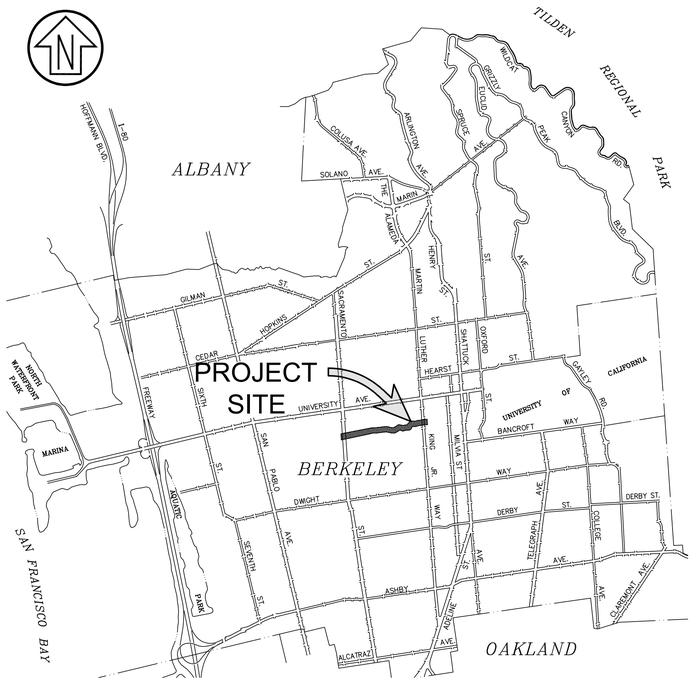
CITY OF BERKELEY

ALAMEDA COUNTY, CALIFORNIA

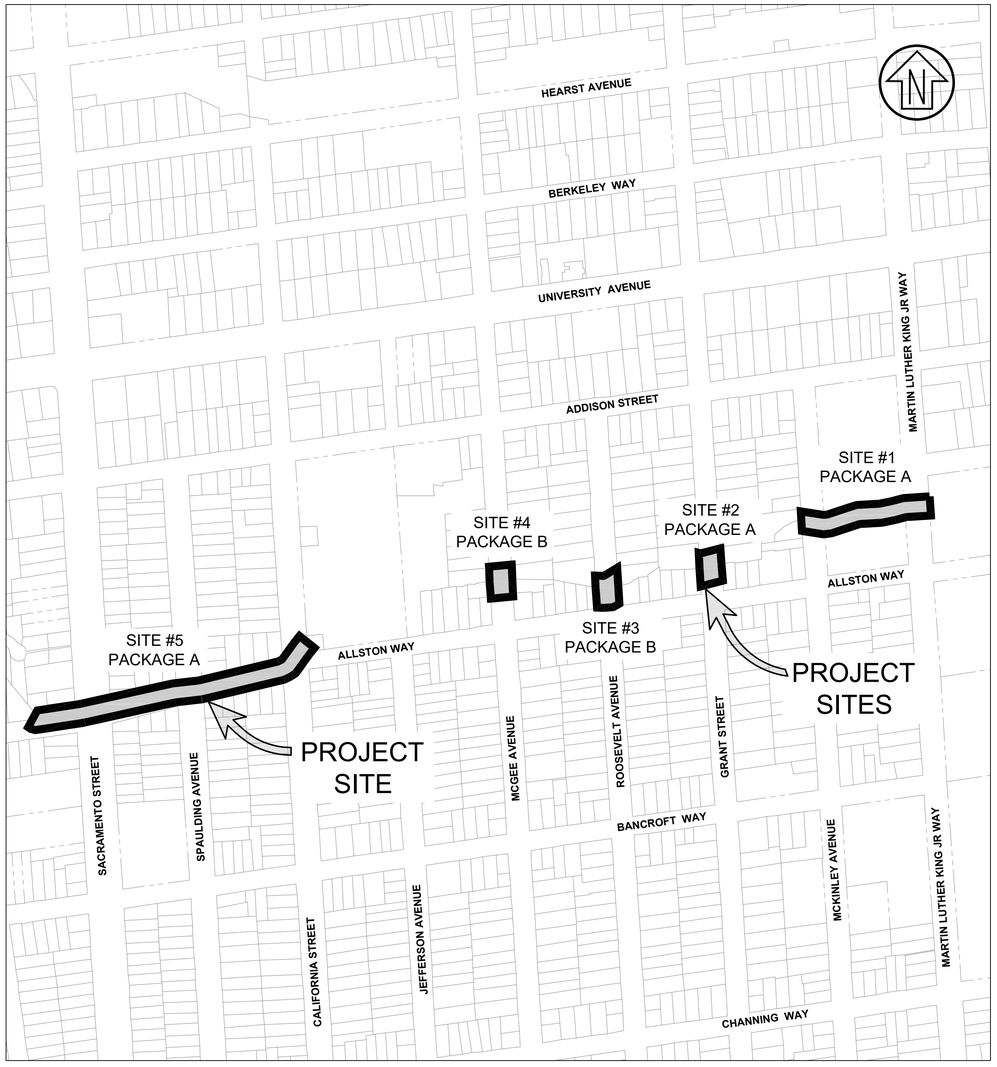
STRAWBERRY CREEK CULVERT MAINTENANCE PROJECT PHASE 1

SPECIFICATION NO. 25-11689-C



LOCATION MAP

SCALE: N.T.S.



KEY MAP

SCALE: N.T.S.

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CONTACT INFORMATION

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REVISION	MARK	DATE	DESCRIPTION	APPROVAL

811 Know what's below. Call before you dig.

REGISTERED PROFESSIONAL ENGINEER — No. 20034 — CIVIL — STATE OF CALIFORNIA — 10/28/24

CSW | ST2

CSW/Stuber-Stroeh Engineering Group, Inc.
2001 Addison Street, Berkeley, CA 94704
tel: 415.883.9850
fax: 415.883.9835
http://www.cswst2.com

PROJECT MANAGER: _____ DATE 11/4/24

DEPICTION OF MONUMENTS: _____ DATE _____

SURVEY CHIEF OF PARTY: _____

WATERSHED REVIEW: _____ DATE 11/4/24

0 1 2 3

FOR REDUCED PLANS – ORIGINAL SCALE IS IN INCHES

SUBMITTED: _____ DATE _____

SUPERVISING ENGINEER

APPROVED: _____ REGISTR. _____ EXP. _____

CITY ENGINEER DATE 11/4/24 R.C.E. C62524 EXP. 9/30/25

DESIGN JD
DRAWN JD
CHECK RS
AS BUILT _____

HORIZ. _____
VERT. _____
BOOK _____
DATE 10/28/24

CITY OF BERKELEY
DEPARTMENT OF PUBLIC WORKS

STRAWBERRY CREEK CULVERT MAINTENANCE PROJECT

COVER SHEET

PLAN 8289
FILE 502-720
T1
SHEET 1 OF 18

GENERAL NOTES:

1. ALL DRAWINGS AND SPECIFICATIONS ARE CONSIDERED PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE START OF CONSTRUCTION SO THAT A CLARIFICATION MAY BE ISSUED. WORK NOT CONFORMING TO THE CONTRACT DOCUMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO THE CITY.
2. ANY DEVIATION FROM THIS APPROVED PLAN REQUIRES THE PRIOR APPROVAL OF THE CITY.
3. THE CONTRACTOR SHALL COMPLY WITH ALL STATE, COUNTY AND CITY LAWS AND ORDINANCES INCLUDING REGULATIONS OF THE DEPARTMENT OF INDUSTRIAL RELATIONS, O.S.H.A. AND INDUSTRIAL ACCIDENT COMMISSION RELATING TO SAFETY AND CHARACTER OF WORK, EQUIPMENT AND LABOR PERSONNEL.
4. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE NPDES AND STATE WATER RESOURCES CONTROL BOARD.
5. THE CONTRACTOR SHALL ADHERE TO ALL PROVISIONS SET FORTH IN ENVIRONMENTAL PERMITS AND AGREEMENTS OBTAINED FOR THIS PROJECT.
6. A PRE-CONSTRUCTION MEETING SHALL BE COORDINATED BY THE CONTRACTOR AND HELD AT THE SITE PRIOR TOT HE START OF WORK, WITH THE FOLLOWING PEOPLE PRESENT: CONTRACTOR; PROJECT CIVIL ENGINEER; CITY ENGINEER OR HIS/HER DESIGNATED REPRESENTATIVE(S).
7. CONSTRUCTION SHALL BE LIMITED BETWEEN THE HOURS OF 7:30 AM AND 5:00 PM, MONDAY THROUGH FRIDAY AND INSPECTION REQUESTS SHALL BE LIMITED TO NORMAL BUSINESS HOURS: 8:00 AM TO 5:00 PM, MONDAY THROUGH FRIDAY. ARRANGEMENTS FOR ANY OVERTIME INSPECTION SERVICES AND PAYMENTS OF FEES FOR SAME SHOULD BE MADE 48 HOURS IN ADVANCE AND ARE SUBJECT TO AVAILABILITY AND APPROVAL BY THE ENGINEER.
8. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT AND COORDINATE CONSTRUCTION WITH THE APPROPRIATE UTILITY AGENCIES.
9. UTILITIES AS SHOWN CONFORM TO AVAILABLE RECORD DATA. THE EXISTENCE, LOCATION AND CHARACTERISTICS OF UNDERGROUND UTILITY INFORMATION SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM A REVIEW OF AVAILABLE RECORD DATA. NO REPRESENTATION IS MADE AS TO THE ACCURACY OR COMPLETENESS OF SAID UTILITY INFORMATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REFERENCE ALL SURFACE UTILITIES PRIOR TO COMMENCING WORK AND TO VERIFY LOCATION AND DEPTHS BY POTHOLING, OR SIMILAR METHODS, OF ALL UTILITIES WITH APPROPRIATE AGENCIES, AND TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. ANY CONFLICTS SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.
10. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DIFFERENCES OF LOCATION OF EXISTING UTILITIES FROM THAT SHOWN OR OF ANY CONFLICTS WITH THE DESIGN BEFORE CONTINUING WORK IN THAT AREA. SHOULD A CONFLICT BE FOUND, THE CONTRACTOR SHALL ALLOW TWO (2) WORKING DAYS TO RESOLVE ANY CONFLICT AT NO COST TO THE CITY.
11. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE OF THE SITE, DURING INTERIM CONDITIONS OF CONSTRUCTION.
12. CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR, EQUIPMENT, FOR INSTALLATION, IMPLEMENTATION, AND MAINTENANCE OF ALL SURFACE WATER POLLUTION PREVENTION MEASURES THROUGHOUT THE FULL EXTENT OF THE PROJECT. SURFACE WATER IS CLASSIFIED AS ANY BODY OF WATER ABOVE GROUND.
13. THE CONTRACTOR SHALL NOT DISCHARGE ANY WATER OR CHEMICALS INTO THE CITY STORM DRAIN SYSTEMS WITHOUT CITY APPROVAL
14. THE CONTRACTOR SHALL USE TEMPORARY COFFERDAMS AS NEEDED DURING CONSTRUCTION.
15. OVERHEAD UTILITY SERVICE DROPS ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL INVESTIGATE THE SITE AND BE AWARE OF LIMITED OVERHEAD CLEARANCES.
16. PAVEMENT MARKINGS DISTURBED, DAMAGED IN ANY FORM, OR TO ANY DEGREE WHILE THE CONTRACTOR HAS CUSTODY OF THE SITE SHALL BE REPLACED IN THEIR ENTIRETY AT CONTRACTOR'S EXPENSE.
17. CONTRACTOR SHALL CONTACT CITY ARBORIST AT LEAST 48 HOURS IN ADVANCE OF PERFORMING WORK UNDER THE DRIP LINE OF EXISTING TREES. THE CITY ARBORIST WILL REVIEW EACH LOCATION ON A CASE-BY-CASE BASIS TO CONFIRM THE ALLOWABLE EXTENT OF ROOT AND BRANCH PRUNING REQUIRED. CONTRACTOR SHALL ADHERE TO CITY SPECIFICATIONS AND RECOMMENDATIONS FOR TREE PRESERVATION.
18. TREE PROTECTION - PROVIDE FOR WRAPPING TREES, KEEPING EXPOSED ROOTS MOIST, AND USE OF AIR TOOLS FOR EXCAVATING. MEET WITH CITY ARBORIST BEFORE ANY WORK IS DONE.

CONSTRUCTION NOTES:

1. PROTECT AND PRESERVE ALL SURVEY MONUMENTS. SEE MONUMENT PRESERVATION NOTE.
2. PROTECT ALL DRAINAGE AND SEWAGE STRUCTURES (INCLUDING PIPES) FROM INFILTRATION OF ALL CONSTRUCTION DEBRIS FOR THE DURATION OF THE WORK.
3. ALL STRUCTURAL DEFICIENCIES AND REPAIR METHOD SHALL BE VERIFIED IN THE FIELD WITH THE ENGINEER AFTER THE SITE HAS BEEN PREPPED FOR SAFE ENTRY.
4. ALL STRUCTURAL REPAIRS SHALL BE COMPLETED AS APPROVED BY THE ENGINEER PRIOR TO THE APPLICATION OF GEOPOLYMER LINING.

PRESERVATION OF SURVEY MONUMENTS

ALL CITY OF BERKELEY MONUMENTS LOCATED WITHIN THE PROJECT AREA MUST BE REFERENCED, PRIOR TO WORK COMMENCING, BY A LICENSED LAND SURVEYOR AS REQUIRED BY SECTION 8771 OF THE BUSINESS AND PROFESSIONS CODE. CORNER RECORDS OF THIS WORK MUST BE SUBMITTED FOR FILING TO BOTH THE COUNTY SURVEYOR OF ALAMEDA COUNTY, AND THE CITY OF BERKELEY PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION, SURVEY SECTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF EXISTING SURVEY MONUMENTS, BENCHMARKS, REFERENCE MARKS AND STAKES. SHOULD ANY SURVEY MONUMENTS, BENCHMARKS, REFERENCE POINTS, OR STAKES BE DAMAGED OR DESTROYED DURING THE PERFORMANCE OF THIS WORK, THE CONTRACTOR SHALL REPLACE SAID ITEMS PER CITY STANDARDS IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND CONTACT A CITY OF BERKELEY, SURVEY SECTION, CHIEF OF PARTY FOR FINAL INSPECTION AND ACCEPTANCE OF THE WORK.

POLLUTION CONTROL NOTES:

1. IF SIGNIFICANT SEDIMENT OR OTHER VISUAL SYMPTOMS OF IMPURITIES ARE NOTICED IN THE STORM WATER, CONTACT THE CITY ENGINEER IMMEDIATELY.
2. CONTRACTOR IS RESPONSIBLE FOR INSPECTION AND RESTORATION OF ALL ASPECTS OF THIS PLAN. SEDIMENT ON SIDEWALKS AND GUTTERS SHALL BE REMOVED BY SHOVEL AND/OR BROOM AND PLACED IN STOCKPILES.
3. ALL DUMPSTERS OR OTHER TRASH STORAGE ENCLOSURES SHALL BE UTILIZED SOLELY FOR NON-HAZARDOUS MATERIALS.
4. ALL EMPLOYEES, CONTRACTORS, AND SUBCONTRACTORS ARE RESPONSIBLE FOR CONFORMING TO THE ELEMENTS SHOWN ON THIS PLAN OR RELATED DOCUMENTS.
5. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND FILING ALL PLANS WITH RELATED AGENCIES ASSOCIATED WITH THEIR WORK. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, PERMITS FOR STORAGE OF HAZARDOUS MATERIALS, BUSINESS PLANS, PERMITS FOR STORAGE OF FLAMMABLE LIQUIDS, GRADING PERMITS, OR OTHER PLANS OR PERMITS REQUIRED BY ALAMEDA COUNTY, THE CITY OF BERKELEY, OR OTHER AGENCIES. ALL CONTRACTORS, OR SUBCONTRACTORS WORKING ON-SITE ARE INDIVIDUALLY RESPONSIBLE FOR OBTAINING AND SUBMITTING ANY BUSINESS PLANS OR PERMITS REQUIRED BY CITY, STATE OR LOCAL AGENCIES.
6. CONTRACTOR SHALL LOCATE STORAGE, DELIVERY, OR WASH-OUT AREAS, TO SUIT THEIR OPERATIONS. CONTRACTOR TO MAINTAIN SECONDARY CONTAINMENT AS NECESSARY TO PROHIBIT POLLUTION AND TOXIC MATERIALS FROM ENTERING STORM DRAIN.
7. CONTRACTOR SHALL UTILIZE SILT FILTERS DURING CONCRETE CONSTRUCTION NEAR EXISTING STORM DRAINAGE SYSTEM. AFTER COMPLETION OF THE SIDEWALK, DRIVEWAYS, CURB, GUTTER, AND PAVING, THE SILT FILTERS SHALL BE MODIFIED TO BURLAP SACKS FILLED WITH 3/4" DRAIN ROCK OR OTHER ACCEPTED BMP POSITIONED SURROUNDING EACH CATCH BASIN.

EROSION CONTROL NOTES:

1. NO VEHICLES SHALL BE ALLOWED TO TRACK OR SPREAD SOIL FROM THE CONSTRUCTION AREAS ONTO EXISTING PAVED PUBLIC STREETS.
2. THE EROSION AND SEDIMENT CONTROL MEASURES WILL BE OPERABLE DURING THE RAINY SEASON, OCTOBER 1ST TO APRIL 15TH. NO GRADING WILL OCCUR BETWEEN OCTOBER 1ST AND APRIL 15TH, UNLESS AUTHORIZED BY THE CITY ENGINEER.
3. DURING THE RAINY SEASON, ALL PAVED AREAS WILL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE WILL BE MAINTAINED SO THAT A MINIMUM OF SEDIMENT-LADEN RUNOFF ENTERS THE STORM DRAIN SYSTEM. THESE PLANS SHALL REMAIN IN EFFECT UNTIL THE IMPROVEMENTS ARE ACCEPTED BY THE CITY, AND ALL SLOPES ARE STABILIZED FROM EROSION.

BMP IMPLEMENTATION SCHEDULE:

1. BMP'S APPROPRIATE FOR THE WORK BEING DONE SHALL BE IN PLACE AT ALL TIMES.
2. PERIMETER CONTROL, EXISTING INLET PROTECTION, AND CONSTRUCTION ENTRANCE SHALL BE INSTALLED PRIOR TO ANY DEMOLITION.
3. ALL OTHER BMP'S SHALL BE INSTALLED AT COMPLETION OF CONSTRUCTION OF EACH INLET.

URBAN RUNOFF POLLUTION NOTES:

1. STABILIZE ALL DENUDED AREAS AND MAINTAIN EROSION CONTROL MEASURES CONTINUOUSLY FOR THE DURATION OF THE PROJECT.
2. REMOVE SPOILS PROMPTLY AND AVOID STOCKPILING OF FILL MATERIALS WHEN RAIN IS FORECAST. IF RAIN THREATENS, STOCK- PILED SOILS AND OTHER MATERIALS SHALL BE TARPED.
3. STORE, HANDLE AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES SO AS TO PREVENT THEIR ENTRY TO THE STORM DRAIN SYSTEM. CONTRACTOR MUST NOT ALLOW CONCRETE, WASHWATERS, SLURRIES, PAINT OR OTHER MATERIALS TO ENTER CATCH BASINS OR TO ENTER SITE RUNOFF.
4. USE FILTRATION OR OTHER MEASURES TO REMOVE SEDIMENT FROM DEWATERING EFFLUENT.
5. NO CLEANING, FUELING OR MAINTAINING VEHICLES ON SITE SHALL BE PERMITTED IN ANY MANNER THAT ALLOWS DELETERIOUS MATERIALS TO ENTER CATCH BASINS OR TO ENTER SITE RUNOFF.
6. CONTRACTOR TO RELOCATE CONCRETE WASHDOWN, VEHICLE STORAGE DELIVERY, AND NON HAZARDOUS WASTE AREAS AS NECESSARY TO FACILITATE THEIR OPERATION AND PROMOTE POLLUTION CONTROL..

SYMBOLS LEGEND

EXISTING

- Ex. Water/Gas Meter
- Ex. Water/Gas Valve
- Ex. Fire Hydrant
- Ex. Utility Pole
- Ex. Utility Pole w/Light
- Ex. Wheel Chair Ramp
- Ex. Tree
- Ex. Miscellaneous Survey Monument
- Ex. Survey Well Monument
- Ex. Benchmark
- Ex. Control Point
- Ex. Misc. Survey Point
- Control Point Set
- Ex. Maintenance hole
- Ex. Junction Box
- Ex. Catch Basin
- Ex. Curb Inlet
- Ex. Culvert Inlet/Outlet
- Ex. Culvert Inlet/Outlet
- Ex. Culvert Inlet/Outlet
- Ex. Light-Post Mounted
- Ex. Power Pole with Guy
- Ex. Sanitary Sewer Clean Out
- Ex. Sanitary Sewer Maintenance hole
- Storm Drainage Area Drain
- Storm Drainage Clean Out
- Ex. Storm Drain
- Ex. Electric Meter
- Ex. Pullbox
- Ex. BOLLARD
- Ex. SIGN
- Ex. Traffic Signal

LINETYPES LEGEND

EXISTING		PROPOSED
30	CONTOUR - MAJOR	30
	CONTOUR - MINOR	
	FENCE	N/A
G	GAS LINE	N/A
E	ELECTRICAL LINE(S)	N/A
TS	TRAFFIC SIGNAL LINE(S)	N/A
W	WATER LINE	N/A
TV	CABLE/TELEVISION LINE	N/A
N/A	LIMITS OF CONSTRUCTION	
	PROPERTY / LOT LINE	N/A
SS	SANITARY SEWER	N/A
	STORM DRAIN CULVERT	N/A
SD	STORM DRAIN	N/A
N/A	TEMPORARY CONSTRUCTION EASEMENT (TCE)	
	TIES	
	TREE DRIPLINE	N/A

ABBREVIATIONS

∩	- ARCH CULVERT SECTION
⊓	- RECTANGULAR CULVERT SECTION
Ø	- CIRCULAR CULVERT SECTION / DIAMETER
AB	- AGGREGATE BASE
AC	- ASPHALT CONCRETE
AD	- AREA DRAIN
AP	- ANGLE POINT
BC	- BEGINNING OF CURVE
BSW	- BACK OF SIDEWALK
CAMUTCD	- CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
CB	- CATCH BASIN
CDFW	- CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
C&G	- CURB AND GUTTER
CI	- CAST IRON
℄	- CENTERLINE
CONC	- CONCRETE
CP	- CONTROL POINT
DI	- DROP INLET
DEP	- DEPRESSED
DESC	- DESCRIPTION
DWY	- DRIVEWAY
EC	- END OF CURVE
EG	- EXISTING GRADE
EP	- EDGE OF PAVEMENT
EL	- ELEVATION
EX	- EXISTING
FG	- FINISH GRADE
FL	- FLOWLINE
FS	- FINISH SURFACE
GB	- GRADE BREAK
GS	- GROUND SURFACE
HDPE	- HIGH DENSITY POLYETHYLENE PIPE
HP	- HIGH POINT
HSS	- HOLLOW STRUCTURAL SECTION
INV	- INVERT
JB	- JUNCTION BOX
JP	- JOINT POLE
LC	- LEVELING COURSE
LF	- LINEAR FEET
LP	- LOW POINT
LOW	- LIMIT OF WORK
MH	- MAINTENANCE HOLE
MON	- SURVEY MONUMENT
NG	- NATURAL GROUND
NTS	- NOT TO SCALE
PB	- PULL BOX
PCC	- PORTLAND CEMENT CONCRETE
PC	- POINT OF COMPOUND CURVE
POC	- POINT ON CURVE
PRC	- POINT OF REVERSE CURVE
PVC	- POLY VINYL CHLORIDE PIPE
R&R	- REMOVE AND REPLACE
RCP	- REINFORCED CONCRETE PIPE
RW	- RIGHT OF WAY
SS	- SANITARY SEWER
SSD	- SEE STRUCTURAL DRAWINGS
SSMH	- SANITARY SEWER MAINTENANCE HOLE
SD	- STORM DRAIN
SDCO.	- STORM DRAIN CLEAN OUT
SDMH	- STORM DRAIN MAINTENANCE HOLE
SQ	- SQUARE FEET
SWRCB	- STATE WATER REGIONAL CONTROL BOARD
SSMH	- STANITARY SEWER MAINTENANCE HOLE
SW	- SIDEWALK
TC	- TOP OF CURB
TCE	- TEMPORARY CONSTRUCTION EASEMENT
TOP	- OBVERT
TS	- TURNING STRUCTURE
UNO	- UNLESS NOTED OTHERWISE
VIF	- VERIFY IN FIELD

HATCH LEGEND

- INSTALL GEOPOLYMER LINING FOLLOWING COMPLETION OF STRUCTURAL REPAIRS (SHEETS S3, S4, S5) (APPROXIMATE LIMITS SHOWN, TO BE VERIFIED IN FIELD WITH ENGINEER)
- TEMPORARY IMPACT ZONE

SEDIMENT CONTROL LEGEND

- TEMPORARY CHECK DAM AND BY-PASS PIPE PER DETAIL 3, SHEET CD1 (APPROXIMATE LOCATION SHOWN, TO BE VERIFIED IN THE FIELD AND INSTALLED AS NEEDED)

REVISION | MARK | DATE | DESCRIPTION | APPROVAL

REGISTERED PROFESSIONAL ENGINEER — No. C90534 — CIVIL — STATE OF CALIFORNIA
10/28/24

CSW | ST2
CSW/Stuber-Stroeh Engineering Group, Inc.
2001 Addison Street, Berkeley, CA 94704
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0 1 2 3
FOR REDUCED PLANS – ORIGINAL SCALE IS IN INCHES

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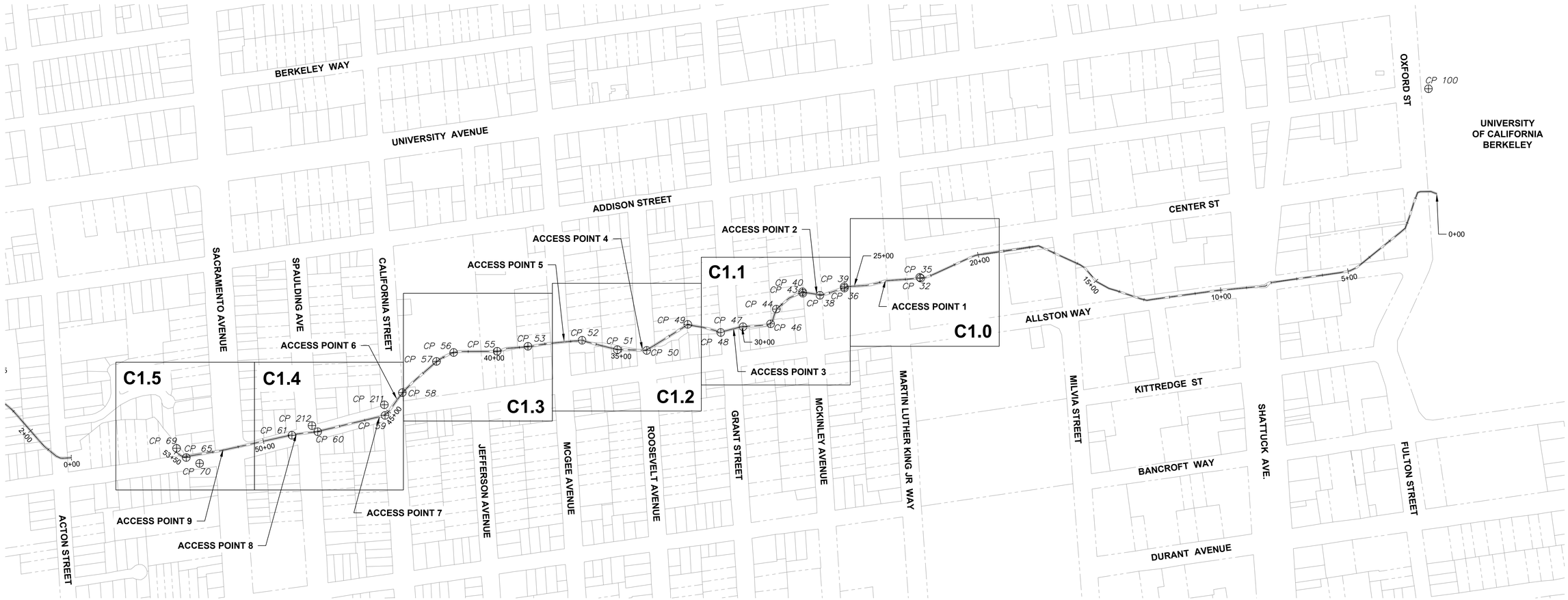
CITY OF BERKELEY
DEPARTMENT OF PUBLIC WORKS

STRAWBERRY CREEK CULVERT MAINTENANCE PROJECT
GENERAL NOTES, LEGEND & ABBREVIATIONS

PLAN 8289 | FILE 502-720 | T2 | SHEET 2 OF 18



Graphic Scale (in feet)

150 0 150 300

1 inch = 150 ft.

SURVEY CONTROL POINTS

CP#	NORTHING	EASTING	ELEVATION	DESCRIPTION
		CONTROL SET		
32	2143877.3102	6050072.9033	136.799	CP MN CNC STREAM
35	2143880.5737	6050068.7365	139.277	CP MNW WALL
36	2143839.0738	6049778.1726	128.554	CP MN CNC STREAM
38	2143811.4761	6049683.9561	125.741	CP MN CNC STREAM
39	2143844.8633	6049777.4557	131.053	CP MNW WALL
40	2143824.9498	6049616.6172	125.692	CP MN CNC STREAM
43	2143819.4359	6049617.6891	128.391	CP MNW WALL
44	2143758.0765	6049515.5980	124.507	CP MN CNC STREAM
46	2143701.1798	6049493.2549	123.554	CP MN CNC STREAM
47	2143689.7747	6049386.8030	122.262	CP MN CNC STREAM
48	2143667.6069	6049300.9265	119.664	CP MN CNC STREAM
49	2143699.1523	6049173.3464	115.303	CP MN CNC STREAM
50	2143598.4933	6049015.1499	112.181	CP MN CNC STREAM
51	2143601.1604	6048901.5410	110.113	CP MN CNC STREAM
52	2143637.6495	6048765.4274	108.138	CP MN CNC STREAM

SURVEY CONTROL POINTS

CP#	NORTHING	EASTING	ELEVATION	DESCRIPTION
		CONTROL SET		
53	2143614.2894	6048556.3742	106.674	CP MN CNC STREAM
55	2143595.4603	6048437.9346	106.040	CP MN CNC STREAM
56	2143590.5507	6048269.8394	101.483	CP MN CNC STREAM
57	2143555.9406	6048203.5529	100.390	CP MN CNC STREAM
58	2143435.3526	6048071.8470	98.401	CP MN CNC STREAM
59	2143347.3672	6048004.7309	96.269	CP MN CNC STREAM
60	2143284.2635	6047745.1449	91.038	CP MN CNC STREAM
61	2143270.5801	6047645.5022	90.059	CP MN CNC STREAM
65	2143184.6177	6047237.4515	86.801	CP STK TACK TEMP
69	2143220.3793	6047200.1504	96.618	CP MN CNC WL
70	2143161.9539	6047289.0843	97.442	CP MNW
100	2144609.2120	6052032.7570	207.278	CP SPK
211	2143388.4850	6048002.2490	109.190	CP MN SW
212	2143308.1400	6047722.6400	105.041	CP MN

SURVEY NOTES

1. DISTANCES SHOWNS ARE IN FEET AND DECIMALS THEREOF.
2. HORIZONTAL DATUM IS NORTH AMERICAN DATUM 1983 (NAD83) PER CALIFORNIA REAL TIME NETWORK, (CRTN), EPOCH 2017.5.
3. VERTICAL DATUM IS BERKELEY CITY DATUM PER "APPROXIMATE VERTICAL DATUM CONVERSIONS FOR: CITY OF BERKELEY DATUM" AS POSTED ON THE CITY WEBSITE. DRAWING PREPARED BY ALEX KELSER CHIEF OF PARTY OF CITY OF BERKELEY, DATED JUNE 18, 2009. TO OBTAIN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) ELEVATIONS ADD 5.89' TO ALL ELEVATIONS SHOWN HEREON.
4. BOUNDARY SHOWN IS FOR CONCEPTUAL PURPOSES ONLY PER ALAMEDA COUNTY ASSESSOR PARCEL LINES. ASSESSOR PARCEL LINES ARE NOT RELIABLE FOR PRECISE PROPERTY LINE LOCATIONS.
5. CONTRACTOR SHALL PROTECT IN PLACE ALL CITY MONUMENTS, UNLESS NOTED OTHERWISE. SEE MONUMENT PRESERVATION NOTES ON SHEET T2.
6. DIMENSIONS AND ELEVATIONS WITHIN THE CONCRETE CULVERT CHANNEL SHOWN ON THE LAYOUT PLANS ARE FROM INNER WALL TO INNER WALL AND INNER FLOOR SLAB TO INNER CROWN. SEE TYPICAL CULVERT CROSS SECTION ON SHEETS S1 AND S2 FOR APPROXIMATE OUTER EXTENTS OF CONCRETE CULVERT CHANNEL. CONTRACTOR SHALL VERIFY ACTUAL DIMENSIONS OF CULVERT FOR NEW IMPROVEMENTS.

CULVERT ACCESS SUMMARY

ACCESS #	STATIONING	CROSS STREET	CULVERT SECTION #	PERSONNEL ENTRY	EQUIPMENT ENTRY	DESCRIPTION
1	23+76	MARTIN LUTHER KING JR WAY	9	YES	YES	24" ROUND MH OPENING WITH 24" ACCESS TO CULVERT
2	26+50	MCKINLEY AVENUE	10	YES	YES	CATCH BASIN - COMBINATION CURB AND GRATE INLET - 36" X 36" OPENING DIRECTLY TO TOP OF CULVERT
3	30+33	GRANT STREET	12	NO	YES	SMALL CATCH BASIN. PIPED OUTLET CONNECTED TO CULVERT BELOW
4	34+18	ROOSEVELT AVENUE	12	YES	YES	ACCESS STRUCTURE 36" X 36" CLEAR TO CULVERT
5	37+37	MCGEE AVENUE	13	YES	YES	CATCH BASIN - COMBINATION CURB AND GRATE INLET - 36" X 36" OPENING TO TOP OF CULVERT
6	44+43	CALIFORNIA STREET	17	YES	YES	CATCH BASIN - COMBINATION CURB AND GRATE INLET - 36" X 36" SITTING ON TOP OF CULVERT. ~24" X 24" OPENING BETWEEN CATCH BASIN BOTTOM AND CULVERT
7	45+36	CALIFORNIA STREET	18	YES	YES	MH WITH 24" CLEAR OPENING TO CULVERT
8	48+78	SPAULDING AVENUE	19	YES	YES	MH WITH 24" CLEAR OPENING, CHIMNEY EXPANDS TO ~30" OPENING AT CULVERT
9	51+75	SACRAMENTO STREET	19	NO	YES	MH WITH 24" CLEAR OPENING, CHIMNEY OPENING CONSTRICTED BY UTILITY CROSSING THROUGH STRUCTURE

NOTES:

1. ACCESS TO STRAWBERRY CREEK CULVERT SHALL BE THROUGH POINTS LISTED ABOVE. NO OTHER ACCESS POINTS SHALL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE CITY.
2. SEE STRUCTURAL SHEETS S1 AND S2 FOR CULVERT SECTION DETAILS.

REGISTERED PROFESSIONAL ENGINEER — No. 20034 — Civil — STATE OF CALIFORNIA — 10/28/24

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PROJECT MANAGER: DATE

DEPICTION OF MONUMENTS: DATE
SURVEY CHIEF OF PARTY

WATERSHED REVIEW: DATE

0 1 2 3
FOR REDUCED PLANS – ORIGINAL SCALE IS IN INCHES

SUBMITTED: DATE
SUPERVISING ENGINEER REGISTR. EXP.

APPROVED: DATE
CITY ENGINEER R.C.E. EXP.

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CHECK RS
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CITY OF BERKELEY
DEPARTMENT OF PUBLIC WORKS

STRAWBERRY CREEK CULVERT MAINTENANCE PROJECT
INDEX & SURVEY CONTROL PLAN

PLAN 8289
FILE 502-720
T3
SHEET 3 OF 18

APPROVAL	DESCRIPTION	DATE	MARK	REVISION

ALAMEDA COUNTY
BERKELEY
COURT HOUSE
2120
MARTIN LUTHER
KING JR WAY

CENTER STREET

MARTIN LUTHER KING JR WAY

±57'
±29'

6" W
8" SS
6" G
CONC
GRASS
TREE

STA: +22+90 (VIF)
BEGIN GEOPOLYMER LINING
END SECTION 8
∩ 5.5' H X 6' W
BEGIN SECTION 9
∩ 7' H X 8' W

END SECTION 7
ROUND 6.5' D
BEGIN SECTION 8
∩ 5.5' H X 6' W
STA: ±22+35 (VIF)

FLOW

STRAWBERRY CREEK
CULVERT

TEMPORARY CHECK DAM W/ BYPASS PIPE (TYP)
PER DETAIL 4, SHEET CD1
(APPROXIMATE LOCATION SHOWN, VIF)

INSTALL GEOPOLYMER LINING (±420 LF)
FOLLOWING COMPLETION OF INTERMITTENT CONCRETE CRACK,
CONCRETE SPALL, AND INVERT SLAB REPAIRS
(CULVERT SECTIONS 9 AND 10, SEE SHEETS S1 AND S2)

REMOVE AND DISPOSE EX. MH
INSTALL NEW MH ACCESS,
SEE SHEETS S5 AND CD1,
SEE NOTE 2
STA: 22+49 (VIF)
RIM: ±149 (VIF)
BOTTOM: ±132.7 (VIF)

MH
ACCESS POINT 1
RIM 149.94

TOP 146.25
FL 139.81
CP CONC STREAM 140.00

CP CONC STREAM 136.88
FL 136.62
TOP 143.08
TOP 142.41
CP CONC STREAM 136.80
TOE OF WALL 136.30
TOE OF WALL 136.34
TOE OF WALL 136.86
TOP 141.48
TOE OF WALL AP 135.81
TOE OF WALL AP 135.87
TOE OF WALL 133.58
TOP 138.96
TOP TRANSITION 139.28
TOE OF WALL 133.39
TOE OF WALL 135.72
FL 135.13
TOE OF WALL AP 133.06
TOE OF WALL 132.50
TOE OF WALL 131.03
TOE OF WALL 131.72
TOE OF WALL AP 129.11
TOE OF WALL 132.07
FL 132.74
TOE OF WALL AP 133.06
FL 128.80 135.81
TOE OF WALL 130.97
TOE OF WALL AP 129.12

20+00
21+00
22+00
23+00
24+00
25+00

MATCHLINE-SEE SHEET C1.1

MARTIN LUTHER KING JR.
CIVIC CENTER PARK

OLD BERKELEY CITY HALL
2134
MARTIN LUTHER
KING JR WAY

±7' PARKING
±51'
±65'
±7' PARKING

ALLSTON WAY
12" SS
12" SS
12" SS
16" W
16" W

Graphic Scale (in feet)
20 0 20 40
1 inch = 20 ft.

NOTE:

1. CONTRACTOR SHALL CONTACT THE CITY ARBORIST AT LEAST 48 HOURS IN ADVANCE OF PERFORMING ANY WORK UNDER THE DRIP LINE OF EXISTING TREES AND WHEN EXCAVATION IS PLANNED WITHIN THE ROOT SYSTEM OF THE TREE. CITY ARBORIST SHALL ASSESS EACH TREE TO DETERMINE THE ALLOWABLE EXTENT OF BRANCH PRUNING. TRIM TREE LIMBS AS APPROVED BY CITY ARBORIST.
2. CONTRACTOR SHALL VERIFY ALL IRRIGATION WITHIN LIMITS OF WORK PRIOR TO ANY EXCAVATION. REMOVE, DISPOSE, AND REPLACE IN KIND IRRIGATION AS NEEDED FOR INSTALLATION OF NEW MH ACCESS.

REGISTERED PROFESSIONAL ENGINEER
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STATE OF CALIFORNIA
10/28/24

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CITY ENGINEER
R.C.E. EXP.
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CITY OF BERKELEY
DEPARTMENT OF PUBLIC WORKS

STRAWBERRY CREEK CULVERT
MAINTENANCE PROJECT
LAYOUT PLAN – MLK JR WAY
(STA: 19+00 TO STA: 25+00)

PLAN 8289
FILE 502-720
C1.0
SHEET 4 OF 18

REVISION	DATE	MARK	DESCRIPTION
			APPROVAL

GRANT STREET

MATCHLINE-SEE SHEET C1.2

MATCHLINE-SEE SHEET C1.0

MCKINLEY AVENUE

ALLSTON WAY

2126

2128

2133

2132

2134

2139

2169

2138

2140

2144
MCKINLEY
AVENUE

1835
ALLSTON
WAY

1823
ALLSTON
WAY

1817
ALLSTON
WAY

1815
ALLSTON
WAY

1805
ALLSTON
WAY

2199
GRANT
STREET

1749
ALLSTON
WAY

1745
ALLSTON
WAY

STRAWBERRY CREEK
CULVERT

FLOW

ACCESS POINT 2
GRATE 143.48

ACCESS POINT 3
GRATE 134.64

END SECTION 10
□ 6.5' H X 8' W
BEGIN SECTION 11
□ 6.5' H X 8' W
STA: ±27+70 (VIF)

END SECTION 11
□ 6.5' H X 8' W
BEGIN SECTION 12
□ 6.5' H X 8' W
STA: ±28+50 (VIF)

END SECTION 9
□ 7' H X 8' W
BEGIN SECTION 10
□ 6.5' H X 8' W
STA: ±26+20 (VIF)

END GEOPOLYMER LINING
STA: ±27+02 (VIF)

STA: ±30+84 (VIF)
END GEOPOLYMER LINING

STA: ±30+14 (VIF)
BEGIN GEOPOLYMER LINING

INSTALL GEOPOLYMER LINING (±70 LF)
FOLLOWING COMPLETION OF INTERMITTENT CONCRETE CRACK,
CONCRETE SPALL, AND INVERT SLAB REPAIRS
(CULVERT SECTION 12, SEE SHEETS S1 & S2)

INSTALL GEOPOLYMER LINING (±420 LF)
FOLLOWING COMPLETION OF
INTERMITTENT CONCRETE CRACK,
CONCRETE SPALL, AND INVERT SLAB REPAIRS
(CULVERT SECTIONS 9 AND 10,
SEE SHEETS S1 & S2)

TEMPORARY CHECK DAM W/ BYPASS PIPE (TYP)
PER DETAIL 4, SHEET CD1
(APPROXIMATE LOCATION SHOWN, VIF)

±7' PARKING
±28'
±42'
±35'
±21'
±37'

NOTE:

1. CONTRACTOR SHALL CONTACT THE CITY ARBORIST AT LEAST 48 HOURS IN ADVANCE OF PERFORMING ANY WORK UNDER THE DRIP LINE OF EXISTING TREES AND WHEN EXCAVATION IS PLANNED WITHIN THE ROOT SYSTEM OF THE TREE. CITY ARBORIST SHALL ASSESS EACH TREE TO DETERMINE THE ALLOWABLE EXTENT OF BRANCH PRUNING. TRIM TREE LIMBS AS APPROVED BY CITY ARBORIST.
2. LOW OVERHEAD WIRES EXIST AT MCKINLEY AVE AND GRANT ST. CONTRACTOR SHALL PROTECT IN PLACE .

Graphic Scale (in feet)
20 0 20 40
1 inch = 20 ft.

10/28/24

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CITY OF BERKELEY
DEPARTMENT OF PUBLIC WORKS

STRAWBERRY CREEK CULVERT
MAINTENANCE PROJECT
LAYOUT PLAN – MCKINLEY AVENUE,
GRANT STREET
(STA: 25+00 TO STA: 31+50)

PLAN 8289
FILE 502-720
C1.1
SHEET 5 OF 18

APPROVAL | DESCRIPTION | DATE | MARK | REVISION

2125
2127
2139
2128
2130
2132
2129
2131
2135
2134 GRANT STREET
2140
2145
2147 MCGEE AVENUE
2139

ROOSEVELT AVENUE

STRAWBERRY CREEK CULVERT

MCGEE AVENUE

ALLSTON WAY

MATCHLINE-SEE SHEET C1.3

MATCHLINE-SEE SHEET C1.1

ON

INSTALL GEOPOLYMER LINING (±80 LF)
FOLLOWING COMPLETION OF INTERMITTENT CONCRETE CRACK,
CONCRETE SPALL, AND INVERT SLAB REPAIRS
(CULVERT SECTIONS 13 AND 14, SEE SHEET S1 AND S2)

DI
ACCESS POINT 5
GRATE 120.88

CURB INLET
EG 120.56

CP CONC STREAM
108.14

TOP
114.52

TOE OF WALL AP
108.33

FL
107.91

TOE OF WALL
108.06

TOE OF WALL
108.78

FLOW

37+00

36+00

35+00

34+00

33+00

32+00

TOE OF WALL
108.03

FL
107.84

TOE OF WALL
108.80

TOE OF WALL AP
108.48

TOP
116.45

FL
109.90

TOE OF WALL AP
110.50

TOE OF WALL
109.99

TOE OF WALL
110.80

TOE OF WALL
109.97

CP CONC STREAM
110.11

TOE OF WALL AP
110.46

TOE OF WALL
111.84

TOE OF WALL
111.90

TOE OF WALL
110.90

TOE OF WALL
112.79

TOE OF WALL
112.32

TOE OF WALL
112.72

FL
112.11

CP CONC STREAM
1112.18

TOP
118.22

TOE OF WALL
112.20

TOP
121.45

CP CONC STREAM
115.30

FL
115.14

TOE OF WALL AP
115.44

TOE OF WALL
115.98

TOE OF WALL
114.85

TOE OF WALL
115.95

TOE OF WALL AP
115.51

TOE OF WALL
114.87

VAULT
ACCESS POINT 4
RIM 127.74

STA: ±37+78 (VIF)
END GEOPOLYMER LINING

STA: ±37+37 (VIF)
END SECTION 13
∩ 6.5' X 8' W
BEGIN SECTION 14
∩ 5' H X 8' W

STA: ±37+07 (VIF)
BEGIN GEOPOLYMER LINING

STA: ±34+42 (VIF)
END GEOPOLYMER LINING

STA: ±33+66 (VIF)
BEGIN GEOPOLYMER LINING

STA: ±35+00 (VIF)
END SECTION 12
∩ 6.5' H X 8' W
BEGIN SECTION 13
∩ 6.5' H X 8' W

±7' PARKING
±29'
±43'
±7' PARKING

±7' PARKING
±27'
±41'
±7' PARKING

±7' PARKING
±20'
±34'
±7' PARKING

TEMPORARY CHECK DAM W/ BYPASS PIPE (TYP)
PER DETAIL 4, SHEET CD1
(APPROXIMATE LOCATION SHOWN, VIF)

INSTALL GEOPOLYMER LINING (±80 LF)
FOLLOWING COMPLETION OF INTERMITTENT CONCRETE CRACK,
CONCRETE SPALL, AND INVERT SLAB REPAIRS
(CULVERT SECTION 12, SEE SHEET S1 AND S2)

STA: ±34+18.07 (VIF)
RIM: ±127.8 (VIF)
BOTTOM: ±117.8 (VIF)
REMOVE AND DISPOSE EX. LID AND
UPPER 16" OF EX. BOX.
INSTALL NEW ACCESS HATCH
PER DETAIL 8, SHEET CD1

SSMH 17-303-33
RIM ±122.6 (VIF)
8" INV ±114.0 (VIF)

SSMH 17-303-39
RIM ±129.2 (VIF)
8" INV ±122.5 (VIF)

1701 ALLSTON WAY
1705 ALLSTON WAY
1709 ALLSTON WAY
1711 ALLSTON WAY
1713 ALLSTON WAY
1717 ALLSTON WAY
1723 ALLSTON WAY
2155 ROOSEVELT AVE
1733 ALLSTON WAY
1735 ALLSTON WAY
1737 ALLSTON WAY
1741 ALLSTON WAY

NOTE:

1. CONTRACTOR SHALL CONTACT THE CITY ARBORIST AT LEAST 48 HOURS IN ADVANCE OF PERFORMING ANY WORK UNDER THE DRIP LINE OF EXISTING TREES AND WHEN EXCAVATION IS PLANNED WITHIN THE ROOT SYSTEM OF THE TREE. CITY ARBORIST SHALL ASSESS EACH TREE TO DETERMINE THE ALLOWABLE EXTENT OF BRANCH PRUNING. TRIM TREE LIMBS AS APPROVED BY CITY ARBORIST.
2. LOW OVERHEAD WIRES EXIST AT ROOSEVELT AVE AND MCGEE AVE. CONTRACTOR SHALL PROTECT IN PLACE.
3. HISTORICAL RECORDS SHOW CONCRETE SLAB MAY EXIST UNDER AC PAVEMENT AT ROOSEVELT AVE.

Graphic Scale (in feet)
20 0 20 40
1 inch = 20 ft.

APPROVAL | DESCRIPTION | DATE | MARK | REVISION

REGISTERED PROFESSIONAL ENGINEER
No. C90534
CIVIL
STATE OF CALIFORNIA
10/28/24

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CITY ENGINEER R.C.E. EXP.
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DRAWN JD
CHECK RS
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HORIZ.
VERT.
BOOK
DATE 10/28/24

CITY OF BERKELEY
DEPARTMENT OF PUBLIC WORKS

STRAWBERRY CREEK CULVERT
MAINTENANCE PROJECT
LAYOUT PLAN – ROOSEVELT AVENUE,
MCGEE AVENUE
(STA: 31+50 TO STA: 37+50)

PLAN 8289
FILE 502-720
C1.2
SHEET 6 OF 18

1600 - 2128
ADDISON STREET

2125
JEFFERSON STREET

2132

2134

2136
2138

CURB INLET
EG 120.56

CP CONC STREAM
106.67

TOE OF WALL AP
106.91

TOE OF WALL AP
106.82

TOE OF WALL
106.73

TOE OF WALL
107.00

TOE OF WALL
106.84

TOP
112.35

TOP
111.44

TOP
112.91

TOE OF WALL AP
106.89

FL
106.44

TOP
112.86

TOE OF WALL
106.90

TOE OF WALL AP
106.47

TOE OF WALL
106.27

TOE OF WALL
106.48

TOE OF WALL AP
106.25

FL
105.87

TOE OF WALL
105.50

TOE OF WALL
106.58

CP CONC STREAM
106.22

FL
106.02

TOE OF WALL
106.84

TOE OF WALL
106.18

TOE OF WALL AP
106.19

EG
118.12

TOE OF WALL
150.42

CP CONC STREAM
106.04

TOP
112.22

FLOW

39+00

38+00

40+00

STA: ±40+20 (VIF)
END SECTION 15
∩ 6.5' H X 8' W
BEGIN SECTION 16
∩ 6.5' H X 8' W

STA: ±38+45 (VIF)
END SECTION 14
∩ 5' H X 8' W
BEGIN SECTION 15
∩ 6.5' H X 8' W

STA: ±37+78 (VIF)
END GEOPOLYMER LINING

MATCHLINE-SEE SHEET C1.2

END SECTION 16
∩ 6.5' H X 8' W
BEGIN SECTION 17
∩ ROUND 7.5'Ø
STA: ±41+40 (VIF)

TOP
109.17

TOE OF WALL
105.10

TOP
110.47

CP CONC STREAM
101.48

TOP
108.79

FL
103.92

FL
101.58

FL
101.39

41+00

±7.9'

TOE OF WALL
105.23

CP CONC STREAM
100.39

TOP
107.81

FL
100.26

±7.4'

42+00

±18'
PARKING

±23'

±7'
PARKING

±48'

FLOW

43+00

±75'

STA: ±44+10 (VIF)
BEGIN GEOPOLYMER LINING

STRAWBERRY CREEK CULVERT

TEMPORARY CHECK DAM W/ BYPASS PIPE (TYP)
PER DETAIL 4, SHEET CD1
(APPROXIMATE LOCATION SHOWN, VIF)

44+00

MATCHLINE-SEE SHEET C1.4

1601
ALLSTON WAY

1607
1609
1611
ALLSTON WAY

1629
ALLSTON
WAY

1631
ALLSTON
WAY

1641
ALLSTON
WAY

1643
ALLSTON
WAY

1645
ALLSTON
WAY

1647
ALLSTON
WAY

ALLSTON WAY

JEFFERSON AVENUE

±7'
PARKING

±20'

±34'

±7'
PARKING

8" SS
6" W
2" G
6" G

Graphic Scale (in feet)

20 0 20 40

1 inch = 20 ft.

APPROVAL

DESCRIPTION

DATE

MARK

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CITY OF BERKELEY
DEPARTMENT OF PUBLIC WORKS

STRAWBERRY CREEK CULVERT
MAINTENANCE PROJECT
LAYOUT PLAN – JEFFERSON AVENUE
(STA: 37+50 TO STA: 44+00)

PLAN 8289
FILE 502-720
C1.3
SHEET 7 OF 18

2137
2136
2138
2133
2144
2139
2140
2135
2143
2144
2139
1569 ALLSTON WAY
1575 ALLSTON WAY
1583 ALLSTON WAY
1593 ALLSTON WAY
2145
1555 1557 ALLSTON WAY
1519 ALLSTON WAY
1515 ALLSTON WAY
1511 ALLSTON WAY
2149
2153

ALLSTON WAY

MATCHLINE-SEE SHEET C1.5

MATCHLINE-SEE SHEET C1.3

SPAULDING AVENUE

CALIFORNIA STREET

STRAWBERRY CREEK CULVERT

INSTALL GEOPOLYMER LINING (~915 LF)
FOLLOWING COMPLETION OF
INTERMITTENT CONCRETE CRACK,
CONCRETE SPALL, AND INVERT SLAB REPAIRS
(CULVERT SECTIONS 17,18, AND 19,
SEE SHEETS S1 AND S2)

STA: ±44+10 (VIF)
BEGIN GEOPOLYMER LINING

END SECTION 17
ROUND 5'-9"
BEGIN SECTION 18
D 8' H X 8' W
STA: 144+85 (VIF)

STA: ±45+45 (VIF)
END SECTION 18
Π 6' H X 8' W
BEGIN SECTION 19
Π 7' H X 8' W

ACCESS POINT 6
GRATE 109.00

ACCESS POINT 7
RIM 109.15

ACCESS POINT 8
RIM 104.14

±7' PARKING
±34'
±32'
±46'
±36'
±22'

FLOW

44+00
45+00
46+00
47+00
48+00
49+00
50+00

Graphic Scale (in feet)
20 0 20 40
1 inch = 20 ft.

10/28/24

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CITY OF BERKELEY
DEPARTMENT OF PUBLIC WORKS

STRAWBERRY CREEK CULVERT MAINTENANCE PROJECT
LAYOUT PLAN – CALIFORNIA STREET, SPAULDING AVENUE
(STA: 44+00 TO STA: 50+50)

PLAN 8289
FILE 502-720
C1.4
SHEET 8 OF 18

APPROVAL
DESCRIPTION
DATE
MARK
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2128
2132
2138
2142
2144
2146
2148
2152
2137
2139
2143
2145
2149
2153
1435 ALLSTON WAY
1431
1429
1425
1419
1417
1415
1413
SACREMENTO STREET (SOUTHBOUND)
SACREMENTO STREET (NORTHBOUND)
ALLSTON WAY
STRAWBERRY CREEK CULVERT
MATCHLINE-SEE SHEET C1.4
STA: ±53+36 (V/F) END SECTION 19 ∩ 7' H X 8' W
STA: ±53+26 (V/F) END GEOPOLYMER LINING
INSTALL GEOPOLYMER LINING (~915 LF) FOLLOWING COMPLETION OF INTERMITTENT CONCRETE CRACK, CONCRETE SPALL, AND INVERT SLAB REPAIRS (CULVERT SECTION 19, SEE SHEET S1 AND S2)
TEMPORARY CHECK DAM W/ BYPASS PIPE (TYP) PER DETAIL 4, SHEET CD1 (APPROXIMATE LOCATION SHOWN, V/F)
TUNNEL EXIT/DAYLIGHTS
MH ACCESS POINT 9
CURB INLET
GROUND
FLOW
FL 84.23
TOP 90.28
EG 95.93
TOE OF WALL AP 106.84
TOE OF WALL AP 86.98
TOE OF WALL AP 86.72
TOE OF WALL AP 87.05
TOE OF WALL AP 87.06
±7' PARKING
±21' ±28'
±22' ±29'
±36'
±22'
±8.0'
53+30
53+00
52+00
51+00
Graphic Scale (in feet)
20 0 20 40
1 inch = 20 ft.

10/28/24

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SUPERVISING ENGINEER
APPROVED: DATE
CITY ENGINEER
REGISTR. EXP.
R.C.E. EXP.
0 1 2 3
FOR REDUCED PLANS – ORIGINAL SCALE IS IN INCHES

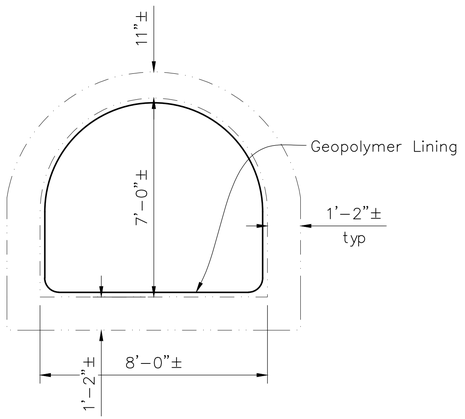
DESIGN JD
DRAWN JD
CHECK RS
AS BUILT
HORIZ.
VERT.
BOOK
DATE 10/28/24

CITY OF BERKELEY
DEPARTMENT OF PUBLIC WORKS

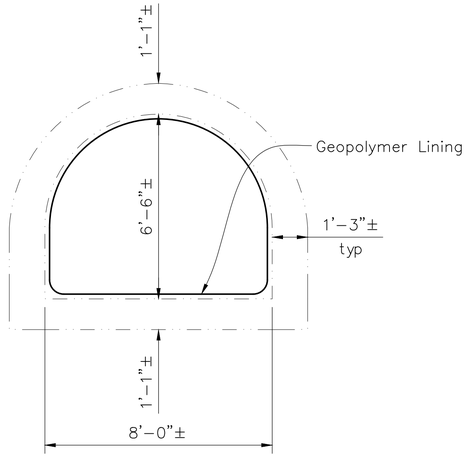
STRAWBERRY CREEK CULVERT MAINTENANCE PROJECT
LAYOUT PLAN – SACRAMENTO STREET (STA: 50+50 TO STA: 53+50)

PLAN 8289
FILE 502-720
C1.5
SHEET 9 OF 18

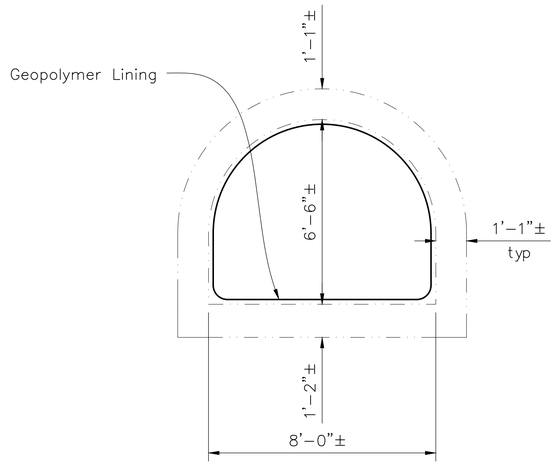
APPROVAL
DESCRIPTION
DATE
MARK
REVISION



SECTION 9
STA 22+90± to STA 26+20±
NOT TO SCALE



SECTION 10
STA 26+20± to STA 27+05±
NOT TO SCALE



SECTION 12
STA 30+16± to STA 30+86± & STA 33+68± to STA 34+43±
NOT TO SCALE

Note:
Geopolymer lining placement to occur following the completion of the various concrete repair details depicted on sheets S3 and S4. Engineer to approve preparation of culvert sections prior to placing geopolymer lining.

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SURVEY CHIEF OF PARTY
WATERSHED REVIEW: DATE

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CITY ENGINEER R.C.E. EXP.

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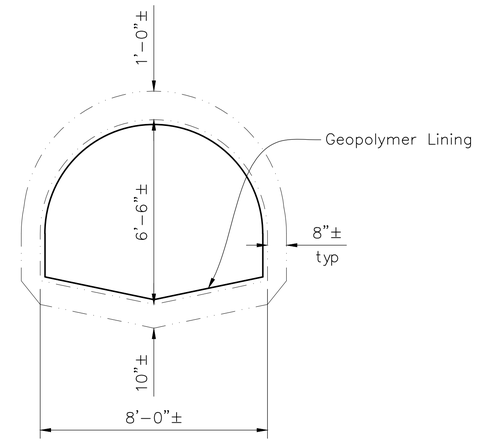
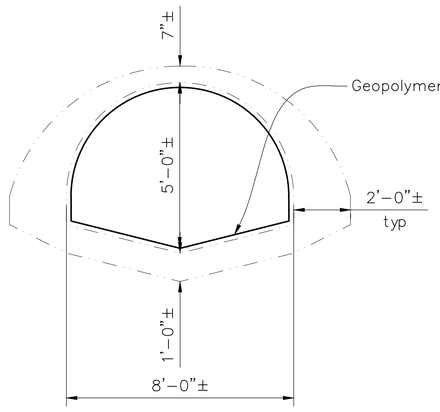
STRAWBERRY CREEK CULVERT MAINTENANCE PROJECT
TYPICAL CULVERT CROSS SECTIONS NO. 1

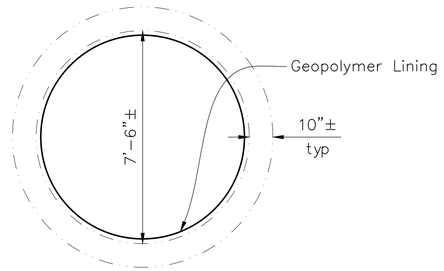
PLAN –
FILE –
S1
SHEET 10 OF 18



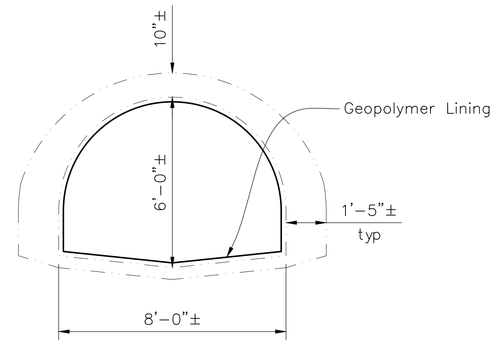
SECTION 13
STA 37+09± to STA 37+37±
NOT TO SCALE



SECTION 14
STA 37+37± to STA 37+80±
NOT TO SCALE



SECTION 17
STA 44+10± to STA 44+85±
NOT TO SCALE



SECTION 18
STA 44+85± to STA 45+45±
NOT TO SCALE

SECTION 19
STA 45+45± to STA 53+26±
NOT TO SCALE

Note:
Geopolymer lining placement to occur following the completion of the various concrete repair details depicted on sheets S3 and S4. Engineer to approve preparation of culvert sections prior to placing geopolymer lining.

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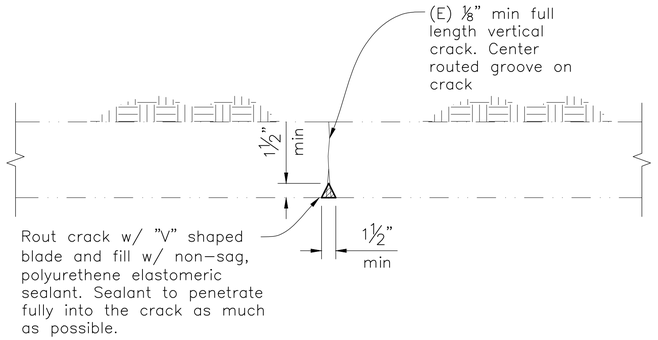
HORIZ. _____
VERT. _____
BOOK _____
DATE 10/28/24

CITY OF BERKELEY
DEPARTMENT OF PUBLIC WORKS

STRAWBERRY CREEK CULVERT MAINTENANCE PROJECT
TYPICAL CULVERT CROSS SECTIONS NO. 2

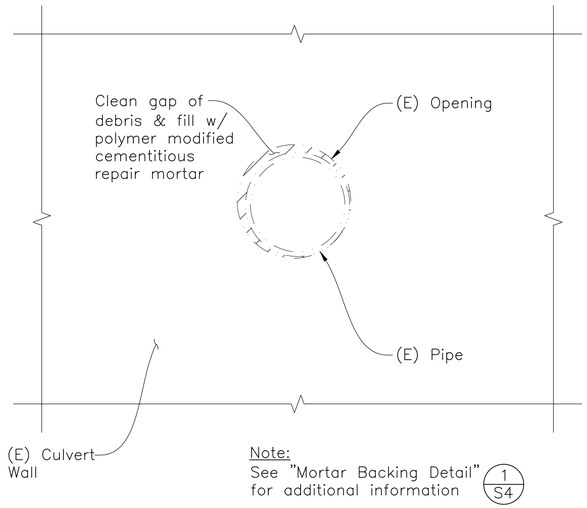
PLAN –
FILE –
S2
SHEET 11 OF 18



VERTICAL CRACK REPAIR AT (E) WALL JOINT

1 / S3

N.T.S.

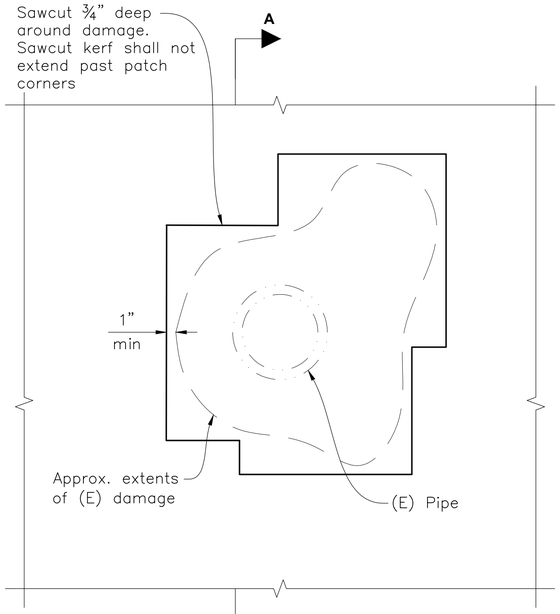


Note:
See "Mortar Backing Detail" 1 / S4 for additional information

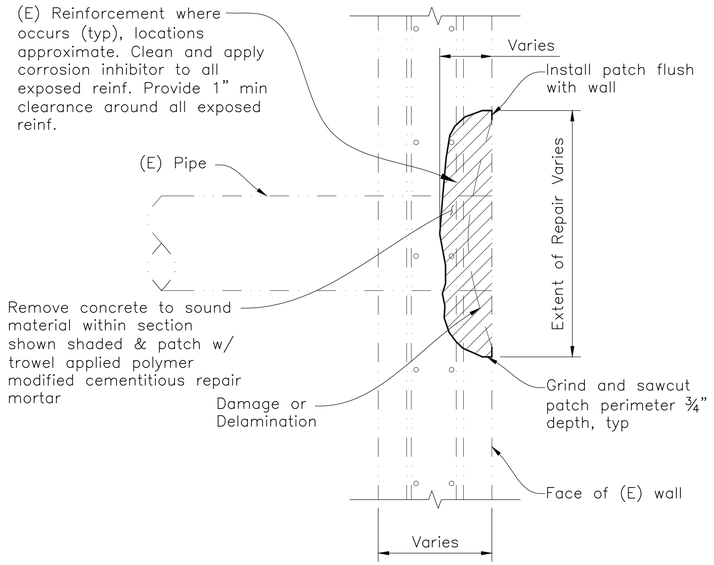
INLET PIPE GAP INFILL DETAIL

2 / S3

1 1/2"=1'–0"



ELEVATION



SECTION A-A

Notes:

1. Trowel applied repair mortar to be applied in per manufacturer's recommendations.
2. See specifications on sheet S7 for trowel applied repair mortar details.
3. If (E) reinforcement is corroded or damaged, see "Concept Reinforcement Repair Detail" 3 / S4

DAMAGE REPAIR AROUND (E) PIPE

3 / S3

1 1/2"=1'–0"

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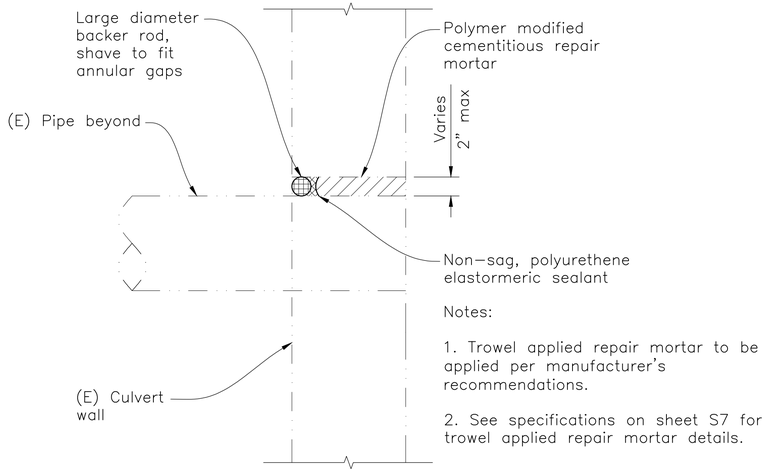
REVISION	MARK	DATE	DESCRIPTION	APPROVAL



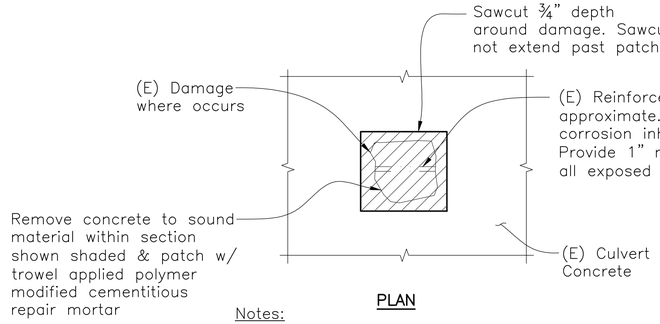
Notes:

1. Trowel applied repair mortar to be applied per manufacturer's recommendations.

2. See specifications on sheet S7 for trowel applied repair mortar details.

MORTAR BACKING DETAIL (1/S4)

1 1/2"=1'–0"



PLAN

Notes:

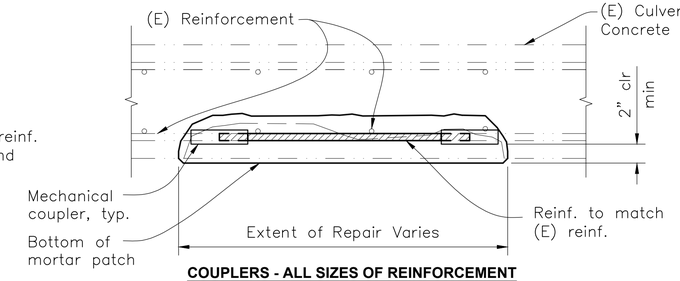
1. Trowel applied repair mortar to be applied per manufacturer's recommendations.

2. See specifications on sheet S7 for trowel applied repair mortar details.

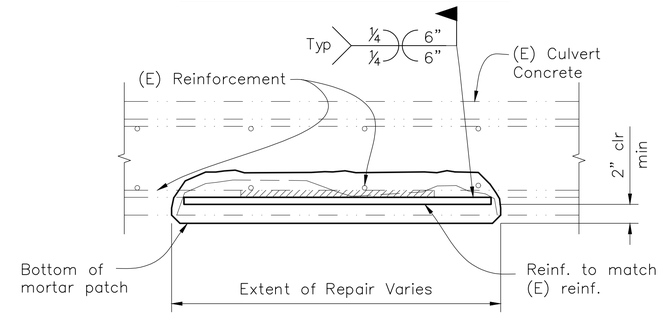
3. If (E) reinforcement is corroded or damaged, see "Concept Reinforcement Repair Detail" (3/S4)

EXPOSED REINF. REPAIR DETAIL (2/S4)

1 1/2"=1'–0"



COUPLERS - ALL SIZES OF REINFORCEMENT



WELDED REINFORCEMENT - #6 & SMALLER

Notes:

1. For information not shown, see "Exposed Reinf. Repair Detail" (2/S4)
2. Demolition extents to provide enough room for installation of coupler.
3. Cut & remove damaged or corroded reinforcement & apply corrosion inhibitor

CONCEPT REINF. REPAIR DETAIL (3/S4)

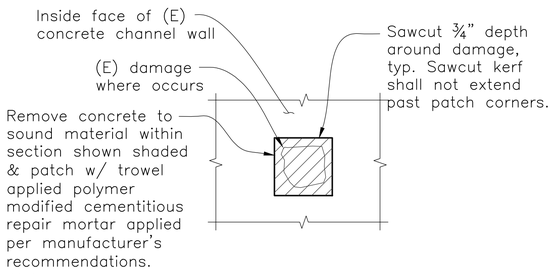
1 1/2"=1'–0"

Notes:

1. Contractor to follow ACI guideline 503R for epoxy injection.
2. Contractor shall remove all ports and surface seal materials after injection is complete

EPOXY INJECTION DETAIL (4/S4)

1 1/2"=1'–0"



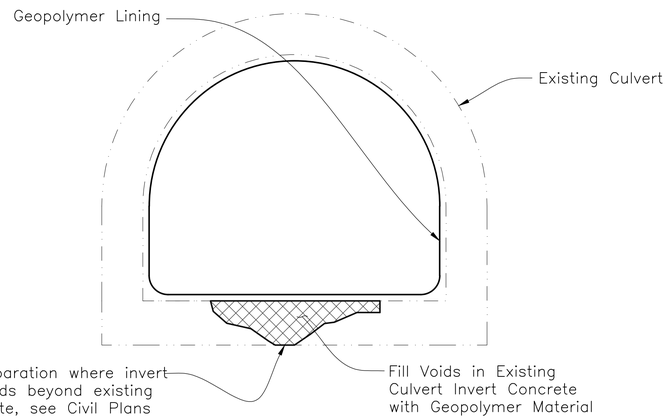
Notes:

1. See specifications on sheet S7 for trowel applied repair mortar details.

2. If (E) reinf. is encountered, provide 1" min clearance around exposed reinf. If (E) reinf. is corroded or damaged, see "Concept Reinforcement Repair Detail" (3/S4)

WALL & ROOF DAMAGE REPAIR DETAIL (5/S4)

1 1/2"=1'–0"



CULVERT INVERT FILL DETAIL (6/S4)

1/2"=1'–0"

Note:
Arch–shaped culvert shown, pipe culvert section typ

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CITY ENGINEER R.C.E. EXP.
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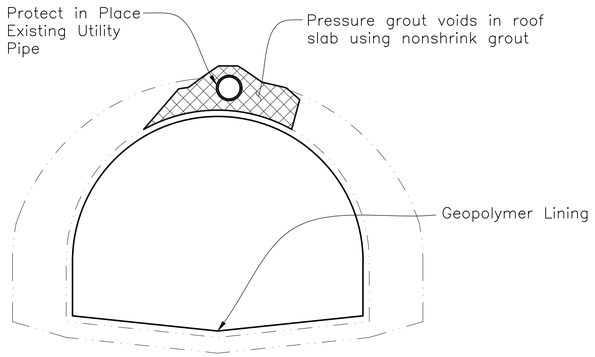
DEPARTMENT OF PUBLIC WORKS

STRAWBERRY CREEK CULVERT MAINTENANCE PROJECT
CULVERT REPAIR DETAILS NO. 2

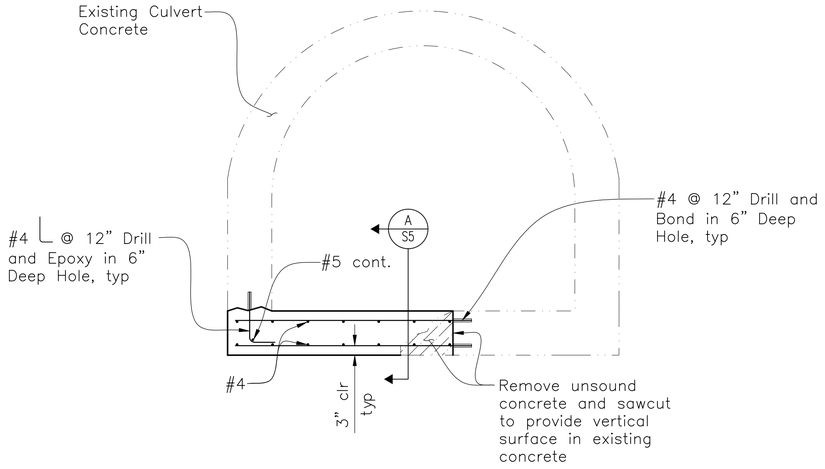
PLAN –
FILE –
S4
SHEET 13 OF 18



CULVERT ROOF REPAIR AT PIPE PENETRATION DETAIL

1/2"=1'-0"

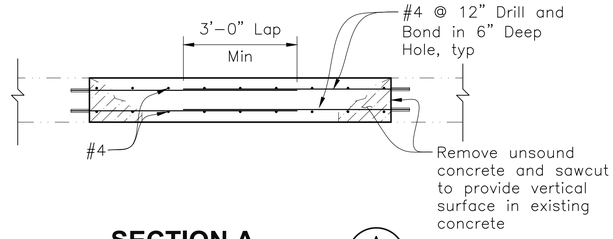
1 / S5



CULVERT INVERT REPAIR DETAIL

1/2"=1'-0"

2 / S5



SECTION A

1/2"=1'-0"

A / S5

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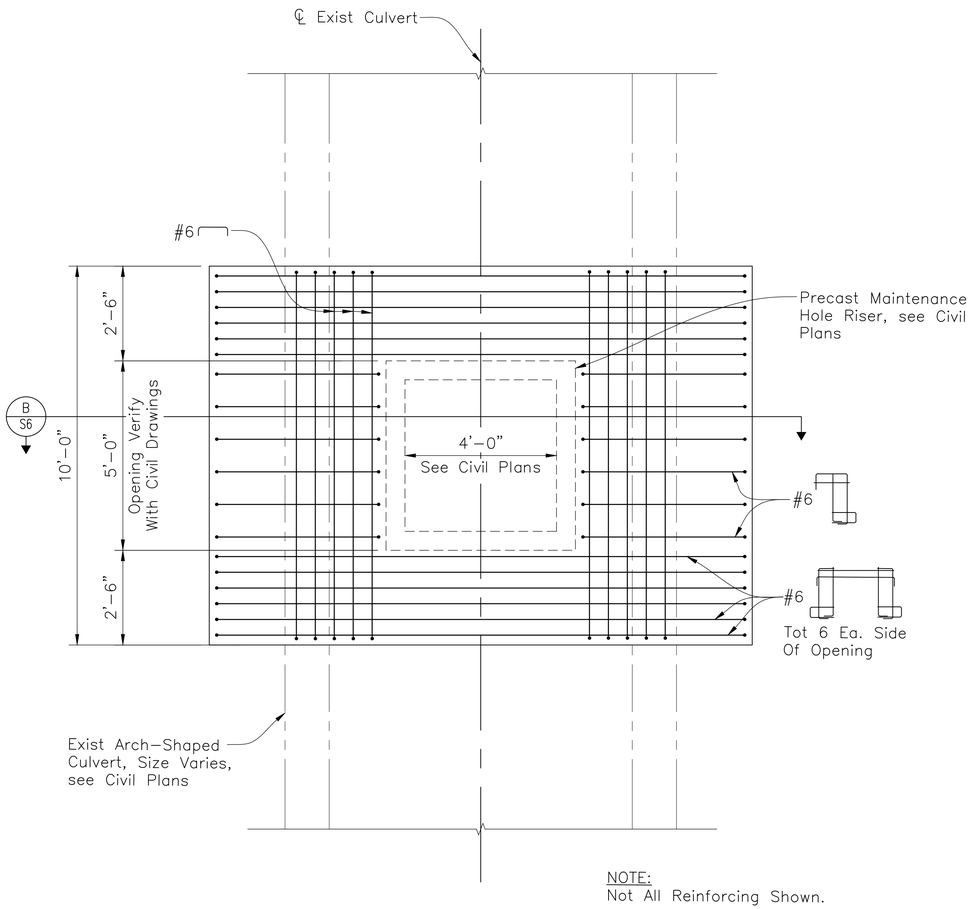
STRAWBERRY CREEK CULVERT MAINTENANCE PROJECT
CULVERT REPAIR DETAILS NO. 3

PLAN –
FILE –
S5
SHEET 14 OF 18

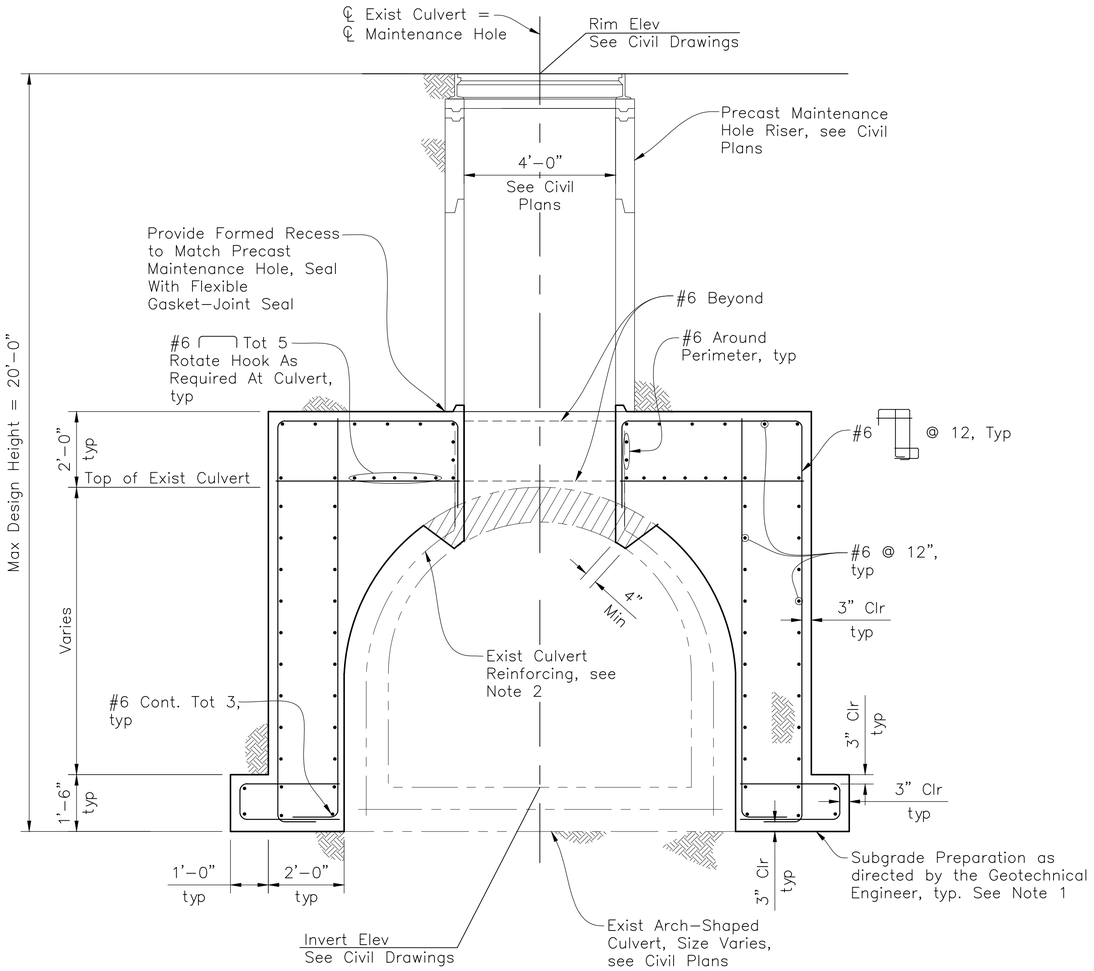


NOTE:
Not All Reinforcing Shown.

PLAN VIEW SADDLE MAINTENANCE HOLE

1/2"=1'–0"

1
S6



SECTION B

1/2"=1'–0"

B
S6

NOTES:

1. The Geotechnical Engineer Must Be Present During Excavation Activities And Observe The Saddle Maintenance Hole Subgrade. Contractor To Provide Subgrade Preparation As Directed By The Geotechnical Engineer.
2. Cut and Bend Existing Culvert Reinf. with 12" Min Length. Where Existing Reinf. Does Not Exist, Drill and Bond #4 @ 12" into Existing Culvert.

Indicate Portion Of Exist. Culvert To Be Removed

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STRAWBERRY CREEK CULVERT MAINTENANCE PROJECT
CULVERT MAINTENANCE HOLE DETAILS NO. 1

PLAN –
FILE –
S6
SHEET 15 OF 18

STRUCTURAL SPECIFICATIONS

GENERAL

All work shall be in accordance to City of Berkeley Standard Requirements and supplemented by the State of California, Department of Transportation 2023 Standard Specifications and the current revise Standard Specification, except as supplemented or modified herein.

CONCRETE

Concrete shall be constructed in accordance with the provisions in Section 51, "Concrete Structures" and Section 90, "Portland Cement Concrete", of the State Standard Specifications. All concrete shall be designated by compressive strength. Cement shall be in accordance with the standard specification for Portland Cement per ASTM designation C150, Type II modified.

Maximum Water–Cement Ratio, by Weight			
28 Day Compressive Strength	Non–Air Entrained	Air Entrained	Fly Ash Content
4000 psi Concrete	.45	.45	15%

Cement shall be in accordance with the standard specifications for portland cement per ASTM designation C150, Type II (modified).

Concrete Element	Min 28 Day Compressive Strength	Max Size Aggregate (inches)	Max Slump (inches)	Total Air Content (%)
Culvert	4000	3/8	4	–

Slump will be measured at the truck discharge. Pumping of concrete may require admixtures to increase slump beyond the maximum slump listed above. Admixtures are subject to the engineer's review. The special inspectors shall be provided with a batch ticket and weight tag upon delivery of each load of concrete. All concrete shall be placed with mechanical vibration unless noted otherwise.

GEOPOLYMER LINING

Geoploymer lining shall be constructed in accordance with the project book specifications. See project book specifications for geopolymer details.

JOINT CRACK REPAIR

Joint Sealant shall be polyurethane–based, non–sag, elastomeric sealant

1. Acceptable materials for this work are as follows:
   a. Sikaflex–2c NS EZ
   b. Other types may be used only with Engineer's approval in writing prior to bidding.

Preparation and Installation shall be in accordance with the manufacturer's recommendations. Contractor to be trained by the manufacturer for use of this product before performing work.

JOINT SEAL REPAIR

Joint Seal repair shall be an epoxy, resin adhesive sealing system composed of a gel resin adhesive and flexible polyolefin (FPO) rubber seal.

1. Acceptable materials for this work are as follows:
   a. Sikadur Combiflex SG
   b. Other types may be used only with Engineer's approval in writing prior to bidding.

Preparation and Installation shall be in accordance with the manufacturer's recommendations. Contractor to be trained by the manufacturer for use of this product before performing work.

REINFORCING STEEL

Bars for reinforcing shall be grade 60 deformed bars conforming to ASTM A706 or A615. Lap splices shall be in accordance with ACI 318 – current edition unless noted otherwise on the plans. Bars to be welded or field bent shall conform to ASTM A706.

MECHANICAL REINFORCEMENT DEVICE COUPLER

Mechanical couplers of reinforcement shall be Bar Lock plain couplers by Dayton Superior (ICC ESR 2495) or approved equal.

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COSMETIC CRACKING

Cracks that are approximately 1/16" wide are considered cosmetic. See "Cosmetic Cracking" specification for more information.

CORROSION INHIBITOR

Corrosion Inhibitor shall be a moisture–tolerant, epoxy resin/portland cement adhesive and shall be compatible and from the same manufacturer as the repair mortar being used.

1. Acceptable materials for this work are as follows:
   a. Sika Armatec 110 EpoCem
   b. Other types may be used only with Engineer's approval in writing prior to bidding.

Preparation and Installation shall be in accordance with the manufacturer's recommendations. Contractor to be trained by the manufacturer for use of this product before performing work.

TROWEL APPLIED REPAIR MORTAR

Trowel Applied Repair Mortar shall be prepackaged, polymer–modified cementitious repair mortar capable of vertical/overhead application by trowel achieving a minimum 5,000 psi compressive strength at 7 days and 7,000 psi compressive strength at 28 days per ASTM C109 as certified by manufacturer.

1. Acceptable materials for this work are as follows:
   a. SikaQuick VOH
   b. SikaTop 123 Plus
   b. Other types may be used only with Engineer's approval in writing prior to bidding.

Preparation and Installation shall be in accordance with the manufacturer's recommendations. Contractor to be trained by the manufacturer for use of this product before performing work.

HORIZONTAL REPAIR MORTAR

Horizontal Repair Mortar Shall be prepackaged, polymer–modified cementitious repair mortar capable of horizontal, pour and screed, form and pour, partial and full depth applications, achieving a minimum 5,000 psi comprssive strength at 7 days and 7,000 psi compressive strength at 28 days per ASTM C109 if neat and ASTM C39 if extended as certified by manufacturer. Manufacturer to submit volume and size of SSD aggregate used for mix extension

1. Acceptable materials for this work are as follows:
   a. SikaQuick 1000
   b. Other types may be used only with Engineer's approval in writing prior to bidding.

Preparation and Installation shall be in accordance with the manufacturer's recommendations. Contractor to be trained by the manufacturer for use of this product before performing work.

ADHESIVE ANCHORING SYSTEMS FOR CONCRETE

Adhesive anchoring systems shall be Hilti HIT–RE500–SD (ICC ESR–2322) System, Simpson Set–XP (ICC ESR–2508), Sika Anchor Fix 3001, or approved equal. Installation of anchors and adhesive including drilling and cleaning of holes shall be in accordance with the current ICC report. Adhesives shall be used only in applications permitted by the adhesive's ICC report. Alternately, Caltrans approved system may be used.

Care shall be taken and appropriate sized equipment used to ensure that existing welded wire mesh is preserved during demo and equipment used to drill holes for dowels does not damage existing surrounding concrete. If refusal is encountered during drilling, contractor to abandon the hole and re–drill.

NON–SHRINK CEMENTITIOUS GROUT

Non–shrink cementitious grout shall be a deep pour, non–shrink, non–metallic, cemnetitious, shrinkage compensated, free flowing, pumpable grout achieving a minimum 1 day compressive strength of 4,000 psi, a minimum 7 day compressive strength of 8,250 psi, and a minimum 28 day compressive strength of 10,000 psi.

1. Acceptable materials for this work are as follows:
   a. SikaGrout–350
   b. Other types may be used only with Engineer's approval in writing prior to bidding.

Preparation and Installation shall be in accordance with the manufacturer's recommendations. Contractor to be trained by the manufacturer for use of this product before performing work.

DRILL AND EPOXY DOWEL

Chemical adhesives used for Drill and Epoxy Dowel shall comply with ACI 355.4 and be installed in accordance with ACI 318 design standards.

1. Acceptable materials for this work are as follows:
   a. Hilti HIT–HY 200–A V3
   b. Hilti HIT–HY 200–R V3
   c. Hilti HIT–HY–100
   d. Hilti HIT–RE 500 V3
   e. Other types may be used only with Engineer's approval in writing prior to bidding.

Preparation and Installation shall be in accordance with the manufacturer's recommendations. Contractor to be trained by the manufacturer for use of this product before performing work.

DRILL AND BOND DOWEL

Mortar used for Drill and Bond Dowel shall consist of a one–component magnesium phosphate–based mortar reaching a minimum compressive strength of 2,000 psi within one hour of placement, a minimum compressive strength of 6,000 psi within one day of placement, and a minimum compressive strength of 8,500 psi within 28 days of placement.

1. Acceptable materials for this work are as follows:
   a. SikaQuick Set–45
   b. Other types may be used only with Engineer's approval in writing prior to bidding.

Preparation and Installation shall be in accordance with the manufacturer's recommendations. Contractor to be trained by the manufacturer for use of this product before performing work.

SUBMITTALS

In addition to other submittal requirements specified in the State Standard Specifications, shop drawings for engineer's review will be required as follows:

1. Reinforcing steel
2. Concrete mix designs
3. Manufacturer's literature for all repair products including, but not limited to, Product Data Sheets and appropriate Material Safety Data Sheets (MSDS)
4. Access, Excavation, and Demolition Plan

Contractor shall submit two sets of prints for review. Fabrication shall not proceed until shop drawings have been approved by the engineer.

EPOXY INJECTION

Epoxy used for injection shall be an 2–component, 100% solids, moisture–tolerant, high modulus, high strength, structural epoxy and shall conform to ASTM C881, Type 1 and IV, Grade 3, Class C as appropriate. The proportions shall be recommended by the manufacturer. Crack preparation including port installation and sealing of the cracks shall be as recommended by the manufacturer. All cracks 1/16" wide and greater shall be injected.

1. Acceptable materials for this work are as follows:
   a. Sikadur Injection Gel, Standard Set
   b. Other types may be used only with Engineer's approval in writing prior to bidding.

Preparation and Installation shall be in accordance with the manufacturer's recommendations. Contractor to be trained by the manufacturer for use of this product before performing work.

SPECIAL INSPECTIONS

SPECIAL INSPECTOR

– The special inspector shall be a qualified person who shall demonstrate his competence, to the satisfaction of the city engineer, for inspection of a particular type of construction or operation requiring special inspections.

DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR

– The special inspector shall observe the work assigned for conformance with the applicable project drawings and specifications.
– The special inspector shall furnish inspection reports to the building official, the owner or owner's denoted representative, the architect or project manager, the structural engineer of record, the contractor and other persons designated by the owner or owner's designated representative. All discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the proper design authority and to the city engineer.
– The special inspector shall submit a final signed report stating whether the work requiring special inspections was, to the best of the inspector's knowledge, in conformance with the project plans and specifications and the applicable workmanship provisions of the State Standard Specifications.

CONCRETE

– Continuously inspect the placement of all concrete
– Sample concrete: ASTM C172, except slump shall comply with ASTM C94.
– Test slump: ASTM C143, one test at point of truck discharge for 150 CY or fraction thereof for each type of concrete; additional tests required when concrete consistency seems to have changed.
– Test air content: ASTM C173, volumetric method for lightweight or normal weight concrete, one for each 150 CY placed or fraction thereof for each type of air–entrained concrete.
– Test concrete temperature: test hourly when air temperature is 50 degrees F. (10 degrees C.) and below, and when 85 degrees F. (29 degrees C.) and above; and each time a set of compression test specimens are made.
– Take compression test specimens: ASTM C31, take one set of 3 standard cylinders for each 150 CY of concrete or 5000 sq. ft. of slabs & walls or fraction thereof for each type of concrete taken each day. Mold and store cylinders for laboratory cured test specimens except when field–cure test specimens are required.
– Take field cured compression test specimens: ASTM C31, take one set of 3 standard cylinders for each 150 CY of concrete or 5000 sq. ft. of slabs & walls or fraction thereof for each type of concrete placed each day; when the contractor plans to remove form work, false work or shoring sooner than 7 days for vertical form work and 14 days for shoring and false work; or when post–tensioning is required.
– Test compressive strength: ASTM C39; one specimen tested at 7 days, two specimens tested at 28 days.
– Test drying shrinkage: ASTM C157, take 1 set of 3 drying shrinkage samples for each day's pour of slabs on grade and post–tensioned concrete slabs.

CONCRETE (REPAIR MORTAR)

– Representative from mortar manufacturer to be on site during all patching work.
– Contractor shall engage a qualified independent testing and inspecting agency acceptable to the engineer to sample material, perform tests, and submit test reports during mortar placement according to ASTM C109.
– Test Compressive Strength: ASTM C109: three specimens tested at 1 day, three specimens tested at 7 days, and three specimens tested at 28 days

EPOXY INJECTION

– Inspect the surface seal material placement and entry port locations prior to the contractor proceeding with pressure epoxy injection.
– Inspect the pressure epoxy injection process to ensure that workmen are experienced, that roper equipment is being used, and that epoxy is traveling throughout the crack.
– Sampling: The contractor shall provide a minimum of three 4" diameter core samples for full crack depth at concrete or concrete unit masonry for approximately the first hundred square feet of repair from representative locations selected by the engineer.
– Test bond strength of epoxy with AASHTO T–237 slant shear test. Failure of the core sample matrix shall occur prior to failure of the epoxy (6500 PSI minimum)

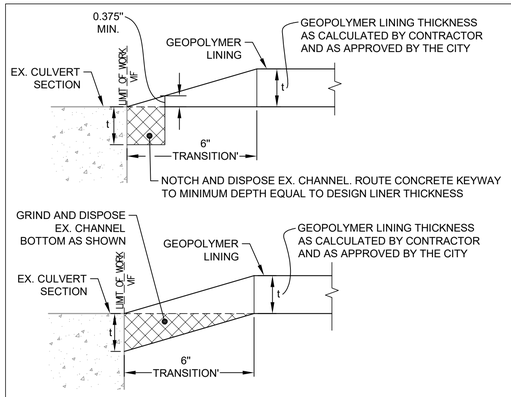
REINFORCING STEEL

– Verify that mill certificates show reinforcing steel is in compliance with project specifications.
– Periodically inspect the placement of reinforcing steel for shotcrete, for concrete which is required to have continuous inspection and for structural masonry.
– Continuously inspect the installation of all mechanical coupling devices.

CONSTRUCTION LIABILITY

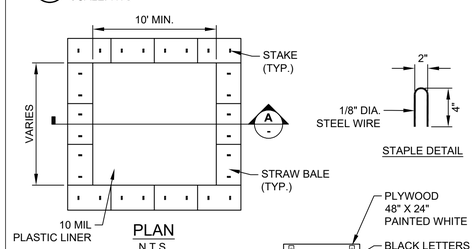
Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor and his subcontractors will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property: that this requirement shall be made to apply continuously and not be limited to normal working hours, and the construction contractor and his subcontractors further agree to defend, indemnify and hold the design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except liability arising from the sole negligence of the design professional.

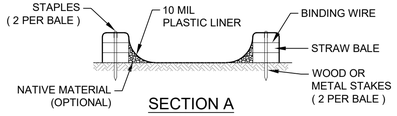
REVISION	MARK	DATE	DESCRIPTION	APPROVAL



1 LINER TRANSITION DETAIL

SCALE: NTS



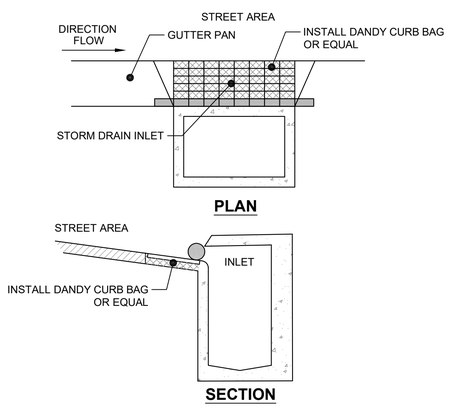


NOTES:

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

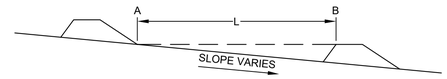
2 TEMPORARY CONCRETE WASHOUT DETAIL

SCALE: 1" = 1'



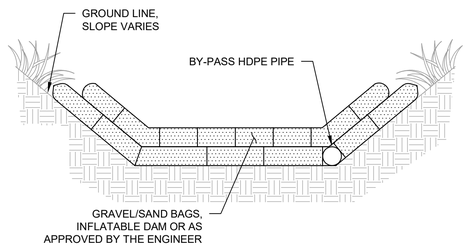
3 INLET PROTECTION

SCALE: NTS

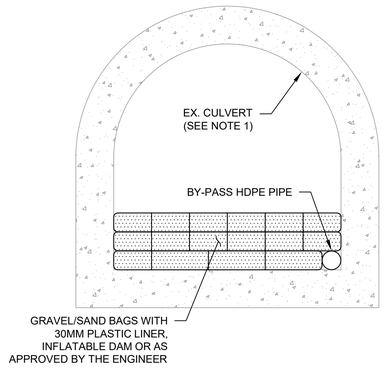


L = THE DISTANCE BETWEEN CHECK DAMS SUCH THAT POINTS "A" AND "B" ARE OF EQUAL ELEVATION

TYPICAL CHECK DAM SPACING



AT OPEN CHANNEL



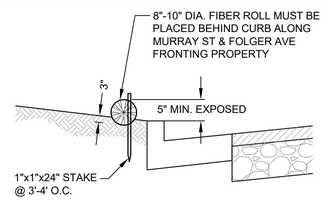
AT CONCRETE CULVERT

NOTES:

1. THE CONCRETE CULVERT VARIES IN SHAPE, HEIGHT, AND WIDTH. ACTUAL LAYOUT DETERMINED IN FIELD.
2. INSTALL GRAVEL/SAND BAGS TIGHTLY ABUTTING EACH OTHER AND STACK IN A RUNNING BOND PATTERN. FOLD ANY FLAPS AWAY FROM WATER FLOW.
3. GRAVEL/SAND BAGS SHALL BE INDIVIDUALLY TIED, DOUBLE BAGGED AND INVERSELY INSERTED. BAGS SHALL OVERLAP THE JOINTS BETWEEN THE BAGS IN THE LAYER BELOW.
4. GRAVEL/SAND BAGS SHALL BE FILLED WITH CLEAN STONE OR CLEAN SAND TO PREVENT RECEIVING WATER FROM BECOMING TURBID.
5. CHECK DAMS ARE NOT INTENDED TO, AND WILL NOT FILTER SEDIMENT FROM TURBID WATER.
6. MEASURES SHALL BE INSPECTED DAILY.
7. REMOVE SEDIMENT WHEN IT REACHES ONE-HALF THE HEIGHT OF THE CHECK DAM.
8. GRAVEL/SAND BAGS SHALL BE REPLACED WHEN DAMAGED OR DETERIORATED AT NO ADDITIONAL COST TO THE CITY.
9. BAG DIMENSIONS MAY VARY. ASSUME A FILLED GRAVEL/SAND BAG HAS APPROXIMATE DIMENSIONS OF 12" W x 6" H x 18" L.
10. BAGS MUST BE REMOVED, ALONG WITH ANY SEDIMENT, AFTER ADJACENT OPERATION IS COMPLETED.

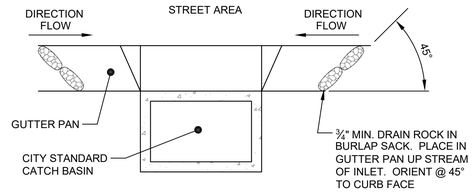
4 TEMPORARY CHECK DAM

SCALE: NTS



5 FIBER ROLL INSTALLATION DETAILS

SCALE: NTS



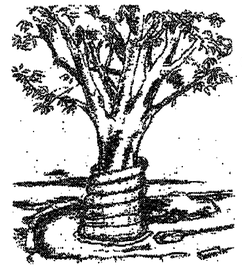
6 GRAVEL BAG FILTER AT GUTTER IN TRAFFIC AREAS

SCALE: NTS

FIGURE 1: EXAMPLES OF TREE TRUNK PROTECTION

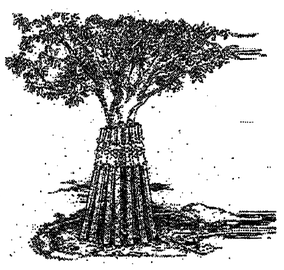
THE FOLLOWING ILLUSTRATIONS ARE EXAMPLES OF TREE TRUNK PROTECTION MEASURES. ONE OF THESE EXAMPLES SHALL BE USED WHEN ANY APPROVED CONSTRUCTION ACTIVITY TAKES PLACE WITHIN THE DRIPLINE OF A PROTECTED TREE THAT US NOT SURROUNDED BY PROTECTIVE FENCING.

EXAMPLE A - STRAW TUBING (WATTLE)



EXAMPLE A. ILLUSTRATION BY DWAYNE WALTERS

EXAMPLE B - WOODEN SLATS



EXAMPLE B. ILLUSTRATION FROM ISA MANAGING TREES DURING CONSTRUCTION, BMP

MINIMUM REQUIREMENTS:

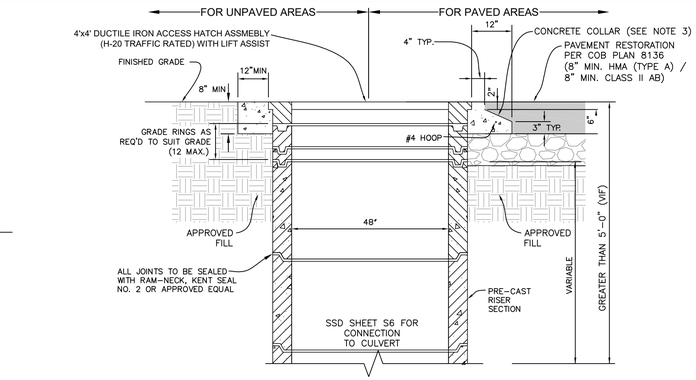
- TREES SITUATED IN A TREE WELL OR SIDEWALK PLANTING STRIP SHALL HAVE THE TRUNK PROTECTED BY WRAPPING IT WITH STRAW TUBES (WATTLE) OR VERTICAL WOOD SLATS (EX. 2X4), UP TO A MINIMUM OF 8 FEET FROM GRADE.
- WOODEN SLATS SHALL BE ANGLED TO PROTECT THE ROOF FLARE AT THE BASE OF THE TREE AND BOUND SECURELY ON THE OUTSIDE.
- CLOSED CELL FOAM OR AN EQUIVALENT MATERIAL SHALL BE USED TO PROTECT THE TRUNK OF THE TREE WHERE IT CONTACTS THE SLATS.
- LATERAL BRANCHES BELOW 8 FEET SHALL ALSO BE PROTECTED.
- CONTRACTOR SHALL KEEP DELETERIOUS MATERIALS ASSOCIATED WITH PROJECT CONSTRUCTION FROM CONTACTING ANY PART OF THE TREES, OR BEING PLACED OR STORED IN THE TREE WELL OR PLANTING STRIP.

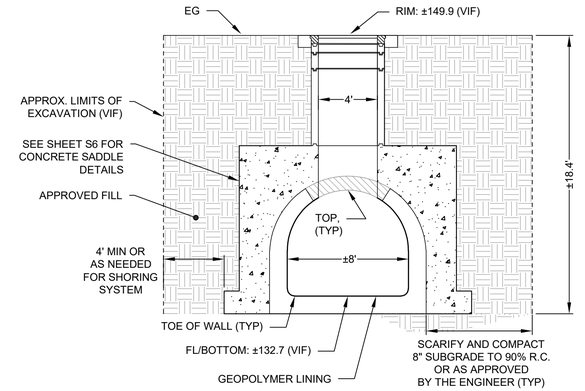
TREE PROTECTION NOTES:

1. NO STREET TREE ROOTS ARE TO BE CUT WITHOUT APPROVAL OF CONTRACTOR'S LICENSED CERTIFIED ARBORIST.
2. TRENCHING: ALL TRENCHING WITHIN THE DRIP LINE OF EXISTING TREES SHALL BE BY HAND WITH CARE TAKEN NOT TO DAMAGE ROOTS OVER 2" DIAMETER.
3. ADVANCED WARNING: THE ARBORIST SHALL MARK LIMITS OF AREA WITHIN DRIP LINES IN ADVANCE PRIOR TO CONSTRUCTION.
4. PRUNING: TREES SHALL BE PRUNED ONLY AS RECOMMENDED BY THE ARBORIST AND APPROVED BY THE CITY. EXISTING TREES WITH BRANCHES ENCROACHING TO 1' FROM BACK OF CURB AND LESS THAN 16" FROM FINISHED GRADE SHALL BE PRUNED UNDER THE DIRECTION OF A CITY APPROVED CERTIFIED ARBORIST.
5. CONSTRUCTION OPERATIONS: NO CONSTRUCTION OPERATIONS SHALL BE CARRIED ON WITHIN THE DRIP LINE AREA OF ANY TREE DESIGNATED TO BE SAVED EXCEPT AS AUTHORIZED BY THE ARBORIST.
6. STORAGE: THE AREA UNDER THE DRIP LINES OF THE TREE SHALL BE KEPT CLEAN. NO CONSTRUCTION MATERIALS AND NO CHEMICAL SOLVENTS SHALL BE STORED OR DUMPED UNDER A TREE.
7. TREE DAMAGE: ANY DAMAGE TO EXISTING TREE CROWNS OR ROOT SYSTEMS SHALL BE REPAIRED IMMEDIATELY BY AN APPROVED TREE SURGEON UNDER THE DIRECTION OF THE ARBORIST.
8. CONTRACTOR SHALL PERFORM DEMOLITION, CUT, CLEAN AND INSTALL GENERAL LANDSCAPE SOIL AT THE EXISTING TREES AS REQUIRED AND APPROVE BY THE CITY.
9. CONTRACTOR'S ATTENTION IS DIRECTED TO THE CITY OF BERKELEY'S "GUIDELINES AND TREE PROTECTION REQUIREMENTS FOR DEVELOPMENT PROJECTS" (GUIDELINES) PROVIDED IN THE PROJECT SPECIAL PROVISIONS, OF WHICH FIGURE 1, SECTION III IS PROVIDED BELOW.
10. CONTRACTOR SHALL INSTALL TEMPORARY CHECK DAMS AS NEEDED FOR THEIR OPERATIONS, FIELD CONDITIONS MAY VARY.

7 TREE PROTECTION DURING CONSTRUCTION

SCALE: NTS



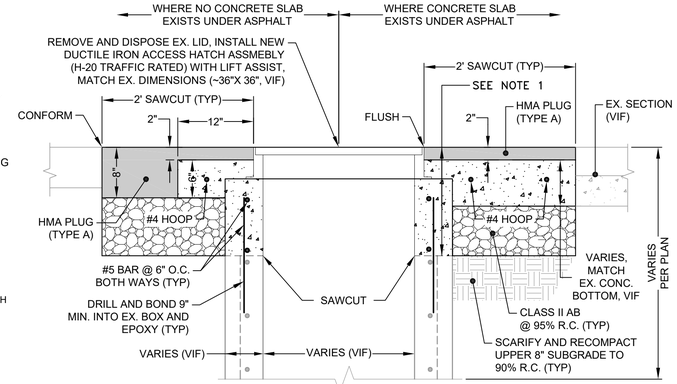


NOTES:

1. CONTRACTOR SHALL NOTIFY 811 UNDERGROUND SERVICE ALERT TO MARK OUT ALL UTILITIES WITHIN LIMITS OF WORK.
2. CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATION OF NEW MAINTENANCE HOLE ACCESS WITH ENGINEER PRIOR TO ANY EXCAVATION. POTHOLE TO VERIFY DEPTH AND SIZE OF SURROUNDING UTILITIES. NOTIFY THE ENGINEER IMMEDIATELY FOR ANY CONFLICTS.
3. CAST-IN-PLACE CONCRETE FOR CONCRETE COLLARS SHALL CONFORM TO SPEC SECTION 201-1.1.2 AND BE CLASS 560-B-3250.

8 MAINTENANCE HOLE ACCESS DETAIL AT MLK JR WAY (STA: 23+86)

SCALE: NTS



NOTES:

1. REMOVE AND DISPOSE UPPER 18" OF EXISTING BOX OR AS APPROVED BY THE ENGINEER.
2. PROVIDE 3" MINIMUM CLEARANCE BETWEEN #5 BAR AND EDGE OF CONCRETE.
3. PLACE TEMPORARY AC (CUT BACK) AROUND UTILITY FRAME UNTIL PERMANENT PAVING IS IN PLACE.
4. CAST-IN-PLACE CONCRETE COLLARS SHALL CONFORM TO STANDARD SPECIFICATIONS (GREENBOOK) SECTION 201-1.1.2 ANE BE CLASS 560-B-3250.

9 CONVERT VAULT TO ACCESS HATCH AT ROOSEVELET AVENUE

SCALE: NTS

APPROVAL | DESCRIPTION | DATE | MARK | REVISION

REGISTERED PROFESSIONAL ENGINEER — No. C90534 — CIVIL — STATE OF CALIFORNIA
10/28/24

CSW | ST2

CSW/Stuber-Stroeh Engineering Group, Inc.
2001 Addison Street, Berkeley, CA 94704
tel: 415.883.9850
fax: 415.883.9835
http://www.cswst2.com

PROJECT MANAGER: DATE
DEPICTION OF MONUMENTS: DATE
SURVEY CHIEF OF PARTY
WATERSHED REVIEW: DATE
SUBMITTED: DATE
SUPERVISING ENGINEER
APPROVED: DATE
CITY ENGINEER
REGISTR. EXP.
R.C.E. EXP.

0 1 2 3
FOR REDUCED PLANS – ORIGINAL SCALE IS IN INCHES

DESIGN	JD
DRAWN	JD
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VERT.	
BOOK	
DATE	10/28/24

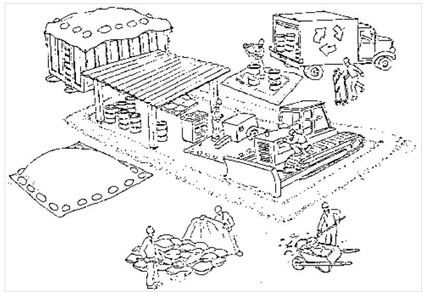
CITY OF BERKELEY
DEPARTMENT OF PUBLIC WORKS

STRAWBERRY CREEK CULVERT MAINTENANCE PROJECT

CONSTRUCTION DETAILS

PLAN 8289
FILE 502-720
CD1
SHEET 17 OF 18

Pollution Prevention — It's Part of the Plan



Make sure your crews and subs do the job right!

Runoff from streets and other paved areas is a major source of pollution in San Francisco Bay. Construction activities can directly affect the health of the Bay unless contractors and crews plan ahead to keep dirt, debris, and other construction waste away from storm drains and local creeks. Following these guidelines will ensure your compliance with local ordinance requirements.

Materials storage & spill cleanup

Non-hazardous materials management

- ✓ Sand, dirt, and similar materials must be stored at least 10 feet from catch basins, and covered with a tarp during wet weather or when rain is forecast.
- ✓ Use (but don't overuse) reclaimed water for dust control as needed.
- ✓ Sweep streets and other paved areas daily. Do not wash down streets or work areas with water!
- ✓ Recycle all asphalt, concrete, and aggregate base material from demolition activities.
- ✓ Check dumpsters regularly for leaks and to make sure they don't overflow. Repair or replace leaking dumpsters promptly.

Hazardous materials management

- ✓ Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, state, and federal regulations.
- ✓ Store hazardous materials and wastes in secondary containment and cover them during wet weather.
- ✓ Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- ✓ Be sure to arrange for appropriate disposal of all hazardous wastes.

Spill prevention and control

- ✓ Keep a stockpile of spill cleanup materials (rags, absorbents, etc.) available at the construction site at all times.
- ✓ When spills or leaks occur, contain them immediately and be particularly careful to prevent leaks and spills from reaching the gutter, street, or storm drain. Never wash spilled material into a gutter, street, storm drain, or creek!
- ✓ Report any hazardous materials spills immediately! Dial 911 or your local emergency response number.

Vehicle and equipment maintenance & cleaning

- ✓ Inspect vehicles and equipment for leaks frequently. Use drip pans to catch leaks until repairs are made; repair leaks promptly.
- ✓ Fuel and maintain vehicles on site only in a bermed area or over a drip pan that is big enough to prevent runoff.
- ✓ If you must clean vehicles or equipment on site, clean with water only in a bermed area that will not allow rinsewater to run into gutters, streets, storm drains, or creeks.
- ✓ Do not clean vehicles or equipment on-site using soaps, solvents, degreasers, steam cleaning equipment, etc.

Earthwork & contaminated soils

- ✓ Keep excavated soil on the site where it is least likely to collect in the street. Transfer to dump trucks should take place on the site, not in the street.
- ✓ Use fiber rolls, silt fences, or other control measures to minimize the flow of silt off the site.
- ✓ Avoid scheduling earth moving activities during the rainy season if possible. If grading activities during wet weather are allowed in your permit, be sure to implement all control measures necessary to prevent erosion.
- ✓ Mature vegetation is the best form of erosion control. Minimize disturbance to existing vegetation whenever possible.
- ✓ If you disturb a slope during construction, prevent erosion by securing the soil with erosion control fabric, or seed with fast-growing grasses as soon as possible. Place fiber rolls down-slope until soil is secure.
- ✓ If you suspect contamination (from site history, discoloration, odor, texture, abandoned underground tanks or pipes, or buried debris), call the Regional Water Quality Control Board or local hazardous waste management agency for help in determining what testing should be done, and manage disposal of contaminated soil according to their instructions.

Dewatering operations

- ✓ Reuse water for dust control, irrigation, or another on-site purpose to the greatest extent possible.
- ✓ Be sure to call your city's storm drain inspector before discharging water to a street, gutter, or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- ✓ In areas of known contamination, testing is required prior to reuse or discharge of groundwater. Consult with the city inspector to determine what testing to do and to interpret results. Contaminated groundwater must be treated or hauled off-site for proper disposal.

Saw cutting

- ✓ Always completely cover or barricade storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or sand/gravel bags to keep slurry out of the storm drain system.
- ✓ Shovel, absorb, or vacuum saw-cut slurry and pick up all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner!).
- ✓ If saw cut slurry enters a catch basin, clean it up immediately.

Paving/asphalt work

- ✓ Do not pave during wet weather or when rain is forecast.
- ✓ Always cover storm drain inlets and manholes when paving or applying seal coat, tack coat, slurry seal, or fog seal.
- ✓ Place drip pans or absorbent material under paving equipment when not in use.
- ✓ Protect gutters, ditches, and drainage courses with sand/gravel bags, or earthen berms.
- ✓ Do not sweep or wash down excess sand from sand sealing into gutters, storm drains, or creeks. Collect sand and return it to the stockpile, or dispose of it as trash.
- ✓ Do not use water to wash down fresh asphalt concrete pavement.

Concrete, grout, and mortar storage & waste disposal

- ✓ Be sure to store concrete, grout, and mortar under cover and away from drainage areas. These materials must never reach a storm drain.
- ✓ Wash out concrete equipment/trucks off-site or designate an on-site area for washing where water will flow onto dirt or into a temporary pit in a dirt area. Let the water seep into the soil and dispose of hardened concrete with trash.

- ✓ Divert water from washing exposed aggregate concrete to a dirt area where it will not run into a gutter, street, or storm drain.
- ✓ If a suitable dirt area is not available, collect the wash water and remove it for appropriate disposal off site.

Painting

- ✓ Never rinse paint brushes or materials in a gutter or street!
- ✓ Paint out excess water-based paint before rinsing brushes, rollers, or containers in a sink. If you can't use a sink, direct wash water to a dirt area and spade it in.
- ✓ Paint out excess oil-based paint before cleaning brushes in thinner.
- ✓ Filter paint thinners and solvents for reuse whenever possible. Dispose of oil-based paint sludge and unusable thinner as hazardous waste.

BASMAA Bay Area Stormwater Management Agencies Association (BASMAA)
1-888-BAYWISE

Storm drain polluters may be liable for fines of $10,000 or more per day!

For more detailed information:
Get a copy of the "Field Manual" — (510) 622-2465 or www.abag.ca.gov/bayarea/sfep/reports/construction.html

REGISTERED PROFESSIONAL ENGINEER — No. C80534 — CIVIL — STATE OF CALIFORNIA
10/28/24

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SUBMITTED: DATE
SUPERVISING ENGINEER
APPROVED: DATE
CITY ENGINEER
REGISTR. EXP. DATE
R.C.E. EXP. DATE

DESIGN JD
DRAWN JD
CHECK RS
AS BUILT
HORIZ.
VERT.
BOOK
DATE 10/28/24

CITY OF BERKELEY
DEPARTMENT OF PUBLIC WORKS

STRAWBERRY CREEK CULVERT MAINTENANCE PROJECT
POLLUTION PREVENTION PLAN

PLAN 8289
FILE 502-720
EC2
SHEET 18 OF 18

APPROVAL | DESCRIPTION | DATE | MARK | REVISION