRRIGATION LOW-VOLTAGE WIRES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "B" TO LEVEL 14 PLANTER UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM LEVEL 14 MAINTENANCE ROOM TO LEVEL 14 PLANTER TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
9. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
10. ALL IRRIGATION LINES SHALL BE ROUTED UNDER PEDESTAL PAVERS.

27 FEB 2023

ALT E - REVISED

North

3/16"=1'-0"
0 2 4 8

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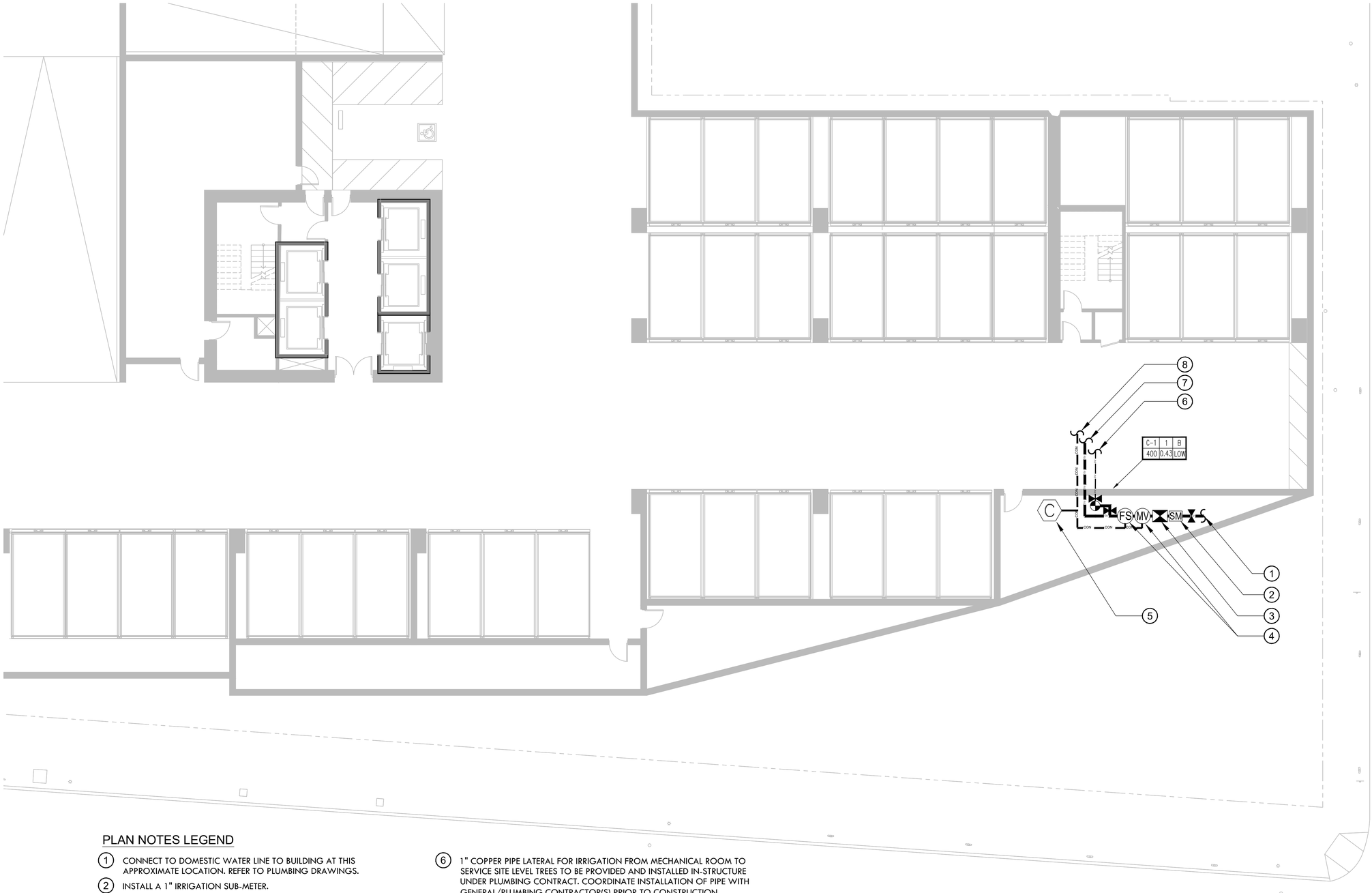
JOB: 0000

SHEET:

IRRIGATION PLAN
FOURTEENTH
FLOOR ROOF DECK
ALT E - REVISED

I3.0



PLAN NOTES LEGEND

1. CONNECT TO DOMESTIC WATER LINE TO BUILDING AT THIS APPROXIMATE LOCATION. REFER TO PLUMBING DRAWINGS.
2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION MASTER VALVE AND FLOW SENSOR.
5. IRRIGATION CONTROLLER "C". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
6. 1" COPPER PIPE LATERAL FOR IRRIGATION FROM MECHANICAL ROOM TO SERVICE SITE LEVEL TREES TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM MECHANICAL ROOM TO PODIUM LEVEL PLANTERS TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO PODIUM LEVEL PLANTERS UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

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North

1/8"=1'-0"
0 4 8 16

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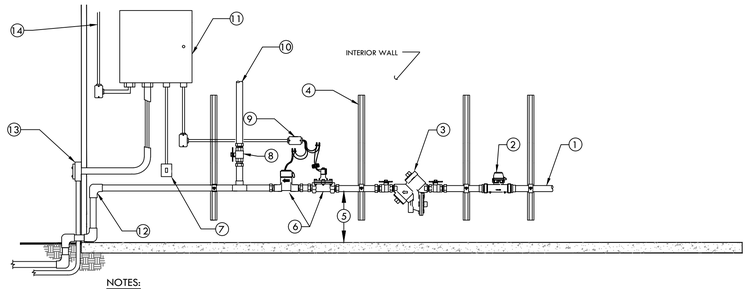
JOB: 0000

SHEET:

IRRIGATION
POINT OF
CONNECTION

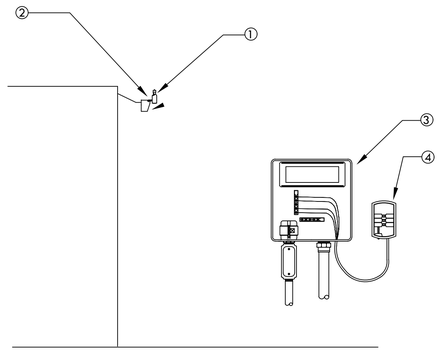
I3.1

1. 1.25" COPPER MAIN LINE TO BACKFLOW IN EQUIPMENT ROOM. SHOWN ON MEP PLANS.
2. SUB-METER FOR IRRIGATION.
3. 1.25" WILKENS REDUCED PRESSURE BACKFLOW ASSEMBLY.
4. UNI-STRUT SUPPORT BRACKET, THREADED EXTENSIONS AND CLAMPS, LENGTH AS REQUIRED. PROVIDE A MINIMUM OF 6" SEPARATION FOR THE VALVES AND PIPE FROM THE WALL.
5. MIN. 18" ± FROM FINISH FLOOR.
6. MASTER VALVE AND FLOW SENSOR.
7. 120 VOLT A.C. ELECTRICAL BY ELECTRICAL CONTRACTOR FOR CONTROLLER
8. 1.25" BRASS BALL VALVE.
9. 1" ELECTRICAL CONDUIT WITH JUNCTION BOXES FOR CONTROL WIRES FOR FLOW SENSOR & MASTER VALVE.
10. 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION(S). INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
11. IRRIGATION CONTROLLER BY IRRIGATION CONTRACTOR. MINIMUM 42" ABOVE FINISHED FLOOR.
12. 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION. INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
13. JUNCTION BOX BY ELECTRICAL CONTRACTOR FOR EXIT OF TWO WIRE SERVICING VALVES WITHIN ROOM.
14. 1.25" ELECTRICAL CONDUIT WITH REQUIRED JUNCTION BOXES ROUTED THROUGH STRUCTURE FROM CONTROLLER LOCATION TO EXTERIOR PLANTERS.



NOTES:
1. THIS LAYOUT IS TO PROVIDE INFORMATION ON EQUIPMENT AND TYPICAL DISTANCES REQUIRED BETWEEN THE EQUIPMENT. IT IS DIAGRAMMATIC AND WILL NEED TO BE ADJUSTED ACCORDING TO AVAILABLE FLOOR SPACE AND OTHER EQUIPMENT INSTALLED WITHIN THE ENCLOSURE. OFFSETS AND FITTINGS WILL BE REQUIRED FOR THESE ADJUSTMENTS.
2. MAINTAIN 6" OF CLEARANCE FROM BUILDING WALLS FOR EASE OF MAINTENANCE FOR ALL COPPER PIPING, VALVES, AND FITTINGS.
3. SEAL ALL PIPE PENETRATIONS THROUGH WALLS/STRUCTURE AS REQUIRED (BY PLUMBING CONTRACTOR). SEE PLUMBING/WATERPROOFING DRAWINGS.
4. ALL FITTINGS AND PIPING FOR WATER LINES WITHIN EQUIPMENT ROOM SHALL BE COPPER WITH WROT FITTINGS OR BRASS NIPPLES.

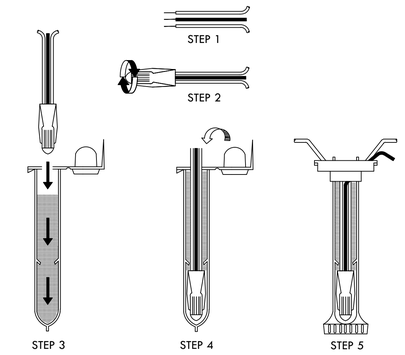
1 IRRIGATION EQUIPMENT LAYOUT DIAGRAM DETAIL
SCALE: NONE



NOTE: MAXIMUM LINE OF SIGHT FROM RAIN SENSOR TO RECEIVER IS 300 FT. DISTANCE IS LESS IF OBSTRUCTIONS EXIST. SENSOR MUST BE INSTALLED IN "CLEAR SPACE" WHERE IT IS EXPOSED TO UNOBSTRUCTED RAINFALL AND IS CLEAR OF IRRIGATION SPRAY.

1. WIRELESS RAIN SENSOR TRANSMITTER (GUTTER MOUNTED)
2. MOUNT RAIN SENSOR ON BUILDING WALL. ARCHITECT TO APPROVE LOCATION
3. CONTROLLER
4. RAIN SENSOR RECEIVER

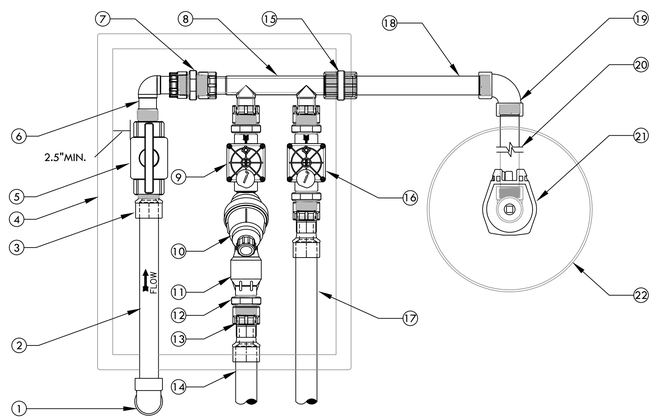
2 WIRELESS RAIN SENSOR-GUTTER MOUNT
SCALE: NONE



NOTE:
MAXIMUM # OF WIRES PER CONNECTOR:
- 3-#14 GAUGE
- 2-#12 GAUGE

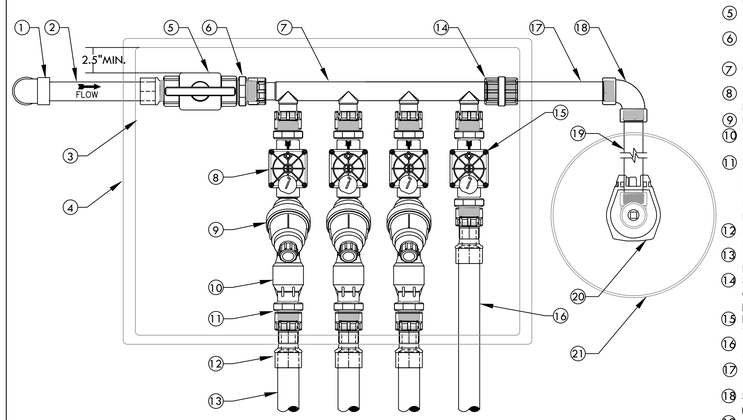
INSTRUCTIONS:
1. STRIP WIRES APPROXIMATELY 1/2" FROM ENDS TO EXPOSE WIRE.
2. TWIST CONNECTOR AROUND WIRES CLOCKWISE UNTIL HAND TIGHT, DO NOT OVERTIGHTEN.
3. INSERT WIRE ASSEMBLY TO BOTTOM OF GEL-FILLED TUBE. CHECK TO MAKE SURE CONNECTOR HAS BEEN PUSHED PAST LOCKING FINGERS AND IS SEATED AT THE BOTTOM OF THE TUBE.
4. PLACE WIRES WHICH EXIT TUBE IN WIRE EXIT HOLES AND CLOSE CAP UNTIL IT SNAPS.
5. INSPECT FINAL SPLICE ASSEMBLY THAT IT IS SECURED.

3 WEATHERPROOF WIRE SPLICE ASSEMBLY
SCALE: NONE



1. SCH 40 PVC 90° ELBOW (SxS) FROM PVC MAIN LINE BELOW.
2. SCH 40 PVC PIPE. LENGTH AS REQUIRED.
3. SCH 80 PVC MALE ADAPTER.
4. CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
5. NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
6. DURA 1" MIPT x 1" SWIVEL 90° (PART #306-009)
7. DURA 1"x1" THREADED ADAPTER (PART #08303) 4 TOTAL.
8. DURA 1" MULTI-PORT MANIFOLD (PART #301-010-2)
9. DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
10. FILTER. REFER TO LEGEND FOR MODEL.
11. 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
12. DURA 1" x 3/4" MALE ADAPTER (PART #08303-131). ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
13. DURA 1" SLIP X 1" SWIVEL (PART #329-011) 2 TOTAL.
14. SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION
15. SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
16. BUBBLER OR SPRINKLER REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
17. SCHEDULE 40 PVC LATERAL TO BUBBLER OR SPRAY IRRIGATION.
18. SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
19. SCHEDULE 80 PVC 90° ELBOW (TxT).
20. SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
21. QUICK COUPLING VALVE. INSTALL PER DETAIL.
22. 10" ROUND BOX. INSTALL PER DETAIL.

4 TWO REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE



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2. SCH 40 PVC PIPE. LENGTH AS REQUIRED.
3. SCH 80 PVC MALE ADAPTER.
4. CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
5. NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
6. DURA 1"x1" THREADED ADAPTER (PART #08303) 6 TOTAL.
7. DURA 1" MULTI-PORT MANIFOLD (PART #301-010-4)
8. DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
9. FILTER. REFER TO LEGEND FOR MODEL.
10. 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
11. DURA 1" x 3/4" MALE ADAPTER (PART #08303-131) 3 TOTAL. ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
12. DURA 1" SLIP X 1" SWIVEL (PART #329-011) 4 TOTAL.
13. SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION.
14. SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
15. BUBBLER OR SPRINKLER REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
16. SCHEDULE 40 PVC LATERAL TO BUBBLERS OR SPRAY IRRIGATION.
17. SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
18. SCHEDULE 80 PVC 90° ELBOW (TxT).
19. SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
20. QUICK COUPLING VALVE. INSTALL PER DETAIL.
21. 10" ROUND BOX. INSTALL PER DETAIL.

5 FOUR REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE

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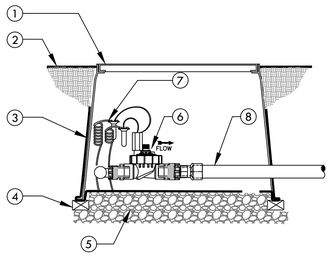
JOB: 0000

SHEET:

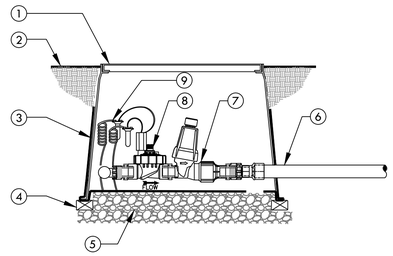
IRRIGATION DETAILS

I4.0



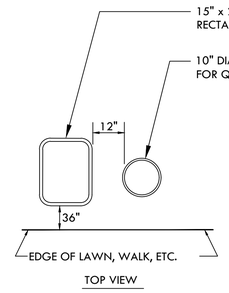
① CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
② FINISH GRADE
③ 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
④ BRICK-1 EACH CORNER
⑤ PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
⑥ REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
⑦ VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL
⑧ SCH 40 PVC LATERAL LINE TO BUBBLERS OR SPRAY

1 BUBBLER OR SPRAY REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



① CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
② FINISH GRADE
③ 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
④ BRICK-1 EACH CORNER
⑤ PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
⑥ SCH 40 PVC LATERAL LINE TO DRIPLINE OR DRIP.
⑦ DRIP FILTER AND REGULATOR
⑧ REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
⑨ VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL

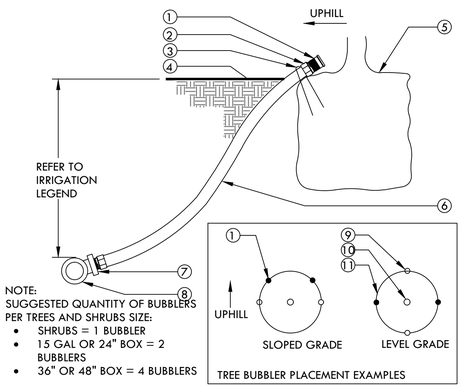
2 DRIP REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



TOP VIEW

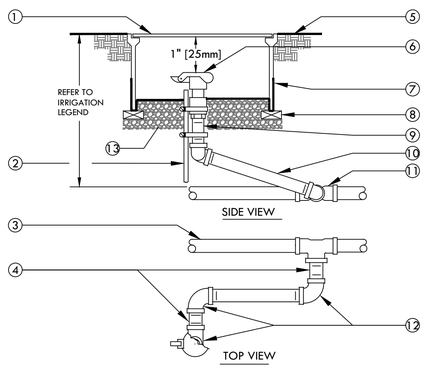
INSTRUCTIONS:
1. CENTER VALVE BOX OVER REMOTE CONTROL VALVES TO FACILITATE SERVICING VALVE.
2. SET BOXES 1" ABOVE FINISH GRADE OR MULCH COVER IN GROUND COVER/SHRUB AREA AND FLUSH WITH FINISH GRADE IN TURF AREA.
3. SET RCV AND VALVE BOX ASSEMBLY IN GROUND COVER/SHRUB AREA WHERE POSSIBLE. INSTALL IN LAWN ONLY IF GROUND COVER DOES NOT EXIST ADJACENT TO LAWN.
4. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE OF LAWN, WALK, FENCE, CURB, ETC.
5. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOXES TO PREVENT COLLAPSE AND DEFORMATION OF VALVE BOX SIDES.
6. INSTALL EXTENSION BY VALVE BOX MANUFACTURER AS REQUIRED TO COMPLETELY ENCLOSE ASSEMBLY FOR EASY ACCESS.

3 VALVE BOX INSTALLATION
SCALE: NONE



① BUBBLER (TO BE INSTALLED ON TOP OF ROOTBALL).
② 1/2" SCH. 40 MALE ADAPTER (2 TOTAL).
③ 6" STAPLE.
④ FINISH GRADE.
⑤ TREE OR SHRUB ROOTBALL.
⑥ 1/2" IPS FLEXIBLE PVC. USE WELD-ON 795 SOLVENT CEMENT OR EQUAL WHEN BONDING PVC HOSE TO FITTINGS.
⑦ PVC TEE (SST), ELBOW (ST) OR FEMALE ADAPTER.
⑧ PVC LATERAL LINE.
⑨ TREE STAKES.
⑩ TREE OR SHRUB.
⑪ EDGE OF ROOTBALL (TYPICAL).

4 TREE AND SHRUB BUBBLER
SCALE: NONE



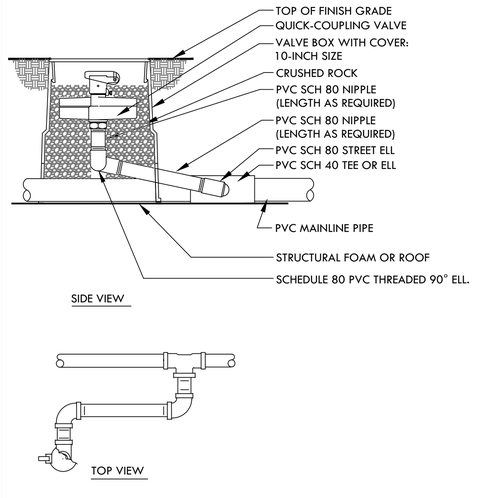
SIDE VIEW

TOP VIEW

① 10" ROUND PLASTIC VALVE BOX WITH BOLT DOWN LID.
② 1 1/4" x 1 1/4" x 3/16" [30mm x 30mm x 5mm] ANGLE IRON 30" [760mm] LONG W/2 STAINLESS STEEL STRAPS (ONE AROUND QCV).
③ PVC MAIN LINE.
④ 3" [75mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
⑤ FINISH GRADE.
⑥ QUICK COUPLING VALVE.
⑦ 19 GAUGE 1/2" [13mm] SQUARE WIRE MESH.
⑧ BRICK - 2 TOTAL.
⑨ SCHEDULE 80 PVC THREADED NIPPLE.
⑩ 10" [250mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
⑪ UPC APPROVED SCHEDULE 40 PVC TEE OR ELBOW.
⑫ SCHEDULE 80 PVC THREADED 90° ELL.
⑬ PEA GRAVEL OR 3/4" DRAIN ROCK- 4" [100mm] DEEP BELOW VALVE (NO SOIL IN VALVE BOX).

NOTE:
NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.

5 QUICK COUPLING VALVE
SCALE: NONE

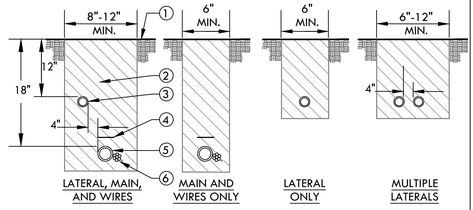


SIDE VIEW

TOP VIEW

NOTE:
1. NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.
2. TRIM VALVE BOX LENGTH AS NECESSARY TO BE FLUSH WITH TOP OF PLANTING TILES.
3. IF NECESSARY SLOT SIDES VALVE BOX TO ALLOW PASSAGE OF PIPE THROUGH BOTTOM OF VALVE BOX.

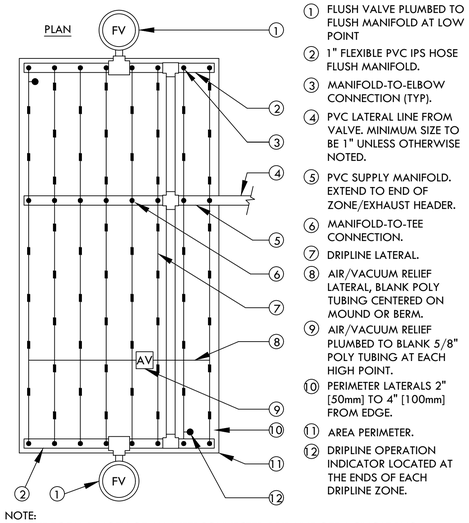
6 QUICK COUPLING VALVE-ON STRUCTURE
SCALE: NONE



NOTES:
1. ALL MAIN SUPPLY LINES AND LATERAL LINES SHALL BE PLACED IN SLEEVES UNDER PAVED SURFACES. INSTALL LOW VOLTAGE WIRES WITHIN A SEPARATE CONDUIT UNDER PAVED SURFACES. DO NOT TAPE WIRES WITHIN CONDUIT.
2. REUSE SALVAGED EXCAVATED FILL AND COMPACT TO ORIGINAL DENSITY IN LANDSCAPE AREAS. ALL OTHER AREAS SHALL BE AT 95% COMPACTION. BACKFILL MATERIAL SHALL BE THE EARTH EXCAVATED FROM THE TRENCHES, FREE FROM ROCKS (ANYTHING LARGER THAN 2"), CONCRETE CHUNKS, AND OTHER FOREIGN OR COARSE MATERIALS.
3. WHEN 12" POP-UP SPRINKLER HEADS ARE USED, INCREASE THE DEPTH OF LATERAL TO 18" AT THE SPRINKLER LOCATION ONLY.

① FINISH GRADE.
② CLEAN BACKFILL MATERIAL.
③ LATERAL LINE.
④ 3" DETECTABLE WARNING TAPE OVER MAIN LINE. INSTALL 3" ABOVE MAIN LINE. USE CHRISTY MODEL #TA-DT-3-BIRR FOR POTABLE IRRIGATION SYSTEMS OR #TA-DT-3-PRW FOR RECYCLED IRRIGATION WATER SYSTEMS
⑤ MAIN LINE.
⑥ LOW VOLTAGE CONTROL WIRES, TWO-WIRE CABLE, OR CONDUIT WITH WIRES. FOR MULTIPLE WIRES, TAPE AND BUNDLE WIRES AT 10 FT. INTERVALS. WIRING SHALL BE LAID OUT LOOSELY IN THE TRENCH.

7 TRENCHING
SCALE: NONE



① FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
② 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
③ MANIFOLD-TO-ELBOW CONNECTION (TYP).
④ PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
⑤ PVC SUPPLY MANIFOLD. EXTEND TO END OF ZONE/EXHAUST HEADER.
⑥ MANIFOLD-TO-TEE CONNECTION.
⑦ DRIPLINE LATERAL.
⑧ AIR/VACUUM RELIEF LATERAL, BLANK POLY TUBING CENTERED ON MOUND OR BERM.
⑨ AIR/VACUUM RELIEF PLUMBED TO BLANK 5/8" POLY TUBING AT EACH HIGH POINT.
⑩ PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
⑪ AREA PERIMETER.
⑫ DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

8 HLD DRIPLINE CENTER FEED LAYOUT
SCALE: NONE

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IRRIGATION DETAILS

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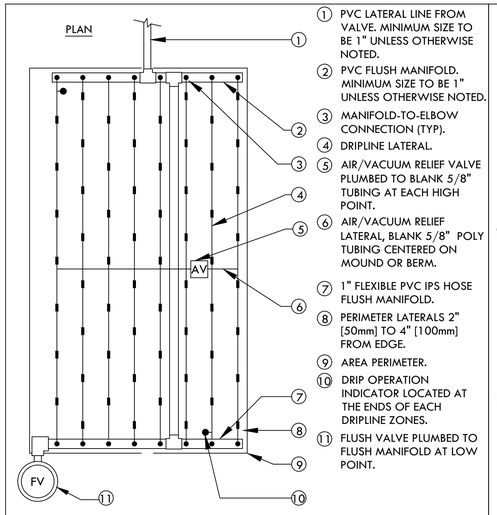
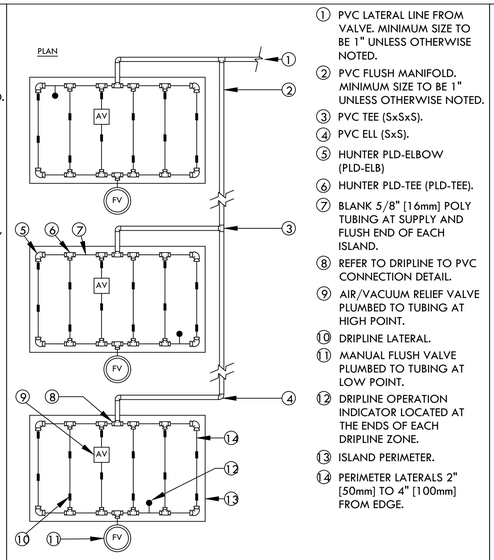


1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. DRIPLINE LATERAL.
5. AIR/VACUUM RELIEF VALVE PLUMBED TO BLANK 5/8" TUBING AT EACH HIGH POINT.
6. AIR/VACUUM RELIEF LATERAL, BLANK 5/8" POLY TUBING CENTERED ON MOUND OR BERM.
7. 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
8. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
9. AREA PERIMETER.
10. DRIP OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONES.
11. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

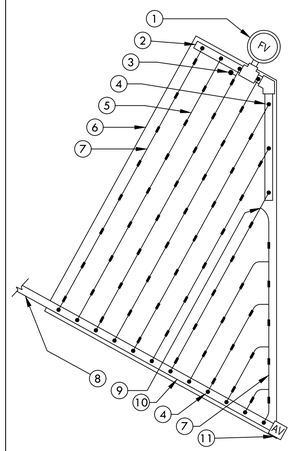
1 HLD DRIPLINE END FEED LAYOUT
SCALE: NONE



1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. PVC TEE (SxSxS).
4. PVC ELL (SxS).
5. HUNTER PLD-ELBOW (PLD-ELB)
6. HUNTER PLD-TEE (PLD-TEE).
7. BLANK 5/8" [16mm] POLY TUBING AT SUPPLY AND FLUSH END OF EACH ISLAND.
8. REFER TO DRIPLINE TO PVC CONNECTION DETAIL.
9. AIR/VACUUM RELIEF VALVE PLUMBED TO TUBING AT HIGH POINT.
10. DRIPLINE LATERAL.
11. MANUAL FLUSH VALVE PLUMBED TO TUBING AT LOW POINT.
12. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
13. ISLAND PERIMETER.
14. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.

NOTE:
1. THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

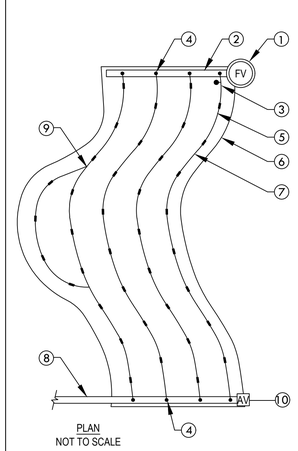
2 HLD DRIPLINE ISLAND LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. PVC SUPPLY MANIFOLD.
11. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

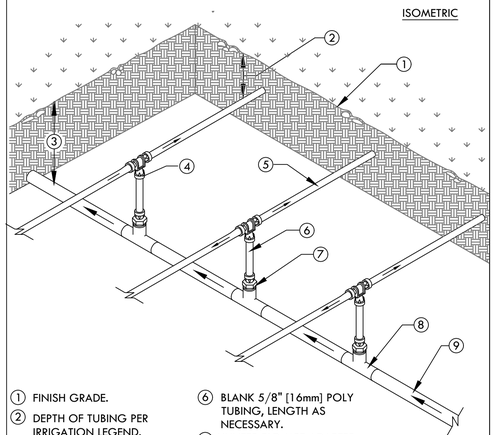
3 HLD DRIPLINE TRIANGULAR LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH/EXHAUST MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC SUPPLY LINE/HEADER FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

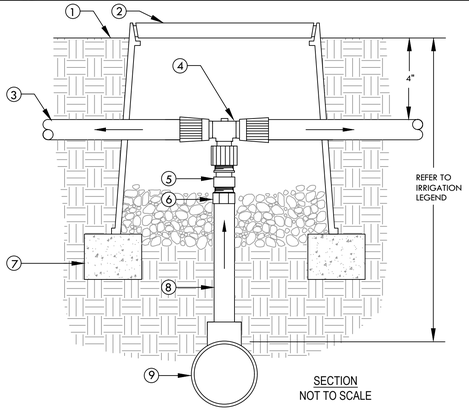
4 HLD DRIPLINE ODD CURVE LAYOUT
SCALE: NONE



1. FINISH GRADE.
2. DEPTH OF TUBING PER IRRIGATION LEGEND.
3. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND
4. HUNTER PLD-TEE (PLD-TEE)
5. DRIPLINE TUBING.
6. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
7. HUNTER PLD-MPT ADAPTER (PLD-050)
8. PVC TEE (SxSxT) WITH 1/2" [13mm] FPT OUTLET.
9. PVC LATERAL LINE FROM REMOTE CONTROL VALVE.

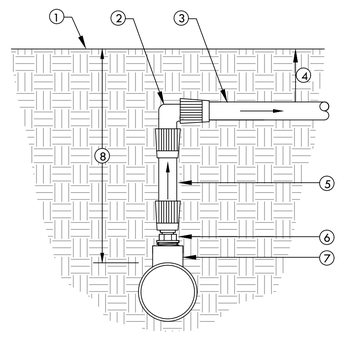
NOTE:
THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.

5 HLD DRIPLINE CENTER FEED MANIFOLD
SCALE: NONE



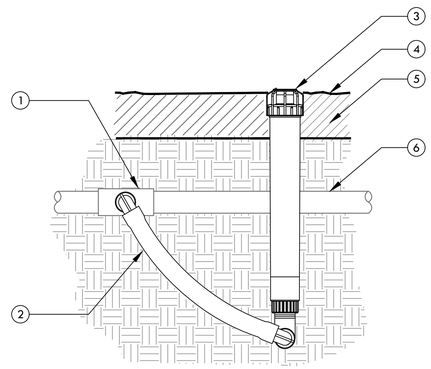
1. FINISH GRADE
2. CARSON 708 OR EQUAL. COLOR: BLACK. USE PURPLE FOR RECYCLED WATER SYSTEMS.
3. DRIPLINE TUBING
4. HUNTER PLD-TEE X 1/2" FPT ADAPTER
5. TORO 1/2" CHECK VALVE (PCV-500)
6. 1/2" SCH 40 MALE ADAPTER.
7. BRICK (1 OF 2)
8. 1/2" SCH 40 PVC (LENGTH AS REQUIRED)
9. PVC LATERAL LINE SUPPLY. MINIMUM SIZE TO BE 1" UNLESS SIZED DIFFERENTLY ON DRAWINGS. USE SCH 40 PVC 1"x1"x1/2" TEE OR 90° ELBOW.

6 DRIPLINE TO PVC CONNECTION
SCALE: NONE



1. FINISH GRADE
2. HUNTER PLD-ELBOW (PLD-ELB)
3. DRIPLINE TUBING
4. DEPTH OF TUBING PER IRRIGATION LEGEND.
5. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
6. HUNTER PLD-MPT ADAPTER (PLD-050)
7. SCH 40 PVC TEE (SxSxT) WITH 1/2" FPT OUTLET.
8. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND

7 DRIPLINE MANIFOLD TO ELBOW CONNECTION
SCALE: NONE



1. UPC APPROVED SCHEDULE 40 PVC TEE, ELBOW OR BARB x THREAD DRIP FITTING TEE OR ELBOW WITH 3/4" OUTLET.
2. 1/2" X 3/4" X 6" HUNTER SWING JOINT (SJ-7506)
3. ECO INDICATOR
4. FINISHED GRADE
5. MULCH
6. PVC LATERAL PIPE OR DRIPLINE

8 DRIPLINE OPERATION INDICATOR
SCALE: NONE

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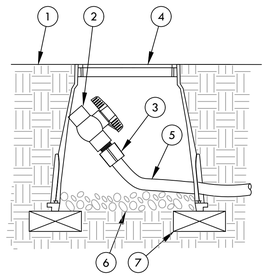
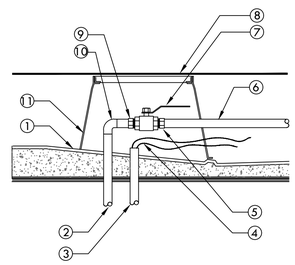


NOTE:
ALLOW A MINIMUM OF PVC HOSE IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

1. FINISH GRADE
2. 1/2" SCH 40 THREADED BALL VALVE.
3. 1/2" SCH 40 MALE ADAPTER.
4. 6" ROUND PLASTIC VALVE BOX.
5. 1" IPS PVC HOSE FROM EXHAUST HEADER.
6. PEA GRAVEL SUMP (6" DEEP).
7. BRICK (1 OF 2)

2 DRIPLINE-FLUSH POINT
SCALE: NONE



1. SLOPED ROOF BELOW PEDESTAL SYSTEM
2. COPPER PIPE THROUGH STRUCTURE PROVIDED BY PLUMBING CONTRACTOR. WATERPROOF ALL PENETRATIONS.
3. CONDUIT FOR CONTROL WIRES THROUGH STRUCTURE PROVIDED BY ELECTRICAL CONTRACTOR. WATERPROOF ALL PENETRATIONS
4. TWO-WIRE CABLE OR CONTROL WIRES
5. SCH 40 PVC MALE ADAPTER.
6. PVC MAIN LINE TO REMOTE CONTROL VALVES.
7. BRONZE BALL VALVE.
8. ROOF DECK PAVERS
9. COPPER MALE ADAPTER.
10. COPPER 90° ELBOW.
11. 10" ROUND PLASTIC VALVE BOX. CUT BOX TO FIT BELOW PEDESTAL PAVER SYSTEM

3 ON STRUCTURE STUB-OUT WITH BRONZE BALL VALVE
SCALE: NONE

IRRIGATION WATER USE CALCULATIONS

WATER USE ESTIMATION CONTROLLER "A"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	1,079	400	10,357	0.03	13.85	17%
2	GROUNDCOVER	LOW	0.3	BUBBLER	0.81	0.370	4,915	1,820	47,177	0.14	63.07	77%
3	TREES	LOW	0.3	BUBBLER	0.81	0.370	400	148	3,839	0.01	5.13	6%
					TOTALS		6,394	2,368	61,373	0.19	82.05	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME										
NA					1						0%
					TOTALS	0					0%

MAWA		
	GALLONS/YR	74,568
	ACRE FEET/YR	0.23
	HCF/YR	99.69

ETWU		
	GALLONS/YR	61,373
	ACRE FEET/YR	0.19
	HCF/YR	82.05

SITE IRRIGATION EFFICIENCY	SITE PLANT FACT0R	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	2,368
TOTAL AREA	6,394
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR

MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR

ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

WATER USE ESTIMATION CONTROLLER "B"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	160	59	1,536	0.00	2.05	60%
2	TREES	LOW	0.3	BUBBLER	0.81	0.370	105	39	1,008	0.00	1.35	40%
					TOTALS		265	98	2,544	0.01	3.40	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME										
NA					1						0%
					TOTALS	0					0%

MAWA		
	GALLONS/YR	3,090
	ACRE FEET/YR	0.01
	HCF/YR	4.13

ETWU		
	GALLONS/YR	2,544
	ACRE FEET/YR	0.01
	HCF/YR	3.40

SITE IRRIGATION EFFICIENCY	SITE PLANT FACT0R	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	98
TOTAL AREA	265
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR

MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR

ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

STACKHOUSE
DE LA PEÑA
TRACHTENBERG
ARCHITECTS

2421 Fourth Street
Berkeley, California 94710
510.649.1414
www.TrachtenbergArch.com

INSIDE OUT
landscape architecture
6000 Harwood Ave
Oakland CA 94618
www.aboutinsideout.com

1998 SHATTUCK

1998 Shattuck Ave
Berkeley, CA

03.01.2023 ZONING SUBMITTAL
11.15.2023 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL
01.16.2025 PRELIM DRC HEARING SET
02.27.2025 ZAB HEARING SET

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ARCHITECT AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF TRACHTENBERG ARCHITECTS.

JOB: 0000

SHEET:

IRRIGATION DETAILS

I7.0

Planning and Development Department
Land Use Planning Division
1947 Center Street, 2nd Floor
Berkeley, CA 94704

Zoning Adjustments Board
NOTICE OF PUBLIC HEARING

SUBJECT: **1950-1998 Shattuck Avenue**
Use Permit #ZP2023-0040

WHEN: **Thursday, February 27, 2025.**
Meeting starts at 7:00 pm.

WHERE: **Berkeley Unified School District Board Room, 1231 Addison Street, Berkeley**
(Wheelchair Accessible) **with remote/hybrid option (via Zoom)**

«NAME1»
«NAME2»
«ADDRESS1» «ADDRESS2»

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«Next Record»«NAME1»
«NAME2»
«ADDRESS1» «ADDRESS2»

	PROJECT: 1950-1998 Shattuck Avenue (University Corners), **Use Permit #ZP2023-0040** to demolish five commercial buildings; merge four lots; and construct a 28-story (312-foot tall, plus 5-foot parapet), 411,610-square-foot, mixed-use building with 599 dwelling units (including 58 Very Low-Income Density Bonus qualifying units), 16,142 square feet of commercial area, and 154 auto parking spaces. **CEQA RECOMMENDATION:** Categorically exempt pursuant to Section 15332 of the CEQA Guidelines ("Infill Development Projects").
Submit written comments: Land Use Division Attn: ZAB Secretary 1947 Center Street, Second Floor Berkeley, CA 94704 or via e-mail: **zab@berkeleyca.gov** **Post and Mail Date:** **February 13, 2025**	**All persons are welcome to attend the hearing virtually or in person. Comments may be made verbally at the public hearing and/or in writing before the hearing.** If your contact information is included in any communication to the Board, it will become part of the public record, and will be accessible on the City Website. All **application materials** are available by searching the address or permit number under the Zoning tab at https://aca.cityofberkeley.info/CitizenAccess/Welcome.aspx. **Draft agenda** posted online 14 days before the hearing. **Final agenda with Zoom link and staff reports** posted online six days before the hearing. Visit https://berkeleyca.gov/your-government/boards-commissions/zoning-adjustments-board and click on the hearing date to access the most up-to-date meeting information, or call the Land Use Planning division (510) 981-7410. **Disability-related accommodation(s) requests** to participate in the meeting, including auxiliary aids or services, please contact the Disability Services specialist at 981-6418(V) or 981-6347(TDD) at least three business days before the meeting date.
NOTICE CONCERNING YOUR LEGAL RIGHTS: If you challenge the decision of the City in court, you may be limited to raising only those issues you or someone else raised at the public hearing.	

	PROJECT: 1950-1998 Shattuck Avenue (University Corners), **Use Permit #ZP2023-0040** to demolish five commercial buildings; merge four lots; and construct a 28-story (312-foot tall, plus 5-foot parapet), 411,610-square-foot, mixed-use building with 599 dwelling units (including 58 Very Low-Income Density Bonus qualifying units), 16,142 square feet of commercial area, and 154 auto parking spaces. **CEQA RECOMMENDATION:** Categorically exempt pursuant to Section 15332 of the CEQA Guidelines ("Infill Development Projects").
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Internal

NAME1	NAME2	ADDRESS1	ADDRESS2
1951 SHATTUCK LLC	1 CALIFORNIA ST	SAN FRANCISCO CA	94111
2054 UNIVERSITY LLC	100 LARKSPUR LANDING CIR #218	LARKSPUR CA	94939
LORE BCA 2120 L P	100 WAUGH DR	HOUSTON TX	77007
REGENTS OF THE UNIVERSITY OF CALIFORNIA	1111 FRANKLIN ST	OAKLAND CA	94607
REDDY HANUMANDLA J & HANUMANDLA R TRS	1114 W 6TH ST #110	HANFORD CA	93230
REGENCY 2120 BERKELEY WAY LLC	11661 SAN VICENTE BLVD	LOS ANGELES CA	90049
REDDY HANUMANDLA R & HANUMANDLA J TRS	1751 MUSCAT PL	HANFORD CA	93230
MAGIC WIZARD LLC	1912 HENRY ST	BERKELEY CA	94704
DEAN TRACY L & FAIRCLOTH IAN	1942 BONITA AVE	BERKELEY CA	94704
1974 SHATTUCK AVENUE LLC	1958a UNIVERSITY AVE	BERKELEY CA	94704
MCREF ACHESON LLC	200 E BROWARD BLVD	FT. LAUDERDALE FL	33301
2020 HEARST LLC	2020 HEARST AVE	BERKELEY CA	94709
TRILINK REAL ESTATE INVESTMENT & DEVELOPMENT INC	2045 UNIVERSITY AVE	BERKELEY CA	94704
GORDON JOHN K & MITCHELL JANIS L TRS & GORDON ETAL	2091 ROSE ST	BERKELEY CA	94709
SLAVAZZA GLORIA E TR ETAL & GASPARDONE L J & J TRS	2115 SHATTUCK AVE	BERKELEY CA	94704
MARTIN REID & JOHN	2171 SHATTUCK AVE 2	BERKELEY CA	94704
MARTIN REID B & DAVID R ETAL	2171 SHATTUCK AVE B	BERKELEY CA	94704
TALAI MOHAMMAD E & KOKAB S TRS & KASHANI MANS ETAL	2180 9TH AVE	SAN FRANCISCO CA	94116
KAM YIU LAM & SHUN TO LO LAM LP	2225 MCGEE AVE	BERKELEY CA	94703
U C STUDIOS LP	2295 SAN PABLO AVE	BERKELEY CA	94702
CHOW PETER L & WEINA B TRS	2332 31ST AVE	SAN FRANCISCO CA	94116
FIFTH KEIL CO	244 KEARNY ST	SAN FRANCISCO CA	94108
SHAMSZAD SASHA G & MERIDETH B TRS	2750 ADELINE ST B	BERKELEY CA	94703
2008 SHATTUCK AVENUE LLC	4096 PIEDMONT AVE #150	OAKLAND CA	94611
KL2067 UNIVERSITY LLC	4288 DUBLIN BLVD #218	DUBLIN CA	94568
VINLAND PROPERTY INVESTMENT LLC	432 BRIDLE CT	SAN RAMON CA	94582
YE TAO & MAN XIYUAN	455 NAVARRO WAY #201	SAN JOSE CA	95134
MORAN EVERETT S JR & CATHARINE D TRS	463 KENTUCKY AVE	BERKELEY CA	94707
MGM SHATTUCK LLC	5 NARANJA WAY	PORTOLA VALLEY CA	94028
MCREF BACHENHEIMER LLC	500 E BROWARD BLVD	FT LAUDERDALE FL	33394
CITY OF BERKELEY	555 CALIFORNIA ST #5000	SAN FRANCISCO CA	94104
NINETEEN HUNDRED TWENTY SIX SHATTUCK INVESTORS	732 ADDISON ST C	BERKELEY CA	94710
JLLJAR LLC	8 BRANDT DR	MORAGA CA	94556
COMMON AREA PM 10119	8429 WILDCAT DR	EL CERRITO CA	94530
CHATELIN YVONNE T TR	922 NEILSON ST	ALBANY CA	94706
LIN YU H & JULIE S TRS	949 POLK ST	ALBANY CA	94706
BERKELEY REPERTORY THEATRE	999 HARRISON ST	BERKELEY CA	94710
FIFTH KEIL CO	PO BOX 182571	COLUMBUS OH	43218
LAUSON LLC	PO BOX 2012	MENLO PARK CA	94026

Internal

OCCUPANT(S)	1900 OXFORD ST	BERKELEY CA	94704
OCCUPANT(S)	1900 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1900 WALNUT ST	BERKELEY CA	94704
OCCUPANT(S)	1902 HENRY ST	BERKELEY CA	94704
OCCUPANT(S)	1902 HENRY ST A	BERKELEY CA	94704
OCCUPANT(S)	1902 HENRY ST B	BERKELEY CA	94704
OCCUPANT(S)	1902 HENRY ST C	BERKELEY CA	94704
OCCUPANT(S)	1902 HENRY ST D	BERKELEY CA	94704
OCCUPANT(S)	1905 HENRY ST	BERKELEY CA	94704
OCCUPANT(S)	1905 HENRY ST 1	BERKELEY CA	94704
OCCUPANT(S)	1905 HENRY ST 2	BERKELEY CA	94704
OCCUPANT(S)	1906 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1908 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1918 HENRY ST	BERKELEY CA	94704
OCCUPANT(S)	1918 HENRY ST 1	BERKELEY CA	94704
OCCUPANT(S)	1918 HENRY ST 2	BERKELEY CA	94704
OCCUPANT(S)	1918 HENRY ST 3	BERKELEY CA	94704
OCCUPANT(S)	1918 HENRY ST 4	BERKELEY CA	94704
OCCUPANT(S)	1920 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 201	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 202	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 203	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 204	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 205	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 206	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 207	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 208	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 209	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 210	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 211	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 212	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 213	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 301	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 302	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 303	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 304	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 305	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 306	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 307	BERKELEY CA	94704

Internal

OCCUPANT(S)	1922 WALNUT ST 308	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 309	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 310	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 311	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 312	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 313	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 401	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 402	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 403	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 404	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 405	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 406	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 407	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 408	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 409	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 410	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 411	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 412	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 413	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 501	BERKELEY CA	94704
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OCCUPANT(S)	1922 WALNUT ST 504	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 505	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 506	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 507	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 508	BERKELEY CA	94704
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OCCUPANT(S)	1922 WALNUT ST 510	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 511	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 512	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 513	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 601	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 602	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 603	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 604	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 605	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 606	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 607	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 608	BERKELEY CA	94704

Internal

OCCUPANT(S)	1922 WALNUT ST 609	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 610	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 611	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 612	BERKELEY CA	94704
OCCUPANT(S)	1922 WALNUT ST 613	BERKELEY CA	94704
OCCUPANT(S)	1924 WALNUT ST	BERKELEY CA	94704
OCCUPANT(S)	1924 WALNUT ST 201	BERKELEY CA	94704
OCCUPANT(S)	1924 WALNUT ST 202	BERKELEY CA	94704
OCCUPANT(S)	1924 WALNUT ST 203	BERKELEY CA	94704
OCCUPANT(S)	1924 WALNUT ST 204	BERKELEY CA	94704
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OCCUPANT(S)	1924 WALNUT ST 403	BERKELEY CA	94704
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OCCUPANT(S)	1924 WALNUT ST 501	BERKELEY CA	94704
OCCUPANT(S)	1924 WALNUT ST 502	BERKELEY CA	94704
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OCCUPANT(S)	1924 WALNUT ST 505	BERKELEY CA	94704
OCCUPANT(S)	1924 WALNUT ST 506	BERKELEY CA	94704
OCCUPANT(S)	1924 WALNUT ST 507	BERKELEY CA	94704
OCCUPANT(S)	1924 WALNUT ST 601	BERKELEY CA	94704
OCCUPANT(S)	1924 WALNUT ST 602	BERKELEY CA	94704
OCCUPANT(S)	1924 WALNUT ST 603	BERKELEY CA	94704
OCCUPANT(S)	1924 WALNUT ST 604	BERKELEY CA	94704
OCCUPANT(S)	1924 WALNUT ST 605	BERKELEY CA	94704
OCCUPANT(S)	1924 WALNUT ST 606	BERKELEY CA	94704

Internal

OCCUPANT(S)	1926 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1928 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1930 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1930 SHATTUCK AV A	BERKELEY CA	94704
OCCUPANT(S)	1930 SHATTUCK AV B	BERKELEY CA	94704
OCCUPANT(S)	1930 SHATTUCK AV C	BERKELEY CA	94704
OCCUPANT(S)	1930 WALNUT ST	BERKELEY CA	94704
OCCUPANT(S)	1930 WALNUT ST 1	BERKELEY CA	94704
OCCUPANT(S)	1930 WALNUT ST 2	BERKELEY CA	94704
OCCUPANT(S)	1930 WALNUT ST 3	BERKELEY CA	94704
OCCUPANT(S)	1930 WALNUT ST 4	BERKELEY CA	94704
OCCUPANT(S)	1930 WALNUT ST 5	BERKELEY CA	94704
OCCUPANT(S)	1930 WALNUT ST 6	BERKELEY CA	94704
OCCUPANT(S)	1934 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1936 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1938 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1942 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1950 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1951 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1955 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1958 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1959 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1961 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1971 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1974 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1975 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1979 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1981 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1983 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1984 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1985 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1986 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1987 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1988 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	1998 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 101	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 109	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 112	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 117	BERKELEY CA	94704

Internal

OCCUPANT(S)	2000 KALA BAGAI WY 120	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 124	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 125	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 136	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 142	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 150	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 154	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 160	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 168	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 178	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 179	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 202	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 204	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 226	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 237	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 24	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 35	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 46	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 47	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 57	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 6	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 61	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 77	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 84	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 88	BERKELEY CA	94704
OCCUPANT(S)	2000 KALA BAGAI WY 9	BERKELEY CA	94704
OCCUPANT(S)	2000 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	2002 KALA BAGAI WY	BERKELEY CA	94704
OCCUPANT(S)	2005 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 10	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 11	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 12	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 13	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 14	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 15	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 16	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 17	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 18	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 19	BERKELEY CA	94704

Internal

OCCUPANT(S)	2006 KALA BAGAI WY 20	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 21	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 22	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 23	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 24	BERKELEY CA	94704
OCCUPANT(S)	2006 KALA BAGAI WY 25	BERKELEY CA	94704
OCCUPANT(S)	2008 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	2008 SHATTUCK AV 26	BERKELEY CA	94704
OCCUPANT(S)	2008 SHATTUCK AV 33	BERKELEY CA	94704
OCCUPANT(S)	2010 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	2011 BERKELEY WY	BERKELEY CA	94704
OCCUPANT(S)	2011 KALA BAGAI WY	BERKELEY CA	94704
OCCUPANT(S)	2012 SHATTUCK AV DELI	BERKELEY CA	94704
OCCUPANT(S)	2014 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	2015 KALA BAGAI WY	BERKELEY CA	94704
OCCUPANT(S)	2016 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	2017 BERKELEY WY	BERKELEY CA	94704
OCCUPANT(S)	2017 BERKELEY WY 1	BERKELEY CA	94704
OCCUPANT(S)	2017 BERKELEY WY 10	BERKELEY CA	94704
OCCUPANT(S)	2017 BERKELEY WY 11	BERKELEY CA	94704
OCCUPANT(S)	2017 BERKELEY WY 12	BERKELEY CA	94704
OCCUPANT(S)	2017 BERKELEY WY 2	BERKELEY CA	94704
OCCUPANT(S)	2017 BERKELEY WY 3	BERKELEY CA	94704
OCCUPANT(S)	2017 BERKELEY WY 4	BERKELEY CA	94704
OCCUPANT(S)	2017 BERKELEY WY 5	BERKELEY CA	94704
OCCUPANT(S)	2017 BERKELEY WY 6	BERKELEY CA	94704
OCCUPANT(S)	2017 BERKELEY WY 7	BERKELEY CA	94704
OCCUPANT(S)	2017 BERKELEY WY 8	BERKELEY CA	94704
OCCUPANT(S)	2017 BERKELEY WY 9	BERKELEY CA	94704
OCCUPANT(S)	2018 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	2018 SHATTUCK AV 104	BERKELEY CA	94704
OCCUPANT(S)	2018 SHATTUCK AV 105	BERKELEY CA	94704
OCCUPANT(S)	2018 SHATTUCK AV 113	BERKELEY CA	94704
OCCUPANT(S)	2018 SHATTUCK AV 124	BERKELEY CA	94704
OCCUPANT(S)	2018 SHATTUCK AV 129	BERKELEY CA	94704
OCCUPANT(S)	2018 SHATTUCK AV 130	BERKELEY CA	94704
OCCUPANT(S)	2018 SHATTUCK AV 142	BERKELEY CA	94704
OCCUPANT(S)	2018 SHATTUCK AV 146	BERKELEY CA	94704
OCCUPANT(S)	2018 SHATTUCK AV 148	BERKELEY CA	94704
OCCUPANT(S)	2018 SHATTUCK AV 157	BERKELEY CA	94704

Internal

OCCUPANT(S)	2018 SHATTUCK AV 170	BERKELEY CA	94704
OCCUPANT(S)	2018 SHATTUCK AV 181	BERKELEY CA	94704
OCCUPANT(S)	2020 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	2021 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	2021 SHATTUCK AV REST	BERKELEY CA	94704
OCCUPANT(S)	2021 SHATTUCK AV ZIBA	BERKELEY CA	94704
OCCUPANT(S)	2021 UNIVERSITY AV ERROR	BERKELEY CA	94704
OCCUPANT(S)	2024 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	2025 ADDISON ST	BERKELEY CA	94704
OCCUPANT(S)	2026 SHATTUCK AV	BERKELEY CA	94704
OCCUPANT(S)	2029 BERKELEY WY	BERKELEY CA	94704
OCCUPANT(S)	2029 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2031 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2032 HEARST AV	BERKELEY CA	94709
OCCUPANT(S)	2033 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2034 HEARST AV	BERKELEY CA	94709
OCCUPANT(S)	2035 BERKELEY WY	BERKELEY CA	94704
OCCUPANT(S)	2035 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2037 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2038 HEARST AV	BERKELEY CA	94709
OCCUPANT(S)	2038 HEARST AV 1	BERKELEY CA	94709
OCCUPANT(S)	2038 HEARST AV 2	BERKELEY CA	94709
OCCUPANT(S)	2038 HEARST AV 3	BERKELEY CA	94709
OCCUPANT(S)	2038 HEARST AV 4	BERKELEY CA	94709
OCCUPANT(S)	2038 HEARST AV 5	BERKELEY CA	94709
OCCUPANT(S)	2038 HEARST AV 6	BERKELEY CA	94709
OCCUPANT(S)	2038 HEARST AV 7	BERKELEY CA	94709
OCCUPANT(S)	2039 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2040 HEARST AV	BERKELEY CA	94709
OCCUPANT(S)	2040 HEARST AV A	BERKELEY CA	94709
OCCUPANT(S)	2040 HEARST AV B	BERKELEY CA	94709
OCCUPANT(S)	2040 HEARST AV C	BERKELEY CA	94709
OCCUPANT(S)	2040 HEARST AV D	BERKELEY CA	94709
OCCUPANT(S)	2041 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2042 HEARST AV	BERKELEY CA	94709
OCCUPANT(S)	2042 HEARST AV A	BERKELEY CA	94709
OCCUPANT(S)	2042 HEARST AV B	BERKELEY CA	94709
OCCUPANT(S)	2042 HEARST AV D	BERKELEY CA	94709
OCCUPANT(S)	2042 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2043 UNIVERSITY AV	BERKELEY CA	94704

Internal

OCCUPANT(S)	2044 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2044 UNIVERSITY AV 12	BERKELEY CA	94704
OCCUPANT(S)	2044 UNIVERSITY AV 6	BERKELEY CA	94704
OCCUPANT(S)	2045 UNIVERSITY AV 211	BERKELEY CA	94704
OCCUPANT(S)	2045 UNIVERSITY AV 302	BERKELEY CA	94704
OCCUPANT(S)	2045 UNIVERSITY AV 303	BERKELEY CA	94704
OCCUPANT(S)	2045 UNIVERSITY AV 309	BERKELEY CA	94704
OCCUPANT(S)	2045 UNIVERSITY AV 316	BERKELEY CA	94704
OCCUPANT(S)	2045 UNIVERSITY AV 321	BERKELEY CA	94704
OCCUPANT(S)	2045 UNIVERSITY AV MANAG	BERKELEY CA	94704
OCCUPANT(S)	2047 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2049 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2051 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2053 BERKELEY WY	BERKELEY CA	94704
OCCUPANT(S)	2054 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2055 BERKELEY WY	BERKELEY CA	94704
OCCUPANT(S)	2057 BERKELEY WY	BERKELEY CA	94704
OCCUPANT(S)	2057 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2057 UNIVERSITY AV 3	BERKELEY CA	94704
OCCUPANT(S)	2057 UNIVERSITY AV 40	BERKELEY CA	94704
OCCUPANT(S)	2058 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2059 BERKELEY WY	BERKELEY CA	94704
OCCUPANT(S)	2059 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2066 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2066 UNIVERSITY AV ESTBK	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 103	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 104	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 201	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 202	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 203	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 204	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 205	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 206	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 207	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 208	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 301	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 302	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 303	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 304	BERKELEY CA	94704

Internal

OCCUPANT(S)	2067 UNIVERSITY AV 305	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 306	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 307	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 308	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 401	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 402	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 403	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 404	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 405	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 406	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 407	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 408	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 501	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 502	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 503	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 504	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 505	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 506	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 507	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 508	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 601	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 602	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 603	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 604	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 605	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 606	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 607	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 608	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 701	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 702	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 703	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 704	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 705	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 706	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 707	BERKELEY CA	94704
OCCUPANT(S)	2067 UNIVERSITY AV 708	BERKELEY CA	94704
OCCUPANT(S)	2068 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2069 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2070 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2070 UNIVERSITY AV 9	BERKELEY CA	94704

Internal

OCCUPANT(S)	2071 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2072 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2074 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2076 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2079 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2081 ADDISON ST	BERKELEY CA	94704
OCCUPANT(S)	2086 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2100 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2101 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2105 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2108 BERKELEY WY	BERKELEY CA	94704
OCCUPANT(S)	2109 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 201	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 202	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 203	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 204	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 205	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 206	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 207	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 208	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 209	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 210	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 211	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 212	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 213	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 214	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 301	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 302	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 303	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 304	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 305	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 306	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 307	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 308	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 309	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 310	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 311	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 312	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 313	BERKELEY CA	94704

Internal

OCCUPANT(S)	2111 UNIVERSITY AV 314	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 401	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 402	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 403	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 404	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 405	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 406	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 407	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 408	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 409	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 410	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 411	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 412	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 413	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 414	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 501	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 502	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 503	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 504	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 505	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 506	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 507	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 508	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 509	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 510	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 511	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 512	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 513	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 601	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 602	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 603	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 604	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 605	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 606	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 607	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 608	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 609	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 610	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 611	BERKELEY CA	94704
OCCUPANT(S)	2111 UNIVERSITY AV 612	BERKELEY CA	94704

Internal

OCCUPANT(S)	2111 UNIVERSITY AV 613	BERKELEY CA	94704
OCCUPANT(S)	2112 BERKELEY WY	BERKELEY CA	94704
OCCUPANT(S)	2113 UNIVERSITY AV NEX	BERKELEY CA	94704
OCCUPANT(S)	2114 BERKELEY WY	BERKELEY CA	94704
OCCUPANT(S)	2116 BERKELEY WY	BERKELEY CA	94704
OCCUPANT(S)	2118 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 201	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 202	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 203	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 204	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 205	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 206	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 207	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 208	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 209	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 210	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 211	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 301	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 302	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 303	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 304	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 305	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 306	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 307	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 308	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 309	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 310	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 311	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 401	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 402	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 403	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 404	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 405	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 406	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 407	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 408	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 409	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 410	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 411	BERKELEY CA	94704

Internal

OCCUPANT(S)	2119 UNIVERSITY AV 501	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 502	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 503	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 504	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 505	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 506	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 507	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 509	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 510	BERKELEY CA	94704
OCCUPANT(S)	2119 UNIVERSITY AV 511	BERKELEY CA	94704
OCCUPANT(S)	2120 BERKELEY WY	BERKELEY CA	94704
OCCUPANT(S)	2120 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2121 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2123 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2125 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2127 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2129 UNIVERSITY AV	BERKELEY CA	94704
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Internal

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OCCUPANT(S)	2135 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2145 UNIVERSITY AV	BERKELEY CA	94704
OCCUPANT(S)	2151 BERKELEY WY	BERKELEY CA	94704
Daughters for Social / Economic Change	PO BOX 2203	BERKELEY CA 94701	
Downtown Berkeley Association	2230 SHATTUCK AVE SUITE C	BERKELEY CA 94704	
McKinley-Addison-Grant Neighborhood Association	1806 ALLSTON WAY	BERKELEY CA 94703	
Milvia-King Alliance	1731 MILVIA ST	BERKELEY CA 94709	
Berkeley High Neighbors	1908 CHANNING WAY	BERKELEY CA 94704	
University of California, Facilities Services	A&E Building, Room 300 University of California Berkeley	Berkeley, CA 94720-1382	
Urban Creeks Council	861 REGAL RD	BERKELEY CA 94708	
Bananas Inc.	5232 CLAREMONT AVE	OAKLAND CA 94618	
Berkeley Central Library	2090 KITTREDGE STREET	BERKELEY CA 94704	
Adams Broadwell Joseph & Cardoza	601 GATEWAY BLVD. Su 1000	SOUTH SAN FRANCISCO CA 94080	
Isaiah Stackhouse, Trachtenberg Architects	2421 Fourth Street	Berkeley CA 94710	

Gong, Sharon

From: Gong, Sharon
Sent: Thursday, February 20, 2025 8:14 AM
To: Gong, Sharon
Subject: FW: 1998 Shattuck Avenue, Berkeley

From: Margots999@sonic.net <Margots999@sonic.net>
Sent: Tuesday, January 14, 2025 11:01 AM
To: Burns, Anne M <ABurns@berkeleyca.gov>
Subject: 1998 Shattuck Avenue, Berkeley

WARNING: This is not a City of Berkeley email. Do not click links or attachments unless you trust the sender and know the content is safe.

This building is far too large for Berkeley. It ignores our history as a family and student town; it creates Manhattan for the East Bay. More Traffic! More high income housing! Where do working people live? families? I hope you nix this 24 or more story market rate building for high income people. It is not appropriate for Berkeley. 154 cars for 599 apartments? Really, where will people park? We used to have height limits, did we vote to change this? Is this planning commission representing us? Do you know if the housing already built is occupied? what is the vacancy rate? Are students rich enough to afford this?

Do not approve this building. It is not right for Berkeley.

"Currently, this is the tallest proposal in the city's pipeline and would potentially become the tallest structure in the city. The **317-foot height eclipses the 307-foot tall Campanile bell tower** on the UC Berkeley campus. The current tallest building in Berkeley is the 1971-built Chase Building, with a rooftop height of 186 feet, followed by the 180-foot tall Anchor House, a UC-developed dormitory that opened last year.

The proposal is expected to rise 317 feet tall with 411,330 square feet of floor area, including 599 apartments, 16,140 square feet of retail, and a 154-car garage. Additional parking will be provided for 284 bicycles. Unit types include 489 studios and 110 two-bedroom residences. The structure will offer 13,030 square feet of residential open space across the second-floor open space, podium-top terraces, and rooftop deck."

Margot Smith
510-486-8010
510-660-5508 (Text)
Margots999@sonic.net

McDonald's USA, LLC
110 N Carpenter St
Chicago, Illinois 60607-2101
Direct Dial Number 630 272 0735
Email: padraic.molloy@us.mcd.com

January 14, 2025

By e-mail aburns@berkeleyca.gov
And Federal Express

City of Berkeley
Design Review Committee
Planning and Development
1947 Center Street, 2nd Floor
Berkeley CA 94704
Attn. Anne Burns

RE: **1950-1998 Shattuck Avenue**
D.R. # DRCP2023-0003
Isaiah Stackhouse/Trachtenberg Architects
Design Review January 16, 2025
McDonald's L/C: 004-0558

Dear Anne Burns:

This is in response to the notice regarding the proposed design review of the above-referenced project on January 16, 2025.

The purpose of this letter is to formally notify the Design Review Committee and the City of Berkeley that McDonald's USA, LLC has a leasehold interest in 1998 Shattuck Avenue (the "Leased Premises"), the term of which runs through December 31, 2031. A portion of the Leased Premises is subleased to a McDonald's franchisee for the operation of a McDonald's restaurant. McDonald's intends to occupy the Leased Premises for the duration of the term of its lease therefore any redevelopment of the Leased Premises may not commence until after the expiration of the term of the McDonald's Lease.

Sincerely,
McDONALD'S USA, LLC

Padraic G. Molloy
Senior Counsel/Director
U.S. Legal Department

Cc: Suzanne Nogues McDonald's by e-mail.

#3405778v1

Gong, Sharon

From: Gong, Sharon
Sent: Thursday, February 20, 2025 8:14 AM
To: Gong, Sharon
Subject: FW: 1998 Shattuck

From: Hans Sluga <sluga@berkeley.edu>
Sent: Wednesday, January 15, 2025 3:41 PM
To: Burns, Anne M <ABurns@berkeleyca.gov>
Subject: 1998 Shattuck

WARNING: This is not a City of Berkeley email. Do not click links or attachments unless you trust the sender and know the content is safe.

OK, let's have highrise buildings in Berkeley, But what good is the Design Review Committee when the end result are those trite boxy structures with weird beige and brownish surfaces? The Trachtenberg architects are producing nothing but inferior buildings in Berkeley. 1998 Shattuck promises to be another one of their flops.

Hans Sluga

Gong, Sharon

From: Gong, Sharon
Sent: Thursday, February 20, 2025 8:15 AM
To: Gong, Sharon
Subject: FW: 1998 Shattuck monstrosity

From: Phoebe Thomas Sorgen <phoebeso@earthlink.net>
Sent: Wednesday, January 15, 2025 3:09 PM
To: Burns, Anne M <ABurns@berkeleyca.gov>
Subject: 1998 Shattuck monstrosity

WARNING: This is not a City of Berkeley email. Do not click links or attachments unless you trust the sender and know the content is safe.

Hello,

I wholeheartedly agree with Margot Smith's concerns re plans for a 1998 Shattuck. Please keep me informed re how we can stop this monstrosity.

"This building is far too large for Berkeley. It ignores our history as a family and student town; it creates Manhattan for the East Bay. More Traffic! More high income housing! Where do working people live? families? I hope you nix this 24 or more story market rate building for high income people. It is not appropriate for Berkeley. 154 cars for 599 apartments? Really, where will people park? We used to have height limits, did we vote to change this? Is this planning commission representing us? Do you know if the housing already built is occupied? what is the vacancy rate? Are students rich enough to afford this?

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"Currently, this is the tallest proposal in the city's pipeline and would potentially become the tallest structure in the city. The **317-foot height eclipses the 307-foot tall Campanile bell tower** on the UC Berkeley campus. The current tallest building in Berkeley is the 1971-built Chase Building, with a rooftop height of 186 feet, followed by the 180-foot tall Anchor House, a UC-developed dormitory that opened last year.

The proposal is expected to rise 317 feet tall with 411,330 square feet of floor area, including 599 apartments, 16,140 square feet of retail, and a 154-car garage. Additional parking will be provided for 284 bicycles. Unit types include 489 studios and 110 two-bedroom residences. The structure will offer 13,030 square feet of residential open space across the second-floor open space, podium-top terraces, and rooftop deck."

Sincerely,
Phoebe Thomas Sorgen, Berkeley resident since 1989 and Commissioner emerita

Planning and Development Department
Land Use Planning Division

MEMORANDUM

Date: February 27, 2025

To: Zoning Adjustments Board

From: Anne Burns, Design Review Committee Secretary

Subject: Preliminary Design Review: 1950-1998 Shattuck Avenue
ZP2023-0040 & DRCP2023-0003

Project Description: The proposed project includes demolition of five existing commercial buildings; merge four lots; construct a 28-story, 411,610-square-foot, mixed-use building with 599 dwelling units (including 58 VLI) and 16,920 sq. ft. of commercial area in the C-DMU (Outer Core) Zoning District at 1950-1998 Shattuck Avenue.

Action: The Design Review Committee (DRC) held a Preliminary Design Review meeting on the subject project on January 16, 2025, based on the applicant's plans dated January 16, 2025. The DRC voted to forward the project to the Zoning Adjustments Board (ZAB) with a favorable recommendation on the project design by a 6-0 vote.

The following is the draft summary recorded by the Secretary. This summary includes the recommendations provided to the applicant for Final Design Review (FDR) during review of the building permit.

Site Design

- *Refine the design at the corner of University and Shattuck Avenues to enhance the pedestrian realm and develop it to be as strong as the design at Shattuck Avenue and Berkeley Way.*
- *Refine the column design at the corner of University and Shattuck Avenues.*
- *Provide a rendering from the sidewalk that shows the top floor.*

Exterior Details

- *Refine details at the 14th and top floors with consideration of the guardrails and railings*
- *Look at resolution of color palette and materials and present final details and material samples at FDR. Details to include metal panels, horizontal bands, parapets, metal awnings, garage gate, windows, railings, and lighting.*

Internal

Landscaping

- *Increase the landscaping on the 14th floor with native plants that are also wind and drought tolerant.*
- *Consider a green wall on Berkeley Way, as well as the column at University and Shattuck Avenues.*
- *Consider adding a green edge at the second floor.*

Windows / Additional Details

- *Add as much depth and interest as possible with detail development.*
- *Consider adding bird safe glass, especially at railings.*
- *Recess windows at the end of the corridor on the north façade.*

Miscellaneous

- *Consider reallocation of lobby space.*
- *Recommendation for a pool cover.*

ZP2023-0040

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LAND USE PLANNING

Item #3, ZAB Meeting of February 27, 2025

Protest and Comments on Use Permit #ZP2023-0040

(1950-1998 Shattuck Avenue or University Corners) and accompanying environmental review

I. **The Project does not meet the goals of the Housing Affordability Act (HAA), of expediting housing, and violates the Downtown Area Plan (DAP)**

a. **The project will not be on-line until 2035**

If the goal of the HAA is to quickly build housing, then this Project will not meet that goal and should be denied. As noted in the Staff Report (p. 15);

> McDonald's has a leasehold interest in the project site through December 31, 2031, a portion of which is subleased to the franchisee of the 1998 Shattuck restaurant...The letter informed the City that McDonald's intends to occupy the site for the duration of the lease term, and that redevelopment may not commence until the lease expires. (Staff Report, p. 15)

This means that the Project will be unable to begin construction until at least 2031. Adding construction time means the project won't come on line until perhaps 2034 or 2035, a delay in providing housing of almost ten years. Even this assumes that market conditions ten years from now will be sufficient for the project to be built.

b. **The Project should be denied to allow other projects, that can come on-line years earlier, to be built.**

The Downtown Area Plan allows five "tall buildings" (120 to 180 feet)[1] to be built in the Downtown Area. The Shattuck Avenue project would be the fifth and last project eligible for this exemption. Approval of the project would therefore block any other project from seeking this exemption while the City waits for ten years for the McDonald's lease to expire and the

[1] Technically greater than 75 feet, the maximum height limit for Downtown.

project to be finally built. Denying the project, and freeing up a slot for a more likely project, is likely to produce more housing in a quicker time-frame.

c. <u>The City has already had to deal with developers who seek a tall building exemption and then fail to build for many years.</u>

In order to ensure that developers timely build projects, Condition of Approval (COA) 5 requires that;

> A permit authorizing construction is exercised when both a valid City building permit (if required) is issued and construction has lawfully begun. **<u>The Zoning Officer may declare a permit lapsed if it is not exercised within one year of its issuance</u>**, except if the applicant has applied for a building permit or has made a substantial good faith effort to obtain a building permit and begin construction.

Having been informed that McDonald's has no intention of leaving its lease before 2031, it is unclear how the applicant could make any assurances it could make the one-year deadline or even meet its "substantial good faith" obligation.

Instead, what the Project developer is more likely to do is to continually seek extensions, delaying housing, precluding other developers from building, and creating blight,

For the Berkeley Plaza project approved in 2015, for instance, a developer associated with the current proposed project requested three extensions (two of them granted by the City) until the City finally cancelled the permit in 2020. As the City wrote:

> Once a project gets entitled, it does not indefinitely hold one of only three opportunities to build a 180-foot building in Berkeley's Downtown...," The condition of approval is designed to ensure that once a project gets approved, it gets built. If the project is unable to move forward in the required timeframe, then another housing development project has the opportunity to be initiated.[2]

d. <u>Any delay in construction creates blight</u>

The Staff Report and Findings recognize the aim of the Downtown Plan to create a vibrant, active, downtown of shops, services, restaurant, and cultural events with a lively streetscape. This goal is directly contradicted if the City approves new construction projects without requiring construction to begin immediately. Instead, the City appears to be promoting real estate speculation, allowing proposed projects to be permitted, but never built, while the Berkeley street-scene suffers.

[2] Letter from Timothy Burroughs, quoted in Berkeleyside (January 17, 2020).

The list of empty and boarded up storefronts includes the empty row of restaurants along Center Street, the vacant storefronts along Shattuck Avenue where the Shattuck Cinemas used to be, and the empty Walgreen's/Ross store, all located in approved building sites that appear to be being held for speculation.

In the case of the Shattuck Avenue project, the expectation that they will be eventually evicted has led to the closure of a Thai restaurant, an ice cream store, and the Missing Link Bicycle store. The longer project construction is delayed, more businesses will leave. This contributes to increased vacancy, contributing to blight, more homeless, and increased crime.

e. <u>If the Project is approved, any approval should be limited to the project beginning construction within one-year without the possibility of an extension</u>

Although we do not think the project should be, and given other procedural defects even can be, approved, if ZAB chooses to do so, it should condition its approval on the project beginning construction within one year. This achieves the goal of promoting housing but avoids the ability of the developer to speculate on project development, delay construction, increase blight, and preclude other developers who are ready to build.

According to the Berkeley Municipal Code, a project securing a position as one of the five tall buildings;

> ...[S]hall include a condition of approval that establishes a schedule for: submittal of a building permit application, timely response to plan check comments, payment of building permit fees such that a building permit can be issued, and beginning construction. **<u>The process for allowing extension of the timeline requirements, if any, shall be specified in the condition.</u>**

If the Project is approved, ZAB should set as a condition of approval a firm, non-appealable date for which construction must begin.[3] Otherwise the project should be denied.

II. <u>The Base Project calculation is flawed</u>

The Base project, by right, is only 65 feet. This is the maximum height associated with these parcels of land proposed for the project. It is this number that should be used to determine the density bonus, not the enhanced 120 foot limit. This significantly reduces the allowed size of the project. At 80 feet (or approximately seven stories, the number of base units is closer to 200 (not 441) and the density bonus needs to be correspondingly reduced.

[3] This would require the applicant to waive their right ti appeal to ZAB in accordance with BMC Chapter 23.410, Appeals and Certification.

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III. The City's proposal that the Project is "categorically exempt" from the EIR process is unsupported by the record, inconsistent with City practice, incomplete, and flawed

a. The Relation of the Downtown Area Plan EIR to the Proposed Project

The Downtown Area Plan, approved in 2012 (although in some cases it used Census data as far back as 1990 for its analysis) is the "Program EIR" that applies to the Project. Since 2012 (or 1990) significant changes have occurred in Berkeley and worldwide that are not examined within the Downtown Area Plan EIR. This includes the effects of global warming, the effect of Uber/Lyft and door-to-door delivery services on transportation, and an increased attention to the effect of projects on indigenous peoples.

The goal of a Program EIR is to examine at a broad level the environmental effects of a major program (such as the Downtown Plan). Closely related to the Program EIR is the Project EIR, which examines in closer detail specific projects that comprise parts of the larger program. In this case 2190 Shattuck is the "Project."

Rather than do a project EIR for 2190 Shattuck, the City is incorrectly proposing to classify the project as "categorically exempt" from any CEQA review.

This is based on an incorrect and incomplete analysis of the "Infill Environmental Checklist."

This Checklist consists of a more narrow scope of environmental issues that need to be examined if a project is being built in an existing urban area, close to transit.

b. For all other tall buildings in Berkeley except for the proposed project, use of the Infill Environmental Checklist has resulted in the need for an Environmental Impact Report (EIR)

The Project is one of five "tall buildings" approved in the Downtown Area Plan. These Tall buildings are outliers, literally sticking out like sore thumbs, raising unique environmental issues that are different from normal sized buildings in the Downtown Area. By their very size, they magnify and concentrate into a smaller sub-area all of the environmental concerns (e.g. air and water pollution, resource concerns, transit needs, etc, common to the larger area) as well as presenting their own unique challenges.

Recognizing this difference, after reviewing the Infill Environmental Checklist , the City has required full-scale Environmental Impact Reports (EIRs) for all of the tall buildings in the Downtown Area. This includes the early 2211 Harold Way Project, 2190 Shattuck Avenue, the Residence Inn Hotel (2129 Shattuck) and 2128 Oxford.

Yet, somehow the Project, which the ZAB Findings (p. 10) describe as "a building which is almost twice as tall than the existing "skyscrapers" in the downtown" area, is assumed incorrectly to have no unique environmental effects.

c. The City appears to be applying a different and lesser standard of environmental review to the Project

It is useful to compare the City's proposed treatment of the Project against the City's recent review of the 2128 Oxford project. The 2128 Oxford project was approved by the City in May, 2024, only five months before the City's proposal for a categorical exemption for the 2190 Shattuck Project. Despite 2128 Oxford being smaller, further away from the edge of the Downtown,[4] and not located on the busiest corner (Shattuck and University) in the Downtown area, the City concluded that an EIR was needed for this project. Areas identified for review in the EIR included;

> Impacts related [to] Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Public Services, and Tribal Cultural Resources [that] were found to be potentially significant in the Initial Environmental Checklist and are analyzed in this EIR.[5]

Yet, less than a quarter of a mile away, none of these issues were found potentially significant enough to be studied for the Project.

d. The City appears to have conducted a cursory and incomplete review of the Infill Checklist requirements

The City appears to have conducted little independent analysis of the environmental issues that need to be addressed in an Infill Environmental Checklist. Instead, it appears the City primarily relied on various reports prepared by the project applicant.

This raises significant concerns.

First, unlike the EIR process, where the City oversees its preparation, all of the analysis was conducted and paid for by the applicant. This creates an implicit bias in favor of downplaying any environmental issues.

Second, almost all of the analysis merely lists and summarizes existing regulations which is insufficient for a CEQA analysis. As the City of Berkeley itself notes;

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[4] Thus minimizing any environmental effects that may occur outside of the Downtown area studied in the Downtown Area Plan EIR.

[5] 2128 Oxford EIR, p. 1-2

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> [An] EIR cannot simply assume that applying laws and regulations to future projects obviates the potential for cumulative impacts. *Californians for Alternatives to Toxics v. Department of Food & Agriculture* (2005) 136 Cal.App.4th 1, 15-17 (compliance with an environmental regulatory program cannot displace an agency's separate obligation to consider whether a project's environmental impacts are significant).[6]

Third, other than a statement in the ZAB Staff Report that these documents had been reviewed, there is no documentation (i.e. review memos, summaries, etc.) showing that staff critically reviewed these filings.

Fourth, and most importantly, the purpose of a thorough environmental review process is to allow the public and other interested stakeholders to review this analysis. This can identify flaws in the analysis and environmental concerns that were missed in a cursory review.

For example, the water quality analysis submitted by the applicant (and supposedly reviewed by City staff) did not identify any problems. Had the analysis been publicly vetted, as the City did for its contemporaneous environmental review of 2128 Oxford, it would have found out, as the East Bay Municipal District (EBMUD) noted, that the Berkeley waste-water system may be incapable of meeting requirements under wet weather conditions. EBMUD also noted other environmental concerns that were not addressed in the applicant's submission.[7]

e. <u>The City appeared to conduct no analysis, and if it did it was incomplete, on the effect of the Project on public utilities and services as required by the Infill Environment Checklist</u>

CEQA Guidelines Section 15332(e) governing use of the Infill Requirement Checklist requires that the City prove that the project "can be adequately served by all required utilities and public services", a requirement that City did not meet.

As noted above, the City's analysis did not examine the ability of EBMUD to provide adequate service during wet weather conditions (an issue the City would have been aware of it they had performed an EIR.)

More troubling is the ability of the City to provide needed fire service to the Project. The Downtown Plan EIR only studied buildings up to 180 feet in height, significantly lower than the 317 foot height of the Project.

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[6] Comments of Jordan Klein, Planning Director for the City of Berkeley –: Draft Environmental Impact Report Comments: 2021 Long Range Development Plan and Housing Projects #1 and #2 submitted to Raphael Breines, Senior Planner, U.C. Berkeley (April 21, 2021), p. 16.

[7] 2128 Oxford EIR, p. 1-2.

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The need for additional fire service in the Downtown Area was recognized by the City itself in its comments on the University of California at Berkeley's Long Range Development Plan EIR. (U.C. Berkeley EIR).[8] Growth in the Downtown area (combined with growth in the student population envisioned by the University would put a significant strain on the ability and capacity of the Berkeley Fire Department to meet its obligations.

As the City noted;

> The increase in building height and densities, such as is found with higher density apartment buildings to accommodate students, also present unique challenges for fire fighters and medical personnel. Responding to calls for service in these housing environments requires twice the staff on fire engines and trucks because these calls require evacuation and management of hundreds of people.[9]

To "accommodate the increased density and height of projects", the City would need additional;

> ...Resources [that] would include an aerial ladder truck, type 1 fire engine, ambulance, mobile air supply truck, and a battalion chief ... [as well as requiring]
>
> ...
>
> A new facility close to the Campus Park to house these additional resources.[10]

None of these additional resource needs, not to mention any specialized equipment or facilities needed to fight fires above the 18th floor are even examined in the Project's environmental review, creating the potential for a fire-trap.

f. <u>The City's traffic analysis and effect on public transit is insufficient</u>

The project is located at the epicenter of Berkeley's downtown transportation system and the two major transit lines in Berkeley

CEQA Guidelines 15332(d) require that;

> Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

Although the City states it conducted a traffic analysis of the proposed Project it likely did not analyze the confluence of events the project could have in creating major gridlock in this vital transit corridor. These events include;

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[8] Comments of Jordan Klein, Planning Director for the City of Berkeley --: Draft Environmental Impact Report Comments: 2021 Long Range Development Plan and Housing Projects #1 and #2 submitted to Raphael Breines, Senior Planner, U.C. Berkeley (April 21, 2021).
[9] Ibid., p. 27-28
[10] Ibid.

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- The addition of 1,000 residents at the corner of Shattuck and University. As many of these residents will be students, there will be significant pedestrian traffic at this intersection to reach campus.
- A corresponding increase in Uber/Lyft pick-ups and drop-offs as well as Door Dash, Amazon and other delivery vehicles turning Shattuck (where the entrance to the building is) into a one-lane southbound street. This effect can already be seen further down Shattuck at Comal, and on University Avenue (for TenderGreens) where delivery drivers have again turned these transit corridors into one-lane.
- Over 250 cars entering and exiting the underground parking on University Avenue.
- The addition of a 1,000 square foot bulb-out on Shattuck Avenue which will hinder the ability of ACTransit to access its pick-up/drop-off location as well as pushing more buses into the adjoining line when buses are backed up.

The combined effect of this is likely to be gridlock, delayed transit, and increased pedestrian and bicycle accidents.

The presence of the bulb-out also raises concerns that the Project does not meet the requirements for an Infill Exemption. CEQA Guidance provided by the Southern California Association of Governments (SCAG), for instance assert that in order for the Infill Requirements to be applicable "the project does not include roadway or transportation system changes beyond site ingress/egress."[11] The bulb out does not meet this criteria.

Also of concern is approval of the bulb out would require an Encroachment Permit from the City, something that does not appear to be within the application.

IV. The Project is not eligible for evaluation under the Infill Exemption criteria

a. The City must examine the "cumulative impacts" of the Project

Under CEQA Guidelines the ability of a project to use the infill exemption process;

> Are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.

Even the applicant appears to recognize the cumulative effect of development in the Downtown Area stating;

> We understand that with approval of the Project, the City will have exceeded the number of residential units that the Downtown Area Plan EIR assumed for the area.

[11] SCAG Categorical Exemption Guide, p. 7.

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To this increased development, the City must add the planned expansion of U.C. as outlined in their LRDP. The existing Downtown Area Plan was developed in coordination with U.C.'s 2005 LDRP, and the current U.C. LDRP (approved in 2024) extensively affects the Downtown area.[12] In its LRDP U.C. estimates it will need new housing for over 7,000 students in addition to increased housing for faculty and additional office/research/teaching space. Much of this new construction is likely to occur in the Downtown area and will be exempt from the City's environmental review.

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (CEQA Guidelines Section 15065[a][3]).

The Downtown Area has reached a tipping point at which any additional marginal environmental effect could have significant implications. It is precisely this marginal effect that CEQA is supposed to examine. A roadway that runs at normal speed with 100 cars on it can become gridlocked with the addition of a 101st car. The incremental pollution from this 101st car in turn could push an area to exceed its regulatory pollution limits, thus triggering additional compliance measures.

The proposed project, combined with known changes from the U.C. LDRP thus creates a cumulative effect and thus is ineligible to use the CEQA Infill Exemption process.

V. The level of Community Benefits is Inadequate:

In exchange for exceeding the by-right height limit in the Downtown Area, applicants are required to provide significant community benefits.

In the case of the Project, the only claimed benefit is a Project Labor Agreement (PLA) as required by the City. There are no further community benefits claimed and it appears that the economic analysis conducted by the City's consultants over-estimated costs and under-estimated the amount of revenues available for community benefits while still retaining project viability.

First, it is only the net costs, not total costs of the PLA that must be considered in calculating community benefits. Adoption of a PLA brings in a more highly-skilled and efficient workforce. Thus higher wages paid in a PLA are either totally or at least partially offset by lower overall costs. As Mark Rhoades, a consultant to the Project noted on a PLA that he had agreed to for a previous project that the PLA ;

[12] Comments of Jordan Klein, Planning Director for the City of Berkeley --: Draft Environmental Impact Report Comments: 2021 Long Range Development Plan and Housing Projects #1 and #2 submitted to Raphael Breines, Senior Planner, U.C. Berkeley (April 21, 2021). P. 13.

ZP2023-0040

> ...[W]ill result in a much better building, a much nicer streetscape, and a building whose systems work because of the union labor that will be putting it together." (Berkeleyside, Oct. 31, 2014)

Second, given the unique skill sets workers need to work on taller buildings such as the Project, many of the PLA costs would have been incurred anyway as a necessary component of the building's construction. Thus while having a PLA is desirable, good for Berkeley and labor, and meets a portion of the significant community benefit requirement, the amount of money claimed as a community benefit should be focused only on the incremental costs of the PLA, not its total costs.

Third, it appears that PLA costs in the economic analysis are overly high, again resulting in understating the amount of funds required for community benefits while maintaining project viability. A recent University of California study found little to any increase in costs for PLA projects versus non-PLA projects. Even studies that conclude that PLAs increase costs (such as the recent RAND study)[13] generally estimate the increased cost at only about 15%. The use of a 20% to 25% figure for the Project thus appears to be too high, once again understating the potential amount of community benefits.

Conclusion

As noted in the above comments, the proposed project must be denied for its failure to comply with City policies, CEQA requirements, and lack of community benefits.

Thank you for your consideration.

James Hendry

[13] RAND Corporation's "The Effects of Project Labor Agreements on the Production of Affordable Housing

Planning and Development Department
Land Use Planning Division

PROOF OF SERVICE

DATE: March 5, 2025

TO: Whom It May Concern

FROM: Melinda Jacob, OSII

SUBJECT: **USE PERMIT #ZP2023-0040 – 1950-1998 SHATTUCK AVENUE**

I, the undersigned, certify that I am employed in the City of Berkeley, County of Alameda, California; that I am over eighteen years of age; that I am not a party to the within action; and that my business address is 1947 Center Street, Berkeley, California 94704. On this date, I served the following documents:

ZONING ADJUSTMENTS BOARD NOTICE OF DECISION

On the parties stated below by placing true copies thereof in sealed envelope(s) addressed as shown below by the following means of service:

Isaiah Stackhouse Trachtenberg Architects 2421 Fourth Street Berkeley, CA 94710	1974 Shattuck Avenue, LLC 2140 Shattuck Avenue Suite 705 Berkeley, CA 94704

☒ By First Class Mail - I am readily familiar with the City's practice for collecting and processing of correspondence for mailing. Under the practice, the correspondence is deposited with the U.S. Postal Service on the same day as collected, with First Class postage thereon fully prepaid, in Berkeley, California, for mailing to the addressee following ordinary business practices.

☐ By Personal Service - I caused each such envelope to be given to the City of Berkeley mail service person to personally deliver to the office of the addressee.

I declare under penalty of perjury that the foregoing is true and correct. Executed on March 5, 2025 at Berkeley, California.

Melinda A. Jacob

Melinda Jacob, OSII

ZONING ADJUSTMENTS BOARD

NOTICE OF DECISION

DATE OF BOARD DECISION: February 27, 2025
DATE NOTICE MAILED: March 5, 205
APPEAL PERIOD EXPIRATION: March 19, 2025
EFFECTIVE DATE OF PERMIT (Barring Appeal or Certification)[1]: March 20, 2025

1950-1998 Shattuck Avenue (University Corners)

Use Permit #ZP2023-0040 to demolish five commercial buildings; merge four lots; and construct a 28-story (312-foot tall, plus 5-foot parapet), 411,610-square-foot, mixed-use building with 599 dwelling units (including 58 Very Low-Income Density Bonus qualifying units), 16,142 square feet of commercial area, and 154 parking spaces.

The Zoning Adjustments Board of the City of Berkeley, after conducting a public hearing, **APPROVED** the following permits:

A. Zoning Permits Required:

- Use Permit under Berkeley Municipal Code (BMC) Section 23.326.070(A) to demolish non-residential buildings
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Use Permit under BMC Section 23.204.030(A)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.130(E)(2) to construct a building that exceeds the district height limit, and that is over 75 feet but not more than 120 feet

[1] Pursuant to BMC Section 23.410.050(C), the City Council Certifications, the City Council may take an action to review ZAB's decision on a Use Permit or Variance. This action is called certification and has the same effect as an appeal. Any member of the City Council may initiate the certification process of a ZAB decision during the 14-day appeal period after the notice of the ZAB's decision is issued. However, the Council's deadline to certify a project is suspended or tolled when the Council is on recess. Therefore, in all cases where the 14-day appeal period is scheduled to end during a Council recess, the certification deadline is extended to and through the day before the next regularly scheduled City Council meeting following any recess. *Extension of the certification deadline has no effect on the appeal deadline.*

- Use Permit under BMC Section 23.204.130(E)(3)(b) to modify the front, side, and rear setback requirements and to exceed 120 feet in width in diagonal measurement above 120 feet in height
- Administrative Use Permit under BMC Section 23.304.050(A) to allow architectural projections to exceed district height limits
- Administrative Use Permit under BMC Section 23.302.070(E)(2) for a food service establishment over 3,000 square feet in area
- Use Permit pursuant to BMC Section 23.310.020(B) to begin alcoholic beverage service (distilled spirits incidental to food service).
- Administrative Use Permit pursuant to BMC Section 23.204.020(A) for Amplified Live Entertainment in a commercial district
- Administrative Use Permit pursuant to BMC Section 23.302.020(D)(3) for outdoor use not abutting a residential district.

B. **Concessions / Waivers Requested Pursuant to State Density Bonus Law (California Government Code Section 65915):**

- Concession from BMC Chapter 23.316 to allow an exemption from the Percentage for Public Art on Private Projects in-lieu fee
- Waiver of BMC Section 23.04.130(E)(1) to exceed building height limits – to be 317' to roof (plus 5' parapet), where 120 feet is the limit (plus 5-foot parapet, by right, with a use permit)
- Waiver of BMC Section 23.204.130(E)(3)(a) to reduce the front setback (University Ave, Shattuck Ave, and Berkeley Way) requirement to 0 feet, where 15 feet is the minimum, above 75-foot building height
- Waiver of BMC Section 23.204.130(E)(3)(a) to reduce the interior left side setback requirement to 10 feet, where 15 feet is the minimum, above 75-foot building height and more than 65 feet from the frontage
- Waiver of BMC Section 23.204.130(E)(3)(d)(i) to exceed diagonal width, to be 239 feet, 10 inches, where 120 feet is the maximum, above 120' in height
- Waiver of BMC Section 23.204.130(E)(4) reduce usable open space minimum to 12,491 square feet, where 47,920 square feet is required

ZONING: C-DMU Core – Downtown Mixed-Use Commercial District, Outer Core Sub-Area

APPLICANT: Isaiah Stackhouse, Trachtenberg Architects, 2421 Fourth Street, Berkeley CA 94710

PROPERTY OWNER: 1974 Shattuck Avenue, LLC, 2140 Shattuck Ave., Ste. 705, Berkeley CA 94704

ENVIRONMENTAL REVIEW STATUS: Categorically exempt pursuant to Section 15332 ("Infill Development Projects") of the CEQA Guidelines.

FINDINGS, CONDITIONS AND APPROVED PLANS ARE ATTACHED TO THIS NOTICE

	Yes	No	Abstain	Absent	Recused
DUFFY	**X**				
KASHANI	**X**				
YUNG	**X**				
VACANT					
VACANT					
SANDERSON	**X**				
THOMPSON	**X**				
GAFFNEY	**X**				
ALLEN	**X**				
BOARD VOTE:	**7**	**0**	**0**	**0**	**0**



ATTEST:
Nilu Karimzadegan, Zoning Adjustments Board
Secretary

PUBLICATION OF NOTICE:

Pursuant to BMC Section 23.404.050, this notice shall be mailed to the applicant at the mailing address stated in the application and to any person who requests such notification by filing a written request with the Zoning Officer on or before the date of the Board action. This notice shall also be filed with the City Clerk. In addition, the notice shall be forwarded to the Zoning Adjustments Board and to the Main Library. The notice shall also be posted at a bulletin board at the Zoning Counter. The City Clerk shall make the notice available to interested members of the Council and the public.

FURTHER INFORMATION:

Questions about the project should be directed to the project planner, Sharon Gong, at (510) 981-7429 or sgong@berkeleyca.gov. All project application materials, including full-size plans, may be viewed online at: https://aca.cityofberkeley.info/CitizenAccess/Welcome.aspx. or in the Permit Service Center at the Zoning Counter at 1947 Center Street, Third Floor, during normal office hours.

TO APPEAL THIS DECISION (see Section 23.410 of the Berkeley Municipal Code):

To appeal a decision of the Zoning Adjustments Board to the City Council you must:

1. Submit a letter clearly and concisely setting forth the grounds for the appeal to the City Clerk, located at 2180 Milvia Street, 1st Floor, Berkeley. The City Clerk's telephone number is (510) 981-6900.
2. Submit the required appeal fee (checks and money orders payable to "City of Berkeley"):
   A. The fee for persons other than the applicant is $1,500. This fee may be reduced to $500 if the appeal is signed by persons who lease or own at least 50 percent of the parcels or dwelling units within 300 feet of the project site, or at least 25 such persons (not including dependent children), whichever is less.
   B. The fee for all appeals by Applicants is $6,000.
3. The appeal must be received prior to 5:00 p.m. on the "APPEAL PERIOD EXPIRATION" date shown on page 1 (if the close of the appeal period falls on a weekend or holiday, then the appeal period expires the following business day).

If no appeal is received, the permit will be issued on the first business day following expiration of the appeal period, and the project may proceed at that time.

NOTICE CONCERNING YOUR LEGAL RIGHTS:

If you object to this decision, the following requirements and restrictions apply:

1. If you challenge this decision in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Zoning Adjustments Board at, or prior to, the public hearing.
2. You must appeal to the City Council within fourteen (14) days after the Notice of Decision of the action of the Zoning Adjustments Board is mailed. It is your obligation to notify the Land Use Planning Division in writing of your desire to receive a Notice of Decision when it is completed.
3. Pursuant to Code of Civil Procedure Section 1094.6(b) and Government Code Section 65009(c)(1), no lawsuit challenging a City Council decision, as defined by Code of Civil Procedure Section 1094.6(e), regarding a use permit, variance or other permit may be filed more than ninety (90) days after the date the decision becomes final, as defined in Code of Civil Procedure Section 1094.6(b). Any lawsuit not filed within that ninety (90) day period will be barred.
4. Pursuant to Government Code Section 66020(d)(1), notice is hereby given to the applicant that the 90-day protest period for any fees, dedications, reservations, or other exactions included in any permit approval begins upon final action by the City, and that any challenge must be filed within this 90-day period.
5. If you believe that this decision or any condition attached to it denies you any reasonable economic use of the subject property, was not sufficiently related to a legitimate public purpose, was not sufficiently proportional to any impact of the project, or for any other reason constitutes a “taking” of property for public use without just compensation under the California or United States Constitutions, your appeal of this decision must include the following information:
   A. That this belief is a basis of your appeal.
   B. Why you believe that the decision or condition constitutes a "taking" of property as set forth above.
   C. All evidence and argument in support of your belief that the decision or condition constitutes a “taking” as set forth above.

   If you do not do so, you will waive any legal right to claim that your property has been taken, both before the City Council and in court.

PLANNING AND DEVELOPMENT

ZONING ADJUSTMENTS BOARD – FINDINGS

FEBRUARY 27, 2025

University Corners
1950-1998 Shattuck Avenue

Use Permit #ZP2023-0040 to demolish five commercial buildings; merge four lots; and construct a 28-story (312-foot tall, plus 5-foot parapet), 411,610-square-foot, mixed-use building with 599 dwelling units (including 58 Very Low-Income Density Bonus qualifying units), 16,142 square feet of commercial area, and 154 parking spaces.

ZONING PERMITS REQUIRED

- Use Permit under Berkeley Municipal Code (BMC) Section 23.326.070(A) to demolish non-residential buildings
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Use Permit under BMC Section 23.204.030(A)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.130(E)(2) to construct a building that exceeds the district height limit, and that is over 75 feet but not more than 120 feet
- Use Permit under BMC Section 23.204.130(E)(3)(b) to modify the front, side, and rear setback requirements and to exceed 120 feet in width in diagonal measurement above 120 feet in height
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- Administrative Use Permit under BMC Section 23.302.070(E)(2) for a food service establishment over 3,000 square feet in area
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- Administrative Use Permit pursuant to BMC Section 23.204.020(A) for Amplified Live Entertainment in a commercial district

- Administrative Use Permit pursuant to BMC Section 23.302.020(D)(3) for outdoor use not abutting a residential district.

CONCESSIONS/WAIVERS UNDER GOVERNMENT CODE SECTION 65915-65918

- Concession from BMC Chapter 23.316 to allow an exemption from the Percentage for Public Art on Private Projects in-lieu fee
- Waiver of BMC Section 23.04.130(E)(1) to exceed building height limits – to be 317' to roof (plus 5' parapet), where 120 feet is the limit (plus 5-foot parapet, by right, with a use permit)
- Waiver of BMC Section 23.204.130(E)(3)(a) to reduce the front setback (University Ave, Shattuck Ave, and Berkeley Way) requirement to 0 feet, where 15 feet is the minimum, above 75-foot building height
- Waiver of BMC Section 23.204.130(E)(3)(a) to reduce the interior left side setback requirement to 10 feet, where 15 feet is the minimum, above 75-foot building height and more than 65 feet from the frontage
- Waiver of BMC Section 23.204.130(E)(3)(d)(i) to exceed diagonal width, to be 239 feet, 10 inches, where 120 feet is the maximum, above 120' in height
- Waiver of BMC Section 23.204.130(E)(4) reduce usable open space minimum to 13,032 square feet, where 47,920 square feet is required

I. CEQA FINDINGS

A. On November 19, 2024, the City determined that the project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA, Public Resources Code Section 21000, et seq. and California Code of Regulations, Section 15000, et seq.) pursuant to Section 15332 of the CEQA Guidelines ("Infill Development Projects").

The project applicant's attorney submitted a letter on October 8, 2024 in support of a Class 32 Categorical Exemption from CEQA and the project's eligibility for AB 1633 protections. The applicant separately submitted an Air Quality Report, a Noise Impact Analysis, and a Water Quality Impact Analysis to support an infill exemption. All technical reports were peer reviewed by a CEQA consultant, and were revised for adequacy.

B. Upon review of all evidence on the record, the City determined that the project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA, Public Resources Code §21000, et seq. and California Code of Regulations, §15000, et seq.) pursuant to Section 15332 ("Infill Development Projects") of the CEQA Guidelines.

The project meets all of the requirements of this exemption, as follows:

1. The project is consistent with the applicable General Plan designation and policies, and with the applicable zoning designation and regulations.
2. The project occurs within the Berkeley City limits on a project site of no more than five acres, and is surrounded by urban uses.
3. The parcels within the project site have previously been developed and have no value as habitat for endangered, rare or threatened species.

4. The project will not result in any significant effects relating to traffic, noise, air quality or water quality. The Traffic Impact Analysis prepared for the project was reviewed by the City Transportation Division which concurred with the findings of less than significant impacts. City Standard Conditions will address potential impacts related to traffic, noise, air quality, and water quality.
5. The site can be adequately served by all required utilities and public services.

C. Furthermore, none of the exceptions in CEQA Guidelines Section 15300.2 apply, as follows: (a) the site is not located in an environmentally sensitive area, (b) there are no cumulative impacts, (c) there are no significant effects, (d) the project is not located near a scenic highway, (e) the project site is not located on a hazardous waste site pursuant to Government Code Section 65962.5, and (f) the project will not affect any historical resource.

II. HOUSING ACCOUNTABILTY ACT FINDINGS

A. The Housing Accountability Act, Government Code Section 65589.5(j) requires that when a proposed housing development complies with applicable, objective general plan and zoning standards, a local agency may not deny the project or approve it with reduced density unless the agency makes written findings supported by substantial evidence that: (1) the development would have a specific adverse impact on public health or safety unless disapproved or approved at a lower density; and (2) there is no feasible method to satisfactorily mitigate or avoid the specific adverse impact, other than the disapproval or approval at a lower density.

B. The project includes construction of 599 units. Because the base project complies with applicable, objective general plan and zoning standards, Section 65589.5(j) does apply to this project. No significant, quantifiable, direct and unavoidable impacts, based on objective, identified written public health or safety standards, polices, or conditions, have been identified.

III. DENSITY BONUS FINDINGS

A. Pursuant to Government Code Section 65915, the Zoning Adjustments Board finds that:
1. Under the City's methodology for implementing density bonuses, the base project consists of 411 units;
2. The project will provide at least 58 VLI qualifying units in the 411-unit base project, as more fully set forth in the Below Market Rate Units Condition;
3. The project is entitled to a density increase of 46.25 percent over the otherwise maximum allowable residential density under the Zoning Ordinance and General Plan Land Use Element, under the requirements of Government Code Section 65915(b) and (f), plus two concessions or incentives. This equates to a density bonus of 188 units (191 units maximum) above the base project, for a total of up to 599 units (602 units maximum).

B. In accordance with Government Code Section 65915(d) and (k), the Zoning Adjustments Board hereby grants the following concessions in order to provide for affordable housing costs:

1. Concession from BMC Chapter 23.316 to allow an exemption from the Percentage for Public Art on Private Projects in-lieu fee

C. In accordance with Government Code Section 65915(d), in order to allow construction of the proposed project with the density permitted under State law, the Zoning Adjustments Board finds that the approval of the concessions is required to provide for affordable rents, as provided in Government Code Section 65915(d)(1)(A) because 1) approval of the concession would result in identifiable and actual cost reduction; 2) approval of the concession would not have a specific adverse impact upon public health and safety, or the physical environment, or on any real property listed in the California Register of Historical Resources; and 3) would not be contrary to State or Federal law.

D. In accordance with Government Code Section 65915(e) the Zoning Adjustments Board hereby grants the following waivers to modify development standards as necessary to accommodate these density bonus units.

1. Waiver of BMC Section 23.04.130(E)(1) to exceed building height limits – to be 317' to roof (plus 5' parapet), where 120 feet is the limit (plus 5-foot parapet, by right, with a use permit)
2. Waiver of BMC Section 23.204.130(E)(3)(a) to reduce the front setback (University Ave, Shattuck Ave, and Berkeley Way) requirement to 0 feet, where 15 feet is the minimum, above 75-foot building height
3. Waiver of BMC Section 23.204.130(E)(3)(a) to reduce the interior left side setback requirement to 10 feet, where 15 feet is the minimum, above 75-foot building height and more than 65 feet from the frontage
4. Waiver of BMC Section 23.204.130(E)(3)(d)(i) to exceed diagonal width, to be 239 feet, 10 inches, where 120 feet is the maximum, above 120' in height
5. Waiver of BMC Section 23.204.130(E)(4) reduce usable open space minimum to 13,032 square feet, where 47,920 square feet is required

E. In accordance with Government Code Section 65915(e), in order to allow construction of the proposed project with the density permitted under State law, the Zoning Adjustments Board finds that the approval of waivers is required 1) to construct the proposed project at the density permitted under State law; 2) approval of requested waivers will not have a specific adverse impact upon public health and safety, or the physical environment, or on any real property listed in the California Register of Historical Resources; and 3) approval of the requested waivers will not be contrary to State or Federal law.

IV. FINDINGS FOR APPROVAL

A. As required by BMC Section 23.406.040(E), Findings for Approval, the project, under the circumstances of this particular case existing at the time at which the application is granted, will not be detrimental to the health, safety, peace, morals, comfort, and general welfare of

the persons residing or working in the neighborhood of such proposed use or be detrimental or injurious to property and improvements of the adjacent properties, the surrounding area or neighborhood, or to the general welfare of the City because:

1. The project is consistent with all applicable C-DMU District standards and qualifies for concessions and waivers for the listed district standards granted pursuant to State Density Bonus, Government Code, Section 65915.

2. According to the shadow studies submitted for the project, new shadow impacts will occur: a) in the winter and spring months in the hours of after sunrise and around noon, on the residential buildings on the blocks to the north and northwest of the site, and b) in the summer months in the hours of after sunrise on the residential buildings to the west of the site. All other new shadows will impact non-residential buildings in the vicinity. The extent of the new shadow impact from the project on the site's adjacent areas will be limited to a few hours of the day during certain times of the year, will not be unreasonable for a development in the dense, downtown district that allows building heights up to 60 feet, with 0 to 5-foot setbacks from property lines, by right.

3. The additional height above the district limits from the density bonus will cast shadows in the affected directions further than if the project were limited to the base district height standards. The proposal will include waivers for additional height beyond the district height limits to accommodate the density bonus units and allow a 312-foot-tall (plus 5-foot parapet), 28-story building. Overall, the shadow impacts from the project will be reasonable and not detrimental.

4. The project will be subject to the City's standard conditions of approval regarding construction noise and air quality, waste diversion, toxics, and stormwater requirements, which will ensure that the project will not be detrimental to the health, safety, peace, morals, comfort or general welfare of persons residing or working in the area or neighborhood of such proposed use or be detrimental or injurious to property and improvements of the adjacent properties, the surrounding area or neighborhood or to the general welfare of the City.

V. OTHER FINDINGS FOR APPROVAL

A. As required by BMC Section 23.326.070(D), the Zoning Adjustments Board finds that the proposed demolition of the non-residential buildings listed below will not be materially detrimental to the commercial needs and public interest of any affected neighborhood or the City, and that the demolition of the structures is required to allow a proposed new building or other proposed new use, will remove a building that which is unusable for activities completable with the purpose of the district or infeasible to modify for such uses, will remove a structure that is an inhabitable attractive nuisance to the public, or is required for the furtherance of specific plans or projects sponsored by the City or other local district or authority.

1. 1950 &1958 Shattuck, 57-2053-1
2. 1974 Shattuck, 57-2053-2
3. 1984 Shattuck, 57-2053-3-2 and 1986 &1998 Shattuck, 57-2053-3-1
4. 2071 & 2079 University, 57-2053-4-2

The proposed demolition of the non-residential buildings will not be detrimental needs of the neighborhood, as the project redevelops an underutilized with a new mixed-use, multifamily building that is compatible with existing development patterns in the downtown. The project is aligned with the Downtown Area Plan and the C-DMU district's purposes, which include objectives for Environmental Sustainability, Land Use, Access, Historic Preservation and Urban Design, Streets and Open Space, Housing and Community Health and Services, and Economic Development.

B. As required by BMC Section BMC 23.310.020(C), Alcohol Sales and Service (Distilled Spirits), the Zoning Adjustments Board finds that:

1. The current Alcoholic Beverage Control license owned by the existing restaurant/bar (Spat's) allows for sales of beer, wine, and distilled spirits for off-site consumption at a bona fide eating place. The number of alcohol licenses within the census tract will not change if the restaurant/bar in the new building assumes ownership of the existing restaurant/bar license, or if the current license owner surrenders the existing license and the new restaurant/bar applies for a new license. A Condition of Approval will be included in the permit to require that no net new alcohol licenses are obtained for businesses at the project site. Additional findings in BMC Section 23.310.020(C)(3) for exceeding the number of licenses within the census tract will not apply.

2. The allowance of distilled spirits sales and service in conjunction with a bona fide eating establishment in the project will provide a wider range of alcoholic menu options to patrons that are customarily available within other restaurants. Such expanded menu choices will contribute to the economic success of the restaurant. The addition of distilled spirits to the offerings will also increase business revenue, resulting in increased tax revenue for the City. The Berkeley Police Department has reviewed the proposal and noted that there are no alcohol-related violations against the property owners of the parcels in the project site, and no violations of alcohol or public safety.

3. Alcohol service standards are included in the Conditions of Approval for the permit, and the applicant will be required to meet applicable ABC standards for the license type.

C. As required by BMC Section 23.302.070(E)(2), Food Service Establishment greater than 3,000 square feet, the Zoning Adjustments Board finds that the use meets the findings in BMC Section 23.204.130(I). The project is compatible with the Land Use and Economic Development purposes of the district because the rooftop restaurant/bar with outdoor seating will contribute to the area's vitality, livability, and character.

D. As required by BMC Section 23.204.020(A), Amplified Live Entertainment, the Zoning Adjustments Board finds that the use meets the findings in BMC Section 23.204.130(I). The project is compatible with the Land Use and Economic Development purposes of the district

because the rooftop restaurant/bar with amplified live entertainment will contribute to the area's vitality, livability, and character.

E. As required by BMC Section 23.302.020(D)(3), outdoor use not abutting a residential district), the Zoning Adjustments Board finds that the use meets the findings in BMC Section 23.204.130(I). The project's rooftop restaurant/bar with outdoor seating is compatible with the Land Use and Economic Development purposes of the district because it will contribute to the area's vitality, livability, and character.

F. As required by BMC Section 23.204.130(I), the project is consistent with the purposes of the C-DMU district:

1. *Environmental Sustainability and Access:* The project is a high-density mixed-use development in proximity to regional transit, shops and amenities, and will provide more housing in the Downtown to increase access to local services and amenities by foot, by bicycle and via transit, while promoting public transit as an efficient and attractive choice through its location and through its Transportation Demand Management measures and other associated Conditions of Approval. The project will comply with the State's Model Water Efficient Landscape Ordinance (MWELO), provide landscaping in its open space areas, and will feature a number of native plant species in its landscape palette. The project proposes GreenPoint Rated Silver certification, which is equivalent to the LEED Gold rating, as required for new buildings in the C-DMU District.

2. *Land Use:* The mixed-use project, which includes 58 VLI units, will add new affordable housing to the Downtown area. Ground floor commercial uses and a rooftop restaurant/bar with outdoor seating and live entertainment will contribute to the area's vitality, livability, sustainability, and character. New street trees and landscaping along Shattuck and University Avenues and Berkeley Way will add to the cultivation of the Downtown as an attractive residential neighborhood.

3. *Historic Preservation and Urban Design:* The project does not propose to demolish or alter any known historic or cultural resource and will preserve the existing historic resources in the Downtown.

The project will provide continuity and harmony between the old and the new in the built environment, improve the visual and environmental quality of Downtown and create an active, safe and visually engaging pedestrian environment. At 28 stories and 317 feet tall (measured to the parapet) the building will be the tallest built structure in the City (taller than the Campanile on the U.C Berkeley campus at 307 feet tall). However, the building is designed to step down from its 28-story maximum height to 14 stories on the north side, away from the Core downtown area, in a nod to the first "skyscrapers" in the downtown, the 13-story Chase building and the 12-story Wells Fargo building at Center and Shattuck Avenues. The transparency of the commercial storefronts and the 20-foot window/ceiling height on the ground-floor of the Shattuck and University Avenue façades will enliven the streetscape on these frontages. The parklet and publicly accessible plaza on either side of the sidewalk on the Shattuck

Avenue frontage will engage pedestrians walking through the downtown commercial district and welcome them to the businesses in the building.

The DRC deemed the project consistent with Downtown Berkeley design guidelines, and provided a favorable recommendation to the ZAB. The proposed project design incorporates materials, color, façade design, ground-floor transparency, roof forms, setbacks, height and open space elements consistent with guidance in the Downtown Berkeley Design Guidelines.

4. *Streets and Open Space:* The project will include street trees along Shattuck and University Avenues and Berkeley Way, and a 1,020-square-foot parklet bulb-out and 706-square-foot publicly accessible private plaza on the Shattuck Avenue frontage to benefit pedestrians, as well as future residents. The second-floor podium deck and 14th floor roof deck will provide landscaped open space and amenities for residents. The project will contribute funds to the Streets and Open Space Improvement Plan (SOSIP).

5. *Housing and Community Health and Services:* The project will involve construction of a mixed-use building with a total of 599 dwelling units, including 58 VLI units. The project will expand the supply of affordable housing and contribute to a thriving, livable, diverse residential neighborhood with a mix of supportive uses in Downtown.

6. *Economic Development:* The project will bring new residents and a greater range of household incomes to the Downtown area, while preserving the character of the Downtown Historic neighborhood, to contribute to the area's vitality and success. The project will bring approximately 8,342 square feet of ground-floor retail and a 7,800-square-foot rooftop restaurant to the area to contribute to making Downtown an attractive regional destination for living, working and visiting. In addition, the project includes a Project Labor Agreement with the Alameda County Building Trades Council, representing approximately 20 to 25 percent of estimated project construction costs, to utilize local workers for project construction.

   In addition, the project is compatible with surrounding uses and buildings. The project site is located at the eastern end of the block bounded by Berkeley Way, Shattuck Avenue, and University Avenue in Downtown Berkeley in an urban area with immediate access to transit. The site's immediate surroundings are a mixture of buildings that contain mixed-use residential with ground floor commercial, multi-family residential, and commercial uses, and range in height from one story to twelve stories. Other taller buildings are the 12-story mixed-use residential building across Shattuck Avenue at 1951 Shattuck, the 14-story Anchor House at 1950 Oxford Street, one block east, and the Residence Inn Hotel at 2129 Shattuck Avenue, two blocks south of the site. Recently approved "tall buildings" include the 25-story mixed-use residential building at 2190 Shattuck (approved in 2023), three blocks to the south, and the 26-story mixed-use residential building at 2128 Oxford Street (approved in 2024) three blocks southeast of the project site.

   As a one of the five "tall buildings" allowed in the C-DMU District and one of the two "tall buildings" allowed in the Outer Core/Core Sub-Areas (combined), the project will

be compatible in size and scale with the other four "tall buildings" that are already constructed or were recently approved in the Downtown area. Thus, the project will be compatible with surrounding uses and buildings. In addition, the DRC deemed the proposed project consistent with Downtown Berkeley Design Guidelines, and provided a favorable recommendation to the ZAB with conditions and recommendations for Final Design Review.

G. As required by BMC Section 23.304.050(A), the Zoning Adjustments Board finds that the proposed rooftop equipment, which exceeds the district height limit, does not exceed 15 percent the average floor area of the building's floors. None of the equipment structures will be used as habitable or commercial space. The project will include staircase and elevator penthouses 1,464 square feet on the roof of level 28 that will extend seventeen feet over the roof height. These areas represent 10 percent of the 14,058-square-foot average of all the floor areas, and will not exceed the limit of 15 percent of the average floor area, and are therefore permissible.

H. As required BMC Section 23.204.130(E)(2), the Zoning Adjustments Board finds that:

1. The project provides a community benefits proposal that is primarily composed of a Project Labor Agreement – an agreement with the Alameda County Building Trades Council, representing approximately 20 to 25 percent of the estimated project construction cost, which is greater than the minimum 5 percent specified in the Resolution #67,172-NS. It is noted, however, that the project offers no other significant community benefits that exceed regulatory requirements, beyond the Project Labor Agreement.

2. Based on the City's consultant peer review, the Community Benefits package is reasonable overall, and will not make project infeasible.

I. As required by BMC Section 23.204.130(E)(2), the Zoning Adjustments Board finds that:

1. The setback encroachment in the Base Project will result in a minimal contribution to new shadow impact relative to the increase in shadow impact from the Density Bonus project height and reduced setbacks that are requested as waivers. Thus, the setback reduction the Base Project will not unreasonably limit solar access.

2. The Pedestrian Wind Comfort Assessment found that:

a. Wind speeds onsite are generally calm and considered suitable for pedestrian use. Higher wind speeds, (still appropriate for sidewalks and walkways), occur near the corners of mid-rise buildings with broad west facing facades on the east side of Shattuck Avenue.

b. Increased wind speeds are expected on University Avenue and at the intersection of Shattuck Avenue and Berkeley way during the summer. However, these speeds are adequate for sidewalks and walkways.

c. In the winter, lower wind speeds are expected. Light breezes are predicted for most areas near the proposed development, with slightly higher wind speeds occurring around the east/northeast side of the building.

d. The pedestrian wind safety criterion is predicted to be met at all locations near the project site.

J. As required by BMC Section 23.204.030(A)(2), the Zoning Adjustments Board finds that:

1. The new building will be compatible with the visual character and form of the zoning district. The zoning district allows for heights up to 120 feet (in the base project for density bonus) with a use permit and upon provision of community benefits. Existing buildings in the vicinity of the project site range from one to twelve stories, with taller buildings on University and Shattuck Avenues. The site is located within the Downtown Area Plan and is consistent Downtown Berkeley Design Guidelines as further discussed below.

2. The proposed project will result in a new building that is substantially taller than surrounding buildings in the downtown district. As a result, it will introduce a new visual feature to the district by introducing a building which is almost twice as tall than the existing “skyscrapers” in the downtown. However, the proposed building will be compatible with the most recently approved “tall buildings” in the downtown district, as discussed in the previous section, and will be consistent with the trend of increased density in new housing development fueled by the adoption of laws to remedy the State’s housing crisis.

3. In addition, the DRC reviewed the project and found the proposed design to be consistent the Downtown Berkeley Design Guidelines and the Downtown Area Plan.

PLANNING AND DEVELOPMENT

USE PERMIT ZP2023-0040 CONDITIONS OF APPROVAL

February 27, 2025

1950-1998 Shattuck Avenue (University Corners)

Use Permit #ZP2023-0040 to demolish five commercial buildings; merge four lots; and construct a 28-story (312-foot tall, plus 5-foot parapet), 411,610-square-foot, mixed-use building with 599 dwelling units (including 58 Very Low-Income Density Bonus qualifying units), 16,142 square feet of commercial area, and 154 parking spaces.

I. STANDARD CONDITIONS OF APPROVAL FOR ALL PROJECTS

Pursuant to Berkeley Municipal Code (BMC) Title 23 Zoning Ordinance and Title 13 Public Peace, Morals, and Welfare, the following conditions, as well as all other applicable provisions of the Zoning Ordinance, apply to this Permit:

1. **Conditions Shall be Printed on Plans.** The conditions of this Permit shall be printed on the *second* sheet of each plan set submitted for a building permit pursuant to this Use Permit, under the title 'Use Permit Conditions.' *Additional sheets* may also be used if the *second* sheet is not of sufficient size to list all of the conditions. The sheet(s) containing the conditions shall be of the same size as those sheets containing the construction drawings.
2. **Compliance Required (BMC Section 23.102.050).** All land uses and structures in Berkeley must comply with the Zoning Ordinance and all applicable City ordinances and regulations. Compliance with the Zoning Ordinance does not relieve an applicant from requirements to comply with other federal, state, and City regulations that also apply to the property.
3. **Approval Limited to Proposed Project and Replacement of Existing Uses (BMC Sections 23.404.060(B)(1) and (2)):**
   - **A.** This Permit authorizes only the proposed project described in the application. In no way does an approval authorize other uses, structures or activities not included in the project description.

B. When the City approves a new use that replaces an existing use, any prior approval of the existing use becomes null and void when permits for the new use are exercised (e.g., building permit or business license issued). To re-establish the previously existing use, an applicant must obtain all permits required by the Zoning Ordinance for the use.

4. **Conformance to Approved Plans (BMC Section 23.404.060(B)(4)).** All work performed under an approved permit shall comply with the approved plans and any conditions of approval.

5. **Exercise and Expiration of Permits (BMC Section 23.404.060(C)):**

   A. A permit authorizing a land use is exercised when both a valid City business license is issued (if required) and the land use is established on the property.

   B. A permit authorizing construction is exercised when both a valid City building permit (if required) is issued and construction has lawfully begun.

   C. The Zoning Officer may declare a permit lapsed if it is not exercised within one year of its issuance, except if the applicant has applied for a building permit or has made a substantial good faith effort to obtain a building permit and begin construction. The Zoning Officer may declare a permit lapsed only after 14 days written notice to the applicant. A determination that a permit has lapsed may be appealed to the ZAB in accordance with BMC Chapter 23.410, Appeals and Certification.

   D. A permit declared lapsed shall be void and of no further force and effect. To establish the use or structure authorized by the lapsed permit, an applicant must apply for and receive City approval of a new permit.

6. **Permit Remains Effective for Vacant Property (BMC Section 23.404.060(D)).** Once a Permit for a use is exercised and the use is established, the permit authorizing the use remains effective even if the property becomes vacant. The same use as allowed by the original permit may be re-established without obtaining a new permit, except as set forth in Standard Condition #5 above.

7. **Permit Modifications (BMC Section 23.404.070).** No change in the use or structure for which this Permit is issued is permitted unless the Permit is modified by the Board. The Zoning Officer may approve changes to plans approved by the Board, consistent with the Board's policy adopted on May 24, 1978, which reduce the size of the project.

8. **Permit Revocation (BMC Section 23.404.080).** The City may revoke or modify a discretionary permit for completed projects due to: 1) violations of permit requirements; 2) Changes to the approved project; and/or 3) Vacancy for one year or more. However, no lawful residential use can lapse, regardless of the length of time of the vacancy. Proceedings to revoke or modify a permit may be initiated by the Zoning Officer, Zoning Adjustments Board (ZAB), or City Council referral.

9. **Hold Harmless.** The permittee agrees as a condition of approval of this application to indemnify, protect, defend with counsel selected by the City, and hold harmless, the City, and any agency or instrumentality thereof, and its elected and appointed officials, officers, employees and agents, from and against any and all liabilities, claims, actions, causes of action, proceedings, suits, damages, judgments, liens, levies, costs and expenses of whatever nature, including reasonable attorney's fees and disbursements (collectively, "Claims") arising out of or in any way relating to the approval of this application, any actions taken by the City related to this entitlement, or any environmental review conducted under the California Environmental Quality Act, Public Resources Code Section 210000 et seq., for this entitlement and related actions. The indemnification shall include any Claims that may be asserted by any person or entity, including the permittee, arising out of or in connection with the approval of this application, whether or not there is concurrent, passive or active negligence on the part of the City, and any agency or instrumentality thereof, and its elected and appointed officials, officers, employees and agents. The permittee's duty to defend the City shall not apply in those instances when the permittee has asserted the Claims, although the permittee shall still have a duty to indemnify, protect and hold harmless the City.

II. ADDITIONAL CONDITIONS IMPOSED BY THE ZONING ADJUSTMENTS BOARD

Pursuant to BMC Section 23.404.050(H) Conditions of Approval, the Zoning Adjustments Board attaches the following additional conditions to this Permit:

Prior to Submittal of Any Building Permit:

10. **Project Liaison.** The applicant shall include in all building permit plans and post onsite the name and telephone number of an individual empowered to manage construction-related complaints generated from the project. The individual's name, telephone number, and responsibility for the project shall be posted at the project site for the duration of the project in a location easily visible to the public. The individual shall record all complaints received and actions taken in response, and submit written reports of such complaints and actions to the project planner on a weekly basis. Please designate the name of this individual below:

    ☐ **Project Liaison** _____

    Name Phone #

11. **Address Assignment.** The applicant shall file an "Address Assignment Request Application" with the Permit Service Center (1947 Center Street) for any address change or new address associated with this Use Permit. The new address(es) shall be assigned in accordance with BMC Section 16.28.030 Assignment and Installation of Numbers, and, except for new buildings on vacant lots, entered into the City's database after the building permit is issued but prior to final inspection.

12. **Privately-Owned Public Plaza.** The applicant shall submit plans that comply with the provisions in BMC Section 23.204.130(E)(5), including signage in a publicly conspicuous location at street level indicating the area that is open to the public, the hours the space is open, and the party responsible for maintenance.

13. **Bird Safe Buildings.** Prior to submittal of the building permit, the applicant shall demonstrate compliance with the applicable bird safe building provisions in BMC Section 23.304.150, Bird Safe Buildings.

14. **Construction Noise Reduction Program.** The applicant shall develop a site-specific noise reduction program prepared by a qualified acoustical consultant to reduce construction noise impacts to the maximum extent feasible, subject to review and approval of the Zoning Officer. The noise reduction program shall include the time limits for construction listed above, as measures needed to ensure that construction complies with BMC Section 13.40.070, Prohibited Acts. The noise reduction program should include, but shall not be limited to, the following available controls to reduce construction noise levels as low as practical:

    A. Construction equipment should be well maintained and used judiciously to be as quiet as practical.

    B. Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment.

    C. Utilize “quiet” models of air compressors and other stationary noise sources where technology exists. Select hydraulically or electrically powered equipment and avoid pneumatically powered equipment where feasible.

    D. Locate stationary noise-generating equipment as far as possible from sensitive receptors when adjoining construction sites. Construct temporary noise barriers or partial enclosures to acoustically shield such equipment where feasible.

    E. Prohibit unnecessary idling of internal combustion engines.

    F. If impact pile driving is required, pre-drill foundation pile holes to minimize the number of impacts required to seat the pile.

    G. Construct solid plywood fences around construction sites adjacent to operational business, residences or other noise-sensitive land uses where the noise control plan analysis determines that a barrier would be effective at reducing noise.

    H. Erect temporary noise control blanket barriers, if necessary, along building facades facing construction sites. This mitigation would only be necessary if conflicts occurred which were irresolvable by proper scheduling. Noise control blanket barriers can be rented and quickly erected.

    I. Route construction related traffic along major roadways and away from sensitive receptors where feasible.

15. **Damage Due to Construction Vibration.** The project applicant shall submit screening level analysis prior to, or concurrent with demolition building permit. If a screening level analysis shows that the project has the potential to result in damage to structures, a structural engineer or other appropriate professional shall be retained to prepare a vibration impact assessment (assessment). The assessment shall consider project specific information such as the composition of the structures, location of the various types of equipment used during each phase of the project, as well as the soil characteristics in the project area, in order to determine whether project construction may cause damage to any of the structures identified as potentially impacted in the screening level analysis. If the assessment finds that the project may cause damage to nearby structures, the structural engineer or other appropriate professional shall recommend design means and methods of construction that to avoid the potential damage, if feasible. The assessment and its recommendations shall be reviewed and approved by the Building and Safety Division and the Zoning Officer. If there are no feasible design means or methods to eliminate the potential for damage, the structural engineer or other appropriate professional shall undertake study of existing conditions (study) of any structures (or, in case of large buildings, of the portions of the structures) that may experience damage.

    This study shall establish the baseline condition of these structures, including, but not limited to, the location and extent of any visible cracks or spalls; and include written descriptions and photographs.

    The study shall be reviewed and approved by the Building and Safety Division and the Zoning Officer prior to issuance of a grading permit. Upon completion of the project, the structures (or, in case of large buildings, of the portions of the structures) previously inspected will be resurveyed, and any new cracks or other changes shall be compared to pre-construction conditions and a determination shall be made as to whether the proposed project caused the damage. The findings shall be submitted to the Building and Safety Division and the Zoning Officer for review. If it is determined that project construction has resulted in damage to the structure, the damage shall be repaired to the pre-existing condition by the project sponsor, provided that the property owner approves of the repair

16. **Compliance with Conditions of Approval.** The building permit application is subject to verification of compliance of these Conditions of Approval. The applicant shall be responsible for demonstrating compliance with all conditions of approval and mitigation measures per the timeline set forth by this use permit. The applicant shall deposit $10,000 with the City, or less with the approval of the Zoning Officer, to pay for the cost of monitoring compliance with these Conditions of Approval and other applicable conditions and regulations. Should compliance-monitoring expenses exceed the initial deposit, the applicant shall deposit additional funds to cover such additional expenses upon the request of the Zoning Officer; any unused deposit will be refunded to the applicant.

Prior to Issuance of Any Building & Safety Permit (Demolition or Construction)

17. **Significant Community Benefits.** Pursuant to BMC Section 23.204.130.E.2(c) and City Council Resolution No. 67,172-N.S., all significant community benefits agreed to by the applicant and approved by the City shall be included as Conditions of Approval and the owner shall enter into a written agreement with the City that shall be binding on all successors in interest. The significant community benefits for this project consists of:

    Project Labor Agreement. An agreement with the Alameda County Building Trades Council, representing approximately 20 to 25 percent of estimated project construction costs, based on the Community Benefits Pro Forma Financial Analysis submitted in permit application.

18. **Demolition.** Demolition of the existing building cannot commence until a complete application is submitted for the replacement building. In addition, all plans presented to the City to obtain a permit to allow the demolition are subject to these conditions.

19. **Construction Noise Management.** Public Notice Required. At least two weeks prior to initiating any construction activities at the site, the applicant shall provide notice to businesses and residents within 500 feet of the project site. This notice shall at a minimum provide the following: (1) project description, (2) description of construction activities during extended work hours and reason for extended hours, (3) daily construction schedule (i.e., time of day) and expected duration (number of months), (4) the name and phone number of the Project Liaison for the project that is responsible for responding to any local complaints, and (5) that construction work is about to commence. The liaison would determine the cause of all construction-related complaints (e.g., starting too early, bad muffler, worker parking, etc.) and institute reasonable measures to correct the problem. A copy of such notice and methodology for distributing the notice shall be provided in advance to the City for review and approval.

20. **Construction Phases.** The applicant shall provide the Zoning Officer with a schedule of major construction phases with start dates and expected duration, a description of the activities and anticipated noise levels of each phase, and the name(s) and phone number(s) of the individual(s) directly supervising each phase. The Zoning Officer or his/her designee shall have the authority to require an on-site meeting with these individuals as necessary to ensure compliance with these conditions. The applicant shall notify the Zoning Officer of any changes to this schedule as soon as possible.

21. **Construction and Demolition Diversion.** Applicant shall submit a Construction Waste Management Plan that meets the requirements of BMC Chapter 19.37 including 100 percent diversion of asphalt, concrete, excavated soil and land-clearing debris and a minimum of 65 percent diversion of other nonhazardous construction and demolition waste.

22. **Toxics.** The applicant shall contact the Toxics Management Division (TMD) at 1947 Center Street or (510) 981-7470 to determine which of the following documents are required and timing for their submittal:

A. Phase I and Phase II Environmental Site Assessment (ESA) (per ASTM 1527). A recent Phase I ESA (less than 2 years old) shall be submitted to the Toxics Management Division for developments for: all new commercial, industrial and mixed-use developments and all improvement projects that require work 5 or more feet below grade, and all new residential buildings with more than four dwelling units located in the Environmental Management Area (or EMA). The EMA can be viewed at: City of Berkeley Community GIS Portal (arcgis.com) [See Phase I Environmental Site Assessment Report dated January 27, 2023 by GEM Group, Inc.]

Depending on the findings in the Phase I, a Phase II or additional investigation may be necessary. Any available soils and groundwater analytical data available for projects listed in this section must also be submitted to TMD.

B. Environmental Site Clearance. The applicant shall provide environmental screening clearance from either the San Francisco Bay Regional Water Quality Control Board (RWQCB), Department of Toxic Substances Control (DTSC), or the Alameda County Department of Environmental Health's Local Oversight Program (LOP). Clearance from one of these regulatory agencies will ensure that the property meets development investigation and cleanup standards for the specific use proposed on the property. Environmental screening clearance shall be submitted to the City of Berkeley's Toxics Management Division prior to issuance of any building permits.

C. Soil and Groundwater Management Plan. A site-specific Soil and Groundwater Management Plan (SGMP) shall be submitted to Toxics Management Division (TMD) for all non-residential projects, and residential or mixed-use projects with more than four dwelling units, that: (1) are in the Environmental Management Area (EMA), as shown on the most recent City of Berkeley EMA map, and (2) propose any excavations deeper than 5 feet below grade or if significant soils removal is anticipated. The SGMP shall be submitted to the TMD with the project's building permit application and shall be approved by TMD prior to issuance of the building permit.

The SGMP shall comply with the hazardous materials and waste management standards required by BMC Section 15.12.100, the stormwater pollution prevention requirements of San Francisco Bay Regional Water Quality Control Board's Order No. R2-2009-0074, California hazardous waste generator regulations (Title 22 California Code of Regulations (CCR) 66260 et seq.), and the East Bay Municipal Utility District's Ordinance 311, and shall include the following:

i. procedures for soil and groundwater management including identification of pollutants and disposal methods;

ii. procedures to manage odors, dust and other potential nuisance conditions expected during development;

iii. notification to TMD within 24 hours of the discovery of any previously undiscovered contamination; and

iv. the name and phone number of the individual responsible for implementing the SGMP and who will respond to community questions or complaints.

TMD may require additional information or impose additional conditions as deemed necessary to protect human health and the environment. All requirements of the approved SGMP shall be deemed conditions of approval.

D. Demolitions & Renovations – Building Materials Survey. A hazardous materials survey for building materials and plans on hazardous materials and hazardous waste removal and disposal is required and must be prepared by qualified professionals, and submitted to the Toxics Management Division (TMD) prior to issuance of the building permit.

i. The survey shall include the identification of all materials to be disturbed for lead-based paints, PCB containing equipment and caulking, hydraulic fluids, refrigerants, treated wood, and mercury containing devices (including fluorescent light bulbs and mercury switches), asbestos and other hazardous materials and chemicals.

ii. If asbestos is identified, Bay Area Air Quality Management District Regulation 11-2-401.3 a notification must be made and the J number must be made available to the City of Berkeley Permit Service Center. Contractors must follow state regulations where there is asbestos-related work involving 100 square feet or more of asbestos containing material (8 Cal. Code Regs. §1529, §341.6 et seq.)

iii. The report to the TMD shall include, in addition to the survey, plans on hazardous materials and hazardous waste removal and disposal that comply with State and Federal codes including California Code of Regulations (CCR) 66260 et seq.

iv. Documentation evidencing disposal of hazardous waste in compliance with the survey shall be submitted to TMD within 30 days of the completion of the demolition.

Please note, the PCB Screening Form required by Public Works, Engineering, is a separate requirement and does not address the PCB identification requirement of the Toxics Management Division.

E. Hazardous Materials Business Plan. A Hazardous Materials Business Plan (HMBP) in compliance with BMC Section 15.12.040 and California Health & Safety Code, Chapter 6.95 Div. 20, shall be submitted to the Toxics Management Division through the California Environmental Reporting System: http://cers.calepa.ca.gov/ for chemicals used or stored on site during construction that exceed reporting thresholds. The reporting is required if your facility stores or handles hazardous materials in aggregate quantities equal to or greater than 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet of compressed gases, or generates any quantity of hazardous waste. This includes welding gases, emergency generator fuel, paints, etc.

Additionally, the business occupant must submit an HMBP within 30 days of starting operations.

F. Petroleum Storage. An (SPCC) Plan is required to be prepared and implemented for facilities with any one of the following:

i. aggregate aboveground petroleum storage capacities of 1,320 gallons or more stored in aboveground storage containers, tanks, oil-filled equipment, or

ii. one or more tank(s) in an underground area (TIUGA) with petroleum storage capacities of 55 gallons or greater. More information on TIUGAs can be found here: https://osfm.fire.ca.gov/divisions/pipeline-safety-and-cupa/certified-unified-program-agency-cupa/aboveground-petroleum-storage-act/tank-in-an-underground-area-tiuga/

The SPCC plan must be prepared prior to beginning operations and you must submit facility information to Toxics Management Division (TMD) through the California Environmental Reporting System: http://cers.calepa.ca.gov/. The SPCC plan will be reviewed during the site inspection and shall not be submitted in CERS or to the TMD.

Prior to Issuance of Any Building (Construction) Permit

23. **Parcel Merger.** The applicant shall secure approval of any parcel merger and/or lot line adjustment associated with this Use Permit.

24. **Final Design Review.** The Project requires approval of a Final Design Review application by the Design Review Committee.

25. **HVAC Noise Reduction.** Prior to the issuance of building permits, the project applicant shall submit plans that show the location, type, and design of proposed heating, ventilation, and cooling (HVAC) equipment. In addition, the applicant shall provide product specification sheets or a report from a qualified acoustical consultant showing that operation of the proposed HVAC equipment will meet the City's exterior noise requirements in BMC Section 13.40.050. The City's Planning and Development Department shall review the submitted plans, including the selected HVAC equipment, to verify compliance with exterior noise standards.

26. **Interior Noise Levels.** Prior to issuance of a building permit, the applicant shall submit a report to the Building and Safety Division and the Zoning Officer by a qualified acoustic engineer certifying that the interior residential portions of the project will achieve interior noise levels of no more than 45 Ldn (Average Day-Night Levels). If the adopted Building Code imposes a more restrictive standard for interior noise levels, the report shall certify compliance with this standard.

27. **Streets and Open Space Improvement Plan.** Street Frontage Improvements. Consistent with the Downtown Streets and Open Space Improvement Plan (SOSIP) (or subsequent iterations as adopted by the City), the developer shall construct improvements along Shattuck Avenue, University Avenue and Berkeley Way, to the centerline. Such improvements shall be included with the building permit submittal, designed and constructed as directed by the Public Works Engineering, Public Works Transportation, and Fire Departments, and constructed prior to certificate of occupancy.

28. **Green Building Certification.** The applicant shall submit documentation demonstrating that the building will attain LEED Gold or higher, or attain a building performance equivalent to this rating that has been approved by the Zoning Officer for this project. Documentation shall include proof of payment of the registration/application fee to the organization administering the green building certification system (e.g. USGBC/GBCI for LEED, Build It Green for GreenPoint Rated, etc.), a copy of the updated green building checklist that reflects anticipated points, and a statement from the appropriate project team professional (e.g. LEED Accredited Professional, GreenPoint Rater, etc.) verifying that the project is on track for certification at the required level or above. The submitted green building checklist must be a type that is appropriate for the project and a version that is being accepted by the organization granting the green building certification at the time of building permit application. Whenever applicable, measures from the green building checklist shall be incorporated and noted on site plans.

29. **Solar Photovoltaic (Solar PV) and Battery Energy Storage Systems (ESS).** A solar PV system shall be installed, subject to specific limited exceptions, as specified by the Berkeley Energy Code (BMC Chapter 19.36). Energy storage system (ESS) readiness (new single-family, duplex, and townhouse homes) or ESS installation (new multifamily and most nonresidential buildings) shall be completed as specified by BMC Chapter 19.36. Location of the solar PV system and the ESS, if applicable, shall be noted on the construction plans. (Project required to meet applicable code at time of building permit application, if different from above.)

30. **Electric Vehicle (EV) Charging.** At least 10 percent of the project parking spaces for residential parking shall have installed Level 2 (40 amp) electric vehicle (EV) charging stations~~,~~ and at least 40 percent shall have installed low power Level 2 EV charging receptacles (20 amp), or any more stringent EV charging requirements as specified by the Berkeley Green Code (BMC Chapter 19.37). Required Level 2 charging stations and low power Level 2 EV charging receptacles shall be installed, maintained, and made available for building resident use. EV charging station installations, EV charging receptacles, and EV Capable spaces shall be noted on the construction plans. Public access parking spaces shall provide any applicable mandatory accessibility provisions. (Project required to meet applicable code at time of building permit application, if different from above.)

31. **Nonresidential Electric Vehicle (EV) Charging.** At least 10 percent of project parking spaces for nonresidential use shall have installed Level 2 (40 amp) electric vehicle (EV) charging stations and/or DC Fast Charging Stations, and least 20 percent shall be “EV Capable” equipped with raceway, electrical panel service capacity, and an electrical system to support future Level 2 (40 amp) EV charging stations, or any more stringent EV charging requirements, as specified by the Berkeley Green Code (BMC Chapter 19.37). EV charging station installations and EV Capable spaces shall be noted on the construction plans. Public access parking spaces shall provide any applicable mandatory accessibility provisions. (Project required to meet applicable code at time of building permit application, if different from above.)

32. **Water Efficient Landscaping.** Landscaping, totaling 500 square feet of more of new landscaping or 2,500 square feet or more of renovated irrigated area, shall comply with the State's Model Water Efficient Landscape Ordinance (MWELO). MWELO-compliant landscape documentation including a planting, grading, and irrigation plan shall be included in site plans. Water budget calculations are also required for landscapes of 2,500 square feet or more and shall be included in site plans. The reference evapotranspiration rate (ETo) for Berkeley is 41.8.

33. **Recycling and Organics Collection.** Applicant shall provide recycling and organics collection areas for occupants, clearly marked on plans, which comply with the Alameda County Organics Reduction and Recycling Ordinance (2021-02). Contact the Zero Waste Division at RecyclingProgram@berkeleyca.gov.

34. **Public Works ADA.** Plans submitted for building permit shall include replacement of sidewalk, curb, gutter, and other streetscape improvements, as necessary to comply with current City of Berkeley standards for accessibility.

AFFORDABLE HOUSING REQUIREMENTS – RESIDENTIAL PROJECTS

35. **Affordable Housing Compliance Plan.** The final Affordable Housing Compliance Plan ("AHCP") must be certified by the Zoning Officer and the Department of Health, Housing, and Community Services prior to the issuance of Building Permit. Projects that receive approval from the Building Official for multiple phase construction permits must have the final AHCP certified prior to the issuance of the phase one building permit.

36. **Below Market Rate Units.** Fifty-eight (58) Very-Low Income, Below Market Rate rental dwelling units (BMR Units) shall be provided in the project. All affordable units provided pursuant to State Density Bonus Law (Government Code Section 65915), shall be designated as BMR Units. All BMR units are required to comply with the stricter of the State Density Bonus Law and BMC Section 23.328.030(A), Inclusionary Affordable Housing Requirements.

Summary table of project BMR units			
Code Section	**Extremely-Low Income (30% AMI)**	**Very-Low Income (50% AMI)**	**Low Income (80% AMI)**
BMC Chapter 23.328 (Inclusionary Housing)	0	0	0
State Density Bonus Law (Gov. Code Section 65915)	0	58	0
Total	0	**58 VLI**	0

37. **Regulatory Agreement.** If BMR units are provided, the owner shall enter into a Regulatory Agreement that implements Government Code Section 65915, BMC Section 23.328.030, and other provisions for BMR units included in this Use Permit. The Regulatory Agreement may include any terms and affordability standards determined by the City to be necessary to ensure such compliance. The Regulatory Agreement will secure the property's obligation to comply with the requirements for providing BMR units as defined by BMC Chapter 23.328 and State Density Bonus Law (Government Code Section 65915). The applicant shall submit the Regulatory Agreement to the Department of Health, Housing, and Community Services for review and approval. All BMR units are required to comply with the Regulatory Agreement and the BMR Administrative Guidelines. Regulatory Agreements must be executed prior to the issuance of Building Permit, or, in the case of projects that receive approval from the Building Official for multiple phase construction permits, prior to the issuance of the phase one building permit.

38. **Payment of Affordable Housing In-Lieu Fee.** The Affordable Housing In-Lieu Fee shall be paid as required by BMC Section 23.328.030(B) and Resolution 70,698 N.S. The fee for this project is $9,855,956 ($56.25 x 175,217 SF), subject to proration to reflect any affordable units provided. Any adjustments to the fee and the final fee amount will be determined prior to building permit issuance as part of the Affordable Housing Compliance Plan approval. The In-Lieu Fee shall be paid prior to the issuance of the first Certificate of Occupancy, or if no Certificate of Occupancy is required, prior to the final inspection of the Project. Nothing in these conditions shall be interpreted to prohibit, or to require modification of the Use Permit or Regulatory Agreement to allow, the provision of additional BMR units, or additional affordability, then are required in the foregoing provisions.

Prior to Demolition or Start of Construction:

39. **Construction Meeting.** The applicant shall request of the Zoning Officer an on-site meeting with City staff and key parties involved in the early phases of construction (e.g., applicant, general contractor, foundation subcontractors) to review these conditions and the construction schedule. The general contractor or applicant shall ensure that all subcontractors involved in subsequent phases of construction aware of the conditions of approval.

40. **Transportation Construction Plan.** The applicant and all persons associated with the project are hereby notified that a Transportation Construction Plan (TCP) may be required, particularly for the following activities:

    A. Alterations, closures, or blockages to sidewalks, pedestrian paths or vehicle travel lanes (including bicycle lanes);

    B. Storage of building materials, equipment, dumpsters, debris anywhere in the public ROW;

    C. Provision of exclusive contractor parking on-street; or

    D. Significant truck activity.

Please contact the Office of Transportation at (510) 981-7010, or 1947 Center Street, and ask to speak to a traffic engineer. In addition to other requirements of the Traffic Engineer, this plan shall include the locations of material and equipment storage, trailers, worker parking, a schedule of site operations that may block traffic, and provisions for traffic control. The TCP shall be stamped and signed by a registered engineer prior to submittal. The TCP shall be consistent with any other requirements of the construction phase. A current copy of this Plan shall be available at all times at the construction site for review by City Staff.

41. **Construction/No Parking Permits.** Contact the Permit Service Center (PSC) at 1947 Center Street or 981-7500 for details on obtaining Construction/No Parking Permits (and associated signs and accompanying dashboard permits). Please note that the Zoning Officer and/or Traffic Engineer may limit off-site parking of construction-related vehicles if necessary to protect the health, safety or convenience of the surrounding neighborhood.

During Construction:

42. **Construction Hours.** Construction activity shall be limited to between the hours of 7:00 AM and 6:00 PM on Monday through Friday, and between 9:00 AM and 4:00 PM on Saturday. No construction-related activity shall occur on Sunday or any Federal Holiday.

43. **Construction Hours- Exceptions.** It is recognized that certain construction activities, such as the placement of concrete, must be performed in a continuous manner and may require an extension of these work hours. Prior to initiating any activity that might require a longer period, the developer must notify the Zoning Officer and request an exception for a finite period of time. If the Zoning Officer approves the request, then two weeks prior to the expanded schedule, the developer shall notify businesses and residents within 500 feet of the project site describing the expanded construction hours. A copy of such notice and methodology for distributing the notice shall be provided in advance to the City for review and approval. The project shall not be allowed more than 15 extended working days.

44. **Project Construction Website.** The applicant shall establish a project construction website with the following information clearly accessible and updated monthly or more frequently as changes warrant.

    A. Contact information (i.e. “hotline” phone number, and email address) for the project construction manager

    B. Calendar and schedule of daily/weekly/monthly construction activities

    C. The final Conditions of Approval, Mitigation Monitoring and Reporting Program, Transportation Construction Plan, Construction Noise Reduction Program, and any other reports or programs related to construction noise, air quality, and traffic.

45. **Public Works - Implement Bay Area Air Quality Management District (BAAQMD)-** Recommended Measures during Construction. For all proposed projects, BAAQMD recommends implementing all the Basic Construction Mitigation Measures, listed below to meet the best management practices threshold for fugitive dust:

    A. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

B. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

C. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

D. All vehicle speeds on unpaved roads shall be limited to 15 mph.

E. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

F. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

G. All construction equipment shall be maintained and properly tuned in accordance with manufacturer specifications. All equipment shall be checked by a certified visible emissions evaluator.

H. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

46. Air Quality - Diesel Particulate Matter Controls during Construction. All off-road construction equipment used for projects with construction lasting more than 2 months shall comply with one of the following measures:

A. The project applicant shall prepare a health risk assessment that demonstrates the project's on-site emissions of diesel particulate matter during construction will not exceed health risk screening criteria after a screening-level health risk assessment is conducted in accordance with current guidance from BAAQMD and OEHHA. The health risk assessment shall be submitted to the Land Use Planning Division for review and approval prior to the issuance of building permits; or

B. All construction equipment shall be equipped with Tier 2 or higher engines and the most effective Verified Diesel Emission Control Strategies (VDECS) available for the engine type (Tier 4 engines automatically meet this requirement) as certified by the California Air Resources Board (CARB). The equipment shall be properly maintained and tuned in accordance with manufacturer specifications.

C. In addition, a Construction Emissions Minimization Plan (Emissions Plan) shall be prepared that includes the following:

i. An equipment inventory summarizing the type of off-road equipment required for each phase of construction, including the equipment manufacturer, equipment identification number, engine model year, engine certification (tier rating), horsepower, and engine serial number. For all VDECS, the equipment inventory shall also include the technology type, serial number, make, model, manufacturer, CARB verification number level, and installation date.

ii. A Certification Statement that the Contractor agrees to comply fully with the Emissions Plan and acknowledges that a significant violation of the Emissions Plan shall constitute a material breach of contract. The Emissions Plan shall be submitted to the Public Works Department for review and approval prior to the issuance of building permits.

47. **Construction and Demolition Diversion.** Divert debris according to your plan and collect required documentation. Get construction debris receipts from sorting facilities in order to verify diversion requirements. Upload recycling and disposal receipts if using Green Halo and submit online for City review and approval prior to final inspection. Alternatively, complete the Construction Waste Management Plan and present it, along with your construction debris receipts, to the Building Inspector by the final inspection to demonstrate diversion rate compliance. The Zoning Officer may request summary reports at more frequent intervals, as necessary to ensure compliance with this requirement.

48. **Low-Carbon Concrete.** The project shall maintain compliance with the Berkeley Green Code (BMC Chapter 19.37) including use of concrete mix design with a cement reduction of at least 25 percent. Documentation on concrete mix design shall be available at all times at the construction site for review by City Staff. (Project required to meet applicable code at time of building permit application, if different from above.)

49. **Avoid Disturbance of Nesting Birds.** Initial site disturbance activities, including vegetation and concrete removal, shall be prohibited during the general avian nesting season (February 1 to August 30), if feasible. If nesting season avoidance is not feasible, the applicant shall retain a qualified biologist to conduct a preconstruction nesting bird survey to determine the presence/absence, location, and activity status of any active nests on or adjacent to the project site. The extent of the survey buffer area surrounding the site shall be established by the qualified biologist to ensure that direct and indirect effects to nesting birds are avoided. To avoid the destruction of active nests and to protect the reproductive success of birds protected by the MBTA and CFGC, nesting bird surveys shall be performed not more than 14 days prior to scheduled vegetation and concrete removal. In the event that active nests are discovered, a suitable buffer (typically a minimum buffer of 50 feet for passerines and a minimum buffer of 250 feet for raptors) shall be established around such active nests and no construction shall be allowed inside the buffer areas until a qualified biologist has determined that the nest is no longer active (e.g., the nestlings have fledged and are no longer reliant on the nest). No ground-disturbing activities shall occur within this buffer until the qualified biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Nesting bird surveys are not required for construction activities occurring between August 31 and January 31.

50. Archaeological Resources (*Ongoing throughout demolition, grading, and/or construction*). Pursuant to CEQA Guidelines section 15064.5(f), "provisions for historical or unique archaeological resources accidentally discovered during construction" should be instituted. Therefore:

A. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant and/or lead agency shall consult with a qualified archaeologist, historian or paleontologist to assess the significance of the find.

B. If any find is determined to be significant, representatives of the project proponent and/or lead agency and the qualified professional would meet to determine the appropriate avoidance measures or other appropriate measure, with the ultimate determination to be made by the City of Berkeley. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and/or a report prepared by the qualified professional according to current professional standards.

C. In considering any suggested measure proposed by the qualified professional, the project applicant shall determine whether avoidance is necessary or feasible in light of factors such as the uniqueness of the find, project design, costs, and other considerations.

D. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation measures for cultural resources is carried out.

E. If significant materials are recovered, the qualified professional shall prepare a report on the findings for submittal to the Northwest Information Center.

51. Human Remains (*Ongoing throughout demolition, grading, and/or construction*). In the event that human skeletal remains are uncovered at the project site during ground-disturbing activities, all work shall immediately halt and the Alameda County Coroner shall be contacted to evaluate the remains, and following the procedures and protocols pursuant to Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the City shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, and all excavation and site preparation activities shall cease within a 50-foot radius of the find until appropriate arrangements are made. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance and avoidance measures (if applicable) shall be completed expeditiously.

52. **Paleontological Resources (*Ongoing throughout demolition, grading, and/or construction*).** In the event of an unanticipated discovery of a paleontological resource during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (per Society of Vertebrate Paleontology standards [SVP 1995,1996]). The qualified paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the City determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important, and such plan shall be implemented. The plan shall be submitted to the City for review and approval.

53. **Halt Work/Unanticipated Discovery of Tribal Cultural Resources.** In the event that cultural resources of Native American origin are identified during construction, all work within 50 feet of the discovery shall be redirected. The project applicant and project construction contractor shall notify the City Planning Department within 24 hours. The City will again contact any tribes who have requested consultation under AB 52, as well as contact a qualified archaeologist, to evaluate the resources and situation and provide recommendations. If it is determined that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with State guidelines and in consultation with Native American groups. If the resource cannot be avoided, additional measures to avoid or reduce impacts to the resource and to address tribal concerns may be required.

54. **Stormwater Requirements.** The applicant shall demonstrate compliance with the requirements of the City's National Pollution Discharge Elimination System (NPDES) permit as described in BMC Section 17.20. The following conditions apply:

    A. The project plans shall identify and show site-specific Best Management Practices (BMPs) appropriate to activities conducted on-site to limit to the maximum extent practicable the discharge of pollutants to the City's storm drainage system, regardless of season or weather conditions.

    B. Trash enclosures and/or recycling area(s) shall be covered; no other area shall drain onto this area. Drains in any wash or process area shall not discharge to the storm drain system; these drains should connect to the sanitary sewer. Applicant shall contact the City of Berkeley and EBMUD for specific connection and discharge requirements. Discharges to the sanitary sewer are subject to the review, approval and conditions of the City of Berkeley and EBMUD.

    C. Landscaping shall be designed with efficient irrigation to reduce runoff, promote surface infiltration and minimize the use of fertilizers and pesticides that contribute to stormwater pollution. Where feasible, landscaping should be designed and operated to treat runoff. When and where possible, xeriscape and drought tolerant plants shall be incorporated into new development plans.

D. Design, location and maintenance requirements and schedules for any stormwater quality treatment structural controls shall be submitted to the Department of Public Works for review with respect to reasonable adequacy of the controls. The review does not relieve the property owner of the responsibility for complying with BMC Chapter 17.20 and future revisions to the City's overall stormwater quality ordinances. This review shall be shall be conducted prior to the issuance of a Building Permit.

E. All paved outdoor storage areas must be designed to reduce/limit the potential for runoff to contact pollutants.

F. All on-site storm drain inlets/catch basins must be cleaned at least once a year immediately prior to the rainy season. The property owner shall be responsible for all costs associated with proper operation and maintenance of all storm drainage facilities (pipelines, inlets, catch basins, outlets, etc.) associated with the project, unless the City accepts such facilities by Council action. Additional cleaning may be required by City of Berkeley Public Works Engineering Dept.

G. All private or public projects that create and/or replace 10,000 square feet or more of impervious surface must comply with Provision C.3 of the Alameda County NPDES permit and must incorporate stormwater controls to enhance water quality. Permit submittals shall include a Stormwater Requirement Checklist and detailed information showing how the proposed project will meet Provision C.3 stormwater requirements, including a) Site design measures to reduce impervious surfaces, promote infiltration, and reduce water quality impacts; b) Source Control Measures to keep pollutants out of stormwater runoff; c) Stormwater treatment measures that are hydraulically sized to remove pollutants from stormwater; d) an O & M (Operations and Maintenance) agreement for all stormwater treatment devices and installations; and e) Engineering calculations for all stormwater devices (both mechanical and biological). (Project required to meet applicable code at time of building permit application, if different from above.)

H. All on-site storm drain inlets must be labeled “No Dumping – Drains to Bay” or equivalent using methods approved by the City.

I. Most washing and/or steam cleaning must be done at an appropriately equipped facility that drains to the sanitary sewer. Any outdoor washing or pressure washing must be managed in such a way that there is no discharge or soaps or other pollutants to the storm drain. Sanitary connections are subject to the review, approval and conditions of the sanitary district with jurisdiction for receiving the discharge.

J. All loading areas must be designated to minimize “run-on” or runoff from the area. Accumulated waste water that may contribute to the pollution of stormwater must be drained to the sanitary sewer or intercepted and pretreated prior to discharge to the storm drain system. The property owner shall ensure that BMPs are implemented to prevent potential stormwater pollution. These BMPs shall include, but are not limited to, a regular program of sweeping, litter control and spill cleanup.

K. Restaurants, where deemed appropriate, must be designed with a contained area for cleaning mats, equipment and containers. This contained wash area shall be covered or designed to prevent run-on or run-off from the area. The area shall not discharge to the storm drains; wash waters should drain to the sanitary sewer, or collected for ultimate disposal to the sanitary sewer. Employees shall be instructed and signs posted indicating that all washing activities shall be conducted in this area. Sanitary connections are subject to the review, approval and conditions of the waste water treatment plant receiving the discharge.

L. Sidewalks and parking lots shall be swept regularly to prevent the accumulation of litter and debris. If pressure washed, debris must be trapped and collected to prevent entry to the storm drain system. If any cleaning agent or degreaser is used, wash water shall not discharge to the storm drains; wash waters should be collected and discharged to the sanitary sewer. Discharges to the sanitary sewer are subject to the review, approval and conditions of the sanitary district with jurisdiction for receiving the discharge.

M. The applicant is responsible for ensuring that all contractors and sub-contractors are aware of and implement all stormwater quality control measures. Failure to comply with the approved construction BMPs shall result in the issuance of correction notices, citations, or a project stop work order.

55. **Public Works.** Subject to approval of the Public Works Department, the applicant shall repair any damage to public streets and/or sidewalks by construction vehicles traveling to or from the project site.

56. **Public Works.** All piles of debris, soil, sand, or other loose materials shall be covered at night and during rainy weather with plastic at least one-eighth millimeter thick and secured to the ground.

57. **Public Works.** The applicant shall ensure that all excavation accounts for surface and subsurface waters and underground streams so as not to adversely affect adjacent properties and rights-of-way.

58. **Public Works.** The project sponsor shall maintain sandbags or other devices around the site perimeter during the rainy season to prevent on-site soils from being washed off-site and into the storm drain system. The project sponsor shall comply with all City ordinances regarding construction and grading.

59. **Public Works.** Prior to any excavation, grading, clearing, or other activities involving soil disturbance during the rainy season the applicant shall obtain approval of an erosion prevention plan by the Building and Safety Division and the Public Works Department. The applicant shall be responsible for following these and any other measures required by the Building and Safety Division and the Public Works Department.

60. **Public Works.** The removal or obstruction of any fire hydrant shall require the submission of a plan to the City's Public Works Department for the relocation of the fire hydrant during construction.

61. **Public Works / Building and Safety.** If underground utilities leading to adjacent properties are uncovered and/or broken, the contractor involved shall immediately notify the Public Works Department and the Building & Safety Division, and carry out any necessary corrective action to their satisfaction.

Prior to Final Inspection or Issuance of Occupancy Permit:

62. **Noise Monitoring.** Prior to occupancy, the property owner shall submit an affidavit to the Zoning Officer and Noise Control Officer stating their intent to comply with this Condition. Prior to the first event that includes amplified music, the property owner shall commence noise monitoring as specified by the Environmental Health Division in BMC Chapter 13.40 Community Noise, during the hours of operation with amplified music, to demonstrate compliance with Chapter 13.40. The property owner shall submit a monitoring report quarterly to the Zoning Officer and Environmental Health Division, Noise Control Officer for the first year of restaurant operation.

63. **Compliance with Conditions.** The project shall conform to the plans and statements in the Use Permit. The developer is responsible for providing sufficient evidence to demonstrate compliance with the requirements throughout the implementation of this Use Permit.

64. All landscape, site and architectural improvements shall be completed per the attached approved drawings dated received **January 24, 2025**.

65. **Streets and Open Space Improvement Plan.** Impact Fee: As required by BMC Section 23.204.130(F), the project shall pay an impact fee to implement the Streets and Open Space Improvement Plan (SOSIP) per the fee schedule adopted by the Council by resolution. The City shall deposit this payment into the Downtown Streets and Open Space Improvement Fund (SOSIF), or its equivalent, to pay for the design and construction of the SOSIP Major Projects. The fee shall apply to the project's "Gross Floor Area" as defined in BMC Section 23.106.030, less any existing Gross Floor Area removed as part of the project.

    At the City's discretion, the City Manager or her designee may reduce the required SOSIP Impact Fee, on a $1 to $1 ratio, as a credit for constructing all or a portion of a Major SOSIP Improvement Project beyond the frontage improvements already required by this Permit. The first half of this fee shall be paid prior to issuance of a building permit, and the second half shall be paid prior to issuance of a certificate of occupancy.

66. **Transportation Demand Management.** Prior to issuance of a Certificate of Occupancy, the property owner shall facilitate a site inspection by Land Use Division staff to confirm that the physical improvements required in BMC Section 23.322.060 have been installed. A Parking and Transportation Demand Management (PTDM) compliance report documenting that the programmatic measures required in BMC Section 23.322.060 are implemented shall be submitted to the Land Use Division prior to occupancy, and on an annual basis thereafter, which demonstrates that the project is compliant with the applicable requirements in this section:

A. New construction that results in an off-street total of more than 25 publicly available parking spaces shall install dynamic signage to Transportation Division specifications, including real-time garage occupancy signs at the entries and exits to the parking facility with vehicle detection capabilities and enabled for future connection to the regional 511 Travel Information System; or equivalent, as determined by the Land Use Division in consultation with the Transportation Division. The information panels shall be shown in the construction drawings and shall be installed prior to occupancy.

B. For any new building with residential units or structures converted to a residential use, required parking spaces shall be leased or sold separate from the rental or purchase of dwelling units for the life of the dwelling units. The property owner shall notify all residents of this restriction in leases and/or contracts, and shall provide sample leases and/or contracts including such notification to the project planner prior to issuance of Certificate of Occupancy or final inspection.

C. For new structures or additions over 20,000 square feet, the property owner shall provide transportation benefits at no cost to every employee, residential unit, and/or group living accommodation resident, one pass for unlimited local bus transit service; or (subject to the review and approval of the Zoning Officer in consultation with the Transportation Division) a functionally equivalent transit benefit in an amount at least equal to the price of a non-discounted adult monthly local bus pass. A notice describing these transportation benefits shall be posted in a location or locations visible to all employee and residents.

D. For residential structures constructed or converted from a non-residential use that provide off-street parking, vehicle sharing spaces shall be provided in the amounts shown in BMC Table 23.322-6, to be offered to vehicle sharing service providers at no cost, for as long as providers request the spaces, and otherwise consistent with BMC Section 23.322.060(D).

67. Car Sharing Spaces. At least **4 car share spaces** shall be provided within the parking garage for the life of the building. In addition, these car share spaces are subject to the following requirements:

A. At least 90 days prior to issuance of a certificate of occupancy, the property owner shall do one of the following if necessary to ensure that car share spaces are provided at this site: 1) purchase 2 cars for the use of a vehicle sharing service provider, or VSSP (e.g., City CarShare or Zipcar), or 2) provide a monthly subsidy to offset the costs to a VSSP to provide for the management of the cars at this site.

B. Prior to issuance of a certificate of occupancy, the property owner shall provide one of the following: 1) a signed agreement with a VSSP to manage shared vehicles at the site, or 2) a plan to provide on-site management. If the vehicle sharing spaces are managed by a VSSP, these spaces shall be accessible to all VSSP members in the same manner and during the same hours as other vehicles offered by the VSSP.

68. **Green Building Certification.** The applicant shall submit updated documentation demonstrating that the building will attain LEED Gold or higher, or attain a building performance equivalent to this rating that has been approved by the Zoning Officer for this project. Documentation expected at this stage includes proof of submission of the final application materials and payment of the certification fee. If this submission has not yet occurred, a detailed explanation and timeline indicating when it will it happen must be submitted to the Zoning Officer for review and approval. Once awarded by the organization administering the green building certification system, the applicant shall forward a copy of the certification award to the Zoning Officer.

At All Times:

69. **Compliance with Approved Plan.** The project shall conform to the plans and statements in the Use Permit.
70. **Exterior Lighting.** All exterior lighting shall be energy efficient where feasible; and shielded and directed downward and away from property lines to prevent excessive glare beyond the subject property.
71. **Rooftop Projections.** No additional rooftop or elevator equipment shall be added to exceed the approved maximum roof height without submission of an application for a Use Permit Modification, subject to Board review and approval.
72. **Design Review.** Signage and any other exterior modifications, including but not limited to landscaping and lighting, shall be subject to Design Review approval.
73. **Drainage Patterns.** The applicant shall establish and maintain drainage patterns that do not adversely affect adjacent properties and rights-of-way. Drainage plans shall be submitted for approval of the Building & Safety Division and Public Works Department, if required.
74. **Electrical Meter.** Only one electrical meter fixture may be installed per dwelling unit.
75. **Loading.** All loading/unloading activities associated with deliveries to all uses shall be restricted to the hours of 7:00 a.m. to 10:00 p.m. daily.
76. **Public Parking.** Consistent with BMC 23.322, the public shall be notified of the availability of publicly available parking spaces via dynamic signage including, but not limited to, real-time garage occupancy signs at the entries and exits to the parking facility with vehicle detection capabilities and enabled for future connection to the regional 511 Travel Information System or equivalent, as determined by the Zoning Officer in consultation with the Transportation Division Manager.
77. **Residential Permit Parking.** No Residential Permit Parking (RPP) permits shall be issued to project residents, nor shall commercial placards be issued to non-residential occupants and/or users of the site. The Finance Department, Customer Service Center shall add these addresses to the list of addresses ineligible for RPP permits. The property owner shall notify all tenants of rental units, and/or buyers of condominium units, of this restriction in leases and/or contracts.
78. **Parking to be Leased or Sold Separately.** All residential parking spaces shall be leased or sold separate from the rental or purchase of dwelling units.

79. **Required Bike Parking.** Secure and on-site bike parking for at least 237 bicycles shall be provided for the life of the building.

80. **Residential Electric Vehicle (EV) Charging.** Required Level 2 charging stations and low power Level 2 EV charging receptacles, as specified by the Berkeley Green Code (BMC Chapter 19.37) shall be maintained in good working condition and made available for building resident use. (Project required to meet applicable code at time of building permit application, if different from above.)

81. **Nonresidential Electric Vehicle (EV) Charging.** Required Level 2 charging stations and DC Fast Charge stations, as specified by the Berkeley Green Code (BMC Chapter 19.37) shall be maintained in *good working condition and made available for building occupant and/or visitor* use. (Project required to **meet applicable code at time of building permit application, if different from above.)**

82. **Tenant Notification.** The developer shall provide tenant notification, via a lease rider or deed covenant, that each dwelling unit is located in a mixed-use area that includes commercial, food service, and entertainment uses, and that each occupant shall not seek to impede their lawful operation.

83. **Increased Height Allowance – Application Process.** A project shall secure a position as one of the five allowed buildings over 75 feet in height, one of the two allowed buildings over 75 feet in height in the Outer Core and Core Sub-Areas combined, following final Use Permit approval.

    A. The applicant shall submit an application for a building permit no later than 180 days after this Use Permit is approved;
    B. Shall respond to all plan check comments no later than 30 days after they are issued; and
    C. Shall pay all building permit-related fees promptly when due, and shall commence construction no later than 180 days after being notified of approval of the first building permit. Any extension of any deadline in this condition shall be subject to approval by the Zoning Officer, except that no deadline for payment of any fees may be extended.

84. **Guaranteed Ride Home.** If qualifying for participation in the Alameda County Guaranteed Ride Home program (or successor program), shall participate in the “Guarantee Ride Home” program to reduce employee single occupant vehicle trips by providing alternate means of leaving work in an emergency. Enrollment shall be encouraged by providing Guarantee Ride Home information to all employees. An affidavit/statement indicating number of participating employees shall be provided annually to the Transportation Division Manager

85. **Transit Subsidy Condition.** If 10 or more employees, the business operator shall reimburse employees the maximum non-taxable cost of commuting to and from work on public transportation (e.g., monthly passes) if they so commute, and a notice informing employees of the availability of such subsidy shall be permanently displayed in the employee area as per BMC Chapter 9.88.

ALCOHOLIC BEVERAGE SERVICE CONDITIONS: INCIDENTAL TO A FOOD SERVICE ESTABLISHMENT (on-site)

86. Licensing.

A. The food service establishment shall comply with all applicable regulations of the California Department of Alcoholic Beverage Control.

B. An operator of the licensed establishment may not have a prior licensed establishment that was the subject of verified complaints or violations regarding alcohol, public safety, or nuisance statutes or regulations before issuance or transfer of a business license at this location. This must be confirmed by the Zoning Officer prior to issuance of a business license or transfer at this location.

C. To ensure that total number of alcohol licenses within the census tract will not change, the applicant/property owner shall assume ownership of the existing restaurant/bar license (for 1974 Shattuck Avenue), or if the current license owner surrenders the existing license and the applicant/property owner for the new restaurant/bar shall apply for a new license.

87. Service.

A. Alcoholic beverage service shall be incidental to the primary food service use. Per BMC 23.502.020(U) Defined Terms, an incidental use shall not exceed 25 percent of the floor area of the primary use, and if it consists of the commercial sales of a different line of products or services than the primary use, such incidental use may not generate gross receipts in excess of 33 percent of the gross receipts generated by the primary use.

B. Alcoholic beverage service incidental to seated food service shall only be allowed at a bona fide eating place making actual and substantial sales of meals as determined and required by the California Department of Alcoholic Beverage Control.

C. The sale of alcoholic beverages for off-site consumption is not permitted, except as authorized by the California Department of Alcoholic Beverage Control.

D. Hours of operation are subject to review and amendment by the review authority as necessary to avoid detriment to the neighborhood or to achieve conformance with revised City of Berkeley standards or policies.

88. Operation.

A. The food service establishment must operate at least five days a week.

B. The service of alcoholic beverages shall be limited to normal meal hours (per California Department of Alcoholic Beverage Control) during the food service establishment's hours of operation, and full food service must be available in all customer areas.

C. During the food service establishment's hours of operation, all customer accessible areas shall be available for meal service and the food service establishment must possess the necessary utensils, and condiment dispensers with which to serve meals to the public.

D. The owner or operator of the establishment shall take reasonable measures to prevent disturbances by patrons in the immediate vicinity. Such measures shall include:

i. Signs reminding patrons of nearby residences and requests not to congregate or loiter near such residences nor operate vehicles in a noisy manner on residential streets; and
ii. Surveillance to public areas near the establishment, keeping public areas free of trash and litter, providing lighting, and otherwise preventing conduct that might disturb the peace and quiet of residences in the vicinity.

E. The operator shall assume reasonable responsibility for ensuring that patrons do not block the entrance or interfere with pedestrian activity on the adjacent public sidewalk.

F. The applicant shall establish cash handling procedures to reduce the likelihood of robberies and theft.

G. Employees shall not serve alcohol to patrons who appear to be inebriated or otherwise unable to behave in an orderly manner upon consuming alcohol.

89. Advertising. The establishment shall comply with BMC Chapter 20.67, Alcohol Product Advertising.

90. Training.

A. The operator shall finish a Crime Prevention through Environmental Design (CPTED) survey before beginning alcohol service.

B. All employees selling and/or serving beer and wine, or directly supervising such sales and/or service, shall comply with Municipal Code Section 9.84.030 (Responsible Beverage Service Training) and finish the Licensee Education on Alcohol and Drugs (LEAD) program, or another equivalent program offered or certified by the California Department of Alcoholic Beverage Control within 90 days of employment at the establishment. Employees who have finished the course within the last 12 months are exempt from this requirement.

91. The Use Permit Conditions of Approval shall be posted in conspicuous location, available for viewing by any interested party.

PLANS APPROVED BY ZONING ADJUSTMENTS BOARD

SIGNATURE

February 27, 2025
DATE

*Approve Findings and Conditions attached



STACKHOUSE
DE LA PEÑA
TRACHTENBERG
ARCHITECTS

2421 Fourth Street
Berkeley, California 94710
510.649.1414
www.TrachtenbergArch.com

LICENSED ARCHITECT
DAVID TRACHTENBERG
C20926
4/30/20 25
RENEWAL DATE
STATE OF CALIFORNIA

1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
11.15.2024 ZONING RESUBMITTAL
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JOB: 2209

SHEET:

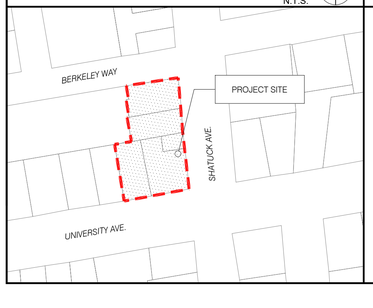
GENERAL INFORMATION

A0.0

VICINITY MAP

N

N.T.S.



PROJECT DIRECTORY

OWNER/APPLICANT:
1974 Shattuck Ave, LLC
1958A University Ave
Berkeley, CA 94705

ARCHITECT:
Isaiah Stackhouse, Principal
TRACHTENBERG ARCHITECTS
2421 Fourth Street
Berkeley, CA 94710
510.649.1414
www.TrachtenbergArch.com

PROJECT DESCRIPTION

PROJECT ADDRESS: 1950-1998 Shattuck Ave. & 2071 University Ave. Berkeley, CA 94704
APNS:
057 205300100
057 205300200
057 205300301
057 205300302
057 205300402

SCOPE OF WORK:
REMOVAL OF EXISTING COMMERCIAL STRUCTURES & CONSTRUCTION OF A NEW 28-STORY MIXED-USE HOUSING DEVELOPMENT WITH 599 DWELLING UNITS AND A ROOFTOP RESTAURANT OVER GROUND-LEVEL COMMERCIAL AND LOBBIES, WITH STATE OF CALIFORNIA DENSITY BONUS.

DRAWING LIST

A0.0	GENERAL INFORMATION			A3.9	PRELIMINARY RENDERING	L3.1	USABLE OPEN SPACE CALCS & PLANTING NOTES
A0.1	ZONING INFORMATION	A2.1	FLOOR PLANS	A3.10	PRELIMINARY RENDERING	I0.0	IRRIGATION NOTES & LEGEND
A0.2A	DENSITY BONUS DIAGRAMS	A2.2	FLOOR PLANS	A3.11	PRELIMINARY RENDERING	I1.0	IRRIGATION PLAN AT STREETSCAPE
A0.2B	DENSITY BONUS DIAGRAMS	A2.3	FLOOR PLANS	A3.12	PRELIMINARY RENDERING	I2.0	IRRIGATION PLAN SECOND FLOOR PODIUM GARDENS
A0.2C	PRELIMINARY AHCP DIAGRAMS	A2.4	FLOOR PLANS	A3.13	PRELIMINARY RENDERING	I3.0	IRRIGATION PLAN FOURTEENTH FLOOR ROOF DECK
A0.3	DPRELIMINARY AHCP DIAGRAMS	A2.5	FLOOR PLANS	A3.14	PRELIMINARY RENDERING	I3.1	IRRIGATION POINT OF CONNECTION
A0.4A	SHADOW STUDIES DECEMBER 21ST	A2.6	FLOOR PLANS	A3.15	PRELIMINARY RENDERING	I4.0	IRRIGATION DETAILS
A0.4B	SHADOW STUDIES JUNE 21ST	A2.7	ROOF PLAN	A3.16	PRELIMINARY RENDERING	I5.0	IRRIGATION DETAILS
A0.4C	SHADOW STUDIES FEB 15TH	A3.1	ELEVATIONS	A3.17	PRELIMINARY RENDERING	I6.0	IRRIGATION DETAILS
A0.5	SITE CONTEXT PHOTOS	A3.2	ELEVATIONS	A4.1	BUILDING SECTIONS	I7.0	IRRIGATION DETAILS
A0.6A	SURVEY	A3.3	STREET STRIP ELEVATIONS	A4.2	AWNING ENCROACHMENT DIAGRAM		
A0.6B	SURVEY	A3.4	PHOTO CONTEXT VIEWS	A5.0	CONCEPTUAL GRADING PLAN		
A0.6C	SURVEY	A3.5	PHOTO CONTEXT VIEWS	L0.0	COVER SHEET, NOTES, AND LEGEND		
A1.0	EXISTING SITE PLAN	A3.6	PHOTO CONTEXT VIEWS	L1.0	LANDSCAPE PLAN AT STREETSCAPE		
A2.0a	FLOOR PLANS	A3.7	PRELIMINARY RENDERING	L2.0	SECOND FLOOR PODIUM GARDENS		
A2.0b	FLOOR PLANS	A3.8	PRELIMINARY RENDERING	L3.0	FOURTEENTH FLOOR ROOF DECK		

ZONING CODE DATA

ZONING SUMMARY TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	PROPOSED W/DENSITY BONUS	ZONING COMPLIANCE
ZONING	C-DMU Core			COMPLIES
TOTAL LOT SIZE (SQ. FT.)	28,319			COMPLIES
TOTAL LOT SIZE (ACRES)	0.65			COMPLIES
FLOOR AREA RATIO (FAR)	NA	NA	14.52	COMPLIES W/ SDB WAIVER
DWELLING UNITS (SEE TABLE)	NA	NA	599	COMPLIES
RESIDENTIAL BEDROOMS	NA	NA	709	COMPLIES
HEIGHT - FEET	60'-0"	120'	317'	COMPLIES W/ SDB WAIVER
HEIGHT - STORIES*	NA	NA	28	COMPLIES W/ SDB WAIVER
LOT COVERAGE	NA	NA	88%	COMPLIES
SETBACK - FRONT (UNIVERSITY) (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - STREET SIDE (SHATTUCK) (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - REAR (SEE TABLE)	0'-15'	0'	SEE TABLE	COMPLIES W/ SDB WAIVER
SETBACK - MAX. DIMENSION ABOVE 120'	120'	NOT LIMITED	239'-10"	COMPLIES W/ SDB WAIVER
RESIDENTIAL PARKING (SEE TABLE)	0	0	130	COMPLIES
COMMERCIAL PARKING (SEE TABLE)	24	24	24	COMPLIES
RES. BIKE PARKING LONG TERM (SEE TABLE)	237	237	240	COMPLIES
RES. BIKE PARKING SHORT TERM (SEE TABLE)	18	18	18	COMPLIES
COM. BIKE PARKING SHORT TERM (SEE TABLE)	9	9	10	COMPLIES
RESIDENTIAL OPEN SPACE (SEE TABLE)	47,920	47,920	12,491	COMPLIES W/ SDB WAIVER
COMMERCIAL OPEN SPACE (SEE TABLE)	323	323	706	COMPLIES

* Community Benefit Required per BMC Section 23.204.130.E.2.c.

PARKING CALCULATIONS

	QNTY	CARS	PER	REQ'D	PROVIDED
RESIDENTIAL	599	0.5 MAX	1	0	130
COMMERCIAL	16,142	1.5	1,000	24	24
TOTAL					**154**

BICYCLE PARKING CALCULATIONS

	QNTY	BIKES	PER	REQ'D	PROVIDED
RESIDENTIAL (LONG TERM) (PER BEDROOM)	709	1	3	237	256
RESIDENTIAL (SHORT TERM) (PER BEDROOM)	709	1	40	18	18
COMMERCIAL (SHORT TERM) (PER SF)	16,142	1.0	2,000	9	10

ROOFTOP ARCHITECTURAL ELEMENTS CALCS

	ALLOWABLE	PROPOSED
AVERAGE AREA OF FLOORS		14,058
AREA OF ROOFTOP ARCHITECTURAL ELEMENTS	2,109	1,464
% AREA OF ROOFTOP ARCHITECTURAL FEATURES	15.0%	10.4%

OPEN SPACE CALCULATIONS

	UNITS	SF / UNIT	TOTAL REQ'D	MODIFICATION	TOTAL PROVIDED	COMMON	LANDSCAPE REQ'D (40%)	LANDSCAPE PROVIDED
RESIDENTIAL UNITS	599	80	47,920	35,429	12,491	12,491	4,996	6,735
COMMERCIAL OPEN SPACE	16,142	50	323	(383)	706			

AREA TABLE

	RESIDENTIAL	COMMERICAL	TOTAL
LEVEL 28		7,800	7,800
LEVEL 27	11,980		11,980
LEVEL 26	11,980		11,980
LEVEL 25	11,980		11,980
LEVEL 24	11,980		11,980
LEVEL 23	11,980		11,980
LEVEL 22	11,980		11,980
LEVEL 21	11,980		11,980
LEVEL 20	11,980		11,980
LEVEL 19	11,980		11,980
LEVEL 18	11,980		11,980
LEVEL 17	11,980		11,980
LEVEL 16	11,980		11,980
LEVEL 15	11,980		11,980
LEVEL 14	11,980		11,980
LEVEL 13	17,862		17,862
LEVEL 12	17,862		17,862
LEVEL 11	17,862		17,862
LEVEL 10	17,862		17,862
LEVEL 9	17,862		17,862
LEVEL 8	17,862		17,862
LEVEL 7	17,862		17,862
LEVEL 6	17,862		17,862
LEVEL 5	17,862		17,862
LEVEL 4	17,862		17,862
LEVEL 3	17,862		17,862
LEVEL 2	17,677		17,677
GROUND LEVEL	12,461	8,342	20,803
BASEMENT PARKING P1	424		424
BASEMENT PARKING P2	424		424
TOTAL	**395,188**	**16,142**	**411,330**

DWELLING UNIT TABLE

	STUDIO	2-BR	TOTAL
LEVEL 28			0
LEVEL 27	15	4	19
LEVEL 26	15	4	19
LEVEL 25	15	4	19
LEVEL 24	15	4	19
LEVEL 23	15	4	19
LEVEL 22	15	4	19
LEVEL 21	15	4	19
LEVEL 20	15	4	19
LEVEL 19	15	4	19
LEVEL 18	15	4	19
LEVEL 17	15	4	19
LEVEL 16	15	4	19
LEVEL 15	15	4	19
LEVEL 14	8	3	11
LEVEL 13	26	5	31
LEVEL 12	26	5	31
LEVEL 11	26	5	31
LEVEL 10	26	5	31
LEVEL 9	26	5	31
LEVEL 8	26	5	31
LEVEL 7	26	5	31
LEVEL 6	26	5	31
LEVEL 5	26	5	31
LEVEL 4	26	5	31
LEVEL 3	26	5	31
LEVEL 2			0
GROUND LEVEL			
TOTAL UNITS	**489**	**110**	**599**
BEDROOMS / UNIT	1	2	
TOTAL BEDROOMS	489	220	709

OPEN SPACE

6,882
5,609
-
12,491

SETBACKS TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	PROPOSED W/DENSITY BONUS	ZONING COMPLIANCE
SETBACK - FRONT (UNIVERSITY)				
0'-20'	0'	0'	2'	COMPLIES
21'-75'	0'	0'	3'-4" to 4'-4"	COMPLIES
76'-120'	15'	0'	3'-4" to 4'-4"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	3'-4" to 15'-6"	COMPLIES W/ SDB WAIVER
SETBACK - STREET SIDE (SHATTUCK)				
0'-20'	0'	0'	5'-3" to 14'-5"	COMPLIES
21'-75'	0'	0'	6'-10" to 29'-8"	COMPLIES
76'-120'	15'	0'	6'-10" to 29'-8"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	6'-10" to 60'-1"	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (<65' FROM FRONT)				
0'-20'	0'	0'	1'-6"	COMPLIES
21'-75'	0'	0'	15'	COMPLIES
76'-120'	5'	0'	15'	COMPLIES
> 120'	15'	0'	15' to 26'-6"	COMPLIES W/ SDB WAIVER
SETBACK - INTERIOR SIDE (>65' FROM FRONT)				
0'-20'	0'	0'	6" to 1'-6"	COMPLIES
21'-75'	5'	0'	17'-1" to 18'-1"	COMPLIES
76'-120'	15'	0'	17'-1" to 18'-1"	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	17'-1" to 18'-1"	COMPLIES W/ SDB WAIVER
SETBACK - REAR (BERKELEY WAY)				
0'-20'	0'	0'	2'	COMPLIES
21'-75'	5'	0'	6'	COMPLIES
76'-120'	15'	0'	6'	COMPLIES W/ SDB WAIVER
> 120'	15'	0'	94'-7"	COMPLIES W/ SDB WAIVER
SETBACK - MAX. DIMENSION ABOVE 120'	120'	NOT LIMITED	165'	COMPLIES W/ SDB WAIVER

CAR SHARE CALCULATION

Number of Parking Spaces Provided
154
Minimum Number of Vehicle Sharing Spaces (3, plus one for every additional 60 spaces)
3+1 = **4**

STATE DENSITY BONUS TABLE (SEE A0.2A-B)

(SEE SHEETS A0.3A-A03.D)	
BASE PROJECT UNITS	411
PERCENT VLI UNITS PROVIDED	14%
NUMBER VLI UNITS PROVIDED (ROUNDS UP)	58
BONUS PERCENTAGE	46.25%
NUMBER BONUS UNITS (ROUNDS UP)	191
MAXIMUM DENSITY BONUS PROJECT	602
PROPOSED DENSITY BONUS PROJECT	599

LIST OF USE PERMITS AND AUP'S

PROPOSED DENSITY BONUS PROJECT USE PERMITS:

- Use Permit for construction for demolition of a non-residential building, under 23.326.070(A)
- Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Administrative Use Permit under BMC Section 23.304.050(A) to exceed building height limits with rooftop architectural elements which exceed the maximum height limit for the district.
- Use Permit under BMC Section 23.204.130.E.2 to construct a building that exceeds the district height limit, and that is over 75 feet but not more than 120 feet (Base Project).
- Use Permit under BMC Section 23.204.130.E.3(b) to modify front, side, and rear setback requirements
- Use Permit under BMC Section 23.204.130.E.3(b) to exceed 120 feet in width in diagonal measurement
- Use Permit under BMC Section 23.204.E.6 to pay a fee in lieu of providing privately owned public open space.
- Density Bonus with the following requested reductions, waivers and concessions below.

LIST OF DENSITY BONUS WAIVERS (SEE A0.2A-B)

- Waiver to increase the maximum building height from the base project maximum density height allowed with UP's and AUP's under the zoning ordinance of 120' (under BMC 23.204.130.E.2) to a density bonus height of 316' to accommodate the density bonus units.
- Waiver to allow a reduction in the required setbacks under BMC Section 23.204.130.E.3(b) to physically accomodate the density bonus units.
- Waiver to reduce the minimum required residential usable open space under BMC 23.204.130.E.4 to allow the construction of the density bonus units.

LIST OF DENSITY BONUS CONCESSIONS (SEE A0.2A-B)

- Athough the project is eligible for 2 concessions as a project that is providing 14% of the base units as Very-Low-Income Units, the project is not proposing any concessions.

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JOB: 2209

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ZONING INFORMATION

A0.1

BASE PROJECT ZONING COMPLIANCE TABLE

	BASE ZONING ALLOWABLE / REQUIRED	ALLOWABLE W/ UP OR AUP MODIFICATION	CODE SECTION	PROPOSED BASE PROJECT	ZONING COMPLIANCE
ZONING	C-DMU Core				COMPLIES
TOTAL LOT SIZE (SQ. FT.)	28,319				COMPLIES
TOTAL LOT SIZE (ACRES)	0.65				COMPLIES
FLOOR AREA RATIO (FAR)	NA	NA		NA	COMPLIES
DWELLING UNITS (SEE TABLE)	NA	NA		411	COMPLIES
RESIDENTIAL BEDROOMS	NA	NA		446	COMPLIES
HEIGHT - FEET	60'-0"	120'-0"	23.204.130.E.2	120'-0"	COMPLIES
HEIGHT - STORIES	NA	NA		11	COMPLIES
LOT COVERAGE	NA	NA		0%	COMPLIES
SETBACK - FRONT (UNIVERSITY)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - STREET SIDE (SHATTUCK)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - INTERIOR SIDE	0' to 15'	0'	23.204.130.E.3(b)	0' to 6'	COMPLIES
SETBACK - REAR (BERKELEY WAY)	0' to 15'	0'	23.204.130.E.3(b)	0'	COMPLIES
SETBACK - MAX. DIMENSION ABOVE 120'	NA	NA			COMPLIES
RESIDENTIAL PARKING (SEE TABLE)	0	0		0	COMPLIES
COMMERCIAL PARKING (SEE TABLE)	25	0		0	COMPLIES
RES. BIKE PARKING LONG TERM (SEE TABLE)	149	149		152	COMPLIES
RES. BIKE PARKING SHORT TERM (SEE TABLE)	12	12		12	COMPLIES
COM. BIKE PARKING SHORT TERM (SEE TABLE)	9	9		9	COMPLIES
RESIDENTIAL OPEN SPACE (SEE TABLE)	32,880	32,880		33,950	COMPLIES
COMMERCIAL OPEN SPACE (SEE TABLE)	338	338		338	COMPLIES

LIST OF BASE PROJECT USE PERMITS AND AUP'S

Per August 2, 2021 Memorandum on Policy Changes to Objective Standards, HAA and Density Bonus

- Use Permit for construction for demolition of a non-residential building, under 23.326.070(A)
- Use Permit under BMC Section 23.326.070(A) to demolish a non-residential building
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.030(B)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Administrative Use Permit under BMC Section 23.304.050(A) to exceed building height limits w/ rooftop architectura elements.
- Use Permit under BMC Section 23.204.130.E.2 to construct a building up to 120 feet.
- Use Permit under BMC Section 23.204.130.E.3(b) to modify front, side, and rear setback requirements

PARKING CALCULATIONS

	QNTY	CARS	PER	REQ'D	PROVIDED
RESIDENTIAL	411	0	1	0	0
COMMERCIAL	16920	1.5	1,000	25	25

BICYCLE PARKING CALCULATIONS

	QNTY	BIKES	PER	REQ'D	PROVIDED
RESIDENTIAL (LONG TERM) (BEDROOMS)	446	1	3	149	152
RESIDENTIAL (SHORT TERM) (BEDROOMS)	446	1	40	12	12
COMMERCIAL (SHORT TERM)	16,920	1.0	2,000	9	9

OPEN SPACE CALCULATIONS

	UNITS	SF / UNIT	TOTAL REQ'D
RESIDENTIAL REQUIREMENT	411	80	32,880
TOTAL PROVIDED			33,950
ROOF DECK			25,630
BALCONIES (MAX 50%)	104	80	8,320
COMMERCIAL OPEN SPACE	16,920	50	338

ROOFTOP ARCHITECTURAL ELEMENTS CALCULATIONS

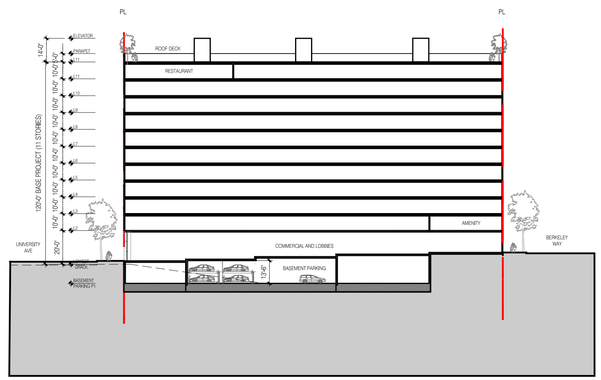
	ALLOWABLE	PROPOSED
AVERAGE AREA OF FLOORS	23,968	
AREA OF ROOFTOP ARCHITECTURAL ELEMENTS	3,595	600
% AREA OF ROOFTOP ARCHITECTURAL FEATURES	15.0%	2.5%

AREA TABLE

	RESIDENTIAL	COMMERICAL	TOTAL
LEVEL 11	18,430	7,800	26,230
LEVEL 10	26,230		26,230
LEVEL 9	26,230		26,230
LEVEL 8	26,230		26,230
LEVEL 7	26,230		26,230
LEVEL 6	26,230		26,230
LEVEL 5	26,230		26,230
LEVEL 4	26,230		26,230
LEVEL 3	26,230		26,230
LEVEL 2	26,230		26,230
GROUND LEVEL	15,922	9,120	25,042
BASEMENT P1	275		275
TOTAL	**270,697**	**16,920**	**287,617**

DWELLING UNIT TABLE

	STUDIO	2-BR	TOTAL
LEVEL 11	28	2	30
LEVEL 10	41	4	45
LEVEL 9	41	4	45
LEVEL 8	41	4	45
LEVEL 7	41	4	45
LEVEL 6	41	4	45
LEVEL 5	41	4	45
LEVEL 4	41	4	45
LEVEL 3	41	4	45
LEVEL 2	20	1	21
GROUND LEVEL			
TOTAL UNITS	**376**	**35**	**411**
BEDROOMS / UNIT	1	2	
TOTAL BEDROOMS	376	70	446



BASE PROJECT SECTION



PLAN AT ROOF LEVEL



PLAN AT LEVEL 2



PLAN AT LEVEL 11



PLAN AT GROUND LEVEL



PLAN AT LEVELS 3-10



PLAN AT PARKING LEVEL P1

BASE PROJECT PLANS

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JOB: 2209

SHEET:

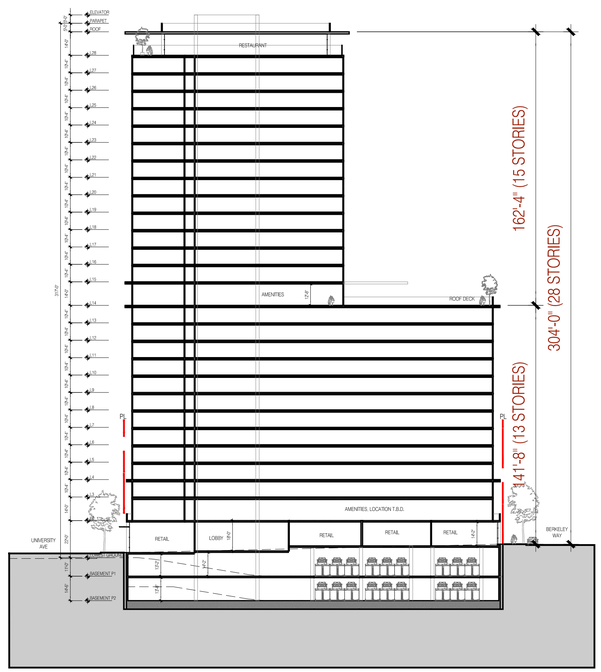
DENSITY BONUS
BASE PROJECT

A0.2A

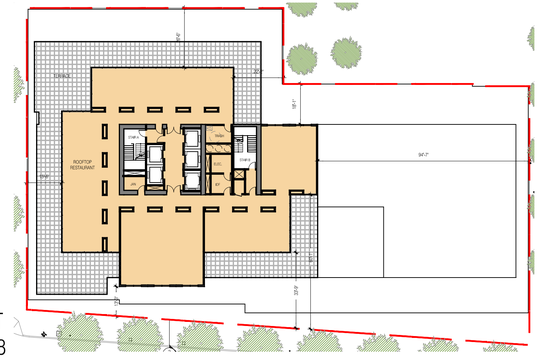
DENSITY BONUS TABLE

Base Project	Base	Base # Units	% VLI units	# VLI Units*	Bonus %	# DB Units	Maximum DB Project
sq. ft. - see calculation below	base project area / proposed avg. unit size	Base Units (rounds up)	VLI = Very Low Income <50 AMI	% VLI x Base # Units (rounds up)		%Bonus x Base # Units (rounds up)	Base + Bonus # Units
270,697	410.30	411	14%	58	46.25%	191	602

Base Project				Proposed Density Bonus Project		
Res GFA	Comm. GFA	Units	Floor	Res GFA	Comm. GFA	Units
			Level 28		7,800	
			Level 27	11,980		19
			Level 26	11,980		19
			Level 25	11,980		19
			Level 24	11,980		19
			Level 23	11,980		19
			Level 22	11,980		19
			Level 21	11,980		19
			Level 20	11,980		19
			Level 19	11,980		19
			Level 18	11,980		19
			Level 17	11,980		19
			Level 16	11,980		19
			Level 15	11,980		19
			Level 14	11,980		11
			Level 13	17,862		31
			Level 12	17,862		31
18,430	7,800	30	Level 11	17,862		31
26,230		45	Level 10	17,862		31
26,230		45	Level 9	17,862		31
26,230		45	Level 8	17,862		31
26,230		45	Level 7	17,862		31
26,230		45	Level 6	17,862		31
26,230		45	Level 5	17,862		31
26,230		45	Level 4	17,862		31
26,230		45	Level 3	17,862		31
26,230		21	Level 2	17,677		
15,922	8,342		Level 1	12,461	8,342	
275			Basement P1	424		
			Basement P2	424		
270,697	**16,142**	**411**	**Total**	**395,188**	**16,142**	**599**
659			**Avg. Unit Size**	**660**		



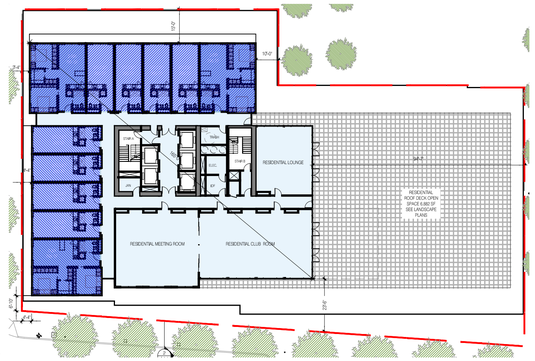
PROPOSED PROJECT SECTION



PLAN AT LEVEL 28



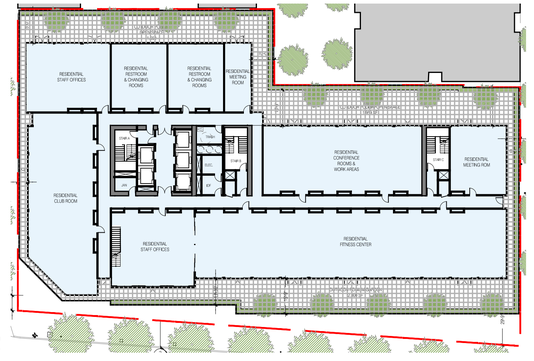
PLAN AT LEVELS 15-27



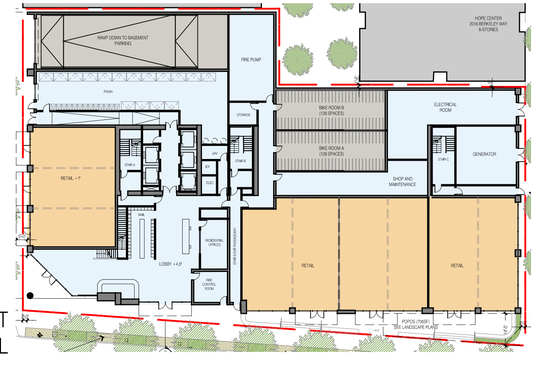
PLAN AT LEVEL 14



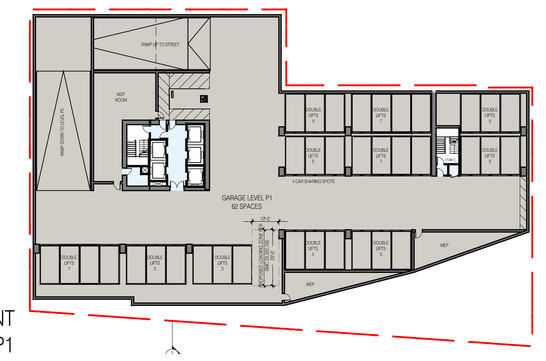
PLAN AT LEVELS 3-13



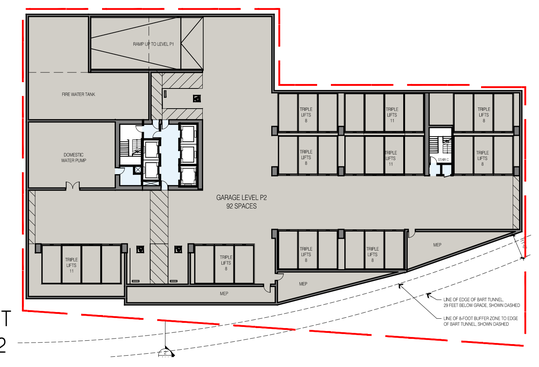
PLAN AT LEVEL 2



PLAN AT GROUND LEVEL



PLAN AT BASEMENT PARKING LEVEL P1



PLAN AT BASEMENT PARKING LEVEL P2

PROPOSED PROJECT PLANS

STACKHOUSE DE LA PEÑA TRACHTENBERG ARCHITECTS

2421 Fourth Street
Berkeley, California 94710
510.649.1414
www.TrachtenbergArch.com

LICENSED ARCHITECT
DAVID TRACHTENBERG
C20926
4/30/20 25
RENEWAL DATE
STATE OF CALIFORNIA

1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
11.15.2024 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL
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JOB: 2209

SHEET:

DENSITY BONUS
PROPOSED PROJECT

A0.2B

WINTER SOLSTICE
DEC 21ST:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

LIGHTER TONE GREY INDICATES SHADOWS FROM PROPOSED BUILDING

NEW SHADOW AT RESIDENTIAL BUILDING

ALL RESIDENTIAL BUILDINGS BEING SHADOWED SHOWN IN THESE DIAGRAMS



6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

WINTER SOLSTICE
DEC 21ST:
NOON

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

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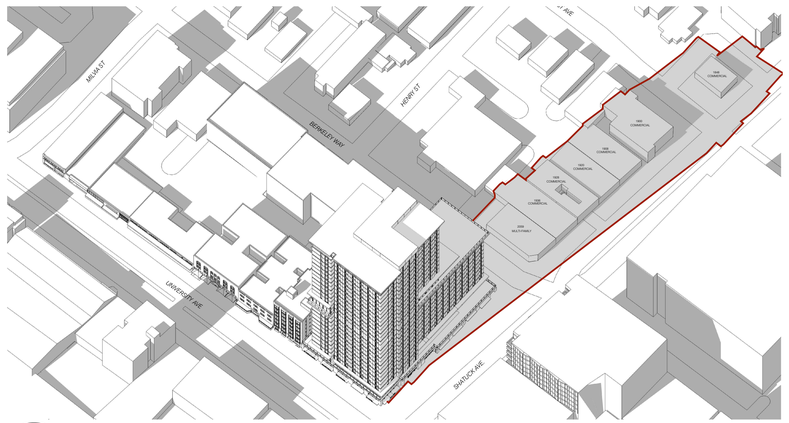

4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

WINTER SOLSTICE
DEC 21ST:
2-HRS AFTER SUNRISE (AM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

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2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

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JOB: 2209

SHEET:

SHADOW STUDIES
DECEMBER 21ST

A0.4A

SUMMER SOLSTICE
JUN 21ST:
2-HRS BEFORE SUNSET (PM)

DARK TONE GREY INDICATES SHADOWS FROM EXISTING BUILDINGS

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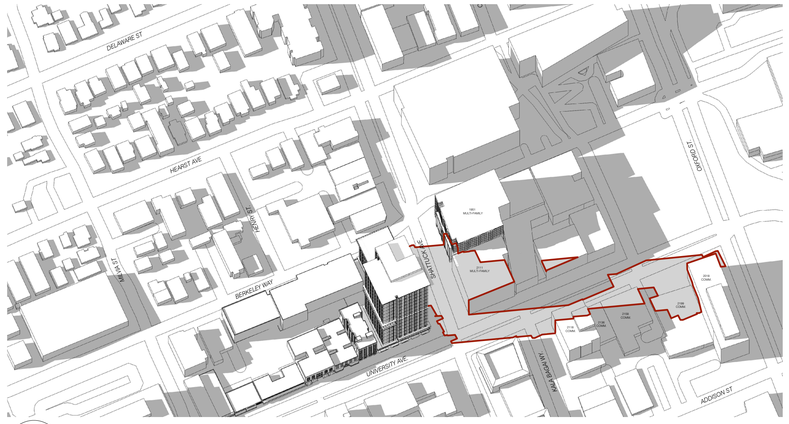

6 SHADOW STUDY AXONOMETRIC - PM
N.T.S.



5 SHADOW STUDY - PM
1:240 @ 11X17 1:120 @ 24X36

N

SUMMER SOLSTICE
JUN 21ST:
NOON

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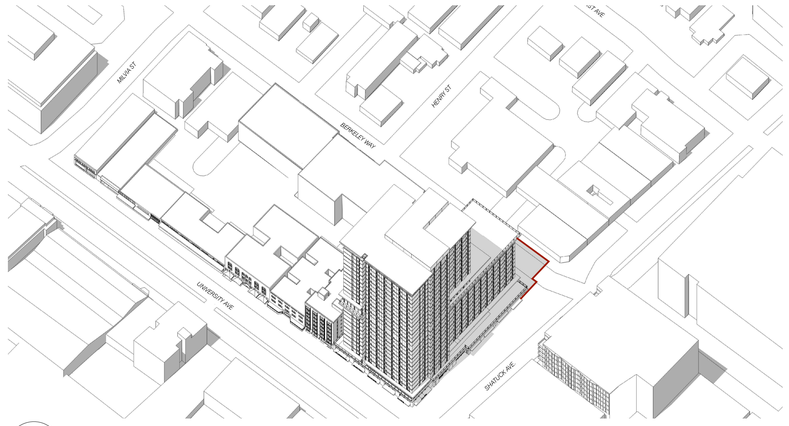

4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

N

SUMMER SOLSTICE
JUN 21ST:
2-HRS AFTER SUNRISE (AM)

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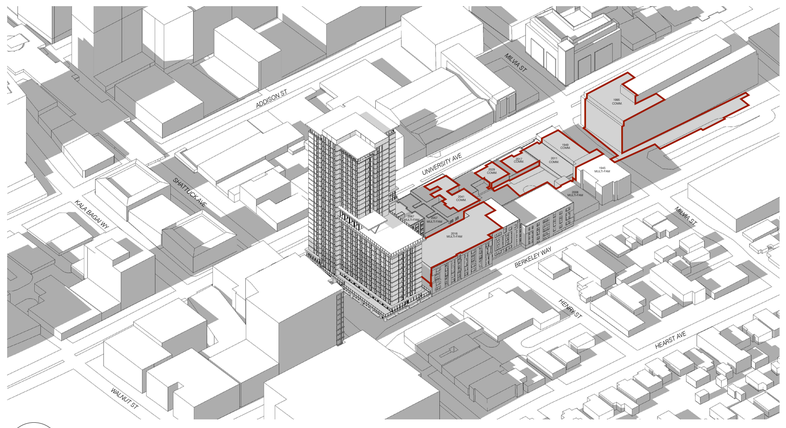

2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

N

STACKHOUSE
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JOB: 2209

SHEET:

SHADOW STUDIES
JUNE 21ST

A0.4B

CURRENT
FEBRUARY 15TH:
2-HRS BEFORE SUNSET (PM)

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CURRENT
FEBRUARY 15TH:
NOON

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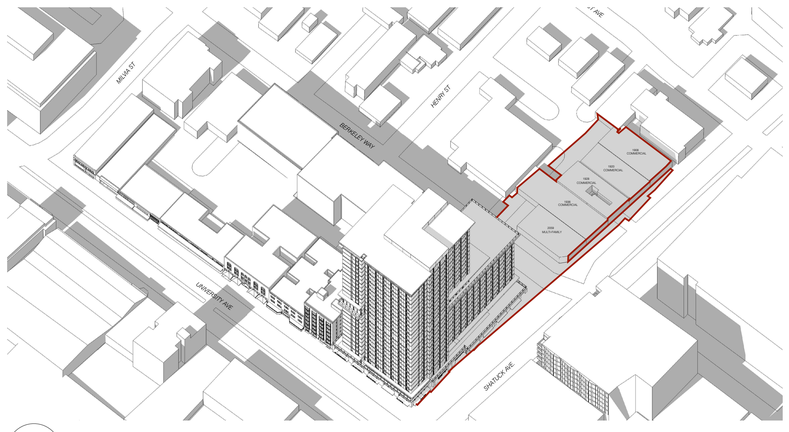

4 SHADOW STUDY AXONOMETRIC - NOON
NT.S.



3 SHADOW STUDY - NOON
1:240 @ 11X17 1:120 @ 24X36

CURRENT
FEBRUARY 15TH:
2-HRS AFTER SUNRISE (AM)

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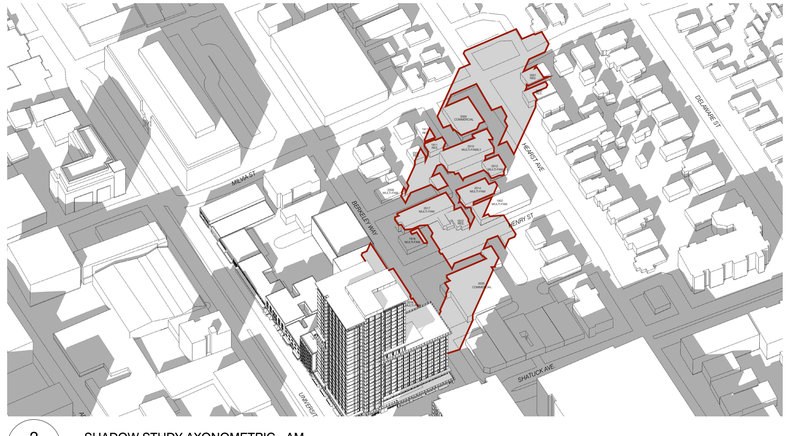

2 SHADOW STUDY AXONOMETRIC - AM
N.T.S.



1 SHADOW STUDY - AM
1:240 @ 11X17 1:120 @ 24X36

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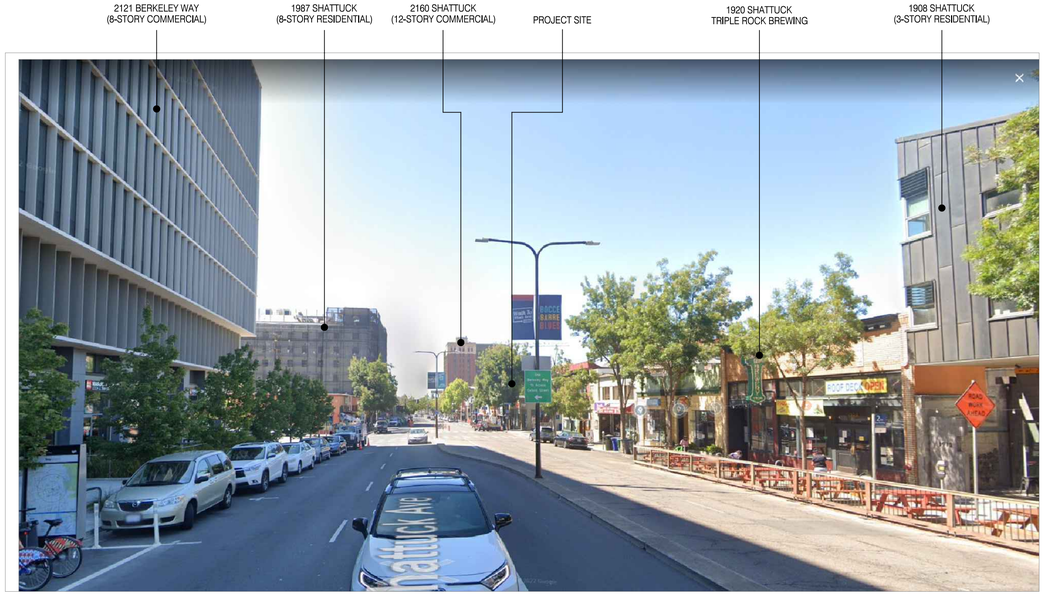
JOB: 2209

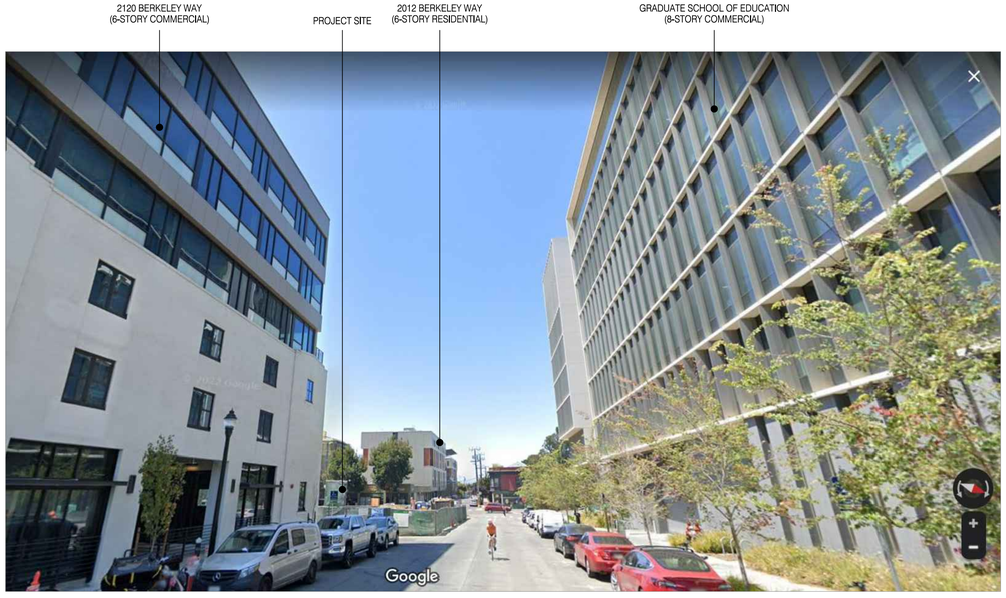
SHEET:

SHADOW STUDIES
FEB 15TH

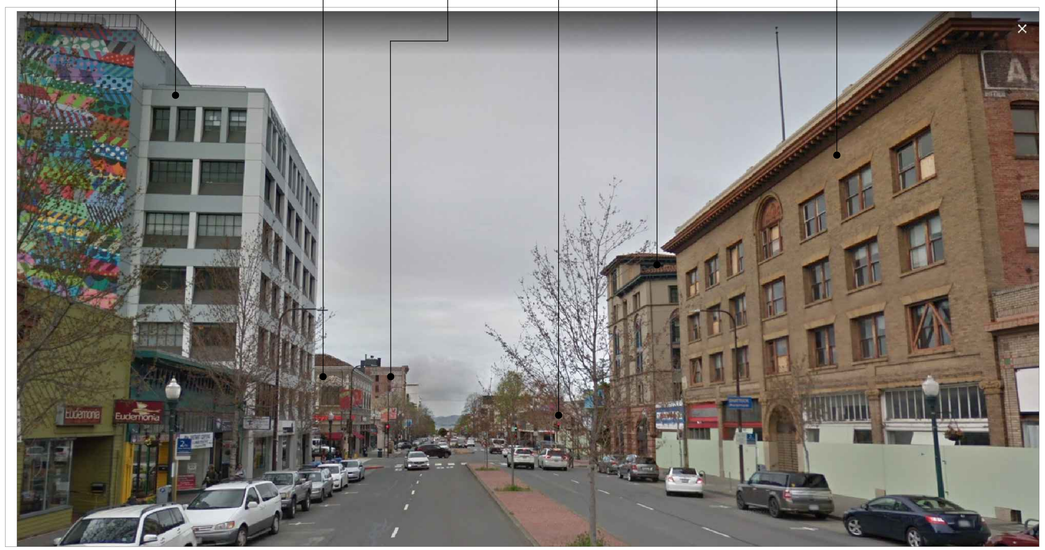
A0.4C



4 - VIEW FROM SHATTUCK LOOKING SOUTH



2 - VIEW FROM BERKELEY WAY LOOKING WEST



3 - VIEW FROM UNIVERSITY LOOKING WEST



1 - GOOGLE EARTH BIRD'S EYE CONTEXT VIEW

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JOB: 2209

SHEET:

SITE CONTEXT PHOTOS

A0.5

TITLE REPORT (1950 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117026135-JM, FOURTH UPDATED REPORT, EFFECTIVE DATE NOVEMBER 21, 2024 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR3"

TITLE TO SAID ESTATE IS VESTED IN: (1950 SHATTUCK)

JILLIAR, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1950 SHATTUCK)

FEE

LEGAL DESCRIPTION (1950 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

ALL THAT REAL PROPERTY SITUATED IN THE CITY OF BERKELEY, COUNTY OF ALAMEDA, STATE OF CALIFORNIA, BEING THOSE PORTIONS OF LOTS 55, 56, AND 57 AS SHOWN ON THAT CERTAIN MAP ENTITLED 'MAP OF THE COLLEGE TRACT', FILED JANUARY 31, 1890 IN BOOK 9 OF MAPS, AT PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA AND A PORTION OF SHATTUCK AVENUE AS SHOWN ON SAID MAP, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF BERKELEY WAY AS SHOWN ON SAID MAP WITH THE WESTERLY LINE OF SHATTUCK AVENUE AS ESTABLISHED BY ORDINANCE NO. 387 ADOPTED BY THE BOARD OF TRUSTEES OF THE TOWN OF BERKELEY ON JANUARY 18, 1892; THENCE ALONG SAID WESTERLY LINE, SOUTH 04°02'40" EAST, 60.06 FEET; THENCE PARALLEL WITH THE SOUTHERLY LINE OF SAID BERKELEY WAY, SOUTH 81°54'40" WEST, 112.52 FEET TO THE EASTERLY LINE OF THE LAND DESCRIBED IN THE DEED EXECUTED BY F. D. CHASE AND ATLANTA J. CHASE, HIS WIFE, TO JACOB BAUM, DATED JULY 28, 1922, AND RECORDED IN LIBER 324 OF OFFICIAL RECORDS, AT PAGE 73, OFFICIAL RECORDS OF ALAMEDA COUNTY; THENCE ALONG LAST SAID LINE, NORTH 08°05'20" WEST, 34.91 FEET TO THE SOUTHERLY LINE OF SAID LOT 55; THENCE ALONG LAST SAID LINE, NORTH 81°54'40" EAST, 1.00 FOOT; THENCE PARALLEL WITH THE WESTERLY LINE OF SAID LOT 55, NORTH 08°05'20" WEST, 25.00 FEET TO THE SOUTHERLY LINE OF SAID BERKELEY WAY; THENCE ALONG LAST SAID LINE AND ITS EASTERLY PROLONGATION, NORTH 81°54'40" EAST, 115.76 FEET TO THE POINT OF BEGINNING.

APN: 57-2053-1

EXCEPTIONS TO TITLE (1950 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS:, DISTRICT NO 2014-1, FOR CLEAN ENERGY DISCLOSED BY : ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR1 EXC. 3 – NOT PLOTTABLE).
2. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, RECORDED MAY 16, 1966 IN BOOK 1785 OF OFFICIAL RECORDS, PAGE 944 UNDER RECORDER'S SERIAL NUMBER AY61475, AFFECTS A PORTION (PTR1 EXC. 5 – PLOTTED).

TITLE REPORT (1974 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117026135-JM, FOURTH UPDATED REPORT, EFFECTIVE DATE NOVEMBER 21, 2024 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR2"

TITLE TO SAID ESTATE IS VESTED IN: (1974 SHATTUCK)

1974 SHATTUCK AVENUE, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

THE ESTATE OR INTEREST IN THE LAND IS: (1974 SHATTUCK)

FEE

LEGAL DESCRIPTION (1974 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

ALL THAT REAL PROPERTY SITUATED IN THE CITY OF BERKELEY, COUNTY OF ALAMEDA, STATE OF CALIFORNIA, BEING THOSE PORTIONS OF LOTS 57 AND 58 AS SHOWN ON THAT CERTAIN MAP ENTITLED 'MAP OF THE COLLEGE TRACT', FILED JANUARY 31, 1890 IN BOOK 9 OF MAPS, AT PAGE 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA AND A PORTION OF SHATTUCK AVENUE AS SHOWN ON SAID MAP, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE INTERSECTION OF THE EASTERLY PROLONGATION OF THE SOUTHERLY LINE OF BERKELEY WAY AS SHOWN ON SAID MAP WITH THE WESTERLY LINE OF SHATTUCK AVENUE AS ESTABLISHED BY ORDINANCE NO. 387 ADOPTED BY THE BOARD OF TRUSTEES OF THE TOWN OF BERKELEY ON JANUARY 18, 1892; THENCE ALONG SAID WESTERLY LINE, SOUTH 04°02'40" EAST, 60.06 FEET TO THE POINT OF BEGINNING AND CONTINUING SOUTH 04°02'40" EAST, 50.23 FEET TO THE SOUTHERLY LINE OF SAID LOT 58; THENCE ALONG LAST SAID LINE, SOUTH 81°55'59" WEST, 108.98 TO THE WESTERLY LINE OF SAID LOT 58; THENCE ALONG LAST SAID LINE AND THE WESTERLY LINE OF SAID LOT 57, NORTH 08°05'20" WEST, 50.09 FEET TO A LINE THAT IS DRAWN PARALLEL WITH THE SOUTHERLY LINE OF SAID BERKELEY WAY FROM THE POINT OF BEGINNING; THENCE ALONG LAST SAID LINE, NORTH 81°54'40" EAST, 112.52 FEET TO THE POINT OF BEGINNING.

APN: 57-2053-2

EXCEPTIONS TO TITLE (1974 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, DISTRICT NO 2014-1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMETN MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR2 EXC. 3 – NOT PLOTTABLE).
2. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING, GRANTED TO BAY AREA RAPID TRANSIT DISTRICT, A RAPID TRANSIT DISTRICT, FOR UNDERGROUND RAPID TRANSIT TUNNEL FACILITIES, RECORDED SEPTEMBER 23, 1966 IN BOOK 1846 OF OFFICIAL RECORDS, PAGE 53 UNDER RECORDER'S SERIAL NUMBER AY-11314 (PTR2 EXC. 5 – PLOTTED)

TITLE REPORT (1984 & 1998 SHATTUCK)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117025433-JM, 1ST UPDATE, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR3"

TITLE TO SAID ESTATE IS VESTED IN: (1984 & 1998 SHATTUCK)

FIFTH KEIL CO., A CALIFORNIA CORPORATION

THE ESTATE OR INTEREST IN THE LAND IS: (1984 & 1998 SHATTUCK)

FEE

LEGAL DESCRIPTION (1984 & 1998 SHATTUCK)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

COMMENCING AT THE POINT OF INTERSECTION OF THE NORTHERN LINE OF UNIVERSITY AVENUE WITH THE WESTERN LINE OF SHATTUCK AVENUE AS SAID AVENUES NOW EXISTS; THENCE WESTERLY ALONG THE NORTHERN LINE OF UNIVERSITY AVENUE 79.00 FEET; THENCE AT RIGHT ANGLES NORTHERLY 114.68 FEET, MORE OR LESS, TO THE SOUTHERN LINE OF THE LAND NOW OR FORMERLY OF JOHN H. BOHLIG AND LOTTA BOHLIG; THENCE EASTERLY AND ALONG SAID LINE 87.07 FEET TO THE WESTERN LINE OF SHATTUCK AVENUE; THENCE SOUTHERLY ALONG SAID LINE OF SHATTUCK AVENUE 114.97 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

APN'S: 057-2053-003-01 AND 057-2053-003-02

EXCEPTIONS TO TITLE (1984 & 1998 SHATTUCK)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014-1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR3 EXC. 4 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO P180-2016, FOR BERKELEY DOWNTOWN P180-2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR3 EXC. 5 – NOT PLOTTABLE).
3. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING INSTRUMENT DEED, GRANTED TO SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT, FOR RAPID TRANSIT TUNNEL FACILITIES, DATED APRIL 6, 1967, RECORDED MAY 10, 1967 IN REEL 1961 OF OFFICIAL RECORDS, IMAGE 330 UNDER RECORDER'S SERIAL NUMBER AZ 43339, AFFECTS A PORTION OF THE PREMISES, THE PRESENT OWNERSHIP OF SAID EASEMENT AND OTHER MATTERS AFFECTING THE INTERESTS THERETO, IF ANY, ARE NOT SHOWN HEREIN (PTR3 EXC. 7 – PLOTTED).
4. A NOTICE AS FOLLOWS, ENTITLED NOTICE OF ASSESSMENT – DOWNTOWN BERKELEY P180, BY CITY OF BERKELEY, DATED AUGUST 25, 2011, RECORDED AUGUST 30, 2011 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2012148358 (PTR3 EXC. 8 – NOT PLOTTABLE).

TITLE REPORT (2701 UNIVERSITY)

THE TITLE REPORT USED IN THIS SURVEY WAS ISSUED BY OLD REPUBLIC TITLE COMPANY, PRELIMINARY REPORT ORDER NO. 1117026137-JM, EFFECTIVE DATE OCTOBER 12, 2022 AT 7:30 A.M., REFERRED TO HEREON AS THE "PTR4"

TITLE TO SAID ESTATE IS VESTED IN: (2701 UNIVERSITY)

EDITH WIESER GLYNN, TRUSTEE OF THE EDITH WIESER GLYNN TRUST

THE ESTATE OR INTEREST IN THE LAND IS: (2701 UNIVERSITY)

FEE

LEGAL DESCRIPTION (2701 UNIVERSITY)

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF ALAMEDA, CITY OF BERKELEY, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTHERN LINE OF BERKELEY WAY, AS SHOWN UPON THE MAP HEREINAFTER REFERRED TO, DISTANT THEREON ONE HUNDRED FIFTEEN AND 46/100 FEET WESTERLY FROM THE INTERSECTION THEREOF WITH THE WESTERN LINE OF SHATTUCK AVENUE AS ESTABLISHED BY BOARD OF TRUSTEES OF THE TOWN OF BERKELEY, JAN. 18, 1892, BY ORDINANCE NO. 387, SAID POINT BEING ONE FOOT EASTERLY ON SAID LINE OF BERKELEY WAY FROM THE LINE DIVIDING LOTS NUMBERED 54 AND 55 ACCORDING TO SAID MAP; RUNNING THENCE WESTERLY ALONG SAID LINE OF BERKELEY WAY THIRTY-NINE FEET TO THE LINE DIVIDING LOTS NUMBERED 55 AND 54 ACCORDING TO SAID MAP; THENCE AT RIGHT ANGLES SOUTHERLY ALONG SAID LINE ONE HUNDRED TEN FEET; THENCE AT RIGHT ANGLES EASTERLY THREE AND 73/100 FEET; THENCE AT RIGHT ANGLES SOUTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET TO THE NORTHERN LINE OF UNIVERSITY AVENUE; THENCE EASTERLY ALONG SAID LINE OF UNIVERSITY AVENUE FIFTY-FIVE AND 9/10 FEET; THENCEN AT RIGHT ANGLES NORTHERLY ONE HUNDRED FOURTEEN AND 68/100 FEET; THENCE AT RIGHT ANGLES WESTERLY TWENTY- ONE AND 63/100 FEET; THENCE AT RIGHT ANGLES NORTHERLY EIGHTY-FIVE FEET TO THE SOUTHWESTERN CORNER OF LOT NUMBERED 55, ACCORDING TO SAID MAP; THENCE AT RIGHT ANGLES EASTERLY ALONG THE SOUTHERN LINE OF SAID LOT ONE FOOT AND THENCE AT RIGHT ANGLES NORTHERLY TWENTY-FIVE FEET TO THE POINT OF BEGINNING.

BEING LOT NUMBERED 54, THE WESTERN ONE FOOT OF LOT NUMBERED 55, A PORTION OF LOT NUMBERED 6 AND A PARCEL ADJOINING SAID LOT NUMBER 6 ON THE EAST, AS ALL OF SAID LOTS ARE DELINEATED AND SO DESIGNATED UPON THAT CERTAIN MAP ENTITLED, "MAP OF COLLEGE TRACT, BERKELEY", FILED MAY 24,1877, IN LIBER 5 OF MAPS AT PAGE 14, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY.

EXCEPTING THEREFROM THAT PORTION DESCRIBED IN THE DEED TO THE CITY OF BERKELEY, RECORDED SEPTEMBER 29,1955, BOOK 7795, PAGE 23, AS INSTRUMENT NO. AK-105819, OFFICIAL RECORDS.

APN: 057-2053-004-02

EXCEPTIONS TO TITLE (2701 UNIVERSITY)

1. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO 2014-1, FOR CLEAN ENERGY, DISCLOSED BY ASSESSMENT MAP BOOK 18 PAGE 65, RECORDED AUGUST 24, 2015 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2015235594 (PTR4 EXC. 3 – NOT PLOTTABLE).
2. THE HEREIN DESCRIBED PROPERTY LYING WITHIN THE PROPOSED BOUNDARIES OF A COMMUNITY FACILITIES DISTRICT, AS FOLLOWS, DISTRICT NO CITY OF BERKELEY-DOWNTOWN PROPERTY AND BUSINESS IMPROVEMENT DISTRICT, FOR BERKELEY DOWNTOWN P180-2016, DISCLOSED BY NOTICE OF ASSESSMENT, RECORDED JUNE 30, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016164799 (PTR4 EXC. 5 – NOT PLOTTABLE).
3. TERMS AND CONDITIONS CONTAINED IN THE EDITH WIESER GLYNN TRUST AS DISCLOSED BY GRANT DEED, RECORDED MAY 22, 1984 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 1984099372 (PTR4 EXC. 6 – NOT PLOTTABLE).
4. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED NONDISTURBANCE AND ATTORNMENT AGREEMENT, EXECUTED BY EDITH GLYNN AND T.Y.P. RESTAURANT GROUP, INC., A DELAWARE CORPORATION DBA TENDER GREENS, RECORDED MARCH 22, 2016 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2016068690 (PTR4 EXC. 7 – NOT PLOTTABLE).
5. TERMS AND PROVISIONS AS CONTAINED IN AN INSTRUMENT ENTITLED MINOR ENCROACHMENT PERMIT 17-03, EXECUTED BY EDITH W. GLYNN AND THE CITY OF BERKELEY, RECORDED MAY 24, 2017 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 2017113477 (PTR 4 EXC. 8 – NOT PLOTTABLE)

NOTES

1. DATE OF FIELD SURVEY: DECEMBER 5, 9 AND 21, 2022 AS TO THE BOUNDARY AND TOPOGRAPHIC SURVEY OF THE SUBJECT PROPERTY.
2. THE UTILITIES SHOWN HEREON ARE BY SURFACE OBSERVATION AND RECORD INFORMATION ONLY AND NO WARRANTY IS GIVEN HEREIN AS TO THEIR EXACT LOCATION. IT IS THE RESPONSIBILITY OF THE DEVELOPER AND/OR CONTRACTOR TO VERIFY THE EXACT LOCATION OF THE UTILITIES WITH THE APPROPRIATE UTILITY COMPANY OR AGENCY.
3. UTILITY JURISDICTIONS / PROVIDERS ARE AS FOLLOWS:
   STORM DRAINS: CITY OF BERKELEY
   SANITARY SEWER: CITY OF BERKELEY
   WATER: EAST BAY MUNICIPAL UTILITY DISTRICT (EBMUD)
   ELECTRICITY: PACIFIC GAS & ELECTRIC CO.
   NATURAL GAS: PACIFIC GAS & ELECTRIC CO.
   TELEPHONE: AT&T
4. THERE ARE NO CEMETERIES ON OR WITHIN 100 FEET OF THE SUBJECT PROPERTY
5. THE SURVEYED PROPERTIES ARE THE SAME PROPERTIES DESCRIBED IN THE TITLE REPORTS.
6. THE LEGAL DESCRIPTIONS AS SHOWN IN THE TITLE REPORTS MATHEMATICALLY CLOSE.
7. THERE IS NO OBSERVED EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL
8. THERE ARE NO WETLAND AREAS IN THE SUBJECT PROPERTIES

TABLE A NOTES

1. FOUND MONUMENTS ARE SHOWN ON THIS SHEET OF THE SURVEY.
2. THE STREET ADDRESS OF THE PROPERTY IS 1950, 1974, 1984, 1998 SHATTUCK AVENUE AND 2071 UNIVERSITY AVENUE, BERKELEY, CA 94704
3. FLOOD ZONE DESIGNATION: THE PREMISES ARE LOCATED IN ZONE "X" (NON-SHADED) DEFINED AS "AREAS OF MINIMAL FLOOD," PER FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 06001C0057G, EFFECTIVE DATE: AUGUST 3, 2009.
4. THE TOTAL GROSS LAND AREA IS:
   1950 SHATTUCK AVENUE: 6,635 SQUARE FEET +/- OR 0.152 ACRES MORE OR LESS.
   1974 SHATTUCK AVENUE: 5,264 SQUARE FEET +/- OR 0.121 ACRES MORE OR LESS
   1984 & 1998 SHATTUCK AVENUE: 9,527 SQUARE FEET +/- OR 0.219 ACRES MORE OR LESS
   2071 UNIVERSITY AVENUE: 6,411 SQUARE FEET +/- OR 0.147 ACRES MORE OR LESS
6. (A/B) ZONING REQUIREMENTS: PER THE CITY OF BERKELEY PLANNING AND ZONING DEPARTMENT, THE PROPERTIES ARE ZONED "C-DMU DOWNTOWN MIXED-USE CORE" DEFINED AS "DOWNTOWN MIXED-USE DISTRICT."

   REFERENCE FOR "C-DMU" ZONING IS MADE HERE TO THE CITY OF BERKELEY CODE, CHAPTER 23.204.130, REGARDING PROPERTY DEVELOPMENT STANDARDS, BUILDING HEIGHT LIMITATION, MINIMUM BUILDING SETBACK AND PARKING REQUIREMENTS ARE AS FOLLOWS:

   SETBACKS
   MINIMUM FRONT: 0 FEET
   MINIMUM SIDE: 0 FEET
   MINIMUM REAR: 0 FEET

   MAXIMUM HEIGHT: 60 FEET, 75 FEET WITH USE PERMIT

   MINIMUM PARKING REQUIREMENTS: NONE REQUIRED
7. (A/B/C) EXTERIOR DIMENSIONS AND SQUARE FOOTAGE OF BUILDING AT GROUND LEVEL, AND NUMBER OF STORIES ARE SHOWN ON SHEET 3 OF THE SURVEY.
8. SUBSTANTIAL IMPROVEMENTS OBSERVED IN THE PROCESS OF CONDUCTING THE SURVEY ARE SHOWN ON SHEET 3.
9. THERE ARE NO PARKING SPACES LOCATED ON THE SUBJECT PROPERTIES.
10. THERE ARE NO DIVISIONS OR PARTY WALLS LOCATED ON THE SUBJECT PROPERTIES WITH RESPECT TO ADJOINING PROPERTIES.
11. (A) LOCATION OF UTILITIES EXISTING ON OR SERVING THE SURVEYED PROPERTIES AS DETERMINED BY OBSERVED EVIDENCE TOGETHER WITH EVIDENCE FROM PLAN OBTAINED FROM UTILITY COMPANIES OR PROVIDED BY CLIENT ARE SHOWN ON SHEET 3.
13. NAMES OF ADJOINING OWNERS OF PLATTED LANDS ARE SHOWN ON SHEET 2 OF THE SURVEY.
14. DISTANCE TO THE NEAREST INTERSECTING STREET IS SHOWN ON SHEET 2 OF THE SURVEY.
16. THERE IS NO OBSERVABLE EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
17. THERE IS NO OBSERVED EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
18. THERE ARE NO OFFSITE EASEMENTS TO THE SUBJECT PROPERTIES.
19. PROFESSIONAL LIABILITY INSURANCE IN THE AMOUNT OF $2,000,000 IS HELD BY THE SURVEYOR.

BASIS OF BEARINGS

THE BASIS OF BEARINGS OF THIS SURVEY IS TAKEN BETWEEN THE TWO FOUND STREET MONUMENTS ALONG BERKELEY WAY BETWEEN MILVIA STREET AND HENRY STREET AS SHOWN ON PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA. TAKEN AS NORTH 81°54'40" EAST.

REFERENCES

(R1) PARCEL MAP NO. 11051, FILED MARCH 20, 2020 IN BOOK 346 OF PARCEL MAPS, AT PAGES 1 TO 11 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R2) PARCEL MAP P.M. 10119, FILED SEPTEMBER 28, 2016 IN BOOK 334 OF PARCEL MAPS, AT PAGES 21 TO 22, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R3) TRACT MAP T.M. 7888, FILED SEPTEMBER 03, 2009 IN BOOK 305 OF MAPS, AT PAGES 18 TO 29 INCLUSIVE, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R4) UNRECORDED MAP, CITY OF BERKELEY CITY MONUMENT MAP, PLAN 1305, 306C-057.

(R5) "MAP OF THE COLLEGE TRACT, BERKELEY", FILED JANUARY 31, 1880 IN BOOK 9 OF MAPS, AT PAGES 46, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R6) GRANT DEED, RECORDED APRIL 15, 1966 IN REEL 1749, IMAGE 918, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

(R7) JUDGMENT QUIETING TITLE, CASE NO. 24CV065234, FILED NOVEMBER 19, 2024 WITH SUPERIOR COURT OF CALIFORNIA FOR ALAMEDA COUNTY.

(R8) DOCUMENT ENTITLED "NONDISTURBANCE AND ATTORNMENT AGREEMENT", RECORDED MARCH 22, 2016 AS DOCUMENT NUMBER 2016-068690, OFFICIAL RECORDS OF ALAMEDA COUNTY, STATE OF CALIFORNIA.

SURVEYOR'S CERTIFICATE

TO JILLIAR, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY; 1974 SHATTUCK AVENUE, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY; FIFTH KEIL CO., A CALIFORNIA CORPORATION; EDITH WIESER GLYNN, TRUSTEE OF THE EDITH WIESER GLYNN TRUST; AND OLD REPUBLIC TITLE COMPANY:

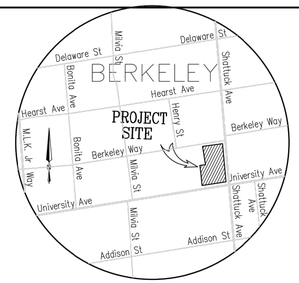
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6(A), 6(B), 7(A), 7(B1), 7(C), 8, 9, 10, 11(A), 13, 14, 16, 17, 18, AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 5, 9 AND 21, 2022.

DATE DECEMBER 13, 2024

JACQUELINE LUK P.L.S. 8934
FOR LUK & ASSOCIATES, INC.

SHEET INDEX

1. NOTES
2. BOUNDARY SURVEY
3. TOPOGRAPHIC SURVEY



VICINITY MAP
NOT TO SCALE

ALTA/NSPS LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE
AND 2071 UNIVERSITY AVENUE
CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA
DECEMBER 2024

PREPARED BY
LUK AND ASSOCIATES
CIVIL ENGINEER – LAND PLANNERS – LAND SURVEYORS
738 ALFRED NOBEL DRIVE
HERCULES, CALIFORNIA 94547
(510) 724-3388

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JOB NO.: 22117A10 PLOT DATE: DECEMBER 13, 2024

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STATE OF CALIFORNIA

1950-1998 (1974) SHATTUCK

Berkeley, CA

12.12.2022 SB-330 SUBMITTAL
03.01.2023 ZONING SUBMITTAL
07.18.2023 ZONING RESUBMITTAL
11.15.2024 ZONING RESUBMITTAL
03.12.2024 ZONING RESUBMITTAL
01.16.2025 PRELIM DRC HEARING SET
02.27.2025 ZAB HEARING SET

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JOB: 2209

SHEET:

SURVEY

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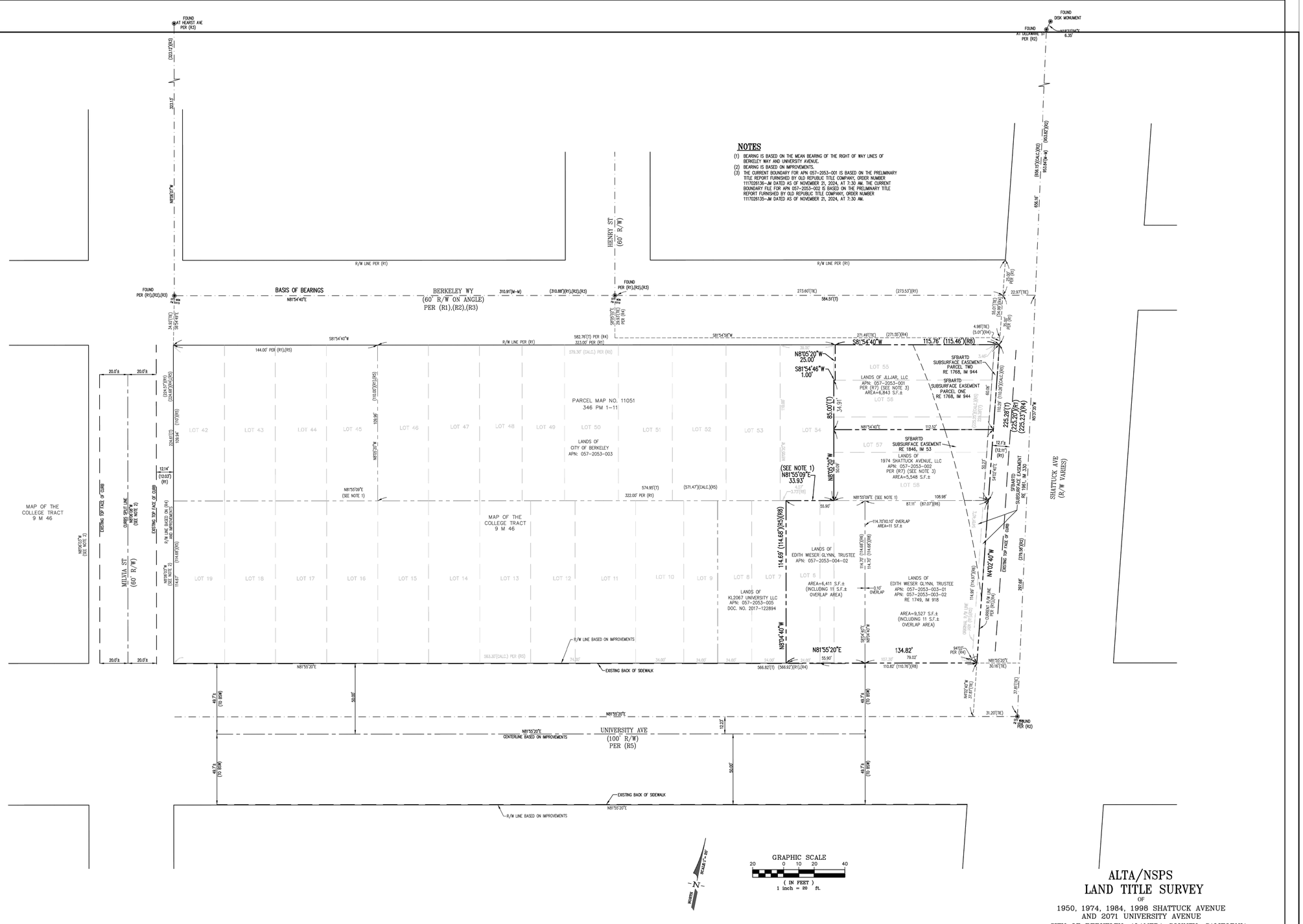

ALTA/NSPS LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE
AND 2071 UNIVERSITY AVENUE
CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA
DECEMBER 2024

PREPARED BY
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SHEET 2 OF 3

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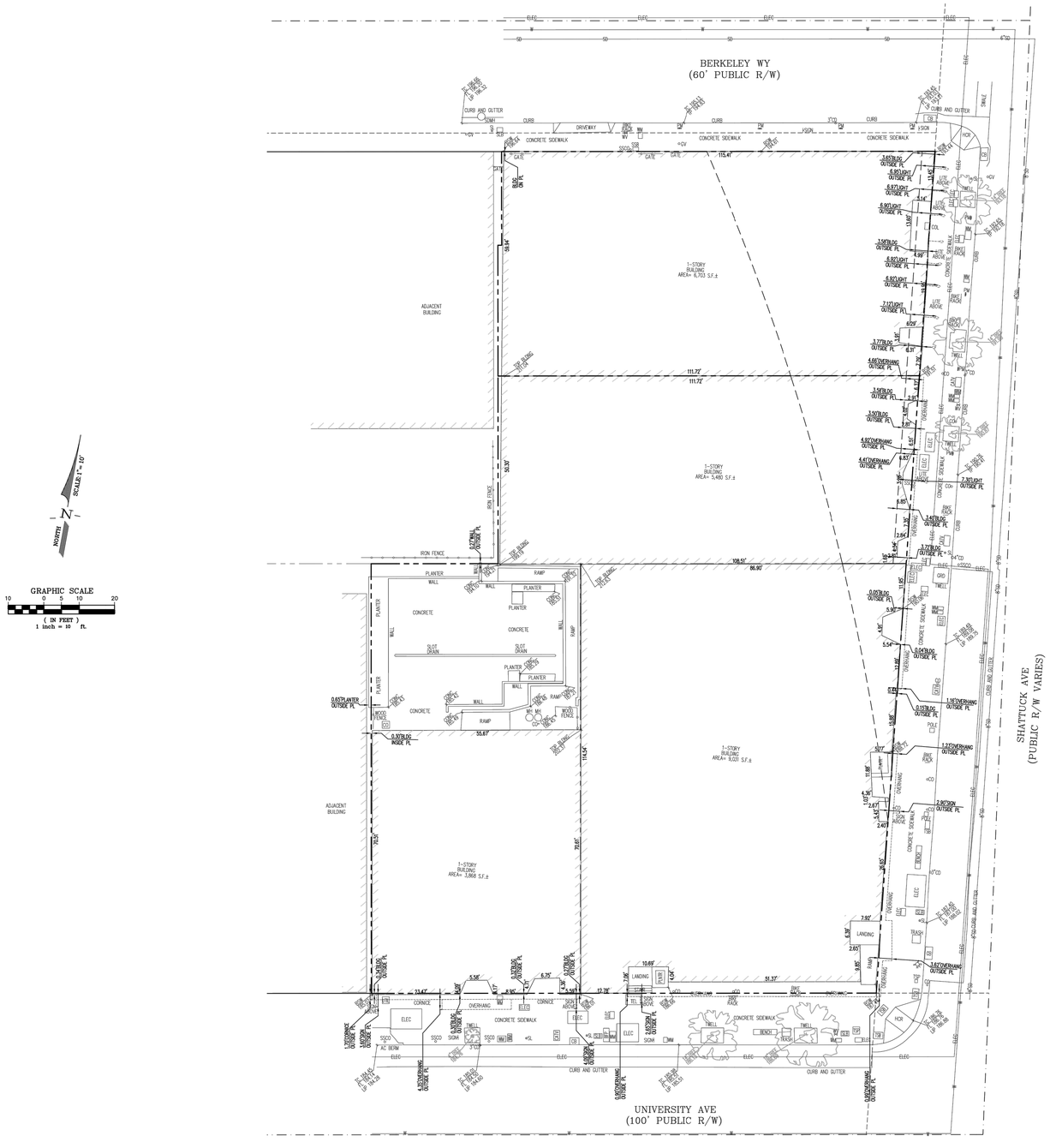

LEGEND

SYMBOLS	DESCRIPTION
	BOUNDARY OF SUBJECT PROPERTY
	RIGHT OF WAY LINE
	INTERIOR PROPERTY LINE
	MONUMENT LINE
	TIE LINE
	OLD LOT LINE
ELEC	ELECTRIC LINE
GAS	GAS LINE LINE
W	WATER LINE
SD	STORM DRAIN LINE
SS	SANITARY SEWER LINE
ELEC	ELECTRICITY BOX
AC BERM	ASPHALT BERM
SSCO	SANITARY SEWER CLEAN OUT
WM	WATER METER
HCR	HANDICAP RAMP
TWELL	TREE WELL
SL	STREET LIGHT
PLNTR	PLANTER BOX
CB	CATCH BASIN
TEL	TELECOMMUNICATION BOX
GV	GAS VALVE
SLB	STREET LIGHT BOX
CD	CURB DRAIN
CO	CLEAN OUT
BFP	BACK FLOW PREVENTER
TSB	TRAFFIC SIGNAL BOX
WV	WATER VALVE
CD	CURB DRAIN
PM	PARKING METER
COL	COLUMN
SSB	SANITARY SEWER BOX
SDMH	STORM DRAIN MAN HOLE
GRD	GROUND
SD	SLOT DRAIN
MH	MANHOLE
CONC 65.60	TOP OF CONCRETE ELEVATION
BSW 65.60	BACK OF SIDEWALK ELEVATION
TC 65.64	TOP OF CURB ELEVATION
TP 65.64	TOP OF PAVEMENT ELEVATION
FL 65.64	FLOW LINE ELEVATION
TOP BLDG 65.64	TOP OF BUILDING ELEVATION
LIP 65.60	TOP OF LIP ELEVATION
	TREE

ALTA/NSPS
LAND TITLE SURVEY

OF

1950, 1974, 1984, 1998 SHATTUCK AVENUE
AND 2071 UNIVERSITY AVENUE
CITY OF BERKELEY, ALAMEDA COUNTY, CALIFORNIA
DECEMBER 2024

PREPARED BY

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SHEET 3 OF 3

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JOB: 2209

SHEET:

SURVEY

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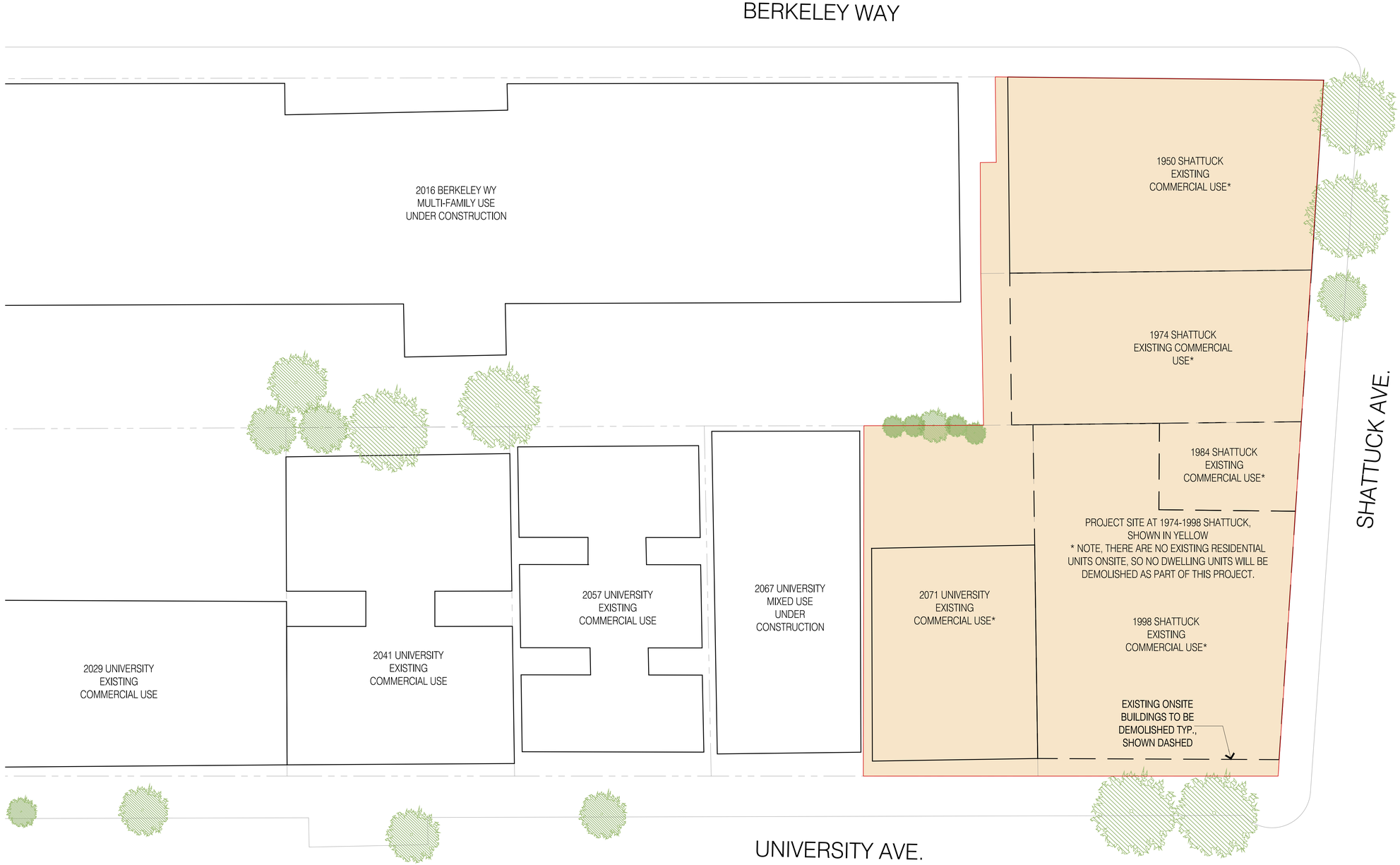

1 - EXISTING SITE PLAN

1/32"=1'-0" @ 11x17 1/16"=1'-0" @ 24x36

0 4 8 16 32

N

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JOB: 2209

SHEET:

EXISTING
SITE PLAN

A1.0



1 / - PLAN AT BASEMENT PARKING LEVEL P2

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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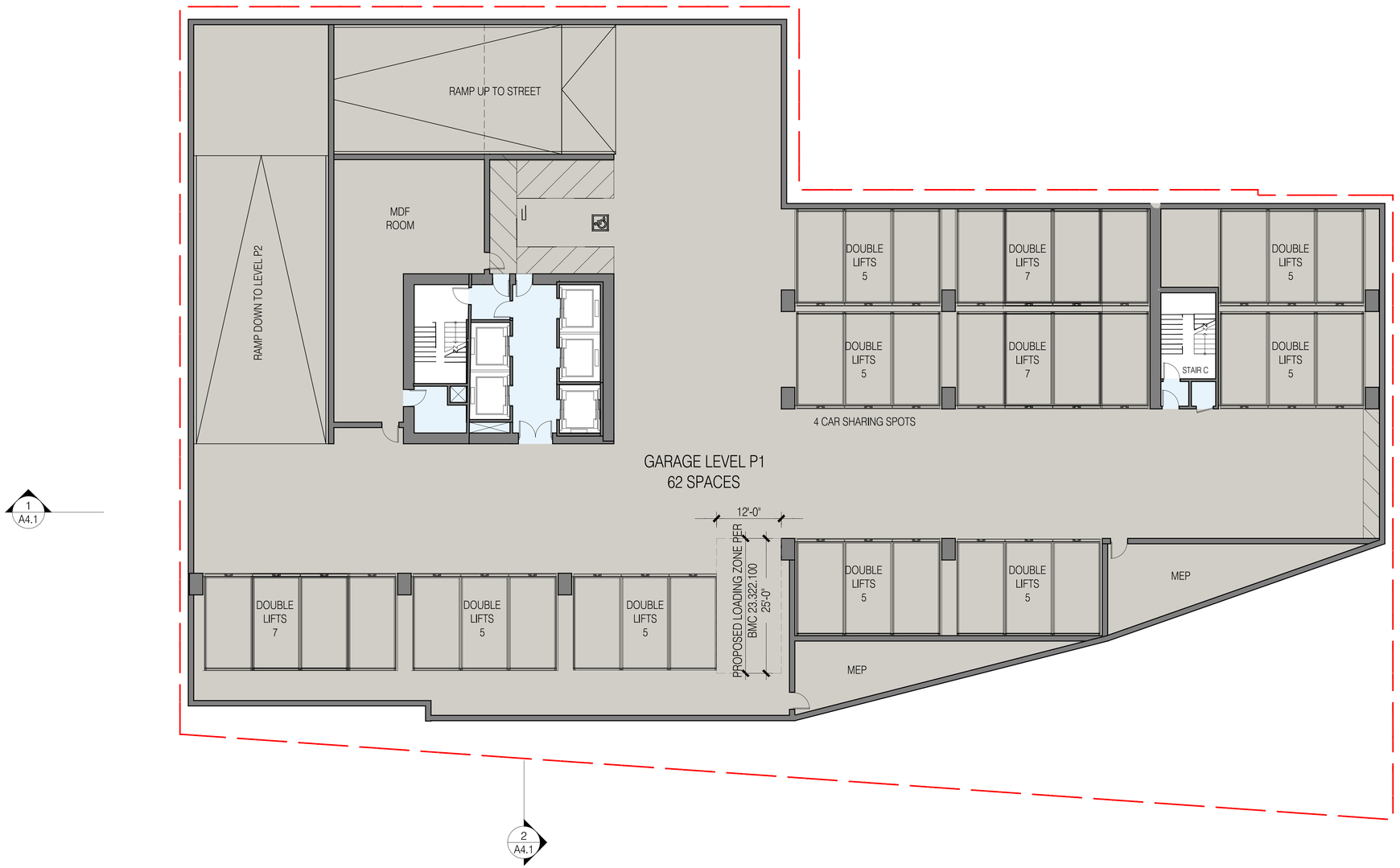
FLOOR PLANS

A2.0a



1 / A4.1

2 / A4.1

1 / -

PLAN AT BASEMENT PARKING LEVEL P1

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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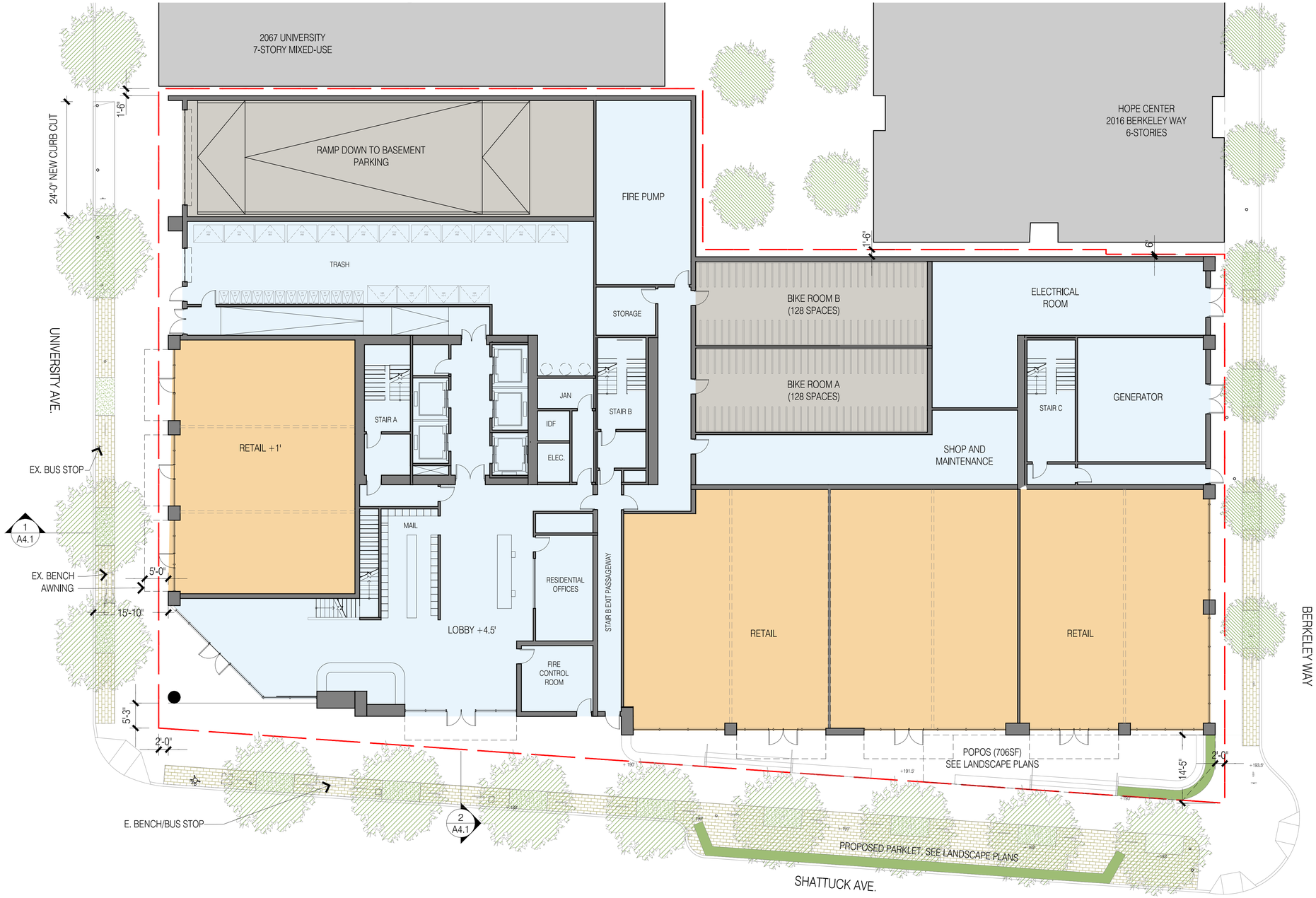
A2.0b



1 / - SITE PLAN / PLAN AT GROUND FLOOR

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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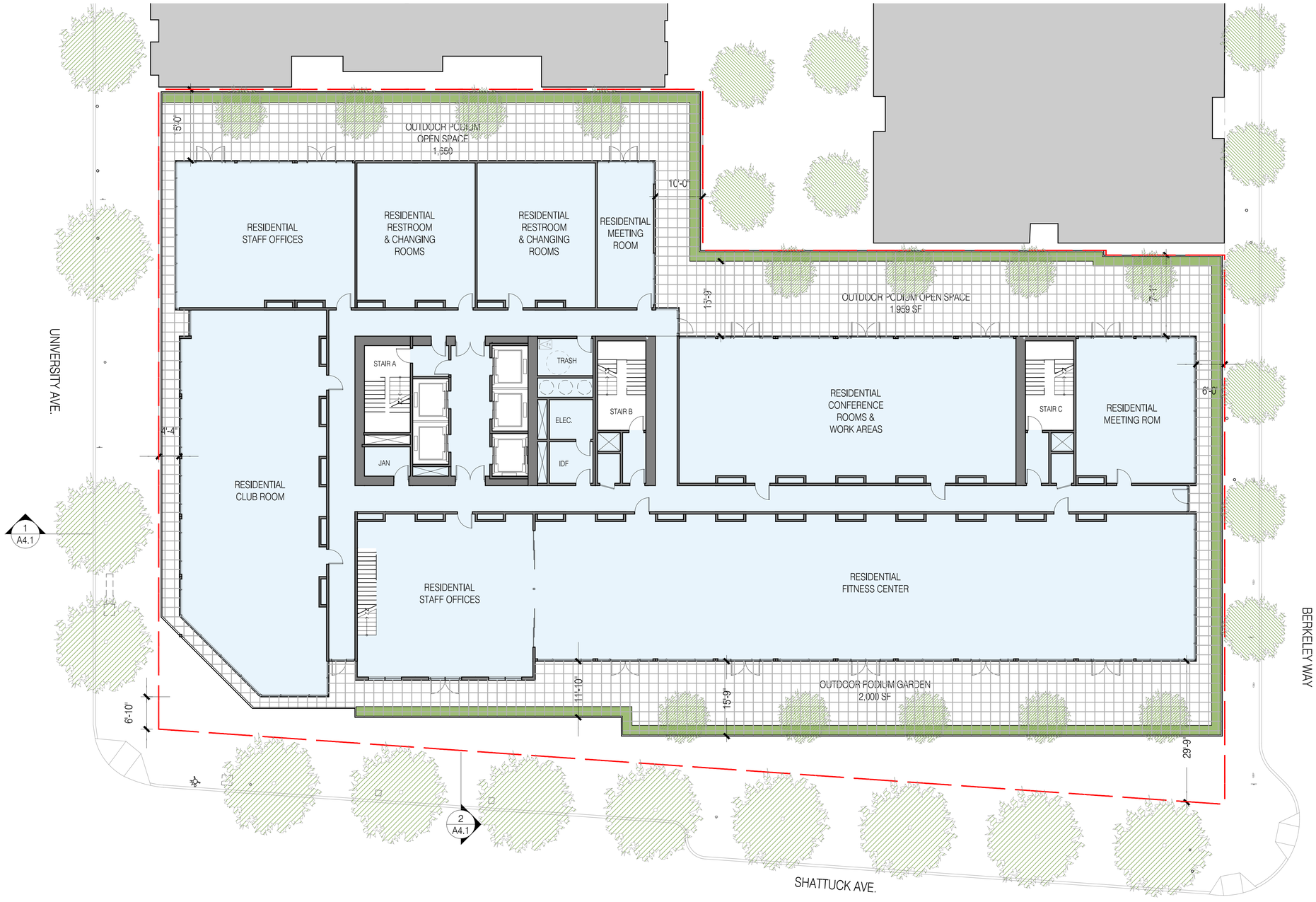
FLOOR PLANS

A2.1



1 PLAN AT LEVEL 2
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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FLOOR PLANS

A2.2



1 PLAN AT LEVELS 3-13

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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A2.3



1 PLAN AT LEVEL 14
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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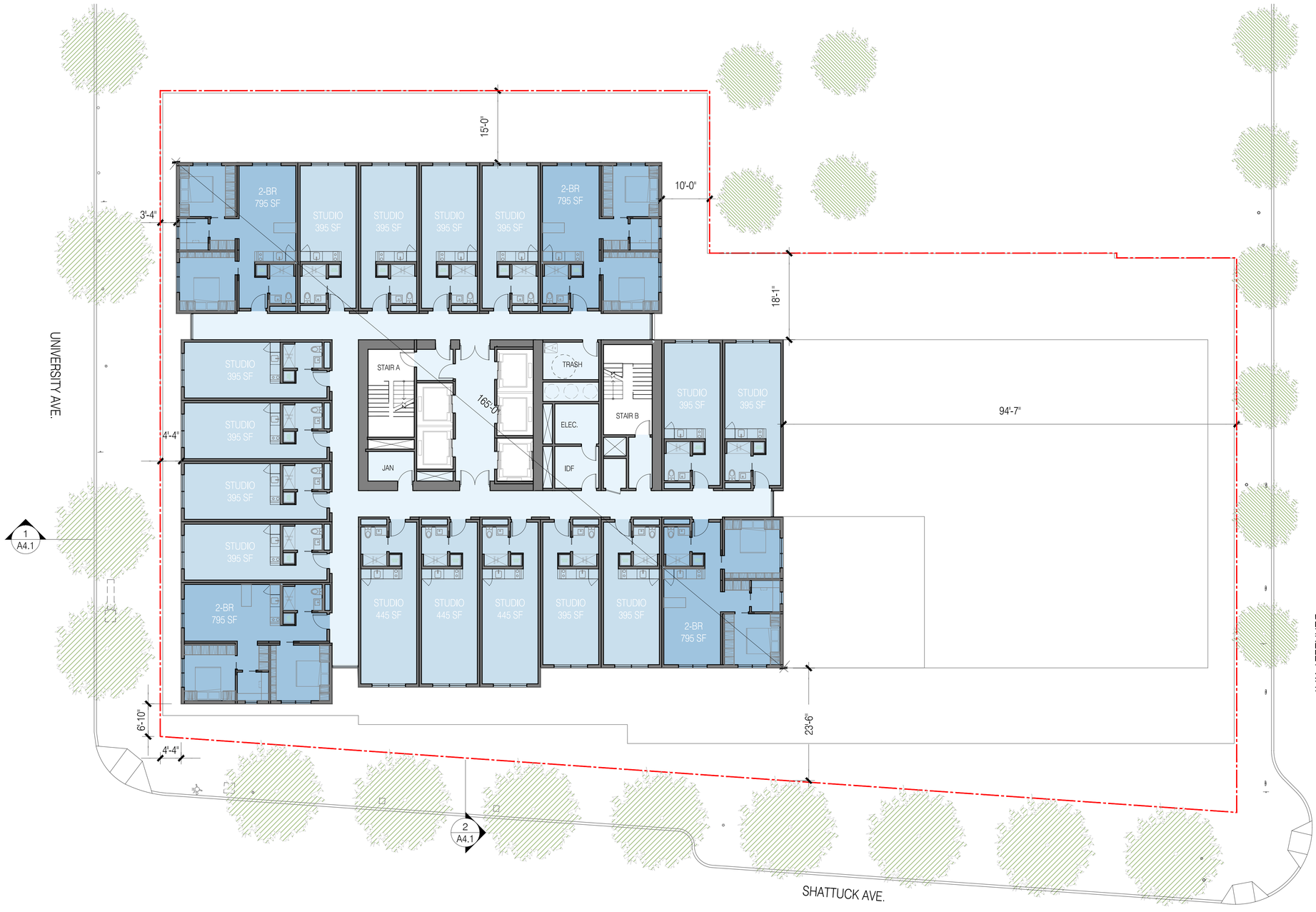
A2.4



1 PLAN AT LEVELS 15-27
3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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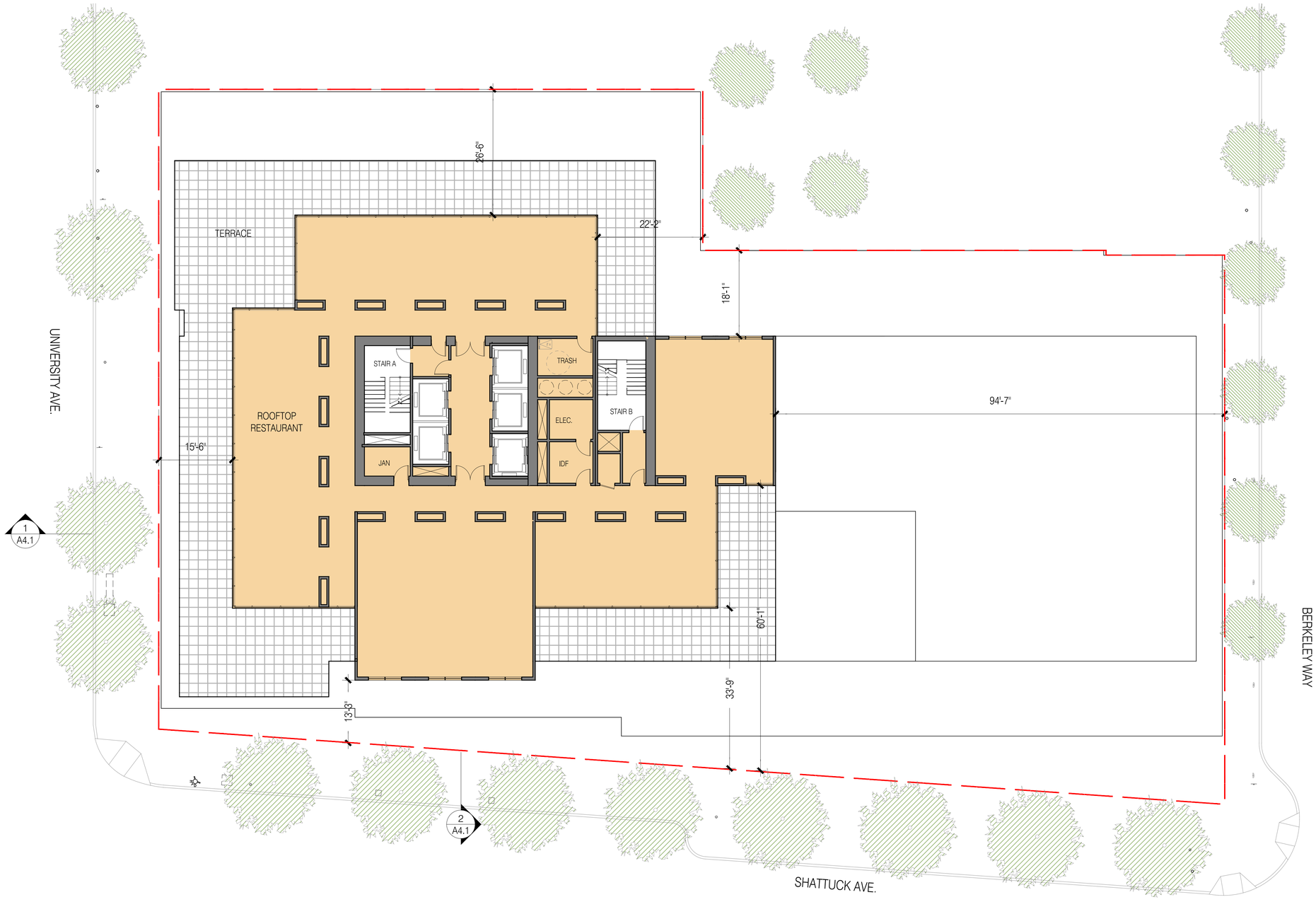
FLOOR PLANS

A2.5



1 / - PLAN AT LEVEL 28 ROOFTOP RESTAURANT

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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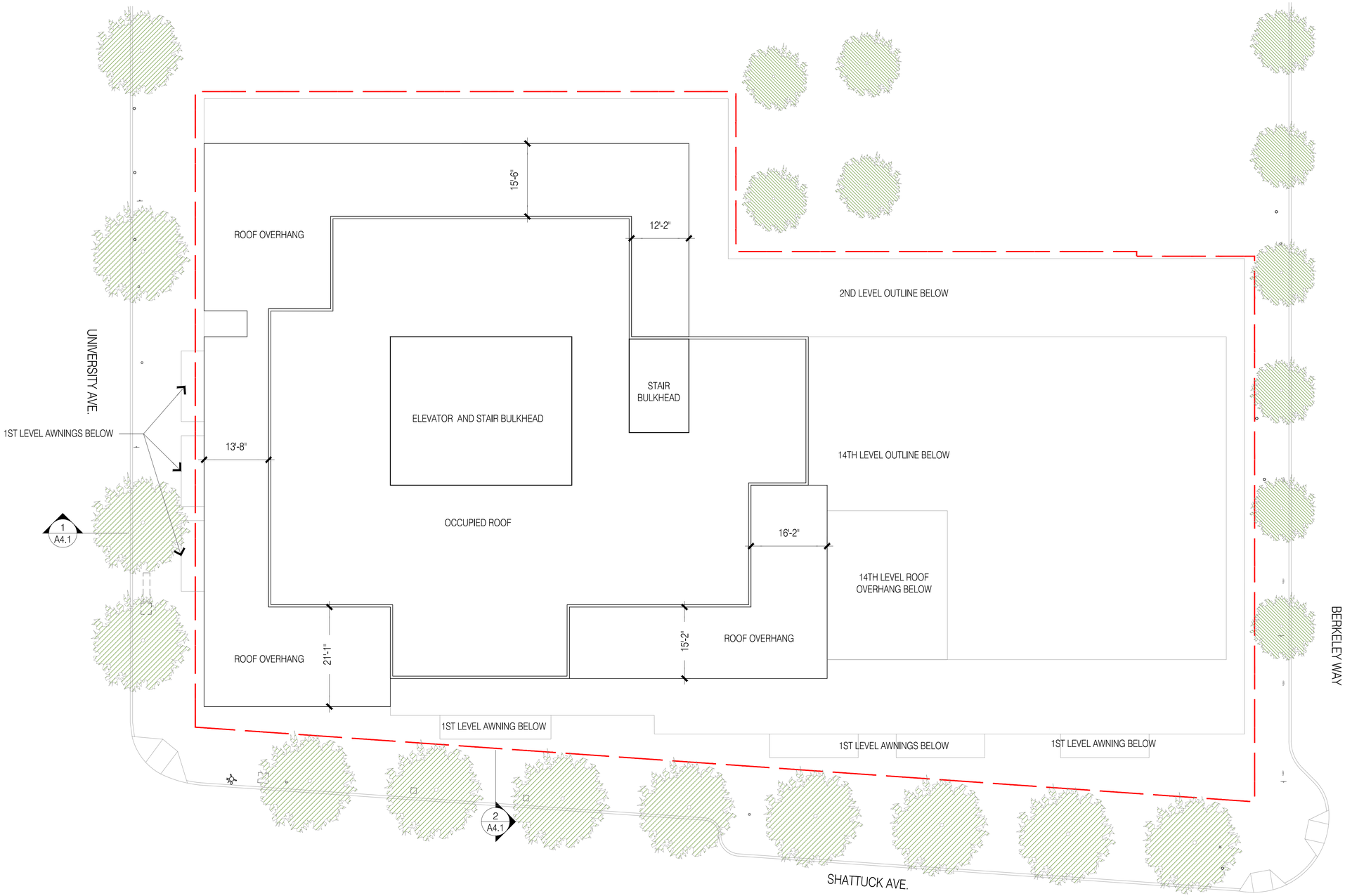
A2.6



1 / - PLAN AT ROOF

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

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SHEET:

ROOF PLAN

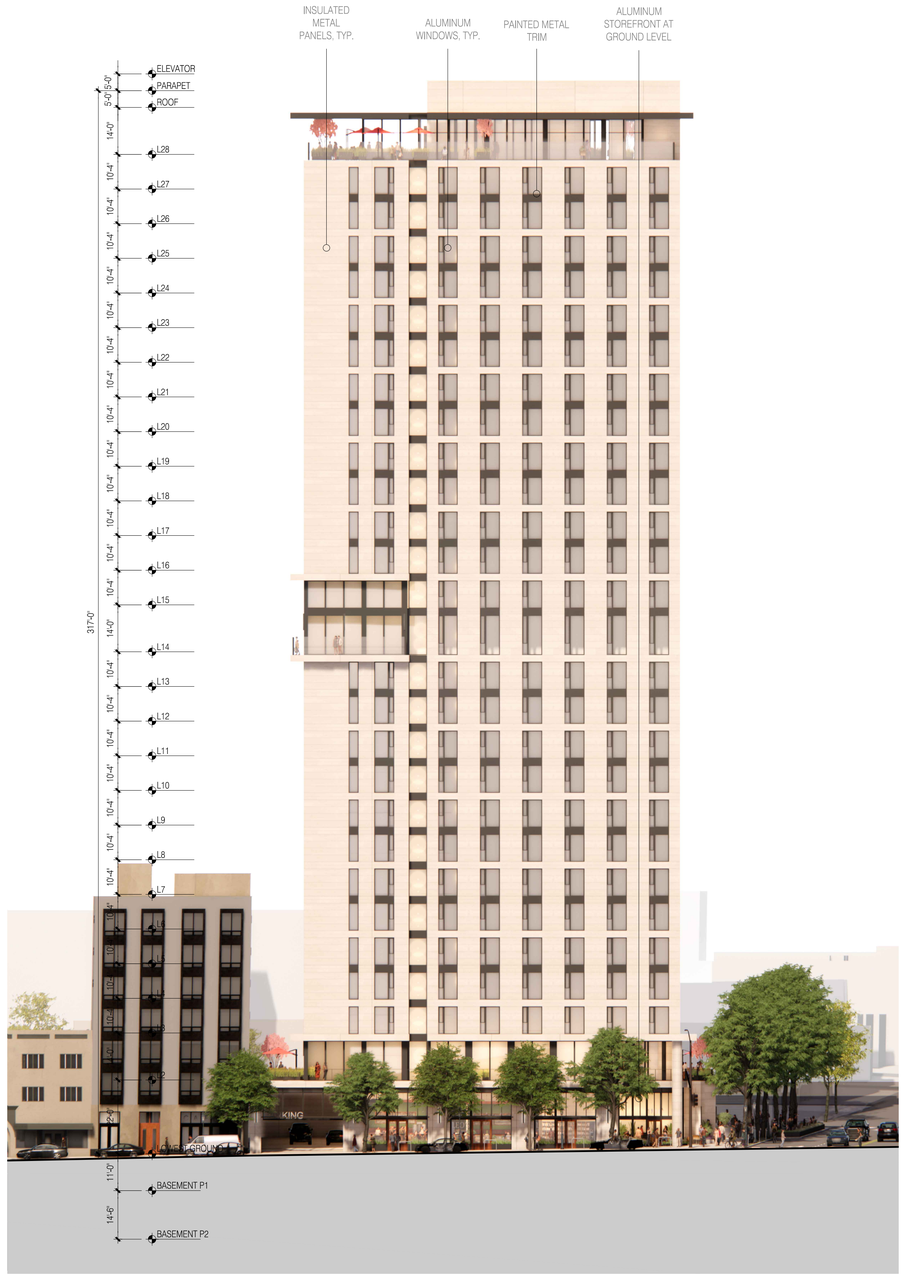
A2.7



2 - EAST ELEVATION

3/128" = 1'-0" @ 11X17 3/64"=1'-0" @ 24x36

0 8 16 32



1 - SOUTH ELEVATION

3/128" = 1'-0" @ 11X17 3/64"=1'-0" @ 24x36

0 8 16 32

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ELEVATIONS

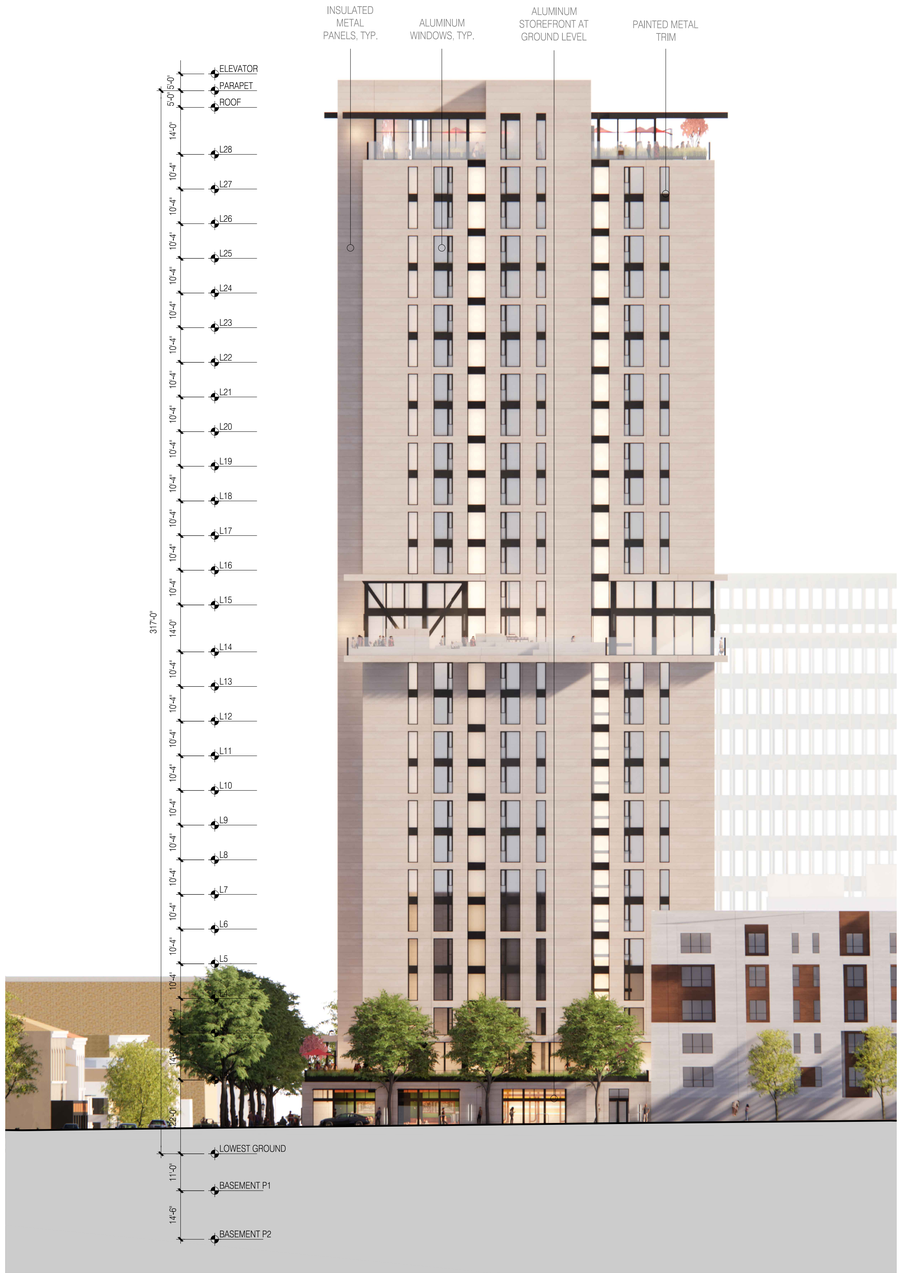
A3.1



2 - WEST ELEVATION

3/128" = 1'-0" @ 11X17 3/64"=1'-0" @ 24x36

0 8 16 32



1 - NORTH ELEVATION

3/128" = 1'-0" @ 11X17 3/64"=1'-0" @ 24x36

0 8 16 32

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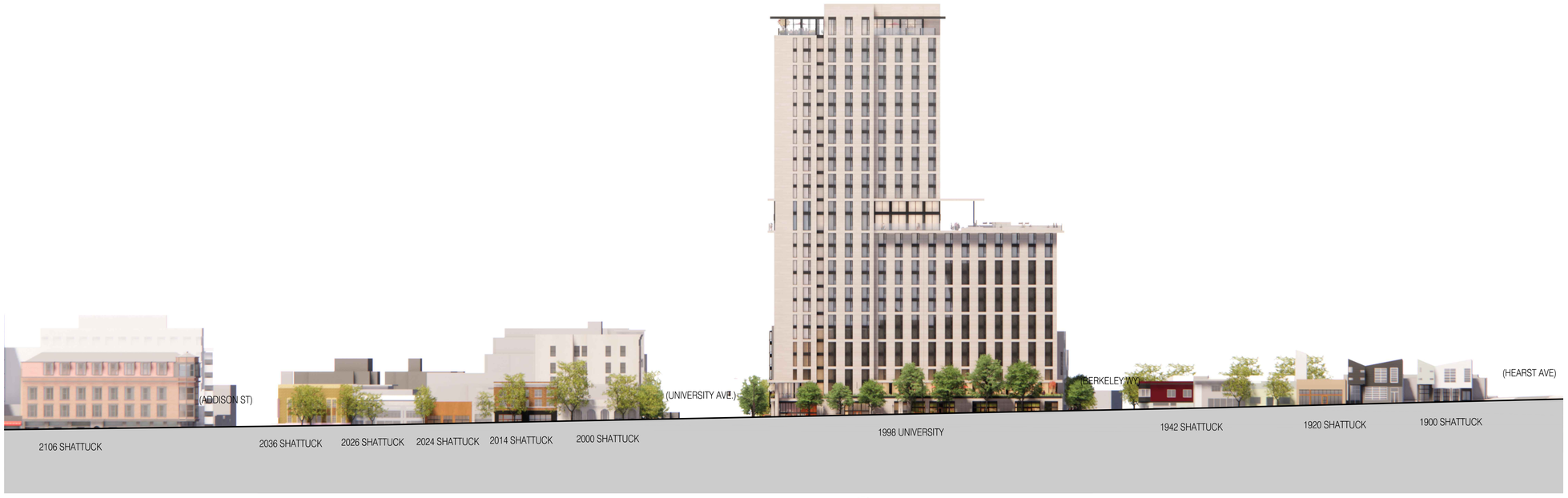
ELEVATIONS

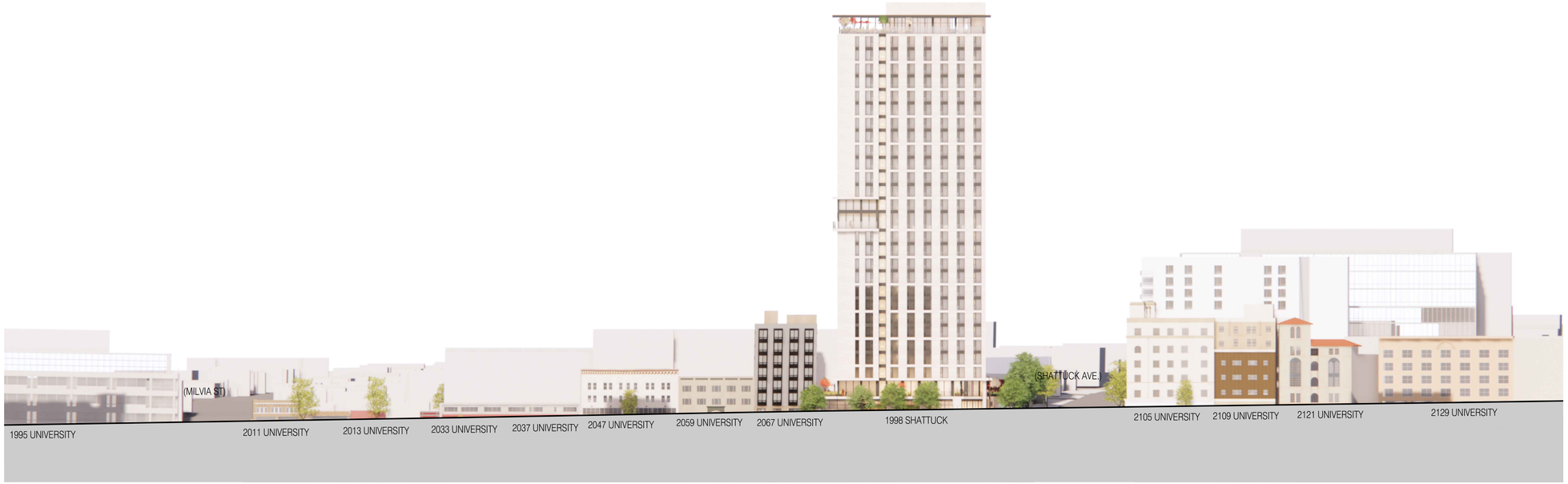
A3.2



2 - STREET STRIP ELEVATION @ SHATTUCK AVE

1/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64



1 - STREET STRIP ELEVATION @ UNIVERSITY AVE

3/256"=1'-0" @ 11X17 3/128" = 1'-0" @ 24X36

0 8 16 32 64

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STREET STRIP ELEVATIONS

A3.3



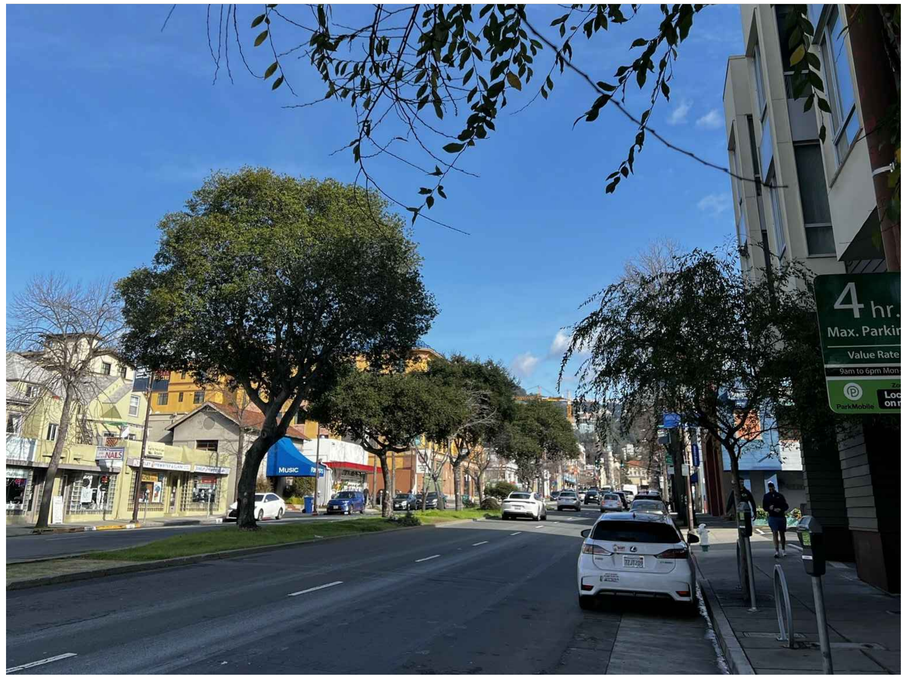
4 - UNIVERSITY LOOKING WEST - AFTER



2 - UNIVERSITY LOOKING EAST - AFTER



3 - UNIVERSITY LOOKING WEST - BEFORE



1 - UNIVERSITY LOOKING EAST - BEFORE

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PHOTO CONTEXT VIEWS

A3.4



4 - SHATTUCK LOOKING NORTH - AFTER



2 - SHATTUCK LOOKING SOUTH - AFTER



3 - SHATTUCK LOOKING NORTH - BEFORE



1 - SHATTUCK LOOKING SOUTH - BEFORE

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PHOTO CONTEXT VIEWS

A3.5



4 - BERKELEY LOOKING WEST - AFTER



2 - BERKELEY LOOKING EAST - AFTER



3 - BERKELEY LOOKING WEST - BEFORE



1 - BERKELEY LOOKING EAST - BEFORE

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PHOTO CONTEXT VIEWS

A3.6



1 - VIEW LOOKING NORTH

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A3.7



1 - VIEW LOOKING NORTH-WEST

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1 - VIEW LOOKING SOUTH-WEST

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1 - VIEW LOOKING SOUTH-EAST

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A3.10



1 VIEW LOOKING NORTH-WEST AT SHATTUCK AND UNIVERSITY

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PRELIMINARY RENDERING

A3.11



1 - VIEW LOOKING SOUTH-WEST ON SHATTUCK

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SHEET:

PRELIMINARY RENDERING

A3.12



1 - VIEW LOOKING NORTH-EAST ON UNIVERSITY

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A3.13



1 - SIDEWALK VIEW - UNIVERSITY LOOKING EAST

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PRELIMINARY RENDERING

A3.14



1 - VIEW LOOKING SOUTH-WEST - SHATTUCK @ BERKELEY WAY

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PRELIMINARY RENDERING

A3.15

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1 - SIDEWALK VIEW - SHATTUCK LOOKING NORTH-WEST

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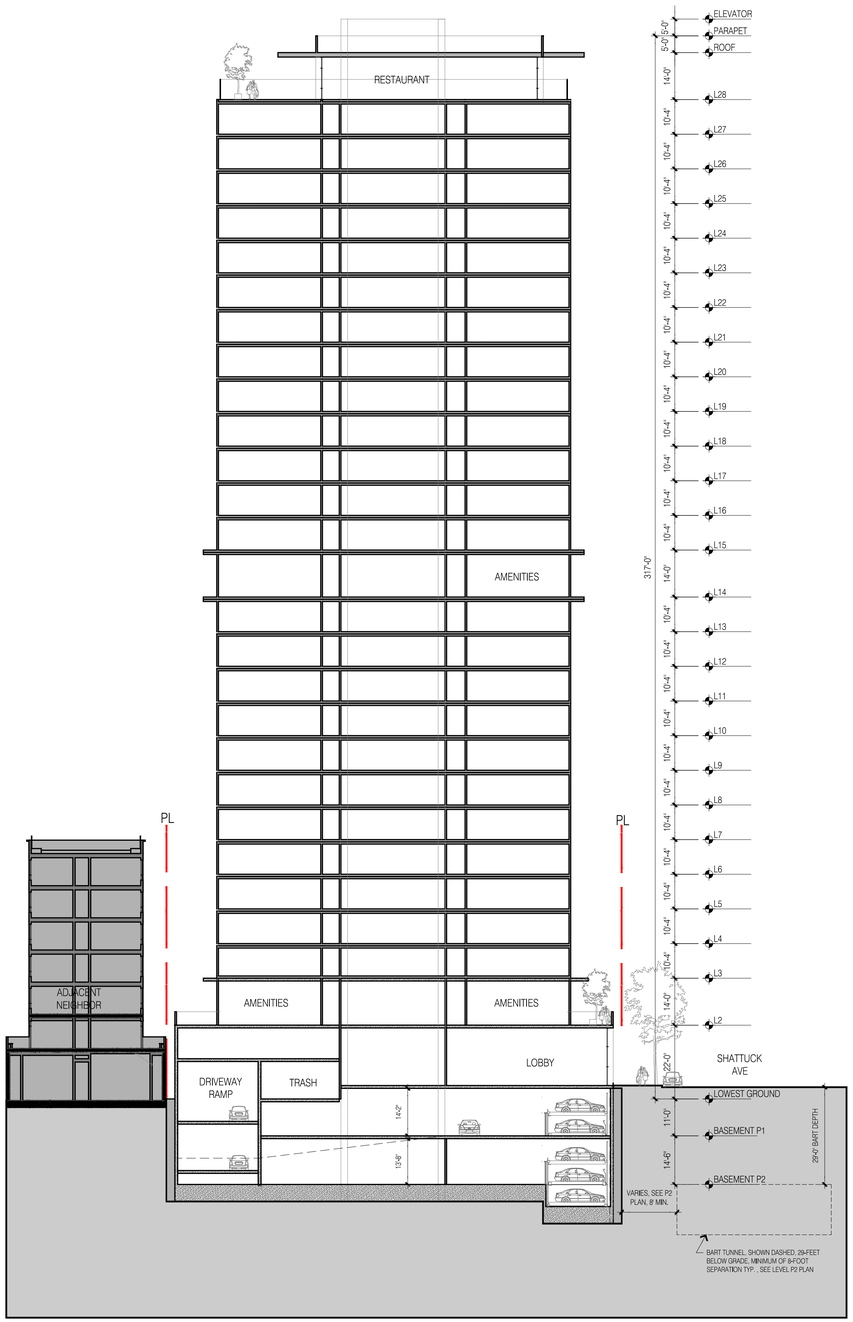
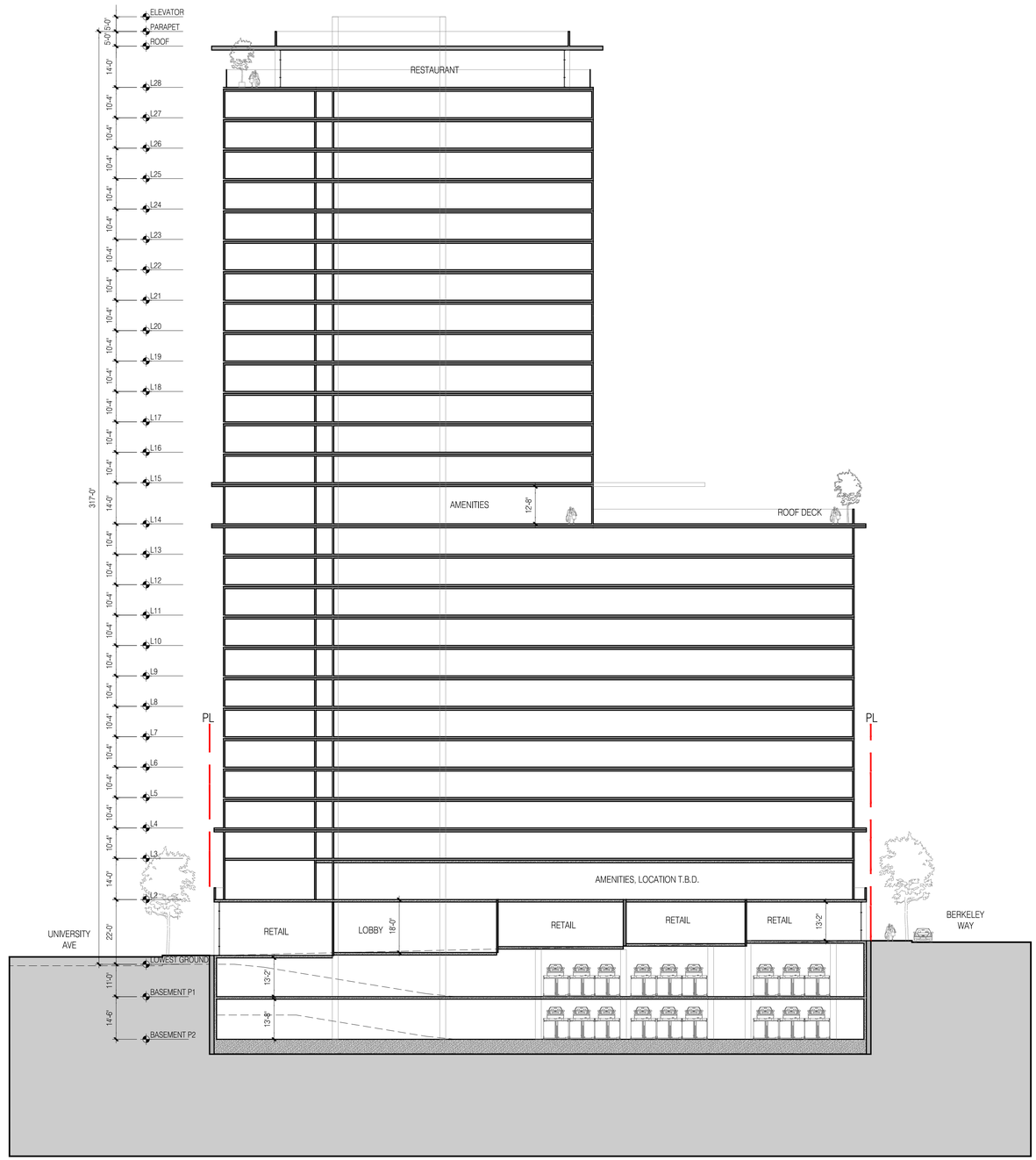


2 - SECTION LOOKING NORTH

3/128" = 1'-0" @ 11X17 ·3/64"=1'-0" @ 24x36

0 8 16 32



1 - SECTION LOOKING WEST

3/128" = 1'-0" @ 11X17 ·3/64"=1'-0" @ 24x36

0 8 16 32

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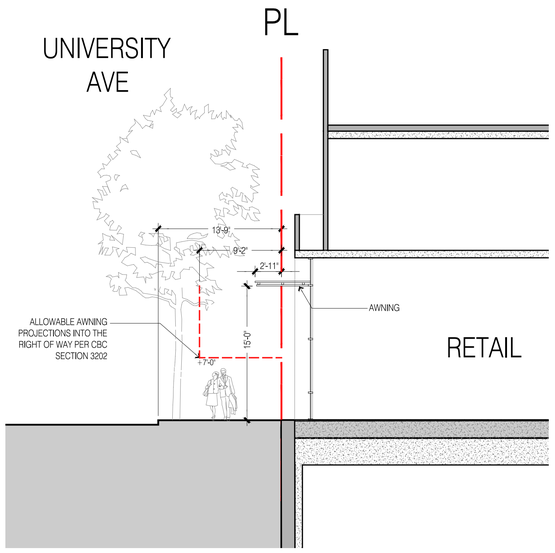
BUILDING SECTIONS

A4.1



2 - SECTION THROUGH UNIVERSITY AVE.
1/8" = 1'-0"

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AWNING ENCROACHMENT DIAGRAM

A4.2

CUT AND FILL CALCULATIONS

	CUT/FILL AREA	AVERAGE CUT/FILL DEPTH (FT)	TOTAL VOLUME (CY)
PROPOSED BUILDING	23,262	37	31,878

EARTHWORK NOTES:

1. EARTHWORK QUATNITY IS A ROUGH ESTIMATE BASED ON APPROXIMATE DEPTH OF BOTTOM OF BASEMENT PARKING LEVEL.

2. EARTHWORK QUANTITIES DO NOT TAKE INTO ACCOUNT SOIL SHRINKAGE, SOIL SWELLING, TRENCH SPOILS, SITE OVER-EXCAVATION REQUIREMENTS.



1 - CONCEPTUAL GRADING PLAN

3/64"=1'-0" @ 11x17 3/32"=1'-0" @ 24x36

0 4 8 16

N

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CONCEPTUAL GRADING PLAN

A5.0

1998 Shattuck — Preliminary Landscape Set

General Notes

1. The contractor shall inspect the site and be familiar with all existing site conditions prior to submitting bid. Contractor shall not willfully proceed with construction as shown when it is obvious that obstructions, landscape area and/or grade differences exist that may not have been known during design. Such conditions shall immediately be brought to the attention of the landscape architect. The contractor shall assume sole responsibility for all necessary revisions due to failure to give such notification. Contractor shall be responsible for making himself familiar with all underground utilities, pipes, structures and obstructions. Contractor shall assume sole responsibility for all costs incurred due to damage and/or replacement of these items. Contractor shall be responsible for coordination among trades and subcontractors as required to accomplish the work. The contractor shall be responsible for any damage to existing features caused by contractor's work. All repairs shall be made at no additional cost to the owner. Planting shall be installed in conformance with all applicable local codes and ordinances by experienced workmen and a licensed landscape contractor who shall obtain all necessary permits and pay all required fees. The garden is a pesticide and herbicide free zone. Contractor shall use organic material to fertilize and to maintain all plant material. No chemical fertilizer will be allowed.Contractor shall verify all grades, existing conditions and dimensions in the field prior to commencing work. All discrepancies or questions shall be brought to the attention of the landscape architect for resolution. Redirect work to avoid delay. All curves and all transitions between curves and straight edges shall be smooth. Take all dimensions perpendicular to any reference line, work line, face of building, face of wall or centerline.

2. Demolition
Contractor shall remove and carry all demolition materials off site. Protect (E) trees as indicated during construction. Contractor shall perform selective trimming of existing trees within the area of work per the direction of the owner.

3. Drainage/Grading
Contractor shall verify if existing drains are in good condition. All drainage systems shall be per City of Berkeley codes. Grade per indicated swales. Sleeving to be Schedule 40 PVC. Cover PVC pipe so that it not visible. All grading to be smooth to achieve a natural aspect. No finish grades shall exceed 2.5:1 slopes.

4. Soil preparation
Soil amendment shall be a minimum of 9 cy of organic compost per 1000 sf (1:4 ratio). The landscape contractor shall be responsible for finish grading and all planting area drainage. Positive drainage away from the building as per city codes shall be maintained. No low spots which hold standing water will be accepted. Where rototilling is not possible, incorporate soil amendments into top 6 inches with hand tools. After installation of irrigation system, all new planting areas are to be fine graded to within 2 inches and slightly mounded away from edges of top of planter, curb, walk, header, etc. and raked smooth with all rocks and debris over 1 inch in diameter removed. Verify existing grades and advice Landscape Architect of any discrepancies prior to start of grading.

5. Topsoil
If any planting areas require the importing of topsoil, the imported soil shall be clean, friable sandy loam; free of noxious weed seeds, sticks, stones over 1 inch in diameter or any materials that could inhibit growth. Incorporate imported topsoil into the top 6-8 inches of site soil by rototilling or hand cultivating as necessary.

6. Substitutions
Requests for substitutions of plant varieties shall be made to the landscape architect within 15 days after signing of contract.

7. Planting
Thoroughly water trees immediately after planting. Shrubs shall be spotted as per plan and the locations approved prior to the digging of the holes. Contractor shall locate and tag all trees at nursery at time of acceptance of contract to ensure availability of healthy specimens. Plant materials to be approved by landscape architect prior to site delivery.

8. Irrigation
The proposed irrigation shall be an automated, water efficient watering system compliant with the City of Berkeley codes & regulations. The contractor shall determine the static water pressure and design the system accordingly to achieve adequate regime for the proposed plantings. The following emitters shall be installed at each planting: (2) 1 gal emitters at each 1 gal sp.; (3) 5 gal. emitters at ea. 5 gal shrub.

9. Mulching
Mulch all planting areas with 3" of 'Forest Floor Bark' from American Soil and Stone, Richmond Ca (510) 292-3000.

10. Stone paving & stone work
See layout plan and detail for sub-base. Install stone paving with tight joints in front and flagstone in stabilized decomposed granite in back as show on sheet L1.0.

11. Concrete work
All concrete retaining walls greater than 3 feet in height shall be designed or reviewed and stamped by a structural engineer. All concrete footings shall be reviewed, approved and stamped by a structural engineer.

12. Electrical
Install light fixtures, conduits and controller per manufacturer recommendation. Locate controller per plan with light switch inside residence. Contractor to supply and install power supply - 2 outlets at outdoor kitchen area. Install power supply for outdoor kitchen equipment .

13. Wood work
All wood decking to match existing wood same size and layout at existing decks for deck extension. All vertical posts to be pressure treated 4x4 wood. SSD for final wood sizing, anchors and concrete footing. See note 14 for painting/staining.

14. Painting
All visible existing & new wood to be painted same color as the main residence, but with a lighter tone. Color to be reviewed & approved by owner/landscape architect.
Paint manufacturer: Sherwin Williams; exterior paint quality "duration" to be applied on all new & existing wood to be painted. Prep all wood surfaces per paint manufacturer's recommendations.

15. Maintenance
The contractor shall maintain the project for 90 days (or as requested by owner) following the approval to begin the maintenance period. During the entire maintenance period, watering, cultivating, weeding, mowing, repair/tightening of stakes and ties, provision of supplemental water by hand in addition to irrigation system as necessary. At the end of the 90 day maintenance period all areas are to be free of weed and all plant material is to be in a healthy, thriving condition.

16. Guarantee
All construction, trees and shrubs by the landscape contractor and/or his subcontractors shall be guaranteed for (1) one year after beginning of maintenance period. The contractor shall replace, at no expense to the owner, any and all landscape materials that are in an unacceptable condition for time of use, and trees or shrubs that are dead or not in a vigorous, healthy growing condition; within two weeks of notification of such condition. Replacement shall be of the same kind and size as the originally specified item and shall be replaced as originally described on the drawings. The contractor shall not be held liable for loss of plant materials during the guarantee period due to vandalism, accidental causes or acts of neglect by others than the contractor, his agents and employees.

17. Clean up
At the end of each work day, at the inspection for substantial completion and before acceptance of project, clean paved areas that are dirtied or stained by construction operations, by sweeping or washing, and remove defacements and stains. Remove construction equipment, excess materials and tools. Haul from owners property the debris resulting from construction, and dispose of legally. Remove remaining temporary protection at time of acceptance by owner unless otherwise agreed.

Project Team

Client
NX Ventures

Architect
Trachtenberg Architects
2421 Fourth Street
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510.649.1414

Landscape Architect
InsideOut Design, Inc.
6000 Harwood Ave
Oakland CA 94618
510.655.7674

Contractor
TBD

Location Map



Legend

(PA)	Planting Area
(TS)	Top of stair
(BS)	Bottom of stair
(TW)	Top of wall
(BW)	Bottom of wall
R	Radius
POB	Layout Starting Point
SIM	Similar
(TYP.)	Typical
SAD	See Architectural Drawings
EQ	Equal
O.C.	On Center
(E)	Existing
›	Align
	90 Degrees angle
(824.76)	Existing spot elevation
824.76	Proposed spot elevation
	Existing contour line
	Proposed contour line
	Property line
	Existing retaining wall to be demolished

Sheet Index

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L1.0	Streetscape
L2.0	Podium
L3.0	Roof Deck
L3.1	Usable Open Space + Planting Notes
I0.0	Irr. Notes & Legend
I1.0	Irr. Plan - Street
I2.0	Irr. Plan - Podium
I3.0	Irr. Plan - Roof Deck
I3.1	Irr. Plan - POC
I4.0	Irrigation Details
I5.0	Irrigation Details
I6.0	Irrigation Details
I7.0	Irrigation Details

Plant List

Index	Latin Name	Common Name	Size	WELO	CA Nat.	Notes
Street Trees						
CC	Carpinus caroliniana	American Hornbeam	24" Box	M		University Ave
LC	Lophostemon confertus	Brisbane Box	24" Box	VL, L		Berkeley Way
PA	Platanus acerifolia 'Columbia'	Columbia' London Plane Tree	24" Box	L, M		Shattuck Ave
Trees						
BE	Brahea edulis	Guadalupe Palm	24" Box	L		Roof
BR	Beaucarnea recurvata	Pony Tail Palm	15 Gallon	VL		Roof
CO	Cercis occidentalis	Western Redbud	24" Box	VL	X	Podium FTP
CR	Ceanothus 'Ray Hartman'	Ray Hartman California Lilac	24" Box	L, ES	X	Podium
HG	Heteromeles arbutifolia 'Davis Gold	Davis Gold Toyon	24" Box	VL, L	X	Podium FTP
PR	Phoenix roebelenii	Pygmy Date Palm	24" Box	L		Roof
WF	Washingtonia filifera	California Fan Palm	24" Box	L, ES	X	Roof
Shrubs						
AD*	Agave deserti	Desert Agave	5 Gallon	VL, L	X	Roof
AP	Arctostaphylos pajaroensis 'Paradise	Paradise Pajaro Manzanita	15 Gallon	VL	X	Roof
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	Podium, Street
CF	Comus sericea, C. Stolonifera 'Hedgerow Gc	Hedgerow Gold Redtwig Dogwooc	15 Gallon	M, ES	X	Podium
HW*	Hesperoyucca whipplei	Our Lord's Candle	5 Gallon	VL	X	Roof
OB*	Opuntia basilaris	Prickly Pear	5 Gallon	VL		Roof
SM	Sabal minor	Dwarf Palmetto	15 Gallon	L		Roof
YP*	Yucca pallida	Pale Leaf Yucca	5 Gallon	VL, L, ES		Roof
ZF	Zamia furfuracea	Cardboard Palm	5 Gallon	M		Roof
Groundcovers						
AM	Armeria maritima	Sea Pink	1 Gallon	M	X	Roof
BM	Baileya multiradiata	Desert Marigold	1 Gallon	VL	X	Roof
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	Street
CM	Coreopsis maritima	Sea Dahlia	1 Gallon	L	X	Roof
DF	Dudleya farinosa	Coast Live Forever	1 Gallon	VL	X	Podium
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	Street
Podium FTP** *(1143 sf)*						
AS	Achillea 'Salmon Beauty'	Salmon Beauty Yarrow	1 Gallon	VL, L	X	
BG	Bouteloua gracilis 'Blonde Ambition'	Blonde Ambition Blue Grama	1 Gallon	L	X	
CB	Ceanothus thyrsiflorus 'Cool Blue'	Cool Blue Mountain Lilac	15 Gallon	L	X	
CD	Ceanothus 'Diamond Heights'	Variegated Carmel Creeper	1 Gallon	VL, L	X	
CE	Carpenteria californica 'Elizabeth'	Elizabeth Bush Anemone	15 Gallon	L	X	
CP	Ceanothus pallidus 'Marie Simon'	Pink Flowering Ceanothus	15 Gallon	VL, L	X	
DN	Deschampsia ces. 'Northern Lights'	Northern Lights Tufted Hair Grass	1 Gallon	L	X	
EF	Eriogonum fasciculatum	California Buckwheat	5 Gallon	VL, L	X	
EG	Elymus glaucus	Blue Wild Rye	1 Gallon	L	X	
ID	Iris douglasiana	Douglas Iris	1 Gallon	M, ES	X	
JE	Juncus effusus	Soft Rush	1 Gallon	VL, H, ES	X	
JP	Juncus patens 'Elk Blue'	Elk Blue California Gray Rush	1 Gallon	L, M, ES	X	
RC	Rudbeckia californica	California Coneflower	1 Gallon	M	X	
SA	Symphoricarpos albus var. laevigatus	Upright Snowberry	5 Gallon	VL, L, M	X	
Podium Grate Walks *(5370 sf)*						
SD	Sedum divergens	Cascade Stonecrop	Flat	L, ES	X	
SO	Sedum oreganum	Oregon Stonecrop	Flat	L, ES	X	
SS	Sedum spathulifolium 'Cape Blanco'	Cape Blanco Sedum	Flat	L	X	

**To be located with 3' min. between edge of mature plant and walkways or planter edges.*
***Species selected per Stormwater C.3 Guidebook (Dalziel et. al.).*

Note: *At least 80% of all plantings will be California natives.*

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INSIDEOUT
landscape architecture
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1998 SHATTUCK

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02.27.2025 ZAB HEARING SET

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SHEET:

COVER SHEET,
NOTES, AND LEGEND

L0.0









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SHEET:

LANDSCAPE PLAN AT STREETSCAPE

L1.0



Permeable grate with groundcover below
- Precedent: ASLA HQ Green Roof
-Mix of 3 shade-tolerant sedums





Maintenance corridor

FTP, typ.
1,306 SF total

Flexible seating

NOTE: FLOW-THROUGH PLANTER AREA TOTALS 1,306 SF; REQUIRED FTP AREA EQUALS MIN 4% OF BUILDING FOOTPRINT'S IMPERVIOUS SURFACE.

BUILDING FOOTPRINT = 26,208 SF
REQUIRED FTP = 26,208 SF X 0.04 = 1,049 SF
PROVIDED FTP = 1,306 SF

Bistro tables

Raised planter with patio trees and wood benches

UNIVERSITY AVE

BERKELEY WAY

Low planting in raised flow-through planters (FTPs)

Flowering tree
-'Davis Gold' Toyon

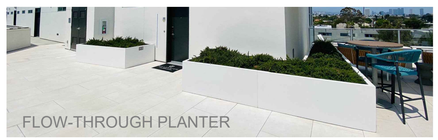
Small trees and accent plantings visible from street

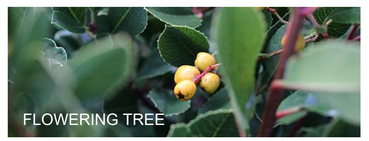
Podium seating overlooks ground-level plaza and parklet at Shattuck Ave

SHATTUCK AVE


PRECEDENT


VEGETATED GRATE


FLOW-THROUGH PLANTER


FLOWERING TREE

North

0 2 4 8

3/16"=1'-0"

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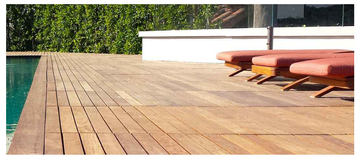
SECOND FLOOR PODIUM GARDENS

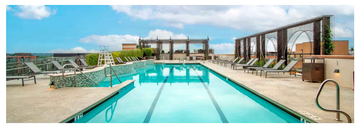
L2.0

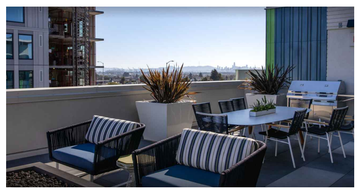


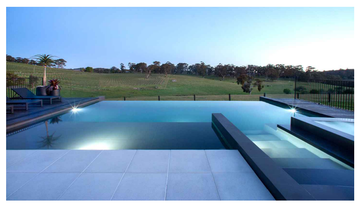


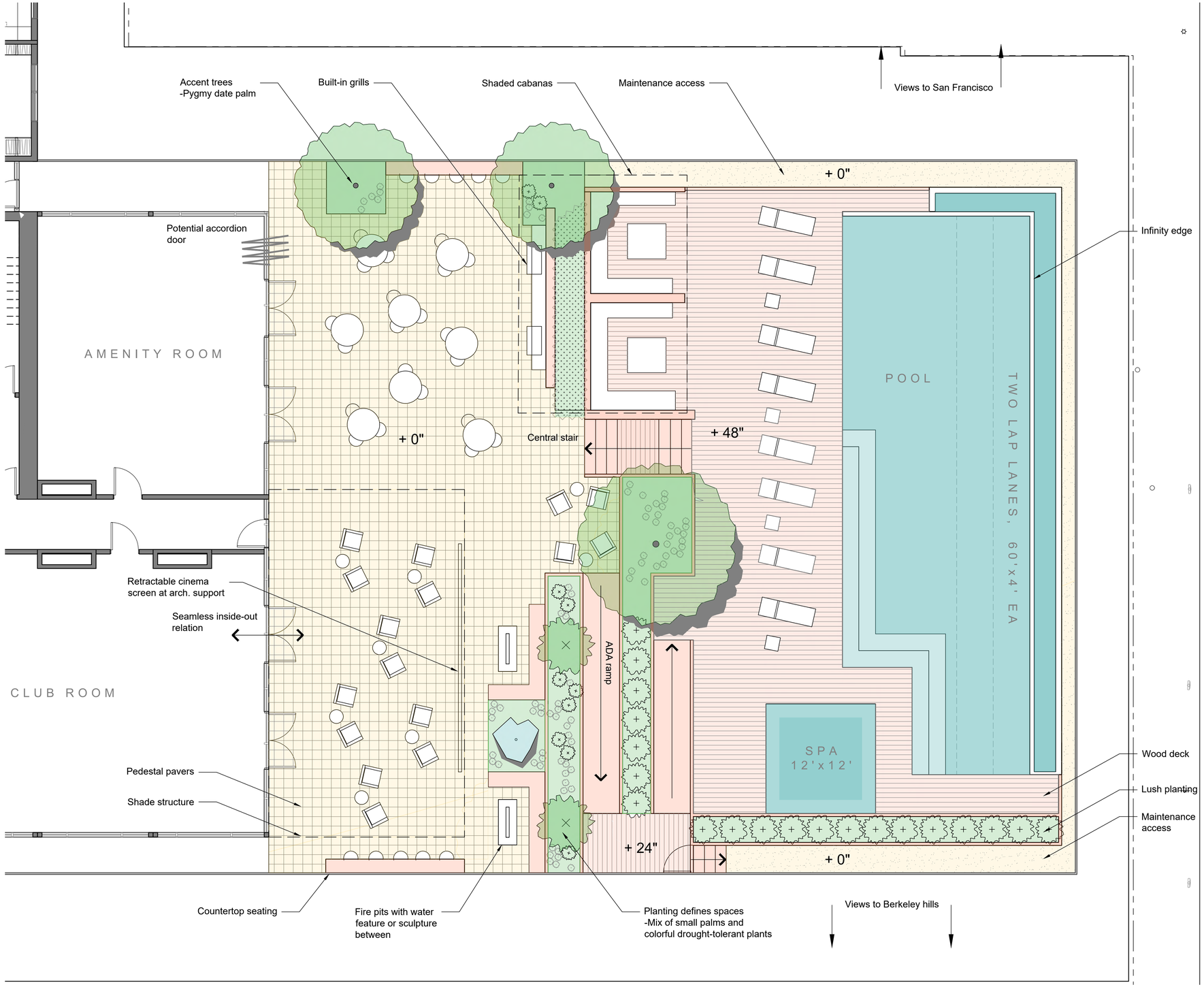












North

3/16"=1'-0"

0 2 4 8

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JOB: 0000

SHEET:

FOURTEENTH
FLOOR ROOF DECK

L3.0

PLANTING NOTES

SEE COVER SHEET L0.0 FOR GENERAL NOTES

GENERAL PLANTING NOTES:

1. SOIL PREPARATION: THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINISH GRADING AND ALL PLANTING AREA DRAINAGE. POSITIVE DRAINAGE AWAY FROM THE BUILDING AS PER CITY CODES SHALL BE MAINTAINED. NO LOW SPOTS WHICH HOLD STANDING WATER WILL BE ACCEPTED.
   THE LANDSCAPE CONTRACTOR SHALL INCORPORATE SOIL PREPARATION AMENDMENT INTO PLANTING AREAS AS NOTED BELOW. WHERE ROTO-TILLING IS NOT POSSIBLE, INCORPORATE SOIL AMENDMENTS INTO TOP 6 INCHES WITH HAND TOOLS. AFTER INSTALLATION OF IRRIGATION SYSTEM, ALL PLANTING AREAS ARE TO BE FINE GRADED TO WITHIN 2 INCHES AND SLIGHTLY MOUNDED AWAY FROM EDGES OF TOP OF PLANTER, CURB, WALK, HEADER, ETC. AND RAKED SMOOTH WITH ALL ROCKS AND DEBRIS OVER 1-INCH IN DIAMETER REMOVED.

2. SOIL PREPARATION AMENDMENTS AND BACKFILL MIX: THE LANDSCAPE CONTRACTOR SHALL AMEND EXISTING SOIL PER THE SOILS REPORT. NATIVE SOIL IS PREFERRED.

3. TREE PLANTING: TREES SHALL BE PLANTED PER DETAIL ON PLAN. TREES SHALL TYPICALLY BE LOCATED A MINIMUM OF 3 1/2 FEET FROM CURBS, WALKS, HEADERS, BUILDINGS, AND OVERHEAD STRUCTURES WITHIN THE PROJECT. BACKFILL PER SOILS REPORT. THOROUGHLY WATER TREES IMMEDIATELY AFTER PLANTING.

4. SHRUB PLANTING: THE SHRUBS SHALL BE SPOTTED AS PER PLAN, SPOTTED AT THE SHOWN LOCATIONS, AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO THE DIGGING OF THE HOLES. SHRUB BACKFILL SHALL BE PER SOILS REPORT. THOROUGHLY WATER SHRUBS IMMEDIATELY AFTER PLANTING. DO NOT PLANT ANY SHRUB WITHIN 2 FEET OF ANY BUILDING WALL.

5. MAINTENANCE: THE CONTRACTOR SHALL MAINTAIN THE PROJECT FOR 90 DAYS (OR AS REQUESTED BY OWNER) FOLLOWING THE APPROVAL TO BEGIN THE MAINTENANCE PERIOD. DURING THE ENTIRE MAINTENANCE PERIOD, WATERING, CULTIVATING, WEEDING, MOWING, REPAIR/TIGHTENING OF STAKES AND TIES, RESTORATION OF BASINS, PROVISION OF SUPPLEMENTAL WATER BY HAND IN ADDITION TO IRRIGATION SYSTEM IS REQUIRED AS NECESSARY. NO PRE-EMERGENCE HERBICIDES SHALL BE APPLIED - HAND REMOVE WEEDS. ONLY ORGANIC FERTILIZERS SHALL BE APPLIED SUCH AS THOSE SPECIFIED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. AT THE END OF THE 90 DAY MAINTENANCE PERIOD ALL AREAS ARE TO BE WEED FREE AND ALL PLANT MATERIAL SHALL BE IN A HEALTHY, THRIVING CONDITION. INTEGRATED PEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED.

6. SUBSTITUTIONS: REQUESTS FOR PLANT SUBSTITUTIONS SHALL BE MADE TO THE LANDSCAPE ARCHITECT WITHIN 15 DAYS AFTER SIGNING OF CONTRACT.

7. GUARANTEE: ALL CONSTRUCTION, TREES AND SHRUBS BY THE LANDSCAPE CONTRACTOR AND/OR SUBCONTRACTORS SHALL BE GUARANTEED FOR (1) ONE YEAR AFTER START OF MAINTENANCE PERIOD. THE CONTRACTOR SHALL REPLACE, AT NO EXPENSE TO THE OWNER, ANY AND ALL LANDSCAPE MATERIALS THAT ARE IN AN UNACCEPTABLE CONDITION FOR TIME OF USE, AND TREES OR SHRUBS THAT ARE DEAD OR NOT IN A VIGOROUS, HEALTHY GROWING CONDITION, WITHIN TWO WEEKS OF NOTIFICATION OF SUCH CONDITION. REPLACEMENT SHALL BE OF THE SAME KIND AND SIZE AS THE ORIGINALLY SPECIFIED ITEM AND SHALL BE REPLACED AS ORIGINALLY DESCRIBED ON THE DRAWINGS. THE CONTRACTOR SHALL NOT BE HELD LIABLE FOR LOSS OF PLANT MATERIALS DURING THE GUARANTEE PERIOD DUE TO VANDALISM, ACCIDENTAL CAUSES OR ACTS OF NEGLECT BY OTHERS THAN THE CONTRACTOR, HIS AGENTS AND EMPLOYEES.

8. CLEAN UP: AT THE END OF EACH WORK DAY, AT THE INSPECTION FOR SUBSTANTIAL COMPLETION, AND BEFORE ACCEPTANCE OF PROJECT - CLEAN
PAVED AREAS THAT ARE DIRTIED OR STAINED BY CONSTRUCTION OPERATIONS BY SWEEPING OR WASHING, AND REMOVE DEFACEMENTS AND STAINS.
REMOVE CONSTRUCTION EQUIPMENT, EXCESS MATERIALS AND TOOLS. HAUL FROM OWNERS PROPERTY ANY DEBRIS RESULTING FROM CONSTRUCTION, AND DISPOSE OF IT LEGALLY. REMOVE REMAINING TEMPORARY PROTECTION AT TIME OF ACCEPTANCE BY OWNER UNLESS OTHERWISE AGREED.

9. FERTILIZERS: AVAILABLE FROM CALIFORNIA ORGANIC FERTILIZERS, INC. 1-800-269-5690 WWW.ORGANICAG.COM.

STREET TREE PROTECTION NOTES:

1. ALL TREE PROTECTION REQUIREMENTS AND RESTRICTIONS SHALL BE INCLUDED IN THE CONSTRUCTION NOTES AND PRINTED ON ALL COPIES OF THE PLANS.

a) INCLUDE THE NAME AND PHONE NUMBER OF THE PARTY THAT WILL MONITOR THE SITE AND ENSURE THE TREE PROTECTION MEASURES ARE BEING FOLLOWED; AND WHAT THE MONITORING SCHEDULE WILL BE: **NAME / PHONE / SCHEDULE**

b) INSTALL 6 FOOT CHAIN-LINK FENCING TO PROTECT THE AREA WITHIN THE DRIP-LINE OF ANY PROTECTED TREE IN THE DEVELOPMENT AREA. FENCING SHALL BE MOUNTED TO POSTS THAT ARE DRIVEN INTO THE GROUND. WHERE THIS IS NOT POSSIBLE BECAUSE OF EXISTING STRUCTURES, TREE ROOTS, OR OTHER OBSTACLES, CHAIN-LINK PANELS MOUNTED TO STANCHIONS AND CONNECTED TO EACH OTHER MAY BE APPROVED. IN AREAS WHERE DIFFICULT TERRAIN MAKES THIS IMPRACTICAL, ORANGE CONSTRUCTION FENCING MAY BE APPROVED.

c) ALL FENCING SHALL HAVE SIGNAGE STATING THE REQUIREMENTS AND RESTRICTIONS, AND THE CONTACT INFORMATION FOR THE PROJECT ARBORIST.

d) WHEN ANY APPROVED CONSTRUCTION ACTIVITY WILL OCCUR WITHIN THE DRIP LINE OF A PROTECTED TREE THAT IS NOT SURROUNDED BY PROTECTIVE FENCING, THE TRUNK SHALL BE PROTECTED BY WRAPPING IT WITH STRAW TUBES (WATTLE) OR VERTICAL WOOD SLATS (EX. 2X4), UP TO A MINIMUM OF 8 FEET FROM GRADE (SEE FIGURE 1, PAGE 6). SLATS SHALL BE ANGLED TO PROTECT THE ROOT FLARE AT THE BASE OF THE TREE; AND CLOSED CELL FOAM OR EQUIVALENT MATERIAL SHALL BE USED TO PROTECT THE TRUNK OF THE TREE WHERE IT CONTACTS THE SLATS. LATERAL BRANCHES BELOW 8 FEET SHALL ALSO BE PROTECTED. IN ADDITION, THE AREA SHALL BE COVERED WITH A 6 INCH LAYER OF MULCH TOPPED WITH 3/4 INCH PLYWOOD THAT IS FASTENED TOGETHER. IF ANY LARGE OR MOTORIZED EQUIPMENT (MINI EXCAVATOR, BOBCAT®, POWERED WHEELBARROW) WILL TRAVEL OVER THIS AREA, THE PLYWOOD MUST BE A MINIMUM OF 1 INCH AND ADEQUATE FOR THE WEIGHT OF THE EQUIPMENT THAT WILL TRAVEL OVER IT. IF LARGER EQUIPMENT (BACKHOE, TRACTOR) WILL BE USED, CONSULT THE CITY ARBORIST. ***CONSTRUCTION ACTIVITY REFERS TO ANY MOVEMENT OF PEOPLE, TOOLS, OR EQUIPMENT; OR STORAGE OF ANY TOOLS, EQUIPMENT, OR SUPPLIES.***

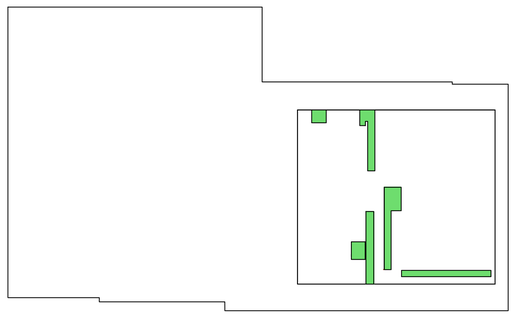
f) LOCATE AND EXPOSE ANY ROOTS 2 INCHES IN DIAMETER OR GREATER THAT MAY NEED TO BE PRUNED TO FACILITATE THE PROJECT. THIS INCLUDES ANY TRENCHING THAT WILL BE DONE AS PART OF FOUNDATION OR UTILITY INSTALLATION. CONTACT THE CITY ARBORIST IN ADVANCE TO LESSEN THE AMOUNT OF TIME THAT THE ROOTS WILL BE EXPOSED. IF ROOTS MUST BE LEFT EXPOSED FOR MORE THAN THREE DAYS, CONSULT THE CITY ARBORIST. **NOTE:** THE 2 INCH DIAMETER THRESHOLD FOR ROOTS IS A GUIDELINE THAT MAY BE ADJUSTED BY THE CITY ARBORIST DEPENDING ON THE SIZE AND CONDITION OF THE TREE, AND THE LOCATION OF THE ROOTS. THE CITY ARBORIST MAY INCREASE THE TPZ, OR IMPOSE OTHER RESTRICTIONS, WHEN THE DRIPLINE OF A TREE HAS BEEN ALTERED BY PRUNING OR UNUSUAL GROWTH PATTERNS.

g) NO STORAGE OF BUILDING MATERIALS, REFUSE, EXCAVATED SPOILS, OR DUMPING OF POISONOUS MATERIALS, IS PERMITTED WITHIN THE DRIP LINE OF ANY PROTECTED TREE. POISONOUS MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, PAINT, PETROLEUM PRODUCTS, CONCRETE OR STUCCO MIX, DIRTY WATER, OR ANY OTHER MATERIAL WHICH MAY BE DELETERIOUS TO TREE HEALTH.

STREET TREE PLANTING NOTES:

1. FOR NEW PLANTING:
   a. THE CITY ARBORIST SHALL BE NOTIFIED, BY CALLING (510) 981-6660, PRIOR TO THE DELIVERY OF THE TREES FOR INSPECTION OF THEIR SIZE AND STRUCTURE.
   b. EACH TREE SHALL BE PROPERLY PLANTED AT OR JUST BELOW GRADE (<1"). SOIL AMENDMENT IS NOT RECOMMENDED, AND NATIVE SOIL IS PREFERRED. NO CONSTRUCTION RUBBLE OR NON-ORGANIC MATERIAL SHALL BE WITHIN THE TREE WELL.
   c. THE SURROUNDING SOIL OUTSIDE THE CONTAINER (ROOT BALL) SHOULD BE LIGHTLY COMPACTED TO ABOUT 4 INCHES BELOW GRADE WITH THE ROOT BALL HIGHER THAN THAT.
   d. 2 TO 2.5 INCHES OF BASE ROCK SHOULD BE APPLIED AROUND THE ROOT BALL LEAVING 1.5 TO 2 INCHES LEFT FOR THE MATERIAL.
   e. 15G CONTAINERS ARE APPROXIMATELY 15-16 INCHES IN DIAMETER AND THE MATERIAL SHOULD BE APPLIED TO THE APPROXIMATE EDGE OF THE ROOT BALL WITH THE TOP GRADE OF THE ROOT BALL UP TO 1 INCH BELOW THE TOP OF THE MATERIAL THAT WILL BE APPLIED.
   f. EACH NEW TREE SHALL HAVE AUTOMATIC IRRIGATION INCLUDING TWO TREE BUBBLERS THAT CURVE OVER THE TOP OF THE TREES' ROOT BALL AND PROVIDE A MINIMUM OF 20 GALLONS PER WEEK BETWEEN MARCH 15 AND OCTOBER 15 FOR THE FIRST THREE YEARS. LARGER TREES MAY REQUIRE ADDITIONAL BUBBLERS. THE BUBBLERS SHOULD BE LOCATED ON TOP OF THE ROOT BALL WITHIN THIS 15-16 INCH CIRCLE AND NOT BE COVERED WITH MATERIAL.
   g. TREES THAT DIE WITHIN THE FIRST THREE YEARS MUST BE REPLACED AT THE PROPERTY OWNER'S EXPENSE.

USEABLE OPEN SPACE CALCULATIONS



ROOF DECK TOTAL USABLE AREA = 6,882 SF

(ROOF DECK HARDSCAPED = 6,297 SF)

ROOF DECK LANDSCAPED = 585 SF

ROOF DECK LANDSCAPED % = 9%

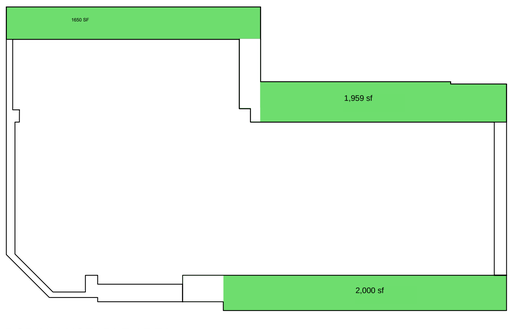
ROOF DECK USEABLE AREA (NTS)

1998 SHATTUCK TOTAL USABLE AREA = 12,491 sf

(TOTAL HARDSCAPED AREA = 6,297 SF)

TOTAL LANDSCAPED AREA = 6,735 SF

TOTAL LANDSCAPED AREA % = 54%



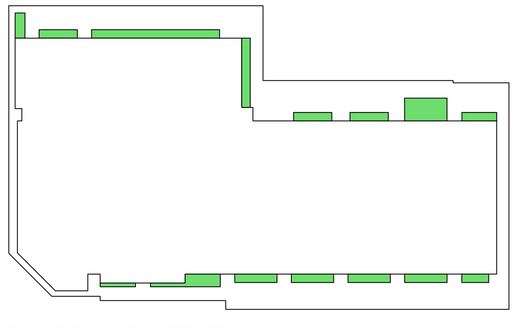
PODIUM TOTAL USABLE AREA = 5,609 sf

(PODIUM HARDSCAPED = 0 SF)

PODIUM LANDSCAPED = 5,609 sf

PODIUM LANDSCAPED % = 100%

PODIUM USEABLE AREA (NTS)



1998 SHATTUCK TOTAL ROOF AREA = 26,208 SF

4% FLOW-THROUGH PLANTER AREA NEEDED = 1,049 SF

CURRENT FLOW-THROUGH PLANTER AREA = 1,306 SF
(AT PODIUM)

FLOW-THROUGH PLANTER AREA (NTS)

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USABLE OPEN SPACE CALCULATIONS + PLANTING NOTES

L3.1

IRRIGATION NOTES

1. THESE IRRIGATION DRAWINGS ARE DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. ALL PIPING, VALVES, AND OTHER IRRIGATION COMPONENTS MAY BE SHOWN WITHIN PAVED AREAS FOR GRAPHIC CLARITY ONLY AND ARE TO BE INSTALLED WITHIN PLANTING AREAS. DUE TO THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, SLEEVES, CONDUIT, AND OTHER ITEMS WHICH MAY BE REQUIRED. INVESTIGATE THE STRUCTURAL AND FINISHED CONDITION AFFECTING THE CONTRACT WORK INCLUDING OBSTRUCTIONS, GRADE DIFFERENCES OR AREA DIMENSIONAL DIFFERENCES. IN THE EVENT OF FIELD DISCREPANCY WITH CONTRACT DOCUMENTS, PLAN THE INSTALLATION WORK ACCORDINGLY BY NOTIFICATION AND APPROVAL OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND ACCORDING TO THE CONTRACT SPECIFICATIONS. NOTIFY AND COORDINATE IRRIGATION CONTRACT WORK WITH APPLICABLE CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE, CONDUIT OR SLEEVES THROUGH OR UNDER WALLS, ROADWAYS, PAVING AND STRUCTURES BEFORE CONSTRUCTION. IN THE EVENT THESE NOTIFICATIONS ARE NOT PERFORMED, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR REQUIRED REVISIONS.

2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE; THE UNIFORM PLUMBING CODE, PUBLISHED BY THE WESTERN PLUMBING OFFICIALS ASSOCIATION; AND OTHER STATE OR LOCAL LAWS OR REGULATIONS. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR REGULATIONS. THE CONTRACTOR SHALL FURNISH WITHOUT ANY EXTRA CHARGE, ANY ADDITIONAL MATERIAL AND LABOR WHEN REQUIRED BY THE COMPLIANCE WITH THESE CODES AND REGULATIONS.

3. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF IRRIGATION SYSTEM WITH LAYOUT AND INSTALLATION OF THE PLANT MATERIALS TO INSURE THAT THERE WILL BE COMPLETE AND UNIFORM IRRIGATION COVERAGE OF PLANTING IN ACCORDANCE WITH THESE DRAWINGS, AND CONTRACT DOCUMENTS. THE IRRIGATION LAYOUT SHALL BE CHECKED BY THE CONTRACTOR AND OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO CONSTRUCTION TO DETERMINE IF ANY CHANGES, DELETIONS, OR ADDITIONS ARE REQUIRED. IRRIGATION SYSTEM SHALL BE INSTALLED AND TESTED PRIOR TO INSTALLATION OF PLANT MATERIAL.

4. THE INTENT OF THIS IRRIGATION SYSTEM IS TO PROVIDE THE MINIMUM AMOUNT OF WATER REQUIRED TO SUSTAIN GOOD PLANT HEALTH.

5. IT IS THE RESPONSIBILITY OF THE MAINTENANCE CONTRACTOR AND/OR OWNER TO PROGRAM THE IRRIGATION CONTROLLER(S) TO PROVIDE THE MINIMUM AMOUNT OF WATER NEEDED TO SUSTAIN GOOD PLANT HEALTH. THIS INCLUDES MAKING ADJUSTMENTS TO THE PROGRAM FOR SEASONAL WEATHER CHANGES, PLANT MATERIAL, WATER REQUIREMENTS, MOUNDS, SLOPES, SUN, SHADE AND WIND EXPOSURE.

6. IT IS THE RESPONSIBILITY OF A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120 VOLT A.C. (2.5 AMP DEMAND PER CONTROLLER) ELECTRICAL SERVICE TO THE CONTROLLER LOCATION(S). IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO COORDINATE THE ELECTRICAL SERVICE STUB-OUT TO THE CONTROLLER(S). PROVIDE PROPER GROUNDING PER CONTROLLER MANUFACTURER'S INSTRUCTIONS AND IN ACCORDANCE WITH LOCAL CODES.

7. PROVIDE EACH CONTROLLER WITH ITS OWN GROUND ROD. SEPARATE THE GROUND RODS BY A MINIMUM OF EIGHT FEET. THE GROUND ROD SHALL BE AN EIGHT FOOT LONG BY 5/8" DIAMETER U.L. APPROVED COPPER CLAD ROD. INSTALL NO MORE THAN 6" OF THE GROUND ROD ABOVE FINISH GRADE. CONNECT #6 GAUGE WIRE WITH A U.L. APPROVED GROUND ROD CLAMP TO ROD AND BACK TO GROUND SCREW AT BASE OF CONTROLLER WITH APPROPRIATE CONNECTOR. MAKE THIS WIRE AS SHORT AS POSSIBLE, AVOIDING KINKS OR BENDING.

8. INSTALL NEW BATTERIES IN THE IRRIGATION CONTROLLER(S) TO RETAIN PROGRAM IN MEMORY DURING TEMPORARY POWER FAILURES. USE QUANTITY, TYPE AND SIZE REQUIRED AS PER CONTROLLER MANUFACTURER'S INSTRUCTIONS.

9. SCHEDULE A MEETING WHICH INCLUDES REPRESENTATIVES OF THE IRRIGATION CONTROLLER MANUFACTURER, THE MAINTENANCE CONTRACTOR, THE OWNER AND THE IRRIGATION CONTRACTOR AT THE SITE FOR INSTRUCTION ON THE PROPER PROGRAMMING AND OPERATION OF THE IRRIGATION CONTROLLER.

10. PROVIDE EACH IRRIGATION CONTROLLER WITH ITS OWN INDEPENDENT LOW VOLTAGE COMMON GROUND WIRE.

11. IRRIGATION CONTROL WIRES: SOLID COPPER WITH U.L. APPROVAL FOR DIRECT BURIAL IN GROUND. COMMON GROUND WIRE: SIZE #12-1 WIRE WITH A WHITE INSULATING JACKET. CONTROL WIRE SERVICING REMOTE CONTROL VALVES: SIZE #14-1 WIRE WITH INSULATING JACKET OF COLOR OTHER THAN WHITE. SPLICES SHALL BE MADE WITH 3M-DBY SEAL PACKS OR APPROVED EQUAL.

12. INSTALL TWO SPARE CONTROL WIRES OF A DIFFERENT COLOR ALONG THE ENTIRE MAIN LINE. LOOP 36" EXCESS WIRE INTO EACH SINGLE VALVE BOX AND INTO ONE VALVE BOX IN EACH GROUP OF VALVES.

13. SPLICING OF LOW VOLTAGE WIRES IS PERMITTED IN VALVE BOXES ONLY. LEAVE A 36" LONG, 1" DIAMETER COIL OF EXCESS WIRE AT EACH SPLICE AND A 36" LONG EXPANSION LOOP EVERY 100 FEET ALONG WIRE RUN. TAPE WIRES TOGETHER EVERY TEN FEET. DO NOT TAPE WIRES TOGETHER WHERE CONTAINED WITHIN SLEEVING OR CONDUIT.

14. INSTALL GREEN PLASTIC VALVE BOXES WITH BOLT DOWN, NON HINGED COVER MARKED "IRRIGATION CONTROL VALVE". BOX BODY SHALL HAVE KNOCK OUTS. ACCEPTABLE VALVE BOX MANUFACTURER'S INCLUDE NDS, CARSON OR APPROVED EQUAL.

15. INSTALL REMOTE CONTROL VALVE BOXES 12" FROM WALK, CURB, BUILDING OR LANDSCAPE FEATURE. AT MULTIPLE VALVE BOX GROUPS, INSTALL EACH BOX AN EQUAL DISTANCE FROM THE WALK, CURB, BUILDING OR LANDSCAPE FEATURE AND PROVIDE 12" BETWEEN BOX TOPS. ALIGN THE SHORT SIDE OF RECTANGULAR VALVE BOXES PARALLEL TO WALK, CURB, BUILDING OR LANDSCAPE FEATURE.

16. VALVE LOCATIONS SHOWN ARE DIAGRAMMATIC. INSTALL IN GROUND COVER/SHRUB AREAS (AVOID LAWN AREAS WHERE POSSIBLE).

17. THE CONTRACTOR SHALL LABEL CONTROL LINE WIRE AT EACH REMOTE CONTROL VALVE WITH A 2 1/4" X 2 3/4" POLYURETHANE I.D. TAG, INDICATING IDENTIFICATION NUMBER OF VALVE (CONTROLLER AND STATION NUMBER). ATTACH LABEL TO CONTROL WIRE. THE CONTRACTOR SHALL PERMANENTLY STAMP ALL VALVE BOX LIDS WITH APPROPRIATE IDENTIFICATION AS NOTED IN CONSTRUCTION DETAILS.

18. FLUSH AND ADJUST IRRIGATION OUTLETS AND NOZZLES FOR OPTIMUM PERFORMANCE AND TO PREVENT OVER SPRAY ONTO WALKS, ROADWAYS, AND/OR BUILDINGS. SELECT THE BEST DEGREE OF THE ARC AND RADIUS TO FIT THE EXISTING SITE CONDITIONS AND THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH CONTROL ZONE.

19. SET SPRINKLER HEADS PERPENDICULAR TO FINISH GRADE.

20. LOCATE BUBBLERS ON UPHILL SIDE OF PLANT OR TREE.

21. INSTALL A HUNTER HCV SERIES, KBI CV SERIES, OR APPROVED EQUAL SPRING LOADED CHECK VALVE IN SPRINKLER RISER ASSEMBLIES WHERE LOW OUTLET DRAINAGE WILL CAUSE EROSION AND/OR EXCESS WATER.

22. WHERE IT IS NECESSARY TO EXCAVATE ADJACENT TO EXISTING TREES, USE CAUTION TO AVOID INJURY TO TREES AND TREE ROOTS. EXCAVATE BY HAND IN AREAS WHERE TWO (2) INCH AND LARGER ROOTS OCCUR. BACK FILL TRENCHES ADJACENT TO TREE WITHIN TWENTY-FOUR (24) HOURS. WHERE THIS IS NOT POSSIBLE, SHADE THE SIDE OF THE TRENCH ADJACENT TO THE TREE WITH WET BURLAP OR CANVAS.

23. NOTIFY LOCAL JURISDICTIONS FOR INSPECTION AND TESTING OF INSTALLED BACKFLOW PREVENTION DEVICE.

24. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE SHOWN ON THE IRRIGATION DRAWINGS. VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE.

25. IRRIGATION DEMAND: REFER TO PLANS.

26. THE EXISTING MAIN LINE SHOWN ON THE DRAWINGS IS DIAGRAMMATIC. VERIFY AND LOCATE EXISTING MAIN LINE IN FIELD. REPORT TO ARCHITECT IN WRITING ANY DEVIATION OF EXISTING MAIN LINE LOCATION FROM THAT SHOWN ON THE DRAWINGS.

27. PIPE SIZING SHOWN ON THE DRAWINGS IS TYPICAL. AS CHANGES IN LAYOUT OCCUR DURING STAKING AND CONSTRUCTION THE SIZE MAY NEED TO BE ADJUSTED ACCORDINGLY.

28. PIPE THREAD SEALANT COMPOUND SHALL BE RECTOR SEAL #5.

29. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MINOR CHANGES IN THE IRRIGATION LAYOUT DUE TO OBSTRUCTIONS NOT SHOWN ON THE IRRIGATION DRAWINGS SUCH AS LIGHTS, FIRE HYDRANTS, SIGNS, ELECTRICAL ENCLOSURES, ETC.

30. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CHANGES IN THE IRRIGATION LAYOUT AND VALVE ZONING DUE TO VARIATIONS IN THE EXISTING SITE CONDITIONS SUCH AS EXPOSURE FROM BUILDINGS, TRELLISES, TREES, ETC., AS WELL AS SLOPE AND SOIL CONDITIONS. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND IRRIGATION CONSULTANT OF THE PROPOSED CHANGES PRIOR TO INSTALLATION FOR APPROVAL.

31. WHEN WORK OF THIS SECTION HAS BEEN COMPLETED AND SUCH OTHER TIMES AS MAY BE DIRECTED, REMOVE ALL TRASH, DEBRIS, SURPLUS MATERIALS AND EQUIPMENT FROM SITE.

32. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLEMENTAL HAND WATERING OF ALL PLANT MATERIAL WITHIN DRIPLINE AREAS UNTIL THE PLANTS ARE SUFFICIENTLY ESTABLISHED.

33. VERIFY LOCATIONS OF ALL IRRIGATION COMPONENTS INSTALLED WITHIN A VALVE BOX WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. DO NOT INSTALL UNTIL LANDSCAPE ARCHITECT PROVIDES ACCEPTABLE LOCATIONS.

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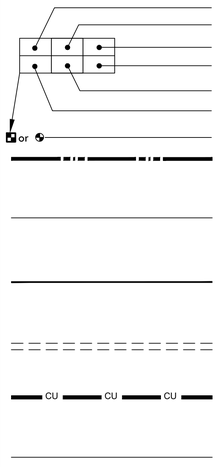
Russell D. Mitchell Associates, Inc.
2760 Camino Diablo
Walnut Creek, CA 94597
tel 925.939.3985 ♦ fax 925.932.5671
www.rmairrigation.com

IRRIGATION LEGEND

SYMBOL	MODEL NUMBER	DESCRIPTION	NOZZLE GPM	OPERATING PSI	OPERATING RADIUS (FEET)
	PCB-25	HUNTER BUBBLER (SHRUB)	0.25	30	TRICKLE
■	PCB-25	HUNTER BUBBLER (TREE) MIN. 2 PER TREE. REFER TO BUBBLER DETAIL FOR QUANTITY OF BUBBLERS PER TREE SIZE.	0.25	30	TRICKLE
	WLT-0500-T	NDS SCH 40 BALL VALVE OR APPROVED EQUAL			
	ECO-ID	HUNTER ECO-INDICATOR			
	ICV-101/AS-40	HUNTER REMOTE CONTROL VALVE WITH 40 PSI PRESSURE REGULATOR			
	ICZ-101-40	HUNTER REMOTE CONTROL VALVE WITH A 40 PSI PRESSURE REGULATOR AND A 1" FILTER.			
	QB44RCAR10	BUCKNER 1" TWO-PIECE QUICK COUPLING VALVE (ANTI-ROTATION)			
	T-FP600A-LF-1"	NIBCO 1" BRASS BALL VALVE			
MV	WT-MV-100G-SNO	WeatherTRAK 1" BRASS MASTER VALVE (NORMALLY OPEN)			
FS	WTFLOW-HD-P-100	WeatherTRAK 1" FLOW SENSOR			
	975XL2SEU-1"	WILKINS REDUCED PRESSURE BACKFLOW ASSEMBL.			
SM	MODEL 55	BADGER SUB WATER METER			
A	WTLC-C-12-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 12 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			
B	WTLC-C-6-PL/ WTLC-FLOW-KEY	WeatherTRAK LC 6 STATION CONTROLLER IN A PLASTIC WALL MOUNTED ENCLOSURE WITH FLOW KEY.			



CONTROLLER AND STATION NUMBER
REMOTE CONTROL VALVE SIZE (IN INCHES)
FLOW (GPM)
WATER USE CLASSIFICATION OF ZONE
APPLICATION RATE (IN/HR) or DRIPLINE SPACING
AREA (SQ. FT.)
ASSOCIATED REMOTE CONTROL VALVE

MAIN LINE: 1.25" THROUGHOUT: 1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 18" COVER.

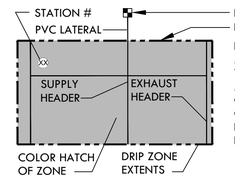
LATERAL LINE: 3/4" AND LARGER: 1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

DRIPLINE LATERAL LINE: 3/4" AND LARGER: 1120-SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS. 12" COVER.

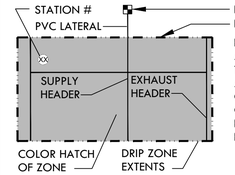
SLEEVING: SCHEDULE 40 PVC PLASTIC PIPE. COVER TO BE AS INDICATED IN SPECIFICATIONS OR AS INDICATED ABOVE FOR PIPE DEPTH OF COVER.

MAIN LINE: 1.25" THROUGHOUT: TYPE 'K' COPPER PIPE WITH WROUGHT FITTINGS. SHOWN FOR REFERENCE ONLY, SEE PLUMBING PLANS FOR ROUTING THROUGH STRUCTURE.

ELECTRICAL CONDUIT: SHOWN FOR REFERENCE ONLY, SEE ELECTRICAL PLANS FOR ROUTING THROUGH STRUCTURE.



DRIPLINE REMOTE CONTROL VALVE
DRIP ZONE:
HUNTER HDL SERIES DRIPLINE WITH BUILT IN PRESSURE COMPENSATION AND CHECK VALVE, PART #HDL-06-12-250-CV. USE PLD FITTINGS. TUBING TO BE INSTALLED 4" BELOW GRADE IN A 12" O.C. GRID ACCORDING TO DETAILS. SIZE EXHAUST HEADERS AS FOLLOWS: 1": 0-10 GPM, 1.25": 11-20 GPM. ALL EXHAUST HEADERS SHALL BE 1" SCH 40 PVC OR 1" SCH 40 FLEXIBLE PVC. USE SCH. 40 PVC SOLVENT WELD FITTINGS. EXTEND PVC HEADERS TO THE ENDS OF ALL DRIP ZONES TO BALANCE FLOW IF REQUIRED. SEE DETAILS FOR FURTHER INFORMATION.



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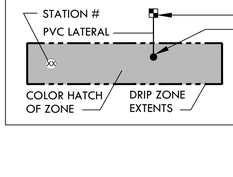

DRIPLINE REMOTE CONTROL VALVE
APPROXIMATE CONNECTION POINT BETWEEN DRIPLINE TUBING AND PVC SUPPLY WHEN DRIP ZONE IS LESS THAN 3 GPM AND NO PVC SUPPLY/EXHUST HEADERS ARE NEEDED. REFER TO DRIPLINE TUBING CONNECTION DETAIL FOR MORE INFORMATION.

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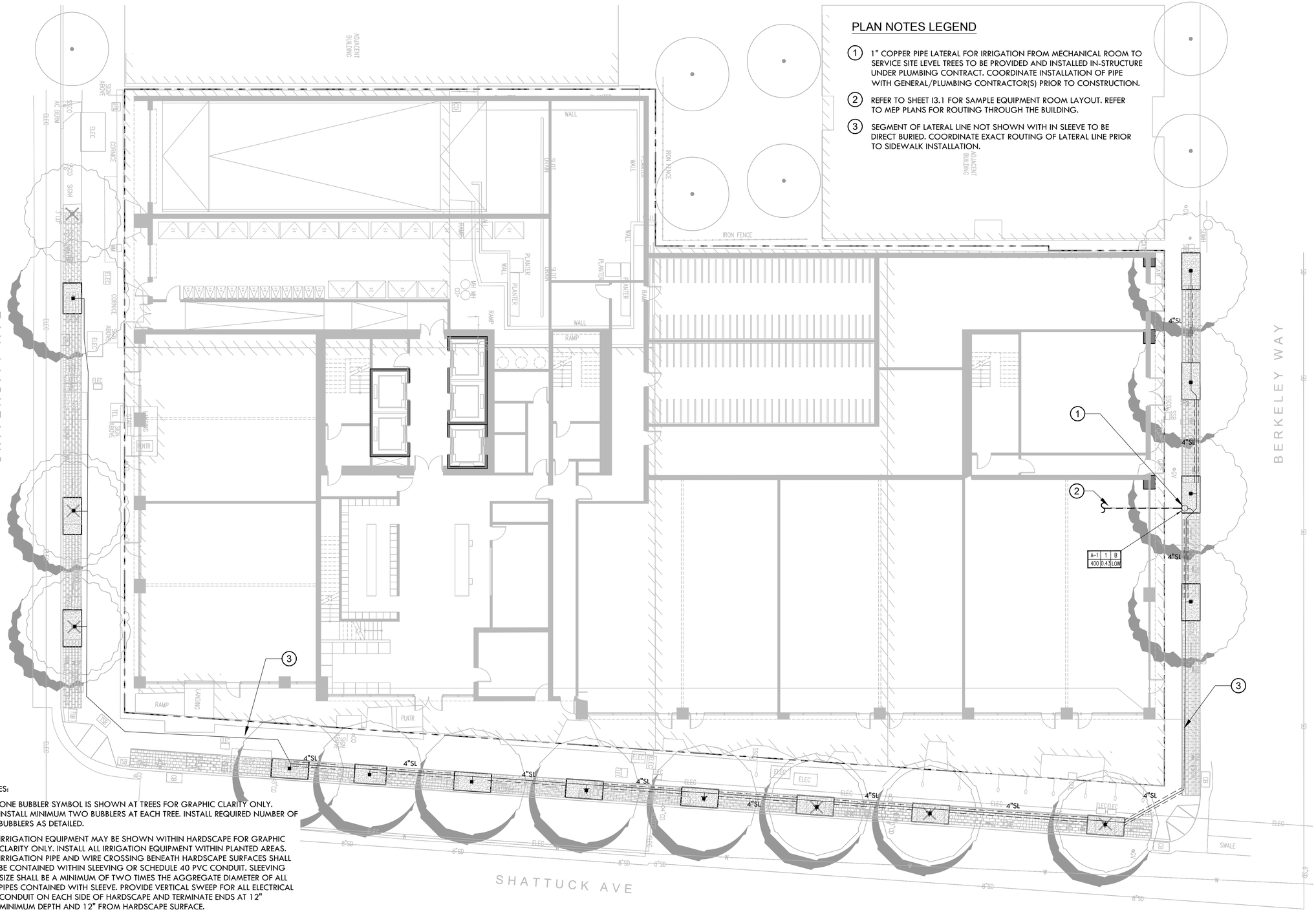
JOB: 0000

SHEET:

IRRIGATION
NOTES & LEGEND

I0.0



NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
2. IRRIGATION EQUIPMENT MAY BE SHOWN WITHIN HARDSCAPE FOR GRAPHIC CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT WITHIN PLANTED AREAS. IRRIGATION PIPE AND WIRE CROSSING BENEATH HARDSCAPE SURFACES SHALL BE CONTAINED WITHIN SLEEVING OR SCHEDULE 40 PVC CONDUIT. SLEEVING SIZE SHALL BE A MINIMUM OF TWO TIMES THE AGGREGATE DIAMETER OF ALL PIPES CONTAINED WITH SLEEVE. PROVIDE VERTICAL SWEEP FOR ALL ELECTRICAL CONDUIT ON EACH SIDE OF HARDSCAPE AND TERMINATE ENDS AT 12" MINIMUM DEPTH AND 12" FROM HARDSCAPE SURFACE.
3. UNSIZED LATERAL LINE PIPING LOCATED DOWN STREAM OF 1" PIPING SHALL BE 3/4" IN SIZE (TYPICAL).
4. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

0.75"	0-6 GPM
1"	7-12 GPM

North

1" = 10'
0 4 8 16

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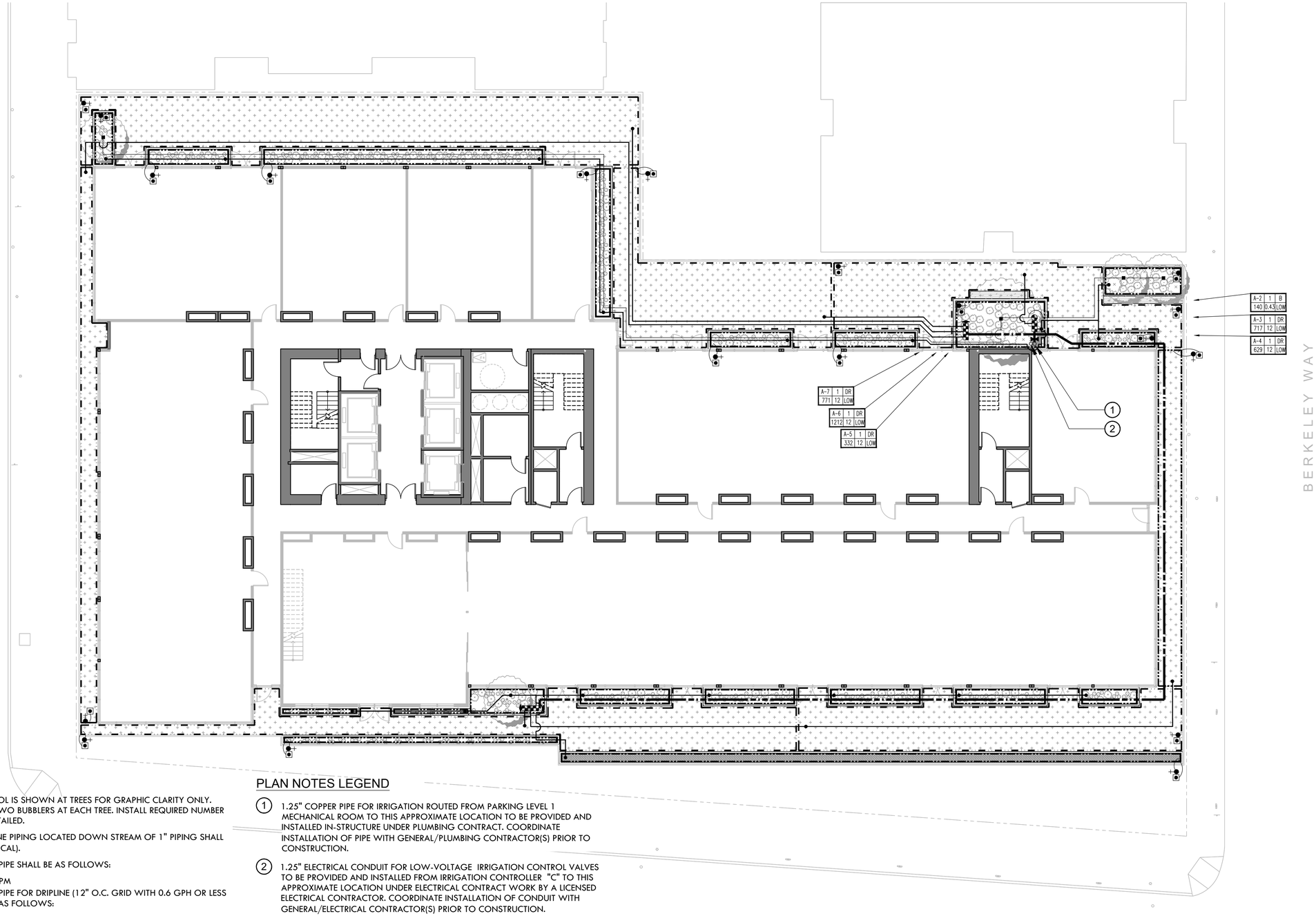
JOB: 0000

SHEET:

IRRIGATION PLAN
AT STREETSCAPE
ALT A

L1.0



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3. SIZING OF LATERAL PIPE SHALL BE AS FOLLOWS:

   0.75" 0-6 GPM
4. SIZING OF LATERAL PIPE FOR DRIPLINE (12" O.C. GRID WITH 0.6 GPH OR LESS EMITTERS) SHALL BE AS FOLLOWS:

   0.75 0-500 FT
   1" 501-1100 FT

PLAN NOTES LEGEND

(1) 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.

(2) 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

North

3/16"=1'-0"
0 2 4 8

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JOB: 0000

SHEET:

IRRIGATION PLAN
SECOND FLOOR
PODIUM GARDENS

L2.0

NOTES:

1. ONE BUBBLER SYMBOL IS SHOWN AT TREES FOR GRAPHIC CLARITY ONLY. INSTALL MINIMUM TWO BUBBLERS AT EACH TREE. INSTALL REQUIRED NUMBER OF BUBBLERS AS DETAILED.
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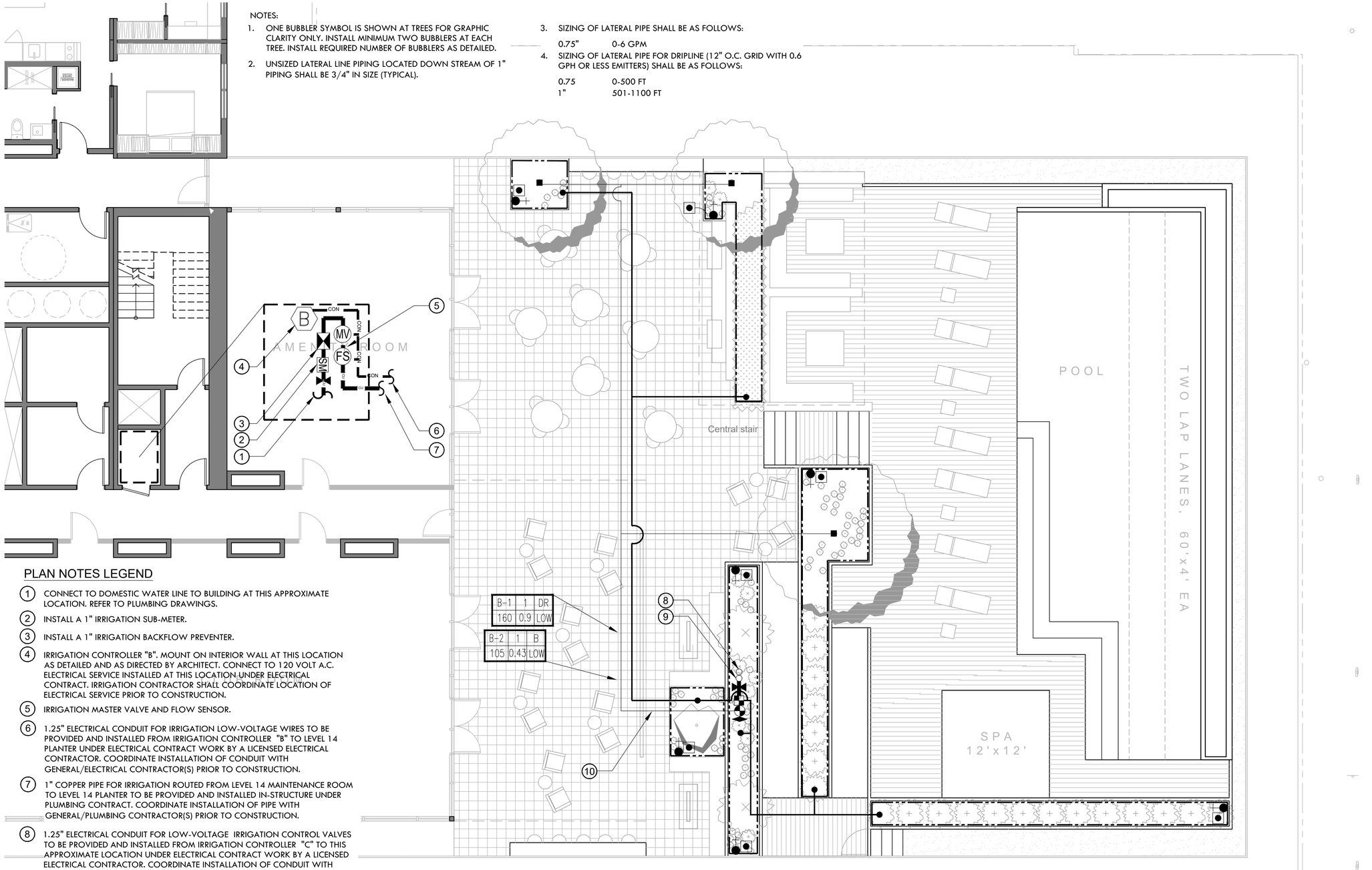
   0.75" 0-6 GPM
4. SIZING OF LATERAL PIPE FOR DRIPLINE (12" O.C. GRID WITH 0.6 GPH OR LESS EMITTERS) SHALL BE AS FOLLOWS:

   0.75 0-500 FT
   1" 501-1100 FT



PLAN NOTES LEGEND

1. CONNECT TO DOMESTIC WATER LINE TO BUILDING AT THIS APPROXIMATE LOCATION. REFER TO PLUMBING DRAWINGS.
2. INSTALL A 1" IRRIGATION SUB-METER.
3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION CONTROLLER "B". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
5. IRRIGATION MASTER VALVE AND FLOW SENSOR.
6. 1.25" ELECTRICAL CONDUIT FOR IRRIGATION LOW-VOLTAGE WIRES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "B" TO LEVEL 14 PLANTER UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM LEVEL 14 MAINTENANCE ROOM TO LEVEL 14 PLANTER TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO THIS APPROXIMATE LOCATION UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.
9. 1" COPPER PIPE FOR IRRIGATION ROUTED FROM PARKING LEVEL 1 MECHANICAL ROOM TO THIS APPROXIMATE LOCATION TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
10. ALL IRRIGATION LINES SHALL BE ROUTED UNDER PEDESTAL PAVERS.

27 FEB 2023

ALT E - REVISED

North

3/16"=1'-0"
0 2 4 8

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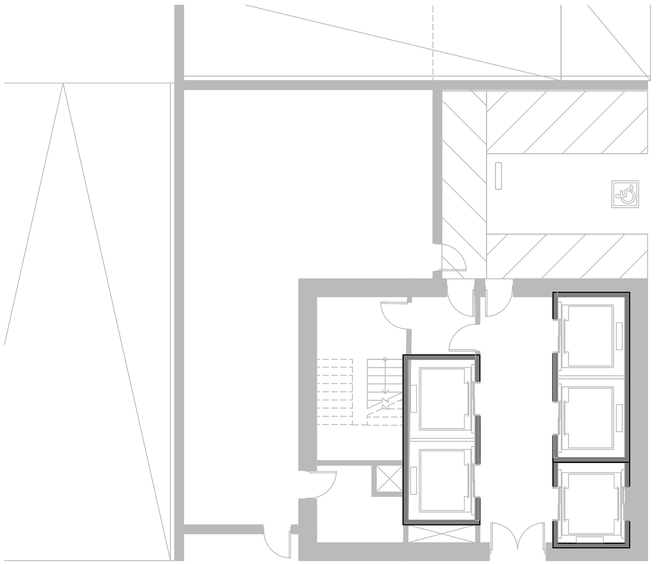
JOB: 0000

SHEET:

IRRIGATION PLAN
FOURTEENTH
FLOOR ROOF DECK
ALT E - REVISED

I3.0



PLAN NOTES LEGEND

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3. INSTALL A 1" IRRIGATION BACKFLOW PREVENTER.
4. IRRIGATION MASTER VALVE AND FLOW SENSOR.
5. IRRIGATION CONTROLLER "C". MOUNT ON INTERIOR WALL AT THIS LOCATION AS DETAILED AND AS DIRECTED BY ARCHITECT. CONNECT TO 120 VOLT A.C. ELECTRICAL SERVICE INSTALLED AT THIS LOCATION UNDER ELECTRICAL CONTRACT. IRRIGATION CONTRACTOR SHALL COORDINATE LOCATION OF ELECTRICAL SERVICE PRIOR TO CONSTRUCTION.
6. 1" COPPER PIPE LATERAL FOR IRRIGATION FROM MECHANICAL ROOM TO SERVICE SITE LEVEL TREES TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
7. 1.25" COPPER PIPE FOR IRRIGATION ROUTED FROM MECHANICAL ROOM TO PODIUM LEVEL PLANTERS TO BE PROVIDED AND INSTALLED IN-STRUCTURE UNDER PLUMBING CONTRACT. COORDINATE INSTALLATION OF PIPE WITH GENERAL/PLUMBING CONTRACTOR(S) PRIOR TO CONSTRUCTION.
8. 1.25" ELECTRICAL CONDUIT FOR LOW-VOLTAGE IRRIGATION CONTROL VALVES TO BE PROVIDED AND INSTALLED FROM IRRIGATION CONTROLLER "C" TO PODIUM LEVEL PLANTERS UNDER ELECTRICAL CONTRACT WORK BY A LICENSED ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION OF CONDUIT WITH GENERAL/ELECTRICAL CONTRACTOR(S) PRIOR TO CONSTRUCTION.

27 FEB 2023

North 0 4 8 16 1/8"=1'-0"

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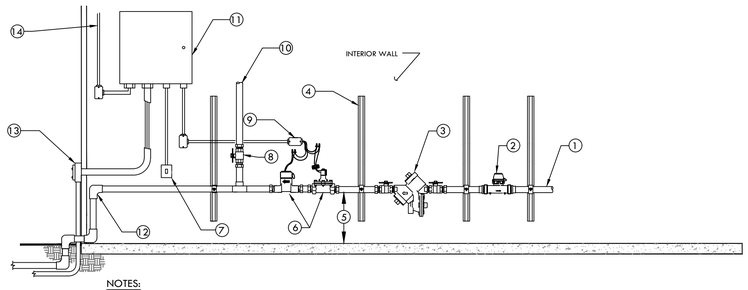
JOB: 0000

SHEET:

IRRIGATION
POINT OF
CONNECTION

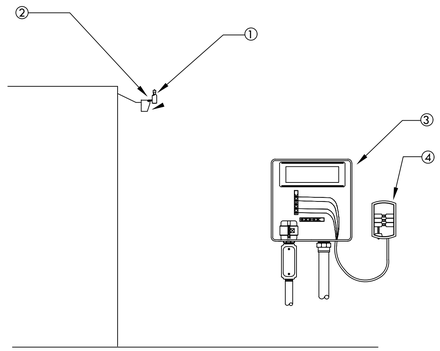
I3.1

1. 1.25" COPPER MAIN LINE TO BACKFLOW IN EQUIPMENT ROOM. SHOWN ON MEP PLANS.
2. SUB-METER FOR IRRIGATION.
3. 1.25" WILKENS REDUCED PRESSURE BACKFLOW ASSEMBLY.
4. UNI-STRUT SUPPORT BRACKET, THREADED EXTENSIONS AND CLAMPS, LENGTH AS REQUIRED. PROVIDE A MINIMUM OF 6" SEPARATION FOR THE VALVES AND PIPE FROM THE WALL.
5. MIN. 18" ± FROM FINISH FLOOR.
6. MASTER VALVE AND FLOW SENSOR.
7. 120 VOLT A.C. ELECTRICAL BY ELECTRICAL CONTRACTOR FOR CONTROLLER
8. 1.25" BRASS BALL VALVE.
9. 1" ELECTRICAL CONDUIT WITH JUNCTION BOXES FOR CONTROL WIRES FOR FLOW SENSOR & MASTER VALVE.
10. 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION(S). INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
11. IRRIGATION CONTROLLER BY IRRIGATION CONTRACTOR. MINIMUM 42" ABOVE FINISHED FLOOR.
12. 1.25" COPPER MAIN LINE ROUTED THROUGH STRUCTURE TO STUB-OUT LOCATION. INSTALLED BY PLUMBING CONTRACTOR. (REFER TO MEP PLAN FOR EXACT ROUTING THRU BUILDING)
13. JUNCTION BOX BY ELECTRICAL CONTRACTOR FOR EXIT OF TWO WIRE SERVICING VALVES WITHIN ROOM.
14. 1.25" ELECTRICAL CONDUIT WITH REQUIRED JUNCTION BOXES ROUTED THROUGH STRUCTURE FROM CONTROLLER LOCATION TO EXTERIOR PLANTERS.



NOTES:
1. THIS LAYOUT IS TO PROVIDE INFORMATION ON EQUIPMENT AND TYPICAL DISTANCES REQUIRED BETWEEN THE EQUIPMENT. IT IS DIAGRAMMATIC AND WILL NEED TO BE ADJUSTED ACCORDING TO AVAILABLE FLOOR SPACE AND OTHER EQUIPMENT INSTALLED WITHIN THE ENCLOSURE. OFFSETS AND FITTINGS WILL BE REQUIRED FOR THESE ADJUSTMENTS.
2. MAINTAIN 6" OF CLEARANCE FROM BUILDING WALLS FOR EASE OF MAINTENANCE FOR ALL COPPER PIPING, VALVES, AND FITTINGS.
3. SEAL ALL PIPE PENETRATIONS THROUGH WALLS/STRUCTURE AS REQUIRED (BY PLUMBING CONTRACTOR). SEE PLUMBING/WATERPROOFING DRAWINGS.
4. ALL FITTINGS AND PIPING FOR WATER LINES WITHIN EQUIPMENT ROOM SHALL BE COPPER WITH WROT FITTINGS OR BRASS NIPPLES.

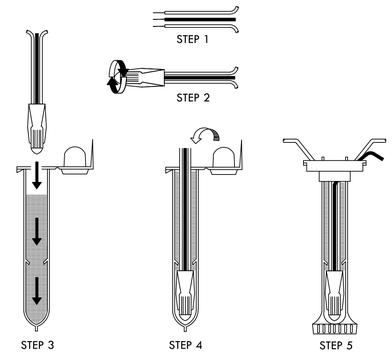
1 IRRIGATION EQUIPMENT LAYOUT DIAGRAM DETAIL
SCALE: NONE



NOTE: MAXIMUM LINE OF SIGHT FROM RAIN SENSOR TO RECEIVER IS 300 FT. DISTANCE IS LESS IF OBSTRUCTIONS EXIST. SENSOR MUST BE INSTALLED IN "CLEAR SPACE" WHERE IT IS EXPOSED TO UNOBSTRUCTED RAINFALL AND IS CLEAR OF IRRIGATION SPRAY.

1. WIRELESS RAIN SENSOR TRANSMITTER (GUTTER MOUNTED)
2. MOUNT RAIN SENSOR ON BUILDING WALL. ARCHITECT TO APPROVE LOCATION
3. CONTROLLER
4. RAIN SENSOR RECEIVER

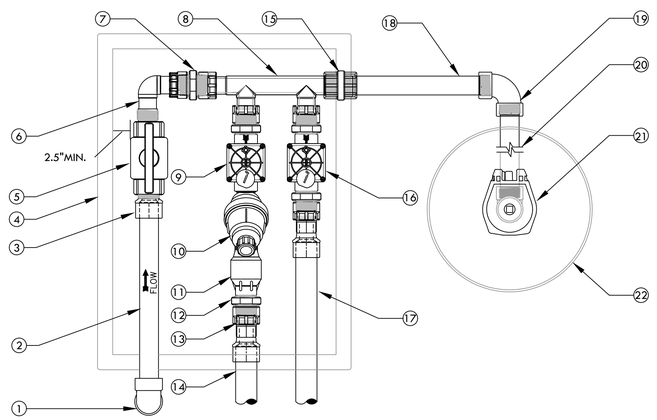
2 WIRELESS RAIN SENSOR-GUTTER MOUNT
SCALE: NONE



NOTE:
MAXIMUM # OF WIRES PER CONNECTOR:
- 3-#14 GAUGE
- 2-#12 GAUGE

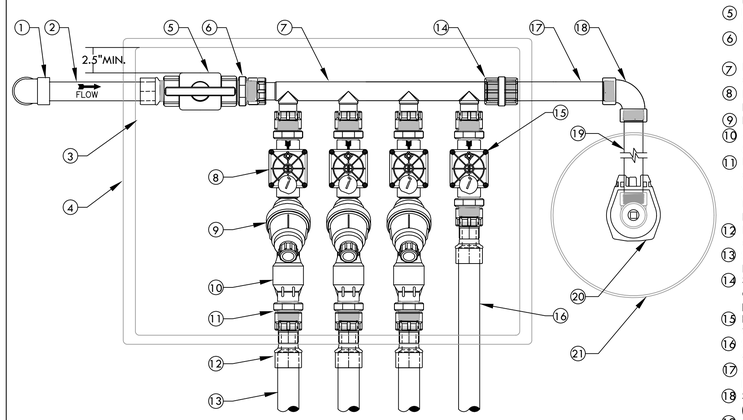
INSTRUCTIONS:
1. STRIP WIRES APPROXIMATELY 1/2" FROM ENDS TO EXPOSE WIRE.
2. TWIST CONNECTOR AROUND WIRES CLOCKWISE UNTIL HAND TIGHT, DO NOT OVERTIGHTEN.
3. INSERT WIRE ASSEMBLY TO BOTTOM OF GEL-FILLED TUBE. CHECK TO MAKE SURE CONNECTOR HAS BEEN PUSHED PAST LOCKING FINGERS AND IS SEATED AT THE BOTTOM OF THE TUBE.
4. PLACE WIRES WHICH EXIT TUBE IN WIRE EXIT HOLES AND CLOSE CAP UNTIL IT SNAPS.
5. INSPECT FINAL SPLICE ASSEMBLY THAT IT IS SECURED.

3 WEATHERPROOF WIRE SPLICE ASSEMBLY
SCALE: NONE



1. SCH 40 PVC 90° ELBOW (SxS) FROM PVC MAIN LINE BELOW.
2. SCH 40 PVC PIPE. LENGTH AS REQUIRED.
3. SCH 80 PVC MALE ADAPTER.
4. CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
5. NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
6. DURA 1" MIPT x 1" SWIVEL 90° (PART #306-009)
7. DURA 1"x1" THREADED ADAPTER (PART #08303) 4 TOTAL.
8. DURA 1" MULTI-PORT MANIFOLD (PART #301-010-2)
9. DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
10. FILTER. REFER TO LEGEND FOR MODEL.
11. 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
12. DURA 1" x 3/4" MALE ADAPTER (PART #08303-131). ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
13. DURA 1" SLIP X 1" SWIVEL (PART #329-011) 2 TOTAL.
14. SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION
15. SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
16. BUBBLER OR SPRINKLER REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
17. SCHEDULE 40 PVC LATERAL TO BUBBLER OR SPRAY IRRIGATION.
18. SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
19. SCHEDULE 80 PVC 90° ELBOW (TxT).
20. SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
21. QUICK COUPLING VALVE. INSTALL PER DETAIL.
22. 10" ROUND BOX. INSTALL PER DETAIL.

4 TWO REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE



1. SCH 40 PVC 90° ELBOW (SxS) FROM PVC MAIN LINE BELOW.
2. SCH 40 PVC PIPE. LENGTH AS REQUIRED.
3. SCH 80 PVC MALE ADAPTER.
4. CARSON 1220 RECTANGULAR PLASTIC VALVE BOX WITH LID. INSTALL PER REMOTE CONTROL VALVE DETAIL.
5. NDS 1"LO-TORQ BALL VALVE THREADED (PART #LT-1000-T)
6. DURA 1"x1" THREADED ADAPTER (PART #08303) 6 TOTAL.
7. DURA 1" MULTI-PORT MANIFOLD (PART #301-010-4)
8. DRIP REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
9. FILTER. REFER TO LEGEND FOR MODEL.
10. 40 PSI REGULATOR. REFER TO LEGEND FOR MODEL.
11. DURA 1" x 3/4" MALE ADAPTER (PART #08303-131) 3 TOTAL. ONLY REQUIRED WITH 3/4" OUTLET REGULATORS. USE 1"x1" DURA THREAD ADAPTER ON 1" REGULATORS
12. DURA 1" SLIP X 1" SWIVEL (PART #329-011) 4 TOTAL.
13. SCHEDULE 40 PVC LATERAL TO DRIP IRRIGATION.
14. SCHEDULE 80 PVC THREADED FEMALE COUPLING TO SERVICE QCV. IF NO QCV INSTALL A DURA 1" CAP (PART #348-010)
15. BUBBLER OR SPRINKLER REMOTE CONTROL VALVE. REFER TO LEGEND FOR MODEL.
16. SCHEDULE 40 PVC LATERAL TO BUBBLERS OR SPRAY IRRIGATION.
17. SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
18. SCHEDULE 80 PVC 90° ELBOW (TxT).
19. SCHEDULE 80 PVC NIPPLE (LENGTH AS REQUIRED).
20. QUICK COUPLING VALVE. INSTALL PER DETAIL.
21. 10" ROUND BOX. INSTALL PER DETAIL.

5 FOUR REMOTE VALVE MANIFOLD DETAIL WITH QUICK COUPLING VALVE (1" VALVES ONLY)
SCALE: NONE

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IRRIGATION DETAILS

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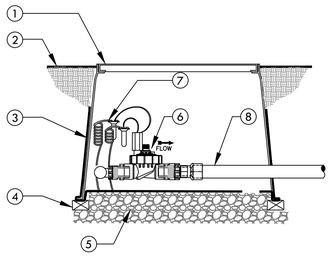
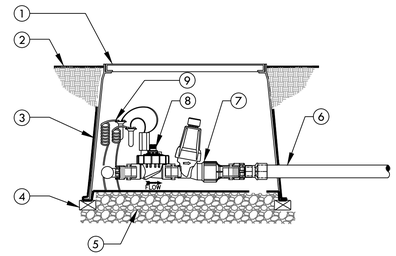


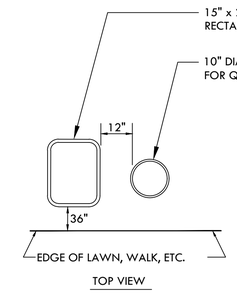
① CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
② FINISH GRADE
③ 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
④ BRICK-1 EACH CORNER
⑤ PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
⑥ REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
⑦ VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL
⑧ SCH 40 PVC LATERAL LINE TO BUBBLERS OR SPRAY

1 BUBBLER OR SPRAY REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



① CARSON 1220 RECTANGULAR VALVE BOX FOR FOUR VALVES OR CARSON 1419 FOR TWO VALVES
② FINISH GRADE
③ 19 GAUGE 1/2" SQUARE WIRE MESH. WRAP UP THE SIDES OF THE BOX
④ BRICK-1 EACH CORNER
⑤ PEA GRAVEL OR 3/4" DRAIN ROCK- 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
⑥ SCH 40 PVC LATERAL LINE TO DRIPLINE OR DRIP.
⑦ DRIP FILTER AND REGULATOR
⑧ REMOTE CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED. REFER TO TWO OR FOUR VALVE MANIFOLD DETAIL FOR INSTALLATION INSTRUCTIONS
⑨ VALVE CONTROL WIRE- PROVIDE 3M-DBY SEAL PACKS AT ALL SPLICES AND 24" OF EXCESS UF WIRE IN A 1" DIAMETER COIL

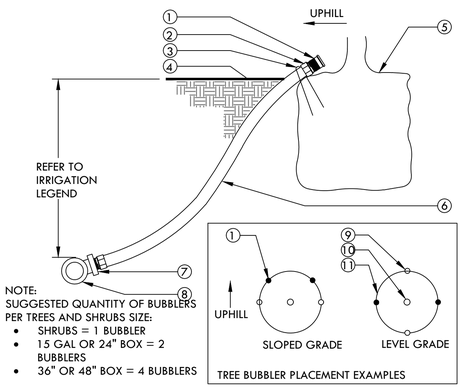
2 DRIP REMOTE CONTROL VALVE IN TWO OR FOUR VALVE MANIFOLD
SCALE: NONE



TOP VIEW

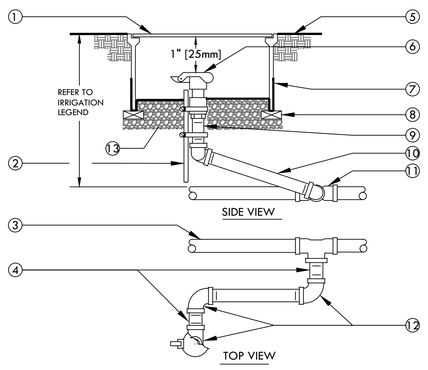
INSTRUCTIONS:
1. CENTER VALVE BOX OVER REMOTE CONTROL VALVES TO FACILITATE SERVICING VALVE.
2. SET BOXES 1" ABOVE FINISH GRADE OR MULCH COVER IN GROUND COVER/SHRUB AREA AND FLUSH WITH FINISH GRADE IN TURF AREA.
3. SET RCV AND VALVE BOX ASSEMBLY IN GROUND COVER/SHRUB AREA WHERE POSSIBLE. INSTALL IN LAWN ONLY IF GROUND COVER DOES NOT EXIST ADJACENT TO LAWN.
4. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE OF LAWN, WALK, FENCE, CURB, ETC.
5. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOXES TO PREVENT COLLAPSE AND DEFORMATION OF VALVE BOX SIDES.
6. INSTALL EXTENSION BY VALVE BOX MANUFACTURER AS REQUIRED TO COMPLETELY ENCLOSE ASSEMBLY FOR EASY ACCESS.

3 VALVE BOX INSTALLATION
SCALE: NONE



① BUBBLER (TO BE INSTALLED ON TOP OF ROOTBALL).
② 1/2" SCH. 40 MALE ADAPTER (2 TOTAL).
③ 6" STAPLE.
④ FINISH GRADE.
⑤ TREE OR SHRUB ROOTBALL.
⑥ 1/2" IPS FLEXIBLE PVC. USE WELD-ON 795 SOLVENT CEMENT OR EQUAL WHEN BONDING PVC HOSE TO FITTINGS.
⑦ PVC TEE (SST), ELBOW (ST) OR FEMALE ADAPTER.
⑧ PVC LATERAL LINE.
⑨ TREE STAKES.
⑩ TREE OR SHRUB.
⑪ EDGE OF ROOTBALL (TYPICAL).

4 TREE AND SHRUB BUBBLER
SCALE: NONE



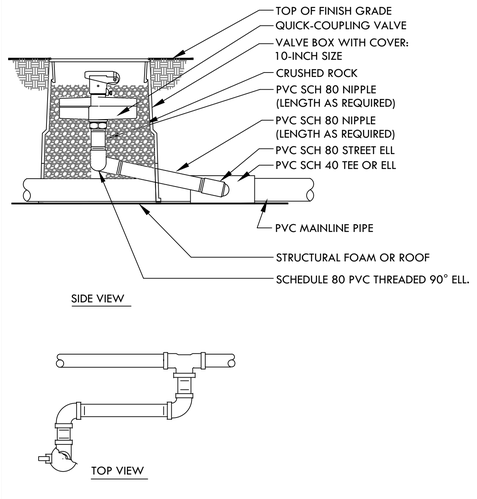
SIDE VIEW

TOP VIEW

① 10" ROUND PLASTIC VALVE BOX WITH BOLT DOWN LID.
② 1 1/4" x 1 1/4" x 3/16" [30mm x 30mm x 5mm] ANGLE IRON 30" [760mm] LONG W/2 STAINLESS STEEL STRAPS (ONE AROUND QCV).
③ PVC MAIN LINE.
④ 3" [75mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
⑤ FINISH GRADE.
⑥ QUICK COUPLING VALVE.
⑦ 19 GAUGE 1/2" [13mm] SQUARE WIRE MESH.
⑧ BRICK - 2 TOTAL.
⑨ SCHEDULE 80 PVC THREADED NIPPLE.
⑩ 10" [250mm] LONG SCHEDULE 80 PVC THREADED NIPPLE.
⑪ UPC APPROVED SCHEDULE 40 PVC TEE OR ELBOW.
⑫ SCHEDULE 80 PVC THREADED 90° ELL.
⑬ PEA GRAVEL OR 3/4" DRAIN ROCK- 4" [100mm] DEEP BELOW VALVE (NO SOIL IN VALVE BOX).

NOTE:
NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.

5 QUICK COUPLING VALVE
SCALE: NONE

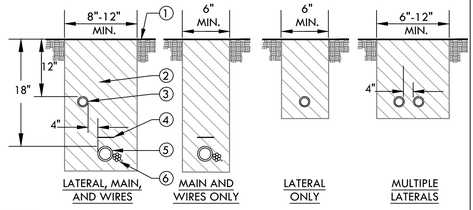


SIDE VIEW

TOP VIEW

NOTE:
1. NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET THREAD SIZE.
2. TRIM VALVE BOX LENGTH AS NECESSARY TO BE FLUSH WITH TOP OF PLANTING TILES.
3. IF NECESSARY SLOT SIDES VALVE BOX TO ALLOW PASSAGE OF PIPE THROUGH BOTTOM OF VALVE BOX.

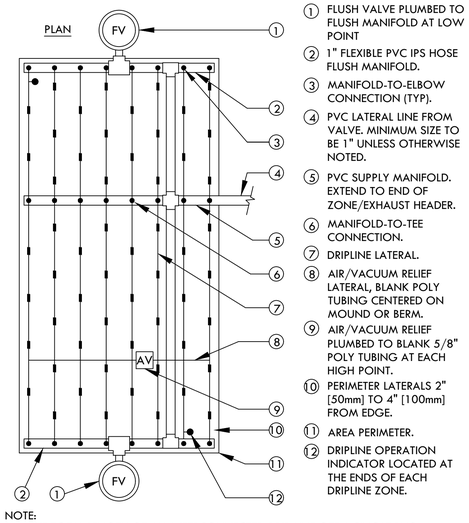
6 QUICK COUPLING VALVE-ON STRUCTURE
SCALE: NONE



NOTES:
1. ALL MAIN SUPPLY LINES AND LATERAL LINES SHALL BE PLACED IN SLEEVES UNDER PAVED SURFACES. INSTALL LOW VOLTAGE WIRES WITHIN A SEPARATE CONDUIT UNDER PAVED SURFACES. DO NOT TAPE WIRES WITHIN CONDUIT.
2. REUSE SALVAGED EXCAVATED FILL AND COMPACT TO ORIGINAL DENSITY IN LANDSCAPE AREAS. ALL OTHER AREAS SHALL BE AT 95% COMPACTION. BACKFILL MATERIAL SHALL BE THE EARTH EXCAVATED FROM THE TRENCHES, FREE FROM ROCKS (ANYTHING LARGER THAN 2"), CONCRETE CHUNKS, AND OTHER FOREIGN OR COARSE MATERIALS.
3. WHEN 12" POP-UP SPRINKLER HEADS ARE USED, INCREASE THE DEPTH OF LATERAL TO 18" AT THE SPRINKLER LOCATION ONLY.

① FINISH GRADE.
② CLEAN BACKFILL MATERIAL.
③ LATERAL LINE.
④ 3" DETECTABLE WARNING TAPE OVER MAIN LINE. INSTALL 3" ABOVE MAIN LINE. USE CHRISTY MODEL #TA-DT-3-BIRR FOR POTABLE IRRIGATION SYSTEMS OR #TA-DT-3-PRW FOR RECYCLED IRRIGATION WATER SYSTEMS
⑤ MAIN LINE.
⑥ LOW VOLTAGE CONTROL WIRES, TWO-WIRE CABLE, OR CONDUIT WITH WIRES. FOR MULTIPLE WIRES, TAPE AND BUNDLE WIRES AT 10 FT. INTERVALS. WIRING SHALL BE LAID OUT LOOSELY IN THE TRENCH.

7 TRENCHING
SCALE: NONE



① FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
② 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
③ MANIFOLD-TO-ELBOW CONNECTION (TYP).
④ PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
⑤ PVC SUPPLY MANIFOLD. EXTEND TO END OF ZONE/EXHAUST HEADER.
⑥ MANIFOLD-TO-TEE CONNECTION.
⑦ DRIPLINE LATERAL.
⑧ AIR/VACUUM RELIEF LATERAL, BLANK POLY TUBING CENTERED ON MOUND OR BERM.
⑨ AIR/VACUUM RELIEF PLUMBED TO BLANK 5/8" POLY TUBING AT EACH HIGH POINT.
⑩ PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
⑪ AREA PERIMETER.
⑫ DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

8 HLD DRIPLINE CENTER FEED LAYOUT
SCALE: NONE

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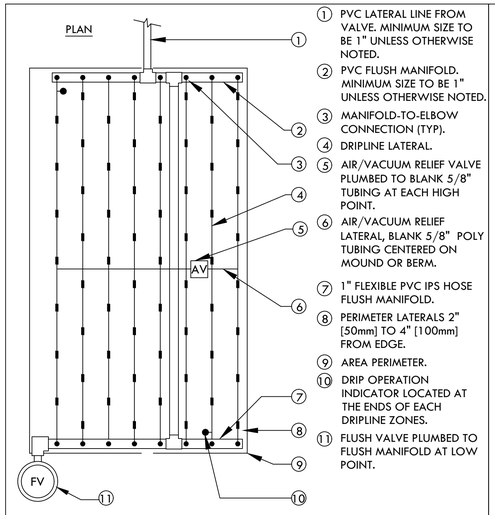
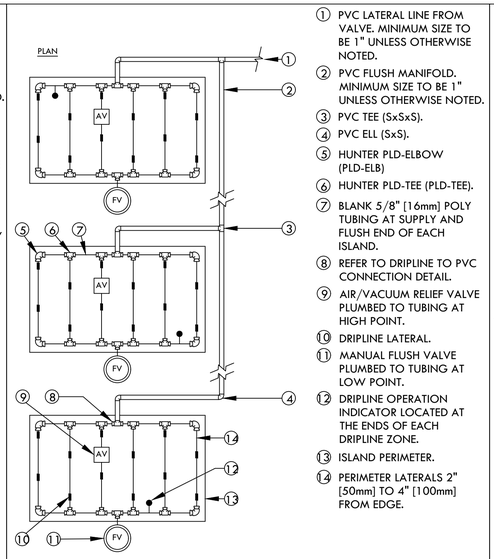


1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. DRIPLINE LATERAL.
5. AIR/VACUUM RELIEF VALVE PLUMBED TO BLANK 5/8" TUBING AT EACH HIGH POINT.
6. AIR/VACUUM RELIEF LATERAL, BLANK 5/8" POLY TUBING CENTERED ON MOUND OR BERM.
7. 1" FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
8. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
9. AREA PERIMETER.
10. DRIP OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONES.
11. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

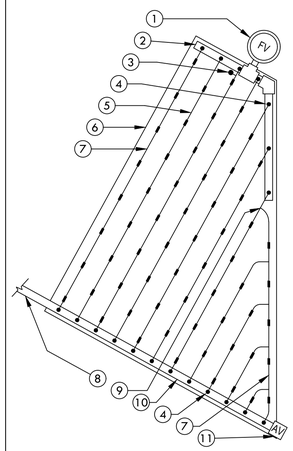
1 HLD DRIPLINE END FEED LAYOUT
SCALE: NONE



1. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
2. PVC FLUSH MANIFOLD. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
3. PVC TEE (SxSxS).
4. PVC ELL (SxS).
5. HUNTER PLD-ELBOW (PLD-ELB)
6. HUNTER PLD-TEE (PLD-TEE).
7. BLANK 5/8" [16mm] POLY TUBING AT SUPPLY AND FLUSH END OF EACH ISLAND.
8. REFER TO DRIPLINE TO PVC CONNECTION DETAIL.
9. AIR/VACUUM RELIEF VALVE PLUMBED TO TUBING AT HIGH POINT.
10. DRIPLINE LATERAL.
11. MANUAL FLUSH VALVE PLUMBED TO TUBING AT LOW POINT.
12. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
13. ISLAND PERIMETER.
14. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.

NOTE:
1. THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

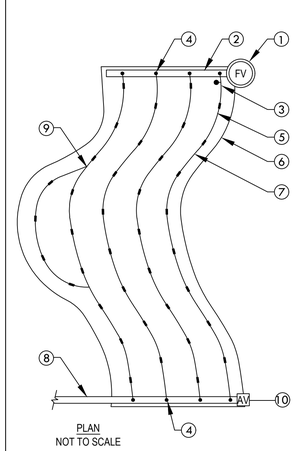
2 HLD DRIPLINE ISLAND LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC LATERAL LINE FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. PVC SUPPLY MANIFOLD.
11. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

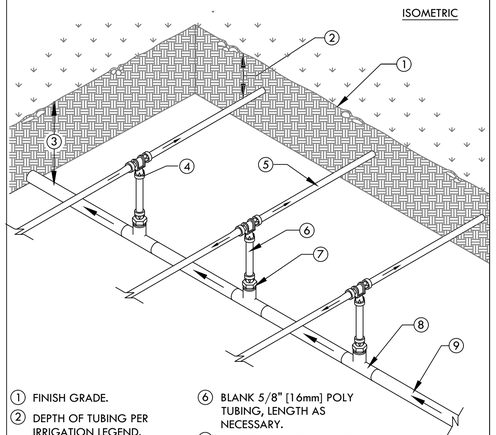
3 HLD DRIPLINE TRIANGULAR LAYOUT
SCALE: NONE



1. FLUSH VALVE PLUMBED TO FLUSH MANIFOLD AT LOW POINT
2. 1" SCH 40 PVC OR FLEXIBLE PVC IPS HOSE FLUSH/EXHAUST MANIFOLD.
3. DRIPLINE OPERATION INDICATOR LOCATED AT THE ENDS OF EACH DRIPLINE ZONE.
4. MANIFOLD-TO-ELBOW CONNECTION.
5. DRIPLINE LATERAL.
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" [50mm] TO 4" [100mm] FROM EDGE.
8. PVC SUPPLY LINE/HEADER FROM VALVE. MINIMUM SIZE TO BE 1" UNLESS OTHERWISE NOTED.
9. HUNTER PLD-TEE (PLD-TEE)
10. HUNTER PLD AIR/VACUUM RELIEF VALVE (PLD-AVR) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

NOTE:
1. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE OFF A SINGLE PVC SUPPLY LINE CONNECTION OR A SINGLE RUN OF DRIPLINE SHALL NOT EXCEED 300 FT.
2. INSTALL DRIPLINE 2-4" BELOW GRADE AND STAKE DOWN EVERY 4' OR AS REQUIRED.

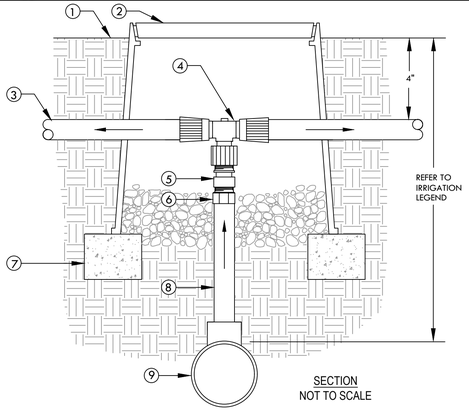
4 HLD DRIPLINE ODD CURVE LAYOUT
SCALE: NONE



1. FINISH GRADE.
2. DEPTH OF TUBING PER IRRIGATION LEGEND.
3. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND
4. HUNTER PLD-TEE (PLD-TEE)
5. DRIPLINE TUBING.
6. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
7. HUNTER PLD-MPT ADAPTER (PLD-050)
8. PVC TEE (SxSxT) WITH 1/2" [13mm] FPT OUTLET.
9. PVC LATERAL LINE FROM REMOTE CONTROL VALVE.

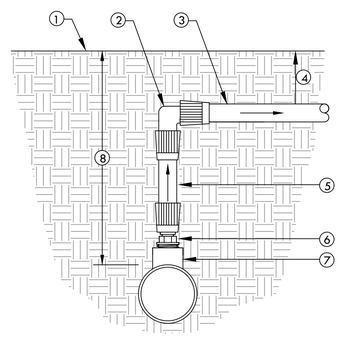
NOTE:
THE TOTAL LENGTH OF A SINGLE DRIP LINE RUN SHALL NOT EXCEED 300 FT.

5 HLD DRIPLINE CENTER FEED MANIFOLD
SCALE: NONE



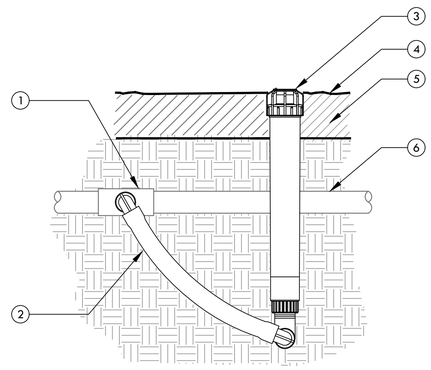
1. FINISH GRADE
2. CARSON 708 OR EQUAL. COLOR: BLACK. USE PURPLE FOR RECYCLED WATER SYSTEMS.
3. DRIPLINE TUBING
4. HUNTER PLD-TEE X 1/2" FPT ADAPTER
5. TORO 1/2" CHECK VALVE (PCV-500)
6. 1/2" SCH 40 MALE ADAPTER.
7. BRICK (1 OF 2)
8. 1/2" SCH 40 PVC (LENGTH AS REQUIRED)
9. PVC LATERAL LINE SUPPLY. MINIMUM SIZE TO BE 1" UNLESS SIZED DIFFERENTLY ON DRAWINGS. USE SCH 40 PVC 1"x1"x1/2" TEE OR 90° ELBOW.

6 DRIPLINE TO PVC CONNECTION
SCALE: NONE



1. FINISH GRADE
2. HUNTER PLD-ELBOW (PLD-ELB)
3. DRIPLINE TUBING
4. DEPTH OF TUBING PER IRRIGATION LEGEND.
5. BLANK 5/8" [16mm] POLY TUBING, LENGTH AS NECESSARY.
6. HUNTER PLD-MPT ADAPTER (PLD-050)
7. SCH 40 PVC TEE (SxSxT) WITH 1/2" FPT OUTLET.
8. DEPTH OF PVC LATERAL LINE PER IRRIGATION LEGEND

7 DRIPLINE MANIFOLD TO ELBOW CONNECTION
SCALE: NONE



1. UPC APPROVED SCHEDULE 40 PVC TEE, ELBOW OR BARB x THREAD DRIP FITTING TEE OR ELBOW WITH 3/4" OUTLET.
2. 1/2" X 3/4" X 6" HUNTER SWING JOINT (SJ-7506)
3. ECO INDICATOR
4. FINISHED GRADE
5. MULCH
6. PVC LATERAL PIPE OR DRIPLINE

8 DRIPLINE OPERATION INDICATOR
SCALE: NONE

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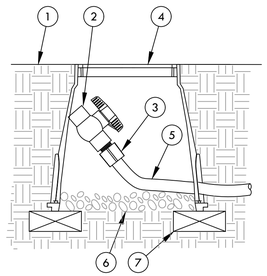
JOB: 0000

SHEET:

IRRIGATION DETAILS

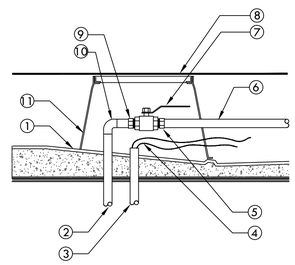
I6.0



NOTE:
ALLOW A MINIMUM OF PVC HOSE IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

1. FINISH GRADE
2. 1/2" SCH 40 THREADED BALL VALVE.
3. 1/2" SCH 40 MALE ADAPTER.
4. 6" ROUND PLASTIC VALVE BOX.
5. 1" IPS PVC HOSE FROM EXHAUST HEADER.
6. PEA GRAVEL SUMP (6" DEEP).
7. BRICK (1 OF 2)

2 DRIPLINE-FLUSH POINT
SCALE: NONE



1. SLOPED ROOF BELOW PEDESTAL SYSTEM
2. COPPER PIPE THROUGH STRUCTURE PROVIDED BY PLUMBING CONTRACTOR. WATERPROOF ALL PENETRATIONS.
3. CONDUIT FOR CONTROL WIRES THROUGH STRUCTURE PROVIDED BY ELECTRICAL CONTRACTOR. WATERPROOF ALL PENETRATIONS
4. TWO-WIRE CABLE OR CONTROL WIRES
5. SCH 40 PVC MALE ADAPTER.
6. PVC MAIN LINE TO REMOTE CONTROL VALVES.
7. BRONZE BALL VALVE.
8. ROOF DECK PAVERS
9. COPPER MALE ADAPTER.
10. COPPER 90° ELBOW.
11. 10" ROUND PLASTIC VALVE BOX. CUT BOX TO FIT BELOW PEDESTAL PAVER SYSTEM

3 ON STRUCTURE STUB-OUT WITH BRONZE BALL VALVE
SCALE: NONE

IRRIGATION WATER USE CALCULATIONS

WATER USE ESTIMATION CONTROLLER "A"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	1,079	400	10,357	0.03	13.85	17%
2	GROUNDCOVER	LOW	0.3	BUBBLER	0.81	0.370	4,915	1,820	47,177	0.14	63.07	77%
3	TREES	LOW	0.3	BUBBLER	0.81	0.370	400	148	3,839	0.01	5.13	6%
					TOTALS		6,394	2,368	61,373	0.19	82.05	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME										
NA				1							0%
				TOTALS	0						0%

MAWA	GALLONS/YR	74,568
	ACRE FEET/YR	0.23
	HCF/YR	99.69

ETWU	GALLONS/YR	61,373
	ACRE FEET/YR	0.19
	HCF/YR	82.05

SITE IRRIGATION EFFICIENCY	SITE PLANT FACTOR	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	2,368
TOTAL AREA	6,394
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR

MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR

ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

WATER USE ESTIMATION CONTROLLER "B"

WATER TYPE	POTABLE
SITE ETO=	41.8

REGULAR LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME	PLANT WATER USE TYPE	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY	ETAF (PF/IE)	AREA (SQ. FT) (HA)	ETAF X AREA (HA)	ETWU (GAL/YR)	ACRE FEET/ YEAR	HCF/ YEAR	PERCENTAGE OF LANDSCAPE
1	SHRUBS	LOW	0.3	BUBBLER	0.81	0.370	160	59	1,536	0.00	2.05	60%
2	TREES	LOW	0.3	BUBBLER	0.81	0.370	105	39	1,008	0.00	1.35	40%
					TOTALS		265	98	2,544	0.01	3.40	100%

SPECIAL LANDSCAPE AREAS

HYDROZONE #	HYDROZONE NAME										
NA				1							0%
				TOTALS	0						0%

MAWA	GALLONS/YR	3,090
	ACRE FEET/YR	0.01
	HCF/YR	4.13

ETWU	GALLONS/YR	2,544
	ACRE FEET/YR	0.01
	HCF/YR	3.40

SITE IRRIGATION EFFICIENCY	SITE PLANT FACTOR	MAWA COMPLIANT
81.0%	0.30	YES

ETAF Calculations	
REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	98
TOTAL AREA	265
AVG. ETAF	37.04%

MAWA FORMULA
MAXIMUM APPLIED WATER ALLOWANCE (MAWA) GALLONS PER YEAR

MAWA = (ETo)(0.62)[(LA x 0.45) + (0.55 x SLA)]

ETo = REFERENCE EVAPOTRANSPIRATION
0.55= ET ADJUSTMENT FACTOR
LA=LANDSCAPED AREA (SQUARE FEET)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

ETWU FORMULA
ESTIMATED TOTAL WATER USE (ETWU) GALLONS PER YEAR

ETWU= ((ETO)(.62)(ETAF x LA))

ETo = REFERENCE EVAPOTRANSPIRATION
PF = PLANT FACTOR FOR HYDROZONES
HA = HYDROZONE AREA (SQ.FT)
0.62 = CONVERSION FACTOR (GALLONS/SQ.FT/YR)

IE = IRRIGATION EFFICIENCY (0.81)-BUBBLER/DRIP

IE = IRRIGATION EFFICIENCY (0.75)-ROTORS/SPRAY

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JOB: 0000

SHEET:

IRRIGATION DETAILS

I7.0

CITY OF BERKELEY - CITY CLERK
2025 MAR 19 PM 4:58
4:58 P.M

Greetings to all departments and persons involved,

I grew up in San Francisco, and have held a long-standing affinity towards Berkeley. I am briefly visiting the Bay from other coast, and came to learn of these development projects. I understand they are part of the Density Bonus plan from California state.

While I can understand thee impetus for these new builds, I believe their height and number is excessive. One building remains open for appeal, located at 1950-1998 Shattuck Ave. I hope that this new building can be shortened in height or removed from group of buildings. I posit that 6 of the 7 new constructions will be sufficient for the city and its peoples needs. I know that two other builds are also nearing 30-stories. 2190 Shattuck Ave is planned for 25 stories, and 2128 Oxford St is planned for 26 stories. 1950-98 Shattuck Ave is planning 28 stories, and I really hope that plan can be amended to a shorter build, or no build.

→ (1)

These 3 tallest buildings are far beyond the height of anything else in Berkeley; besides the Campanile. I am concerned for the way such monolithic structures will affect the city's culture and lifestyle. Views will be blocked, shade made, wind funneled, and congestion condensed. I fear impacts from complications of these large buildings have the potential to forever alter the ethos and livability of this great city.

I can only hope that each of these new buildings are designed in a way that is tasteful and considerate, as they will be the new skyline. I would be most disappointed if buildings were erected in a bland style, as they are replacing many multi-generational institutions of culture and business. It is most good that the buildings will operate as mixed-use and (very) low-income housing. I hope the buildings might also be beautiful to look at, while environmentally conscious as well. Maybe something like the photos I've seen of "green-buildings" in Singapore, that incorporate plants into the facade

and roof of buildings.

I plan to contact affiliates at the state level, and start a process of appeal with them as well. I understand that only so much can be done from a local level about matters coming down stream from the state's superceding powers.

I do hope that more meetings and town-halls will be held in discussion around compromises which might be fit to satisfy a majority of civilians and operators involved.

I've decided to pay the full appeal fee, while still collecting [petition] signatures. I figure money for the city is good, and I can source a greater show of community contest to these plans by canvassing outside the 300-foot radius of 1950-98 Shattuck Ave. I will be leaving some QR codes for digital signatures around town - as I am about to depart back East.

Thank you for your time in reviewing

this appeal. Please keep me abreast of any gatherings that will be held in response, so that I may travel to them, or virtually attend.

Kind Regards,

ZADEN LIPMAN

Digital Petition: bit.ly/28FlrShattuckPetition

(4)

City Clerk Department

March 21, 2025

Zaden Lipman
8970 Old A1A
Saint Augustine, FL 32080

RE: 1950-1998 Shattuck Avenue – Appeal ZAB Decision Use Permit #2023-0040

Dear Appellant:

This will acknowledge receipt of your appeal of the Zoning Adjustments Board decision of February 27, 2025, approving the following permits.

A. Zoning Permits Required:

- Use Permit under Berkeley Municipal Code (BMC) Section 23.326.070(A) to demolish non-residential buildings
- Use Permit under BMC Section 23.204.020(A) to construct a new mixed-use development
- Use Permit under BMC Section 23.204.020(A) to construct dwelling units
- Use Permit under BMC Section 23.204.030(A)(1) to create new floor area of 10,000 square feet or more
- Use Permit under BMC Section 23.204.130(E)(2) to construct a building that exceeds the district height limit, and that is over 75 feet but not more than 120 feet
- Use Permit under BMC Section 23.204.130(E)(3)(b) to modify the front, side, and
- rear setback requirements and to exceed 120 feet in width in diagonal measurement above 120 feet in height
- Administrative Use Permit under BMC Section 23.304.050(A) to allow architectural projections to exceed district height limits
- Administrative Use Permit under BMC Section 23.302.070(E)(2) for a food service establishment over 3,000 square feet in area
- Use Permit pursuant to BMC Section 23.310.020(B) to begin alcoholic beverage service (distilled spirits incidental to food service).
- Administrative Use Permit pursuant to BMC Section 23.204.020(A) for Amplified Live Entertainment in a commercial district
- Administrative Use Permit pursuant to BMC Section 23.302.020(D)(3) for outdoor use not abutting a residential district.

B. **Concessions / Waivers Requested Pursuant to State Density Bonus Law (California Government Code Section 65915):**

- Concession from BMC Chapter 23.316 to allow an exemption from the Percentage for Public Art on Private Projects in-lieu fee

- Waiver of BMC Section 23.04.130(E)(1) to exceed building height limits – to be 317' to roof (plus 5' parapet), where 120 feet is the limit (plus 5-foot parapet, by right, with a use permit)
- Waiver of BMC Section 23.204.130(E)(3)(a) to reduce the front setback (University Ave, Shattuck Ave, and Berkeley Way) requirement to 0 feet, where 15 feet is the minimum, above 75-foot building height
- Waiver of BMC Section 23.204.130(E)(3)(a) to reduce the interior left side setback requirement to 10 feet, where 15 feet is the minimum, above 75-foot building height and more than 65 feet from the frontage
- Waiver of BMC Section 23.204.130(E)(3)(d)(i) to exceed diagonal width, to be 239 feet, 10 inches, where 120 feet is the maximum, above 120' in height
- Waiver of BMC Section 23.204.130(E)(4) reduce usable open space minimum to 12,491 square feet, where 47,920 square feet is required

Your appeal has been referred to the Planning Department.

The Planning Department will transmit to Council a statement setting forth the reasons for the Zoning Adjustments Board decision. This report, as well as a copy of the appeal, will appear on the Council agenda of **June 3, 2025**.

This meeting of the Council will commence at 6:00 p.m. and will be held in the School District Board Room located at 1231 Addison Street. The meeting will be conducted in a hybrid model with both in-person attendance and virtual participation. Once posted, the agenda for this meeting will include a link for public participation using Zoom video technology, as well as any health and safety requirements for in-person attendance.

Pursuant to the City Council Rules of Procedure, this appeal will appear on the City Council's agenda as a public hearing. Time shall be provided for five-minute presentations each by the appellant and applicant. Where the appellant is not the applicant, the appellants collectively shall have five minutes to comment and the applicant shall have five minutes to comment. Where the appellant is the applicant, the applicant/appellant shall have five minutes to comment and the persons supporting the action of the board or commission on appeal shall have five minutes to comment.

After the conclusion of the five-minute comment periods, members of the public may comment on the appeal pursuant to the Rules of Procedure in effect for the Council meeting.

The Council will then deliberate and determine to do one of three things: 1) continue the public hearing; 2) based on the record of the Council's consideration and hearing, reverse or affirm, wholly or partly, or modify any decision, determination, condition or requirement of the Board's original action; or 3) remand the matter to the Board to reconsider the application, or any revisions thereto submitted after the Board's action.

Communications to the City Council that are received by the City Clerk pursuant to the following deadlines will be accepted and distributed as follows:

Submission Deadline	Distributed	Packet
May 20, 2025, by 5:00 p.m. (Tuesday)	Twelve days before the meeting (Thursday)	Agenda Packet
May 27, 2025, by 5:00 p.m. (Tuesday)	Five days before the meeting (Thursday)	Supplemental 1
June 2, 2025, 12:00 p.m. (Monday)	By 5:00 pm the day before the meeting (Monday)	Supplemental 2

Communications should be submitted directly to the City Clerk to ensure receipt by all Councilmembers. Electronic communications may be submitted to council@berkeleyca.gov for immediate distribution to the Mayor, each City Councilmember, and the City Clerk for inclusion in the official record. Please note that for communications submitted in hardcopy, if the communication includes maps or photos or any other material not reproducible on a copy machine, fifteen copies should be provided to the City Clerk.

Please note that Berkeley's Lobbyist Registration Act (Berkeley Municipal Code Chapter 2.09) is effective beginning on January 1, 2020. Information and resources regarding the Lobbyist Registration Act are available from the City's website at: https://berkeleyca.gov/your-government/lobbyist-registration

If you have any additional questions regarding this matter, please do not hesitate to contact me at (510) 981-6908.

A copy of the staff report and a City Council agenda will be available from this office upon request after 4:00 p.m. on Thursday, May 22, 2025 or can be viewed on our website at: https://berkeleyca.gov/your-government/city-council/city-council-agendas.

Sincerely,

Rose Thomsen

Rosé Thomsen
Deputy City Clerk

cc: Jordan Klein, Director of Planning
Anne Hersch, Land Use Planning Manager
Sharon Gong, Staff Planner
Farimah Brown, City Attorney
Isaiah Stackhouse (Applicant)
1974 Shattuck Avenue, LLC (Owner)

NOTICE CONCERNING YOUR LEGAL RIGHTS: If you object to a decision by the City Council to approve or deny an appeal, the following requirements and restrictions apply: 1) Pursuant to Code of Civil Procedure Section 1094.6 and Government Code Section 65009(c)(1)(E), no lawsuit challenging a City decision to deny or approve a Zoning Adjustments Board decision may be filed and served on the City more than 90 days after the date the Notice of Decision of the action of the City Council is mailed. Any lawsuit not filed within that 90-day period will be barred. 2) Pursuant to Government Code Section 66020(d)(1), the 90-day protest period for any fees, dedications, reservations, or other exactions included in any permit approval begins upon final action by the City, and that any challenge must be filed within this 90-day period. 3) In any lawsuit that may be filed against a City Council decision to approve or deny a Zoning Adjustments Board decision, the issues and evidence will be limited to those raised by you or someone else, orally or in writing, at a public hearing or prior to the close of the last public hearing on the project.