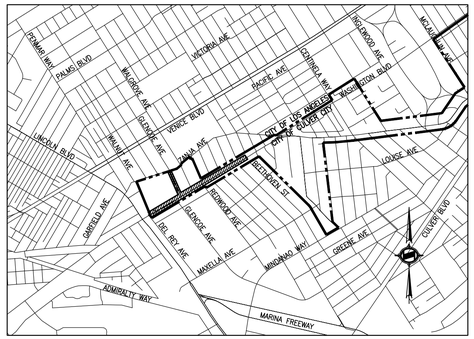


VICINITY MAP
SCALE: 1"=2000'

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION, PR-001

ABBREVIATIONS

AC	ASPHALT/CONCRETE	MH	MANHOLE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	MJ	MECHANICAL JOINT
BC	BEGIN OF CURVE	O.D.	OUTSIDE DIAMETER
BVC	BEGINNING OF VERTICAL CURVE	OC	ON CENTER
CL	CENTERLINE	PCF	POUNDS PER CUBIC FEET
CMB	CRUSHED MISCELLANEOUS BASE	PE	PLAIN END
CONC	CONCRETE	PI	POINT OF INTERSECTION
DI	DUCTILE IRON	PR	PROPOSED
DIP	DUCTILE IRON PIPE	PSF	POUNDS PER SQUARE FOOT
DWY	DRIVEWAY	PVC	POLYVINYL CHLORIDE
EC	END OF CURVE	RCP	REINFORCED CONCRETE PIPE
ELEC	ELECTRICAL CONDUIT	RD	ROAD
ELEV	ELEVATION	RFCA	RESTRAINED FLANGE COUPLING ADAPTER
EVC	END OF VERTICAL CURVE	RPM	REVOLUTIONS PER MINUTE
EX.	EXISTING	R/W	RIGHT-OF-WAY
FG	FINISH GRADE	SCE	SOUTHERN CALIFORNIA EDISON
FH	FIRE HYDRANT	SD	STORM DRAIN
FIB OPT	FIBER OPTICS LINE	SDR	STANDARD DIMENSION RATIO
FL	FLOW LINE	SPPWC	STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
FLG	FLANGE	SS	SANITARY SEWER
FS	FINISH SURFACE	ST	STREET
G	GRADE OF INITIAL TANGENT	STA	STATION
GPM	GALLONS PER MINUTE	STD	STANDARD
HDPE	HIGH DENSITY POLYETHYLENE	TC	TOP OF CURB
HRDWR	HARDWARE	TELE	TELECOMMUNICATION
I.D.	INSIDE DIAMETER	TPZ	TREE PROTECTION ZONE
IN	INCHES	TYP.	TYPICAL
INV.	INVERT	VC	VERTICAL CURVE
LF	LINEAR FEET	W	WIDTH

SYMBOLS

CONTOUR
DRIVEWAY
FIRE HYDRANT
GAS VALVE
GUY POLE
GUY WIRE
MANHOLE
OTHER TREE
PALM TREE
PARKING METER
POWER POLE
PULL BOX
STREET CENTERLINE
STREET LIGHT
TRAFFIC SIGNAL
TRAFFIC SIGNAL BOX
VAULT
WATER VALVE

UTILITY COMPANY CONTACTS

COMPANY	CONTACT	PHONE NO.
AT&T DISTRIBUTION	RICK RODRIGUEZ	(626) 308-4042
CHARTER	AL RUIZ	(310) 216-3510
CITY OF LOS ANGELES	LILIA MENDOZA	(213) 847-1552
CRIMSON PIPELINE	DAN COBUM	(562) 355-7259
CROWN CASTLE	DAVID ANTOL	(724) 416-2180
FRONTIER	CORY RIGGS	(310) 264-5123
LADWP	PATRICK MAGALLANES	(213) 367-2659
LA SANITATION	RACHEL BASS	(310) 575-8612
SOUTHERN CALIFORNIA EDISON	KIM GURULE	(714) 796-9932
SOUTHERN CALIFORNIA EDISON - TELECOMM	TONY DEVESTERN	(626) 308-6625
SOUTHERN CALIFORNIA GAS COMPANY	ZAKEE SINGLETON	(310) 605-7931

ENGINEER'S NOTICE TO CONTRACTOR

THE ESTIMATED QUANTITY FOR EACH SPECIFIC ITEM OF THE WORK DESIGNATED ON THE PLANS SHALL BE CONSIDERED AS APPROXIMATE ONLY AND NO GUARANTEE IS MADE THAT THE QUANTITIES WHICH CAN BE DETERMINED BY COMPUTATIONS, BASED ON THE DETAILS AND DIMENSIONS SHOWN ON THESE PLANS, WILL EQUAL THE ESTIMATED QUANTITIES. THE ESTIMATE OF QUANTITIES IS PROVIDED BY THE ENGINEER ONLY FOR THE CONVENIENCE OF THE CITY. ANY ITEM OF WORK, OR PORTION THEREOF, REQUIRED BY THESE PLANS WHICH IS NOT SPECIFICALLY LISTED IN THE ESTIMATE OF QUANTITIES SHALL BE CONSIDERED AS INCLUDED IN THE OTHER ITEMS OF WORK.

BASIS OF BEARINGS

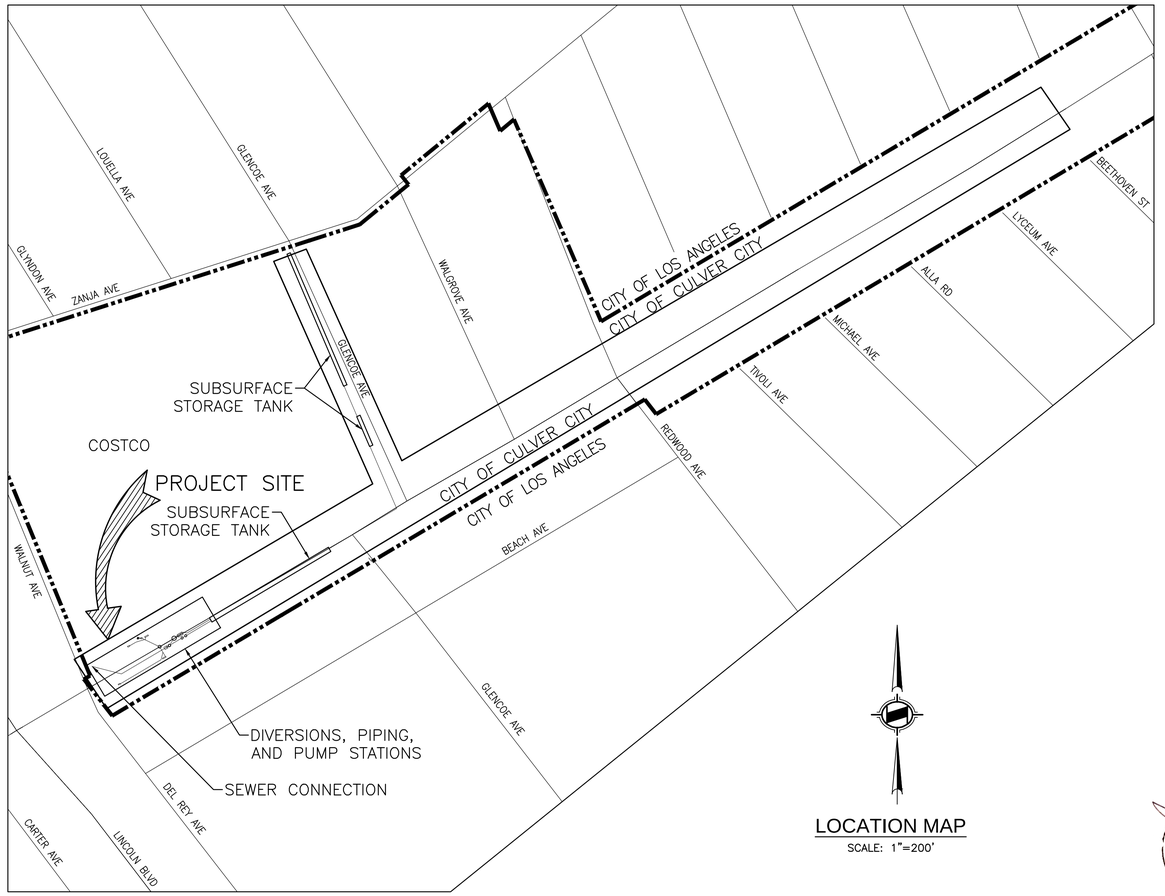
THE BASIS OF BEARING FOR THIS SURVEY IS, SOUTH 59°17'26" WEST AS SHOWN ON THE CENTERLINE OF WASHINGTON BLVD, BETWEEN STANFORD AVE & LINCOLN BLVD, ESTABLISHED PER N.A.D. 83, ZONE 5, EPOCH 2007, STATE PLANE COORDINATE SYSTEM.

BENCHMARK

CITY OF LOS ANGELES BM 17-02669
(2000 ADJUSTED); NAVD 88
ELEVATION = (15.794) FEET

VERTICAL DATUM

NORTH AMERICAN VERTICAL DATUM OF 1988.



LOCATION MAP
SCALE: 1"=200'

SHEET LIST TABLE

SHT. NO.	DRAWING NO.	SHEET TITLE
1	T-01	TITLE SHEET
2	C-01	GENERAL NOTES
3	C-02	LINE "A" PLAN AND PROFILE
4	C-03	LINE "B" PLAN AND PROFILE STA 10+00 TO STA 16+50
5	C-04	LINE "B" PLAN AND PROFILE STA 16+50 TO STA 22+70
6	C-05	LINE "B" PLAN AND PROFILE STA 22+70 TO STA 26+15
7	C-06	LINE "B-1", LINE "B-2", LINE "C-1", LINE "C-2", AND LINE "D" PLAN AND PROFILE
8	C-07	DETAILS
9	C-08	PRETREATMENT UNIT
10	C-09	SUBSURFACE STORAGE TANK LAYOUT
11	C-10	SUBSURFACE STORAGE TANK SECTION AND PIPE CONNECTION DETAIL
12	C-11	HIGH FLOW DIVERSION PUMP
13	C-12	LOW FLOW SEWER DISCHARGE PUMP
14	C-13	RAINWATER HARVESTING SYSTEM
15	C-14	PUMP NOTES
16	C-15	BORING LOGS
17	C-16	BORING LOGS
18	E-01	ELECTRICAL GENERAL NOTES
19	E-02	ELECTRICAL SINGLE-LINE DIAGRAM AND PANEL SCHEDULE
20	E-03	ELECTRICAL SITE PLAN
21	E-04	ELECTRICAL PLAN
22	E-05	HIGH FLOW DIVERSION PUMP ELECTRICAL DETAIL
23	E-06	LOW FLOW SEWER DISCHARGE PUMP ELECTRCIAL DETAIL
24	E-07	IRRIGATION PUMP ELECTRICAL DETAIL
25	E-08	ELECTRICAL ENCLOSURE DETAILS
26	E-09	ELECTRICAL DETAILS
27	E-10	CONTROL AND COMMUNICATION SYSTEM BLOCK DIAGRAM AND PERFORMANCE SPECIFICATIONS
28	EC-01	EROSION CONTROL PLAN GENERAL NOTES
29	EC-02	EROSION CONTROL PLAN WASHINGTON BLVD STA 10+00 TO 21+00 AND GLENCOE AVE
30	EC-03	EROSION CONTROL PLAN GLENCOE AVE
31	TC-01	TRAFFIC CONTROL GENERAL NOTES
32	TC-02	TRAFFIC CONTROL PHASING PLAN
33	TC-03	TRAFFIC CONTROL PLANS – GLENCOE AVE (NORTH) PHASE 1C
34	TC-04	TRAFFIC CONTROL PLANS – WASHINGTON BOULEVARD PHASE 1A AND 1B
35	SS-01	STRIPING AND SIGNAGE PLAN WASHINGTON BOULEVARD FROM LINCOLN BLVD TO TIVOLI AVE
36	SS-02	STRIPING AND SIGNAGE PLAN GLENCOE AVE FROM ZANJA ST TO WASHINGTON BOULEVARD
37	SS-03	STRIPING PLAN WASHINGTON BOULEVARD BETWEEN GLENCOE AVE AND BEETHOVEN ST
38	LS-01	LANDSCAPE PROTECTION AND DEMOLITION PLAN
39	LS-02	PLANTING PLAN
40	LS-03	PLANTING NOTES
41	LS-04	IRRIGATION PLAN
42	LS-05	LANDSCAPE DETAILS
43	LS-06	LANDSCAPE DETAILS
44	LS-07	LANDSCAPE DETAILS
45	TS-01	TRAFFIC SIGNAL GENERAL NOTES
46	TS-02	TEMPORARY TRAFFIC SIGNAL PLAN WASHINGTON BOULEVARD AND COSTCO DRIVEWAY (WEST)
47	TS-03	TEMPORARY TRAFFIC SIGNAL PLAN WASHINGTON BOULEVARD AND GLENCOE AVENUE/COSTCO DRIVEWAY (EAST)
48	TS-04	RESTORATION TRAFFIC SIGNAL PLAN WASHINGTON BOULEVARD AND COSTCO DRIVEWAY (WEST)
49	TS-05	RESTORATION TRAFFIC SIGNAL PLAN WASHINGTON BOULEVARD AND GLENCOE AVENUE

LEGEND

EXISTING GAS LINE
EXISTING SANITARY SEWER LINE
EXISTING STORM DRAIN LINE
EXISTING WATER LINE
EXISTING TELECOMMUNICATIONS LINE
EXISTING ELECTRICAL LINE
EXISTING OIL LINE
CITY BOUNDARY
STREET CENTERLINE

REGISTERED PROFESSIONAL ENGINEER YANNI DEMITRI No. C-62388 Exp. 9/24 CIVIL STATE OF CALIFORNIA

DIGALERT DIAL BEFORE YOU DIG TOLL FREE 800-227-2600 TWO WORKING DAYS BEFORE YOU DIG A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

PREPARED BY
CWE
1561 E. ORANGETHORPE AVE.
SUITE 240
FULLERTON, CA 92831
TEL (714) 526-7500
www.cwecorp.com

REGISTERED PROFESSIONAL ENGINEER JONATHON L. PASCHEL No.85752 Exp. 9/30/2024 CIVIL STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

TITLE SHEET

APPROVED BY: YANNI DEMITRI, P.E., T.E.
PUBLIC WORKS DIRECTOR/ CITY ENGINEER — DATE 4-10-23

SHEET T-01
Sheet 1 Of 49 Sheets

Drawing Name: Z:\17239\05 Todos\01 Design\60 Storm Drain\17239 - T01 - Title Sheet.dwg
Last Opened: Oct 26, 2022 - 1:19pm by fdalgleas

GENERAL NOTES:

1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. PRIOR TO COMMENCING CONSTRUCTION THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD. IF THE FIELD CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.
3. NOTES AND DETAILS ON THESE PLANS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
4. THE WORK SHOWN ON THESE PLANS REQUIRES THE PRIME CONTRACTOR TO POSSESS A VALID CALIFORNIA CLASS A CONTRACTOR'S LICENSE.

EXISTING & PROPOSED UTILITIES

5. INFORMATION ON LOCATION, SIZES AND DEPTH OF THE EXISTING UTILITIES WAS TAKEN FROM EXISTING DRAWINGS AND DATA, AND IS FOR REFERENCE ONLY. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE PLANS AND SHALL VERIFY SITE CONDITIONS PRIOR TO THE ORDERING OF MATERIALS AND COMMENCING WORK.
6. COMPLETE POTHOLING PRIOR TO COMMENCING ANY CONSTRUCTION IN THE EVENT THAT UNDOCUMENTED OR INCORRECTLY NOTED UTILITIES ARE ENCOUNTERED. UTILITY INVESTIGATION DONE BY EXPLORATORY EXCAVATION METHODS SHALL USE VACUUM EXTRACTION OR HAND EXCAVATION METHODS ONLY.
7. BEFORE CONSTRUCTION IS STARTED, CONTRACTOR SHALL COORDINATE WITH THE OWNER OF EACH UTILITY AND DEFINE THE REQUIREMENTS AND METHODS TO ACCOMMODATE THE PROTECTION, TEMPORARY SUPPORT, ADJUSTMENT, OR RELOCATION OF ANY UTILITIES AFFECTED BY THE PROPOSED WORK.
8. IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO ADJUST TO FINISHED GRADE EXISTING SEWER AND STORM DRAIN MAINTENANCE HOLE COVERS AND ANY OTHER UTILITY BOX COVERS AND FURNISH AND INSTALL CONCRETE COLLARS AS REQUIRED TO MATCH PROPOSED PAVEMENT.
9. THE CONTRACTOR SHALL BE COGNIZANT OF ALL OVERHEAD LINES AT ALL TIMES AND SHALL MARK AND PLACE APPROPRIATE SIGNAGE.

JOB SITE

10. ALL FIRE HYDRANTS, WATER CONTROL VALVES, AND MAINTENANCE HOLES SHALL BE KEPT FREE FROM OBSTRUCTIONS AND AVAILABLE FOR USE AT ALL TIMES.
11. IN CASE OF SUSPENSION OF WORK FROM ANY CAUSE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS AND SHALL PROPERLY STORE THEM IF NECESSARY AND SHALL ERECT TEMPORARY STRUCTURES WHERE NECESSARY. CITY WILL NOT BE HELD RESPONSIBLE FOR THE CARE OR PROTECTION OF ANY MATERIAL OR PARTS OF THE WORK PRIOR TO FINAL ACCEPTANCE, UNLESS OTHERWISE SPECIFIED.
12. THE CONTRACTOR SHALL MAINTAIN AND CLEAN, IF NECESSARY, ALL EXISTING ONSITE AND/OR ADJACENT STORM DRAIN INLETS AFFECTED BY CONSTRUCTION DURING THE COURSE OF CONSTRUCTION AND UNTIL THE WORK IS ACCEPTED BY THE CITY.
13. ALL CONSTRUCTION DEBRIS AND FOREIGN MATERIAL SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF AT APPROVED DISPOSAL SITE. THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS FOR THE TRANSPORTATION AND DISPOSAL OF MATERIAL.

SURVEY & LAYOUT

14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PROPERTY CORNER MARKERS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REPLACING ANY SURVEY MONUMENTS THAT ARE DISTURBED DURING CONSTRUCTION. PROPERTY CORNER MARKERS AND SURVEY MONUMENTS DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE RE-ESTABLISHED BY A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF CALIFORNIA.
15. THE PROPOSED GRADE IS THE FINAL GRADE AND NOT THE ROUGH GRADE. THE CONTRACTOR SHALL SUBTRACT THE THICKNESS OF THE PAVED SECTION AND/OR LANDSCAPE TOPSOIL SECTION TO ARRIVE AT THE ROUGH GRADE ELEVATION.
16. CONSTRUCTION STAKING FOR IMPROVEMENTS SHOWN ON THESE PLANS SHALL BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR, POSSESSING A VALID STATE OF CALIFORNIA LAND SURVEYOR LICENSE.

PUBLIC HEALTH, SAFETY & WELFARE

17. TRAFFIC CONTROL DEVICES AND METHODS SHALL CONFORM TO THE TRAFFIC CONTROL PLANS INCLUDED AS PART OF THESE PLANS.
18. CONTRACTOR SHALL COMPLY WILL ALL LOCAL SOUND CONTROL AND NOISE LEVEL RULES, REGULATIONS AND ORDINANCES, INCLUDING BUT NOT LIMITED TO ALL APPLICABLE PROVISIONS OF CHAPTER 9.07 OF THE CULVER CITY MUNICIPAL CODE.

TREE PROTECTION

19. THE CONTRACTOR SHALL CONTACT THE AGENCY'S PUBLIC WORKS MAINTENANCE OPERATIONS DIVISION PRIOR TO DISTURBING ANY INTERFERING TREES OR TRENCHING NEAR THE TREES WHICH CAN DISTURB THE TREE ROOTS.
20. CONTRACTOR SHALL FOLLOW ALL GUIDELINES AS DETAILED IN THE MOST CURRENT ANSI A300 STANDARDS FOR TREE CARE OPERATIONS.
    - ANSI A300 PART 1–2008 VERSION ON THE STANDARDS FOR TREE PRUNING
    - ANSI STANDARD Z133.1–2006 SAFETY REQUIREMENTS
21. TREES WITHIN THE PUBLIC RIGHT–OF–WAY MAY NOT BE REMOVED FOR ANY REASON, UNLESS SHOWN ON THE PLANS OR SPECIFIED IN THE SPECIAL PROVISIONS FOR REMOVAL, AND ARE TO BE PROTECTED FROM INJURY OR DAMAGE DURING CONSTRUCTION. QUESTIONS REGARDING STREET TREES MAY BE DIRECTED TO THE PUBLIC WORKS MAINTENANCE OPERATIONS DIVISION.
22. IN THE EVENT ROOT PRUNING IS REQUIRED TO ACCOMMODATE GRADE CHANGES OR THE INSTALLATION OF HARDSCAPE FEATURES, THE ROOT PRUNING PROCEDURES SHALL BE DIRECTED BY A CERTIFIED ARBORIST (TO BE RETAINED BY THE CONTRACTOR).

MISCELLANEOUS

23. IN AREAS SHOWN ON THESE PLANS TO BE CONSTRUCTED OR RECONSTRUCTED AND WHERE EXISTING PAVEMENT OR SUBGRADE IS FOUND TO BE UNSTABLE, THE CONTRACTOR SHALL REMOVE AND REPLACE THE TOP 3 FEET OF SUBGRADE WITH CRUSHED MISCELLANEOUS BASE (CMB) AND COMPACT TO 90% OF MAX. DRY DENSITY OBTAINABLE AS MEASURED BY ASTM D–1157. IF SHALLOW UTILITIES PREVENT REMOVAL OF 3 FEET OF SUBGRADE SOIL, AN APPROVED WOVEN GEOFABRIC OR GEOGRID SHALL BE USED TO PROVIDE STRENGTH TO THE SUBGRADE.
24. EXPANSION JOINTS PERPENDICULAR TO THE CURB SHALL BE CONSTRUCTED IN COMBINED CURB AND GUTTER AT THE BCR, ECR, BC, EC AND AT LOCATIONS WHERE THE CURB JOINS EXISTING STRUCTURES. LONGITUDINAL EXPANSION JOINTS SHALL BE CONSTRUCTED WHERE THE CURB BUTTS AGAINST ANY EXISTING STRUCTURE.
25. SAWING OF JOINTS SHALL BEGIN AS SOON AS THE CONCRETE HAS SUFFICIENTLY HARDENED TO PERMIT SAWING WITHOUT RAVELING, BUT NOT EXCEEDING TWELVE (12) HOURS AFTER PLACEMENT OF CONCRETE. PLACEMENT OF CONCRETE SHALL BE SCHEDULED TO BEGIN AND BE COMPLETED IN SUFFICIENT TIME TO ALLOW SAWING OF JOINTS AS PREVIOUSLY STATED.
26. ALL FILL SOILS OR SOILS DISTURBED OR OVER–EXCAVATED DURING CONSTRUCTION SHALL BE COMPACTED TO 90% MAXIMUM DENSITY AS DETERMINED BY SOIL COMPACTION TEST ASTM D–1157.
27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EXPENSE AND TO REPAIR OR REPLACE ANY DAMAGES TO THE PUBLIC RIGHT–OF–WAY, TO INCLUDE TRAFFIC LOOPS, SIGNAL, LIGHTING, ELECTRICAL SYSTEMS, AND UNDERGROUND INSTALLATIONS (WHETHER OR NOT PHYSICALLY MARKED OR SHOWN ON THE CONTRACT PLANS). SUCH REPAIRS OR REPLACEMENT SHALL BE COMPLETED TO THE SATISFACTION OF THE CITY ENGINEER.
28. CONTRACTOR TO USE AVAILABLE SITE WITHIN THE LIMITS OF WORK FOR STAGING (LAY DOWN AREA) FOR ALL THEIR TOOLS, EQUIPMENT, MATERIAL AND PARKING. AT THE END OF EACH DAY, CONTRACTOR SHALL APPROPRIATELY STORE ALL MATERIALS/EQUIPMENT AND REMOVE DEBRIS AND FOREIGN MATERIAL FROM THE JOB SITE. ANY ADDITIONAL AREA MUST BE OBTAINED BY THE CONTRACTOR.
29. THE LIMITS OF PAVEMENT/SURFACE RESTORATION OVER PIPES AND CONDUITS LESS THAN 4–INCHES IN DIAMETER ARE NOT SHOWN ON THE PLANS FOR CLARITY. PIPE/CONDUIT TRENCHES SHALL BE RESTORED TO MATCH EXISTING CONDITIONS, INCLUDING EQUIVALENT PAVEMENT/BASE DEPTHS, SURFACE TYPE, ETC. APPLICABLE STANDARDS SHALL BE FOLLOWED AS APPLICABLE TO RESTORATION.

DESIGN & CONSTRUCTION STANDARDS:

30. THE FOLLOWING STANDARD PLANS & SPECIFICATIONS ARE APPLICABLE TO THIS PROJECT:
    A. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SPPWC), 2018 EDITION AND SUPPLEMENTS.
    B. STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (SPPWC), 2012 EDITION.
    C. SECTION 41 & 86 OF THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD SPECIFICATIONS, LATEST EDITION AND SUPPLEMENTS, FOR ELECTRICAL FACILITIES AND TRAFFIC STRIPING MARKINGS.
    D. THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD PLANS, LATEST EDITION AND SUPPLEMENTS, FOR TRAFFIC STRIPING AND MARKINGS.
    E. LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD PLANS.

PUBLIC NOTIFICATION REQUIREMENTS:

31. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING PUBLIC NOTICES PRIOR TO BEGINNING CONSTRUCTION ON THE PROJECT:
    A. UPON RECEIVING THE NOTICE TO PROCEED DATE, THE CONTRACTOR SHALL ISSUE A NOTICE BY U.S. MAIL, PREPARED OR APPROVED BY THE CITY, NOTIFYING RESIDENTS AND BUSINESSES WITHIN 500 FEET OF THE PROJECT LIMITS ABOUT THE SCHEDULED WORK.
    B. 2 WEEK PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL PREPARE AND DISTRIBUTE A NOTICE APPROVED BY THE CITY TO RESIDENTS AND BUSINESSES IMMEDIATELY ADJACENT TO THE PROJECT LIMITS.
    C. CONTRACTOR SHALL PREPARE AND INSTALL/PLACE A PROJECT SIGN ON ALUMINUM BACKING AND MOUNTED ON TWO (2) 4X4 WOODEN POSTS WITHIN THE PROJECT LIMITS. THE SIGN SHALL PROVIDE INFORMATION REGARDING THE PROJECT, CONSTRUCTION DATES AND TIMES, ALONG WITH GENERAL AND EMERGENCY CONTACT INFORMATION TWO (2) WEEKS PRIOR TO BEGINNING OF WORK. ALL CAPITAL LETTERS USED ON THE SIGN SHALL BE A MINIMUM OF 6 INCHES TALL AND ALL LOWERCASE LETTERS SHALL BE A MINIMUM OF 4 INCHES TALL.

GRADING NOTES:

32. NO WORK SHALL BE STARTED IN OR ABOUT A GRADING PROJECT WITHOUT FIRST NOTIFYING THE AGENCY.
33. NO GRADING WORK, INCLUDING IMPORT AND EXPORT, SHALL BE DONE OUTSIDE OF CITY SPECIFIED CONSTRUCTION HOURS, EXCEPT IN EMERGENCIES. A HAUL ROUTE SHALL BE PREPARED BY THE CONTRACTOR SATISFACTORY TO THE PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION.
34. NO PERSON SHALL, WHEN HAULING ANY EARTH, SAND, GRAVEL, ROCK, STONE, DEBRIS, PAPER OR ANY OTHER SUBSTANCE OVER ANY PUBLIC STREET, ALLEY OR OTHER PUBLIC PLACE, ALLOW SUCH MATERIALS TO BLOW OR SPILL OVER AND UPON THE PUBLIC STREET, ALLEY OR OTHER PUBLIC PLACE OR ADJACENT PRIVATE PROPERTY.
35. THE LOADING OR DUMPING OF EXCESS SOIL SHALL BE APPROVED BY THE CITY PRIOR TO STARTING EXCAVATION.
36. PRIOR TO PLACING FILL, SLOPES SHALL BE PROPERLY PREPARED BY BRUSHING AND BENCHING.
37. IF AT ANY STAGE OF WORK ON AN EXCAVATION OR FILL THE CITY DETERMINES THAT FURTHER WORK AS AUTHORIZED BY AN EXISTING PERMIT IS LIKELY TO ENDANGER ANY PROPERTY OR PUBLIC WAY THE CITY MAY REQUIRE, AS A CONDITION TO ALLOW THE WORK TO CONTINUE, THAT PLANS FOR SUCH WORK BE AMENDED TO INCLUDE ADEQUATE SAFETY PRECAUTIONS.
38. THE CONTRACTOR SHALL OBTAIN A PERMIT FROM CALIFORNIA DIVISION OF INDUSTRIAL SAFETY FOR THE CONSTRUCTION OF TRENCHES OR EXCAVATIONS WHICH ARE FIVE FEET OR DEEPER. SHEETING, SHORING, AND BRACING FOR THE TRENCH EXCAVATION SHALL CONFORM TO THE REQUIREMENTS OF "CONSTRUCTION SAFETY ORDERS," TITLE 8, DIVISION OF INDUSTRIAL SAFETY, STATE OF CALIFORNIA.
39. A COPY OF THE GRADING PERMIT AND APPROVED PLANS MUST BE IN THE POSSESSION OF A RESPONSIBLE PERSON AND AVAILABLE AT THE SITE AT ALL TIMES.
40. WORK SHALL BE PERFORMED IN ACCORDANCE WITH THIS PLAN SET, TECHNICAL SPECIFICATIONS, PROVISIONS OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SPPWC), AND ALL REFERENCES.
41. FILL PLACEMENT AREAS SHALL BE INSPECTED AND APPROVED BY THE CITY ENGINEER PRIOR TO PLACEMENT OF ANY FILL.
42. GRADING SHALL BE DONE UNDER THE SUPERVISION OF THE CITY ENGINEER WHO SHALL CERTIFY THAT ALL FILL HAS BEEN PROPERLY PLACED AND WHO SHALL SUBMIT A FINAL COMPACTION REPORT FOR ALL FILLS OVER ONE FOOT DEEP.
43. THE EXISTING TOPOGRAPHY AS DELINEATED ON THESE DRAWINGS SHALL BE UTILIZED AS THE BASIS FOR ALL EARTHWORK COMPUTATIONS. SAID TOPOGRAPHY SHALL BE PRESUMED TO BE ACCEPTABLE TO ALL INTERESTED PARTIES UNLESS A DEVIATION IS FOUND PRIOR TO THE START OF GRADING IN ANY SPECIFIC AREAS. ANY DEVIATION SO DETERMINED SHALL BE PROMPTLY TRANSMITTED TO ALL INTERESTED PARTIES.
44. OVER–EXCAVATION AND/OR EXCESS BACKFILLING OR DUPLICATION OF GRADING ACTIVITIES IS NOT A BASIS FOR ADDITIONAL COMPENSATION. THIS ALSO APPLIES WHERE MATERIAL IS TO BE REMOVED AND REPLACED TO REDUCE MOISTURE CONTENT.
45. THE QUANTITIES FOR THESE PLANS ARE BASED UPON 0% SHRINKAGE AND 0% SUBSIDENCE. SHRINKAGE PERCENTAGE IS SHOWN FOR REFERENCE ONLY. ACTUAL SHRINKAGE VOLUMES MAY VARY CONSIDERABLY.

CONSTRUCTION NOTES:

(P) PROTECT IN PLACE
(1) 4"ø SDR35 PVC STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080–3, CASE 3
(2) CONNECTION TO EXISTING MANHOLE PER SPPWC STD. PLAN 208–2
(3) 6"ø SDR35 PVC STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080–3, CASE 3
(4) 8"ø SDR35 PVC STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080–3, CASE 3
(5) REMOVE CONCRETE PAVING
(6) REMOVE AND REPLACE CONCRETE CURB IN KIND
(7) TRENCH DRAIN PER CONCRETE DRAIN SUMP DETAIL 4 ON SHEET C–07, SIZE PER TABLE 1
(8) REMOVE AND REPLACE 10" THICK HIGH EARLY STRENGTH CONCRETE PAVING OVER 6" CMB PER CONCRETE PAVING DETAIL 5 ON SHEET C–07 (ACTUAL LIMITS TO BE CONFIRMED BY THE AGENCY DURING CONSTRUCTION)
(9) 8' X 6' PRECAST CONCRETE VALVE VAULT PER DETAILS ON SHEET C–12
(10) LOW FLOW PUMP STATION PER DETAILS ON SHEET C–12
(11) 5'ø CONCRETE MH AND KNIFE GATE FLOW CONTROL VALVE PER DETAIL 1 ON SHEET C–06
(12) 5'ø CONCRETE MH AND FLOW METER PER DETAIL 2 ON SHEET C–06
(13) SUPPORT EXISTING CONDUIT ACROSS TRENCH DURING CONSTRUCTION PER SPPWC STD. PLAN 224–2. DISPOSE OF SUPPORT PRIOR TO BACKFILLING EXISTING CONDUIT
(14) 1 ½"ø SCH 80 PVC STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080–3, CASE 3
(15) NORMALLY OPEN SOLENOID ACTIVATED CAST IRON GATE WATERMAN 8"x8" PER SHEET C–11 OR AGENCY APPROVED EQUAL
(16) REMOVE EXISTING PALM TREE AND REPLACE WITH DATE PALM TREE
(17) DROP MANHOLE AND DIVERSION STRUCTURE PER MODIFIED SPPWC STD. PLAN 320–2 AS SHOWN IN DETAIL 3 ON SHEET C–07
(18) 3' X 3' DROP INLET PER DETAIL 6 ON SHEET C–07
(19) REMOVE AND RECONSTRUCT 4" CONCRETE WALK TO THE LIMITS SHOWN
(20) 18"ø RCP STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080–3, CASE 3
(21) PRETREATMENT UNIT MODEL # CDS 4045–8–C (OR AGENCY APPROVED EQUAL) PER DETAILS ON SHEET C–08
(22) HIGH FLOW DIVERSION PUMP STATION PER DETAILS ON SHEET C–11
(23) 14' x 7' PRECAST CONCRETE VAULT PER DETAILS ON SHEET C–11
(24) 36"ø MH ACCESS SHAFT PER RISER DETAIL ON SHEET C–10 AND PER SPPWC STD. PLAN 326–2 AND 636–2
(25) IRRIGATION PUMP PER DETAILS ON SHEET C–13
(26) SUBSURFACE STORAGE TANK SYSTEM PER DETAILS ON SHEETS C–09 AND C–10
(27) 12"ø C–900 PVC PVC STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080–3, CASE 3
(28) REMOVE AND REPLACE CURB RAMP IN KIND
(29) 8' x 6' PRECAST CONCRETE VAULT FOR RAINWATER HARVESTING PUMP STATION CONTROLS, VALVES, AND INTERNAL PIPE PER DETAILS ON SHEET C–13
(30) INTERPRETIVE SIGN PER DETAILS ON SHEET C–07
(31) REMOVE AND REPLACE CONCRETE CURB AND GUTTER IN KIND
(32) 5'ø CONCRETE MH AND FLOW METER PER DETAIL 3 ON SHEET C–06
(33) PRECAST CONCRETE MH STRUCTURE PER SPPWC STD. PLAN 200–3
(34) REMOVE INTERFERING TREES AND RESTORE DISTURBED LANDSCAPING
(35) STREET SWEEPING AND VACUUMING (BMP SE–7)
(36) STORM DRAIN INLET PROTECTION (BMP SE–10)

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REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. HARPER — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

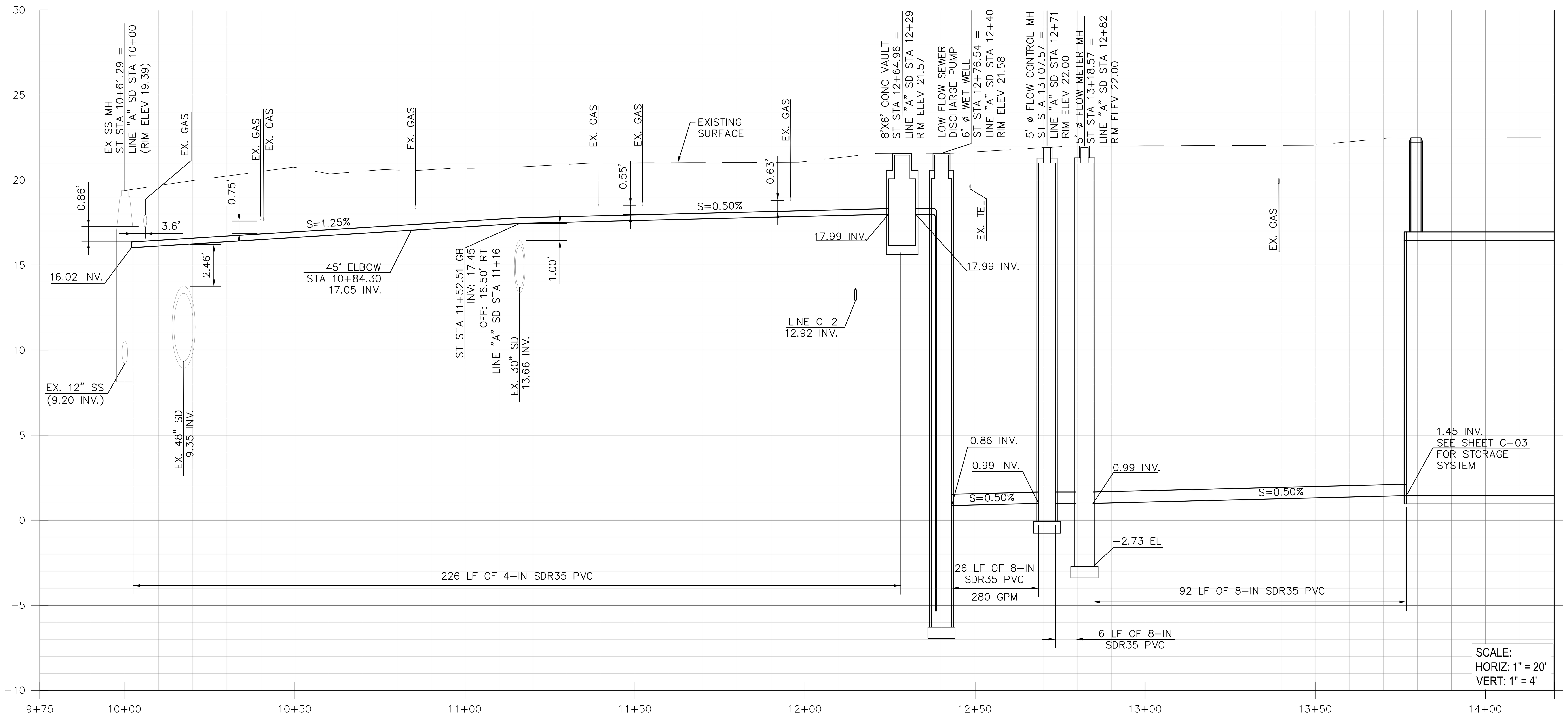
WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

GENERAL NOTES

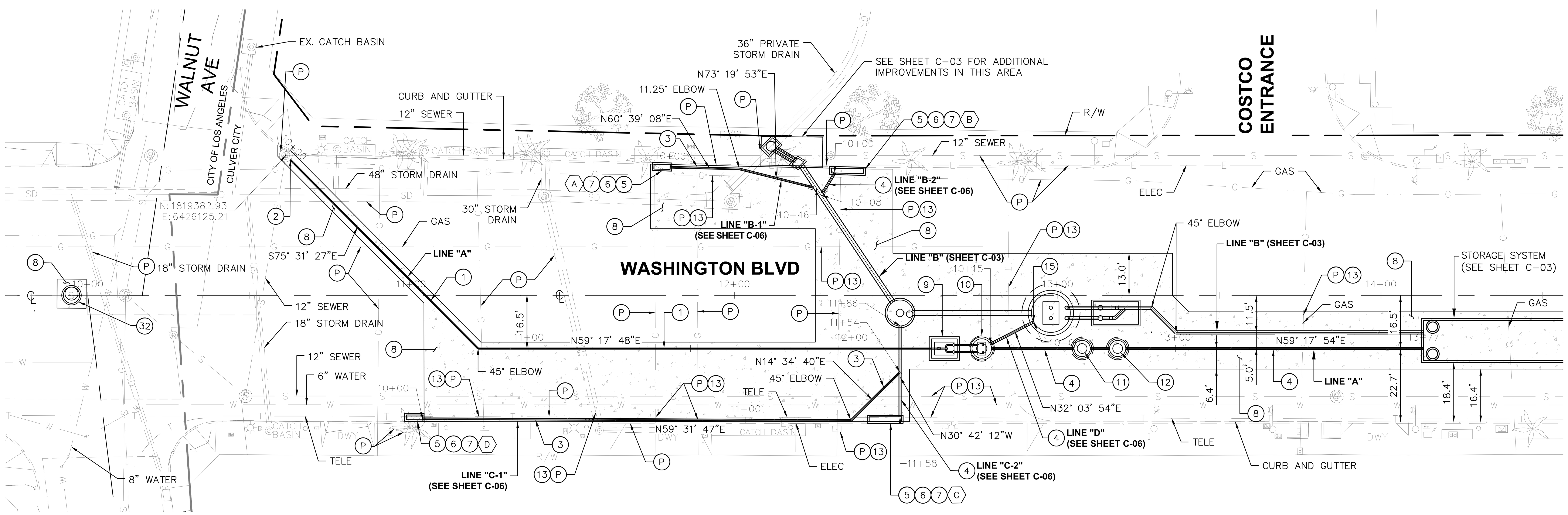
REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET C - 01
Sheet 2 Of 49 Sheets

Drawing Name: Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - C01- General Notes.dwg
Last Opened: Oct 26, 2022 - 1:20pm by tlakigawa



LINE "A"



CONSTRUCTION NOTES:

- (P) PROTECT IN PLACE
- (1) 4"ø SDR35 PVC STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080-3, CASE 3
- (2) CONNECTION TO EXISTING MANHOLE PER SPPWC STD. PLAN 208-2
- (3) 6"ø SDR35 PVC STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080-3, CASE 3
- (4) 8"ø SDR35 PVC STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080-3, CASE 3
- (5) REMOVE CONCRETE PAVING
- (6) REMOVE AND REPLACE CONCRETE CURB IN KIND
- (7) TRENCH DRAIN PER CONCRETE DRAIN SUMP DETAIL 4 ON SHEET C-07, SIZE PER TABLE 1
- (8) REMOVE AND REPLACE 10" THICK HIGH EARLY STRENGTH CONCRETE PAVING OVER 6" CMB PER CONCRETE PAVING DETAIL 5 ON SHEET C-07 (ACTUAL LIMITS TO BE CONFIRMED BY THE AGENCY DURING CONSTRUCTION)
- (9) 8' X 6' PRECAST CONCRETE VALVE VAULT PER DETAILS ON SHEET C-12
- (10) LOW FLOW PUMP STATION PER DETAILS ON SHEET C-12
- (11) 5'ø CONCRETE MH AND KNIFE GATE FLOW CONTROL VALVE PER DETAIL 1 ON SHEET C-06
- (12) 5'ø CONCRETE MH AND FLOW METER PER DETAIL 2 ON SHEET C-06
- (13) SUPPORT EXISTING CONDUIT ACROSS TRENCH DURING CONSTRUCTION PER SPPWC STD. PLAN 224-2. DISPOSE OF SUPPORT PRIOR TO BACKFILLING EXISTING CONDUIT
- (15) NORMALLY OPEN SOLENOID ACTIVATED CAST IRON GATE WATERMAN 8"x8" PER SHEET C-11 OR AGENCY APPROVED EQUAL
- (32) 5'ø CONCRETE MH AND FLOW METER PER DETAIL 3 ON SHEET C-06

TABLE 1

	LENGTH (FT)	TRENCH WIDTH (IN)
A	5	18
B	10	18
C	10	18
D	5	18

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

LINE "A" PLAN AND PROFILE

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REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. HARRELL — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
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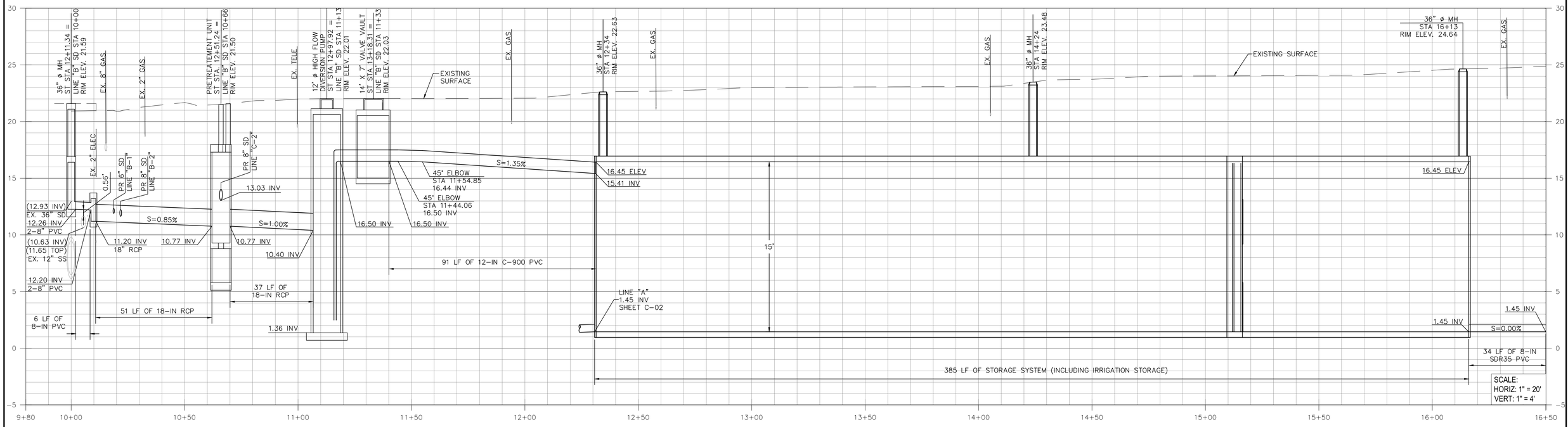
REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET C-02
Sheet 3 Of 49 Sheets

Drawing Name: Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - C02-C06 - SD.dwg
Last Opened: Oct 26, 2022 - 1:21pm by tcalgaw



CONSTRUCTION NOTES:

- (P) PROTECT IN PLACE
- (4) 8"ø SDR35 PVC STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080-3, CASE 3
- (6) REMOVE AND REPLACE CONCRETE CURB IN KIND
- (8) REMOVE AND REPLACE 10" THICK HIGH EARLY STRENGTH CONCRETE PAVING OVER 6" CMB PER CONCRETE PAVING DETAIL 5 ON SHEET C-07 (ACTUAL LIMITS TO BE CONFIRMED BY THE AGENCY DURING CONSTRUCTION)
- (13) SUPPORT EXISTING CONDUIT ACROSS TRENCH DURING CONSTRUCTION PER SPPWC STD. PLAN 224-2. DISPOSE OF SUPPORT PRIOR TO BACKFILLING EXISTING CONDUIT
- (14) 1 ½"ø SCH 80 PVC STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080-3, CASE 3
- (16) REMOVE EXISTING PALM TREE AND REPLACE WITH DATE PALM TREE
- (17) DROP MANHOLE AND DIVERSION STRUCTURE PER MODIFIED SPPWC STD. PLAN 320-2 AS SHOWN IN DETAIL 3 ON SHEET C-07
- (18) 3' X 3' DROP INLET PER DETAIL 6 ON SHEET C-07
- (19) REMOVE AND REPLACE 4" CONCRETE WALK TO THE LIMITS SHOWN
- (20) 18"ø SDR35 RCP STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080-3, CASE 3
- (21) PRETREATMENT UNIT MODEL # CDS 4045-8-C (OR AGENCY APPROVED EQUAL) PER DETAILS ON SHEET C-08
- (22) HIGH FLOW DIVERSION PUMP STATION PER DETAILS ON SHEET C-11
- (23) 14' x 7' PRECAST CONCRETE VAULT PER DETAILS ON SHEET C-11
- (24) 36"ø MH ACCESS SHAFT PER RISER DETAIL ON SHEET C-10 AND PER SPPWC STD. PLAN 326-2 AND 636-2
- (25) IRRIGATION PUMP PER DETAILS ON SHEET C-13
- (26) SUBSURFACE STORAGE TANK SYSTEM PER DETAILS ON SHEETS C-09 AND C-10
- (27) 12"ø C-900 PVC STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080-3, CASE 3

20' 10' 0 20'

SCALE: 1"= 20'

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PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

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CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

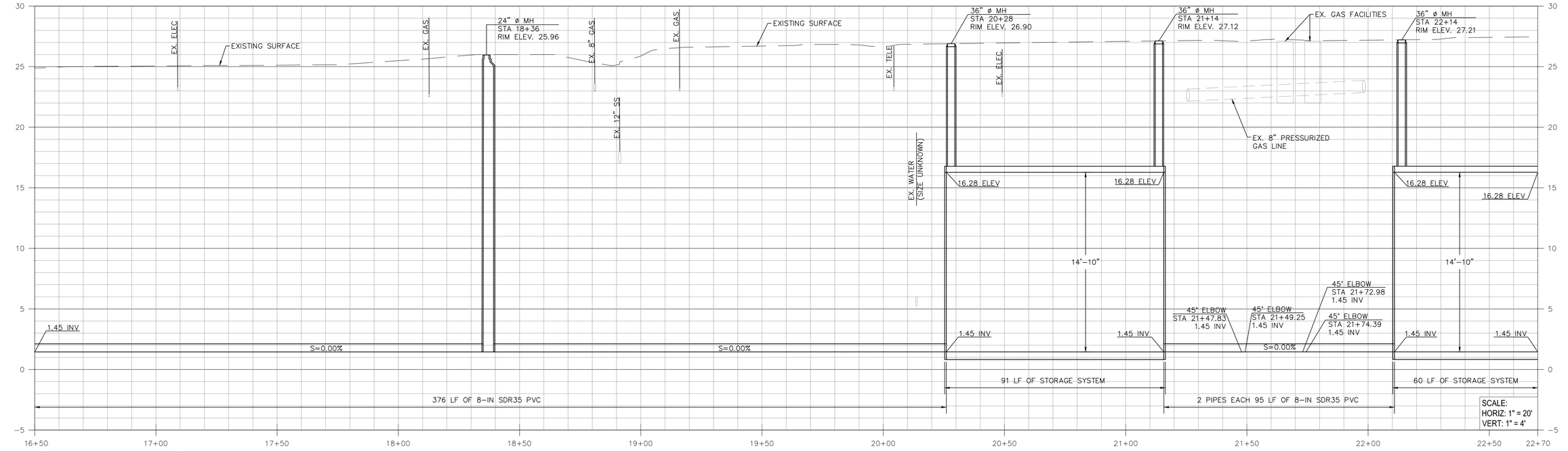
WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

LINE "B" PLAN AND PROFILE
STA 10+00 TO STA 16+50

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET C-03
Sheet 4 Of 49 Sheets

Drawing Name: Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - C02-C06 - SD.dwg
Last Opened: Oct 26, 2022 - 1:21pm by tlokipawa



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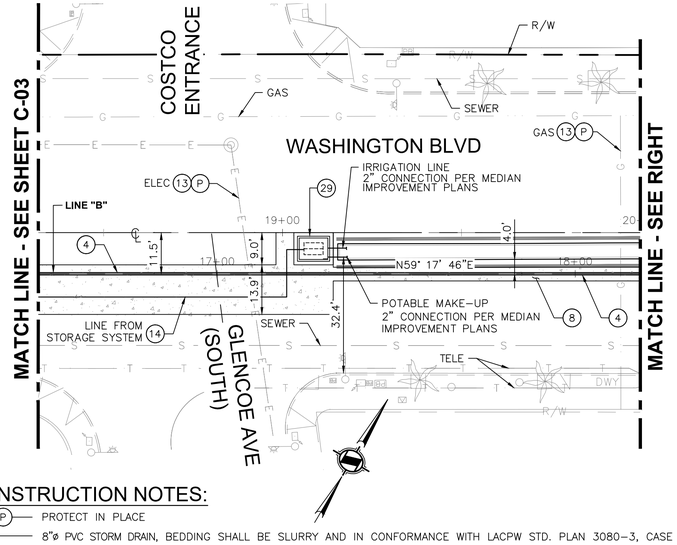

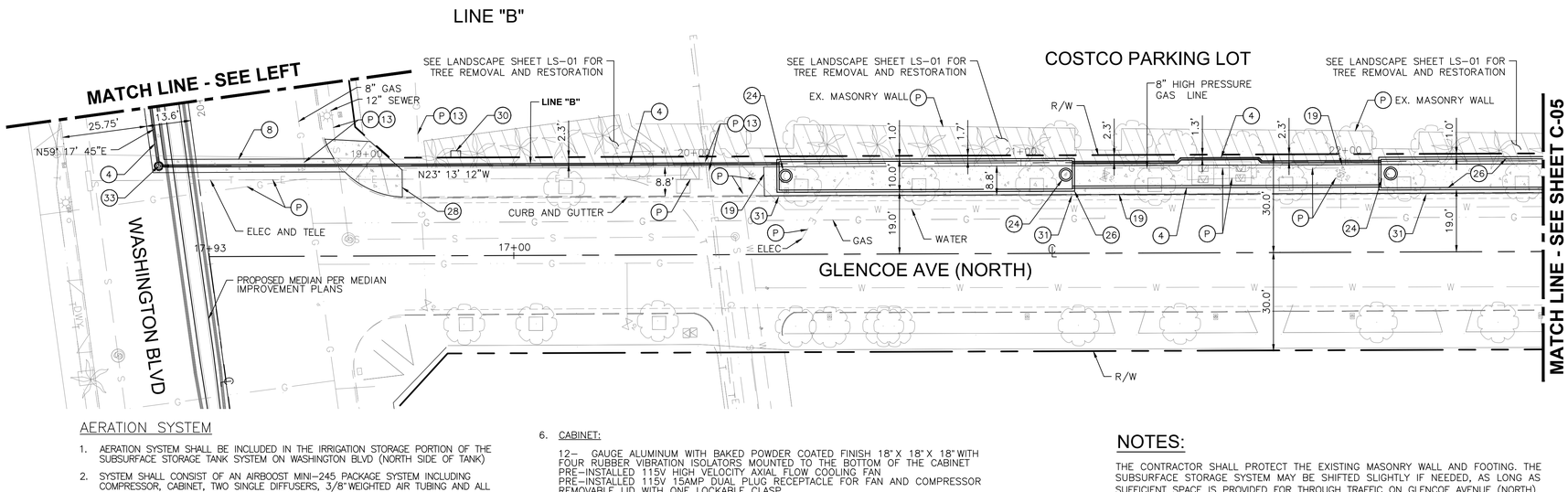

CONSTRUCTION NOTES:

- (P) PROTECT IN PLACE
- (4) 8"ø PVC STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080-3, CASE 3
- (8) REMOVE AND REPLACE 10" THICK HIGH EARLY STRENGTH CONCRETE PAVING OVER 6" CMB PER CONCRETE PAVING DETAIL 5 ON SHEET C-07 (ACTUAL LIMITS TO BE CONFIRMED BY THE AGENCY DURING CONSTRUCTION)
- (13) SUPPORT EXISTING CONDUIT ACROSS THE TRENCH DURING CONSTRUCTION PER SPPWC STD. PLAN 224-2, DISPOSE OF SUPPORT PRIOR TO BACKFILLING EXISTING CONDUIT
- (14) 1 ½"ø SCH 80 PVC STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080-3, CASE 3
- (19) REMOVE AND REPLACE 4" CONCRETE WALK TO THE LIMITS SHOWN
- (24) 36"ø MH ACCESS SHAFT PER RISER DETAIL ON SHEET C-10 AND PER SPPWC STD. PLAN 326-2 AND 636-2
- (26) SUBSURFACE STORAGE TANK SYSTEM PER DETAILS ON SHEETS C-09 AND C-10
- (28) REMOVE AND REPLACE CURB RAMP IN KIND
- (29) 8' x 6' PRECAST CONCRETE VAULT FOR RAINWATER HARVESTING PUMP STATION CONTROLS, VALVES, AND INTERNAL PIPE PER DETAILS ON SHEET C-13
- (30) INTERPRETIVE SIGN PER DETAILS ON SHEET C-07
- (31) REMOVE AND REPLACE CONCRETE CURB AND GUTTER IN KIND
- (33) PRECAST CONCRETE MH STRUCTURE PER SPPWC STD. PLAN 200-3

AERATION SYSTEM

1. AERATION SYSTEM SHALL BE INCLUDED IN THE IRRIGATION STORAGE PORTION OF THE SUBSURFACE STORAGE TANK SYSTEM ON WASHINGTON BLVD (NORTH SIDE OF TANK)
2. SYSTEM SHALL CONSIST OF AN AIRBOOST MINI-245 PACKAGE SYSTEM INCLUDING COMPRESSOR, CABINET, TWO SINGLE DIFFUSERS, 3/8" WEIGHTED AIR TUBING AND ALL REQUIRED ACCESSORIES FOR AN OPERATIONAL SYSTEM.
3. THE CABINET (18" X 18" X 18") SHALL HAVE FOUR RUBBER VIBRATION ISOLATORS MOUNTED ON THE BOTTOM OF THE CABINET.
4. PROVIDE 4" DIAMETER PVC PIPE ROUTED UNDERGROUND FROM THE BACK OF THE CABINET TO THE TOP OF THE STORAGE CHAMBERS TO ROUTE THE [2] ⅜" DIAMETER AIR LINES TO THE DIFFUSERS.
5. COMPRESSOR:

   COMPRESSOR TYPE: HIGH PRESSURE SINGLE ROCKING PISTON RELIANCE 3.5
   HORSEPOWER: 1/3 HP
   VOLTS: 115V
   AMPS: 3.0
   PHASE: SINGLE
   MAXIMUM DEPTH: 25'
   CFM AIR @ 0': 3.5 CFM
   CFM AIR @ 20': 3.1 CFM
   MANUFACTURER 2-YEAR LIMITED WARRANTY

6. CABINET:

   12- GAUGE ALUMINUM WITH BAKED POWDER COATED FINISH 18" X 18" X 18" WITH FOUR RUBBER VIBRATION ISOLATORS MOUNTED TO THE BOTTOM OF THE CABINET
   PRE-INSTALLED 115V HIGH VELOCITY AXIAL FLOW COOLING FAN
   PRE-INSTALLED 115V 15AMP DUAL PLUG RECEPTACLE FOR FAN AND COMPRESSOR
   REMOVABLE LID WITH ONE LOCKABLE CLASP
   MANUFACTURER 5-YEAR LIMITED WARRANTY

7. AIRBASE™ DIFFUSER:

   CIRCULAR MEMBRANE DIFFUSER
   AQUATIC LIFTING CAPACITY (2,541 GPM PER AIRBASE) DESIGN FLOW .5 - 2.5 CFM PER AIRBASE
   BUILT-IN BACKFLOW PREVENTER
   PRODUCES MILLIONS OF 500 TO 3,000 MICRON BUBBLES HDPE HIGH IMPACT BLACK DIFFUSER MOUNTING PLATFORM RUGGED HDPE DESIGN EASY SINK BALLAST BASIN
   ALL SCHEDULE 80 PVC CONNECTIONS
   MANUFACTURER 5-YEAR LIMITED WARRANTY

SUPPLIER - AERATION SUPPLY (888) 480-5027 OR AGENCY APPROVED EQUAL

NOTES:

THE CONTRACTOR SHALL PROTECT THE EXISTING MASONRY WALL AND FOOTING. THE SUBSURFACE STORAGE SYSTEM MAY BE SHIFTED SLIGHTLY IF NEEDED, AS LONG AS SUFFICIENT SPACE IS PROVIDED FOR THROUGH TRAFFIC ON GLENCOE AVENUE (NORTH).

20' 10' 0 20'

SCALE: 1"= 20'

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REGISTERED PROFESSIONAL ENGINEER — MATHEW L. FARRELL — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

LINE "B" PLAN AND PROFILE
STA 16+50 TO STA 22+70

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET C-04
Sheet 5 Of 49 Sheets

Drawing Name: Z:\17239\05 Tasks\01 Design\80 Storm Drain\17239 - C02-C06 - SD.dwg
Last Opened: Oct 26, 2022 - 1:22pm by tlakigawa

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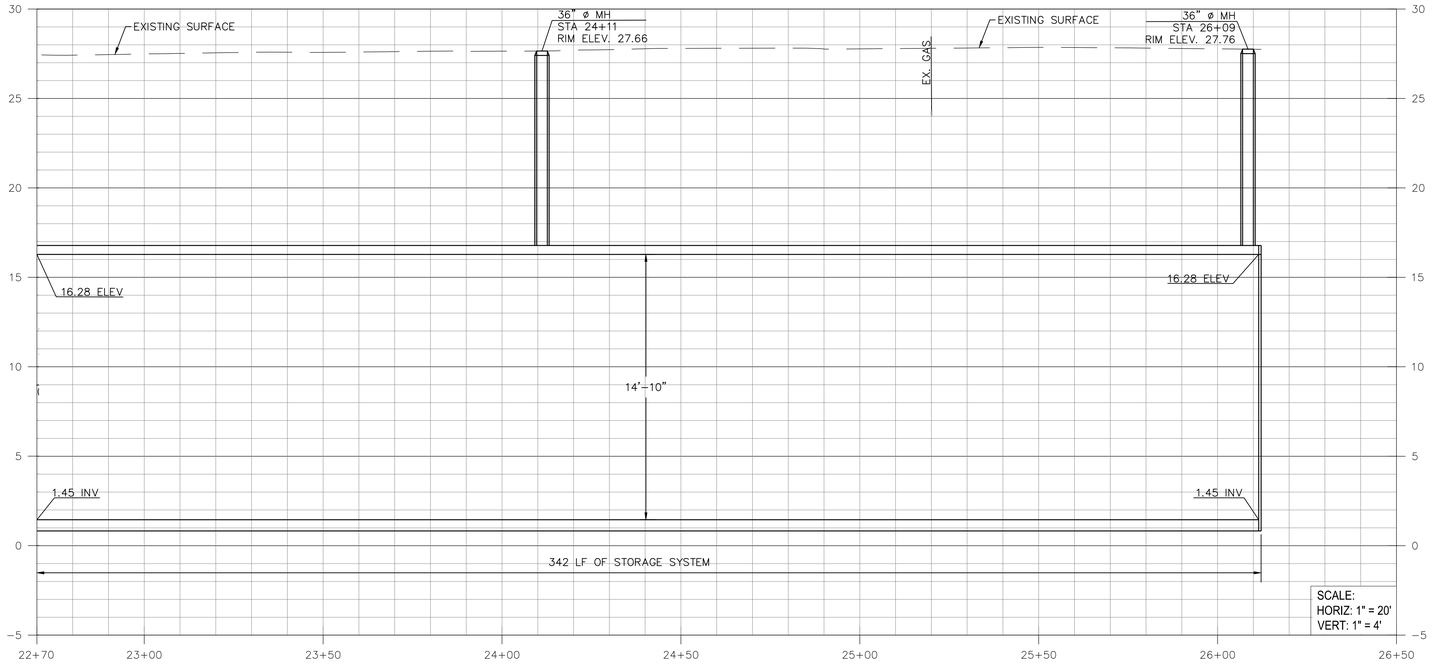

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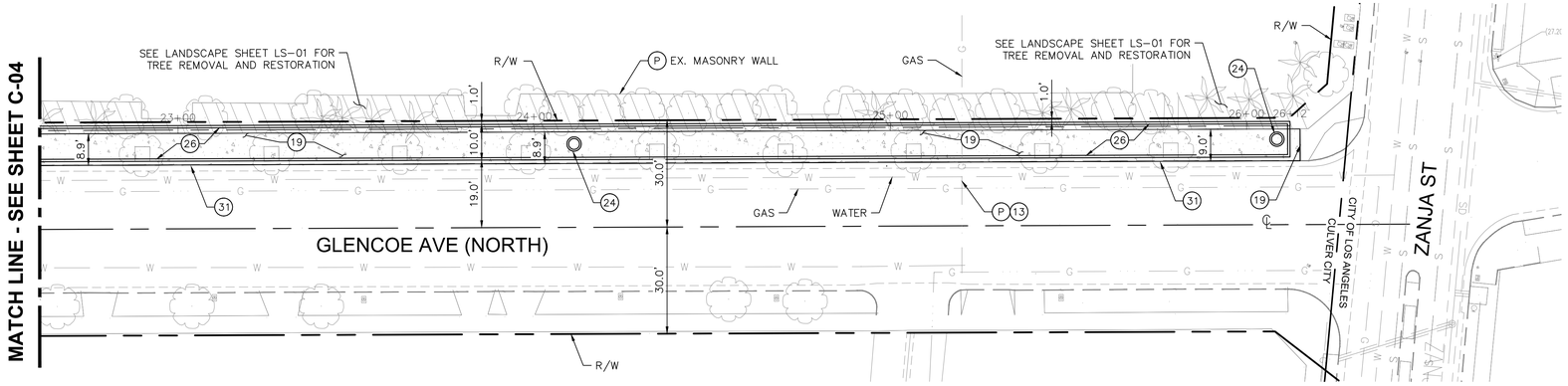
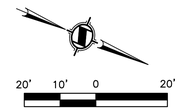


NOTES:

THE CONTRACTOR SHALL PROTECT THE EXISTING MASONRY WALL AND FOOTING. THE SUBSURFACE STORAGE SYSTEM MAY BE SHIFTED SLIGHTLY IF NEEDED, AS LONG AS SUFFICIENT SPACE IS PROVIDED FOR THROUGH TRAFFIC ON GLENCOE AVENUE (NORTH).

CONSTRUCTION NOTES:

- (P) — PROTECT IN PLACE
- (13) — SUPPORT EXISTING CONDUIT ACROSS THE TRENCH DURING CONSTRUCTION PER SPPWC STD. PLAN 224−2, DISPOSE OF SUPPORT PRIOR TO BACKFILLING EXISTING CONDUIT
- (19) — REMOVE AND REPLACE 4" CONCRETE WALK TO THE LIMITS SHOWN
- (24) — 36"ø MH ACCESS SHAFT PER RISER DETAIL ON SHEET C−10 AND PER SPPWC STD. PLAN 326−2 AND 636−2
- (26) — SUBSURFACE STORAGE TANK SYSTEM PER DETAILS ON SHEETS C−09 AND C−10
- (31) — REMOVE AND REPLACE CONCRETE CURB AND GUTTER IN KIND



SCALE: 1"= 20'

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Project Number: PR- 001

Drawing No.

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1				
2				
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CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

LINE "B" PLAN AND PROFILE
STA 22+70 TO STA 26+15

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET C-05
Sheet 6 Of 49 Sheets

Drawing Name: Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - C02-C06 - SD.dwg
Last Opened: Oct 26, 2022 - 1:23pm by tlakipaw

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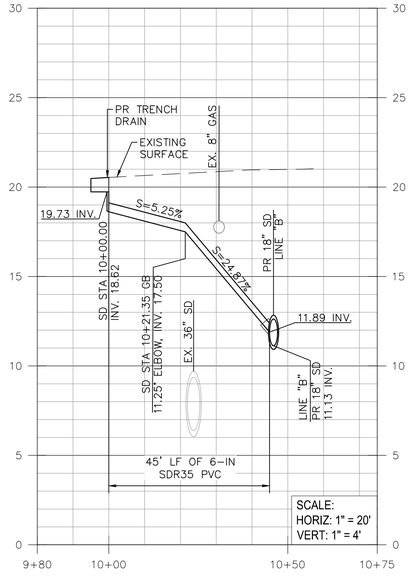

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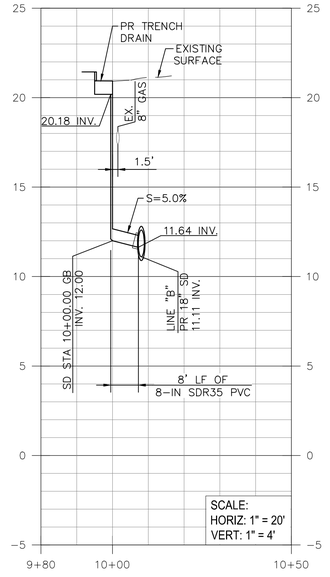

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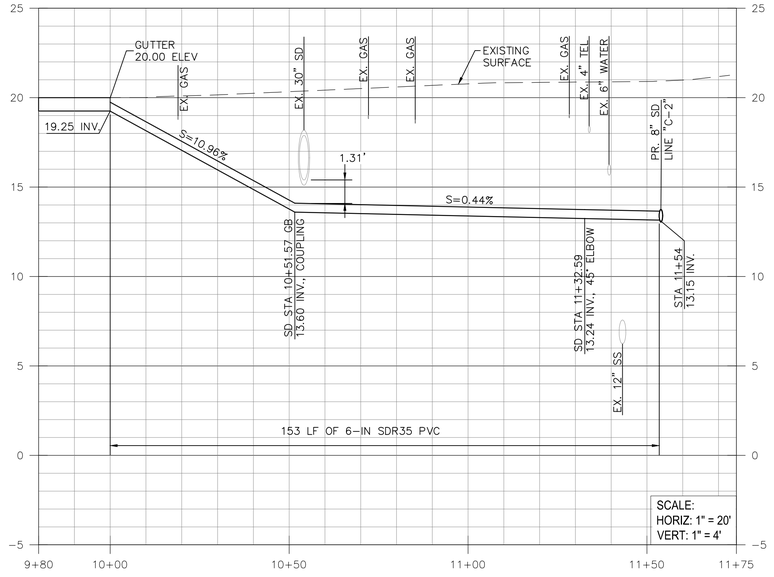

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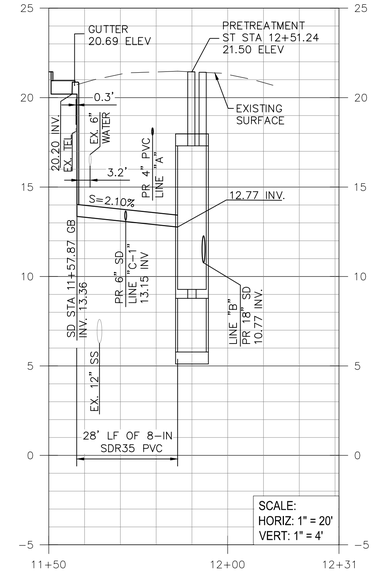

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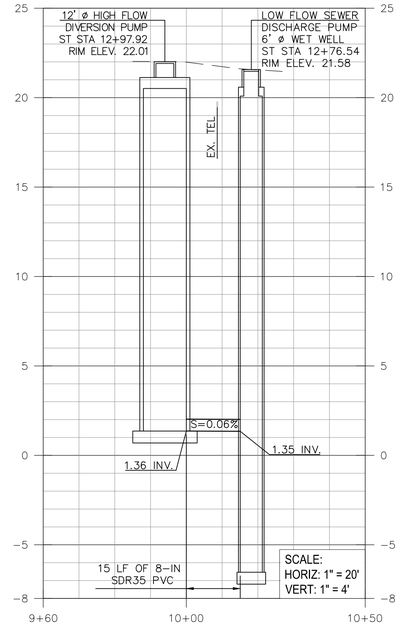

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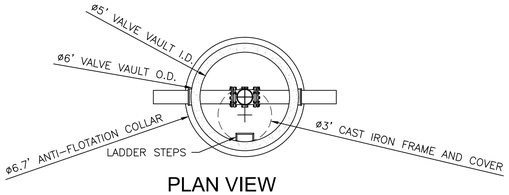
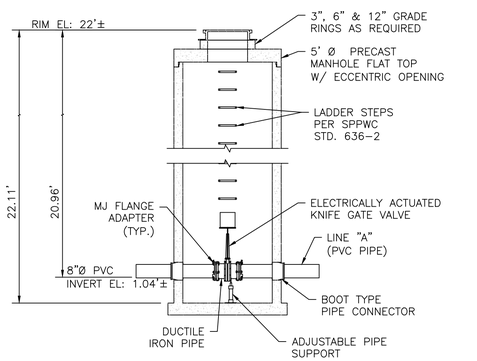


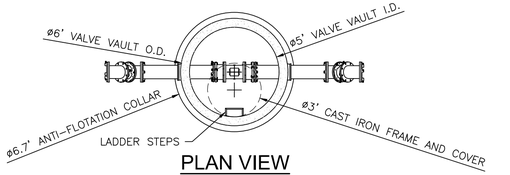
PLAN VIEW



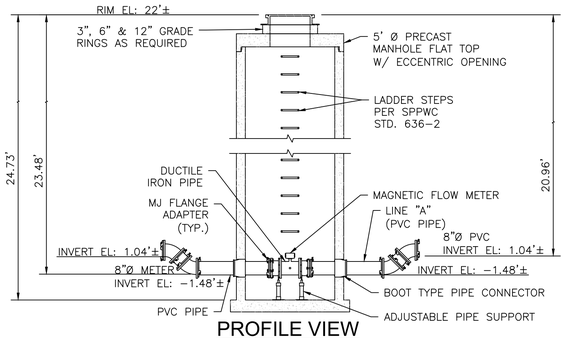
PROFILE VIEW

NOTE: OUTSIDE OF PRECAST CONCRETE TO BE SEALED USING TARGAURD COAL TAR EPOXY

KNIFE GATE FLOW CONTROL MH
DETAIL 1
1"=4'



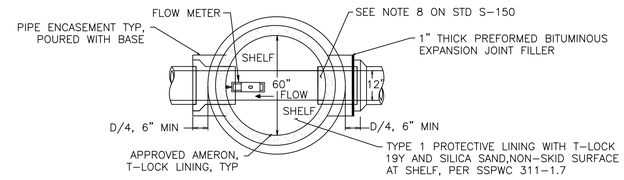
PLAN VIEW



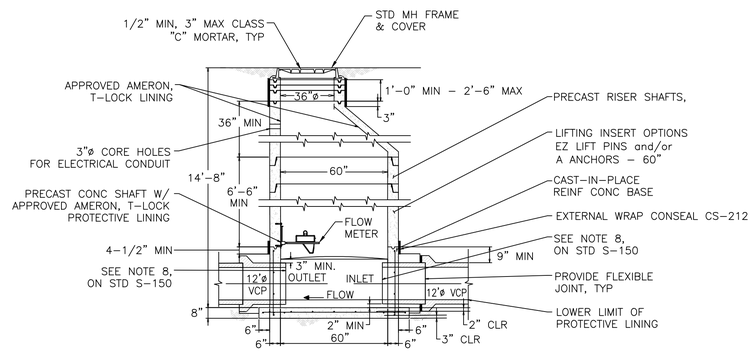
PROFILE VIEW

NOTE: OUTSIDE OF PRECAST CONCRETE TO BE SEALED USING TARGAURD COAL TAR EPOXY

FLOW METER MH
DETAIL 2
1"=4'



PLAN VIEW



PROFILE VIEW *SEE STD S-150 FOR REINFORCING DETAIL

STRUCTURE SHALL BE MODIFIED PRECAST CONCRETE MANHOLE (CITY OF LOS ANGELES STD PLAN S-150-0).

FLOW METER MH
DETAIL 3
1"=4'

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SUITE 240
FULLERTON, CA 92831
TEL (714) 526-7500
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REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. FARRELL — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
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CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

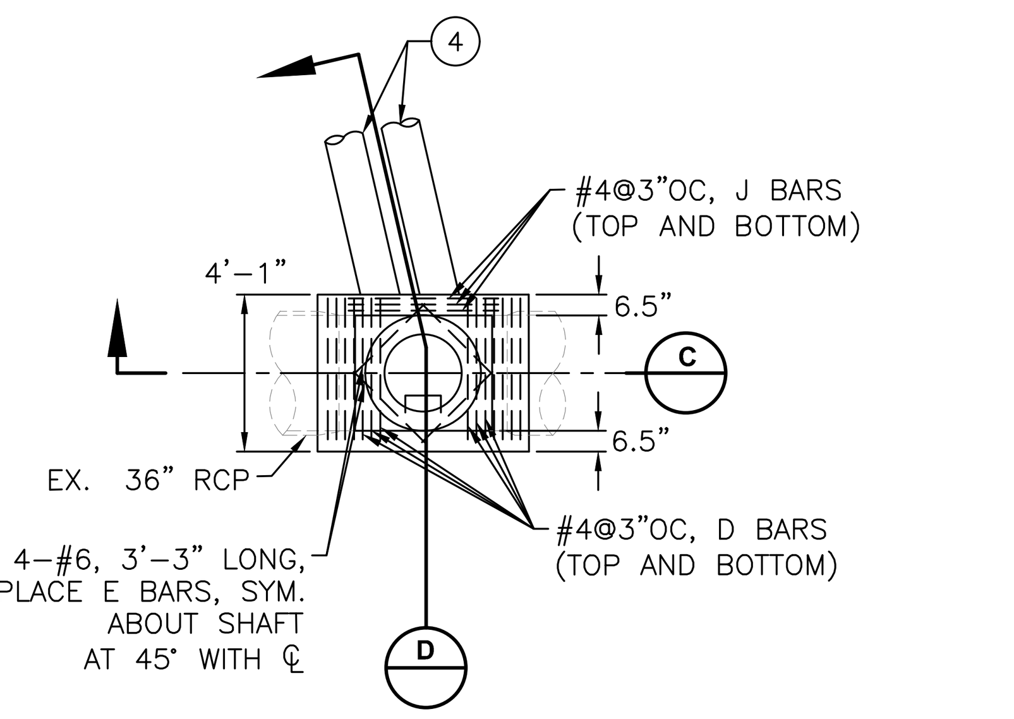
LINE "B-1", LINE "B-2", LINE "C-1", LINE "C-2", AND LINE "D" PLAN AND PROFILE

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
4-10-23
SENIOR CIVIL ENGINEER — DATE

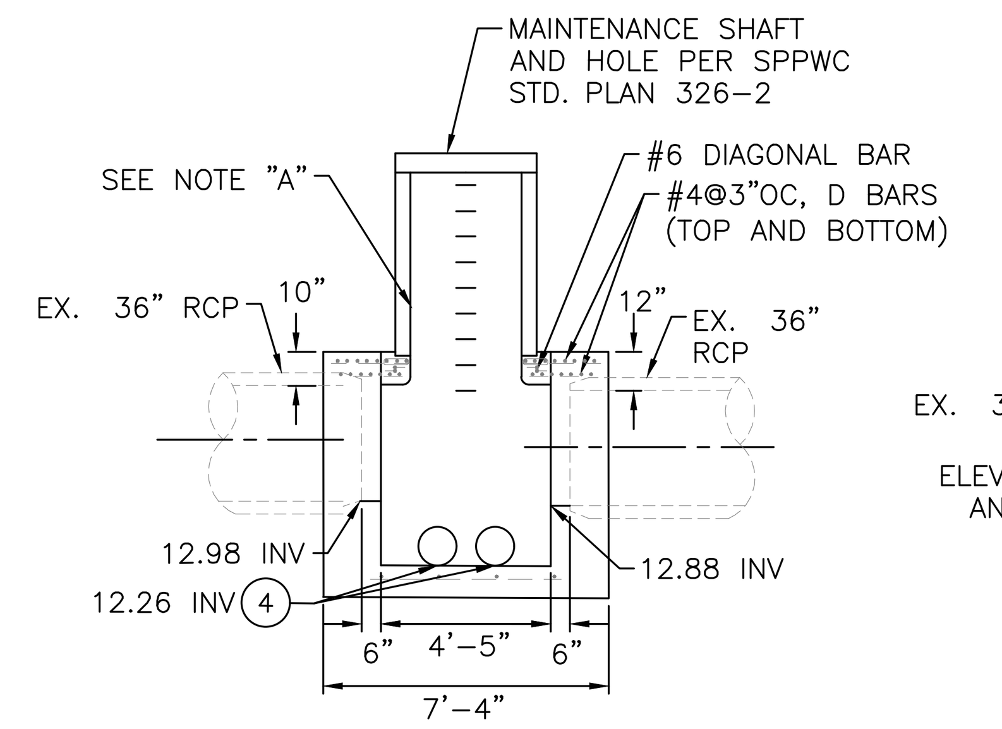
SHEET C-06
Sheet 7 Of 49 Sheets

Drawing Name: Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - C02-C06 - SD.dwg
Last Opened: Oct 26, 2022 - 1:24pm by tlokjonwa

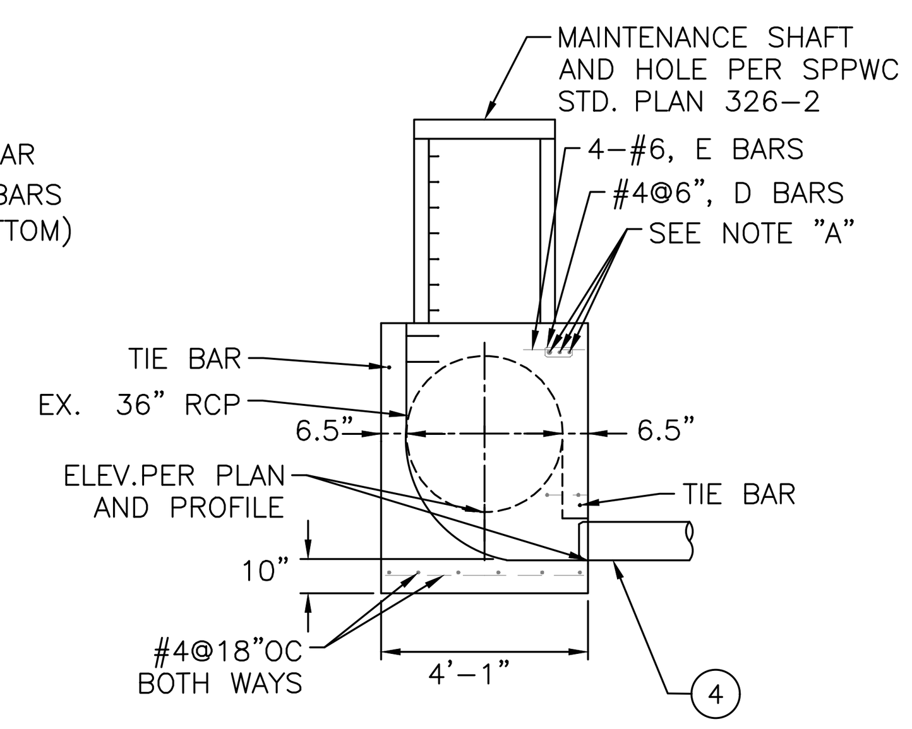
Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - C02-C06 - SD PLOTTED: 5/17/2022



PLAN VIEW



SECTION C



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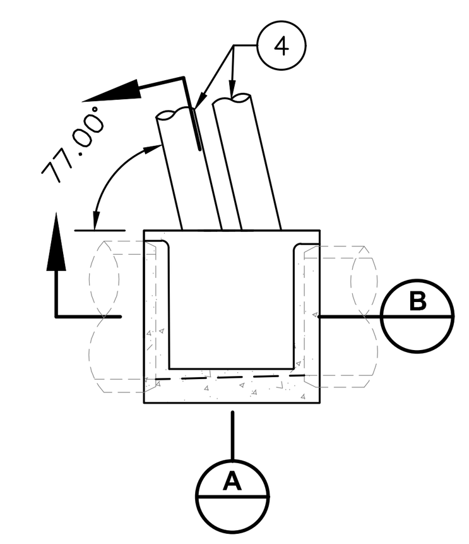
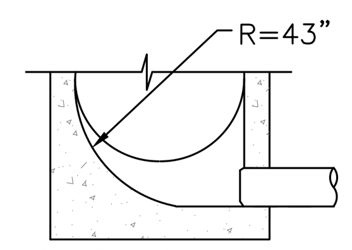
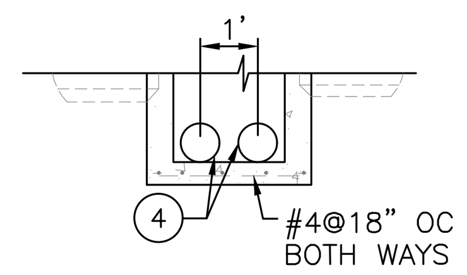


DIVERSION
STRUCTURE FLOOR
TOP VIEW

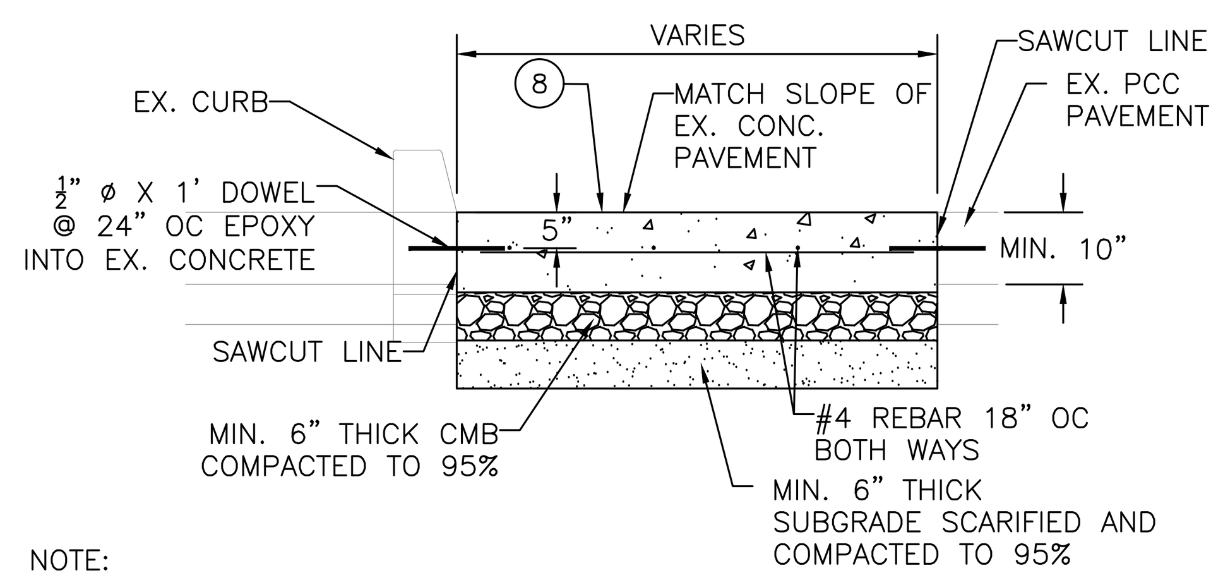


SECTION A



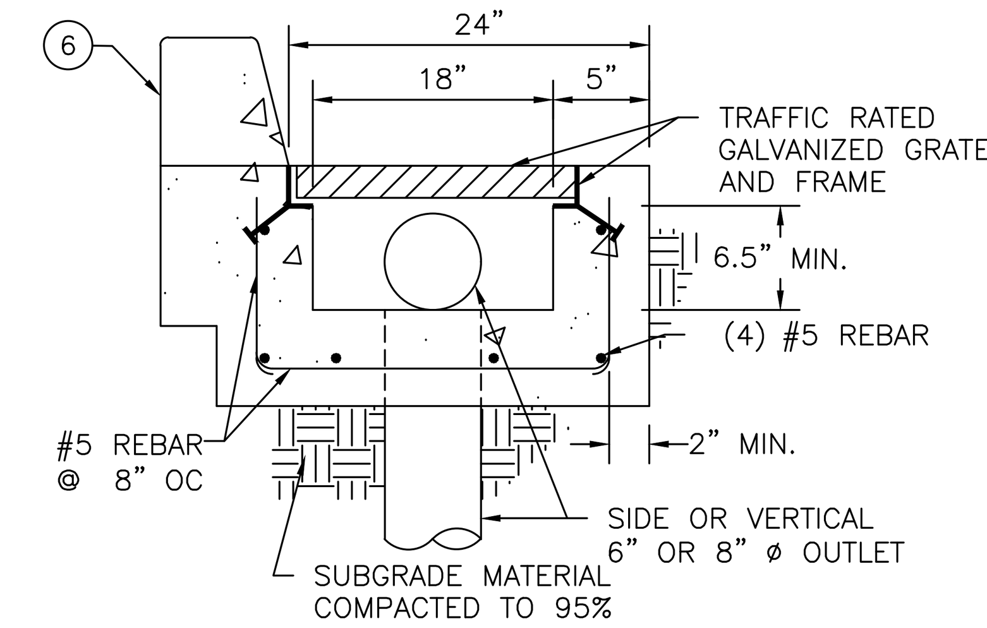
SECTION B

NOTE "A": 3-#4, J BARS 33" LONG 3" OC CONTINUOUS.
ADDITIONAL BARS 6" OC TO INSIDE EDGE OF MANHOLE



NOTE:
INSTALL DOWELS ONLY WHEN THE WIDTH OF THE
PROPOSED CONCRETE SLAB IS ≤ 8'

CONCRETE PAVING
DETAIL 5
1"=2'

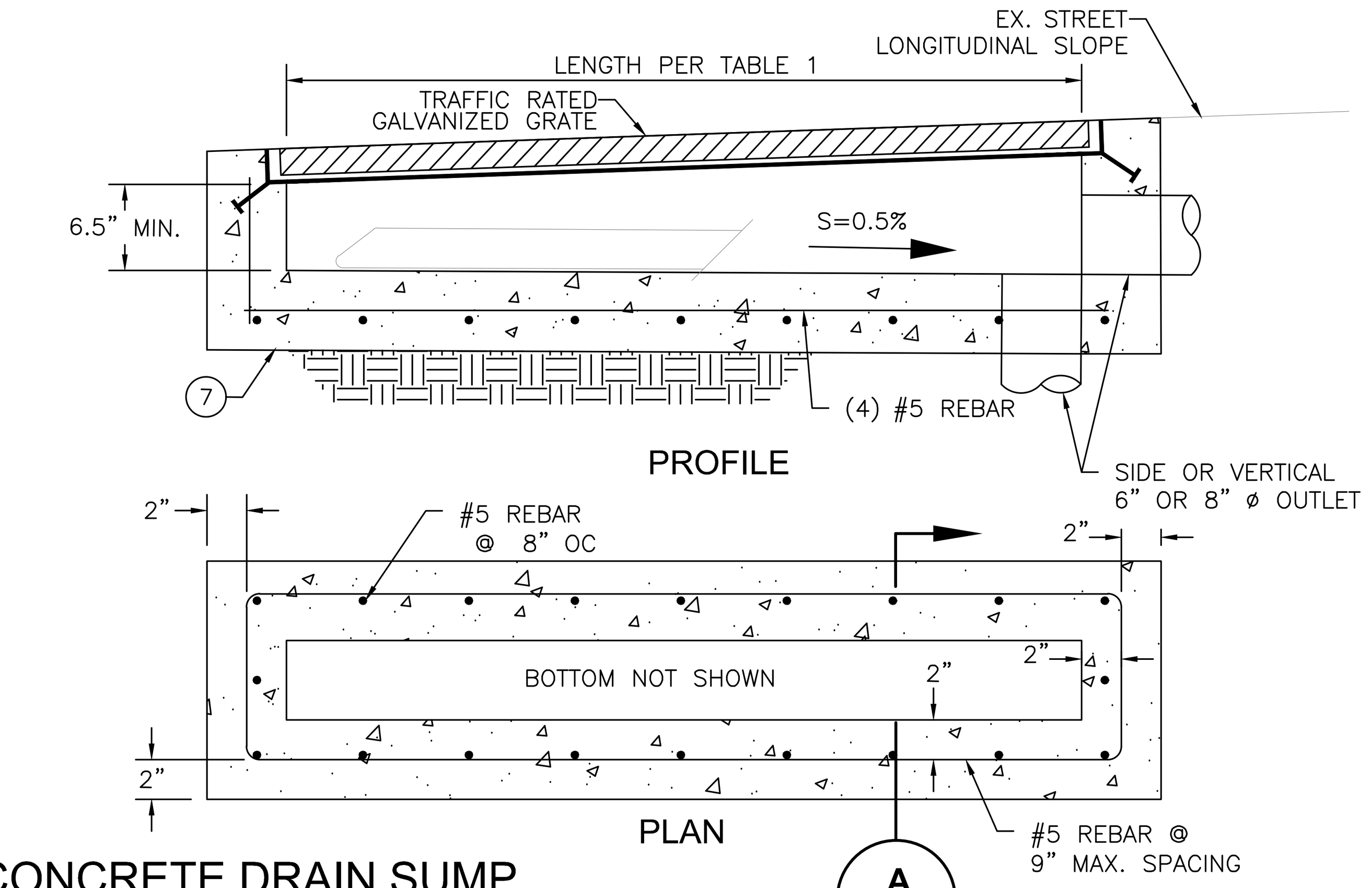


SECTION A

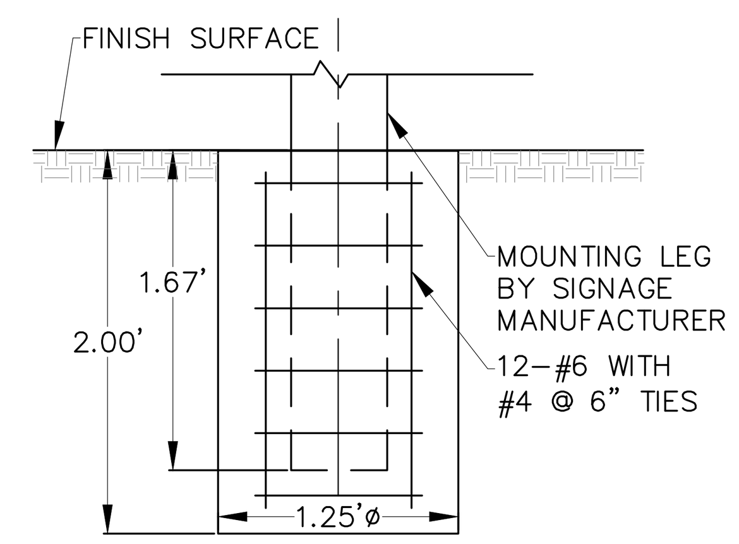
TABLE 1

	LENGTH (FT)	TRENCH WIDTH (IN)
A	5	18
B	10	18
C	10	18
D	5	18

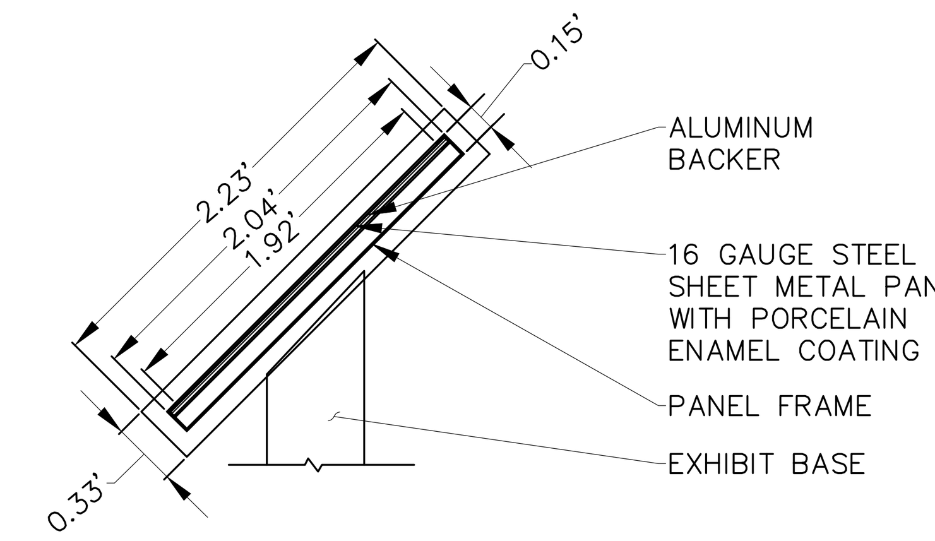
LETTER SHOWN ON SHEET C-02



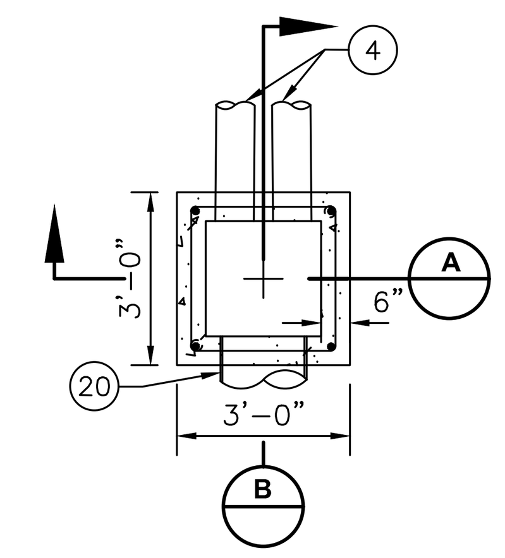
CONCRETE DRAIN SUMP
DETAIL 4
1"=1'



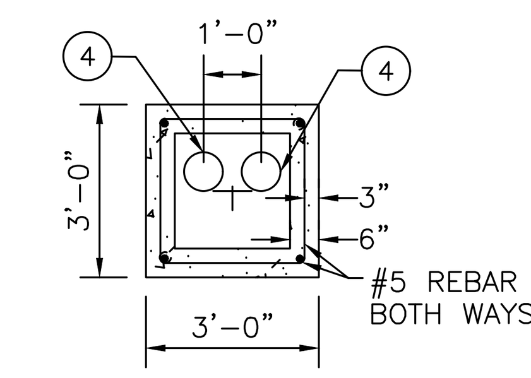
SIGN - FOUNDATION
1"=1'



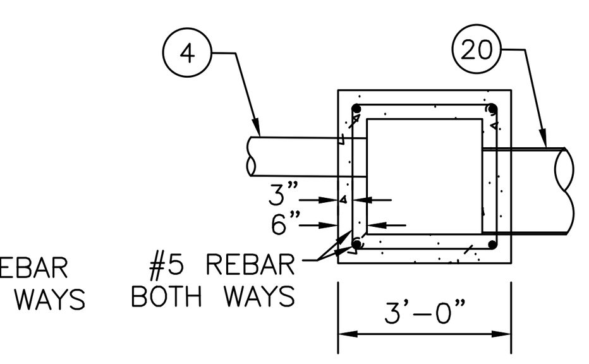
SIGN - PANEL FRAME SECTION
1"=1'



PLAN VIEW

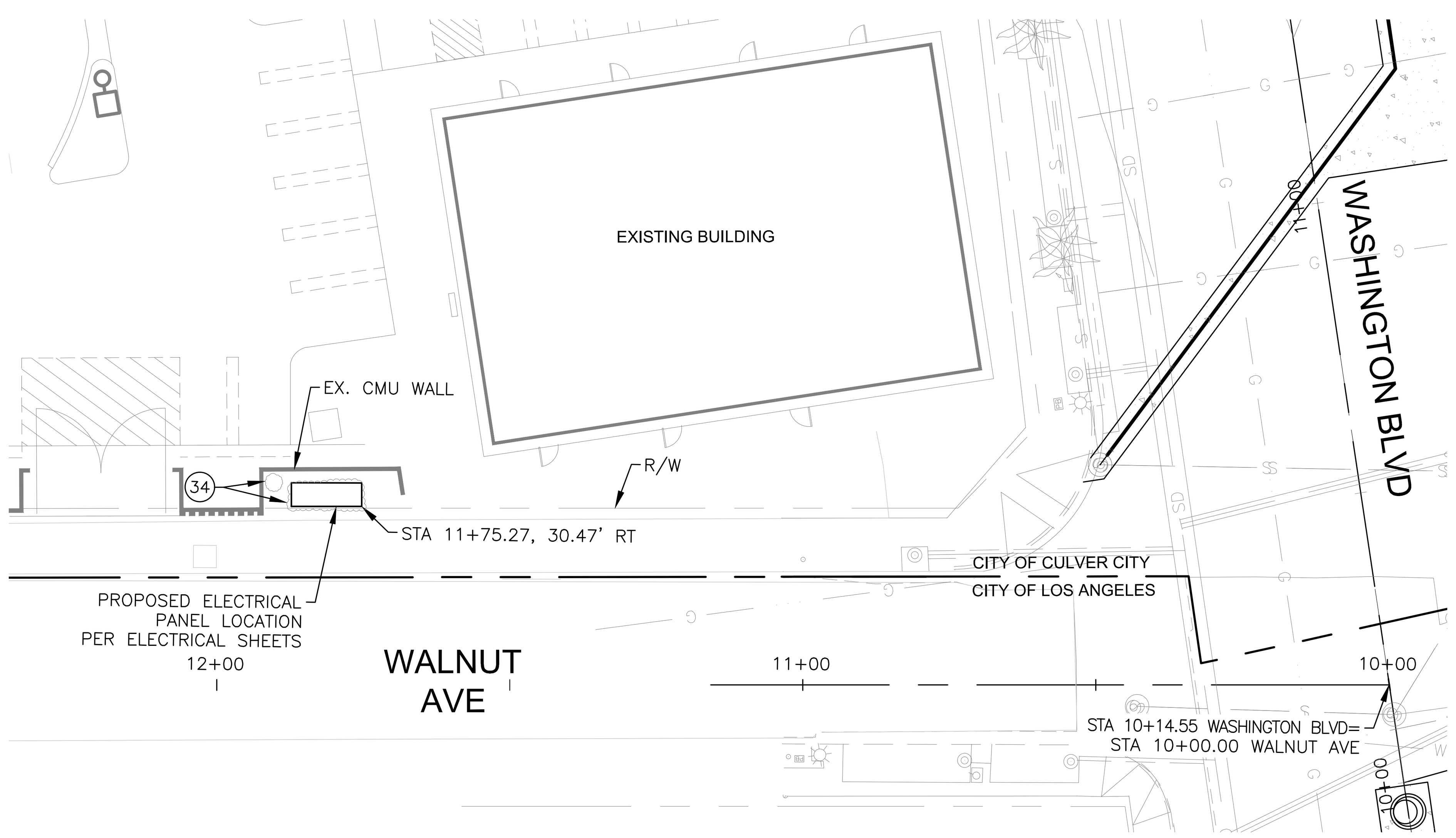


SECTION A

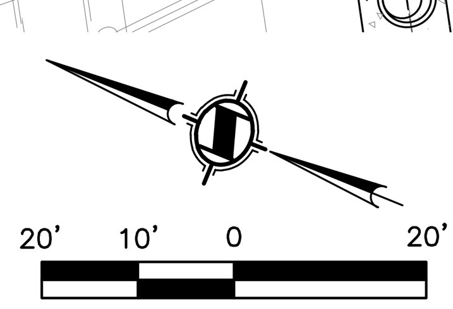


SECTION B

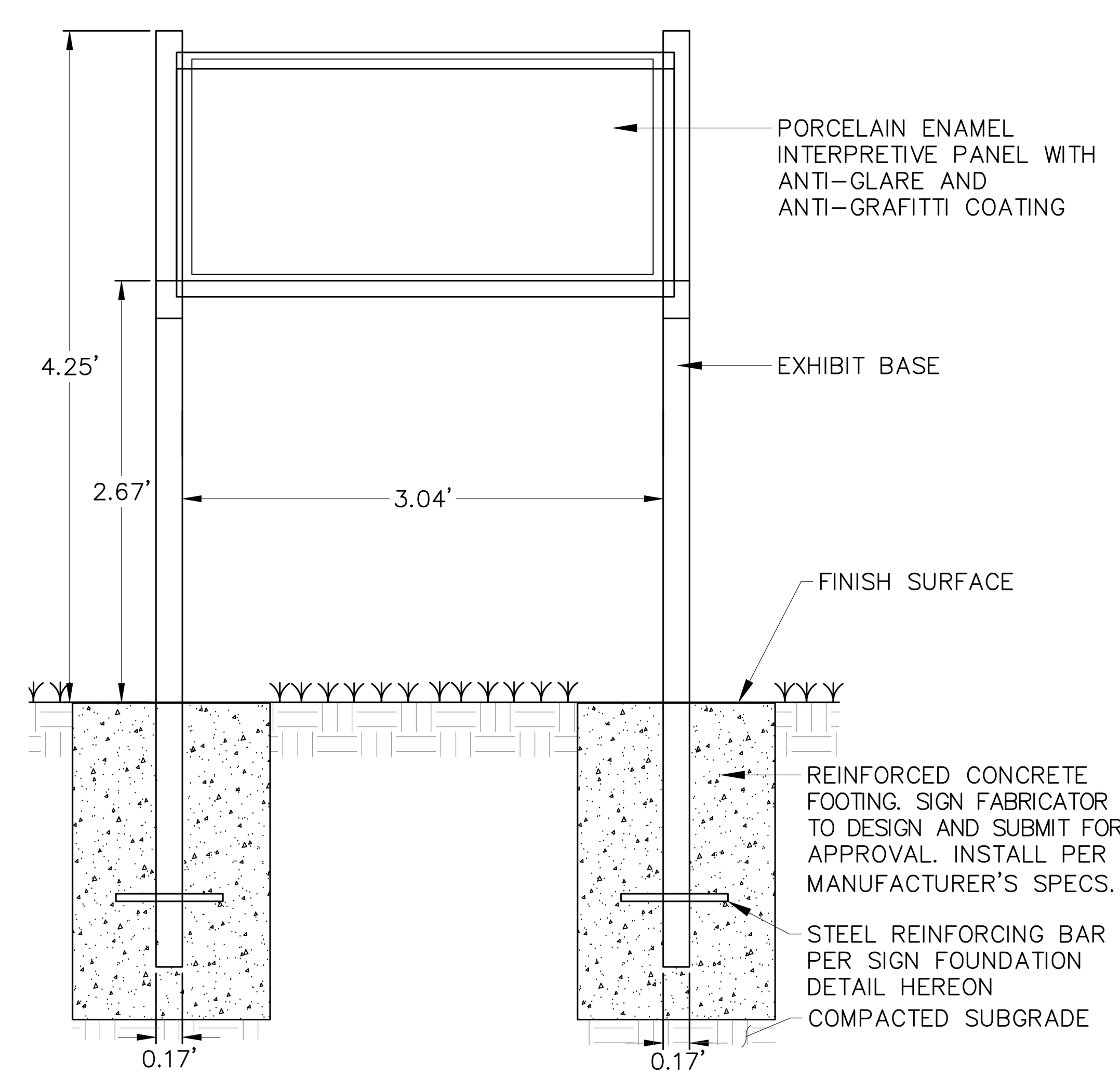
3' x 3' DROP INLET
DETAIL 6
NOT TO SCALE



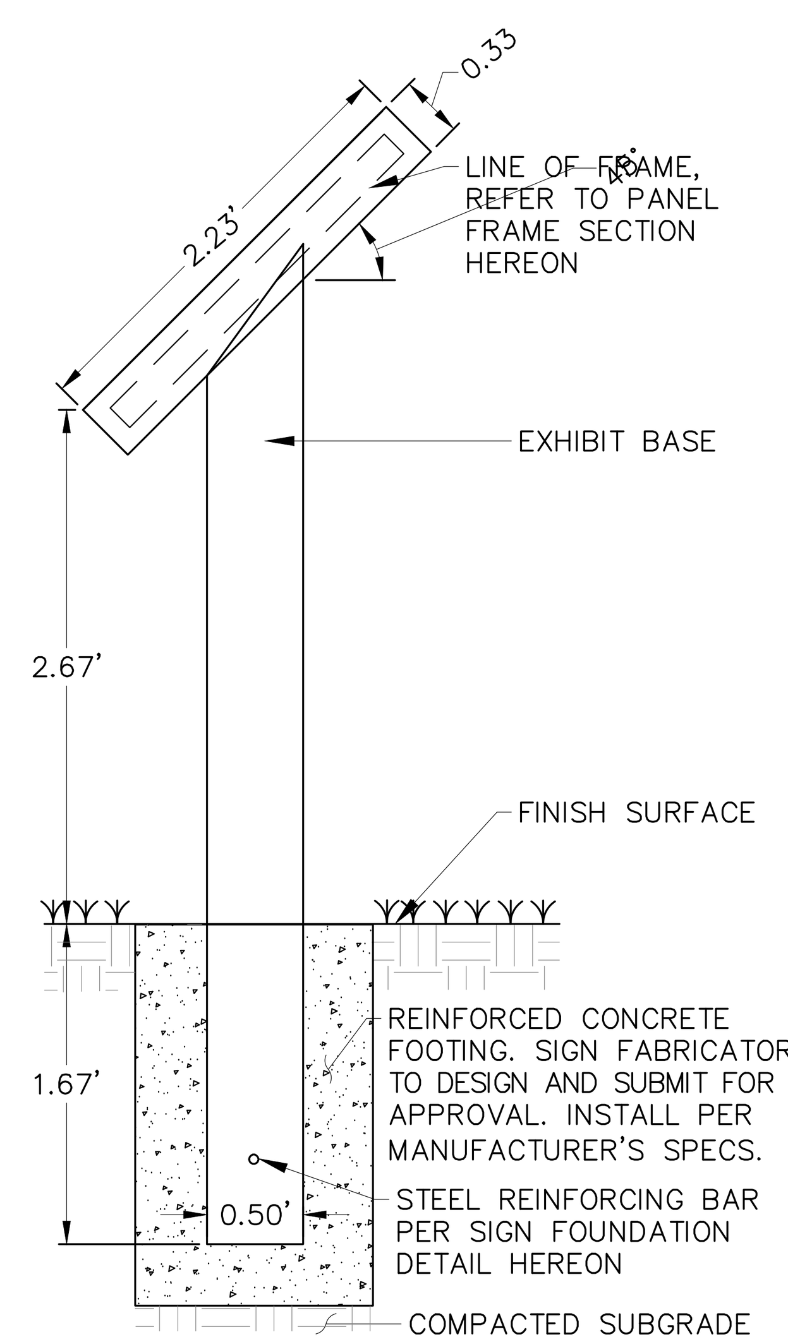
ELECTRICAL PANEL LOCATION



SCALE: 1"= 20'



SIGN - FRONT ELEVATION
1"=1'



SIGN - SIDE ELEVATION
1"=1'

DETAIL 10 - SIGN DETAIL

EXACT SIGN LOCATION SHALL BE APPROVED BY THE AGENCY PRIOR TO PLACEMENT.
CONTENT WILL BE DEVELOPED BY THE AGENCY AND PROVIDED TO THE CONTRACTOR FOR INSTALLATION.

CONSTRUCTION NOTES:

- (4) 8" ø SDR35 PVC STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080-3, CASE 3
- (6) REMOVE AND REPLACE CONCRETE CURB IN KIND
- (7) TRENCH DRAIN PER CONCRETE DRAIN SUMP DETAIL 4 ON SHEET C-07, SIZE PER TABLE 1 ON SHEET C-07
- (8) REMOVE AND REPLACE 10" THICK HIGH EARLY STRENGTH CONCRETE PAVING OVER 6" CMB PER PAVING DETAIL 5 ON SHEET C-07
- (20) 18" ø RCP STORM DRAIN, BEDDING SHALL BE SLURRY AND IN CONFORMANCE WITH LACPW STD. PLAN 3080-3, CASE 3
- (34) REMOVE INTERFERING TREES AND RESTORE DISTURBED LANDSCAPING

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND
URBAN RUNOFF DIVERSION

DETAILS

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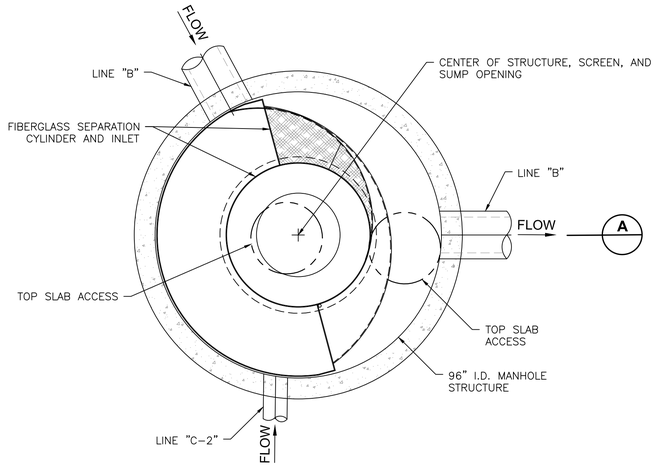
REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET C-07
Sheet 8 Of 49 Sheets

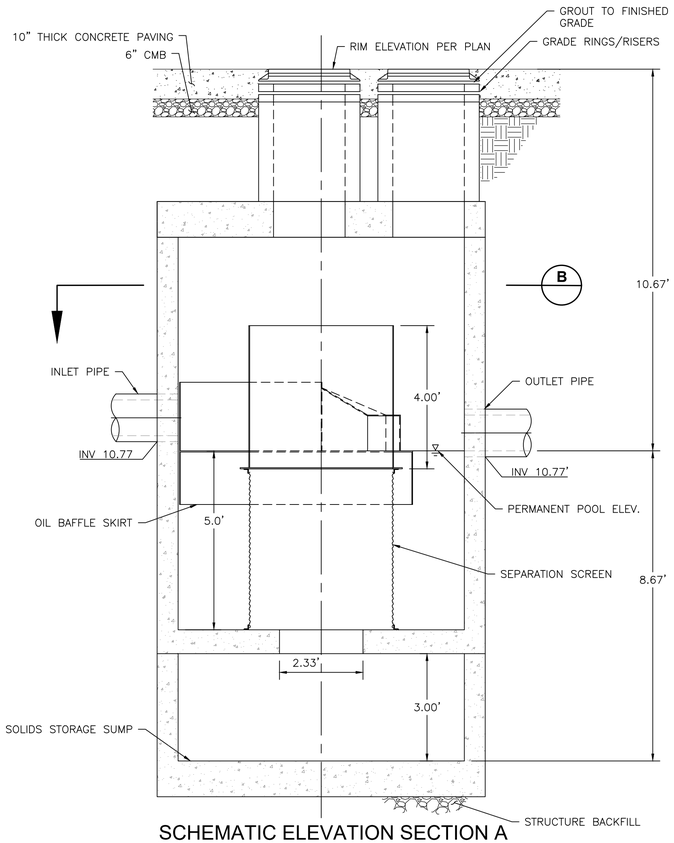
Drawing Name: Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - C07 - SD Details.dwg
Last Opened: Oct 26, 2022 - 1:26pm by tdelgado

Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - C07 - SD Details PLOTTED: 5/17/2022



SCHEMATIC PLAN VIEW SECTION B

SCALE: 1"= 2'



SCHEMATIC ELEVATION SECTION A

SCALE: 1"= 2'

SITE DESIGN DATA:	
WATER QUALITY FLOW RATE	7.5 CFS
PEAK FLOW RATE	30 CFS
RETURN PERIOD OF WATER QUALITY FLOW RATE	85th PERCENTILE
MAKE AND MODEL (OR AGENCY APPROVED EQUAL)	CDS4045-8-C BY CONTECH

MATERIAL LIST	
COUNT	DESCRIPTION
1	FIBERGLASS INLET AND CYLINDER
1	2400 MICRON SEP. SCREEN
1	SEALANT FOR JOINTS
1	GRADE RINGS/RISERS
2	CDS4045-8-C W/ HS20 FULL TRAFFIC RATED MANHOLE FRAME AND COVER
1	PRECAST CONCRETE MANHOLE STRUCTURE
1	CYLINDER EXTENSION

GENERAL NOTES:

1. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING.

INSTALLATION NOTES FOR PRETREATMENT UNIT:

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE APPROVED BY THE ENGINEER.

B. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.

C. CONTRACTOR SHALL MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.

D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. ALL JOINTS BELOW PIPE INVERTS TO BE GROUTED.

E. SLURRY BACKFILL SHALL BE USED AS INDICATED ON SHEET C-03.

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CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

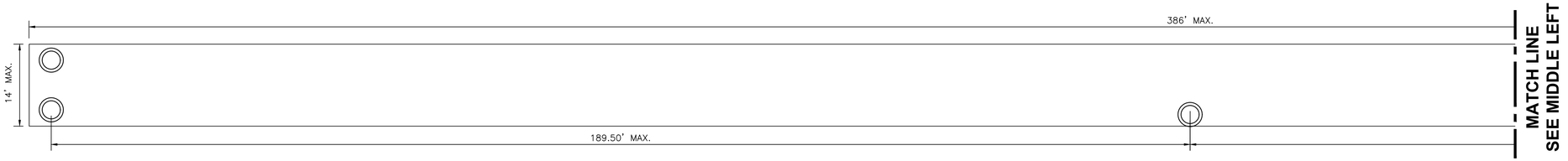
WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

PRETREATMENT UNIT

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

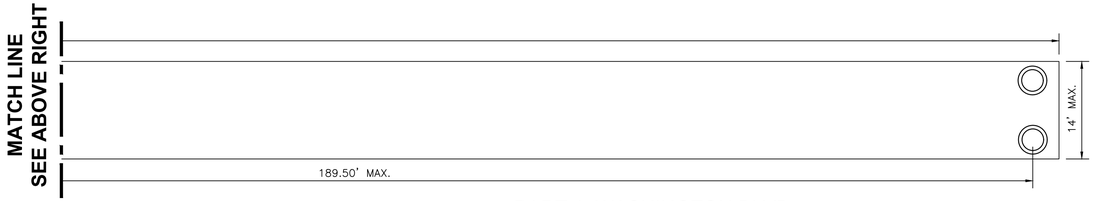
SHEET
C - 08
Sheet 9 Of 49 Sheets

Drawing Name: Z:\17259.05 Tasks\01 Design\WP\ Storm Drain\17259 - C08 - Pretreatment.dwg
Last Opened: Oct 26, 2022 - 1:27pm by tlakigawa



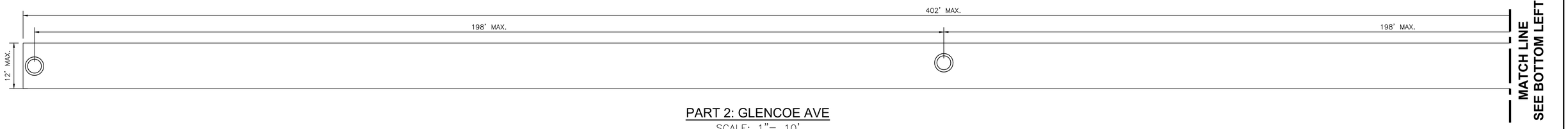
PART 1: WASHINGTON BLVD

SCALE: 1"= 10'



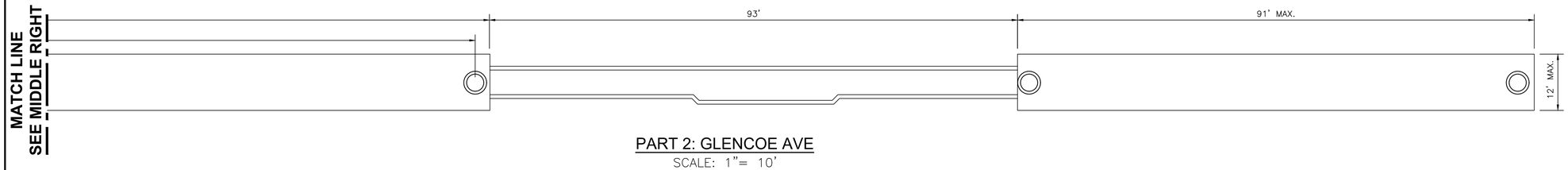
PART 1: WASHINGTON BLVD

SCALE: 1"= 10'



PART 2: GLENCOE AVE

SCALE: 1"= 10'



PART 2: GLENCOE AVE

SCALE: 1"= 10'

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REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. KRAMER — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

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CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

SUBSURFACE STORAGE TANK LAYOUT

APPROVED BY: JAVIER DE LA CRUZ, P.E.

SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET C - 09

Sheet 10 Of 49 Sheets

Drawing Name: Z:\17239\05 Tasks\01 Design\80 Storm Drain\17239 - C09 - Subsurface Storage Tank Layout.dwg
Last Opened: Oct 26, 2022 - 1:27pm by tlakigawa

ZONE CHART		
ZONES	ZONE DESCRIPTIONS	REMARKS
ZONE 1	FOUNDATION MATERIAL	STRUCTURE BACKFILL (1/4")
ZONE 2	BACKFILL	STRUCTURE BACKFILL (3/8") OR SLURRY
ZONE 3	FINAL COVER OVERTOP	MATERIALS NOT TO EXCEED 120 PCF

DESIGN LOADING		
FILL DEPTH	TRACK WIDTH	MAX GROUND PRESSURE
12"	12"	1690 psf
	18"	1219 psf
	24"	1111 psf
	30"	1000 psf
	36"	924 psf

SUBSURFACE STORAGE SYSTEM INFORMATION	
MIN TOTAL VOLUME	122,100 CUBIC FEET
MIN VOLUME FOR IRRIGATION:	4,000 CUBIC FEET
DESIGN:	CONSIDER GROUNDWATER

ZONE CONSTRUCTION PROCEDURES

1. THE FILL PLACED AROUND THE STORAGE MODULES SHALL BE DEPOSITED CONCURRENTLY ON BOTH SIDES AND TO THE SAME ELEVATION. AT NO TIME SHALL THE FILL BEHIND ONE SIDE WALL BE MORE THAN 2' HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL EITHER BE COMPACTED AND/OR VIBRATED TO ENSURE THAT BACKFILL MATERIAL IS WELL SEATED AND PROPERLY INTER LOCKED. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE. CARE SHALL BE TAKEN AS NOT TO DISRUPT THE JOINT WRAP FROM THE JOINT DURING THE BACKFILL PROCESS. THE BACKFILL MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION 217-3 AND 300-3.5 OF THE GREENBOOK.
2. DURING PLACEMENT OF MATERIAL OVERTOP THE SYSTEM, AT NO TIME SHALL MACHINERY BE USED OVERTOP THAT EXCEEDS THE DESIGN LIMITATIONS OF THE SYSTEM. WHEN PLACEMENT OF MATERIAL OVERTOP, MATERIAL SHALL BE PLACED SUCH THAT THE DIRECTION OF PLACEMENT IS PARALLEL WITH THE OVERALL LONGITUDINAL DIRECTION OF THE SYSTEM WHENEVER POSSIBLE.
3. THE FILL PLACED OVERTOP THE SYSTEM SHALL BE PLACED AT A MINIMUM OF 6" LIFTS. AT NO TIME SHALL MACHINERY OR VEHICLES GREATER THAN THE DESIGN HS-20 LOADING CRITERIA TRAVEL OVERTOP THE SYSTEM WITHOUT THE MINIMUM DESIGN COVERAGE. IF TRAVEL IS NECESSARY OVERTOP THE SYSTEM PRIOR TO ACHIEVING THE MINIMUM DESIGN COVER, IT MAY BE NECESSARY TO REDUCE THE ULTIMATE LOAD/BURDEN OF THE OPERATING MACHINERY SO AS TO NOT EXCEED THE DESIGN CAPACITY OF THE SYSTEM. IN SOME CASES, IN ORDER TO ACHIEVE REQUIRED COMPACTION, HAND COMPACTION MAY BE NECESSARY IN ORDER NOT TO EXCEED THE ALLOTTED DESIGN LOADING. SEE CHART FOR TRACKED VEHICLE WIDTH AND ALLOWABLE MAXIMUM PRESSURE PER TRACK.

SITE SPECIFIC DESIGN CRITERIA

4. STORAGE UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS, STAMPED BY A CALIFORNIA STRUCTURAL ENGINEER, SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS, AND SIZE OF OPENINGS.
5. STORAGE UNITS SHALL BE WRAPPED WITH IMPERMEABLE 60 mil HDPE LINER WITH WELDED SEAMS AND ALL JOINTS SHALL BE CAULKED, SUCH THAT THE SYSTEM IS WATER TIGHT TO PREVENT INFILTRATION AND EXFILTRATION.
6. SHORING IS TO BE REMOVED. THE EDGE OF THE VEHICLE USED FOR THE REMOVAL OF SHORING SHALL BE POSITIONED A MINIMUM OF 15' AWAY FROM THE SYSTEM TO PREVENT ANY ADDITIONAL LATERAL LOADING ON THE SYSTEM, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

ACCESS OPENING SPECIFICATION

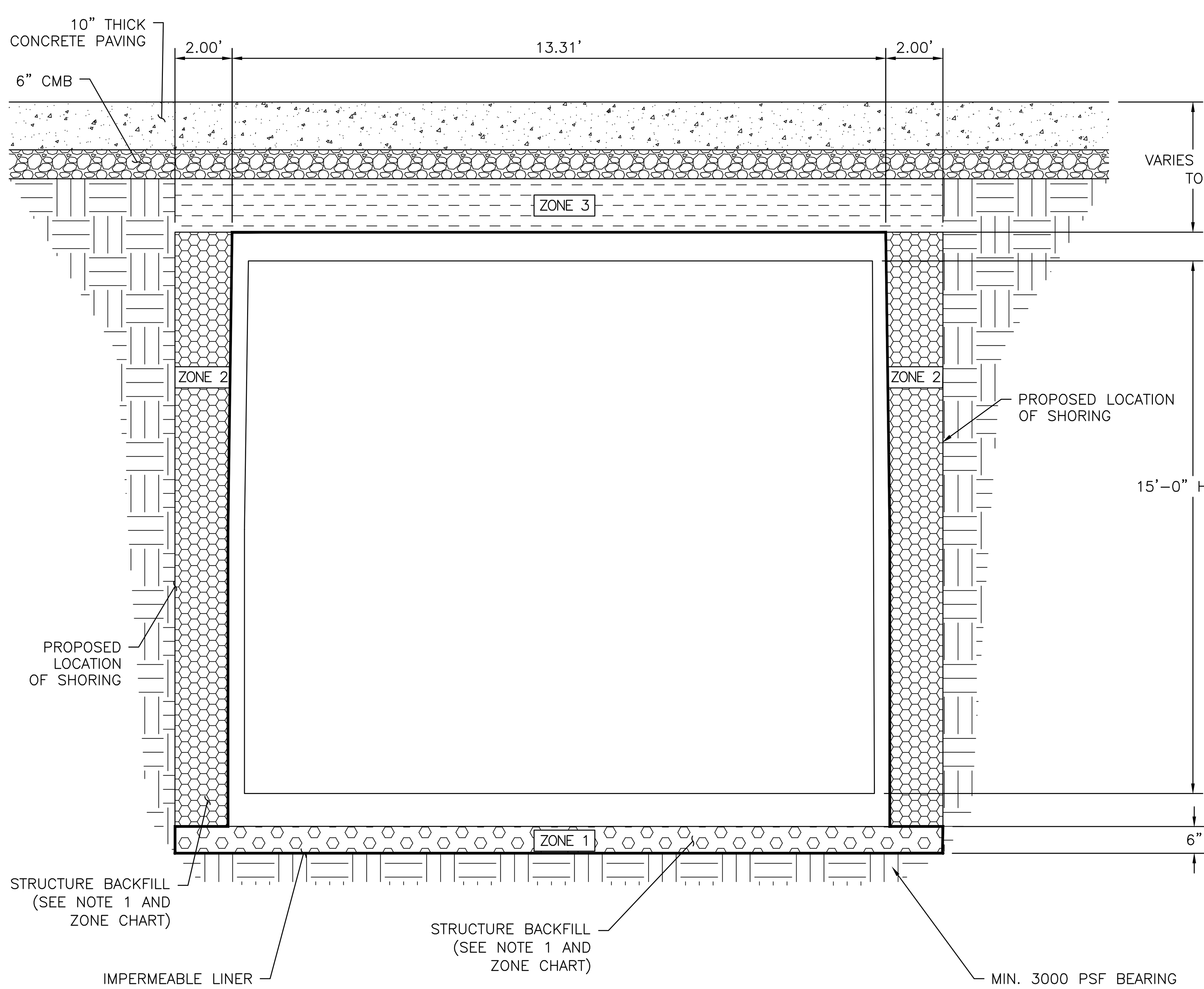
1. ALL OPENINGS MUST RETAIN AT LEAST 1'-0" OF CLEARANCE FROM THE END OF THE MODULE. ALL ACCESS OPENINGS TO BE LOCATED ON INSIDE LEG.
2. STEPS SHALL BE PER SPPWC 636-2 AND ARE PROVIDED INSIDE ANY MODULE AS SHOWN IN THESE PLANS. THE HIGHEST STEP IN THE MODULE IS TO BE PLACED A DISTANCE OF 0.50' FROM THE INSIDE EDGE OF THE MODULES. ALL ENSUING STEPS SHALL BE PLACED WITH A MAXIMUM DISTANCE OF 1'-3" BETWEEN THEM. STEPS MAY BE MOVED OR ALTERED TO AVOID OPENINGS OR OTHER IRREGULARITIES IN THE MODULE.
3. LIFTING INSERTS SHALL BE RELOCATED TO AVOID INTERFERENCE WITH ACCESS OPENINGS OR THE CENTER OF GRAVITY OF THE MODULE AS NEEDED.
4. ACCESS OPENINGS SHALL BE RELOCATED TO AVOID INTERFERENCE WITH INLET AND/OR OUTLET PIPE OPENINGS SO PLACEMENT OF STEPS IS ATTAINABLE.
5. PRECAST ADJUSTING RINGS SHALL BE USED AS NEEDED TO MEET GRADE.

PIPE OPENING SPECIFICATION

1. MINIMUM EDGE DISTANCE FOR AN OPENING ON THE OUTSIDE WALL SHALL BE NO LESS THAN 1'-0".
2. CONNECTING PIPES SHALL BE INSTALLED WITH A 1'-0" CONCRETE COLLAR, AND AN AGGREGATE CRADLE FOR AT LEAST ONE PIPE LENGTH (SEE PIPE CONNECTION DETAIL). A STRUCTURAL GRADE CONCRETE OR HIGH STRENGTH, NON-SHRINK GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI SHALL BE USED.
3. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH HIGH STRENGTH NON-SHRINK GROUT.
4. ALL PIPE CONNECTIONS SHALL BE SEALED TO ENSURE SYSTEM IS WATER TIGHT.

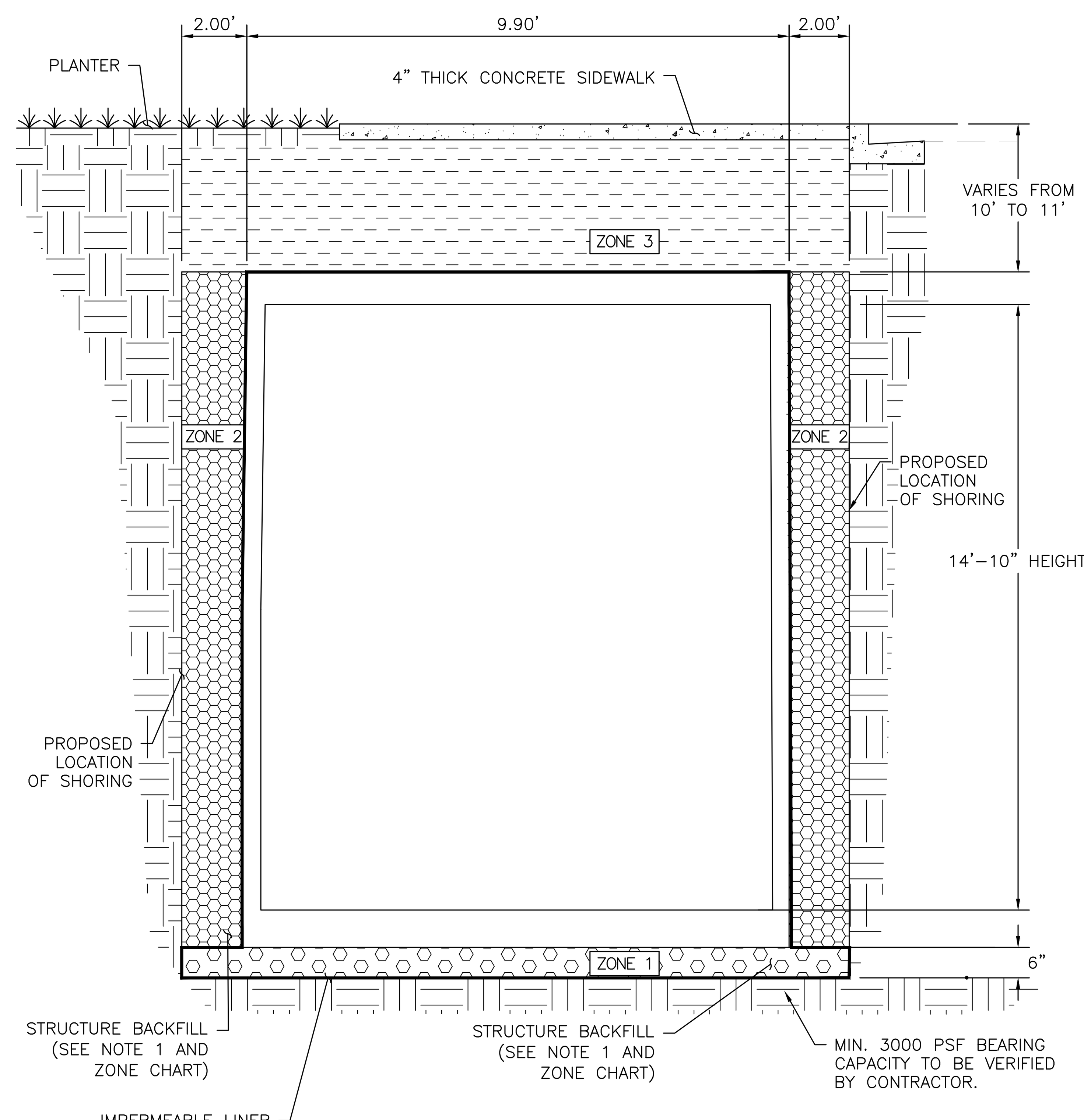
PIPE INSTALLATION INSTRUCTIONS

1. CLEAN AND LIGHTLY LUBRICATE ALL OF THE PIPE TO BE INSERTED INTO THE SUBSURFACE STORAGE SYSTEM.
2. IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ALLOW NO SHARP EDGES. BEVEL AND LUBRICATE LEAD END OF PIPE.
3. ALIGN CENTER OF PIPE TO CORRECT ELEVATION AND INSERT INTO OPENING.



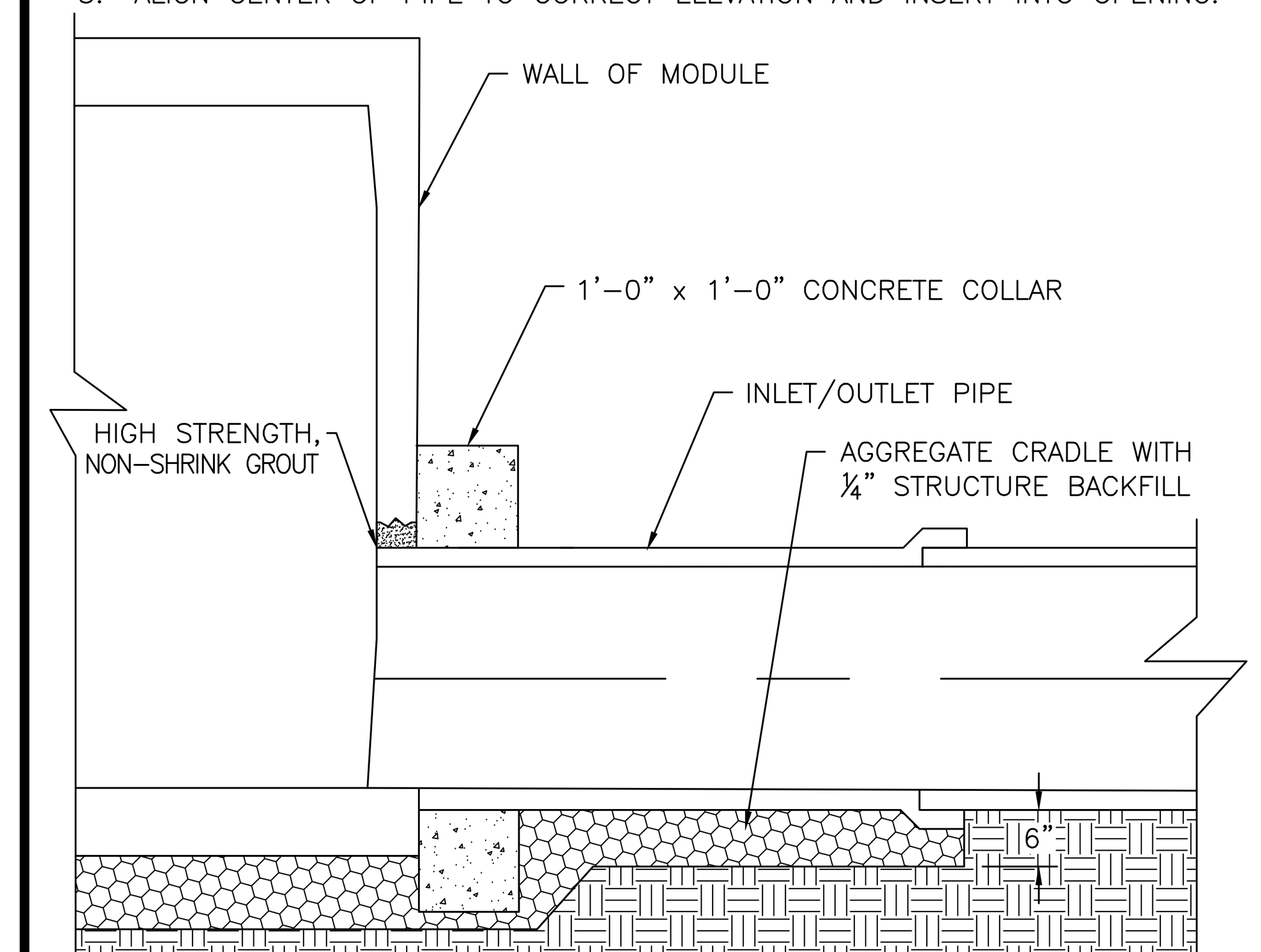
WASHINGTON BLVD: TYPICAL CONCRETE SUBSURFACE STORAGE TANK SECTION

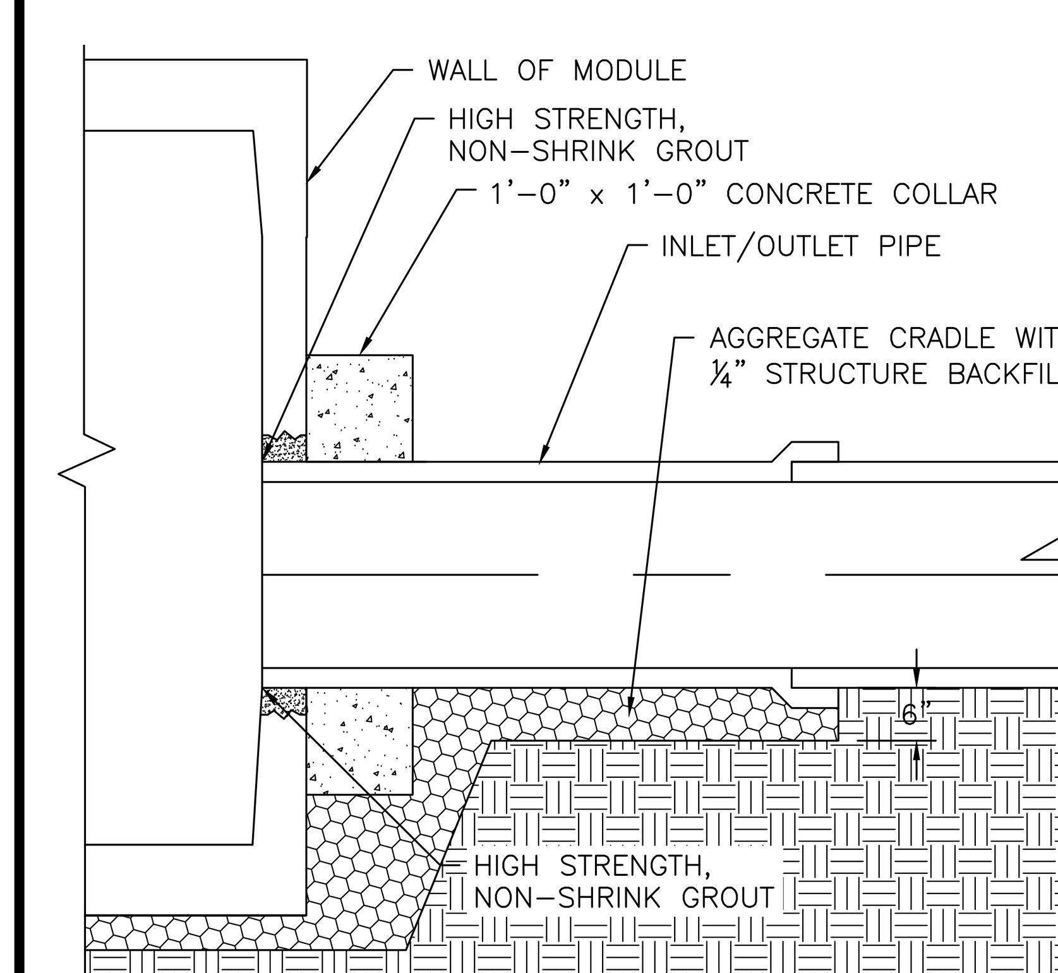
NOT TO SCALE



GLENCOE BLVD: TYPICAL CONCRETE SUBSURFACE STORAGE TANK SECTION

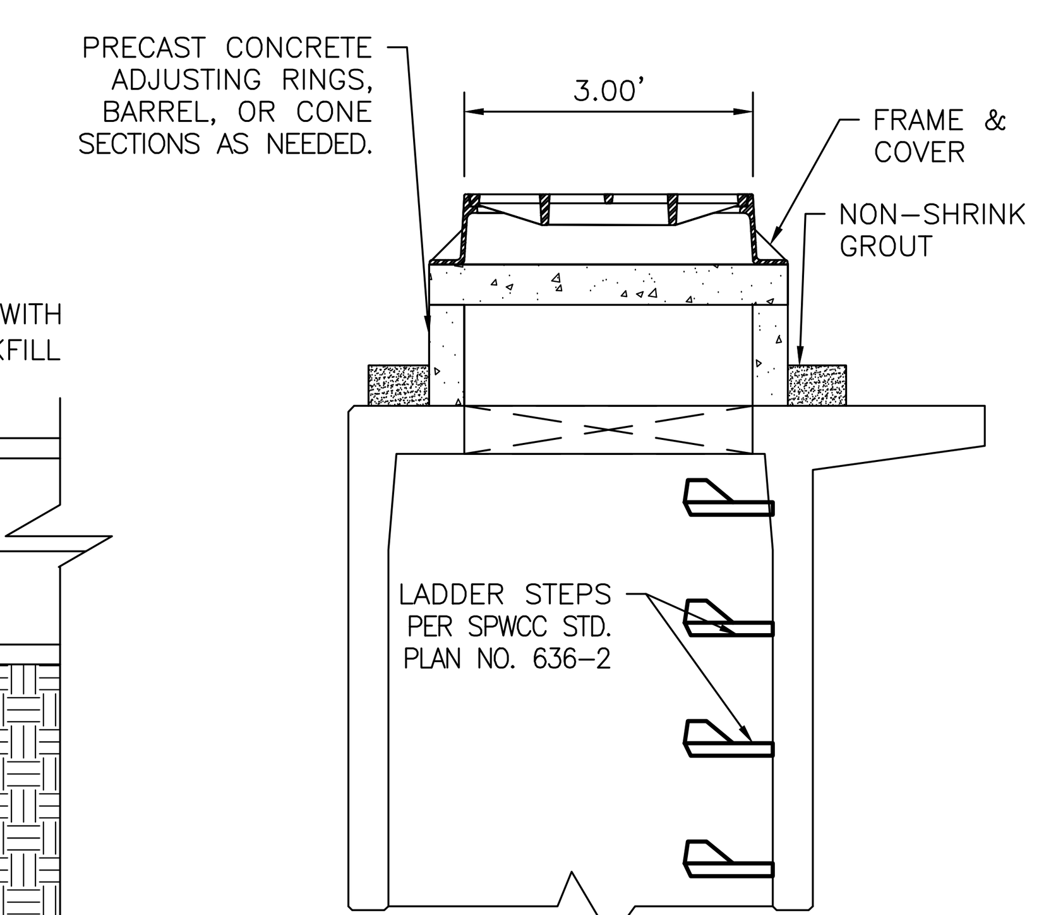
NOT TO SCALE





PIPE CONNECTION DETAIL

NOT TO SCALE



RISER / STAIR DETAIL

NOT TO SCALE

FOR REFERENCE ONLY

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WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

SUBSURFACE STORAGE TANK SECTION AND PIPE CONNECTION DETAIL

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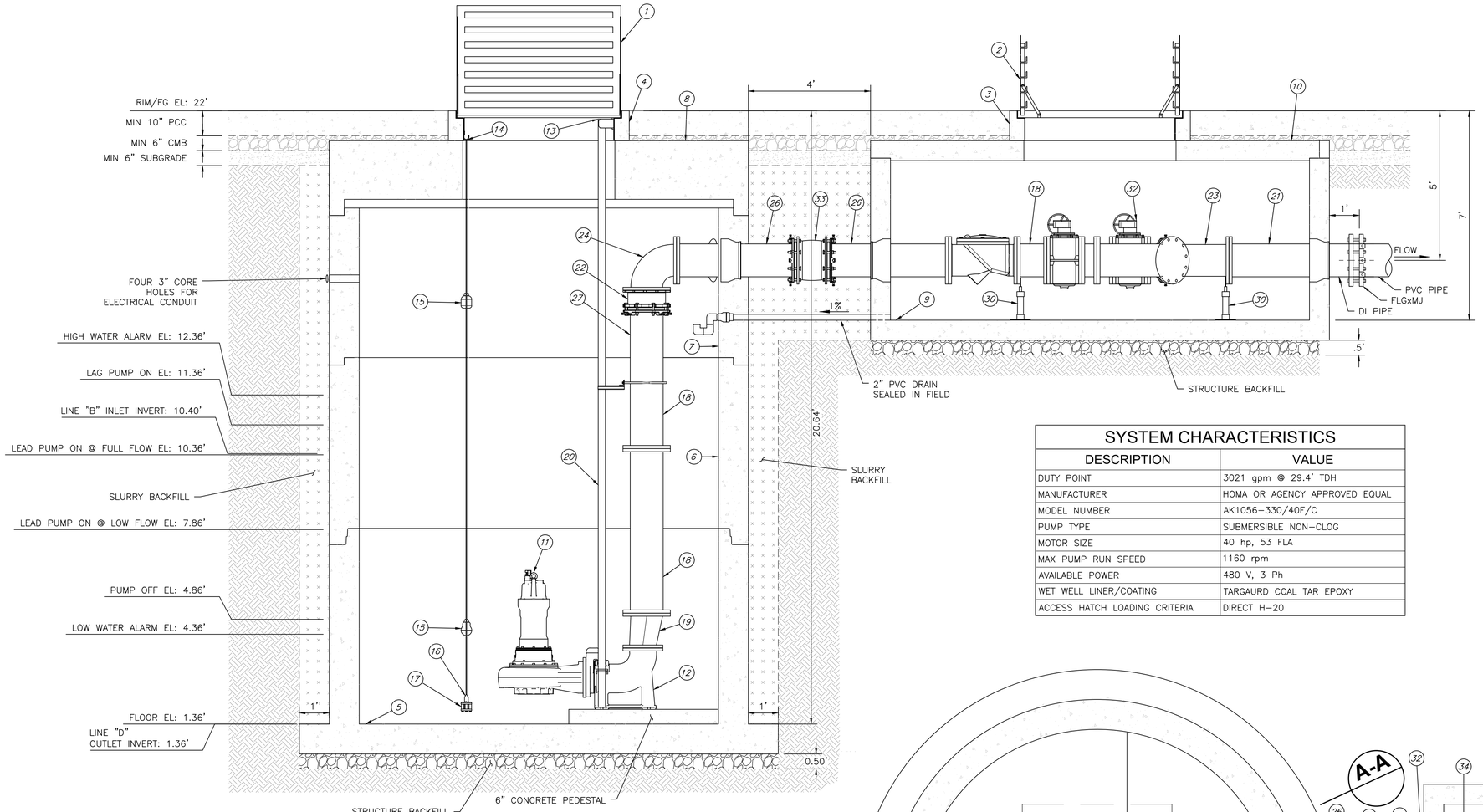
REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

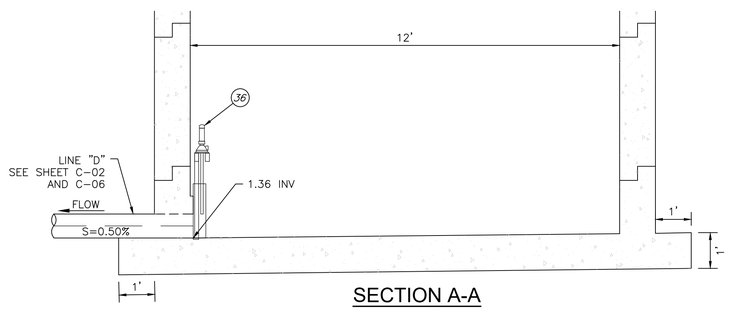
SHEET C - 10
Sheet 11 Of 49 Sheets

Drawing Name: Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - C10 - Subsurface Storage Tank Details.dwg
Last Opened: Oct 26, 2022 - 1:15pm by ttakigawa

Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - C10 - Subsurface Storage Tank Details PLOTTED: 5/17/2022



PROFILE SECTION VIEW
SCALE: 1"= 2'



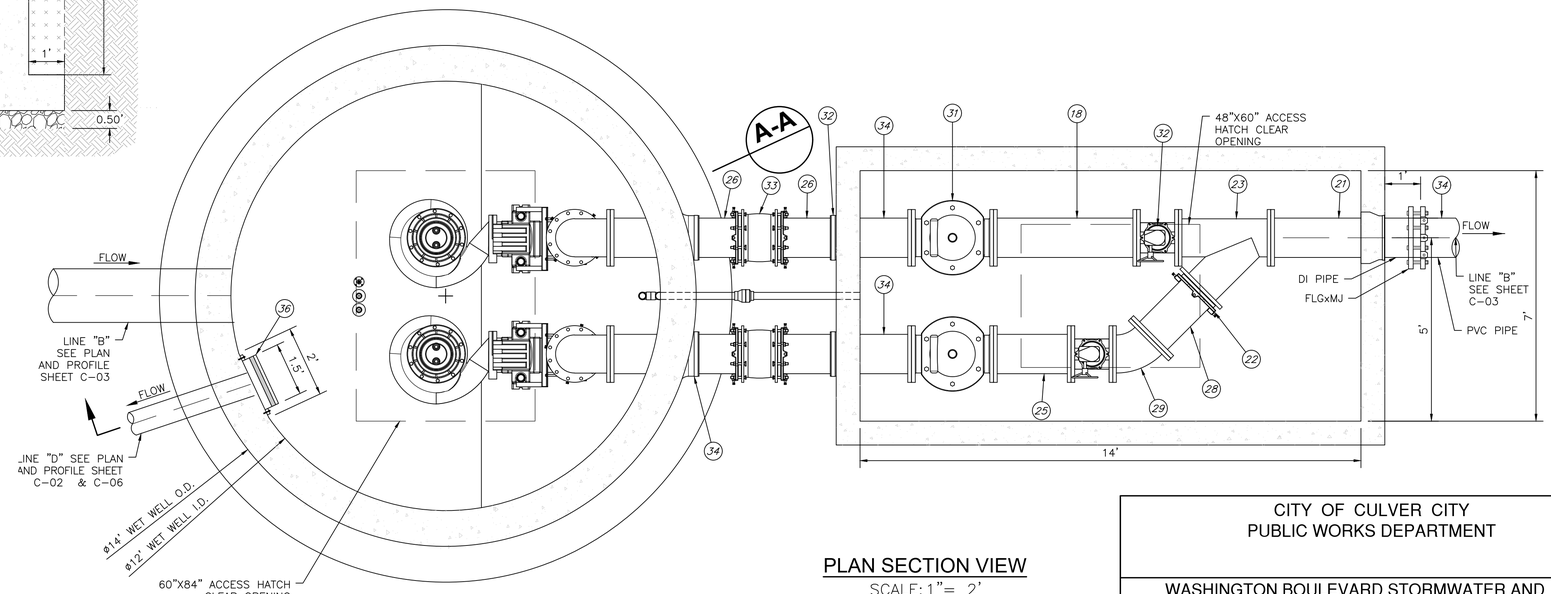
SECTION A-A
SCALE: 1"= 2'

SYSTEM CHARACTERISTICS

DESCRIPTION	VALUE
DUTY POINT	3021 gpm @ 29.4' TDH
MANUFACTURER	HOMA OR AGENCY APPROVED EQUAL
MODEL NUMBER	AK1056-330/40F/C
PUMP TYPE	SUBMERSIBLE NON-CLOG
MOTOR SIZE	40 hp, 53 FLA
MAX PUMP RUN SPEED	1160 rpm
AVAILABLE POWER	480 V, 3 Ph
WET WELL LINER/COATING	TARGAURD COAL TAR EPOXY
ACCESS HATCH LOADING CRITERIA	DIRECT H-20

PARTS LIST

ITEM	QTY	DESCRIPTION
1	1	DOUBLE DOOR HATCH WITH A CLEAR OPENING OF 84IN X 60IN
2	1	DOUBLE DOOR HATCH WITH A CLEAR OPENING OF 60IN X 48IN
3	1	PRECAST CONCRETE HATCH RISER 48IN X 60IN
4	1	PRECAST CONCRETE HATCH RISER 60IN X 84IN
5	1	144IN MANHOLE BASE
6	1	144IN MANHOLE BARREL
7	1	144IN MANHOLE BARREL
8	1	144IN MANHOLE FLAT TOP
9	1	VAULT BASE 84IN X 168IN X 65IN
10	1	PRECAST VAULT FLAT TOP 96IN X 120IN
11	2	SUBMERMSIBLE PUMP HOMA AK1056-330/40F/C
12	2	HOMA 10IN AUTOCOUPLING ASSY
13	2	304SS UPPER GUIDE RAIL BRACKET
14	1	FLOAT BRACKET 3 HOOK TYPE 304SS - DO NOT USE
15	2	FLOAT SWITCH 100FT COX OPTI-F1100
16	1	PRESSURE TRANSDUCER 15PSI 100FT CABLE PMC VL2113-IS-15PSI-100'
17	1	SINK WEIGHT SS PMC SW2000
18	5	PIPE 12IN FLG X FLG DUCTILE IRON SPOOL 4FT
19	2	ECCENTRIC REDUCER 12IN X 10IN DUCTILE IRON FLG
20	80 FT	PIPE 2-1/2IN SCH40 GUIDE RAIL 304SS
21	1	PIPE 12IN FLG X PE DUCTILE IRON SPOOL 5FT 6IN
22	3	RFCA 12IN W/ SS HARDWARE ROMAC
23	1	WYE 12IN DUCTILE IRON FLG
24	2	90 DEG ELBOW 12IN DUCTILE IRON FLG
25	1	PIPE 12IN FLG X FLG DUCTILE IRON SPOOL 2FT
26	4	PIPE 12IN FLG X PE DUCTILE IRON SPOOL 4FT
27	2	PIPE 12IN FLG X PE DUCTILE IRON SPOOL 2FT 6IN
28	1	PIPE 12IN FLG X PE DUCTILE IRON SPOOL 2FT
29	1	45 DEG ELBOW 12IN DUCTILE IRON FLG
30	3	FLG PIPE SUPPORT 12IN STANDON S8912
31	2	CHECK VALVE 12IN
32	2	ISOLATION VALVE 12IN FLG
33	2	MJ SLEEVE 12IN DUCTILE IRON
34	5	CONNECTOR BOOT S106-16WS CORE-SEAL ASTM C923/C1644 WEDGE SS HOLE-16 13.00-14.20
35	1	CUSTOM CONTROL PANEL
36	1	CAST IRON SLIDE GATE WATERMAN 8" x 8" OR AGENCY APPROVED



PLAN SECTION VIEW
SCALE: 1"= 2'

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PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
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2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

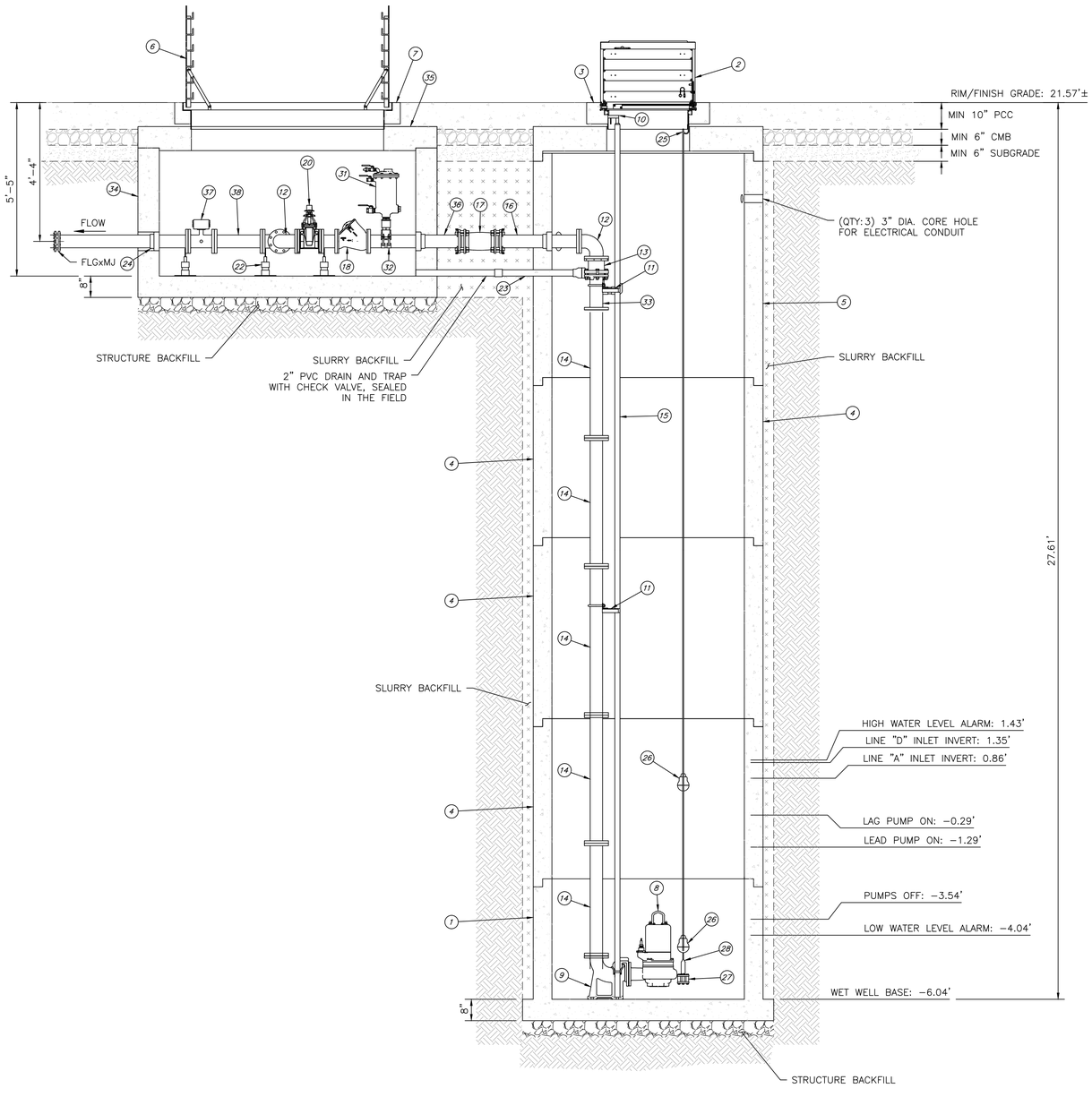
WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

HIGH FLOW DIVERSION PUMP

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET C - 11
Sheet 12 Of 49 Sheets

Drawing Name: Z:\17239\06 Tracks\01 Design\06 Storm Drain\17239 - C11-C13 - Pumps.dwg
Last Opened: Oct 26, 2022 - 1:15pm by ttakigawa

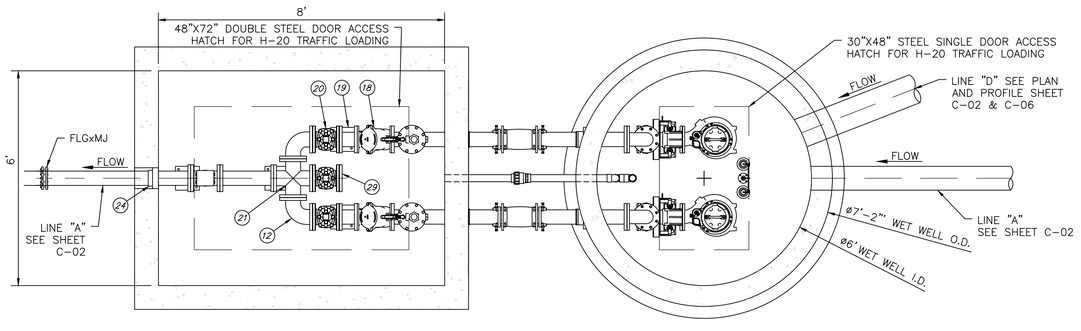


PROFILE SECTION VIEW

SCALE: 1"= 2'

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	72IN MANHOLE BASE
2	1	3048 JENSEN METALTECH HATCH AND CONCRETE RISER, FOR TRAFFIC LOADING
3	1	72IN MANHOLE FLAT TOP
4	4	72IN MANHOLE BARREL
5	1	72IN MANHOLE BARREL
6	1	DOUBLE DOOR HATCH WITH A CLEAR OPENING OF 72IN X 48IN, FOR TRAFFIC LOADING
7	1	PRECAST CONCRETE HATCH RISER 48IN X 72IN X 8IN
8	2	SUBMERSIBLE PUMP HOMA AMS434-200/7.5T/C
9	2	AUTOCOUPLING ASSY 4IN FLG STD HOMA 8604055
10	2	UPPER GUIDE RAIL BRACKET 4IN FLG CPLNG 304SS HOMA 8732306
11	4	INTERMEDIATE GUIDE RAIL BRACKET 4IN FLG CPLNG 304SS HOMA 8732106
12	4	90 DEG ELBOW 4IN DUCTILE IRON FLG
13	2	RFCA 4IN W/ SS HARDWARE ROMAC
14	10	PIPE 4IN FLG X FLG DUCTILE IRON SPOOL 4FT
15	120 FT	PIPE 1-1/2IN SCH40 GUIDE RAIL 304SS
16	2	PIPE 4IN FLG X PE DUCTILE IRON SPOOL 3FT
17	2	MJ SLEEVE 4IN WITH SS BOLT AND MJ GASKET
18	2	BALL CHECK VALVE 4IN FLG AVK 53-100-FFI
19	2	PIPE 4IN FLG X FLG DUCTILE IRON SPOOL 6IN
20	3	GATE VALVE 4IN FLG W/ NBR WEDGE AVK 65-100-FFN
21	1	CROSS 4IN DUCTILE IRON
22	4	FLG PIPE SUPPORT 4IN STANDON S8904
23	1	PVC VAULT DRAIN
24	5	CONNECTOR BOOT S106-7MWS-MULTI CORE-SEAL ASTM C923/C1644 SS MULTI HOLE-7 1.50-4.80
25	1	FLOAT BRACKET 3 HOOK TYPE 316SS
26	2	FLOAT SWITCH 100FT COX OPTI-F1100
27	1	SINK WEIGHT SS PMC SW2000
28	1	PRESSURE TRANSDUCER 15PSI 100FT CABLE PMC VL2113-IS-15PSI-100'
29	1	BLIND FLG 4IN CAST IRON
30	1	PIPE 4IN FLG X PE DUCTILE IRON SPOOL 4FT
31	2	COMBINATION AIR VALVE 2IN X 2IN W/ BACKWASH VAL-MATIC 802ABW
32	2	PIPE SADDLE 4IN DIP X 2IN THRD
33	2	PIPE 4IN FLG X PE DUCTILE IRON SPOOL 1FT 6IN
34	1	VAULT BASE 72IN X 96IN X 48IN
35	1	PRECAST VAULT FLAT TOP 72INX 96IN
36	2	PIPE 4IN FLG X PE DUCTILE IRON SPOOL 3.5FT
37	1	4" ELECTROMAGNETIC FLOW METER
38	1	PIPE 4IN FLG X FLG DUCTILE IRON SPOOL 1FT 6IN

SYSTEM CHARACTERISTICS	
DESCRIPTION	VALUE
DUTY POINT	280 gpm @ 45.1' TDH
MANUFACTURER	HOMA OR AGENCY APPROVED EQUAL
MODEL NUMBER	AMS434-200/7.5 T/C
PUMP TYPE	SUBMERSIBLE NON-CLOG PUMP
MOTOR SIZE	7.5 hp, 9.4 A
MAX PUMP RUN SPEED	1750
AVAILABLE POWER	480 V, 3 Ph
WET WELL LINER/COATING	TARGAURD COAL TAR EPOXY
ACCESS HATCH LOADING CRITERIA	DIRECT H-20



PLAN SECTION VIEW

SCALE: 1"= 2'

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CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

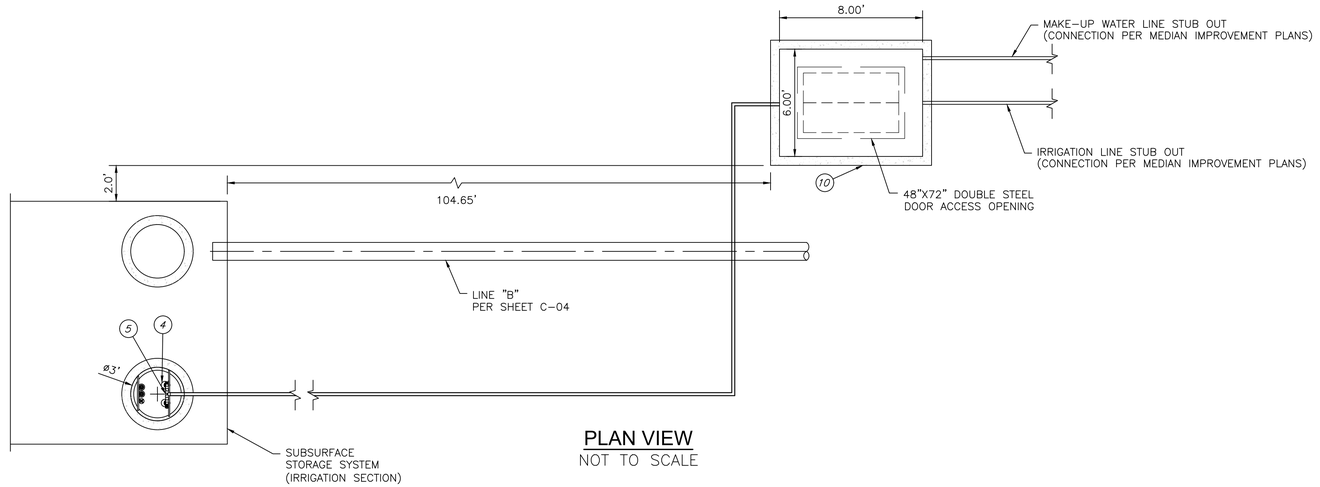
WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

LOW FLOW SEWER DISCHARGE PUMP

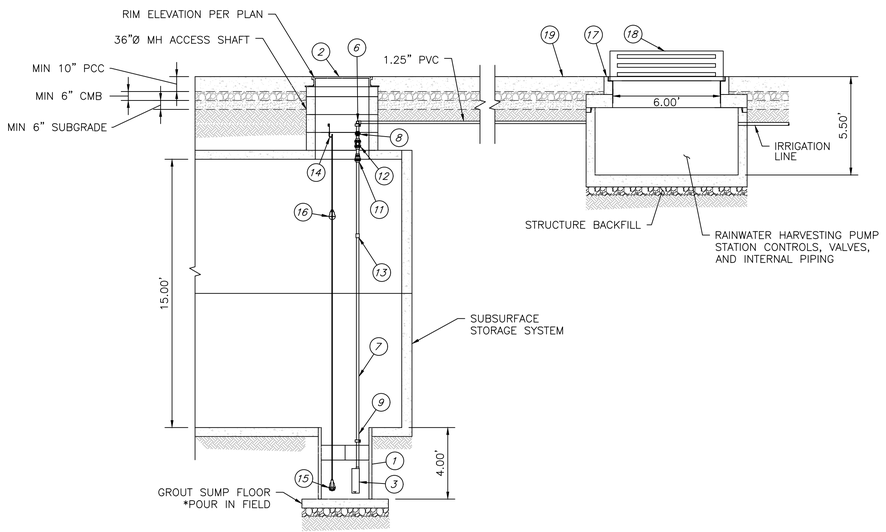
REVIEWED BY: JAVIER DE LA CRUZ, P.E.
4-10-23
SENIOR CIVIL ENGINEER — DATE

SHEET
C - 12
Sheet 13 Of 49 Sheets

Drawing Name: Z:\17239\06 Tracks\01 Design\90 Storm Drain\17239 - C11-C13 - Pumps.dwg
Last Opened: Oct 26, 2022 - 1:16pm by ttakigawa



PLAN VIEW
NOT TO SCALE



PROFILE
NOT TO SCALE

PARTS LIST

ITEM	QTY	DESCRIPTION
1	1	36" DIA. CONCRETE PUMP SUMP
2	1	36" DIA. CAST IRON FRAME AND COVER (H-20 LOADING RATED)
3	2	MUNRO 5" SUBMERSIBLE PUMP, MODEL# MXS205S22, 1.5 HP, 1-1/4" THREADED DISCHARGE, STAINLESS STEEL CONSTRUCTION, 15' STANDARD CABLE LENGTH
4	3	UNISTRUT NUT RAIL AND MOUNTING HARDWARE
5	1	1.25" DIA. PVC SCH80 TEE
6	2	1.25" DIA. PVC SCH80 ELBOW
7	2	1.25" DIA. SCH80 PVC PIPE *20'-0" STICK CUT TO LENGTH
8	2	1.25" DIA. PVC SCH80 UNION
9	4	1.25" DIA. PIPE WALL CLAMP
10	1	MECHANICAL ENCLOSURE, 5' x 4'. INCLUDES CONTROL PANEL, FLOW METER, SELF CLEANING FILTER, 3-WAY ACTUATED VALVE, DISCHARGE PRESSURE TRANSDUCER, CHECK AND BUTTERFLY VALVES, FITTINGS AND COUPLINGS.
11	2	1.25" PVC SCH80 CHECK VALVE
12	2	1.25" PVC SCH80 BALL VALVE
13	2	1.25" DIA. PVC SCH80 COUPLING
14	1	304SS 3-HOOK FLOAT BRACKET
15	1	APG PRESSURE TRANSDUCER W/ 100' CABLE LENGTH
16	2	OPTICAL FLOAT SWITCH BY OPTI-FLOAT W/ 100' CABLE LENGTH
17	1	CONCRETE RISER SECTION
18	1	48"X72" STEEL, DOUBLE DOOR ACCESS HATCH (H-20 LOADING RATED)
19	1	8'X6' CONCRETE VAULT FLAT TOP

SYSTEM CHARACTERISTICS

DESCRIPTION	VALUE
FLOW REQUIRED AT POC	9 GPM
PRESSURE REQUIRED AT POC	83 PSI
MANUFACTURER	MUNRO
MODEL NUMBER	MXS205T22
PUMP TYPE	MULTISTAGE SUBMERSIBLE PUMP
MOTOR SIZE	1.5 hp, 5.5 A
AVAILABLE POWER	220 V, 3 Ph
WET WELL LINER/COATING	TARGAURD COAL TAR EPOXY OR MATCH SUBSURFACE STORAGE SYSTEM
ACCESS HATCH LOADING CRITERIA	UP TO H-20

NOTE:

IRRIGATION SYSTEM SERVICED BY THE RAINWATER HARVESTING IS AS SHOWN ON THE MEDIAN IMPROVEMENT PLANS.

SCHEMATIC LAYOUT

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

RAINWATER HARVESTING SYSTEM

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REVIEWED BY: JAVIER DE LA CRUZ, P.E. 4-10-23
SENIOR CIVIL ENGINEER DATE

SHEET
C -13
Sheet 14 Of 49 Sheets

Drawing Name: Z:\17239\05 Tasks\01 Design\80 Storm Drain\17239 - C11-C13 - Pumps.dwg
Last Opened: Oct 26, 2022 - 1:16pm by ttakigawa

PUMP NOTES:

DEFINITIONS:

VALVE A: NORMALLY OPEN SOLENOID ACTIVATED CAST IRON SLIDE GATE LOCATED BETWEEN HIGH FLOW DIVERSION PUMP AND LOW FLOW SEWER PUMP IN THE HIGH FLOW DIVERSION PUMP WET WELL.

VALVE B: KNIFE GATE FLOW CONTROL VALVE LOCATED ON GRAVITY STORM DRAIN FROM SUBSURFACE STORAGE TANK TO LOW FLOW SEWER PUMP.

VALVE C: THREE (3) WAY VALVE LOCATED IN RAINWATER HARVESTING SYSTEM ON MAKE-UP LINE (POTABLE WATER AVAILABLE TO SERVICE IRRIGATION SYSTEM IF THE SUBSURFACE STORAGE TANK DOES NOT HAVE ADEQUATE SUPPLY).

LOW FLOW PUMP: LOW FLOW SEWER PUMP DETAILED ON SHEET C-12 IS USED TO DISCHARGE RUNOFF TO THE SANITARY SEWER.

HIGH FLOW PUMP: HIGH FLOW DIVERSION PUMP DETAILED ON SHEET C-11 IS USED TO DIVERT STORMWATER DURING A STORM EVENT TO THE SUBSURFACE STORAGE TANK.

IRRIGATION PUMP: IRRIGATION PUMP DETAILED ON SHEET C-13 IS USED TO PUMP STORMWATER STORED IN THE SUBSURFACE STORAGE TANK SYSTEM TO THE DRIP IRRIGATION SYSTEM SHOWN ON MEDIAN IMPROVEMENT PLANS.

GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
2. SUPERVISION FOR INSTALLATION, START-UP, AND TESTING TO BE PROVIDED BY MANUFACTURER'S REPRESENTATIVE.
3. ALL ELECTRICAL WIRING AND EQUIPMENT INSTALLED IN THE "WET WELL" SECTION MUST BE RATED FOR SUBMERGED CONDITIONS.
4. ALL CONDUITS SHALL BE AS NOTED ON PLANS, OR AGENCY APPROVED EQUAL.
5. ALL ELECTRICAL WIRE SHALL BE "RHW" OR "THW" COPPER CONDUCTOR, OR AGENCY APPROVED EQUAL.
6. THE FLOOR OF THE WET WELL SHALL BE SMOOTH AND LEVEL.
7. ALL NUTS, BOLTS, AND WASHERS SHALL BE 304 S.S./316 S.S. NO EXCEPTIONS.
8. PUMP STATION PERFORMANCE AT CONNECTION LIMITS SHALL BE AS NOTED IN THE PLANS. THE CAPACITY, DISCHARGE PRESSURE, AND DISCHARGE PIPE DIMENSIONS SHALL BE PER PLANS. THE POWER SUPPLY TO THE STATION SHALL BE AS SHOWN ON THE ELECTRICAL DRAWINGS.
9. PUMP STATIONS SHALL BE COMPLETELY WIRED, DYNAMICALLY FLOW AND PRESSURE TESTED PRIOR TO SHIPMENT.

VALVE A OPERATION:

1. VALVE A SHALL REMAIN OPEN NORMALLY SUCH THAT LOW FLOWS ARE CONVEYED THROUGH THE HIGH FLOW PUMP WET WELL TO THE LOW FLOW PUMP WET WELL AND PUMPED TO THE SANITARY SEWER.
2. VALVE A SHALL CLOSE ONCE 0.1 INCHES OF RAIN IS MEASURED AT THE ON-SITE RAIN GAGE SO THAT STORM FLOWS ARE PUMPED TO THE SUBSURFACE STORAGE TANK BY THE HIGH FLOW PUMP. THE VALVE SHALL REMAIN CLOSED UNTIL 72 HOURS AFTER THE LAST MEASURED RAIN.
3. VALVE A SHALL REMAIN CLOSED IF THE HIGH FLOW PUMP IS OPERATING.

VALVE B OPERATION:

1. VALVE B OPERATION IS CONSISTENT WITH VALVE A. VALVE A AND B SHALL BE OPENED/CLOSED AT THE SAME TIME. OPEN SHALL INCLUDE BOTH PARTIALLY OR FULLY OPEN.
2. VALVE B SHALL REMAIN OPEN NORMALLY SUCH THAT STORMWATER STORED IN THE SUBSURFACE STORAGE TANK IS CONVEYED TO THE LOW FLOW PUMP WET WELL AND PUMPED TO THE SANITARY SEWER.
3. VALVE B SHALL BE REGULATED BASED ON MEASUREMENTS MADE AT THE UPSTREAM FLOW METER, SUCH THAT DISCHARGE TO THE SEWER DIVERSION PUMP, AND ULTIMATELY TO THE SEWER SYSTEM, DO NOT EXCEED THE ALLOWABLE DISCHARGE RATES, AS DESCRIBED IN NOTE 5 UNDER THE LOW FLOW PUMP SEQUENCE OF OPERATION.
4. VALVE B SHALL CLOSE ONCE 0.1 INCHES OF RAIN IS MEASURED AT THE ON-SITE RAIN GAGE SO THAT STORM FLOWS ARE RETAINED IN THE SUBSURFACE STORAGE TANK. THE VALVE SHALL REMAIN CLOSED UNTIL 72 HOURS AFTER THE LAST MEASURED RAIN.
5. VALVE B SHALL REMAIN CLOSED IF THE HIGH FLOW PUMP IS OPERATING.

VALVE C OPERATION:

1. VALVE C CONTROLS ARE PART OF THE RAINWATER HARVESTING SYSTEM AND ARE FOR REFERENCE ONLY.
2. VALVE C SHALL REMAIN CLOSED NORMALLY, AS IT WILL ONLY OPEN WHEN THERE IS NOT ADEQUATE STORAGE WITHIN THE SUBSURFACE STORAGE TANK TO SUPPLY THE IRRIGATION DEMAND.
3. VALVE C SHALL OPEN IF THE LEVEL IN THE IRRIGATION PUMP WET WELL IS LESS THAN 1.45' (STORAGE SYSTEM INVERT) AND THERE IS AN IRRIGATION DEMAND. THE VALVE SHALL CLOSE ONCE THE IRRIGATION DEMAND IS SATISFIED.

LOW FLOW PUMP SEQUENCE OF OPERATION:

1. WATER WILL BE DRAWN OUT OF THE WET WELL AS LONG AS THE USER ADJUSTABLE LEVEL SET POINTS IDENTIFIED ON SHEET C-12 ARE SATISFIED AND THE ON-SITE RAIN GAGE HAS NOT MEASURED GREATER THAN 0.1 INCHES OF RAIN IN THE PRIOR 72 HOURS.
2. VALVES A AND B SHALL BE OPEN WHILE THE LOW FLOW PUMP IS OPERATING.
3. LEAD PUMP SELECTION WILL ALTERNATE. THE RUNTIME, FLOW RATE, AND GALLONS PUMPED SHALL BE RECORDED USING A COUNTING SYSTEM. THE COUNTER MUST RECORD AND SAVE PERIODIC READINGS FOR DOWNLOAD. BOTH PUMPS SHALL NOT OPERATE SIMULTANEOUSLY.
4. LOW FLOW AND HIGH FLOW PUMP SHALL NEVER OPERATE SIMULTANEOUSLY.
5. THE DISCHARGE RATE OF THE LOW FLOW PUMP SHALL BE DETERMINED BASED ON READINGS AT THE PROPOSED FLOW METER SHOWN ON SHEET C-02 WITH CONSTRUCTION NOTE 32 (ON THE EXISTING 12-INCH SEWER). FLOW IN THE EXISTING 12-INCH SEWER SHALL NOT EXCEED 75% FULL AS A RESULT OF CONTRIBUTIONS FROM THE PROJECT. THE PUMP DISCHARGE RATE SHALL BE DETERMINED SUCH THAT THE FLOW IN THE 12-INCH SEWER DOES NOT EXCEED 600 GPM. IF FLOWS WITHIN THE SEWER ARE EQUAL TO OR GREATER THAN 600 GPM, THEN THE LOW FLOW SEWER DISCHARGE PUMP SHALL NOT OPERATE UNTIL FLOWS DECREASE TO A RATE THAT WOULD ALLOW GREATER DISCHARGES FROM THE PROJECT.
6. PUMP ALARMS AND SHUTOFFS ARE FURTHER DETAILED ON SHEET C-12 AND IN THE PROJECT SPECIFICATIONS.

HIGH FLOW PUMP SEQUENCE OF OPERATION:

1. WATER WILL BE DRAWN OUT OF THE WET WELL AS LONG AS THE USER ADJUSTABLE LEVEL SET POINTS IDENTIFIED ON SHEET C-11 ARE SATISFIED.
2. VALVES A AND B SHALL BE CLOSED WHILE THE HIGH FLOW PUMP IS OPERATING.
3. LEAD PUMP SELECTION WILL ALTERNATE. THE RUNTIME, FLOW RATE, AND GALLONS PUMPED SHALL BE RECORDED USING A COUNTING SYSTEM. THE COUNTER MUST RECORD AND SAVE PERIODIC READINGS FOR DOWNLOAD. BOTH PUMPS SHALL NOT OPERATE SIMULTANEOUSLY.
4. LOW FLOW AND HIGH FLOW PUMP SHALL NEVER OPERATE SIMULTANEOUSLY.
5. HIGH FLOW PUMP SHALL SHUT OFF IF THE WATER LEVEL IN THE SUBSURFACE STORAGE TANK REACHES THE STORAGE SYSTEM SOFFIT.
6. PUMP ALARMS AND SHUTOFFS ARE FURTHER DETAILED ON SHEET C-11 AND IN THE PROJECT SPECIFICATIONS.

IRRIGATION PUMP SEQUENCE OF OPERATION:

1. IRRIGATION PUMP CONTROLS ARE PART OF THE RAINWATER HARVESTING SYSTEM AND ARE FOR REFERENCE ONLY.
2. WATER WILL BE DRAWN OUT OF THE WET WELL AS LONG AS THE USER ADJUSTABLE LEVEL SET POINT AT LOWEST OPERATION LEVEL (STORAGE SYSTEM INVERT = 1.45') IS SATISFIED AND AN IRRIGATION DEMAND EXISTS.
3. IF THERE IS AN IRRIGATION DEMAND AND THE WET WELL LEVEL IS BELOW THE PUMPS ON LEVEL (STORAGE SYSTEM INVERT = 1.45'), THEN VALVE C WILL OPEN, ALLOWING POTABLE WATER SUPPLY TO SATISFY THE DEMAND ASSOCIATED WITH THE FULL IRRIGATION CYCLE. VALVE C WILL CLOSE FOLLOWING THE END OF THE IRRIGATION CYCLE.
4. IF THERE IS IRRIGATION DEMAND AND THE WET WELL LEVEL IS ABOVE THE PUMPS ON LEVEL (1.45'), THEN THE PUMP WILL SUPPLY THE DEMAND IN ACCORDANCE WITH THESE NOTES. IF THE LOW LEVEL (1.45') IS REACHED DURING THE IRRIGATION CYCLE, THEN VALVE C WILL OPEN, ALLOWING THE POTABLE WATER SUPPLY TO SATISFY THE REMAINING DEMAND. VALVE C WILL CLOSE FOLLOWING THE END OF THE IRRIGATION CYCLE.
5. LEAD PUMP SELECTION WILL ALTERNATE. THE RUNTIME, FLOW RATE, AND GALLONS PUMPED SHALL BE RECORDED USING A COUNTING SYSTEM. THE COUNTER MUST RECORD AND SAVE PERIODIC READINGS FOR DOWNLOAD. BOTH PUMPS SHALL NOT OPERATE SIMULTANEOUSLY.

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PREPARED BY
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SUITE 240
FULLERTON, CA 92831
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REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. HARPER — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

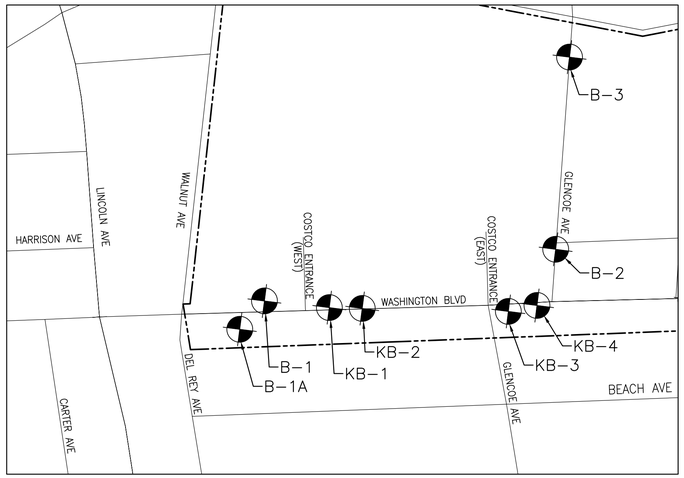
PUMP NOTES

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET C - 14
Sheet 15 Of 49 Sheets

Drawing Name: Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - C14 - Pump Notes.dwg
Last Opened: Oct 26, 2022 - 1:16pm by ttakigawa

Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - C14 - Pump Notes PLOTTED: 5/17/2022



BORING INDEX MAP

SCALE: 1"=200'

LOG OF EXPLORATORY BORING — KB-1

Sheet 1 of 1

Project: Culver City
Project Number: 15083-00
Date Drilled: 2/24/16
Logged By: T.D.
Boring No.: KB-1
Driller: J&H Drilling
Drill Type: HS
Hammer Wt. / Drop: 140lb / 30in
Ground Elev. [ft]: 23.0

Standard Split Spoon; Shelby Tube; Water Level ATD; California; Bulk Sample; Static Water Table

Elevation [ft]	Depth [ft]	Graphic Log	Sample Type	Blows/6"	Moisture Content [%]	Dry Density, [pcf]	Pocket Pen. [tsf]	Lab Tests	Remarks	Well
									SOIL DESCRIPTION and CLASSIFICATION (USCS)	
									@ 0.0 feet - 10 in. Concrete Asphalt	8 in. boring, 2 in. solid pipe with gravel.
									@ 0.84 feet - Silty SAND (SM) with trace of clay: brown, fine grained, damp.	
									@ 1.0 feet - SAME	
20	5			11 14 17	17	112		AL GS	**@ 5.0 feet - Silty SAND (SM) with clay**:dark brown, fine grained, slightly micaceous, damp, medium dense.	
15	10			13 16 28	23	92			**@ 10.0 feet - Silty SAND (SM):** light gray to brown, iron oxide staining, fine to medium grained, dry to damp, medium dense.	
10	15			28 50	6	108			**@ 15.0 feet - Poorly-Graded Sandy Gravel (GPS)**: grayish to light brown, medium to coarse grained, gravels up to 1/2", moist to wet, very dense.	8 in. boring, 2 in. slotted pipe with gravel.
5	20			30 50/6"	9	135			**@ 20.0 feet - Poorly-Graded Sand (SP)**:assorted light colors, coarse grained, random gravel up to 1/2", wet, very dense.	
0	25			25 50					**@ 25.0 feet - Poorly-Graded Sand (SP)**:assorted light colors, coarse grained, random gravel up to 1/2", wet, very dense. Rock at tip.	
									Total depth: 26.5 feet. Groundwater encounter during drilling at 18.0 feet. No caving. Installed slotted pipe backfilled with gravel on 02/24/16. Observation monitoring well began 02/24/16.	

LOG OF EXPLORATORY BORING — KB-2

Sheet 1 of 1

Project: Culver City
Project Number: 15083-00
Date Drilled: 2/24/16
Logged By: T.D.
Boring No.: KB-2
Driller: J&H Drilling
Drill Type: HS
Hammer Wt. / Drop: 140lb / 30in
Ground Elev. [ft]: 23.0

Standard Split Spoon; Shelby Tube; Water Level ATD; California; Bulk Sample; Static Water Table

Elevation [ft]	Depth [ft]	Graphic Log	Sample Type	Blows/6"	Moisture Content [%]	Dry Density, [pcf]	Pocket Pen. [tsf]	Lab Tests	Remarks
									SOIL DESCRIPTION and CLASSIFICATION (USCS)
									@ 0.0 feet - 9 in. Concrete Asphalt
20	5								**@ 0.75 feet - Silty SAND (SM) with trace of clay:**brown, fine grained, damp. **@ 1.0 feet - SAME** **@ 2.0 feet - Silty Sandy Clay (CL):**dark brown, fine grained, damp. **@ 5.0 feet - Silty SAND (SM):** brown, fine grained, damp.
									Total depth: 7.0 feet No groundwater. No caving. Installed slotted pipe and gravel well. Presaturated for 24 hours. Infiltration testing was performed 02/25/16. Well removed,backfilled with gravel, and capped with concrete 02/25/16.

8 in. boring, 2 in. slotted pipe with gravel.

LOG OF EXPLORATORY BORING — KB-3

Sheet 1 of 1

Project: Culver City
Project Number: 15083-00
Date Drilled: 2/24/16
Logged By: T.D.
Boring No.: KB-3
Driller: J&H Drilling
Drill Type: HS
Hammer Wt. / Drop: 140lb / 30in
Ground Elev. [ft]: 26.0

Standard Split Spoon; Shelby Tube; Water Level ATD; California; Bulk Sample; Static Water Table

Elevation [ft]	Depth [ft]	Graphic Log	Sample Type	Blows/6"	Moisture Content [%]	Dry Density, [pcf]	Pocket Pen. [tsf]	Lab Tests	Remarks
									SOIL DESCRIPTION and CLASSIFICATION (USCS)
									@ 0.0 feet - 8.5 in. Concrete Asphalt
25	5			9 14 18	12	115		DS AL GS	**@ 0.75 feet - Silty SAND (SM) with trace of clay**:brown, fine grained, damp. **@ 1.0 feet - SAME** **@ 5.0 feet - Silty SAND (SM) with trace of clay**:brown, fine to medium grained, damp, medium dense.
20	10			11 16 21	25	99			**@ 10.0 feet - Silty SAND (SM) :** light brown, fine grained, iron oxide staining, damp, medium dense.
15	15			16 19 23					**@ 15.0 feet - Poorly Graded SAND (SP) :**light brown with assorted light colors, coarse grained, trace gravel up to 1/2", damp, medium dense to dense. SAMPLE NOT RECOVERED.
10	20			21 26 33	34	92			**@ 20.0 feet - Poorly Graded Gravelly SAND (SPG):** grayish to brown, coarse grained, gravels up to 1/2", moist, very dense.
5	25			18 28 29					**@ 25.0 feet - Poorly Graded Sand (SP)**:assorted light and dark colors, coarse grained, wet, dense.
0									Total depth: 26.5 feet. Groundwater encounter during drilling at 21.0 feet. No caving. Backfilled with gravel and capped with concrete 02/24/16.

LOG OF EXPLORATORY BORING — KB-4

Sheet 1 of 1

Project: Culver City
Project Number: 15083-00
Date Drilled: 2/24/16
Logged By: T.D.
Boring No.: KB-4
Driller: J&H Drilling
Drill Type: HS
Hammer Wt. / Drop: 140lb / 30in
Ground Elev. [ft]: 26.0

Standard Split Spoon; Shelby Tube; Water Level ATD; California; Bulk Sample; Static Water Table

Elevation [ft]	Depth [ft]	Graphic Log	Sample Type	Blows/6"	Moisture Content [%]	Dry Density, [pcf]	Pocket Pen. [tsf]	Lab Tests	Remarks
									SOIL DESCRIPTION and CLASSIFICATION (USCS)
									@ 0.0 feet - 9 in. Concrete Asphalt
25	5							AL EI MAX GS RV CO SU	**@ 0.71 feet - Silty SAND (SM) with clay:**brown, fine grained, dry to damp. **@ 5.0 feet - Silty SAND (SM) with clay:**brown, fine grained, dry to damp.
20	10								Total depth: 10.0 feet No groundwater. No caving. Installed slotted pipe and gravel well. Presaturated for 24 hours. Infiltration testing was performed 02/25/16. Well removed, backfilled with gravel, and capped with concrete 02/25/16.

8 in. boring, 2 in. slotted pipe with gravel.

DIG ALERT — DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — TOLL FREE 1-800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

PREPARED BY
CWE
1561 E. ORANGETHORPE AVE.
SUITE 240
FULLERTON, CA 92831
TEL (714) 526-7500
www.cwecorp.com

REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. FARRELL — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

BORING LOGS

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET C -15
Sheet 16 Of 49 Sheets

Drawing Name: Z:\17230\05 Tasks\101 Design\05 Storm Drain\17239 - C15- 016 - Boring Logs.dwg
Last Opened: Oct 26, 2022 - 11:17pm by tlakipawa

BORING LOG NO. B-1A

Page 1 of 2

PROJECT: Washington Boulevard Runoff Diversion Project
CLIENT: City of Culver City CA, Culver City, CA
SITE: Washington Blvd and Glencoe Avenue, Culver City, CA

LOCATION See Exploration Plan
Latitude: 33.991° Longitude: -118.4466°

DEPTH	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psi)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
0.6					**CONCRETE**, 7.5" thickness							
					LEAN CLAY WITH SAND (CL), trace gravel & cobbles, reddish brown						31-17-14	
					brown, no gravel or cobbles							
		5			trace gravel, hard				22	100	46-27-19	85
					13-22-28							
10.0		10			**POORLY GRADED SAND WITH SILT (SP-SM)**, trace gravel, dark tan, dense							8
					22-33-50/6"							
15.0		15			**POORLY GRADED SAND (SP)**, trace gravel & silt, dark tan, medium dense				14	112		4
					25-15-12							
20.0		20			**CLAYEY SAND (SC)**, brown to tan, medium dense							36
					25-34-22							
25.0		25			**POORLY GRADED SAND WITH SILT (SP-SM)**, trace gravel, dark tan, very dense				13	118		
					5-40-50/4"							

Stratification lines are approximate. In-situ, the transition may be gradual. Hammer Type: Automatic

Advancement Method: Hollow Stem Auger
Abandonment Method: Boring backfilled with Auger Cuttings, Surface capped with concrete
WATER LEVEL OBSERVATIONS: *While drilling*; *At completion of drilling*

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (if any).
See Supporting Information for explanation of symbols and abbreviations.

Notes:

Terracon, 1421 Edinger Ave, Ste C, Tustin, CA

Boring Started: 11-01-2019 | Boring Completed: 11-01-2019
Drill Rig: CME 45 | Driller: 2R Drilling
Project No.: 60195203

BORING LOG NO. B-1A

Page 2 of 2

PROJECT: Washington Boulevard Runoff Diversion Project
CLIENT: City of Culver City CA, Culver City, CA
SITE: Washington Blvd and Glencoe Avenue, Culver City, CA

LOCATION See Exploration Plan
Latitude: 33.991° Longitude: -118.4466°

DEPTH	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psi)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
					POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, dark tan, very dense *(continued)*							
		30			35-30-35				13	114	NP	10
					brown, dense							
35.0		35			**LEAN CLAY WITH SAND (CL)**, dark tan, hard							74
					12-17-26							
40.0		40			**SILTY SAND (SM)**, gray, medium dense				28	97		36
41.5					7-13-23							
					Boring Terminated at 41.5 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual. Hammer Type: Automatic

Advancement Method: Hollow Stem Auger
Abandonment Method: Boring backfilled with Auger Cuttings, Surface capped with concrete
WATER LEVEL OBSERVATIONS: *While drilling*; *At completion of drilling*

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (if any).
See Supporting Information for explanation of symbols and abbreviations.

Notes:

Terracon, 1421 Edinger Ave, Ste C, Tustin, CA

Boring Started: 11-01-2019 | Boring Completed: 11-01-2019
Drill Rig: CME 45 | Driller: 2R Drilling
Project No.: 60195203

BORING LOG NO. B-1

Page 1 of 1

PROJECT: Washington Boulevard Runoff Diversion Project
CLIENT: City of Culver City CA, Culver City, CA
SITE: Washington Blvd and Glencoe Avenue, Culver City, CA

LOCATION See Exploration Plan
Latitude: 33.9912° Longitude: -118.4466°

DEPTH	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psi)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
0.6					**CONCRETE**, 9" thickness							
					LEAN CLAY WITH SAND (CL)						29-15-14	
		5			very stiff				20	105		
					7-15-23							
8.0					***Auger Refusal at 8 Feet***							

Stratification lines are approximate. In-situ, the transition may be gradual. Hammer Type: Automatic

Advancement Method: Hollow Stem Auger
Abandonment Method: Boring backfilled with Auger Cuttings, Surface capped with concrete
WATER LEVEL OBSERVATIONS: *Not encountered*

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (if any).
See Supporting Information for explanation of symbols and abbreviations.

Notes:

Terracon, 1421 Edinger Ave, Ste C, Tustin, CA

Boring Started: 10-24-2019 | Boring Completed: 10-24-2019
Drill Rig: CME 45 | Driller: 2R Drilling
Project No.: 60195203

BORING LOG NO. B-2

Page 1 of 1

PROJECT: Washington Boulevard Runoff Diversion Project
CLIENT: City of Culver City CA, Culver City, CA
SITE: Washington Blvd and Glencoe Avenue, Culver City, CA

LOCATION See Exploration Plan
Latitude: 33.9927° Longitude: -118.4445°

DEPTH	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psi)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
0.7					**ASPHALT**, 8" thickness							
1.3					**AGGREGATE BASE COURSE**, 7" thickness							
					SANDY LEAN CLAY (CL), brown						29-15-14	
		5			hard							65
					18-26-31							
		10			very stiff				33	86		
					11-14-25							
15.0		15			**POORLY GRADED SAND WITH GRAVEL (SP)**, trace silt, grey and orange, very dense				10	98		
					33-50/4"							
		20			reddish tan, moist, dense							5
					19-22-19							
26.0		25			very dense, no recovery							
					15-50/6"							
					Boring Terminated at 26 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual. Hammer Type: Automatic

Advancement Method: Hollow Stem Auger
Abandonment Method: Boring backfilled with Auger Cuttings, Surface capped with asphalt
WATER LEVEL OBSERVATIONS: *Not encountered*

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (if any).
See Supporting Information for explanation of symbols and abbreviations.

Notes:

Terracon, 1421 Edinger Ave, Ste C, Tustin, CA

Boring Started: 10-24-2019 | Boring Completed: 10-24-2019
Drill Rig: CME 45 | Driller: 2R Drilling
Project No.: 60195203

BORING LOG NO. B-3

Page 1 of 1

PROJECT: Washington Boulevard Runoff Diversion Project
CLIENT: City of Culver City CA, Culver City, CA
SITE: Washington Blvd and Glencoe Avenue, Culver City, CA

LOCATION See Exploration Plan
Latitude: 33.9939° Longitude: -118.4451°

DEPTH	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psi)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
0.6					**ASPHALT**, 7" thickness							
1.1					**AGGREGATE BASE COURSE**, 6.5" thickness							
					SANDY LEAN CLAY (CL), brown							
		5			hard							69
					18-30-40							
10.0		10			**SANDY SILTY CLAY (CL-ML)**, brown, very stiff				10	107	25-19-6	50
					18-23-23							
15.0		15			**SILTY SAND (SM)**, dense							43
					18-30-40							
20.0		20			**POORLY GRADED SAND WITH SILT (SP-SM)**, trace gravel, very dense				4	117		
					43-50/5"							
26.5		25			9-38-50/6"							11
					Boring Terminated at 26.5 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual. Hammer Type: Automatic

Advancement Method: Hollow Stem Auger
Abandonment Method: Boring backfilled with Auger Cuttings, Surface capped with asphalt
WATER LEVEL OBSERVATIONS: *While drilling*

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (if any).
See Supporting Information for explanation of symbols and abbreviations.

Notes:

Terracon, 1421 Edinger Ave, Ste C, Tustin, CA

Boring Started: 10-24-2019 | Boring Completed: 10-24-2019
Drill Rig: CME 45 | Driller: 2R Drilling
Project No.: 60195203

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1561 E. ORANGETHORPE AVE.
SUITE 240
FULLERTON, CA 92831
TEL (714) 526-7500
www.cwecorp.com

REGISTERED PROFESSIONAL ENGINEER — ANTHONY L. TARPINIAN — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

BORING LOGS

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
4-10-23
SENIOR CIVIL ENGINEER — DATE

SHEET C - 16
Sheet 17 Of 49 Sheets

Drawing Name: Z:\172\91.06 Task\01 Design\80 Storm Drain\172391 - C15 - 016 - Boring Logs.dwg
Last Opened: Oct 26, 2022 - 11:17pm by tlokgawa

GENERAL NOTES

1. GENERAL:

THE PROVISIONS OF THE GENERAL CONDITIONS ARE PART OF THIS SECTION AS THOUGH FULLY SET FORTH HEREIN. BEFORE SUBMITTING THE BID, THE BIDDER SHALL VISIT THE SITE AND DETERMINE ANY EXISTING CONDITIONS WHICH MAY AFFECT THE COST OF WORK UNDER THIS SECTION; AND SHALL INCLUDE IN THE BID ALLOWANCE FOR SUCH COST.

THE ELECTRICAL GENERAL NOTES ARE PROVIDED ONLY TO EMPHASIZE PORTIONS OF WORK OR INFORMATION REQUIRED FOR THE SCOPE OF WORK. CONTRACTOR TO REFER TO ALL OTHER INFORMATION INCLUDED IN THE COMPLETE DRAWINGS PACKAGE FOR ALL DISCIPLINES IN THE PROJECT, PROJECT MANUALS AND SPECIFICATIONS AS WELL AS ALL OTHER DOCUMENTS AND INFORMATION PROVIDED OR REFERENCED IN CONTRACT DOCUMENTS.

2. WORK INCLUDED:

PROVIDE MATERIALS AND PERFORM LABOR REQUIRED TO EXECUTE THIS WORK AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS NECESSARY TO COMPLETE THE CONTRACT, INCLUDING, BUT NOT LIMITED TO, THESE MAJOR ITEMS:

A. PROVIDE NEW ELECTRICAL SERVICE TO SERVE THE NEW LOADS. COORDINATE WITH ALL UTILITY (SCE) FOR ALL REQUIREMENT, INCLUDING BUT NOT LIMITED TO SCE STANDARDS SUCH AS THE ELECTRICAL SERVICE REQUIREMENTS (ESR) AND UNDERGROUND STRUCTURES (UGS).

B. ALL ELECTRICAL AND CONTROL EQUIPMENT, INCLUDING 480V INCOMING SERVICE, METERING, 480V SWITCBOARD, TRANSFORMERS, 208Y/120V PANELBOARD AND ALL CONTROL EQUIPMENT AND DEVICES, SHALL BE HOUSED IN A MULTI-SECTION OUTDOOR ELECTRICAL ENCLOSURE.

C. CONTRACTOR SHALL DESIGN THE CONTROL SYSTEM BASED ON PERFORMANCE REQUIREMENTS ON DRAWINGS AND SPECIFICATIONS. REFER TO DWG E-09 FOR FURTHER INFORMATION.

D. PROVIDE POWER FEEDERS TO PUMPS, BRANCH CIRCUITS TO AUXILIARY LOADS, DEVICES, INSTRUMENTS, VALVES, RECEPTACLES, OUTLETS, ETC.

E. PROVIDE LOW-VOLTAGE AND CONTROL WIRING FOR PUMP CONTROL, TO MONITOR PUMP SAFETY SYSTEMS (i.e. LEAK DETECTION, OVERLOAD, OVERHEAT, ETC.), MONITOR AND CONTROL POSITION OF VALVES, FLOWMETERS, LEVEL SENSORS, RAIN SENSORS/GAUGES, AND OTHER FIELD DEVICES AND INSTRUTMENT

F. MAINTAIN ALL EXISTING ELECTRICAL WORK WITHIN THE CONSTRUCTION AREA REQUIRED TO CONTINUE EXISTING ELECTRICAL SYSTEMS OPERATION BEYOND THE CONSTRUCTION AREA.

G. PROVIDE "AS-BUILT" DRAWINGS SHOWING CHANGES FROM THE CONTRACT DOCUMENTS.

H. TEST THE COMPLETED WORK. CORRECT ANY DEFECTS TO THE SATISFACTION OF PROJECT REPRESENTATIVE.

3. DRAWINGS:

A. ALL DRAWINGS IN THE PACKAGE ARE INCLUDED SCOPE OF WORK. DRAWINGS FROM EVERY TRADE SHOULD BE CAREFULLY REVIEWED AND COORDINATED WITH THE ELECTRICAL DRAWINGS TO ESTABLISH AN UNDERSTANDING OF THE PROJECT AS A WHOLE. WHERE THERE ARE ITEMS SHOWN ON DRAWINGS OF OTHER TRADES THAT REQUIRE ELECTRICAL PROVISIONS, SUCH PROVISIONS SHALL BE DETERMINED BY THE CONTRACTOR AND THE COST SHALL BE INCLUDED IN THE BID.

B. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE LOCATIONS OF EQUIPMENT, DEWCES AND OTHER LOADS AS WELL AS THE CIRCUIT ARRANGEMENT OR THE REQUIRED CONDUIT AND WIRING, ALTHOUGH NOT NECESSARILY INDICATING THE ACTUAL RUNS OF CONDUIT THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS COORDINATION WITH THE WORK OF OTHER TRADES AND THE STAGES AVAILABLE WILL PERMIT. ANY DISCREPANCIES, CONFLICTS OR QUESTIONABLE POINTS SHALL BE IMMEDIATELY REPORTED TO PROJECT MANAGER.

C. IF THE RELOCATION OR ADJUSTMENT OF ANY PORTION OF WORK IS REQUIRED, IT SHALL BE MADE BY THE CONTRACTOR WITHOUT EXTRA COST, PROVIDED THE NEW LOCATION IS NOT MORE THAN FIVE FEET FROM THE LOCATION SHOWN ON THE DRAWINGS.

D. ALL ITEMS NOT SPECIFICALLY MENTIONED IN THE SPECIFICATIONS OR NOTED ON THE DRAWINGS, BUT WHICH ARE OBVIOUSLY NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION SHALL BE INCLUDED.

4. SPECIFICATIONS:

A. A SPECIFICATION PACKAGE IS PROVIDED IN ADDITION TO THE DRAWINGS. ALL SECTIONS OF THE SPECIFICATION PACKAGE SHALL BE CAREFULLY REVIEWED BY THE CONTRACTOR. NOT ALL ELECTRICAL WORK IS NECESSARILY STATED IN THE ELECTRICAL SECTIONS, THEREFORE IT IS NECESSARY TO CAREFULLY REVIEW ALL SECTIONS TO DETERMINE ELECTRICAL PROVISIONS THAT ARE REQUIRED.

B. ALL REQUIREMENTS STATED IN THE SPECIFICATIONS PACKAGE SHALL APPLY TO THE PROJECT, WHETHER OR NOT SHOWN ON THE DRAWINGS. COORDINATE ALL INFORMATION SHOWN ON DRAWINGS AND SPECIFICATION PRIOR TO BID AND REPORT ANY DISCREPANCY, CONFLICT OR QUESTIONS IMMEDIATELY TO THE PROJECT MANAGER. WHERE A CONFLICT EXISTS BETWEEN THE DRAWINGS AND SPECIFICATIONS, THE MORE STRINGENT, SAFE AND/OR COSTLY OF THE ITEMS SHALL BE USED AS BASIS FOR THE BID AND INCLUDED IN WORK.

5. DELEGATED DESIGN DRAWINGS, PRODUCT DATA AND SPECIFICATIONS:

DELEGATED DESIGN PACKAGE SHALL INCLUDE DRAWINGS, SPECIFICATIONS AND SPECIFIC PRODUCT DATA / CUT-SHEETS FOR PRODUCTS THAT ARE USED. SUBMIT TO PROJECT MANAGER FOR APPROVAL. CONTRACTOR SHALL DESIGN A COMPLETE PUMP CONTROL SYSTEM AND COMMUNICATION SYSTEM. INTEGRATE ALL EQUIPMENT AND DEVICES FOR MONITORING, CONTROL AND COMMUNICATION. REFER TO DWG E-08 FOR FURTHER INFORMATION.

6. SHOP DRAWINGS:

SUBMIT TO PROJECT MANAGER FOR APPROVAL. SHOP DRAWING SHOWING COMPLETE DETAILS AND DIMENSIONS FOR ALL ELECTRICAL POWER AND CONTROL EQUIPMENT AND DEVICES SHALL BE PROVIDED. REFER TO SPECIFICATIONS FOR DETAILED INFORMATION ON SHOP DRAWING REQUIREMENTS.

7. ORDINANCE REQUIREMENTS:

THE ELECTRICAL WORK SHALL COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE LOCAL AND STATE CODES AND ALL OTHER LEGAL REQUIREMENTS. IN CASE OF CONFLICTS BETWEEN CODE REQUIREMENTS, THE MOST RESTRICTIVE SHALL APPLY; EXCEPT WHERE THE REQUIREMENTS OF THE CONTRACT DOCUMENTS EXCEED CODE REQUIREMENTS, IN WHICH CASE THE CONTRACT DOCUMENTS SHALL GOVERN.

8. PERMITS AND INSPECTIONS:

THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES AND FEES REQUIRED FOR THE EXECUTION OF HIS WORK, AND SHALL ARRANGE FOR AND PAY FOR ALL REQUIRED TESTS AND INSPECTIONS, AND SHALL GIVE ALL NOTICES REQUIRED BY ANY AND ALL LAWS, RULES, REGULATIONS, AND ORDINANCES WHICH PERTAIN TO THE CONTRACTOR'S WORK.

9. TESTING AND COMISSIONING:

A. CONTRACTOR SHALL CONDUCT SUCH TESTING AND COMMISSIONING OF ANY PORTION OF INSTALLATIONS AS MAY BE NECESSARY TO ENSURE FULL COMPLIANCE WITH PLANS AND SPECIFICATIONS. COST OF TESTING AND COMMISSIONING SHALL BE BORNE BY CONTRACTOR AND CONTRACTOR SHALL PROVIDE ALL THE INSTRUMENTS, EQUIPMENT, LABOR AND MATERIALS TO COMPLETE TESTS.

B. TESTING AND COMMISSIONING SHALL BE DONE IN A COMPREHENSIVE MANNER APPLIED TO THE ENTIRE SYSTEM AS A WHOLE. FOR EXAMPLE, THE ELECTRICAL, MECHANICAL AND PLUMBING SYSTEM AS WELL AS THEIR INTERCONNECTION AND FUNCTIONALITY WITH THE CONTROL AND COMMUNICATIONS SYSTEM SHALL BE TESTED AND COMMISSIONED IN THEIR ENTIRETY TO DEMONSTRATE A COMPLETE AND FUNCTIONAL SYSTEM.

C. SHOULD THESE TESTS DEVELOP ANY DEFECT IN MATERIALS OR POOR WORKMANSHIP OR VARIANCE WITH REQUIREMENTS OF SPECIFICATIONS, THEN CONTRACTOR SHALL MAKE ANY CHANGES NECESSARY AND REMEDY ANY DEFECTS AT THE CONTRACTOR'S OWN EXPENSE.

D. WHERE ANY FAILURE OR UNSATISFACTORY RESULTS FROM THE TESTING AND COMMISSIONING PROCESS ARE RECORDED OR OBSERVED, THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL AS NECESSARY TO RESOLVE THE ISSUE IN SUCH A WAY THAT TESTING AND COMMISSIONING IS COMPLETED SUCCESSFULLY. TESTING AND COMMISSIONING OF THE SYSTEM AS A WHOLE SHALL BE REPEATED IN SUCH CASES UNTIL ALL ISSUES HAVE BEEN RESOLVED, SATISFACTORY RESULTS ARE ACHIEVED AND RECORDED AND SYSTEM FUNCTIONALITY IS ITS ENTIRETY IS DEMONSTRATED AND PROVEN.

10. WARRANTY / GUARANTEE:

EQUIPMENT AND ACCESSORIES INSTALLED UNDER THIS SECTION SHALL CARRY THE MANUFACTURER'S WARRANTY AND/OR GUARANTEE FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE EQUIPMENT. THE CONTRACTOR SHALL GUARANTEE IN WRITING, IN A FORM ACCEPTABLE TO THE PROJECT MANAGER, THE ENTIRE ELECTRICAL INSTALLATION AGAINST DEFECTIVE MATERIALS AND/OR IMPROPER WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. DURING THE PERIOD COVERED BY THE GUARANTEE CONTRACTOR SHALL MAKE NECESSARY REPLACEMENTS AND REPAIR AT NO COST TO THE CITY. REFER TO PROJECT SPECIFICATIONS FOR FURTHER INFORMATION ON WARRANTY AND/OR GUARANTEE REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS ON WARRANTY/GUARANTEE FOR SPECIFIC EQUIPMENT, DEVICES AND SYSTEMS.

11. COOPERATION WITH OTHERS:

THE CONTRACTOR SHALL CONSULT AND COOPERATE FULLY WITH ALL OTHER CONTRACTORS AND SUB-CONTRACTORS FURNISHING LABOR, MATERIALS OR SERVICES, SO THAT THE WORK AS A WHOLE, SHALL BE EXECUTED IN THE MOST EFFICIENT MANNER, AND WITHOUT CONFLICT OR DELAY.

12. MATERIAL:

ALL MATERIALS AND EQUIPMENT USED IN THE WORK SHALL BE NEW (UNLESS OTHERWISE NOTED OR SCHEDULED), AND SUITED TO THE INTENDED USE, AND SHALL BE LISTED BY THE UNDERWRITERS LABORATORIES INC. AND SHALL MEET THEIR REQUIREMENTS AND BEAR THEIR LABEL WHENEVER STANDARDS HAVE BEEN ESTABLISHED AND LABEL SERVICE IS REGULARLY FURNISHED BY THAT AGENCY. ALL MATERIALS AND EQUIPMENT SHALL BE OF THE MAKES AND TYPES SPECIFIED, AND NO SUBSTITUTIONS WILL BE ALLOWED UNLESS APPROVED IN WRITING. THE PROJECT MANAGER RESERVES THE RIGHT TO REJECT ANY MATERIAL OR EQUIPMENT, EITHER BEFORE OR AFTER INSTALLATION, WHICH, IN THE PROJECT MANAGER'S OPINION IS NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS OR INTENDED USE.

13. CONDUIT INSTALLATION:

A. USE RIGID METAL CONDUIT FOR ALL EXPOSED EXTERIOR WORK.

B. ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 80. ALL TRANSITIONS FROM UNDERGROUND TO ABOVE GROUND, EXPOSED CONDUIT SHALL UTILIZE RIGID METAL ELBOWS AND FITTINGS.

C. PENETRATE AND SEAL ACCESS TO MANHOLES, WELL, VAULTS, ETC. AS REQUIRED TO ROUTE POWER AND CONTROL CONDUCTORS TO PUMP AND OTHER COMPONENTS. SUCH PENETRATIONS SHALL BE SEALED TO COMPLETE WATERTIGHT CONDITIONS. IN ADDITION, ALL CONDUIT PENETRATIONS TO AND FROM WELLS AND VAULTS SHALL BE EQUIPPED WITH EXPLOSION-PROOF FITTING, SIMILAR TO "COOPER INDUSTRIES" TYPE "EYS AND EZS" FITTING. SUCH FITTINGS SHALL BE PROVIDED WITH APPROPRIATE LISTED SEALANT TO PREVENT GASES TRAVELING THROUGH CONDUITS TO AND FROM WELLS TO VAULTS AND OTHER PARTS OF THE SYSTEM.

D. WHERE UNDERGROUND BORING IS REQUIRED, CONTRACTOR SHALL PROVIDE ALL NECESSARY SITE PREPARATION, EQUIPMENT, STAGING, ETC. TO ROUTE THE CONDUIT AS INDICATED ON PLANS.

E. WHEN ROUTING ANY UNDERGROUND CONDUIT, CAREFULLY COORDINATE WITH UTILITIES SHOWN ON CIVIL SHEETS. CONTRACTOR IS RESPONSIBLE FOR CONDUCTING A COMPLETE SURVEY TO CONFIRM EXISTING UTILITIES SHOWN, VERIFY ALL OTHER EXISTING UTILITIES AND ADJUST WORK TO AVOID DISRUPTION OF ALL EXISTING UTILITIES IN WORK AREA.

14. WIRE AND CABLE:

A. PROVIDE WIRES AND CABLES OF THE SIZE AND TYPE SHOWN ON DRAWINGS AND AS SPECIFIED HEREIN. UNLESS OTHERWISE SPECIFIED ALL WIRE AND CABLE SHALL BE U.L. STANDARD ANNEALED COPPER WIRE WITH U.S. 600 VOLT INSULATION. THE MINIMUM SIZE WIRE FOR LIGHTING OR POWER CIRCUITS SHALL BE NO.12 AWG. ALL CONDUCTORS SHALL BE STRANDED. INSULATION OF CONDUCTORS SHALL BE TYPE THHN/THWN.

B. COLOR CODE NO. 12 THROUGH NO. 8 BRANCH CIRCUIT WIRES. USE BLACK, RED, BLUE & WHITE FOR 120/208V CIRCUITS. USE YELLOW, ORANGE, BROWN & GRAY FOR 277/480V CIRCUITS. USE GREEN WIRES FOR EQUIPMENT GROUNDS ONLY.

C. WIRES AND CABLES FOR CONTROL AND COMMUNICATIONS SYSTEMS HAVE NOT BEE SHOWN ON THE DRAWINGS AS THESE ITEMS ARE A PART OF THE DELEGATED DESIGN SCOPE OF WORK. THE CONTRACTOR IS RESPONSIBLE FOR SELECTING TYPE, SIZE AND QUANTITY OF WIRES AND CABLES AS REQUIRED TO PROVIDE THE COMPLETE SYSTEMS DESCRIBED IN THE DELEGATED DESIGN SCOPE OF WORK.

15. CONDUCTOR IDENTIFICATION:

A. ALL FEEDERS SHALL BE TAGGED AT EACH POINT WHERE THE CONDUIT RUN IS BROKEN. ALL BRANCH CIRCUIT CONDUCTORS AT PANELBOARDS AND SWITCHBOARDS SHALL BE IDENTIFIED WITH "E-Z" CODE MARKERS.

B. ALL CONTROL AND COMMUNICATION WIRING SHALL BE TAGGED NEAR THE POINT OF TERMINATION OF THE EQUIPMENT TO WHICH THE WIRING IS CONNECTED. THE TAGS SHALL BE TYPEWRITTEN, UV RESISTANT AND WATERPROOF.

16. BOXES AND ENCLOSURES:

A. ALL OUTDOOR BOXES AND ENCLOSURES SHALL BE NEMA 3R.

B. ALL BOXES AND ENCLOSURES USED IN VAULTS AND WELLS SHALL BE NEMA 4X STAINLESS STEEL TYPE.

17. WIRING DEVICES:

A. ALL WIRING DEVICES SHALL BE FIRST QUALITY, HEAVY-DUTY "SPECIFICATION" GRADE, AND SHALL BE OF IVORY COLOR, GFCI TYPE.

B. ALL WIRING DEVICES IN VAULTS AND WELLS SHALL BE HOUSED IN WEATHERPROOF NEMA 4X STAINLESS STEEL BOX OR ENCLOSURE.

18. LIGHTING:

THE CONTRACTOR SHALL INSTALL ALL LIGHTING FIXTURES AS AN INTEGRAL PART OF THE ELECTRICAL ENCLOSURE. THIS INFORMATION IS NOT SHOWN ELSEWHERE ON THE DRAWINGS. IT IS THE DESIGN INTENT FOR CONTRACTOR TO PROVIDE AN INTEGRAL LED STRIP LIGHTING WILL BE PROVIDED. PROVIDE LOCAL SWITCH MOUNTED IN AN ACCESSIBLE LOCATION NEAR THE ENCLOSURE DOOR.

19. CLEANING:

THE CONTRACTOR SHALL REMOVE FROM SITE ALL PACKING CARTONS, SCRAP MATERIALS AND OTHER RUBBISH AND LEAVE THE AREA IN A CONDITION ACCEPTABLE TO THE PROJECT MANAGER.

20. CODE COMPLIANCE:

ALL WORK MUST COMPLY WITH THE LATEST APPLICABLE FOLLOWING CODES AND REGULATIONS, AS ADOPTED AND AMENDED BY LOCAL, CITY, COUNTY, MUNICIPAL AND STATE REGULATIONS:

- 2019 CALIFORNIA BUILDING CODE, VOLUMES I, II, III
- 2019 CALIFORNIA ELECTRICAL CODE
- 2019 CALIFORNIA FIRE CODE
- 2019 CALIFORNIA MECHANICAL CODE
- 2019 CALIFORNIA PLUMBING CODE
- ALL OTHER CODES AND REGULATIONS AS REQUIRED BY CONTRACT DOCUMENTS, INCLUDING ALL DISCIPLINES AND SPECIFICATIONS.

21. SAFETY:

A. ALL ELECTRICAL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH CAL/OSHA "LOCK OUT / TAG OUT " PROCEDURES.

B. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A SHORT-CIRCUIT DEVICE COORDINATION STUDY AND AN ARC FLASH STUDY. STUDIES SHALL BE BASED ON ACTUAL AVAILABLE FAULT CURRENT OBTAINED FROM THE LOCAL UTILITY. SUBMIT STUDIES TO PROJECT MANAGER FOR REVIEW AND APPROVAL. AFTER THE STUDIES HAVE BEEN COMPLETED, REVIEWED AND APPROVED, THE CONTRACTOR SHALL PROVIDE AND APPLY ARC FLASH HAZARD LABELS AT EACH ELECTRICAL SWITCHBOARD, PANELBOARD AND INDUSTRIAL CONTROL PANEL.

TRAINING:

A. AT THE CONCLUSION OF WORK, AFTER ALL POWER AND CONTROL EQUIPMENT HAVE BEEN INSTALLED, ENERGIZED, PROGRAMMED, TESTED/COMMISSIONED AND READY FOR USE, PROVIDE TRAINING FOR THE CITY STAFF.

B. TRAINING SESSION SHALL BE NO LESS THAN 8 HOURS AND SHALL COVER THE OPERATION AND MAINTENANCE OF THE PUMP CONTROL, COMMUNICATIONS AND TELEMETRY / SCADA SYSTEMS.

C. TRAINING SHALL BE PERFORMED BY A FACTORY TECHNICIAN OR AUTHORIZED VENDOR OF THE SPECIFIC PRODUCTS USED IN THE SYSTEM.

D. CONTRACTOR SHALL PROVIDE A COMPREHENSIVE NARRATIVE DESCRIBING THE COMPLETE OPERATION OF THE PUMP SYSTEM, CONTROL SYSTEM, COMMUNICATION AND TELEMETRY/SCADA SYSTEMS. THE INTENT OF REQUIRING THIS DOCUMENT IS FOR THE CURRENT OPERATORS OR PERSONS OPERATING THE SYSTEMS IN THE FUTURE TO BE ABLE TO REFER BACK TO ONE COMPREHENSIVE DOCUMENT THAT DESCRIBES THE OVERALL OPERATION OF THESE SYSTEM AS A WHOLE AS WELL AS INDIVIDUAL PARTS OF THE SYSTEM. SUBMIT (3) THREE COPIES OF THE OPERATION NARRATIVE TO THE PROJECT MANAGER FOR REVIEW AND APPROVAL. NOTE THAT THIS NARRATIVE MAY BE THE SAME DOCUMENT REQUIRED AS A PART OF THE CONTROL SYSTEM DELEGATED DESIGN SCOPE OF WORK.

SYMBOL LIST

	SECTIONAL POWER & CONTROLS ENCLOSURE PER DETAIL ON SHEET E-07
	HEAVY BROKEN LINE INDICATES CONDUIT, WIRES OR EQUIPMENT RUN UNDERGROUND
	THIN LINES INDICATE EXISTING
	HEAVY, THICK LINES INDICATE NEW
	GROUND ELECTRODE
30A 3P	DISCONNECT SWITCH, 30A, 3-POLE
P	POWER PULLBOX
S	SIGNAL PULLBOX
J	JUNCTION BOX
	LINE-VOLTAGE STARTER
M	UTILITY APPROVED METERING PEDESTAL
VFC	VARIABLE FREQUENCY CONTROLLER WITH dv/dt FILTER
	TRANSFORMER
M	MOTOR
GFCI	20A, 120V, GFCI RECEPTACLE (NEMA-5-20C)
FM	FLOW METER
100AF 80AT 3P	MOLDED CASE CIRCUIT BREAKER 100V AMP FRAME 80 AMP TRIP 3P POLE

CONTROL SYSTEM AND TELEMETRY / SCADA DELEGATED DESIGN

1. THE PUMP CONTROL, COMMUNICATION AND TELEMETRIC / SCADA SYSTEMS ARE DELEGATED DESIGN ITEMS. THE CONTRACTOR SHALL RETAIN THE SERVICES OF "UTILITY SYSTEMS SCIENCE & SOFTWARE (US^3)" COMPANY WHICH CURRENTLY INSTALLS, SERVICES AND MAINTAINS THE EXISTING SCADA / PLC SYSTEM FOR THE CITY.

CONTACT INFORMATION:
TOM WILLIAMS
tom.williams@uscubed.com
(619)546-4281
UTILITY SYSTEMS SCIENCE & SOFTWARE (US^3)
1250 PIONEER WAY SUITE F, EL CAJON CA 92020

2. CONTRACTOR IS RESPONSIBLE FOR DESIGNING, FURNISHING, INSTALLING, PROGRAMMING, TESTING AND COMMISSIONING A COMPLETE AND FUNCTIONAL SYSTEM, INCLUDING BUT NOT LIMITED TO PLC, TELEMETRIC / SCADA EQUIPMENT, CONTROLLERS, ANALOG AND DISCRETE INPUT/OUTPUT MODULES, LEVEL AND PRESSURE SENSORS AND TRANSDUCERS, ANTENNAS, INSTRUMENTS, LOW-VOLTAGE AND LINE-VOLTAGE RELAYS, HUMAN MACHINE INTERFACE (HMI) TOUCH-SCREEN DISPLAYS, INDICATOR LIGHTS, SELECTOR SWITCHES, PUSH-BUTTONS, POWER SUPPLIES, TRANSFORMERS, ENCLOSURES, MOUNTING HARDWARE, TERMINATIONS AND WIRING FOR ALL COMPONENTS INCLUDING INTERFACE WITH FIELD EQUIPMENT AND DEVICES SUCH AS PUMPS, STARTERS/VARIABLE FREQUENCY DRIVES, SENSORS, TRANSDUCERS, ACTUATORS, VALVES, GATES, ETC. SEE DRAWINGS FOR COMPLETE REQUIREMENTS, PAYING SPECIAL ATTENTION TO DWG E-09.

3. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE DELEGATED DESIGN IN A SHOP DRAWINGS PACKAGE, INCLUDING DATA SHEETS FOR ALL COMPONENTS, SPECIFICATIONS FOR ALL COMPONENTS, DETAILED DRAWINGS SHOWING ALL COMPONENTS OF THE PLC AND ALL FIELD DEVICES USING POINT-TO-POINT CONNECTION DIAGRAMS, ELEVATIONS AND FLOOR VIEW OF ALL EQUIPMENT AND DEVICES AS WELL AS EXACT LOCATION OF ALL EQUIPMENT AND DEVICES ON FLOOR OR SITE PLANS. IN ADDITION, CONTRACTOR SHALL PROVIDE A COMPREHENSIVE NARRATIVE DESCRIBING THE COMPLETE OPERATION OF THE SYSTEM INCLUDING ALL FIELD DEVICES. SUBMIT SHOP DRAWINGS PACKAGE TO THE PROJECT MANAGER FOR REVIEW AND APPROVAL.

4. AT THE CONCLUSION OF THE PROJECT, PROVIDE AS-BUILT RECORD DRAWINGS OF THE FINAL SYSTEM CONDITION AND CONFIGURATION, COMPREHENSIVE NARRATIVE DESCRIBING COMPLETE OPERATION OF THE SYSTEM, MAINTENANCE AND OPERATIONS MANUALS, WARRANTY / GUARANTEE CERTIFICATES AND ALL OTHER DOCUMENTATION TO THE PROJECT MANAGER.

NEW UTILITY SERVICE REQUIREMENTS

1. CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND CONFIRMING NEW SERVICE REQUIREMENTS WITH SOUTHERN CALIFORNIA EDISON (SCE), INCLUDING, BUT NOT LIMITED TO, CONDUIT RISER FOR UTILITY POLE, UTILITY SERVICE CONDUIT FROM UTILITY POLE TO THE LOCATION OF THE SERVICE PEDESTAL AND METEREY SERVICE PEDESTAL. MATERIAL, INSTALLATION AND TESTING SHALL BE PROVIDED IN COMPLIANCE WITH SCE REQUIREMENTS.

2. WHEN VERIFYING SCE REQUIREMENTS, SPECIAL ATTENTION MUST BE GIVEN TO THE ELECTRICAL SERVICE REQUIREMENTS (ESR). IN PARTICULAR, THE PEDESTAL METER SOCKET TYPE AS WELL AS SIZE, TYPE AND QUANTITY OF SERVICE CONDUITS MUST BE VERIFIED WITH SCE.

3. SOUTHERN CALIFORNIA EDISON SERVICE PLANNER:
MUDILA KANGULUNGU
Mudila.Kangulungu@sce.com
Local Planning, Santa Monica Service Center
310-315-3235 (OFFICE)
310-961-0412 (MOBILE)

DRAWING INDEX

ABBREVIATIONS

A	AMPERES	MCB	MAIN CIRCUIT BREAKER
AF	AMP FRAME	MH	MANHOLE
AT	AMP TRIP	(N)	NEW
AFF	ABOVE FINISHED FLOOR	P	POLE
AIC	AMPERE INTERRUPTING CAPACITY	PH	PHASE
C	CONDUIT	PLC	PROGRAMMABLE LOGIC CONTROLLER
CU	COPPER	SCE	SOUTHERN CALIFORNIA EDISON
(E)	EXISTING	SUR	SURFACE
EGC	EQUIPMENT GROUNDING CONDUCTOR	TYP	TYPICAL
ESR	ELECTRICAL SERVICE REQUIREMENTS	UON	UNLESS OTHERWISE NOTED
DWG	DRAWING	V	VOLT, VOLTAGE
G, GND	GROUND	VFC	VARIABLE FREQUENCY CONTROLLER
GC	GENERAL CONTRACTOR	WP	WEATHER PROOF
GEC	GROUNDING ELECTRODE CONDUCTOR	XFMR	TRANSFORMER
GFI	GROUND FAULT INTERRUPTER	#	NUMBER
L	LENGTH		

DEFINITION

1. PROVIDE IS DEFINED TO MEAN THAT THE CONTRACTOR SHALL FURNISH, INSTALL, ADJUST, TEST AND INTEGRATE INTO A COMPLETE SYSTEM THE ITEM INDICATED, INCLUDING ALL HARDWARE, WIRING, AND MISCELLANEOUS ITEMS AS NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM.

DIGALERT — DIAL BEFORE YOU DIG 811 — TWO WORKING DAYS BEFORE YOU DIG — TOLL FREE 1-800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

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REGISTERED PROFESSIONAL ENGINEER — SEVAG AVANESSIAN — No. E22793 — ELECTRICAL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

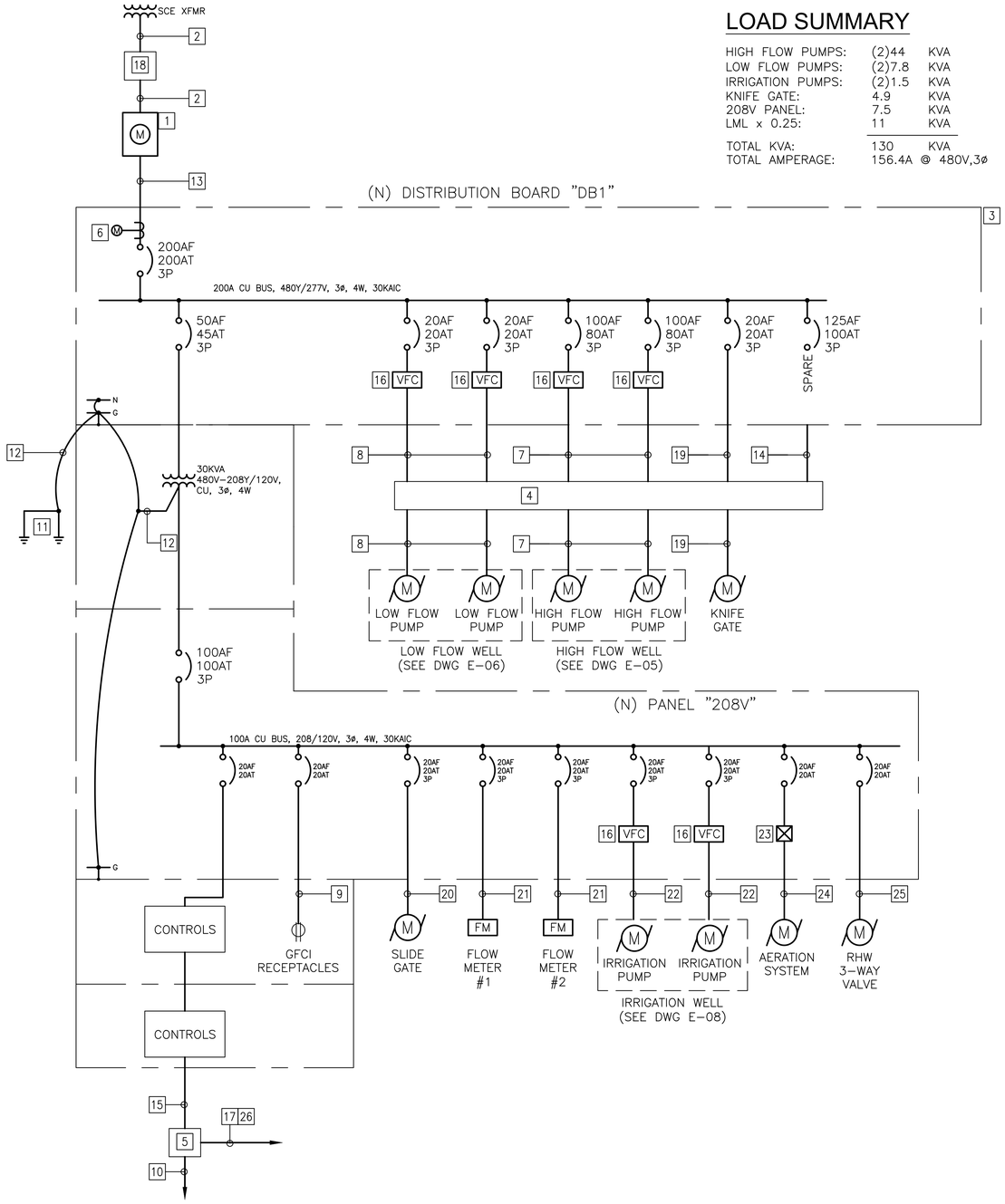
CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

ELECTRICAL GENERAL NOTES

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET E-01
Sheet 18 Of 49 Sheets



SINGLE LINE DIAGRAM

LOAD SUMMARY

HIGH FLOW PUMPS:	(2)44	KVA
LOW FLOW PUMPS:	(2)7.8	KVA
IRRIGATION PUMPS:	(2)1.5	KVA
KNIFE GATE:	4.9	KVA
208V PANEL:	7.5	KVA
LML x 0.25:	11	KVA
TOTAL KVA:	130	KVA
TOTAL AMPERAGE:	156.4A @ 480V,3ø	

PANEL: 208V (N)

LOCATION : SIDEWALK
FLOOR : -
MOUNTING : GROUND
VOLTAGE/ PHASE : 208Y/120V, 3Ø,4W
BUS AMPS : 100A
MAIN BREAKER : 100A
FED FROM : 30kVA XFMR
MINIMUM BUS BRACING : 30,000AIC

LOADS	SEE NOTE	*	OUTLETS LTG	OUTLETS REC	OUTLETS MISC	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	CKT	BKR/ POLE	A B C	BKR/ POLE	CKT	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	OUTLETS LTG	OUTLETS REC	OUTLETS MISC	*	SEE NOTE	LOADS
LIGHTING						250			1	20/1	*--	20/1	2									SPARE
SERVICE OUTLETS							720		3	20/1	-*-	20/1	4									SPARE
PLC POWER SUPPLY								1,500	5	20/1	--*	20/1	6									SPARE
TELEMETRIC POWER SUPPLY						1,500			7	20/1	*--	20/1	8									SPARE
SLIDE GATE							500		9	20/1	-*-	20/1	10									SPARE
FLOW METER								500	11	20/1	--*	20/1	12									SPARE
IRRIGATION PUMP						554			13	20/3	*--	20/1	14									SPARE
							554		15		-*-	20/1	16									SPARE
								554	17		--*	20/1	18									SPARE
AERATION SYSTEM						300			19	15/1	*--	20/1	20									SPARE
RHW 3-WAY VALVE							500		21	15/1	-*-	20/1	22									SPARE
SPACE									23		--*	20/1	24									SPARE
SPACE									25		*--	20/1	26									SPARE
SPACE									27		-*-	20/1	28									SPARE
SPACE									29		--*	20/1	30									SPARE

NOTES

TOTAL ØA =	2,604 VOLT-AMPS	21.7 AMPS
TOTAL ØB =	2,274 VOLT-AMPS	18.95 AMPS
TOTAL ØC =	2,554 VOLT-AMPS	21.2833 AMPS
LCL x 0.25 =	63 VOLT-AMPS	0.17349 AMPS
LML x 0.25 =	VOLT-AMPS	0 AMPS
TOTAL PANEL =	7,495 VA @ 208V, 3Ø =	21 AMPS

PANEL SCHEDULE:

SINGLE LINE DIAGRAM NOTES

1. PROVIDE 200A, 480Y/277V, 3PH, 4W, 20" WIDE, B–SIZE CP3A UTILITY METER PEDESTAL WITH CIRCUIT BREAKER BY MILBANK OR EQUAL. PEDESTAL SHALL MEET ALL SCE ESR. SEE PEDESTAL DETAILS ON SHEET E–08 FOR DETAILS.
2. ROUTE (2)3" CONDUITS FOR SCE USE FROM LOCATION OF THE SCE TRANSFORMER/POLE AS SHOWN ON PLANS TO LOCATION OF SCE METER. SEE SHEET E–03 FOR CONDUIT LAYOUT PLANS.
3. PROVIDE SECTIONAL POWER & CONTROLS ENCLOSURE PER DETAIL ON SHEET E–08 WITH 480Y/277V, 200A, 3PH, 4W, 30KAIC DISTRIBUTION BOARD, 30KVA, 480V–208Y/120V, DELTA–WYE XFMR, AND 208Y/120V, 100A PANELBOARD.
4. PROVIDE (N) UNDERGROUND PULL BOX "PBP".
5. PROVIDE (N) UNDERGROUND PULL BOX "PBS".
6. PROVIDE MULTI–FUNCTION POWER. PROVIDE AS A PART OF DISTRIBUTION BOARD ENCLOSURE AS SHOWN ON SHEET E0–7.
7. PROVIDE 2"C–3#2 + 1#6GND TO DIVERSION (HIGH FLOW) PUMP.
8. PROVIDE 1–1/2"C–3#10 + 1#10GND TO SEWER (LOW FLOW) PUMP.
9. PROVIDE 1"C–2#10 + 1#10GND TO GFCI RECEPTACLES.
10. PROVIDE (14) FOURTEEN 1"C WITH CONTROL WIRES FROM CONTROL SECTIONS TO THE PERTINENT PUMPS, VALVE VAULTS, ETC. SEE SHEETS E–03 & E–04 FOR LOCATIONS.
11. PROVIDE (2) TWO 3/4" DIA, 10' GROUND RODS, 6' APART. INTER–CONNECT GEC TO GROUND RODS AND SYSTEM GROUNDING AND PER CEC 250.
12. PROVIDE #2 GROUNDING ELECTRODE CONDUCTOR (GEC) PER CEC 250.
13. PROVIDE (2)3"C–4#350 + 1#4GND FROM SEC METER TO (N) DISTRIBUTION BOARD "DB1". SEE SHEET E–03 FOR LOCATION.
14. PROVIDE SPARE 2"C TO PBP
15. PROVIDE (3)2"C WITH CONTROL WIRES FROM CONTROL SECTIONS TO PBS. PROVIDE 2"C SPARE CONDUIT.
16. PROVIDE VFC. COORDINATE REQUIREMENTS WITH PUMP PACKAGE MANUFACTURER PRIOR TO ORDERING. VFC SHALL BE SUITABLE FOR THIS APPLICATION, WITHOUT INTEGRAL DISCONNECT AND CAPABLE OF ALL CONTROL FUNCTIONS REQUIRED FOR SYSTEM OPERATION. CAREFULLY QUANTIFY DISTANCE FROM VFC TO PUMPS BASED ON FIELD CONDITIONS AND ENSURE VFC IS PROVIDED WITH APPROPRIATE PROVISIONS SUCH AS LINE REACTOR AND DV/DT CONTROLLERS AS NEEDED BASED ON DISTANCE OF CONDUCTORS TO LOAD.
17. PROVIDE (1) ONE 2"C WITH CONTROL WIRING FROM UNDERGROUND PULLBOX PBS TO RAINWATER HARVESTING SYSTEM. SEE SHEET E–03 FOR LOCATION. CONTROL WIRING SHALL BE FED BACK TO "DB1."
18. PROVIDE SCE PULL BOX. SIZE PER SEC ESR.
19. PROVIDE 1–1/2"C–3#10 + 1#10GND TO KNIFE GATE.
20. PROVIDE 1–1/2"C–3#10 + 1#10GND TO SLIDE GATE.
21. PROVIDE 1–1/2"C–3#10 + 1#10GND TO FLOW METER.
22. PROVIDE 1–1/2"C–3#10 + 1#10GND TO IRRIGATION PUMP.
23. PROVIDE LINE–VOLTAGE STARTER FOR AERATION SYSTEM PUMP. VERIFY SIZE AND TYPE WITH AERATION SYSTEM MANUFACTURER. COORDINATE AUXILIARY CONTACTS AND OTHER INTERFACE OPTIONS AS A PART OF CONTROL SYSTEM SCOPE.
24. PROVIDE 1–1/2"C–2#10 + 1#10GND TO AERATION SYSTEM.
25. PROVIDE 1–1/2"C–2#10 + 1#10GND TO RHW VALVE ACTUATOR.
26. PROVIDE 2"C WITH CONTROL WIRING TO SEWER FLOW METER.

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CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

ELECTRICAL SINGLE-LINE DIAGRAM AND PANEL SCHEDULE

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER
4-10-23
DATE

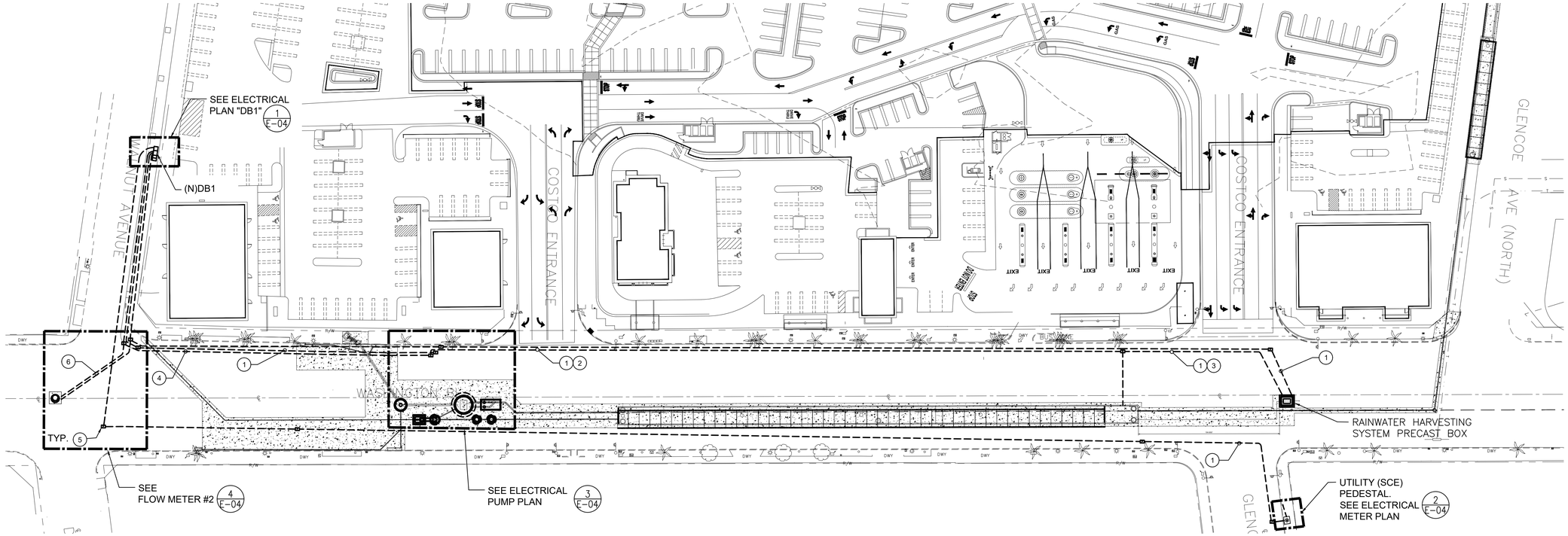
SHEET
E–02
Sheet 19 Of 49 Sheets

NEW WORK PLAN NOTES:

1. PROVIDE UNDERGROUND TRENCHING, CONDUIT AND WIRING PER SIZING ON SHEET E-02.
2. PROVIDE (2) TWO 2"C WITH CONTROL WIRING FROM UNDERGROUND PULLBOX PBS TO RAINWATER HARVESTING SYSTEM PULLBOX. CONTROL WIRING SHALL BE ROUTED BACK TO "DB1", MECHANICAL ENCLOSURE, AND WELLS AS REQUIRED.
3. PROVIDE (1) ONE 1"C WITH CONTROL WIRING FROM RAINWATER HARVESTING SYSTEM PULLBOX TO MECHANICAL ENCLOSURE. CONTROL WIRING SHALL BE ROUTED BACK TO "DB1", MECHANICAL ENCLOSURE, AND WELLS AS REQUIRED.
4. PROVIDE (14) FOURTEEN 1"C WITH CONTROL WIRES FROM ENCLOSURE "DB1" CONTROL SECTIONS TO (N) UNDERGROUND PULL BOX PBS, THEN CONTINUE TO DISTRIBUTE TO PUMPS, VALVE VAULTS, ETC.
5. PROVIDE (N) UNDERGROUND PULLBOXES AT 90 DEGREE CONDUIT SWEEPS AND EVERY 200' FOR PULLS.
6. PROVIDE 1"C (POWER) AND 1"C (CONTROL WIRING) FROM DB1 TO LOCATION OF FLOW METER #2

GENERAL NOTES:

1. SEE DETAIL 1 ON DWG E-09 FOR TYPICAL DUCTBANK DETAIL.
2. PROVIDE RIGID METALLIC EXPLOSION-PROOF CONDUIT SEAL FITTING FOR ALL CONDUITS ENTERING VALVE VAULTS, WET WELLS AND MANHOLES PER DETAIL 3 ON E-09.
3. SEE DWG E-05 FOR HIGH FLOW WET WELL AND VAULT DETAILS.
4. SEE DWG E-06 FOR LOW FLOW WET WELL AND VAULT DETAILS.
5. SEE DETAIL 5 ON DWG E-09 FOR KNIFE GATE MANHOLE AND FLOW METER MANHOLE DETAILS.
6. CAREFULLY COORDINATE TYPE, SIZE AND QUANTITY OF WIRING AND CONDUIT BETWEEN SITE PLAN AND SINGLE LINE DIAGRAMS. VERIFY THE WIRING TYPE AND SIZE INFORMATION WITH MANUFACTURER OF EQUIPMENT AND DEVICES. ADJUST CONDUIT SIZES IF NECESSARY TO ACCOMMODATE MANUFACTURER WIRING REQUIREMENTS.



ELECTRICAL SITE PLAN

SCALE= 1"= 20'

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REGISTERED PROFESSIONAL ENGINEER — SEYAG AVANESIAN — No. E22793 — ELECTRICAL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
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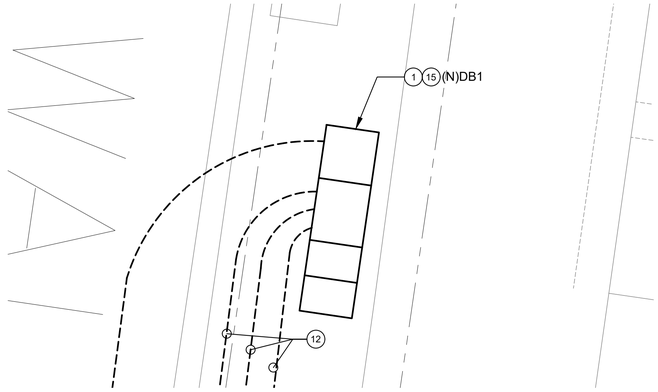
CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

ELECTRICAL SITE PLAN

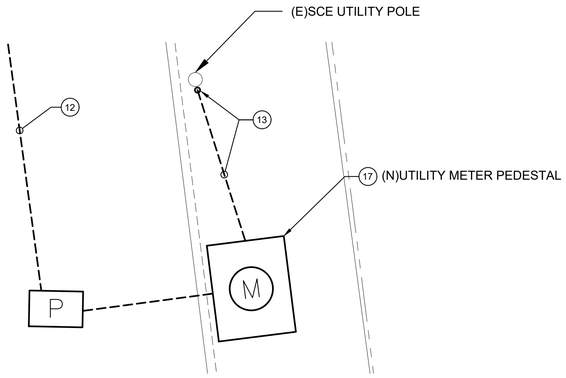
REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET E-03
Sheet 20 Of 49 Sheets



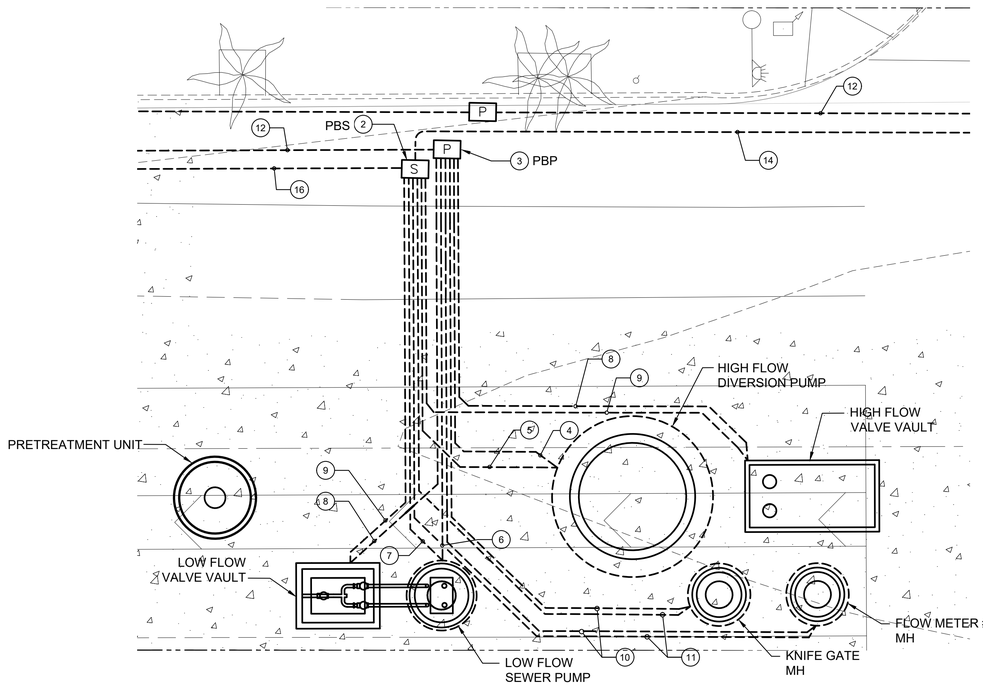
ELECTRICAL "DB1" PLAN (1 / E-04)

SCALE= 1/4"= 1'



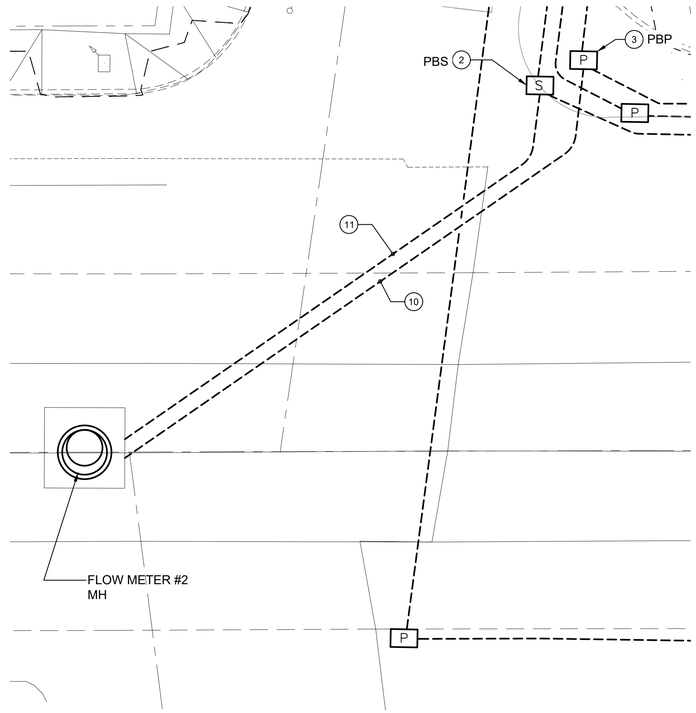
ELECTRICAL METER PLAN (2 / E-04)

SCALE= 1/8"= 1'



ELECTRICAL PUMP PLAN (3 / E-04)

SCALE= 1/8"= 1'



FLOW METER #2 (4 / E-04)

SCALE= 1/8"= 1'

NEW WORK PLAN NOTES:

1. PROVIDE SECTIONAL POWER & CONTROLS ENCLOSURE, "DB1," PER DETAIL ON SHEET E-10 WITH 480Y/277V, 200A, 3PH, 4W, 30KAIC DISTRIBUTION BOARD, 30KVA, 480V-208Y/120V, DELTA-WYE XFMR, AND 208Y/120V, 100A PANELBOARD, VFC AND CONTROL EQUIPMENT IN SEPARATE COMPARTMENTS. MOUNT ENCLOSURE ON CONCRETE PAD, SEE DETAIL 4 ON E-10.
2. PROVIDE (N) UNDERGROUND PULLBOX "PBS" FOR SIGNAL CONDUCTORS. SEE DETAIL 2 ON E-10.
3. PROVIDE (N) UNDERGROUND PULLBOX "PBP" FOR POWER. SEE DETAIL 2 ON E-10. PROVIDE SPLICE KIT AND SPLICE SUBMERSIBLE PUMP CONDUCTOR LEADS WITH FEEDERS FROM POWER SOURCE.
4. PROVIDE (2) TWO 2"C - (3)#2 +(1)#6GND UNDERGROUND FROM THE (N) UNDERGROUND PULL BOX PBP TO THE (N) HIGH FLOW DIVERSION PUMP
5. PROVIDE (1) ONE 1 1/2"C WITH CONTROL WIRING UNDERGROUND FROM THE (N) UNDERGROUND PULL BOX PBS TO THE (N) HIGH FLOW DIVERSION PUMP.
6. PROVIDE (2) TWO 1 1/2"C - (3)#10 +(1)#10GND UNDERGROUND FROM THE (N) UNDERGROUND PULL BOX PBP TO THE (N) LOW FLOW SEWER PUMP.
7. PROVIDE (1) ONE 1 1/2"C WITH CONTROL WIRING UNDERGROUND FROM THE (N) UNDERGROUND PULL BOX PBS TO THE (N) LOW FLOW SEWER PUMP.
8. PROVIDE (1) ONE 1"C - (3)#10 +(1)#10GND UNDERGROUND FROM THE (N) UNDERGROUND PULL BOX PBP TO THE (N) VALVE VAULT.
9. PROVIDE (3) THREE 1"C WITH CONTROL WIRING + (1) ONE 1"C SPARE UNDERGROUND FROM THE (N) UNDERGROUND PULL BOX PBS TO THE (N) VALVE VAULT.
10. PROVIDE (1) ONE 1"C - (3)#10 +(1)#10GND UNDERGROUND FROM THE (N) UNDERGROUND PULLBOX PBP TO THE (N) MANHOLE.
11. PROVIDE (1) ONE 1"C WITH CONTROL WIRING UNDERGROUND FROM THE (N) UNDERGROUND PULLBOX PBS TO THE (N) MANHOLE.
12. PROVIDE UNDERGROUND TRENCHING, CONDUIT AND WIRING PER SIZING ON SHEET E-02.
13. PROVIDE CONDUIT RISER ON UTILITY POWER POLE PER SCE REQUIREMENTS. TRANSITION UNDERGROUND, CONTINUE RUN BY PROVIDING UNDERGROUND TRENCHING AND CONDUIT SCE REQUIREMENTS. SEE SIZING ON SHEET E-02. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING SIZING WITH SCE UTILITY PLANNER PRIOR TO INSTALLATION.
14. PROVIDE (1) ONE 2"C WITH CONTROL WIRING FROM UNDERGROUND PULLBOX PBS TO RAINWATER HARVESTING SYSTEM. SEE SHEET E-03 FOR DETAILS.
15. CONTRACTOR TO PROVIDE (2) TWO GFCI RECEPTACLES IN ENCLOSURE.
16. PROVIDE (14) FOURTEEN 1"C WITH CONTROL WIRES FROM ENCLOSURE "DB1" CONTROL SECTIONS TO (N) UNDERGROUND PULL BOX PBS, THEN CONTINUE TO DISTRIBUTE TO PUMPS, VALVE VAULTS, ETC.
17. PROVIDE UTILITY METER PEDESTAL AND CONCRETE PAD PER SCE ESR. SEE E-10 FOR PEDESTAL DETAIL.

GENERAL NOTES:

1. SEE DETAIL 1 ON DWG E-10 FOR TYPICAL DUCTBANK DETAIL.
2. PROVIDE RIGID METALLIC EXPLOSION-PROOF CONDUIT SEAL FITTING FOR ALL CONDUITS ENTERING VALVE VAULTS, WET WELLS AND MANHOLES PER DETAIL 3 ON E-10.
3. SEE DWG E-05 FOR HIGH FLOW WET WELL AND VAULT DETAILS.
4. SEE DWG E-06 FOR LOW FLOW WET WELL AND VAULT DETAILS.
5. SEE DETAIL 5 ON DWG E-10 FOR KNIFE GATE MANHOLE AND FLOW METER MANHOLE DETAILS.
6. CAREFULLY COORDINATE TYPE, SIZE AND QUANTITY OF WIRING AND CONDUIT BETWEEN SITE PLAN AND SINGLE LINE DIAGRAMS. VERIFY THE WIRING TYPE AND SIZE INFORMATION WITH MANUFACTURER OF EQUIPMENT AND DEVICES. ADJUST CONDUIT SIZES IF NECESSARY TO ACCOMMODATE MANUFACTURER WIRING REQUIREMENTS.

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REGISTERED PROFESSIONAL ENGINEER — SEVAG AVANESSIAN — No. E22793 — ELECTRICAL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

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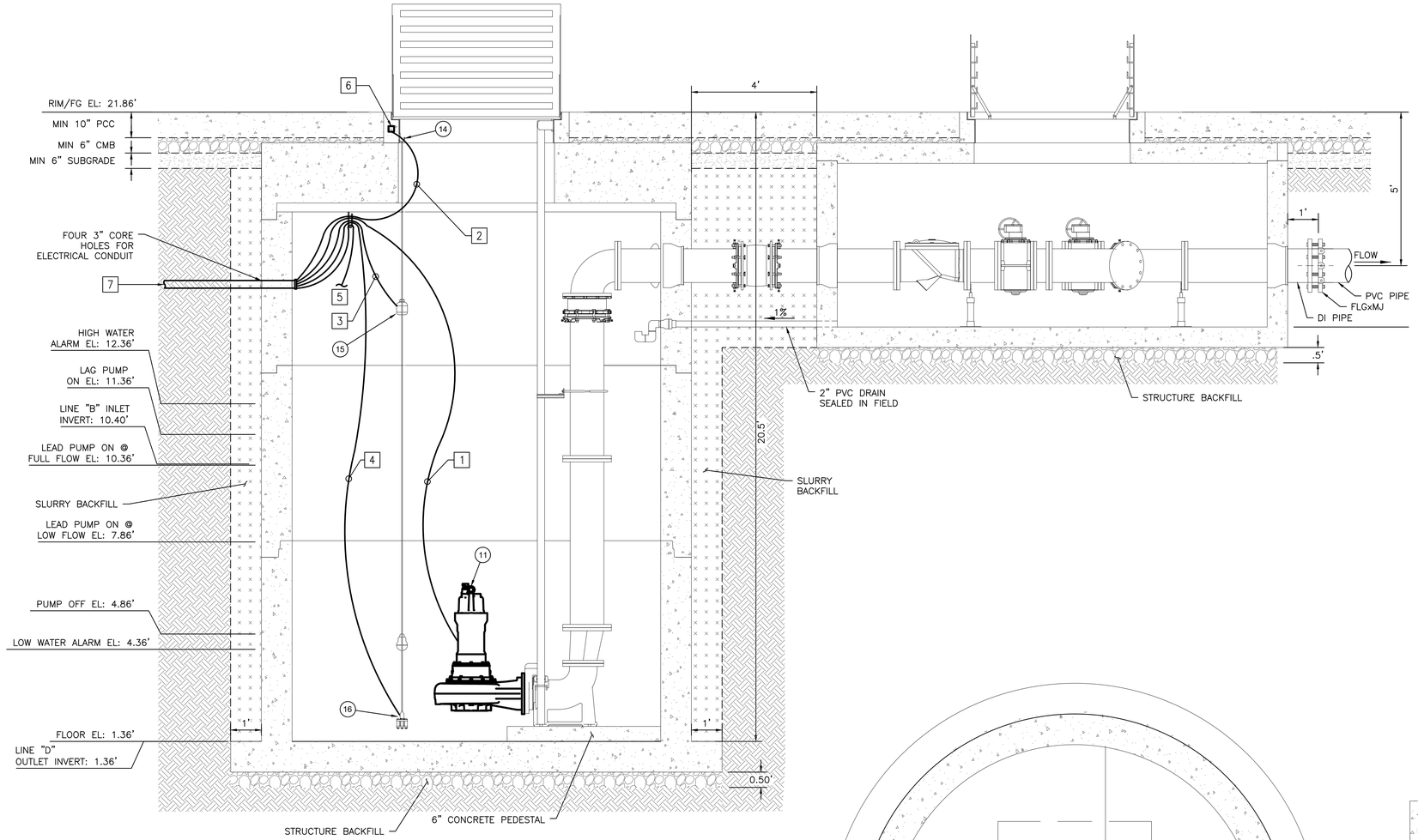
CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

ELECTRICAL PLAN

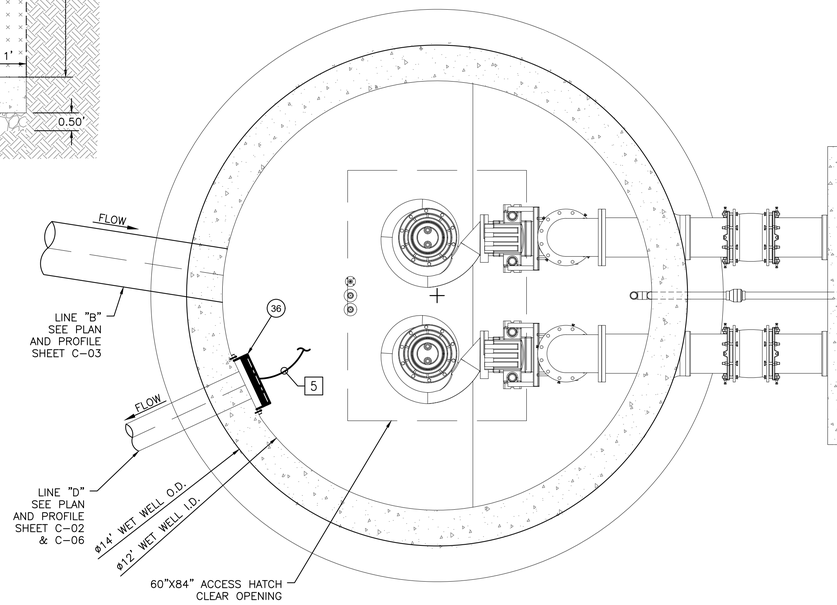
REVIEWED BY: JAVIER DE LA CRUZ, P.E. 4-10-23
SENIOR CIVIL ENGINEER DATE

SHEET E-04
Sheet 21 Of 49 Sheets



PROFILE SECTION VIEW

SCALE: 1"= 2'



PLAN SECTION VIEW

SCALE: 1"= 2'

NEW WORK PLAN NOTES:

1. (2) TWO PUMP POWER CONDUCTOR LEADS AND PUMP CONTROL WIRING LEADS (OVERTEMPERATURE, LEAK DETECTION, ETC.) FROM HIGH FLOW DIVERSION PUMPS.
2. CONTROL WIRING FROM WET WELL COVER INTRUSION DETECTION CONTACTS.
3. POWER/CONTROL WIRING FROM FLOAT LEVEL SENSOR.
4. POWER/CONTROL WIRING FROM PRESSURE TRANSDUCER LEVEL SENSOR.
5. POWER/CONTROL WIRING FROM SLIDE GATE ACTUATOR.
6. 304 STAINLESS STEEL CABLE HOOK BRACKET.
7. POWER AND CONTROL CONDUITS. COORDINATE WITH ELECTRICAL SITE PLAN AND SINGLE LINE DIAGRAM FOR CONDUIT QUANTITY AND SIZING.

PARTS LIST

ITEM	QTY	DESCRIPTION
14	1	304SS 3-HOOK FLOAT BRACKET
15	2	FLOAT SWITCH 100FT COX OPTI-F1100
16	1	PRESSURE TRANSDUCER 15PSI 100FT CABLE PMC VL2113-IS-15PSI-100'
11	2	SUBMERMSIBLE PUMP HOMA AK1056-330/40F/C WITH THERMAL AND SEAL FAIL SENSORS, STANDARD CABLE LENGTH OF 100FT (OR AGENCY APPROVED EQUAL)
36	1	CAST IRON SLIDE GATE WATERMAN 8" x 8" OR AGENCY APPROVED EQUAL

NOTE: SEE CIVIL DRAWING C-11 FOR COMPLETE PARTS LIST AND DETAILS.

SYSTEM CHARACTERISTICS

DESCRIPTION	VALUE
DUTY POINT	3021 gpm @ 29.4' TDH
MANUFACTURER	HOMA OR AGENCY APPROVED EQUAL
MODEL NUMBER	AK1056-330/40F/C
PUMP TYPE	SUBMERSIBLE NON-CLOG
MOTOR SIZE	40hp, 53 A
MAX PUMP RUN SPEED	1160 rpm
AVAILABLE POWER	480 V, 3 Ph
WET WELL LINER/COATING	TARGUARD COAL TAR EPOXY
ACCESS HATCH LOADING CRITERIA	DIRECT H-20

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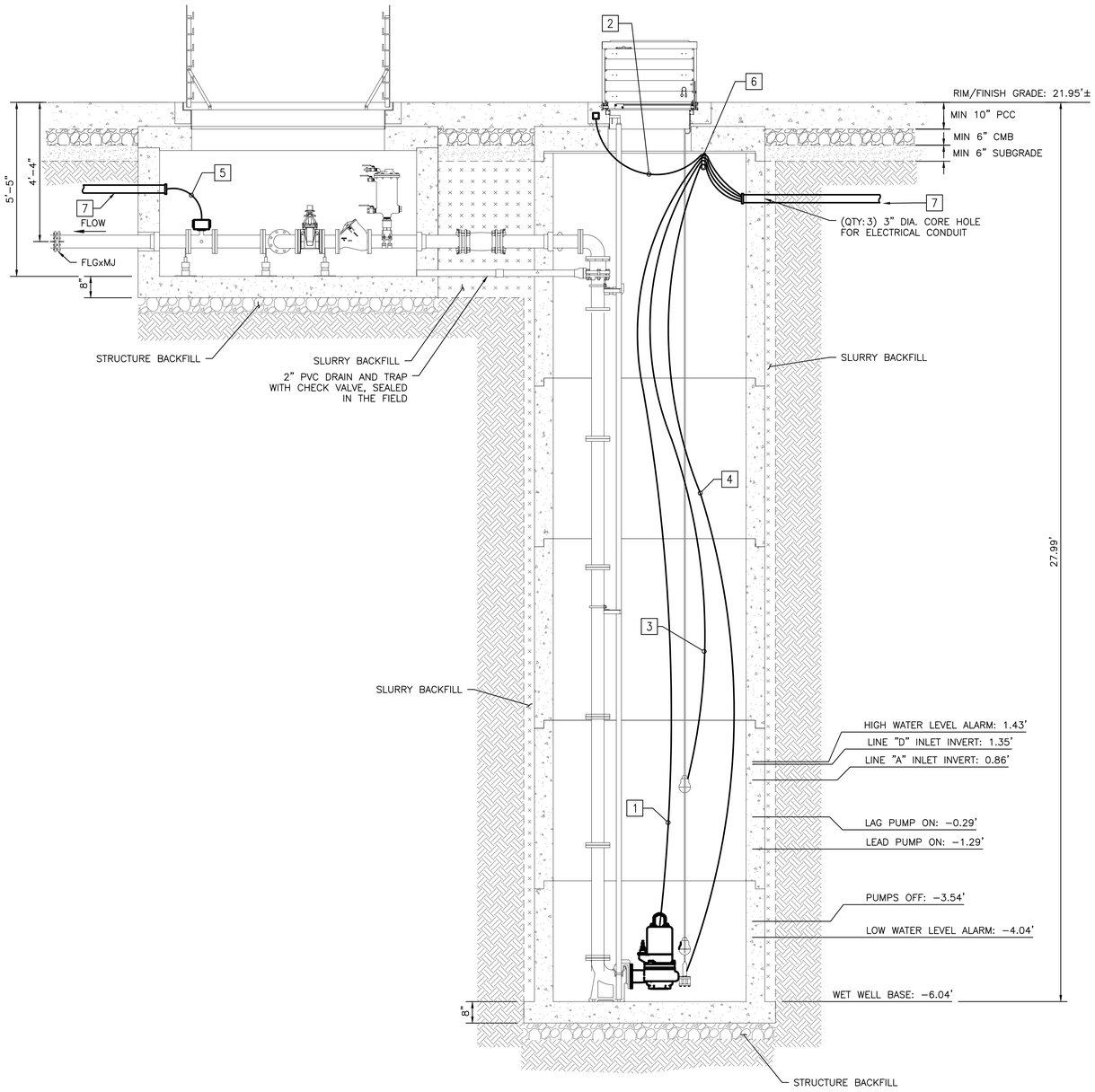
CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

HIGH FLOW DIVERSION PUMP ELECTRICAL DETAIL

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET E-05
Sheet 22 Of 49 Sheets



PROFILE SECTION VIEW
SCALE: 1"= 2'

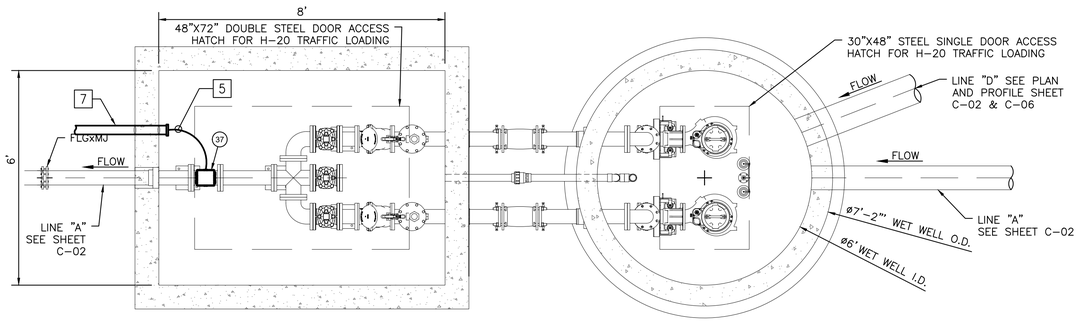
NEW WORK PLAN NOTES:

1. (2) TWO PUMP POWER CONDUCTOR LEADS AND PUMP CONTROL WIRING LEADS (OVERTEMPERATURE, LEAK DETECTION, ETC.) FROM HIGH FLOW DIVERSION PUMPS.
2. CONTROL WIRING FROM WET WELL COVER INTRUSION DETECTION CONTACTS.
3. POWER/CONTROL WIRING FROM FLOAT LEVEL SENSOR.
4. POWER/CONTROL WIRING FROM PRESSURE TRANSDUCER LEVEL SENSOR.
5. POWER/CONTROL WIRING FROM FLOW METER.
6. 304 STAINLESS STEEL CABLE HOOK BRACKET.
7. POWER AND CONTROL CONDUITS. COORDINATE WITH ELECTRICAL SITE PLAN AND SINGLE LINE DIAGRAM FOR CONDUIT QUANTITY AND SIZING.

SYSTEM CHARACTERISTICS	
DESCRIPTION	VALUE
DUTY POINT	280 gpm @ 45.1' TDH
MANUFACTURER	HOMA OR AGENCY APPROVED EQUAL
MODEL NUMBER	AMS434-200/7.5T/C
PUMP TYPE	SUBMERSIBLE NON-CLOG PUMP
MOTOR SIZE	7.5 hp, 9.4 A
MAX PUMP RUN SPEED	1750
VOLTAGE	480 V, 3 Ph
WET WELL LINER/COATING	TARGUARD COAL TAR EPOXY
ACCESS HATCH LOADING CRITERIA	DIRECT H-20

PARTS LIST		
ITEM	QTY	DESCRIPTION
8	2	SUBMERSIBLE PUMP HOMA AMS434-200/7.5T/C
25	2	FLOAT BRACKET 3 HOOK TYPE 316SS
26	1	FLOAT SWITCH 100FT COX OPTI-F1100
28	2	FLOAT SWITCH 100FT COX OPTI-F1100
37	1	4" ELECTROMAGNETIC FLOW METER

NOTE: SEE CIVIL DRAWING C-12 FOR COMPLETE PARTS LIST AND DETAILS.



PLAN SECTION VIEW
SCALE: 1"= 2'

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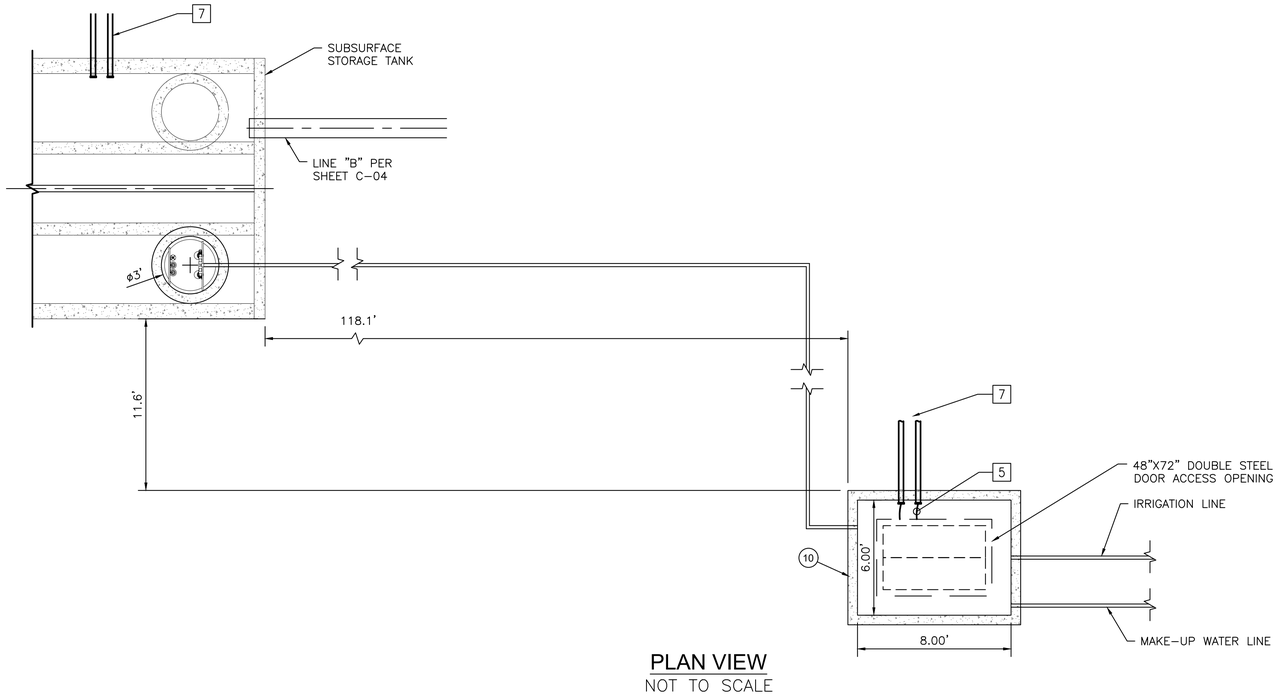
WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

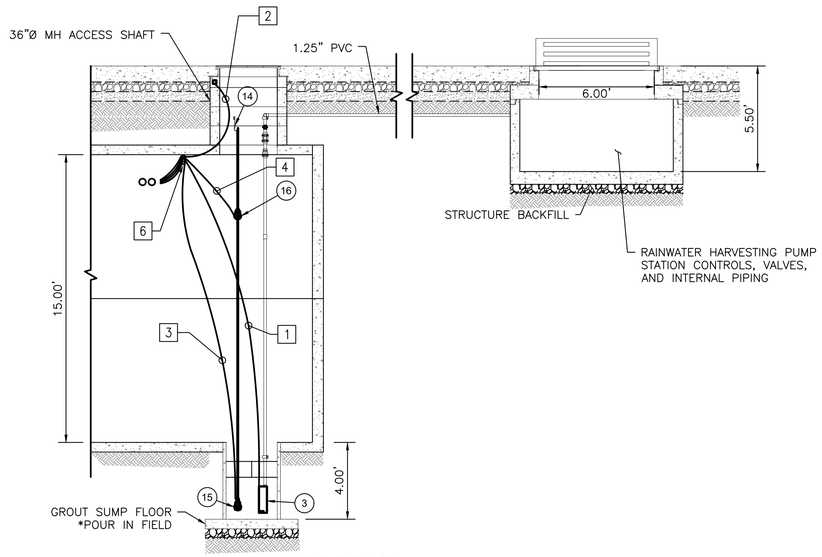
LOW FLOW SEWER DISCHARGE
PUMP ELECTRICAL DETAIL

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET
E-06
Sheet 23 Of 49 Sheets



PLAN VIEW
NOT TO SCALE



PROFILE
NOT TO SCALE

NEW WORK PLAN NOTES:

1. (2) TWO PUMP POWER CONDUCTOR LEADS AND PUMP CONTROL WIRING LEADS (OVERTEMPERATURE, LEAK DETECTION, ETC.) FROM IRRIGATION PUMPS.
2. CONTROL WIRING FROM WET WELL COVER INTRUSION DETECTION CONTACTS.
3. POWER/CONTROL WIRING FROM FLOAT LEVEL SENSOR.
4. POWER/CONTROL WIRING FROM PRESSURE TRANSDUCER LEVEL SENSOR.
5. POWER/CONTROL WIRING FROM MECHANICAL ENLOSURE.
6. 304 STAINLESS STEEL CABLE HOOK BRACKET.
7. POWER AND CONTROL CONDUITS. COORDINATE WITH ELECTRICAL SITE PLAN AND SINGLE LINE DIAGRAM FOR CONDUIT QUANTITY AND SIZING.

PARTS LIST		
ITEM	QTY	DESCRIPTION
3	2	MUNRO 5" SUBMERSIBLE PUMP, MODEL# MXS205S22, 1.5 HP, 1-1/4" THREADED DISCHARGE, STAINLESS STEEL CONSTRUCTION, 15' STANDARD CABLE LENGTH
10	1	MECHANICAL ENCLOSURE, 5' x 4'. INCLUDES CONTROL PANEL, FLOW METER, SELF CLEANING FILTER, 3-WAY ACTUATED VALVE, DISCHARGE PRESSURE TRANSDUCER, CHECK AND BUTTERFLY VALVES, FITTINGS AND COUPLINGS.
14	1	304SS 3-HOOK FLOAT BRACKET
15	12	APG PRESSURE TRANSDUCER W/ 100' CABLE LENGTH
16	2	OPTICAL FLOAT SWITCH BY OPTI-FLOAT W/ 100' CABLE LENGTH

NOTE: SEE CIVIL DRAWING C-12 FOR COMPLETE PARTS LIST AND DETAILS.

SYSTEM CHARACTERISTICS	
DESCRIPTION	VALUE
FLOW REQUIRED AT POC	9 GPM
PRESSURE REQUIRED AT POC	83 PSI
MANUFACTURER	MUNRO
MODEL NUMBER	SUBMERSIBLE NON-CLOG PUMP
PUMP TYPE	7.5 hp, 9.4 A
MOTOR SIZE	1750
VOLTAGE	480 V, 3 Ph
WET WELL LINEAR/COATING	NONE
ACCESS HATCH LOADING CRITERIA	DIRECT H-20

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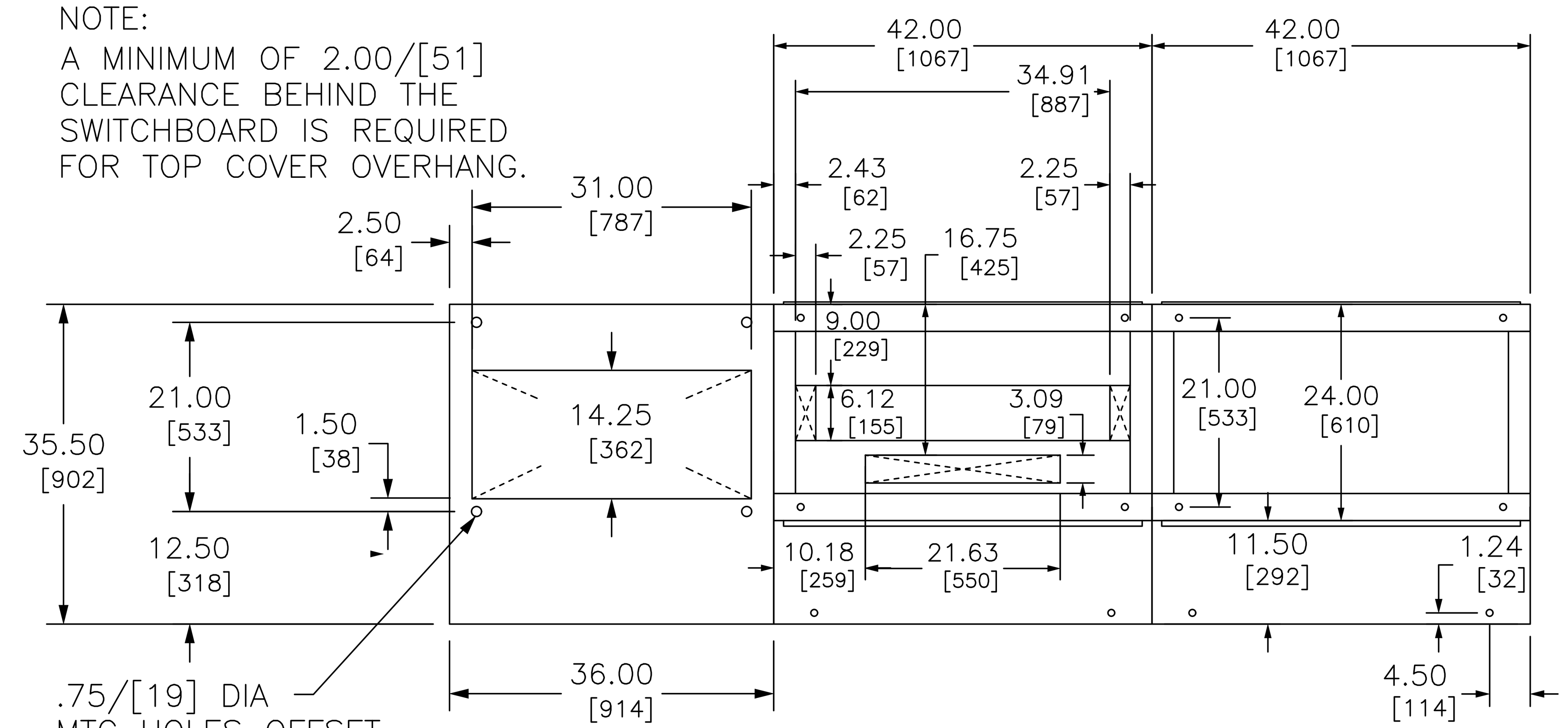
WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

IRRIGAGTION PUMP ELECTRICAL DETAIL

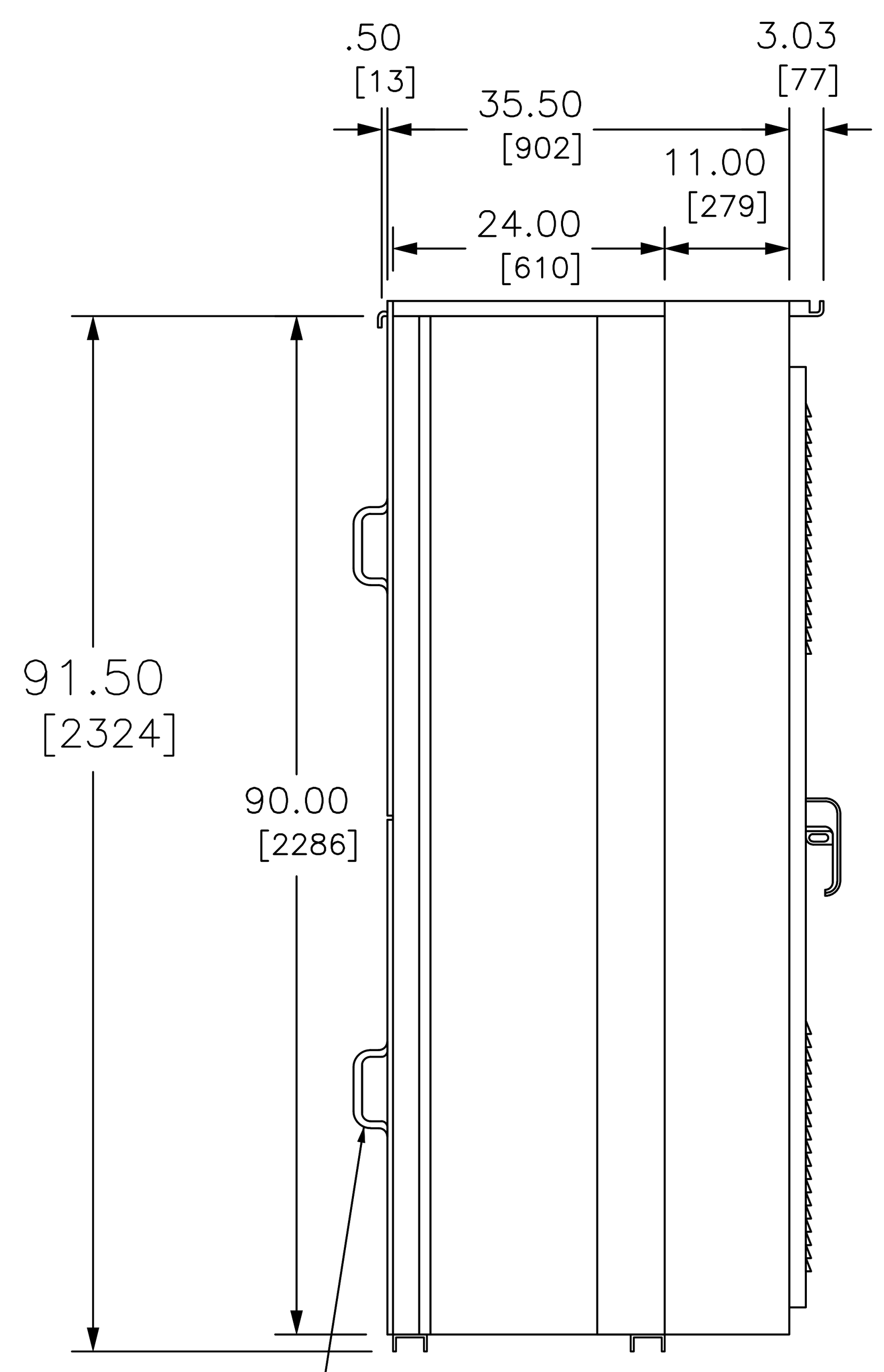
REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET E-07
Sheet 24 Of 49 Sheets

NOTE:
A MINIMUM OF 2.00/[51] CLEARANCE BEHIND THE SWITCHBOARD IS REQUIRED FOR TOP COVER OVERHANG.



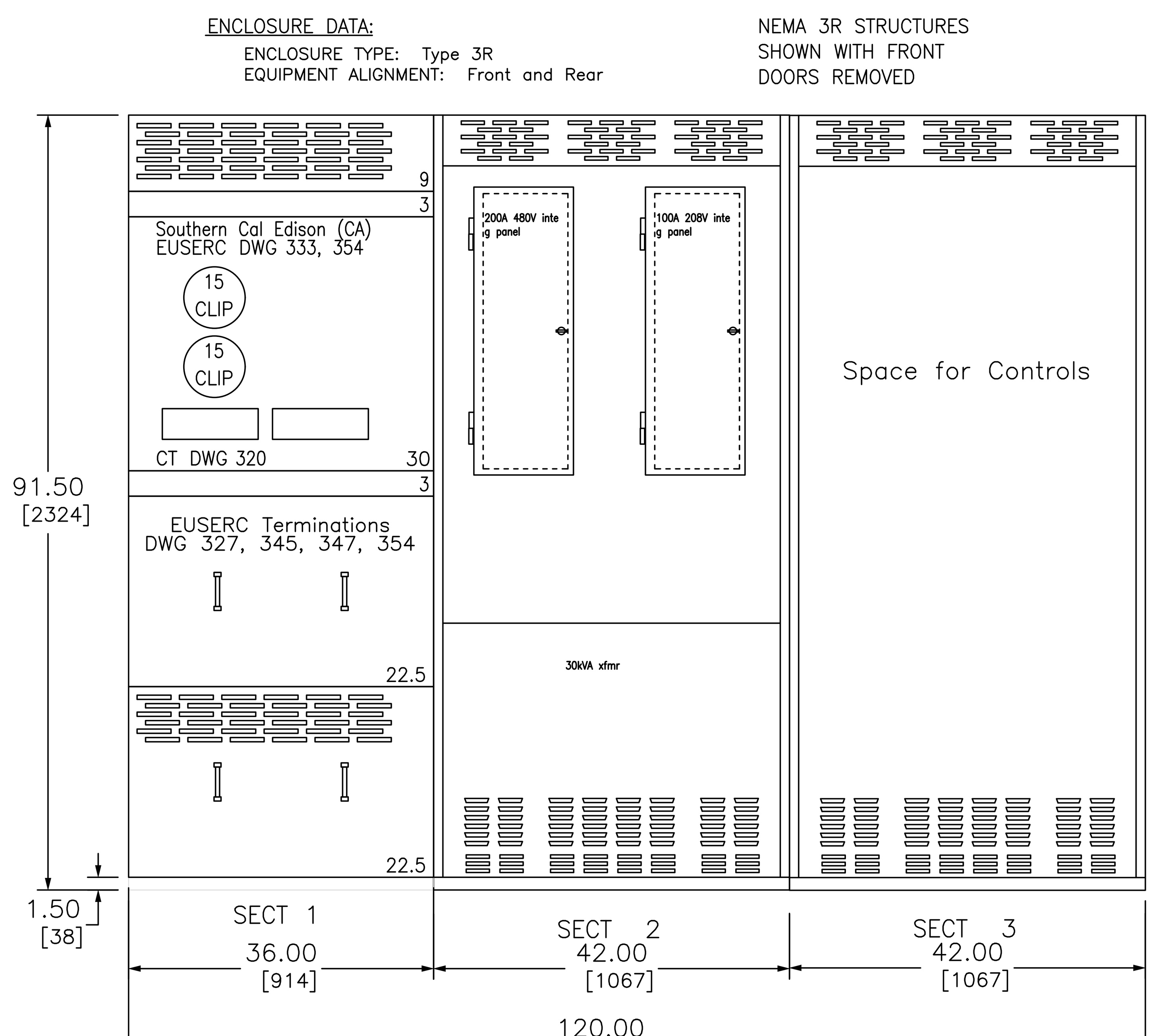
FLOOR PLAN - FRONT
N.T.S.



LEFT SIDE VIEW
N.T.S.

ENCLOSURE DATA:
ENCLOSURE TYPE: Type 3R
EQUIPMENT ALIGNMENT: Front and Rear

NEMA 3R STRUCTURES SHOWN WITH FRONT DOORS REMOVED



ELEVATION VIEW - FRONT
N.T.S.

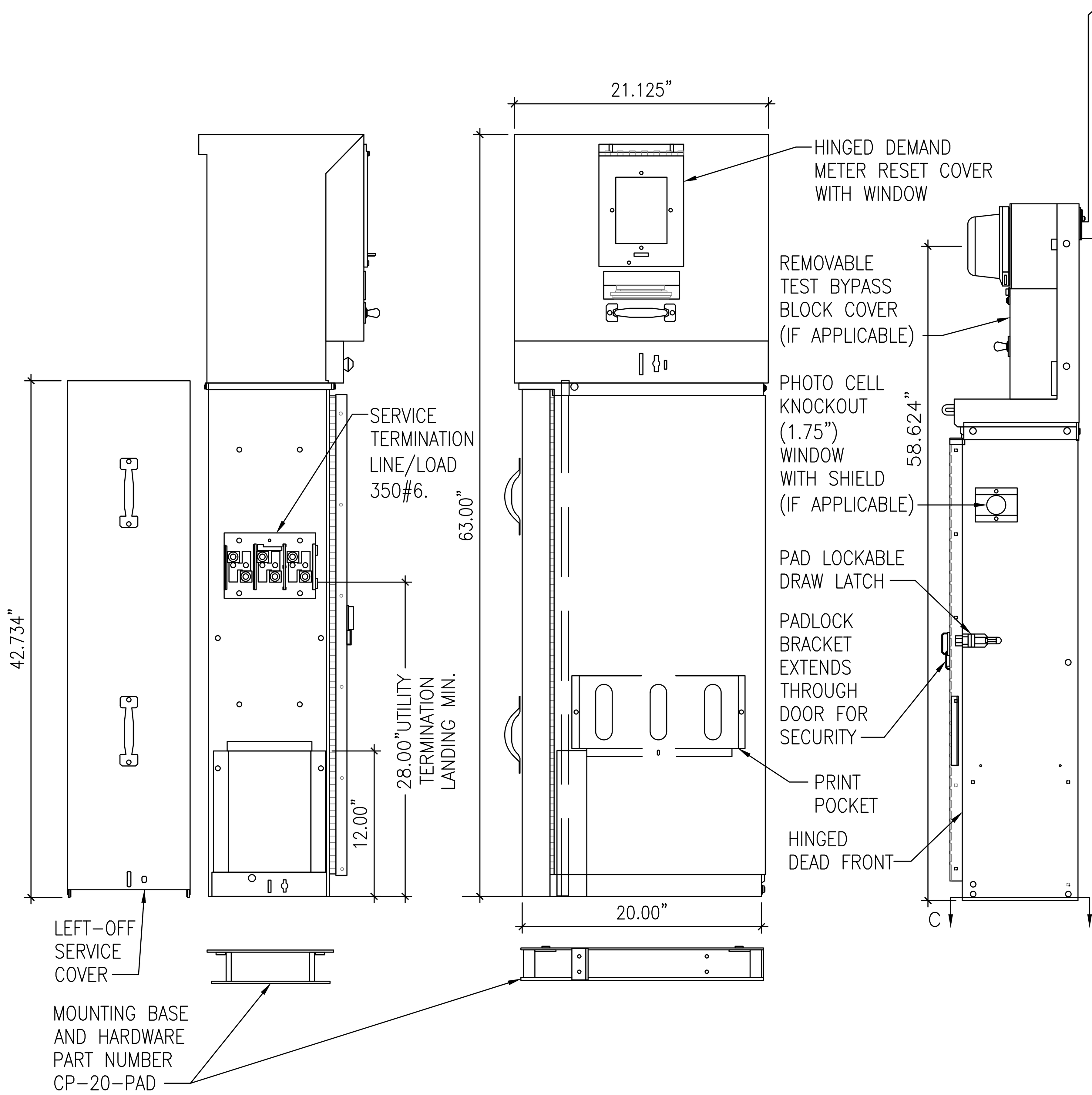
Section 1 – Utility UGPS & Meter
480Y/277V 3Ph 4W 60Hz / 3 Phase Wye, Solidly Grounded
System Short Circuit Current Rating: 22kA RMS
Incoming Section 1 Cable Through the Bottom Left of Lineup U.L. Deadfront and suitable for use as Service Entrance when not more than six (6) disconnecting means are provided.

Section 2 – IPC2
EXTERIOR COLOR: ANSI 49
PANELBOARD DATA (ITEM – 04943497)
DESIGNATION: 200A 480V integ panel
Single Main 30kA 200A
SYSTEM: 480Y/277V 3Ph 4W 60Hz

PANELBOARD DATA (ITEM – 04943566)
DESIGNATION: 100A 208V integ panel
LOCATION: Top Right
PANEL FEED: Through the Top
Single Main 30kA 100A
SYSTEM: 208Y/120V 3Ph 4W 60Hz
TRANSFORMER DATA
DESIGNATION: 30kVA xfmr
LOCATION: Bottom Single
TYPE: DOE 2016 EX 30kVA
VOLTAGE: 480v–208Y/120V WINDING MATERIAL: Copper
TEMPERATURE RISE: 150C

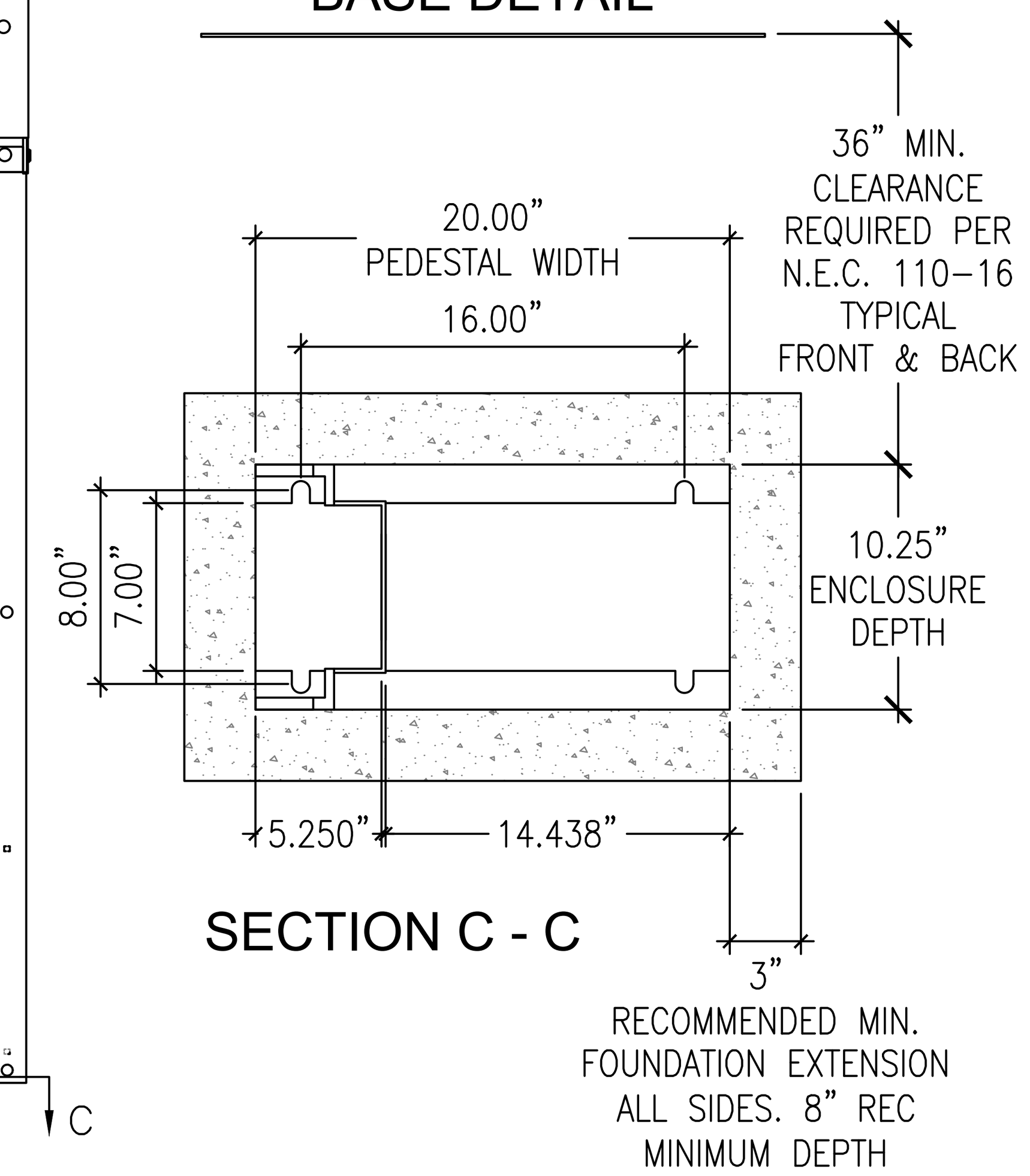
Section 3 – IPC2
EXTERIOR COLOR: ANSI 49
Equipment Space – SPACE FOR VFCs AND CONTROL SYSTEM COMPONENTS

DISTRIBUTION BOARD "DB1" (1/E-08)
N.T.S



PEDESTAL DETAIL (2/E-08)
N.T.S.

MOUNTING BASE DETAIL



SECTION C - C

NOTE:
PEDESTAL DETAIL IS FOR REFERENCE AND TO ESTABLISH DESIGN INTENT. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH UTILITY COMPANY (SCE) TO OBTAIN AND CONFIRM REQUIREMENTS FOR PEDESTAL, METERING AND DISCONNECT REQUIREMENTS. PROVIDE SUBMITTAL BASED ON CONFIRMED REQUIREMENTS.

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

ELECTRICAL ENCLOSURE DETAILS

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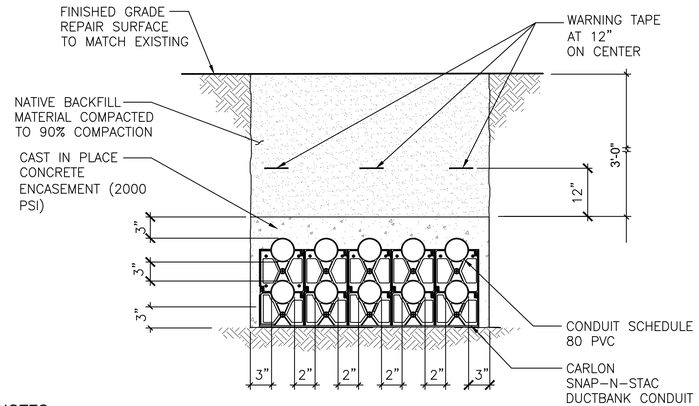
SENIOR CIVIL ENGINEER
DATE 4-10-23

SHEET E–08
Sheet 25 Of 49 Sheets



NOTES:

1. ADDITIONAL OR LESSER QUANTITY OF CONDUIT REQUIRES SAME SPACING.
2. REPAIR AND PATCH ALL SURFACES. TO MATCH EXISTING OR AS REQUIRED BY CIVIL DRAWINGS.
3. MINIMUM CONDUIT SWEEP RADIUS SHALL BE 36".
4. CONDUIT SIZES AND QUANTITY SHALL BE PER SITE & FLOOR PLANS.

TYPICAL UNDERGROUND CONDUIT DUCT BANK DETAIL

N.T.S.

1 / E-09

NOTES:

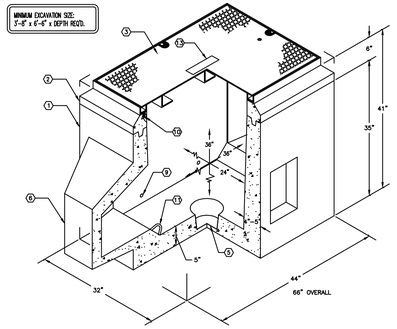
- PULL BOX DESIGNED IN ACCORDANCE WITH AASHTO H-20-44 TRAFFIC BRIDGE LOADING USING 5,500 PSI COMPRESSIVE STRENGTH CONCRETE AND 60,000 PSI YIELD STRENGTH ASTM A-706 STEEL REINFORCEMENT.
- STEEL COVER DESIGNED FOR H-20-44 TRAFFIC LOADING.
- RPM COVER DESIGNED FOR PARKWAY LOADING.
- PULL BOX TO BE PLACED ON A MIN 6" BASE OF CRUSHER RUN FOR EASE OF INSTALLATION AND END LOAD DISTRIBUTION.

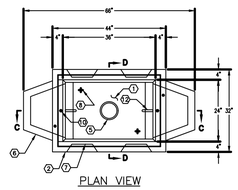
ORDERING INFORMATION:

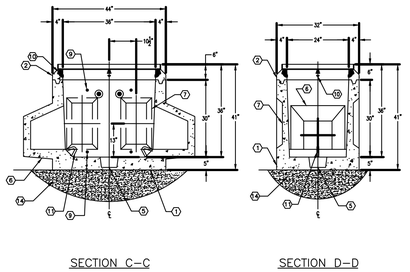
PER EDISON SPEC. UGS 215.1 PB-2
TOTAL WEIGHT OF ASSEMBLY SHOWN IS 2,150 lbs.

1. PB2436D-B30-05, 30" BOTTOM SECTION, WT. 1,822 lbs.
2. PB2436-TEE, 6" TOP SECTION, W/F2436-PB-ANG GALV. FRAME CAST IN, WT. 185 lbs.
3. A. SC2436-TOV, ONE PIECE TRAFFIC COVER, GALVANIZED FINISH. MARKED "EDISON", WT. 134 lbs. (AS SHOWN).
   B. 12-20-10, ONE PIECE RPM COVER. MARKED "EDISON", (NOT SHOWN).
4. 6" x 7" DIA. SUMP x 4" DEEP, BOTTOM SECTION.
5. 11" x 11" DUCTED K.O. x 13 1/2" DEEP, BOTTOM SECTION.
6. 8" x 16" K.O. x 3" DEEP, BOTTOM SECTION.
7. 1" DIA. BLIND GROUND ROD HOLE. BOTTOM SECTION.
8. ● 1/2" P-35-T INSERT. BOTTOM SECTION.
9. ○ 1/2" P-35-T INSERT W/CLEAN-OUT HOLE. TOP SECTION.
10. 7/8" DIA. X 9" VERTICAL GALV. PULL IRON, BOTTOM SECTION.
11. CABLE RACK.
12. LABELS FOR PULLBOXES TO BE APPROVED BY THE OWNER'S REPRESENTATIVE.
13. STRUCTURE BACKFILL: ROCK LAYER DOES NOT NEED TO BE ANY GREAT THAN 8 INCHES.

PARKWAY ASSEMBLY WITH RPM COVER K2436-DP36-11P.
LIGHT TRAFFIC ASSEMBLY WITH STEEL COVER K2436-DP36-11T.



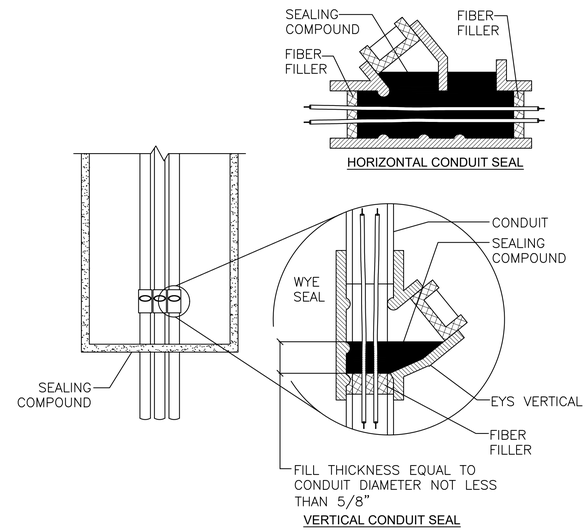




UNDERGROUND PULLBOX DETAIL

N.T.S.

2 / E-09



CONDUIT SEAL DETAIL

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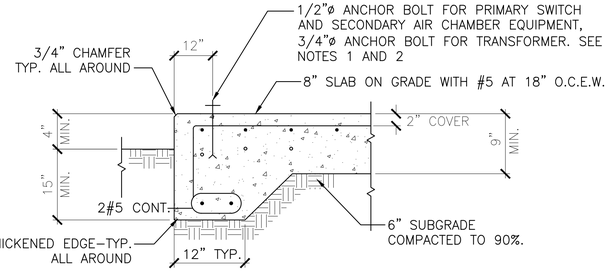
3 / E-09



STANDARD FOOTING

NOTES:

1. VERIFY WHAT IS SHOWN FOR EQUIPMENT HOLD DOWN IS AS RECOMMENDED BY SUPPLIER OF THE EQUIPMENT.
2. ANCHOR BOLTS SHALL BE HILTI STAINLESS STEEL KWIK BOLT TZ'S WITH MINIMUM EFFECTIVE EMBEDMENT DEPTH OF 3-1/4" FOR 1/2" DIAMETER AND 4-3/4" FOR 3/4" DIAMETER. INSTALLATION TO COMPLY WITH ICC-ESR 1917
3. SEE PLAN FOR DIMENSIONS.
4. PAD SHALL BE MIN. 4" ABOVE GRADE.
5. CONC. SHALL HAVE A MIN. COMPRESSIVE STRENGTH @ 28 DAYS OF 3000 Psi.
6. PROVIDE SMOOTH STEEL TROWEL FINISH.
7. REBAR SHALL CONFORM TO ASTM A615 GRADE 60.

CONCRETE PAD DETAIL

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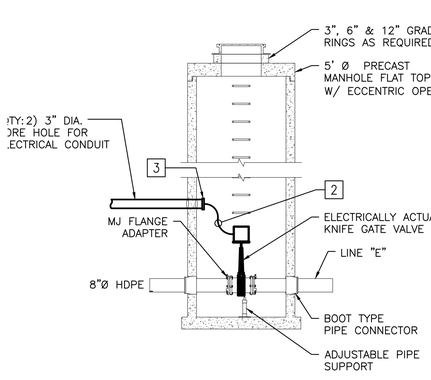
4 / E-09



KNIFE GATE FLOW CONTROL MH DETAIL

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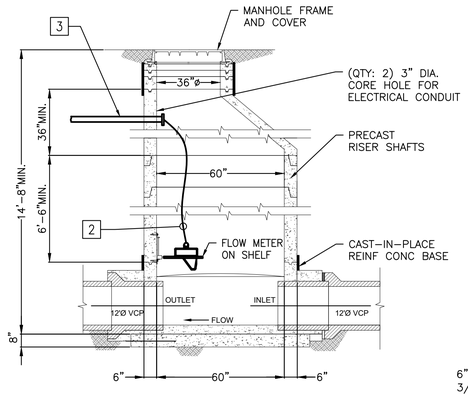

FLOW METER #1

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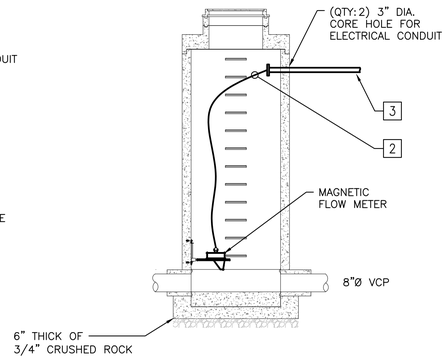

FLOW METER #2

N.T.S.

KEYNOTES:

1. POWER/CONTROL WIRING FROM KNIFE GATE (VALVE "B).
2. POWER/CONTROL WIRING FROM FLOW METER.
3. POWER AND CONTROL CONDUITS. COORDINATE WITH ELECTRICAL SITE PLAN AND SINGLE LINE DIAGRAM FOR CONDUIT QUANTITY AND SIZING.

KNIFE GATE AND FLOW METER MANHOLE DETAILS

N.T.S.

5 / E-09

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REGISTERED PROFESSIONAL ENGINEER — SEVAG AVANESSIAN — No. E22793 — ELECTRICAL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
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CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

ELECTRICAL DETAILS

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER
4-10-23
DATE

SHEET
E-09
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CONTROL SYSTEM PERFORMANCE SPECIFICATIONS

GENERAL REQUIREMENTS:

1. THE PUMP CONTROL, COMMUNICATION AND TELEMETRIC / SCADA SYSTEMS ARE DELEGATED DESIGN ITEMS. THE CONTRACTOR SHALL RETAIN THE SERVICES OF "UTILITY SYSTEMS SCIENCE & SOFTWARE (US)" COMPANY WHICH CURRENTLY INSTALLS, SERVICES AND MAINTAINS THE EXISTING SCADA / PLC SYSTEM FOR THE CITY.

   CONTACT INFORMATION:
   TOM WILLIAMS
   tom.williams@uscubed.com
   (619)546-4281
   UTILITY SYSTEMS SCIENCE & SOFTWARE (US)
   1250 PIONEER WAY SUITE F, EL CAJON CA 92020

2. CONTRACTOR IS RESPONSIBLE FOR DESIGNING, FURNISHING, INSTALLING, PROGRAMMING, TESTING AND COMMISSIONING A COMPLETE AND FUNCTIONAL SYSTEM, INCLUDING BUT NOT LIMITED TO PLC, TELEMETRIC / SCADA EQUIPMENT, CONTROLLERS, ANALOG AND DISCRETE INPUT/OUTPUT MODULES, LEVEL AND PRESSURE SENSORS AND TRANSDUCERS, ANTENNAS, INSTRUMENTS, LOW-VOLTAGE AND LINE-VOLTAGE RELAYS, HUMAN MACHINE INTERFACE (HMI) TOUCH-SCREEN DISPLAYS, INDICATOR LIGHTS, SELECTOR SWITCHES, PUSH-BUTTONS, POWER SUPPLIES, TRANSFORMERS, ENCLOSURES, MOUNTING HARDWARE, TERMINATIONS AND WIRING FOR ALL COMPONENTS INCLUDING INTERFACE WITH FIELD EQUIPMENT AND DEVICES SUCH AS PUMPS, STARTERS/VARIABLE FREQUENCY DRIVES, SENSORS, TRANSDUCERS, ACTUATORS, VALVES, GATES, ETC.

PROGRAMMABLE LOGIC CONTROLLER (PLC):

1. REFER TO SPECIFICATION SECTION 26 09 15 "PROGRAMMABLE LOGIC CONTROLLER" FOR COMPLETE REQUIREMENTS. IN ORDER TO BE COMPATIBLE WITH THE EXISTING CITY SCADA / TELEMETRY SYSTEM AND STANDARDS, THE PLC SHALL BE "ACE3600" SERIES BY "MOTOROLLA". SUBSTITUTIONS ARE NOT PERMISSIBLE.

2. PROVIDE PLC UNIT, WITH THE FOLLOWING FEATURES:

   a. 120V INPUT POWER
   b. CPU / MOTHERBOARD
   c. TELEMETRY RADIO MODULE COMPATIBLE WITH EXISTING CULVER CITY SYSTEMS
   d. POWER SUPPLY MODULE WITH BATTERY BACKUP
   e. MIXED I/0 DISCRETE MODULES
   f. MIXED I/O ANALOG MODULES
   g. METAL CHASSIS SIZED TO HOUSE ALL COMPONENTS.
   h. PROVIDE ALL MODULES, CARDS, POWER SUPPLIES, TRANSFORMERS, RELAYS, ETC. AS REQUIRED FOR THE SEQUENCE OF OPERATION.

3. COORDINATE TYPE AND QUANTITY OF PLC INPUTS AND OUTPUTS WITH TYPE AND QUANTITY OF INSTRUMENTS, INPUT DEVICES, OUTPUT DEVICES, FIELD DEVICES AND FIELD EQUIPMENT.

HUMAN MACHINE INTERFACE (HMI):

1. PROVIDE 10 INCH MULTI-TOUCH HMI SCREEN. A DIAGRAM OF THE SYSTEM AND ITS FUNCTIONS SHALL BE GRAPHICALLY DISPLAYED ON THE SCREEN, INCLUDING SHOWING THE CURRENT FLOW RATES CAPTURES BY THE FLOW METERS, STATUS OF SLIDE GATE BEING OPEN/CLOSED (VALVE "A"), STATUS OF KNIFE GATE BEING OPEN/CLOSED (VALVE "B) & PERCENTAGE OF KNIFE GATE VALVE OPENING, FLUID LEVELS IN THE WET WELL, INTRUSION ALARMS IN WET WELL.

PUSH BUTTONS, SELECTOR SWITCH AND INDICATOR LIGHTS:

1. PROVIDE "START" AND "STOP" PUSHBUTTONS FOR EACH PUMP SYSTEM (ONE SET OF BUTTONS FOR LOW-FLOW PUMP AND ONE SET OF BUTTONS FOR HIGH-FLOW PUMP. "START" BUTTON SHALL BE GREEN AND "STOP" BUTTON SHALL BE RED. "START" AND "STOP" PUSHBUTTONS SHALL BE INTEGRATED WITH THE PLC TO ALLOW FOR MANUAL REMOTE START OR STOPPING THE LOW-FLOW AND HIGH-FLOW PUMP SYSTEM. THE PUSHBUTTONS SHALL ONLY BE OPERABLE WHEN THE HAND-OFF-AUTO SELECTOR SWITCH IS IN THE "HAND" POSITION.

2. PROVIDE HAND-OFF-AUTO SELECTOR SWITCH AS FOLLOWS:

   a. "AUTO" MODE: THE PLC / SCADA SYSTEM OPERATES THE PUMP SYSTEMS BASED ON PROGRAMMING OR BASED ON OPERATOR INPUT THROUGH THE SCADA SYSTEM.
   b. "HAND" MODE: A LOCAL OPERATOR PHYSICALLY OPERATES THE PUMP SYSTEMS USING "START" AND "STOP" PUSHBUTTONS.
   c. "OFF" MODE: PUMP SYSTEMS ARE TURNED OFF. NEITHER THE PLC / SCADA SYSTEM NOR THE PUSHBUTTONS CAN OPERATE THE PUMP SYSTEM.

3. PROVIDE ONE "RED" AND ONE "GREEN" LED INDICATOR PILOT LIGHT FOR EACH PUMP SYSTEM (ONE SET OF INDICATOR LIGHTS FOR LOW-FLOW PUMP AND ONE SET FOR HIGH-FLOW PUMP). "RED" LIGHT SHALL BE ILLUMINATED WHEN THE ASSOCIATED PUMP IS NOT OPERATING. "GREEN" LIGHT SHALL BE ILLUMINATED WHEN THE ASSOCIATED PUMP IS OPERATING.

4. PROVIDE ENGRAVED WEATHERPROOF SIGNAGE IDENTIFYING EACH PUSHBUTTON, THE POSITIONS OF SELECTOR SWITCH AND FUNCTION OF EACH INDICATOR LIGHT. COORDINATE EXACT WORDING AND SIZE OF SIGNS WITH CULVER CITY REPRESENTATIVE.

RELAYS AND AUXILIARY MODULES:

1. PROVIDE ALL LINE-VOLTAGE AND LOW-VOLTAGE RELAYS, CONTROL MODULES, ISOLATION RELAYS / MODULES, ETC. AS REQUIRED FOR THE SEQUENCE OF OPERATION.

FLOW RECORDERS:

1. PROVIDE FLOW RECORDER PANELS COMPATIBLE WITH FLOW METERS. INTERFACE RECORDER PANELS WITH PLC / SCADA SYSTEM TO RECORD READINGS AND TRANSMIT RECORDED READINGS AND REAL-TIME READINGS TO THE CITY SCADA SYSTEM.

FIELD INSTRUMENTS, DEVICES AND EQUIPMENT:

1. FLOWMETER LOCATED IN LOW FLOW VAULT.
2. FLOWMETER LOCATED IN FLOW METER MANHOLE.
3. FLOAT LEVEL SENSORS LOCATED IN LOW FLOW, HIGH FLOW AND RAINWATER HARVESTING SYSTEM WET WELLS.
4. SUBMERSED PRESSURE TRANSDUCER LEVEL SENSORS LOCATED IN LOW FLOW, HIGH FLOW AND RAINWATER HARVESTING SYSTEM WET WELLS.
5. INTRUSION DETECTION CONTACTS AT LOW FLOW AND HIGH FLOW WELL COVER DOORS.
6. SUMBERSIBLE PUMP ALARMS, i.e. OVERTEMPERATURE ALARM, LEAK DETECTION ALARM, OVERLOAD ALARM, ETC.
7. NORMALLY OPEN CAST IRON SLIDE GATE (VALVE "A") LOCATED IN HIGH FLOW DIVERSION PUMP WELL.
8. POWER ACTUATED, VARIABLE FLOW KNIFE GATE (VALVE "B") LOCATED IN KNIFE GATE MANHOLE.

RAINFALL DETECTION DEVICE:

1. PROVIDE RAINFALL DETECTION DEVICE CAPABLE OF DETECTING RAINFALL WITH 0.01 INCH ACCURACY. DEVICE SHALL BE STAINLESS STEEL. MOUNT ON ELECTRICAL ENCLOSURE CONTROL SECTION AND CONNECT TO PLC SYSTEM AS REQUIRED TO PERFORM THE REQUIRED SEQUENCE OF OPERATION.

ANTENNA SYSTEM:

1. PROVIDE ANTENNA SYSTEM COMPATIBLE WITH PLC AND SUITABLE FOR USE WITH CULVER CITY SCADA.
2. ANTENNA SHALL BE, 150-200MHZ,7-ELEMENT RUGGED BROADBAND YAGI ANTENNA, FABRICATED BY 6061-6T ALUMINUM ROD AND SEAMLESS DRAWN PIPE, ANODIZED FOR CORROSION RESISTANCE AND FOAM SEALED COAX CABLE FEED AND CONNECTORS TO PREVENT MOISTURE PENETRATION, BY "SCALA" OR APPROVED EQUAL.
3. PROVIDE ANTENNA CABLE, CONNECTORS, GROUNDING, ETC. COMPATIBLE WITH ANTENNA SYSTEM AS REQUIRED FOR A COMPLETE INSTALLATION.
4. MOUNT ANTENNA ON ELECTRICAL ENCLOSURE CONTROL SECTION AND INTERFACE WITH PLC TELEMETRY SYSTEM AS REQUIRED TO TRANSMIT INFORMATION TO THE EXISTING CULVER CITY SCADA SYSTEM.

CONDUITS AND WIRING:

1. THE ELECTRICAL DRAWINGS SHOW EXACT CONDUIT AND CONDUCTOR SIZING FOR POWER TO THE PUMPS ONLY. ALL OTHER CONDUIT AND WIRING HAS BEEN SHOWN TO ESTABLISH A SCOPE OF WORK FOR THE CONTRACTOR WHO IS RESPONSIBLE FOR COMPLETE DESIGN AND INSTALLATION OF THE SYSTEM.
2. CONTRACTOR DESIGN SCOPE INCLUDE SIZING, TYPE AND QUANTITY OF WIRING FOR POWER AND CONTROL OF ALL INSTRUMENTS, DEVICES, SENSORS, RELAYS, MODULES, POWER SUPPLIES, ETC. THAT ARE PART OF THE PUMP CONTROL PLC / SCADA / TELEMETRY SYSTEMS.
3. ONCE SIZE, TYPE AND QUANTITY OF WIRING HAS BEEN DETERMINED, REVIEW THE SIZE AND QUANTITY OF CONDUITS SHOWN ON ELECTRICAL SITE PLANS TO VERIFY AND CONFIRM THE INFORMATION. ADJUST SIZE AND QUANTITY OF CONDUITS IF NECESSARY TO ACCOMMODATE THE WIRING SYSTEMS.

SYSTEM CONTROL AND MONITORING FUNCTIONS:

1. PLC SYSTEM SHALL BE CAPABLE OF CONTROLLING THE FOLLOWING THROUGH PROGRAM, USING THE HMI TOUCHSCREEN, OR REMOTELY BY AN OPERATOR USING THE SCADA SYSTEM AT CULVER CITY:

   a. RUN / STOP COMMAND TO VFD
   b. SPEED CONTROL OF VFDs.
   c. POSITION OF SLIDE GATE (OPEN OR CLOSED).
   d. ACTUATION OF KNIFE GATE INCLUDING PARTIAL OPENING AND CLOSING.
   e. SUBMERSIBLE PUMP ALARMS, i.e. OVERTEMPERATURE ALARM, LEAK DETECTION ALARM, OVERLOAD ALARM, ETC.

2. THE PLC SYSTEM SHALL MONITOR THE FOLLOWING, TO BE DISPLAYED ON THE HMI TOUCHSCREEN AND TRANSMITTED THE INFORMATION THROUGH THE SCADA SYSTEM TO CULVER CITY:

   a. STATUS OF VFDs (RUNNING / STOPPED).
   b. SPEED OF VFDs.
   c. POSITION OF SLIDE GATE (OPEN OR CLOSED).
   d. POSITION OF KNIFE GATE (OPEN OR CLOSE) & PERCENTAGE OF OPENING.
   e. FLUID LEVELS IN EACH WET WELL AS INDICATED BY BOTH THE FLOAT LEVEL SENSOR AND SUBMERSIBLE PRESSURE TRANSDUCER LEVEL SENSOR.
   f. FLOWMETER READING FROM LOW FLOW VAULT.
   g. FLOWMETER READING FROM FLOW METER MANHOLE.
   h. INTRUSION DETECTION CONTACTS AT LOW FLOW AND HIGH FLOW WELL COVER DOORS.

SYSTEM DESIGN AND SHOP DRAWINGS:

CONTRACTOR SHALL DESIGN THE PUMP CONTROL PLC / SCADA / TELEMETRY SYSTEM. THE SYSTEM DESIGNER SHALL BE A PERSON WITH A MINIMUM OF 3 YEARS EXPERIENCE DESIGNING, PROGRAMMING AND TESTING SYSTEMS IDENTICAL OR VERY SIMILAR TO THE SYSTEMS IN THE SCOPE OF WORK FOR THIS PROJECT. PROVIDE DETAILED SHOP DRAWINGS THAT INCLUDE THE FOLLOWING:

1. A COMPREHENSIVE NARRATIVE DESCRIBING THE OPERATION OF THE SYSTEM AS A WHOLE AS WELL AS FUNCTIONS OF THE VARIOUS COMPONENTS OF THE SYSTEM. THE INTENT IS FOR THE CURRENT OR FUTURE USERS AND OPERATORS OF THE SYSTEM TO BE ABLE TO HAVE REFER BACK TO THIS DOCUMENT AND CLEARLY UNDERSTAND THE OPERATION AND FUNCTIONS OF THE SYSTEM.
2. CUT-SHEETS / SPECIFICATION SHEETS FOR ALL EQUIPMENT, DEVICES AND INSTRUMENTS USED IN THE SYSTEM.
3. PLANS AND ELEVATIONS, INCLUDING SITE PLAN SHOWING CONNECTION TO FIELD DEVICES, EQUIPMENT AND INSTRUMENTS.
4. POINT-TO-POINT WIRING DIAGRAMS, IDENTIFYING EACH TERMINAL OF EVERY COMPONENTS, TYPE AND QUANTITY OF WIRING OR CONNECTION BETWEEN POINTS, FUNCTION OF EACH COMPONENT, INCLUDING ALL FIELD DEVICES, EQUIPMENT AND INSTRUMENTS.

SYSTEM PROGRAMMING:

1. PROVIDE PROGRAMMING OF THE PLC / SCADA / TELEMETRY SYSTEMS TO PROVIDE THE SEQUENCE OF OPERATION DESCRIBED IN THE CIVIL DRAWINGS, AND TO PROVIDE THE CONTROL AND MONITORING FUNCTIONS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS.

TESTING AND COMMISSIONING:

1. AFTER INSTALLATION AND PROGRAMMING HAS BEEN COMPLETED, PROVIDE TESTING AND COMMISSIONING OF THE ENTIRE SYSTEM, INCLUDING FUNCTIONAL TESTING OF ALL INSTRUMENTS, INPUT DEVICES, OUTPUT DEVICES AND EQUIPMENT. FINAL TESTING SHALL DEMONSTRATE THAT ALL FUNCTIONS OF INPUT DEVICES AND ALL FUNCTIONS OF OUTPUT DEVICES, AS WELL AS EQUIPMENT AND DEVICES CONNECTED TO INPUT AND OUTPUT, ARE BEING PERFORMED PROPERLY. IF ANY PART OF THE SYSTEM IS NOT OPERATING CORRECTLY, CONTRACTOR SHALL IDENTIFY THE CAUSE, RESOLVE THE ISSUE AND REPEAT THE TESTING IN ITS ENTIRETY TO DEMONSTRATE A COMPLETE AND FUNCTIONAL SYSTEM.

SEQUENCE OF OPERATION:

1. SEE CIVIL DRAWING C-16 FOR COMPLETE SEQUENCE OF OPERATION

COORDINATION:

IT IS ESSENTIAL AND NECESSARY FOR THE CONTRACTOR TO CAREFULLY COORDINATE THE ELECTRICAL, IN PARTICULAR THE PUMP CONTROL PLC / SCADA / TELEMETRY SYSTEMS, WITH ALL OTHER DISCIPLINES. IT IS SPECIALLY IMPORTANT FOR ALL SUB-CONTRACTORS TO OBTAIN DRAWINGS AND SPECIFICATIONS FOR ALL DISCIPLINES AND UNDERSTAND THE COMPLETE SCOPE OF WORK. IN PARTICULAR, THE SEQUENCE OF OPERATION SHOWN ON THE CIVIL DRAWINGS MUST BE UNDERSTOOD CLEARLY BY CONTRACTOR OR SUBCONTRACTORS WHO ARE RESPONSIBLE FOR DESIGNING, PROGRAMMING, INSTALLING AND TESTING THE PUMP CONTROL SYSTEM.

TRAINING:

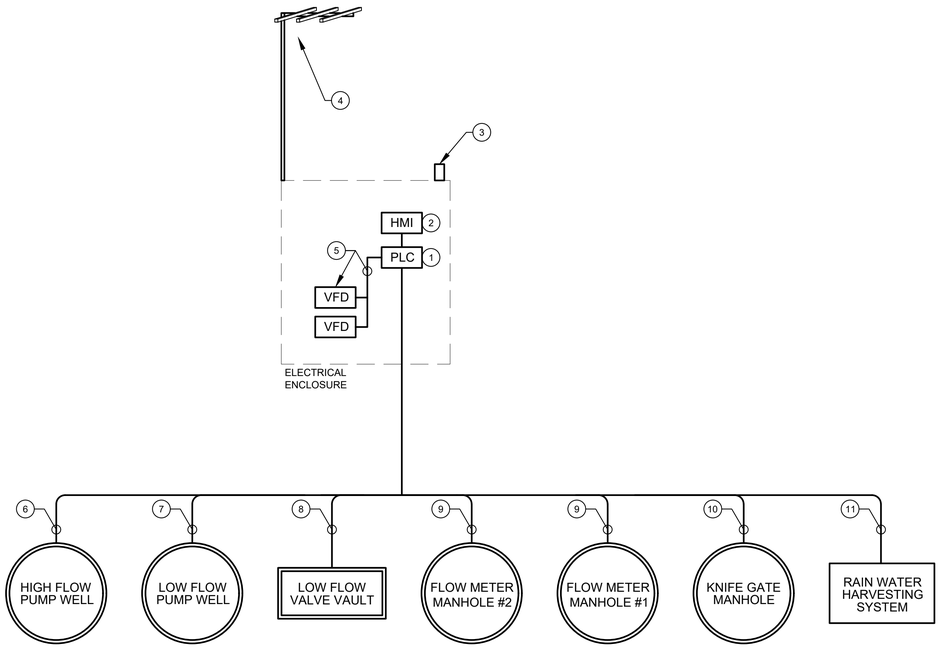
1. AT THE CONCLUSION OF WORK, AFTER ALL POWER AND CONTROL EQUIPMENT HAVE BEEN INSTALLED, ENERGIZED, PROGRAMMED, TESTED/COMMISSIONED AND READY FOR USE, PROVIDE TRAINING FOR CULVER CITY STAFF.
2. TRAINING SESSION SHALL BE NO LESS THAN 8 HOURS AND SHALL COVER THE OPERATION AND MAINTENANCE OF THE PUMP CONTROL PLC / SCAD / TELEMETRY SYSTEMS.
3. TRAINING SHALL BE PERFORMED BY A FACTORY TECHNICIAN OR AUTHORIZED VENDOR OF THE SPECIFIC PRODUCTS USED IN THE SYSTEM.

RECORD DOCUMENTS:

1. AFTER INSTALLATION, PROGRAMMING, TESTING AND COMMISSIONING HAVE ALL BEEN COMPLETED TO THE SATISFACTION OF INSPECTION AND CULVER CITY, PROVIDE (3) THREE HARD COPIES AND (3) THREE USB THUMB DRIVES WITH DIGITAL FORMAT COPIES OF RECORD DOCUMENTS TO CULVER CITY.
2. THE RECORD DOCUMENTS SHALL INCLUDE THE SHOP DRAWINGS PACKAGE BUT AMENDED BY THE CONTRACTOR TO REFLECT THE FINAL FIELD CONDITIONS OF THE INSTALLATION, INCLUDING FINAL LOCATION OF ALL EQUIPMENT AND DEVICES AS WELL AS ANY CHANGES, MODIFICATIONS OR OTHER INFORMATION THAT WERE NOT REFLECTED ON THE SHOP DRAWINGS.
3. THE RECORD DOCUMENTS PACKAGE SHALL ALSO INCLUDE ALL OPERATIONS & MAINTENANCE MANUALS, WARRANTY/GUARANTEE INFORMATION AND ALL OTHER DOCUMENTATION IN POSSESSION OF THE CONTRACTOR THAT ARE PERTINENT TO THE PUMP CONTROL PLC / SCADA / TELEMETRY SYSTEMS.

NEW WORK KEYNOTES:

1. PROVIDE PLC.
2. PROVIDE HMI TOUCHSCREEN.
3. PROVIDE RAIN DETECTION DEVICE. INTERFACE WITH PLC.
4. PROVIDE ANTENNA. INTERFACE WITH PLC.
5. INTERFACE PLC WITH VFD UNITS FOR RUN/STOP AND SPEED CONTROL.
6. INTERFACE PLC WITH HIGH FLOW PUMP WELL SLIDE GATE (VALVE "A"), FLOAT LEVEL SENSOR, PRESSURE TRANSDUCER LEVEL SENSOR, SUBMERSIBLE PUMP ALARMS AND INTRUSION DETECTION.
7. INTERFACE PLC WITH LOW FLOW PUMP WELL FLOAT LEVEL SENSOR, PRESSURE TRANSDUCER LEVEL SENSOR, SUBMERSIBLE PUMP ALARMS AND INTRUSION DETECTION.
8. INTERFACE PLC WITH LOW FLOW VALVE VAULT FLOW METER.
9. INTERFACE PLC WITH FLOW METER IN FLOW METER MANHOLE.
10. INTERFACE PLC WITH POWER ACTUATED KNIFE GATE (VALVE "B") IN KNIFE GATE MANHOLE.
11. INTERFACE PLC WITH LEVEL SENSORS IN RAIN WATER HARVESTING SYSTEM WET WELL.



CONTROL SYSTEM BLOCK DIAGRAM

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

CONTROL AND COMMUNICATION SYSTEM BLOCK DIAGRAM AND PERFORMANCE SPECIFICATIONS

DIGALERT — DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG TOLL FREE 1-800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

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REGISTERED PROFESSIONAL ENGINEER — SISAG AVANESSIAN — No. E22793 — ELECTRICAL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
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REVIEWED BY: JAVIER DE LA CRUZ, P.E. 4-10-23
SENIOR CIVIL ENGINEER DATE

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E-10
Sheet 27 Of 49 Sheets

EROSION AND SEDIMENT CONTROL NOTES:

SEDIMENTS FROM AREAS DISTURBED BY CONSTRUCTION SHALL BE RETAINED ON-SITE USING AN EFFECTIVE COMBINATION OF EROSION AND SEDIMENT CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE, AND STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO MINIMIZE SEDIMENT TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES OR ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TRACKING, OR WIND.

WASTE AND MATERIALS MANAGEMENT CONTROL NOTES:

APPROPRIATE BEST MANAGEMENT PRACTICES (BMPS) FOR CONSTRUCTION-RELATED MATERIALS, WASTES, SPILLS OR RESIDUES SHALL BE IMPLEMENTED AND RETAINED ON-SITE TO MINIMIZE TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES, OR ADJOINING PROPERTY BY WIND OR RUNOFF.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

(NPDES) NOTES:

IN THE CASE OF EMERGENCY, CALL:

AT WORK PHONE #

AT HOME PHONE #

1. SEDIMENT FROM AREAS DISTURBED BY CONSTRUCTION SHALL BE RETAINED ON-SITE USING STRUCTURAL CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE.
2. STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO MINIMIZE SEDIMENT TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES OR ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TRACKING, OR WIND.
3. APPROPRIATE BMPS FOR CONSTRUCTION-RELATED MATERIALS, WASTES, SPILLS SHALL BE IMPLEMENTED TO MINIMIZE TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES, OR ADJOINING PROPERTIES BY WIND OR RUNOFF.
4. RUNOFF FROM EQUIPMENT AND VEHICLE WASHING SHALL BE CONTAINED AT CONSTRUCTION SITES UNLESS TREATED TO REDUCE OR REMOVE SEDIMENT AND OTHER POLLUTANTS.
5. ALL CONSTRUCTION CONTRACTOR AND SUBCONTRACTOR PERSONNEL ARE TO BE MADE AWARE OF THE REQUIRED BEST MANAGEMENT PRACTICES AND GOOD HOUSEKEEPING MEASURES FOR THE PROJECT SITE AND ANY ASSOCIATED CONSTRUCTION STAGING AREAS.
6. AT THE END OF EACH DAY OF CONSTRUCTION ACTIVITY ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND PROPERLY DISPOSED IN TRASH OR RECYCLE BINS.
7. CONSTRUCTION SITES SHALL BE MAINTAINED IN SUCH A CONDITION THAT AN ANTICIPATED STORM DOES NOT CARRY WASTES OR POLLUTANTS OFF THE SITE. DISCHARGES OF MATERIAL OTHER THAN STORMWATER ONLY WHEN NECESSARY FOR PERFORMANCE AND COMPLETION OF CONSTRUCTION PRACTICES AND WHERE THEY DO NOT: CAUSE OR CONTRIBUTE TO A VIOLATION OF ANY WATER QUALITY STANDARD; CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR NUISANCE; OR CONTAIN A HAZARDOUS SUBSTANCE IN A QUANTITY REPORTABLE UNDER FEDERAL REGULATIONS 40 CFR PARTS 117 AND 302.
8. POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SOLID OR LIQUID CHEMICAL SPILLS; WASTES FROM PAINTS, STAINS, SEALANTS, GLUES, LIMES, PESTICIDES, HERBICIDES, WOOD PRESERVATIVES, AND SOLVENTS; ASBESTOS FIBERS, PAINT FLAKES, OR STUCCO FRAGMENTS; FUELS, OILS, LUBRICANTS, AND HYDRAULIC, RADIATOR OR BATTERY FLUIDS; FERTILIZERS, VEHICLE/EQUIPMENT WASH WATER, AND CONCRETE WASH WATER; CONCRETE, DETERGENT, OR FLOATABLE WASTES; WASTES FROM ANY ENGINE/EQUIPMENT STEAM CLEANING OR CHEMICAL DEGREASING AND SUPERCHLORINATED POTABLE WATER LINE FLUSHING.

   DURING CONSTRUCTION, PERMITTEE SHALL DISPOSED OF SUCH MATERIALS IN A SPECIFIED AND CONTROLLED TEMPORARY AREA ON-SITE, PHYSICALLY SEPARATED FROM POTENTIAL STORMWATER RUNOFF, WITH ULTIMATE DISPOSAL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
9. DEWATERING OF CONTAMINATED GROUNDWATER, OR DISCHARGING CONTAMINATED SOILS VIA SURFACE EROSION IS PROHIBITED. DEWATERING OF NON-CONTAMINATED GROUNDWATER REQUIRES A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FROM THE RESPECTIVE STATE REGION WATER QUALITY CONTROL BOARD.
10. GRADED AREAS ON THE PERMITTED AREA PERIMETER MUST DRAIN AWAY FROM THE FACE OF SLOPES AT THE CONCLUSION OF EACH WORKING DAY. DRAINAGE IS TO BE DIRECTED TOWARD DESILTING FACILITIES.
11. THE PERMITTEE AND CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATER CREATES A HAZARDOUS CONDITION.
12. THE PERMITTEE AND CONTRACTOR SHALL INSPECT THE EROSION CONTROL WORK AND INSURE THAT THE WORK IS IN ACCORDANCE WITH THE APPROVED PLANS.
13. THE PERMITTEE SHALL NOTIFY ALL GENERAL CONTRACTORS, SUBCONTRACTORS, MATERIAL SUPPLIERS, LESSEES, AND PROPERTY OWNERS: THAT DUMPING OF CHEMICALS INTO THE STORM DRAIN SYSTEM OR THE WATERSHED IS PROHIBITED.
14. EQUIPMENT AND WORKERS FOR EMERGENCY WORK SHALL BE MADE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON. NECESSARY MATERIALS SHALL BE AVAILABLE ON-SITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES WHEN RAIN IS IMMINENT.
15. ALL REMOVABLE EROSION PROTECTIVE DEVICES SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN THE 5-DAY RAIN PROBABILITY FORECAST EXCEEDS 40%.
16. SEDIMENTS FROM AREAS DISTURBED BY CONSTRUCTION SHALL BE RETAINED ON-SITE USING AN EFFECTIVE COMBINATION OF EROSION AND SEDIMENT CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE, AND STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO MINIMIZE SEDIMENT TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES OR ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TRACKING, OR WIND.
17. APPROPRIATE BMPS FOR CONSTRUCTION-RELATED MATERIALS, WASTES, SPILLS OR RESIDUES SHALL BE IMPLEMENTED AND RETAINED ON-SITE TO MINIMIZE TRANSPORT FROM THE SITES TO STREETS, DRAINAGE FACILITIES, OR ADJOINING PROPERTY BY WIND OR RUNOFF.

AS THE PROJECT OWNER OR AUTHORIZED AGENT OF THE OWNER, I HAVE READ AND UNDERSTAND THE REQUIREMENT TO CONTROL STORM WATER POLLUTION FROM SEDIMENTS, EROSION, AND CONSTRUCTION MATERIALS, AND I CERTIFY THAT I WILL COMPLY WITH THESE REQUIREMENTS, I, OR MY REPRESENTATIVE, CONTRACTOR, DEVELOPER, OR ENGINEER WILL MAKE CERTAIN THAT ALL BMPs SHOWN ON THIS PLAN WILL BE FULLY IMPLEMENTED, AND ALL EROSION CONTROL DEVICES WILL BE KEPT CLEAN AND FUNCTIONING. PERIODIC INSPECTION OF THE BMPs WILL BE CONDUCTED AND A CURRENT LOG, SPECIFYING THE EXACT NATURE OF THE INSPECTION AND ANY REMEDIAL MEASURES, WILL BE KEPT AT THE CONSTRUCTION SITE AT ALL TIMES AND WILL BE AVAILABLE FOR THE REVIEW BY THE APPROPRIATE OFFICIAL(S).

AS THE PROJECT OWNER OR AUTHORIZED AGENT OF OWNER, "I CERTIFY THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASE ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE INFORMATION SUBMITTED IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT SUBMITTING FALSE AND/OR INACCURATE INFORMATION, FAILING TO UPDATE THE SWPPP TO REFLECT CURRENT CONDITIONS, OR FAILING TO PROPERLY AND/OR ADEQUATELY IMPLEMENT THE EROSION CONTROL PLAN MAY RESULT IN REVOCATION OF GRADING AND/OR OTHER PERMITS OR OTHER SANCTION PROVIDED BY LAW."

PROJECT MANAGER: _____ DATE: _____

STORM WATER POLLUTION PREVENTION PLAN NOTES:

1. EVERY EFFORT SHOULD BE MADE TO ELIMINATE THE DISCHARGE OF NON-STORM WATER 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 SHEET FLOW, 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. AS THE PROJECT OWNER OR AUTHORIZED AGENT OF THE OWNER, I HAVE READ AND UNDERSTAND THE REQUIREMENTS LISTED ABOVE, NECESSARY TO CONTROL STORM WATER POLLUTION FROM SEDIMENTS, EROSION, AND CONSTRUCTION MATERIALS, AND I CERTIFY THAT I WILL COMPLY WITH THESE REQUIREMENTS.

PRINT NAME:_____

SIGNATURE: _____
DATE: _____

CHANGES TO THIS PLAN CAN ONLY BE MADE BY THE QSD WHO DEVELOPED THIS ESCP.
FOR REVISIONS CONTACT THE PROJECT QSD.
QSD: CHRIS PENDROY CERT # 24503.
CWE ADDRESS: 1561 E. ORANGETHORPE AVE., SUITE 240 FULLERTON, CA 92831
PHONE # (714)526-7500 X 209.

THE FOLLOWING BMPs FROM THE LATEST ADDITION OF THE CASQA CONSTRUCTION BMP HANDBOOK (NOVEMBER 2019) MUST BE IMPLEMENTED AS APPLICABLE FOR ALL CONSTRUCTION ACTIVITIES. ADDITIONAL INFORMATION IS AVAILABLE AT WWW.CABMPHANDBOOKS.COM

EROSION CONTROL:

EC-1 SCHEDULING
EC-2 PRESERVATION OF EXISTING VEGETATION
EC-3 HYDRAULIC MULCH
EC-4 HYDROSEEDING
EC-5 SOIL BINDERS
EC-6 STRAW MULCH
EC-7 GEOTEXTILES & MATS
EC-8 WOOD MULCHING
EC-9 EARTH DIKES AND DRAINAGE SWALES
EC-10 VELOCITY DISSIPATION DEVICES
EC-11 SLOPE DRAINS
EC-12 STREAMBANK STABILIZATION
EC-14 COMPOST BLANKETS
EC-15 SOIL PREPERATION/ROUGHENING
EC-16 NON-VEGETATIVE STABILIZATION

TEMPORARY SEDIMENT CONTROL:

SE-1 SILT FENCE
SE-2 SEDIMENT BASIN
SE-3 SEDIMENT TRAP
SE-4 CHECK DAM
SE-5 FIBER ROLLS
SE-6 GRAVEL BAG BERM
SE-7 STREET SWEEPING AND VACUUMING
SE-8 SANDBAG BARRIER
SE-9 STRAW BALE BARRIER
SE-10 STORM DRAIN INLET PROTECTION
SE-12 TEMPORARY SILT DIKE
SE-13 COMPOST SOCKS AND BERMS
SE-14 BIOFILTER BAGS

WIND EROSION CONTROL:

WE-1 WIND EROSION CONTROL

EQUIPMENT TRACKING CONTROL:

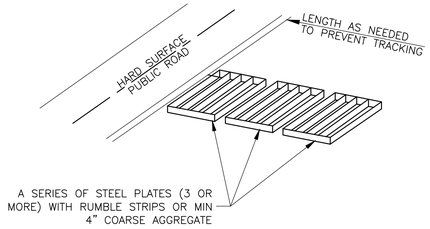
TC-1 STABILIZED CONSTRUCTION ENTRANCE/EXIT
TC-2 STABILIZED CONSTRUCTION ROADWAY
TC-3 ENTRANCE/OUTLET TIRE WASH

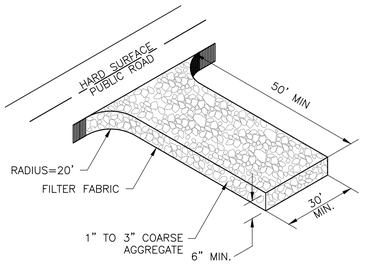
NON-STORMWATER MANAGEMENT:

NS-1 WATER CONSERVATION PRACTICES
NS-2 DEWATERING OPERATIONS
NS-3 PAVING AND GRINDING OPERATIONS
NS-4 TEMPORARY STREAM CROSSING
NS-5 CLEAR WATER DIVERSION
NS-6 ILLICIT CONNECTION/DISCHARGE
NS-7 POTABLE WATER/IRRIGATION
NS-8 VEHICLE AND EQUIPMENT CLEANING
NS-9 VEHICLE AND EQUIPMENT FUELING
NS-10 VEHICLE AND EQUIPMENT MAINTENANCE
NS-12 CONCRETE CURING
NS-13 CONCRETE FINISHING
NS-14 MATERIAL AND EQUIPMENT USE
NS-15 DEMOLITION ADJACENT TO WATER
NS-16 TEMPORARY BATCH PLANTS

WASTE MANAGEMENT & MATERIAL 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 CONTAMINATION SOIL MANAGEMENT
WM-8 CONCRETE WASTE MANAGEMENT
WM-9 SANITARY/SEPTIC WASTE MANAGEMENT
WM-10 LIQUID WASTE MANAGEMENT





TC-1 STABILIZED CONSTRUCTION ENTRANCE/EXIT

TO BE PLACED AT ALL ENTRY AND EXIT LOCATIONS

NOTES:

1. SEDIMENTS AND OTHER MATERIALS SHALL BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC, THE CONSTRUCTION ENTRANCE ROADWAYS SHALL BE STABILIZED SO AS TO PREVENT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC ROADS. DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS INTO THE STORM DRAIN SYSTEM.
2. STABILIZED CONSTRUCTION ENTRANCE SHALL BE:
   A. LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE RD OR FROM A PUBLIC RIGHT OF WAY, STREET, ALLEY, AND SIDEWALK OR PARKING AREA.
   B. SERIES OF STEEL PLATES WITH "RUMBLE STRIPS", AND/OR MIN 4" COARSE AGGREGATE WITH LENGTH, WIDTH, & THICKNESS AS NEEDED TO ADEQUATELY PREVENT ANY TRACKING ONTO PAVED SURFACES.
3. ADDING A WASH RACK WITH A SEDIMENT TRAP LARGE ENOUGH TO COLLECT ALL WASH WATER CAN GREATLY IMPROVE EFFICIENCY.
4. ALL VEHICLES ACCESSING THE CONSTRUCTION SITE SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE SITES.

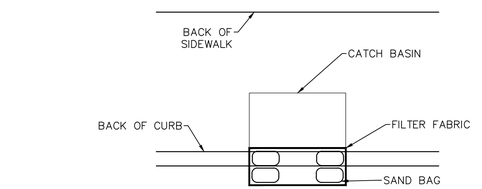
EROSION CONTROL SYMBOLS:

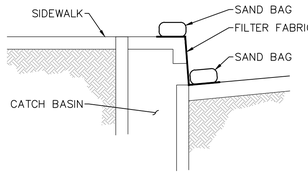
INLET PROTECTION

DIRECTION OF FLOW

EROSION CONTROL NOTES:

(35) STREET SWEEPING AND VACUUMING (BMP SE-7)
(36) STORM DRAIN INLET PROTECTION (BMP SE-10)

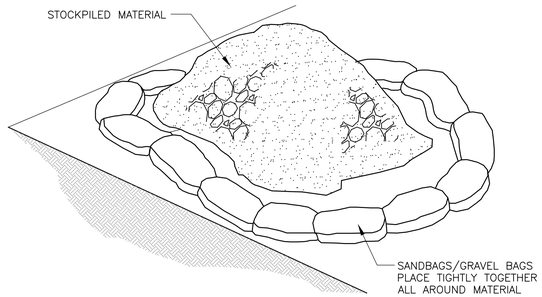




NOTES:

1. REMOVE FILTER FABRIC DURING RAIN AND REINSTALL ONCE RAIN STOPS, PRIOR TO WORK.
2. PLACE SANDBAGS AT THE ENDS OF EACH CATCH BASIN. PLACE ADDITIONAL SANDBAGS SUCH THAT THE MINIMUM SPACING IS 7 FEET ON CENTER.
3. PROTECT DOWNSTREAM CATCH BASIN OUTSIDE OF PROJECT AREA
4. ALL PROPOSED INLETS SHALL BE PROTECTED ONCE INSTALLED. FILTER FABRIC SHALL BE PLACED UNDER THE GRADES OF THE TRENCH DRAINS TO FILTER FLOWS PRIOR TO ENTERING THE CONVEYANCE SYSTEM.

SE-10 STORM DRAIN INLET PROTECTION



WM-3 STOCKPILE MANAGEMENT

MATERIAL STORAGE:

1. DIRT AND OTHER CONSTRUCTION RELATED MATERIALS PLACED IN THE STREET OR ON OTHER IMPERVIOUS SURFACES MUST BE CONTAINED WITH SANDBAGS OR OTHER MEASURES TO PREVENT TRANSPORT TO THE STORM DRAIN SYSTEM.
2. ANY CONSTRUCTION MATERIAL STORED OR STOCKPILED ON-SITE SHALL BE PROTECTED FROM BEING TRANSPORTED BY THE FORCE OF WIND OR WATER.

STREET MAINTENANCE:

1. REMOVE ALL SEDIMENT DEPOSITED ON PAVE ROADWAYS IMMEDIATELY.
2. SEEP PAVED AREAS THAT RECEIVE CONSTRUCTION TRAFFIC WHENEVER SEDIMENT BECOMES VISIBLE.
3. PAVEMENT WASHING WITH WATER IS PROHIBITED IF IT RESULTS IN A DISCHARGE TO THE STORM DRAIN SYSTEM.

DIG ALERT — DIAL BEFORE YOU DIG — TOLL FREE — TWO WORKING DAYS BEFORE YOU DIG — 800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

PREPARED BY
CWE
1561 E. ORANGETHORPE AVE.
SUITE 240
FULLERTON, CA 92831
TEL (714) 526-7500
www.cwecorp.com

REGISTERED PROFESSIONAL ENGINEER — JONATHAN L. ARMSTRONG — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
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CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

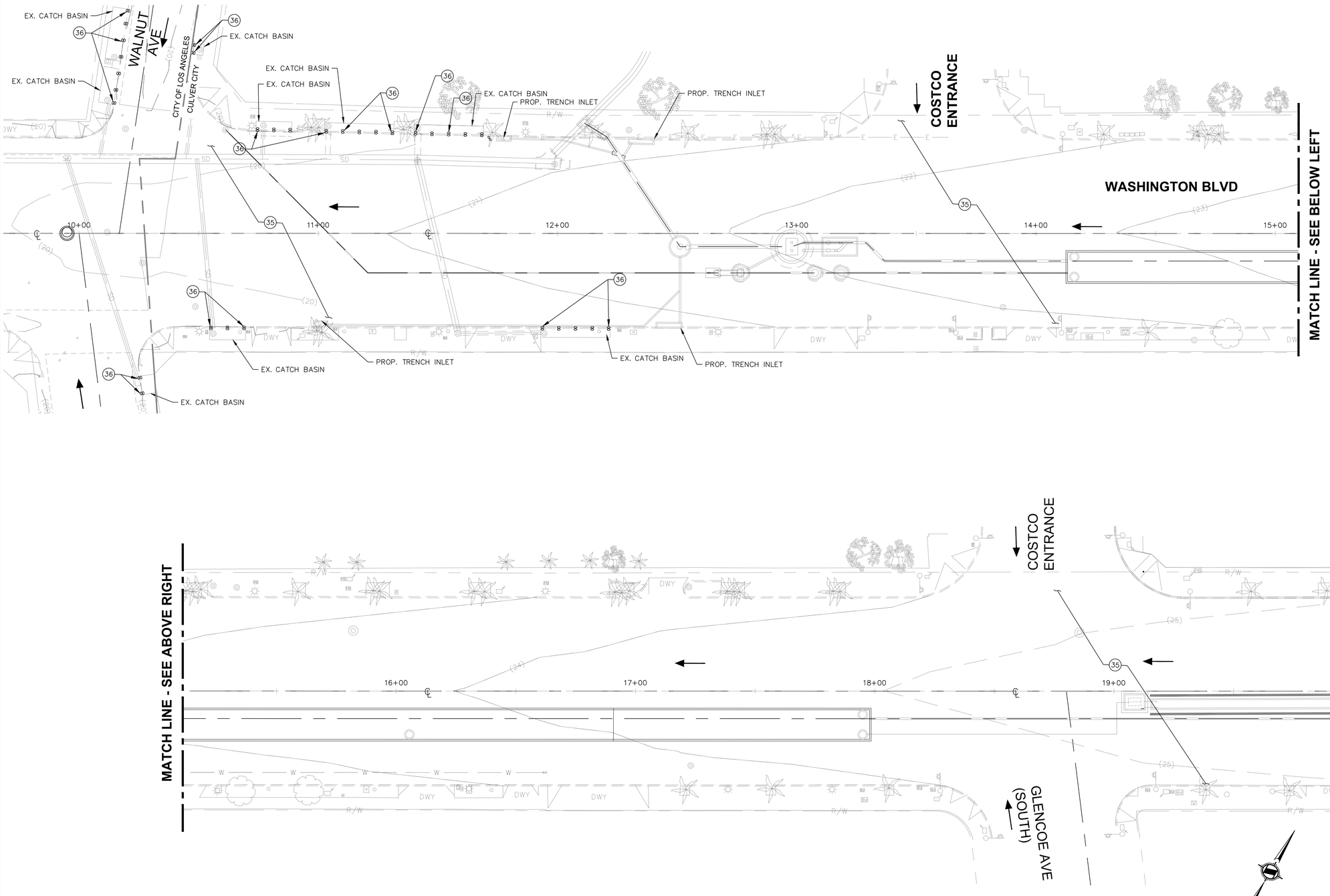
WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

EROSION CONTROL PLAN GENERAL NOTES

REVIEWED BY: JAVIER DE LA CRUZ, P.E.
SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET EC-01
Sheet 28 Of 49 Sheets

Drawing Name: Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - EC01-EC03.dwg
Last Opened: Oct 26, 2022 - 1:18pm by fiskigawa



EROSION CONTROL SYMBOLS:

INLET PROTECTION

DIRECTION OF FLOW

EROSION CONTROL NOTES:

(35) STREET SWEEPING AND VACUUMING (BMP SE-7)

(36) STORM DRAIN INLET PROTECTION (BMP SE-10)

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1561 E. ORANGETHORPE AVE.
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TEL (714) 526-7500
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REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. PARADIS — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

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CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

EROSION CONTROL PLAN WASHINGTON BLVD STA 10+00 TO 21+00 AND GLENCOE AVE

REVIEWED BY: JAVIER DE LA CRUZ, P.E.

SENIOR CIVIL ENGINEER — DATE 4-10-23

SHEET EC-02

Sheet 29 Of 49 Sheets

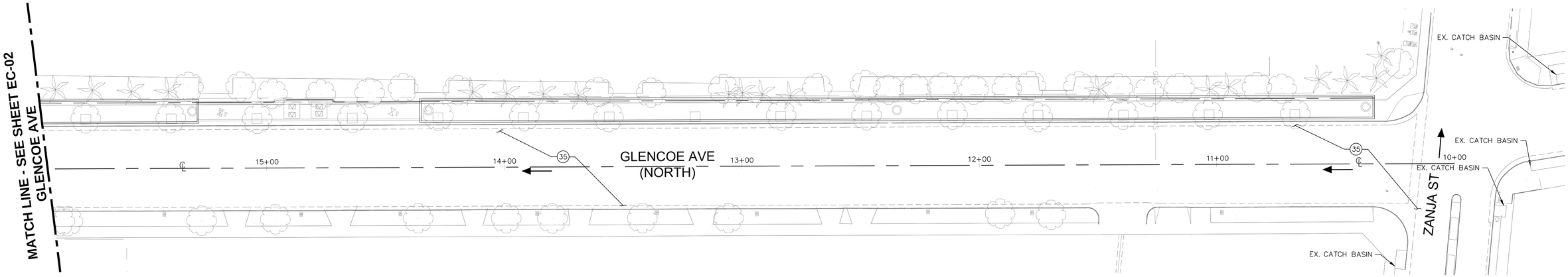
Drawing Name: Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - EC01-EC03.dwg
Last Opened: Oct 26, 2022 - 1:18pm by tlaligawa

EROSION CONTROL SYMBOLS:

DIRECTION OF FLOW →

EROSION CONTROL NOTES:

(35) STREET SWEEPING AND VACUUMING (BMP SE-7)



SCALE: 1"= 20'

20' 10' 0 20'

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

EROSION CONTROL PLAN GLENCOE AVE

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REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. RAPPOLT — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

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REVIEWED BY: JAVIER DE LA CRUZ, P.E. 4-10-23
SENIOR CIVIL ENGINEER DATE

SHEET EC-03
Sheet 30 Of 49 Sheets

Drawing Name: Z:\17239\06 Tasks\D1 Design\80 Storm Drain\17239 - EC01-EC03.dwg
Last Opened: Oct 26, 2022 - 1:19pm by tfukigawa

WORKSITE TRAFFIC CONTROL PLAN GENERAL NOTES

1. THIS STAGE OF WORK IS FOR PHASE 1A, 1B, AND 1C (UNDERGROUND STORAGE TANKS, PUMP STATIONS, AND PIPING). PHASE 2A AND 2B WILL CONTAIN SMALLER DIAMETER PIPE AND WORK UNDER WATCH COMMAND.
2. ALL SIGNS SHALL BE REFLECTORIZED AND STANDARD SIZE. WORK AREA WARNING SIGNS SHALL BE ORANGE SIGN FACE.
3. THE CONTRACTOR SHALL HAVE SIGNS, DELINEATORS, BARRICADES, ETC., PROPERLY INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
4. THESE PLANS INDICATE VEHICULAR TRAFFIC CONTROL IN THE WORK AREA DURING CONSTRUCTION ACTIVITY, ADDITIONAL TRAFFIC CONTROLS, SIGNS, DELINEATORS OR BARRICADES MAY BE REQUIRED IN THE FIELD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ANY ADDITIONAL DEVICES NECESSARY TO ASSURE SAFETY TO THE PUBLIC AT ALL TIMES DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL PROVIDE SAFE PEDESTRIAN ACCESS AT ALL TIMES.
6. ALL EXISTING STRIPING WITHIN THE WORK AREA MUST BE SAND BLASTED (PAINT) OR GRINDING (THERMOPLASTIC) PRIOR TO BEING REAPPLIED WITHIN THE CITY RIGHT OF WAY. THIS DOES NOT APPLY TO THE AREA PROTECTED BY THE K–RAIL.
7. CONTRACTOR SHALL COVER ALL EXISTING SIGNS THAT CONFLICT WITH THE CONSTRUCTION SIGNS. CONTRACTOR SHALL UNCOVER EXISTING SIGNS AS SOON AS THE CONSTRUCTION SIGNS ARE REMOVED.
8. ALL DELINEATORS SHALL BE EQUIPPED WITH REFLECTIVE BAND AT NIGHT TIME.
9. OPEN TRENCH WITH LESS THAN FIVE FEET OF CLEARANCE SHALL BE PROTECTED BY K–RAIL BARRIERS AND TEMPORARY CRASH CUSHIONS INSTALLED PER CALTRANS STANDARDS. AT LOCATIONS SHOWN ON THESE PLANS, UNLESS OTHERWISE DIRECTED BY ENGINEER.
10. TRAFFIC SIGNALS SHALL REMAIN IN OPERATION AT ALL TIMES. CONFLICTING TRAFFIC SIGNAL INDICATIONS SHALL BE COVERED AND SIGNAL OPERATION DURING EACH CONSTRUCTION PHASE SHALL BE COORDINATED WITH AND APPROVED BY THE CITY ENGINEER.
11. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL AND MAINTAIN THE TRAFFIC CONTROL DEVICES AS SHOWN HEREON, AS WELL AS ANY SUCH ADDITIONAL TRAFFIC CONTROL DEVICE AS MAY BE REQUIRED TO ENSURE THE SAFE MOVEMENT OF TRAFFIC AND PEDESTRIANS THROUGH OR AROUND THE WORK AREA AND PROVIDE MAXIMUM PROTECTION AND SAFETY TO CONSTRUCTION WORKERS.
12. THE CITY RESERVES THE RIGHT TO OBSERVE THESE TRAFFIC CONTROL PLANS IN USE AND TO MAKE ANY NECESSARY CHANGES AS FIELD CONDITIONS WARRANT. ANY CHANGES SHALL SUPERSEDE THESE PLANS AND BE DONE PER CALIFORNIA MUTCD WITH THE APPROVAL OF THE ENGINEER. EXACT LOCATION OF ALL EQUIPMENT AND TRAFFIC CONTROL DEVICES SHALL BE APPROVED BY THE ENGINEER.
13. ALL PRIVATE DRIVEWAYS AND SIDE STREETS SHALL BE KEPT OPEN AT ALL TIMES EXCEPT WHEN CONSTRUCTION TAKES PLACE DIRECTLY IN FRONT OF OR WITHIN THE DRIVEWAY/SIDE STREET. ALL OPEN EXCAVATIONS ON PUBLIC STREETS SHALL BE BACK–FILLED OR STEEL–PLATED (ANTI–SKID PLATES) FOR TRAFFIC TO THE SATISFACTION OF CITY ENGINEER OUTSIDE THE WORKING HOURS. TRAFFIC SHALL BE RESTORED TO NORMAL CONDITIONS DURING NON–WORKING HOURS.
14. THE CONTRACTOR SHALL MAINTAIN INGRESS TO AND EGRESS FROM ALL COMMERCIAL AND RESIDENTIAL DRIVEWAYS THROUGHOUT THE PROJECT LIMITS. THE CONTRACTOR WILL BE ALLOWED TO CLOSE SAID DRIVEWAYS TO PERFORM THE REQUIRED WORK DURING THOSE PERIODS WHEN THE BUSINESSES ARE CLOSED UNLESS PERMISSION IS GRANTED FROM THE BUSINESS OWNER TO CLOSE THE DRIVEWAY DURING BUSINESS HOURS. THE CONTRACTOR SHALL NOTIFY AFFECTED RESIDENTS THAT RESIDENTIAL DRIVEWAY ACCESS WILL BE RESTRICTED. IF A TEMPORARY CLOSURE OF A RESIDENTIAL DRIVEWAY IS NECESSARY, THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO DETERMINE THE TIME PERIOD OF THE CLOSURE.
15. PLACE CHANGEABLE MESSAGE SIGNS AT THE PROJECT APPROACHES OR LOCATIONS DESIGNATED BY THE ENGINEER, 14 DAYS PRIOR TO START OF WORK TO WARN MOTORISTS TO USE ALTERNATIVE ROUTES.
16. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICANS DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES AND WITH THE CALIFORNIA ACCESSIBILITY GUIDELINES AS RELATED TO PEDESTRIAN ACCESS AND SHALL MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES PER ADA REQUIREMENTS. SIDEWALK AND BIKE LANE CLOSURE/DETOUR SHALL COMPLY WITH THE CALIFORNIA MUTCD STANDARDS.
17. THE CONTRACTOR SHALL COORDINATE DIRECTLY WITH THE CITY'S MOBILITY AND TRAFFIC ENGINEERING MANAGER FOR THE DEVELOPMENT OF TEMPORARY AND RESTORATION SIGNAL TIMING CHARTS FOR THE AFFECTED TRAFFIC SIGNALS.

TYPICAL CONTRACTOR RESPONSIBILITIES

1. THE STRIPING AND SIGNAGE SHOWN FOR REMOVAL ON THESE PLANS MAY BE DIFFERENT THAN WHAT EXISTS AT TIME OF IMPLEMENTATION OF A CONSTRUCTION STAGE. THE CONTRACTOR SHALL REMOVE ALL CONFLICTING SIGNAGE AND STRIPING, WHETHER OR NOT IT IS DEPICTED ACCURATELY ON THESE PLANS.
2. ALL TRAFFIC CONTROL DEVICES SHALL BE KEPT IN THEIR PROPER POSITION AT ALL TIMES, AND SHALL BE REPAIRED, REPLACED OR CLEANED AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY.
3. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL FUNCTIONAL DRIVEWAYS AT ALL TIMES AND SHALL COORDINATE WITH ALL AFFECTED RESIDENTS AND BUSINESSES.
4. CONTRACTOR SHALL PERFORM WORK IN ONLY ONE STAGE AT A TIME. THE CONTRACTOR SHALL ONLY UTILIZE THAT PORTION OF THE DESIGNATED "WORK AREA" WHICH IS NEEDED FOR CONSTRUCTION AT ANY GIVEN TIME.
5. THE IMPLEMENTATION OF WORKSITE TRAFFIC CONTROL PLANS, INCLUDING PAINT REMOVAL/GRINDING, MARK–OUT, LAYOUT AND INSTALLATION OF ALL TRAFFIC CONTROLS, INCLUDING SIGNAL WORK AND STRIPING SHALL ONLY TAKE PLACE DURING OFF–PEAK HOURS; 9AM–3PM. CONTRACTOR SHALL REQUEST APPROVAL FROM ENGINEER FOR ANY ADDITIONAL TEMPORARY LANE CLOSURES NOT SHOWN ON THESE PLANS, REGARDLESS OF DURATION OR TIME PERIOD.
6. ANY CHANGES TO WORK AREAS, WORK HOURS, AND/OR APPROVED PLANS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRIPING (PROPOSED AND EXISTING) SHOWN ON THIS WTCP TO BE IN GOOD CONDITION AND VISIBLE. THE CONTRACTOR SHALL REPLACE ANY FADED EXISTING STRIPING AS DIRECTED BY THE ENGINEER.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY MISSING OR DAMAGED SIGNS.
9. FIELD CONDITIONS MAY VARY FROM THOSE SHOWN ON THE WTCP. IN THE EVENT FIELD CONDITIONS ARE DIFFERENT, THE CONTRACTOR SHALL COORDINATE WITH ENGINEER BEFORE IMPLEMENTING THE WTCP. THE CONTRACTOR MAY BE REQUIRED TO SUBMIT A REVISED WTCP FOR APPROVAL PRIOR TO WTCP IMPLEMENTATION.

TEMPORARY CRASH CUSHION INSTALLATION NOTES

1. INDICATES SAND FILLED MODULE LOCATION AND WEIGHT OF SAND IN POUNDS FOR EACH MODULE. MODULE SPACING IS BASED ON THE GREATER DIAMETER OF THE MODULE.
2. ALL SAND WEIGHTS ARE NOMINAL.
3. THE TEMPORARY CRASH CUSHION ARRAYS SHOWN ON THE PLANS SHALL BE USED ONLY IN LOCATIONS WHERE THERE WILL BE TRAFFIC ON ONE SIDE OF THE TEMPORARY CRASH CUSHION ARRAY.
4. IF THE FIXED OBJECT OR APPROACH END OF THE TEMPORARY RAILING IS LESS THAN 15'–0" FROM THE EDGE OF THE TRAVELED WAY, A TEMPORARY CRASH CUSHION ARRAY IS REQUIRED IN A CONSTRUCTION WORK ZONE.
5. TEMPORARY CRASH CUSHION ARRAYS SHALL NOT ENCROACH ON THE TRAVELED WAY.
6. PLACE THE TYPE P MARKER PANEL SO THAT THE BOTTOM OF THE PANEL RESTS UPON THE PALLET AND FACES TRAFFIC.

TYPICAL IMPLEMENTATION REQUIREMENTS

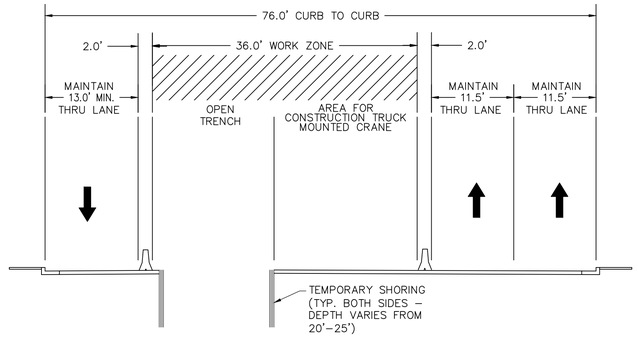
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LABOR EQUIPMENT AND MATERIAL INVOLVED IN THE REMOVAL, INSTALLATION, AND MAINTENANCE OF ALL STRIPING, PAVEMENT MARKINGS, SIGNS, BARRICADES, DELINEATORS, ETC., SHOWN ON THESE WTC PLANS AND AS CONSTRUCTION STAGING NECESSITATES. STRIPING AND PAVEMENT MARKINGS SHALL BE REMOVED BY WET SANDBLASTING/GRINDING. PAINTING THE EXISTING STRIPING OVER WITH BLACK PAINT IS NOT PERMITTED. PAINT MAY BE USED ON SMOOTH SURFACES FOR INSTALLATION LESS THAN 6 MONTHS. DETOUR TAPE IS NOT PERMITTED.
2. ALL CONSTRUCTION RELATED WARNING SIGNS SHALL BE IN BLACK LEGEND WITH ORANGE BACKGROUND AND IN CONFORMANCE WITH THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA M.U.T.C.D.) LATEST EDITION.
3. CONTRACTOR SHALL PROVIDE FLAGGERS AS DEEMED NECESSARY BY CITY. A FLAGGER SHALL USE ONLY THE APPROVED OCTAGONAL STOP/ SLOW PADDLE, SHALL WEAR AN ORANGE CLASS 3 SAFETY VEST (PADDLE AND VEST MUST BE REFLECTORIZED FOR NIGHT WORK) AND HARD HAT, AS REQUIRED BY THE WATCH MANUAL, AND MUST BE PROPERLY TRAINED BY THE CONTRACTOR IN PERFORMING THE WORK SAFELY. APPROPRIATE ADVANCE SIGNS MUST ALSO BE INSTALLED, PER THE WATCH MANUAL.
4. ALL SIGNS, DELINEATORS, BARRICADES, ETC., SHALL CONFORM TO THE CALIFORNIA MUTCD (LATEST EDITION).
5. FOR OTHER REQUIREMENTS RELATED TO TRAFFIC CONTROL PLANS AND WORK AREA MAINTENANCE, THE CONTRACTOR SHALL FOLLOW THE CALIFORNIA MUTCD (LATEST EDITION) AND WATCH MANUAL (LATEST EDITION), AND ALL RELATED SECTIONS OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION,
6. CONTRACTOR SHALL PROVIDE CHANGEABLE MESSAGE SIGNS/FLASHING ARROW BOARDS AND CONES/BARRICADES DELINEATORS AS FIELD CONDITIONS/DETOURS WARRANT AND AS DEEMED NECESSARY BY ENGINEER.
7. UNLESS K–RAILS AND CRASH CUSHIONS ARE INSTALLED, CONTRACTOR SHALL PROVIDE MIN. 5' SHOULDER FROM ANY OPEN EXCAVATION.
8. ALL K–RAIL ENDS, PLATFORMS AND FIXED OBJECTS SHALL BE PROTECTED BY CRASH CUSHIONS OR BY A QUADGUARD SYSTEM, UNLESS THEY ARE PLACED 15' AWAY FROM EDGE OF TRAVEL WAY. FOR A 20' K–RAIL MAX. VERTICAL DISTANCE DISPLACED CAN NOT EXCEED 5'/K–RAIL, OR A TAPER RATE SHALL NOT EXCEED 1/4.
9. ALL TEMPORARY SIGNAGE INSTALLED ADJACENT TO PEDESTRIAN TRAVEL WAY MUST ALLOW FOR ADA–COMPLIANT PASSAGEWAYS.
10. CONCRETE K–RAIL SECTIONS SHALL BE CONTINUOUSLY CONNECTED. IN AREAS WITH LESS THAN 3 CONCRETE K–RAILS, SECURE K–RAIL TO PAVEMENT PER CALTRANS SPECIFICATIONS T3B.
11. THE CONTRACTOR SHALL INSTALL SIDE REFLECTORS WITH CUBE–CORNER LENSES OR TOP MOUNTED REFLECTORS (FACING THE DRIVER) ON ALL K–RAIL BARRIERS.
12. WHEN REMOVAL IS REQUIRED BY CONSTRUCTION, CROSSWALK MARKINGS AND PEDESTRIAN SIGNAL HEADS SHALL BE COVERED SIMULTANEOUSLY.
13. CONTRACTOR SHALL PROVIDE REFLECTORIZED CONES AT TYPE III BARRICADE SUPPORTS TO ALERT PEDESTRIANS OF THE BARRICADE SUPPORT.
14. CONTRACTOR SHALL PROVIDE ACCESS TO ALL FIRE HYDRANTS WITHIN AND ADJACENT TO THE WORK AREA AT ALL TIMES.
15. CONTRACTOR SHALL PROVIDE ADA COMPLIANT AND MINIMUM 5FT WIDE CONTINUOUS ACCESS FOR PEDESTRIAN PASSAGEWAYS.

RESTORATION STRIPING NOTES

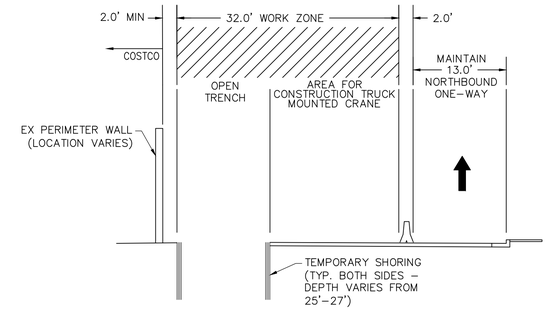
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LABOR AND MATERIAL INVOLVED IN THE MARKOUT, AND INSTALLATION OF ALL RESTORATION STRIPING/PAVEMENT MARKINGS. SEE SHEETS SS–01, SS–02, AND SS–03. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REMOVAL OF ALL CONFLICTING WTCP STRIPING, SIGNING, AND OTHER WTCP–RELATED TRAFFIC CONTROL DEVICES PRIOR TO THE INSTALLATION OF THE FINAL STRIPING.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAINTING OF ALL EXISTING STRIPING AND CURBS THAT HAVE BEEN DAMAGED DURING THE CONSTRUCTION PROCESS.
3. MARKOUT SHALL BE BY HEAVY PAINT BRUSH MARKINGS OVER A PULLED ROPE IN THE RESPECTIVE WHITE AND YELLOW COLORS OF THE PROPOSED STRIPING.
4. THE CONTRACTOR SHALL CONTACT ENGINEER AT LEAST TEN (10) WORKING DAYS BEFORE BEGINNING MARKOUT. THE CONTRACTOR SHALL CORRECT ALL ERRORS IN MARKOUT REQUESTED. THE INSTALLATION OF STRIPING MAY PROCEED ONLY AFTER APPROVAL OF MARKOUT.

GENERAL NOTES

1. ALL MATERIAL AND WORK SHALL CONFORM TO THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CALIFORNIA MUTCD) LATEST EDITION, STANDARD PLANS AND STANDARD SPECIFICATIONS OF THE CALIFORNIA DEPARTMENT OF TRANSPORTATION DATED 2015, FHWA STANDARD HIGHWAY SIGNS 2012 EDITION, CALIFORNIA SIGN SPECIFICATION DATED NOVEMBER 7, 2014, AND THE SPECIAL PROVISIONS.
2. ALL STRIPING AND PAVEMENT LEGENDS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED.
3. ALL CONFLICTING LINES, LEGENDS AND RAISED PAVEMENT MARKERS SHALL BE REMOVED BY WET SANDBLASTING.
4. ALL SALVAGED SIGNS AND POSTS SHALL BE DELIVERED TO THE CITY MAINTENANCE YARD, 9505 JEFFERSON BLVD, CITY OF CULVER CITY, (310) 253–6441, UNLESS OTHERWISE INDICATED.
5. NEW SIGN POSTS SHALL BE "UNISTRUT" SQUARE GALVANIZED STEEL POSTS WITH BREAKAWAY ANCHOR POST, OR APPROVED EQUAL.
6. ALL NEW SIGNS ARE TO BE REFLECTORIZED USING 3–M TYPE IV GRADE SHEETING OR APPROVED EQUAL.
7. ALL SIGNS ARE TO BE PER THE STATE OF CALIFORNIA SIGN SPECIFICATIONS, EXCEPT THAT ALL SIGNS SHALL BE MINIMUM 0.1 INCH THICK ALUMINUM.
8. STRIPING SHALL BE CAT TRACKED (MARKED OUT BY ROPE) AND APPROVED BY THE CITY TRAFFIC ENGINEER PRIOR TO FINAL INSTALLATION. MINIMUM OF ONE WEEK NOTICE REQUIRED BY THE CITY TRAFFIC ENGINEER FOR APPROVAL OF STRIPING.
9. PAVING DAMAGED DUE TO REMOVING RAISED PAVEMENT MARKERS SHALL BE REPAIRED TO THE SATISFACTION OF THE CITY ENGINEER.
10. INTERSECTION APPROACHES AND DEPARTURES SHALL BE STRIPED WITH A 50' SECTION OF 4" SOLID WHITE STRIPING OR OTHER APPROPRIATE STRIPING DETAIL.
11. SEE CIVIL PLAN SHEET FOR STREET IMPROVEMENTS.
12. ALL SIGNS WHERE PARKING IS ALLOWED SHALL BE INSTALLED ON SIGN POST.



WASHINGTON BLVD
TRAFFIC CONTROL TYPICAL SECTION – WEST
NOT TO SCALE



GLENCOE AVE
TRAFFIC CONTROL TYPICAL SECTION – NORTH
NOT TO SCALE

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REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. PARCEL — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
GARY LEE MOORE, P.E. CITY ENGINEER
ACCEPTED BY :
PLAN CHECKER — DATE
DIVISION / DISTRICT ENGINEER — DATE

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

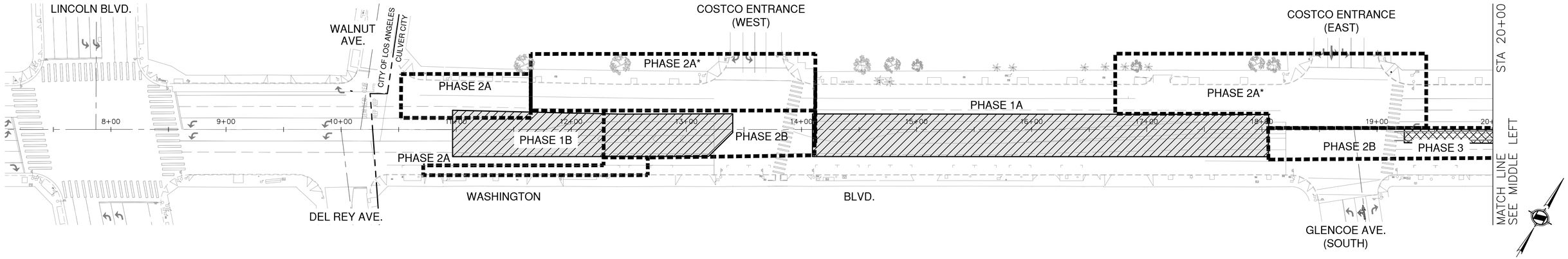
WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

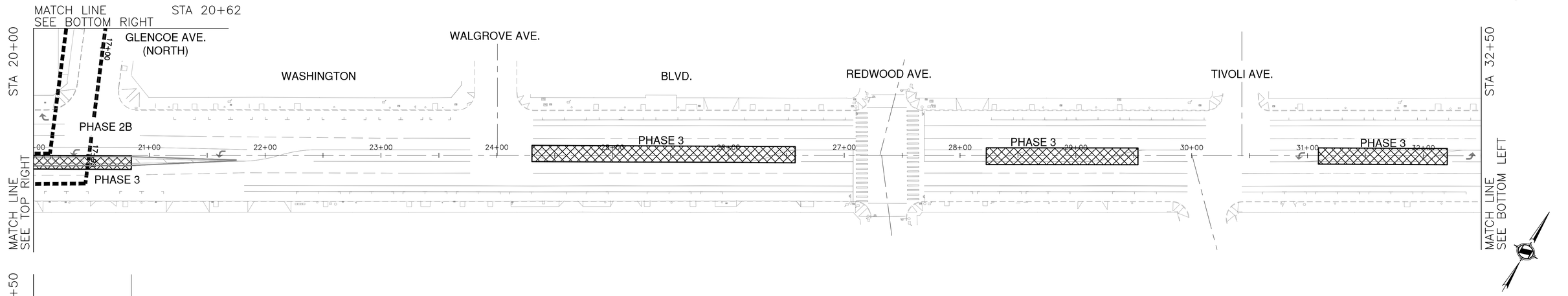
TRAFFIC CONTROL GENERAL NOTES

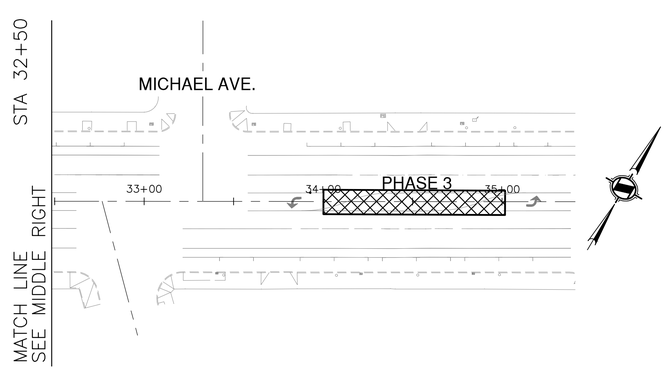
APPROVED BY: ANDREW MAXIMOUS, P.E., T.E.
4/11/23
MOBILITY & TRAFFIC ENGINEERING DIVISION — DATE

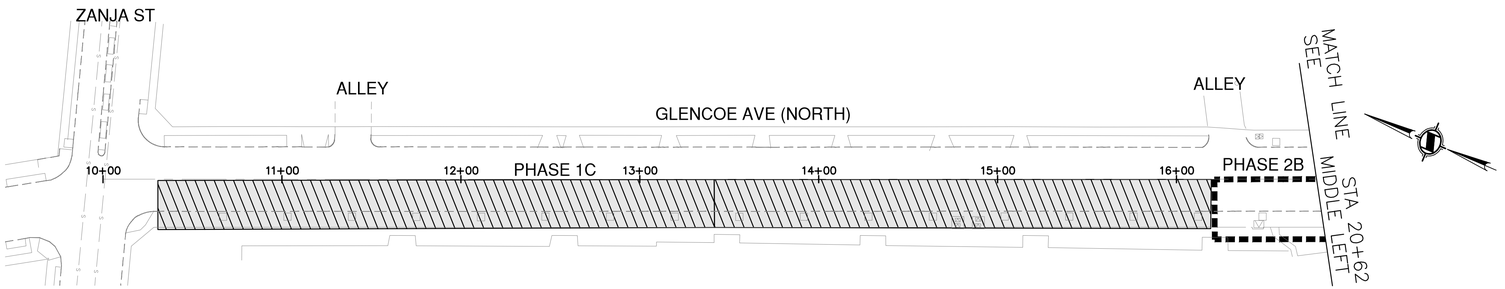
SHEET
TC-01
Sheet 31 Of 49 Sheets

Drawing Name: Z:\17239\06 Tasks\01 Design\90 Traffic\17239 – 31 TC–PHASE 1.dwg
Last Opened: Dec 01, 2022 – 1:01pm by tdalgpawa









LEGEND:

TRAFFIC CONTROL CLOSURE TYPE (METHOD)

PHASE 1 – (UNDERGROUND STORAGE TANK, PUMP STATIONS, PRETREATMENT, AND PIPING CONSTRUCTION)	1A, 1B AND 1C – (SEE TRAFFIC CONTROL PLAN SHEETS 33 AND 34)
PHASE 2 – (DIVERSION PIPING AND COSTCO DRIVEWAY AND INTERSECTION CONSTRUCTION)	2A – TEMPORARY (MUTCD) 2B – CONTINUOUS (MUTCD)
PHASE 3 – (MEDIAN CONSTRUCTION)	3 – CONTINUOUS (WATCH)

* COSTCO DRIVEWAYS MAY NOT BE CONSTRUCTED CONCURRENTLY.

40' 20' 0 40'

SCALE: 1"= 40'

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SUITE 240
FULLERTON, CA 92831
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REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. FARRELL — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

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CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

TRAFFIC CONTROL PHASING PLAN

APPROVED BY: MOBILITY & TRAFFIC ENGINEERING DIVISION
4/11/23
DATE

SHEET
TC-02
Sheet 32 Of 49 Sheets

Drawing Name: Z:\17229\VB Tasks\01 Design\90 Traffic\17229 – 32 TC PHASE PLAN.dwg
Last Opened: Dec 01, 2022 – 1:04pm by ttakigawa

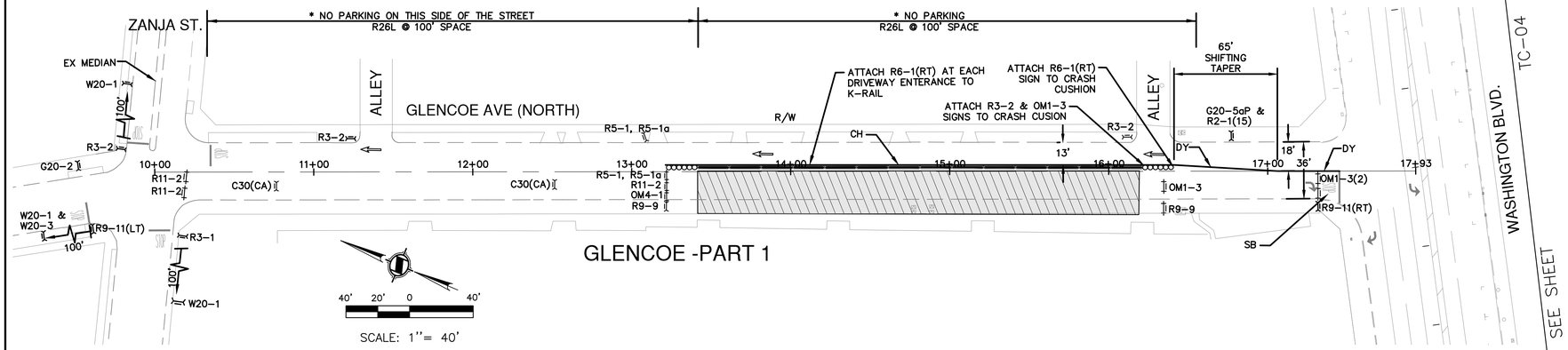
C30(CA)	G20-2	G20-5aP	M4-10L	OM1-3	OM4-1	R2-1	R3-1	R3-2	R5-1	R5-1a	R6-1	R9-9	R9-11(LT,RT)	R11-2	R26L	W20-1	W20-3
LANE CLOSED	END ROAD WORK	WORK ZONE	DETOUR			SPEED LIMIT 15			DO NOT ENTER	WRONG WAY	ONE WAY	SIDEWALK CLOSED	SIDEWALK CLOSED AHEAD CROSS HERE	ROAD CLOSED	NO STOPPING ANY TIME	ROAD WORK AHEAD	ROAD CLOSED AHEAD

DURATION: 6 MONTHS

WORK HOURS: 8 AM TO 5 PM (M-F)

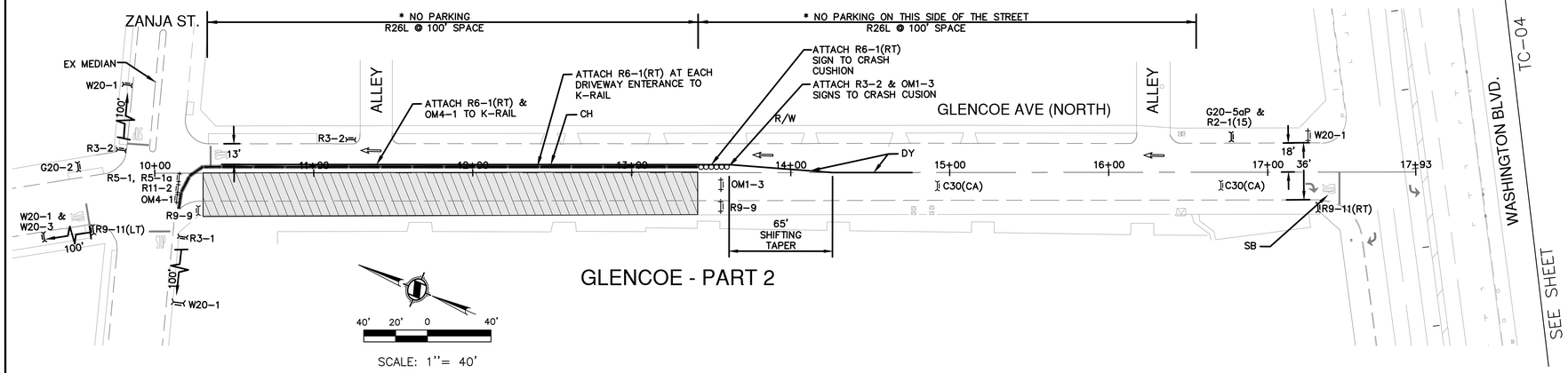
DURATION AND WORK HOURS ARE INCLUSIVE OF PART 1 AND 2 SHOWN HEREON. ALTERNATIVE WORK HOURS MUST BE APPROVED BY THE AGENCY IN ADVANCE.

SIGN LEGEND:



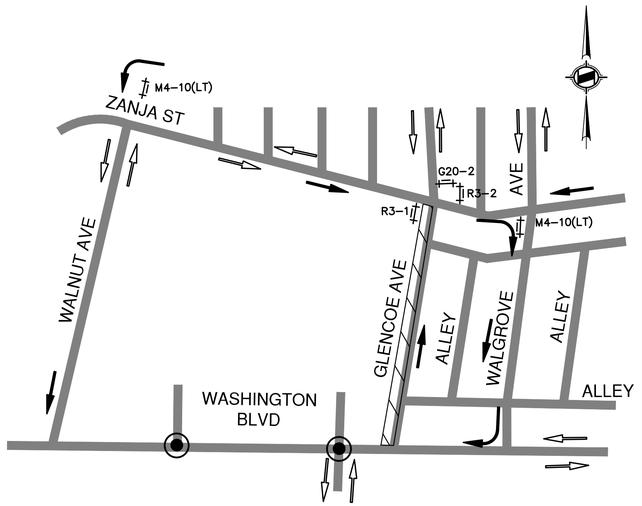
SCALE: 1"= 40'

GLENCOE -PART 1



SCALE: 1"= 40'

GLENCOE - PART 2



DETOUR MAP

SCALE: NTS

NOTE: SIGNS INCLUDED IN DETOUR MAP ARE SPECIFIC TO DETOUR PLAN. SEE TRAFFIC CONTROL SHEETS PROVIDED FOR ADDITIONAL SIGNAGE

DETOUR MAP LEGEND:

- DETOUR DIRECTION OF TRAVEL
- TRAFFIC DIRECTION
- WORK ZONE
- TYPE III BARRICADE WITH SIGN
- SIGNALIZED INTERSECTION

LEGEND:

- TYPE II BARRICADE / WITH SIGN(S)
- TYPE III BARRICADE / WITH SIGN(S)
- ABSORB 350 CRASH CUSHION OR EQUAL
- K-RAIL (INTERCONNECTED) PER CALTRANS STD. PLAN T4
- WORK AREA
- DIRECTION OF TRAFFIC (NON PAINTED ARROW)
- SB SANDBLAST EXISTING STRIPING
- DY PAINT 12" DOUBLE YELLOW LINE PER CALTRANS STD PLAN A20B, DETAIL 27

GENERAL NOTES:

CONTRACTOR MAY IMPLEMENT PART 1 OR PART 2 FIRST, WHILE BOTH PARTS MAY NOT BE IMPLEMENTED CONCURRENTLY.

NOTICE TO CONTRACTOR:

1. THE CONTRACTOR SHALL COORDINATE DIRECTLY WITH THE CITY'S MOBILITY AND TRAFFIC ENGINEERING MANAGER FOR THE DEVELOPMENT OF TEMPORARY AND RESTORATION SIGNAL TIMING CHARTS FOR THE AFFECTED TRAFFIC SIGNALS. TRAFFIC SIGNAL MODIFICATIONS SHALL BE MADE BY THE CONTRACTOR IN ACCORDANCE WITH THE TEMPORARY SIGNAL MODIFICATION PLANS INCLUDED IN THIS PLAN SET.
2. ALL SIGNAL HEADS SHALL BE ADJUSTED AS REQUIRED BY THE TEMPORARY LANE ALIGNMENT, SUCH THAT SIGNAL INDICATION ARE VISIBLE TO DRIVERS. SIGNAL HEADS SHALL BE ADJUSTED BACK TO EXISTING CONDITIONS ONCE TRAFFIC CONTROLS ARE NO LONGER REQUIRED.
3. IMPLEMENTATION OF SIGNAGE AND OTHER IMPROVEMENTS PER THIS PLAN SHEET SHALL NOT LIMIT THE WIDTHS OF TRAVEL LANES AND/OR SIDEWALKS TO LESS THAN THE MINIMUM REQUIRED FOR ACCESSIBILITY.
4. *NO PARKING:
   COVER ALL EXISTING PARKING SIGNS AND METERS AND PLACE R26L(CA) SIGN. COVER ALL BIKE LANE SIGNS WITHIN WORK AREA.
5. CONTRACTOR SHALL REMOVE CONFLICTING STRIPING (INCLUDING RAISED PAVEMENT MARKERS) OR PAVEMENT MARKING BY WET SANDBLASTING (PAINT) OR GRINDING (THERMOPLASTIC) - SEE GENERAL NOTES

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REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. TAYLOR — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

GARY LEE MOORE, P.E. CITY ENGINEER

ACCEPTED BY :

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CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

TRAFFIC CONTROL PLANS - GLENCOE AVE (NORTH)
PHASE 1C

APPROVED BY: MOBILITY & TRAFFIC ENGINEERING DIVISION — 4/11/23 DATE

SHEET TC-03 Sheet 33 Of 49 Sheets

Drawing Name: Z:\17293\05 Tasks\01 Design\00 Traffic\17293 - 33 TC-GLENCOE.dwg
Last Opened: Dec 01, 2022 - 1:08pm by ttakigawa

C30(CA)	G20-2	G20-5aP	OM4-1	OM1-3	R2-1	R3-4	R3-5	R3-6(R)	R3-7	R3-8A	R3-8B	R4-11	R9-11(RT)	R10-12	R26L	W1-4	W4-2(L)	W11-1	W13-1
LANE CLOSED	END ROAD WORK	WORK ZONE			SPEED LIMIT 25		ONLY		RIGHT LANE MUST TURN RIGHT	ONLY ONLY	ONLY ONLY ONLY	MAY USE FULL LANE	SIDEWALK CLOSED AHEAD CROSS HERE	LEFT TURN YIELD ON GREEN	NO STOPPING ANY TIME				25 M.P.H.

W16-1P	W20-1	W20-5(L)	T-P(CA)(LT,RT)
SHARE THE ROAD	ROAD WORK AHEAD	LEFT LANE CLOSED AHEAD	Left Type P (CA) Markers / Right

SIGN LEGEND:

NOTICE TO CONTRACTOR:

1. THE CONTRACTOR SHALL COORDINATE DIRECTLY WITH THE CITY'S TRAFFIC CONSULTANT (ADVANTEC) FOR THE DEVELOPMENT OF TEMPORARY AND RESTORATION SIGNAL TIMING CHARTS FOR THE AFFECTED TRAFFIC SIGNALS. TRAFFIC SIGNAL MODIFICATIONS SHALL BE MADE BY THE CONTRACTOR IN ACCORDANCE WITH THE TEMPORARY SIGNAL MODIFICATION PLANS INCLUDED IN THIS PLAN SET.
2. ALL SIGNAL HEADS SHALL BE ADJUSTED AS REQUIRED BY THE TEMPORARY LANE ALIGNMENT, SUCH THAT SIGNAL INDICATION ARE VISIBLE TO DRIVERS. SIGNAL HEADS SHALL BE ADJUSTED BACK TO EXISTING CONDITIONS ONCE TRAFFIC CONTROLS ARE NO LONGER REQUIRED.
3. IMPLEMENTATION OF SIGNAGE AND OTHER IMPROVEMENTS PER THIS PLAN SHEET SHALL NOT LIMIT THE WIDTHS OF TRAVEL LANES AND/OR SIDEWALKS TO LESS THAN THE MINIMUM REQUIRED FOR ACCESSIBILITY.
4. *NO PARKING:
   COVER ALL EXISTING PARKING SIGNS AND METERS AND PLACE R26L(CA) SIGN. COVER ALL BIKE LANE SIGNS WITHIN WORK AREA.
5. CONTRACTOR SHALL REMOVE CONFLICTING STRIPING (INCLUDING RAISED PAVEMENT MARKERS) OR PAVEMENT MARKING BY WET SANDBLASTING (PAINT) OR GRINDING (THERMOPLASTIC) – SEE GENERAL NOTES

LEGEND:

- (S) – SIGNALIZED INTERSECTION
- – TYPE II BARRICADE / WITH SIGN(S) WITH FLASHERS ON ARTERIAL STREETS
- – TYPE III BARRICADE / WITH SIGN(S) WITH FLASHERS ON ARTERIAL STREETS
- – TAU–II–R CRASH CUSHION OR EQUAL
- – ABSORB 350 CRASH CUSHION OR EQUAL
- DELINEATORS AT 10' OC WITH REFLECTIVE BANDS EPOXIED
- – K–RAIL (INTERCONNECTED) PER CALTRANS STD. PLAN T4
- – WORK AREA
- FAB – FLASHING ARROW BOARD (FAB)
- CMS – CHANGEABLE MESSAGE SIGN (CMS) MESSAGES TO BE DISPLAYED ARE INDICATED HEREON. (TYPE 2 SHALL BE INSTALLED 14 DAYS PRIOR TO CONSTRUCTION)
- DIRECTION OF TRAFFIC (NON PAINTED ARROW)
- PAINTED ARROW AS SHOWN ON PLAN PER CALTRANS STD PLAN A24A

CH	PAINT 8" WHITE CHANNELIZING LINE PER CALTRANS STD PLAN A20D, DETAIL 38
DY	PAINT 12" DOUBLE YELLOW LINE PER CALTRANS STD PLAN A20B, DETAIL 27
LL	PAINT 50' LONG PAINTED 4–INCH WIDE WHITE LEAD LINE WITH ONE TYPE G CLEAR RETROREFLECTIVE PAVEMENT MARKER AT EACH END.
SB	SANDBLAST EXISTING STRIPING
SK	PAINT 4" SKIP WHITE LINE PER CALTRANS STD PLAN A20A, DETAIL 9
SL	PAINT MODIFY 4" WHITE SHOULDER LINE PER CALTRANS STD PLAN A20B, DETAIL 27B
SLL	PAINT 12" WHITE STOP LIMIT LINE PER CALTRANS STD PLAN A24E

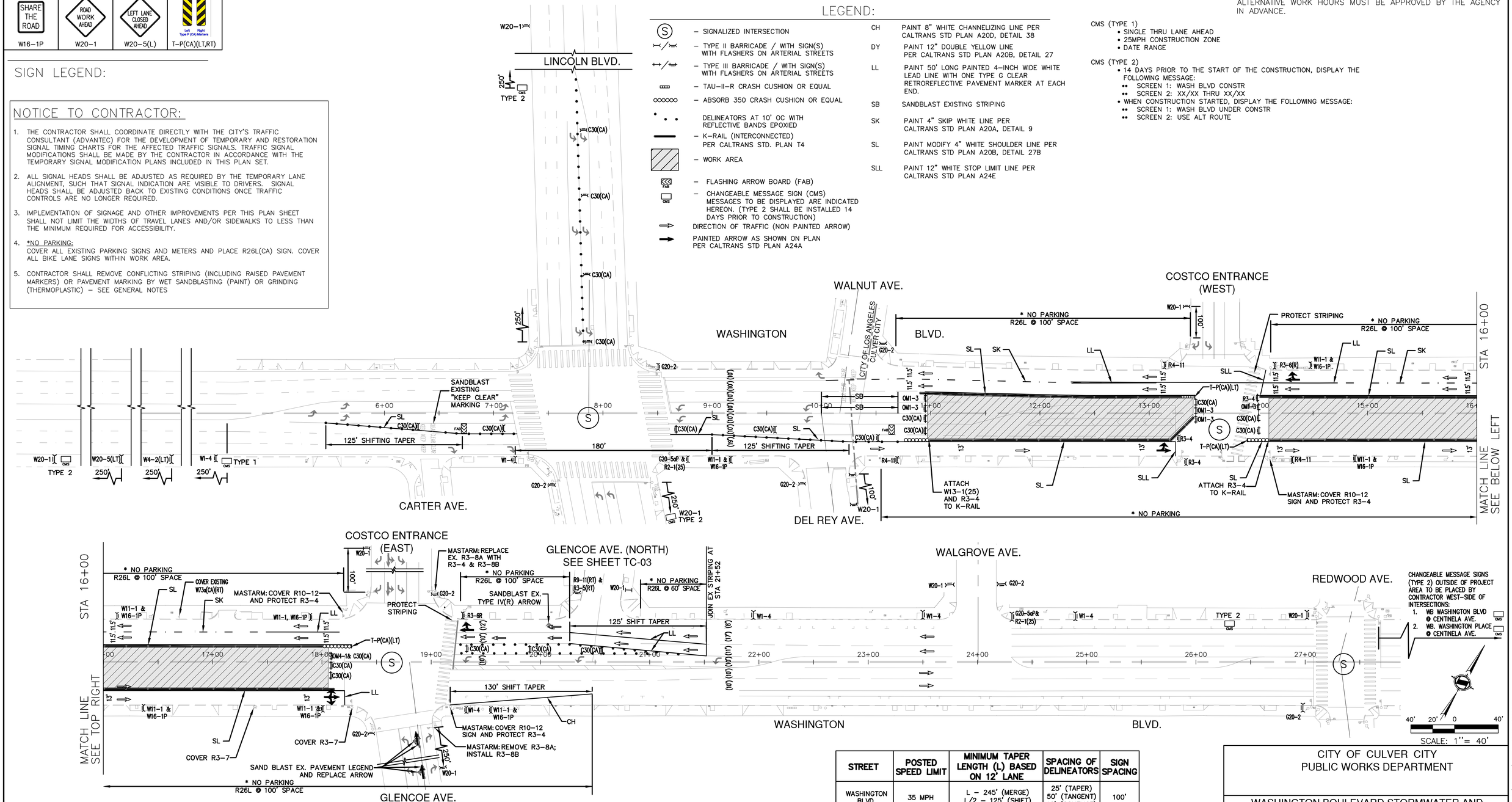
DURATION: 6 MONTHS

WORK HOURS: 8 AM TO 5 PM (M–F)

ALTERNATIVE WORK HOURS MUST BE APPROVED BY THE AGENCY IN ADVANCE.

CMS (TYPE 1)
- SINGLE THRU LANE AHEAD
- 25MPH CONSTRUCTION ZONE
- DATE RANGE

CMS (TYPE 2)
- 14 DAYS PRIOR TO THE START OF THE CONSTRUCTION, DISPLAY THE FOLLOWING MESSAGE:
  - SCREEN 1: WASH BLVD CONSTR
  - SCREEN 2: XX/XX THRU XX/XX
- WHEN CONSTRUCTION STARTED, DISPLAY THE FOLLOWING MESSAGE:
  - SCREEN 1: WASH BLVD UNDER CONSTR
  - SCREEN 2: USE ALT ROUTE



STREET	POSTED SPEED LIMIT	MINIMUM TAPER LENGTH (L) BASED ON 12' LANE	SPACING OF DELINEATORS	SIGN SPACING
WASHINGTON BLVD.	35 MPH	L – 245' (MERGE) L/2 – 125' (SHIFT)	25' (TAPER) 50' (TANGENT) 12' (CONFLICT)	100'

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

TRAFFIC CONTROL PLANS - WASHINGTON BOULEVARD
PHASE 1A AND 1B

APPROVED BY: MOBILITY & TRAFFIC ENGINEERING DIVISION — DATE 4/11/23

SHEET TC-04
Sheet 34 Of 49 Sheets

DIGALERT — DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — TOLL FREE 1-800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

PREPARED BY
CWE
1561 E. ORANGETHORPE AVE.
SUITE 240
FULLERTON, CA 92831
TEL (714) 526-7500
www.cwecorp.com

REGISTERED PROFESSIONAL ENGINEER — ANTHONY L. TAPPAN — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

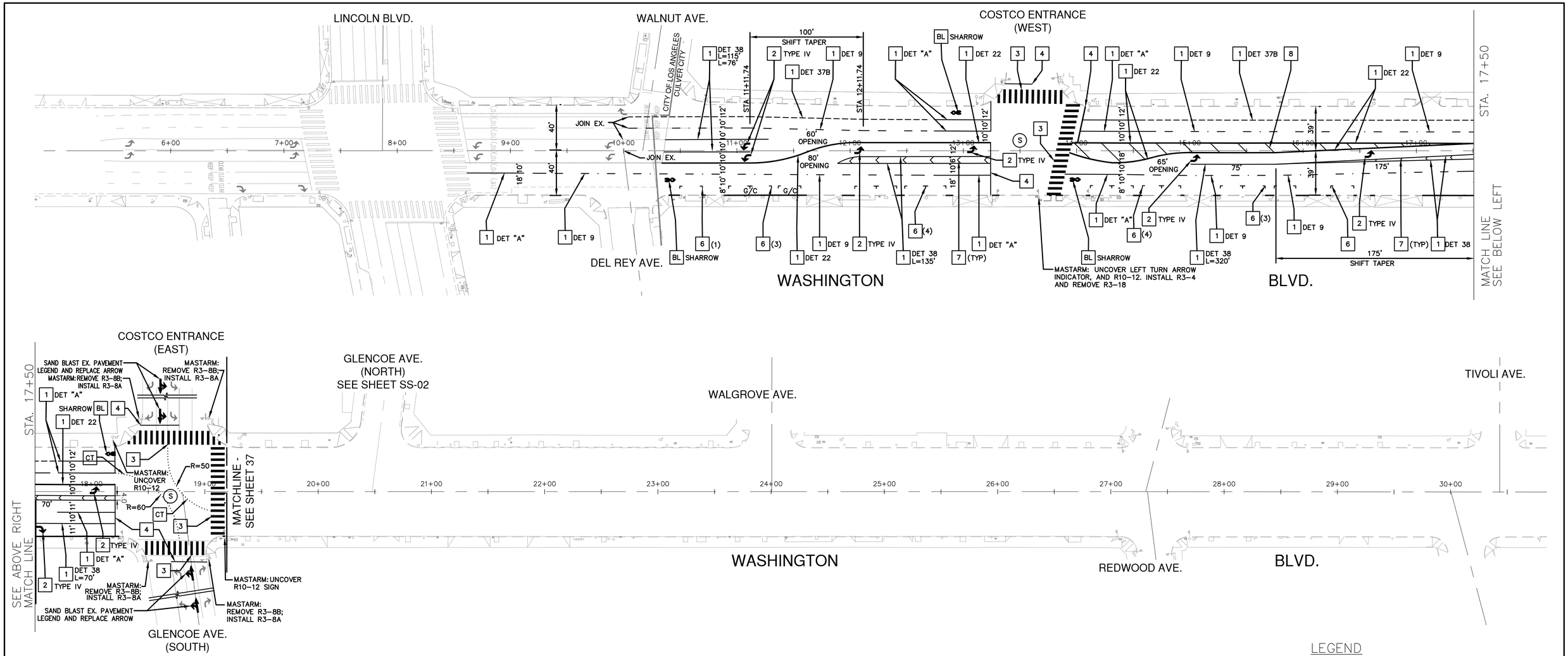
Project Number: PR- 001

Drawing No.

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
GARY LEE MOORE, P.E. CITY ENGINEER
ACCEPTED BY :
PLAN CHECKER — DATE
DIVISION / DISTRICT ENGINEER — DATE

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

Drawing Name: Z:\17239\08 Tasks\101 Design\90 Traffic\17239 – 34 TC–WASHINGTON.dwg
Last Opened: Dec 01, 2022 – 1:38pm by itakigawa



SIGNING AND STRIPING CONSTRUCTION NOTES:

1. INSTALL STRIPING DETAIL (INCLUDING RAISED PAVEMENT MARKERS PER CALTRANS STANDARD PLAN) AS NOTED.
2. INSTALL PAVEMENT MARKING AS NOTED.
3. INSTALL WHITE 12' WIDE CONTINENTAL CROSSWALK PER DETAIL ON SHEET SS-02.
4. INSTALL 12" SOLID WHITE LIMIT LINE.
5. NOT USED
6. INSTALL WHITE PARKING T'S PER PARKING STALL DETAIL "C", # OF STALLS AS NOTED.
7. INSTALL 12" WHITE CHERVON, 24' SPACING O.C.
8. INSTALL 12" YELLOW DIAGONAL AT 45°, 24' SPACING O.C.

BL. INSTALL BIKE LANE SYMBOLS AS NOTED ON PLAN. USE WHITE PAINT BIKE LANE SYMBOL PER DETAIL ON SHEET SS-02.

CT. PAINT 4" WHITE CATRACKING LINE PER DETAIL 40

GENERAL NOTES:

1. ALL MATERIAL AND WORK SHALL CONFORM TO THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CALIFORNIA MUTCD) LATEST EDITION, STANDARD PLANS AND STANDARD SPECIFICATIONS OF THE CALIFORNIA DEPARTMENT OF TRANSPORTATION, FHWA STANDARD HIGHWAY SIGNS 2012 EDITION, CALIFORNIA SIGN SPECIFICATION, AND THE SPECIAL PROVISIONS.
2. ALL STRIPING AND PAVEMENT LEGENDS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED.
3. ALL CONFLICTING LINES, LEGENDS AND RAISED PAVEMENT MARKERS SHALL BE REMOVED BY WET SANDBLASTING.
4. ALL SALVAGED SIGNS AND POSTS SHALL BE DELIVERED TO THE CITY MAINTENANCE YARD, 9505 JEFFERSON BLVD, CITY OF CULVER CITY, (310) 253-6441, UNLESS OTHERWISE INDICATED.
5. NEW SIGN POSTS SHALL BE "UNISTRUT" SQUARE GALVANIZED STEEL POSTS WITH BREAKAWAY ANCHOR POST, OR APPROVED EQUAL.
6. ALL NEW SIGNS ARE TO BE REFLECTORIZED USING 3-M TYPE IV GRADE SHEETING OR APPROVED EQUAL.
7. ALL SIGNS ARE TO BE PER THE STATE OF CALIFORNIA SIGN SPECIFICATIONS, EXCEPT THAT ALL SIGNS SHALL BE MINIMUM 0.1 INCH THICK ALUMINUM.
8. STRIPING SHALL BE CAT TRACKED (MARKED OUT BY ROPE) AND APPROVED BY THE CITY TRAFFIC ENGINEER PRIOR TO FINAL INSTALLATION. MINIMUM OF ONE WEEK NOTICE REQUIRED BY THE CITY TRAFFIC ENGINEER FOR APPROVAL OF STRIPING.
9. PAVING DAMAGED DUE TO REMOVING RAISED PAVEMENT MARKERS SHALL BE REPAIRED TO THE SATISFACTION OF THE CITY ENGINEER.
10. INTERSECTION APPROACHES AND DEPARTURES SHALL BE STRIPED WITH A 50' SECTION OF 4" SOLID WHITE STRIPING.
11. SEE CIVIL PLAN SHEET FOR STREET IMPROVEMENTS.
12. ALL PARKING METERS SHALL BE UNCOVERED IF THEY WERE COVERED DURING CONSTRUCTION.

LEGEND

G/C	GREEN CURB (LOADING)
	REPAINT CURB MARKINGS COLOR RED (UNLESS OTHERWISE NOTED ON PLANS).
(S)	SIGNALIZED INTERSECTION

SIGNAL RESTORATION AND ASSOCIATED IMPROVEMENTS, INCLUDING SIGNAL LOOP DETECTORS, ARE AS SHOWN ON THE SIGNAL PLANS.

40' 20' 0 40'

SCALE: 1"= 40'

DIGALERT — DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — 1-800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

PREPARED BY
CWE
1561 E. ORANGETHORPE AVE.
SUITE 240
FULLERTON, CA 92831
TEL (714) 526-7500
www.cwecorp.com

REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. PARKER — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
GARY LEE MOORE, P.E. CITY ENGINEER
ACCEPTED BY :

PLAN CHECKER DATE

DIVISION / DISTRICT ENGINEER DATE

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

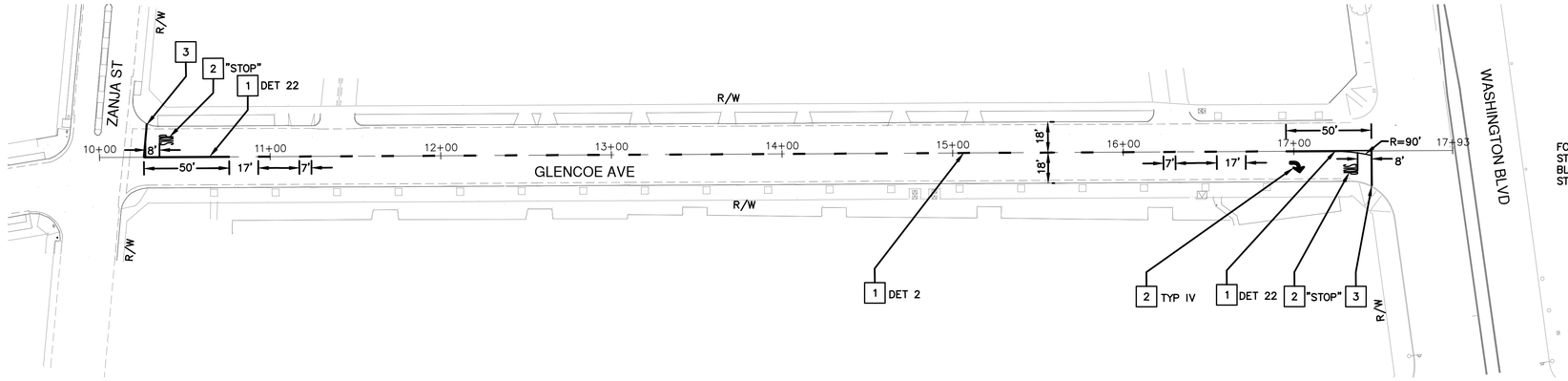
WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

STRIPING AND SIGNAGE PLAN
WASHINGTON BOULEVARD FROM LINCOLN BLVD TO TIVOLI AVE

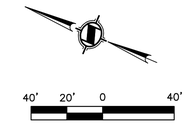
APPROVED BY: ANDRFW MAXIMOUS, P.E., T.E.
4/11/23
MOBILITY & TRAFFIC ENGINEERING DIVISION DATE

SHEET SS-01
Sheet 35 Of 49 Sheets

Drawing Name: Z:\17229\03 Tasks\01 Design\90 Traffic\17229 - 35 SIGN_STRIPE.dwg
Last Opened: Dec 01, 2022 - 1:30pm by tlakigawa



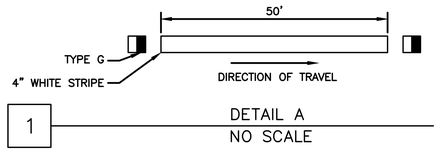
FOR SIGNAGE AND STRIPING ON WASHINGTON BLVD, REFER TO MEDIAN STRIPING



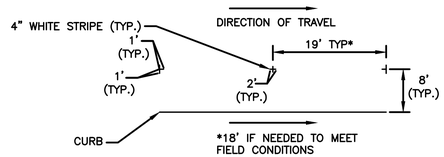
SCALE: 1''= 40'

SIGNING AND STRIPING CONSTRUCTION NOTES:

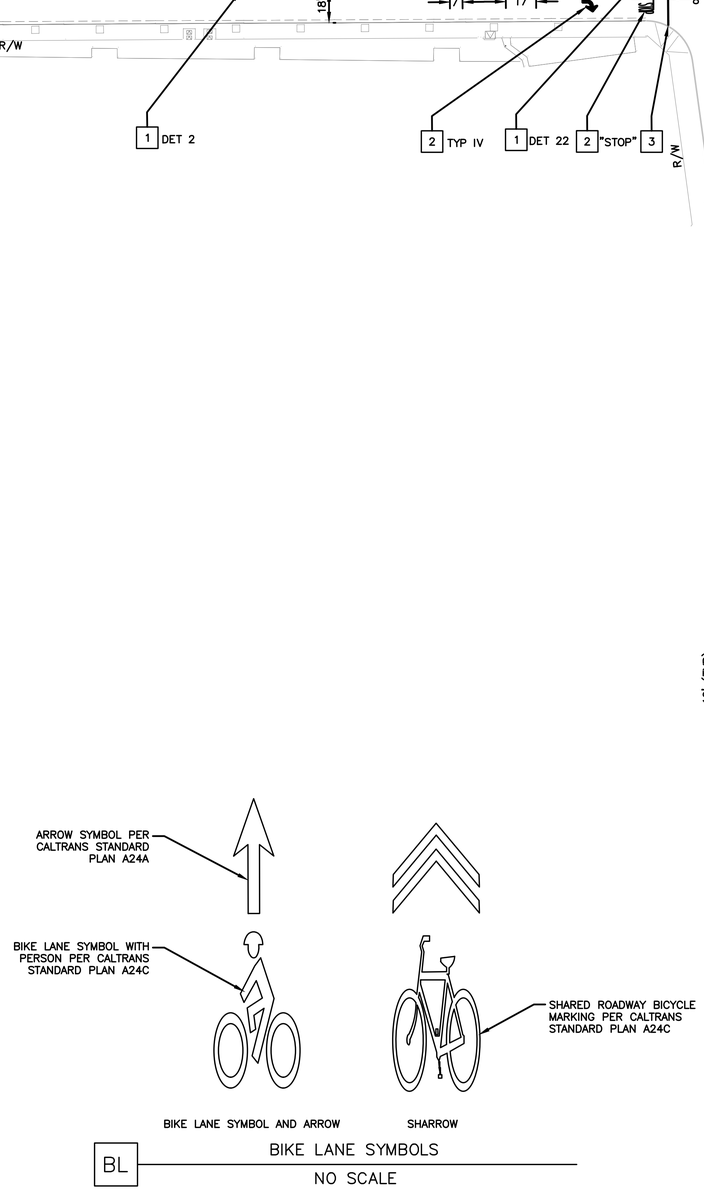
1. INSTALL STRIPING DETAIL (INCLUDING RAISED PAVEMENT MARKERS) AS NOTED.
2. INSTALL PAVEMENT MARKING AS NOTED.
3. INSTALL 12" LIMIT LINE



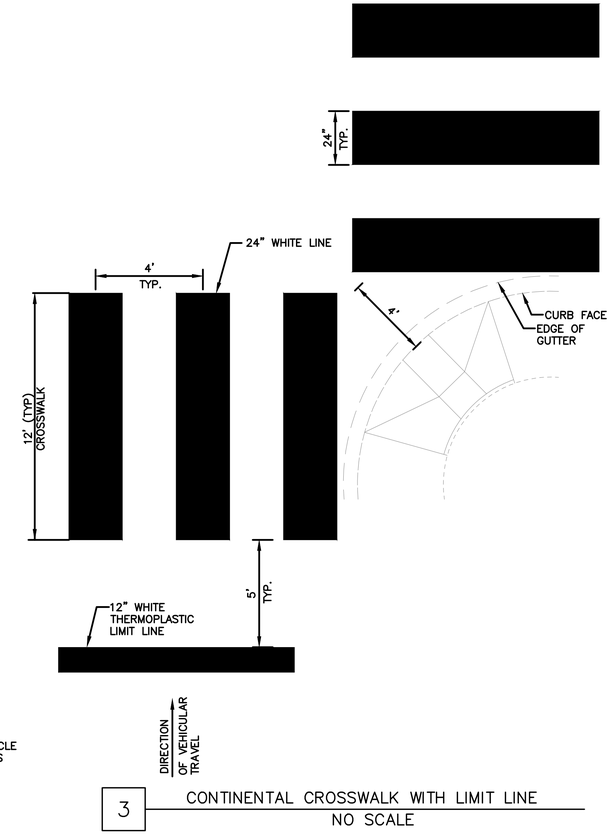
1 DETAIL A
NO SCALE



6 PARKING STALL DETAIL C
NO SCALE



BL BIKE LANE SYMBOLS
NO SCALE



3 CONTINENTAL CROSSWALK WITH LIMIT LINE
NO SCALE

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

STRIPING AND SIGNAGE PLAN
GLENCOE AVE FROM ZANJA ST TO WASHINGTON BOULEVARD

APPROVED BY: ANDREW MAXIMOUS, P.E., T.E.
4/11/23
MOBILITY & TRAFFIC ENGINEERING DIVISION DATE

SHEET SS-02
Sheet 36 Of 49 Sheets

DIG ALERT — DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — ALL TIME — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

PREPARED BY
CWE
1561 E. ORANGETHORPE AVE.
SUITE 240
FULLERTON, CA 92831
TEL (714) 526-7500
www.cwecorp.com

REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. FARRELL — No.85752 — Exp. 9/30/2024 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
GARY LEE MOORE, P.E. CITY ENGINEER
ACCEPTED BY :
PLAN CHECKER DATE
DIVISION / DISTRICT ENGINEER DATE

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

Drawing Name: Z:\17239\06 Traffic\01 Design\SS Traffic\17239 - 36 SIGN_STRIPE-2.dwg
Last Opened: Dec 01, 2022 - 1:31pm by tfalcipeo

PAVEMENT MARKING & STRIPING NOTES:

*ALL STRIPING SHALL CONFORM TO THE CA MUTCD (2014 EDITION, REV. 6)

1. INSTALL LANE LINE, DETAIL 9.
2. INSTALL 4" WHITE LANE LINE PER DETAIL "A" ON SHEET 36.
3. INSTALL DOUBLE YELLOW STRIPING, DETAIL 22.
4. INSTALL LEFT EDGE LINE, DETAIL 25.
5. INSTALL LEFT EDGE LINE, DETAIL 27.
6. INSTALL RIGHT EDGE LINE, DETAIL 27B.
7. INSTALL MEDIAN ISLAND STRIPING, DETAIL 29.
8. INSTALL TWO-WAY LEFT TURN LANE, DETAIL 32.
9. INSTALL CHANNELIZATION LINE, DETAIL 38.
10. INSTALL BIKE LANE STRIPING, DETAIL 39.
11. INSTALL BIKE LANE INTERSECTION STRIPING, DETAIL 39A.
12. INSTALL 12" WHITE CHEVRON @ 10' SPACING
13. INSTALL PAVEMENT MARKING AS SHOWN ON PLAN, SEE BELOW LIST FOR STANDARDS:
    BIKE LANE ARROW = PER CA MUTCD 9C-3
    BIKE LANE SYMBOL W/ PERSON = PER CA MUTCD 9C-3
    SHARED LANE MARKING (SHARROW) = PER CA MUTCD FIGURE 9C-9
    TYPE I ARROW = PER CA MUTCD FIGURE 3B-24(CA)
    TYPE IV ARROW = PER CA MUTCD FIGURE 3B-24(CA)
14. INSTALL 12" YELLOW DIAGONALS @ 10' SPACING.
15. PAINT MEDIAN NOSE YELLOW.
16. INSTALL ENNIS FLINT PREMARK BIKE LANE EMERALD GREEN WITH VIZIGRIP OR CITY APPROVED EQUAL.
17. INSTALL CURB MARKING, COLOR AS SHOWN. SANDBLAST OR GRIND OFF CONFLICTING STRIPING, PER CITY INSPECTOR (IF APPLICABLE).
18. INSTALL 4" WHITE, 8' X 19' PARKING STALLS. SEE DETAIL "C" ON SHEET 36. RELOCATION OF PARKING METERS BY OTHERS.
19. INSTALL WHITE CONTINENTAL CROSSWALK. SEE DETAIL "C".
20. INSTALL 12" SOLID WHITE LIMIT LINE.
21. INSTALL BIKE LANE INTERSECTION STRIPING DETAIL 39A WITH EMERALD GREEN COLORED PAVEMENT MARKING PER DETAIL "A" SHOWN HEREON.
22. INSTALL WHITE BIKE LANE SYMBOL W/ PERSON AND BIKE LANE ARROW PAVEMENT MARKING PER MUTCD FIGURE 9C-3 WITH EMERALD GREEN PAVEMENT MARKING PER DETAIL "B" SHOWN HEREON.

(R) REMOVE EXISTING STRIPING AND/OR PAVEMENT MARKING.

SIGN NOTES

[IS] INSTALL SIGN AND/OR POST AS SHOWN R9-3

[R] REMOVE SIGN

LEGEND

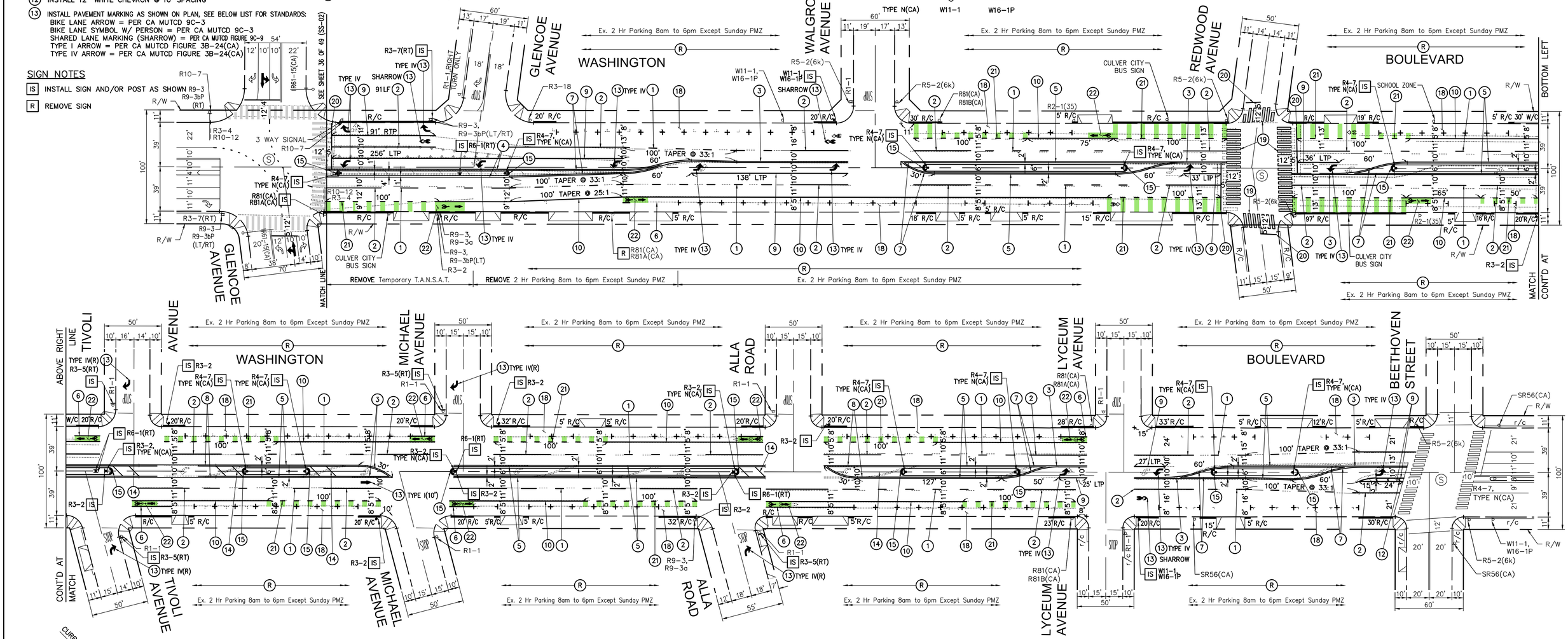
1. = EXISTING STRIPING & MARKINGS TO REMAIN.
   = EXISTING STRIPING & MARKINGS TO BE REMOVED.
   = PROPOSED STRIPING & MARKINGS.
2. = EXISTING SIGN AND POST.
   = EXISTING SIGN AND POST TO BE REMOVED OR RELOCATED.
   = PROPOSED SIGN AND POST.
3. r/c = EXISTING RED CURB MARKINGS TO REMAIN.
   r/c = EXISTING RED CURB MARKINGS TO BE REMOVED.
   R/C = PROPOSED RED CURB MARKINGS.
   W/C = PROPOSED GREEN CURB MARKINGS.
4. (S) = SIGNALIZED INTERSECTION.

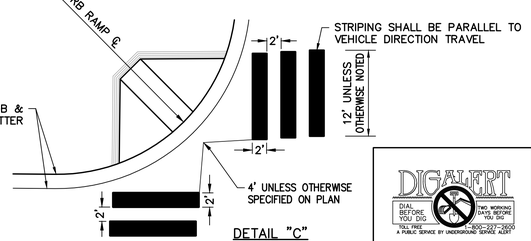
SIGN LEGEND

R3-2 | R3-5(RT) | R3-7(RT) | R4-7 | R6-1(RT) | R60B(CA) | R81(CA) | R81A(CA) | TYPE N(CA) | W11-1 | W16-1P

DETAIL 39A W/ GREEN PAVEMENT MARKING
DETAIL "A"
NO SCALE

DETAIL "B"
BIKE SYMBOL DETAIL
NO SCALE





DETAIL "C"
NOT TO SCALE

DIG ALERT — DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — TOLL FREE 1-800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

PREPARED BY
KOA
1100 Corporate Center Drive, Suite 201
Monterey Park, California 91754
Tel: (323) 260-4703 Fax: (323) 260-4705

11/7/22
Date

REGISTERED PROFESSIONAL ENGINEER — GIUSEPPE S. CANONERI — No. C79006 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

40' 20' 0 20' 40'
1"=40' GRAPHIC SCALE

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

STRIPING AND SIGNAGE PLAN
WASHINGTON BLVD FROM
GLENCOE AVE TO BEETHOVEN ST

APPROVED BY: ANDREW MAXIMOUS, P.E., T.E.
4/11/23
MOBILITY & TRAFFIC ENGINEERING DIVISON — DATE

SHEET SS-03
Sheet 37 Of 49 Sheets

Drawing Name: z:\2022\JC2101 CC Washington Blvd SS\Design\Signing & Striping\SS-Washington Blvd.dwg
Last Opened: Dec 07, 2022 - 10:07am by jkamal

TREE REMOVAL AND RETENTION SCHEDULE

STREET TREES	BOTANICAL NAME	COMMON NAME	CONT. SIZE	QTY
	Tristania conferta Exisitng street tree to be protected. See Tree Protection Details and notes.	Brisbane Box	Existing City Street Tree	2
	Tristania conferta Existing to be removed	Brisbane Box	Existing to be Removed	16
EXISTING TREE TO REMAIN IN PLACE	**BOTANICAL NAME**	**COMMON NAME**	**CONT. SIZE**	**QTY**
	Cupressus sempervirens	Italian Cypress	Existing to Remain	1
	Pistacia chinensis	Chinese Pistache	Existing to Remain	2
	Syagrus romanzoffiana	Queen Palm	Existing to Remain	6
EXISTING TREES TO BE REMOVED	**BOTANICAL NAME**	**COMMON NAME**	**CONT. SIZE**	**QTY**
	Cupressus sempervirens	Italian Cypress	Remove	14
	Eucalyptus spp.	Eucalyptus	Remove	3
	Pinus halepensis	Allepo Pine	Remove	3
	Pistacia chinensis	Chinese Pistache	Remove	1
	Syagrus romanzoffiana	Queen Palm	Remove	20
	Trachycarpus fortunei	Windmill Palm	Remove	2

4 PLANTING SCHEDULE

SYMBOL	DESCRIPTION	QTY
4-01	Existing Landcape to be protected.	1,138 sf
4-02	Existing shrubs and ground covers to be removed.	sf

MAWA Calculator

²Special Landscape Area (ft.²)
0

¹ET₀ Adjustment Factor	³EPPT Factor (Optional)	MAWA	Gallons Per Year	1000 Gal. Per Year	Cubic Ft. Per Year	CCF Per Year	Acre Ft. Per Year
0.45	0%	W/O EPPT	54,294	54	7,258	73	0
		With EPPT		0	0	0	0

MWELO Water Budget

Sample ET_o
44.2

Total Landscape Area (ft. sq.)
4,403

Water Budget Calculator

MAWA	ETWU	ETAF
54,294	31,627	0.26

Estimated Water Use for Regular Landscape Area:

Hydro-Zone ID	Regular Landscape Area Planting & Water Use	↓ENTER↓ Irrigation 1=Spray 2=Drip	↓ENTER↓ Zone Area (ft.²)
1	Shrub (Low)	2	2,791.92
2	Trees (Mod)	2	1,639.08
3			
4			
5			
6			
7			
8			

Total Reg. Land. Area (ft.²)	ETWU Reg. Land. Area Gallons	1000 Gal. Per Year	Cubic Ft. Per Year	CCF Per Year	Acre Ft. Per Year
4,431	31,627	32	4,228	42.28	0.10

RLA Calculator

Plant Factor	Irrigation Efficiency	Hydro-zone Totals: ETAF (PF/IE)	ETAF x Zone Area (ft.²)	ETWU RLA (Gallons)
0.10	0.81	0.12	344.68	9,445.65
0.40	0.81	0.49	809.42	22,181.41
			-	-
			-	-
			-	-
			-	-

Total ETAF x RLA Area	Total RLA Gallons
1,154.10	31,627

Estimated Water Use for Special Landscape Area:

SLA-Zone ID	SLA-Zone Description	↓ENTER↓ Zone Area (ft.²)
1	Edibles: Potable Water	
2	Edibles: Grey/Recycled/Rain Water	
3	Landscape: Grey/Recycled/Rain Water	
4	Water Feature: Recycled/Rain Water	

Total Spec. Land. Area (ft.²)	Total Spec. Land. Area Gallons
0	0

SLA Calculator

ETAF	Hydro-Zone Totals: ETAF x Zone Area (ft.²)	ETWU SLA (Gallons)
1	0	0
1	0	0
1	0	0
1	0	0

Total ETAF x SLA Zone Area	Total ETWU SLA Gallons
0	0

All Landscape Areas	
Total ETAF x Area	1,154
Total Area	4,431
Sitewide ETAF	0.26

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

LANDSCAPE PROTECTION & DEMOLITION PLAN

DIG ALERT — DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — TOLL FREE 1-800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

CCA INC — CUMMINGS CURLEY AND ASSOCIATES, INC — LANDSCAPE ARCHITECTS — 1700 PACIFIC COAST HIGHWAY, SUITE C, SEAL BEACH, CALIFORNIA 90740 — 562.424.8182 — CUMMINGSCURLEY.COM

PREPARED BY
CWE
1561 E. ORANGETHORPE AVE. SUITE 240
FULLERTON, CA 92831
TEL (714) 526-7500
www.cwecorp.com

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

REVIEWED BY CITY LANDSCAPE ARCHITECT
REFER TO SHEET T-01 FOR APPROVAL SIGNATURE

DATE

SHEET
LS-01

PLANT SCHEDULE

TREES	BOTANICAL NAME	COMMON NAME	CONT. SIZE	HT & SP	SIZE	WULCOLS	PLANT FACTOR	HYDROZONE	QTY
	Cocos plumosa 10` Brown Trunk Min.	Queen Palm	36" Box		10` BT	M	0.4-0.6	2	15
	Cupressus sempervirens	Italian Cypress	24" Box	1.5"Cal	6` Ht.	L	0.1-0.3	2	13
	Eucalyptus sideroxylon	Red Ironbark	36" Box	2.5"Cal	7-8` x 3-4`	L	0.1-0.3	2	3
	Pinus halepensis	Allepo Pine	24" Box	2.5"Cal	6` x 2`	L	0.1-0.3	2	8
	Pistacia chinensis	Chinese Pistache	36" Box	30-60` ht. 30-60` sp.	7-8` x 3-4`	M	0.4-0.6	2	1
	Trachycarpus fortunei	Windmill Palm	12` Brown Trunk		12` BT	M	0.4-0.6	2	2

STREET TREES	BOTANICAL NAME	COMMON NAME	CONT. SIZE	QTY
	Tristania conferta Exisitng street tree to be protected. See Tree Protection Details and notes.	Brisbane Box	Existing City Street Tree	2

EXISTING TREE TO REMAIN IN PLACE	BOTANICAL NAME	COMMON NAME	CONT. SIZE	QTY
	Cupressus sempervirens	Italian Cypress	Existing to Remain	1
	Pistacia chinensis	Chinese Pistache	Existing to Remain	2
	Syagrus romanzoffiana	Queen Palm	Existing to Remain	6

STREET TREE	BOTANICAL NAME	COMMON NAME	CONT. SIZE	HT & SP	SIZE	WULCOLS	PLANT FACTOR	HYDROZONE	QTY
	Lophostemon confertus Replacement Tree	Brisbane Box	24" Box Standard	2"Cal	7-8` x 3-4`	M	0.4-0.6	2	16

SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	CONT. SIZE	HT & SP.	WULCOLS	PLANT FACTOR	HYDROZONE	QTY
	LN	Laurus nobilis Full in can. 5`h x 2`w min	Sweet Bay	15 gal	4-6` ht. 3-4` sp.	L	0.1-.0.3	1	108
	PM2	Phormium tenax `Maori Queen` Full in can	New Zealand Flax	5 gal	4-6` ht. 3-4` sp.	L	0.1-.0.3	1	51

GROUND COVERS	CODE	BOTANICAL NAME	COMMON NAME	CONT	WULCOLS	PLANT FACTOR	HYDROZONE	SPACING
	HC2	Hypericum calycinum to match existing in majority of planter	Creeping St. John`s Wort	flat	M	0.4-0.6	3	9" o.c.
	LW	Lantana montevidensis `White Lightnin` Full in can	Trailing Lantana	1 gal	L	0.1-0.3	1	24" o.c.
	HB	Rosmarinus officinalis `Huntington Blue`	Rosemary	1 gal	L	0.1-0.3	1	24" o.c.

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CCA INC — CUMMINGS CURLEY AND ASSOCIATES, INC — Landscape Architects — 1700 Pacific Coast Highway, Suite C — Seal Beach, California 90740 — 562.424.8182 — CUMMINGSCURLEY.COM

PREPARED BY

CWE — 1561 E. ORANGETHORPE AVE. SUITE 240 — FULLERTON, CA 92831 — TEL (714) 526-7500 — www.cwecorp.com

REGISTERED LANDSCAPE ARCHITECT — STATE OF CALIFORNIA — 08-25-22

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

PLANTING PLAN

REVIEWED BY CITY LANDSCAPE ARCHITECT
REFER TO SHEET T-01 FOR APPROVAL SIGNATURE

DATE

SHEET LS-02

GENERAL PLANTING NOTES

1. Installer shall be responsible for making themselves familiar with all underground utilities, pipes and structures. Installer shall take sole responsibility for any cost incurred due to damage of said utilities.
2. Installer shall not willfully proceed with construction as designed when it is obvious that unknown obstructions and/or grade differences exist that may not have been known during design.
3. Installer shall have soils tested by a qualified agronomy laboratory. Materials and mixing of soil amendments, fertilizers, and back fill for planting pits shall be in accordance with recommendations of the soils agronomy report.
4. All plant material shall be approved by the Landscape Architect prior to installation.
5. Final location of all plant material shall be subject to the approval of the Construction Manager.
6. See details for staking method and plant pit dimensions.
7. If conflicts arise between size of areas and plans, Installer to contact Construction Manager for resolution. Failure to make such conflicts known to the Construction Manager will result in Installer's liability to relocate the materials.
8. All ground covers to be held back 4" from edge of new shrubs typical and 2" from back of curbs or edge of walks at time of planting.
9. Ground covers shall be triangularly spaced per detail.
10. Trees shall be located minimum 4' from walls, overhead, walks, headers and other trees within the project, unless otherwise shown.
11. Place Deep Root Barrier at new trees that are with in 5' of Curbs or paving unless noted otherwise on the plans. Deep Root model UB 24-2 see installation detail.
12. All slopes greater than 3:1 in shrub areas shall be covered jute mesh to prevent soil erosion during plant establishment
13. Remove stakes and trellis from vines and espaliers and secure to walls, fences and posts as per detail
14. In all cases "Root Bound" plant material will not be accepted.
15. All planting areas including pots irrigated with drip irrigation or low volume irrigation components shall be hand watered by the installer until the plant materials root zones have established enough to effectively access the irrigation water from the drip systems.
16. Planting areas (except lawn and hydroseed areas as well as areas of Decomposed Granite) to be top dressed with 2" (inch) min, layer of mulch Agromin ES-2 or equal. Agromin (800)247-6646
17. Suitable Soil Import
    a. General - Topsoil shall be free of roots, clods, stones larger than 1-inch in the greatest dimension, pockets of coarse sand, noxious weeds, sticks, lumber, brush and other litter. It shall not be infested with nematodes or other undesirable disease-causing organisms such as insects and plant pathogens
    b. Topsoil shall be friable and have sufficient structure in order to give good tilth and aeration to the soil.
    c. Gradation limits - soil shall be a sandy loam. The definition of soil texture shall be the USDA classification scheme cited below. Gravel over 2 millimeters in diameter shall be less than 20% by weight
    d. Permeability Rate - Hydraulic conductivity rate shall be not less than one inch per hour nor more than 10 inches per hour when tested in accordance with the USDA Handbook Number 60, method 34b or other approved methods.
    e. Fertility - The range of the essential elemental concentration in soil shall be as follows for approval of source soil:

Ammonium Bicarbonate/DTPA Extraction
parts per million (mg/kilogram
dry weight basis

phosphorus	10 - 40
potassium	100 - 220
iron	5- 35
manganese	0.6 - 6
zinc	1 - 8
copper	0.3 - 5
boron	0.2 - 1
magnesium	50 - 150
sodium	0 - 100
sulfur	25 - 500
molybdenum	0.1 - 2

    f. Acidity - The soil pH range measured in the saturation extract (Method 21a, USDA Handbook Number 60) shall be 6.0 - 7.9.
    g. Salinity - The salinity range measured in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 0.5 - 2.5 dS/m.
    h. Chloride - The maximum concentration of soluble chloride in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 150 mg/l (parts per million).
    i. Boron - The maximum concentration of soluble boron in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 1 mg/l (parts per million).
    j. Sodium Adsorption Ratio (SAR) - The maximum SAR shall be 3 measured per Method 20b, USDA Handbook Number 60.
    k. Aluminum - Available aluminum measured with the Ammonium Bicarbonate/DTPA Extraction shall be less than 3 parts per million.
    l. Soil Organic Matter Content - Sufficient soil organic matter shall be present to impart good physical soil properties but not be excessive to cause toxicity or cause excessive reduction in the volume of soil due to decomposition of organic matter. The desirable range is 3% to 5%. The carbon:nitrogen ratio should be about 10.
    m. Calcium Carbonate Content - Free calcium carbonate (limestone) shall not be present for acid-loving plants.
    n. Heavy Metals - The maximum permissible elemental concentration in the soil shall not exceed the following concentrations:

Ammonium Bicarbonate/DTPA Extraction
parts per million (mg/kilogram)
dry weight basis

arsenic	1
cadmium	1
chromium	10
cobalt	2
lead	30
mercury	1
nickel	5
selenium	3
silver	0.5
vanadium	3

    o. If the soil pH is between 6 and 7, the maximum permissible elemental concentration shall be reduced 50%. If the soil pH is less than 6.0, the maximum permissible elemental concentration shall be reduced 75%. No more than three metals shall be present at 50% or more of the above values.

Phytotoxic constituent, herbicides, hydrocarbons etc. - Germination and growth of monocots and dicots shall not be restricted more than 10% compared to the reference soil. Growth inhibiting constituents must not be present.

20. Organic soil amendment
    a. Composted aerobic humus compost without presence of decomposition products. The organic matter content shall be at least 50% on dry weight basis. Humus material shall have an acid-soluble ash content of no less than 6% and no more than 20%.
    b. The pH of the material shall be between 6 and 7.5.
    c. The salt content shall be less than 6 millimho/cm @ 25° C. (ECe less than 6) in a saturated paste extract.
    d. Boron content of the saturated extract shall be less than 1.0 part per million.
    e. Silicon content (acid-insoluble ash) shall be less than 50%.
    f. Calcium carbonate shall not be present if to be applied on alkaline soils.
    g. Types of acceptable products are composts, manures, mushroom composts, straw, alfalfa, peat mosses etc. low in salts, low in heavy metals, free from weed seeds, free of pathogens and other deleterious materials.
    h. Composted wood products are conditionally acceptable [stable humus must be present]. Wood based products are not acceptable which are based on red wood or cedar.
    i. Sludge-based materials are not acceptable.
    j. Carbon:nitrogen ratio is between 8.0 and 20:1.
    k. SAR (sodium adsorption ratio) less than 5.
    l. Seed germination - over 80% germination in saturation extract diluted 1 to 3 in water compared to seeds germinated in deionized water.
    m. Germination vigor - equal to or better than seed length for seeds germinated in deionized water.
    n. Maturity and stability - Solvita 5 or higher.
    o. Molar ratio of ammoniacal nitrogen to nitrate nitrogen less than 2.
    p. The compost shall be aerobic without malodorous presence of decomposition products.
    q. The maximum particle size shall be 0.5 inch, 80% or more shall pass a No. 4 screen.

Maximum total permissible pollutant concentrations in amendment in parts per million on a dry weight basis:

arsenic	12	copper	100	selenium	20
cadmium	15	lead	100	silver	10
chromium	100	mercury	10	vanadium	50
cobalt	50	zinc	200	molybdenum	20
nickel	100				

20. Decomposed granite (D.G.) - install a 2" (Min.) layer of Decomposed Granite w/ stabilizer continuous, color as per plan, in all planters under all trees and shrubs as indicated. Before placing granite, compact sub-grade to 85% and apply a pre-emergent herbicide to soil. After placing granite: rake smooth, wet to entire depth, allow to dry, then lightly scarify surface with a leaf rake. Apply a secondary application of pre-emergent herbicide to top of granite. Keep top of granite 1" below adjacent walks and curbs. Do not allow granite to touch the trunk of any plant. Install after installation of plant material making note of plant height so they are not buried by D.G..
21. Brown Trunk Height "BT" shall mean as measured from the ground line to the base of the heart leaf.
22. All Palms must be certified disease and pest free by a the supplier in writing. Written documentation must be provided prior to planting.

SOIL TESTS FOR SOIL MANAGEMENT

1. The Contractor shall be responsible for obtaining soils testing and soil amendment recommendations. Soils testing shall be completed and test results and amendment recommendations submitted to the Landscape Architect a minimum of fifteen (30) days before commencement of [illegible] commencement of any soil amending or planting.
2. The testing laboratory shall be **WALLACE LABORATORIES, LLC 365 Coral Circle El Segundo, CA 90245 phone (310) 615-0116** or approved equal as approved by the Landscape Architect or approved equal as approved by the Landscape Architect.
3. The testing laboratory for soils analysis shall use the following criteria for soil testing: USDA Agricultural Suitability Test per Handbook 60, to include Boron presence and content; and University of California Soil Fertility Test.
4. Interpretations, fertilization and soil amendment recommendations, and comments regarding these tests are required.
5. Infiltration Rate determined by laboratory test or Soil Texture and Infiltration Rate table
6. Soils test sites shall occur not more than 250 feet on center in the planting areas, unless otherwise noted on plans.
7. Samples of all import soil from each source shall also be submitted to the soils testing laboratory for analysis, interpretation and recommendations prior to placement, blending or back-filling.

PERCOLATION TEST

1. The landscape installer shall dig (as test areas) four (4) plant pits of 24" box size, or larger, at four (4) locations minimum within the job site. Pits are to be filled with water. The results of this test shall be reported to the Landscape Architect and owner 48 hours after initiating. Test pits shall be in actual location of trees as shown on the plan. Failure to carry out this test shall make the landscape installer liable for any and all trees that die due to poor water percolation beyond the agreed guarantee period.

   OPTION 1
   Should the water drain out of the test pits at a normal rate indicating good percolation then tree detail "A" and shrub planting detail "A" shall be utilized.

   OPTION 2
   In the event any amount of water is left standing in the test pit (per the above procedure) 24 hours after initiating the percolation test then the vertical mulching details for tree detail "B" and shrub detail "B" shall apply to all trees and shrubs regardless of size. These details shall supersede all other planting details. However, the tree staking requirements of tree planting detail "A" shall remain intact in either case.

TREE AND EXISTING LANDSCAPE PROTECTION NOTES

A. New Construction -Requirements by Development Phase

The information contained in this section is divided into the four phases normally associated with new construction. Apart from the normal activities conducted during each phase, there are certain conditions associated with work around trees that are required to be completed during these phases. This section addresses these conditions.

1. Pre-Construction Phase

This period is defined as the time between the approval of a development permit and the issuance of a stage grading or final grading permit. No work of any kind may occur on an approved project unless a stage grading permit, grading permit and tree permit (if required) has been obtained from the City of Culver. Generally speaking, the following activities will occur before the commencement of grading operations.

1.1 Pre-Construction Conference

During the conduct of this meeting, representatives from the Departments of Public Works will address various issues relating to trees on the project site. These issues include, but may not be limited to, the following matters:

Tree Removal, Deadwooding, Pruning, Retaining, Walls, Pest Control, Fertilization, Cabling, Drainage and Aeration Devices, etc.

1.2 The Fencing Plan

All of the remaining trees and or landscape areas must be fenced before grading operations begin. The City or their representative will have a copy of the Fencing Plan at the Pre-ConstructionMeeting. Using the approved grading plan or the Site Plan Map the Fencing Plan should be designed along the following guidelines:

(a) A minimum five (5') foot high new chainlink fence will be required to be installed at the outermost edge of the drip line of each tree or groups of trees, and the perimeter of all landscape areas. . The fences must be installed in accordance with the approved fencing plan, prepared by the landscape installer, prior to the commencement of any grading operations. The project's site representative will be responsible to call the Departments of Public Works for an inspection of the fencing prior to grading operations.

(b) Additionally, signs must be installed on the fence in four locations (equidistant) around each tree. The size of each sign must be a minimum of two (2') feet by two (2') feet square and must contain the following language:

WARNING

THIS FENCE SHALL NOT BE REMOVED OR RELOCATED WITHOUTWRITTEN AUTHORIZATION FROM THE COMMUNITY DEVELOPMENT DEPARTMENT.

On fencing around a grove of trees or landscape area, signs shall be placed at approximately fifty (50') foot intervals.

(c) Once approval has been obtained, the fences must remain in place throughout the entire construction period and may not be removed without obtaining written authorization from the Departments of Public Works .

2. Grading Operations Phase

This period is defined as the time between the commencement of grading operations and the commencement of construction of building improvements. It is understood that the construction phase may begin while grading operations are continuing and that grading may begin on a subsequent phase while construction is still in progress on a previous phase.

In addition to the normal grading operations conducted during this phase, the developer will be required to complete or satisfy the following tasks.

2.1 On-site Documentation

The following information must be located and permanently retained in the construction trailer or project office at the start of grading operations. The superintendent will be required to call the Departments of Public Works to request an inspection and verify that the information is located on site.

(a) Tree Location Plan
(b) Tree Fencing Plan.
(c) Landscape Permit and all present and future modifications.
(d) Approved Construction Plans: A Stamped set approved by the Community Development Department.
(e) Permit and Tract Conditions: A copy of the approved permit and Tract conditions, and all current and future modifications approved by the Community Development Department.
(f) Tree Inspection Card.
(g) Tree Ordinance.
(h) Tree Preservation Guidelines.
(i) Approved Planting and Irrigation Drawings.

2.2 Utility Trenching-Pathway Plan

In order to avoid unnecessary damage to the root system, prior to the completion of the grading operations and before the commencement of the construction phase, the developer will be required to submit a Utility Trenching-Pathway Plan to the Community Development and Public Works Departments for review and approval. The plan will depict al of the following systems: Storm drains, sewers, easements, area drains, gas lines, electrical service, Cable TV, and water mains. Additionally, the plan must show all lateral lines serving the residences. To be completely effective, the plan must include the surveyed locations of all Trees on the project as well as an accurate plotting of the protected zone to within one foot.

The plan should be developed considering the following general guidelines:

(a) The plan must be developed to avoid going into the protected zone of any tree on its path from the street to the building.

2.3 Where it is not possible to avoid some encroachment, the design must minimize the extent of such encroachment.

3. Construction Phase

3.1 Permitted Encroachments

The following improvements may be permitted to be installed within the protected zone of a tree or landscape area subject to the approval of an Tree Permit issued by the Community Development Department and the limitations and guidelines contained in this section: Patio covers, wood decks, garden walls, fences, gazebos, driveways, walkways, above ground spas and related equipment and other similar improvements.

The guidelines and limitations are as follows:

(a) A Landscape Permit will need to be submitted and approved by the Community Development Department;

(b) When approved, trenching under the dripline of an tree shall be performed with hand tools only;

(c) All of the work must be conducted in the presence of an tree preservation consultant;

(d) Minor roots under one inch in diameter may be cut but must be treated with a fungicide/sealant compound before the improvement is installed;

(e) Major roots over one inch in diameter may not be cut. Depending upon the type of improvement being proposed, bridging techniques or a new site may need to be employed to protect the root and the tree.

3.2 Fine Grading Permit

On most tracts, the drainage patterns for the lots have been designed into the original grading plan. However, this is not the case as in custom lots and custom lot tracts. Therefore, in an effort to avoid establishing drainage patterns that intrude into the protected zone of trees, the following procedures have been established:

(a) Other Lots and Projects

On all other projects, grading plans shall be designed to avoid the protected zone of the trees. The procedure for these lots will then proceed as described in custom lots.

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COLORADO 1559 • TEXAS 3337 • WASHINGTON 1069 • CLARB 1848

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REGISTERED LANDSCAPE ARCHITECT
Robert L. Curley No. 3583
SIGNATURE
12-31-23
RENEWAL DATE
08-25-22
DATE
STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

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CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

PLANTING NOTES

REVIEWED BY CITY LANDSCAPE ARCHITECT
REFER TO SHEET T-01 FOR APPROVAL SIGNATURE
DATE

SHEET
LS-03

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	ARC	PSI	GPM	RADIUS
	Rain Bird RWS-B-C Root Watering System with 4.0" diameter x 36.0" long with locking grate, semi-rigid mesh tube, and check valve. Rain Bird bubbler option as indicated: 1401 0.25 gpm, 1402 0.5 gpm, 1404 1.0 gpm, 1408 2.0 gpm.	54	360	20	1.00	1'
SYMBOL	**MANUFACTURER/MODEL/DESCRIPTION**	**QTY**		**PSI**	**GPM**	**RADIUS**
.75	Hunter PGP-12-SR-CV Shrub Rotor, 12" Pop-Up. Adjustable to Full Circle. Short Radius Nozzle. With Drain Check Valve.	1		40	0.68	24'
1.0	Hunter PGP-12-SR-CV Shrub Rotor, 12" Pop-Up. Adjustable to Full Circle. Short Radius Nozzle. With Drain Check Valve.	2		40	0.90	17'
SYMBOL	**MANUFACTURER/MODEL/DESCRIPTION**	**QTY**				
	Rain Bird XCZ-150-PRB-COM High Flow Control Zone Kit, for Large Commercial Drip Zones. 1-1/2" PESB Valve with two 1" Pressure Regulating 40psi Quick-Check Basket Filters. Flow range: 15-40 GPM.	2				
F	Rain Bird MDCFCAP Dripline Flush Valve cap in compression fitting coupler.	2				
A	Rain Bird ARV075 3/4" Air Relief Valve, made of quality rust-proof materials, with a 6.0" drip valve box (SEB 7XB emitter box). Use with installation below soil. The valve will allow air to escape the pipeline, thus preventing water hammer or blockage.	2				
	Area to Receive Dripline Rain Bird XFS-06-12 (12) XFS Sub-Surface Pressure Compensating Landscape Dripline w/Copper Shield Technology. 0.6GPH emitters at 12.0" O.C. Dripline laterals spaced at 12.0" apart, with emitters offset for triangular pattern. UV Resistant.	4,431 s.f.				
SYMBOL	**MANUFACTURER/MODEL/DESCRIPTION**	**QTY**				
	Rain Bird PEB 1", 1-1/2", 2" Plastic Industrial Valves. Low Flow Operating Capability, Globe Configuration.	3				
	Rain Bird 44-LRC 1" Brass Quick-Coupling Valve, with Corrosion-Resistant Stainless Steel Spring, Locking Thermoplastic Rubber Cover, and 2-Piece Body.	1				
M	Buckner-Superior 3000 1" Normally Closed Brass Master Valve that Provides Dirty Water Protection and 3-Way Solenoid Design. (Existing. For Information Only)	1				
BF	RPBP Reduced Pressure Principle Assembly. Sizes 1-1/2", Test and Certify as part of project. (Existing)	1				
C	Rain Bird ESP-LXD-LXMMPED with (1) ESPLXD-SM75 Flow sensing Two-Wire Decoder Commercial Controller. 125 Stations. (Existing. For Information Only)	1				
FS	Rain Bird FS-150-B 1-1/2" Flow Sensor (Existing. For Information Only).	1				
P	Zurn 500XL Pressure Regulator Water Pressure Reducing Valve with Integral By-pass Check Valve. Lead Free. 5 psi to 125 psi spring range, factory set at 85 psi. (Existing)	1				
XX	Point of Connection 1-1/2" Existing Service	1				
	Irrigation Lateral Line: PVC Schedule 40	1,804 l.f.				
	Irrigation Mainline: PVC Schedule 40	341.1 l.f.				
	Irrigation Mainline: PVC Schedule 40 Existing to Remain Verify location in the field. See As Builts by Weisman Design Group dated 1/27/99	115.6 l.f.				

Valve Callout
- # — Valve Number
- # — Valve Flow
- #" — Valve Size

IRRIGATION NOTES

VERIFICATION:
The system is based on a static 80 p.s.i. and 50 g.p.m. available at the discharge outlet of the meter or other point of connection. The contractor shall verify the same at the award of the contract. The contractor shall notify the Landscape Architect immediately if the data is significantly different and would adversely affect the operation of the system. Such notice shall be in writing and shall occur within 5 days of contract award for projects anticipated to take two weeks or longer or 72 hours prior to commencement.

DEMOLITION:
All existing irrigation affected by new work shall be removed. The systems and circuits connected to the current irrigation system shall remain functional during the construction period. All means and methods required to maintain a complete and functional irrigation system during the construction period for areas outside the project area are the responsibility of the installer.

SCHEMATIC:
The system features are shown schematically for graphic clarity: install all piping in common trenches (the minimum cover noted in Detail 1 "Pipe & Wire Trenching" is required for the upper most line) where feasible and inside planting areas. Valves and main lines shall be located in planter areas.

CODES:
The irrigation system and all other mechanical, electrical, and structural systems shall be installed in accordance with all federal, state, and local codes and manufacture specifications recommendations and requirements. Notify the Landscape Architect immediately in writing prior to signing a contract with the owner of any conflicts. Conflicts noted after signing or after the commencement of work shall be the sole responsibility of the contractor.

HEAD ALLOWANCE:
The contractor is required to provide the owner with a complete project. He/she shall install any additional heads, nozzle changes, valves, irrigation lines, wire, etc. as necessary to accommodate any necessary field changes. The contractor shall make all needed changes as directed by the Landscape Architect and provide the project with a complete project at no additional cost.

CHECK VALVES:
Install check valves at the base of any heads that display low end drainage. These shall be included in the contractors price and shall be added as directed by the Landscape Architect and provide the project with a complete project with no additional cost .

SLEEVING:
The contractor shall be responsible for providing adequately sized sleeving for all irrigation pipes, landscape lighting and other components. The drawings are intended to be used as a guide only. Sleeves shall be clearly marked during construction and shall occur under all paved areas and shall extend 1' minimum beyond all paving. Sleeves must be 2x the diameter of pipe running through it.

GUARANTEE:
The contractor shall guarantee the irrigation system and all its components for the period of one year after final acceptance by the Landscape Architect. The contractor shall be responsible for all materials and labor associated with the guarantee, including but not limited to the loss of plant material or damage to structures due to the failure of the irrigation system.

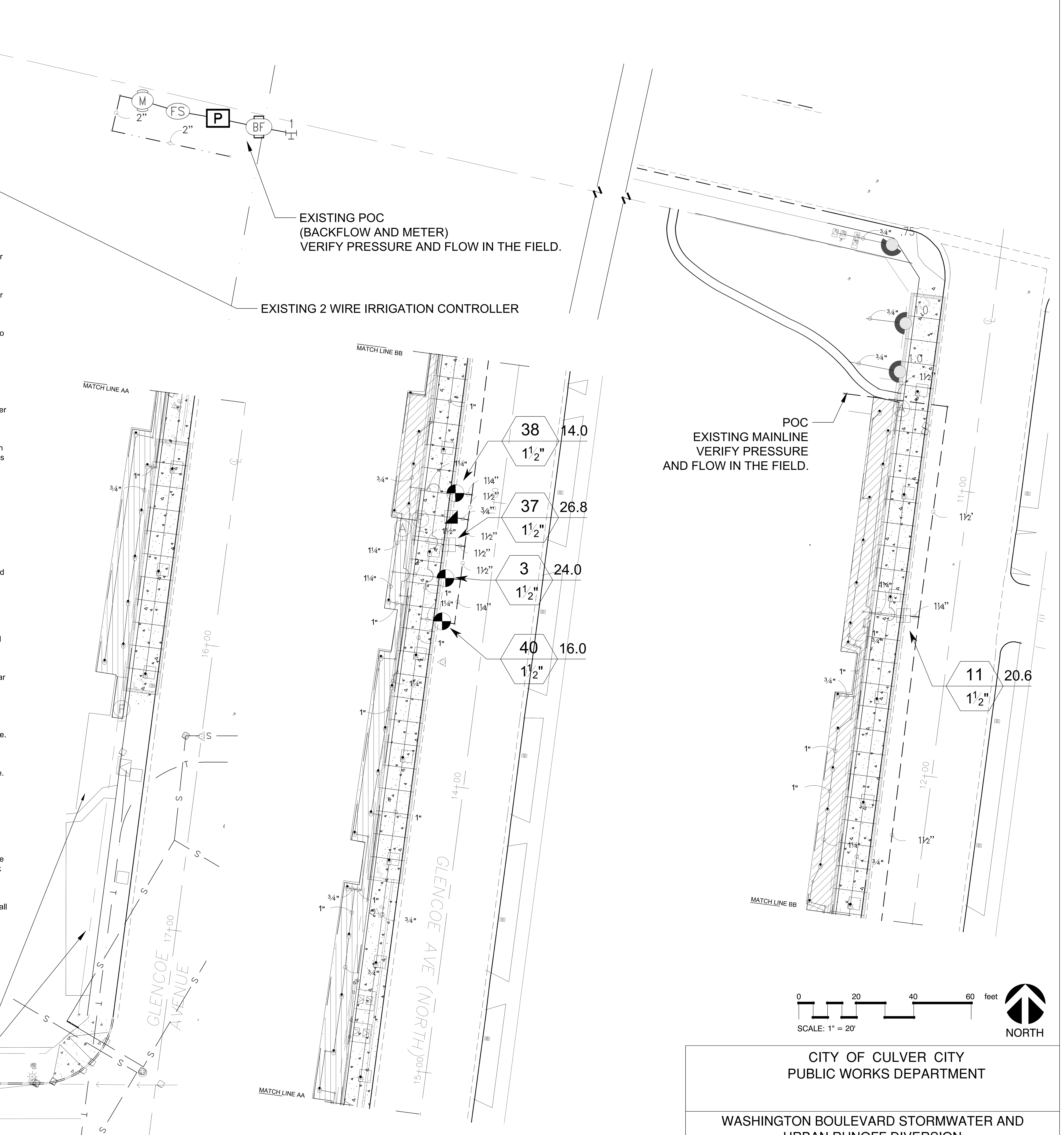
ELECTRICAL SERVICE:
All exposed 110V wires shall be placed in rigid metal conduit and hard wired directly to 110V service. All exposed low voltage wire for irrigation and lighting shall also be placed in rigid metal conduit.

VALVE BOXES:
Unless specifically noted valves boxes shall be installed in the following colors by area of landscape.

Lawn:	Green box and lid
Spreading ground covers:	Green box and lid
Bark Mulch:	Black box and lid
Shrub area:	Black box and lid
Decomposed Granite:	Brown box and lid
Cobble / Gravel:	Black box and lid

DRIP LINE
Perimeter dripline pipe shall be installed 2"-4" from perimeter area per the detail then spaced per the notations in the Irrigation Schedule. Drip line spacing shall begin at 2"-4" from edge of paving, back of curb and or areas of other materials etc. unless otherwise noted.

PLANT ESTABLISHMENT WITH DRIP IRRIGATION:
All planting areas including pots irrigated with drip irrigation or low volume irrigation components shall be hand watered by the installer until the plant materials root zones have established enough to effectively access the irrigation water from the drip systems.



0 20 40 60 feet
SCALE: 1" = 20'
NORTH

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WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

IRRIGATION PLAN

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REFER TO SHEET T-01 FOR APPROVAL SIGNATURE

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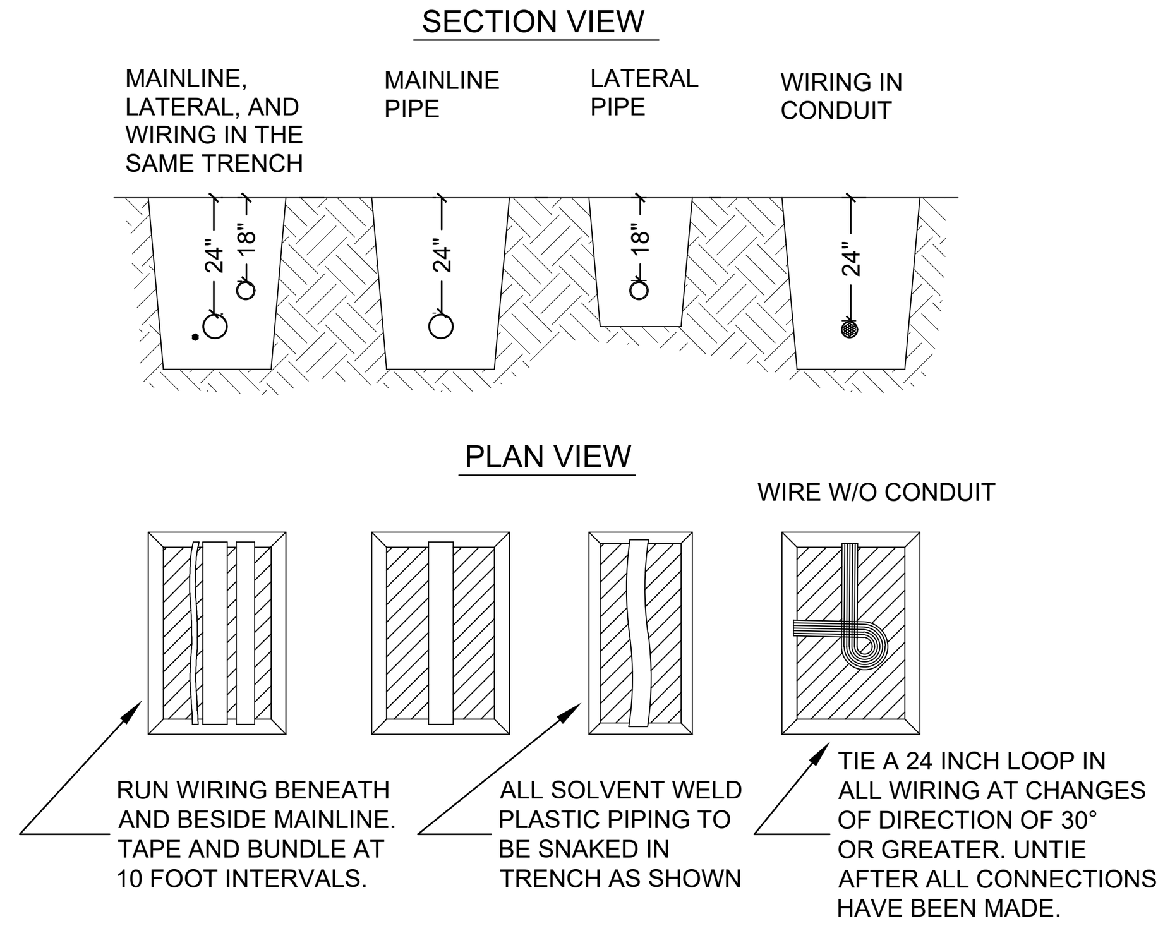
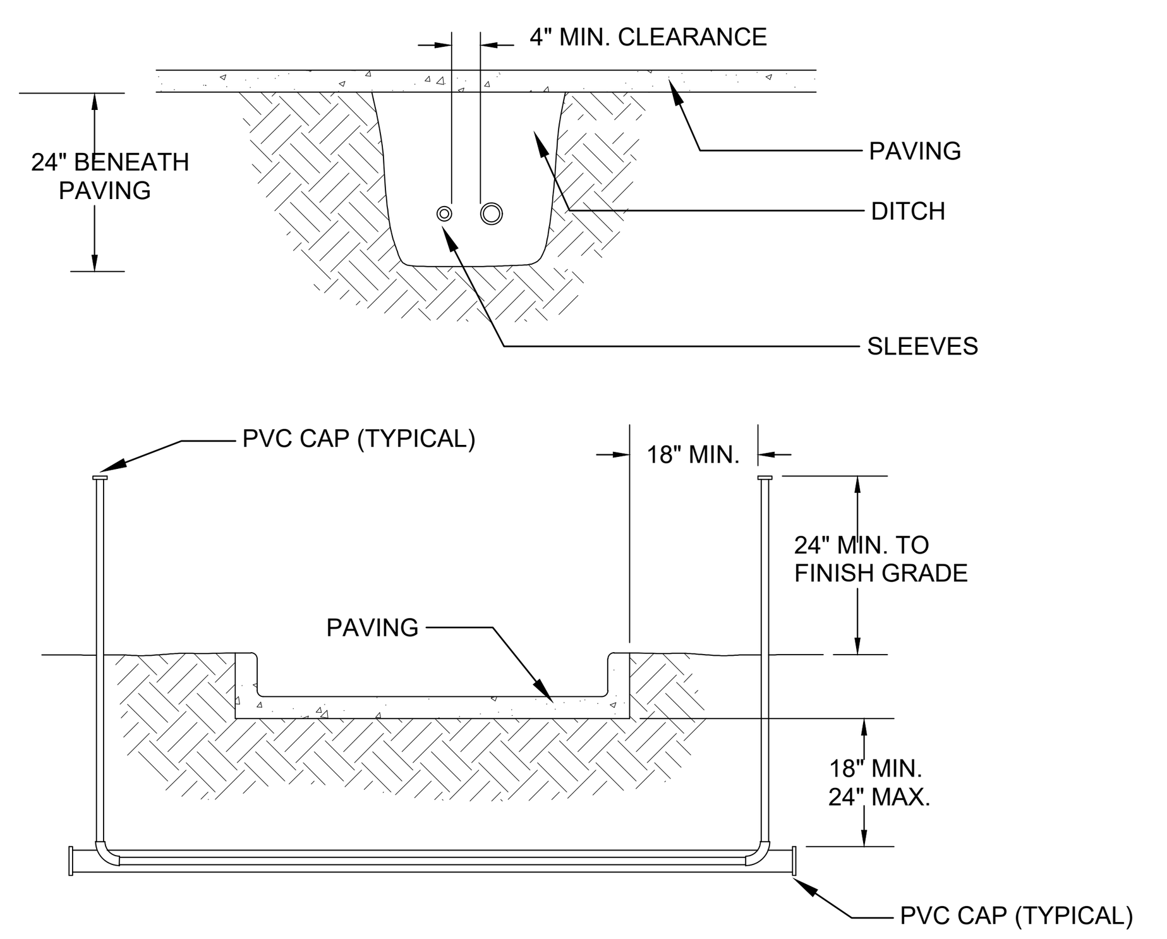


NOTES:
1. SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH SCHEDULE 40 PVC TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE WITHIN.
2. FOR PIPE AND WIRE BURIAL DEPTHS SEE SPECIFICATIONS.

1 PIPE & WIRE TRENCHING

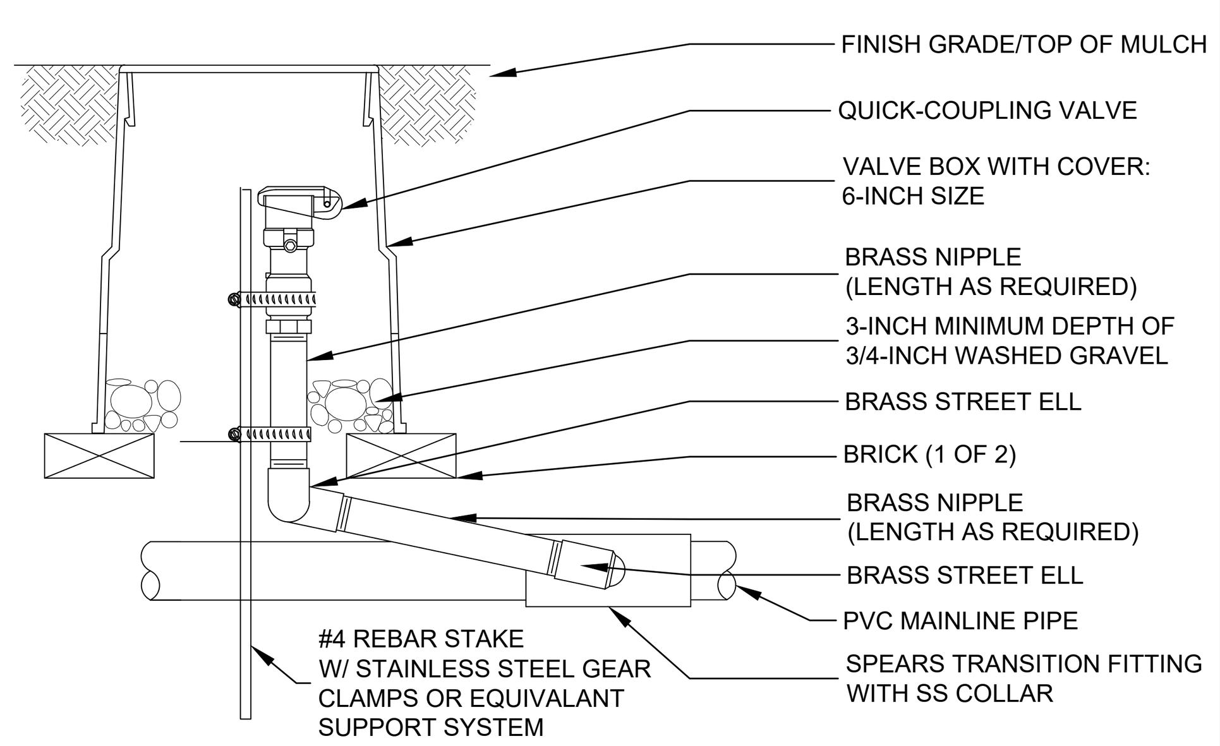
NOT TO SCALE



NOTES:
1. ALL PVC IRRIGATION SLEEVES TO BE SCH.40 PIPE.
2. ALL JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.
3. WHERE THERE IS MORE THAN ONE SLEEVE, EXTEND THE SMALLER SLEEVE TO 24-INCHES MINIMUM ABOVE FINISH GRADE.
4. MECHANICALLY TAMP TO 95% PROCTOR.

2 SLEEVING

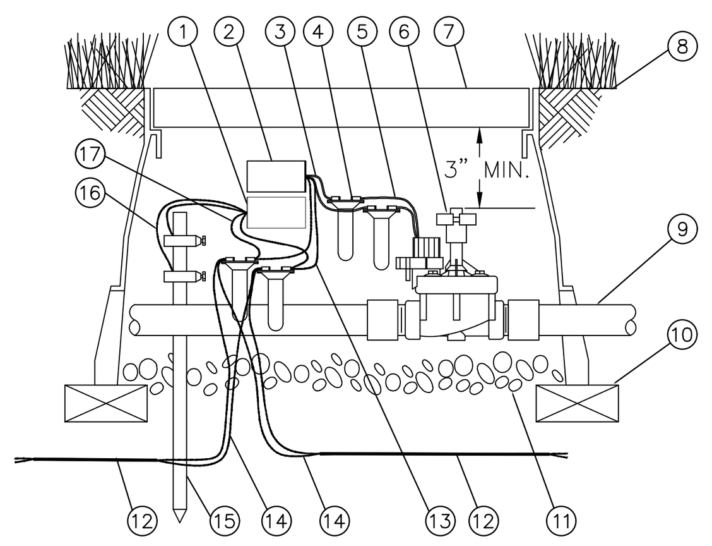
NOT TO SCALE



NOTE:
1. FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.

3 QUICK-COUPLING VALVE

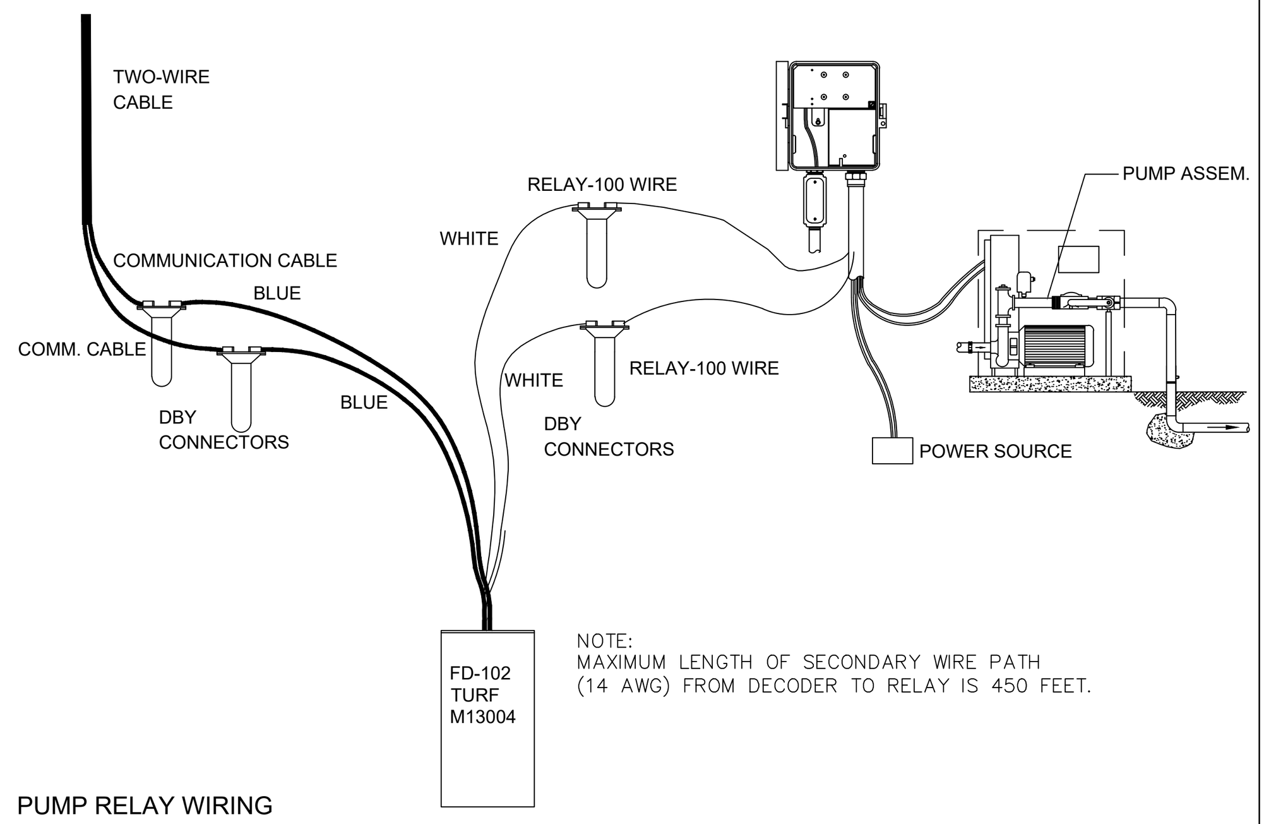
NOT TO SCALE



1. LSP-1TURF M10008 LINE SURGE PROTECTION
2. FD-101TURF M13011 DECODER OR FD-102TURF M13004 DECODER
3. WHITE WIRE FROM FD-101TURF/FD-102TURF DECODER (1 OF 2)
4. DBY WATER PROOF CONNECTION (1 OF 4)
5. SOLENOID WIRE (1 OF 2)
6. REMOTE CONTROL VALVE
7. VALVE BOX WITH COVER: 12-INCH SIZE
8. FINISH GRADE / TOP OF MULCH
9. PVC MAINLINE PIPE
10. BRICK (1 OF 4)
11. 3.0 - INCH MIN. DEPTH OF 3/4 - INCH WASHED GRAVEL
12. TWO-WIRE CABLE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, LSP-1 OR MDC)
13. BLUE WIRE FROM FD-102TURF
14. COMMUNICATION WIRE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, LSP-1 OR MDC)
15. GROUNDING ROD: 10 OHMS OR LESS
16. GREEN / YELLOW WIRE FROM LSP-1 TO GROUNDING ROD (1 OF 2)
17. BLUE WIRE FROM LSP-1

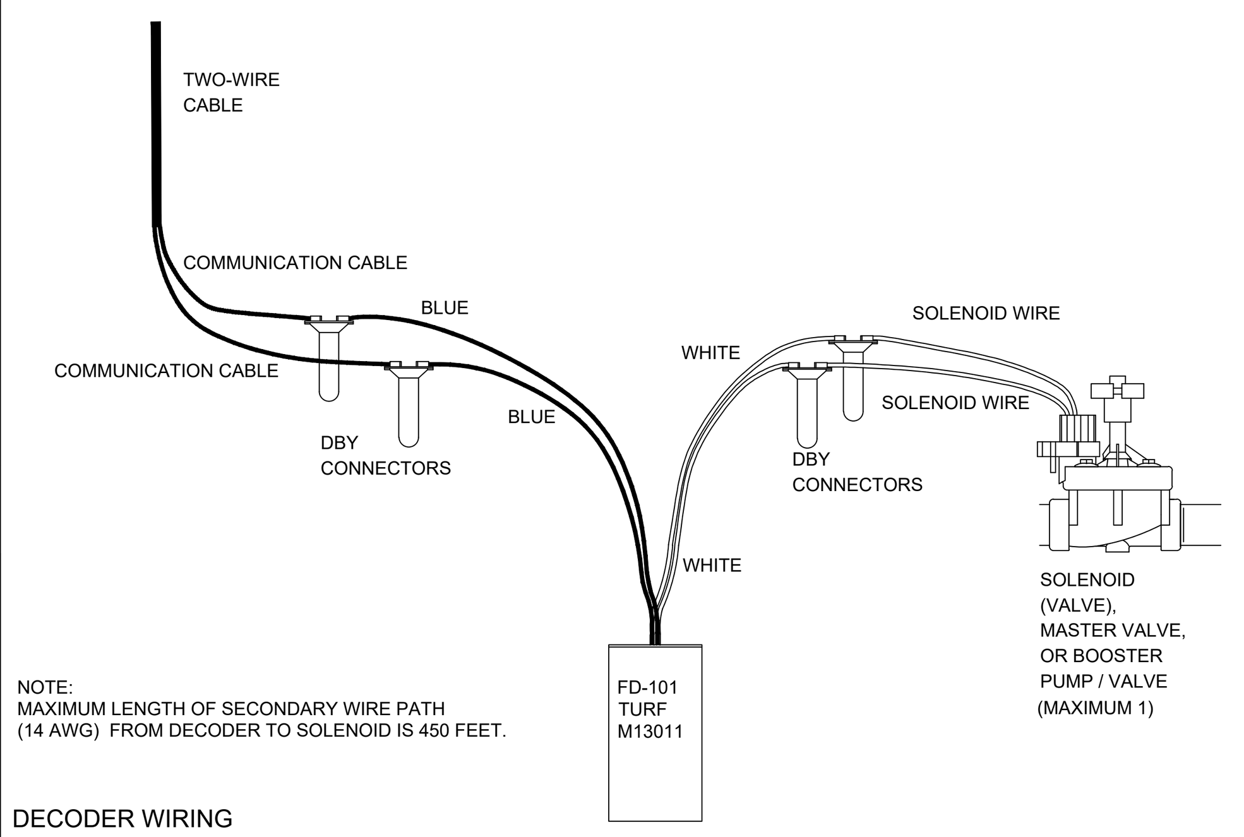
NOTES:
1. LSP-1 SHOULD BE INSTALLED EVERY 500-FEET OR FOR EVERY EIGHT DECODERS ON TWO-WIRE PATH.
2. SECONDARY WIRE RUN - DISTANCE BETWEEN SOLENOID AND FIELD DECODER - NOT TO EXCEED 450-FEET WITH 14 GAUGE WIRE.
3. PLACE 3-FEET OF EXTRA WIRE IN EVERY VALVE BOX FOR EASIER SERVICING.
4. RAIN BIRD FD-401 AND FD-601 FIELD DECODERS COME WITH LSP-1'S BUILT-IN. FD-101, FD-102 AND FD-202 REQUIRE SEPARATE LSP-1 SURGE PROTECTION.

FIELD DECODER CONNECTION



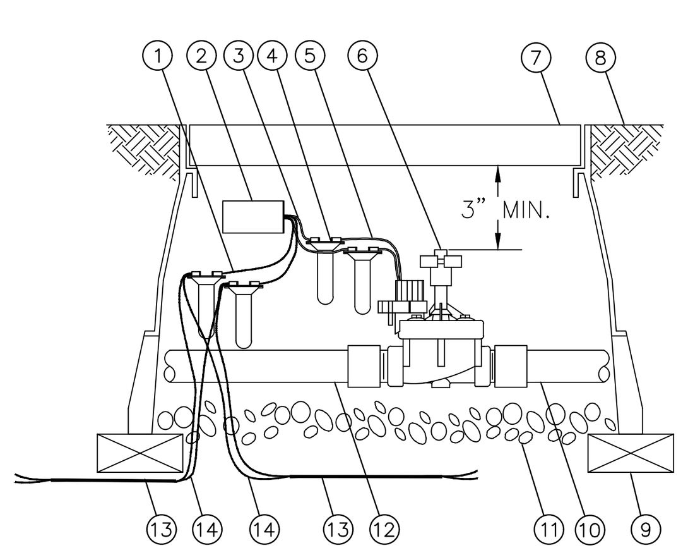
NOTE:
MAXIMUM LENGTH OF SECONDARY WIRE PATH (14 AWG) FROM DECODER TO RELAY IS 450 FEET.

PUMP RELAY WIRING



NOTE:
MAXIMUM LENGTH OF SECONDARY WIRE PATH (14 AWG) FROM DECODER TO SOLENOID IS 450 FEET.

DECODER WIRING



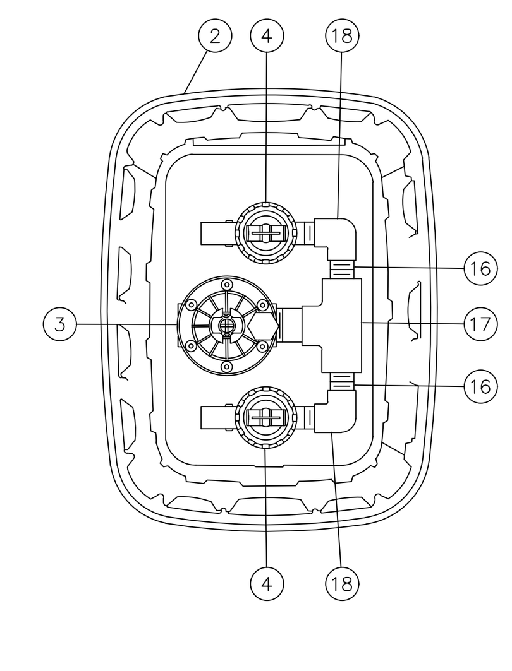
1. BLUE WIRE FROM FD-101TURF OR FD-102TURF DECODER (1 OF 2)
2. FD-101TURF M13011 DECODER OR FD-102TURF M13004 DECODER
3. WHITE WIRE FROM FD-102TURF DECODER (1 OF 2)
4. DBY WATER PROOF CONNECTION (1 OF 4)
5. SOLENOID WIRE (1 OF 2)
6. REMOTE CONTROL VALVE
7. VALVE BOX WITH COVER: 12-INCH SIZE
8. FINISH GRADE / TOP OF MULCH
9. BRICK (1 OF 4)
10. PVC MAINLINE PIPE
11. 3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
12. PVC LATERAL PIPE
13. TWO-WIRE CABLE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, LSP-1 OR MDC)
14. COMMUNICATION WIRE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, LSP-1 OR MDC)

NOTES:
1. SECONDARY WIRE RUN - DISTANCE BETWEEN SOLENOID AND FIELD DECODER - NOT TO EXCEED 450-FEET WITH 14 GAUGE WIRE.
2. PLACE 3-FEET OF EXTRA WIRE IN EVERY VALVE BOX FOR EASIER SERVICING.

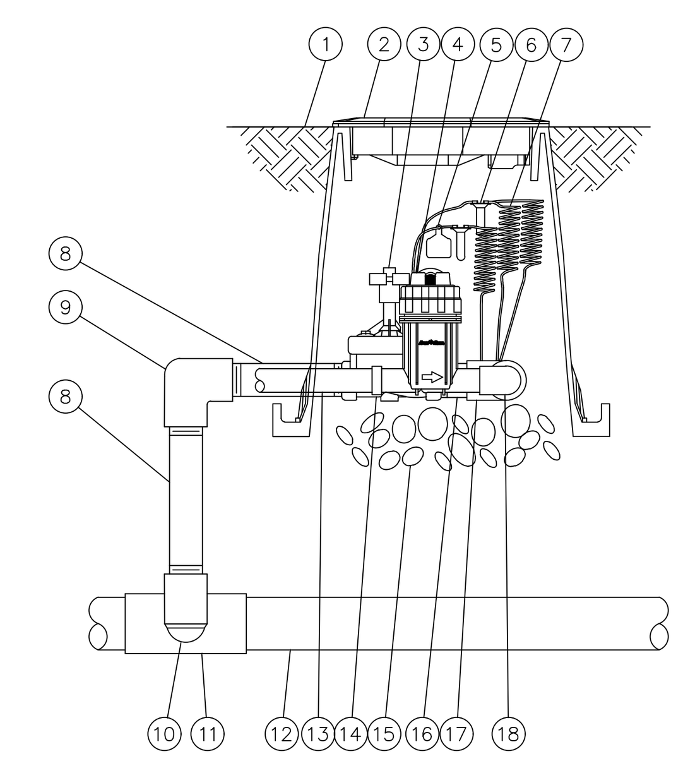
VALVE WIRING

4 TWO WIRE VALVE WIRING

NOT TO SCALE



TOP VIEW



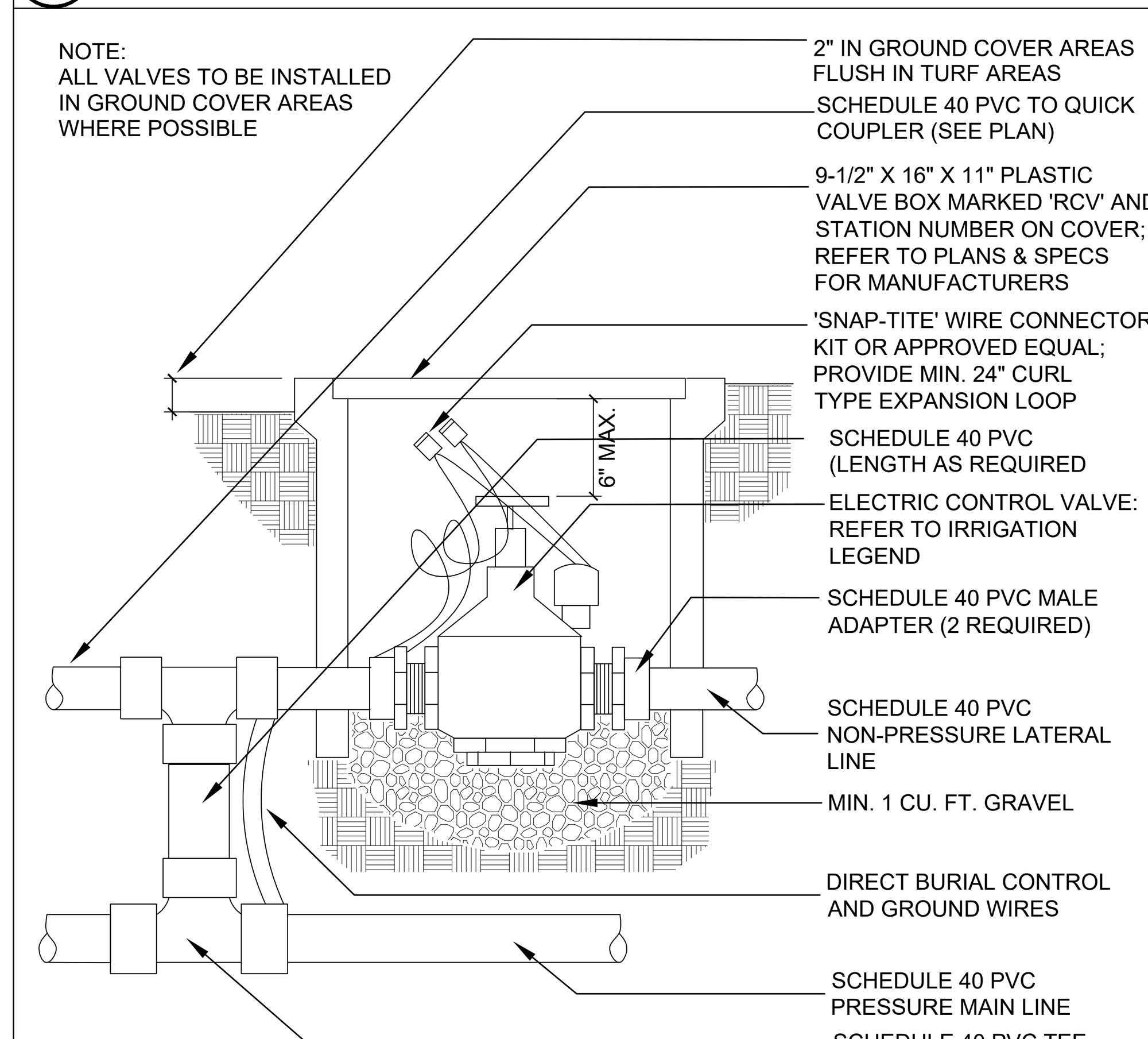
SIDE VIEW

1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH STD COVER: RAIN BIRD VB-STD
3. REMOTE CONTROL VALVE: RAIN BIRD 150-PESB (INCLUDED IN XCZ-PRB-150-COM KIT)
4. PRESSURE REGULATING QUICK CHECK BASKET FILTER: RAIN BIRD PRB-QKCHK-100 (INCLUDED IN XCZ-PRB-150-COM KIT)
5. ID TAG
6. WATERPROOF CONNECTION:
7. 30-INCH LINEAR LENGTH OF WIRE, COILED
8. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
9. PVC SCH 40 ELL
10. PVC SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND PVC SCH 40 ELL
11. PVC SCH 40 TEE OR ELL
12. MAINLINE PIPE
13. LATERAL PIPE
14. PVC SCH 40 FEMALE ADAPTOR
15. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
16. PVC SCH 80 NIPPLE, CLOSE (INCLUDED IN XCZ-PRB-150-COM KIT)
17. PVC SCH 40 TEE (INCLUDED IN XCZ-PRB-150-COM KIT)
18. PVC SCH 40 ELL (INCLUDED IN XCZ-PRB-150-COM KIT)
19. R.W. WARNING TAGS ON ALL VALVES

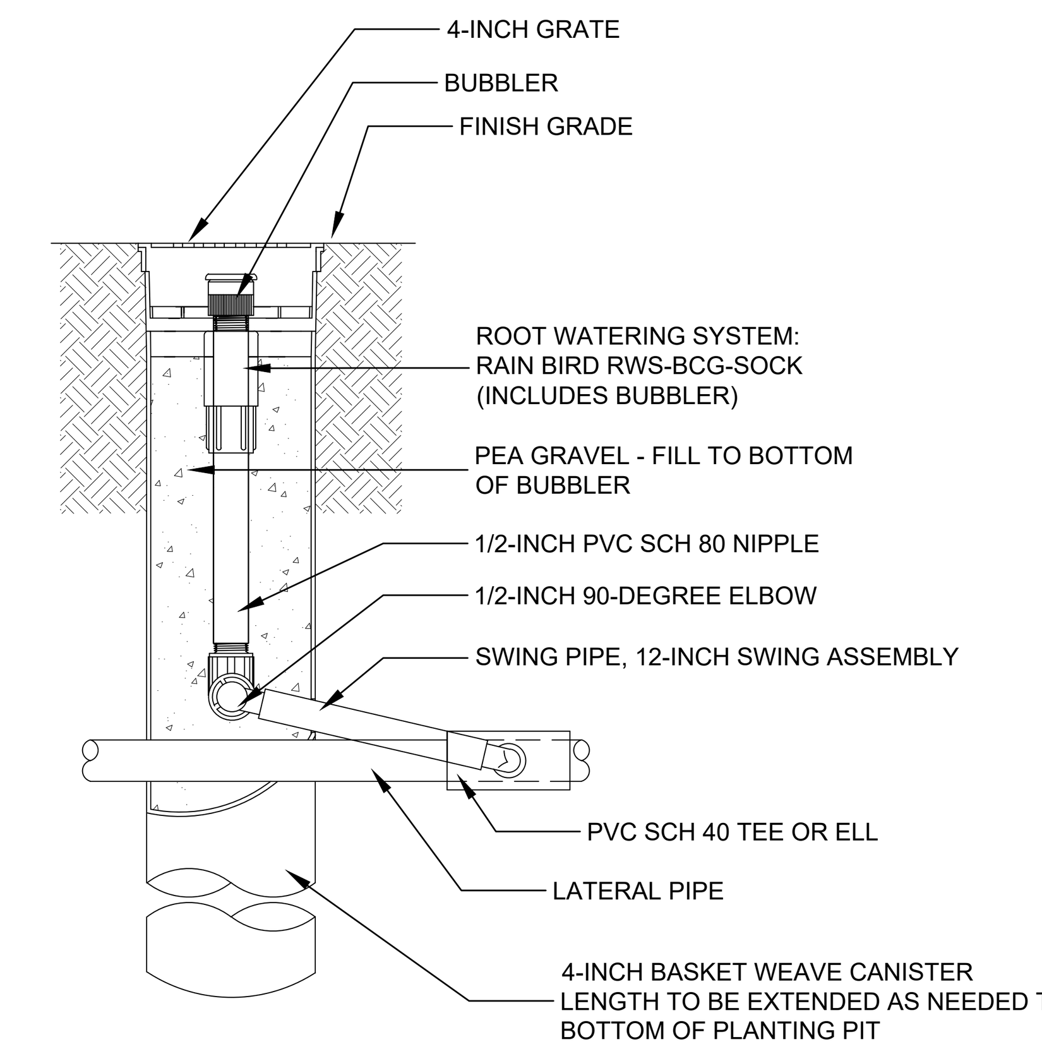
5 XCZ-PRB-150-COM ZONE KIT

NOT TO SCALE

NOTE:
ALL VALVES TO BE INSTALLED IN GROUND COVER AREAS WHERE POSSIBLE

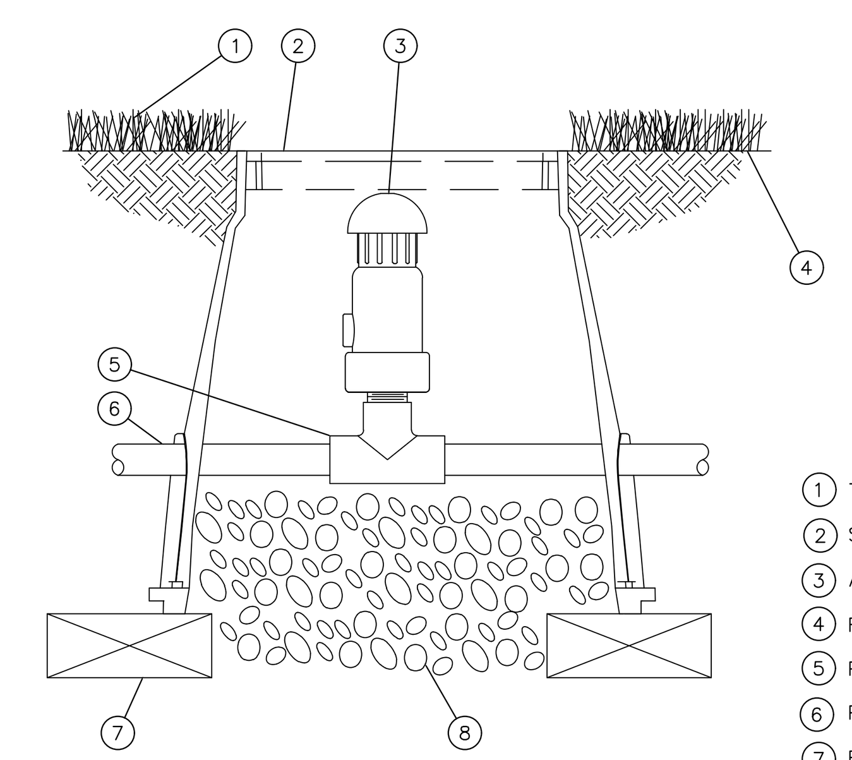


6 ELECTRIC REMOTE CONTROL VALVE



7 DEEP WATERING BUBBLER

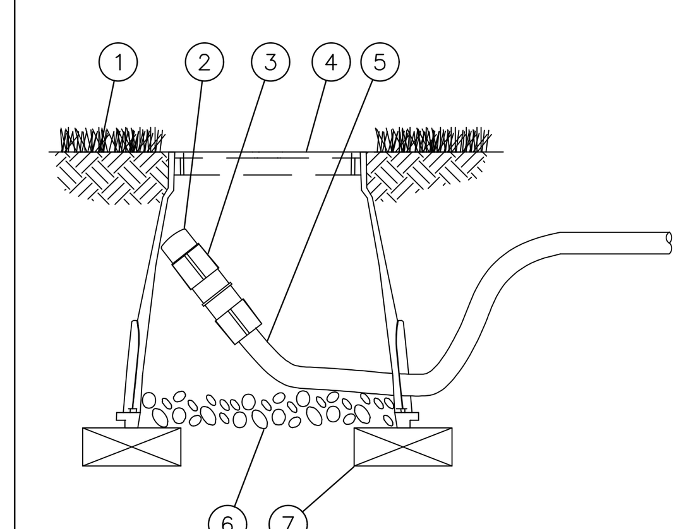
NOT TO SCALE



1. TURF GRASS
2. SUBTERRANEAN EMITTER BOX: RAIN BIRD SEB 7XB
3. AIR/VACUUM RELIEF VALVE KIT: RAIN BIRD AR VALVE KIT
4. FINISH GRADE
5. PVC SCH 40 TEE
6. PVC HEADER PIPE
7. BRICK (1 OF 2)
8. 3" MINIMUM DEPTH OF ¾" WASHED GRAVEL

8 SUB-SURFACE AIR/VACUUM RELIEF

NOT TO SCALE



1. FINISH GRADE/TURF
2. FLUSH CAP FOR EASY FIT COMPRESSION FITTINGS: POTABLE: RAIN BIRD MDCFCAP NON-POTABLE: RAIN BIRD MDCFPCAP
3. EASY FIT COUPLING: RAIN BIRD MDCFCOUP
4. SUBTERRANEAN EMITTER BOX: RAIN BIRD SEB 7XB
5. LANDSCAPE DRIPLINE TUBING: RAIN BIRD XF-SDI DRIPLINE POTABLE: XFS SERIES NON-POTABLE: XFSP SERIES
6. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
7. BRICK (1 OF 2)

NOTE:
1. ALLOW A MINIMUM OF 6-INCHES OF DRIPLINE TUBING IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

9 SUB-SURFACE DRIPLINE FLUSH POINT

NOT TO SCALE

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

LANDSCAPE DETAILS

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LS-05
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PREPARED BY
CWE
1561 E. ORANGETHORPE AVE.
SUITE 240
FULLERTON, CA 92831
TEL (714) 526-7500
www.cwecorp.com

REGISTERED LANDSCAPE ARCHITECT
Robert L. Curley No.
SIGNATURE
12-31-23
RENEWAL DATE
08-25-22
DATE
STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

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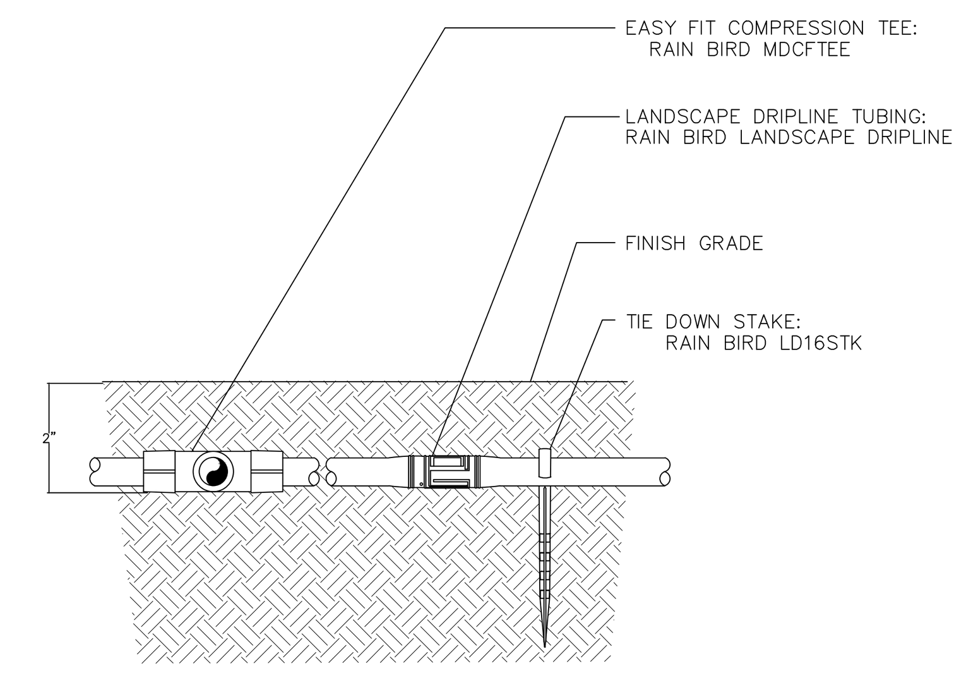
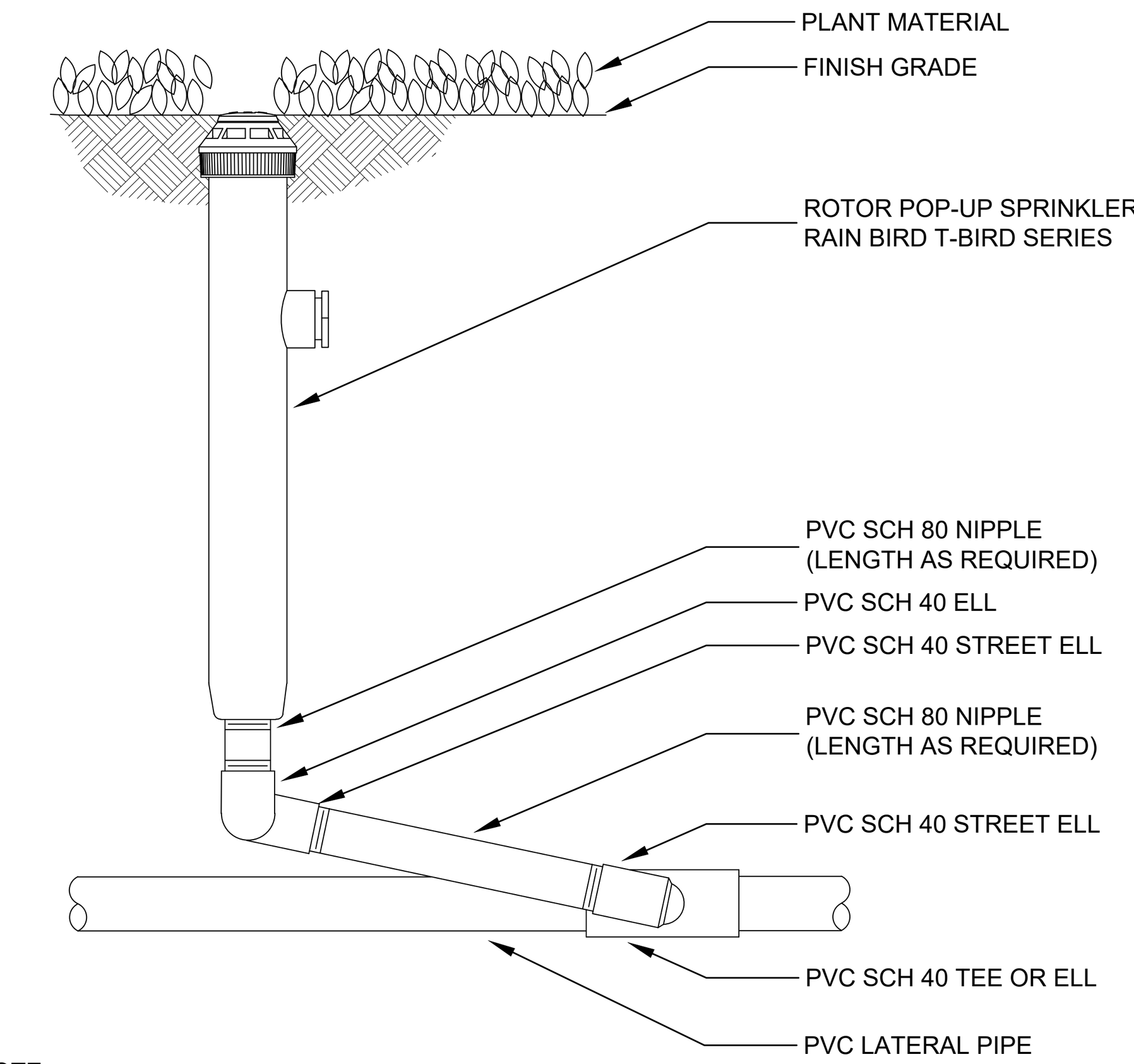


NOTE(S):
IF PUTTING LANDSCAPE DRIPLINE UNDER SOIL, DO NOT BURY MORE THAN 2" BELOW GRADE AND INCLUDE AIR RELIEF VALVE (SEE DRAWING– "AIR RELIEF VALVE KIT–AR VALVE KIT").

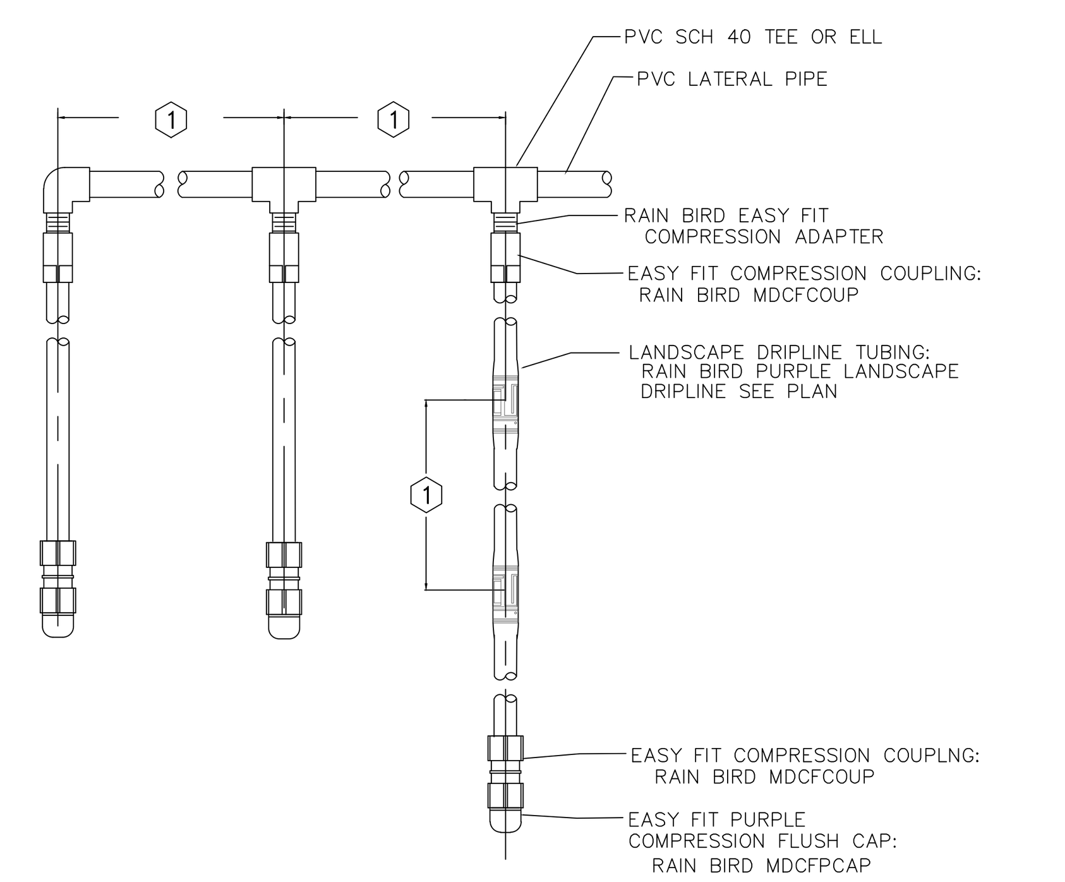
(10) DRIPLINE BELOW GRADE

NOT TO SCALE



NOTE:
1. A SWING PIPE ASSEMBLY MAY BE USED WITH FLOWS LESS THAN 4 GPM.

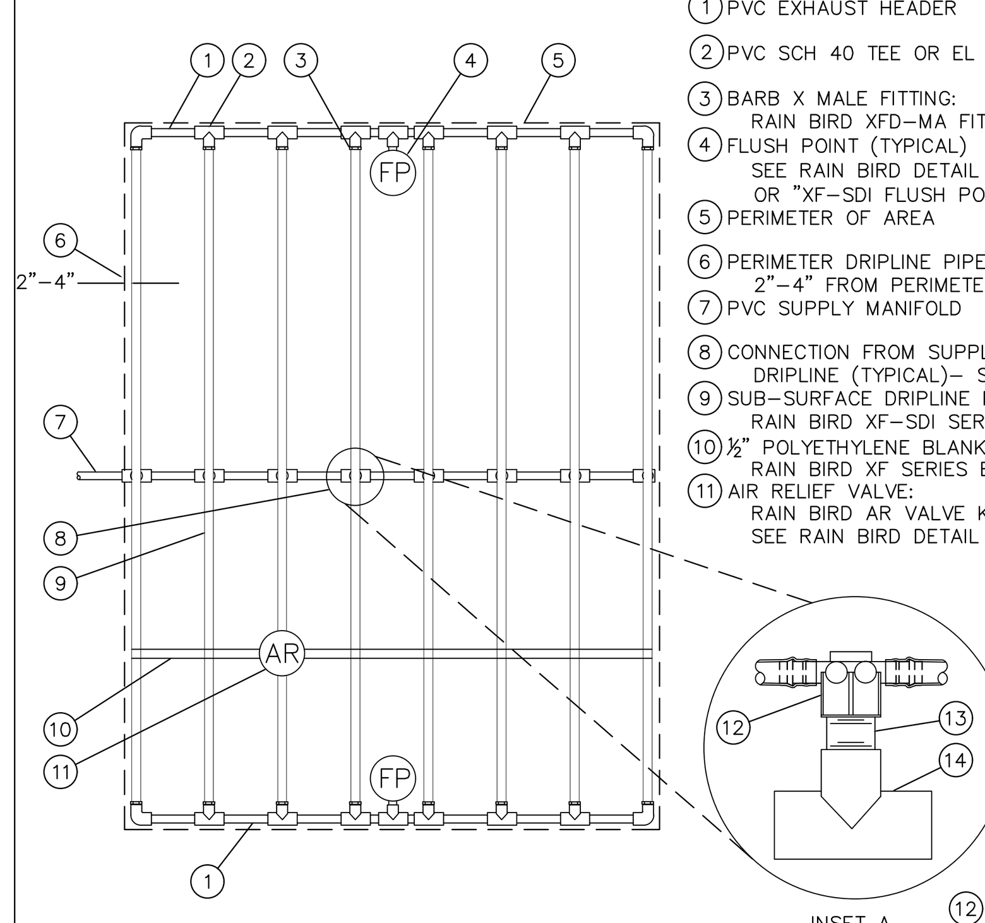
(13) SHRUB ROTOR POP-UP SPRINKLER



NOTES:
1. LATERAL AND EMITTER SPACING DEPENDS ON SOIL TYPE.

(11) DRIPLINE LATERALS

NOT TO SCALE



1. PVC EXHAUST HEADER
2. PVC SCH 40 TEE OR EL (TYPICAL)
3. BARB X MALE FITTING: RAIN BIRD XFD–MA FITTING (TYPICAL)
4. FLUSH POINT (TYPICAL) SEE RAIN BIRD DETAIL "XF–SDI FLUSH POINT" OR "XF–SDI FLUSH POINT WITH BALL VALVE"
5. PERIMETER OF AREA
6. PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"–4" FROM PERIMETER OF AREA
7. PVC SUPPLY MANIFOLD
8. CONNECTION FROM SUPPLY MANIFOLD TO DRIPLINE (TYPICAL)– SEE INSET A
9. SUB–SURFACE DRIPLINE PIPE: RAIN BIRD XF–SDI SERIES DRIPLINE (TYPICAL)
10. ½" POLYETHYLENE BLANK TUBING: RAIN BIRD XF SERIES BLANK TUBING
11. AIR RELIEF VALVE: RAIN BIRD AR VALVE KIT SEE RAIN BIRD DETAIL "AIR RELIEF VALVE KIT"
12. BARB X FEMALE FITTING: RAIN BIRD XFD–TFA–075 FITTING
13. PVC NIPPLE, LENGTH AS NECESSARY
14. PVC SCH 40 TEE OR EL

NOTE:
1. DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. SEE RAIN BIRD XF–SDI DRIPLINE INSTALLATION GUIDE FOR SUGGESTED SPACINGS.

(12) SUB-SURFACE DRIPLINE LAYOUT

NOT TO SCALE

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PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

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Robert L. Curley No. 3583
SIGNATURE
12-31-23
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08-25-22
DATE
STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

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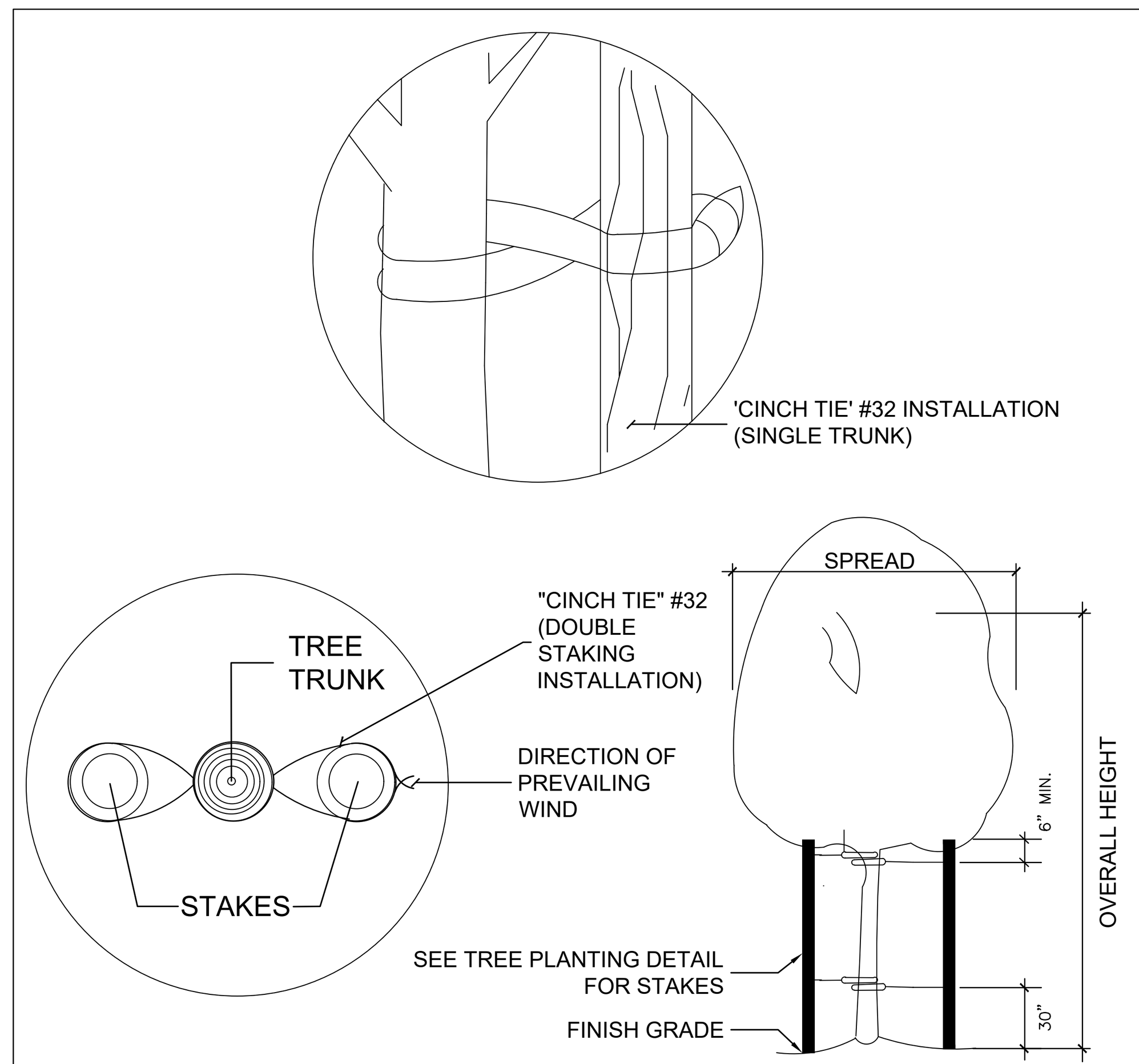


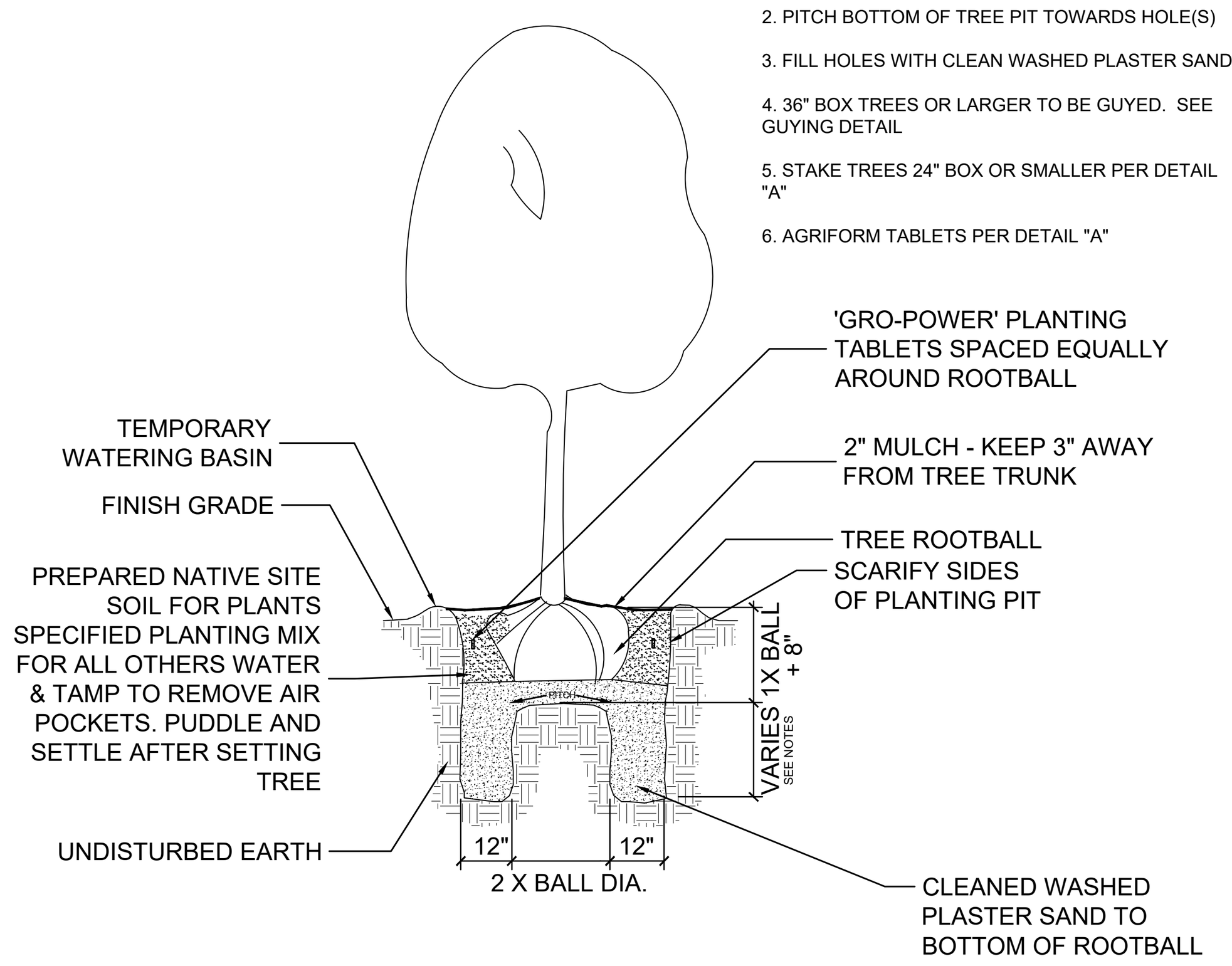
(14) TREE STAKING TIE DETAIL

NOT TO SCALE

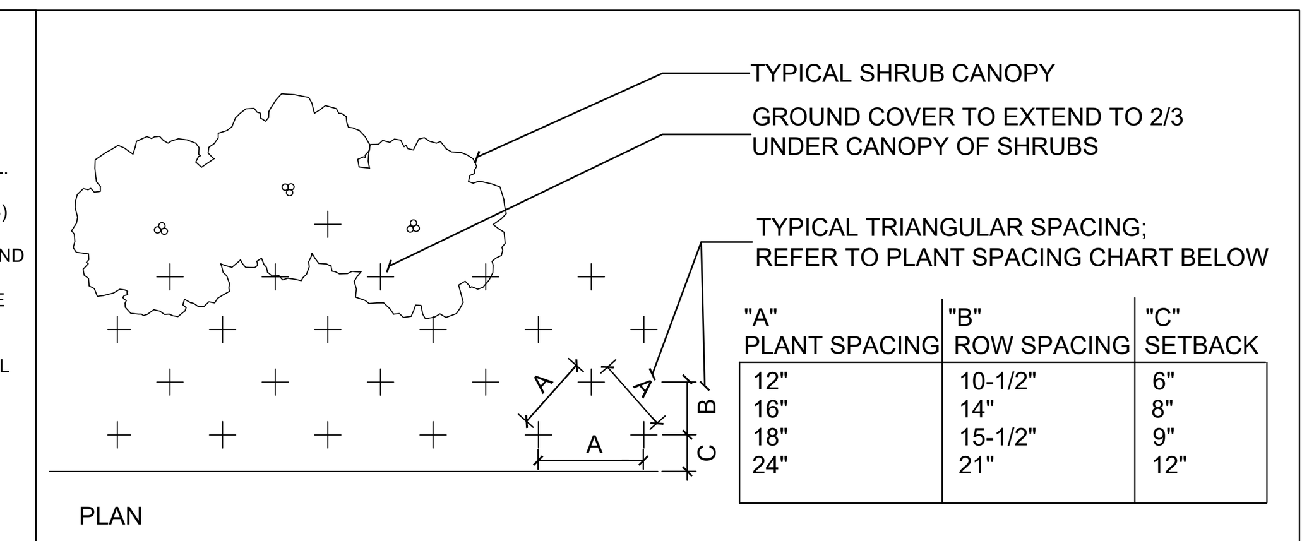
NOTE-	HOLE SCHEDULE-
SUBMIT BID ON A COST PER LINEAL FOR FOR VARIOUS DEPTHS OF 5', 10', 15' & 20'	5 GAL -1 HOLE 15 GAL -1 HOLE 24" BOX -1 HOLE 36" BOX OR LARGER -2 HOLES

NOTES:

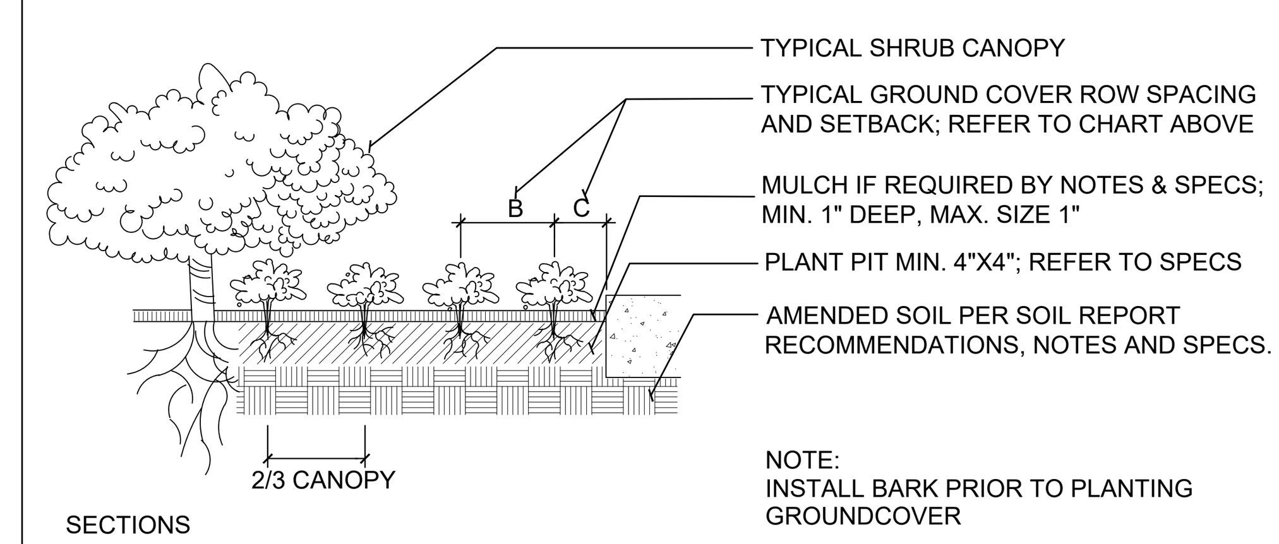
1. BORE HOLES @ BOTTOM OF PLANT PIT ACCORDING TO HOLE SCHEDULE. HOLE MUST BREAK THROUGH HARDPAN TO PORUS MATERIAL.
2. PITCH BOTTOM OF TREE PIT TOWARDS HOLE(S)
3. FILL HOLES WITH CLEAN WASHED PLASTER SAND
4. 36" BOX TREES OR LARGER TO BE GUYED. SEE GUYING DETAIL
5. STAKE TREES 24" BOX OR SMALLER PER DETAIL "A"
6. AGRIFORM TABLETS PER DETAIL "A"



(17) TREE PLANTING DETAIL "B" VERTICAL MULCHING



"A" PLANT SPACING	"B" ROW SPACING	"C" SETBACK
12"	10-1/2"	6"
16"	14"	8"
18"	15-1/2"	9"
24"	21"	12"

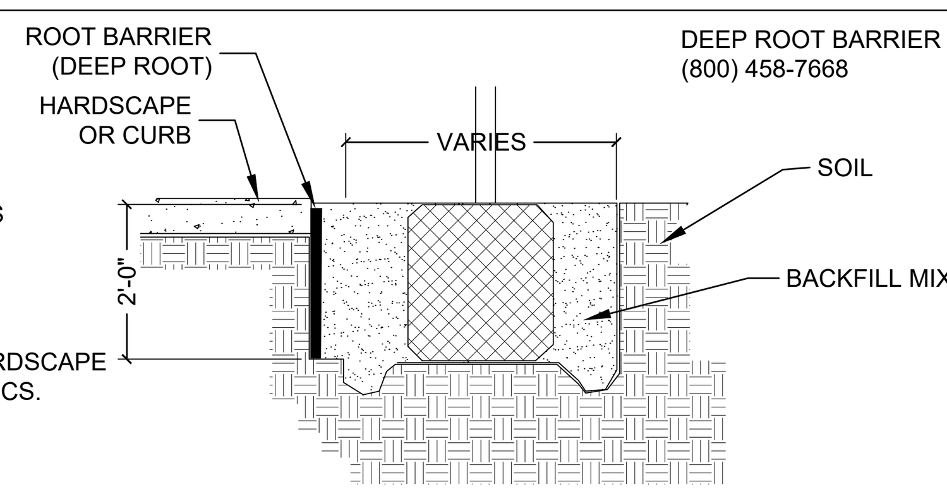


NOTE:
INSTALL BARK PRIOR TO PLANTING GROUNDCOVER

(20) GROUNDCOVER PLANTING

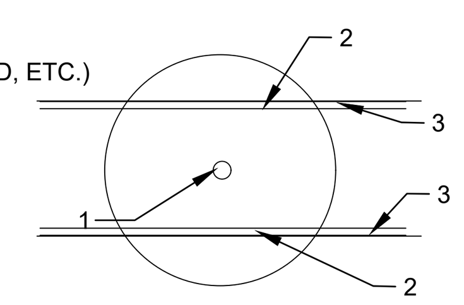
NOT TO SCALE

DEEP ROOT BARRIER
(800) 458-7668



NOTE: ROOT BARRIERS SHALL BE INSTALLED FOR LINEAR STYLE PLANTING , AND SHALL BE INSTALLED ADJACENT TO THE HARDSCAPE ONLY PER MANUF. SPECS.

1- TREE TRUNK
2- DEEP ROOT- UB 24-2 LINEAR BARRIER
3- EDGE OF HARDSCAPE (CURB, PAVING, PAD, ETC.)



Formula to determine the quantity of panels required for a Linear application use:

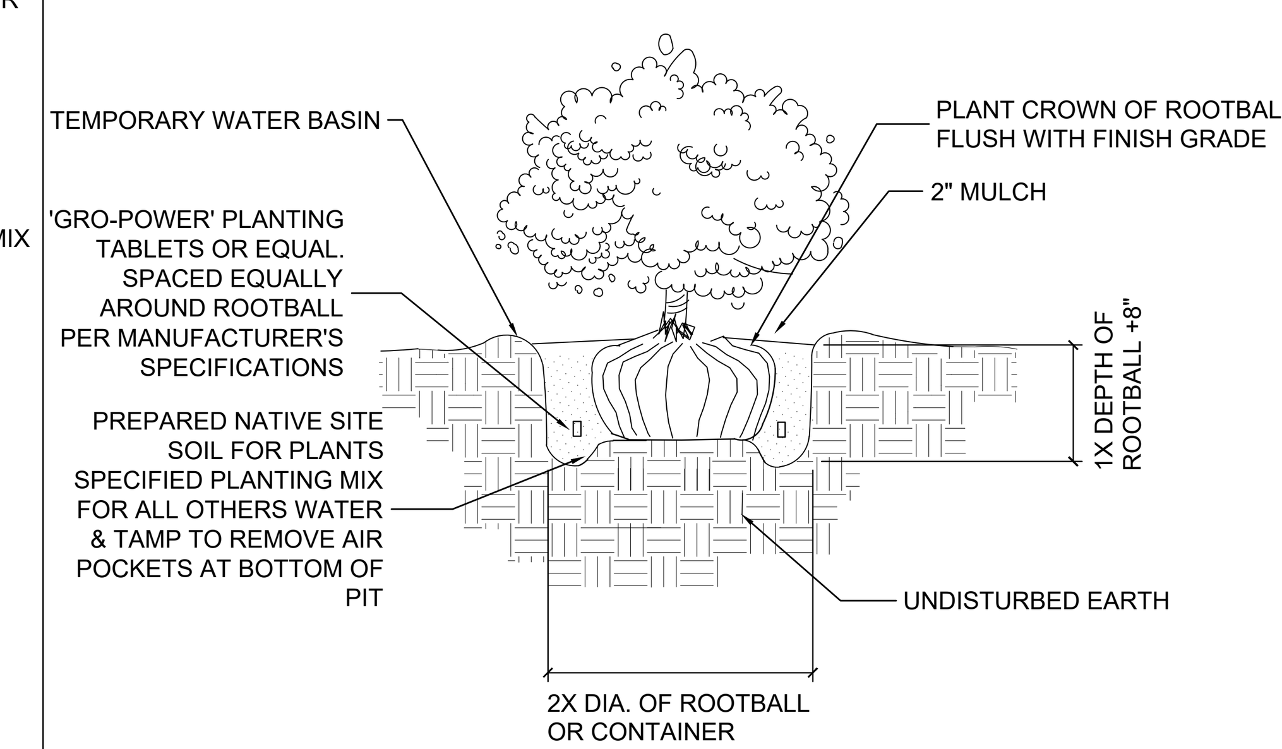
Estimated Diameter of the Tree Canopy at Maturity + 2' (61cm) = Length of Barrier per Side.

Per One Side of Tree

Expected Tree Canopy at Maturity	Feet of Barrier	Number of Panels
12' (3.6m) Dia. +2' (61cm) =	14' (4.2m)	7 Panels
18' (5.5m) Dia. +2' (61cm) =	20' (6.1m)	10 Panels
24' (7.3m) Dia. +2' (61cm) =	26' (7.9m)	13 Panels

(15) ROOT BARRIER DETAIL

NOT TO SCALE



CONTAINER SIZE & # OF TABLETS:
1 FOR 1 GALLON
2 FOR 5 GALLON
4 FOR 15 GALLON

FERTILIZER TABLETS SHALL BE `GRO-POWER' 12-8-8,7-GRAM PLANTING TABLETS AS SUPPLIED BY SOUTHERN CALIFORNIA ORGANIC FERTILIZER

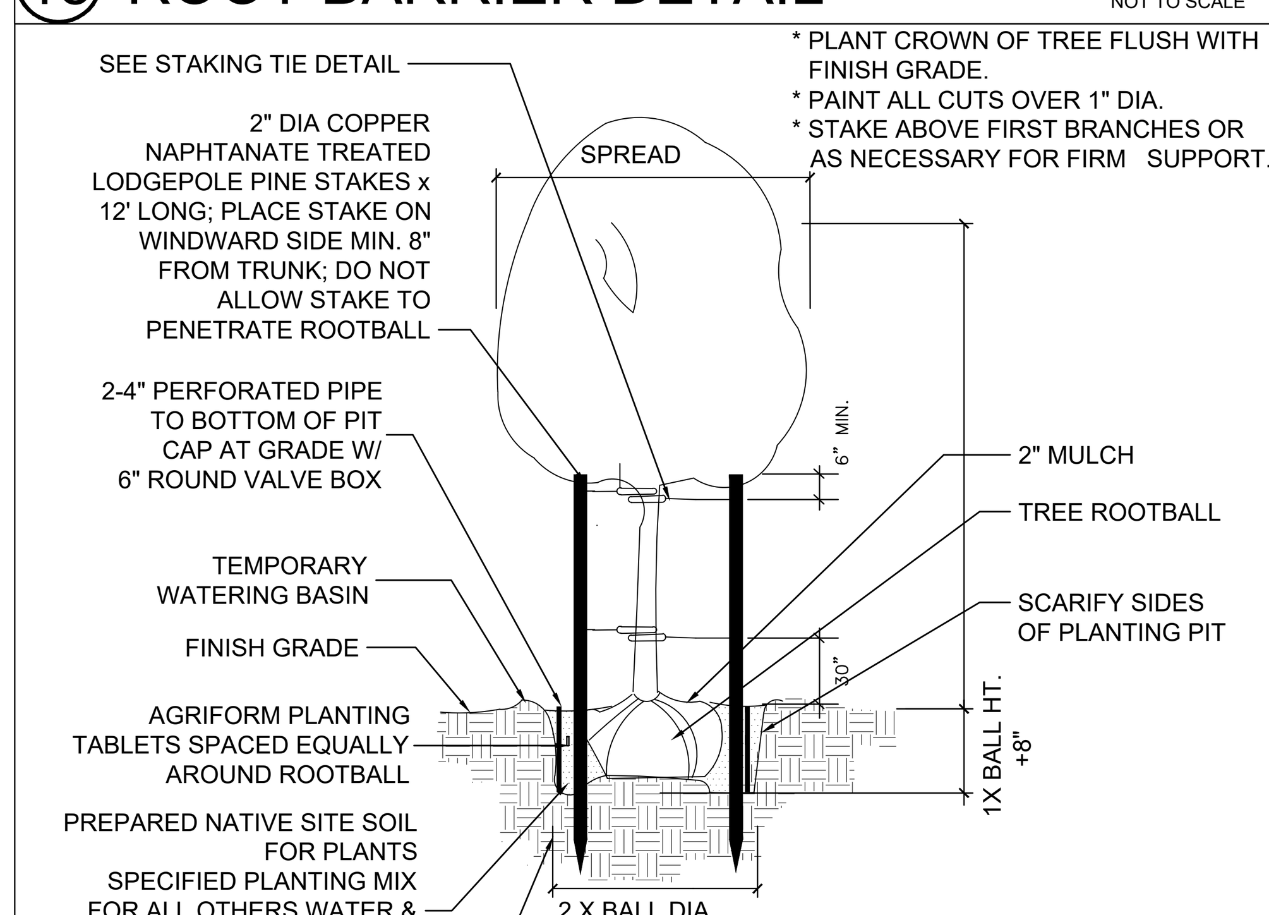
WATERING BERMS:

1. 5 GALLON OR LARGER 4" HIGH
2. LESS THAN 5 GALLON 2" HIGH

(18) SHRUB PLANTING DETAIL "A"

NOT TO SCALE

* PLANT CROWN OF TREE FLUSH WITH FINISH GRADE.
* PAINT ALL CUTS OVER 1" DIA.
* STAKE ABOVE FIRST BRANCHES OR AS NECESSARY FOR FIRM SUPPORT.



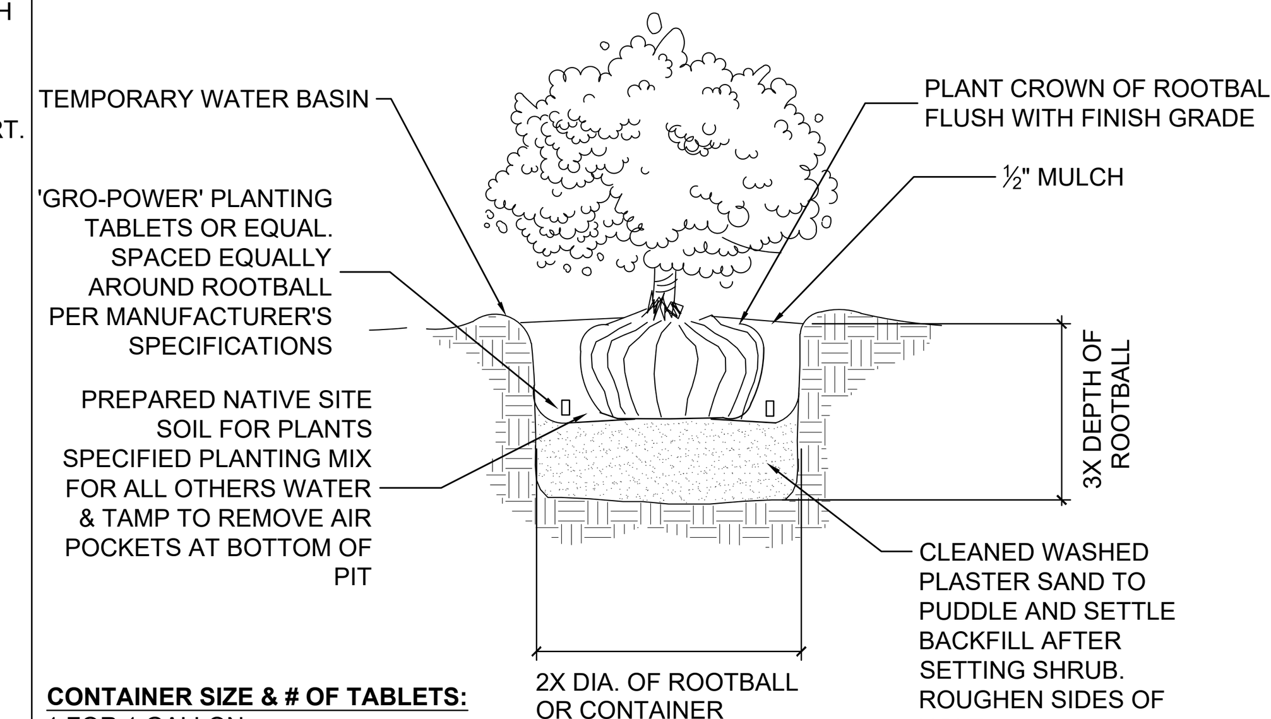
CONTAINER SIZE & # OF TABLETS:

2 FOR 5 GALLON	7 FOR 42" BOX
4 FOR 15 GALLON	8 FOR 48" BOX
5 FOR 24" BOX	12 FOR 60" BOX
6 FOR 36" BOX	

FERTILIZER TABLETS SHALL BE 'GRO-POWER' 12-8-8,7-GRAM PLANTING TABLETS AS SUPPLIED BY SOUTHERN CALIFORNIA ORGANIC FERTILIZER

(16) TREE PLANTING DETAIL "A"

NOT TO SCALE



CONTAINER SIZE & # OF TABLETS:
1 FOR 1 GALLON
2 FOR 5 GALLON
4 FOR 15 GALLON

FERTILIZER TABLETS SHALL BE `GRO-POWER' 12-8-8,7-GRAM PLANTING TABLETS AS SUPPLIED BY SOUTHERN CALIFORNIA ORGANIC FERTILIZER

WATERING BERMS:

1. 5 GALLON OR LARGER 4" HIGH
2. LESS THAN 5 GALLON 2" HIGH

NOTES:
1. SET CROWN OF ROOT BALL 1" ABOVE FINISH GRADE
2. CONSTRUCT TAMPED BERM WATER BASIN AROUND EACH SHRUB TYPICAL UNLESS INSTRUCTED OTHERWISE BY THE LANDSCAPE ARCHITECT. CALL LANDSCAPE ARCHITECT TO VERIFY.

(19) SHRUB PLANTING DETAIL "B" VERTICAL MULCHING

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LANDSCAPE DETAILS

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TRAFFIC SIGNAL GENERAL NOTES:

1. ALL MATERIAL AND WORK, EXCEPT TRAFFIC SIGNAL POLES SHALL CONFORM TO THE LATEST EDITIONS OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CALIFORNIA MUTCD), STANDARD PLANS AND STANDARD SPECIFICATIONS OF THE CALIFORNIA DEPARTMENT OF TRANSPORTATION, FHWA STANDARD HIGHWAY SIGNS, CALIFORNIA SIGN SPECIFICATION, AND THE SPECIAL PROVISIONS.

2. ALL MATERIAL AND EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR NEW AND UNUSED, UNLESS OTHERWISE NOTED.

3. SIGNAL POLES, CONTROLLER CABINET, PULL BOXES, AND SERVICE CABINET SHALL BE CONSISTENT WITH THE DESIGN PLANS BUT MAY BE ADJUSTED BY THE CITY SIGNAL TECHNICIAN IN THE FIELD AS NECESSARY.

4. ALL WIRING SHALL BE MARKED (TAGGED) WITHIN THE CONTROLLER CABINET AND PULL BOXES FOR PHASE IDENTIFICATION.

5. UNLESS SHOWN OTHERWISE, DETECTOR LOOPS SHALL BE INSTALLED PER CITY OF LOS ANGELES DEPARTMENT OF TRANSPORTATION (LADOT) STANDARD PLANS S–70.0, S–70.1A AND S–70.1 D, EXCEPT THAT THE SEPARATION BETWEEN LOOPS SHALL BE 10 FEET. THE NEAR EDGE OF LIMIT LINE DETECTORS SHALL BE ONE FOOT UPSTREAM FROM THE CENTER OF THE LIMIT LINE. ADVANCE DETECTORS SHALL BE SEPARATELY WIRED TO EACH LANE AND CENTERED IN EACH LANE.

6. ALL NEW TRAFFIC SIGNAL HEAD AND PEDESTRIAN HEAD HOUSINGS SHALL BE BLACK POLYCARBONATE WITH COLOR RETENTION. NEW TRAFFIC SIGNAL INDICATIONS SHALL BE 12" LED TYPE AND PEDESTRIAN INDICATIONS SHALL BE TWO–SECTIONS WITH LED LAMPS AND WITH COUNTDOWN NUMERALS, UNLESS OTHERWISE SPECIFIED.

7. ALL LOOPS SHALL BE PROPERLY LABELED IN THE PULL BOXES.

8. ALL MULTI–CONDUCTOR CABLES SHALL BE LABELED PER PHASE IN EACH PULL BOX IF THE COLOR INDICATION CHANGES.

9. ALL SIGNAL EQUIPMENT SHALL BE WIRED IN ACCORDANCE WITH THE SIGNAL PHASE DIAGRAM.

10. NEW CONDUIT SHALL BE 4" PVC SCHEDULE 80, UNLESS OTHERWISE NOTED.

11. NEW PULL BOXES SHALL BE No. 6 UNLESS OTHERWISE NOTED.

12. NEW PEDESTRIAN PUSH BUTTONS SHALL BE POLARA 2 WIRE IDS NAVIGATOR ACCESSIBLE PEDESTRIAN SIGNALS OR CITY APPROVED EQUAL.

13. EMERGENCY VEHICLE PREEMPTION DEVICE SHALL BE OPTICOM MODEL 721. INSTALL M138 DETECTOR CABLE TO OPTICOM DISCRIMINATOR INSIDE CONTROLLER CABINET. OPTICOM CABLE TO BE UNSPLICED FROM CABINET TO DETECTOR.

14. NEW SIGNAL VISORS SHALL BE "TUNNEL" STYLE, AND REMOVABLE WITH A BLACK POLYCARBONATE COLOR AND COLOR RETENTION. STANDARD VISORS SHALL HAVE A LENGTH OF 12". LONG VISORS, WHERE SPECIFIED, SHALL HAVE A LENGTH OF 27". BEVELED VISORS, WHERE SPECIFIED, SHALL HAVE A LENGTH ON THE SHORT SIDE OF 12" AND A LENGTH ON THE LONG SIDE OF 27".

15. NEW LUMINAIRES SHALL BE LED INTEGRAL AND INCLUDE PHOTO ELECTRIC CONTROLS.

16. PRIOR TO WORKING ON SERVICE OR LIGHTING CIRCUITS, CONTACT MAINTENANCE OPERATIONS AT (310) 253–6433, 48 HOURS IN ADVANCE, FOR DAILY SAFETY CIRCUIT CLEARANCE.

17. ALL SALVAGED TRAFFIC SIGNAL EQUIPMENT SHALL BE RETURNED TO CITY STORAGE YARD AT 9505 JEFFERSON BLVD. CONTACT FACILITIES MAINTENANCE SUPERVISOR AT (310) 253–6433.

18. STREET LIGHTS SHALL REMAIN OPERATIONAL AT ALL TIMES DURING CONSTRUCTION.

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PREPARED BY

11/7/22
Date

KOA
1100 Corporate Center Drive, Suite 201
Monterey Park, California 91754
Tel: (323) 260-4703 Fax: (323) 260-4705

REGISTERED PROFESSIONAL ENGINEER
GIUSEPPE S. CANONERI
No. C79006
CIVIL
STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

TRAFFIC SIGNAL GENERAL NOTES

APPROVED BY: ANDREW MAXIMOUS, P.E., T.E.
4/11/23
MOBILITY & TRAFFIC ENGINEERING DIVISON DATE

SHEET
TS–01
Sheet 45 Of 49 Sheets

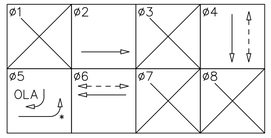
Drawing Name: a:\2019\JB91085 CC Washington Blvd TTS\Design\Signal\SS-01-TITLE.dwg
Last Opened: Nov 06, 2022 - 3:04pm by frivera

CONDUCTOR SCHEDULE

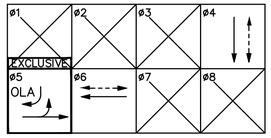
AWG SIZE OR CABLE TYPE	POLE OR CIRCUIT	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯
MULTI	28 CONDUCTOR CABLE 27–#14 & 1–#10 (COM)	1		1		1					1		1		2		
MULTI	9 CONDUCTOR CABLE 8–#14 & 1–#10 (COM)														1		
#8	STREET LIGHTING		2		2		2			2							
#8	LUMINAIRE	2		2		2			2		2						
#6	SIGNAL SERVICE								2	2					2		
EVP SHIELDED CABLE		1		1		1					1					2	
#19	I/C CABLE (12 PR)											1	1	1		2	
CAT5E	VIDEO DETECTION	1(N)		1(N)		1(N)					1(N)		1(N)			3(N)	
CONDUIT SIZE (IN)		2"	2"	3"	2"	2"	2"	2"	2"	3"	2"	2"	2"	3"	3"		

ALL CONDUCTORS/CABLES ARE EXISTING EXCEPT WHERE SHOWN. **(N) = NEW.**

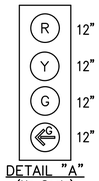
EXISTING PHASE DIAGRAM



PROPOSED PHASE DIAGRAM



*–PROTECTED–PERMISSIVE



DETAIL "A"
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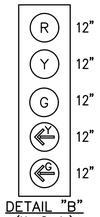
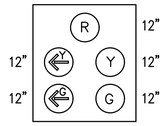


DETAIL "B"
(No Scale)



DETAIL "C"
(No Scale)

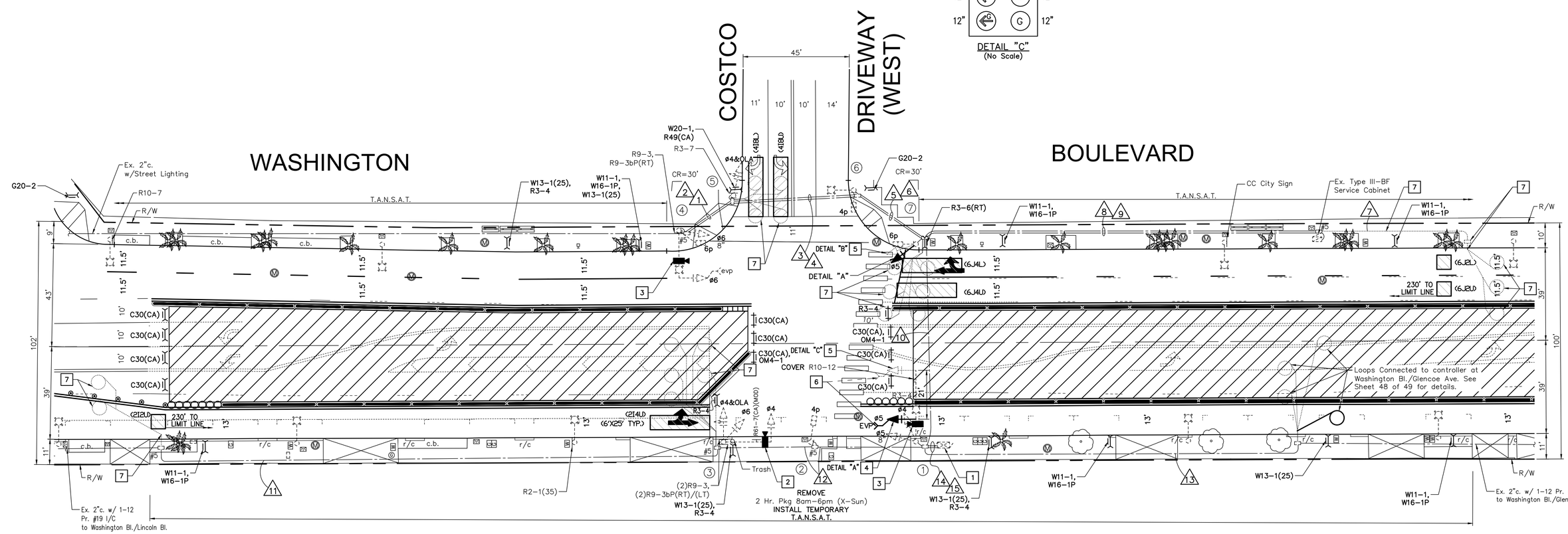
POLE SCHEDULE

ALL EQUIPMENT IS EXISTING UNLESS NOTED OTHERWISE; (N)=NEW

POLE DATA NO.	TYPE	HEIGHT	SIGNAL M.A.	LUMINAIRE M.A.	LUMINAIRE WATTS	SIGNAL MOUNTING VEH.	SIGNAL MOUNTING M.A.	SIGNAL MOUNTING PED.	PED PUSH BUT'N PHASE	PED PUSH BUT'N ARROW	POLE LOC. A B C	R.S.N.S.
①	19–2–113	30'	30'	12'	250	SV–2–T	MAS(N)*	–	–	–	Exist.	–
②	1–A	7'	–	–	–	_	–	TP–1–T	4	→	Exist.	–
③	16–1–113	18.4'	30'	–	–	SV–2–T	MAS	–	–	–	Exist.	–
④	19–1–113	30'	20'	15'	250	SV–1–T	MAS	SP–1–T	–	–	Exist.	–
⑤	1–A	10'	–	–	–	TV–1–T	–	–	6	→	Exist.	–
⑥	15	30'	–	8'	400	_	–	SP–1–T	6	←	Exist.	–
⑦	1–A	10'	–	–	–	TV–1–T(N)	–	SP–1–T	4	→	Exist.	–

ALL CONDUCTORS/CABLES ARE EXISTING EXCEPT WHERE SHOWN. **(N) = NEW.**

* SEE CONSTRUCTION NOTE 4



CONSTRUCTION NOTES:

1. RE–USE EXISTING 2070 ATC CONTROLLER IN 332 CONTROLLER CABINET. CONTRACTOR SHALL FURNISH AND INSTALL NEW ITERIS VIDEO DETECTION SYSTEM AND ALL AUXILIARY EQUIPMENT REQUIRED TO PROVIDE A COMPLETE FUNCTIONING CONTROLLER FOR THE OPERATION AS SHOWN.
2. FURNISH AND INSTALL ITERIS VIDEO DETECTION CAMERA AND PELCO RISER ON SIGNAL MAST ARM PER MANUFACTURER'S REQUIREMENTS. FURNISH AND INSTALL CAT5E CABLE FROM CAMERA TO CONTROLLER CABINET.
3. FURNISH AND INSTALL ITERIS VIDEO DETECTION CAMERA AND PELCO RISER ON LUMINAIRE MAST ARM PER MANUFACTURER'S REQUIREMENTS. FURNISH AND INSTALL CAT5E CABLE FROM CAMERA TO CONTROLLER CABINET.
4. USE STRAP–ON UNIVERSAL SIGNAL HEAD MOUNT (PELCO AB–3004) PER LADOT STD. DWG. NO. S–63.1.4 TO MOUNT PROPOSED VEHICLE HEAD TO MAST ARM.
5. REMOVE EXISTING VEHICLE HEAD AND STORE FOR RESTORATION PHASE.
6. RELOCATE EXISTING EVP DETECTOR UNIT AND MOUNTING ASSEMBLY AS SHOWN ON PLAN.
7. ABANDON. IF APPLIED TO CONDUITS, REMOVE CONDUCTORS/WIRES.
8. PROPOSED WORKSITE TRAFFIC CONTROL EQUIPMENT, STRIPING AND SIGNAGE SHOWN FOR REFERENCE ONLY. SEE WORKSITE TRAFFIC CONTROL PLANS FOR PROPOSED TRAFFIC CONTROL EQUIPMENT, STRIPING, AND SIGNAGE INSTALLATION DETAILS.

LEGEND:

= PROPOSED VIDEO DETECTION ZONE

20' 10' 0 10' 20'
1"=20'
GRAPHIC SCALE

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PREPARED BY

KOA
1100 Corporate Center Drive, Suite 201
Monterey Park, California 91754
Tel: (323) 260-4703 Fax: (323) 260-4705

11/7/22
Date

REGISTERED PROFESSIONAL ENGINEER — GIUSEPPE S. CANONIERI — No. C79006 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

TEMPORARY TRAFFIC SIGNAL PLAN
WASHINGTON BOULEVARD AND
COSTCO DRIVEWAY (WEST)

APPROVED BY: ANDREW MAXIMOUS, P.E., T.E.

4/11/23
MOBILITY & TRAFFIC ENGINEERING DIVISON — DATE

SHEET
TS–02
Sheet 46 Of 49 Sheets

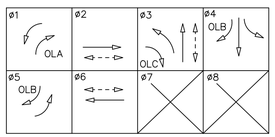
Drawing Name: z:\2019\JB91085 CC Washington Blvd TTS\Design\Signal\1–TEMP TS13–01 Washington & Costco (West).dwg
Last Opened: Nov 06, 2022 – 3:05pm by trivera

CONDUCTOR SCHEDULE

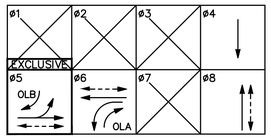
AWG SIZE OR CABLE TYPE	POLE OR CIRCUIT	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯
MULTI	28 CONDUCTOR CABLE 27–#14 & 1–#10 (COM)	1	1	1		1				1(N)	1	1		1		2	
#8	LUMINAIRE	2	2	2		2					2	2	2	2			
#6	SIGNAL SERVICE												2	2	2		
EVP	SHIELDED CABLE	1	1	1		1										2	
	VIDEO POWER CABLE						1	1			1	1		1	1		
#19	I/C CABLE (6 PR)				1	1										1	
#19	I/C CABLE (12 PR)						1				1	1		1		1	
CAT5E	VIDEO DETECTION	1(N)	1(N)	2(N)		2(N)						1(N)		1(N)	4(N)		
	CONDUIT SIZE (IN)	2"	3"	2"	2.5"	3"	2.5"	3"	2"	O.H. (N)	2.5"	3"	2"	3"	3"	3"	

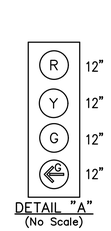
ALL CONDUCTORS/CABLES ARE EXISTING EXCEPT WHERE SHOWN. (N) = NEW.
O.H. = OVERHEAD. OVERHEAD CABLES SHALL MAINTAIN A 20' VERTICAL CLEARANCE ABOVE THE TRAVELED ROADWAY AND 12' CLEARANCE OVER THE SIDEWALK. COIL AN ADDITIONAL 25' LENGTH OF OVERHEAD CABLE AT THE TEMPORARY PLATFORM SIGNAL TO FACILITATE CHANGE IN POSITION.

EXISTING PHASE DIAGRAM



PROPOSED PHASE DIAGRAM





DETAIL "A"
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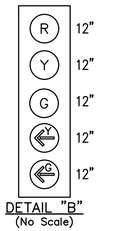
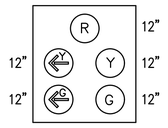


DETAIL "B"
(No Scale)



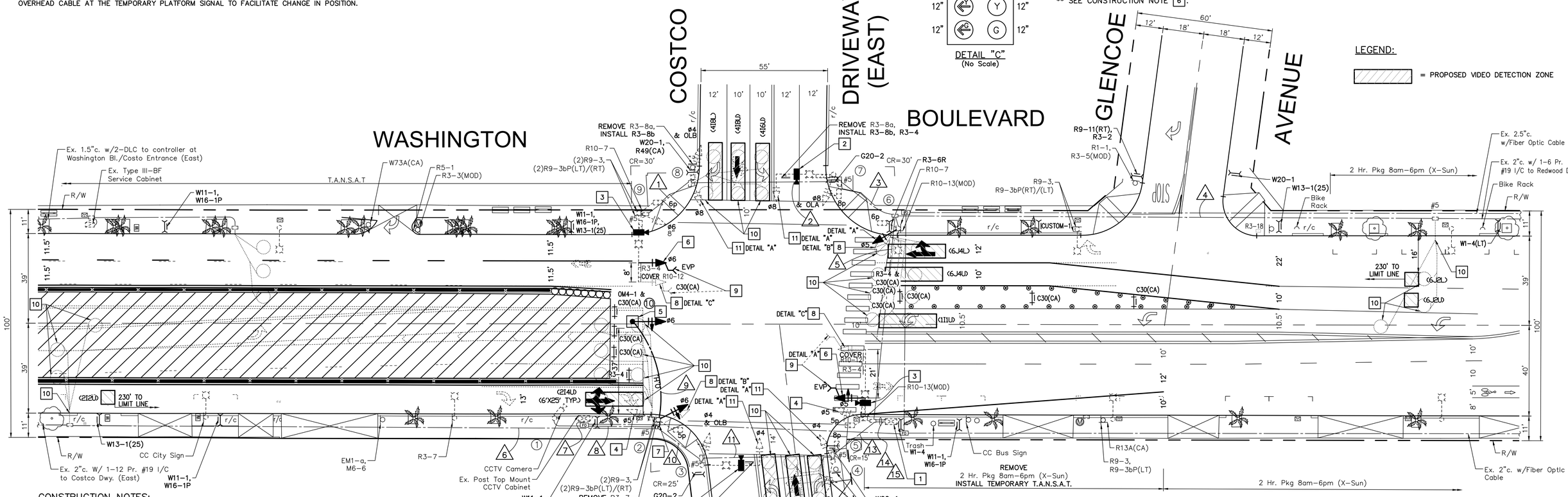
DETAIL "C"
(No Scale)

POLE SCHEDULE

ALL EQUIPMENT IS EXISTING UNLESS NOTED OTHERWISE; (N)=NEW

POLE DATA No.	TYPE	HEIGHT	SIGNAL M.A.	LUMINAIRE M.A.	LUMINAIRE WATTS	SIGNAL MOUNTING VEH.	SIGNAL MOUNTING M.A.	SIGNAL MOUNTING PED.	PED PUSH BUT'N PHASE	PED PUSH BUT'N ARROW	POLE LOC. A	POLE LOC. B	POLE LOC. C	R.S.N.S.
①	AMERON 11-6	30'	–	–	–	–	–	–	–	–	Exist.			–
②	1–A	10'	–	–	–	SV–2–T(N)	–	SP–1–T	–	–	Exist.			–
③	19–3–70	30'	25'	12'	250	SV–1–T	MAS–4B	–	2	←	Exist.			–
④	1–A	10'	–	–	–	TV–2–T	–	SP–1–T	2	→	Exist.			–
⑤	19–4–113	30'	30'	12'	250	SV–1–T	MAS(N)**	SP–1–T	8	←	Exist.			Glencoe Av
⑥	15	25'	–	12'	250	SV–1–T(N)	–	SP–1–T	8	→	Exist.			–
⑦	19–3–70	30'	25'	12'	250	SV–1–T	MAS–4B	SP–1–T	6	←	Exist.			Washington Bl
⑧	1–A	10'	–	–	–	TV–2–T	–	–	6	→	Exist.			–
⑨	19–4–113	30'	30'	12'	250	SV–1–T	MAS(N)**	SP–1–T	–	–	Exist.			Glencoe Av
⑩	*CD954(N)	30'	–	–	–	SV–1–T(N)	–	–	–	–	AS SHOWN			–

ALL CONDUCTORS/CABLES ARE EXISTING EXCEPT WHERE SHOWN. (N) = NEW.
* – Platform Foundation Per LADOT Std. Dwg. No. S–57.2B.
** SEE CONSTRUCTION NOTE 6.



CONSTRUCTION NOTES:

1. RE–USE EXISTING 2070 ATC CONTROLLER IN 332 CONTROLLER CABINET. CONTRACTOR SHALL FURNISH AND INSTALL NEW ITERIS VIDEO DETECTION SYSTEM AND ALL AUXILIARY EQUIPMENT REQUIRED TO PROVIDE A COMPLETE FUNCTIONING CONTROLLER FOR THE OPERATION AS SHOWN.
2. FURNISH AND INSTALL ITERIS VIDEO DETECTION CAMERA AND PELCO RISER ON SIGNAL MAST ARM PER MANUFACTURER'S REQUIREMENTS. FURNISH AND INSTALL CAT5E CABLE FROM CAMERA TO CONTROLLER CABINET.
3. FURNISH AND INSTALL ITERIS VIDEO DETECTION CAMERA AND PELCO RISER ON LUMINAIRE MAST ARM PER MANUFACTURER'S REQUIREMENTS. FURNISH AND INSTALL CAT5E CABLE FROM CAMERA TO CONTROLLER CABINET.
4. COVER GREEN ARROW AND YELLOW ARROW WITH DETACHABLE HEAD COVER (PER LADOT SPEC. NO. 92–086–03) AND DE–ENERGIZE AS DIRECTED BY TRAFFIC SIGNAL INSPECTOR.
5. TEMPORARY SIGNAL PLATFORM SHALL BE PLACED AS SHOWN WITH A MINIMUM OF 2' CLEARANCE FROM THE FACE OF THE PLATFORM TO THE EDGE OF THE TRAVELED ROADWAY (15' CLEARANCE IF NOT PROTECTED BY CRASH CUSHION OR BEHIND K–RAIL). OVERHEAD CABLES SHALL MAINTAIN A 20' VERTICAL CLEARANCE ABOVE THE TRAVELED ROADWAY AND 12' CLEARANCE OVER THE SIDEWALK. COIL AN ADDITIONAL 25' LENGTH OF OVERHEAD CABLE AT THE TEMPORARY PLATFORM SIGNAL TO FACILITATE CHANGE IN POSITION. ALTERNATE LOCATION OF THE TEMPORARY SIGNAL EQUIPMENT, BASED ON CONSTRUCTION CONDITIONS, REQUIRES APPROVAL OF THE LADOT TRAFFIC SIGNAL INSPECTOR.
6. USE STRAP–ON UNIVERSAL SIGNAL HEAD MOUNT (PELCO AB–3004) PER LADOT STD. DWG. NO. S–63.1.4 TO MOUNT PROPOSED VEHICLE HEAD TO MAST ARM.
7. STRAP 2"CONDUIT TO EXISTING POLE FOR ROUTING OF TEMPORARY CABLES/WIRES.
8. REMOVE EXISTING VEHICLE HEAD AND STORE FOR RESTORATION PHASE.
9. RELOCATE EXISTING EVP DETECTOR UNIT AND MOUNTING ASSEMBLY AS SHOWN ON PLAN.
10. ABANDON. IF APPLIED TO CONDUITS, REMOVE CONDUCTORS/WIRES.
11. COVER GREEN LEFT ARROW WITH DETACHABLE HEAD COVER (PER LADOT SPEC. NO. 92–086–03) AND DE–ENERGIZE AS DIRECTED BY TRAFFIC SIGNAL INSPECTOR.
12. PROPOSED WORKSITE TRAFFIC CONTROL EQUIPMENT, STRIPING AND SIGNAGE SHOWN FOR REFERENCE ONLY. SEE WORKSITE TRAFFIC CONTROL PLANS FOR PROPOSED TRAFFIC CONTROL EQUIPMENT, STRIPING, AND SIGNAGE INSTALLATION DETAILS.

20' 10' 0 10' 20'
1"=20' GRAPHIC SCALE

DIGALERT — DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — TOLL FREE 1–800–227–2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

PREPARED BY
KOA
1100 Corporate Center Drive, Suite 201
Monterey Park, California 91754
Tel: (323) 260-4703 Fax: (323) 260-4705
11/7/22
Date

REGISTERED PROFESSIONAL ENGINEER GIUSEPPE S. CANONERO No. C79006 CIVIL STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

TEMPORARY TRAFFIC SIGNAL PLAN
WASHINGTON BOULEVARD AND GLENCOE AVENUE/COSTCO DRIVEWAY (EAST)

APPROVED BY: ANDREW MAXIMOUS, P.E., T.E.
4/11/23
MOBILITY & TRAFFIC ENGINEERING DIVISON DATE

SHEET TS–03
Sheet 47 Of 49 Sheets

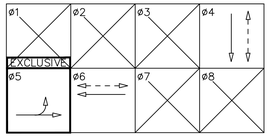
Drawing Name: a:\2019\AE91085 CC Washington Blvd TTS\Design\Signal\1–TEMP TS\13–02 Washington & Glencoe Ave.dwg
Last Opened: Nov 06, 2022 – 3:06pm by frivera

CONDUCTOR SCHEDULE

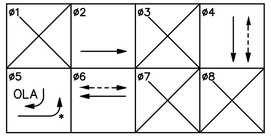
AWG SIZE OR CABLE TYPE	POLE OR CIRCUIT	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯
MULTI	28 CONDUCTOR CABLE 27–#14 & 1–#10 (COM)	1		1		1					1		1		2		
MULTI	9 CONDUCTOR CABLE 8–#14 & 1–#10 (COM)														1		
#8	STREET LIGHTING		2		2		2			2							
#8	LUMINAIRE	2		2		2			2		2						
#6	SIGNAL SERVICE								2	2					2		
EVP SHIELDED CABLE		1		1		1					1					2	
#19	I/C CABLE (12 PR)											1	1	1		2	
CAT5E	VIDEO DETECTION	1		1		1					1		1			3	
CONDUIT SIZE (IN)		2"	2"	3"	2"	2"	2"	2"	2"	3"	2"	2"	2"	2"	3"	3"	

ALL CONDUCTORS/CABLES ARE EXISTING EXCEPT WHERE SHOWN. **(N) = NEW.**

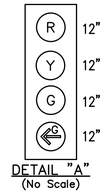
EXISTING PHASE DIAGRAM



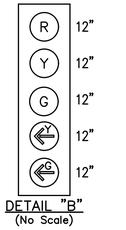
PROPOSED PHASE DIAGRAM



*–PROTECTED–PERMISSIVE



DETAIL "A" (No Scale)



DETAIL "B" (No Scale)

DETAIL "C" (No Scale)

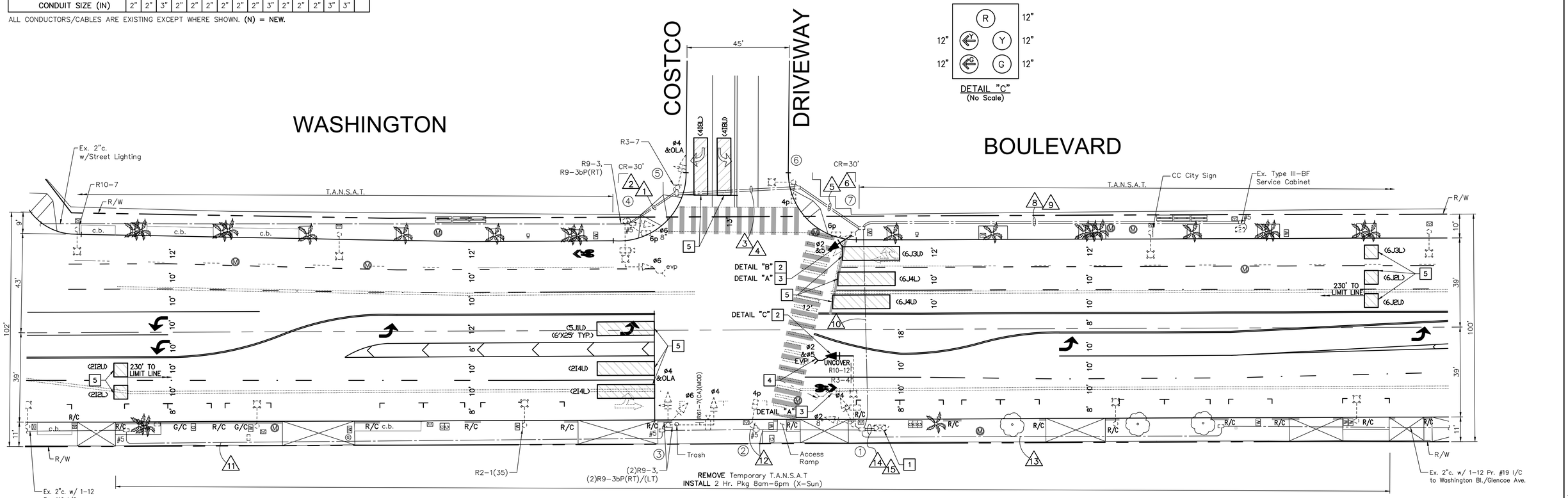
POLE SCHEDULE

ALL EQUIPMENT IS EXISTING UNLESS NOTED OTHERWISE; (N)=NEW

POLE DATA NO.	TYPE	HEIGHT	SIGNAL M.A.	LUMINAIRE M.A.	LUMINAIRE WATTS	SIGNAL MOUNTING VEH.	SIGNAL MOUNTING M.A.	SIGNAL MOUNTING PED.	PED PUSH BUT'N PHASE	PED PUSH BUT'N ARROW	POLE LOC. A B C	R.S.N.S.
①	19–2–113	30'	30'	12'	250	SV–2–T	MAS–5A*	–	–	–	Exist.	–
②	1–A	7'	–	–	–	_	–	TP–1–T	4	→	Exist.	–
③	16–1–113	18.4'	30'	–	–	SV–2–T	MAS	–	–	–	Exist.	–
④	19–1–113	30'	20'	15'	250	SV–1–T	MAS	SP–1–T	–	–	Exist.	–
⑤	1–A	10'	–	–	–	TV–1–T	–	–	6	→	Exist.	–
⑥	15	30'	–	8'	400	_	–	SP–1–T	6	←	Exist.	–
⑦	1–A	10'	–	–	–	TV–1–T(N)	–	SP–1–T	4	→	Exist.	–

ALL CONDUCTORS/CABLES ARE EXISTING EXCEPT WHERE SHOWN. **(N) = NEW.**

*SEE CONSTRUCTION NOTE [3].



CONSTRUCTION NOTES:

1. RE–USE EXISTING 2070 ATC CONTROLLER IN 332 CONTROLLER CABINET. CONTRACTOR SHALL FURNISH AND INSTALL ALL AUXILIARY EQUIPMENT REQUIRED TO PROVIDE A COMPLETE FUNCTIONING CONTROLLER FOR THE OPERATION AS SHOWN.
2. CONTRACTOR SHALL RE–INSTALL VEHICLE HEAD AS SHOWN.
3. REMOVE AND SALVAGE EXISTING VEHICLE HEAD AND MOUNTING.
4. RELOCATE EXISTING EVP DETECTOR UNIT AND MOUNTING ASSEMBLY AS SHOWN ON PLAN.
5. RECONFIGURE VIDEO DETECTION ZONES AS SHOWN ON PLAN.
6. PROPOSED SIGNING AND STRIPING REMOVALS AND RESTORATION SHOWN FOR REFERENCE ONLY. SEE RESTORATION SIGNING AND STRIPING PLANS FOR SIGNING AND STRIPING INSTALLATION DETAILS.

LEGEND:

= PROPOSED VIDEO DETECTION ZONE

= EXISTING VIDEO DETECTION ZONE

20' 10' 0 10' 20'
1"=20' GRAPHIC SCALE

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PREPARED BY
KOA
1100 Corporate Center Drive, Suite 201
Monterey Park, California 91754
Tel: (323) 260-4703 Fax: (323) 260-4705

11/7/22
Date

REGISTERED PROFESSIONAL ENGINEER GIUSEPPE S. CANONIERI No. C79006 CIVIL STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION
RESTORATION TRAFFIC SIGNAL PLAN
WASHINGTON BOULEVARD AND COSTCO DRIVEWAY (WEST)

APPROVED BY: ANDREW MAXIMOUS, P.E., T.E.
4/11/23
MOBILITY & TRAFFIC ENGINEERING DIVISON DATE

SHEET TS–04
Sheet 48 Of 49 Sheets

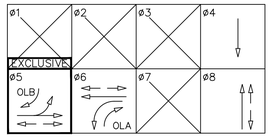
Drawing Name: J:\2019_JB91065 CC Washington Blvd TTS\Design\Signal\2–RESTORATION TS\RTS–01 Washington Blvd & Costco (West).dwg
Last Opened: Nov 06, 2022 – 3:14pm by rivero

CONDUCTOR SCHEDULE

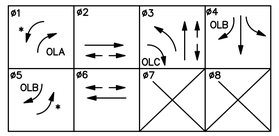
AWG SIZE OR CABLE TYPE	POLE OR CIRCUIT	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯
MULTI	28 CONDUCTOR CABLE 27–#14 & 1–#10 (COM)	1	1	1		1				1	1				1	2		
MULTI	12 CONDUCTOR CABLE 11–#14 & 1–#10 (COM)																	
#8	LUMINAIRE	2	2	2		2				2	2	2	2					
#6	SIGNAL SERVICE											2	2	2				
	EVP SHIELDED CABLE	1	1	1		1										2		
	VIDEO POWER CABLE							1	1	1	1			1	1			
#19	I/C CABLE (6 PR)						1	1								1		
#19	I/C CABLE (12 PR)								1		1	1		1		1		
	FIBER OPTIC																	
CAT5E	VIDEO DETECTION	1	1	2		2							1		1	4		
	CONDUIT SIZE (IN)	2"	3"	2"	2.5"	3"	2.5"	3"	2"	2.5"	3"	2"	3"	3"	3"	3"		

ALL CONDUCTORS/CABLES ARE EXISTING EXCEPT WHERE SHOWN. **(N) = NEW.**

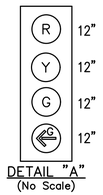
EXISTING PHASE DIAGRAM



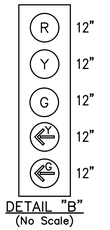
PROPOSED PHASE DIAGRAM



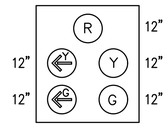
*–PROTECTED–PERMISSIVE



DETAIL "A"
(No Scale)



DETAIL "B"
(No Scale)



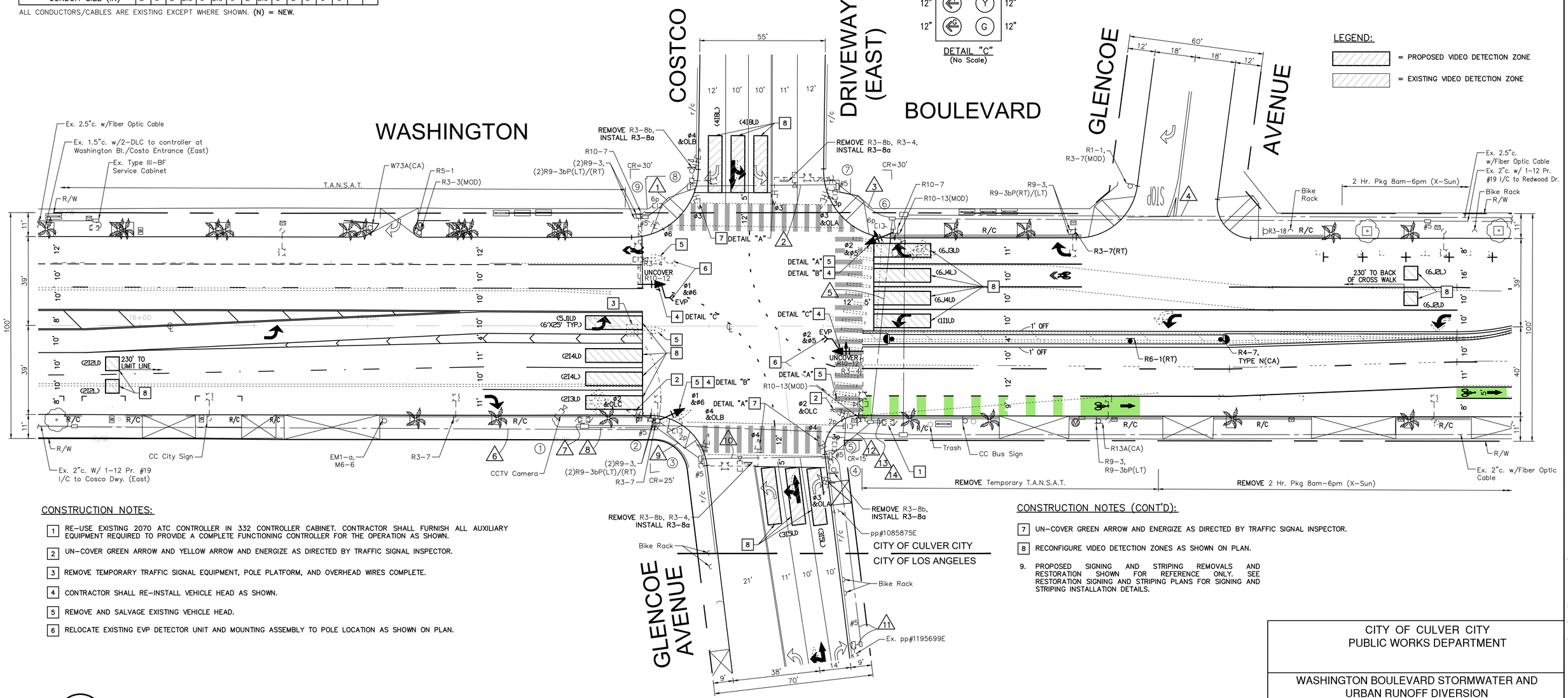
DETAIL "C"
(No Scale)

POLE SCHEDULE

ALL EQUIPMENT IS EXISTING UNLESS NOTED OTHERWISE; (N)=NEW

No.	POLE DATA TYPE	POLE DATA HEIGHT	SIGNAL M.A.	LUMINAIRE M.A.	LUMINAIRE WATTS	SIGNAL MOUNTING VEH.	SIGNAL MOUNTING M.A.	SIGNAL MOUNTING PED.	PED PUSH BUT'N PHASE	PED PUSH BUT'N ARROW	POLE LOC. A	POLE LOC. B	POLE LOC. C	R.S.N.S.
①	AMERON 11–6	30'	–	–	–	–	–	–	–	–	Exist.			–
②	1–A	10'	–	–	–	SV–2–T(N)	–	SP–1–T	–	–	Exist.			–
③	19–3–70	30'	25'	12'	250	SV–1–T	MAS–4B	–	2	←	Exist.			–
④	1–A	10'	–	–	–	TV–2–T	–	SP–1–T	2	←	Exist.			–
⑤	19–4–113	30'	30'	12'	250	SV–1–T	MAS–5A*	SP–1–T	3	←	Exist.			Glencoe Av
⑥	15	25'	–	12'	250	SV–1–T(N)	–	SP–1–T	3	→	Exist.			–
⑦	19–3–70	30'	25'	12'	250	SV–1–T	MAS–4B	SP–1–T	6	←	Exist.			Washington Bl
⑧	1–A	10'	–	–	–	TV–2–T	–	–	6	→	Exist.			–
⑨	19–4–113	30'	30'	12'	250	SV–1–T	MAS–5A*	SP–1–T	–	–	Exist.			Glencoe Av

ALL CONDUCTORS/CABLES ARE EXISTING EXCEPT WHERE SHOWN. **(N) = NEW.**
*SEE CONSTRUCTION NOTE 4.



CONSTRUCTION NOTES:

1. RE–USE EXISTING 2070 ATC CONTROLLER IN 332 CONTROLLER CABINET. CONTRACTOR SHALL FURNISH ALL AUXILIARY EQUIPMENT REQUIRED TO PROVIDE A COMPLETE FUNCTIONING CONTROLLER FOR THE OPERATION AS SHOWN.
2. UN–COVER GREEN ARROW AND YELLOW ARROW AND ENERGIZE AS DIRECTED BY TRAFFIC SIGNAL INSPECTOR.
3. REMOVE TEMPORARY TRAFFIC SIGNAL EQUIPMENT, POLE PLATFORM, AND OVERHEAD WIRES COMPLETE.
4. CONTRACTOR SHALL RE–INSTALL VEHICLE HEAD AS SHOWN.
5. REMOVE AND SALVAGE EXISTING VEHICLE HEAD.
6. RELOCATE EXISTING EVP DETECTOR UNIT AND MOUNTING ASSEMBLY TO POLE LOCATION AS SHOWN ON PLAN.

CONSTRUCTION NOTES (CONT'D):

7. UN–COVER GREEN ARROW AND ENERGIZE AS DIRECTED BY TRAFFIC SIGNAL INSPECTOR.
8. RECONFIGURE VIDEO DETECTION ZONES AS SHOWN ON PLAN.
9. PROPOSED SIGNING AND STRIPING REMOVALS AND RESTORATION SHOWN FOR REFERENCE ONLY. SEE RESTORATION SIGNING AND STRIPING PLANS FOR SIGNING AND STRIPING INSTALLATION DETAILS.

20' 10' 0 10' 20'
1"=20' GRAPHIC SCALE

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PREPARED BY
KOA
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Monterey Park, California 91754
Tel: (323) 260-4703 Fax: (323) 260-4705
11/7/22
Date

REGISTERED PROFESSIONAL ENGINEER — GIUSEPPE S. CANZANERI — No. C79006 — CIVIL — STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF:

Project Number: PR- 001

Drawing No.

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1				
2				
3				

CITY OF CULVER CITY
PUBLIC WORKS DEPARTMENT

WASHINGTON BOULEVARD STORMWATER AND URBAN RUNOFF DIVERSION

RESTORATION TRAFFIC SIGNAL PLAN
WASHINGTON BOULEVARD AND GLENCOE AVENUE

APPROVED BY: ANDREW MAXIMOUS, P.E., T.E.
4/11/23
MOBILITY & TRAFFIC ENGINEERING DIVISON — DATE

SHEET
TS–05
Sheet 49 Of 49 Sheets

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