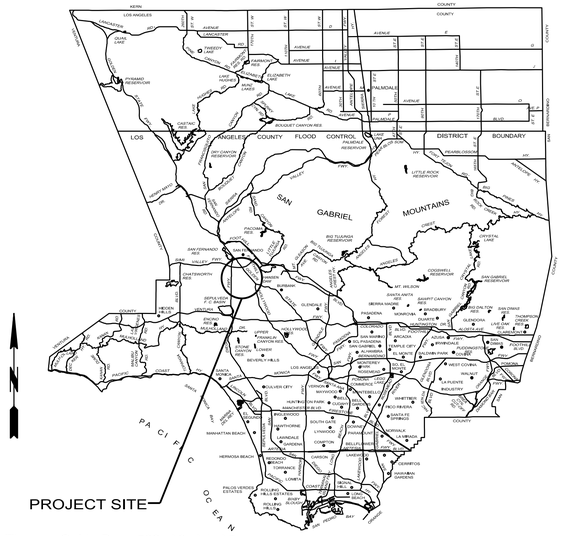
LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT



Thomas Guide Pgs. 502- A3, A4, A5
501- J3, J4, J5

LOCATION MAP

UTILITIES

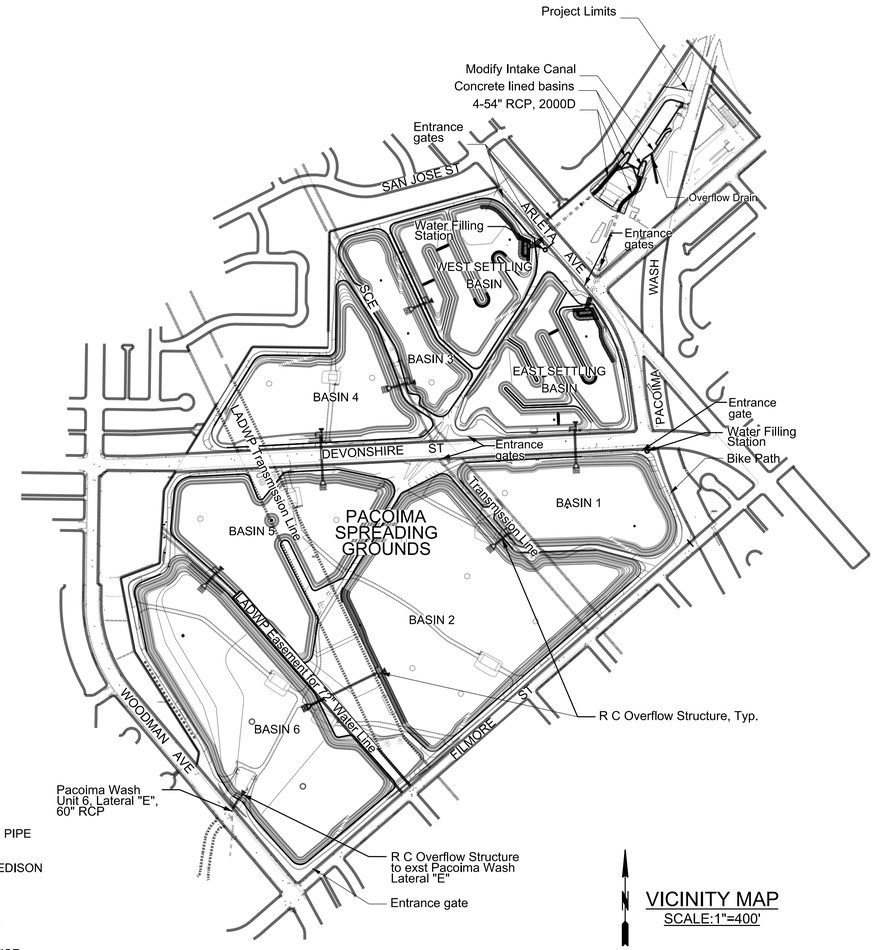
CITY OF LOS ANGELES DEPARTMENT OF WATER AND POWER (LADWP) (WATER, POWER)
CITY OF LOS ANGELES (STREET LIGHTING, SEWER, STORM DRAIN)
SOUTHERN CALIFORNIA EDISON (SCE) (POWER)
SOUTHERN CALIFORNIA GAS COMPANY (GAS)
SPECTRUM (TELECOMMUNICATION)
OIL* (UNABLE TO CONFIRM LINE STATUS, NO ACTIVE OIL LINES REPORTED BY UTILITY COMPANIES)

REFERENCES

PACOIMA SPREADING GROUNDS - DWG NO. 21-D101.1 thru 21
PACOIMA SPREADING GROUNDS - ALTERATION TO DIVERSION WORKS 21-D21.1 thru 7
PACOIMA SPREADING GROUNDS - MODIFICATION TO DIVERSION WORKS 21-D99.1 thru 8
PACOIMA SPREADING GROUNDS - OUTFLOW DRAIN 21-D91.1 thru 4
PACOIMA WASH CHANNEL FILE NO. 144, PAGES 21, 26, 46-49, 60
TOPOGRAPHIC MAP NO. 21-T101 (OCT. 2007)
PIPE LOCATION REPORT NO. 86477
RFS/FB 194-162
PWFB 3376 PG 1-4

ABBREVIATIONS

Bot	BOTTOM	RCP	REINFORCED CONCRETE PIPE
CLF	CHAIN LINK FENCE	R/W	RIGHT OF WAY
Conc	CONCRETE	SCE	SOUTHERN CALIFORNIA EDISON
Const Jt	CONSTRUCTION JOINT	STD	STANDARD
CP	CONTACT POINT	STL	STEEL PIPE
El or Elev	ELEVATION	TS	TRANSITION STRUCTURE
EMO	ELECTRIC MOTOR OPERATOR	TW	TOP OF WALL
ES	END STRUCTURE	UNO	UNLESS NOTED OTHERWISE
Exst	EXISTING	WS	WEIR STRUCTURE
GC	GRADE CHANGE	WSE	WATER SURFACE ELEVATION
Inv	INVERT		
JS	JUNCTION STRUCTURE		
Jt	JOINT		
LACFCD	LOS ANGELES COUNTY FLOOD CONTROL DISTRICT		
LACPW	LOS ANGELES COUNTY PUBLIC WORKS		
LADWP	LOS ANGELES DEPARTMENT OF WATER & POWER		
MH	MANHOLE		
OS	OUTLET STRUCTURE		
OM	OBJECT MARKER		
PP	POWER POLE		
RC	REINFORCED CONCRETE		
RCB	REINFORCED CONCRETE BOX		



VICINITY MAP
SCALE:1"=400'

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1	TITLE SHEET
2	GENERAL NOTES, INDEX TO STANDARD PLANS, AND CONCRETE REMOVAL NOTES
3	SITE PLAN - EXISTING FACILITIES
4	DIVERSION CHANNEL STRUCTURE AND REMOVAL
5	SITE PLAN - IMPROVEMENT FACILITIES AND LADWP POWER LINE CLEARANCES
6-7	EMBANKMENT CENTERLINE TIES AND GALVANIZED STEEL PICKET FENCE COORDINATES
8	PROFILE - BASIN TO BASIN CONDUITS 72" RCP
9	EXCAVATION AND GRADING PLAN - BASIN 6
10	EXCAVATION AND GRADING PLAN - BASIN 1 & 2
11	EXCAVATION AND GRADING PLAN - BASIN 4 & 5
12	EXCAVATION AND GRADING PLAN - BASIN 3 , EAST & WEST SETTLING BASINS
13-14	BASIN CROSS SECTIONS
15	DIVERSION LINE - PLAN AND PROFILE
16	PIPE CURVE DATA, PIPE BEDDING AND PIPE CONNECTION DETAIL
17	INTAKE CANAL - PLAN AND PROFILE
18	INTAKE CANAL DETAILS
19	REINFORCED CONCRETE ACCESS RAMP - PLAN AND PROFILE
20	CONCRETE LINED BASINS AND DIVERSION STRUCTURE DETAILS
21	OVERFLOW LINE - PLAN AND PROFILE
22	CATWALK DETAILS
23	DETAILS - EXPANDED METAL CAGE ENCLOSURE FOR WEIR
24	DETAILS - EXPANDED METAL CAGE ENCLOSURE FOR CONCRETE LINED BASINS AND LOW FLOW
25	S-1 - INTAKE CANAL PLAN AND GENERAL NOTES
26	S-2 - INTAKE CANAL AND ACCESS RAMP SECTIONS
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PLAN J	JACKING PLAN
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PLAN TCA	TRAFFIC CONTROL PLAN (ARLETA)
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THE WORK SHOWN ON THESE PLANS REQUIRES THE PRIME CONTRACTOR TO HAVE A VALID CLASS A LICENSE ISSUED BY THE STATE OF CALIFORNIA.

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

APPROVED BY MARK PESTRELLA, DIRECTOR OF PUBLIC WORKS
ASSISTANT DEPUTY DIRECTOR — DATE 11/16/2020

RECOMMENDED BY:
DESIGN TEAM III — DATE 11/16/2020

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — RAFAEL G. PIAMONTE — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER — DATE 11/16/2020

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

TITLE SHEET

DWG 21-D114.1 | PD 052980 | SHEET 1 OF 72

TS-DF 11/08

CADD PROJECT FILE NAME: FCC0001207-PACOIMASGE.DGN
CHECKER: J. LI
DESIGNER: V. TE
DRAFTER: R. PIAMONTE

DATE: 11/19/2020 FILE: 2:09:23 PM pw:\\pwedmsprod001.dpw.co.la.ca.us:PW_INT2\Documents\DEPARTMENT PROJECTS (PW)\FCC\FCC0001207 - Pacoima Spreading Grounds Basin Enhancement Proj\DES Drainage\4-CAD\FCC0001207 - PACOIMA SG IMPROVEMENTS.dgn

GENERAL NOTES

1. ELEVATIONS SHOWN ARE IN FEET BASED ON LOS ANGELES CITY, 1970 ADJUSTMENT, NAVD 1929 DATUM, CF = 0.99991978.

2. ALL PIPE IN OPEN TRENCH SHALL BE BEDDED ACCORDING TO LACDPW STANDARD PLAN 3080, CASE III, EXCEPT BELL AND SPIGOT PIPE WHICH SHALL BE CASE II BEDDING, UNLESS OTHERWISE SHOWN. "W" VALUES SHALL BE AS SPECIFIED ON STANDARD PLAN 3080 FOR CASE III BEDDING, NOTES (a), (b), AND (c). IF THE "W" VALUE AT THE TOP OF THE PIPE IS EXCEEDED, THE BEDDING SHALL BE MODIFIED, AND/OR PIPE OF ADDITIONAL STRENGTH SHALL BE PROVIDED. THE PROPOSED MODIFICATION SHALL BE APPROVED BY THE AGENCY.

3. EXISTING UTILITIES SHALL BE MAINTAINED IN PLACE BY THE CONTRACTOR, UNLESS OTHERWISE NOTED, AND ALL UTILITIES CROSSING THE TRENCH SHALL BE TEMPORARILY SUPPORTED TO THE SATISFACTION OF THE OWNER.

4. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS TO DETERMINE THE DEPTH AND LOCATION OF EXISTING UTILITIES WHERE SO INDICATED BY THE SYMBOL "△".

5. WHERE THE UTILITIES ARE INDICATED ON THE PLANS TO BE SUPPORTED, SAID SUPPORTS SHALL BE IN ACCORDANCE WITH SPPWC STANDARD PLAN 224-2, UNLESS OTHERWISE INDICATED.

6. ALL RESURFACING, CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS AND OTHER EXISTING IMPROVEMENTS TO BE RECONSTRUCTED SHALL BE CONSTRUCTED AT THE SAME ELEVATION AND LOCATION AS THE EXISTING IMPROVEMENTS, UNLESS OTHERWISE NOTED.

7. EXISTING TREES SHALL BE REMOVED ONLY IF SO DESIGNATED. THOSE TREES NOT INTERFERING WITH CONSTRUCTION SHALL BE PROTECTED IN PLACE.

8. ALL FIELD BOOK REFERENCES ARE TO LOS ANGELES COUNTY DPW OF PUBLIC WORKS FIELD BOOKS, UNLESS OTHERWISE NOTED.

9. BENCHING OF THE LEVEES SHALL BE AS SPECIFIED IN 300-4.4 OF THE SSPWC.

10. CONTRACTOR SHALL RELOCATE EXISTING RIP RAP AND ROCKS IN SETTLING BASINS AND BASIN 2 SHOWN ON SHEET 3 AND PLACE THEM ALONG THE TOE OF SETTLING BASINS AS SHOWN ON SHEET 12. EXACT LOCATION OF THE PLACEMENT SHALL BE DETERMINED BY THE ENGINEER.

11. ALL FILL, OR AS STATED OTHERWISE. AS SHOWN ON PLANS SHALL BE ON-SITE EXCESS MATERIAL FROM THE EXCAVATION OF THE BASINS.

STRUCTURAL DESIGN CRITERIA

L.A.C.F.C.D. STRUCTURAL DESIGN MANUAL
DESIGN OF CAST-IN-PLACE AND PRE-CAST BOX CONDUITS
WITH NEW BOX LOADING DIAGRAMS
JANUARY 2008

LIVE LOAD

HS 20-44 unless otherwise noted

DEAD LOAD

Earth load per Marston's formula: w=110 pcf
Ku=Ku'=0.150
Bd=Outside width of box plus 3 feet
Side earth 37 psf per foot of depth
Internal water pressure: 62.4 psf per foot of depth
Weight of concrete: 150 pcf

ALLOWABLE STRESSES

f'c =4000 psi at 28 days
fc =1800 psi
fs =24,000 psi
n =8
Shear and bond stresses per A.C.I. 318-95

AC PAVEMENT CLASS AND GRADE LEGEND

P1 1½ inches C2-PG 64-10
2½ inches B-PG 64-10

LADWP STANDARD CONDITIONS FOR CONSTRUCTION

1. ENERGIZED TRANSMISSION LINES CAN PRODUCE ELECTRICAL EFFECTS INCLUDING, BUT NOT LIMITED TO, INDUCED VOLTAGES AND CURRENTS IN PERSONS AND OBJECTS. CONTRACTOR HEREBY ACKNOWLEDGES A DUTY TO CONDUCT ACTIVITIES IN SUCH MANNER THAT WILL NOT EXPOSE PERSONS TO INJURY OR PROPERTY TO DAMAGE FROM SUCH EFFECTS.
2. LADWP PERSONNEL SHALL HAVE ACCESS TO THE RIGHT OF WAY AT ALL TIMES.
3. UNAUTHORIZED PARKING OF VEHICLES OR EQUIPMENT SHALL NOT BE ALLOWED ON THE RIGHT OF WAY AT ANY TIME.
4. UNAUTHORIZED STORAGE OF EQUIPMENT OR MATERIAL SHALL NOT BE ALLOWED ON THE RIGHT OF WAY AT ANY TIME.
5. FUELING OF VEHICLES OR EQUIPMENT SHALL NOT BE ALLOWED ON THE RIGHT OF WAY AT ANY TIME.
6. PATROL ROADS AND/OR THE GROUND SURFACES OF THE RIGHT OF WAY SHALL BE RESTORED BY THE CONTRACTOR TO ORIGINAL CONDITIONS, OR BETTER.
7. ALL TRASH, DEBRIS, WASTE, AND EXCESS EARTH SHALL BE REMOVED FROM THE RIGHT OF WAY UPON COMPLETION OF THE PROJECT, OR THE LADWP MAY DO SO AT THE SOLE RISK AND EXPENSE OF THE CONTRACTOR.
8. ALL CUT AND FILL SLOPES WITHIN THE RIGHT OF WAY SHALL CONTAIN ADEQUATE BERMS, BENCHES, AND INTERCEPTOR TERRACES.
9. ALL PAVING, DRIVEWAYS, BRIDGES, CROSSINGS, AND SUBSTRUCTURES LOCATED WITHIN THE RIGHT OF WAY SHALL BE DESIGNED TO WITHSTAND THE AMERICAN ASSOCIATION OF STATE HIGHWAY OF TRANSPORTATION OFFICIALS' VHICULAR LOADING H20-44 OR HL-93. THE DESIGN SHALL ALSO COMPLY WITH APPLICABLE DESIGN STANDARDS.
10. GENERAL GROUNDING CONDITION
    ALL ABOVEGROUND METAL STRUCTURES INCLUDING, BUT NOT LIMITED TO, PIPES, DRAINAGE DEVICES, FENCES, AND BRIDGE STRUCTURES LOCATED WITHIN OR ADJOINING THE RIGHT OF WAY SHALL BE PROPERLY GROUNDED, AND SHALL BE INSULATED FROM ANY FENCING OR OTHER CONDUCTIVE MATERIALS LOCATED OUTSIDE OF THE RIGHT OF WAY. FOR SAFETY OF PERSONNEL AND EQUIPMENT, ALL EQUIPMENT AND STRUCTURES SHALL BE GROUNDED IN ACCORDANCE WITH STATE OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTION 2941, AND NATIONAL ELECTRIC CODE, ARTICLE 250.
11. CONTRACTOR SHALL NEITHER HOLD THE LADWP LIABLE FOR NOR SEEK INDEMNITY FROM THE LADWP FOR ANY DAMAGE TO THE CONTRACTOR'S PROJECT DUE TO FUTURE CONSTRUCTION OR RECONSTRUCTION BY THE LADWP WITHIN THE RIGHT OF WAY.
12. FIRES AND BURNING OF MATERIALS IS NOT ALLOWED ON THE RIGHT OF WAY.
13. CONTRACTOR SHALL CONTROL DUST BY DUST-ABATEMENT PROCEDURES APPROVED BY LADWP, SUCH AS THE APPLICATION OF A DUST PALLIATIVE OR WATER.
14. THE RIGHT OF WAY CONTAINS HIGH-VOLTAGE ELECTRICAL CONDUCTORS; THEREFORE, THE CONTRACTOR SHALL UTILIZE ONLY SUCH EQUIPMENT, MATERIAL, AND CONSTRUCTION TECHNIQUES THAT ARE PERMITTED UNDER APPLICABLE SAFETY ORDINANCES AND STATUTES, INCLUDING THE FOLLOWING: STATE OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, INDUSTRIAL RELATIONS, CHAPTER 4, DIVISION OF INDUSTRIAL SAFETY, SUBCHAPTER 5, ELECTRICAL SAFETY ORDERS; AND CALIFORNIA PUBLIC UTILITIES COMMISSION, GENERAL ORDER NO. 95, RULES FOR OVERHEAD ELECTRIC LINE CONSTRUCTION.
15. CONTRACTOR IS HEREBY NOTIFIED THAT GROUNDING WIRES MAY BE BURIED IN THE RIGHT OF WAY; THEREFORE, THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT'S TRANSMISSION CONSTRUCTION AND MAINTENANCE BUSINESS GROUP AT (818) 771-5014, OR (818) 771-5076, AT LEAST 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES IN THE RIGHT OF WAY.
16. DETAILED PLANS FOR ANY GRADING, PAVING, AND CONSTRUCTION WORK WITHIN THE RIGHT OF WAY SHALL BE SUBMITTED FOR APPROVAL TO THE REAL ESTATE SERVICES, 221 N. FIGUEROA ST., SUITE 1600, LOS ANGELES, CA 90012, NO LATER THAN 45 DAYS PRIOR TO THE START OF ANY GRADING, PAVING, OR CONSTRUCTION WORK. NOTWITHSTANDING ANY OTHER NOTICES GIVEN BY THE CONTRACTOR REQUIRED HEREIN, CONTRACTOR SHALL NOTIFY THE LADWP'S TRANSMISSION CONSTRUCTION AND MAINTENANCE BUSINESS GROUP AT (818) 771-5014, OR (818) 771-5076, NO EARLIER THAN 14 DAYS AND NO LATER THAN TWO DAYS PRIOR TO THE START OF ANY GRADING, PAVING, OR CONSTRUCTION WORK.
17. "AS CONSTRUCTED" DRAWINGS SHOWING ALL PLANS AND PROFILES OF THE CONTRACTOR'S PROJECT SHALL BE FURNISHED TO THE REAL ESTATE SERVICES, 221 N. FIGUEROA ST., SUITE 1600, LOS ANGELES, CA 90012, WITHIN FIVE DAYS AFTER COMPLETION OF CONSENTEE'S PROJECT
18. IN THE EVENT THAT CONSTRUCTION WITHIN THE RIGHT OF WAY IS DETERMINED UPON INSPECTION BY THE LADWP TO BE UNSAFE OR HAZARDOUS TO DWP FACILITIES, THE LADWP MAY ASSIGN A LINE PATROL MECHANIC AT THE CONTRACTOR'S EXPENSE.
19. IF THE LADWP DETERMINES AT ANY TIME DURING CONSTRUCTION THAT THE CONTRACTOR'S EFFORTS ARE HAZARDOUS OR DETRIMENTAL TO THE LADWP FACILITIES, THE LADWP SHALL HAVE THE RIGHT TO IMMEDIATELY TERMINATE SAID CONSTRUCTION.
20A. ALL CONCENTRATED SURFACE WATER WHICH IS DRAINING AWAY FROM THE PERMITTED ACTIVITY SHALL BE DIRECTED TO AN APPROVED STORM DRAIN SYSTEM WHERE ACCESSIBLE, OR OTHERWISE RESTORED TO SHEET FLOW BEFORE BEING RELEASED WITHIN OR FROM THE RIGHT OF WAY.
20B. DRAINAGE FROM THE PAVED PORTIONS OF THE RIGHT OF WAY SHALL NOT ENTER THE UNPAVED AREA UNDER THE TOWERS. DRAINAGE DIVERSIONS SUCH AS CURBS SHALL BE USED ON THREE SIDES OF EACH TOWER. THE OPEN SIDE OF EACH TOWER SHALL BE THE LOWEST ELEVATION SIDE TO ALLOW STORM WATER WHICH FALLS UNDER THE TOWER TO DRAIN. THE AREA UNDER THE TOWERS SHALL BE MANUALLY GRADED TO SHEET FLOW FROM UNDER THE TOWERS.
20C. PONDING OR FLOODING CONDITIONS WITHIN THE RIGHT OF WAY SHALL NOT BE ALLOWED, ESPECIALLY AROUND THE TRANSMISSION TOWERS. ALL DRAINAGE SHALL FLOW OFF OF THE RIGHT OF WAY.
21A. FILLS, INCLUDING BACKFILLS, SHALL BE IN HORIZONTAL, UNIFORM LAYERS NOT TO EXCEED SIX INCHES IN THICKNESS BEFORE COMPACTION, THEN COMPACTED TO 90 PERCENT RELATIVE COMPACTION IN ACCORDANCE WITH THE AMERICAN SOCIETY FOR TESTING AND MATERIALS D1557.
21B. THE TOP TWO INCHES TO SIX INCHES OF THE CONCRETE FOOTINGS OF THE TOWERS SHALL REMAIN EXPOSED AND NOT COVERED OVER BY ANY FILL FROM GRADING OPERATIONS.
22. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND LICENSES REQUIRED FOR PERFORMANCE OF THE WORK AND SHALL COMPLY WITH ALL LAWS, ORDINANCES, RULES, ORDERS OR REGULATIONS INCLUDING, BUT NOT LIMITED TO, THOSE OF ANY AGENCIES, DEPARTMENTS, DISTRICTS, OR COMMISSIONS OF THE STATE, COUNTY, OR CITY HAVING JURISDICTION THEREOVER.
23. CONTRACTOR SHALL PROVIDE AND MAINTAIN A MINIMUM 20-FOOT WIDE TRANSITION RAMP FOR THE PATROL ROADS FROM THE PAVEMENT TO THE GROUND SURFACE. THE RAMP SHALL NOT EXCEED A SLOPE OF TEN PERCENT.
24. ALL WORK THAT IS TO BE DONE BY THE CONTRACTOR FOR LADWP SHALL BE DONE PER THE DESIGN PROVIDED FROM A LADWP PROJECT ENGINEER. THE CONTRACTOR SHALL REFER TO THE FOLLOWING WORK REQUESTS FOR THE WORK REQUESTED ON SHEET E-6 OF THESE PLANS:

    WR 1169346 FOR 10044 WOODMAN AVE
    WR 1169340 FOR 10421 ARLETA AVE
    WR 1169336 FOR 14528 SAN JOSE ST
    WR 1169341 FOR 14441 FILMORE ST

    FOR ALL QUESTIONS REGARDING LADWP WORK REQUESTS, PLEASE CONTACT DESIGN ENGINEER ROBERT BOULWARE OF LADWP AT (213) 367-2553.

INDEX TO STANDARD PLANS

LACDPW

STD. PLAN	TITLE
3080-3	PIPE BEDDING IN TRENCHES
3090-1	CRITERIA FOR THE DESIGN OF SHORING FOR EXCAVATIONS
3091-1	SAMPLE SHEET FOR USE AS A GUIDE IN PREPARING CALCULATIONS FOR SHORING OF EXCAVATIONS
3093-1	UNIFIED SOIL CLASSIFICATION SYSTEM
6008-1	MINIMUM PUBLIC SAFETY REQUIREMENT FOR OPEN EXCAVATIONS

SPPWC 2012 EDITION

STD. PLAN	TITLE
121-2	CURB AND GUTTER - MOUNTABLE
224-2	SUPPORT FOR CONDUITS ACROSS TRENCHES, CASE 4
320-2	MANHOLE PIPE TO PIPE
323-2	MANHOLE - CONCRETE BOX STORM DRAIN
326-2	MANHOLE SHAFT 36" WITHOUT REDUCER
332-2	JUNCTION STRUCTURE - PIPE TO PIPE (ID ≤ 24")
380-4	CONCRETE COLLAR FOR RCP
520-4	TREE PLANTING
600-3	CHAIN LINK FENCE AND GATES
606-3	METAL HAND RAILINGS, TYPE A
610-3	REINFORCED CONCRETE RETAINING WALL TYPE 1
633-4	36" MANHOLE FRAME AND COVER
635-3	STEEL STEP
640-4	REINFORCED CONCRETE STAIRWAY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
STANDARD PLANS, 2018 EDITION

STD. PLAN	TITLE
A73A	OBJECT MARKERS TYPE L-1

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
STANDARD PLANS

STD. PLAN	TITLE
S-440-4	DRIVEWAYS
S-477-2	T-TRENCH AND PAVEMENT RESTORATION ASPHALT CONCRETE STREETS

CONCRETE REMOVAL NOTES

1. A SAW CUT SHALL BE MADE ONE INCH DEEP AT THE REMOVAL LIMITS. CARE SHALL BE EXERCISED IN THE SAWING AT THE REMOVAL LIMITS SO AS NOT TO CUT THE REINFORCING STEEL IN THE REMAINING SLAB OR WALL. THE EXISTING REINFORCING STEEL SHALL BE RETAINED AND EXTENDED INTO THE NEW CONSTRUCTION AS SHOWN ON THE PLANS.

2. CUT A GROOVE IN THE CONCRETE ADJACENT TO THE SAWCUT ON THE SIDE TO BE REMOVED TO THE DEPTH OF THE SAWCUT WITH A CHIPPING HAMMER. REMOVE THE REMAINING CONCRETE WITH HAND-OPERATED EQUIPMENT LEAVING A CLEAN PLANE SURFACE FOR BONDING NEW CONCRETE. THE HORIZONTAL REINFORCING STEEL AT INTERSECTION OF THE EXISTING AND NEW CONSTRUCTION SHALL BE LAPPED INTO THE NEW CONSTRUCTION PER ACI 318-08.

3. RETAIN EXISTING REINFORCEMENT BARS UNLESS OTHERWISE INDICATED.

4. REMOVAL OF THE REMAINING CONCRETE BY ANOTHER METHOD OTHER THAN AS DESCRIBED IN NOTE 2 MUST BE APPROVED BY THE ENGINEER PRIOR TO PERFORMING THE WORK.

DRAFTER R. PIAMONTE | DESIGNER R. PIAMONTE | CHECKER J. LI | CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn | REVIEWED BY | DATE

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — RAFAEL G. PIAMONTE — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

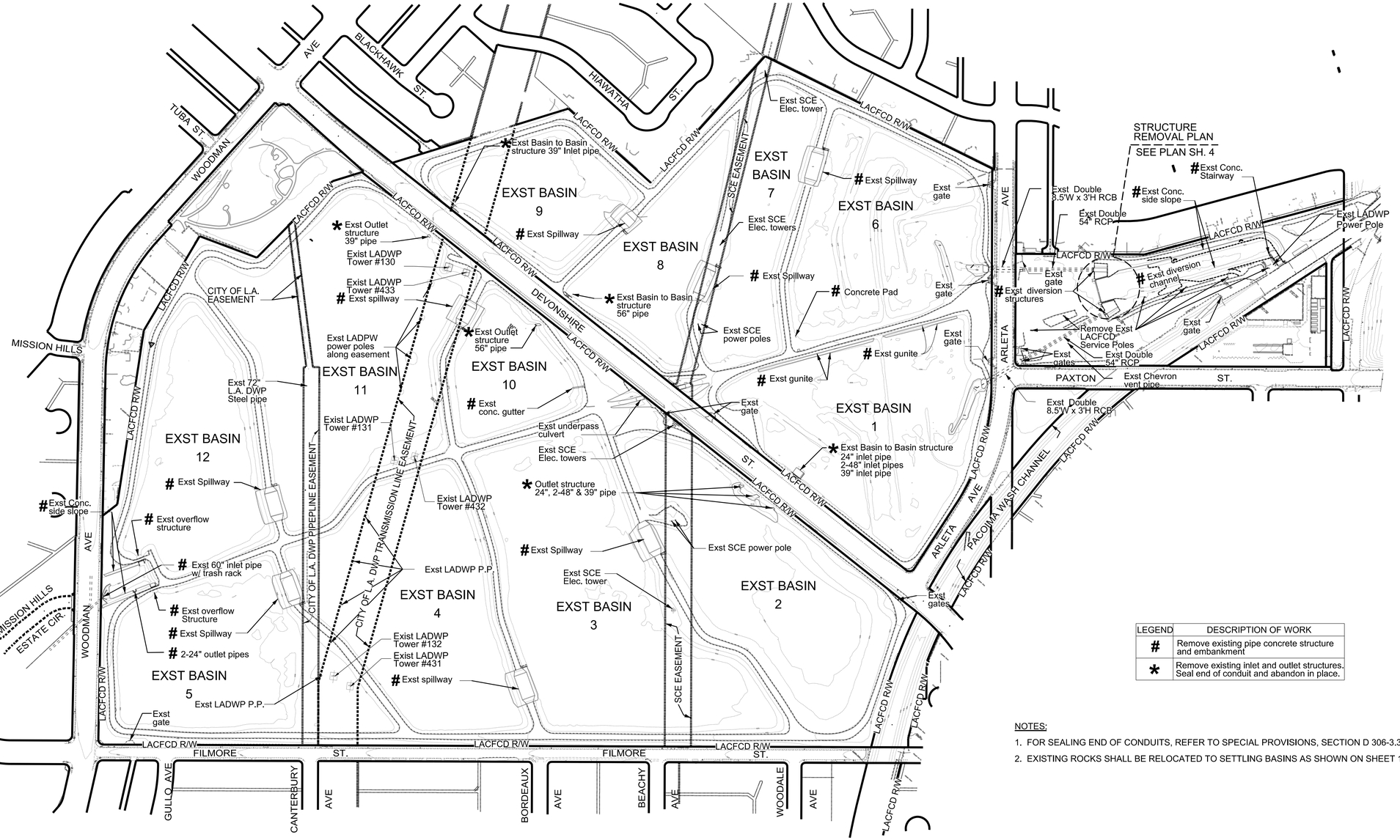
PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

GENERAL NOTES, INDEX TO STANDARD PLANS, AND CONCRETE REMOVAL NOTES

DWG 21-D114.2 | PD 052980 | SHEET 2 OF 72

PS-DF 07/05



LEGEND	DESCRIPTION OF WORK
#	Remove existing pipe concrete structure and embankment
*	Remove existing inlet and outlet structures. Seal end of conduit and abandon in place.

NOTES:

1. FOR SEALING END OF CONDUITS, REFER TO SPECIAL PROVISIONS, SECTION D 306-3.3.
2. EXISTING ROCKS SHALL BE RELOCATED TO SETTLING BASINS AS SHOWN ON SHEET 12.

PLAN
SCALE:1"=200'

DRAFTER	DESIGNER	CHECKER	CADD PROJECT FILE NAME	REVIEWED BY	DATE
R. PIAMONTE	R. PIAMONTE	J. LI	PacoimaSGEnhancement.dgn		

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — RAFAEL G. PIAMONTE — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

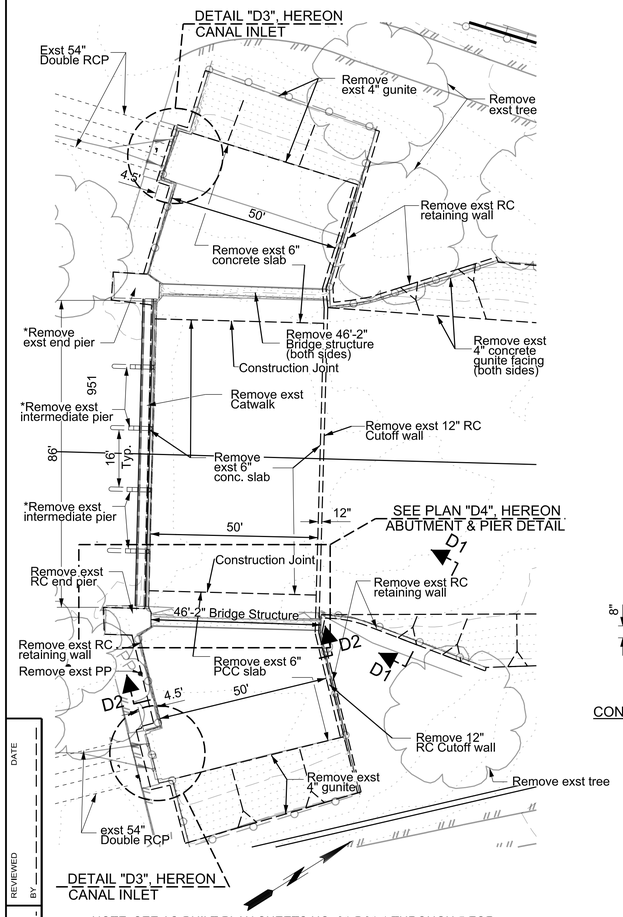
BASIN ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

SITE PLAN
EXISTING FACILITIES

DWG 21-D114.3 | PD 052980 | SHEET 3 OF 72

PS-DF 07/05

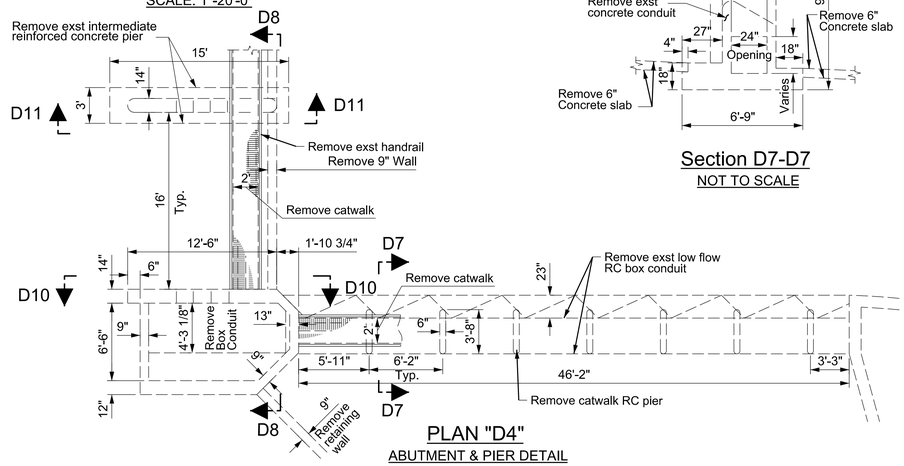


DETAIL "D3", HEREON
CANAL INLET

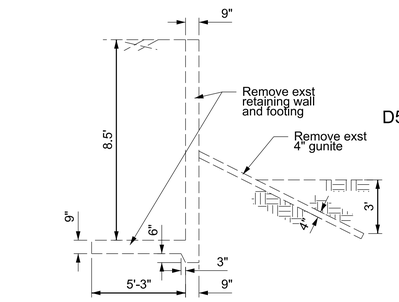
NOTE: SEE AS-BUILT PLAN SHEETS NO. 21-D21.1 THROUGH 5 FOR INFORMATION OF EXIST DIVERSION CHANNEL STRUCTURES

STRUCTURE REMOVAL PLAN, (Sh. 3)

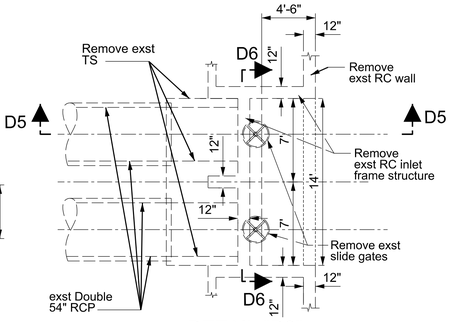
SCALE: 1"-20'-0"



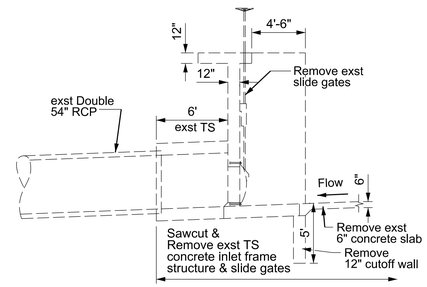
PLAN "D4"
ABUTMENT & PIER DETAIL



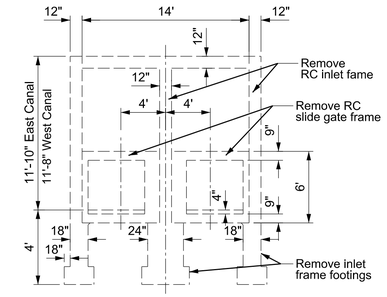
Section D1-D1
SIDE SLOPE GUNITE & RETAINING WALL REMOVAL
NOT TO SCALE



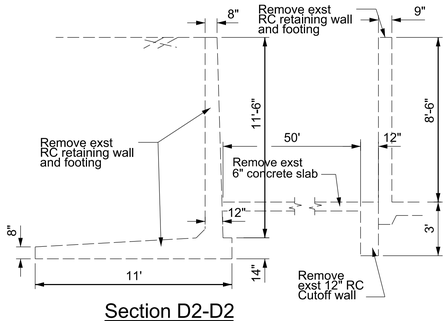
DETAIL "D3"
CANAL INLET
NOT TO SCALE



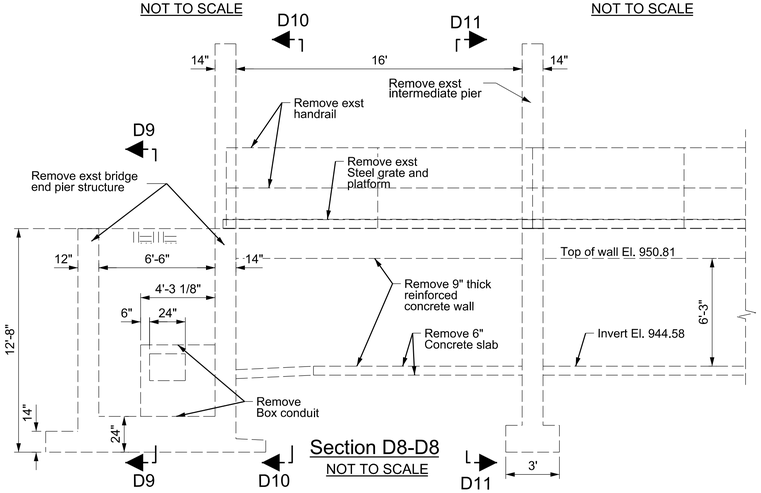
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NOT TO SCALE



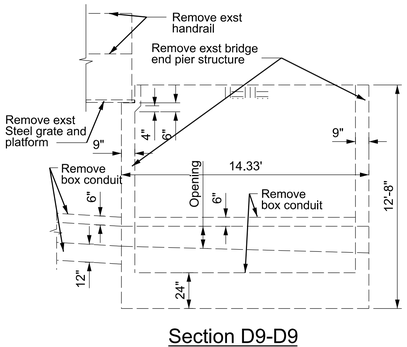
Section D6-D6
NOT TO SCALE



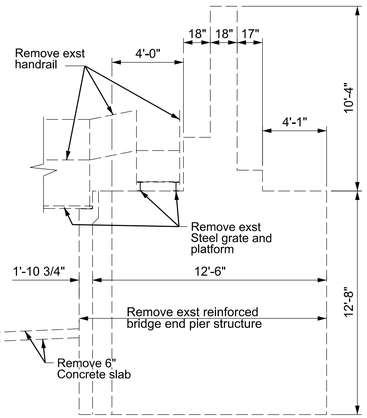
Section D2-D2
CONCRETE INVERT AND RETAINING WALL REMOVAL
NOT TO SCALE



Section D8-D8
NOT TO SCALE

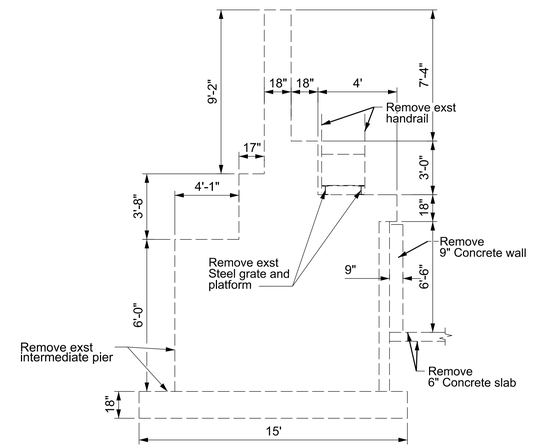


Section D9-D9
NOT TO SCALE



Section D7-D7
NOT TO SCALE

Section D10-D10
NOT TO SCALE



Section D11-D11
NOT TO SCALE

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER — 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

DIVERSION CHANNEL STRUCTURE REMOVAL

DWG 21-D114.4	PD 052980	SHEET 4 OF 72

PS-DF 07/05

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

PT# 109

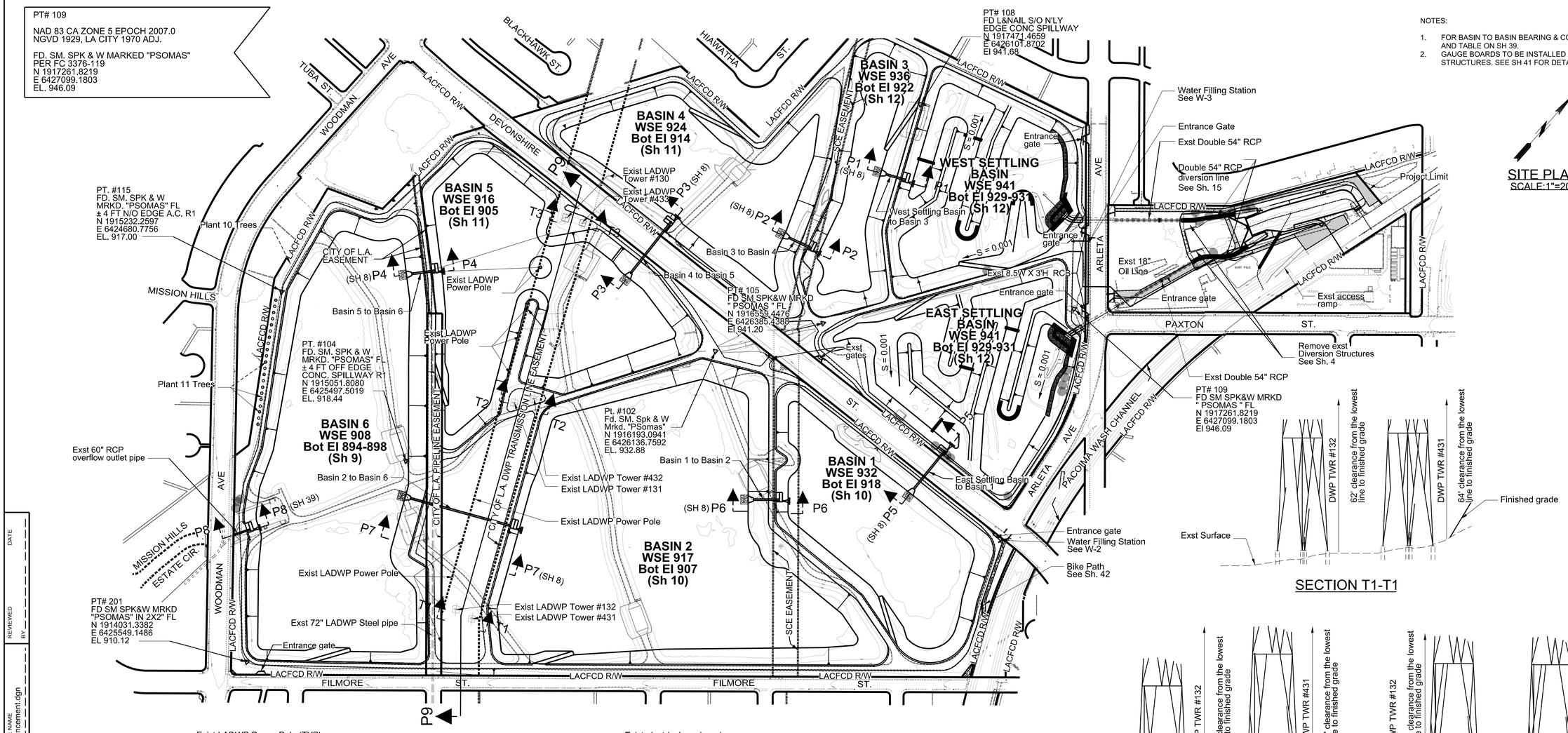
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NGVD 1929, LA CITY 1970 ADJ.

FD. SM. SPK & W MARKED "PSOMAS"
PER FC 3376-119
N 1917261.8219
E 6427099.1803
EL. 946.09

PT# 108
FD L&NAIL S/O N'LY
EDGE CONC. SPILLWAY
N 1917471.4659
E 6426101.8702
El 941.68

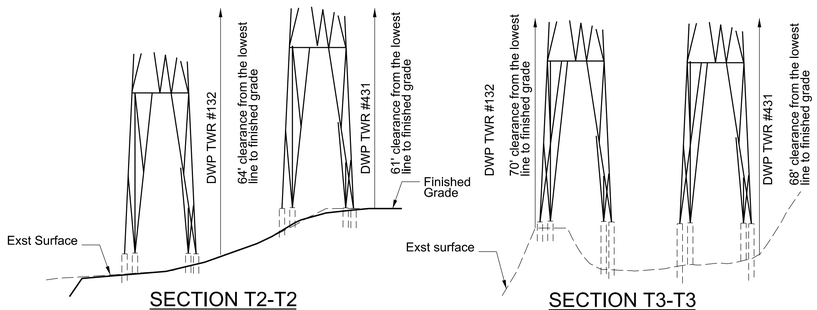
NOTES:

1. FOR BASIN TO BASIN BEARING & COORDINATES SEE DETAIL AND TABLE ON SH 39.
2. GAUGE BOARDS TO BE INSTALLED AT BASIN OUTLET STRUCTURES. SEE SH 41 FOR DETAILS.



SITE PLAN
SCALE:1"=200'

SECTION T1-T1



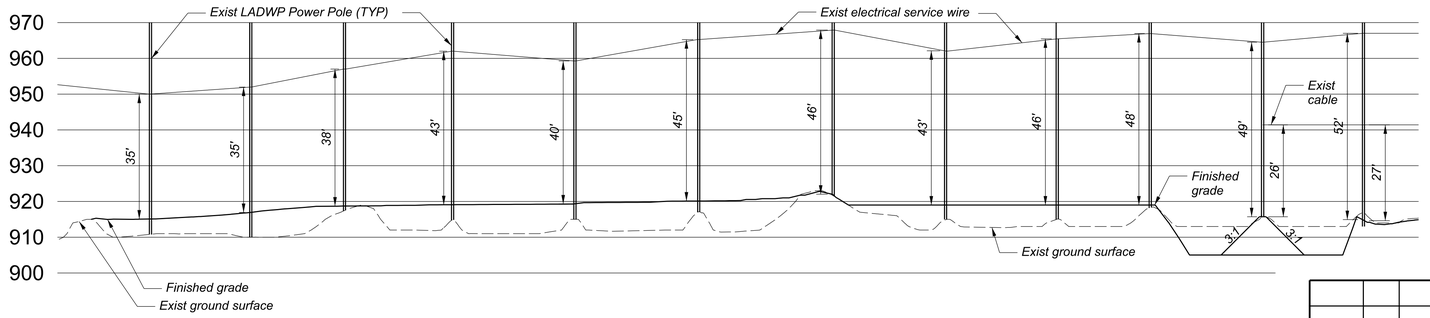
SECTION T2-T2

SECTION T3-T3

LADWP TRANSMISSION LINE CLEARANCES

NOT TO SCALE

*Clearances are estimated from finished grade to the bottom of the lowest cable hanging from the transmission tower. Distances measured on August 6, 2019, 10:30 am at an outdoor temperature of 84° F



PROFILE P9-P9

LADWP DISTRIBUTION POLES ALONG TRANSMISSION EASEMENT*

SCALES: HOR: 1"=100'
VERT: 1"=20'

*Clearances are estimated from finished grade to the bottom of the lowest cable hanging from the distribution pole.

DATE	MARK	DESCRIPTION
		REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER — 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

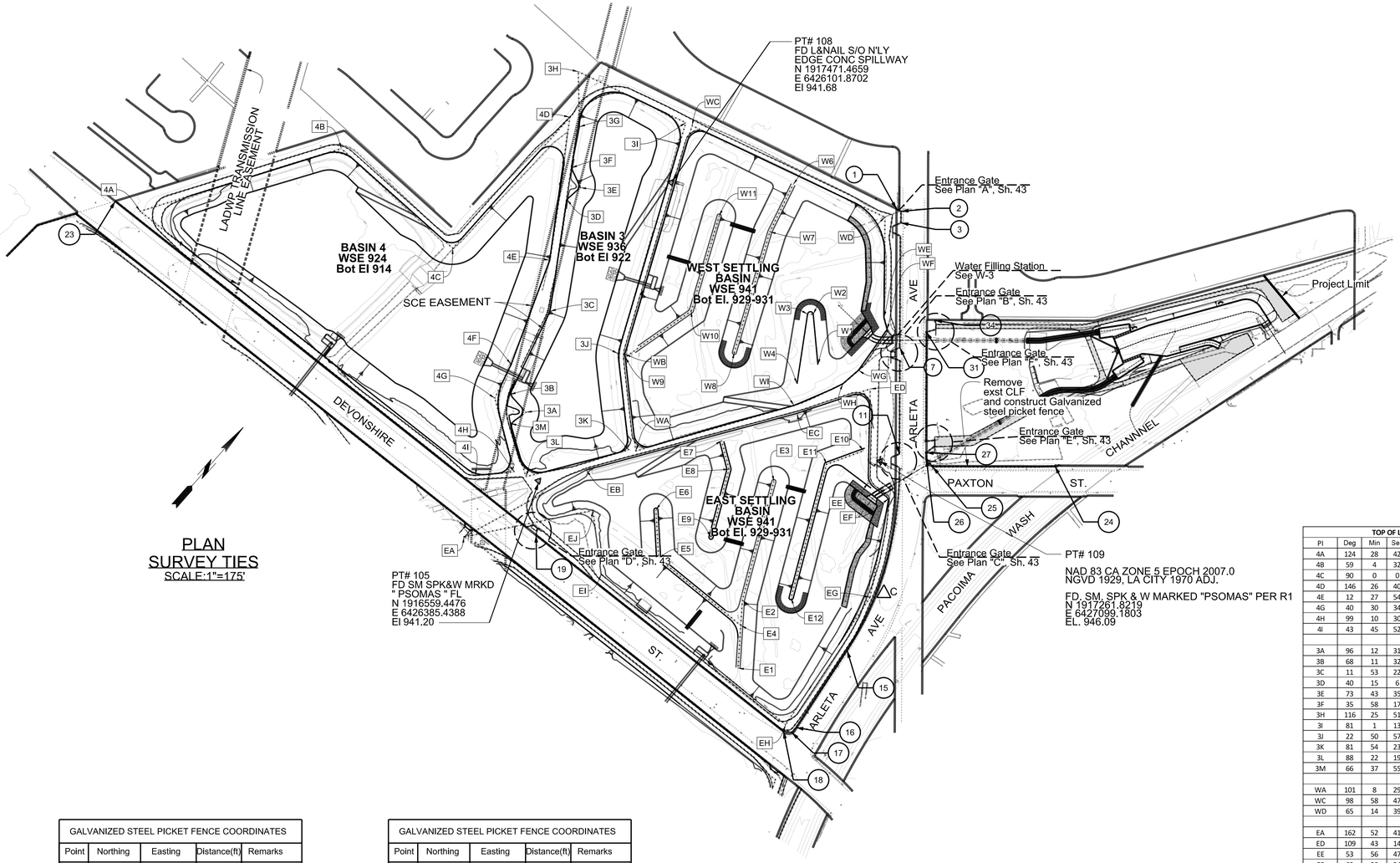
PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207
SITE PLAN - IMPROVEMENT FACILITIES
AND LADWP POWER LINE CLEARANCES

DWG 21-D114.5 | PD 052980 | SHEET 5 OF 72

PS-DF 07/05

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

11/19/2020 2:10:03 PM pw:\\pwedmsprod01.dpw.co.la.ca.us:PW_INTF2\Documents\DEPARTMENT PROJECTS (PRW)\FCD\FCC0001207 - Pacoima Spreading Grounds Basin Enhancement Proj\DES Drainage\4-CAD\FCC0001207 - PACOIMA SG IMPROVEMENTS.dgn



PLAN
SURVEY TIES
SCALE:1"=175'

WEST SETTLING BASIN								
Point	Northing(Y)	Easting(X)	Distance (ft)	Bearing				
					Deg	Min	Sec	
WA	1916808.74	6426529.66						
WB	1917000.94	6426318.37	285.62	N	47	42	31	W
WC	1917633.04	6426025.50	696.66	N	24	51	34	W
WD	1917804.00	6426626.45	624.79	N	74	7	13	E
WE	1917582.08	6426816.89	292.44	S	40	38	8	E
WF	1917560.95	6426847.73	37.38	S	55	35	19	E
WG	1917416.51	6426863.59	145.31	S	6	16	3	E
WH	1917356.32	6426855.09	60.79	S	8	2	22	W
WI	1917214.63	6426789.47	156.14	S	24	51	3	W
WA	1916808.74	6426529.66	481.93	S	32	37	24	W
W1	1917350.24	6426763.48						
W2	1917452.06	6426655.84	148.17	N	46	35	22	W
W3	1917441.58	6426643.17	16.44	S	50	23	21	W
W4	1917268.15	6426754.23	205.94	S	32	37	57	E
W6	1917698.86	6426361.39						
W7	1917550.06	6426401.17	154.02	S	14	57	51	E
W8	1917216.00	6426555.94	368.17	S	24	51	34	E
W9	1916994.80	6426325.12						
W10	1917223.53	6426381.31	235.53	N	13	48	11	E
W11	1917486.60	6426259.42	289.95	N	24	51	34	W

EAST SETTLING BASIN								
Point	Northing(Y)	Easting(X)	Distance (ft)	Bearing				
					Deg	Min	Sec	
EA	1916288.77	6426317.08						
EB	1916671.84	6426457.03	407.83	N	20	4	11	E
EC	1917203.38	6426811.61	638.96	N	33	42	24	E
ED	1917397.91	6426925.28	225.31	N	30	17	53	E
EE	1917187.45	6427101.77	274.67	S	39	58	54	E
EF	1917192.63	6427177.27	75.68	N	86	4	19	E
EG	1916939.45	6427326.91	294.09	S	30	35	7	E
EH	1916496.37	6427386.82	447.11	S	7	42	1	E
EI	1916471.20	6426690.91	696.37	S	87	55	41	W
EJ	1916595.45	6426549.79	188.02	N	48	38	14	W
EA	1916288.77	6426317.08	384.97	S	37	11	30	W
E1	1916519.13	6427180.46						
E2	1916686.76	6427051.47	211.52	N	37	34	43	W
E3	1917008.18	6426891.95	358.83	N	26	23	40	W
E4	1916627.96	6427096.71						
E5	1916616.76	6426787.08	309.84	S	87	55	41	W
E6	1916718.13	6426687.42	142.15	N	44	30	48	W
E7	1916997.39	6426697.70						
E8	1916949.14	6426769.42	86.44	S	56	4	26	E
E9	1916764.51	6426861.05	206.12	S	26	23	40	E
E10	1917248.99	6427029.80						
E11	1917147.83	6426974.47	115.31	S	28	40	34	W
E12	1916786.05	6427154.02	403.88	S	26	23	40	E

TOP OF LEVEE CURVE DATA						
PI	Deg	Min	Sec	Radius (ft)	Tangent(ft)	Arc Length (ft)
4A	124	28	42	80	151.99	173.80
4B	59	4	32	80	45.33	82.49
4C	90	0	0	40	40.00	62.83
4D	146	26	40	40	132.67	102.24
4E	12	27	54	120	13.11	26.11
4G	40	30	34	150	55.35	106.05
4H	99	10	30	40	46.98	69.24
4I	43	45	52	80	32.13	61.11
3A	96	12	31	20	22.29	33.58
3B	68	11	32	20	13.54	23.80
3C	11	53	22	120	12.50	24.90
3D	40	15	6	20	7.33	14.05
3E	73	43	35	20	15.00	25.74
3F	35	58	17	20	6.49	12.56
3H	116	25	51	100	161.38	203.21
3I	81	1	13	80	68.35	113.13
3J	22	50	57	120	24.25	47.86
3K	81	54	23	40	34.71	57.18
3L	88	22	19	60	58.32	92.54
3M	66	37	55	20	13.15	23.26
WA	101	8	29	40	48.65	70.81
WC	98	58	47	40	46.82	69.10
WD	65	14	39	160	102.41	182.20
EA	162	52	41	40	265.71	113.71
ED	109	43	14	40	56.83	76.80
EE	53	56	47	45	22.90	42.37
EF	63	20	34	15	9.25	16.58
EG	22	53	6	780	157.88	311.55
EH	95	37	41	60	66.20	100.14
EJ	94	10	16	50	53.78	82.18

Basin 3								
Point	Northing(Y)	Easting(X)	Distance (ft)	Bearing				
					Deg	Min	Sec	
3A	1916682.42	6426213.13						
3B	1916690.28	6426143.25	70.31	N	83	35	5	W
3C	1916951.00	6426071.21	270.49	N	15	26	46	W
3D	1917229.36	6425892.31	330.89	N	32	43	46	W
3E	1917281.69	6425899.43	52.81	N	7	44	58	E
3F	1917307.26	6425841.43	63.39	N	66	12	16	W
3G	1917412.92	6425779.86	122.29	N	30	13	59	W
3H	1917532.26	6425671.22	161.38	N	42	18	38	W
3I	1917627.50	6426006.03	348.09	N	74	7	13	E
3J	1916988.86	6426301.92	703.86	S	24	51	34	E
3K	1916797.84	6426511.92	283.88	S	47	42	31	E
3L	1916540.64	6426337.15	310.96	S	34	11	53	W
3M	1916627.70	6426200.87	161.71	N	57	25	48	W
3A	1916682.42	6426213.13	319.04	S	16	9	37	W

Basin 4								
Point	Northing(Y)	Easting(X)	Distance (ft)	Bearing				
					Deg	Min	Sec	
4A	1916379.85	6424976.82						
4B	1916905.84	6425298.63	616.62	N	31	27	35	E
4C	1916901.75	6425735.86	437.24	S	89	27	53	E
4D	1917415.84	6425740.66	514.11	N	0	32	7	E
4E	1917062.70	6425971.91	422.12	S	33	13	6	E
4F	1916759.60	6426087.81	324.50	S	20	55	36	E
4G	1916653.41	6426117.16	110.17	S	15	26	56	E
4H	1916528.61	6426301.90	222.95	S	55	57	29	E
4I	1916445.62	6426223.92	113.88	S	43	13	1	W
4A	1916379.85	6424976.82	1,248.84	S	86	58	53	W

GALVANIZED STEEL PICKET FENCE COORDINATES				
Point	Northing	Easting	Distance(ft)	Remarks
1	1917843.86	6426636.09	--	Begin Fence
2	1917847.76	6426650.79	15.00	Fence Post
3	1917822.34	6426672.57	34.00	Fence Post
4-6	See Sh. 43 for Coordinates and Distances			
7	1917545.87	6426910.50	326.00	Fence Post
8-10	See Sh. 43 for Coordinates and Distances			
11	1917311.20	6427114.94	273.00	Fence Post
12-14	See Sh. 43 for Coordinates and Distances			
15	1916778.52	6427378.94	564.00	Fence Post
16	1916509.67	6427415.29	271.00	Fence Post
17	1916491.04	6427415.03	19.00	Fence Post
18	1916478.21	6427394.60	24.00	Fence Post
19	1916432.10	6426472.07	924.00	Fence Post
20-22	See Sh. 43 for Coordinates and Distances			
23	1916354.39	6424902.69	1535.00	End Fence

GALVANIZED STEEL PICKET FENCE COORDINATES				
Point	Northing	Easting	Distance(ft)	Remarks
24	1917585.13	6427480.93	--	Begin Fence
25	1917347.40	6427480.98	359.00	Fence Post
26	1917351.92	6427184.39	28.00	Fence Post
27	1917365.35	6427171.10	19.00	Fence Post
28-30	See Sh. 43 for Coordinates and Distances			
31	1917631.35	6426939.22	319.00	Fence Post
32-33	See Sh. 43 for Coordinates and Distances			
34	1917673.07	6426934.91	9.00	End Fence

FENCE CURVE DATA

△C= 32°17'43"
R = 1000.00'
T = 289.53'
L = 563.66'
BC = (14)
EC = (15)
PI = N 1917064.31
E 6427332.87

NOTES:

1. FOR TYPICAL GALVANIZED STEEL PICKET FENCE DETAILS, SEE SH. 42.

LEGEND

(16) FENCE COORDINATE

[4G] CENTERLINE TIES

PT# 109

NAD 83 CA ZONE 5 EPOCH 2007.0
NGVD 1929, LA CITY 1970 ADJ.

FD. SM. SPK & W MARKED "PSOMAS"
PER FC 3376-119
N 1917261.8219
E 6427099.1803
EL. 946.09

DATE	MARK	DESCRIPTION

REVISIONS

RAFAEL G. PIAMONTE — REGISTERED PROFESSIONAL ENGINEER — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

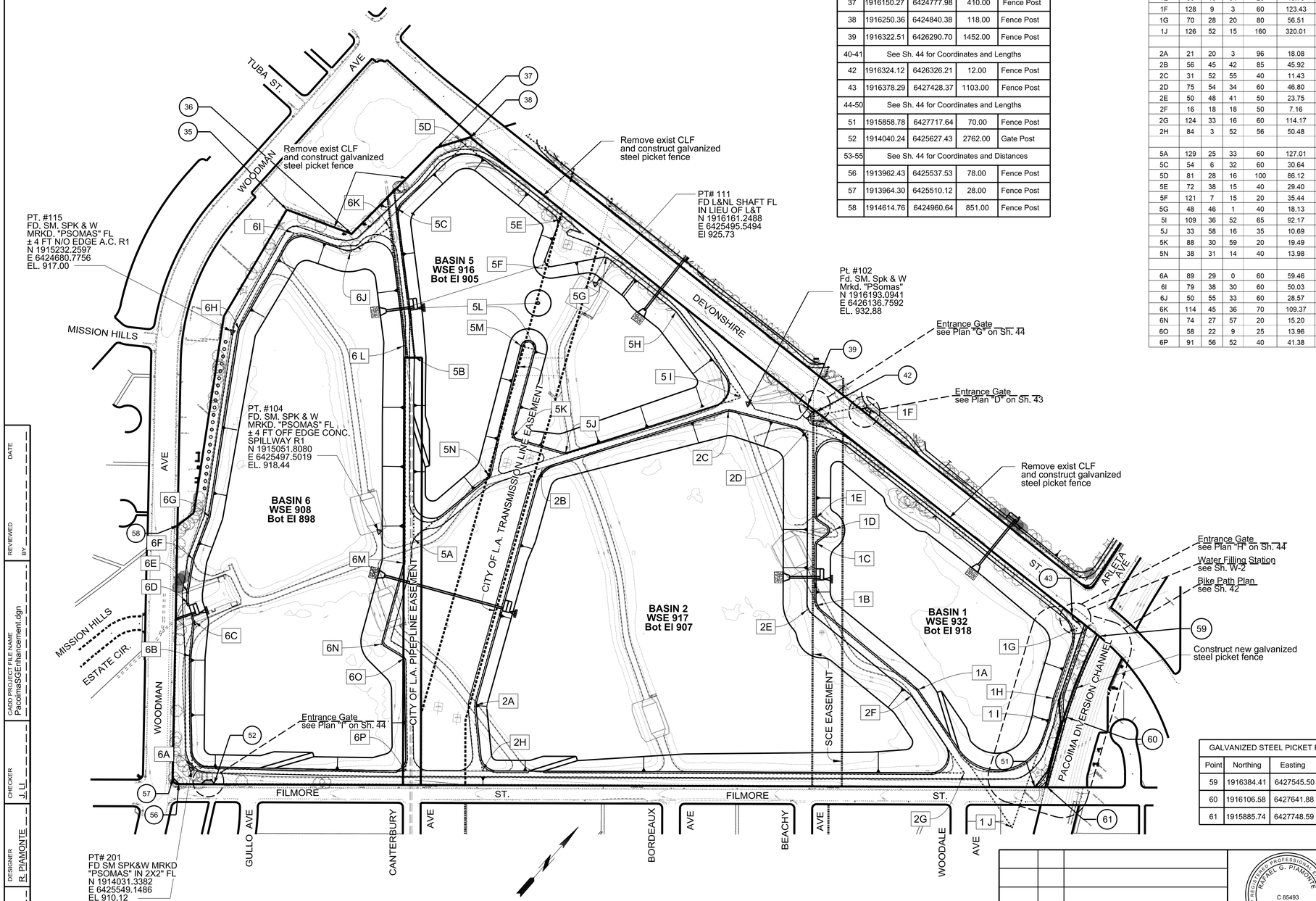
EMBANKMENT CENTERLINE TIES AND GALVANIZED STEEL PICKET FENCE COORDINATES

DWG 21-D114.6 | PD 052980 | SHEET 6 OF 72

FIS-DF 07-05

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

11/19/2020 2:10:11 PM pw:\\pwedmsprod01.dpw.co.la.ca.us:PW_INT2\Documents\DEPARTMENT PROJECTS (PW)\FCC\FCC0001207 - Pacoima Spreading Grounds Basin Enhancement Proj\DES Drainage\4-CAD\FCC0001207 - PACOIMA SG IMPROVEMENTS.dgn



GALVANIZED STEEL PICKET FENCE COORDINATES				
Point	Northing	Easting	Distance(ft)	Remarks
35	1915658.57	6424535.33	--	Begin Fence
36	1915741.22	6424840.38	233.00	Fence Post
37	1916150.27	6424777.98	410.00	Fence Post
38	1916250.36	6424840.38	118.00	Fence Post
39	1916322.51	6426290.70	1452.00	Fence Post
40-41	See Sh. 44 for Coordinates and Lengths			
42	1916324.12	6426326.21	12.00	Fence Post
43	1916378.29	6427428.37	1103.00	Fence Post
44-50	See Sh. 44 for Coordinates and Lengths			
51	1915858.78	6427717.64	70.00	Fence Post
52	1914040.24	6425627.43	2762.00	Gate Post
53-55	See Sh. 44 for Coordinates and Distances			
56	1913962.43	6425537.53	78.00	Fence Post
57	1913964.30	6425510.12	28.00	Fence Post
58	1914614.76	6424960.64	851.00	Fence Post

TOP OF LEVEE CURVE DATA						
PI	Deg	Min	Sec	Radius (ft)	Tangent (ft)	Arc Length (ft)
1A	16	18	18	50	7.16	14.23
1B	50	48	41	50	23.75	44.34
1C	53	35	26	20	10.10	18.71
1D	109	54	20	20	28.51	38.36
1E	56	18	54	20	10.70	19.66
1F	128	9	3	60	123.43	134.20
1G	70	28	20	80	56.51	98.40
1J	126	52	15	160	320.01	354.29
2A	21	20	3	96	18.08	35.75
2B	56	45	42	85	45.92	84.21
2C	31	52	55	40	11.43	22.26
2D	75	54	34	60	46.80	79.49
2E	50	48	41	50	23.75	44.34
2F	16	18	18	50	7.16	14.23
2G	124	33	16	60	114.17	130.43
2H	84	3	52	56	50.48	82.16
5A	129	25	33	60	127.01	135.53
5C	54	6	32	60	30.64	56.66
5D	81	28	16	100	86.12	142.19
5E	72	38	15	40	29.40	50.71
5F	121	7	15	20	35.44	42.28
5G	48	46	1	40	18.13	34.05
5I	109	36	52	65	92.17	124.35
5J	33	58	16	35	10.69	20.75
5K	88	30	59	20	19.49	30.90
5N	38	31	14	40	13.98	26.89
6A	89	29	0	60	59.46	93.71
6I	79	38	30	60	50.03	83.40
6J	50	55	33	60	28.57	53.33
6K	114	45	36	70	109.37	140.21
6N	74	27	57	20	15.20	25.99
6O	58	22	9	25	13.96	25.47
6P	91	56	52	40	41.38	64.19

BASIN 1							
Point	Northing (Y)	Easting (X)	Distance (ft)	Bearing			
					Deg	Min	Sec	
1A	1915846.22	6427203.82						
1B	1915827.48	6426778.08	426.16	S	87	28	49	W
1C	1915991.01	6426619.55	227.76	N	44	6	37	W
1D	1916063.51	6426635.68	74.27	N	12	32	50	E
1E	1916054.31	6426564.44	71.84	S	82	38	30	W
1F	1916299.06	6426351.35	324.51	N	41	2	36	W
1G	1916299.06	6426351.35	0.00	N	90	0	0	E
1H	1916124.23	6427566.08	1227.24	S	81	48	36	E
1I	1916058.61	6427603.98	75.78	S	30	0	11	E
1J	1915705.57	6427749.63	381.91	S	22	25	13	E
1A	1915846.22	6427203.82	563.65	N	75	32	58	W
BASIN 2								
Point	Northing (Y)	Easting (X)	Distance (ft)	Bearing			
					Deg	Min	Sec	
2A	1914822.82	6426116.03						
2B	1915565.68	6425760.16	823.70	N	25	35	48	W
2C	1916131.76	6426102.52	661.56	N	31	9	55	E
2D	1916256.78	6426348.39	275.83	N	63	2	50	E
2E	1915801.34	6426744.90	603.86	S	41	2	36	E
2F	1915816.10	6427200.50	455.83	N	88	8	43	E
2G	1915737.22	6427506.59	316.10	S	75	32	58	E
2H	1914670.37	6426279.12	1626.30	S	49	0	17	W
2A	1914822.82	6426116.03	223.25	N	46	55	50	W
BASIN 5								
Point	Northing (Y)	Easting (X)	Distance (ft)	Bearing			
					Deg	Min	Sec	
5A	1915107.67	6425587.28						
5B	1915569.03	6425185.77	611.61	N	41	1	55	W
5C	1915907.46	6424811.74	504.41	N	47	51	41	W
5D	1916220.91	6424842.10	314.92	N	5	31	55	E
5E	1916242.26	6425250.06	408.52	N	87	0	11	E
5F	1916077.02	6425311.38	176.25	S	20	21	34	E
5G	1916250.65	6425449.59	221.91	N	38	31	10	E
5H	1916266.43	6425748.85	299.68	N	86	58	53	E
5I	1916193.69	6426104.91	363.42	S	78	27	11	E
5J	1915661.71	6425783.18	621.71	S	31	9	55	W
5K	1915582.61	6425612.48	188.13	S	65	8	11	W
5L	1915857.05	6425476.56	306.25	N	26	20	50	W
5M	1915834.65	6425431.94	49.94	S	63	20	43	W
5N	1915433.72	6425641.13	452.22	S	27	33	17	E
5A	1915107.67	6425587.28	330.47	S	9	22	40	W
BASIN 6								
Point	Northing (Y)	Easting (X)	Distance (ft)	Bearing			
					Deg	Min	Sec	
6A	1914035.51	6425533.26						
6B	1914311.75	6425285.38	371.15	N	41	54	10	W
6C	1914408.44	6425215.85	119.10	N	35	43	13	W
6D	1914440.24	6425161.22	63.20	N	59	47	39	W
6E	1914466.90	6425136.66	36.25	N	42	39	10	W
6F	1914563.60	6425076.54	113.86	N	31	52	17	W
6G	1914707.64	6425023.83	153.38	N	20	5	52	W
6H	1915247.92	6424981.42	639.64	N	32	21	56	W
6I	1915615.58	6424602.88	375.95	N	12	3	31	W
6J	1915692.74	6424789.93	202.34	N	67	34	59	E
6K	1915841.97	6424834.58	155.76	N	16	39	27	E
6L	1915573.85	6425134.04	401.95	S	48	9	38	E
6M	1915022.01	6425617.08	733.39	S	41	11	47	E
6N	1914766.58	6425741.03	283.91	S	25	53	8	E
6O	1914782.91	6425830.42	90.87	N	79	38	55	E
6P	1914499.44	6426085.49	381.11	S	41	58	55	E
6A	1914035.51	6425533.26	721.25	S	49	57	56	W

NOTE:

1. FOR TYPICAL GALVANIZED STEEL PICKET FENCE DETAILS, SEE SH. 42.

LEGEND

(13) FENCE COORDINATE

4G CENTERLINE TIES

GALVANIZED STEEL PICKET FENCE COORDINATES				
Point	Northing	Easting	Distance(ft)	Remarks
59	1916384.41	6427545.50	--	Begin Fence
60	1916106.58	6427641.88	295.00	Fence Post
61	1915885.74	6427748.59	245.00	Fence Post

PT# 102

NAD 83 CA ZONE 5 EPOCH 2007.0
NGVD 1929, LA CITY 1970 ADJ.

FD. SM. SPK & W MRKD. "PSOMAS"
PER FC 3376-120
N 1916193.0941
E 6426136.7592
EL. 932.88

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

DATE	MARK	DESCRIPTION
		REVISIONS

RECISTERED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

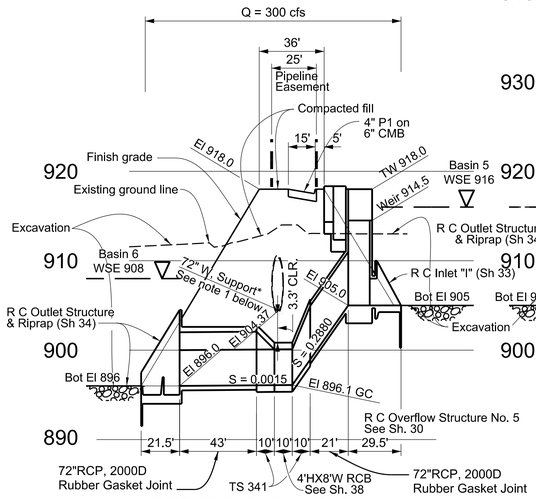
BASIN ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

EMBANKMENT CENTERLINE TIES AND GALVANIZED STEEL PICKET FENCE COORDINATES

DWG 21-D114.7 | PD 052980 | SHEET 7 OF 72

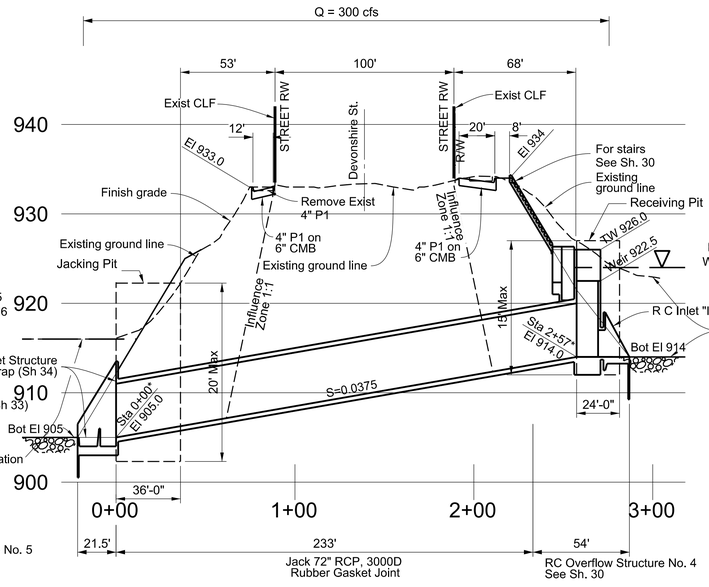
PS-DF 07-05



PROFILE P4-P4 (SH.5)

BASIN 5 TO BASIN 6

SCALES: HOR: 1"=40' VERT: 1"=8'

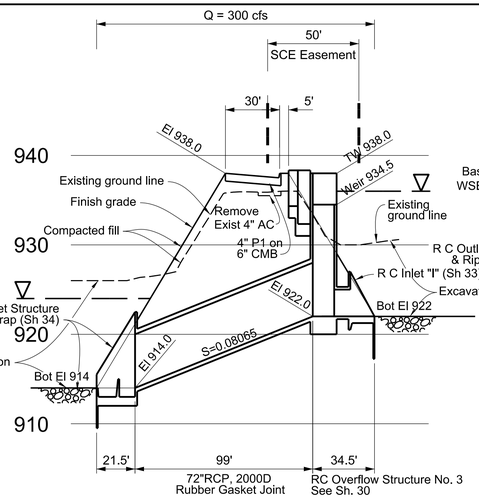


PROFILE P3-P3 (SH.5)

BASIN 4 TO BASIN 5

SCALES: HOR: 1"=40' VERT: 1"=8'

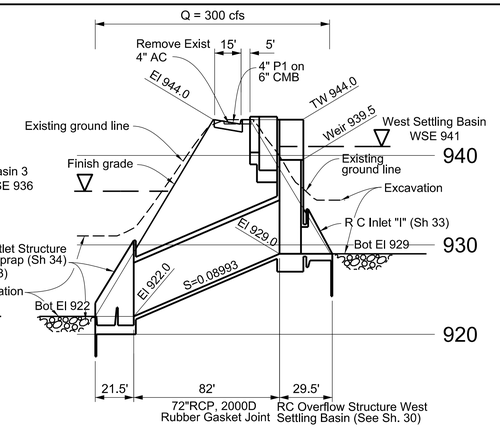
*Stationing references to Jacking Plans, Plan J



PROFILE P2-P2 (SH.5)

BASIN 3 TO BASIN 4

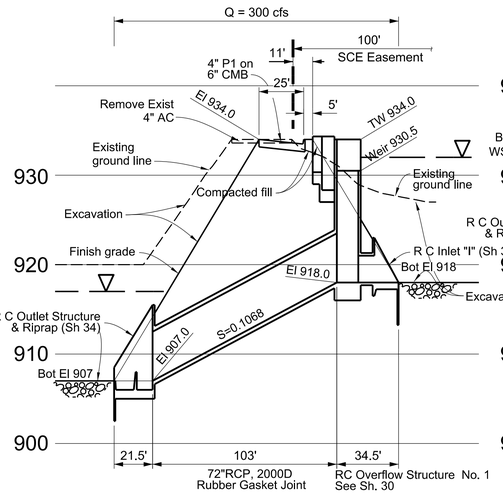
SCALES: HOR: 1"=40' VERT: 1"=8'



PROFILE P1-P1 (SH.5)

WEST SETTLING BASIN TO BASIN 3

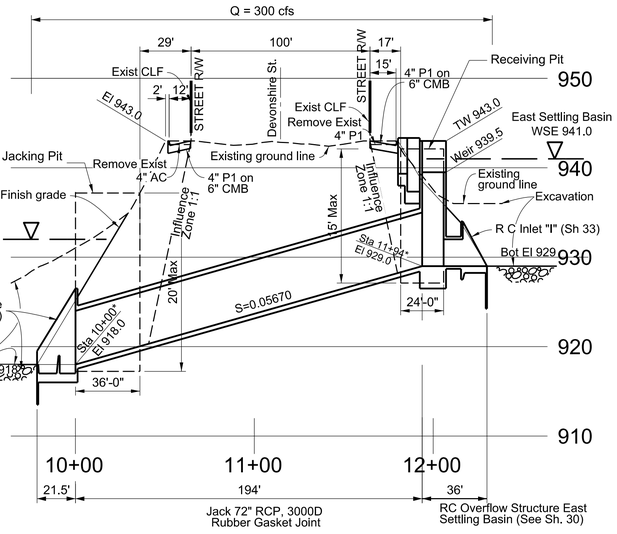
SCALES: HOR: 1"=40' VERT: 1"=8'



PROFILE P6-P6 (SH.5)

BASIN 1 TO BASIN 2

SCALES: HOR: 1"=40' VERT: 1"=8'

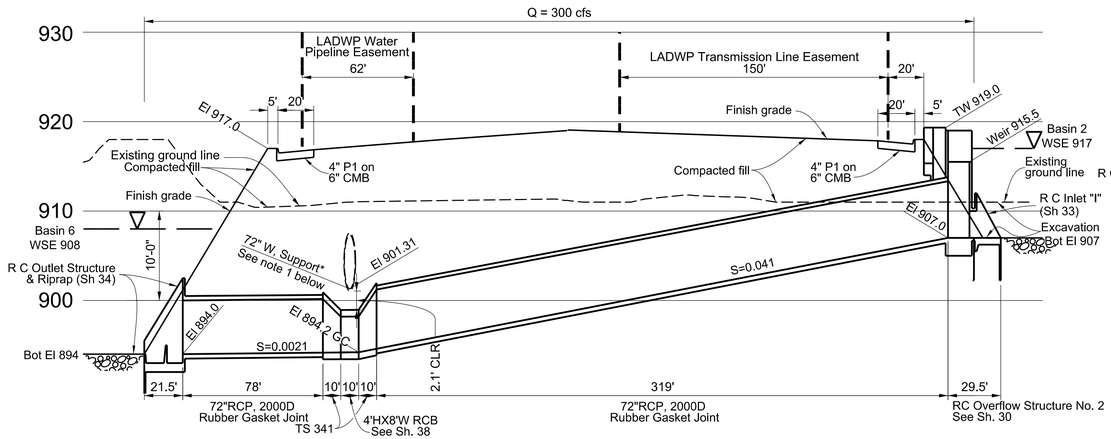


PROFILE P5-P5 (SH.5)

EAST SETTLING BASIN TO BASIN 1

SCALES: HOR: 1"=40' VERT: 1"=8'

*Stationing references to Jacking Plans, Plan J



PROFILE P7-P7 (SH.5)

BASIN 2 TO BASIN 6

SCALES: HOR: 1"=40' VERT: 1"=8'

*GENERAL NOTES:

1. THE CONTRACTOR SHALL SUBMIT A TEMPORARY SUPPORT DESIGN FOR THE 72" LADWP TRUNKLINE TO LADWP - WATER FOR REVIEW AND APPROVAL PRIOR TO ANY PRE-CONSTRUCTION ACTIVIITES. THE DESIGN AND CALCULATIONS MUST BE SIGNED AND STAMPED BY A REGISTERED CIVIL PE IN CA.
2. FOR TYPICAL INTERBASIN PIPE BEDDING SEE SH. 39.

DRAFTER	DESIGNER	CHECKER	CADD PROJECT FILE NAME	REVIEWED	DATE
R. PIAMONTE	R. PIAMONTE	J. LI	PacoimaSGEnhancement.dgn	BY	

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — RAFAEL G. PIAMONTE — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER — 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

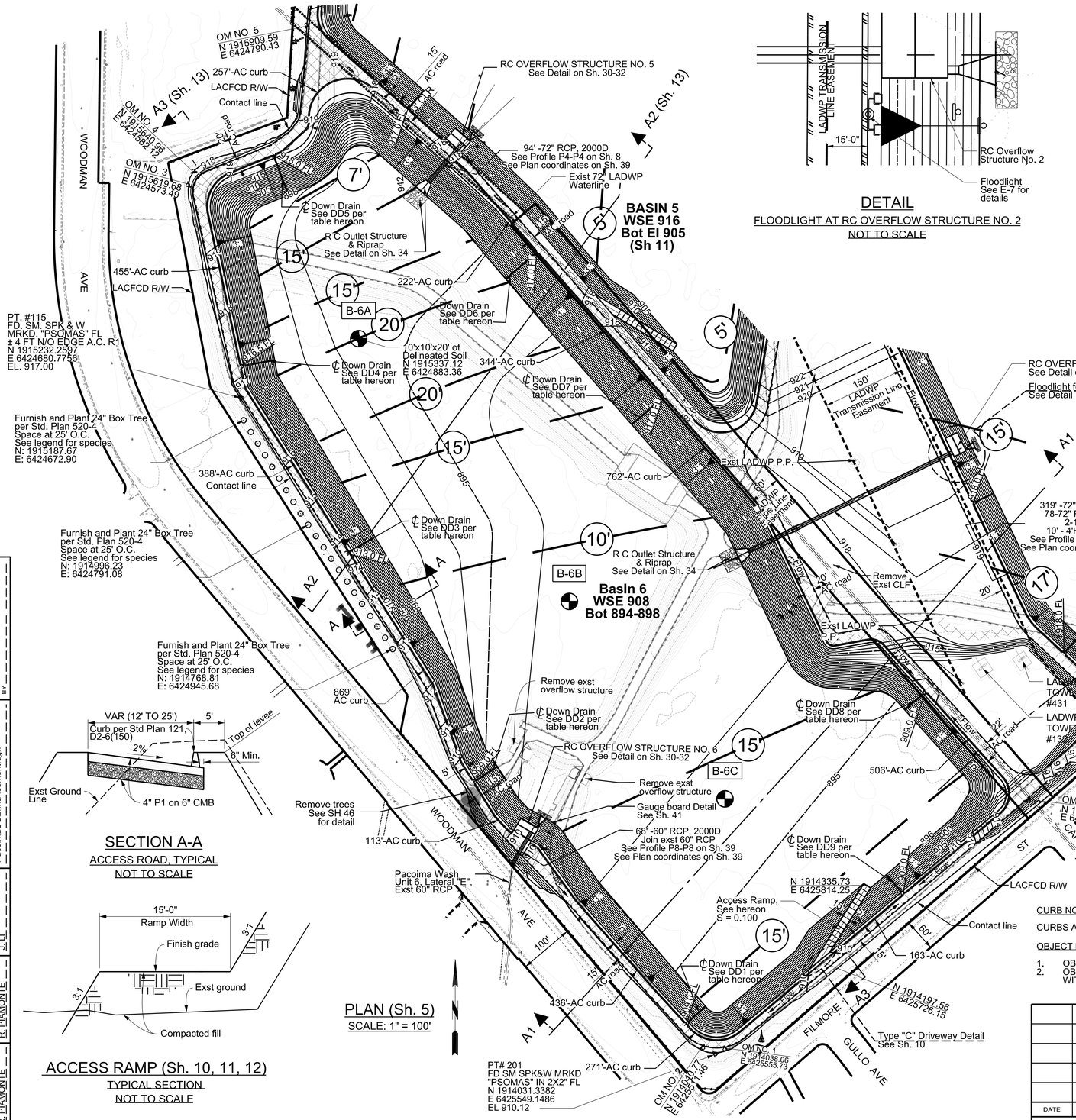
BASIN ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

PROFILE - BASIN TO BASIN CONDUITS 72" RCP

DWG 21-D114.8	PD 052980	SHEET 8 OF 72

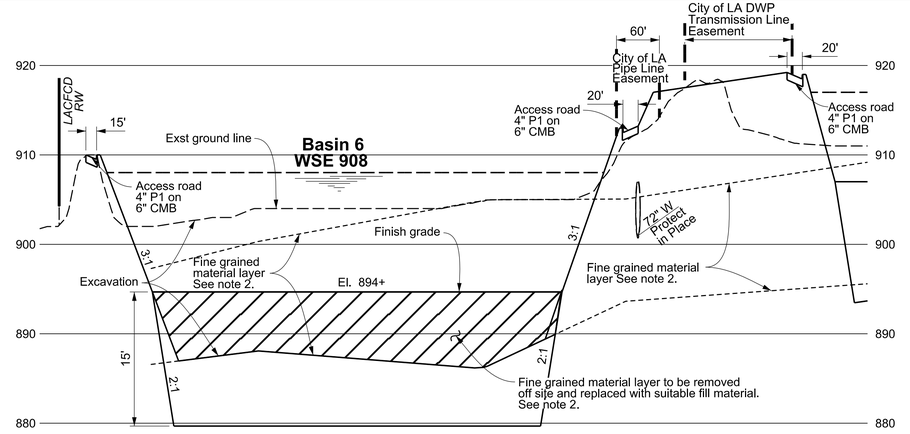
PS-DF 07/05



DETAIL

FLOODLIGHT AT RC OVERFLOW STRUCTURE NO. 2

NOT TO SCALE



SECTION A1-A1

SCALES: HOR: 1"=100'
VERT: 1"=8'

APPROXIMATE EXCAVATION AND HAUL	BASIN 6
Basin Fill (CY)	475,667
Excavation And Transportation of Material	
Fine Grained Material (TON)	531,581
Excess Material (TON)	2,629
Delineated (TON)	9,444

LEGEND

15' — FINE GRAINED MATERIAL REMOVAL CONTOUR DEPTH (APPROXIMATELY LOCATED) BELOW PROPOSED BASIN BOTTOM ELEVATION

B-6C — SOIL BORING LOCATION NOVEMBER 2015

BASEMAP SOURCE: PACOIMA SPREADING GROUNDS ENHANCEMENT PROJECT DRAWING DWG 21-D114.9

PROPOSED TREE SPECIES

COAST LIVE OAK (QUERCUS AGRIFOLIA)

CATALINA IRONWOOD (LYONOTHAMNUS FLORIBUNDUS)

NOTES:

1. EXCAVATION BELOW FINISH GRADE TO REMOVE FINE GRAINED MATERIAL LAYER SHALL BE 2:1 SLOPE.
2. EXACT DEPTH OF FINE GRAINED MATERIAL REMOVAL SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. INTERBEDDED, THIN TO THICKLY LAYERED FINE GRAINED SEDIMENTS ARE TO BE SEGREGATED FROM COARSE-GRAINED SEDIMENTS AND REMOVED.
4. DELINEATED SOIL SHALL ONLY BE TRANSPORTED TO SUNSHINE LANDFILL.

DOWN DRAIN TABLE FOR BASIN 6								
	Levee top		Levee Toe		Bearing			
ID	Northing(Y)	Easting(X)	Northing(Y)	Easting(X)	Deg	Min	Sec		Length (ft)
DD1	1,914,082.72	6,425,483.19	1,914,114.61	6,425,517.93	47	26	41	E	47
DD2	1,914,525.44	6,425,094.41	1,914,553.60	6,425,137.00	56	31	31	E	51
DD3	1,914,944.05	6,424,861.42	1,914,971.56	6,424,909.17	60	3	22	E	55
DD4	1,915,286.53	6,424,668.07	1,915,298.03	6,424,729.37	79	22	18	E	62
DD5	1,915,672.43	6,424,727.60	1,915,607.04	6,424,752.27	20	39	55	E	70
DD6	1,915,495.72	6,425,209.18	1,915,446.29	6,425,152.72	48	48	13	W	75
DD7	1,915,230.48	6,425,441.24	1,915,179.77	6,425,383.30	48	48	13	W	77
DD8	1,914,690.05	6,425,920.70	1,914,657.98	6,425,883.02	49	35	48	W	49
DD9	1,914,320.37	6,425,880.11	1,914,355.56	6,425,848.93	41	32	40	W	47

NOTE: FOR DOWN DRAIN DETAILS, SEE SH. 39

SECTION A-A

ACCESS ROAD, TYPICAL

NOT TO SCALE

ACCESS RAMP (Sh. 10, 11, 12)

TYPICAL SECTION

NOT TO SCALE

CURB NOTE:

CURBS ARE LOCATED ON THE DOWN DRAIN SIDES AS SHOWN ON PLAN

OBJECT MARKER (OM) NOTES:

1. OBJECT MARKER SHALL BE INSTALLED PER CALTRANS STD. PLAN A73A TYPE L-1
2. OBJECT MARKERS SHALL BE INSTALLED ON THE EDGE OF THE ACCESS ROAD WITH RESPECT TO THE CENTERLINE.

PT# 115

NAD 83 CA ZONE 5 EPOCH 2007.0
NGVD 1929, LA CITY 1970 ADJ.

FD. SM. SPK & W MRKD. "PSOMAS" FL
± 4 FT N/O EDGE A.C. PER PER FC 3376-121
N 1915232.2597
E 6424680.7756
EL. 917.00

DATE	MARK	DESCRIPTION
		REVISIONS

RAFAEL G. PIAMONTE — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER — 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

EXCAVATION AND GRADING PLAN - BASIN 6

DWG 21-D114.9 | PD 052980 | SHEET 9 OF 72

DRAFTER R. PIAMONTE | DESIGNER R. PIAMONTE | CHECKER J. LI | CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn | REVIEWED BY | DATE

FS-EXF 07/05

1/5/2021 3:51:05 PM pw:\\pwedmsprod01.dpw.co.la.ca.us:PW_INT2\Documents\DEPARTMENT PROJECTS (PRW)\FCC\FCC0001207 - Pacoima Spreading Grounds Basin Enhancement Proj\DES Drainage\4-CAD\FCC0001207 - PACOIMA SG IMPROVEMENTS.dgn

PT# 102

NAD 83 CA ZONE 5 EPOCH 2007.0
NGVD 1929, LA CITY 1970 ADJ.

FD. SM. SPK & W MRKD. "PSOMAS"
PER FC 3376-120
N 1916193.0941
E 6426136.7592
EL. 932.88

BASIN 5
WSE 916
Bot El 905
(Sh 11)

APPROXIMATE EXCAVATION AND HAUL	BASIN 1 & 2
Basin Fill (CY)	628,692
Excavation And Transportation of Material	
Fine Grained Material (TON)	761,835
Excess Material (TON)	34,324
Delineated (TON)	12,625

LEGEND

B-2F — SOIL BORING LOCATION NOVEMBER 2015

15' — FINE GRAINED MATERIAL REMOVAL CONTOUR DEPTH (APPROXIMATELY LOCATED) BELOW PROPOSED BASIN BOTTOM ELEVATION

NOTES:

1. EXCAVATION BELOW FINISH GRADE TO REMOVE FINE GRAINED MATERIAL LAYER SHALL BE 2:1 SLOPE.
2. EXACT DEPTH OF FINE GRAINED MATERIAL REMOVAL SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. INTERBEDDED, THIN TO THICKLY LAYERED FINE GRAINED SEDIMENTS ARE TO BE SEGREGATED FROM COARSE-GRAINED SEDIMENTS AND REMOVED.
4. DELINEATED SOIL SHALL ONLY BE TRANSPORTED TO SUNSHINE LANDFILL.

EAST SETTLING BASIN
WSE 941
Bot El 929-931
(Sh 12)

LADWP TOWER #432
LADWP TOWER #131
LADWP TOWER #132
LADWP TOWER #431
Exst LADWP P.P.
Exst 72" DWP Water Line
Floodlight. See E-7 for details
R C Outlet Structure & Riprap See Detail on Sh. 34
AC road
CITY OF LADWP TRANSMISSION LINE EASEMENT
CITY OF L.A. DWP PIPELINE EASEMENT
LACFCD R/W
FILMORE ST
CANTERBURY AVE
DEVONSHIRE AVE
BEACHY AVE
BORDEAUX AVE
WOODALE AVE
ARLETA AVE
STREET R/W
PACOIMA DIVERSION CHANNEL
Flow
Contact line
Exst Tower
Exst SCE Tower
Exst SCE P.P.
OM NO 9 N 1916255.24 E 6426343.50
OM NO 10 N 1915919.19 E 6427674.83
OM NO 11 N 1915888.18 E 6427262.02
OM NO 12 N 1916368.95 E 6427473.25
525'-AC curb
335'-AC curb
674'-AC curb
350'-AC curb
409'-AC curb
320'-AC curb
317'-AC curb
646'-AC curb
784' - AC curb
313'-AC curb
378'-AC curb
712'-AC curb
565' - AC curb
194'-AC curb
38'-AC curb
Pt. #102 Fd. SM. Spk & W Mrkd. "PSomas" N 1916193.0941 E 6426136.7592 EL. 932.88
10' x 10' x 15' of Delineated Soil N 1915395.53 E 6425873.42
10' x 10' x 15' of Delineated Soil N 1916054.25 E 6427031.49
10' x 10' x 15' of Delineated Soil N 1915949.33 E 6427407.40
305'-72" RCP, 2000D
78'-72" RCP, 2000D
2-10' - TS
10' - 4'H X8'W RCB
See Profile P7-P7 on Sh. 8
See Plan coordinates on Sh. 39
RC OVERFLOW STRUCTURE NO. 2 See Detail on Sh. 30-32
RC OVERFLOW STRUCTURE NO. 1 See Detail on Sh. 30-32
RC OVERFLOW STRUCTURE EAST S.B. See Detail on Sh. 30-32
Receiving Pit, 24' x 20' See Plan J for details
194' -72" RCP, 2000D See Profile P5-P5 on Sh. 8 See Plan Coordinates on Sh. 39
103' -72" RCP, 2000D See Profile P6-P6 on Sh. 8 See Plan coordinates on Sh. 39
Gauge Board Detail See Sh. 41
Jacking Pit 36' x 20' See Plan J
Water Filling Station See W-2
Bike Path See Sh. 42
Access Ramp, See Sh. 9 S = 0.100
Access ramp ℄ Top of Levee
50' Entrance Width
Flow line
AC curb Mountable per Std Plan 121 D2-6 (150)
TYPE "C" DRIVEWAY DETAIL
NOT TO SCALE
Top of levee
SECTION J-J
NOT TO SCALE
℄ Down Drain See DD1 per table hereon
℄ Down Drain See DD2 per table hereon
℄ Down Drain See DD3 per table hereon
℄ Down Drain See DD4 per table hereon
℄ Down Drain See DD5 per table hereon
℄ Down Drain See DD6 per table hereon
℄ Down Drain See DD8 per table hereon
℄ Down Drain See DD9 per table hereon
℄ Down Drain See DD10 per table hereon
℄ Down Drain See DD11 per table hereon
℄ Down Drain See DD12 per table hereon
℄ Down Drain See DD13 per table hereon
B-1A, B-1B, B-1C, B-2A, B-2B, B-2C, B-2D, B-2E, B-2F
Basin 1 WSE 932 Bot 918
Basin 2 WSE 917 Bot 907
Basin 6 WSE 908 Bot 898 (Sh. 9)
Access Ramp, See Sh. 9 S = 0.100
100' SCE EASEMENT
A4 (See Hereon)
A5 (Sh. 13)
A6 (Sh. 14)
Type "C" Driveway Detail See hereon

DOWN DRAIN TABLE FOR BASIN 1

	Levee top		Levee Toe	
ID	Northing(Y)	Easting(X)	Northing(Y)	Easting(X)
DD8	1,916,020.87	6,427,624.95	1,915,995.31	6,427,569.18
DD9	1,915,748.06	6,427,069.04	1,915,801.04	6,427,067.58
DD10	1,915,928.29	6,426,667.53	1,915,963.09	6,426,707.50
DD11	1,916,159.31	6,426,466.39	1,916,194.11	6,426,506.37
DD12	1,916,320.76	6,426,539.70	1,916,254.11	6,426,543.24
DD13	1,916,356.93	6,427,258.79	1,916,280.47	6,427,262.85

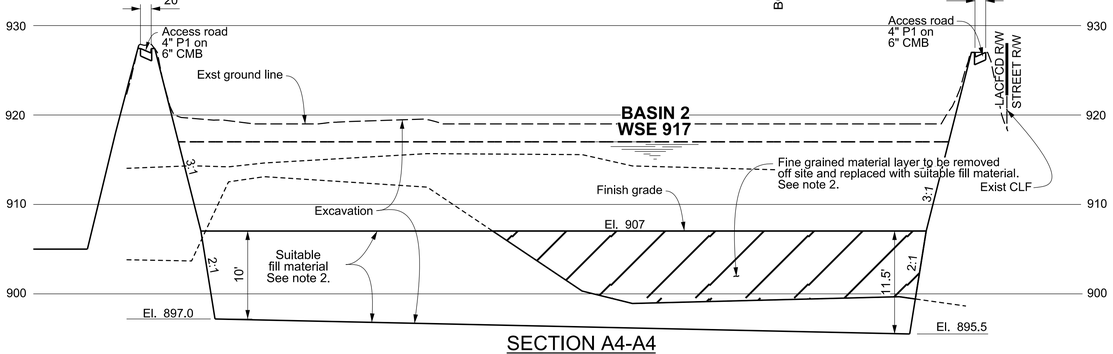
DOWN DRAIN TABLE FOR BASIN 1

ID		Deg	Min	Sec		Length
DD8	S	65	22	22	W	61
DD9	N	1	34	46	W	53
DD10	N	48	57	24	E	53
DD11	N	48	57	24	E	53
DD12	S	3	2	18	E	67
DD13	S	3	2	18	E	77

DOWN DRAIN TABLE FOR BASIN 2

	Levee Top		Levee Toe	Bearing					
ID	Northing(Y)	Easting(X)	Northing(Y)	Easting(X)		Deg	Min	Sec		Length
DD1	1,914,761.63	6,426,174.17	1,914,791.58	6,426,202.17	N	43	4	10	E	41
DD2	1,915,036.17	6,426,008.28	1,915,053.89	6,426,045.25	N	64	24	12	E	41
DD3	1,915,653.83	6,425,807.63	1,915,626.34	6,425,853.08	S	58	50	5	E	53
DD4	1,915,947.13	6,425,985.02	1,915,907.66	6,426,050.29	S	58	50	5	E	76
DD5	1,915,229.65	6,426,930.23	1,915,279.96	6,426,885.23	N	41	48	35	W	67
DD6	1,914,746.85	6,426,367.11	1,914,774.02	6,426,343.49	N	40	59	43	W	36

NOTE: FOR DOWN DRAIN DETAILS, SEE SH. 39



SECTION A4-A4

SCALES: HOR: 1"=100' VERT: 1"=8'

PLAN
SCALE: 1" = 100'

CURB NOTE:

CURBS ARE LOCATED ON THE DOWN DRAIN SIDES AS SHOWN ON PLAN

OBJECT MARKER (OM) NOTES:

1. OBJECT MARKER SHALL BE INSTALLED PER CALTRANS STD. A73A
2. OBJECT MARKERS SHALL BE INSTALLED INLINE WITH THE CENTERLINE OF THE ACCESS ROAD.

DATE	MARK	DESCRIPTION
		REVISIONS

REGISTERED PROFESSIONAL ENGINEER — RAFAEL G. PIAMONTE — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

EXCAVATION AND GRADING PLAN - BASIN 1 & 2

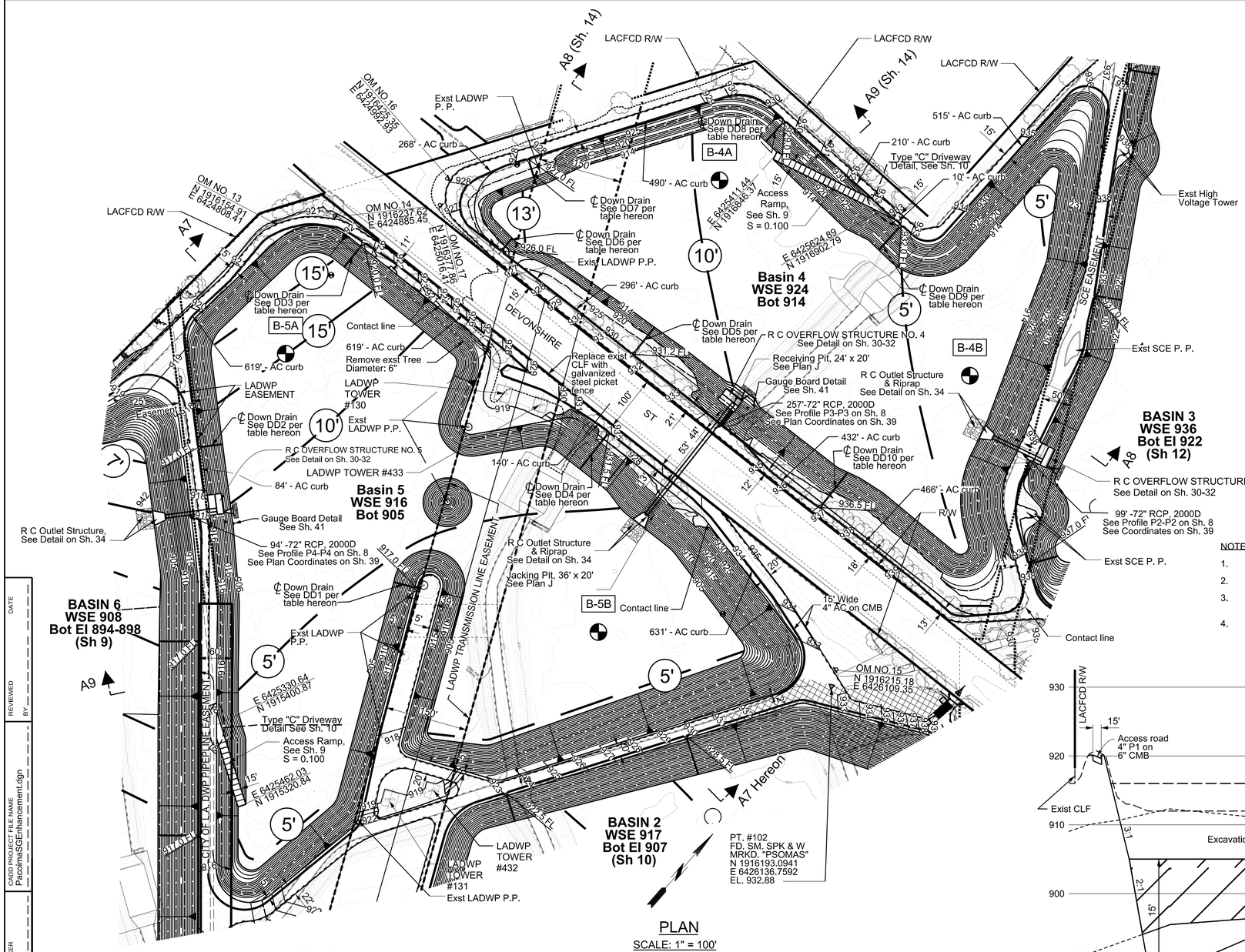
DWG 21-D114.10 | PD 052980 | SHEET 10 OF 72

DRAFTER R. PIAMONTE | DESIGNER R. PIAMONTE | CHECKER J. LI | REVIEWED BY | DATE

CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn

1/5/2021 3:51:25 PM pw:\\pwedmsprod01.dpw.co.la.ca.us:PW_INT2\Documents\DEPARTMENT PROJECTS (PW)\FCC\FCC0001207 - Pacoima Spreading Grounds Basin Enhancement Proj\DES Drainage\4-CAD\FCC0001207 - PACOIMA SG IMPROVEMENTS.dgn

PS-DF 07/05



PLAN

SCALE: 1" = 100'

SECTION A7-A7

SCALES: HOR: 1"=100' / VERT: 1"=8"

DOWN DRAIN TABLE FOR BASIN 4									
	Levee top		Levee Toe		Bearing				
ID	Northing(Y)	Easting(X)	Northing(Y)	Easting(X)		Deg	Min	Sec		Length (ft)
DD5	1,916,405.30	6,425,455.53	1,916,461.29	6,425,452.58	N	3	1	7	W	56
DD6	1,916,389.11	6,425,152.34	1,916,425.64	6,425,150.41	N	3	1	7	W	37
DD7	1,916,546.39	6,425,078.28	1,916,524.18	6,425,115.53	S	59	11	50	E	43
DD8	1,916,905.05	6,425,382.74	1,916,854.82	6,425,382.27	S	0	32	7	W	50
DD9	1,916,902.40	6,425,666.67	1,916,841.87	6,425,666.10	S	0	32	7	W	61
DD10	1,916,419.49	6,425,894.12	1,916,494.54	6,425,890.16	N	3	1	7	W	75

DOWN DRAIN TABLE FOR BASIN 5									
	Levee top		Levee Toe		Bearing				
ID	Northing(Y)	Easting(X)	Northing(Y)	Easting(X)		Deg	Min	Sec		Length (ft)
DD1	1,915,827.37	6,425,441.18	1,915,807.84	6,425,401.75	S	63	39	11	W	44.00
DD2	1,915,757.97	6,424,973.64	1,915,790.97	6,425,002.74	N	41	24	42	E	44.00
DD3	1,916,235.40	6,424,954.37	1,916,178.94	6,424,956.67	S	2	19	56	E	56.51
DD4	1,916,270.84	6,425,515.88	1,916,185.05	6,425,520.40	S	3	1	7	E	85.91

NOTE: FOR DOWN DRAIN DETAILS, SEE SH. 39

APPROXIMATE EXCAVATION AND HAUL	BASIN 4 & 5
Basin Fill (CY)	906,008
Excavation And Transportation of Material	
Fine Grained Material (TON)	565,686
Excess Material (TON)	-93,786
Delineated (TON)	0

LEGEND

15' — FINE GRAINED MATERIAL REMOVAL CONTOUR DEPTH (APPROXIMATELY LOCATED) BELOW PROPOSED BASIN BOTTOM ELEVATION

B-5B — SOIL BORING LOCATION NOVEMBER 2015

BASEMAP SOURCE: PACOIMA SPREADING GROUNDS ENHANCEMENT PROJECT DRAWING DWG 21-D114.11

NOTES:

1. EXCAVATION BELOW FINISH GRADE TO REMOVE FINE GRAINED MATERIAL LAYER SHALL BE 2:1 SLOPE.
2. EXACT DEPTH OF FINE GRAINED MATERIAL REMOVAL SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER
3. INTERBEDDED, THIN TO THICKLY LAYERED FINE GRAINED SEDIMENTS ARE TO BE SEGREGATED FROM COARSE-GRAINED SEDIMENTS AND REMOVED.
4. DELINEATED SOIL SHALL ONLY BE TRANSPORTED TO SUNSHINE LANDFILL.

CURB NOTE:

CURBS ARE LOCATED ON THE DOWN DRAIN SIDES AS SHOWN ON PLAN

OBJECT MARKER (OM) NOTES:

1. OBJECT MARKER SHALL BE INSTALLED PER CALTRANS STD. A73A
2. OBJECT MARKERS SHALL BE INSTALLED INLINE WITH THE CENTERLINE OF THE ACCESS ROAD.

PT# 102

NAD 83 CA ZONE 5 EPOCH 2007.0
NGVD 1929, LA CITY 1970 ADJ.

FD. SM. SPK & W MRKD. "PSOMAS"
PER FC 3376-120
N 1916193.0941
E 6426136.7592
EL. 932.88

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — RAFAEL G. PIAMONTE — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER — 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

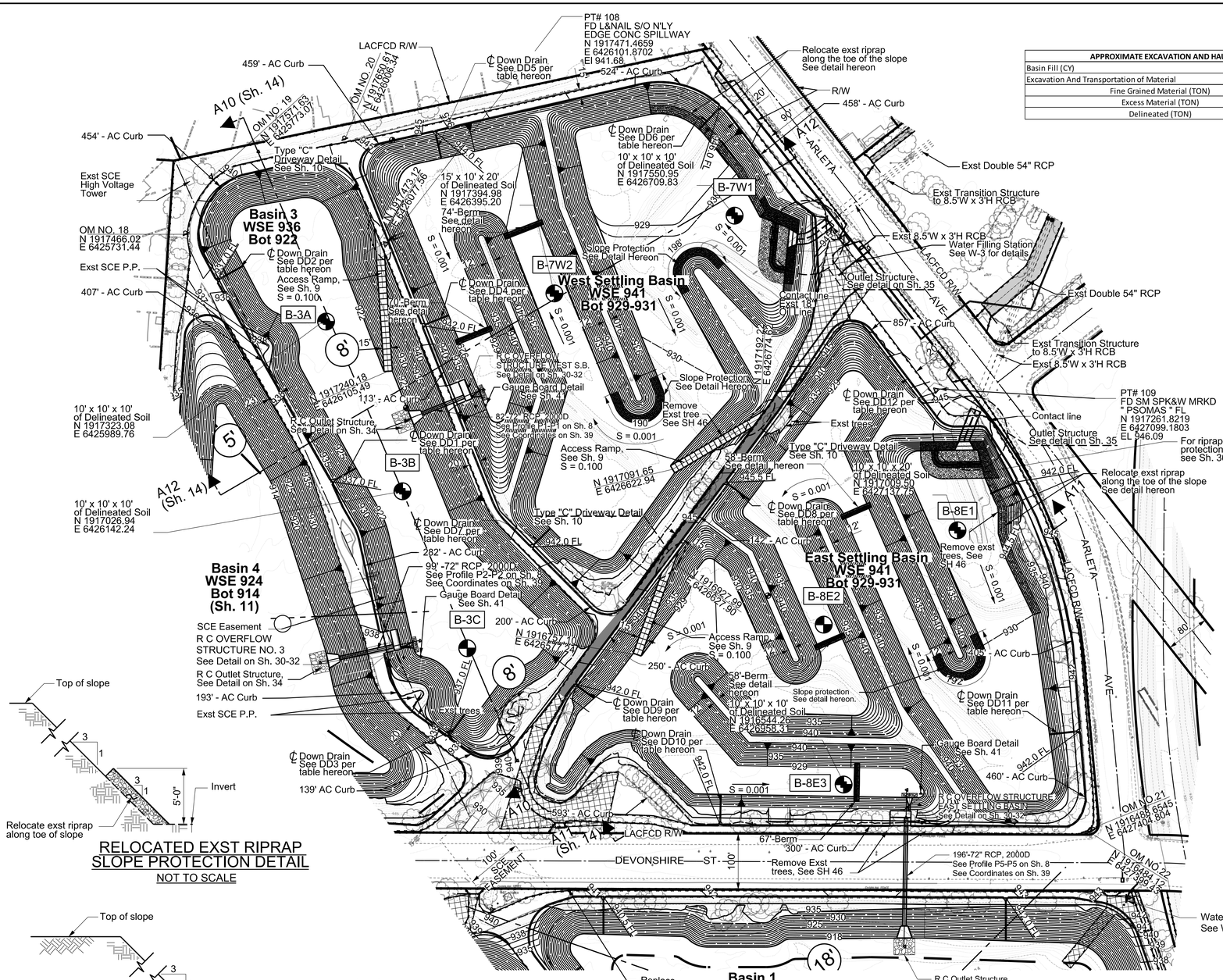
EXCAVATION AND GRADING PLAN - BASIN 4 & 5

DWG 21-D114.11 | PD 052980 | SHEET 11 OF 72

DRAFTER R. PIAMONTE | DESIGNER R. PIAMONTE | CHECKER J. LI | CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn | REVIEWED BY | DATE

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APPROXIMATE EXCAVATION AND HAUL	BASIN 3, WEST S.B & EAST S.B.
Basin Fill (CY)	75,585
Excavation And Transportation of Material	
Fine Grained Material (TON)	54,012
Excess Material (TON)	198,597
Delineated (TON)	24,833

LEGEND

8' — FINE GRAINED MATERIAL REMOVAL CONTOUR DEPTH (APPROXIMATELY LOCATED) BELOW PROPOSED BASIN BOTTOM ELEVATION

B-8E3 — SOIL BORING LOCATION NOVEMBER AND DECEMBER 2015

BASEMAP SOURCE: PACOIMA SPREADING GROUNDS ENHANCEMENT PROJECT DRAWING DWG 21-D114.12

NOTES:

1. EXCAVATION BELOW FINISH GRADE TO REMOVE FINE GRAINED MATERIAL LAYER SHALL BE 2:1 SLOPE.
2. EXACT DEPTH OF FINE GRAINED MATERIAL REMOVAL SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. INTERBEDDED, THIN TO THICKLY LAYERED FINE GRAINED SEDIMENTS ARE TO BE SEGREGATED FROM COARSE-GRAINED SEDIMENTS AND REMOVED.
4. DELINEATED SOIL SHALL ONLY BE TRANSPORTED TO SUNSHINE LANDFILL.

DOWN DRAIN TABLE FOR BASIN 3

	Levee top		Levee Toe		Bearing				
ID	Northing(Y)	Easting(X)	Northing(Y)	Easting(X)		Deg	Min	Sec		Length (ft)
DD1	1,917,037.43	6,426,015.08	1,917,063.93	6,426,057.14	N	57	47	11	E	50
DD2	1,917,386.52	6,425,791.11	1,917,415.20	6,425,836.64	N	57	47	18	E	54
DD3	1,916,592.22	6,426,247.11	1,916,636.63	6,426,276.05	N	33	5	16	E	53

DOWN DRAIN TABLE FOR West Settling Basin

	Levee top		Levee Toe		Bearing				
ID	Northing(Y)	Easting(X)	Northing(Y)	Easting(X)		Deg	Min	Sec		Length (ft)
DD4	1,917,327.01	6,426,167.30	1,917,345.92	6,426,208.13	N	65	8	26	E	45
DD5	1,917,673.21	6,426,166.72	1,917,625.61	6,426,180.26	S	15	52	47	E	49
DD6	1,917,744.68	6,426,674.53	1,917,702.15	6,426,638.87	S	39	58	59	W	56
DD7	1,916,943.46	6,426,381.56	1,916,974.53	6,426,409.82	N	42	17	29	E	42

DOWN DRAIN TABLE FOR East Settling Basin

	Levee top		Levee Toe		Bearing				
ID	Northing(Y)	Easting(X)	Northing(Y)	Easting(X)		Deg	Min	Sec		Length (ft)
DD8	1,917,074.28	6,426,717.60	1,917,046.49	6,426,759.87	S	56	40	24	E	51
DD9	1,916,698.36	6,426,468.71	1,916,670.83	6,426,510.58	S	56	40	24	E	50
DD10	1,916,460.69	6,426,741.42	1,916,517.99	6,426,739.72	N	1	41	32	W	57
DD11	1,916,661.99	6,427,374.84	1,916,653.36	6,427,321.03	S	80	52	52	W	55
DD12	1,917,057.21	6,427,266.67	1,917,033.33	6,427,218.83	S	63	28	34	W	53

NOTE: FOR DOWN DRAIN DETAILS, SEE SH. 39

OBJECT MARKER (OM) NOTES:

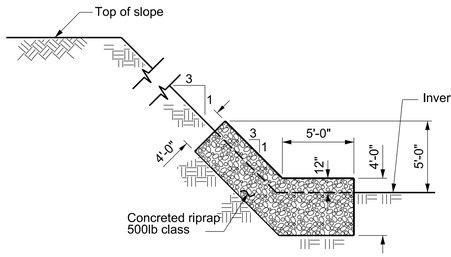
1. OBJECT MARKER SHALL BE INSTALLED PER CALTRANS STD. A73A
2. OBJECT MARKERS SHALL BE INSTALLED INLINE WITH THE CENTERLINE OF THE ACCESS ROAD.

PT# 109

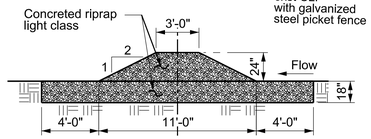
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NGVD 1929, LA CITY 1970 ADJ.

FD. SM. SPK & W MARKED "PSOMAS"
PER FC 3376-119
N 1917261.8219
E 6427099.1803
EL. 946.09

RELOCATED EXST RIPRAP SLOPE PROTECTION DETAIL
NOT TO SCALE



SLOPE PROTECTION DETAIL
NOT TO SCALE



BERM DETAIL
SCALE: 1"=5'

PLAN (Sh. 3)
SCALE: 1" = 100'

DATE	MARK	DESCRIPTION
		REVISIONS

RECTIFIED PROFESSIONAL ENGINEER
PAMEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER — 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

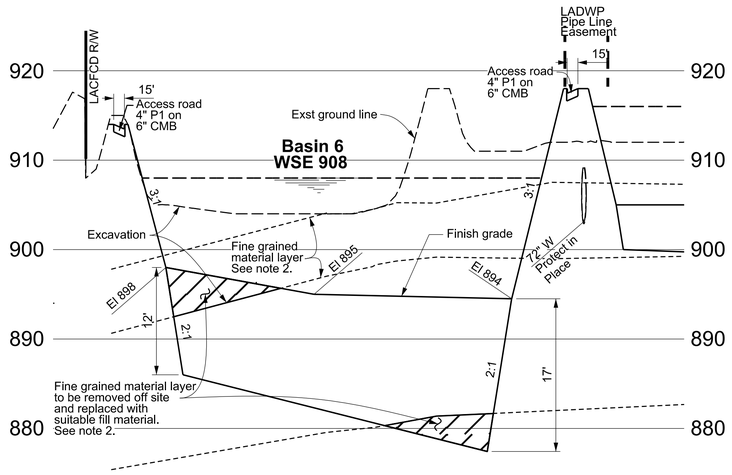
EXCAVATION AND GRADING PLAN -
BASIN 3, EAST & WEST SETTLING BASINS

DWG 21-D114.12 | PD 052980 | SHEET 12 OF 72

PS-DF 07/05

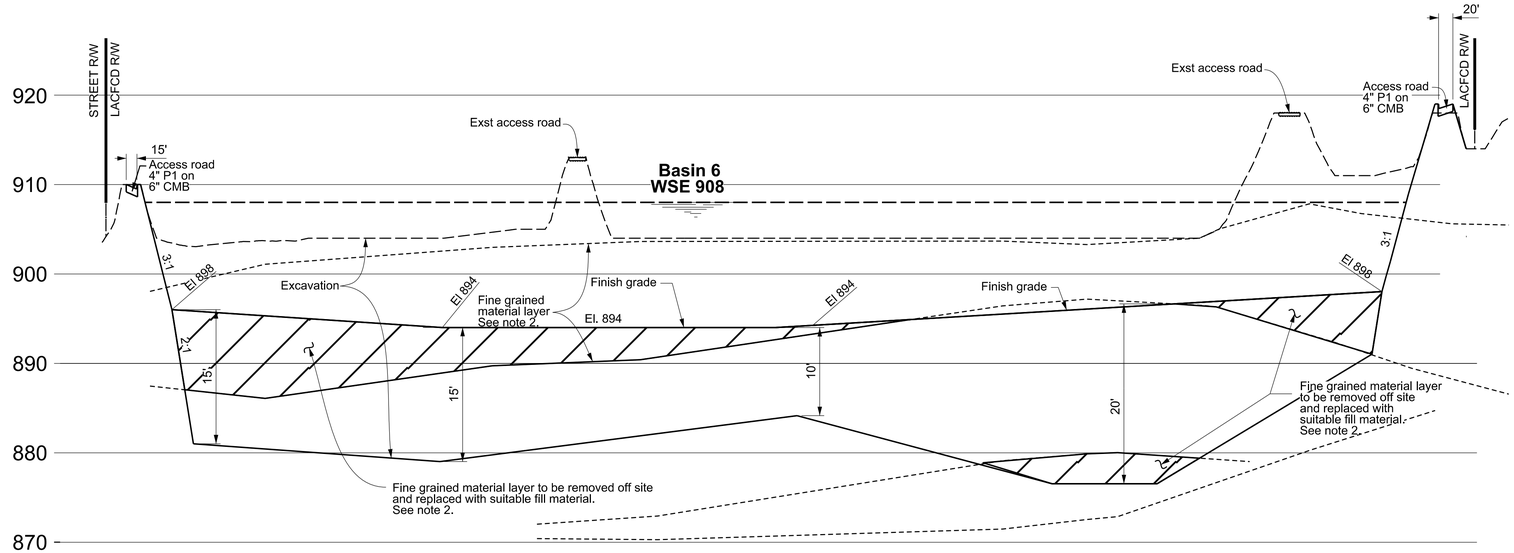
DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

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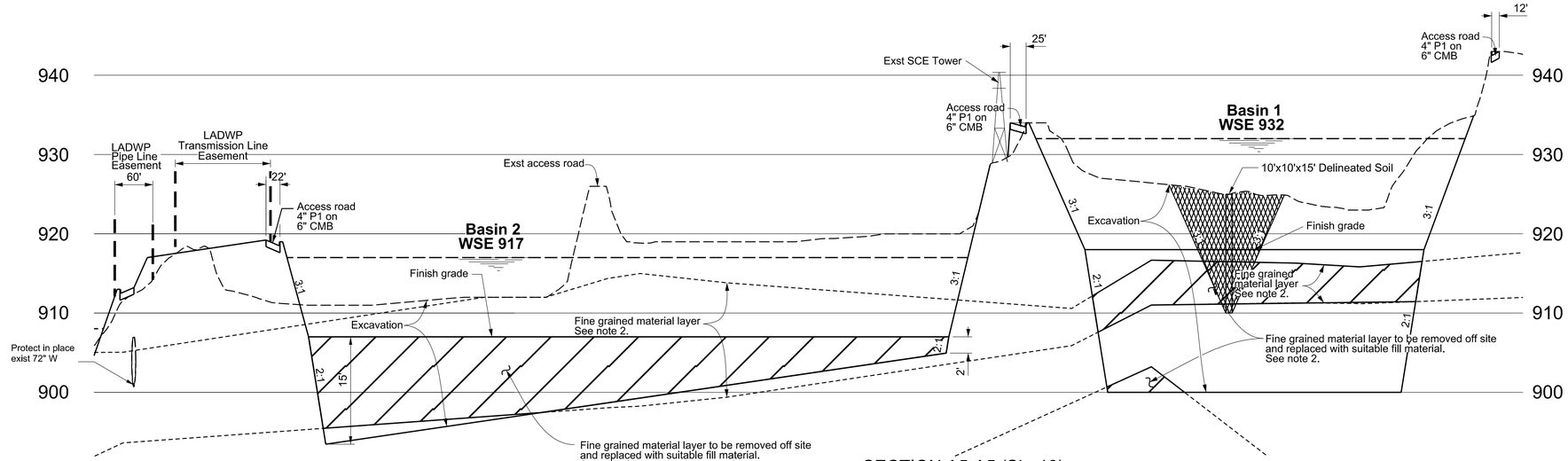
SECTION A2-A2 (Sh. 9)

SCALES: HOR: 1"=100'
VERT: 1"=8'



SECTION A3-A3 (Sh. 9)

SCALES: HOR: 1"=100'
VERT: 1"=8'



SECTION A5-A5 (Sh. 10)

SCALES: HOR: 1"=100'
VERT: 1"=8'

NOTES:

1. EXCAVATION BELOW FINISH GRADE TO REMOVE FINE GRAINED MATERIAL LAYER SHALL BE 2:1 SLOPE.
2. EXACT DEPTH OF FINE GRAINED MATERIAL REMOVAL SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER OR GEOLOGIST.
3. INTERBEDDED, THIN TO THICKLY LAYERED FINE GRAINED SEDIMENTS ARE TO BE SEGREGATED FROM COARSE-GRAINED SEDIMENTS AND REMOVED.
4. DELINEATED SOIL SHALL ONLY BE TRANSPORTED TO SUNSHINE LANDFILL.

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

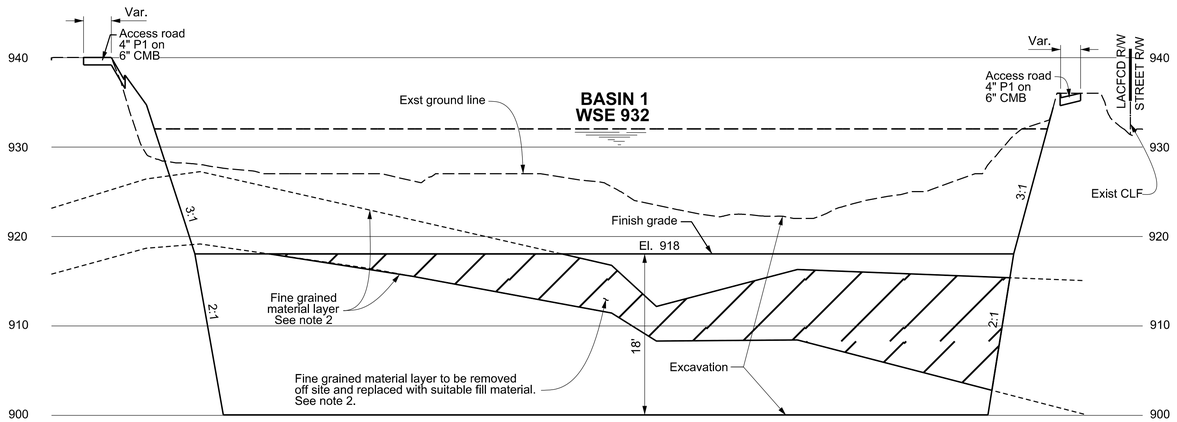
BASIN CROSS SECTIONS

DWG 21-D114.13 | PD 052980 | SHEET 13 OF 72

PS-DF 07/05

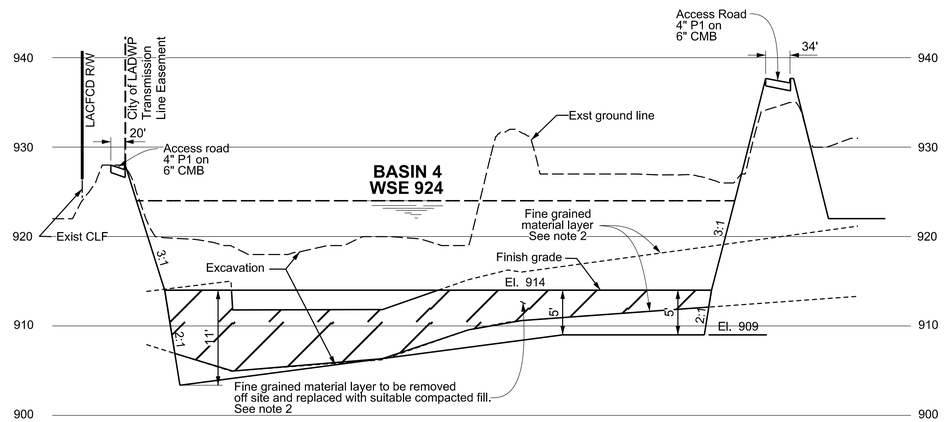
DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

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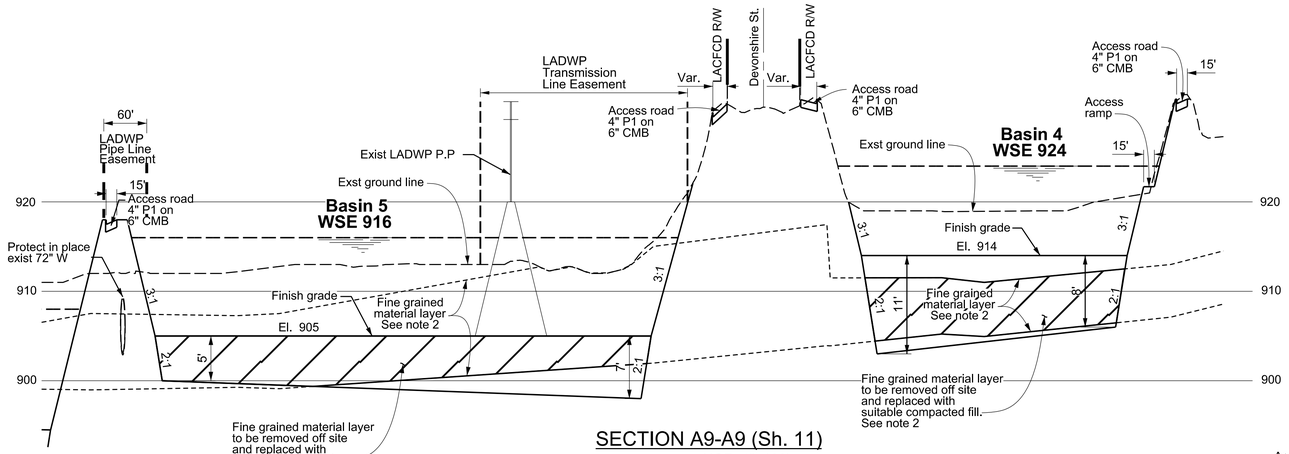
SECTION A6-A6 (Sh. 10)

SCALES: HOR: 1"=100'
VERT: 1"=8'



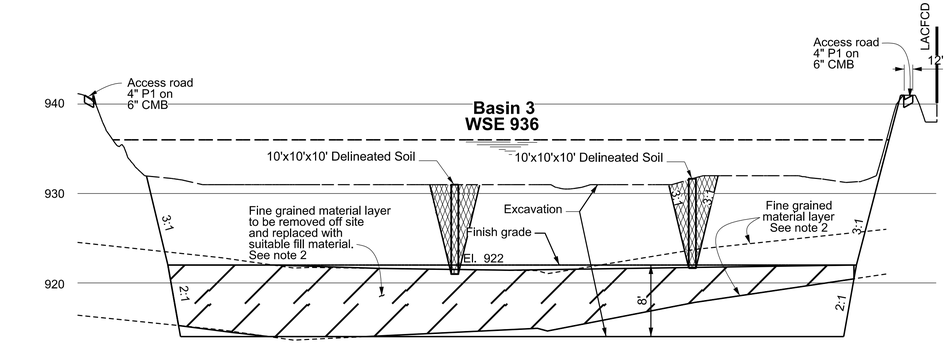
SECTION A8-A8 (Sh. 11)

SCALES: HOR: 1"=100'
VERT: 1"=8'



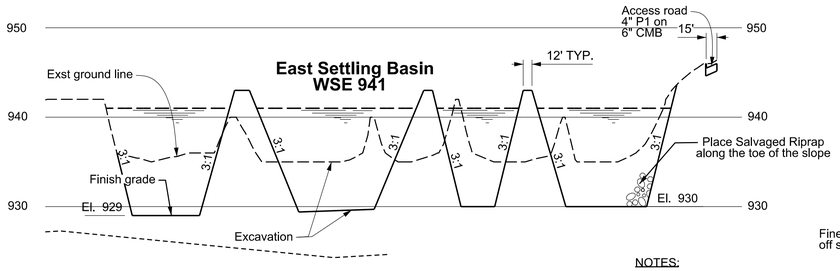
SECTION A9-A9 (Sh. 11)

SCALES: HOR: 1"=100'
VERT: 1"=8'



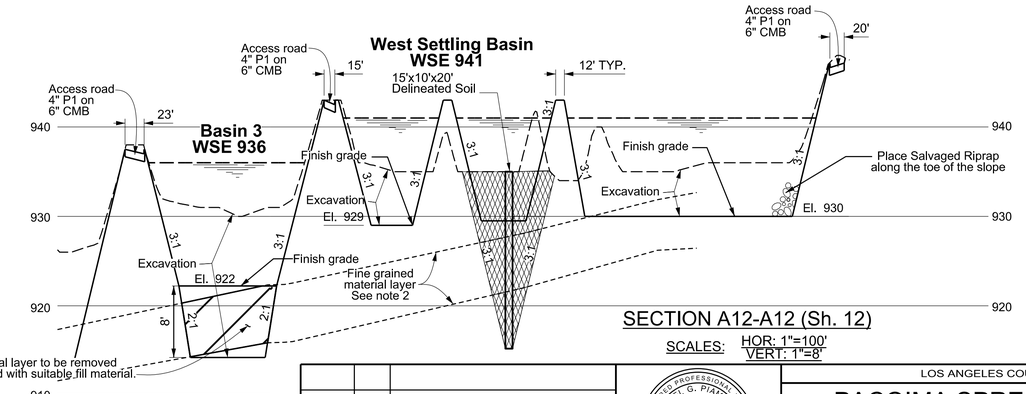
SECTION A10-A10 (Sh. 12)

SCALES: HOR: 1"=100'
VERT: 1"=8'



SECTION A11-A11 (Sh. 12)

SCALES: HOR: 1"=100'
VERT: 1"=8'



SECTION A12-A12 (Sh. 12)

SCALES: HOR: 1"=100'
VERT: 1"=8'

NOTES:

1. EXCAVATION BELOW FINISH GRADE TO REMOVE FINE GRAINED MATERIAL LAYER SHALL BE 2:1 SLOPE.
2. EXACT DEPTH OF FINE GRAINED MATERIAL REMOVAL SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER OR GEOLOGIST.
3. INTERBEDDED, THIN TO THICKLY LAYERED FINE GRAINED SEDIMENTS ARE TO BE SEGREGATED FROM COARSE-GRAINED SEDIMENTS AND REMOVED.
4. DELINEATED SOIL SHALL ONLY BE TRANSPORTED TO SUNSHINE LANDFILL.

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

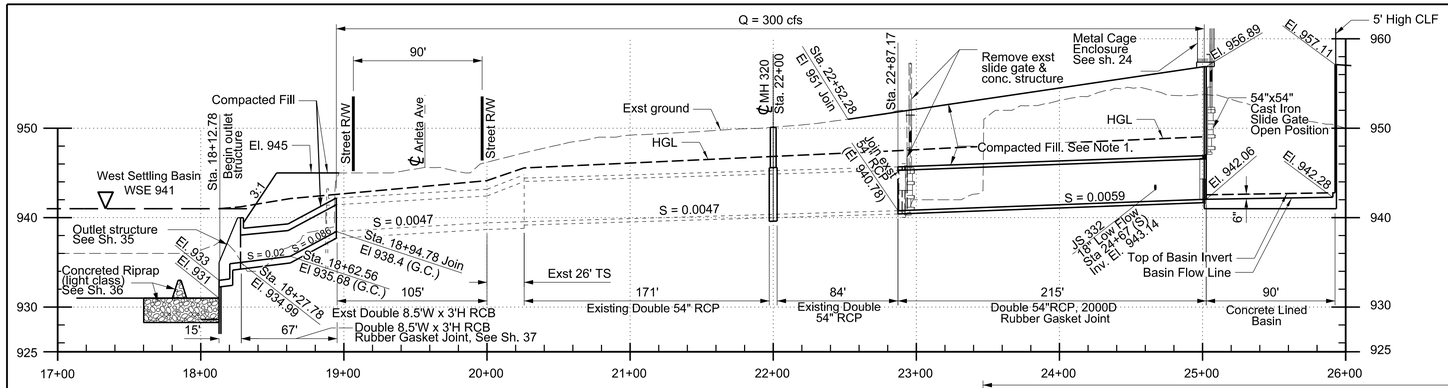
BASIN CROSS SECTIONS

DWG 21-D114.14 | PD 052980 | SHEET 14 OF 72

FS-DF 07/05

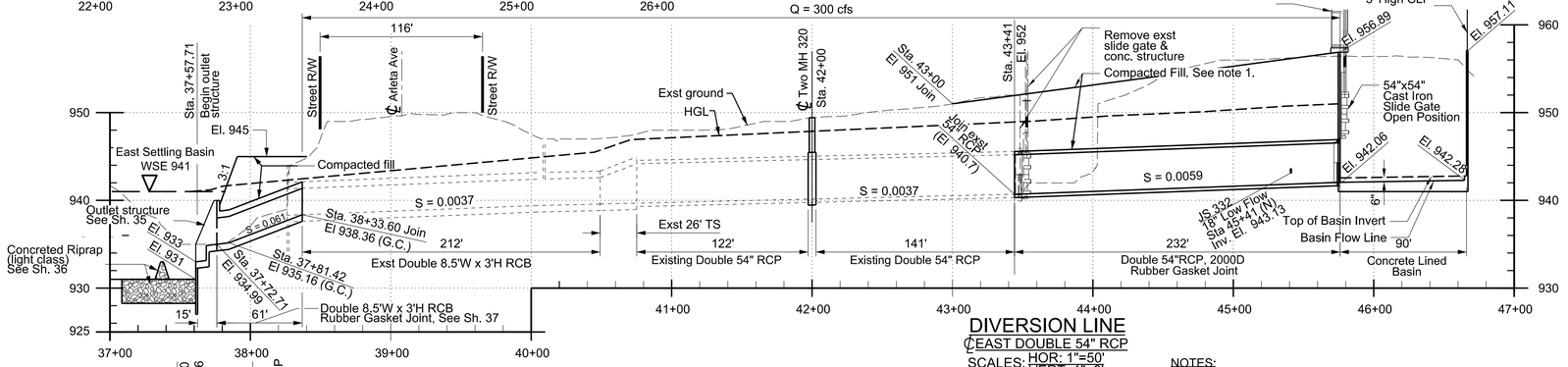
DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
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REVIEWED BY
DATE

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DIVERSION LINE
℄ WEST DOUBLE 54" RCP

SCALES: HOR: 1"=50'
VERT: 1"=8'



DIVERSION LINE
℄ EAST DOUBLE 54" RCP

SCALES: HOR: 1"=50'
VERT: 1"=8'



PLAN
DIVERSION LINE EAST & WEST
SCALE: 1"= 50'

NOTES:

1. Fills, including backfills, shall be in horizontal, uniform layers not to exceed six inches in thickness before compaction, then compacted to 90 percent relative compaction in accordance with the American Society for Testing and Materials, D1557. Approximated compacted fill in this location to be 8,716 CY.
2. Tree removal per sh. 46.
3. The contractor shall be required to remove the oil line per the special provisions Section EC. Once the section of oil line is removed, the two remaining openings shall be sealed with a bentonite plug and steel plates welded over the openings, or other approved means to seal off the oil line.

PT# 109

NAD 83 CA ZONE 5 EPOCH 2007.0
NGVD 1929, LA CITY 1970 ADJ.

FD. SM. SPK & W
MARKED "PSOMAS"
PER FC 3376-119
N 1917261.8219
E 6427099.1803
EL. 946.09

DRAFTER	DESIGNER	CHECKER	CADD PROJECT FILE NAME	REVIEWED	DATE
R. PIAMONTE	R. PIAMONTE	J. LI	PacoimaSGEnhancement.dgn	BY	

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER RAFAEL G. PIAMONTE C 85493 CIVIL STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

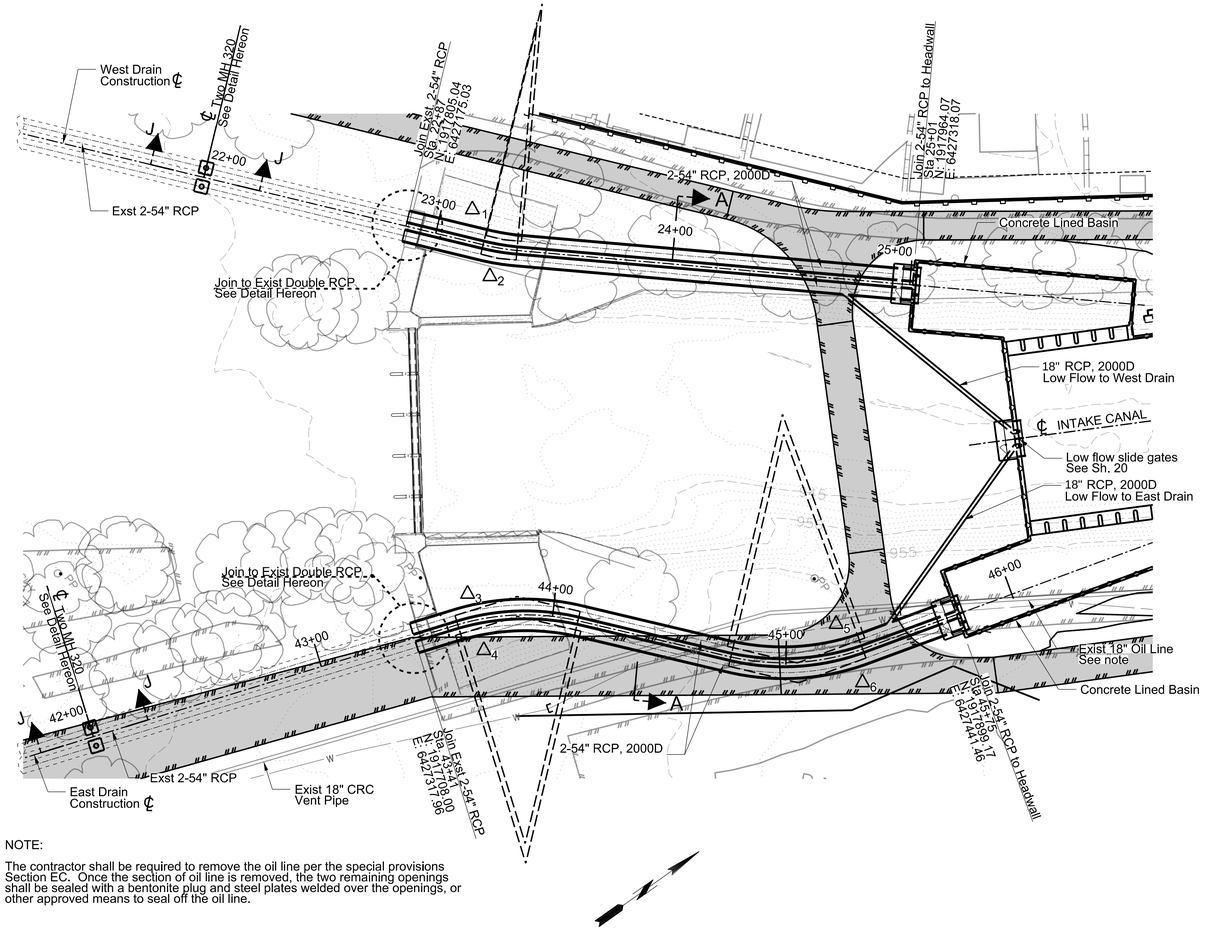
PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

DIVERSION LINE
PLAN AND PROFILE

DWG 21-D114.15 | PD 052980 | SHEET 15 OF 72

PS-DF 07/05



NOTE:

The contractor shall be required to remove the oil line per the special provisions Section EC. Once the section of oil line is removed, the two remaining openings shall be sealed with a bentonite plug and steel plates welded over the openings, or other approved means to seal off the oil line.

PIPE CURVE DETAIL "J", (Sh. 15)

SCALE: 1" = 30'

WEST/EAST DRAIN CONSTRUCTION ℄ CURVE DATA

CURVE	RADIUS	CENTRAL ANGLE	LENGTH	TANGENT	PI NORTHING*	PI EASTING*
1	100'	8°34'34"	14.97'	7.50'	1,917,832.06	6,427,206.01
2	100'	30°26'15"	53.12'	27.20'	1,917,750.93	6,427,332.11
3	100'	33°31'44"	58.52'	30.12'	1,917,830.67	6,427,423.20

54" RCP CURVE DATA

$\triangle_1$ = 08°36'25"
R = 100.00'
T = 07.52'
L = 15.02'
BC = 23+20.76 4.00' Lt Offset
EC = 23+36.39 4.00' Lt Offset
PI = N 1917835.14 E 6427203.38

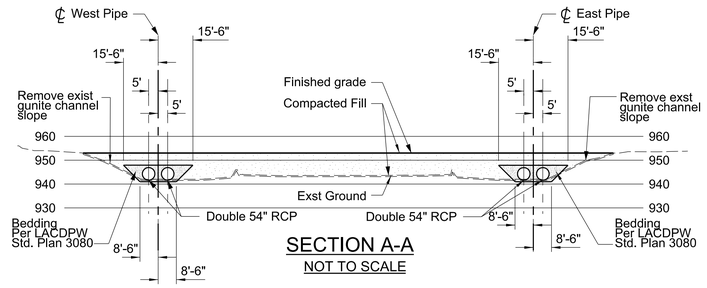
$\triangle_2$ = 08°36'25"
R = 100.00'
T = 07.52'
L = 15.02'
BC = 23+20.42 4.00' Rt Offset
EC = 23+34.87 4.00' Rt Offset
PI = N 1917828.79 E 6427208.47

$\triangle_3$ = 30°26'15"
R = 100.00'
T = 27.20'
L = 53.12'
BC = 43+59.81 4.00' Lt Offset
EC = 44+10.84 4.00' Lt Offset
PI = N 1917753.21 E 6427328.65

$\triangle_4$ = 30°26'15"
R = 100.00'
T = 27.20'
L = 53.12'
BC = 43+57.68 4.00' Rt Offset
EC = 44+12.98 4.00' Rt Offset
PI = N 1917748.64 E 6427335.57

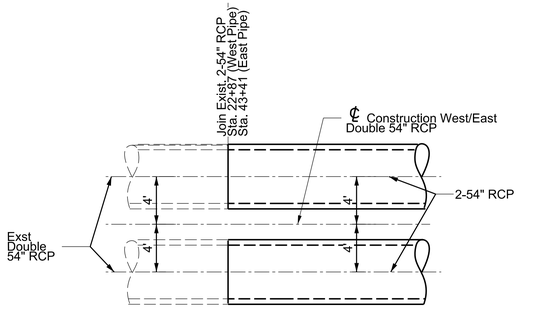
$\triangle_5$ = 33°31'44"
R = 100.00'
T = 30.14'
L = 58.51'
BC = 44+74.24 4.00' Lt Offset
EC = 45+35.17 4.00' Lt Offset
PI = N 1917832.94 E 6427419.37

$\triangle_6$ = 33°31'44"
R = 100.00'
T = 30.14'
L = 58.51'
BC = 44+76.61 4.00' Rt Offset
EC = 45+32.81 4.00' Rt Offset
PI = N 1917828.52 E 6427426.46



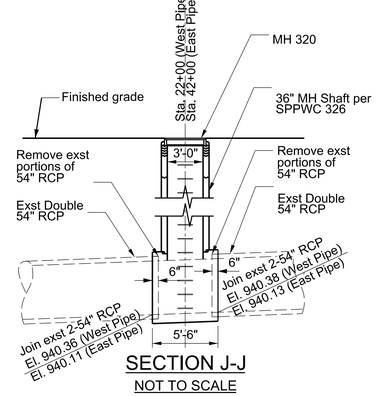
SECTION A-A

NOT TO SCALE



JOIN TO EXST WEST/EAST DRAIN DETAIL (SH. 15)

NOT TO SCALE



SECTION J-J

NOT TO SCALE

DATE	MARK	DESCRIPTION

REVISIONS

RICHARD G. PIAMONTE — REGISTERED PROFESSIONAL ENGINEER — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

PIPE CURVE DATA, PIPE BEDDING AND PIPE CONNECTION DETAIL

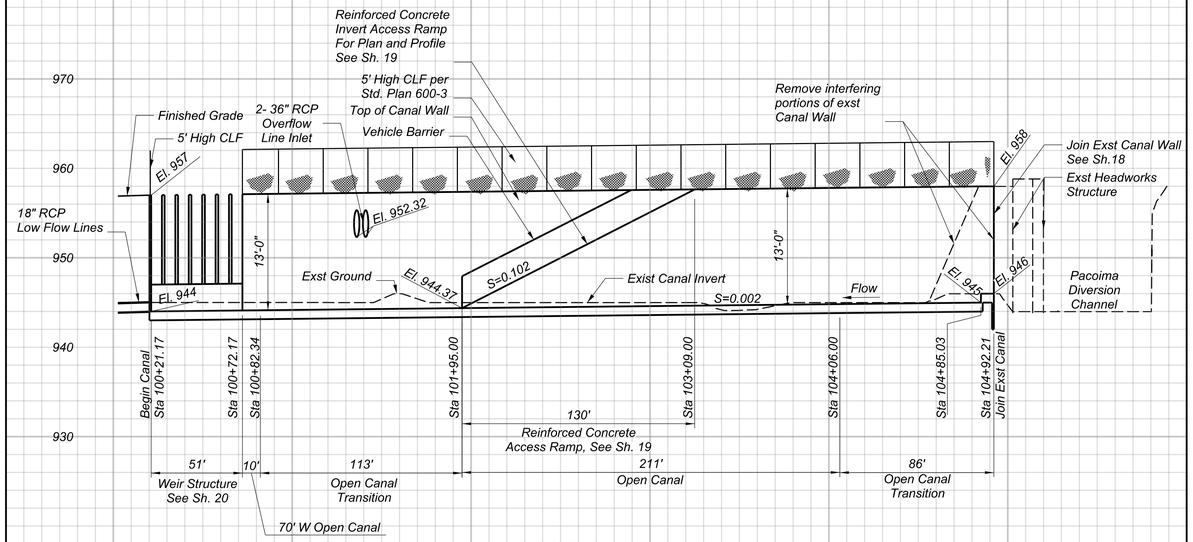
DWG 21-D114.16 | PD 052980 | SHEET 16 OF 72

PS-DF 07/05

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

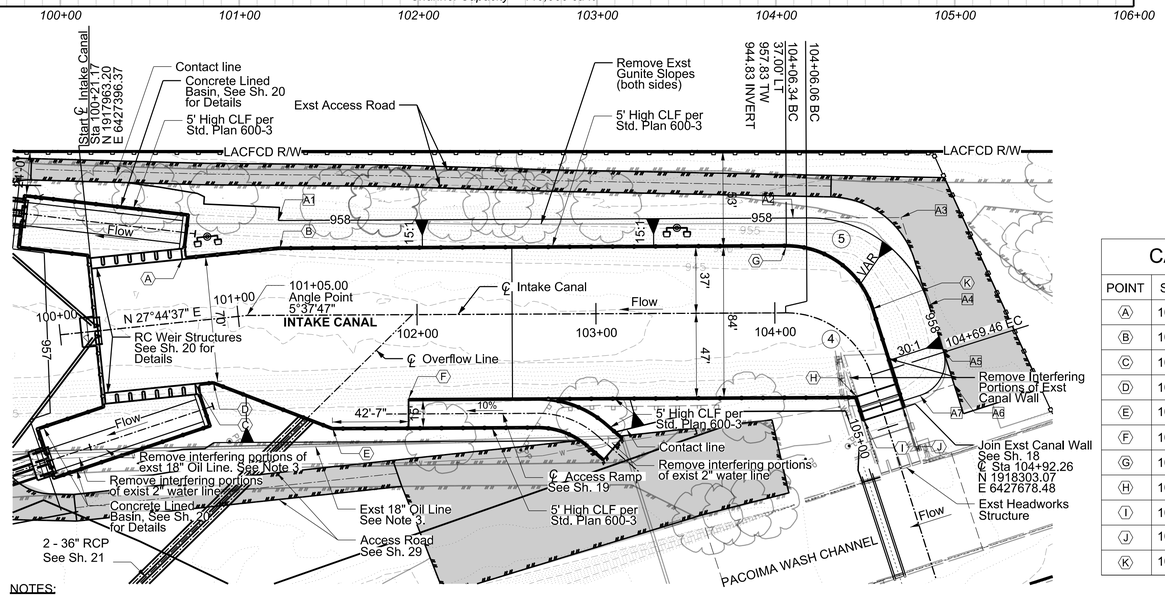
11/19/2020 2:13:12 PM pw:\\pwedmsprod01.dpw.co.la.ca.us:PW_INTI2\Documents\DEPARTMENT PROJECTS (PW)\FCC\FCC0001207 - Pacoima Spreading Grounds Basin Enhancement Proj\DES Drainage\4-CAD\FCC0001207 - PACOIMA SG IMPROVEMENTS.dgn

SCALE: HOR. 1"= 40'
VERT. 1"= 8'



PROFILE

Channel Capacity = 440,000 cu ft



PLAN
INTAKE CHANNEL
SCALE: 1"= 40'

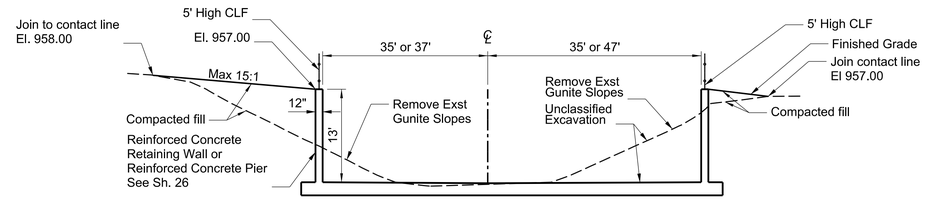
NOTES:

1. Fills, including backfills, shall be in horizontal, uniform layers not to exceed six inches in thickness before compaction, then compacted to 90 percent relative compaction in accordance with the american society for testing and materials D1557.

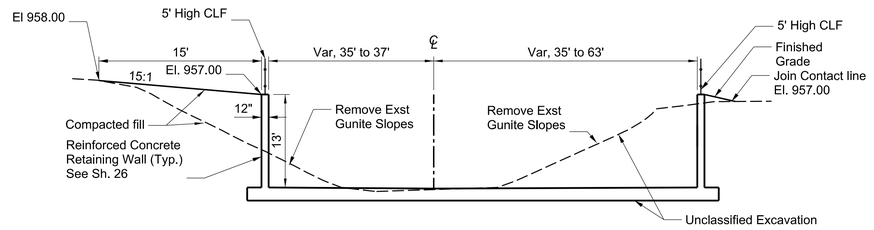
2. Tree removal per sh. 46.

3. The contractor shall be required to remove the oil line per the special provisions Section EC. Once the section of oil line is removed, the two remaining openings shall be sealed with a bentonite plug and steel plates welded over the openings, or other approved means to seal off the oil line.

4. Reinforcement details per Structural Sheets, Sh. 25-28.



STA 100+70.17 to 100+82.34
STA 102+78.20 to 104+78.35
NOT TO SCALE



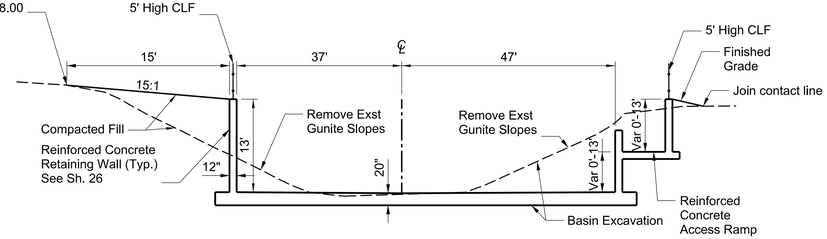
STA 100+82.34 to 101+95
NOT TO SCALE

POINT DATA
GRADING

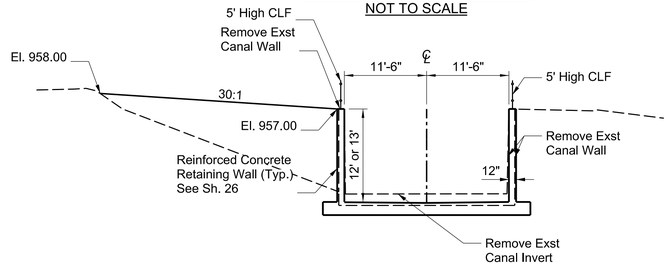
POINT	NORTHING	EASTING
A1	1918081.40	6427400.92
A2	1918329.04	6427564.04
A3	1918372.02	6427592.36
A4	1918357.82	6427641.82
A5	1918350.48	6427667.37
A6	1918344.96	6427686.59
A7	1918325.74	6427681.07

CANAL WALL DATA

POINT	STATION	NORTHING	EASTING
A	100+72.17	1918024.63	6427389.14
B	101+23.57	1918073.25	6427414.71
C	100+72.17	1917992.04	6427451.09
D	100+82.34	1918001.04	6427455.83
E	101+52.39	1918042.31	6427514.08
F	101+95.00	1918086.70	6427524.16
G	104+06.34	1918309.57	6427570.38
H	104+78.35	1918295.86	6427661.93
I	104+92.26	1918292.02	6427675.30
J	104+92.26	1918314.12	6427681.65
K	104+43.49	1918330.12	6427625.94



STA 101+95 to 102+78.20
NOT TO SCALE



STA 104+78.35 to 104+92.26
NOT TO SCALE

CURVE DATA

CURVE	RADIUS	CENTRAL ANGLE	LENGTH	TANGENT	PI NORTHING*	PI EASTING*
4	50'	72°39'02"	63.40'	36.76'	1918319.51	6427621.23
5	50'	72°21'13"	63.14'	36.56'	1918342.11	6427579.84

DATE	MARK	DESCRIPTION
		REVISIONS

REGISTERED PROFESSIONAL ENGINEER — PAMEL G. PIAMONTE — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

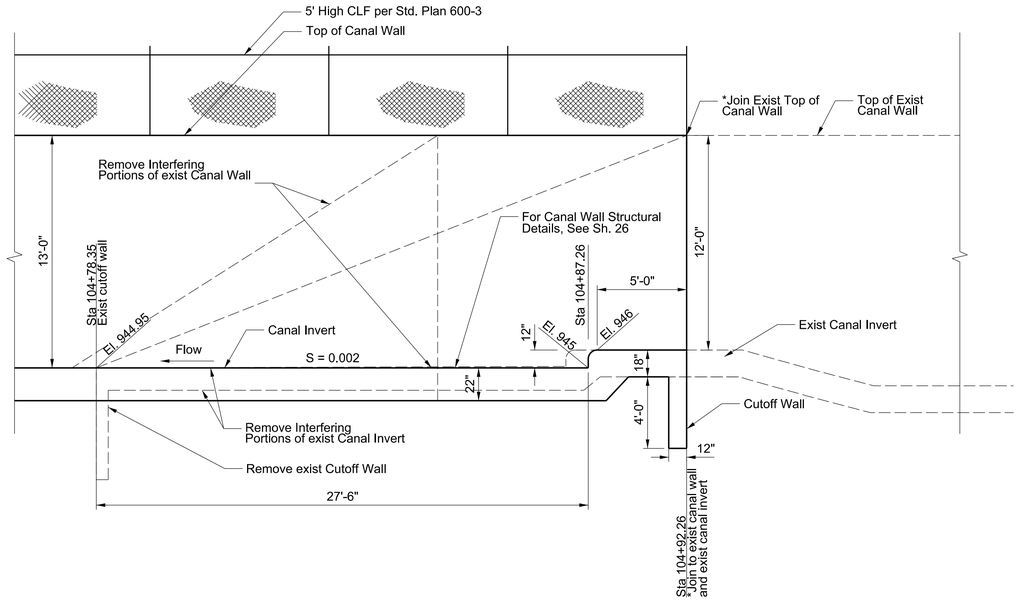
LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207
INTAKE CANAL
PLAN, PROFILE, AND SECTIONS

DWG 21-D114.17 | PD 052980 | SHEET 17 OF 72

PS-DF 07/05

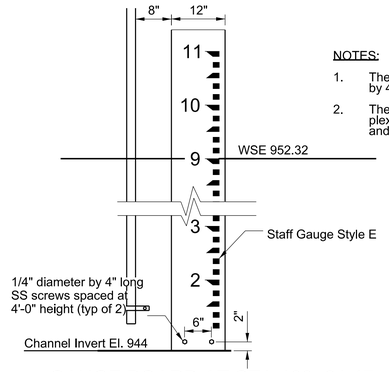
DRAFTER B. LIANG
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE



JOIN TO EXIST CANAL WALL DETAIL (SH. 17)

NOT TO SCALE

*NOTE: Join to exsiting concrete channel wall/invert details per Sh. 25.

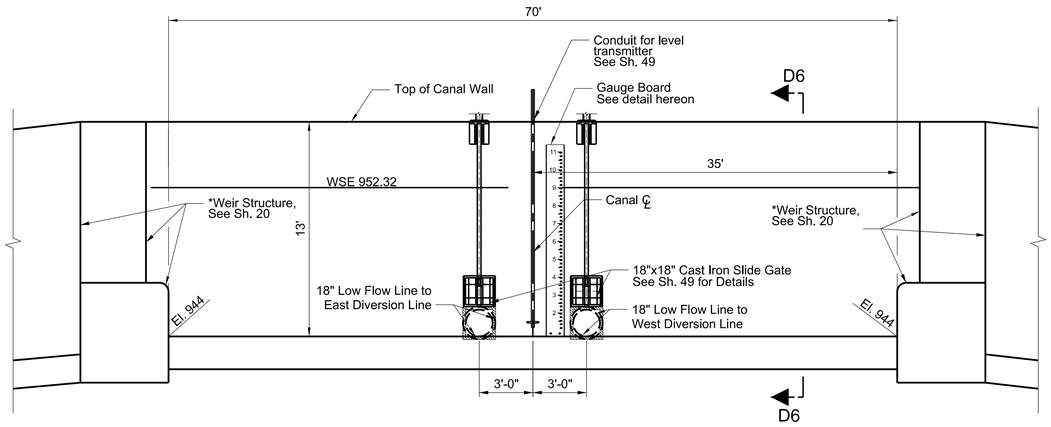


GAUGE BOARD AT STA 100+21.17

NOT TO SCALE

NOTES:

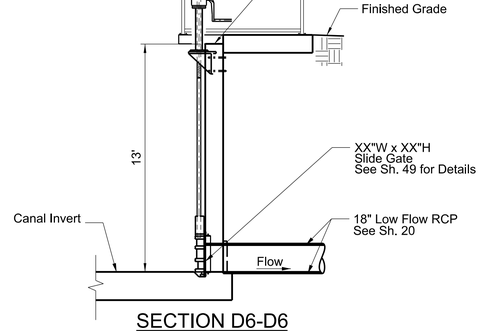
1. The gauge shall be mounted to the wall with 1/4" diameter by 4" long SS screws spaced at 4'-0" max height.
2. The gauge shall be of 1/2" thick white painted fiberglass or plexiglass with 4" high black numbers and markers. Numbers and markers shown are for display only.



BEGIN CANAL WALL AT STA 100+21.17 (SH. 20)

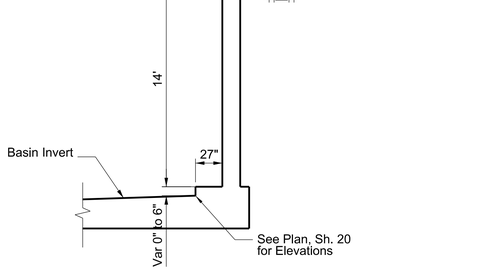
NOT TO SCALE

*Catwalks at Weir Structure not shown for clarity. See Sh. 22 for Catwalk details.



SECTION D6-D6

NOT TO SCALE



SECTION D7-D7 (SH. 20)

NOT TO SCALE

DRAFTER	DESIGNER	CHECKER	CADD PROJECT FILE NAME	REVIEWED BY	DATE
B. LIANG	R. PIAMONTE	J. LI	PacoimaSGEnhancement.dgn		

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT

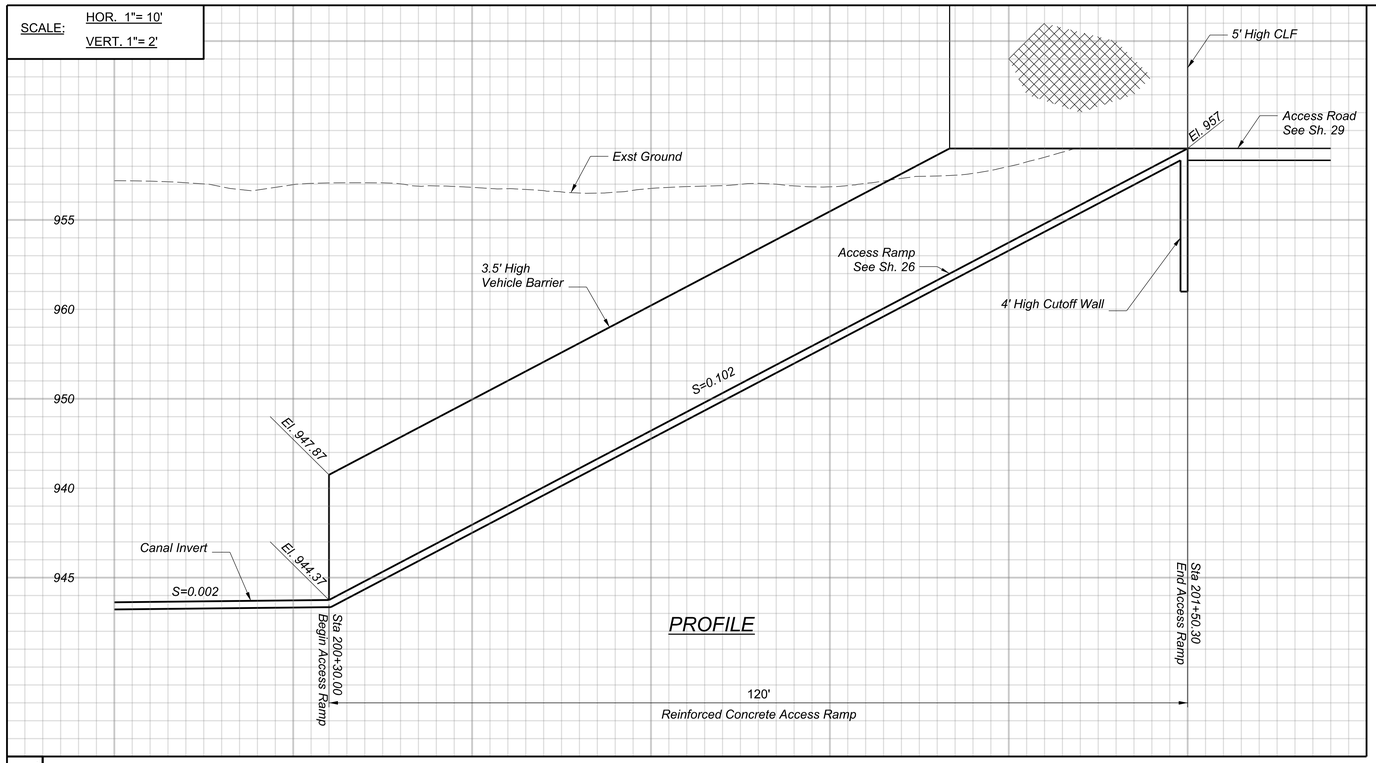
PROJECT ID NO. FCC0001207

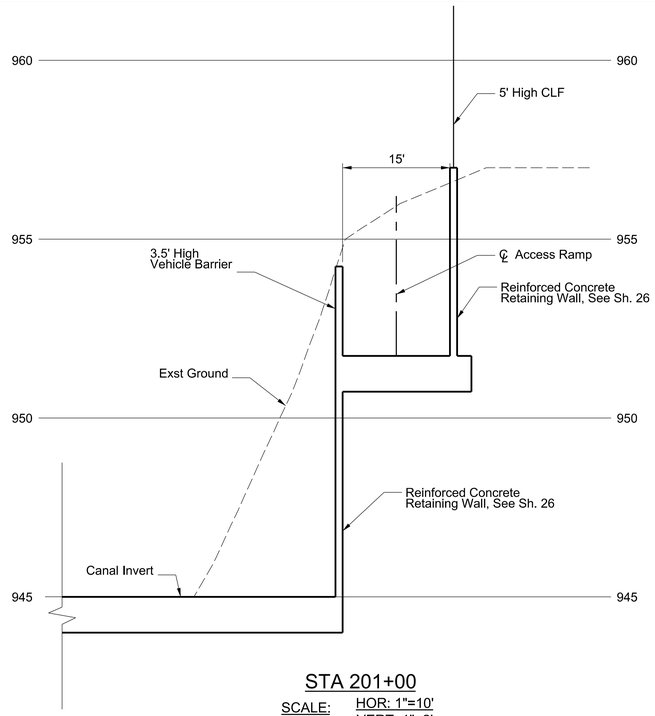
INTAKE CANAL
DETAILS AND GRADING

DWG 21-D114.18	PD 052980	SHEET 18 OF 72

PS-DF 07/05

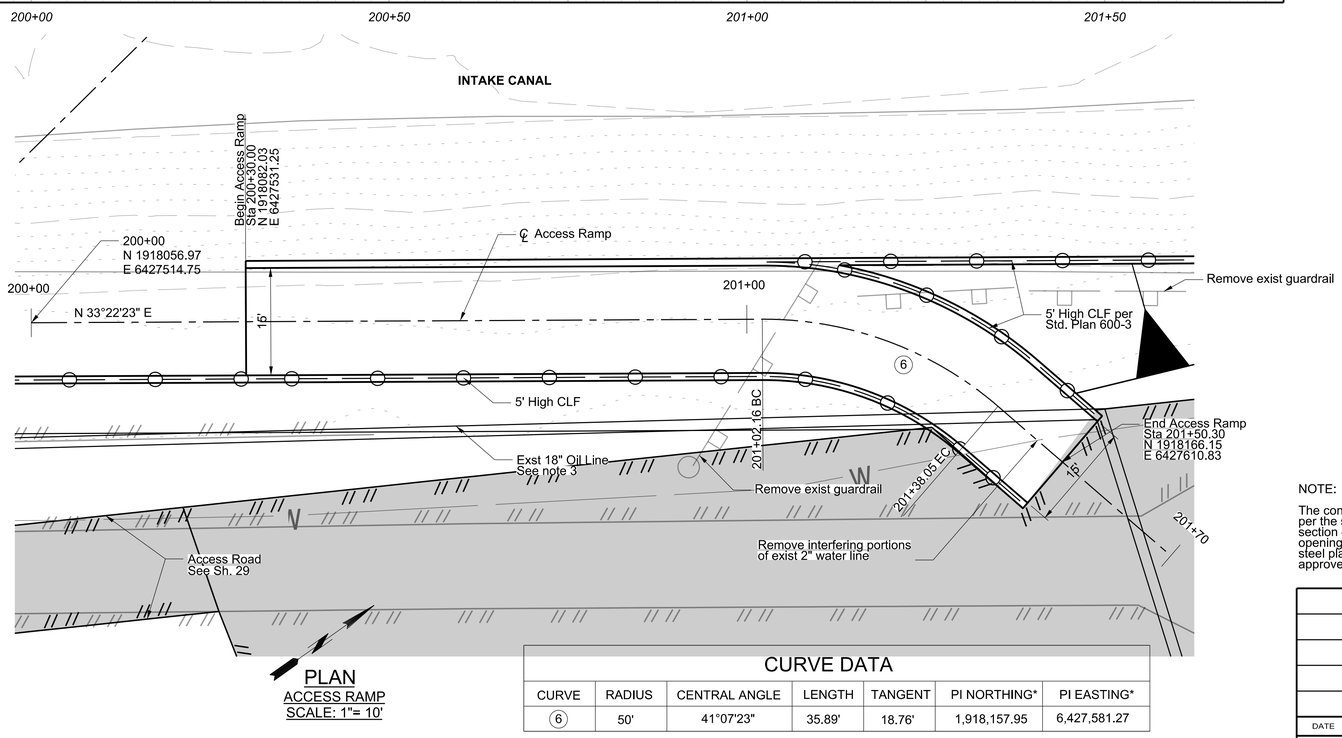
SCALE: HOR. 1"= 10'
VERT. 1"= 2'





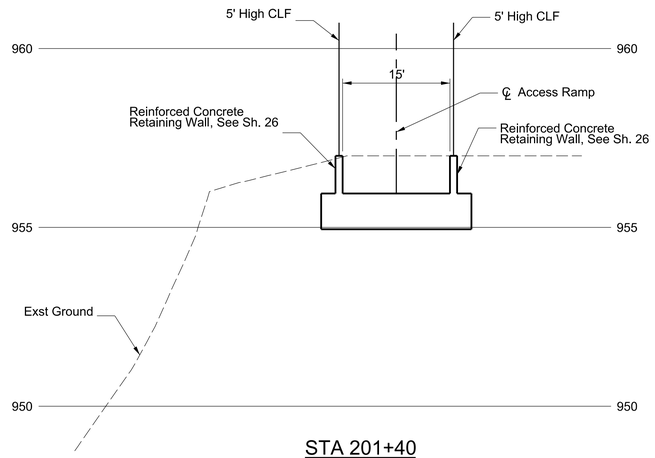
STA 201+00

SCALE: HOR: 1"=10'
VERT: 1"=2'



PLAN
ACCESS RAMP
SCALE: 1"= 10'

CURVE DATA						
CURVE	RADIUS	CENTRAL ANGLE	LENGTH	TANGENT	PI NORTHING*	PI EASTING*
(6)	50'	41°07'23"	35.89'	18.76'	1,918,157.95	6,427,581.27



STA 201+40

SCALE: HOR: 1"=10'
VERT: 1"=2'

NOTE:

The contractor shall be required to remove the oil line per the special provisions Section EC. Once the section of oil line is removed, the two remaining openings shall be sealed with a bentonite plug and steel plates welded over the openings, or other approved means to seal off the oil line.

DATE	MARK	DESCRIPTION
		REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL C. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT

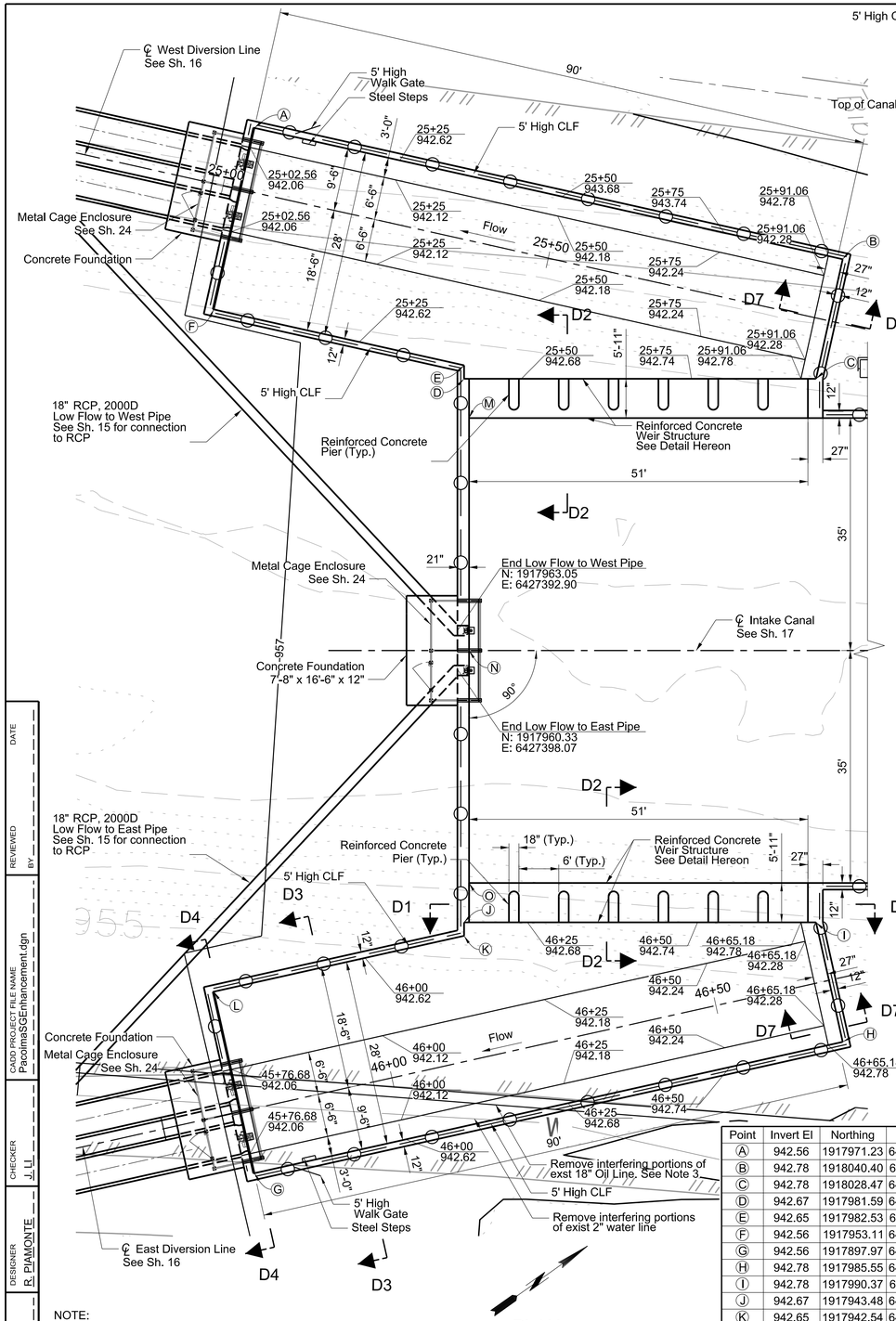
PROJECT ID NO. FCC0001207

REINFORCED CONCRETE ACCESS RAMP PLAN AND PROFILE

DWG 21-D114,19 | PD 052980 | SHEET 19 OF 72

DRAFTER B. LIANG
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

PS-DF 07/05



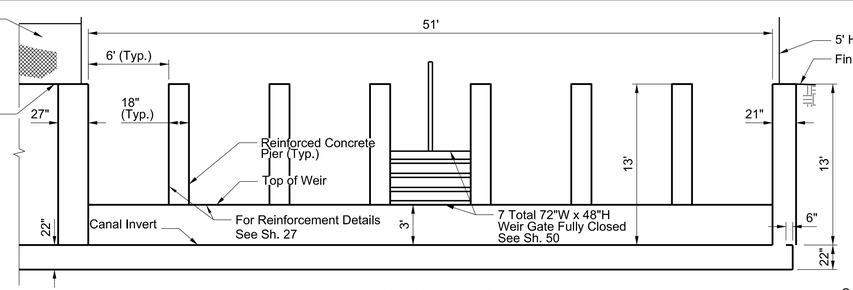
Point	Invert El	Northing	Easting
Ⓐ	942.56	1917971.23	6427311.69
Ⓑ	942.78	1918040.40	6427370.41
Ⓒ	942.78	1918028.47	6427384.46
Ⓓ	942.67	1917981.59	6427359.80
Ⓔ	942.65	1917982.53	6427358.01
Ⓕ	942.56	1917953.11	6427333.03
Ⓖ	942.56	1917897.97	6427450.97
Ⓗ	942.78	1917985.55	6427474.70
Ⓘ	942.78	1917990.37	6427456.91
Ⓙ	942.67	1917943.48	6427432.25
Ⓚ	942.65	1917942.54	6427434.04
Ⓛ	942.56	1917905.29	6427423.95
Ⓜ	944.00	1917979.49	6427365.40
Ⓝ	944.00	1917963.20	6427396.37
Ⓞ	944.00	1917946.91	6427427.35

NOTE:

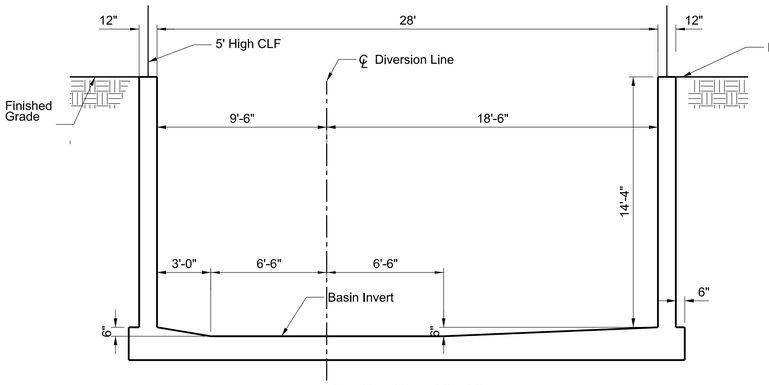
The contractor shall be required to remove the pipeline per the special provisions Section EC. Once the section of pipeline is removed, the two remaining openings shall be sealed with a bentonite plug and steel plates welded over the openings, or other approved means to seal off the pipeline.

PLAN
DIVERSION STRUCTURE
SCALE: 1"= 10'

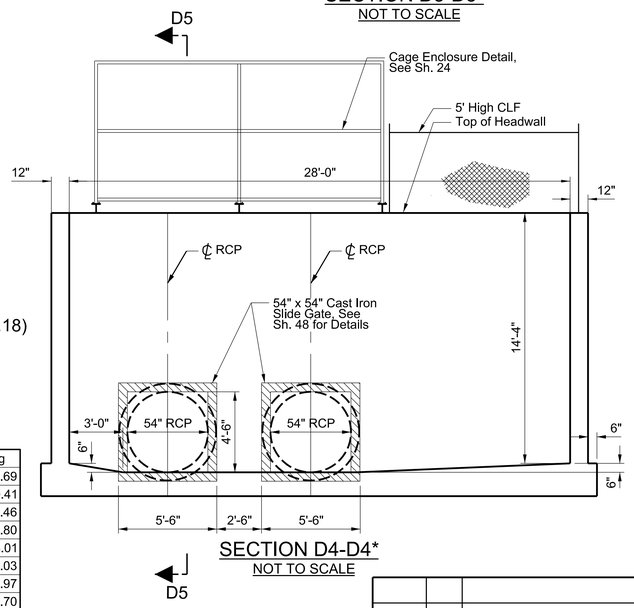
Note: Elevations shown are at invert of canal



SECTION D1-D1*
NOT TO SCALE

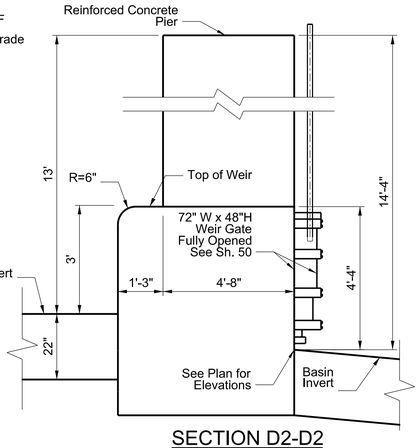


SECTION D3-D3*
NOT TO SCALE

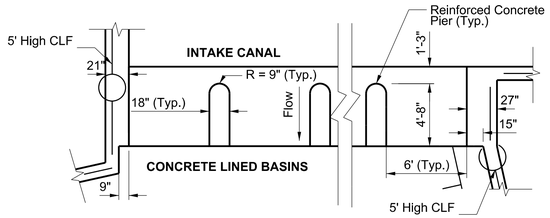


SECTION D4-D4*
NOT TO SCALE

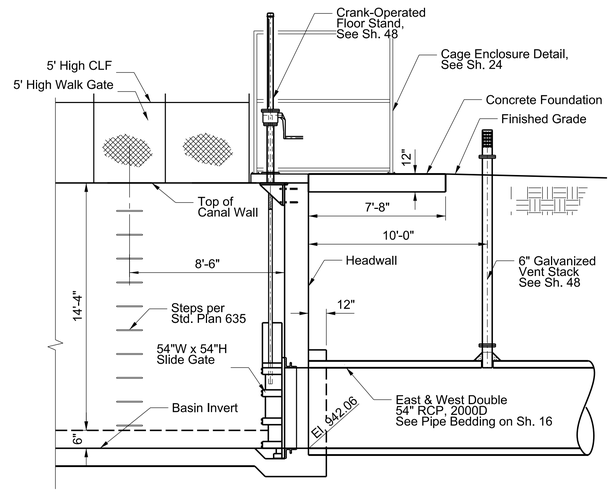
* Symmetrical detail applies for West Diversion Line



SECTION D2-D2
NOT TO SCALE



WEIR STRUCTURE DETAIL
NOT TO SCALE



SECTION D5-D5
NOT TO SCALE

DATE	MARK	DESCRIPTION

REVISIONS

DRAFTER: B. LIANG
DESIGNER: R. PIAMONTE
CHECKER: J. LI
CADD PROJECT FILE NAME: PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER — 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT

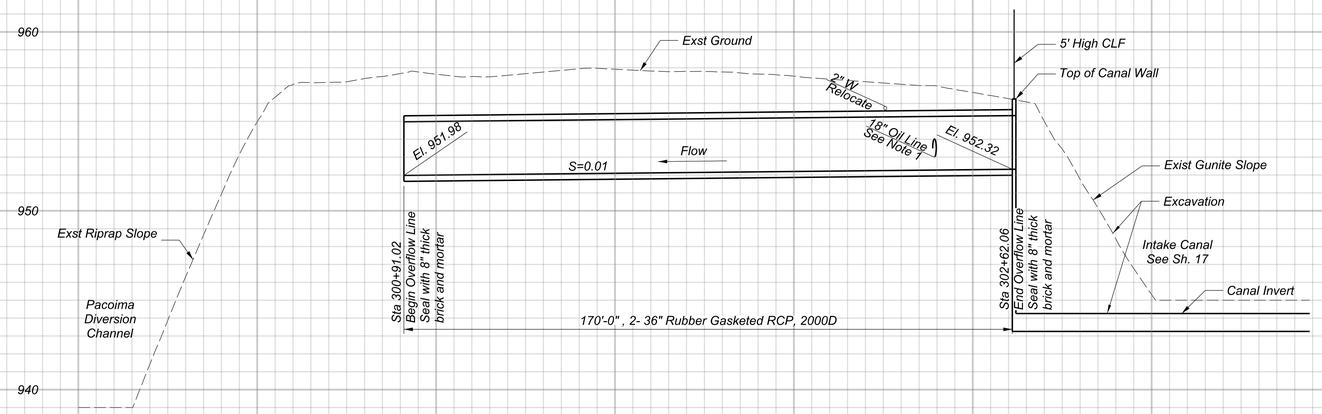
PROJECT ID NO. FCC0001207

CONCRETE LINED BASINS AND WEIR STRUCTURE DETAILS

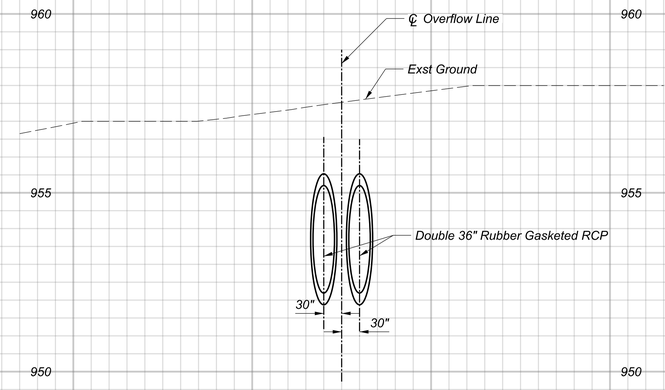
DWG 21-D114.20	PD 052980	SHEET 20 OF 72

PS-DF 07/08

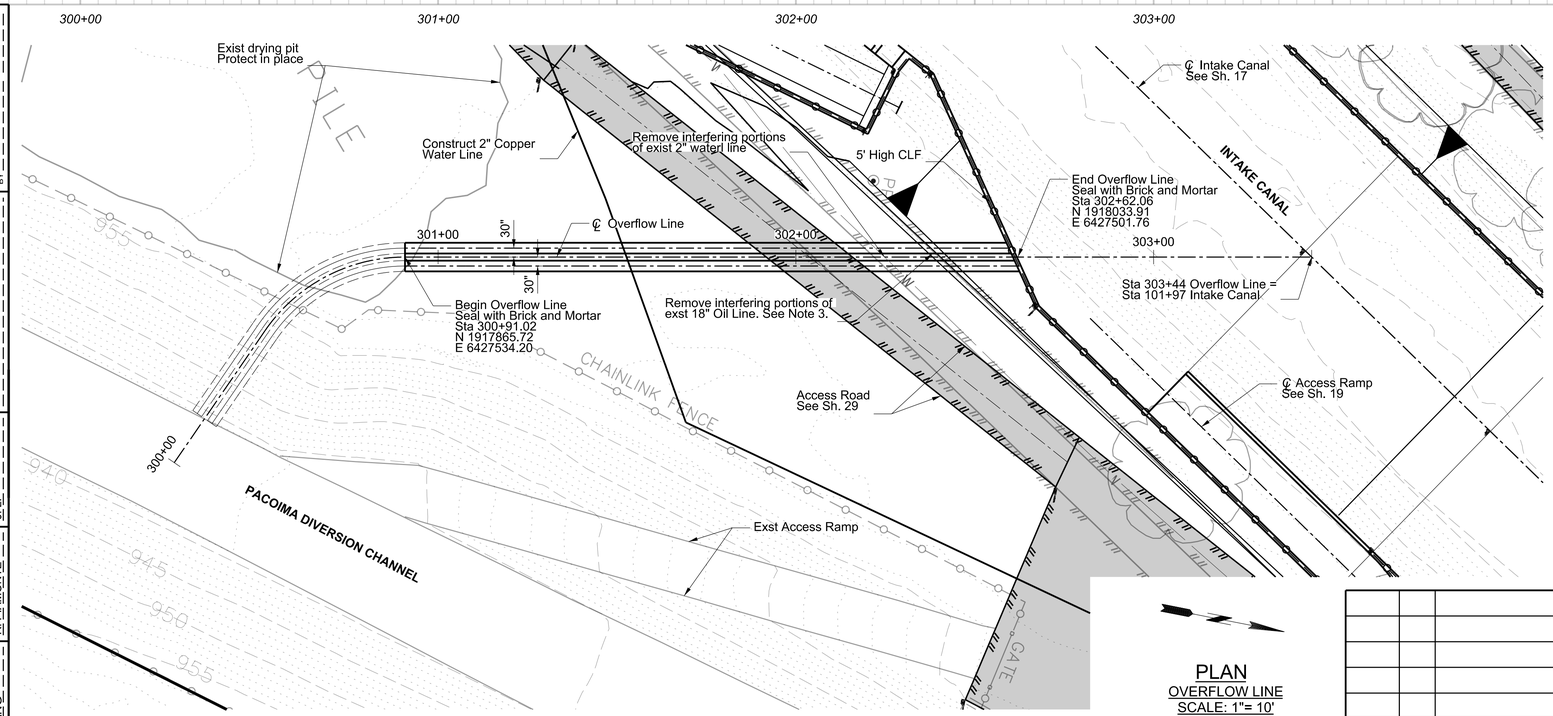
SCALE: HOR. 1"= 20'
VERT. 1"= 4'



PROFILE



CROSS SECTION
STA 301+00
Scale: HOR 1"=10'
VERT 1"=2'



PLAN
OVERFLOW LINE
SCALE: 1"= 10'

NOTE:

1. The contractor shall be required to remove the oil line per the special provisions Section EC. Once the section of oil line is removed, the two remaining openings shall be sealed with a bentonite plug and steel plates welded over the openings, or other approved means to seal off the oil line.

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — RAFAEL G. PIAMONTE — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER — 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT

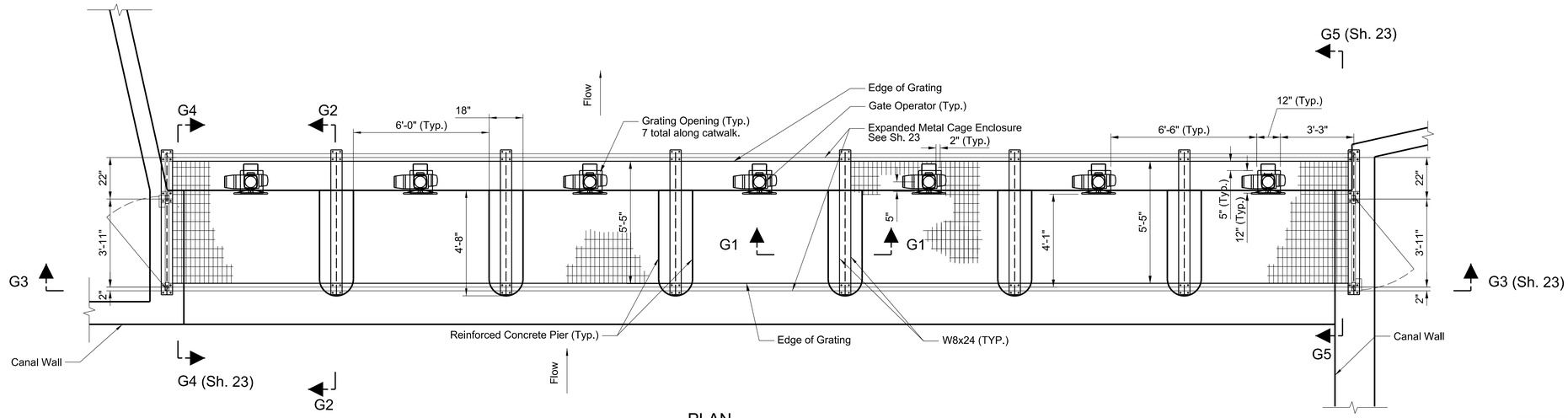
PROJECT ID NO. FCC0001207

OVERFLOW LINE PLAN AND PROFILE

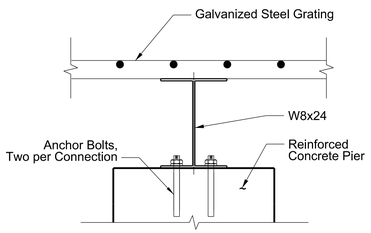
DWG 21-D114.21	PD 052980	SHEET 21 OF 72

FS-DF 07-05

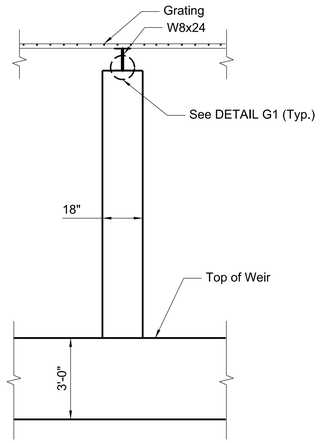
DRAFTER B. LIANG
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE



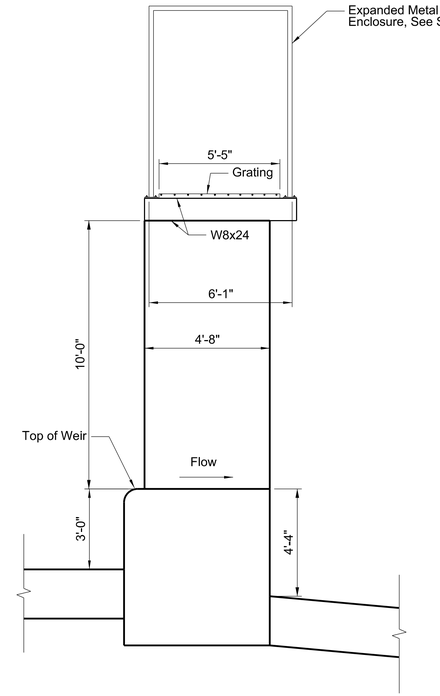
PLAN
WEIR CATWALK (TYPICAL FOR EAST AND WEST WEIRS)
NOT TO SCALE



DETAIL G1
NOT TO SCALE



SECTION G1-G1
WEIR CATWALK
NOT TO SCALE



SECTION G2-G2
WEIR CATWALK
NOT TO SCALE

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — RAFAEL G. PIAMONTE — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER — 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

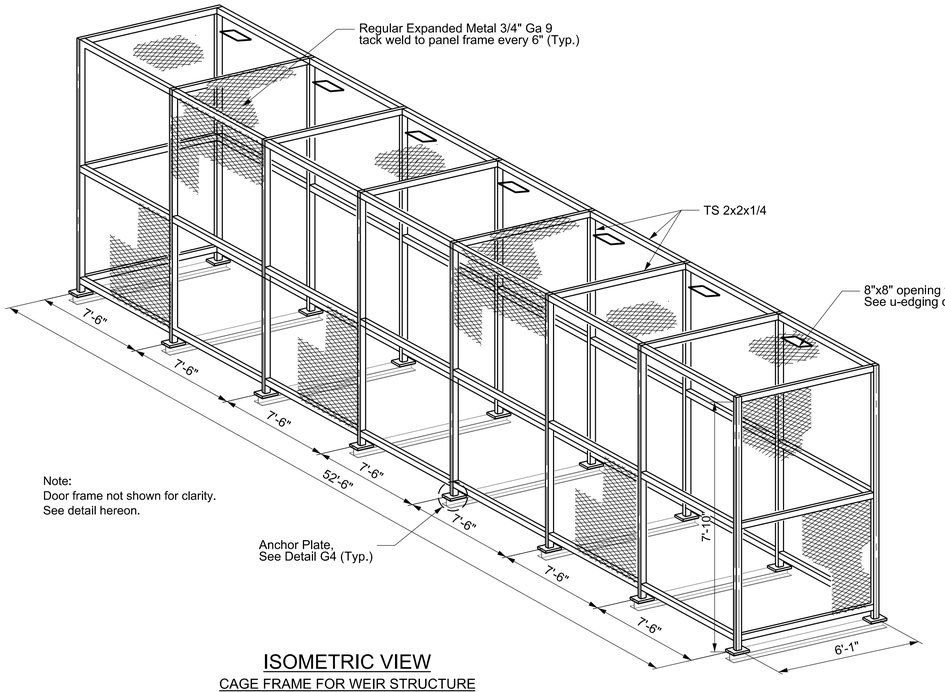
PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

CATWALK DETAILS

DWG 21-D114.22 | PD 052980 | SHEET 22 OF 72

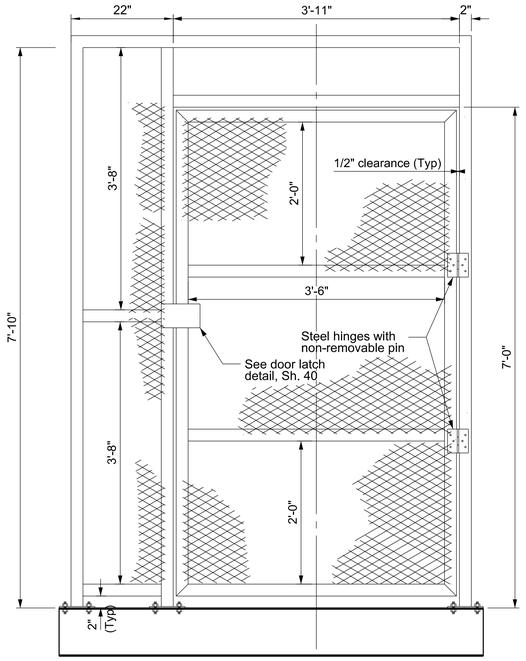
PS-DF 07/05

DRAFTER B. LIANG
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE



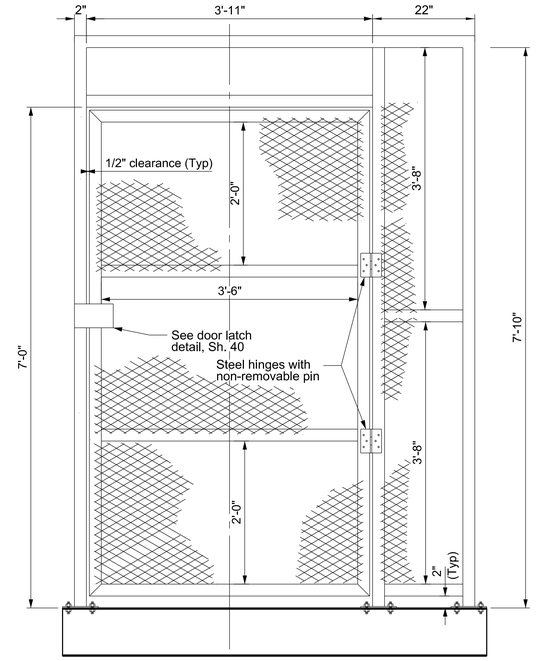
Note:
Door frame not shown for clarity.
See detail hereon.

ISOMETRIC VIEW
CAGE FRAME FOR WEIR STRUCTURE
NOT TO SCALE

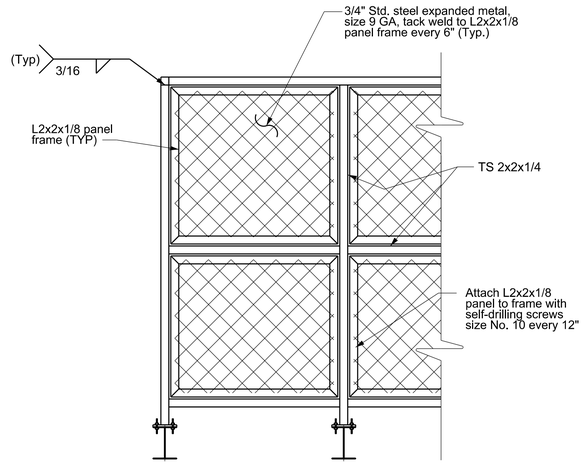


SECTION G4-G4 (SH. 22)
DOOR FRAME DETAIL
NOT TO SCALE

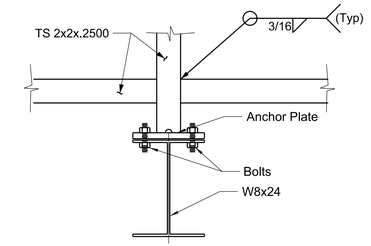
Attach L2x2x1/8
panel to frame with
self-drilling screws
size No. 10 every 12"

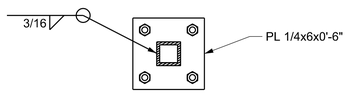


SECTION G5-G5 (SH. 22)
DOOR FRAME DETAIL
NOT TO SCALE

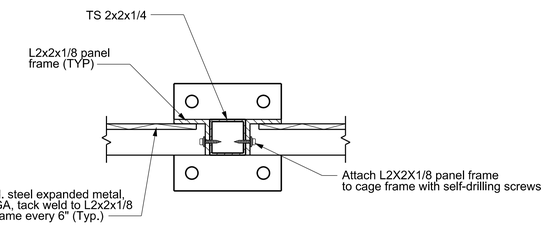


SECTION G3-G3 (SH. 22)
TYPICAL PANEL INSTALLATION DETAIL
NOT TO SCALE





DETAIL G4
ANCHOR PLATE DETAIL
NOT TO SCALE



PANEL TO CAGE FRAME CONNECTION DETAIL
NOT TO SCALE

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

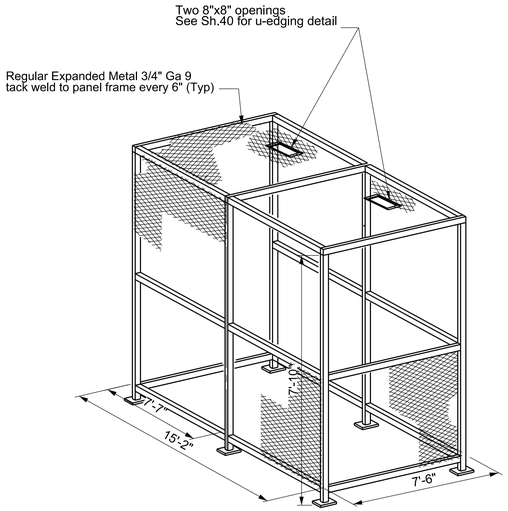
LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207
DETAILS - EXPANDED METAL CAGE ENCLOSURE FOR WEIR

DWG 21-D114.23 | PD 052980 | SHEET 23 OF 72

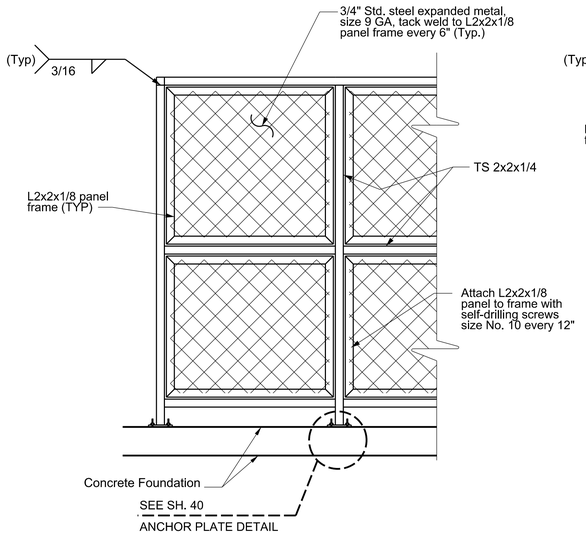
PS-DF 07/05

DRAFTER B. LIANG
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

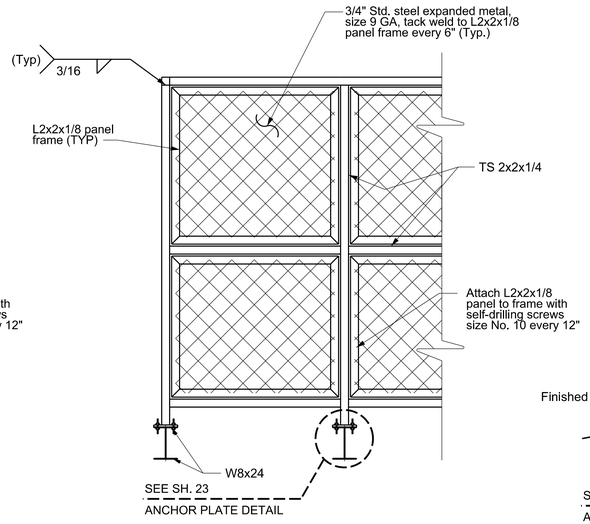


Note:
Door frame not shown for clarity. See detail hereon.

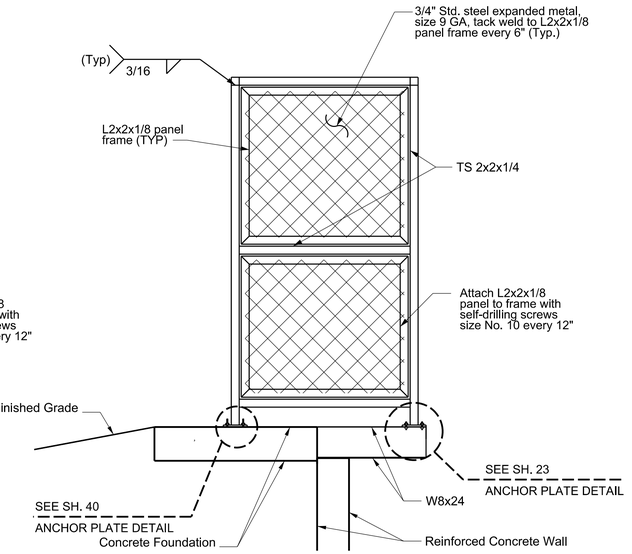
ISOMETRIC VIEW
CAGE FRAME FOR CONCRETE LINED BASINS AND LOW FLOW
NOT TO SCALE



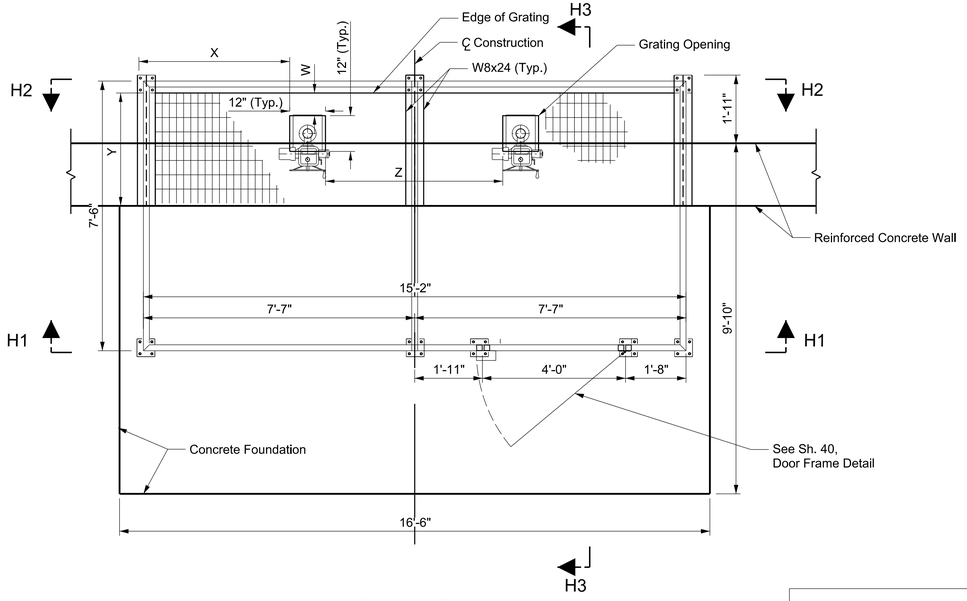
SECTION H1-H1
TYPICAL PANEL INSTALLATION DETAIL
NOT TO SCALE



SECTION H2-H2
TYPICAL PANEL INSTALLATION DETAIL
NOT TO SCALE

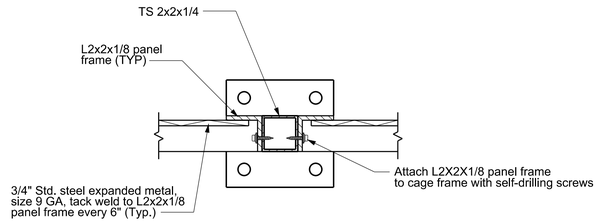


SECTION H3-H3
TYPICAL PANEL INSTALLATION DETAIL
NOT TO SCALE



PLAN VIEW
CAGE FRAME FOR CONCRETE LINED BASINS AND LOW FLOW
NOT TO SCALE

	W	X	Y	Z
East Concrete Lined Basin	5"	3'-0"	2'-9"	7'-0"
West Concrete Lined Basin	5"	3'-0"	2'-9"	7'-0"
Low Flow Lines	8"	4'-0"	3'-2"	5'-0"



PANEL TO CAGE FRAME CONNECTION DETAIL
NOT TO SCALE

DRAFTER B. LIANG
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

DATE	MARK	DESCRIPTION

REVISIONS

RECOMMENDED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

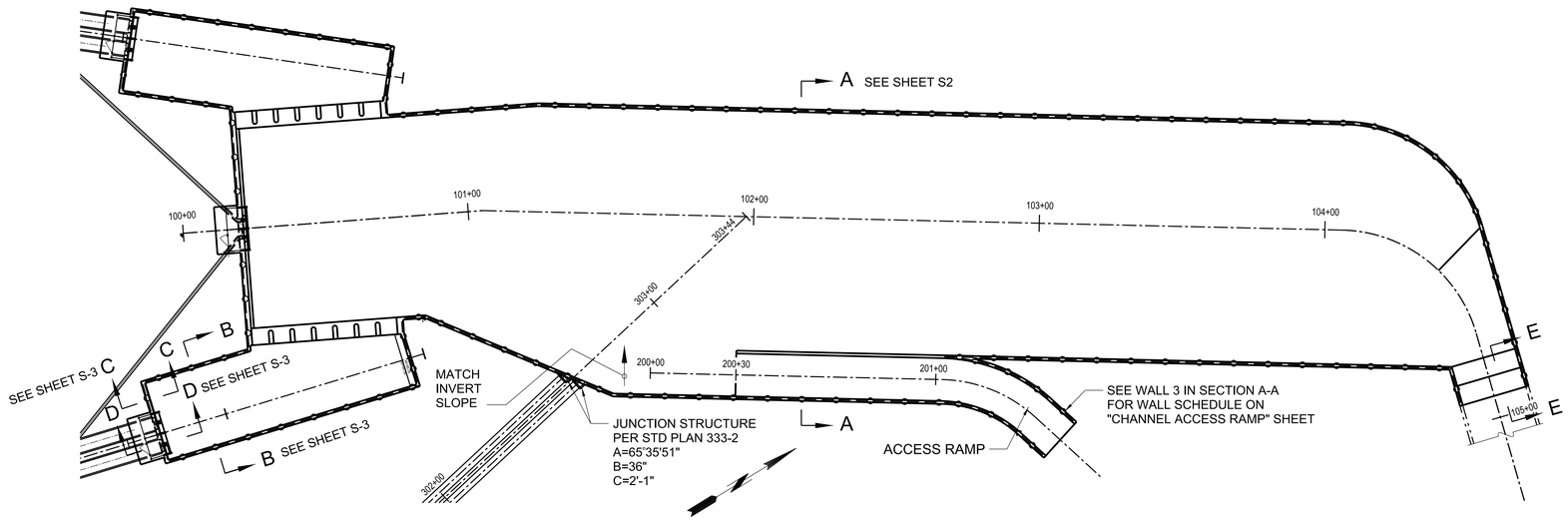
LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

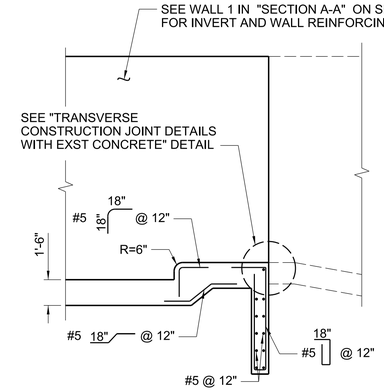
DETAILS - EXPANDED METAL CAGE ENCLOSURE
FOR CONCRETE LINED BASINS AND LOW FLOW

DWG 21-D114.24 | PD 052980 | SHEET 24 OF 72

PS-DF 07/05



INTAKE CANAL PLAN
NOT TO SCALE



SECTION E-E

STRUCTURAL NOTES

1. DIMENSIONS FROM FACE OF CONCRETE TO STEEL ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN.
2. CONCRETE DIMENSIONS SHALL BE MEASURED HORIZONTALLY OR VERTICALLY ON THE PROFILE, AND PARALLEL TO OR AT RIGHT ANGLES (OR RADIALLY) TO CENTERLINE OF CONDUIT ON THE PLAN EXCEPT AS SHOWN.
3. ALL BAR BENDS AND HOOKS SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", LATEST EDITION.
4. PLACING OF REINFORCEMENT SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", LATEST EDITION.
5. TRANSVERSE CONSTRUCTION JOINTS SHALL NOT BE PLACED WITHIN 30 INCHES OF MANHOLE OR JUNCTION STRUCTURE OPENINGS.
6. TRANSVERSE CONSTRUCTION JOINTS IN WALLS AND SLABS SHALL BE IN THE SAME PLANE. NO STAGGERING OF JOINTS WILL BE PERMITTED. TRANSVERSE CONSTRUCTION JOINTS SHALL BE NORMAL OR RADIAL TO THE CENTERLINE OF CONSTRUCTION.
7. THE TRANSVERSE REINFORCING STEEL SHALL TERMINATE ONE AND ONE-HALF INCHES FROM THE CONCRETE SURFACES UNLESS OTHERWISE SHOWN ON THE STRUCTURAL DETAILS.
8. EXPOSED EDGES OF CONCRETE MEMBERS SHALL BE ROUNDED OR BEVELED, UNO.
9. OTHER THAN THOSE SHOWN ON THE PLANS, NO SPLICES IN TRANVSVERSE STEEL REINFORCEMENT WILL BE PERMITTED WITHOUT APPROVAL OF THE ENGINEER. NO MORE THAN TWO SPLICES WILL BE PERMITTED IN ANY LONGITUDINAL BAR BETWEEN TRANSVERSE JOINTS. SPLICES SHALL BE STAGGERED.
10. LONGITUDINAL STEEL SHALL BE LAPPED 30 BAR DIAMETERS AT SPLICES. TRANSVERSE STEEL SHALL BE LAPPED 40 BAR DIAMETERS AT SPLICES.
11. LONGITUDINAL STEEL SHALL TERMINATE TWO INCHES FROM TRANSVERSE CONSTRUCTION JOINTS.
12. TRANSVERSE JOINTS SHALL BE SPACED NOT TO EXCEED 50 FEET NOR BE LESS THAN 10 FEET, MEASURED ALONG THE CENTERLINE OF CONSTRUCTION, EXCEPT AS OTHERWISE SHOWN ON PLANS.
13. TRANSVERSE JOINTS SHALL BE PLACED A THE JUNCTION OF RECTANGULAR OPEN CHANNEL SECTIONS WITH CLOSED CONDUIT SECTIONS.
14. ALL RECTANGULAR OPEN CHANNEL WALLS SHALL BE FENCED IN ACCORDANCE WITH STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION , STANDARD PLAN 600-3.
15. UNLESS OTHERWISE SHOWN ON THE PLANS, IN CURVED SECTIONS, THE MAXIMUM SPACING OF BARS SHALL NOT EXCEED THAT SHOWN ON THE TYPICAL SECTIONS. REINFORCEMENT STEEL SHALL BE PLACED RADIALLY FROM THE MAXIMUM SPACING.
16. AT THE BEGINNING AND END OF ALL CONCRETE POURS, A COMPLETE CURTAIN OF REINFORCEMENT COMPOSED OF B1, B4, AND TOP INVERT BARS SHALL BE PLACED THREE INCHES FROM THE TRANSVERSE CONSTRUCTION JOINT.

DESIGN CRITERIA

DESIGN SPECIFICATIONS
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION WITH CALIFORNIA AMENDMENTS.
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT, STRUCTURAL DESIGN MANUAL DATE APRIL 1982.

LOADING:

EARTH LOAD:
PER GEOTECHNICAL REPORT BY LOS ANGELES COUNTY PUBLIC WORKS, GEOTECHNICAL AND MATERIAL DIVISION, DATED _____ __, 2020.

ACTIVE EQUIVALENT FLUID PRESSURE: 40 PCF

PASSIVE EQUIVALENT FLUID PRESSURE: 280 PCF WITH THE MAXIMUM OF 2,500 PSF

AT-REST EQUIVALENT FLUID PRESURE: 60 PCF

ALLOWABLE SOIL PRESSURE: 1500 PSI

COEFFICIENT OF SOIL FRICTION: 0.4

LIVE LOAD SURCHARGE: (AASHTO TABLE 3.11.6.4-2)
H=2 ft

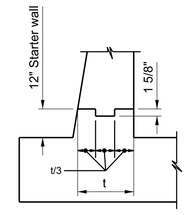
INTERNAL WATER PRESSURE:
62.4 PSF PER FOOT OF DEPTH

EARTHQUAKE LOAD:
PER GEOTECHNICAL REPORT BY LOS ANGELES COUNTY PUBLIC WORKS , GEOTECHNICAL AND MATERIAL DIVISION, DATED _____ __, 2020.

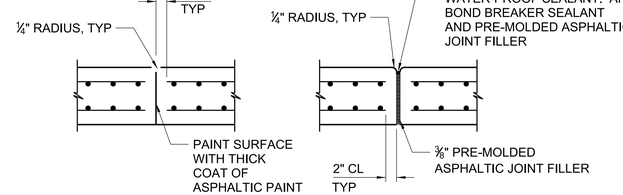
SEISMIC DYNAMIC LOAD INCREMENT: 17 PCF

LOAD FACTORS:
AASHTO LRFD TABLE 3.4.1.1 AND TABLE 3.4.2.1

UNIT STRESSES:
f' = 4000 PSI
f = 60,000 PSI



WALL BASE

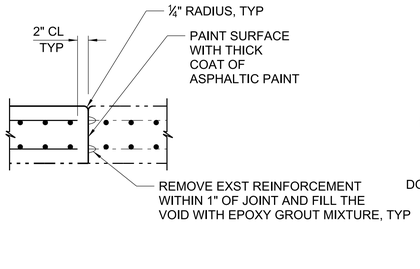


FOR CHANNEL WALLS

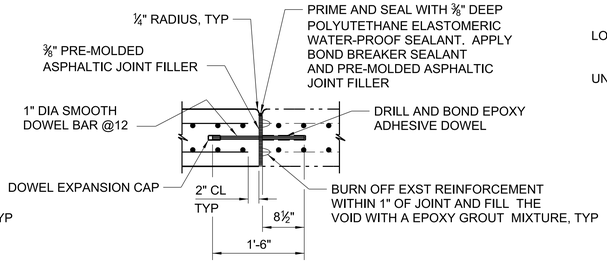
FOR INVERT SLAB

LONGITUDINAL CONSTRUCTION JOINT DETAIL
NOT TO SCALE

TRANSVERSE CONSTRUCTION JOINT DETAILS
NOT TO SCALE



FOR CHANNEL WALLS



FOR INVERT SLAB

TRANSVERSE CONSTRUCTION JOINT DETAILS WITH EXST CONCRETE
NOT TO SCALE

REVIEWED BY: Bahman Fathollahi DATE: 11/19/20
CADD PROJECT FILE NAME: Pacoima SG_Intake Canal_Structural Details.dgn
CHECKER: B. Fathollahi
DESIGNER: V. Mardis
DRAFTER: V. Mardis

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — VERONICA MARDIS — C 87422 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER 11/19/20 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

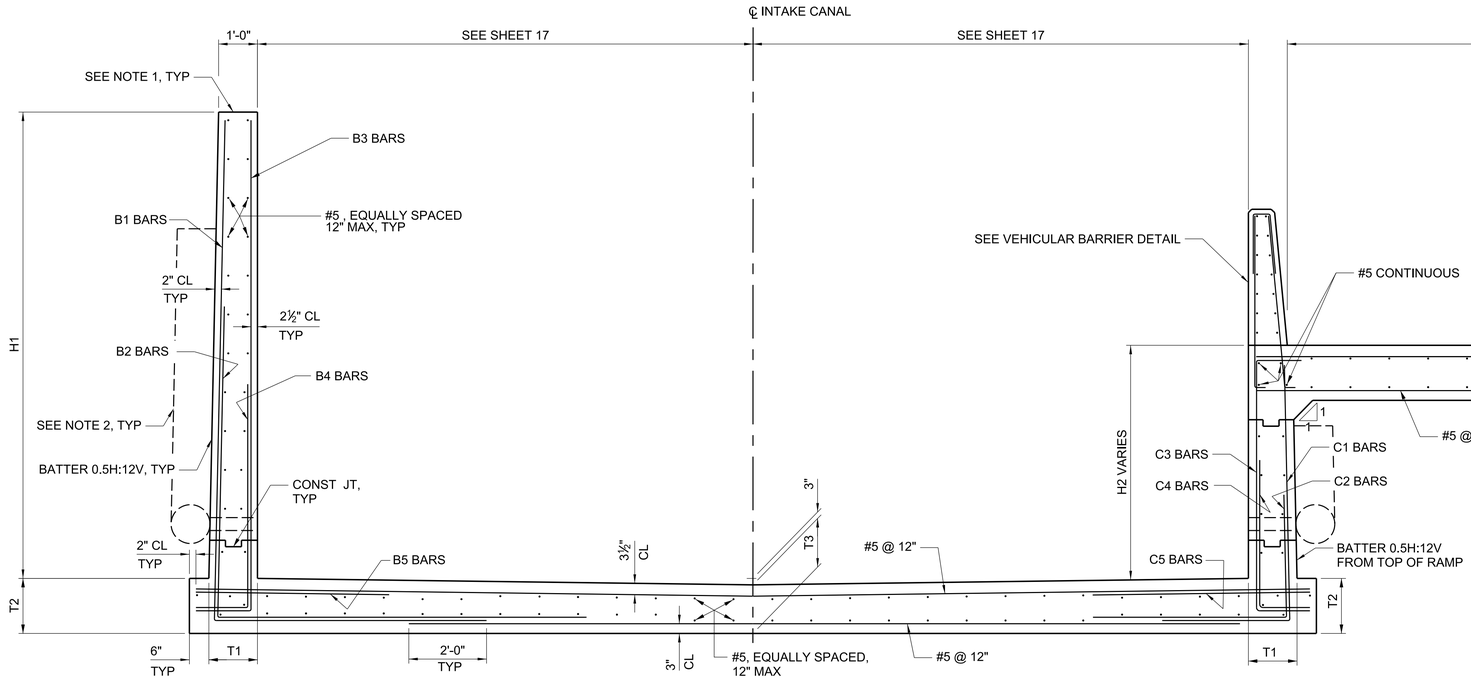
INTAKE CANAL PLAN
AND GENERAL NOTES

S-1

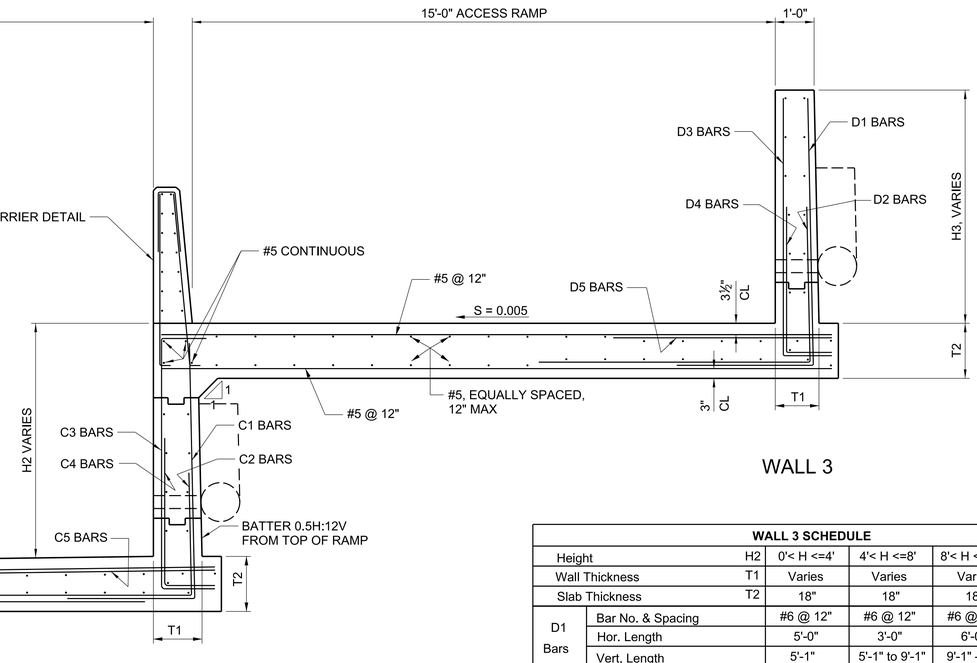
DWG 21-D114.25 | PD 052980 | SHEET 25 OF 72

PLAN S

DATE: $DATE$ TIME: $TIME$ FILE: $FILEL$



WALL 1: TYPICAL CANAL WALL SECTION



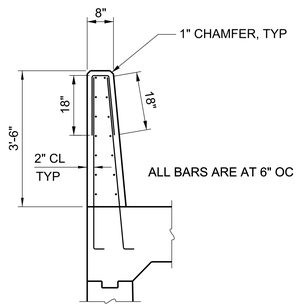
WALL 2

WALL 3

WALL 3 SCHEDULE						
Height		H2	0'< H <=4'	4'< H <=8'	8'< H <=12'	12'< H <=13'
Wall Thickness		T1	Varies	Varies	Varies	Varies
Slab Thickness		T2	18"	18"	18"	18"
D1 Bars	Bar No. & Spacing		#6 @ 12"	#6 @ 12"	#6 @ 12"	#7 @ 12"
	Hor. Length		5'-0"	3'-0"	6'-0"	8'-0"
	Vert. Length		5'-1"	5'-1" to 9'-1"	9'-1" - 13'-1"	13'-1" - 14'-1"
D2 Bars	Bar No. & Spacing			#6 @ 12"	#6 @ 12"	#7 @ 12"
	Hor. Length			6'-0"	8'-0"	13'-0"
	Vert. Length			3'-0" to 5'-0"	5'-0" - 6'-0"	6'-0" - 7'-0"
D3 Bars	Bar No. & Spacing		#5 @ 12"	#5 @ 12"	#5 @ 12"	#5 @ 12"
	Hor. Length		1'-3"	1'-3" to 1'-5"	1'-5" to 1'-7"	1'-7" to 1'-8"
	Vert. Length		5'-1"	5'-1" - 9'-1"	9'-1" - 13'-1"	13'-1" - 14'-1"
D4 Bars	Bar No. & Spacing				#5 @ 12"	#5 @ 12"
	Hor. Length				1'-5" to 1'-7"	1'-7" to 1'-8"
	Vert. Length				6'-0"	7'-0"
D5 Bars	Bar No. & Spacing			#5 @ 12"	#5 @ 12"	#5 @ 12"
	Hor. Length			5'-0"	7'-0"	8'-0"

WALL 1 SCHEDULE		
Height	H1	13'
Wall Thickness	T1	18.5"
Slab Thickness	T2	18"
Slab Thickness	T3	15"
B1 Bars	Bar No. & Spacing	#7 @ 12"
	Hor. Length	8'-0"
	Vert. Length	14'-1"
B2 Bars	Bar No. & Spacing	#7 @ 12"
	Hor. Length	13'-0"
	Vert. Length	7'-0"
B3 Bars	Bar No. & Spacing	#5 @ 12"
	Hor. Length	1'-8"
	Vert. Length	14'-1"
B4 Bars	Bar No. & Spacing	#5 @ 12"
	Hor. Length	1'-8"
	Vert. Length	7'-0"
B5 Bars	Bar No. & Spacing	#5 @ 12"
	Hor. Length	8'-0"

SECTION A-A
NOT TO SCALE



VEHICULAR BARRIER DETAIL
STA 200+30.00 TO STA 201+02.16
NOT TO SCALE

WALL 2 SCHEDULE						
Height		H2	0'< H <=4'	4'< H <=8'	8'< H <=12'	12'< H <=13'
Wall Thickness		T1	Varies	Varies	Varies	Varies
Slab Thickness		T2	18"	18"	18"	18"
D1 Bars	Bar No. & Spacing		#6 @ 12"	#6 @ 12"	#6 @ 12"	#7 @ 12"
	Hor. Length		5'-0"	3'-0"	6'-0"	8'-0"
	Vert. Length		5'-1"	5'-1" to 9'-1"	9'-1" - 14'-1"	14'-1" - 15'-1"
D2 Bars	Bar No. & Spacing			#6 @ 12"	#6 @ 12"	#7 @ 12"
	Hor. Length			6'-0"	8'-0"	13'-0"
	Vert. Length			3'-0" to 5'-0"	5'-0" - 6'-0"	6'-0" - 7'-0"
D3 Bars	Bar No. & Spacing		#5 @ 12"	#5 @ 12"	#5 @ 12"	#5 @ 12"
	Hor. Length		1'-3"	1'-3" to 1'-5"	1'-5" to 1'-7"	1'-7" to 1'-8"
	Vert. Length		5'-1"	5'-1" - 9'-1"	9'-1" - 14'-1"	14'-1" - 15'-1"
D4 Bars	Bar No. & Spacing				#5 @ 12"	#5 @ 12"
	Hor. Length				1'-5" to 1'-7"	1'-7" to 1'-8"
	Vert. Length				6'-0"	7'-0"
D5 Bars	Bar No. & Spacing			#5 @ 12"	#5 @ 12"	#5 @ 12"
	Hor. Length			5'-0"	7'-0"	8'-0"

NOTES:

1. 4' CLF PER SPPWC STD PLAN 600-3 AT TOP OF CHANNEL WALLS. NOT SHOWN FOR CLARITY.
2. WALL DRAIN DETAIL PER SPPWC STD PLAN 617-3.

DRAFTER V. Mardis
DESIGNER V. Mardis
CHECKER B. Fatholiahi
CADD PROJECT FILE NAME Pacoima SG_Intake Canal_Structural Details.dgn
REVIEWED BY: Bahman Fatholiahi DATE: 11/19/20

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER VERONICA MARDIS C 87422 CIVIL STATE OF CALIFORNIA

11/19/20
PROJECT ENGINEER DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

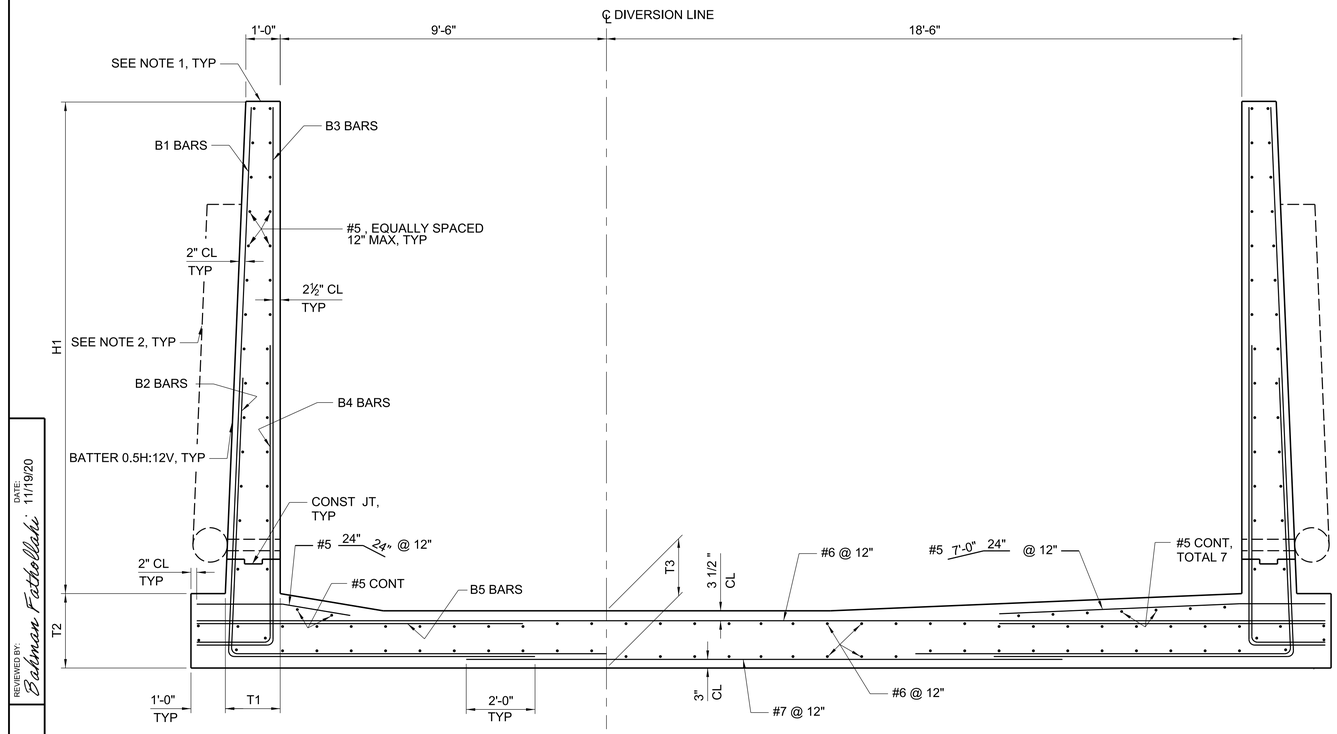
INTAKE CANAL
AND ACCESS RAMP SECTIONS

DWG 21.D114.26 | PD 052980 | SHEET 26 OF 72

S-2

PLAN S

DATE: $DATE$ TIME: $TIME$ FILE: $FILEL$

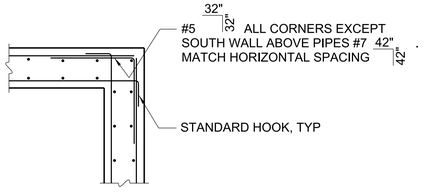


NOTES:

1. 4' CLF PER SPPWC STD PLAN 600-3 AT TOP OF CHANNEL WALLS. NOT SHOWN FOR CLARITY.
2. WALLDRAIN DETAIL PER SPPWC STD PLAN 617-3.

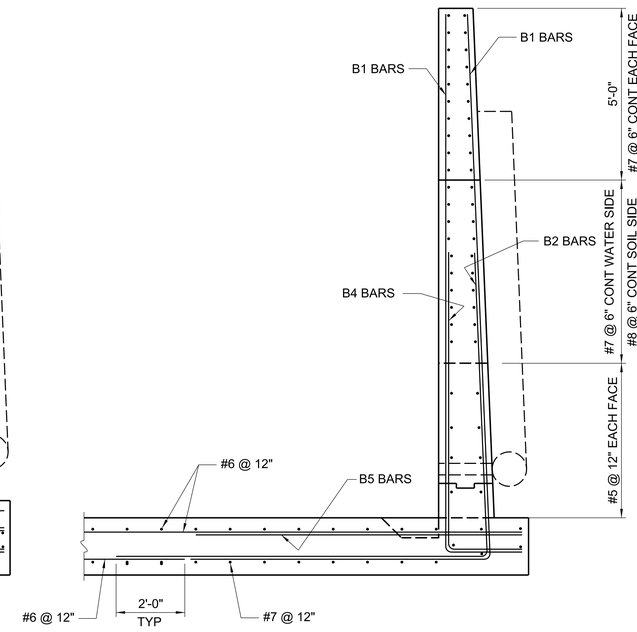
SECTION B-B
NOT TO SCALE

WALL SCHEDULE SECTION B-B		
Height	H1	14'-10"
Wall Thickness	T1	18"
Slab Thickness	T2	28"
Slab Thickness	T3	22"
B1 Bars	Bar No. & Spacing	#7 @ 12"
	Hor. Length	9'-0"
	Vert. Length	16'-3"
B2 Bars	Bar No. & Spacing	#7 @ 12"
	Hor. Length	11'-0"
	Vert. Length	9'-0"
B3 Bars	Bar No. & Spacing	#6 @ 12"
	Hor. Length	2'-3"
	Vert. Length	16'-3"
B4 Bars	Bar No. & Spacing	#6 @ 12"
	Hor. Length	2'-3"
	Vert. Length	9'-0"
B5 Bars	Bar No. & Spacing	#6 @ 12"
	Hor. Length	9'-0"



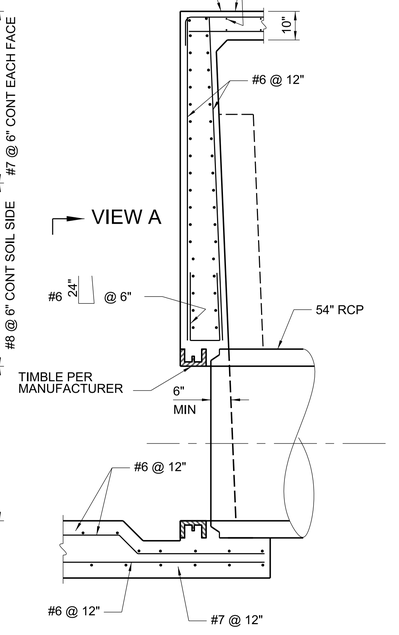
NOTE:
SEE SECTION B-B, SECTION CC, AND SECTION D-D FOR REINFORCING BARS

CORNER DETAIL
NOT TO SCALE

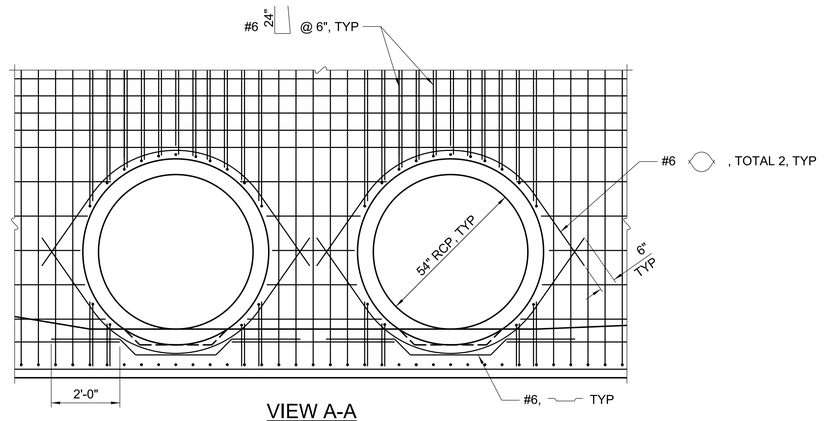


NOTE: FOR REBARS SEE WALL SCHEDULE FOR SECTION B-B

SECTION C-C
NOT TO SCALE



SECTION D-D
NOT TO SCALE



VIEW A-A
NOT TO SCALE

S-3

DRAFTER	DESIGNER	CHECKER	CADD PROJECT FILE NAME
V. Mardis	V. Mardis	B. Fatholahi	Pacoima SG_Intake Canal_Structural Details.dgn

REVIEWED BY: Bahman Fatholahi DATE: 11/19/20

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — VERONICA MARDIS — C 87422 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER 11/19/20 DATE

LOS ANGELES COUNTY PUBLIC WORKS

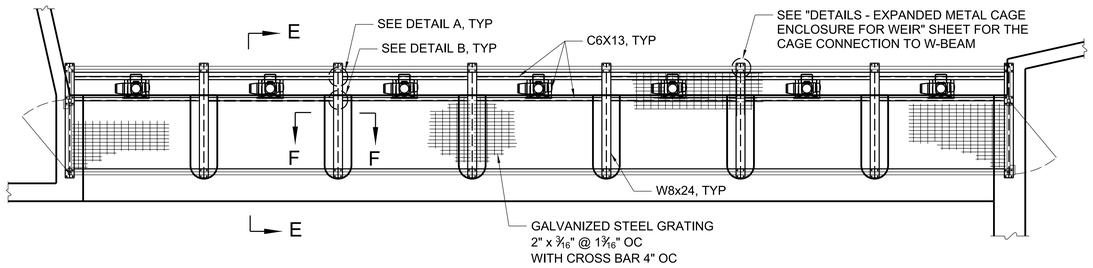
PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

DIVERSION STRUCTURE SECTIONS

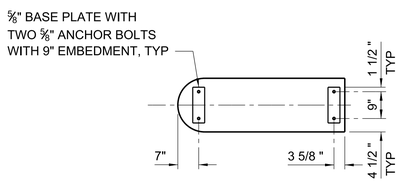
DWG 21.D114.27 | PD 052980 | SHEET 27 OF 72

PLAN S

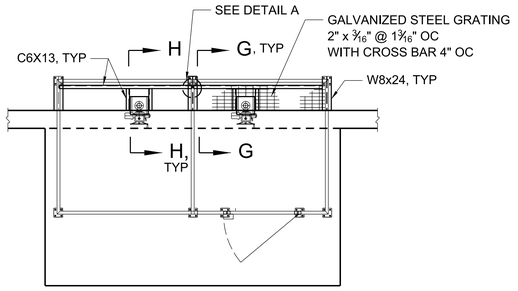
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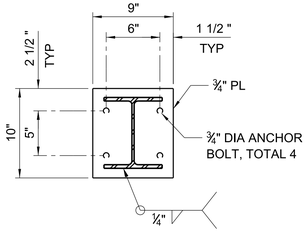


WEIR PLAN
NOT TO SCALE

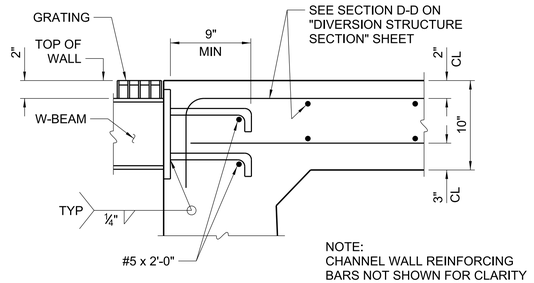


BASE PLATE ANCHOR BOLTS LAYOUT
NOT TO SCALE



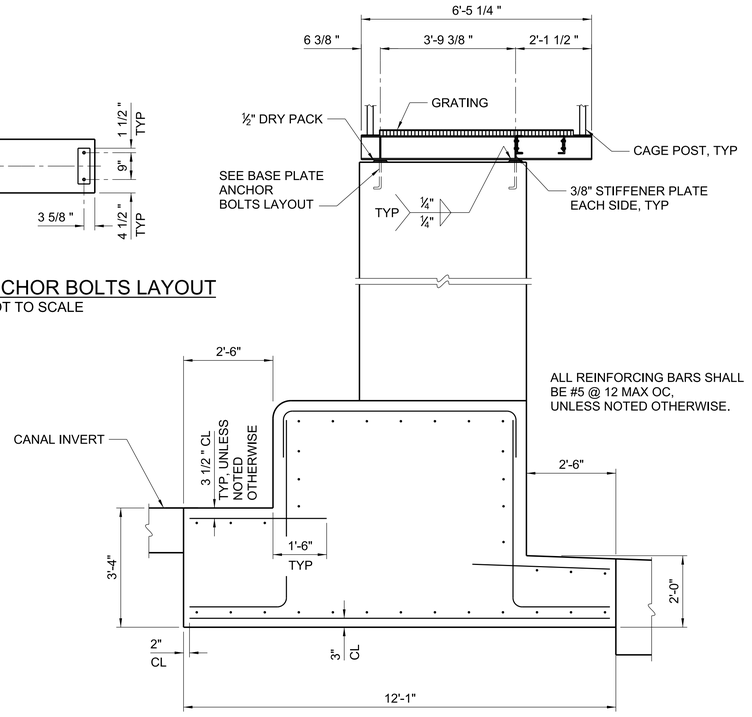


W BEAM PLATE DETAIL
NOT TO SCALE



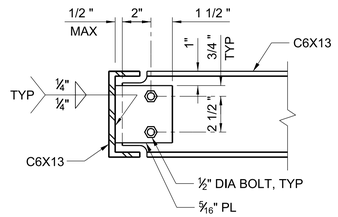
NOTE:
CHANNEL WALL REINFORCING
BARS NOT SHOWN FOR CLARITY

SECTION G-G
NOT TO SCALE

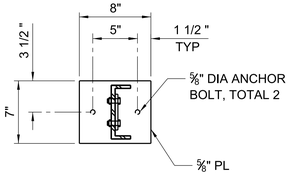


SECTION E-E
NOT TO SCALE

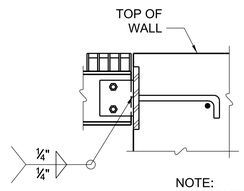
CAGE FRAME FOR CONCRETE LINED BASINS AND LOW FLOW
NOT TO SCALE



TYPICAL CHANNEL TO CHANNEL CONNECTION
NOT TO SCALE

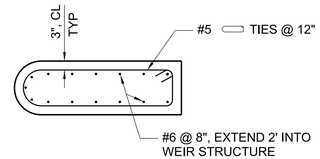


C-CHANNEL PLATE DETAIL
NOT TO SCALE

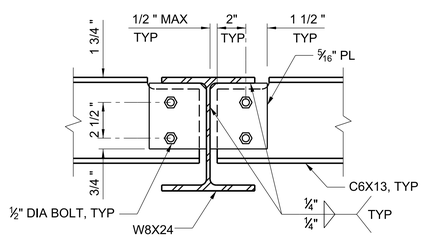


NOTE:
SEE SECTION G-G FOR
INFORMATION NOT SHOWN

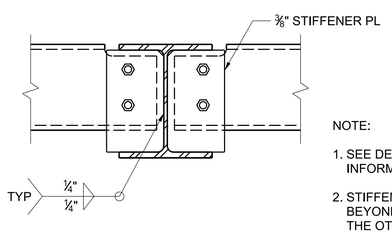
SECTION H-H
NOT TO SCALE



SECTION F-F
NOT TO SCALE



DETAIL A
TYPICAL CHANNEL TO W-BEAM CONNECTION
NOT TO SCALE



NOTE:

1. SEE DETAIL A FOR INFORMATION NOT SHOWN
2. STIFFENER PLATE DOES NOT EXTEND BEYOND THE EDGE OF FLANGE AT THE OTHER END SUPPORT

DETAIL B
TYPICAL CHANNEL TO W-BEAM CONNECTION
NOT TO SCALE

NOTES:

1. SEE "CONCRETE LINED BASINS AND WEIR STRUCTURE DETAILS" AND "CATWALK DETAILS" SHEETS FOR WEIR STRUCTURE DIMENSIONS AND SIZE AND LOCATION OF OPENINGS IN GALAVANIZED GRATING .

S-4

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — VERONICA MARDIS — C 87422 — CIVIL — STATE OF CALIFORNIA

11/19/20
PROJECT ENGINEER — DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

WEIR STRUCTURE AND CATWALK

DWG 21.D114.28 | PD 052980 | SHEET 28 OF 72

DRAFTER V. Mardis
DESIGNER V. Mardis
CHECKER B. Fathollahi
CADD PROJECT FILE NAME Pacoima SG_Intake Canal_Structural Details.dgn
REVIEWED BY: Fathollahi DATE: 11/19/20

DATE: $DATE$ TIME: $TIME$ FILE: $FILEL$

PLAN S

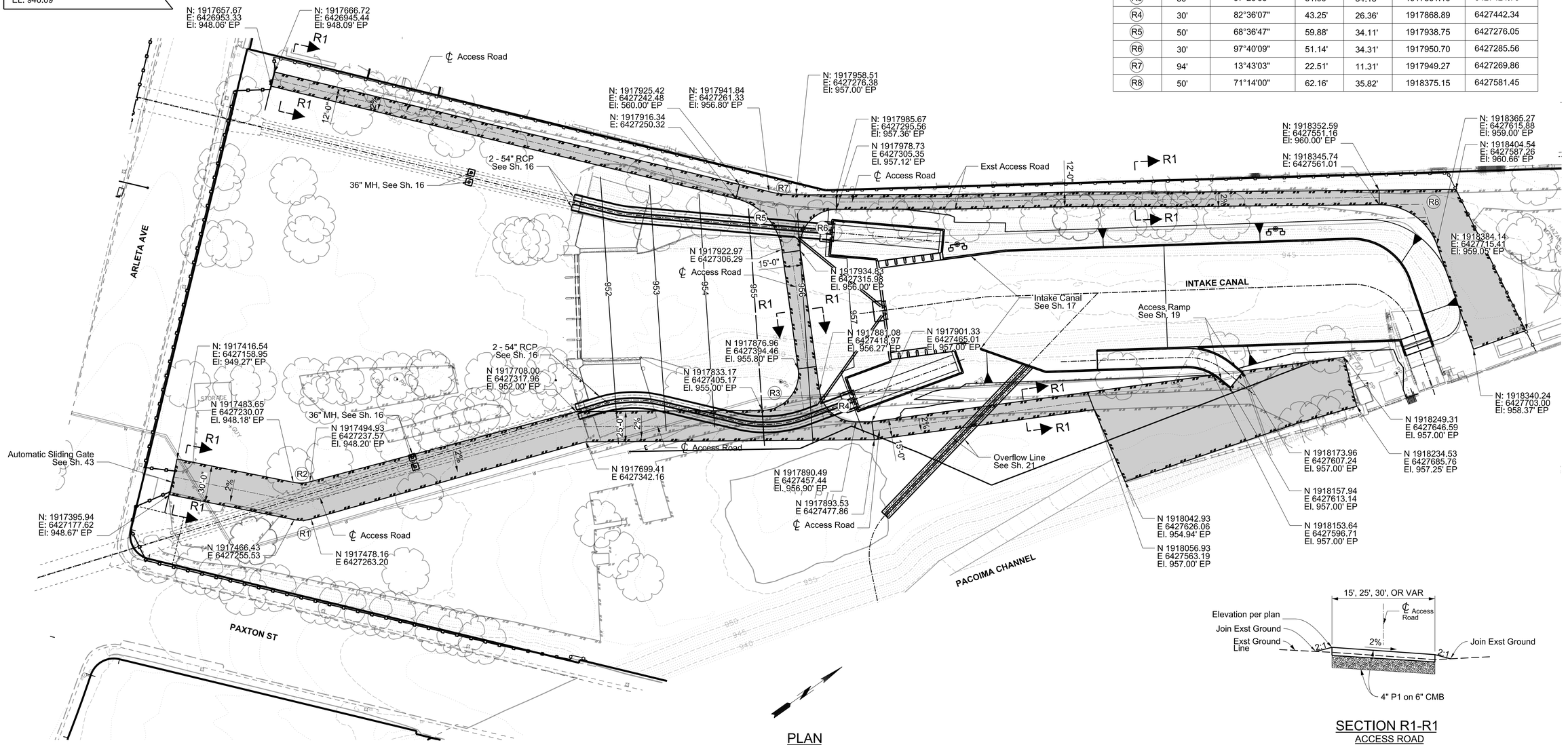
PT# 109

NAD 83 CA ZONE 5 EPOCH 2007.0
NGVD 1929, LA CITY 1970 ADJ.

FD. SM. SPK & W
MARKED "PSOMAS"
PER FC 3376-119
N 1917261.8219
E 6427099.1803
EL. 946.09

CURVE DATA

CURVE	RADIUS	CENTRAL ANGLE	LENGTH	TANGENT	PI NORTHING	PI EASTING
R1	30'	27°01'21"	14.15'	7.20'	1917471.37	6427260.77
R2	30'	26°06'20"	13.67'	6.96'	1917488.42	6427235.13
R3	30'	97°23'53"	51.00'	34.15'	1917861.16	6427424.73
R4	30'	82°36'07"	43.25'	26.36'	1917868.89	6427442.34
R5	50'	68°36'47"	59.88'	34.11'	1917938.75	6427276.05
R6	30'	97°40'09"	51.14'	34.31'	1917950.70	6427285.56
R7	94'	13°43'03"	22.51'	11.31'	1917949.27	6427269.86
R8	50'	71°14'00"	62.16'	35.82'	1918375.15	6427581.45



PLAN
ACCESS ROAD
SCALE: 1"= 50'

SECTION R1-R1
ACCESS ROAD
NOT TO SCALE

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

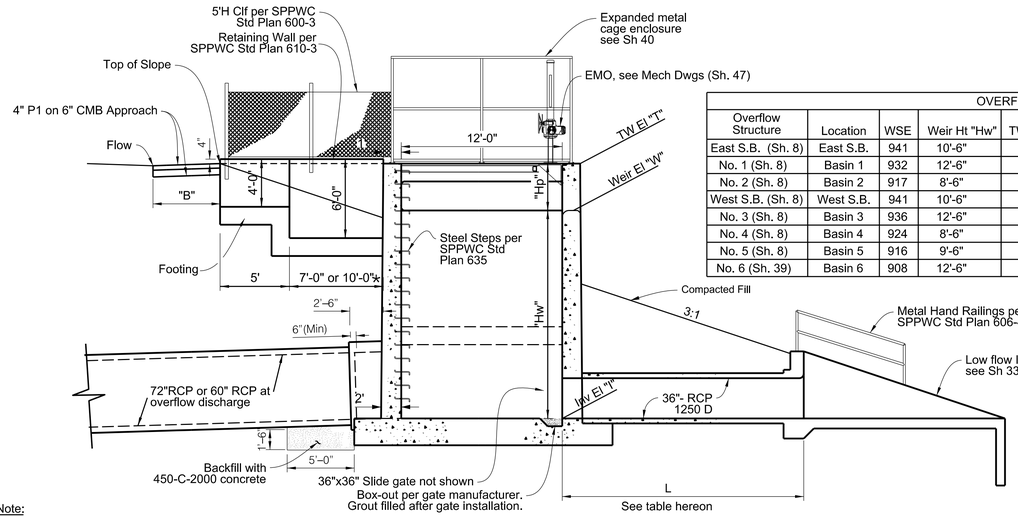
LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

ACCESS ROAD AT INTAKE CANAL PLAN

DWG 21-D114.29 | PD 052980 | SHEET 29 OF 72

PS-DF 07/05



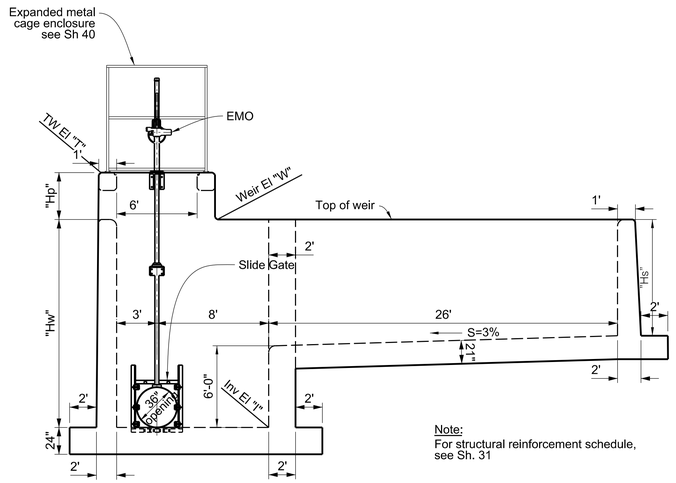
Note:

* For structural reinforcement schedule, see Sh. 31 West Settling Basin Overflow Structure.

SECTION D1-D1

SCALE:3/16"=1'-0"

OVERFLOW STRUCTURES											
Overflow Structure	Location	WSE	Weir Ht "Hw"	TW El "T"	Weir El "W"	Inv El "I"	Top of slope	"Hp"	"Hs"	"B"	L	Discharge Pipe
East S.B. (Sh. 8)	East S.B.	941	10'-6"	943	939.5	929	943	3'-6"	3'-9"	0'	10'-6"	72" RCP
No. 1 (Sh. 8)	Basin 1	932	12'-6"	934	930.5	918	934	3'-6"	5'-9"	5'-0"	9'-0"	72" RCP
No. 2 (Sh. 8)	Basin 2	917	8'-6"	919	915.5	907	919	3'-6"	1'-9"	5'-0"	4'-0"	72" RCP
West S.B. (Sh. 8)	West S.B.	941	10'-6"	944	939.5	929	944	4'-6"	3'-9"	5'-0"	4'-0"	72" RCP
No. 3 (Sh. 8)	Basin 3	936	12'-6"	938	934.5	922	938	3'-6"	5'-9"	5'-0"	9'-0"	72" RCP
No. 4 (Sh. 8)	Basin 4	924	8'-6"	926	922.5	914	934	3'-6"	1'-9"	0'	4'-0"	72" RCP
No. 5 (Sh. 8)	Basin 5	916	9'-6"	918	914.5	905	918	3'-6"	2'-9"	5'-0"	4'-0"	72" RCP
No. 6 (Sh. 39)	Basin 6	908	12'-6"	910	906.5	894	910	3'-6"	5'-9"	5'-0"	9'-0"	60" RCP



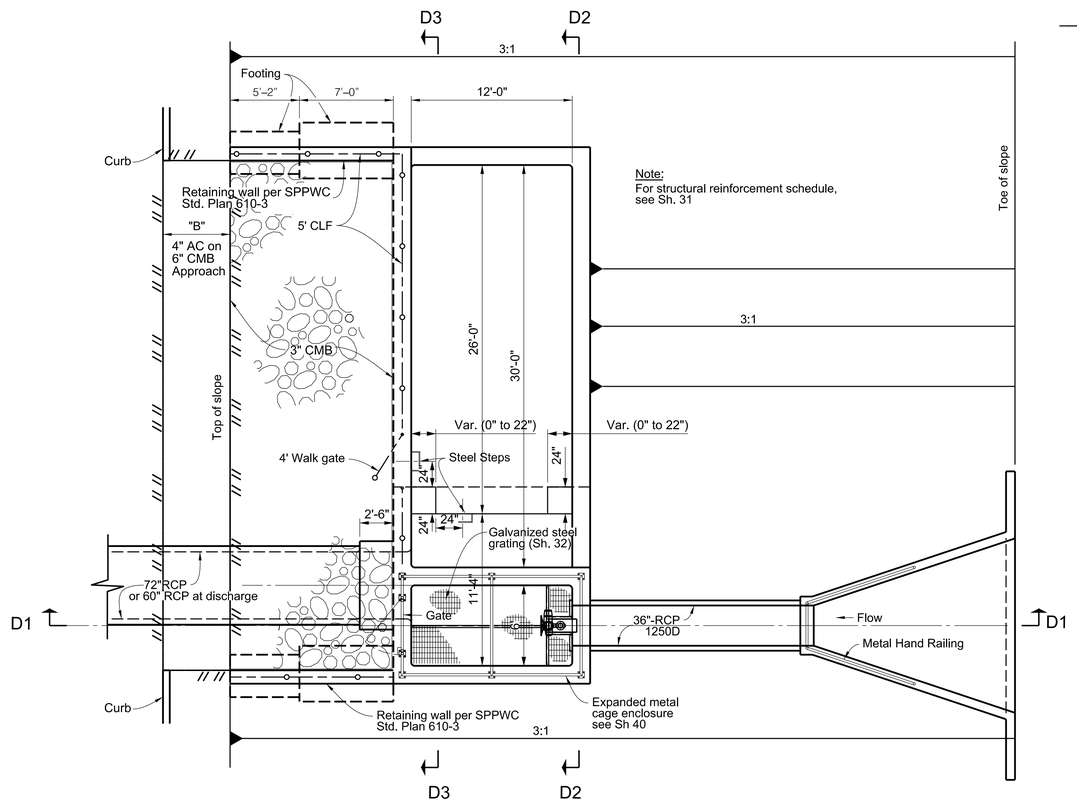
Note:

For structural reinforcement schedule, see Sh. 31

SECTION D2-D2

FRONT WALL

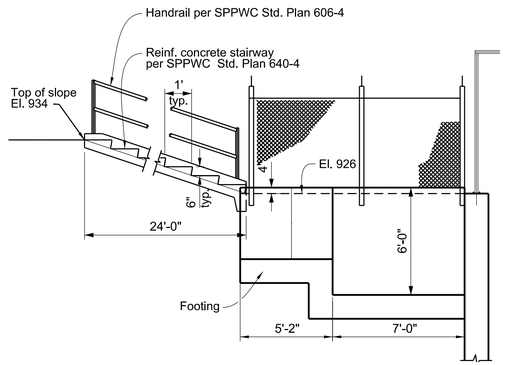
SCALE:3/16"=1'-0"



PLAN

REINFORCED CONCRETE OVERFLOW STRUCTURE (SH. 9 thru 12)

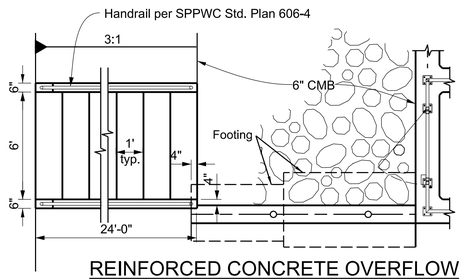
SCALE:3/16"=1'-0"



REINFORCED CONCRETE OVERFLOW STRUCTURE NO. 4 (Sh. 8 & 11)

REINFORCED CONCRETE STAIRWAY PROFILE

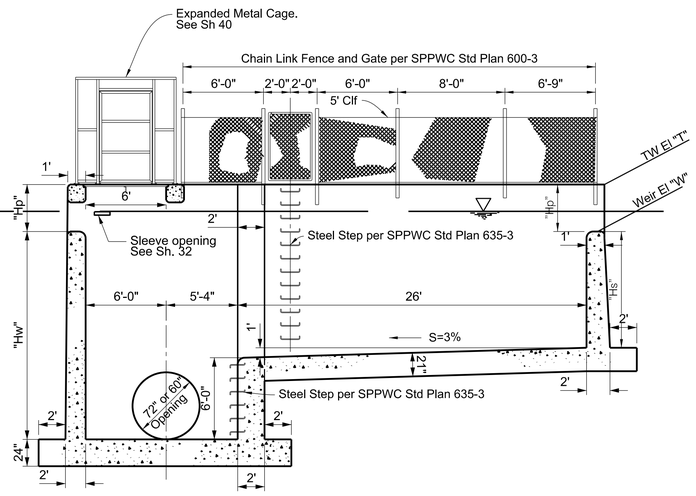
SCALE:1/2"=2'-0"



REINFORCED CONCRETE OVERFLOW STRUCTURE NO. 4 (Sh. 8 & 11)

REINFORCED CONCRETE STAIRWAY PLAN

SCALE:1/2"=2'-0"



SECTION D3-D3

BACK WALL

SCALE:3/16"=1'-0"

NOTES:

1. OVERFLOW STRUCTURE NO.4 INCLUDES A REINFORCED CONCRETE STAIRWAY. REFER TO REINFORCED CONCRETE OVERFLOW STRUCTURE NO.4 PLAN AND PROFILE HEREON.

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — RAFAEL G. PIAMONTE — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER — 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT

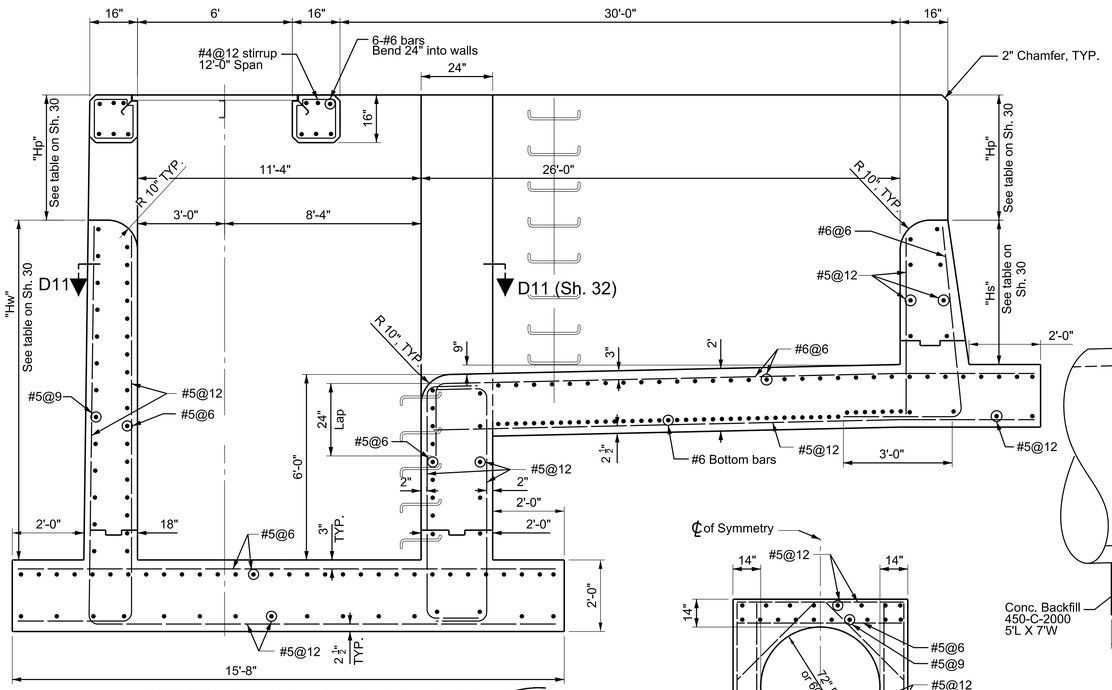
PROJECT ID NO. FCC0001207

REINFORCED CONCRETE OVERFLOW STRUCTURE PLAN AND SECTIONS

DWG 21-D114.30 | PD 052980 | SHEET 30 OF 72

PS-DF 07/05

DRAFTER R. PIAMONTE | DESIGNER R. PIAMONTE | CHECKER J. LI | CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn | REVIEWED BY | DATE



DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER — 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT

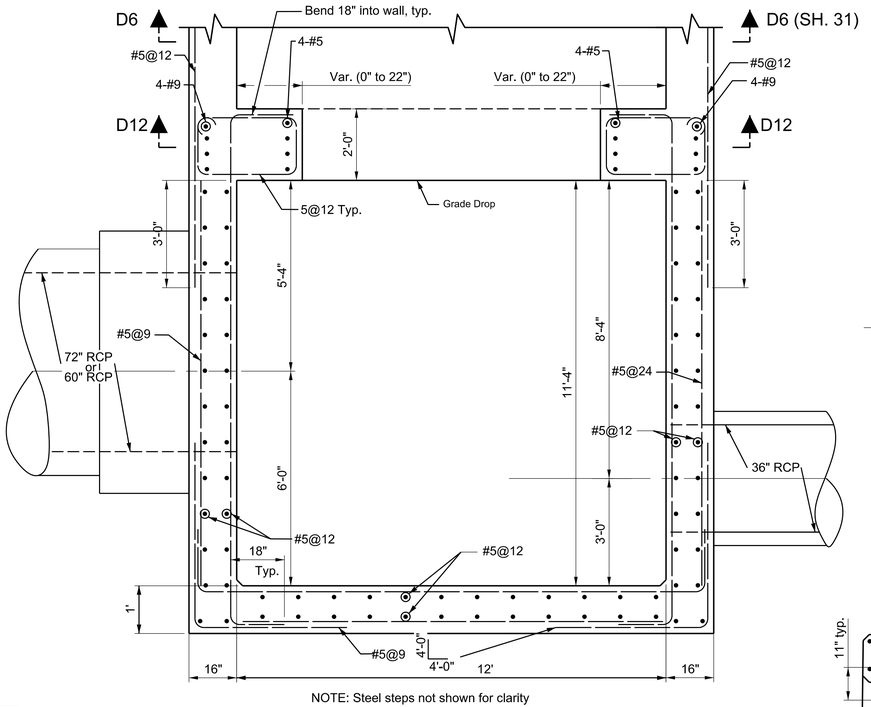
PROJECT ID NO. FCC0001207

REINFORCED CONCRETE OVERFLOW STRUCTURE DETAILS

DWG 21-D114.31	PD 052980	SHEET 31 OF 72

PS-DF 07/05

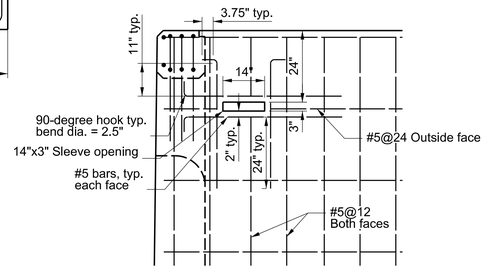
DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE



NOTE: Steel steps not shown for clarity

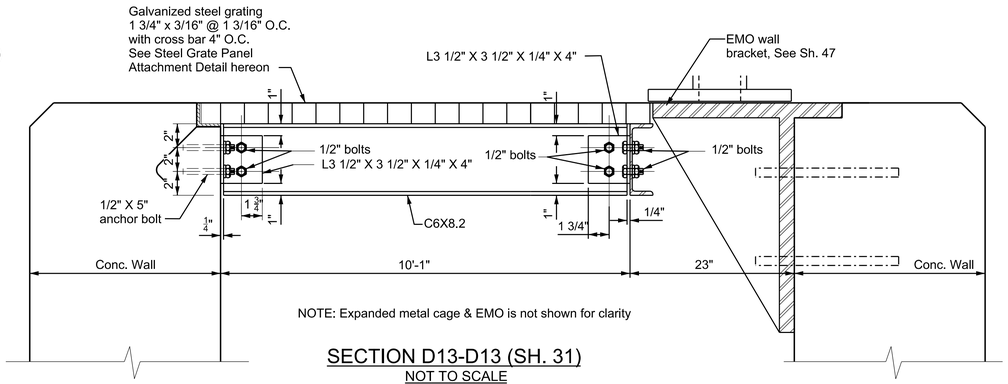
SECTION D11-D11 (SH. 31)

SCALE: 1/2" = 1'-0"



SLEEVE OPENING DETAIL (SH. 31)

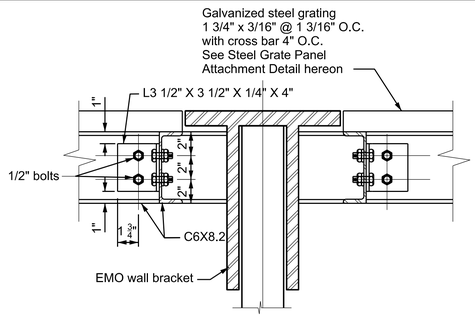
NOT TO SCALE



NOTE: Expanded metal cage & EMO is not shown for clarity

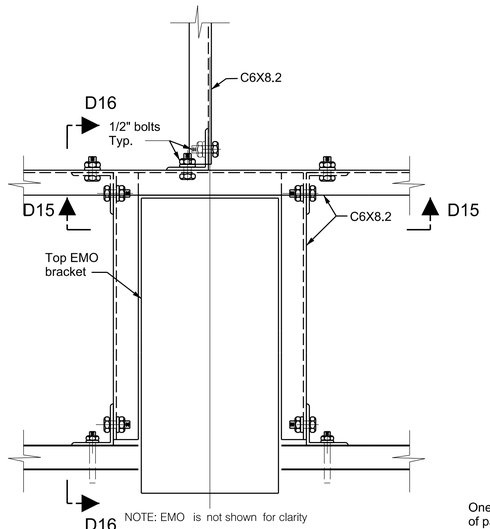
SECTION D13-D13 (SH. 31)

NOT TO SCALE



SECTION D15-D15

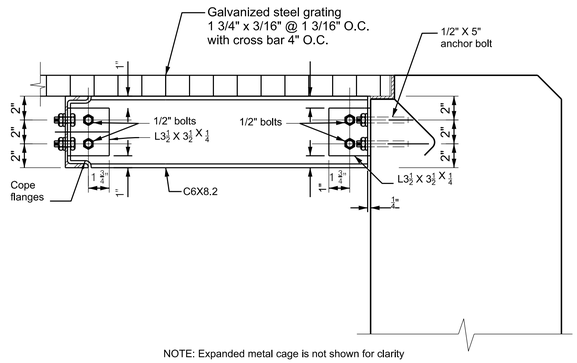
TYPICAL CHANNEL TO CHANNEL CONN.
NOT TO SCALE



NOTE: EMO is not shown for clarity

DETAIL "D14" (SH. 31)

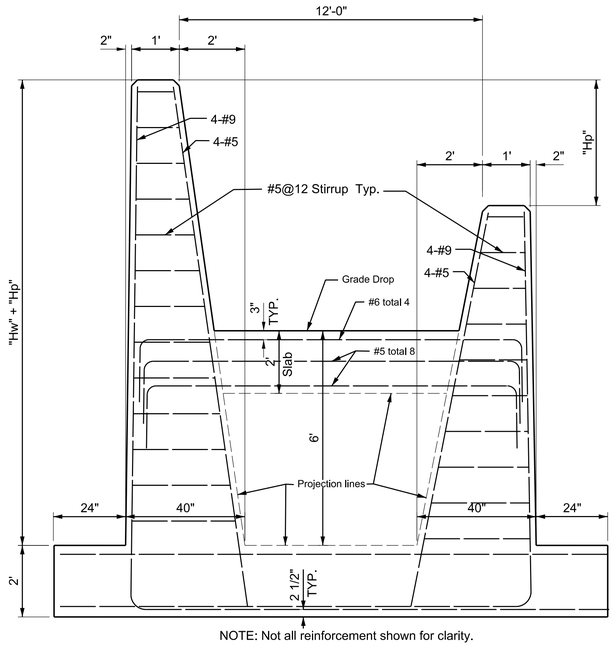
BRACKET FRAME



NOTE: Expanded metal cage is not shown for clarity

SECTION D16-D16

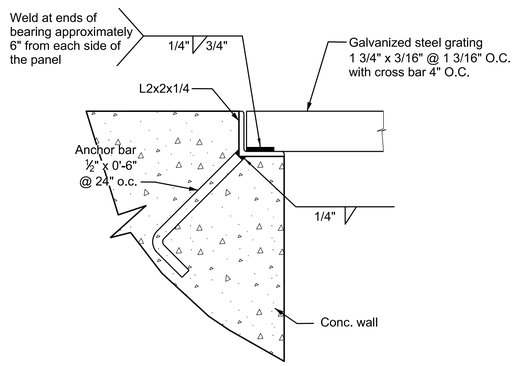
NOT TO SCALE



NOTE: Not all reinforcement shown for clarity.

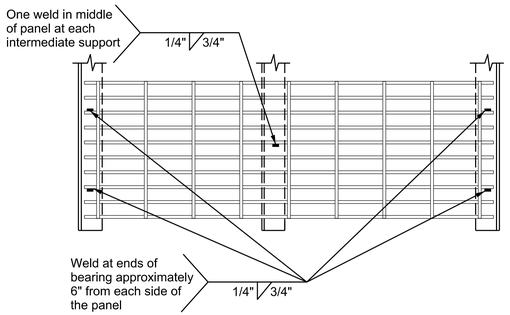
SECTION D12-D12

NOT TO SCALE



DETAIL "D17" (SH. 31)

GRATING ANCHOR DETAIL
NOT TO SCALE



STEEL GRATE PANEL ATTACHMENT DETAIL (SH. 30 & 31)

NOT TO SCALE

DRAFTER	DESIGNER	CHECKER	CADD PROJECT FILE NAME	REVIEWED BY	DATE
R. PIAMONTE	R. PIAMONTE	J. LI	PacoimaSGEnhancement.dgn		

DATE	MARK	DESCRIPTION
		REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

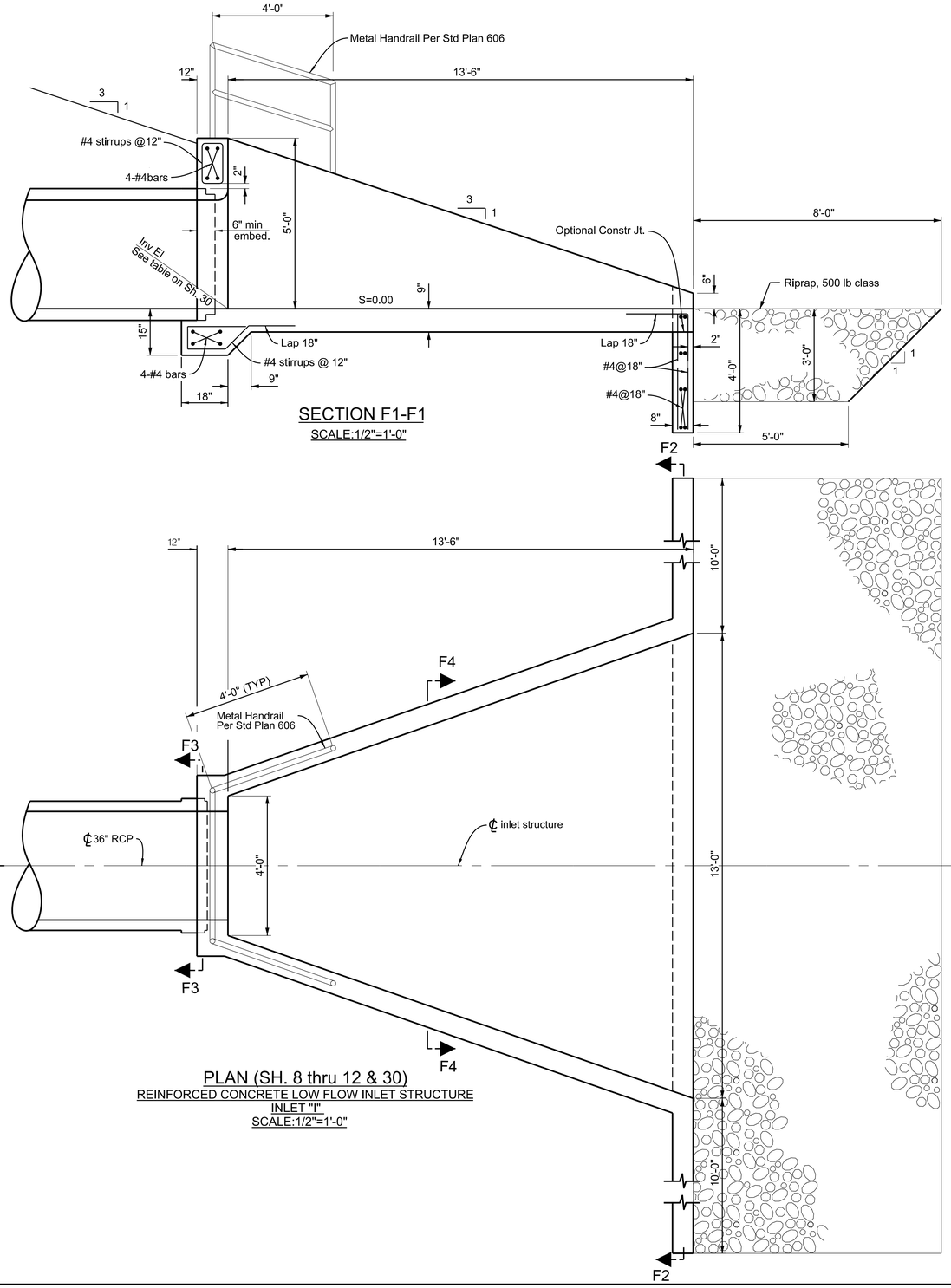
LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207
REINFORCED CONCRETE OVERFLOW STRUCTURE DETAILS

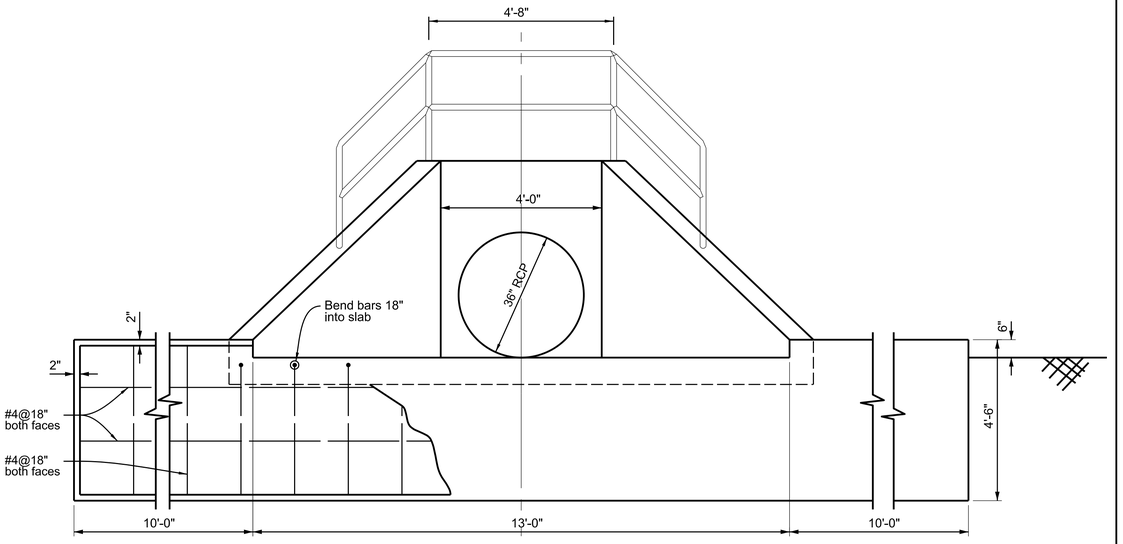
DWG 21-D114.32	PD 052980	SHEET 32 OF 72

FS-DF 07/05

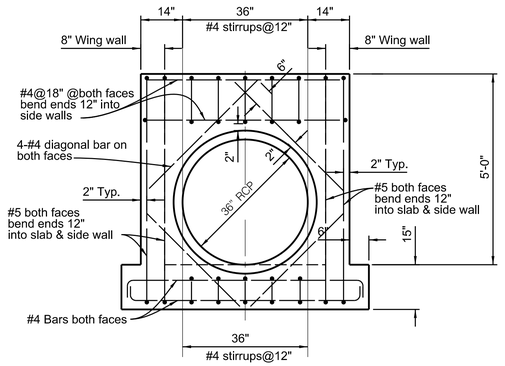


SECTION F1-F1
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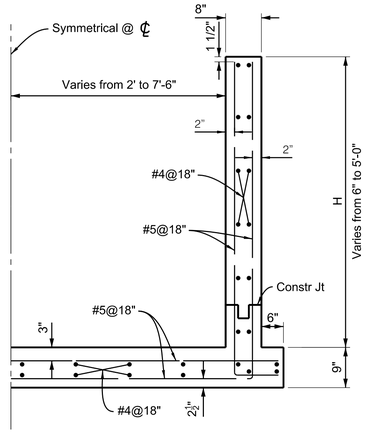
PLAN (SH. 8 thru 12 & 30)
REINFORCED CONCRETE LOW FLOW INLET STRUCTURE
INLET "I"
SCALE:1/2"=1'-0"



SECTION F2-F2
SCALE:1/2"=1'-0"



SECTION F3-F3
HEADWALL
SCALE:1/2"=1'-0"



SECTION F4-F4
TYPICAL REINFORCEMENT
NOT TO SCALE

DRAFTER	DESIGNER	CHECKER	CADD PROJECT FILE NAME	REVIEWED BY	DATE
R. PIAMONTE	R. PIAMONTE	J. LI	PacoimaSGEnhancement.dgn		

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — RAFAEL G. PIAMONTE — C 85493 — CIVIL — STATE OF CALIFORNIA

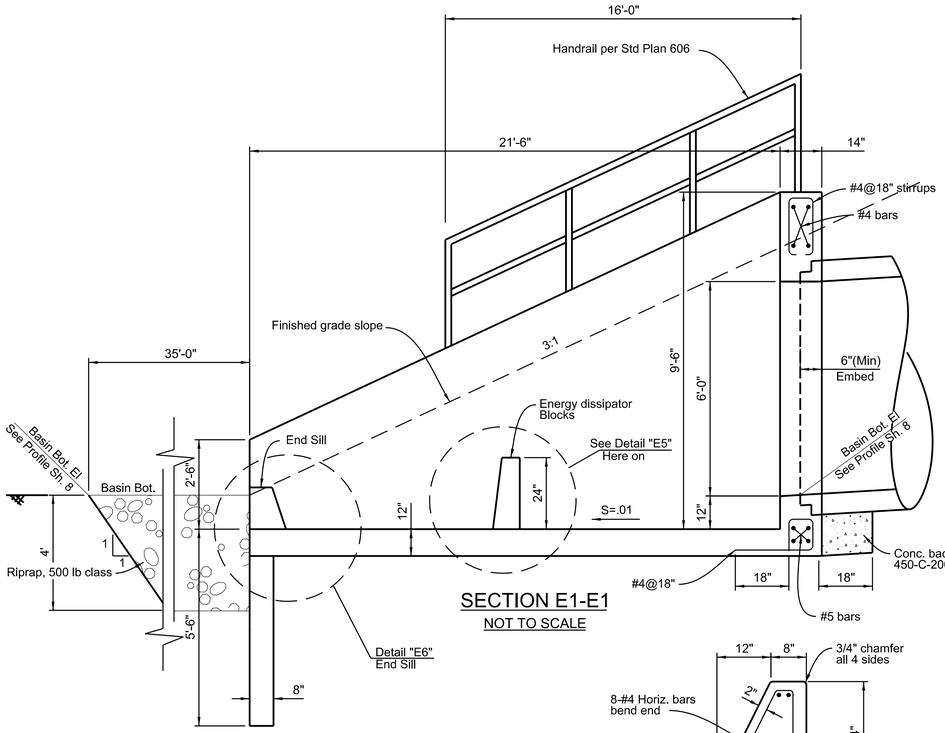
PROJECT ENGINEER — 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207
REINFORCED CONCRETE
LOW FLOW INLET STRUCTURE "I" - DETAILS

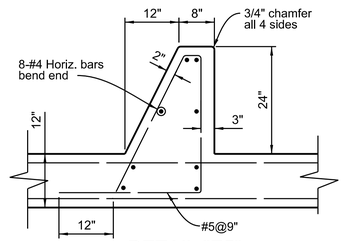
DWG 21-D114,33 | PD 052980 | SHEET 33 OF 72

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SECTION E1-E1

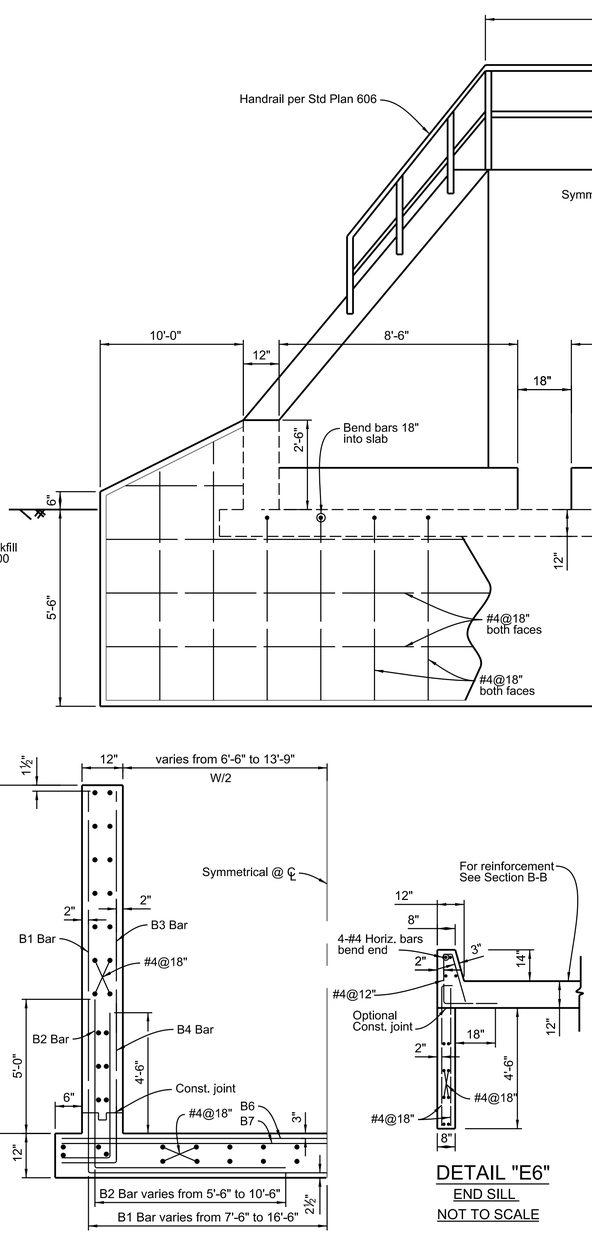
NOT TO SCALE



DETAIL "E5"

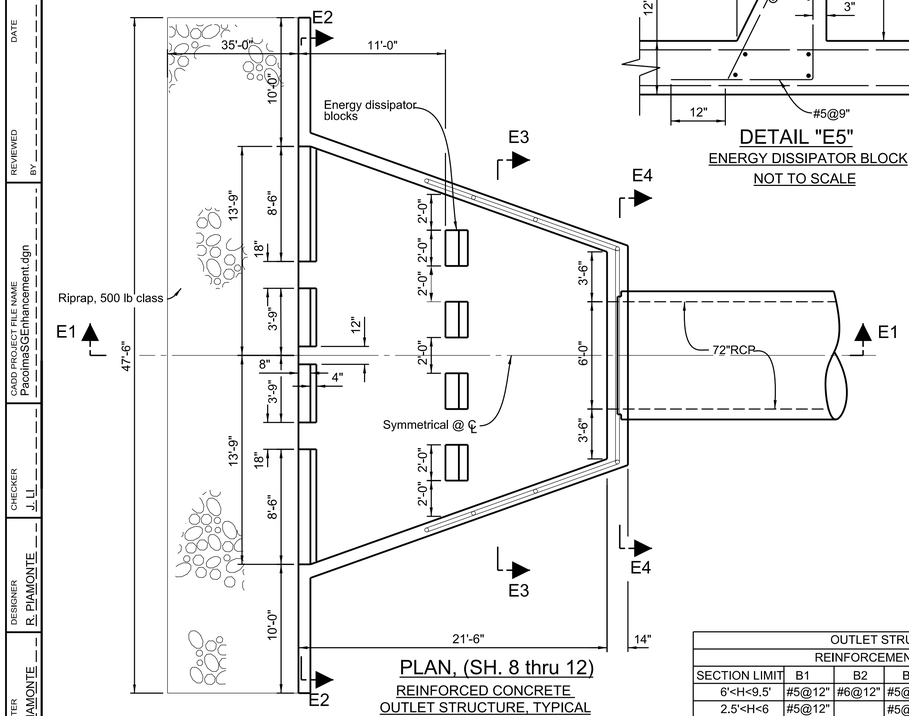
ENERGY DISSIPATOR BLOCK

NOT TO SCALE



SECTION E2-E2

NOT TO SCALE



PLAN, (SH. 8 thru 12)

REINFORCED CONCRETE
OUTLET STRUCTURE, TYPICAL

NOT TO SCALE

SECTION E3-E3

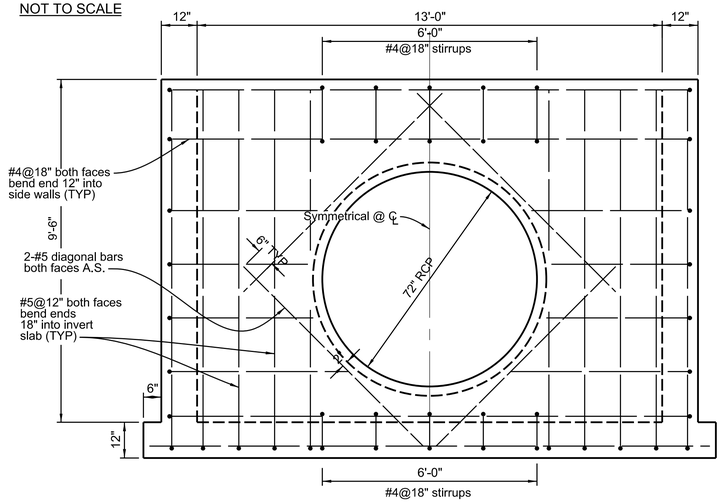
TYPICAL REINFORCEMENT

NOT TO SCALE

DETAIL "E6"

END SILL

NOT TO SCALE



SECTION E4-E4

SCALE:1/2"=1'-0"

OUTLET STRUCTURES						
REINFORCEMENT SCHEDULE						
SECTION LIMIT	B1	B2	B3	B4	B6	B7
6'<H<9.5'	#5@12"	#6@12"	#5@14"	#4@12"	#4@12"	#4@12"
2.5'<H<6	#5@12"		#5@14"		#5@18"	

DATE	MARK	DESCRIPTION

REVISIONS

RICHARD G. PIAMONTE — REGISTERED PROFESSIONAL ENGINEER — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER — 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

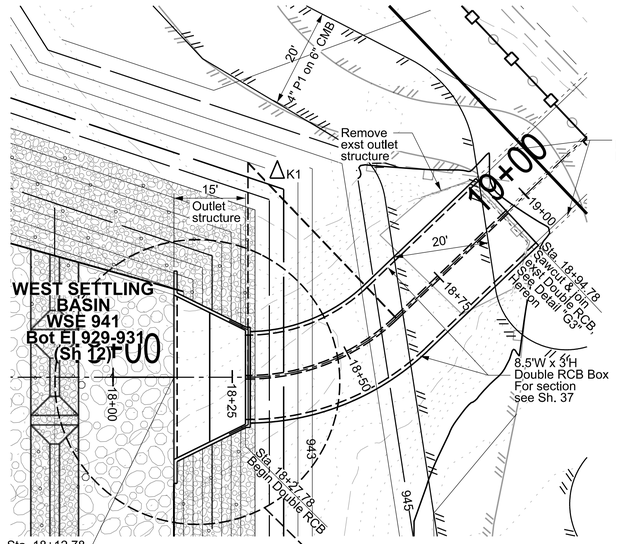
REINFORCED CONCRETE OUTLET STRUCTURE DETAILS

DWG 21-D114.34	PD 052980	SHEET 34 OF 72

PS-DF 07/05

DRAFTER R. PIAMONTE | DESIGNER R. PIAMONTE | CHECKER J. LI | CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn | REVIEWED BY | DATE

11/19/2020 2:14:35 PM pw:\\pwedmsprod01.dpw.co.la.ca.us:PW_INTI2\Documents\DEPARTMENT PROJECTS (PW)\FCC\FCC0001207 - Pacoima Spreading Grounds Basin Enhancement Proj\DES Drainage\4-CAD\FCC0001207 - PACOIMA SG IMPROVEMENTS.dgn



Curve Data

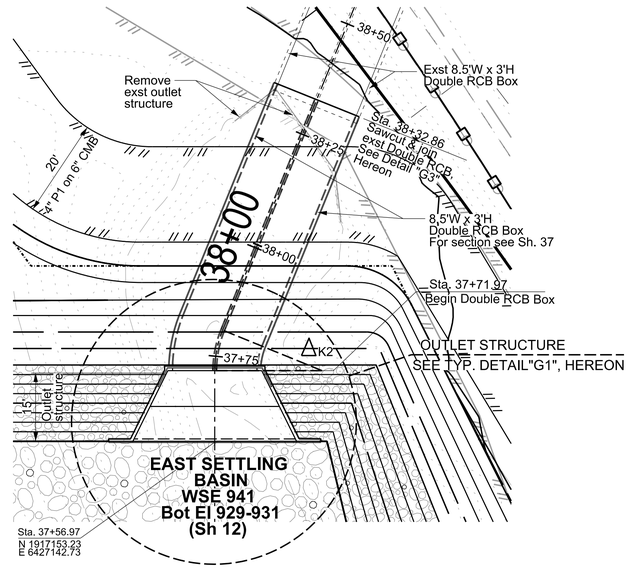
K1	= 43°37'03
R	= 45.0'
T	= 18.01'
L	= 34.26'
BC	= 18+28.31
EC	= 18+62.56
PI	= N 1,917,514.11 E 6,426,841.47

K2	= 22°10'42"
R	= 22.5'
T	= 4.41'
L	= 8.71'
BC	= 37+71.97
EC	= 37+80.68
PI	= N 1,917,172.60 E 6,427,141.40

PLAN (SH. 15)

REINFORCED CONCRETE OUTLET STRUCTURE, WEST SETTLING BASIN

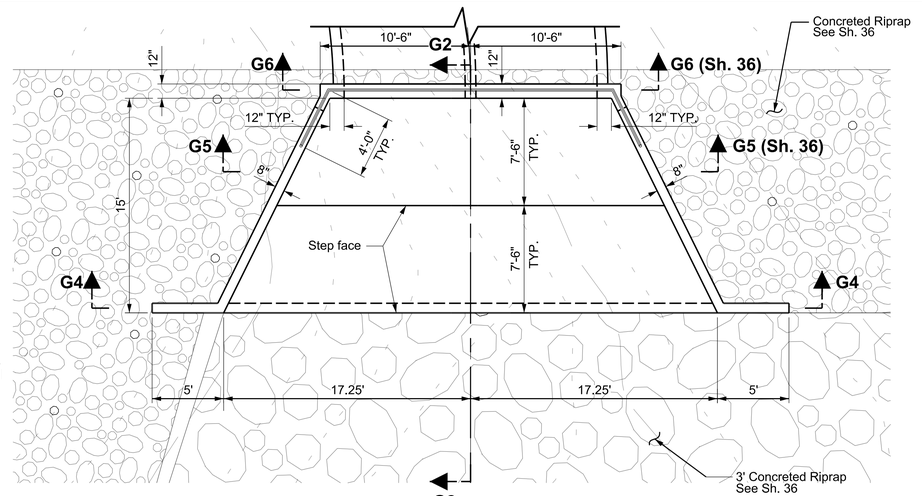
SCALE: 1" = 15'



PLAN (SH. 15)

REINFORCED CONCRETE OUTLET STRUCTURE, EAST SETTLING BASIN

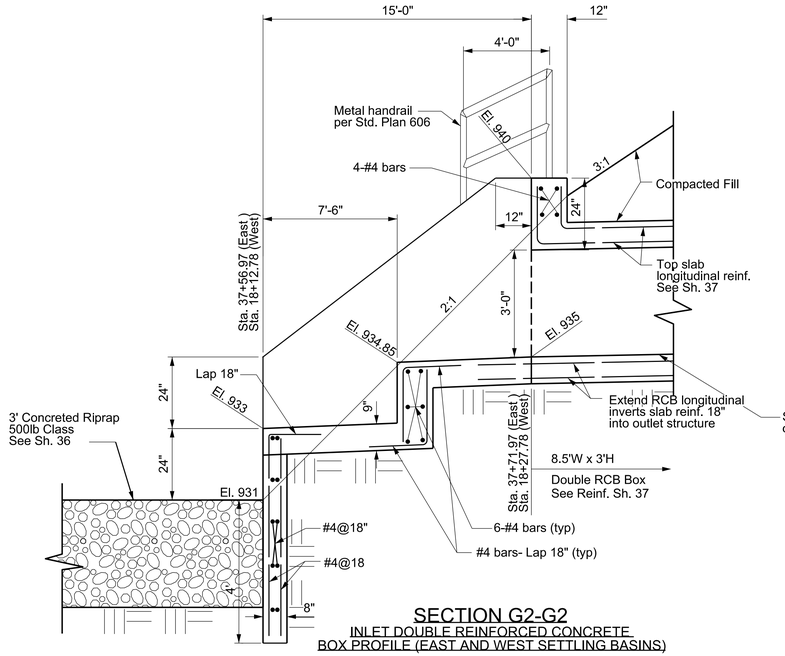
SCALE: 1" = 15'



DETAIL "G1"

REINFORCED CONCRETE OUTLET STRUCTURE FOR EAST & WEST SETTLING BASINS

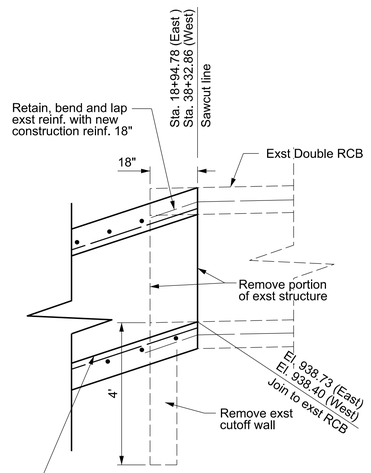
SCALE: 1" = 5'



SECTION G2-G2

INLET DOUBLE REINFORCED CONCRETE BOX PROFILE (EAST AND WEST SETTLING BASINS)

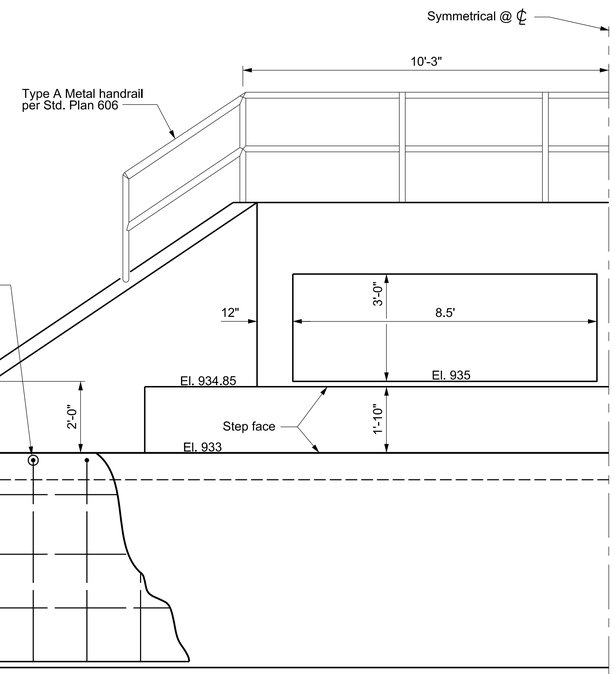
NOT TO SCALE



DETAIL "G3"

DOUBLE REINFORCED CONCRETE BOX JOINT DETAIL (EAST AND WEST SETTLING BASINS)

NOT TO SCALE



SECTION G4-G4

FRONT VIEW (EAST AND WEST SETTLING BASIN)

SCALE: 1/2" = 1'

DRAFTER	R. PIAMONTE	
DESIGNER	R. PIAMONTE	
CHECKER	J. LI	
CADD PROJECT FILE NAME	PacoimaSGEnhancement.dgn	
REVIEWED BY		
DATE		

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER RAFAEL G. PIAMONTE C 85493 CIVIL STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

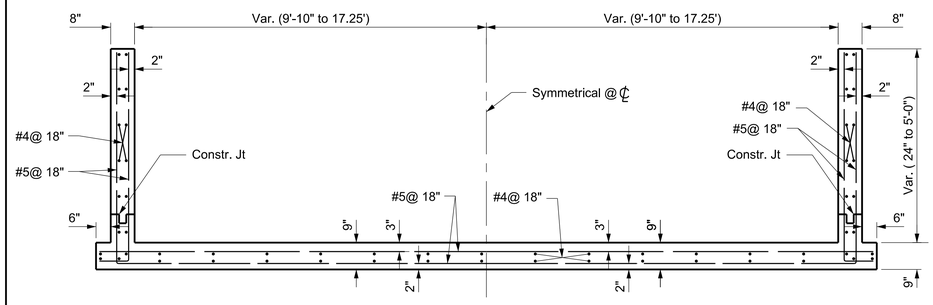
BASIN ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

REINFORCED CONCRETE OUTLET STRUCTURE EAST & WEST SETTLING BASINS

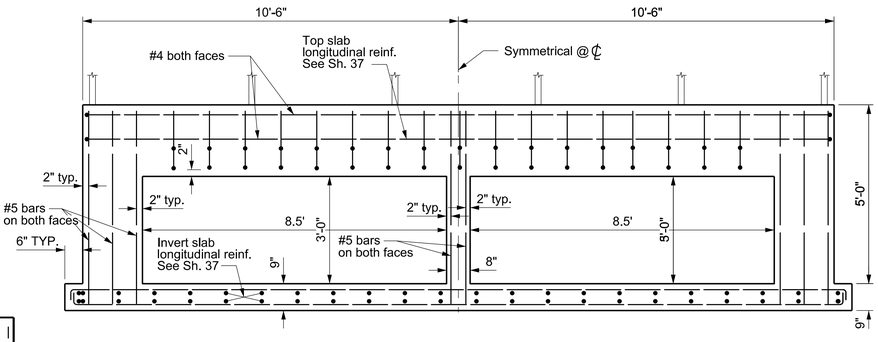
DWG 21-D114.35 | PD 052980 | SHEET 35 OF 72

PS-DF 07/05



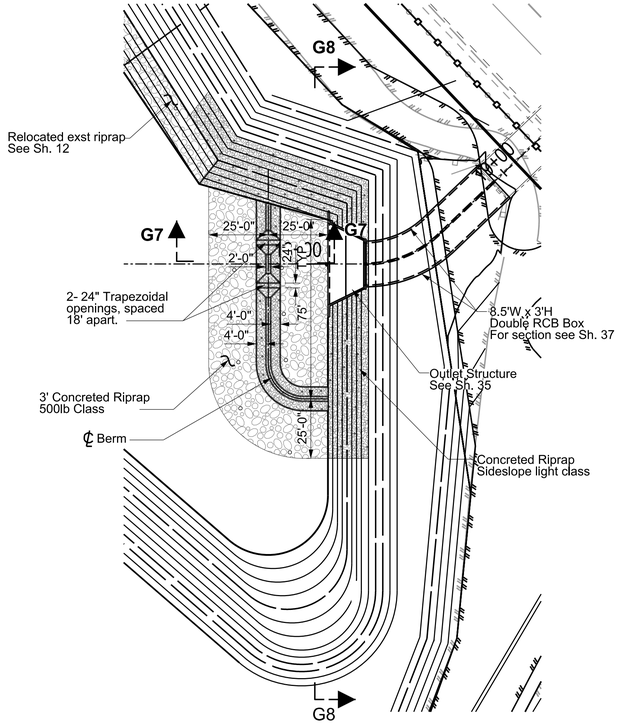
SECTION G5-G5 (SH. 35)

TYPICAL REINFORCEMENT
(EAST AND WEST SETTLING BASINS)
SCALE: 1"=2'



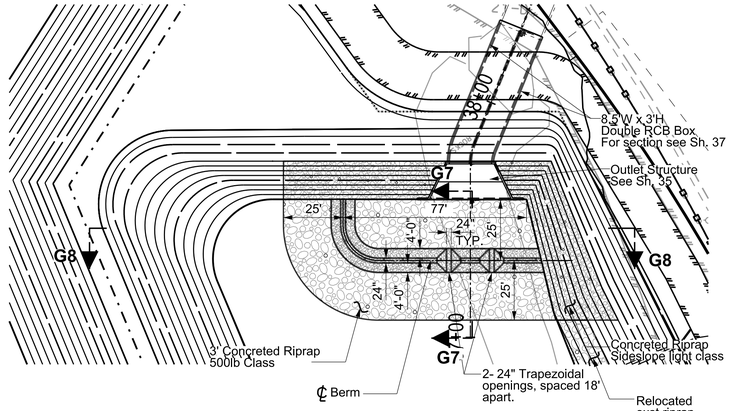
SECTION G6-G6 (SH. 35)

HEADWALL (EAST AND WEST SETTLING BASINS)
SCALE: 1"=2'



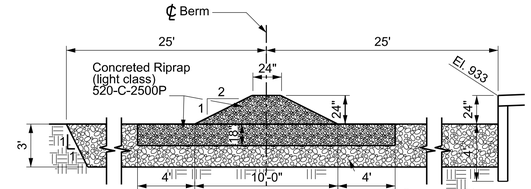
PLAN (Sh. 15)

RIP RAP PROTECTION AT WEST SETTLING BASIN OUTLET STRUCTURE
SCALE: 1"=30'



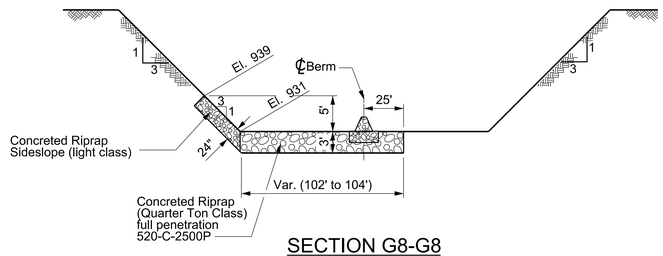
PLAN (Sh. 15)

RIP RAP PROTECTION AT EAST SETTLING BASIN OUTLET STRUCTURE
SCALE: 1"=30'



SECTION G7-G7

BERM DETAIL
(EAST AND WEST SETTLING BASINS)
SCALE: 1"=5'



SECTION G8-G8

SIDE SLOPE PROTECTION
(EAST AND WEST SETTLING BASINS)
NOT TO SCALE

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

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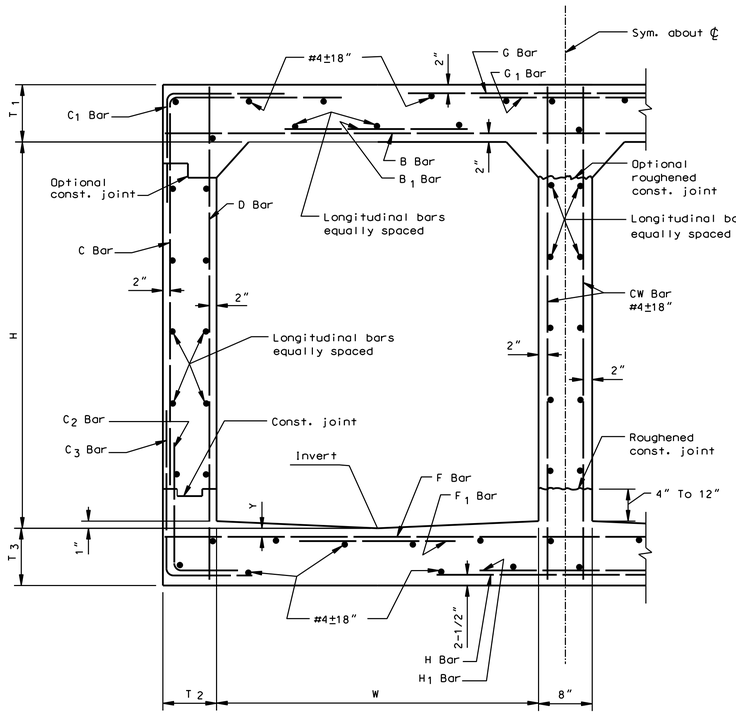
PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

RIP RAP PROTECTION AND BERM DETAIL

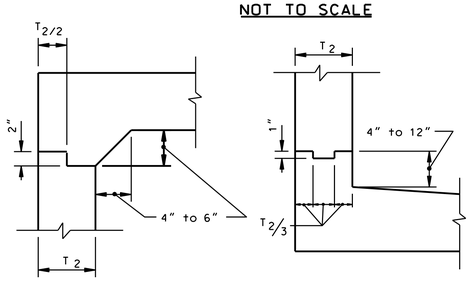
DWG 21-D114.36 | PD 052980 | SHEET 36 OF 72

PS-DF 07/05



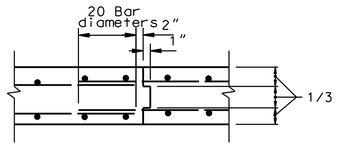
TYPICAL RC BOX SECTION (Sh.15.35 & 36)

NOT TO SCALE



TOP OF WALL BASE OF WALL

LONGITUDINAL JOINT



TRANSVERSE JOINT

CONSTRUCTION JOINT DETAILS

NOT TO SCALE

STRUCTURAL NOTES

1. DIMENSIONS FROM FACE OF CONCRETE TO STEEL ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN.
2. CONCRETE DIMENSIONS SHALL BE MEASURED HORIZONTALLY OR VERTICALLY ON THE PROFILE, AND PARALLEL TO OR AT RIGHT ANGLES (OR RADIALLY) TO CENTERLINE OF CONDUIT ON THE PLAN EXCEPT AS OTHERWISE SHOWN.
3. ALL BAR BENDS AND HOOKS SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S "BUILDING CODE REQUIREMENT FOR REINFORCED CONCRETE", LATEST EDITION.
4. TRANSVERSE CONSTRUCTION JOINTS SHALL NOT BE PLACED WITHIN 30 INCHES OF MANHOLE OR JUNCTION STRUCTURE OPENINGS.
5. TRANSVERSE CONSTRUCTION JOINTS IN WALLS AND SLABS SHALL BE IN THE SAME PLANE. NO STAGGERING OF JOINTS WILL BE PERMITTED. TRANSVERSE CONSTRUCTION JOINTS SHALL BE NORMAL OR RADIAL TO THE CENTERLINE OF CONSTRUCTION.
6. THE TRANSVERSE REINFORCING BARS SHALL TERMINATE ONE AND ONE-HALF INCHES FROM THE CONCRETE SURFACES UNLESS OTHERWISE SHOWN ON THE STRUCTURAL DETAILS.
7. EXPOSED EDGES OF CONCRETE MEMBERS SHALL BE ROUNDED OR BEVELED.
8. NO SPLICES IN TRANSVERSE BARS REINFORCEMENT WILL BE PERMITTED OTHER THAN SHOWN ON THE PLANS WITHOUT APPROVAL OF THE ENGINEER. NO MORE THAN TWO SPLICES WILL BE PERMITTED IN ANY LONGITUDINAL BAR BETWEEN TRANSVERSE JOINTS. SPLICES SHALL BE STAGGERED.
9. LONGITUDINAL BARS SHALL BE LAPPED 20 BAR DIAMETERS AT SPLICES. TRANSVERSE BARS SHALL BE LAPPED 30 BAR DIAMETERS AT SPLICES.
10. LONGITUDINAL BARS SHALL BE CONTINUOUS AND EXTEND THROUGH ALL CONSTRUCTION JOINTS.
11. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, TRANSVERSE CONSTRUCTION JOINTS (IN BOTH SLABS AND WALLS), SHALL BE PLACED AT THE END OF EACH POUR, BUT THE SPACING THEREOF SHALL NOT EXCEED 50 FEET NOR BE LESS THAN 10 FEET.
12. UNLESS OTHERWISE SHOWN ON THE DETAILS, IN CURVED SECTIONS TRANSVERSE BARS SHALL BE PLACED RADIALLY. STRAIGHT TRANSVERSE BARS IN TOP AND BOTTOM SLABS SHALL BE SPACED AS SHOWN ON THE TYPICAL SECTIONS: SPACING SHALL BE AT THE CENTERLINE OF THE BARREL ON THE OUTSIDE OF THE CURVE FOR DOUBLE BARREL BOXES. STRAIGHT BARS AND L-BARS IN WALLS SHALL BE SPACED AS SHOWN ON THE TYPICAL SECTIONS, WITH THE SPACING MEASURED BETWEEN THE VERTICAL LEGS OF BARS.
13. AT THE BEGINNING AND ENDING OF ALL POURS, A CURTAIN OF REINFORCEMENT COMPOSED OF B, C, C2, D, CW, F, G, AND H BARS SHALL BE PLACED THREE INCHES FROM THE TRANSVERSE CONSTRUCTION JOINT.
14. D BARS AND CW BARS MAY BE SPLICED 20 BAR DIAMETERS AT THE LOWER LONGITUDINAL CONSTRUCTION JOINT, AT CONTRACTOR'S OPTION.
15. IN ALL SECTIONS LAP C AND C2 BARS. THE VERTICAL LENGTH OF C AND C2 BARS HAS BEEN CALCULATED FOR A FOUR-INCH STARTER WALL. IF THE HEIGHT OF THE STARTER WALL IS VARIED, THE VERTICAL LENGTH OF THE C AND C2 BARS SHALL BE VARIED CORRESPONDINGLY SO AS TO MAINTAIN A 30 DIAMETER LAP BETWEEN THE TWO BARS. THE LAPS SHALL BE BASED ON THE SMALLER BARS.
16. CONCRETE QUANTITIES ARE BASED ON A SIX-BY-SIX INCH FILLET AND THE STEEL QUANTITIES DO NOT INCLUDE ANY OPTIONAL SPLICES.
17. IF WALL THICKNESS IS SIX INCHES, PLACE REINFORCEMENT AT THE CENTERLINE OF THE WALL.
18. THE DESIGN OF BOX SECTIONS IDENTIFIED BY A NUMERICAL VALUE ONLY IS BASED ON A WIDTH OF TRENCH EQUAL TO THE OUTSIDE WIDTH OF THE CONDUIT PLUS 3 FEET. WHEN THE COVER IS EQUAL TO 10 FEET OR LESS THE TRENCH WIDTH IS UNRESTRICTED. WHEN THE COVER IS GREATER THAN 10 FEET AND THE TRENCH WIDTH IS GREATER THAN THE OUTSIDE WIDTH OF THE CONDUIT PLUS 3 FEET FOR A DISTANCE IN EXCESS OF 10 FEET AN ALTERNATE SECTION SHALL BE USED AS INDICATED BELOW:
    A. WHEN THE DEPTH OF COVER IS LESS THAN 18 FEET, SECTIONS WITH THE SUFFIX "B" SHALL BE USED.
    B. WHEN THE DEPTH OF COVER IS GREATER THAN 18 FEET AND:
        1. THE TRENCH WIDTH IS LESS THAN THE OUTSIDE WIDTH OF THE CONDUIT PLUS 6 FEET, SECTIONS WITH THE SUFFIX "A" SHALL BE USED.
        2. THE TRENCH WIDTH IS GREATER THAN THE OUTSIDE WIDTH OF CONDUIT PLUS 6 FEET, SECTIONS WITH THE SUFFIX "B" SHALL BE USED.

BOX SECTION		EAST & WEST BASIN
Design Cover		5'
Width	W	8'-6"
Height	H	3'-0"
Top Slab Thickness	T1	9"
Side Wall Thickness	T2	8"
Bottom Slab Thickness	T3	9"
Concrete Cover(3" Min)	Y	3"
B Bars	Bar No. & Spacing	#4@20"
	Length	18'-9"
B 1 Bars	Bar No. & Spacing	#7@20"
	Length	18'-9"
C Bars	Bar No. & Spacing	#4@9"
	Hor. Length	3'-10"
	Vert. Length	3'-2"
C 1 Bars	Bar No. & Spacing	-
	Hor. Length	-
	Vert. Length	-
C 2 Bars	Bar No. & Spacing	#4@9"
	Hor. Length	3'-10"
	Vert. Length	2'-2"
C 3 Bars	Bar No. & Spacing	-
	Hor. Length	-
	Vert. Length	-
D Bars	Bar No. & Spacing	#4@18
	Length	4'-3"
F Bars	Bar No. & Spacing	#4@20"
	Length	18'-9"
F 1 Bars	Bar No. & Spacing	#7@20"
	Length	18'-9"
G Bars	Bar No. & Spacing	#4@13
	Length	13'-6"
G 1 Bars	Bar No. & Spacing	-
	Length	-
H Bars	Bar No. & Spacing	#4@14"
	Length	13'-6"
H 1 Bars	Bar No. & Spacing	#7@14
	Length	4'-6"
CW Bars	Bar No. & Spacing	4@18"
	Length	4'-3"
NUMBER OF LONGITUDINAL REINFORCEMENT # 4 BARS		
Top Slab (includes distribution reinforcement)		27
Ext. Walls		2X12
Int. Walls		12
Inv. Slab		27
TOTAL		66
QUANTITIES		
Concrete Cu.Yds./Lin. Ft.		1.32
Steel Lbs./Lin. Ft.		168.1

R C BOX LOCATION SCHEDULE		
Box Sect.	Station From	Station To
EAST BASIN	37+67	38+34
WEST BASIN	18+27	18+95

STRUCTURAL DESIGN CRITERIA

L.A.C.F.C.D. STRUCTURAL DESIGN MANUAL
DESIGN OF CAST-IN-PLACE AND PRE-CAST BOX CONDUITS
WITH NEW BOX LOADING DIAGRAMS
JANUARY 2008

LIVE LOAD

H20-S16-44 unless otherwise noted

DEAD LOAD

Earth load per Marston's formula: w=110 pcf
Ku=Ku'=0.150
Bd=Outside width of box plus 3 feet
Side earth 37 psf per foot of depth
Internal water pressure: 62.4 psf per foot of depth
Weight of concrete: 150 pcf

ALLOWABLE STRESSES

f'c =4000 psi at 28 days
fc =1800 psi
fs =24.000 psi
n =8
Shear and bond stresses per A.C.I. 318-95

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
REVIEWED BY
DATE
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER RAFAEL G. PIAMONTE C 85493 CIVIL STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

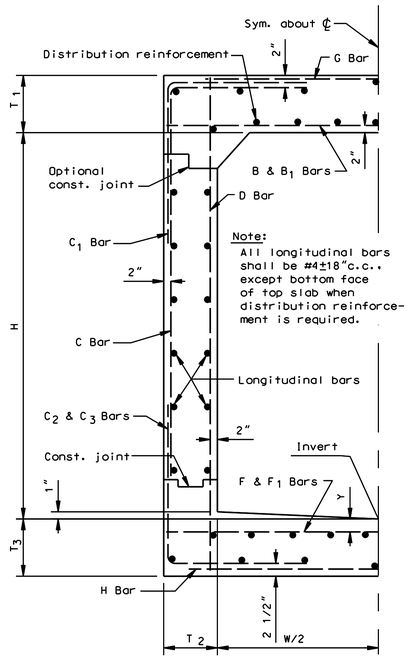
PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

DOUBLE REINFORCED CONCRETE BOX
STRUCTURAL SCHEDULE, NOTES AND DETAILS

DWG 21-D114.37 | PD 052980 | SHEET 37 OF 72

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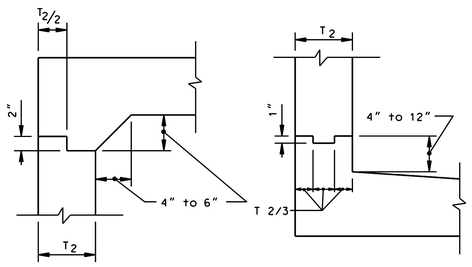
TYPICAL RC BOX SECTION (Sh. 8)

NOT TO SCALE

STRUCTURAL NOTES

1. DIMENSIONS FROM FACE OF CONCRETE TO STEEL ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN.
2. CONCRETE DIMENSIONS SHALL BE MEASURED HORIZONTALLY OR VERTICALLY ON THE PROFILE, AND PARALLEL TO OR AT RIGHT ANGLES (OR RADIALLY) TO CENTERLINE OF CONDUIT ON THE PLAN EXCEPT AS OTHERWISE SHOWN.
3. ALL BAR BENDS AND HOOKS SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S "BUILDING CODE REQUIREMENT FOR REINFORCED CONCRETE", LATEST EDITION, SECTION 7.2.
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9. LONGITUDINAL BARS SHALL BE LAPPED 20 BAR DIAMETERS AT SPLICES. TRANSVERSE BARS SHALL BE LAPPED 30 BAR DIAMETERS AT SPLICES.
10. LONGITUDINAL BARS SHALL BE CONTINUOUS AND EXTEND THROUGH ALL CONSTRUCTION JOINTS.
11. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, TRANSVERSE CONSTRUCTION JOINTS (IN BOTH SLABS AND WALLS), SHALL BE PLACED AT THE END OF EACH POUR, BUT THE SPACING THEREOF SHALL NOT EXCEED 50 FEET NOR BE LESS THAN 10 FEET.
12. UNLESS OTHERWISE SHOWN ON THE DETAILS, IN CURVED SECTIONS TRANSVERSE BARS SHALL BE PLACED RADIALLY. THE SPACING OF STRAIGHT TRANSVERSE BARS IN TOP AND BOTTOM SLABS SHALL BE MEASURED AT THE CENTERLINE OF CONSTRUCTION. THE SPACING OF STRAIGHT BARS AND L-BARS IN WALLS SHALL BE MEASURED BETWEEN THE VERTICAL LEGS OF BARS.
13. AT THE BEGINNING AND ENDING OF ALL POURS, A CURTAIN OF REINFORCEMENT COMPOSED OF B, C, C2, D, F, G, AND H BARS SHALL BE PLACED THREE INCHES FROM THE TRANSVERSE CONSTRUCTION JOINT.
14. D BARS MAY BE SPLICED 20 BAR DIAMETERS AT THE LOWER LONGITUDINAL CONSTRUCTION JOINT, AT CONTRACTOR'S OPTION.
15. IN ALL SECTIONS LAP C AND C2 BARS. THE VERTICAL LENGTH OF C AND C2 HAS BEEN CALCULATED FOR A FOUR-INCH STARTER WALL. IF THE HEIGHT OF THE STARTER WALL IS VARIED, THE VERTICAL LENGTH OF THE C AND C2 BARS SHALL BE VARIED CORRESPONDINGLY SO AS TO MAINTAIN A 30 DIAMETER LAP BETWEEN THE TWO BARS. THE LAPS SHALL BE BASED ON THE SMALLER BARS.
16. CONCRETE QUANTITIES ARE BASED ON A SIX-BY-SIX INCH FILLET AND STEEL QUANTITIES DO NOT INCLUDE ANY OPTIONAL SPLICES.
17. IF WALL THICKNESS IS SIX INCHES, PLACE REINFORCEMENT AT THE CENTERLINE OF THE WALL.

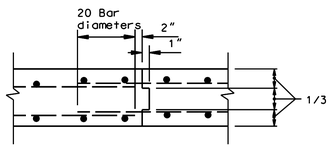
BOX SECTION		
Design Cover		18'
Width	W	8'
Height	H	4'
Top Slab Thickness	T1	11"
Side Wall Thickness	T2	9"
Bottom Slab Thickness	T3	12"
Concrete Cover(3" Min.)	Y	3"
B Bars	Bar No. & Spacing	#9@15"
	Length	9'-2"
B1 Bars	Bar No. & Spacing	#4@15"
	Length	4'-8"
C Bars	Bar No. & Spacing	#4@12"
	Hor. Length	3'-9"
	Vert. Length	4'-4"
C1 Bars	Bar No. & Spacing	#4@12"
	Hor. Length	1'-6"
	Vert. Length	3'-5"
C2 Bars	Bar No. & Spacing	#4@12"
	Hor. Length	3'-9"
	Vert. Length	2'-5"
C3 Bars	Bar No. & Spacing	#4@12"
	Hor. Length	1'-5"
	Vert. Length	2'-7"
D Bars	Bar No. & Spacing	#4@18"
	Length	5'-8"
F Bars	Bar No. & Spacing	#9@14"
	Length	9'-2"
F1 Bars	Bar No. & Spacing	#4@14"
	Length	5'-1"
G Bars	Bar No. & Spacing	#4@12"
	Length	4'-0"
H Bars	Bar No. & Spacing	#4@12"
	Length	4'-0"
NUMBER OF LONGITUDINAL REINFORCEMENT # 4 BARS		
Top Slab (includes distribution reinforcement)		15
Bottom Slab		15
Side Walls		8
TOTAL		38
QUANTITIES		
Concrete Cu. Yds./Lin. Ft.		0.89
Steel Lbs./Lin. Ft.		122.5



TOP OF WALL

BASE OF WALL

LONGITUDINAL JOINT



TRANSVERSE JOINT

CONSTRUCTION JOINT DETAILS

NOT TO SCALE

STRUCTURAL DESIGN CRITERIA

L.A.C.F.C.D. STRUCTURAL DESIGN MANUAL
DESIGN OF CAST-IN-PLACE AND PRE-CAST BOX CONDUITS
WITH NEW BOX LOADING DIAGRAMS
JANUARY 2008

LIVE LOAD

H20-S16-44 unless otherwise noted

DEAD LOAD

Earth load per Marston's formula: w=110 pcf
Ku=Ku' =0.150
Bd=Outside width of box plus 3 feet
Side earth psf per foot of depth
Internal water pressure: 62.4 psf per foot of depth
Weight of concrete: 150 pcf

ALLOWABLE STRESSES

f'c=4000 psi at 28 days
fc =1800 psi
fs =24,000 psi
n =8
Shear and bond stresses per A.C.I. 318-95

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
REVIEWED BY
DATE
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER RAFAEL G. PIAMONTE C 85493 CIVIL STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

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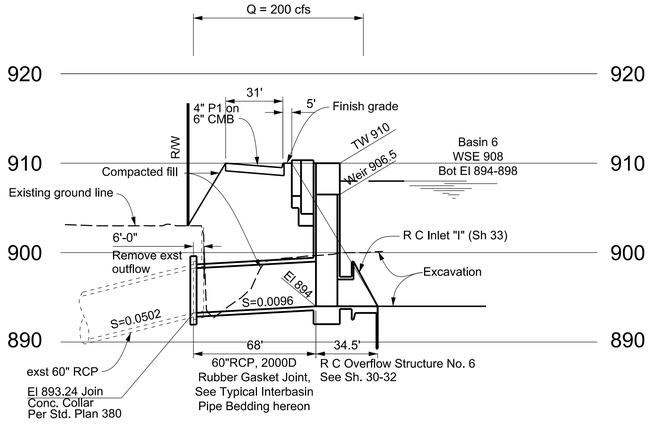
PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

SINGLE REINFORCED CONCRETE BOX
STRUCTURAL SCHEDULE, NOTES AND DETAILS

DWG 21-D114.38 | PD 052980 | SHEET 38 OF 72

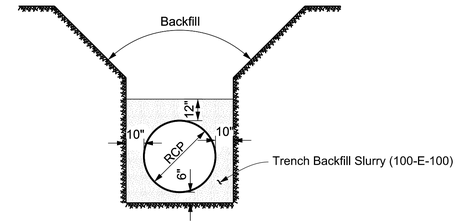
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PROFILE P8-P8 (SH.5)

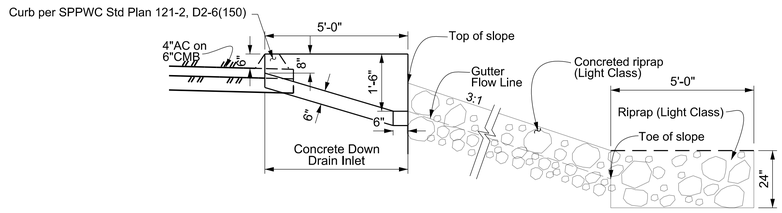
REINFORCED CONCRETE OVERFLOW STRUCTURE NO. 6
CONNECTION TO PACOIMA WASH UNIT 6

SCALES: HOR: 1"=40'
VERT: 1"=8'



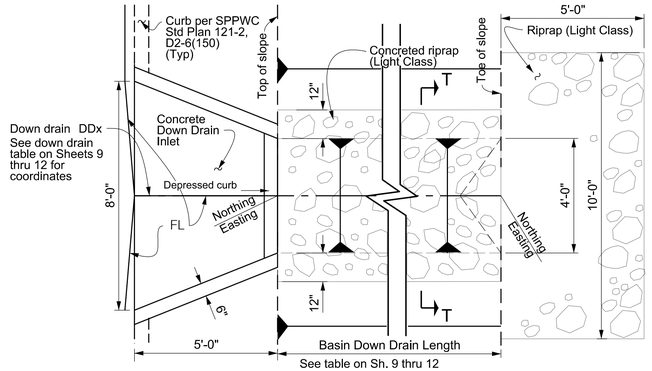
TYPICAL INTERBASIN PIPE BEDDING (SH. 8)

NOT TO SCALE



PROFILE
TYPICAL BASIN DOWN DRAIN DETAIL (CONCRETE DOWN DRAIN INLET, BASIN DOWN DRAIN & RIP RAP (LIGHT CLASS)

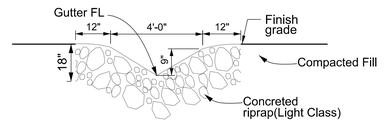
NOT TO SCALE



Note:
1. For downdrain locations see table on Sheets 9 thru 12.
2. Curbs are located on the down drain sides as shown on plan.

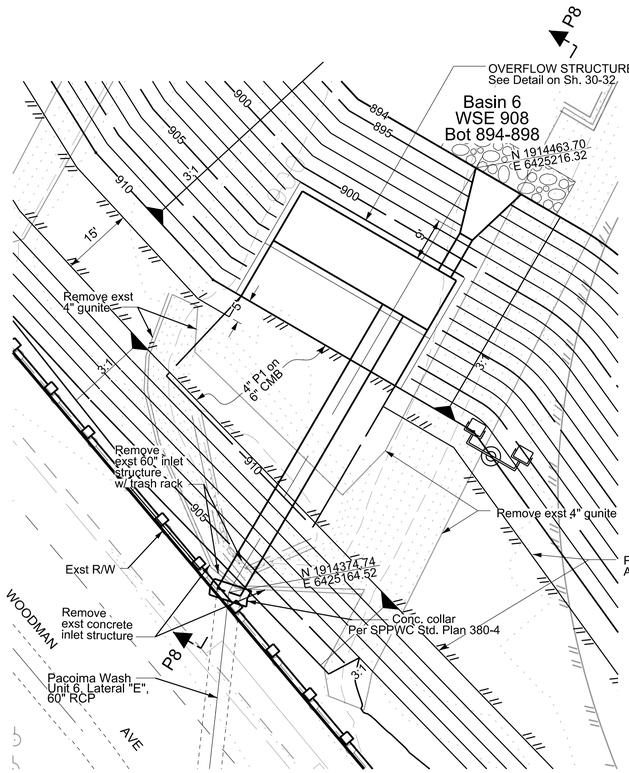
PLAN (SH. 9-12)
TYPICAL BASIN DOWN DRAIN DETAIL (CONCRETE DOWN DRAIN INLET, BASIN DOWN DRAIN & RIP RAP (LIGHT CLASS)

NOT TO SCALE



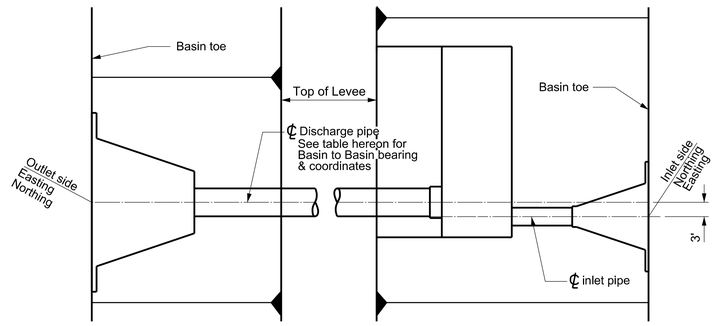
SECTION T-T
TYPICAL CROSS SECTION BASIN DOWN DRAIN

NOT TO SCALE



PLAN (Sh. 5 & 9)

REINFORCED CONCRETE OVERFLOW STRUCTURE NO. 6
CONNECTION TO PACOIMA WASH UNIT 6
SCALES: 1"=15'



TYPICAL BASIN TO BASIN COORDINATE DETAIL (SH. 5)

NOT TO SCALE

BASIN TO BASIN BEARING & COORDINATES

	Inlet Side		Outlet Side		Bearing					Length (ft)
Basins	Northing(Y)	Easting(X)	Northing(Y)	Easting(X)		Deg	Min	Sec		
East S.B - 1	1916527.20	6427088.26	1916275.64	6427080.86	S	2	4	19	E	251.53
1 - 2	1915931.21	6426735.25	1915830.93	6426611.75	S	48	57	24	W	159.00
2 -6	1915141.78	6426009.58	1914938.38	6425577.63	S	64	47	1	W	477.44
West S.B -3	1917209.21	6426272.68	1917158.67	6426150.51	S	65	8	26	W	132.10
3 - 4	1916753.07	6426175.72	1916717.11	6426024.86	S	74	33	4	W	154.99
4 - 5	1916489.13	6425657.06	1916180.71	6425666.08	S	3	1	7	E	308.30
5 - 6	1915712.98	6425097.20	1915607.69	6424996.97	S	41	25	22	W	145.26

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

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REGISTERED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

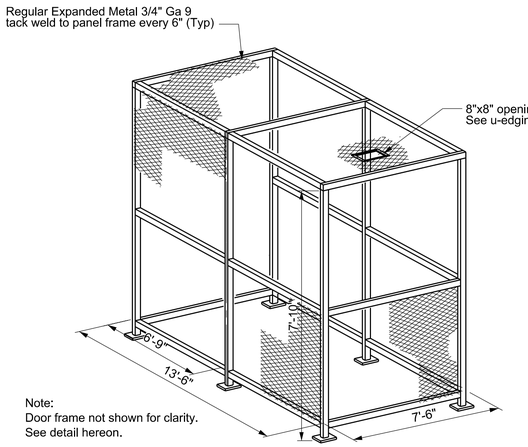
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PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207
REINFORCED CONCRETE OVERFLOW STRUCTURE NO. 6
TO PACOIMA WASH UNIT 6,
BASIN TO BASIN COORDINATES, BASIN DOWN DRAIN DETAILS

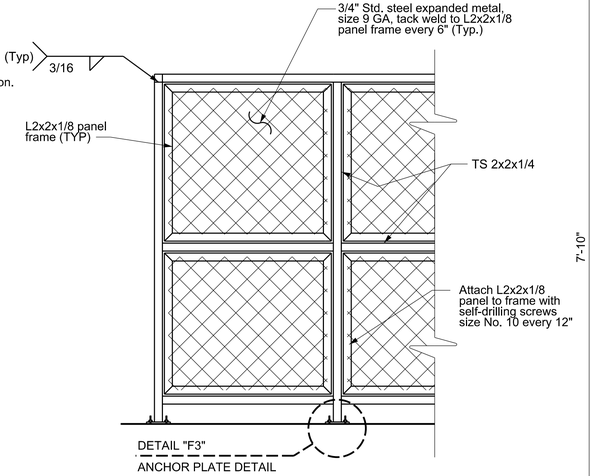
DWG 21-D114.39 | PD 052980 | SHEET 39 OF 72

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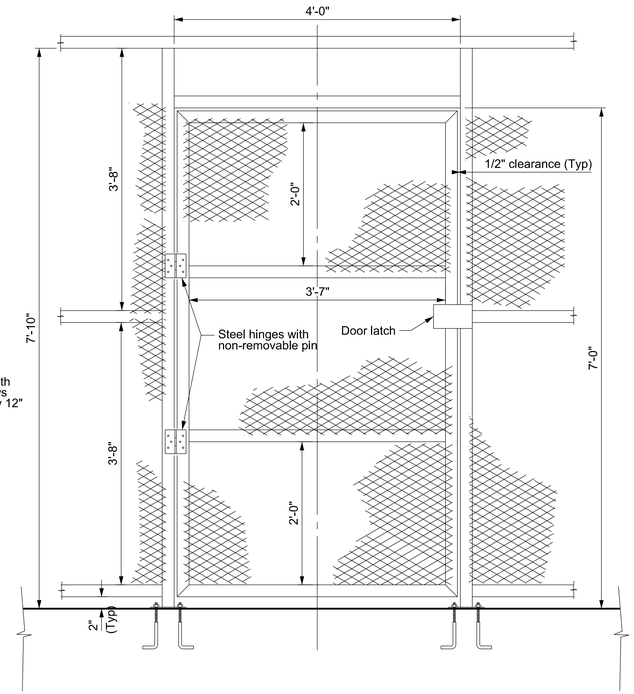


Note:
Door frame not shown for clarity.
See detail hereon.

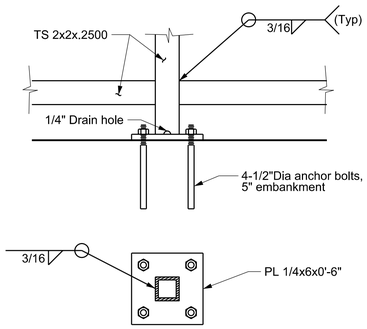
ISOMETRIC VIEW
CAGE FRAME FOR REINFORCED CONCRETE OVERFLOW STRUCTURE
NOT TO SCALE



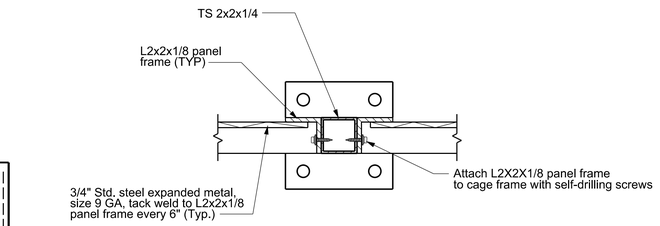
SECTION F1-F1
TYPICAL PANEL INSTALLATION DETAIL
NOT TO SCALE



SECTION F2-F2
DOOR FRAME DETAIL
SCALE: 1"=1'-0"

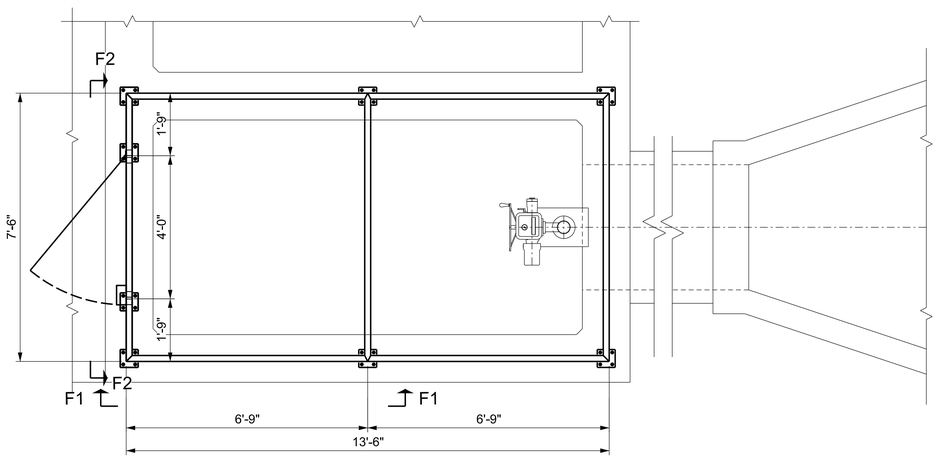


DETAIL "F3"
ANCHOR PLATE DETAIL
NOT TO SCALE

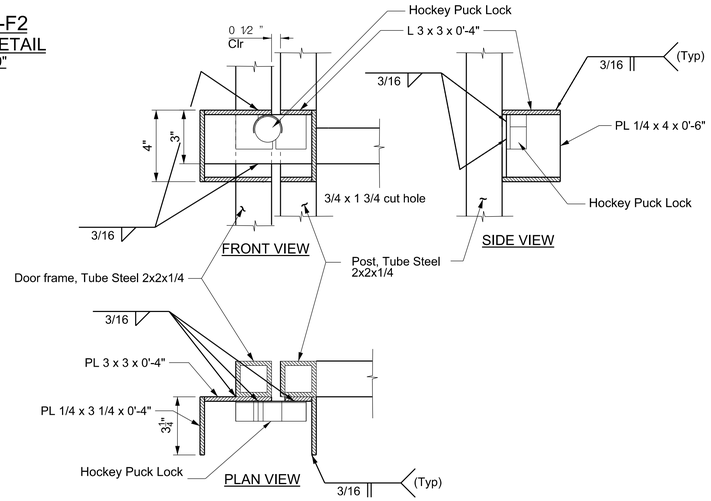


PANEL TO CAGE FRAME CONNECTION DETAIL
NOT TO SCALE

U-EDGING DETAIL
NOT TO SCALE



PLAN VIEW
CAGE FRAME FOR REINFORCED CONCRETE OVERFLOW STRUCTURE (SH. 30)
NOT TO SCALE



DOOR LATCH SECTION DETAIL
NOT TO SCALE

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER — 11/16/2020 DATE

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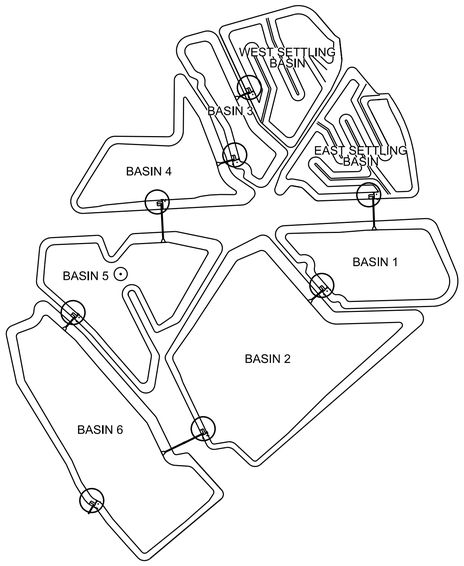
PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

DETAILS - EXPANDED METAL CAGE ENCLOSURE
FOR REINFORCED CONCRETE OVERFLOW STRUCTURE

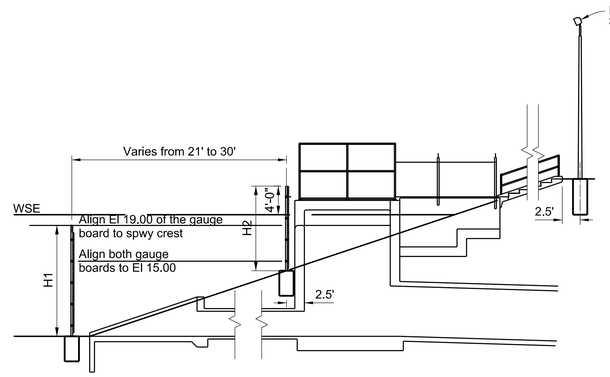
DWG 21-D114.40 | PD 052980 | SHEET 40 OF 72

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LOCATION PLAN
GAUGE BOARD AND FLOOD LIGHTING
NOT TO SCALE

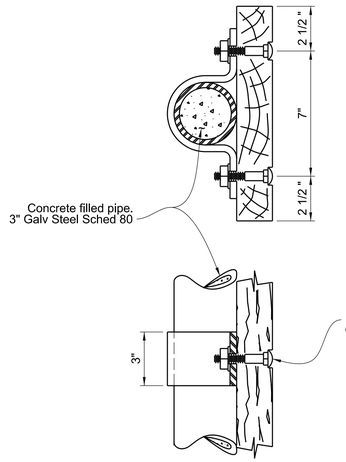


PROFILE
SCALE: 1"=10'

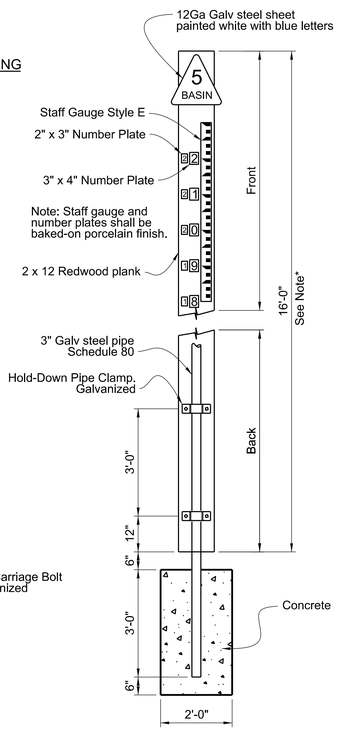
*Note:
Location and of the gauge boards shall be determined by the Engineer.

Height of the gauge board in the basin (H1) shall be the height of the basin from the invert of the basin to the WSE of the basin, which is defined on the "Overflow Structures" table on SH. 30. The gauge board reading shall start from the top at 19' and be aligned with the spillway crest as noted on the plan.

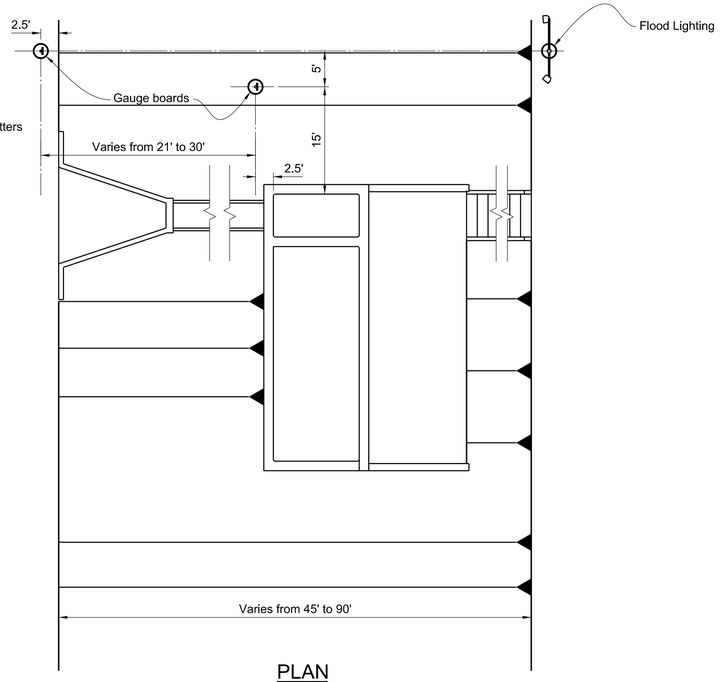
Height of the gauge board closer to the weir structure (H2) shall have 4' length above the spillway crest, with the gauge board reading starting from the top at 23', and with 19' aligned with the spillway crest as noted on the plan.



CLAMP DETAIL
SCALE: 3"=1'-0"



GAUGE BOARD
SCALE: 1/2"=1'-0"



PLAN
TYPICAL OVERFLOW STRUCTURE
SCALE: 1"=10'

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DATE	MARK	DESCRIPTION

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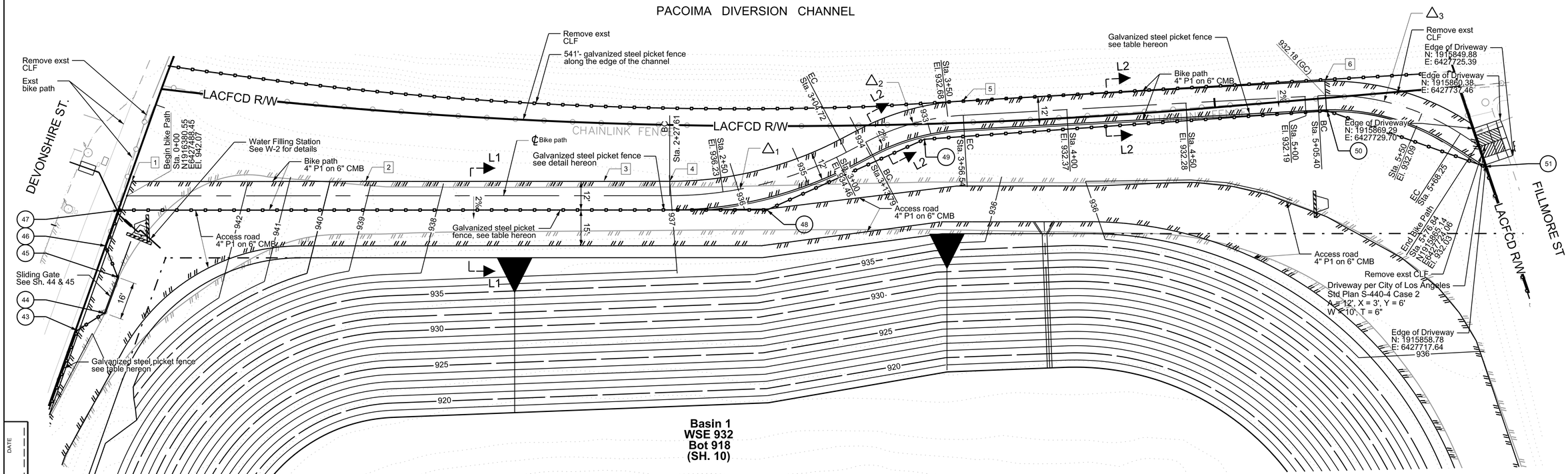
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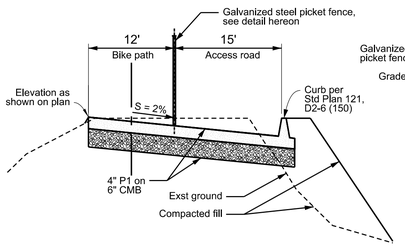
PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

DETAILS - GAUGE BOARDS

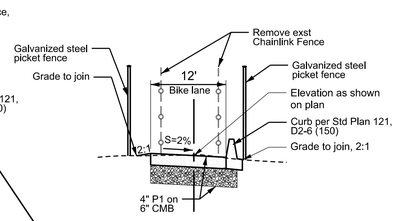
DWG 21-D114.41 | PD 052980 | SHEET 41 OF 72

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SECTION L1-L1
NOT TO SCALE



SECTION L2-L2
NOT TO SCALE

GALVANIZED STEEL PICKET FENCE COORDINATES				
Point	Northing	Easting	Distance(ft)	Remarks
43-45	See SH. 45 for Coordinates and Lengths			
46	1916380.52	6427465.33	--	Begin Fence
47	1916381.13	6427481.72	16.00	Fence Post
48	1916130.15	6427585.27	272.00	Fence Post
49	1916080.39	6427637.82	72.00	Fence Post
50	1915928.93	6427713.22	169.00	Fence Post
51	1915858.79	6427716.78	70.00	Fence Post

LEGEND

(1) GALVANIZED STEEL PICKET FENCE COORDINATE

[1] ACCESS ROAD/BIKE PATH COORDINATE

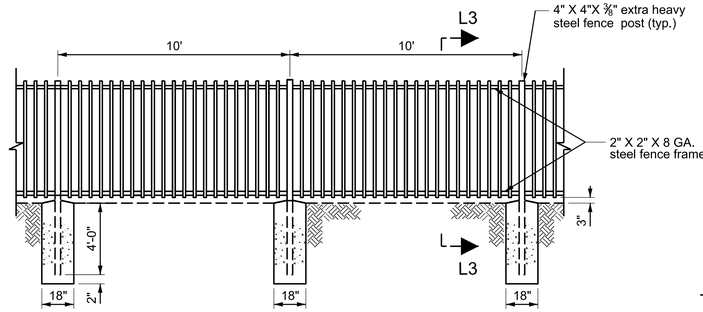
ACCESS ROAD/BIKE PATH COORDINATES			
Point	N	E	El.
1	1916380.87	6427494.84	942.00
2	1916290.51	6427532.09	939.00
3	1916197.96	6427570.28	937.35
4	1916172.44	6427580.81	937.15
5	1916073.99	6427658.19	932.57
6	1915934.52	6427724.33	932.09

℄ CONSTRUCTION CURVE DATA

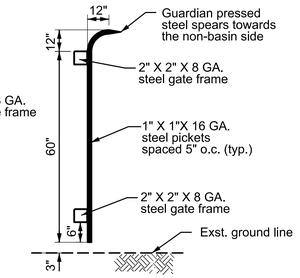
△1 = 27°36'46"
R = 160.00'
T = 39.32'
L = 77.11'
BC = 2+27.61
EC = 3+04.72
PI = N 1916133.80
E 6427590.26

△2 = 24°29'36"
R = 100.00'
T = 21.71'
L = 42.75'
BC = 3+13.79
EC = 3+56.54
PI = N 1916088.78
E 6427643.98

△3 = 36°00'54"
R = 100.00'
T = 32.51'
L = 62.86'
BC = 5+05.40
EC = 5+68.25
PI = N 1915905.55
E 6427731.53



GALVANIZED STEEL PICKET FENCE (TYP.) (Sh. 6 & 7)
NOT TO SCALE



SECTION L3-L3
NOT TO SCALE

DATE	MARK	DESCRIPTION
REVISIONS		

RECOMMENDED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

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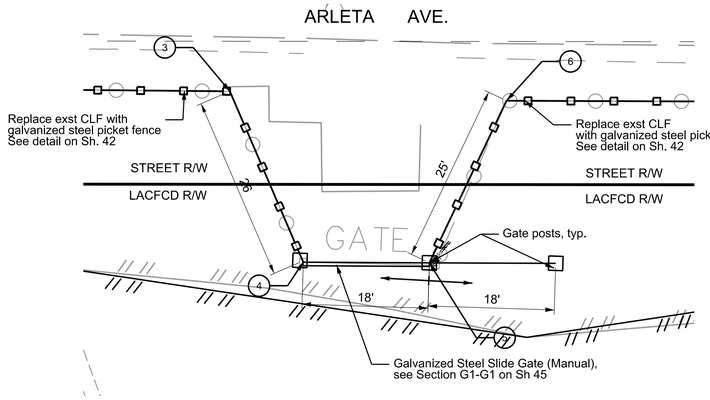
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

BIKE PATH PLAN

DWG 21-D114.42 | PD 052980 | SHEET 42 OF 72

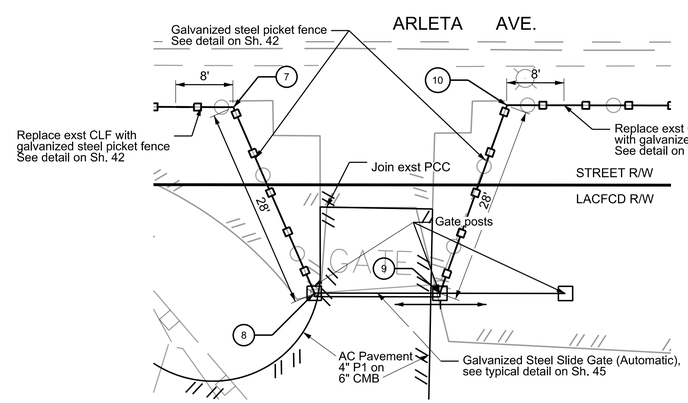
DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
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DATE

PS-DF 07/05



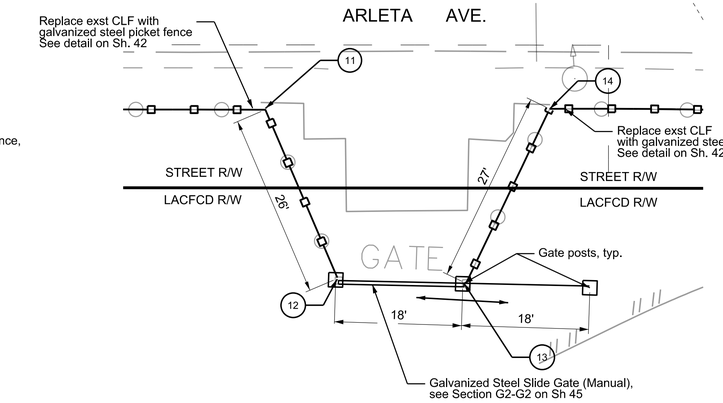
PLAN "A" ENTRANCE GATE COORDINATES (SH. 6)				
Point	Northing	Easting	Distance(ft)	Remarks
3	1917822.34	6426672.57	--	Fence Post
4	1917798.91	6426661.32	26.00	Gate Post
5	1917785.57	6426672.84	18.00	Gate Post
6	1917792.35	6426697.00	25.00	Fence Post

PLAN "A" (Sh. 6)
SCALE: 1" = 10'



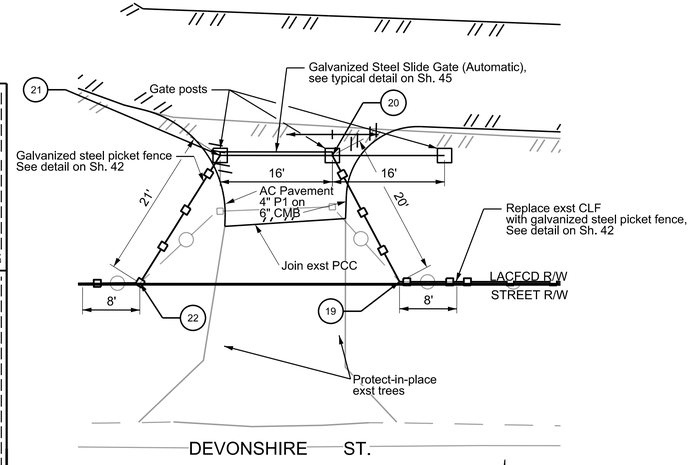
PLAN "B" ENTRANCE GATE COORDINATES (SH. 6)				
Point	Northing	Easting	Distance(ft)	Remarks
7	1917545.87	6426910.50	--	Fence Post
8	1917520.24	6426898.39	28.00	Gate Post
9	1917507.01	6426909.89	18.00	Gate Post
10	1917517.23	6426935.87	28.00	Fence Post

PLAN "B" (Sh. 6)
SCALE: 1" = 10'



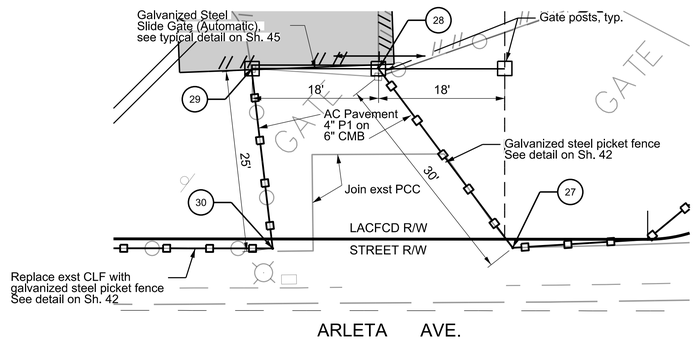
PLAN "C" ENTRANCE GATE COORDINATES (SH. 6)				
Point	Northing	Easting	Distance(ft)	Remarks
11	1917311.20	6427114.94	--	Fence Post
12	1917287.84	6427103.70	26.00	Gate Post
13	1917273.85	6427115.50	18.00	Gate Post
14	1917281.38	6427141.19	27.00	Fence Post

PLAN "C" (Sh. 6)
SCALE: 1" = 10'



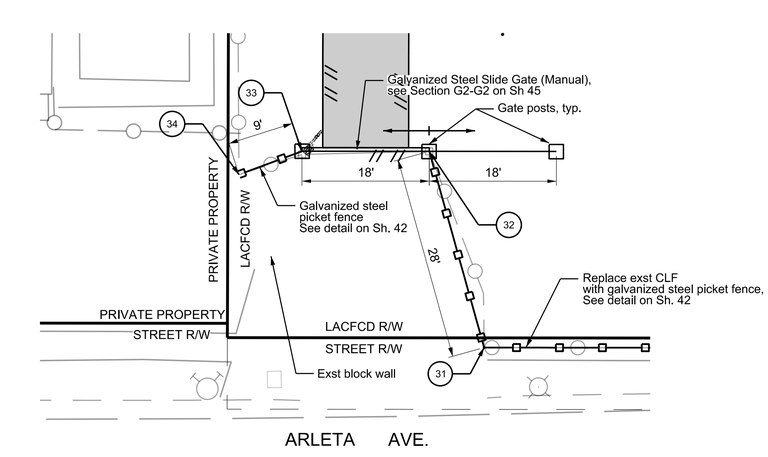
PLAN "D" ENTRANCE GATE COORDINATES (SH. 6)				
Point	Northing	Easting	Distance(ft)	Remarks
19	1916432.10	6426472.07	--	Fence Post
20	1916449.26	6426461.81	20.00	Gate Post
21	1916448.49	6426446.15	16.00	Gate Post
22	1916430.13	6426435.83	21.00	Fence Post

PLAN "D" (Sh. 6)
SCALE: 1" = 10'



PLAN "E" ENTRANCE GATE COORDINATES (SH. 6)				
Point	Northing	Easting	Distance(ft)	Remarks
27	1917365.35	6427171.10	--	Fence Post
28	1917395.94	6427177.62	30.00	Gate Post
29	1917409.21	6427165.85	18.00	Gate Post
30	1917390.58	6427148.97	25.00	Fence Post

PLAN "E" (Sh. 6)
SCALE: 1" = 10'



PLAN "F" ENTRANCE GATE COORDINATES (SH. 6)				
Point	Northing	Easting	Distance(ft)	Remarks
31	1917631.35	6426939.22	--	Fence Post
32	1917655.16	6426954.84	28.00	Gate Post
33	1917658.56	6426953.17	18.00	Gate Post
34	1917631.35	6426939.22	9.00	Fence Post

PLAN "F" (Sh. 6)
SCALE: 1" = 10'

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER RAFAEL G. PIAMONTE C 85493 CIVIL STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

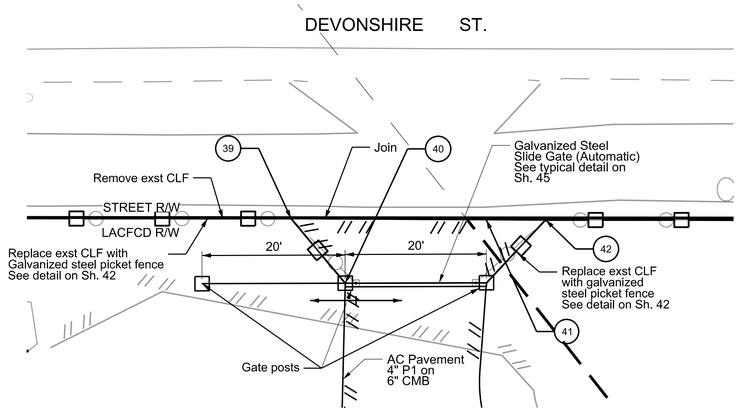
BASIN ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

AUTOMATIC AND MANUAL SLIDING AND SWING GATES PLANS

DWG 21-D114.43 | PD 052980 | SHEET 43 OF 72

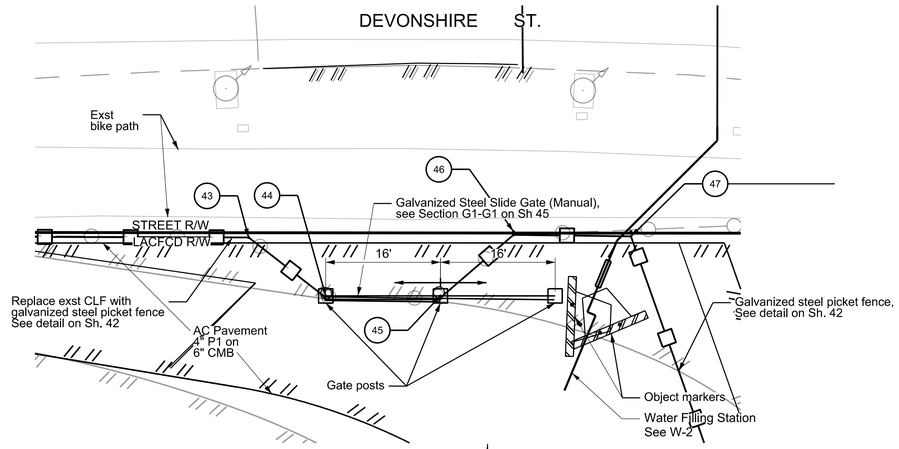
FS-DF 07/05



PLAN "G" ENTRANCE GATE COORDINATES (SH. 7)				
Point	Northing	Easting	Distance(ft)	Remarks
39	1916322.51	6426290.70	--	Fence Post
40	1916313.88	6426298.71	12.00	Gate Post
41	1916314.92	6426318.42	20.00	Gate Post
42	1916324.12	6426326.21	12.00	Fence Post

PLAN "G" (Sh. 7)

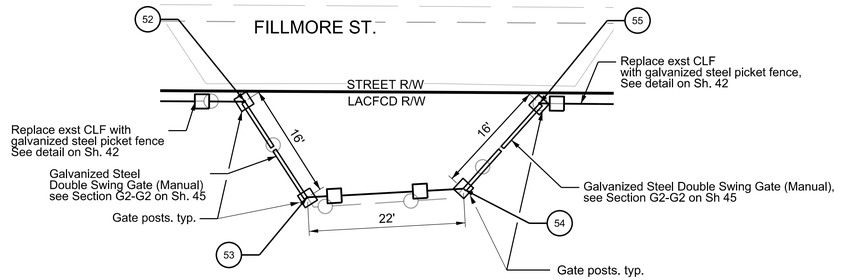
SCALE: 1" = 10'



PLAN "H" ENTRANCE GATE COORDINATES (SH. 7 & 43)				
Point	Northing	Easting	Distance(ft)	Remarks
43	1916378.29	6427428.37	--	Fence Post
44	1916370.53	6427439.45	14.00	Gate Post
45	1916371.13	6427455.48	16.00	Gate Post
46	1916380.52	6427465.33	14.00	Fence Post

PLAN "H" (Sh. 7 & 42)

SCALE: 1" = 10'



PLAN "I" ENTRANCE GATE COORDINATES (SH. 7)				
Point	Northing	Easting	Distance(ft)	Remarks
52	1914040.24	6425627.43	--	Gate Post
53	1914044.53	6425611.99	16.00	Gate Post
54	1914029.25	6425596.45	22.00	Gate Post
55	1914013.22	6425596.31	16.00	Gate Post

PLAN "I" (Sh. 7)

SCALE: 1" = 10'

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — RAFAEL G. PIAMONTE — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

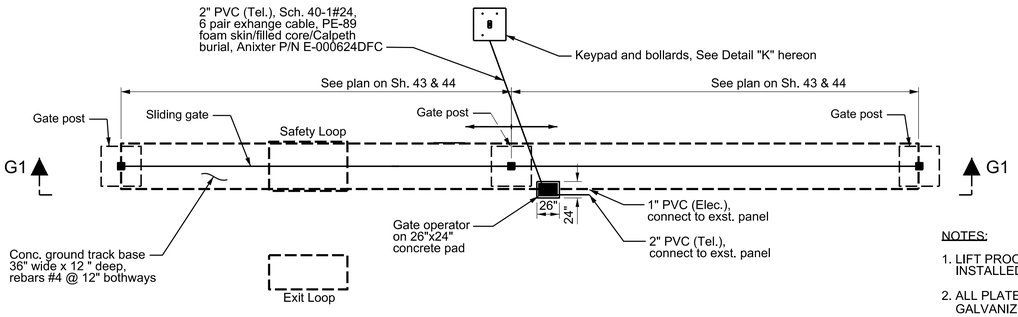
BASIN ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

AUTOMATIC AND MANUAL SLIDING AND SWING GATES PLANS

DWG 21-D114.44 | PD 052980 | SHEET 44 OF 72

PS-DF 07/05

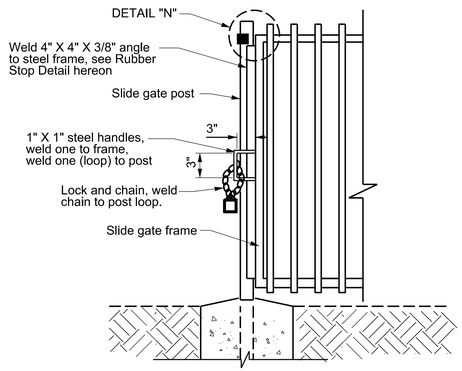


GALVANIZED STEEL SLIDE GATE (AUTOMATIC) TYPICAL DETAIL (Sh. 43 & 44)

NOT TO SCALE

NOTES:

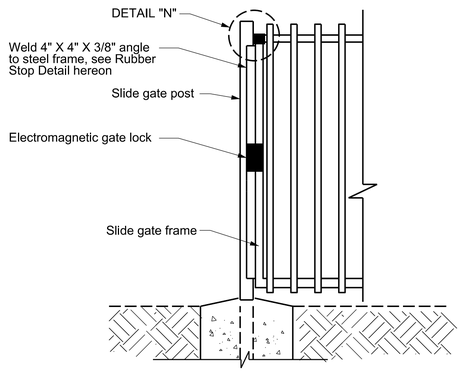
1. LIFT PROOF PLATES SHALL BE INSTALLED AT ALL SLIDE GATES
2. ALL PLATES SHALL BE ⅜" THICK GALVANIZED STEEL



DETAIL "H"

LIFT PROOF PLATE, LOCK AND CHAIN (MANUAL GATE)

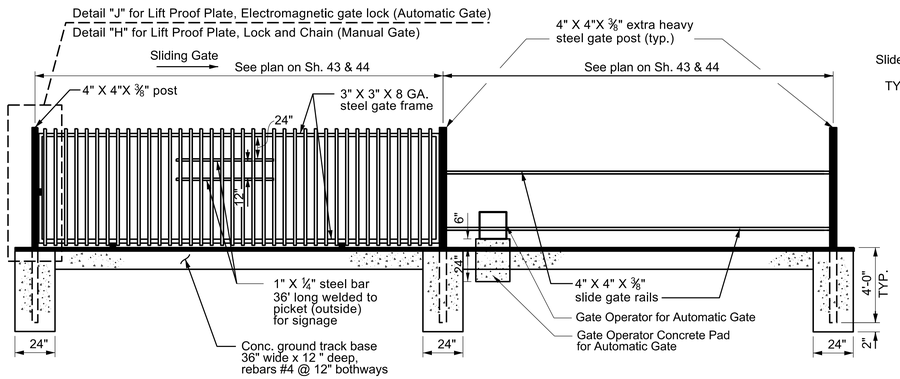
NOT TO SCALE



DETAIL "J"

LIFT PROOF PLATE, ELECTROMAGNETIC GATE LOCK (AUTOMATIC GATE)

NOT TO SCALE

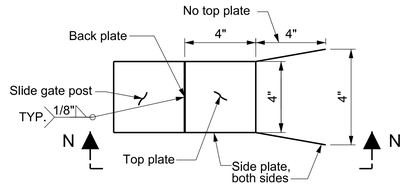


SECTION G1-G1

GALVANIZED STEEL SLIDE GATE DETAIL (Sh. 43 & 44)

(MANUAL AND AUTOMATIC)

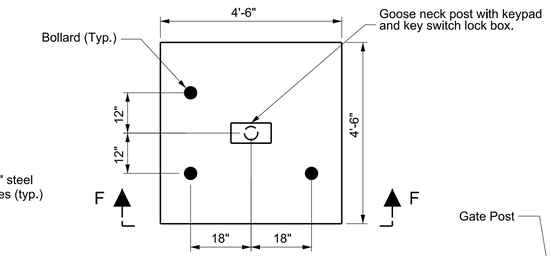
NOT TO SCALE



PLAN

DETAIL "N"

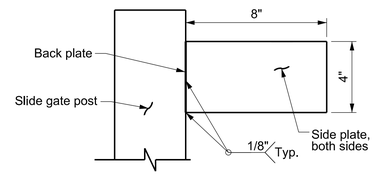
NOT TO SCALE



DETAIL "K"

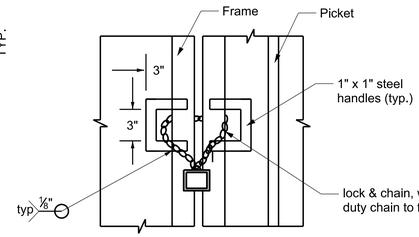
KEYPAD AND BOLLARDS (AUTOMATIC GATE)

NOT TO SCALE



SECTION N-N

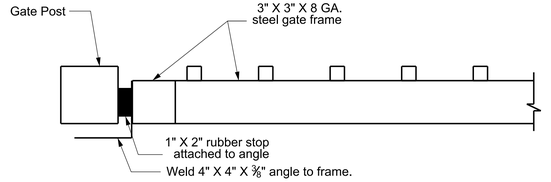
NOT TO SCALE



DETAIL "L"

SWING GATE

CHAIN AND LOCK LOOPS

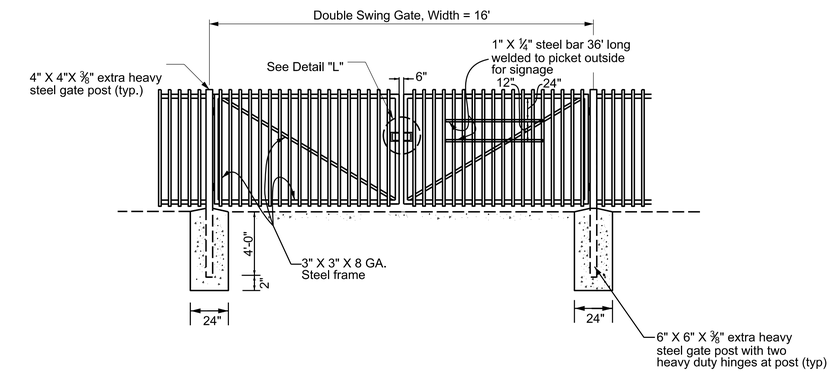


PLAN

SLIDING GATE

RUBBER STOP DETAIL

NOT TO SCALE

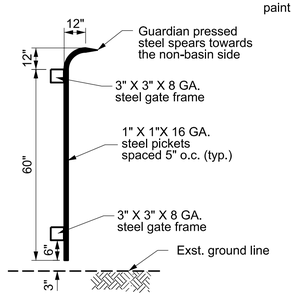


SECTION G2-G2

GALVANIZED STEEL DOUBLE SWING GATE DETAIL (Sh. 44)

(MANUAL)

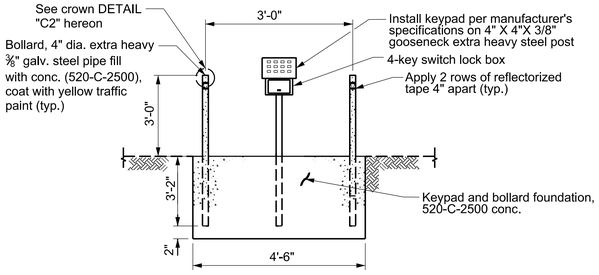
NOT TO SCALE



GALVANIZED STEEL SLIDE GATE DETAIL

(MANUAL AND AUTOMATIC)

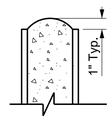
NOT TO SCALE



SECTION F-F

KEYPAD AND BOLLARDS

NOT TO SCALE



DETAIL "C2"

BOLLARD CROWN

NOT TO SCALE

DATE	MARK	DESCRIPTION

REVISIONS

RECOMMENDED PROFESSIONAL ENGINEER RAFAEL G. PIAMONTE C 85493 CIVIL STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

AUTOMATIC AND MANUAL SLIDING AND SWING GATES DETAILS AND SECTIONS

DWG 21-D114.45 | PD 052980 | SHEET 45 OF 72

DRAFTER R. PIAMONTE | DESIGNER R. PIAMONTE | CHECKER J. LI | CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn | REVIEWED BY | DATE

PS-DF 07/05

TREE PROTECTION NOTES

1. DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING TREES FROM DAMAGE OR DEATH. PROTECTION SHALL BE GIVEN TO THE ROOTS, TRUNK AND FOLIAGE OF ALL EXISTING TREES TO REMAIN.

2. THE EXTENT OF THE TREE PROTECTION ZONE SHALL BE ESTABLISHED AT A DISTANCE 15' FROM THE TRUNK OR 5' BEYOND THE CANOPY OF THE TREE DRIPLINE (WHICHEVER IS GREATER), AND SHALL BE VERIFIED IN THE FIELD BY THE ENGINEER PRIOR TO ANY SITE WORK.

3. THE AREA OF CRITICAL ROOT ZONE (CRT) SHALL CONICIDE WITH TREE PROTECTION ZONE: ROOT PRUNING WITHIN THE CRT SHALL BE IN COMPLIANCE WITH ANSI A300 GUIDELINES AND ARBORICULTURAL PRACTICE. WHERE TRENCHING WITHIN THE CRT IS UNAVOIDABLE, THE ENGINEER MAY REQUIRE TRENCHING ALTERNATIVES SUCH AS BORING BELOW THE TREE ROOTS.

4. ANY DAMAGE TO TREES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE AGENCY WILL DETERMINE THE REPLACEMENT VALUE.

5. FOR BIRD NESTING, REFER TO SECTION EC IN THE SPECIAL PROVISIONS.

6. DO NOT NAIL GRADE STAKES OR ANYTHING ELSE TO TREES.

7. NO EQUIPMENT IS TO BE OPERATED OR PARKED WITHIN A TREE PROTECTION ZONE.

8. NO MATERIALS OR TOOLS ARE TO BE STOCKPILED OR STORED WITHIN A TREE PROTECTION ZONE.

9. DO NOT STRIP TOPSOIL AROUND TREES. ANY VEGETATION TO BE REMOVED SHOULD BE REMOVED BY CUTTING AT GROUND LEVEL RATHER THAN PULLING OUT BY EQUIPMENT.

10. THE ROOT FLARE ZONE IS THE AREA ADJACENNT TO WHERE THE TREES ROOTS JOIN THE TRUNK OF THE TREE. SHRUBS SHALL NOT BE PLANTED WITHIN THE ROOT FLARE ZONE.

11. PROTECTIVE FENCE SHALL BE MIN. 4' HIGH (5' MIN. FOR OAK TREES), STURDY AND VISIBLE. FABRIC FOR PROTECTIVE FENCING SHALL BE HIGH DENSITY POLYETHLYENE WITH 3.5" X 1.5" OPENINGS; COLOR: ORANGE. USE 2" X 6" STEEL POSTS INSTALLED AT 8' ON CENTER AROUND TREES THAT ARE INDICATED TO REMAIN.

12. CONTRACTOR SHALL INSTALL PROTECTIVE FENCING AT THE PERIMETER OF THE TREE PROTECTION ZONE.

13. PLACE WARNING SIGNS EVERY 50', (3) SIGNS AT EACH TREE MINIMUM, ALONG FENCE THAT READS:

    KEEP OUT
    TREE PROTECTION ZONE

    TEXT OF SIGN SHALL BE CENTER JUSTIFIED AND IN LARGE LETTERS. SIGN SHALL BE 8.5" BY 11" HERMETICALLY SEALED (LAMINATED) BETWEEN (2) PIECES OF PLASTIC, EACH PIECE BEING A MINIMUM OF 20 MILS THICK.

14. MAINTAIN MINIMUM CLEARANCE OF SIX INCHES OUTSIDE DRIP LINE OF SUCH TREES EXCEPT FOR TREES WITHIN SIDEWALKS OF PUBLIC RIGHT-OF-WAY AND/OR WHEN WORK HAS TO BE PERFORMED WITHIN THE AREA OF TREE ROOT PROTECTION.

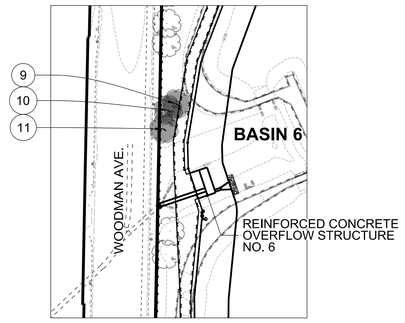
15. WITHIN SIDEWALKS, ERECT FENCES TO MAXIMIZE ROOT PROTECTION ZONES AS MUCH AS POSSIBLE. SEE PLAN VIEWS.

16. WHERE TRENCHING WITHIN THE AREA OF TREE ROOT PROTECTION IS UNAVOIDABLE, LOCATE PROTECTION FENCING BETWEEN WORK AREA AND TREE NO CLOSER THAN SIX INCHES AROUND THE ROOT FLARE ZONE. FENCE AREAS WITHIN DRIP LINE OF TREES ON ADJACENT PROPERTY THAT OVERHANG THE WORKSITE. FENCING SHALL BE CONSTRUCTED IN A MANNER THAT IS SAFE AND NOT BECOME A HAZARD TO THE PUBLIC.

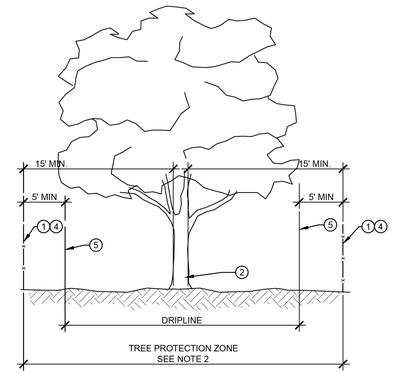
17. IF FOOT, VEHICLE OR CONSTRUCTION MACHINERY TRAVEL WITHIN THE TREE PROTECTION ZONE, 6" - 12" WOOD MULCH OR A 3/4" PLYWOOD OVER 4" LAYER OF MULCH SHALL BE PLACED WITHIN THE TREE PROTECTION ZONE.

LEGEND

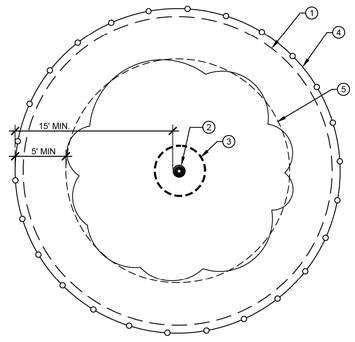
1. TREE PROTECTION ZONE/CRITICAL ROOT ZONE. SEE NOTES 2 & 3.
2. TREE TRUNK
3. ROOT FLARE ZONE. SEE NOTE 10.
4. PROTECTIVE FENCE. SEE NOTE 12.
5. TREE CANOPY/DRIP LINE



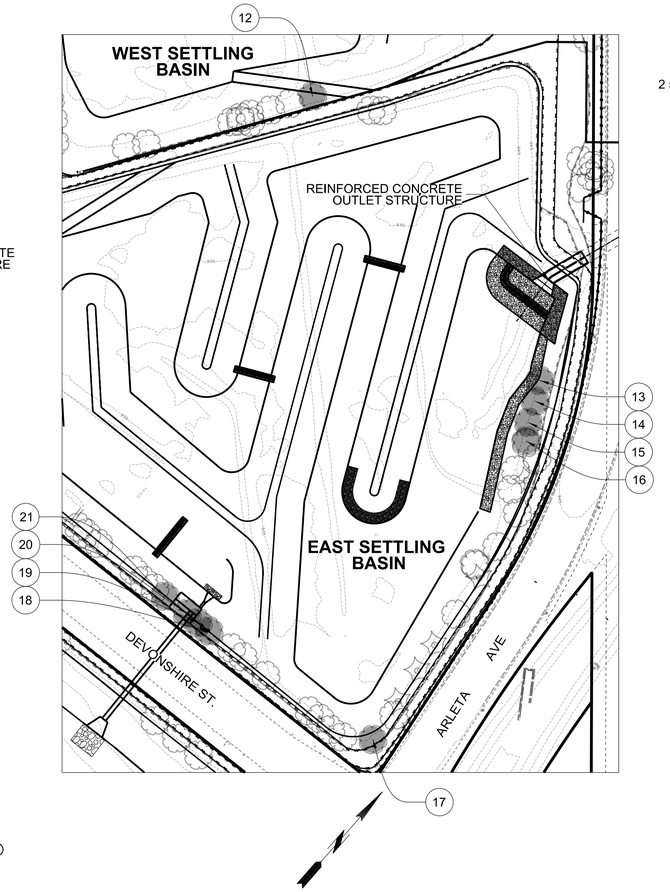
BASIN 6
SCALE:1"=100'



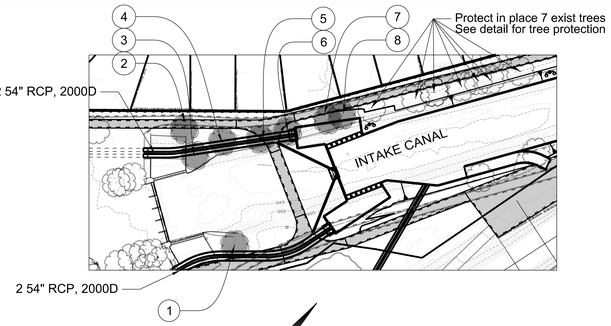
TREE IN OPEN AREA CONDITION - ELEVATION



TREE IN OPEN AREA CONDITION - PLAN VIEW



WEST & EAST SETTLING BASIN
SCALE:1"=100'



INTAKE CANAL
SCALE:1"=100'

TREE REMOVAL TABLE

Tree No.	Type	Size	N	E
1	Silk Oak (Grevillea Robusta)	18"	1917792.72	6427355.84
2	Aleppo Pine (Pinus Halepensis)	18"	1917867.21	6427196.64
3	Aleppo Pine (Pinus Halepensis)	52"	1917849.93	6427232.10
4	Aleppo Pine (Pinus Halepensis)	60"	1917890.40	6427247.91
5	Aleppo Pine (Pinus Halepensis)	32"	1917927.42	6427285.29
6	Aleppo Pine (Pinus Halepensis)	32"	1917960.29	6427307.01
7	Aleppo Pine (Pinus Halepensis)	36"	1918009.29	6427338.30
8	Aleppo Pine (Pinus Halepensis)	34"	1918027.68	6427349.17
9	Lemon Scented Gum (Corymbia Citriodora)	20"	1914497.47	6425089.06
10	Palo Verde (Parkinsonia Sp.)	6"	1914483.22	6425086.22
11	Deodar Cedar (Cedrus Deodara)	20"	1914459.51	6425099.05
12	Aleppo Pine (Pinus Halepensis)	24"	1917144.49	6426724.76
13	Aleppo Pine (Pinus Halepensis)	38"	1917055.23	6427225.64
14	Aleppo Pine (Pinus Halepensis)	12"	1917029.01	6427239.79
15	Aleppo Pine (Pinus Halepensis)	36"	1917000.50	6427252.24
16	Aleppo Pine (Pinus Halepensis)	15"	1916979.06	6427267.07
17	Tree of Heaven (Ailanthus Altissima)	16"	1916523.73	6427381.08
18	Ash (Fraxinus Sp.)	26"	1916486.84	6427108.80
19	Ash (Fraxinus Sp.)	24"	1916485.66	6427089.85
20	Ash (Fraxinus Sp.)	32"	1916485.18	6427069.75
21	Ash (Fraxinus Sp.)	26"	1916482.84	6427030.50

DRAFTER R. PIAMONTE | DESIGNER R. PIAMONTE | CHECKER J. LI | CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn | REVIEWED BY | DATE

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REVISIONS

RAFAEL G. PIAMONTE — No. C 85493 — CIVIL — STATE OF CALIFORNIA — REGISTERED PROFESSIONAL ENGINEER

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

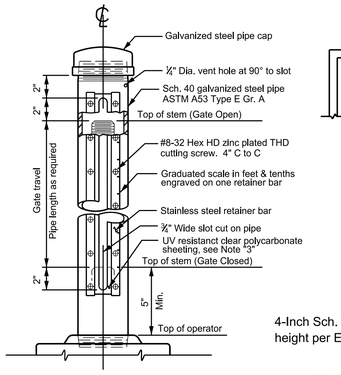
PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

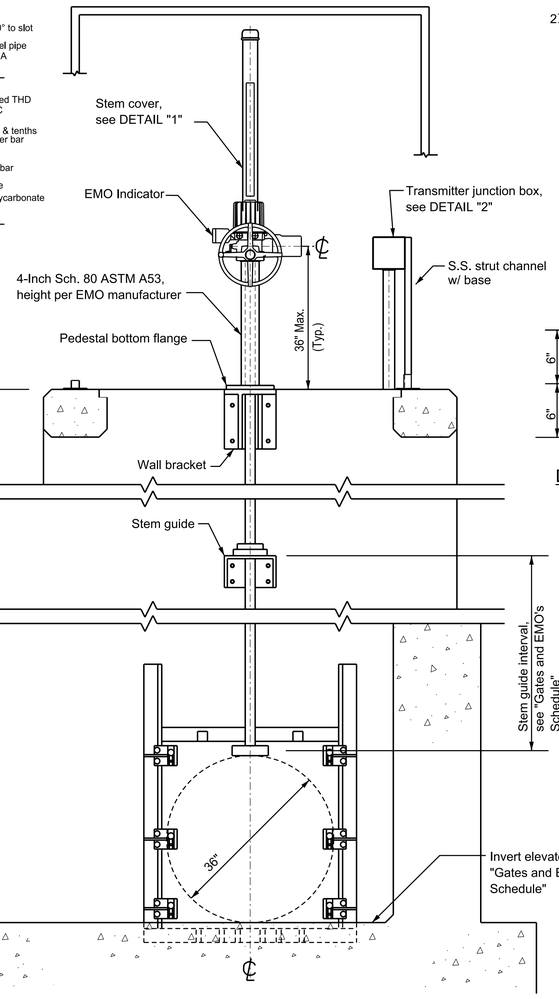
TREE REMOVAL
PROTECTION DETAILS AND NOTES

DWG 21-D114.46 | PD 052980 | SHEET 46 OF 72

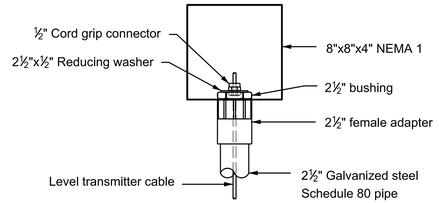
PS-DF 07/05



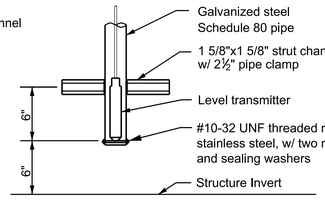
DETAIL "1"
STEM COVER
NOT TO SCALE



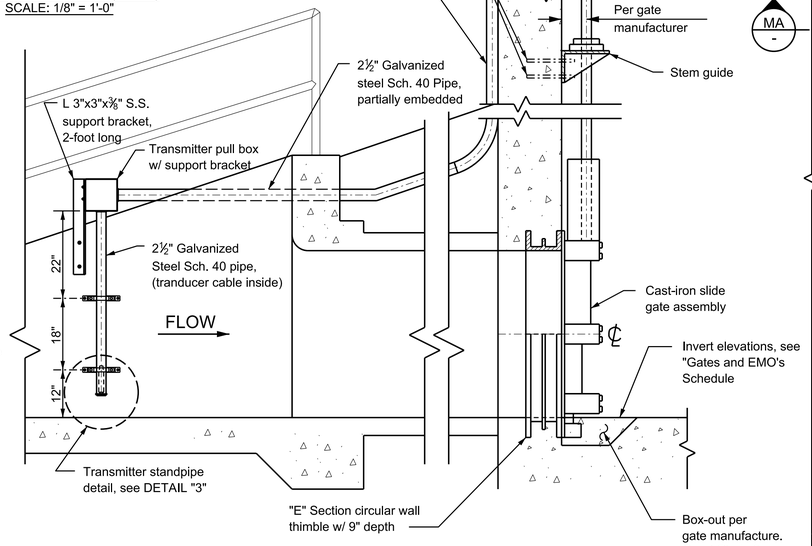
SECTION MA-MA,
TYPICAL CAST-IRON SLIDE GATE
AND EMO ELEVATIONS
SCALE: 1/2" = 1'-0"



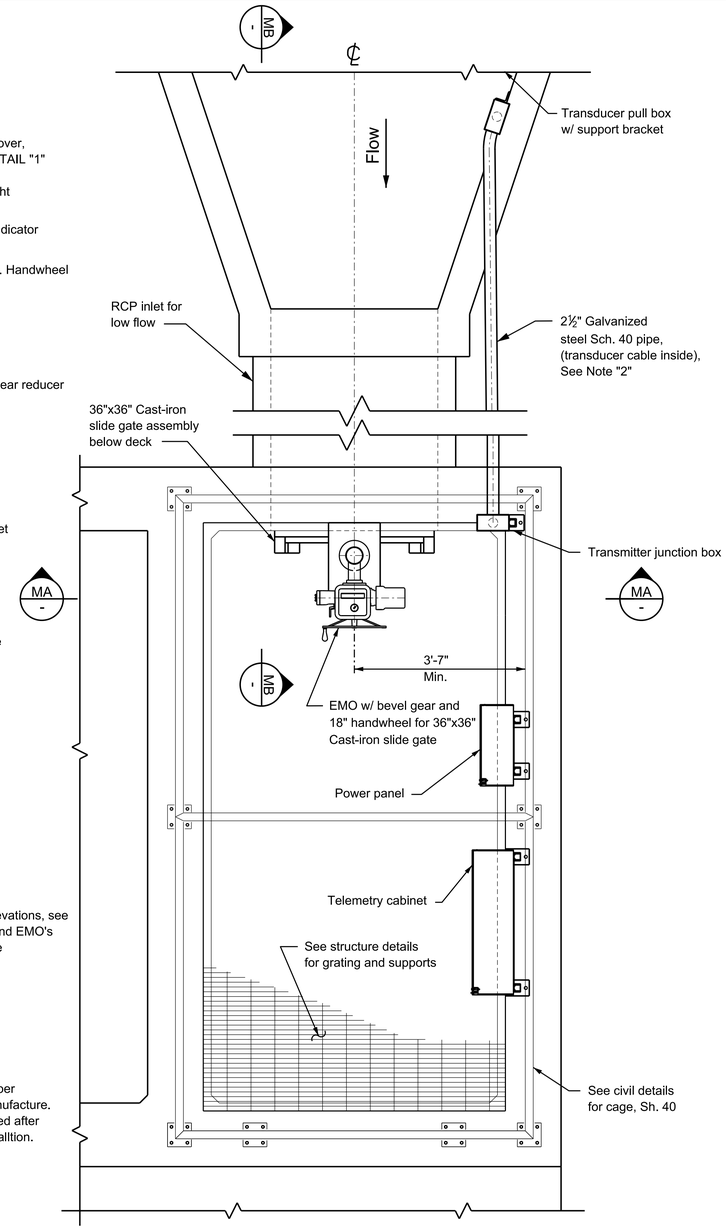
DETAIL "2"
SUBMERSIBLE LEVEL TRANSMITTER J-BOX
NOT TO SCALE



DETAIL "3" TRANSMITTER
STANDPIPE END, (TYP.)
SCALE: 1/8" = 1'-0"



SECTION MB-MB,
TYPICAL WALL THIMBLE, STEM GUIDE,
AND WALL BRACKET DETAILS
SCALE: 1/2" = 1'-0"



TYPICAL EQUIPMENT LAYOUT
FOR WEIRS AT OVERFLOW STRUCTURES
SCALE: 1/2" = 1'-0"

GATES AND EMO'S SCHEDULE FOR WEIRS AT OVERFLOW STRUCTURES

GATES AND ACCESSORIES											EMO'S			BEVEL GEAR
Location	Gate Type	Gate Size	Qty.	Inv. El. (Ft)	Max. WSE (Ft)	Max. Operating Head (Ft)		Stem Dia. (Inches)	Min. Stem Guides	Stem Guide Interval (Ft)	Motor Power Output (HP)	Output Torque (FT-lb)	Thrust Rating (Lb.)	Gear Ratio
W. Settling Basin to 3	Cast-iron slide gate	36"x36"	1	929.0	941.0	13.5	Unseating	2.5	1	6.0	0.26	540	54,000	4:1
Basin 3 to 4	Cast-iron slide gate	36"x36"	1	922.0	936.0	15.5	Unseating	2.5	1	6.0	0.26	540	54,000	4:1
Basin 4 to 5	Cast-iron slide gate	36"x36"	1	914.0	924.0	11.5	Unseating	2.5	1	6.0	0.26	540	54,000	4:1
Basin 5 to 6	Cast-iron slide gate	36"x36"	1	905.0	916.0	12.5	Unseating	2.5	1	6.0	0.26	540	54,000	4:1
Basin 6 to 60" Lateral	Cast-iron slide gate	36"x36"	1	898.0	908.0	11.5	Unseating	2.5	1	6.0	0.26	540	54,000	4:1
E. Settling Basin to 1	Cast-iron slide gate	36"x36"	1	929.0	941.0	13.5	Unseating	2.5	1	6.0	0.26	540	54,000	4:1
Basin 1 to 2	Cast-iron slide gate	36"x36"	1	918.0	932.0	15.5	Unseating	2.5	1	6.0	0.26	540	54,000	4:1
Basin 2 to 6	Cast-iron slide gate	36"x36"	1	907.0	917.0	11.5	Unseating	2.5	1	6.0	0.26	540	54,000	4:1

NOTES:

1. EMO = Electric Motor Operator
2. Extend 2½" galvanized steel conduit (Transducer Cable inside) from Transmitter junction box to Telemetry Cabinet.
3. The UV resistant clear polycarbonate sheeting shall be manufactured by Plexiglass, Lexan, or Agency Approved Equal.

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — OPART PONGPUN — M 36456 — MECHANICAL — STATE OF CALIFORNIA

11/19/2020
PROJECT ENGINEER DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

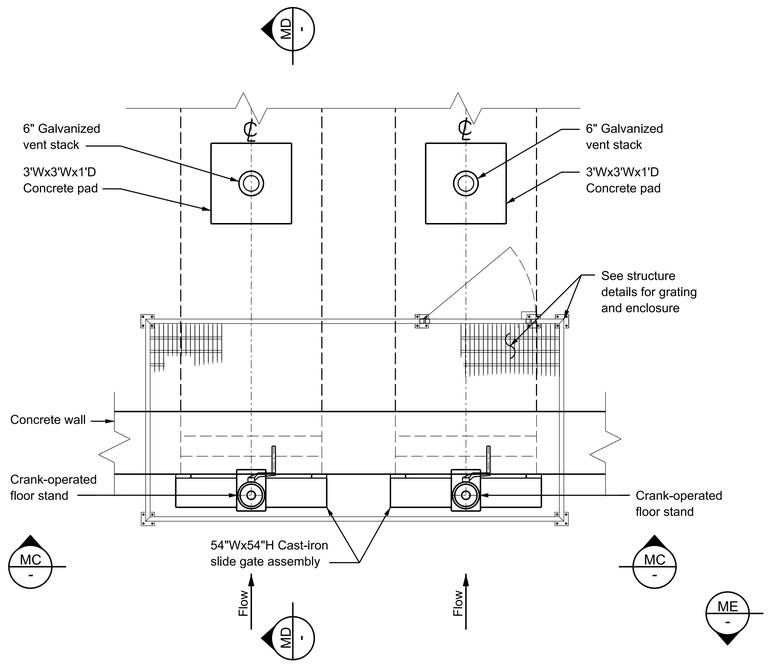
TYPICAL EQUIPMENT LAYOUT
FOR WEIRS AT OVERFLOW STRUCTURES

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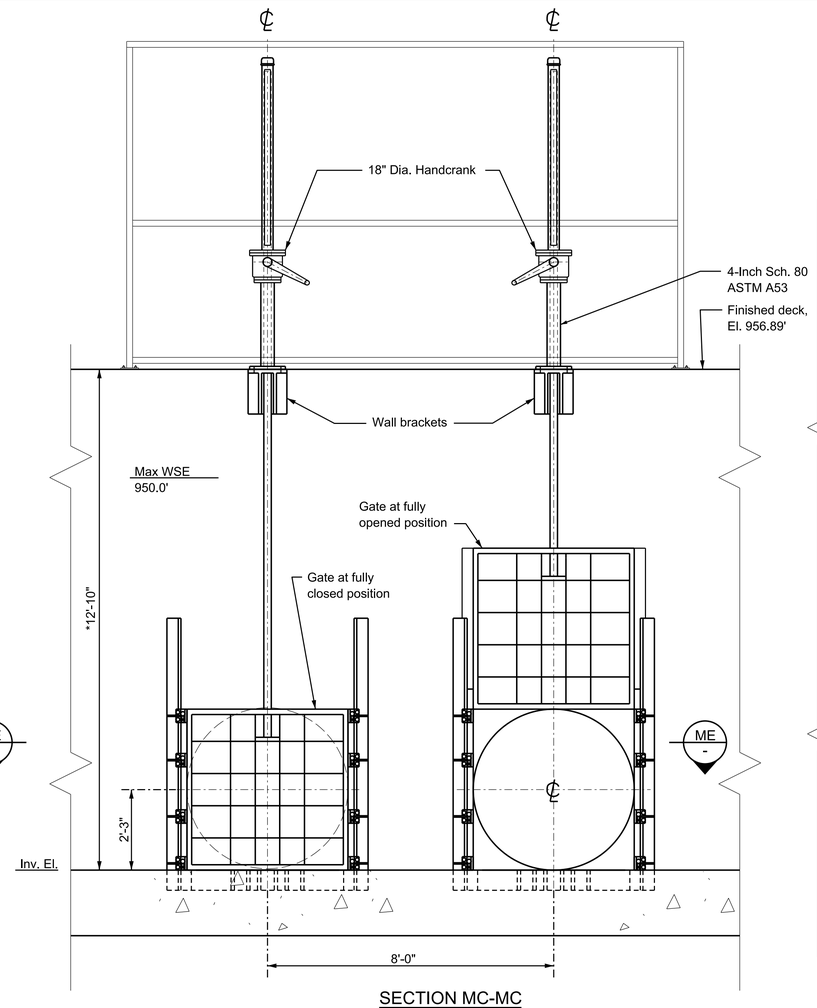
PLAN M1

DRAFTER J.UNG/O.PONGPUN
DESIGNER J.UNG/O.PONGPUN
CHECKER O.PONGPUN
CADD PROJECT FILE NAME FCC0001207.MECH.M1

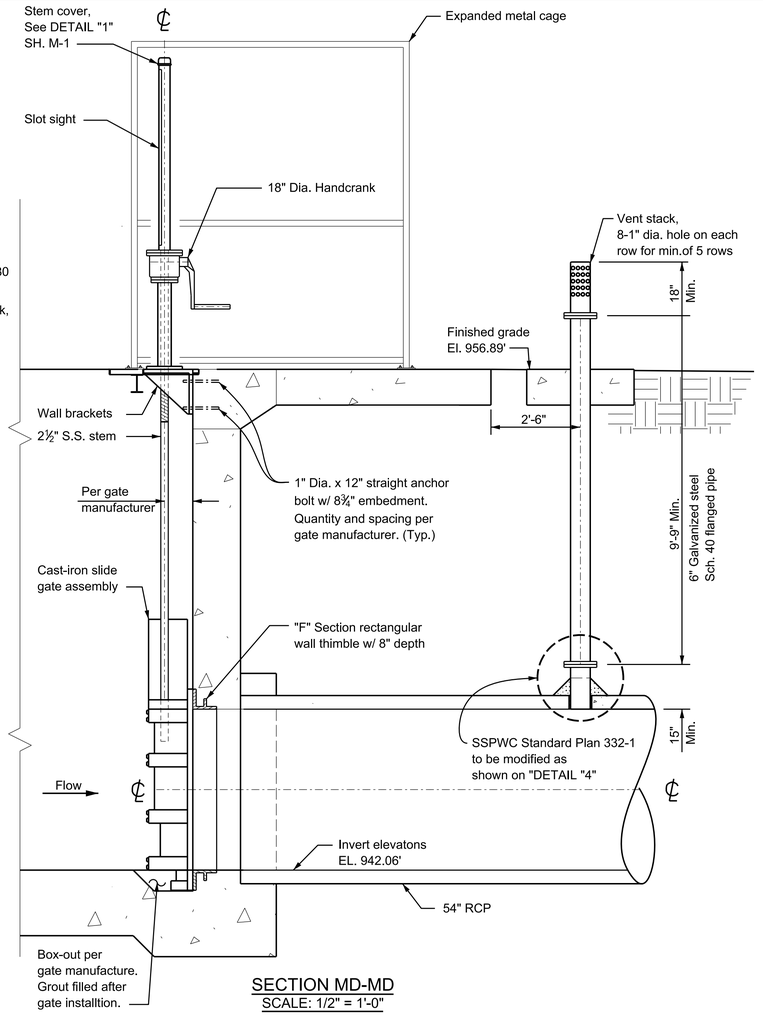
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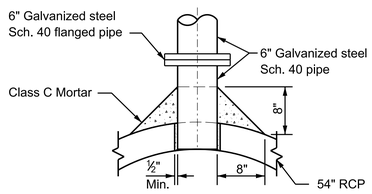
TYPICAL CAST-IRON SLIDE GATE AND EMO LAYOUT
SCALE: 3/8" = 1'-0"



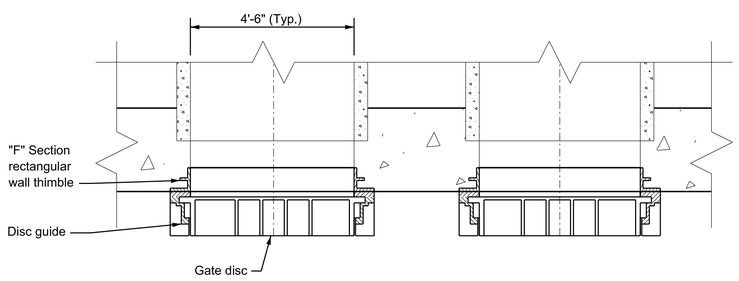
SECTION MC-MC
SCALE: 1/2" = 1'-0"



SECTION MD-MD
SCALE: 1/2" = 1'-0"



DETAIL "4"
JUNCTION STRUCTURE - VENT STACK
SCALE: 1" = 1'-0"



SECTION ME-ME
SCALE: 1/2" = 1'-0"

GATES AND MANUAL OPERATORS SCHEDULE FOR INTAKE STRUCTURE

GATES AND ACCESSORIES								MANUAL OPERATOR	
Location	Gate Type	Gate Size	Qty.	Inv. El. (Ft)	Max. WSE (Ft)	Max. Operating Head (Ft)	Stem Dia. (Inches)	Required Torque (FT-lb)	Thrust Rating (Lb.)
West Intake Canal	Cast-iron slide gate	54"Wx54"H	2	942.06	950.0	9.8 Seating Head	2.5	40	8,000
East Intake Canal	Cast-iron slide gate	54"Wx54"H	2	942.06	950.0	9.8 Seating Head	2.5	40	8,000

NOTES:

1. The Contractor shall construct the expanded metal cage per details shown on the drainage plan, Sh. 24
2. The Contractor shall construct the vent stack using the modified SPPWC Standard Plan 332-2 Case 1 as shown on DETAIL "4" for this plan sheet.
3. The thread length for the gate stem shown on the plan was sized to accommodate the future upgrade to electric motor operator.

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — OPART PONGPUN — M 36456 — MECHANICAL — STATE OF CALIFORNIA

PROJECT ENGINEER 11/19/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

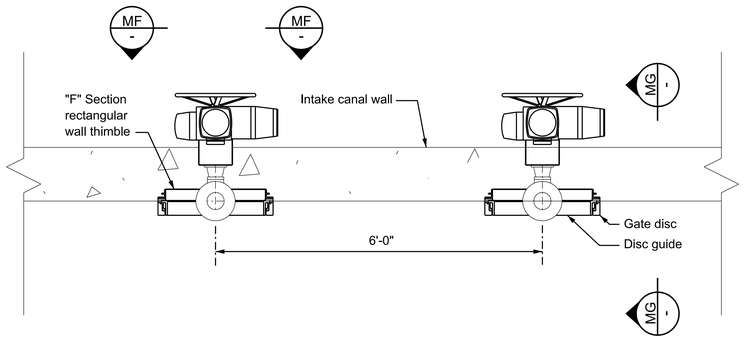
TYPICAL EQUIPMENT LAYOUT FOR INTAKE STRUCTURE

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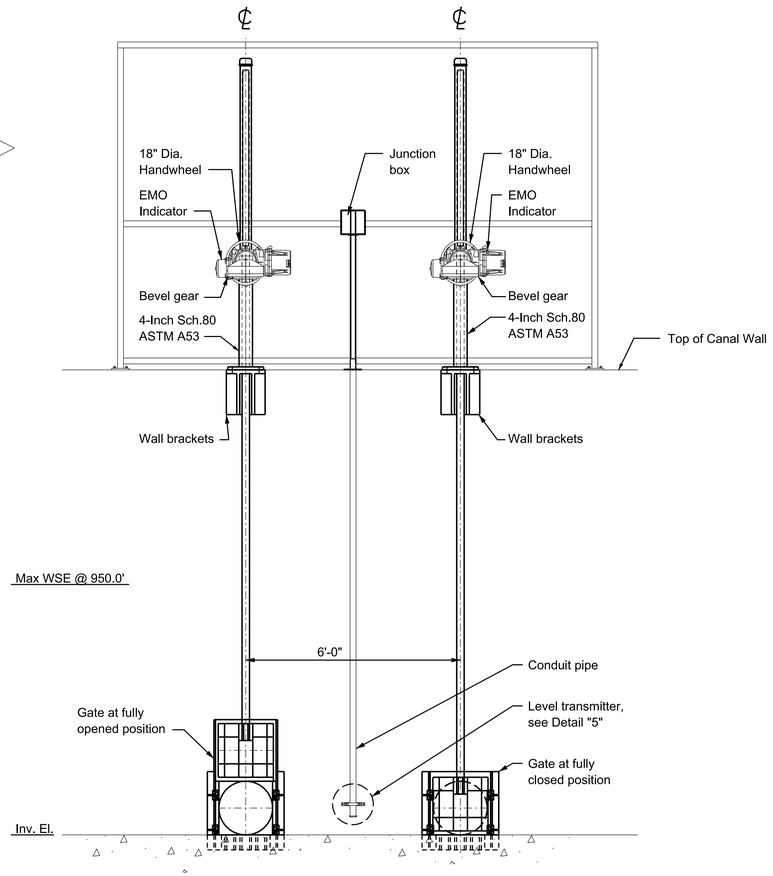
CADD PROJECT FILE NAME FCC0001207.MECH.M2
CHECKER O.PONGPUN
DESIGNER J.UNG/O.PONGPUN
DRAFTER J.UNG/O.PONGPUN

PLAN M2

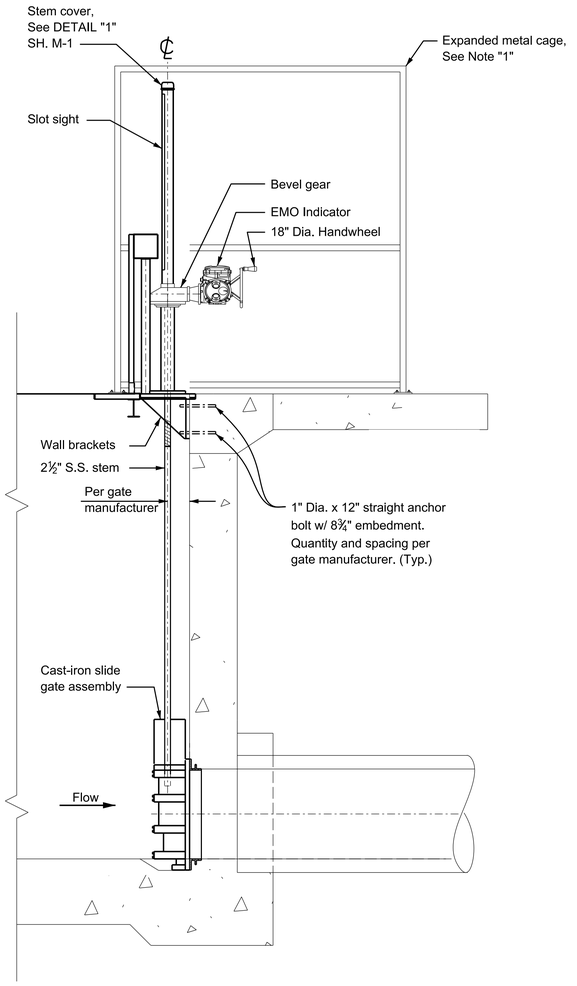
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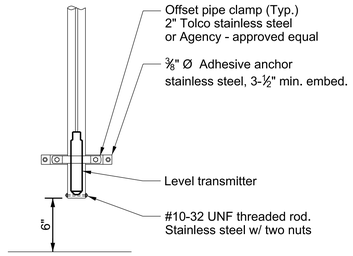
TYPICAL LOW FLOW CAST-IRON SLIDE GATE
SCALE: 3/4" = 1'-0"



SECTION MF-MF
SCALE: 1/2" = 1'-0"



SECTION ME-ME
SCALE: 1/2" = 1'-0"



DETAIL "5"
SCALE: 1 1/2" = 1'-0"

GATES AND MANUAL OPERATORS SCHEDULE FOR LOW FLOW GATES

GATES AND ACCESSORIES									MANUAL OPERATOR	
Location	Gate Type	Gate Size	Qty.	Inv. El. (Ft)	Max. WSE (Ft)	Max. Operating Head (Ft)		Stem Dia. (Inches)	Required Torque (FT-lb)	Thrust Rating (Lb.)
Low Flow Intake Canal	Cast-iron slide gate	12"Wx12"H	2	943.50	950.0	13.0	Seating Head	1.25	40	8,000

NOTES:

1. The Contractor shall construct the expanded metal cage per details shown on the drainage plan, Sh. 24
2. The thread length for the gate stem shown on the plan was sized to accommodate the future upgrade to electric motor operator.

DATE	MARK	DESCRIPTION

REVISIONS

OPART PONGPUN
M 36456
REGISTERED PROFESSIONAL ENGINEER
MECHANICAL
STATE OF CALIFORNIA

11/19/2020
PROJECT ENGINEER DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

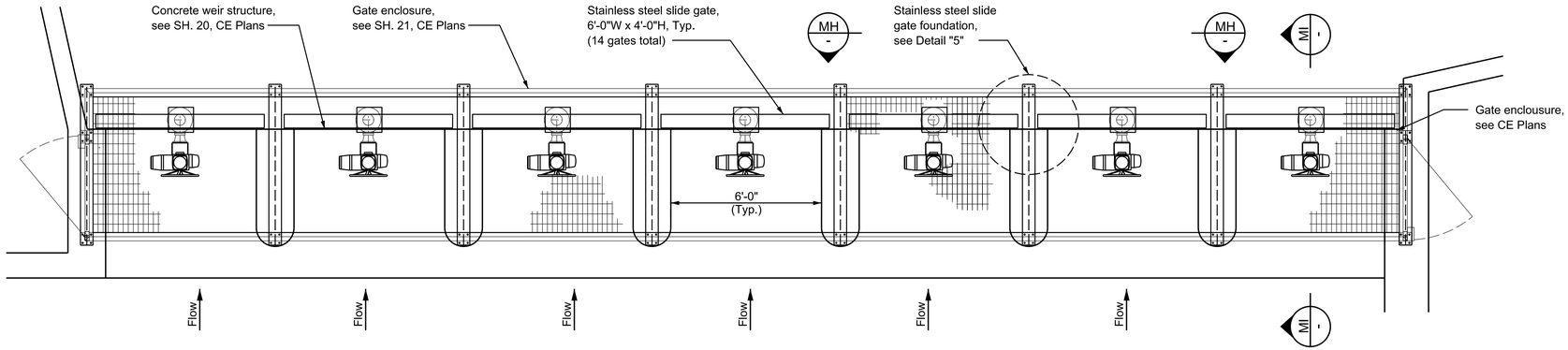
LOW FLOW GATE - INTAKE STRUCTURE

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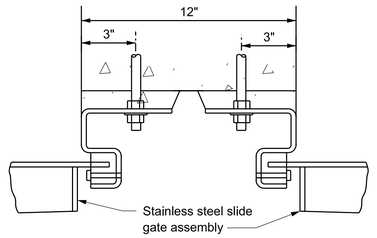
CADD PROJECT FILE NAME FCC0001207.MECH.M3
CHECKER O.PONGPUN
DESIGNER J.UNG/O.PONGPUN
DRAFTER J.UNG/O.PONGPUN

PLAN M3

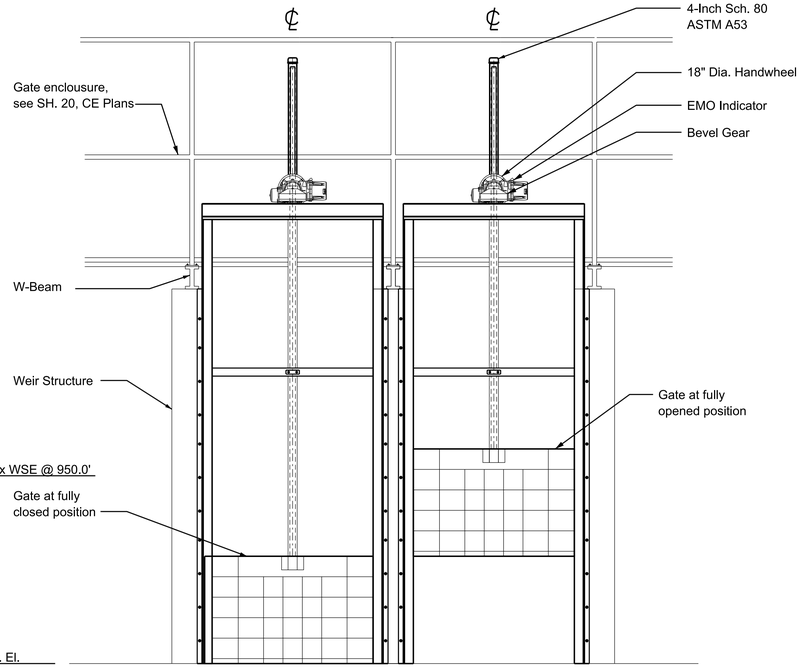
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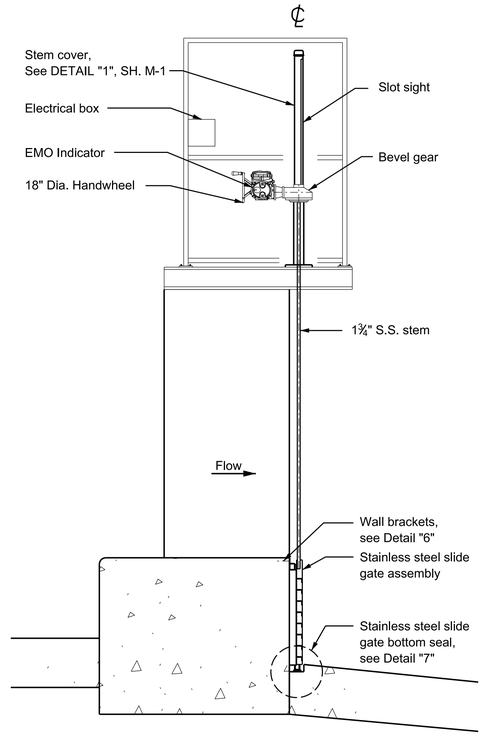
TYPICAL GATE CONCRETE WEIR STRUCTURE AT INTAKE CANAL
SCALE: 1/2" = 1'-0"



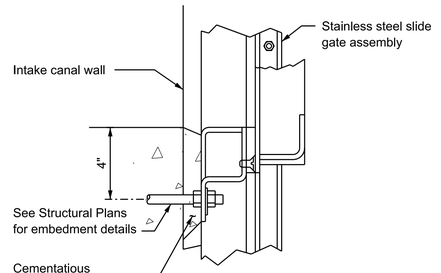
DETAIL "5"
SCALE: 3" = 1'-0"



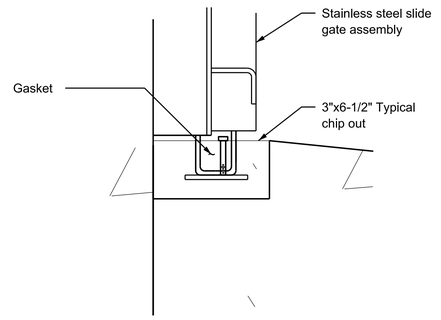
SECTION MH-MH
SCALE: 1/2" = 1'-0"



SECTION MI-MI
SCALE: 1/2" = 1'-0"



DETAIL "6"
SCALE: 3" = 1'-0"



DETAIL "7"
SCALE: 3" = 1'-0"

GATES AND MANUAL OPERATORS SCHEDULE FOR WEIR STRUCTURE AT INTAKE CANAL

GATES AND ACCESSORIES									MANUAL OPERATOR	
Location	Gate Type	Gate Size	Qty.	Inv. El. (Ft)	Max. WSE (Ft)	Max. Operating Head (Ft)		Stem Dia. (Inches)	Required Torque (FT-lb)	Thrust Rating (Lb.)
Weir Structure	Stainless steel slide gate	6'-0"Wx4'-0"H	14	943.0	950.0	13.0	Unseating Head	1.75	40	8,000

NOTES:

1. The Contractor shall verify the dimensions with " * ".
2. The Contractor shall construct the expanded metal cage per details shown on the drainage plan, Sh. 23
3. The thread lenght for the gate stem shown on the plan was sized to accommodate the future upgrade to electric motor operator.

DRAFTER J.UNG/O.PONGPUN
DESIGNER J.UNG/O.PONGPUN
CHECKER O.PONGPUN
CADD PROJECT FILE NAME FCC0001207.MECH.M2

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — OPART PONGPUN — M 36456 — MECHANICAL — STATE OF CALIFORNIA

PROJECT ENGINEER 11/19/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS ENHANCEMENT PROJECT

PROJECT ID NO. FCC0001207

TYPICAL EQUIPMENT LAYOUT FOR WEIR STRUCTURE AT INTAKE CANAL

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PLAN M4

DATE: $DATE$ TIME: $TIME$ FILE: $FILEL$

ABBREVIATIONS

A	AMPERES
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
AT	AMPERE TRIP
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CO	CONDUIT ONLY
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DISC	DISCONNECT
DIST	DISTRIBUTION
DPDT	DOUBLE POLE DOUBLE THROW
DWG	DRAWING
EGC	EQUIPMENT GROUNDING CONDUCTOR
ETM	ELAPSED TIME METER
EXIST	EXISTING
FU	FUSE
FLA	FULL LOAD AMPERES
FLEX	FLEXIBLE CONDUIT
FL	FLUORESCENT LAMP
FVNR	FULL VOLTAGE NON REVERSING
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GND	GROUND
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSE POWER
HZ	HERTZ (CYCLE)
INCAND	INCANDESCENT
JB	JUNCTION BOX
kA	KILOAMPERES
KCMIL	THOUSAND CIRCULAR MILLS
kV	KILOVOLTS
kVA	kILOVOLT-AMPERES
kW	kILOWATTS
LRC	LOCKED ROTOR CURRENT
LTG	LIGHTING
LV	LOW VOLTAGE
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MH	MOUNTING HEIGHT
MLO	MAIN LUGS ONLY
MTD	MOUNTED
NC	NORMALLY CLOSED
N.C.T.O.	NORMALLY CLOSED TIMED OPEN
NF	NOT FUSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
N.O.T.C.	NORMALLY OPEN TIMED CLOSED
OL	OVERLOAD RELAY (THERMAL)
P	POLE
PFR	PHASE FAILURE RELAY
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PS	PRESSURE SWITCH
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
R	RELAY
RMS	ROOT MEAN SQUARE
RTD	RESISTANCE TEMPERATURE DETECTOR
SP	SUMP PUMP
SPDT	SINGLE POLE DOUBLE THROW
SYM	SYMMETRICAL
TB	TERMINAL BLOCK
TD	TIME DELAY RELAY
TS	TRANSIENT SUPPRESSOR
UG	UNDERGROUND
UGPS	UNDERGROUND PULL SECTION
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VAR	VOLTAMP REACTIVE
W	WIRE
WH	WATTHOUR
XFMR	TRANSFORMER
Z	IMPEDANCE

GENERAL ELECTRICAL SYMBOLS

- NEW RACEWAY & CONDUCTOR. SEE RACEWAY SCHEDULE.
- JUNCTION BOX
- CONDUIT SEAL
- GROUND
- TRANSFORMER
- DUPLEX GFCI RECEPTACLE
- CONDUCTORS IN RACEWAY; LONGER LINE INDICATES NEUTRAL WIRE; DIAGONAL WIRE INDICATES GROUND WIRE.
- HOMERUN. PANEL & CIRCUITS AS INDICATES ON PLANS.
- GAS MONITOR SAMPLE POINT
- DISCONNECTING MEANS. NON-FUSIBLE. HORSE POWER RATED. (NUMBER INDICATES SWITCH SIZE. WP-WEATHERPROOF)
- DISCONNECTING MEANS, FUSED. HORSE POWER RATED. (NUMBER INDICATES SWITCH/FUSE SIZE. WP-WEATHERPROOF)
- PANELBOARD SEE PANEL SCHEDULE FOR DESCRIPTION.
- MOTOR STARTER. SIZE AND CONFIGURATION AS INDICATED ON SCHEMATIC CONTROL DIAGRAMS (SEE CONTROL SCHEMATIC DIAGRAMS "E" DRAWING SHEET SERIES).
- TRANSIENT VOLTAGE SURGE SUPPRESSOR.
- FUSE
- CIRCUIT BREAKER - VOLTS, AMPERAGE AND AIC AS INDICATED.
- MANUFACTURER SUPPLIED CONTROLLER W/INTEGRAL DISCONNECT AND MOTOR OVERLOAD PROTECTION.
- MOTOR INDICATED, 480V, 3PH. HP RATINGS AS INDICATED.
- UTILITY METERING.
- AMMETER
- DISCONNECT
- 3-POSITION AMMETER SWITCH.
- CIRCUIT BRREAKER W/ GROUND-FAULT PROTECTION - VOLTS, AMPERAGE AND AIC AS INDICATED.

LOGIC SYMBOLS

- TERMINAL. NUMBER INDICATED.
- RELAY OR AUX CONTACT. NORMALLY OPEN.
- SAME AS ABOVE EXCEPT NORMALLY CLOSED
- RELAY COIL
- FUSE (SIZE PER DIAGRAM)
- HAND-OFF-AUTO SELECTOR SWITCH
- TOGGLE SWITCH
- SOV
- PTC PROBE
- FLOAT SWITCH. N.O.
- PRESSURE SWITCH. N.O.
- PRESSURE SWITCH. N.C.
- TEMPERTURE ACTIVATED SWITCH. N.O.
- LIMIT SWITCH. N.O.
- INDICATING LAMP. ANNOTATION INDICATES COLOR AS FOLLOWS: A - AMBER G - GREEN R - RED
- AMMETER
- VOLTMETER
- ELAPSED TIME METER
- CURRENT TRANSFORMER
- CIRCUIT BREAKER - VOLTS, AMPERAGE AS INDICATED.
- CIRCUIT BREAKER - W/ SHUNT TRIP- VOLTS, AMPERAGE AS INDICATED.
- THERMAL OVERLOAD.
- MOISTURE SENSING PROBES.

CONDUIT & WIRING INSTALLATION LEGEND

- CONDUIT CONCEALED
- CONDUIT EXPOSED
- CONDUIT PLUGGED FLUSH.
- CONDUIT TURNING UP.
- CONDUIT CAPPED.
- CONDUIT TURNING DOWN.

OTHER SYMBOLS

- (N) NEW ELECTRICAL EQUIPMENT FURNISHED AND INSTALLED BY CONTRACTOR.
- (E) EXISTING ELECTRICAL EQUIPMENT
- BATTERY

ELECTRICAL DRAWINGS LIST

E-1 SYMBOLS AND ABBREVIATIONS LIST
E-2 GENERAL CONSTRUCTION NOTES
E-3 ELECTRICAL SITE PLAN
E-4 OVERFLOW STRUCTURE CONDUIT DETAILS - 1
E-5 OVERFLOW STRUCTURE CONDUIT DETAILS - 2
E-6 SINGLE LINE DIAGRAMS
E-7 ELECTRICAL INSTALLATIONS
E-8 ELECTRICAL DETAILS
E-9 ELECTRICAL SITE PLAN - WEIR STRUCTURES
E-10 EXISTING GENERATOR HOUSE ELECTRICAL DETAILS
E-11 SINGLE LINE DIAGRAM - WEIR STRUCTURES

DRAFTER H. SHALVIRI
DESIGNER H. SHALVIRI
CHECKER V. BIKOVSKY
CADD PROJECT FILE NAME
REVIEWED BY
DATE

DATE	MK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — VADIM BIKOVSKY — E20261 — ELECTRICAL — STATE OF CALIFORNIA

12/03/2020
PROJECT ENGINEER DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

SYMBOLS & ABBREVIATIONS LIST

DWG 21-D114.51 | JOB EF11610123 | SHEET 51 OF 72

E-1

PS-DF 07/05

DATE: $DATE$ TIME: FILE: $TIME$ $FILE$

CONDUIT NOTES

1. PVC COATED RIGID METAL CONDUIT AND FITTINGS SHALL BE LISTED (UL 6)

2. POLYVINYL CHLORIDE CONDUIT (PVC) AND FITTINGS SHALL BE LISTED (UL 50, 514B, 651)

3. LIQUID-TIGHT FLEXIBLE CONDUIT SHALL BE LISTED (UL 360)

4. RIGID METAL CONDUIT AND FITTINGS SHALL BE LISTED (UL 6)

5. ALL UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40.

OUTLET, JUNCTION, AND PULL BOXES NOTES

1. OUTLET BOXES SHALL BE CAST WITH DRILLED, TAPPED, AND PLUGGED HUBS AND SHALL BE HOT-DIPPED GALVANIZED. ALL BOXES SHALL BE NEC CODE SIZED FOR THE NUMBER OF WIRES PASSING THROUGH OR TERMINATING. EACH BOX CONTAINING AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED WITH A GROUNDING TERMINAL.

2. OUTLET BOXES SHALL BE NEMA TYPE 4, 3R OR 4X.

3. OUTLET BOXES SHALL BE LISTED (UL 514A)

4. PULL BOXES SHALL BE INSTALLED IN ALL CONDUIT RUNS WHEREVER INDICATED AND/OR WHERE NECESSARY IN ORDER TO FACILITATE THE PULLING OF WIRES OR CABLES.

5. EXPOSED BOXES SHALL BE 14GA, PROVIDED WITH REMOVABLE COVERS, SECURED WITH MATCHING SCREWS. JUNCTION BOXES SHALL BE IDENTIFIED. ALL SURFACES OF BOXES AND COVERS, INSIDE AND OUT, SHALL BE GIVEN A PRIMER COAT AND ONE COAT OF GRAY EPOXY PAINT. STAINLESS STEEL BOXES SHALL REMAIN UNFINISHED. CONDUIT SHALL ENTER THE BOXES THROUGH TIGHT FITTING, BORED OR PUNCHED HOLES AND SHALL BE SECURED TO THE BOXES WITH DOUBLE LOCKNUTS AND BUSHINGS.

6. UNDERGROUND PULL BOXES SHALL BE PRE-CAST WITH BOLT-DOWN STEEL TRAFFIC COVERS SUITABLE FOR H-20 LOADING, PULLING IRONS AND CONDUCTOR SUPPORTS. UNDERGROUND PULL BOXES SHALL BE LISTED (UL 50)

7. UNDERGROUND PULL BOXES HOUSING SPARE OR COMMUNICATIONS CABLES SHALL BE 17"(W) x 30"(L) x 12"(D). PULL BOXES SHALL HAVE A 12" (D) REINFORCED CONCRETE EXTENSION.

8. UNDERGROUND PULL BOXES HOUSING POWER CONDUITS SHALL BE 10.5"(W) x 17"(L) x 12"(D). NO EXTENSION IS REQUIRED.

CONDUCTORS NOTES

1. ALL CONDUCTORS SHALL BE ANNEALED COPPER.

2. CONDUCTORS SHALL BE NOT SMALLER THAN #14 AMERICAN WIRE GAUGE (AWG) COPPER WIRE.

3. ALL CONDUCTORS #8 AND LARGER SHALL BE STRANDED.

4. UNLESS OTHERWISE SPECIFIED, THE MINIMUM SIZE FOR CLASS I REMOTE-CONTROL AND SIGNAL CIRCUITS SHALL BE #16 AWG, AND FOR CLASS 2 LOW-ENERGY CONTROL AND SIGNAL CIRCUITS, #20 AWG.

5. ALL CONDUCTOR INSULATION SHALL BE TYPE THHN OR THWN FOR 600V AND BELOW. OTHER TYPES OF CONDUCTORS SHALL BE INSTALLED ONLY WHERE SHOWN ON PLANS.

6. ALL CONDUCTORS SHALL BE LISTED (UL 83)

SPLICED CONDUCTORS NOTE

1. CONDUCTOR SPLICES SHALL UTILIZE LISTED (UL 486A, 486B, 486D) INSULATED CONNECTORS SUITABLE FOR DIRECT BURIAL/SUBMERSIBLE INSTALLATION.

GENERAL NOTES

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST NATIONAL ELECTRICAL CODE (NEC), LOCAL MUNICIPAL CODE AND LOCAL FIRE DISTRICT REGULATIONS.

2. ALL ELECTRICAL EQUIPMENT SHALL BE LISTED BY UL OR AN AGENCY-APPROVED THIRD PARTY TESTING FACILITY.

3. ALL EQUIPMENT AND RACEWAYS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.

4. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF THE EQUIPMENT AND WORK INCLUDED. THE INTENTION OF THE DRAWINGS IS TO INDICATE SIZE, CAPACITY, APPROXIMATE LOCATION AND GENERAL RELATIONSHIP, BUT NOT THE EXACT DETAIL OR PHYSICAL PLACEMENT.

5. ALL DISTANCES SHALL BE FIELD -VERIFIED BY CONTRACTOR.

6. GENERAL NOTES PERTAIN TO ELECTRICAL WORK ONLY. REFER TO OTHER PLANS FOR NON-ELECTRICAL SCOPE OF WORK AND REQUIREMENTS.

7. CONTRACTOR SHALL CALL DIG ALERT TO VERIFY THE LOCATION OF EXISTING UTILITIES IN THE PROJECT AREA PRIOR TO CONDUCTING ANY EXCAVATION.

8. ALL CONDUITS SHALL BE MINIMUM 24" BELOW FINISH GRADE.

9. CONDUITS SHALL BE PLACED UNDER ACCESS ROADS. CONDUITS SHALL NOT BE PLACED ON BASIN SIDE SLOPES.

10. MINIMUM BEND RADIUS FOR ALL 2" CONDUITS SHALL BE 24".

11. CONDUIT ALIGNMENTS ARE SCHEMATIC ONLY.

DRAFTER H. SHALVIRI HS
DESIGNER H. SHALVIRI HS
CHECKER V. BIKOVSKY
CADD PROJECT FILE NAME
REVIEWED BY
DATE

E-2

DATE	MK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — VADIM BIKOVSKY — E20261 — ELECTRICAL — STATE OF CALIFORNIA

12/03/2020

PROJECT ENGINEER DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

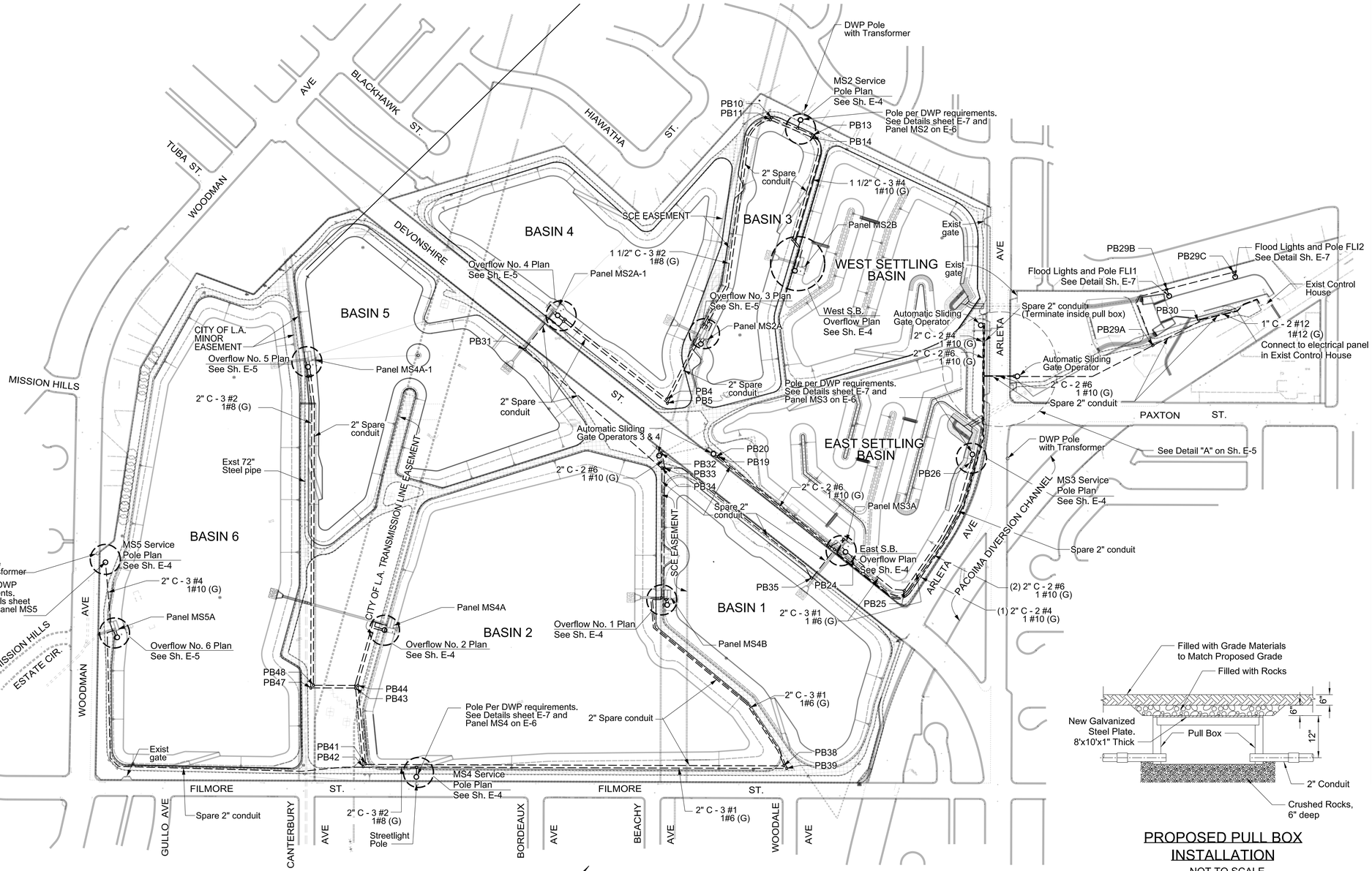
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

GENERAL CONSTRUCTION NOTES

DWG 21-D114.52	JOB EF11610123	SHEET 52 OF 72

PS-DF 07/05

DATE. $DATE$TIME. FILE. $TIME$ $FILE$



SITE PLAN
SCALE:1"=200'

PROPOSED PULL BOX INSTALLATION
NOT TO SCALE

Pullbox	Flood Light	Service Pole	Northing	Easting
PB1			1916407.49	6425661.29
PB2			1916413.22	6425664.33
	FL4		1916414.14	6425684.04
PB3			1916415.46	6425711.59
PB4			1916481.29	6426202.76
PB5			1916477.16	6426206.39
	FL3		1916717.34	6426132.68
PB6			1916745.02	6426137.10
PB7			1916740.77	6426133.60
PB8			1916807.06	6426107.88
PB9			1916811.30	6426111.38
PB10			1917567.13	6425806.10
PB11			1917561.66	6425806.65
PB12			1917595.36	6425894.15
		MS2	1917620.71	6425883.98
PB13			1917609.67	6425957.91
PB14			1917604.31	6425959.12
PB15			1917264.05	6426173.56
PB16			1917266.37	6426178.55
PB17			1917192.91	6426236.16
PB18			1917189.29	6426232.03
	FLW		1917167.70	6426237.80
PB19			1916446.80	6426498.16
PB20			1916441.76	6426494.90
PB21			1916467.75	6427059.31
PB22			1916471.06	6427064.32
PB23			1916480.89	6427077.69
	FLE		1916483.06	6427101.87
PB24			1916483.78	6427132.20
PB25			1916529.68	6427367.96
PB26			1917075.21	6427249.82
		MS3	1917099.64	6427237.29
PB27			1917345.65	6427054.49
PB28			1917494.62	6426926.72
PB29			1917422.12	6427143.43
PB29A			1917859.98	6427464.23
PB29B			1918056.09	6427362.59
	FLI1		1918043.52	6427385.96
PB29C			1918273.53	6427511.02
	FLI2		1918264.66	6427527.61
PB30			1918047.33	6427534.41
PB31			1916272.67	6425669.21
PB32			1916312.17	6426324.55
PB33			1916277.40	6426370.21
PB34			1916273.56	6426365.84
PB35			1916343.20	6427071.14
PB36			1915902.03	6426703.55
PB37			1915896.94	6426701.48
	FL1		1915880.29	6426711.72
PB38			1915716.62	6427434.97
PB39			1915715.69	6427440.39
PB40			1914816.85	6426447.65
		MS4	1914768.88	6426433.33
PB41			1914671.94	6426258.66
PB42			1914665.51	6426257.72
PB43			1914868.03	6426037.90
PB44			1914880.80	6426037.77
PB45			1915099.57	6425927.54
PB46			1915097.39	6425934.78
	FL2		1915106.93	6425974.70
PB47			1914739.09	6425918.73
PB48			1914744.01	6425924.27
	FL5		1915663.40	6425084.13
PB49			1915676.60	6425069.94
PB50			1915681.60	6425069.85
	FL6		1914403.08	6425219.41
PB51			1914419.36	6425203.05
PB52			1914420.12	6425195.79
		MS5	1914598.91	6425002.69

DRAFTER VISAL TE
DESIGNER H. SHALVIRI
CHECKER V. BIKOVSKY
CADD PROJECT FILE NAME
REVIEWED BY
DATE

DATE	MK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEERS
VADIM BIKOVSKY
NO. E20261
EXP. 03/31/19
ELECTRICAL
STATE OF CALIFORNIA

12/03/2020
PROJECT ENGINEER DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

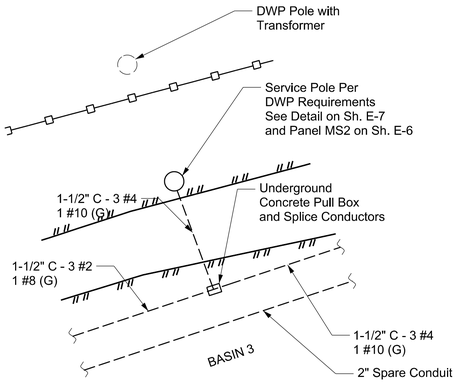
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207
ELECTRICAL SITE PLAN
IMPROVEMENT FACILITIES

DWG 21-D114.37 | PD | SHEET 53 OF 72

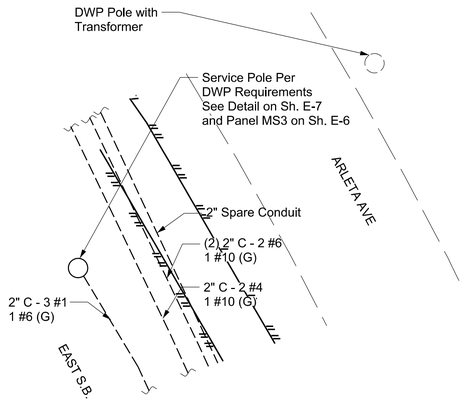
E-3

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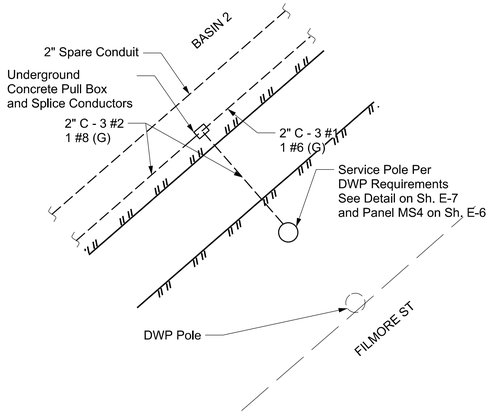
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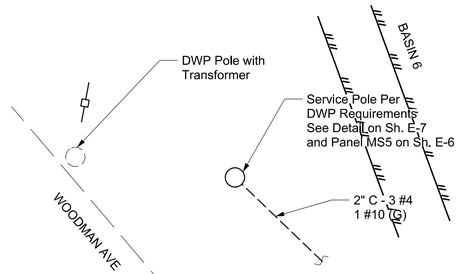
MS2 SERVICE POLE PLAN
NOT TO SCALE



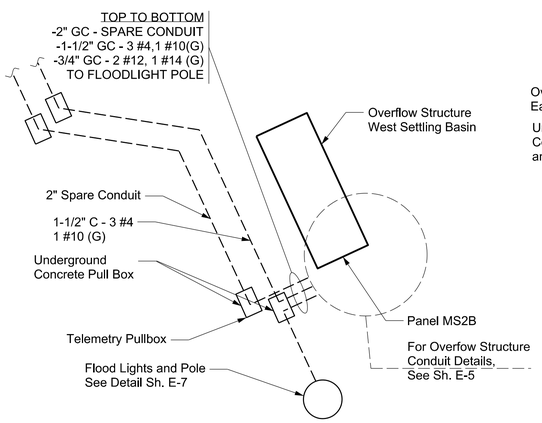
MS3 SERVICE POLE PLAN
NOT TO SCALE



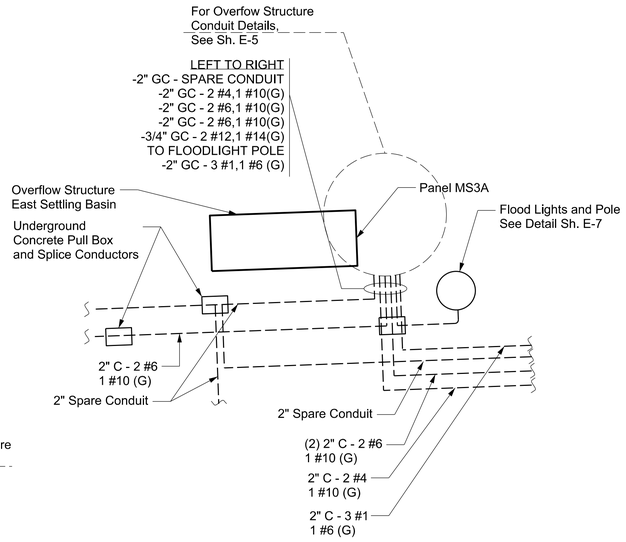
MS4 SERVICE POLE PLAN
NOT TO SCALE



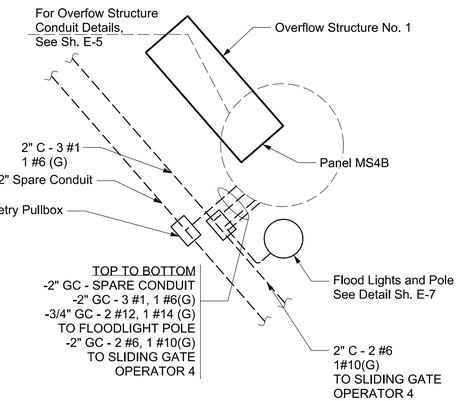
MS5 SERVICE POLE PLAN
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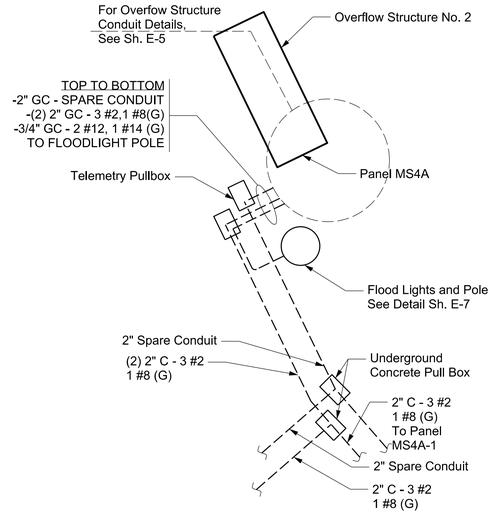
WEST S.B. OVERFLOW PLAN
NOT TO SCALE



EAST S.B. OVERFLOW PLAN
NOT TO SCALE



OVERFLOW NO. 1 PLAN
NOT TO SCALE



OVERFLOW NO. 2 PLAN
NOT TO SCALE

DESIGNER H. SHALVIRI
CHECKER V. BIKOVSKY
CADD PROJECT FILE NAME
REVIEWED
DATE
DRAFTER B. LIANG

E-4

DATE	MK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
VADIM BIKOVSKY
NO. E20261
EXP. 03/31/21
ELECTRICAL
STATE OF CALIFORNIA

12/03/2020
PROJECT ENGINEER — DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

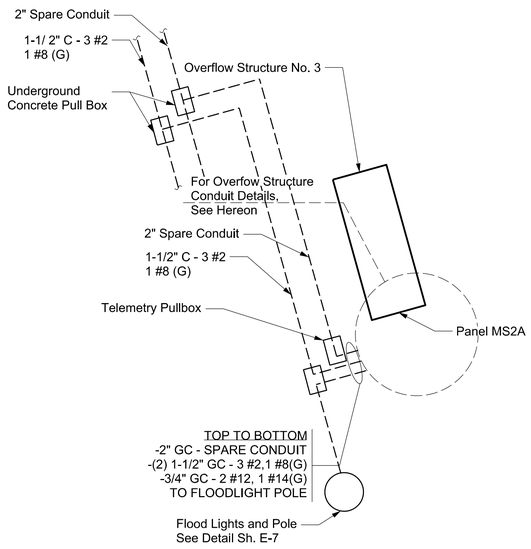
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

OVERFLOW STRUCTURE CONDUIT DETAILS-1

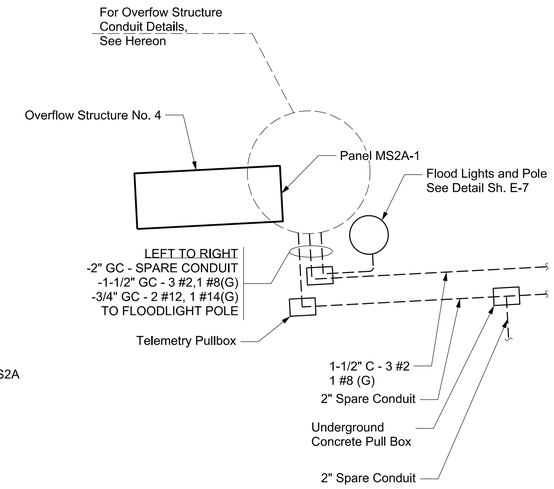
DWG 21-D114. 54 | JOB EF11610123 | SHEET 54 OF 72

PS-DF 07/05

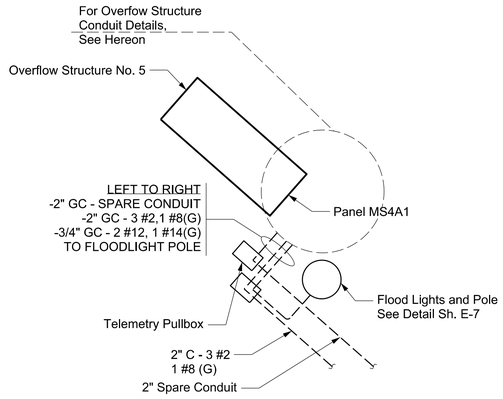
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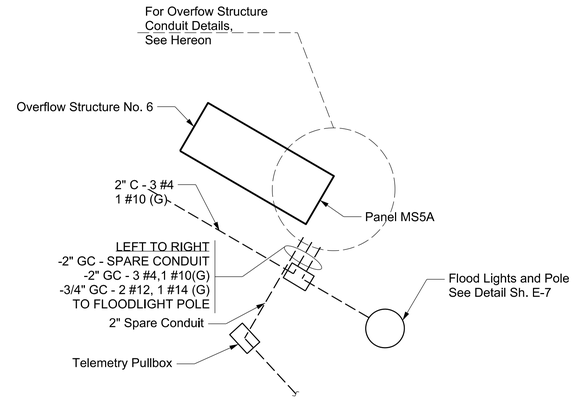
OVERFLOW NO. 3 PLAN
NOT TO SCALE



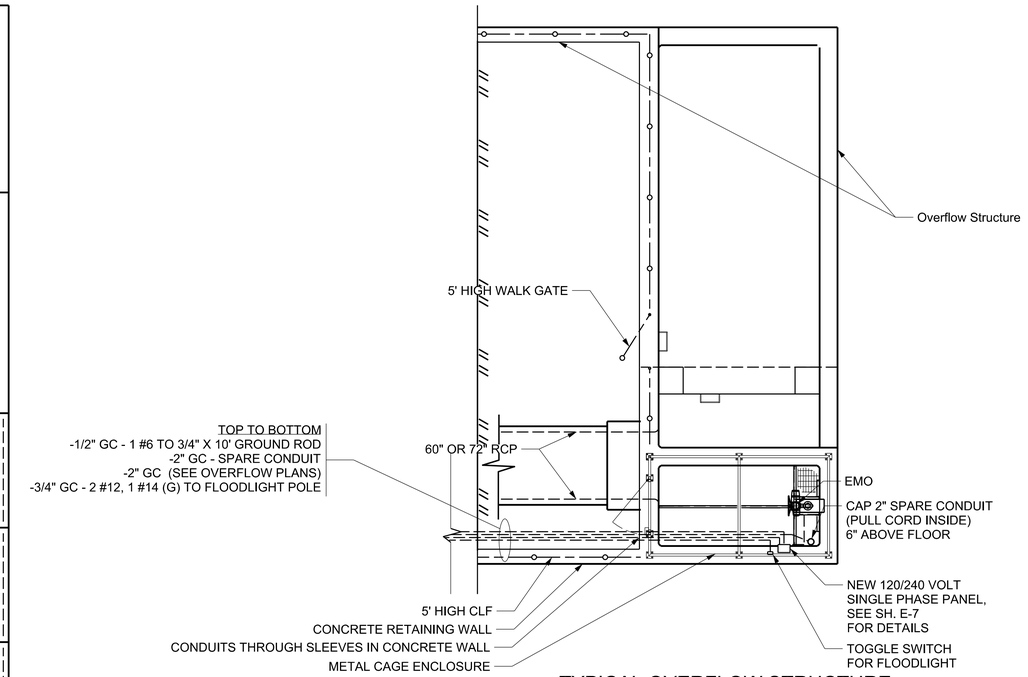
OVERFLOW NO. 4 PLAN
NOT TO SCALE



OVERFLOW NO. 5 PLAN
NOT TO SCALE



OVERFLOW NO. 6 PLAN
NOT TO SCALE



TYPICAL OVERFLOW STRUCTURE
CONDUIT DETAILS
NOT TO SCALE

DRAFTER B.LIANG
DESIGNER H. SHALVIRI
CHECKER V. BIKOVSKY
CADD PROJECT FILE NAME
REVIEWED DATE

DATE	MK	DESCRIPTION
REVISIONS		

REGISTERED PROFESSIONAL ENGINEER
VADIM BIKOVSKY
NO. E20261
EXP. 03/31/21
ELECTRICAL
STATE OF CALIFORNIA

12/03/2020
PROJECT ENGINEER DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

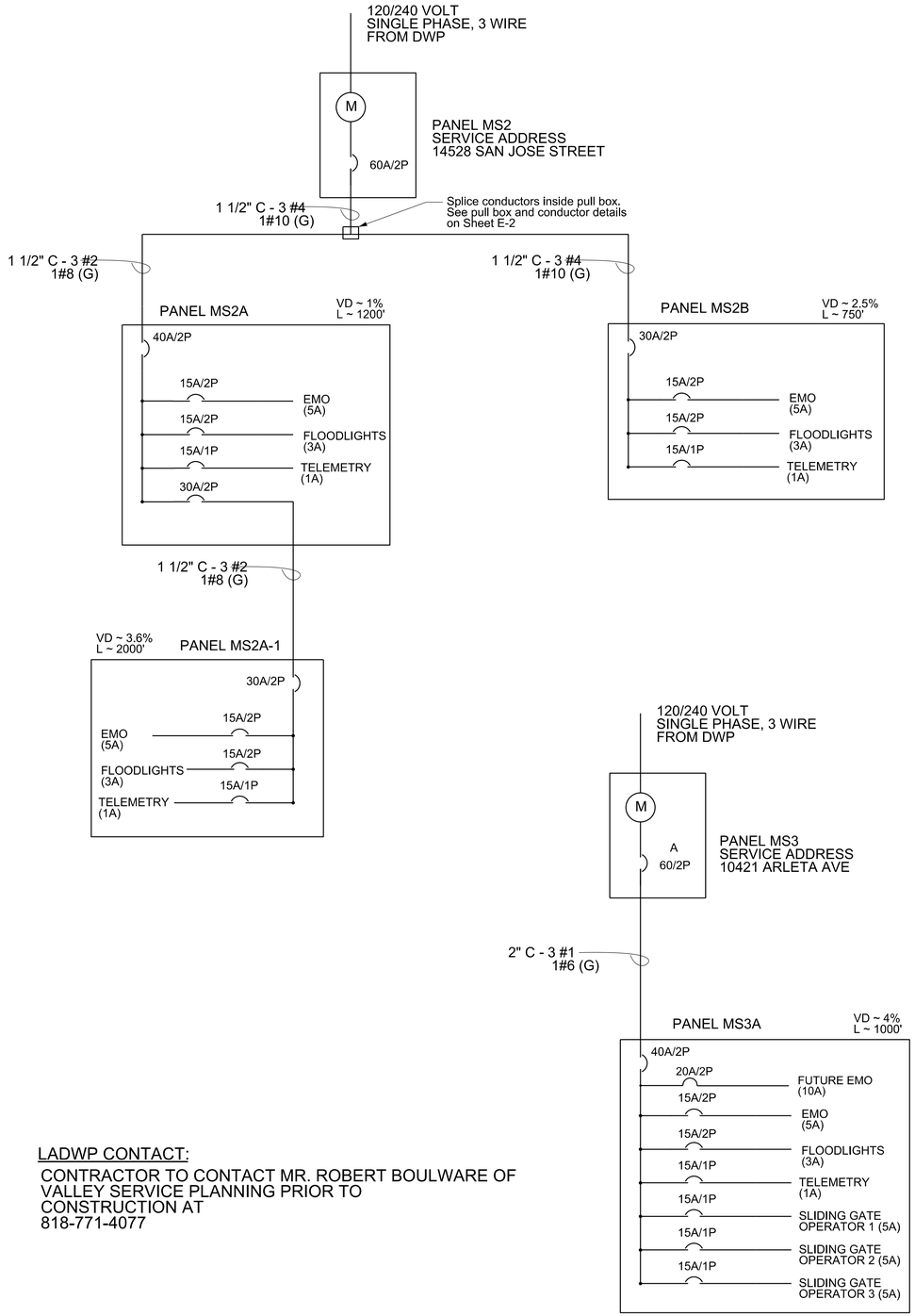
OVERFLOW STRUCTURE CONDUIT DETAILS - 2

DWG 21-D114. 55 | JOB EF11610123 | SHEET 55 OF 72

E-5

PS-DF 07/05

DATE. $DATE$ TIME. FILE. $TIME$ $FILE$



LADWP CONTACT:

CONTRACTOR TO CONTACT MR. ROBERT BOULWARE OF VALLEY SERVICE PLANNING PRIOR TO CONSTRUCTION AT 818-771-4077

DRAFTER VISAL TE
DESIGNER H. SHALVIRI
CHECKER V. BIKOVSKY
CADD PROJECT FILE NAME
REVIEWED
DATE

E-6

DATE	MK	DESCRIPTION
		REVISIONS

REGISTERED PROFESSIONAL ENGINEER
VADIM BIKOVSKY
NO. E20261
EXP. 03/31/21
ELECTRICAL
STATE OF CALIFORNIA
12/03/2020
PROJECT ENGINEER DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

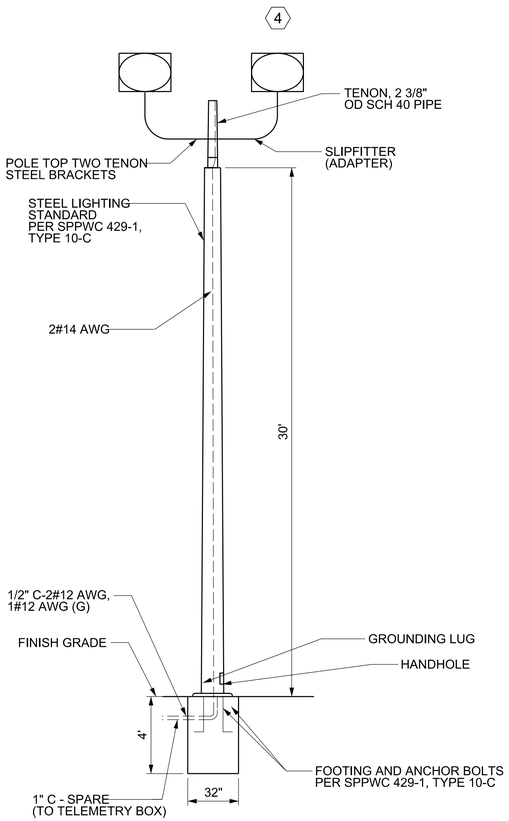
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

SINGLE LINE DIAGRAMS

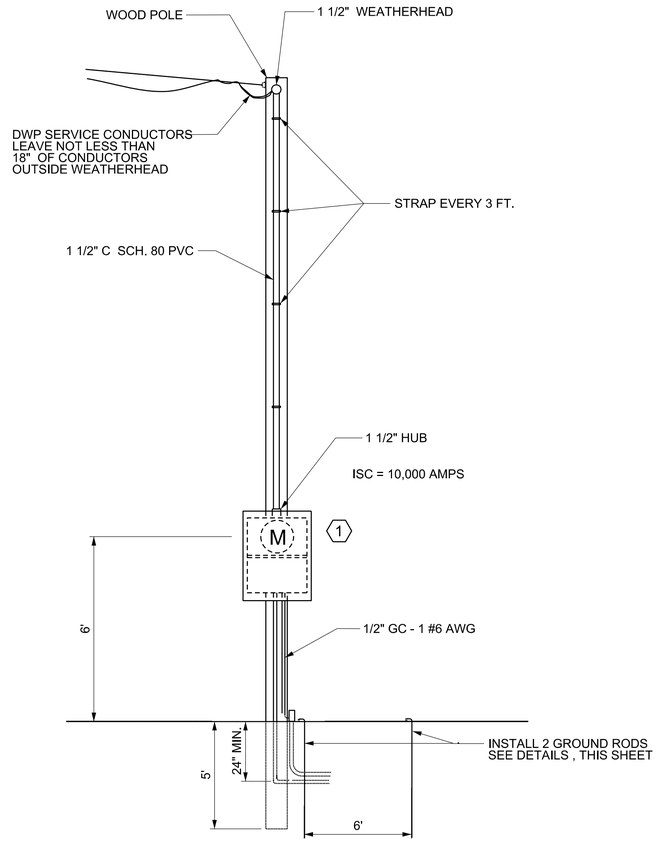
DWG 21-D114. 56 | JOB EF11610123 | SHEET 56 OF 72

PS-DF 07/05

DATE. $DATE$ TIME. FILE. $TIME$ $FILE$



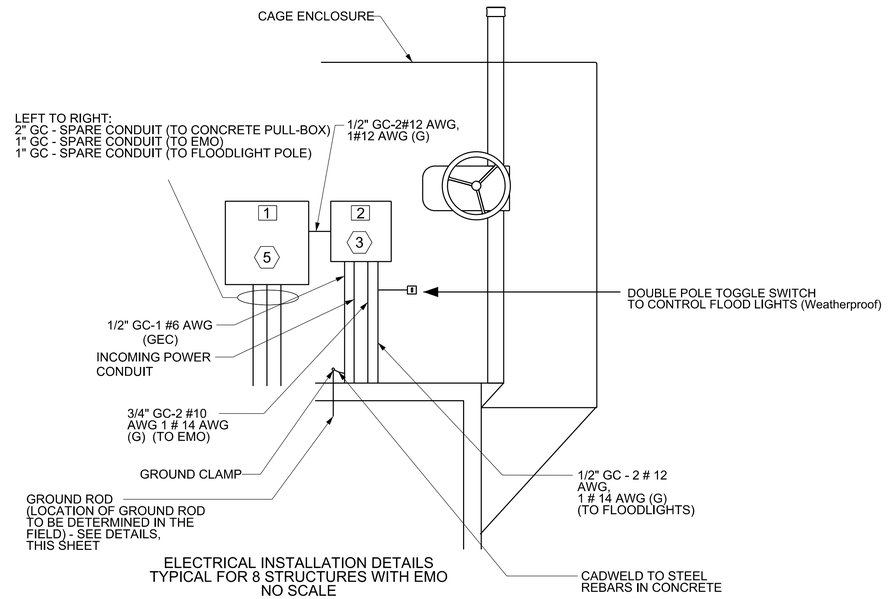
FLOODLIGHT POLE (Typical for 10 locations)
NO SCALE



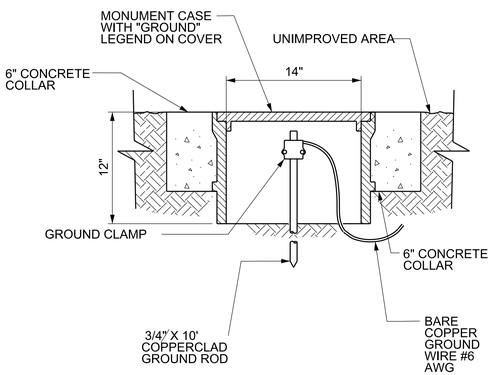
SERVICE POLE (Typical for 4 locations)
NO SCALE

ELECTRICAL MATERIALS SCHEDULE AND QUANTITIES

ITEM	DESCRIPTION	QTY
1	100 AMP METER MAIN COMBINATION SOCKET; 240 VOLT, SINGLE PHASE, 3 WIRE WITH A FACTORY-INSTALLED CIRCUIT BREAKER, NEMA 3R	4
2	NOT USED	
3	POWER PANEL (LOAD CENTER): SINGLE PHASE, 120 / 240 VOLT, 100 AMP, NEMA 3R, WITH A MAIN CIRCUIT BREAKER (SEE LOAD CENTER NOTES)	8
4	LED FLOOD LIGHT: 240 Volt, 79.2 WATT, STAINLESS STEEL EXTERNAL HARDWARE, SHATTER-RESISTANT GLASS, BOLT-ON WIRE GUARD, SLIPFITTER	20
5	ENCLOSURE: NEMA 3R, 16 GAUGE STEEL WITH DRIP-SHIELD, 36" X 36" X 8" WITH PANEL, VENTILATION LOUVERS 6"H X 6"W TWO LOCATIONS, LOWER LEFT SIDE AND UPPER RIGHT SIDE	8

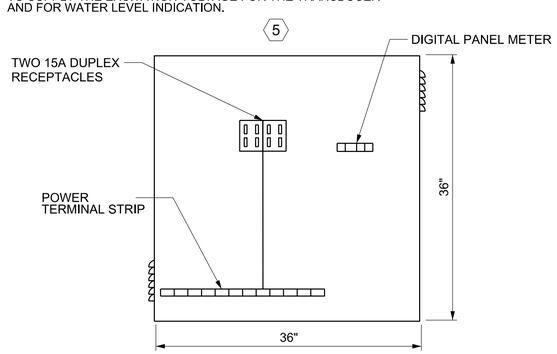


ELECTRICAL INSTALLATION DETAILS
TYPICAL FOR 8 STRUCTURES WITH EMO
NO SCALE



GROUND ROD AND WELL DETAIL
NO SCALE

NOTE:
DIGITAL PANEL METER INSIDE TELEMETRY BOX TO SUPPLY THE EXCITATION VOLTAGE FOR THE TRANSDUCER AND FOR WATER LEVEL INDICATION.



TELEMETRY BOX - DETAILS
NO SCALE

NAMEPLATES:
1 TELEMETRY
2 CIRCUIT BREAKERS

NAMEPLATE DETAIL

HEIGHT	WIDTH	CHARACTER HEIGHT
0.50	2.75	0.125 (#Gorton Normal)

NOTES:
1. DIMENSIONS ARE IN INCHES
2. NAMEPLATE MATERIAL: WHITE LAMINATED FORMICA PLASTIC WITH BLACK LETTERS.

LOAD CENTER NOTES:
1. FOR PANEL MS4B: AN ADDITIONAL 15A/1P CIRCUIT BREAKER AND (1) 2"C - 2-#6, 1#10(G) RACEWAY TO GATE OPERATOR SHOWN ON PLAN E-6.
2. FOR PANEL MS3A: ADDITIONAL (3) 15A/1P CIRCUIT BREAKERS AND (3) 2"C - 2-#6, 1#10(G) RACEWAYS TO THREE GATE OPERATORS, AND (1) 20A/2P CIRCUIT BREAKER AND (1) 2"C - 2#4, 1#10(G) TO FUTURE EMOs AS SHOWN ON PLAN E-6.

E-7

DATE	MK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
VADIM BIKOVSKY
NO. E20261
EXP. 03/31/21
ELECTRICAL
STATE OF CALIFORNIA

12/03/2020
PROJECT ENGINEER — DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

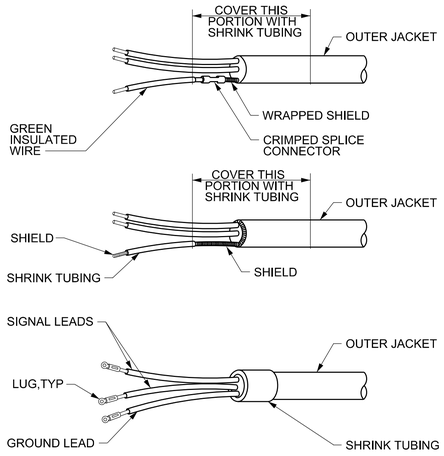
ELECTRICAL INSTALLATIONS

DWG 21-D114. 57 | JOB EF11610123 | SHEET 57 OF 72

PS-DF 07/05

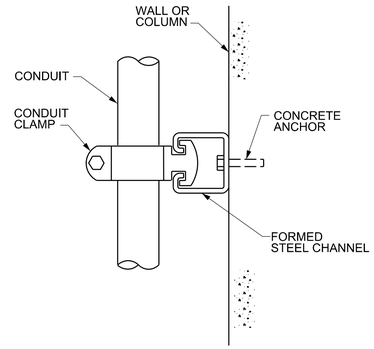
DRAFTER VISAL TE
DESIGNER H. SHALVIRI
CHECKER V. BIKOVSKY
CADD PROJECT FILE NAME
REVIEWED BY
DATE

DATE. $DATE$ TIME. FILE. $TIME$ $FILE$



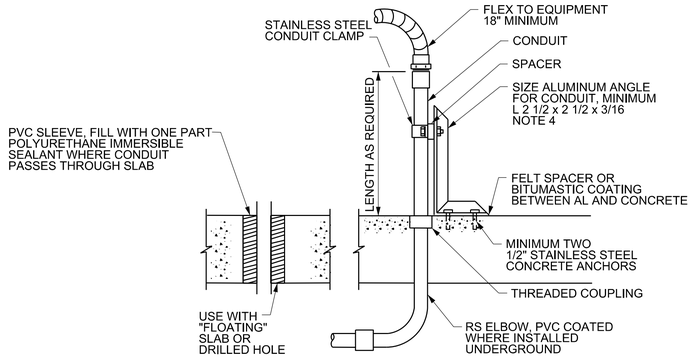
NOTES:
1. ALL SHIELDED INSTRUMENTATION CABLE SHALL BE TERMINATED IN ACCORDANCE WITH THIS DETAIL WHERE GROUNDING IS REQUIRED.
2. GROUND SHIELD/GROUND LEAD ONLY AT SOURCE.

TERMINATION OF SHILEDED INSTRUMENTATION CABLE
NTS



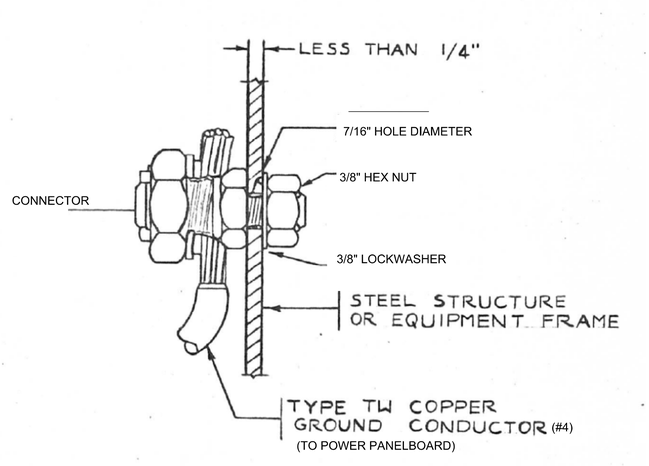
NOTES:
1. SUPPORT ALL EXPOSED CONDUITS ON FORMED STEEL CHANNELS.

CONDUIT SUPPORT on STRUCTURE
NTS

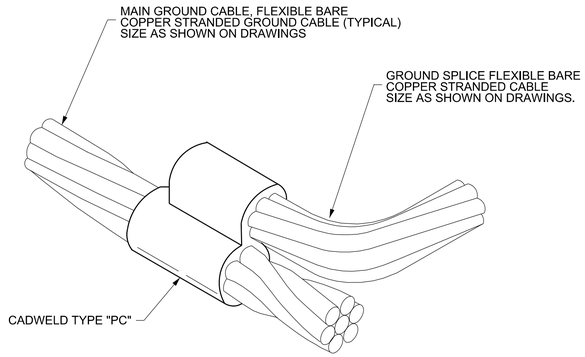


NOTES:
1. SUPPORT FOR ALL METAL CONDUITS WHICH EXTEND MORE THAN 18 INCHES OUT OF THE SLAB WITHIN 3 INCHES OF THE END OF THE CONDUIT.
2. SUPPORT FOR ALL PVC CONDUITS WITHIN 3 INCHES OF THE END OF THE CONDUIT.
3. THIS DETAIL SHALL BE USED FOR SUPPORT OF ALL CONDUITS WHICH ARE NOT OTHERWISE SUPPORTED IN A RIGID MANNER SUCH AS AGAINST AN EQUIPMENT BASE, WALL, COLUMN, ETC, AS REQUIRED ABOVE.
4. FOR ANY ANGLE GREATER THAN 2'-6" TALL, SIZE ANGLE SUPPORT AND ANCHORS FOR SEISMIC LOADS.

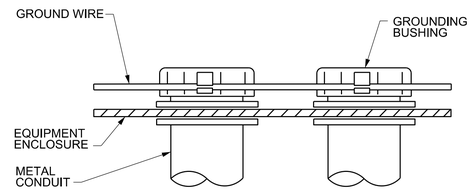
CONDUIT TRANSITION AND SUPPORT
NTS



CAGE ENCLOSURE BONDING DETAILS
NTS



PARALLEL GROUND CONNECTION DETAIL
NTS



NOTE:
1. THE ENDS OF ALL CONDUITS REQUIRED TO BE GROUNDED BY THE SPECIFICATIONS SHALL BE GROUNDED IN ACCORDANCE WITH THIS DETAIL.

CONDUIT GROUNDING
NTS

DRAFTER H. SHALVIRI
DESIGNER H. SHALVIRI
CHECKER V. BIKOVSKY
CADD PROJECT FILE NAME
REVIEWED BY
DATE

E-8

DATE	MK	DESCRIPTION
		REVISIONS

REGISTERED PROFESSIONAL ENGINEER — VADIM BIKOVSKY — NO. E20261 — EXP. 03/31/21 — ELECTRICAL — STATE OF CALIFORNIA

12/03/2020
PROJECT ENGINEER — DATE

LOS ANGELES COUNTY PUBLIC WORKS

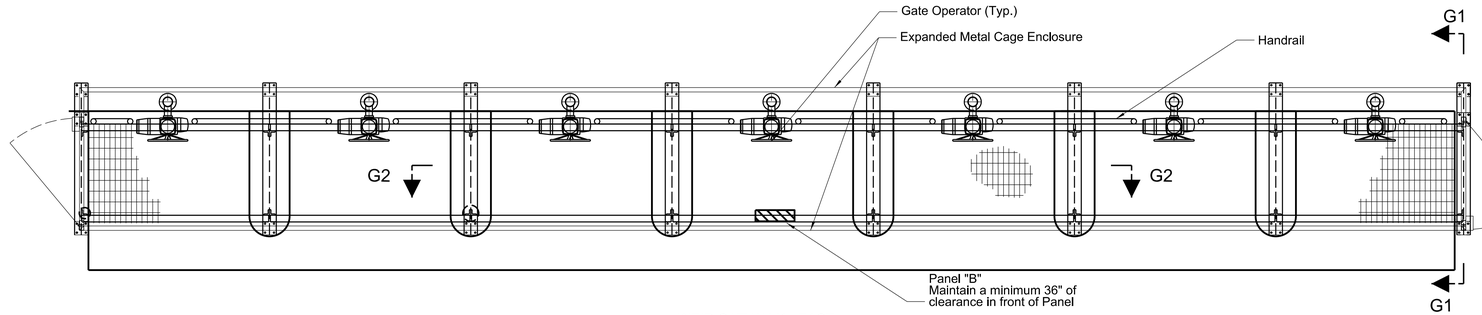
PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

ELECTRICAL DETAILS

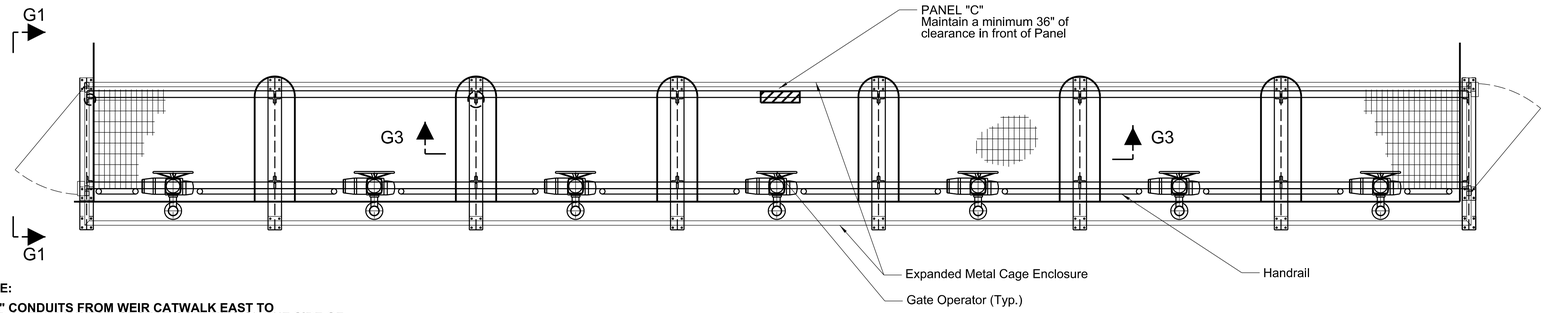
DWG 21-D114. 58 | JOB EF11610123 | SHEET 58 OF 72

PS-DF 07/05

DATE. $DATE$TIME. FILE. $TIME$ $FILE$



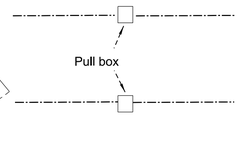
WEIR CATWALK - EAST

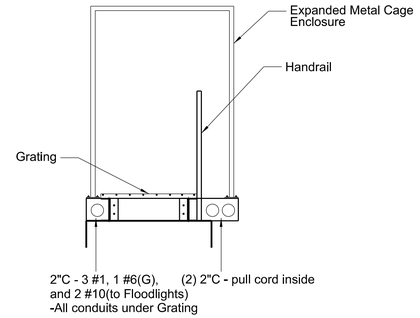


WEIR CATWALK - WEST

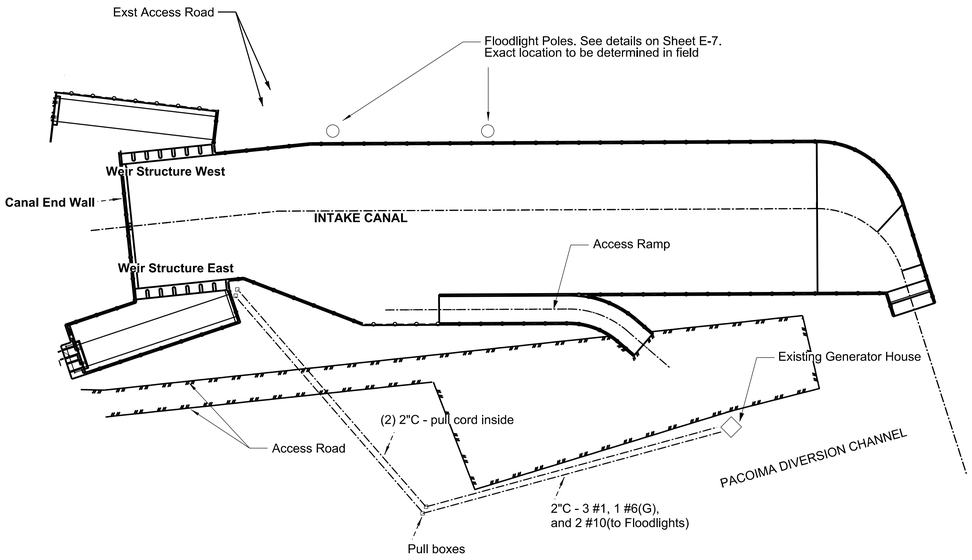
NOTE:

(3) 2" CONDUITS FROM WEIR CATWALK EAST TO WEIR CATWALK WEST. SECURE CONDUITS ON THE SIDE OF CANAL END WALL USING BRACKETS.





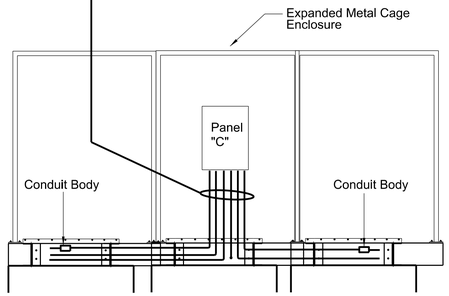
SECTION G1-G1



PLAN
INTAKE CHANNEL
SCALE: 1"= 40'

Conduit Schedule - From Left to Right

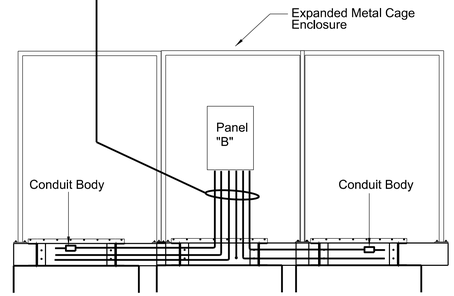
- 1"GC - 6 #10, 1 #12G (To Gates 8, 9, 10)
- 2"GC - 3 #2, 1 #8G (From Panel "B"), and 2 #10(to Floodlights)
- 3/4"GC - 1 #8 (To Ground Rod)
- 1"GC - 2 #10, 1 #12G (To Gate 11)
- 1"GC - 6 #10, 1 #12G (To Gates 12, 13, 14)
- 3/4"GC - 2 #10, 1 #12G (To Floodlights)



SECTION G3-G3

Conduit Schedule - From Left to Right

- 1"GC - 6 #10, 1 #12G (To Gates 1, 2, 3)
- 2"GC - 3 #1, 1 #6G (From Panel "A"), and 2 #10(to Floodlights)
- 3/4"GC - 1 #8 (To Ground Rod)
- 1"GC - 2 #10, 1 #12G (To Gate 4)
- 1"GC - 6 #10, 1 #12G (To Gates 5, 6, 7)
- 2"GC - 3 #2, 1 #8G (To Panel "C"), and 2 #10(to Floodlights)



SECTION G2-G2

DRAFTER H. SHALVIRI
DESIGNER H. SHALVIRI
CHECKER V. BIKOVSKY
CADD PROJECT FILE NAME
REVIEWED BY
DATE

E-9

DATE	MK	DESCRIPTION
		REVISIONS

REGISTERED PROFESSIONAL ENGINEER
VADIM BIKOVSKY
E20261
ELECTRICAL
STATE OF CALIFORNIA

12/03/2020
PROJECT ENGINEER DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

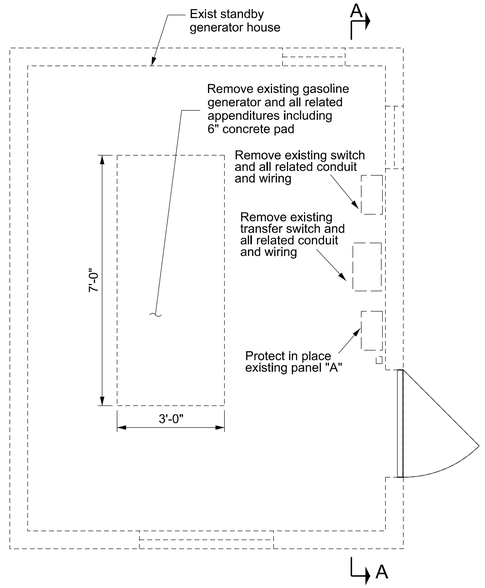
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

ELECTRICAL SITE PLAN - WEIR STRUCTURES

DWG 21-D114. 59	JOB EF11610123	SHEET 59 OF 72

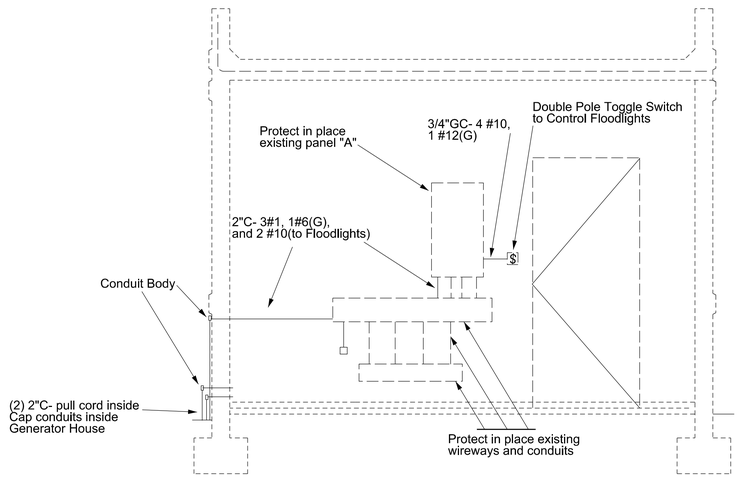
PS-DF 07/06

DATE. $DATE$TIME. FILE. $TIME$ $FILE$



ELECTRICAL FLOOR PLAN

NOT TO SCALE



SECTION A-A

NOT TO SCALE

DRAFTER H. SHALVIRI
DESIGNER H. SHALVIRI
CHECKER V. BIKOVSKY
CADD PROJECT FILE NAME
REVIEWED BY
DATE

DATE	MK	DESCRIPTION
		REVISIONS

REGISTERED PROFESSIONAL ENGINEER — VADIM BIKOVSKY — E20261 — ELECTRICAL — STATE OF CALIFORNIA

12/03/2020
PROJECT ENGINEER DATE

E-10

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

EXISTING GENERATOR HOUSE ELECTRICAL DETAILS

DWG 21-D114. 60 | JOB EF11610123 | SHEET 60 OF 72

PS-DF 07/05

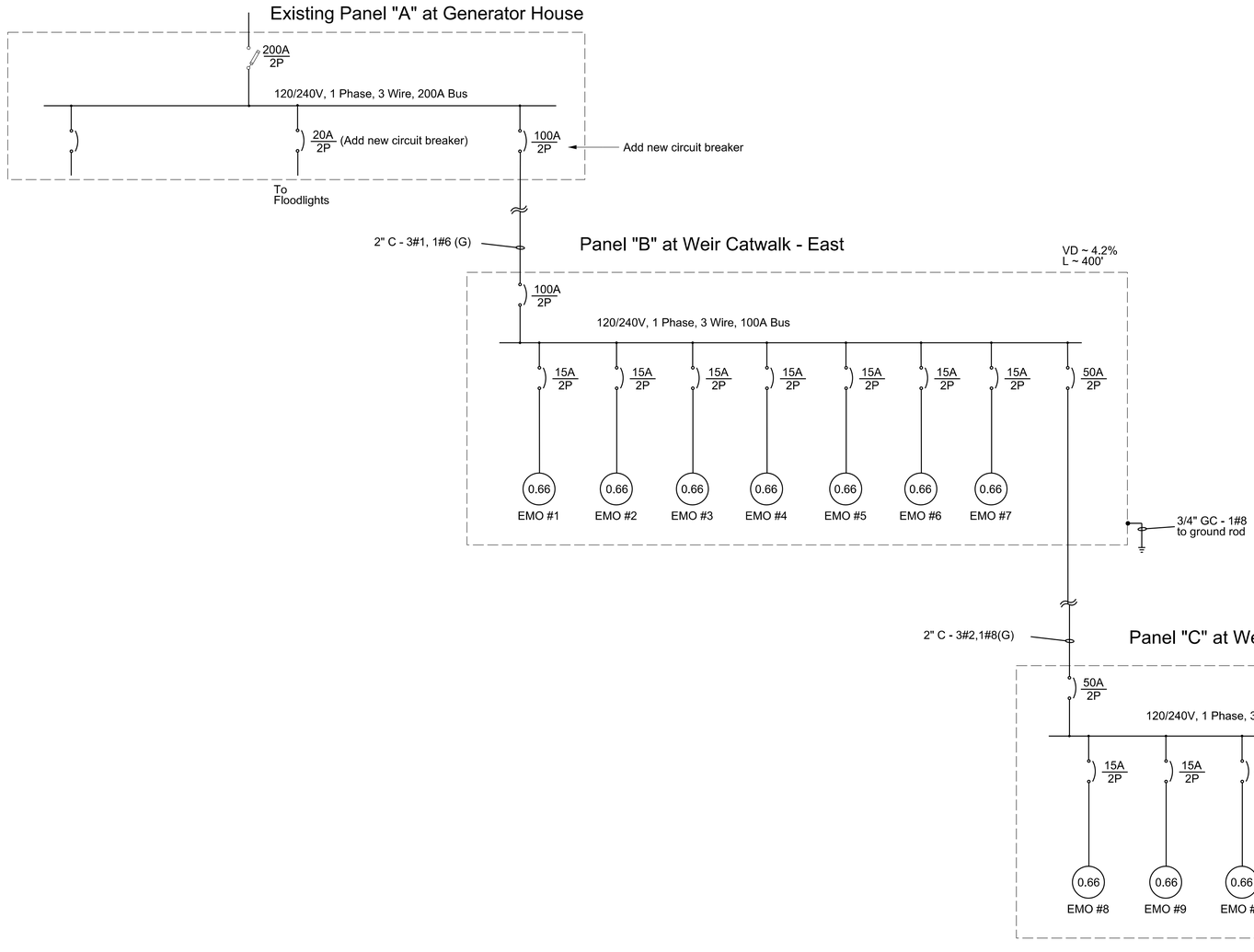
DATE. $DATE$TIME. FILE. $TIME$ $FILE$

ELECTRICAL LOAD-PANEL "B"

LOAD DESCRIPTION	AMPS
(7) EMO	42
PANEL "C"	43.5
25% OF LARGEST MOTOR	1.5
TOTAL LOAD	87

ELECTRICAL LOAD-PANEL "C"

LOAD DESCRIPTION	AMPS
(7) EMO	42
25% OF LARGEST MOTOR	1.5
TOTAL LOAD	43.5



SINGLE LINE DIAGRAM

DRAFTER H. SHALVIRI
DESIGNER H. SHALVIRI
CHECKER V. BIKOVSKY
CADD PROJECT FILE NAME
REVIEWED BY
DATE

E-11

DATE	MK	DESCRIPTION
		REVISIONS

REGISTERED PROFESSIONAL ENGINEER
VADIM BIKOVSKY
E20261
ELECTRICAL
STATE OF CALIFORNIA

PROJECT ENGINEER 12/03/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

SINGLE LINE DIAGRAM - WEIR STRUCTURES

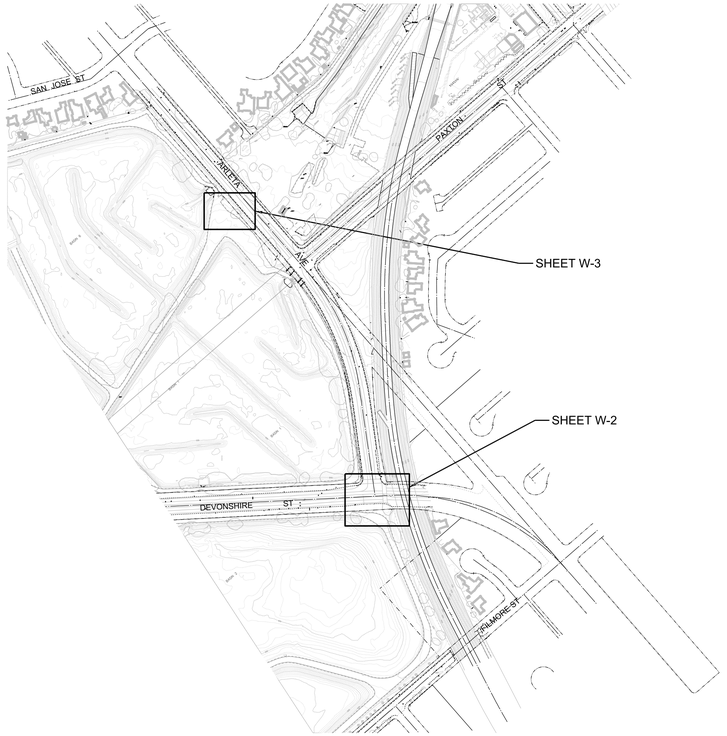
DWG 21-D114.61	JOB EF11610123	SHEET 61 OF 72

PS-DF 07/05

DATE. $DATE$ TIME. FILE. $TIME$ $FILE$

GENERAL NOTES :

1. ELEVATIONS SHOWN ARE IN FEET ABOVE THE N.G.V.D 1929 DATUM. LA CITY 1970 ADJ.
2. ALL FIELD BOOK REFERENCES ARE TO LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS FIELD BOOKS, UNLESS OTHERWISE NOTED.
3. ALL NEW WORK SHALL BE TESTED AT 200 PSI FOR FOUR HOURS ALONG 4" WATERMAIN. CONTRACTOR SHALL DESIGN, FURNISH, AND INSTALL ANY NECESSARY THRUST BLOCKS IN ACCORDANCE WITH LACWD STANDARD PLAN W-21, UNLESS OTHERWISE NOTED.
4. PIPE LENGTHS SHOWN ON THE PLANS WERE CALCULATED ON A HORIZONTAL OFFSET. PIPE LENGTH ADJUSTMENTS FOR JOGS, SLOPES, VALVES, AND FITTINGS HAVE NOT BEEN MADE.
5. BEFORE BACKFILLING THE TRENCH, ALL UNDERGROUND STEEL SURFACES SHALL BE COATED WITH A MINIMUM 1" THICKNESS OR AS INDICATED IN SPECIFICATIONS OF 1,000 LB. CEMENT MORTAR (THREE (3) PARTS SAND TO ONE (1) PART PORTLAND CEMENT) UNLESS OTHERWISE NOTED.
6. THE CONTRACTOR SHALL VERIFY THE SIZE, TYPE, CLASS, PROTECTIVE LINING AND COATING, AND DEPTH OF THE EXISTING WATER MAIN AND SHALL BE RESPONSIBLE FOR MAKING THE PROPER CONNECTIONS.
7. THE PIPE SHALL BE CONSTRUCTED SO AS TO PROVIDE THE FOLLOWING MINIMUM CLEARANCES TO EXISTING OR OTHER PROPOSED UNDERGROUND CONDUITS OR STRUCTURES:
   A. HORIZONTAL: 24-INCHES OUTSIDE-TO-OUTSIDE
   B. VERTICAL: 12-INCHES OUTSIDE-TO-OUTSIDE
8. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH AS-BUILT PLANS OF THE WATER SYSTEM FOR THIS PROJECT AT THE COMPLETION OF THE WORK.
9. EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE BASED ON RECORDS FURNISHED BY UTILITY COMPANIES. UTILITY SERVICE CONNECTIONS ARE APPROXIMATE. CONTRACTORS SHALL ASSUME THAT SERVICE FACILITIES (INCLUDING, BUT NOT LIMITED TO, WATER, TELEPHONE, ELECTRICAL, CABLE TV, AND GAS) EXTEND FROM EACH UTILITY FACILITY TO EACH PARCEL OR LOT WHETHER OR NOT SERVICE FACILITIES ARE SHOWN. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL PIPE AND FITTINGS REQUIRED TO AVOID ALL UTILITIES INCLUDING ALL SERVICE FACILITIES. ALL AT NO ADDITIONAL COST TO AGENCY.
10. CONTRACTOR SHALL ADJUST WATER MAIN ALIGNMENTS AS REQUIRED TO MAINTAIN MINIMUM CLEARANCE BETWEEN PROPOSED WATER MAIN AND EXISTING UTILITIES, VAULTS, MANHOLES, STRUCTURES, AND ANY OTHER SUBSURFACE FACILITIES AT NO ADDITIONAL COST TO THE AGENCY. PIPELINE CONSTRUCTION IN THE VICINITY OF SANITARY SEWERS SHALL, AT A MINIMUM, CONFORM TO LACWWD STD PLAN W-50.
11. DISINFECTION: CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO ASSURE SANITARY INSTALLATION. THE CONTRACTOR SHALL ENDEAVOR TO KEEP ALL DIRT, RODENTS, INSECTS, ETC. AWAY FROM WATERWAY SURFACES. ISOLATION VALVES SHALL BE KEPT CLOSED (EXCEPT DURING FILLING AND FLUSHING, WHEN VALVES SHALL BE OPERATED SO AS TO ASSURE FLOW TOWARD NEW DISCHARGE) AND LEFT CLOSED AT ALL OTHER TIMES UNTIL AFTER PRESSURE TEST, DISINFECTION, FLUSHING AND BACTERIAL TEST HAS BEEN PASSED. CONTRACTOR SHALL NOTIFY AGENCY AT LEAST 24 HOURS IN ADVANCE OF ANY OPERATION OF ISOLATION VALVES WHICH SHALL BE OPERATED ONLY BY AGENCY PERSONNEL. AGENCY WILL ARRANGE FOR BACTERIOLOGICAL TEST SAMPLING AND OPERATION OF ISOLATION VALVES WHICH SHALL BE OPERATED ONLY BY AGENCY PERSONNEL. AGENCY WILL ARRANGE FOR BACTERIOLOGICAL TEST SAMPLING OF WATER MAINS UPON NOTIFICATION BY CONTRACTOR. AGENCY WILL ALSO ARRANGE FOR CONCURRENT BACTERIOLOGICAL TEST SAMPLING OF SUPPLY. CONTRACTOR SHALL PROMPTLY DECHLORINATE THE HEAVILY CHLORINATED WATER WITH A PROPER NEUTRALIZING CHEMICAL AND DEWATER THE PIPELINE PER SECT. 306 OF SECTION W OF SPECIAL PROVISIONS.
12. THE CONTRACTOR SHALL NOTIFY CITY OF LOS ANGELES DEPARTMENT OF WATER AND POWER ENGINEER MR. MARTIN LAM AT (213)367-1241 AT LEAST 48 HOURS BEFORE STARTING ANY WORK ON THIS PROJECT.
13. JOINT DEFLECTIONS SHALL NOT EXCEED MANUFACTURERS RECOMMENDATIONS.
14. INTERCONNECTIONS:
   A - CONTRACTOR SHALL COMPLETELY INSTALL AND TEST NEW WATER MAIN IN ACCORDANCE WITH THE SPECIFICATIONS PRIOR TO MAKING THE INTERCONNECTION.
   B - CONTRACTOR SHALL REMOVE INTERFERING PORTIONS OF EXISTING WATER MAINS, VALVES, FITTINGS, PLUGS, BLIND FLANGES, AND APPURTENANCES IN THE PRESENCE OF THE ENGINEER.
   C - CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING, TWO WORKING DAYS IN ADVANCE, THAT THEY ARE PREPARED WITH ALL LABOR, MATERIAL, EQUIPMENT, AND NECESSARY PRELIMINARY WORK TO MAKE THE CONNECTION. AGENCY PERSONNEL WILL CLOSE EXISTING VALVES AS NEEDED.
   D - CONTRACTOR SHALL NOTIFY ALL AFFECTED AGENCY CUSTOMERS AND THE FIRE DEPARTMENT NO LESS THAN 24 HOURS PRIOR TO THE LOSS OF SERVICE. MAXIMUM SHUTDOWN SHALL NOT EXCEED 3 HOURS.
   E - CONTRACTOR SHALL EXCAVATE, INSTALL CONNECTIONS, BACKFILL, AND REPAIR ANY DAMAGES AT HIS EXPENSE.
15. CONTRACTOR SHALL POSSESS A VALID CALIFORNIA CLASS "A" OR "C-34" CONTRACTORS LICENSE.
16. ALL 4" AND 6" DIAMETER PIPE SHALL HAVE A MINIMUM COVER OF 36"; 8" AND 10" DIAMETER PIPE SHALL HAVE A MINIMUM COVER OF 42" ; 12" AND 16" DIAMETER PIPE SHALL HAVE A MINIMUM COVER OF 48"; 24" DIAMETER PIPE AND LARGER SHALL HAVE A MINIMUM COVER OF 60" (UNLESS OTHERWISE SHOWN).



SHEET INDEX MAP
T.G. PAGE 502-A3,A4
N.T.S.

STATISTICS

LENGTH OF 4" WATERMAIN	127 FT
MAX STATIC PRESSURE	100 PSI
PRESSURE ZONE	1,134

SHEET INDEX

SHT NO.	DESCRIPTION
W-1	GENERAL NOTES, LEGEND, AND SHEET INDEX MAP
W-2	DEVONSHIRE ST / ARLETA AVE PLAN
W-3	ARLETA AVE PLAN
W-4	DETAILS I
W-5	DETAILS II

COORDINATES FOR SURVEY CONTROL POINTS

SURVEY CONTROL PI #	NORTHING (FT)	EASTING (FT)	ELEV (FT)
108	1917471.47	6426101.87	941.68
109	1917261.82	6427099.18	946.09
314 (BM)	1915970.52	6427872.38	934.29
504	1916119.95	6427704.25	918.11

SURVEY FIELD BOOK REFERENCES

VERTICAL DATUM, NGVD' 29, L.A. CITY 1970 ADJ
HORIZONTAL DATUM, NAD 83 ZONE 5
EPOCH 2007.0

BENCH MARK INFORMATION

BENCH	DESCRIPTION	ELEV. (FT)
BM NO. 034-52040	LACFCD BM NO. 034-52040 BEING A 2 IN CH STD F.C. DISK, STAMPED BM 034-52040, 1967 LOCATED AT PACOIMA DIVERSION CHANNEL AND FILMORE ST. E'LY SIDE OF CHANNEL AND NW SIDE OF STREET, APPROX 18 FT NE'LY OF F.C. R/W FENCE. NEAR SW PROP LINE OF HOUSE NO 14201 FILMORE ST. AT O.L.S. IN TOP OF CONC CURB.	934.293

LEGEND

PROPOSED WATER MAIN	
EXISTING WATER MAIN	W W
EXISTING SEWER AND MANHOLE	S S
EXISTING CABLE LINE	C C
EXISTING GAS LINE	G G
EXISTING TELEPHONE LINE	T T
EXISTING ELECTRICAL UNDERGROUND	E E
STREET CENTER LINE	
PROPERTY LINE	
RIGHT OF WAY LINE	
EXISTING A.C. PAVING	
EXISTING CHAIN LINK FENCE	
GATE VALVE	
TEE, FLANGED	
ELBOW, FLANGED	
CONNECTIONS: FLANGE, MJ, FLEX. ADAPTOR	
SERVICE CONNECTION	
FIRE HYDRANT 6" x 4" x 2 1/2"	
LIGHT POLE	
POWER POLE	PP
TRAFFIC SIGNAL	
METER AND VALVES	

SECTION AND DETAIL IDENTIFICATION SYSTEM

A — SECTION LETTER OR DETAIL NUMBER
W1 W2 — SHEET ON WHICH SECTION OR DETAIL APPEARS
W3 — SHEET ON WHICH SECTION OR DETAIL IS CALLED OUT
ADDITIONAL SHEET(S) ON WHICH SECTION OR DETAIL IS CALLED OUT

DATE	NO.	INITIALS	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — ROBERT HARTOONIAN — NO. C78988 — EXP. 03/31/2022 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER — 11/19/2020 DATE

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

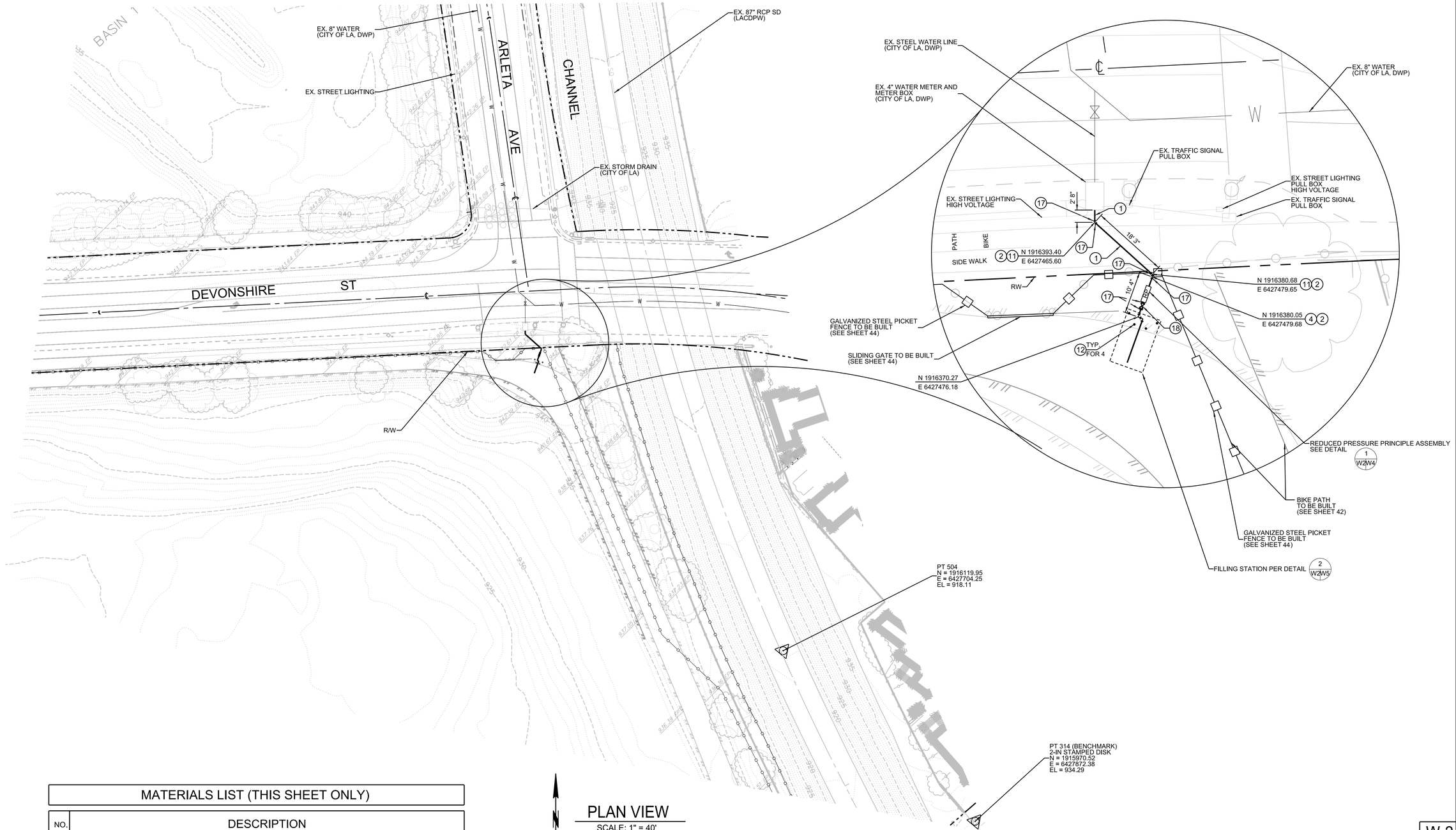
PACOIMA SPREADING GROUNDS BASIN ENHANCEMENT PROJECT

WATER FILLING STATION NOTES

W-1

PROJ ID	FCC0001207	PCA	EF11610123	SPEC	SHEET 62 OF 72

DRAFTER: C. JUDKINS
DESIGNER: R. HARTOONIAN
CHECKER: R. GINDI
DATE LAST SAVED: 09/06/2020
FILE NAME: PACOIMA S.G PLANS.dgn



MATERIALS LIST (THIS SHEET ONLY)

NO.	DESCRIPTION
1	4" STEEL PIPE, 0.14" MIN. WALL, CML & CMC
2	THRUST BLOCK PER LACWD STD PLAN W-21
4	4" 22.5° STEEL ELBOW, FLG'D CL 150, STD WT, CML & CMC
11	4" 45° STEEL ELBOW, FLG'D CL 150, STD WT, CML & CMC
12	BARRICADES PER DETAIL 2, SHEET 4
17	4" STEEL SLIP-ON WELD FLANGE, CL 150
18	4" GATE VALVE, FLG'D CL 125, 150 PSI WWP, NRS, W/ VALVE BOX PER LACWD STD PLAN W-15

N

PLAN VIEW
SCALE: 1" = 40'

DESIGNER R. HARTOONIAN
CHECKER R. GINDI
DATE LAST SAVED: 08/06/2020
FILE NAME PACOIMA S.G. PLANS.dgn
DRAFTER C. JUDKINS

NO.	INITIALS	DESCRIPTION	DATE

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
ROBERT HARTOONIAN
NO. C78988
EXP. 03/31/2022
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER — 11/19/2020 DATE

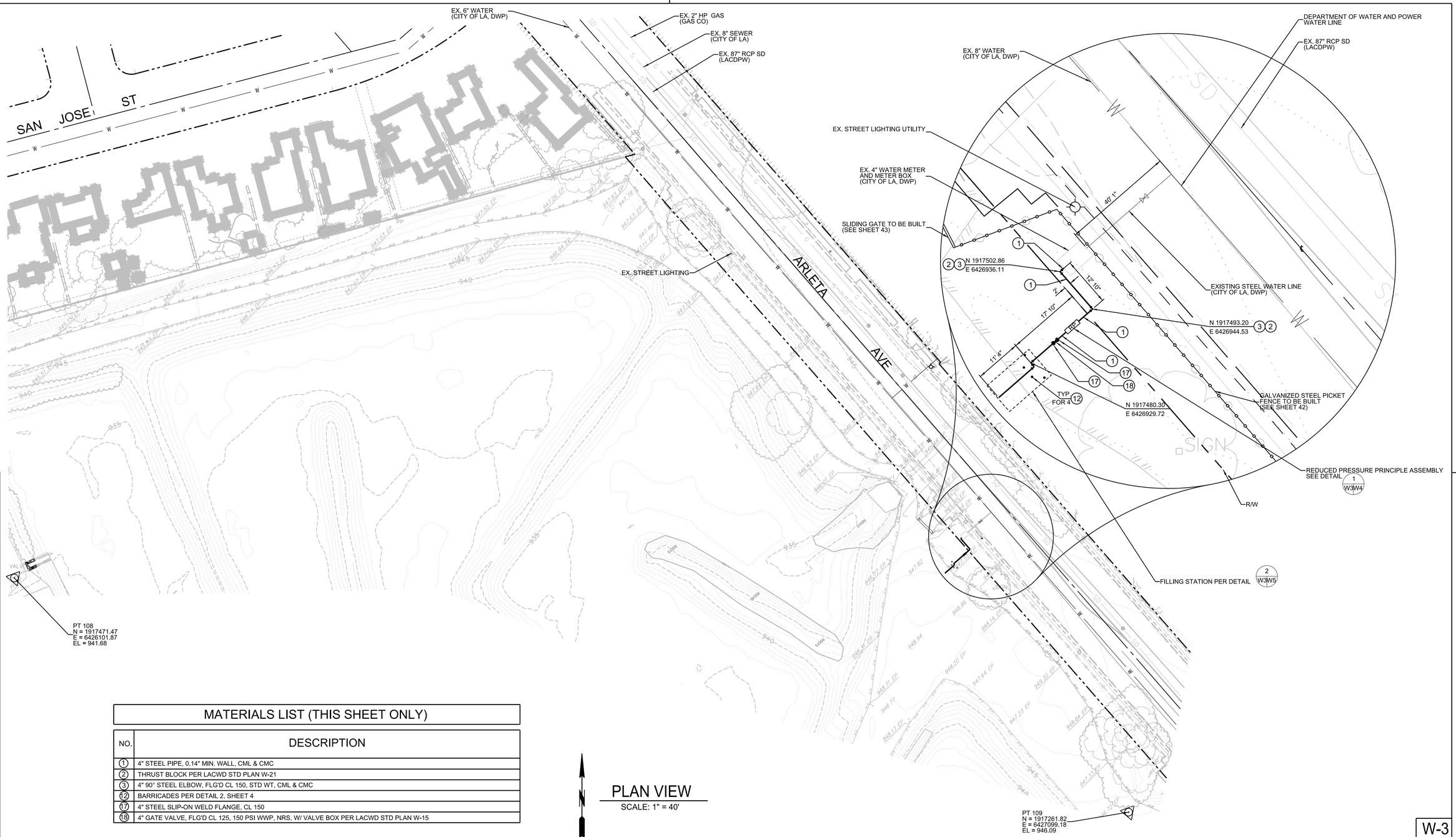
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

PACOIMA SPREADING GROUNDS BASIN ENHANCEMENT PROJECT

WATER FILLING STATION
DEVONSHIRE ST / ARLETA AVE PLAN

W-2

PROJ ID	FCC0001207	PCA	EF11610123	SPEC	SHEET 63 OF 72



MATERIALS LIST (THIS SHEET ONLY)

NO.	DESCRIPTION
(1)	4" STEEL PIPE, 0.14" MIN. WALL, CML & CMC
(2)	THRUST BLOCK PER LACWD STD PLAN W-21
(3)	4" 90° STEEL ELBOW, FLG'D CL 150, STD WT, CML & CMC
(12)	BARRICADES PER DETAIL 2, SHEET 4
(17)	4" STEEL SLIP-ON WELD FLANGE, CL 150
(18)	4" GATE VALVE, FLG'D CL 125, 150 PSI WWP, NRS, W/ VALVE BOX PER LACWD STD PLAN W-15

PLAN VIEW

SCALE: 1" = 40'

DRAFTER: C. JUDKINS
DESIGNER: R. HARTOONIAN
CHECKER: R. GINDI
DATE LAST SAVED: 08/06/2020
FILE NAME: PACOIMA S.G PLANS.dgn

NO.	DATE	INITIALS	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
ROBERT HARTOONIAN
NO. C78988
EXP. 03/31/2022
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER — 11/19/2020 DATE

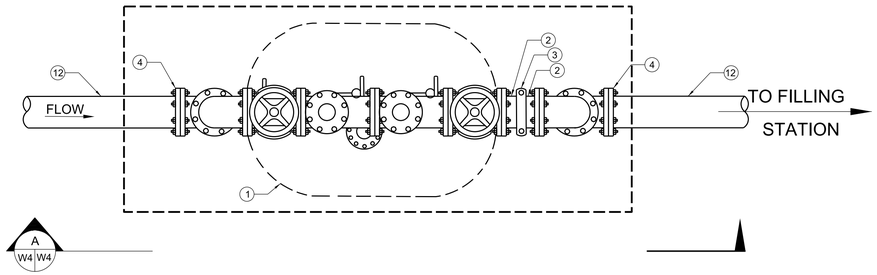
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

PACOIMA SPREADING GROUNDS BASIN ENHANCEMENT PROJECT

WATER FILLING STATION
ARLETA AVE PLAN

PROJ ID FCC0001207 | PCA EF11610123 | SPEC | SHEET 64 OF 72

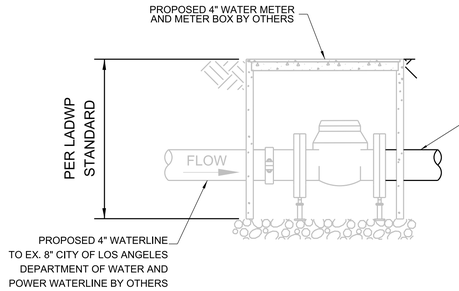
W-3

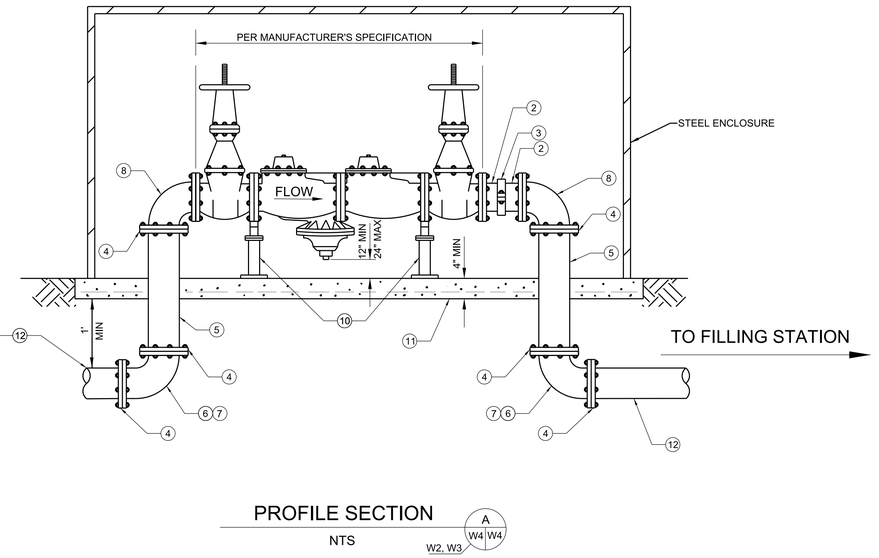


REDUCED PRESSURE PRINCIPLE ASSEMBLY PLAN DETAIL

NTS

1 W2 W4 W3





PROFILE SECTION

NTS

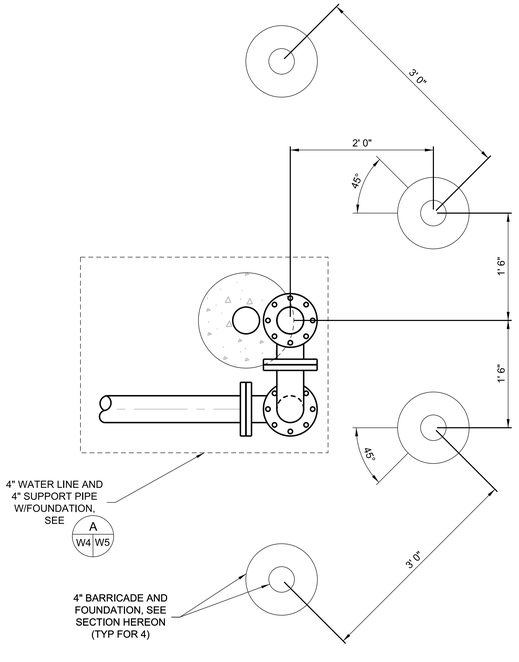
A W4 W4 W2, W3

GENERAL NOTES (REDUCED PRESSURE PRINCIPLE ASSEMBLY):

1. THE BACKFLOW PREVENTION ASSEMBLY SHALL BE ON THE USC FOUNDATION FOR CROSS-CONNECTION CONTROL CURRENT LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES. DEVICES SHALL COMPLY WITH THE STATE'S HEALTH AND SAFETY CODE, AND SHALL BE TESTED AND CERTIFIED AFTER INSTALLATION.
2. ALL ABOVEGROUND PIPING, VALVES, AND FITTINGS SHALL BE PAINTED WITH TWO (2) COATS OF APPROVED HEAVY-DUTY RED PRIMER, AND TWO (2) COATS OF LACWWD APPROVED DUNES TAN.
3. THE BOLTS AND NUTS CALLED FOR ABOVEGROUND SHALL BE ¾" COATED "BLUE" BOLTS.

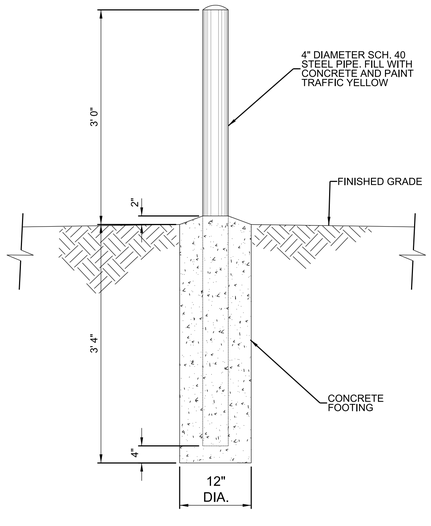
MATERIALS LIST (THIS SHEET ONLY)

NO.	DESCRIPTION
1	4" REDUCED PRESSURE PRINCIPLE ASSEMBLY FROM APPROVED USC FOUNDATION FOR CROSS-CONNECTION CONTROL LIST WITH 4' BY 8' STEEL ENCLOSURE
2	4" VICTAULIC NIPPLE, GROOVED END X FLANGED END, STEEL SCH 40, CL 150 FLANGE (6" LONG EACH), EPOXY LINED
3	4" VICTAULIC COUPLING STYLE NO. 77 OR OTHER AGENCY APPROVED COUPLING FOR GROOVE-END PIPE
4	4" STEEL SLIP-ON WELD FLANGE, CL 150
5	4" STEEL PIPE SPOOL, 0.14" MIN. WALL, CML & CMC BELOW GROUND, CML & PAINTED ABOVE GROUND
6	4" 90° STEEL ELBOW, FLG'D, STD WT, CL 150, CML & CMC
7	THRUST BLOCK PER LACWD STANDARD PLAN W-21
8	4" 90° STEEL ELBOW, FLG'D, STD WT, CL 150, FUSION EPOXY LINED & COATED
9	NOT USED
10	ADJUSTABLE PIPE SUPPORT PER LACWD STANDARD PLAN W-17.
11	4' X 8' CONCRETE SLAB, 4-INCH MIN. THICKNESS, TYPE 520-C-2500 CONCRETE WITH 6-6-10-10 WIRE MESH PLACED AT ½ FROM THE BASE OF THE SLAB
12	4" STEEL PIPE, 0.14" MIN. WALL, CML & CMC



BARRICADE PLAN

N.T.S.



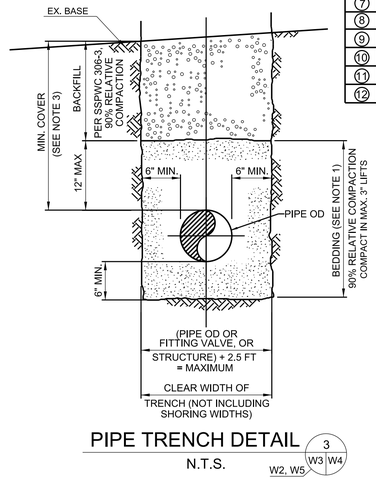
BARRICADE SECTION

N.T.S.

BARRICADE DETAIL

N.T.S.

2 W5 W4 W2, W3



PIPE TRENCH DETAIL

N.T.S.

3 W3 W4 W2, W5

GENERAL NOTES (PIPE TRENCH):

1. BEDDING SHALL BE SAND PER SSPWC 217-1 UNLESS OTHERWISE APPROVED BY THE AGENCY.
2. NEITHER BEDDING NOR BACKFILL SHALL CONTAIN PARTICLES GREATER THAN ONE INCH.
3. MINIMUM COVER PER NOTE 16, SHEET W1.

W-4

DATE	NO.	INITIALS	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — ROBERT HARTOONIAN — NO. C78988 — EXP. 03/31/2022 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER 11/19/2020 DATE

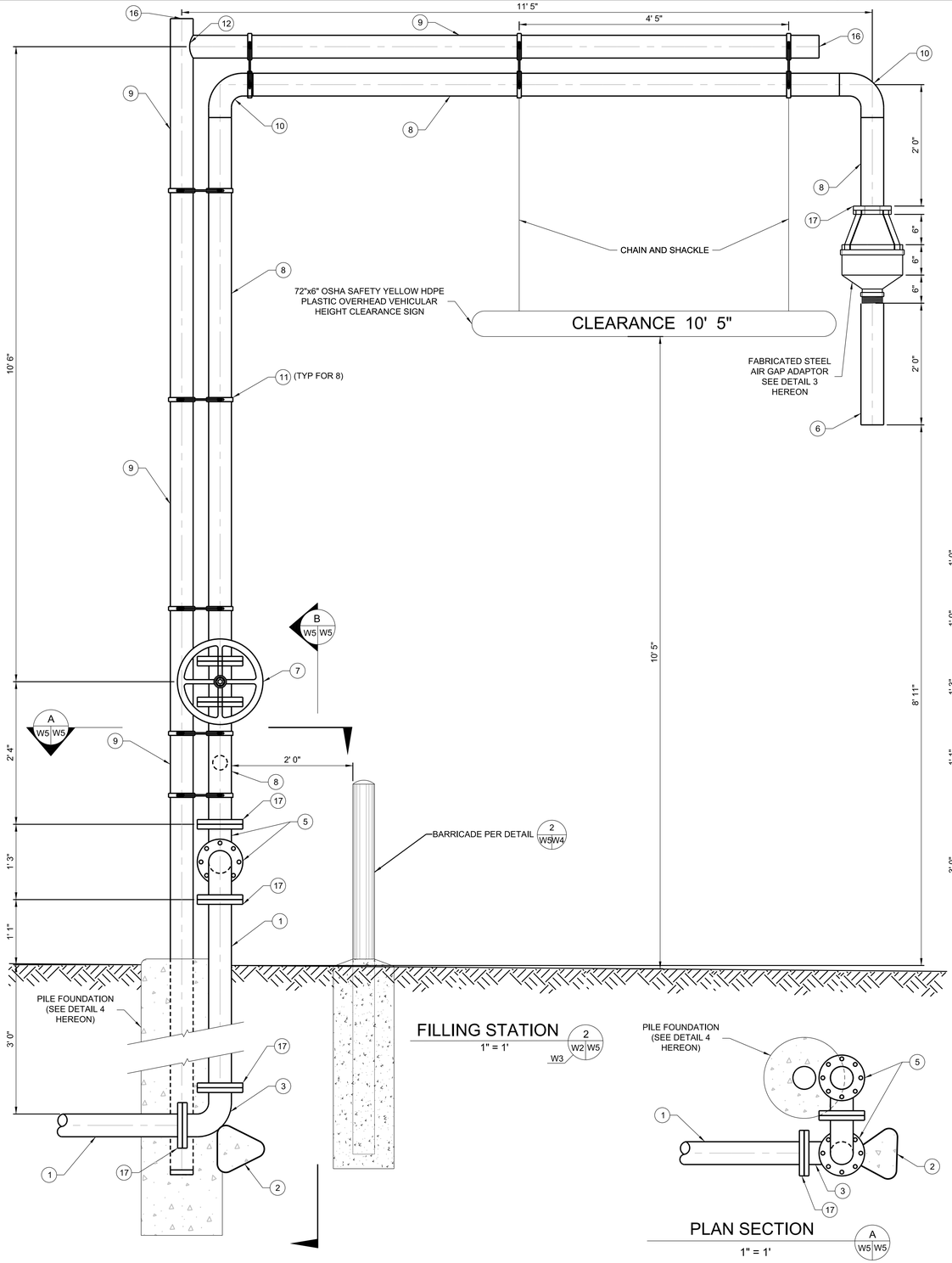
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

PACOIMA SPREADING GROUNDS BASIN ENHANCEMENT PROJECT

WATER FILLING STATION DETAILS I

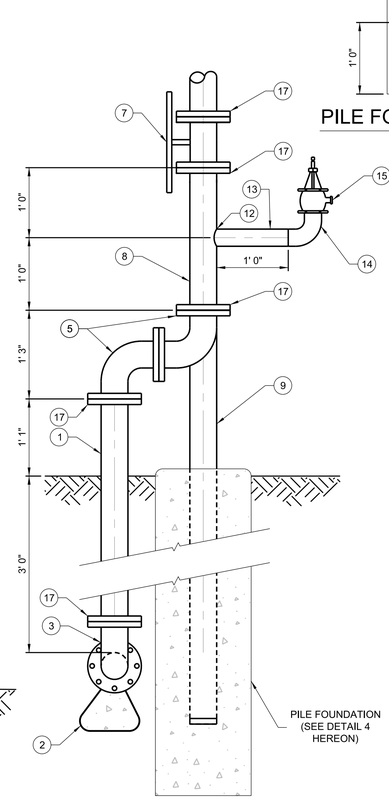
PROJ ID FCC0001207 | PCA EF11610123 | SPEC | SHEET 65 OF 72

DRAFTER C. JUDKINS
DESIGNER R. HARTOONIAN
CHECKER R. GINDI
DATE LAST SAVED: 08/06/2020
FILE NAME PACOIMA S.G.PLANS.dgn

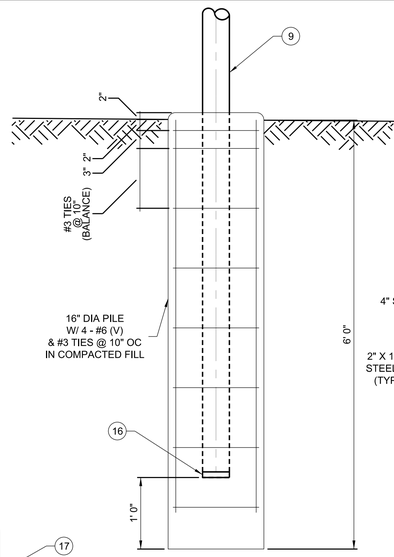


FILLING STATION
1" = 1'
2 W2 W5 W3

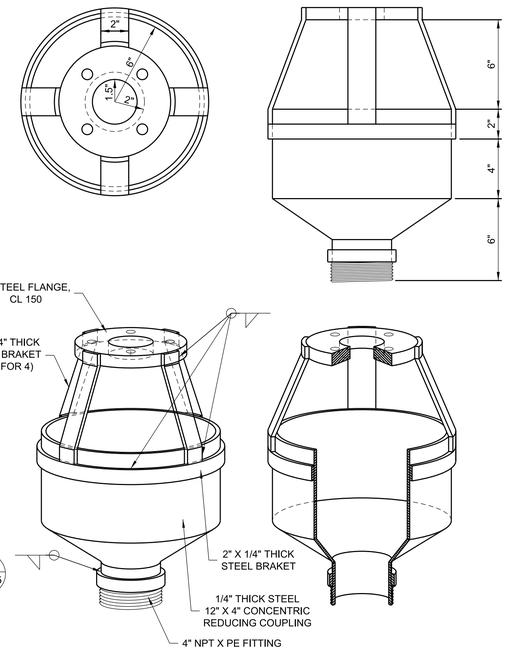
PLAN SECTION
1" = 1'
A W5 W5



PIPE CONNECTION ELEVATION
1" = 1'
B W2 W5 W3



PILE FOUNDATION DETAIL
1" = 1'
4 W2 W5 W3



NOTES:

ALL EXPOSED METAL SURFACES SHALL BE PROTECTED IN ACCORDANCE WITH THE SPECIFICATIONS, EXCEPT THE THREADS.

FABRICATED STEEL AIR GAP ADAPTOR
DETAIL AND SECTION
N.T.S.
3 W2 W5 W3

MATERIALS LIST (THIS SHEET ONLY)

NO.	DESCRIPTION
1	4" STEEL PIPE, 0.14" MIN. WALL, CML & CMC
2	THRUST BLOCK PER LACWD STD PLAN W-21
3	4" 90° STEEL ELBOW, FLG'D CL 150, STD WT, CML & CMC
4	4" 22.5° STEEL ELBOW, FLG'D CL 150, STD WT, CML & CMC
5	4" 90° STEEL ELBOW, FLG'D CL 150, STD WT, CML & PAINTED
6	4" FLEXIBLE HOSE
7	4" GATE VALVE, FLG'D CL 125, 150 PSI WWP WITH HANDWHEEL
8	4" STEEL PIPE, 0.14" THICK STEEL, CML & PAINTED
9	4" STEEL STRUCTURAL SUPPORT PIPE, 0.25" MIN. WALL, PAINTED
10	4" 90° STEEL ELBOW, PE X PE, STD WT, CML & PAINTED, WELDED
11	2 - 4" 2 BOLT STEEL PIPE CLAMPS, 2 - 12" LONG 5/8" DIA. DOUBLE ARMING BOLTS, 8 NUTS, ALL HOT DIPPED GALVANIZED
12	1/4" FILLET WELD
13	2.5" STEEL PIPE SPOOL, 0.14" MIN. WALL, CML & PAINTED
14	2.5" 90° STEEL ELBOW, FL X PE, STD WT, CML & PAINTED
15	2.5" FLUSHOUT HEAD, 200 PSI WWP, WITH HOSE ADAPTOR
16	4" STEEL END CAP PLATE, WELDED
17	4" STEEL SLIP-ON WELD FLANGE, CL 150

W-5

DATE	NO.	INITIALS	DESCRIPTION
REVISIONS			

REGISTERED PROFESSIONAL ENGINEER — ROBERT HARTOONIAN — NO. C78988 — EXP. 03/31/2022 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER — 11/19/2020 DATE

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

PACOIMA SPREADING GROUNDS BASIN ENHANCEMENT PROJECT

WATER FILLING STATION DETAILS II

PROJ ID	FCC0001207	PCA	EF11610123	SPEC	SHEET 66 OF 71

DRAFTER: C. JUDKINS
DESIGNER: R. HARTOONIAN
CHECKER: R. GINDI
DATE LAST SAVED: 11/4/2020
FILE NAME: Pacoima S.G plans_REV.dgn

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-1A
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/5/2015 - 11/5/2015	Boring Location	Basin 1 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	927	Drilled Depth (ft)	30
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
		B-1A-1 [09:30]				**Alluvium** Sandy Silt with Gravel; dry, brown (7.5YR 5/2), fine-grained sand, coarse gravel.	Rocky hard surface.
				ML			
5		B-1A-2 [14:40]				Silty Sand; dry, brown (10YR 4/3), fine-grained sand.	
				SM			
						Silt; dry, brown (10YR 4/3), trace fine-grained sand.	
				ML			
10		B-1A-3 [14:45]				Gravelly Sand; dry, dark brown (10YR 3/3), coarse-grained sand, fine to coarse gravel, with cobbles.	
15		B-1A-4 [15:00]		SP			
						Pulverized rock.	
						Sandy, less cobbles.	
		B-1A-5 [15:20]					

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Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-1A
PAGE 2 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
				SP		Gravelly Sand; dry, dark brown (10YR 3/3), coarse-grained sand, fine to coarse gravel, with cobbles.	
25		B-1A-6 [15:35]		SP		Sand; slightly moist, strong brown (7.5YR 4/6), fine-grained sand, trace fine gravel.	
				ML		Silt; slightly moist, brown (7.5YR 4/6).	
				SM		Silty Sand; slightly moist, strong brown (7.5YR 4/6), fine-grained sand.	
						Gravelly.	
30		B-1A-7 [15:40]		ML		Sandy Silt; slightly moist, strong brown (7.5YR 4/6), very fine-grained sand.	
						Total depth: 30 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	
35							
40							

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Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-1B
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/5/2015 - 11/5/2015	Boring Location	Basin 1 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	927	Drilled Depth (ft)	30
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
		B-1B-1 [09:45]				**Alluvium** Sandy Silt with Gravel; dry, brown (7.5YR 5/2), fine-grained sand, coarse gravel, trace cobbles.	Rocky hard surface.
				ML			
5		B-1B-2 [12:40]		SM		Silty Sand with Gravel; dry, grayish-brown (10YR 5/2), medium-grained sand, fine gravel, trace cobbles (pulverized rock).	
				ML		Clayey Silt to Silt; slightly moist, strong brown (7.5YR 4/6).	
10		B-1B-3 [13:00]				Sand with Gravel; dry, dark grayish-brown (10YR 5/2), medium-grained sand, fine gravel, trace cobbles (pulverized rock).	Poor recovery from 10-20 feet bgs. Drilled a new hole and resampled soil from 20-30 feet bgs.
				SP			
15		B-1B-4 [14:10]		GW		Sandy Gravel; dry, brown (10YR 4/3), medium-grained sand, fine to coarse gravel, trace cobbles.	
		B-1B-5 [14:20]					

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Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-1B
PAGE 2 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
				SM		Silty Sand with Gravel to Sand with Gravel; dry, gray (10YR 5/1), fine- to coarse-grained sand, fine to coarse gravel, trace cobbles.	
25		B-1B-6 [13:40]				Intermittent pulverized rock.	
				ML		Silt; dry, dark brown (10YR 3/3).	
				GW		Sandy Gravel; dry, brown (10YR 4/3), medium-grained sand, fine to coarse gravel, trace cobbles.	
30		B-1B-7 [13:45]				Total depth: 30 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	
35							
40							

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Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-1C
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/5/2015 - 11/5/2015	Boring Location	Basin 1 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	925	Drilled Depth (ft)	30
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
		B-1C-1 [10:00]				**Alluvium** Sandy Silt with Gravel; dry, brown (7.5YR 4/2), fine-grained sand, coarse gravel, trace cobbles.	Rocky hard surface.
5		B-1C-2 [10:20]		ML		Increasing sand content, medium-grained sand.	
10		B-1C-3 [10:25]					
				ML		Silt/Clayey Silt; dry, dark yellowish-brown (10YR 4/4).	
15		B-1C-4 [10:45]		ML		Sandy Silt with Gravel; dry, brown (7.5YR 4/2), fine-grained sand, coarse gravel, trace cobbles.	

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Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-1C
PAGE 2 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
		B-1C-5 [10:50]				Silty Sand; dry, brown (10YR 5/3), fine-grained sand, fine to coarse gravel, trace cobbles.	
25		B-1C-6 [11:10]		SM		Intermittent pulverized rock.	
30		B-1C-7 [11:20]				Total depth: 30 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	
35							
40							

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Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-2A
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/6/2015 - 11/6/2015	Boring Location	Basin 2 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	918	Drilled Depth (ft)	25
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
		B-2A-1 [07:25]				**Alluvium** Sandy Silt with Gravel; dry, dark yellowish-brown (10YR 4/6).	
				ML			
5		B-2A-2 [12:00]				Silt; dry, strong brown (7.5YR 5/6), trace fine-grained sand.	
				ML			
10		B-2A-3 [12:10]				Silty Sand with Gravel; dry, dark yellowish-brown (10YR 3/4), medium-grained sand, fine to coarse gravel.	
15		B-2A-4 [12:30]		SM		Pulverized rock from 15-20 feet.	
		B-2A-5 [12:40]					

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Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-2A
PAGE 2 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
				SP		Sand with Gravel; slightly moist, brown (10YR 4/3), fine- to coarse grained sand, fine gravel.	
				SM		Silty Sand with Gravel.	
25		B-2A-6 [13:05]				Pulverized rock from 23-25 feet.	
						Total depth: 25 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	
30							
35							
40							

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DRAFTER EDDIE LY | DESIGNER G. GOODMAN | CHECKER G. GOODMAN | CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn | REVIEWED BY | DATE

Note: Logs of Borings are provided for the upper layers of soil. Additional subsurface information and copies of the complete geotechnical reports are available at:

Geotechnical and Material Engineering Division
900 S Fremont Ave, 4' Floor
Alhambra, CA, 91803-1331

DATE	MK	DESCRIPTION

REVISIONS

PROFESSIONAL GEOLOGIST
Gregory M. Sena
No. 2447
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

PROJECT ENGINEER — 12/2/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

LOGS OF BORINGS

DWG 21-D114.67 | PD 052980 | SHEET 67 OF 72

PS-DF 07/05

DATE 11/19/2020 FILE: 2:16:03 PM pw:\\pwedmsprod01.dpw.co.la.ca.us:PW_INT2\Documents\DEPARTMENT PROJECTS (PW)\FCC\FCC0001207 - Pacoima Spreading Grounds Basin Enhancement Proj\DES Drainage\4-CAD\FCC0001207 - PACOIMA SG IMPROVEMENTS.dgn

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-2B
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/6/2015 - 11/6/2015	Boring Location	Basin 2 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	918	Drilled Depth (ft)	25
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
		B-2B-1 [07:35]		ML		**Alluvium** Sandy Silt with Gravel; dry, yellowish-brown (10YR 5/4), trace cobbles.	Rocky hard surface.
				SM		Silty Sand with Gravel; dry, gray (10YR 5/1), fine- to coarse-grained sand, fine to coarse gravel.	
5		B-2B-2 [10:10]					
10		B-2B-3 [10:25]		SM		Silty Sand; dry to slightly moist, brown (10YR 4/3).	
				ML		Sandy Silt to Silt; slightly moist, brown (10YR 4/3).	
15		B-2B-4 [10:30]				Silty Sand; dry to slightly moist, brown (10YR 4/3).	
		B-2B-5 [10:35]		SP			

(Continued Next Page)

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-2B
PAGE 2 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
				SP		Sand; slightly moist, very dark brown (10YR 2/2), fine-grained sand.	
				ML		Silt to Clayey Silt; moist to wet, very dark grayish-brown (10YR 2/2).	
						Becomes wet, dark brown (7YR 3/3).	
25		B-2B-6 [10:45]		SP		Clayey Sand with Gravel; moist, fine-grained sand, coarse gravel.	
						Total depth: 25 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

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900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-2C
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/6/2015 - 11/6/2015	Boring Location	Basin 2 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	918	Drilled Depth (ft)	25
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
		B-2C-1 [07:55]		ML		**Alluvium** Sandy Silt with Gravel; dry, brown (7.5YR 5/4), fine-grained sand.	Rocky hard surface.
				ML		Silt; dry, strong brown (7.5YR 5/6), trace fine-grained sand.	
5		B-2C-2 [08:00]					
10		B-2C-3 [08:05]		SM		Silty Sand with Gravel; dry, brown (7.5YR 5/4), fine-grained sand, fine gravel, trace cobbles.	
						Less silt and gravel.	
15		B-2C-4 [09:20]					

(Continued Next Page)

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-2C
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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
		B-2C-5 [09:25]		SM		Gravelly Sand; dry, brown (7.5 YR 5/4), fine-grained sand, fine gravel, trace cobbles, trace silt.	
				SM		Silty Sand with Gravel; dry, brown (10YR 4/3), medium-grained sand, coarse gravel, pulverized rock.	
25		B-2C-6 [09:40]					
						Total depth: 25 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/9/2015 - 11/9/2015	Boring Location	Basin 2 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	918	Drilled Depth (ft)	25
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
		B-2D-1 [12:00]		ML		**Alluvium** Sandy Silt with Gravel.	
				SM		Silty Sand with Gravel; dry, light yellowish-brown (2.5Y 6/3), fine- to medium-grained sand, fine gravel.	
5		B-2D-2 [12:05]		SM		Silty Sand; dry, light brownish-gray (2.5Y 6/2), fine- to medium-grained sand, trace gravel.	
10		B-2D-3 [12:10]		ML		Silt; dry, dark brown (10YR 3/3).	
15		B-2D-4 [12:25]		ML		Sandy Silt; dry, dark brown (10YR 3/3), fine-grained sand.	
				SP		Sand; slightly moist, dark yellowish-brown (10YR 4/4), medium-grained sand, trace fine gravel.	
				SP		Gravelly Sand; dry, dark grayish-brown (10YR 4/2), fine- to coarse-grained sand, fine gravel, pulverized rock to 25 feet.	

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Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
		B-2D-5 [12:30]		SP		Gravelly Sand; dry, dark grayish-brown (10YR 4/2), fine- to coarse-grained sand, fine gravel, pulverized rock to 25 feet.	
25		B-2D-6 [12:45]				Total depth: 25 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-2E
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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/9/2015 - 11/9/2015	Boring Location	Basin 2 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	918	Drilled Depth (ft)	25
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
		B-2E-1 [09:30]		ML		**Alluvium** Sandy Silt with Gravel; dry, yellowish-brown (10YR 5/4), fine- to medium-grained sand, fine to coarse gravel.	Rocky hard surface.
5		B-2E-2 [09:40]					
10		B-2E-3 [09:45]		SM		Silty Sand with Gravel; dry, grayish-brown (10YR 5/2), fine- to medium-grained sand, fine gravel.	
						Cobbles and pulverized rock from 10-23 feet.	
15		B-2E-4 [10:15]					
		B-2E-5 [10:20]					

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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
				SM		Silty Sand with Gravel; dry, grayish-brown (10YR 5/2), fine- to medium-grained sand, fine gravel. Becomes mostly medium-grained sand and coarse gravel, with less cobbles. Increasing cobbles.	
25		B-2E-6 [10:40]				Total depth: 25 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

Note: Logs of Borings are provided for the upper layers of soil. Additional subsurface information and copies of the complete geotechnical reports are available at:

Geotechnical and Material Engineering Division
900 S Fremont Ave, 4' Floor
Alhambra, CA, 91803-1331

DATE	BY	DESCRIPTION

REVISIONS

PROFESSIONAL GEOLOGIST
Gregory M. Sena
No. 2447
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

PROJECT ENGINEER — 12/2/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

LOGS OF BORINGS

DWG 21-D114.68	PD 052980	SHEET 68 OF 72

PS-DF 07/05

DRAFTER EDDIE LY | DESIGNER G. GOODMAN | CHECKER G. GOODMAN | CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn | REVIEWED BY | DATE

DATE. 11/19/2020 FILE. 2:16:33 PM pw:\\pwedmsprod01.dpw.co.la.ca.us:PW_INTI2\Documents\DEPARTMENT PROJECTS (PW)\FCC\FCC0001207 - Pacoima Spreading Grounds Basin Enhancement Proj\DES Drainage\4-CAD\FCC0001207 - PACOIMA SG IMPROVEMENTS.dgn

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-2F
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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/9/2015 - 11/9/2015	Boring Location	Basin 2 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	918	Drilled Depth (ft)	25
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0	B-2F-1	[08:15]		ML		**Alluvium** Sandy Silt with Gravel; dry, brown (10YR 5/3).	
5	B-2F-2	[08:20]					
10	B-2F-3	[08:25]		SM		Silty Sand with Gravel; dry, yellowish-brown (10YR 5/4), medium-grained sand, fine gravel.	
15	B-2F-4	[08:40]					
	B-2F-5	[08:45]		ML SM		Sandy Silt with Gravel; slightly moist, dark yellowish-brown (10YR 3/6).	

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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
25	B-2F-6	[09:00]		SM ML ML SM		Silty Sand with Gravel; slightly moist, very dark grayish-brown (10YR 3/3). Total depth: 25 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-3A
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/2/2015 - 11/2/2015	Boring Location	Basin 3 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	933	Drilled Depth (ft)	20
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0	B-3A-1	[13:05]		ML		**Alluvium** Silt; dry, brown (7.5YR 4/2), trace coarse gravel.	
5	B-3A-2	[13:15]		SP		Sand with Gravel; slightly moist, dark grayish-brown (10YR 4/2).	
10	B-3A-3	[13:25]					
15	B-3A-4	[13:35]		CL		Clay; slightly moist, dark brown (7.5YR 3/4).	
	B-3A-5	[13:40]		SP		Sand; slightly moist, dark yellowish-brown (10YR 3/4).	

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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
25						Total depth: 20 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
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BORING NUMBER B-3B
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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/2/2015 - 11/2/2015	Boring Location	Basin 3 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	932	Drilled Depth (ft)	20
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0	B-3B-1	[13:55]		ML		**Alluvium** Silt; dry, brownish-yellow (10YR 6/6).	
5	B-3B-2	[14:05]					
10	B-3B-3	[14:10]		SP		Sand with Gravel; slightly moist, dark grayish-brown (10YR 4/2), fine gravel.	
15	B-3B-4	[14:15]		CL		Clay; slightly moist, dark brown (7.5YR 3/4).	
	B-3B-5	[14:25]		SP		Sand; slightly moist, dark yellowish-brown (10YR 3/4).	

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Los Angeles County Department of Public Works
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BORING NUMBER B-3B
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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
25						Total depth: 20 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-3C
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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/2/2015 - 11/2/2015	Boring Location	Basin 3 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	932	Drilled Depth (ft)	20
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0	B-3C-1	[14:45]		ML		**Alluvium** Silt; dry, light brown (10YR 6/3), trace coarse-grained sand and gravel.	Rocky surface.
5	B-3C-2	[14:55]		SW		Gravelly Sand; dry, gray (7.5YR 5/1), medium- to coarse-grained sand, coarse gravel.	
10	B-3C-3	[15:00]					
15	B-3C-4	[15:10]		CL		Clay; moist, very dark brown (7.5YR 2.5/3), high plasticity.	
	B-3C-5	[15:15]		SW		Sand; slightly moist, brown (7.5YR 4/4), medium- to coarse-grained sand, fine gravel.	

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Los Angeles County Department of Public Works
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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
25						Total depth: 20 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

Note: Logs of Borings are provided for the upper layers of soil. Additional subsurface information and copies of the complete geotechnical reports are available at:

Geotechnical and Material Engineering Division
900 S Fremont Ave, 4' Floor
Alhambra, CA, 91803-1331

DATE	MK	DESCRIPTION
		REVISIONS

PROFESSIONAL GEOLOGIST
Gregory M. Sena
No. 2447
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

PROJECT ENGINEER — 12/2/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

LOGS OF BORINGS

DWG 21-D114.69 | PD 052980 | SHEET 69 OF 72

PS-DF 07/05

DRAFTER EDDIE LY | DESIGNER G. GOODMAN | CHECKER G. GOODMAN | CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn | REVIEWED BY | DATE

DATE 11/19/2020 FILE: 2:17:03 PM pw:\\pwedmsprod01.dpw.co.la.ca.us:PW_INT2\Documents\DEPARTMENT PROJECTS (PW)\FCC\FCC0001207 - Pacoima Spreading Grounds Basin Enhancement Proj\DES Drainage\4-CAD\FCC0001207 - PACOIMA SG IMPROVEMENTS.dgn

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-4A
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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/3/2015 - 11/4/2015	Boring Location	Basin 4 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	920	Drilled Depth (ft)	20
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0	B-4A-1	[09:15]		ML		**Alluvium** Silt with Gravel; dry, dark grayish-brown (10YR 4/2), fine gravel.	Rocky surface.
5	B-4A-2	[09:30]		ML		With gravel and sand.	
10	B-4A-3	[09:40]		SM		Silty Sand with Gravel; dry, dark yellowish-brown (10YR 4/4), medium-grained sand, fine gravel, trace cobble.	
				CL		Clay; moist, dark brown (10YR 3/3).	
15	B-4A-4	[09:45]		SW		Gravelly Sand; slightly moist, brown (10YR 4/3), coarse-grained sand.	
	B-4A-5	[10:00]					

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Geotechnical and Materials Engineering Division
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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
						Total depth: 20 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/3/2015 - 11/3/2015	Boring Location	Basin 4 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	927	Drilled Depth (ft)	20
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0	B-4B-1	[08:00]		ML		**Alluvium** Silt; dry, brown (7.5YR 5/2), trace coarse-grained sand.	Rocky surface.
5	B-4B-2	[08:05]		ML		With fine to coarse gravel, trace cobbles.	
10	B-4B-3	[08:20]		SM		Silty Sand with Gravel; dry, very dark gray (10YR 3/1), medium- to coarse-grained sand, fine to coarse gravel.	
				SP		Sand; moist, very dark gray (10YR 3/1), coarse-grained sand, trace clay and gravel.	
15	B-4B-4	[08:30]		CL		Clay; moist, very dark brown (7.5YR 2.5/3).	
	B-4B-5	[08:45]		SW		Gravelly Sand; slightly moist, brown (7.5YR 3/2) medium- to coarse-grained sand, fine gravel.	

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Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
						Total depth: 20 feet bgs No groundwater encountered Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-5A
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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/3/2015 - 11/4/2015	Boring Location	Basin 5 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	912	Drilled Depth (ft)	25
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0	B-5A-1	[14:30]		ML		**Alluvium** Sandy Silt; dry, yellow-brown (10YR 5/4), trace coarse-grained sand.	Rocky surface.
5	B-5A-2	[14:35]		CL		Silty Clay; moist, very dark brown (10YR 2/2).	
10	B-5A-3	[14:50]		ML		Clayey Silt/Clay; dry, very dark brown (10YR 2/2).	
15	B-5A-4	[15:10]		SP		Gravelly Sand; slightly moist, brown (7.5YR 4/4), medium-grained sand, fine gravel.	

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BORING NUMBER B-5A
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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
	B-5A-5	[08:30]		SP		Sand; slightly moist, brown (10YR 4/3), medium-grained sand, trace fine gravel.	* Lost the sample at 20 feet on 11/3/2015 due to heat-blowout. Drilled a new boring on 11/4/2015 and collected a new sample.
25	B-5A-6	[15:45]		SW		Gravelly Sand; slightly moist, brown (7.5YR 4/4), medium-grained sand, fine gravel.	
						Total depth: 25 feet bgs No groundwater encountered Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/3/2015 - 11/3/2015	Boring Location	Basin 5 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	916	Drilled Depth (ft)	20
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0	B-5B-1	[10:30]		ML		**Alluvium** Sandy Silt; dry, light yellowish-brown (10YR 6/4), fine- to medium-grained sand, trace coarse-grained sand.	Rocky surface.
5	B-5B-2	[10:40]		ML		Silt with Gravel; dry, light yellowish-brown (10YR 6/4), trace fine-grained sand and fine gravel.	
10	B-5B-3	[10:50]		ML		Silt; dry, dark yellowish-brown (10YR 4/4).	No gravel or sand.
15	B-5B-4	[11:00]		CL		Clay; dry, very dark brown (10YR 2/2). Gravelly Sand; dry, dark yellowish-brown (10YR 4/6).	
	B-5B-5	[11:15]		SP			

(Continued Next Page)

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-5B
PAGE 2 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
						Total depth: 20 feet bgs No groundwater encountered Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

DRAFTER EDDIE LY | DESIGNER G. GOODMAN | CHECKER G. GOODMAN | CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn | REVIEWED BY | DATE

Note: Logs of Borings are provided for the upper layers of soil. Additional subsurface information and copies of the complete geotechnical reports are available at:

Geotechnical and Material Engineering Division
900 S Fremont Ave, 4' Floor
Alhambra, CA, 91803-1331

DATE	MK	DESCRIPTION

REVISIONS

PROFESSIONAL GEOLOGIST
Gregory M. Sena
No. 2447
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

12/2/2020
PROJECT ENGINEER — DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

LOGS OF BORINGS

DWG 21-D114.70 | PD 052980 | SHEET 70 OF 72

PS-DF 07/05

DATE 11/19/2020 FILE: 2:17:32 PM pw:\\pwedmsprod01.dpw.co.la.ca.us:PW_INT2\Documents\DEPARTMENT PROJECTS (PW)\FCC\FCC0001207 - Pacoima Spreading Grounds Basin Enhancement Proj\DES Drainage\4-CAD\FCC0001207 - PACOIMA SG IMPROVEMENTS.dgn

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-6A
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/4/2015 - 11/4/2015	Boring Location	Basin 6 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	905	Drilled Depth (ft)	40
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0		B-6A-1 [08:50]		ML		**Alluvium** Silt with Gravel; dry, brown (10YR 4/3), trace fine-grained sand, fine gravel.	Rocky hard surface.
5		B-6A-2 [09:00]		ML		Sandy Silt with Gravel; dry, brown (10YR 4/3), fine-grained sand, fine gravel.	
10		B-6A-3 [09:10]		ML		Increasing sand, coarse gravel, with trace cobbles.	Hard drilling. Partial recovery, likely due to cobbles or boulders.
15		B-6A-4 [09:40]		SP		Gravelly Sand; dry, medium- to coarse-grained sand, fine gravel, trace cobbles, trace silt, pulverized rock.	

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Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-6A
PAGE 2 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
20		B-6A-5 [09:50]		SP		Gravelly Sand; dry, medium- to coarse-grained sand, fine gravel, trace cobbles, trace silt, pulverized rock.	
25		B-6A-6 [10:10]		SP			
30		B-6A-7 [10:15]		SP		Gravelly Sand.	
35		B-6A-8 [11:50]		ML		Clayey Silt; dry, brown (10YR 4/3).	Partial recovery.
40		B-6A-9 [12:00]		ML		Sand Silt/Silt; dry, brown (10YR 4/3), fine-grained sand.	
						Total depth: 40 feet bgs No groundwater encountered Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-6B
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/4/2015 - 11/4/2015	Boring Location	Basin 6 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	905	Drilled Depth (ft)	30
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0		B-6B-1 [09:30]		ML		**Alluvium** Sandy Silt; dry, brown (10YR 4/3), fine-grained sand, fine gravel.	Rocky hard surface.
5		B-6B-2 [13:10]		ML		Silt; dry, brown (10YR 4/3).	
10		B-6B-3 [13:20]		SP		Gravelly Sand; dry, medium-grained sand, fine to coarse gravel, abundant gravel with cobbles. Pulverized rock to 19 feet.	
15		B-6B-4 [13:55]		SP			
		B-6B-5 [14:00]					

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Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-6B
PAGE 2 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
20				SP		Gravelly Sand; dry, medium-grained sand, fine to coarse gravel, abundant gravel with cobbles.	
25		B-6B-6 [14:30]		ML		Silt; slightly moist, very dark grayish-brown (10YR 3/2).	
30		B-6B-7 [14:35]		SP		Gravelly Sand; dry, medium-grained sand, fine to coarse gravel, abundant gravel with cobbles.	
						Total depth: 30 feet bgs No groundwater encountered Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-6C
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/4/2015 - 11/5/2015	Boring Location	Basin 6 (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	905	Drilled Depth (ft)	30
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	21 feet bgs	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0		B-6C-1 [14:15]*		ML		**Alluvium** Sandy Silt; dry, dark grayish-brown (2.5Y 4/2).	Rocky hard surface. * Sample at 0 feet collected on 11/4/2015. Samples 5-30 feet collected on 11/5/2015.
5		B-6C-2 [08:00]		SM		Silty Sand with Gravel; dry, brown (10YR 5/3), trace cobbles.	
10		B-6C-3 [08:10]		SP		Sand; slightly moist, dark brown (7.5YR 3/3), medium- to coarse-grained sand, trace fine gravel.	
15		B-6C-4 [08:20]		SP		Gravelly Sand; dry, brown (10YR 5/3), medium-grained sand, fine gravel.	
				ML		Silt; slightly moist, very dark brown (7.5YR 2.5/2).	
				SP		Gravelly Sand; dry, brown (10YR 5/3), medium-grained sand, fine gravel.	

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Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-6C
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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
20		B-6C-5 [08:40]		SP		Gravelly Sand; dry, brown (10YR 5/3), medium-grained sand, fine gravel.	
25		B-6C-6 [08:55]		GP		Sandy Gravel; dry, grayish-brown (10YR 5/2).	
30		B-6C-7 [09:05]				Total depth: 30 feet bgs Groundwater encountered at 21 feet bgs Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

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Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-7W1
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	12/9/2015 - 12/9/2015	Boring Location	West Basin (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	932	Drilled Depth (ft)	20
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments	Observed soil moisture reflects artificial wetting by recent infiltration test.						

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0		B-7W1 -1 [08:00]		SM		**Alluvium** Silty Sand with Gravel; very moist, brown (7.5YR 4/2), fine-grained sand, trace cobbles.	
5		B-7W1 -2 [09:10]*		ML		Sandy Silt; moist, very dary grayish-brown (10YR 3/2), fine-grained sand, trace coarse gravel.	* Drilled a new hole from 0-10' bgs due to poor recovery Resampled soil at 5' and 10' bgs.
10		B-7W1 -3 [09:15]*		SP		Sand; moist, brown (10YR 4/3), fine- to medium-grained sand, trace gravel.	
				CL		Sandy Clay; moist, dark yellowish-brown (10YR 3/6), fine-grained sand.	
15		B-7W1 -4 [08:45]		SW		Sand/Sand with Gravel; moist, yellowish-brown (10YR 5/8), medium-grained sand, fine gravel.	
		B-7W1 -5 [08:55]				Increasing gravel content.	Poor recovery from

(Continued Next Page)

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Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-7W1
PAGE 2 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	Sample PID (ppm)	USCS	Graphic Log	Material Description	Remarks
20						Total depth: 20 feet bgs No groundwater encountered Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	19.5-20' bgs.

DRAFTER EDDIE LY | DESIGNER G. GOODMAN | CHECKER G. GOODMAN | CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn | REVIEWED BY | DATE

Note: Logs of Borings are provided for the upper layers of soil. Additional subsurface information and copies of the complete geotechnical reports are available at:

Geotechnical and Material Engineering Division
900 S Fremont Ave, 4' Floor
Alhambra, CA, 91803-1331

DATE	MK	DESCRIPTION

REVISIONS

PROFESSIONAL GEOLOGIST
Gregory M. Sena
No. 2447
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

PROJECT ENGINEER 12/2/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

LOGS OF BORINGS

DWG 21-D114.71	PD 052980	SHEET 71 OF 72

PS-DF 07/05

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-7W2
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	12/9/2015 - 12/9/2015	Boring Location	West Basin (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	932	Drilled Depth (ft)	20
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	9 feet bgs	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0		B-7W2 -1 [09:45]		SW		**Alluvium** Gravelly Sand; slightly moist, brown (10YR 4/3), fine- to medium-grained sand, fine to coarse gravel, trace cobbles.	
5		B-7W2 -2 [09:55]		SP		Sand; moist, dark gray (10YR 2/1), medium-grained sand, trace fine gravel.	
				SC		Clayey Sand; moist, dark gray (10YR 2/1), fine- to medium-grained sand, trace coarse gravel.	
10		B-7W2 -3 [10:00]		CL		Clay; moist, dark brown (10YR 3/3). Very strong sweet odor.	
15		B-7W2 -4 [10:15]		SW		Gravelly Sand; moist, dark brown (10YR 3/3), medium- to coarse-grained sand, fine to coarse gravel.	
		B-7W2 -5 [10:25]				Becomes dark yellowish-brown (10YR 3/6).	

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Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-7W2
PAGE 2 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
						Total depth: 20 feet bgs Groundwater encountered at 9 feet bgs Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-8E1
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/2/2015 - 11/2/2015	Boring Location	East Basin (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	932	Drilled Depth (ft)	20
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0		B-8E1 -1 [08:55]		ML		**Alluvium** Silt; dry, brown (7.5YR 4/2).	
5		B-8E1 -2 [09:20]				Becomes very dark brown (7.5YR 2.5/2), with trace coarse-grained sand.	
10		B-8E1 -3 [09:30]		ML		Sandy Silt with Gravel; dry, olive-brown (2.5Y 4/3).	
15		B-8E1 -4 [09:40]					
		B-8E1 -5 [09:50]		ML		Silt; slightly moist, very dark brown (7.5YR 2.5/2).	

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Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-8E1
PAGE 2 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
						Total depth: 20 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-8E2
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/2/2015 - 11/2/2015	Boring Location	East Basin (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	932	Drilled Depth (ft)	20
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0		B-8E2 -1 [10:00]		ML		**Alluvium** Silt; dry, olive-brown (2.5Y 4/4).	
5		B-8E2 -2 [10:10]		SM		Silty Sand; dry, brown (10YR 4/3), fine- to medium-grained sand, trace fine gravel.	
10		B-8E2 -3 [10:25]					
15		B-8E2 -4 [10:35]					
		B-8E2 -5 [10:45]		ML		Clayey Silt; slightly moist, very dark brown (7.5YR 2.5/3).	

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Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-8E2
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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
						Total depth: 20 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-8E3
PAGE 1 OF 2

CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Date(s) Drilled	11/2/2015 - 11/2/2015	Boring Location	East Basin (New)	Logged By	G. Sena	Checked By	G. Goodman
Drilling Contractor	Cascade Drilling	Drill Bit Size/Type	6 inches	Approx. Surf. Elevation (ft)	932	Drilled Depth (ft)	20
Drilling Method	Sonic	Finished Diameter		Depth to First Groundwater	not encountered	Inclination/ Bearing (°)	90
Drill Rig Type		Hammer Description	NA	Sample Type(s)	continuous core grab		
Notes/ Comments							

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
0		B-8E3 -1 [11:10]		ML		**Alluvium** Silt; dry, brown (7.5YR 5/2), trace sand and gravel.	
5		B-8E3 -2 [11:15]		ML		Clayey Silt; slightly moist, dark brown (7.5YR 3/2), trace gravel.	
10		B-8E3 -3 [11:30]		SW		Gravelly Sand; slightly moist, grayish-brown (10YR 5/2), medium- to coarse-grained sand, fine gravel.	
15		B-8E3 -4 [11:40]				Becomes moist, with trace cobbles.	
		B-8E3 -5 [11:50]					

(Continued Next Page)

Los Angeles County Department of Public Works
Geotechnical and Materials Engineering Division
900 South Fremont Avenue, Alhambra, CA 91803

BORING NUMBER B-8E3
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CLIENT Stormwater Planning Division **PROJECT NAME** Pacoima SG Enhancement Project
PROJECT NUMBER EF11610123 (FCC0001207) **PROJECT LOCATION** Pacoima Spreading Grounds

Depth (ft)	Sample Type	Sample Number [Time]	PID (ppm)	USCS	Graphic Log	Material Description	Remarks
						Total depth: 20 feet bgs Did not encounter groundwater Backfilled with cuttings and bentonite Colors based on Munsell Soil Color Book	

Note: Logs of Borings are provided for the upper layers of soil. Additional subsurface information and copies of the complete geotechnical reports are available at:

Geotechnical and Material Engineering Division
900 S Fremont Ave, 4' Floor
Alhambra, CA, 91803-1331

DATE	MK	DESCRIPTION

REVISIONS

PROFESSIONAL GEOLOGIST
Gregory M. Sena
No. 2447
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

PROJECT ENGINEER — 12/2/2020 — DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

LOGS OF BORINGS

DWG 21-D114.72	PD 052980	SHEET 72 OF 72

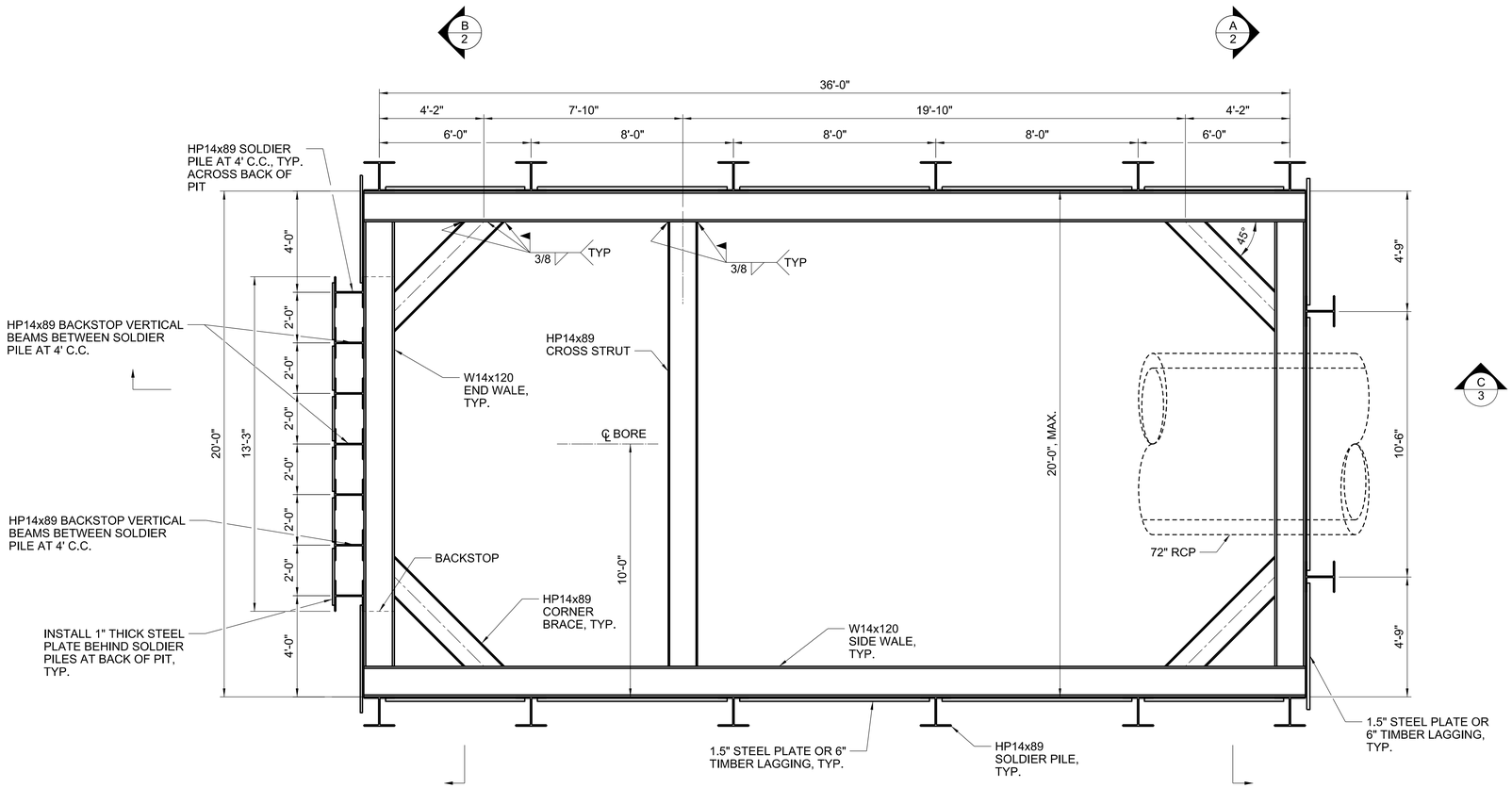
PS-DF 07/05

DESIGNER G. GOODMAN
CHECKER G. GOODMAN
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE
DRAFTER EDDIE LY

DATE 11/19/2020 FILE: 2:18:32 PM pw:\\pwedmsprod01.dpw.co.la.ca.us:PW_INT2\Documents\DEPARTMENT PROJECTS (PW)\FCC\FCC0001207 - Pacoima Spreading Grounds Basin Enhancement Proj\DES Drainage\4-CAD\FCC0001207 - PACOIMA SG IMPROVEMENTS.dgn

JACKING/RECEIVING PIT NOTES:

1. SPACINGS BETWEEN MEMBERS MAY BE DECREASED.
2. LARGER MEMBERS WITH CORRESPONDINGLY LARGER SECTION PROPERTIES MAY BE SUBSTITUTED.
3. SOLDIER BEAMS MAY BE INSTALLED BY EITHER DRIVING OR PLACING IN DRILLED HOLES. DRILLED SOLDIER BEAM HOLES SHALL BE BACKFILLED WITH GRANULAR MATERIAL AND JETTED PRIOR TO TRENCH EXCAVATION.
4. LAGGING SHALL BE INSTALLED AS THE EXCAVATION PROGRESSES SUCH THAT THE BOTTOM OF THE LAGGING IS WITHIN 2 FEET OF THE BOTTOM OF THE EXCAVATION AT ALL TIMES. LAGGING MAY BE STOPPED AT 2' ABOVE SUBGRADE PROVIDED THERE ARE NO INDICATIONS OF A POSSIBLE LOSS OF SOIL FROM BEHIND OR BELOW THE LAGGING.
5. STRUTS SHALL BE INSTALLED PRIOR TO THE EXCAVATION REACHING A LEVEL 3 FEET BELOW THE LEVEL OF THE STRUT.
6. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS FOR SUPPORTING ALL STRUTS (EG. CHAIN, WIRE ROPE, WELDING, ETC.) FROM FALLING SLIPPING, OR BEING KNOCKED OUT OF PLACE.
7. FIRM CONTACT SHALL BE MAINTAINED BETWEEN THE SOLDIER BEAMS, LAGGING, AND SURROUNDING SOILS.
8. VOIDS BEHIND LAGGING SHALL BE BACKFILLED WITH CLEAN SAND OR SLURRY.



C/3

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

JACKING BORE PIT:

	APPLICABLE LIMITS
EAST SETTLING BASIN TO BASIN 1	STA 10+00± TO STA 10+36±
BASIN 4 TO 5	STA 0+00± TO STA 0+36±

GENERAL NOTES:

1. THIS SHORING PLAN IS TO BE IMPLEMENTED BY THE CONTRACTOR'S COMPETENT PERSON AS DEFINED BY CALIFORNIA CODE OF REGULATIONS TITLE 8, CHAPTER 4, SUBCHAPTER 4, SECTION 1504(A) ADOPTED 6/21/91. SHORING SHALL BE INSTALLED AS DEFINED BY CALIFORNIA CODE OF REGULATIONS TITLE 8, CHAPTER 4, SUBCHAPTER 4, SECTION 1541.1(E) ADOPTED 9/25/91 AND MANUFACTURER'S RECOMMENDATIONS.
2. THESE SHORING CASES ARE BASED ON ENCOUNTERING STABLE SOIL WITH A STAND-UP TIME WHICH ALLOWS FOR THE INSTALLATION OF SHORES. IF A TYPE OF SOIL IS ENCOUNTERED WITHIN THESE REACHES WHICH REQUIRES THE USE OF A DIFFERENT METHOD OF SHORING OR IF THIS SHORING METHOD IS FOUND TO BE INEFFECTIVE, THEN SHORING DETAILS WILL BE REVISED AND RESUBMITTED FOR APPROVAL AS NECESSARY.
3. THIS SHORING PLAN HAS BEEN PREPARED AS DEFINED BY CALIFORNIA CODE OF REGULATIONS TITLE 8, CHAPTER 4, SUBCHAPTER 4, SECTION 1541.1(C)(4) ADOPTED 9/25/91.
4. CALCULATIONS NOT SHOWN HEREON ARE ON FILE AT THE OFFICE OF THE ACCEPTING AGENCY AND/OR THE OFFICE OF THE SHORING DESIGN ENGINEER.
5. NO ONE SHALL BE EXPOSED WHERE SHORING HAS NOT BEEN INSTALLED, HAS BEEN REMOVED, OR IS INEFFECTIVE.
6. ALL CONSTRUCTION EQUIPMENT, STOCKPILED MATERIALS, SPOIL PILES, AND OTHER SURCHARGES SHALL BE KEPT A MINIMUM OF 5 FEET FROM THE EDGE OF THE EXCAVATION.
7. THE CONTRACTOR SHALL MAINTAIN THE EXCAVATION IN A DEWATERED CONDITION TO SUBGRADE. THE CONTRACTOR SHALL ALSO TAKE PREVENTATIVE MEASURES TO ROUTE SURFACE RUNOFF AWAY FROM THE EXCAVATION.
8. CONTRACTOR IS RESPONSIBLE FOR PLANNING AND EXECUTING ALL PROCEDURES NECESSARY TO CONSTRUCT, MAINTAIN, AND REMOVE THE TEMPORARY SHORING SYSTEM IN A SAFE CONTROLLED MANNER.
9. REMOVAL OF SHORING SHALL CONFORM WITH CALIFORNIA CODE OF REGULATIONS TITLE 8, CHAPTER 4, SUBCHAPTER 4, SECTION 1541.1(E) ADOPTED 9/25/91.

PROJECT DESIGN CRITERIA:

1. DESIGN LOADS ARE BASED ON THE PROJECT SPECIFICATIONS, LACDPW STANDARD PLAN 3090, CALIFORNIA CODE OF REGULATIONS TITLE 8, CHAPTER 4, SUBCHAPTER 4, SECTION 1541.1(C)(4), AND THE CALTRANS TRENCHING AND SHORING MANUAL (2011 EDITION)."
2. SOIL TYPE: OSHA TYPE "C" SOILS
3. ACTIVE EARTH PRESSURE (EFP) = 45 PCF
   PASSIVE EARTH PRESSURE (EFP) = 390 PCF
4. MAXIMUM DEPTH OF CUT = 20'
5. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" (AISC 360-16) AND SUPPLEMENTS, AND ASTM A6.
6. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A572, GRADE 50 (Fy = 50,000 PSI) OR A992, GRADE 50 (Fy = 50,000 PSI), UNLESS NOTED OTHERWISE. ALL STEEL PLATES SHALL CONFORM TO ASTM A36 (Fy = 36,000 PSI), UNLESS NOTED OTHERWISE.
7. ALL TIMBER MEMBERS SHALL BE DOUGLAS FIR NO. 2 OR BETTER WITH ALLOWABLE STRESSES PER THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" (2015 EDITION).
8. ALL WELDS SHALL BE PREQUALIFIED IN CONFORMANCE WITH THE CODE FOR WELDING IN BUILDING CONSTRUCTION (AWS D1.1, 2015 EDITION) OF THE AMERICAN WELDING SOCIETY. ELECTRODES TO BE E70 SERIES UNLESS NOTED OTHERWISE.
9. WORK WITHIN PUBLIC RIGHT OF WAY SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION 2012 EDITION WITH CITY OF LOS ANGELES AMENDMENTS.
10. DESIGN BASED ON THE FOLLOWING GEOTECHNICAL INVESTIGATION:
    PACOIMA SPREADING GROUNDS BASIN ENHANCEMENT PROJECT
    PROJECT NO. EF116010123 (PROJECT ID FCC0001207)
    PREPARED BY LACPW GEOTECHNICAL AND MATERIALS ENGINEERING DIVISION
    DATED MARCH 20, 2019

CADD PROJECT FILE NAME: FCC0001207_Pacoima Spreading Grounds_Shoring Plan.dgn
CHECKER: A. WONG
DESIGNER: T. KAWAKATSU
DRAFTER: N. TORRES

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER TAKANORO KAWAKATSU C 82082 CIVIL STATE OF CALIFORNIA

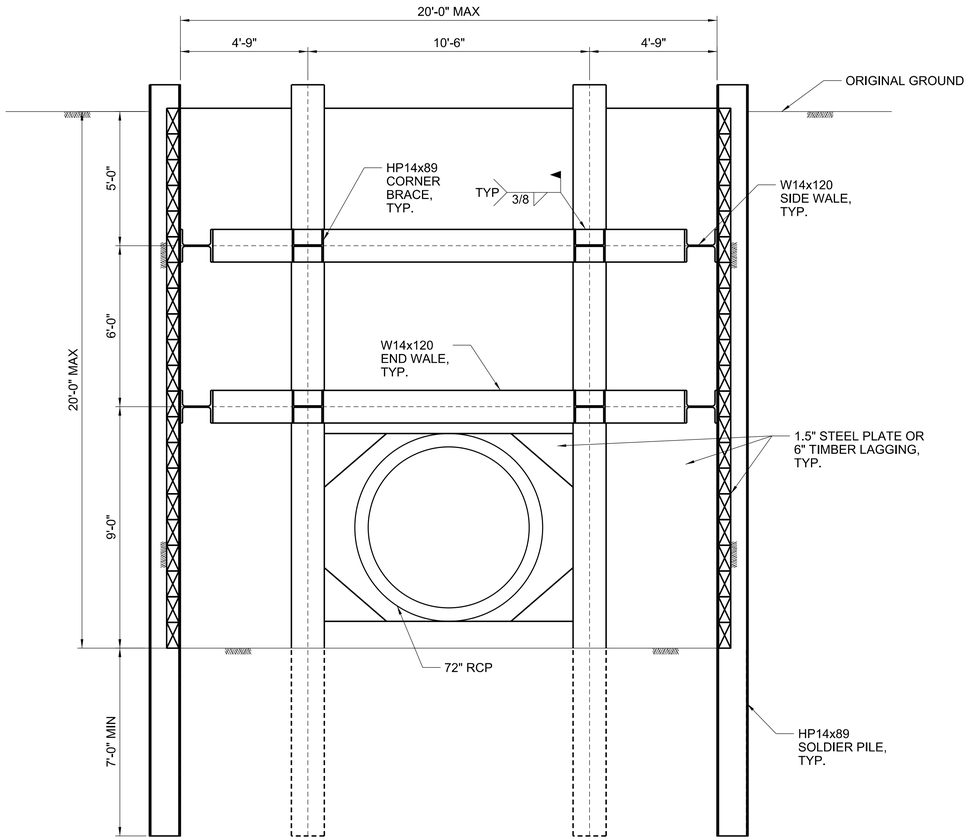
PROJECT ENGINEER 11/25/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207
SHORING PLAN
JACKING PIT - PLAN VIEW

SHEET 1 OF 5

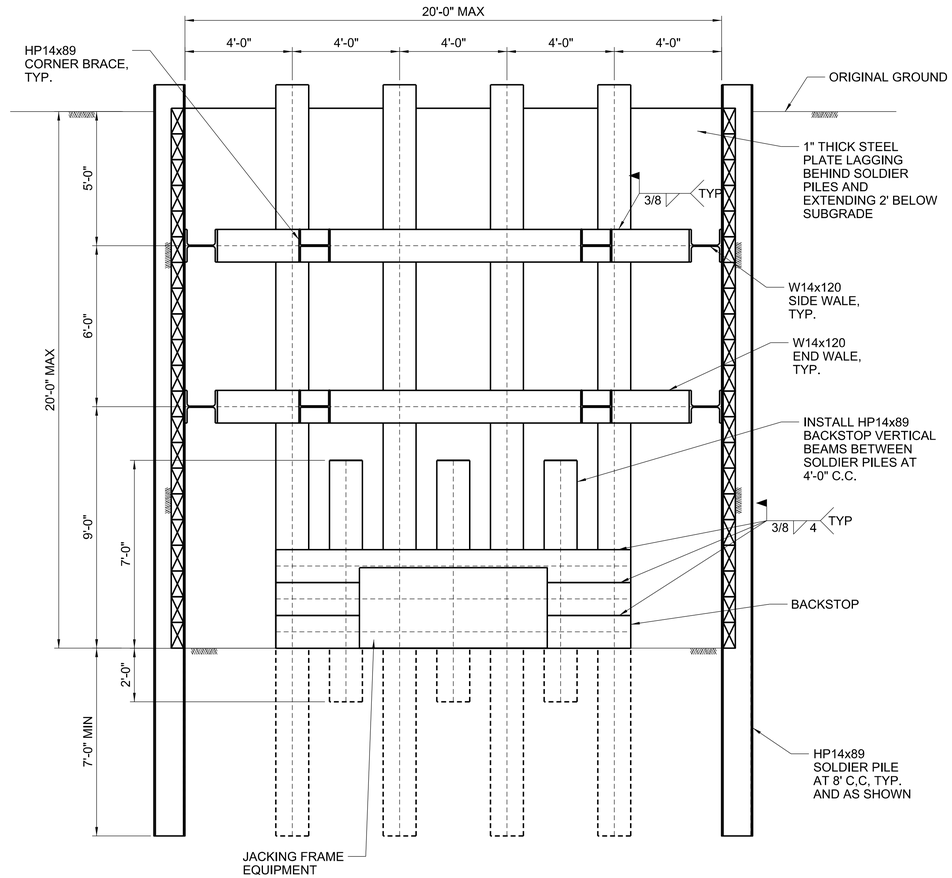
PLAN S1



A
-

FRONT ELEVATION VIEW

SCALE: 3/8" = 1'-0"



B
-

REAR ELEVATION VIEW

SCALE: 3/8" = 1'-0"

CADD PROJECT FILE NAME: FCC0001207_Pacoima Spreading Grounds_Shoring Plan.dgn

DRAFTER: N. TORRES
DESIGNER: T. KAWAKATSU
CHECKER: A. WONG

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
TAKAHIRO KAWAKATSU
C 82082
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER 11/25/2020 DATE

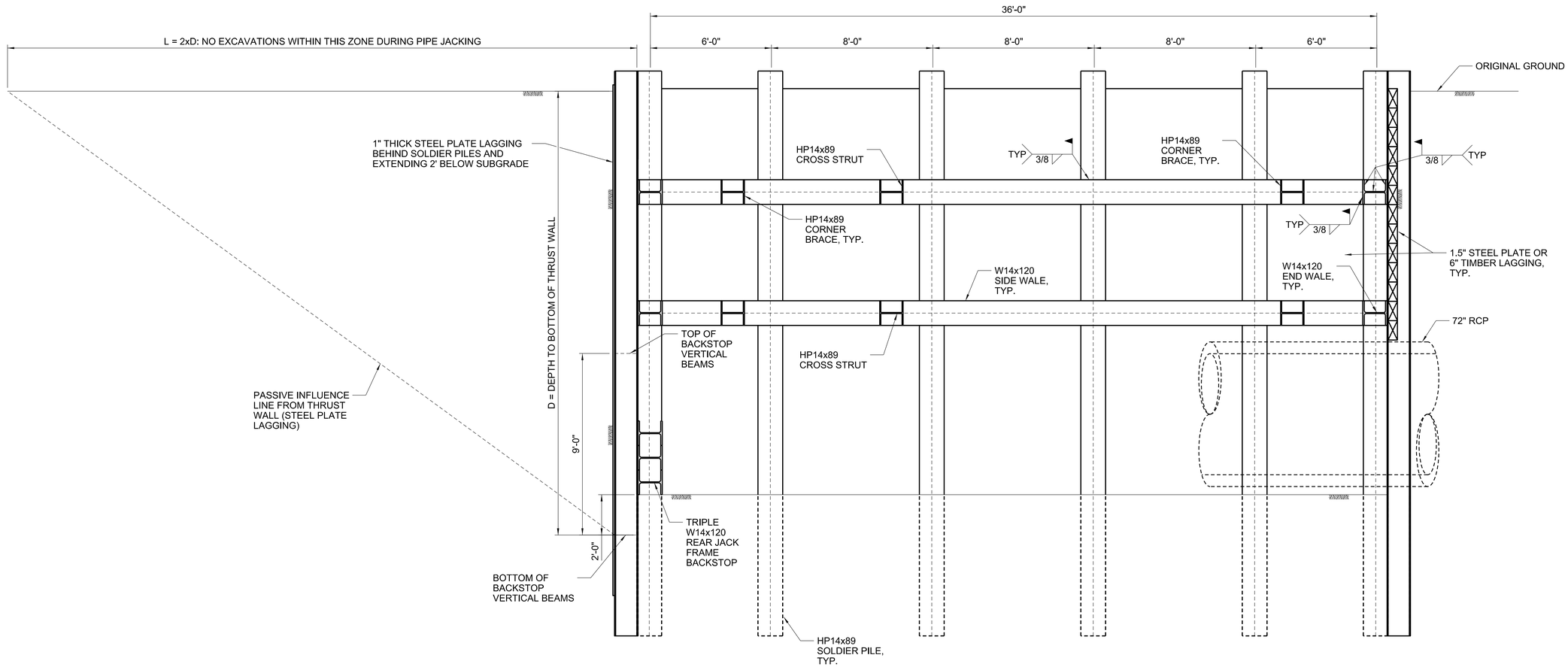
LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207
SHORING PLAN
JACKING PIT - SECTION VIEWS

SHEET 2 OF 5

PLAN S2



C / - **SIDE ELEVATION VIEWS**

SCALE: ⅜" = 1'-0"

NOTE:
MAX. JACKING THRUST REACTION = 360 TONS

CADD PROJECT FILE NAME: FCC0001207_Pacoima Spreading Grounds_Shoring Plan.dgn
CHECKER: A. WONG
DESIGNER: T. KAWAKATSU
DRAFTER: N. TORRES

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER TAKAHIRO KAWAKATSU C 82082 CIVIL STATE OF CALIFORNIA

PROJECT ENGINEER 11/25/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

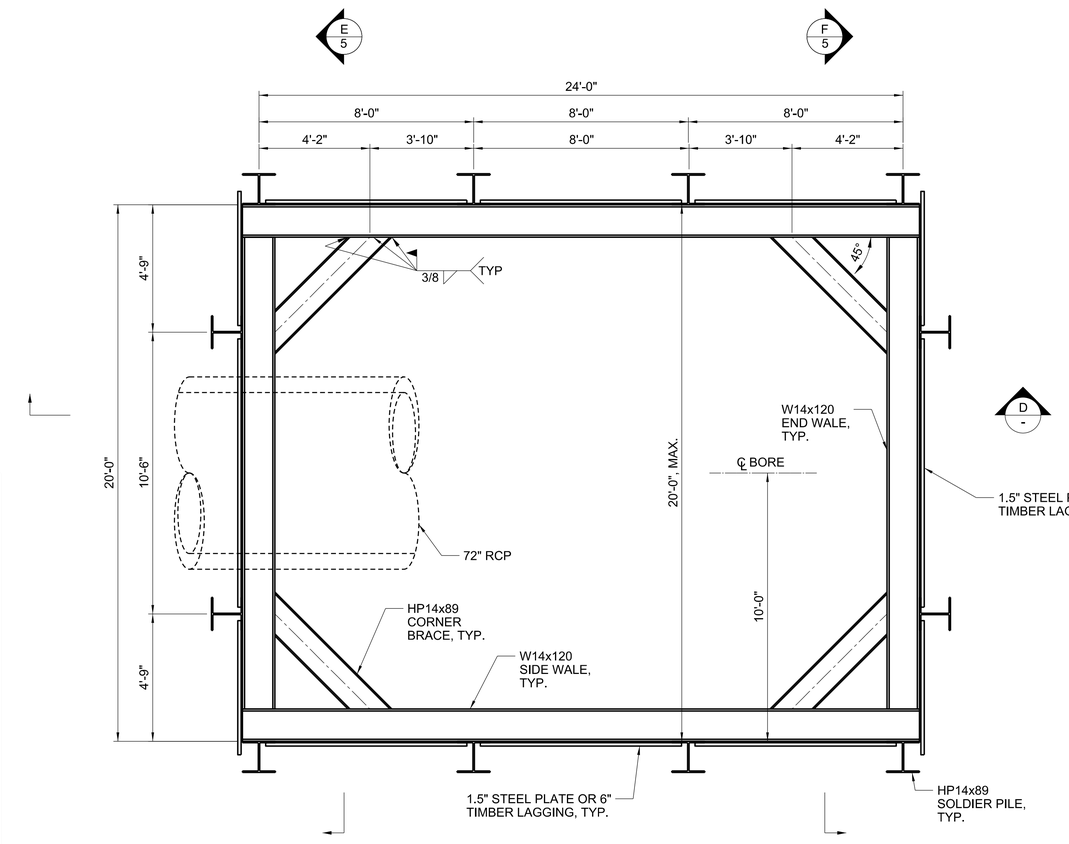
PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207
SHORING PLAN
JACKING PIT - ELEVATION

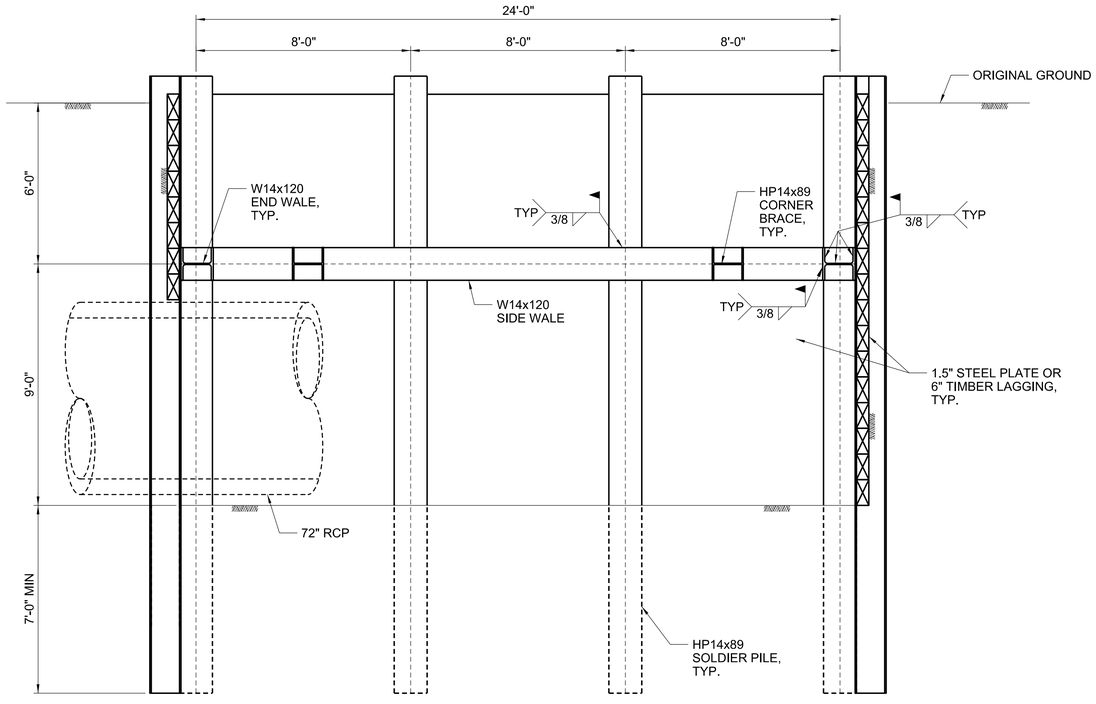
SHEET 3 OF 5

PLAN S3

DATE: $DATE$ TIME: $TIME$ FILE: $FILEL$



2 - **PLAN VIEW**
SCALE: ⅜" = 1'-0"



D - **SIDE ELEVATION VIEW**
SCALE: ⅜" = 1'-0"

RECEIVING BORE PIT:

	APPLICABLE LIMITS
EAST SETTLING BASIN TO BASIN 1	STA 11+82± TO STA 12+06±
BASIN 4 TO 5	STA 2+56± TO STA 2+80±

CADD PROJECT FILE NAME: FCC0001207_Pacoima Spreading Grounds_Shoring Plan.dgn
CHECKER: A. WONG
DESIGNER: T. KAWAKATSU
DRAFTER: N. TORRES

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — TAKAHIRO KAWAKATSU — C 82082 — CIVIL — STATE OF CALIFORNIA

11/25/2020
PROJECT ENGINEER — DATE

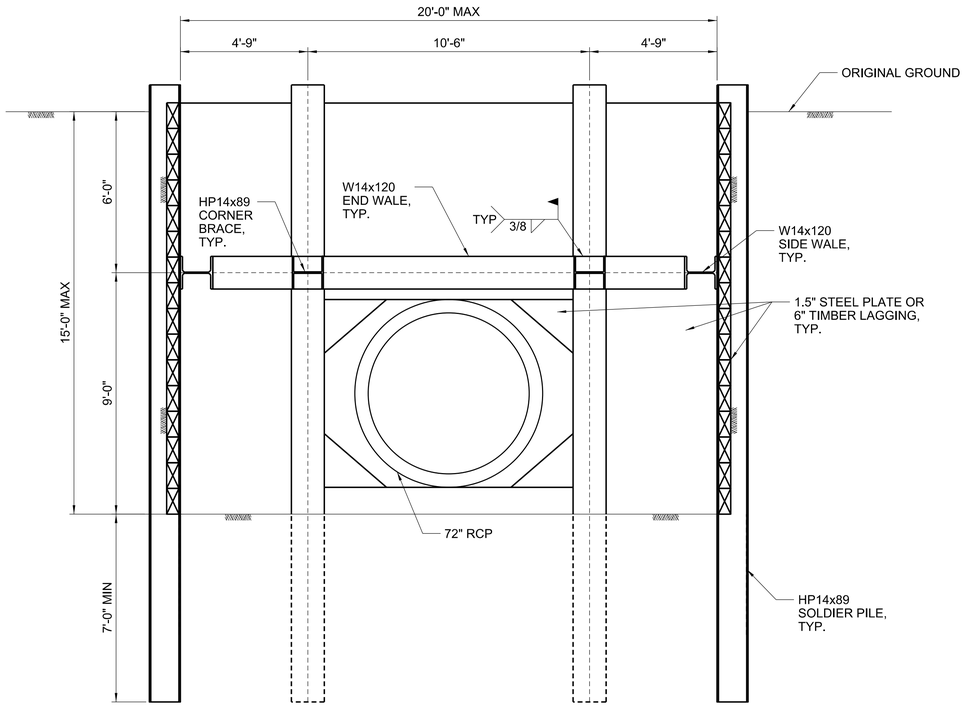
LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207
SHORING PLAN
RECEIVING PIT - PLAN & ELEVATION VIEW

SHEET 4 OF 5

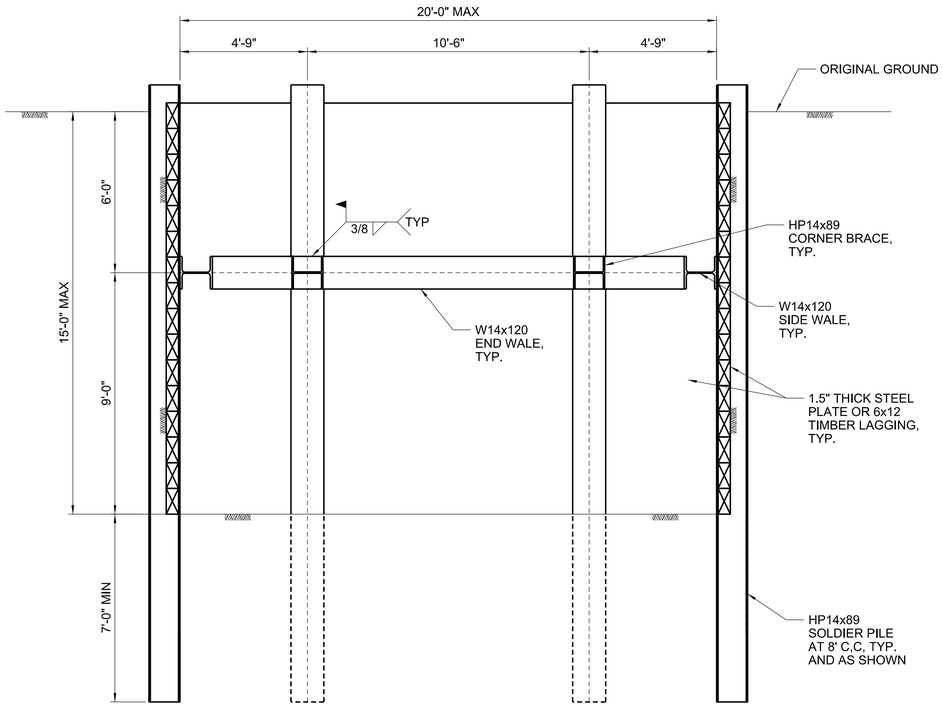
PLAN S4



E
-

FRONT ELEVATION VIEW

SCALE: ⅜" = 1'-0"



F
-

REAR ELEVATION VIEW

SCALE: ⅜" = 1'-0"

CADD PROJECT FILE NAME: FCC0001207_Pacoima Spreading Grounds_Shoring Plan.dgn

DRAFTER: N. TORRES | DESIGNER: T. KAWAKATSU | CHECKER: A. WONG

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER TAKAHIRO KAWAKATSU C 82082 CIVIL STATE OF CALIFORNIA

PROJECT ENGINEER 11/25/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT

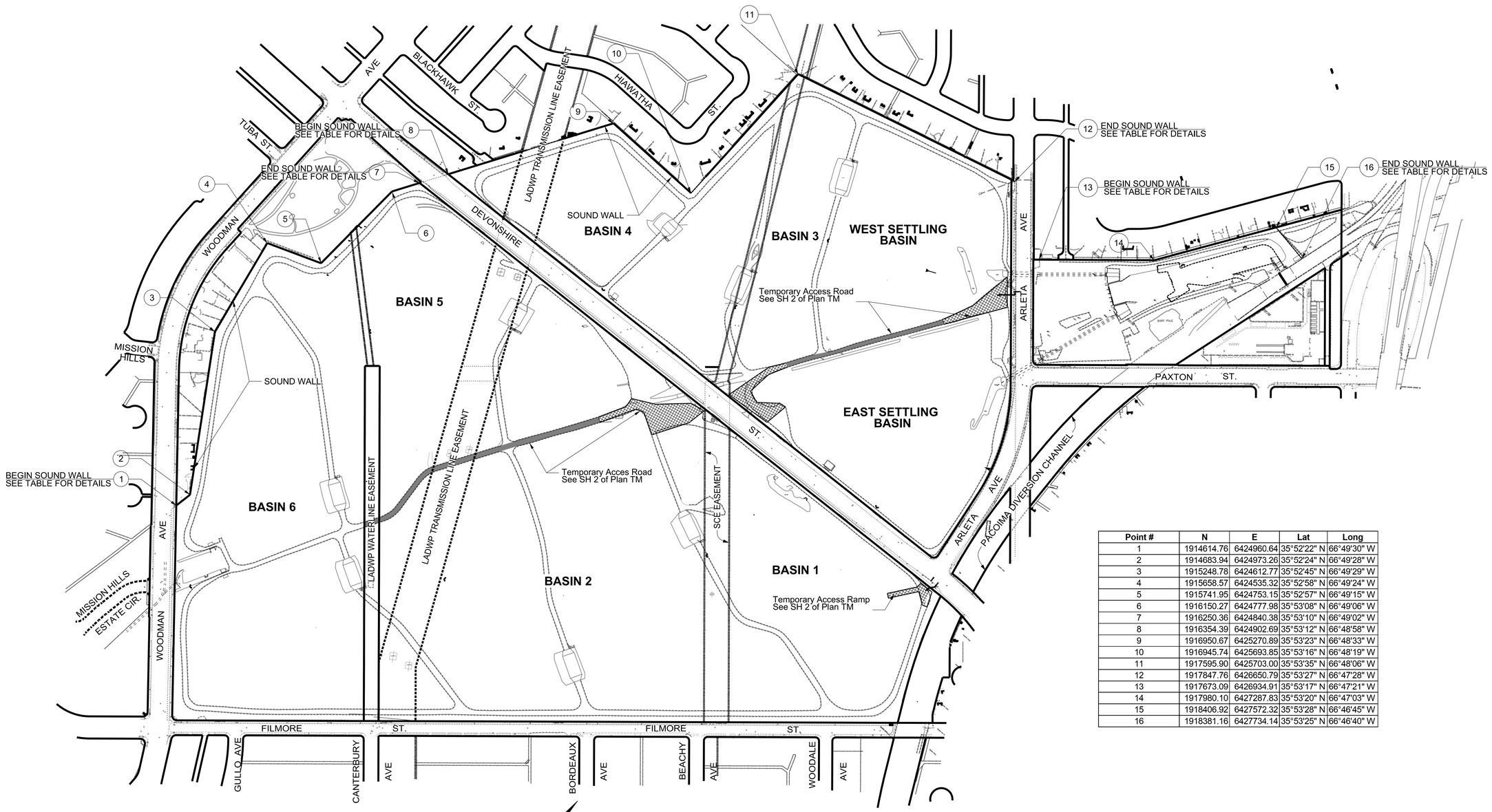
PROJECT ID NO. FCC0001207

SHORING PLAN

RECEIVING PIT - SECTION VIEWS

SHEET 5 OF 5

PLAN S5



Point #	N	E	Lat	Long
1	1914614.76	6424960.64	35°52'22" N	66°49'30" W
2	1914683.94	6424973.26	35°52'24" N	66°49'28" W
3	1915248.78	6424612.77	35°52'45" N	66°49'29" W
4	1915658.57	6424535.32	35°52'58" N	66°49'24" W
5	1915741.95	6424753.15	35°52'57" N	66°49'15" W
6	1916150.27	6424777.98	35°53'08" N	66°49'06" W
7	1916250.36	6424840.38	35°53'10" N	66°49'02" W
8	1916354.39	6424902.69	35°53'12" N	66°48'58" W
9	1916950.67	6425270.89	35°53'23" N	66°48'33" W
10	1916945.74	6425693.85	35°53'16" N	66°48'19" W
11	1917595.90	6425703.00	35°53'35" N	66°48'06" W
12	1917847.76	6426650.79	35°53'27" N	66°47'28" W
13	1917673.09	6426934.91	35°53'17" N	66°47'21" W
14	1917980.10	6427287.83	35°53'20" N	66°47'03" W
15	1918406.92	6427572.32	35°53'28" N	66°46'45" W
16	1918381.16	6427734.14	35°53'25" N	66°46'40" W

NOTES:
The wood used shall be tongue and groove and a minimum of 1/2" thick or have a weight of at least 32 pounds per square foot.

SITE PLAN
SCALE:1"=200'

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL G. PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

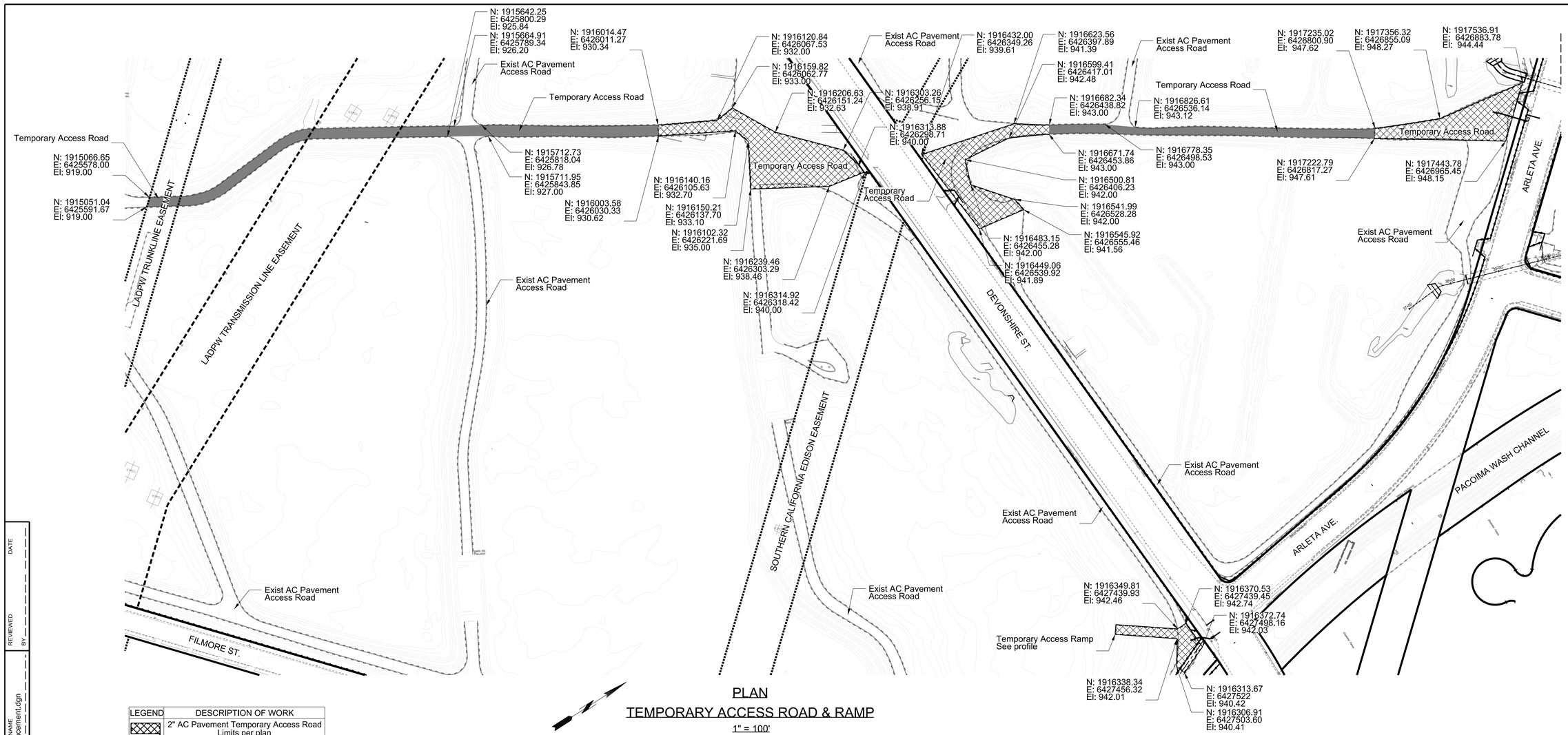
TEMPORARY MEASURES FOR CONSTRUCTION SOUND WALL

DWG 21-D114.TM-1 | PD 052980 | SHEET 1 OF 3

TM-1

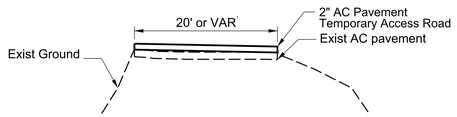
PS-DF 07/05

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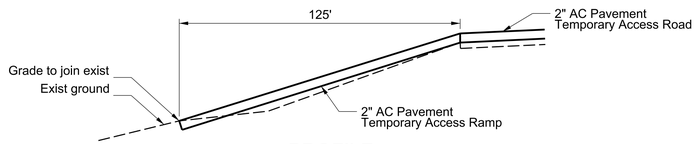


LEGEND	DESCRIPTION OF WORK
	2" AC Pavement Temporary Access Road Limits per plan
	2" AC Pavement Temporary Access Road See note 2 for road limits

PLAN
TEMPORARY ACCESS ROAD & RAMP
1" = 100'



TYPICAL SECTION
TEMPORARY ACCESS ROAD
NOT TO SCALE



PROFILE
TEMPORARY ACCESS RAMP
NOT TO SCALE

NOTES:

1. Temporary Access Road width will match the existing access road footprint in the delineated areas on the plans, unless otherwise noted.
2. When applicable, Temporary Access Road shall be overlay the existing AC access road. In areas where existing access road does not exist but plans require Temporary Access Road, subgrade shall be compacted prior to placement of the Temporary Access Road. Elevations on plans will refer to bottom of the Temporary Access Road.

DATE	MARK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL PIAMONTE
C 85493
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER DATE

LOS ANGELES COUNTY PUBLIC WORKS

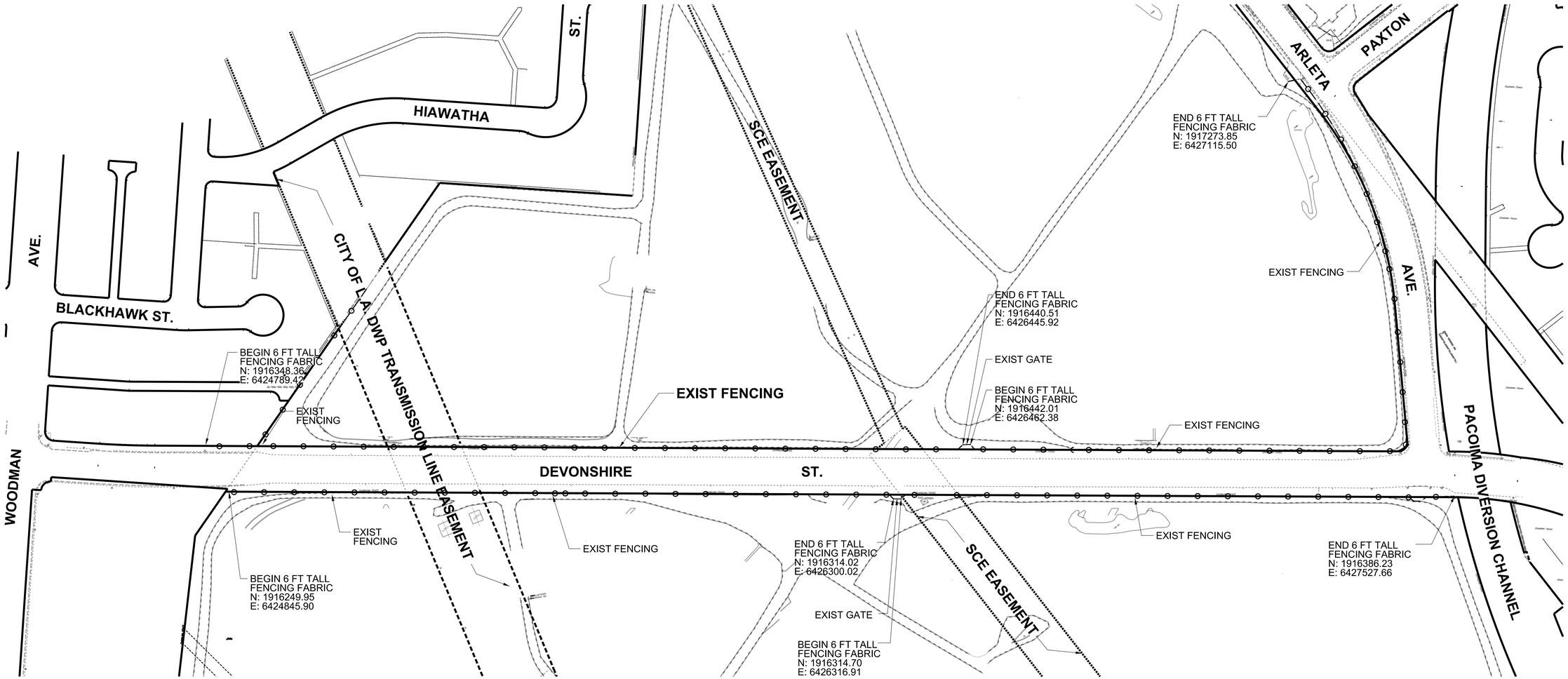
PACOIMA SPREADING GROUNDS
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

TEMPORARY ACCESS ROAD AND RAMP

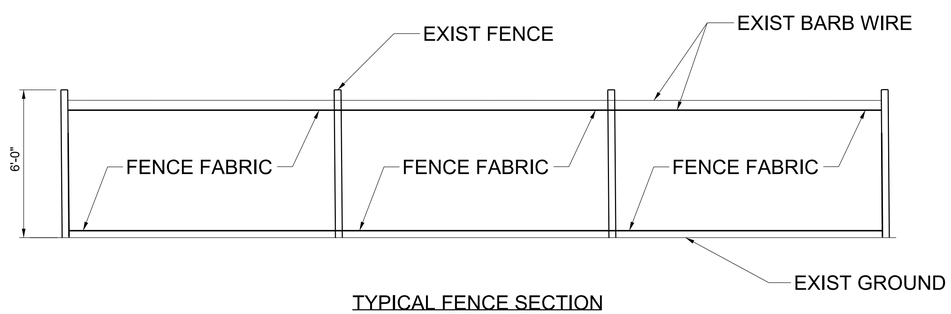
TM-2

DWG 21-D114.TM-2	PD 052980	SHEET 2 OF 3

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancement.dgn
REVIEWED BY
DATE



PLAN
NOT TO SCALE



TYPICAL FENCE SECTION
NOT TO SCALE

TM-3

DESIGNER R. PIAMONTE
CHECKER R. PIAMONTE
CADD PROJECT FILE NAME J. LI

DRAWING NUMBER:

(MARK AS-BUILT HERE)

DATE	MK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — RAFAEL G. PIAMONTE — C 85493 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

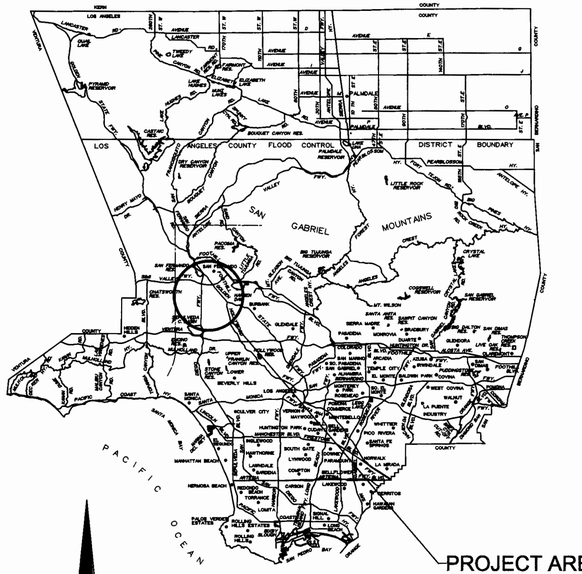
BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

TEMPORARY MEASURES FOR CONSTRUCTION FENCING FABRIC

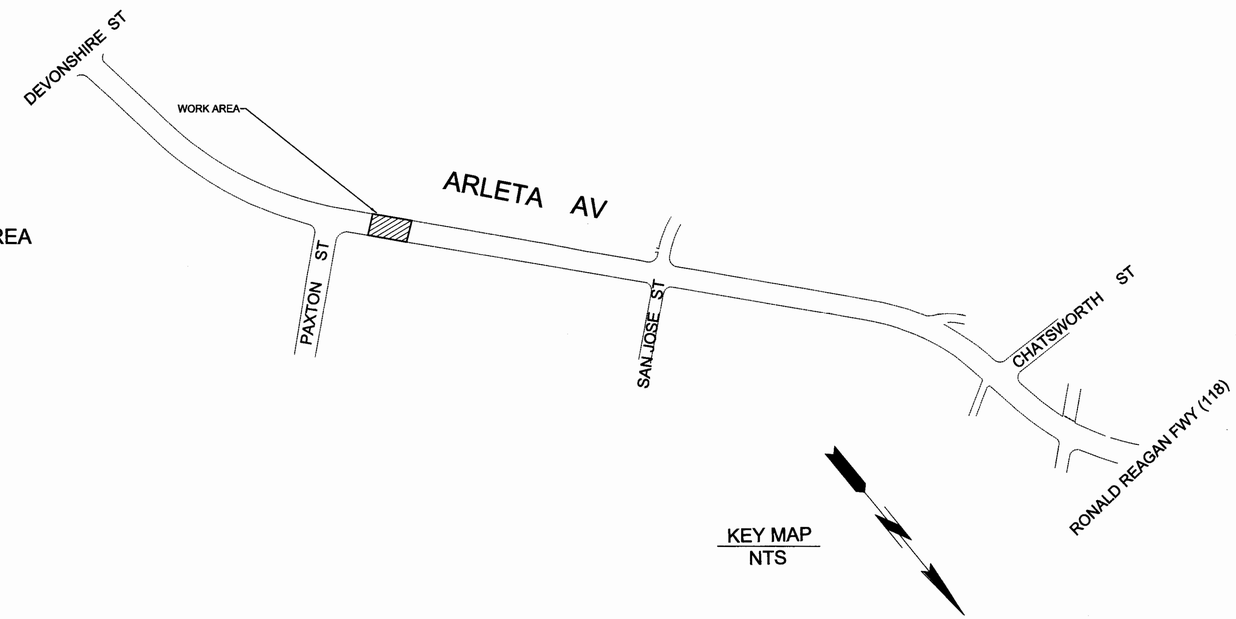
DWG 21-D114,TM-2	PD 052980	SHEET 3 OF 3

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PACOIMA SPREADING GROUNDS ENHANCEMENT PROJECT
TRAFFIC CONTROL PLAN
FCC0001207



VICINITY MAP
N.T.S



KEY MAP
NTS

W20-5(LT) = LEFT LANE CLOSED AHEAD	R3-7(RT) = RIGHT LANE MUST TURN RIGHT	W20-1 = ROAD WORK AHEAD	C30 (CA) = LANE CLOSED
W4-2(RT) =	W20-5(RT) = RIGHT LANE CLOSED AHEAD	W1-6(RT) =	W4-2(LT) =
			W1-6(LT) =

SIGNING LEGEND

LEGEND:

- SIGN ON TYPE III BARRICADE WITH FLASHING BEACON
- DELINEATOR WITH WHITE REFLECTIVE TAPE
- WORK AREA
- FLASHING ARROW SIGN (FAS)

TRAFFIC CONTROL PLAN GENERAL NOTES:

1. ALL SIGNS, DELINEATORS, BARRICADES, ETC. SHALL CONFORM TO THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS (2015) AND TO THE LATEST STATE OF CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. EACH ADVANCE WARNING SIGN SHALL BE EQUIPPED WITH AT LEAST TWO FLAGS FOR DAYTIME CLOSURE. EACH FLAG SHALL BE AT LEAST 16" x 16" IN SIZE AND SHALL BE ORANGE OR FLUORESCENT RED-ORANGE IN COLOR. FLASHING BEACONS SHALL BE PLACED AT THE LOCATIONS INDICATED FOR LANE CLOSURE DURING HOURS OF DARKNESS.
3. THE AGENCY RESERVES THE RIGHT TO OBSERVE THESE TRAFFIC CONTROL PLANS IN USE AND TO MAKE THE NECESSARY CHANGES AS FIELD CONDITIONS WARRANT. ANY CHANGES SHALL SUPERSEDE THESE PLANS.
4. THE CONTRACTOR SHALL PROVIDE FLAGGERS AS DEEMED NECESSARY BY THE ENGINEER.
5. THE CONTRACTOR SHALL NOTIFY ANY AFFECTED TRANSIT SERVICES, FIRE AND POLICE SERVING THE AREA AT LEAST 14 DAYS PRIOR TO EACH CONSTRUCTION PHASE.
6. THE CONTRACTOR SHALL PROVIDE ALL CONSTRUCTION SIGNING, BARRICADING, DELINEATORS, CHANGEABLE MESSAGE SIGN AND FLASHING ARROW SIGN AS SHOWN ON THE PLANS.

TRAFFIC CONTROL PLAN GENERAL NOTES:

7. THE CONTRACTOR IS RESPONSIBLE IN INSTALLING AND MAINTAINING THE TRAFFIC CONTROL SYSTEMS SHOWN ON THESE PLANS. IN THE EVENT THAT THERE ARE CHANGES IN THESE PLANS THAT NEED TO BE MADE DUE TO CHANGED FIELD CONDITIONS DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE IN MAKING THE NECESSARY CHANGES ON THESE PLANS WHERE APPLICABLE WITH THE APPROVAL OF THE ENGINEER.
8. DELINEATORS SHALL BE SPACED AT 20' O.C. WITHIN 300' OF AN INTERSECTION.
9. ALL CONFLICTING SIGNS SHALL BE COVERED DURING CONSTRUCTION. COVERS SHALL BE REMOVED AT COMPLETION OF CONSTRUCTION.
10. ACCESS TO EXISTING BUSINESSES, RESIDENCES, AND SIDE STREETS SHALL BE PROVIDED.
11. TRAFFIC CONTROL SIGNS ON PORTABLE SIGN SUPPORTS SHALL NOT BLOCK ACCESS IN THE TRAVELED WAY OR SIDEWALK AREA.
12. COVER TRENCHES WITH STEEL PLATES DURING NON-WORKING HOURS.

REGISTERED PROFESSIONAL ENGINEER — JASPER JUNIO — NO. C 66741 — CIVIL — STATE OF CALIFORNIA

SUBMITTED: C 66741
BY _____ DATE 8/15/17
APPROVED:
BY _____ DATE 8-28-17

DATE		DESCRIPTION

REVISIONS

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION

TRAFFIC CONTROL PLAN

PACOIMA SPREADING GROUNDS:
ENHANCEMENT PROJECT
FCC0001207

PCA: EF11610123 | SCALE: 1"=40' | SHEET 1 OF 4

DRAFTER Z. KARIMY
DESIGNER Z. KARIMY
CHECKER J. JUNIO
CADD PROJECT FILE NAME PACOIMA S.G. BASIN ENHANCEMENT PROJECT.dgn

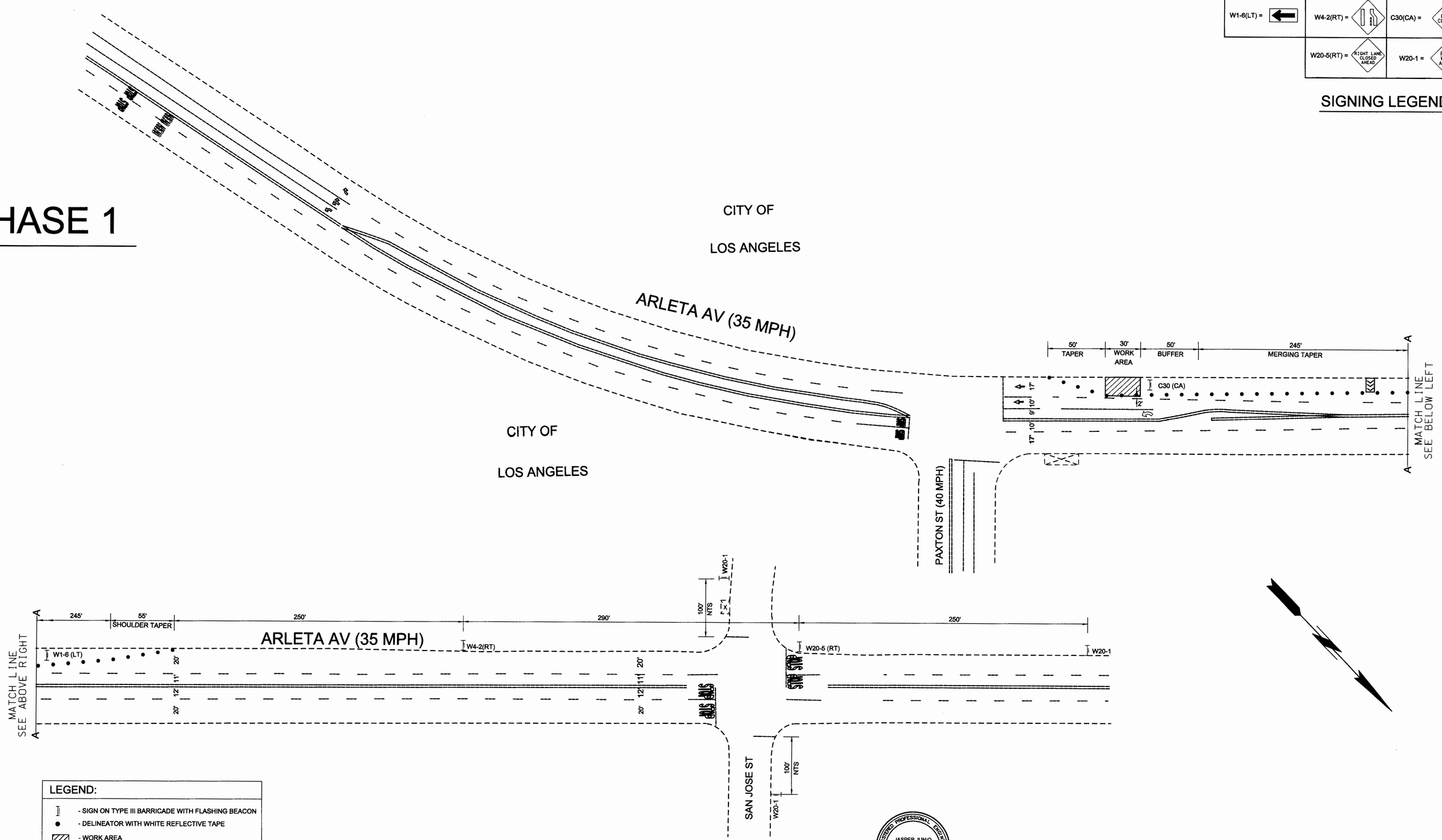
PACOIMA SPREADING GROUNDS ENHANCEMENT PROJECT-FCC0001207

TG 502 - A3 & A4

PHASE 1

W1-6(LT) =	W4-2(RT) =	C30(CA) = LANE CLOSED
	W20-5(RT) = RIGHT LANE CLOSED AHEAD	W20-1 = ROAD WORK AHEAD

SIGNING LEGEND



LEGEND:

- SIGN ON TYPE III BARRICADE WITH FLASHING BEACON
- DELINEATOR WITH WHITE REFLECTIVE TAPE
- WORK AREA
- FLASHING ARROW SIGN (FAS)

REGISTERED PROFESSIONAL ENGINEER
JASPER JUNIO
No. C 66741
CIVIL
STATE OF CALIFORNIA

SUBMITTED: C 66741
BY _____ DATE 8/15/17

APPROVED:
BY _____ DATE 8-28-17

DATE		DESCRIPTION

REVISIONS

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION

TRAFFIC CONTROL PLAN

PACOIMA SPREADING GROUNDS:
BASIN ENHANCEMENT PROJECT
FCC0001207

PCA: EF11610123 | SCALE: 1"=40' | SHEET 2 OF 4

DRAFTER Z. KARIMY
DESIGNER Z. KARIMY
CHECKER J. JUNIO
CADD PROJECT FILE NAME PACOIMA S.G.BASIN ENHANCEMENT PROJECT.dgn

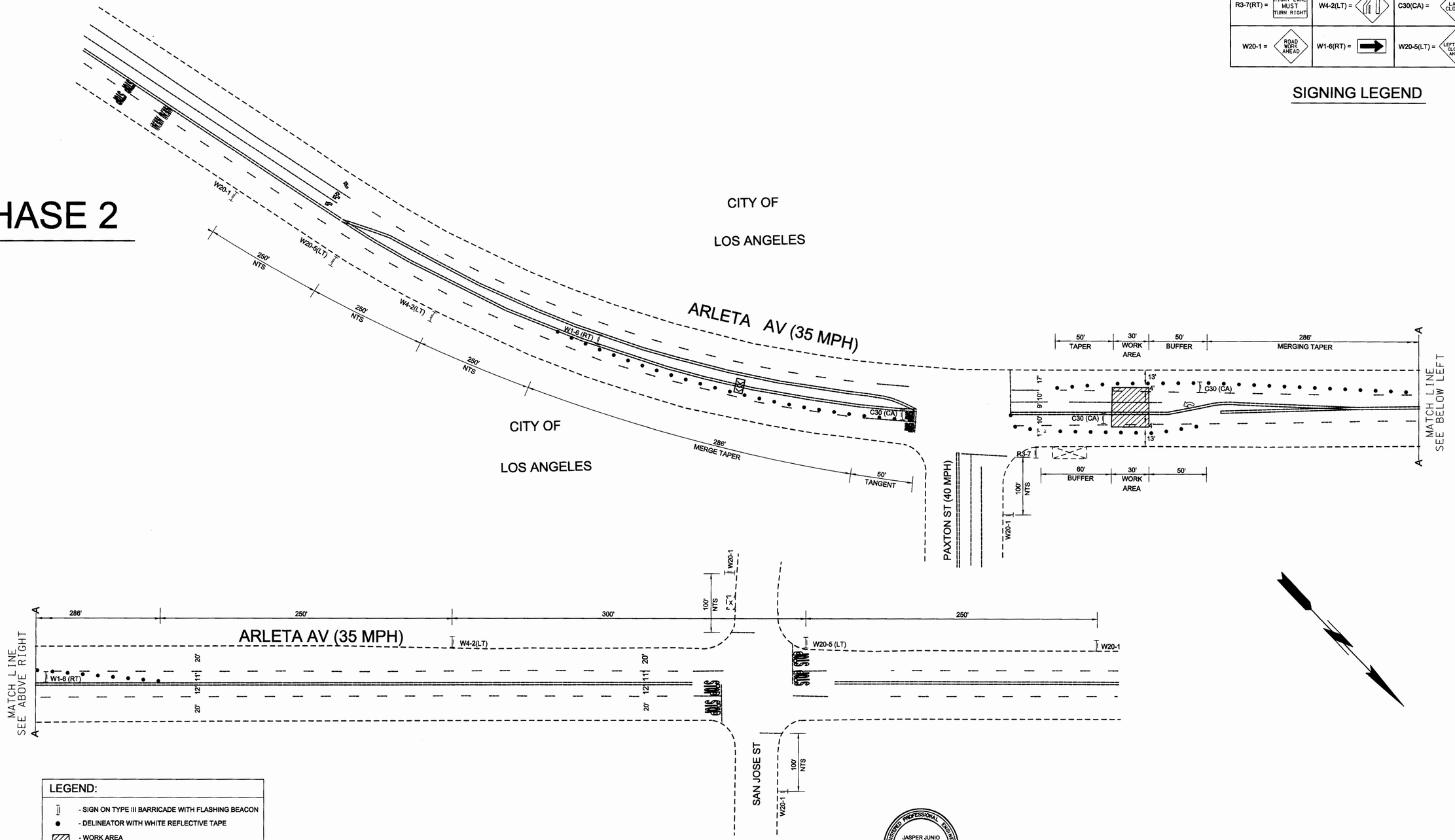
PACOIMA SPREADING GROUNDS ENHANCEMENT PROJECT-FCC0001207

TG 502 - A3 & A4

PHASE 2

R3-7(RT) = RIGHT LANE MUST TURN RIGHT	W4-2(LT) =	C30(CA) = LANE CLOSED
W20-1 = ROAD WORK AHEAD	W1-6(RT) =	W20-5(LT) = LEFT LANE CLOSED AHEAD

SIGNING LEGEND



LEGEND:

- SIGN ON TYPE III BARRICADE WITH FLASHING BEACON
- DELINEATOR WITH WHITE REFLECTIVE TAPE
- WORK AREA
- FLASHING ARROW SIGN (FAS)

REGISTERED PROFESSIONAL ENGINEER — JASPER JUNIO — No. C 66741 — CIVIL — STATE OF CALIFORNIA

SUBMITTED: C 66741
BY _____ DATE 5/15/17

APPROVED:
BY _____ DATE 8-28-17

DATE		DESCRIPTION

REVISIONS

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION

TRAFFIC CONTROL PLAN

PACOIMA SPREADING GROUNDS:
BASIN ENHANCEMENT PROJECT
FCC0001207

PCA: EF11610123 | SCALE: 1"=40' | SHEET 3 OF 4

PACOIMA SPREADING GROUNDS ENHANCEMENT PROJECT-FCC0001207

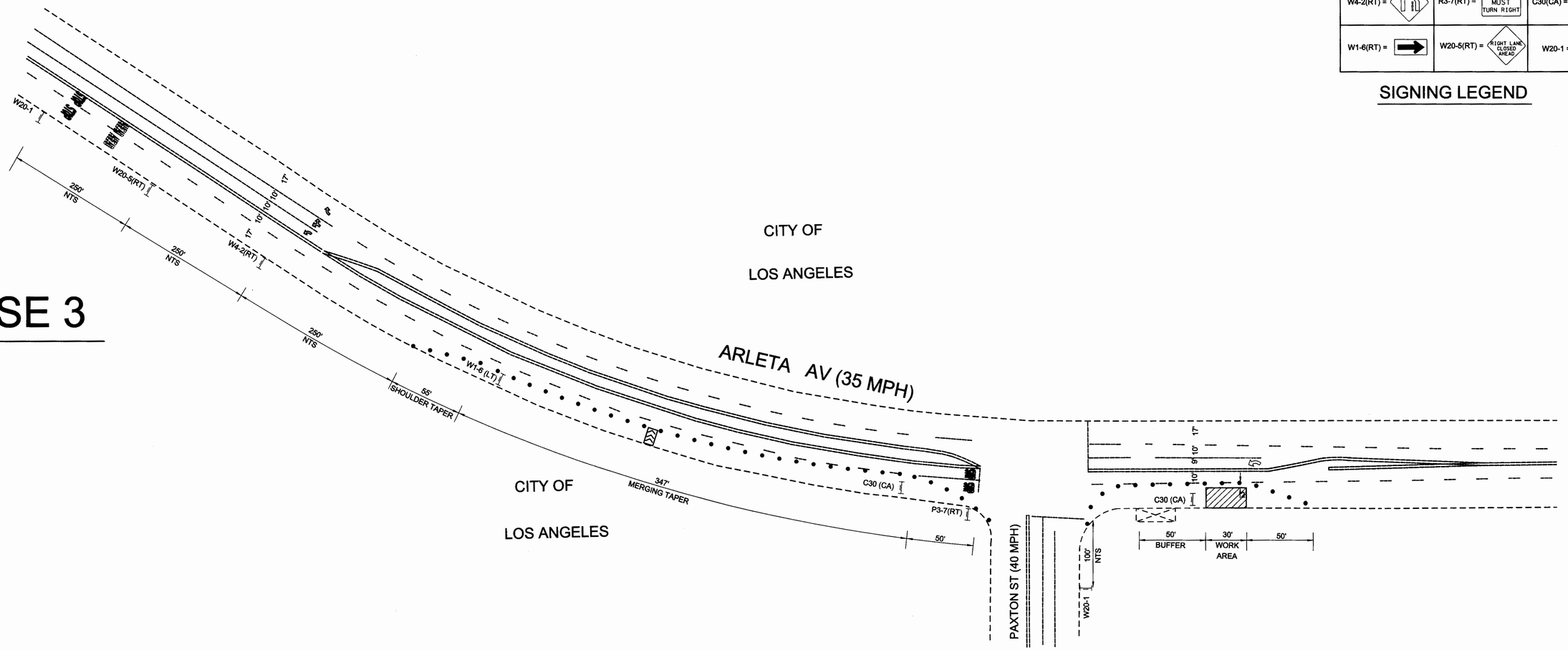
DRAFTER Z. KARIMY
DESIGNER Z. KARIMY
CHECKER J. JUNIO
CADD PROJECT FILE NAME PACOIMA S.G.BASIN ENHANCEMENT PROJECT.dgn

TG 502 - A3 & A4

PHASE 3

W4-2(RT) =	R3-7(RT) = RIGHT LANE MUST TURN RIGHT	C30(CA) = LANE CLOSED
W1-6(RT) =	W20-5(RT) = RIGHT LANE CLOSED AHEAD	W20-1 = ROAD WORK AHEAD

SIGNING LEGEND



LEGEND:

- I - SIGN ON TYPE III BARRICADE WITH FLASHING BEACON
- ● - DELINEATOR WITH WHITE REFLECTIVE TAPE
- ▨ - WORK AREA
- ▨ - FLASHING ARROW SIGN (FAS)

REGISTERED PROFESSIONAL ENGINEER
JASPER JUNIO
no. C 66741
CIVIL
STATE OF CALIFORNIA

SUBMITTED: C 66741
BY _____ DATE 8/15/17

APPROVED:
BY _____ DATE 8-28-17

DATE		DESCRIPTION

REVISIONS

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION

TRAFFIC CONTROL PLAN

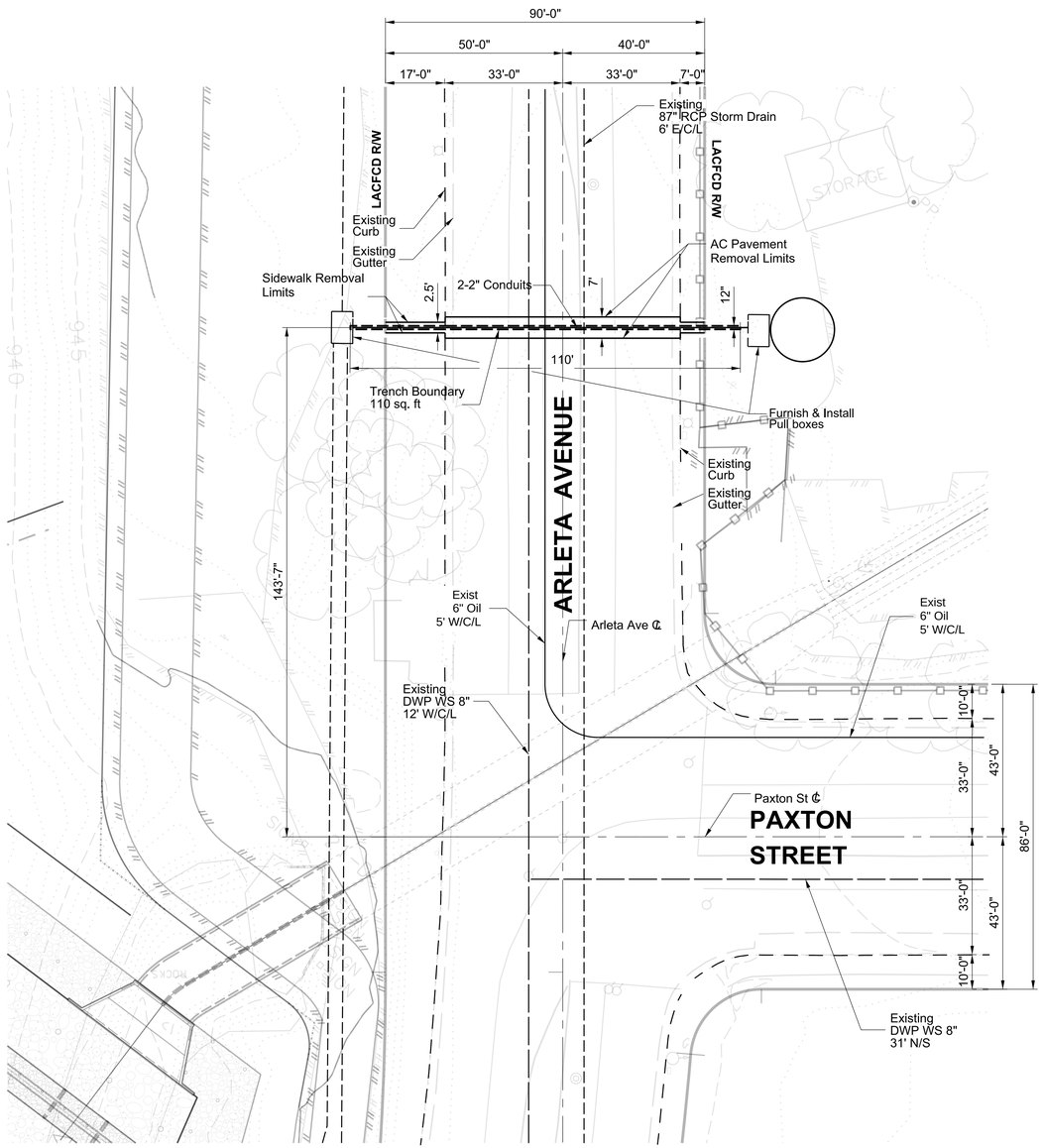
PACOIMA SPREADING GROUNDS:
BASIN ENHANCEMENT PROJECT
FCC0001207

PCA: EF11610123 | SCALE: 1"=40' | SHEET 4 OF 4

DRAFTER Z. KARIMY
DESIGNER Z. KARIMY
CHECKER J. JUNIO
CADD PROJECT FILE NAME PACOIMA_S.G._BASIN_ENHANCEMENT_PROJECT.dgn

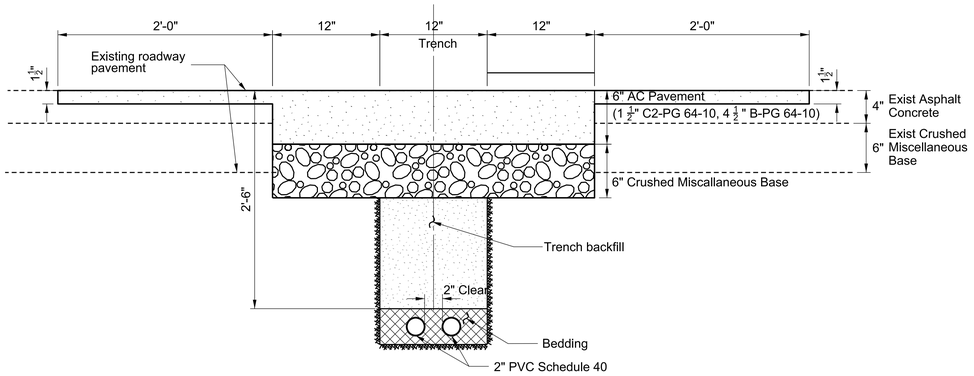
PACOIMA SPREADING GROUNDS ENHANCEMENT PROJECT-FCC0001207

TG 502 - A3 & A4



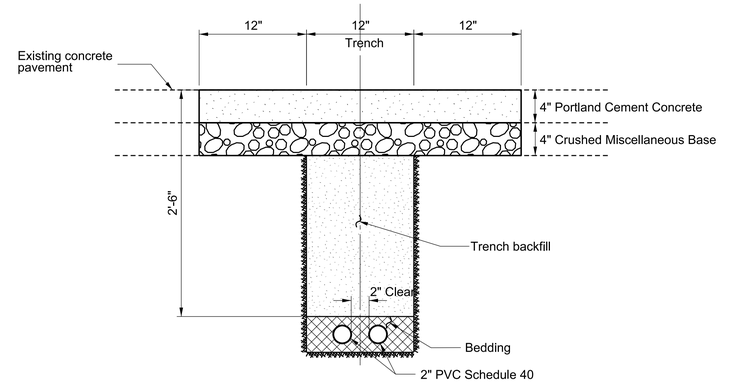
PLAN

SCALE: 1" = 20'



TRENCH AND RESTORATION DETAIL - STREET

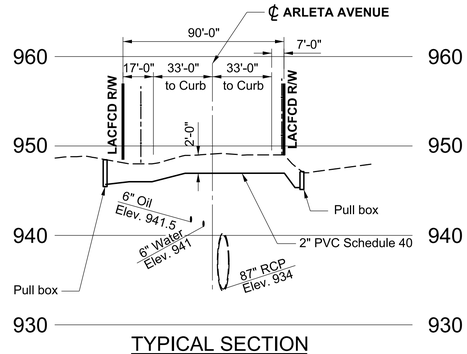
NOT TO SCALE



TRENCH AND RESTORATION DETAIL - SIDEWALK

NOT TO SCALE

Note:
1. Concrete sidewalk shall be resurfaced from scoreline to scoreline.
2. Sidewalk restoration to be performed per City of LA Standard Plan S-444-0.



TYPICAL SECTION

SCALES: HOR: 1"=40'
VERT: 1"=8'

TR-1

GENERAL NOTE

Trenching, backfill, and paving in asphalt pavement shall be performed in accordance with City of Los Angeles Standard Plan S-477-2.

DATE	MK	DESCRIPTION

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
RAFAEL C. PIAMONTE
No. C85493
STATE OF CALIFORNIA

PROJECT ENGINEER 11/16/2020 DATE

LOS ANGELES COUNTY PUBLIC WORKS

PACOIMA SPREADING GROUNDS

BASIN ENHANCEMENT PROJECT
PROJECT ID NO. FCC0001207

TRENCH ACROSS ARLETA AVE
ELECTRICAL CONDUIT

DWG 21-D114.TR1 | PD 052980 | SHEET 1 OF 1

DRAFTER R. PIAMONTE
DESIGNER R. PIAMONTE
CHECKER J. LI
CADD PROJECT FILE NAME PacoimaSGEnhancementLdgn
REVIEWED BY
DATE

DATE. $DATE$ TIME. FILE. $TIME$ $FILE$

PS-DF 07/05