CITY OF SAN FERNANDO

PUBLIC WORKS DEPARTMENT

SAN FERNANDO REGIONAL PARK INFILTRATION PROJECT

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

JOB NO.760I PLAN NO.P-732

NOTES TO CONTRACTOR

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF SAN FERNANDO REQUIREMENTS.

THE CONTRACTOR SHALL TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER UTILITIES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.

ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AGENCY'S STANDARD PLANS, PROJECT PLANS, SPECIFICATIONS, AND CONTRACT DOCUMENTS. THE CONTRACTOR SHALL KEEP A COPY OF THIS INFORMATION ON THE JOBSITE.

A PRECONSTRUCTION MEETING SHALL BE HELD A MINIMUM OF 48 HOURS PRIOR TO COMMENCING WORK.

THE CONTRACTOR SHALL NOTIFY THE AGENCY'S CONSTRUCTION MANAGER, MANUEL FABIAN @ (818) 898-1243, A MINIMUM OF 5 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION AND 48 HOURS IN ADVANCE OF INSPECTION REQUESTS.

PROJECT STATIONING REFERS TO THE CENTERLINE OF THE STORM DRAIN, UNLESS INDICATED OTHERWISE.

STOCK PILING OF EXCESS REMOVED MATERIAL WILL NOT BE ALLOWED IN OR AROUND THE PROJECT SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAULING OFF ALL EXCESS MATERIALS GENERATED DURING THE CONSTRUCTION OF THIS PROJECT TO AN APPROVED DISPOSAL SITE.

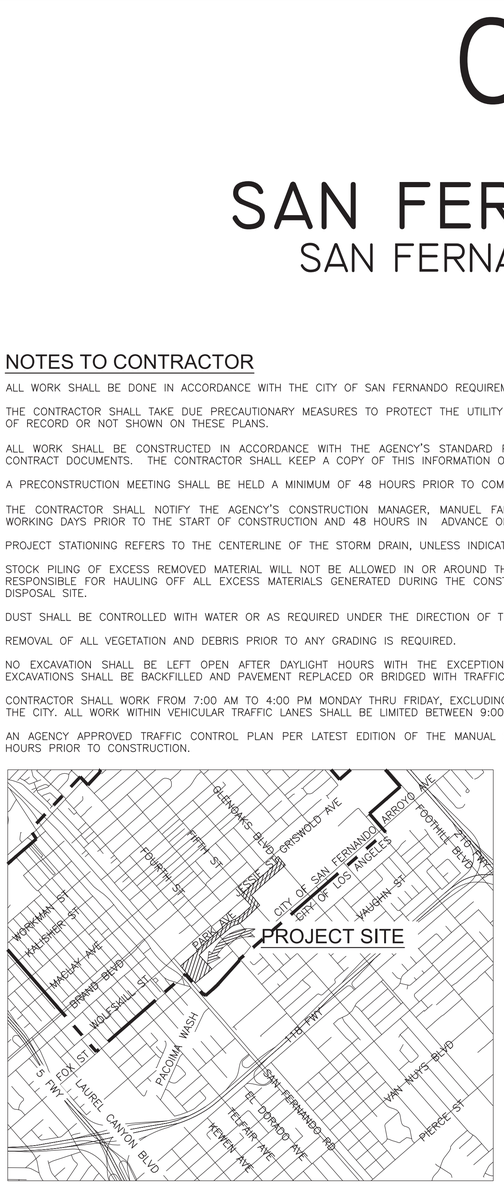
DUST SHALL BE CONTROLLED WITH WATER OR AS REQUIRED UNDER THE DIRECTION OF THE INSPECTOR.

REMOVAL OF ALL VEGETATION AND DEBRIS PRIOR TO ANY GRADING IS REQUIRED.

NO EXCAVATION SHALL BE LEFT OPEN AFTER DAYLIGHT HOURS WITH THE EXCEPTION OF THE SUBSURFACE INFILTRATION SYSTEM, EXCAVATIONS SHALL BE BACKFILLED AND PAVEMENT REPLACED OR BRIDGED WITH TRAFFIC RATED STEEL PLATES.

CONTRACTOR SHALL WORK FROM 7:00 AM TO 4:00 PM MONDAY THRU FRIDAY, EXCLUDING HOLIDAYS, UNLESS OTHERWISE ACCEPTED BY THE CITY. ALL WORK WITHIN VEHICULAR TRAFFIC LANES SHALL BE LIMITED BETWEEN 9:00 AM AND 3:00 PM.

AN AGENCY APPROVED TRAFFIC CONTROL PLAN PER LATEST EDITION OF THE MANUAL SHALL BE SECURED BY THE CONTRACTOR 48 HOURS PRIOR TO CONSTRUCTION.



LOCATION MAP

SCALE: 1"=500'

T.G. PAGE 502-B1, 482-B7, 482 C-7

VICINITY MAP

SCALE: 1"=2000'

T.G. PAGE 502-B1, 482-B7, 482 C-7

SYMBOLS

- BORING
- FIRE HYDRANT
- LIGHT POLE
- MANHOLE
- POWER POLE
- PB PULL BOX
- SIGN
- TRAFFIC SIGNAL BOX
- WATER METER
- WATER VALVE
- V VAULT
- E ELECTRICAL
- G GAS
- O OIL
- (OH) OVERHEAD LINE
- S SEWER
- SD STORM DRAIN
- T TELEPHONE
- W WATER
- CITY BOUNDARY
- X CHAIN LINK FENCE
- RIGHT-OF-WAY

SHEET LIST TABLE

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2	C-01	GENERAL NOTES
3	C-02	LINE "A1" AND "A2" PLAN AND PROFILE AND SUBSURFACE INFILTRATION SYSTEM PLAN
4	C-03	LINE "B" STA 10+00 TO 13+50 PLAN AND PROFILE
5	C-04	LINE "B" STA 13+50 TO 20+00 PLAN AND PROFILE
6	C-05	LINE "B" STA 20+00 TO 26+50 PLAN AND PROFILE
7	C-06	LINE "B" STA 26+50 TO 33+00 PLAN AND PROFILE
8	C-07	LINE "B" STA 33+00 TO 37+00 PLAN AND PROFILE
9	C-08	LINE "B" STA 37+00 TO 41+00 PLAN AND PROFILE
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12	C-11	LINE "B" STA 53+00 TO 54+23 PLAN AND PROFILE
13	C-12	PRETREATMENT UNIT
14	C-13	SUBSURFACE INFILTRATION SYSTEM PLAN AND DETAILS
15	C-14	SUBSURFACE INFILTRATION SYSTEM SECTION
16	C-15	SUBSURFACE INFILTRATION SYSTEM DETAILS
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18	C-17	DETAILS
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20	C-19	STREET IMPROVEMENT PLAN STA 10+00 TO 23+12
21	C-20	STREET IMPROVEMENT PLAN STA 27+47 TO 40+14
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PUBLIC UTILITIES AND AGENCIES WITHIN THE CITY OF SAN FERNANDO

COMPANY	CONTACT	PHONE NO.
WATER	CITY OF SAN FERNANDO 120 MACNEIL ST. SAN FERNANDO, CA 91340 DANNY GARCIA	818 898 1293
WASTEWATER	CITY OF SAN FERNANDO 120 MACNEIL ST. SAN FERNANDO, CA 91340 DALE WARREN	818 898 1293
ELECTRICITY	SOUTHERN CALIFORNIA EDISON COMPANY EMERGENCY CALLS	800 611 1911
GAS	SOUTHERN CALIFORNIA GAS COMPANY EMERGENCY CALLS	800 427 2200
OIL	PLAINS ALL AMERICAN PIPELINE EMERGENCY CALLS	800 987 4737
TELEPHONE	FRONTIER COMMUNICATIONS EMERGENCY CALLS	800 921 8101
CABLE / COMMUNICATION	SPECTRUM EMERGENCY CALLS	818 700 6500
	CENTURY LINK AND LEVEL 3 NETWORK EMERGENCY CALLS	918 547 0007
	CHARTER COMMUNICATIONS EMERGENCY CALLS	818 922 6167
POLICE	CITY OF SAN FERNANDO POLICE DEPT. NON-EMERGENCY NUMBER	818 898 1267

NOTICE TO CONTRACTOR:

IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CALL THE USA UNDERGROUND ALERT FOR LOCATION OF EXISTING UNDERGROUND UTILITIES NO LESS THAN TWO DAYS NOR MORE THAN SEVEN DAYS PRIOR TO CONSTRUCTION.

811

THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR ANY DAMAGE DONE TO EXISTING UTILITIES OR STREET IMPROVEMENTS INCLUDING CONCRETE/LANDSCAPING DURING CONSTRUCTION.

"FUNDING FOR THIS PROJECT HAS BEEN PROVIDED IN FULL OR IN PART THROUGH AN AGREEMENT WITH THE STATE WATER RESOURCES CONTROL BOARD USING FUNDS FROM PROPOSITION 1. THE CONTENTS OF THIS DOCUMENT DO NOT NECESSARILY REFLECT THE VIEWS AND POLICIES OF THE FOREGOING, NOR DOES MENTION OF TRADE NAMES OR COMMERCIAL PRODUCTS CONSTITUTE ENDORSEMENT OR RECOMMENDATION FOR USE."

UNDERGROUND SERVICE ALERT

CALL: TOLL FREE

811

TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'VD

PREPARED BY:

CWE

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

REGISTERED PROFESSIONAL ENGINEER
KATHRYN L. PARNELL
No.85752
Exp. 9/30/2022
CIVIL
STATE OF CALIFORNIA

DRAWN BY:	TT	APR 2021
DESIGNED BY:	KH	APR 2021
CHECKED BY:	VB	APR 2021

Matthew Baumgardner, Director of Public Works — DATE

R.C.E. NO.: 71932 EXP. DATE: 12/31/2021

Manuel Fabian, Civil Engineer Assistant II — DATE

CITY OF SAN FERNANDO
HISTORIC & VISIONARY

CITY OF SAN FERNANDO
DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

TITLE SHEET

DWG No. T-01

SHEET No. 1 OF 46

Plotted by: aesparzoalmaroz Apr. 20, 2021 10:24 AM Z:\T1827\2\06 Tasks\01 Design\80 Storm Drain\182\2 -1-2 TS & GEN NOTES.DWG

NOTICE TO CONTRACTORS

1. SPECIFICATIONS: ALL WORK SHALL CONFORM TO THE LATEST EDITION AND SUPPLEMENTS OF "THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (GREENBOOK).
2. THIS IMPROVEMENT CONSISTS OF WORK CALLED FOR ONLY ON THIS PLAN.
3. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "WORK AREA TRAFFIC CONTROL HANDBOOK" (WATCH).
4. REMOVALS:
   A. REMOVE ALL EXISTING IMPROVEMENTS THAT INTERFERE WITH THE CONSTRUCTION OF THIS PROJECT.
   B. ALL UTILITIES OWNED BY ENTITIES OTHER THAN THE CITY SHALL BE REMOVED OR RELOCATED BY THEIR OWNER. CONTRACTOR TO REMOVE AND RELOCATE CITY-OWNED UTILITIES SHOWN IN THESE PLANS.
5. IN ADDITION TO THE RECONSTRUCTION OF PAVEMENT SHOWN HEREON, WORK REQUIRED UNDER THESE PLANS WILL ALSO INCLUDE THE CONSTRUCTION OF PERMANENT TRENCH RESURFACING IN AREAS WHERE STORM DRAIN LINES HAVE BEEN INSTALLED TO SERVE THIS PROJECT. CONDITIONS OF TRENCH BACKFILL AND RESURFACING SHALL BE AS SHOWN ON SHEET C-17 AND SPECIFIED ON THE EXCAVATION PERMIT OBTAINED BY THE CONTRACTOR. PAVING OF ROADWAY AREAS SHALL BE WITHHELD UNTIL CONTEMPLATED UTILITY CHANGES OR INSTALLATIONS HAVE BEEN MADE UNDER CITY PERMIT.
6. REPAIR AND/OR REPLACE ANY EXISTING BROKEN OR OFF-GRADE PAVEMENT, CONCRETE CURB, GUTTER OR SIDEWALK IMMEDIATELY ADJACENT TO OR WITHIN THE AREA OF THIS IMPROVEMENT SATISFACTORY TO THE CITY ENGINEER.
7. CONFIRM DEMO AND RELOCATION OF IRRIGATION LINES AND OTHER APPURTENANCES WITHIN PARK WITH THE CITY ENGINEER.
8. UNAUTHORIZED CHANGES AND USES: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS AND THE CITY.
9. PLANS ARE NOT TO BE UTILIZED UNLESS STAMPED "APPROVED" BY THE ENGINEER OF RECORD.
10. CONTRACTOR SHALL PROVIDE TIMELY NOTIFICATION TO THE ENGINEER OF RECORD OF ANY POTENTIAL OR ACTUAL DISCREPANCIES BETWEEN CIVIL PLANS AND OTHER PLANS/ACTUAL FIELD CONDITIONS.
11. ELEVATIONS INDICATED MAY HAVE BEEN INTERPOLATED FROM EXISTING TOPOGRAPHIC OR RECORD MAPS, CONTRACTOR SHALL FIELD VERIFY ELEVATIONS AND LOCATIONS WHERE PROPOSED IMPROVEMENTS JOIN EXISTING.
12. NOT ALL UTILITIES MAY BE SHOWN, CONTRACTOR SHALL FIELD VERIFY ELEVATIONS AND LOCATIONS OF ALL AFFECTED UTILITIES. FOR ALL CITY OWNED UTILITIES, PROTECT IN PLACE, RELOCATE, OR REPLACE AS NECESSARY ONCE APPROVED BY THE CITY ENGINEER. PROVIDE TEMPORARY UTILITY SERVICES AS NECESSARY. NOTIFY OWNER OF UTILITIES OWNED BY ENTITIES OTHER THAN THE CITY IF RELOCATION OR REPLACEMENT IS NECESSARY TO PERFORM REQUIRED IMPROVEMENTS.
13. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS, INSTALLATION DRAWINGS, CATALOG CUT-SHEETS, PRODUCT SPECIFICATIONS, AND OTHER APPLICABLE SUBMITTALS, IN A TIMELY MANNER, TO THE ENGINEER FOR APPROVAL.
14. WHERE EXISTING WATER SERVICES OR SEWER LATERALS ARE TO BE UTILIZED, CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND FUNCTIONALITY OF SUCH SERVICES OR LATERALS.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO FACILITIES.
16. THE CONTRACTOR SHALL BE RESPONSIBLE TO SECURE AND PAY FOR ALL NECESSARY CONSTRUCTION LAYDOWN AREAS.
17. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITIES OF RENTING OPERATING EQUIPMENTS.
18. ALL REPAIRS TO CONSTRUCTION LAYDOWN AREAS AND TEMPORARY IMPROVEMENTS SHALL BE INSPECTED AND APPROVED BY THE INSPECTOR.
19. THE CONTRACTOR SHALL REMOVE, REGRADE, AND WHEN NECESSARY, BACKFILL TO RESTORE THE CONSTRUCTION LAYDOWN ACCESS AND TEMPORARY IMPROVEMENTS TO ITS ORIGINAL/FORMER CONDITION AT THE COMPLETION OF THE WORK.
20. THE CONTRACTOR SHALL BACKFILL EXCAVATED AREAS WITH ENGINEERED FILL UP TO THE ORIGINAL GRADE, UNLESS OTHERWISE SPECIFIED OR INDICATED ON THESE PLANS.
21. THE CONTRACTOR SHALL VERIFY ALL DIMENSION AND CONDITIONS IN THE FIELD PRIOR TO STARTING ANY WORK.
22. SURVEY MONUMENT PRESERVATION IS REQUIRED AND SHALL INCLUDE SUBMITTAL OF PRE AND POST CONSTRUCTION SURVEY MONUMENT TIES TO THE ENGINEER.
23. THE CONTRACTOR SHALL MAINTAIN LOCAL AND EMERGENCY ACCESS AT ALL TIMES.
24. NO CONSTRUCTION DEBRIS WILL BE ALLOWED TO FALL IN TO THE CATCH BASIN OR STORM DRAIN, IF ANY MATERIAL IS INADVERTENTLY INTRODUCED, THEN IT SHALL BE REMOVED IMMEDIATELY.
25. THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH ALL UTILITY COMPANIES RESPONSIBLE FOR WORK TO BE PERFORMED NEAR THEIR RESPECTIVE FACILITIES. IN THE EVENT THAT THE CONTRACTOR'S OPERATION REQUIRES UTILITY RELOCATION IN ADDITION TO THAT SPECIFIED ON THE PLAN, SUCH ADDITIONAL WORK SHALL BE AT CONTRACTOR'S EXPENSE.
26. ALL CONCRETE AND SOIL NOT UTILIZED IN CONSTRUCTION SHALL BE DISPOSED OF IN ACCORDANCE WITH THE APPLICABLE JURISDICTION REGULATION.

CONCRETE REMOVAL NOTES:

WHERE REINFORCEMENT IS REQUIRED TO EXTEND THROUGH THE NEW JOINT, CONCRETE SHALL BE REMOVED IN THE FOLLOWING SEQUENCE.

1. A SAWCUT SHALL BE MADE ONE AND ONE-HALF INCHES DEEP AT THE REMOVAL LIMITS. CARE SHALL BE EXERCISED IN SAWING AT THE REMOVAL LIMITS SO AS NOT TO CUT THE REINFORCING STEEL IN THE REMAINING SLAB. THE EXISTING REINFORCING STEEL SHALL BE RETAINED AND EXTENDED INTO THE NEW CONSTRUCTION AS INDICATED ON THE PLANS.
2. USING HANDHELD EQUIPMENT, THE CONCRETE SHALL BE CAREFULLY REMOVED FOR THE FULL DEPTH OF THE WALL OR SLAB AND FOR A MINIMUM DISTANCE FROM THE SAWCUT EQUAL TO THE LONGEST EXTENSION OF THE EXISTING BARS TO BE EXTENDED INTO THE NEW CONSTRUCTION. THIS EXTENSION SHALL BE 30 BAR DIAMETERS, UNLESS OTHERWISE SHOWN.
3. EXISTING REINFORCEMENT SHALL BE CUT TO THE REQUIRED BAR EXTENSION.
4. THE REMAINING CONCRETE SHALL BE REMOVED BY ANY SUITABLE METHOD UPON APPROVAL OF THE ENGINEER, WHO SHALL BE THE SOLE JUDGE OF THE USE OF ANY CONCRETE REMOVAL EQUIPMENT. WRECKING BALLS OR OTHER SIMILAR DEVICES, WHICH ARE LIKELY TO DAMAGE THE CONCRETE TO BE LEFT IN PLACE, SHALL NOT BE USED.

POLLUTION PREVENTION NOTES

IN ORDER TO MEET THE REQUIREMENTS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PROGRAM FOR CONSTRUCTION, CONSTRUCTION CONTRACTORS SHALL INSTALL AND MAINTAIN APPROPRIATE BEST MANAGEMENT PRACTICES (BMPS), AS SHOWN IN THE EROSION AND SEDIMENT CONTROL PLAN. ON ALL CONSTRUCTION PROJECTS, BMPS SHALL BE INSTALLED IN ACCORDANCE WITH INDUSTRY RECOMMENDED STANDARDS, AND/OR IN ACCORDANCE WITH ANY GENERAL CONSTRUCTION PERMIT ISSUED BY THE STATE FOR THE PROJECT TO PREVENT ANY DISCHARGES FROM THE PROJECT SITE OR INTO ANY STORM DRAIN FACILITIES. ALL SEDIMENTS, CONSTRUCTION MATERIALS, DEBRIS AND WASTES, AND OTHER POLLUTANTS MUST BE RETAINED ON SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES, WIND, OR VEHICLE TRACKING. UNDER DIRECTION OF THE ENGINEER OF RECORD, EROSION AND/OR SEDIMENT CONTROL DEVICES SHALL BE MODIFIED AS NEEDED AS THE PROJECT PROGRESSES TO ENSURE EFFECTIVENESS.

SEDIMENTS AND OTHER MATERIALS SHALL NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC, THE CONSTRUCTION ENTRANCE ROADWAYS SHALL BE STABILIZED SO AS TO PREVENT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC ROADS. DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS INTO THE STORM DRAIN SYSTEM.

1. STABILIZED CONSTRUCTION ENTRANCE SHALL BE:
   A. LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING CONSTRUCTION SITE OR FROM A PUBLIC RIGHT OF WAY, STREET, ALLEY, AND SIDEWALK OR PARKING AREA.
   B. SERIES OF STEEL PLATES WITH "RUMBLE STRIPS", AND/OR MIN 4" COARSE AGGREGATE WITH LENGTH, WIDTH, & THICKNESS AS NEEDED TO ADEQUATELY PREVENT ANY TRACKING ONTO PAVED SURFACES.
2. ADDING A WASH RACK WITH A SEDIMENT TRAP LARGE ENOUGH TO COLLECT ALL WASH WATER CAN GREATLY IMPROVE EFFICIENCY.
3. ALL VEHICLES ACCESSING THE CONSTRUCTION SITE SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE SITES.

STREET MAINTENANCE NOTES

4. REMOVE ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS IMMEDIATELY.
5. SWEEP PAVED AREAS THAT RECEIVE CONSTRUCTION TRAFFIC WHENEVER SEDIMENT BECOMES VISIBLE.
6. PAVEMENT WASHING WITH WATER IS PROHIBITED IF IT RESULTS IN A DISCHARGE TO THE STORM DRAIN SYSTEM.

NPDES NOTES

7. CONSTRUCTION SITE BMPS FOR THE MANAGEMENT OF STORMWATER AND NON-STORMWATER DISCHARGES SHALL BE DOCUMENTED ON THE EROSION CONTROL PLAN. THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) MUST BE RETAINED ON THE JOBSITE THROUGHOUT THE HOURS OF CONSTRUCTION. THE IMPLEMENTATION AND MAINTENANCE OF THE SITE BMPS IS REQUIRED TO MINIMIZE JOBSITE EROSION AND SEDIMENTATION. ARRANGEMENTS SHALL BE MADE BY THE CONTRACTOR TO MAINTAIN THOSE BMPS THROUGHOUT THE TIME OF CONSTRUCTION.
8. EROSION CONTROL BMPS SHALL BE IMPLEMENTED AND MAINTAINED TO PREVENT AND/OR MINIMIZE THE ENTRAINMENT OF SOIL IN RUNOFF FROM DISTURBED SOIL AREAS ON CONSTRUCTION SITES.
9. SEDIMENT CONTROL BMPS SHALL BE IMPLEMENTED AND MAINTAINED TO PREVENT AND/OR MINIMIZE THE TRANSPORT OF SOIL FROM THE CONSTRUCTION SITE.
10. AREAS THAT ARE CLEARED AND GRADED SHALL BE LIMITED TO ONLY THE PORTION OF THE SITE THAT IS NECESSARY FOR CONSTRUCTION. THE CONSTRUCTION SITE SHALL BE MANAGED TO MINIMIZE THE EXPOSURE TIME OF DISTURBED SOIL AREAS THROUGH PHASING AND SCHEDULING OF GRADING AND THE USE OF TEMPORARY AND PERMANENT SOIL STABILIZATION.
11. STOCKPILES OF SOIL AND SEDIMENTS FROM AREAS DISTURBED BY CONSTRUCTION SHALL BE PROPERLY CONTAINED TO ELIMINATE OR REDUCE SEDIMENT TRANSPORT FROM THE SITE OR STREETS, DRAINAGE FACILITIES OR ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TRACKING, OR WIND.
12. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT AFFECTED CATCH BASINS WITH APPROPRIATE INLET PROTECTION (INCLUDING FILTER FABRIC AND GRAVEL BAGS) AND ENSURE THAT ALL SEDIMENT, DIRT, AND MATERIALS FROM THE CONSTRUCTION SITE DO NOT ENTER THE CATCH BASINS.
13. ALL STORM INLETS PROTECTED BY INLET PROTECTION SHALL BE MAINTAINED AND MODIFIED AS REQUIRED DURING CONSTRUCTION.
14. ANY SEDIMENT FROM CONSTRUCTION THAT IS BLOCKING DRAINAGE INLETS AND CREATES STANDING WATER ON ROADWAYS AND/OR DRIVEWAYS SHALL BE REMOVED IMMEDIATELY.

EROSION CONTROL NOTES

15. APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO SOIL DISTURBANCE. MEASURES SHALL BE TAKEN TO CONTROL EROSION WITHIN THE PROJECT AREA. SEDIMENT IN RUNOFF WATER SHALL BE TRAPPED AND RETAINED WITHIN THE PROJECT AREA.
16. MINIMIZE SOIL EROSION AND CONTROL SEDIMENTATION DURING CONSTRUCTION.
17. PROTECT AND MANAGE ON AND OFF-SITE MATERIAL STORAGE AREAS (OVERBURDEN AND STOCKPILES OF DIRT, BORROW AREAS, OR OTHER AREAS USED SOLELY BY THE PERMITTED PROJECT ARE CONSIDERED A PART OF THE PROJECT).
18. SOIL STOCKPILES MUST BE STABILIZED OR COVERED AT THE END OF EACH WORKDAY. ALL STOCKPILES SHALL BE SURROUNDED BY SEDIMENT CONTROLS.
19. DIVERT UNCONTAMINATED WATER AROUND DISTURBED AREAS.
20. AFTER A RAINSTORM, ALL SILT AND DEBRIS SHALL BE REMOVED FROM STREETS, CHECK BERMS, AND CATCH BASINS.
21. PROPERLY MANAGE ON-SITE CONSTRUCTION AND WASTE MATERIALS.

STANDARD PLANS

STANDARD PLANS FOR PUBLIC CONSTRUCTION (SPPWC)
(2012 EDITION & REVISIONS)

111-5	CURB RAMP
120-2	CURB AND GUTTER
171-0	PAVEMENT MARKINGS – ARROWS AND SYMBOLS
172-0	STOP AND STOP BAR
320-2	MANHOLE PIPE TO PIPE
321-2	MANHOLE PIPE TO PIPE
324-2	MANHOLE SHAFT – WITH ECCENTRIC REDUCER
326-2	MANHOLE SHAFT – 36" (900mm) WITHOUT REDUCER
331-3	JUNCTION STRUCTURE – PIPE TO PIPE
630-4	24" MANHOLE FRAME AND COVER
636-2	POLYPROPYLENE – PLASTIC STEP MISCELLANEOUS STRUCTURES

COORDINATE DATUM

COORDINATES SHOWN ARE BASED ON THE CALIFORNIA STATE PLANE COORDINATE SYSTEM, ZONE V, 1983 NAD.

BENCHMARK

LOS ANGELES COUNTY BENCHMARK 03-02219
ELEV.1058.613 FEET NAVD88
P.K. FOUND NAIL IN LEAD N.W. CURB WOLFSKILL ST: 30.4FT NE/O BCR NE/O SAN FERNANDO RD.

NOTICE TO CONTRACTOR:

IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CALL THE USA UNDERGROUND ALERT FOR LOCATION OF EXISTING UNDERGROUND UTILITIES NO LESS THAN TWO DAYS NOR MORE THAN SEVEN DAYS PRIOR TO CONSTRUCTION.

811

THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR ANY DAMAGE DONE TO EXISTING UTILITIES OR STREET IMPROVEMENTS INCLUDING CONCRETE/LANDSCAPING DURING CONSTRUCTION.

UNDERGROUND SERVICE ALERT
CALL BEFORE YOU DIG
CALL: TOLL FREE
811
TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'V'D

PREPARED BY:

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

REGISTERED PROFESSIONAL ENGINEER
KATHRYN L. HARREL
No.85752
Exp. 9/30/2022
CIVIL
STATE OF CALIFORNIA

DRAWN BY:	TT	APR 2021
DESIGNED BY:	KH	APR 2021
CHECKED BY:	VB	APR 2021

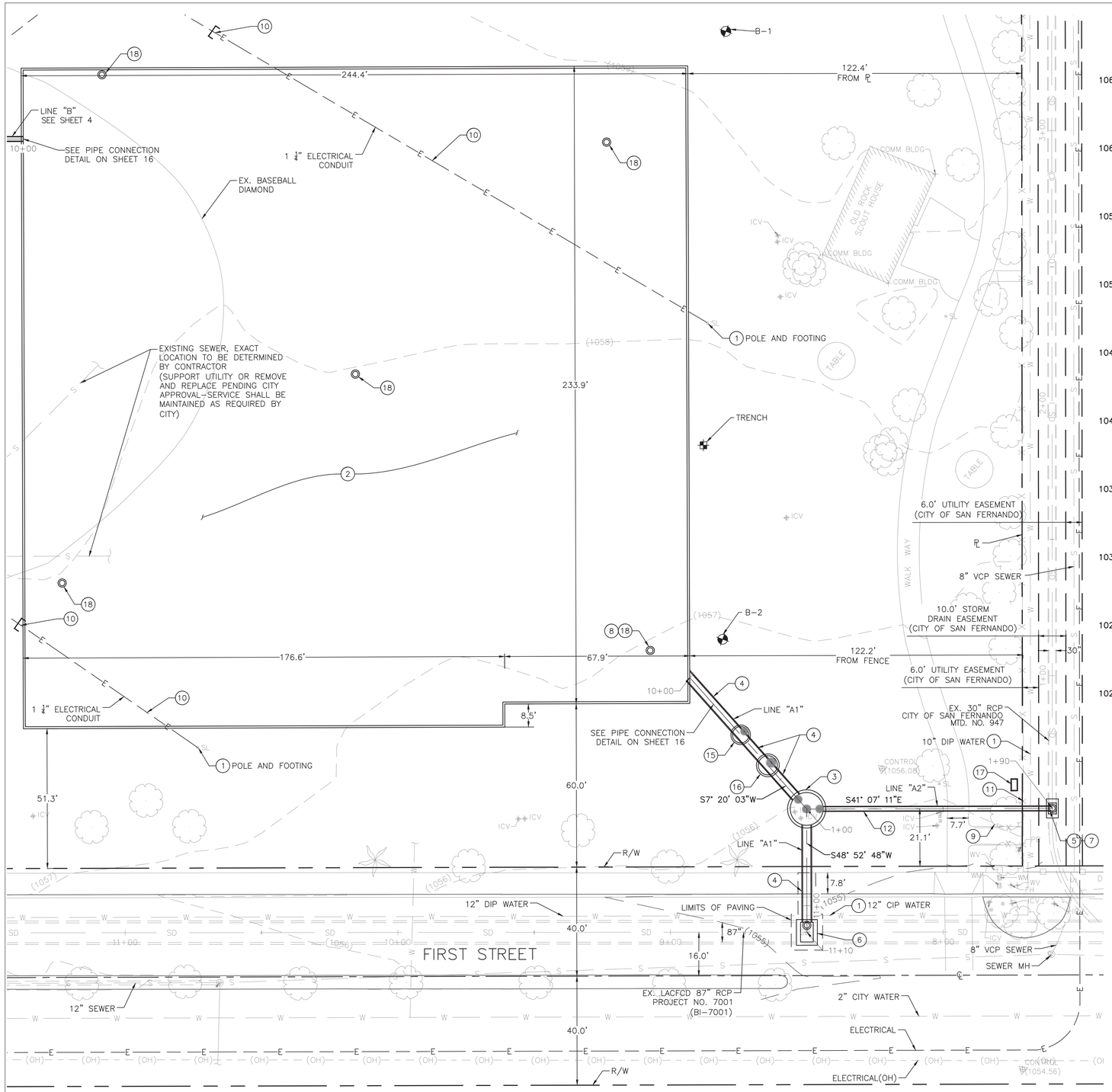
Matthew Baumgardner, Director of Public Works — DATE
R.C.E. NO.: 71932 EXP. DATE: 12/31/2021
Manuel Fabian, Civil Engineer Assistant II — DATE

CITY OF SAN FERNANDO
HISTORIC & VISIONARY
CITY OF SAN FERNANDO
DEPARTMENT OF PUBLIC WORKS

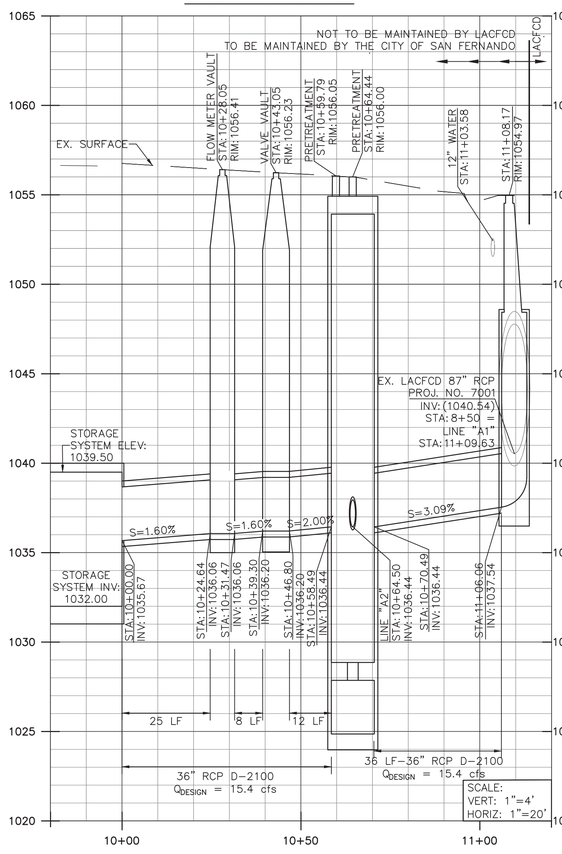
San Fernando Regional Park Infiltration Project
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

GENERAL NOTES

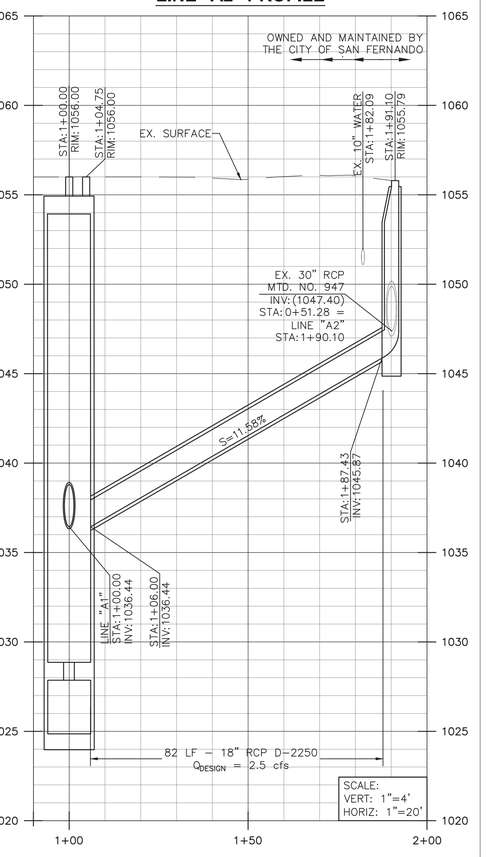
DWG No. C-01
SHEET No. 2 OF 46



LINE "A1" PROFILE



LINE "A2" PROFILE



CONSTRUCTION NOTES:

1. PROTECT IN PLACE
2. SUBSURFACE STORAGE SYSTEM PER DETAIL ON SHEETS 14–16
3. PRETREATMENT UNIT PER DETAIL ON SHEET 13
4. 36" RCP AND BEDDING PER DETAIL 1 ON SHEET 18
5. DROP MANHOLE AND DIVERSION STRUCTURE PER MODIFIED SPPWC STD. PLAN NO. 321–2 PER DETAIL 1 ON SHEET 17
6. DROP MANHOLE AND DIVERSION STRUCTURE PER MODIFIED SPPWC STD. PLAN NO. 320–2 PER DETAIL 2 ON SHEET 17
7. REMOVE EXISTING MANHOLE STRUCTURE
8. FLOAT SWITCH AND ELECTRICAL APPURTENANCES
9. REMOVE 24"ø TREE
10. REMOVE AND RESTORE INTERFERING PORTIONS OF ELECTRICAL LINES
11. REMOVE AND REINSTALL INTERFERING PORTIONS OF 6' HIGH CHAIN LINK FENCE
12. 18" RCP AND BEDDING PER DETAIL 1 ON SHEET 18
15. FLOW METER AND VAULT PER DETAIL 2 ON SHEET 18
16. GATE VALVE, ACTUATOR, AND VAULT PER DETAIL 3 ON SHEET 18
17. ELECTRICAL PANEL AND BOX WITH CONCRETE BASE PER ELECTRICAL PLANS
18. 36"ø MH ACCESS SHAFT PER RISER DETAIL ON SHEET 16 AND PER SPPWC STD. PLAN NO. 326–2, BURIED 4" BELOW GROUND SURFACE

NOTES TO CONTRACTOR:

1. CONTRACTOR TO REMOVE AND REPLACE IRRIGATION LINES AND APPURTENANCES WITHIN THE PARK AS SHOWN ON IRRIGATION PLANS
2. CONTRACTOR TO REMOVE AND REPLACE ELECTRICAL LINES AND APPURTENANCES WITHIN THE PARK IN ASSOCIATION WITH THE IRRIGATION SYSTEM INDICATED ABOVE
3. RESTORE SITE TO ORIGINAL LINE AND GRADE
4. SUPPORT UTILITIES ACROSS TRENCHES AS NECESSARY

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

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Manuel Fabian, Civil Engineer Assistant II — DATE

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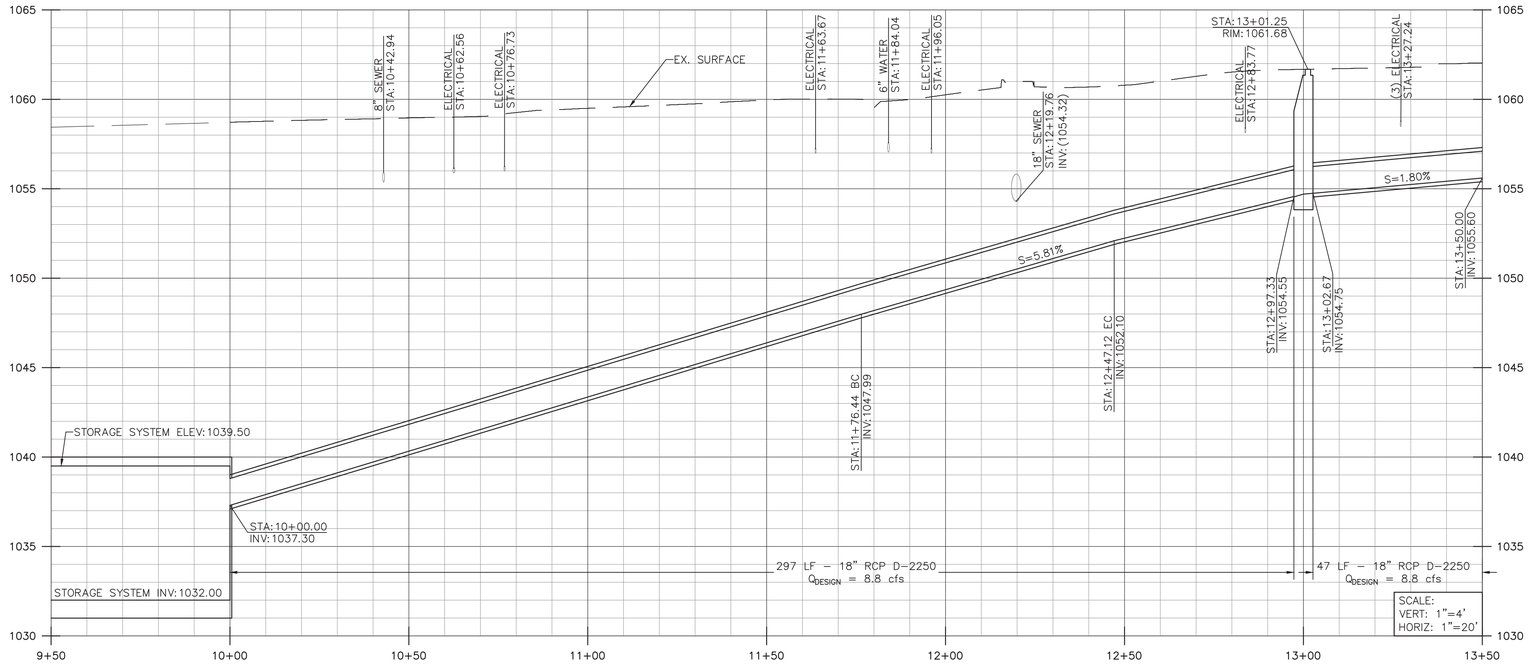
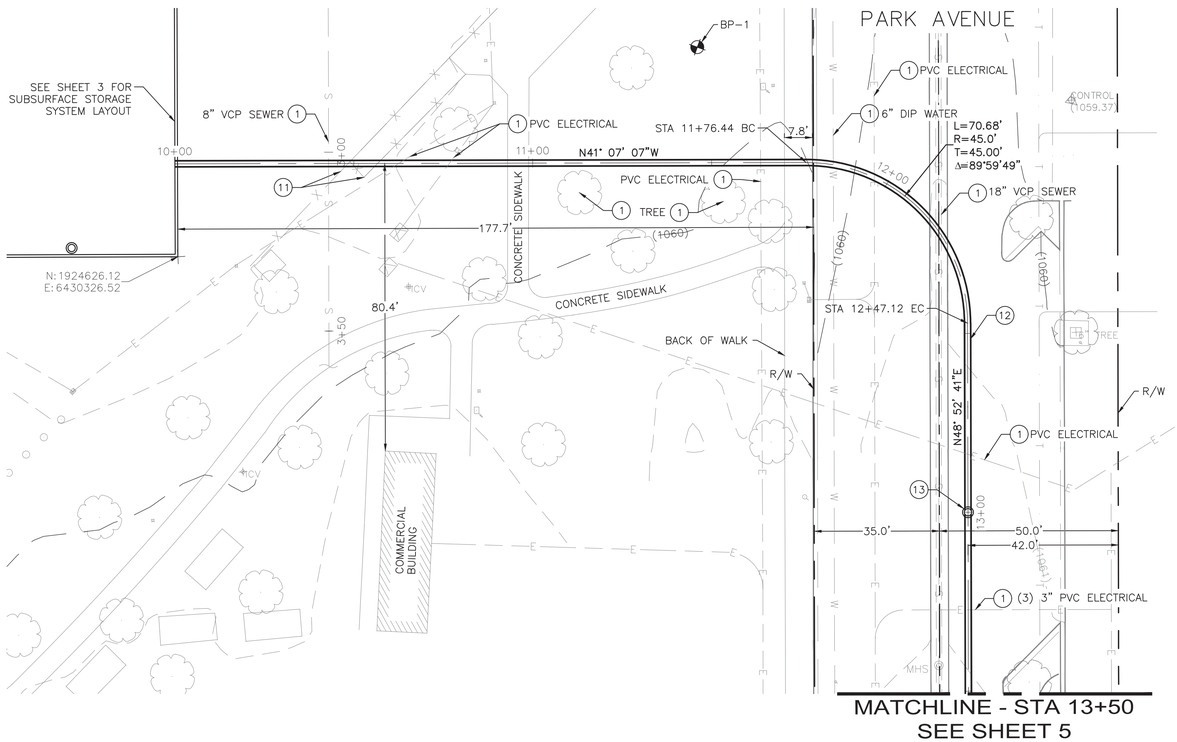
San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

LINE "A1" AND "A2" PLAN AND PROFILE AND SUBSURFACE INFILTRATION SYSTEM PLAN

DWG No. C-02
SHEET No. 3 OF 46





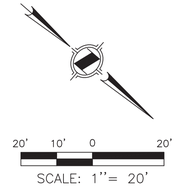
MATCHLINE - STA 13+50
SEE SHEET 5

CONSTRUCTION NOTES:

(1) PROTECT IN PLACE
(11) REMOVE AND REINSTALL INTERFERING PORTIONS OF 6' HIGH CHAIN LINK FENCE
(12) 18" RCP AND BEDDING PER DETAIL 1 ON SHEET 18
(13) STORM DRAIN MANHOLE PER SPPWC STD. PLAN NO. 321-2

NOTES TO CONTRACTOR:

1. CONTRACTOR TO REMOVE AND REPLACE IRRIGATION LINES AND APPURTENANCES WITHIN THE PARK AS SHOWN ON IRRIGATION PLANS
2. CONTRACTOR TO REMOVE AND REPLACE ELECTRICAL LINES AND APPURTENANCES WITHIN THE PARK IN ASSOCIATION WITH THE IRRIGATION SYSTEM INDICATED ABOVE
3. RESTORE SITE TO ORIGINAL LINE AND GRADE
4. SUPPORT UTILITIES ACROSS TRENCHES AS NECESSARY
5. ENCASE EXISTING PIPE IN CONCRETE IF THE PIPE IS LESS THAN 3 FEET FROM PROPOSED IMPROVEMENTS



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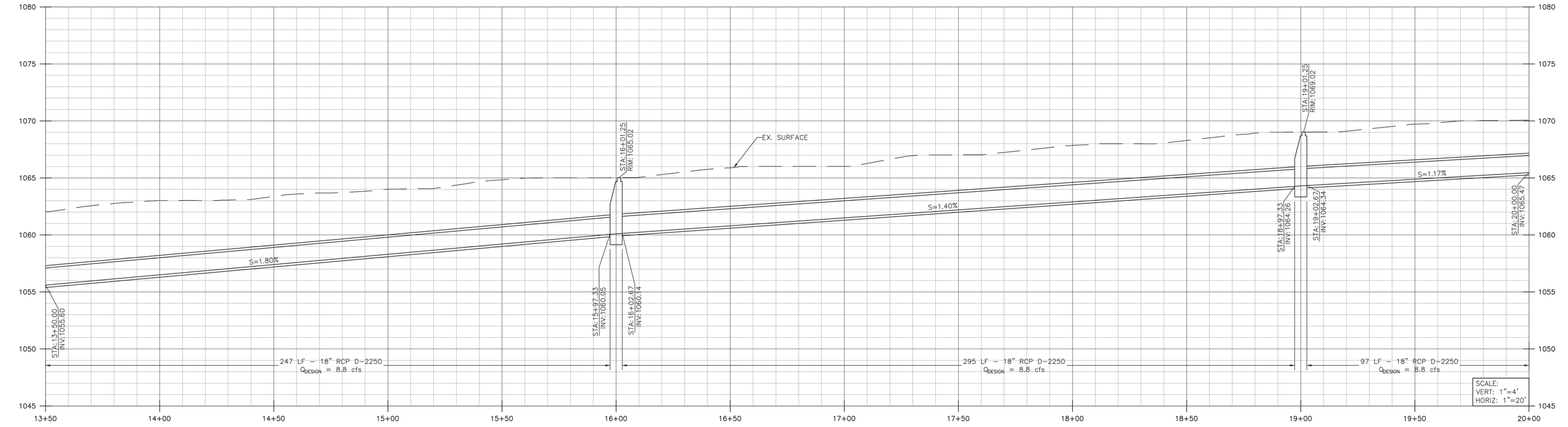
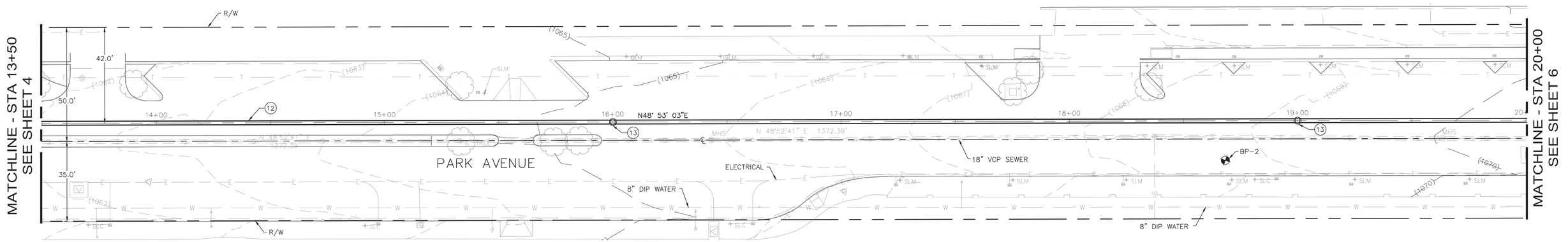
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

LINE "B" STA 10+00 TO 13+50
PLAN AND PROFILE

DWG No. C-03
SHEET No. 4 OF 46



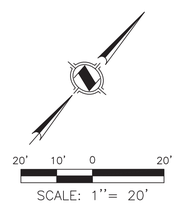


CONSTRUCTION NOTES:

(12) 18" RCP AND BEDDING PER DETAIL 1 ON SHEET 18
(13) STORM DRAIN MANHOLE PER SPPWC STD. PLAN NO. 321-2

NOTES TO CONTRACTOR:

1. SUPPORT UTILITIES ACROSS TRENCHES AS NECESSARY
2. ENCASE EXISTING PIPE IN CONCRETE IF THE PIPE IS LESS THAN 3 FEET FROM PROPOSED IMPROVEMENTS



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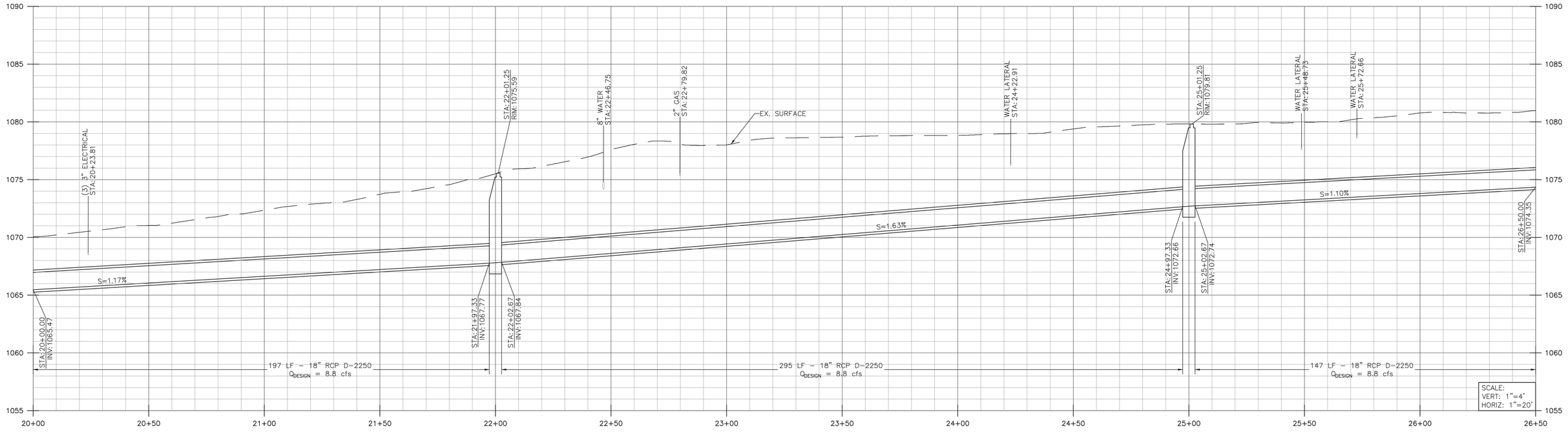
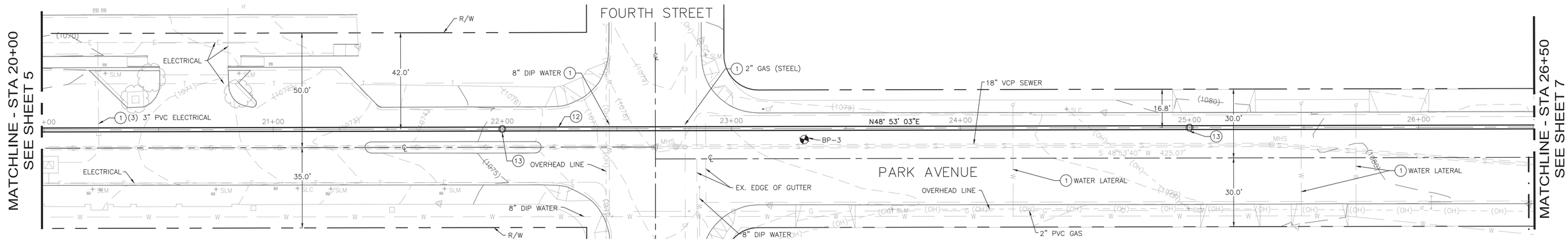
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

LINE "B" STA 13+50 TO 20+00 PLAN AND PROFILE

DWG No. C-04
SHEET No. 5 OF 46



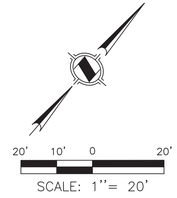


CONSTRUCTION NOTES:

(1) —— PROTECT IN PLACE
(12) —— 18" RCP AND BEDDING PER DETAIL 1 ON SHEET 18
(13) —— STORM DRAIN MANHOLE PER SPPWC STD. PLAN NO. 321–2

NOTES TO CONTRACTOR:

1. SUPPORT UTILITIES ACROSS TRENCHES AS NECESSARY
2. ENCASE EXISTING PIPE IN CONCRETE IF THE PIPE IS LESS THAN 3 FEET FROM PROPOSED IMPROVEMENTS



SCALE: 1"= 20'

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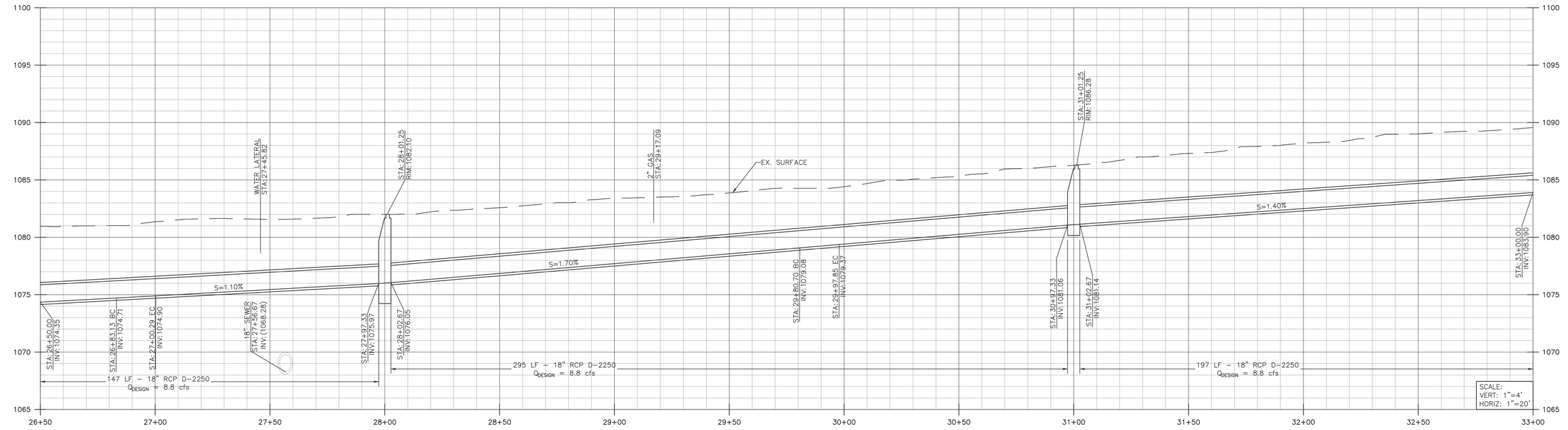
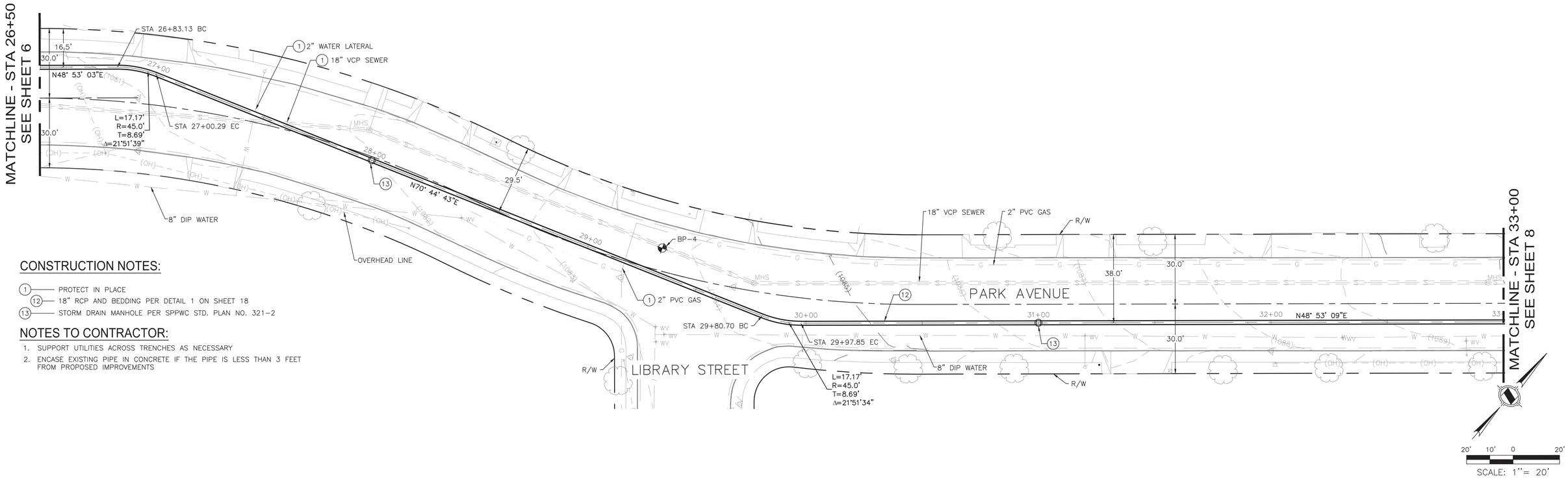
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

LINE "B" STA 20+00 TO 26+50 PLAN AND PROFILE

DWG No. C-05
SHEET No. 6 OF 46





CONSTRUCTION NOTES:

(1) —— PROTECT IN PLACE
(12) —— 18" RCP AND BEDDING PER DETAIL 1 ON SHEET 18
(13) —— STORM DRAIN MANHOLE PER SPPWC STD. PLAN NO. 321-2

NOTES TO CONTRACTOR:

1. SUPPORT UTILITIES ACROSS TRENCHES AS NECESSARY
2. ENCASE EXISTING PIPE IN CONCRETE IF THE PIPE IS LESS THAN 3 FEET FROM PROPOSED IMPROVEMENTS

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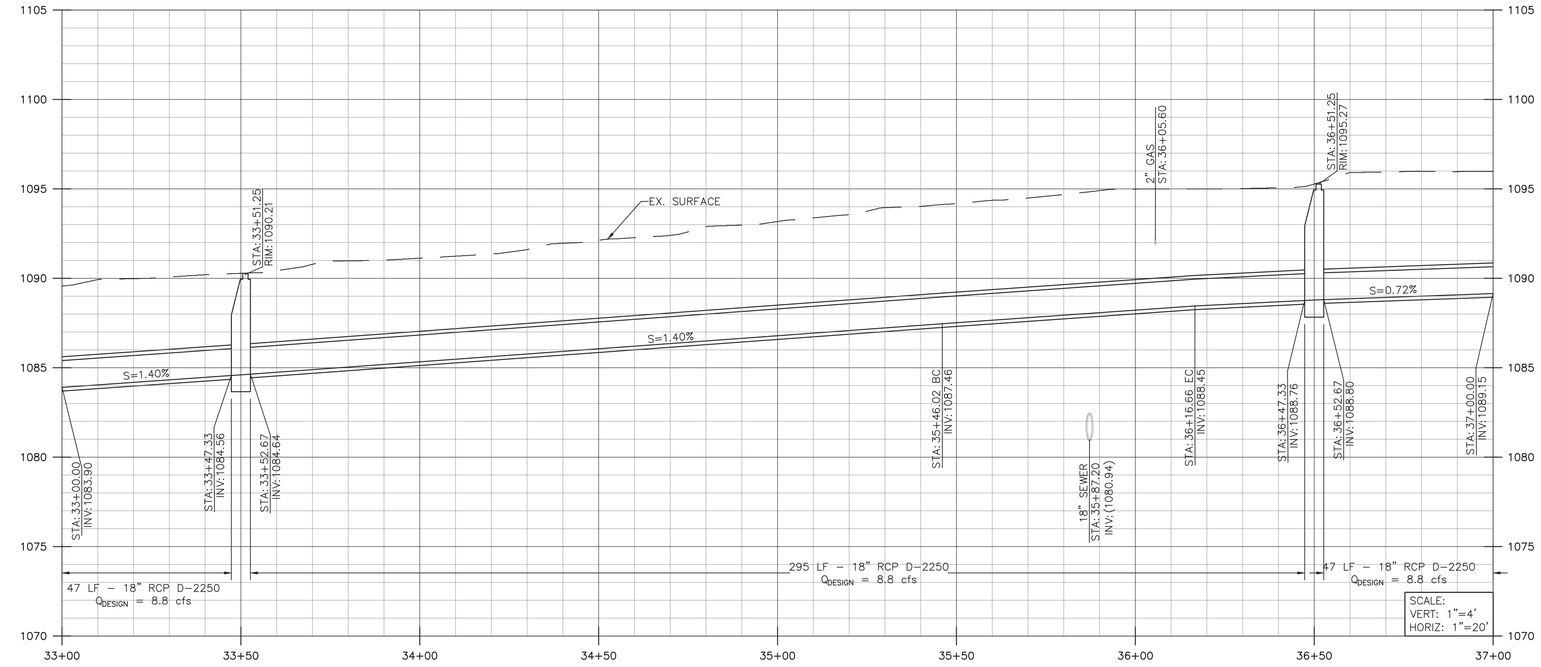
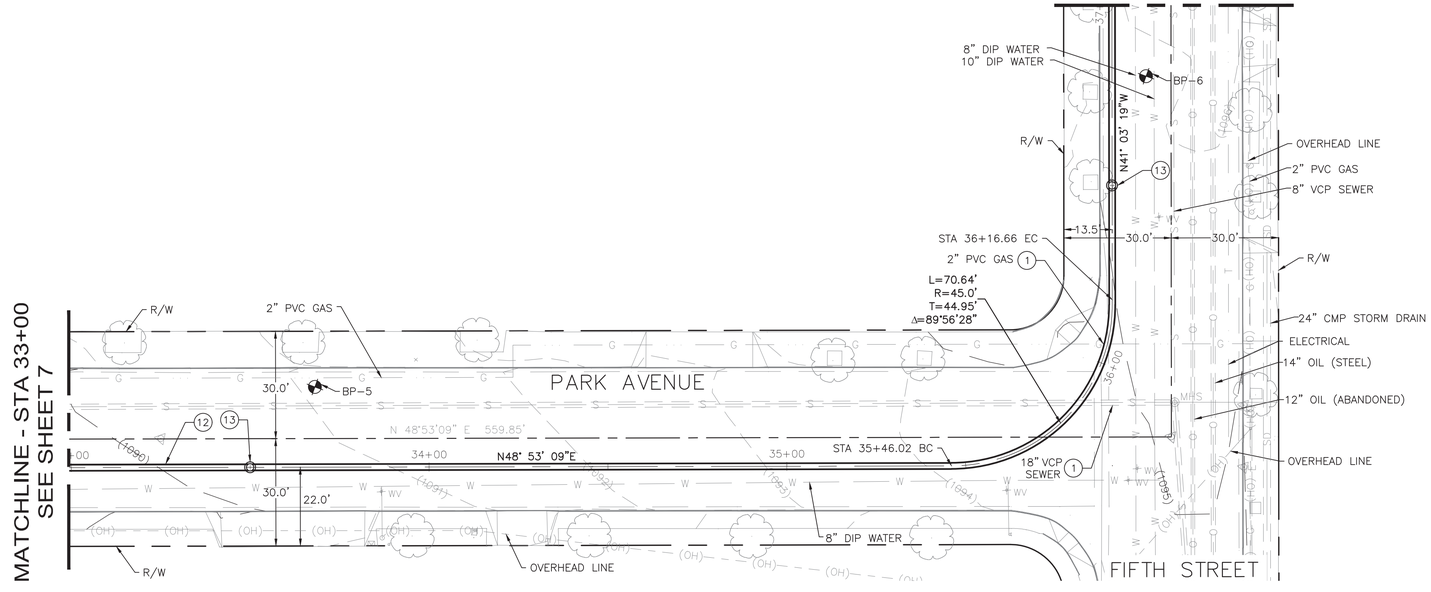
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

LINE "B" STA 26+50 TO 33+00 PLAN AND PROFILE

DWG No. C-06
SHEET No. 7 OF 46



MATCHLINE - STA 37+00
SEE SHEET 9



CONSTRUCTION NOTES:

(1) PROTECT IN PLACE
(12) 18" RCP AND BEDDING PER DETAIL 1 ON SHEET 18
(13) STORM DRAIN MANHOLE PER SPPWC STD. PLAN NO. 321-2

NOTES TO CONTRACTOR:

1. SUPPORT UTILITIES ACROSS TRENCHES AS NECESSARY
2. ENCASE EXISTING PIPE IN CONCRETE IF THE PIPE IS LESS THAN 3 FEET FROM PROPOSED IMPROVEMENTS

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

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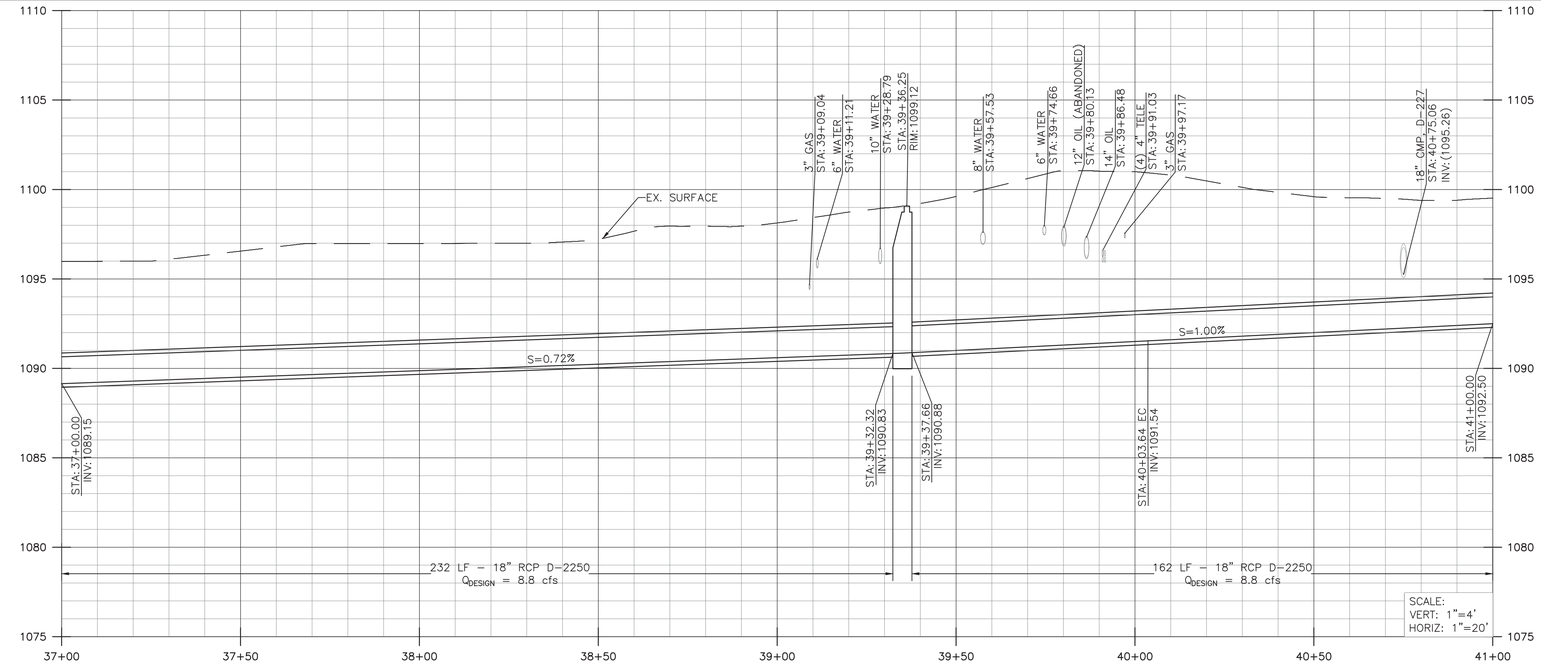
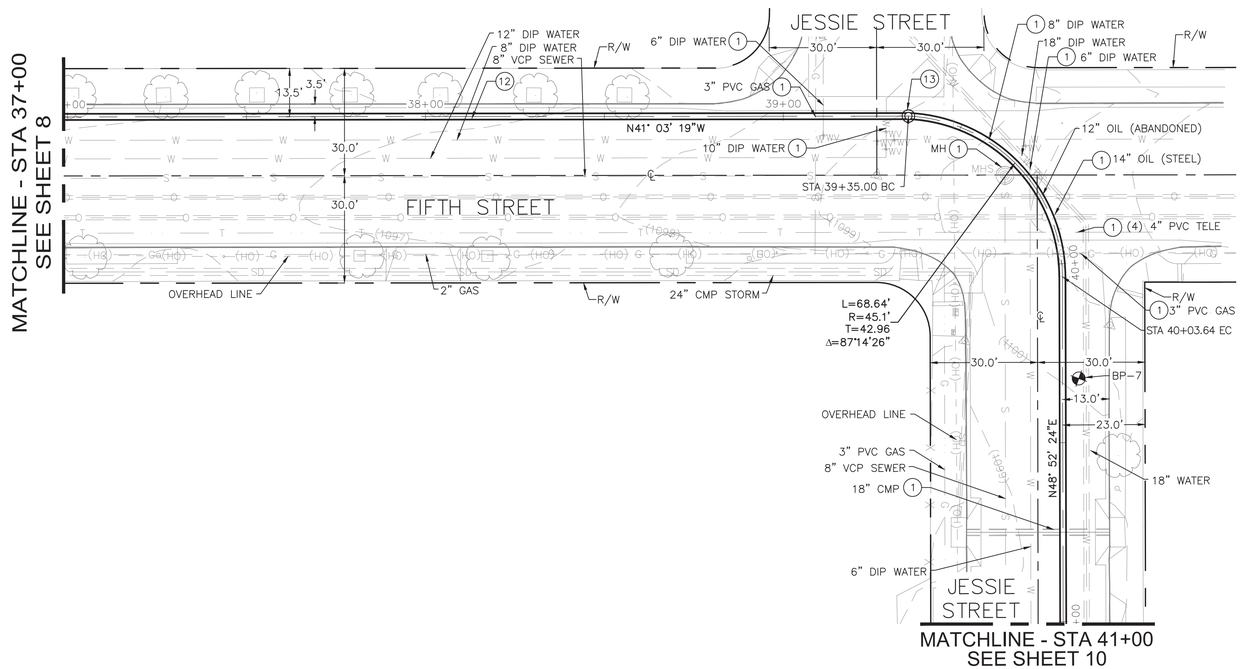
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

LINE "B" STA 33+00 TO 37+00 PLAN AND PROFILE

DWG No. C-07
SHEET No. 8 OF 46



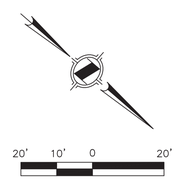


CONSTRUCTION NOTES:

(1) —— PROTECT IN PLACE
(12) —— 18" RCP AND BEDDING PER DETAIL 1 ON SHEET 18
(13) —— STORM DRAIN MANHOLE PER SPPWC STD. PLAN NO. 321-2

NOTES TO CONTRACTOR:

1. SUPPORT UTILITIES ACROSS TRENCHES AS NECESSARY
2. ENCASE EXISTING PIPE IN CONCRETE IF THE PIPE IS LESS THAN 3 FEET FROM PROPOSED IMPROVEMENTS



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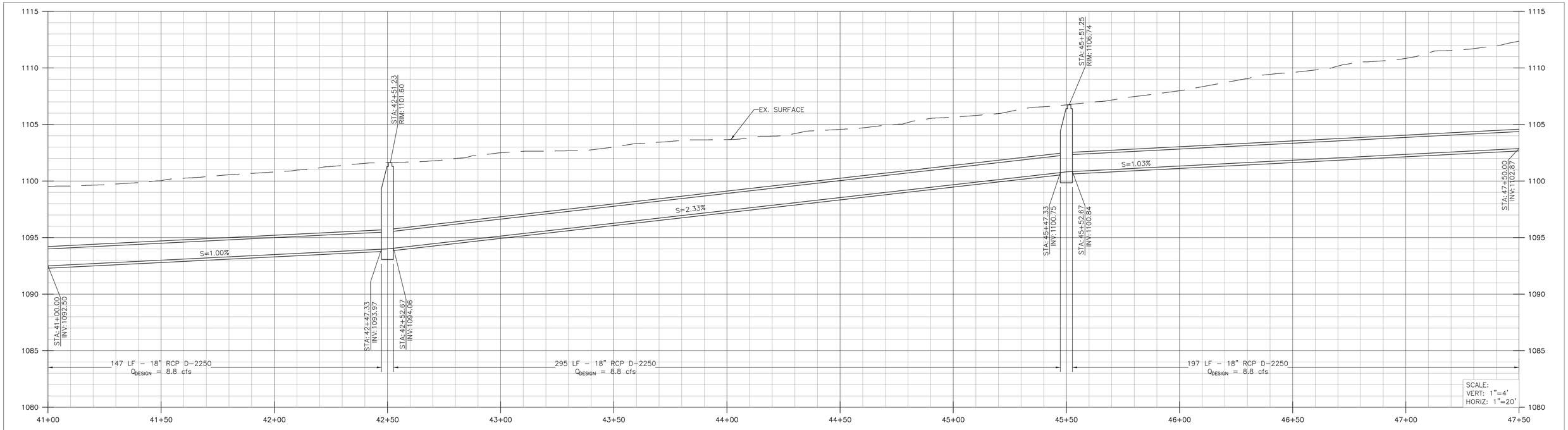
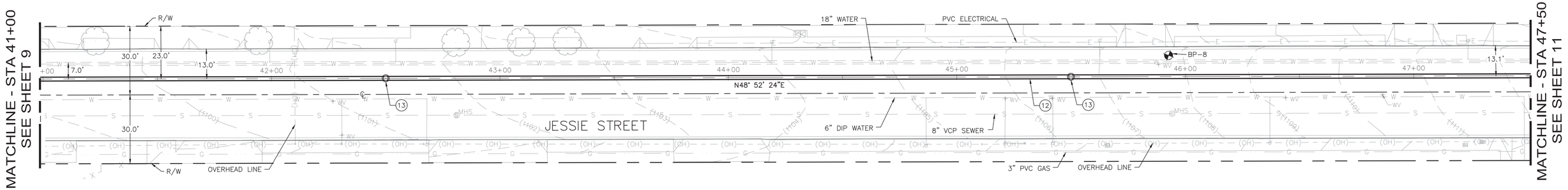
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

LINE "B" STA 37+00 TO 41+00 PLAN AND PROFILE

DWG No. C-08
SHEET No. 9 OF 46





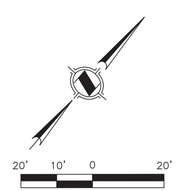
CONSTRUCTION NOTES:

(12) 18" RCP AND BEDDING PER DETAIL 1 ON SHEET 18

(13) STORM DRAIN MANHOLE PER SPPWC STD. PLAN NO. 321–2

NOTES TO CONTRACTOR:

1. SUPPORT UTILITIES ACROSS TRENCHES AS NECESSARY
2. ENCASE EXISTING PIPE IN CONCRETE IF THE PIPE IS LESS THAN 3 FEET FROM PROPOSED IMPROVEMENTS



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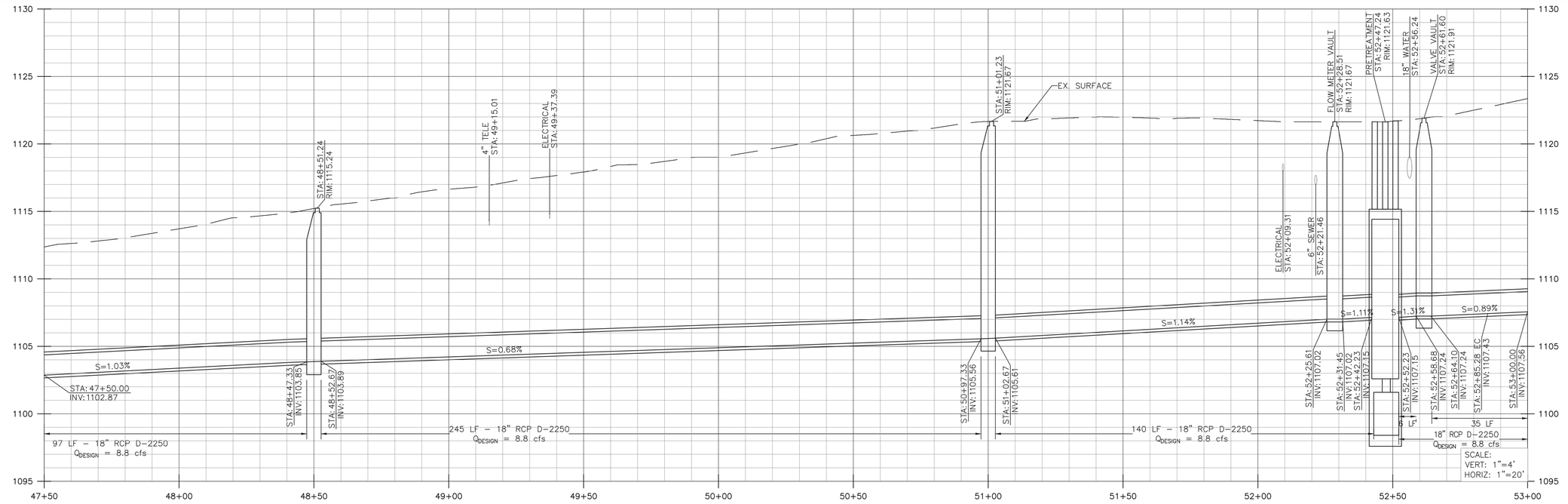
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

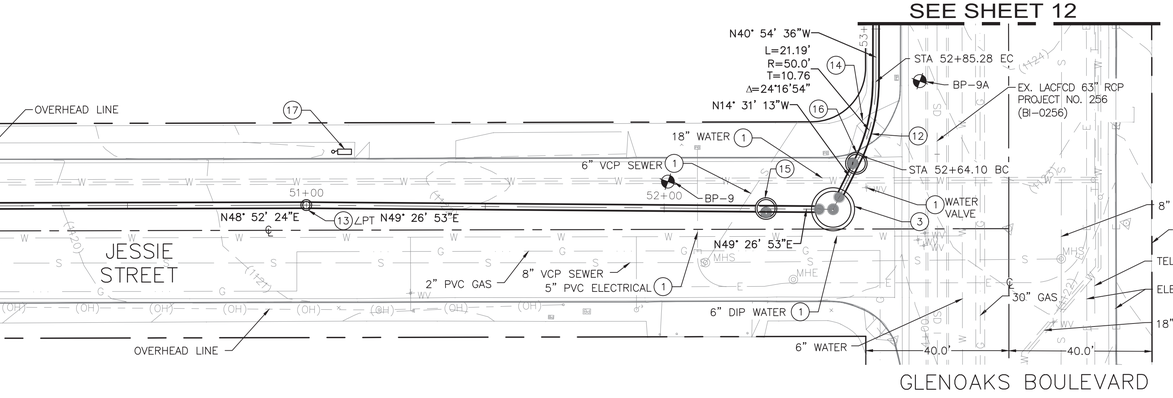
LINE "B" STA 41+00 TO 47+50 PLAN AND PROFILE

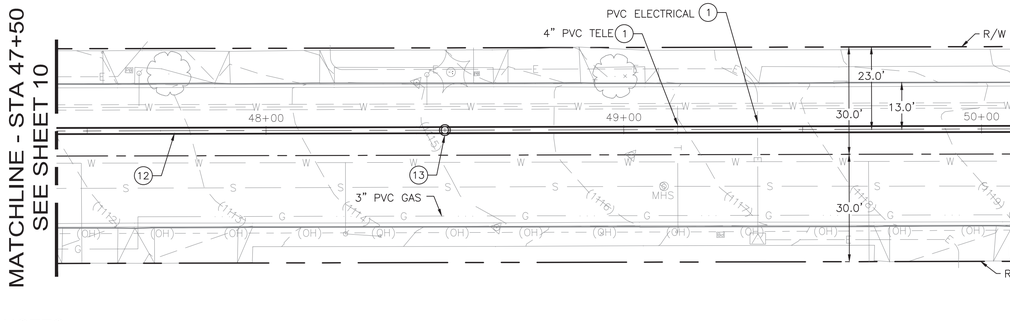
DWG No. C-09

SHEET No. 10 OF 46



MATCHLINE - STA 53+00
SEE SHEET 12



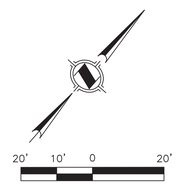


CONSTRUCTION NOTES:

(1) PROTECT IN PLACE
(3) PRETREATMENT UNIT PER DETAIL ON SHEET 13
(12) 18" RCP AND BEDDING PER DETAIL 1 ON SHEET 18
(13) STORM DRAIN MANHOLE PER SPPWC STD. PLAN NO. 321-2
(14) CURB RAMP PER STREET IMPROVEMENT PLAN SHEET 21
(15) FLOW METER AND VAULT PER DETAIL 2 ON SHEET 18
(16) GATE VALVE, ACTUATOR, AND VAULT PER DETAIL 3 ON SHEET 18
(17) ELECTRICAL PANEL AND BOX WITH CONCRETE BASE PER ELECTRICAL PLANS

NOTES TO CONTRACTOR:

1. SUPPORT UTILITIES ACROSS TRENCHES AS NECESSARY
2. ENCASE EXISTING PIPE IN CONCRETE IF THE PIPE IS LESS THAN 3 FEET FROM PROPOSED IMPROVEMENTS



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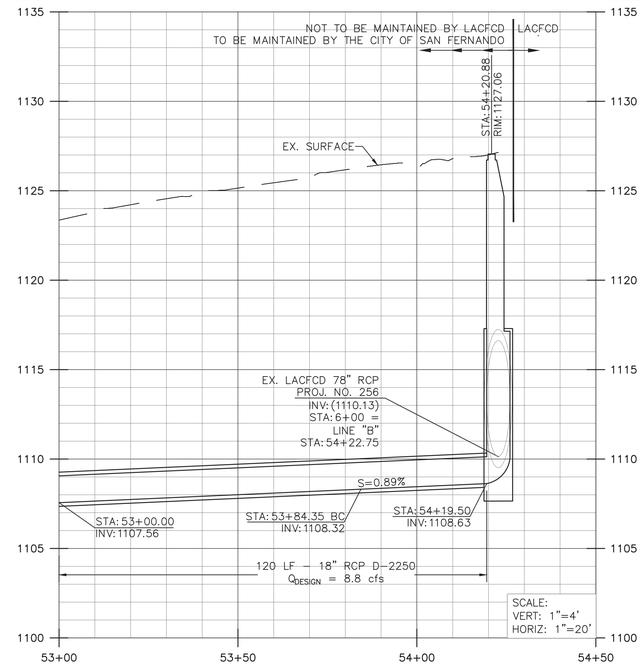
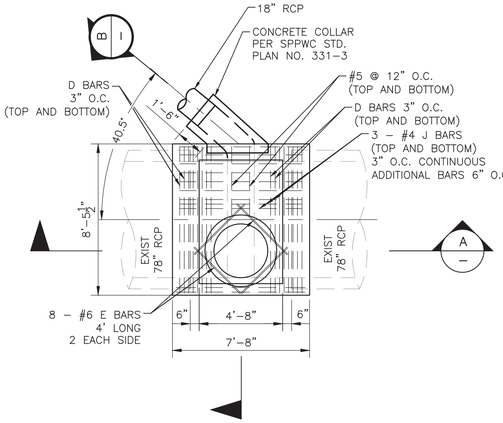
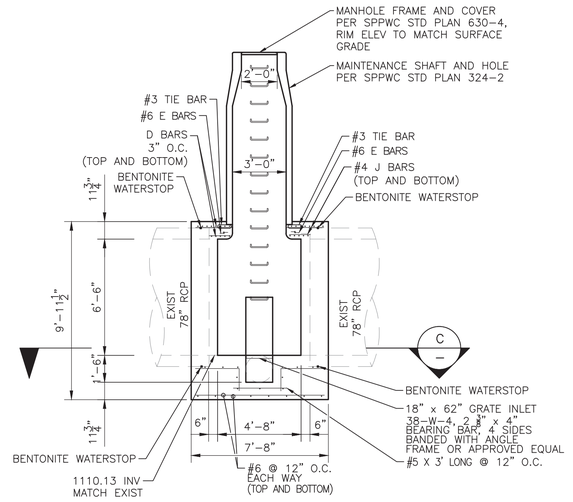
LINE "B" STA 47+50 TO 53+00 PLAN AND PROFILE

DWG No. C-10
SHEET No. 11 OF 46

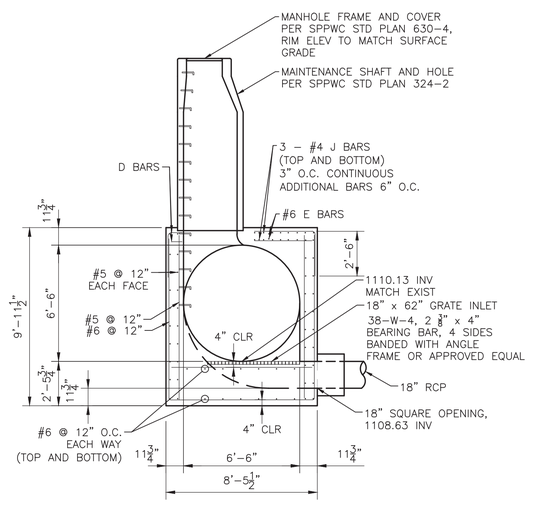




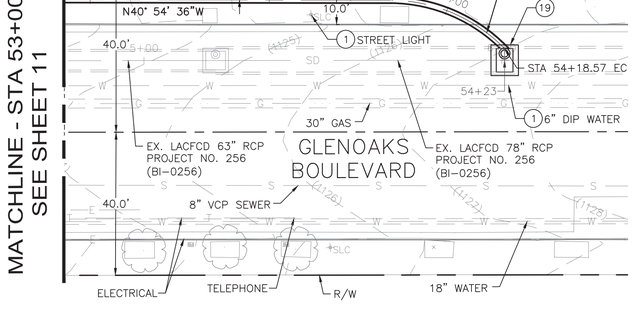
PLAN

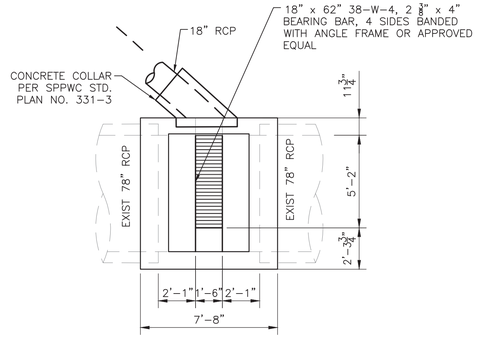


SECTION A



SECTION B





SECTION C

CONSTRUCTION NOTES:

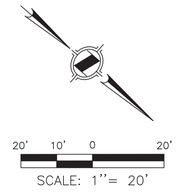
(1) PROTECT IN PLACE
(12) 18" RCP AND BEDDING PER DETAIL 1 ON SHEET 18
(19) DROP MANHOLE AND DIVERSION STRUCTURE PER MODIFIED SPPWC STD. PLAN NO. 320-2 AS SHOWN HEREON

NOTES TO CONTRACTOR:

1. SUPPORT UTILITIES ACROSS TRENCHES AS NECESSARY
2. ENCASE EXISTING PIPE IN CONCRETE IF THE PIPE IS LESS THAN 3 FEET FROM PROPOSED IMPROVEMENTS

DIVERSION STRUCTURE
MODIFIED MANHOLE PER SPPWC 320-2 DETAIL

SCALE: 1"=4'
NOTE: ALL STEEL SHALL BE 2" CLEAR UNLESS OTHERWISE NOTED



SCALE: 1"= 20'

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REGISTERED PROFESSIONAL ENGINEER
KATHRYN L. HARRELL
No. 85752
Exp. 9/30/2022
CIVIL
STATE OF CALIFORNIA

DRAWN BY:	TT	APR 2021
DESIGNED BY:	KH	APR 2021
CHECKED BY:	VB	APR 2021

Matthew Baumgardner, Director of Public Works — DATE
R.C.E. NO.: 71932 EXP. DATE: 12/31/2021
Manuel Fabian, Civil Engineer Assistant II — DATE

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DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project

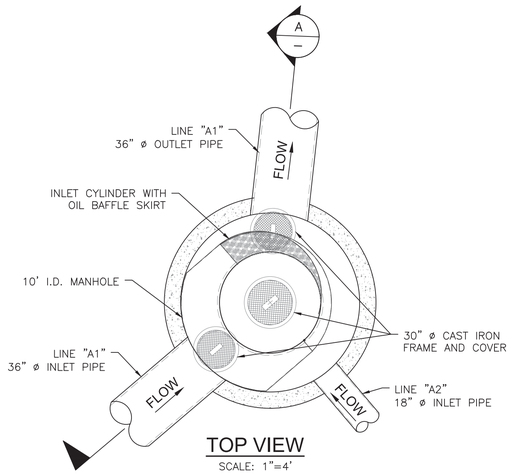
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

LINE "B" STA 53+00 TO 54+23
PLAN AND PROFILE

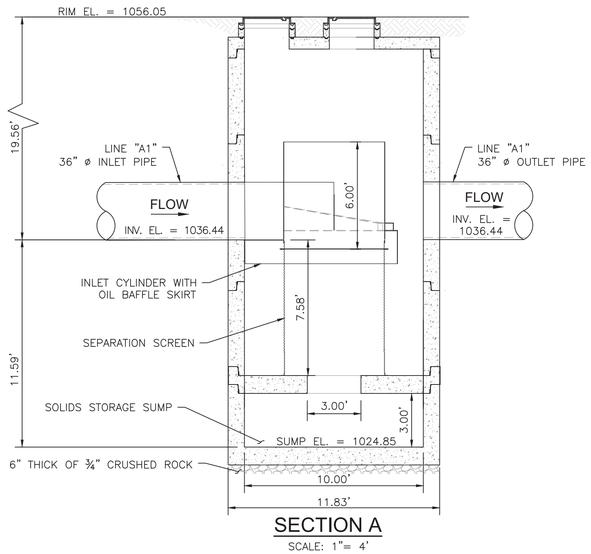
DWG No. C-11
SHEET No. 12 OF 46

SITE DESIGN DATA:	
WATER QUALITY FLOW RATE	19 CFS
PEAK FLOW RATE	15.4 CFS
RETURN PERIOD OF WATER QUALITY FLOW RATE	RAA EVENT
MAKE AND MODEL (OR AGENCY APPROVED EQUAL)	JDS120-6782 OR CDS5668-10-C

MATERIAL LIST	
COUNT	DESCRIPTION
1	SEPARATION SCREEN
1	SEALANT FOR JOINTS
1	GRADE RINGS/RISERS
3	30" ø CAST IRON FRAME AND COVER, H20 RATED
1	PRECAST CONCRETE MANHOLE STRUCTURE



TOP VIEW
SCALE: 1"=4'

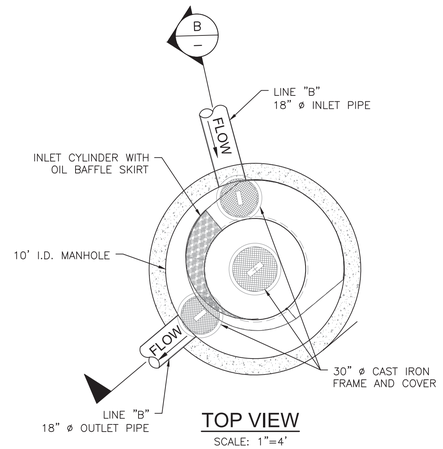


SECTION A
SCALE: 1"= 4'

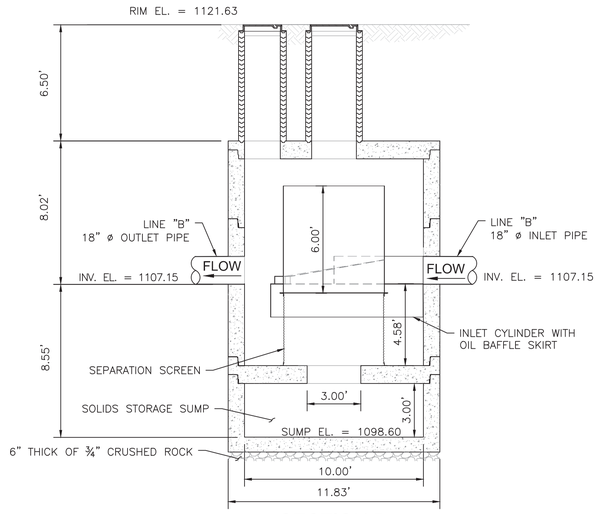
PRETREATMENT UNIT ON FIRST ST

SITE DESIGN DATA:	
WATER QUALITY FLOW RATE	9 CFS
PEAK FLOW RATE	8.8 CFS
RETURN PERIOD OF WATER QUALITY FLOW RATE	RAA EVENT
MAKE AND MODEL (OR AGENCY APPROVED EQUAL)	JDS120-6748 OR CDS5640-10-C

MATERIAL LIST	
COUNT	DESCRIPTION
1	SEPARATION SCREEN
1	SEALANT FOR JOINTS
1	GRADE RINGS/RISERS
3	30" ø CAST IRON FRAME AND COVER, H20 RATED
1	PRECAST CONCRETE MANHOLE STRUCTURE



TOP VIEW
SCALE: 1"=4'



SECTION B
SCALE: 1"= 4'

PRETREATMENT UNIT AT GLENOAKS BLVD

GENERAL NOTES:

1. PRECAST CONCRETE JOINTS SHALL BE SEALED USING BUTYL RUBBER COMPOUND.
2. ALL PIPE PENETRATIONS SHALL BE GROUTED IN PRECAST CONCRETE OPENINGS.

SPECIFICATIONS:

1. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206.
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
3. PORTLAND CEMENT USED IN THE PRECAST SECTION SHALL MEET THE REQUIREMENTS OF TYPE II/V HIGH SULFATE RESISTANT CEMENT IN ACCORDANCE WITH ASTM CLASS M C-150.
4. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478, AND AASHTO M199.
5. STRUCTURE SHALL MEET ASSHTO HS-20 AND CASTINGS SHALL MEET HS20 (ASSHTO M 306) LOAD RATING.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.

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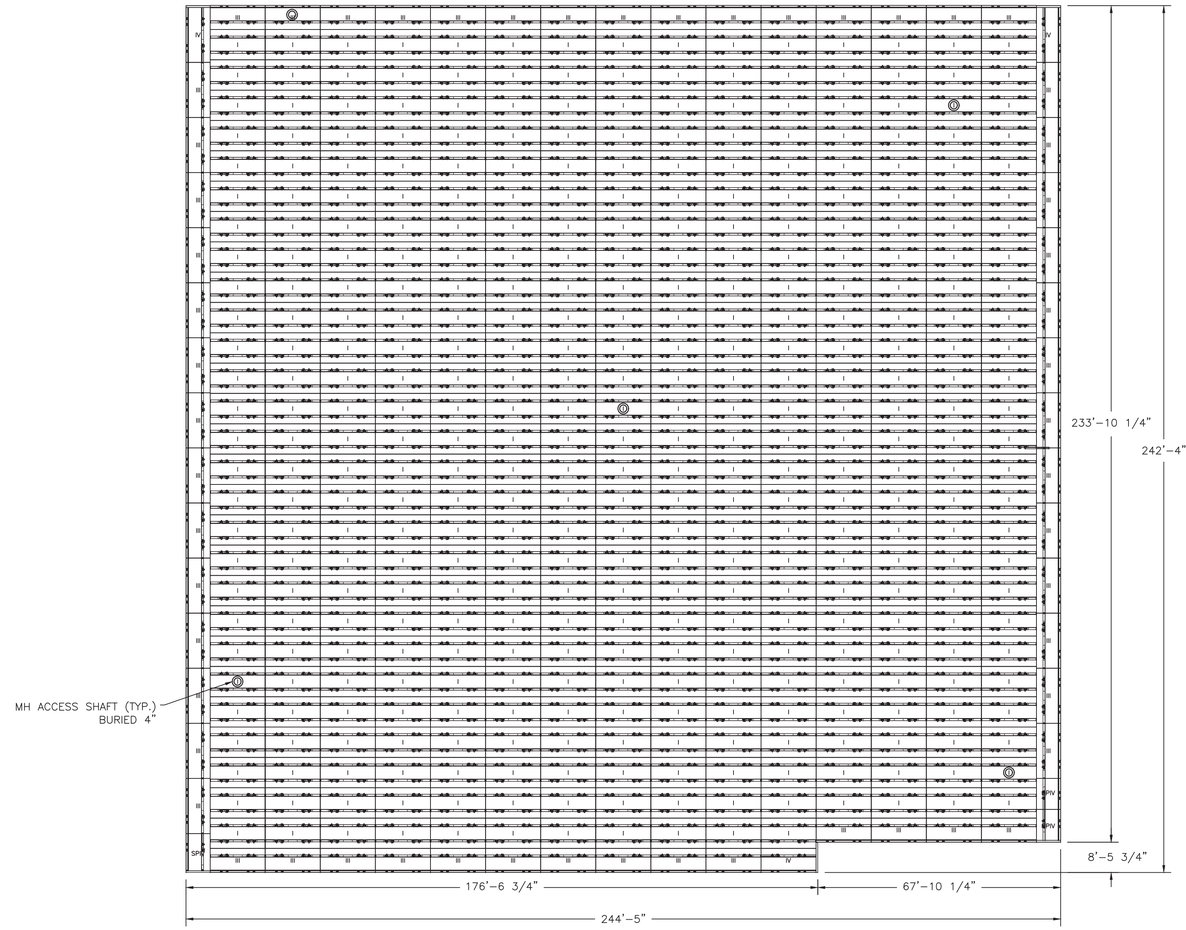
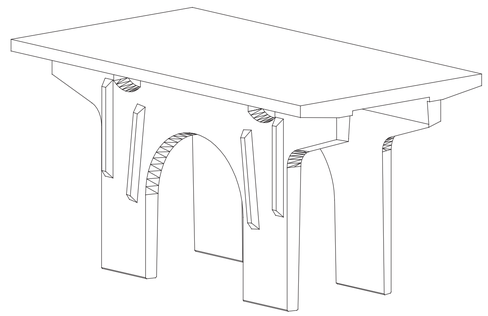
San Fernando Regional Park Infiltration Project
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD
PRETREATMENT UNIT

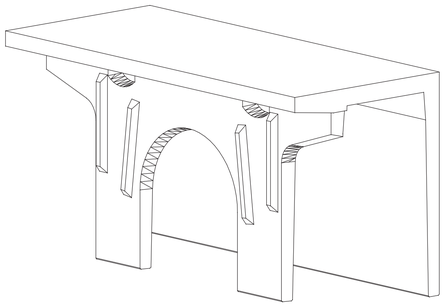
DWG No. C-12
SHEET No. 13 OF 46



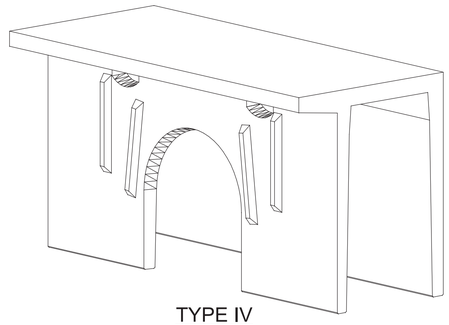
SUBSURFACE INFILTRATION SYSTEM
PLAN
SCALE: 1"= 20'



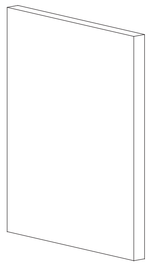
TYPE I



TYPE III



TYPE IV



TYPE IV
END PANEL

SUBSURFACE INFILTRATION SYSTEM DETAILS
NOT TO SCALE

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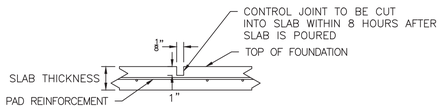
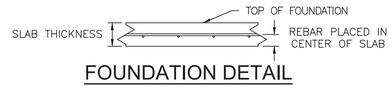
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD
SUBSURFACE INFILTRATION SYSTEM
PLAN AND DETAILS

DWG No. C-13
SHEET No. 14 OF 46

MAXIMUM SYSTEM COVER	SLAB THICKNESS	CONCRETE STRENGTH	REINFORCEMENT (BOTH DIRECTIONS)
19.6'	1'–0"	4500 PSI	#5@12" O.C.



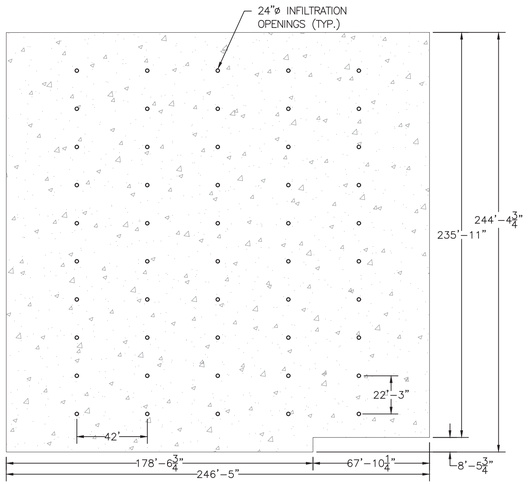
CONTROL JOINT DETAIL
NOT TO SCALE



FOUNDATION DETAIL
NOT TO SCALE

NOTES

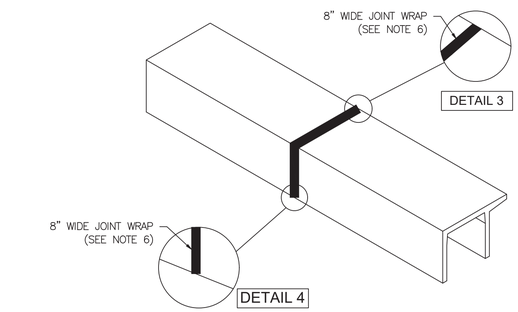
1. CONCRETE STRENGTH @ 28 DAYS, 5%–8% ENTRAINED AIR, 4" MAX. SLUMP.
2. NET ALLOWABLE SOIL PRESSURE AS INDICATED ON SHEET 15.
3. SOIL CONDITIONS TO BE VERIFIED ON SITE.
4. REBAR: ASTM A–615 GRADE 60. BLACK BAR.
5. DIMENSION OF FOUNDATION MUST HAVE 1'–0" OVERHANG BEYOND EXTERNAL FACE OF MODULE.
6. DIMENSION OF SYSTEM ALLOW FOR A 3/4" GAP BETWEEN EACH MODULE.
7. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD.
8. THE CONTROL JOINTS SHALL BE BETWEEN 16'–0" TO 24'–0" MAX APART.
9. SEE INSTALLATION SPECIFICATIONS HEREON.

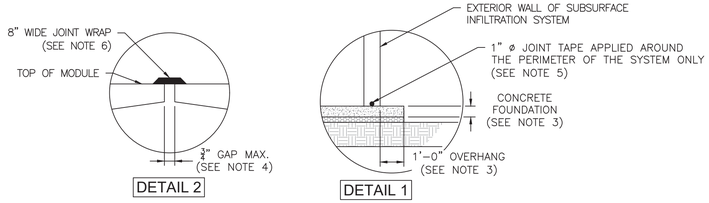


INSTALLATION OPENING DETAIL
NOT TO SCALE

INSTALLATION SPECIFICATIONS

1. SUBSURFACE INFILTRATION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891, STANDARD FOR INSTALLATION OF UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES, THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS SHALL APPLY:
2. PROPER/ADEQUATE EQUIPMENT IS USED TO SET/INSTALL THE MODULES.
3. MODULES CAN BE PLACED ON A LEVEL, 12" CONCRETE FOUNDATION OF STRUCTURAL BACKFILL WITH A 1'–0" OVERHANG ON ALL SIDES THAT SHALL BE POURED IN PLACE BY INSTALLING CONTRACTOR. A QUALIFIED GEOTECHNICAL ENGINEER WILL BE EMPLOYED, BY OWNER, TO PROVIDE ASSISTANCE IN EVALUATING THE EXISTING SOIL CONDITIONS TO ENSURE THAT THE SOIL BEARING PRESSURE MEETS OR EXCEEDS THE STRUCTURAL DESIGN LOADING CRITERIA AS SPECIFIED ON SHEET 15.
4. MODULES SHALL BE PLACED SUCH THAT THE MAXIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED 3/4" (SEE DETAIL 2). IF THE SPACE EXCEEDS 3/4", THE MODULES SHALL BE RESET WITH APPROPRIATE ADJUSTMENT MADE TO LINE AND GRADE TO BRING THE SPACE INTO SPECIFICATION.
5. THE PERIMETER HORIZONTAL JOINT BETWEEN THE MODULES AND THE CONCRETE FOUNDATION SHALL BE SEALED TO THE FOUNDATION WITH PRE–FORMED MASTIC JOINT SEALER ACCORDING TO ASTM C891, 8.8 AND 8.12 (SEE DETAIL 1). THE MASTIC JOINT TAPE DOES NOT PROVIDE A WATERTIGHT SEAL. THE SOLE PURPOSE OF THE JOINT TAPE IS TO PROVIDE A SILT AND SOIL TIGHT SYSTEM.
6. ALL EXTERIOR JOINTS BETWEEN ADJACENT MODULES SHALL BE SEALED WITH 8" WIDE PRE–FORMED, COLD–APPLIED, SELF–ADHERING ELASTOMERIC RESIN, BONDED TO A WOVEN, HIGHLY PUNCTURE RESISTANT POLYMER WRAP, CONFORMING TO ASTM C891 AND SHALL BE INTEGRATED WITH PRIMER SEALANT AS APPROVED BY VENDOR (SEE DETAILS 3 & 4). THE JOINT WRAP DOES NOT PROVIDE A WATERTIGHT SEAL. THE SOLE PURPOSE OF THE JOINT WRAP IS TO PROVIDE A SILT AND SOIL TIGHT SYSTEM. THE ADHESIVE EXTERIOR JOINT WRAP SHALL BE INSTALLED ACCORDING TO THE FOLLOWING INSTALLATION INSTRUCTIONS:
   - 6.1. USE A BRUSH OR WET CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE JOINT WRAP IS TO BE APPLIED.
   - 6.2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP. PLACE THE ADHESIVE TAPE (ADHESIVE SIDE DOWN) AROUND THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE MODULE SURFACE WHEN APPLYING.





INSTALLATION DETAILS
NOT TO SCALE

ACCESS OPENING SPECIFICATION

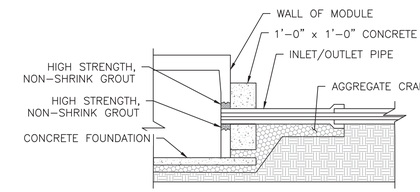
1. ALL OPENINGS MUST RETAIN AT LEAST 1'–0" OF CLEARANCE FROM THE END OF THE MODULE UNLESS NOTED OTHERWISE. ALL ACCESS OPENINGS TO BE LOCATED ON INSIDE LEG UNLESS OTHERWISE SPECIFIED.
2. STEPS SHALL BE PER SPPWC 636–2 AND ARE PROVIDED INSIDE ANY MODULE AS SHOWN IN THESE PLANS. THE HIGHEST STEP IN THE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

PIPE OPENING SPECIFICATION

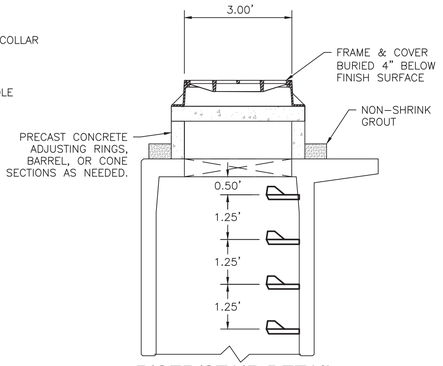
1. MINIMUM EDGE DISTANCE FOR AN OPENING ON THE OUTSIDE WALL SHALL BE NO LESS THAN 1'–0".
2. CONNECTING PIPES SHALL BE INSTALLED WITH A 1'–0" CONCRETE COLLAR, AND AN AGGREGATE CRADLE FOR AT LEAST ONE PIPE LENGTH (SEE PIPE CONNECTION DETAIL). A STRUCTURAL GRADE CONCRETE OR HIGH STRENGTH, NON–SHRINK GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI SHALL BE USED.
3. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH HIGH STRENGTH NON–SHRINK GROUT.

PIPE INSTALLATION INSTRUCTIONS

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



PIPE CONNECTION DETAIL
NOT TO SCALE

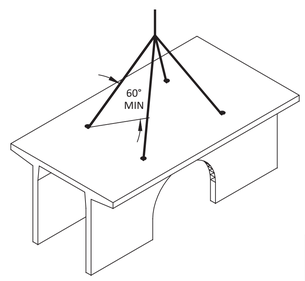


RISER/STAIR DETAIL
NOT TO SCALE

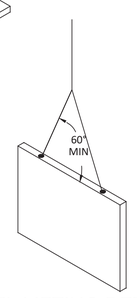
NOTE: MANHOLES TO BE BURIED 4" BELOW FG

END PANEL ERECTION/INSTALLATION NOTES

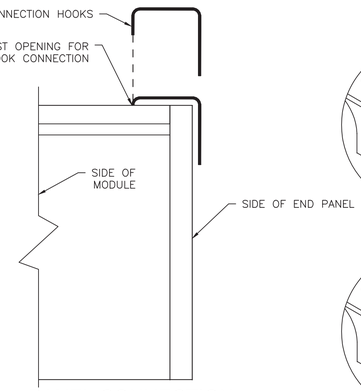
1. END PANELS WILL BE SUPPLIED TO CLOSE OFF OPEN ENDS OF ROWS.
2. PANELS SHALL BE INSTALLED IN A TILT UP FASHION DIRECTLY ADJACENT TO OPEN END OF MODULE.
3. CONNECTION HOOKS WILL BE SUPPLIED BY VENDOR WITH END PANELS TO SECURELY CONNECT PANEL TO ADJACENT MODULE (SEE PANEL CONNECTION ELEVATION VIEW).
4. ONCE CONNECTION HOOKS ARE ATTACHED, LIFTING CLUTCHES MAY BE REMOVED.
5. JOINT WRAP SHALL BE PLACED AROUND PERIMETER JOINT PANEL (SEE DETAILS HEREON).



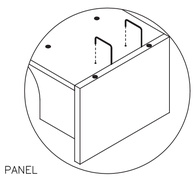
MODULE LIFTING DETAIL
NOT TO SCALE



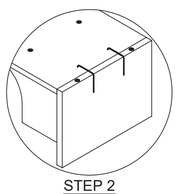
END PANEL LIFTING DETAIL
NOT TO SCALE



PANEL CONNECTION ELEVATION VIEW
NOT TO SCALE



STEP 1



STEP 2

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SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

SUBSURFACE INFILTRATION SYSTEM DETAILS

DWG No. C-15
SHEET No. 16 OF 46

ZONE CHART		
ZONES	ZONE DESCRIPTIONS	REMARKS
ZONE 1	FOUNDATION AGGREGATE	3/4" CRUSHED ROCK
ZONE 2	BACKFILL	STRUCTURE BACKFILL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
ZONE 3	FINAL COVER OVERTOP	MATERIALS NOT TO EXCEED 120 PCF

STRUCTURAL DESIGN LOADING CRITERIA	
LIVE LOADING:	AASHTO HS-20 HIGHWAY LOADING
GROUNDWATER TABLE:	HISTORICALLY 50' - 60' BELOW GROUND SURFACE
SOIL BEARING PRESSURE:	4500 PCF
SOIL DENSITY:	120 PCF
EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE:	35 PSF/FT.
EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE:	NA
APPLICABLE CODES	AASHTO ACI-318
BACKFILL TYPE:	SEE ZONE CHART HEREON

SUBSURFACE STORAGE SYSTEM INFORMATION:	
WATER STORAGE PROVIDED:	403,835 CUBIC FEET
UNIT HEADROOM:	7'-6" SINGLETRAP
UNIT QUANTITY:	464 TOTAL PIECES

MATERIAL LIST		
COUNT	UNIT TYPE	DESCRIPTION
401	I	7'-6" SINGLE TRAP
58	III	7'-6" SINGLE TRAP
2	IV	7'-6" SINGLE TRAP
3	SPIV	7'-6" SINGLE TRAP
5	PANEL	6" THICK PANEL
80	JOINT TAPE	JOINT TAPE (14.5' PER ROLL)
84	JOINT WRAP	JOINT WRAP (150' PER ROLL)
5		MANHOLE STRUCTURE AND COVER

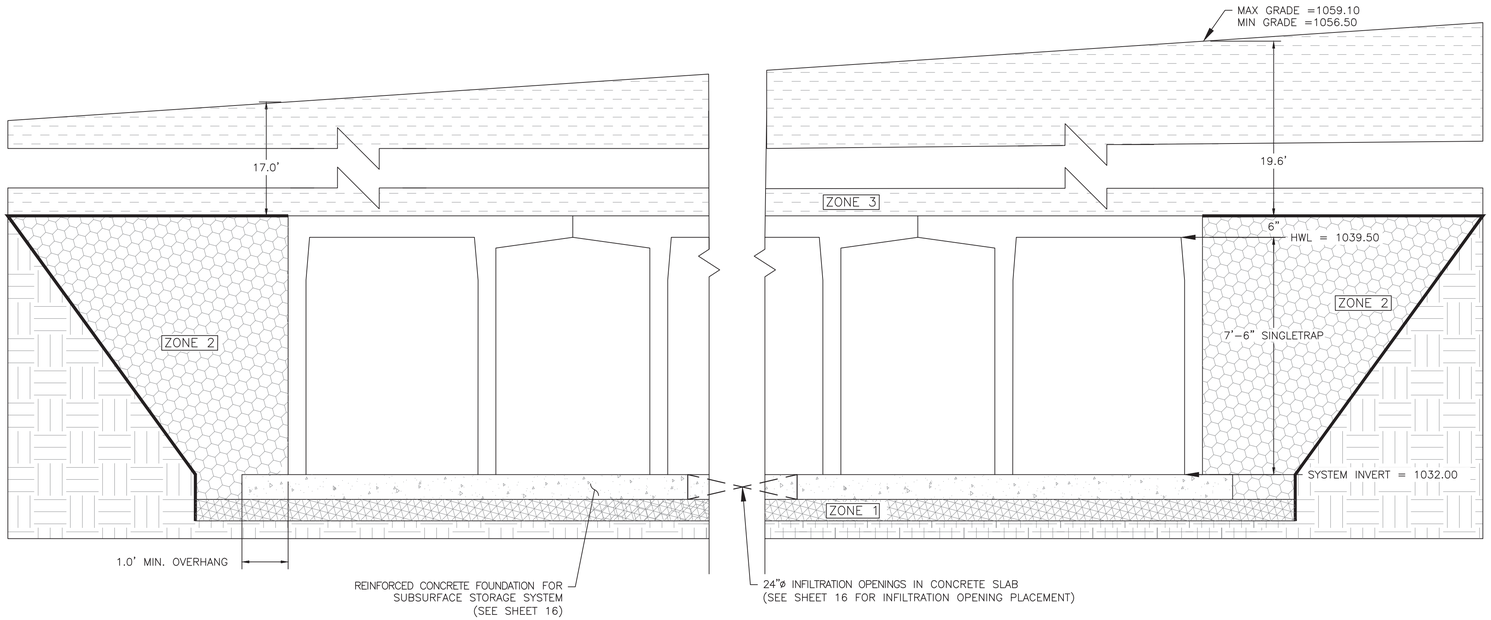
DESIGN LOADING			
FILL DEPTH	TRACK WIDTH	MAX VEHICLE WEIGHT (KIPS)	MAX GROUND PRESSURE
12"	12"	51.8	1690 psf
	18"	56.1	1219 psf
	24"	68.1	1111 psf
	30"	76.7	1000 psf
	36"	85.0	924 psf

ZONE CONSTRUCTION PROCEDURES

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

SITE SPECIFIC DESIGN CRITERIA

4. STORAGE UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS, STAMPED BY A CALIFORNIA STRUCTURAL ENGINEER, SUBMITTED BY THE CONTRACTOR, AND APPROVED BY THE ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS, AND SIZE OF OPENINGS.



TYPICAL CONCRETE SUBSURFACE INFILTRATION SYSTEM SECTION

NOT TO SCALE

FOR REFERENCE ONLY

UNDERGROUND SERVICE ALERT
CALL: TOLL FREE
811
TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'V'D

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

REGISTERED PROFESSIONAL ENGINEER
KATHRYN L. HARRIET
No.85752
Exp. 9/30/2022
CIVIL
STATE OF CALIFORNIA

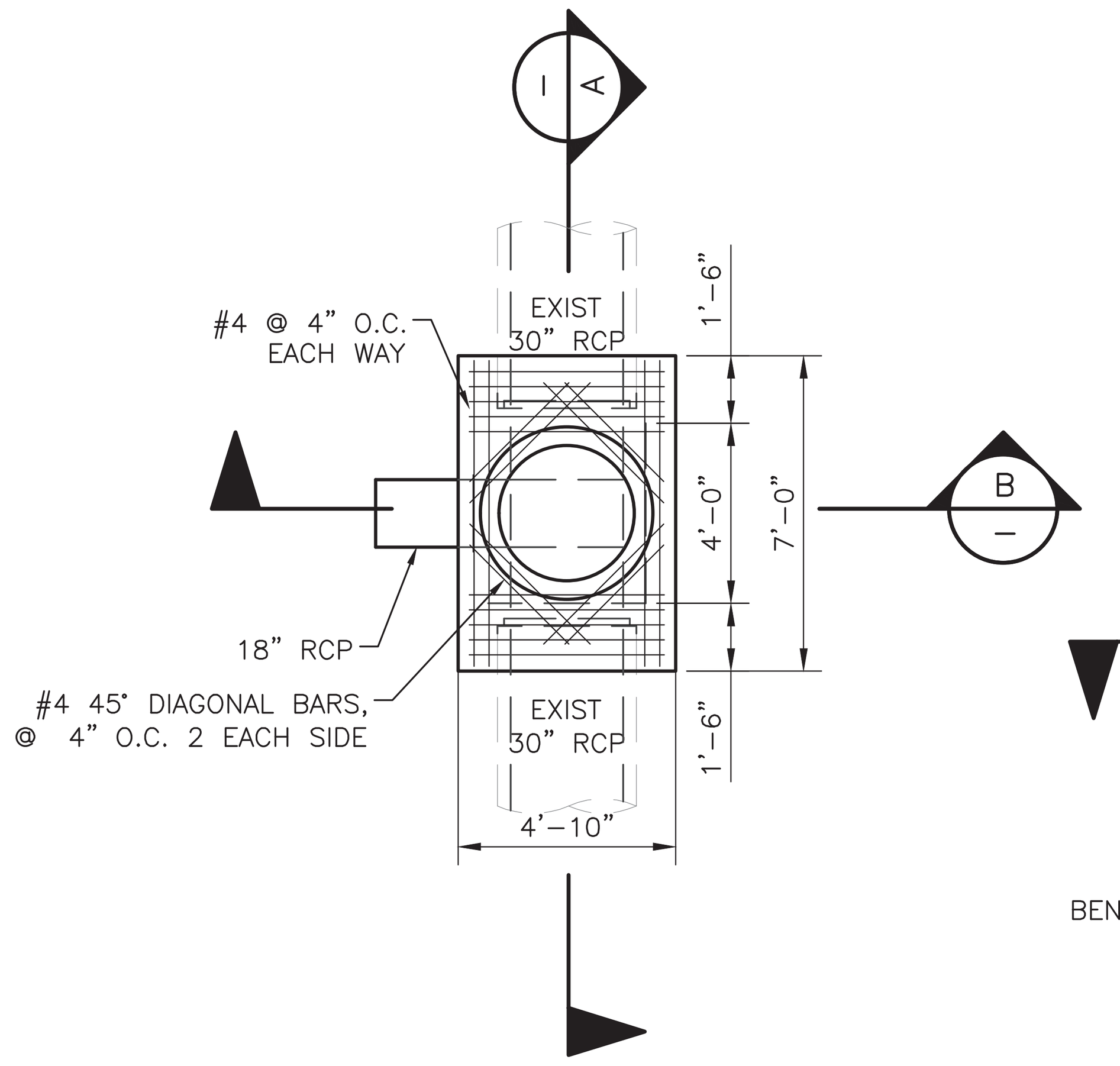
DRAWN BY:	TT	APR 2021
DESIGNED BY:	KH	APR 2021
CHECKED BY:	VB	APR 2021

Matthew Baumgardner, Director of Public Works — DATE
R.C.E. NO.: 71932 EXP. DATE: 12/31/2021
Manuel Fabian, Civil Engineer Assistant II — DATE

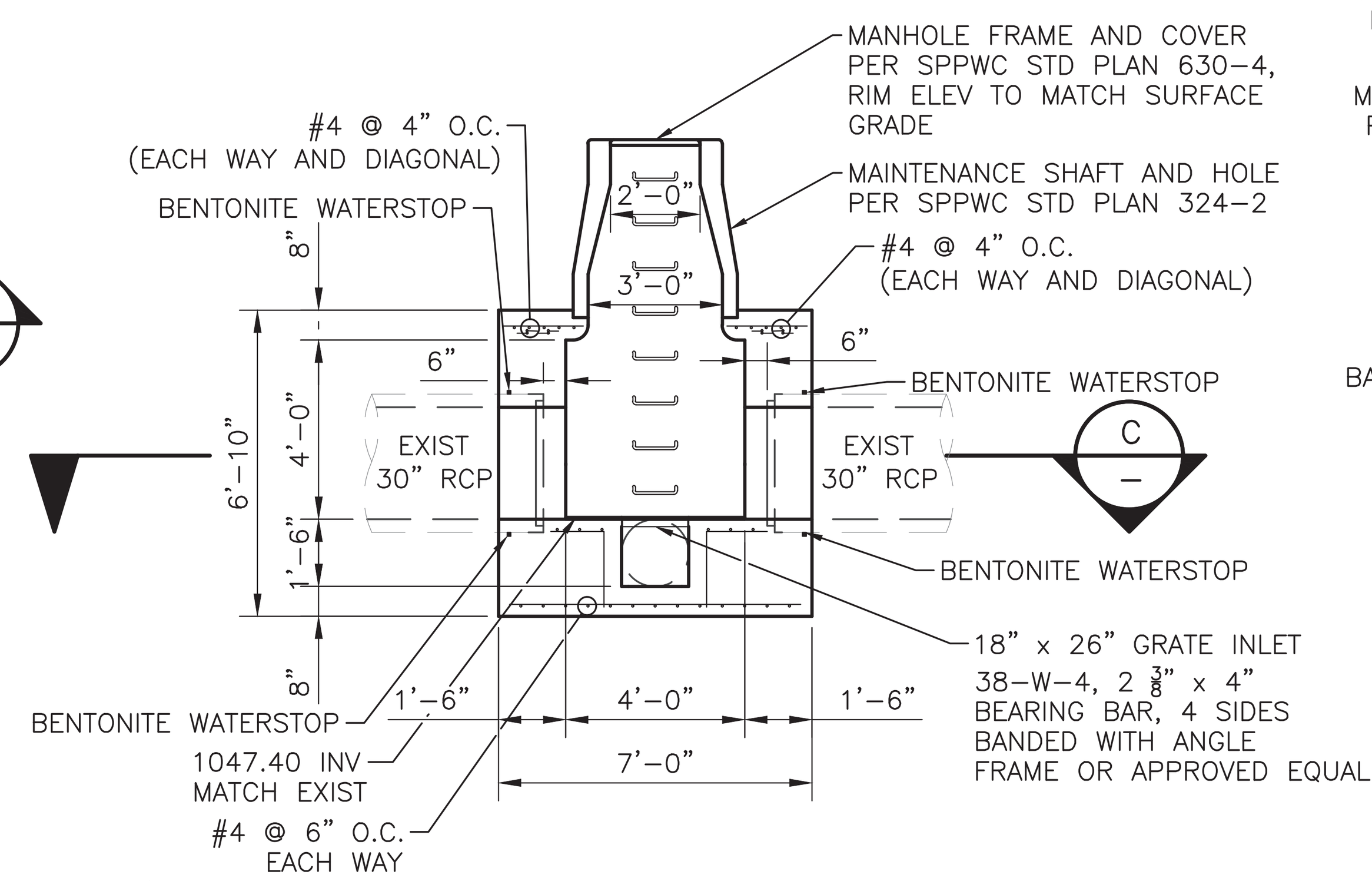
CITY OF SAN FERNANDO
HISTORIC & VISIONARY
CITY OF SAN FERNANDO
DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD
SUBSURFACE INFILTRATION SYSTEM SECTION

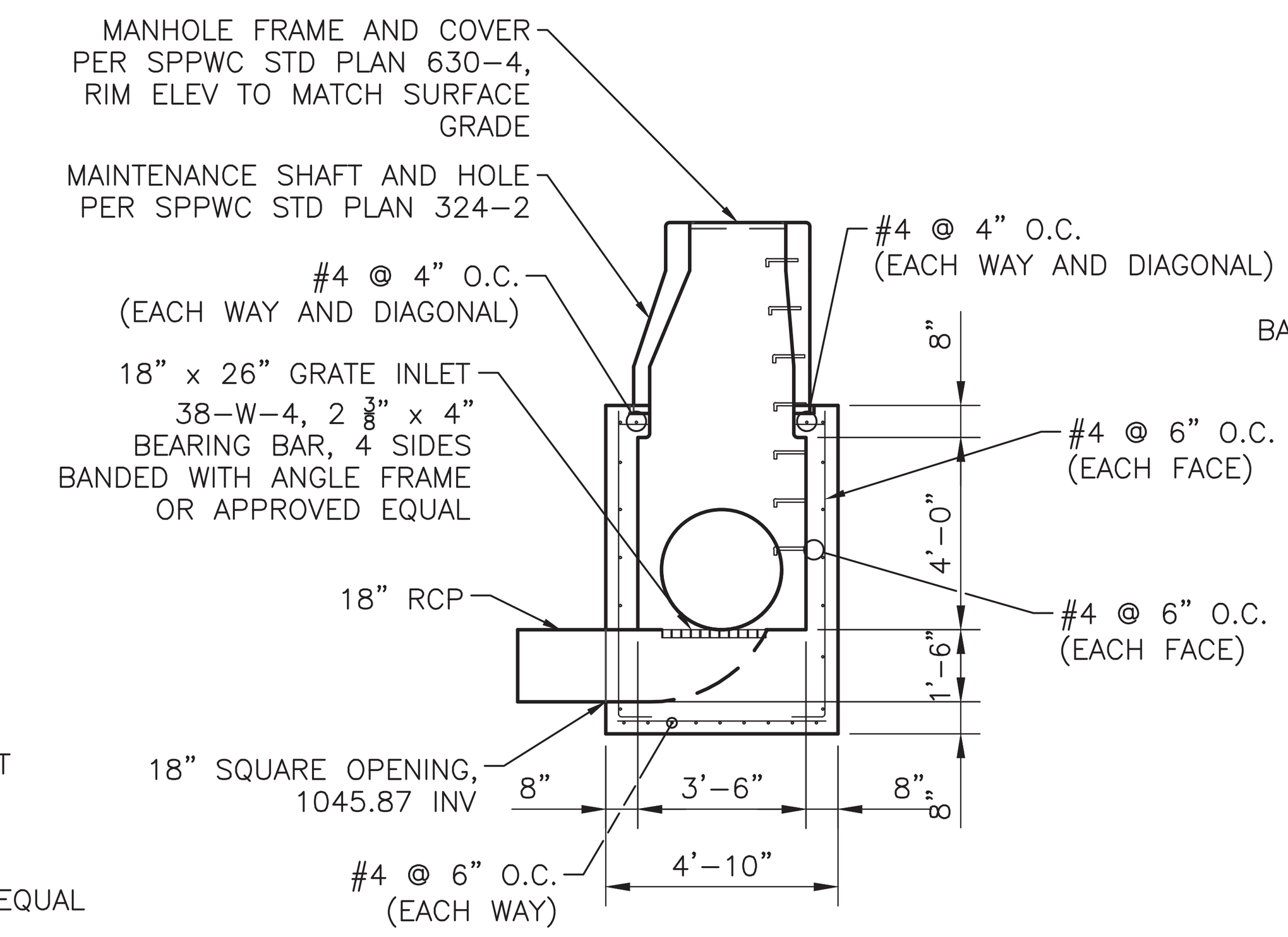
DWG No. C-14
SHEET No. 15 OF 46



PLAN



SECTION A



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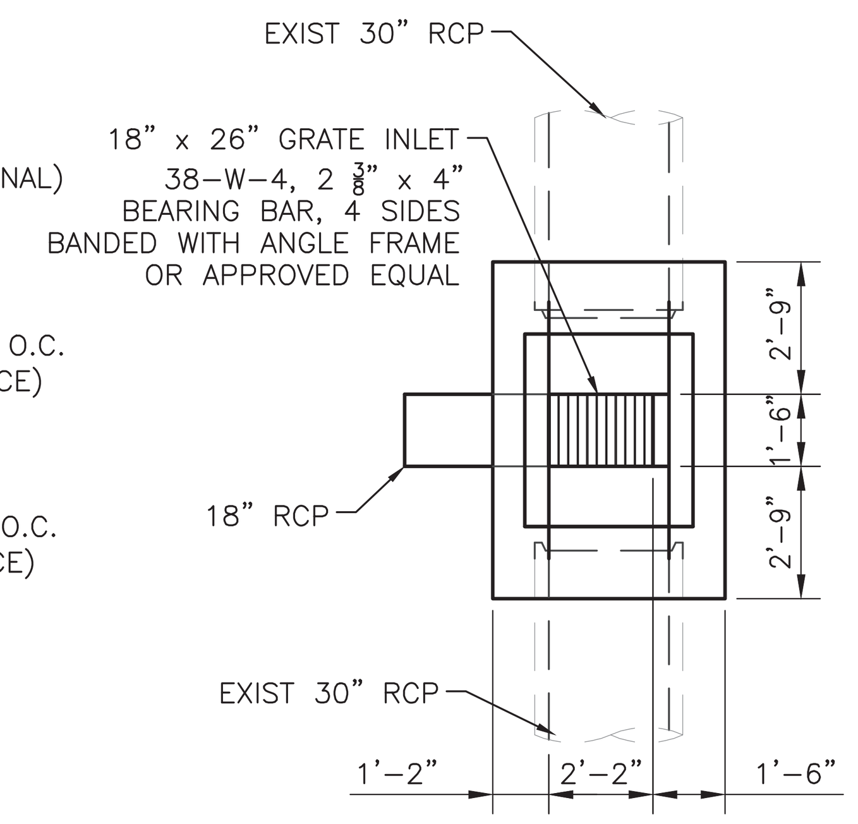
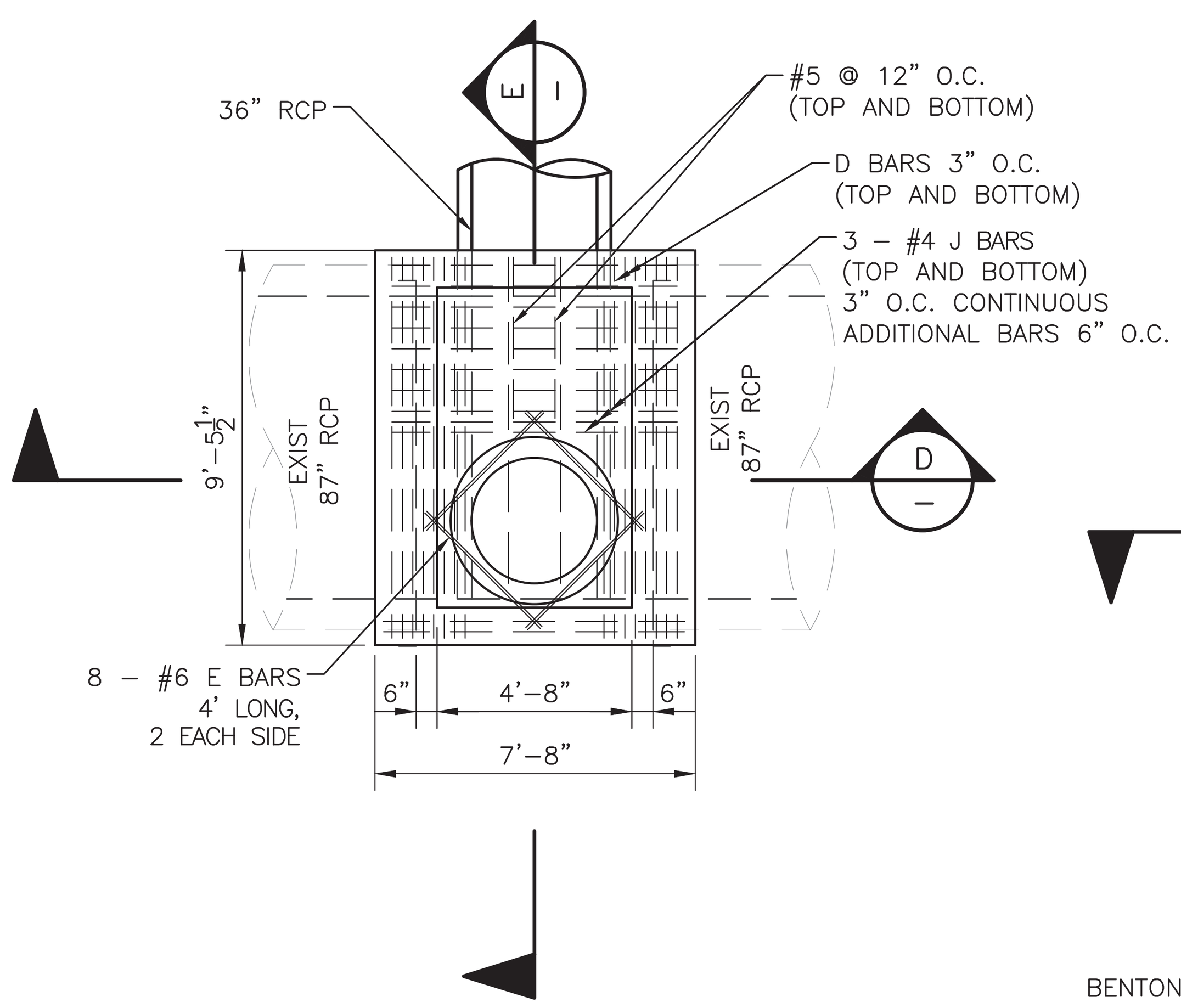


SECTION C

DETAIL 1
MODIFIED MANHOLE PER SPPWC 321-2 DETAIL

SCALE: 1"= 4'

NOTE: ALL STEEL SHALL BE 2" CLEAR UNLESS OTHERWISE NOTED



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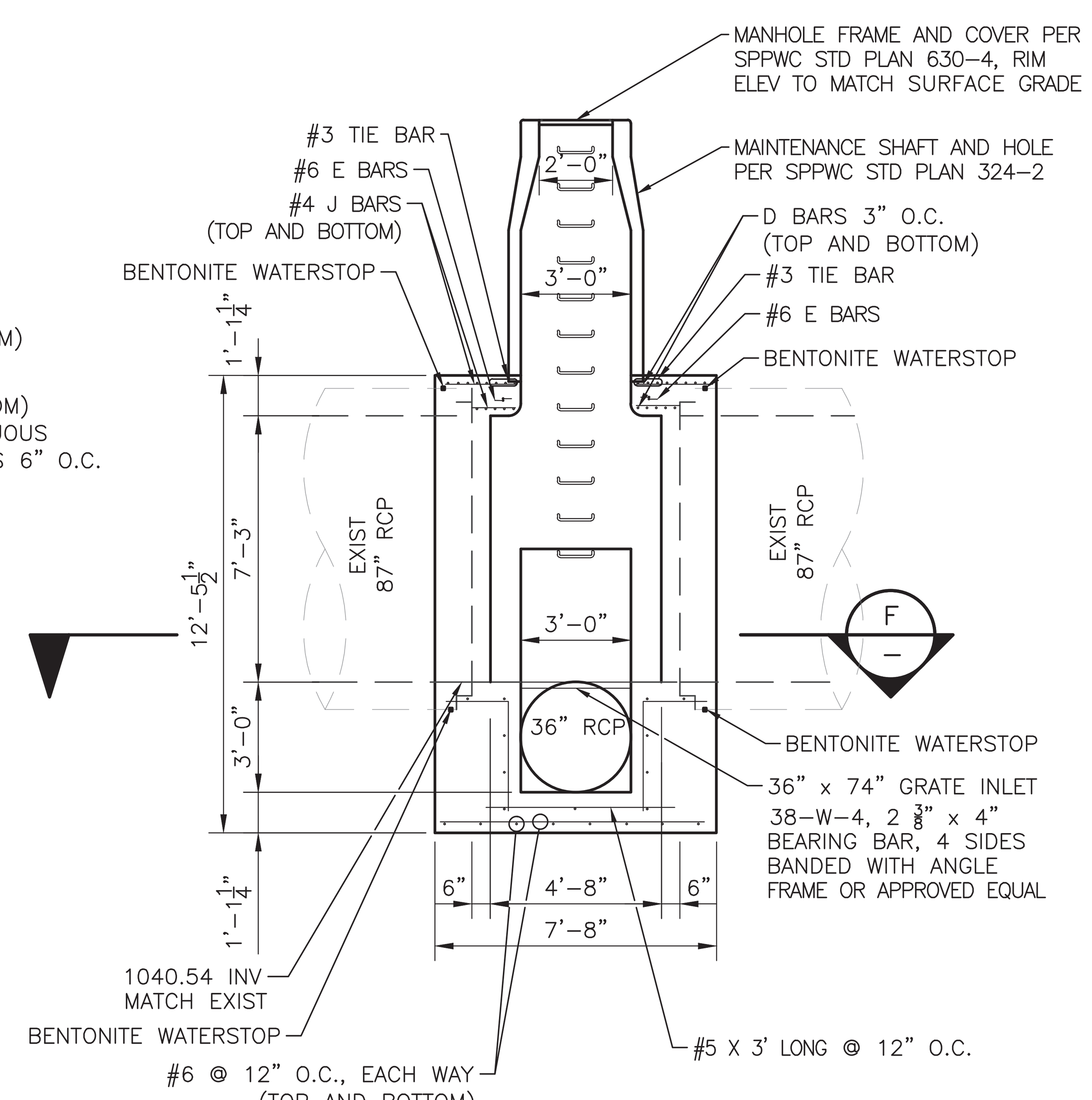
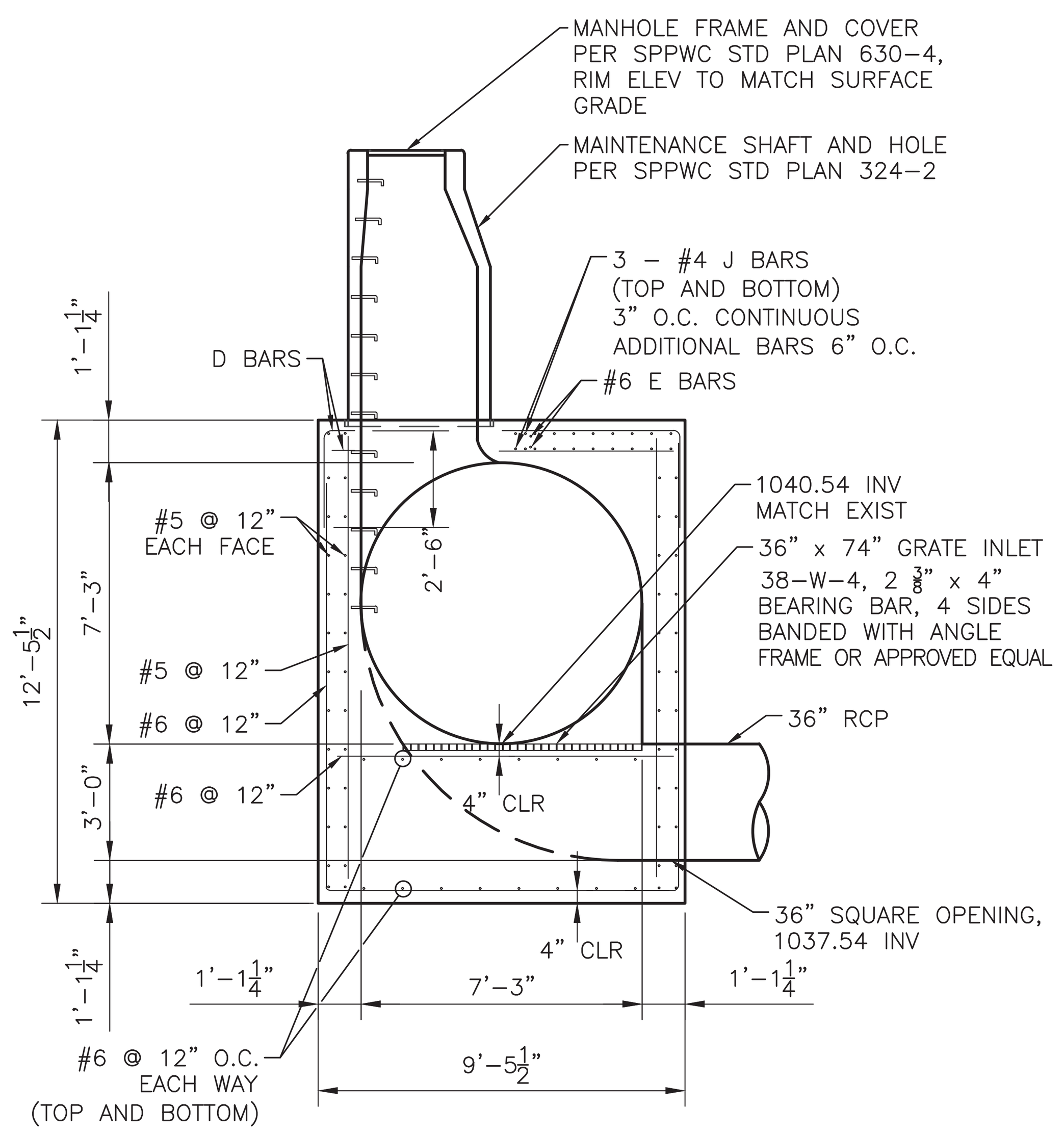
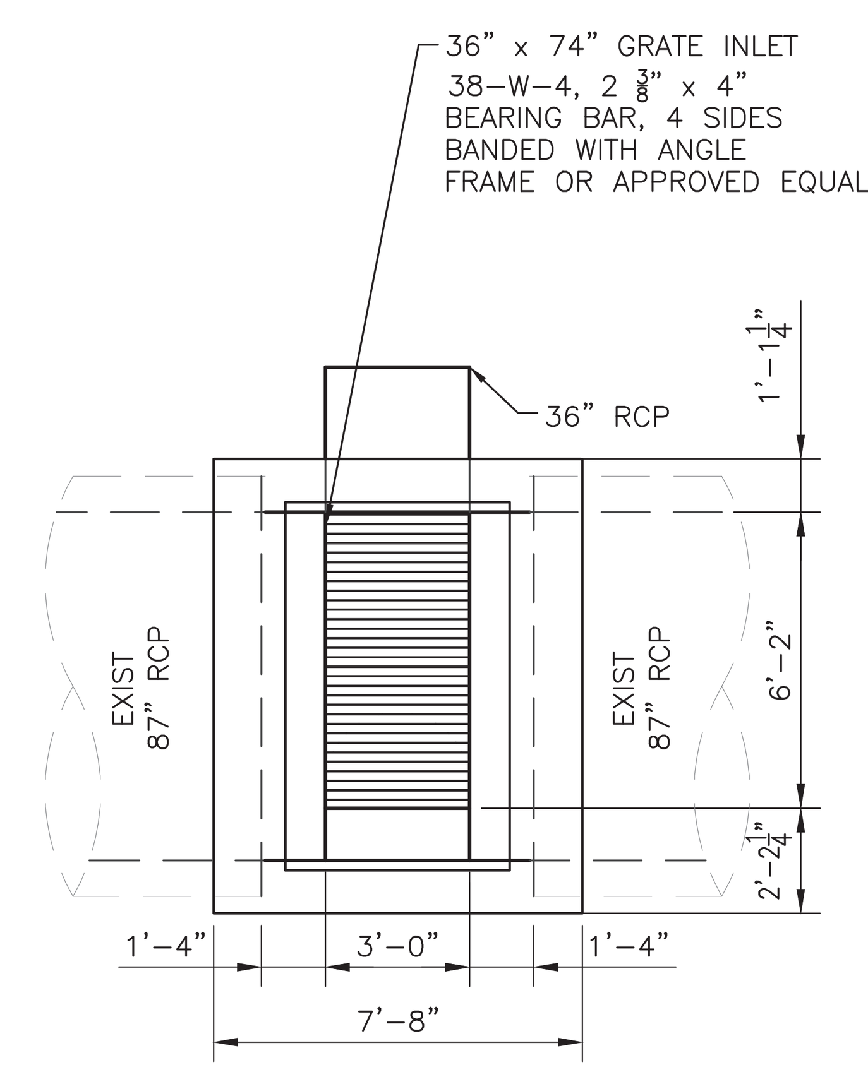


SECTION D



SECTION E



SECTION F

DETAIL 2
MODIFIED MANHOLE PER SPPWC 320-2 DETAIL

SCALE: 1"= 4'

NOTE: ALL STEEL SHALL BE 2" CLEAR UNLESS OTHERWISE NOTED

UNDERGROUND SERVICE ALERT

CALL BEFORE YOU DIG

CALL: TOLL FREE

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TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'V'D

PREPARED BY:

1561 E. ORANGETHORPE AVE.
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FULLERTON, CA 92831
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DEPARTMENT OF PUBLIC WORKS

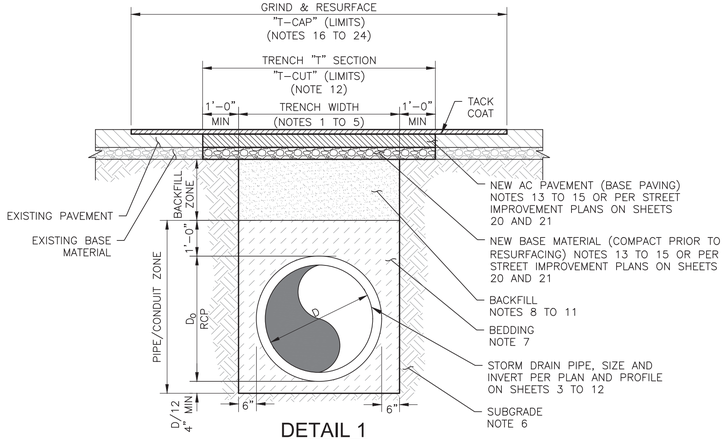
San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

DETAILS

DWG No. C-16

SHEET No. 17 OF 46



DETAIL 1
T-TRENCH AND AC PAVING RESTORATION

SCALE: 1"= 2'

NOTES:

ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC) "GREENBOOK".

LIMITS OF REMOVALS, TRENCH WIDTH:

1. ALL PAVEMENT REMOVED SHALL HAVE STRAIGHT EDGES. CUTS SHALL BE MADE TO A MINIMUM DEPTH OF ONE AND A HALF (1–1/2) INCHES. ALL CUTS SHALL BE NEAT, STRAIGHT, VERTICAL CUTS WITH NO BROKEN EDGES.
2. ALL LONGITUDINAL PAVEMENT CUTS SHALL BE UNINTERRUPTED APPROXIMATELY PARALLEL TO THE TRENCH (MAX. 1:6 LONGITUDINAL VARIANCE).
3. IF A SAW CUT IN PAVEMENT FALLS WITHIN 1 FOOT OF AN EXISTING CURB, GUTTER, OR EDGE OF PAVEMENT, THE ADDITIONAL PAVEMENT SHALL BE REMOVED AND RECONSTRUCTED.
4. WHEN SAW CUTTING PAVEMENT, THE MAXIMUM OVERRUN ALLOWED FOR ANY SAW CUT BEYOND THE BOUNDARY REMOVAL LIMITS OF EXISTING PAVEMENT SHALL BE 2 INCHES.
5. TRENCH WIDTH SHALL BE MINIMUM 24 INCHES, UNLESS SLURRY BACKFILL AND BEDDING IS USED, IN WHICH CASE MINIMUM SHALL BE 4 INCHES. MINIMUM 3 INCH SEPARATION SHALL BE MAINTAINED BETWEEN ALL CONDUITS, PIPES, AND TRENCH WALLS. IF SLURRY BEDDING MATERIAL IS USED, 1 INCH IS ACCEPTABLE IN A SINGLE LAYER INSTALLATION, OTHERWISE 2 INCH SEPARATION IS REQUIRED. UNDERCUTTING TRENCH WALLS TO ACQUIRE CLEARANCES IS NOT PERMITTED.

BEDDING:

6. BEDDING MATERIAL SHALL BE PLACED ON FIRM AND UNYIELDING SUBGRADE PER GREENBOOK SECTION 306. SOFT, SPONGY, UNSTABLE, UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED.
7. BEDDING SHALL CONFORM TO GREENBOOK REQUIREMENTS AND OTHER APPLICABLE STANDARDS.

BACKFILL:

8. EXCAVATIONS SHALL BE BACKFILLED WITH AN APPROVED SLURRY MIX, CLSM, CMB, OR CAB. NATIVE SOIL MAY ONLY BE USED WITH CITY ENGINEER'S APPROVAL. CMB, CAB, SOIL SHALL BE COMPACTED TO 90% RELATIVE DENSITY. CMB, CAB SHALL BE WELL GRADED AND HANDLED IN A MANNER TO PREVENT SEGREGATION BY PARTICLE SIZE. SOIL TESTING MAY BE REQUIRED TO BE PROVIDED TO THE FIELD INSPECTOR ON A CASE–BY–CASE BASIS.
9. BACKFILL SLURRY MATERIAL SHALL BE PROPERLY CONSOLIDATED. SLURRY MATERIAL FOR TRENCHES DEEPER THAN 5 FEET AND/OR NARROWER THAN 12 INCHES MUST BE CONSOLIDATED WITH VIBRATION.
10. BACKFILL MATERIAL SHALL BE MADE SMOOTH AND LEVEL BEFORE PLACING BASE AND PAVEMENT.
11. JETTING IS NOT AN APPROVED DENSIFICATION METHOD.

TRENCH "T" SECTION ("T-CUT"):

12. AFTER THE EXCAVATION HAS BEEN BACKFILLED, THE EXISTING PAVEMENT SHALL BE REMOVED TO A LINE AT LEAST 12–INCHES BACK OF THE FIRM BANKS OF THE TRENCH AND THIS AREA ADJACENT TO THE TRENCH SHALL BE COMPACTED TO 95% RELATIVE DENSITY ("T–CUT"). EXISTING CMB OR CAB BASE MATERIAL IN THIS AREA DOES NOT NEED TO BE REMOVED. "T–CUT" IS NOT REQUIRED IF PROPER SLURRY BACKFILL IS USED, UNLESS UNDERMINING OF ADJACENT PAVEMENT IS PRESENT. IF SLURRY TRENCH WIDTH IS LESS THAN 12 INCHES, EXISTING PAVEMENT SHALL BE REMOVED TO PROVIDE AT LEAST A 12 INCH WIDE OPENING FOR PROPER COMPACTION OF THE BASE MATERIAL.
13. NEW BASE MATERIAL OF CMB, OR CAB, SHALL MATCH THE EXISTING BASE THICKNESS, OR 4–INCHES, WHICHEVER IS GREATER. COMPACT TO 95% RELATIVE DENSITY. THIS REQUIREMENT SHALL ALSO APPLY OVER SLURRY BACKFILLS UNLESS OTHERWISE SPECIFIED IN THE PERMIT.
14. NEW ASPHALT CONCRETE SECTION SHALL MATCH EXISTING PAVEMENT THICKNESS PLUS AN ADDITIONAL INCH, OR FULL DEPTH AC PLUS AN ADDITIONAL INCH.
15. ASPHALT CONCRETE PAVING WILL OCCUR NO SOONER THAN 42 HOURS AFTER SLURRY BACKFILL OF TRENCH.

GRIND AND RESURFACE ("T-CAP"):

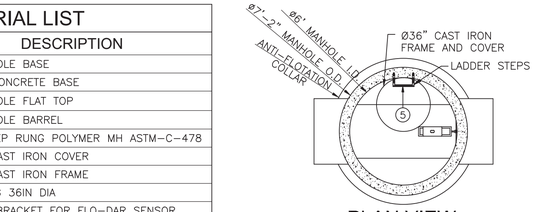
WITHIN 30 CALENDAR DAYS AFTER BACKFILLING, ASPHALT CONCRETE SHALL BE COLD MILLED AND RESURFACED AS FOLLOWS:

16. EXISTING ASPHALT CONCRETE SHALL BE GROUND DOWN ONE AND ONE HALF (1–1/2) INCHES, OR ONE HALF THE EXISTING PAVEMENT THICKNESS, WHICHEVER IS LESS, TO THE "T–CAP" LIMITS.
17. WHERE POSSIBLE, "T–CAP" LIMITS SHALL BE FROM DETAIL 1, "EXAMPLES OF GRIND AND RESURFACE "T–CAP" LIMITS". "T–CAP" IS NOT REQUIRED FOR SERVICE CONNECTIONS IN STREETS THAT HAVE NOT BEEN RESURFACED WITHIN THE PAST 25 YEARS AND DO NOT IMPACT BIKE LANES.
18. "T–CAP" LIMITS SHALL EXTEND AT LEAST 2 FT BEYOND THE TRENCH "T–CUT" LIMITS. MINIMUM "T–CAP" DIMENSIONS SHALL BE 5 FT X 5 FT.
19. "T–CUT" AND CORRESPONDING "T–CAP" (AS APPLICABLE) IS REQUIRED FOR ALL EXCAVATIONS WITH A SURFACE AREA OF 2 SQ. FT OR GREATER.
20. WHERE LIMITS OF "T–CUT"S, "T–CAP"S, POT HOLES OR CORED HOLES ARE WITHIN 4FT OF EACH OTHER, THE PAVEMENT SURFACE RESTORATION SHALL BE COMBINED, BLENDED AND SQUARED USING "T–CAP"S TO ENCOMPASS ALL AREAS IN BETWEEN AS SHOWN IN DETAIL 1. "T–CAP" LIMITS FOR POT HOLES AND CORE HOLES SHALL EXTEND A MINIMUM OF 1–FOOT ALL AROUND BEYOND THE HOLES.
21. IMPACTED BIKE LANES – "T–CAP" LIMITS SHALL FULLY ENCOMPASS ANY BIKE LANE IMPACTED BY THE TRENCH, AND SHALL HAVE A LENGTH THAT EXTENDS AT LEAST 2 FEET BEYOND THE ASPHALT REMOVAL LIMITS IN THE DIRECTION OF BIKE TRAFFIC.
22. WHEN THE "T–CAP" LIMIT IS WITHIN 2 FEET OR LESS FROM A CURB OR GUTTER, THE "T–CAP" LIMIT SHALL EXTEND TO THE CURB OR GUTTER.
23. PAVEMENT SHALL BE LEVEL WITH ADJACENT ROADWAY ELEVATIONS AND SHALL PROVIDE A SMOOTH SURFACE PER GREENBOOK SECTION 302–5 AND SUBJECT TO ACCEPTANCE BY THE CITY PUBLIC WORKS INSPECTOR.
24. "T–CAP" AND PERMANENT BASE PAVING MAY BE PERFORMED ON THE SAME DAY WHEN FEASIBLE.

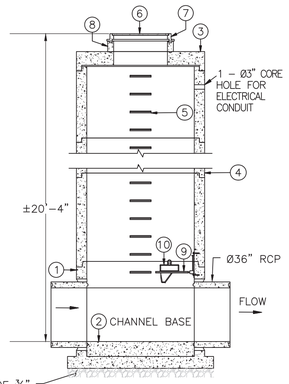
IDENTIFICATION:

EACH RESURFACING SHALL BE IDENTIFIED WITH A METAL IDENTIFICATION TAG IDENTIFYING THE OWNER, AND YEAR OF CONSTRUCTION. IF THE RESURFACING IS MORE THAN 50 FEET IN LENGTH, PLACE THE TAG NEAR EACH END OF THE RESURFACING AND AT INTERVALS NOT TO EXCEED 50 FEET.

MATERIAL LIST		
ITEM	COUNT	DESCRIPTION
1	1	72IN MANHOLE BASE
2	1	CHANNEL CONCRETE BASE
3	1	72IN MANHOLE FLAT TOP
4	3	72IN MANHOLE BARREL
5	15	LADDER STEP RUNG POLYMER MH ASTM–C–478
6	1	36IN DIA CAST IRON COVER
7	1	36IN DIA CAST IRON FRAME
8	1	GRADE RING 36IN DIA
9	1	MOUNTING BRACKET FOR FLO–DAR SENSOR
10	1	FLO–DAR AV SENSOR BY HACH W/SURCHARGE VELOCITY SENSOR OR AGENCY APPROVED EQUAL



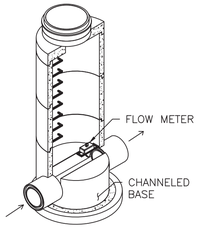
PLAN VIEW



PROFILE VIEW

SCALE: 1"= 4'

FIRST ST



ISOMETRIC VIEW

MATERIAL LIST		
ITEM	COUNT	DESCRIPTION
1	1	60IN MANHOLE BASE
2	1	60IN MANHOLE FLAT TOP
3	2	60IN MANHOLE BARREL
4	1	36IN DIA CAST IRON COVER
5	1	36IN DIA CAST IRON FRAME
6	2	GRADE RING 36IN DIA
7	10	LADDER STEP RUNG POLYMER MH ASTM–C–478
8	1	FLO–DAR AV SENSOR BY HACH W/SURCHARGE VELOCITY SENSOR OR AGENCY APPROVED EQUAL
9	1	MOUNTING BRACKET FOR FLO–DAR SENSOR
10	1	CHANNEL CONCRETE BASE

NOTE:

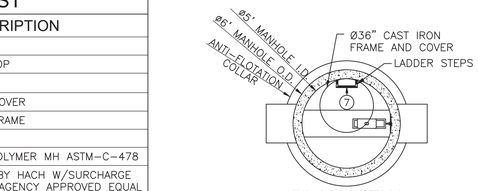
ELECTRIC COMPONENTS IN VAULTS SHALL BE RATED FOR FULL SUBMERSION

GENERAL NOTES:

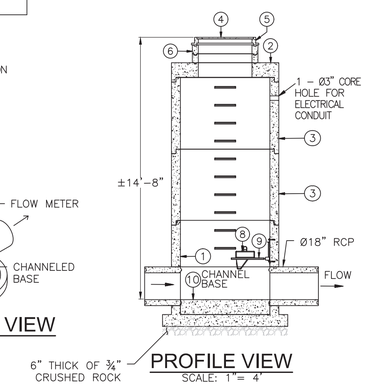
1. PLAN VIEW TOP SLAB WITH FRAMES AND COVERS ARE NOT SHOWN FOR CLARITY
2. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT
3. INLET/OUTLET PIPE STUBS PROVIDED BY CONTRACTOR

CONSTRUCTION NOTES:

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND.
3. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
4. ALL MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ALL APPLICABLE AND CURRENT ASTM, AASHTO, AND NPCA STANDARDS AND SPECIFICATIONS.
5. CONTROL PANEL LOCATION SHOWN ON ELECTRICAL PLANS.

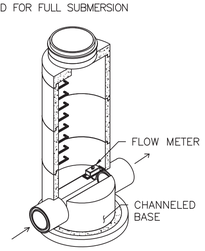


PLAN VIEW



PROFILE VIEW

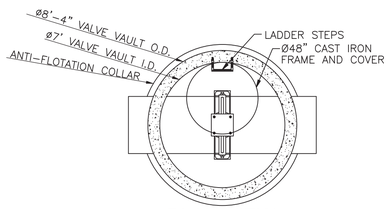
GLENOAKS BLVD



ISOMETRIC VIEW

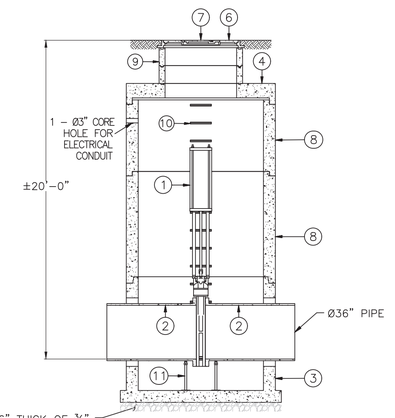
DETAIL 2: FLOW METER AND VAULT

MATERIAL LIST		
ITEM	COUNT	DESCRIPTION
1	1	ELECTRICALLY ACTUATED KNIFE GATE VALVE 36IN
2	2	PIPE 16IN FLG X PE DUCTILE IRON SPOOL 3FT
3	1	84IN MANHOLE BASE
4	1	84IN MANHOLE FLAT TOP
5	1	CI RING 48X5 A–1428 (NOT CALLED OUT IN DETAIL
6	1	CI CVR 48X5 MAIN A–1428
7	1	CI CVR 48X5 VIEW A–1428
8	2	84IN MANHOLE BARREL
9	2	GRADE RING 48DIA X 12IN
10	15	LADDER STEP RUNG POLYMER MH ASTM–C–478 9–3/16 X 13IN PS2–PF–DF
11	2	CRADLE PIPE SUPPORT 30 ADJ TRIPAC TP100



PLAN VIEW

SCALE: 1"= 4'

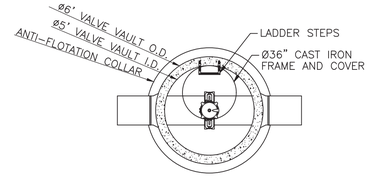


PROFILE VIEW

SCALE: 1"= 4'

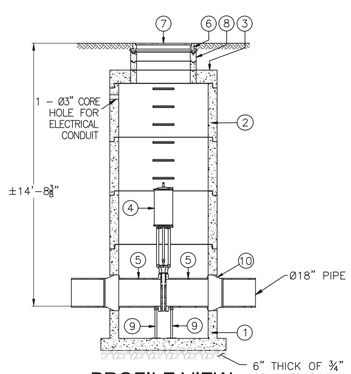
FIRST ST

MATERIAL LIST		
ITEM	COUNT	DESCRIPTION
1	1	60IN MANHOLE BASE
2	3	60IN MANHOLE BARREL
3	1	60IN MANHOLE FLAT TOP
4	1	ELECTRICALLY ACTUATED KNIFE GATE VALVE 18IN
5	2	18IN DIP FLG X PE SPOOL
6	1	36IN DIA CAST IRON FRAME
7	1	36IN DIA CAST IRON COVER
8	2	GRADE RING 36IN DIA
9	2	PIPE SUPPORT
10	2	CONNECTOR BOOT S206–24A CORE–SEAL ASTM C923/C1644 HOLE–24 18.00–19.50



PLAN VIEW

SCALE: 1"= 4'



PROFILE VIEW

SCALE: 1"= 4'

GLENOAKS BLVD

NOTE:

ELECTRIC COMPONENTS IN VAULTS SHALL BE RATED FOR FULL SUBMERSION

SEQUENCE OF OPERATIONS:

1. THE GATE VALVES LOCATED AT THE FIRST STREET AND GLENOAKS BOULEVARD DIVERSIONS WILL NORMALLY BE IN AN OPEN POSITION.
2. ONCE THE LEVEL IN THE TANK REACHES 7 FEET (ELEVATION: 1039.0 FEET), THE GATE VALVE LOCATED AT THE GLENOAKS BOULEVARD DIVERSION WILL BE CLOSED.
3. ONCE THE LEVEL IN THE TANK REACHES 7.3 FEET (ELEVATION: 1039.3 FEET), THE GATE VALVE LOCATED AT THE FIRST STREET DIVERSION WILL BE CLOSED.
4. BOTH VALVES WILL REOPEN ONCE THE LEVEL IN THE TANK IS EQUAL OR LESS THAN 6 FEET DEEP (ELEVATION: 1038.0 FEET).

GENERAL NOTES:

1. PLAN VIEW TOP SLAB WITH FRAMES AND COVERS ARE NOT SHOWN FOR CLARITY
2. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT
3. INLET/OUTLET PIPE STUBS PROVIDED BY CONTRACTOR

CONSTRUCTION NOTES:

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND.
3. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
4. ALL MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ALL APPLICABLE AND CURRENT ASTM, AASHTO, AND NPCA STANDARDS AND SPECIFICATIONS.
5. CONTROL PANEL LOCATION SHOWN ON ELECTRICAL PLANS.

DETAIL 3: GATE VALVE AND VAULT

UNDERGROUND SERVICE ALERT

CALL BEFORE YOU DIG

CALL: TOLL FREE

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TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'V'D

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DESIGNED BY:	KH	APR 2021
CHECKED BY:	VB	APR 2021

Matthew Baumgardner, Director of Public Works — DATE

R.C.E. NO.: 71932 EXP. DATE: 12/31/2021

Manuel Fabian, Civil Engineer Assistant II — DATE

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DEPARTMENT OF PUBLIC WORKS

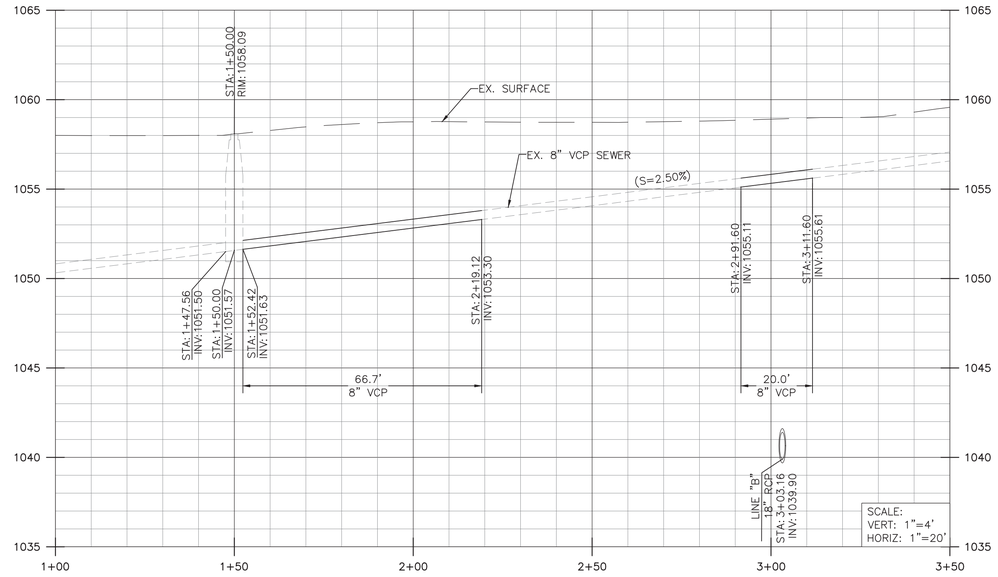
San Fernando Regional Park Infiltration Project

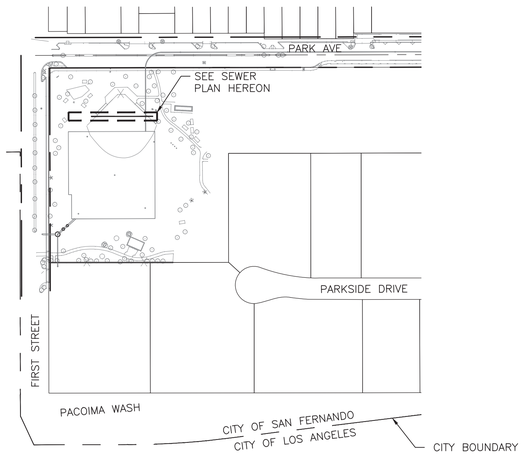
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

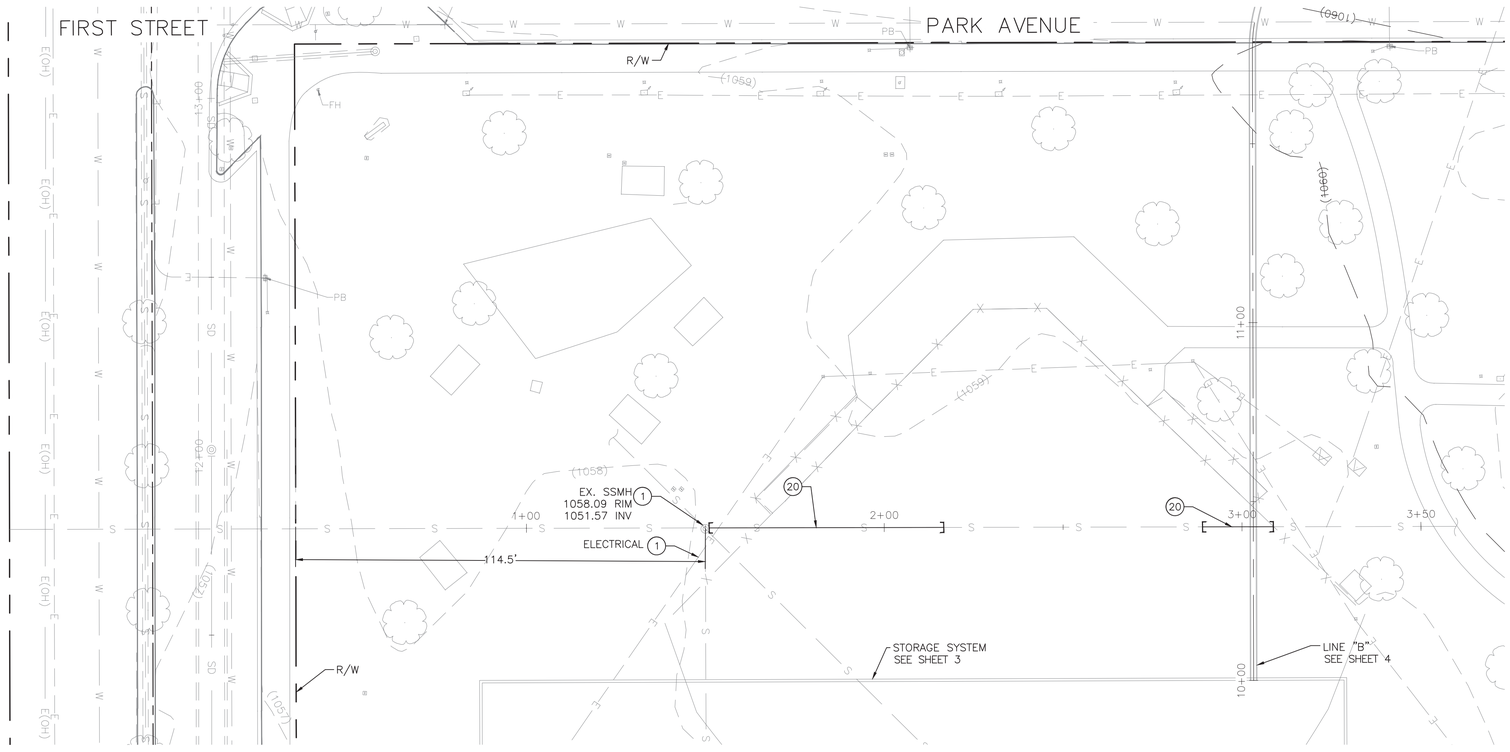
DETAILS

DWG No. C-17

SHEET No. 18 OF 46







LOCATION MAP

SCALE: 1"=200'

CONSTRUCTION NOTES:

(1) PROTECT IN PLACE

(20) REMOVE AND REPLACE 8" VCP SEWER

20' 10' 0 20'

SCALE: 1"= 20'

UNDERGROUND SERVICE ALERT

CALL: TOLL FREE

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TWO WORKING DAYS BEFORE YOU DIG

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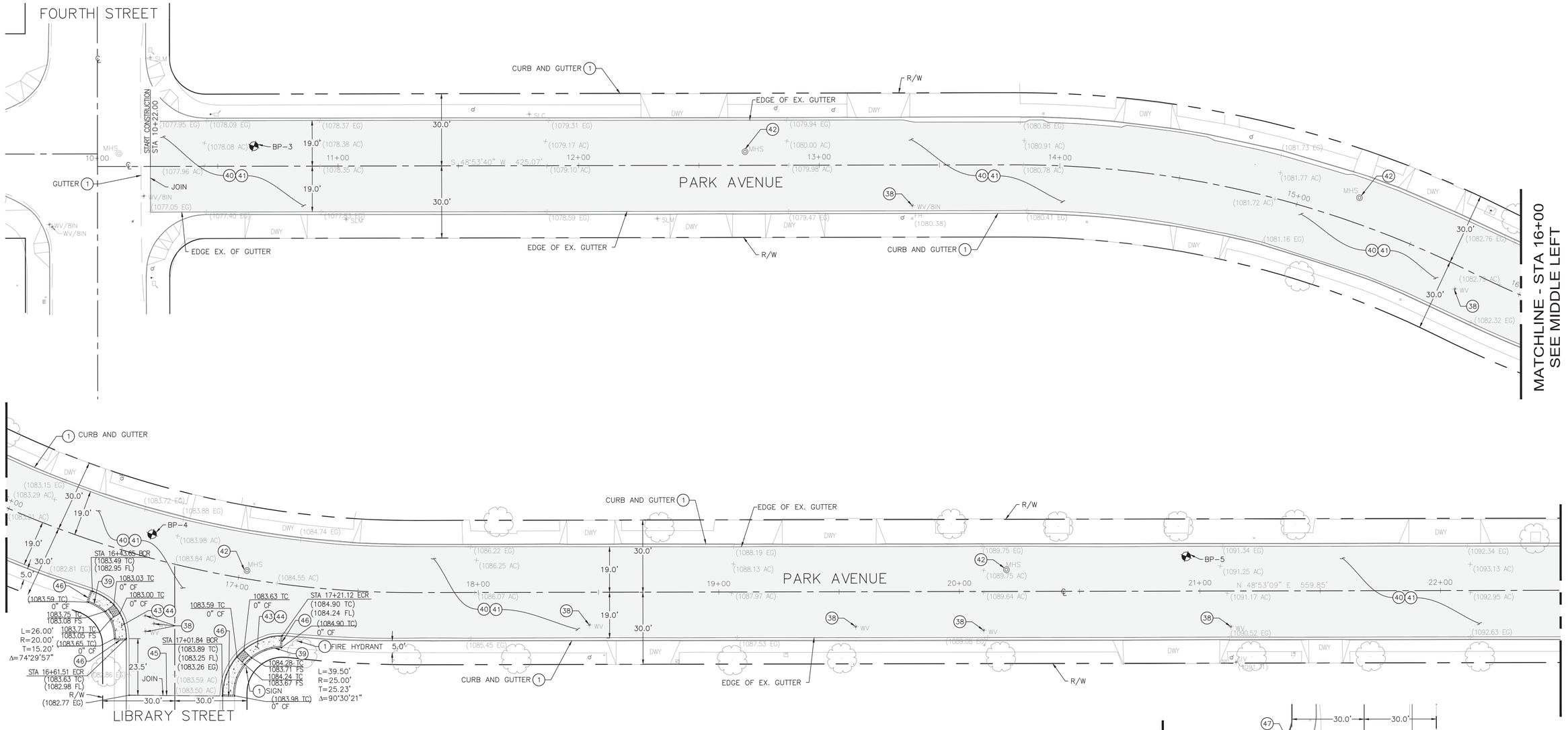
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

SEWER PLAN

DWG No. C-18

SHEET No. 19 OF 46

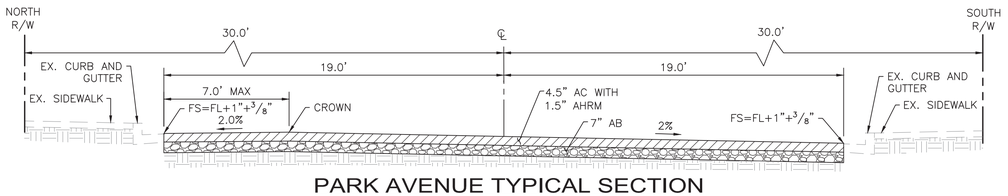


CONSTRUCTION NOTES:

1. PROTECT IN PLACE
38. ADJUST VALVE COVER TO GRADE
39. CURB PER SPPWC STD. PLAN NO. 120-2 A1-6(VAR) WITH NO BATTER
40. REMOVE EXISTING AC PAVEMENT
41. 4.5" AC WITH 1.5" AHRM OVER 7" BASE (SEE DETAIL HEREON FOR TYPICAL PAVEMENT SECTION)
42. ADJUST MANHOLE RIM AND COVER TO GRADE
43. CURB RAMP PER SPPWC STD. PLAN NO. 111-5 MODIFIED CASE B, TYPE 1 WITH TRUNCATED DOMES (ARMOR TILE PART NO. ADA-C-3648 OR AGENCY APPROVED EQUAL)
44. REMOVE EXISTING CURB, GUTTER, AND SIDEWALK
45. SAWCUT ASPHALT PAVEMENT
46. SAWCUT PCC PAVEMENT
47. INSTALL TRUNCATED DOMES (ARMOR TILE PART NO. ADA-C-3648 OR AGENCY APPROVED EQUAL) PER SPPWC STD. PLAN NO. 111-5

NOTE:

ALL STATIONS ARE LABELED BASED ON THE CENTERLINE STATIONING

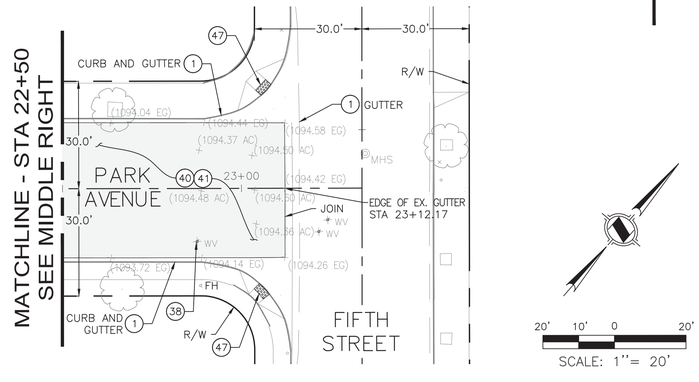


PARK AVENUE TYPICAL SECTION
STA 10+22 TO STA 23+12

SCALE: 1"=4'

LEGEND

- ASPHALT PAVEMENT
- PORTLAND CEMENT CONCRETE
- TRUNCATED DOMES



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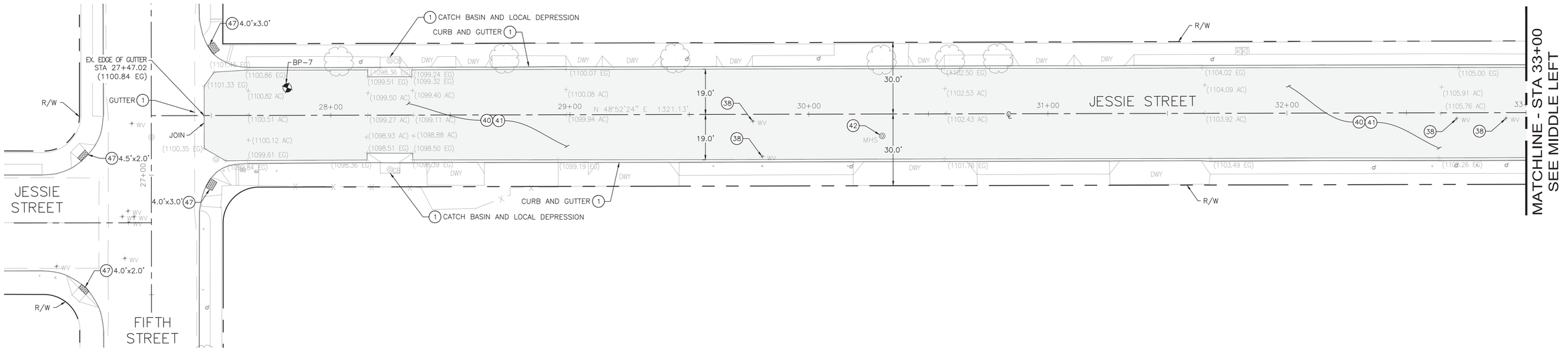
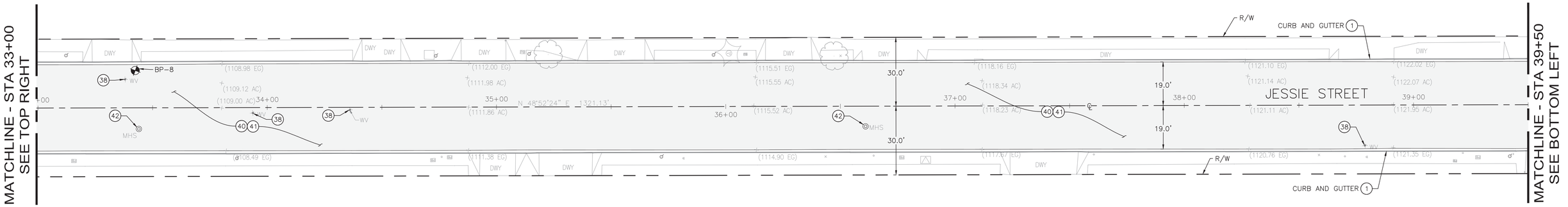
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

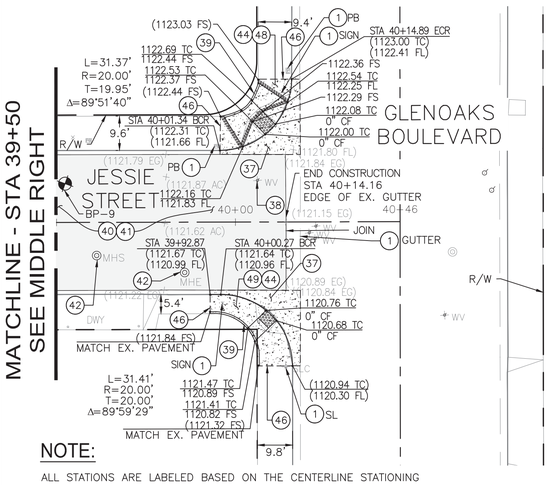
STREET IMPROVEMENT PLAN
STA 10+00 TO 23+12

DWG No. C-19

SHEET No. 20 OF 46







CONSTRUCTION NOTES:

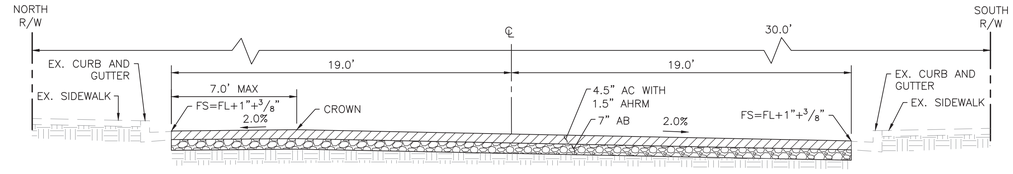
1. PROTECT IN PLACE
37. PCC PAVEMENT IN KIND
38. ADJUST VALVE COVER TO GRADE
39. CURB PER SPPWC STD. PLAN NO. 120-2 A1-6(VAR) WITH NO BATTER
40. REMOVE EXISTING AC PAVEMENT
41. 4.5" AC WITH 1.5" AHRM OVER 7" BASE (SEE DETAIL HEREON FOR TYPICAL PAVEMENT SECTION)
42. ADJUST MANHOLE RIM AND COVER TO GRADE
44. REMOVE EXISTING CURB, GUTTER, AND SIDEWALK
46. SAWCUT PCC PAVEMENT
47. INSTALL TRUNCATED DOMES (ARMOR TILE PART NO. ADA-C-3648 OR AGENCY APPROVED EQUAL) PER SPPWC STD. PLAN NO. 111-5
48. CURB RAMP PER SPPWC STD. PLAN NO. 111-5 MODIFIED CASE A, TYPE 3 WITH TRUNCATED DOMES (ARMOR TILE PART NO. ADA-C-3648 OR AGENCY APPROVED EQUAL)
49. CURB RAMP PER SPPWC STD. PLAN NO. 111-5 MODIFIED CASE B, TYPE 1 WITH TRUNCATED DOMES (ARMOR TILE PART NO. ADA-C-3648 OR AGENCY APPROVED EQUAL)

LEGEND

- ASPHALT PAVEMENT
- PORTLAND CEMENT CONCRETE
- TRUNCATED DOMES

NOTE:

ALL STATIONS ARE LABELED BASED ON THE CENTERLINE STATIONING



JESSIE STREET TYPICAL SECTION
STA 27+47 TO STA 40+14

SCALE: 1"=4'

20' 10' 0 20'

SCALE: 1"= 20'

UNDERGROUND SERVICE ALERT

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TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

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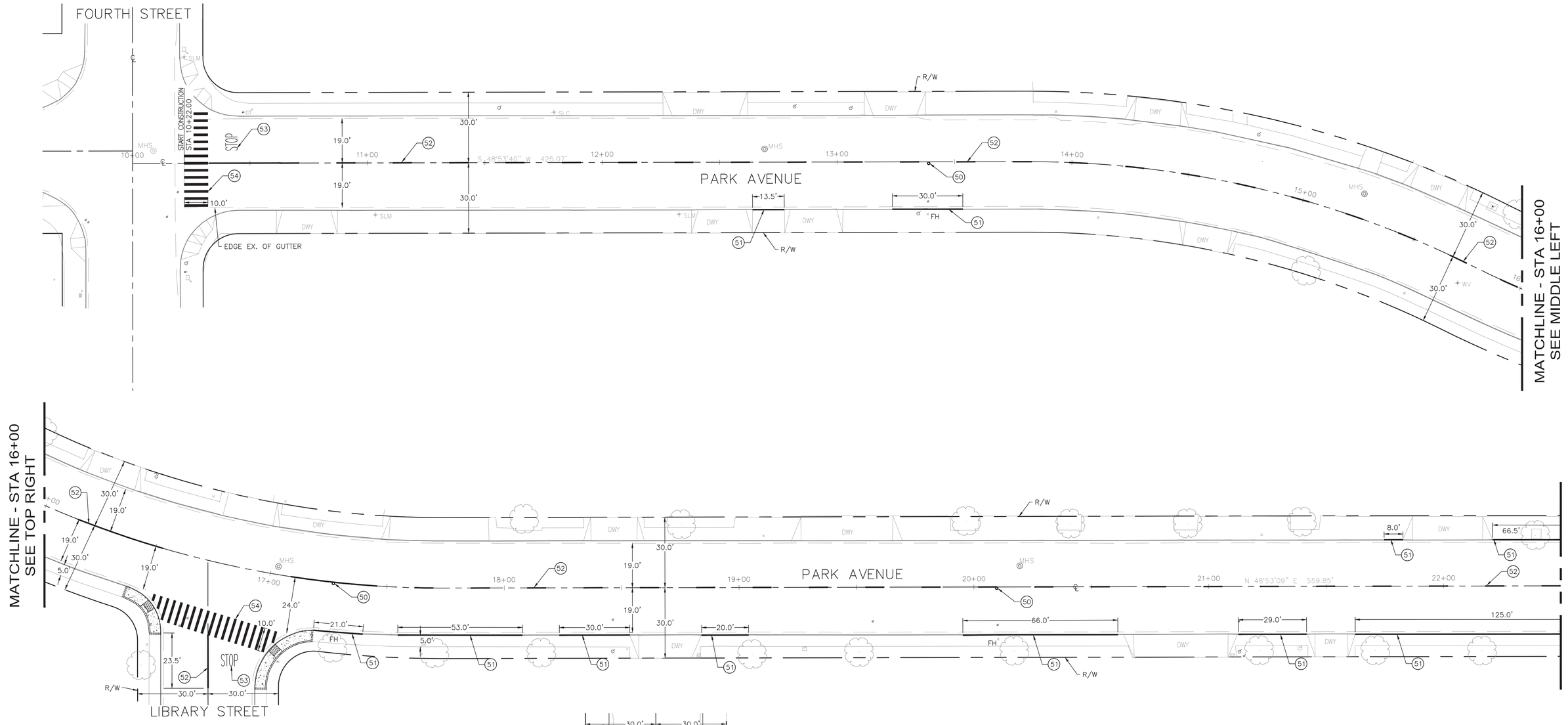
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

STREET IMPROVEMENT PLAN
STA 27+47 TO 40+14

DWG No. C-20

SHEET No. 21 OF 46



CONSTRUCTION NOTES:

(50) BLUE RAISED REFLECTIVE PAVEMENT MARKER AT CENTERLINE
(51) RED CURB, LENGTH PER PLAN
(52) YELLOW CENTERLINE, 4" LINE, THERMOPLASTIC PER CA MUTCD FIGURE 3A-101(CA), DETAIL 1
(53) THERMOPLASTIC PAVEMENT MARKING "STOP" PER SPPWC STD. PLAN NO. 171-0
(54) WHITE, CONTINENTAL THERMOPLASTIC CROSSWALK STRIPING PER CALTRANS STD. PLAN A24F
(55) WHITE STOP AND STOP BAR PER SPPWC STD. PLAN NO. 172-0

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

UNDERGROUND SERVICE ALERT
CALL: TOLL FREE
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TWO WORKING DAYS BEFORE YOU DIG

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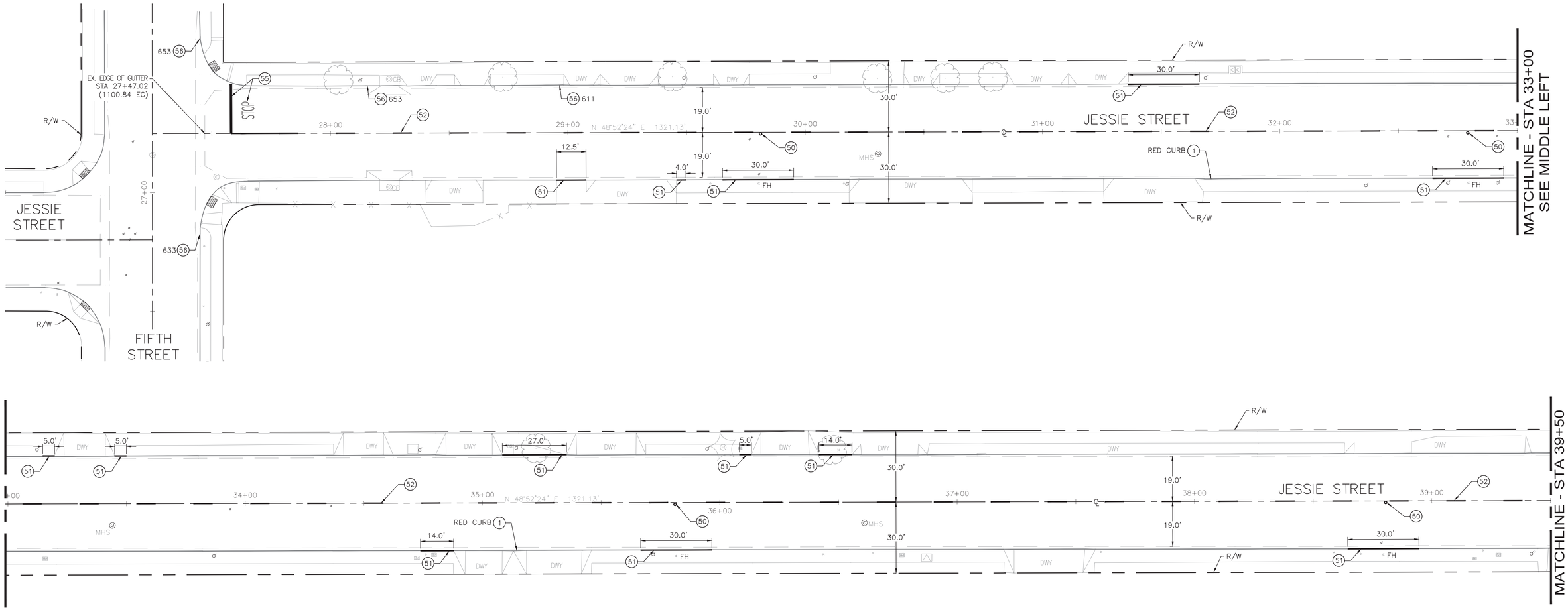
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

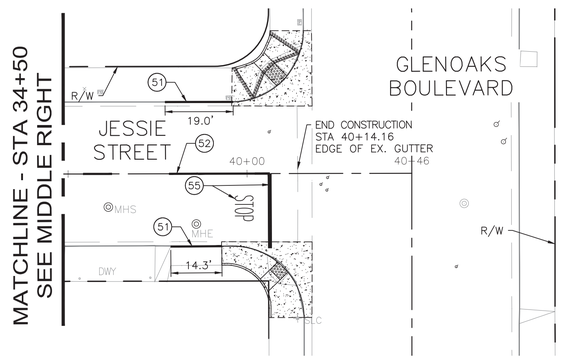
STRIPING PLAN
STA 10+00 TO 23+12

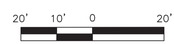
DWG No. C-21
SHEET No. 22 OF 46



CONSTRUCTION NOTES:

(1) PROTECT IN PLACE
(50) BLUE RAISED REFLECTIVE PAVEMENT MARKER AT CENTERLINE
(51) RED CURB, LENGTH PER PLAN
(52) YELLOW CENTERLINE, 4" LINE, THERMOPLASTIC PER CA MUTCD FIGURE 3A-101(CA), DETAIL 1
(55) WHITE STOP AND STOP BAR PER SPPWC STD. PLAN NO. 172-0
(56) ADDRESS NUMBER ON CURB (BLACK BLOCK NUMBERS ON WHITE BACKGROUND)





SCALE: 1"= 20'

UNDERGROUND SERVICE ALERT
CALL: TOLL FREE
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SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

STRIPING PLAN
STA 27+47 TO 40+14

DWG No. C-22
SHEET No. 23 OF 46

GENERAL NOTES

1. THIS DRAWING CONTAINS STANDARD SYMBOLS. NOT ALL SYMBOLS SHOWN ARE USED ON THIS PROJECT.
2. THESE DRAWINGS ARE SUPPLEMENTED WITH STANDARD SPECIFICATIONS. OBTAIN A COPY OF THE SPECIFICATIONS FROM ENGINEER'S OFFICE.
3. CONTRACTOR SHALL NOT CUT ANY STRUCTURAL MEMBER(S) OR USE ANY ATTACHMENTS THAT WOULD IMPAIR THEIR STRENGTH.
4. CONTRACTOR SHALL DESIGN THE SUPPORTS IN BETWEEN THE STRUCTURAL SUPPORT MEMBER(S) AND SUBMIT THE DESIGN AS A SHOP DRAWING SUBMITTAL.
5. THE ENTIRE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, FEDERAL COMMUNICATION COMMISION (FCC), STATE FIRE MARSHALL REGULATIONS, AND ALL OTHER ORDINANCES HAVING JURISDICTION ALBEIT NOT SHOWN ON DRAWINGS OR SHOWN OTHERWISE.
6. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTION REQUIREMENTS.
7. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY-OPERATING SYSTEM, ENERGIZED THROUGHOUT AND AS INDICATED ON THE DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
8. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, EXCEPT AS NOTED, AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORY AND SHALL BEAR THE INSPECTION LABEL UL WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH THE APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY AND ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, AND NBFU.
9. ALL ABOVE GROUND OUTDOOR WIRING SHALL BE IN RIGID STEEL CONDUIT. FLEXIBLE CONDUIT SHALL BE USED FOR SHORT CONNECTIONS TO LIGHTING FIXTURES AND OTHER VIBRATING EQUIPMENT. USE NEOPRENE JACKETED FLEXIBLE CONDUIT AND FITTINGS WHERE EXPOSED TO WEATHER.
10. ALL CONDUCTORS SHALL BE COPPER AND RATED 600 VOLTS. LARGER SHALL BE STRANDED AND NO. 10 AND SMALLER SHALL BE SOLID UNLESS USE TYPE THNN/THWN/THW.
11. OUTLET BOXES SHALL BE CAST BOXES WITH THREADED HUBS, GASKETED COVER PLATES, AND PROPER DEVICE. FOR VAULT INSTALLATIONS MATCH EXISTING BOXES IF OTHER THAN CAST BOX.
12. ALL SURFACE-MOUNTED ELECTRICAL EQUIPMENT AND DEVICES SHALL BE PROPERLY SECURED TO WALL OR CEILING.
13. TEST THE ENTIRE SYSTEM AND DEMONSTRATE THAT THE ELECTRICAL COMPONENTS AND SPECIAL SYSTEMS ARE COMPLETE AND FUNCTION PROPERLY. MAKE NECESSARY CORRECTIONS AND LEAVE SYSTEMS READY FOR OPERATION.
13. PROVIDE SEPARATE GROUND WIRE IN ALL PLASTIC AND FLEX CONDUITS.
14. ALL OUTDOOR EQUIPMENT SHALL BE IN WEATHERPROOF NEMA 4X STAINLESS STEEL ENCLOSURE EXCEPT AS NOTED. ALL EQUIPMENT AND DEVICES SHALL BE PAD LOCKED ALL KEYED ALIKE WITH 5 KEYS FOR EACH SITE SUBMITTED TO THE DISTRICT AFTER ACCEPTANCE.
15. LIGHT OR SCREENED LINES ARE EXISTING TO REMAIN OR NON-ELECTRICAL COMPONENTS. EXISTING TO REMAIN SHALL BE PROTECTED IN PLACE UNLESS OTHERWISE. HEAVY LINE ARE NEW TO BE PROVIDED, INSTALLED, TESTED, COMMISSIONED AND READY FOR USE.
16. ALL ITEMS TO BE REMOVED SHALL BE LEGALLY DISPOSED PER STATE REGULATIONS.

GENERAL INSTRUMENTATION, CONTROL FUNCTION SYMBOLS & DEFINITIONS

XXX OR XXXXX — EQUIPMENT/FIELD MOUNTED. SHOWN FOR DEVICE XXX OR XXXXX, TYPICAL.

INSTRUMENTS SHARING A COMMON HOUSING, EQUIPMENT/FIELD MOUNTED.

XXX — PANEL MOUNTED, OPERATOR ACCESSIBLE. MOUNTED IN LCP, UON. PANEL XXX SHOWN.

PANEL MOUNTED, OPERATOR INACCESSIBLE.

XXX XXX — INSTRUMENTS SHARING COMMON HOUSING, PANEL MOUNTED IN LCP, UON, PANEL XXX SHOWN

PLC SHARED DISPLAY/CONTROL FUNCTIONS

ELECTRICAL SIGNAL

PNEUMATIC SIGNAL

MICROPROCESSOR BASED LOCAL OPERATOR INTERFACE (MMI)

MICROPROCESSOR BASED REMOTE (SCADA) OPERATOR INTERFACE (MMI)

PLC INPUT/OUTPUT POINT, DISCRETE INPUT SHOWN (FSH 1A / DI)

COMMUNICATION OR LOGIC SIGNAL

RADIO OR TELEMETRY SIGNAL

ISA – S5.1 TABLE 1 IDENTIFICATION LETTERS

FIRST LETTER(S)			SUCCEEDING LETTERS		
MEASURED OR INITIATING VARIABLE		MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER , COMBUSTION				
C	CONDUCTIVITY		CLOSE	CONTROL	CLOSED
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	GAUGE		GLASS, VIEWING DEVICE		
H	HAND (MANUAL)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHED.	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOISTURE	MOMENTARY			MIDDLE
N	INTRUSION				NORMAL
O	TORQUE		OPEN		OPENED
P	PRESSURE, VACUUM		POINT CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD OR PRINT		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, SOLENOID, CONVERT	
Z	POSITION	Z AXIS		DRIVER, ACTUATOR, FINAL CONTROL ELEMENT	NTS

REFERENCE ISA-S5.1 SECTION 5.1 AND TABLE 2 FOR EXPLANATION AND TYPICAL LETTER COMBINATIONS

TRANSDUCERS

A	= ANALOG	I	= CURRENT
D	= DIGITAL	P	= PNEUMATIC
E	= VOLTAGE	PF	= PULSE FREQUENCY
F	= FREQUENCY	PD	= PULSE DURATION
H	= HYDRAULIC	R	= RESISTANCE

PLC DEFINITIONS

AI = ANALOG INPUT

AO = ANALOG OUTPUT

DI = DISCRETE INPUT

DO = DISCRETE OUTPUT

SELF CONTAINED VALVE & EQUIPMENT TAG NUMBERS

D-X

D:
- ARV = AIR RELEASE VALVE
- ASV = ANTI-SIPHON VALVE
- ARVR = AIR AND VACUUM RELEASE VALVE
- E = EDUCTOR
- FCV = FLOW CONTROL VALVE
- G = GATE
- LCV = LEVEL CONTROL VALVE
- M = MECHANICAL EQUIPMENT
- P = PUMP
- PCV = PRESSURE CONTROL VALVE
- PRV = PRESSURE REGULATING VALVE
- PSE = RUPTURE DISK
- PSV = PRESSURE RELIEF VALVE
- T = TANK
- TCV = TEMPERATURE CONTROL VALVE
- SP = SUMP PUMP
- SOL = SOLENOID VALVE

X: UNIT NUMBER

NOTICE TO CONTRACTOR:

IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CALL THE USA UNDERGROUND ALERT FOR LOCATION OF EXISTING UNDERGROUND UTILITIES NO LESS THAN TWO DAYS NOR MORE THAN SEVEN DAYS PRIOR TO CONSTRUCTION.

811

THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR ANY DAMAGE DONE TO EXISTING UTILITIES OR STREET IMPROVEMENTS INCLUDING CONCRETE/LANDSCAPING DURING CONSTRUCTION.

PLANS ELECTRICAL SYSMBOLS

	125V, 20A NEMA 5-20R SIMPLEX RECEPTACLE, UON
	125V, 20A NEMA 5-20R DUPLEX RECEPTACLE, UON
	SAME AS DUPLEX RECEPTACLE ABOVE EXCEPT WEATHERPROOF, GFCI
	SAME AS DUPLEX RECEPTACLE ABOVE EXCEPT GFCI
S	WALL SWITCH MOUNT AT +45" AFF, UON 2-DOUBLE POLE 3-THREE WAY 4-FOUR WAY 6-OUTLET CONTROLLED CRE-CORROSION RESISTANT D-DIMMER EP-EXPLOSION PROOF K-KEY OPERATED P-PILOT LIGHT WP-WEATHERPROOF T-TIMER SWITCH
T	THERMOSTAT OUTLET, MOUNT AT +66" UON
J	JUNCTION BOX, SIZED AS REQUIRED
	CONTROL STATION SEE SCHEMATIC DIAGRAM
	NON-FUSED SWITCH, 30A, 3P, UON
F	FUSED SWITCH, 30A, 3P, UON
2	ENCLOSED COMBINATION STARTER, NUMBER INDICATES NEMA SIZE, NEMA SIZE #1 UON
	GROUND WELL, CONCRETE WITH LABELED COVER
	GROUND ROD, 5/8" DIA. X 10' COPPER CLAD STEEL. BURIAL DEPTH PER OWNER'S INSTRUCTIONS
XXX	CONDUIT DESIGNATION SEE CONDUIT SCHEDULE
	CONDUIT IN SLAB OR UNDER GROUND, 1" MIN.
	CONDUIT ABOVE GRADE, 3/4" MIN. SEE GENERAL NOTES OF THIS SHEET FOR ADDITIONAL REQUIREMENTS.
	CONDUIT INTERSECT WITH CONDULET
G	EXOTHERMIC WELD CONNECTION
	CONDUIT BENDS TOWARD OBSERVER OR EQUIPMENT
	CONDUIT BENDS AWAY FROM OBSERVER OR EQUIPMENT
	CONDUIT STB-OUT AND CAPPED
J	FLEXIBLE CONDUIT CONNECTION
	MOTOR CONNECTION
	PANELBOARD
	FLOURESCENT FIXTURE SEE FIXTURE SCHEDULE
OR	WALL MOUNTED FIXTURE SEE FIXTURE SCHEDULE
OR	POLE MOUNTED LIGHT
	CELLULAR ANTENNA
	JUNCTION BOX / PULLBOX
	GENERATOR RECEPTACLES SEE PLANS FOR RATINGS.
	TWIST LOCK RECEPTACLE, WP SEE PLANS FOR RATINGS
	CONDUIT RUN (GROUND CONDUCTOR | NEUTRAL CONDUCTOR | PHASE OR SWITCHED CONDUCTOR CROSS LINES INDICATE NUMBER OF CONDUCTORS, #12 AWG UNLESS OTHERWISE INDICATED, SIZE GROUND CONDUCTOR PER N.E.C., NO CROSS LINES INDICATE 2#12 & 1#12 GND
	MINIMUM CONDUIT RUN AS SHOWN IS 3/4"C ABOVE GROUND AND 1"C UNDERGROUND WITH 2#12 + 1#12 GND., UNLESS OTHERWISE NOTED

SCHEMATIC DIAGRAM SYMBOLS

NORMALLY OPEN	NORMALLY CLOSE	
		DEVICE
		CONTACT
		TIMED CONTACT CONTACT ACTION RETARDED ON ENERGIZATION
		TIMED CONTACT CONTACT ACTION RETARDED ON DE-ENERGIZATION
		PUSH BUTTON SINGLE CIRCIUIT MOMENTARY CONTACT
		PUSH BUTTON SINGLE CIRCIUIT LOCK-OUT
		LIMIT SWITCH
		LIQUID LEVEL SWITCH
		PRESSURE OR VACUUM SWITCH
		FLOW SWITCH
		TEMPERATURE SWITCH
		SELECTOR SWITCH
		MANUAL MOTOR STARTER
O/L'S		MOTOR OVERLOAD HEATER CONTACTS
		MOTOR OVERLOAD HEATER
A		PILOT LIGHT R=RED, W=WHITE, G=GREEN, A=AMBER
A		PILOT LIGHT, PUSH TO TEST R=RED, W=WHITE, G=GREEN, A=AMBER
CR		CONTROL RELAY, FUNCTION AS DEFINED
TD		TIME DELAY RELAY
PC		PHOTO CELL
SC		STARTER COIL
		SOLENOID OPERATED VALVE
		PHASE MOTOR
		BELL OR BUZZER
ETM		ELAPSED TIME METER
		FUSE, TRIP RATING AS NOTED
		CONTROL POWER TRANSFORMER
		GROUND
		WIRING IN MOTOR STARTER
		FIELD WIRING
		TERMINAL BLOCK
		BATTERY
10A		CIRCUIT BREAKER, TRIP RATING AS NOTED
PM		POWER MONITORING DEVICE
VFD		VARIABLE FREQUENCY DRIVE
		DC CHOKE / LINE REACTOR
M		SERVICE METER
H		BLOCK HEATER / SPACE HEATER
SSS		SOLID STATE STARTER
30A NEMA 1		COMBINATION STARTER WITH MOTOR CIRCUIT PROTECTION, NEMA SIZE MOTOR STARTER AND OVERLOAD HEATERS
30 KVA 480-120/208 V		STEP DOWN TRANSFORMER WITH SECONDARY GROUND

THESE PLANS WERE PREPARED IN CONJUNCTION WITH THE STAFF OF THE OWNER'S ENGINEERING DEPARTMENT. ENGINEERING MADE A REASONABLE REVIEW OF AVAILABLE RECORDS AND A VISUAL INSPECTION OF THE PROJECT AREA TO COMPLETE THE INFORMATION GIVEN HEREON INCLUDING THE EXISTENCE AND LOCATION OF SUBSTRUCTURES AND UNDERGROUND UTILITY PIPES. HOWEVER, OWNER OR LINKTURE DOES NOT WARRANTY THE INFORMATION GIVEN HEREON.

THE CONTRACTOR, IN ADDITION TO COMPLYING WITH THE PROCEDURES OF UNDERGROUND SERVICE ALERT, IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO LOCATE AND PROTECT THE ABOVE AND BELOW GROUND STRUCTURES IN THE VICINITY OF THE PROJECT.

ABBREVIATIONS

A	AMPERE, AUTO, AUTOMATIC
A/C, AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AI	ANALOG INPUT TO PLC
AIC	AVAILABLE INTERRUPTING CURRENT
ANN	ANNUNCIATOR
AO	ANALOG OUTPUT FROM PLC
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
AWG	AMERICAN WIRE GUAGE
BLDG.	BUILDING
BRKR	BREAKER
BTCW	BARE TINNED COPPER WIRE
C	CONDUIT
CAB	CABINET
C/B, CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING
CNTRL	CONTROL
CO	CONDUIT ONLY, WITH PULL ROPE
COMM	COMMUNICATION
CPT	CONTROL POWER TRANSFORMER, 120V SECONDARY, UON
CPU	CENTRAL PROCESSING UNIT
CM	COMMUNICATION MODULE
DC	DIRECT CURRENT
DI	DISCRETE INPUT TO PLC
DSW	DISCONNECT SWITCH
DO	DISCRETE OUTPUT FROM PLC
D/P	DIFFERENTIAL PRESSURE
DPDT	DOUBLE-POLE, DOUBLE-THROW
DPM	DIGITAL PANEL METER
DWG	DRAWING
EA	EACH
EF-X	EXHAUST FAN NO.X
ELECT.	ELECTRICAL
EMI	ELECTROMAGNETIC INTERFERENCE
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EX, (E)	EXISTING
FA	FLOW ALARM
F	FUSE
FM	FACTORY MUTUAL
FS	FLOW SWITCH OR FLOAT SWITCH
GEC	GROUND ELECTRODE CONDUCTOR
GFI, GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GND OR G	GROUND
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HT	HEIGHT
H	HEATER OR HAND SWITCH
HS	HAND SWITCH
I/O	INPUT/OUTPUT
IC	RMS SYM. INTERRUPTING CAPACITY RATING
IN OR "	INCHES
JB	JUNCTION BOX
JS	POWER SWITCH
K	THOUSAND
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERE
KVAR	KILOVOLT-AMPERE REACTIVE
KW	KILOWATT
LAH	LEVEL ALARM HIGH
LAL	LEVEL ALARM LOW
LCL	LONG CONTINUOUS LOAD
LCP	LOCAL CONTROL PANEL
LM	LARGEST MOTOR
LOS	LOCK OUT SWITCH
LSH	LEVEL SWITCH HIGH
LSL	LEVEL SWITCH LOW
LT	LEVEL TRANSMITTER
LTG	LIGHTING
LV	LOW VOLTAGE
LVL	LEVEL
MA	MANUAL OR MILLIAMPERE
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
ML	MAIN LUG
MLO	MAIN LUG ONLY
mm	MILLIMETER
MOV	MOTOR OPERATED VALVE
MSB	MAIN SWITCHBOARD
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
(N)	NEW, TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR
(NL)	NEW LOCATION OF RELOCATED DEVICE
NA	INTRUSION ALARM
N/C, NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NIC	NOT IN CONTRACT
N/O, NO	NORMALLY OPEN
NO., #	NUMBER
NS	INTRUSION SWITCH
NTS	NOT TO SCALE
OC	ON CENTER
P	POLE
PAH	PRESSURE ALARM HIGH
PAL	PRESSURE ALARM LOW
P&ID	PIPING AND INSTRUMENTATION DIAGRAM
PB	PULL BOX
PC	PHOTO CELL
PFA	POWER FAILURE ALARM
PFR	PHASE FAILURE RELAY
PH, ø	PHASE
PID	PROPORTIONAL, INTEGRAL, AND DERIVATIVE (TUNING)
PLC	PROGRAMMABLE LOGIC CONTROLLER
P/L	PROPERTY LINE
PM	POWER MONITORING
PNL	PANEL
PS	PULL SECTION
PSH	PRESSURE SWITCH HIGH
PSL	PRESSURE SWITCH LOW
PT	PRESSURE TRANSMITTER
PTT	PUSH-TO-TEST
PVC	POLYVINYL CHLORIDE
(R)	RELOCATE-PROVIDE WIRING AND CONDUITS AS NECESSARY
RE	REPLACE EXISTING
REQ'D.	REQUIRED
REQMT.	REQUIREMENT
RTU	REMOTE TERMINAL UNIT
SHT	SHEET
SLD	SINGLE LINE DIAGRAM
SPDT	SINGLE-POLE, DOUBLE-THROW
SPEC	SPECIFICATION
SPST	SINGLE-POLE, SINGLE-THROW
S/N	SOLID NEUTRAL
S/S	START-STOP
SS	STAINLESS STEEL, SOFT STARTER
SSS	SOLID-STATE STARTER
SW	SWITCH
TB	TERMINAL BLOCK, OR TERMINAL BOX
TBD	TO BE DISCUSS/DETERMINED
TD	TIME DELAY
TERM	TERMINAL
TYP.	TYPICAL
TSP	TWISTED SHIELDED PAIR, 2/C#16 AWG
STS	TWISTED SHIELDED TRIAD, 3/C#16 AWG
V	VOLTAGE
VA	VOLT-AMPERES
VFD	VARIABLE FREQUENCY DRIVE
XFMR	TRANSFORMER
XTMR	TRANSMITTER
W	WATT
WH	WATTHOUR
WP	WEATHERPROOF
WT	WATER TIGHT
Z	IMPEDANCE
ZSC	LIMIT SWITCH CLOSED
ZSO	LIMIT SWITCH OPEN
3W	THREE-WIRE
4W	FOUR-WIRE

NOTES:

LIGHT THIN LINES DEPICTING WIRES, EQUIPMENT, DEVICES, COMPONENTS, CONDUITS, ETC. ARE EXISTING AND ARE SHOWN FOR CLARITY.

NOT ALL SYMBOLS AND ABBREVIATIONS ABOVE APPEAR ON THE ACCOMPANYING CONTRACT PLANS OR ELSEWHERE IN THE CONTRACT DOCUMENTS.

UNDERGROUND SERVICE ALERT
CALL BEFORE YOU DIG
CALL: TOLL FREE
811
TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'VD

PREPARED BY:
CWE
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SUITE 240
FULLERTON, CA 92831
TEL. (714) 526-7500
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REGISTERED PROFESSIONAL ENGINEER — DIPTY N. FERNANDEZ — No. E 012496 — EXP. 9/30/21 — 04/22/21 — ELECTRICAL — STATE OF CALIFORNIA

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DRAWN BY:	JA	APRIL 2021
DESIGNED BY:	JA	APRIL 2021
CHECKED BY:	OF	APRIL 2021

Matthew Baumgardner — Director of Public Works — DATE
R.C.E. NO.: 71932 EXP. DATE: 12/31/2021

Manuel Fabian, Civil Engineer Assistant II — DATE

CITY OF SAN FERNANDO
HISTORIC & VISIONARY
CITY OF SAN FERNANDO
DEPARTMENT OF PUBLIC WORKS

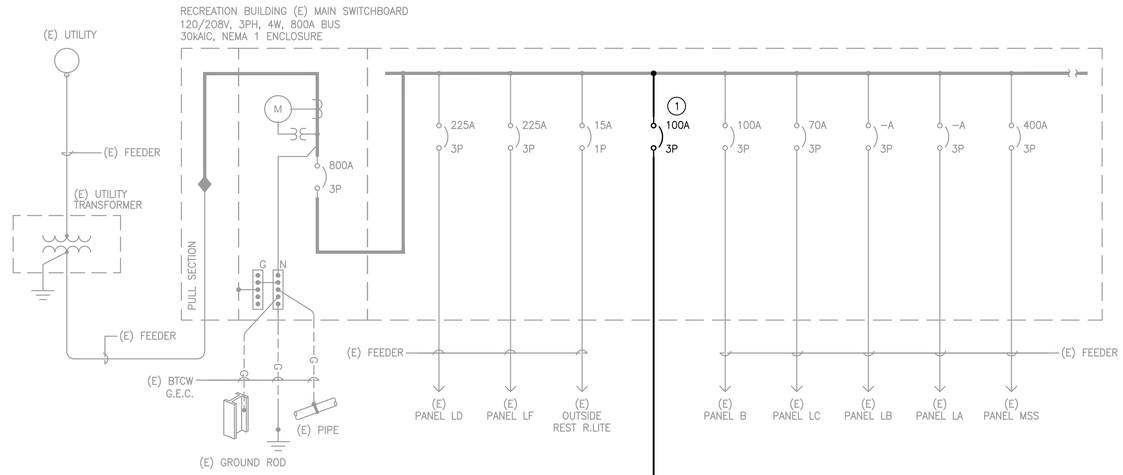
San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

GENERAL NOTES, ELECTRICAL SYMBOLS, SCHEMATIC SYMBOLS, ABBREVIATIONS

DWG No. E-01
SHEET No. 24 OF 46

Plotted by: JMSN Apr. 22, 2021 01:26 PM Z:\Linkture Corp\CWE City of San Fernando Infiltration\CAD Files\Electrical Plans\2021-04-22 San Fernando Infiltration.dwg



ELECTRICAL DESIGN LOAD SUMMARY

SERVICE DESCRIPTION	LOAD (kW)
(E) PANEL LD	36.0
(E) PANEL LF	36.0
(E) OUTSIDE REST R. LITE	2.5
(N) PANEL RH	19.2
(E) PANEL B	14.4
(E) PANEL LC	10.1
(E) PANEL LB	7.2
(E) PANEL LA	7.2
(E) PANEL MSS	57.6
SAFETY FACTOR (25% OF TOTAL LOAD)	47.6
TOTAL kW	237.9
TOTAL AMPERE AT 208V, 3PH	660.3

PANEL "RH1" SCHEDULE

PANEL FRAME SIZE: **100A** — MAIN BREAKER SIZE: **60A**
VOLTAGE: **120/208V** — ENCLOSURE: **NEMA 1**
PHASE: **3PH, 4W** — INTERRUPTING RATING: **10 kA** — MOUNTING: **INSIDE CONTROL PANEL**

	CKT NO.	CKT BKR AMPS	CKT BKR POLES	QTY LTG	QTY REC	QTY MISC	DESCRIPTION	LOAD (WATTS) LOAD	L1	L2	L3	LOAD	DESCRIPTION	QTY MISC	QTY REC	QTY LTG	CKT BKR POLES	CKT BKR AMPS	CKT NO.	
LML	1	40	3				ELECTRIC ACTUATOR	2906	4106			1200	CONTROL PANEL				1	20	2	CL
LML	3							2906		2906			SPARE						4	
LML	5							2906			2906		SPARE						6	
	7						SPARE		0				SPARE						8	
	9						SPARE			0			SPARE						10	
	11						SPARE				0		SPARE						12	
							PHASE TOTALS (WATTS)		4106	2906	2906									
							PHASE BALANCE	12%	41%	29%	29%									
							TOTAL CONNECTED LOAD (WATTS)			9918										
							25% OF LONG CONTINUOUS LOAD (LCL) AND LARGEST MOTOR			2480										
							TOTAL LOAD (WATTS)			12398										
							TOTAL LOAD (AMPS)			29.8										

NOTES:
1. ALL CIRCUIT BREAKERS SHALL BE 80% RATED.
2. CL - DENOTES CONTINUOUS LOAD
3. LML - DENOTES LARGEST MOTOR LOAD

PANEL "RH" SCHEDULE

PANEL FRAME SIZE: **100A** — MAIN BREAKER SIZE: **100A**
VOLTAGE: **120/208V** — ENCLOSURE: **NEMA 1**
PHASE: **3PH, 4W** — INTERRUPTING RATING: **10 kA** — MOUNTING: **SURFACE**

	CKT NO.	CKT BKR AMPS	CKT BKR POLES	QTY LTG	QTY REC	QTY MISC	DESCRIPTION	LOAD (WATTS) LOAD	L1	L2	L3	LOAD	DESCRIPTION	QTY MISC	QTY REC	QTY LTG	CKT BKR POLES	CKT BKR AMPS	CKT NO.	
CL	1	20	1				EXISTING LOAD	600	4706			4106	PANEL RH1				3	60	2	CL
CL	3	20	1				EXISTING LOAD	600		3506		2906							4	CL
CL	5	20	1				EXISTING LOAD	600			3506	2906							6	CL
	7	20	1				SPARE		0				SPARE				1	20	8	
CL	9	20	1				EXISTING LOAD	600		1200		600	EXISTING LOAD				1	40	10	CL
	11	20	1				SPARE	600			2600	2000	EXISTING LOAD				1	20	12	CL
	13						SPACE		0				SPACE						14	
	15						SPACE			0			SPACE						16	
	17						SPACE				0		SPACE						18	
	19						SPACE		0				SPACE						20	
	21						SPACE			0			SPACE						22	
	23						SPACE				0		SPACE						24	
							PHASE TOTALS (WATTS)		4706	4706	6106									
							PHASE BALANCE	9%	30%	30%	39%									
							TOTAL CONNECTED LOAD (WATTS)			15518										
							25% OF LONG CONTINUOUS LOAD (LCL) AND LARGEST MOTOR			3730										
							TOTAL LOAD (WATTS)			19248										
							TOTAL LOAD (AMPS)			46.3										

NOTES:
1. ALL CIRCUIT BREAKERS SHALL BE 80% RATED.
2. CL - DENOTES CONTINUOUS LOAD
3. LML - DENOTES LARGEST MOTOR LOAD

SLD PLAN KEY NOTES:

1. PROVIDE (N) 100A, 3P, CIRCUIT BREAKER. FAULT RATING OF THE (N) BREAKER SHALL MATCH WITH THE (E) AVAILABLE FAULT RATING.
2. (E) LOADS. MATCH (E) PANEL RH BRANCH BREAKER SIZES. IF CABLES ARE NOT LONG ENOUGH SPLICE AND EXTEND AS NECESSARY. MATCH EXISTING CABLE SIZE.
3. TAP (N) GROUND WIRE TO (E) GROUNDING SYSTEM. FIELD VERIFY EXACT LOCATION OF GROUND ROD.

SLD GENERAL NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE 80% RATED.
2. ALL (N) CURRENT CARRYING EQUIPMENT SHALL BE U.L. LISTED AND BRACED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AT ITS TERMINALS.
3. ALL OVERCURRENT DEVICES SHALL BE FULLY RATED TO AVAILABLE FAULT CURRENT.
4. ALL NEW ELECTRICAL EQUIPMENT SHALL BE U.L LISTED OR APPROVED BY A ELECTRICAL TESTING LABORATORY APPROVED BY THE AUTHORITY HAVING JURISDICTION.
5. CONTRACTOR SHALL COORDINATE THE OVERCURRENT PROTECTION DEVICE INCLUDING BUT NOT LIMITED TO UTILITY MAIN CIRCUIT BREAKER AND ALL DOWNSTREAM BRANCH CIRCUIT BREAKERS.
6. HEAVY WEIGHT LINES ARE NEW, SCREENED LIGHT LINES ARE EXISTING.
7. PROVIDE ARC–FLASH WARNING ON ALL ELECTRICAL EQUIPMENT. SEE SAMPLE BELOW.

SINGLE LINE DIAGRAM 1

SCALE: NONE

NOTICE TO CONTRACTOR:

IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CALL THE USA UNDERGROUND ALERT FOR LOCATION OF EXISTING UNDERGROUND UTILITIES NO LESS THAN TWO DAYS NOR MORE THAN SEVEN DAYS PRIOR TO CONSTRUCTION.

811

THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR ANY DAMAGE DONE TO EXISTING UTILITIES OR STREET IMPROVEMENTS INCLUDING CONCRETE/LANDSCAPING DURING CONSTRUCTION.

FIRST STREET

VOLTAGE DROP CALCULATION 3 PHASE, 3 OR 4 WIRE

EQUIPMENT	WIRE LENGTH (FT)	LOAD (A)	VOLTS (V)	DESIRED % DROP	MIN. CIRC MILS	SELECTED WIRE	VOLTAGE DROP (V)	VOLTAGE AT TERM. (V)	%VD
P05	552	80	208	2%	248698	250000	4.14	203.9	1.99%
P06	237	48	203.9	3%	41561	52620	4.83	199.0	2.37%
P01	14	24.2	199.0	3%	1268	16510	0.46	198.6	0.23%

VOLTAGE DROP CALCULATION 1 PHASE, 3 WIRE FROM 4 WIRE

EQUIPMENT	WIRE LENGTH (FT)	LOAD (A)	VOLTS (V)	DESIRED % DROP	MIN. CIRC MILS	SELECTED WIRE	VOLTAGE DROP (V)	VOLTAGE AT TERM. (V)	%VD
P03	6	16	199	3%	415	6530	0.38	198.65	0.19%

SAMPLE WARNING SIGN. USE THE ACTUAL CALCULATED BY PROFESSIONAL ENGINEER.

WARNING

Arc Flash and Shock Hazard
Appropriate PPE Required

25.10 Cal/cm2 at **18** inches
9 ft 7 in Flash Hazard Boundary
208 VAC Nominal System Voltage
42 in Limited Approach Boundary
0 in Restricted Approach Boundary
Bus: Prot.: Max Trip Time @ 2 sec.
Equipment Name:

Short Circuit and Arc Flash Calculation — Arc-In-Box energy = cal/cm² at specified working distance

Branch Circuit

I_{sc} at beginning of circuit (Amps):	30,000	PANEL RH
Conductors per phase:	1	
(S)ingle conductors or (C)able:	S	
AL or CU:	CU	
Conductor length:	552	
Conductor AWG or kcmil:	4/0	
Metallic conduit? (Y or N):	N	
Fault Clearing Time (seconds):	2	

Enter working distance (inches): 18
Arc-In-Box Incident Energy: 22.10
Flash Protection Boundary: 111
I_{sc} at fault (Amps) = 3,236
@ 1,970 arc fault current (Amps)

Branch Circuit

I_{sc} at beginning of circuit (Amps):	3,236	PANEL RH1
Conductors per phase:	1	
(S)ingle conductors or (C)able:	S	
AL or CU:	CU	
Conductor length:	237	
Conductor AWG or kcmil:	3	
Metallic conduit? (Y or N):	N	
Fault Clearing Time (seconds):	2	

Enter working distance (inches): 18
Arc-In-Box Incident Energy: 9.57
Flash Protection Boundary: 66
I_{sc} at fault (Amps) = 1,389
@ 1,088 arc fault current (Amps)

Table 130.4(D)(a) Approach Boundaries to Energized Electrical Conductors or Circuit Parts for Shock Protection for Alternating-Current Systems (All dimensions are distance from energized electrical conductor or circuit part to employee.)

(1)	(2)	(3)	(4)
	Limited Approach Boundary[b]		Restricted Approach Boundary[b]; Includes Inadvertent Movement Adder
Nominal System Voltage Range, Phase to Phase[a]	Exposed Movable Conductor[c]	Exposed Fixed Circuit Part	
<50 V	Not specified	Not specified	Not specified
50 V–150 V[d]	3.0 m (10 ft 0 in.)	1.0 m (3 ft 6 in.)	Avoid contact
151 V–750 V	3.0 m (10 ft 0 in.)	1.0 m (3 ft 6 in.)	0.3 m (1 ft 0 in.)

Table 130.4(D)(b) Approach Boundaries to Energized Electrical Conductors or Circuit Parts for Shock Protection, Direct-Current Voltage Systems

(1)	(2)	(3)	(4)
	Limited Approach Boundary		Restricted Approach Boundary; Includes Inadvertent Movement Adder
Nominal Potential Difference	Exposed Movable Conductor[c]	Exposed Fixed Circuit Part	
<100 V	Not specified	Not specified	Not specified
100 V–300 V	3.0 m (10 ft 0 in.)	1.0 m (3 ft 6 in.)	Avoid contact
301 V–1 kV	3.0 m (10 ft 0 in.)	1.0 m (3 ft 6 in.)	0.3 m (1 ft 0 in.)

UNDERGROUND SERVICE ALERT
CALL: TOLL FREE
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TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'VD

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

REGISTERED PROFESSIONAL ENGINEER — OPTY N. FERNANDEZ — No. E 012496 EXP. 9/30/21 — 04/22/21 — ELECTRICAL — STATE OF CALIFORNIA

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email@linkture.com www.linkture.com

DRAWN BY:	JA	APRIL 2021
DESIGNED BY:	JA	APRIL 2021
CHECKED BY:	OF	APRIL 2021

Matthew Baumgardner, Director of Public Works — DATE
R.C.E. NO.: 71932 — EXP. DATE: 12/31/2021
Manuel Fabian, Civil Engineer Assistant II — DATE

CITY OF SAN FERNANDO
HISTORIC & VISIONARY
CITY OF SAN FERNANDO
DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

FIRST STREET DIVERSION SINGLE LINE DIAGRAM, LOAD SUMMARY AND SCHEDULES

DWG No. E-02
SHEET No. 25 OF 46

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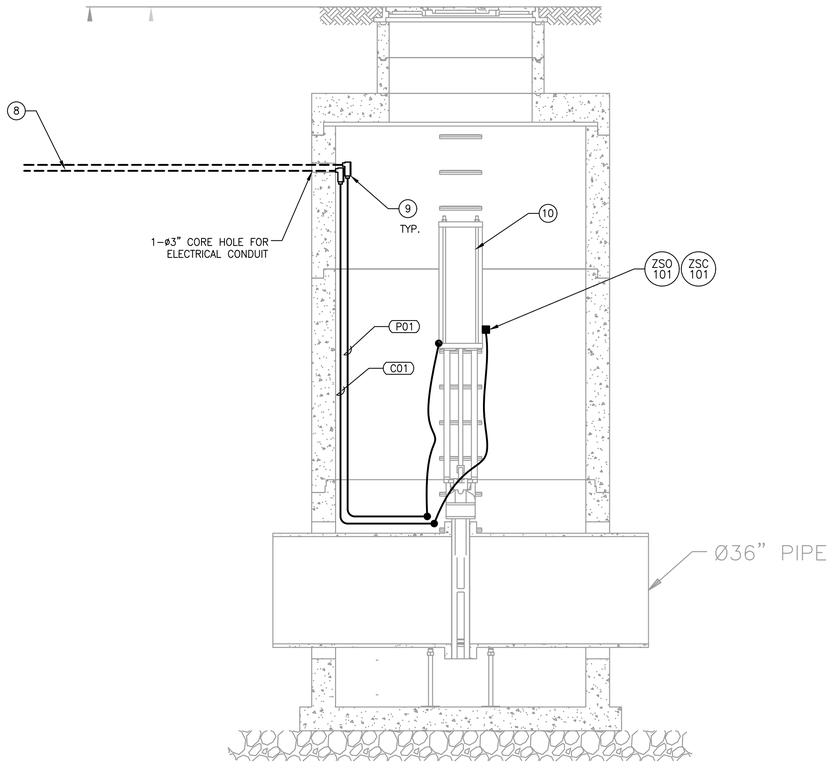
PLAN KEY NOTES:

1. (N) CONTROL PANEL
2. FLOW METER AND VAULT
3. GATE VALVE AND VAULT
4. PRETREATMENT UNIT
5. DROP MANHOLE AND DIVERSION STRUCTURE (REMOVE EXISTING MANHOLE STRUCTURE)
6. DROP MANHOLE AND DIVERSION STRUCTURE
7. 36" DIAMETER MH ACCESS SHAFT.
8. CONDUIT FROM CONTROL PANEL
9. LB CONNECTOR. SIZE AS REQUIRED.
10. ELECTRIC ACTUATOR
11. ROCKHOUSE
12. ROCKHOUSE (N) PANEL RH1.
13. RECREATION BUILDING MAIN SWITCHBOARD. UTILIZE AVAILABLE SPACE.
14. (N) 30' RADIO MAST – CONCRETE LIGHT POLE
15. ELECTRICAL ROOM
16. RECREATION BUILDING
17. (N) GROUND ROD

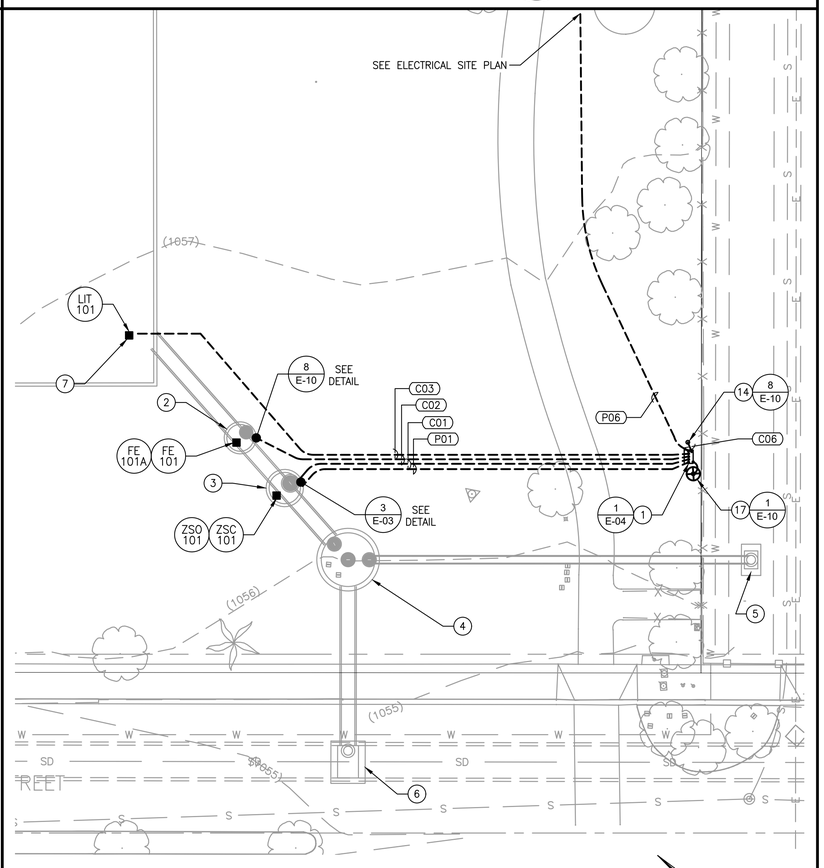
EXISTING PANEL "RH" 4

SCALE: NONE



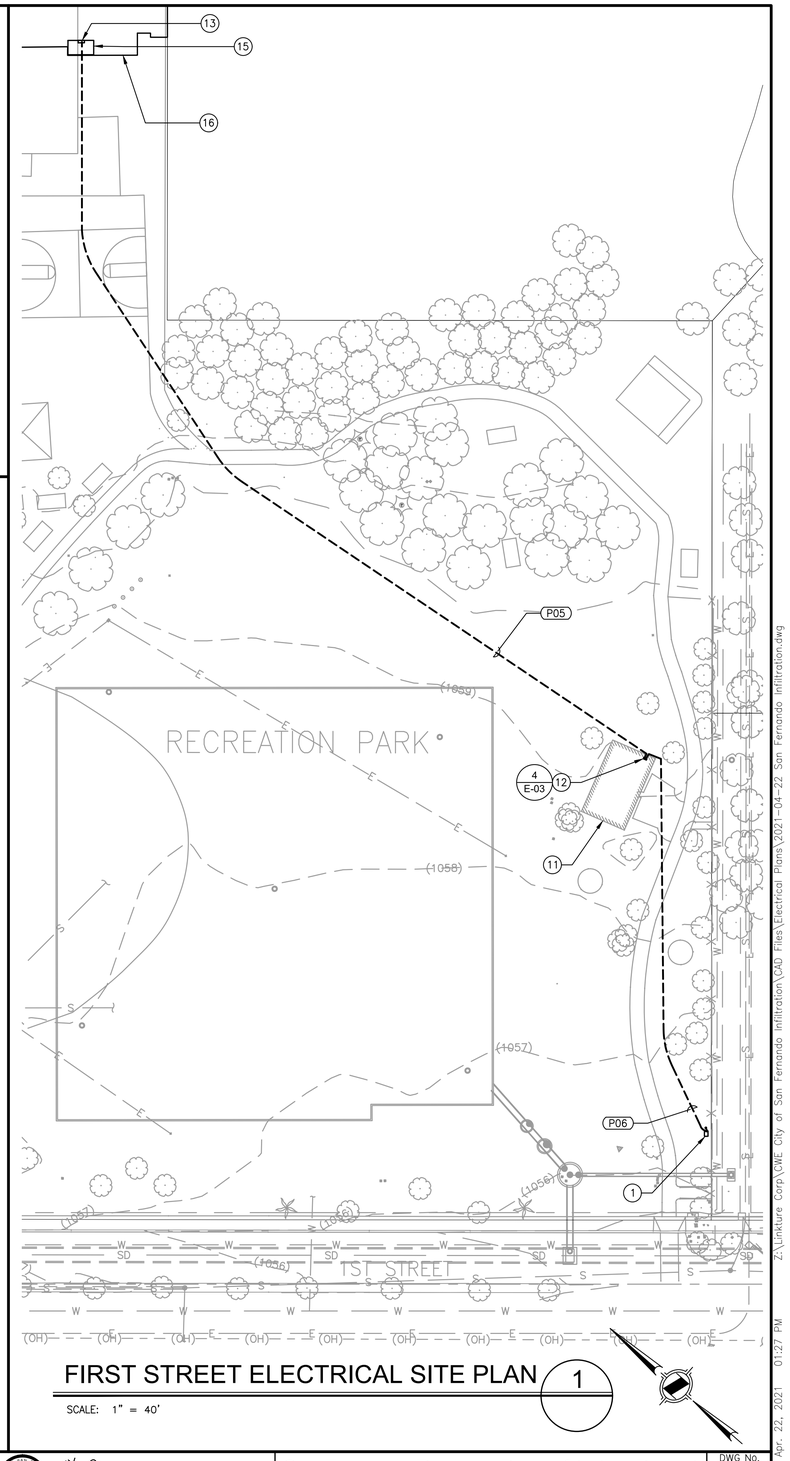
GATE VALVE & VAULT 3

SCALE: NONE



FIRST STREET ENLARGE ELECTRICAL PLAN 2

SCALE: 1" = 16'



FIRST STREET ELECTRICAL SITE PLAN 1

SCALE: 1" = 40'

NOTICE TO CONTRACTOR:

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REVISIONS

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REGISTERED PROFESSIONAL ENGINEER — OPTY N. FERNANDEZ — No. E 012496 EXP. 9/30/21 04/22/21 — ELECTRICAL — STATE OF CALIFORNIA

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DRAWN BY:	JA	APRIL 2021
DESIGNED BY:	JA	APRIL 2021
CHECKED BY:	OF	APRIL 2021

Matthew Baumgardner, Director of Public Works — DATE

R.C.E. NO.: 71932 EXP. DATE: 12/31/2021

Manuel Fabian, Civil Engineer Assistant II — DATE

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HISTORIC & VISIONARY

CITY OF SAN FERNANDO
DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

FIRST STREET DIVERSION ELECTRICAL PLANS

DWG No. E-03
SHEET No. 26 OF 46

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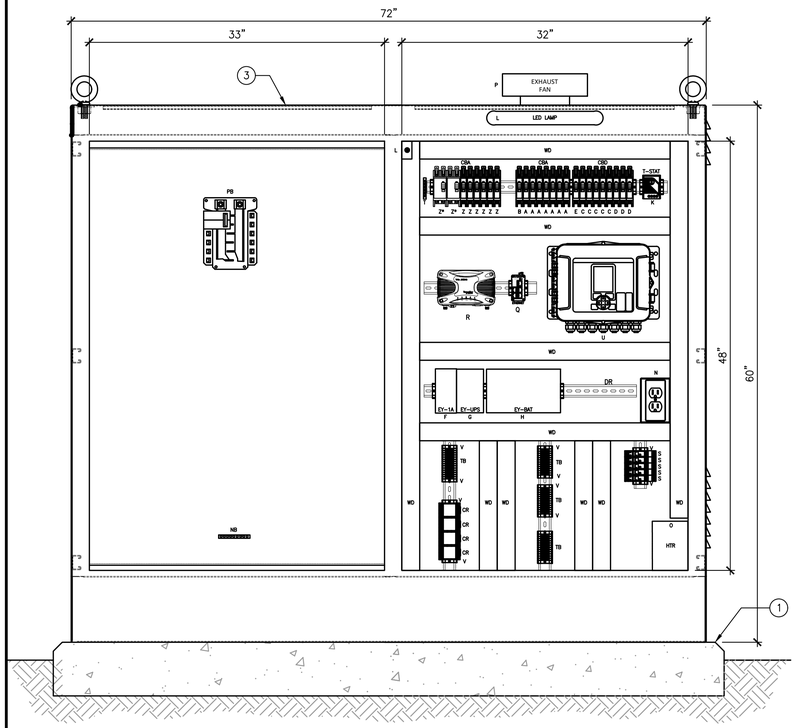
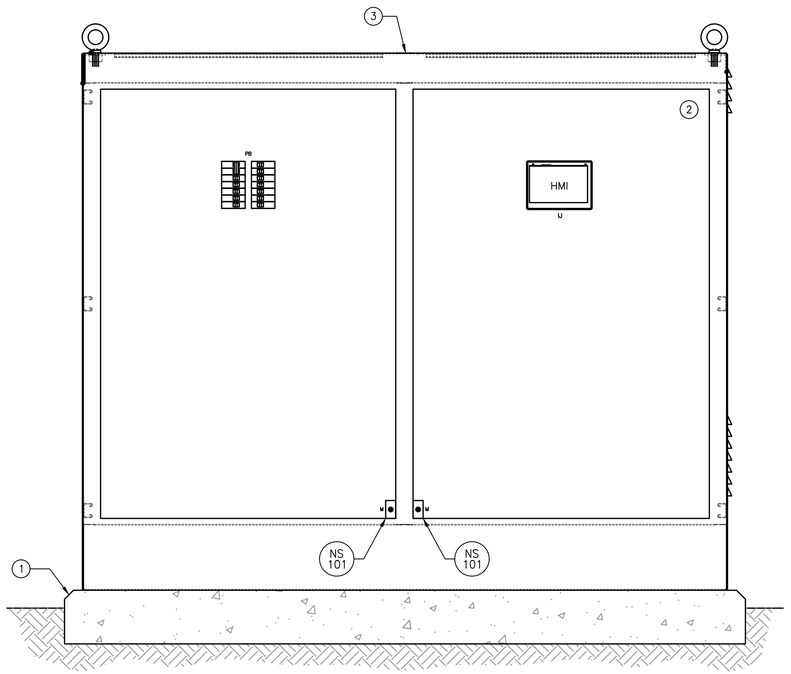


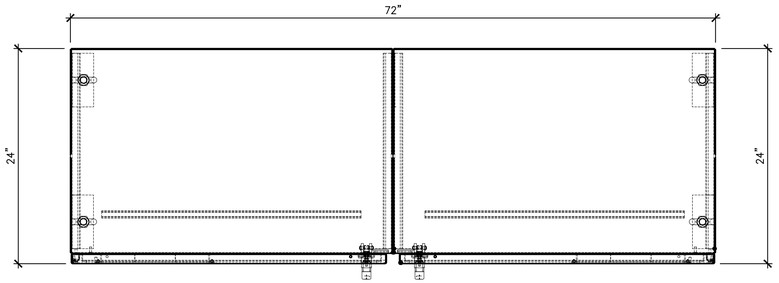
FRONT VIEW

LESS DOORS, DEADFRONT, AND COVERS



FRONT VIEW

LESS DOORS



PLAN VIEW

PLAN KEY NOTES:

1. EQUIPMENT CONCRETE PAD. SEE SHEET E-10 DETAIL 6.
2. CONTRACTOR TO PROVIDE AN INNER DOOR FOR MOUNTING THE OIT. INNER DOOR SHALL HAVE CONTINUOUS HINGE AND 3 WING NUTS ON THE OPPOSITE SIDE TO SECURE THE DOOR. PROVIDE DRILLED AND TAPPED TABS FOR THE WING NUTS. DOOR AND TABS SHALL BE WELDED TO THE ENCLOSURE. SCREWS ARE NOT ACCEPTABLE.
3. POWER AND CONTROL PANEL ENCLOSURE. USE HOFFMAN ENCLOSURE OR APPROVED EQUAL.

COMPONENT SCHEDULE

REF.	CONTROL TAG NAME	NET REQD.	DESCRIPTION	MANUFACTURER PART NO.
A	CBA		10A MINIATURE CIRCUIT BREAKER	SQUARE "D" – QOU110
B	CBA		15A MINIATURE CIRCUIT BREAKER	SQUARE "D" – QOU115
C	CBD		1A MINIATURE CIRCUIT BREAKER	SQUARE "D" – M9F21101
D	CBD		2A MINIATURE CIRCUIT BREAKER	SQUARE "D" – M9F21102
E	CBD		10A MINIATURE CIRCUIT BREAKER	SQUARE "D" – M9F21110
F	EY-1A	1	24VDC POWER SUPPLY (10A)	SOLA SDN 4-24 100C
G	EY-UPS	1	24VDC UPS (10A)	SOLA SDU 10-24
H	EY-BAT	1	24VDC BATTERY MODULE	SOLA SDU 24-BAT
I	HMI	1	7" TOUCHSCREEN HMI + PLC	MAPLE SYSTEMS INC. HMC3070A-M
J			I/O MODULE	MAPLE SYSTEMS INC. HMC3-M1212Y0200
K	T-STAT	1	THERMOSTAT	HOFFMAN THERM16F
L	LED LAMP	1	LED LIGHT FIXTURE AND LIGHT DOOR SWITCH WITH MOUNTING ACCESSORIES	PHOENIX 2702223 / 2702336
M			INTRUSION SWITCH	HONEYWELL 13AC1
N		1	RECEPTACLE DUPLEX – ISOLATED GROUND	WEIDMULLER 6720005421
O	HTR	1	SPACE ELECTRIC HEATER	HOFFMAN DAH2001A
P	EXHAUST FAN	1	FAN & FILTER	375 CFM, PFA6000 PART NO. PTF8000 HAMMOND
Q	–	1	ETHERNET SWITCH	RED LION N-TRON 105TX
R	RADIO	1	ETHERNET DATA RADIO	SCHNEIDER J-SERIES TRIO JR900
S			ANALOG SURGE PROTECTORS	PHOENIX 2856126/2856023
T			ISOLATED GROUND BAR	
U			FLOW LOGGER	HACH FL1500
V			DIN RAIL END STOP	IDEC BNL5
W			FEED THROUGH TERMINAL BLOCKS M4/6 GREY	ENTRELEC 115.116
X	CR		CONTROL RELAY SOCKET AND PLUG-IN RELAY	SQUARE D 8501K
Y	WD		WIRE DUCT – PANDUCT TYPE G 2.25 W X 3.12 H (TYP. ALL)	PANDUIT G2X3LG6
Z	CBA		20A MINIATURE CIRCUIT BREAKER	SQUARE "D" – QOU120
Z*	CBA		20A MINIATURE CIRCUIT BREAKER	SQUARE "D" – QOU220
PB			PANEL "RH1", 60A, 120/240V, 1PH, 3W 12-CIRCUIT BREAKER INTERIOR. BOLT-ON BREAKERS.	
NB			NEUTRAL BAR	
DR			DIN RAIL	

FIRST STREET

CONTROL PANEL ELEVATION 1

SCALE: NONE

NOTICE TO CONTRACTOR:

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UNDERGROUND SERVICE ALERT

CALL: TOLL FREE

811

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REV.	DATE	BY	DESCRIPTION	APP'VD

PREPARED BY:

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DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

FIRST STREET DIVERSION CONTROL PANEL ELEVATION AND COMPONENT SCHEDULE

DWG No. E-04

SHEET No. 27 OF 46

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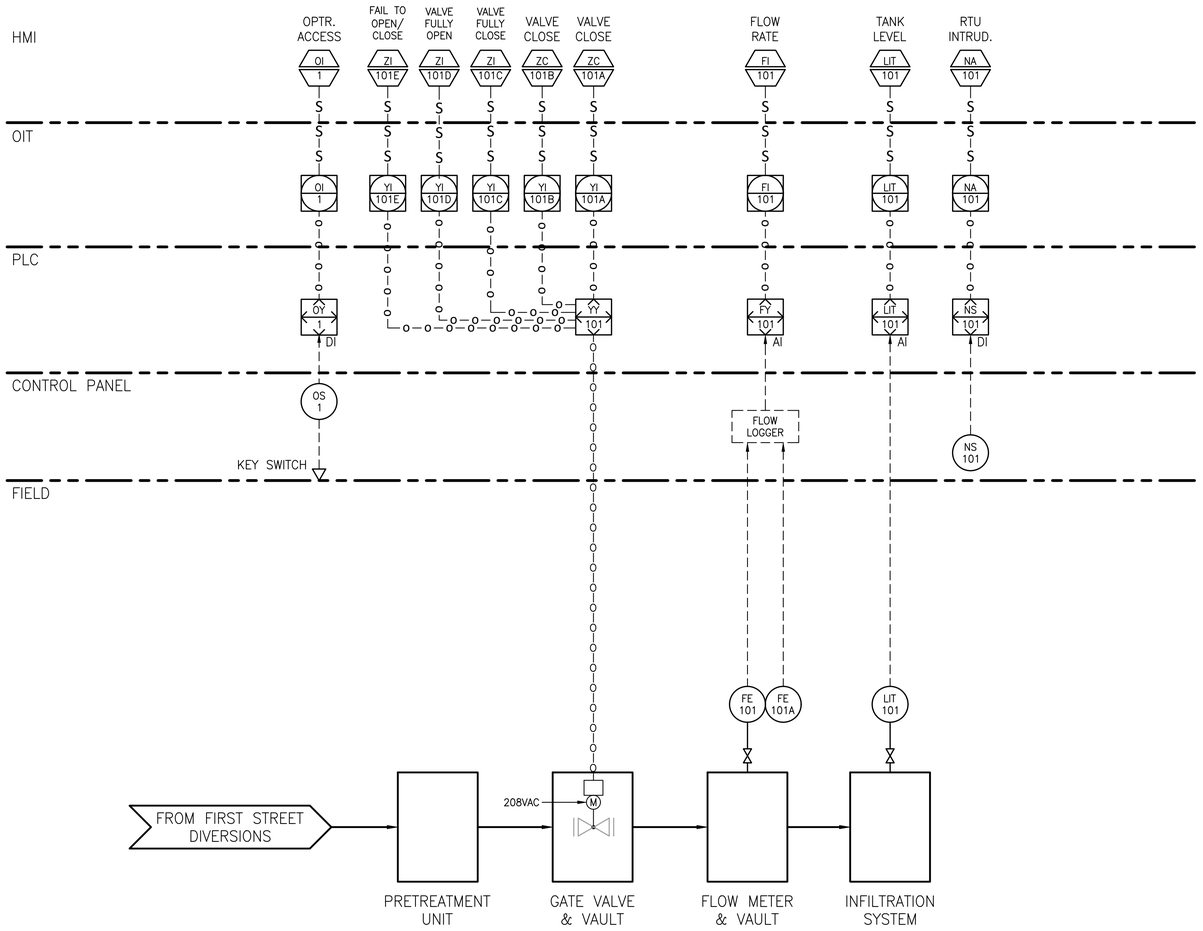

FIRST STREET

PIPING & INSTRUMENTATION DIAGRAM 1

SCALE: NONE

GENERAL NOTES:

1. ALL PIPING AND INSTRUMENTATION DIAGRAM SHOWS ONLY THE FUNCTIONAL SYSTEM. REFER TO MECHANICAL PLAN FOR COMPLETE PIPING DETAILS, REFER TO CONTROL SCHEMATIC DIAGRAM AND PLC WIRING FOR COMPLETE LOGIC CONTROL SEQUENCE.
2. RTU DESIGN, SCADA HMI AND PLC PROGRAMMING SHALL BE DONE BY BYRD ELECTRONICS.

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SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD
PIPING & INSTRUMENTATION DIAGRAM

DWG No. E-05
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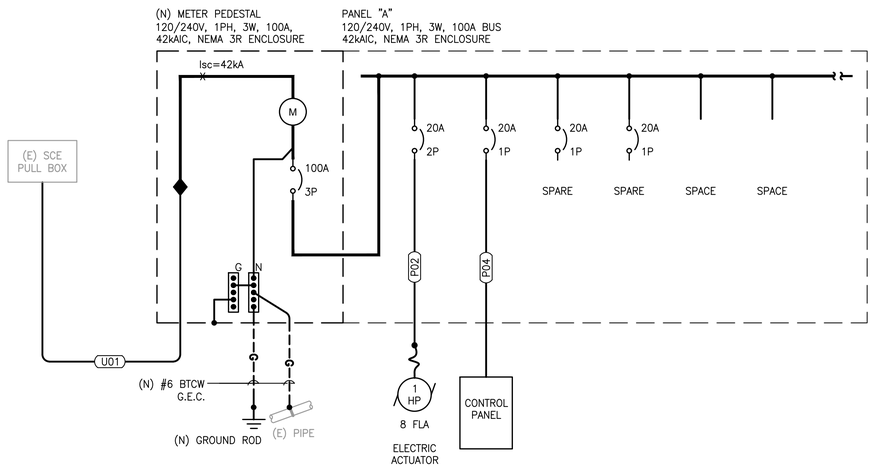

SINGLE LINE DIAGRAM 1

SCALE: NONE

ELECTRICAL DESIGN LOAD SUMMARY	
SERVICE DESCRIPTION	LOAD (A)
PANEL "A"	16.3
SAFETY FACTOR (25% OF TOTAL LOAD)	4.1
TOTAL AMPERE	20.4

SLD GENERAL NOTES:

1. ALL CIRCUIT BREAKERS SHALL BE 80% RATED.
2. ALL (N) CURRENT CARRYING EQUIPMENT SHALL BE U.L. LISTED AND BRACED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AT ITS TERMINALS.
3. ALL OVERCURRENT DEVICES SHALL BE FULLY RATED TO AVAILABLE FAULT CURRENT.
4. ALL NEW ELECTRICAL EQUIPMENT SHALL BE U.L LISTED OR APPROVED BY A ELECTRICAL TESTING LABORATORY APPROVED BY THE AUTHORITY HAVING JURISDICTION.
5. CONTRACTOR SHALL COORDINATE THE OVERCURRENT PROTECTION DEVICE INCLUDING BUT NOT LIMITED TO UTILITY MAIN CIRCUIT BREAKER AND ALL DOWNSTREAM BRANCH CIRCUIT BREAKERS.
6. HEAVY WEIGHT LINES ARE NEW, SCREENED LIGHT LINES ARE EXISTING.
7. PROVIDE ARC-FLASH WARNING ON ALL ELECTRICAL EQUIPMENT. SEE SAMPLE ON SHEET E-2.

PANEL "A" SCHEDULE

PANEL FRAME SIZE: **100A** | MAIN BREAKER SIZE: **100A**
VOLTAGE: **240/120V** | ENCLOSURE: **NEMA 1**
PHASE: **1PH, 3W** | INTERRUPTING RATING: **10 kA** | MOUNTING: **METER PEDESTAL**

	CKT NO.	CKT BKR AMPS	CKT BKR POLES	QTY LTG	QTY REC	QTY MISC	DESCRIPTION	LOAD (WATTS) LOAD	L1	L2	LOAD	DESCRIPTION	QTY MISC	QTY REC	QTY LTG	CKT BKR POLES	CKT BKR AMPS	CKT NO.
CL	1	20	1				CONTROL PANEL	1200	1200			SPARE				1	20	2
LML	3	20	2				1-HP ELECTRIC ACTUATOR	960		960		SPARE				1	20	4
LML	5							960	960			SPARE				1	20	6
	7						SPACE			0		SPARE				1	20	8
	9						SPACE		0			SPARE				1	20	10
	11						SPACE			0		SPACE						12
							PHASE TOTALS (WATTS)		2160	960								
							PHASE BALANCE	38%	69%	31%								
							TOTAL CONNECTED LOAD (WATTS)		3120									
							25% OF LONG CONTINUOUS LOAD (LCL) AND LARGEST MOTOR		780									
							TOTAL LOAD (WATTS)		3900									
							TOTAL LOAD (AMPS)		16.3									

NOTE/S:
1. ALL CIRCUIT BREAKERS SHALL BE 80% RATED.
2.. CL - DENOTES CONTINUOUS LOAD
3. LML - DENOTES LARGEST MOTOR LOAD

VOLTAGE DROP CALCULATION
1 PHASE, 3 WIRE FROM 4 WIRE

EQUIPMENT	WIRE LENGTH (FT)	LOAD (A)	VOLTS (V)	DESIRED % DROP	MIN. CIRC MILS	SELECTED WIRE	VOLTAGE DROP (V)	VOLTAGE AT TERM. (V)	%VD
P02	18	8	240	3%	516	6530	0.57	239.43	0.24%
P04	6	16	120	3%	688	6530	0.38	119.62	0.32%

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GLENOAKS BOULEVARD

UNDERGROUND SERVICE ALERT
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CITY OF SAN FERNANDO
DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD
GLENOAKS BLVD. DIVERSION SINGLE LINE DIAGRAM, LOAD SUMMARY AND PANEL SCHEDULE

DWG No. E-06
SHEET No. 29 OF 46

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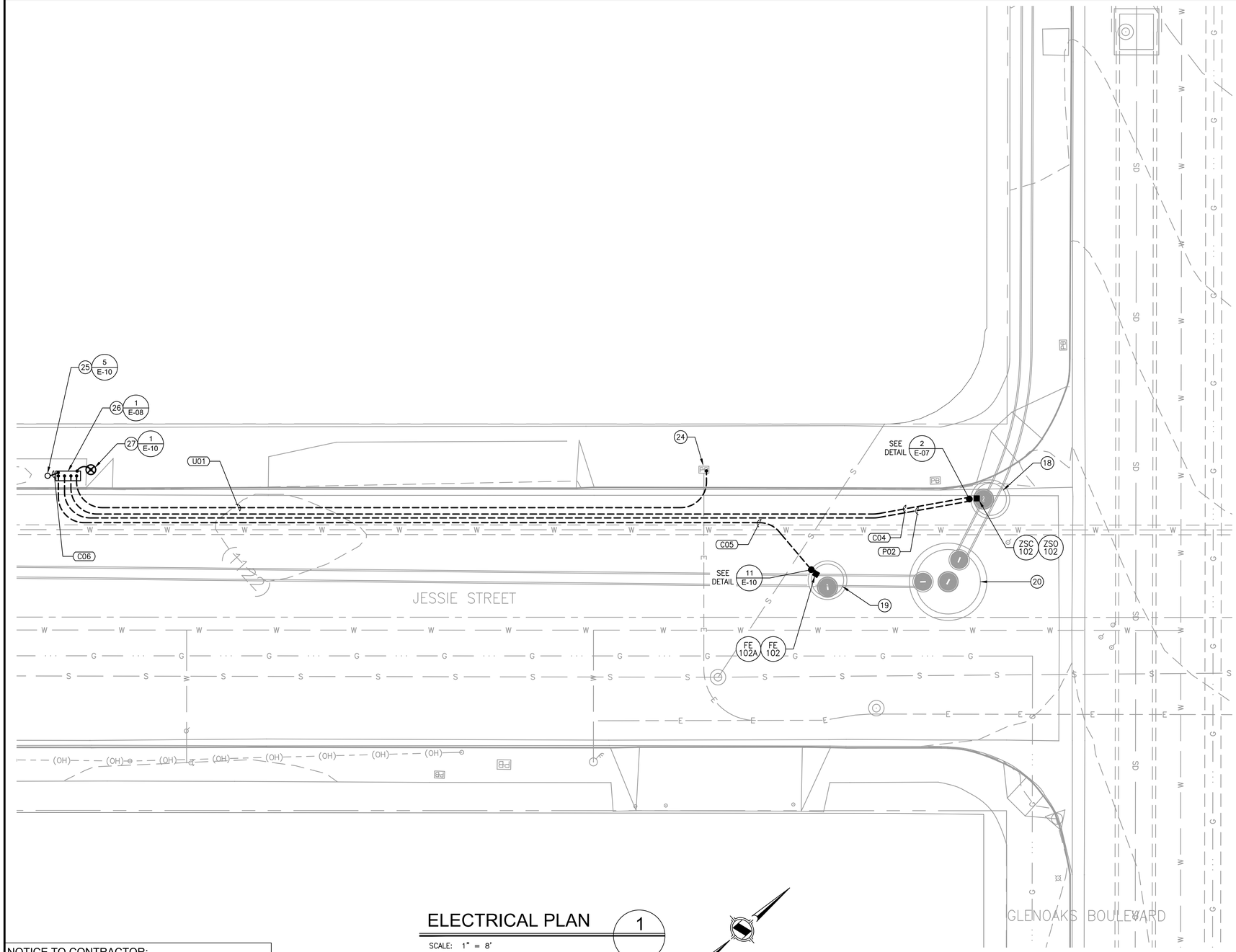

ELECTRICAL PLAN KEY NOTES:

(18) GATE VALVE AND VAULT

(19) FLOW METER AND VAULT

(20) PRETREATMENT UNIT

(21) CONDUIT GOING TO CONTROL PANEL

(22) LB CONNECTOR. SIZE AS REQUIRED.

(23) ELECTRIC ACTUATOR

(24) EXISTING SCE PULL BOX

(25) (N) 30' RADIO MAST – CONCRETE LIGHT POLE

(26) (N) METER PEDESTAL.

(27) (N) GROUND ROD

ELECTRICAL PLAN 1

SCALE: 1" = 8'

GATE VALVE & VAULT 2

SCALE: NONE

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Matthew Baumgardner DATE
Director of Public Works

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San Fernando Regional Park Infiltration Project
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

GLENOAKS BLVD. DIVERSION
ELECTRICAL PLAN

DWG No. E-07
SHEET No. 30 OF 46

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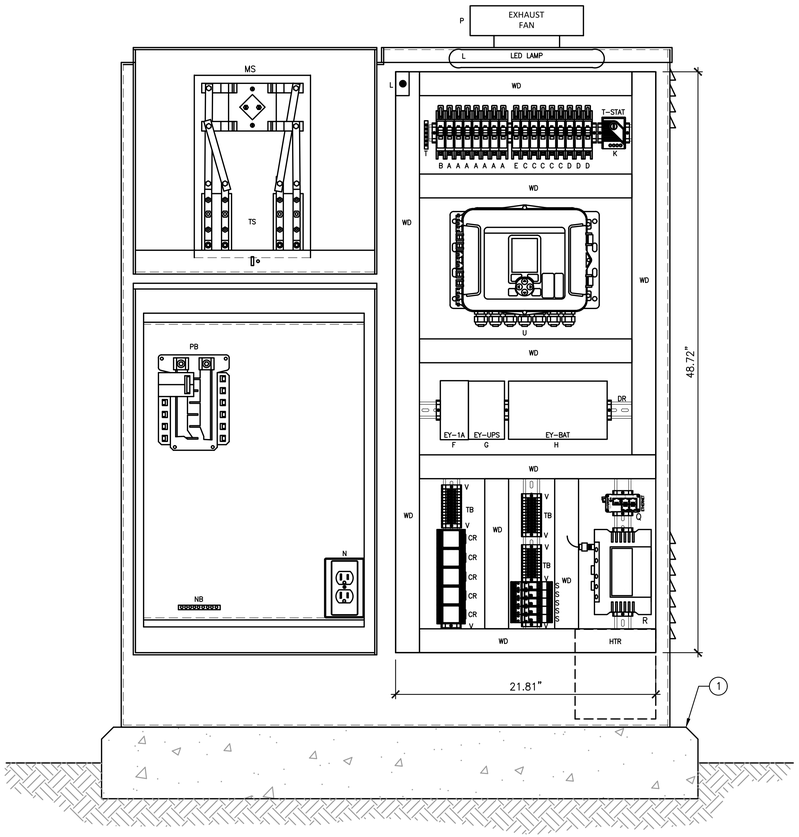
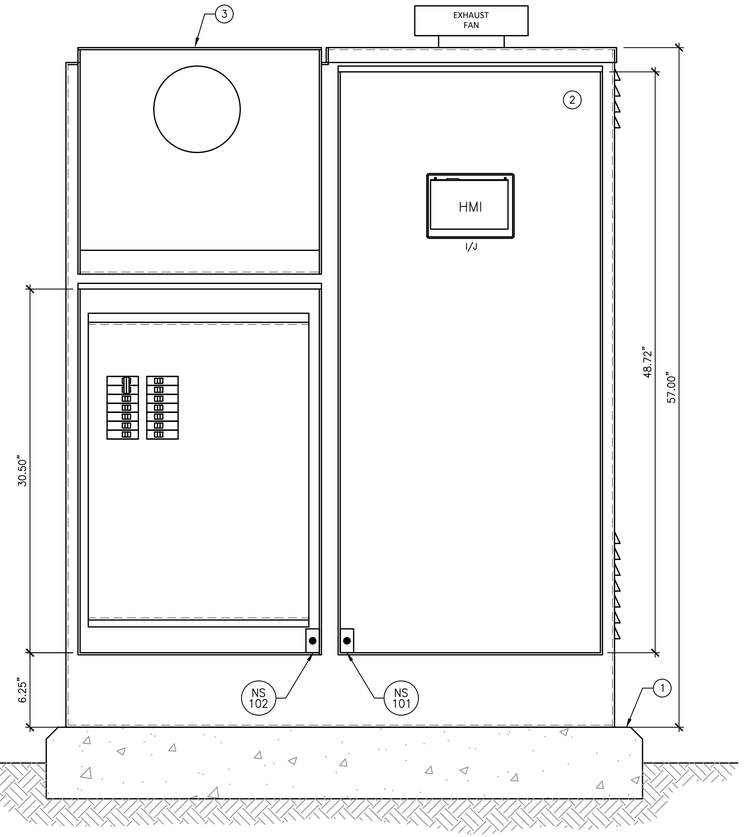


FRONT VIEW

LESS DOORS, DEADFRONT, AND COVERS

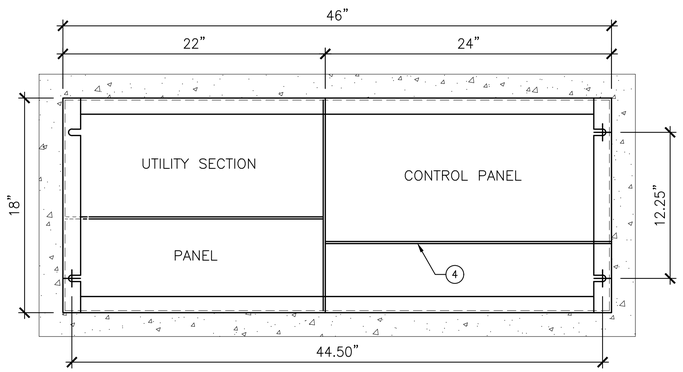


FRONT VIEW

LESS DOORS

PLAN KEY NOTES:

1. EQUIPMENT CONCRETE PAD. SEE SHEET E-10 DETAIL 6.
2. CONTRACTOR TO PROVIDE AN INNER DOOR FOR MOUNTING THE OIT. INNER DOOR SHALL HAVE CONTINUOUS HINGE AND 3 WING NUTS ON THE OPPOSITE SIDE TO SECURE THE DOOR. PROVIDE DRILLED AND TAPPED TABS FOR THE WING NUTS. DOOR AND TABS SHALL BE WELDED TO THE ENCLOSURE. SCREWS ARE NOT ACCEPTABLE.
3. METER PANEL PEDESTAL 100A, 120/240V, 1ϕ, 3W, STAINLESS STEEL ENCLOSURE. USE MYERS OR APPROVED EQUAL.
4. CONTRACTOR TO ADD A CONTINUOUS HINGED INNER DOOR WITH KNURL HEAD BOLT TO SECURE THE UNHINGED SIDE



BOTTOM VIEW

MOUNTING SLOT DETAIL

COMPONENT SCHEDULE

REF.	CONTROL TAG NAME	NET REQD.	DESCRIPTION	MANUFACTURER PART NO.
A	CBA		10A MINIATURE CIRCUIT BREAKER	SQUARE "D" – QOU110
B	CBA		15A MINIATURE CIRCUIT BREAKER	SQUARE "D" – QOU115
C	CBD		1A MINIATURE CIRCUIT BREAKER	SQUARE "D" – M9F21101
D	CBD		2A MINIATURE CIRCUIT BREAKER	SQUARE "D" – M9F21102
E	CBD		10A MINIATURE CIRCUIT BREAKER	SQUARE "D" – M9F21110
F	EY-1A	1	24VDC POWER SUPPLY (10A)	SOLA SDN 4-24 100C
G	EY-UPS	1	24VDC UPS (10A)	SOLA SDU 10-24
H	EY-BAT	1	24VDC BATTERY MODULE	SOLA SDU 24-BAT
I	HMI	1	7" TOUCHSCREEN HMI + PLC	MAPLE SYSTEMS INC. HMC3070A-M
J			I/O MODULE	MAPLE SYSTEMS INC. HMC3-M1212Y0200
K	T-STAT	1	THERMOSTAT	HOFFMAN THERM16F
L	LED LAMP	1	LED LIGHT FIXTURE AND LIGHT DOOR SWITCH WITH MOUNTING ACCESSORIES	PHOENIX 2702223 / 2702336
M			INTRUSION SWITCH	HONEYWELL 13AC1
N		1	RECEPTACLE DUPLEX – ISOLATED GROUND	WEIDMULLER 6720005421
O	HTR	1	SPACE ELECTRIC HEATER	HOFFMAN DAH2001A
P	EXHAUST FAN	1	FAN & FILTER	375 CFM, PFA6000 PART NO. PTF8000 HAMMOND
Q	–	1	ETHERNET SWITCH	RED LION N-TRON 105TX
R	RADIO	1	ETHERNET DATA RADIO	SCHNEIDER J-SERIES TRIO JR900
S			ANALOG SURGE PROTECTORS	PHOENIX 2856126/2856023
T			ISOLATED GROUND BAR	
U			FLOW LOGGER	HACH FL1500
V			DIN RAIL END STOP	IDEC BNL5
W	TB		FEED THROUGH TERMINAL BLOCKS M4/6 GREY	ENTRELEC 115.116
X	CR		CONTROL RELAY SOCKET AND PLUG-IN RELAY	SQUARE D 8501K
Y	WD		WIRE DUCT – PANDUCT TYPE G 2.25 W X 3.12 H (TYP. ALL)	PANDUIT G2X3LG6
MS			100A, 4 JAW METER SOCKET	
TS			TEST BLOCKS WITH SEALABLE COVER	
PB			PANEL "A", 100A, 120/240V, 1PH, 3W 12-CIRCUIT BREAKER INTERIOR. BOLT-ON BREAKERS.	
NB			NEUTRAL BAR	
DR			DIN RAIL	

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GLENOAKS BOULEVARD

METER PEDESTAL ELEVATION 1

SCALE: NONE

UNDERGROUND SERVICE ALERT

CALL: TOLL FREE

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EXP. 9/30/21
04/22/21
ELECTRICAL
STATE OF CALIFORNIA

LINKTURE CONSULTING ENGINEERS
15 Flagstone, Trabuco Canyon, CA 92679
P:(949) 317-4700 P:(206) 203-1316
email@linkture.com www.linkture.com

DRAWN BY:	JA	APRIL 2021
DESIGNED BY:	JA	APRIL 2021
CHECKED BY:	OF	APRIL 2021

Matthew Baumgardner, Director of Public Works — DATE

R.C.E. NO.: 71932 EXP. DATE: 12/31/2021

Manuel Fabian, Civil Engineer Assistant II — DATE

CITY OF SAN FERNANDO
HISTORIC & VISIONARY

CITY OF SAN FERNANDO
DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

GLENOAKS BLVD. DIVERSION
METER PEDESTAL ELEVATION AND
COMPONENT SCHEDULE

DWG No. E-08

SHEET No. 31 OF 46

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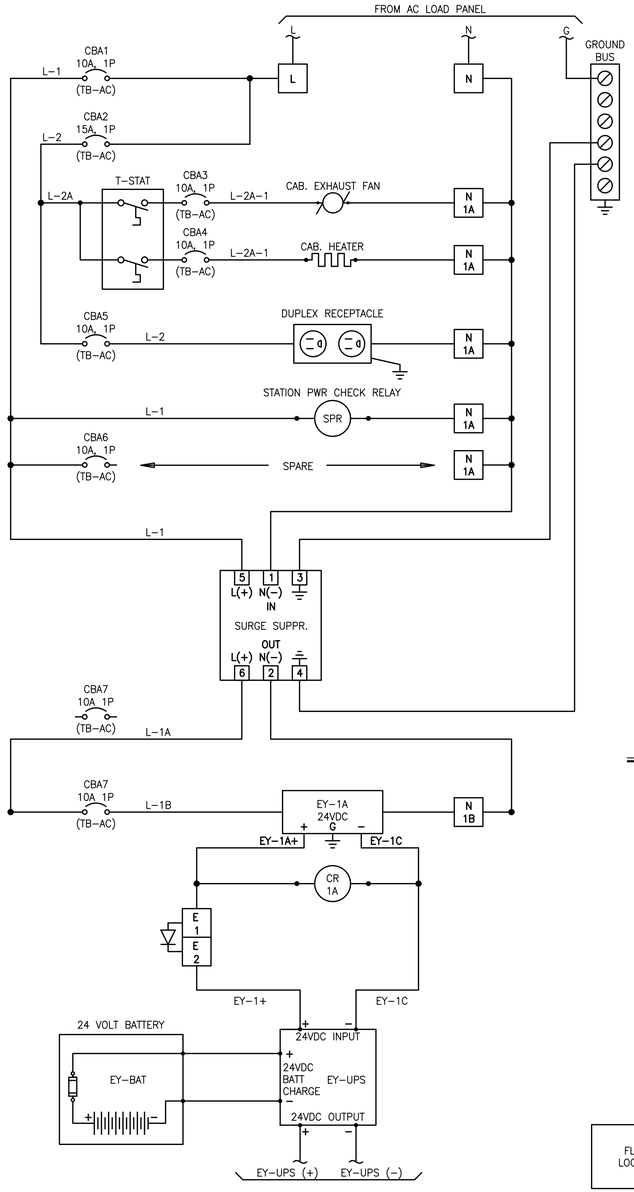
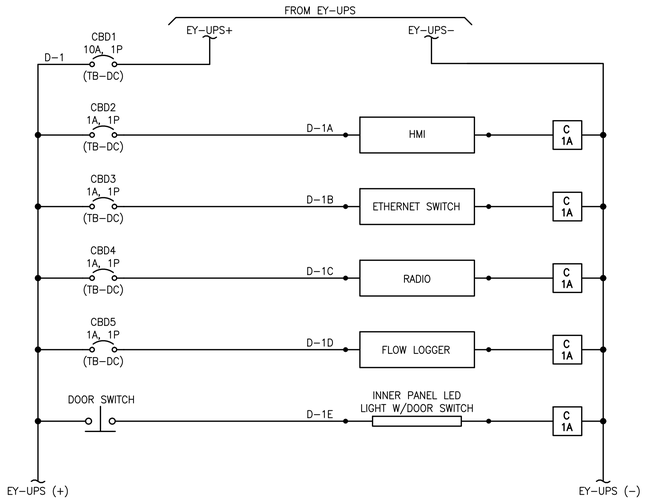
Apr. 22, 2021 01:27 PM
Plotted by: JMSN



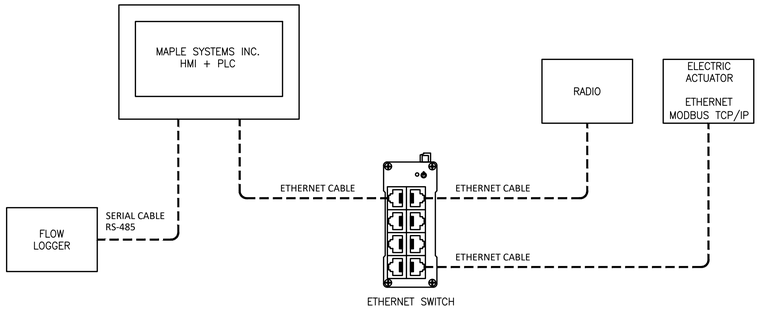
TYPICAL CONTROL SCHEMATIC DIAGRAM 1

SCALE: NONE



LEGEND:

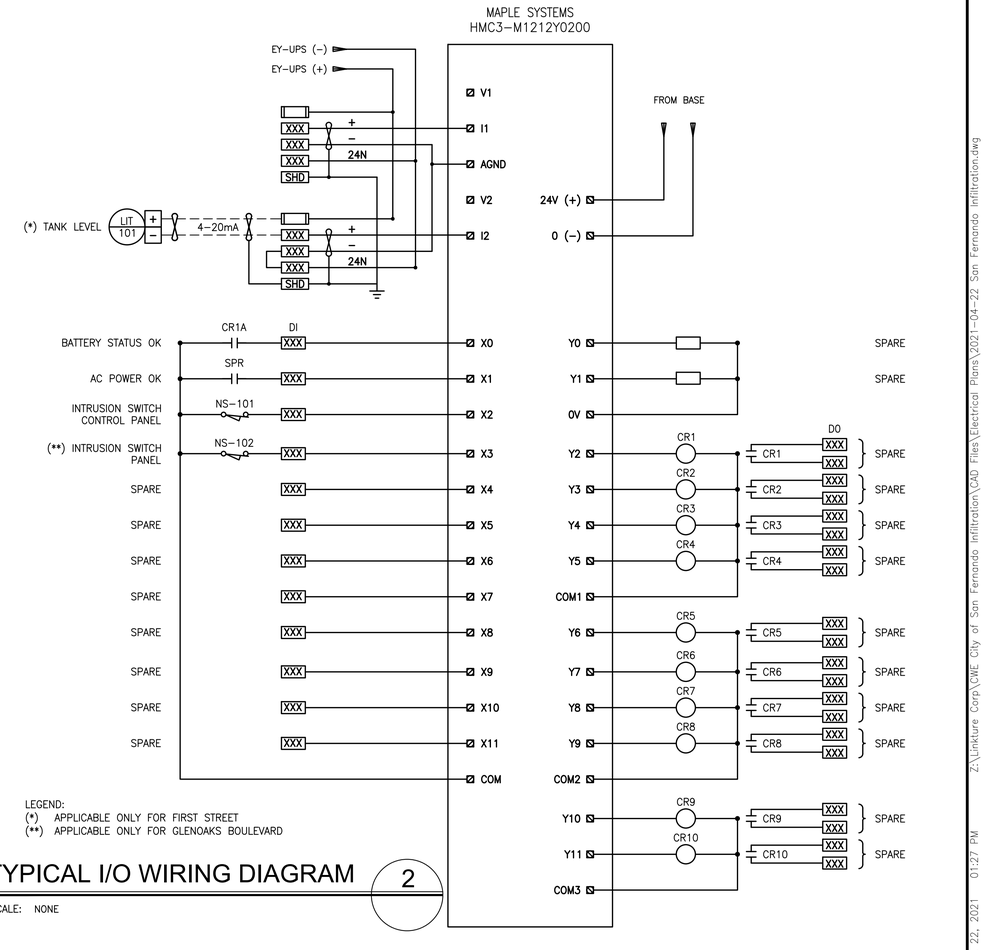
XXX CONTROL TERMINAL LOCATED IN PLC/SCADA CONTROL PANEL SECTION



(TYP.) PLC COMMUNICATION DIAGRAM 1

SCALE: NONE

CONDUIT SCHEDULE							
PLAN SYMBOL	CONDUIT			WIRE		LOCATION	
(##)	QTY	SIZE (")	% FILL	QTY SIZE	USE	FROM	TO
U01	1	2	–	3/8 NYLON ROPE	SECONDARY SERVICE	(E) SCE PULL BOX	(N) METER PEDESTAL
P01	1	1	21.28	3#8 + 1#8 GND.	ELECTRIC ACTUATOR	VAULT	PANEL "RH1"
P02	1	1	5.80	2#12 + 1#12	ELECTRIC ACTUATOR	VAULT	PANEL "A"
P03	1	1	5.80	2#12 + 1#12	AS SHOWN	CONTROL PANEL	PANEL "RH1"
P04	1	1	5.80	2#12 + 1#12	AS SHOWN	CONTROL PANEL	PANEL "A"
P05	1	3	19.06	3#250–KCMIL + 1#8	FEEDER	RECREATION BLDG. "MSB"	PANEL "RH"
P06	1	2	8.04	3#3 + 1#8	FEEDER	PANEL "RH"	PANEL "RH1"
C01	1	1	5.64	4#14	ZCO–1/ZSC–1 DISCRETE SIGNAL	VAULT	CONTROL PANEL
C02	1	1 1/2	14.69	(2) MFR'S CABLE	FLOW–DAR SENSOR W/ SURCHARGE VELOCITY SENSOR	VAULT	CONTROL PANEL
C03	1	1	13.20	2/C#16 TSP	LIT–1 4–20mA SIGNAL	VAULT	CONTROL PANEL
C04	1	1	5.64	4#14	ZCO–2/ZSC–2 DISCRETE SIGNAL	VAULT	CONTROL PANEL
C05	1	1 1/2	14.69	(2) MFR'S CABLE	FLOW–DAR SENSOR W/ SURCHARGE VELOCITY SENSOR	VAULT	CONTROL PANEL
C06	1	2	4.48	COAXIAL CABLE	ANTENNA CABLE	CONTROL PANEL	10dB YAGI ANTENNA



LEGEND:
(*) APPLICABLE ONLY FOR FIRST STREET
(**) APPLICABLE ONLY FOR GLENOAKS BOULEVARD

TYPICAL I/O WIRING DIAGRAM 2

SCALE: NONE

NOTICE TO CONTRACTOR:

IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CALL THE USA UNDERGROUND ALERT FOR LOCATION OF EXISTING UNDERGROUND UTILITIES NO LESS THAN TWO DAYS NOR MORE THAN SEVEN DAYS PRIOR TO CONSTRUCTION.

811

THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR ANY DAMAGE DONE TO EXISTING UTILITIES OR STREET IMPROVEMENTS INCLUDING CONCRETE/LANDSCAPING DURING CONSTRUCTION.

NOTE:

CONTRACTOR SHALL PROVIDE ALL THE NECESSARY EQUIPMENT INCLUDING BUT NOT LIMITED TO, PROGRAMS, DRIVERS, COMPUTER OR LAPTOP TO IMPLEMENT THE INTENT OF THESE CONSTRUCTION DOCUMENTS.

UNDERGROUND SERVICE ALERT
CALL: TOLL FREE
811
TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'VD

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REGISTERED PROFESSIONAL ENGINEER — OPTY N. FERNANDEZ — No. E 012496 EXP. 9/30/21 — 04/22/21 — ELECTRICAL — STATE OF CALIFORNIA

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DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

TYPICAL CONTROL SCHEMATIC DIAGRAM & CONDUIT SCHEDULE

DWG No. E-09
SHEET No. 32 OF 46

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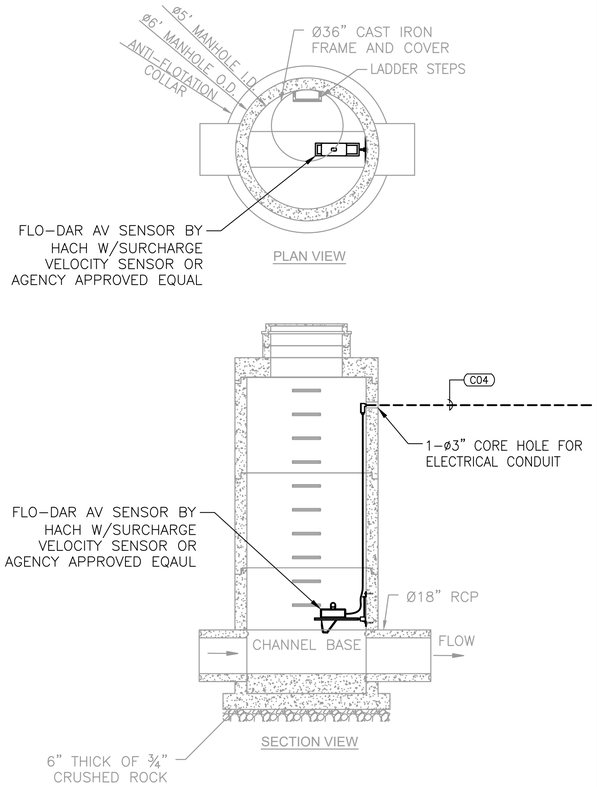
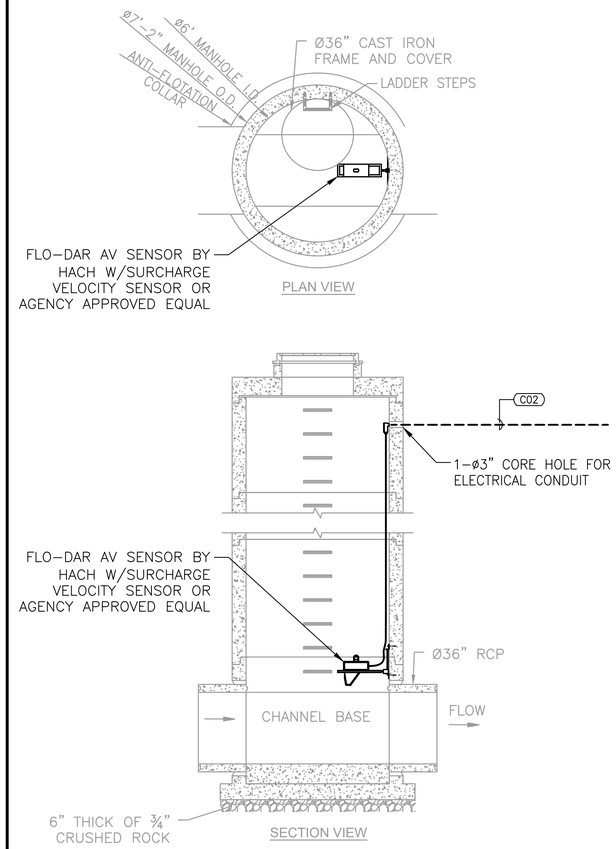


GLENOAKS BLVD. FLOW METER

SCALE: NONE

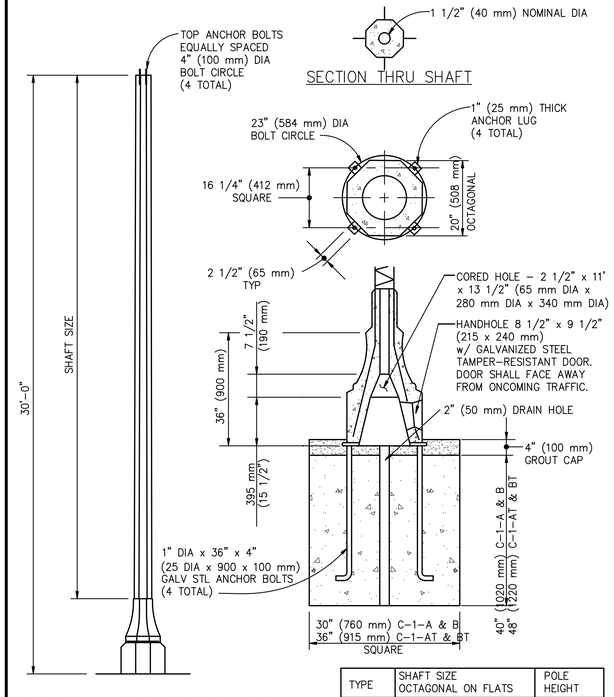
11



FIRST STREET FLOW METER

SCALE: NONE

8



POLE SHAFT SHALL BE CONSTRUCTED TO WITHSTAND LOADING SPECIFIED IN THE LATEST EDITION OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. LOADING FROM LUMINAIRE ARM AND LUMINAIRE SHALL BE INCLUDED.

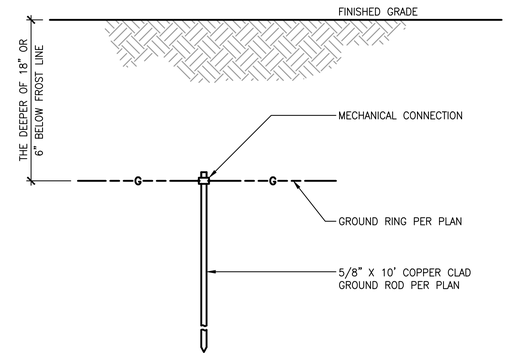
TYPE	SHAFT SIZE OCTAGONAL ON FLATS	POLE HEIGHT
C-1-A	8 1/2" x 6" x 23'-3" (215 x 150 x 7,085 mm)	26'-3" (8,000 mm)
C-1-B	9" x 6" x 28'-3" (230 x 150 x 8,610 mm)	31'-3" (9,525 mm)
C-1-AT	SAME AS ABOVE, EXCEPT EQUIPPED w/ TRAFFIC SIGNAL MAST ARM	
C-1-BT		

NOTE:
1. LIGHT CONCRETE POLE SHALL MEET CITY STANDARD OF SAN FERNANDO CITY STANDARDS AND APPROVED BY THE CITY.

CONCRETE LIGHTING POLE

SCALE: NONE

5



NOTE:
1. GROUND RESISTANCE SHALL BE 25 OHMS OR LESS. PROVIDE ADDITIONAL GROUNDING ELECTRODE AS NECESSARY TO MEET THE MINIMUM RESISTANCE.

GROUND ROD DETAIL

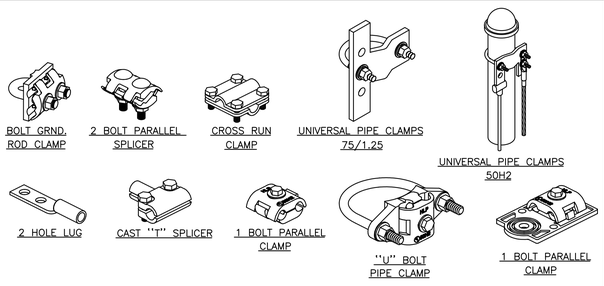
SCALE: NONE

1

UNUSED

SCALE: NONE

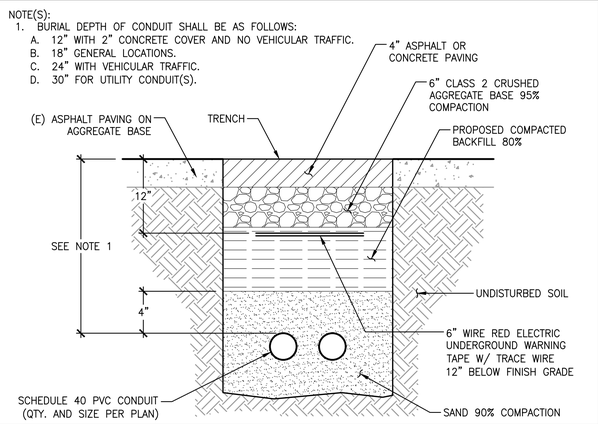
2



MECHANICAL CONNECTORS

SCALE: NONE

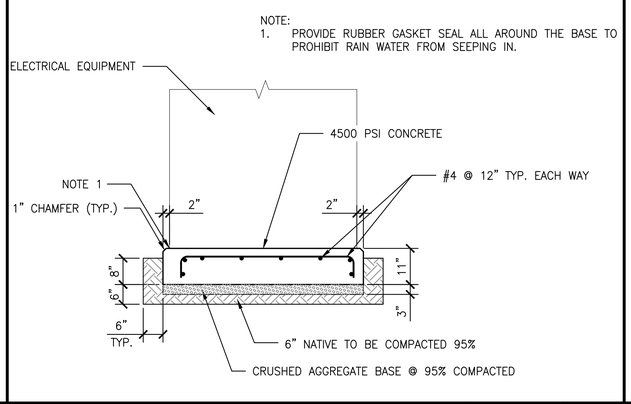
12



TRENCH DETAIL NO. 2

SCALE: NONE

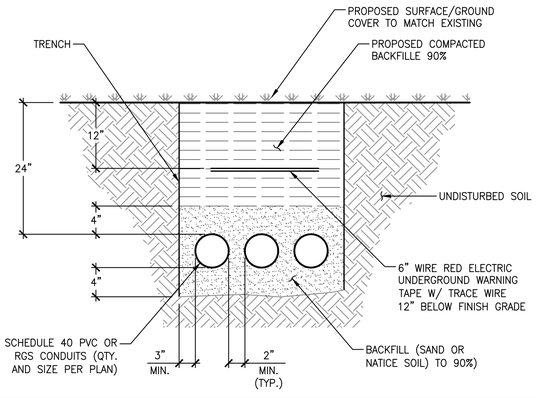
9



EQUIPMENT CONCRETE PAD DETAIL

SCALE: NONE

6



TRENCH DETAIL NO. 1

SCALE: NONE

3

NOTICE TO CONTRACTOR:

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UNDERGROUND SERVICE ALERT

CALL: TOLL FREE 811

TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'VD

PREPARED BY:

CWE

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REGISTERED PROFESSIONAL ENGINEER — OPTIY N. FERNANDEZ — No. E 012496 EXP. 9/30/21 — 04/22/21 — ELECTRICAL — STATE OF CALIFORNIA

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DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

ELECTRICAL DETAILS

DWG No. E-10

SHEET No. 33 OF 46

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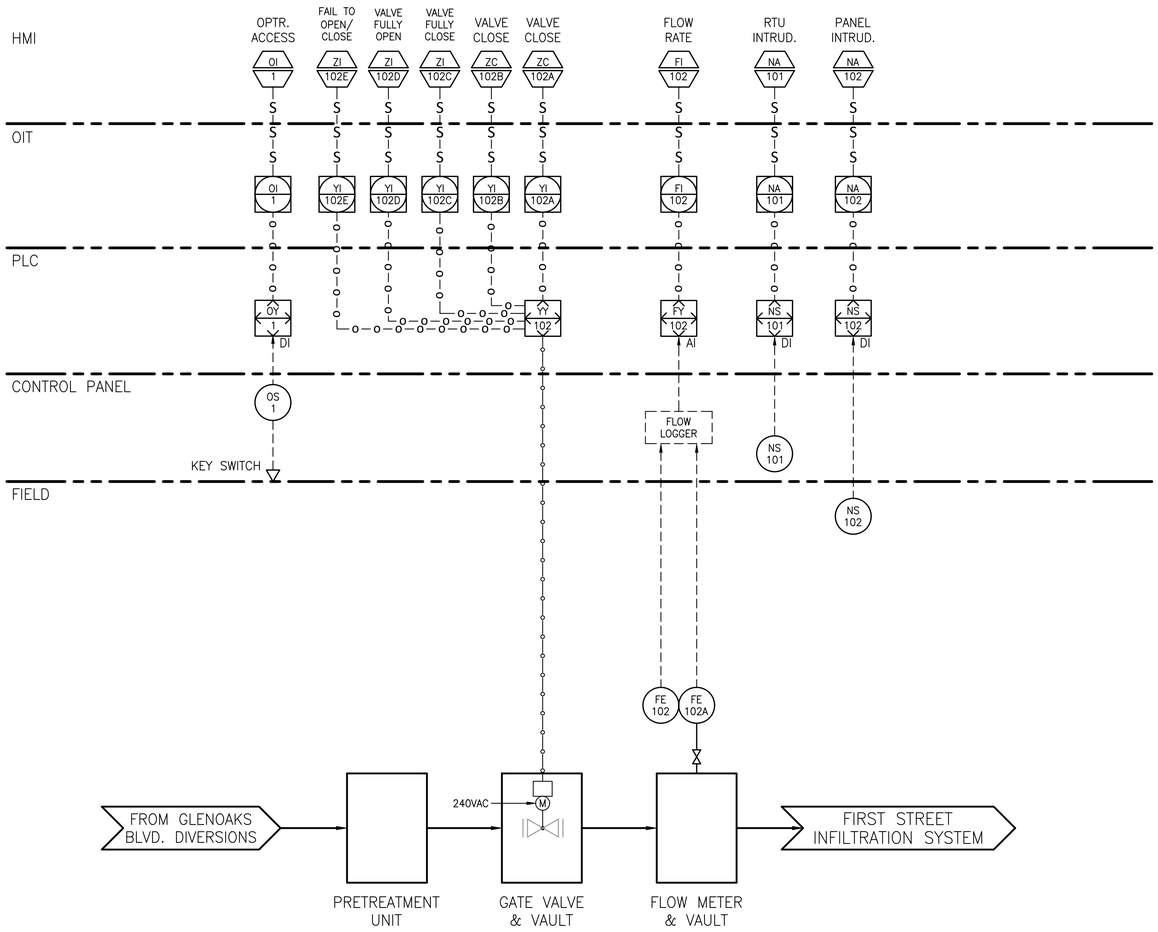

GENERAL NOTES:

1. ALL PIPING AND INSTRUMENTATION DIAGRAM SHOWS ONLY THE FUNCTIONAL SYSTEM. REFER TO MECHANICAL PLAN FOR COMPLETE PIPING DETAILS, REFER TO CONTROL SCHEMATIC DIAGRAM AND PLC WIRING FOR COMPLETE LOGIC CONTROL SEQUENCE.
2. RTU DESIGN, SCADA HMI AND PLC PROGRAMMING SHALL BE DONE BY BYRD ELECTRONICS.

GLENOAKS BOULEVARD

PIPING & INSTRUMENTATION DIAGRAM 1

SCALE: NONE

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SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD
PIPING & INSTRUMENTATION DIAGRAM

DWG No. E-11
SHEET No. 34 OF 46

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EROSION AND SEDIMENT CONTROL NOTES:

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

WASTE AND MATERIALS MANAGEMENT CONTROL NOTES:

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

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) NOTES:

IN THE CASE OF EMERGENCY, CALL:

AT PHONE (818) 898-1243 (MANUEL FABIAN)

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

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

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

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

PROJECT MANAGER: ______________________ DATE: __________________

STORM WATER POLLUTION PLAN NOTES:

1. EVERY EFFORT SHOULD BE MADE TO ELIMINATE THE DISCHARGE OF NON-STORM WATER FROM THE PROJECT SITE AT ALL TIMES.
2. ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON-SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES, OR WIND.
3. STOCKPILES OF EARTH AND OTHER CONSTRUCTION RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND OR WATER.
4. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.
5. EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON-SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
6. TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.
7. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
8. ANY SLOPES WITH DISTURBED SOILS OR DENUDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT EROSION BY WIND AND WATER.
9. AS THE PROJECT OWNER OR AUTHORIZED AGENT OF THE OWNER, I HAVE READ AND UNDERSTAND THE REQUIREMENTS LISTED ABOVE, NECESSARY TO CONTROL STORM WATER POLLUTION FROM SEDIMENTS, EROSION, AND CONSTRUCTION MATERIALS, AND I CERTIFY THAT I WILL COMPLY WITH THESE REQUIREMENTS.

PRINT NAME: ____

SIGNATURE: ____
DATE:_______________

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

THE FOLLOWING BMPs FROM THE LATEST ADDITION OF THE CASQA CONSTRUCTION BMP HANDBOOK (NOVEMBER 2009) MUST BE IMPLEMENTED AS APPLICABLE FOR ALL CONSTRUCTION ACTIVITIES. ADDITIONAL INFORMATION IS AVAILABLE AT WWW.CABMPHANDBOOKS.COM

EROSION CONTROL:

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

TEMPORARY SEDIMENT CONTROL:

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

WIND EROSION CONTROL:

WE-1 WIND EROSION CONTROL

EQUIPMENT TRACKING CONTROL:

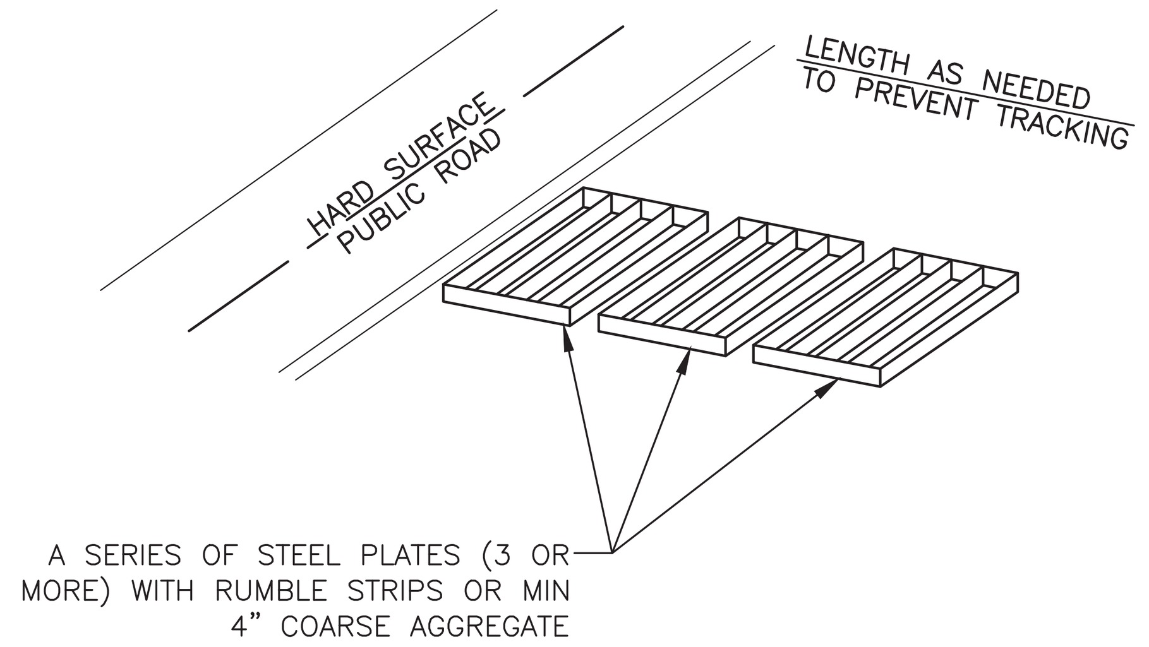
TC-1 STABILIZED CONSTRUCTION ENTRANCE/EXIT
TC-2 STABILIZED CONSTRUCTION ROADWAY
TC-3 ENTRANCE/OUTLET TIRE WASH

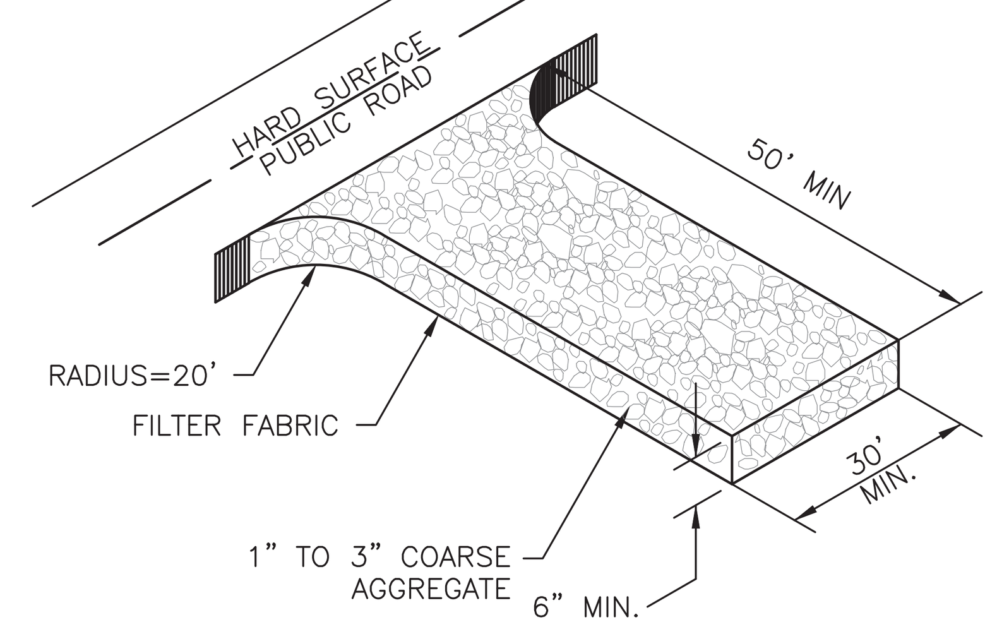
NON-STORMWATER MANAGEMENT:

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

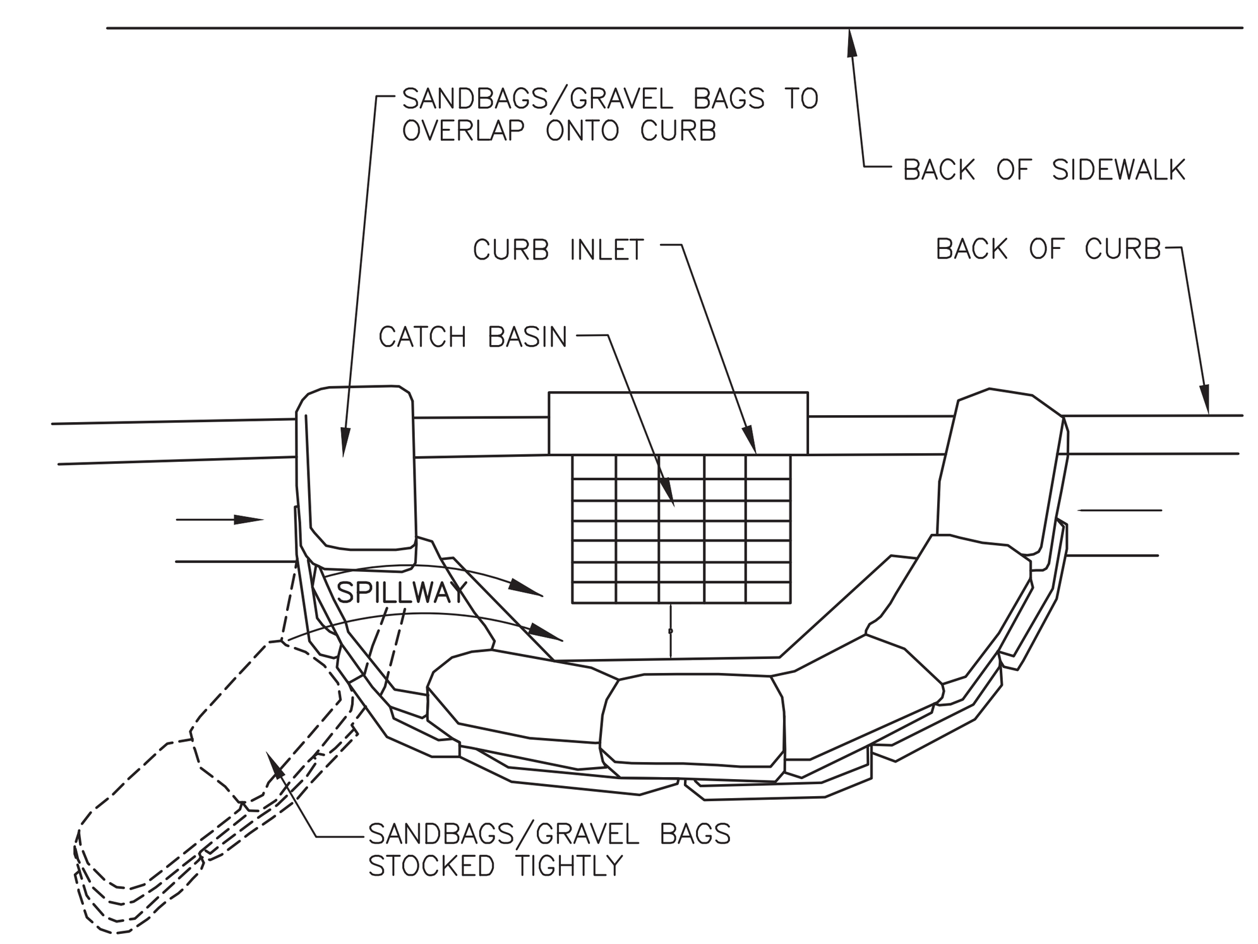
WASTE MANAGEMENT & MATERIAL POLLUTION CONTROL:

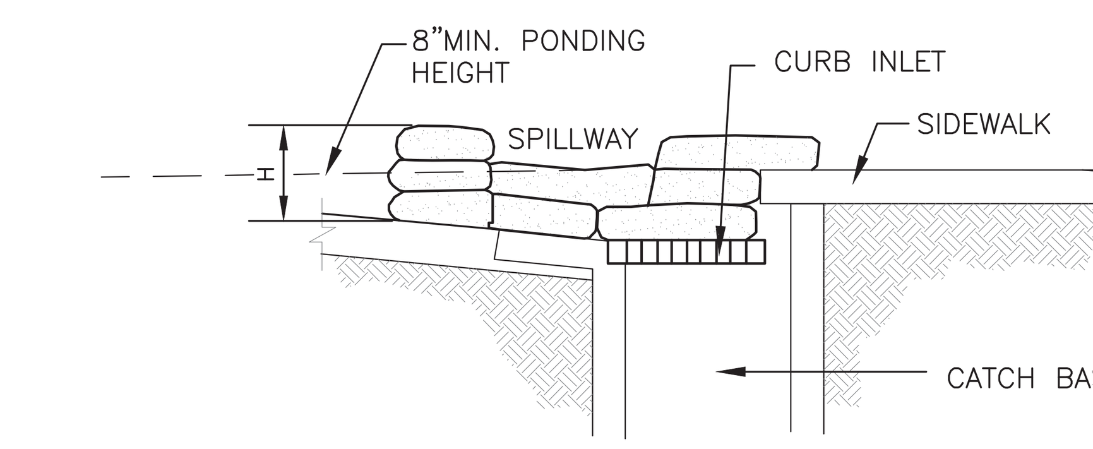
WM-1 MATERIAL DELIVERY AND STORAGE
WM-2 MATERIAL USE
WM-3 STOCKPILE MANAGEMENT
WM-4 SPILL PREVENTION AND CONTROL
WM-5 SOLID WASTE MANAGEMENT
WM-6 HAZARDOUS WASTE MANAGEMENT
WM-7 CONTAMINATION SOIL MANAGEMENT
WM-8 CONCRETE WASTE MANAGEMENT
WM-9 SANITARY/SEPTIC WASTE MANAGEMENT
WM-10 LIQUID WASTE MANAGEMENT





TO BE PLACED AT ALL ENTRY AND EXIT LOCATIONS

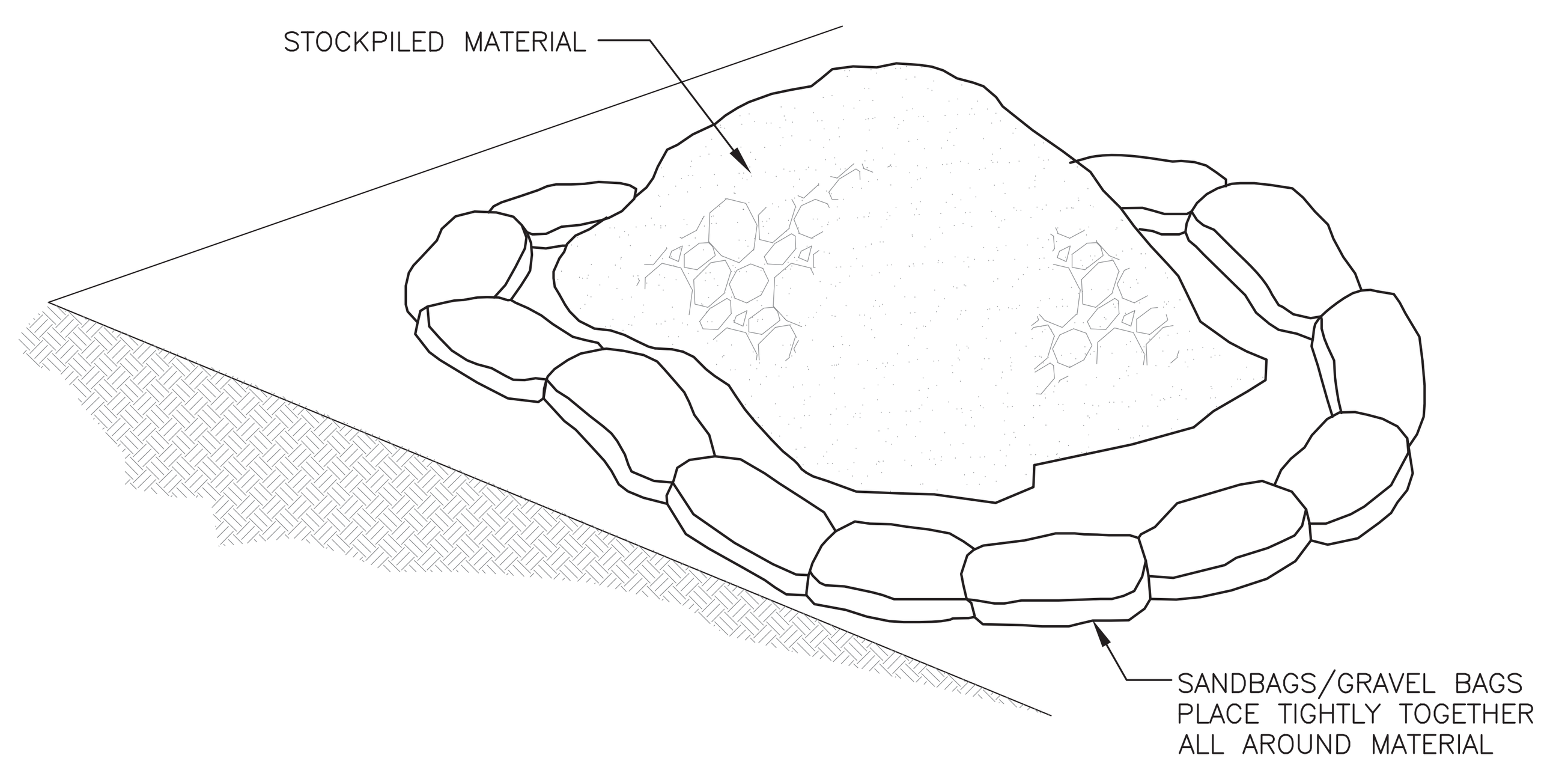




1. PROTECT DOWNSTREAM CATCH BASIN OUTSIDE OF PROJECT AREA

NOTES:

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



EROSION CONTROL SYMBOLS:

INLET PROTECTION
DIRECTION OF FLOW
CONSTRUCTION ENTRANCE
PROJECT LIMIT

EROSION CONTROL NOTES:

(30) STREET SWEEPING AND VACUUMING (BMP SE-7)
(31) INSTALL STORM DRAIN INLET PROTECTION (BMP SE-10)
(32) CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE/EXIT (BMP TC-1) CONTRACTOR TO DETERMINE EXACT LOCATION
(33) INSTALL CHECK DAM (SE-4)

MATERIAL STORAGE:

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

STREET MAINTENANCE:

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

MATCHLINE - STA 12+40 SEE SHEET 37

CONCRETE SIDEWALK

CONCRETE SIDEWALK

12+00

11+00

10+00

PARK AVENUE

R/W

STOCKPILE AREA WM-3

STOCKPILE AREA WM-3

LIMIT OF WORK

COMM. BLDG.

COMM. BLDG.

COMM. BLDG.

1+00 SAMPLING POINT

1+90

CONSTRUCTION TRAILER OFFICE

CONSTRUCTION STAGING AREA/ WASTE MANAGEMENT

FIRST STREET

SCALE: 1"= 20'

EROSION CONTROL SYMBOLS:

- DIRECTION OF FLOW
- INLET PROTECTION
- FIBER ROLLS
- CONSTRUCTION ENTRANCE
- PROJECT LIMIT
- SAMPLING POINT
- CHECK DAM

EROSION CONTROL NOTES:

30 — STREET SWEEPING AND VACUUMING (BMP SE-7)

31 — INSTALL STORM DRAIN INLET PROTECTION (BMP SE-10)

32 — CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE/EXIT (BMP TC-1). CONTRACTOR TO DETERMINE EXACT LOCATION

33 — INSTALL CHECK DAM (SE-4)

UNDERGROUND SERVICE ALERT

CALL: TOLL FREE 811

TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'V'D

PREPARED BY:

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

REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. HARVEL — No.85752 — Exp. 9/30/2022 — CIVIL — STATE OF CALIFORNIA

DRAWN BY:	TT	APR 2021
DESIGNED BY:	KH	APR 2021
CHECKED BY:	VB	APR 2021

Matthew Baumgardner, Director of Public Works — DATE

R.C.E. NO.: 71932 EXP. DATE: 12/31/2021

Manuel Fabian, Civil Engineer Assistant II — DATE

CITY OF SAN FERNANDO
HISTORIC & VISIONARY

CITY OF SAN FERNANDO
DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

EROSION CONTROL PLAN STA 10+00 TO 12+40

DWG No. EC-02

SHEET No. 36 OF 46

MATCHLINE - STA 16+00 SEE SHEET 38

MATCHLINE - STA 12+40 SEE SHEET 36

EROSION CONTROL SYMBOLS:

- DIRECTION OF FLOW
- PROJECT LIMIT
- INLET PROTECTION
- CHECK DAM
- SAMPLING POINT

EROSION CONTROL NOTES:

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

(33) INSTALL CHECK DAM (SE-4)

UNDERGROUND SERVICE ALERT

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STATE OF CALIFORNIA

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Matthew Baumgardner, Director of Public Works — DATE

R.C.E. NO.: 71932 EXP. DATE: 12/31/2021

Manuel Fabian, Civil Engineer Assistant II — DATE

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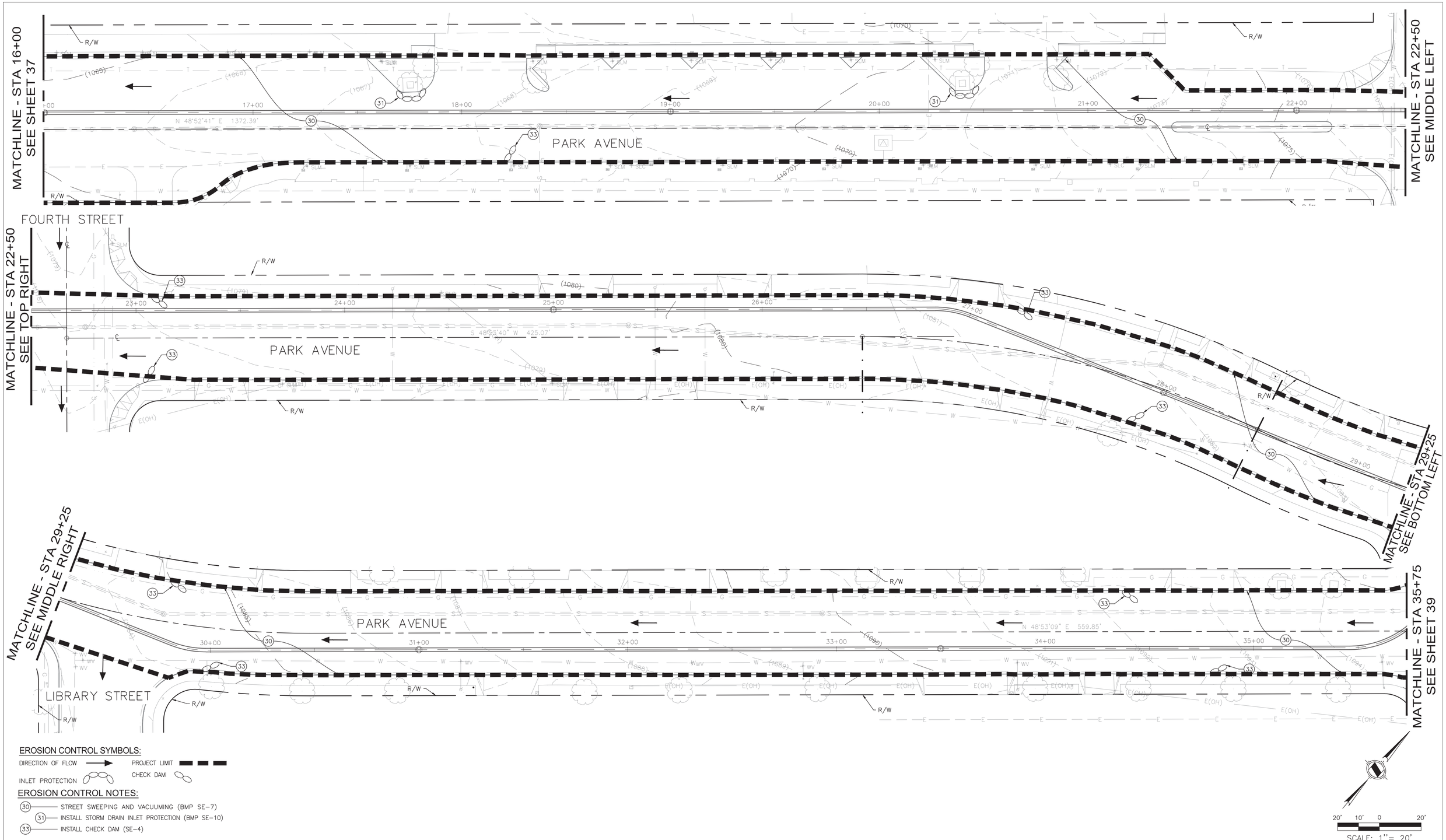
San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

EROSION CONTROL PLAN
STA 12+40 TO 16+00

DWG No. EC-02

SHEET No. 37 OF 46



EROSION CONTROL SYMBOLS:

DIRECTION OF FLOW

PROJECT LIMIT

INLET PROTECTION

CHECK DAM

EROSION CONTROL NOTES:

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

(31) INSTALL STORM DRAIN INLET PROTECTION (BMP SE-10)

(33) INSTALL CHECK DAM (SE-4)

20' 10' 0 20'

SCALE: 1" = 20'

UNDERGROUND SERVICE ALERT

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San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

EROSION CONTROL PLAN
STA 16+00 TO 35+75

DWG No. EC-03

SHEET No. 38 OF 46

MATCHLINE - STA 35+75
SEE SHEET 38

PARK AVENUE

FIFTH STREET

JESSIE STREET

MATCHLINE - STA 40+25
SEE MIDDLE LEFT

EROSION CONTROL SYMBOLS:

DIRECTION OF FLOW

PROJECT LIMIT

INLET PROTECTION

CHECK DAM

EROSION CONTROL NOTES:

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

(31) INSTALL STORM DRAIN INLET PROTECTION (BMP SE-10)

(33) INSTALL CHECK DAM (SE-4)

MATCHLINE - STA 40+25
SEE TOP RIGHT

JESSIE STREET

MATCHLINE - STA 46+75
SEE BOTTOM LEFT

MATCHLINE - STA 46+75
SEE MIDDLE RIGHT

JESSIE STREET

GLENOAKS BOULEVARD

SCALE: 1" = 20'

UNDERGROUND SERVICE ALERT

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REV.	DATE	BY	DESCRIPTION	APP'V'D

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REGISTERED PROFESSIONAL ENGINEER
KATHRYN L. HARRER
No. 85752
Exp. 9/30/2022
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STATE OF CALIFORNIA

DRAWN BY:	TT	APR 2021
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CHECKED BY:	VB	APR 2021

Matthew Baumgardner, Director of Public Works — DATE

R.C.E. NO.: 71932 EXP. DATE: 12/31/2021

Manuel Fabian, Civil Engineer Assistant II — DATE

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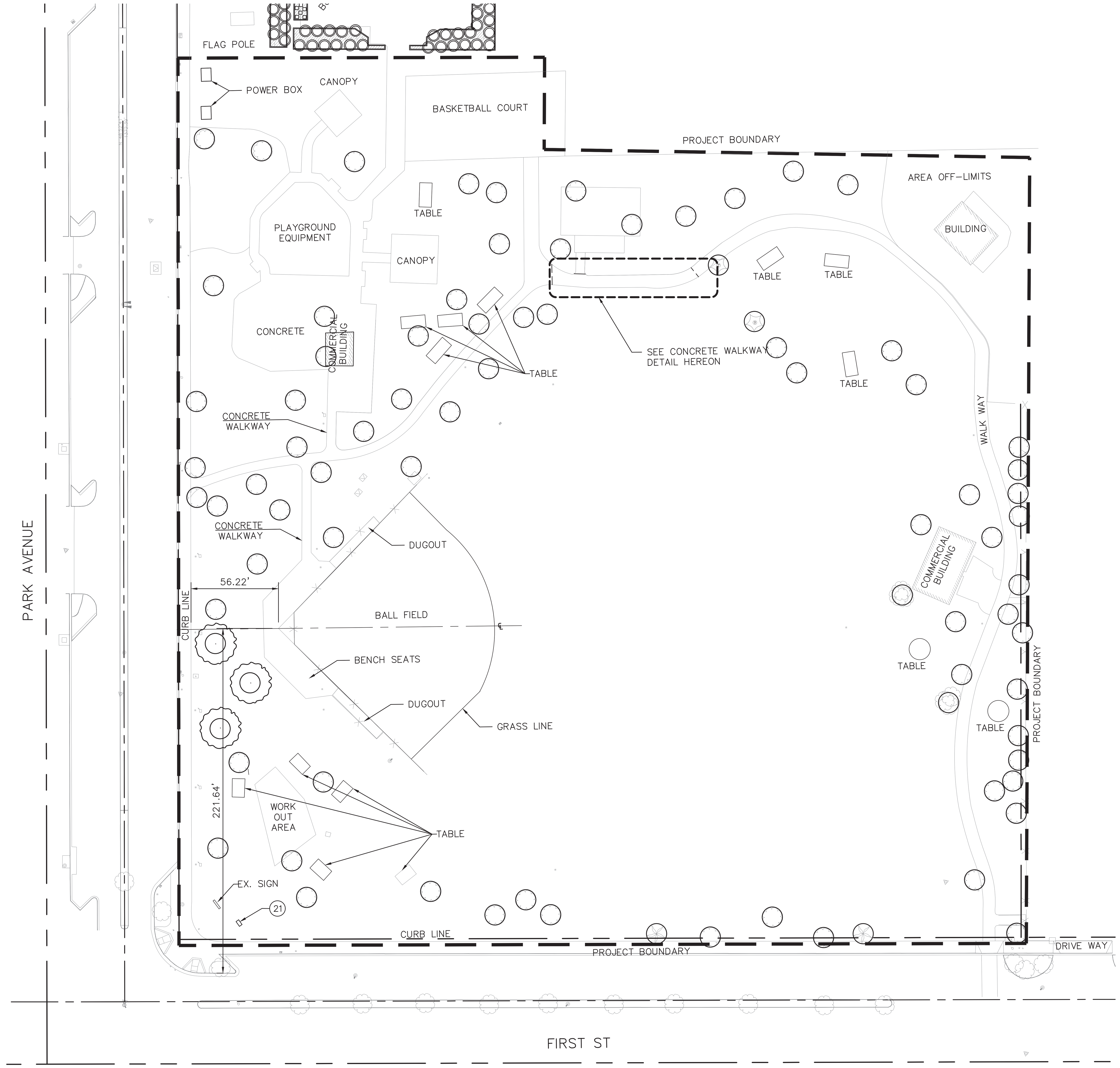
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

EROSION CONTROL PLAN
STA 35+75 TO 54+23

DWG No. EC-04

SHEET No. 39 OF 46



CONSTRUCTION NOTES:

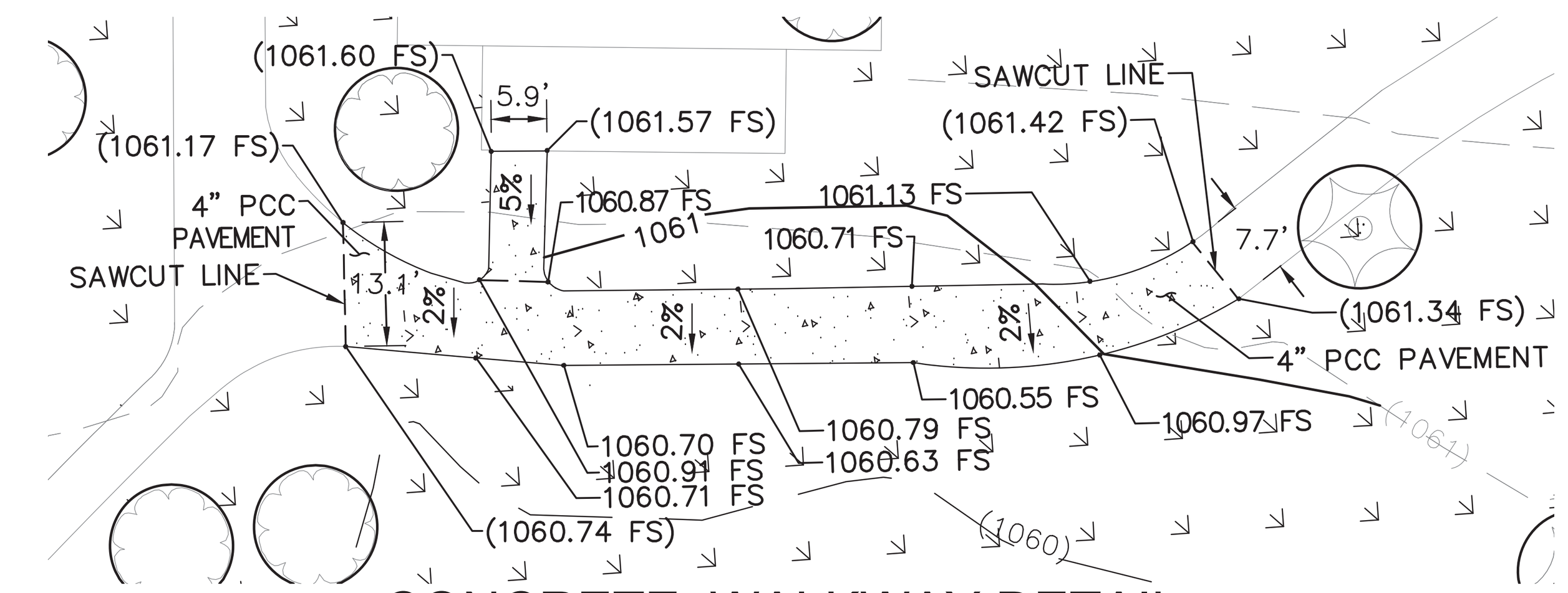
(21) INSTALL INTERPRETIVE SIGN PER DETAILS 4-7 ON SHEET 42

0' 10' 20' 40'
SCALE: 1"= 40'

SAN FERNANDO PARK INFILTRATION PLAN LAYOUT

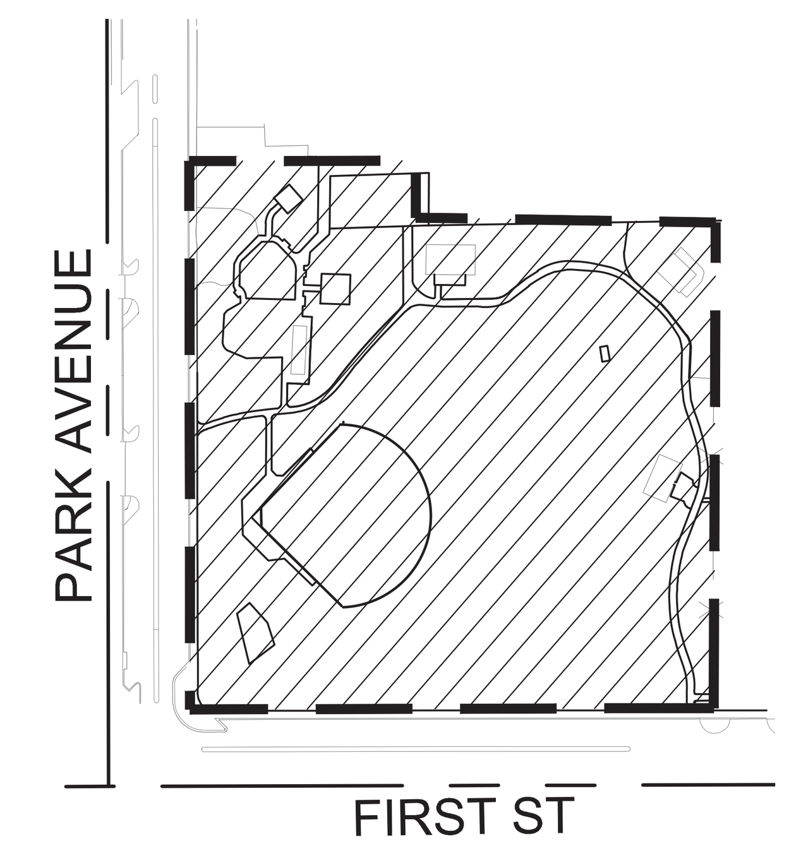
LAYOUT NOTES:

1. CONTRACTOR TO VERIFY ALL DIMENSIONS IN THE FIELD.
2. ALL SIDEWALKS, CONCRETE SURFACES, PLAY SURFACES AND FENCES ARE TO REMAIN.
3. REMOVE AND RESTORE ALL SIGNAGE, FURNITURE, FENCING, AND SPORTS EQUIPMENT THAT ARE WITHIN AREAS AFFECTED BY CONSTRUCTION. ALL SIGNAGE, FURNITURE, FENCING, AND SPORTS EQUIPMENT SHALL BE RESTORED TO EXISTING CONDITION OR BETTER ONCE WORK IS COMPLETED. BASEBALL FIELD IS TO BE REINSTALLED IN ITS ORIGINAL PLACEMENT, SIZE AND ORIENTATION.
5. CONTRACTOR IS TO VERIFY BASEBALL FIELD'S DIMENSIONS, LOCATION AND ORIENTATION PRIOR TO DEMOLITION AND CONSTRUCTION.
6. OUTFIELD NEEDS TO BE GRADED TO A 1% SLOPE.
7. BASEBALL INFIELD AREA SHALL NOT HAVE MORE THAN A 1% GRADE.
8. FOLLOW MANUFACTURERS SPECIFICATIONS FOR INFIELD SKIN OF DG.
9. DIAGRAM OF FIELD MAY NOT REFLECT THE SPECIFIC REQUIREMENTS OF EACH LEAGUE.



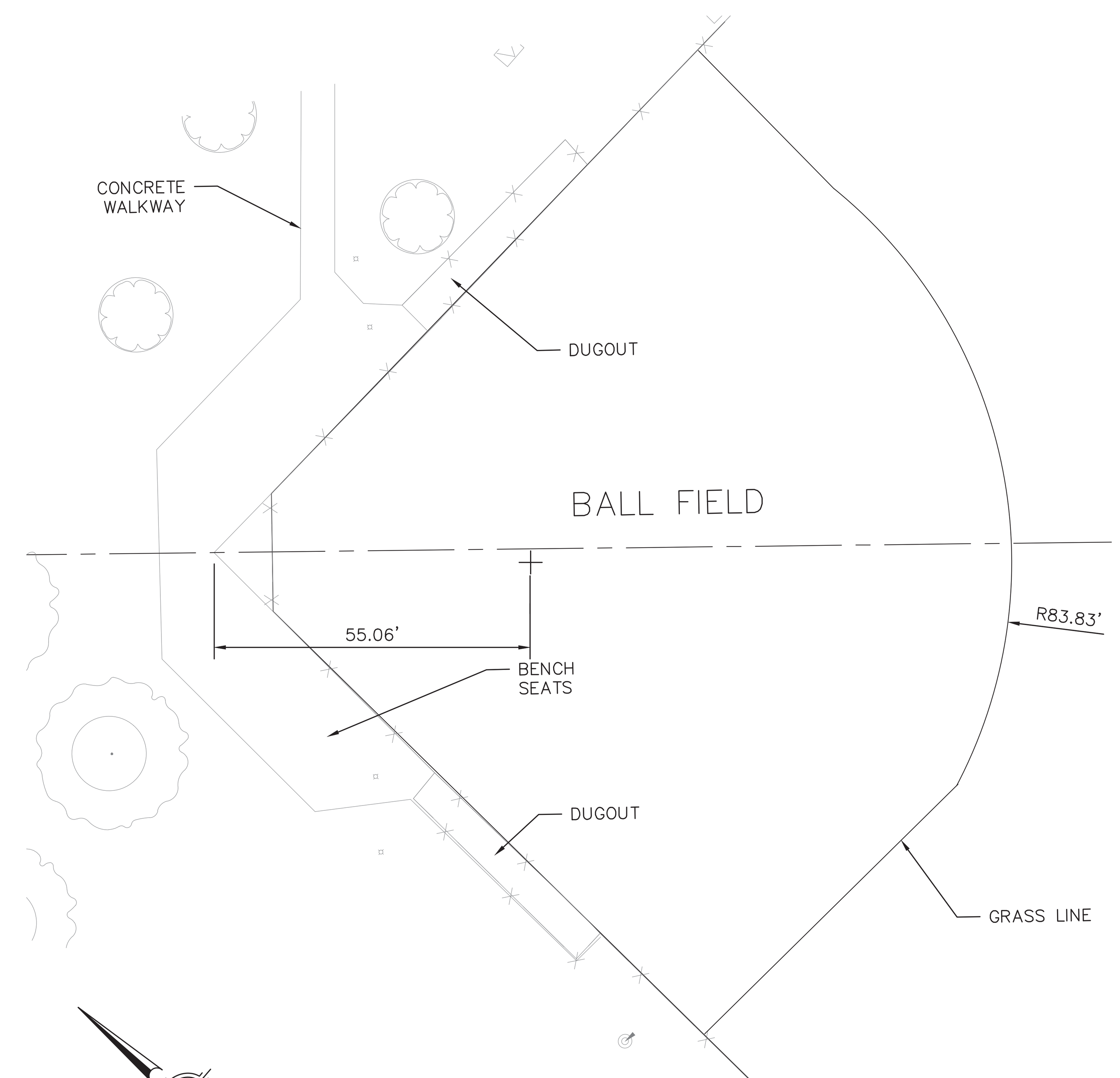
CONCRETE WALKWAY DETAIL

SCALE: 1"=20'



LOCATION KEY

0 50 100 200
SCALE: 1= 200



SAN FERNANDO PARK BASEBALL FIELD LAYOUT

SCALE: 1"=20'

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PREPARED BY:
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TEL (714) 526-7500
www.cwecorp.com

SEAL:
LICENSED LANDSCAPE ARCHITECT
KATHLEEN M. McKERNIN
Signature
10/31/19
Renewal Date
11/9/17
Date
License No. 5630
STATE OF CALIFORNIA

DRAWN BY:	KM	AUG 2020
DESIGNED BY:	KM	AUG 2020
CHECKED BY:	KM	AUG 2020

[illegible]
Matthew Baumgardner,
Director of Public Works
R.C.E. NO.: 71932 EXP. DATE: 12/31/2021

[illegible]
Manuel Fabian, Civil Engineer Assistant II DATE

CITY OF
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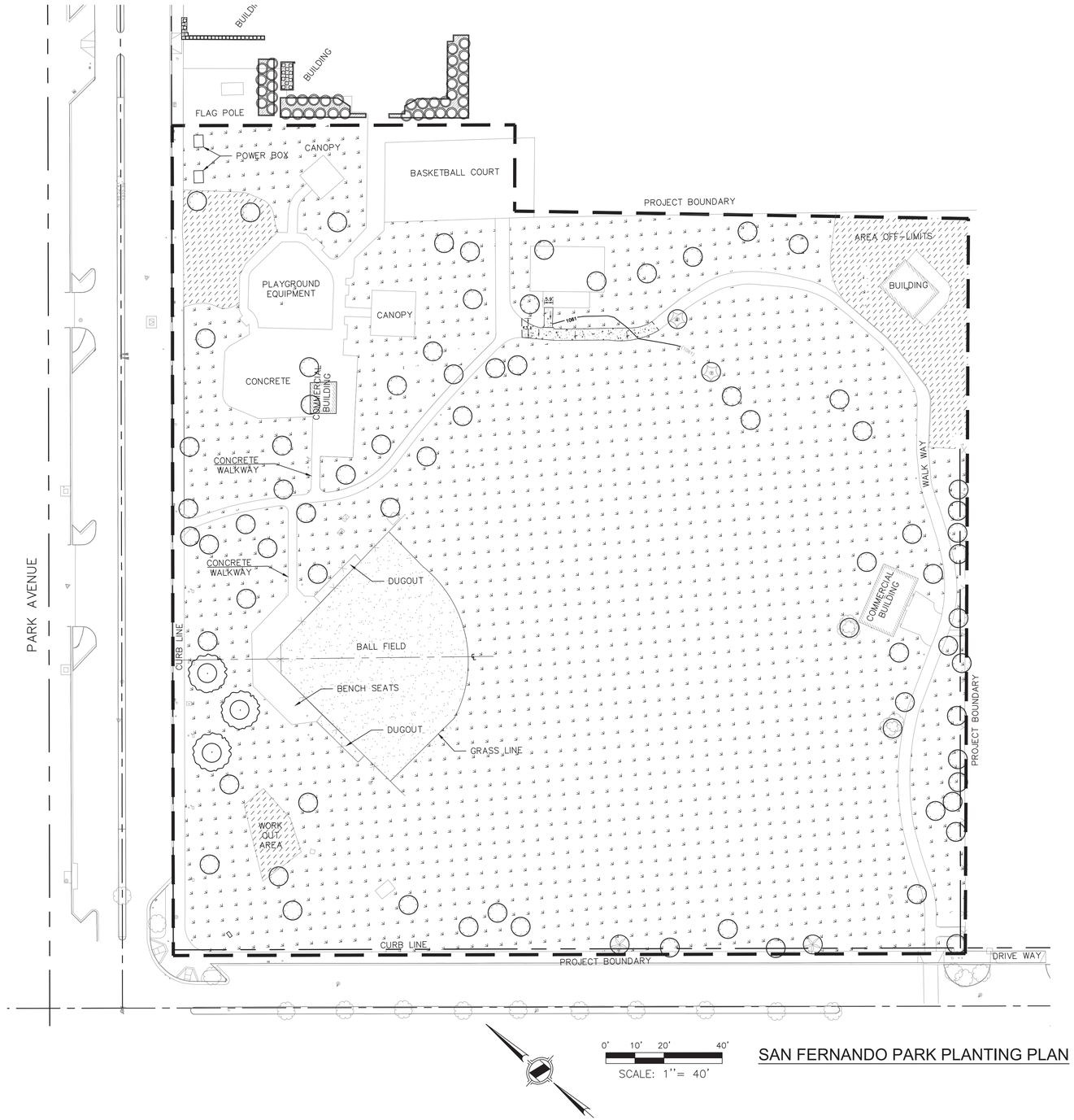
San Fernando Regional Park Infiltration Project
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

LANDSCAPE LAYOUT PLAN

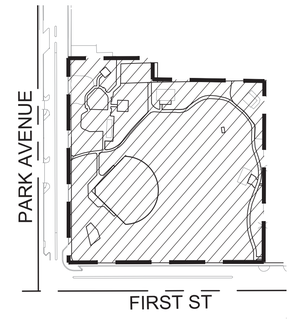
DWG No. LS-01
SHEET No. 40 OF 46



SAN FERNANDO PARK PLANTING PLAN

PLANTING NOTES:

1. CONTRACTOR TO VERIFY ALL DIMENSIONS IN THE FIELD
2. CONTRACTOR TO COORDINATE LOCATION OF ALL UTILITIES (CALL BEFORE YOU DIG)
3. ALL SIDEWALKS, CONCRETE SURFACES, PLAY SURFACES AND FENCES ARE TO REMAIN
4. PROTECT ALL EXISTING TREES IN PLACE – PLANTING PLAN DETAIL ①
5. FOLLOW PLANTING SPECIFICATIONS FOR SHRUBS – PLANTING PLAN DETAIL ②
6. FOLLOW PLANTING SPECIFICATIONS FOR TREES – PLANTING PLAN DETAIL ③
7. ENTIRE AREA IS TO BE ROTOTILLED TO A DEPTH OF 8"
8. FOLLOW MANUFACTURER'S SPECIFICATIONS FOR LAYING OF SOD
9. FOLLOW SPECIFICATIONS REGARDING SOIL COMPACTION AND TOPSOIL AMENDMENTS FOR BALLFIELD
10. FOLLOW MANUFACTURERS SPECIFICATIONS FOR DECOMPOSED GRANITE INSTALLATION FOR BALLFIELD
11. FOLLOW MANUFACTURERS SPECIFICATIONS FOR INFIELD MIX INSTALLATION FOR BALLFIELD



LOCATION KEY

0 50 100 200

SCALE: 1= 200

PLANT/MATERIAL KEY

SYMBOL	BOTANICAL NAME / COMMON NAME	QUANTITY	NOTES
	MARATHON SOD	211,939 SF	SOD OVER 5" PREFERRED
	BASEBALL DIAMOND DIRT	13,825 SF	DIAMOND PRO OVER 50% BRICK 30% SAND AND 20% DG FINE MIX AS A BINDER @6" DEEP
	STABILIZED DECOMPOSED GRANITE	13,481 SF	3" OF STABILIZED DG OVER COMPACTED SUBGRADE OF NATIVE SOIL
	TREE RING DRIPLINE W/ BARK MULCH	10,956 SF	3" DEEP SHREDDED BARK MULCH BELOW ALL TREE DRIPLINES
	RHAPIOLEPSIS INDICA INDIAN HAWTHORNE	41– 5 GAL	
	DIETES VEGETA AFRICAN IRIS	38– 1 GAL	
	BARK MULCH	2,906 SF	½"–3/4" BARK MULCH @ 3" DEEP
	QUERCAS AGRIFOLIA COAST LIVE OAK	3– 24" BOX	

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REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'V'D

PREPARED BY:
CWE
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SEAL:
LICENSED LANDSCAPE ARCHITECT
KATHLEEN M. MCERNAN
License No. 5900
STATE OF CALIFORNIA

DRAWN BY:	KM	AUG 2020
DESIGNED BY:	KM	AUG 2020
CHECKED BY:	KM	AUG 2020

Matthew Baumgardner,
Director of Public Works
R.C.E. NO.: 71932 EXP. DATE: 12/31/2021

Manuel Fabian, Civil Engineer Assistant II DATE

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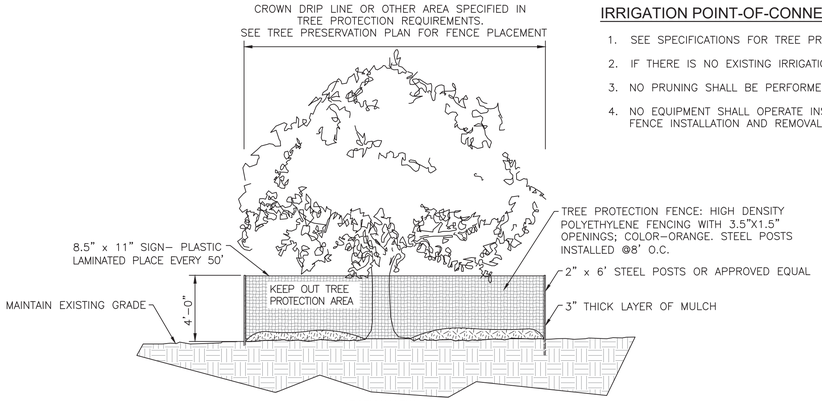
San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

PLANTING PLAN

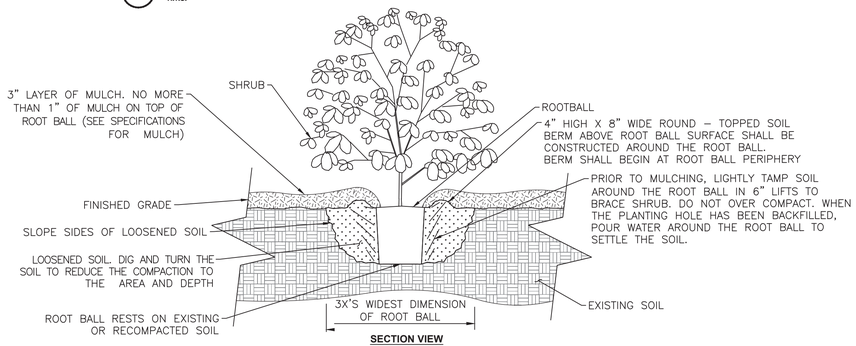
DWG No. LS-02
SHEET No. 41 OF 46



1 TREE PROTECTION
N.T.S.

IRRIGATION POINT-OF-CONNECTION NOTES:

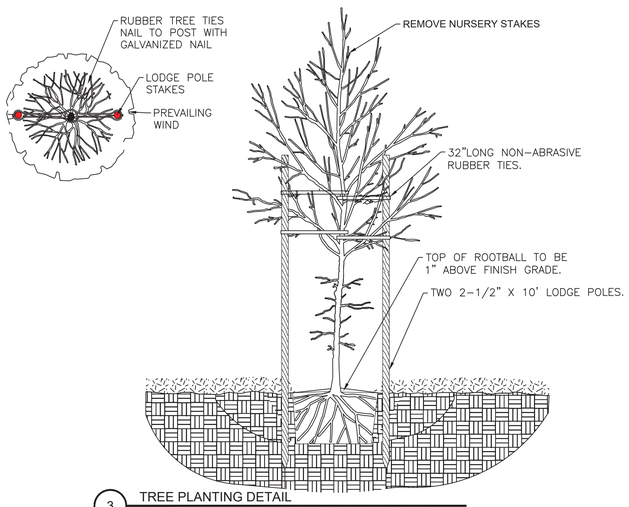
1. SEE SPECIFICATIONS FOR TREE PROTECTION REQUIREMENT.
2. IF THERE IS NO EXISTING IRRIGATION, SEE SPECIFICATIONS FOR WATERING REQUIREMENTS.
3. NO PRUNING SHALL BE PERFORMED EXCEPT BY APPROVED ARBORIST.
4. NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.



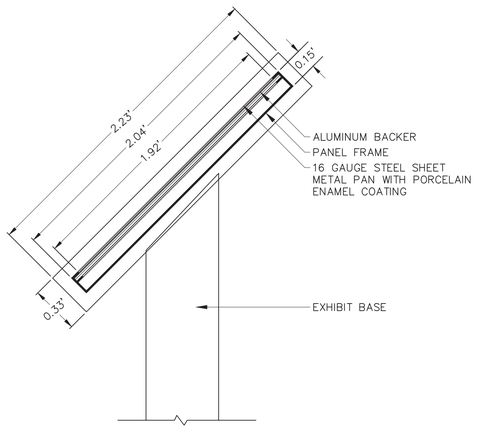
NOTES:

1. SHRUBS SHALL BE OF QUALITY PRESCRIBED IN THE ROOT OBSERVATIONS DETAIL AND SPECIFICATIONS.
2. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS RELATED TO THIS DETAIL.

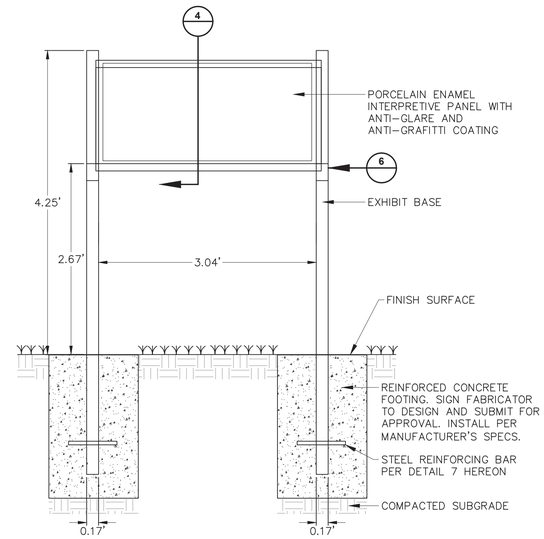
2 SHRUB - UNMODIFIED SOIL
N.T.S.



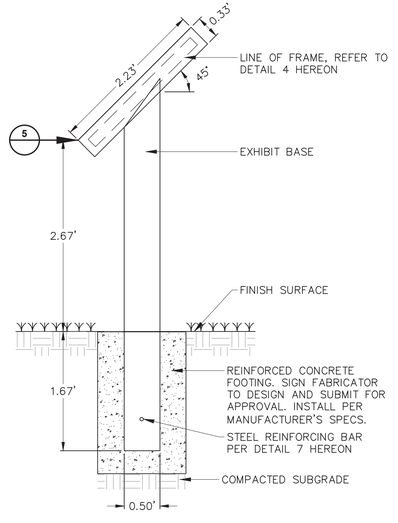
3 TREE PLANTING DETAIL
N.T.S.



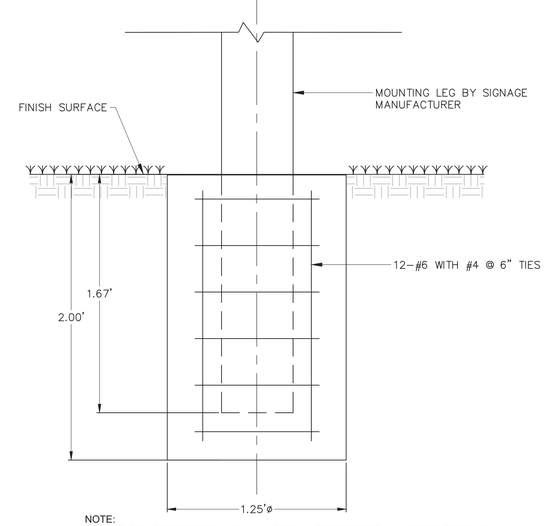
4 SIGN - PANEL FRAME SECTION
SCALE: 1"= 6"



5 SIGN - FRONT ELEVATION
SCALE: 1"=1'



6 SIGN - SIDE ELEVATION
SCALE: 1"=1'



NOTE:
SAMPLE REINFORCEMENT SHOWN IN DETAIL. REINFORCED CONCRETE FOOTING TO BE DESIGNED BY SIGN MANUFACTURER AND SUBMITTED FOR APPROVAL.

7 SIGN - FOUNDATION
SCALE: 1"= 6"

UNDERGROUND SERVICE ALERT
CALL: TOLL FREE
811
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REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'V'D

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

SEAL:
LICENSED LANDSCAPE ARCHITECT
KATHLEEN M. MCKERNIN
Signature
10/31/19
Renewal Date
11/9/17
Date
License No. 6600
STATE OF CALIFORNIA

DRAWN BY:	KM	AUG 2020
DESIGNED BY:	KM	AUG 2020
CHECKED BY:	KM	AUG 2020

Matthew Baumgardner,
Director of Public Works
R.C.E. NO.: 71932 EXP. DATE: 12/31/2021

Manuel Fabian, Civil Engineer Assistant II DATE

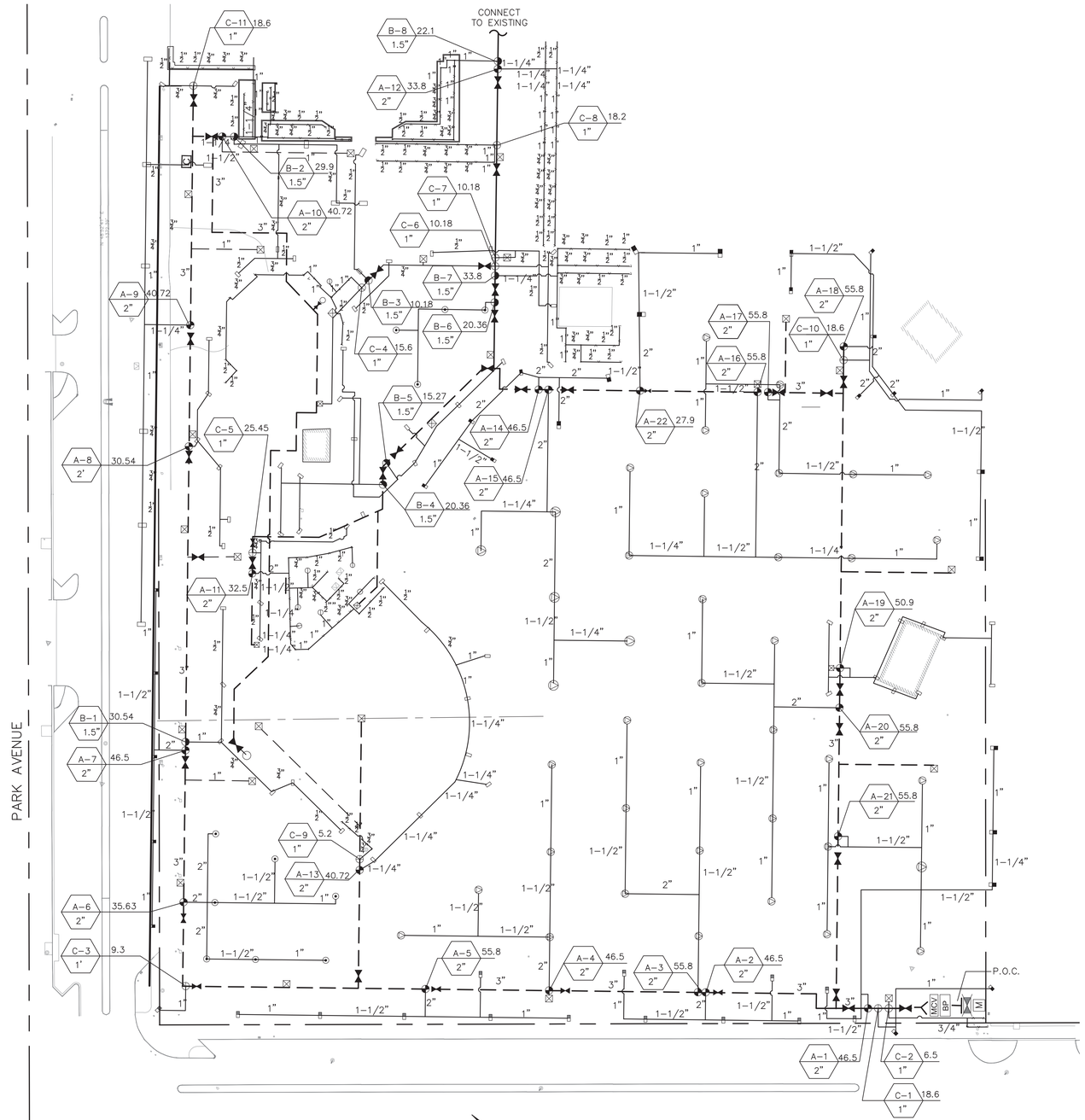
CITY OF SAN FERNANDO
HISTORIC & VISIONARY
CITY OF SAN FERNANDO
DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

PLANTING AND SIGN DETAILS

DWG No. LS-03
SHEET No. 42 OF 46



0' 10' 20' 40'

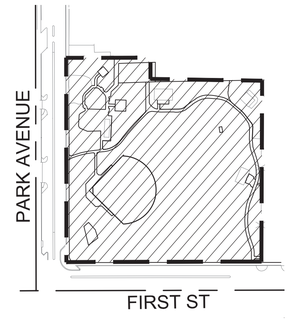
SCALE: 1"= 40'

SAN FERNANDO PARK IRRIGATION PLAN

THE EXISTING IRRIGATION SYSTEM SERVICING THE AREAS SHOWN WITH NEW IRRIGATION SHALL BE REMOVED AND REPLACED WITH THE IMPROVEMENTS SHOWN ON THIS PLAN SHEET.

PLANTING IRRIGATION POINT-OF-CONNECTION NOTES:

1. EXISTING 3" WATER METER AND BACKFLOW PREVENTER, PROVIDED AND INSTALLED BY CONTRACTOR.
2. IRRIGATION PLANS ARE SHOWN SCHEMATICALLY ONLY . COORDINATE WITH THE CITY FOR THE FINAL LOCATION OF THE ELECTRICAL AND IRRIGATION CONTROLLER PRIOR TO INSTALLATION.
3. THE CONTRACTOR SHALL VERIFY THE STATIC PRESSURE IN THE FIELD BEFORE COMMENCEMENT OF THE PROJECT.
4. IF THE PRESSURE VARIES 20% FROM THE STATED OPERATING PRESSURE, IMMEDIATELY CONTACT THE LANDSCAPE ARCHITECT, KATHLEEN MCKERNIN AT 310-795-4886, FOR ADDITIONAL DIRECTIVE.
5. SLEEVE IRRIGATION UNDER ALL CONCRETE/HARDSCAPE SURFACES IN SCHEDULE 40 PVC EXTEND SLEEVES 12" INTO PLANTER AREAS PER DETAIL FON SHEET LS-05.
6. RUN IRRIGATION LINES, CONTROL WIRES ELECTRICAL SERVICE IN SCHEDULE 40 PVC SLEEVES EXTEND CONDUIT 12" INTO PLANTER AREAS PER DETAIL G ON SHEET LS-05.



LOCATION KEY

0 50 100 200

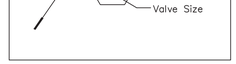
SCALE: 1= 200

IRRIGATION LEGEND

SYMBOL	DESCRIPTION	MANUFACTURER	PART # AND DESCRIPTION	DETAILS
M	WATER METER	NA		
	BACKFLOW PREVENTER	NA		
	P.O.C.			
BP	BOOSTER PUMP	MUNROE	COMPLETE PRO II	
	Y STRAINER	WILKENS ZURN	3 YB WILKINS Y STRAINER	
MCV	MASTER CONTROL VALVE	BUCKNER	SUPERIOR 3200 3"	A/5
	MAINLINE		PVC CLASS 315 3" PIPE	
	LATERAL LINE		SCHEDULE 40 PVC	
C	IRRIGATION CONTROLLER	WEATHERMATIC	SL4800 SOLAR CONTROLLER W/ FLOW SMARTLINK BUNDLE	H/6
	CONTROL VALVE WITH VALVE BOX 2"	RAINBIRD	RAINBIRD 200 PEB 2" WITH PRS DIAL	B/5
	CONTROL VALVE WITH VALVE BOX 1-1/2"	RAINBIRD	RAINBIRD 150PEB 1.5" WITH PRS DIAL	B/5
	CONTROL VALVE WITH VALVE BOX !'	RAINBIRD	RAINBIRD 100 PEB 1" WITH PRS DIAL	B/5
	GATE VALVE WITH VALVE BOX	RAINBIRD	GATE VALVE AWWA C-500 WITH VALVE BOX RAINBIRD VB SERIES PVBSTD 12" STANDARD	I/5
	QUICK COUPLER WITH VALVE BOX	RAINBIRD	TRIPLE SWING ASSEMBLY BRASS 44-R VALVE BOX: VB SERIES PVBSTD 12" STANDARD	C/5

SYMBOL	DESCRIPTION	MANUFACTURER	PART # AND DESCRIPTION	PATTERN/GPM	RADIUS	PSI
	TURF ROTOR	RAINBIRD	8005 SS FULL CIRCLE ROTOR NOZZLE 10	FULL CIRCLE 9.3 GPM	55'-0"	50
	TURF ROTOR	RAINBIRD	8005 SS FULL CIRCLE NOZZLE 6	FULL CIRCLE 5.6GPM	45'-0"	50
	TURF ROTOR	RAINBIRD	8005 SS HALF CIRCLE NOZZLE 10	HALF 9.3 GPM	55	50
	TURF ROTOR	RAINBIRD	5000 SERIES STD. RAINCURTAIN NOZZLE 4.0LA	ADJUSTABLE PART CIRCLE-REVERSE FULL CIRCLE 4.01 GPM	40'-35'	45
H F	SPRINKLER HEADS	RAINBIRD	1800 SERIES MPR 12 SERIES	H 1.3 F 2.6	1'-0"	30
H	SPRINKLER HEADS	RAINBIRD	1800 SERIES MPR 8 SERIES NOZZLE	H .52GPM	5'-0"	30

VALVE KEY:



UNDERGROUND SERVICE ALERT

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TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'V'D

PREPARED BY:

1561 E. ORANGETHORPE AVE.
SUITE 240
FULLERTON, CA 92831
TEL (714) 526-7500
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SEAL: LICENSED LANDSCAPE ARCHITECT KATHLEEN M. MCKERNIN Signature 10/31/19 Renewal Date 11/8/17 Date License No. 5605 STATE OF CALIFORNIA

DRAWN BY:	KM	AUG 2020
DESIGNED BY:	KM	AUG 2020
CHECKED BY:	KM	AUG 2020

Matthew Baumgardner, Director of Public Works

R.C.E. NO.: 71932 EXP. DATE: 12/31/2021

Manuel Fabian, Civil Engineer Assistant II DATE

CITY OF SAN FERNANDO HISTORIC & VISIONARY

CITY OF SAN FERNANDO DEPARTMENT OF PUBLIC WORKS

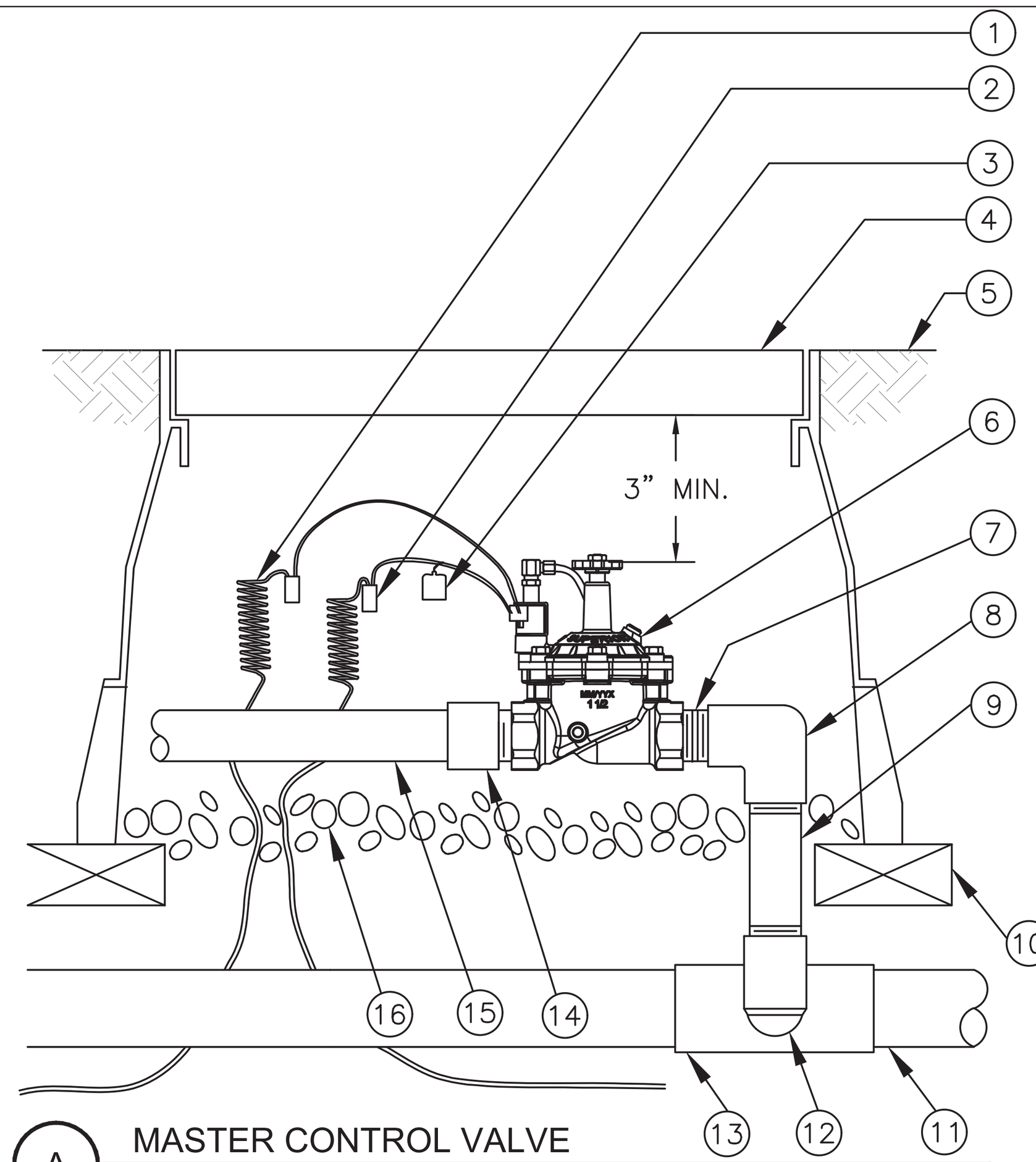
San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

IRRIGATION PLAN

DWG No. LS-04

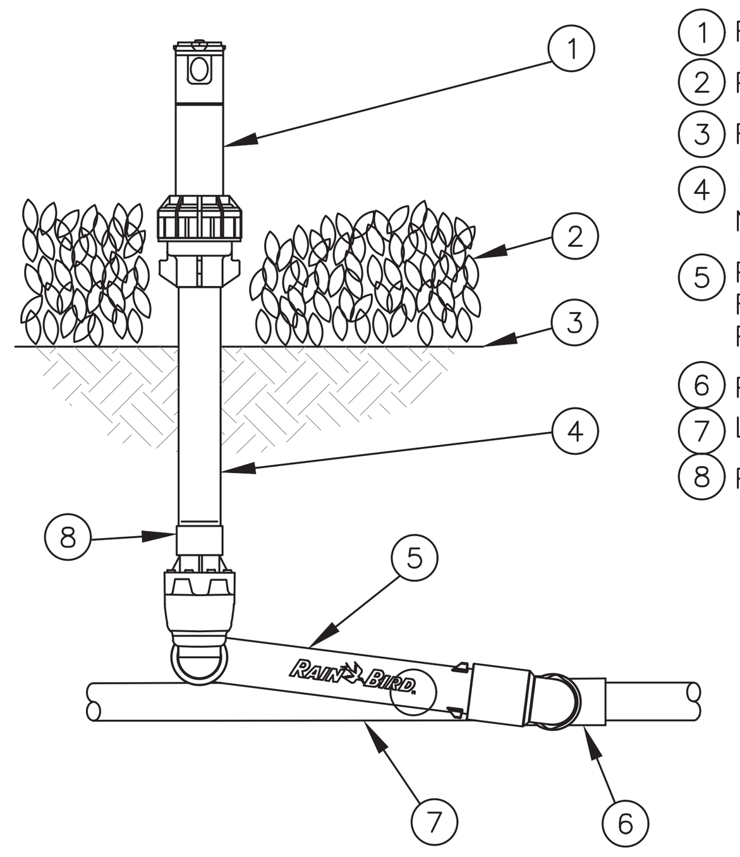
SHEET No. 43 OF 46



1. 30-INCH LINEAR LENGTH WIRE, COILED
2. WATERPROOF CONNECTION
3. ID TAG
4. VALVE BOX WITH COVER
5. FINISH GRADE/TOP OF MULCH
6. CONTROL VALVE: SUPERIOR 3200 SERIES VALVE
7. PVC SCH 80 NIPPLE (CLOSE)
8. PVC SCH 40 ELL
9. PVC SCH 80 NIPPLE (AS REQD LENGTH)
10. BRICK (1 OF 4)
11. PVC MAINLINE PIPE
12. SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL
13. PVC SCH 40 TEE OR ELL
14. PVC SCH 40 MALE ADAPTER
15. PVC LATERAL PIPE
16. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

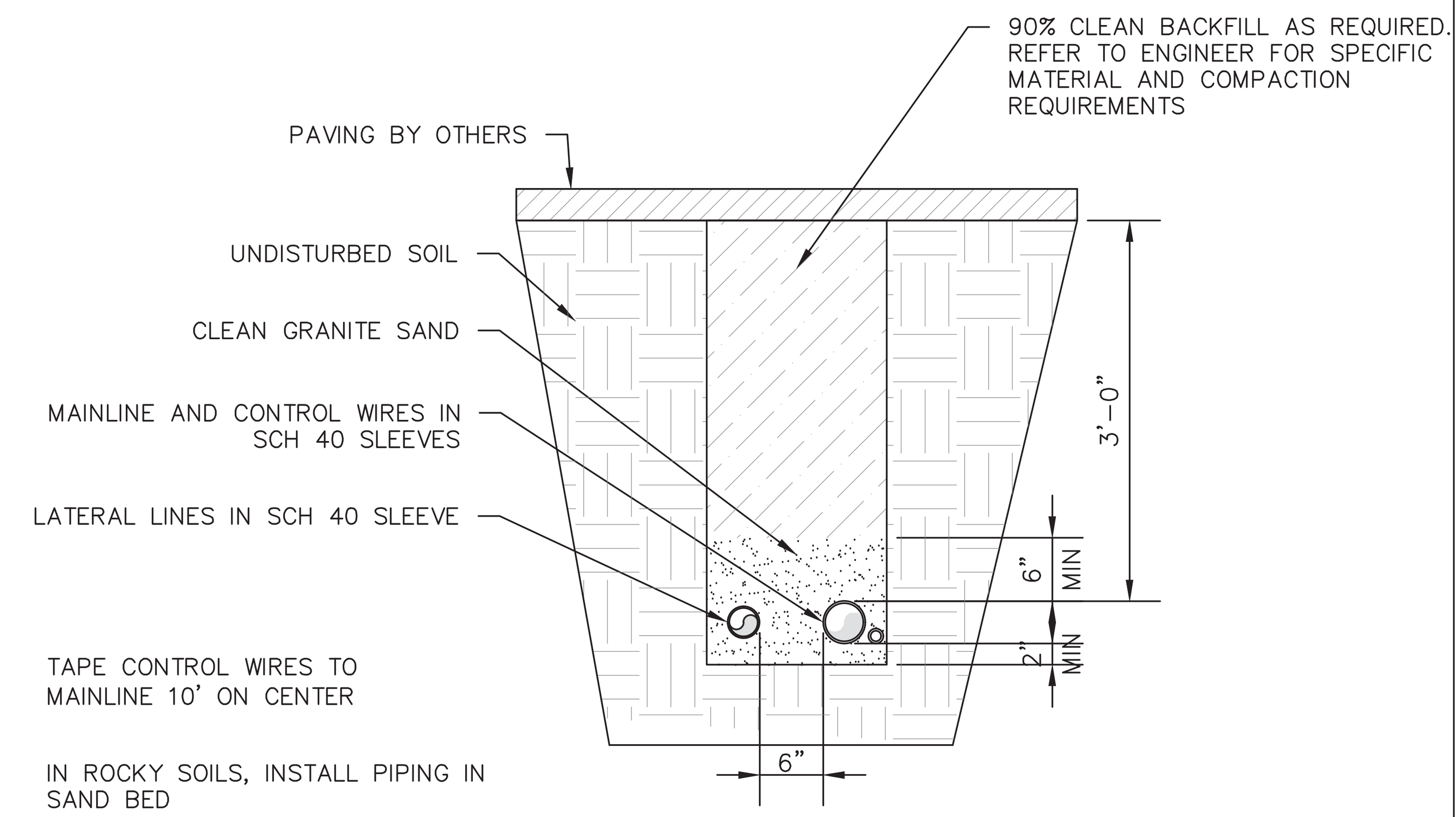
PART NO.
3200 SERIES
TITLE
INSTALLATION, FORWARD, 3200

A — MASTER CONTROL VALVE
N.T.S.



1. ROTOR SPRINKLER: RAIN BIRD
2. PLANT MATERIAL
3. FINISH GRADE
4. UV RADIATION RESISTANT PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
5. PRE-FABRICATED SWING JOINT: RAIN BIRD TSJ-075-PRS WITH 45 PSI PRESSURE REGULATOR
6. PVC SCH 40 TEE OR ELL
7. LATERAL PIPE
8. PVC SCH 40 COUPLER

D — ROTOR POP UP SPRINKLER
N.T.S. 5000 SHRUB



TAPE CONTROL WIRES TO MAINLINE 10' ON CENTER

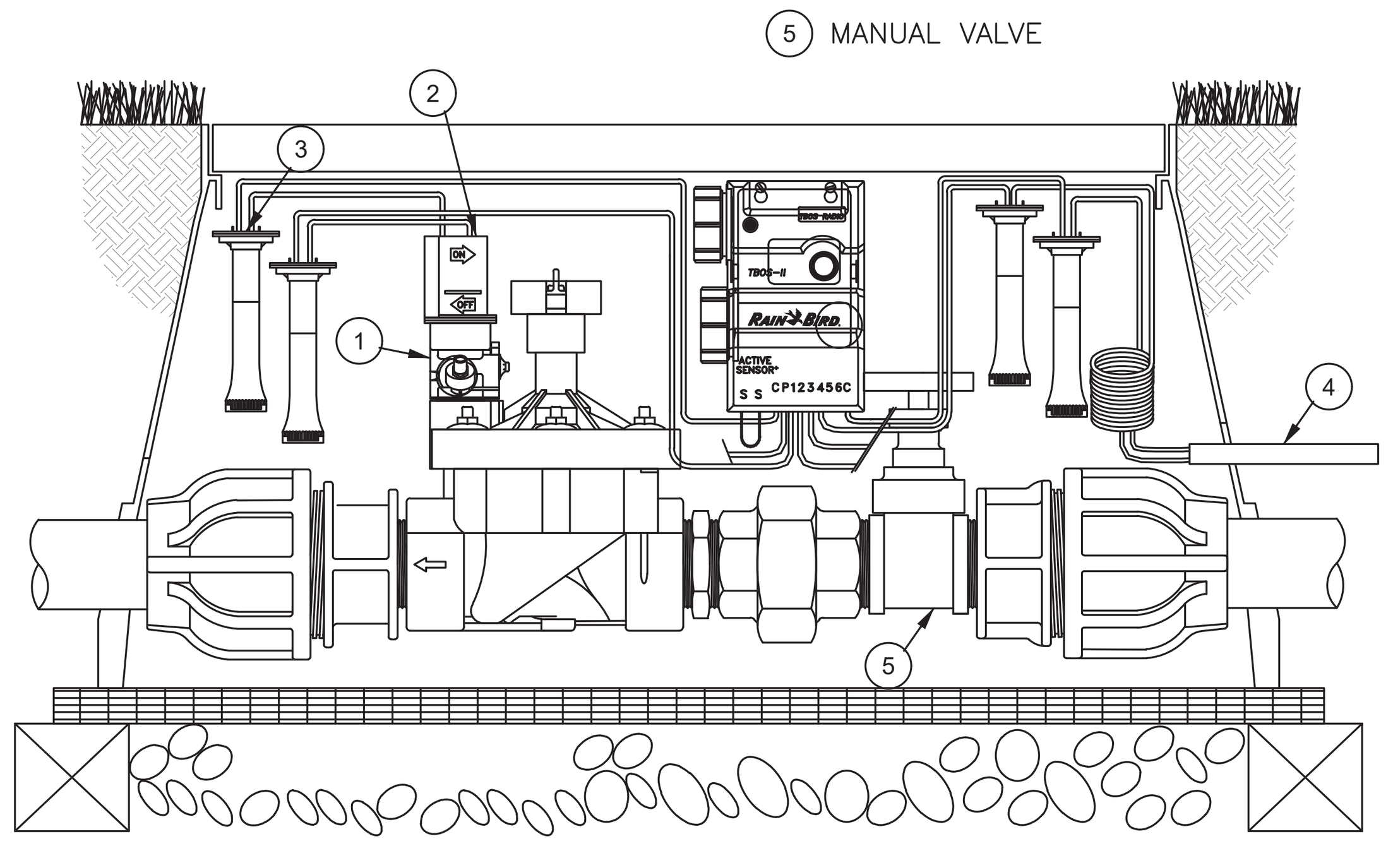
IN ROCKY SOILS, INSTALL PIPING IN SAND BED

G — SLEEVE INSTALLATION
N.T.S.

IRRIGATION PRESSURE CALCULATION VALVE B-2 FURTHEST SHRUB

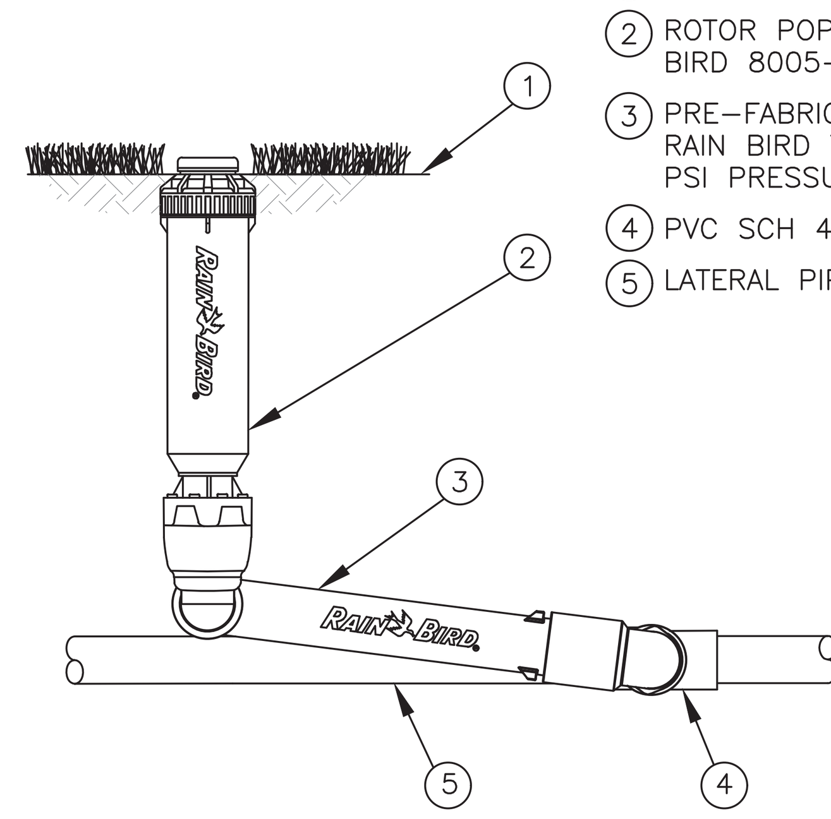
UNITS	SIZE	TYPE	DESCRIPTION	PSI LOSS	TL. UNIT PSI LOSS
1	0'-3"	PRESS.	"Y" STRAINER	1	1
1	0'-3"	ANGLE	MASTER VALVE	2.6000	2.6000
1	0'-1 1/2"	BRASS	AUTOMATIC VALVE	3.6000	3.6
4	0'-3"	BRASS	GATE VALVE	0	0
1109.5	0'-3"	CL315	MAINLINE	4.12 @ 100'	45.7100
5'/10'/10'	0'-0 1/2"	SCH 40 PVC	LATERAL LINE	2.11,3.36,4.22@100'	1.8000
10'-0", 10'-0", 0'-0"	0'-0 3/4"	SCH40	LATERAL LINE	4.2,4.8@100'	0.9000
10',10',10',10'	0'-1"	SCH 40	LATERAL LINE	3.7,4.07,4.44,2.99	1.5000
6'	0'-1 1/4"	SCH 40	LATERAL LINE	3.42@100'	0.2050
10'-0"	0'-2"	SCH 40	LATERAL LINE	3.77@100'	0.3770
				SUB-TOTAL	57.7620
			FITTINGS ALLOWANCE		5.7000
5'-0"			ELEVATION LOSSES	0.4330	2.1650
			MIN REQ'D BY HEAD	30	30
			TOTAL PRESSURE REQ'D		95.5620
			EXIST STATIC PRESSURE	90PSI	90
			RESIDUAL PRESSURE		-5.5600
			BOOSTER PUMP NEEDED		

1. RAIN BIRD PRS-DIAL PRESSURE REGULATOR
2. 9V DC LATCHING SOLENOID
3. RAIN BIRD WATERPROOF WIRE CONNECTOR
4. 2 X 1.5 MM² CABLE
5. MANUAL VALVE



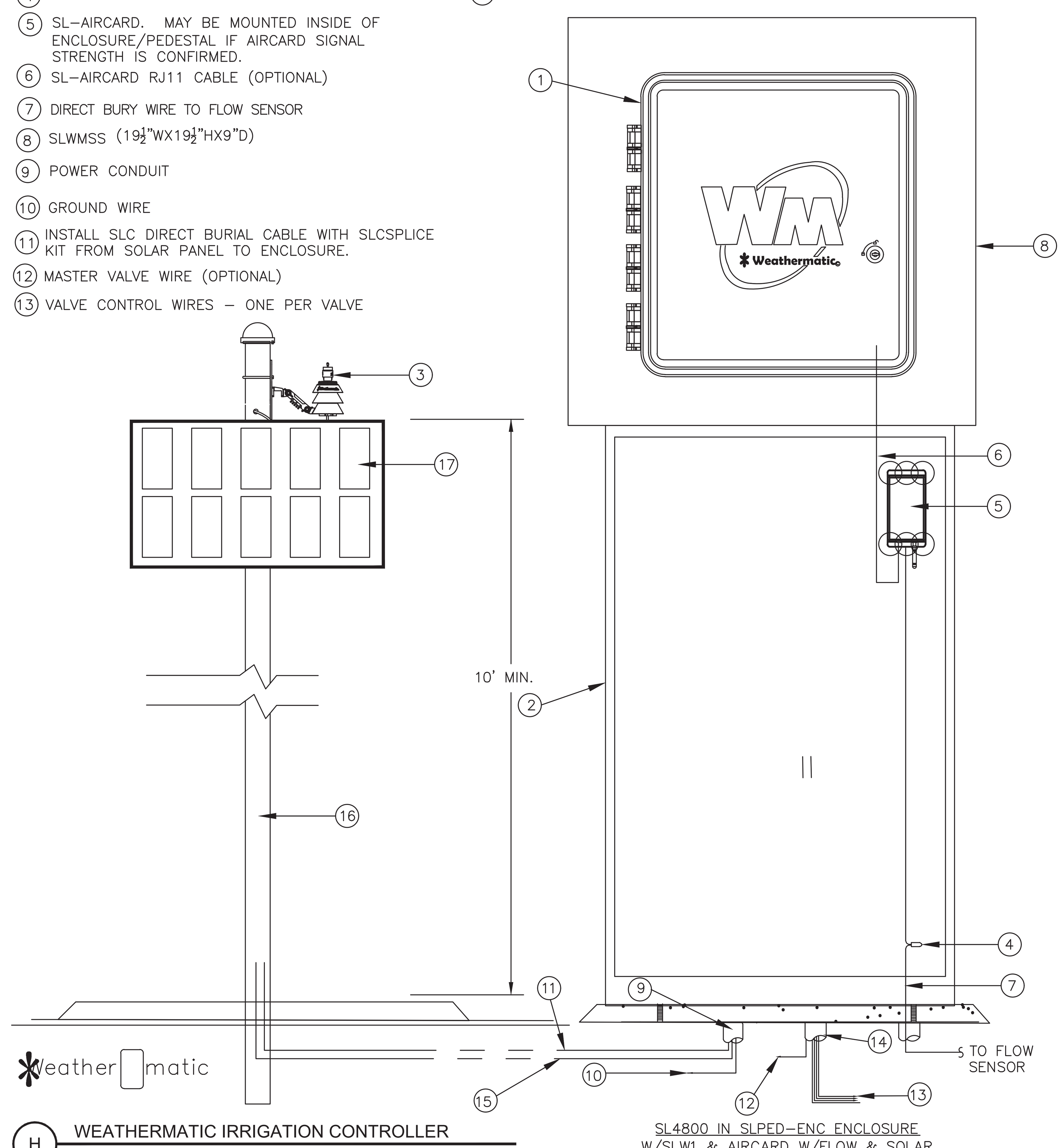
B — PEB VALVE
N.T.S.

1. FINISH GRADE
2. ROTOR POP-UP SPRINKLER: RAIN BIRD 8005-SS-RC
3. PRE-FABRICATED SWING JOINT: RAIN BIRD TSJ-100-PRS WITH 70 PSI PRESSURE REGULATOR
4. PVC SCH 40 TEE OR ELL
5. LATERAL PIPE



E — ROTOR POP UP SPRINKLER
N.T.S. 8005

1. SL1600 CONTROLLER
2. SLPED-ENC ENCLOSURE (191/3"WX24"HX15"D)
3. SLW1 WEATHER STATION- WIRE TO CONTROLLER
4. SLCSPLICE KIT OR WATERPROOF CONNECTOR
5. SL-AIRCARD. MAY BE MOUNTED INSIDE OF ENCLOSURE/PEDESTAL IF AIRCARD SIGNAL STRENGTH IS CONFIRMED.
6. SL-AIRCARD RJ11 CABLE (OPTIONAL)
7. DIRECT BURY WIRE TO FLOW SENSOR
8. SLWMSS (19½"WX19½"HX9"D)
9. POWER CONDUIT
10. GROUND WIRE
11. INSTALL SLC DIRECT BURIAL CABLE WITH SLCSPLICE KIT FROM SOLAR PANEL TO ENCLOSURE.
12. MASTER VALVE WIRE (OPTIONAL)
13. VALVE CONTROL WIRES – ONE PER VALVE
14. CONDUIT 24V A.C.
15. INSTALL SLC DIRECT BURIAL CABLE WITH SLCSPLICE KIT FROM WEATHER STATION TO CONTROL.
16. GALVANIZED MOUNTING POLE
17. SOLAR PANEL. WIRE TO ENCLOSURE

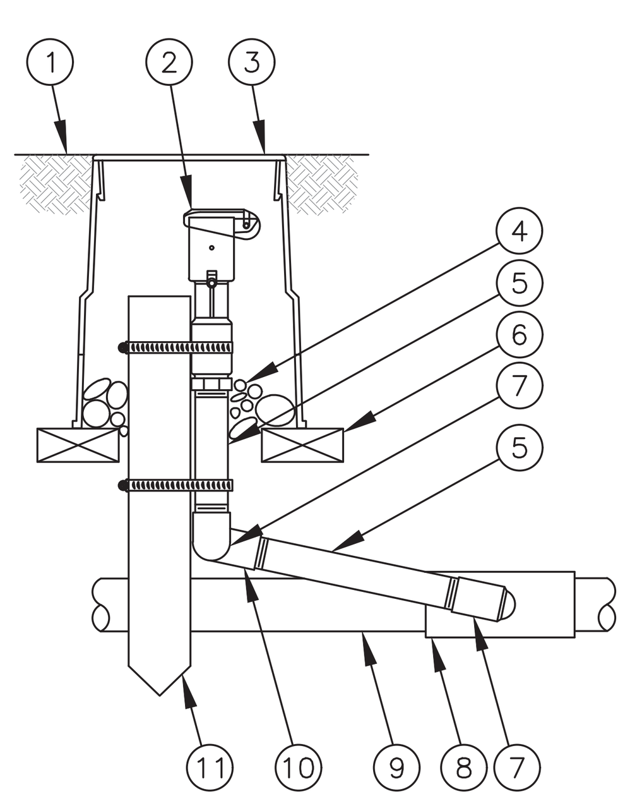


SL4800 IN SLPED-ENC ENCLOSURE W/SLW1 & AIRCARD W/FLOW & SOLAR

H — WEATHERMATIC IRRIGATION CONTROLLER
N.T.S.

IRRIGATION PRESSURE CALCULATION VALVE A-16 LARGEST TURF

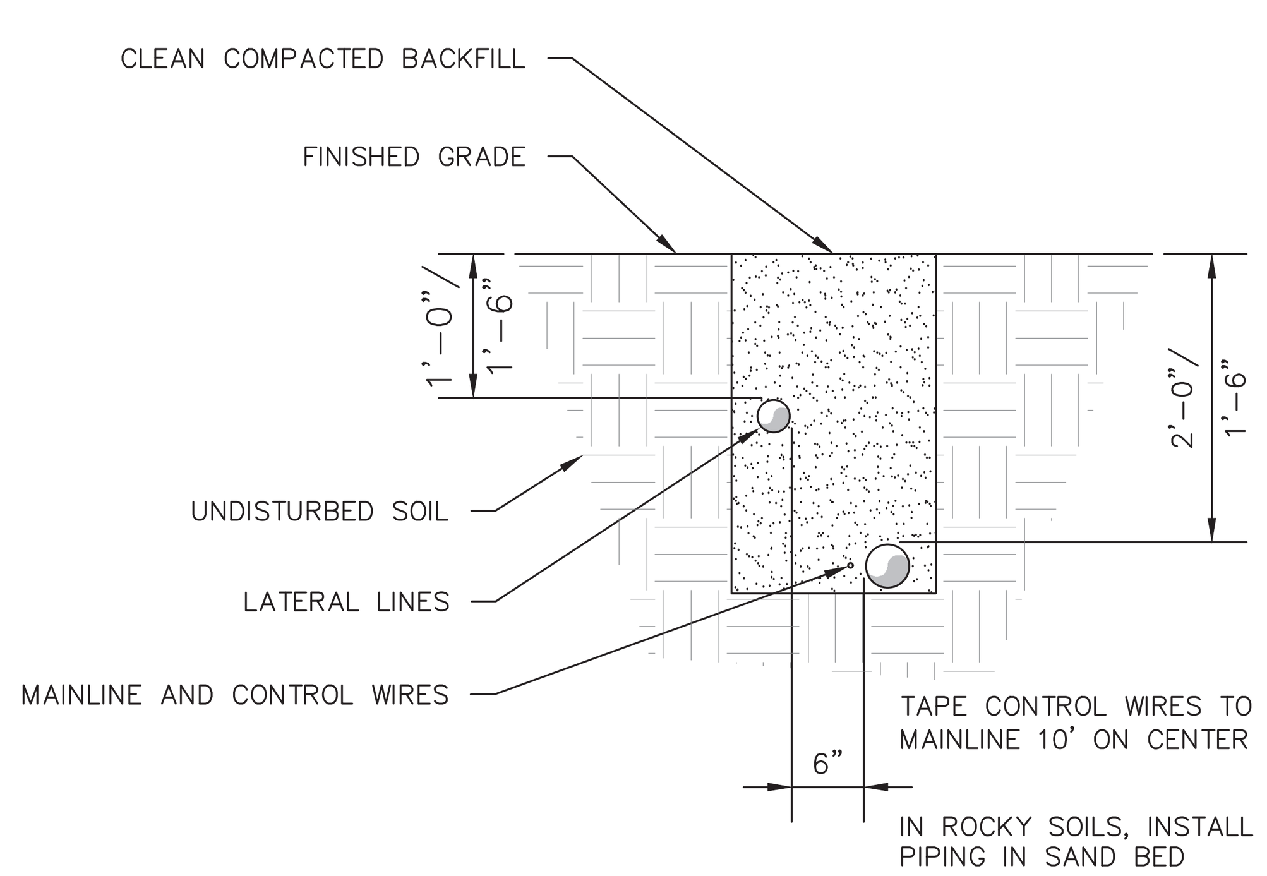
UNITS	SIZE	TYPE	DESCRIPTION	PSI LOSS	TL. UNIT PSI LOSS
1	0'-3"	PRESS.	"Y" STRAINER	1	1
1	0'-3"	ANGLE	MASTER VALVE	2.6000	2.6000
1	0'-2"	BRASS	AUTOMATIC VALVE	4.5000	4.5000
5	0'-3"	BRASS	GATE VALVE	0	1
545'-0"	0'-3"	CL315	MAINLINE	4.12 @ 100'	22.4500
56'-0"	0'-1"	SCH 40	LATERAL LINE	3.7@100'	2.0720
50'-0"	0'-1 1/4"	SCH 40	LATERAL LINE	4.25@100'	2.1250
81'-0"	0'-1 1/2"	SCH 40	LATERAL LINE	4.4@100'	3.5640
108'-0"	0'-2"	SCH 40	LATERAL LINE	4.77@100'	5.1500
				SUB-TOTAL	93.7100
			FITTINGS ALLOWANCE		9.3700
4'-0"			ELEVATION LOSSES	0.4330	1.7300
			MIN REQ'D BY HEAD	50	50
			TOTAL PRESSURE REQ'D		99.1400
			EXISTING STATIC PRESSURE	90PSI	90
			RESIDUAL PRESSURE		-9.9100
			BOOSTER PUMP NEEDED		



1. FINISH GRADE/TOP OF MULCH
2. QUICK-COUPLING VALVE: RAIN BIRD MODEL 44LRC
3. VALVE BOX WITH COVER: RAIN BIRD VB-6RND
4. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
5. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
6. BRICK (1 OF 2)
7. PVC SCH 40 STREET ELL
8. PVC SCH 40 TEE OR ELL
9. PVC MAINLINE PIPE
10. PVC SCH 40 ELL
11. 2" x 2" REDWOOD STAKE WITH STAINLESS STEEL GEAR CLAMPS OR EQUIVALENT SUPPORT SYSTEM

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

C — QUICK COUPLING VALVE
N.T.S. MODEL 44RC SERIES

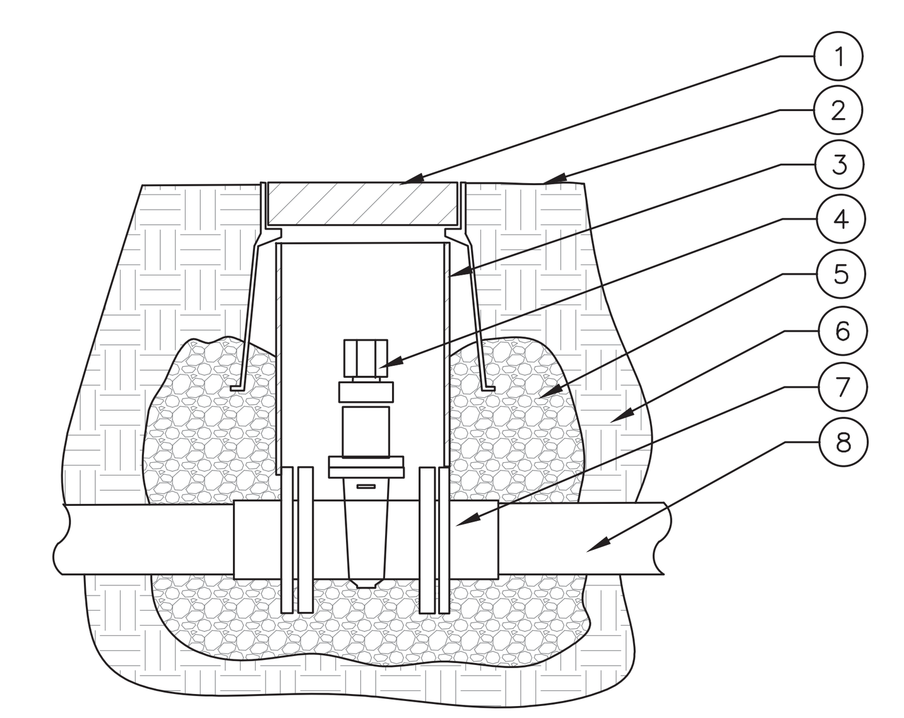


TAPE CONTROL WIRES TO MAINLINE 10' ON CENTER

IN ROCKY SOILS, INSTALL PIPING IN SAND BED

24" DEPTH REQUIRED FOR ALL DOMESTIC MAINLINES
36" DEPTH REQUIRED FOR ALL RECLAIMED MAINLINES

F — PIPE INSTALLATION
N.T.S.



1. 10" ROUND VALVE BOX (DO NOT CUT ADDITIONAL HOLES INTO BOX)
2. FINISH GRADE
3. 8" CL 160 PVC SLEEVE (TO REST ON TOP EDGE OF VALVE ASSEMBLY)
4. ISOLATION GATE VALVE WITH 2" SQUARE OPERATING NUT (SEE SPECIFICATIONS)
5. ¾" GRAVEL SUMP IN, UNDER, AND AROUND VALVE BOX. FILL TO TOP OF VALVE BOX HOLES
6. INSTALL FILTER FABRIC AROUND GRAVEL SUMP
7. FLGxSLIP SCH. 80 PVC FLANGE (2 REQUIRED)
8. PRESSURE SUPPLY LINE (REFER TO PLAN FOR SIZE)

I — ISOLATION GATE VALVE
N.T.S.

UNDERGROUND SERVICE ALERT
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REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'V'D

PREPARED BY:
CWE
1561 E. ORANGETHORPE AVE.
SUITE 240
FULLERTON, CA 92831
TEL (714) 526-7500
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SEAL:
LICENSED LANDSCAPE ARCHITECT
KATHLEEN M. McKERNIN
Signature
10/31/19
Renewal Date
11/9/17
Date
License No. 5630
STATE OF CALIFORNIA

DRAWN BY:	KM	AUG 2020
DESIGNED BY:	KM	AUG 2020
CHECKED BY:	KM	AUG 2020

[illegible]
Matthew Baumgardner,
Director of Public Works
R.C.E. NO.: 71932 EXP. DATE: 12/31/2021

[illegible]
Manuel Fabian, Civil Engineer Assistant II DATE

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CITY OF SAN FERNANDO
DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

IRRIGATION DETAILS

DWG No. LS-05
SHEET No. 44 OF 46

BORING LOG NO. B-1

Page 1 of 1

PROJECT: San Fernando Regional Park Infiltration Project

CLIENT: CWE Corporation, Fullerton, CA

SITE: 208 Park Avenue, San Fernando, CA

LOCATION See Exhibit A-2

Latitude: 32.2797° Longitude: -118.4342°

DEPTH	GRAPHIC LOG	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
2.5											12
				9-10-15				3	104		4
				12-12-13 N=25							
				23-50/6"				4	131		
10.0											
				26-36-30 N=66							18
15.0											
				40-50/5"				4	127		
25.1											
				50/1"							

POORLY GRADED SAND WITH SILT (SP-SM), brown

POORLY GRADED SAND (SP), brown, medium dense

very dense

SILTY SAND (SM), brown, very dense

POORLY GRADED SAND (SP), brown, very dense

No recovery

Boring Terminated at 25.1 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method: Hollow stem auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

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

Boring Started: 05-15-2018 | Boring Completed: 05-15-2018

Drill Rig: CME 75 | Driller:

Project No.: 60185012 | Exhibit: A-3

BORING LOG NO. B-2

Page 1 of 1

PROJECT: San Fernando Regional Park Infiltration Project

CLIENT: CWE Corporation, Fullerton, CA

SITE: 208 Park Avenue, San Fernando, CA

LOCATION See Exhibit A-2

Latitude: 32.2793° Longitude: -118.4347°

DEPTH	GRAPHIC LOG	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
2.5				17-46-48				10	76		45
5.0				41-50/4"				2	139		
				10-21-25 N=46							16
				34-50/6"				4	123		
				16-27-34 N=61							14
20.0				50/3"				6	116		11
25.5				50/6"							

POORLY GRADED SAND (SP), trace gravel, brown

CLAYEY SAND (SC), brown, dense

SILTY SAND (SM), trace gravel, brown, very dense

dense

very dense

POORLY GRADED SAND WITH CLAY (SP-SC), brown, very dense

trace gravel

Boring Terminated at 25.5 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method: Hollow stem auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

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

Boring Started: 05-15-2018 | Boring Completed: 05-15-2018

Drill Rig: CME 75 | Driller:

Project No.: 60185012 | Exhibit: A-4

TEST PIT LOG NO. Trench

Page 1 of 1

PROJECT: San Fernando Regional Park Infiltration Project

CLIENT: CWE Corporation, Fullerton, CA

SITE: 208 Park Avenue, San Fernando, CA

LOCATION See Exhibit A-2

Latitude: 32.2764° Longitude: -118.4346°

DEPTH	GRAPHIC LOG	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
1.5											
3.0											
7.0											
10.0											

CLAYEY SAND (SC), brown

POORLY GRADED SAND WITH GRAVEL (SP), gray

POORLY GRADED SAND WITH GRAVEL (SP), with cobbles, gray

POORLY GRADED SAND WITH GRAVEL (SP), with cobbles and boulders, gray

Trench is 20 feet long in the northeast-southwest direction along the existing soccer field. The lattitude and longitude are to the center of the trench.

Test Pit Terminated at 10 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method: Back hoe

Abandonment Method: Boring backfilled with auger cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

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

Test Pit Started: 05-15-2018 | Test Pit Completed: 05-15-2018

Excavator: CME 75 | Operator:

Project No.: 60185012 | Exhibit: A-7

BORING LOG NO. BP-1

Page 1 of 1

PROJECT: San Fernando Regional Park Infiltration Project

CLIENT: CWE Corporation, Fullerton, CA

SITE: 208 Park Avenue, San Fernando, CA

LOCATION See Exhibit A-2

Latitude: 34.2804° Longitude: -118.4352°

DEPTH	GRAPHIC LOG	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
										NP	
7.5				14-23-39				1	127	NP	5
10.0				37-50/4"							
				34-50/4"				3	122		
15.0				40-50/3"							
20.4				50/5"							

POORLY GRADED SAND (SP), trace sand, trace gravel, dark brown

dense

SILTY SAND WITH GRAVEL (SM), light brown, very dense

SILTY SAND WITH GRAVEL (SM), light brown, very dense

No Recovery

Boring Terminated at 20.4 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method: Hollow stem auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

See Exhibit A-5 for description of field procedures.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

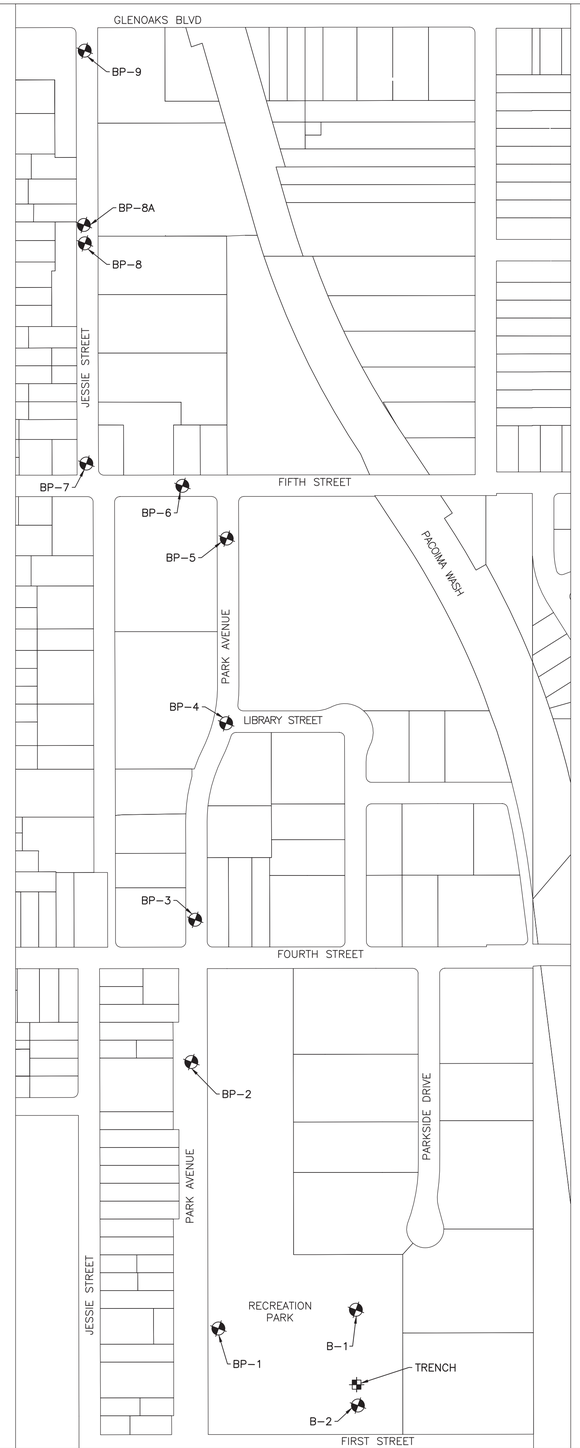
Groundwater not encountered

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

Boring Started: 12-03-2018 | Boring Completed: 12-03-2018

Drill Rig: CME 75 | Driller: Martini Drilling

Project No.: 60185012 | Exhibit: A-6



BORING LOG LOCATIONS

1" = 200'

UNDERGROUND SERVICE ALERT

CALL BEFORE YOU DIG — CALL: TOLL FREE 811

TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'V'D

PREPARED BY:

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

REGISTERED PROFESSIONAL ENGINEER — KATHRYN L. HARRELL — No. 85752 — Exp. 9/30/2022 — CIVIL — STATE OF CALIFORNIA

DRAWN BY:	TT	APR 2021
DESIGNED BY:	KH	APR 2021
CHECKED BY:	VB	APR 2021

Matthew Baumgardner, Director of Public Works — DATE

R.C.E. NO.: 71932 EXP. DATE: 12/31/2021

Manuel Fabian, Civil Engineer Assistant II — DATE

CITY OF SAN FERNANDO — HISTORIC & VISIONARY

CITY OF SAN FERNANDO — DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project

SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

BORING LOGS

DWG No. BL-01

SHEET No. 45 OF 46

BORING LOG NO. BP-2
Page 1 of 1

PROJECT: San Fernando Regional Park Infiltration Project
CLIENT: CWE Corporation, Fullerton, CA
SITE: 208 Park Avenue, San Fernando, CA
LOCATION See Exhibit A-2
Latitude: 34.2818° Longitude: -118.4336°

DEPTH	Description	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	LL-PL-PI	Percent Fines
0.3	**ASPHALT**, 4" thickness					
1.0	**AGGREGATE BASE COURSE**, 8" thickness					
	SILTY SAND (SM), trace gravel, dark brown				NP	18
5.0	**POORLY GRADED SAND WITH SILT (SP-SM)**, trace gravel, very dense, no Recovery	50/4"				
	trace gravel, brown/black	17-50/5"				
		29-50/5"	2	114		
	tan/white	21-29-47 N=76				
16.5	*Boring Terminated at 16.5 Feet*					

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

Advancement Method: Hollow stem auger
Abandonment Method: Boring backfilled with Auger Cuttings; Surface capped with asphalt
See Exhibit A-5 for description of field procedures. See Appendix B for description of laboratory procedures and additional data (if any). See Appendix C for explanation of symbols and abbreviations.
Notes:
WATER LEVEL OBSERVATIONS: Groundwater not encountered
Terracon, 1421 Edinger Ave, Ste C, Tustin, CA
Boring Started: 12-03-2018 | Boring Completed: 12-03-2018 | Drill Rig: CME 75 | Driller: Martini Drilling | Project No.: 60185012 | Exhibit: A-7

BORING LOG NO. BP-3
Page 1 of 1

PROJECT: San Fernando Regional Park Infiltration Project
CLIENT: CWE Corporation, Fullerton, CA
SITE: 208 Park Avenue, San Fernando, CA
LOCATION See Exhibit A-2
Latitude: 34.2827° Longitude: -118.4323°

DEPTH	Description	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	LL-PL-PI	Percent Fines
0.3	**ASPHALT**, 4" thickness					
0.6	**AGGREGATE BASE COURSE**, 3" thickness					
	POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, brown					
	medium dense	19-18-27	1			
	very dense	9-30-26 N=56				11
		45-50/2"	4	103		
15.3	no recovery	50/4"				
	Boring Terminated at 15.3 Feet					

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

Advancement Method: Hollow stem auger
Abandonment Method: Boring backfilled with Auger Cuttings; Surface capped with asphalt
See Exhibit A-5 for description of field procedures. See Appendix B for description of laboratory procedures and additional data (if any). See Appendix C for explanation of symbols and abbreviations.
Notes:
WATER LEVEL OBSERVATIONS: Groundwater not encountered
Terracon, 1421 Edinger Ave, Ste C, Tustin, CA
Boring Started: 12-03-2018 | Boring Completed: 12-03-2018 | Drill Rig: CME 75 | Driller: Martini Drilling | Project No.: 60185012 | Exhibit: A-8

BORING LOG NO. BP-4
Page 1 of 1

PROJECT: San Fernando Regional Park Infiltration Project
CLIENT: CWE Corporation, Fullerton, CA
SITE: 208 Park Avenue, San Fernando, CA
LOCATION See Exhibit A-2
Latitude: 34.2834° Longitude: -118.4309°

DEPTH	Description	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	LL-PL-PI	Percent Fines
0.3	**ASPHALT**, 4" thickness					
	POORLY GRADED SAND WITH GRAVEL (SP), brown					
	very dense	23-38-50/4"	2	120		
7.5	**SILTY SAND (SM)**, trace gravel, brown, medium dense	15-7-10 N=17				
	very dense, no recovery	35-50/5"				
15.0	**POORLY GRADED SAND WITH GRAVEL (SP)**, brown, dense	20-25-19 N=44				
16.5	*Boring Terminated at 16.5 Feet*					

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

Advancement Method: Hollow stem auger
Abandonment Method: Boring backfilled with Auger Cuttings; Surface capped with asphalt
See Exhibit A-5 for description of field procedures. See Appendix B for description of laboratory procedures and additional data (if any). See Appendix C for explanation of symbols and abbreviations.
Notes:
WATER LEVEL OBSERVATIONS: Groundwater not encountered
Terracon, 1421 Edinger Ave, Ste C, Tustin, CA
Boring Started: 12-03-2018 | Boring Completed: 12-03-2018 | Drill Rig: CME 75 | Driller: Martini Drilling | Project No.: 60185012 | Exhibit: A-9

BORING LOG NO. BP-5
Page 1 of 1

PROJECT: San Fernando Regional Park Infiltration Project
CLIENT: CWE Corporation, Fullerton, CA
SITE: 208 Park Avenue, San Fernando, CA
LOCATION See Exhibit A-2
Latitude: 34.2842° Longitude: -118.4298°

DEPTH	Description	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	LL-PL-PI	Percent Fines
0.3	**ASPHALT**, 4" thickness					
	POORLY GRADED SAND WITH GRAVEL (SP), brown					
	dense	23-31-50	1	131		
		15-23-18 N=41				
	very dense	31-50	1			
		34-50/5"				
15.9	*Boring Terminated at 15.9 Feet*					

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

Advancement Method: Hollow stem auger
Abandonment Method: Boring backfilled with Auger Cuttings; Surface capped with asphalt
See Exhibit A-5 for description of field procedures. See Appendix B for description of laboratory procedures and additional data (if any). See Appendix C for explanation of symbols and abbreviations.
Notes:
WATER LEVEL OBSERVATIONS: Groundwater not encountered
Terracon, 1421 Edinger Ave, Ste C, Tustin, CA
Boring Started: 12-03-2018 | Boring Completed: 12-03-2018 | Drill Rig: CME 75 | Driller: Martini Drilling | Project No.: 60185012 | Exhibit: A-10

BORING LOG NO. BP-6
Page 1 of 1

PROJECT: San Fernando Regional Park Infiltration Project
CLIENT: CWE Corporation, Fullerton, CA
SITE: 208 Park Avenue, San Fernando, CA
LOCATION See Exhibit A-2
Latitude: 34.2849° Longitude: -118.4294°

DEPTH	Description	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	LL-PL-PI	Percent Fines
0.6	**ASPHALT**, 7" thickness					
	POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, light brown					
5.0	very dense	50/2"				
	dense	20-46-37	5	122		
	tan, very dense, little sample recovered	50/5"				
	Boring Terminated at 15.4 Feet					

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

Advancement Method: Hollow stem auger
Abandonment Method: Boring backfilled with Auger Cuttings; Surface capped with asphalt
See Exhibit A-5 for description of field procedures. See Appendix B for description of laboratory procedures and additional data (if any). See Appendix C for explanation of symbols and abbreviations.
Notes:
WATER LEVEL OBSERVATIONS: Groundwater not encountered
Terracon, 1421 Edinger Ave, Ste C, Tustin, CA
Boring Started: 11-28-2018 | Boring Completed: 11-28-2018 | Drill Rig: CME 75 | Driller: Martini Drilling | Project No.: 60185012 | Exhibit: A-11

BORING LOG NO. BP-7
Page 1 of 1

PROJECT: San Fernando Regional Park Infiltration Project
CLIENT: CWE Corporation, Fullerton, CA
SITE: 208 Park Avenue, San Fernando, CA
LOCATION See Exhibit A-2
Latitude: 34.2856° Longitude: -118.4299°

DEPTH	Description	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	LL-PL-PI	Percent Fines
0.2	**ASPHALT**, 2.5" thickness					
	SILTY SAND (SM), trace sand, trace gravel, brown					
5.0	**POORLY GRADED SAND (SP)**, trace gravel, brown, medium dense	11-11-16	2	123		5
	light brown, very dense	6-23-27 N=50				
15.0	**SILTY SAND (SM)**, trace gravel, brown, very dense	11-28-50/4"	3	129		
16.3	*Boring Terminated at 16.3 Feet*					

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

Advancement Method: Hollow stem auger
Abandonment Method: Boring backfilled with Auger Cuttings; Surface capped with asphalt
See Exhibit A-5 for description of field procedures. See Appendix B for description of laboratory procedures and additional data (if any). See Appendix C for explanation of symbols and abbreviations.
Notes:
WATER LEVEL OBSERVATIONS: Groundwater not encountered
Terracon, 1421 Edinger Ave, Ste C, Tustin, CA
Boring Started: 11-28-2018 | Boring Completed: 11-28-2018 | Drill Rig: CME 75 | Driller: Martini Drilling | Project No.: 60185012 | Exhibit: A-12

BORING LOG NO. BP-8
Page 1 of 1

PROJECT: San Fernando Regional Park Infiltration Project
CLIENT: CWE Corporation, Fullerton, CA
SITE: 208 Park Avenue, San Fernando, CA
LOCATION See Exhibit A-2
Latitude: 34.2867° Longitude: -118.4285°

DEPTH	Description	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	LL-PL-PI	Percent Fines
0.3	**ASPHALT**, 3" thickness					
	SILTY SAND (SM), trace gravel, brown	5-10-30	6	120		
5.3	large piece of gravel encountered in sample, no recovery	50/4"				
	Auger Refusal at 5.3 Feet					

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

Advancement Method: Hollow stem auger
Abandonment Method: Boring backfilled with Auger Cuttings; Surface capped with asphalt
See Exhibit A-5 for description of field procedures. See Appendix B for description of laboratory procedures and additional data (if any). See Appendix C for explanation of symbols and abbreviations.
Notes:
WATER LEVEL OBSERVATIONS: Groundwater not encountered
Terracon, 1421 Edinger Ave, Ste C, Tustin, CA
Boring Started: 11-28-2018 | Boring Completed: 11-28-2018 | Drill Rig: CME 75 | Driller: Martini Drilling | Project No.: 60185012 | Exhibit: A-13

BORING LOG NO. BP-8A
Page 1 of 1

PROJECT: San Fernando Regional Park Infiltration Project
CLIENT: CWE Corporation, Fullerton, CA
SITE: 208 Park Avenue, San Fernando, CA
LOCATION See Exhibit A-2
Latitude: 34.2867° Longitude: -118.4285°

DEPTH	Description	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	LL-PL-PI	Percent Fines
0.3	**ASPHALT**, 3" thickness					
	SILTY SAND WITH GRAVEL (SM), brown, very dense	26-50/5"	5	95		
7.5	**POORLY GRADED SAND WITH SILT (SP-SM)**, trace gravel, light brown, dense	15-18-25 N=43				
	very dense	21-50/5"	3	133		
		24-50/4"				
20.0	**SILTY SAND (SM)**, trace gravel, light brown, very dense	26-50/3"	3	119		
20.8	*Boring Terminated at 20.8 Feet*					

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

Advancement Method: Hollow stem auger
Abandonment Method: Boring backfilled with Auger Cuttings; Surface capped with asphalt
See Exhibit A-5 for description of field procedures. See Appendix B for description of laboratory procedures and additional data (if any). See Appendix C for explanation of symbols and abbreviations.
Notes:
WATER LEVEL OBSERVATIONS: Groundwater not encountered
Terracon, 1421 Edinger Ave, Ste C, Tustin, CA
Boring Started: 11-28-2018 | Boring Completed: 11-28-2018 | Drill Rig: CME 75 | Driller: Martini Drilling | Project No.: 60185012 | Exhibit: A-14

BORING LOG NO. BP-9
Page 1 of 2

PROJECT: San Fernando Regional Park Infiltration Project
CLIENT: CWE Corporation, Fullerton, CA
SITE: 208 Park Avenue, San Fernando, CA
LOCATION See Exhibit A-2
Latitude: 34.2878° Longitude: -118.427°

DEPTH	Description	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	LL-PL-PI	Percent Fines
0.3	**ASPHALT**, 4" thickness					
	SILTY SAND (SM), brown					26
	trace gravel, medium dense	12-15-15	5	129		
	very dense	3-12-50/4"				16
	medium dense	12-15-11	4	105		
	light brown, very dense	17-33-36 N=69				12
	trace gravel, trace clay	50	3	130		
25.0	**POORLY GRADED SAND WITH SILT (SP-SM)**, trace gravel, very dense	22-50/3"				

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

Advancement Method: Hollow stem auger
Abandonment Method: Boring backfilled with auger cuttings upon completion.
See Exhibit A-5 for description of field procedures. See Appendix B for description of laboratory procedures and additional data (if any). See Appendix C for explanation of symbols and abbreviations.
Notes:
WATER LEVEL OBSERVATIONS: Groundwater not encountered
Terracon, 1421 Edinger Ave, Ste C, Tustin, CA
Boring Started: 11-28-2018 | Boring Completed: 11-28-2018 | Drill Rig: CME 75 | Driller: Martini Drilling | Project No.: 60185012 | Exhibit: A-15

BORING LOG NO. BP-9
Page 2 of 2

PROJECT: San Fernando Regional Park Infiltration Project
CLIENT: CWE Corporation, Fullerton, CA
SITE: 208 Park Avenue, San Fernando, CA
LOCATION See Exhibit A-2
Latitude: 34.2878° Longitude: -118.427°

DEPTH	Description	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	LL-PL-PI	Percent Fines
	POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, very dense *(continued)* no recovery	47-50/3"				
35.1	no recovery	50/1"				
	Boring Terminated at 35.1 Feet					

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

Advancement Method: Hollow stem auger
Abandonment Method: Boring backfilled with auger cuttings upon completion.
See Exhibit A-5 for description of field procedures. See Appendix B for description of laboratory procedures and additional data (if any). See Appendix C for explanation of symbols and abbreviations.
Notes:
WATER LEVEL OBSERVATIONS: Groundwater not encountered
Terracon, 1421 Edinger Ave, Ste C, Tustin, CA
Boring Started: 11-28-2018 | Boring Completed: 11-28-2018 | Drill Rig: CME 75 | Driller: Martini Drilling | Project No.: 60185012 | Exhibit: A-16

UNDERGROUND SERVICE ALERT
CALL BEFORE YOU DIG
CALL: TOLL FREE
811
TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

REV.	DATE	BY	DESCRIPTION	APP'V'D

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

REGISTERED PROFESSIONAL ENGINEER
KATHRYN L. HARREL
No. 85752
Exp. 9/30/2022
CIVIL
STATE OF CALIFORNIA

DRAWN BY:	TT	APR 2021
DESIGNED BY:	KH	APR 2021
CHECKED BY:	VB	APR 2021

Matthew Baumgardner, Director of Public Works — DATE
R.C.E. NO.: 71932 EXP. DATE: 12/31/2021
Manuel Fabian, Civil Engineer Assistant II — DATE

CITY OF SAN FERNANDO
HISTORIC & VISIONARY
CITY OF SAN FERNANDO DEPARTMENT OF PUBLIC WORKS

San Fernando Regional Park Infiltration Project
SAN FERNANDO RECREATION PARK AND FROM FIRST STREET TO GLENOAKS BOULEVARD

BORING LOGS

DWG No. BL-02
SHEET No. 46 OF 46