

ALLSTON CORPORATION YARD BUILDING "H"

1326 ALLSTON WAY

PWT1CB2211 - PERMIT SET - 10.01.2024

CITY OF BERKELEY

NOLL & TAM
ARCHITECTS

729 Heinz Avenue
Berkeley, CA 94710
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ARCHITECTS SEAL

CITY OF BERKELEY
ALLSTON CORPORATION
YARD BUILDING
"H"

1326 ALLSTON WAY

PERMIT SET

ISSUE DATE 10.01.2024

N&T JOB # 22222.00

REVISIONS	DATE	DESCRIPTION
1	5/9/23	Revision 1
2	9/23/24	Revision 2

SHEET TITLE
COVER SHEET

BID ALT #1:
ENTIRE SCOPE
OF BUILDING "H"

SHEET NUMBER

GO.00

FIRE SAFETY INFORMATION

GENERAL CONTRACTOR AND SUBCONTRACTORS TO COMPLY WITH CFC CHAPTER 33 FOR SAFEGUARDS DURING CONSTRUCTION:

- Smoking shall be prohibited except in designated areas with approved ashtrays. All other areas must have "No Smoking" signage posted around construction areas in accordance with CFC§310. [CFC§3304.1]
- Combustible debris shall not be allowed to accumulate within building. Combustible debris, rubbish and waste material shall be removed from building at the end of each shift of work. [CFC §3304.2]
- Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a listed disposal container. [CFC §3304.2.4]
- Operations involving the use of cutting and welding shall be done in accordance with Chapter 35. [CFC §3304.6]
- During construction, the construction site or area must be thoroughly cleaned at the end of each work day in order to provide firefighter access in the building in an event of a fire.

BUILDING INFORMATION

ALLSTON CORPORATION YARD STORAGE BUILDING "H" INFORMATION:
BUILDING OCCUPANCY TYPE: UTILITY AND MISCELLANEOUS GROUP "U" PER CBC 312
BUILDING CONSTRUCTION TYPE: "S"
ALLOWABLE BUILDING AREA: 5,500 S.F.
FIRE SPRINKLER: NONE
FIRE ALARM: NONE
BUILDING SQUARE FOOTAGE, APPROPRIATELY 2,268 S.F.

THIS PROJECT SHALL COMPLY WITH THE 2022 CALIFORNIA BUILDING, MECHANICAL, ELECTRICAL, PLUMBING, ENERGY, HISTORICAL, EXISTING AND GREEN BUILDING STANDARDS CODE AS AMENDED BY TGHE CITY OF BERKELEY, AND OTHERWISE APPLICABLE.

THIS PROJECT SHALL COMPLY WITH THE 2022 CALIFORNIA FIRE CODE.

PROJECT SUMMARY

THE PROJECT IS RENOVATION OF AN EXISTING, OPEN-SIDED, 2,268 SQUARE-FOOT STORAGE BUILDING.

THE PROJECT SCOPE INCLUDES, BUT IS NOT LIMITED TO: PARTIAL REMOVAL OF AN EXISTING ROOF OVERHANG, NEW ROOFING, AND IMPROVEMENTS TO THE ELECTRICAL DISTRIBUTION SYSTEM AND REPLACEMENT OF EXISTING LIGHTING. THE EXISTING FENCED AND GATED ENLCOSURES WILL BE REMOVED AND REPLACED.

SEE REFERENCE SHEETS G1.02, G1.03 AND G1.04 INCLUDED HEREIN, FOR ACCESSIBILITY IMPROVEMENTS TO BUILDING 'B' GREEN ROOM LOCKER ROOMS.

CONTRACTOR WILL BE RESPONSIBLE FOR PREPPING ALL AREAS FOR NEW SCOPE OF WORK INCLUDING PATCHING AND REPAIRING EXISTING CONDITIONS WHERE AFFECTED BY ANY AND ALL DEMOLITION WORK.

THE WORK TO BE PERFORMED UNDER THIS CONTRACT INCLUDES THE FURNISHING OF ALL LABOR, MATERIALS, EQUIPMENT, TRANSPORTATION, SERVICES, PERMITS, TEMPORARY CONTROLS AND CONSTRUCTION FACILITIES, AND ALL GENERAL CONDITIONS, SEISMIC REQUIREMENTS, GENERAL REQUIREMENTS AND INCIDENTALS REQUIRED TO COMPLETE THE WORK ON THE PROJECT IN ITS ENTIRETY AS DESCRIBED IN THE CONTRACT DOCUMENTS.

LOCAL STREET MAP



Electrical

Capital Engineering
11020 Sun Center Drive
Suite 100
Rancho Cordova CA 95670
Tel: (916) 851-3500

Structural

IDA Structural Engineers Inc.
1629 Telegraph Avenue
Suite 300
Oakland CA 94612-2114
Tel: (510) 834-1629

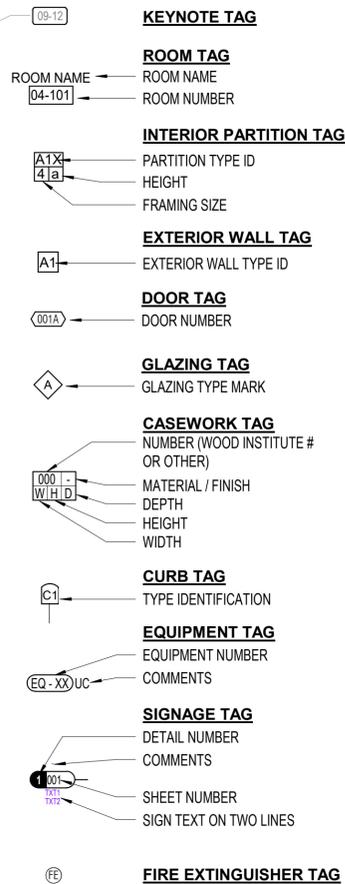
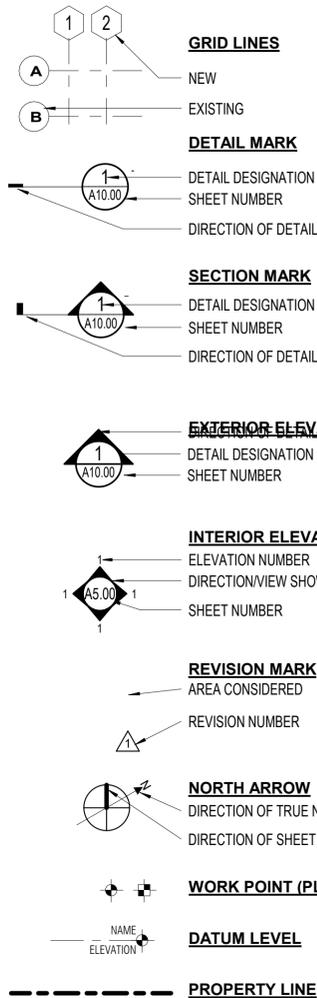
Architect

Noll & Tam Architects
729 Heinz Ave
Berkeley, CA 94710
Tel: 510.542.2200
Fax: 510.542.2201

Client

City of Berkeley
Public Works Department
1947 Center Street
Tel: (510) 981 6300

SYMBOLS LEGEND



GENERAL NOTES

- WORK SHALL MEET OR EXCEED THE MINIMUM STANDARDS OF APPLICABLE CODES AND ORDINANCES AND SHALL NOT BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THOSE CODES.
- CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PROJECT SPECIFICATIONS.
- VERIFY ALL DIMENSIONS AND INSPECT CONDITION OF IN-PLACE CONSTRUCTION BEFORE STARTING WORK. PROCEEDING WITH THE WORK SHALL CONSTITUTE ACCEPTANCE OF CONDITIONS.
- CONTRACTOR SHALL EXAMINE THE DOCUMENTS AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO THE START OF WORK.
- THE CONTRACTOR AND ALL SUBCONTRACTORS ARE REQUIRED TO VISIT AND INSPECT THE SITE PRIOR TO CONSTRUCTION OR ORDERING ANY MATERIALS.
- ITEMS MARKED "NIC" ARE NOT IN CONTRACT. SUCH ITEMS ARE INCLUDED IN THE DOCUMENTS WHEN CONTRACTOR'S COORDINATION IS REQUIRED OR FOR CLARIFICATION OF PROJECT LIMITS.
- DETAILS MARKED "TYPICAL" SHALL APPLY IN ALL SIMILAR CASES, UON.
- DIMENSIONS
 - IN NO CASE SHALL WORKING DIMENSIONS BE SCALED FROM THE DRAWINGS.
 - ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO PROCEEDING WITH CONSTRUCTION.
 - ELEVATION MARKERS REFER TO THE TOP OF THE SLAB ON GRADE DATUM. FLOOR AND ROOF ELEVATIONS NOTED ARE TO TOP OF STRUCTURAL ASSEMBLY, UON. WALL HEIGHT ELEVATIONS ARE TO TOP OF FRAMING, UON.
 - STUD WALLS: ALL DIMENSIONS ARE TO THE FACE OF STUD, UON.
 - CEILING HEIGHT DIMENSIONS: ARE FROM FINISHED FLOOR TO FINISHED FACE OF CEILING, UON.
 - OPENINGS: DOOR DIMENSIONS ARE TO THE EDGE OF DOOR PANEL, UON. LOCATE UNDIMENSIONED DOORS 4" FROM FINISHED FACE OF INTERSECTING PARTITION TO HINGE EDGE OF DOOR PANEL.
 - ALL DIMENSIONS NOTED "CLEAR" OR "CLR" INDICATE DIMENSION FROM FACE OF FINISH TO FACE OF FINISH OR OBJECT, UON AND MUST BE STRICTLY MAINTAINED.
 - ALL DIMENSIONS NOTED "VERIFY" OR "VIF" ARE TO BE CHECKED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY VARIANCE FROM THE REQUIRED DIMENSIONS MUST BE BROUGHT IMMEDIATELY TO THE ARCHITECT'S ATTENTION.
 - COORDINATE WITH EQUIPMENT CONTRACTORS FOR ROUGH-IN DIMENSIONS AND TEMPLATES.
- EXISTING BUILDING AND SITE DOCUMENTATION IS BASED ON AVAILABLE DOCUMENTATION PROVIDED BY THE OWNER AND LIMITED SITE OBSERVATION INVESTIGATIONS. AS BUILT CONDITIONS MAY VARY. CONTRACTOR IS TO USE CAUTION IN DEMOLITION AND IS TO NOTIFY ARCHITECT IMMEDIATELY IF ANY VARIATIONS OR DISCREPANCIES ARE UNCOVERED.
- CONTRACTOR TO MAINTAIN SAFE & COMPLIANT EGRESS FROM OCCUPIED AREAS TO THE PUBLIC WAY OR TO SAFE DISPERSAL AREAS DURING CONSTRUCTION ACTIVITIES.
- PROTECT EXISTING CONDITIONS TO REMAIN. CONFIRM W/ ARCHITECT AND/OR OWNERS REPRESENTATIVE ITEMS TO BE SALVAGED PRIOR TO START OF DEMOLITION.
- PROTECT ALL (E) BUILDING & SITE INFRASTRUCTURE TO REMAIN.
- THE DRAWINGS INDICATE THE GENERAL EXTENT OF CONSTRUCTION NECESSARY FOR THE WORK BUT ARE NOT INTENDED TO BE ALL-INCLUSIVE. ALL DEMO AND NEW WORK NECESSARY FOR A COMPLETED PROJECT IN ACCORDANCE W/ THE CONTRACT DOCUMENTS SHALL BE INCLUDED REGARDLESS OF WHETHER OR NOT SHOWN IN THE CONTRACT DOCUMENTS. THE INTEGRITY AND CONTINUITY OF ALL EXISTING FIRE, THERMAL, ACOUSTIC, & WEATHER BARRIER ASSEMBLIES IS TO BE STRICTLY MAINTAINED. SELECTIVE REMOVAL, REPLACEMENT, PATCHING & REPAIR SHALL BE PROVIDED TO MAINTAIN INTEGRITY OF EXISTING ASSEMBLIES AND FINISHES TO MATCH EXISTING ADJACENT ASSEMBLIES AND FINISHES.
- PROVIDE TEMPORARY BARRIERS FOR SAFETY, SECURITY & CLEANLINESS IN COORDINATION WITH CITY OF BERKELEY CORPORATION YARD STAFF

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TOTAL SHEETS:	21

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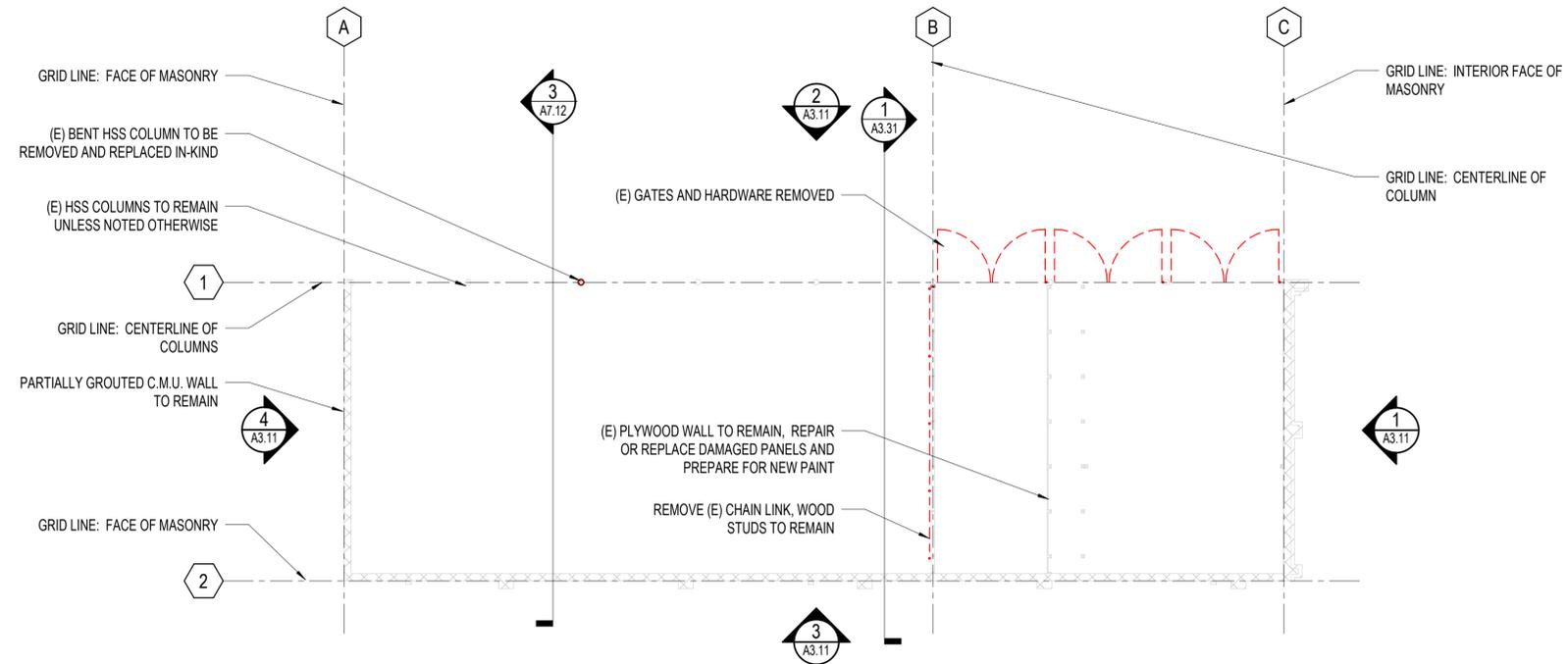
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G0.01

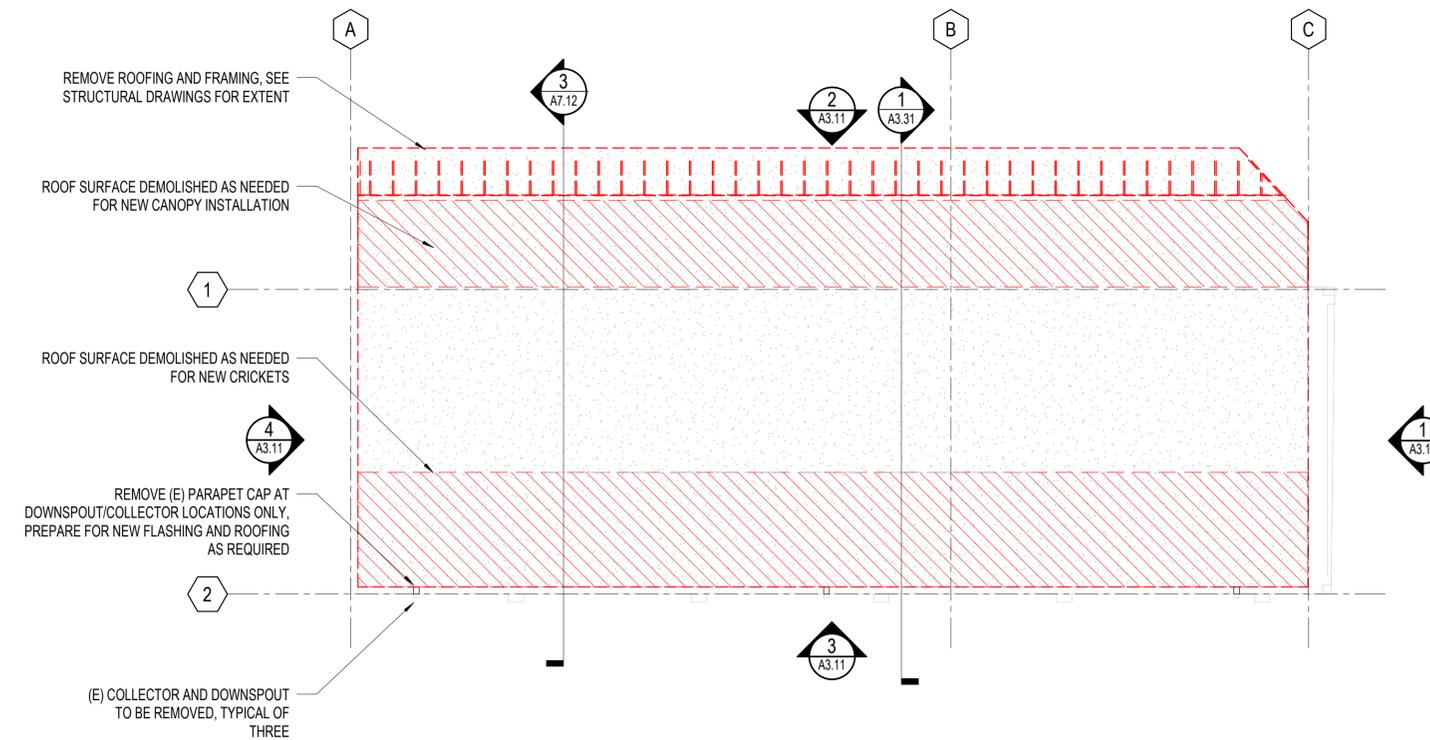
ABBREVIATIONS

&	AND	CEM	CEMENT/CEMENTITIOUS	DN	DOWN	FOC	FACE OF CONCRETE	HM	HOLLOW METAL	MTD	MOUNTED	PT	POINT/PRESSURE TREATED	SH	SINGLE HUNG	TO	TOP OF
(E)	EXISTING	CER	CERAMIC	DR	DOOR	FOF	FACE OF FINISH	HORIZ	HORIZONTAL	MTL	METAL	PTD	PAINTED	SHT	SHEET	TOC	TOP OF CONCRETE/CURB
(N)	NEW	CFMF	COLD FORMED METAL FRAMING	DS	DOWNSPOUT	FOS	FACE OF STUD	HR	HOUR	MUL	MULLION	PVC	POLYVINYLCHLORIDE	SHTG	SHEATHING	TOP	TOP OF PAVING
@	AT	CI	CAST IRON	DTL	DETAIL	FR	FIRE RESISTANT/FIRE	HT	HEIGHT	N	NORTH	QTY	QUANTITY	SIM	SIMILAR	TOS	TOP OF STEEL
AB	ANCHOR BOLT	CJ	CONTROL JOINT	DWG	DRAWING	FRP	FIBERGLASS REINFORCED	HVAC	HEATING VENTILATION & AIR	NA	NOT APPLICABLE	R	RISER	SLD	SEE LANDSCAPE DRAWINGS	TOW	TOP OF WALL
AC	ASPHALTIC CONCRETE	CLG	CEILING	DWR	DRAWER	FRP	FIBERGLASS REINFORCED	ID	INSIDE DIAMETER	NIC	NOT IN CONTRACT	RAD	RADIUS	SMD	SEE MECHANICAL DRAWINGS	TRANS	TRANSPARENT
ACC	ACCESS	CLKG	CAULKING	E	EAST	FRT	FIRE RETARDANT TREATED	IF	INSIDE FACE	NO	NUMBER	RD	ROOF DRAIN	SOG	SLAB ON GRADE	TS	TUBE STEEL
ACOUS	ACOUSTICAL	CLO	CLOSET	EA	EACH	FSP	FIBERGLASS SANDWICH PANEL	INC	INCANDESCENT	NOM	NOMINAL	REF	REFERENCE	SP	SPACE	TYP	TYPICAL
ACT	ACOUSTIC CEILING TILE	CLR	CLEAR	EJ	EXPANSION JOINT	FT	FOOT/FEET	INCL	INCLUDE/INCLUDING	NTS	NOT TO SCALE	REFR	REFRIGERATOR	SPA	SANDWICH PANEL ASSEMBLY	UON	UNLESS OTHERWISE NOTED
AD	AREA DRAIN	CMU	CONCRETE MASONRY UNIT	ELEC	ELECTRICAL	FTG	FOOTING	INCL	INCLUDE/INCLUDING	OA	OVERALL	REG	REGISTER	SPD	SEE PLUMBING DRAWINGS	UR	URINAL
ADDL	ADDITIONAL	CNTR	COUNTER	ELEV	ELEVATION/ELEVATOR	FURN	FURNITURE	INSUL	INSULATION	OC	ON CENTER	REINF	REINFORCE/REINFORCING	SPEC	SPECIFICATION	VCT	VINYL COMPOSITION TILE
ADJ	ADJACENT/ADJUSTABLE	CO	CLEAN OUT	ENLG	ENLARGED	FX	FIXED	INT	INTERIOR	OCC	OCCUPANT	REQD	REQUIRED	SQ	SQUARE	VENT	VENTILATION
AESS	ARCHITECTURAL EXPOSED STRUCTURAL STEEL	COL	COLUMN	EOS	EDGE OF SLAB	GA	GAUGE	JAN	JANITOR	OD	OUTSIDE DIAMETER/OVERFLOW DRAIN	REQT	REQUIREMENTS	SS	STAINLESS STEEL	VERT	VERTICAL
AFF	ABOVE FINISHED FLOOR	CONC	CONCRETE	EQ	EQUAL	GB	GRAB BAR	JBOX	JUNCTION BOX	OF	OUTSIDE FACE	RES	RESILIENT	SSD	SEE STRUCTURAL DRAWINGS	VEST	VESTIBULE
AGG	AGGREGATE	CONN	CONNECTION	EP	EQUIP	GALV	GALVANIZED	JST	JOIST	OFI	OWNER FURNISHED CONTRACTOR INSTALLED	REV	REVISION	SSGD	SEE SIGNAGE DRAWINGS	VIF	VERIFY IN FIELD
ALT	ALTERNATE	CONT	CONTINUOUS	EQUIP	EQUIPMENT	GB	GRAB BAR	JT	JOINT	OPD	OVERFLOW DRAIN	RM	ROOM	SS	SERVICE SINK	W	WEST / WIDTH / WIDE
ALUM	ALUMINUM	CONTR	CONTRACTOR	EWC	ELECTRIC WATER COOLER	GC	GENERAL CONTRACTOR	LAM	LAMINATE	OPNG	OPENING	RO	ROUGH OPENING	SSL	STAINLESS STEEL	W	WITH
ANOD	ANODIZED	CORR	CORRIDOR	EXH	EXHAUST	GFI	GROUND FAULT INTERRUPT	LAV	LAVATORY	OFF	OFFICE	RWL	RAIN WATER LEADER	STD	STANDARD	W/O	WITHOUT
APPROX	APPROXIMATE	CPT	CARPET	EXP	EXPANSION	GI	GALVANIZED IRON	LB	LAG BOLT	OP	OPERABLE	S	SEE TELECOM DRAWINGS	STED	SEE TELECOM DRAWINGS	WC	WATER CLOSET
AV	AUDIO VISUAL	CSMT	CASEMENT	EXT	EXTERIOR	GL	GLASS/GLAZING	LF	LINEAR FEET	OPNG	OPENING	SASF	SELF ADHERING SHEET FLASHING	STL	STEEL	WD	WOOD
BD	BOARD	CTR	CENTER	FA	FIRE ALARM	GLAM	GLUE LAMINATED	LKR	LOCKER	OPP	OPPOSITE	SASM	SELF ADHERING SHEET MEMBRANE	STOR	STORAGE	WH	WATER HEATER
BLDG	BUILDING	CTSCK	COUNTERSINK	FD	FLOOR DRAIN	GR	GRADE	LT	LIGHT	OPP HD	OPPOSITE HAND	SASM	SELF ADHERING SHEET MEMBRANE	STRUC	STRUCTURAL	WIN	WINDOW
BLK	BLOCK	D	DEPTH	FE	FIRE EXTINGUISHER	GSM	GALVANIZED SHEET METAL	MAS	MASONRY	PA	PUBLIC ADDRESS	SC	SOLID CORE	SUSP	SUSPENDED	WO	WHERE OCCURS
BLKG	BLOCKING	DBL	DOUBLE	FEC	FIRE EXTINGUISHER CABINET	GWB	GYPSSUM WALL BOARD	MATL	MATERIAL	PCP	PORTLAND CEMENT PLASTER	SCD	SEE CIVIL DRAWINGS	SYS	SYSTEM	WP	WORK POINT
BM	BEAM	DEPT	DEPARTMENT	FHC	FIRE HOSE CABINET	GYP	GYPSSUM	MAX	MAXIMUM	PL	PLATE	SCHED	SCHEDULE	T	TREAD	WR	WATER RESISTANT
BO	BOTTOM OF	DF	DOUGLAS FIR/DRINKING	FIN	FINISH	H	HIGH / HEIGHT	MB	MACHINE BOLT	PLM	PLASTIC LAMINATE	SE	STRUCTURAL ENGINEER	T&G	TONGUE & GROOVE	WSC	WOOD SOLID CORE
BOT	BOTTOM	FIN FLR	FINISH FLOOR	FIXT	FIXTURE	HC	HOLLOW CORE	MECH	MECHANICAL	PLAS	PLASTIC	SEC	SECTION	TBD	TO BE DETERMINED	WT	WEIGHT
BUR	BUILT UP ROOF	FLR	FLOOR	HD	HEADER	HD	HEAD	MET	METAL	PLY	PLYWOOD	SED	SEE ELECTRICAL DRAWINGS	TEL	TELEPHONE	TEMP	TEMPERED
CAB	CABINET	FLRG	FLOORING	HDR	HEADER	HDW	HARDWARE	MFR	MANUFACTURER	PR	PAIR	SF	SUPPLY FAN	THK	THICK/THICKNESS	THRESH	THRESHOLD
CB	CARRIAGE BOLT	FLUOR	FLUORESCENT	HDW	HARDWARE	HDWD	HARDWOOD	MIN	MINIMUM	PROJ	PROJECT/PROJECTOR	SFRM	SPRAY-APPLIED FIRE RESISTIVE MATERIAL	TJ	TRUSS JOIST		
CE	CIVIL ENGINEER	DISP	DISPOSAL	MISC	MISCELLANEOUS												

ARCHITECTS SEAL



1 FLOOR PLAN (DEMO)
A1.31 1/8" = 1'-0"



2 ROOF PLAN (DEMO)
A1.31 1/8" = 1'-0"

ROOF DEMOLITION NOTES

STARTING THE LOW END OF THE ROOF AT LINE E, REMOVE (E) SINGLE PLY ROOF FROM PERIMETER EDGE, UP SLOPE APPROXIMATELY 12 FEET OR TOP OF NEW CRICKET, WHATEVER IS GREATER.

CAREFULLY INSPECT DECK FOR DAMAGE. VERIFY MEASUREMENTS AND PROVIDE PHOTOS OF AREAS. CONTACT OWNER IMMEDIATELY.

REMOVE DAMAGED AREAS AND REPAIR AREAS AS SPECIFIED, MEETING CURRENT UBC.

PREPARE LOW ROOF AREA FOR NEW ROOFING AND CRICKETS.

STARTING AT HIGH POINT OF THE ROOF, REMOVE ROOFING AS NEEDED FOR OVERHANG REMOVAL. PREPARE AREA FOR NEW DRIP EDGES AND FLASHING AS REQUIRED. PREPARE FOR NEW CANOPY INSTALLATION.

REMOVE PARAPET CAP AT THE THREE COLLECTORS AND PREPARE SURFACES FOR NEW THROUGH-FASCIA SCUPPER PER DETAIL 2/A7.10

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**DEMOLITION PLAN-
1ST FLOOR**

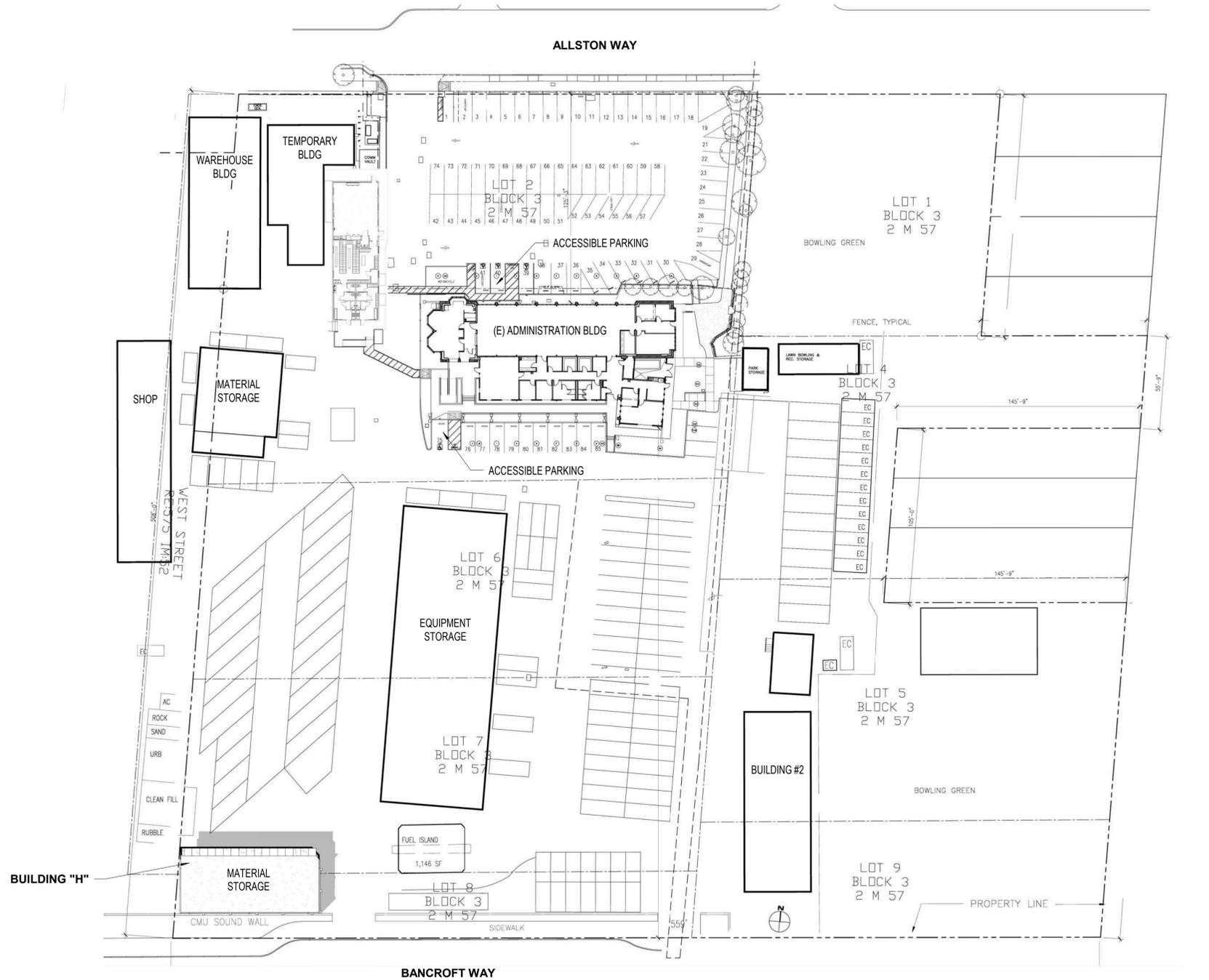
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A1.31



2 EXISTING CONDITIONS PHOTOS
A2.01 NOT TO SCALE



1 SITE PLAN
A2.01 1" = 40'-0"

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SHEET TITLE
SITE PLAN

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SEAL



APPROVALS

PROJECT TITLE

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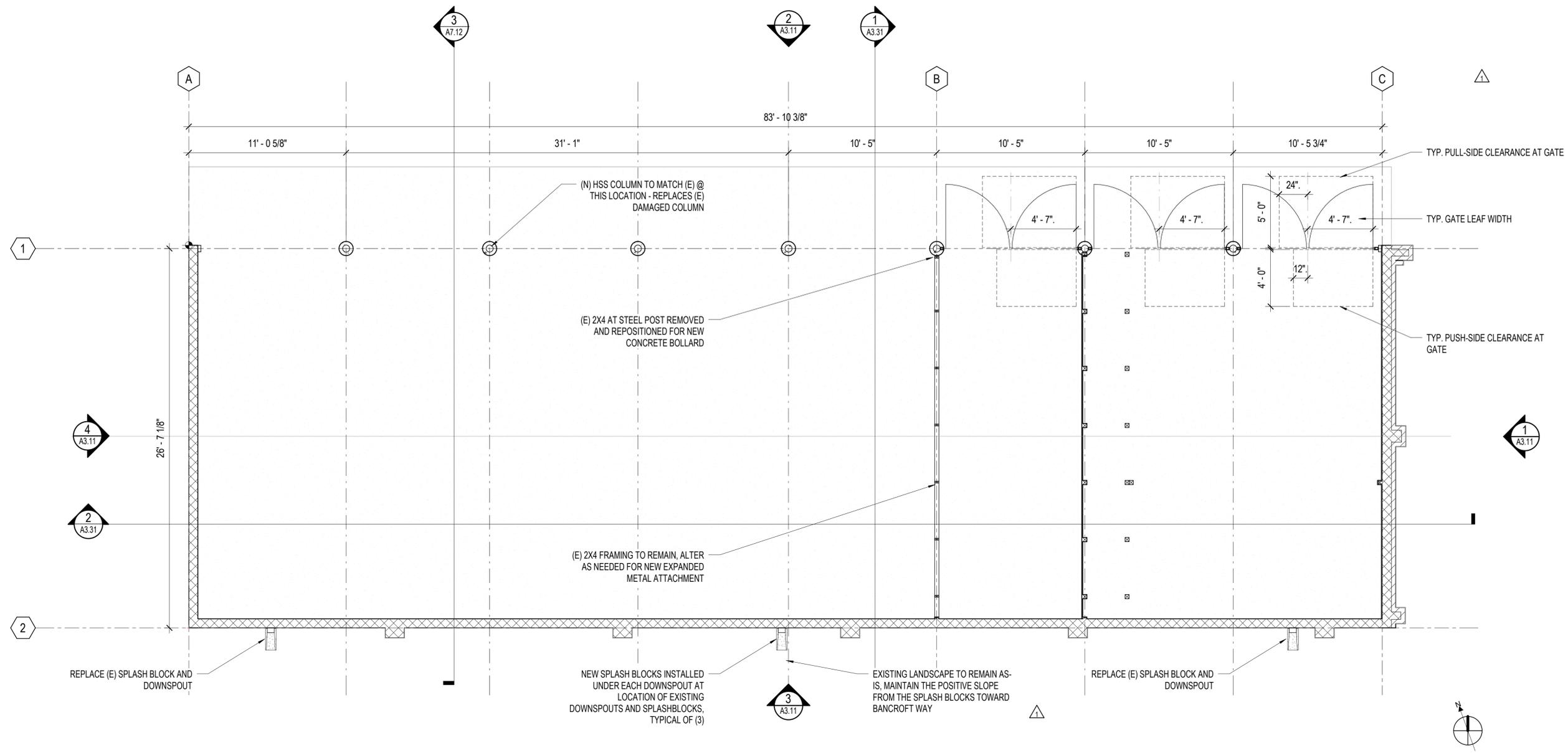
SHEET TITLE

**FLOOR PLAN- 1ST
FLOOR**

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A2.31



1 FLOOR PLAN
1/4" = 1'-0"



EXISTING LANDSCAPE TO REMAIN, MAINTAIN POSITIVE SLOPE TOWARD BANCROFT WAY

2 EXISTING CONDITIONS PHOTO - BANCROFT WAY SIDE
3" = 1'-0"

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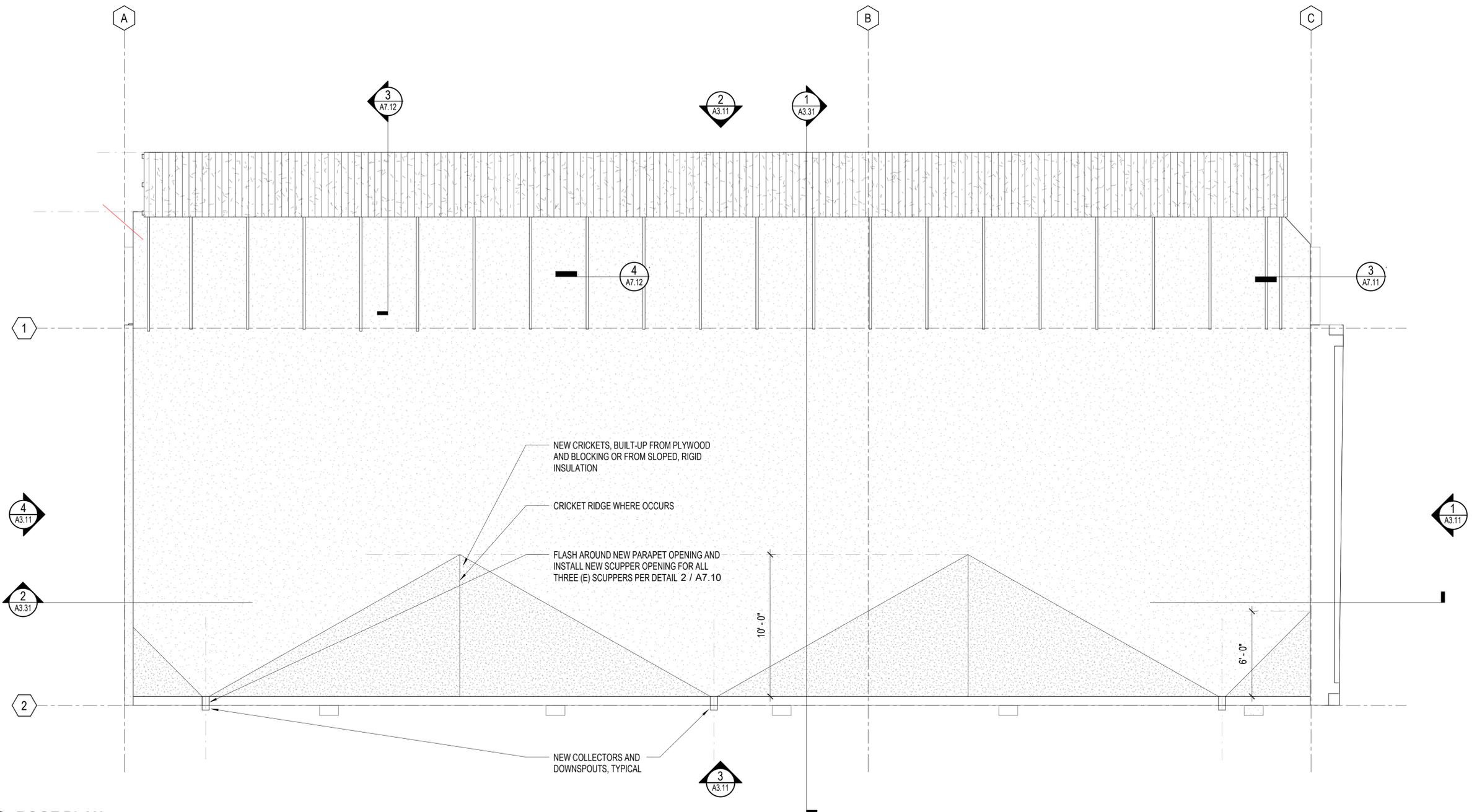
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SHEET TITLE
**ROOF / PENTHOUSE
PLAN**

BID ALT #1:
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A2.33



1 ROOF PLAN
A2.33 1/4" = 1'-0"

ROOF DEMOLITION NOTES

FURNISH AND INSTALL [N] SPECIFIED CRICKETS AND MECHANICALLY ATTACH WITH SCREWS AND PLATES.

STARTING AT LOWER POINT OF THE ROOF, FURNISH AND INSTALL [N] TPA MEMBRANE, MECHANICALLY ATTACHED. RUN [N] SHEET UP THE SLOPE AND UNDER [E] SHEET A MINIMUM OF 12 INCHES. SECURE AND HEAT WELD LAP.

FURNISH, FABRICATE AND INSTALL [N] 24 GAUGE GSM TPA COATED SCUPPER TO FIT [E] OPENING.

FURNISH AND INSTALL [N] 24 GAUGE TPA COATED METAL AND SECURE. STRIP IN WITH TPA FLASHING SHEET.

POWER-WASH ROOF AND SCRUB WITH SOFT BRISTLED BROOM TO REMOVE ALGAE GROWTH, DIRT AND NON ADHERED MATERIALS.

FURNISH AND INSTALL PARTIALLY REINFORCED FLUID APPLIED SYSTEM OVER FIELD AND BASEFLASHINGS.

PROVIDE CONTRACTOR WARRANTY FOR WORKMANSHIP AND LEAKS FOR 2 YEARS. PROVIDE MANUFACTURERS COMPREHENSIVE WARRANTY FOR 15 YEARS.

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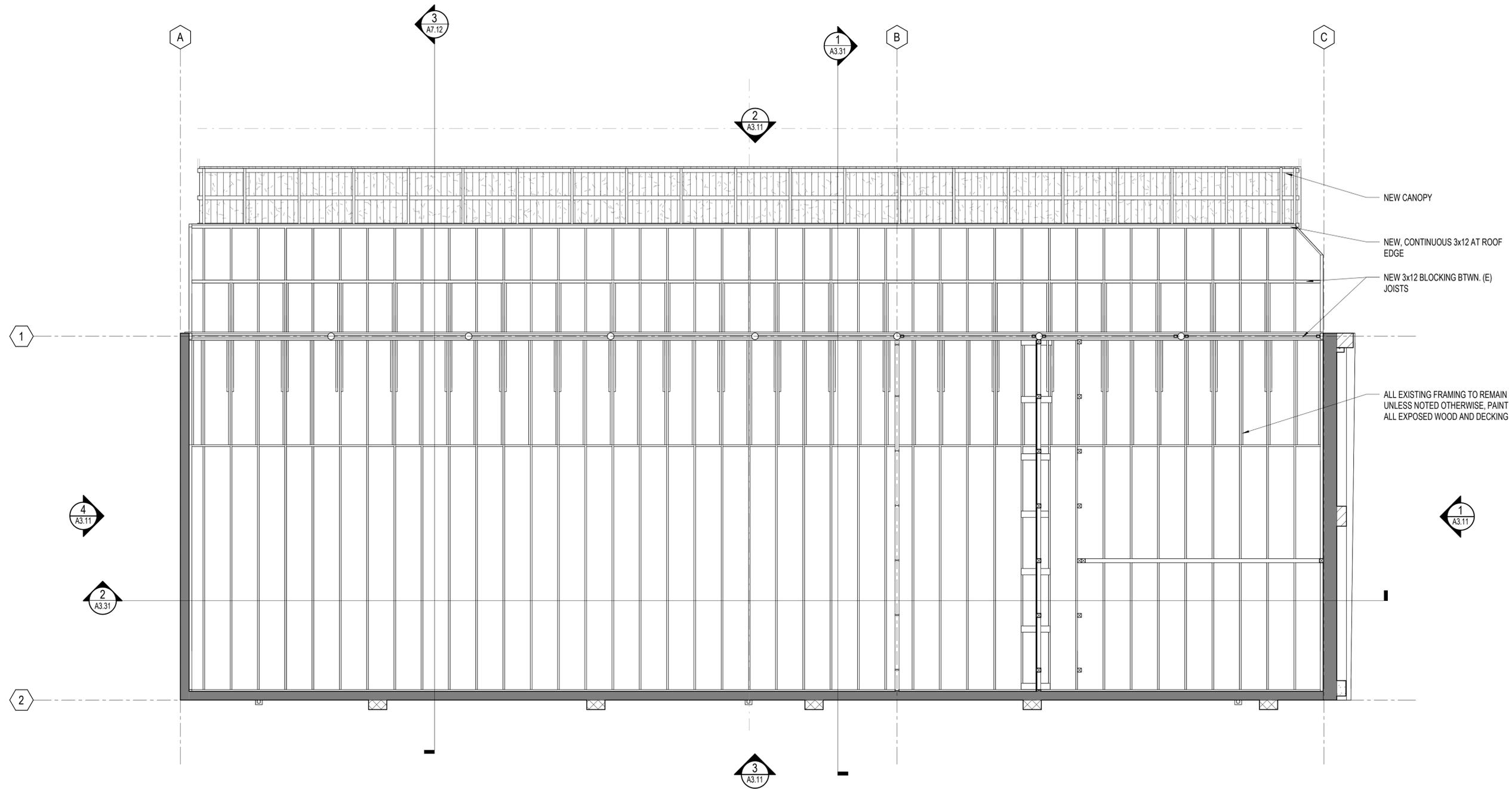
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SHEET TITLE
**REFLECTED CEILING
PLAN- 1ST FLOOR**

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A2.41



1 CEILING PLAN
A2.41 1/4" = 1'-0"

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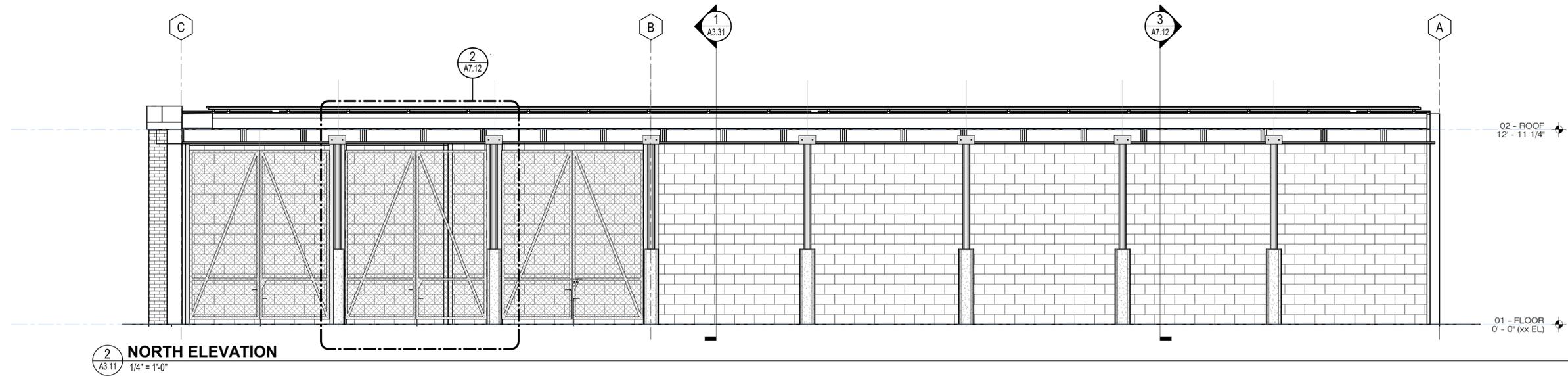
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EXTERIOR ELEVATIONS

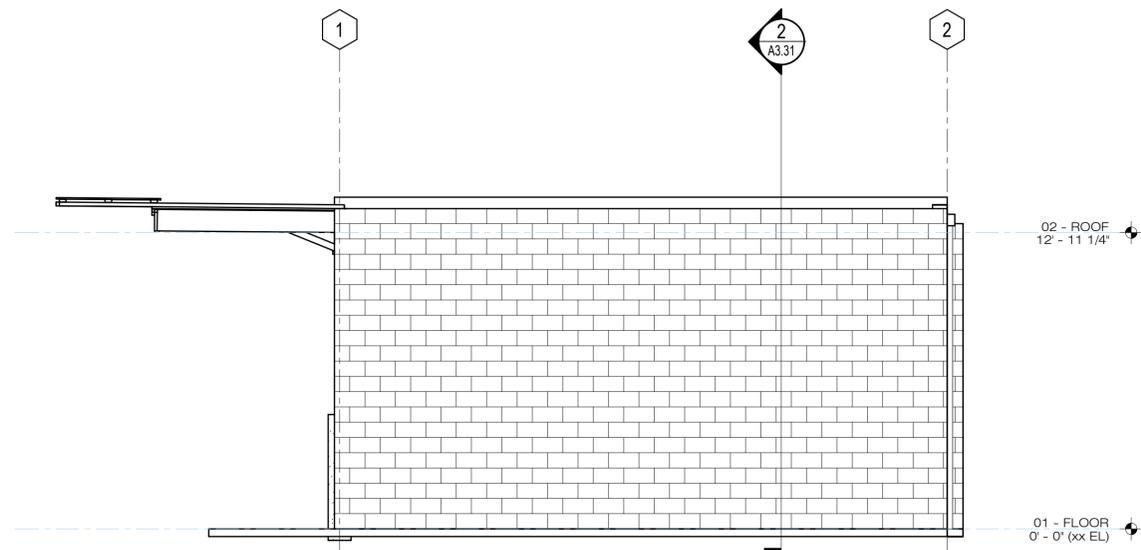
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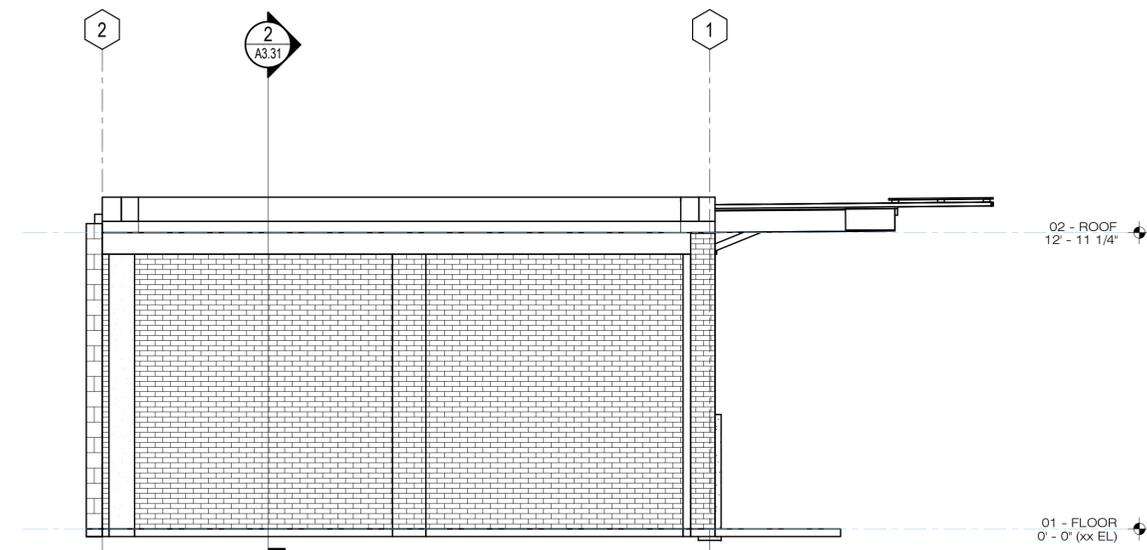
A3.11



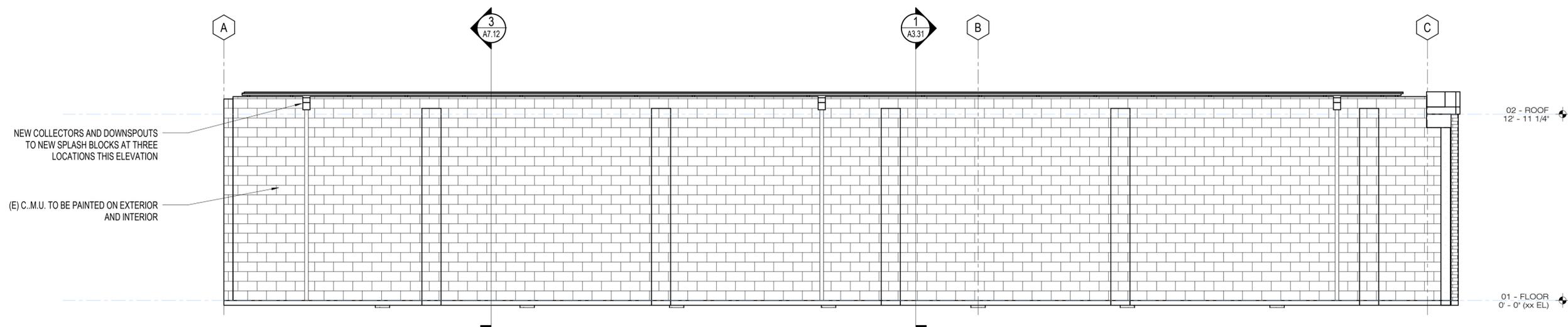
2 NORTH ELEVATION
A3.11 1/4" = 1'-0"



4 WEST ELEVATION
A3.11 1/4" = 1'-0"

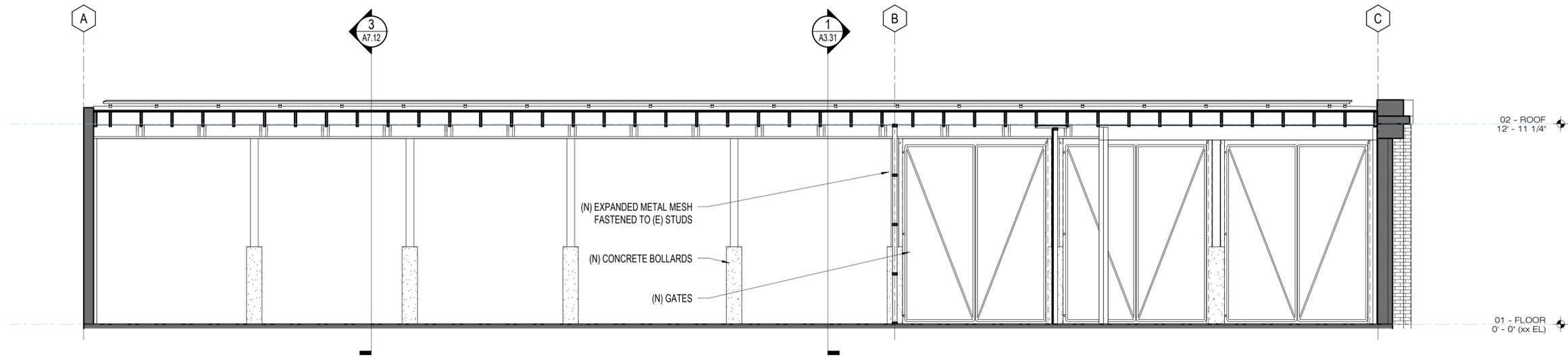


1 EAST ELEVATION
A3.11 1/4" = 1'-0"

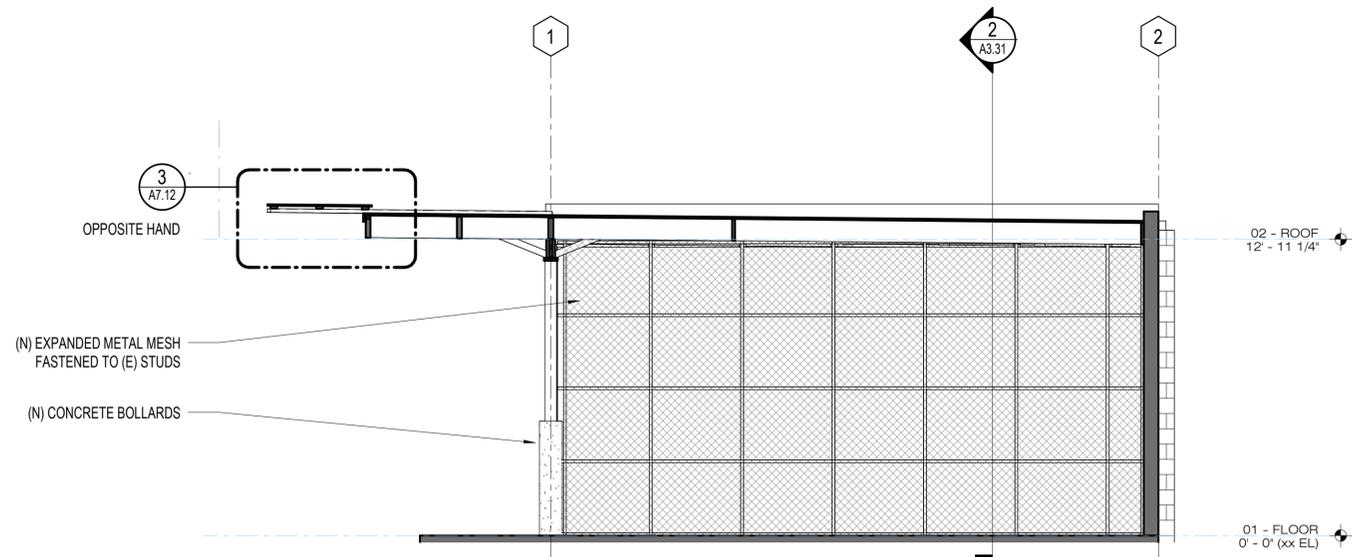


3 SOUTH ELEVATION
A3.11 1/4" = 1'-0"

ARCHITECTS SEAL



2 BUILDING SECTION - LONG DIRECTION LOOKING NORTH
A3.31 1/4" = 1'-0"



1 BUILDING SECTION - SHORT DIRECTION LOOKING EAST
A3.31 1/4" = 1'-0"

**CITY OF BERKELEY
ALLSTON
CORPORATION
YARD BUILDING
"H"**

1326 ALLSTON WAY

PERMIT SET

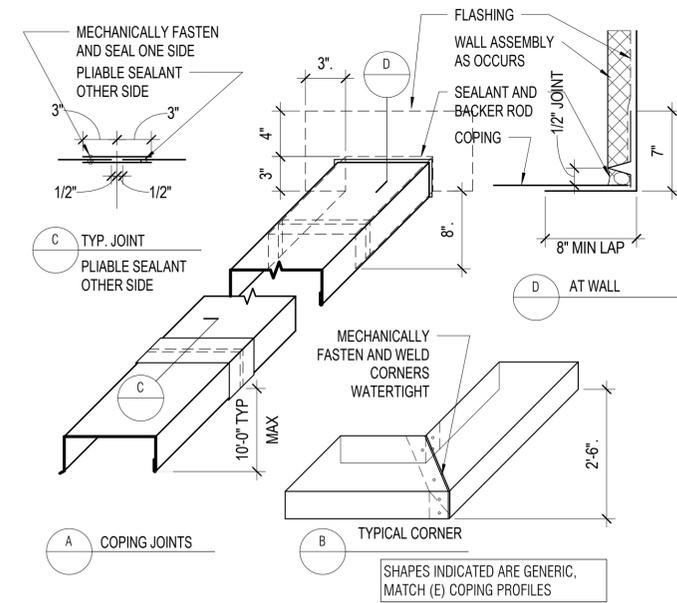
ISSUE DATE	10.01.2024
N&T JOB #	22222.00
REVISIONS	
DATE	DESCRIPTION

SHEET TITLE
BUILDING SECTIONS

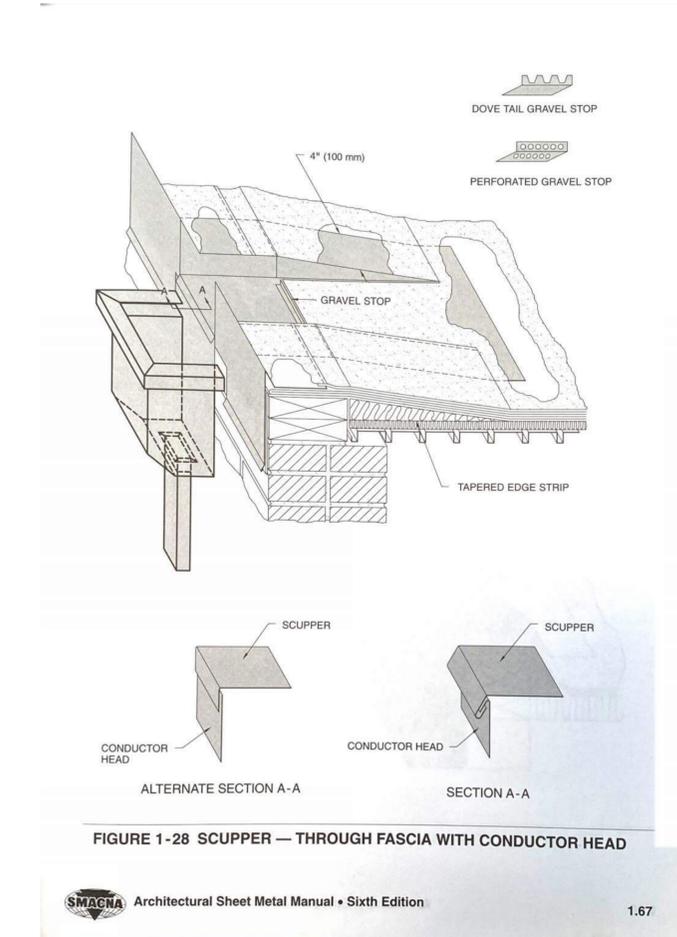
BID ALT #1:
ENTIRE SCOPE
OF BUILDING 'H'

SHEET NUMBER

A3.31



1 TYPICAL COPING DETAILS
A7.10 1 1/2" = 1'-0"



2 THROUGH-FASCIA SCUPPER SMACNA REFERENCE
A7.10 3" = 1'-0"

CITY OF BERKELEY ALLSTON CORPORATION YARD BUILDING "H"

1326 ALLSTON WAY

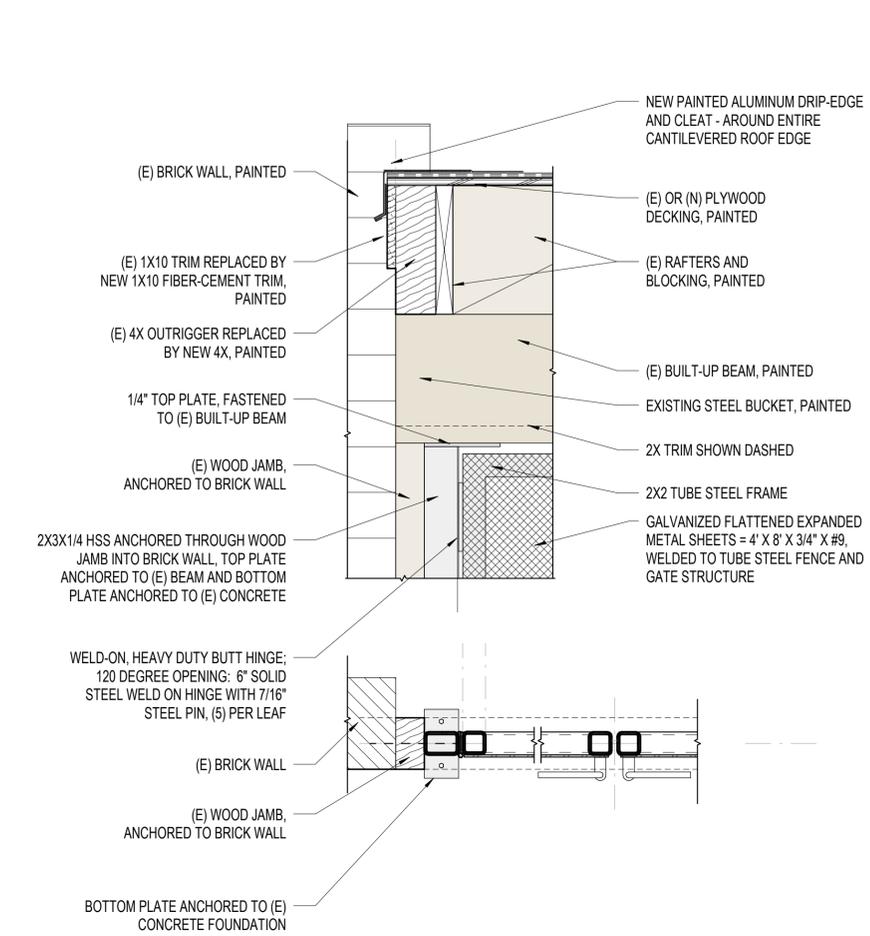
PERMIT SET

ISSUE DATE	10.01.2024
N&T JOB #	22222.00
REVISIONS	
DATE	DESCRIPTION

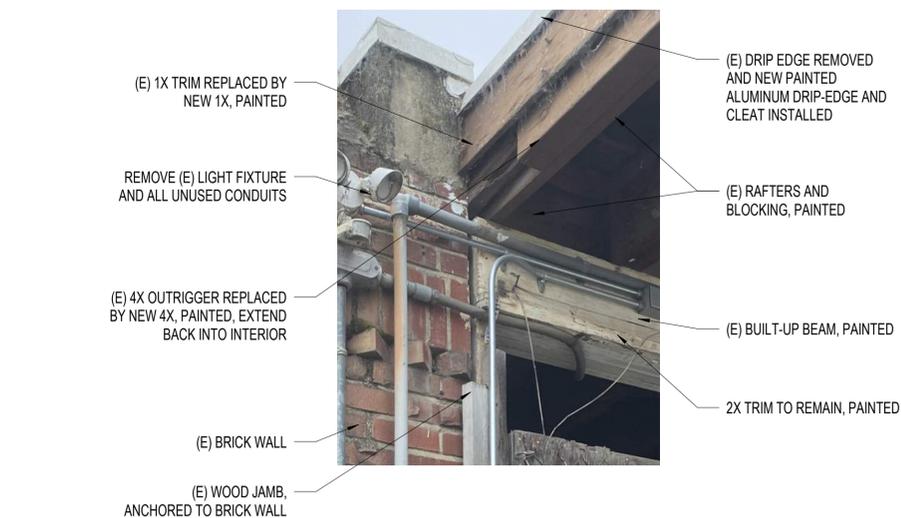
SHEET TITLE
**EXTERIOR - ROOF
ASSEMBLIES AND
S**
BID ALT #1:
ENTIRE SCOPE
OF BUILDING "H"

SHEET NUMBER

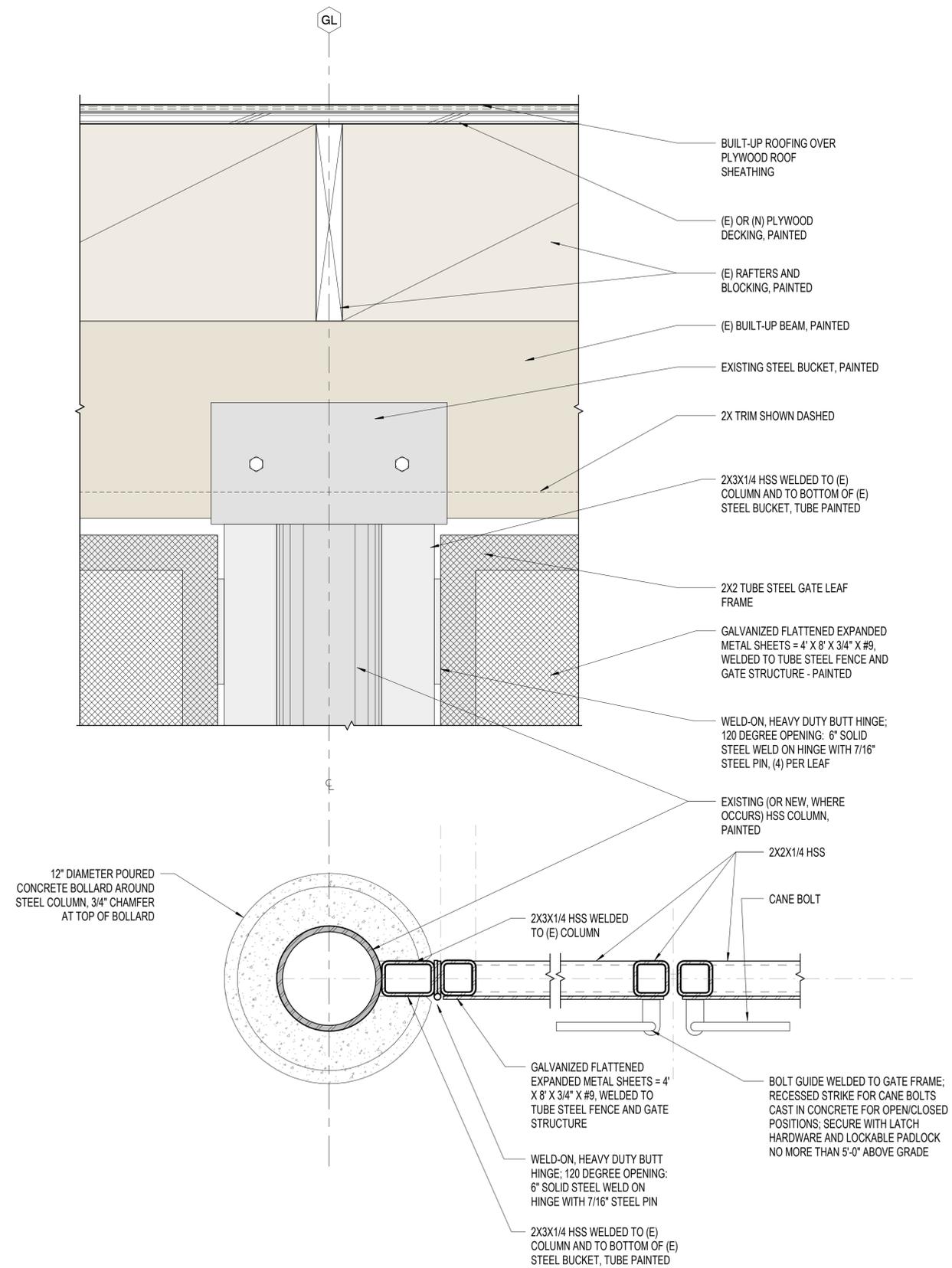
A7.10



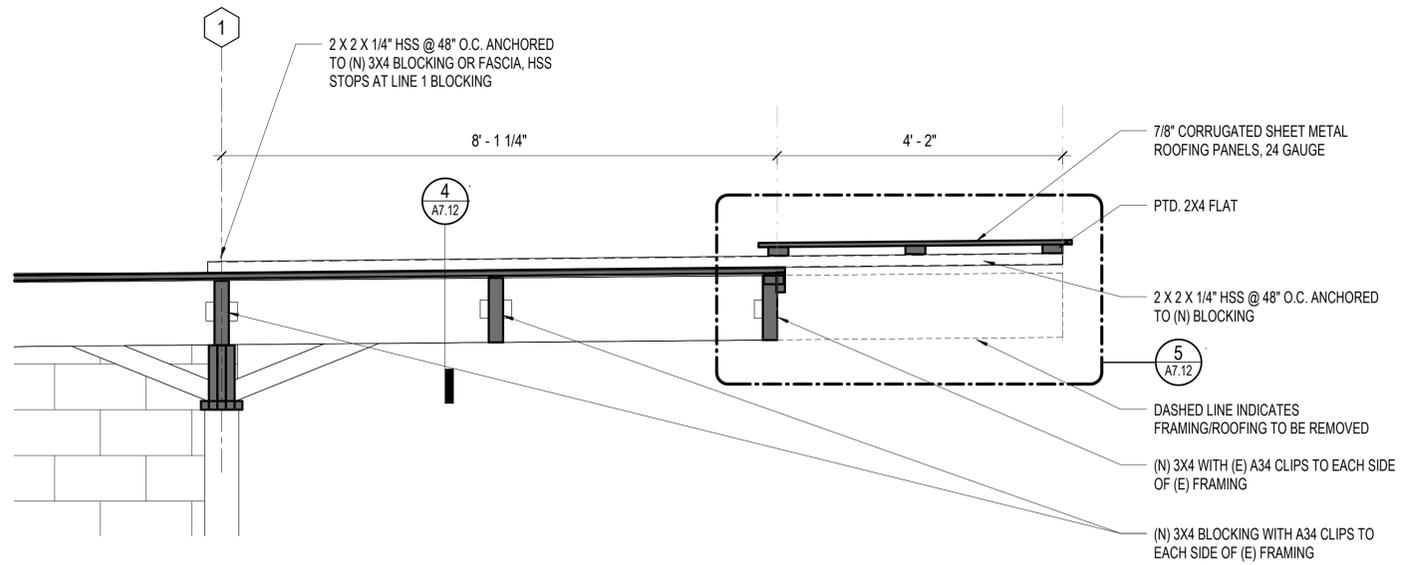
3 GATE JAMB AT BRICK WALL
1 1/2" = 1'-0"



2 EXISTING CONDITION AT BRICK WALL
1 1/2" = 1'-0"

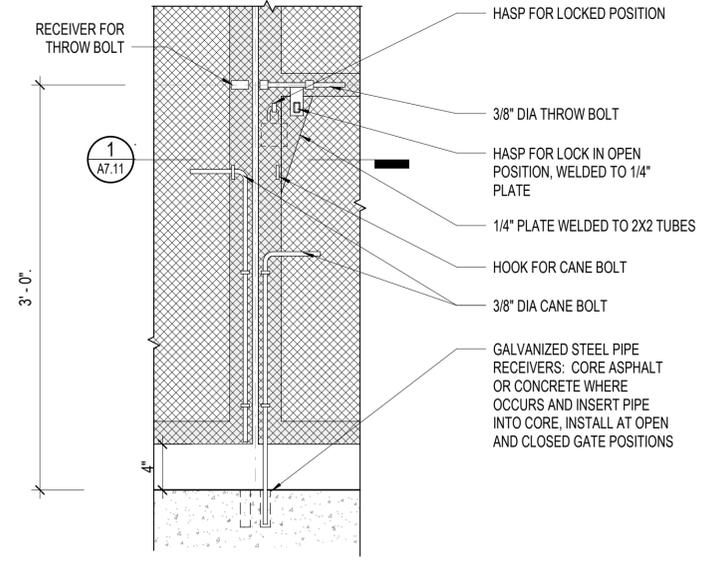


1 COLUMN AND GATE
3" = 1'-0"



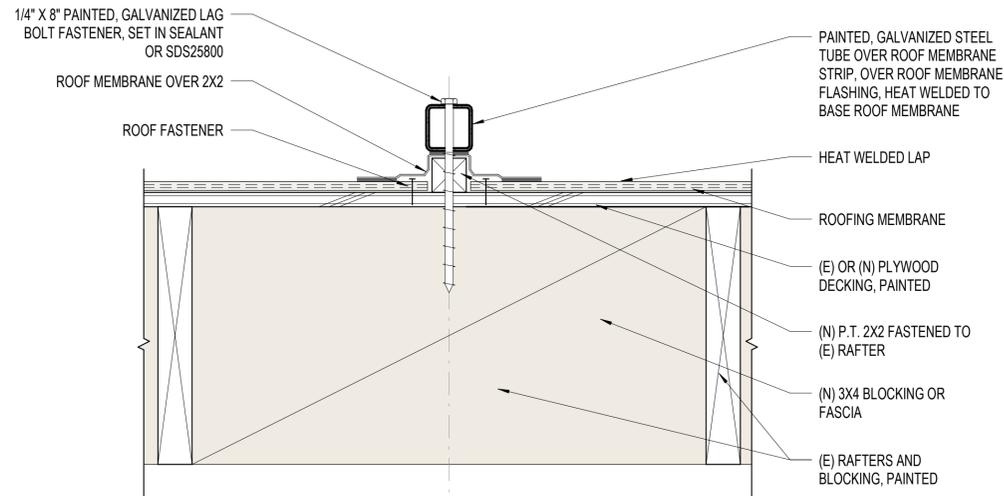
3 SECTION THROUGH CANOPY

A7.12 3/4" = 1'-0"



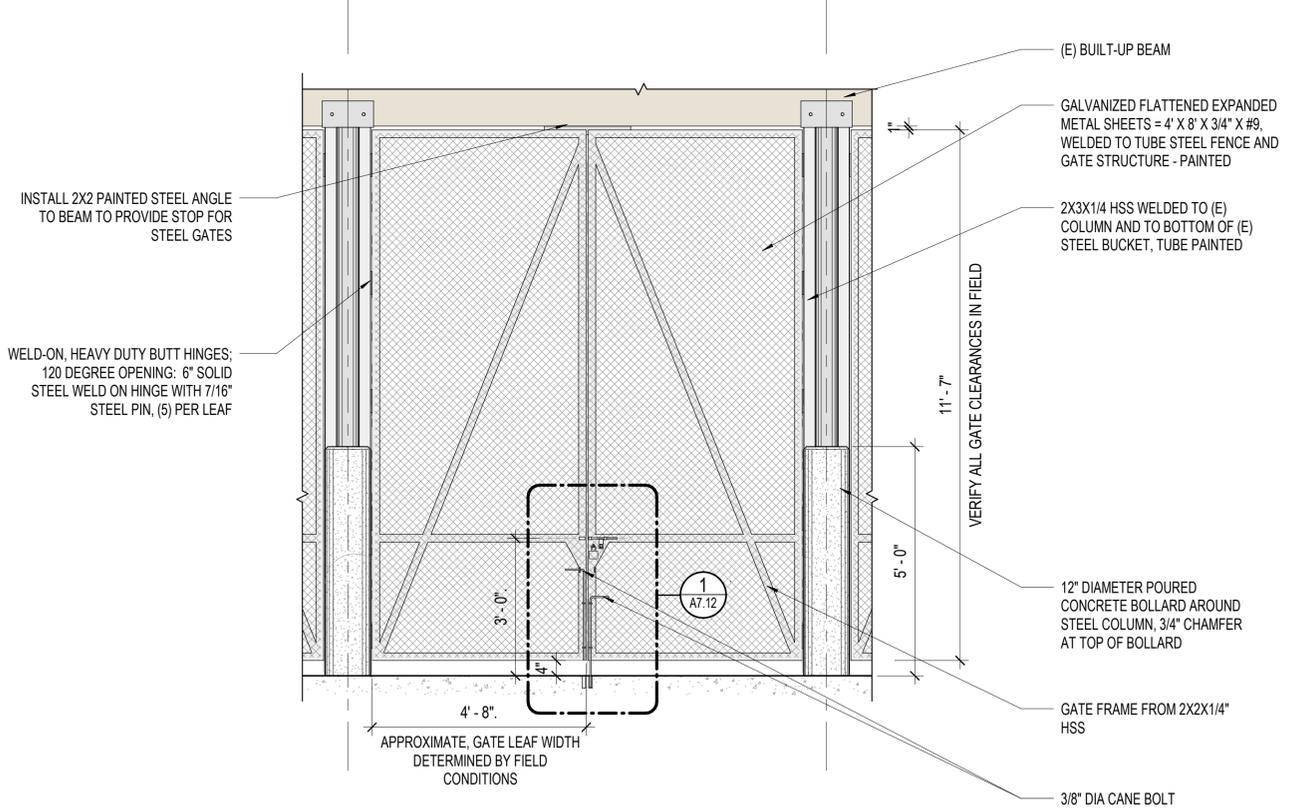
1 CANE BOLTS FOR GATES

A7.12 1 1/2" = 1'-0"



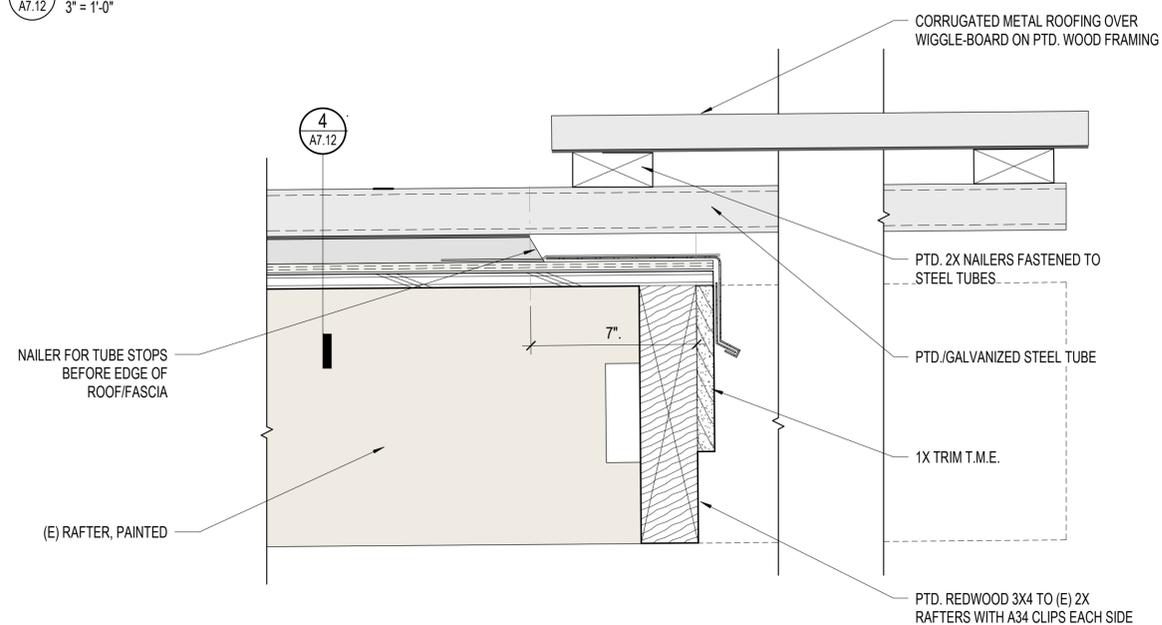
4 SECTION AT NEW TUBE STEEL

A7.12 3" = 1'-0"



2 TYPICAL GATE PAIR ELEVATION

A7.12 1/2" = 1'-0"



5 CANOPY FASCIA

A7.12 3" = 1'-0"

ELECTRICAL SYMBOL LIST

NOTE: This is a standard symbol list and not all items listed may be used.

Abbreviations

A	AMPERES
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AVAILABLE INTERRUPTING CAPACITY
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
C	CONDUIT
CB	CIRCUIT BREAKER
CT	CURRENT TRANSFORMER
CU	COPPER
EMT	ELECTRICAL METALLIC TUBING
F	FUSE
FBO	FURNISHED BY OTHERS
G, GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GRC	GALVANIZED RIGID STEEL CONDUIT
KVA	KILOVOLT AMPERES
KW	KILOWATT
LED	LIGHT EMITTING DIODE
M	MOTOR
MCA	MINIMUM CIRCUIT AMPS
MT, MTD	Mount, MOUNTED
MT	EMPTY CONDUIT WITH NYLON PULL CORD
N	NEUTRAL
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT	NEUTRAL
OS	OCCUPANCY SENSOR
PB	PUSHBUTTON, PULLBOX
PH	PHASE
PVC	POLY-VINYL-CHLORIDE
QTY	QUANTITY
REQD	REQUIRED
RSC	RIGID STEEL CONDUIT
S	SWITCH
SPD	SURGE PROTECTION DEVICE
TM	THERMAL MAGNETIC
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLTS, VOLTAGE
W/	WITH
W/O	WITHOUT
W	WIRE
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER

Connections / Equipment

	HEAVY DUTY FUSED DISCONNECT SWITCH
	JUNCTION BOX
	JUNCTION BOX WITH FLEX CONNECTION TO EQUIPMENT
	WALL-MOUNTED JUNCTION BOX
	MOTOR CONNECTION
	TRANSFORMER

General

	DETAIL NUMBER AND SHEET LOCATION
	KEYED NOTE

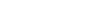
Lighting

	AREA LUMINAIRE POLE TOP MOUNTED WITH POLE AND CONCRETE BASE
	SURFACE OR PENDANT MOUNTED 1' X 4' LUMINAIRE
	SURFACE OR PENDANT MOUNTED STRIPLIGHT
	WALL MOUNTED LUMINAIRE

Miscellaneous

	BRANCH CIRCUIT WIRING. ARROW INDICATES HOME RUN TO PANEL WITH CIRCUITS AS NOTED. WIRE SIZE IS #12 AWG MINIMUM UNLESS NOTED OTHERWISE. SHORT TICK MARKS INDICATE PHASE CONDUCTORS. LONG TICK MARKS INDICATE NEUTRAL CONDUCTORS. A SINGLE CURVED TICK MARK INDICATES INSULATED GREEN GROUND CONDUCTOR. SECOND CURVED TICK MARK INDICATES "ISOLATED GROUND" (GREEN INSULATION WITH YELLOW STRIPE) CONDUCTOR.
	BRANCH PANEL
	CIRCUIT BREAKER
	DRY TYPE TRANSFORMER
	GROUND ROD
	GROUNDING POINT
	LANDING LUG
	METER WITH CONNECTION
	WALL MOUNTING BRACKET

Raceways

	CONDUIT CONCEALED IN WALL OR CEILING SPACE
	CONDUIT ROUTED BELOW FLOOR / GRADE
	CONDUIT ELLED DOWN
	CONDUIT ELLED UP
	CONDUIT/WIRING CONTINUATION

	CONDUIT/WIRING STUBBED OUT WITH END CAP OR INSULATED PLASTIC BUSHING
	FLEXIBLE CONDUIT
	PULL BOX

Switches and Receptacles

	DUPLEX RECEPTACLE (MULTIPLE LETTERS INDICATE MULTIPLE OPTIONS) A = ABOVE COUNTER B = CLOCK HANGER C = FLUSH CEILING MOUNTED E = EMERGENCY F = ARC FAULT PROTECTED BY BREAKER IN PANEL G = GROUND FAULT CIRCUIT INTERRUPTER H = HOSPITAL GRADE K = CHILD RESISTANT COVER L = ISOLATED GROUND P = PENDANT MOUNTED WITH CORD GRIPS. VERIFY PENDANT LENGTH S = SPLIT WIRED T = TAMPER RESISTANT SHUTTERED RECEPTACLE W = WEATHERPROOF CONTINUOUS USE COVER, GFCI PROTECTED, WITH WEATHER-RESISTANT RECEPTACLE ? = DESIGNER DEFINED
	DOUBLE DUPLEX RECEPTACLE. SEE LETTER CODE LIST AT DUPLEX RECEPTACLE FOR OPTIONS
	CEILING MOUNTED OCCUPANCY SENSOR P = PASSIVE INFRARED D = DUAL TECHNOLOGY U = ULTRASONIC, 360 DEG RANGE H = ULTRASONIC, HALLWAY PATTERN
	PHOTO ELECTRIC SWITCH D = CONTINUOUS DIMMING PHOTOCELL S = SWITCHED PHOTOCELL
	SINGLE POLE SWITCH 2 = DOUBLE POLE SWITCH 3 = THREE-WAY SWITCH 4 = FOUR-WAY SWITCH o thru z (LOWERCASE) = LUMINAIRE CONTROL DESIGNATION D = DIMMER F = FAN SPEED CONTROL K = KEY OPERATED SWITCH L = LIGHTED HANDLE M = MANUAL MOTOR STARTER WITH THERMAL OVERLOAD OC = OCCUPANCY SENSOR P = SWITCH WITH PILOT LIGHT S = SENTRY SWITCH T = INTERVAL TIMER W = WEATHERPROOF SWITCH V = LOW VOLTAGE SWITCH ? = DESIGNER DEFINED SWITCH

Telecommunications

	RACEWAY ONLY DATA OUTLET. PROVIDE DOUBLE GANG BACK BOX AND SINGLE OR DOUBLE GANG ADAPTER PLATE (VERIFY) WITH 1" C. AND PULLSTRING TO ACCESSIBLE CEILING SPACE. SEE LETTER CODE LIST AT DATA/TELEPHONE OUTLET FOR OPTIONS.
	RACEWAY ONLY DATA/TELEPHONE OUTLET. PROVIDE DOUBLE GANG BACK BOX AND SINGLE OR DOUBLE GANG ADAPTER PLATE (VERIFY) WITH 1" C. AND PULLSTRING TO ACCESSIBLE CEILING SPACE. (MULTIPLE LETTERS INDICATE MULTIPLE OPTIONS) A = ABOVE COUNTER C = CEILING MOUNTED ABOVE ACCESSIBLE CEILING F = FLUSH CEILING MOUNTED R = SURFACE MOUNTED ON RACEWAY
	RACEWAY ONLY TELEPHONE OUTLET. PROVIDE DOUBLE GANG BACK BOX AND SINGLE OR DOUBLE GANG ADAPTER PLATE (VERIFY) WITH 3/4" C. AND PULLSTRING TO ACCESSIBLE CEILING SPACE. SEE LETTER CODE LIST AT DATA/TELEPHONE OUTLET FOR OPTIONS.

SCOPE OF WORK

THE PROJECT IS A MODIFICATION TO AN EXISTING FACILITY. CONTRACTOR TO REPLACE EXISTING LIGHTING FIXTURES, CONDUIT AND WIRING WITH NEW FIXTURES, CONDUIT AND WIRING AS SHOWN ON THE PLANS. REUSE EXISTING ELECTRICAL LOADCENTER TO POWER NEW AND EXISTING LOADS. RETAIN 3 EXISTING RECEPTACLES AND WIRING. MODIFY EXISTING RACEWAY AND WIRING IN ORDER TO RETAIN 2 EXISTING DUPLEX RECEPTACLES IN SERVICE. PROVIDE INTERIOR MANUAL SWITCH PER TITLE 24.

SHEET INDEX

E0.1	ELECTRICAL COVER SHEET
E0.2	TITLE 24
E0.3	TITLE 24
E1.0	ELECTRICAL SITE PLAN
E2.0	DEMOLITION PLAN
E2.1	POWER AND LIGHTING PLAN
E2.2	PHOTOMETRIC PLAN
E3.0	ELECTRICAL SPECIFICATIONS
E3.1	ELECTRICAL SPECIFICATIONS

NOLL & TAM ARCHITECTS

729 Heinz Avenue
Berkeley, CA 94710
tel 510.542.2200
fax 510.542.2201

SEAL



APPROVALS

PROJECT TITLE

Owner
ALLSTON CORPORATION
YARD BUILDING "H"

1326 ALLSTON WAY
BERKELEY, CA 94702

Project Status

ISSUE DATE	08/01/2022
N&T JOB NUMBER	Project Number

REVISIONS	DATE	DESCRIPTION
1	02-03-2023	ISSUED FOR PERMIT
2	03-30-2023	PLAN CHECK COMMENTS

SHEET TITLE

ELECTRICAL COVER SHEET
BID ALT #1:
ENTIRE SCOPE OF BUILDING "H"

SHEET NUMBER

E0.1



APPROVALS

PROJECT TITLE

Owner
ALLSTON CORPORATION YARD BUILDING "H"

1326 ALLSTON WAY
BERKELEY, CA 94702

Project Status

ISSUE DATE 08/01/2022

N&T JOB NUMBER Project Number

REVISIONS	DATE	DESCRIPTION
1	02-03-2023	ISSUED FOR PERMIT
2	03-30-2023	PLAN CHECK COMMENTS

SHEET TITLE

TITLE 24

BID ALT #1:
ENTIRE SCOPE
OF BUILDING "H"

SHEET NUMBER

EO.2

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
NRC-174-E

CERTIFICATE OF COMPLIANCE
This document is used to demonstrate compliance with requirements in 110.9, 110.12(c), 130.0, 130.1, 140.6 and 141.0(b) for indoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e) and 180.2(b) for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitory and senior living facilities.

Project Name: Berkeley Bldg H Corp Yard Report Page: (Page 1 of 7)
Project Address: 1326 Allston Way Date Prepared: 3/30/2023

A. GENERAL INFORMATION

01 Project Location (city)	Berkeley	04 Total Conditioned Floor Area (ft ²)	0
02 Climate Zone	3	05 Total Unconditioned Floor Area (ft ²)	2,210
03 Occupancy Types Within Project (select all that apply):		06 # of Stories (Habitable Above Grade)	1

B. PROJECT SCOPE
This table includes any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.6 / 170.2(e) or 141.0(b) / 180.2(b) for alterations.

Scope of Work	Conditioned Spaces	Unconditioned Spaces
01	02	03
My Project Consists of (check all that apply):	Calculation Method	Area (ft ²)
<input type="checkbox"/> New Lighting System		
<input type="checkbox"/> New Lighting System - Parking Garage		
<input checked="" type="checkbox"/> Altered Lighting System	Area Category Method	0
		Area Category Method
Total Area of Work (ft²)		2210

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
Generated Date/Time: 2023-03-30 09:30:06
Documentation Software: EnergyPro
Report Version: 2022.0.000
Schema Version: rev 20220101
Compliance ID: EnergyPro-30211-0323-0093
Report Generated: 2023-03-30 09:30:06

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
NRC-174-E

CERTIFICATE OF COMPLIANCE
Project Name: Berkeley Bldg H Corp Yard Report Page: (Page 2 of 7)
Project Address: 1326 Allston Way Date Prepared: 3/30/2023

C. COMPLIANCE RESULTS
If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D, for guidance.

Lighting in conditioned and unconditioned spaces must not be compliance for 140.6(b) / 170.2(e)	Allowed Lighting Power per 140.6(b) / 170.2(e) (Watts)				Adjusted Lighting Power per 140.6(a) / 170.2(a) (Watts)	Compliance Results
	01	02	03	04		
Complete Building 140.6(c) / 170.2(e)4	Area Category 140.6(c)3 / 170.2(e)4	Area Category 140.6(c)3 / 170.2(e)4	Tailored Additional 140.6(c)3 / 170.2(e)4	Total Allowed (Watts)	Total Adjusted (Watts) *Includes Adjustments	05 must be >= 08 140.6 / 170.2(e)
(See Table I)	(See Table I)	(See Table I)	(See Table I)	(See Table I)	(See Table I)	
Conditioned				884	544	COMPLIES
Unconditioned	884	0		884	544	COMPLIES
Controls Compliance (See Table H for Details)						
Rated Power Reduction Compliance (See Table Q for Details)						

D. EXCEPTIONAL CONDITIONS
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS
This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

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STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
NRC-174-E

CERTIFICATE OF COMPLIANCE
Project Name: Berkeley Bldg H Corp Yard Report Page: (Page 3 of 7)
Project Address: 1326 Allston Way Date Prepared: 3/30/2023

F. INDOOR LIGHTING FIXTURE SCHEDULE
This table includes all planned permanent and portable lighting other than dwelling unit/hotel/motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here.

Designated Wattage	Unconditioned Spaces
01	02
Name or Item Tag	Complete Luminaire Description
A	Type A
Total Designated Watts: UNCONDITIONED SPACES	
544	

*FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per 140.6(a)4B / 170.2(e)2D is adjusted to be 75%/80% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.
*Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b). Wattage used must be the maximum rated for the luminaire, not the lamp.

G. MODULAR LIGHTING SYSTEMS
This section does not apply to this project.

H. INDOOR LIGHTING CONTROLS (Not including PAFs)
This table includes lighting controls for conditioned and unconditioned spaces.

Building Level Controls	01	02	03
	Mandatory Demand Response 110.12(c)	Shut-off controls 130.1(c) / 160.5(b)4C	Field Inspector
	Required >= 4,000W subject to multilevel	Whole Building Auto Time Switch	Pass Fail

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
NRC-174-E

CERTIFICATE OF COMPLIANCE
Project Name: Berkeley Bldg H Corp Yard Report Page: (Page 4 of 7)
Project Address: 1326 Allston Way Date Prepared: 3/30/2023

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

Area Level Controls	04	05	06	07	08	09	10	11	12
Area Description	Complete Building or Area Category Primary Function Area	Manual Area Controls 130.1(a) / 160.5(b)4A	Multi-Level Controls 130.1(b) / 160.5(b)4B	Shut-Off Controls 130.1(c) // 160.5(b)4C	Primary/Sky lit Daylighting 130.1(d) / 160.5(b)4D	Secondary Daylighting 130.1(e) / 160.5(b)4E	Interlocked Systems 140.6(a)1 / 170.2(e)2A	Field Inspector	Pass Fail
Storage Building	All Other Space Types	Readily Accessible	NA: General Ltg <= 0.5W/5F	Occupancy Sensor	NA: General Ltg < 120W	No	No		
Plan Sheet Showing Daylit Zones:									

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS
Each area complying using the Complete Building or Area Category Methods per 140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per 140.6(c) or adjustments per 140.6(a) are being used.

Unconditioned Spaces	01	02	03	04	05	06
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft ²)	Area (ft ²)	Allowed Wattage (Watts)	Additional Allowance / Adjustment	PAF
Storage Building	All Other Space Types	0.4	2,210	884	No	No
TOTALS:		2,210	2,210	884	See Tables J, or P for detail	

J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM
This section does not apply to this project.

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STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
NRC-174-E

CERTIFICATE OF COMPLIANCE
Project Name: Berkeley Bldg H Corp Yard Report Page: (Page 5 of 7)
Project Address: 1326 Allston Way Date Prepared: 3/30/2023

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE
This section does not apply to this project.

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY
This section does not apply to this project.

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING
This section does not apply to this project.

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE / SPECIAL EFFECTS
This section does not apply to this project.

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE
This section does not apply to this project.

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))
This section does not apply to this project.

Q. RATED POWER REDUCTION COMPLIANCE FOR ONE-FOR-ONE ALTERATIONS
This section does not apply to this project.

R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS
This section does not apply to this project.

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STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
NRC-174-E

CERTIFICATE OF COMPLIANCE
Project Name: Berkeley Bldg H Corp Yard Report Page: (Page 6 of 7)
Project Address: 1326 Allston Way Date Prepared: 3/30/2023

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)
This section does not apply to this project.

T. DWELLING UNIT LIGHTING
This section does not apply to this project.

U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Form/Title

V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
There are no NRCA forms required for this project.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
NRC-174-E

CERTIFICATE OF COMPLIANCE
Project Name: Berkeley Bldg H Corp Yard Report Page: (Page 7 of 7)
Project Address: 1326 Allston Way Date Prepared: 3/30/2023

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: John Gumawid
Signature Date: 4/3/23
Company: Capital Engineering Consultants Inc.
Address: 11200 Sun Center Dr
City/State: Rancho Cordova CA 95670
Phone: 916.851.3500

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Nathan A. Hearn, PE
Signature Date: 2023-03-30
Company: Capital Engineering
Address: 11200 Sun Center Dr
City/State: Rancho Cordova CA 95670
Phone: 916.851.3500

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
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STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION
NRC-170-E

CERTIFICATE OF COMPLIANCE
This document is used to demonstrate compliance with requirements in 110.9, 130.0, 130.2, 140.7, and 141.0(b) for outdoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e)6, 180.1(a) and 180.2(b)4B for outdoor lighting scopes using the prescriptive path for multifamily and mixed-use occupancies. Multifamily includes dormitory and senior living facilities.

Project Name: Berkeley Bldg H Corp Yard Report Page: (Page 1 of 7)
Project Address: 1326 Allston Way Date Prepared: 3/30/2023

A. GENERAL INFORMATION

01 Project Location (city)	Berkeley	04 Total Illuminated Hardscape Area (ft ²)	2223
02 Climate Zone	3		
03 Outdoor Lighting Zone per Title 24 Part 1.10.114 or as designated by Authority Having Jurisdiction (AHJ):			
<input type="checkbox"/> LZ-0: Very Low - Undeveloped Parkland	<input type="checkbox"/> LZ-2: Moderate - Urban Clusters	<input type="checkbox"/> LZ-4: High - Must be reviewed by CA Energy Commission for Approval	
<input type="checkbox"/> LZ-1: Low - Rural Areas	<input checked="" type="checkbox"/> LZ-3: Moderately High - Urban Areas		
05 Occupancy Types within Project			
• All Other Occupancies			

B. PROJECT SCOPE
This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.7 / 170.2(e)6 or 141.0(b)2L / 180.2(b)4B for alterations.

My Project Consists of:

01	02
<input type="checkbox"/> New Lighting System	Must Comply with Allowances from 140.7 / 170.2(e)6
<input checked="" type="checkbox"/> Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)?
	Yes <input type="radio"/> No <input type="radio"/>
03	04
% of Existing Luminaires Being Altered ¹	Sum Total of Luminaires Being Added or Altered
<input type="checkbox"/> < 10% <input type="checkbox"/> >= 10% and < 50% <input type="checkbox"/> >= 50%	0
Calculation Method	

Please proceed to Table F, Outdoor Lighting Fixture Schedule to define the project's luminaires.
¹ FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.

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Report Version: 2022.0.000
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Compliance ID: EnergyPro-30211-0323-0093
Report Generated: 2023-03-30 09:30:06

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NRC-170-E

CERTIFICATE OF COMPLIANCE
Project Name: Berkeley Bldg H Corp Yard Report Page: (Page 2 of 7)
Project Address: 1326 Allston Way Date Prepared: 3/30/2023

C. COMPLIANCE RESULTS
Results in this table are automatically calculated from data input and calculations in Tables F through N. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

Calculations of Total Allowed Lighting Power (Watts) 140.7 / 170.2(e)6 or 141.0(b)2L / 180.2(b)4B						Compliance Results		
01	02	03	04	05	06	07	08	09
General Hardscape Allowance 140.7(d)1 / 170.2(e)6 (See Table I)	Per Application 140.7(d)2 / 170.2(e)6 (See Table J)	Sales Frontage 140.7(d)2 / 170.2(e)6 (See Table K)	Ornamental 140.7(d)2 / 170.2(e)6 (See Table L)	Per Specific Area 141.0(b)2L / 170.2(e)6 (See Table M)	Existing Power Allowance 141.0(b)2L / 180.2(b)4B (See Table N)	Total Allowed (Watts)	Total Actual (Watts)	07 must be >= 08
359	---	---	---	---	---	359	2	170
Shielding Compliance (See Table G for Details)								N/A
Controls Compliance (See Table H for Details)								COMPLIES

D. EXCEPTIONAL CONDITIONS
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS
This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

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Project Name: Berkeley Bldg H Corp Yard
Project Address: 1326 Allston Way
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F. OUTDOOR LIGHTING FIXTURE SCHEDULE
For new or altered lighting systems demonstrating compliance with 140.7 / 170.2(c)6 all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per 141.0(b)(2) only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (i.e. existing luminaires remaining or existing luminaires being moved are not included). Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H, and are not included here. All other multifamily outdoor lighting is included here.

01	02	03	04	05	06	07	08	09	10
Name or Item Tag	Complete Luminaire Description	Watts per luminaire ^{1,2}	How is Wattage determined	Total Number Luminaires ²	Luminaire Status ³	Excluded per 140.7(a) / 170.2(e)6A	Design Watts	Cutoff Req. > 6,200 Initial Lumen Output / 160.5(c)1 ⁴	Field Inspector Pass / Fail
B	Type B	34	Mfr. Spec	5	New		170	NA < 6200 lumens	
Total Design Watts:									170

¹ NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
² Luminaire is lighting is stated. EXCEPTION 2 to 130.2(b)
³ FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.2(c) / 160.5(b)
⁴ For linear luminaires, wattage should be indicated as W/ft instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.
⁵ Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.
⁶ Compliance with mandatory shielding requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by 130.2(b) / 160.5(c)

G. SHIELDING REQUIREMENTS (BUG)
This section does not apply to this project.

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Documentation Software: EnergyPro
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Project Name: Berkeley Bldg H Corp Yard
Project Address: 1326 Allston Way
Date Prepared: 3/30/2023

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA
This section does not apply to this project.

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)
This section does not apply to this project.

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Form/Title: NRC-170-E - Must be submitted for all buildings

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
Form/Title: NRC-170-Q2-A - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
Generated Date/Time: Report Version: 2022.0.000
Documentation Software: EnergyPro
Scheme Version: rev 20220101
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Project Name: Berkeley Bldg H Corp Yard
Project Address: 1326 Allston Way
Date Prepared: 3/30/2023

H. OUTDOOR LIGHTING CONTROLS
This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
Outdoor lighting for nonresidential buildings, parking garages and common service areas in multifamily buildings must be documented separately from outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit.
Mandatory Controls for Nonresidential Occupancies, Parking Garages & Common Areas in Multifamily Buildings

01	02	03	04	05
Area Description	Shut-Off 130.2(c)1 / 160.5(c)	Auto-Schedule 130.2(c)2 / 160.5(c)	Motion Sensor 130.2(c)3 / 160.5(c)	Field Inspector
Site Lighting	Photocontrol	Provided	NA: Not permitted by H&LS	Pass / Fail

¹ FOOTNOTE: Text has been abbreviated, please refer to Table 160.5-A to confirm compliance with the specific light source technologies listed.
² Authority having jurisdiction may ask for cut sheets or other documentation to confirm compliance of light source.
³ Recessed luminaires marked for use in fire-rated installations, and recessed luminaires installed in non-insulated ceilings are exempted from ii and iii.

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
Generated Date/Time: Report Version: 2022.0.000
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Project Name: Berkeley Bldg H Corp Yard
Project Address: 1326 Allston Way
Date Prepared: 3/30/2023

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: John Gurnawid
Signature Date: 2023-03-30
Address: 11020 Sun Center Dr
City/State/Cp: Rancho Cordova CA 95670
Phone: 916.851.3500

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the holder provides to the building owner at occupancy.

Responsible Designer Name: Nathan A. Hearn, PE
Signature Date: 2023-03-30
Address: 11020 Sun Center Dr
City/State/Cp: Rancho Cordova CA 95670
Phone: 916.851.3500

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
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Documentation Software: EnergyPro
Scheme Version: rev 20220101
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Project Name: Berkeley Bldg H Corp Yard
Project Address: 1326 Allston Way
Date Prepared: 3/30/2023

I. LIGHTING POWER ALLOWANCE (per 140.7 / 170.2(e))
This table includes areas using allowance calculations per 140.7 / 170.2(e). General Hardship Allowance is per Table 140.7-A / Table 170.2-A while "Use it or lose it" Allowances are per Table 140.7-B / Table 170.2-B. Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance. Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H, and are not included here. All other multifamily outdoor lighting is included here.

01	"Use it or lose it" Allowance (select all that apply) (select all that apply)				
	General Hardship Allowance Table I (below)	Per Application Table J	Sales Frontage Table K	Ornamental Table L	Per Specific Area Table M
Area Description	Area Wattage Allowance (AWA)	Linear Wattage Allowance (LWA)	Perimeter Length (ft)	Allowed Density (W/ft)	Linear Allowance (Watts)
Security Lighting	2223	0.021	46.7	311	62.2
Initial Wattage Allowance for Entire Site (Watts):					250
Instances of Initial Wattage Allowance (Lx 0 only):					
Total General Hardship Allowance (Watts):					359

J. LIGHTING ALLOWANCE: PER APPLICATION
This section does not apply to this project.

K. LIGHTING ALLOWANCE: SALES FRONTAGE
This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL
This section does not apply to this project.

Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance
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Documentation Software: EnergyPro
Scheme Version: rev 20220101
Compliance ID: EnergyPro-30211-0323-0092
Report Generated: 2023-03-30 09:30:06

NOLL & TAM ARCHITECTS

729 Heinz Avenue
Berkeley, CA 94710
tel 510.542.2200
fax 510.542.2201

SEAL



Date Signed: 4/3/23



APPROVALS

PROJECT TITLE

Owner
ALLSTON CORPORATION YARD BUILDING "H"

1326 ALLSTON WAY
BERKELEY, CA 94702

Project Status

ISSUE DATE: 08/01/2022

N&T JOB NUMBER: Project Number

REVISIONS	DATE	DESCRIPTION
1	02-03-2023	ISSUED FOR PERMIT
2	03-30-2023	PLAN CHECK COMMENTS

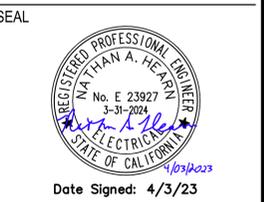
SHEET TITLE

TITLE 24

BID ALT #1:
ENTIRE SCOPE
OF BUILDING "H"

SHEET NUMBER

EO.3



APPROVALS

PROJECT TITLE
**Owner
ALLSTON
CORPORATION
YARD BUILDING
"H"**

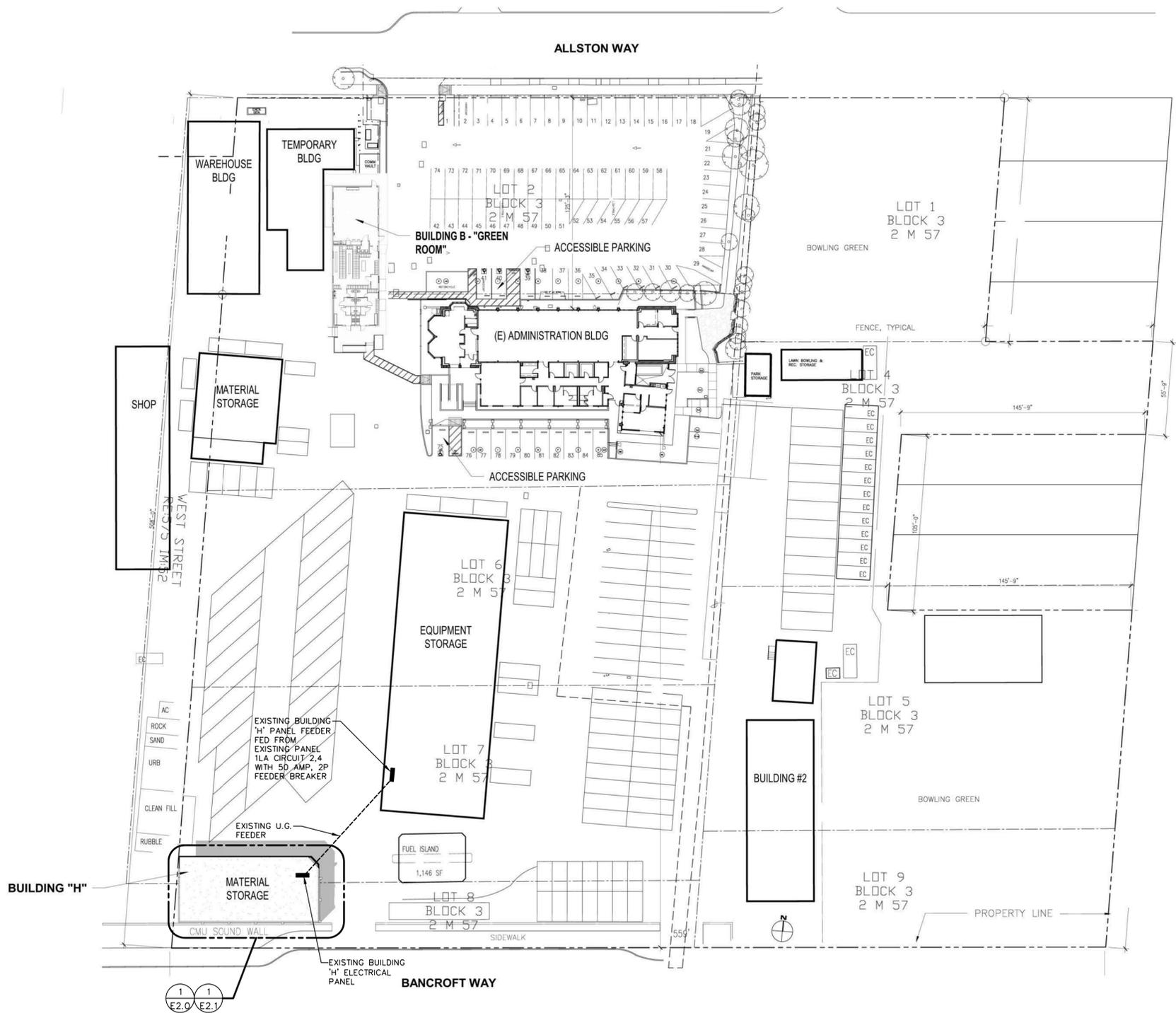
1326 ALLSTON WAY
BERKELEY, CA 94702

Project Status

ISSUE DATE	08/01/2022
N&T JOB NUMBER	Project Number
REVISIONS	
1	02-03-2023 ISSUED FOR PERMIT
2	03-30-2023 PLAN CHECK COMMENTS

SHEET TITLE
**ELECTRICAL
SITE PLAN**
BID ALT #1:
ENTIRE SCOPE
OF BUILDING "H"

SHEET NUMBER
E1.0



1 ELECTRICAL SITE PLAN
NO SCALE



SEAL



Date Signed: 4/3/23



APPROVALS

PROJECT TITLE

Owner
ALLSTON CORPORATION
YARD BUILDING "H"

1326 ALLSTON WAY
BERKELEY, CA 94702

Project Status

ISSUE DATE 08/01/2022

N&T JOB NUMBER Project Number

REVISIONS	DATE	DESCRIPTION
1	02-03-2023	ISSUED FOR PERMIT
2	03-30-2023	PLAN CHECK COMMENTS

SHEET TITLE

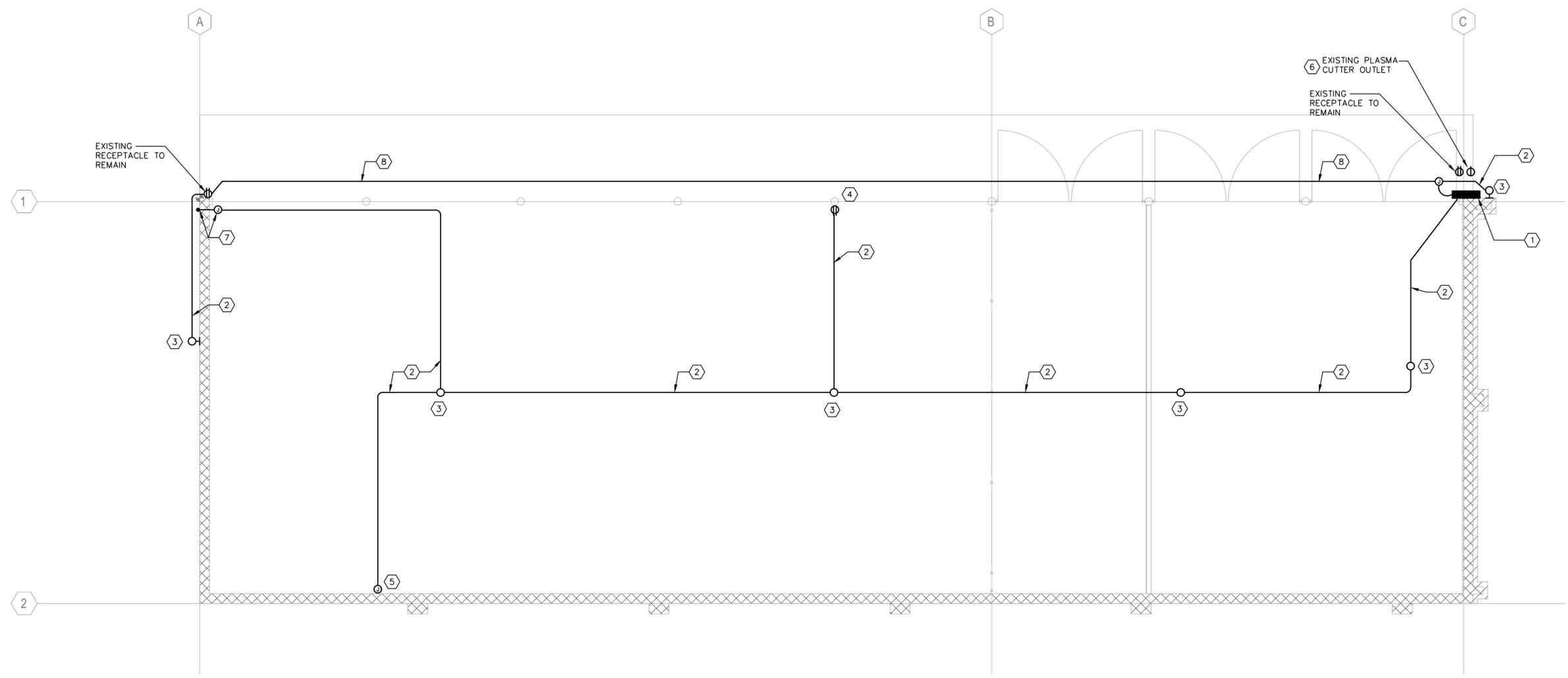
DEMOLITION PLAN
BID ALT #1:
ENTIRE SCOPE OF BUILDING "H"

SHEET NUMBER

E2.0

SHEET KEYNOTES

- 1 EXISTING LOADCENTER TO REMAIN IN SERVICE AND BE REUSED FOR NEW WORK.
- 2 DISCONNECT AND REMOVE EXISTING BRANCH CIRCUIT WIRING AND RACEWAY BACK TO SOURCE.
- 3 DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURE.
- 4 DISCONNECT AND REMOVE EXISTING RECEPTACLE.
- 5 DISCONNECT AND REMOVE EXISTING JUNCTION BOX.
- 6 PLASMA CUTTER OUTLET TO REMAIN IN SERVICE.
- 7 EXISTING JUNCTION BOX AND BRANCH CIRCUIT TO EXISTING SITE LIGHTING POLES. EXISTING SITE LIGHTING POLES TO REMAIN IN SERVICE. REFER TO NEW WORK FOR RECONNECTION.
- 8 EXISTING RACEWAY SERVING THE WEST RECEPTACLE TO REMAIN IN SERVICE. MODIFY RACEWAY AS NECESSARY AND SEAL ALL UNUSED OPENINGS.



1 DEMOLITION PLAN
SCALE: 1/4"=1'-0"
0 2' 4' 8'





SHEET KEYNOTES

- TYPE 'A' LED GARAGE LIGHT: 12.8" SQUARE, 120V, 34 WATT, 4528 LUMENS, 80 CRI, 4K CCT, PHOTCELL/WATTSTOPPER MOTION DETECTOR. ABOVE ALL LIGHTING CAT. NO. LSPKG35401P-MS-L2B. INTEGRAL SENSOR CONTROL SHALL BE BY MOTION DETECTION AND/OR DAYLIGHT CONTRIBUTION. FROM HIGH LEVEL, IN THE ABSENCE OF MOTION, SENSOR SHALL FADE TO LOW LEVEL THEN OFF AFTER TIME DELAY. LIGHTING TO BE OFF IF DAYLIGHT CONTRIBUTION IS SUFFICIENT.
- TYPE 'B' SECURITY FLOODLIGHT: ~6" SQUARE 120V, 9.1 WATT, 1500 LUMENS, 80CRI, 4K CCT, INTEGRAL PHOTOCELL. LITHONIA ESXF1 ALO SWW2 KY DDB. CONTROL SHALL BE BY PHOTOCELL, DUSK TO DAWN.
- RECEPTACLE TO REMAIN IN SERVICE. REPLACE EXISTING 20A RECEPTACLE AND INSTALL OUTLET COVER WITH NEW CAST METAL WEATHERPROOF IN USE COVER.
- EXISTING POLE LIGHTS TO REMAIN IN SERVICE. RECONNECT AS REQUIRED. REPAIR/REPLACE EXISTING DEFECTIVE JUNCTION BOX.
- EXISTING PLASMA CUTTER OUTLET TO REMAIN IN SERVICE.
- NEW WEATHERPROOF INTERIOR LIGHTING SWITCH FOR 'ON-OFF CONTROL PER TITLE 24 REQUIREMENTS.
- ROUTE EXTERIOR FLOODLIGHTING CIRCUIT THROUGH LIGHTING CONTROL TIMECLOCK.
- LIGHTING CONTROL TIMECLOCK - DIGITAL, 7 DAY, 1 CHANNEL, ASTRONOMIC OPERATION, SPST, 120 VOLT, MANUAL OVERRIDE, NEMA 3R ENCLOSURE. TORK EW2101

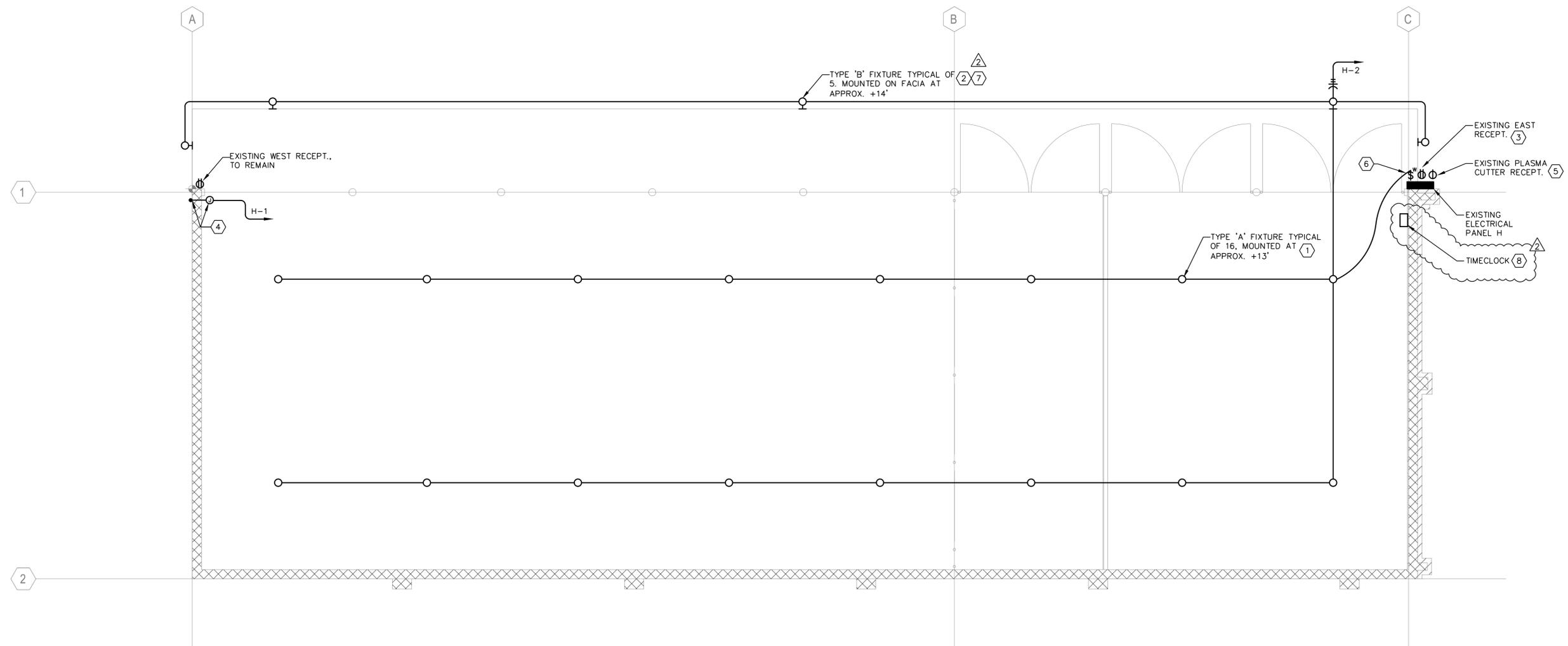
PANELBOARD SCHEDULE - Panel H EXISTING														
DESIGNATION	FEEDER NO.	POLES & AMPS	LOAD, VA			C K	P H	C K	LOAD, VA			POLES & AMPS	FEEDER NO.	DESIGNATION
			LTG.	RECP.	OTHER				LTG.	RECP.	OTHER			
EXISTING POLE LIGHTS - ALLOTMENT	1	1/20	1000			1	A	5			2496	1/30	2	PLASMA CUTTER - ALLOTMENT
LIGHTING	1	1/20	590			2	B	6			2496	*	-	"
RECEPTACLE EAST	1	1/20		180		3	A	7						SPACE
RECEPTACLE WEST	1	1/20		180		4	B	8						SPACE
SECTION SUB-TOTALS			0	0	0				0	0	0			SECTION SUB-TOTALS

CATEGORY	CONN. LOAD		DESIGN LOAD		
	KVA	AMPS	DIV.	KVA	AMPS
LIGHTING	1.6	6.6	1.25	2.0	8.3
RECEPTACLE	0.4	1.5	1.00	0.4	1.5
MOTORS	5.0	20.8	1.00	5.0	20.8
SPECIAL LOADS:	0.0	0.0	1.00	0.0	0.0
ELECTRIC HEATING:	0.0	0.0	1.00	0.0	0.0
WATER HEATING:	0.0	0.0	1.00	0.0	0.0
TOTAL:	6.9	28.9	7.3	30.6	

MOUNTING:	SURFACE
VOLTS:	120/240
PHASEWIRE:	1/3
MAINS SIZE:	100 AMPS
MAINS TYPE:	MLO
BUSS TYPE:	COPPER
BRKR TYPE:	BOLT-IN
A.I.C. (RMS):	65,000
A Phase	3.7 Connected Kva
B Phase	3.3 Connected Kva

REMARKS:
* PROVIDE NEW CIRCUIT BREAKER MATCH EXISTING C.B. AIC RATING

FEEDER NO:
1 = 2#12, #12G - 1/2" C
2 = 2#10, #10G - 3/4" C



1 POWER AND LIGHTING PLAN
SCALE: 1/4"=1'-0"
0 2' 4' 8'

APPROVALS

PROJECT TITLE

Owner
ALLSTON CORPORATION
YARD BUILDING "H"

1326 ALLSTON WAY
BERKELEY, CA 94702

Project Status

ISSUE DATE: 08/01/2022

N&T JOB NUMBER: Project Number

REVISIONS	DATE	DESCRIPTION
1	02-03-2023	ISSUED FOR PERMIT
2	03-30-2023	PLAN CHECK COMMENTS

SHEET TITLE

POWER AND LIGHTING PLAN
BID ALT #1:
ENTIRE SCOPE OF BUILDING 'H'

SHEET NUMBER

E2.1

SEAL



Date Signed: 4/3/23



APPROVALS

PROJECT TITLE

Owner
ALLSTON CORPORATION
YARD BUILDING "H"

1326 ALLSTON WAY
BERKELEY, CA 94702

Project Status

ISSUE DATE 08/01/2022

N&T JOB NUMBER Project Number

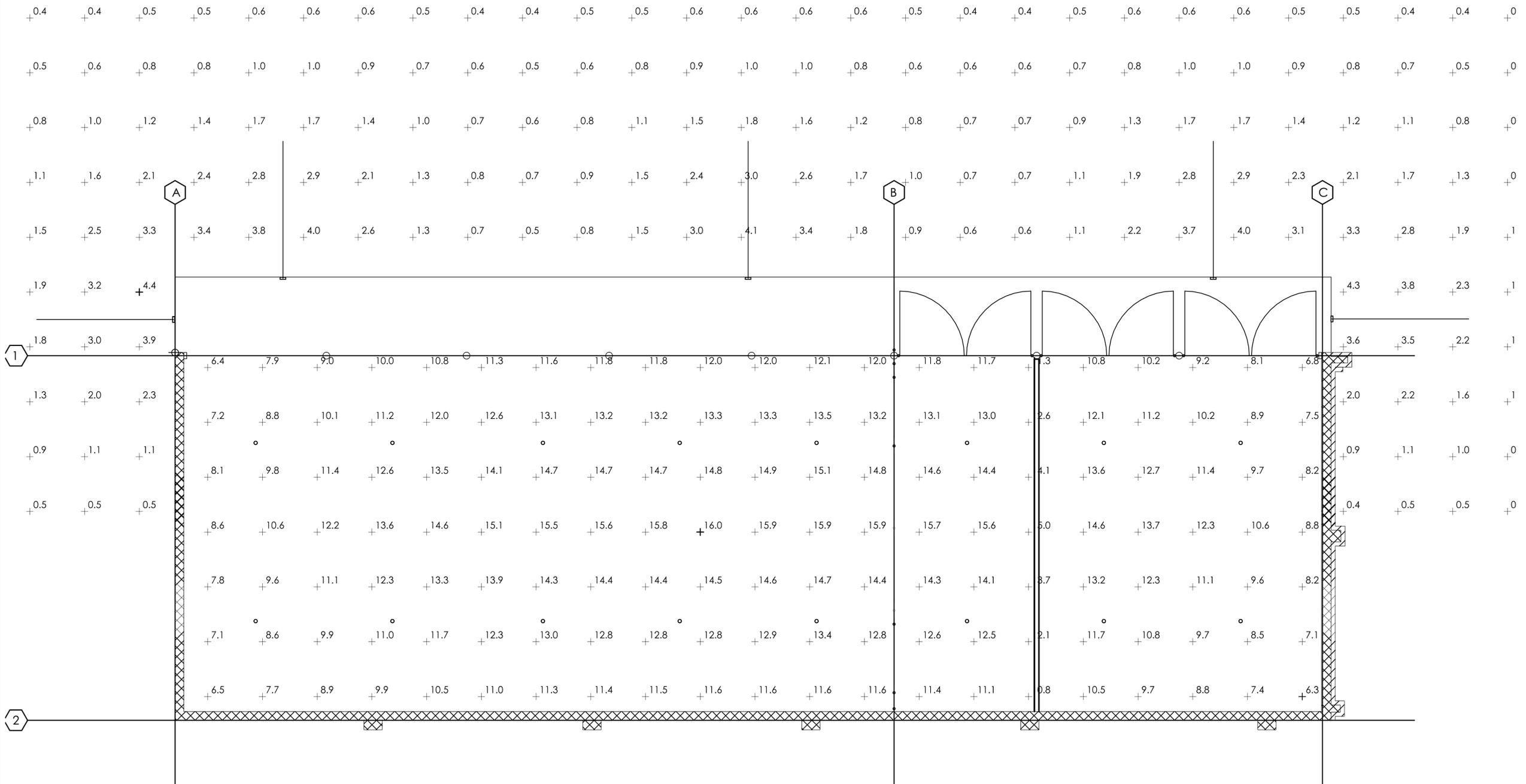
REVISIONS	DATE	DESCRIPTION
1	02-03-2023	ISSUED FOR PERMIT
2	03-30-2023	PLAN CHECK COMMENTS

SHEET TITLE

PHOTOMETRIC PLAN
BID ALT #1:
ENTIRE SCOPE
OF BUILDING "H"

SHEET NUMBER

E2.2



1 PHOTOMETRIC PLAN

SCALE: 1/4"=1'-0"



SECTION 16010

PART 1 – GENERAL ELECTRICAL SPECIFICATIONS

1.1 WORK INCLUDED:

A. This specification shall apply to all phases of work hereinafter specified, shown on drawings, or as required to provide a complete installation of electrical systems for this project. Work required under this specification is not limited to just the Electrical drawings. Refer to Architectural, Structural, Landscape, and Mechanical/Plumbing drawings as well as all other drawings applicable to this project, which designate the scope of work to be accomplished. The intent of the Drawings and Specifications is to provide a complete and operable electrical system that includes all documents that are a part of the Contract.

1. Work Included: Furnish labor, material, services and skilled supervision necessary for the construction, erection, installation, connections, testing, and adjustment of all circuits and electrical equipment specified herein, or shown or noted on Drawings, and its delivery to the Owner complete in all respects ready for use.
2. The electrical Work includes installation or connection of certain materials and equipment furnished by others. Verify installation details, installation and rough-in locations from the actual equipment or from the equipment shop drawings.
3. Electrical Drawings: Electrical Drawings are diagrammatic, and are intended to convey the scope of work, indicating intended general arrangement of equipment, conduit and outlets. Follow Drawings in laying out Work and verify spaces for installation of materials and equipment based on actual dimensions of equipment furnished.

1.2 QUALITY ASSURANCE

A. Design, manufacture, testing and method of installation of all apparatus and materials furnished under requirements of these specifications shall conform to latest publications or standard rules of the following:

1. Institute of Electrical and Electronic Engineers – IEEE
2. National Electrical Manufacturers' Association – NEMA
3. Underwriter's Laboratories, Inc. – UL
4. National Fire Protection Association – NFPA
5. Federal Specifications – Fed. Spec.
6. American Society for Testing and Materials – ASTM
7. American National Standards Institute – ANSI
8. National Electrical Code – NEC
9. National Electrical Safety Code – NESC
10. Insulated Cable Engineers Association – ICEA
11. American Institute of Steel Construction – AISC
12. State and Municipal Codes In Force In The Specific Project Area
13. Occupational Safety and Health Administration (OSHA)
14. Electronics Industries Association/Telecommunications Industry Association (EIA/TIA)
15. California Electrical Code
16. Local Authority Having Jurisdiction (AHJ) Published Electrical Standards and Codes (as applicable).

B. Perform Work in accordance with the California Electrical Code, applicable building ordinances, and other applicable codes, hereinafter referred to as the "Code." The Contractor shall comply with the Code including local amendments and interpretations without added cost to the Owner. Where Contract Documents exceed minimum requirements, the Contract Documents take precedence. Where code conflicts occur, the most stringent shall apply unless variance is approved.

1. Comply with all requirements for permits, licenses, fees and codes. The Contractor, at Contractor's expense, shall obtain all permits, licenses, fees, special service costs, inspections and arrangements required for Work under this contract, unless otherwise specified.
2. Comply with requirements of the applicable utility companies serving this Project. Make all arrangements with utility companies for proper coordination of Work.

1.3 GENERAL REQUIREMENTS

1. Guarantee: Furnish a written guarantee for a period of one-year from date of acceptance.
2. Wherever a discrepancy in quantity or size of conduit, wire, equipment, devices, circuit breakers, etc., (all materials), arises on the Drawings and/or in the Specifications, the Contractor shall be responsible for providing and installing all material and services required by the strictest condition noted on Drawings and/or in Specifications to ensure complete and operable systems as required by the Owner and Engineer.
3. All Core Cutting, Drilling, and Patching:
 1. For the installation of work under this Section, the aforementioned shall be performed under this Section of the Specifications and the Concrete section of the Specifications.
 2. No holes will be allowed in any structural members without the written approval of the Project's Structural Engineer.
 3. For penetrations of concrete slabs or concrete footings, the work shall be as directed in the Concrete Section of Specifications.
 4. The Contractor shall be responsible for patching and repairing surfaces where he is required to penetrate for work under this contract.
 5. Penetrations shall be sealed to meet the rated integrity of the surface required to be patched and repaired. The patched surface shall be painted or finished to match the existing surface.
4. Verifying Drawings and Job Conditions:
 1. The Contractor shall examine all Drawings and Specifications in a manner to be fully cognizant of all work required under this Section.
 2. The Contractor shall visit the site and verify existing conditions. Where existing conditions differ from Drawings, adjustment(s) shall be made and allowances included for all necessary equipment to complete all parts of the Drawings and Specifications.

1.4 WORK IN COOPERATION WITH OTHER TRADES

1. Examine the Drawings and Specifications and determine the work to be performed by the electrical, mechanical and other trades. Provide the type and amount of electrical materials and equipment necessary to place this work in proper operation, completely wired, tested and ready for use. This shall include all conduit, wire, disconnects, relays, and other devices for the required operation sequence of all electrical, mechanical and other systems or equipment.
2. Provide a conduit-only system for low voltage wiring required for control of mechanical and plumbing equipment described in this or other parts of the Contract Documents. Install all control housings, conduits, and backboxes before installing conduit to the controls.
3. Install separate conduits between each heating, ventilating and air conditioning sensing device and its control panel and/or control motor. Before installing any conduit for heating, ventilating and air conditioning control wiring, verify the exact requirements from the control diagrams provided with the equipment manufacturer's shop drawings.

1.5 TESTING AND ADJUSTMENT

1. Upon completion of all electrical work, the Contractor shall test all circuits, switches, light fixtures, lighting control and dimming systems including distributed systems, UPSs, generators, SPDs, lighting inverters, transfer switches, motors, circuit breakers, motor starter(s) and their auxiliary circuits and any other electrical items to ensure perfect operation of all electrical equipment.
2. Equipment and parts in need of correction, and discovered during such testing, shall be immediately repaired or replaced with all new equipment and that part of the system shall then be retested. All such replacement or repair shall be done at no additional cost to the Owner.
3. All circuit(s) shall be tested for continuity and circuit integrity. Adjustments shall be made for circuits not complying with testing criteria.
4. All test reports, including copies of any required Energy Code Acceptance Forms (e.g. CA Title 24 Acceptance For Code Compliance Forms) should be submitted to the Engineer at completion of project.

1.6 IDENTIFICATION

1. Nameplates shall be provided for panel boards, contactors, starters, disconnect switches, enclosed circuit breakers/switches, lighting control panels, dimming panels, and all low voltage system terminal and control cabinets.
 1. Nameplate inscriptions shall be identical to the equipment designations indicated in plans and specifications. Nameplates shall be engraved with the device designation/identification on the top line, source identification for the device on the 2nd line per CEC, Art 408.4, and load designation for the device on the bottom line. Where load designation consists of a branch circuit, omit bottom line. Where device designation is not indicated on plans/specifications, Contractor shall submit a written clarification request to the Engineer.

Example: Transformer 11A
Source Disconnecting Location: Switchboard MSA located in RM 110
Load: Panels 1LA & 1LB

B. Identification nameplates, unless otherwise noted (UON), shall be laminated/extruded modified acrylic that is 3/32" thick, UV-stabilized, matte finish, suitable for use in 180 deg F ambient, with beveled edges and engraved white letters 3/8" high, minimum, on 1-1/2" high black background (utility/normal and optional standby power systems) for single line of text. Where two lines of text are required, provide min. 2" high nameplate. Where three lines of text are required, provide min. 2.5" high nameplate.

C. Identification nameplates for new panelboards shall be attached with panelboard manufacturer-provided screws via panelboard manufacturer factory pre-drilled holes. A factory option to rivet identification nameplates to the equipment is only acceptable if screw-fastened nameplates are not an available option from the switchgear manufacturer. Field drilling or other mechanical attachment methods that change/void the NEMA or NRTL rating of the enclosure are strictly forbidden.

D. Identification nameplates for disconnect switches, enclosed circuit breakers/switches, lighting control panels, dimming panels be attached to the equipment by self-adhesive backing integral to the nameplates. When equipment is located outdoors, provide nameplates without self-adhesive backing and attach to equipment using weather-rated, UV-resistant epoxy. In all cases, clean surfaces before applying identification nameplates parallel to equipment lines.

E. See wiring device section of this specification for additional wiring device plate cover labeling requirements.

F. See drawings for panel board schedule directory installation requirements.

G. See conduit installation section of this specification for conduit labeling requirements.

1.7 FINAL INSPECTION AND ACCEPTANCE

1. After all requirements of the Specifications and/or the Drawings have been fully completed, representatives of the Owner will inspect the work. Contractor shall provide competent personnel to demonstrate the operation of any item or system to the full satisfaction of each representative.
2. Final acceptance of the work will be made by the Owner after receipt of approval and recommendation of acceptance from each representative.

1.8 RECORD DRAWINGS

1. Drawings of Record: The Contractor shall provide and keep up-to-date, a complete record set of drawings. These shall be corrected daily and show every change from the original Drawings. This set of prints shall be kept on the job site and shall be used only as a record set. This shall not be construed as authorization for the Contractor to make changes in the layout without definite instruction in each case. Upon completion of the work, a set of reproducible Contract Drawings shall be obtained from the General Contractor and all changes as noted on the record set of prints shall be incorporated thereon with black ink in a neat, legible, understandable and professional manner. Refer to the Supplementary General Conditions for complete requirements.

1.9 SHOP DRAWINGS/SUBMITTALS

1. Shop Drawings/Submittals, unless required otherwise by general project specifications or instructions to bidders, shall be submitted in electronic format (PDF) to include a Letter of Transmittal (L.O.T.), which shall give a list of the drawings submitted with dates and/or system(s) components contained within the submittal. Drawings and material cut sheets shall be complete in every respect and edited/marked to indicate specific items being provided. Printed/Hard copies are not acceptable.
2. The shop drawings/submittals shall be marked with the name of the project, numbered consecutively, and bear the approval of the Contractor as evidence that the Contractor has checked the drawings. Any drawings submitted without this approval will be returned to the Contractor for resubmittal.
3. If the shop drawings show variations from the requirements of the Contract because of standard shop practice or other reasons, the Contractor shall make specific mention of such variations in the Contractor's letter of transmittal. If the substitution is accepted, the Contractor shall be responsible for proper adjustment that may be caused by the substitution. Samples shall be submitted when requested.

F. Shop drawings shall be submitted on the following, but not limited to:

1. Lighting fixtures.
2. Panelboards complete with overcurrent device information.
3. Fire Alarm System/Central Monitoring System.
4. Wiring Devices.
5. Lighting control products/dimming system products.
6. Pull boxes and underground vaults.
7. Terminal cabinets.
8. Cable tray, flexible cable tray and cable runway.
9. Arc flash, short-circuit, and coordination studies.
10. All other products called out on drawings that call for shop drawing submittal.

1.10 MAINTENANCE, SERVICING, INSTRUCTION MANUALS AND WIRING DIAGRAMS

1. Prior to final acceptance of the job, the Electrical Contractor shall furnish to the Owner at least four (4) copies of operating and maintenance and servicing instructions, as well as four (4) complete wiring diagrams for the following items or equipment:
 1. Lighting control systems/dimming systems.
 2. Fire Alarm System.
 3. Panel boards; complete with overcurrent device information.
2. All wiring diagrams shall specifically cover the system supplied. Typical drawings will not be accepted. Four (4) copies shall be presented to the Owner.

1.11 INTERRUPTION OF SERVICES/SERVICE SHUTDOWN

1. Any interruption of electrical services, electrical circuits, electrical feeders, signal systems, communication systems, fire alarm systems, etc., required to perform work shall meet the specific prior-approval requirements of the Owner. Such work shall be scheduled with the Owner to be performed at the Owner's convenience.
2. Interruptions/outages of any of the Owner's systems and services mentioned above shall be scheduled to occur during other than the Owner's normal business hours. Any overtime costs shall be borne by the Contractor.
3. See drawings for any additional requirements regarding outages, interruption and any temporary services required.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Materials and Equipment: All electrical materials and equipment, including custom-made equipment, shall be new and shall be listed by Underwriter's Laboratories (UL) and bear their label or be listed and certified by a Nationally Recognized Testing Lab (NRTL) that is also recognized by the local Authority-Having-Jurisdiction (AHJ).

B. Panelboards – Branch Circuit:

1. See drawings for panel board schedules and specifications.

C. Lighting Fixtures:

1. See drawings for lighting fixture schedules and additional specifications. Furnish, install, and connect a lighting fixture at each outlet where a lighting fixture type symbol (designated on plans) is shown as being installed. Each fixture shall be complete with all required accessories including sockets, glassware, boxes, spacers, mounting devices, fire rating enclosure and lamps.

D. Wiring Devices:

1. Provide wiring devices indicated per plan. Devices shall be specification grade. Acceptable manufacturers are Leviton, Pass & Seymour and Hubbell. Provide all similar devices of same manufacturer, unless indicated otherwise. All device colors shall be selected from the full range of manufacturer standard color options as selected by the Architect. This direction will be provided in the shop drawing review process.

a. Wiring Devices (Decora)

- | | |
|---|-----------------|
| 1) Convenience Receptacle | #16252-COLOR |
| 2) Dedicated Receptacle | #16352-COLOR |
| 3) Convenience I.G. Receptacle | #16262-IG-COLOR |
| 4) Dedicated IG Receptacle | #16362-IG-COLOR |
| 5) Convenience G.F.C.I. Receptacle | #GFNT1-COLOR |
| 6) Dedicated G.F.C.I. Receptacle | #GFNT2-COLOR |
| 7) Weather/Tamper Resistant GFCI Receptacle | #GFWT2-COLOR |
| 8) Convenience Simplex Receptacle | #16251-COLOR |
| 9) Single Pole Switch | #5621-2-COLOR |
| 10) Double Pole Switch | #5622-2-COLOR |
| 11) Three Way Switch | #5623-2-COLOR |
| 12) Pilot Light Switch "On" | #5628-2-COLOR |
| 13) Pilot Light Switch "Off" | #5631-2-COLOR |
| 14) Projection Screen Switch | #5657-2-COLOR |
| 15) Low Voltage Momentary Switch | #5657-2-COLOR |
| 16) Keyed Switch | #1221-2L-COLOR |

b. Use of dedicated receptacles is required where plans depict a branch circuit supplying only a single simplex or duplex receptacle. Use of controlled receptacles is required where depicted on plans – See controlled receptacle specifications for additional information.

2. I.G. (isolated ground) receptacle bodies shall be of a basic color specified above with an orange triangle to symbolize isolated ground.

3. Wiring device cover plates located on recessed boxes shall be commercial grade nylon. Plate color shall match wiring device color UON on plans. Cover plates utilized on surface mounted boxes shall be metal. Plastic cover plates are unacceptable.

4. Except as otherwise noted, all wiring device plates on the project shall be labeled with panel and circuit number(s) utilizing a Brother P-Touch labeling system with 1/2" tape (yellow on black) or equal by Herman-Tellerman or Panduit. Locate label on the concealed side of the wiring device plate. Handwritten labels are unacceptable.

5. The Contractor shall provide duplex receptacle outlets in the appropriate configurations necessary to comply with applicable energy code requirements for controlled receptacles and as shown on plans. All wiring devices indicated to be controlled receptacles shall be NEMA-approved, electrical code-compliant with factory markings on the face of the receptacle(s) with the word "Controlled" or utilize further markings and symbols to indicate which receptacles on each outlet is/are controlled. Stickers, field-applied markings or other non-permanent markings are not acceptable. Where a GFCI receptacle outlet is required to be controlled, provide an adjacent controlled duplex receptacle outlet connected on the load side of the GFCI outlet. Generally, one receptacle in a duplex receptacle outlet is required to be controlled. It may be the lower receptacle or upper receptacle based on manufacturer offering. However, the controlled receptacle location within a controlled receptacle outlet shall remain consistent throughout the project. Where an existing duplex receptacle outlet is required to be controlled, provide a new wiring device with the appropriate control configuration necessary to comply with plans. All controlled receptacles shall be connected to a branch circuit controlled by an occupancy sensor-based or relay panel lighting control system. Acceptable manufacturers are Leviton, Pass and Seymour & Hubbell.

E. For outdoor wiring devices, provide lockable, hinged metal cover suitable for wet locations, while-in-use, Taymac #MX3200, or equal.

F. Motor Controllers/Starters: See drawings for motorized equipment schedules and specifications.

G. Circuit Breakers.

1. All non-service entrance circuit breakers less than 225A shall be molded plastic case, air circuit breakers conforming to UL 489. Provide breakers with thermal magnetic trip units, and a common trip bar for two- or three-pole breakers, connected internally to each pole so tripping of one pole will automatically trip all poles of each breaker. Provide breakers of trip-free and trip-indicating bolt-on type, with quick-make, quick-break contacts. Provide single two- or three-pole breaker interchangeability. Provide padlocking device for circuit breakers as shown on the Drawings.
2. Tandem or half-sized circuit breakers are not permitted.
3. Circuit breakers shall be standard interrupting construction. Panelboards shall accept standard circuit breakers up to 100A.
4. Circuit breaker handle accessories shall provide provisions for locking handle in the on or off position.
5. Provide 75 degree Celsius-rated conductor lugs/lug kits as required on all circuit breakers to accept conductor quantities and sizes shown on drawings.
6. All circuit breaker terminations shall be suitable for use with 75 degree Celsius ampacity conductors. Listed, dual-rated pin terminals, straight or offset, are acceptable for use in accommodating oversized or parallel conductor installations.
7. Circuit breakers serving Fire Alarm or Central Monitoring panels and power supplies shall be red in color and lockable in the "ON" position.

H. Conduit:

1. Galvanized Rigid Conduit (GRC) shall be full weight threaded type steel. Steel conduit shall be protected by overall zinc coating to inside and outside surfaces, applied by the hot dip, metallizing, or sherardizing process.
2. Intermediate Metal Conduit (IMC) shall be hot-dipped galvanized in accordance with UL 1242, and meet Federal Specification WWC-581 (latest revision).
3. Electrical Metallic Tubing (EMT) shall be zinc-coated steel with baked enamel or plastic finish on inside surfaces except as noted below. EMT shall be dipped in a chromic acid bath to chemically form a corrosion-resistant protective coating of zinc chromate over galvanized surface.
4. Liquid-tight conduit (Seal-Tite) shall be galvanized steel flexible conduit as above except with moisture and oil-proof jacket, pre-cut lengths and factory-installed fittings. For outdoor installations and motor connections only unless otherwise noted on drawings.
5. Factory assembled, or off-site assembled wiring systems (such as Metal Clad (MC) Cable, Type AC Cable, Type NM Cable, Type BX Cable, etc.) shall not be used unless otherwise indicated in the Allowed Specification Deviations Section or Deductive/Additive Alternate Pricing Section generally located on the symbols list drawing.
6. Non-Metallic Conduit:
 - a. Polyvinyl chloride (PVC) rigid conduit, Schedule 40, Type II for underground installation only with solvent welded joints, conforming to UL requirements, listed for exposed and direct burial application.
 - b. Conduit and fittings shall be produced by the same manufacturer.

I. Fittings:

1. Conduit type fittings shall be smooth inside and out, taper threaded with integral insulating bushing and of the shapes, sizes and types required to facilitate installation or removal of wires and cables from the conduit and tubing system. These fittings shall be of metal, smooth inside and out, thoroughly galvanized, and sherardized cadmium plated.
2. Metallic conduit covers shall have the same finish as the fitting and shall be provided for the opening of each fitting where conductors do not pass through the cover.
3. Connector, coupling, locknut, bushings and caps used with rigid conduit shall be steel, threaded and thoroughly galvanized. Bushings shall be insulated.
4. UON all interior EMT fittings, connectors and couplings installed in concealed locations, areas not considered to be wet or damp locations by the AHJ, or areas not subject to physical damage, shall be steel, zinc or cadmium plated, threadless, compression, steel locking ring type with insulated throat. Where suitable for use, steel set screw fittings are allowed for trade sizes of 2" and smaller. Insulated throat is not required for fittings, connectors and couplings 1" and smaller.

5. All interior and exterior EMT fittings, connectors and couplings, 2" and smaller, installed in exposed or concealed locations that are considered by the AHJ to be wet or damp locations, shall be raintight-listed, steel, zinc or cadmium plated, threadless, compression, steel locking ring type with insulated throat. If raintight-listed, EMT fittings, connectors and couplings are unavailable for a given trade size or if conduit is installed in an area subject to damage – provide rigid metallic or intermediate metallic conduits, fittings, connectors and couplings as required.

6. Flexible steel conduit connectors shall be a malleable iron clamp or squeeze type or steel twist-in type with insulated throat. The finish shall be zinc or cadmium plating.

7. Conduit unions shall be "Erickson" couplings, or approved equal. The use of running threads will not be permitted.

J. 600V Conductors – Wire and Cable:

1. All conductors shall be copper. Provide stranded conductor for #10 AWG and larger or when making flexible connections to vibrating machinery. Use compression "fork" type connectors or transition to solid conductors when connecting to switches, receptacles, etc.
2. Type THHN/THWN-2 thermoplastic, 600V, UL approved, dry and wet locations rated at 90 degrees Celsius, for conductors of all sizes from #12 AWG up to and including 1000 kcmil. RHH/RHW insulation is allowed only to provide an Electrical Circuit Protective System to comply with CEC.
3. Wire and cable shall be new, manufactured not more than six (6) months prior to installation, shall have size, type of insulation, voltage rating and manufacturer's name permanently marked on outer covering at regular intervals.
4. Wire and cable shall be factory color-coded by integral pigmentation with a separate color for each phase and neutral. Each system shall be color-coded and it shall be maintained throughout.

NOLL & TAM ARCHITECTS

729 Heinz Avenue
Berkeley, CA 94710
tel 510.542.2200
fax 510.542.2201

SEAL



Date Signed: 4/3/23



APPROVALS

PROJECT TITLE

Owner
ALLSTON CORPORATION
YARD BUILDING "H"

1326 ALLSTON WAY
BERKELEY, CA 94702

Project Status

ISSUE DATE 08/01/2022

N&T JOB NUMBER Project Number

REVISIONS

NO.	DATE	DESCRIPTION
1	02-03-2023	ISSUED FOR PERMIT
2	03-30-2023	PLAN CHECK COMMENTS

SHEET TITLE

ELECTRICAL SPECIFICATIONS
BID ALT #1:
ENTIRE SCOPE
OF BUILDING "H"

SHEET NUMBER

E3.0

SEAL



Date Signed: 4/3/23



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PART 3 - EXECUTION

3.1 PREPARATION AND INSTALLATION

A. Installation of Conduit and Outlet Boxes:

- All conduit installed in the dry walls or ceilings of a building shall be steel tube (EMT), aluminum tube (EMT), or intermediate Metal Conduit (IMC). Flexible conduit shall not be used in lieu of EMT, IMC or rigid conduit except as noted herein.
- Galvanized rigid conduit (GRC) or intermediate metal conduit (IMC) shall be used as follows:
 - When noted on the drawings.
 - When considered exposed to damage by the local AHJ.
 - When installed in wet or damp locations and of a trade size where listed-raintight fittings, connectors, couplings, etc. are unavailable.
 - When required by CEC.
 - When installed in concrete and masonry. The use of ENT in CMU walls and parking structures may be allowed only as directed in writing by the Engineer. Request for ENT substitution must be made prior to bid and in accordance with pre-bid substitution request requirements of these specifications.
- Intermediate metal conduit (IMC), is approved for use in all locations as approved for GRC or EMT and in accordance with CEC Article 342.
- Flexible steel conduit shall only be permitted to be used at light fixture outlets and connections to vibrating electrical equipment. All flexible steel conduit runs shall be less than 6'-0". Except when concealed in walls or other structural elements, all outdoor installation shall be made using liquid-tight flex with approved fittings. Include a separate insulated green ground conductor sized per NEC in each conduit. Other uses of flexible conduit shall be allowed only as approved in writing by the Engineer.
- Flexible liquid-tight conduit shall be installed in lieu of the flexible steel where required by NEC, or CEC where adopted, in damp and wet location, where exposed to weather, in refrigerated areas (55 Deg. F or less), and/or between seismic joints. All rotating electrical equipment shall be supplied with flexible, liquid-tight conduit with appropriate slack and shall not exceed thirty-six (36) inches. Include a separate insulated green ground conductor sized per NEC in each conduit. Other uses of liquid-tight flexible conduit shall be allowed as approved in writing by the Engineer on a case by case basis.
- Rigid metallic conduit installed underground or embedded in concrete shall be 1" trade size minimum and shall be wrapped with 20 mil polyvinyl chloride plastic tape. PVC conduit installed underground or imbedded in concrete shall be 3/4" minimum trade size.
- Conduit shall be run so as not to interfere with other piping, fixtures or equipment.
- The ends of all conduits shall be cut square, carefully reamed out to full size and shall be shouldered in fitting.
- No running threads will be permitted in locations exposed to the weather, in concrete or underground. Special union fittings shall be used in these locations.
- Where conduit is underground, under slabs or grade, exposed to the weather, or in wet locations, make joints liquid tight and gas tight.
- All metal conduit in masonry and concrete and where concealed under floor slabs shall have joints painted with thread compound prior to make-up.
- PVC conduit shall not be run in walls except where approved by the Engineer prior to bid in limited instances that may include concrete or CMU walls used in site retaining, parking structures, or exterior equipment yard or enclosure walls, etc.
- Where conductors enter a raceway or a raceway in a cabinet, pull box, junction box, or auxiliary gutter, the conductors shall be protected by a plastic bushing type fitting providing a smoothly rounded insulating surface.
- Where conduit extends through roof to equipment on roof area, the Contractor shall provide flashing material compatible with the roofing system as required by the roofing specifications or as required by the Owner's roof warranty. This flashing shall be delivered to the roofing Contractor for installation. The actual location of all such roof penetrations and outlets shall be verified by the Architect/Owner. Contractor to verify type of flashing prior to bid and include all costs.
- All conduit shall be supported at intervals not less than 6'-0" and within 12" from any outlet and at each side of bends and elbows. Conduit supports shall be galvanized, heavy stamped, two-hole conduit clamp properly secured.
- Where conduit racks are used, the rack shall consist of two piece conduit clamps attached to galvanized steel slotted channels, properly secured via threaded rods attached directly to the building structure.
- Nail-in conduit supports, one-piece set screw type conduit clamps or perforated iron for supporting conduit shall not be used.
- All conduit runs shall be installed parallel or perpendicular to walls, structural members, or intersection of vertical planes and ceilings. Field made bends and offset shall be avoided where possible. Crushed or deformed raceway shall not be installed.
- Open knockouts in outlet boxes only where required for inserting conduit.
- Locate wall outlet of the same type at same level in all rooms, except where otherwise noted.
- Outlet boxes on metal studs shall be attached to metal hangers, tack welded or screwed to studs; On wood studs attachment shall be with wood screws, nails are not acceptable.
- Recessed boxes shall not be mounted back-to-back in any wall; minimum offset shall be 24 inches.
- Junction Boxes that do not contain any device(s) shall be located in storage rooms, electrical closets or above accessible ceilings, not in hard lid ceilings or other forms of inaccessible ceilings. Place boxes which must be exposed to public view in a location approved by the Owner's Project Manager. Provide covers or plates to match adjacent surfaces as approved by the Owner's Project Manager.
- Surface mounted pull boxes, terminal cabinets, junction boxes, panel boards etc., shall be attached to walls using appropriate screws, fasteners, backing plates, stud blocking, etc., as detailed on architectural and/or structural drawings. If architectural and/or structural drawings are not provided on the project, Contractor shall provide all necessary mounting hardware and backing support to comply with local building code requirements and any additional requirements imposed by the local Authority-Having-Jurisdiction.
- Except where below grade, sleeves shall be installed where conduit passes through masonry or concrete walls and shall be 24 gauge galvanized steel no more than 1/2" greater in diameter than the outside diameter of the conduit. When located in non-rated structures, caulk conduit sleeve with stone wool. When located in fire rated structures, provide UL listed fire stopping system. See fire stopping section of this specification for additional requirements.
- All boxes shall be covered with outlet box protector, Appleton SB-CK, or similar device/method to keep dirt/debris from entering box, conduit or panels. If dirt/debris does get in, it shall be removed prior to pulling wires.
- All boxes installed outdoors shall be suitable for outdoor installations, gasketed, screw cover, and painted as directed by the Architect with weatherproof paint to match building.
- All conduit entries to outdoor mounted panels, cabinets, boxes, etc., shall be made using Myers "SCRU-TITE" hubs Series ST.
- Provide nylon or a 1/8-inch O.D. polyethylene rope, rated at 250 pounds tensile strength, in all conduits more than 5 feet in length left empty for future use. Not less than 5 feet of rope shall be left at each end of the conduit. Tag all lines with a plastic tag at each end indicating the termination/stub location of the opposite end of the conduit.
- All multiple conduit runs within suspended ceilings shall be suspended from building structure by means of unistrut hangers/racks. Conduit shall not be allowed to lay on ceiling or be supported from ceiling suspension wires or other suspension system. Support conduit to structure above suspended ceilings 8" minimum above ceiling to allow removal of ceiling tile. Maintain two inch clearance above recessed light fixtures.
- All exposed conduits and support hardware shall be painted to match the finish of the wall or ceiling to which it is supported.
- Seal all conduits where termination is subject to moisture or where conduit penetrates exterior wall, floor or roof, in refrigerated areas, classified (hazardous areas) and as indicated on the drawings.

- Except as otherwise indicated on the drawings or elsewhere in these specifications, bends in feeder and branch circuit conduit 2 inches or larger shall have a radius or curvature of the inner edge, equal to not less than ten (10) times the internal diameter of the conduit. Except where sweeping vertically into a building where sweep radius equals ten (10) times conduit diameter, underground communications and building interconnect conduits 3 inches or larger shall have a minimum 12'-6" radius or curvature of the inner edge. For the serving utilities, radius bends shall be made per their respective specifications.
 - Tag all empty conduits at each accessible end with a permanent tag identifying the purpose of the conduit, footage end-to-end, and the location of the other end. In wet, corrosive outdoor or underground locations, use brass, bronze, or copper 16 gauge tags secured to conduit ends with #16 or larger galvanized wire. Inscribe on the tags, with steel punch dies, clear and complete identifying information.
 - The following additional requirements shall apply to underground conduits:
 - Underground conduit shall be Schedule 40 PVC (polyvinyl chloride) unless otherwise indicated elsewhere in these specifications or as required per CEC.
 - In all cases, where any conduit(s) pass under a building slab or footing, the electrical contractor will provide a Bentonite clay or concrete barrier that conforms to the height and width of the trench excavation extending a minimum of 24" on either side of the foundation. In all cases, where conduit(s) pass through a sleeve in a footing or other foundation element, the electrical contractor will provide a Bentonite clay or concrete barrier between the sleeve and the conduit(s) surrounding the conduit(s) for the entire depth of the sleeve. The barrier is required to prevent passage of moisture under or through the slab or footing via the trench or sleeve.
 - Where underground conduit passes under a building slab, concrete encasement may not be required, except as required above, contact the Engineer for written direction prior to omitting any encasement.
 - Include a separate insulated green ground conductor sized per NEC, or CEC where adopted, in each underground electrical feeder/branch circuit.
 - All underground conduits with circuits rated at 40A or greater and all underground communications conduits shall be provided with a metallic marker tape located 12" below the finished grade.
 - Where underground conduits sweep into/through slabs, utilize PVC 90 degree sweeps that transition, via female PVC adapter to GRC coupling mounted flush in slab. GRC couplings shall be 1/2 lap topped with 20 mil tape. If the distance of the conduit run between a sweep and the next connecting sweep, pullbox, vault or manhole exceeds 150 ft then the sweep shall be concrete encased. Exceptions:
 - Communications conduits shown terminating at a finished floor shall have an additional 4" high GRC nipple equipped with a bushing, removable conduit plug, labeling tag and pull rope. Tie off pull rope to conduit plug.
 - Utility conduit sweeps shall be installed per the requirements of the respective utility company.
 - All PVC conduit shall be glued for a water and gas tight installation. The Contractor shall use appropriate solvent on all joints prior to gluing conduit and fittings together.
 - All underground conduit work shall conform to the Federal, State and Local Safety Orders or Rules regarding excavations, trenches and related earthwork. Refer to the California Code of Regulations, Title 8, Construction Code Sections 1540 and 1541 for additional requirements.
 - Installation of 600V Conductors:
 - All electrical wire, including signal circuits, shall be installed in conduit.
 - All circuits and feeder wires for all systems shall be continuous from overcurrent protective device or switch to terminal or farthest outlet. Joints shall be made except in pull, junction or outlet boxes, or in panel or switchboard gutters.
 - Utilize pre-insulated "winged" spring type connectors, 3M Company "Performance Plus" #0/2 or #R/Y or equal or as required for splices and taps in conductors #6 AWG and smaller. When a spring connector is used in an underground environment or when subject to moisture, utilize a 3M Company Scotchcast 3507G epoxy resin connector sealing pack to seal the spring connector. THE USE OF PUSH-WIRE CONNECTORS (e.g. "WAGO" OR EQUIVALENT) IS STRICTLY PROHIBITED.
 - Wires #4 AWG and larger AWG shall be joined together as follows:
 - When located in an underground environment or when subject to moisture, the splice shall be made with compression connector and sealed by a 3M, or equal, PST cold shrink connector insulator.
 - When located in an interior environment, the splice shall be made with an ILSCO or equal dual rated, insulated splicer-reducer connector or multi-tap connector listed for use with 75/90 degree Celsius rated conductors.
 - Connections to busbar shall be made with dual-rated copper/aluminum one-piece compression lugs. Paralleled conductor connections shall be by mechanical lugs.
 - Thoroughly clean all conduit and wire-ways and see that all parts are perfectly dry before pulling any wires.
 - Install UL approved fixture wire from all lighting fixture lamp sockets into fixture outlet or junction box.
 - For 20A branch circuit wiring, increase #12 conductors to #10 for 120V circuits longer than 100 feet and for 277V circuits longer than 150 feet.
 - Conductor Support: Provide conductor supports as required by codes and recommended by cable manufacturer. Where required, provide cable supports in vertical conduits and provide lower end of conduit with a ventilator.
- Grounding/Bonding:
 - Provide grounding and bonding for entire electric installation as shown on plans, as listed herein, and as required by applicable codes. Included, but not limited to, are items that require grounding/bonding:
 - Conduit, raceways and cable trays.
 - Neutral or identified conductors of interior wiring system.
 - Panel boards, Distribution boards, Switchgear and Switchboards.
 - Non-current carrying metal parts of fixed equipment.
 - Telephone distribution equipment.
 - Exposed metal in maintenance holes, hand holes.
 - Metal piping installed in or attached to a building/structure.
 - Metallically isolated structural steel.
 - Metallically isolated underground metal water piping.
 - Use of Ground Rods: Furnish and install required number of 3/4" x 10' copper clad ground rods to meet specified resistance, all required grounding wires, conduit and clamps. The size of the grounding conductors shall be not less than that set forth in the latest edition of the California Code of Regulations, Title 24, State of California and NEC (or CEC where adopted), unless otherwise indicated. Rods shall be installed such that at least 10 feet of length is in contact with the soil. Where rock bottom is encountered, the electrode shall be driven at an oblique angle not to exceed 45 degrees from vertical or shall be buried in a trench that is at least 30 inches deep. The upper end of the electrode shall be flush with or below ground level unless the above ground end and the grounding electrode conductor attachments are protected against physical damage. Unless otherwise noted, connection to the grounding electrode conductor may be by compression type or exothermic process connector. Mechanical connectors shall not be used.
 - Grounding System Connection:
 - Compression connectors shall be unplated copper, manufactured by Burndy, or approved equal, designed specifically for the intended connection.
 - Exothermic weld-type connectors shall be 'Cordwell' manufactured by Erico Products, or approved equal, designed specifically for the intended connection.
 - Mechanical connectors shall not be used.

5. Systems Conductor Color Coding:

- Power 208/120V, 3PH, 4W:
 - Phase A = Black
 - Phase B = Red
 - Phase C = Blue
 - Neutral = White or White with Phase Color Tracer
 - Switchlegs = Purple (Switchlegs shall also be identified separately by numerical tags)
 - Travelers = Purple with Black stripe or Pink
 - Ground Conductors: Green
 - Isolated Ground Conductors: Green with continuous Yellow stripe
 - Fire Alarm System: As recommended by the manufacturer
6. All color-coding for #12 through #6 AWG conductor shall be as identified above. Conductors #4 AWG and larger shall be identified by utilizing phase tape at each termination.
7. No conductors carrying 120V or more shall be smaller than #12 AWG.
8. Aluminum conductors shall not be used.
9. Wire-pulling compounds used as lubricants in installing conductors in raceways shall only be "Polywater J". No oil, grease, graphite, or similar substances may be used. Pulling of #1/0 or larger conductors shall be done with an approved cable pull machine. Other methods; e.g. using vehicles or block and tackle to install conductors are not acceptable.

O. Junction and Pullboxes:

- For interior dry locations, boxes shall be NEMA 1 galvanized one-piece drawn steel, knockout type, with removable, machine screw secured covers.
- For outside, damp or surface locations, boxes shall be NEMA 3R heavy cast aluminum or cast iron with removable, gasketed, non-ferrous machine screw secured covers.
- For in-grade applications, junction and pull boxes shall be pre-cast concrete or molded fiberglass manufactured by Christy, Brooks-Jensen, or Utility Vault Co. Fiberglass boxes shall:
 - Be used only in landscape planter areas that are not subject to damage from lawnmowers, tractors and other machinery.
 - Not be used in lawn or turf areas.
 - Not exceed 11" W x 17" L in size unless required to be larger to meet code requirements.
- All boxes shall be sized for the number and sizes of conductors and conduits entering the box and equipped with plaster rings where required.
- All boxes located in traffic areas shall be traffic rated.

P. Outlet Boxes:

- For fixtures, boxes shall be galvanized, one-piece drawn steel, knockout type equipped with 3/8" fixture studs and plaster rings where required.
- For convenience outlets, wall switches, or other devices, outlet boxes shall be galvanized one-piece drawn steel, knockout type 4" x 4" x 2-1/8" minimum size with plaster rings as required.
- For locations where standard boxes are not suitable due to number and size of conduit to be terminated, special boxes shall be designed to fit space or meet other requirements and submitted for approval.
- For exposure to weather, damp locations, or surface mounting, outlet boxes shall be heavy cast aluminum or cast iron with threaded hubs; covers shall be watertight with gaskets and non-ferrous screws.
- Outlet boxes used for support of ceiling fans shall be galvanized, one-piece drawn steel, knockout type equipped with bracing bars and plaster rings where required and listed for ceiling fan support use. Such boxes shall be labeled and capable of supporting ceiling fan weights up to 70 pounds.
- See drawings for floor box installation notes and specifications.