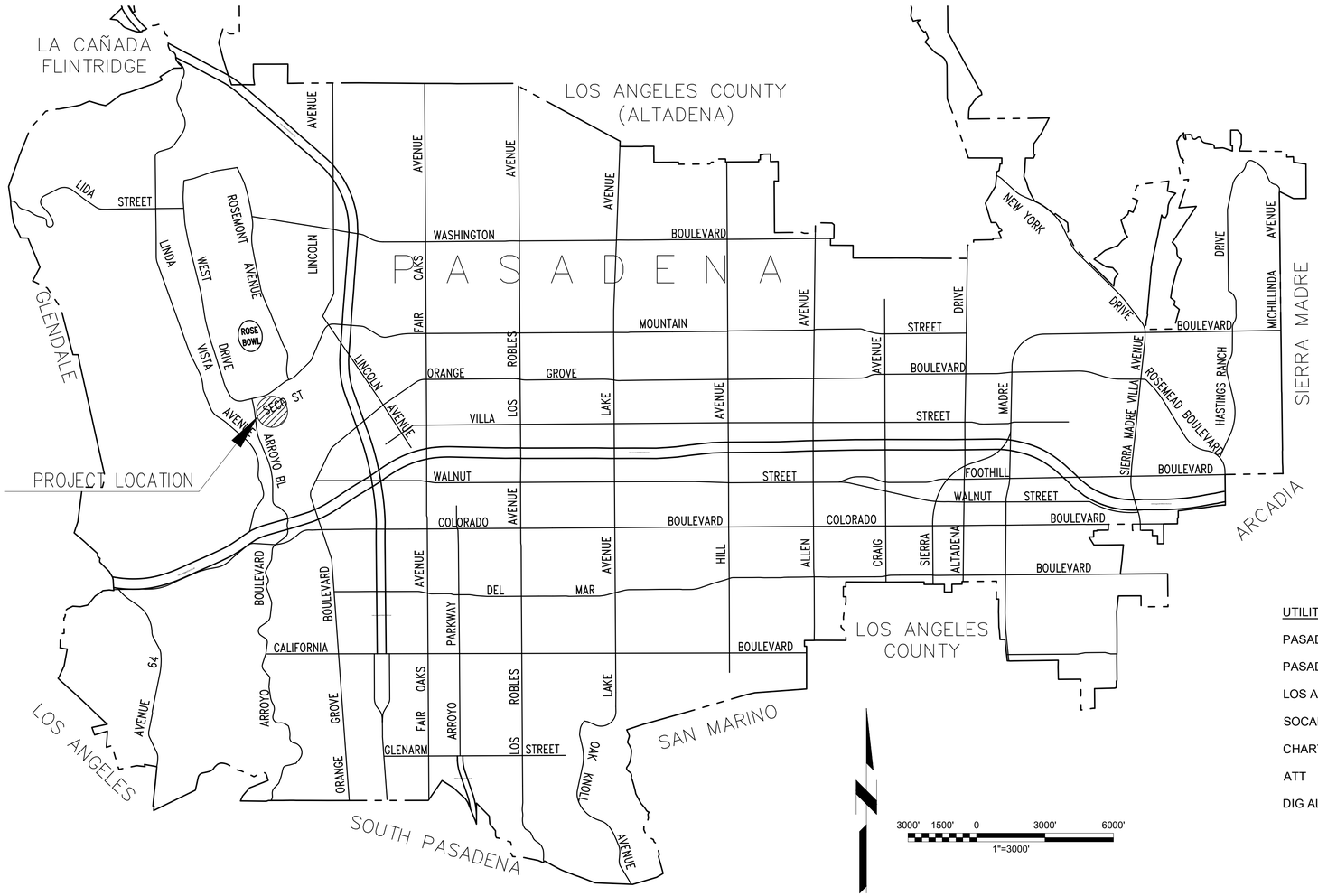
Attachment B

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

IN THE CITY OF PASADENA, CALIFORNIA



VERTICAL CONTROL:
VERTICAL VALUES SHOWN HEREON ARE BASED UPON NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29) UTILIZING THE COUNTY OF LOS ANGELES FLOOD CONTROL BENCHMARK LISTED BELOW:

BENCHMARK NO: 050-02770

ARROYO SECO CHANNEL AND SECO ST. NEAR ROSEBOWL AT SELY COR. OF BRIDGE OVER CHAN. AND APPROX. 50 FT. ELY OF C/L OF CHAN., AND AT APPROX. 30 FT. SLY OF C/L OF SECO ST., ND 6 FT. S OF CRUB FAACE AT 2'LY SIDE OF CONC POST FOR BROSS RAIL, FOUND IN TOP OF CONC DECK, A STD. FC. DISK, STAMPED BM. 50-11A.

ELEV. = 794.53 FEET (PER CITY OF PASADENA STORM DRAIN PLAN K-704)

SURVEYOR'S COMMENT: THE LA FLOOD CONTROL PUBLISHED ELEVATION OF SAID BENCHMARK IS 794.458 FEET, 1971 ADJUSTMENT. TO MATCH CITY OF PASADENA PLANS, THE ELEVATION OF 794.53 AS SHOWN ON CITY STORM DRAIN PLAN K-704 IS BEING HELD.

HORIZONTAL CONTROL:
STATE PLANE COORDINATES, CALIFORNIA COORDINATE SYSTEM ZONE 5 BASED UPON NAD83 (2011) EPOCH 2017.50, POSITIONAL VALUES SHOWN HEREON ARE BASED UPON LOCAL CONTROL POINTS AND DERIVED FROM THE GPS STATIC OBSERVATIONS UTILIZING DATA FROM SOUTHERN CALIFORNIA INTEGRATED GPS NETWORK (SCIGN) CONTINUOUSLY OPERATION REFERENCE STATIONS (CORS).

VDCY	34-10-42.829365	118-13-11.959061
SILK	34-06-10.297634	118-15-49.894438
PKRD	34-04-17.610449	118-13-58.413097

UTILITY CONTACT INFORMATION

PASADENA PUBLIC WORKS	(626) 744-7311
PASADENA WATER AND POWER	(626) 744-4005
LOS ANGELES COUNTY SANITATION DISTRICT	(526) 908-4288
SOCAL GAS	(714) 634-5067
CHARTER COMMUNICATIONS/SPECTRUM	(818) 922-6839
ATT	(888) 290-3111
DIG ALERT	811

60% - PRELIMINARY NOT FOR CONSTRUCTION

BLACK & VEATCH
Black & Veatch Corporation
Los Angeles, California

DRAWN BY C. DORSET
DESIGNED BY J. HEALY
CHECKED BY K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: TITLE SHEET

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET G-01

1 OF 70

DWG. NO. 6869

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Date: January 5, 2026 C:\USERS\DOR126239\DCA\ACCDOCS\BLACK & VEATCH CORP\420977 - BROOKSIDE PARK SWC PROJECT\PROJECT FILES\5.0 DESIGN FILES_BV\5.0.3 AUTOCAD\GEN\G-01.DWG

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SHEET NO.	DRAWING NO.	SHEET TITLE
1	G-01	TITLE SHEET
2	G-02	SHEET INDEX
3	G-03	GENERAL NOTES
4	G-04	GENERAL ABBREVIATIONS
5	G-05	GENERAL LEGENDS
6	C-01	EXISTING CONDITIONS (1 OF 2)
7	C-02	EXISTING CONDITIONS (2 OR 2)
8	C-03	SUBSURFACE IMPROVEMENTS SITE PLAN (1 OF 2)
9	C-04	SUBSURFACE IMPROVEMENTS SITE PLAN (2 OF 2)
10	C-05	SITE LID PLAN
11	C-06	GRADING PLAN (1 OF 3)
12	C-07	GRADING PLAN (2 OF 3)
13	C-08	GRADING PLAN (3 OF 3)
14	C-09	DIVERSION PLAN AND PROFILE
15	C-10	OUTFLOW LINE #1 PLAN AND PROFILE
16	C-11	OUTFLOW LINE #2 PLAN AND PROFILE (1 OF 2)
17	C-12	OUTFLOW LINE #2 PLAN AND PROFILE (2 OF 2)
18	C-13	LID STORM SEWER PLAN
19	C-14	PAVEMENT RESTORATION & MARKING PLAN (1 OF 2)
20	C-15	PAVEMENT RESTORATION & MARKING PLAN (2 OF 2)
21	C-16	DETAILS -1
22	C-17	DETAILS -2
23	C-18	DETAILS -3
24	C-19	DETAILS - 4
25	C-20	DETAILS - 5
26	C-21	DETAILS - 6
27	C-22	DETAILS - 7
28	C-23	DETAILS - 8
29	C-24	DETAILS - 9
30	C-25	DETAILS - 10
31	D-01	CIVIL DEMOLITION PLAN
32	L-01	LANDSCAPE GENERAL NOTES
33	L-11	TREE DISPOSITION AND PROTECTION NOTES
34	L-12	LANDSCAPE SITE PLAN
35	L-13	TREE DISPOSITION PLAN (1 OF 2)
36	L-14	TREE DISPOSITON PLAN (2 OF 2)
37	L-21	LANDSCAPE CONSTRUCTION NOTES & SCHEDULE
38	L-22	LANDSCAPE CONSTRUCTION PLAN
39	L-23	SOILS PLAN
40	L-24	LANDSCAPE SECTIONS
41	L-25	LANDSCAPE CONSTRUCTION DETAILS - 1
42	L-26	LANDSCAPE CONSTRUCTION DETAILS - 2
43	L-31	LANDSCAPE IRRIGATION LEGEND
44	L-32	LANDSCAPE IRRIGATION NOTES
45	L-33	LANDSCAPE IRRIGATION CALCULATIONS - 1
46	L-34	LANDSCAPE IRRIGATION CALCULATIONS - 2
47	L-35	LANDSCAPE IRRIGATION PLAN - 1
48	L-36	LANDSCAPE IRRIGATION PLAN - 2
49	L-37	LANDSCAPE IRRIGATION DETAILS - 1
50	L-38	LANDSCAPE IRRIGATION DETAILS - 2
51	L-39	LANDSCAPE IRRIGATION DETAILS - 3
52	L-41	LANDSCAPE PLANTING NOTES
53	L-42	LANDSCAPE PLANTING SCHEDULE
54	L-43	LANDSCAPE PLANTING PLAN
55	L-44	BIOSWALE PLANTING PLAN
56	L-45	LANDSCAPE PLANTING DETAILS
57	S-01	GENERAL STRUCTURAL NOTES
58	S-02	STRUCTURAL ABBREVIATIONS
59	S-03	DIVERSION STRUCTURE CONSTRUCTION STAGING PLAN
60	S-04	DIVERSION STRUCTURE CONSTRUCTION PLAN AND SECTIONS
61	S-05	CATCH BASIN PLAN AND DETAILS
62	S-06	STANDARD CONCRETE REINFORCEMENT AND MISC DETAILS
63	S-07	STANDARD CONCRETE JOINT DETAILS
64	E-01	GENERAL ELECTRICAL NOTES
65	E-02	ELECTRICAL LEGENDS AND ABBREVIATIONS
66	E-03	ELECTRICAL SINGLE LINE DIAGRAM
67	E-04	ELECTRICAL SITE PLAN
68	E-07	ELECTRICAL DETAILS
69	I-01	LEGENDS & ABBREVIATIONS
70	I-02	P&ID - CAPTURE AND TREATMENT SYSTEM

60% - PRELIMINARY NOT FOR CONSTRUCTION

Black & Veatch Corporation
Los Angeles, California

DRAWN BY C. DORSET
DESIGNED BY J. HEALY
CHECKED BY K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: SHEET INDEX

SCALE

ACCOUNT NUMBER: 420977

SHEET: G-02

2 OF 70

DWG. NO.: 6869

FD11000

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Date: December 3, 2025 C:\USERS\DOR12623\DC\ACCDOCS\BLACK & VEATCH CORP\420977 - BROOKSIDE PARK SWC PROJECT\PROJECT FILES\5.0 DESIGN FILES_BV\5.0.3 AUTOCAD\GEN\G-02.DWG

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GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE PROJECT TECHNICAL SPECIFICATIONS. WORK NOT COVERED BY THE PROJECT SPECIFICATIONS SHALL CONFORM TO THE STANDARD PLANS OF LOS ANGELES COUNTY, THE CITY OF PASADENA, AMERICAN PUBLIC WORKS ASSOCIATION AND CALTRANS STANDARD PLANS AND SPECIFICATIONS (ALL LATEST EDITIONS).
2. NOTIFICATION: AT LEAST TEN (10) DAYS BEFORE THE START OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY, IN WRITING, ALL HOMES LOCATED WITHIN 500 FEET OF THE WORK AREA, OF THE PROPOSED CONSTRUCTION START DATE. A COPY OF SAID WRITTEN NOTIFICATION SHALL BE PROVIDED TO THE INSPECTOR FOR WRITTEN APPROVAL BEFORE THEY ARE DISTRIBUTED TO THE OCCUPANTS OF THE ABUTTING PROPERTY.
3. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER TWO (2) WORKING DAYS IN ADVANCE PRIOR TO STARTING WORK AT (626) 744-7311.
4. THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES 48 HOURS IN ADVANCE PRIOR TO WORKING AROUND THEIR FACILITIES.
5. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT AT 811 48 HOURS IN ADVANCE PRIOR TO WORKING AROUND THEIR FACILITIES.
6. THE CONTRACTOR SHALL VISIT THE SITE AND BE KNOWLEDGEABLE OF CONDITIONS THEREON. THE CONTRACTOR SHALL INVESTIGATE, VERIFY AND BE RESPONSIBLE FOR ALL CONDITIONS OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE CITY OF ANY CONDITIONS REQUIRING CORRECTION OR MODIFICATION PRIOR TO PROCEEDING WITH THE WORK.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURATE PLACEMENT OF ALL WORK ON THE SITE.
8. EXISTING ELEVATIONS AND LOCATIONS TO BE JOINED BY THE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE COMMENCING THE WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE DRAWINGS.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL DRAWINGS WITH ITS SUBCONTRACTORS. ALL SUBCONTRACTORS SHALL BE FURNISHED WITH COMPLETE SETS OF PLANS AND SPECIFICATIONS BY THE CONTRACTOR.
10. WHERE SPECIFIC DIMENSIONS, DETAILS, OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
11. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES AND PROTECT THEM FROM DAMAGE AS REQUIRED. ALL EXISTING UTILITY CROSSINGS SHALL BE POTHOLED AND FIELD LOCATED. IN ANY INSTANCES WHERE THE CLEARANCE BETWEEN THE TOP OF THE EXISTING PIPE AND THE BOTTOM OF THE CROSSING PIPE OR CONDUIT IS LESS THAN 18", CONTRACTOR SHALL INSTALL BLANKET PROTECTION IN ACCORDANCE WITH THE STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION NO. 225-3.

EXISTING FACILITY NOTE

ALL EXISTING INFORMATION SHOWN ON THE PLANS PREPARED BY BLACK AND VEATCH HAS BEEN TRANSFERRED FROM DOCUMENTS PROVIDED BY THE CITY OF PASADENA. BLACK AND VEATCH HAS PROVIDED DRAFTING SERVICES ONLY WITH REGARD TO DEPICTING EXISTING IMPROVEMENTS AND CONDITIONS. BLACK AND VEATCH CANNOT GUARANTEE THE ACCURACY OR COMPLETENESS OF EXISTING INFORMATION SHOWN. IF CONTRACTOR NOTICES ANY DISCREPANCIES BETWEEN EXISTING INFORMATION SHOWN ON THESE PLANS AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL GIVE NOTICE OF SUCH FACT TO THE CITY OR ITS REPRESENTATIVE WITHOUT DELAY.

JOB SITE RESPONSIBILITY

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR 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; AND THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

WORK AREA RESTRICTIONS

1. ONCE AUTHORIZED BY THE CITY TO COMMENCE WORK WITHIN THE SECO STREET STORM DRAIN, THE CONTRACTOR SHALL NOTIFY THE CITY AT TELEPHONE (626) 744-7311 (8:00AM TO 4:00PM) AND PROVIDE THEM WITH A SCHEDULE OF ACTIVITIES A MINIMUM OF 120 HOURS (5 WORKING DAYS) BEFORE STARTING ANY WORK UNDER THE PERMIT.
2. CONTRACTOR SHOULD BE AWARE THAT IMPROVEMENTS WITHIN THE SECO STREET STORM DRAIN MAY OCCUR WHEN LARGE FLOWS ARE PRESENT WITHIN THE SECO STREET STORM DRAIN, RAIN GAUGES THROUGHOUT THE WATERSHED SHOULD BE MONITORED DURING ALL WORK WITHIN THE SECO STREET STORM DRAIN. CONTRACTOR IS RESPONSIBLE FOR SAFELY DIVERTING AND CONVEYING FLOW WITHIN THE WORK AREA THROUGHOUT THE DURATION OF CONSTRUCTION.
3. PRIOR TO ANY WORK WITHIN THE SECO STREET STORM DRAIN, THE CONTRACTOR SHALL SUBMIT A WATER DIVERSION PLAN TO THE CITY TO PROVIDE BYPASS CAPACITY AS FOLLOWS:
   - APRIL 16 TO MAY 31: 33% OF SECO STREET STORM DRAIN PEAK CAPACITY
   - JUNE 1 TO AUGUST 31: 5% OF SECO STREET STORM DRAIN PEAK CAPACITY
   - SEPTEMBER 1 TO OCTOBER 14: 33% OF SECO STREET STORM DRAIN PEAK CAPACITY
   - NO WORK WILL BE ALLOWED IN THE LACFCD STORM DRAIN DURING THE PERIOD OF OCTOBER 15-APRIL 15 PLEASE SEE PERMIT POLICY DURING THE STORM SEASON FOR MORE DETAILS.
4. THE CONTRACTOR SHALL SUBMIT THE WATER DIVERSION PLAN A MINIMUM OF 60-DAYS PRIOR TO THE ANTICIPATED START DATE OF THE WORK TO OCCUR WITHIN THE STORM DRAIN. THE WATER DIVERSION PLAN IS REQUIRED TO BE REVIEWED AND APPROVED BY THE CITY.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) NOTES

1. CONTACT THE CITY ENGINEER (626) 744-7311 FOR NPDES COORDINATION, QUESTIONS, AND SITUATIONAL SPECIFIC REVISIONS.
2. SEDIMENT FROM AREAS DISTURBED BY CONSTRUCTION SHALL BE RETAINED ONSITE USING STRUCTURAL CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE.
3. STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO MINIMIZE SEDIMENT TRANSPORTATION FROM THE SITE TO STREETS, DRAINAGE FACILITIES OR ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TRACKING, AND WIND.
4. ALL WORK SHALL BE IN ACCORDANCE WITH THE PROJECT APPROVED STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
5. THE CONTRACTOR IS REQUIRED TO PREPARE AND SUBMIT THE SWPPP FOR APPROVAL BY THE CITY.

UTILITY NOTES

1. A PERMIT SHALL BE OBTAINED AND ALL FEES AND DEPOSITS FOR CONSTRUCTION INSPECTION SHALL BE PAID TO THE CITY OF PASADENA PRIOR TO STARTING WORK UNDER THIS CONTRACT. ALSO, ALL OTHER REQUIRED PERMITS, SUCH AS ROAD EXCAVATION PERMITS, MUST BE OBTAINED PRIOR TO STARTING WORK.
2. APPROVAL OF THIS PLAN BY THE CITY OF PASADENA DOES NOT CONSTITUTE A REPRESENTATION TO THE ACCURACY OF THE LOCATION, OR THE EXISTENCE OR NONEXISTENCE OF ANY UNDERGROUND UTILITY, PIPE, OR STRUCTURE WITHIN THE LIMITS OF THIS PROJECT. THIS NOTE APPLIES TO ALL SHEETS.
3. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (INCLUDING SUPPLEMENTS) AND CITY OF PASADENA STANDARD PLANS (LATEST EDITION).
4. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE CITY OF PASADENA GUIDELINES IN REGARD TO SAFETY ORDERS AND SHALL CONFORM TO THE MINIMUM PUBLIC SAFETY REQUIREMENTS.
5. ELEVATIONS ARE IN FEET ABOVE U.S.C. AND G.S. MEAN SEA LEVEL DATUM OF 1929 UNLESS OTHERWISE INDICATED.
6. NO CONCRETE SHALL BE PLACED UNTIL THE FORMS AND REINFORCING STEEL HAVE BEEN PLACED, INSPECTED, AND APPROVED.
7. ALL STRUCTURAL CONCRETE SHALL BE PORTLAND CEMENT CONCRETE WITH AN ULTIMATE 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED.
8. TRANSVERSE REINFORCEMENT AND TRANSVERSE JOINTS SHALL BE PLACED AT RIGHT ANGLES (OR RADIAL) TO THE CONDUIT CENTERLINE EXCEPT AS OTHERWISE SHOWN ON THE DRAWINGS.
9. ALL STEEL ADJACENT TO FACE OF CONCRETE SHALL HAVE A 2-1/2-INCH CLEARANCE UNLESS OTHERWISE SPECIFIED.
10. REINFORCEMENT SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE STEEL, PER ASTM A615 GRADE 60.
11. ALL BAR BENDS AND HOOKS SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "MANUAL OF STANDARD PRACTICE."
12. DIMENSIONS FROM FACE OF CONCRETE TO STEEL ARE TO CENTERLINE OF STEEL UNLESS OTHERWISE NOTED.
13. ALL STEEL THAT IS TO BE CONTINUOUS SHALL HAVE A MINIMUM LAP OF 30 BAR DIAMETERS OR 18 INCHES, WHICHEVER IS GREATER.
14. ALL CONSTRUCTION JOINTS IN THE FOOTING OR SLABS AND WALLS SHALL BE IN THE SAME PLANE. NO STAGGERING OF JOINTS WILL BE PERMITTED.
15. ALL EXPOSED EDGES SHALL BE FINISHED WITH A 3/4-INCH CHAMFER.
16. UNLESS OTHERWISE SHOWN, CONCRETE DIMENSIONS SHALL BE MEASURED VERTICALLY OR HORIZONTALLY AND PARALLEL OR AT RIGHT ANGLES (OR RADIAL) TO THE CENTER LINE OF CONSTRUCTION.
17. CONCRETE BACKFILL IS REQUIRED WHEN THE PIPE HAS LESS THAN ONE-FOOT OF COVER. THE CONCRETE BACKFILL SHALL CONSIST OF 1:3:5 MIX, PORTLAND CEMENT CONCRETE POURED FROM WALL TO WALL OF TRENCH AND FROM BOTTOM OF TRENCH TO A MINIMUM OF 4 INCHES OVER THE TOP OF THE PIPE.
18. ALL PIPES SHALL BE PLACED IN TRENCH IN NATURAL GROUND AND/OR COMPACTED FILL. THE GROUND LEVEL BEFORE THE TRENCHING SHALL BE AT LEAST 3 FEET ABOVE THE TOP OF THE PIPE ELEVATION OR AT FINISH SURFACE ELEVATION, WHICHEVER IS LESS.
19. ALL BACKFILL AND RELATIVE COMPACTION FILLS OUTSIDE OF STREET RIGHT OF WAY SHALL BE COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 95 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM SOIL TEST D 1557-91 METHOD D UNLESS OTHERWISE SPECIFIED. THIS SHALL BE CERTIFIED BY A SOILS ENGINEER. THIS CERTIFICATION SHALL BE SUBMITTED TO THE CITY ENGINEER PRIOR TO ACCEPTANCE OF THE WORK BY THE CITY.
20. ALL BACKFILL AND FILLS WITHIN STREET RIGHTS OF WAY SHALL BE COMPACTED IN ACCORDANCE WITH CITY REQUIREMENTS UNLESS OTHERWISE NOTED AND INSPECTED BY THE CITY. THE SOIL COMPACTION SHALL BE CERTIFIED BY A GEOTECHNICAL ENGINEER.
21. PIPE BEDDING SHALL BE IN ACCORDANCE WITH THE LOS ANGELES COUNTY PUBLIC WORKS STANDARD PLAN NO. 3080-2 UNLESS OTHERWISE NOTED.
22. PIPE SHALL BE EMBEDDED 5 INCHES INTO ALL STRUCTURES INCLUDING INLET AND HEAD WALLS UNLESS OTHERWISE SPECIFIED.
23. THE MINIMUM CONCRETE COVER FOR REINFORCEMENT IN PRECAST CONCRETE PIPE SHALL BE 1 INCH IN PIPE HAVING A WALL THICKNESS OF 2 1/2 INCHES OR GREATER AND 3/4 INCH IN PIPE HAVING A WALL THICKNESS OF LESS THAN 2 1/2 INCHES.
24. ALL CATCH BASINS WITHIN THE DEDICATED STREET RIGHT OF WAY SHALL BE CONSTRUCTED PER THE STREET PLANS.
25. ALL REFERENCES ON THIS PLAN TO THE CITY ENGINEER, BUILDING AND SAFETY, PLANNING, OR PUBLIC WORKS SHALL APPLY TO THE APPROPRIATE ELEMENTS OF PUBLIC WORKS.
26. EXISTING UTILITIES SHALL BE MAINTAINED IN PLACE BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
27. UTILITY SUPPORT SHALL BE IN ACCORDANCE WITH STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION NO. 224 UNLESS OTHERWISE INDICATED.
28. MANHOLES SHALL USE THE STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION NO. 630 FOR THE "FRAME AND COVER" AND NO. 635 FOR THE "STANDARD DROP STEP."
29. THIS WATER QUALITY SYSTEM WILL NOT BE FIELD ACCEPTED UNTIL THE STREETS HAVE BEEN PAVED, MANHOLES BROUGHT TO GRADE, AND THE SYSTEM CLEANED TO THE SATISFACTION OF THE CITY ENGINEER.
30. THE SOILS ENGINEER OF RECORD SHALL INSPECT AND APPROVE THE FOUNDATION EXCAVATIONS BEFORE STEEL OR CONCRETE IS PLACED.
31. ALL ABOVE GROUND FACILITIES SHALL BE STAMPED WITH THE DRAIN AND LINE NAME. THE LETTERING SHOULD BE 4" BLACK TEXT ON A YELLOW BACKGROUND.
32. ALL REINFORCED CONCRETE PIPE SHALL BE CLASS IV.

EROSION CONTROL NOTES:

1. EVERY EFFORT SHOULD BE MADE TO ELIMINATE THE DISCHARGE OF NON-STORMWATER FROM THE PROJECT SITE AT ALL TIMES.
2. ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON-SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEETFLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES, OR WIND.
3. STOCKPILES OF EARTH AND OTHER CONSTRUCTION RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND OR WATER.
4. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.
5. EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON-SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
6. TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.
7. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
8. ANY SLOPES WITH DISTURBED SOILS OR DENUDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT EROSION BY WIND AND WATER.
9. THE FOLLOWING BMPs AS OUTLINED IN, BUT NOT LIMITED TO, THE LATEST EDITION OF THE CALIFORNIA BMP HANDBOOK (CONSTRUCTION) OR CALTRANS STORMWATER QUALITY HANDBOOKS (CONSTRUCTION SITE BMP MANUAL), MAY APPLY DURING THE CONSTRUCTION OF THIS PROJECT (ADDITIONAL MEASURES MAY BE REQUIRED IF DEEMED APPROPRIATE BY THE PROJECT ENGINEER OR THE BUILDING OFFICAL):

TEMPORARY SOIL STABILIZATION

SS-1 SCHEDULING
SS-2 PRESERVATION OF EXISTING VEGETATION
SS-3 HYDRAULIC MULCH
SS-4 HYDROSEEDING
SS-5 SOIL BINDERS
SS-6 STRAW MULCH
SS-7 TEMPORARY COVER AND ROLLED EC PRODUCTS
SS-8 WOOD MULCHING
SS-9 EARTH DIKES AND DRAINAGE SWALES
SS-10 VELOCITY DISSIPATION DEVICES
SS-11 SLOPE DRAINS
SS-12 STREAMBANK STABILIZATION

TEMPORARY SEDIMENT CONTROLS

SC-1 SILT FENCE
SC-2 SEDIMENT/DESILTING BASIN
SC-3 SEDIMENT TRAP/CURB CUTBACK
SC-4 CHECK DAM
SC-5 FIBER ROLLS
SC-6 GRAVEL BAG BERM/EARTHEN BERM
SC-7 STREET SWEEPING
SC-8 SANDBAG BARRIER
SC-9 STRAW BALE BARRIER
SC-10 TEMPORARY DRAINAGE INLET PROTECTION
SC-11 COMPOST SOCK
SC-12 FLEXIBLE SEDIMENT BARRIER

WIND EROSION CONTROL

WE-1 WIND EROSION CONTROL

TRACKING CONTROL

TC-1 TEMPORARY CONSTRUCTION ENTRANCE/EXIT
TC-2 TEMPORARY CONSTRUCTION ROADWAY
TC-3 ENTRANCE/OUTLET TIRE WASH

NON-STORM WATER MANAGEMENT

NS-1 WATER CONSERVATION PRACTICES
NS-2 DEWATERING OPERATIONS
NS-3 PAVING, SEALING, SAWCUTTING AND GRINDING OPERATIONS
NS-4 TEMPORARY STREAM CROSSING
NS-5 CLEAR WATER DIVERSION
NS-6 ILLEGAL CONNECTION AND ILLICIT DISCHARGE DETECTION AND REPORTING
NS-7 POTABLE WATER/IRRIGATION
NS-8 VEHICLE AND EQUIPMENT CLEANING
NS-9 VEHICLE AND EQUIPMENT FUELING
NS-10 VEHICLE AND EQUIPMENT MAINTENANCE
NS-11 PILE DRIVING OPERATIONS
NS-12 CONCRETE CURING
NS-13 MATERIAL AND EQUIPMENT USE OVER WATER
NS-14 CONCRETE FINISHING
NS-15 STRUCTURE DEMOLITION/REMOVAL OVER OR ADJACENT TO WATER

WASTE MANAGEMENT & MATERIALS POLLUTION CONTROL

WM-1 MATERIAL DELIVERY AND STORAGE
WM-2 MATERIAL USE
WM-3 STOCKPILE MANAGEMENT
WM-4 SPILL PREVENTION AND CONTROL
WM-5 SOLID WASTE MANAGEMENT
WM-6 HAZARDOUS WASTE MANAGEMENT
WM-7 CONTAMINATED SOIL MANAGEMENT
WM-8 CONCRETE WASTE MANAGEMENT
WM-9 SANITARY AND SEPTIC WASTE MANAGEMENT
WM-10 LIQUID WASTE MANAGEMENT

60% - PRELIMINARY NOT FOR CONSTRUCTION

Black & Veatch Corporation
Los Angeles, California

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C. DORSET	MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED
DESIGNED BY J. HEALY		----				
CHECKED BY K. LEWIS						

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT — SHEET G-03

SHEET TITLE GENERAL NOTES — 3 OF 70

SCALE — ACCOUNT NUMBER 420977 — DWG. NO. 6869

Date: December 3, 2025 C:\USERS\DOR12623\DC\ACCDOCS\BLACK & VEATCH CORP\420977 - BROOKSIDE PARK SWC PROJECT\PROJECT FILES\5.0 DESIGN FILES_BV\5.0.3 AUTOCAD\GEN\G-02.DWG

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FD11000

22X34

A

AB	AGGREGATE BASE
ABV	ABOVE
AC	ASPHALT CONCRETE
ACP	ASBESTOS CEMENT PIPE
AD	AREA DRAIN, ANODE
ADD	ADDITIONAL
ADJ	ADJUSTABLE, ADJACENT
ADMIN	ADMINISTRATION
ADWF	AVERAGE DRY-WEATHER FLOW
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AH	AHEAD
ALT	ALTERNATE, ALTERNATIVE
ANC	ANCHOR
AP	ACCESS PANEL, ANGLE POINT
APPR	APPROACH
APPROX	APPROXIMATE, APPROXIMATELY
AR	ANCHOR ROD
ARCH	ARCHITECTURAL
ASSY	ASSEMBLY
ATM	ATMOSPHERE, ATMOSPHERIC
AUTO	AUTOMATIC
AUX	AUXILIARY
AVG	AVERAGE
AWG	AMERICAN WIRE GAUGE
AWWA	AMERICAN WATER WORKS ASSOCIATION
AWWF	AVERAGE WET-WEATHER FLOW

B

B	BORE HOLE
B TO B	BACK TO BACK
BAL	BALANCE
BC	BACK OF CURB
BET	BETWEEN
BF	BLIND FLANGE
BHP	BRAKE HORSEPOWER
BITUM	BITUMINOUS
BLDG	BUILDING
BLK	BLOCK
BM	BENCHMARK
BNR	BIOLOGICAL NUTRIENT REMOVAL
BOD	BIOLOGICAL/BIOCHEMICAL OXYGEN DEMAND
BOF	BOTTOM OF FOOTING
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BP	BACK PRESSURE
BRG	BEARING
BS	BOTH SIDES
BU	BELL-UP
BVC	BEGINNING OF VERTICAL CURVE

C

C	CURVE
C TO C	CENTER TO CENTER
CB	CATCH BASIN
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
C&G	CURB AND GUTTER
CIP	CAST IRON PIPE
CISP	CAST IRON SOIL PIPE
CL	CLASS
C/L	CENTERLINE
CLG	CEILING
CLR	CLEAR, CLEARANCE
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMC	CEMENT MORTAR COATED
CML	CEMENT MORTAR LINED
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT, COMPANY
COD	CHEMICAL OXYGEN DEMAND
COL	COLUMN
COMB	COMBINATION
COMB SWR	COMBINED SEWER
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUED, CONTINUOUS, CONTINUATION, CONTROL
CONTR	CONTRACTOR
COR	CORNER
CORR	CORRIDOR, CORRUGATED
CP	CONTROL POINT, CATHODIC PROTECTION, CATCH POINT
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CSP	CORRUGATED STEEL PIPE
CTR(S)	CENTER(S)
CTS	CORROSION/CATHODIC TEST STATION
CU	CUBIC, COPPER
CY	CUBIC YARD

D

D	DOOR
DB	DUCT BANK
DBL	DOUBLE
DEG	DEGREE
DEPT	DEPARTMENT
DET	DETAIL
DI	DROP INLET, DUCTILE IRON
DIA	DIAMETER
DIFF	DIFFUSER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DISCH	DISCHARGE
DIST	DISTRIBUTION
DIV	DIVISION
DMJ	DISMANTLING JOINT
DN	DOWN
DR	DRAIN
DW	DRY WELL
DWG(S)	DRAWING(S)

E

E	EAST, EASTING
EA	EACH
ECC	ECCENTRIC
ECC RED	ECCENTRIC REDUCER
EFF	EFFLUENT, EFFICIENCY
EG	EXISTING GRADE
EJ	EXPANSION JOINT
EL	ELEVATION
ELB	ELBOW
ELL	ELBOW
ELEC	ELECTRIC, ELECTRICAL
EMER	EMERGENCY
ENC	ENCASEMENT
ENCL	ENCLOSURE
EOL	END OF LINE
EOP	EDGE OF PAVEMENT
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EVC	END OF VERTICAL CURVE
EW	EACH WAY
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION, EXPOSED
EXT	EXTENSION, EXTERIOR, EXTERNAL

F

F	FAHRENHEIT, FACE
F TO F	FACE TO FACE
FAB	FABRICATE(D)(TION)
FC	FACE OF CONCRETE, FAIL CLOSED
FCA	FLANGED COUPLING ADAPTER
FD	FLOOR DRAIN
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIG	FIGURE
FL	FLOOR, FLOW LINE
FLEX	FLEXIBLE
FLG	FLANGE(D)
FM	FORCE MAIN
FMH	FLEXIBLE METAL HOSE
FO	FAIL OPEN
FOB	FLAT ON BOTTOM
FOM	FACE OF MASONRY
FOT	FLAT ON TOP
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FAR SIDE, FLOOR SLEEVE
FT	FOOT, FEET
FTG	FOOTING
FURN	FURNISH, FURNISHED
FWD	FORWARD

G

G	GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BREAK
GC	GROOVED COUPLING
GEN	GENERAL, GENERATOR
GL	GLASS
GM	GAS METER
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GR	GRADE

H

H	HIGH, HOUR
HDG	HOT-DIPPED GALVANIZED
HDPE	HIGH DENSITY POLYETHYLENE
HEX	HEAT EXCHANGER
HGT	HEIGHT
HH	HANDHOLE
HMC	HARNESSED MECHANICAL COUPLING
HMJ	HARNESSED MECHANICAL JOINT
HORIZ	HORIZONTAL
HP	HIGH POINT, HIGH PRESSURE, HORSEPOWER
HR	HOUR, HANDRAIL
HS	HIGH STRENGTH
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HWY	HIGHWAY
HYDRO	HYDROPNEUMATIC, HYDROGENERATION

I

ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IN	INCH(ES)
INCL	INCLUDING
INCR	INCREASE
INST	INSTRUMENT, INSTRUMENTATION
INSUL	INSULATE, INSULATED, INSULATING
INT	INTERIOR, INTERNAL
INV	INVERT
IPS	IRON PIPE SIZE

J

JB	JUNCTION BOX
JT	JOINT

K

KVA	KILOVOLT AMPERE

L

L	LENGTH, LONG, LOW
LAT	LATERAL, LATITUDE
LB(S)	POUND(S)
LC	LENGTH OF CURVE
LF	LINEAR FEET
LH	LEFT HAND
LIN	LINEAL, LINEAR
LONG	LONGITUDE
LP LOW	POINT, LOW PRESSURE
LT	LEFT

M

MAINT	MAINTENANCE
MAN	MANUAL(LY)
MAX	MAXIMUM
MBR	MEMBRANE BIOREACTOR
MC	MECHANICAL COUPLING
MECH	MECHANICAL
MED	MEDIUM
MF	MICROFILTRATION
MFR	MANUFACTURER
MG	MILLION GALLONS
MG/L	MILLIGRAMS PER LITER
MGD	MILLION GALLONS PER DAY
MH	MAINTENANCE HOLE, MANHOLE
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MJRG	MECHANICAL JOINT RETAINER GLAND
MJTR	MECHANICAL JOINT WITH TIE ROD
MO	MOTOR OPERATED
MSL	MEAN SEA LEVEL
MTD	MOUNTED
MTL	MATERIAL
MTR	MOTOR
MW	MONITORING WELL

N

N	NORTH, NORTHING, NITROGEN (TOTAL AS N)
N/A	NOT APPLICABLE
NAD	NORTH AMERICAN DATUM (HORIZONTAL)
NAVD	NORTH AMERICAN VERTICAL DATUM
NC	NORMALLY CLOSED
NF	NEAR FACE
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER(S)
NOM	NOMINAL
NPSH	NET POSITIVE SUCTION HEAD
NPSHR	NET POSITIVE SUCTION HEAD REQUIRED
NPT	NATIONAL PIPE THREAD
NRS	NON-RISING STEM
NS	NEAR SIDE
NTS	NOT TO SCALE

O

OC	ON CENTER, ODOR CONTROL
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE, OVERFLOW
OH	OVERHEAD
OPER	OPERATING
OPNG	OPENING
OPP	OPPOSITE
OZ	OUNCE

P

P&ID	PIPING/PROCESS AND INSTRUMENTATION DIAGRAM
P	PHOSPHORUS (TOTAL AS P)
PPM	PARTS PER MILLION
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PE	PLAIN END
PG	PRESSURE GAUGE
PH	PIPE HANGER
PI	POINT OF INTERSECTION
PNL(S)	PANEL(S), PANELBOARD(S)
POC	POINT ON CIRCULAR CURVE, POINT OF CONNECTION
POT	POINT ON TANGENT
PP	POWER POLE
PROJ	PROJECTION
PRS	PRESSURE REDUCING STATION
PS	PIPE SUPPORT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT OF TANGENCY, POINT
PVC	POLYVINYL CHLORIDE, POINT OF VERTICAL CURVATURE
PVT	POINT OF VERTICAL TANGENCY
PVCP	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT

Q

Q	RATE OF FLOW
QCPLG	QUICK COUPLING

R

R	RADIUS, RISER
R/W	RIGHT OF WAY
RCP	REINFORCED CONCRETE PIPE
RCCP	REINFORCED CONCRETE CYLINDER PIPE
RECIRC	RECIRCULATING
RED	REDUCER, REDUCING
REF	REFERENCE
REINF	REINFORCED, REINFORCING
REM	REMOVABLE, REMOVE
REQD	REQUIRED
RET	RETURN
REV	REVISION, REVISED, REVERSED
RH	RIGHT HAND
RO	REVERSE OSMOSIS
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RS	RISING STEM
RT	RIGHT
ROW	RIGHT OF WAY

S

S	SECOND, SLOPE, SOUTH
SCHED	SCHEDULE
SCFM	STANDARD CUBIC FEET PER MINUTE
SD	STORM DRAIN
SEC	SECOND
SECT	SECTION
SF	SQUARE FEET
SH	SHEET
SIM	SIMILAR
SP	STEEL PIPE
SPA	SPACING, SPACES
SPEC(S)	SPECIFICATION(S)
SPL	SPECIAL
SPLY	SUPPLY
SQ	SQUARE
SS	STAINLESS STEEL
SS	SANITARY SEWER
ST SWR	STORM SEWER
STA	STATION
STD	STANDARD
STL	STEEL
STOR	STORAGE
STR	STRUCTURAL
SUSP	SUSPENDED
SYM	SYMMETRICAL
SYS	SYSTEM

T

T	TELEPHONE, TOP
TAN	TANGENT
TBC	TOP BACK OF CURB
TBD	TO BE DETERMINED
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TDS	TOTAL DISSOLVED SOLIDS
TEMP	TEMPERATURE, TEMPORARY
TH	TEST HOLE
THD	THREADED
THK	THICK, THICKNESS
TOC	TOP OF CONCRETE, TABLE OF CONTENTS, TOTAL ORGANIC CARBON
TOF	TOP OF FOOTING
TOM	TOP OF MASONRY
TOP	TOP OF PIPE
TOW	TOP OF WALL
TP	TEST PIT
TRANS	TRANSFORMER
TS	TOTAL SOLIDS
TSS	TOTAL SUSPENDED SOLIDS
TYP	TYPICAL

U

UB	UTILITY BOX
UF	ULTRAFILTRATION
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UP	UTILITY POLE
USGS	UNITED STATES GEOLOGICAL SURVEY
UV	ULTRAVIOLET

V

V	VALVE (SEE P&ID ABBREVIATIONS), VERTICAL, VOLT, VENT
VAC	VACUUM
VB	VALVE BOX
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VOCs	VOLATILE ORGANIC COMPOUNDS
VP	VAPOR PRESSURE

W

W	WEST, WIDE, WATER
W/	WITH
WC	WATER COLUMN
WEF	WATER ENVIRONMENT FEDERATION
W	WATER LEVEL
WM	WATER METER
W/O	WITHOUT
WP	WATERPROOF
WS	WATERSTOP
WS	WATER SURFACE
WSL	WATER SURFACE LEVEL
WT	WEIGHT
WW	WETWELL

X

x	BY, TIMES

Y

YH	YARD HYDRANT

NOTES:

1. FOR EQUIPMENT ABBREVIATIONS, INCLUDING FOR VALVES, REFER TO P&ID LEGEND AND ABBREVIATIONS DRAWINGS FUNCTION CODE ABBREVIATIONS.
2. FOR SYSTEM AND PROCESS STREAM ABBREVIATIONS, REFER TO P&ID LEGEND AND ABBREVIATIONS DRAWINGS SYSTEM CODE AND PROCESS CODE ABBREVIATIONS.
3. FOR PIPE MATERIAL AND INSULATION MATERIAL ABBREVIATIONS REFER TO P&ID LEGEND AND ABBREVIATIONS DRAWINGS PIPELINE MATERIAL CODE AND INSULATION MATERIAL CODE ABBREVIATIONS.

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Los Angeles, California

DRAWN BY
DESIGNED BY
CHECKED BY

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD.	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: GENERAL ABBREVATIONS

SCALE

ACCOUNT NUMBER: 76294

SHEET: G-04

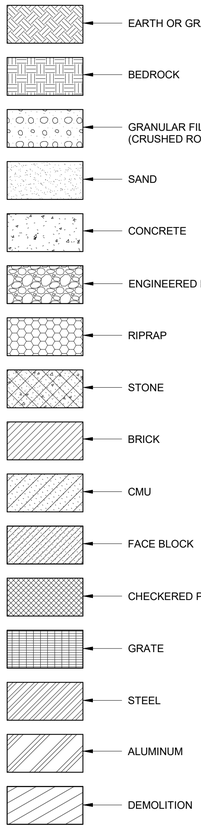
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DWG. NO.: 6869

Date: XX/XX/XXXX Autodesk Docs://429977 - Brookside Park SWC Project/429977-Diversion Structure & General Sheets.rvt

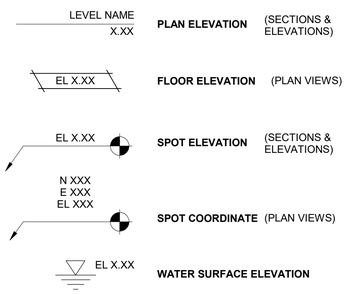
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FILL PATTERNS

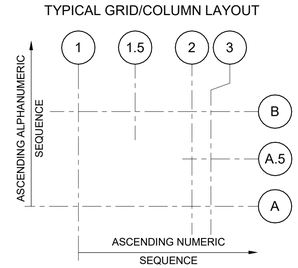


ELEVATION & GRID CALLOUTS

ELEVATION CALLOUTS

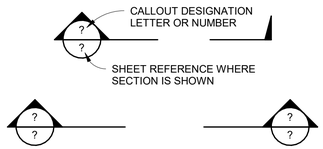


GRID/COLUMN CALLOUTS

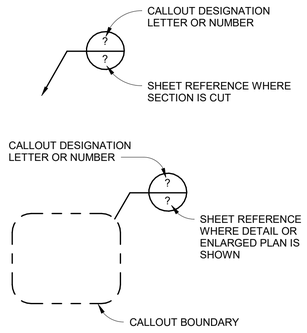


VIEW CALLOUTS

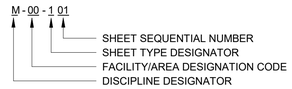
SECTION CALLOUTS



DETAIL/ENLARGED PLAN AREA CALLOUTS



DRAWING NUMBERING SYSTEM



DISCIPLINE DESIGNATORS

A	ARCHITECTURAL
C	CIVIL
D	DEMOLITION
E	ELECTRICAL
F	FIRE PROTECTION
G	GENERAL
H	HVAC/BUILDING MECHANICAL
I	INSTRUMENTATION AND CONTROLS
L	LANDSCAPE
M	PROCESS MECHANICAL
P	PLUMBING
S	STRUCTURAL

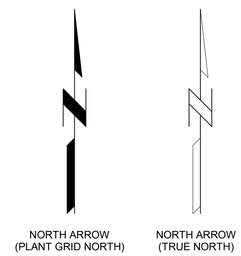
AREA/FACILITY DESIGNATION CODES

REFER TO THE PROJECT SITE PLAN FOR AREA OR FACILITY DESIGNATIONS.

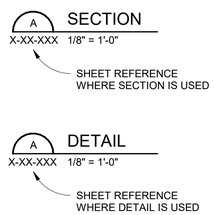
SHEET TYPE DESIGNATORS

0	GENERAL (SYMBOLS, LEGENDS, NOTES, ETC.)
1	PLANS (ARRANGEMENT PLANS, PARTIAL PLANS)
2	ELEVATIONS
3	SECTIONS
4	LARGE SCALE VIEWS (ENLARGED PLANS, STAIR SECTIONS OR SECTIONS THAT ARE NOT DETAILS)
5	DETAILS
6	SCHEDULES & DIAGRAMS
7	SCHEMATICS (ONE-LINES, BLOCK DIAGRAMS)
8	USER DEFINED
9	3D MODEL (PERSPECTIVES, ISOMETRICS, PHOTOGRAPHS)

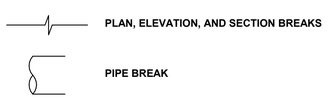
NORTH ARROW



SECTION & DETAIL VIEW TITLES



BREAKS

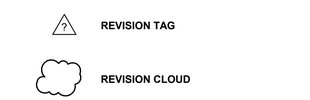


ANNOTATION

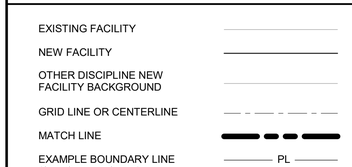
SHEET NOTES



REVISIONS



LINE STYLES



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CHECKED BY:

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MARK	DATE	DESCRIPTION	BY	CHKD.	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: GENERAL LEGENDS

SCALE:

ACCOUNT NUMBER: 76294

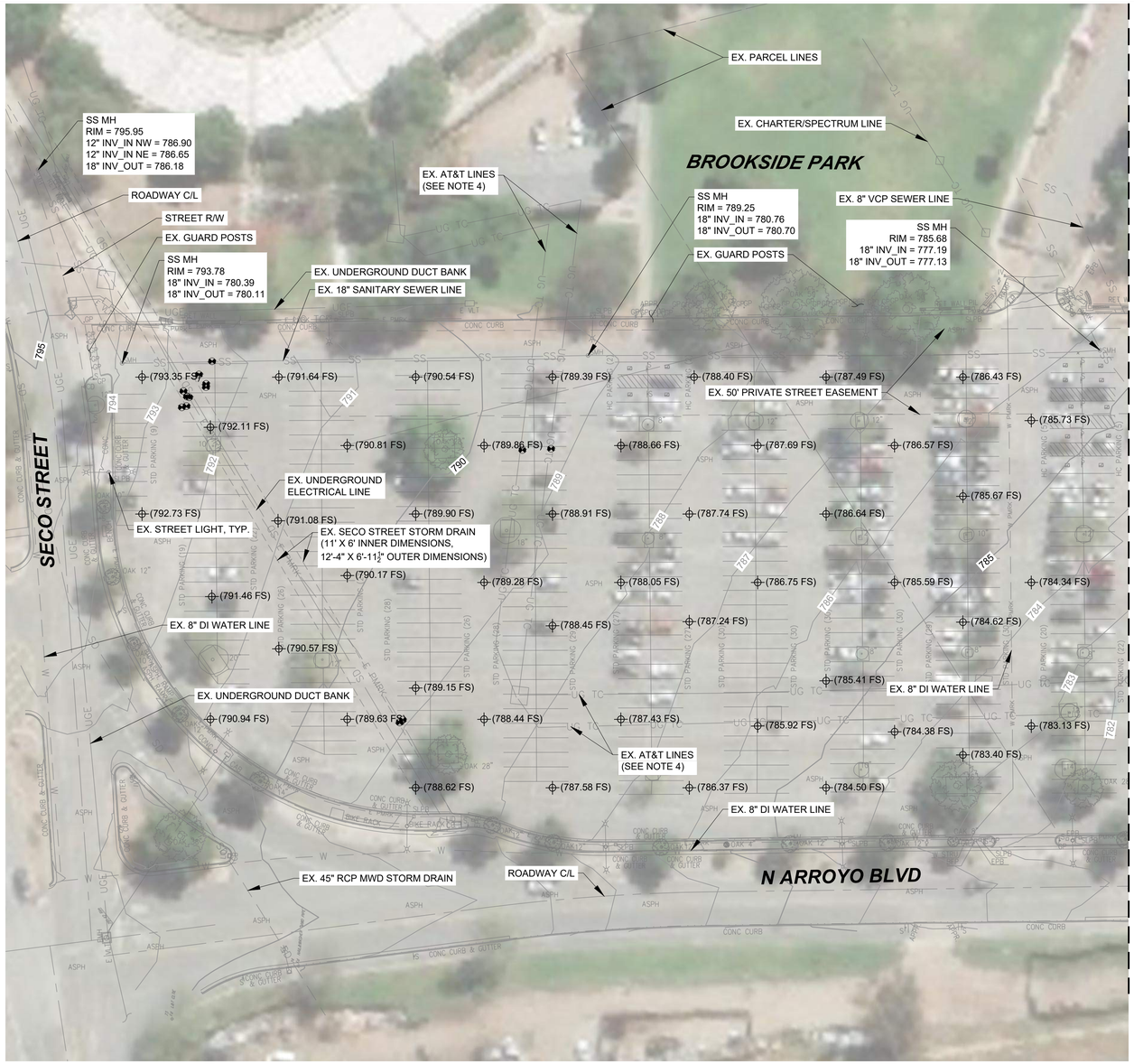
SHEET: G-05

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DWG. NO.

Date: XX/XX/XXXX Autodesk Docs://425977 - Brookside Park SWC Project/425977-Diversion Structure & General Sheets.rvt

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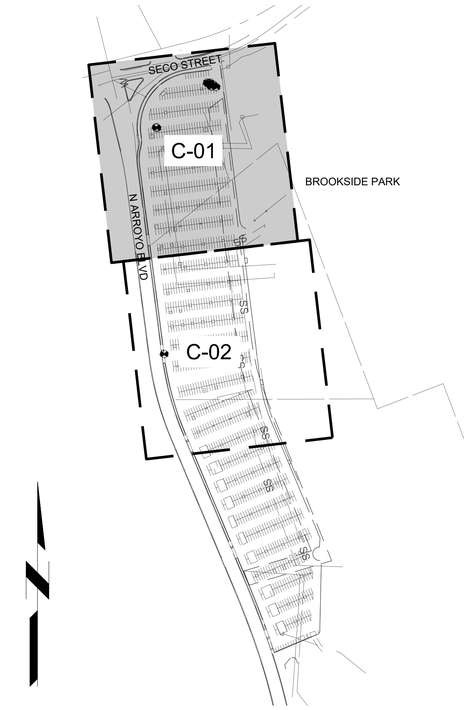
40' 20' 0 40' 80'

1"=40'

MATCHLINE SEE SHEET C-02

LEGEND

	PROPERTY / BOUNDARY LINE
	EASEMENT LINE
	RETAINING WALL
	CHAINLINK (CHLK) FENCE LINE (CLF)
	PARCEL LINE
CB	CATCH BASIN WITH ACCESS HOLE
APPR.	DRIVEWAY APRON
SMH/SDMH/WMH	SEWER / STORMDRAIN / WATER MANHOLE
CP/PP/UP	COMMUNICATION / POWER / UTILITY POLE
S	SIGN (ALL KINDS)
	STREET LIGHT WITH ARM
	FIRE HYDRANT
EM/GM/UM/WM	ELECTRICAL / GAS / UNKNOWN / WATER METER
AV/GV/IV/PV/UV/WV	AIR / GAS / IRRIGATION / PETROLEUM / UNKNOWN / WATER VALVE
C/E/FO VLT	COMMUNICATION / ELECTRICAL / FIBER OPTIC VAULT
G/I/U/W VLT	GAS / IRRIGATION / UNKNOWN / WATER VAULT
C/E/G RISR	COMMUNICATION / ELECTRICAL / GAS RISER
P/U/W RISR	PETROLEUM / UNKNOWN / WATER RISER
C/E/U/TS CAB	COMMUNICATION / ELECTRICAL / UNKNOWN / TRAFFIC SIGNAL CABINET
CPB/EPB/FOPB	COMMUNICATION / ELECTRICAL / FIBER OPTIC PULL BOX
SLPB/TSPB/UPB	STREET LIGHT / TRAFFIC SIGNAL / UNKNOWN PULL BOX
G/I/U BOX	GAS / IRRIGATION / UNKNOWN BOX
A/C/E/F STRU	AIR / COMMUNICATION / ELECTRICAL / FIRE STRUCTURE
G/I/P/SS STRU	GAS / IRRIGATION / PETROLEUM / SANITARY SEWER STRUCTURE
SD/SL/U/W STRU	STORM DRAIN / STREET LIGHT / UNKNOWN / WATER STRUCTURE
1"	EVERGREEN TREE WITH TRUNK DIAMETER
1"	PALM TREE WITH TRUNK DIAMETER
1"	DECIDUOUS TREE IN WELL WITH TRUNK DIAMETER
GP	GUARD POST
CO	CLEAN OUT
(793.33 FS)	EXISTING SPOT ELEVATION FINISH SURFACE
790	MAJOR CONTOUR WITH EXISTING ELEVATION
790	MINOR CONTOUR WITH EXISTING ELEVATION
W	EXISTING WATER LINE
UGE	EXISTING UNDERGROUND ELECTRIC LINE
SS	EXISTING SANITARY SEWER LINE
G	EXISTING GAS LINE
SD	EXISTING STORM DRAIN LINE
UG TC	EXISTING UNDERGROUND TELECOM LINE
UNK	EXISTING UNKNOWN UTILITY LINE



KEY MAP

250' 125' 0 250' 500'

1"=250'

ABBREVIATIONS

ASPH	ASPHALT PAVING
CONC	CONCRETE PAVING
COMP/HC/STD	COMPACT / HANDYCAP / STANDARD PARKING STALL
C/L	STREET CENTERLINE / CONTROL LINE
P/L	PROPERTY LINE
R/W	RIGHT OF WAY
DRWY	DRIVEWAY
T.P.	TRACTION PAD
C.D.	CONCRETE DRAIN
INV	INVERT ELEVATION
RIM	RIM ELEVATION
PMRK	SURVEYED UTILITY PAINT MARKS

NOTES

1. ALL UNDERGROUND UTILITIES SHOWN WERE COMPILED USING FIELD SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION.
2. A GROUND SURVEY WAS PERFORMED BY PSOMAS SURVEYING IN MARCH 2025. LOCATION OF UTILITIES DESIGNATED WITH PMRK (PAINT MARK) SHALL BE CONFIRMED IN FIELD.
3. RECORD UTILITY INFORMATION FROM THE VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES ARE APPROXIMATE ONLY AND ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD.
4. EXISTING AT&T UNDERGROUND TELECOM LINES WERE NOT ENCOUNTERED DURING SUBSURFACE INVESTIGATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALIGNMENT OF AT&T UNDERGROUND TELECOM LINES AND SHALL BE RESPONSIBLE FOR COORDINATING WITH AT&T TO RELOCATE ANY INTERFERING PORTIONS OF EXISTING UTILITIES TO COMPLETE THE PROJECT WORK.
5. THE LOCATION OF EXISTING PIPES OR OTHER UNDERGROUND STRUCTURES OR PROPERTY LINES ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND PIPES OR STRUCTURES ARE SHOWN. THE CONTRACTOR SHALL CALL THE USA UNDERGROUND 811 ALERT NO LESS THAN TWO DAYS (EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS) NOR MORE THAN 7 DAYS PRIOR TO ANY EXCAVATION TO OBTAIN ACCURATE UTILITY LOCATIONS. THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR ANY DAMAGE DONE TO EXISTING UTILITIES OR STREET IMPROVEMENTS INCLUDING CONCRETE AND LANDSCAPING DURING CONSTRUCTION.
6. THE EXISTING CONDITIONS PLAN IS TO BE USED FOR THE SPECIFIED PROJECT ONLY AND IS NOT WARRANTED TO BE COMPLETE FOR ANY OTHER FUTURE PROJECTS.

60% - PRELIMINARY NOT FOR CONSTRUCTION

Black & Veatch Corporation
Los Angeles, California

DRAWN BY C. DORSET
DESIGNED BY J. HEALY
CHECKED BY K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: EXISTING CONDITIONS (1 OF 2)

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET: C-01

6 OF 70

DWG. NO.: 6869

FD11000

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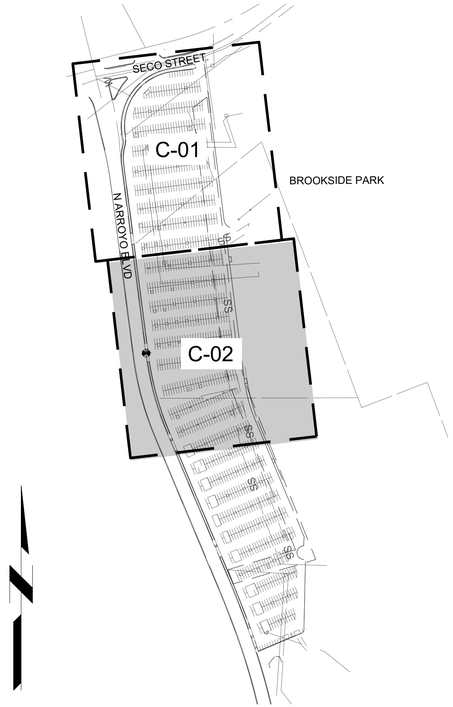
40' 20' 0 40' 80'
1"=40'

LEGEND

	PROPERTY / BOUNDARY LINE
	EASEMENT LINE
	RETAINING WALL
	CHAINLINK (CHLK) FENCE LINE (CLF)
	PARCEL LINE
CB	CATCH BASIN WITH ACCESS HOLE
APPR.	DRIVEWAY APRON
SMH/SDMH/WMH	SEWER / STORMDRAIN / WATER MANHOLE
CP/PP/UP	COMMUNICATION / POWER / UTILITY POLE
S	SIGN (ALL KINDS)
	STREET LIGHT WITH ARM
	FIRE HYDRANT
EM/GM/UM/WM	ELECTRICAL / GAS / UNKNOWN / WATER METER
AV/GV/IV/PV/UV/WV	AIR / GAS / IRRIGATION / PETROLEUM / UNKNOWN / WATER VALVE
C/E/FO VLT	COMMUNICATION / ELECTRICAL / FIBER OPTIC VAULT
G/I/U/W VLT	GAS / IRRIGATION / UNKNOWN / WATER VAULT
C/E/G RISR	COMMUNICATION / ELECTRICAL / GAS RISER
P/U/W RISR	PETROLEUM / UNKNOWN / WATER RISER
C/E/U/TS CAB	COMMUNICATION / ELECTRICAL / UNKNOWN / TRAFFIC SIGNAL CABINET
CPB/EPB/FOPB	COMMUNICATION / ELECTRICAL / FIBER OPTIC PULL BOX
SLPB/TSPB/UPB	STREET LIGHT / TRAFFIC SIGNAL / UNKNOWN PULL BOX
G/I/U BOX	GAS / IRRIGATION / UNKNOWN BOX
A/C/E/F STRU	AIR / COMMUNICATION / ELECTRICAL / FIRE STRUCTURE
G/I/P/SS STRU	GAS / IRRIGATION / PETROLEUM / SANITARY SEWER STRUCTURE
SD/SL/U/W STRU	STORM DRAIN / STREET LIGHT / UNKNOWN / WATER STRUCTURE
1"	EVERGREEN TREE WITH TRUNK DIAMETER
1"	PALM TREE WITH TRUNK DIAMETER
1"	DECIDUOUS TREE IN WELL WITH TRUNK DIAMETER
GP	GUARD POST
CO	CLEAN OUT
(793.33 FS)	EXISTING SPOT ELEVATION FINISH SURFACE
790	MAJOR CONTOUR WITH EXISTING ELEVATION
790	MINOR CONTOUR WITH EXISTING ELEVATION
W	EXISTING WATER LINE
UGE	EXISTING UNDERGROUND ELECTRIC LINE
SS	EXISTING SANITARY SEWER LINE
G	EXISTING GAS LINE
SD	EXISTING STORM DRAIN LINE
UG TC	EXISTING UNDERGROUND TELECOM LINE
UNK	EXISTING UNKNOWN UTILITY LINE

ABBREVIATIONS

ASPH	ASPHALT PAVING
CONC	CONCRETE PAVING
COMP/HC/STD	COMPACT / HANDYCAP / STANDARD PARKING STALL
C/L	STREET CENTERLINE / CONTROL LINE
P/L	PROPERTY LINE
R/W	RIGHT OF WAY
DRWY	DRIVEWAY
T.P.	TRACTION PAD
C.D.	CONCRETE DRAIN
INV	INVERT ELEVATION
RIM	RIM ELEVATION
PMRK	SURVEYED UTILITY PAINT MARKS



KEY MAP

250' 125' 0 250' 500'
1"=250'

NOTES

1. ALL UNDERGROUND UTILITIES SHOWN WERE COMPILED USING FIELD SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION.
2. A GROUND SURVEY WAS PERFORMED BY PSOMAS SURVEYING IN MARCH 2025. LOCATION OF UTILITIES DESIGNATED WITH PMRK (PAINT MARK) SHALL BE CONFIRMED IN FIELD.
3. RECORD UTILITY INFORMATION FROM THE VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES ARE APPROXIMATE ONLY AND ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD.
4. EXISTING UNKNOWN UTILITIES WERE IDENTIFIED ON LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS STORM DRAIN UTILITY MAPS AND NOT ENCOUNTERED DURING SUBSURFACE INVESTIGATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING EXISTENCE OR ABSENCE OF ABANDONED UTILITIES AND REMOVING INTERFERING PORTIONS REQUIRED TO CONSTRUCT THE PROJECT WORK.
5. THE LOCATION OF EXISTING PIPES OR OTHER UNDERGROUND STRUCTURES OR PROPERTY LINES ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND PIPES OR STRUCTURES ARE SHOWN. THE CONTRACTOR SHALL CALL THE USA UNDERGROUND 811 ALERT NO LESS THAN TWO DAYS (EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS) NOR MORE THAN 7 DAYS PRIOR TO ANY EXCAVATION TO OBTAIN ACCURATE UTILITY LOCATIONS. THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR ANY DAMAGE DONE TO EXISTING UTILITIES OR STREET IMPROVEMENTS INCLUDING CONCRETE AND LANDSCAPING DURING CONSTRUCTION.
6. THE EXISTING CONDITIONS PLAN IS TO BE USED FOR THE SPECIFIED PROJECT ONLY AND IS NOT WARRANTED TO BE COMPLETE FOR ANY OTHER FUTURE PROJECTS.

60% - PRELIMINARY NOT FOR CONSTRUCTION

Black & Veatch Corporation
Los Angeles, California

DRAWN BY	C. DORSET
DESIGNED BY	J. HEALY
CHECKED BY	K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: EXISTING CONDITIONS (2 OF 2)

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET: C-02

7 OF 70

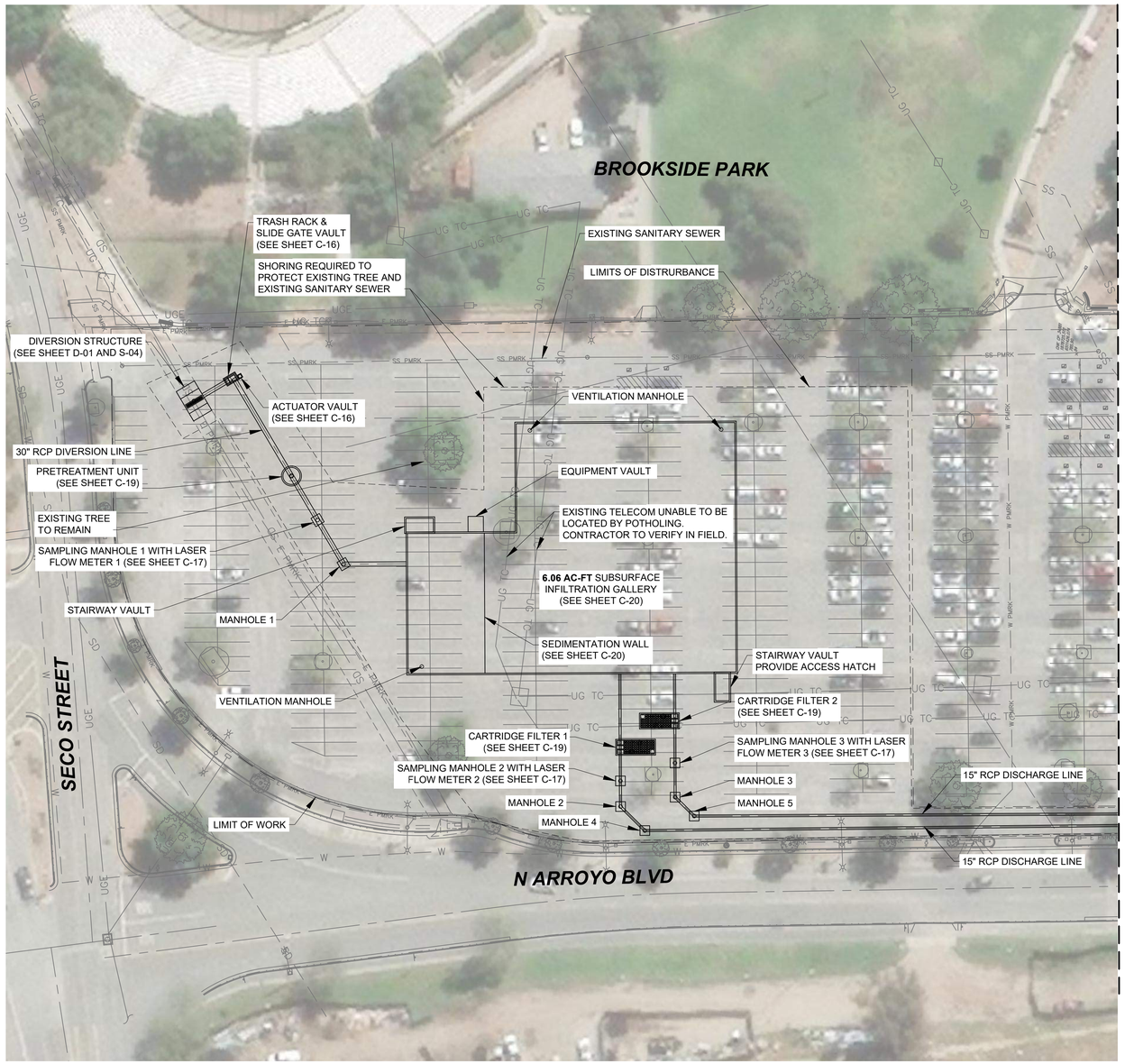
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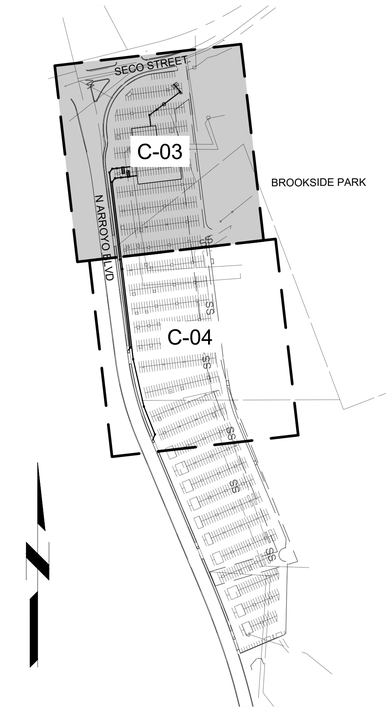
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22X34



MATCHLINE SEE SHEET C-04

40' 20' 0 40' 80'
1"=40'



KEY MAP

250' 125' 0 250' 500'
1"=250'

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Los Angeles, California

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DESIGNED BY J. HEALY
CHECKED BY K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE SUBSURFACE IMPROVEMENTS SITE PLAN (1 OF 2)

SCALE AS NOTED

ACCOUNT NUMBER 420977

SHEET C-03

8 OF 70

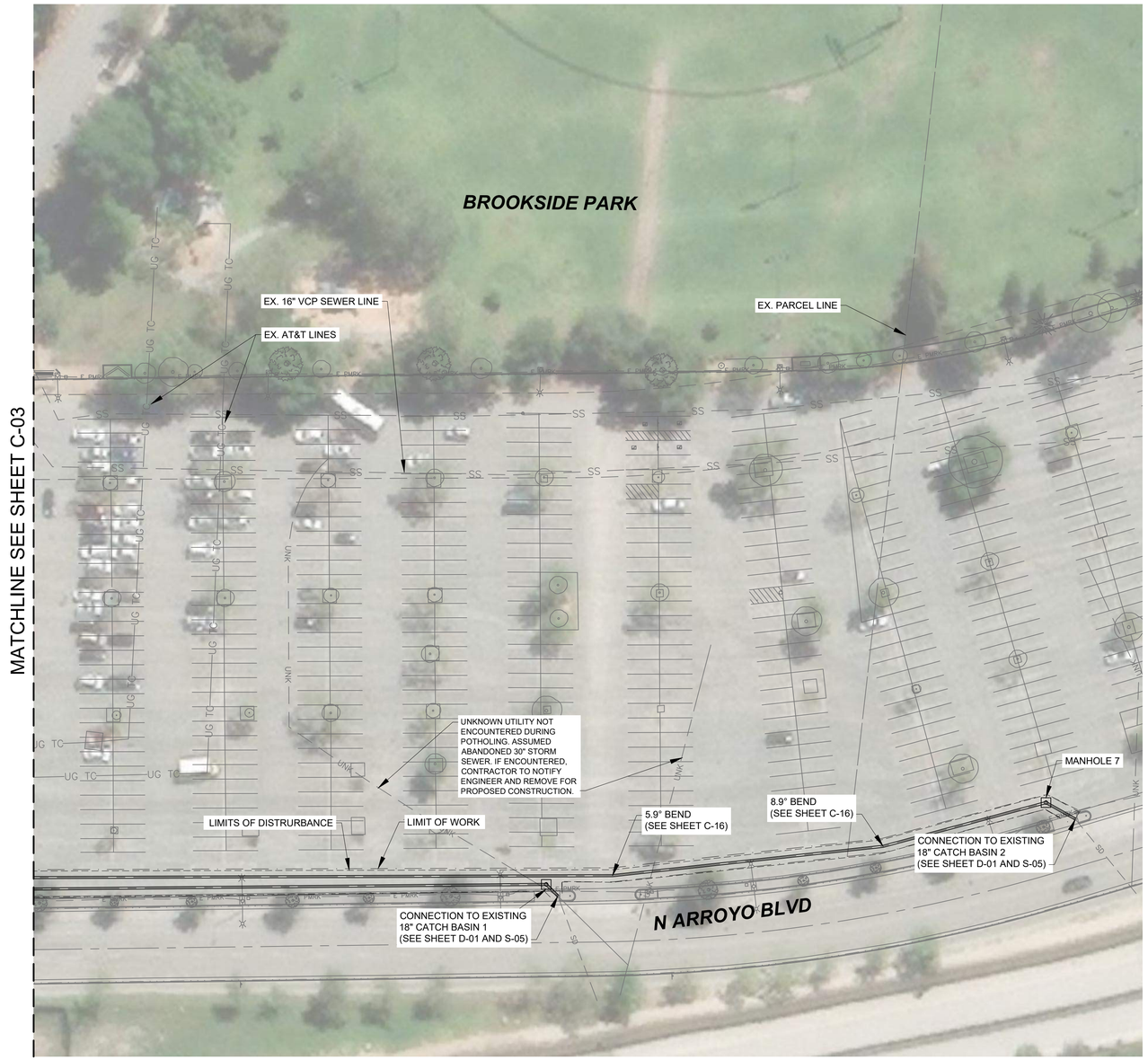
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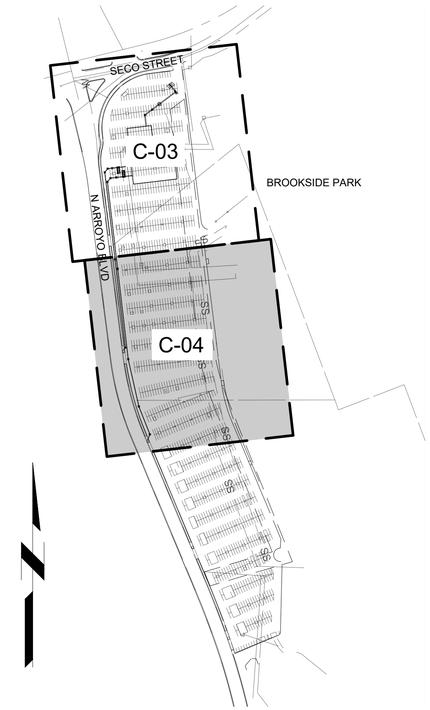
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FD11000

22X34





KEY MAP

250' 125' 0 250' 500'

1"=250'

60% - PRELIMINARY NOT FOR CONSTRUCTION

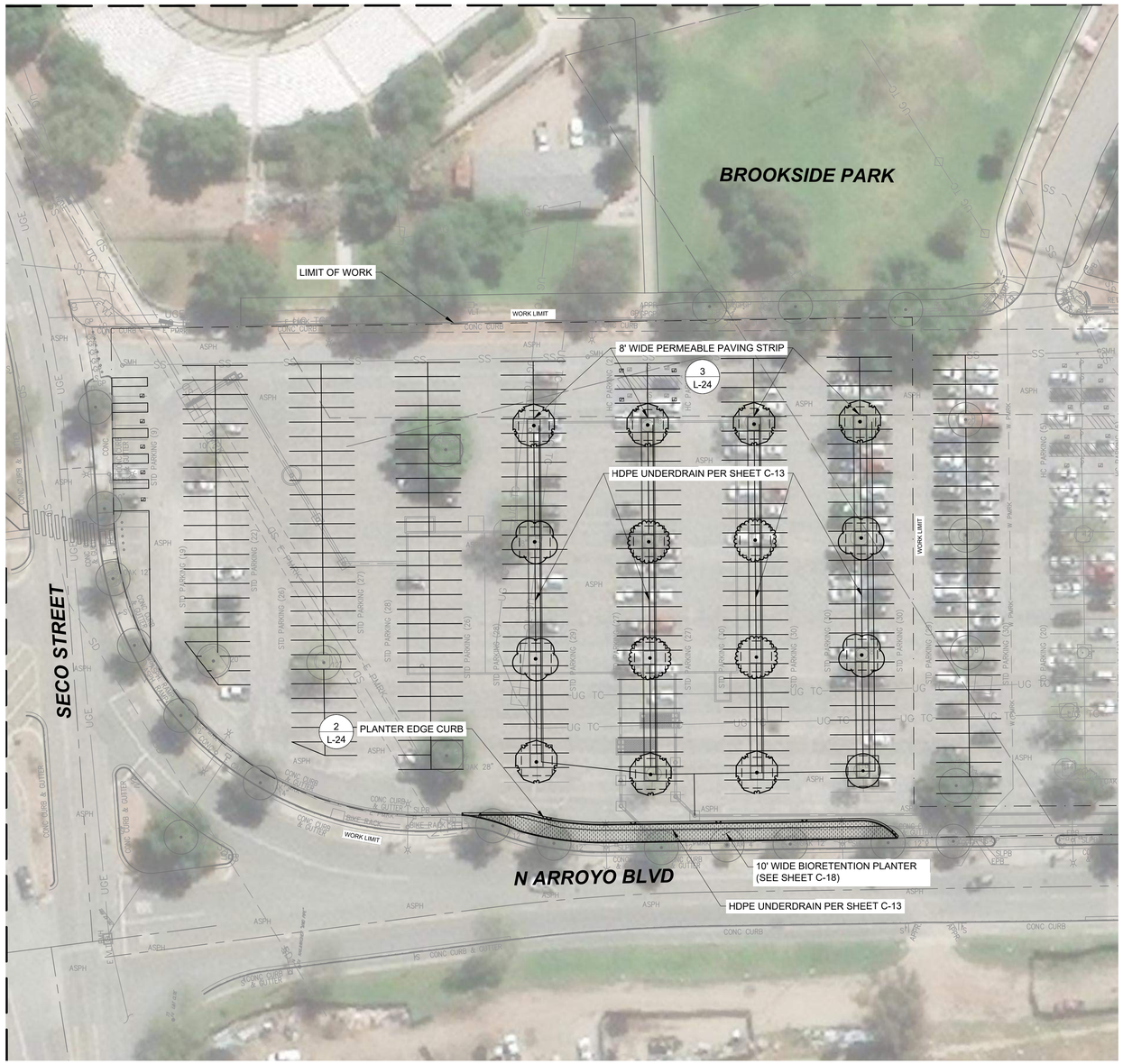
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			----					SHEET TITLE SUBSURFACE IMPROVEMENTS SITE PLAN (2 OF 2)
								SCALE AS NOTED / ACCOUNT NUMBER 420977

SHEET C-04 | 9 OF 70 | DWG. NO. 6869

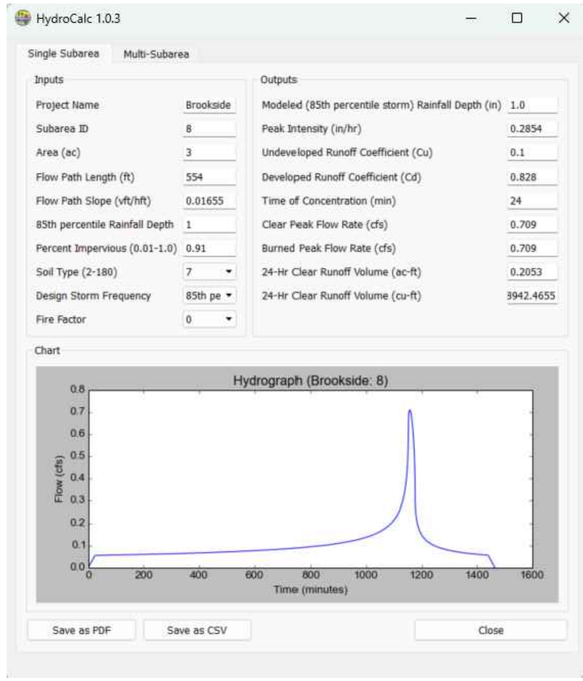
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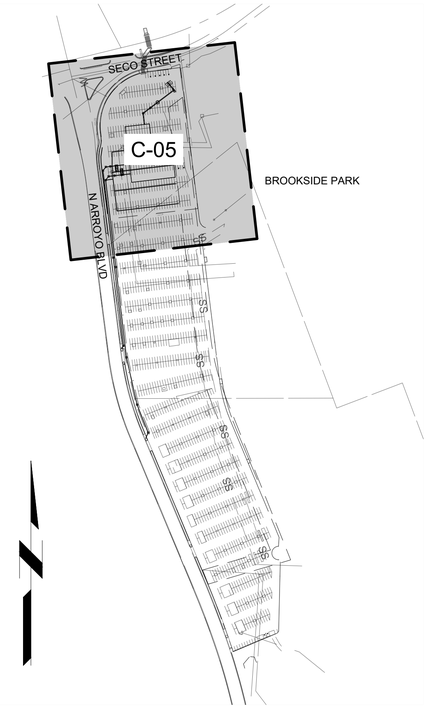
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40' 20' 0 40' 80'
1"=40'





KEY MAP

250' 125' 0 250' 500'
1"=250'

LEGEND

(# / C-#) DETAIL AND SHEET NUMBER CALLOUT

LIMIT OF WORK

LID CALCULATIONS (85TH PERCENTILE STORM)

INFILTRATION RATE	PERMEABLE PAVEMENT		BIORETENTION PLANTER			VOLUME PROVIDED (AC-FT)	85TH VOLUME (AC-FT)
	AREA (SF)	EFFECTIVE DEPTH (FT)	SURFACE AREA (SF)	PONDING AREA (SF)	EFFECTIVE DEPTH (FT)		
0.34 IN/HR	4970	0.5	1,385	870	2.53	0.108	0.205

60% - PRELIMINARY NOT FOR CONSTRUCTION

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Black & Veatch Corporation
Los Angeles, California

DRAWN BY	DESIGNED BY	CHECKED BY
C. DORSET	J. HEALY	K. LEWIS

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: SITE LID PLAN

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET: C-05

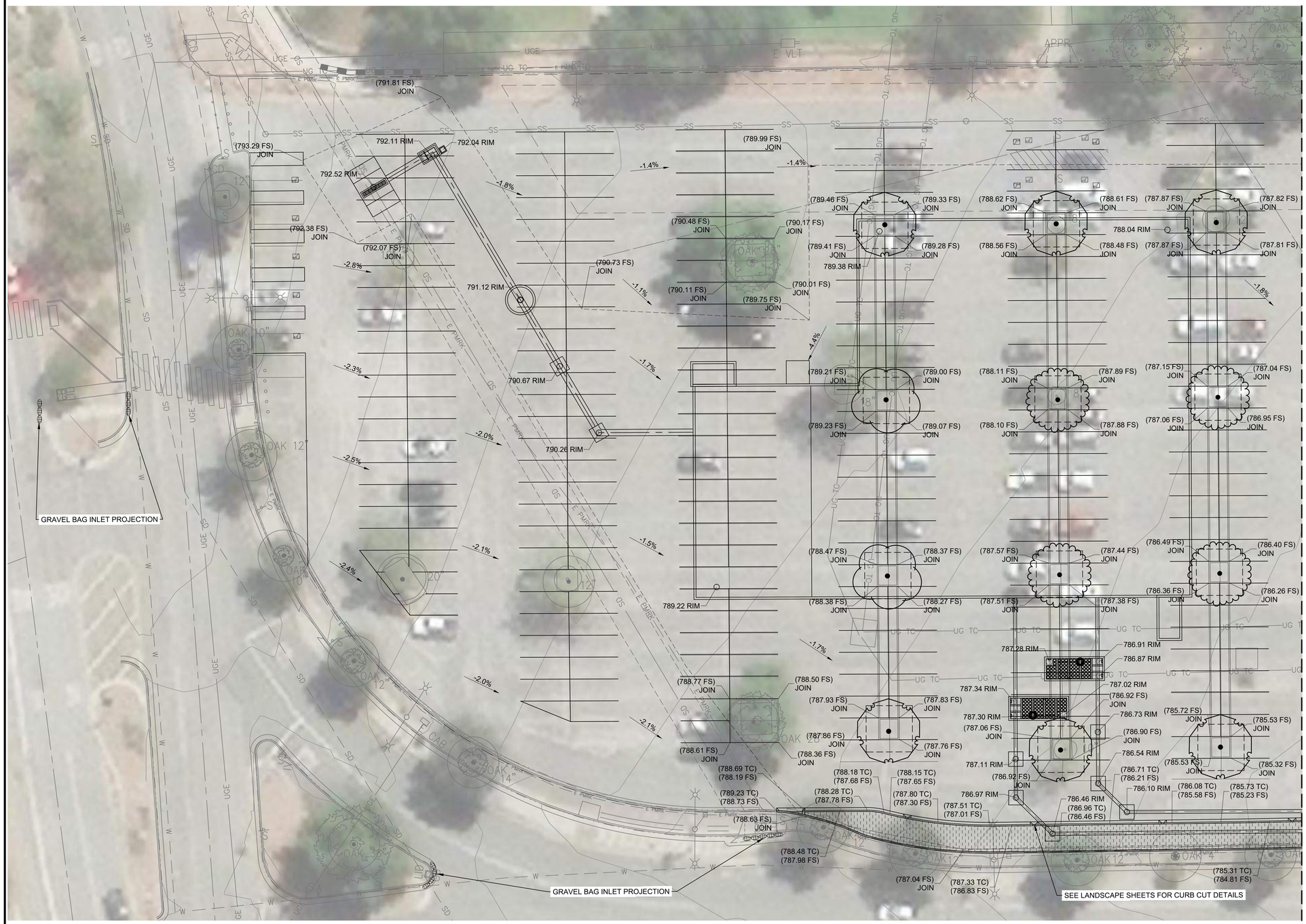
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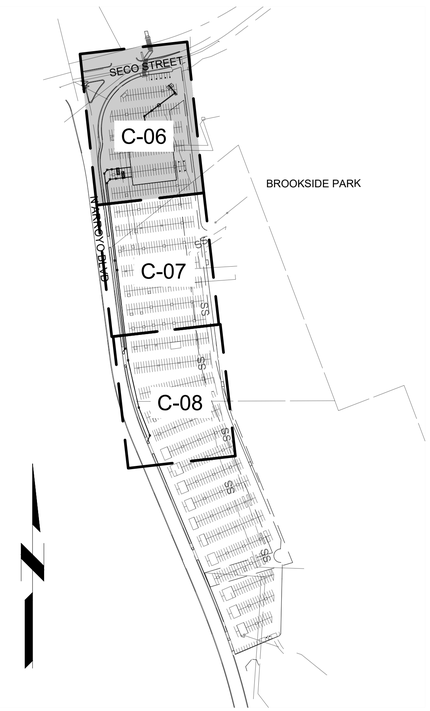
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22X34





KEY MAP

250' 125' 0 250' 500'

1"=250'

GRADING NOTES

1. ALL UNDERGROUND UTILITIES SHOWN WERE COMPILED USING FIELD SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION. SURVEY WAS COMPLETED BY PSOMAS IN MARCH 2025.
2. PROPOSED GRADING SHALL MATCH EXISTING GRADES AT THE LIMIT OF WORK. WHERE PROPOSED GRADES MEET EXISTING GRADES, CONTRACTOR SHALL BLEND GRADES TO PROVIDE A SMOOTH TRANSITION BETWEEN EXISITNG AND NEW WORK AND ENSURE NO PONDING AREAS ARE CREATED.
3. GRADE ALL AREAS TO DRAIN.
4. CONTRACTOR SHALL ADJUST UTILITY ELEMENTS MEANT TO BE FLUSH WITH GRADE (I.E. UTILITY MANHOLES, CATCH BASINS, ETC.) THAT ARE AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON THE PLANS OR NOT.
5. EROSION CONTROL MEASURES SHALL BE PER CITY OF PASADENA BUILDING AND SAFETY DIVISION BEST MANAGEMENT PRACTICE STANDARD DETAILS.
6. STOCKPILING OF MATERIAL SHALL BE PLACED WITHIN THE LIMITS OF WORK PER CITY OF PASADENA STANDARD DETAILS.
7. PROPOSED GRADE FOR PAVEMENT REPAIR AND REPLACEMENT ARE TO MATCH EXISTING GRADE. GRADE TO DRAIN.

LEGEND

FS	FINISHED SURFACE
JOIN	JOIN TO EXISTING GRADE
RIM	RIM ELEVATION
TC	TOP OF CURB
X.XX%	PR SLOPE
	LIMIT OF WORK
	PLANTING AREA
	GRAVEL BAG INLET PROJECTION

20' 10' 0 20' 40'

1"=20'

60% - PRELIMINARY NOT FOR CONSTRUCTION

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Black & Veatch Corporation
Los Angeles, California

DRAWN BY	C. DORSET
DESIGNED BY	J. HEALY
CHECKED BY	K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: GRADING PLAN (1 OF 3)

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET: C-06

11 OF 70

DWG. NO.: 6869

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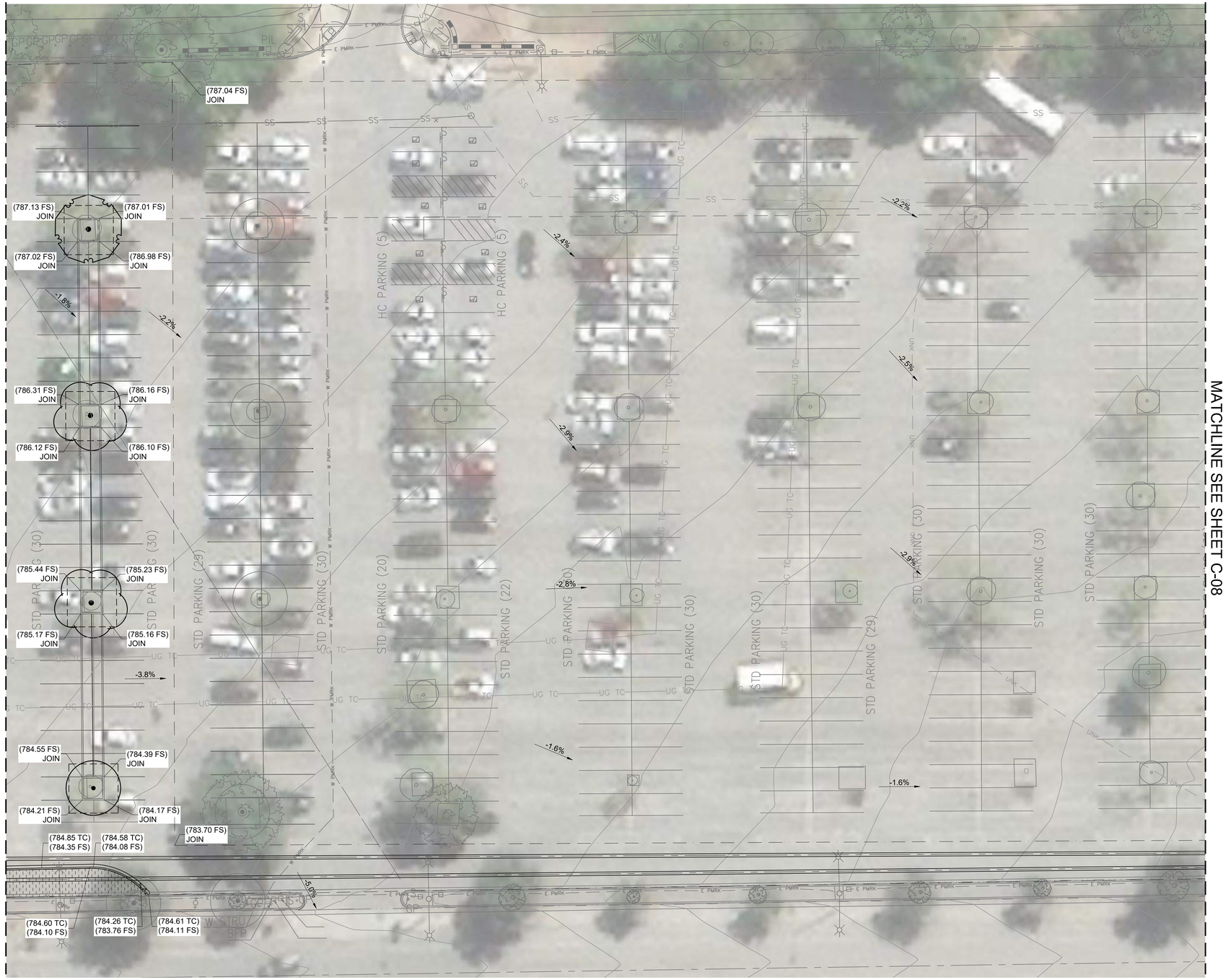
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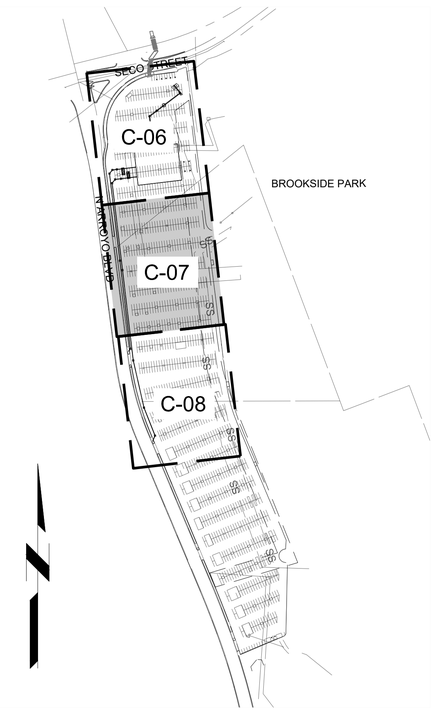
MATCHLINE SEE SHEET C-06

MATCHLINE SEE SHEET C-08



20' 10' 0 20' 40'

1"=20'



KEY MAP

250' 125' 0 250' 500'

1"=250'

GRADING NOTES

1. ALL UNDERGROUND UTILITIES SHOWN WERE COMPILED USING FIELD SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION. SURVEY WAS COMPLETED BY PSOMAS IN MARCH 2025.
2. PROPOSED GRADING SHALL MATCH EXISTING GRADES AT THE LIMIT OF WORK. WHERE PROPOSED GRADES MEET EXISTING GRADES, CONTRACTOR SHALL BLEND GRADES TO PROVIDE A SMOOTH TRANSITION BETWEEN EXISITNG AND NEW WORK AND ENSURE NO PONDING AREAS ARE CREATED.
3. GRADE ALL AREAS TO DRAIN.
4. CONTRACTOR SHALL ADJUST UTILITY ELEMENTS MEANT TO BE FLUSH WITH GRADE (I.E. UTILITY MANHOLES, CATCH BASINS, ETC.) THAT ARE AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON THE PLANS OR NOT.
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LEGEND

FS	FINISHED SURFACE
JOIN	JOIN TO EXISTING GRADE
RIM	RIM ELEVATION
TC	TOP OF CURB
X.XX%	PR SLOPE
	LIMIT OF WORK
	PLANTING AREA

60% - PRELIMINARY NOT FOR CONSTRUCTION

Black & Veatch Corporation
Los Angeles, California

DRAWN BY	C. DORSET
DESIGNED BY	J. HEALY
CHECKED BY	K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: GRADING PLAN (2 OF 3)

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET: C-07

12 OF 70

DWG. NO.: 6869

Date: November 4, 2025 C:\DOCACCDOCS\BLACK & VEATCH CORP\420977 - BROOKSIDE PARK SWC PROJECT FILES\5.0 DESIGN FILES_BV\5.0.5 CIVIL 3D\C-07.DWG

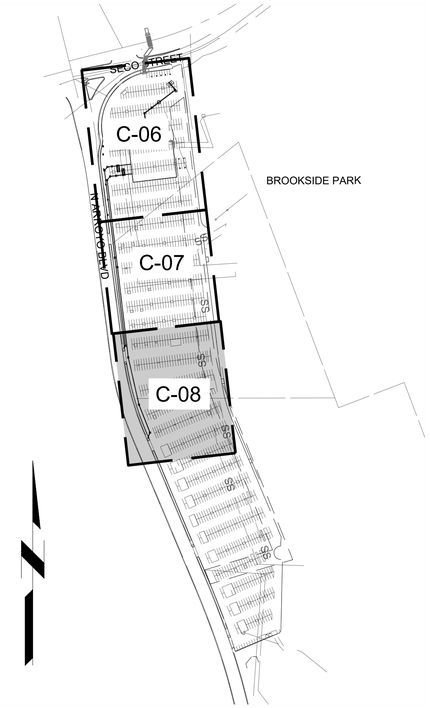
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FD11000

22X34

MATCHLINE SEE SHEET C-07





KEY MAP

250' 125' 0 250' 500'
1"=250'

GRADING NOTES

1. ALL UNDERGROUND UTILITIES SHOWN WERE COMPILED USING FIELD SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION. SURVEY WAS COMPLETED BY PSOMAS IN MARCH 2025.
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LEGEND

FS	FINISHED SURFACE
JOIN	JOIN TO EXISTING GRADE
RIM	RIM ELEVATION
TC	TOP OF CURB
X.XX%	PR SLOPE
	LIMIT OF WORK
	GRAVEL BAG INLET PROTECTION

60% - PRELIMINARY NOT FOR CONSTRUCTION

BLACK & VEATCH
Black & Veatch Corporation
Los Angeles, California

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DESIGNED BY J. HEALY
CHECKED BY K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE GRADING PLAN (3 OF 3)

SCALE AS NOTED

ACCOUNT NUMBER 420977

SHEET C-08

13 OF 70

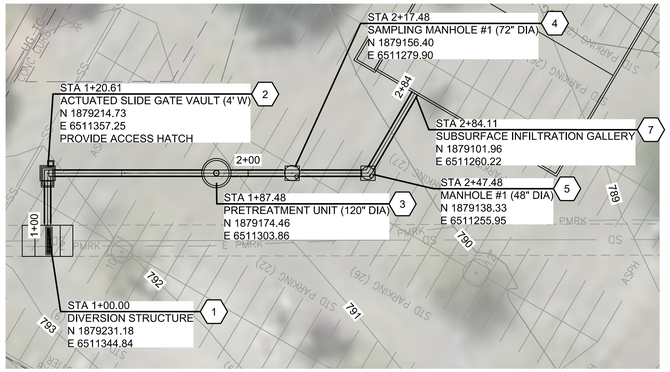
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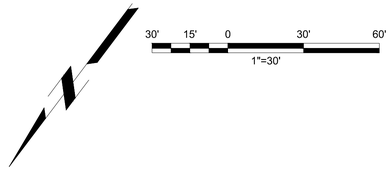
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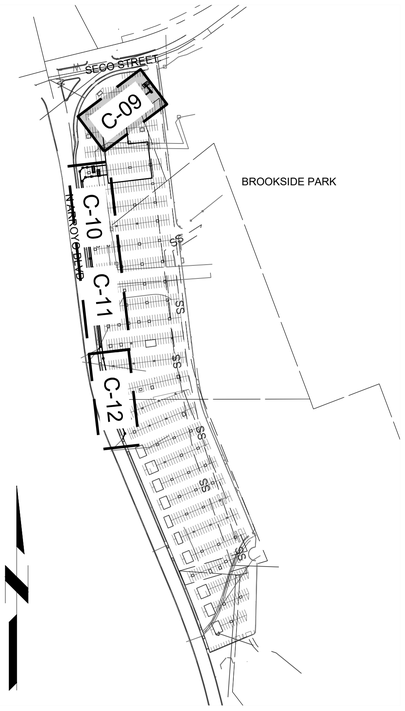
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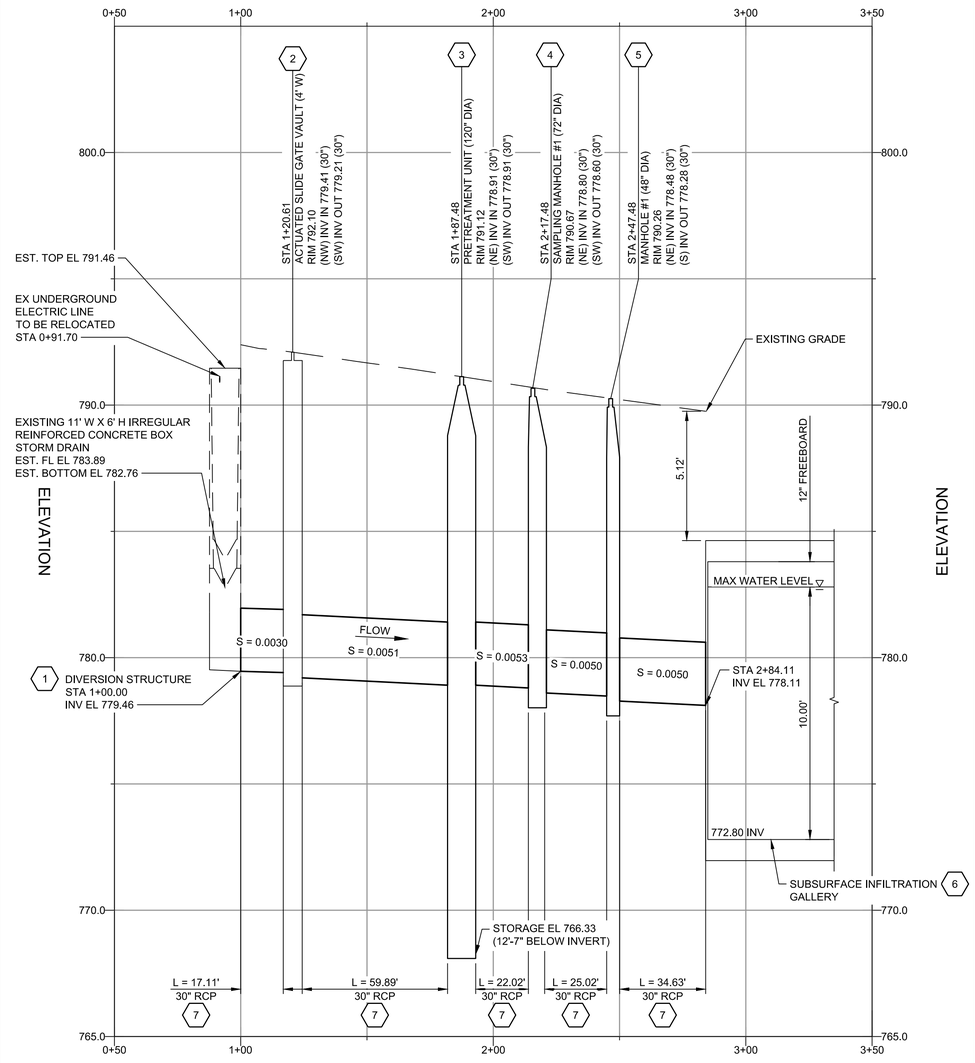
CONSTRUCTION NOTES

1	CONSTRUCT CONCRETE DIVERSION STRUCTURE PER SHEET S-04.
2	CONSTRUCT ACTUATED SLIDE GATE VAULT WITH TRASH RACK PER SHEET C-16.
3	CONSTRUCT PRETREATMENT UNIT PER SHEET C-19.
4	CONSTRUCT SAMPLING MANHOLE WITH FLOW METER PER SHEET C-17.
5	CONSTRUCT MANHOLE PER SPPWC 321-2.
6	CONSTRUCT SUBSURFACE INFILTRATION GALLERY. INSTALLATION AND SPECIFICATIONS PER MANUFACTURER. SEE SHEETS C-20 THROUGH C-24.
7	CONSTRUCT 30" REINFORCED CONCRETE PIPE, CLASS 4. TRENCHING AND BEDDING PER LACDPW STD 3080-3, CASE 3.



KEY MAP

250' 125' 0 250' 500'
1" = 250"



3' 2' 1' 0 3' 6'
VERTICAL SCALE 1"=3'

30' 15' 0 30' 60'
HORIZONTAL SCALE 1"=30'

60% - PRELIMINARY NOT FOR CONSTRUCTION

BLACK & VEATCH Black & Veatch Corporation Los Angeles, California	DRAWN BY C. DORSET DESIGNED BY J. HEALY CHECKED BY K. LEWIS	REVISIONS					
		MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: DIVERSION LINE PLAN AND PROFILE

SCALE: AS NOTED | ACCOUNT NUMBER: 420977

SHEET: C-09

14 OF 70

DWG. NO.: 6869

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Date: January 5, 2026 C:\DC\ACCDOCS\BLACK & VEATCH CORP\420977 - BROOKSIDE PARK SWC PROJECT\PROJECT FILES\5.0 DESIGN FILES_BV\5.0.5 CIVIL 3D\C-09.DWG

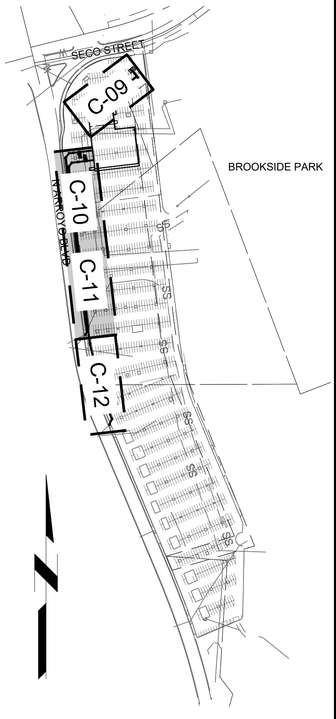
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30' 15' 0 30' 60'
1"=30'

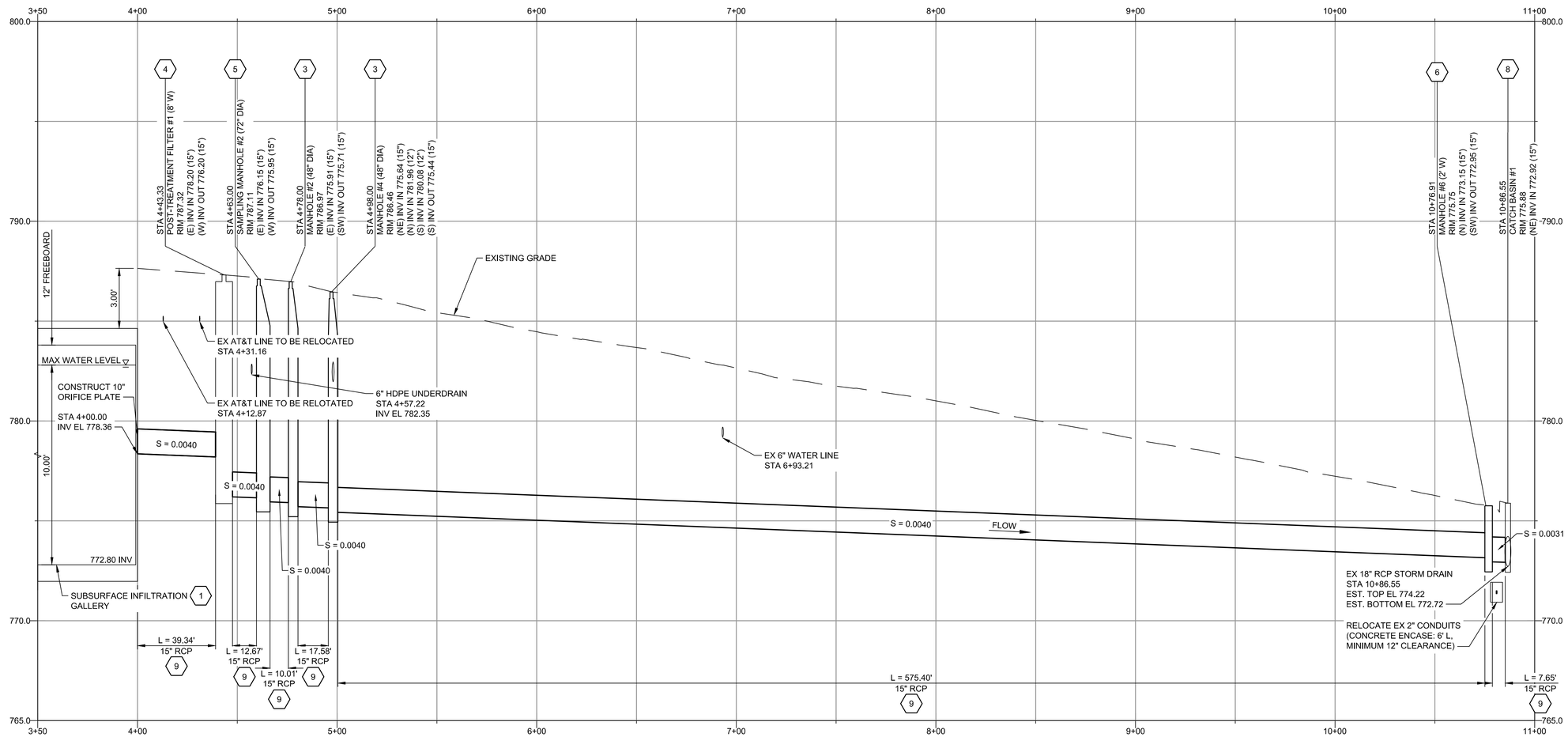
CONSTRUCTION NOTES

1	CONSTRUCT SUBSURFACE INFILTRATION GALLERY. INSTALLATION AND SPECIFICATIONS PER MANUFACTURER. SEE SHEETS C-20 THROUGH C-24.
2	NOT USED
3	CONSTRUCT MANHOLE PER SPPWC 321-2.
4	CONSTRUCT POST-TREATMENT FILTER #1 PER SHEET C-19.
5	CONSTRUCT SAMPLING MANHOLE WITH FLOW METER PER SHEET C-17.
6	CONSTRUCT SHALLOW MANHOLE PER LACDPW 2002-1.
7	NOT USED
8	SEE DEMO PLAN CATCH BASIN #1. CONSTRUCT CAST-IN-PLACE CATCH BASIN PER STRUCTURAL DETAILS.
9	CONSTRUCT 15" REINFORCED CONCRETE PIPE, CLASS 4. TRENCHING AND BEDDING PER LACDPW STD 3080-3.



KEY MAP

250' 125' 0 250' 500'
1" = 250'



3' 2' 1' 0 3' 6'
VERTICAL SCALE 1"=3'

30' 15' 0 30' 60'
HORIZONTAL SCALE 1"=30'

60% - PRELIMINARY NOT FOR CONSTRUCTION

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Black & Veatch Corporation
Los Angeles, California

DRAWN BY	C. DORSET
DESIGNED BY	J. HEALY
CHECKED BY	K. LEWIS

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: OUTFLOW LINE #1 PLAN AND PROFILE

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET: C-10

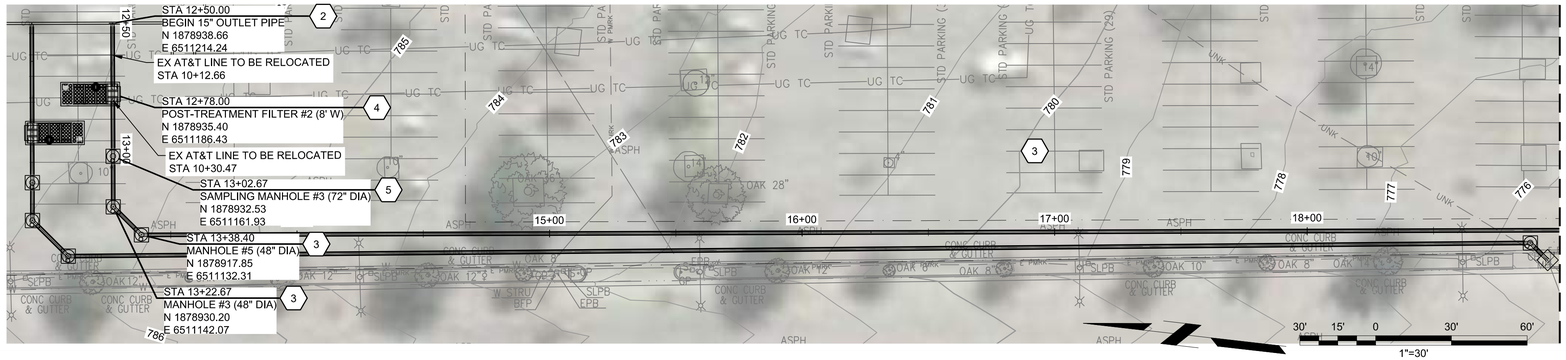
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DWG. NO.: 6869

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Date: January 5, 2026 C:\DOCACCDOCS\BLACK & VEATCH CORP\420977 - BROOKSIDE PARK SWC PROJECT\PROJECT FILES\5.0 DESIGN FILES_BV\5.0.5 CIVIL 3D\C-10.DWG

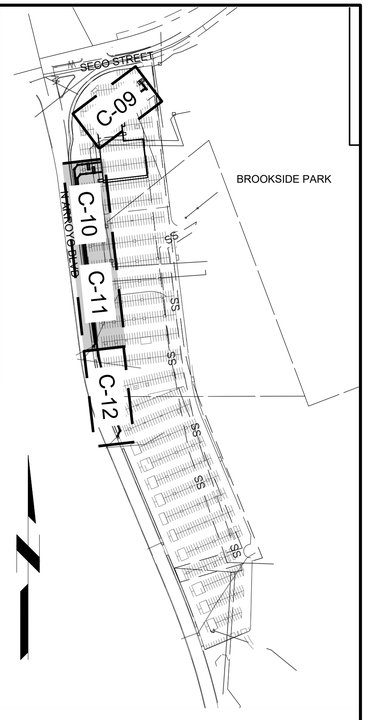
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MATCHLINE STA: 19+00
SEE SHEET C-12

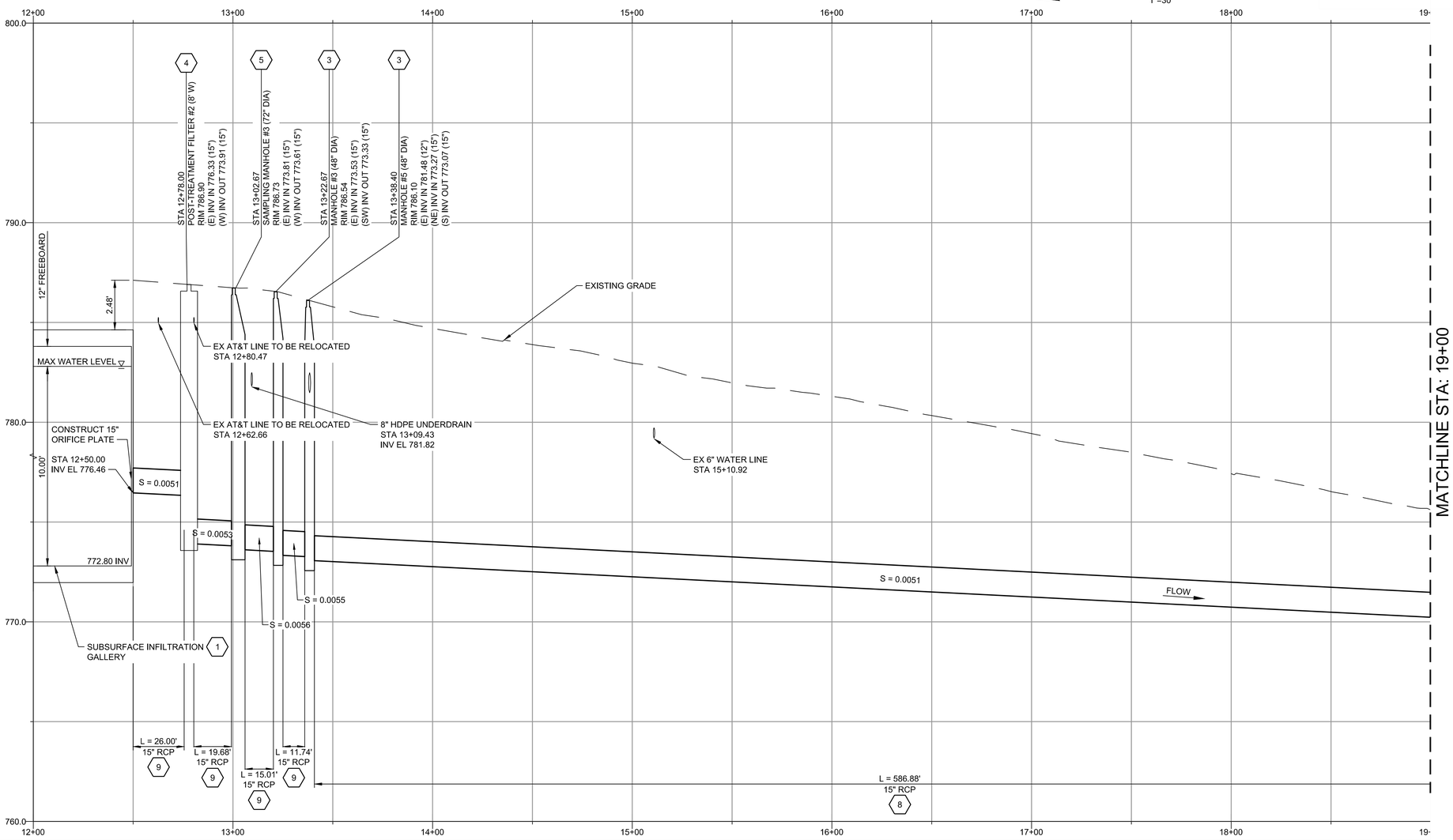
CONSTRUCTION NOTES

1	CONSTRUCT SUBSURFACE INFILTRATION GALLERY. INSTALLATION AND SPECIFICATIONS PER MANUFACTURER. SEE SHEETS C-20 THROUGH C-24.
2	NOT USED
3	CONSTRUCT MANHOLE PER SPPWC 321-2.
4	CONSTRUCT CARTRIDGE FILTER PER MANUFACTURER SPECIFICATIONS. TREATMENT FLOW = 8.36 CFS.
5	CONSTRUCT SAMPLING MANHOLE WITH FLOW METER PER SHEET C-17.
6	CONSTRUCT SHALLOW MANHOLE PER LACDPW 2002-1.
7	SEE DEMO PLAN CATCH BASIN #2. CONSTRUCT CAST-IN-PLACE CATCH BASIN PER STRUCTURAL DETAILS.
8	CONSTRUCT 15" REINFORCED CONCRETE PIPE, CLASS 4. TRENCHING AND BEDDING PER LACDPW 3080-3, CASE 3.



KEY MAP

250' 125' 0 250' 500'
1" = 250'



3' 2' 1' 0 3' 6'
VERTICAL SCALE 1"=3'

30' 15' 0 30' 60'
HORIZONTAL SCALE 1"=30'

60% - PRELIMINARY NOT FOR CONSTRUCTION

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Black & Veatch Corporation
Los Angeles, California

DRAWN BY C. DORSET
DESIGNED BY J. HEALY
CHECKED BY K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: OUTFLOW LINE #2 PLAN AND PROFILE (1 OF 2)

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET C-11

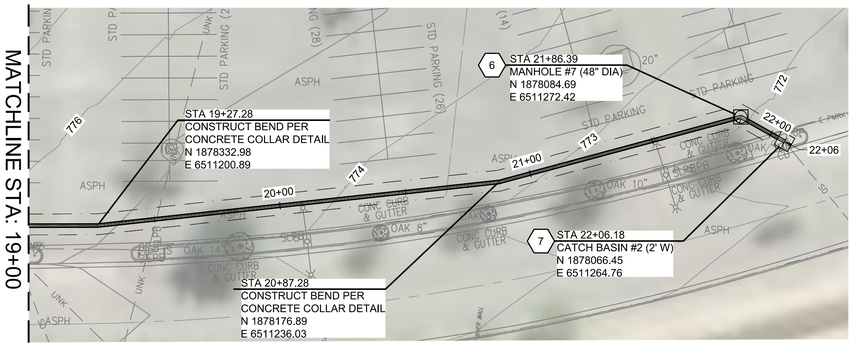
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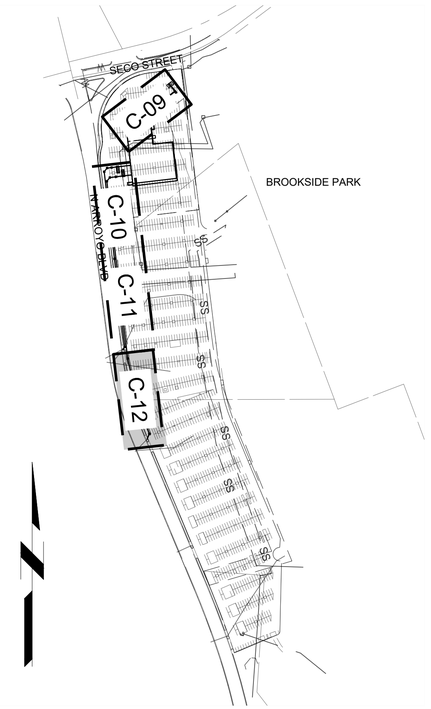
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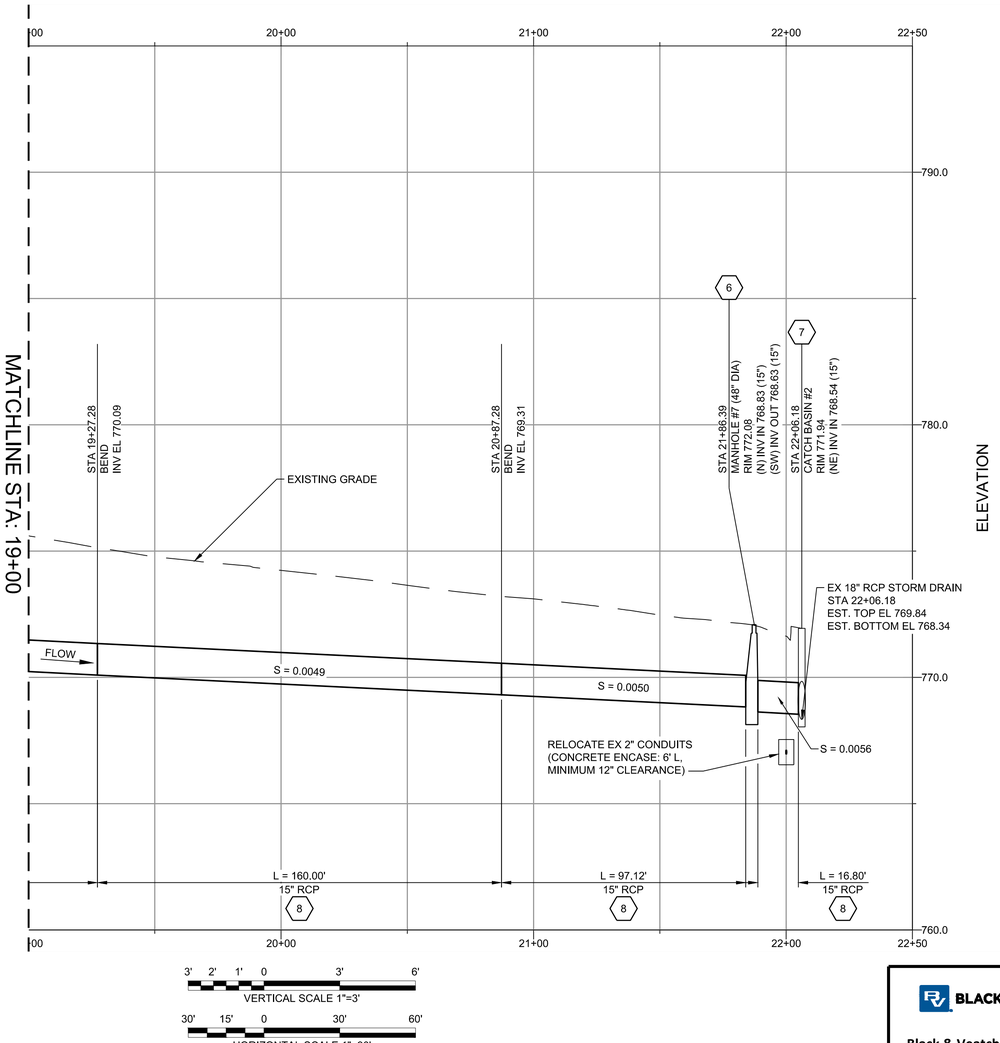
CONSTRUCTION NOTES

1	CONSTRUCT SUBSURFACE INFILTRATION GALLERY. INSTALLATION AND SPECIFICATIONS PER MANUFACTURER. SEE SHEETS C-20 THROUGH C-24.
2	NOT USED
3	CONSTRUCT MANHOLE PER SPPWC 321-2.
4	CONSTRUCT CARTRIDGE FILTER PER MANUFACTURER SPECIFICATIONS. TREATMENT FLOW = 8.36 CFS.
5	CONSTRUCT SAMPLING MANHOLE WITH FLOW METER PER SHEET C-17.
6	CONSTRUCT SHALLOW MANHOLE PER LACDPW 2002-1.
7	SEE DEMO PLAN CATCH BASIN #2. CONSTRUCT CAST-IN-PLACE CATCH BASIN PER STRUCTURAL DETAILS.
8	CONSTRUCT 15" REINFORCED CONCRETE PIPE, CLASS 4. TRENCHING AND BEDDING PER LACDPW 3080-3, CASE 3.



KEY MAP

250' 125' 0 250' 500'
1"=250'



60% - PRELIMINARY NOT FOR CONSTRUCTION

Black & Veatch Corporation
Los Angeles, California

DRAWN BY	C. DORSET
DESIGNED BY	J. HEALY
CHECKED BY	K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: OUTFLOW LINE #2 PLAN AND PROFILE (2 OF 2)

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET C-12

17 OF 70

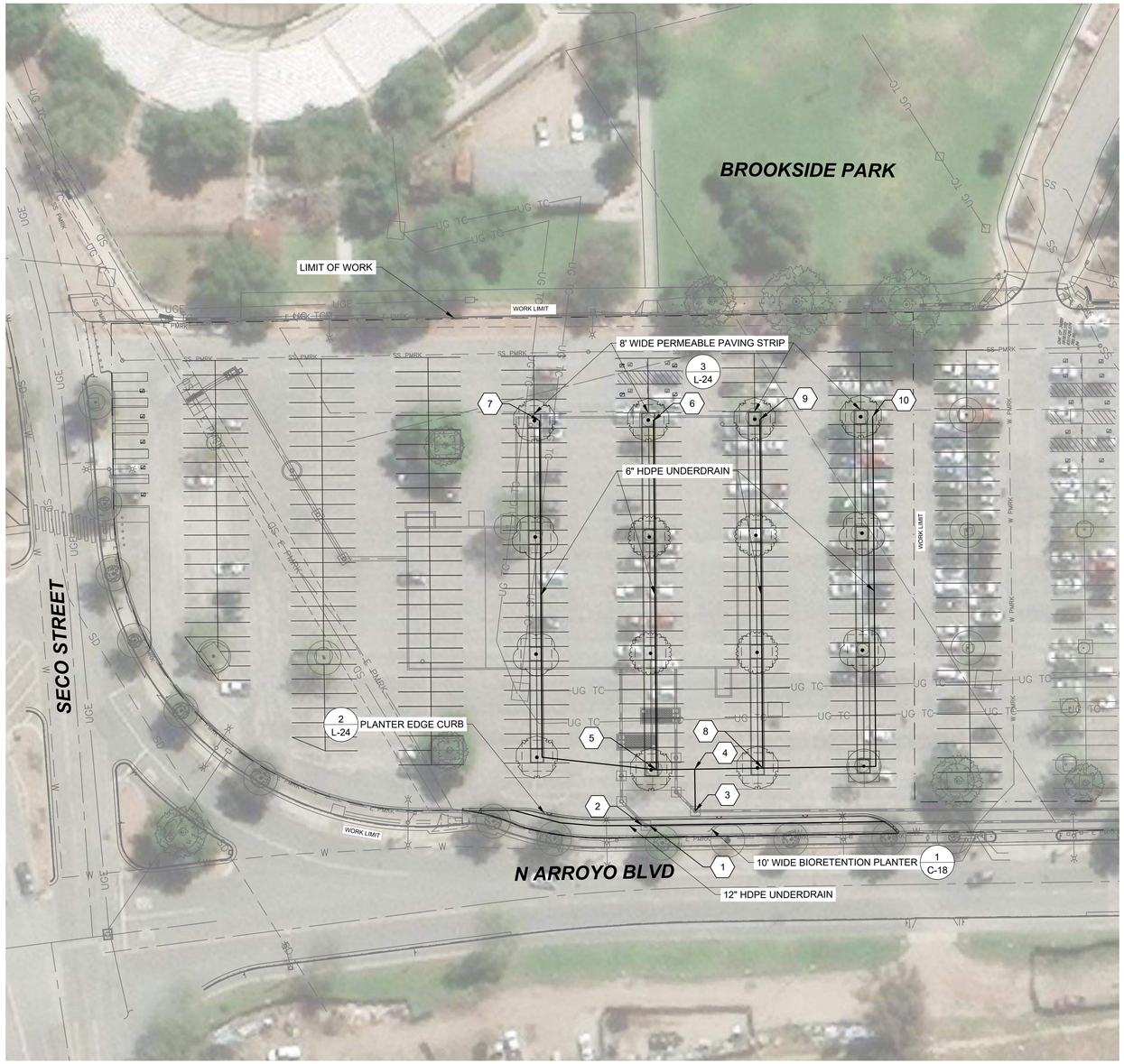
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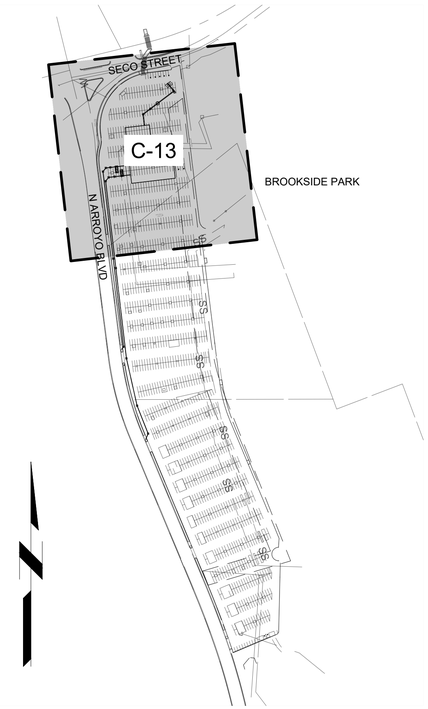
22X34



40' 20' 0 40' 80'

1"=40'

CONSTRUCTION NOTES	
1	CONNECT 12" UNDERDRAIN TO MH 4, FL 780.08. INSTALL 140 LF 12" PERFORATED HDPE UNDERDRAIN SOUTH @ MIN. 0.5%. INSTALL INLINE DRAINS AT 25' O.C. PER CONSTRUCTION DETAILS.
2	CONNECT 12" UNDERDRAIN TO MH 4, FL 781.96. INSTALL 85 LF 12" PERFORATED HDPE UNDERDRAIN NORTH @ MIN. 0.5%. INSTALL INLINE DRAINS AT 25' O.C. PER CONSTRUCTION DETAILS.
3	CONNECT 12" HDPE PIPE TO MH 5, FL 781.48. INSTALL 19 LF 12" HDPE PIPE EAST @ 0.8% TO NOTE 4.
4	INSTALL 8X8X12 TEE, FL 781.63. INSTALL CLEANOUT. INSTALL 23 LF 8" HDPE PIPE NORTH @ 1.7% TO NOTE 5. INSTALL 40 LF 8" HDPE PIPE SOUTH @ 0.8% TO NOTE 8.
5	INSTALL 6X8X6 TEE, FL 781.02. INSTALL CLEANOUT. INSTALL 211 LF PERFORATED 6" HDPE PIPE EAST @ 1.7% TO NOTE 6. INSTALL 271 LF PERFORATED 6" HDPE PIPE NORTH AND THEN EAST @ 1.6% TO NOTE 7.
6	INSTALL CLEANOUT
7	INSTALL CLEANOUT
8	INSTALL 6X8X6 TEE, FL 781.95. INSTALL CLEANOUT. INSTALL 211 LF PERFORATED 6" HDPE PIPE EAST @ 1.3% TO NOTE 9. INSTALL 272 LF PERFORATED 6" HDPE PIPE SOUTH AND THEN EAST @ 0.8% TO NOTE 10.
9	INSTALL CLEANOUT
10	INSTALL CLEANOUT



KEY MAP

250' 125' 0 250' 500'

1"=250'

LEGEND

(#/C-#) DETAIL AND SHEET NUMBER CALLOUT

LIMIT OF WORK

60% - PRELIMINARY NOT FOR CONSTRUCTION

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Los Angeles, California

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C. DORSET	J. HEALY	K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: LID STORM SEWER PLAN

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET: C-13

18 OF 70

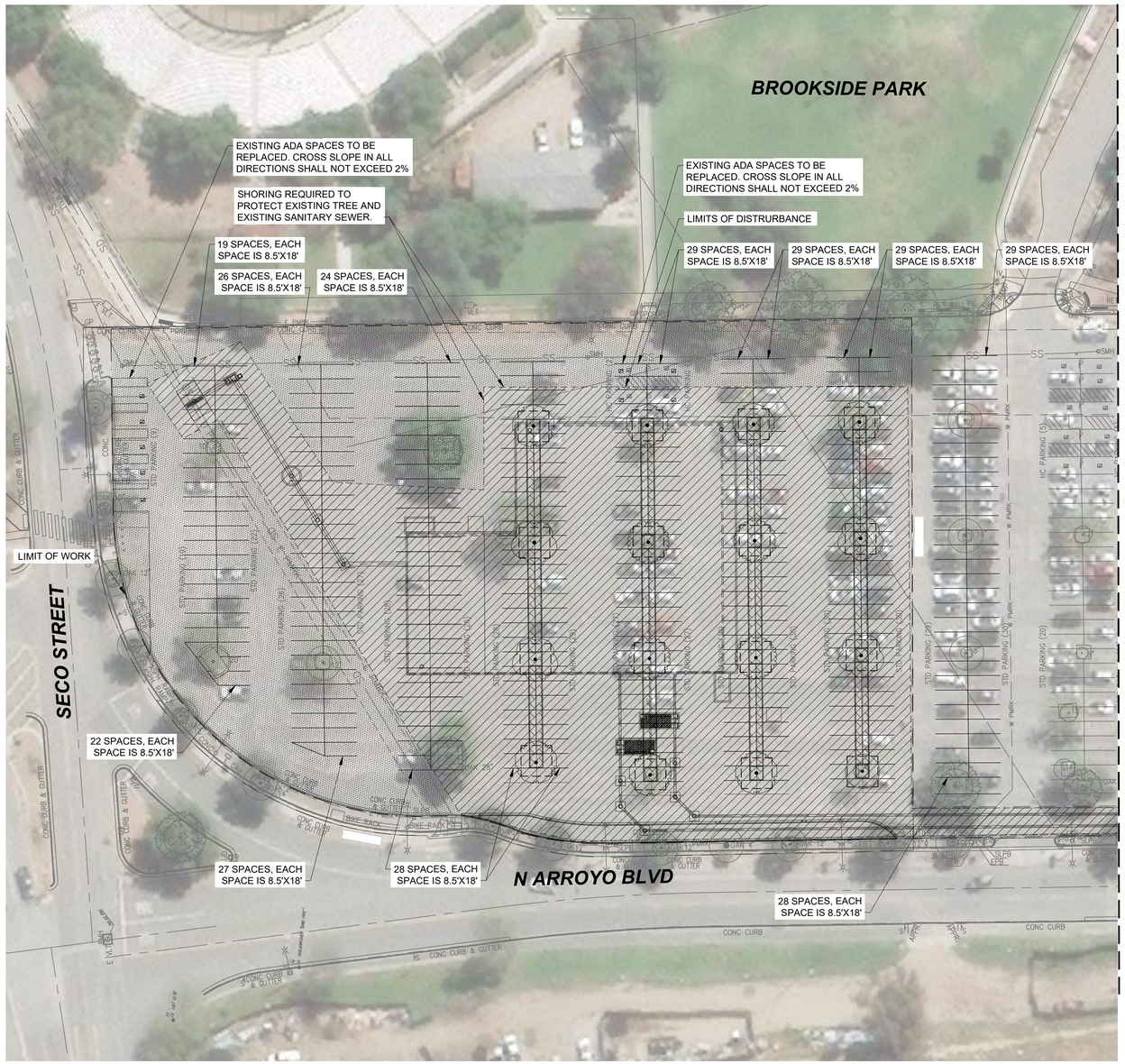
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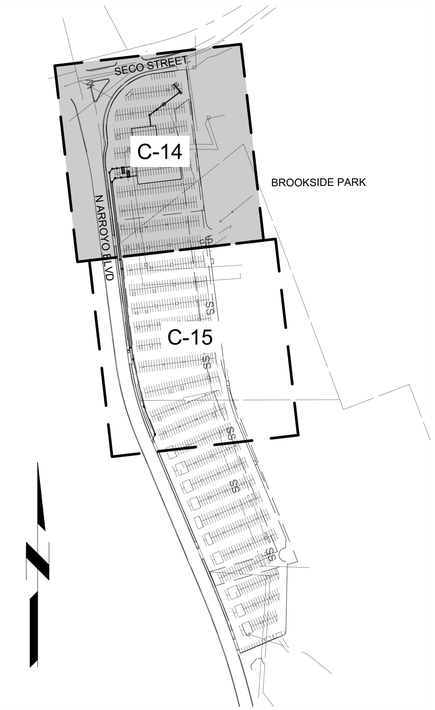
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22X34



MATCHLINE SEE SHEET C-15



KEY MAP

250' 125' 0 250' 500'

1"=250'

LEGEND

- PAVEMENT FULL SECTION DEMOLITION AND REPLACEMENT
- PAVEMENT MILL AND OVERLAY
- PAVERS

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Los Angeles, California

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DESIGNED BY	J. HEALY
CHECKED BY	K. LEWIS

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE PAVEMENT RESTORATION & MARKING PLAN (1 OF 2)

SCALE AS NOTED

ACCOUNT NUMBER 420977

SHEET C-14

19 OF 70

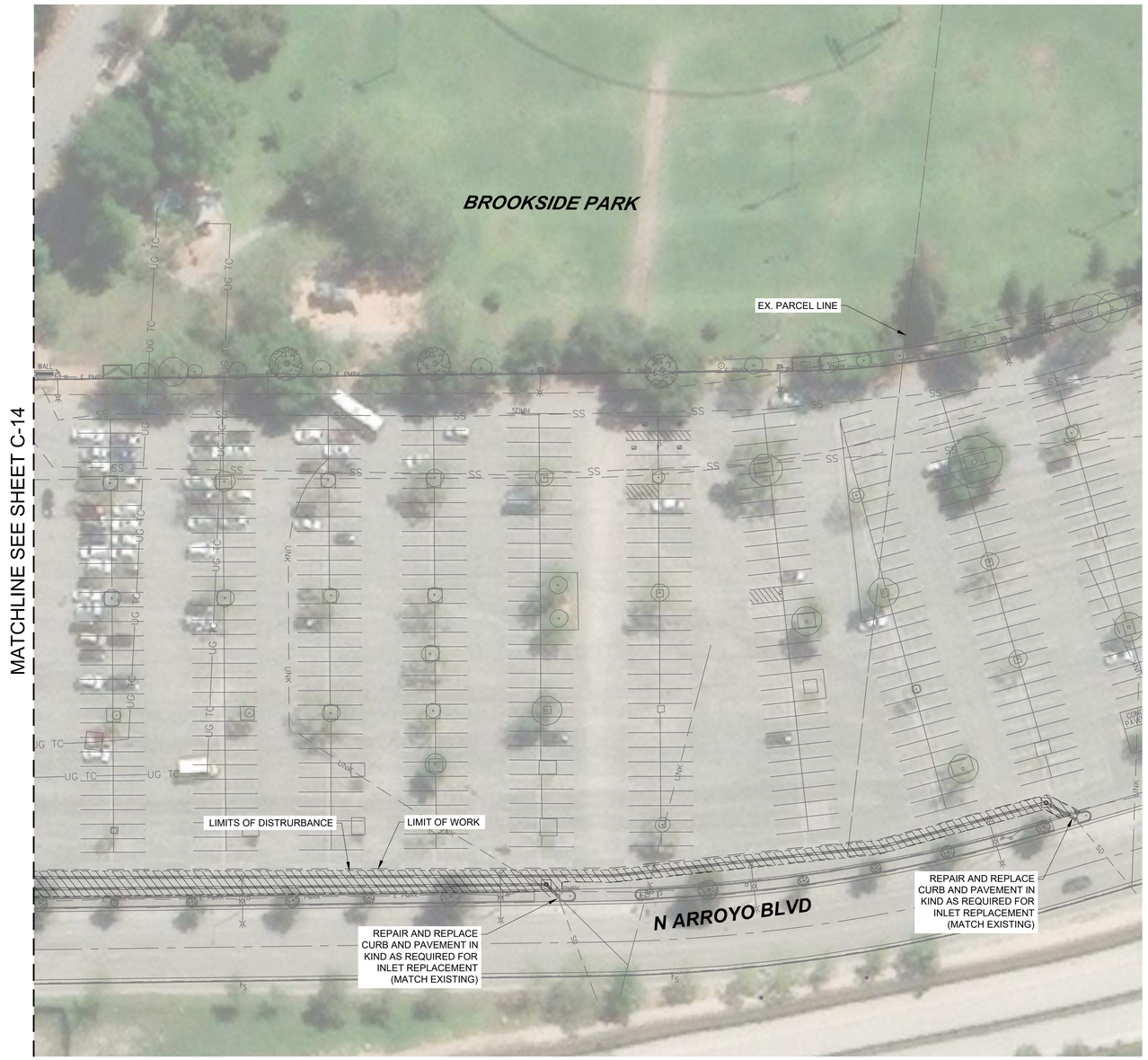
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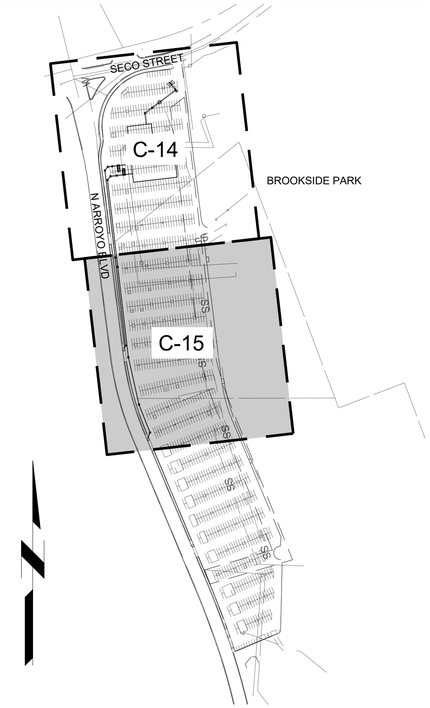
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22X34





KEY MAP

250' 125' 0 250' 500'

1"=250'

LEGEND

PAVEMENT FULL SECTION DEMOLITION AND REPLACEMENT

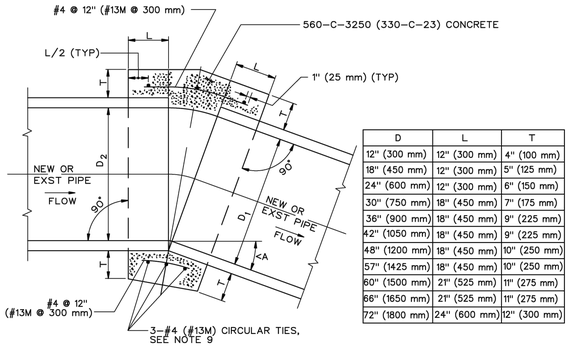
60% - PRELIMINARY NOT FOR CONSTRUCTION

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		MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED	BROOKSIDE PARK STORMWATER CAPTURE PROJECT
			----					SHEET TITLE PAVEMENT RESTORATION & MARKING PLAN (2 OF 2)
								SCALE AS NOTED / ACCOUNT NUMBER 420977
								SHEET C-15 / 20 OF 70 / DWG. NO. 6869

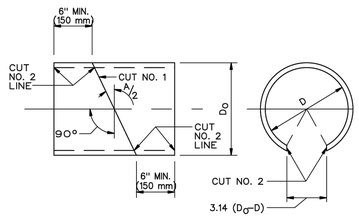
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Date: November 4, 2025 C:\DOCSACCDOCS\BLACK & VEATCH CORP\420977 - BROOKSIDE PARK SWC PROJECT\PROJECT FILES\5.0 DESIGN FILES_BV\5.0.5 CIVIL 3D\C-15.DWG

22X34



D	L	T
12" (300 mm)	12" (300 mm)	4" (100 mm)
18" (450 mm)	12" (300 mm)	5" (125 mm)
24" (600 mm)	12" (300 mm)	6" (150 mm)
30" (750 mm)	18" (450 mm)	7" (175 mm)
36" (900 mm)	18" (450 mm)	9" (225 mm)
42" (1050 mm)	18" (450 mm)	9" (225 mm)
48" (1200 mm)	18" (450 mm)	10" (250 mm)
57" (1425 mm)	18" (450 mm)	10" (250 mm)
60" (1500 mm)	21" (525 mm)	11" (275 mm)
66" (1650 mm)	21" (525 mm)	11" (275 mm)
72" (1800 mm)	24" (600 mm)	12" (300 mm)



DETAIL "A" (SEE NOTE 10)
SONO-TUBE, OR EQUAL, INTERIOR FORM

CUT NO. 1: SAW THE TUBE AT AN ANGLE OF A/2 WITH THE TRANSVERSE PLANE. REVERSE ONE SECTION AND TAPE BOTH SECTIONS TOGETHER FORMING THE DEFLECTION ANGLE A.
CUT NO. 2: SAW THE TUBE LONGITUDINALLY REMOVING A STRIP 3.14 (D-D) WIDE ON THE SIDE OPPOSITE THE OPEN JOINT. BEND THE ENDS OF THE CUT TOGETHER AND INSERT THE TUBE IN THE PIPE.



DETAIL "B"
TYPICAL JOINT FOR
REINFORCED CONCRETE PIPE

NOTES

1. A CONCRETE COLLAR IS REQUIRED WHERE THE CHANGE IN GRADE EXCEEDS 10%.
2. FOR CURVE JOINTS (SEE DETAIL B, SHEET 1)
   IF THE EXTREME ENDS OF THE PIPE LEAVE A CLEAR SPACE THAT IS GREATER THAN 1" (25 mm), BUT IS LESS THAN 3" (75 mm) A CONCRETE COVER IS REQUIRED IN ACCORDANCE WITH SSPWC 306-7.3.2.1.
   IF THE EXTREME ENDS OF THE PIPE LEAVE A CLEAR SPACE THAT IS EQUAL TO OR GREATER THAN 3" (75 mm), BUT LESS THAN 6" (150 mm), A CONCRETE COLLAR IS REQUIRED. IF THE CLEAR SPACE IS 6" (150 mm) OR GREATER, A TRANSITION STRUCTURE IS REQUIRED.
3. CONCRETE COLLAR SHALL NOT BE USED FOR A SIZE CHANGE ON THE MAIN LINE.
4. CONNECTOR PIPES
   A. WHERE PIPES OF DIFFERENT DIAMETERS ARE JOINED WITH A CONCRETE COLLAR, L AND T SHALL BE THOSE OF THE LARGER PIPE. D=D1 OR D2 WHICHEVER IS GREATER.
   B. WHEN D1 IS EQUAL TO OR LESS THAN D2 JOIN INVERTS AND WHEN D1 IS GREATER THAN D2 JOIN SOFFITS.
5. FOR PIPE LARGER THAN 72" (1800 mm) SPECIAL COLLAR DETAILS ARE REQUIRED.
6. FOR PIPE SIZE NOT LISTED USE NEXT SIZE LARGER.
7. REINFORCEMENT SHALL CONFORM TO ASTM A 615 (A 615 M) GRADE 40 (300).
8. WHERE REINFORCING IS REQUIRED THE DIAMETER OF THE CIRCULAR TIES SHALL BE D+(2X WALL THICKNESS) + T.
9. REINFORCING SHALL BE USED WHERE THE PIPE DIAMETER IS GREATER THAN 21" (525 mm) AND ON ALL PIPES WHERE THE SPACES BETWEEN THE EXTREME OUTER ENDS IS 3" (75 mm) OR LARGER.

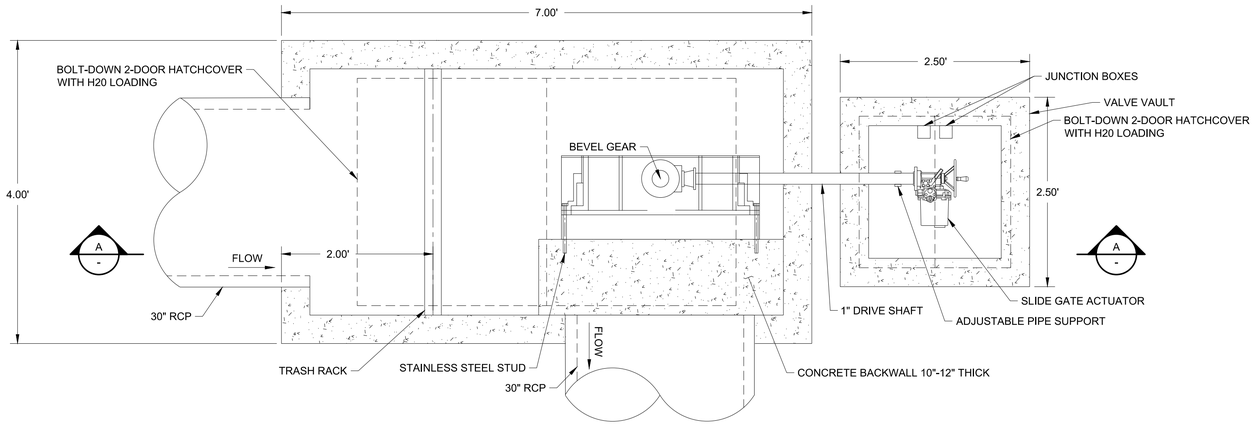
CIRCULAR TIES:

PIPE DIAMETER	NO. OF CIRCULAR TIES
21" (525 mm) OR LESS	3
24" (600 mm) TO 30" (750 mm)	3
33" (825 mm) TO 57" (1425 mm)	4
60" (1500 mm) TO 72" (1800 mm)	5

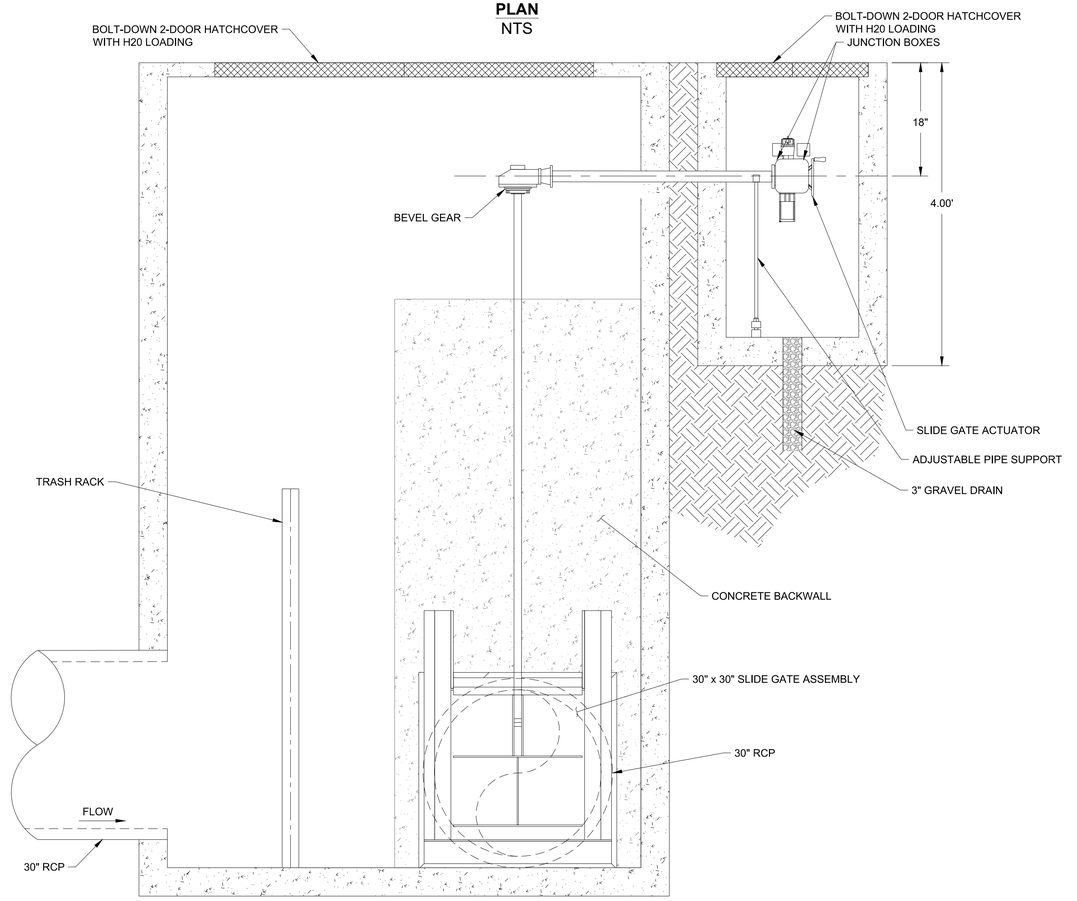
WHERE THE SPACE BETWEEN PIPE ENDS EXCEEDS 3" (75 mm), THE NUMBER OF CIRCULAR TIES SHALL BE INCREASED TO MAINTAIN AN APPROXIMATE SPACING OF 6" (150 mm) O.C.

10. WHERE THE PIPE IS 21" (525 mm) OR LESS IN DIAMETER AN INTERIOR FORM OF UNSEALED SONO-TUBE OR EQUAL SHALL BE USED TO PROVIDE A SMOOTH INTERIOR JOINT. THE PAPER FORM MAY BE LEFT IN PLACE (SEE DETAIL A). WHEN THE PIPE IS 24" (600 mm) OR LARGER A REMOVABLE INTERIOR FORM SHALL BE USED OR THE INTERIOR JOINT SHALL BE COMPLETELY FILLED WITH MORTAR AND NEATLY POINTED.

1 C-16 CONCRETE COLLAR DETAIL
NOT TO SCALE



PLAN
NTS



SECTION A-A
NTS

2 C-16 ACTUATED SLIDE GATE VAULT DETAIL
NOT TO SCALE

60% - PRELIMINARY NOT FOR CONSTRUCTION

Black & Veatch Corporation
Los Angeles, California

DRAWN BY	C. DORSET
DESIGNED BY	J. HEALY
CHECKED BY	K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: DETAILS - 1

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET: C-16

21 OF 70

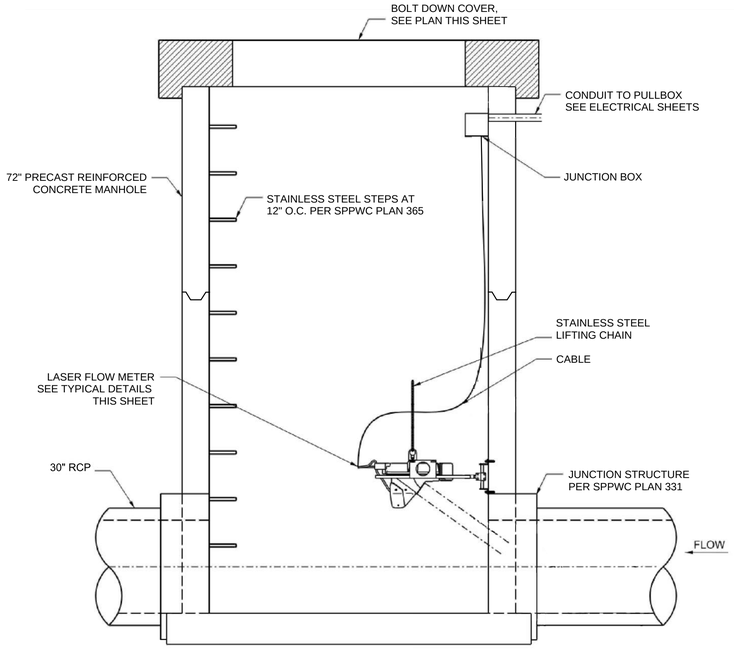
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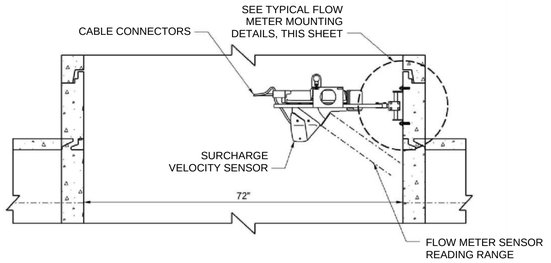
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Date: March 10, 2026
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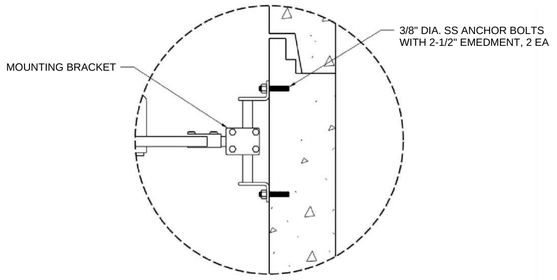
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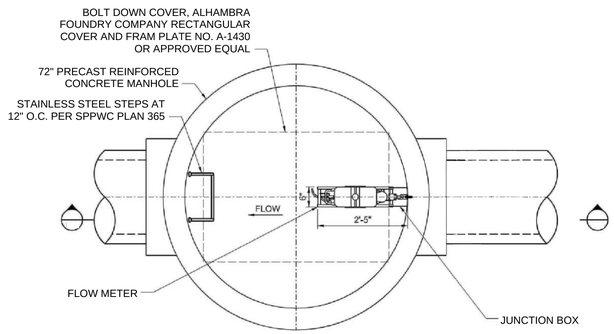
SECTION VIEW



TYPICAL FLOW METER
SENSOR INSTALLATION DETAIL



TYPICAL
FLOW METER MOUNTING DETAIL



PLAN VIEW

SAMPLING MANHOLE WITH FLOW METER DETAIL
NOT TO SCALE

60% - PRELIMINARY NOT FOR CONSTRUCTION

BLACK & VEATCH
Black & Veatch Corporation
Los Angeles, California

DRAWN BY
C. DORSET

DESIGNED BY
J. HEALY

CHECKED BY
K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: DETAILS - 2

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET: C-17

22 OF 70

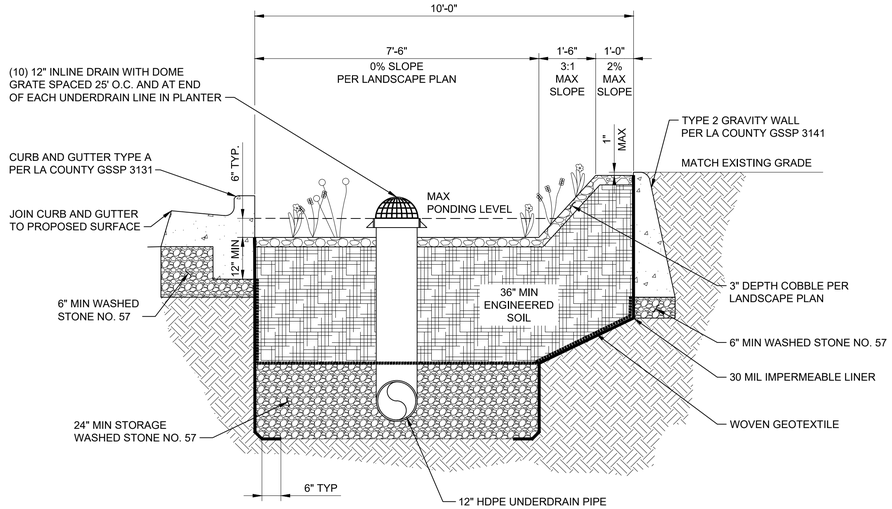
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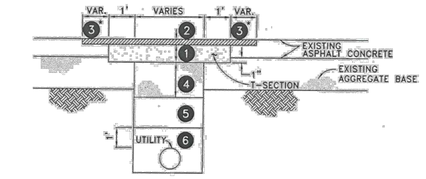
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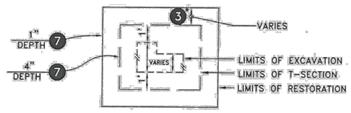
NOTES:

1. TOP OF GRAVITY WALL TO MATCH LONGITUDINAL SLOPE OF ADJACENT SURFACE AND HAVE 18 INCH MAX DEPTH TO DEEPEST POINT OF PLANTER BED SURFACE.
2. CURB EXTENSIONS WITH INFILTRATION COMPONENT SHALL NOT BE USED IF STREET LONGITUDINAL SLOPE EXCEEDS 15 PERCENT.
3. ALL CONCRETE TO BE CLASS 520-C-2500 PORTLAND CEMENT CONCRETE.
4. CURB WALLS, END WALLS, AND TRANSVERSE BRACE WALLS SHALL EACH BE POURED MONOLITHIC. JOINTS BETWEEN WALLS SHALL BE PER SSPWC SECTION 303-1.9.7.
5. ALL CURB, BRACE, AND END WALLS TO HAVE 3/4 -INCH RADIUS ROUNDED CORNERS AT TOP EDGES.
6. EXPANSION JOINTS TO BE APPROVED WITH POLYSTYRENE JOINT FILLER AND TWO-PART POLYURETHANE SEALANT.
7. GEOTEXTILE FABRIC TO BE IN ACCORDANCE WITH SSPWC SECTION 300-8.
8. CEMENT GROUT TO CONFORM TO SSPWC SECTION 202-3.2.2.
9. PLACEMENT OF GRAVEL TO BE SELF COMPACTING, COMPACT TOP SOIL TO 80-85 PERCENT RELATIVE COMPACTION, TOP SOIL TO BE PLACED IN MINIMUM OF TWO EQUAL LIFTS, IN ORDER TO MINIMIZE COMPACTION, AND EXCESSIVE SETTLEMENT.
10. MINIMUM UTILITY SETBACKS AND PROTECTION MEASURES MUST CONFORM TO CURRENT SPPWC STANDARDS. COORDINATE WITH THE CITY OF PASADENA IN THE EVENT OF UTILITY CROSSINGS AND UTILITY CONFLICTS.
11. WOVEN GEOTEXTILE TO BE TYPE 200WM PER SSPWC SECTION 213 AND PLACEMENT TO FOLLOW SECTION 300-8.

1 / C-18 BIORETENTION PLANTER DETAIL
NOT TO SCALE



SECTION



PLAN

1. CONSTRUCT NEW ASPHALT CONCRETE BASE COURSE, B-PG 64-10 1" THICKER THAN THE EXISTING SECTION.
2. CONSTRUCT NEW ASPHALT CONCRETE WEARING COURSE:

TYPE OF STREETS	DEPTH	ASPHALT CONCRETE
~~LOCAL RESIDENTIAL STREETS~~	~~1"~~	~~D2-PG 64-10~~
~~STREET WITH RUBBERIZED ASPHALT CONCRETE (RAC)~~	~~1"~~	~~D2-PG 64-10~~
COLLECTOR/MAJOR STREETS	1 3/4"	C2-PG 64-10

1 & 2 THE TOTAL THICKNESS OF 1 + 2 SHALL BE 4" MINIMUM FOR LOCAL OR COLLECTOR STREETS AND 6" MINIMUM FOR MAJOR STREETS.

*MORATORIUM STREETS ONLY

STANDARD TRENCH REQUIREMENTS

MAXIMUM LENGTH OF OPEN TRENCH IS 300 FEET OR WHAT CAN BE INSTALLED IN ONE WORKING DAY.

A MINIMUM 2 INCHES OF TEMPORARY PAVING IS REQUIRED BEFORE THE AREA CAN BE MADE AVAILABLE TO TRAFFIC.

TEMPORARY PLATE BRIDGING MAY BE PERMITTED SUBJECT TO APPROVAL BY THE CITY ENGINEER.

ONE SACK CEMENT SAND SLURRY IS PREFERABLE AS TRENCH BACKFILL MATERIAL.

NATIVE BACKFILL

IF NATIVE MATERIALS ARE TO BE USED FOR TRENCH BACKFILL, CONTINUOUS BACKFILL INSPECTION IS REQUIRED. IN ADDITION, COMPACTION TESTING AND REPORTS SHALL BE CERTIFIED BY A REGISTERED CALIFORNIA CIVIL OR GEOTECHNICAL ENGINEER.

- BACKFILL LIFTS AND RELATIVE COMPACTION PER GREENBOOK SECTION 306-12.3.
- TESTING WILL OCCUR AT MAXIMUM 250-FOOT INTERVALS (LOCATIONS TO BE DETERMINED BY CITY). ONE TEST IS REQUIRED PER EACH 4 FEET OF DEPTH OR FRACTION THEREOF AND WILL OCCUR AT THE MID-DEPTH OF EACH 4 FEET OF BACKFILL STARTING AT THE TOP OF THE INSTALLATION.
- COMPACTION REPORTS SHALL BE SUBMITTED TO THE INSPECTOR FOR REVIEW AND APPROVAL PRIOR TO PERMANENT PAVING.

TEMPORARY PLATE BRIDGING

UPON APPROVAL FROM THE CITY, TEMPORARY PLATE BRIDGING OF TRENCHES MAY BE PERMITTED SUBJECT TO THE FOLLOWING CRITERIA:

1. STEEL PLATE COVER FOR VEHICLE TRAFFIC REQUIRES PROPER TRENCH BRACING AND STEEL PLATES. TRENCHES LESS THAN 3 FEET WIDE REQUIRE A MINIMUM 1-INCH THICK STEEL PLATES; TRENCHES BETWEEN 3 AND 4 FEET WIDE REQUIRE A MINIMUM 1.25-INCH THICK STEEL PLATES.
2. FOR A SPAN GREATER THAN 4 FEET A STRUCTURAL DESIGN SHALL BE PREPARED BY A REGISTERED CIVIL ENGINEER AND APPROVED BY THE CITY.
3. STEEL PLATES SHALL BE SECURED WITH PINS AND SEATED WITH TEMPORARY ASPHALT. EMBEDMENT MAY BE REQUIRED BASED ON LOCAL CONDITIONS.
4. PLATE BRIDGING SHALL BE INSTALLED TO OPERATE WITH MINIMUM NOISE; NOT EXCEEDING ANY AMBIENT NOISE LEVEL BY 5 DECIBELS PER PASADENA MUNICIPAL CODE 9.36.050.
5. COVERS FOR NON-VEHICLE TRAFFIC MAY BE 1/4-INCH THICK STEEL PLATES, 2-INCH THICK PLANKS, OR 3/4-INCH THICK PLYWOOD.

LOCATIONS OUTSIDE OF THE PUBLIC ROW

PRIOR TO THE END OF EACH WORK DAY AND WHENEVER WORKERS ARE NOT WITHIN VISUAL SIGHT OF THE EXCAVATION, THE CONTRACTOR SHALL BACKFILL THE EXCAVATION, ERECT AND MAINTAIN FENCES AROUND THE EXCAVATION OR PLACE COVERS PER STANDARD PLAN S-426. THESE ARE MINIMUM ACCEPTABLE MEASURES ONLY AND COMPLIANCE WITH THIS STANDARD DOES NOT RELIEVE THE CONTRACTOR OF HIS OBLIGATION TO PROTECT THE PUBLIC BY ALL NECESSARY MEANS.

3 A. FOR EMERGENCY EXCAVATIONS ON MORATORIUM STREETS (STREETS RE-PAVED WITHIN THE LAST 5 YEARS): THE LIMITS OF THE RESTORATION SHALL BE A RECTANGULAR AREA TO THE CENTERLINE ACROSS THE ENTIRE SUBJECT FRONTAGE EXTENDING A MINIMUM OF 1' BEYOND THE OUTER EDGE OF THE WIDEST PORTION OF THE T-SECTION. THE LIMITS SHALL BE SAWCUT AFTER BACKFILL OF TRENCH IS COMPLETED. THE EXISTING A.C. SHALL BE REMOVED TO A DEPTH EQUAL TO THE THICKNESS OF THE WEARING COURSE. REMOVAL BY COLD MILLING OR PNEUMATIC HAMMER IS ACCEPTABLE. IF THE REMOVALS ARE LESS THAN 5' APART OR LESS THAN 2' FROM A CONCRETE CURB, GUTTER OR CROSS GUTTER, THE RESTORATION SHALL BE CONTINUOUS BETWEEN EXCAVATIONS AND/OR THE EDGE OF CONCRETE.
NOTE: POT HOLES OR EXCAVATIONS THAT ARE 2'x3' OR LESS IN AREA ARE NOT SUBJECT TO THE T-SECTION AND THIS REQUIREMENT.

B. FOR OTHER EXCAVATIONS ON MORATORIUM STREETS, EXACT LIMITS OF COLD MILLING AND RE-PAVING SHALL BE DETERMINED BY THE ENGINEER.

4 CONSTRUCT NEW CRUSHED AGGREGATE BASE TO MATCH EXISTING THICKNESS OR 4" THICKNESS, WHICHEVER IS GREATER. COMPACT TO 95% OF RELATIVE DENSITY. NO AGGREGATE BASE REQUIRED IF CEMENT SLURRY IS USED.

5 TRENCH BACKFILL SHALL BE EITHER: A. ONE SACK CEMENT SAND SLURRY; OR
B. NATIVE MATERIAL OR IMPORTED SOIL (IF NATIVE IS UNSUITABLE), WITH COMPACTION TESTS

6 PIPE BEDDING AND PIPE ZONE BACKFILL PER GREENBOOK STANDARD SPECIFICATIONS

7 SAWCUTTING WILL BE REQUIRED AROUND THE PERIMETER OF THE FINAL EDGE OF ALL EXCAVATIONS TO PROVIDE CLEAN, STRAIGHT, VERTICAL SIDES.

8 T-SECTIONS ARE 1' WIDE AS MEASURED FROM THE FINAL EDGE OF TRENCH (AFTER SLUFFING.)

9 ALL TRAFFIC STRIPING AND/OR MARKINGS REMOVED BY RESTORATION WORK SHALL BE REPLACED.

10 ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (GREEN BOOK), LATEST EDITION, INCLUDING SUPPLEMENTS, AND THE CITY OF PASADENA SUPPLEMENTS AND MODIFICATIONS" TO THE ABOVE (BLUE BOOK).

2 / C-18 RESTORATION OF ASPHALT STREET EXCAVATIONS
NOT TO SCALE

60% - PRELIMINARY NOT FOR CONSTRUCTION

BLACK & VEATCH
Black & Veatch Corporation
Los Angeles, California

DRAWN BY C. DORSET
DESIGNED BY J. HEALY
CHECKED BY K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: DETAILS - 3

SCALE: AS NOTED

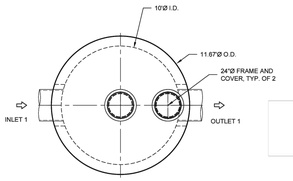
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SHEET C-18

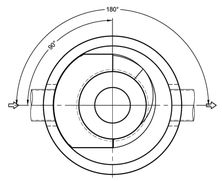
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DWG. NO. 6869

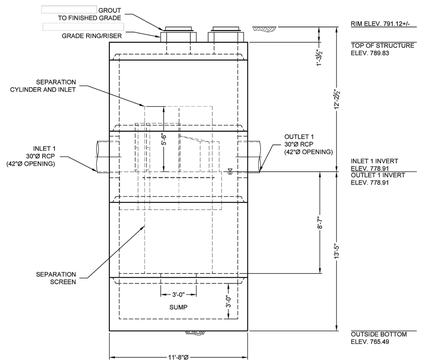
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22X34



PLAN VIEW



PLAN VIEW FOR PIPE ORIENTATION
TOP SLAB NOT SHOWN

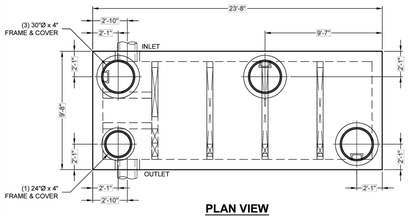


ELEVATION VIEW

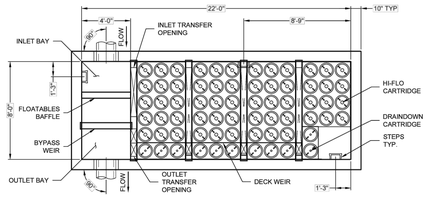
GENERAL NOTES

1. PRE-TREATMENT UNIT DETAILS INCLUDED ON THIS SHEET HAVE BEEN PREPARED BY CONTECH ENGINEERED SOLUTIONS. PRE-TREATMENT UNIT SHALL BE CONTECH INLINE CDS MODEL CDS5678-10-C OR EQUAL. SEE SPECIFICATION SECTION 33 44 20.
2. PRE-TREATMENT UNIT DESIGN HAS BEEN DEVELOPED USING CONTECH ENGINEERED SOLUTIONS MODEL CDS5678-10-C AS DESIGN BASIS. IF CONTRACTOR PROVIDES ALTERNATIVE EQUIPMENT, CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALTERNATIVE EQUIPMENT COMPLIES WITH SPECIFICATION SECTION 33 44 20 AND IS COORDINATED WITH FINISHED GRADE, INVERT ELEVATIONS OF INLET AND OUTLET PIPING, AND ALL INTERFACING COMPONENTS OF THE DESIGN.

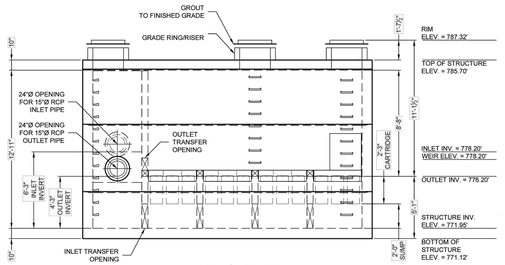
1 C-19 PRE-TREATMENT UNIT DETAIL
NOT TO SCALE



PLAN VIEW



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)

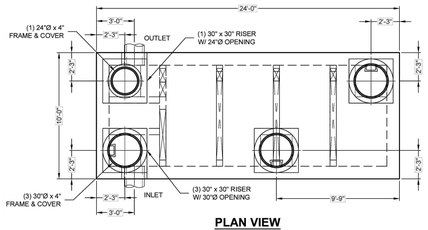


ELEVATION VIEW

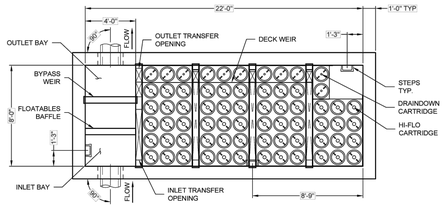
GENERAL NOTES

1. POST-TREATMENT FILTER DETAILS INCLUDED ON THIS SHEET HAVE BEEN PREPARED BY CONTECH ENGINEERED SOLUTIONS. POST-TREATMENT UNIT SHALL BE CONTECH JELLYFISH MODEL JFPD0822 OR EQUAL. SEE SPECIFICATION SECTION 33 44 21.
2. POST-TREATMENT FILTER DESIGN HAS BEEN DEVELOPED USING CONTECH ENGINEERED SOLUTIONS MODEL JFPD0822 (WITH 27" HI-FLO CARTRIDGE) AS DESIGN BASIS. IF CONTRACTOR PROVIDES ALTERNATIVE EQUIPMENT, CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALTERNATIVE EQUIPMENT COMPLIES WITH SPECIFICATION SECTION 33 44 21 AND IS COORDINATED WITH FINISHED GRADE, INVERT ELEVATIONS OF INLET AND OUTLET PIPING, AND ALL INTERFACING COMPONENTS OF THE DESIGN.

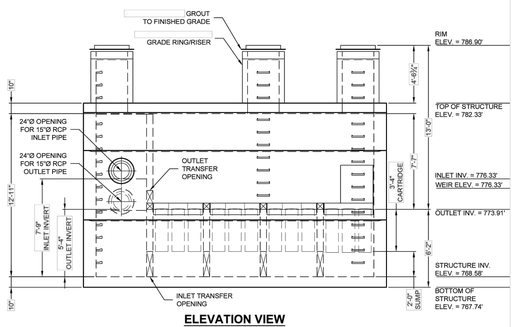
2 C-19 POST-TREATMENT FILTER #1 DETAIL
NOT TO SCALE



PLAN VIEW



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)



ELEVATION VIEW

GENERAL NOTES

1. POST-TREATMENT FILTER DETAILS INCLUDED ON THIS SHEET HAVE BEEN PREPARED BY CONTECH ENGINEERED SOLUTIONS. POST-TREATMENT UNIT SHALL BE CONTECH JELLYFISH MODEL JFPD0822 OR EQUAL. SEE SPECIFICATION SECTION 33 44 21.
2. POST-TREATMENT FILTER DESIGN HAS BEEN DEVELOPED USING CONTECH ENGINEERED SOLUTIONS MODEL JFPD0822 (WITH 40" HI-FLO CARTRIDGE) AS DESIGN BASIS. IF CONTRACTOR PROVIDES ALTERNATIVE EQUIPMENT, CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALTERNATIVE EQUIPMENT COMPLIES WITH SPECIFICATION SECTION 33 44 21 AND IS COORDINATED WITH FINISHED GRADE, INVERT ELEVATIONS OF INLET AND OUTLET PIPING, AND ALL INTERFACING COMPONENTS OF THE DESIGN.

3 C-19 POST-TREATMENT FILTER #2 DETAIL
NOT TO SCALE

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Black & Veatch Corporation
Los Angeles, California

DRAWN BY	DESIGNED BY	CHECKED BY
C. DORSET	J. HEALY	K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

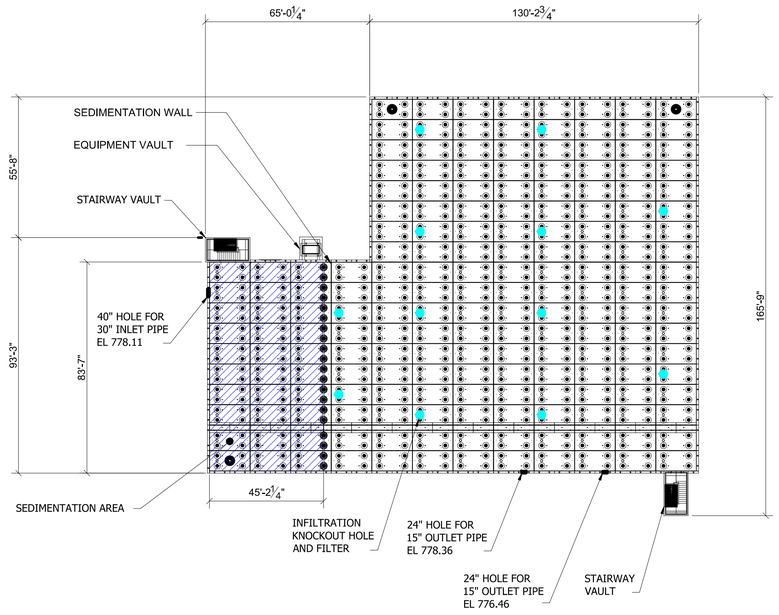
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SCALE: AS NOTED | ACCOUNT NUMBER: 420977

SHEET C-19 | 24 OF 70 | DWG. NO. 6869

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INFILTRATION GALLERY OVERVIEW (PLAN)



GENERAL NOTES

1. SUBSURFACE INFILTRATION GALLERY DETAILS INCLUDED ON THIS SHEET HAVE BEEN PREPARED BY PRECON PRODUCTS. SUBSURFACE INFILTRATION GALLERY SHALL BE A STORM PRISM EQ INFILTRATION SYSTEM MANUFACTURED BY PRECON PRODUCTS OR EQUAL. SEE SPECIFICATION SECTION 33 43 23.

2. SUBSURFACE INFILTRATION GALLERY DESIGN HAS BEEN DEVELOPED USING PRECON PRODUCTS STORM PRISM EQ INFILTRATION SYSTEM AS DESIGN BASIS. IF CONTRACTOR PROVIDES ALTERNATIVE EQUIPMENT, CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALTERNATIVE EQUIPMENT COMPLIES WITH SPECIFICATION SECTION 33 43 23 AND IS COORDINATED WITH FINISHED GRADE, INVERT ELEVATIONS OF INLET AND OUTLET PIPING, AND ALL INTERFACING COMPONENTS OF THE DESIGN.

60% - PRELIMINARY NOT FOR CONSTRUCTION

BLACK & VEATCH

Black & Veatch Corporation
Los Angeles, California

DRAWN BY C. DORSET
DESIGNED BY J. HEALY
CHECKED BY K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: DETAILS - 5

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

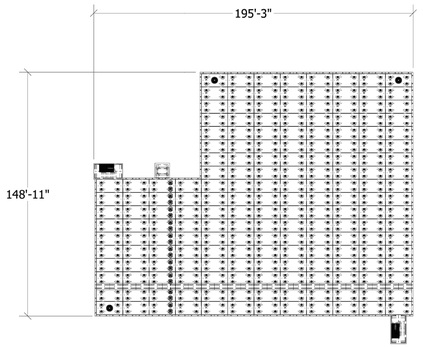
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25 OF 70

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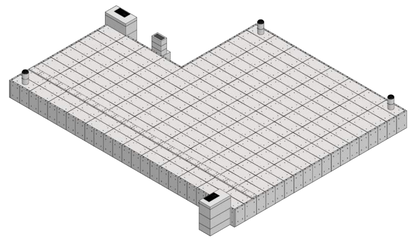
INFILTRATION GALLERY OVERVIEW (PLAN, PROFILE, ISOMETRIC)



PLAN VIEW
SCALE: 1/16"=1'-0" (1)



PROFILE VIEW
SCALE: 1/16"=1'-0" (2)



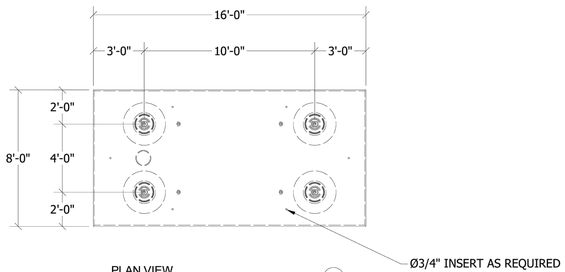
ISOMETRIC VIEW
SCALE: 1/16"=1'-0" (3)

NUMBER OF MODLES:	184	MODULE HEIGHT:	11'
NUMBER OF WALLS:	82	FREEBOARD HEIGHT:	12"

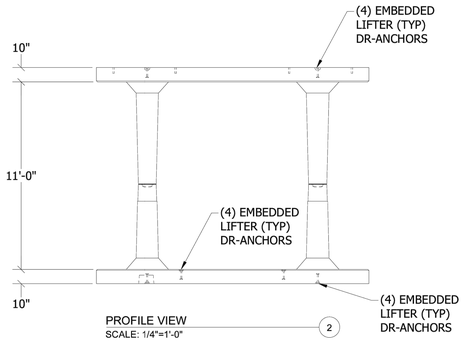
TOTAL VOLUME (CF)	**263,965**
STORAGE IN SYSTEM	**254,339**
STORAGE IN 12" ROCK	**9,626**
ACRE FEET	**6.060**
GALLONS	**1,974,595**

PART INFORMATION		
PART No.	QTY	APPROX. WEIGHT
STORMPRISM 5'-0" BASE	184	20,161 LBS
STORMPRISM 6'-0" TOP	184	20,868 LBS
WALLS	82	TBD
TOP EXT 4'-0"	24	6,005 LBS
BASE EXT 2'-0"	12	3,996 LBS

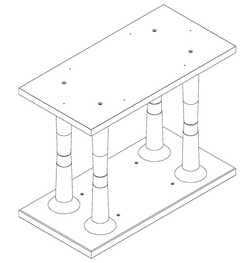
11'-0" UNIT DETAIL



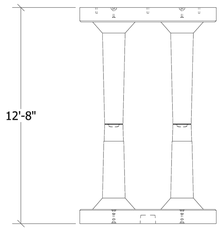
PLAN VIEW
SCALE: 1/4"=1'-0" (1)



PROFILE VIEW
SCALE: 1/4"=1'-0" (2)



ISOMETRIC VIEW
SCALE: 3/16"=1'-0" (4)

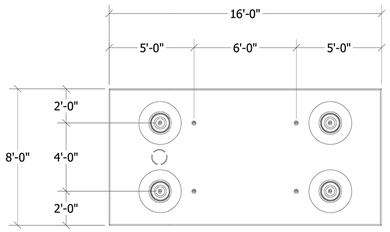


SIDE VIEW
SCALE: 1/4"=1'-0" (3)

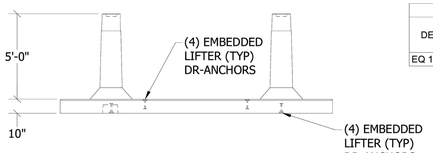
GENERAL NOTES

1. SUBSURFACE INFILTRATION GALLERY DETAILS INCLUDED ON THIS SHEET HAVE BEEN PREPARED BY PRECON PRODUCTS. SUBSURFACE INFILTRATION GALLERY SHALL BE A STORM PRISM EQ INFILTRATION SYSTEM MANUFACTURED BY PRECON PRODUCTS OR EQUAL. SEE SPECIFICATION SECTION 33 43 23.
2. SUBSURFACE INFILTRATION GALLERY DESIGN HAS BEEN DEVELOPED USING PRECON PRODUCTS STORM PRISM EQ INFILTRATION SYSTEM AS DESIGN BASIS. IF CONTRACTOR PROVIDES ALTERNATIVE EQUIPMENT, CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALTERNATIVE EQUIPMENT COMPLIES WITH SPECIFICATION SECTION 33 43 23 AND IS COORDINATED WITH FINISHED GRADE, INVERT ELEVATIONS OF INLET AND OUTLET PIPING, AND ALL INTERFACING COMPONENTS OF THE DESIGN.

STANDARD 11'-0" INFILTRATION BASE

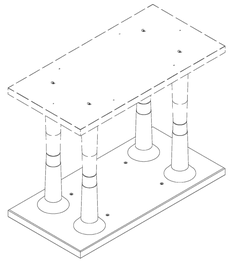


PLAN VIEW
SCALE: 1/4"=1'-0" (1)

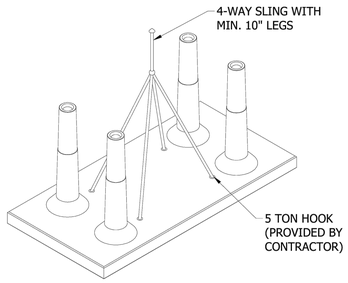


PROFILE VIEW
SCALE: 1/4"=1'-0" (2)

PART INFORMATION	
DESCRIPTION	APPROX. WEIGHT IN LBS
EQ 11'-0" BASE	20,161 LBS

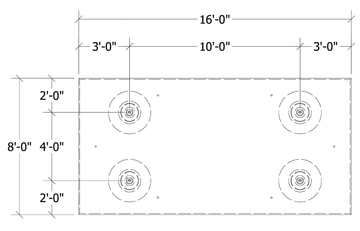


ISOMETRIC VIEW
SCALE: 3/16"=1'-0" (4)

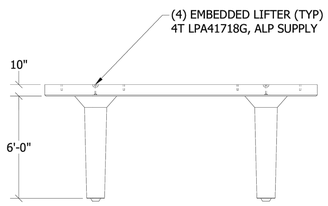


LIFTING DETAIL
SCALE: 1/4"=1'-0" (3)

STANDARD 11'-0" INFILTRATION TOP

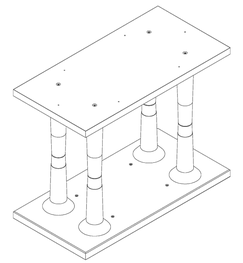


PLAN VIEW
SCALE: 1/4"=1'-0" (1)

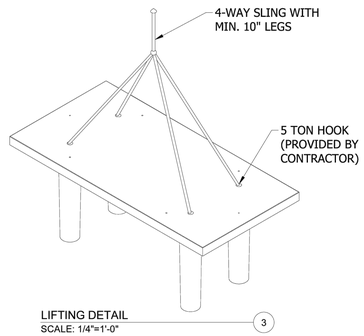


PROFILE VIEW
SCALE: 1/4"=1'-0" (2)

PART INFORMATION	
DESCRIPTION	APPROX. WEIGHT IN LBS
EQ 11'-0" TOP	20,868 LBS



ISOMETRIC VIEW
SCALE: 3/16"=1'-0" (4)



LIFTING DETAIL
SCALE: 1/4"=1'-0" (3)

60% - PRELIMINARY NOT FOR CONSTRUCTION

BLACK & VEATCH Black & Veatch Corporation Los Angeles, California	DRAWN BY C. DORSET	REVISIONS					
	DESIGNED BY J. HEALY	MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED
	CHECKED BY K. LEWIS		----				

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: DETAILS - 6

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

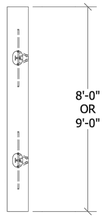
SHEET: C-21

26 OF 70

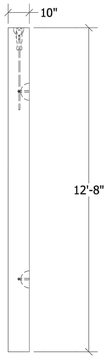
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FD11000
Date: November 4, 2025 C:\DC\ACCDOCS\BLACK & VEATCH CORP\420977 - BROOKSIDE PARK SWC PROJECT\PROJECT FILES\5.0 DESIGN FILES_BV\5.0.5 CIVIL 3D\C-21.DWG
22X34

STANDARD 12'-8" WALL

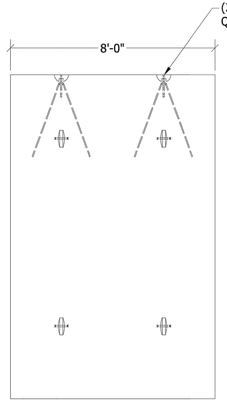


PLAN VIEW
SCALE: 3/8"=1'-0" (1)



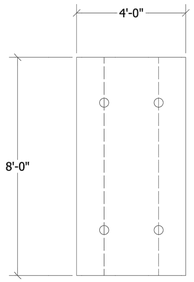
PROFILE VIEW
SCALE: 3/8"=1'-0" (2)

PART INFORMATION	
DESCRIPTION	APPROX. WEIGHT IN LBS
EXTERNAL WALLS 8'Wx 12'-8" T	12,660 LBS
EXTERNAL WALLS 9'Wx 12'-8" T	14,080 LBS

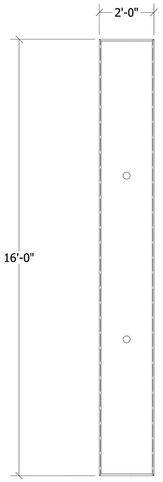


SIDE VIEW
SCALE: 3/8"=1'-0" (3)

EXTENSIONS TOP AND BASE

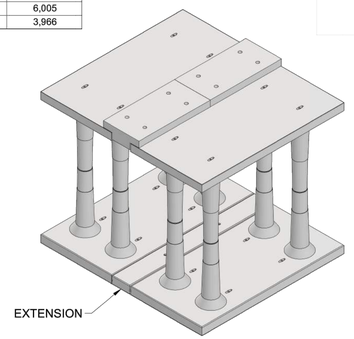


PLAN VIEW

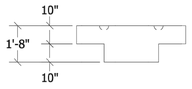


PLAN VIEW

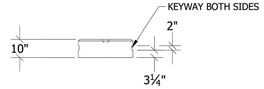
PART INFORMATION	
DESCRIPTION	APPROX. WEIGHT IN LBS
SPEQ-EXT-TOP	6,005
SPEQ-EXT-BASE	3,966



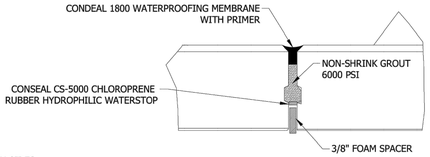
ISOMETRIC VIEW



PROFILE VIEW



PROFILE VIEW

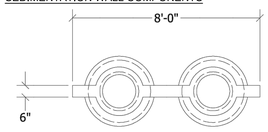


KEYWAY SEALING DETAIL

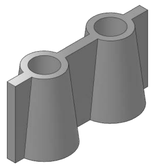
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SEDIMENTATION WALL COMPONENTS

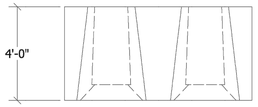


PLAN VIEW
8' STD PONY WALL

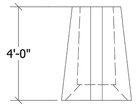


ISOMETRIC VIEW
8' STD PONY WALL

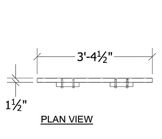
PART INFORMATION	
PART NUMBER	APPROX. WEIGHT IN LBS
8' STD PONY WALL	4,500
8' PONY WALL W/ JOINT FOR STOP BLOCK	4,335



PROFILE VIEW
8' STD PONY WALL

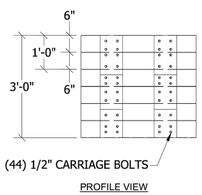


END VIEW
8' STD PONY WALL

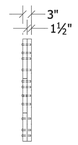


PLAN VIEW

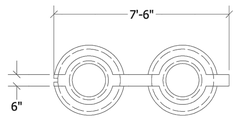




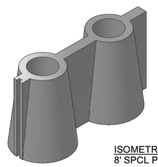
PROFILE VIEW



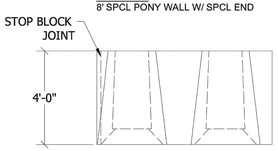
END VIEW



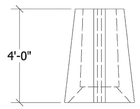
PLAN VIEW
8' SPCL PONY WALL W/ SPCL END



ISOMETRIC VIEW
8' SPCL PONY WALL
WITH JOINT FOR
STOP BLOCK

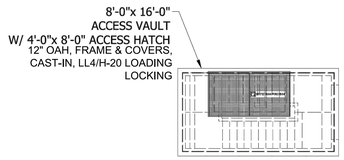


PROFILE VIEW
8' SPCL PONY WALL W/ SPCL END

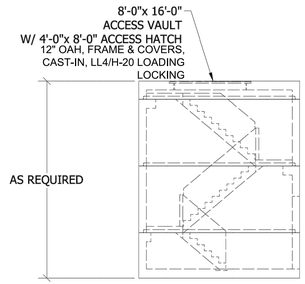


END VIEW
8' SPCL PONY WALL W/ SPCL END

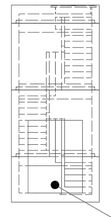
STAIRWAY VAULT



PLAN VIEW
SCALE: 3/16"=1'-0" (1)



PROFILE VIEW
SCALE: 3/16"=1'-0" (2)



SIDE VIEW
SCALE: 3/16"=1'-0" (3)

60% - PRELIMINARY NOT FOR CONSTRUCTION

BLACK & VEATCH Black & Veatch Corporation Los Angeles, California	DRAWN BY C. DORSET	REVISIONS					
	DESIGNED BY J. HEALY	MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED
	CHECKED BY K. LEWIS		----				

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: DETAILS - 7

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET: C-22

27 OF 70

DWG. NO.: 6869

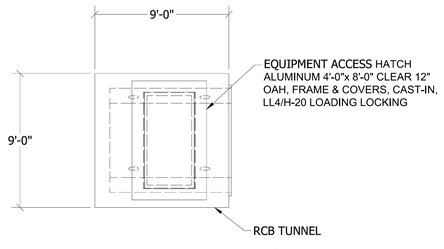
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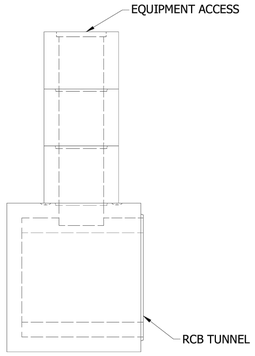
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22X34

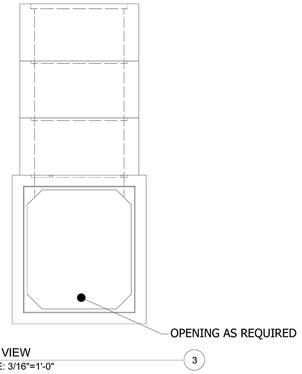
EQUIPMENT VAULT



PLAN VIEW
SCALE: 3/16"=1'-0" — 1

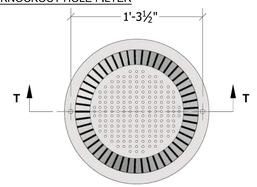


PROFILE VIEW
SCALE: 3/16"=1'-0" — 2

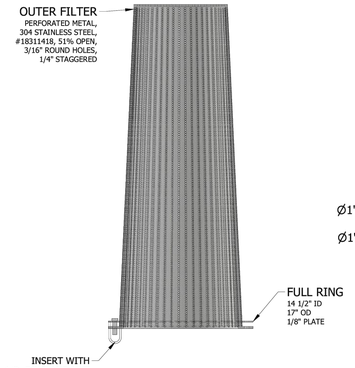


SIDE VIEW
SCALE: 3/16"=1'-0" — 3

INFILTRATION KNOCKOUT HOLE FILTER



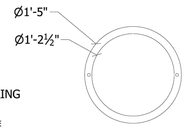
PLAN VIEW
SCALE: 1 1/2"=1'-0" — 1



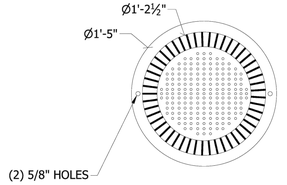
PROFILE CUT VIEW
SCALE: 1 1/2"=1'-0" — 2



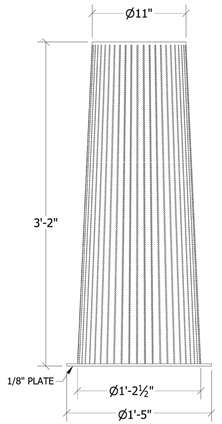
ISOMETRIC VIEW
SCALE: 1 1/2"=1'-0" — 3



PLAN VIEW
SCALE: 1"=1'-0" — 1



PLAN VIEW
SCALE: 1 1/2"=1'-0" — 4

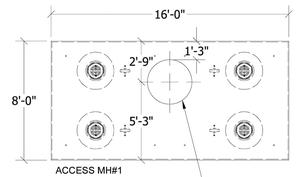


PROFILE VIEW
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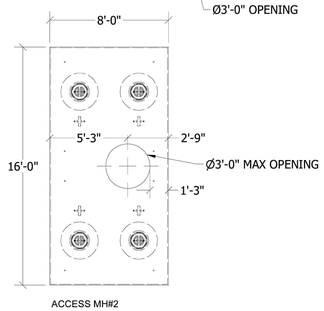
GENERAL NOTES

1. SUBSURFACE INFILTRATION GALLERY DETAILS INCLUDED ON THIS SHEET HAVE BEEN PREPARED BY PRECON PRODUCTS. SUBSURFACE INFILTRATION GALLERY SHALL BE A STORM PRISM EQ INFILTRATION SYSTEM MANUFACTURED BY PRECON PRODUCTS OR EQUAL. SEE SPECIFICATION SECTION 33 43 23.
2. SUBSURFACE INFILTRATION GALLERY DESIGN HAS BEEN DEVELOPED USING PRECON PRODUCTS STORM PRISM EQ INFILTRATION SYSTEM AS DESIGN BASIS. IF CONTRACTOR PROVIDES ALTERNATIVE EQUIPMENT, CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALTERNATIVE EQUIPMENT COMPLIES WITH SPECIFICATION SECTION 33 43 23 AND IS COORDINATED WITH FINISHED GRADE, INVERT ELEVATIONS OF INLET AND OUTLET PIPING, AND ALL INTERFACING COMPONENTS OF THE DESIGN.

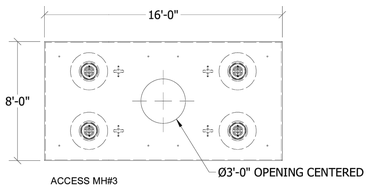
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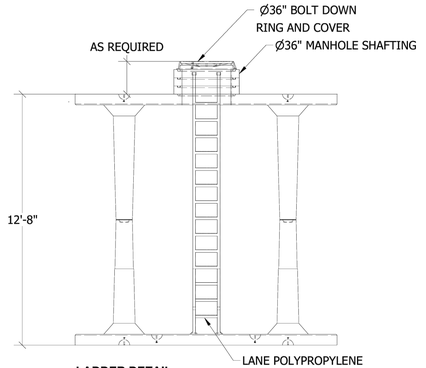
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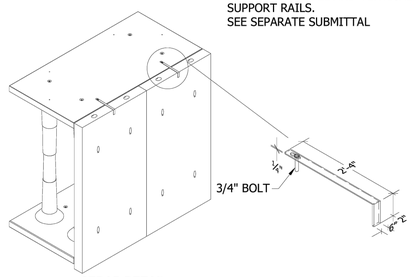
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ACCESS MH#3

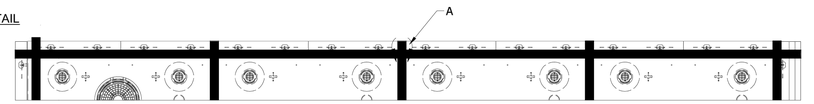


LADDER DETAIL

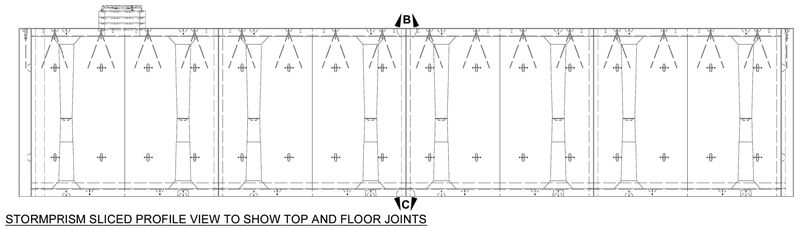


STRAP DETAIL

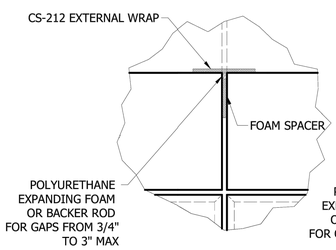
JOINT SEALANT DETAIL



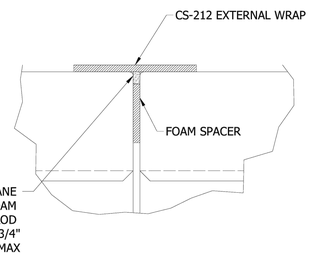
STORMPRISM SLICED PLAN VIEW TO SHOW WALL JOINT



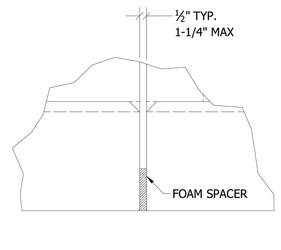
STORMPRISM SLICED PROFILE VIEW TO SHOW TOP AND FLOOR JOINTS



DETAIL A
WALL JOINT
ONLY VERTICAL PART OF WALL IS DETAILED FOR CLARITY



DETAIL B
TOP JOINT
WALL JOINT SEALANT NOT SHOWN FOR CLARITY



DETAIL C
BOTTOM JOINT

60% - PRELIMINARY NOT FOR CONSTRUCTION

BLACK & VEATCH
Black & Veatch Corporation
Los Angeles, California

DRAWN BY	C. DORSET
DESIGNED BY	J. HEALY
CHECKED BY	K. LEWIS

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: DETAILS - 8

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET: C-23

28 OF 70

DWG. NO.: 6869

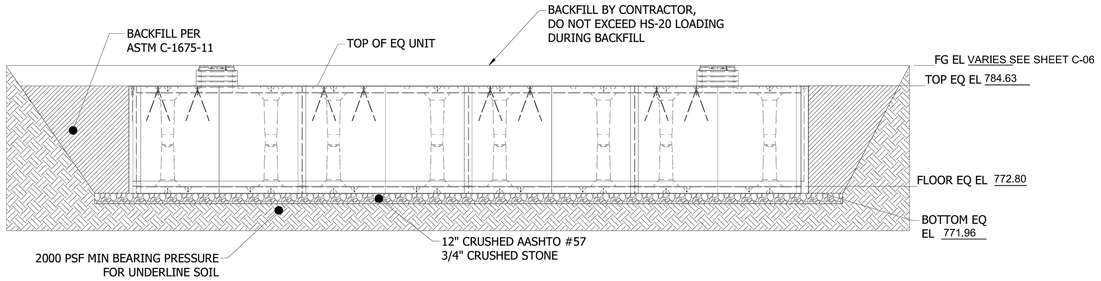
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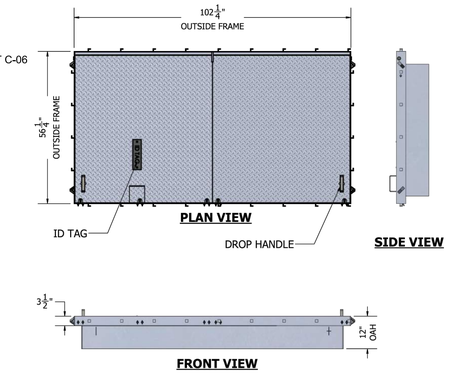
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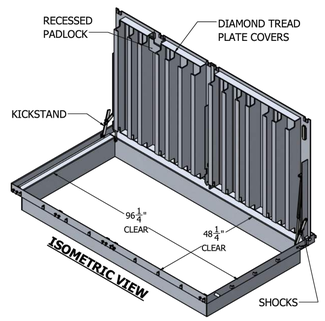
22X34

BEDDING AND BACKFILL REQUIREMENTS



EQUIPMENT VAULT ACCESS HATCH





GENERAL NOTES

1. SUBSURFACE INFILTRATION GALLERY DETAILS INCLUDED ON THIS SHEET HAVE BEEN PREPARED BY PRECON PRODUCTS. SUBSURFACE INFILTRATION GALLERY SHALL BE A STORM PRISM EQ INFILTRATION SYSTEM MANUFACTURED BY PRECON PRODUCTS OR EQUAL. SEE SPECIFICATION SECTION 33 43 23.
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60% - PRELIMINARY NOT FOR CONSTRUCTION

Black & Veatch Corporation
Los Angeles, California

DRAWN BY	C. DORSET
DESIGNED BY	J. HEALY
CHECKED BY	K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: DETAILS - 9

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

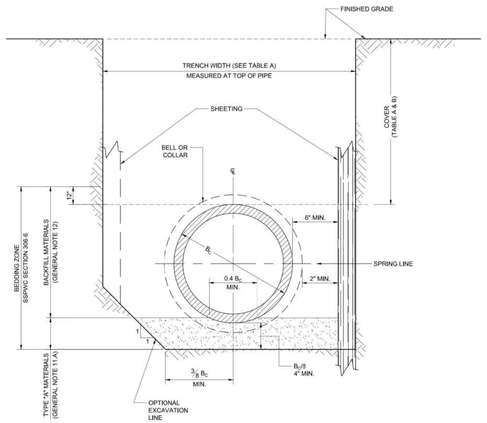
SHEET: C-24

29 OF 70

DWG. NO.: 6869

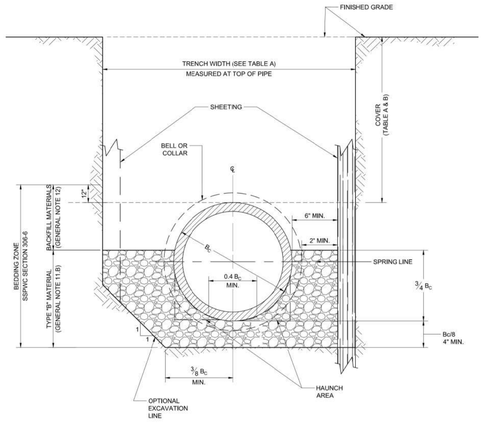
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CASE 1 BEDDING INSTALLATION
LOAD FACTOR = 1.4



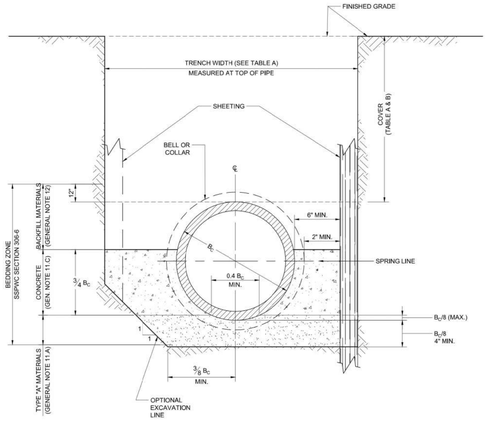
NOTES:
1) B_C = O.D. (OUTSIDE DIAMETER)
2) INDICATES UNDISTURBED EARTH

CASE 2 BEDDING INSTALLATION
LOAD FACTOR = 1.8



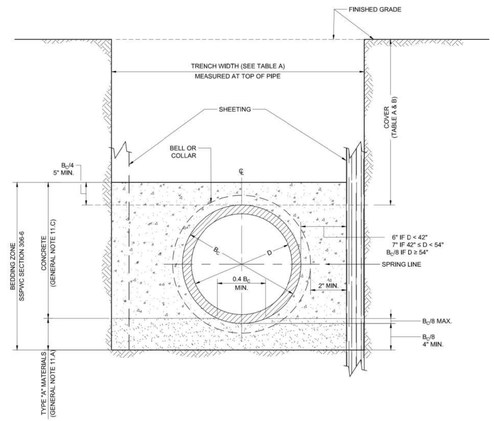
NOTES:
1) B_C = O.D. (OUTSIDE DIAMETER)
2) INDICATES UNDISTURBED EARTH
3) TYPE "B" MATERIAL SHALL BE PLACED IN A MANNER SUCH AS SLICING, SHOVEL-SPADING OR SHOVEL RODDING TO INSURE COMPLETE FILLING OF THE "HAUNCH AREAS" BELOW THE PIPE.

CASE 3 BEDDING INSTALLATION
LOAD FACTOR = 2.7



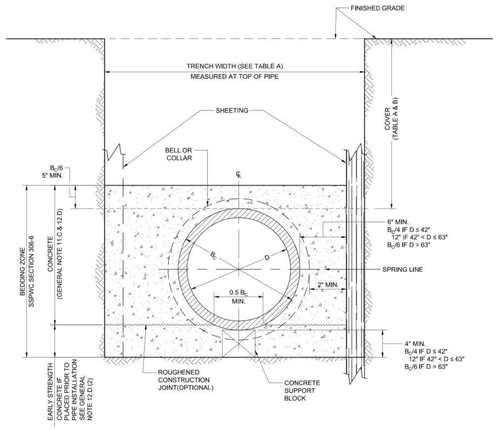
NOTES:
1) B_C = O.D. (OUTSIDE DIAMETER)
2) INDICATES UNDISTURBED EARTH

CASE 4 BEDDING INSTALLATION
LOAD FACTOR = 3.2



NOTES:
1) B_C = O.D. (OUTSIDE DIAMETER)
2) D = I.D. (INSIDE DIAMETER)
3) INDICATES UNDISTURBED EARTH
4) < INDICATES "LESS THAN"
≤ INDICATES "LESS THAN OR EQUAL TO"
≥ INDICATES "GREATER THAN OR EQUAL TO"

CASE 5 BEDDING INSTALLATION
LOAD FACTOR = 4.5



NOTES:
1) B_C = O.D. (OUTSIDE DIAMETER)
2) D = I.D. (INSIDE DIAMETER)
3) INDICATES UNDISTURBED EARTH
4) TREATED PINE SHIMS MAYBE USED FOR GRADE ADJUSTMENT
5) < INDICATES "LESS THAN"
≤ INDICATES "LESS THAN OR EQUAL TO"
≥ INDICATES "GREATER THAN OR EQUAL TO"
> INDICATES "GREATER THAN"

TABLE A

MAXIMUM ALLOWABLE TRENCH WIDTH

NOTES:
A. IF COVER LESS THAN 8'-0" - UNLIMITED WIDTH.
B. IF MAXIMUM ALLOWABLE IS EXCEEDED, PROVIDE SUBSTITUTE INSTALLATION PER TABLE B.

INSIDE DIAMETER	PLASTIC, CLAY & CAST IRON	RCP BELLS OR COLLAR	RCP WITHOUT BELLS OR COLLAR
6" TO 15"	B_C + 18"	B_C + 32"	B_C + 20"
16" TO 21"	B_C + 24"		
22" TO 42"	B_C + 30"		
43" TO 96"	-		
OVER 96"	-	B_C + 32"	B_C + 24"

TABLE B

SUBSTITUTE INSTALLATION
(APPLICABLE TO ALL PIPE SIZES)

CASE[B]	COVER[C] (FEET)	RATIO = TRENCH WIDTH * / MAXIMUM ALLOWABLE TRENCH WIDTH: 1.00	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.75	NO LIMIT
1	8.1 TO 15.0	2[A]					3[A]					4							
	15.1 TO 20.0																		
	20.1 TO 30.0																		
2	8.1 TO 15.0	3[A]					4					5						SPECIAL[D]	
	15.1 TO 20.0																		
	20.1 TO 30.0																		
3	8.1 TO 15.0	4				5						SPECIAL[D]							
	15.1 TO 30.0																		
4	8.1 TO 30.0																		

NOTES:
A. SEE GENERAL NOTES #2
B. CASE - INSTALLATION CASE SPECIFIED ON THE PLANS.
C. COVER - IF COVER EXCEEDS 30 FEET, SUBSTITUTE SHALL BE AS ORDERED BY THE ENGINEER.
D. SPECIAL - CONTRACTOR SHALL CONSTRUCT SPECIAL AS ORDERED BY THE ENGINEER
E. TRENCH WIDTH* - ACTUAL TRENCH WIDTH MEASURED AT TOP OF PIPE

GENERAL NOTES:

ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC) ADOPTED BY THE BOARD OF PUBLIC WORKS AS MODIFIED BY THE CORRESPONDING ISSUE OF THE CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BROWN BOOK (BB), EXCEPT AS NOTED HEREIN.

1. CASE 1 BEDDING INSTALLATION SHALL BE USED FOR ALL PIPE LAYING UNLESS OTHERWISE SPECIFIED ON THE PLANS OR NOTED HEREON.
2. IF THE ACTUAL TRENCH WIDTH EXCEEDS THE MAXIMUM INDICATED IN TABLE A, THE CONTRACTOR IS REQUIRED TO PROVIDE A SUBSTITUTE INSTALLATION PER TABLE B. HOWEVER, IF RUNNING, CAVING OR SQUEEZING SOILS ARE PRESENT, CASE 4 SHALL BE THE MINIMUM SUBSTITUTE.
3. IF THE COVER ON THE CLAY PIPE IS LESS THAN 42 INCHES MEASURED FROM THE FINISHED GRADE OR INTERIM CONSTRUCTION GRADE TO THE TOP OF PIPE, CASE 5 BEDDING INSTALLATION SHALL BE USED AND EXTENDED TO THE NEXT JOINT.
4. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE BEDDING INSTALLATION CASE FOR SEWER HOUSE CONNECTIONS SHALL BE THE SAME AS THAT USED FOR THE MAIN LINE.
5. LOAD FACTORS INDICATED FOR EACH BEDDING INSTALLATION CASE BASED ON THE 3-EDGE BEARING TEST WITH A 1.0 LOAD FACTOR. LOAD FACTORS APPLY IN THE DESIGN FOR RCP AND VCP.
6. IF RUNNING, CAVING OR SQUEEZING SOILS ARE ENCOUNTERED WHEN CASE 2 OR 3 BEDDING INSTALLATION IS SPECIFIED ON THE PLANS, THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED TO DETERMINE WHAT CORRECTIVE MEASURES SHALL BE TAKEN.
7. ALL COST ARISING FROM THE CONTRACTOR'S CHOICE OF OPTIONAL CONSTRUCTION DETAILS, INCLUDING SUBSTITUTE BEDDING INSTALLATIONS WHEN THE MAXIMUM TRENCH WIDTH IS EXCEEDED, SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND AT NO COST TO THE CITY.
8. PIPE BELLS AND COUPLINGS OUTSIDE OF THE PIPE BARREL SHALL BE PREVENTED FROM BEARING UPON BEDDING MATERIAL BY SUITABLE EXCAVATION DURING THE PIPE LAYING OPERATIONS.
9. IF A CHANGE IN BEDDING INSTALLATION CASE OCCURS BETWEEN THE JOINTS OF A LENGTH OF PIPE, THE CONTRACTOR SHALL CONSTRUCT THE HIGHER CASE BEDDING INSTALLATION FOR THE ENTIRE LENGTH OF THAT PIPE.
10. THE HEIGHT OF BEDDING MATERIALS AS DESCRIBED IN SUBSECTION 306-6 OF SSPWC IS MODIFIED AS ILLUSTRATED IN BEDDING CASES 1 THROUGH 5.
11. BEDDING:
    A. TYPE "A" BEDDING MATERIAL
        1) TYPE "A" MATERIAL SHALL BE ONE OF THE FOLLOWING:
            a. NO. 3 OR NO. 4 AGGREGATE OR ½" OR ¾" CRUSHED ROCK FOR PIPES LARGER THAN 24 INCHES IN DIAMETER.
            b. NO. 4 AGGREGATE OR ½" CRUSHED ROCK FOR PIPES 24 INCHES OR SMALLER IN DIAMETER.
            c. UNDISTURBED NATIVE FREE DRAINING MATERIAL HAVING A MINIMUM SAND EQUIVALENT OF 30% AND SHAPED TO FULL SUPPORT THE PIPE.
        2) IF ANY TYPE "A" MATERIAL DIRECTLY SUPPORTING THE PIPE IS REMOVED OR DISLOCATED IN THE PROCESS OF REMOVING A PIPE LAYING SLING, THAT MATERIAL SHALL BE CAREFULLY REPLACED BY HAND-SHOVELING.
    B. TYPE "B" BEDDING MATERIAL SHALL BE NO. 4 AGGREGATE OR ½" CRUSHED ROCK.
    C. CONCRETE BEDDINGS SHALL BE IN ACCORDANCE WITH SSWPC SECTION 201-1.1.2 "CONCRETE SPECIFIED BY CLASS AND ALTERNATE CLASS" AND SHALL CONFORM TO ALL THE REQUIREMENTS LISTED BELOW:
        1) AT LEAST 50% OF CONCRETE BEDDING WITHIN ANY 5-FOOT LENGTH SHALL BE PLACED AGAINST UNDISTURBED EARTH, OR AGAINST TIMBER SHEETING WHICH IS PLACED AGAINST UNDISTURBED EARTH AND LEFT IN PLACE.
        2) IF BACKFILL IS PLACED IMMEDIATELY AFTER PLACING CONCRETE BEDDING, SEE NOTE 12.D
        3) TRANSVERSE (PERPENDICULAR TO LENGTH) CONSTRUCTION JOINTS SHALL BE PROVIDED AS FOLLOWS:
            a. MAXIMUM SPACING SHALL BE 30 FEET FOR CLAY PIPE AND 40 FEET FOR CAST IRON, OR REINFORCED CONCRETE PIPES.
            b. JOINTS SHALL BE LOCATED AT THE ENDS OF PIPE BELLS.
            c. JOINTS SHALL BE PLACED AT ALL CHANGES BETWEEN ANY TWO BEDDING INSTALLATION CASES.
            d. PROVIDE MINIMUM 1" THICK PRE-MOLDED EXPANSION JOINT FILLER SHEET AT EACH JOINT ALL AROUND.
        4) NO CONSTRUCTION JOINTS OTHER THAN THOSE REQUIRED BY NOTE 11.C.3 SHALL BE LOCATED ABOVE THE SPRING LINE OF THE PIPE UNLESS AUTHORIZED BY THE ENGINEER OR SPECIFIED ON THE PLANS.
    D. SHORING REMOVAL IN BEDDING ZONE AND TRENCH:
    CONTRACTOR SHALL COORDINATE THE SEQUENCE OF SHORING REMOVAL DURING BEDDING PLACEMENT AND TRENCH BACKFILLING TO ENSURE THE TRENCH STABILITY AT ALL TIMES. ALL SHORING AND FORMS SHALL BE REMOVED PROPERLY TO PREVENT ANY VOIDS ALONG TRENCH. ALL VOIDS SHALL BE FILLED WITH CLSM. ALL SHORING SHALL BE REMOVED AT THE END OF PROJECTS.

GENERAL NOTES:

12. BACKFILLING: (MODIFIES SSPWC SECTION 217, 306, 306-6, AND 306-12):
    A. SUITABLE BACKFILL MAY CONSIST OF EXCAVATED SOIL EXCEPT THAT BACKFILL SHALL NOT CONTAIN ROCKS GREATER THAN 1 INCH PER SSPWC SECTION 217-2 AS MODIFIED BY BB. THERE WILL BE NO SAND EQUIVALENT REQUIREMENT. SAND SHALL NOT BE USED AS A BACKFILL, AND JETTING IS NOT AN APPROVED DENSIFICATION METHOD.
    B. FLOODING OR PONDING IS PROHIBITED.
    C. ALL BACKFILL SHALL BE MECHANICALLY COMPACTED TO 90% RELATIVE COMPACTION, EXCEPT:
        1) PLACEMENT OF TYPE "A" MATERIALS (AS SPECIFIED IN GENERAL NOTE 11.A.1.(a) AND (b)) OR TYPE "B" MATERIAL WITHIN THE HAUNCH AREA, CAN BE PERFORMED BY HAND SHOVELING AND SPADING WITH HAND COMPACTION.
        2) WHEN BACKFILLING OVER THE TOP OF PIPE, IMPACT TAMPERS OR SIMILAR TOOLS SHALL NOT BE USED UNTIL A SUFFICIENT BACKFILL (E.G. 12 INCHES) HAS BEEN PLACED TO PREVENT DAMAGE TO THE INSTALLED PIPE.

    THE SUBSECTION 306-12.3 OF SSPWC IS MODIFIED AS FOLLOWS:

        3) WHERE OTHER TYPES OF IMPACT EQUIPMENT APPROVED BY THE ENGINEER ARE USED OVER SUCH PIPE, THE COMPACTIVE EFFORT PER BLOW SHALL NOT EXCEED THE FOLLOWING LIMITS UNLESS CASE 5 BEDDING IS USED, IN WHICH CASE PERMITTED EFFORT MAY BE TWICE THE TABULATED VALUES:

MAXIMUM COMPACTIVE EFFORT (FT-LB PER BLOW)	MINIMUM THICKNESS COMPACTED MATERIAL ABOVE BELLS OR CONCRETE ENCASEMENT (FT)	MINIMUM AREA OF COMPACTING FOOT (SQ. IN.)
200	1.5	16
400	2	25
625	2.5	36
900	3	36
1,225	3.5	49
1,600	4	64
2,025	4.5	64
2,500	5	64
3,600	6	81
4,900	7	81
6,400	8	100
8,100	9	100
10,000	10	144
12,100	11	144
14,400	12	144
16,900	13	144
19,600	14	144
22,500	15	144
100 x (FT COVER)[2]	OVER 15	196

    D. FOR SLURRY BACKFILLING OVER CONCRETE BEDDING (MODIFIES SSPWC SUBSECTION 306-12): SLURRY BACKFILL MAY BE PLACED AFTER INITIAL SET TIME OF THE CONCRETE BEDDING SUBJECT TO THE FOLLOWING CONDITIONS AND RESTRAINTS:
        1) THE INITIAL SLURRY BACKFILL HEIGHT IS LIMITED TO 10 FEET ABOVE THE TOP OF PIPE. THE INITIAL SLURRY BACKFILL SHALL NOT BE PLACED UNTIL AT LEAST ONE HOUR AFTER THE CONCRETE BEDDING PLACEMENT AND ONLY WHEN THE CONCRETE BEDDING HAS REACHED ITS INITIAL SET, BECOMING FIRM AND STIFF. ADDITIONAL BACKFILL SHALL NOT BE PLACED UNTIL THE MINIMUM ELAPSED TIME INDICATED IN THE "CONCRETE CLASS USE TABLE", SSPWC SUBSECTION 201-1.1.2.
        2) EXCEPT FOR THE AREA BELOW THE PIPE INDICATED ON CASE 5 BEDDING INSTALLATION, THE CONCRETE SHALL NOT CONTAIN ACCELERATING ADMIXTURE.
        3) THE CONCRETE BEDDING SHALL BE COVERED WITH A MINIMUM 6 MIL PLASTIC MEMBRANE TO PREVENT CONTAMINATION BY THE BACKFILL.
        4) THE DEPTH OF CONCRETE BEDDING SHALL BE INCREASED BY AT LEAST ADDITIONAL 2 INCHES OVER OF THE TOP OF PIPE.
        5) THE SLURRY BACKFILL PLACEMENT AND CONSOLIDATION BY VIBRATION SHALL BE HANDLED IN A MANNER WHICH WILL NOT DISTURB OR DISPLACE THE CONCRETE BEDDING.
    E. SOIL BACKFILL OVER CONCRETE BEDDING SHALL ONLY BE PLACED AND MECHANICALLY COMPACTED AFTER THE CONCRETE BEDDING HAS CURED, AS SPECIFIED IN SSPWC SECTION 306-12.1, AND AFTER THE ELAPSED TIME INDICATED IN TABLE 201-1.1.2 AND ITS FOOTNOTE 3.
13. SEE S-477 FOR MORE BACKFILL AND COMPACTION REQUIREMENTS.

3 / C-19 BEDDING INSTALLATION DETAILS
NOT TO SCALE

60% - PRELIMINARY NOT FOR CONSTRUCTION

Black & Veatch Corporation
Los Angeles, California

DRAWN BY	REVISIONS					
C. DORSET	MARK	DATE	DESCRIPTION	BY	CHKD.	APPROVED
DESIGNED BY		----				
J. HEALY						
CHECKED BY						
K. LEWIS						

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

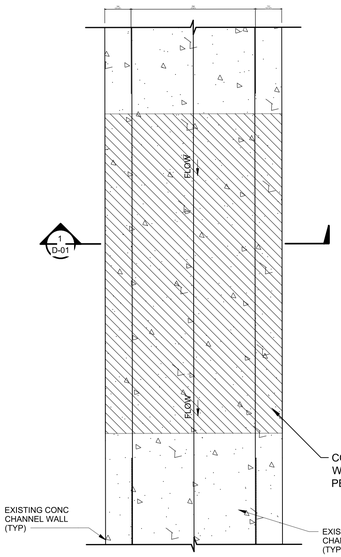
BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: DETAILS - 10

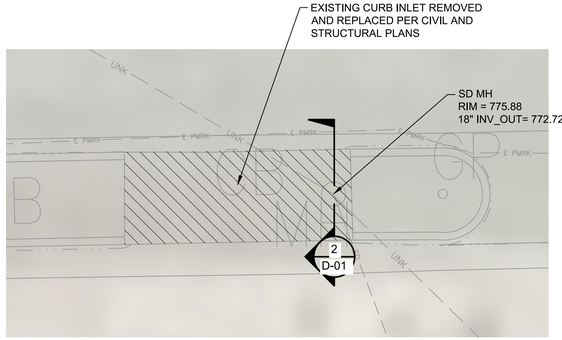
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SHEET C-25
30 OF 70
DWG. NO. 6869

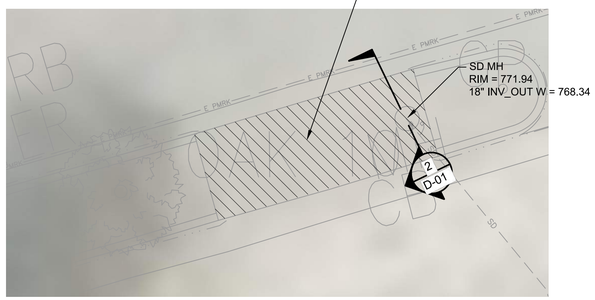
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Date: November 4, 2025 C:\USERS\DOR126239\DCA\CDOCS\BLACK & VEATCH CORP\420977 - BROOKSIDE PARK SWC PROJECT\PROJECT FILES\5.0 DESIGN FILES_BV\5.0.5 CIVIL 3D\C-25.DWG
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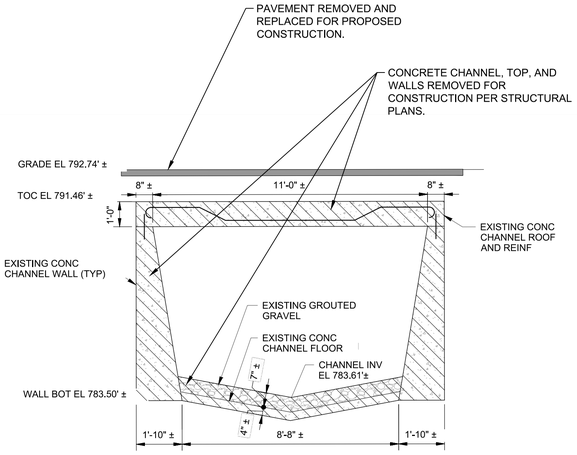
DEMOLITION PLAN - DIVERSION STRUCTURE
NTS



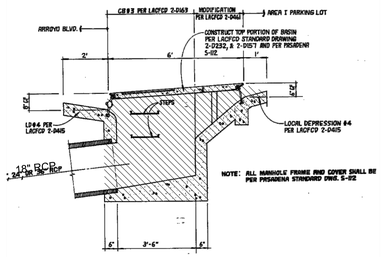
DEMOLITION PLAN - CURB INLET #1
1"=5'



DEMOLITION PLAN - CURB INLET #2
1"=5'



1 SECTION
D-01 NTS



2 SECTION
D-01 NTS

NOTES:

1. EXISTING CONDITIONS SHOWN ON THE PLANS ARE BASED ON AVAILABLE RECORD INFORMATION, FIELD OBSERVATIONS, AND/OR SURVEY DATA AND ARE PROVIDED FOR REFERENCE ONLY. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AFFECTING THE WORK PRIOR TO DEMOLITION AND CONSTRUCTION.
2. THE CONTRACTOR SHALL PERFORM ALL DEMOLITION, REMOVALS, SAW CUTTING, CLEARING, GRUBBING, EXCAVATION, AND RELATED WORK REQUIRED TO CONSTRUCT THE PROPOSED IMPROVEMENTS AS SHOWN ON THE PLANS AND AS NECESSARY BASED ON ACTUAL FIELD CONDITIONS.
3. LOCATIONS, SIZES, DEPTHS, AND ELEVATIONS OF EXISTING UNDERGROUND AND ABOVEGROUND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY UTILITY LOCATIONS PRIOR TO DEMOLITION OR EXCAVATION AND SHALL COORDINATE WITH UTILITY OWNERS AS REQUIRED.
4. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES, STRUCTURES, FACILITIES, PAVEMENTS, VEGETATION, AND IMPROVEMENTS DESIGNATED TO REMAIN. ANY DAMAGE RESULTING FROM CONSTRUCTION OPERATIONS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
5. REMOVE EXISTING ASPHALT PAVING, CONCRETE PAVEMENT, CURB AND GUTTER, SIDEWALK, DRIVEWAYS, FOUNDATIONS, ABANDONED UTILITIES, APPURTENANCES, AND OTHER SITE FEATURES WHERE REQUIRED FOR THE PROPOSED IMPROVEMENTS OR AS NECESSARY TO COMPLETE THE WORK.
6. DEMOLITION LIMITS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY REQUIRE ADJUSTMENT BASED ON ACTUAL FIELD CONDITIONS AND CONSTRUCTION MEANS AND METHODS. THE CONTRACTOR SHALL PROVIDE SUFFICIENT DEMOLITION TO ALLOW PROPER INSTALLATION, TIE-IN, GRADING, AND RESTORATION ASSOCIATED WITH THE PROPOSED IMPROVEMENTS.
7. EXISTING PAVEMENTS AND CONCRETE TO REMAIN THAT ARE DISTURBED OR DAMAGED BY CONSTRUCTION OPERATIONS SHALL BE NEATLY SAW CUT AT TRUE LINES AND REPLACED IN KIND TO MATCH ADJACENT MATERIALS, THICKNESS, AND FINISHES UNLESS OTHERWISE SHOWN OR SPECIFIED.
8. CLEAR AND GRUB ALL VEGETATION, BRUSH, ROOTS, DEBRIS, ABANDONED MATERIALS, AND OTHER OBSTRUCTIONS WITHIN THE LIMITS OF CONSTRUCTION AS REQUIRED FOR THE PROPOSED IMPROVEMENTS. DISPOSE OF REMOVED MATERIALS OFFSITE UNLESS OTHERWISE NOTED.
9. ABANDONED UTILITIES ENCOUNTERED WITHIN THE LIMITS OF CONSTRUCTION THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHALL BE REMOVED, CAPPED, PLUGGED, OR OTHERWISE PROPERLY ABANDONED IN ACCORDANCE WITH PROJECT REQUIREMENTS AND APPLICABLE UTILITY OWNER REQUIREMENTS.
10. THE CONTRACTOR SHALL MAINTAIN ACCESS, DRAINAGE, AND OPERATION OF EXISTING FACILITIES DURING DEMOLITION AND CONSTRUCTION UNLESS OTHERWISE APPROVED. TEMPORARY MEASURES REQUIRED TO SUPPORT DEMOLITION AND INSTALLATION OF THE PROPOSED IMPROVEMENTS SHALL BE PROVIDED BY THE CONTRACTOR.
11. ALL DEMOLITION MATERIAL SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR PER LOCAL, STATE, AND FEDERAL LAWS.

40' 20' 0 40' 80'
1"=40'

60% - PRELIMINARY NOT FOR CONSTRUCTION

Black & Veatch Corporation
Los Angeles, California

DRAWN BY	C. DORSET
DESIGNED BY	J. HEALY
CHECKED BY	K. LEWIS

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: CIVIL DEMOLITION PLAN

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET: D-01

31 OF 70

DWG. NO.: 6869

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ABBREVIATIONS

&	AND	IRRIG	IRRIGATION
@	AT	L	LENGTH
#	NUMBER	LB.	POUND
%	PERCENT	L.F.	LINEAR FEET
A.C.	ASPHALTIC CONCRETE	L.O.W.	LIMIT OF WORK
AD	AREA DRAIN	LP	LOW POINT
ADJ.	ADJACENT	MAX.	MAXIMUM
AGG	AGGREGATE	M.E.P.	MECHANICAL, ELECTRICAL, PLUMBING
AM	APICAL MERISTEM	MIN.	MINIMUM
APPROX	APPROXIMATE	(N)	NEW
ARCH.	ARCHITECTURE / ARCHITECT	NAT.	NATURAL
ASTM	AMERICAN SOCIETY OF TESTING & MATERIALS	NOM	NOMINAL
ASSY	ASSEMBLY	N.I.C.	NOT IN CONTRACT
AVG	AVERAGE	N.T.E.	NOT TO EXCEED
BC	BOTTOM OF CURB	N.T.S.	NOT TO SCALE
BCR	BEGIN CURB RADIUS	O.C.	ON CENTER
BET	BETWEEN	O.D.	OUTSIDE DIAMETER
BFP	BACK FLOW PREVENTER	OF/CI	OWNER FURNISHED/CONTRACTOR INSTALLED
BLDG.	BUILDING	P.A., PA	PLANTING AREA
BS	BOTTOM OF STEP	PERF	PERFORATED
BTH	BROWN TRUNK HEIGHT	P.O.B.	POINT OF BEGINNING
BW	BOTTOM OF WALL	POC	POINT OF CONNECTION
C.I.P.	CAST IN PLACE	POT	POINT OF TANGENCY
C.J.	CONSTRUCTION JOINT	PP	POWER POLE
CL	CENTER LINE	PL	PROPERTY LINE
CLR	CLEAR	PSI	POUNDS PER SQUARE INCH
CMB	CRUSHED MISCELLANEOUS BASE	PTDF	PRESSURE TREATED DOUGLAS FIR
CMU	CONCRETE MASONRY UNIT	PT	PRESSURE TREATED
CONC.	CONCRETE	PVC	POLY VINYL CHLORIDE
CONT.	CONTINUOUS	QCV	QUICK COUPLING VALVE
CORP.	CORPORATION	QTY	QUANTITY
CY	CUBIC YARD	R.	RISER
d	PENNY (NAIL SIZE)	R, RAD.	RADIUS
DEG	DEGREE	R.C.B.	ROOT CONTROL BARRIER
D.G.	DECOMPOSED GRANITE	RCV	REMOTE CONTROL VALVE
D.I.	DRAIN INLET	REINF.	REINFORCED
D,DIA.	DIAMETER	REP.	REPRESENTATIVE
DIAG	DIAGONAL	R.O.W.	RIGHT-OF-WAY
DIM	DIMENSION	S.C.	SAWCUT JOINT
DWGS.	DRAWINGS	SE	STRUCTURAL ENGINEER
(E)	EXISTING	SCH.	SCHEDULE
EA.	EACH	SF	SQUARE FEET
E.J.	EXPANSION JOINT	SIM.	SIMILAR
ENGR	ENGINEER	S.J.	SCORE JOINT
EX.	EXISTING	S.L.	SCORELINE
ETC.	ETCETERA	SPECS	CONTRACT SPECIFICATIONS
E.W.	EACH WAY	SQ.	SQUARE
F.D.C.	FIRE DEPARTMENT CONNECTIONS	SS	STAINLESS STEEL
FDTN	FOUNDATION	STD.	STANDARD
FFE	FINISH FLOOR ELEVATION	SYM	SYMMETRICAL
FF	FINISH FLOOR	S4S	SURFACED FOUR SIDES
FG	FINISH GRADE	T.	TREAD
FIN.	FINISH	T.B.D.	TO BE DETERMINED
FS	FINISH SURFACE	TC	TOP OF CURB
FTG.	FOOTING	TF	TOP OF FOOTING
GA	GAUGE	TG	TOP OF GRATE
GAL	GALLON	TS	TUBULAR STEEL
GALV.	GALVANIZED	TW	TOP OF WALL
GPM	GALLON PER MINUTE	TYP.	TYPICAL
H.B.	HEADERBOARD	VERT.	VERTICAL, VERTICALLY
HDWR	HARDWARE	V.I.F.	VERIFY IN FIELD
H,HT.	HEIGHT	W	WIDTH
HOR.	HORIZONTAL, HORIZONTALLY	W/	WITH
HP	HIGH POINT	WL	WATER LEVEL
HSS	HOLLOW STRUCTURAL STEEL	W.W.M.	WELDED WIRE MESH
ID	INSIDE DIAMETER		

GENERAL NOTES

1. INSTALL ALL IMPROVEMENTS IN ACCORDANCE WITH CITY OF PASADENA REQUIREMENTS. IN CASE OF DISCREPANCY BETWEEN THESE PLANS AND THE CITY OF PASADENA REQUIREMENTS, THE MOST STRINGENT REQUIREMENTS WILL APPLY.
2. A VISIT TO THE SITE IS REQUIRED. VERIFY ALL CONDITIONS PRIOR TO SUBMITTING A PROPOSAL OF COST FOR CONSTRUCTION.
3. THESE DRAWINGS, AS AN INSTRUMENT OF SERVICE, ARE THE PROPERTY OF THE LANDSCAPE ARCHITECT AND MAY NOT BE REPRODUCED WITHOUT THE LANDSCAPE ARCHITECT'S PERMISSION AND UNLESS THE REPRODUCTION CARRIES THE LANDSCAPE ARCHITECT'S NAME. ALL DESIGN AND OTHER INFORMATION SHOWN ON THE DRAWINGS IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION FROM THE LANDSCAPE ARCHITECT.
4. REVIEW THESE PLANS AND NOTES COMPLETELY. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT IMMEDIATELY UPON DISCOVERY.
5. EXTRA WORK TO BE APPROVED IN WRITING BY THE OWNER PRIOR TO COMMENCEMENT OF WORK.
6. IT IS THE RESPONSIBILITY OF THE SUB-CONTRACTORS TO FAMILIARIZE THEMSELVES WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, UTILITIES, SEWERS, WATER LINES, ETC. COORDINATE WORK WITH OTHER SUB-CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES UNDER PAVING, ELECTRICAL CONNECTIONS, WATER HOOK-UPS, ETC.
7. ALL REQUIREMENTS OF THE UNIFORM BUILDING CODE SHALL APPLY TO THE WORK SPECIFIED HEREIN UNLESS OTHERWISE MODIFIED BY THESE DOCUMENTS.
8. CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED TO COMPLETE THE WORK SPECIFIED PRIOR TO COMMENCEMENT OF WORK.
9. BEFORE COMMENCING ANY WORK, OBTAIN AN UNDERGROUND SERVICE I.D. BY CALLING DIG-ALERT AT 1-800-422-4133 TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION.
10. CONTRACTOR TO COORDINATE A PRE-CONSTRUCTION MEETING ON SITE TWO (2) WORKING DAYS PRIOR TO START OF CONSTRUCTION. NOTIFY OWNER, LANDSCAPE ARCHITECT, AND ALL SUB-CONTRACTORS.
11. SUBMIT REQUESTS FOR MEETINGS, OBSERVATIONS, AND APPROVALS BY THE LANDSCAPE ARCHITECT TWO (2) WORKING DAYS PRIOR TO THE DATE AND TIME PROPOSED.
12. SHOP DRAWINGS MUST BE SUBMITTED TO THE LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO PROCEEDING WITH FABRICATION.
13. OBTAIN CITY OF PASADENA INSPECTOR'S AND LANDSCAPE ARCHITECT'S REVIEW AND APPROVAL OF WORK IN PROGRESS AT VARIOUS TIMES DURING CONSTRUCTION. THE FOLLOWING REVIEWS/MEETINGS ARE MANDATORY. PROVIDE TWO (2) WORKING DAYS NOTICE FOR EACH REQUESTED VISIT.
    - *PRE-JOB CONFERENCE
    - *CONSTRUCTION STAKING
    - *MAIN LINE PRESSURE TEST AND TRENCH DEPTHS PRIOR TO BACKFILL OF TRENCHES
    - *COVERAGE TEST UPON COMPLETION OF SPRINKLER INSTALLATION
    - *FINAL GRADING REVIEW
    - *PLANT MATERIAL LOCATION REVIEW
    - *PLANT MATERIAL APPEARANCE AND QUALITY REVIEW
    - *SOIL PREPARATION AND PLANTING INSTALLATION METHODS
    - *FINAL WALK THROUGH (AT COMPLETION OF PLANTING INSTALLATION)
    - *FINAL WALK THROUGH (AT COMPLETION OF MAINTENANCE PERIOD)

DIRECT ANY QUESTIONS REGARDING THESE PLANS TO :
STUDIO-MLA
251 S. MISSION RD.
LOS ANGELES, CA 90033
213-384-3844

ATTN: MATT ROMERO, PRINCIPAL IN CHARGE
MICHAEL HEE, PROJECT MANAGER

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAY IT SAFE. DIAL BEFORE YOU DIG!
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NINE SOUTHERN CALIFORNIA COUNTIES
AAH
AA

CM

SYMBOLS

- PROPERTY LINE (PL)
- RIGHT-OF-WAY
- LIMIT OF WORK LINE
- MATCHLINE (MATCHLINE REFER TO LXXX)
- CENTER LINE (CL)
- SECTION
- ELEVATION
- DETAIL
- ALIGN
- POINT OF BEGINNING/ ORIGIN POINT OF LAYOUT
- DETAIL SECTION
- KEYNOTE (A-101)
- CALLOUT

STUDIO-MLA

DRAWN BY	A. WILKINSON
DESIGNED BY	M. HEE
CHECKED BY	M. ROMERO

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: LANDSCAPE GENERAL NOTES

SCALE

ACCOUNT NUMBER: 420977

L-01

32 OF 70

DWG. NO.: 6869

22X34

TREE PROTECTION NOTES

1. PROTECTION OF EXISTING VEGETATION SHALL COMPLY WITH REQUIREMENTS UNDER SPECIFICATION SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION.

2. PRIOR TO COMMENCING WORK, A TREE PROTECTION ZONE (TPZ) AREA SHALL BE DESIGNATED AND ESTABLISHED TO IDENTIFY THOSE AREA(S) THAT ARE NOT SPECIFICALLY DESIGNATED FOR REMOVAL OR DEMOLITION AND REQUIRE MANDATORY PROTECTION MEASURES. AREAS MAY INCLUDE THE BOUNDARY DELINEATED IN THE CONTRACT DRAWINGS AS THE DESIGNATED LIMITS OF WORK, ADJOINING AREAS THAT ARE IN CLOSE VICINITY (BY MEASUREMENT CALCULATION OF TREE DRIP LINE OR CANOPY SPREAD), VEHICULAR ACCESS AREAS LEADING TO THE CONSTRUCTION ZONE, LAY DOWN AREAS, OR OTHER AREAS IMPACTED BY CONSTRUCTION ACTIVITIES. TPZ AREA SHALL BE CONFIRMED BY THE OWNER'S AUTHORIZED REPRESENTATIVE, GOVERNING AGENCY REPRESENTATIVE, OR LANDSCAPE ARCHITECT.

3. CONTRACTOR SHALL BE FAMILIAR WITH THE GENERAL CONDITIONS OF THE CONTRACT FOR ANY DAMAGE TO LANDSCAPING OR OTHER AMENITIES THAT OCCUR WITHIN A TPZ AREA.

4. AVOID EXCAVATION WITHIN A DESIGNATED TPZ AREA. ANY ROOT CUTTING NECESSARY AS A RESULT OF EXCAVATION WITHIN A DESIGNATED TPZ AREA SHALL BE CONFIRMED IN ADVANCE WITH THE OWNER'S AUTHORIZED REPRESENTATIVE, GOVERNING AGENCY REPRESENTATIVE, OR LANDSCAPE ARCHITECT. EXCAVATION SHALL BE PERFORMED BY HAND, AND ROOT CUTTING SHALL BE MONITORED ACCORDINGLY BY A CERTIFIED ARBORIST. IF CONFIRMED, ALL NECESSARY ROOT PRUNING SHALL CONFORM TO ANSI A300 PRUNING STANDARDS.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR MITIGATING CONSTRUCTION RELATED DUST ACCUMULATION ON ALL PROTECTED PLANT MATERIALS. APPLY WATER IN ADEQUATE QUANTITY AND VOLUME TO SPRAY DOWN TRUNKS, BRANCHES, AND FOLIAGE TO REMOVE DUST TO A HEIGHT OF THIRTY FEET (30'). APPLICATION SHALL OCCUR AT MONTHY INTERVALS FROM APRIL THROUGH NOVEMBER.

6. CONTRACTOR SHALL ADHERE TO REQUIREMENTS (INCLUDING BUT NOT LIMITED TO) FOR THE FOLLOWING WITHIN A TPZ AREA:

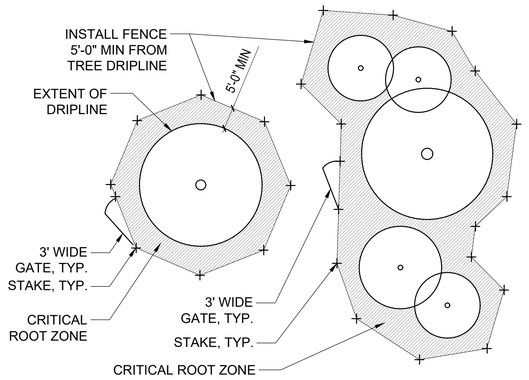
   - NO STOCKPILING OR STORAGE OF MATERIALS, DEBRIS, REFUGE, SPOILS, OR SOIL.
   - NO STORAGE OF CONSTRUCTION TOOLS, EQUIPMENT, OR MACHINERY.
   - NO ACCESS OR PARKING BY VEHICLES, OR ACCESS BY CONSTRUCTION PERSONNEL.
   - NO SOIL DISTURBANCE, INCLUDING EXCAVATION, COMPACTION, OR GRADE CHANGES.
   - NO CUTTING, BREAKING, OR SHINNING OF ROOTS CAUSED BY TRENCHING, DIGGING, OR OTHER EXCAVATION WITHOUT PRIOR CONFIRMATION AND ACCEPTANCE.
   - NO ATTACHMENTS OR ANCHORAGES OF ANY KIND TO TREE TRUNKS, BRANCHES, OR FOLIAGE, INCLUDING USE AS SUPPORT FOR FENCING, SIGNAGE, POWER, ETC., GUY WIRING, ROPES, OR SIMILAR FUNCTIONS.
   - NO DUMPING OF POISONOUS OR TOXIC MATERIALS, INCLUDING PAINT, PETROLEUM PRODUCTS, CHEMICALS, DIRTY OR NON-POTABLE WATER, OR OTHER DELETERIOUS MATERIALS.
   - NO EXCESSIVE HEAT OR WATER FROM EQUIPMENT.
   - MAINTAIN TPZ AREA IN A PEST, DISEASE, AND WEED-FREE CONDITION.

7. CONDITIONAL TO COMMENCING WORK, INSTALL PROTECTIVE BARRICADE FENCING AT THE PERIMETER TPZ AREA(S) TO SAFEGUARD VEGETATION. REFER TO SPECIFICATION SECTION 015639 - TEMPORARY TREE & PLANT PROTECTION, FOR REQUIREMENTS OF FENCING MATERIALS (POSTS/STAKES AND FABRIC MESH), AND ASSOCIATED ATTACHED SIGNAGE. BARRICADE FENCING SHALL BE INSTALLED AND CONTINUOUSLY MAINTAINED IN A FIRM, TAUGHT, AND UPRIGHT CONDITION THROUGHOUT THE DURATION OF THE CONTRACT.

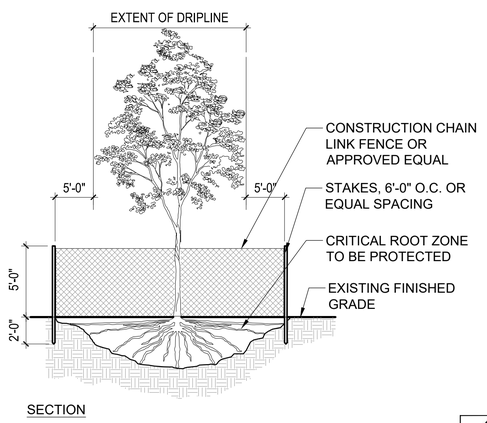
8. NO WORK SHALL BE PERMITTED WITHIN A DESIGNATED TPZ AREA WITHOUT FIRST OBTAINING CONSENT, IN WRITING, FROM THE OWNER'S AUTHORIZED REPRESENTATIVE, GOVERNING AGENCY REPRESENTATIVE, OR LANDSCAPE ARCHITECT. ANY WORK AUTHORIZED WITHIN A DESIGNATED TPZ AREA MUST BE DONE IN ACCORDANCE AND UNDER OBSERVATION BY A MONITORING CERTIFIED ARBORIST.

9. ENGAGEMENT OF A CONSULTING CERTIFIED ARBORIST, AS REQUIRED, SHALL BE THE RESPONSIBILTY OF THE CONTRACTOR AND ALL ASSOCIATED COSTS SHALL BE INCLUDED IN THE CONTRACT BID.

10. EXISTING IRRIGATION SYSTEM, AS APPLICABLE, SHALL BE KEPT IN FUNCTIONAL WORKING OPERATION TO PROVIDE NECESSARY WATER TO ALL PLANTS WITHIN A DESIGNATED TPZ AREA. WHERE CONDITIONS REQUIRE THE NEED TO TEMPORARILY SHUTDOWN AN EXISTING IRRIGATION SYSTEM, CONTRACTOR SHALL PROVIDE FOR HAND-WATERING TO ALL IMPACTED PLANTS. APPLY FRESH, POTABLE WATER AT REGULAR INTERVALS AND IN SUFFICIENT QUANTITY AND APPLICATION RATE TO MAINTAIN HEALTH AND VIGOR OF PROTECTED PLANT MATERIAL THROUGHOUT THE DURATION OF THE CONTRACT. TREES SHALL BE IRRIGATED DEEPLY AND AT A FREQUENCY SO THAT ADEQUATE SOIL MOISTURE IS DETECTED WITH A SOIL PROBE AT A MINIMUM EIGHTEEN INCH (18") DEPTH.



PLAN - SINGLE /SPECIMEN TREE PLAN - MULTIPLE/CLUSTERED TREES



SECTION

NOTES:
1. BARRIER TO PREVENT COMPACTION OF SOIL AROUND AND DAMAGE TO TREE AND LIMBS DURING CONSTRUCTION.
2. ALL PROPOSED WORK WITHIN TREE DRIPLINE TO BE COMPLETED BY HAND.

1 TREE PROTECTION FENCING

N.T.S. P-BSP2024-311210-01

11. CONDITIONAL TO RECEIVING FINAL ACCEPTANCE, CONTRACTOR SHALL REMOVE ALL TPZ AREA MATERIALS THAT WERE INSTALLED DURING THE CONSTRUCTION PERIOD.

12. FAILURE BY THE CONTRACTOR TO ADHERE TO THE REQUIREMENTS SPECIFIED FOR TREE AND PLANT PROTECTION WITHIN A DESIGNATED TPZ AREA MAY RESULT IN THE SUSPENSION OF CONSTRUCTION ACTIVITIES AS NOTIFIED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. ASSOCIATED COSTS INCURRED DUE TO CONSTRUCTION DELAYS FOR NON-COMPLIANCE SHALL BE BORNE BY THE CONTRACTOR.

13. CONTRACTOR SHALL BE RESPONSIBLE FOR FULL AND ADEQUATE COMPENSATION TO OWNER FROM CONTRACTOR'S NON-COMPLIANCE IN FAILING TO ADEQUATELY PROTECT OR FROM RESULTING CONSEQUENTIAL DAMAGE TO PLANTS WITHIN A DESIGNATED TPZ AREA. DIMINISHED VALUE OR COSTS TO REMOVE AND REPLACE TREES OR PLANTS IN KIND THAT HAVE BEEN IMPAIRED THROUGH CONSTRUCTION ACTIVITY SHALL BE COMPENSATED TO THE OWNER, AS DETERMINED BY THIRD PARTY REVIEW. CHOICE OF RECEIVING EITHER MONETARY COMPENSATION OR DIRECTING REMOVAL AND REPLACEMENT IN KIND SHALL BE MADE BY THE OWNER'S AUTHORIZED REPRESENTATIVE.

2025 TREES DISPOSITION SCHEDULE

EXISTING TREES TO PROTECT IN PLACE	92
EXISTING TREES TO BE REMOVED	10

2025 EXISTING TREES DISPOSITION

TAG #	COMMON NAME	SCIENTIFIC NAME	PROTECT/REMOVE
1	HOLM OAK	QUERCUS ILEX	PROTECT
2	HOLM OAK	QUERCUS ILEX	PROTECT
3	HOLM OAK	QUERCUS ILEX	PROTECT
4	HOLM OAK	QUERCUS ILEX	PROTECT
5	HOLM OAK	QUERCUS ILEX	PROTECT
6	HOLM OAK	QUERCUS ILEX	PROTECT
7	HOLM OAK	QUERCUS ILEX	PROTECT
8	HOLM OAK	QUERCUS ILEX	PROTECT
9	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
10	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
11	HOLM OAK	QUERCUS ILEX	PROTECT
12	HOLM OAK	QUERCUS ILEX	PROTECT
13	HOLM OAK	QUERCUS ILEX	PROTECT
14	HOLM OAK	QUERCUS ILEX	PROTECT
15	HOLM OAK	QUERCUS ILEX	PROTECT
16	HOLM OAK	QUERCUS ILEX	PROTECT
17	SYCAMORE	PLATANUS SP.	PROTECT
18	SYCAMORE	PLATANUS SP.	PROTECT
19	SYCAMORE	PLATANUS SP.	PROTECT
20	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
21	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
22	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
23	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
24	WINDMILL PALM	TRACHYCARPUS FORTUNEI	PROTECT
25	WINDMILL PALM	TRACHYCARPUS FORTUNEI	PROTECT
26	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
27	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
28	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
29	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
30	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
31	CHINESE ELM	ULMUS PARVIFOLIA	PROTECT
32	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
33	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
34	HOLM OAK	QUERCUS ILEX	PROTECT
35	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
36	SYCAMORE	PLATANUS SP.	REMOVE
37	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
38	SYCAMORE	PLATANUS SP.	PROTECT
39	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
40	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
41	WESTERN SYCAMORE	PLATANUS RACEMOSA	REMOVE
42	SYCAMORE	PLATANUS SP.	REMOVE
43	SYCAMORE	PLATANUS SP.	REMOVE
44	SYCAMORE	PLATANUS SP.	REMOVE
45	SYCAMORE	PLATANUS SP.	REMOVE
46	SYCAMORE	PLATANUS SP.	REMOVE
47	SYCAMORE	PLATANUS SP.	REMOVE
48	SYCAMORE	PLATANUS SP.	REMOVE
49	SYCAMORE	PLATANUS SP.	REMOVE
50	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
51	SYCAMORE	PLATANUS SP.	PROTECT
52	SYCAMORE	PLATANUS SP.	PROTECT
53	SYCAMORE	PLATANUS SP.	PROTECT
54	SYCAMORE	PLATANUS SP.	PROTECT
55	SYCAMORE	PLATANUS SP.	PROTECT
56	SYCAMORE	PLATANUS SP.	PROTECT
57	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
58	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
59	SYCAMORE	PLATANUS SP.	PROTECT
60	SYCAMORE	PLATANUS SP.	PROTECT
61	SYCAMORE	PLATANUS SP.	PROTECT
62	SYCAMORE	PLATANUS SP.	PROTECT
63	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
64	HOLM OAK	QUERCUS ILEX	PROTECT
65	HOLM OAK	QUERCUS ILEX	PROTECT
66	HOLM OAK	QUERCUS ILEX	PROTECT
67	HOLM OAK	QUERCUS ILEX	PROTECT
68	HOLM OAK	QUERCUS ILEX	PROTECT
69	HOLM OAK	QUERCUS ILEX	PROTECT
70	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
71	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
72	HOLM OAK	QUERCUS ILEX	PROTECT
73	HOLM OAK	QUERCUS ILEX	PROTECT
74	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
75	HOLM OAK	QUERCUS ILEX	PROTECT
76	HOLM OAK	QUERCUS ILEX	PROTECT
77	HOLM OAK	QUERCUS ILEX	PROTECT
78	HOLM OAK	QUERCUS ILEX	PROTECT
79	HOLM OAK	QUERCUS ILEX	PROTECT
80	HOLM OAK	QUERCUS ILEX	PROTECT
81	HOLM OAK	QUERCUS ILEX	PROTECT
82	HOLM OAK	QUERCUS ILEX	PROTECT
83	HOLM OAK	QUERCUS ILEX	PROTECT
84	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
85	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
86	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
87	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
88	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
89	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
90	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
91	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
92	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
93	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
94	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
95	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
96	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
97	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
98	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
99	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
100	COAST LIVE OAK	QUERCUS AGRIFOLIA	PROTECT
101	WESTERN SYCAMORE	PLATANUS RACEMOSA	PROTECT
102	EUROPEAN ASH	FRAXINUS EXCELSIOR	PROTECT

STUDIO-MLA

DRAWN BY A. WILKINSON
DESIGNED BY M. HEE
CHECKED BY M. ROMERO

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE TREE DISPOSITION AND PROTECTION NOTES

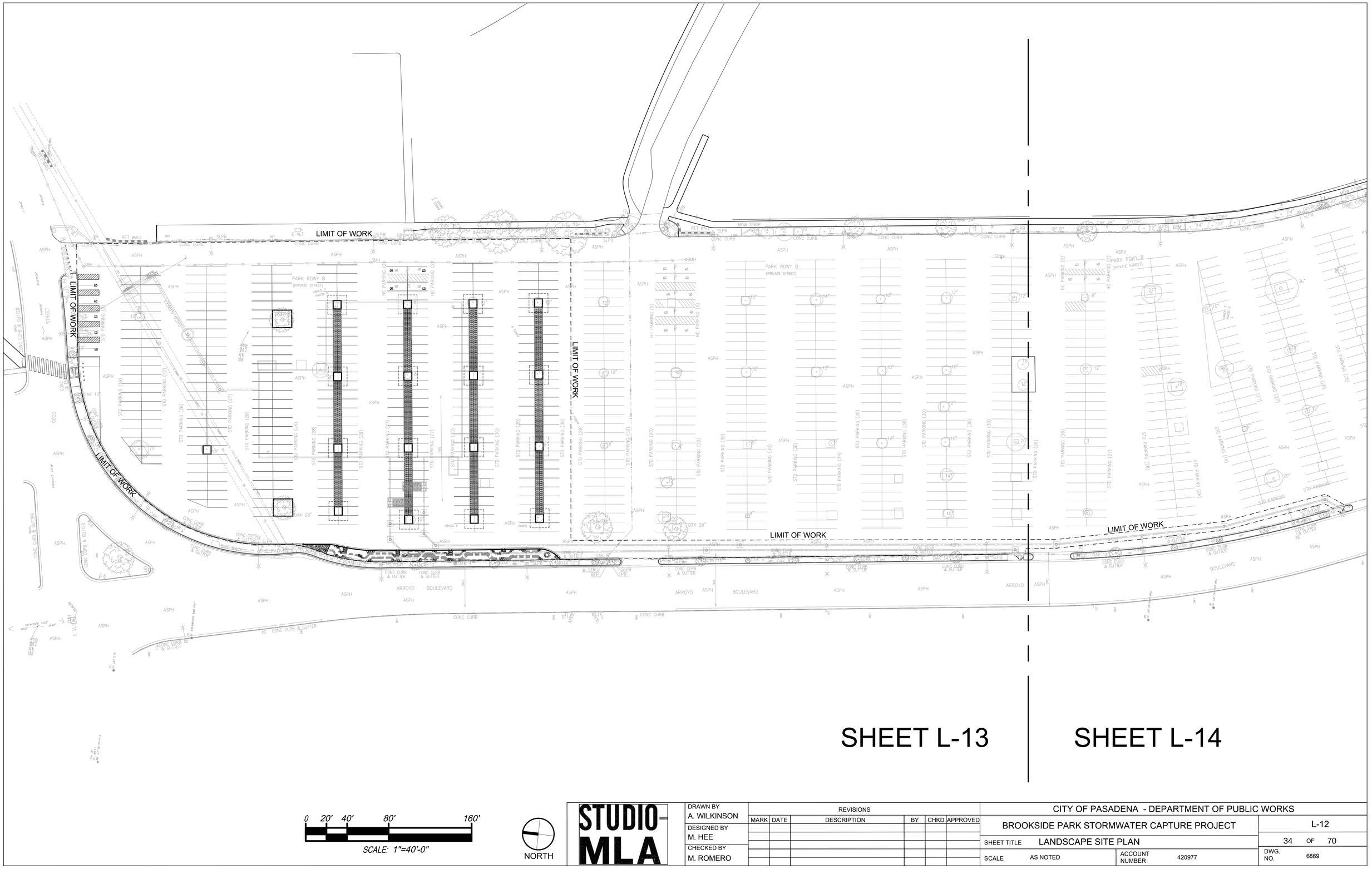
SCALE ACCOUNT NUMBER 420977

L-11

33 OF 70

DWG. NO. 6869

22X34



SHEET L-13

SHEET L-14

STUDIO-MLA	DRAWN BY A. WILKINSON	REVISIONS						CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS	
	DESIGNED BY M. HEE	MARK	DATE	DESCRIPTION	BY	CHKD.	APPROVED	BROOKSIDE PARK STORMWATER CAPTURE PROJECT	L-12
	CHECKED BY M. ROMERO							SHEET TITLE LANDSCAPE SITE PLAN	34 OF 70
								SCALE AS NOTED / ACCOUNT NUMBER 420977	DWG. NO. 6869

22X34

PLANT SCHEDULE		
SYMBOL	BOTANICAL / COMMON NAME	QTY
TREES		
⊗	EXISTING TREE TO BE REMOVED	10
⊙	EXISTING TREE TO PROTECT IN PLACE	92

0 15' 30' 60' 120'

SCALE: 1/30"=1'-0"

NORTH

STUDIO-MLA

DRAWN BY	A. WILKINSON
DESIGNED BY	M. HEE
CHECKED BY	M. ROMERO

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: TREE DISPOSITION PLAN (1 OF 2)

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

L-13

35 OF 70

DWG. NO. 6869

22X34

PLANT SCHEDULE		
SYMBOL	BOTANICAL / COMMON NAME	QTY
TREES		
	EXISTING TREE TO BE REMOVED	10
	EXISTING TREE TO PROTECT IN PLACE	92

0 15' 30' 60' 120'

SCALE: 1/30"=1'-0"

NORTH

STUDIO-MLA

DRAWN BY	A. WILKINSON
DESIGNED BY	M. HEE
CHECKED BY	M. ROMERO

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

L-14

SHEET TITLE: TREE DISPOSITION PLAN (2 OF 2)

36 OF 70

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

DWG. NO.: 6869

22X34

CONSTRUCTION NOTES

1. CONTRACTOR TO COORDINATE AND SCHEDULE WORK OF ALL TRADES SO AS TO NOT DELAY AT ANY PHASE OF COMPLETION, CONSTRUCTION DUE TO INTERCONNECTING WORK, OR LATE SCHEDULING. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ENSURE THAT ALL SUB-TRADES ARE FAMILIAR WITH THE COMPLETE CONSTRUCTION DOCUMENTS PACKAGE INCLUDING WORK THAT MAY OR MAY NOT BE PART OF THEIR SCOPE.
2. WORK SHALL BE PERFORMED WITH THE BEST ACCEPTED PRACTICES OF THE RESPECTED TRADES. ALL MATERIALS TO BE NEW (UNLESS OTHERWISE NOTED ON DRAWINGS), FIRST CLASS IN EVERY RESPECT, AND SHALL CONFORM TO CONTRACT DOCUMENTS.
3. DIMENSIONS ARE SUBJECT TO CONVENTIONAL INDUSTRY TOLERANCES EXCEPT WHERE THE REQUIREMENT IS STATED AS A RANGE WITH SPECIFIC MINIMUM AND MAXIMUM END POINTS.
4. NOTIFY DIG-ALERT (800.422.4133) TO OBTAIN AN UNDERGROUND SERVICE ID AT LEAST TWO (2) DAYS PRIOR BEFORE PROCEEDING WITH ANY EXCAVATION. LOCATIONS OF ALL SERVICE UTILITY RUNS, SUCH AS WATER SUPPLY, GAS, FIBER, ELECTRICAL (OVERHEAD AND UNDERGROUND), TELEPHONE, STORM, AND SANITARY SEWER, ETC. SHOULD BE ASCERTAINED BEFORE WORK COMMENCES. WHERE SERVICES MAY BE AFFECTED BY EXCAVATION, OR WHERE MACHINES MAY BE WORKING NEARBY, THEY SHOULD BE CAREFULLY SEALED, PROTECTED, OR DIVERTED. NOTIFY LANDSCAPE ARCHITECT OF ANY CONFLICT WITH PROPOSED IMPROVEMENTS.
5. COORDINATE ALL UTILITY RUNS AND INSTALLATIONS (EXISTING AND NEW) PRIOR TO PAVING INSTALLATION. VERIFY ALL SLEEVES AND ELECTRIC SOURCES FOR IRRIGATION CONTROL AND LIGHTING.
6. CLEAN OUT AND ADJUST EXISTING DRAIN INLETS TO ACCOMMODATE PROPOSED SURFACE DRAINAGE. ADJUST LATERAL DRAIN LINES AS NECESSARY TO BEST LINK EXISTING MAIN LINES.
7. OBTAIN INSPECTION AND APPROVAL OF FORM WORK AND REINFORCING PRIOR TO PLACING CONCRETE.
8. TRANSITIONS FROM EXISTING PAVING TO NEW PAVING OR BETWEEN DIFFERENT PAVING TYPES SHALL BE FLUSH, UNLESS OTHERWISE NOTED.
9. GRADIENTS SHALL POSITIVELY SLOPE AWAY FROM FOUNDATION(S) TOWARDS DRAIN INLETS AND DRAINAGE SWALES AT A MINIMUM RATE OF 1/8" PER FOOT. INSTALL CONCRETE FORM WORK WITH LONG, EVEN GRADIENTS TO ELIMINATE DIPS, RIDGES, ABRUPT CHANGES OF GRADE, AND SHARP TRANSITIONS.
10. INSTALL EXPANSION JOINTS (EJ) AT ALL VERTICAL ELEMENTS. INSTALL CONSTRUCTION CONTROL JOINTS (CCJ) AT MAX. 12'-0". ZIP JOINTS WILL NOT BE ALLOWED. INSTALL EJ'S AND CCJ'S AT 90° TO THE EDGE OF CONCRETE PAVING. SEE PLANS FOR ADDITIONAL INFORMATION AND LOCATIONS.
11. PRIOR TO PLACING CONCRETE, SUFFICIENTLY MOISTEN THE SUBGRADE AND PROVIDE SUBGRADE PREPARATIONS PER GEOTECHNICAL REPORT RECOMMENDATION.
12. INSTALL CONCRETE IMPROVEMENTS THAT OBTAIN A MINIMUM COMPRESSIVE STRENGTH NOTED IN SPECIFICATIONS. CONCRETE TYPE IS ALSO INDICATED IN SPECIFICATIONS; SUBMIT CONCRETE DESIGN MIXES AND REFEREE FINISH SAMPLES TO LANDSCAPE ARCHITECT. PREPARE FIELD MOCKUPS AND OBTAIN THEIR APPROVAL PRIOR TO INSTALLATION OF CONCRETE. INSTALL CONCRETE FLAT WORK PER RECOMMENDATIONS OF GEOTECHNICAL REPORT. IN CASE OF CONFLICT BETWEEN GEOTECHNICAL REPORT AND DETAILS, THE MOST STRINGENT REQUIREMENTS WILL APPLY.
13. WATERPROOF, BACKFILL AND COMPACT BEHIND ALL WALLS AND MASONRY STRUCTURES AS REQUIRED ON DRAWINGS. BACKFILL PLANTERS WITH IMPORTED AMENDED SOIL MIXTURE PER SPECIFICATIONS.
14. OWNER SHALL EMPLOY AND PAY FOR SERVICES OF AN INDEPENDENT TESTING LABORATORY TO PERFORM SPECIFIED INSPECTION AND TESTING. IN THE EVENT A TEST AND/OR INSPECTION INDICATES FAILURE OF A MATERIAL OR PROCEDURE TO MEET REQUIREMENTS OF THE CONSTRCT DOCUMENTS, COSTS FOR RE-TESTING AND/OR RE-INSPECTION WILL BE PAID BY THE OWNER AND BACK-CHARGED TO THE CONTRACTOR.
15. ADDITIONAL TESTS AND/OR INSPECTIONS NOT HEREIN SPECIFIED BUT REQUESTED BY THE OWNER OR LANDSCAPE ARCHITECT WILL BE PAID BY THE OWNER, UNLESS RESULTS OF SUCH TESTS AND/OR INSPECTIONS ARE FOUND TO BE NOT IN COMPLIANCE WITH CONTRACT DOCUMENTS. IN SUCH CASE, OWNER SHALL PAY FOR ALL COSTS FOR INITIAL TESTING AND/OR INSPECTIONS, AND RE-TESTING AND/OR RE-INSPECTIONS, AND BACK-CHARGED TO THE CONTRACTOR.

REFERENCE NOTES SCHEDULE

SYMBOL	CODE	DESCRIPTION	DETAIL	MODEL	FINISH	COLOR	MANUFACTURER	MATERIAL
AMENITIES								
	A-101	BOULDER	4/L-24			AS FOUND ON SITE		REUSED BOULDERS FROM SITE
SYMBOL	CODE	DESCRIPTION	DETAIL	MATERIAL	FINISH	COLOR	MANUFACTURER	REMARKS
EDGING								
	E-101	FLUSH CURB	1/L-24	CIP CONCRETE	BROOM	NATURAL GRAY TO MATCH EXISTING		
	E-102	6" HIGH CURB	2/L-24	CIP CONCRETE	BROOM	NATURAL GRAY TO MATCH EXISTING		
SYMBOL	CODE	DESCRIPTION	DETAIL	MATERIAL	FINISH	COLOR	MANUFACTURER	DIMENSION
PAVING								
	P-101	PERMEABLE PAVER	3/L-24	PRECAST CONCRETE PAVER	SMOOTH	AGAVE	ACKERSTONE	12X12"
	P-102	COBBLE	1/L-25	COBBLE	NATURAL	SIERRA COBBLE	SOUTHWEST BOULDER & STONE	1.5"-3"
	P-103	AGGREGATE MULCH	1/L-25	AGGREGATE	NATURAL	CHAMOIS BEIGE PEA GRAVEL	SOUTHWEST BOULDR AND STONE	3/4"
SYMBOL	CODE	DESCRIPTION	DETAIL	MATERIAL	MANUFACTURER	DEPTH	REMARKS	
SOIL								
	SL-101	STRUCTURAL SOIL		SEE SPECS			MIXTURE OF CRUSHED GRAVEL AND SOIL	
	SL-102	BIOTREATMENT PLANTING SOIL	5/L-24	SEE SPECS			MIXTURE OF SAND, SOIL, AND COMPOST	

STUDIO-MLA

DRAWN BY A. WILKINSON
DESIGNED BY M. HEE
CHECKED BY M. ROMERO

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE LANDSCAPE CONSTRUCTION NOTES & SCHEDULE

SCALE

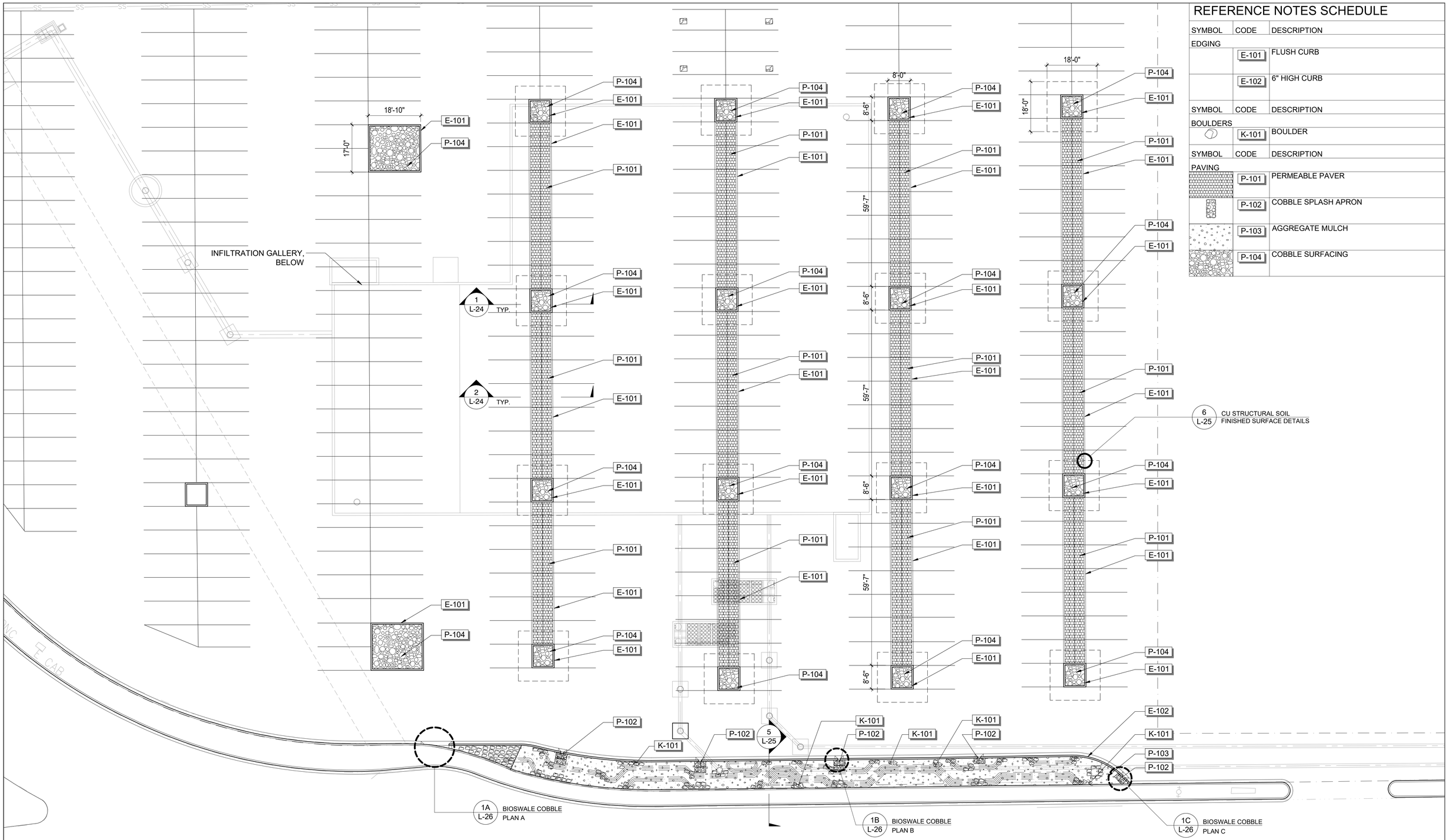
ACCOUNT NUMBER 420977

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DWG. NO. 6869

22X34



REFERENCE NOTES SCHEDULE

SYMBOL	CODE	DESCRIPTION
EDGING		
	E-101	FLUSH CURB
	E-102	6" HIGH CURB
SYMBOL	CODE	DESCRIPTION
BOULDERS		
	K-101	BOULDER
SYMBOL	CODE	DESCRIPTION
PAVING		
	P-101	PERMEABLE PAVER
	P-102	COBBLE SPLASH APRON
	P-103	AGGREGATE MULCH
	P-104	COBBLE SURFACING

0 8' 16' 32' 64'

SCALE: 1/16"=1'-0"

NORTH

STUDIO-MLA

DRAWN BY	A. WILKINSON
DESIGNED BY	M. HEE
CHECKED BY	M. ROMERO

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

L-22

SHEET TITLE LANDSCAPE CONSTRUCTION PLAN

38 OF 70

SCALE AS NOTED

ACCOUNT NUMBER 420977

DWG. NO. 6869

22X34

SOIL SCHEDULE

SYMBOL	CODE	DESCRIPTION
	SL-101	STRUCTURAL SOIL
	SL-102	BIOTREATMENT PLANTING SOIL

INFILTRATION GALLERY, BELOW

SL-101

SL-102

1 L-24

2 L-24

6 L-25 CU STRUCTURAL SOIL FINISHED SURFACE DETAILS

0 8' 16' 32' 64'

SCALE: 1/16"=1'-0"

NORTH

STUDIO-MLA

DRAWN BY	A. WILKINSON
DESIGNED BY	M. HEE
CHECKED BY	M. ROMERO

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

L-23

SHEET TITLE SOILS PLAN

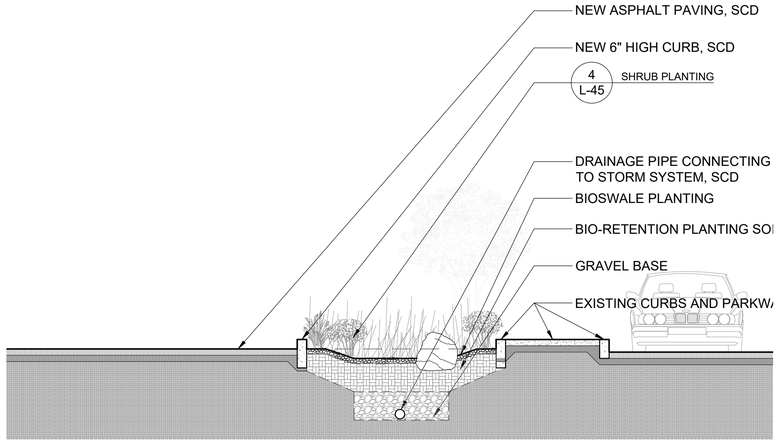
39 OF 70

SCALE AS NOTED

ACCOUNT NUMBER 420977

DWG. NO. 6869

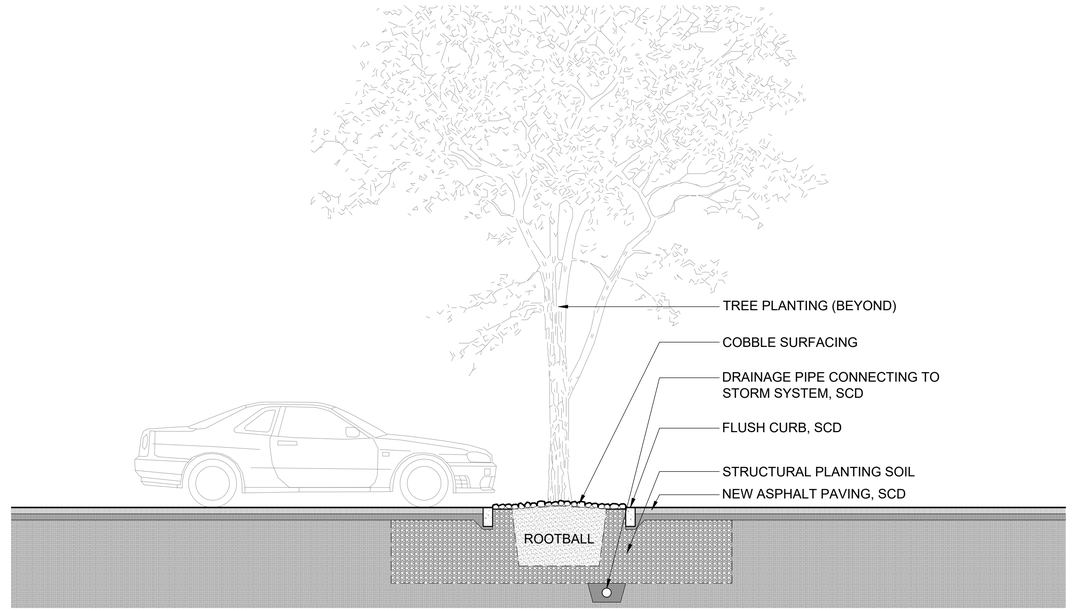
22X34



3 SECTION 3

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

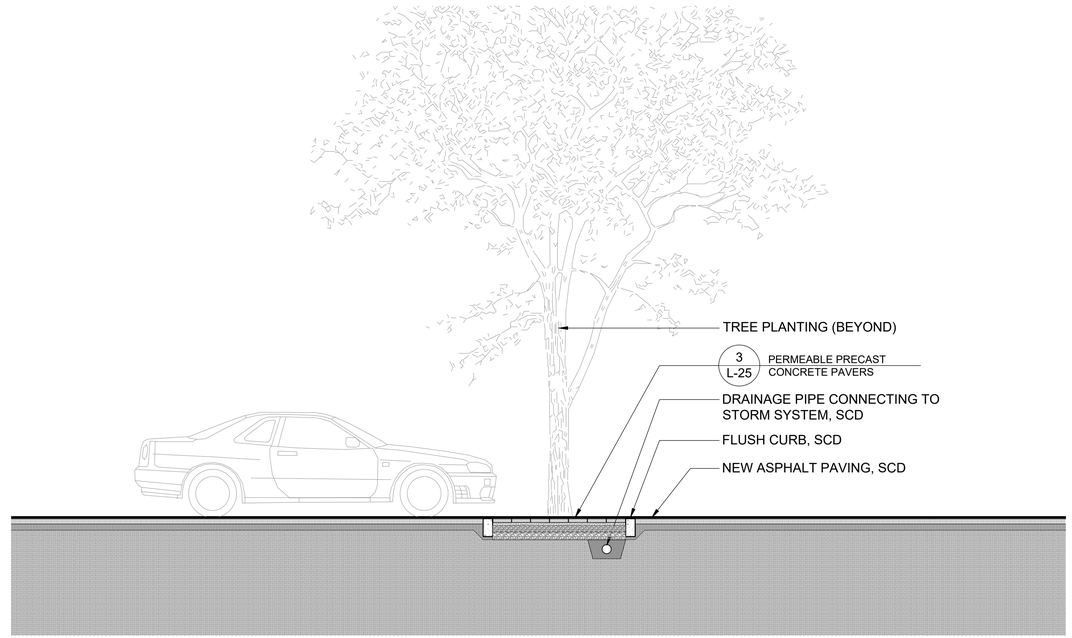
0' 1' 2' 4' 8'



1 SECTION 1

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

0' 1' 2' 4' 8'



2 SECTION 2

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

0' 1' 2' 4' 8'

STUDIO-MLA

DRAWN BY A. WILKINSON

DESIGNED BY M. HEE

CHECKED BY M. ROMERO

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

L-24

SHEET TITLE LANDSCAPE SECTIONS

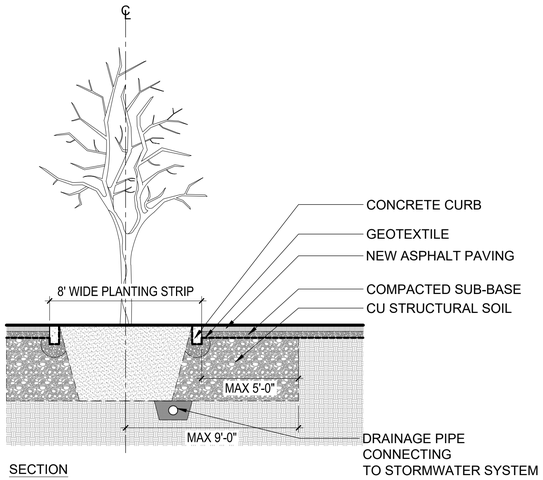
40 OF 70

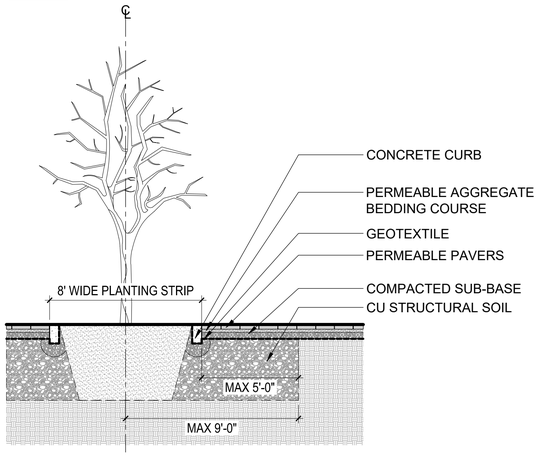
SCALE AS NOTED

ACCOUNT NUMBER 420977

DWG. NO. 6869

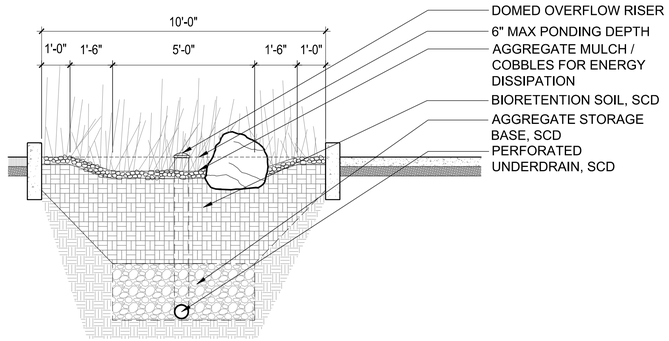
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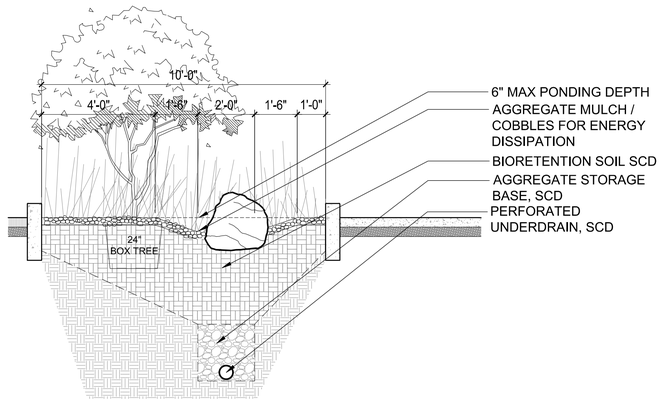


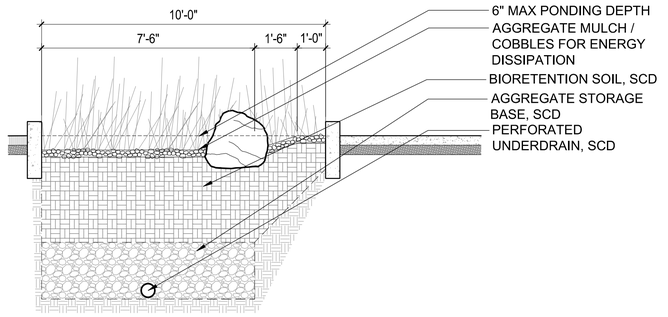


6 CU STRUCTURAL SOIL FINISHED SURFACE DETAILS

1/4" = 1'-0" P-BSP2024-321613-43

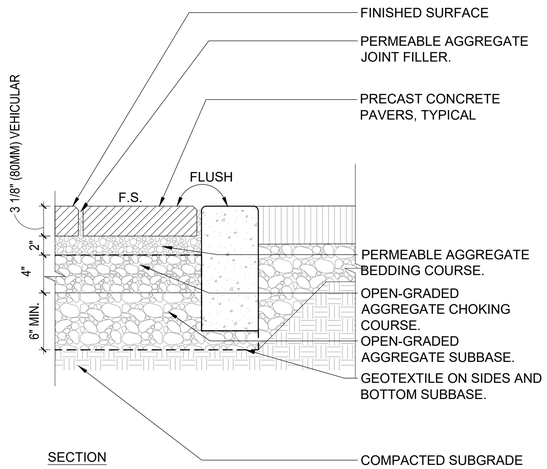






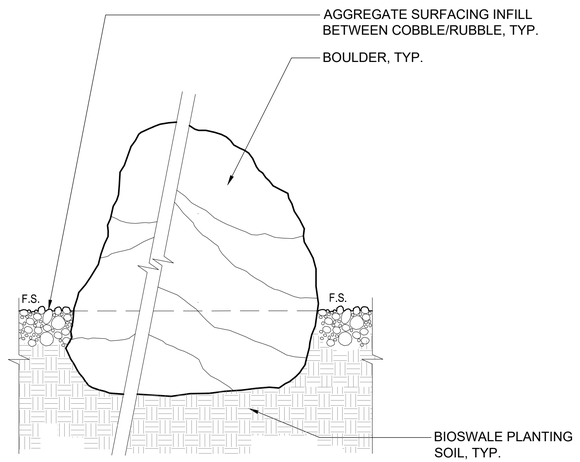
5 PARKING LOT BIOSWALE

3/8" = 1'-0" P-BSP2024-334963-01



3 PERMEABLE PAVERS

1 1/2" = 1'-0" P-BSP2024-321413-10



4 BOULDER

N.T.S. P-BSP2024-323317-01

STUDIO-MLA

DRAWN BY	A. WILKINSON	REVISIONS					
DESIGNED BY	M. HEE	MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED
CHECKED BY	M. ROMERO						

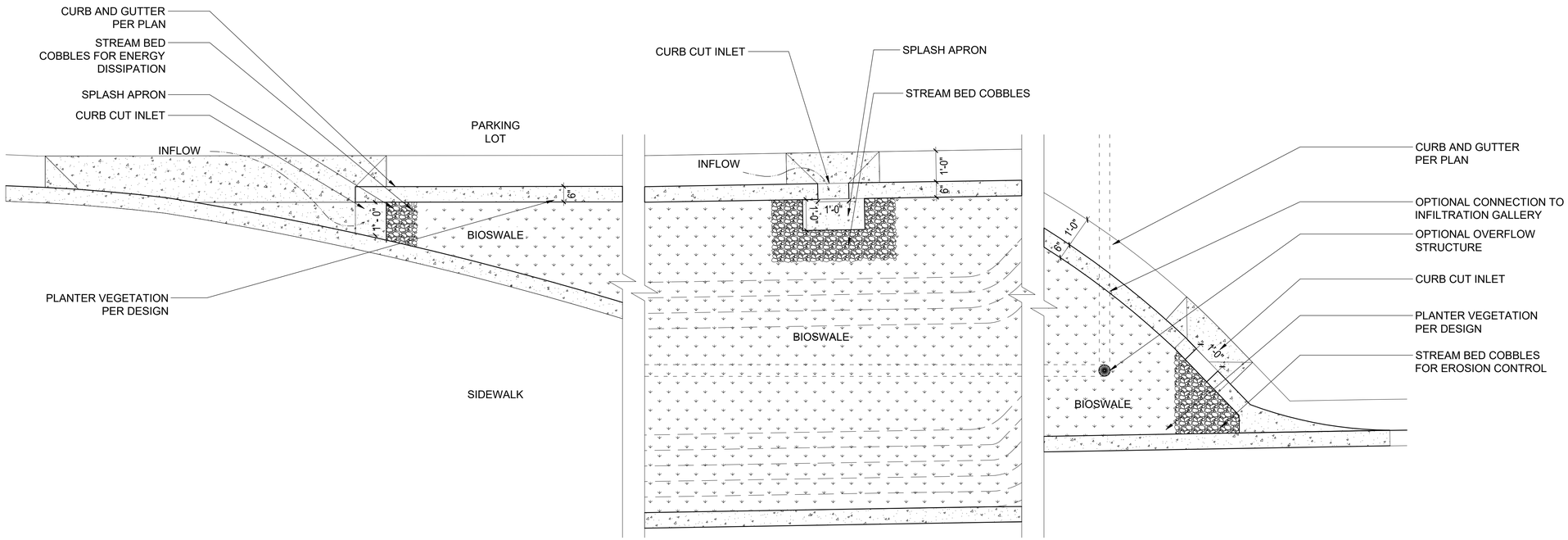
CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT — L-25

SHEET TITLE: LANDSCAPE CONSTRUCTION DETAILS - 1 — 41 OF 70

SCALE: AS NOTED — ACCOUNT NUMBER: 420977 — DWG. NO.: 6869

22X34



PLAN A

PLAN B

PLAN C

1 BIOSWALE COBBLE

1/2" = 1'-0"

P-BSP2024-321313-01

STUDIO-MLA

DRAWN BY	A. WILKINSON
DESIGNED BY	M. HEE
CHECKED BY	M. ROMERO

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

L-26

SHEET TITLE LANDSCAPE CONSTRUCTION DETAILS - 2

42 OF 70

SCALE AS NOTED

ACCOUNT NUMBER 420977

DWG. NO. 6869

22X34

WATER AUDIT NOTE

THE CONTRACTOR WILL CONDUCT AN IRRIGATION AUDIT USING A CERTIFIED IRRIGATION AUDITOR, AFTER THE FINAL FIELD OBSERVATION HAS BEEN COMPLETED AND ALL IRRIGATION COMPONENTS ARE INSTALLED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND THE IRRIGATION SYSTEM IS ACCEPTED BY THE PROJECT LANDSCAPE ARCHITECT FOR MAINTENANCE.

THE IRRIGATION AUDIT WILL BE CONDUCTED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

1. PLACE FLAGS AT EACH HEAD IN THE ZONE.
2. MEASURE SPACING AND MARK MID-POINTS BETWEEN HEADS.
3. PLACE WATER MEASURING RECEPTACLES.
4. TAKE READINGS OF WATER LEVEL IN RECEPTACLES AND RECORD RESULTS.
5. MEASURE HEAD PRESSURE IN EACH ZONE AND RECORD RESULTS.
6. AFTER COMPLETING ZONE ADVANCE TO NEXT ZONE AND REPEAT PROCEDURE.
7. SUBMIT THE RESULTS OF THE AUDIT TO THE PROJECT ARCHITECT.

THE IRRIGATION MAINTENANCE SCHEDULE TASKS LISTED BELOW ARE INTENDED AS MINIMUM STANDARDS AND MORE FREQUENT ATTENTION MAY BE REQUIRED DEPENDING ON THE PARTICULAR SITE CONDITIONS.

MAINTENANCE TASK	FREQUENCY
1. CONTROLLER CABINET - OPEN CABINET, CLEAN OUT DEBRIS, AND REPLACE BATTERY AS NECESSARY. CHECK WIRING AND REPAIR AS NEEDED. CHECK CLOCK AND RESET, IF NECESSARY.	QUARTERLY
2. IRRIGATION SCHEDULE - ADJUST SCHEDULE FOR SEASONAL VARIATIONS AND OTHER CONDITIONS WHICH MAY AFFECT THE AMOUNT OF WATER NEEDED TO MAINTAIN PLANT HEALTH. ADJUST AS NECESSARY.	MONTHLY
3. POC - VISUALLY INSPECT COMPONENTS FOR LEAKS, PRESSURE SETTINGS, SETTLEMENT OR OTHER DAMAGE AFFECTING THE OPERATION OF A COMPONENT REPAIR AS NEEDED.	QUARTERLY
4. REMOTE CONTROL VALVES, ISOLATION VALVES AND QUICK COUPLER VALVES - VISUALLY INSPECT FOR LEAKS, SETTLEMENT, WIRE CONNECTIONS AND PRESSURE SETTINGS. REPAIR OR ADJUST AS NEEDED.	QUARTERLY
5. MAINLINE AND LATERALS - VISUALLY INSPECT FOR LEAKS OR SETTLEMENT OF TRENCH.	QUARTERLY
6. SPRINKLERS - VISUALLY CHECK FOR ANY BROKEN, MISSALIGNED OR CLOGGED HEADS, HEADS WITH INCORRECT ARC, INADEQUATE COVERAGE OR OVERSPRAY AND LOW HEAD DRAINAGE. REPAIR AS NEEDED.	WEEKLY
7. FILTERS AND STRAINERS - VISUALLY CHECK FOR LEAKS AND BROKEN FITTINGS. CLEAN AND FLUSH SCREENS.	MONTHLY

AUDIT SHALL BE IN ACCORDANCE WITH THE LATEST STATE OF CALIFORNIA LANDSCAPE WATER MANAGEMENT PROGRAM AS DESCRIBED IN THE LATEST LANDSCAPE IRRIGATION AUDITOR HANDBOOK. THE LANDSCAPE IRRIGATION AUDITS TO BE CONDUCTED BY A QUALIFIED INDIVIDUAL AND THE AUDIT SCHEDULE SHALL BE CONDUCTED AT LEAST ONCE EVERY FIVE YEARS IN ACCORDANCE WITH THE REQUIREMENTS OF TITLE 20, DIVISION 1 OF THE LOS ANGELES COUNTY CODE.

Maintenance Schedules:

Maintenance Schedules. A regular maintenance schedule satisfying the following conditions shall be submitted as part of the landscape documentation package.

Landscape shall be maintained to ensure water efficiency. A regular maintenance schedule shall include, but not be limited to, checking, adjusting, and repairing irrigation equipment, resetting the automatic controller, aerating and dethatching turf areas, replenishing mulch, fertilizing, pruning, and weeding in all landscape areas.

Whenever possible, repair of irrigation equipment shall be done with the originally specified materials or their equivalents.

A landscape irrigation audit schedule as required in chapter 20.09 of Title 20 may be recommended. The maximum period between audits shall be five years.

Irrigation Audit Schedules:

Landscape Irrigation Audit Schedules. A schedule of landscape irrigation audits of at least every five years must be established, for all but single-family residences, and other projects with a landscape area less than 1 acre (0.405 ha). As required in Chapter 20.09 of Title 20 (Utilities Codes), an audit satisfying the following conditions shall be submitted to the County as part of the landscape documentation package.

At a minimum, audits shall be in accordance with the latest State of California Landscape Water Management Program as described in the Landscape Irrigation Auditor Handbook, prepared for the California Department of Water Resources, Water Conservation Office, the entire document, which is hereby incorporated by reference.

The schedule shall provide for landscape irrigation audits to be conducted by a qualified individual as determined by the Director at least once every five years in accordance with the requirements of Title 20, Division 1 of the Los Angeles County Code.

Monument Note:

CONTRACTOR TO PROTECT AND PRESERVE IN PLACE ALL EXISTING SURVEY MONUMENTS. ANY DISTURBED MONUMENTS SHALL BE RESET BY A LICENSED LAND SURVEYOR AND THE APPROPRIATE CORNER RECORD MUST BE FILED WITH LOS ANGELES COUNTY.

IRRIGATION EQUIPMENT LEGEND
DOMESTIC WATER

SYMBOL	ITEM	MANUFACTURER - MODEL NUMBER - DESCRIPTION
NOT SHOWN	VALVE BOX	**IRRIGATION VALVE BOXES**

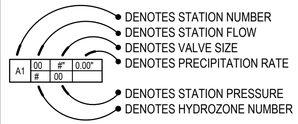
BOX	LID	SKU NUMBER
• 6" ROUND	SNAP ON T-COVER	CARSON 07081136
• 10" ROUND	T-COVER	CARSON 09101037
• 14" x 19" RECTANGULAR	T-COVER	CARSON 14191434
• 12" x 20" JUMBO	T-COVER	CARSON 12201030

BOX / LID COLOR: BLACK - INCLUDES STANDARD HEX BOLT

LOW VOLTAGE IRRIGATION WIRE VALVE BOXES

• 10" ROUND	T-COVER	CARSON 09101037
• 14" x 19" RECTANGULAR	T-COVER	CARSON 14191434

BOX / LID COLOR: BLACK - INCLUDES STANDARD HEX BOLT



TURF ROTATOR POP UP LEGEND
DOMESTIC WATER

	SYMBOL	NOZZLE	PATTERN	FLOW	PRES	PRECIP
	ROTATOR MODEL # - HUNTER PROS-12-PRS40-CV-F					
10' (RADIUS)		MP800SR-90	QRTR	0.23	40	0.80
		MP800SR-90	THRD	0.33	40	0.80
		MP800SR-90	HALF	0.42	40	0.80
		MP800SR-360	FULL	0.78	40	0.80
15'		MP815-90	QRTR	0.49	40	0.80
		MP815-90	THRD	0.71	40	0.80
		MP815-90	HALF	0.93	40	0.80
		MP815-360	FULL	1.87	40	0.80
22'		MP820-90	QRTR	0.97	40	0.80
		MP820-90	THRD	1.49	40	0.80
		MP820-90	HALF	2.01	40	0.80
		MP820-360	FULL	3.97	40	0.80

POC NOTE

BELOW IS SIZING OF THE POC IRRIGATION EQUIPMENT TO BE INSTALLED. CONTRACTOR SHALL REFER TO THE IRRIGATION EQUIPMENT LEGEND FOR SPECIFICATION.

POINT OF CONNECTION '1'

SERVICE LINE:	3"	BASKET STRAINER:	N/A
WATER METER:	3"	MASTER VALVE:	4"
BACKFLOW DEVICE:	3"	FLOW SENSOR:	4"
PRESSURE REGULATOR:	N/A		

CONTROLLER NOTE

CONTRACTOR SHALL PURCHASE AND INSTALL THE FOLLOWING CONTROLLER AS NOTED BELOW:

CONTROLLER MANUFACTURER:	HUNTER
CONTROLLER MODEL:	MCC
WIRE TYPE:	CONVENTIONAL/TWO-WIRE
ASSEMBLY TYPE:	TOP MOUNT ENCLOSURE
SERVICE WARRANTY:	2 YEARS
RAIN SENSOR:	SOLAR SYNC
FLOW SENSOR MANUFACTURE:	HUNTER
FLOW SENSOR SIZE AND TYPE:	EXISTING

CONTROLLER 'B' - SITEONE GREENTECH MODEL NUMBER:
CA6-HU13-38&TW/(X)GR-K/HSSE/GTCM-1Y/(X)CAB14-B/(X)EZD100

THE IRRIGATION CONTRACTOR SHALL MAKE FINAL ELECTRICAL CONNECTION TO CONTROLLER PER LOCAL ELECTRICAL CODE.

CONTACT JOSHUA SEIPEL FOR ORDER INFORMATION (909) 240-6887

IRRIGATION EQUIPMENT LEGEND
DOMESTIC WATER

SYMBOL	ITEM	MANUFACTURER - MODEL NUMBER - DESCRIPTION
DW	DOMESTIC WATER METER	EXISTING 3" DOMESTIC WATER METER • VERIFY STATIC WATER PRESSURE AND REPORT TO IRRIGATION CONSULTANT BEFORE START OF WORK
	BACKFLOW WITH ENCLOSURE	EXISTING BACKFLOW PREVENTION DEVICE
	MASTER VALVE	EXISTING MASTER VALVE
	FLOW SENSOR	EXISTING FLOW SENSOR
	GATE VALVE	NIBCO T-113-K BRONZE CROSS TOP GATE VALVE • LINE SIZE UP TO 3"
	CONTROL VALVE	HUNTER ICV-FS-AS-ADJ SERIES PRESSURE REGULATING CONTROL VALVE WITH FILTER SENTRY • INCLUDE ACCU SYNC ADJUSTABLE VALVE PRESSURE REGULATOR • INCLUDE SINGLE STATION TWO-WIRE DECODER • REFER TO PLAN FOR SIZE
	QUICK COUPLER	HUNTER HQ-33DLRC 3/4" QUICK COUPLER WITH YELLOW VINYL LOCKING COVER • INCLUDE TWO (2) HUNTER HK-33 KEYS WITH HS-0 SWIVEL PER CONTROLLER
	AIR RELIEF	NETAFIM 65ARIB1 1" COMBINATION AIR / VACUUM RELIEF VALVE
NOT SHOWN	LATERAL LINE CHECK VALVE	NDS KSC-S SERIES LINE SIZE SWING CHECK FOR UPHILL FLOW DIRECTION NDS KC-S SERIES LINE SIZE SPRING CHECK FOR DOWNHILL FLOW DIRECTION
TP	TREE IRRIGATION	36" HUNTER RZWS-36-25-CV-RZWS-SLEEVE. REFER TO TREE MATRIX ON TREE DETAIL FOR NUMBER OF ROOT WATERING SYSTEMS BY TREE BOX SIZE.
	LOCATION ARROW	INDICATES MAINLINE INSTALLATION LOCATION
NOT SHOWN	RAIN SENSOR	EXISTING RAIN SENSOR
	CONTROLLER	TOP MOUNTED STAINLESS STEEL CONTROLLER ASSEMBLY • REFER TO CONTROLLER NOTE FOR MODEL NUMBER AND FEATURES
DM	BELOW GRADE PRESSURE MAINLINE	DOMESTIC WATER MAINLINE (DM) WHITE SCHEDULE 40 PVC PRESSURE MAINLINE FOR PIPE 1" THROUGH 1-1/2" WHITE CLASS 315 PVC PRESSURE MAINLINE FOR PIPE 2" THROUGH 3" • ALL PIPE TO BE SOLVENT WELD • REFER TO PLAN FOR SIZE • REFER TO TRENCHING DETAIL FOR DEPTHS
	BELOW GRADE LATERAL LINE	WHITE SCHEDULE 40 SOLVENT WELD PVC LATERAL LINE • REFER TO PLAN FOR SIZE - 3/4" MINIMUM • REFER TO TRENCHING DETAIL FOR BURIAL DEPTHS
	TREE IRRIGATION LATERAL	WHITE SCHEDULE 40 SOLVENT WELD PVC LATERAL LINE • REFER TO PLAN FOR SIZE - 3/4" MINIMUM • REFER TO TRENCHING DETAIL FOR BURIAL DEPTHS
	SLEEVE	WHITE SCHEDULE 40 PVC • REFER TO SLEEVING LEGEND FOR QUANTITY AND SIZE
NOT SHOWN	IRRIGATION WIRE TWO-WIRE PATH	PAIGE P7354D UL LISTED U.F. 600V, 14 AWG TWO-WIRE DIRECT BURIAL CABLE • INSTALL IN A GRAY SCHEDULE 40 1-1/4" PVC CONDUIT • EACH CONTROLLER TO HAVE DIFFERENT COLOR JACKET • NO WIRE SPLICES BETWEEN VALVES • WIRE CONNECTORS TO BE 600VAC RATED
NOT SHOWN	WIRE CONNECTORS	3M DBR/Y-6 600 VAC WATERPROOF DIRECT BURY CONNECTORS
NOT SHOWN	MAINLINE FITTINGS	PRESSURE MAINLINE FITTINGS TO BE SCHEDULE 40 PVC SOLVENT WELD
	LATERAL FITTINGS	NON-PRESSURE LATERAL LINE FITTINGS TO BE: • BURIED LATERAL: SCHEDULE 40 PVC SOLVENT WELD • ABOVE GRADE LATERAL: UVR SCHEDULE 40 PVC SOLVENT WELD
NOT SHOWN	STATION ID TAG	CHRISTY'S ID-MAX-Y1 YELLOW STATION ID TAGS WITH BLACK LETTERING • PER REMOTE CONTROL VALVE

ARROYO
IRRIGATION CONSULTING
13660 GERSHON PLACE
SANTA ANA, CA 92705
(949) 430-7030

BLACK & VEATCH
Black & Veatch Corporation
Los Angeles, California

DRAWN BY: A. WILKINSON
DESIGNED BY: M. HEE
CHECKED BY: M. ROMERO

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD.	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: LANDSCAPE IRRIGATION LEGEND

SCALE

ACCOUNT NUMBER: 420977

SHEET: L-31

43 OF 70

DWG. NO.: 6869

22X34

EXISTING IRRIGATION SYSTEM - CONSTRUCTION NOTES

DOCUMENTATION OF EXISTING IRRIGATION SYSTEM - PRIOR TO COMMENCING WORK

1. CONTRACTOR SHALL OBTAIN EXISTING IRRIGATION AS-BUILT RECORD DRAWINGS / CONTROLLER CHARTS FOR ADJACENT IRRIGATED AREAS PRIOR TO STARTING WORK. ALL EXISTING IRRIGATION EQUIPMENT LOCATION, SIZES, AND CONDITIONS SHALL BE VERIFIED IN FIELD WITH OWNER'S AUTHORIZED REPRESENTATIVE AT START OF WORK. CONTRACTOR TO PROVIDE OWNER'S AUTHORIZED REPRESENTATIVE A PUNCH LIST OF REPAIRS NEEDED TO THE EXISTING IRRIGATION SYSTEM.
2. CONTRACTOR SHALL MEET WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO BEGINNING DEMOLITION OR ANY OTHER WORK, AND WALK SITE TO LOCATE EXISTING CONTROLLER, WIRING, PIPES AND OTHER IRRIGATION TO BE PROTECTED IN PLACE.
3. THE CONTRACTOR MUST FAMILIARIZE THEMSELF WITH THE EXISTING IRRIGATION AND PLANTING ON PROPERTY. ANY DAMAGE OR ADJUSTMENTS REQUIRED INCLUDING REPLACING OR RELOCATING IRRIGATION LINES, HEADS, VALVES, WIRES OR ANY UTILITY THAT OCCURS ON THE PARCEL DUE TO THE CONSTRUCTION OF THIS PROJECT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER. THE OWNER'S REPRESENTATIVE MUST REVIEW ANY REQUIRED MODIFICATIONS TO THESE AREAS PRIOR TO COMMENCING WORK. THE CONTRACTOR MUST NOTIFY THE OWNER'S AUTHORIZED REPRESENTATIVE OF THESE CONDITIONS OR ANY DISCREPANCIES PRIOR TO COMMENCING WORK.
4. CONTRACTOR TO DOCUMENT AND PROVIDE SHOP DRAWING OF THE EXISTING IRRIGATION SYSTEM TO LANDSCAPE ARCHITECT. CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS, PROPERTY LINES, DIMENSIONS, ETC. PRIOR TO COMMENCING WORK. ALL EXISTING METERS, SERVICE LINES, BACKFLOW DEVICES, MAINLINES, RCVS, ISOLATION VALVES, QUICK COUPLERS, CONTROLLERS, ETC. SHALL BE VERIFIED IN FIELD. CONTRACTOR TO POT HOLE TO LOCATE BURIED IRRIGATION EQUIPMENT AS NEEDED. ALL EXISTING IRRIGATION EQUIPMENT SHALL BE CLEARLY INDICATED INCLUDING SIZES AND MODEL NUMBERS TO SCALE ON AN ACCURATE BASE DRAWING AND SUBMITTED AS A SHOP DRAWING. SAID SHOP DRAWING SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT, AND OWNER'S AUTHORIZED REPRESENTATIVE FOR REVIEW AND APPROVAL. NOTIFY THE OWNER'S AUTHORIZED REPRESENTATIVE IMMEDIATELY IF ANY DISCREPANCIES ARE FOUND. NO WORK SHALL PROCEED WITHOUT APPROVAL OF SAID SHOP DRAWINGS.

MODIFICATION OF EXISTING IRRIGATION SYSTEM

1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE REMOVAL AND DISPOSAL OF ALL EXISTING IRRIGATION EQUIPMENT AFFECTED BY THE PROPOSED IRRIGATION IMPROVEMENTS. CONTRACTOR SHALL VERIFY ALL EQUIPMENT TO BE REMOVED AND DISPOSED OF IN FIELD PRIOR TO COMMENCING WORK. CONTRACTOR TO VERIFY WITH OWNER'S AUTHORIZED REPRESENTATIVE IF ANY EXISTING IRRIGATION EQUIPMENT IS TO BE TURNED OVER TO OWNER. CONTRACTOR TO BACKFILL ALL EXISTING IRRIGATION EQUIPMENT LOCATIONS WITH LIKE SOIL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR/MODIFICATION OF ALL ADJACENT IRRIGATION SYSTEM EQUIPMENT THAT IS AFFECTED BY PROPOSED IRRIGATION IMPROVEMENTS. CONTRACTOR SHALL REPAIR SAID SYSTEMS TO A LIKE NEW MANNER, PROVIDING COMPLETE 100% HEAD TO HEAD COVERAGE IN ALL AREAS . CONTRACTOR SHALL CONFIRM ALL AREAS REQUIRING MODIFICATION WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO BIDDING WORK AND PRIOR TO COMMENCING WORK.
3. WHERE NEW SCOPE OF WORK DOES NOT ENCOMPASS THE ENTIRE EXISTING IRRIGATION VALVE AREA, CONTRACTOR TO INSTALL ADDITIONAL VALVE(S) AS NEEDED FOR HYDROZONING PURPOSES (PLANTING AND IRRIGATION CONSIDERATIONS).
4. CONTRACTOR SHALL BE RESPONSIBLE FOR UPSIZING THE IRRIGATION CONTROLLER, FURNISHING AND INSTALLING VALVES AND NEW WIRES, PROVIDING TWO-WIRE EQUIPMENT (AS APPLICABLE), ETC FOR MODIFICATION OF THE EXISTING IRRIGATION SYSTEM AT NO COST TO OWNER.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS TO EXISTING IRRIGATION, LANDSCAPE AND HARDSCAPE DAMAGED BY NEW CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
6. CONTRACTOR SHALL FURNISH AND INSTALL BACKFLOW PREVENTION FOR THE IRRIGATION SYSTEM PER CURRENT PLUMBING CODES.
7. CONTRACTOR SHALL FURNISH AND INSTALL A SMART IRRIGATION CONTROLLER WITH FLOW SENSING FEATURES, RAIN SENSOR, MASTER VALVE AND FLOW SENSOR PER CA MWELO ORDINANCE. ALL EQUIPMENT IS TO BE WIRED AND OPERATIONAL AT TIME OF TURNOVER.

WATERING OF EXISTING SITE

1. CONTRACTOR SHALL WATER (AUTOMATIC PROGRAMMED WATERING SCHEDULES, TEMPORARY HIGHLINE, HAND WATER, ETC) THE EXISTING PLANT MATERIAL THROUGHOUT THE CONSTRUCTION PROCESS. ANY DAMAGE DUE TO CONSTRUCTION SHALL BE REPAIRED IMMEDIATELY TO PREVENT ANY LAPSE IN IRRIGATION OF THE EXISTING PLANT MATERIAL. ANY PLANT MATERIAL AND/OR IRRIGATION DAMAGED AS PART OF CONSTRUCTION SHALL BE REPAIRED TO A LIKE NEW CONDITION AS PART OF CONTRACT. ANY PLANT MATERIAL WHICH IS STRESSED OR DIES DUE TO CONSTRUCTION, IS TO BE REPLACED BY THE CONTRACTOR AT NO COST TO OWNER.

IRRIGATION CONTROLLER NOTES

1. ANY EXISTING IRRIGATION CONTROL VALVES CONNECTED TO THE EXISTING IRRIGATION SYSTEM/CONTROLLER SHALL BE RECONNECTED TO THE NEW CONTROLLER. CONTRACTOR SHALL CONNECT ALL BATTERY VALVES LOCATED ONSITE TO THE NEW CONTROLLER TO MEET FLOW SENSING REQUIREMENTS. CONTRACTOR TO RUN NEW WIRES TO EXISTING BATTERY VALVES OR UTILIZE TWO-WIRE RETROFIT DEVICES.
2. IRRIGATION CONTROLLER SHALL BE REPROGRAMMED WITH NEW IRRIGATION SCHEDULE PER NEW IRRIGATION PARAMETERS.
3. ALL EXISTING IRRIGATION VALVES SHALL BE RESEQUENCED TO ACCOMMODATE NEW IRRIGATION VALVES INSTALLED DURING CONSTRUCTION.
4. IRRIGATION WIRES TO MATCH EXISTING COLOR SCHEME FOR PILOT, EXTRA, AND COMMON.

EXISTING TREES / OBSTRUCTIONS

1. WHENEVER ROOTS OF EXISTING TREES ARE ENCOUNTERED DURING TRENCHING OPERATIONS, THE CONTRACTOR SHALL REROUTE MAIN LINE TRENCHES. DO NOT CUT ROOTS OVER 1" IN DIAMETER. ALL CUTS SHALL BE A CLEAN SHARP CUT. IF TRENCHING IS REQUIRED, THE CONTRACTOR SHALL HAND DIG THE TRENCHES OR USE AN AIR SPADE TO NOT DAMAGE ROOTS. NO MECHANICAL TRENCHING WITHIN THE DRIPLINE OF THE EXISTING TREE WILL BE ALLOWED. PROTECT ALL ROOTS EXPOSED TO SUNLIGHT WITH MOIST BURLAP UNTIL COVERED WITH SOIL.

IRRIGATION DESIGN NOTES

1. ITEMS SHOWN IN BLACK REPRESENT PROPOSED RETROFIT. ITEMS SHADED IN GRAY REPRESENT EXISTING IRRIGATION FOR REFERENCE.

IRRIGATION SYSTEM MAINTENANCE SCHEDULE

IRRIGATION SYSTEM ADJUSTMENT/MAINTENANCE (INSTALLATION)

1. FLUSH IRRIGATION SYSTEM THOROUGHLY BEFORE INSTALLING DRIP COMPONENTS / SPRINKLER NOZZLES.
2. ADJUST PRESSURE REGULATOR DOWNSTREAM OF WATER METER TO REQUIRED PRESSURE SETTING.
3. ADJUST CONTROL VALVE FLOW / PRESSURE WITH MAXIMUM FLOW OPERATING PER POINT OF CONNECTION.
4. ADJUST PRESSURE DIAL SETTING ON CONTROL VALVES AS FOLLOWS:
   A. SPRAY HEADS - 35 PSI
   B. MEDIUM RANGE ROTORS AND ROTATORS - 50 PSI
   C. LARGE RANGE ROTORS - 65 PSI
      * INCREASE AS NEEDED FOR ELEVATION CHANGE
5. ACTIVATE VALVE AND ADJUST FLOW CONTROL STEM UNTIL DESIRED FLOW / PRESSURE IS ACHIEVED. VALVE STEM SHALL NOT BE FULLY OPEN PER MANUFACTURER RECOMMENDATIONS.
6. ADJUST SPRAY HEAD PATTERN AND COVERAGE WITH NOZZLE SCREW ADJUSTMENT TO ELIMINATE OVERSPRAY ONTO HARDSCAPE.
7. ADJUST ROTOR PATTERN AND COVERAGE WITH NOZZLE SCREW TO ELIMINATE OVERSPRAY ONTO HARDSCAPE.

IRRIGATION SYSTEM MAINTENANCE (POST INSTALLATION)

1. MAINTENANCE OF THE IRRIGATION SYSTEM IS AN ONGOING PROCESS THAT INVOLVES MONITORING, ADJUSTMENT, AND REPAIR. BY INSTITUTING A MAINTENANCE PROGRAM THAT EMPHASIZES MONITORING AND ADJUSTMENT, YOU CAN MINIMIZE REPAIRS.
2. SEVERAL IRRIGATION SYSTEM MAINTENANCE ACTIVITIES ARE BEST DONE AT REGULAR, PERIODIC INTERVALS; OTHERS REQUIRE PERFORMANCE ON AN AS-NEEDED BASIS. THESE ACTIVITIES ARE SUMMARIZED AS FOLLOWS:
3. **WEEKLY:**
   A. WET CHECK - BRIEFLY ACTIVATE EACH CONTROL VALVE AND OBSERVE FOR MAJOR LEAKING OR BROKEN PIPES AND/OR TUBING.
   B. INSPECT EMITTERS FOR PROPER COVERAGE AND OPERATION. IMMEDIATELY REPAIR OR REPLACE ANY EMITTERS WHICH MAY HAVE BECOME DAMAGED OR CLOGGED BY DEBRIS.
   C. OBSERVE IRRIGATION SYSTEM FOR RUN-OFF AND ADJUST AS NEEDED.
   D. FLUSH DRIP SYSTEMS BY OPENING UP FLUSH VALVE.
   E. BASED ON OBSERVED FIELD CONDITIONS ADJUST IRRIGATION PROGRAMMING OF THE AUTOMATIC IRRIGATION CONTROLLERS. ADJUST WATER APPLICATIONS ACCORDING TO CHANGES IN THE WEATHER. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE RESULTING FROM EITHER OVER OR UNDER-WATERING.
   F. SOIL: AS OFTEN AS NECESSARY THE SOIL SHOULD BE CHECKED WITH A SOIL MOISTURE SENSOR AND/OR AUGER TO EVALUATE SOIL MOISTURE LEVEL IN RESPECT TO THE PLANT MATERIAL'S ROOT ZONE.
   G. RECORDS: THE CONTRACTOR SHALL ESTABLISH A FORM TO RECORD WATER USAGE, WEATHER DATA, SOIL DATA AND SYSTEM OPERATION.
4. **MONTHLY:**
   A. PERFORM A PREVENTATIVE MAINTENANCE REVIEW OF ALL IRRIGATION EQUIPMENT, INCLUDING STRAINERS, CONTROLLERS, VALVES AND EMITTERS. IT IS IMPERATIVE THAT THE SYSTEM BE CHECKED PRIOR TO THE INCREASED SEASONAL WATER NEEDS OF SPRING AND SUMMER.
   B. MAINTAIN AUTOMATIC CONTROLLERS IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS, INCLUDING PERIODIC INSPECTION FOR LOOSE WIRING, ACCUMULATED DEBRIS, AND DETERIORATING HOUSINGS. REPORT ANY MALFUNCTIONS OR NEEDED REPAIRS TO OWNER'S REPRESENTATIVE.
   C. INSPECT AND FLUSH WYE STRAINERS, BASKET STRAINERS AND DRIP FILTERS.
5. **YEARLY:**
   A. CERTIFY IRRIGATION BACKFLOW DEVICE (AS APPLICABLE)
   B. RENEW IRRIGATION CONTROLLER SUBSCRIPTION SERVICE (AS APPLICABLE)
   C. SERVICE IRRIGATION CONTROLLER AND RAIN SENSOR / WEATHER STATION
   D. RE-LEARN STATION FLOWS AND ADJUST IRRIGATION PROGRAMMING
6. **AS NEEDED:**
   A. EXPOSE EMITTERS AS NECESSARY TO ACHIEVE A VISUAL INSPECTION OF OPERATION.
   B. BEFORE PERIODS OF RAINFALL, CHANGE CONTROLLER SETTINGS TO TEMPORARILY PREVENT IRRIGATION WATERING.
   C. MAINTAIN ELECTRIC CONTROL VALVES FREE OF DEBRIS AND ACCUMULATED SILT.

IRRIGATION SYSTEM NOTES

DESIGN CLARIFICATIONS:

1. THE IRRIGATION PLANS ARE DIAGRAMMATIC. ALL EQUIPMENT AND PIPING SHOWN WITHIN HARDSCAPED LOCATIONS ARE FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN LANDSCAPED LOCATIONS WHEREVER POSSIBLE.
2. THE IRRIGATION CONTRACTOR SHALL BECOME FAMILIAR WITH ALL GRADE DIFFERENCES AND LOCATION OF ALL WALLS, FENCES, STRUCTURES AND UTILITIES. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR REPAIRING OR REPLACING ALL ITEMS DAMAGED BY THEIR WORK. WORK SHALL BE COORDINATED WITH THE SITE SUPERINTENDENT FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER STREETS, PARKING LOTS, AND PAVING, ETC.
3. THE IRRIGATION SYSTEM DESIGN IS BASED ON A MINIMUM OPERATING PRESSURE AS NOTED ON THE PLANS. THE IRRIGATION CONTRACTOR SHALL VERIFY WATER PRESSURE AT THE IRRIGATION POINT OF CONNECTION PRIOR TO START OF CONSTRUCTION. REPORT THE ONSITE MEASURED PRESSURE READING TO THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO START OF WORK.
4. DO NOT PURPOSEFULLY INSTALL THE IRRIGATION SYSTEM AS SHOWN ON THE PLANS WHEN IT IS CLEAR IN THE FIELD THAT UNKNOWN STRUCTURES, UTILITIES, GRADE DIFFERENCES, OR DIFFERENCES IN THE LANDSCAPE AREA EXIST THAT ARE NOT REPRESENTED ON THE PLANS. THE IRRIGATION CONTRACTOR SHALL NOTIFY THE OWNER'S AUTHORIZED REPRESENTATIVE OF THE OBSTRUCTIONS OR DIFFERENCES. IF A NOTIFICATION IS NOT PROVIDED, THE IRRIGATION CONTRACTOR SHALL ACCEPT FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.
5. ALL IRRIGATION EQUIPMENT NOT DETAILED SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.

INSTALLATION NOTES:

1. THE LANDSCAPE ARCHITECT AND IRRIGATION CONSULTANT SHALL APPROVE THE FINAL LOCATION OF THE IRRIGATION CONTROLLER, BACKFLOW DEVICE, SIGNAGE AND ALL OTHER ABOVE GRADE EQUIPMENT PRIOR TO INSTALLATION.
2. 120 VAC ELECTRICAL SOURCE AT IRRIGATION CONTROLLER LOCATION SHALL BE PROVIDED BY OTHERS. THE IRRIGATION CONTRACTOR SHALL MAKE THE FINAL CONNECTION FROM THE ELECTRICAL SOURCE TO THE IRRIGATION CONTROLLER PER LOCAL ELECTRICAL CODES.
3. INSTALL ALL PIPING BETWEEN THE POINT OF CONNECTION AND THE R.P. BACKFLOW DEVICE AS PER LOCAL CODES.
4. ALL MAINLINE / LATERAL LINE PIPING AND WIRES / CONDUITS UNDER PAVING SHALL BE INSTALLED IN SEPARATE SLEEVES. MAINLINE / LATERAL LINE SLEEVES SHALL BE A MINIMUM OF TWICE (2X) THE DIAMETER OF THE PIPE TO BE SLEEVED. WIRE / CONDUIT SLEEVES SHALL BE OF SUFFICIENT SIZE FOR THE REQUIRED NUMBER OF WIRES UNDER PAVING.
5. PIPE SIZES SHALL CONFORM TO THOSE SHOWN ON THE DRAWING. NO SUBSTITUTIONS OF SMALLER PIPE SIZES SHALL BE PERMITTED, BUT SUBSTITUTIONS OF LARGER SIZES MAY BE APPROVED. ALL DAMAGED PIPE SHALL BE IMMEDIATELY REMOVED FROM THE SITE.
6. ALL SPRINKLER / ROTOR HEADS SHALL BE SET PERPENDICULAR TO FINISH GRADE UNLESS OTHERWISE SPECIFIED.

BOOSTER PUMP NOTES (IF PUMP IS REQUIRED):

1. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR VERIFYING ELECTRICAL POWER TYPE (VOLTAGE AND PHASE) FOR IRRIGATION PUMP(S) BEFORE ORDERING / PURCHASING EQUIPMENT. IF ELECTRICAL POWER TYPE DIFFERS FROM THE PUMP SPECIFICATION, THEN IRRIGATION CONTRACTOR SHALL NOTIFY THE OWNER'S AUTHORIZED REPRESENTATIVE AND IRRIGATION CONSULTANT. IF A NOTIFICATION IS NOT PROVIDED, THE IRRIGATION CONTRACTOR SHALL ACCEPT FULL RESPONSIBILITY FOR ALL COSTS.
2. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR VERIFYING STATIC AND DYNAMIC PRESSURE (PSI) OF THE PROJECT BEFORE ORDERING / PURCHASING IRRIGATION PUMPS EQUIPMENT. CONTRACTOR SHALL NOTIFY THE OWNER'S AUTHORIZED REPRESENTATIVE AND IRRIGATION CONSULTANT OF PRESSURE READINGS. IF A NOTIFICATION IS NOT PROVIDED, THE IRRIGATION CONTRACTOR SHALL ACCEPT FULL RESPONSIBILITY FOR ALL COSTS.
3. IF PUMP ASSEMBLY DOES NOT INCLUDE A WAFER CHECK VALVE, CONTRACTOR SHALL INSTALL A LINE SIZE WAFER CHECK VALVE IMMEDIATELY DOWNSTREAM OF PUMP.
4. IF PUMP ASSEMBLY DOES NOT INCLUDE PUMP RELAY, PUMP START WIRING AND/OR TWO-WIRE DECODER, CONTRACTOR SHALL FURNISH AND INSTALL IF REQUIRED.
5. PUMP CONCRETE PAD TO SLOPE AWAY FROM THE PUMP ASSEMBLY. CONTACT PUMP MANUFACTURER FOR PAD DIMENSIONS AND CIVIL/STRUCTURAL ENGINEER FOR PAD STRUCTURAL DESIGN REQUIREMENTS.
6. INSTALL ALL ABOVE GRADE PUMP PIPING AS:
   A. BRASS PIPE WITH PIPE WRAP FOR PIPING UP TO 3" IN SIZE
   B. DUCTILE IRON PIPE WITH TWO COATS OF PAINT SHALL BE USED FOR PIPING 4"+ IN SIZE

SYSTEM ADJUSTMENT NOTES:

1. THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL VALVES, SPRAY HEADS AND ROTORS FOR OPTIMUM COVERAGE WITH NO OVERSPRAY ONTO WALKS, STREETS, WALLS, ETC.
2. THE IRRIGATION CONTRACTOR SHALL INSTALL CHECK VALVES IN AREAS WHERE FINISH GRADE EXCEEDS 4:1 AND WHERE POST VALVE SHUT-OFF LOW HEAD DRAINAGE OF THE IRRIGATION SYSTEM OCCURS OR AS DIRECTED BY THE OWNER'S AUTHORIZED REPRESENTATIVE.
3. THE CONTRACTOR SHALL PROVIDE PRESSURE COMPENSATION SCREENS (PCS) AS NECESSARY TO ELIMINATE OVERSPRAY ONTO WALKS, STREETS, WALLS, OR OTHER AREAS AS DIRECTED BY THE OWNER'S AUTHORIZED REPRESENTATIVE.
4. SHRUB RISER HEADS MAY BE SUBSTITUTED FOR SHRUB POP-UP HEADS IN LANDSCAPE AREAS EXCEPT WHERE ADJACENT TO PUBLIC AREAS SUCH AS WALKS, CURBS, TURF HEADERS, MONUMENTS, FOUNTAINS, OR SIGNAGE. REFER TO INSTALLATION DETAILS.

IRRIGATION AUDIT FOR CERTIFICATE OF COMPLETION:

1. AN IRRIGATION AUDIT REPORT PREPARED BY A CERTIFIED LANDSCAPE IRRIGATION AUDITOR IS REQUIRED AT THE COMPLETION OF INSTALLATION. CONTRACTOR TO HIRE IRRIGATION AUDITOR AT NO COST TO OWNER. THE AUDIT MUST BE CONDUCTED IN A MANNER CONSISTENT WITH THE IRRIGATION ASSOCIATION'S LANDSCAPE IRRIGATION AUDITOR CERTIFICATION PROGRAM OR OTHER US ENVIRONMENTAL PROTECTION AGENCY 'WATERSENSE' LABELED AUDITING PROGRAM. PROOF OF CERTIFICATION MUST BE PROVIDED WITH THE SIGNED AND DATED REPORT. IRRIGATION AUDIT REPORT TO MEET AGENCY REQUIREMENTS FOR CERTIFICATE OF COMPLETION.

ARROYO
IRRIGATION CONSULTING
13660 GERSHON PLACE
SANTA ANA, CA 92705
(949) 430-7030

BLACK & VEATCH
Black & Veatch Corporation
Los Angeles, California

DRAWN BY: A. WILKINSON
DESIGNED BY: M. HEE
CHECKED BY: M. ROMERO

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: LANDSCAPE IRRIGATION NOTES

SCALE

ACCOUNT NUMBER: 420977

SHEET: L-32
44 OF 70
DWG. NO.: 6869

22X34

Irrigation Pressure Calculation

Water Meter #: 1 **Controller ID:** B

Basis for Calculation: Longest Run/Highest Elevation/Highest Flow

Water Meter Information

Maximum Flow	120 GPM
Service Line	3.00"
Water Meter Size	3.00"
Water Type	Domestic Water
Elevation of Meter	805'
Static Pressure	**95 PSI**

Valve Information

Automatic Control Valve	**B33**
Size	1.50"
Demand	25 GPM
Elevation of Highest Head	788'
Head Type	MP Rotator

Friction Loss

QTY	SIZE (INCHES)	TYPE	ITEM	FLOW (GPM)	PRESSURE LOSS (PSI)
10'	3.00"	Copper	Service Line	120 GPM	0.19 PSI
1	3.00"		Water Meter	120 GPM	3.08 PSI
1	3.00"	RP Device	RP Backflow w/ Strainer	120 GPM	15.00 PSI
1	4.00"	Cla-Val	Master Valve	120 GPM	2.00 PSI
1	4.00"		Flow Sensor	120 GPM	1.00 PSI
2	4.00"		Isolation Valves	120 GPM	0.10 PSI
1611'	4.00"	PVC	Mainline	120 GPM	5.24 PSI
1	1.50"	ICV	Automatic Control Valve	25 GPM	1.56 PSI
			Lateral Line Loss		4.00 PSI
			Fitting Loss (10%)		3.22 PSI
			Elevation Change		-7.36 PSI
			Total System Losses		28 PSI
			Pressure to Operate Head		40 PSI
			Safety Factor	20%	14 PSI
			Static Pressure at Water Meter		95 PSI
			Residual Pressure / Boost Pressure		13 PSI
			Pressure Required with Safety Factor		**82 PSI**

Water Efficient Landscape Worksheet

Water Meter #: 1 **Controller ID:** B **Landscape Type:** Non-Residential

CIMIS Zone or City: State Zone 9 **ETo (in/year):** 55.10 **Maximum RLA ETAF:** 0.45

Landscape Area

Hydrozone #	Plant Type	Plant Factor (PF)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Hydrozone Area Sq. Ft.	Percent %	Estimated Total Water Use (ETWU) Gallons
1	Shrub - Low Water Use	0.2	Rotary	75%	0.27	2,164	95%	19,714
2	Trees - Low Water Use	0.2	Bubblers	81%	0.25	92	4%	776
3	Trees - Mod Water Use	0.4	Bubblers	81%	0.49	16	1%	270
					Totals:	**2,272**	**100%**	**20,760**

Special Landscape Area

Hydrozone #	Plant Type	Plant Factor (PF)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Hydrozone Area Sq. Ft.	Percent %	Estimated Total Water Use (ETWU) Gallons
Recycled Water	THIS SPACE LEFT BLANK PER MWELO							
Active Play								
Edible Garden								
Urban Forest								
					Totals:			

Total Area (Sq. Ft.)	**2,272**	**Sitewide Estimated Total Water Use (Gallons)**	**20,760**
Regular Landscape Area Average ETAF	**0.27**	**Maximum Applied Water Allowance (Gallons)**	**34,927**
All Landscape Area Sitewide ETAF	**0.27**	**ETWU < MAWA**	**COMPLIANT**

Model Water Efficient Landscape Ordinance Formulas

MAWA = Maximum Applied Water Allowance
ETWU = Estimated Total Water Use
RLA = Regular Landscape Area (Sq. Ft.)
SLA = Special Landscape Area (Sq. Ft.)
ETo = Reference Evapotranspiration
PF = Plant Water Use Factor
IE = Irrigation Efficiency
ETAF = ET Adjustment Factor

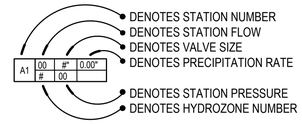
$$MAWA = ETo \times .62 \times [ETAF \times RLA + 1.0 \times SLA]$$

$$ETWU = \left(\frac{ETo \times 0.62 \times LA \times PF}{IE}\right)$$

HYDROZONE NOTE

THE IRRIGATION PLANS COMPLY WITH THE STATE OF CALIFORNIA'S WATER EFFICIENT LANDSCAPE ORDINANCE PER THE FOLLOWING INFORMATION:

- LANDSCAPE HYDROZONE (NUMBER), PRECIPITATION RATE AND FLOW RATE ARE LOCATED IN THE STATION ID FOR ALL VALVES.
- HYDROZONE NUMBERS ARE ASSIGNED BY PLANT TYPE, PLANT WATER USE, AND IRRIGATION TYPE.
- THE WATER USE CALCULATIONS ARE ORGANIZED BY HYDROZONE CATEGORY NUMBER THAT CORRESPONDS TO THE HYDROZONE NUMBER IN THE STATION ID ON THE PLANS. EACH HYDROZONE CATEGORY SUMMARIZES THE TOTAL AREA OF EACH CATEGORY.
- WATER USE CALCULATIONS ARE PER WATER METER.
- REFER TO THE STATION ID SYMBOL (BELOW) FOR LOCATION OF HYDROZONE AND IRRIGATION DATA PROVIDED.



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CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: LANDSCAPE IRRIGATION CALCULATIONS - 1

SCALE

ACCOUNT NUMBER: 420977

SHEET: L-33

45 OF 70

DWG. NO.: 6869

22X34

Irrigation Controller Programming Recommendation

Water Meter #: 1
Controller ID: B

CIMIS Zone: Zone 17
Soil Type: Sandy Loam
Schedule Type: Establishment

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Daily ETo	0.06	0.1	0.15	0.2	0.26	0.3	0.32	0.28	0.22	0.14	0.09	0.06
						Cycles Per Week						
Turf	4	6	7	7	7	7	7	7	7	7	6	4
Shrub	2	3	5	6	7	7	7	7	7	5	3	2
Tree	1	1	2	2	3	3	4	3	3	2	1	1
Supplemental	1	1	1	1	1	1	1	1	1	1	1	1

Station #	Flow (GPM)	Hydrozone #	Aspect Exposure	Plant Type	Peak Landscape Coefficient	Sprinkler Type	Precipitation Rate (In/Hr)	Efficiency	JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		OCT		NOV		DEC		ANNUAL TOTAL
									MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	GALLONS
31	11	2	South - Full Sun	Tree - Low	0.30	Tree Bubbler	3.54	0.9	1	52	2	70	2	174	2	174	2	261	2	313	2	417	2	261	2	261	2	174	2	70	1	52	2,277
32	4	3	South - Full Sun	Tree - Mod	0.50	Tree Bubbler	3.54	0.9	2	25	3	44	3	101	3	101	3	152	4	171	4	253	3	152	4	171	3	101	2	38	2	25	1,334
33	6	2	South - Full Sun	Tree - Low	0.30	Tree Bubbler	3.54	0.9	1	28	2	38	2	95	2	95	2	142	2	171	2	228	2	142	2	142	2	95	2	38	1	28	1,242
34	25	1	South - Full Sun	Shrub - Low	0.30	Rotary	0.6	0.78	4	790	5	1,422	5	2,371	6	3,793	4	2,766	5	3,319	5	3,595	4	3,042	7	4,702	4	2,173	4	1,304	4	790	30,067
																															Total:		**34,921**

IRRIGATION SCHEDULES ARE RECOMMENDATIONS ONLY. CONTRACTOR TO ADJUST IRRIGATION SCHEDULES PER SITE CONDITIONS. CONTRACTOR TO ENABLE CYCLE AND SOAK FEATURES AS NEEDED TO PREVENT RUN OFF. OVERHEAD IRRIGATION SHALL BE SCHEDULED BETWEEN 8:00 P.M. AND 10:00 A.M. UNLESS WEATHER CONDITIONS PREVENT IT. IF ALLOWABLE HOURS OF IRRIGATION DIFFER FROM THE LOCAL WATER PURVEYOR, THE STRICTER OF THE TWO SHALL APPLY. OPERATION OF THE IRRIGATION SYSTEM OUTSIDE THE NORMAL WATERING WINDOW IS ALLOWED FOR AUDITING AND SYSTEM MAINTENANCE.

Irrigation Controller Programming Recommendation

Water Meter #: 1
Controller ID: B

CIMIS Zone: Zone 17
Soil Type: Sandy Loam
Schedule Type: Maturity

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Daily ETo	0.06	0.1	0.15	0.2	0.26	0.3	0.32	0.28	0.22	0.14	0.09	0.06
						Cycles Per Week						
Turf	2	3	5	6	7	7	7	7	7	5	3	2
Shrub	2	2	3	4	6	6	7	6	5	3	2	2
Tree	1	1	1	1	2	2	2	2	2	1	1	1
Supplemental	1	1	1	1	1	1	1	1	1	1	1	1

Station #	Flow (GPM)	Hydrozone #	Aspect Exposure	Plant Type	Peak Landscape Coefficient	Sprinkler Type	Precipitation Rate (In/Hr)	Efficiency	JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		OCT		NOV		DEC		ANNUAL TOTAL
									MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	MINUTES	GALLONS	GALLONS
31	11	2	South - Full Sun	Tree - Low	0.30	Tree Bubbler	3.54	0.9	1	52	2	70	2	104	3	139	4	313	4	313	4	348	4	348	4	313	2	104	2	70	1	52	2,225
32	4	3	South - Full Sun	Tree - Mod	0.50	Tree Bubbler	3.54	0.9	2	25	3	44	4	63	6	89	6	190	6	190	6	202	6	202	6	190	4	63	2	38	2	25	1,321
33	6	2	South - Full Sun	Tree - Low	0.30	Tree Bubbler	3.54	0.9	1	28	2	38	2	57	3	76	4	171	4	171	4	190	4	190	4	171	2	57	2	38	1	28	1,214
34	25	1	South - Full Sun	Shrub - Low	0.30	Rotary	0.6	0.78	6	1,106	6	1,264	7	2,134	6	2,529	8	4,741	9	5,689	10	6,914	9	5,215	7	3,358	7	2,015	6	1,106	6	1,106	37,179
																															Total:		**41,939**

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MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: LANDSCAPE IRRIGATION CALCULATIONS - 2

SCALE

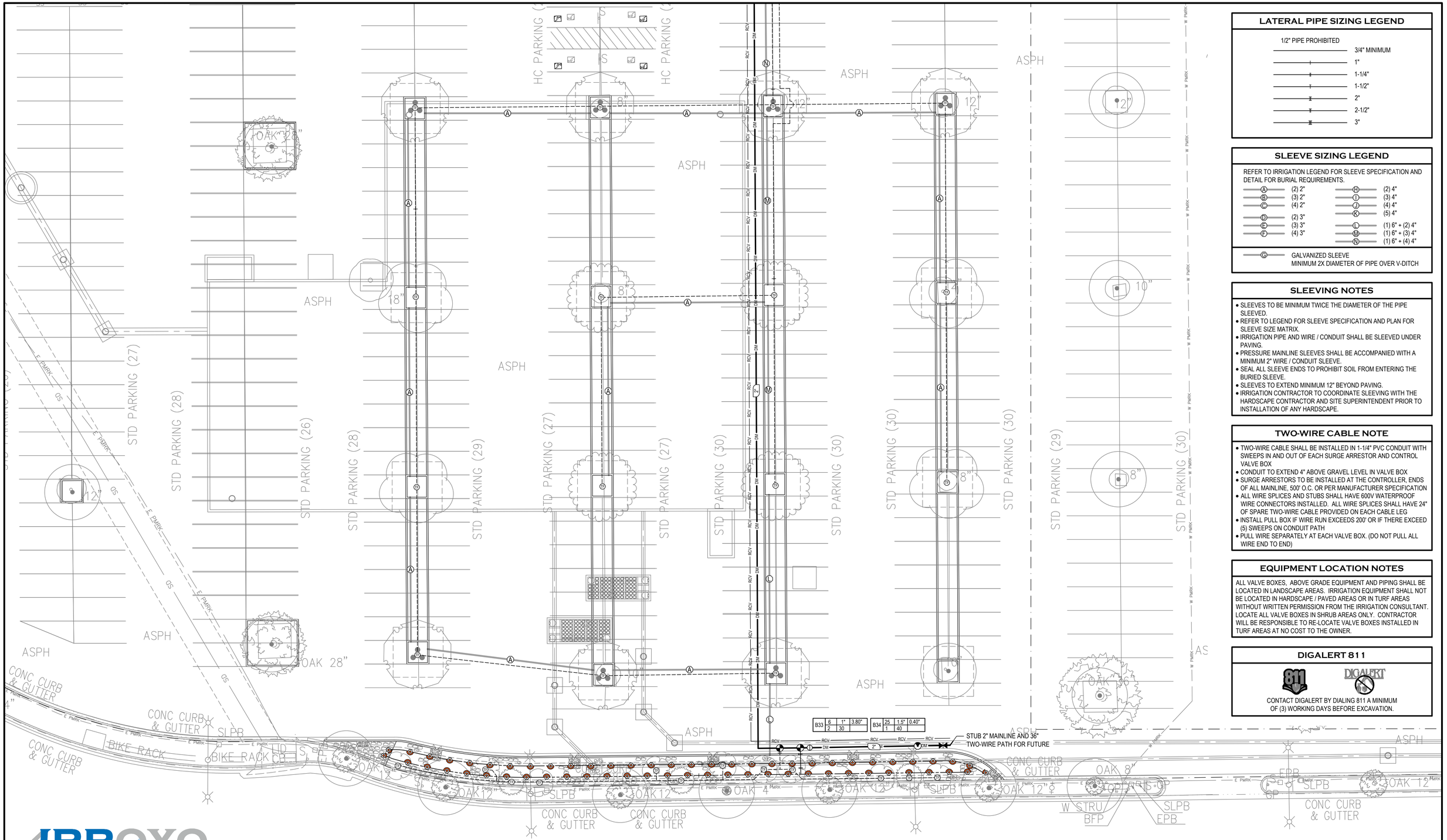
ACCOUNT NUMBER: 420977

SHEET: L-34

46 OF 70

DWG. NO.: 6869

22X34



LATERAL PIPE SIZING LEGEND

1/2" PIPE PROHIBITED

- 3/4" MINIMUM
- 1"
- 1-1/4"
- 1-1/2"
- 2"
- 2-1/2"
- 3"

SLEEVE SIZING LEGEND

REFER TO IRRIGATION LEGEND FOR SLEEVE SPECIFICATION AND DETAIL FOR BURIAL REQUIREMENTS.

Ⓐ	(2) 2"	Ⓗ	(2) 4"
Ⓑ	(3) 2"	Ⓘ	(3) 4"
Ⓒ	(4) 2"	Ⓙ	(4) 4"
		Ⓚ	(5) 4"
Ⓓ	(2) 3"		
Ⓔ	(3) 3"	Ⓛ	(1) 6" + (2) 4"
Ⓕ	(4) 3"	Ⓜ	(1) 6" + (3) 4"
		Ⓝ	(1) 6" + (4) 4"

Ⓖ GALVANIZED SLEEVE
MINIMUM 2X DIAMETER OF PIPE OVER V-DITCH

SLEEVING NOTES

- SLEEVES TO BE MINIMUM TWICE THE DIAMETER OF THE PIPE SLEEVED.
- REFER TO LEGEND FOR SLEEVE SPECIFICATION AND PLAN FOR SLEEVE SIZE MATRIX.
- IRRIGATION PIPE AND WIRE / CONDUIT SHALL BE SLEEVED UNDER PAVING.
- PRESSURE MAINLINE SLEEVES SHALL BE ACCOMPANIED WITH A MINIMUM 2" WIRE / CONDUIT SLEEVE.
- SEAL ALL SLEEVE ENDS TO PROHIBIT SOIL FROM ENTERING THE BURIED SLEEVE.
- SLEEVES TO EXTEND MINIMUM 12" BEYOND PAVING.
- IRRIGATION CONTRACTOR TO COORDINATE SLEEVING WITH THE HARDSCAPE CONTRACTOR AND SITE SUPERINTENDENT PRIOR TO INSTALLATION OF ANY HARDSCAPE.

TWO-WIRE CABLE NOTE

- TWO-WIRE CABLE SHALL BE INSTALLED IN 1-1/4" PVC CONDUIT WITH SWEEPS IN AND OUT OF EACH SURGE ARRESTOR AND CONTROL VALVE BOX
- CONDUIT TO EXTEND 4" ABOVE GRAVEL LEVEL IN VALVE BOX
- SURGE ARRESTORS TO BE INSTALLED AT THE CONTROLLER, ENDS OF ALL MAINLINE, 500' O.C. OR PER MANUFACTURER SPECIFICATION
- ALL WIRE SPLICES AND STUBS SHALL HAVE 600V WATERPROOF WIRE CONNECTORS INSTALLED. ALL WIRE SPLICES SHALL HAVE 24" OF SPARE TWO-WIRE CABLE PROVIDED ON EACH CABLE LEG
- INSTALL PULL BOX IF WIRE RUN EXCEEDS 200' OR IF THERE EXCEED (5) SWEEPS ON CONDUIT PATH
- PULL WIRE SEPARATELY AT EACH VALVE BOX. (DO NOT PULL ALL WIRE END TO END)

EQUIPMENT LOCATION NOTES

ALL VALVE BOXES, ABOVE GRADE EQUIPMENT AND PIPING SHALL BE LOCATED IN LANDSCAPE AREAS. IRRIGATION EQUIPMENT SHALL NOT BE LOCATED IN HARDSCAPE / PAVED AREAS OR IN TURF AREAS WITHOUT WRITTEN PERMISSION FROM THE IRRIGATION CONSULTANT. LOCATE ALL VALVE BOXES IN SHRUB AREAS ONLY. CONTRACTOR WILL BE RESPONSIBLE TO RE-LOCATE VALVE BOXES INSTALLED IN TURF AREAS AT NO COST TO THE OWNER.

DIGALERT 811

811 DIGALERT

CONTACT DIGALERT BY DIALING 811 A MINIMUM OF (3) WORKING DAYS BEFORE EXCAVATION.

ARROYO
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13660 GERSHON PLACE
SANTA ANA, CA 92705
(949) 430-7030

0 8' 16' 32' 64'

SCALE: 1/16"=1'-0"

NORTH

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Black & Veatch Corporation
Los Angeles, California

DRAWN BY A. WILKINSON
DESIGNED BY M. HEE
CHECKED BY M. ROMERO

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD.	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE LANDSCAPE IRRIGATION PLAN - 1

SCALE AS NOTED

ACCOUNT NUMBER 420977

SHEET L-35

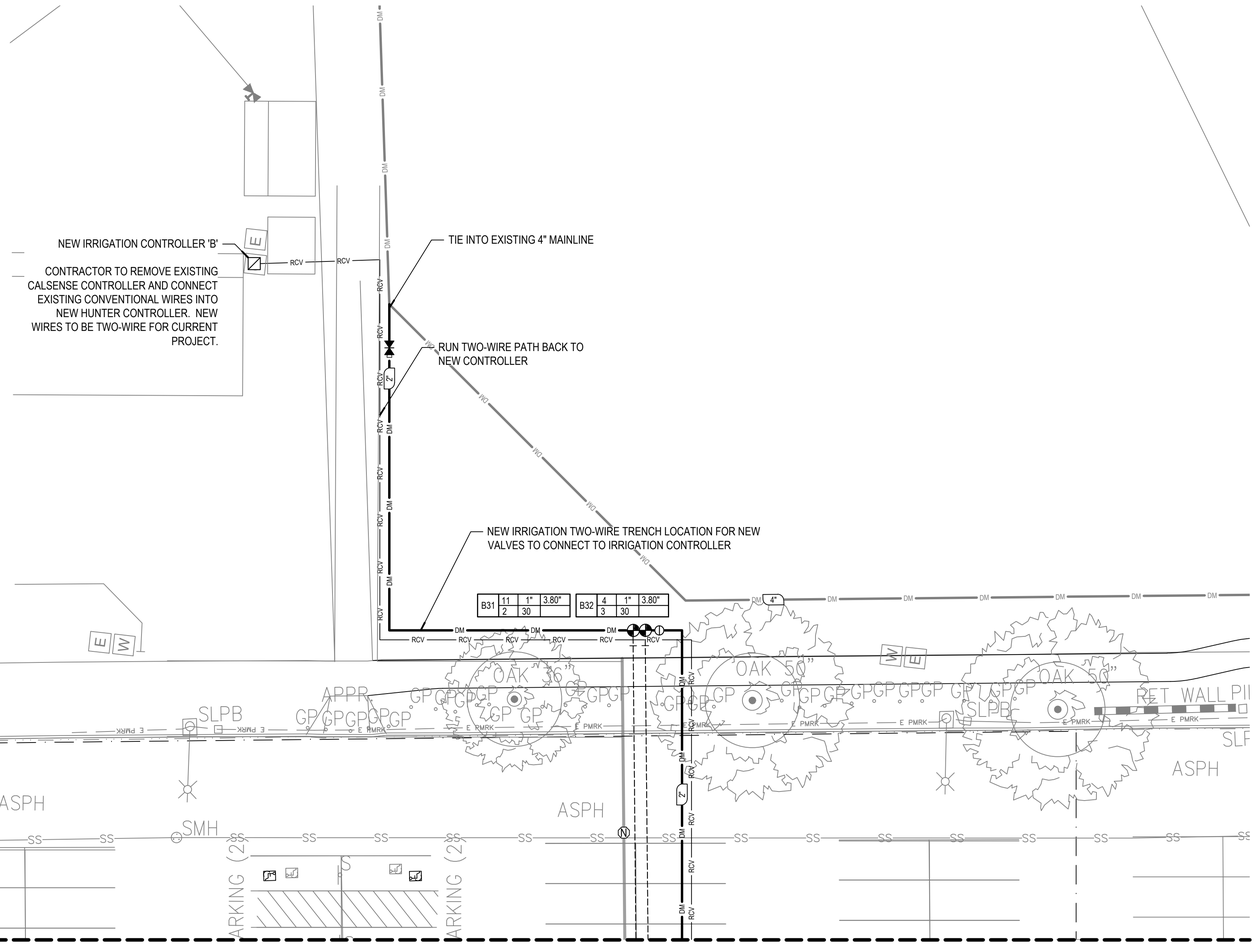
47 OF 70

DWG. NO. 6869

22X34



SITE OVERVIEW



MATCHLINE - SEE SHEET L-35

LATERAL PIPE SIZING LEGEND

1/2" PIPE PROHIBITED
3/4" MINIMUM
1"
1-1/4"
1-1/2"
2"
2-1/2"
3"

SLEEVE SIZING LEGEND

REFER TO IRRIGATION LEGEND FOR SLEEVE SPECIFICATION AND DETAIL FOR BURIAL REQUIREMENTS.

A	(2) 2"	H	(2) 4"
B	(3) 2"	I	(3) 4"
C	(4) 2"	J	(4) 4"
		K	(5) 4"
D	(2) 3"		
E	(3) 3"	L	(1) 6" + (2) 4"
F	(4) 3"	M	(1) 6" + (3) 4"
		N	(1) 6" + (4) 4"

G — GALVANIZED SLEEVE
MINIMUM 2X DIAMETER OF PIPE OVER V-DITCH

SLEEVING NOTES

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- INSTALL PULL BOX IF WIRE RUN EXCEEDS 200' OR IF THERE EXCEED (5) SWEEPS ON CONDUIT PATH
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EQUIPMENT LOCATION NOTES

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REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE LANDSCAPE IRRIGATION PLAN - 2

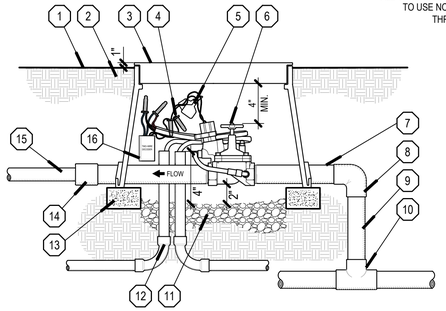
SCALE AS NOTED

ACCOUNT NUMBER 420977

SHEET L-36
48 OF 70
DWG. NO. 6869

22X34

ALL THREADED CONNECTIONS TO USE NON-HARDENING THREAD SEALANT

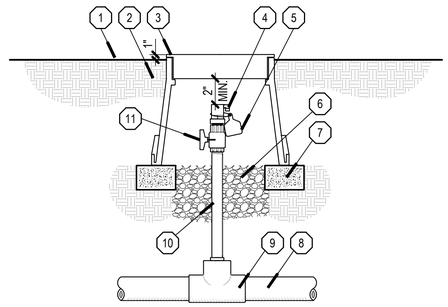


1. FINISH GRADE
2. SUBGRADE
3. RECTANGULAR VALVE BOX - LABEL PER BRANDING DETAIL
4. TWO-WIRE CABLE WITH 24" MINIMUM EXPANSION LOOP WITH WATERPROOF WIRE CONNECTORS
5. STATION ID TAG AND WATER IDENTIFICATION TAG - LOCATE ON SOLENOID WIRES - REFER TO LEGEND
6. REMOTE CONTROL VALVE - REFER TO LEGEND
7. SCHEDULE 80 PVC TOE NIPPLE - LENGTH TO CLEAR VALVE BOX
8. PRESSURE MAINLINE FITTING - SLIP ELL
9. PRESSURE MAINLINE PIPE
10. SLIP TEE OR ELL- PRESSURE MAINLINE FITTING WITH BUSHING TO ADAPT PIPE TO INLET SIZE OF VALVE
11. 3/4" CRUSHED GRAVEL - 6" DEPTH
12. 1-1/4" TWO-WIRE CABLE CONDUIT WITH SWEEPS IN AND OUT OF EACH VALVE BOX
13. BRICK SUPPORTS - FOUR REQUIRED
14. SLIP COUPLING - LATERAL FITTING WITH BUSHING TO ADAPT PIPE TO LATERAL SIZE
15. LATERAL PIPE
16. TWO-WIRE DECODER - REFER TO LEGEND

CONTROL VALVE - TWO-WIRE

NO SCALE

ALL THREADED CONNECTIONS TO USE NON-HARDENING THREAD SEALANT



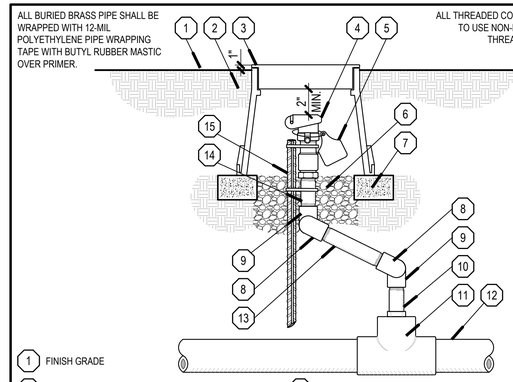
1. FINISH GRADE
2. SUBGRADE
3. ROUND VALVE BOX WITH VALVE BOX EXTENSIONS AS REQUIRED - LABEL PER BRANDING DETAIL
4. AIR / VACUUM RELIEF VALVE - REFER TO LEGEND
5. WATER IDENTIFICATION TAG - REFER TO LEGEND FOR COLOR AND TYPE
6. 3/4" CRUSHED GRAVEL - 6" DEPTH
7. BRICK SUPPORTS - TWO REQUIRED
8. PRESSURE MAINLINE PIPE
9. SLIP TEE OR ELL - PRESSURE MAINLINE FITTING WITH BUSHING TO ADAPT PIPE TO INLET SIZE OF AIR RELIEF
10. PVC SCHEDULE 80 PVC TOE NIPPLE - LENGTH AS REQUIRED
11. SCHEDULE 80 PVC TxT FULL PORT BALL VALVE

AIR RELIEF VALVE

NO SCALE

ALL BURIED BRASS PIPE SHALL BE WRAPPED WITH 12-MIL POLYETHYLENE PIPE WRAPPING TAPE WITH BUTYL RUBBER MASTIC OVER PRIMER.

ALL THREADED CONNECTIONS TO USE NON-HARDENING THREAD SEALANT

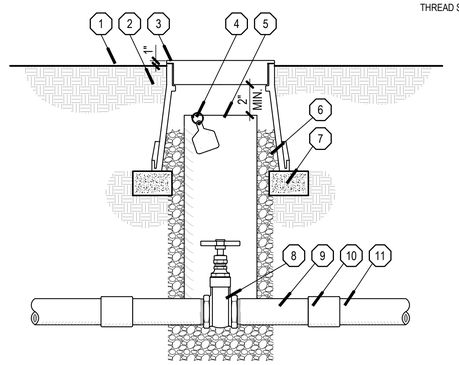


1. FINISH GRADE
2. SUBGRADE
3. ROUND VALVE BOX - LABEL PER BRANDING DETAIL
4. QUICK COUPLER VALVE - REFER TO LEGEND
5. WATER IDENTIFICATION TAG - REFER TO LEGEND FOR COLOR AND TYPE
6. 3/4" CRUSHED GRAVEL - 6" DEPTH
7. BRICK SUPPORTS - TWO REQUIRED
8. BRASS STREET ELBOW - INLET SIZE
9. BRASS ELBOW - INLET SIZE
10. PVC SCHEDULE 80 PVC TOE NIPPLE - LENGTH AS REQUIRED
11. PRESSURE MAINLINE TEE OR ELL FITTING WITH BUSHING TO ADAPT PIPE TO INLET SIZE OF QUICK COUPLER
12. PRESSURE MAINLINE PIPE
13. BRASS NIPPLE - INLET SIZE x 12" LENGTH
14. BRASS NIPPLE - INLET SIZE x 2" LENGTH
15. #4 REBAR - MINIMUM 18" LENGTH - SECURE TO QUICK COUPLER WITH (2) STAINLESS STEEL HOSE CLAMPS

QUICK COUPLER VALVE

NO SCALE

ALL THREADED CONNECTIONS TO USE NON-HARDENING THREAD SEALANT

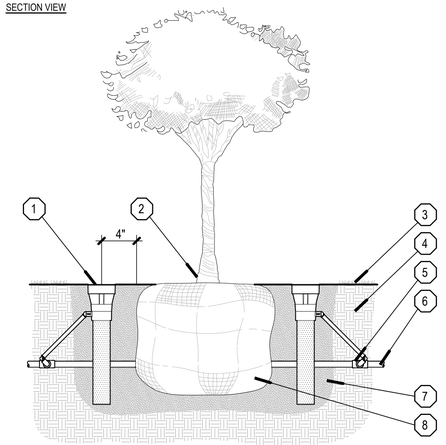


1. FINISH GRADE
2. SUBGRADE
3. ROUND VALVE BOX - LABEL PER BRANDING DETAIL
4. WATER IDENTIFICATION TAG - REFER TO LEGEND FOR COLOR AND TYPE
5. 6" SCHEDULE 40 PVC PIPE ACCESS SLEEVE
6. 3/4" CRUSHED GRAVEL - 6" DEPTH
7. BRICK SUPPORTS - TWO REQUIRED
8. GATE VALVE - REFER TO LEGEND
9. PVC SCHEDULE 80 TOE NIPPLE - MINIMUM LENGTH 6"
10. PRESSURE MAINLINE FITTING - SLIP COUPLING
11. PRESSURE MAINLINE PIPE

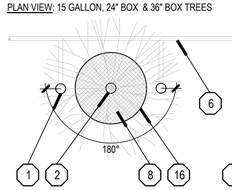
GATE VALVE

NO SCALE

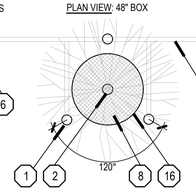
SECTION VIEW



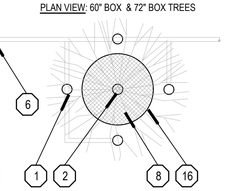
PLAN VIEW: 15 GALLON, 24" BOX & 36" BOX TREES



PLAN VIEW: 48" BOX



PLAN VIEW: 60" BOX & 72" BOX TREES

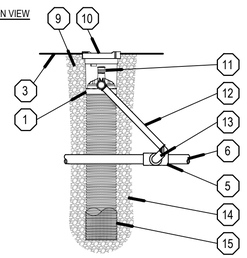


TREE MATRIX

TREE BOX SIZE	NUMBER OF HEADS	FLOW (GPM)	TOTAL FLOW (GPM)
15 GALLON	2	0.25	0.50
24"	2	0.25	0.50
36"	2	0.25	0.50
48"	3	0.25	0.75
60"	4	0.25	1.00
72"	4	0.25	1.00

NOTE: 60" BOX TREES AND SMALLER SHALL BE VALVED SEPARATELY FROM 72" BOX TREES AND LARGER

SECTION VIEW



NOTES:
- SPACE BUBBLERS AND TREE WELL INSPECTION TUBE EQUALLY AROUND TREE.
- ROOT WATERING BUBBLERS TO BE 90 DEGREES FROM TREE LODGE POLES
- COORDINATE INSTALLATION OF IRRIGATION SYSTEM WITH TREE PLANTING
- CROSS REFERENCE WITH TREE PLANTING DETAIL.

1. ROOT ZONE WATERING SYSTEM - REFER TO LEGEND
2. TREE
3. FINISH GRADE
4. SUBGRADE
5. PVC SCHEDULE 40 SxSxT TEE OR 90 DEGREE ELBOW
6. LATERAL PIPE
7. AMENDED SOIL
8. ROOT BALL
9. PEA GRAVEL - EVENLY DISTRIBUTE AROUND ROOT WATERING SYSTEM IN CLAY SOILS
10. 4" GRATE
11. THREADED BUBBLER - REFER TO LEGEND FOR GPM
12. SWING JOINT, 12" PIPE SWING ASSEMBLY
13. PVC SCHEDULE 40 STREET ELL - INLET SIZE
14. 4"X36" LONG RIGID BASKET WEAVE CANISTER, FILL WITH PEA GRAVEL IN HEAVY SOILS
15. INSTALL SOCK IN SANDY SOILS
16. EDGE OF TREE PIT

ROOT ZONE WATERING SYSTEM

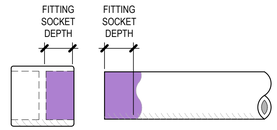
NO SCALE

STEP 1



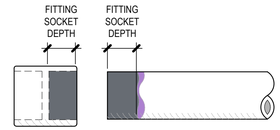
CUTTING PIPE
- CUT PVC PIPE WITH PVC CUTTER OR FINE TOOTH SAW
- REMOVE BURRS FROM INSIDE AND OUTSIDE OF PIPE USING A DEBURRING TOOL OR FILE
- BEVEL END OF PIPE AT A CONSISTENT 10° - 15° ANGLE USING CHAMFERING TOOL
- DRY FIT PIPE AND FITTING

STEP 2



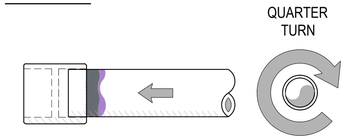
PRIMER
- APPLY PRIMER TO FITTING
- APPLY PRIMER TO PIPE TO MATCH DEPTH OF FITTING SOCKET
- REAPPLY PRIMER TO FITTING
- REPEAT PROCESS 2 - 3 TIMES
- WHILE THE PRIMER IS WET, APPLY SOLVENT CEMENT

STEP 3



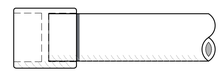
SOLVENT CEMENT
- APPLY SOLVENT CEMENT TO PIPE TO MATCH DEPTH OF FITTING SOCKET IN A CIRCULAR MOTION
- APPLY SOLVENT CEMENT TO FITTING - AVOID PUDDLING AND APPLYING CEMENT IN OTHER SOCKET OR THREADS
- REAPPLY SOLVENT CEMENT TO PIPES LARGER THAN 1-1/4" TO THE DEPTH OF THE FITTING SOCKET IN A CIRCULAR MOTION

STEP 4



JOINT ASSEMBLY
- IMMEDIATELY AFTER APPLYING SOLVENT CEMENT, INSERT PIPE INTO FITTING SOCKET WHILE ROTATING PIPE QUARTER TURN
- ALIGN FITTING TO PROPER ORIENTATION
- ENSURE PIPE BOTTOMS OUT AT FITTING STOP

STEP 5



SET AND CURE TIMES
- HOLD ASSEMBLY FOR 30 SECONDS TO ENSURE INITIAL BOND AND TO PREVENT PIPE BACKING OUT OF FITTING
- VERIFY A BEAD OF CEMENT IS PRESENT AROUND THE ENTIRE PIPE AND FITTING JOINT
- DO NOT HANDLE JOINT UNTIL INITIAL SET TIME HAS PASSED - 30 MINUTES FOR PIPES < 8" @ 60° -100° F
- DO NOT PRESSURIZE IRRIGATION SYSTEM UNTIL CURE TIME HAS PASSED - 24 HOURS FOR PIPES < 8" @ 60° -100° F

NOTE:
- APPLY PRIMER AND SOLVENT CEMENT TO PIPE AND FITTING WITH AN APPLICATOR 1/2 THE PIPE DIAMETER

SOLVENT CEMENT JOINTS

NO SCALE

ARROYO IRRIGATION CONSULTING
13660 GERSHON PLACE
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BLACK & VEATCH
Black & Veatch Corporation
Los Angeles, California

DRAWN BY: A. WILKINSON
DESIGNED BY: M. HEE
CHECKED BY: M. ROMERO

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: LANDSCAPE IRRIGATION DETAILS - 1

SCALE

ACCOUNT NUMBER: 420977

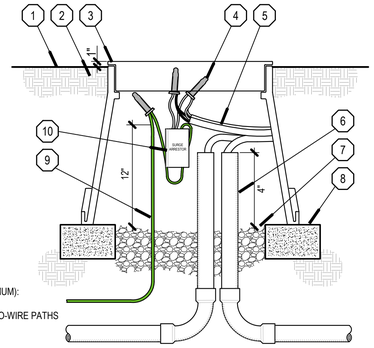
SHEET: L-37

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DWG. NO.: 6869

22X34

NOTE:
- CONTROLLERS TO BE GROUNDED PER LOCAL ELECTRICAL CODE
- INSTALLATION OF A GROUND ROD TO BE AUTHORIZED BY THE OWNER IN WRITING PRIOR TO INSTALLATION
- ALL GROUND RODS TO BE INSTALLED BY LICENSED ELECTRICIAN
- GROUND PLATES ARE AN ALLOWABLE SUBSTITUTION FOR GROUND RODS
- CONSULT DIG ALERT OR UNDERGROUND SERVICE ALERT (811) PRIOR TO INSTALLATION
- EARTH RESISTANCE SHALL BE MEASURED AND RECORDED AFTER INSTALLATION WITHIN ACCORDANCE WITH THE LATEST REQUIREMENTS OF NFPA 780. READINGS TO BE BETWEEN 5 - 10 OHMS



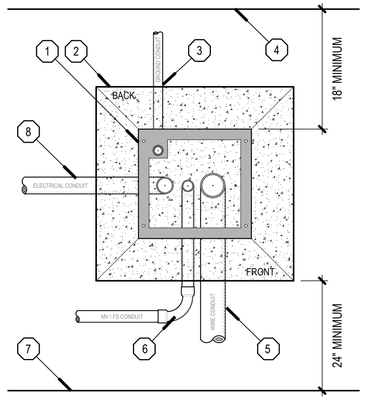
LOCATE SURGE ARRESTORS (AT A MINIMUM):
- AT CONTROLLER LOCATION
- 500' MAXIMUM SPACING ALONG TWO-WIRE PATHS
- AT EVERY 15TH DEVICE
- AT END OF ALL TWO-WIRE PATHS

NOTE: CONTRACTOR TO INSTALL PER MANUFACTURER'S SPECIFICATIONS. MINIMUM QUANTITY SHOWN ON PLANS, CONTRACTOR TO INSTALL ADDITIONAL ARRESTORS/GROUNDING AS NEEDED, AT NO ADDITIONAL COST TO OWNER, TO MEET MANUFACTURER AND DISTRIBUTOR'S SPECIFICATIONS.

1. FINISH GRADE
2. SUBGRADE
3. BLACK ROUND VALVE BOX - LABEL PER BRANDING DETAIL
4. WATERPROOF WIRE CONNECTORS - REFER TO LEGEND
5. TWO-WIRE CABLE WITH 24" MINIMUM EXPANSION LOOP
6. 1-1/4" TWO-WIRE CABLE CONDUIT WITH SWEEPS IN AND OUT OF EACH VALVE BOX
7. 3/4" CRUSHED GRAVEL - 6" DEPTH
8. BRICK SUPPORTS - TWO REQUIRED
9. #6 AWG SOLID BARE COPPER GROUND WIRE TO GROUNDING DEVICE - REFER TO GROUNDING DETAIL
10. SURGE ARRESTOR - REFER TO LEGEND

TWO-WIRE SURGE ARRESTOR
NO SCALE

NOTES:
EMPTY CONDUITS SHALL HAVE A NYLON PULL ROPE INSTALLED WITH PULL POXES INSTALLED EVERY 200' O.C.

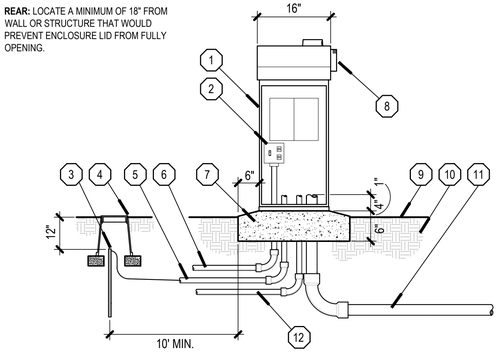


1. ENCLOSURE MOUNTING BRACKET
2. CONCRETE CONTROLLER BASE - SLOPE EDGES AWAY FROM CONTROLLER ASSEMBLY
3. (1) 1" CONDUIT FOR GROUND ROD OR GROUNDING PLATE WIRE (SET 90 DEGREE FROM CONTROL VALVE WIRES)
4. WALL OR STRUCTURE
5. (1) 3" PVC CONDUIT AND SWEEP ELLS FOR CONTROL VALVE WIRES
6. (1) 1-1/4" PVC CONDUIT AND SWEEP ELLS FOR MASTER VALVE WIRE AND FLOW SENSOR CABLE
7. HARDSCAPE
8. (1) 1" CONDUIT FOR 120 VAC ELECTRICAL WIRES

CONTROLLER BASE
NO SCALE

NOTES:
FRONT: LOCATE A MINIMUM OF 24" FROM HARDSCAPE

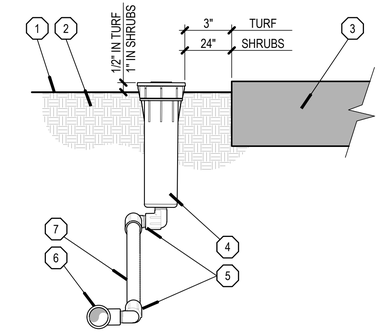
REAR: LOCATE A MINIMUM OF 18" FROM WALL OR STRUCTURE THAT WOULD PREVENT ENCLOSURE LID FROM FULLY OPENING.



1. CONTROLLER ASSEMBLY ENCLOSURE
2. CONTROLLER ON/OFF SWITCH WITH GFCI - PER LOCAL ELECTRICAL CODE
3. 5/8" X 96" COPPER GROUND ROD OR GROUNDING PLATE - INSTALL PER MANUFACTURER SPECIFICATIONS
4. 10" BLACK ROUND VALVE BOX - LABEL PER BRANDING DETAIL
5. (1) 1" PVC SWEEP ELL AND CONDUIT FOR GROUND WIRE
6. (1) 1" PVC CONDUIT AND SWEEP ELLS FOR 120 VAC ELECTRICAL CONNECTION
7. 6" THICK CONCRETE BASE - SLOPE EDGES AWAY FROM CONTROLLER ASSEMBLY
8. RAIN SENSOR - REFER TO LEGEND / CONTROLLER NOTE
9. FINISH GRADE
10. SUBGRADE
11. (1) 3" PVC CONDUIT AND SWEEP ELLS FOR CONTROL VALVE WIRES
12. (1) 1-1/4" PVC CONDUIT AND SWEEP ELLS FOR MASTER VALVE WIRE AND FLOW SENSOR CABLE

CONTROLLER - TOP MOUNT
NO SCALE

ADJUST RADIUS AND ARC PATTERN TO ELIMINATE OVERSPRAY WHILE MAINTAINING HEAD TO HEAD COVERAGE

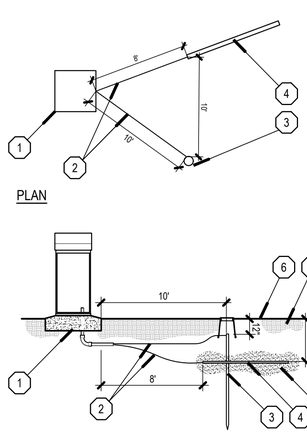


1. FINISH GRADE
2. SUBGRADE
3. HARDSCAPE OR STRUCTURE
4. POP-UP SPRAY HEAD - REFER TO LEGEND
5. MARLEX 90 DEGREE STREET ELBOW - INLET SIZE
6. PVC SCHEDULE 40 SxSxT TEE OR 90 DEGREE ELBOW CONNECTED TO LATERAL PIPE
7. PVC SCHEDULE 80 NIPPLE - 6" MIN, LENGTH AS REQUIRED

POP-UP SPRAY
NO SCALE

NOTE:
- CONTROLLERS TO BE GROUNDED PER LOCAL ELECTRICAL CODE
- INSTALLATION OF A GROUND ROD TO BE AUTHORIZED BY THE OWNER IN WRITING PRIOR TO INSTALLATION
- ALL GROUND RODS TO BE INSTALLED BY LICENSED ELECTRICIAN
- GROUND PLATES ARE AN ALLOWABLE SUBSTITUTION FOR GROUND RODS
- CONSULT DIG ALERT OR UNDERGROUND SERVICE ALERT (811) PRIOR TO INSTALLATION
- EARTH RESISTANCE SHALL BE MEASURED AND RECORDED AFTER INSTALLATION WITHIN ACCORDANCE WITH THE LATEST REQUIREMENTS OF NFPA 780. READINGS TO BE BETWEEN 5 - 10 OHMS

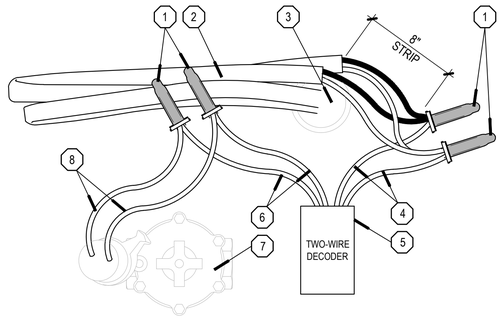
CONTRACTOR TO INSTALL PER MANUFACTURER'S SPECIFICATIONS. MINIMUM QUANTITY SHOWN ON PLANS, CONTRACTOR TO INSTALL ADDITIONAL ARRESTORS/GROUNDING AS NEEDED, AT NO ADDITIONAL COST TO OWNER, TO MEET MANUFACTURER AND DISTRIBUTOR'S SPECIFICATIONS.



1. IRRIGATION CONTROLLER OR SURGE ARRESTOR - REFER TO PLANS
2. #6 AWG SOLID BARE COPPER GROUND WIRE
3. 5/8" X 96" COPPER GROUND ROD - INSTALL PER MANUFACTURER SPECIFICATIONS
4. 4" X 96" GROUNDING PLATE - INSTALL PER MANUFACTURER SPECIFICATIONS
5. 100 POUNDS OF POWERSET EARTH CONTACT MATERIAL MINIMUM
6. FINISH GRADE
7. SUBGRADE
8. BLACK ROUND VALVE BOX - LABEL PER BRANDING DETAIL
9. 3/4" CRUSHED GRAVEL - 6" DEPTH
10. BRICK SUPPORTS - TWO REQUIRED

GROUNDING
NO SCALE

NOTE:
CONTRACTOR SHALL UTILIZE U.F. SAFETY CABLE STRIPPER FOR ALL TWO-WIRE CONNECTION SPLICES.



1. WATERPROOF WIRE CONNECTORS - REFER TO LEGEND
2. TWO-WIRE CABLE WITH 24" MINIMUM EXPANSION LOOP
3. 1-1/4" TWO-WIRE CABLE CONDUIT WITH SWEEPS IN AND OUT OF EACH VALVE BOX
4. TWO-WIRE DECODER WIRES TO TWO-WIRE CABLE
5. TWO-WIRE DECODER - REFER TO LEGEND
6. TWO-WIRE DECODER WIRES TO AUTOMATIC CONTROL VALVE
7. AUTOMATIC CONTROL VALVE
8. AUTOMATIC CONTROL VALVE SOLENOID WIRES

TWO-WIRE DECODER
NO SCALE

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Los Angeles, California

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DESIGNED BY	M. HEE
CHECKED BY	M. ROMERO

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: LANDSCAPE IRRIGATION DETAILS - 2

SCALE

ACCOUNT NUMBER: 420977

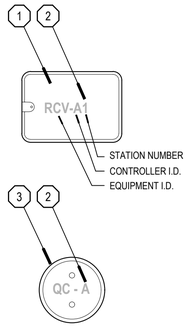
SHEET: L-38

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DWG. NO.: 6869

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NOTE:
CONTRACTOR TO USE 2" BRANDING KIT FOR BRANDING VALVE BOXES



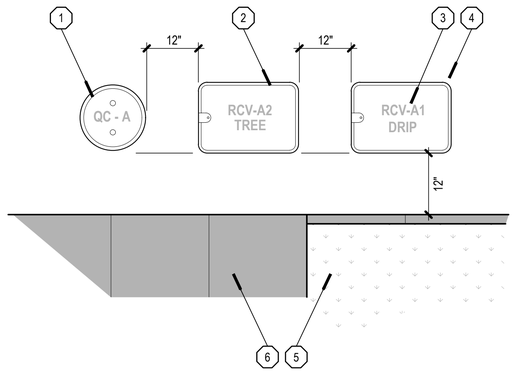
BOX COLOR	EQUIPMENT:	CONTROLLER:	BRANDING:
REFER TO LEGEND	AIR RELIEF VALVE	A	AR - A
	BALL VALVE	A	BV - A#
	BASKET STRAINER	A	BS - #
	CONTROL VALVE	A	RCV - A#
	DRIP AIR RELIEF	A	AR - #
	DRIP FLUSH VALVE	A	FV - #
	FERTILIZER INJECTOR	A	FI - A
	FLOW SENSOR	A	FS - A
	GATE VALVE	A	GV - A
	MASTER VALVE	A	MV - A
	PRESSURE REGULATOR	A	PR - A
	QUICK COUPLER	A	QC - A
BLACK	GROUND ROD	A	GR - A
	PULL BOX	A	PB - A
	SURGE ARRESTOR	A	SA - A

1. RECTANGULAR VALVE BOX
2. 2" VALVE BOX BRAND - REFER TO BRANDING TABLE
3. ROUND VALVE BOX
4. IF RCV IS A TREE VALVE, THEN BRAND "TREE" BELOW RCV-A# BRANDING
5. IF RCV IS A DRIP VALVE, THEN BRAND "DRIP" BELOW RCV-A# BRANDING

VALVE BOX BRANDING

NO SCALE

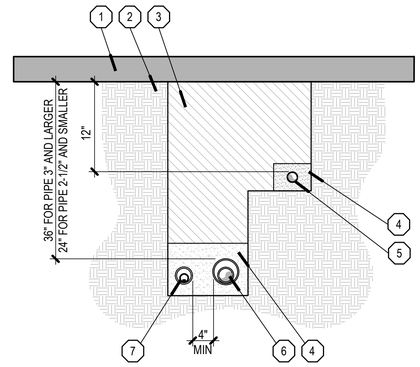
NOTE:
VALVE BOXES SHALL NOT BE LOCATED IN TURF AREAS, IN HEDGES OR ADJACENT TO TREES



1. ROUND VALVE BOX
2. RECTANGULAR VALVE BOX
3. 2" VALVE BOX BRAND - REFER TO BRANDING DETAIL
4. ALIGN VALVE BOXES PARALLEL TO LANDSCAPE EDGE HARDSCAPE
5. TURF LANDSCAPE AREA
6. HARDSCAPE OR STRUCTURE

VALVE BOX LAYOUT

NO SCALE

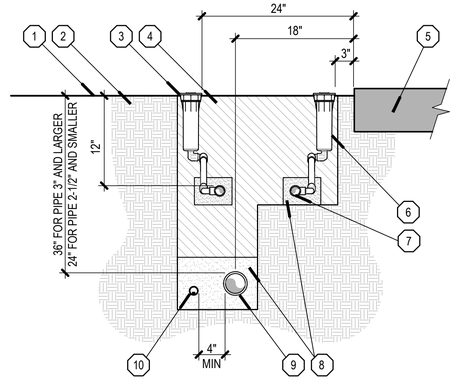


1. VEHICULAR PAVING OR HARDSCAPE
2. SUBGRADE
3. COMPACTED BACKFILL
4. ROCK AND DEBRIS FREE BACKFILL - MINIMUM 2" SURROUNDING PIPING / SLEEVE
5. LATERAL PIPE IN SLEEVE
6. PRESSURE MAINLINE PIPE IN SLEEVE
7. TWO-WIRE CONDUIT IN SLEEVE - MINIMUM 2"

NOTES
1. ALL SLEEVES TO BE MINIMUM TWICE THE DIAMETER OF PIPE / CONDUIT
2. ALL SLEEVES SHALL EXTEND MINIMUM 12" BEYOND EDGE OF HARDSCAPE / PAVING AND ENDS COVERED
3. NON-DOMESTIC WATER PIPE SLEEVES SHALL BE IDENTIFIED PER WATER DISTRICT STANDARDS

PIPE SLEEVING - TWO-WIRE

NO SCALE



1. FINISH GRADE
2. SUBGRADE
3. SHRUB HEAD
4. COMPACTED BACKFILL
5. HARDSCAPE OR STRUCTURE
6. TURF HEAD
7. LATERAL PIPE
8. ROCK AND DEBRIS FREE BACKFILL - MINIMUM 2" SURROUNDING PIPING
9. PRESSURE MAINLINE PIPE
10. TWO-WIRE CABLE CONDUIT

PIPE TRENCHING - TWO-WIRE

NO SCALE

IRRIGATION CONSULTING
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Los Angeles, California

DRAWN BY: A. WILKINSON
DESIGNED BY: M. HEE
CHECKED BY: M. ROMERO

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: LANDSCAPE IRRIGATION DETAILS - 3

SCALE:

ACCOUNT NUMBER: 420977

SHEET: L-39

51 OF 70

DWG. NO.: 6869

22X34

PLANTING NOTES

1. PLANTING PLANS ARE DIAGRAMMATIC. CONTRACTOR TO VERIFY EXISTING SITE CONDITIONS, PLANT TYPES, SIZES, AND PLANT LOCATIONS AS SHOWN PRIOR TO INSTALLATION. ADVISE LANDSCAPE ARCHITECT WHERE CONFLICTS MAY BE PRESENT FOR RESOLUTION SO THE DESIGN'S INTENT IS NOT COMPROMISED.

2. PROTECTION OF EXISTING PLANTS, WHERE APPLICABLE, SHALL COMPLY WITH REQUIREMENTS UNDER SPECIFICATION SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION.

3. VERIFY AND STAKE LOCATIONS OF EXISTING UTILITIES PRIOR TO EXCAVATION. CONTACT UNDERGROUND SERVICE ALERT (800.642.2444). PROTECT UTILITIES IN PLACE DURING CONTRACT DURATION. ANY DAMAGE TO UTILITIES SHALL BE REPAIRED BY CONTRACTOR AT THEIR OWN EXPENSE.

4. DO NOT PRUNE OR TOP TREES PRIOR TO DELIVERY UNLESS DIRECTED, IN WRITING, BY THE LANDSCAPE ARCHITECT. DO NOT PRUNE THE CENTRAL LEADER OF ANY TREE. TREES THAT SHOW EVIDENCE OF HAVING BEEN RECENTLY PRUNED PRIOR TO DELIVERY SHALL BE SUBJECT TO REJECTION.

5. THE APPLICATION OF SOIL AMENDMENTS AND/OR FERTILIZERS SHALL BE DETERMINED BY THE RESULTS OF AN AGRICULTURAL SUITABILITY ANALYSIS PREPARED BY A LICENSED SOILS LABORATORY FOR ON-SITE ROUGH-GRADED SOILS, AND (IF REQUIRED) ANY IMPORTED TOPSOIL. REFER TO THE SPECIFICATIONS FOR THE NUMBER OF REPRESENTATIVE SAMPLES REQUIRED TO BE ANALYZED, AND THE NECESSARY ASSOCIATED TESTING METHODS/RESULTS THAT ARE REQUIRED TO BE FULFILLED. IF SIGNIFICANTLY DIFFERENT SOILS ARE ENCOUNTERED BY THE SUITABILITY ANALYSIS RESULTS, FURTHER SAMPLING MAY BE REQUIRED. A COPY OF THE SUITABILITY ANALYSES, ACCOMPANIED WITH RECOMMENDATIONS AUTHORED BY THE LABORATORY TO BRING THE SUBJECT SOILS INTO OPTIMUM HORTICULTURAL SUITABILITY (USING PRODUCTS/MATERIALS IDENTIFIED IN THE PROJECT SPECIFICATIONS), SHALL BE SUBMITTED TO THE OWNER'S AUTHORIZED REPRESENTATIVE AND LANDSCAPE ARCHITECT AS SOON AS AVAILABLE. CONTRACTOR SHALL SUBMIT WRITTEN CERTIFICATION, ACCOMPANIED WITH COPIES OF THE DELIVERY TICKETS, THAT ALL REQUIRED SOIL AMENDEMENT AND FERTILIZER TYPE(S) HAVE BEEN INCORPORATED AT THE NECESSARY APPLICATION RATES AS RECOMMENDED AND REVIEWED THROUGH THE AGRICULTURAL SUITABILITY ANALYSIS.

6. BASED ON THE RESULTS AND/OR MODIFICATIONS REQUIRED FROM AGRICULTURAL SUITABILITY ANALYSIS, THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO MAKE RECOMMENDATIONS FOR REVISIONS TO THE PLANTING SPECIES REQUIRED TO BETTER ACCOMMODATE THE AMENDED SOILS.

7. CONTRACTOR IS RESPONSIBLE FOR TEMPORARY EROSION CONTROL AT ALL TIMES. TEMPORARY EROSION CONTROL SHALL CONSIST OF, BUT NOT LIMITED TO, CONSTRUCTING SUCH FACILITIES AND TAKING SUCH MEASURES AS ARE NECESSARY TO PREVENT, CONTROL, AND ABATE WATER, MUD AND EROSION DAMAGE TO THE SITE AND ADJOINING PROPERTY (PRIVATE AND PUBLIC) AS A RESULT OF CONSTRUCTING THE PROJECT. BY OCTOBER 15TH OF EACH YEAR, OR EARLIER IF CONDITIONS WARRANT, SUCH TEMPORARY EROSION CONTROL FEATURES AS ARE NECESSARY TO PREVENT DAMAGE DURING THE FORTHCOMING WINTER SEASON SHALL BE CONSTRUCTED AND FUNCTIONING, MEETING REQUIREMENTS OF THE REGIONAL WATER QUALITY CONTROL BOARD.

8. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING A MINIMUM TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF ANY LANDSCAPE IMPROVEMENT WORK AT THE SITE.

9. LOCATION OF PLANT MATERIAL TAKES PRECEDENCE OVER LOCATION OF IRRIGATION SYSTEM COMPONENTS. CONTRACTOR SHALL MAKE NECESSARY PROVISIONS IN FIELD WHERE IRRIGATION SYSTEM COMPONENTS (SUBSURFACE MAINLINES, LOCATION OF VALVE BOXES, ETC.) DO NOT CONFLICT WITH THE LOCATION OR DESIGN INTENT LAYOUT OF THE PLANT MATERIAL. COORDINATION IS ESSENTIAL TO MAKE SURE THE DESIGN INTENT OF THE PLANTING IS NOT COMPROMISED. (EXAMPLES: A CONTINUOUS HEDGE REQUIRES DIVISION INTO PARTIAL SEGMENTS DUE TO ERRANT SETTING OF VALVE BOXES, OR A TREE NEEDS TO BE RELOCATED DUE TO ERRANT LOCATION OF INSTALLED IRRIGATION MAINLINE. THE DESIGN INTENT FOR A CONTINUOUS HEDGE TAKES PRECEDENCE (THE VALVE BOXES SHALL BE LOCATED IN ANOTHER NON-CONFLICTING LOCATION); THE IRRIGATION MAINLINE SHALL BE REROUTED ACCORDINGLY (TO AVOID THE NEED TO RELOCATE THE CONFLICTING TREE).

10. CHECK DIMENSIONS AND SITE CONDITIONS BEFORE STARTING WORK. DISCREPANCIES OR POSSIBLE DIFFICIENCIES BETWEEN THE CONTRACT DRAWINGS AND SPECIFICATIONS WITH FIELD CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND LANDSCAPE ARCHITECT.

11. PROVIDE FOR POSITIVE DRAINAGE AT ALL TIMES. NOTIFY LANDSCAPE ARCHITECT IF SITE CONDITIONS ARE OTHERWISE. MAINTAIN FLOWLINES AND DRAINAGE PATTERNS AS INDICATED ON THE ENGINEER'S DRAWINGS. REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO GROWTH OF PLANT MATERIAL.

12. CONTRACT DRAWINGS AND SPECIFICATIONS INDICATE THE FINISH STRUCTURE. CONSTRUCTION MEANS AND METHODS, SAFETY PROCEDURES, BRACING, SHORING, AND TEMPORARY SUPPORTS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. OBSERVATION VISITS TO THE JOB SITE MADE BY THE LANDSCAPE ARCHITECT DO NOT INCLUDE INSPECTION OF CONSTRUCTION METHODS AND SAFETY CONDITIONS AT THE WORK SITE. GIVE THE LANDCAPE ARCHITECT A MINIMUM OF FORTY-EIGHT (48) HOURS NOTICE FOR REQUIRED OR REQUESTED JOB SITE VISITS.

13. PLANT QUANTITIES, IF INDICATED, ARE FOR THE OWNER'S CONVENIENCE ONLY. CONTRACTOR TO VERIFY ALL PLANT QUANTITIES AS INDICATED IN THE PLAN DOCUMENTS.

14. PROVIDE MATERIAL AND QUALITY REQUIREMENTS NECESSARY FOR CONTINUOUS CONTROL, ABATEMENT, AND REMOVAL OF NOXIOUS VEGETATION. ESTABLISH, THROUGH THE COLLECTIVE USE OF SYSTEMIC, PRE-, AND POST-EMERGENT HERBICIDES, A WEED-FREE CONDITION THROUGHOUT THE PROJECT AREA. FURNISH ALL NECESSARY MATERIALS, LABOR, SUPERVISION, EQUIPMENT, SIGNAGE, AND CHEMICAL SOLUTIONS FOR CONTROLLING OR ELIMINATING UNDESIRABLE VEGETATION. ALL PRODUCTS AND MATERIALS USED FOR WEED CONTROL SHALL BE EPA REGISTERED AND APPROVED FOR USE BY THE LOCAL JURISDICTION.

15. ALL PLANT MATERIALS SHALL BE SUBJECT TO REVIEW AND SELECTION BY THE LANDSCAPE ARCHITECT AT THE SUPPLYING NURSERY(IES) AND/OR DURING DELIVERY TO THE PROJECT SITE. FURNISHING ONLY PREMIUM GRADE NURSERY STOCK IS THE INTENT OF THESE SPECIFICATIONS. QUALITY AND SIZE OF PLANTS SHALL BE IN ACCORDANCE WITH RULES AND GRADING ADOPTED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. AND INCLUDED IN THE AMERICAN STANDARDS FOR NURSERY STOCK (ANSI Z60). ALL PLANT MATERIALS SHALL EXHIBIT A NORMAL HABIT OF GROWTH FOR THE SPECIFIED SPECIES; THEY SHALL BE SOUND, HEALTHY, SYMMETRICAL, FULL IN CONTAINER, VIGOROUS IN GROWTH WITH DENSELY FOLIATED BRANCHES, EXCEPTIONAL IN APPEARANCE, FORM, AND STRUCTURE, WITH ROBUST WELL-DEVELOPED ROOT SYSTEMS (NOT ROOT BOUND), AND FREE FROM WEEDS, INSECTS, PESTS, SALT OR WIND BURN, AND DISEASE. TREE TRUNKS SHALL BE FREE OF SCARS, BLEMISHES, ABRASIONS, DEFECTS, INJURIES, OR OTHER DISFIGUREMENTS.

16. CONTAINER-GROWN PLANTS SHALL HAVE BEEN CULTIVATED IN NURSERY CONTAINERS FOR A MINUMUM OF SIX (6) MONTHS, AND A MAXIMUM OF TWO (2) YEARS. PLANTS SHALL HAVE SUFFICIENTLY- DEVELOPED ROOT SYSTEMS TO HOLD PLANTING SOIL TOGTHER INTACT UPON REMOVAL FROM THEIR CONTAINERS; THEY SHALL NOT EXHIBIT A ROOT-BOUND CONDITION.

17. PLANT MATERIALS IDENTIFIED IN THE CONTRACT DRAWINGS PLANT LIST HAVE BEEN VETTED BY THE LANDSCAPE ARCHITECT AS BEING OF THE DESIGNATED SPECIE(S), CULTIVAR(S), SIZE(S), AND FORM(S) THAT ARE CULTIVATED AND AVAILABLE FOR INSTALLATION. IMMEDIATELY UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE ARRANGEMENTS TO SOURCE AND SECURE ALL IDENTIFIED PLANT MATERIALS TO MEET PROJECT INSTALLATION SCHEDULING AND ACHIEVE DESIGN INTENT. NO SUBSTITUTIONS OF PLANT MATERIALS SHALL BE ACCEPTED DUE TO CONTRACTOR'S NEGLIGENCE IN FAILING TO ADEQUATELY SECURE ALL NECESSARY PLANT MATERIALS. PLANT MATERIALS MAY BE SUBJECT TO SPECIAL CONTRACT-GROWING BY NURSERY PROPAGATION OR OBTAINED THROUGH BROKERAGE IN ADVANCE TO ASSURE AVAILABILITY; ANY COSTS RELATING TO THESE SERVICES SHALL BE SOLELY BORNE BY THE CONTRACTOR. UNANTICIPATED CONSTRUCTION DELAYS, PROJECT SCOPE CHANGES, CHANGES IN INSTALLATION SEASONALITY, WEATHER, OR OTHER ACTS OF GOD MAY AFFECT AVAILABILITY OF PLANT MATERIALS; SUBSTITUTIONS UNDER THESE CIRCUMSTANCES MAY BE CONSIDERED. COST OF SUBSTITUTION(S) SHALL NOT INCREASE THE CONTRACT PRICE. NECESSARY CHANGES TO FURNISH AND INSTALL SMALLER PLANT SIZES OR DIFFERENT SPECIES SHALL BE NEGOTIATED IN ADVANCE WITH THE OWNER'S AUTHORIZED REPRESENTATIVE AND CREDIT MADE BACK TO THE OWNER. ALL PLANT SUBSTITUTION(S) SHALL BE SUBJECT TO REVIEW AND ACCEPTANCE BY THE LANDSCAPE ARCHITECT.

18. PLANTS SHALL BE HANDLED BY THEIR CONTAINERS AT ALL TIMES. DO NOT LIFT, SET, OR HANDLE PLANTS BY THEIR TRUNKS, STEMS, OR FOLIAGE MASS. DO NOT USE PLANTS AS A LEVER FOR INSTALLATION. DO NOT DROP CONTAINERS TO DISRUPT ROOT SYSTEMS. ROOTBALLS THAT ARE CRACKED OR DAMAGED SHALL BE REJECTED AND REPLACED.

19. PLANTS SHALL BE DELIVERED TO SITE UNDER PROTECTIVE COVER. PLANTS SHALL ARRIVE UNBLEMISHED, WITH SUFFICIENTLY MOISTENED ROOTBALLS. STORE AND PROTECT FROM DAMAGE THROUGHOUT INSTALLATION PERIOD. MAINTAIN PLANTS IN A FULLY- IRRIGATED CONDITION UNTIL INSTALLATION.

20. PLANTS DELIVERED TO THE SITE SHALL HAVE DURABLE LEGIBLE LABELS, PRINTED OR STATED IN WEATHER-RESISTANT INK, WITH THE CORRECT BOTANICAL NAME OF THE PLANT(S) BEING DELIVERED. LABELS SHALL BE SECURELY ATTACHED TO PLANT FOLIAGE OR CONTAINER. PLANTS THAT HAVE BEEN REVIEWED AND SELECTED IN ADVANCE AT THE NURSERY BY THE LANDSCAPE ARCHITECT SHALL BE DELIVERED TO THE SITE WITH THE ORIGINAL NURSERY TAGGING MATERIALS (HELD SECURLY INTACT AND UNTAINTED) AS USED BY THE LANDSCAPE ARCHITECT.

21. PRIOR TO PLANTING OPERATIONS, CONTRACTOR SHALL RECEIVE APPROVAL OF REQUIRED SUBMITTALS AS INDICATED IN CONTRACT SPECIFICATIONS. SUBMITTALS INCLUDE THE FOLLOWING:

    - AGRONOMIC SOIL FERTILITY ANALYSIS AND RECOMMENDATIONS PER SPECIFICATION SECTION 329113.
    - SOIL PERCOLATION TESTING PER SPECIFICATION SECTION 329113.
    - APPLICABLE SOIL PREPARATION ARTICLES BEING FURNISHED AND INSTALLED FOR AMENDMENTS, FERTILIZERS, AND SOIL MIXTURES UNDER SPECIFICATION SECTION 329113.
    - PLANT MATERIALS BEING FURNISHED AND INSTALLED UNDER APPLICABLE SPECIFICATION SECTIONS 329200, 329300, AND/OR 329360.
    - LANDSCAPE PLANTING ACCESSORIES BEING FURNISHED AND INSTALLED UNDER SPECIFICATION SECTION 329400.
    - APPLICABLE PLANT ESTABLISHMENT PERIOD ARTICLES BEING FURNISHED AND INSTALLED UNDER SPECIFICATION SECTION 329813.

22. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED WHEN SOIL ARE IN A SATURATED, MUDDY, OR FROZEN CONDITION.

23. PLANTING HOLE/PIT SHALL BE EXCAVATED TO A MINIMUM OF 2X THE WIDTH OF THE PLANT ROOTBALL BEING INSTALLED. DO NOT EXCAVATE HOLES/PITS DEEPER THAN THE DEPTH OF THE ROOTBALL BEING INSTALLED. SCARIFY THE SIDES OF THE PLANTING HOLE/PIT TO ENCOURAGE OPTIMUM GROWTH INTO THE SUBGRADE.

24. UPON REMOVAL OF THE PLANT'S NURSERY CONTAINER OR ROOT BALL WRAPPINGS, PRUNE OR REMOVE ANY WINDING OR GIRDLING ROOTS. PRUNE/CUT UTILIZING CLEAN, SHARP, AND STERILIZED TOOLS. LIGHTLY SCARIFY ROOT BALL TO ENCOURAGE OUTWARD GROWTH OF ROOT MASS.

25. SET THE TOP (CROWN) OF THE PLANT ROOT BALL SLIGHTLY ABOVE THE LEVEL OF THE SURROUNDING FINISHED GRADIENT, ALLOWING FOR ANY DIFFERENTIAL SETTLEMENT OF THE BACKFILL.

26. FULLY IRRIGATE PLANT MATERIALS IMMEDIATELY UPON INSTALLATION SO THAT ROOT MASS AND BACKFILL ARE SATURATED AND SETTLED. MONITOR PLANTS AND APPLY SUPPLEMENTAL WATER, IN QUANTITY AS REQUIRED, TO PROMOTE HEALTHY ESTABLISHMENT, AND UNTIL IRRIGATION SYSTEM IS FULLY OPERATIONAL AND FUNCTIONAL. HAND WATERING OF PLANTS MAY BE REQUIRED TO ENSURE SURVIVAL.

27. FOR BOXED OR BALLED AND BURLAPPED TREES, SET TREES IN THE EXCAVATED PLANTING HOLE/PIT AND ORIENT/SET PLUMB, ACCORDING TO THE DIRECTION OF THE LANDSCAPE ARCHITECT. ONCE TREE IS ACCEPTED IN PLACE, REMOVE NURSERY CONTAINER STRAPS AND SIDES, OR BURLAP AND WIRE NETTING. WHERE TREE ROOTBALLS ARE STABILIZED VIA TETHERED SUBSURFACE ROOT BALL ANCHORING SYSTEMS, INSTALL COMPONENTS OF THISC SYSTEM PER MANUFACTURER'S DIRECTIONS. INSTALL SUPPLEMENTAL DRAINAGE ASSEMBLIES AND TREE ROOT AERATION UNITS AS SPECIFIED. INSTALL ROOT CONTROL BARRIERS AS SPECIFIED. BACKFILL AND LIGHTLY COMPACT ACCORDINGLY IN LIFTS WITH AMENDED PLANTING BACKFILL MIXTURE (REFER TO SPECIFICATIONS). APPLY WATER AND TAMP TO REMOVE AIR POCKETS AND SETTLE BACKFILL BEING CAREFUL TO AVOID EXCESSIVE COMPACTION WHICH WILL AFFECT SOIL POROSITY ESSENTIAL FOR HEALTHY ROOT GROWTH. ADD SLOW-RELEASE FERTILIZER TABLETS AND SUPPLEMENTAL AMENDMENTS IN QUANTITY AS SPECIFIED PRIOR TO FINAL LIFT OF BACKFILL.

28. FOR PALM TREES, SET PALM IN THE EXCAVATED PLANTING HOLE/PIT AND ORIENT/SET PLUMB, ACCORDING TO THE DIRECTION OF THE LANDSCAPE ARCHITECT. REMOVE NURSERY WRAPPINGS/SHEATHINGS ONCE PALM IS ACCEPTED IN PLACE. WHERE PALM ROOTBALLS ARE STABILIZED VIA TETHERED SUBSURFACE ROOT BALL ANCHORING SYSTEMS, INSTALL COMPONENTS OF THIS SYSTEM PER MANUFACTURER'S DIRECTIONS. INSTALL SUPPLEMENTAL DRAINAGE ASSEMBLIES AND TREE ROOT AERATION UNITS AS SPECIFIED. INSTALL ROOT CONTROL BARRIERS AS SPECIFIED. BACKFILL, IRRIGATE AS NEEDED, AND LIGHTLY COMPACT ACCORDINGLY IN LIFTS WITH SPECIAL AMENDED PLANTING BACKFILL FOR PALM TREES (REFER TO SPECIFICATIONS). CONTINUE TO WATER AND TAMP TO REMOVE AIR POCKETS AND SETTLE BACKFILL, BEING CAREFUL TO AVOID EXCESSIVE COMPACTION WHICH WILL AFFECT SOIL POROSITY ESSENTIAL FOR HEALTHY ROOT GROWTH. ADD SLOW-RELEASE FERTILIZER TABLETS AND SUPPLEMENTAL AMENDMENTS IN QUANTITY AS SPECIFIED PRIOR TO FINAL LIFT OF BACKFILL.

29. STAKE AND/OR GUY TREES, AS NECESSARY, IMMEDIATELY AFTER PLANTING, TO ENSURE CONTINUOUS PLUMB GROWTH THROUGH THE SPECIFIED PLANT ESTABLISHMENT PERIOD AND UNTIL FINAL ACCEPTANCE IS GRANTED. FOR TREE STAKING, SECURLY ANCHOR TREE STAKES INTO UNDISTURBED SUBGRADE. REFER TO SPECIFICATIONS FOR TYPE, QUANTITY, AND SIZE OF STAKES AND SUPPLEMENTAL STAKING MATERIALS. FOR TYPE AND INSTALLATION OF TREE GUYING ASSEMBLIES, REFER TO MANUFACTURER'S PRINTED INSTRUCTIONS AS SPECIFIED. REMOVE AND DISCARD ALL NURSERY-FURNISHED STAKING MATERIALS.

30. FOR APPLICABLE VINE AND/OR ESPALIER PLANTING, REMOVE NURSERY-FURNISHED STAKING OR TRELLIS SUPPORT MATERIALS. CAREFULLY TRAIN AND ANCHOR VINES/ESPALIERS TO SPECIFIED SUPPORTING STRUCTURES (FENCE, WALL, ETC.) BY WEAVING STEMS/BRANCHES THROUGH STRUCTURE, AND/OR ANCHOR WITH SPECIFIED WRAPPING MATERIALS IN QUANTITY NECESSARY TO SUFFICIENTLY SUPPORT PLANT IN AN UPRIGHT SPLAYED CONDITION. AVOID DAMAGE TO PLANT.

31. FOLLOWING PLANTING INSTALLATION AND REMEDIAL FINE GRADING, PLANTING AREAS SHALL RECEIVE A LAYER OF MULCH TO HOLD IN SOIL MOISTURE AND DETER WEED GROWTH AND SOIL EROSION. TYPE AND SETTLED DEPTH OF MULCH LAYER (SHREDDED WOOD MULCH, AGGREGATE SURFACING, ETC.) SHALL BE AS INDICATED ON THE CONTRACT DRAWINGS. MULCH SHALL BE APPLIED BEING CAREFUL NOT TO SET WITHIN AND PROTECT GROWING NODES OF INSTALLED PLANTS.

32. REMEDIAL PRUNING OF PLANTS SHALL BE RESERVED AND LIMITED TO DEAD, DISEASED OR BROKEN LIMBS ONLY, AND SHALL BE IN STRICT ACCORDANCE WITH ANSI A300 SPECIFICATIONS. PRUNE/CUT UTILIZING CLEAN, SHARP, AND STERILIZED TOOLS.

33. LANDSCAPE INSTALLATION PERIOD: CONTRACTOR IS RESPONSIBLE FOR MAINTAINING IN FULL, ALL PLANTING AREAS (INCLUDING WATERING, SPRAYING, MULCHING, MOWING, FERTILIZING, WEEDING, STAKING, ETC.) UNTIL THE PROJECT IS REVIEWED AT THE END OF THE INSTALLATION PHASE BY THE OWNER'S AUTHORIZED REPRESENTATIVE AND LANDSCAPE ARCHITECT. CONTRACTOR SHALL REQUEST REVIEW OF PROJECT IN WRITING AT THE END OF THIS INSTALLATION PERIOD. COMPLETION OF THE LANDSCAPE ARCHITECT AND OWNER'S AUTHORIZED REPRESENTATIVE'S REVIEW IN FIELD SHALL COMMENCE THE LANDSCAPE ESTABLISHMENT PERIOD. THE ENTIRE PROJECT WILL BE ACCEPTED AT ONE TIME AND WILL NOT BE ACCEPTED BY AREAS OR PHASED PARTS.

34. LANDSCAPE ESTABLISHMENT PERIOD: CONTRACTOR IS RESPONSIBLE TO GUARANTEE AND CONTINUOUSLY MAINTAIN IN FULL ALL PLANTING AREAS (INCLUDING WATERING, SPRAYING, MULCHING, MOWING, FERTILIZING, WEEDING, STAKING, ETC.) FOR AN ESTABLISHMENT PERIOD FOLLOWING THE REVIEW DATE OF INSTALLATION COMPLETION. DURATION OF THIS LANDSCAPE ESTABLISHMENT PERIOD SHALL BE AS SPECIFIED. CONTRACTOR SHALL REQUEST REVIEW OF PROJECT IN WRITING FOLLOWING COMPLETION OF THE LANDSCAPE ESTABLISHMENT PERIOD. LANDSCAPE ARCHITECT AND OWNER'S AUTHORIZED REPRESENTATIVE'S SUCCESSFUL REVIEW SHALL ACKNOWLEDGE SUBSTANTIAL COMPLETION AND BEGIN THE LANDSCAPE GUARANTEE PERIOD.

35. GUARANTEE PERIOD: FOLLOWING SUBSTANTIAL COMPLETION, IF ALL WORK IS SATISFACTORY, COMPLETE, AND IN ACCORDANCE WITH THE CONDITIONS OF THE CONTRACT, THEN THE OWNER'S AUTHORIZED REPRESENTATIVE AND LANDSCAPE ARCHITECT SHALL DECLARE FINAL ACCEPTANCE OF THE PROJECT IN WRITING AND THE BEGINNING OF THE LANDSCAPE GUARANTEE PERIOD.

36. ALL PLANT MATERIAL INSTALLED SHALL BE GUARANTEED BY THE CONTRACTOR TO BE IN A VIGOROUS GROWING CONDITION. PROVISIONS SHALL BE MADE FOR A GROWTH GUARANTEE OF AT LEAST ONE (1) YEAR FOLLOWING FINAL ACCEPTANCE FOR TREE AND SHRUBS/GROUNDCOVERS/VINES. SPECIMEN-SIZE TREES AND PALM TREES SHALL BE GUARANTEED FOR TWO (2) YEARS FOLLOWING FINAL ACCEPTANCE. CONTRACTOR SHALL REMOVE AND REPLACE ANY PLANT MATERIAL WHICH ARE DEAD OR DYING (PER THE SOLE OPINION OF THE LANDSCAPE ARCHITECT), EXCEPT THOSE DUE TO VANDALISM OR NEGLECT, WITH PLANT MATERIAL EQUAL TO ORIGINAL. REPLACEMENT PLANT MATERIALS SHALL BE MADE AT THE BEGINNING OF THE FIRST SUBSEQUENT PLANTING SEASON. ALL REPLACEMENT PLANT MATERIALS SHALL HAVE A GUARANTEE EQUAL TO THAT STATED ABOVE.

37. CONTINUOUSLY MAINTAIN INSTALLED PLANTING AREAS IN A DUST, PEST, TRASH, DEBRIS, AND WEED-FREE CONDITION THROUGHOUT THE CONTRACTED PLANT ESTABLISHMENT PERIOD UNTIL FINAL ACCEPTANCE. MAINTAIN IN ACCORDANCE WITH APPLICABLE GOVERNING AGENCY GUIDELINES AND SPECIFICATIONS UNLESS NOTED OTHERWISE IN THE CONTRACT DOCUMENTS.

STUDIO-MLA

DRAWN BY: A. WILKINSON
DESIGNED BY: M. HEE
CHECKED BY: M. ROMERO

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

L-41

SHEET TITLE: LANDSCAPE PLANTING NOTES

52 OF 70

SCALE

ACCOUNT NUMBER: 420977

DWG. NO.: 6869

22X34

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	PLANT FACTOR	REMARKS
TREES					
	CER OCC	CERCIS OCCIDENTALIS WESTERN REDBUD	15 GAL	LOW	MULTI-TRUNK/LOW BRANCHING
	EXI DET	EXISTING TREE TO BE PROTECTED	-		
	HET DAV	HETEROMELES ARBUTIFOLIA 'DAVIS GOLD' DAVIS GOLD TOYON	15 GAL	LOW	MULTI-TRUNK/LOW BRANCHING
	PLA SYC	PLATANUS RACEMOSA CALIFORNIA SYCAMORE	60" BOX	MODERATE / .5	STANDARD
	QUE MUL	QUERCUS AGRIFOLIA COAST LIVE OAK MULTI-TRUNK	60" BOX	LOW	STANDARD
	QUE EN2	QUERCUS ENGELMANNII ENGELMANN OAK	60" BOX	LOW	STANDARD

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	QTY	CONT	DETAIL
BIORETENTION UNDERSTORY					
	BAC FYN	BACCHARIS PILULARIS 'PIGEON POINT' / DWARF COYOTE BRUSH	65	5 GAL	
	CAR TUM	CAREX TUMULICOLA / FOOTHILL SEDGE	77	5 GAL	
	DIP AU2	DIPLACUS AURANTIACUS / STICKY MONKEYFLOWER	22	5 GAL	
	IVA HAY	IVA HAYESIANA / SAN DIEGO POVERTY WEED	16	5 GAL	
	LEY CON	LEYMUS CONDENSATUS / GIANT WILD RYE	8	5 GAL	
UPLAND UNDERSTORY					
	ACH SAL	ACHILLEA MILLEFOLIUM 'SALMON BEAUTY' / SALMON BEAUTY COMMON YARROW	149	5 GAL	
	ARI PUR	ARISTIDA PURPUREA / PURPLE THREEAWN	60	5 GAL	
	EPI HUM	EPILOBIUM CANUM / CALIFORNIA FUCHSIA	13	5 GAL	
	ERI FAS	ERIOGONUM FASCICULATUM / CALIFORNIA BUCKWHEAT	25	5 GAL	
	GAL FIR	GALVEZIA SPECIOSA 'FIRECRACKER' / FIRECRACKER ISLAND SNAPDRAGON	17	5 GAL	
	MUH RIG	MUHLENBERGIA RIGENS / DEER GRASS	48	5 GAL	
	SAL CLE	SALVIA CLEVELANDII / CLEVELAND SAGE	7	5 GAL	
	SAL SPA	SALVIA SPATHACEA / HUMMINGBIRD SAGE	10	5 GAL	

STUDIO-MLA

DRAWN BY A. WILKINSON
DESIGNED BY M. HEE
CHECKED BY M. ROMERO

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE LANDSCAPE PLANTING SCHEDULE

SCALE

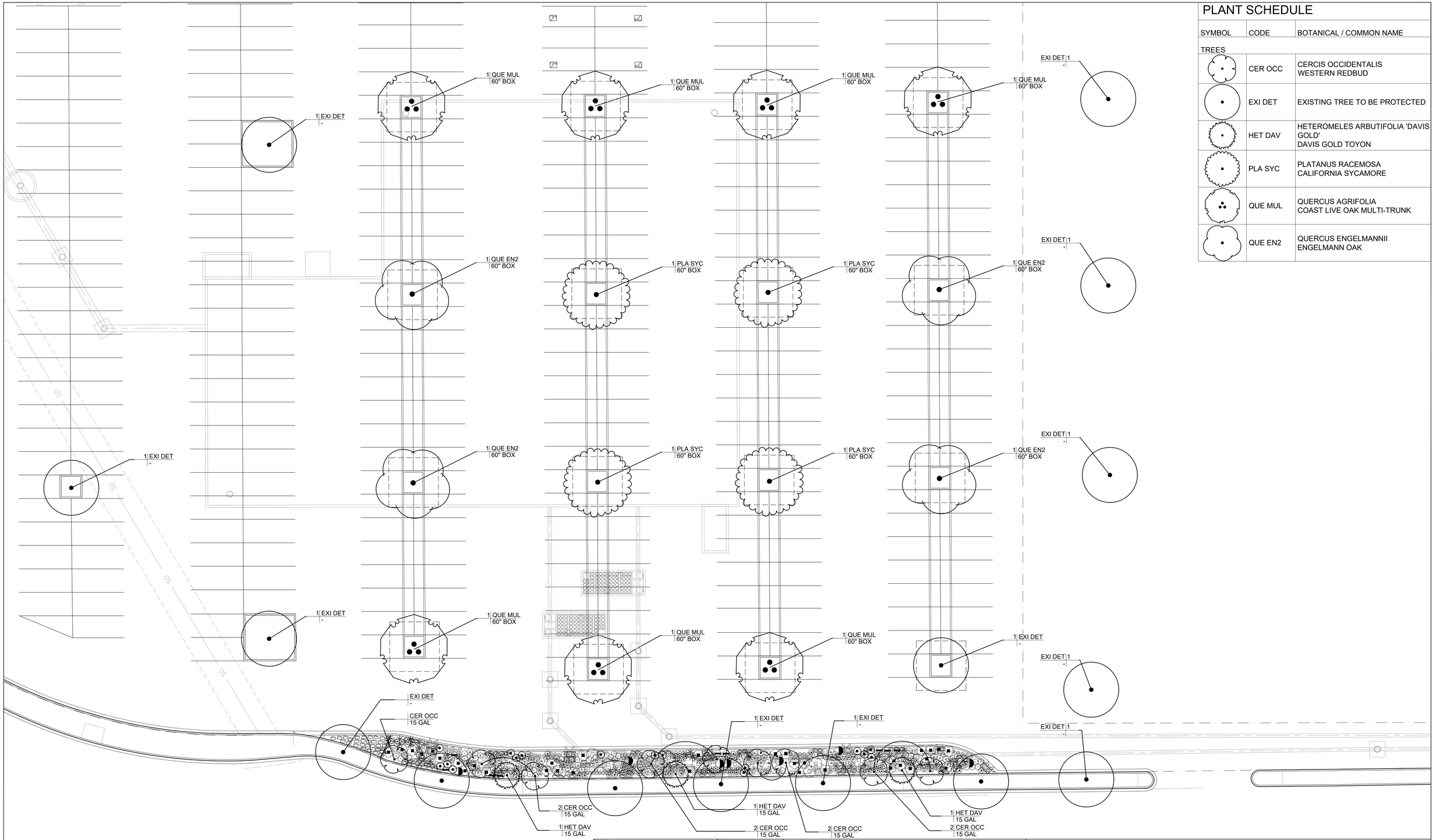
ACCOUNT NUMBER 420977

L-42

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DWG. NO. 6869

22X34



PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	CER OCC	CERCIS OCCIDENTALIS WESTERN REDBUD
	EXI DET	EXISTING TREE TO BE PROTECTED
	HET DAV	HETEROMELES ARBUTIFOLIA 'DAVIS GOLD' DAVIS GOLD TOYON
	PLA SYC	PLATANUS RACEMOSA CALIFORNIA SYCAMORE
	QUE MUL	QUERCUS AGRIFOLIA COAST LIVE OAK MULTI-TRUNK
	QUE EN2	QUERCUS ENGELMANNII ENGELMANN OAK

0 8' 16' 32' 64'

SCALE: 1/16"=1'-0"

NORTH

STUDIO-MLA

DRAWN BY	A. WILKINSON
DESIGNED BY	M. HEE
CHECKED BY	M. ROMERO

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

L-43

SHEET TITLE LANDSCAPE PLANTING PLAN

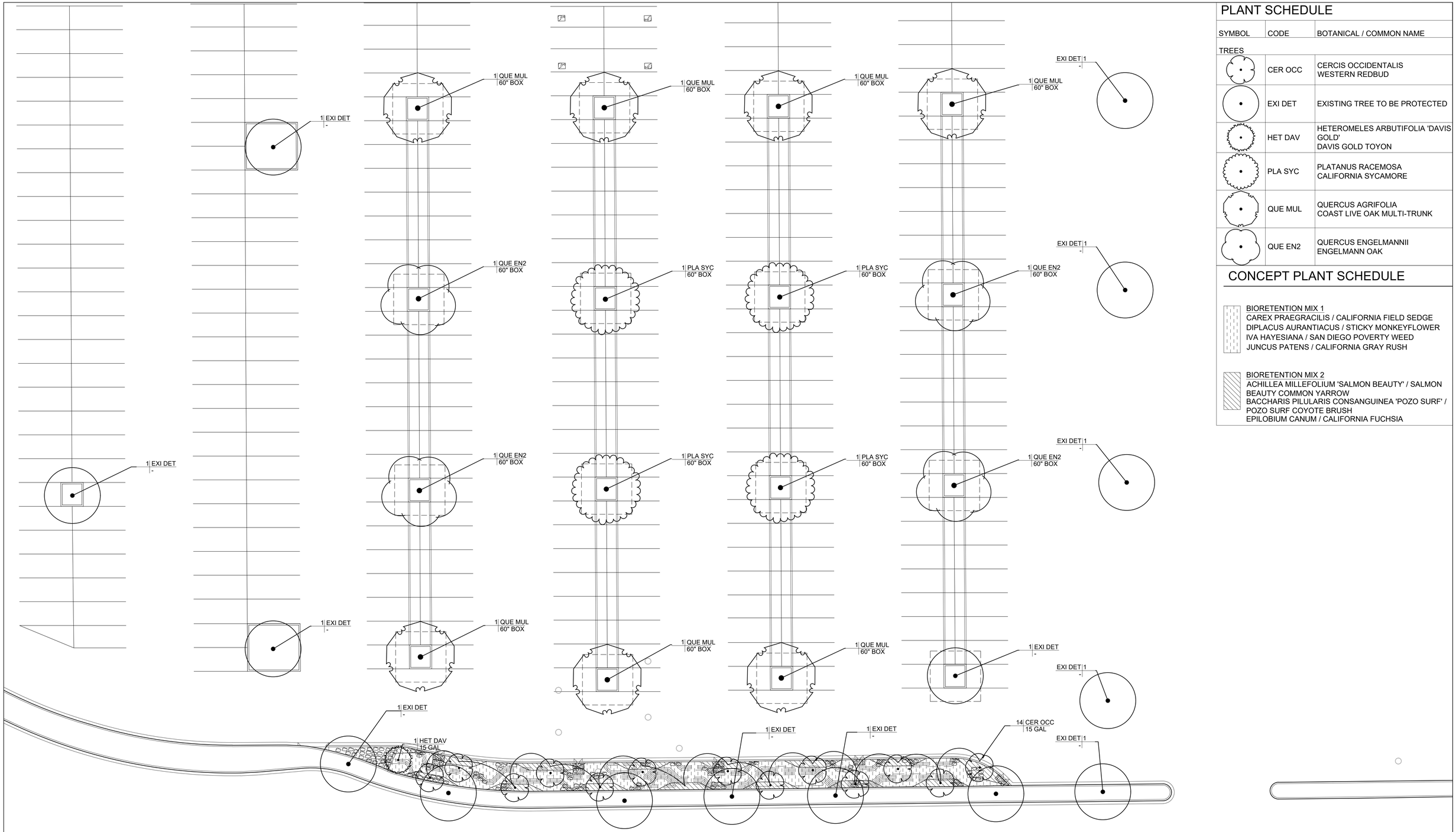
54 OF 70

SCALE AS NOTED

ACCOUNT NUMBER 420977

DWG. NO. 6869

22X34



PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	CER OCC	CERCIS OCCIDENTALIS WESTERN REDBUD
	EXI DET	EXISTING TREE TO BE PROTECTED
	HET DAV	HETEROMELES ARBUTIFOLIA 'DAVIS GOLD' DAVIS GOLD TOYON
	PLA SYC	PLATANUS RACEMOSA CALIFORNIA SYCAMORE
	QUE MUL	QUERCUS AGRIFOLIA COAST LIVE OAK MULTI-TRUNK
	QUE EN2	QUERCUS ENGELMANNII ENGELMANN OAK

CONCEPT PLANT SCHEDULE

BIORETENTION MIX 1
CAREX PRAEGRACILIS / CALIFORNIA FIELD SEDGE
DIPLACUS AURANTIACUS / STICKY MONKEYFLOWER
IVA HAYESIANA / SAN DIEGO POVERTY WEED
JUNCUS PATENS / CALIFORNIA GRAY RUSH

BIORETENTION MIX 2
ACHILLEA MILLEFOLIUM 'SALMON BEAUTY' / SALMON BEAUTY COMMON YARROW
BACCHARIS PILULARIS CONSANGUINEA 'POZO SURF' / POZO SURF COYOTE BRUSH
EPILOBIUM CANUM / CALIFORNIA FUCHSIA

0 8' 16' 32' 64'
SCALE: 1/16"=1'-0"

NORTH

STUDIO-MLA

DRAWN BY	A. WILKINSON
DESIGNED BY	M. HEE
CHECKED BY	M. ROMERO

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

L-44

SHEET TITLE: BIOSWALE PLANTING PLAN

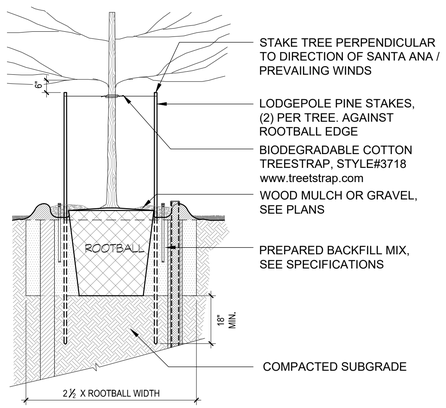
55 OF 70

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

DWG. NO.: 6869

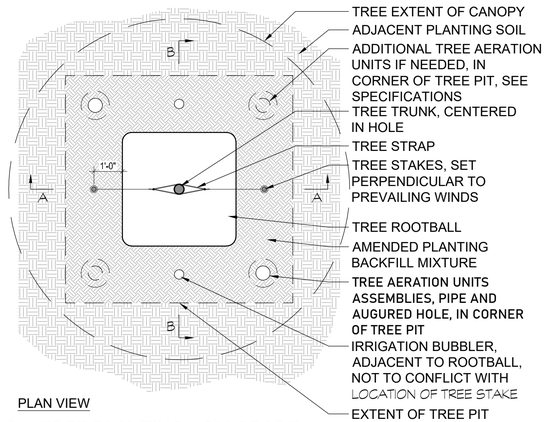
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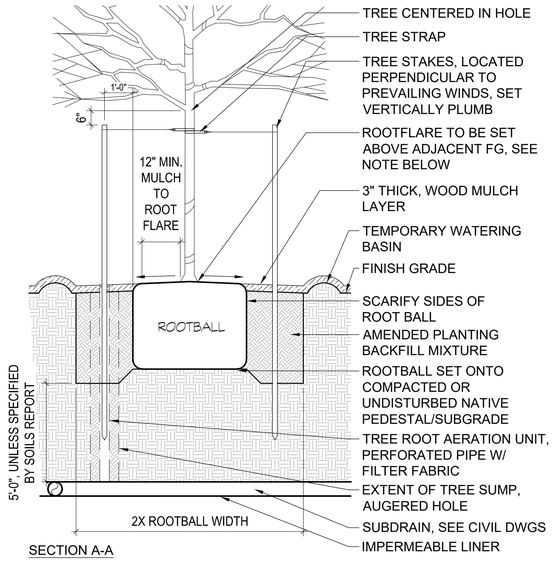
5 TYPICAL TREE STAKING

1" = 1'-0"

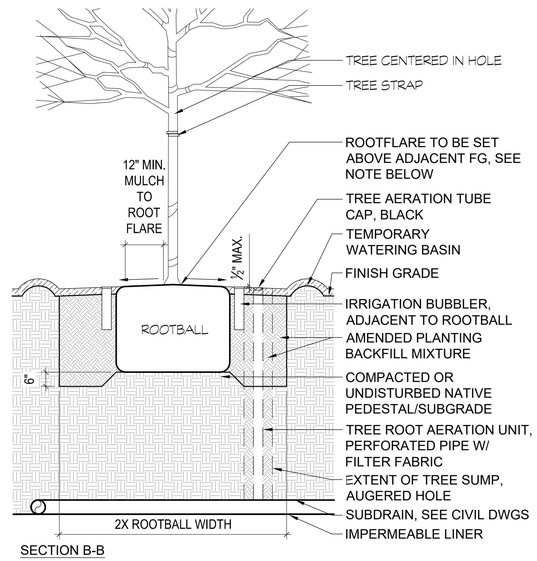
P-LP2019-329343-20



PLAN VIEW



SECTION A-A



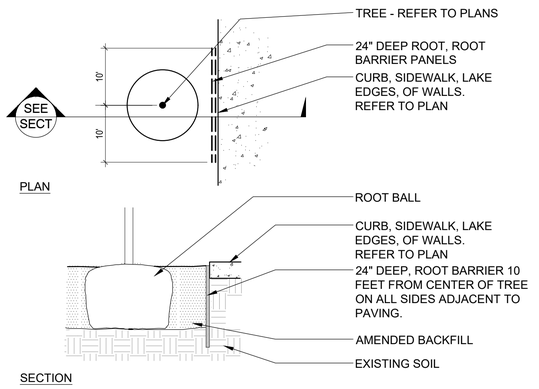
SECTION B-B

1 TREE PLANTING - ON GRADE

3/8" = 1'-0"

P-BSP2024-329343-03

NOTES:
1. INSTALL ROOT BARRIER AS PER MANUFACTURER'S RECOMMENDATIONS.
2. STRIP ROOT BARRIER TO BE INSTALLED WHEN TREES ARE WITHIN 5' OF CURB, SIDEWALK, LAKE EDGES, OR WALLS. BOX ROOT BARRIERS SHOULD NOT BE USED.

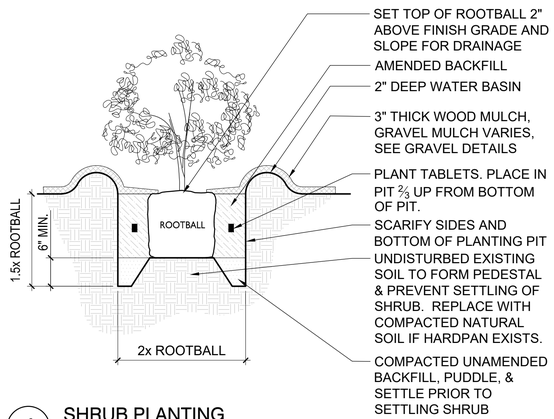


6 ROOT BARRIER

N.T.S.

P-LP2019-329413-04

NOTES:
1. CONTAINER GROWN SHRUBS- LOOSEN ROOTS @ EDGE OF ROOTBALL.
2. ALL SHRUB AREA: PROVIDE SOIL PREPARATION CONTINUOUS IN ENTIRE PLANTING AREA EXCEPT UNDER EXISTING TREES.
3. WIDTH OF PLANTING PIT SHALL NOT BE LESS THAN 1-1/2 TIMES THE DEPTH OF THE ROOTBALL

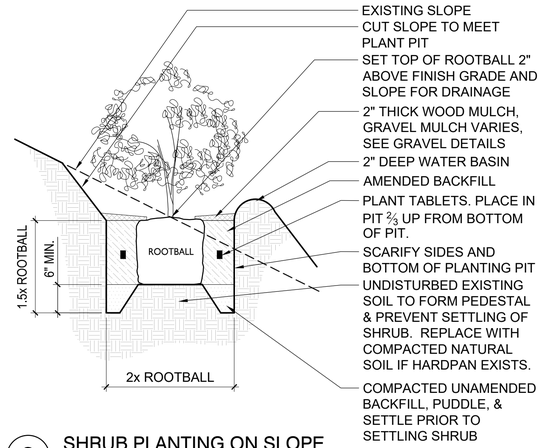


4 SHRUB PLANTING

3/4" = 1'-0"

P-LP2019-329333-15

NOTES:
1. CONTAINER GROWN SHRUBS- LOOSEN ROOTS @ EDGE OF ROOTBALL.
2. ALL SHRUB AREA: PROVIDE SOIL PREPARATION CONTINUOUS IN ENTIRE PLANTING AREA EXCEPT UNDER EXISTING TREES.
3. WIDTH OF PLANTING PIT SHALL NOT BE LESS THAN 1-1/2 TIMES THE DEPTH OF THE ROOTBALL

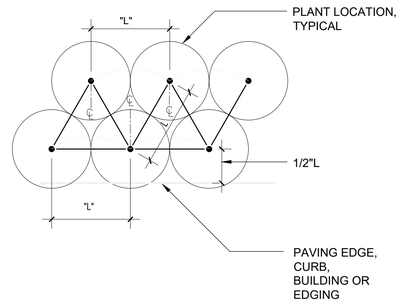


3 SHRUB PLANTING ON SLOPE

3/4" = 1'-0"

P-LP2019-329333-11

"L"= SPACING AS CALLED FOR IN PLANTING PLAN



2 TRIANGULAR SPACING

1" = 1'-0"

STUDIO-MLA

DRAWN BY	A. WILKINSON
DESIGNED BY	M. HEE
CHECKED BY	M. ROMERO

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

L-45

SHEET TITLE LANDSCAPE PLANTING DETAILS

56 OF 70

SCALE AS NOTED

ACCOUNT NUMBER 420977

DWG. NO. 6869

22X34

STRUCTURAL NOTES

GENERAL

1. THE APPLICABLE BUILDING CODE IS INDICATED ON THE LOADING CRITERIA SECTION.
2. THE REQUIREMENTS INDICATED ON THIS SHEET ARE INTENDED AS A BASIC SUMMARY OF THE MATERIAL AND CONSTRUCTION REQUIREMENTS FOR THE PROJECT. ADDITIONAL, MORE STRINGENT REQUIREMENTS ARE GIVEN IN THE PROJECT DETAIL DRAWINGS AND SPECIFICATIONS.
3. ALL STRUCTURAL RELATED SHOP DRAWINGS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO CONSTRUCTION.
4. STRUCTURES MAY BE BUOYANT WHEN EMPTY DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT STRUCTURES AGAINST FLOTATION UNTIL CONSTRUCTION IS COMPLETE.
5. STRUCTURES MAY BE UNSTABLE UNTIL THEY ARE CONSTRUCTED IN THEIR ENTIRETY. CONTRACTOR IS RESPONSIBLE FOR DESIGNING TEMPORARY STRUCTURAL SUPPORTS TO RESIST WIND LOADS, CONSTRUCTION LOADS, AND ANY OTHER TEMPORARY CONDITIONS THAT MAY OCCUR DURING CONSTRUCTION, IN ORDER TO MAINTAIN STABILITY OF THE CONSTRUCTION WORK. ANCHORS FOR CONTRACTOR'S TEMPORARY SUPPORT SYSTEMS THAT ATTACH TO CONCRETE OR MASONRY SHALL BE LOCATED TO AVOID DAMAGING EMBEDDED REINFORCEMENT OR UTILITIES.

CAST-IN-PLACE CONCRETE

1. ALL CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF THE PROJECT TECHNICAL SPECIFICATIONS AND SHALL DEVELOP A MINIMUM 28-DAY COMPRESSIVE STRENGTH (f'c) OF 4500 PSI, OR AS REQUIRED IN THE CAST-IN-PLACE CONCRETE TECHNICAL SPECIFICATION SECTION, DEPENDING ON THE TYPE OR CLASSIFICATION OF CONSTRUCTION.
2. WHERE A MINIMUM 28-DAY COMPRESSIVE STRENGTH (f'c) OF 4500 IS SPECIFIED, A REDUCED DESIGN COMPRESSIVE STRENGTH VALUE OF 4000 PSI WAS UTILIZED FOR STRUCTURAL ANALYSIS AND DESIGN OF REINFORCED CONCRETE ELEMENTS. THIS ALLOWS ADDITIONAL TOLERANCE CONSISTENT WITH ACI FIELD TESTING AND ACCEPTANCE CRITERIA.
3. THE LOCATION OF ALL CONSTRUCTION JOINTS AND OTHER JOINTS NOT SPECIFICALLY INDICATED ON THE DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND ACCEPTANCE BY THE ENGINEER PRIOR TO PLACING CONCRETE.

REINFORCING STEEL

1. ALL REINFORCING BAR SHALL BE GRADE 60, DEFORMED, ASTM A615, UNLESS NOTED OTHERWISE.
2. DIMENSIONS TO REINFORCING BARS ARE TO BAR CENTERLINES, UNLESS NOTED OTHERWISE. BAR COVER IS THE CLEAR DISTANCE BETWEEN THE BAR AND THE CONCRETE SURFACE.
3. NO WELDING OF REINFORCING BARS SHALL BE PERMITTED UNLESS APPROVAL IS OBTAINED FROM THE ENGINEER PRIOR TO CONSTRUCTION.
4. FOR CONCRETE SLABS THAT HAVE A SLOPING TOP FACE, THE TOP LAYERS OF REINFORCEMENT SHALL BE PLACED ON A SIMILAR SLOPE SO THAT SPECIFIED COVER IS MAINTAINED.

POST-INSTALLED ANCHORS

1. POST-INSTALLED ANCHORS SHALL INCLUDE ADHESIVE ANCHORS (THREADED RODS, BOLTS OR REINFORCING BARS), EXPANSION ANCHORS, AND UNDERCUT ANCHORS INSTALLED INTO HARDENED CONCRETE OR MASONRY. SEE THE ANCHORAGE IN CONCRETE AND MASONRY SPECIFICATION SECTION FOR ADDITIONAL REQUIREMENTS.
2. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE INDICATED ON THE DRAWINGS. CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN-PLACE ANCHORS.
3. CARE SHALL BE TAKEN TO AVOID CONFLICTS WITH EXISTING REINFORCING STEEL AND OTHER EMBEDDED ITEMS WHEN DRILLING HOLES. REINFORCING BARS SHALL NOT BE DAMAGED DURING DRILLING OR ANCHOR INSTALLATION. HOLES SHALL BE DRILLED AND CLEANED PER THE PRODUCT MANUFACTURER'S INSTRUCTIONS. ANCHORS SHALL BE INSTALLED PER THE PRODUCT MANUFACTURER'S INSTRUCTIONS AT NOT LESS THAN MINIMUM EDGE DISTANCES AND/OR SPACING INDICATED IN THE MANUFACTURER'S LITERATURE.
4. SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE LISTED IN THE SPECIFICATION OR INDICATED ON THE DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL. PRODUCT ICC-ESR EVALUATION REPORTS SHALL BE INCLUDED WITH THE SUBMITTAL PACKAGE. IF REQUESTED, CALCULATIONS PREPARED BY A REGISTERED PROFESSIONAL ENGINEER USING METHODS AND PROCEDURES REQUIRED BY THE BUILDING CODE MAY BE REQUIRED AS PART OF THE SUBMITTAL PACKAGE.
5. UNLESS NOTED OTHERWISE, THE MINIMUM EMBEDMENT PROVIDED FOR ADHESIVE ANCHORED REINFORCING BARS SHALL DEVELOP THE FULL TENSILE STRENGTH OF THE BAR.
6. SPECIAL INSPECTION WILL BE PROVIDED FOR ALL POST-INSTALLED ANCHORS.

STAINLESS STEEL

1. STAINLESS STEEL BOLTS SHALL CONFORM TO ASTM F593, ALLOY GROUP 1 OR 2, CONDITION CW.
2. STAINLESS STEEL PLATES SHALL CONFORM TO ASTM A240, TYPE 316L.
3. STAINLESS STEEL STRUCTURAL SHAPES SHALL CONFORM TO ASTM A1069 OR ASTM A276, TYPE 316L.

EXCAVATION, BACKFILL, AND FOUNDATIONS

1. FOUNDATION CONSTRUCTION SHALL NOT BEGIN UNTIL ANY REQUIRED SPECIAL INSPECTION HAS BEEN COMPLETED AND THE CONTRACTOR NOTIFIED TO PROCEED.
2. TO FACILITATE SCHEDULING, AT LEAST 48 HOURS ADVANCE NOTICE SHALL BE GIVEN TO THE ENGINEER PRIOR TO THE REQUIRED INSPECTIONS.
3. UNLESS NOTED OTHERWISE, BACKFILL SHALL NOT BE PLACED AGAINST WALLS WHICH SUPPORT A CONCRETE SLAB OR WALKWAY UNTIL THE TOP SLAB OR WALKWAY HAS BEEN PLACED IN ITS ENTIRETY AND ALL CONCRETE HAS REACHED THE SPECIFIED DESIGN STRENGTH.
4. OVER-EXCAVATION OF SOIL, OR OVER-BREAKING OF ROCK, THAT WOULD RESULT IN A STRUCTURAL CONCRETE THICKNESS GREATER THAN INDICATED ON THE DRAWINGS SHALL BE CLASSIFIED AS UNAUTHORIZED EXCAVATION. CONTRACTOR SHALL SELECT ONE OF TWO METHODS TO ADDRESS UNAUTHORIZED EXCAVATION.
   - REPLACE UNAUTHORIZED EXCAVATION MATERIAL WITH LEAN CONCRETE THAT IS PLACED SEPARATELY FROM THE STRUCTURAL CONCRETE INDICATED ON THE DRAWINGS. CONTRACTOR WILL RECEIVE NO ADDITIONAL PAYMENT FOR THE LEAN CONCRETE.
   - REPLACE UNAUTHORIZED EXCAVATION MATERIAL WITH STRUCTURAL CONCRETE THAT IS PLACED MONOLITHICALLY WITH THE STRUCTURAL CONCRETE INDICATED ON THE DRAWINGS, CREATING AN ENLARGED SECTION. CONTRACTOR SHALL NOTIFY ENGINEER FOR DIRECTION PRIOR TO PERFORMING THIS WORK. THE INCREASED CONCRETE THICKNESS MAY REQUIRE ADDITIONAL REINFORCEMENT AND/OR OTHER DESIGN MODIFICATIONS. IF THE INCREASED CONCRETE THICKNESS EXCEEDS 36 INCHES, ENGINEER MAY REQUIRE CONTRACTOR TO IMPLEMENT MASS CONCRETE HEAT MITIGATION PROCEDURES. CONTRACTOR WILL RECEIVE NO ADDITIONAL PAYMENT FOR EXTRA STRUCTURAL CONCRETE, ADDITIONAL REINFORCEMENT, OTHER DESIGN MODIFICATIONS, OR MASS CONCRETING PROCEDURES.
5. THE FOLLOWING NET ALLOWABLE BEARING PRESSURES WERE UTILIZED IN THE DESIGN OF THE FOUNDATIONS.

SPREAD FOOTINGS.....1500 PSF
MAT FOUNDATIONS.....1500 PSF
FROST DEPTH..... 1'-6"
COEFFICIENT AGAINST SLIDING (ULTIMATE).....0.45

NOTE:
1. ALLOWABLE BEARING PRESSURES MAY BE INCREASED BY 500 PSF PER FOOT INCREASE OF DEPTH AND INCREASED BY 1/3 FOR WIND OR SEISMIC LOADS, UP TO A MAXIMUM OF 2500 PSF.

EXISTING STRUCTURES

1. THE DRAWINGS DEPICT WORK AT EXISTING STRUCTURES. ALL DIMENSIONS AND ALL DEPICTIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS, STARTING FABRICATION, OR STARTING CONSTRUCTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE, REPAIRS OR STRUCTURAL MODIFICATIONS THAT ARE REQUIRED DUE TO DEMOLITION BEYOND THE LIMITS IDENTIFIED IN THE DRAWINGS.
3. REINFORCEMENT FOR ANY EXISTING CONCRETE OR MASONRY ELEMENT SHALL NOT BE DAMAGED UNLESS THE ELEMENT IS TO BE DEMOLISHED. WHEN LOCATING EXISTING REINFORCEMENT IS REQUIRED, IT SHALL BE LOCATED USING NON-DESTRUCTIVE METHODS. REINFORCING STRANDS IN EXISTING PRESTRESSED CONCRETE SHALL NOT BE CUT UNLESS INDICATED ON THE DRAWINGS OR OTHERWISE AUTHORIZED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE, REPAIRS OR STRUCTURAL MODIFICATIONS THAT ARE REQUIRED DUE TO DAMAGE OF CONCRETE, MASONRY OR REINFORCEMENT THAT HAS BEEN IDENTIFIED ON THE DRAWINGS TO REQUIRE FIELD VERIFICATION.
4. CORE DRILLING AND SAW CUTTING SHALL NOT BE PERFORMED UNLESS INDICATED ON THE DRAWINGS OR APPROVED BY ENGINEER.
5. EXPOSED CONCRETE SURFACES THAT REMAIN AFTER DEMOLITION SHALL BE REPAIRED TO MATCH ADJACENT CONCRETE SURFACES.
6. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, EXPOSED CONCRETE SURFACES WITH REINFORCEMENT, ANCHOR BOLTS, HANGER RODS, OR OTHER EXPOSED METAL EMBEDMENTS SHALL BE REPAIRED BY CUTTING OFF THE METAL AT THE FACE OF THE CONCRETE, GRINDING SMOOTH, AND APPLYING TWO HEAVY COATS OF EPOXY ENAMEL. COATING SHALL EXTEND A MINIMUM OF 1" BEYOND THE EDGE OF ANY EXPOSED METAL.

SPECIAL INSPECTIONS

1. CODE REQUIRED SPECIAL INSPECTIONS AND TESTS WILL BE CONDUCTED BY APPROVED AGENCIES EMPLOYED BY THE OWNER IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE.
2. THE STATEMENT OF SPECIAL INSPECTIONS WILL BE PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE DURING CONSTRUCTION.
3. EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND OR SEISMIC FORCE RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM OR A WIND OR SEISMIC RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND OWNER PRIOR TO COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT.
4. SEE THE QUALITY CONTROL SECTION AND THE CODE REQUIRED SPECIAL INSPECTIONS AND PROCEDURES SECTION OF THE SPECIFICATIONS FOR FURTHER CLARIFICATION OF RESPONSIBILITIES.

STRUCTURAL OBSERVATIONS

1. IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE, THE OWNER WILL RETAIN A LICENSED ENGINEER TO MAKE STRUCTURAL OBSERVATIONS TO OBSERVE REPRESENTATIVE LOCATIONS OF STRUCTURAL SYSTEMS, DETAILS AND LOAD PATHS FOR GENERAL CONFORMANCE TO THE DESIGN INTENT AS DEFINED IN THE APPROVED CONSTRUCTION DOCUMENTS.
2. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE ANY SPECIAL INSPECTION AND TESTING REQUIREMENTS INDICATED IN THE APPLICABLE BUILDING CODE.
3. SEE THE CODE REQUIRED STRUCTURAL OBSERVATIONS SECTION OF THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

BASIC LOADING CRITERIA

THE APPLICABLE BUILDING CODE IS THE 2025 CALIFORNIA BUILDING CODE (CBC).

1. DEAD LOAD ..... CALCULATED
2. LIVE LOADS:
   - ALL FLOORS NOT INDICATED..... 100 PSF
   - ROOF..... 20 PSF(UNREDUCED)
   - HS-20 LOADING..... (4) - 16k WHEEL LOADS; (2) - 4k WHEEL LOADS
3. LATERAL EARTH PRESSURE (EQUIVALENT FLUID PRESSURE)
   LATERAL EARTH PRESSURE = PSF/FT
   - AT-REST:
     - NON-SATURATED..... 50 H
     - SATURATED..... 90 H
   - ACTIVE:
     - NON-SATURATED.....30 H
     - SATURATED.....90 H
   - DYNAMIC:
     - NON-YIELDING WALL:
       - TOP..... 0 H
       - BOTTOM..... 24 H
     - YIELDING WALL:
       - TOP..... 0 H
       - BOTTOM..... 24 H

   NOTES:
   1. H = HEIGHT OF SOIL (FT)
   2. DYNAMIC LATERAL EARTH PRESSURE DECREASES VERTICALLY BASED ON SOIL HEIGHT FROM SURFACE TO BASE OF SUBJECT BEING CONSIDERED.
   3. DYNAMIC EARTH PRESSURE CAN BE REASONABLY APPRXIMATED BY A TRIANGULAR DISTRIBUTION WITH THE RESULTANT POINT OF APPLICATION BEING 0.6H, MEASURED UP FROM THE BASE OF WALL IN BOTH YIELDING AND NON-YIELDING CONDITIONS.
4. LATERAL SURCHARGE..... EQUIVALENT TO 2 FEET OF SOIL BUT NOT LESS THAN 100PSF WHERE ADJACENT TO A ROADWAY. LOADING EXTENDS FROM FINISH GRADE ELEVATION TO BASE OF WALL OR 10 FEET BELOW FINISH GRADE, WHICHEVER IS LESS.
5. COMPACTIVE SURCHARGE LOAD..... 400 PSF AT FINISH GRADE ELEVATION DECREASING LINEARLY AT SAME RATE AS BACKFILL LOAD INCREASES. FOR WALLS 8 FEET OR LESS IN HEIGHT, USE CRITERIA 4 ABOVE AS COMPACTIVE SURCHARGE.



6. HYDROSTATIC FLUID PRESSURE..... 63 PSF/FT
7. SNOW LOAD:
   - GROUND SNOW LOAD (P_g)..... 7.0 PSF
   - SNOW EXPOSURE FACTOR (C_e)..... 0.9
8. SEISMIC LOAD:
   - MAPPED MCE SHORT PERIOD SPECTRAL RESPONSE ACCELERATION (S_S)..... 2.36g
   - MAPPED MCE ONE SECOND PERIOD SPECTRAL RESPONSE ACCELERATION (S_1)..... 0.76g
   - DESIGN SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS (S_{DS})..... 1.65g
   - DESIGN SPECTRAL RESPONSE ACCELERATION AT ONE SECOND PERIOD (S_{D1})..... 1.18g
   - SITE CLASS..... D
9. RAIN INTENSITY..... 4.71 INCHES/HR
10. FLOOD DESIGN DATA:
    - DESIGN FLOOD ELEVATION..... N/A

BLACK & VEATCH Black & Veatch Corporation Los Angeles, California	DRAWN BY S. BOCKHORST DESIGNED BY P. NICHOLS CHECKED BY G. SUBRAMANIAN	REVISIONS						CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS
		MARK	DATE	DESCRIPTION	BY	CHKD.	APPROVED	BROOKSIDE PARK STORMWATER CAPTURE PROJECT
								SHEET TITLE: GENERAL STRUCTURAL NOTES
								SCALE: ACCOUNT NUMBER 76294
								SHEET: S-01 57 OF 70 DWG. NO. 6869

Date: XX/XX/XXXX Autodesk Docs://420977 - Brookside Park SWC Project/420977-Diversion Structure & General Sheets.rvt

STRUCTURAL ABBREVIATIONS

A

ADDL	ADDITIONAL
AFF	ABOVE FINISH FLOOR
AHR	ANCHOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
AROD	ANCHOR ROD
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
AWG	AMERICAN WIRE GAUGE
AWS	AMERICAN WELDING SOCIETY

B

BLDG	BUILDING
BM	BENCHMARK, BEAM
BO	BOTTOM OF
BOT	BOTTOM
BRDG	BRIDGING
BRG	BEARING
BTWN	BETWEEN

C

C	CAMBER
CANTIL	CANTILEVER
CHKD	CHECKERED
CHKDPL	CHECKERED PLATE
CIP	CAST-IN-PLACE
CJ	CONTRACTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS,CONTINUATION, CONTROL
COORD	COORDINATE
COV	COVER
CRNR	CORNER
CSJ	CONSTRUCTION JOINT
CTRD	CENTERED
CTRS	CENTERS

D

db	BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
DWA	DEFORMED WIRE ANCHOR
DWG(S)	DRAWING, DRAWINGS
DWL(S)	DOWEL, DOWELS

E

E	EAST
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
EMBED	EMBEDMENT
EMER	EMERGENCY
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR

F

FAB	FABRICATE
f'c	28 DAY CONCRETE STRENGTH =
FD	FLOOR DRAIN
FDN	FOUNDATION
FIN	FINISH(ED)
FLR	FLOOR
FS	FAR SIDE
FT	FOOT
FTG	FOOTING
FUT	FUTURE
FV	FIELD VERIFY
Fy	STRUCTURAL STEEL YIELD STRENGTH =
fy	REINFORCING STEEL YIELD STRENGTH =

G

GA	GAUGE
GALV	GALVANIZED
GEN	GENERAL
GR	GRADE

H

H	HORIZONTAL REACTION
HC	HOLLOW CORE
HCA	HEADED CONCRETE ANCHOR
HEX	HEXAGONAL
HGR	HANGER
HORIZ	HORIZONTAL
HP	HIGH POINT
HSS	HOLLOW STRUCTURAL SECTION

I

ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCHES
INT	INTERIOR, INTERNAL
INV	INVERT

J

JT	JOINT

K

K	KIPS (1000 LBS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH

L

L	LENGTH, ANGLE
LAB	LABORATORY
LB(S)	POUND, POUNDS
ld	DEVELOPMENT LENGTH
LE	LEFT END
LIN	LINES
LLBB	LONG LEG BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LP	LOW POINT
LSH	LONG SIDE HORIZONTAL
LSHP	LONG SLOTTED HOLE PARALLEL
LSLT	LONG SLOTTED HOLE TRANSVERSE
LSV	LONG SIDE VERTICAL
LWC	LIGHTWEIGHT CONCRETE

M

M	MOMENT
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MC	MOMENT CONNECTION, MECHANICAL COUPLING
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURE(R)
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL

N

N	NORTH
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO.	NUMBER
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE

O

OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPER	OPERATING
OPH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OVS	OVERSIZED HOLE
OZ	OUNCE

P

P	AXIAL LOAD
PAF	POWDER ACTUATED FASTENER
PAR	PARALLEL
PCC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PEMB	PRE-ENGINEERED METAL BUILDING
PERP	PERPENDICULAR
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLCS	PLACES
PLF	POUNDS PER LINEAR FOOT
PQR	PROCEDURE QUALIFICATION RECORD
PR	PAIR
PRELIM	PRELIMINARY
PROJ	PROJECTION
PROP	PROPERTY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST TENSIONED

Q

QTY	QUANTITY

R

R	RADIUS, RISER, REMAINDER
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
RECT	RECTANGULAR
REF	REFERENCE
REINF	REINFORCEMENT
REQD	REQUIRED
REV	REVISION
RO	ROUGH OPENING

S

S	SOUTH
SC	SLIP CRITICAL, SHEAR CONNECTOR
SCHED	SCHEDULE
SECT	SECTION
SH	SHEET
SIM	SIMILAR
SJ	SAW JOINT
SLBB	SHORT LEG BACK TO BACK
SPA	SPACING
SPEC	SPECIFICATION
SPRT	SUPPORT
SQ	SQUARE
SS	STAINLESS STEEL
SSHP	SHORT SLOTTED HOLE PARALLEL
SSHT	SHORT SLOTTED HOLE TRANSVERSE
STD	STANDARD
STIF	STIFFENER
STIR	STIRRUP
STL	STEEL
STR	STRUCTURE, STRUCTURAL
SYM	SYMMETRICAL

T

T	TREAD, SCHEDULED PLATE THICKNESS, TOP
T&B	TOP & BOTTOM
TAN	TANGENT
TEMP	TEMPERATURE
THD	THREADED
THK	THICK, THICKNESS
TO	TOP OF
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL

U

UNO	UNLESS NOTED OTHERWISE
USGS	UNITED STATES GEOLOGICAL SURVEY

V

VERT	VERTICAL
VNR	VENEER

W

W	WEST
W/	WITH
W/O	WITHOUT
WF	WIDE FLANGE
WP	WORK POINT
WPS	WELDING PROCEDURE QUALIFICATIONS
WT	WEIGHT
WWR	WELDED WIRE REINFORCEMENT

X

x	BY, TIMES
XS	EXTRA STRONG
XXS	DOUBLE EXTRA STRONG

Y

	NOT USED

Z

	NOT USED

SPECIAL CHARACTERS

@	AT
&	AND
ø	DIAMETER
#	NUMBER
%	PERCENT

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Black & Veatch Corporation
Los Angeles, California

DRAWN BY
DESIGNED BY
CHECKED BY

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD.	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: STRUCTURAL ABBREVIATIONS

SCALE

ACCOUNT NUMBER: 76294

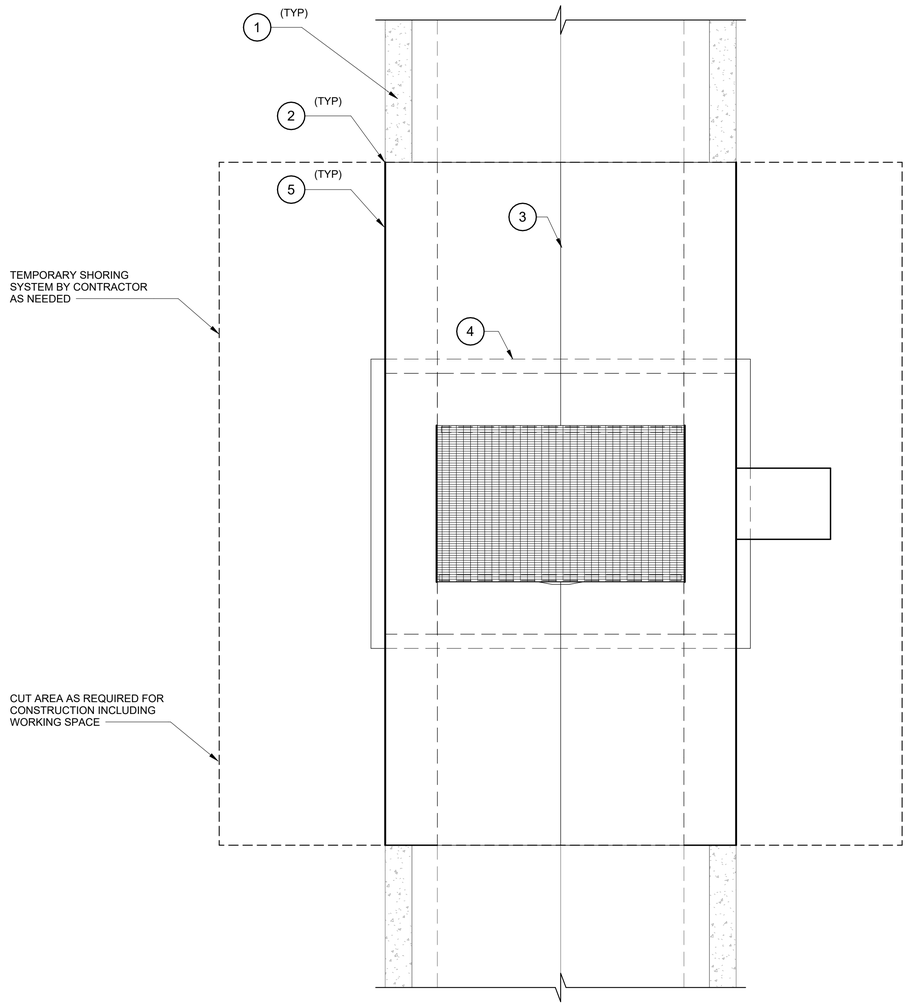
SHEET: S-02

58 OF 70

DWG. NO.: 6869

Date: XX/XX/XXXX Autodesk Docs://420977 - Brookside Park SWC Project/420977-Diversion Structure & General Sheets.rvt

22X34



DIVERSION STRUCTURE STAGING PLAN

3/8" = 1'-0"

STAGING PLAN ASSUMED FOR THE STRUCUTRAL DESIGN

1. EXISTING RETAINING WALLS ADJACENT TO NEW DIVERSION STRUCTURE SHALL BE PROTECTED IN PLACE AVOIDING ANY MOVEMENT OR DAMAGE DURING CONSTRUCTION. CONTRACTOR MAY ELECT TO USE A WALL JACK SYSTEM TO MEET THE ABOVE REQUIREMENTS.
2. CONTRACTOR SHALL REMOVE A SEGMENT OF THE EXISTING DRAINAGE CHANNEL. REMOVED SEGMENT WIDTH TO BE DETERMINED BY CONTRACTOR PER WORKING SPACE REQUIREMENTS.
3. SHEET PILING AND OR TRENCH PLATE CAN BE DRIVEN TO CREATE WORKING SPACE AS NEEDED BY CONTRACTOR.
4. CONSTRUCTION OF NEW DIVERSION STRUCTURE.
5. NEW CHANNEL WALLS, BASE SLAB AND TOP SLAB.

NOTE:

1. THE ABOVE STAGING PLAN IS PROVIDED AS A GUIDELINE FOR THE STRUCTURAL DESIGN PURPOSES ONLY AND SHALL NOT BE INTERPRETED AS " MEANS AND METHODS". CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS, METHODS, TECHNIQUES, SEQUENCING AND SAFETY PROCEDURES FOR THE CONSTRUCTION.

12" 0' 1' 2' 3' 4' 5' 6' 7'

3/8" = 1'-0"

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MARK	DATE	DESCRIPTION	BY	CHKD.	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE DIVERSION STRUCTURE CONSTRUCTION STAGING PLAN

SCALE AS NOTED

ACCOUNT NUMBER 76294

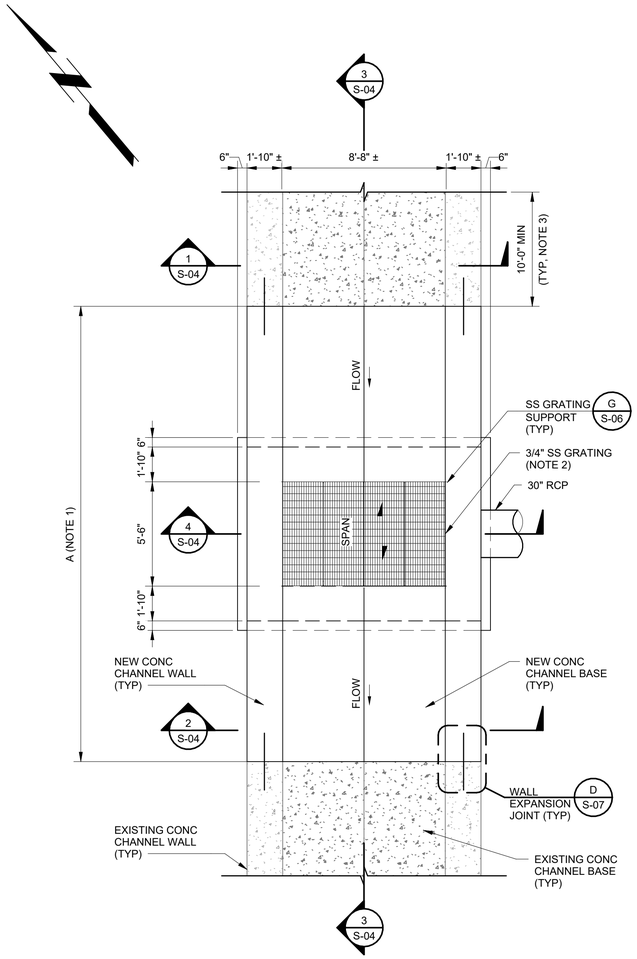
SHEET: S-03

59 OF 70

DWG. NO. 6869

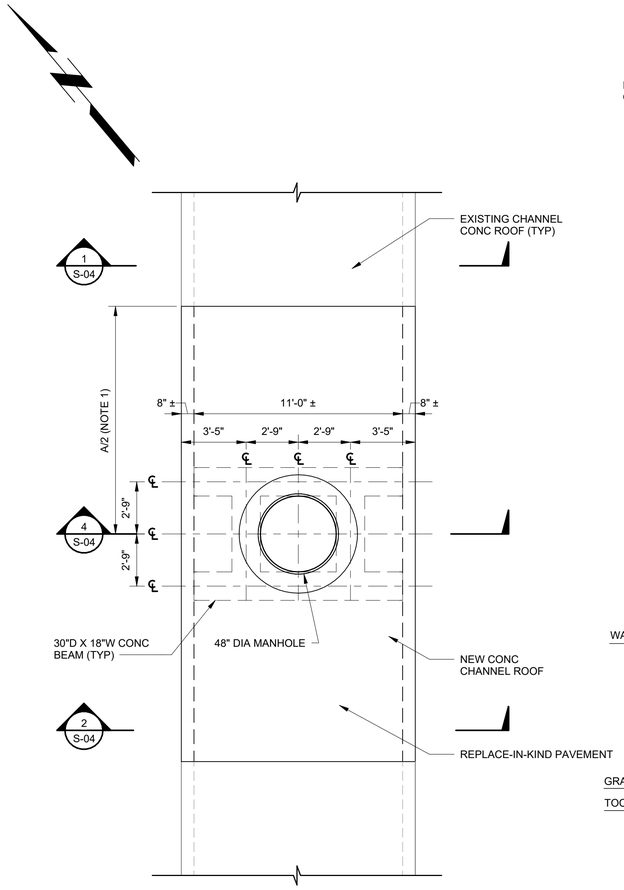
Date: XX/XX/XXXX Autodesk Docs://420977 - Brookside Park SWC Project/420977-Diversion Structure & General Sheets.rvt

22X34



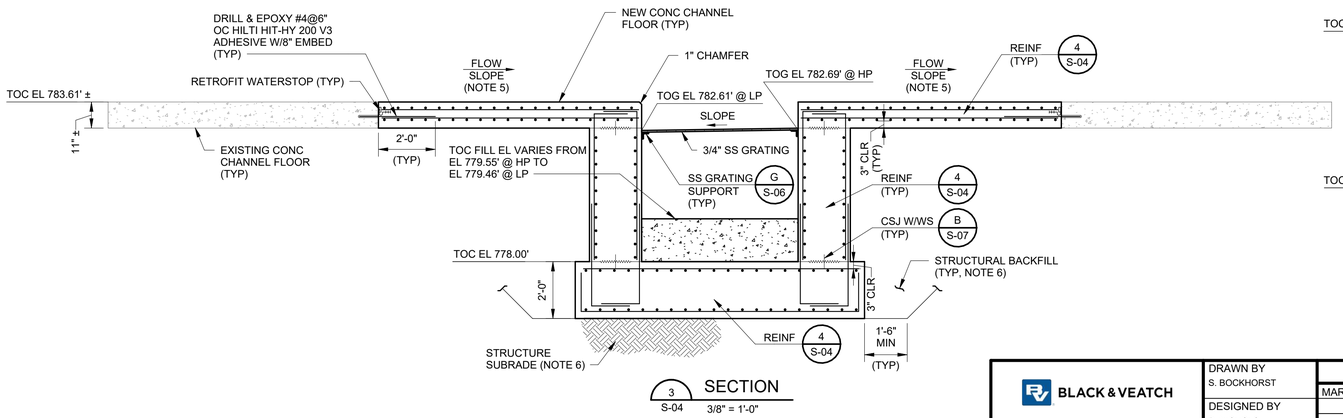
DIVERSION STRUCTURE PLAN AT EL 783.50'

1/4" = 1'-0"

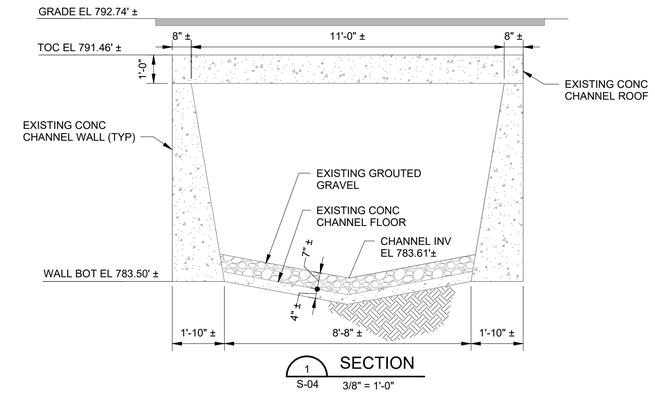


DIVERSION STRUCTURE ROOF PLAN

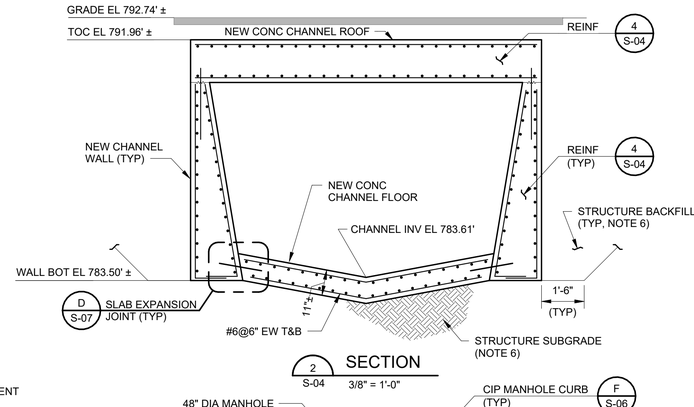
1/4" = 1'-0"



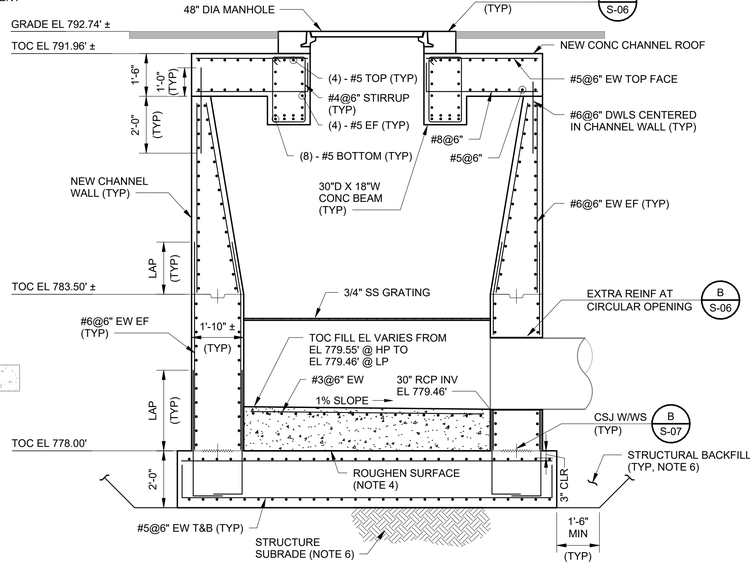
3 SECTION S-04 3/8" = 1'-0"



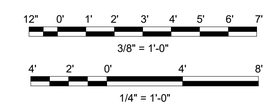
1 SECTION S-04 3/8" = 1'-0"



2 SECTION S-04 3/8" = 1'-0"



4 SECTION S-04 3/8" = 1'-0"



NOTES:

1. DIMENSION A: REPLACE-IN-KIND CHANNEL WALL, BASE, AND ROOF ON EITHER SIDE OF THE NEW DIVERSION STRUCTURE PER THE CUT LENGTH REQUIRED FOR WORKING SPACE AS DEFINED IN SHEET S-03.
2. 3/4" SS GRATING SHALL BE DIVIDED INTO FOUR EQUAL 2'-2" WIDE SEGMENTS SPANNING IN THE DIRECTION INDICATED.
3. EXISTING CHANNEL WALLS AND ROOF SLAB SHALL BE PROTECTED IN PLACE TO MAINTAIN LATERAL STABILITY DURING CONSTRUCTION. CONTRACTOR MUST SUBMIT A PLAN TO PROTECT THESE ELEMENTS PRIOR TO BEGINNING CONSTRUCTION.
4. A MINIMUM CONCRETE SURFACE PROFILE (CSP) OF 4 OR HIGHER SHALL BE MET IN ACCORDANCE WITH ICRI TECHNICAL GUIDELINE NO 310-2. SUBSTRATE SHALL BE SATURATED SURFACE DRY (SSD) AND FREE OF STANDING WATER PRIOR TO PLACING CONCRETE FILL.
5. SLOPE OF NEW CHANNEL FLOOR TO MATCH EXISTING CHANNEL FLOOR.
6. REFER TO SPECIFICATION SECTION 31 23 11 FOR SUBGRADE PREPARATION AND BACKFILL REQUIREMENTS.
7. CONTRACTOR TO FIELD-VERIFY ALL EXISTING CHANNEL DIMENSIONS AND USE THE SAME DIMENSIONS IN CONSTRUCTION OF THE NEW CHANNEL ELEMENTS.

BLACK & VEATCH

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REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD.	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: DIVERSION STRUCTURE PLAN AND SECTIONS

SCALE: AS NOTED

ACCOUNT NUMBER: 76294

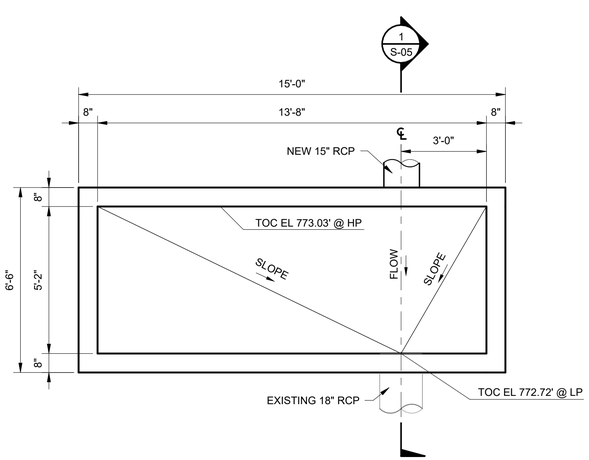
SHEET: S-04

60 OF 70

DWG. NO. 6869

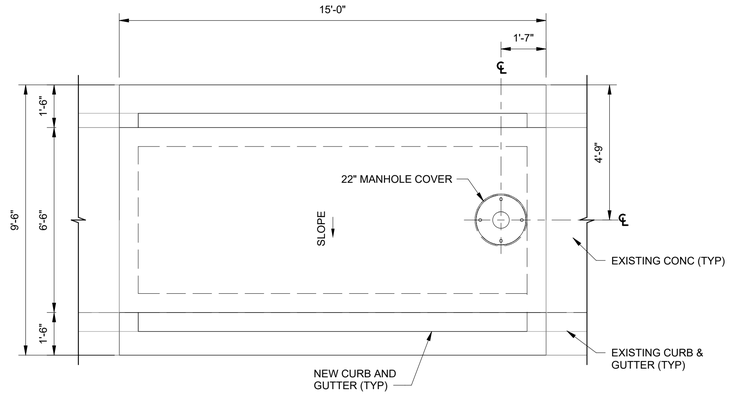
Date: XX/XX/XXXX Autodesk Docs://420977 - Brookside Park SWC Project/420977-Diversion Structure & General Sheets.rvt

22X34



CATCH BASIN FOUNDATION PLAN

3/8" = 1'-0"

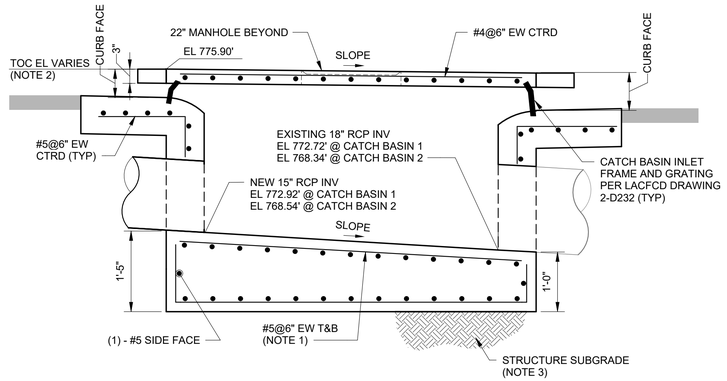


CATCH BASIN ROOF PLAN

3/8" = 1'-0"

NOTES:

1. SLOPE TOP REINFORCING TO MAINTAIN 2" COVER.
2. TOP OF CATCH BASIN ROOF TO MATCH EXISTING CURB ELEVATIONS.
3. REFER TO SPECIFICATION SECTION 31 23 11 FOR SUBGRADE PREPARATION AND BACKFILL REQUIREMENTS.



1 SECTION

S-05 3/4" = 1'-0"

12" 6" 0' 1' 2' 3'

3/4" = 1'-0"

12" 0' 1' 2' 3' 4' 5' 6' 7'

3/8" = 1'-0"

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Los Angeles, California

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DESIGNED BY

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REVISIONS

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BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE CATCH BASIN PLAN AND DETAILS

SCALE AS NOTED

ACCOUNT NUMBER 76294

SHEET: S-05

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DWG. NO. 6869

Date: XX/XX/XXXX Autodesk Docs://420977 - Brookside Park SWC Project/420977-Catch Basin.rvt

22X34

LENGTH OF LAPPED SPLICES FOR REINFORCEMENT (INCHES)

UNLESS NOTED OTHERWISE ON THE DRAWINGS

BAR SIZE *	BEAMS & COLUMNS		WALLS & SLABS		BAR SIZE *
	**TOP BARS	OTHERS	**TOP BARS	OTHERS	
#3	16	16	16	16	#3
#4	19	16	19	16	#4
#5	24	18	24	18	#5
#6	33	26	29	22	#6
#7	55	42	48	37	#7
#8	69	53	60	46	#8
#9	84	65	74	57	#9
#10	103	79	91	70	#10
#11	122	94	108	83	#11

* LAP SPLICE LENGTH FOR BARS OF DIFFERENT SIZES SHALL BE THE GREATER OF THE SMALL BAR LAP LENGTH OR 0.75x THE LARGER BAR LAP LENGTH.

** TOP BARS ARE HORIZONTAL BARS SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR. HORIZONTAL BARS IN WALLS ARE TO BE PROVIDED WITH LAP LENGTHS AS REQUIRED FOR TOP BARS. VERTICAL BARS MAY BE CONSIDERED AS OTHER BARS.

CONCRETE COVER FOR REINFORCEMENT

UNLESS NOTED OTHERWISE ON THE DRAWINGS

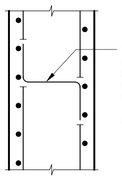
LOCATION	SPECIFIED COVER
UNFORMED SURFACES ADJACENT TO EXCAVATION	3"
SURFACES INSIDE OZONE CONTACTOR STRUCTURES EXPOSED TO OZONE IN WATER OR AIR	3"
TOP SURFACES OF SLABS THAT ARE SUBMERGED	3"
FORMED SURFACES THAT ARE SUBMERGED, AND FORMED OR TOP SURFACES EXPOSED TO WEATHER, SATURATED AIR, OR EARTH	2"
OTHER LOCATIONS:	
BEAMS AND GIRDERS	1 1/2"
SLABS, WALLS AND JOISTS: #5 AND LARGER	1 1/2"
#4 AND SMALLER	1"

NOTES:

1. COVER IS MEASURED TO NEAREST BAR, STIRRUP, TIE, OR SPIRAL, AS APPLICABLE.
2. TOLERANCES FOR CONCRETE COVER AND THE FABRICATION AND PLACING OF REINFORCEMENT SHALL CONFORM TO ACI 117.

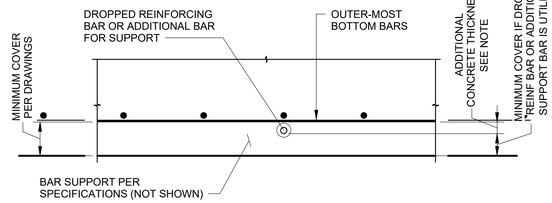
A STANDARD CONCRETE REINFORCMENT SCHEDULE

NO SCALE



C SPACERS FOR WALL REINFORCEMENT

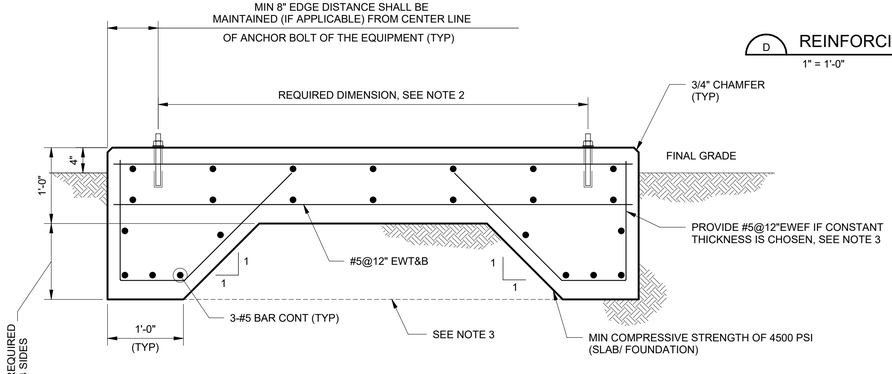
12" = 1'-0"



NOTE:
WHERE DROPPED REINFORCING BARS OR ADDITIONAL BARS ARE UTILIZED AS SUPPORT BARS IN THE PLACEMENT OF THE BOTTOM MAT REINFORCING, CONCRETE COVER TO THE SUPPORT BARS SHALL NOT BE LESS THAN REQUIRED PER THE DRAWINGS AND THE CONCRETE THICKNESS OF THE SLAB OR FOOTING SHALL BE INCREASED, EQUAL TO THE DIAMETER OF THE SUPPORT BAR, AT NO ADDITIONAL COST. ALTERNATIVELY, UPON THE APPROVAL OF THE ENGINEER, A SHALLOWER BOLSTER MADE BE USED TO MAINTAIN THE MINIMUM CLEAR COVER FOR THE BOTTOM MAT REINFORCING.

D REINFORCING SUPPORT DETAIL

1" = 1'-0"

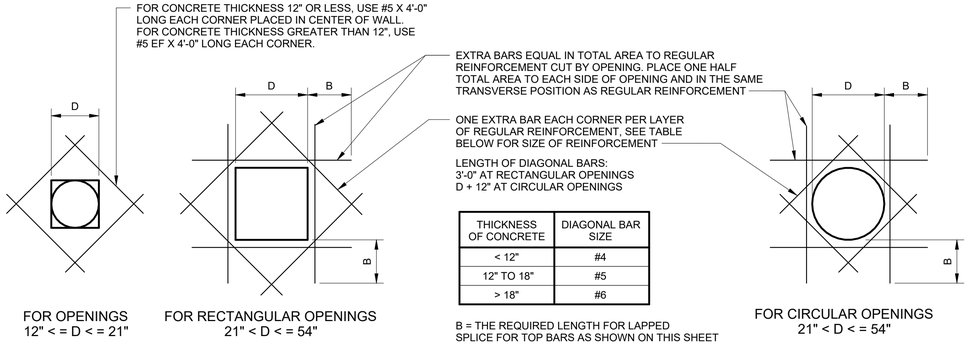


NOTES:

1. FOUNDATION DIMENSIONS DETERMINED BY AND EQUIPMENT ANCHORAGE EDGE DISTANCE REQUIREMENTS.
2. EQUIPMENT PAD DIMENSIONS TO BE COORDINATED WITH EQUIPMENT MANUFACTURER. THE MINIMUM EDGE DISTANCE MUST BE TAKEN INTO ACCOUNT FOR THE SIZE OF THE PAD IN BOTH DIRECTIONS.
3. AT CONTRACTOR OPTION, PERIMETER TURN DOWN EDGE CAN BE ELIMINATED ON ALL SIDES. THE ENTIRE THICKNESS CAN BE CONSTANT. CONTRACTOR SHALL LOWER THE BOTTOM LAYER OF THE REBAR MAT TO THE BOTTOM AND MAINTAIN 3" OF CONC COVER.
4. WHEN THE REQUIRED SIZE IS GREATER THAN 15'-0" X 15'-0", CONTRACTOR SHALL SUBMIT CONTROL JOINT LAYOUT DURING CONSTRUCTION FOR REVIEW. PROVIDE A MINIMUM SLOPE OF 1/8" PER LINER FOOT. APPROPRIATE DRAINAGE DIRECTION MAY BE FIELD DETERMINED IF NOT SHOWN ON PLAN TO APPROPRIATELY DRAIN WATER FROM FOUNDATION, BUILDING, OR NEARBY STRUCTURE.

G EXTERIOR EQUIPMENT PAD

1" = 1'-0"



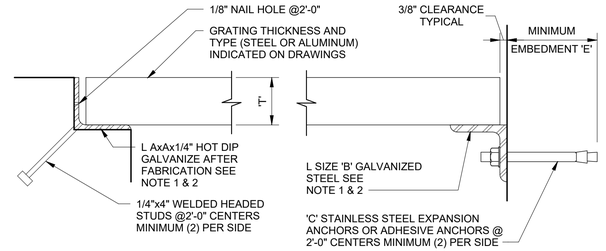
THICKNESS OF CONCRETE	DIAGONAL BAR SIZE
< 12"	#4
12" TO 18"	#5
> 18"	#6

B = THE REQUIRED LENGTH FOR LAPPED SPLICE FOR TOP BARS AS SHOWN ON THIS SHEET

TYPICAL REQUIRED UNLESS ADDITIONAL REINFORCEMENT SPECIFICALLY INDICATED AT OPENINGS ON DRAWINGS

B TYPICAL EXTRA REINFORCEMENT AT OPENINGS 12" TO < = 54"

12" = 1'-0"



GRATING THICKNESS 'T'	L SIZE AxAx1/4 INCHES	L SIZE 'B' INCHES	'C' ANCHOR DIA	'C' ANCHOR MIN 'E'
1"	1 3/4 x 1 3/4*	2 1/2x2 1/2x1/4	1/2"	3 1/4"
1 1/4"	1 3/4 x 1 3/4*	2 1/2x2 1/2x1/4	1/2"	3 1/4"
1 1/2"	1 3/4 x 1 3/4	2 1/2x2 1/2x1/4	1/2"	3 1/4"
1 3/4"	2x2	3x3x3/8	3/4"	4 3/4"
2"	2 1/2x2 1/2*	3x3x3/8	3/4"	4 3/4"
2 1/4"	2 1/2x2 1/2	3x3x3/8	3/4"	4 3/4"
2 1/2"	3x3*	3x3x3/8	3/4"	4 3/4"

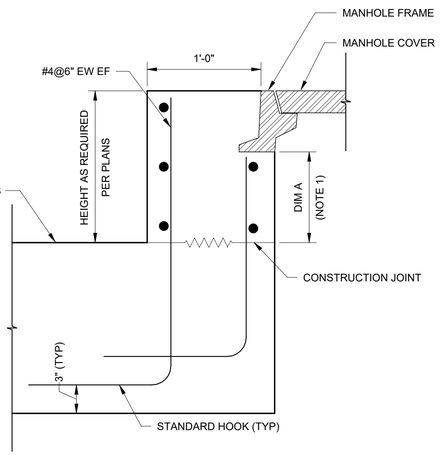
* TRIM AND BEVEL UPSTANDING LEG TO FIT

NOTES:

1. ALL GRATING SUPPORTED ON CONCRETE SHALL HAVE AN EMBEDDED ANGLE RECESSED AS SHOWN UNLESS NOTED OTHERWISE. GRATING SUPPORTED BY THE FACE MOUNTED ANGLE SHALL BE USED WHERE THE CONCRETE EXTENDS ABOVE THE TOP OF THE GRATING OR AT EXISTING STRUCTURES.
2. WHERE GRATING IS REQUIRED TO BE STAINLESS STEEL, SUPPORT ANGLES SHALL ALSO BE STAINLESS STEEL.

E METAL GRATING SUPPORT

3" = 1'-0"



NOTES:

1. WHERE DIM A IS LESS THAN 10", PROVIDE ONLY ONE HORIZONTAL BAR ON INLET FACE CENTERED VERTICALLY.
2. PROVIDE 2" COVER FOR ALL BARS.

F CIP MANHOLE CURB

1 1/2" = 1'-0"

12" 9" 6" 3" 0' 1' 2'

1" = 1'-0"

12" 9" 6" 3" 0"

3" = 1'-0"

NOTES:

1. DETAILS ON THIS DRAWING APPLY TO ALL DRAWINGS UNLESS OTHERWISE NOTED.
2. WORK THIS DRAWING WITH THE STANDARD CONCRETE JOINT DETAILS.

BLACK & VEATCH

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Los Angeles, California

DRAWN BY S. BOCKHORST
DESIGNED BY P. NICHOLS
CHECKED BY G. SUBRAMANIAN

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD.	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: STANDARD CONCRETE REINFORCEMENT AND MISC DETAILS

SCALE: AS NOTED

ACCOUNT NUMBER: 76294

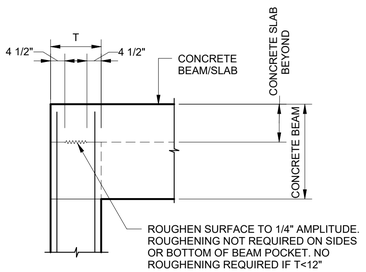
SHEET: S-06

62 OF 70

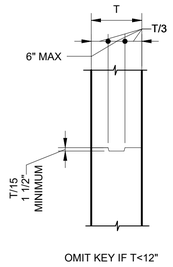
DWG. NO. 6869

Date: XX/XX/XXXX Autodesk Docs://420977 - Brookside Park SWC Project/420977-Diversion Structure & General Sheets.rvt

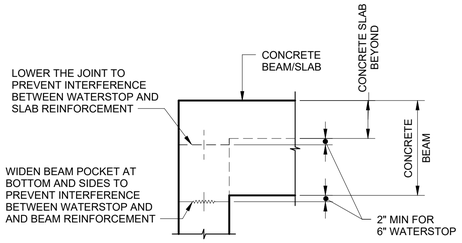
22X34



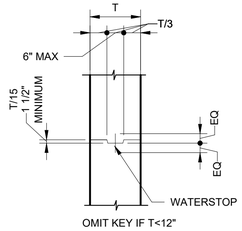
TOP OF WALL TO BEAM/SLAB



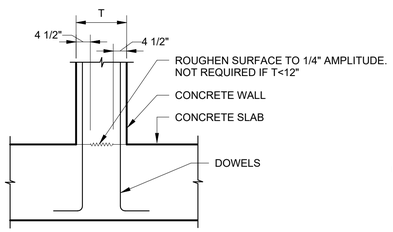
WALL TO WALL



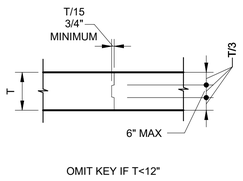
TOP OF WALL TO BEAM/SLAB



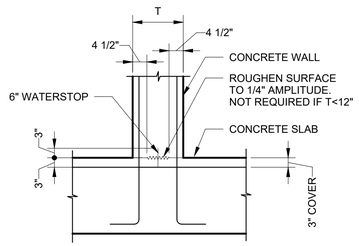
WALL TO WALL



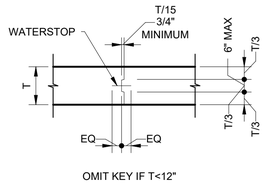
SLAB TO BOTTOM OF WALL



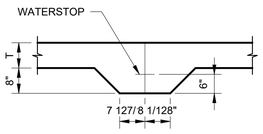
SLAB TO SLAB



BOTTOM OF WALL TO SLAB



SLAB TO SLAB (T>=12")



SLAB TO SLAB (T<12")

NOTES:
1. REINFORCEMENT STEEL IS CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS.
2. "CSJ" - CONSTRUCTION JOINT WITHOUT WATERSTOP.

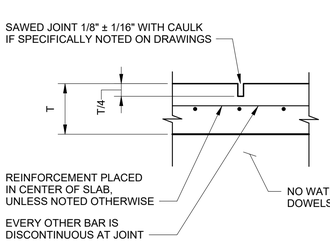
NOTES:
1. REINFORCEMENT STEEL IS CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS.
2. "CSJ W/ WS" - CONSTRUCTION JOINT WITH WATERSTOP.
3. UNLESS NOTED OTHERWISE, WATERSTOPS MAY BE STEEL OR PVC.

NOTES:

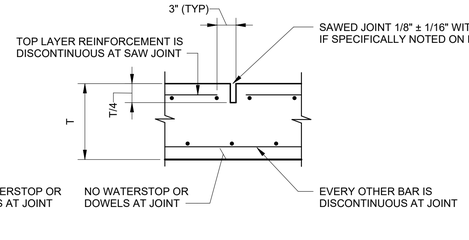
1. DETAILS ON THIS DRAWING APPLY TO ALL DRAWINGS UNLESS NOTED OTHERWISE.
2. WORK THIS DRAWING WITH THE STANDARD CONCRETE REINFORCEMENT DETAILS.
3. AT WALL JOINTS AND AT WALL BASE JOINTS, SECURE ALL ELASTOMERIC WATERSTOPS IN THE CORRECT POSITION USING HOG RINGS OR GROMMETS SPACED AT 12 INCHES ALONG THE LENGTH OF THE WATERSTOP AND WIRE TIE TO ADJACENT REINFORCING STEEL.
4. AT SLAB JOINTS AND FOOTING JOINTS, ENSURE SPACE BENEATH AND AROUND WATERSTOP IS COMPLETELY FILLED WITH CONSOLIDATED CONCRETE. DURING OPERATION, MAKE VISUAL INSPECTION OF ENTIRE WATERSTOP AREA. LIMIT CONCRETE PLACEMENT TO ELEVATION OF WATERSTOP IN FIRST LIFT. RAISE ELASTOMERIC WATERSTOPS TO CONFIRM FULL CONSOLIDATION WITHOUT VOIDS. PLACE REMAINING CONCRETE TO FULL DEPTH OF SLAB.

A TYPICAL CONSTRUCTION JOINT DETAILS - WITHOUT WATERSTOPS

1/2" = 1'-0"



SINGLY REINFORCED SLABS



DOUBLY REINFORCED SLABS

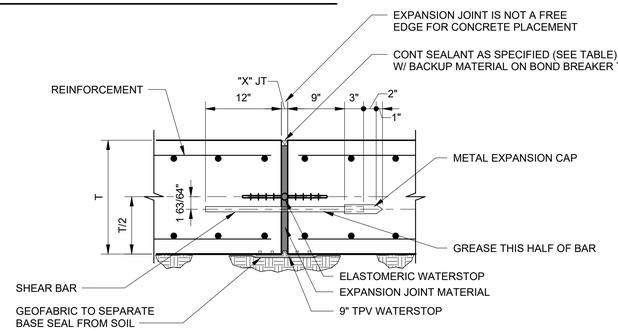
NOTES:
1. "SJ" SAWED JOINT TO BE USED ONLY AT LOCATIONS NOTED ON DRAWINGS.
2. JOINT FORMED WITH TOOL OR INSERT STRIP MAY BE SUBSTITUTED FOR SAWED TYPE ONLY WITH PRIOR ACCEPTANCE BY THE ENGINEER.
3. SAWCUTS SHALL BE PERFORMED WHILE CONCRETE IS GREEN (GENERALLY 4 TO 12 HOURS AFTER CONCRETE IS PLACED).

C SAWED CONTRACTION JOINT - SLAB ON GRADE

1" = 1'-0"

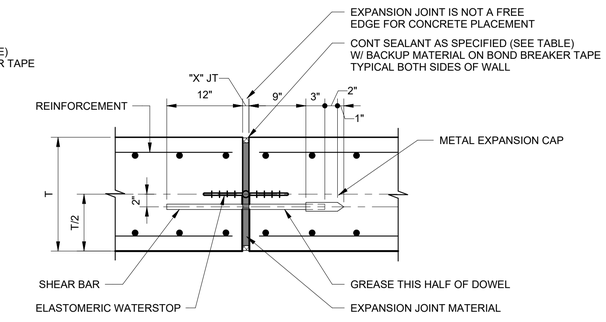
B TYPICAL CONSTRUCTION JOINT DETAILS - WITH WATERSTOPS

1/2" = 1'-0"



SLAB EXPANSION JOINT - TYPE A

SEALANT TYPE	EJ SPACING	EJ SIZE "X"	SEALANT DEPTH
POLYURETHANE OR POLYSULFIDE	<100 FT	3/4"	3/8"
	101 FT - 150 FT	1"	1/2"

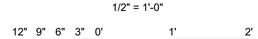


WALL EXPANSION JOINT - TYPE A

SEALANT TYPE	EJ SPACING	EJ SIZE "X"	SEALANT DEPTH
POLYURETHANE OR POLYSULFIDE	<100 FT	3/4"	3/8"
	101 FT - 150 FT	1"	1/2"

NOTES:
1. PROVIDE 3/4" DIAMETER SHEAR BARS @ 1'-6" CENTERS ACROSS JOINT UNLESS NOTED OTHERWISE.
2. REINFORCING STEEL SHALL NOT BE EXTENDED ACROSS JOINT UNLESS NOTED OTHERWISE. SHEAR BARS SHALL BE SMOOTH FREE FROM RUST OR SCALE, AND GREASED TO PREVENT BOND (ONE HALF BAR ONLY).
3. WATERSTOP SIZE SHALL BE 6" FOR WALLS AND SLABS LESS THAN 18" IN THICKNESS, AND SHALL BE 9" FOR WALLS AND SLABS THICKER THAN 18'.
4. "EJ W/ WS" - EXPANSION JOINT WITH ELASTOMERIC WATERSTOP
"EJ" - EXPANSION JOINT WITHOUT WATERSTOP

1/2" = 1'-0"



1" = 1'-0"

D TYPICAL EXPANSION JOINT DETAILS

S-04 1" = 1'-0"

BLACK & VEATCH
Black & Veatch Corporation
Los Angeles, California

DRAWN BY S. BOCKHORST
DESIGNED BY P. NICHOLS
CHECKED BY G. SUBRAMANIAN

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD.	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE STANDARD CONCRETE JOINT DETAILS

SCALE AS NOTED ACCOUNT NUMBER 76294

SHEET: S-07

63 OF 70

DWG. NO. 6869

Date: XX/XX/XXXX Autodesk Docs://420977 - Brookside Park SWC Project/420977-Diversion Structure & General Sheets.rvt

22X34

ELECTRICAL LEGENDS

ONE-LINE DIAGRAM LEGEND

TRANSFORMER WITH PRIMARY AND SECONDARY VOLTAGE, AND KVA RATING AS NOTED

1500KVA
2.4KV Δ - 480Y/277V
3%Z, 60HZ

CS — 4#14,3/4"
20 — 3P-60 — 22:3#8,#10G, 4#14,2"
CIRCUIT NO.22 WITH #8 INSULATED CONDUCTORS AND 1#10 GROUND WIRE FOR A 20HP MOTOR WITH 3 POLE, 60A, MOTOR DISCONNECT SWITCH AND 4#14 INSULATED CONDUCTORS FOR AUXILIARY ITEM, AS FOR EXAMPLE A CONTROL STATION, ALL IN 2" CONDUIT.

AUXILIARY ITEMS MAY NOT BE COMPLETELY SHOWN
HS
20 — 3P-60 — 22:3#8,#10G 4#14,2"
CONDUCTORS FOR AUXILIARY ITEM SHALL NOT PASS THROUGH MOTOR DISCONNECT SWITCH.

AUXILIARY ITEMS MAY NOT BE COMPLETELY SHOWN
15
ONE-LINE SHOWING POWER AND CONTROL TO A PACKAGE UNIT, AS FOR EXAMPLE A STEAM GENERATOR OR AN AIR HANDLING UNIT, SHALL IMPLY THAT ANY AND ALL ASSOCIATED EQUIPMENT SHALL ALSO BE INSTALLED AND WIRED AS REQUIRED BY THE EQUIPMENT FURNISHED.

INDICATES THAT ALL OR PART OF CIRCUIT MAY BE ROUTED IN DUCT BANK OR UNDERGROUND. CONDUIT SIZE SHOWN ON ONE-LINE IS ABOVE GROUND AND/OR INSIDE OF STRUCTURE. SEE DUCT BANK SCHEDULE AND SECTIONS FOR CONDUIT SIZE OF UNDERGROUND PORTION OF CIRCUIT.

HIGH VOLTAGE DRAWOUT AIR OR VACUUM CIRCUIT BREAKER

3P-20
LOW VOLTAGE AIR CIRCUIT BREAKER, 3 POLE, 20 AMPERE

S4
SIZE 4 COMBINATION MAGNETIC MOTOR STARTER

LOW VOLTAGE DRAWOUT AIR CIRCUIT BREAKER

HIGH VOLTAGE DRAWOUT CONTACTOR

FUSE AND DISCONNECT SWITCH

S2
SIZE 2 COMBINATION MAGNETIC MOTOR STARTER, REVERSING OR 2 SPEED

S1
SIZE 1 COMBINATION REDUCED VOLTAGE AUTOTRANSFORMER

POTENTIAL TRANSFORMER

CURRENT TRANSFORMER

CURRENT OR POTENTIAL TEST SWITCH

G — GENERATOR

K — KIRK KEY INTERLOCK

E — ELECTRICAL INTERLOCK

R — RESISTOR

59G — PROTECTION RELAY WITH IEEE DEVICE FUNCTION AS SHOWN

ONE-LINE DIAGRAM LEGEND CONTINUED

V — SINGLE-FUNCTION METER

SURGE OR LIGHTNING ARRESTER

SURGE ARRESTER WITH SURGE CAPACITOR

GROUND CONNECTION

COMMUNICATION SYMBOLS

HORN SPEAKER

DUAL HORN SPEAKER

WALL MOUNTED CONE SPEAKER

SK — CEILING MOUNTED CONE SPEAKER

PROTECTION/RELAY DEVICE NUMBERS

25 - SYNCHRONIZING OR SYNCHRONISM-CHECK DEVICE
27 - UNDERVOLTAGE RELAY
32 - DIRECTIONAL POWER RELAY
37 - UNDERCURRENT OR UNDERPOWER RELAY
46 - REV. PHASE OR PHASE-BAL. CURRENT RELAY
47 - PHASE SEQ. OR PHASE BAL. VOLTAGE RELAY
49 - MACHINE OR TRANSFORMER THERMAL RELAY
50 - INSTANTANEOUS OVERCURRENT
51 - AC TIME OVERCURRENT RELAY
52 - AC CIRCUIT BREAKER
59 - OVERVOLTAGE RELAY
63 - PRESSURE SWITCH
64 - GROUND DETECTOR RELAY
67 - AC DIRECTIONAL OVERCURRENT RELAY
71 - LIQUID OR GAS LEVEL RELAY
81 - FREQUENCY RELAY
83 - AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY
86 - LOCKOUT RELAY
87 - DIFFERENTIAL PROTECTIVE RELAY

BREAKER DETAILS

DETAIL

A — 52 — 5KV / 1200A / 49KA
A 5KV CLASS MEDIUM-VOLTAGE, DRAWOUT, VACUUM OR AIR INSULATED CIRCUIT BREAKER WITH A 1,200 AMPERE FRAME. BREAKER HAS A 49,000 AMPERE MAXIMUM FAULT CURRENT INTERRUPTING RATING.

DETAIL

B — 3P-50
A LOW VOLTAGE FIXED MOUNTED MOLDED CASE CIRCUIT BREAKER WITH A 50 AMPERE TRIP RATING.
TRIP UNIT IS NON-ADJUSTABLE THERMAL-MAGNETIC TYPE.

B — 1000AT / 1200AF, SST, LSIG, AFRD
A LOW VOLTAGE FIXED MOUNTED MOLDED CASE CIRCUIT BREAKER WITH A 1200 AMPERE FRAME AND A 1000 AMPERE TRIP RATING.
TRIP UNIT IS ADJUSTABLE SOLID-STATE TYPE WITH LONG-TIME, SHORT-TIME, INSTANTANEOUS, GROUND FAULT AND ARC-FLASH REDUCTION PROTECTION FEATURES.

DETAIL

C — 800AT / 1000AS / 1600AF, AFRD
A LOW VOLTAGE, DRAWOUT, POWER OR INSULATED CASE CIRCUIT BREAKER WITH A 1600A FRAME AND SOLID-STATE TRIP UNIT.
TRIP UNIT HAS A SENSOR MODULE RATED FOR 1000 AMPERES AND WITH A TRIP RATING OF 800 AMPERES AND ARC-FLASH REDUCTION PROTECTION FEATURES.

CONDUIT & WIRING INSTALLATION LEGEND

CONDUIT EXPOSED

CONDUIT CONCEALED

CONDUIT TURNING UP. CONDUIT TURNING DOWN.

CONDUIT PLUGGED FLUSH. CONDUIT CAPPED.

L2 - 5
TYPICAL FOR HOME RUN TO BE ROUTED TO LIGHTING PANEL L2 & CONNECTED TO CIRCUIT #5 (MINIMUM NO. 12 AWG CONDUCTORS AND 3/4" CONDUIT)

A — LIGHTING FIXTURE. REFER TO NUMBER OR LETTER IN FIXTURE SCHEDULE

11 — LINEAR FIXTURE. REFER TO NUMBER OR LETTER IN FIXTURE SCHEDULE.

LP1-3 — RECEPTACLE POWERED FROM LIGHTING PANEL LP1, CIRCUIT 3

A LP2-2 — LIGHTING FIXTURE POWERED FROM LIGHTING PANEL LP2, CIRCUIT 2 (NON-SWITCHED)

LPA-4 A / 11 — LIGHTING FIXTURE POWERED FROM LIGHTING PANEL LPA, CIRCUIT 4, VIA SWITCH A

E — UNDERGROUND CONCRETE ENCASED ELECTRICAL DUCT BANK

UNDERGROUND CONCRETE ENCASED ELECTRICAL BANK ROUTED BENEATH SLAB-ON-GRADE

EE — DIRECT BURIED CONDUIT

GROUND CONDUCTOR

UE — UE — UNDERGROUND ELECTRIC

OH — OH — OVERHEAD CIRCUIT

SCHEMATIC SYMBOLS

- WIRE CONNECTION POINT
- EXTERNAL CONNECTION POINT
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- STARTER, CONTACTOR OR RELAY COIL
- NORMALLY OPEN PUSH BUTTON
- NORMALLY CLOSED PUSH BUTTON
- MAINTAINED PUSH BUTTON
- NORMALLY CLOSED GEARED LIMIT SWITCH
- NORMALLY OPEN GEARED LIMIT SWITCH
- INDICATING LIGHT
- FUSE
- POTENTIOMETER
- CAPACITOR
- DIODE
- RESISTOR
- CONTROL POWER TRANSFORMER
- SWITCH
- MS — MANUAL STARTER
- OL — OVERLOAD
- OVERLOAD
- ELECTRODE
- FLOAT SWITCH (CLOSING ON RISING LEVEL)
- FLOAT SWITCH (OPENING ON RISING LEVEL)
- P — PRESSURE SWITCH (CLOSING ON RISING PRESSURE)
- PRESSURE SWITCH (OPENING ON RISING PRESSURE)
- TEMPERATURE SWITCH (CLOSING ON RISING TEMPERATURE)
- TEMPERATURE SWITCH (OPENING ON RISING TEMPERATURE)
- FLOW ACTUATED SWITCH (CLOSING ON INCREASE IN FLOW)
- FLOW ACTUATED SWITCH (OPENING ON INCREASE IN FLOW)
- ON TIME DELAY CONTACT (NORMALLY OPEN, WHEN THE COIL IS ENERGIZED THE CONTACT WILL CLOSE AFTER A TIME DELAY)
- ON TIME DELAY CONTACT (NORMALLY CLOSED, WHEN THE COIL IS ENERGIZED THE CONTACT WILL OPEN AFTER A TIME DELAY)
- OFF TIME DELAY CONTACT (NORMALLY OPEN, WHEN THE COIL IS DE-ENERGIZED THE CONTACT WILL OPEN AFTER A TIME DELAY)
- OFF TIME DELAY CONTACT (NORMALLY CLOSED, WHEN THE COIL IS DE-ENERGIZED THE CONTACT WILL CLOSE AFTER A TIME DELAY)
- LIMIT SWITCH (NORMALLY OPEN)
- LIMIT SWITCH (NORMALLY CLOSED)

SWITCH & OUTLET SYMBOLS

- S — SINGLE POLE SWITCH
- S_2 — TWO POLE SWITCH
- S_{3A} — THREE-WAY SWITCH CONTROLLING LIGHTS WITH "A" DESIGNATION
- S_4 — FOUR-WAY SWITCH
- S_M^{C1} — MOMENTARY SWITCH CONTROLLING CONTACTOR C1
- DUPLEX RECEPTACLE 120 VOLT
- SIMPLEX RECEPTACLE
- RANGE RECEPTACLE
- TWISTLOCK RECEPTACLE
- 30 — 240V, 1Ø RECEPTACLE, TYPICAL AMPERE RATING NOTED
- 60 — 480V, 3Ø WELDING RECEPTACLE, TYPICAL AMPERE RATING NOTED
- 120 VOLT DUPLEX RECEPTACLE (UPS)
- DUPLEX FLOOR OUTLET
- TELEPHONE OUTLET
- TELEPHONE FLOOR OUTLET
- CX — COAXIAL CABLE OUTLET
- DATA NETWORK OUTLET

MISCELLANEOUS SYMBOLS

- STROBE
- HORN & STROBE
- HORN
- T — THERMOSTAT
- J — JUNCTION BOX
- GROUND ROD
- GROUND ROD WITH TEST WELL
- GROUND CONNECTION
- DISCONNECT SWITCH
- COMBINATION STARTER
- POWER PANEL
- LIGHTING PANEL
- MISCELLANEOUS PANEL
- LIGHTING CONTACTOR
- CAMERA
- PHOTO CELL (PE)

Black & Veatch Corporation
Los Angeles, California

DRAWN BY	DESIGNED BY	CHECKED BY
AAH	AA	CM

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: GENERAL ELECTRICAL NOTES

SCALE

ACCOUNT NUMBER: 76294

SHEET: E-01

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DWG. NO.: 6869

ELECTRICAL ABBREVIATIONS & NOTES

ELECTRICAL GENERAL NOTES

1. SOLID LINES (_____) INDICATE NEW WORK OR EQUIPMENT.
2. SCREENED LINES (_____) INDICATE EXISTING WORK OR EQUIPMENT.
3. DASHED LINES (_ _ _ _) INDICATE FUTURE WORK OR EQUIPMENT.
4. REFER TO INDIVIDUAL DISCIPLINE CONTRACT DRAWINGS FOR ADDITIONAL ABBREVIATIONS, DETAILS, AND GENERAL DESIGN NOTES.
5. LEGEND SHEETS ARE GENERAL. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.
6. INFORMATION RELATED TO CIRCUIT IDENTIFICATION, WIRE & CONDUIT SIZES, AND ROUTING, IS ON THE FOLLOWING DRAWING TYPES.

   A. ONE-LINE DIAGRAMS SHOW CIRCUIT IDENTIFICATION, WIRE QUANTITY AND SIZES, AND CONDUIT SIZE WITHIN STRUCTURES. ONE-LINE DIAGRAMS ALSO INDICATE ORIGIN AND DESTINATION OF CIRCUITS, AND IDENTIFY CIRCUITS ROUTED UNDERGROUND.

   B. FOR CIRCUITS WITHOUT UNDERGROUND PORTIONS, BUILDING FLOOR PLANS SHOW LOCATION OF EQUIPMENT FOR DETERMINING CIRCUIT LENGTH WITHIN THE STRUCTURE. FOR CIRCUITS WITH UNDERGROUND PORTIONS, ANTICIPATED PENETRATION OF UNDERGROUND CONDUITS ARE SHOWN ON STRUCTURE PLANS FOR DETERMINING THE LENGTH OF THE IN-STRUCTURE PORTIONS OF CIRCUITS. BUILDING FLOOR PLANS MAY ALSO SHOW HOME RUNS FOR LIGHTING, RECEPTACLE, AND OTHER MISCELLANEOUS EQUIPMENT CIRCUITS.

   C. SITE PLANS INDICATE THE GENERAL ROUTING OF UNDERGROUND CONDUITS AND DUCT BANKS. CIRCUITS ROUTED IN UNDERGROUND CONDUITS OR DUCT BANKS ARE INDICATED IN DUCT BANK SECTIONS REFERENCED ON THE SITE PLAN.

   D. DUCT BANK SECTIONS AND SCHEDULES IDENTIFY CONDUIT SIZE, CONDUIT MATERIAL, ARRANGEMENT OF THE UNDERGROUND CONDUITS, AND CIRCUITS ROUTED IN EACH UNDERGROUND CONDUIT.

AREA DESIGNATIONS

THE SPECIAL AREA DESIGNATION BOXES, AS DEFINED BELOW, ARE LOCATED ON THE PLAN DRAWINGS TO DEFINE ELECTRICAL INSTALLATION REQUIREMENTS. DESIGNATION BOXES ARE LOCATED WITHIN ROOM OR BELOW ROOM NUMBER. ALL INDOOR AREAS NOT INDICATED OTHERWISE ARE AREA TYPE 1 AND MINIMUM NEMA TYPE 1 ENCLOSURES.

AREA TYPE 1A	CORROSIVE CHEMICAL FEED AND STORAGE ROOMS. CONDUIT SYSTEM SHALL BE EXPOSED SCHEDULE 80 PVC RIGID NON-METALLIC CONDUIT WITH PVC FITTINGS, BOXES AND ACCESSORIES.
AREA TYPE 4	INDOOR WET LOCATIONS SUCH AS VAULTS, HOSEDOWN AREAS, BASEMENTS, ETC. MINIMUM NEMA TYPE 4 ENCLOSURE FOR EQUIPMENT AND GASKETED FITTINGS IN A CONDUIT SYSTEM.
AREA TYPE 7A	CLASS I, DIVISION 1 AREA AS DEFINED BY NEC. ALL EQUIPMENT AND CONDUIT SYSTEMS SHALL BE RATED FOR USE IN THIS AREA.
AREA TYPE 7B	CLASS I, DIVISION 2, GROUP C AND D (METHANE, GASOLINE) AS DEFINED BY NEC. EQUIPMENT AND CONDUITS SYSTEMS SHALL BE RATED FOR USE IN THIS AREA.
AREA TYPE 12	INDOOR, DRY, DIRTY AREA. REQUIRES MINIMUM NEMA TYPE 12 GASKETED ENCLOSURES FOR ALL EQUIPMENT AND GASKETED FITTINGS IN CONDUIT SYSTEMS.

GENERAL REQUIREMENTS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING ALL CONDUITS NOT SHOWN ON THE PLANS. THIS SHALL INCLUDE ALL CONDUITS SHOWN ON THE ONE-LINES AND HOME-RUNS SHOWN ON THE PLAN DRAWINGS. CONDUITS SHALL BE ROUTED AS DEFINED IN THE SPECIFICATION.
2. SPARE WIRES SHALL BE TAPED AND COILED AND LABELED TO INDICATE WHERE OTHER END OF SPARE WIRE IS LOCATED.
3. IF EQUIPMENT SUPPLIED BY MANUFACTURER HAS A LARGER LOAD THAN VALUE SHOWN, THE CABLE CONDUIT AND ELECTRICAL EQUIPMENT SHALL BE ENLARGED, AS REQUIRED, TO ACCOMMODATE THE HIGHER VALUE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING PROPERLY SIZED STARTER OVERLOADS FOR EQUIPMENT FURNISHED.
5. LIGHTING AND RECEPTACLE CIRCUITS DESIGNATED ON THE FLOOR PLANS ARE NOT SHOWN ON THE ONE-LINES. CONDUCTORS FOR LIGHTING, RECEPTACLES, AND MISCELLANEOUS 120VAC CIRCUITS SHALL BE MINIMUM NO. 12AWG. CONDUIT FOR LIGHTING, RECEPTACLES, AND MISCELLANEOUS 120VAC CIRCUITS SHALL BE MINIMUM 3/4".
6. IN AREAS WHERE THERE ARE OVERHEAD BRIDGE CRANES, HOISTS, ETC. NO CONDUITS SHALL BE RUN OVERHEAD THAT WILL INTERFERE WITH THE OPERATION OF THE EQUIPMENT.

ELECTRICAL ABBREVIATIONS

A

A	AMBER, AMPERE, ALARM
AC	ALTERNATING CURRENT
ACB	AIR CIRCUIT BREAKER
ACR	ACCESS CARD READER
AF	AMPERE FRAME
AFD	ADJUSTABLE FREQUENCY DRIVE
AFRD	ARC-FLASH REDUCTION DEVICE
AM	AMMETER
ANN	ANNUNCIATOR
AR	ALARM RELAY
AS	AMMETER SWITCH, AMPERE
AT	SENSOR AMPERE TRIP AUTOMATIC
ATS	TRANSFER SWITCH
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE

B

B	BUS
BC	BATTERY CHARGER
BKR	BREAKER
BR	BRAKE
BT	BEARING TEMPERATURE

C

C	CLOSE, COUNTER, CONTACTOR, CONTROL, CCTV CAMERA
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CB"A"	CIRCUIT BREAKER AUXILIARY CONTACT (OPEN WHEN BREAKER IS OPEN)
CB"B"	CIRCUIT BREAKER AUXILIARY CONTACT (CLOSED WHEN BREAKER IS OPEN)
CD	CONTROL DAMPER
CI	CELL INTERLOCK
CKT	CIRCUIT
CL2	CHLORINE
COS	CABLE OPERATED SWITCH
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CURRENT OF CONTROL RELAY, CARD READER
CS	CONTROL STATION
CT	CYCLE TIMER OR CURRENT TRANSFORMER
CTC	CYCLE TIMER CLUTCH
CTM	CYCLE TIMER MONITOR
2/C	2 CONDUCTOR
4"C	4" CONDUIT

D

DC	DIRECT CURRENT, DOOR CONTACT
DI	DOOR INTERLOCK
DM	DAMPER MOTOR, DEMAND METER,
DPDT	DIMMER SWITCH
DPST	DOUBLE POLE DOUBLE THROW
DPR	DOUBLE POLE SINGLE THROW
DPS	DIFFERENTIAL PRESSURE
DS	REGULATOR DIFFERENTIAL PRESSURE SWITCH DISCONNECT SWITCH, DOOR
DVLS	SWITCH, DESKTOP STATION DISCHARGE VALVE LIMIT SWITCH

E

E	ELECTRIC OPERATOR FOR CONTROL DAMPER OR VALVE
EC	EMPTY CONDUIT
EDS	ELECTRICAL DOOR STRIKE
EL	ELEVATION, EMERGENCY LIGHT ELECTRICAL
EMH	MANHOLE
ER	ELECTRODE RELAY
ES	END SWITCH, REQUEST TO EXIT SENSOR
E-STOP	EMERGENCY STOP
ETM	ELAPSED TIME METER
EX	EXISTING
EXP	EXPLOSION PROOF

F

F	FORWARD, FIELD
FO	FIBER OPTIC
FPR	FEEDER PROTECTION
FS	RELAY FLOW SWITCH

G

G	GREEN, GROUND, GENERATOR, GROUND FAULT
GD	GROUND DETECTOR
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTOR
GLS	GEARED LIMIT SWITCH
GPR	GENERATOR PROTECTION
GND	GROUND
#8G	#8 GROUND WIRE

H

H	HIGH, HUMIDISTAT
HH	HANDHOLE
HMT	HIGH MOTOR
HOA	TEMPERATURE
HOR	HAND-OFF-AUTO
HP	HAND-OFF-REMOTE
HS	HORSEPOWER
HWCO	HAND STATION
HZ	HIGH WATER CUTOFF HERTZ (CYCLE)

I

I/O	INPUT/OUTPUT
I	INSTANTANEOUS
IJB	INTERCOM JUNCTION BOX

J

J,JB	JUNCTION BOX

K

K	KEY INTERLOCK
KAIC	THOUSAND AMPERES INTERRUPTING
KCMIL	CURRENT THOUSAND CIRCULAR MIL
KO	KEY OPERATED
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KVAR	KILOVAR
KW	KILOWATT
KWH	KILOWATT HOUR

L

L	LOW, LEVEL, LONG-TIME
LA	LIGHTNING ARRESTER
LAN	LOCAL AREA NETWORK
LC	LIGHTING CONTRACTOR
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LOA	LOCAL-OFF-AUTO
LOR	LOCAL-OFF-REMOTE
LOS	LOCK OUT STOP LIGHTING
LP	PANEL
LS	LIMIT OR LEVEL SWITCH
LTG	LIGHTING
LWCO	LOW WATER CUTOFF

M

M	MAGNETIC MOTOR STARTER
MA	MILLIAMPERE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCLU	MOTOR CONTROL LINEUP
MD	MOISTURE DETECTOR, MOTION
MDL	DETECTOR MAGNETIC DOOR LOCK
MFR	MANUFACTURER
MH	MANHOLE, MOUNTING HEIGHT
MOG	MOTOR OPERATED GATE
MOV	MOTOR OPERATED VALVE
MPC	MINI POWER CENTER
MPR	MOTOR PROTECTION RELAY
MS	MANUAL MOTOR STARTER
MSH	MOTOR SPACE HEATER
MTS	MANUAL TRANSFER SWITCH
MV	MILLIVOLT, MEDIUM VOLTAGE MEGAVOLT
MVA	AMPERE

N

N	NEUTRAL
NGR	NEUTRAL GROUNDING RESISTOR
NGT	NEUTRAL GROUNDING
NC	TRANSFORMER NORMALLY CLOSED
NO	NORMALLY OPEN, NUMBER
NEU	NEUTRAL

0

O	OPEN
OL	OVERLOAD
OOA	ON-OFF-AUTO
OOR	ON-OFF-REMOTE
O/U	OVER/UNDER

P

P	PRIMARY, POWER, POLE
PCS	PLANT CONTROL SYSTEM
PCP	PUMP CONTROL PANEL
PB	PUSH BUTTON, PULL BOX
PF	POWER FACTOR
PFCC	POWER FACTOR CORRECTION CAPACITOR
PH	PHASE
PL	PILOT LIGHT
PLC	PROGRAMMABLE LOGIC CONTROLLER
PP	POWER PANEL
PR	PAIR
PRS	PROXIMITY SWITCH
PS	PRESSURE SWITCH
PT	POTENTIAL TRANSFORMER, PROGRAM TIMER
PWP	PASADENA WATER & POWER UTILITY

Q

NOT USED

R

R	RED, RAISE, RELAY, REVERSE RECEPTACLE
RCS	REMOTE CONTROL STATION
RECP	RECEPTACLE
RES	RESISTOR
RH	REMOTE HANDSET
RT	REPEATING TIMER
RTD	RESISTANCE TEMPERATURE DETECTOR
RTU	REMOTE TERMINAL UNIT
RVSS	REDUCED VOLTAGE SOLID STATE STARTER

S

S	SHORT-TIME, SHIELDED, STARTER
SA	SURGE ARRESTER, SPEAKER AMPLIFIER
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SES	SERVICE ENTRANCE SECTION
SF6	SULFUR HEXAFLOURIDE
SH	SPACE HEATER
SN	SOLID NEUTRAL
SO	SOLENOID OILER
SP	SINGLE POLE
SPD	SURGE PROTECTION DEVICE
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
SS	SELECTOR SWITCH, START/STOP
SSM	SOLID-STATE METERING
SSS	SOLID STATE STARTER
SST	SOLID-STATE TRIP
SUPV	SUPERVISORY CONTROL
SV	SOLENOID VALVE
SWB,SWBD	SWITCHBOARD
SWG,SWGR	SWITCHGEAR

T

T	THERMOSTAT, TIMER, TOTALIZER, TRANSFORMER
TACH	TACHOMETER
TB	TERMINAL BLOCK
TC	TIMER CLUTCH
TD	TIME DELAY RELAY
TEMP	TEMPERATURE
TM	TIMER MOTOR
TQ	TORQUE
TR	TIMER RELAY, TRIAD
TS	TEMPERATURE SWITCH
TTB	TELEPHONE TERMINAL BOARD

U

UG	UNDERGROUND
UPS	UNINTERRUPTIBLE POWER SUPPLY

V

V	VOLTS, VOLTAGE RESTRAINED
VA	VOLT AMPERE
VAR	VARMETER
VFD	VARIABLE FREQUENCY DRIVE
VI	VACUUM INTERRUPTER
VLS	VALVE LIMIT SWITCH
VM	VOLTMETER
VPI	VALVE POSITION INDICATOR
VS	VOLTMETER SWITCH

W

W	WHITE, WATTS
WH	WATTHOUR METER
WM	WATT METER
WP	WEATHERPROOF
WPI	WEATHERPROOF
WS	IN-USE WALL STATION

X

X	AUXILIARY RELAY
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

Y

Y	YELLOW

Z

Z	AUXILIARY RELAY, IMPEDANCE
ZS	POSITION SWITCH
ZSS	ZERO SPEED SWITCH

1-1PR#16S	ONE, SINGLE PAIR, TWISTED SHIELDED #16 CABLE
3-7/C#14	THREE, SINGLE, SEVEN CONDUCTOR #14 MULTICONDUCTOR CONTROL CABLES

Black & Veatch Corporation
Los Angeles, California

DRAWN BY AAH
DESIGNED BY AA
CHECKED BY CM

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE ELECTRICAL LEGEND & ABBREVIATIONS

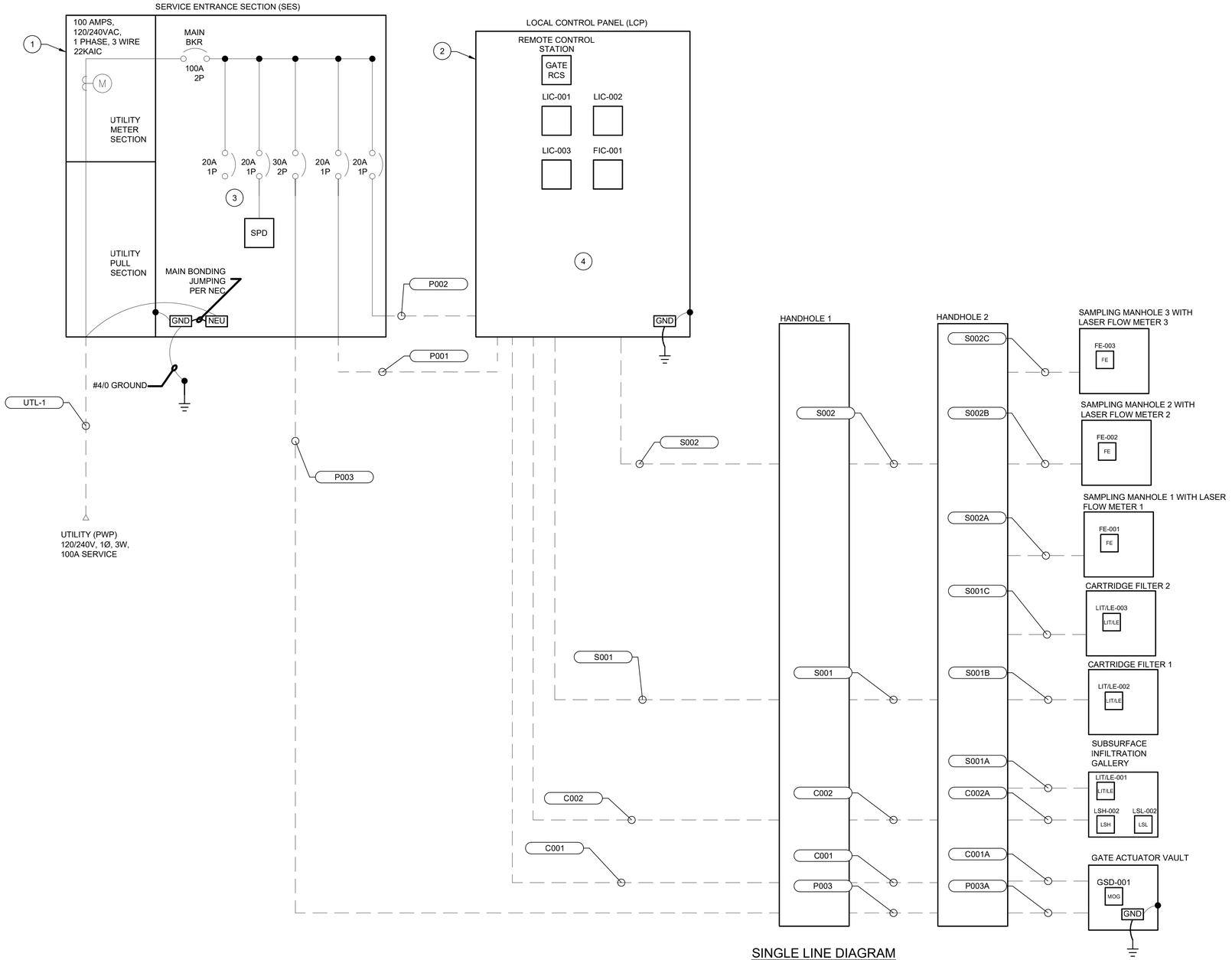
SCALE

ACCOUNT NUMBER 76294

SHEET E-02

65 OF 70

DWG. NO. 6869



SINGLE LINE DIAGRAM

NO SCALE

PHASE		SERVICE ENTRANCE METER PEDESTAL SES-	BUS: COPPER			MAINS: 2P-100A MAIN BREAKER		PHASE	
		SERVICE: 120/240V, 1PH, 3W, S/N	RATING: 100A			LOCATION: NORTHWEST CORNER OF			
"A"	"B"	ENCLOSURE: NEMA 3R	BUS BRACING: 22kAIC			SECO ST. AND N ARROYO BLVD		"A"	"B"
V.A.	V.A.	LOAD	P	BKR	CKT #	BKR	P	LOAD	V.A.	V.A.
		MAIN DISCONNECT	2	100	1 2	30	2	GATE ACTUATOR (IN VAULT)	660	
					3 4					660
		SURGE PROTECTIVE DEVICE (SPD)	1	20	5 6	20	1	LOCAL CONTROL PANEL (LCP)	500	
		SPARE	1	20	7 8	20	1	LCP (LIGHTING & RECEPTACLE)		200
		SPACE	1		9 10		1	SPACE		
		SPACE	1		11 12		1	SPACE		
		SPACE	1		13 14		1	SPACE		
		SPACE	1		15 16		1	SPACE		
0		TOTAL "L1"	1160					TOTAL "L1"	1160	
	0	TOTAL "L2"	860					TOTAL "L2"		860
		TOTAL =	2020							

NOTES:

1. SEE DRAWINGS E-01 AND E-02 FOR ELECTRICAL LEGEND & ABBREVIATION AND GENERAL REQUIREMENTS.
2. CONTRACTOR SHALL COORDINATE PERMIT APPLICATION WITH UTILITY, PASADENA WATER & POWER (PWP).
3. CONTROL PANEL WIRING AND DESIGN SHALL BE PROVIDED BY OTHERS.

CONSTRUCTION NOTES

1	SERVICE ENTRANCE SECTION (SES), 120/240VAC, 1 PHASE, 3 WIRE, 100 AMPS, NEMA 3R, UL LISTED, EUSERC, 16"Wx52"Hx18"D, BRAND EATON CMP4111MC1 OR ENGINEER APPROVED EQUAL.
2	120VAC FREE STANDING NEMA 3R RATED LOCAL CONTROL PANEL (LCP) WITH LOCKABLE DOOR HANDLE, APPX. 30"Wx36"Hx12"D.
3	CIRCUIT BREAKER RATING SHALL BE AS RECOMMENDED BY EQUIPMENT MANUFACTURER.
4	GATE ACTUATOR REMOTE CONTROL STATION, FLOW DIGITAL INDICATOR, AND LEVEL INDICATING CONTROLLERS ARE MOUNTED ON LOCAL CONTROL PANEL (LCP) INNER DOOR.

Black & Veatch Corporation
Los Angeles, California

DRAWN BY AAH
DESIGNED BY AA
CHECKED BY CM

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: SINGLE LINE DIAGRAM

SCALE

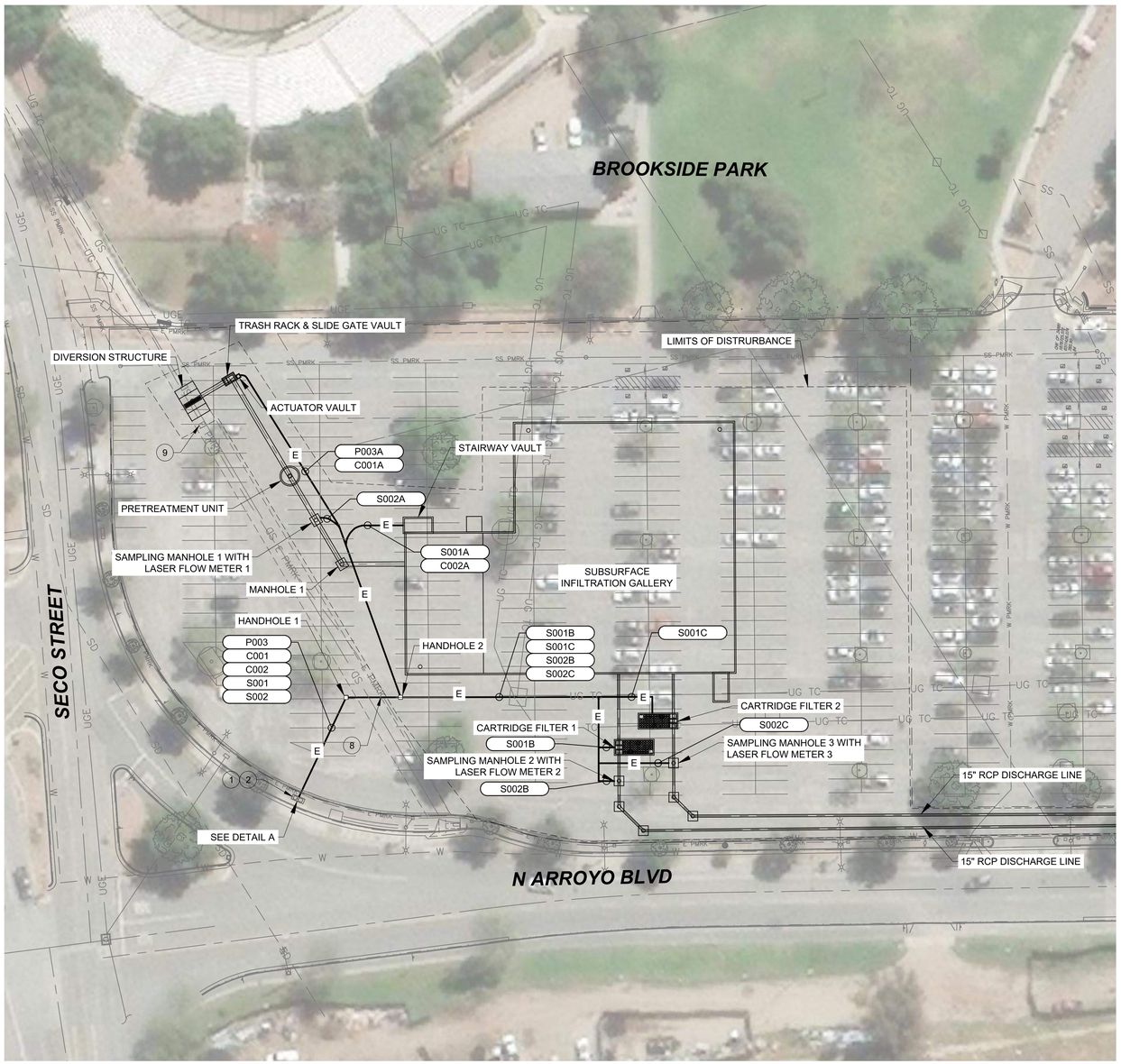
ACCOUNT NUMBER: 76294

SHEET: E-03

66 OF 70

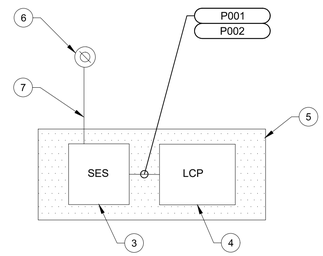
DWG. NO.: 6869

22X34



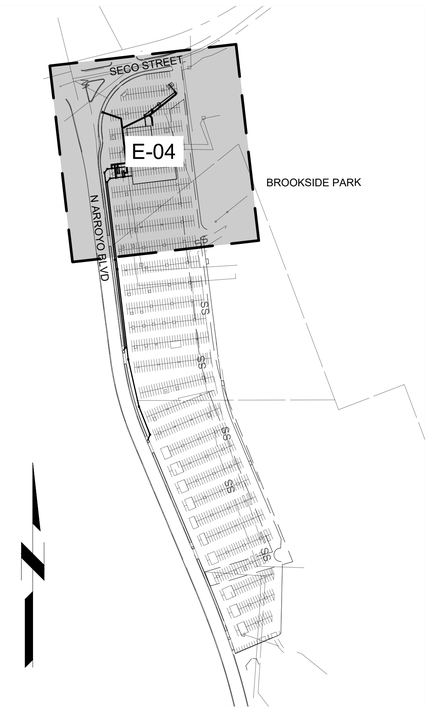
40' 20' 0 40' 80'

1"=40'



DETAIL A - ORIENTATION AND GROUNDING

NO SCALE



KEY MAP

250' 125' 0 250' 500'

1"=250'

CONSTRUCTION NOTES

1	CONTRACTOR SHALL INSTALL A NEW PAD MOUNTED 120/240V, 100A SERVICE ENTRANCE SECTION (SES). CONTRACTOR IS REQUIRED TO COORDINATE WITH PWP TO SECURE 120/240V SERVICE. CONTRACTOR SHALL WORK WITH PWP FOR THE INSTALLATION OF NEW CONDUITS. PWP PROVIDED CONDUCTORS AND THE METER. ALL INSTALLATION SHALL COMPLY WITH PWP STANDARDS AND REQUIREMENTS.
2	REFER TO ELECTRICAL ONE-LINE DIAGRAM ON SHEET E-0.3 AND DETAIL DRAWINGS ON SHEET E-07 FOR ADDITIONAL INFORMATION.
3	SERVICE ENTRANCE METER PEDESTAL (SES).
4	LOCAL CONTROL PANEL (LCP).
5	CONCRETE PAD. REFER TO STRUCTURAL DRAWINGS FOR PAD DETAILS.
6	INSTALL GROUND ROD WITH TEST WELL. SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS.
7	INSTALL #4/0 GROUND STRINGER TO SES. SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS.
8	CONTRACTOR SHALL RELOCATE PORTIONS OF EXISTING ACTIVE UTILITIES THAT INTERFERE WITH CONSTRUCTION OF THE WORK IN ORDER TO ROUTE NEW CONDUITS ACROSS THE STORM DRAIN TRENCH. CONTRACTOR SHALL COORDINATE WITH THE OWNER OF INTERFERING UTILITIES AND RELOCATE IN ACCORDANCE WITH UTILITY OWNER REQUIREMENTS. EXISTING NON-ACTIVE UTILITIES THAT INTERFERE WITH THE WORK SHALL BE ABANDONED IN PLACE BY THE CONTRACTOR.
9	CONTRACTOR SHALL RELOCATE PORTIONS OF EXISTING ACTIVE UTILITIES THAT INTERFERE WITH CONSTRUCTION OF THE DIVERSION STRUCTURE. CONTRACTOR SHALL COORDINATE WITH THE OWNER OF INTERFERING UTILITIES AND RELOCATE IN ACCORDANCE WITH UTILITY OWNER REQUIREMENTS. EXISTING NON-ACTIVE UTILITIES THAT INTERFERE WITH THE WORK SHALL BE ABANDONED IN PLACE BY THE CONTRACTOR.

NOTES:

1. SEE DRAWINGS E-01 AND E-02 FOR ELECTRICAL LEGEND & ABBREVIATION AND GENERAL REQUIREMENTS.
2. ADJUST CONDUIT ROUTING AS NECESSARY BASED ON EXISTING CONDITIONS AND OBSTRUCTIONS.
3. LOCATION OF EQUIPMENT SHOWN IS APPROXIMATE. CONTRACTOR TO FIELD DETERMINE FINAL ROUTING OF ALL CONDUIT RUNS.

PRELIMINARY NOT FOR CONSTRUCTION

Black & Veatch Corporation
Los Angeles, California

DRAWN BY P. NGUYEN
DESIGNED BY R. NAKATANI
CHECKED BY M. TAYLOR

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE ELECTRICAL SITE PLAN

SCALE AS NOTED

ACCOUNT NUMBER 420977

SHEET E-04

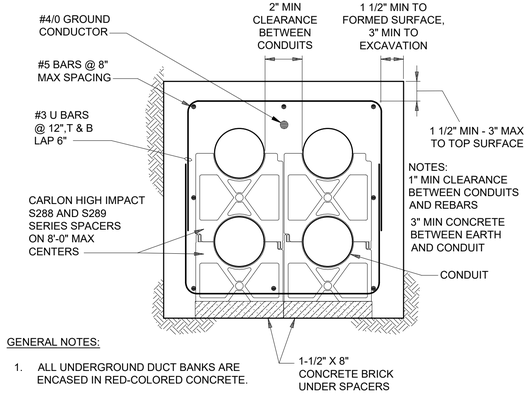
67 OF 70

DWG. NO. 6869

4/9/2026 2:10:41 PM
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FD11000

Date: November 4, 2025 C:\DOCS\ACCDOCS\BLACK & VEATCH CORP\420977 - BROOKSIDE PARK SWC PROJECT\PROJECT FILES\5.0 DESIGN FILES_BV\5.0.3 AUTOCAD\ELEC\E-04.DWG

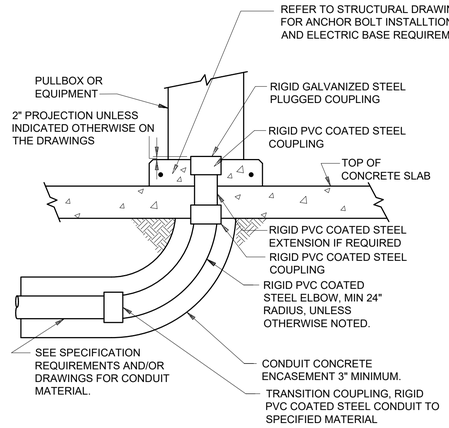
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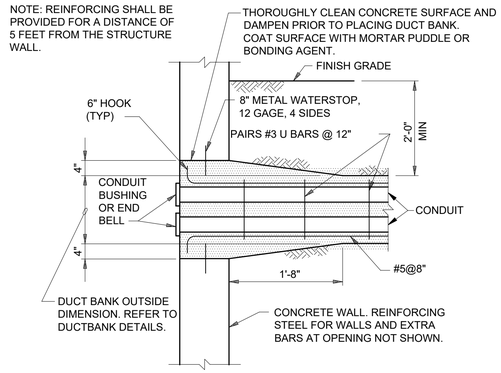
GENERAL NOTES:

1. ALL UNDERGROUND DUCT BANKS ARE ENCASED IN RED-COLORED CONCRETE.
2. INSTALL REINFORCING ONLY WHERE SPECIFIED OR INDICATED ON THE DRAWING.

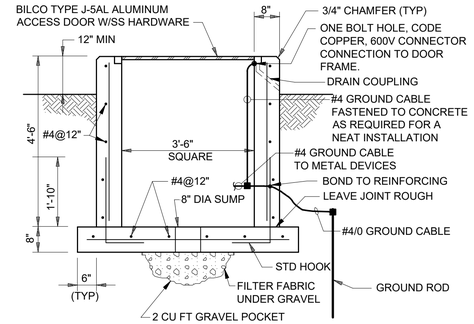
A TYPICAL DUCT BANK SECTION
NOT TO SCALE



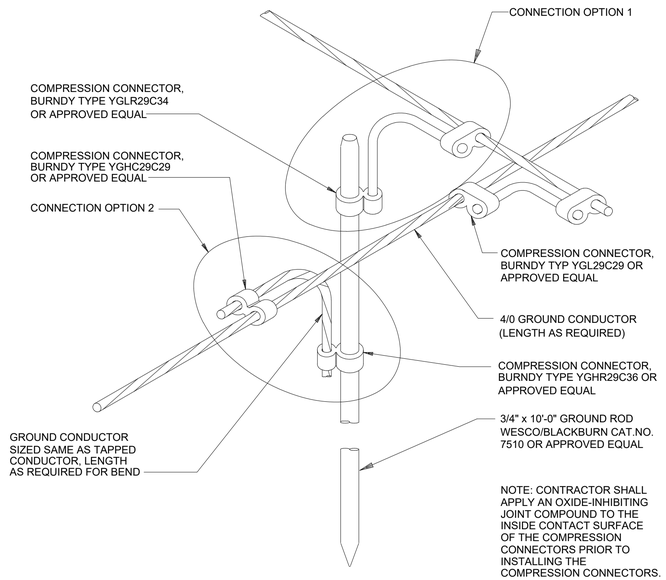
B TYPICAL CONDUIT RISER TERMINATING IN CONCRETE SLAB WITH EQUIPMENT BASE
NOT TO SCALE



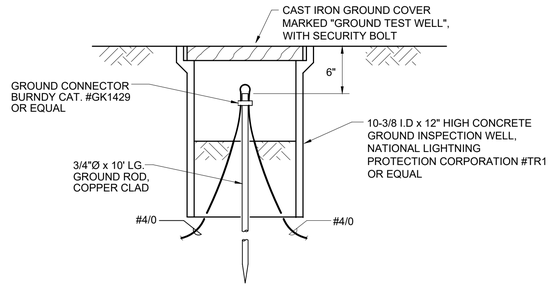
C TYPICAL UNDERGROUND DUCT BANK ENTRANCE DETAIL
NOT TO SCALE



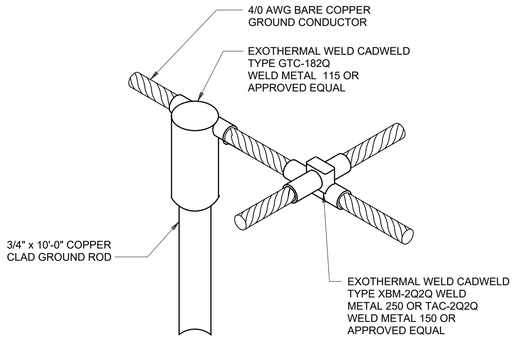
H TYPICAL TRAFFIC RATED ELECTRICAL HANDHOLE DETAIL
NOT TO SCALE



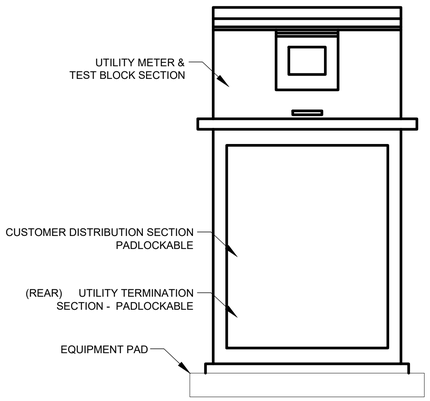
D TYPICAL COMPRESSION FITTING GROUND ROD TO CONNECTION AT CROSS OR TEE
NOT TO SCALE



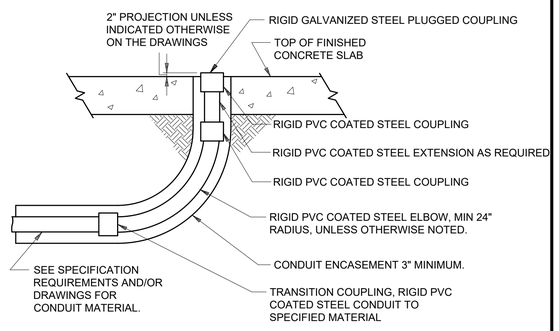
E GROUND TEST WELL DETAIL
NOT TO SCALE



F TYPICAL EXOTHERMAL WELD GROUND ROD AT CROSS OR TEE CONNECTION
NOT TO SCALE



G SES ELEVATION VIEW
NOT TO SCALE



I TYPICAL CONDUIT RISER TERMINATING IN CONCRETE SLAB
NOT TO SCALE

NOTES:

1. SEE DRAWINGS E-01 AND E-02 FOR ELECTRICAL LEGEND & ABBREVIATION AND GENERAL REQUIREMENTS.

#

Black & Veatch Corporation
Los Angeles, California

DRAWN BY	P. NGUYEN
DESIGNED BY	R. NAKATANI
CHECKED BY	M. TAYLOR

REVISIONS

MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED
#	####	#			
#	#	#			
#	#	#			
#	#	#			
#	#	#			

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: ELECTRICAL DETAILS

SCALE: AS NOTED

ACCOUNT NUMBER: 420977

SHEET: E-07

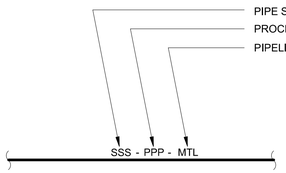
68 OF 70

DWG. NO.: 6869

FD11000



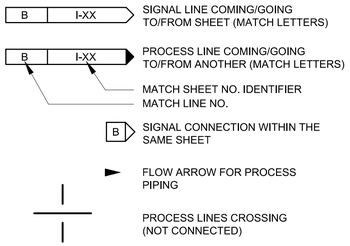
EQUIPMENT IDENTIFICATION DESCRIPTION



PIPELINE IDENTIFICATION DESCRIPTION

LINE SYMBOLS

- MAJOR PROCESS PIPING OR FLOW CHANNEL
- SECONDARY PROCESS PIPING
- MISCELLANEOUS PIPING
- SCREENED LINE DENOTES EXISTING PIPE OR EQUIPMENT
- DASHED LINE DENOTES FUTURE PIPE AND EQUIPMENT
- ELECTRIC SIGNAL
- HYDRAULIC SIGNAL
- PNEUMATIC SIGNAL
- SIGNAL CONNECTION POINT
- CONTROL SYSTEM BACKBONE NETWORK SIGNAL (ETHERNET)
- FIELD DEVICE NETWORK SIGNAL (ETHERNET)
- NON-STANDARD OR INDEPENDENT CONTROL SYSTEM NETWORK SIGNAL (AS NOTED ON DRAWINGS)



PRIMARY ELEMENT & FITTING SYMBOLS

- CAP
- COUPLING
- DIAPHRAGM SEAL
- DIAPHRAGM SEAL, ANNULAR TYPE
- D — DRAIN, BELL-UP TYPE
- D — DRAIN, FUNNEL TYPE
- EXPANSION LOOP
- FLAME ARRESTER
- FLAME CHECK
- FLANGE
- FLEXIBLE CONNECTION
- FLOW CONDITIONER
- HORN OR SIREN
- HOSE CONNECTION
- IN-LINE TYPE ULTRASONIC FLOWMETER (SINGLE OR MULTI-PATH)
- P — INSTRUMENT PURGE OR FLUSHING DEVICE
- LE CON — LEVEL SENSOR, CONDUCTANCE TYPE
- LE GWR — LEVEL SENSOR, GUIDED WAVE RADAR TYPE
- LE DP — LEVEL SENSOR, PRESSURE SENSING TYPE
- LIT RAD — LEVEL SENSOR, RADAR TYPE
- LE US — LEVEL SENSOR, ULTRASONIC TYPE
- FE RAD — FLOW SENSOR, PULSED RADAR

VALVE & GATE SYMBOLS

- GATE, SLUICE OR SLIDE

VALVE AND GATE ACTUATOR SYMBOLS

- M — INTELLIGENT ELECTRIC ACTUATOR

GENERAL NOTES

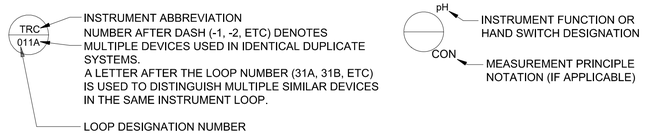
1. IN GENERAL, THE P&ID SYMBOLS AND DEVICE IDENTIFICATIONS ARE BASED ON INTERNATIONAL SOCIETY OF AUTOMATION, STANDARD PRACTICE ANSI/ISA-5.1 (2024). SOME MODIFICATIONS, ADDITIONS, AND ALTERATIONS HAVE BEEN MADE AS NEEDED TO ACCOMMODATE THE PROJECT REQUIREMENTS.
2. SOME CONTROL AND INTERLOCK REQUIREMENTS WHICH CAN BE MORE CLEARLY ILLUSTRATED ON SCHEMATIC DRAWINGS HAVE BEEN OMITTED FROM THE P&ID DRAWINGS.
3. THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.

PIPELINE MATERIAL CODE ABBREVIATIONS [1]

PIPE MATERIAL		SPECIFICATION NO.
RCP	CONCRETE SEWER PIPE	40 05 39.24

1. ABBREVIATION EXTENSIONS ARE ADDED AS NEEDED TO IDENTIFY THE MATERIAL SUB-CLASSIFICATION IN THE SPECIFICATION, SUCH AS "SS-1" FOR DIGESTER GAS PIPING.

INSTRUMENTATION SYMBOLOGY AND DESIGNATIONS



INSTRUMENT AND I/O ABBREVIATIONS
MEANINGS OF IDENTIFICATION LETTERS

LETTER	FIRST LETTER: MEASURED OR INITIATING VARIABLE	FIRST LETTER: VARIABLE MODIFIER	SUCCEEDING LETTERS: READOUT OR PASSIVE FUNCTION	SUCCEEDING LETTERS: OUTPUT OR ACTIVE FUNCTION	SUCCEEDING LETTERS: FUNCTION MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL	CLOSE
D	USER'S CHOICE	DIFFERENTIAL			DEVIATION
E	VOLTAGE (EMF)		SENSOR, PRIMARY ELEMENT		
F	FLOW, FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS, GAUGE, VIEWING DEVICE		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER		SCAN		
K	TIME OR TIME-SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE	MOMENTARY			MIDDLE OR INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)		OPEN
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE OR TOTALIZE	INTEGRATE OR TOTALIZE		
R	RADIATION		RECORD		RUN
S	SPEED OR FREQUENCY	SAFETY		SWITCH	STOP
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	
V	VIBRATION OR MECHANICAL ANALYSIS			VALVE, DAMPER OR LOUVER	
W	WEIGHT OR FORCE		WELL, PROBE		
X	UNCLASSIFIED	X-AXIS	ACCESSORY DEVICES OR UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, OR PRESENCE	Y-AXIS		AUXILIARY DEVICES	
Z	POSITION, DIMENSION	Z-AXIS		DRIVE, ACTUATOR OR FINAL CTRL ELEMENT	

GENERAL INSTRUMENT SYMBOLS

- FIELD MOUNTED DISCRETE INSTRUMENT
- PILOT LIGHT
- DISCRETE INSTRUMENT MOUNTED ON FACE OF PRIMARY PANEL
- DISCRETE INSTRUMENT MOUNTED BEHIND OR INSIDE OF PRIMARY PANEL
- DISCRETE INSTRUMENT MOUNTED ON FACE OF LOCAL PANEL
- DISCRETE INSTRUMENT MOUNTED BEHIND OR INSIDE OF LOCAL PANEL
- SINGLE INSTRUMENT HOUSING CONTAINING TWO (OR MORE) INSTRUMENTATION FUNCTIONS
- I — GENERAL CONTROL INTERLOCK FUNCTION, SEE SCHEMATICS AND SYSTEM SPECIFICATIONS FOR SPECIFIC FUNCTION

FUNCTION CODE ABBREVIATIONS

GSD	GATE, SLIDE
LCP	LOCAL CONTROL PANEL

PROCESS CODE ABBREVIATIONS

STW_X	STORM WATER

FUNCTION DESIGNATIONS AND ABBREVIATIONS

MEASUREMENT PRINCIPLE NOTATIONS

CON	CONDUCTANCE
DP	DIFFERENTIAL PRESSURE SENSING
FLN	FLOW NOZZLE
FLT	FLOW TUBE
GWR	GUIDED WAVE RADAR
RAD	RADAR
US	ULTRASONIC
VENT	VENTURI TUBE

CALCULATED ALARM DESIGNATIONS

H	HIGH
HH	HIGH-HIGH
L	LOW
LL	LOW-LOW

HAND SWITCH DESIGNATIONS

FR	FORWARD-REVERSE
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
LOA	LOCAL-OFF-AUTO
LOR	LOCAL-OFF-REMOTE
LR	LOCAL REMOTE
OC	OPEN-CLOSE
OCA	OPEN-CLOSE-AUTO
OO	ON-OFF
OOA	ON-OFF-AUTO
OOR	ON-OFF-REMOTE
OSC	OPEN-STOP-CLOSE

POWER SUPPLY ABBREVIATIONS

120V	POWER SUPPLY SOURCE LABEL. USED ONLY WHERE NECESSARY TO HELP CLARIFY AN INSTRUMENT OR SYSTEM FUNCTION.
120V	120VAC
AS	AIR SUPPLY
ES	ELECTRIC SUPPLY
GS	GAS SUPPLY
HS	HYDRAULIC SUPPLY
NS	NITROGEN SUPPLY
SS	STEAM SUPPLY
WS	WATER SUPPLY

INSTRUMENT AND I/O ABBREVIATION DEFINITIONS

FAH	FLOW ALARM HIGH
FAL	FLOW ALARM LOW
FC	FLOW CONTROLLER
FE	PRIMARY FLOW ELEMENT/SENSOR
FG	FLOW SIGHT GAUGE
FI	FLOW DIGITAL INDICATOR (LED OR SCREEN)
FIC	FLOW INDICATING CONTROLLER
FIT	FLOW INDICATING TRANSMITTER
FQG	FLOW TOTALIZING GAUGE
FQIT	FLOW TOTALIZING INDICATING TRANSMITTER
FSH	FLOW SWITCH HIGH
FSL	FLOW SWITCH LOW
FY	FLOW SIGNAL CONVERTER, REPEATER, OR ISOLATOR
HIC	HAND INDICATING CONTROLLER
HMS	MOMENTARY PUSHBUTTON OR SELECTOR SWITCH
HS	HAND SWITCH
LAH	LEVEL ALARM HIGH
LAHH	LEVEL ALARM HIGH-HIGH
LAL	LEVEL ALARM LOW
LALL	LEVEL ALARM LOW-LOW
LE	PRIMARY LEVEL ELEMENT/SENSOR
LG	LEVEL SIGHT GAUGE
LI	LEVEL INDICATOR (LED OR SCREEN)
LIC	LEVEL INDICATING CONTROLLER
LIT	LEVEL INDICATING TRANSMITTER
LSH	LEVEL SWITCH HIGH
LSHH	LEVEL SWITCH HIGH-HIGH
LSL	LEVEL SWITCH LOW
LSLL	LEVEL SWITCH LOW LOW
LY	LEVEL SIGNAL CONVERTER, ISOLATOR, OR REPEATER
YA	GENERAL ALARM EVENT
YI	EVENT INDICATION (LED OR SCREEN)
YIR	RUNNING INDICATION
YIS	STOPPED INDICATION
YL	EVENT INDICATING LIGHT
YLR	RUNNING INDICATING LIGHT
YLS	STOPPED INDICATING LIGHT
ZCC	CLOSED COMMAND
ZCO	OPEN COMMAND
ZI	POSITION INDICATOR
ZIC	CLOSED INDICATION
ZIO	OPEN INDICATION
ZIT	POSITION INDICATING TRANSMITTER
ZLC	CLOSED INDICATING LIGHT
ZLO	OPEN INDICATING LIGHT
ZSC	CLOSED POSITION SWITCH
ZSO	OPEN POSITION SWITCH
ZT	POSITION TRANSMITTER

Black & Veatch Corporation
Los Angeles, California

DRAWN BY JBO
DESIGNED BY JBO
CHECKED BY MCZ

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE: LEGEND & ABBREVIATIONS

SCALE

ACCOUNT NUMBER 76294

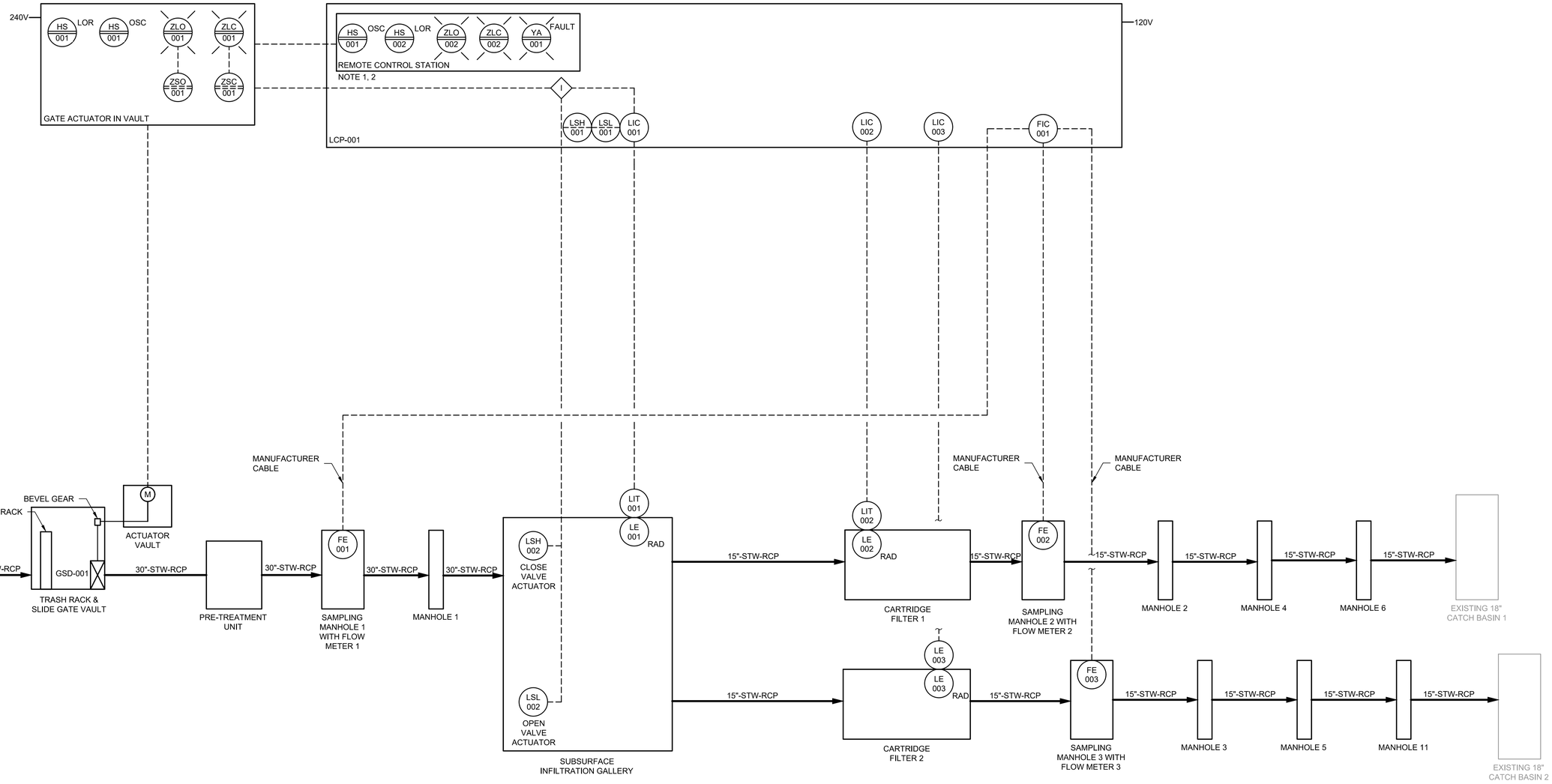
SHEET I-01

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DWG. NO. 6869

Date: April 25, 2025 C:\USERS\DMU111856\APPDATA\LOCAL\AUTODESK\AUTOCAD PLANT 3D\COLLABORATIONCACHE\426977 - BROOKSIDE PARK\PID DWG\I-01.DWG

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CONTROL DESCRIPTIONS

1. SLIDE GATE
   - 1.1. REMOTE (REMOTE CONTROL STATION LOR IN R, REMOTE POSITION)
     - 1.1.1. WHEN RADAR LEVEL TRANSMITTER DETECTS HIGH LEVEL (LSH) IN THE SUBSURFACE INFILTRATION GALLERY, THE VALVE WILL CLOSE.
     - 1.1.2. WHEN THE LEVEL DROPS TO A LOW LEVEL (LSL), THE VALVE WILL OPEN.
     - 1.1.3. THE FLOAT SWITCHES (LSH-002, LSL-002) PROVIDED IN THE SUBSURFACE INFILTRATION GALLERY SHALL SERVE SOLELY AS BACK UP DEVICES WHEN THE RADAR LEVEL TRANSMITTER FAILS AND SHALL NOT BE USED DURING NORMAL OPERATION.

NOTES

1. REMOTE STATION PROVIDED BY VALVE ACTUATOR MANUFACTURER (GSD-001). CONTRACTOR TO INSTALL REMOTE STATION ON THE LOCAL CONTROL PANEL AS SHOWN.
2. REMOTE CONTROL STATION SHALL BE SUPPLIED BY THE VALVE ACTUATOR MANUFACTURER AND SHALL RECEIVE ITS OPERATING POWER FROM THE VALVE ACTUATOR.

Black & Veatch Corporation
Los Angeles, California

DRAWN BY JBO
DESIGNED BY JBO
CHECKED BY MCZ

REVISIONS					
MARK	DATE	DESCRIPTION	BY	CHKD	APPROVED

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

BROOKSIDE PARK STORMWATER CAPTURE PROJECT

SHEET TITLE P&ID - CAPTURE & TREATMENT SYSTEM

SCALE

ACCOUNT NUMBER 76294

SHEET I-02

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DWG. NO. 6869

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