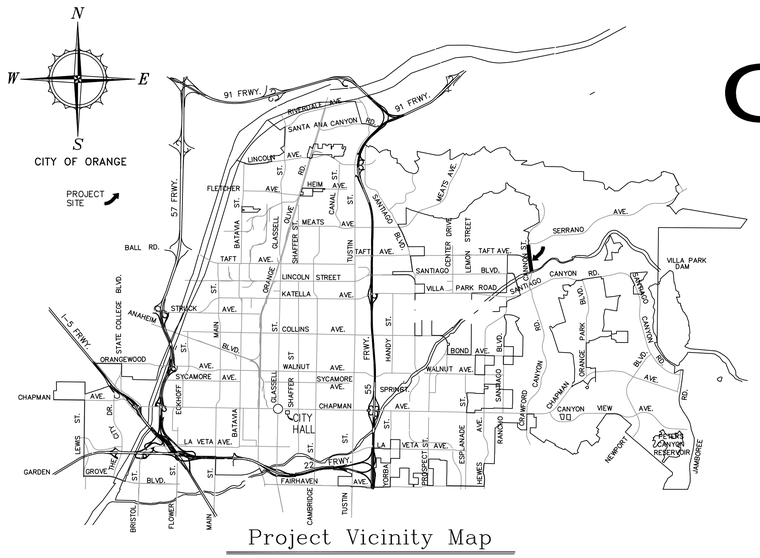
CITY OF ORANGE

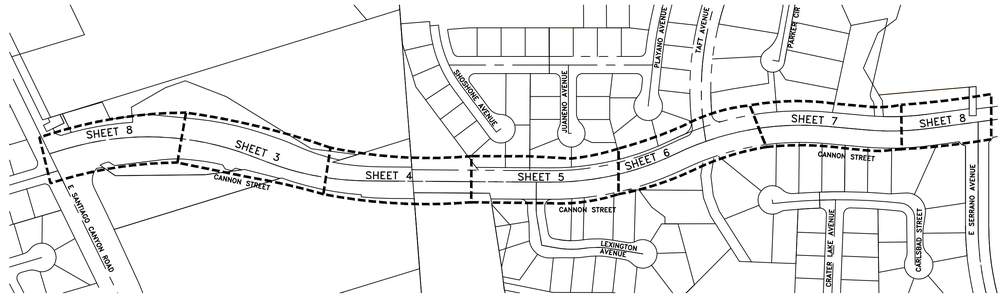


Project Vicinity Map

CITY OF ORANGE INCORPORATED APRIL 6, 1888 ORANGE COUNTY, CALIFORNIA

SP-4178 CANNON STREET WIDENING IMPROVEMENT PROJECT

CANNON STREET - SERRANO AVENUE TO SANTIAGO CANYON ROAD



LOCATION MAP
SCALE: 1"=250'

SHEET INDEX

CALL BEFORE YOU DIG DIGALERT®

CALL: 811® TWO WORKING DAYS BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER YOUICHI NAKAGAWA NO. C79162 Exp. 3/31/2024 CIVIL STATE OF CALIFORNIA

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE LATEST EDITION OF THE CITY OF ORANGE STANDARD PLANS AND SPECIFICATIONS, AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. (GREEN BOOK)
2. PUBLIC AND PRIVATE UTILITIES AND THE ACCOMPANYING SUBSTRUCTURES SHOWN ON THESE PLANS ARE FROM AVAILABLE PUBLIC DATA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL UTILITIES AND SUBSTRUCTURES WITHIN THE CONSTRUCTION LIMITS. DAMAGE TO SUCH RESULTING FROM CONSTRUCTION OPERATIONS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
3. ALL UNDERGROUND UTILITY AND OTHER SUBSURFACE WORK SHALL BE COMPLETED PRIOR TO COMPLETING THE FINAL SURFACING OR LANDSCAPING. SEWER LATERALS TO BE INSTALLED PRIOR TO CURB AND GUTTER.
4. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES REGARDING ANY PROBLEMS.

MICAH JEAN	CITY OF ORANGE STREET TREES	714-532-6470
JIMMY ROCHA	CITY OF ORANGE TRAFFIC DIVISION	714-532-6477
SONNY TRAN	CITY OF ORANGE WATER DIVISION	714-288-2497
NATHAN BLUHM	CITY OF ORANGE LANDSCAPE DIVISION	714-744-6491
RICH RANSOM	AT&T	714-618-9154
LARRY LILLY	CHARTER COMMUNICATIONS	714-591-4883
DAVID DIAZ	SOUTHERN CALIFORNIA EDISON	626-630-2575
ANTHONY CHAVEZ	SOUTHERN CALIFORNIA GAS	213-231-0698

5. FOR INSPECTION, CONTACT CITY OF ORANGE PUBLIC WORKS, 714-744-5526, FORTY-EIGHT (48) HOURS PRIOR TO THE REQUIRED DATE.
6. THE CONTRACTOR SHALL NOTIFY CITY OF ORANGE PUBLIC WORKS MAINTENANCE DIVISION, 714-532-5480, SEVENTY-TWO HOURS PRIOR TO ANY ROAD CLOSURE AND/OR DETOUR.
7. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (DIAL 811 OR 1-800-227-2600) FORTY-EIGHT HOURS PRIOR TO THE REQUIRED DATE.
8. ALL PIPELINES AND SUBSTRUCTURES ARE TO BE CONSTRUCTED BEGINNING FROM THE DOWNSTREAM END. VERIFY DOWNSTREAM POINTS OF CONNECTION (HORIZONTAL AND VERTICAL LOCATIONS) PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE CITY OF ORANGE.
9. CONSTRUCTION SURVEY WORK FOR THE LINES AND GRADES FOR CONSTRUCTION OF THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL PRESERVE ALL PERMANENT SURVEY MARKERS INCLUDING ALL CENTERLINE TIES AS SPECIFIED IN SECTION 2-9.1 OF THE CITY OF ORANGE STANDARD PLANS AND SPECIFICATIONS.
11. THE CONTRACTOR SHALL PROTECT FROM DAMAGE ALL UTILITY LINES AND SUBSTRUCTURES.
12. NO DRIVEWAY OPENINGS TO BE CONSTRUCTED WITHIN THREE FEET OF A FIRE HYDRANT OR CURB RETURN.
13. ALL STREET CONSTRUCTION SHOWN IS BASED ON STREET CENTERLINE STATIONS AND ELEVATIONS.
14. AT THE COMPLETION OF THE CONSTRUCTION, SUBMIT TO THE CITY CONSTRUCTION INSPECTOR A COMPLETE SET OF VIDEO INSPECTION OF THE SEWER SYSTEM AND THE STORM DRAIN SYSTEM. THE VIDEO INSPECTION SHALL BE FOR THE ENTIRE LENGTH OF THE SYSTEM. LOCATION AND STATIONING INFORMATION SHALL BE INCLUDED IN THE VIDEO RECORDING.
15. THE CONTRACTOR SHALL PROVIDE, FOR REVIEW AND APPROVAL OF THE CITY, TRAFFIC CONTROL PLANS PER THE LATEST EDITIONS OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD), AND WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH) PREPARED BY A LICENSE TRAFFIC ENGINEER.

ENGINEER'S NOTES TO CONTRACTORS

1. ALL EXISTING SURFACE AND UNDERGROUND IMPROVEMENTS SHALL BE PROTECTED IN PLACE UNLESS SPECIFIED OTHERWISE. ANY DAMAGES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AND REPLACE AT THE RESPECTIVE AGENCY STANDARD AND SPECIFICATIONS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
2. THE CONTRACTOR SHALL POTHOLE AND VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO START OF ANY CONSTRUCTION ACTIVITIES. ANY DISCREPANCY SHALL BE REPORTED TO THE OWNER /OR THE ENGINEER.
3. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS AND ELEVATIONS OF EXISTING SEWER MAIN, LATERALS AND MANHOLES PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES ANY DISCREPANCY SHALL BE REPORTED TO THE OWNER /OR THE ENGINEER.
4. CONTRACTOR SHALL PROVIDE GRADES AS REQUIRED PER STANDARD. REMOVAL LIMITS SHALL BE COORDINATED WITH ENGINEER PRIOR TO REMOVAL.
5. PAVEMENT LIMIT REMOVALS SHALL BE COORDINATE WITH ENGINEER PRIOR TO CONSTRUCTION.
6. CONTRACTOR SHALL SCHEDULE A JOB WALK PRIOR TO DEMOLITION WITH THE CITY ENGINEER AND THE SR. LANDSCAPE PROJECT COORDINATOR (714-532-6464).

EROSION CONTROL, SEDIMENT CONTROL, AND WATER QUALITY NOTES

1. IN CASE OF EMERGENCY, CALL RUBEN HERNANDEZ AT: (714) 532-6493 DURING BUSINESS HOURS, AND (714) 538-1961 ALL OTHER TIMES.
2. A STAND-BY CREW FOR EMERGENCY WORK SHALL BE AVAILABLE AT ALL TIMES. NECESSARY MATERIALS SHALL BE AVAILABLE ON SITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES WHEN RAIN IS IMMINENT.
3. THE CONTRACTOR SHALL SUBMIT PLANS FOR REVIEW BY THE CITY ENGINEER DETAILING THE PLACING OF EROSION CONTROL FACILITIES TO PROTECT AREAS SUBJECT TO STORM DAMAGE. ALL DEVICES MUST BE IN PLACE AND WORKING AT ALL TIMES. FAILURE TO PROVIDE THESE DEVICES WILL BE CAUSE TO REVOKE PERMITS OR APPROVALS BY THE CITY ENGINEER AND/OR BUILDING OFFICIAL.
4. DEVICES SHALL NOT BE MOVED OR MODIFIED WITHOUT THE APPROVAL OF THE CITY INSPECTOR.
5. EXCEPT AS OTHERWISE APPROVED BY THE CITY INSPECTOR, REMOVABLE PROTECTIVE DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY OR ON WEEKENDS WHEN THE 5 DAY RAIN PROBABILITY FORECAST EXCEEDS 40%.
6. THE PLACEMENT OF ADDITIONAL DEVICES TO REDUCE EROSION DAMAGE WITHIN THE SITE IS LEFT TO THE DISCRETION OF THE FIELD ENGINEER.
7. DESILTING BASINS MAY NOT BE REMOVED OR MADE INOPERABLE WITHOUT PRIOR APPROVAL OF THE CITY INSPECTOR.
8. EROSION CONTROL DEVICES SHALL BE MODIFIED AS NEEDED AS THE PROJECT PROGRESSES, AND PLANS OF THESE CHANGES SUBMITTED FOR APPROVAL AS REQUIRED.
9. INSURE THAT ALL EXISTING DRAINAGE COURSES AND CULVERTS ARE MAINTAINED IN WORKING CONDITION AND FREE OF SILT AND DEBRIS.
10. SEDIMENT FROM AREAS DISTURBED BY CONSTRUCTION SHALL BE RETAINED ON SITE USING STRUCTURAL CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE.
11. ALL LOOSE SOIL AND DEBRIS WHICH MAY CREATE A POTENTIAL HAZARD TO OFFSITE PROPERTY SHALL BE REMOVED FROM THE SITE AS DIRECTED BY THE INSPECTOR.
12. AFTER A RAINSTORM, ALL SILT AND DEBRIS SHALL BE REMOVED FROM CHECK BERMS AND DESILTING BASINS AND BASINS PUMPED DRY.
13. 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.
14. 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 PROPERTY BY WIND OR RUNOFF.
15. RUNOFF FROM EQUIPMENT AND VEHICLE WASHING SHALL BE CONTAINED AT CONSTRUCTION SITES UNLESS TREATED TO REMOVE SEDIMENT AND OTHER POLLUTANTS.
16. 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.
17. 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.
18. FILL SLOPES AT THE SITE PERIMETER MUST DRAIN AWAY FROM THE TOP OF SLOPE AT THE CONCLUSION OF EACH WORKING DAY.
19. A GUARD SHALL BE POSTED ON THE SITE WHENEVER THE DEPTH OF WATER IN ANY DEVICE EXCEEDS TWO (2) FEET.
20. 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 ARE ALLOWED 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.

    POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SOLID OR LIQUID CHEMICAL SPILLS; WASTES FROM PAINTS, STAINS, SEALANTS, GLUES, LIME, PESTICIDES, HERBICIDES, WOOD PRESERVATIVES AND SOLVENTS, ASBESTOS FIBERS, PAINT FLAKES OR STUCCO FRAGMENTS; FUELS, OILS, LUBRICANTS, AND HYDRAULIC, RADIATOR OR BATTERY FLUIDS; CONCRETE, DETERGENT OR FLOATABLE WASTES; WASTES FROM ANY ENGINE/EQUIPMENT STEAM CLEANING OR CHEMICAL DEGREASING; AND SUPERCHLORINATED POTABLE WATER LINE FLUSHINGS.
21. DURING CONSTRUCTION, DISPOSAL OF SUCH MATERIALS SHOULD OCCUR 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.
22. 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 (NPDES) PERMIT FROM THE RESPECTIVE STATE REGIONAL WATER QUALITY CONTROL BOARD.
23. TAKE NECESSARY PRECAUTIONS TO INSURE THAT ADJACENT PROPERTY NOT SUFFER DAMAGE DUE TO DEBRIS, MUD, OR INUNDATION CAUSED BY GRADING ACTIVITIES WITHIN PERMITTED AREA.
24. PLACE EROSION PROTECTION AROUND ALL OUTLETS OF DOWNDRAINS THAT ARE NOT FULLY CONNECTED TO THE ULTIMATE DRAINAGE DEVICE.
25. PLACE EROSION PROTECTION AROUND ALL ULTIMATE INLETS WHILE THE POSSIBILITY OF SILTATION EXISTS PRIOR TO ULTIMATE SLOPE PLANTING BECOMING EFFECTIVE.
26. RESTORE ALL VEGETATION AND PLANTING ON THE EXISTING SLOPE TO ORIGINAL CONDITION.

LEGEND

AB = AGGREGATE BASE
AC = ASPHALT CONCRETE
BS = BACK OF SIDEWALK
CB = CATCH BASIN
CC = CROWN CASTLE
CF = CURB FACE
C&G = CURB AND GUTTER
℄ = CENTERLINE
CLF = CHAIN LINK FENCE
CO = CLEANOUT
DWY = DRIVEWAY
EB = ELECTRICAL BOX
E'LY = EASTERLY
EMH = ELECTRICAL MANHOLE
EG = EDGE OF GUTTER
EP = EDGE OF PAVEMENT
EX = EXISTING
FD = FOUND
FG = FINISHED GRADE
FL = FLOW LINE
FS = FINISHED SURFACE
GB = GRADE BREAK
GM = GAS METER
GR = TOP OF GRATE
GV = GAS VALVE
IRGV = IRRIGATION VALVE
INV = INVERT
L = LENGTH
LT = LEFT
L&T = LEAD & TAG
MB = MAIL BOX
MH = MANHOLE
MW = MONITORING WELL
N'LY = NORTHERLY
NG = NATURAL GROUND
N&T = NAIL & TAG
OG = ORIGINAL GROUND
PB = PULL BOX
PCC = CONCRETE
PL = PROPERTY LINE
PP = POWER POLE
PROP = PROPOSED
RET = RETAINING
RT = RIGHT
R/W = RIGHT OF WAY
S'LY = SOUTHERLY
SDMH = STORM DRAIN MANHOLE
SMH = SEWER MANHOLE
SPK = SPIKE
ST LT = STREETLIGHT
STA = STATION
SW = SIDEWALK
TC = TOP OF CURB
TSB = TRAFFIC SIGNAL BOX
TSP = TRAFFIC SIGNAL POLE
UG = UNDERGROUND
UP = UTILITY POLE
VARS = VARIES
W = WIDTH
W'LY = WESTERLY
WM = WATER METER
WV = WATER VALVE

SYMBOLS

STREET LIGHT
WV WATER VALVE
ROADSIDE SIGN
(S) SEWER MANHOLE
PB UTILITY PULLBOX
(T) TELEPHONE MANHOLE
(MH) MANHOLE
TRAFFIC DETECTOR LOOP
TRAFFIC SIGNAL
(D) STORM DRAIN MANHOLE
(E) ELECTRICAL MANHOLE
WM WATER METER
GM GAS METER
GAS VALVE
POWER POLE

DIRECTOR OF PUBLIC WORKS/CITY ENGINEER — DATE
CITY OF VILLA PARK

UNDER THE SUPERVISION OF:

DATE

REVISIONS

DATE	DESCRIPTION	REV.BY

FOR ENGINEER'S USE

	NAME	DATE
DRAWN	E. PEREZ	1/26/24
DESIGNED	E. PEREZ	1/26/24
CHECKED	Y. NAKAGAWA	1/26/24

FOR CITY USE ONLY

	NAME	DATE
STREETS		
SEWER		
DRAINAGE		
WATER		
ST. SUPT.		
TRAFFIC		

CITY OF ORANGE
OFFICE OF THE CITY ENGINEER
IMPROVEMENTS PLAN
CANNON STREET WIDENING IMPROVEMENTS
TITLE SHEET

APPROVED: DATE ASSISTANT PUBLIC WORKS DIRECTOR/CITY ENGINEER

APPROVED: DATE PUBLIC WORKS DIRECTOR

SCALE: HORIZ. AS NOTED VERT. AS NOTED | F.B. _____ PG. _____ | SHEET 1 OF 10 SHEETS

SP-4178

65% PLAN DRAFT 01 YCN 1/26/2024

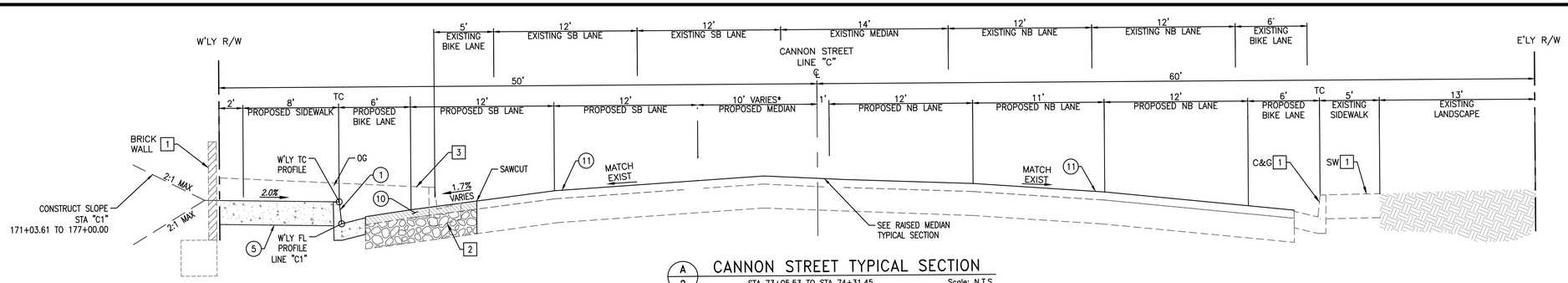
N:\Public Works\ENGINEERING\Design\Projects\SP-4178_Cannon Street Widening\01_Engineering\Drawings\Sheets\01_SP-4178_TITLE.dwg
By: Gerlene Sarria on 1/26/2024 9:56 AM

CONSTRUCTION NOTES

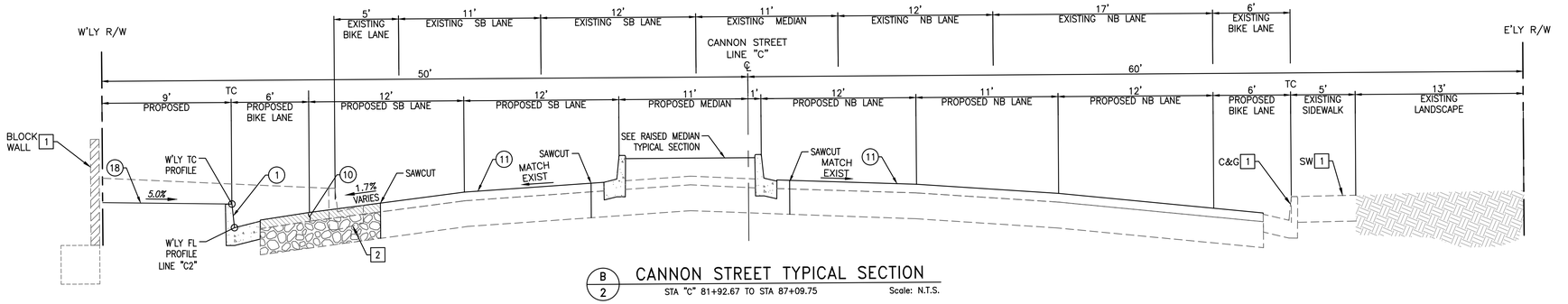
1. CONSTRUCT TYPE "A" CURB AND GUTTER PER CITY OF ORANGE STD 117. (CONSTRUCT 8" CURB FACE UNLESS OTHERWISE NOTED)
2. CONSTRUCT MODIFIED TYPE "A" CURB AND GUTTER PER CITY OF ORANGE STD 117 AND SEE CURB DETAIL ON SHEET 8.
3. CONSTRUCT TYPE "B-2" CURB AND GUTTER PER CITY OF ORANGE STD 117.
4. CONSTRUCT PCC MODIFIED CROSS GUTTER AND SPANDREL PER CITY OF ORANGE STD 119 AND SEE DETAIL ON SHEET 9.
5. CONSTRUCT CONCRETE SIDEWALK PER CITY OF ORANGE STD 118.
6. CONSTRUCT RESIDENTIAL DRIVEWAY PER CITY OF ORANGE STD 116A.
7. CONSTRUCT STAMPED CONCRETE PAVEMENT. PAVING PATTERN AND COLOR TO MATCH ADJACENT EXISTING STAMPED CONCRETE PAVEMENT.
8. CONSTRUCT COMMERCIAL DRIVEWAY PER CITY OF ORANGE STD 115. SEE DRIVEWAY DETAIL ON SHEET 9.
9. CONSTRUCT ACCESSIBLE PCC CURB RAMP WITH TRUNCATED DOMES PER CITY OF ORANGE STD 121 AND RAMP DETAILS ON SHEET 9.
10. CONSTRUCT FULL DEPTH AC PAVEMENT OVER SUBGRADE. (PAVEMENT SECTION TO BE RECOMMENDED BY THE GEOTECHNICAL ENGINEER).
11. APPLY SLURRY SEAL ON THE EX ASPHALT CONCRETE PAVEMENT.
12. CONSTRUCT 4" THICK AC PAVEMENT BIKE TRAIL.
13. CONSTRUCT 0" CONCRETE CURB PER MODIFIED CITY OF ORANGE STD 117, TYPE B-1.
14. CONSTRUCT MEDIAN TAPER PER OCPW STD 140-3.
15. CONSTRUCT MEDIAN FLARE PER CITY OF ORANGE STD 112.
16. CONSTRUCT MODIFIED 48-INCH WIDE CONCRETE V-DITCH. SEE DETAIL ON SHEET 10 & CITY OF ORANGE STD 332.
17. CONSTRUCT CURB DRAIN.
18. REGRADE EXISTING DIRT TRAIL.

DISPOSITION NOTES

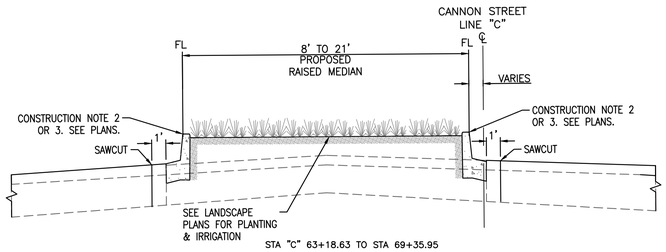
1. PROTECT IN PLACE.
2. REMOVE EXISTING CURB AND GUTTER.
3. REMOVE EXISTING SIDEWALK.
4. REMOVE EXISTING ACCESS RAMP.
5. REMOVE EXISTING DRIVEWAY.
6. REMOVE EXISTING CHAIN LINK FENCE.
7. REMOVE EXISTING CONCRETE CROSS GUTTER.
8. REMOVE EXISTING CURB DRAIN.
9. ADJUST EXISTING MANHOLE TO GRADE PER CITY OF ORANGE STD 408.
10. REMOVE AND RELOCATE EXISTING STREET SIGN. SEE SIGNING & STRIPING PLANS.
11. REMOVE AND RELOCATE EXISTING RESIDENTIAL MAILBOX.
12. REMOVE AND RELOCATE EXISTING FIRE HYDRANT ASSEMBLY AND SERVICE LATERAL PER CITY OF ORANGE STD OWD-102 & 103.
13. REMOVE AND RELOCATE EXISTING WATER METER BOX TO FINISHED GRADE PER CITY OF ORANGE WATER STD OWD-212.
14. REMOVE AND RELOCATE EXISTING WATER VALVE BOX TO FINISHED GRADE PER CITY OF ORANGE WATER STD OWD-101.
15. REMOVE EXISTING AND CONSTRUCT NEW TRAFFIC SIGNAL POLE, PULL BOX, AND ASSOCIATED APPURTENANCES. SEE TRAFFIC SIGNAL PLANS.
16. REMOVE EXISTING AND CONSTRUCT NEW STREET LIGHT POLE AND PULL BOX. SEE STREET LIGHTING PLANS.
17. REMOVE EXISTING TREE. SEE LANDSCAPE PLANS.
18. REMOVE AND RELOCATE EXISTING ELECTRICAL VAULT. ADJUST TO FINAL FINISH SURFACE AS REQUIRED.
19. REMOVE AND RELOCATE EXISTING PCC OPEN CATCH BASIN AND STORM DRAIN MANHOLE FRAME. ADJUST MANHOLE COVER TO GRADE.
20. REMOVE AND RELOCATE EXISTING ELECTRICAL BOX. ADJUST TO FINAL FINISH SURFACE AS REQUIRED.



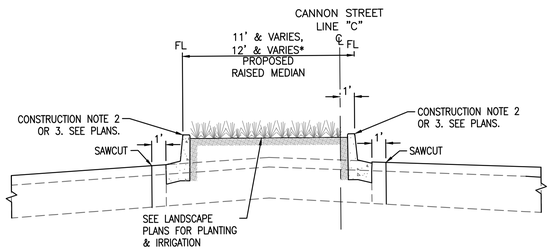
A/2 CANNON STREET TYPICAL SECTION
STA 73+05.53 TO STA 74+31.45
STA "C" 74+31.45 TO STA 80+73.12*
Scale: N.T.S.



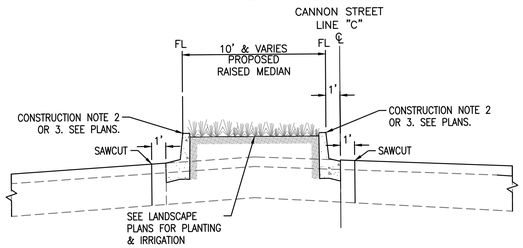
B/2 CANNON STREET TYPICAL SECTION
STA "C" 81+92.67 TO STA 87+09.75
Scale: N.T.S.



STA "C" 63+18.63 TO STA 69+35.95

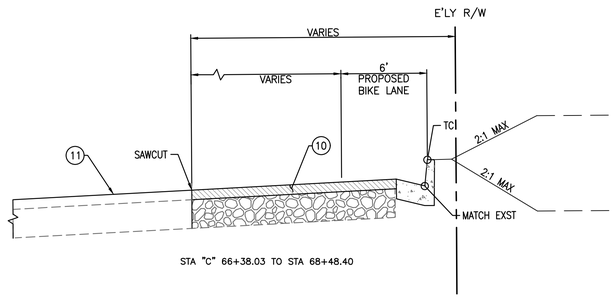


STA "C" 76+58.74 TO STA 78+44.55
STA 83+12.54 TO STA 85+97.33*

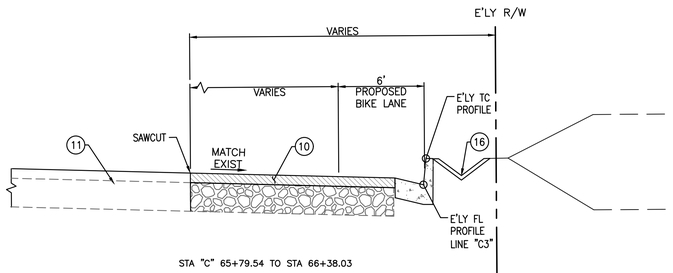


STA "C" 88+03.24 TO STA 90+10.41

C/2 RAISED MEDIAN TYPICAL SECTION
Scale: N.T.S.



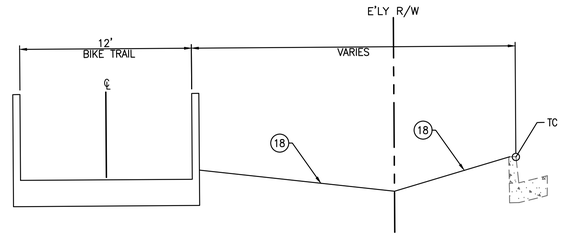
STA "C" 66+38.03 TO STA 68+48.40



STA "C" 65+79.54 TO STA 66+38.03

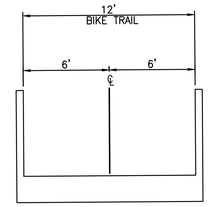
D/2 STREET WIDENING (EAST SIDE) TYPICAL SECTION
Scale: N.T.S.

LINE "C1"



F/2 BRIDGE BIKE/PEDESTRIAN TRAIL
STA "C1" 171+13.00 TO STA 173+05.48
Scale: N.T.S.

LINE "C1"



E/2 BRIDGE BIKE/PEDESTRIAN TRAIL
STA "C1" 169+13.00 TO STA 171+13.00
Scale: N.T.S.

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENTS PLAN
CANNON STREET WIDENING IMPROVEMENTS
CONSTRUCTION NOTES & TYPICAL SECTIONS

APPROVED:	APPROVED:
DATE ASSISTANT PUBLIC WORKS DIRECTOR/CITY ENGINEER	DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	E. PEREZ	1/26/24
DESIGNED	E. PEREZ	1/26/24
CHECKED	Y. NAKAGAWA	1/26/24

SCALE: HORIZ. AS NOTED VERT. AS NOTED | F.B._____ PG. _____ | SHEET 2 OF 10 SHEETS | SP-4178

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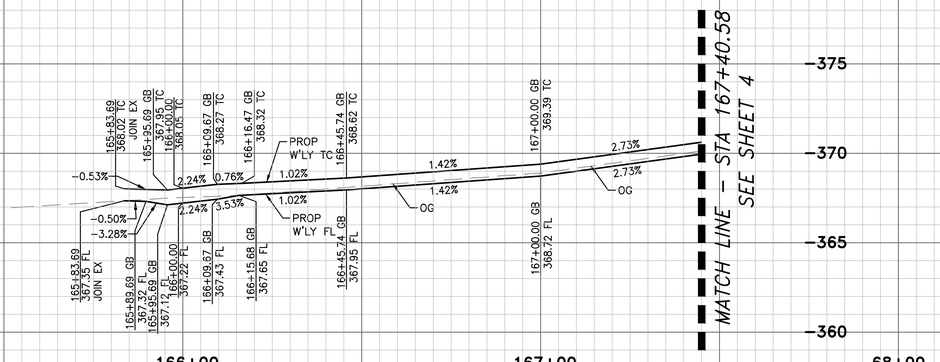
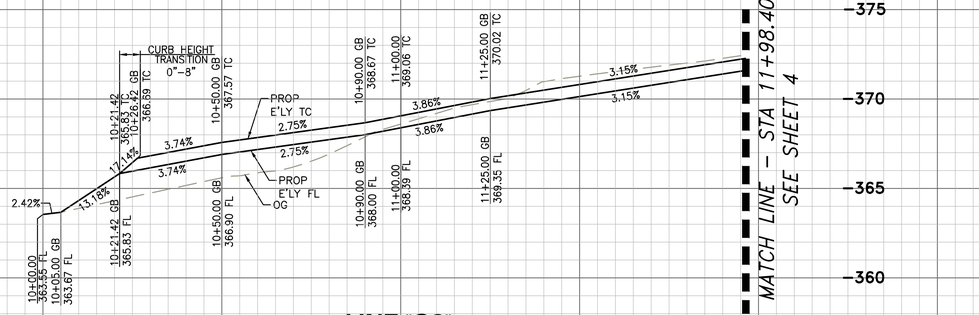
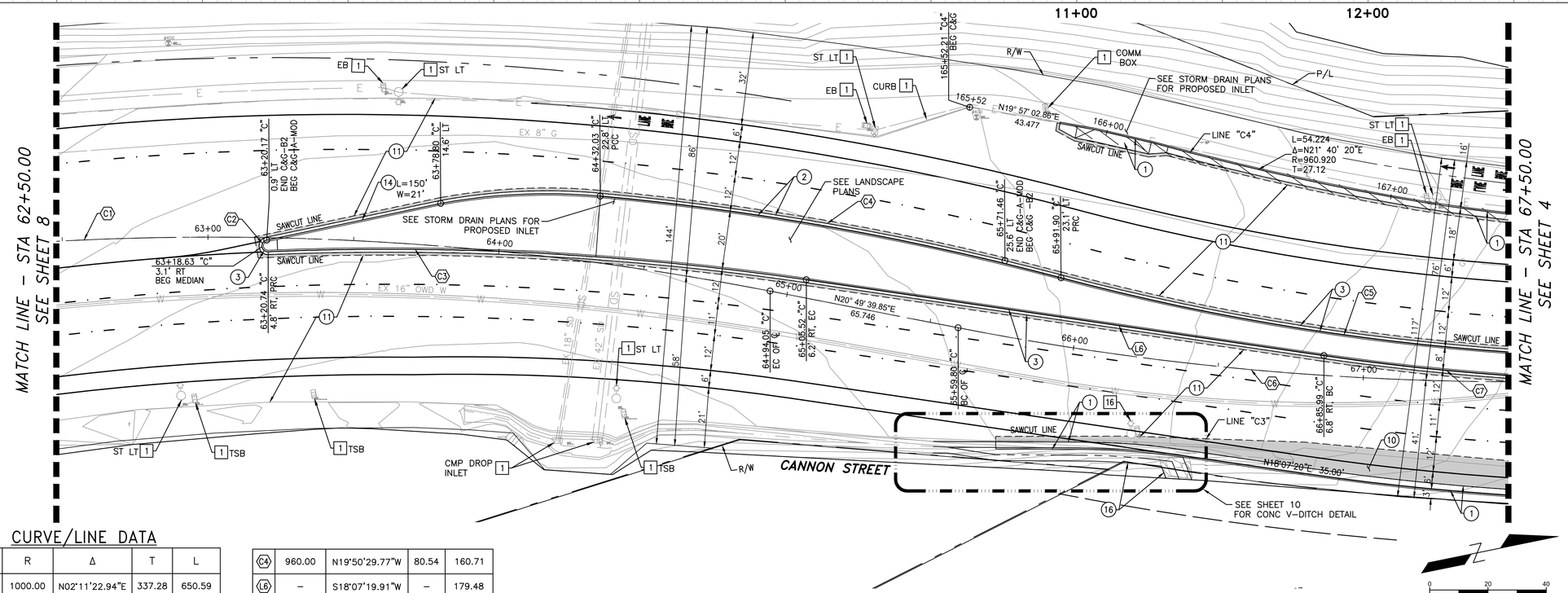
By: Gerlene Sarmiento on 1/26/2024 10:02 AM



LINE "C4"



LINE "C3"



CURVE/LINE DATA

	R	Δ	T	L
C1	1000.00	N02°11'22.94"E	337.28	650.59
C2	2.00	N87°22'10.41"W	23.94	5.95
C3	990.00	N12°45'49.19"W	92.86	185.18
C4	960.00	N19°50'29.77"W	80.54	160.71
L6	–	S18°07'19.91"W	–	179.48
C5	821.00	N12°51'58.77"E	171.08	337.34
C6	1000.00	N10°36'21.96"E	180.32	356.80
C7	829.00	N09°36'26.83"W	124.11	246.40

LEGEND

- REMOVAL AREA
- NEW PCC IMPROVEMENTS
- NEW AC PAVEMENT

DISPOSITION NOTES

1 — PROTECT IN PLACE.

16 — REMOVE EXISTING AND CONSTRUCT NEW STREET LIGHT POLE AND PULL BOX. SEE STREET LIGHTING PLANS.

CONSTRUCTION NOTES

1 — CONSTRUCT TYPE "A" CURB AND GUTTER PER CITY OF ORANGE STD 117. (CONSTRUCT 8" CURB FACE UNLESS OTHERWISE NOTED)

2 — CONSTRUCT MODIFIED TYPE "A" CURB AND GUTTER PER CITY OF ORANGE STD 117 AND SEE CURB DETAIL ON SHEET 8.

3 — CONSTRUCT TYPE "B-2" CURB AND GUTTER PER CITY OF ORANGE STD 117.

10 — CONSTRUCT FULL DEPTH AC PAVEMENT OVER SUBGRADE. (PAVEMENT SECTION TO BE RECOMMENDED BY THE GEOTECHNICAL ENGINEER).

11 — APPLY SLURRY SEAL ON THE EX ASPHALT CONCRETE PAVEMENT.

14 — CONSTRUCT MEDIAN TAPER PER OCPW STD 140-3.

16 — CONSTRUCT 48-INCH WIDE CONCRETE V-DITCH. SEE DETAIL ON SHEET 10.

SCALE:
HORIZONTAL: 1":20'
VERTICAL: 1":4'

0 20 40
10 30
SCALE: 1"=20'

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENTS PLAN
SP-4178 CANNON STREET WIDENING
PLAN & PROFILE
STA 62+50.00 TO STA 67+50.00

APPROVED: _____ DATE ASSISTANT PUBLIC WORKS DIRECTOR/CITY ENGINEER

APPROVED: _____ DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	E. PEREZ	1/26/24
DESIGNED	E. PEREZ	1/26/24
CHECKED	Y. NAKAGAWA	1/26/24

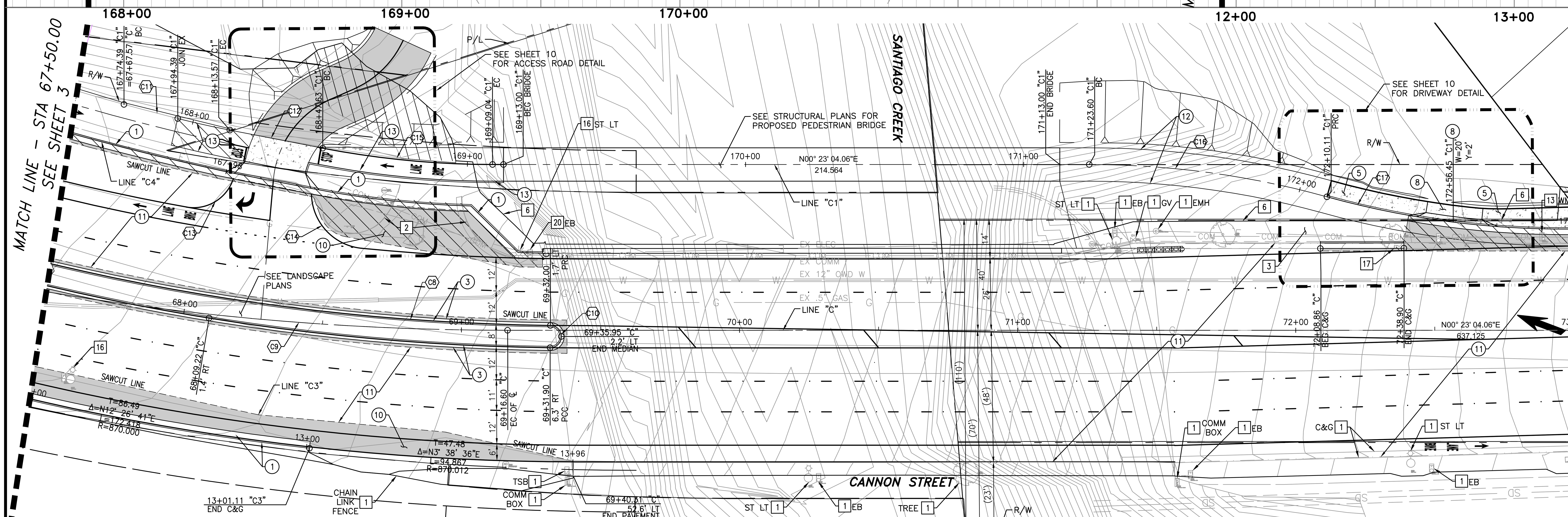
SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B._____ PG._____

SHEET 3 OF 10 SHEETS

SP-4178

N:\Public Works\ENGINEERING\Design\Projects\SP-4178_Cannon Street Widening\01_Engineering\Drawings\Sheets\03_SP-4178_PLAN.dwg
By: Gerlene Sarria on 1/26/2024 8:16 AM

SCALE:
HORIZONTAL: 1":20'
VERTICAL: 1":4'



DISPOSITION NOTES

1 — PROTECT IN PLACE.

2 — REMOVE EXISTING CURB AND GUTTER.

3 — REMOVE EXISTING SIDEWALK.

6 — REMOVE EXISTING CHAIN LINK FENCE.

13 — REMOVE AND RELOCATE EXISTING WATER METER BOX TO FINISHED GRADE PER CITY OF ORANGE WATER STD OWD–212.

16 — REMOVE EXISTING AND CONSTRUCT NEW STREET LIGHT POLE AND PULL BOX. SEE STREET LIGHTING PLANS.

17 — REMOVE EXISTING TREE. SEE LANDSCAPE PLANS.

20 — REMOVE AND RELOCATE EXISTING ELECTRICAL BOX. ADJUST TO FINAL FINISH SURFACE AS REQUIRED.

LEGEND

- REMOVAL AREA
- NEW PCC IMPROVEMENTS
- NEW AC PAVEMENT

CONSTRUCTION NOTES

(1) — CONSTRUCT TYPE "A" CURB AND GUTTER PER CITY OF ORANGE STD 117. (CONSTRUCT 8" CURB FACE UNLESS OTHERWISE NOTED)

(3) — CONSTRUCT TYPE "B–2" CURB AND GUTTER PER CITY OF ORANGE STD 117.

(5) — CONSTRUCT CONCRETE SIDEWALK PER CITY OF ORANGE STD 118.

(8) — CONSTRUCT COMMERCIAL DRIVEWAY PER CITY OF ORANGE STD 115. SEE DRIVEWAY DETAIL ON SHEET 9.

(10) — CONSTRUCT FULL DEPTH AC PAVEMENT OVER SUBGRADE. (PAVEMENT SECTION TO BE RECOMMENDED BY THE GEOTECHNICAL ENGINEER).

(11) — APPLY SLURRY SEAL ON THE EX ASPHALT CONCRETE PAVEMENT.

(12) — CONSTRUCT 4" THICK AC PAVEMENT BIKE TRAIL.

(13) — CONSTRUCT 0" CONCRETE CURB PER MODIFIED CITY OF ORANGE STD 117, TYPE B–1.

CURVE/LINE DATA

X	R	Δ	T	L
C8	821.00	N12°51'58.77"E	171.08	337.43
C9	1000.00	N10°36'21.96"E	180.31	356.80
C10	4.00	S88°54'26.30"E	23.94	12.56
C11	511.09	N14°01'42.26"E	19.60	39.18
L12	–	N11°22'50.55"E	–	34.05
C13	15.00	N30°42'12.70"W	13.21	21.66
C14	20.00	N47°34'37.80"E	17.74	29.02
C15	320	N05°52'57.31"E	30.80	61.41
C16	320.00	N08°07'42.94"E	43.51	86.50
C17	320.00	N07°20'2.79"E	48.04	95.374

SCALE: 1"=20' (0, 10, 20, 30, 40)

	NAME	DATE
DRAWN	E. PEREZ	1/26/24
DESIGNED	E. PEREZ	1/26/24
CHECKED	Y. NAKAGAWA	1/26/24

CITY OF ORANGE
OFFICE OF THE CITY ENGINEER

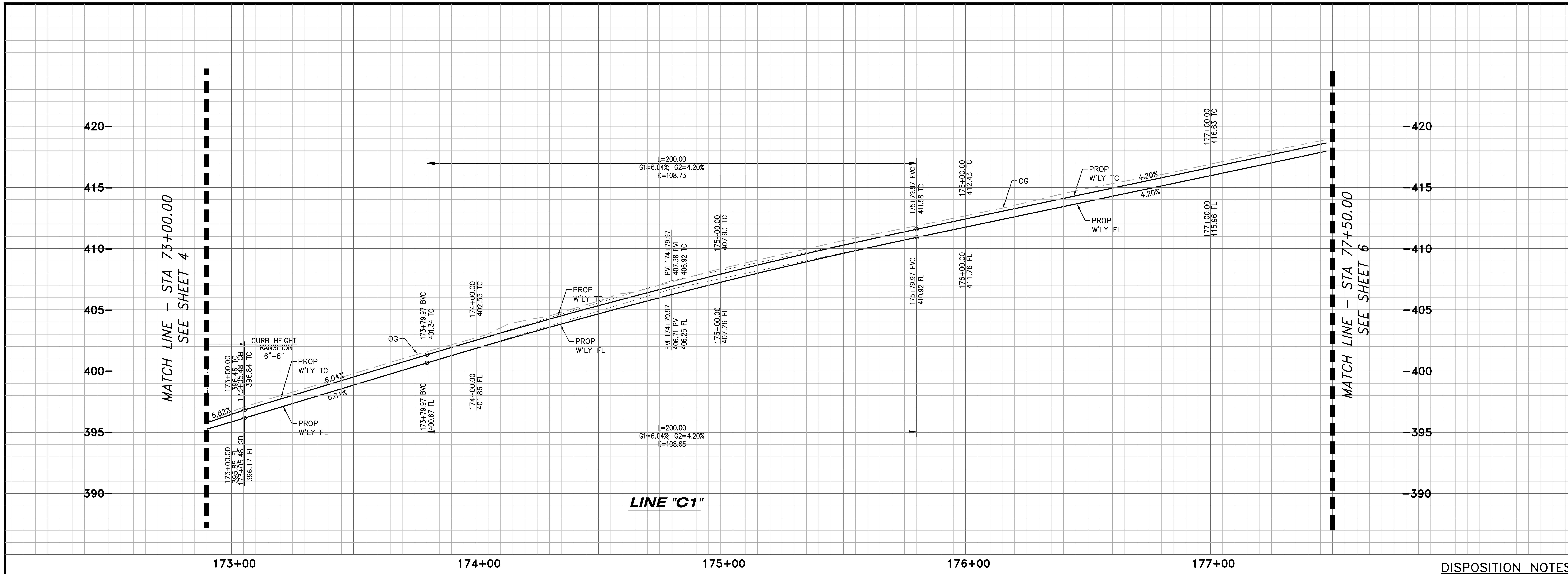
IMPROVEMENTS PLAN
SP–4178 CANNON STREET WIDENING
STREET IMPROVEMENT: PLAN & PROFILE
STA 67+50.00 TO STA 73+00.00

APPROVED: ______ DATE ASSISTANT PUBLIC WORKS DIRECTOR/CITY ENGINEER

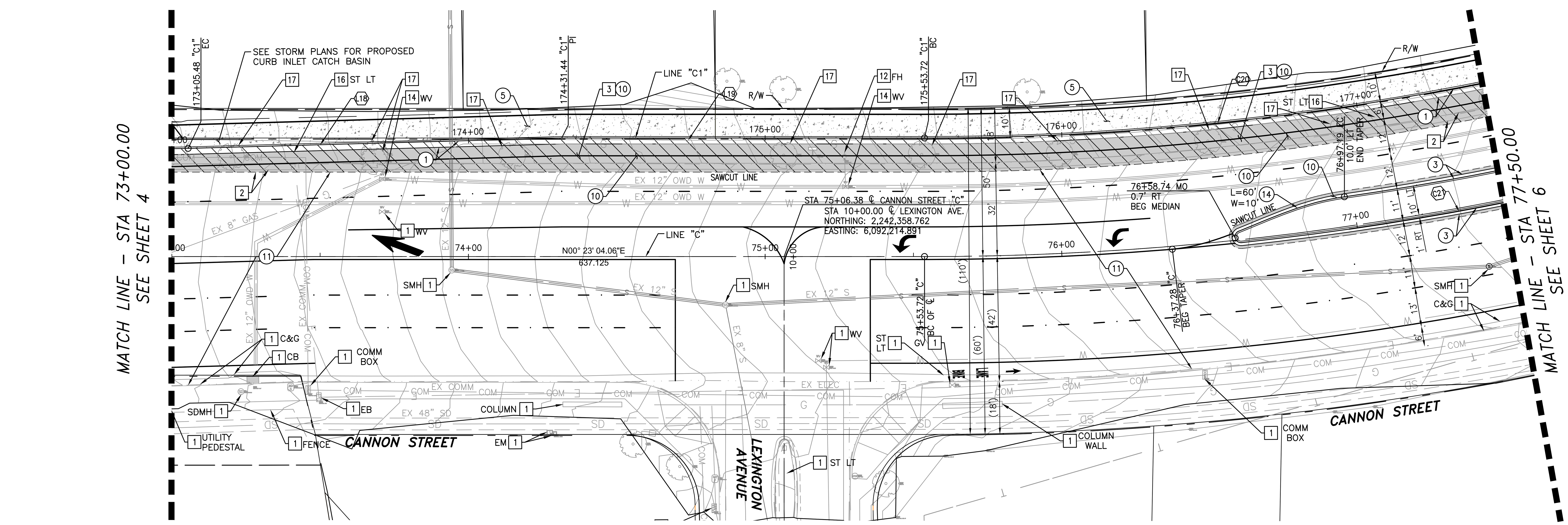
APPROVED: ______ DATE PUBLIC WORKS DIRECTOR

SCALE: HORIZ. AS NOTED VERT. AS NOTED | F.B.______ PG.______ | SHEET 4 OF 10 SHEETS

SP–4178



SCALE:
HORIZONTAL: 1":20'
VERTICAL: 1":4'



DISPOSITION NOTES

- [1] — PROTECT IN PLACE.
- [2] — REMOVE EXISTING CURB AND GUTTER.
- [3] — REMOVE EXISTING SIDEWALK.
- [12] — REMOVE AND RELOCATE EXISTING FIRE HYDRANT ASSEMBLY AND SERVICE LATERAL PER CITY OF ORANGE STD OWD-102 & 103.
- [13] — REMOVE AND RELOCATE EXISTING WATER METER BOX TO FINISHED GRADE PER CITY OF ORANGE WATER STD OWD-212.
- [14] — REMOVE AND RELOCATE EXISTING WATER VALVE BOX TO FINISHED GRADE PER CITY OF ORANGE WATER STD OWD-101.
- [16] — REMOVE EXISTING AND CONSTRUCT NEW STREET LIGHT POLE AND PULL BOX. SEE STREET LIGHTING PLANS.
- [17] — REMOVE EXISTING TREE. SEE LANDSCAPE PLANS.

CURVE/LINE DATA

X	R	Δ	T	L
L18	–	N01°12'16.24"W	–	125.96
L19	–	N00°23'04.06"E	–	122.27
C20	960.00	N12°42'09.44"W	223.17	438.55
C21	1000.00	N12°42'09.44"W	232.47	456.83

CONSTRUCTION NOTES

- (1) — CONSTRUCT TYPE "A" CURB AND GUTTER PER CITY OF ORANGE STD 117. (CONSTRUCT 8" CURB FACE UNLESS OTHERWISE NOTED)
- (3) — CONSTRUCT TYPE "B-2" CURB AND GUTTER PER CITY OF ORANGE STD 117.
- (5) — CONSTRUCT CONCRETE SIDEWALK PER CITY OF ORANGE STD 118.
- (9) — CONSTRUCT ACCESSIBLE PCC CURB RAMP WITH TRUNCATED DOMES PER CITY OF ORANGE STD 121 AND RAMP DETAILS ON SHEET 9.
- (10) — CONSTRUCT FULL DEPTH AC PAVEMENT OVER SUBGRADE. (PAVEMENT SECTION TO BE RECOMMENDED BY THE GEOTECHNICAL ENGINEER).
- (11) — APPLY SLURRY SEAL ON THE EX ASPHALT CONCRETE PAVEMENT.
- (13) — CONSTRUCT 0" CONCRETE CURB PER MODIFIED CITY OF ORANGE STD 117, TYPE B-1.

LEGEND

- REMOVAL AREA
- NEW PCC IMPROVEMENTS
- NEW AC PAVEMENT

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENTS PLAN
SP-4178 CANNON STREET WIDENING
STREET IMPROVEMENT: PLAN & PROFILE
STA 73+00.00 TO STA 77+50.00

	NAME	DATE
DRAWN	E. PEREZ	1/26/24
DESIGNED	E. PEREZ	1/26/24
CHECKED	Y. NAKAGAWA	1/26/24

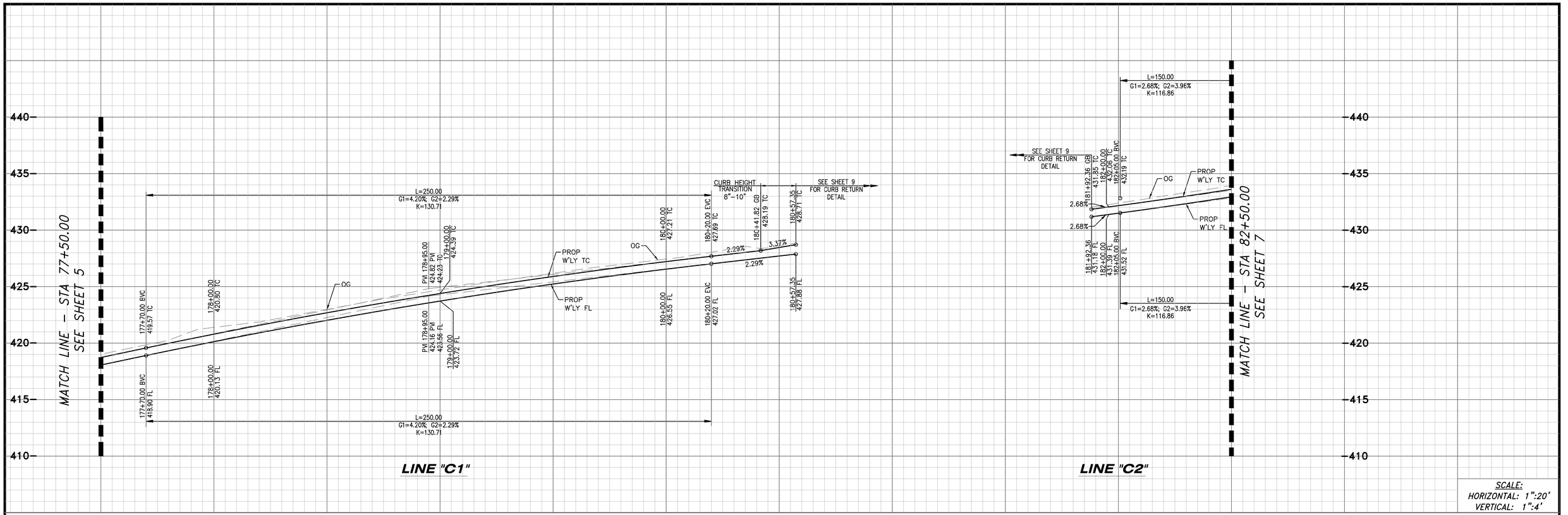
APPROVED: ____ DATE ASSISTANT PUBLIC WORKS DIRECTOR/CITY ENGINEER

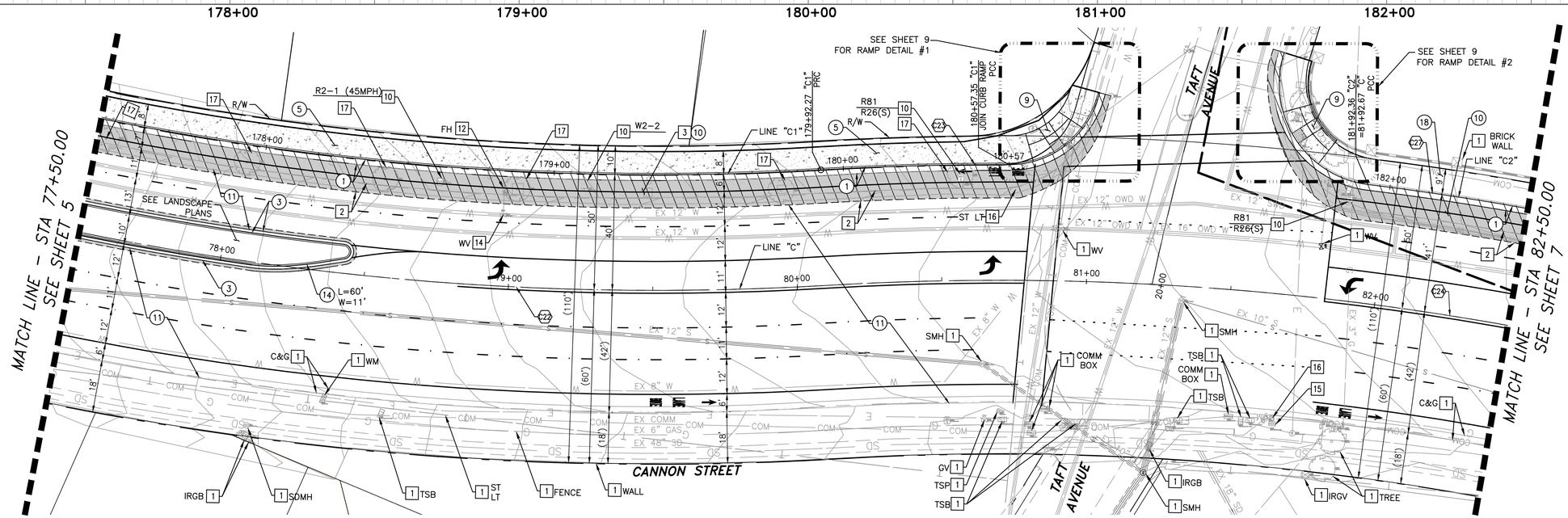
APPROVED: ____ DATE PUBLIC WORKS DIRECTOR

SCALE: HORIZ. AS NOTED VERT. AS NOTED | F.B.______ PG.______ | SHEET 5 OF 10 SHEETS

SP-4178

N:\Public Works\ENGINEERING\Design\Projects\SP-4178_Cannon Street Widening\01_Engineering\Drawings\Sheets\03_SP-4178_PLAN.dwg
By :Gerlene Samia on 1/26/2024 8:24 AM





SCALE:
HORIZONTAL: 1":20'
VERTICAL: 1":4'

DISPOSITION NOTES

1. PROTECT IN PLACE.
2. REMOVE EXISTING CURB AND GUTTER.
3. REMOVE EXISTING SIDEWALK.
4. REMOVE EXISTING ACCESS RAMP.
9. ADJUST EXISTING MANHOLE TO GRADE PER CITY OF ORANGE STD 408.
10. REMOVE AND RELOCATE EXISTING STREET SIGN. SEE SIGNING & STRIPING PLANS.
12. REMOVE AND RELOCATE EXISTING FIRE HYDRANT ASSEMBLY AND SERVICE LATERAL PER CITY OF ORANGE STD OWD-102 & 103.
13. REMOVE AND RELOCATE EXISTING WATER METER BOX TO FINISHED GRADE PER CITY OF ORANGE WATER STD OWD-212.
14. REMOVE AND RELOCATE EXISTING WATER VALVE BOX TO FINISHED GRADE PER CITY OF ORANGE WATER STD OWD-101.
15. REMOVE EXISTING AND CONSTRUCT NEW TRAFFIC SIGNAL POLE, PULL BOX, AND ASSOCIATED APPURTENANCES. SEE TRAFFIC SIGNAL PLANS.
16. REMOVE EXISTING AND CONSTRUCT NEW STREET LIGHT POLE AND PULL BOX. SEE STREET LIGHTING PLANS.
17. REMOVE EXISTING TREE. SEE LANDSCAPE PLANS.
18. REMOVE AND RELOCATE EXISTING ELECTRICAL VAULT. ADJUST TO FINAL FINISH SURFACE AS REQUIRED.
20. REMOVE AND RELOCATE EXISTING ELECTRICAL BOX. ADJUST TO FINAL FINISH SURFACE AS REQUIRED.

CONSTRUCTION NOTES

1. CONSTRUCT TYPE "A" CURB AND GUTTER PER CITY OF ORANGE STD 117. (CONSTRUCT 8" CURB FACE UNLESS OTHERWISE NOTED)
3. CONSTRUCT TYPE "B-2" CURB AND GUTTER PER CITY OF ORANGE STD 117.
5. CONSTRUCT CONCRETE SIDEWALK PER CITY OF ORANGE STD 118.
9. CONSTRUCT ACCESSIBLE PCC CURB RAMP WITH TRUNCATED DOMES PER CITY OF ORANGE STD 121 AND RAMP DETAILS ON SHEET 9.
10. CONSTRUCT FULL DEPTH AC PAVEMENT OVER SUBGRADE. (PAVEMENT SECTION TO BE RECOMMENDED BY THE GEOTECHNICAL ENGINEER).
11. APPLY SLURRY SEAL ON THE EX ASPHALT CONCRETE PAVEMENT.
14. CONSTRUCT MEDIAN TAPER PER OCPW STD 140-3.

LEGEND

- REMOVAL AREA
- NEW PCC IMPROVEMENTS
- NEW AC PAVEMENT

CURVE DATA

X	R	Δ	T	L
22	1000.00'	N12°42'09.44"W	232.47'	456.82'
23	1039.06'	N23°59'44.04"W	32.55'	65.07'
24	999.06'	N13°16'33.44"W	221.74'	436.40'
27	1040.06'	S05°04'53.21"E	188.33'	372.63'

0 10 20 30 40
SCALE: 1"=20'

CITY OF ORANGE
OFFICE OF THE CITY ENGINEER

IMPROVEMENTS PLAN
SP-4178 CANNON STREET WIDENING
STREET IMPROVEMENT: PLAN & PROFILE
STA 77+50.00 TO STA 82+50.00

APPROVED:	APPROVED:
DATE ASSISTANT PUBLIC WORKS DIRECTOR/CITY ENGINEER	DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	E. PEREZ	1/26/24
DESIGNED	E. PEREZ	1/26/24
CHECKED	Y. NAKAGAWA	1/26/24

SCALE: HORIZ. AS NOTED VERT. AS NOTED | F.B._____ PG._____ | SHEET 6 OF 10 SHEETS | SP-4178

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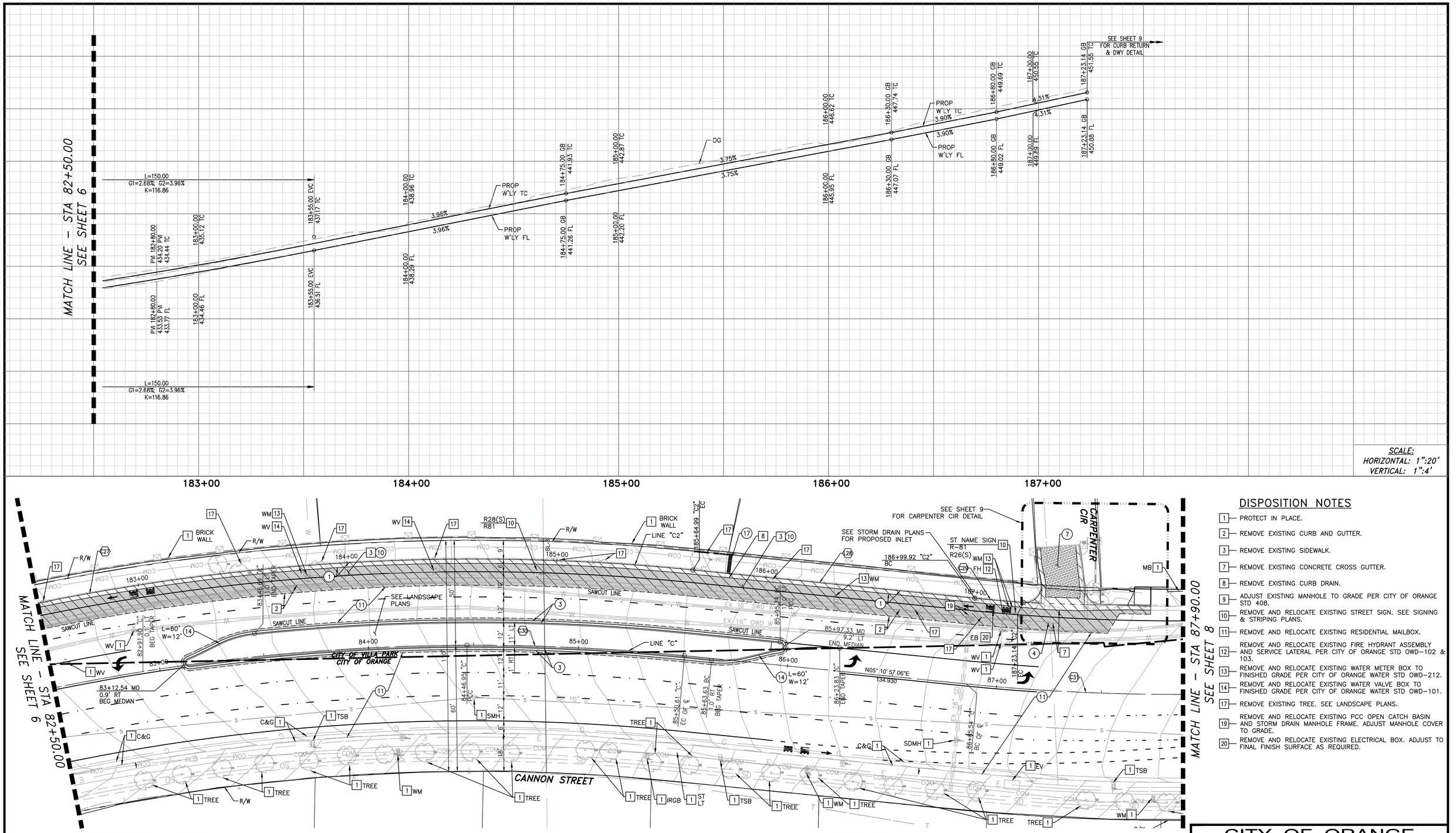
By: Gerlene Sarria on 1/26/2024 8:27 AM



CONSTRUCTION NOTES

1. CONSTRUCT TYPE "A" CURB AND GUTTER PER CITY OF ORANGE STD 117. (CONSTRUCT 8" CURB FACE UNLESS OTHERWISE NOTED)
3. CONSTRUCT TYPE "B-2" CURB AND GUTTER PER CITY OF ORANGE STD 117.
4. CONSTRUCT PCC MODIFIED CROSS GUTTER AND SPANDREL PER CITY OF ORANGE STD 119 AND SEE DETAIL ON SHEET 9.
5. CONSTRUCT CONCRETE SIDEWALK PER CITY OF ORANGE STD 118.
7. CONSTRUCT STAMPED CONCRETE PAVEMENT. PAVING PATTERN AND COLOR TO MATCH ADJACENT EXISTING STAMPED CONCRETE PAVEMENT.
10. CONSTRUCT FULL DEPTH AC PAVEMENT OVER SUBGRADE. (PAVEMENT SECTION TO BE RECOMMENDED BY THE GEOTECHNICAL ENGINEER).
11. APPLY SLURRY SEAL ON THE EX ASPHALT CONCRETE PAVEMENT.
14. CONSTRUCT MEDIAN TAPER PER OCPW STD 140-3.
15. CONSTRUCT MEDIAN FLARE PER CITY OF ORANGE STD 112.
17. CONSTRUCT CURB DRAIN.
18. REGRADE EXISTING DIRT TRAIL.

LEGEND

- REMOVAL AREA
- NEW PCC IMPROVEMENTS
- NEW AC PAVEMENT
- STAMPED CONCRETE

CURVE DATA

(X)	R	Δ	T	L
(28)	–	N05°10'57.06"E	–	134.93'
(29)	959.00'	N04°29'19.98"E	11.61'	23.22'
(30)	999.06'	N02°12'36.56"E	51.88'	103.66'
(31)	1000.00'	N01°13'35.94"E	112.33'	223.72'

DISPOSITION NOTES

1. PROTECT IN PLACE.
2. REMOVE EXISTING CURB AND GUTTER.
3. REMOVE EXISTING SIDEWALK.
7. REMOVE EXISTING CONCRETE CROSS GUTTER.
8. REMOVE EXISTING CURB DRAIN.
9. ADJUST EXISTING MANHOLE TO GRADE PER CITY OF ORANGE STD 408.
10. REMOVE AND RELOCATE EXISTING STREET SIGN. SEE SIGNING & STRIPING PLANS.
11. REMOVE AND RELOCATE EXISTING RESIDENTIAL MAILBOX.
12. REMOVE AND RELOCATE EXISTING FIRE HYDRANT ASSEMBLY AND SERVICE LATERAL PER CITY OF ORANGE STD OWD-102 & 103.
13. REMOVE AND RELOCATE EXISTING WATER METER BOX TO FINISHED GRADE PER CITY OF ORANGE WATER STD OWD-212.
14. REMOVE AND RELOCATE EXISTING WATER VALVE BOX TO FINISHED GRADE PER CITY OF ORANGE WATER STD OWD-101.
17. REMOVE EXISTING TREE. SEE LANDSCAPE PLANS.
19. REMOVE AND RELOCATE EXISTING PCC OPEN CATCH BASIN AND STORM DRAIN MANHOLE FRAME. ADJUST MANHOLE COVER TO GRADE.
20. REMOVE AND RELOCATE EXISTING ELECTRICAL BOX. ADJUST TO FINAL FINISH SURFACE AS REQUIRED.

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENTS PLAN
SP-4178 CANNON STREET WIDENING
STREET IMPROVEMENT: PLAN & PROFILE
STA 82+50.00 TO STA 87+90.00

APPROVED:	APPROVED:
DATE ASSISTANT PUBLIC WORKS DIRECTOR/CITY ENGINEER	DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	E. PEREZ	1/26/24
DESIGNED	E. PEREZ	1/26/24
CHECKED	Y. NAKAGAWA	1/26/24

SCALE: HORIZ. AS NOTED / VERT. AS NOTED F.B._____ PG._____

SHEET 7 OF 10 SHEETS

SP-4178

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By: Gerilene Sarria on 1/26/2024 8:29 AM

MATCH LINE – STA 87+90.00
SEE SHEET 7

LEGEND

- REMOVAL AREA
- NEW PCC IMPROVEMENTS
- NEW AC PAVEMENT

DISPOSITION NOTES

[1] — PROTECT IN PLACE.

CONSTRUCTION NOTES

(3) — CONSTRUCT TYPE "B–2" CURB AND GUTTER PER CITY OF ORANGE STD 117.

(11) — APPLY SLURRY SEAL ON THE EX ASPHALT CONCRETE PAVEMENT.

(15) — CONSTRUCT MEDIAN FLARE PER CITY OF ORANGE STD 112.

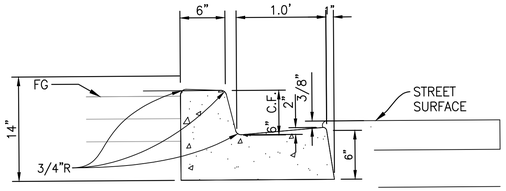
STA 90+82.83 ℄ CANNON STREET
STA 40+00.00 ℄ SERRANO AVENUE
NORTHING: 2,242,358.762
EASTING: 6,092,214.891

CANNON STREET

SERRANO AVENUE

SANTIAGO CANYON ROAD

MATCH LINE – STA 62+50.00
SEE SHEET 3



G/8 — MODIFIED TYPE "A" CURB

Scale: N.T.S.

SCALE: 1"=20'

	NAME	DATE
DRAWN	E. PEREZ	1/26/24
DESIGNED	E. PEREZ	1/26/24
CHECKED	Y. NAKAGAWA	1/26/24

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENTS PLAN
SP–4178 CANNON STREET WIDENING
STREET IMPROVEMENT: PLAN & PROFILE
STA 87+50.00 TO STA 90+82.83
STA 57+79.00 TO STA 62+50.00

APPROVED: _____ DATE ASSISTANT PUBLIC WORKS DIRECTOR/CITY ENGINEER

APPROVED: _____ DATE PUBLIC WORKS DIRECTOR

SCALE: HORIZ. AS NOTED VERT. AS NOTED | F.B._____ PG._____ | SHEET 8 OF 10 SHEETS

SP–4178

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By: Cerlene Sierra on 1/26/2024 8:31 AM

CONSTRUCTION NOTES

(1) CONSTRUCT TYPE "A" CURB AND GUTTER PER CITY OF ORANGE STD 117. (CONSTRUCT 8" CURB FACE UNLESS OTHERWISE NOTED)

(5) CONSTRUCT CONCRETE SIDEWALK PER CITY OF ORANGE STD 118.

(7) CONSTRUCT STAMPED CONCRETE PAVEMENT. PAVING PATTERN AND COLOR TO MATCH ADJACENT EXISTING STAMPED CONCRETE PAVEMENT.

(9) CONSTRUCT ACCESSIBLE PCC CURB RAMP WITH TRUNCATED DOMES PER CITY OF ORANGE STD 121 AND RAMP DETAILS ON SHEET 9.

(10) CONSTRUCT FULL DEPTH AC PAVEMENT OVER SUBGRADE. (PAVEMENT SECTION TO BE RECOMMENDED BY THE GEOTECHNICAL ENGINEER).

DISPOSITION NOTES

[1] PROTECT IN PLACE.

[2] REMOVE EXISTING CURB AND GUTTER.

[3] REMOVE EXISTING SIDEWALK.

[4] REMOVE EXISTING ACCESS RAMP.

[7] REMOVE EXISTING CONCRETE CROSS GUTTER.

[10] REMOVE AND RELOCATE EXISTING STREET SIGN. SEE SIGNING & STRIPING PLANS.

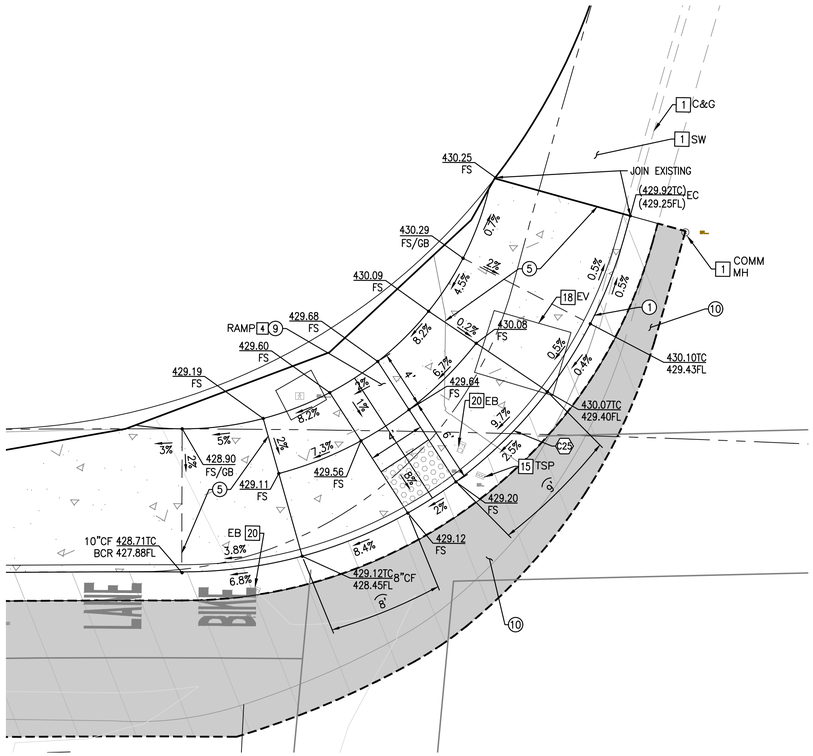
[11] REMOVE AND RELOCATE EXISTING RESIDENTIAL MAILBOX.

[12] REMOVE AND RELOCATE EXISTING FIRE HYDRANT ASSEMBLY AND SERVICE LATERAL PER CITY OF ORANGE STD OWD-102 & 103.

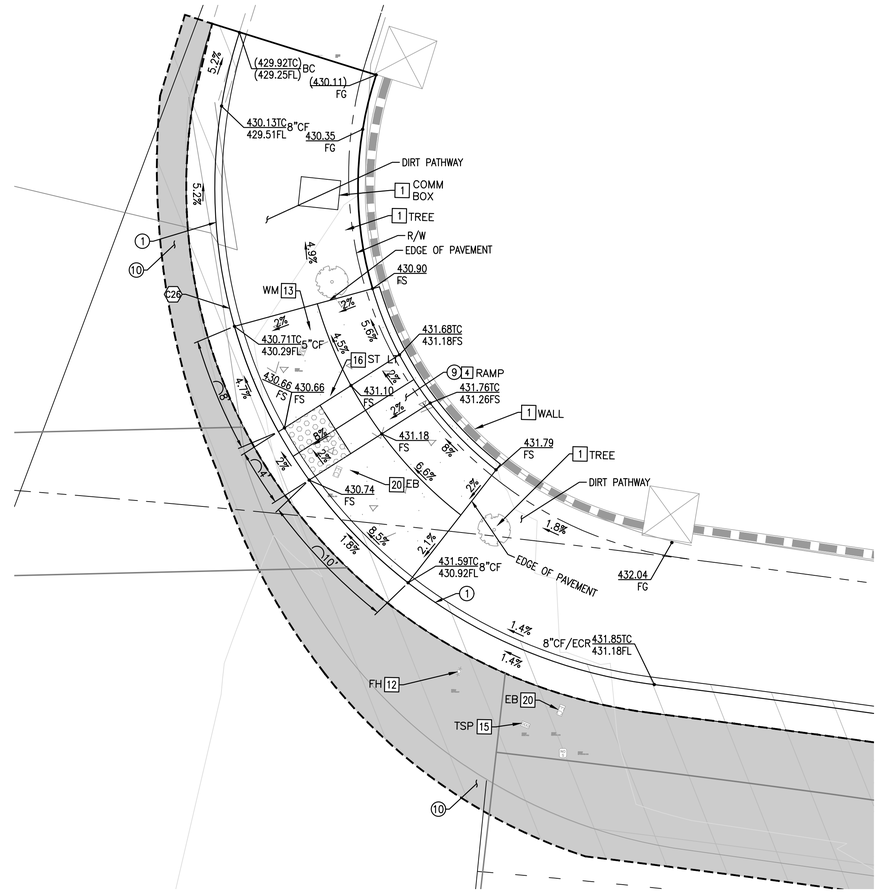
[15] REMOVE EXISTING AND CONSTRUCT NEW TRAFFIC SIGNAL POLE, PULL BOX, AND ASSOCIATED APPURTENANCES. SEE TRAFFIC SIGNAL PLANS.

[18] REMOVE AND RELOCATE EXISTING ELECTRICAL VAULT. ADJUST TO FINAL FINISH SURFACE AS REQUIRED.

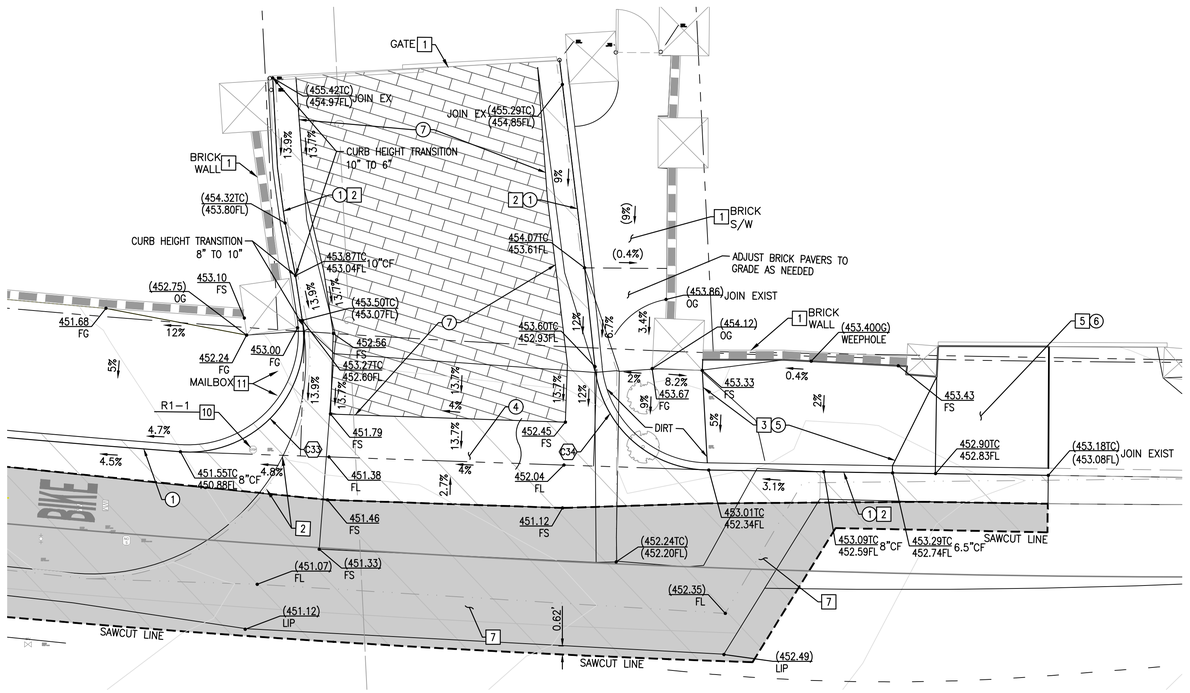
[20] REMOVE AND RELOCATE EXISTING ELECTRICAL BOX. ADJUST TO FINAL FINISH SURFACE AS REQUIRED.



G/9 CURB RAMP DETAIL #1
Scale: 1"=5'



H/9 CURB RAMP DETAIL #2
Scale: 1"=5'



I/9 CARPENTER CIR ACCESS ROAD
Scale: 1"=5'

LEGEND

- REMOVAL AREA
- NEW PCC IMPROVEMENTS
- NEW AC PAVEMENT
- STAMPED CONCRETE

CURB RAMP NOTES

1. ALL RAMPS SHALL BE COORDINATED AND VERIFIED IN THE FIELD WITH CITY INSPECTOR PRIOR TO RAMP CONCRETE POUR.

CURVE/LINE DATA

(X)	R	Δ	T	L
(25)	32.00	N22°12'05.14"W	24.50	41.83
(26)	35.00	N85°38'22.32"E	42.45	61.69
(33)	8.00	N47°42'35.00"E	10.06	14.38
(34)	8.00	N41°54'24.00"E	7.09	11.61

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENTS PLAN
CANNON STREET WIDENING IMPROVEMENTS
RAMP & STREET IMPROVEMENT DETAILS

APPROVED: _____ DATE ASSISTANT PUBLIC WORKS DIRECTOR/CITY ENGINEER

APPROVED: _____ DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	E. PEREZ	1/26/24
DESIGNED	E. PEREZ	1/26/24
CHECKED	Y. NAKAGAWA	1/26/24

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B. _____ PG. _____

SHEET 9 OF 10 SHEETS

SP-4178

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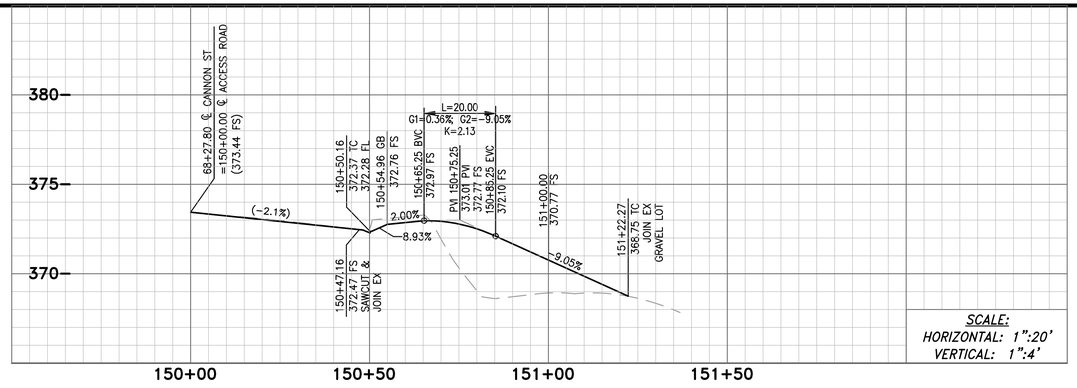
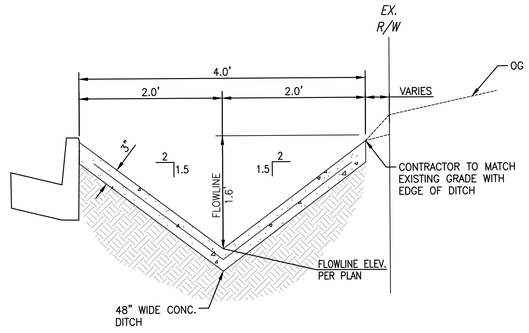
By: Gerilene Sarmiento on 1/26/2024 8:13 AM





M/10 MODIFIED STD. 332 V-DITCH
Scale: 1"=10'

DISPOSITION NOTES

2 — REMOVE EXISTING CURB AND GUTTER.

3 — REMOVE EXISTING SIDEWALK.

14 — REMOVE AND RELOCATE EXISTING WATER VALVE BOX TO FINISHED GRADE PER CITY OF ORANGE WATER STD OWD-101.

17 — REMOVE EXISTING TREE. SEE LANDSCAPE PLANS.

20 — REMOVE AND RELOCATE EXISTING ELECTRICAL BOX. ADJUST TO FINAL FINISH SURFACE AS REQUIRED.

CONSTRUCTION NOTES

1 — CONSTRUCT TYPE "A" CURB AND GUTTER PER CITY OF ORANGE STD 117. (CONSTRUCT 8" CURB FACE UNLESS OTHERWISE NOTED)

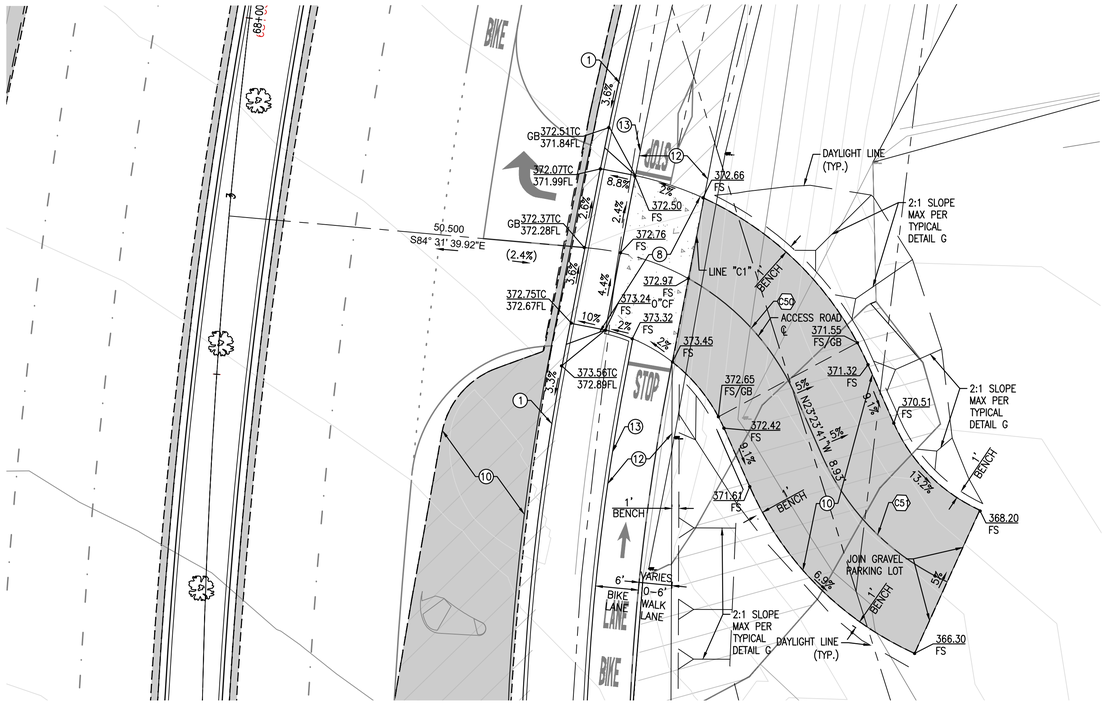
8 — CONSTRUCT COMMERCIAL DRIVEWAY PER CITY OF ORANGE STD 115. SEE DRIVEWAY DETAIL ON SHEET 9.

10 — CONSTRUCT FULL DEPTH AC PAVEMENT OVER SUBGRADE. (PAVEMENT SECTION TO BE RECOMMENDED BY THE GEOTECHNICAL ENGINEER).

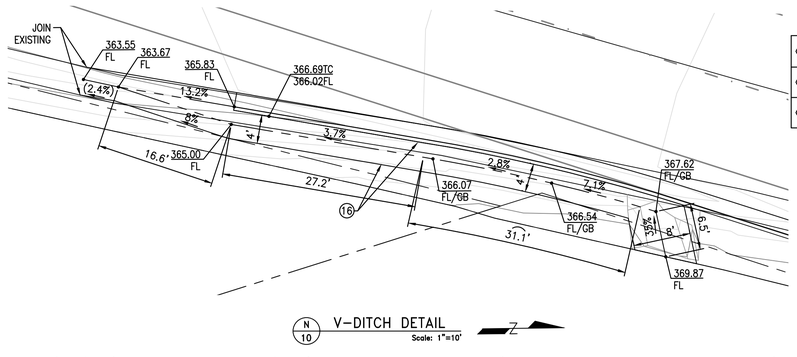
12 — CONSTRUCT 4" THICK AC PAVEMENT BIKE TRAIL.

13 — CONSTRUCT 0" CONCRETE CURB PER MODIFIED CITY OF ORANGE STD 117, TYPE B-1.

16 — CONSTRUCT MODIFIED 48-INCH WIDE CONCRETE V-DITCH. SEE DETAIL ON SHEET 10 & CITY OF ORANGE STD 332.



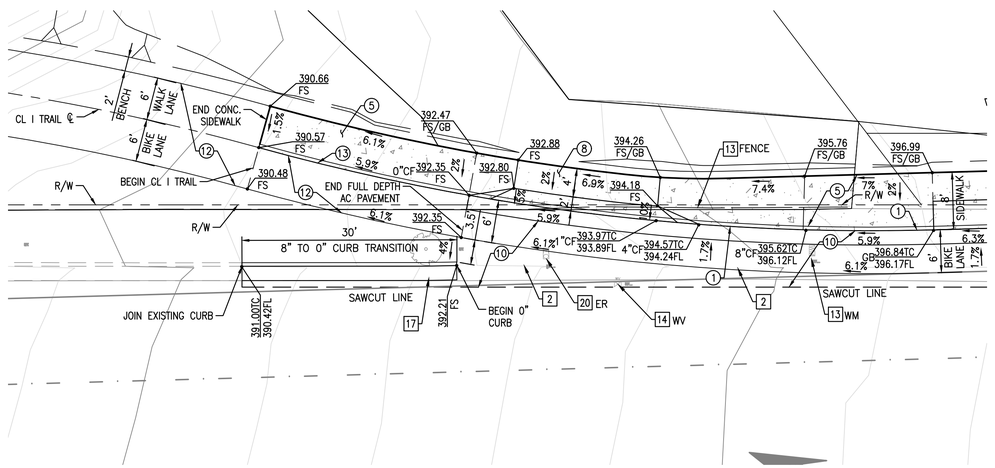
L/10 ACCESS ROAD DETAIL
Scale: 1"=10'



N/10 V-DITCH DETAIL
Scale: 1"=10'

CURVE DATA

X	R	Δ	T	L
C50	35.00	N60°35'32.47"W	11.78	22.72
C51	35.00	N23°23'40.70"W	13.35	25.50



O/10 DRIVEWAY DETAIL
Scale: 1"=5'

LEGEND

- REMOVAL AREA
- NEW PCC IMPROVEMENTS
- NEW AC PAVEMENT
- STAMPED CONCRETE

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENTS PLAN
CANNON STREET WIDENING IMPROVEMENTS
RAMP & STREET IMPROVEMENT DETAILS

APPROVED:	APPROVED:
DATE ASSISTANT PUBLIC WORKS DIRECTOR/CITY ENGINEER	DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	E. PEREZ	1/26/24
DESIGNED	E. PEREZ	1/26/24
CHECKED	Y. NAKAGAWA	1/26/24

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B.____ PG.____

SHEET 10 OF 10 SHEETS

SP-4178

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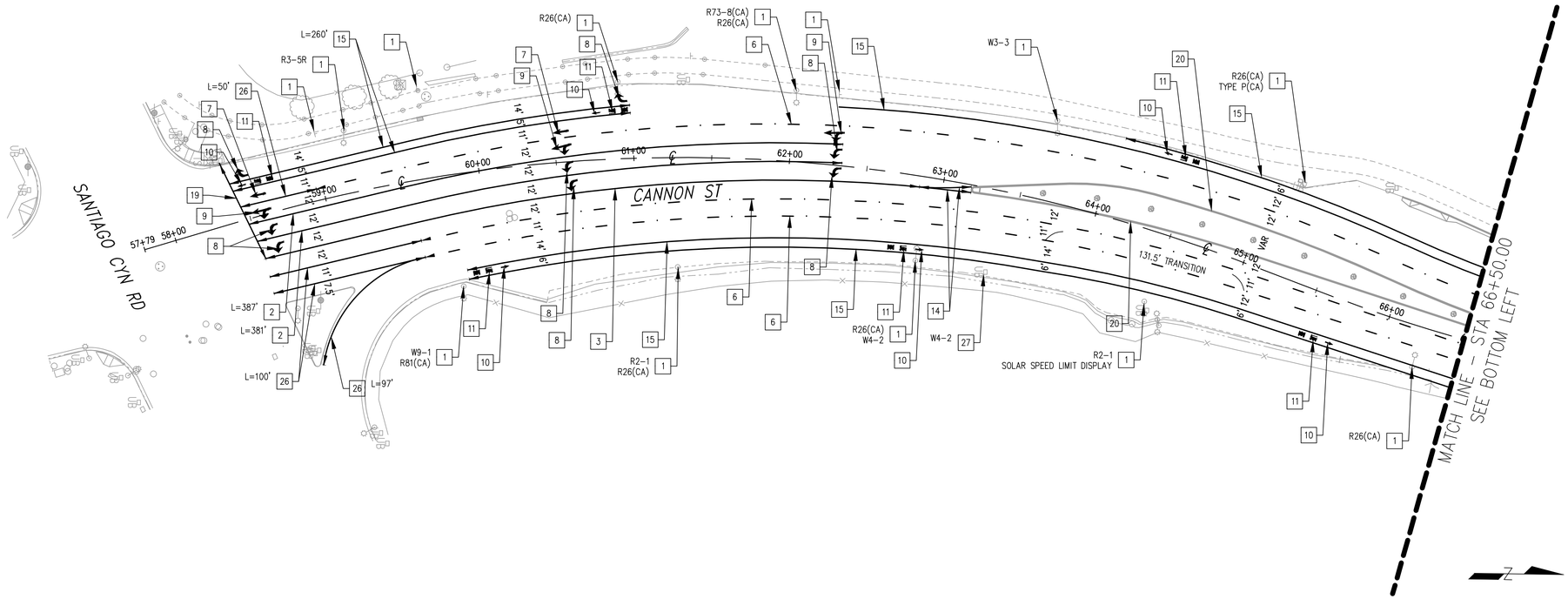
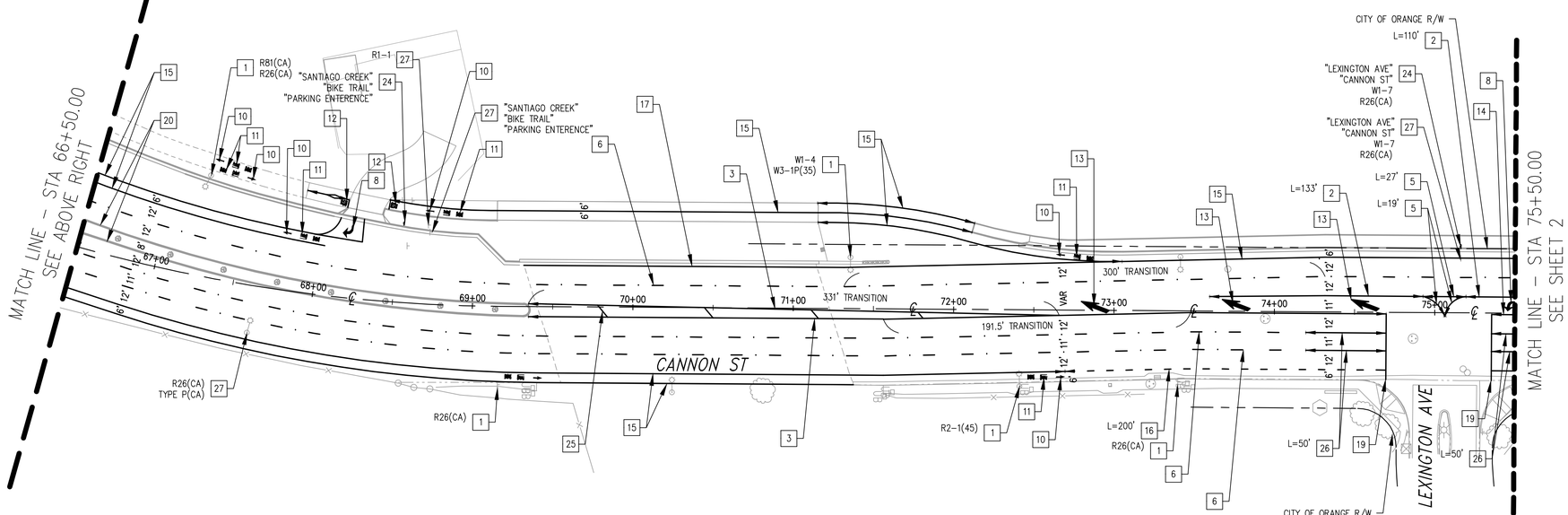
By: Corlene Sarmiento on 1/26/2024 9:32 AM





SIGNAGE AND STRIPING NOTES

1 — PROTECT IN PLACE EXISTING SIGN, TYPE PER PLAN
2 — INSTALL 8" SOLID WHITE CHANNELIZER LINE PER CALTRANS STD PLAN A20D, DETAIL 38
3 — INSTALL NO PASSING ZONES–TWO DIRECTION STRIPING PER CALTRANS STD PLAN A20A, DETAIL 22
5 — INSTALL NO PASSING ZONES–TWO DIRECTION STRIPING PER CALTRANS STD PLAN A20A, DETAIL 29
6 — INSTALL 6" LANE LINE PER CALTRANS STD PLAN A20A, DETAIL 9
7 — INSTALL TYPE I PAVEMENT MARKING PER CALTRANS STD PLAN A24A
8 — INSTALL TYPE IV PAVEMENT MARKING PER CALTRANS STD PLAN A24A, DIRECTION PER PLAN
9 — INSTALL TYPE VII PAVEMENT MARKING PER CALTRANS STD PLAN A24A, DIRECTION PER PLAN
10 — INSTALL BIKE LANE ARROW PAVEMENT MARKING PER CALTRANS STD PLAN A24A
11 — INSTALL "BIKE LANE" PAVEMENT MARKING WORD PER CALTRANS STD PLAN A24D
12 — INSTALL "STOP" PAVEMENT MARKING WORD PER CALTRANS STD PLAN A24D
13 — INSTALL TYPE VI PAVEMENT MARKING PER CALTRANS STD PLAN A24A
14 — INSTALL NO PASSING ZONES–TWO DIRECTION STRIPING PER CALTRANS STD PLAN A20A, DETAIL 21
15 — INSTALL 6" SOLID WHITE PER CALTRANS STD PLAN A20D, DETAIL 39
17 — INSTALL 6" WHITE LINE PER CALTRANS STD PLAN A20B, DETAIL 27B
19 — INSTALL 12" WHITE LIMIT LINE PER CALTRANS STD PLAN A24G
20 — INSTALL YELLOW RETROREFLECTIVE MARKER PER CALTRANS STD PLAN A20B, DETAIL 26A
24 — INSTALL POST AND/OR SIGN PANEL AS SHOWN
25 — INSTALL 12" SOLID YELLOW DIAGONAL LINE AT 45° SPACED 60' O.C.
26 — INSTALL 6" SOLID WHITE LINE PER DETAIL A ON SHEET 1
27 — REMOVE POST AND/OR SIGN PANEL AS SHOWN

*ON STREET LIGHT OR TRAFFIC SIGNAL POLE BY STRAP AND SADDLE METHOD

LEGEND

- BEGIN/END OF TRAFFIC STRIPING DETAIL
- CHANGE OF TRAFFIC STRIPING DETAIL
- STRIPING TRANSITION LENGTH
- PROPOSED SIGN AND POST

DETAIL A

0 40' 80'

PRELIMINARY ENGINEERING

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

SIGN AND STRIPING – CANNON ST WIDENING

REGISTERED PROFESSIONAL ENGINEER — CIVIL — STATE OF CALIFORNIA

APPROVED: _____ DATE _____ CITY ENGINEER

APPROVED: _____ DATE _____ PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	MY	08/15/23
DESIGNED	MY	08/15/23
CHECKED	RY	08/15/23

SCALE: HORIZ. AS NOTED VERT. AS NOTED | F.B._____ PG._____ | SHEET### OF # SHEETS | 22-00092

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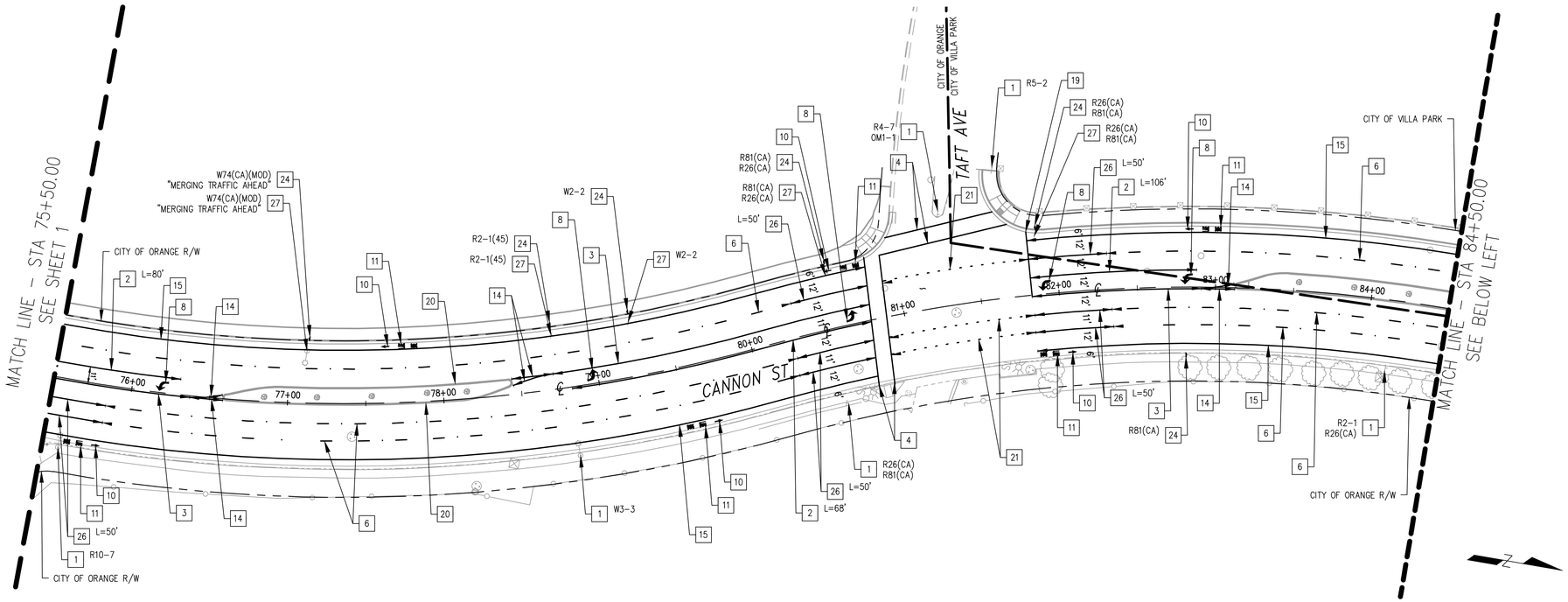
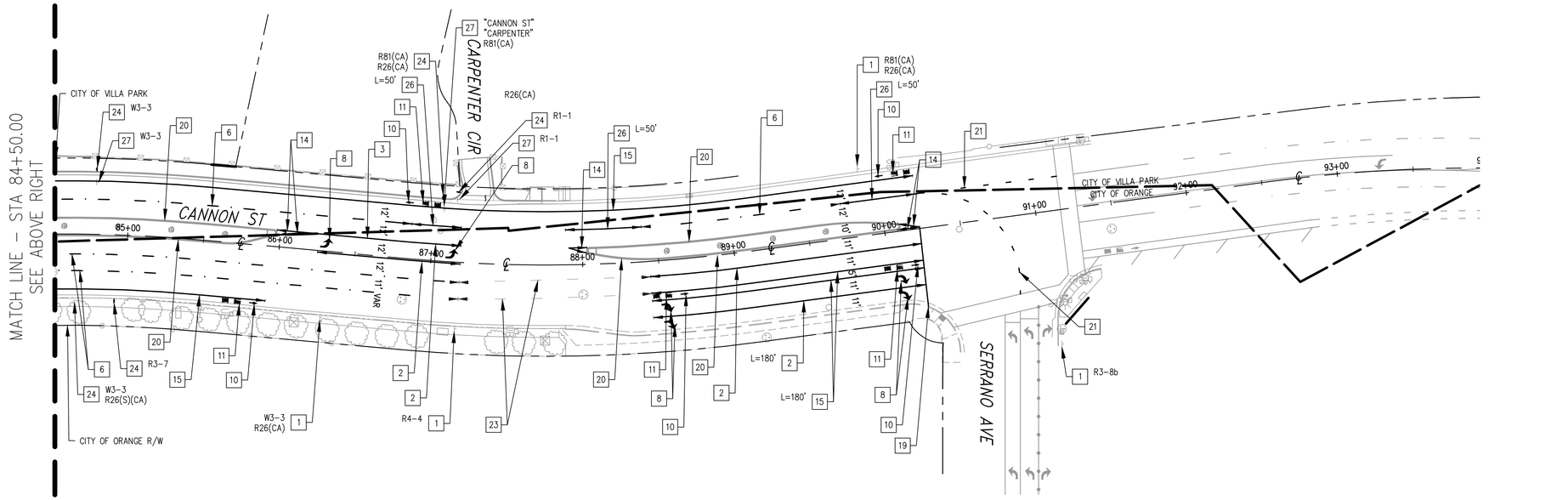
By: Rachel Yozawa-Taylor on 1/26/2024 1:53 PM





SIGNAGE AND STRIPING NOTES

1 — PROTECT IN PLACE EXISTING SIGN, TYPE PER PLAN
2 — INSTALL 8" SOLID WHITE CHANNELIZER LINE PER CALTRANS STD PLAN A20D, DETAIL 38
3 — INSTALL NO PASSING ZONES–TWO DIRECTION STRIPING PER CALTRANS STD PLAN A20A, DETAIL 22
4 — INSTALL 12" SOLID WHITE BASIC CROSSWALK PER CALTRANS STD PLAN A24F
5 — INSTALL NO PASSING ZONES–TWO DIRECTION STRIPING PER CALTRANS STD PLAN A20A, DETAIL 29
6 — INSTALL 6" LANE LINE PER CALTRANS STD PLAN A20A, DETAIL 9
8 — INSTALL TYPE IV PAVEMENT MARKING PER CALTRANS STD PLAN A24A, DIRECTION PER PLAN
10 — INSTALL BIKE LANE ARROW PAVEMENT MARKING PER CALTRANS STD PLAN A24A
11 — INSTALL "BIKE LANE" PAVEMENT MARKING WORD PER CALTRANS STD PLAN A24D
14 — INSTALL NO PASSING ZONES–TWO DIRECTION STRIPING PER CALTRANS STD PLAN A20A, DETAIL 21
15 — INSTALL 6" SOLID WHITE PER CALTRANS STD PLAN A20D, DETAIL 39
19 — INSTALL 12" WHITE LIMIT LINE PER CALTRANS STD PLAN A24G
20 — INSTALL YELLOW RETROREFLECTIVE MARKER PER CALTRANS STD PLAN A20B, DETAIL 26A
21 — INSTALL RIGHT EDGE LINE EXTENSION PER CALTRANS STD PLAN A20B, DETAIL 27C
22 — INSTALL LANE LINE EXTENSION PER CALTRANS STD PLAN A20D, DETAIL 40
23 — INSTALL LANE LINE EXTENSION PER CALTRANS STD PLAN A20A, DETAIL 8
24 — INSTALL POST AND/OR SIGN PANEL AS SHOWN
26 — INSTALL 6" WHITE LINE PER DETAIL A ON SHEET 1
27 — REMOVE POST AND/OR SIGN PANEL AS SHOWN

*ON STREET LIGHT OR TRAFFIC SIGNAL POLE BY STRAP AND SADDLE METHOD

LEGEND

- BEGIN/END OF TRAFFIC STRIPING DETAIL
- CHANGE OF TRAFFIC STRIPING DETAIL
- STRIPING TRANSITION LENGTH
- PROPOSED SIGN AND POST

N

0 40' 80'

PRELIMINARY ENGINEERING

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

SIGN AND STRIPING – CANNON ST WIDENING

REGISTERED PROFESSIONAL ENGINEER — CIVIL — STATE OF CALIFORNIA

APPROVED: _____ DATE _____ CITY ENGINEER

APPROVED: _____ DATE _____ PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	MY	08/15/23
DESIGNED	MY	08/15/23
CHECKED	RY	08/15/23

SCALE: HORIZ. AS NOTED VERT. AS NOTED | F.B._____ PG._____ | SHEET### OF # SHEETS | 22-00092

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By: Mike You on 1/26/2024 10:07 AM

POLE SCHEDULE

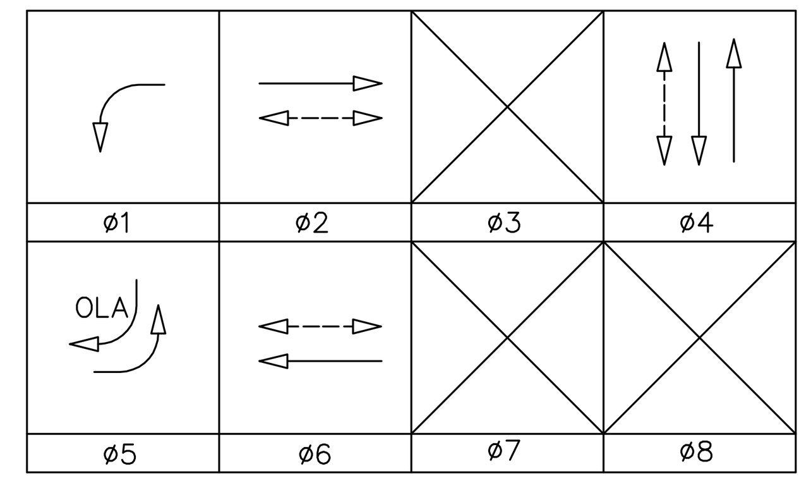
No.	STANDARD TYPE	STANDARD HEIGHT	MAST ARM LENGTH SIGNAL	MAST ARM LENGTH LUMINAIRE	LUMINAIRE	SIGNAL MOUNTINGS POLE	SIGNAL MOUNTINGS M.A.	SIGNAL MOUNTINGS PED	PPB/EPB ● TYPE	PPB/EPB ● PHASE	SIGNAL HEAD INDICATIONS	▲ PED HEAD INDICATIONS	POLE LOC. "B"	POLE LOC. "E"	POLE LOC. "C"	REMARKS
1	26–4–70(RE)	30'	40'(RE)	15'(RE)	135 LED(R)	SV–2–TB(RE)	2–MAS(RE)	SP–1–CS(RE)	–	–	3–3/12"(RE) 1–3A/12"(RE)	LED(RE)	EXISTING			2 3 5 6 10 14 15
	29–5–100(N)	**30'(N)**	**50'(N)**	**15'(N)**	**135 LED(R)**	**SV–2–TB(N)**	**2–MAS(N) 1–MAT(N)**	**SP–1–T(N)**	**–**	**–**	**4–3/12"(N) 1–3A/12"(N)**	**LED(N)**	**–**	**SEE PLAN**	**3.5'**	4 5 7 11 12 13 14
2	1A	7'	–	–	–	–	–	–	**B(N)**	**ø2**	–	–	EXISTING			8 9
3	PPB POST	3'–10"	–	–	–	–	–	–	**B(N)**	**ø2**	–	–	EXISTING			8 9
4	PPB POST	3'–10"	–	–	–	–	–	–	**B(N)**	**ø2**	–	–	EXISTING			8 9
5	1A	7'	–	–	–	–	–	–	**B(N)/B(N)**	**ø2/ø4**	–	–	EXISTING			8 9
6	17–2–70	30'	20'	12'	70 LED	SV–2–TB SV–1–T	MAS	SP–2–CS	**B(N)**	**ø4**	1–5A/12"(DETAIL "A") 2–3/12",1–3A/12"	LED/2	EXISTING			8 9
7	26–4–100(RE)	30'	35'(RE)	15'(RE)	135 LED(R)	SV–1–T(RE)	2–MAS(RE)	SP–1–CS(RE)	B(RE)	ø4	1–3A/12"(RE) 2–3/12"(RE)	LED(RE)	EXISTING			2 3 5 6 8 10 15
	26–4–100(N)	**30'(N)**	**40'(N)**	**15'(N)**	**135 LED(R)**	**SV–1–T(N)**	**2–MAS(N)**	**SP–1–T(N)**	**B(N)**	**ø4**	**1–3A/12"(N) 2–3/12"(N)**	**LED(N)**	**–**	**4'**	**3'**	4 5 7 9 11 12 13
8	1A(RE)	7'	–	–	–	–	–	–	B(RE)	ø4	–	–	EXISTING			2 8
	1A(N)	**7'(N)**	**–**	**–**	**–**	**–**	**–**	**–**	**B(N)/B(N)**	**ø4/ø6**	**–**	**–**	**–**	**10.5'**	**11'**	9 12
9	1A(RE)	10'(RE)	–	–	–	TV–2–T(RE)	–	SP–1–CS(RE)	B(RE)	ø6	1–5A/12"(DETAIL "A")(RE) 1–3/12"(RE)	LED(RE)	EXISTING			2 3 6 8
	1A(N)	**10'(N)**	**–**	**–**	**–**	**TV–2–T(N)**	**–**	**SP–1–T(N)**	**–**	**–**	**1–5A/12"(DETAIL "A")(N) 1–3/12"(N)**	**LED(N)**	**0'**	**–**	**7.5'**	4 7 12
10	17–1–70(RE)	30'(RE)	20'(RE)	12'(RE)	70 LED(R)	SV–1–T(RE)	MAS(RE)	–	B(RE)	ø6	2–3/12"(RE)	–	EXISTING			2 5 6 8 10 15
	17–3–100(N)	**30'(N)**	**20'(N)**	**12'(N)**	**70 LED(R)**	**SV–1–T(N)**	**MAT(N)**	**–**	**–**	**–**	**2–3/12"(N)**	**–**	**–**	**13'**	**3'**	5 7 11 12
11	1A(RE)	10'(RE)	–	–	–	TV–2–T(RE)	–	SP–1–CS(RE)	–	–	1–3A/12"(RE) 1–3/12"(RE)	LED(RE)	EXISTING			2 3 6 15
	1A(N)	**10'(N)**	**–**	**–**	**–**	**TV–2–T(N)**	**–**	**SP–1–T(N)**	**B(N)**	**ø6**	**1–3A/12"(N) 1–3/12"(N)**	**LED(N)**	**5.5'**	**–**	**3'**	4 7 9 12

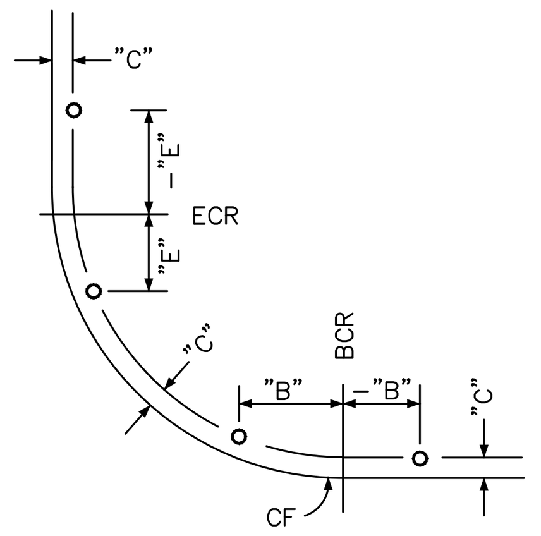
ALL EQUIPMENT IS EXISTING EXCEPT WHERE SHOWN OTHERWISE (R) = RELOCATE, (RE) = REMOVE, (N) = NEW

▲ PED HEADS SHALL BE LED COUNT–DOWN TYPE. ● ALL PPB'S AND EPB'S SHALL BE 2" PUSH BUTTON.

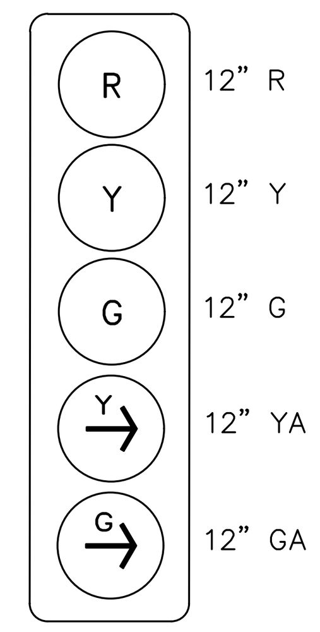
1. CONTRACTOR RESPONSIBLE FOR DISPOSAL OF SIGNAL GEAR.
2. REMOVE POLE FOUNDATIONS COMPLETELY.

EXISTING PHASE DIAGRAM





POLE LOCATION DETAIL
NO SCALE



DETAIL "A"
N.T.S

ILLUMINATED STREET NAME SIGNS

POLE NO.	SIZE	LEGEND
1	72"	Taft
* 6	72"	Cannon
7	72"	Taft
10	72"	Cannon

1. ALL ISNS AND MOUNTING HARDWARE SHALL BE NEW.
2. INSTALL SINGLE FACE PANEL.
3. SIGNS SHALL HAVE WHITE LETTERS ON BLUE BACKGROUND.

* EXISTING ISNS TO REMAIN.

CONDUCTOR SCHEDULE

AWG, SIZE, WIRE OR CABLE TYPE	STD	PHASES	1	2	3	4	5	6	7	8	9	10	11	12
			CONDUIT SIZE AND RUN NUMBER											
12 CSC SIGNAL	1	ø2, ø4, ø5, ø2P												1/–
	2	ø2EPB								–/1				–/1
	3	ø2PPB								–/1				–/1
	4	ø2PPB						–/1		–/1				–/1
	5	ø2EPB, ø4EPB						–/2		–/2				–/2
	6	ø1, ø2, ø4, OLA, ø4P, ø4PPB					2/1	2/1		2/1				2/1
	7	ø1, ø6, ø6P, ø4PPB		1/1		1/1								1/1
	8	ø4EPB, ø6PPB		–/2		–/2								–/2
	9	ø4, OLA, ø4P	1/–	1/–		1/–								1/–
	10	ø4			1/–	1/–								1/–
3 CSC PPB	11	ø5, ø6, ø6P, ø6PPB				1/1								1/1
		TOTAL CABLES	1/–	2/3	1/–	4/4	2/1	2/4		2/6				7/10
#6		SERVICE							3(E)				3(E)	
#10		LUMINAIRE		2	2	2	2(E)	2(E)		2(E)				2(E)
		SIGNAL COMMON	1	1	1	1	1(E)	1(E)		1(E)				1(E)
#12		ISNS		2	2	2	2(E)	2(E)		2(E)				2(E)
TYPE B DLC		ø1 DETECTOR				1								1
		ø2 DETECTOR					5	5		5				5
		ø4 DETECTOR	2	2		2								2
		ø5 DETECTOR					1	1		1				1
		ø6 DETECTOR				1								3
		TOTAL	2	2		4	6	6		6				12
6 SMFO											1(E)	1(E)		
12 SMFO														1(E)
ANTENNA CABLE														1(E)
PERCENT FILL			13.2%	14.7%	12.2%	25.1%	16.3%	19.9.%	7.3%	22.3%	23.3%	23.3%	7.3%	32.6% 23.9%
CONDUIT SIZE (INCHES)			2"	3"	2"	3"	3"(E)	3"(E)	2"(E)	3"(E)	1"(E)	3"(E)	2"(E)	2–3"(E)

ALL CONDUIT & CONDUCTORS ARE NEW EXCEPT WHERE SHOWN OTHERWISE, (E) = EXISTING

ONLY
NO U TURN

R61-7(CA)(MOD)

TRAFFIC SIGNAL GENERAL NOTES:

1. ALL WORK AND MATERIAL SHALL CONFORM TO THE STATE OF CALIFORNIA PLANS AND SPECIFICATIONS DATED 2023 AND THE SPECIAL PROVISIONS FOR THIS PROJECT.
2. ALL SIGNAL STANDARDS ARE TO BE INSTALLED 3'–0" (MINIMUM) FROM STANDARD CENTERLINE TO CURB FACE (SEE POLE LOCATION DETAIL).
3. ALL PEDESTRIAN PUSH BUTTON SIGNS (NEW AND EXISTING) SHALL BE INSTALLED WITH (2) ONE–WAY SLOT (TAMPER–PROOF) SCREWS AND (2) STANDARD SCREWS. INSTALL LIKE SCREWS DIAGONALLY.
4. FINAL POLE, PULL BOX, CONDUIT AND DETECTOR LOCATIONS SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION.
5. CONTRACTOR SHALL POT HOLE FOUNDATION FOR CLEARANCE AND SHALL NOTIFY CITY TRAFFIC ENGINEER OF ANY CONFLICT PRIOR TO ORDERING POLE.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING AND TEMPORARY ELECTRICAL SYSTEMS INCLUDING WIRING, POWER AND POLES WITH WEIGHTS AND PLATES, AS NECESSARY, TO MAINTAIN OPERATION OF SIGNAL OPERATION DURING CONSTRUCTION. ALL COSTS FOR MAINTAINING EXISTING AND ALL TEMPORARY ELECTRICAL SYSTEMS ARE CONSIDERED INCLUDED IN VARIOUS ITEMS OF WORK AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
7. ALL PULL BOXES SHALL BE CHRISTY PRODUCTS OR EQUAL, ALL PULL BOXES SHALL BE #6 UNLESS NOTED OTHERWISE.
8. ALL PULL BOXES INSTALLED OUT OF SIDEWALK SHALL BE ENCASED IN CONCRETE.
9. ALL PULLBOXES NEW AND EXISTING IN PARKWAY AREAS SHALL HAVE A 1' CONCRETE CAP AROUND EACH BOX. ALL PULL BOXES SHALL BE GROUTED AND ALL CONDUITS SHALL BE DUCT SEALED.
10. (W.C.) WIRELESS INTERCONNECT ANTENNA.

TRAFFIC SIGNAL CONSTRUCTION NOTES:

1. PROTECT IN PLACE EXISTING 5 PHASE PROGRAMMABLE FULLY ACTUATED CONTROLLER IN EXISTING TYPE P CONTROLLER CABINET WITH TYPE II SERVICE AND BATTERY BACKUP SYSTEM.
2. REMOVE EXISTING SIGNAL STANDARDS, EQUIPMENT, ADJACENT CONDUIT, AND TRAFFIC PULL BOXES. REMOVE FOUNDATION COMPLETE.
3. REMOVE EXISTING PEDESTRIAN SIGNAL HEAD AND MOUNTING.
4. FURNISH AND INSTALL NEW LED COUNTDOWN PEDESTRIAN SIGNAL HEAD AND MOUNTING.
5. RELOCATE EXISTING LED LUMINAIRE ON NEW LUMINAIRE MAST ARM (SEE POLE SCHEDULE).
6. REMOVE EXISTING VEHICLE SIGNAL HEAD AND MOUNTING (SEE POLE SCHEDULE).
7. INSTALL NEW 12-INCH VEHICLE HEAD AND MOUNTING.
8. REMOVE EXISTING PEDESTRIAN/EQUESTRIAN PUSH BUTTON.
9. FURNISH AND INSTALL TYPE B PEDESTRIAN/EQUESTRIAN PUSH BUTTON PER CALTRANS STANDARD PLAN ES-5C.

TRAFFIC SIGNAL CONSTRUCTION NOTES: (CONT'D)

10. REMOVE EXISTING IISNS COMPLETE.
11. FURNISH AND INSTALL DOUBLE FACE NU-ART NAIM-72 EDGE LIT LED-S-VPM ISNS. PANELS SHALL BE DOUBLE FACE BLUE/WHITE.
12. FURNISH AND INSTALL NEW POLE STANDARD AND EQUIPMENT AS SHOWN.
13. FURNISH AND INSTALL NEW SIGN(S) AND MAST ARM MOUNTING HARDWARE AS SHOWN ON PLANS PER CALTRANS STANDARD PLAN ES-7N (DETAIL U).
14. RELOCATE EXISTING WIRELESS INTERCONNECT ANTENNA ON NEW POLE.
15. REMOVE EXISTING SIGN(S) AND MAST ARM MOUNTING HARDWARE AS SHOWN ON PLANS.

TRAFFIC SIGNAL CONSTRUCTION NOTES: (CONT'D)

16. INSTALL TYPE E INDUCTIVE VEHICLE DETECTOR LOOPS PER CALTRANS STANDARD PLAN ES–5B.
17. INSTALL TYPE D INDUCTIVE VEHICLE DETECTOR LOOPS PER CALTRANS STANDARD PLAN ES–5B.

- AB ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS.
- CB INSTALL CONDUIT INTO EXISTING PULL BOX.
- RC EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR.
- SC SPLICE NEW TO EXISTING CONDUCTORS.

REGISTERED PROFESSIONAL ENGINEER RAGHU KOMMOJI No. 76481 Exp. Date: 12/31/2024 CIVIL STATE OF CALIFORNIA

FOR ENGINEER'S USE

	NAME	DATE
DRAWN	SH	01/26/24
DESIGNED	SH	01/26/24
CHECKED	RK	01/26/24

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS
SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

TRAFFIC SIGNAL MODIFICATION PLAN
CANNON STREET AT TAFT AVENUE

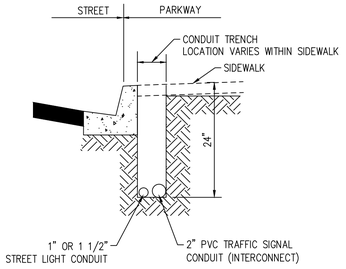
APPROVED: ____ DATE ____ CITY ENGINEER
APPROVED: ____ DATE ____ PUBLIC WORKS DIRECTOR

SCALE: HORIZ. AS NOTED VERT. AS NOTED | F.B.____ PG.____ | SHEET XX OF XX SHEETS

22–00092

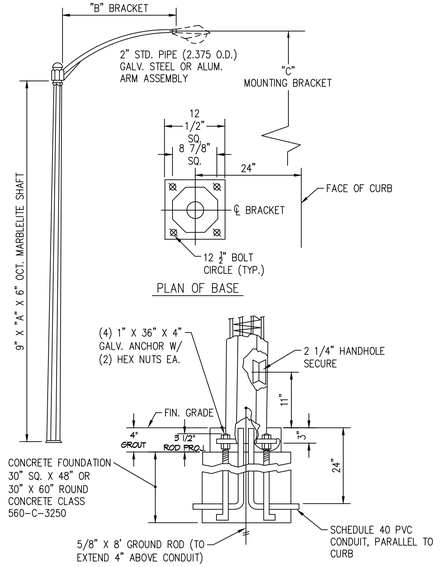
GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS (2023 EDITION), THE CITY OF ORANGE STANDARD PLANS AND SPECIFICATIONS (2016 EDITION), AND STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREENBOOK) (2021 EDITION).
2. ANY CONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE THEMSELVES WITH THIS JOB AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM THEIR OPERATIONS, WHETHER OR NOT SUCH FACILITIES ARE SHOWN ON THESE PLANS.
3. CONTRACTOR SHALL CALL UNDERGROUND ALERT SERVICE 48 HOURS PRIOR TO CONSTRUCTION FOR UNDERGROUND LOCATION, PHONE 1-800-422-4133.
4. ALL WORK RELATED TO ELECTRIC SERVICE OR EXISTING STREET LIGHTING CIRCUITS SHALL BE PERFORMED IN CONFORMANCE WITH THE REQUIREMENTS OF SOUTHERN CALIFORNIA EDISON COMPANY.
5. BEFORE STARTING WORK, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE CITY AND "MEN AT WORK" SIGNS, LANE DELINEATORS MUST BE POSTED BEFORE ANY WORK IS PERFORMED.
6. ONE AND ONE-HALF INCH (1 1/2") SCHEDULE 40 PVC CONDUIT OR RIGID CONDUIT SHALL BE USED AND PLACEMENT SHALL BE WITHIN 6" OF BACK OF CURB, UNLESS OTHERWISE SHOWN, WITH 24" OF COVER. ALL CONDUCTORS SHALL BE TWO NO. 12 AWG AND ONE NO. 8 THW FOR STREET LIGHTING, UNLESS OTHERWISE SHOWN. ALL CONDUIT FROM FUSEKIT TO LUMINAIRE SHALL BE NO. 10.
7. ALL CONDUCTORS SHALL BE TWO (2) AWG NO. 6 THW FOR STREET LIGHTING, UNLESS OTHERWISE SHOWN.
8. ALL PULL BOXES SHALL BE CHRISTY CONCRETE PRODUCTS, (#3½ OR #5 STATE APPROVED), PLACED ON A BED OF 6" CRUSHED ROCK WITH LID INSCRIBED "STREET LIGHTING". ALL PULL BOXES SHALL BE GROUTED AND ALL CONDUITS SHALL BE DUCT SEALED.
9. GROUNDING SHALL BE ACCOMPLISHED USING COPPERWELD GROUND ROD 5/8" X 8' FOR EACH NEW ELECTROLIER. FOR EXISTING ELECTROLIERS, A CONTINUOUS GROUND SHALL BE USED WITH A COPPERWELD GROUND ROD IN A PULL BOX AT EACH END OF THE CIRCUIT.
10. ALL SPLICES SHALL BE WATERPROOF AND IN ACCORDANCE WITH CALTRANS STANDARD SPECIFICATIONS OR AS APPROVED BY THE TRAFFIC ENGINEER.
11. ALL FUSING SHALL BE BUSSMAN HEX/HEB OR APPROVED EQUAL. IN-LINE FUSE HOLDER SHALL BE INSTALLED IN EACH ELECTROLIER. FUSE SIZE SHALL BE 5 TIMES THE AMPERES OF LUMINAIRE. THERE SHALL BE A MINIMUM OF 18" OF SLACK IN EACH CONDUCTOR.
12. TWELVE (12) INCHES OF #6 THX COPPER WIRE SHALL BE INSTALLED ON THE SOURCE SIDE OF EACH FUSED SPLICE CONNECTOR AND EACH NEUTRAL LEG FOR DIRECT COUPLING BY SOUTHERN CALIFORNIA EDISON PERSONNEL TO THEIR SERVICE CONDUCTORS. SPLICES SHALL BE INSTALLED TO PROVIDE A WATER TIGHT JOINT.
13. CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE SOUTHERN CALIFORNIA EDISON INSPECTOR FOR LOCATION OF SERVICE RISER PRIOR TO BACKFILLING OF EDISON TRENCH CONTAINING 3' SWEEP (FROM PULL BOX TO SERVICE POINT).
14. AT COMPLETION OF JOB, CONTRACTOR SHALL SUBMIT TO THE CITY TRAFFIC DIVISION AN UPDATED MYLAR (3 MIL THICK) MATTE FINISH AND DIGITAL COPY OF PLANS. PLANS SHALL SHOW, WITH DIMENSIONS, ALL CONDUIT LOCATIONS AND ANY CHANGES FROM ORIGINAL DRAWING. SHEET SIZE SHALL BE 24" X 36".
15. ELECTROLIER SHALL BE AMERON 1C1-SERIES WITH VERDE GREEN AND ANTI GRAFFITI COATING AND ANCHOR BOLTS.
16. ALL LUMINAIRE FIXTURES SHALL BE LEOTEK LED GREENCOBRA HEAD WITH RIPLEY LONGLIFE II PHOTOCELL OR APPROVED EQUAL.
17. THE CITY OF ORANGE WILL AUTHORIZE THE SERVING UTILITY TO INSTALL THE NECESSARY SIGNAL AND/OR LIGHTING SERVICE. ALL INSTALLATION CHARGES WILL BE PAID BY CONTRACTOR AS PART OF THIS JOB FOR EACH LOCATION.
18. ALL PULL BOXES IN PARKWAY OR DIRT AREAS SHALL HAVE A 1' CONCRETE CAP AROUND EACH BOX. ALL CONDUITS SHALL HAVE DUCT SEAL.



TRENCH DETAIL

DETAIL "A"



STREET LIGHT DETAIL

DETAIL "B"

NOTE: VERIFY AND MAINTAIN 18" MINIMUM CLEARANCE BETWEEN CURB FACE AND BASE OF STREET LIGHT POLE. NOTIFY ENGINEER OF ANY DISCREPANCY PRIOR TO INSTALLATION

CONSTRUCTION NOTES

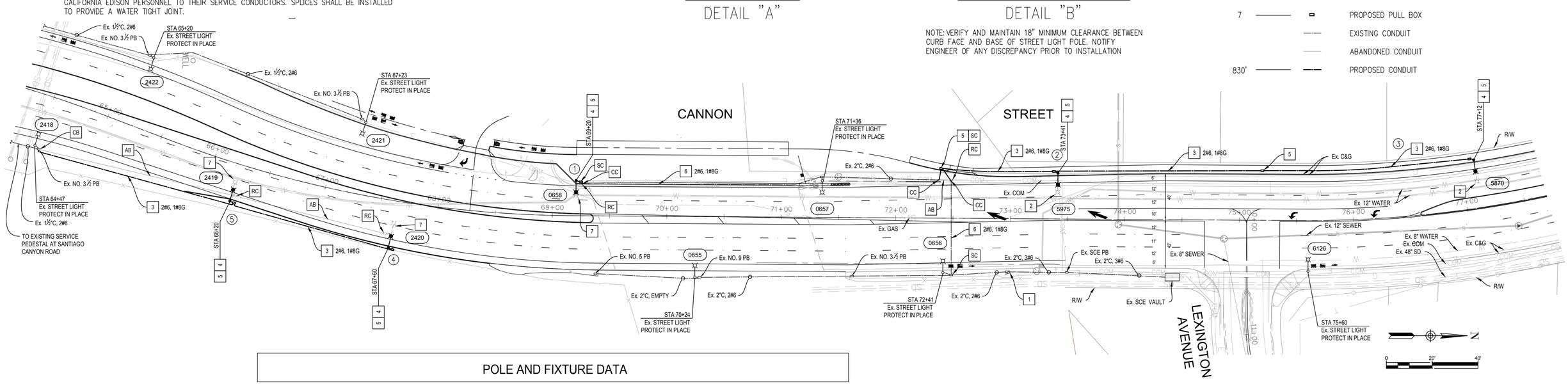
1. EXISTING SINGLE PHASE PEDESTAL USP-100 OR-1A-SS STAINLESS STEEL.
2. CONTRACTOR TO REMOVE POLE AND FOUNDATION COMPLETE. CONTRACTOR TO COORDINATE WITH SOUTHERN CALIFORNIA EDISON TO REMOVE CONDUIT AND CONDUCTORS. EXISTING FIXTURE TO BE SALVAGED AND INSTALLED ON NEW POLE.
3. FURNISH AND INSTALL 1.5" PVC CONDUIT WITH CONDUCTORS AS INDICATED. INSTALLATION SHALL BE BY BORING AND JACKING, UNLESS OTHERWISE APPROVED BY THE ENGINEER (24" MINIMUM DEPTH UNDER PARKWAY, 30" MINIMUM DEPTH UNDER STREET SECTION. SEE DETAIL "A".
4. FURNISH AND INSTALL STREET LIGHT POLE AND SALVAGED LED FIXTURE. CONSTRUCT CONCRETE FOUNDATION (30" SQUARE X 48" DEEP OR 30" ROUND BY 60" DEEP, CONCRETE CLASS 560-C-3250). SEE DETAIL "B".
5. FURNISH AN INSTALL NO. 5 PULL BOX WITH LOCK DOWN "STREET LIGHT" LID.
6. EXISTING 2"C, REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED.
7. CONTRACTOR TO REMOVE POLE FOUNDATION COMPLETE. EXISTING FIXTURE TO BE SALVAGED AND INSTALLED ON NEW POLE.

- AB: ABANDON, IF APPLIED TO CONDUIT, REMOVE CONDUCTORS.
- CB: INSTALL CONDUIT INTO EXISTING PULL BOX.
- CC: CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED.
- RC: EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR.
- SC: SPLICE NEW TO EXISTING CONDUCTORS.

QUANTITIES

LEGEND

	EXISTING STREET LIGHT
5	REMOVED STREET LIGHT
5	PROPOSED STREET LIGHT
	EXISTING PULL BOX
4	REMOVED PULL BOX
7	PROPOSED PULL BOX
	EXISTING CONDUIT
	ABANDONED CONDUIT
830'	PROPOSED CONDUIT



POLE AND FIXTURE DATA

NO.	MFG.	POLE TYPE	MAST ARM	LOCATION**	LUM. FIXTURE	TYPE /WATTS	VOLTS	RATE*
①	AMERON	1C128	8'	STA 69+20	EXISTING LEOTEK	LED/101W	240	LS-3
②	AMERON	1C128	8'	STA 73+41	EXISTING LEOTEK	LED/39W	240	LS-3
③	AMERON	1C128	8'	STA 77+12	EXISTING LEOTEK	LED/39W	240	LS-3
④	AMERON	1C128	8'	STA 67+60	EXISTING LEOTEK	LED/101W	240	LS-3
⑤	AMERON	1C128	8'	STA 66+20	EXISTING LEOTEK	LED/101W	240	LS-3

* LS-1 LEGACY STREET LIGHTING FLAT RATE
LS-2 SAFETY LIGHTING
LS-3 STREET LIGHTING

** POLE LOCATIONS ARE APPROXIMATE. FINAL LOCATION SHALL BE VERIFIED IN THE FIELD AND APPROVED BY THE ENGINEER

REGISTERED PROFESSIONAL ENGINEER
RAGHU KOMMIDI
No. 76481
Exp. Date 12/31/2024
CIVIL
STATE OF CALIFORNIA

FOR ENGINEER'S USE

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS
SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK
STREET LIGHTING PLAN

APPROVED:	APPROVED:
DATE CITY ENGINEER	DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	B. YAU	1/25/24
DESIGNED	B. YAU	1/25/24
CHECKED	R. KOMMIDI	1/25/24

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B.____ PG.____ SHEET OF SHEETS

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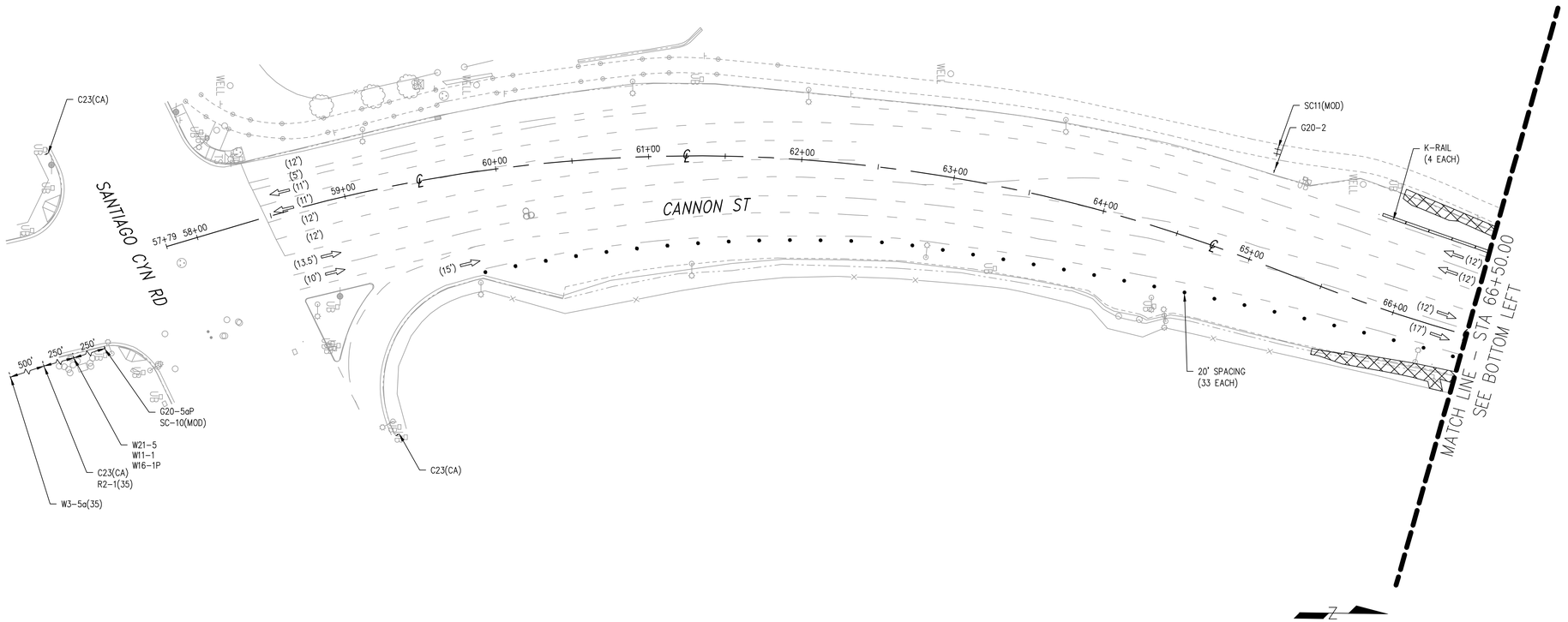

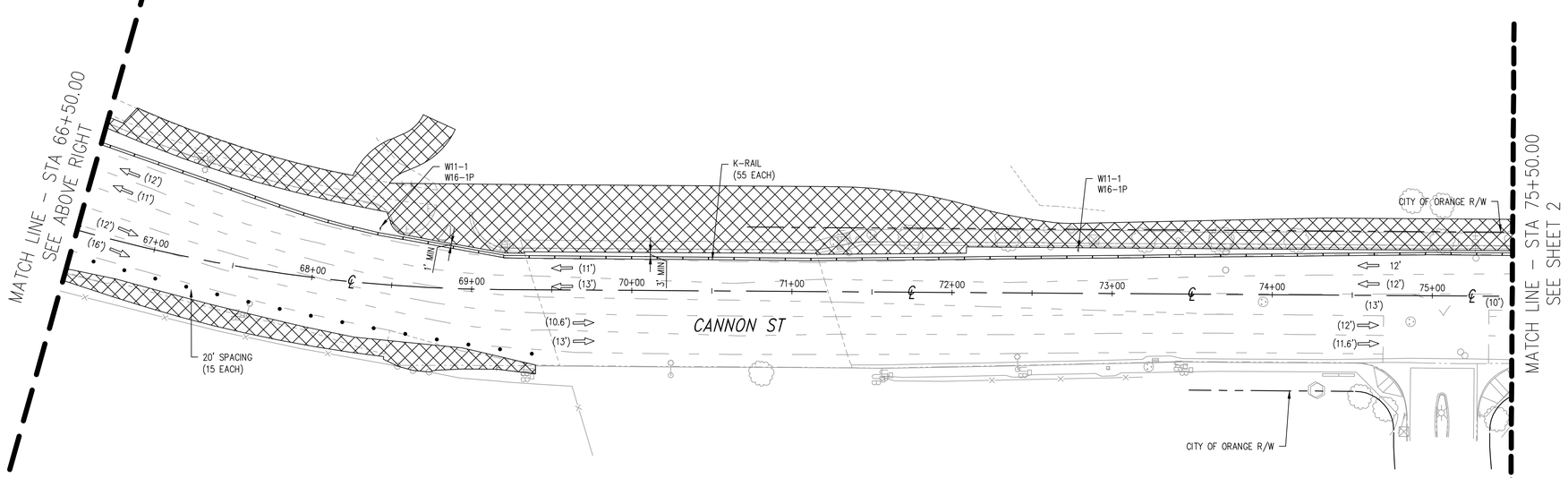

LEGEND

- CONSTRUCTION ZONE
- DELINEATOR
- DIRECTION OF TRAVEL
- TEMPORARY IN-LINE CRASH CUSHION
- K-RAIL
- (XX') EXISTING LANE WIDTH
- XX' PROPOSED LANE WIDTH
- (#) TEMPORARY STRIPING (ONE COAT) SEE CALTRANS STANDARD PLAN A20A TO A20G
- ++ TYPE II BARRICADE
- SIGN (ONE-POST)
- RIGHT OF WAY

TRAFFIC CONTROL SIGN LEGEND

C23(CA) | W3-5a(35) | W11-1

G20-2 | G20-5aP | W16-1P

SC-10(MOD) | SC-11(MOD) | R9-9

R2-1(35) | R2-1(45)

STAGE 1 CONSTRUCTION

- CONSTRUCTION ON ALL PROPOSED OUTSIDE WIDENING IMPROVEMENT ALONG CANNON ROAD.

0 40' 80'

PRELIMINARY ENGINEERING

REGISTERED PROFESSIONAL ENGINEER — CIVIL — STATE OF CALIFORNIA

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

TRAFFIC HANDLING – CANNON ST WIDENING
STAGE 1

APPROVED: _____ DATE _____ CITY ENGINEER

APPROVED: _____ DATE _____ PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	MY	09/01/23
DESIGNED	MY	09/01/23
CHECKED	RY	09/01/23

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B._____ PG._____

SHEET###OF # SHEETS

22-00092

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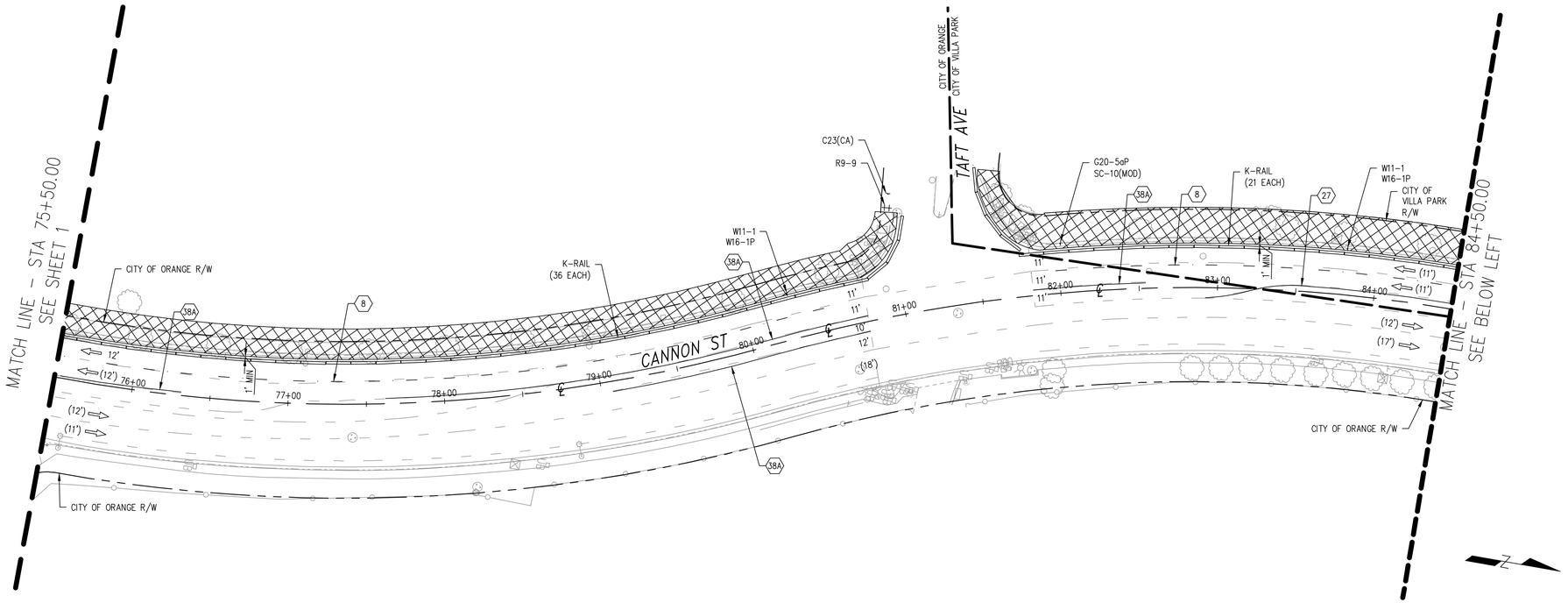

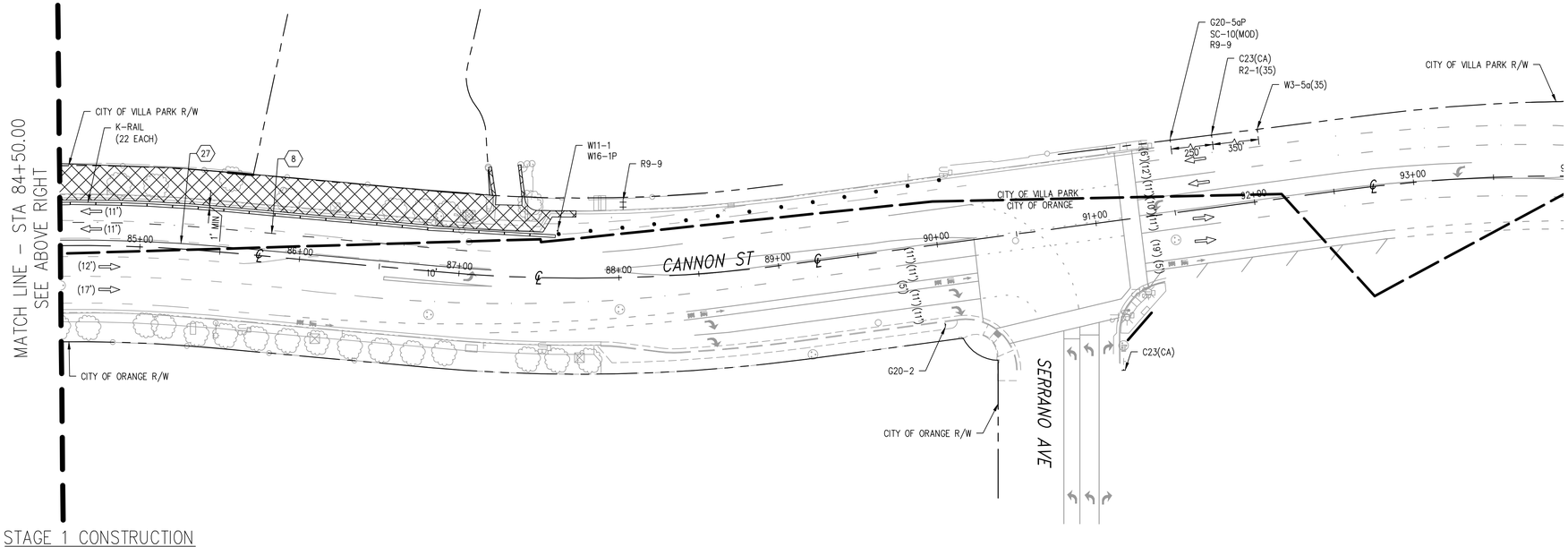

STAGE 1 CONSTRUCTION

- CONSTRUCTION ON ALL PROPOSED OUTSIDE WIDENING IMPROVEMENT ALONG CANNON ROAD.

LEGEND

- CONSTRUCTION ZONE
- DELINEATOR
- DIRECTION OF TRAVEL
- TEMPORARY IN-LINE CRASH CUSHION
- K-RAIL
- (XX') EXISTING LANE WIDTH
- XX' PROPOSED LANE WIDTH
- (#) TEMPORARY STRIPING (ONE COAT) SEE CALTRANS STANDARD PLAN A20A TO A20G
- ++ TYPE II BARRICADE
- SIGN (ONE-POST)
- RIGHT OF WAY
- CITY BOUNDARY

N

0 40' 80'

PRELIMINARY ENGINEERING

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

TRAFFIC HANDLING – CANNON ST WIDENING
STAGE 1

REGISTERED PROFESSIONAL ENGINEER CIVIL STATE OF CALIFORNIA

APPROVED: _____ DATE CITY ENGINEER

APPROVED: _____ DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	MY	08/17/23
DESIGNED	MY	08/17/23
CHECKED	RY	08/17/23

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B._____ PG._____

SHEET ### OF # SHEETS

22-00092

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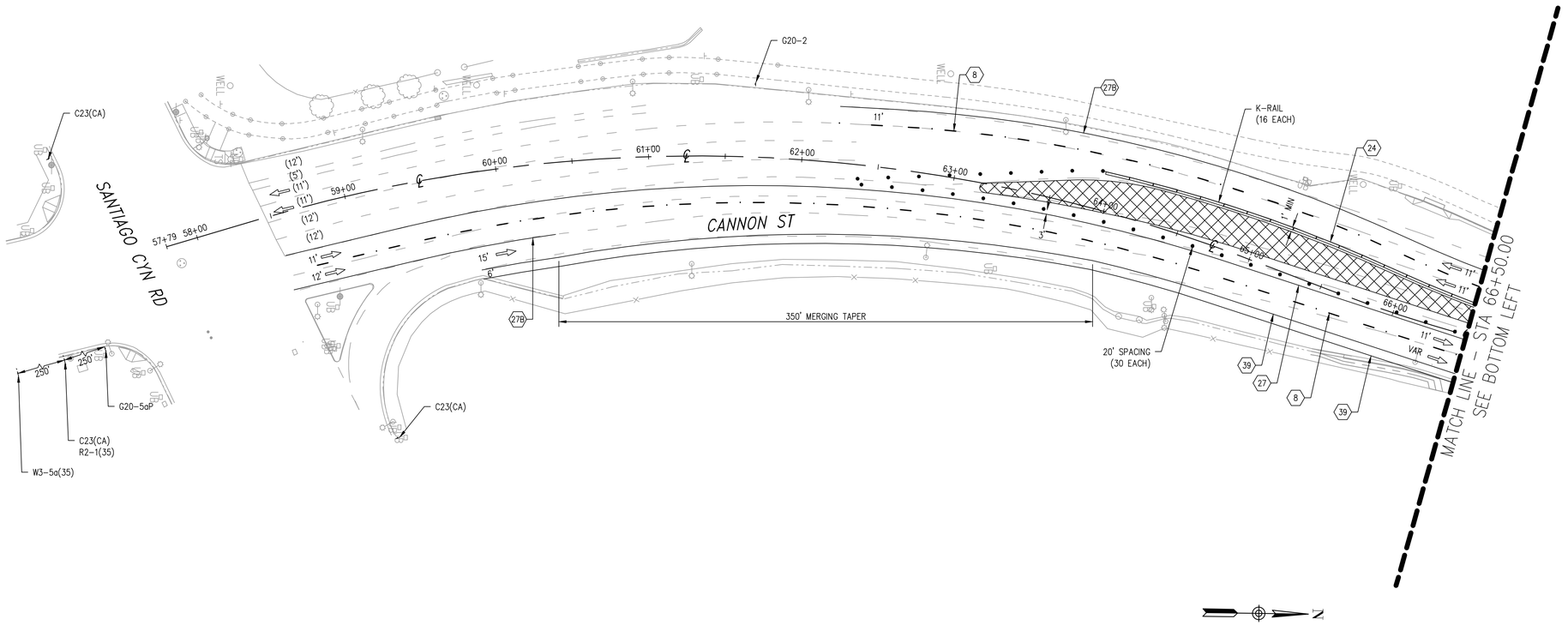

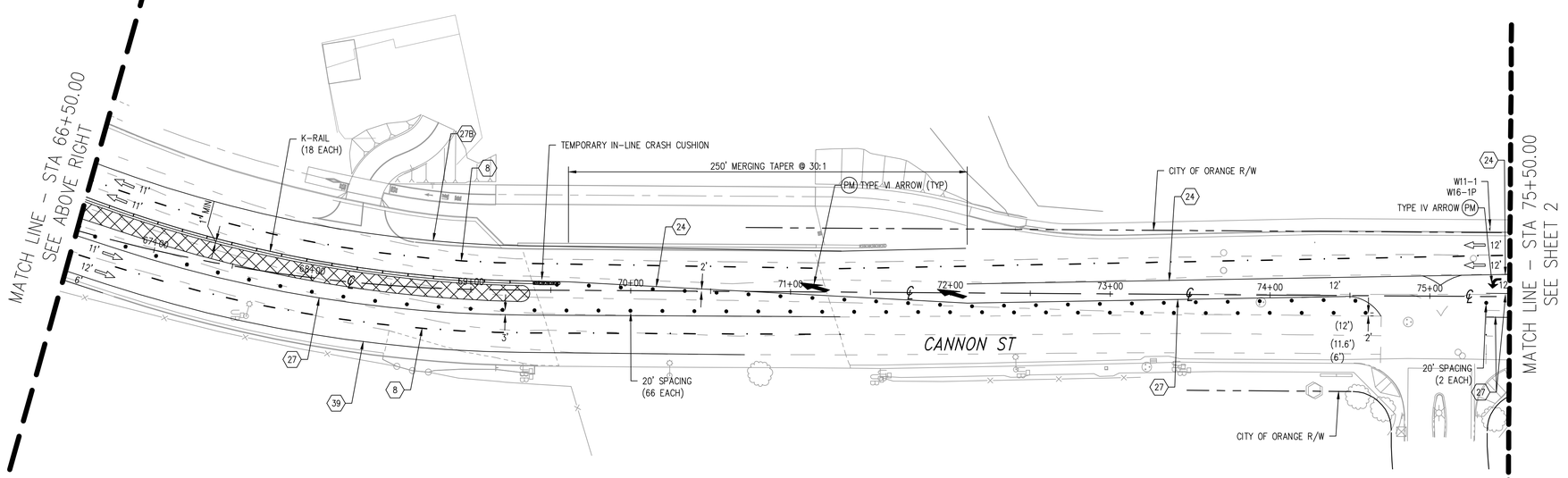

LEGEND

- CONSTRUCTION ZONE
- DELINEATOR
- DIRECTION OF TRAVEL
- TEMPORARY IN-LINE CRASH CUSHION
- K-RAIL
- (XX') EXISTING LANE WIDTH
- XX' PROPOSED LANE WIDTH
- (#) TEMPORARY STRIPING (ONE COAT) SEE CALTRANS STANDARD PLAN A20A TO A20G
- TYPE II BARRICADE
- SIGN (ONE-POST)
- RIGHT OF WAY

TRAFFIC CONTROL SIGN LEGEND

STAGE 2 CONSTRUCTION

- CONSTRUCTION ON ALL PROPOSED INSIDE MEDIAN ALONG CANNON ROAD.

0 40' 80'

PRELIMINARY ENGINEERING

REGISTERED PROFESSIONAL ENGINEER — CIVIL — STATE OF CALIFORNIA

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

TRAFFIC HANDLING - CANNON ST WIDENING
STAGE 2

APPROVED:	APPROVED:
DATE CITY ENGINEER	DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	MY	09/01/23
DESIGNED	MY	09/01/23
CHECKED	RY	09/01/23

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B._____ PG._____ SHEET###OF # SHEETS

22-00092

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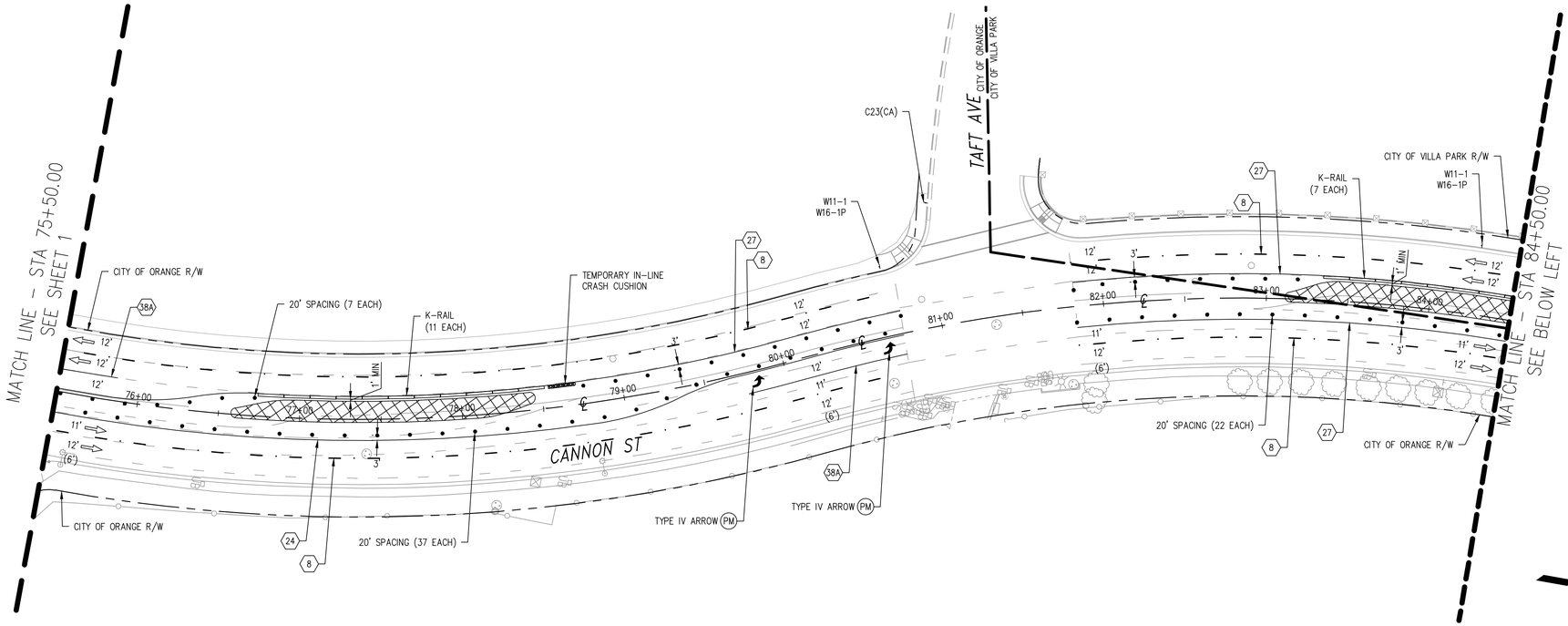

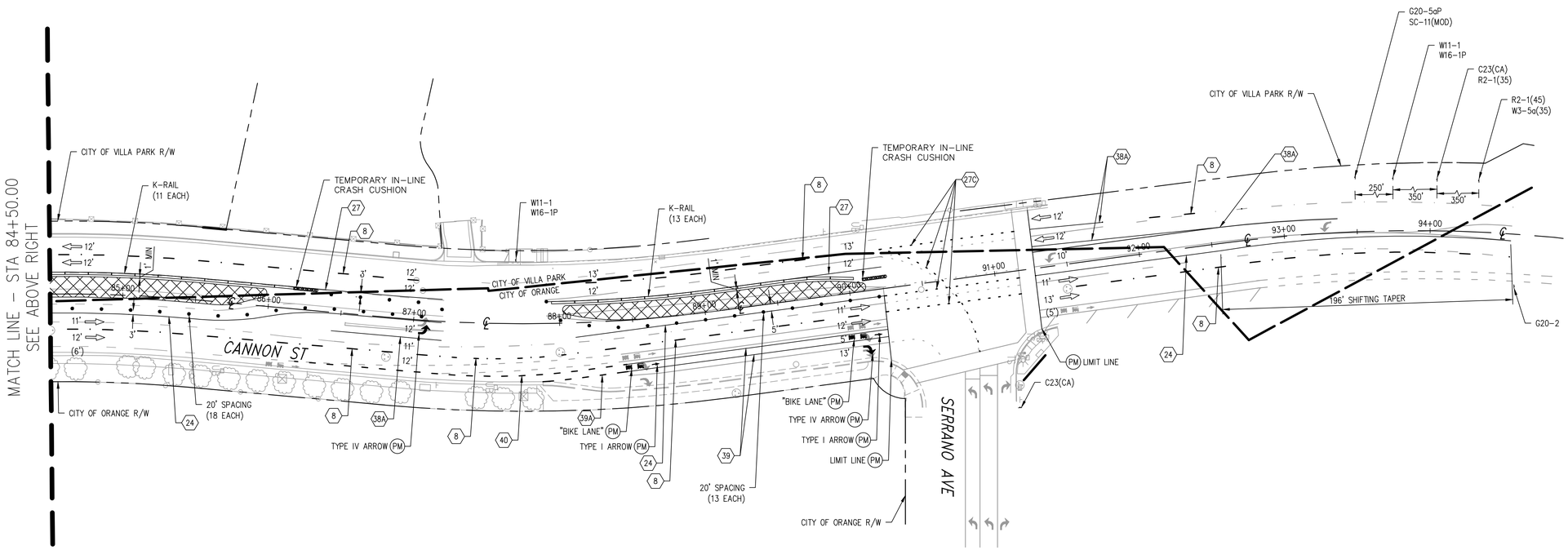

LEGEND

- CONSTRUCTION ZONE
- DELINEATOR
- DIRECTION OF TRAVEL
- TEMPORARY IN-LINE CRASH CUSHION
- K-RAIL
- (XX') EXISTING LANE WIDTH
- XX' PROPOSED LANE WIDTH
- (#) TEMPORARY STRIPING (ONE COAT) SEE CALTRANS STANDARD PLAN A20A TO A20G
- TYPE II BARRICADE
- SIGN (ONE-POST)
- RIGHT OF WAY
- CITY BOUNDARY

STAGE 1 CONSTRUCTION

- CONSTRUCTION ON ALL PROPOSED OUTSIDE WIDENING IMPROVEMENT ALONG CANNON ROAD.

0 40' 80'

PRELIMINARY ENGINEERING

REGISTERED PROFESSIONAL ENGINEER
CIVIL
STATE OF CALIFORNIA

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH

FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

TRAFFIC HANDLING – CANNON ST WIDENING
STAGE 2

APPROVED:	APPROVED:
DATE CITY ENGINEER	DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	MY	08/17/23
DESIGNED	MY	08/17/23
CHECKED	RY	08/17/23

SCALE: HORIZ. AS NOTED VERT. AS NOTED | F.B._____ PG._____ | SHEET###OF # SHEETS | 22-00092

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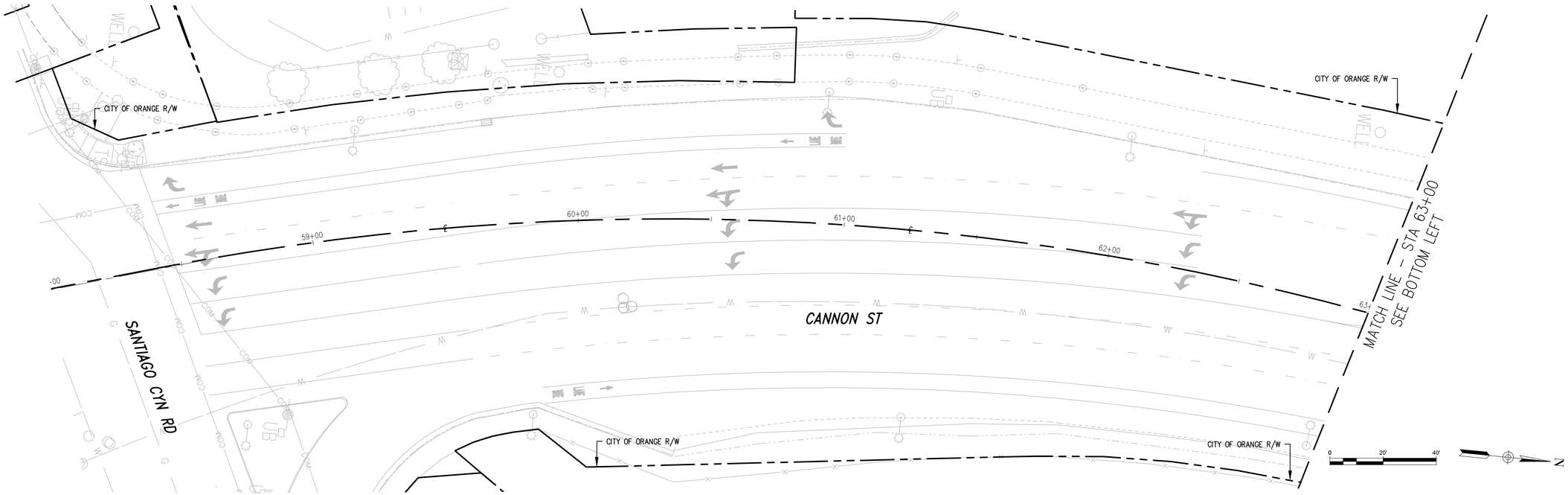
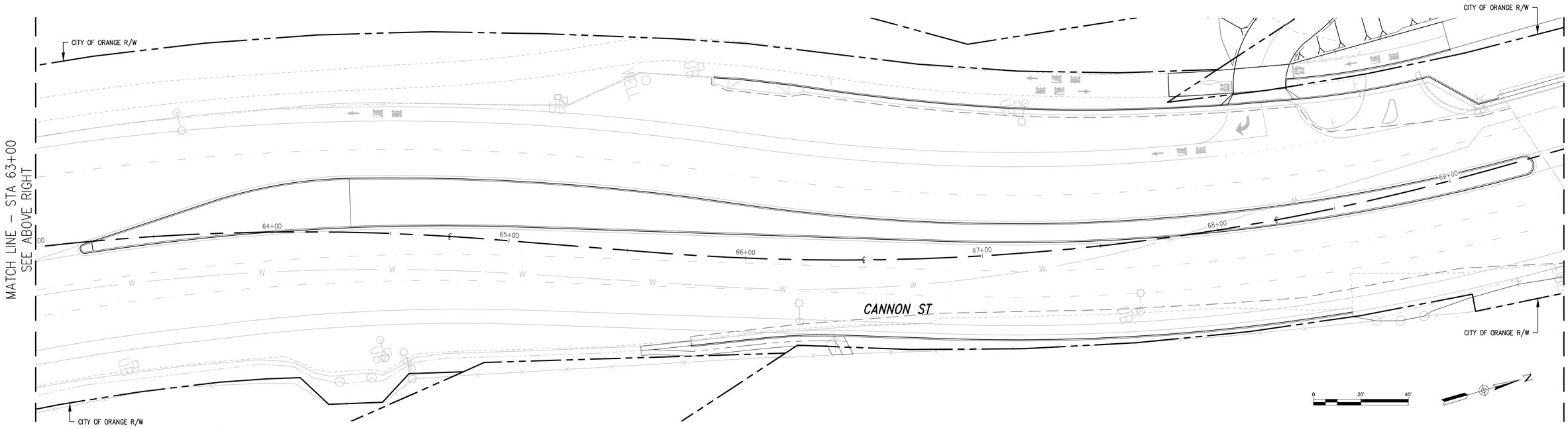


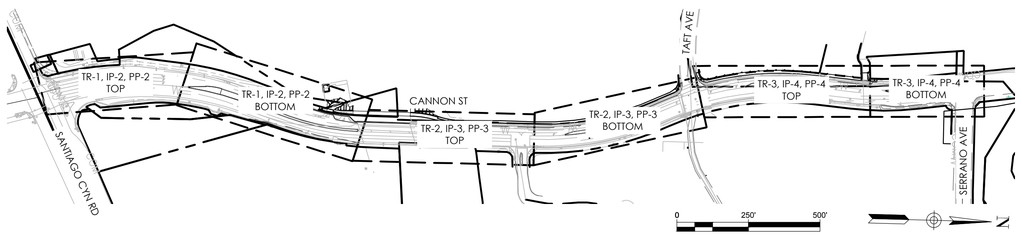


LEGEND

EXISTING TREES TO BE REMOVED
TOTAL TREES REMOVED: 33

EXISTING TREES TO REMAIN

KEY MAP



PRELIMINARY ENGINEERING

CITY OF ORANGE
OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

TREE REMOVAL PLAN
STATIONS 58+00 TO 69+50

APPROVED: _____ DATE _____ CITY ENGINEER

APPROVED: _____ DATE _____ PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	RO	01/05/23
DESIGNED	JG/RO	01/05/23
CHECKED	CA	01/05/23

SCALE: HORIZ. AS NOTED, VERT. AS NOTED | F.B. _____ PG. _____ | SHEET 1 OF XX SHEETS

22-00092

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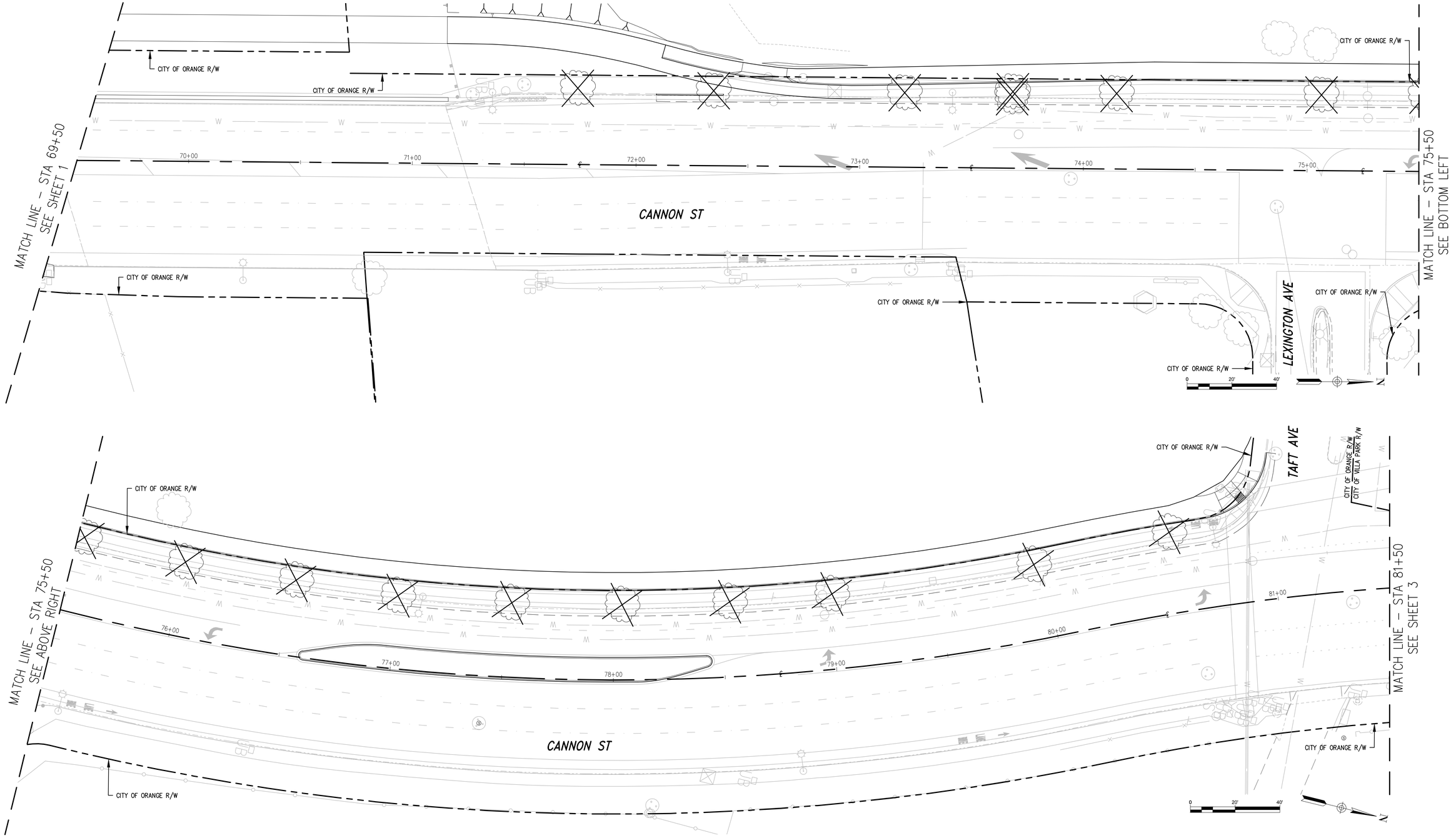

PRELIMINARY ENGINEERING

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

TREE REMOVAL PLAN
STATIONS 69+50 TO 81+50

APPROVED:	APPROVED:
DATE CITY ENGINEER	DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	RO	01/05/23
DESIGNED	JG/RO	01/05/23
CHECKED	CA	01/05/23

SCALE: HORIZ. AS NOTED, VERT. AS NOTED | F.B.____ PG.____ | SHEET **2** OF **XX** SHEETS | **22-00092**

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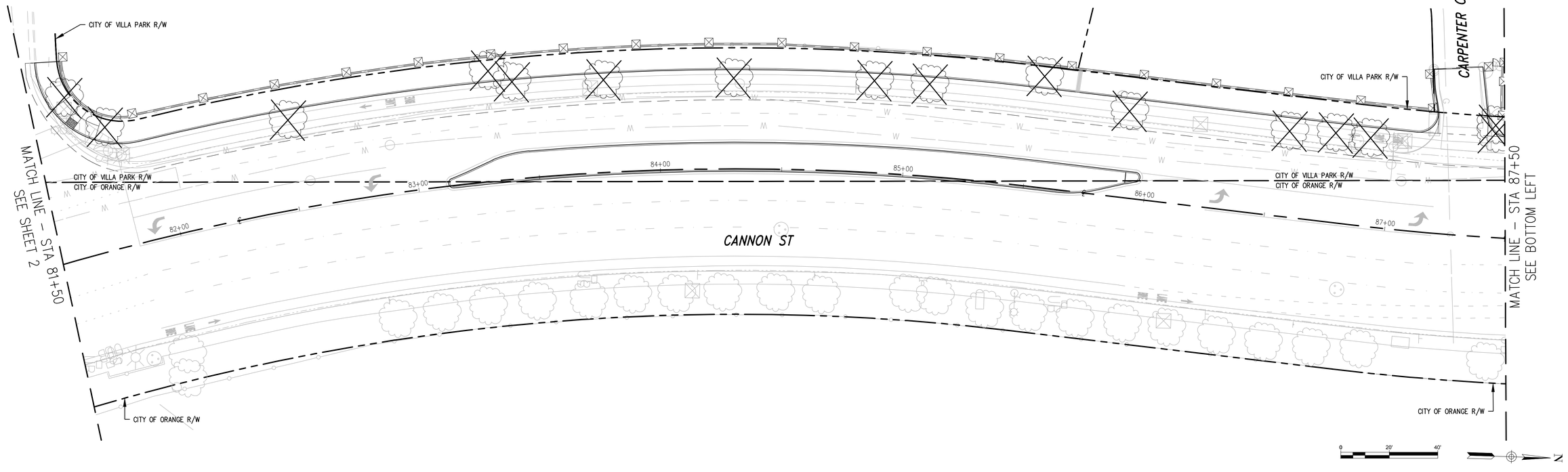

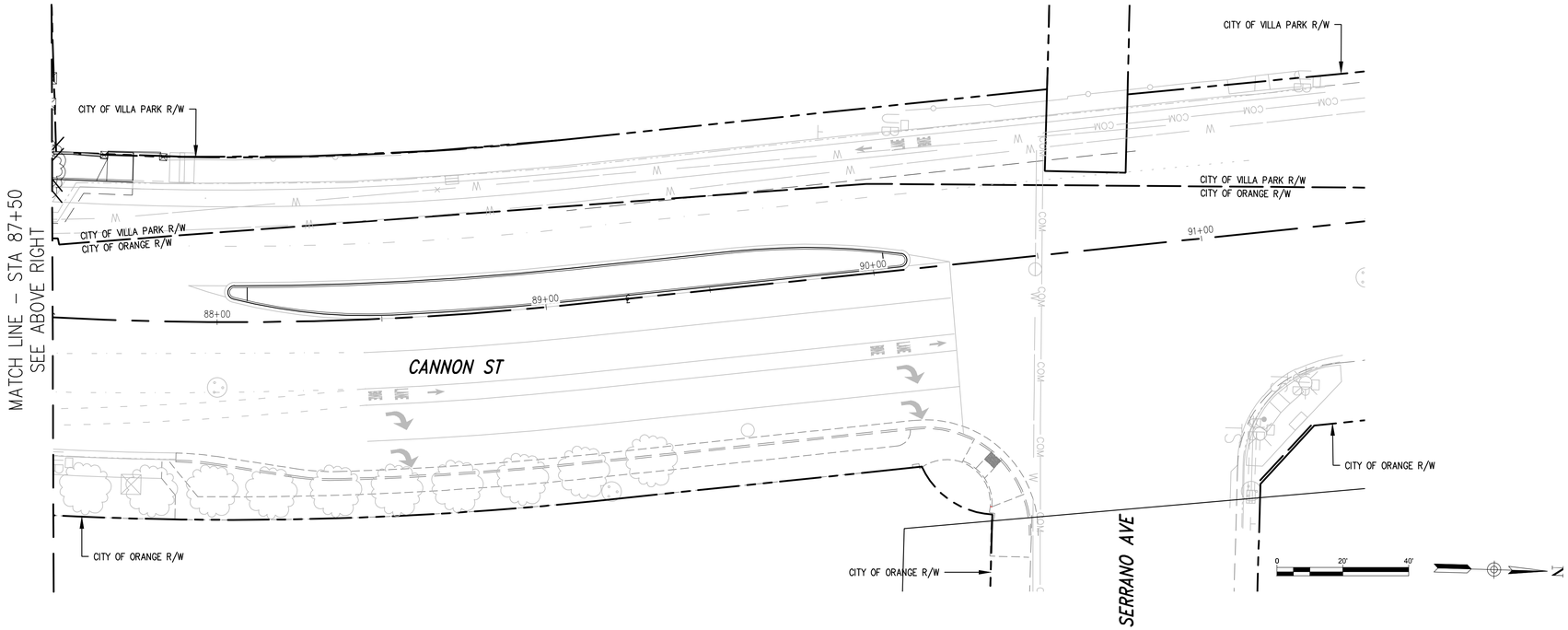

PRELIMINARY ENGINEERING

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH

FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

TREE REMOVAL PLAN
STATIONS 81+50 TO 91+50

APPROVED: _____ DATE _____ CITY ENGINEER

APPROVED: _____ DATE _____ PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	RO	01/05/23
DESIGNED	JG/RO	01/05/23
CHECKED	CA	01/05/23

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B.____ PG.____

SHEET 3 OF XX SHEETS

22-00092

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By: Ryan Ortiz on 1/26/2024 3:21 PM

IRRIGATION NOTES

1. THE IRRIGATION SYSTEM IS BASED ON THE MINIMUM OPERATING PRESSURE AND THE MAXIMUM FLOW DEMAND SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT TO THE LANDSCAPE ARCHITECT ANY DIFFERENCE BETWEEN THE WATER PRESSURE SHOWN ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE POINT OF CONNECTION. IN THE EVENT PRESSURE DIFFERENCES ARE NOT REPORTED IN WRITING PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY NECESSARY REVISIONS.

2. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, ETC., SHOWN WITHIN PAVED AREAS ARE FOR DESIGN CLARIFICATION ONLY. INSTALL PIPING AND VALVES IN PLANTING AREAS WHERE POSSIBLE, AND LOCATE ELECTRIC CONTROL AND QUICK COUPLING VALVES IN GROUND COVER/SHRUB AREAS, 6" TO 12" AWAY FROM EDGE OF SIDEWALK FOR EASY ACCESS.

3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FAMILIARIZE THEMSELF WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, STRUCTURES, AND UTILITIES. THE CONTRACTOR SHALL EXERCISE EXTREME CARE AND BE RESPONSIBLE FOR ANY DAMAGE IN EXCAVATING AND WORKING NEAR EXISTING UTILITIES. THEY SHALL COORDINATE THEIR WORK FOR THE LOCATION OF UTILITIES AND THE INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADWAYS, AND NEAR STRUCTURES. PRIOR TO CONSTRUCTION, CONTACT ALL APPLICABLE AGENCIES AND U.S.A. AT (800) 642-2444 TO FIELD LOCATE ALL EXISTING UTILITIES.

4. THE CONTRACTOR SHALL FLUSH AND ADJUST ALL LINES, VALVES AND NOZZLES FOR OPTIMUM PERFORMANCE. ADJUST ALL NOZZLES TO ELIMINATE SPRAYING ONTO WALKS, STREETS, BUILDINGS, ETC.

5. FIELD ADJUSTMENTS MAY BE REQUIRED TO PROVIDE OPTIMUM OPERATING EFFICIENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE LANDSCAPE ARCHITECT TO REVIEW PROPOSED FIELD ADJUSTMENTS PRIOR TO INSTALLATION. IN THE EVENT THAT NO WRITTEN REQUEST IS RECEIVED BY THE LANDSCAPE ARCHITECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REVISIONS.

6. SLEEVE ALL PRESSURE MAINLINE PIPE, LATERAL PIPE, AND CONTROL WIRES UNDER STREETS AND CONCRETE WALKWAYS WITH THE PROPER SIZE SCH 40 PVC AND DEPTH AS SPECIFIED.

7. DO NOT WILLFULLY INSTALL THE IRRIGATION SYSTEM AS DIAGRAMMATICALLY SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, GRADE DIFFERENCES OR DIFFERENCES IN SITE DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN FORESEEN AND CONSIDERED IN THE ENGINEERING. THE CITY ENGINEER SHOULD BE INFORMED IN WRITING OF SUCH OBSTRUCTIONS AND DIFFERENCES, BUT IN THE EVENT THAT THIS NOTIFICATION IS NOT PERFORMED, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS AND REPAIR WORK NECESSARY.

8. INSTALL ALL PIPE MATERIALS AND EQUIPMENT AS SHOWN IN THE CONSTRUCTION DETAILS. USE "TEFLON" TAPE ON ALL PVC MALE THREADS OF ALL SPRINKLER SWING JOINTS AND VALVE ASSEMBLIES EXCEPT MARLEX STYLED FITTINGS.

9. CONTRACTOR SHALL VERIFY OPERABILITY OF ALL EXISTING IRRIGATION SYSTEM SHOWN TO REMAIN.

10 FOR ADDITIONAL INFORMATION, SEE PROJECT DETAILS AND SPECIFICATIONS.

11. NO DISRUPTION OF THE EXISTING IRRIGATION SYSTEM'S WATERING WILL BE ALLOWED DURING CONSTRUCTION. ALL ADJACENT SYSTEM SHALL MAINTAIN AUTOMATIC PROGRAMMED WATERING SCHEDULES THROUGHOUT CONSTRUCTION. IF DISTRIBUTION OF AUTOMATIC IRRIGATION IS INEVITABLE, CONTRACTOR SHALL PROVIDE AND MAINTAIN SUPPLEMENTAL IRRIGATION FOR EXISTING TREES TO REMAIN THROUGHOUT CONSTRUCTION.

12. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING & ADJUSTING ANY PORTIONS OF THE EXISTING ADJACENT IRRIGATION SYSTEMS DAMAGED DURING CONSTRUCTION OF THE IMPROVEMENTS IN THIS CONTRACT.

IRRIGATION LEGEND

A B C	IRRIGATION CONTROLLER, RAINBIRD ESP-12-LXMEF, 12 STATION CONTROLLER, CONTROLLERS A & C TO BE MOUNTED IN STAINLESS STEEL PEDESTAL ENCLOSURE, STRONGBOX SB-16SS, CONTROLLER B TO WALL MOUNTED, STRONGBOX SB-16SSW. FEATURE OPTIONS INCLUDE RAINBIRD RBSS-TN9B RB IQ SPREAD SPEC RADIO (GE), AND RAINBIRD IQNCCRSW RS-232 NETWORK COMMUNICATION CARTRIDGE. INSTALL PER DETAIL. (1, ID-1) (5, ID-1)
M	WATER METER, SENSUS COMPOUND OMNI SERIES, 1" SIZE. SEE PLANS FOR LOCATION. INSTALL PER DETAIL. (4, ID-1)
	REDUCED PRESSURED BACKFLOW ASSEMBLY. FEBCO 825Y, 1-1/2", STRONGBOX SBBC-45AL ENCLOSURE, SIZE AS REQUIRED. SEE PLANS FOR LOCATION. CONTRACTOR TO TEST AND CERTIFY ALL BACKFLOW PREVENTION DEVICES. (2, ID-1)
V	MASTER VALVE, SUPERIOR 3200, 1-1/2" SIZE, NORMALLY CLOSED, FLOW REQUIREMENTS 0-20 GPM. INSTALL PER DETAIL. (2, ID-3)
F	FLOW SENSOR, RAINBIRD FS150B, 1-1/2" SIZE, WITH OPERATING RANGE OF 4-80 GPM. INSTALL PER DETAIL. (3, ID-3)
	GATE VALVE, NIBCO CLASS 125, T-113, SIZE PER LINE. INSTALL PER DETAIL. (3, ID-1)
	REMOTE CONTROL VALVE ASSEMBLY, RAINBIRD 100-PEB-PRS-D, 1" SIZE, WITH PRESSURE REGULATING MODULE. BALL VALVE, WATTS LFB6001, 1" SIZE. INSTALL PER DETAIL. (1, ID-2)
	DRIP REMOTE VALVE ASSEMBLY, RAINBIRD, XCZ-100-PRB-LC, 1" SIZE, WITH OPERATING RANGE OF 0.3-20 GPM. INSTALL PER DETAIL. (4, ID-3)
	QUICK COUPLING VALVE ASSEMBLY, 33-DLRC WITH YELLOW LOCKING RUBBER COVER, 3/4" SIZE. INSTALL BALL VALVE, WATTS LBF6001, BETWEEN MAINLINE CONNECTION AND QUICK COUPLER AS SHUT OFF. INSTALL PER DETAIL. (2, ID-2)
	DEEP WATER BUBBLER ASSEMBLY, RAINBIRD RWS-B-C-1401 W/ RWSGRATE BLACK GRATE, 36" TUBE, 0.25 GPM, TWO PER TREE. INSTALL PER DETAIL. (5, ID-3)
W	EXISTING WATER MAINLINE
	IRRIGATION SUPPLY LINE CONNECTION, COPPER TYPE K, 1-1/2" DIA, BETWEEN WATER SERVICE AND REDUCED PRESSURE BACKFLOW ASSEMBLY.
	MAINLINE, SCH 40 PVC, 1-1/2" DIA, INSTALL PER DETAIL.
	LATERAL LINE, CLS 200 PVC, 1" UNLESS SPECIFIED ON PLAN, INSTALL PER DETAIL. (4, ID-1) (3-4, ID-2)
	SLEEVE, SCH 40 PVC, SIZE PER DETAIL, COVER TO BE AS INDICATED IN SPECS. FOR PIPE DEPTH OF COVER, INSTALL PER DETAIL. CONTRACTOR TO PROVIDE EXTRA SLEEVE ADJACENT TO PROPOSED SLEEVE WHEN NECESSARY. SIZE SLEEVES PER DETAIL.
	SUBSURFACE DRIP, RAINBIRD XFS-CV-06-12 DRIPLINE WITH COPPER SHIELD™ TECHNOLOGY, 10' HOLD-BACK, INSTALL PER DETAIL. INSTALL FLUSH VALVES AND AIR RELIEF VALVES PER DETAIL. (6, ID-3)
	INSTALL DRIP SYSTEM OPERATION INDICATOR, RAINBIRD XFS FOR SUB-SURFACE DRIPLINE, WITHIN 3 FEET OF IRRIGATION VALVES FOR MAINTENANCE. REFER TO MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION. ALL DRIP IRRIGATION INSTALLED ABOVE SURFACE WITH EMITTERS AT 12" O.C.

PRELIMINARY ENGINEERING

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

IRRIGATION LEGEND
STATIONS 58+00 TO 69+50

APPROVED: _____ DATE CITY ENGINEER

APPROVED: _____ DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	RO	01/05/23
DESIGNED	JG/RO	01/05/23
CHECKED	CA	01/05/23

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B._____ PG._____

SHEET 4 OF XX SHEETS

22-00092

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By: Ryan Ortiz on 1/26/2024 3:42 PM

CITY OF ORANGE R/W

CITY OF ORANGE R/W

59+00 60+00 61+00 62+00 63+00

℄

CANNON ST

SANTIAGO CYN RD

MATCH LINE – STA 63+00
SEE BOTTOM LEFT

CITY OF ORANGE R/W

CITY OF ORANGE R/W

CONTROLLER LOCATION 'A'
INSTALL IRRIGATION CONTROLLER IN PARKWAY STRIP PLANTER NEAR STA 65+10. CONTRACTOR TO COORDINATE POWER AND CONDUIT RUN TO THIS LOCATION FROM POWER SOURCE SPECIFIED ON ELECTRICAL PLANS. REFER TO IRRIGATION LEGEND FOR MORE INFORMATION.

0 20' 40'

N

CITY OF ORANGE R/W

CITY OF ORANGE R/W

A M V F

	1"
A-1	12.62
	0.43

	1"
A-2	6.89
	0.43

	1"
A-3	8.50
	BUB

	1"
A-4	5.28
	0.43

64+00 65+00 66+00 67+00 68+00 69+00

℄

MATCH LINE – STA 63+00
SEE ABOVE RIGHT

MATCH LINE – STA 69+50
SEE SHEET 3

POINT OF CONNECTION (P.O.C.) LOCATION 'A'
CONTRACTOR SHALL CONNECT TO **12"** WATER MAIN AT APPROX. STA 65+10 ON CANNON ST. CONTRACTOR SHALL FIELD VERIFY IRRIGATION LOCATION WITH **144** PSI MINIMUM PRESSURE PROVIDED AND ALLOWABLE FLOW OF **20** GPM PRIOR TO CONSTRUCITON.

CANNON ST

CITY OF ORANGE R/W

CITY OF ORANGE R/W

0 20' 40'

N

CITY OF ORANGE R/W

PRELIMINARY ENGINEERING

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

IRRIGATION PLAN
STATIONS 58+00 TO 69+50

APPROVED: _____ DATE _____ CITY ENGINEER

APPROVED: _____ DATE _____ PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	RO	01/05/23
DESIGNED	JG/RO	01/05/23
CHECKED	CA	01/05/23

SCALE: HORIZ. AS NOTED VERT. AS NOTED

F.B._____ PG. _____

SHEET **5** OF **XX** SHEETS

22-00092

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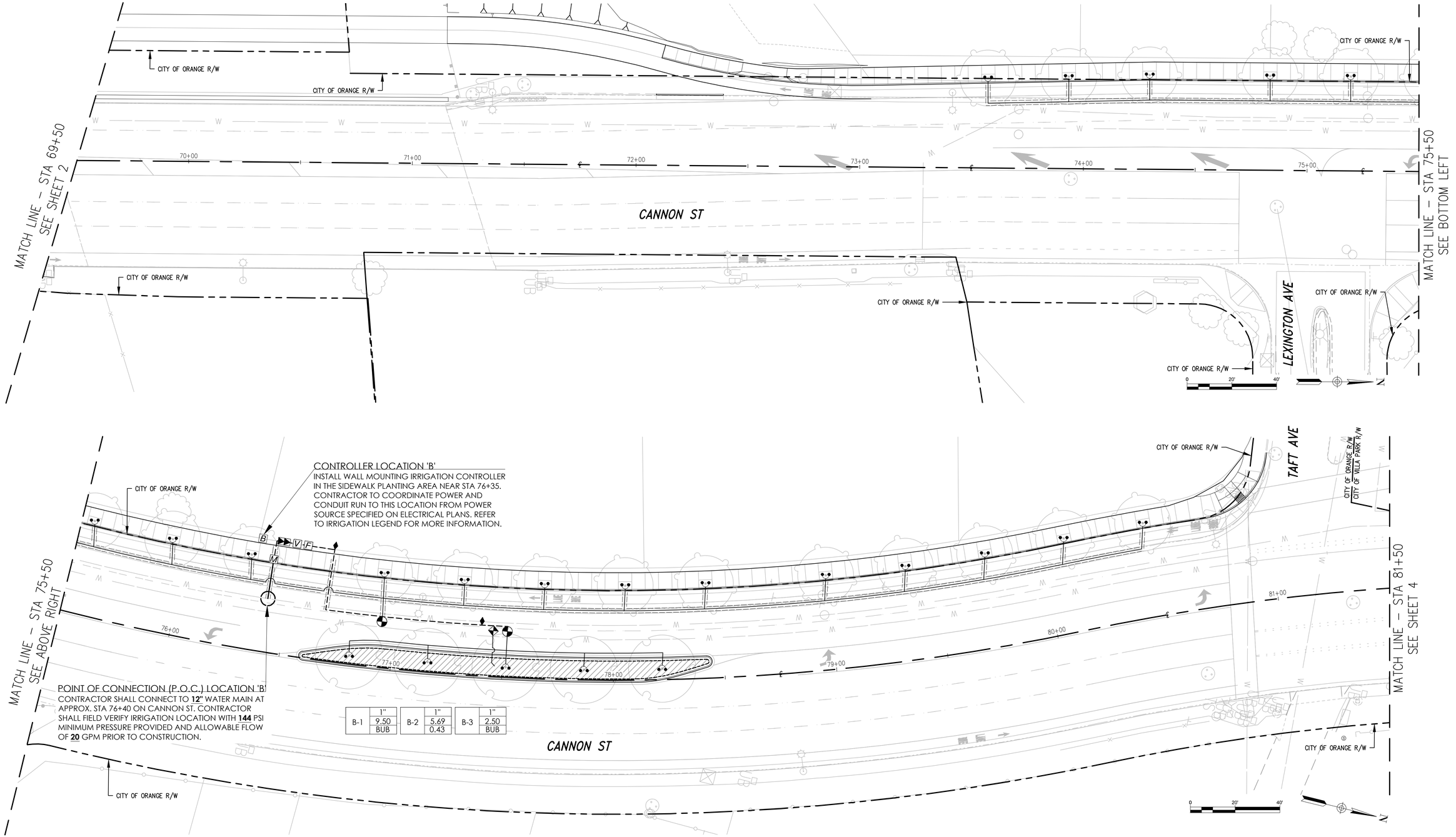

PRELIMINARY ENGINEERING

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH

FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

IRRIGATION PLAN

STATIONS 69+50 TO 81+50

APPROVED: _____ DATE _____ CITY ENGINEER

APPROVED: _____ DATE _____ PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	RO	01/05/23
DESIGNED	JG/RO	01/05/23
CHECKED	CA	01/05/23

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B._____ PG._____

SHEET **6** OF **XX** SHEETS

22-00092

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By: Ryan Ortiz on 1/26/2024 3:42 PM

POINT OF CONNECTION (P.O.C.) LOCATION 'C'
CONTRACTOR SHALL CONNECT TO **12"** WATER MAIN AT APPROX. STA 85+50 ON CANNON ST. CONTRACTOR SHALL FIELD VERIFY IRRIGATION WITH **128** PSI MINIMUM PRESSURE PROVIDED AND ALLOWABLE FLOW OF **20** GPM PRIOR TO CONSTRUCTION.

CONTROLLER LOCATION 'C'
INSTALL IRRIGATION CONTROLLER IN THE MEDIAN PLANTING AREA NEAR STA 85+50. CONTRACTOR TO COORDINATE POWER AND CONDUIT RUN TO THIS LOCATION FROM POWER SOURCE SPECIFIED ON ELECTRICAL PLANS. REFER TO IRRIGATION LEGEND FOR MORE INFORMATION.

C-1	1"	6.00	BUB	C-2	1"	10.35	0.43
C-3	1"	3.50	BUB				

C-4	1"	5.35	0.43	C-5	1"	2.00	BUB

CANNON ST

CARPENTER CIR

SERRANO AVE

CITY OF VILLA PARK R/W

CITY OF ORANGE R/W

CITY OF VILLA PARK R/W
CITY OF ORANGE R/W

MATCH LINE – STA 81+50
SEE SHEET 3

MATCH LINE – STA 87+50
SEE BOTTOM LEFT

MATCH LINE – STA 87+50
SEE ABOVE RIGHT

82+00 83+00 84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00

0 20' 40' N

PRELIMINARY ENGINEERING

CITY OF ORANGE
OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS
SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

IRRIGATION PLAN
STATIONS 81+50 TO 91+50

APPROVED: _____ DATE _____ CITY ENGINEER

APPROVED: _____ DATE _____ PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	RO	01/05/23
DESIGNED	JG/RO	01/05/23
CHECKED	CA	01/05/23

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B.____ PG.____

SHEET **7** OF **XX** SHEETS

22-00092

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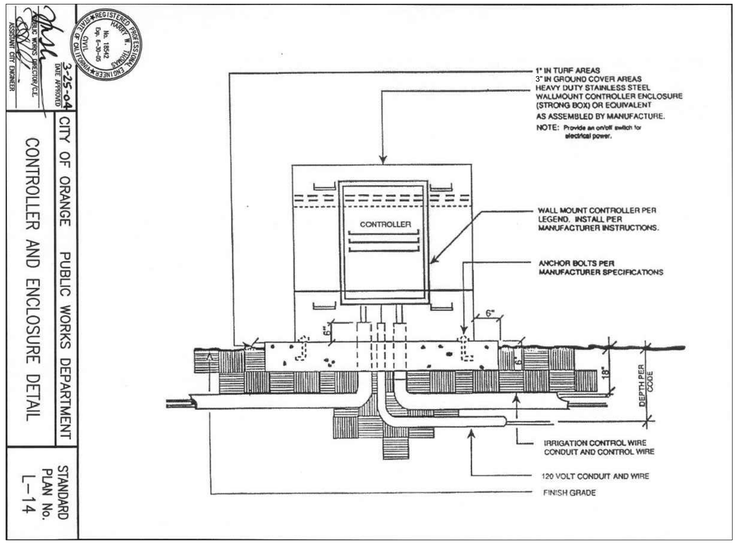
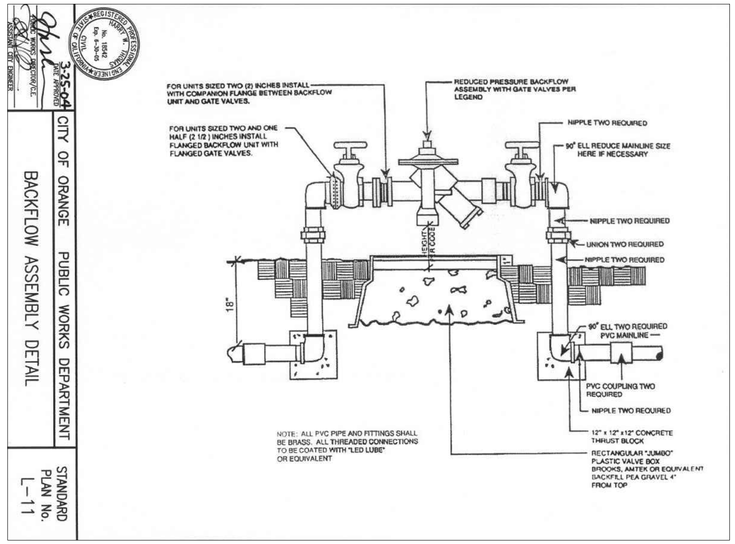


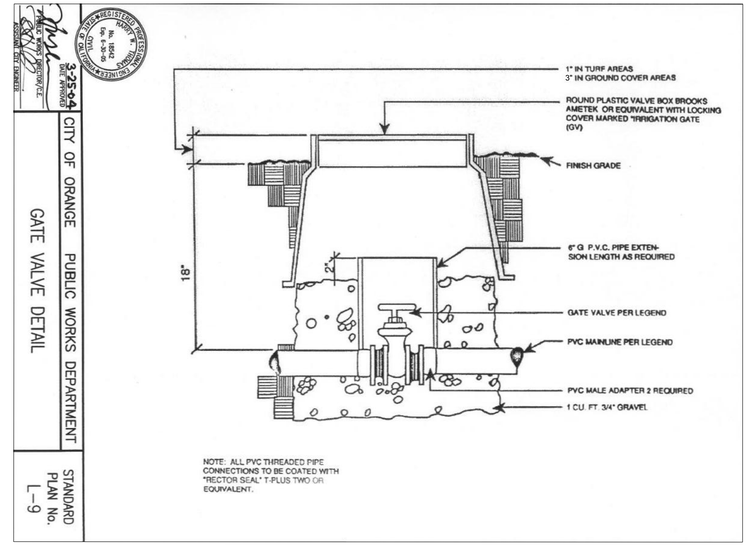
1 ID-1 WALL MOUNT CONTROLLER AND ENCLOSURE

CITY OF ORANGE PUBLIC WORKS DEPARTMENT STANDARDS N.T.S.



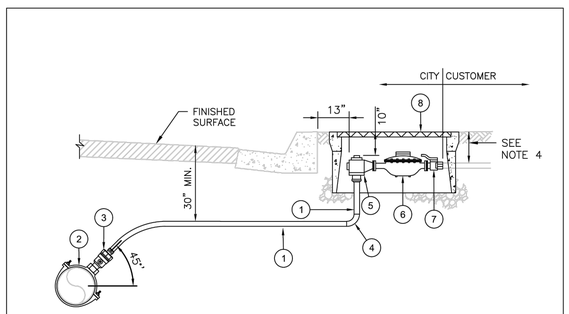
2 ID-1 BACKFLOW ASSEMBLY

CITY OF ORANGE PUBLIC WORKS DEPARTMENT STANDARDS N.T.S.



3 ID-1 GATE VALVE

CITY OF ORANGE PUBLIC WORKS DEPARTMENT STANDARDS N.T.S.



ITEM	MATERIALS	QTY.
1	1-1/2" SOFT COPPER TUBING, TYPE "K" W/ P.E. WRAP.	VARIES
2	BRASS SERVICE SADDLE, CC/ TAPERED THREAD OUTLET.	1 EA
3	1-1/2" CORPORATION STOP, CC THREAD X COMPRESSION COUPLING.	1 EA
4	1-1/2" COPPER 90° ELL, SWEAT X SWEAT.	1 EA
5	1-1/2" ANGLE METER STOP.	1 EA
6	1-1/2" DISC METER (SEE NOTE 2).	1 EA
7	1-1/2" CURB STOP W/ LEVER HANDLE.	1 EA
8	METER BOX – PER SPEC. SECTION 212-10.6.1.	1 EA

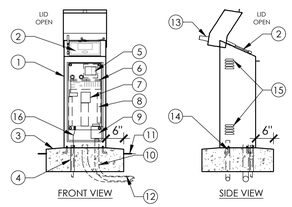
NOTES:

1. CONNECTION TO WATER MAIN PER STD. OWD-201.
2. APPROVED REMOTE READ METERS REQUIRED FOR NEW DEVELOPMENTS PER STD. OWD-213.
3. SOLDER SHALL BE 5% SILVER SOLDER, HARRIS CO, STAY BRITE, OR APPROVED EQUAL.
4. CONTRACTOR IS RESPONSIBLE FOR CONNECTING SERVICE TO THE CUSTOMER SIDE. ELEVATION VARIES. ADJUSTMENT MAY BE NECESSARY.
5. TOP OF THE METER BOX SHALL ALIGN WITH THE PAVING FINISH OR THE TOP OF THE WOOD MULCH LAYER.

BY CITY WATER MANAGER 1/31/2023	CITY OF ORANGE WATER DIVISION STANDARDS	OWD STD. DWG.
CITY ENGINEER 1/31/2023	1-1/2" SERVICE INSTALLATION (COPPER TUBING)	OWD-204
PUBLIC WORKS DIRECTOR 1/31/2023		SHEET 1 OF 1

4 ID-1 1" SERVICE INSTALLATION (COPPER TUBING)

CITY OF ORANGE WATER DIVISION STANDARDS N.T.S.



NOTES:

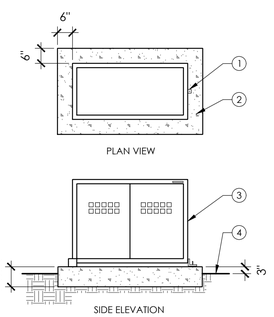
1. ALLOW MINIMUM OF 7-1/2" OF CLEARANCE BEHIND ENCLOSURE FOR FULLY OPENED LID.
2. 120 VAC POWER AND GROUNDING PER NATIONAL AND LOCAL ELECTRICAL CODES.
3. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR MORE INFORMATION.

KEY:

1. STAINLESS STEEL ENCLOSURE
2. SECURE IRRIGATION CONTROLLER TO A VANDAL RESISTANT ENCLOSURE AND SECURE ENCLOSURE TO A CONCRETE PAD. SEE IRRIGATION LEGEND FOR MANUFACTURER AND MODEL NUMBER OF CONTROLLER AND ENCLOSURE.
3. CONCRETE PAD - INSTALL 3" ABOVE FINISH GRADE IN PLANTING AREA OR FLUSH WITH ADJACENT CONCRETE PAVING, AND SLOPE TOP TO DRAIN AT A MINIMUM OF 2% WITH A 6-INCH MINIMUM THICKNESS.
4. PVC SLEEVE WITH 5/8" COPPER GROUND ROD INSIDE
5. GFI OUTLET & SWITCH
6. PLASTIC SHIELD FOR STATION/OPTION CARDS
7. OPTIONAL TWO-WIRE TERMINAL
8. CONVENTIONAL WIRED STATION AND OPTION TERMINALS
9. 120 VAC JUNCTION BOX (INCLUDED WITH ENCLOSURE)
10. SCH 40 PVC ELECTRICAL SWEEP FOR 120 VAC POWER
11. FINISHED GRADE, 3" BELOW TOP OF CONCRETE PAD
12. SCH 40 PVC ELECTRICAL SWEEP FOR FIELD WIRES, EXTEND 6" BEYOND EDGE OF CONCRETE PAD.
13. OPTIONAL STUBBY ANTENNA(S)
14. MOUNTING J-BOLT (4 TYP)
15. LOUVERED VENTS
16. #6 BARE COPPER GROUND WIRE

5 ID-1 CONTROLLER ON PEDESTAL

N.T.S.



KEY:

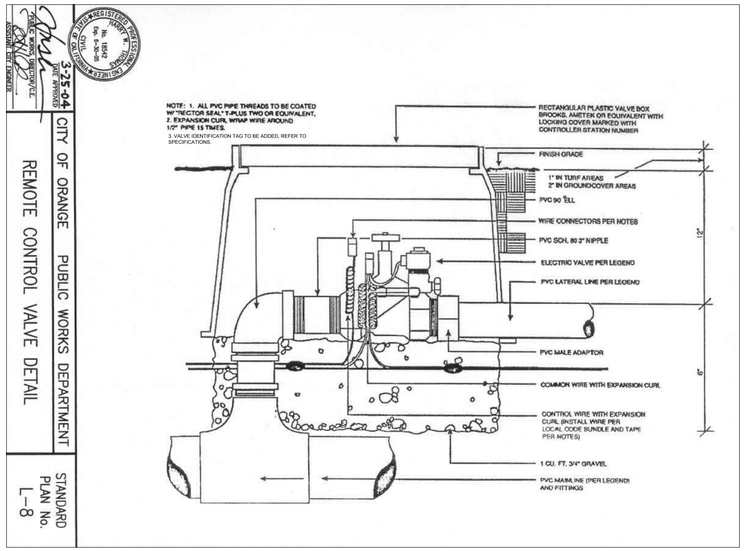
1. 3/8" U-BOLT PADLOCK. CONTRACTOR SHALL PROVIDE KEYS TO OWNER.
2. CONCRETE PAD, SLOPE TO DRAIN AT 2%.
3. BACKFLOW PREVENTER ENCLOSURE, SEE IRRIGATION LEGEND.
4. FINISH GRADE.

NOTES:

1. ENCLOSURE SHALL BE AS INDICATED ON IRRIGATION LEGEND.
2. REFER TO BACKFLOW PREVENTER DETAIL FOR FURTHER INFORMATION.
3. INSTALL ENCLOSURE PER MANUFACTURER'S SPECIFICATIONS.
4. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR MORE INFORMATION.

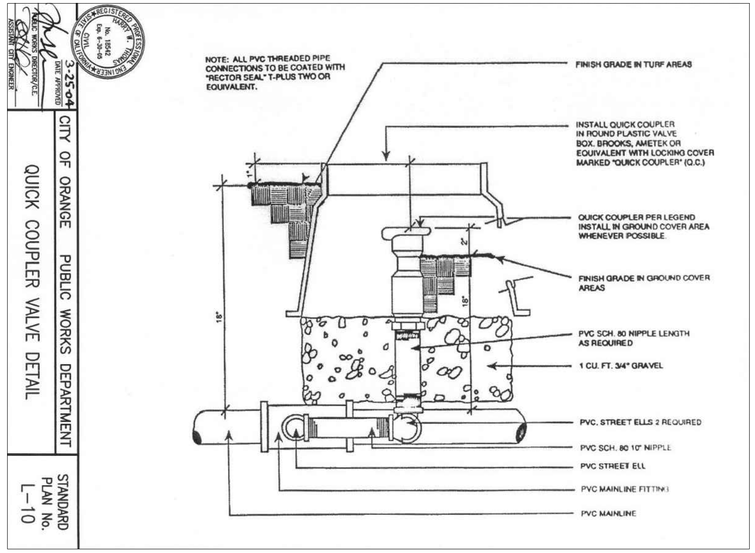
6 ID-1 BACKFLOW PREVENTER ENCLOSURE

N.T.S.



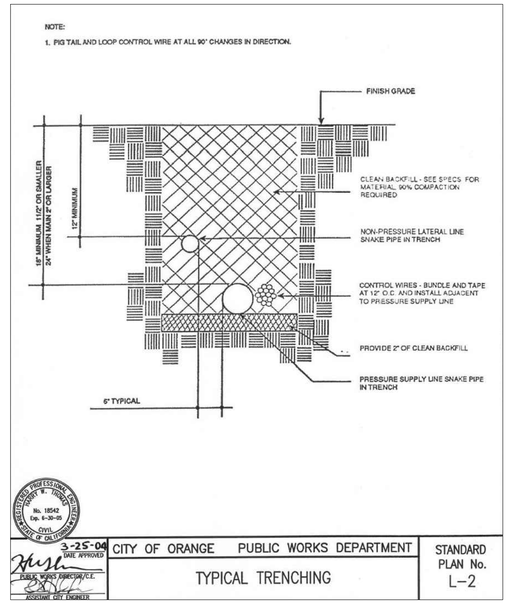
1 ID-2 REMOTE CONTROL VALVE

CITY OF ORANGE PUBLIC WORKS DEPARTMENT STANDARDS N.T.S.



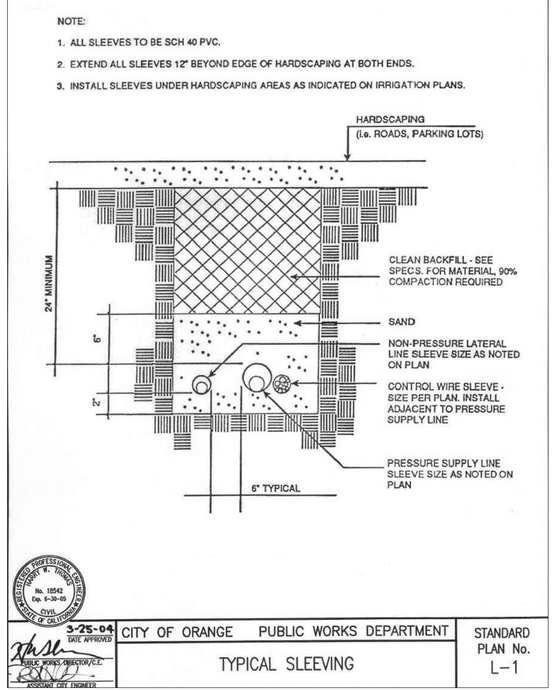
2 ID-2 QUICK COUPLER VALVE

CITY OF ORANGE PUBLIC WORKS DEPARTMENT STANDARDS N.T.S.



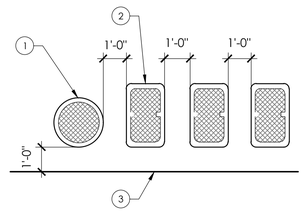
3 ID-2 TYPICAL TRENCHING

CITY OF ORANGE PUBLIC WORKS DEPARTMENT STANDARDS N.T.S.



4 ID-2 TYPICAL SLEEVING

CITY OF ORANGE PUBLIC WORKS DEPARTMENT STANDARDS N.T.S.



KEY:

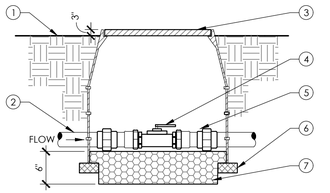
1. CIRCULAR VALVE BOX.
2. JUMBO RECTANGULAR VALVE BOX.
3. EDGE OF PLANTER.

NOTES:

1. CENTER VALVE BOX OVER VALVE.
2. PLACE REMOTE CONTROL VALVE ASSEMBLY SHRUB/GROUNDCOVER AREA WHENEVER POSSIBLE. INSTALL IN TURF AREA ONLY IF SHRUB/GROUNDCOVER AREA DOES NOT EXIST ADJACENT TO LAWN.
3. SET VALVE BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE OF PLANTER. SET ALL GROUPINGS OF VALVE BOXES LEVEL WITH EACH OTHER OR AT THE SAME HEIGHT ABOVE GRADE.

5 ID-2 VALVE BOX LAYOUT

N.T.S.



NOTES:

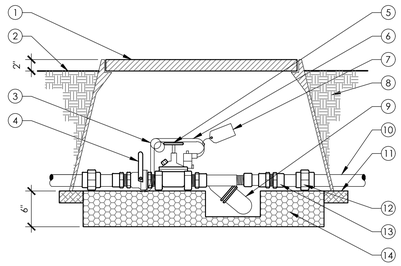
1. INSTALL BALL VALVE TO A MINIMUM OF 12" FROM STRUCTURES OR HARDSCAPING.
2. INSTALL BALL VALVE IN PLANTING AREAS WHEREVER POSSIBLE.
3. PLACE 3/4" DIAMETER DRAIN ROCK PRIOR TO INSTALLATION OF VALVE BOX.
4. FINISH GRADE BEFORE PLANTING.
5. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR MORE INFORMATION.

KEY:

1. FINISH GRADE.
2. MAINLINE.
3. GREEN VALVE BOX AND LOCKING COVER, W/ BOX EXTENSIONS AS REQUIRED. SEE SPECS.
4. BALL VALVE, SEE IRRIGATION LEGEND.
5. SCH 80 PVC UNION DOWNSTREAM OF VALVE.
6. BRICK, TYP. THREE (3) PLACES.
7. 3/4" DIA. DRAIN ROCK (NOT TO EXCEED BOTTOM OF VALVE).

1 ID-3 BALL VALVE

N.T.S.



NOTES:

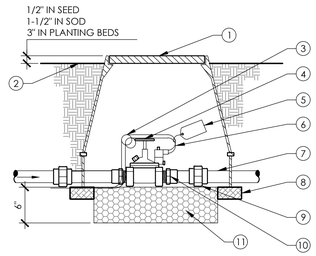
1. INSTALL VALVES A MINIMUM OF 1' - 0" FROM STRUCTURES OR HARDSCAPING.
2. INSTALL VALVES IN PLANTING BEDS WHEREVER POSSIBLE.
3. PLACE VALVE BOX AT RIGHT ANGLES TO STRUCTURES OR HARDSCAPING.
4. INSTALL VALVE BOX SO THAT TOP OF VALVE BOX IS FLUSH WITH ADJACENT HARDSCAPING.
5. PLACE DRAIN ROCK PRIOR TO INSTALLATION OF VALVE BOX.
6. BALL VALVE & FITTINGS SHALL BE LINE SIZE UNLESS NOTED OTHERWISE.
7. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR MORE INFORMATION.

KEY:

1. GREEN VALVE BOX WITH BOLT DOWN COVER AND BOX EXTENSIONS AS REQUIRED. REFER TO SPECIFICATIONS.
2. FLUSH IN PAVED AREAS, 2" IN PLANTING BEDS.
3. PIG TAIL EXPANSION LOOP, 18" MINIMUM.
4. BALL VALVE. SEE IRRIGATION LEGEND FOR MANUFACTURER AND MODEL NUMBER.
5. ELECTRIC CONTROL VALVE.
6. CONTROL AND COMMON WIRES.
7. VALVE IDENTIFICATION TAG, REFER TO SPECIFICATIONS.
8. FINISHED GRADE.
9. DRIP FILTER.
10. LATERAL LINE, ANGLE TO 12" MINIMUM DEPTH AS REQUIRED.
11. STANDARD BRICK , TYP. FOUR (4).
12. SCH 80 PVC UNION DOWNSTREAM OF VALVE.
13. SCH 40 PVC ADAPTER, TYP.
14. 3/4" DIAMETER DRAIN ROCK BELOW VALVE.

4 ID-3 DRIP REMOTE CONTROL VALVE ASSEMBLY

N.T.S.



NOTES:

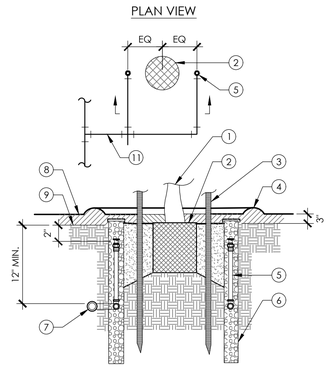
1. INSTALL VALVES A MINIMUM OF 12" FROM STRUCTURES OR HARDSCAPING.
2. INSTALL VALVES IN PLANTING BEDS WHEREVER POSSIBLE.
3. PLACE VALVE BOX AT RIGHT ANGLES TO STRUCTURES OR HARDSCAPING.
4. INSTALL VALVE BOX SO THAT TOP OF VALVE BOX IS FLUSH WITH ADJACENT HARDSCAPE.
5. PLACE 3/4" DIAMETER DRAIN ROCK PRIOR TO INSTALLATION OF VALVE BOX.
6. BALL VALVE AND FITTINGS SHALL BE LINE SIZE UNLESS NOTED OTHERWISE.
7. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR MORE INFORMATION.

KEY:

1. GREEN VALVE BOX WITH BOLT DOWN COVER AND BOX EXTENSION IF REQUIRED. REFER TO SPECIFICATIONS.
2. FLUSH IN PAVED AREAS, 3" IN PLANTING BEDS.
3. PIG TAIL EXPANSION LOOP, MINIMUM 18".
4. ELECTRIC CONTROL VALVE
5. VALVE IDENTIFICATION TAG.
6. CONTROL AND COMMON WIRES
7. LATERAL LINE, ANGLE TO 12" MINIMUM DEPTH AS REQUIRED.
8. STANDARD BRICK, TYP. FOUR (4) PLACES.
9. SCH 80 PVC UNION DOWNSTREAM OF VALVE
10. SCH 40 PVC MALE ADAPTER, TYP. TWO (2) PLACES.
11. 3/4" DIAMETER DRAIN ROCK BELOW VALVE.

2 ID-3 MASTER VALVE

N.T.S.



NOTES:

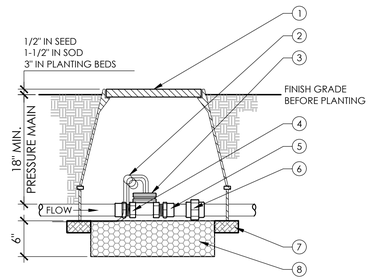
1. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR MORE INFORMATION.
2. FOR TREE PLANTING SEE 'TREE PLANTING' DETAIL.

KEY:

1. REFER TO TREE PLANTING DETAIL FOR OTHER REQUIREMENTS.
2. ROOTBALL.
3. TREE STAKES.
4. WATER RETENTION BERM.
5. DEEP WATER BUBBLER ASSEMBLY, SEE IRRIGATION LEGEND FOR MANUFACTURER AND MODEL NUMBER. INSTALL TWO PER TREE.
6. PEA GRAVEL 1/2" DIA.
7. PVC LATERAL, TYP.
8. MULCH LAYER.
9. FINISH GRADE.

5 ID-3 TREE DEEP WATER BUBBLER ASSEMBLY

N.T.S.



KEY:

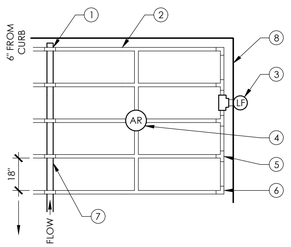
1. GREEN PLASTIC VALVE BOX AND BOLT DOWN COVER, AND BOX EXTENSION IS REQUIRED. REFER TO SPECIFICATIONS.
2. PIG TAIL EXPANSION LOOP, 18" MINIMUM.
3. FLOW SENSOR USE WITH PULSE PUTPUT TRANSMITTER OR FLOW MONITOR. SEE IRRIGATION LEGEND AND SPECIFICATIONS.
4. COMMUNICATIONS CABLE. RETURN TO CONTROLLER WITHIN 1" GRAY SCHEDULE 40 PVS CONDUIT.
5. SCH 40 PVC MALE ADAPTOR, TYP. TWO (2) PLACES.
6. SCH 80 PVC UNION DOWNSTREAM OF VALVE.
7. BRICK, TYP. THREE (3) PLACES.
8. 3/4" DIAMETER DRAIN ROCK BELOW VALVES.

NOTES:

1. REDUCE BENDS, FITTINGS, ETC., FOR DISTANCE EQUAL TO 10X DIAMETER OF PIPE. SIMILAR ON BOTH SIDES OF SENSOR.
2. INSTALL FLOW SENSOR A MINIMUM OF 12" FROM STRUCTURES OF HARDSCAPING.
3. INSTALL FLOW SENSOR IN PLANTING BEDS WHEREVER POSSIBLE.
4. PLACE VALVE BOX AT RIGHT ANGLES TO STRUCTURES OR HARDSCAPING.
5. INSTALL VALVE BOX SO THAT TOP OF VALVE BOX IS FLUSH WITH ADJACENT HARDSCAPE.
6. PLACE 3/4" DIAMETER DRAIN ROCK PRIOR TO INSTALLATION OF VALVE BOX.
7. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR MORE INFORMATION.

3 ID-3 FLOW SENSOR

N.T.S.



KEY:

1. PVC TO DRIP LINE CONNECTION POINT (CENTER FEED SHOWN).
2. DRIP LINE (BURIED 4") WITH EMITTERS. SEE LEGEND.
3. AUTOMATIC FLUSH VALVE, TYP.
4. AIR RELIEF VALVE AT HIGHEST POINT.
5. BARBED TEE, TYP.
6. BARBED ELL, TYP.
7. PVC LATERAL.
8. PERIMETER/EDGE OF PLANTING AREA.

NOTES:

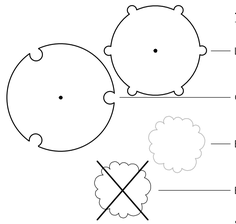
1. SPACING BETWEEN ROWS VARIES IN SLOPED CONDITIONS. REFER TO DRIP NOTES.
2. LOCATE AN AIR-RELIEF VALVE AT THE HIGH POINT OF EACH SYSTEM WITHIN A PLASTIC BOX.
3. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR MORE INFORMATION.

6 ID-3 SUBSURFACE INLINE DRIP SYSTEM

N.T.S.

IRRIGATION DETAILS

PLANTING LEGEND



LABEL	SCIENTIFIC NAME	COMMON NAME	WATER USAGE (WUCOLS)	SIZE	SPACING
TREES					
LOP CON	*LOPHOSTEMON CONFERTUS*	BRISBANE BOX	M	36" BOX	AS SHOWN
QUE TOM	*QUERCUS TOMENTELLA*	ISLAND OAK	L	36" BOX	AS SHOWN
EXISTING TREES TO REMAIN					
EXISTING TREES TO REMOVE					
SHRUBS					
EPI CAN	*EPILOBIUM CANUM*	CALIFORNIA FUCHSIA	VL	5 GAL	AS SHOWN
ERI FAS	*ERIOGONUM FASCICULATUM*	CALIFORNIA BUCKWHEAT	VL	5 GAL	AS SHOWN
LEY CON	*LEYMUS CONDENSATUS 'CANYON PRINCE'*	CANYON PRINCE WILD RYE	L	5 GAL	AS SHOWN
HES WHI	*HESPEROYUCCA WHIPPLEI*	CHAPARRAL YUCCA	VL	5 GAL	AS SHOWN
PEN HET	*PENSTEMON HETEROPHYLLUS*	FOOTHILL PENSTEMON	L	5 GAL	AS SHOWN
SPA AMB	*SPHAERALCEA AMBIGUA*	DESERT MALLOW	L	5 GAL	AS SHOWN
GROUNDCOVERS					
BAC PIL	*BACCHARIS PILULARIS 'PIGEON POINT'*	DWARF COYOTE BRUSH	L	1 GAL	60" O.C.
SAL SPA	*SALVIA SPATHACEA*	HUMMINGBIRD SAGE	L	1 GAL	36" O.C.
CALIFORNIA NATIVE WILDFLOWERS		NON-IRRIGATED HYDROSEED MIX	L	SEED	AS SHOWN
OTHER					
BOULDERS AUBURN BROWN N GOLD BOULDERS FROM EARTHSTONEROCK, (800) 215-7372 SIZE A: 18"-24" DIA SIZE B: 30"-36" DIA					
MULCH ONLY					
ROOT BARRIER, INSTALL PER DETAIL					

1 PD-1

2 PD-1 3 PD-1

5 PD-1

4 PD-1

NON-IRRIGATED HYDROSEED MIX

SCIENTIFIC NAME	COMMON NAME	APPLICATION RATE (PLS LBS PER 1000 ACRE)	GERMINATION RATE PERCENTAGE
ACHILLEA MILLEFOLIUM	WHITE YARROW	1.00	85%
CLARKIA UNGUICULATA	ELEGANT CLARKIA	1.50	83%
COLLINSIA HETEROPHYLLA	CHINESE HOUSES	1.00	83%
ESCHSCHOLZIA CALIFORNICA	CALIFORNIA POPPY	3.00	83%
GILIA CAPITATA	GLOBE GILIA	0.50	83%
GILIA TRICOLOR	BIRDS EYE	0.50	83%
LASTHENIA CALIFORNICA	DWARF GOLDFIELDS	0.25	68%
LAYIA PLATYGLOSSA	TIDY TIPS	0.25	77%
LUPINUS MICROCARPUS DENSIFLORUS	GOLDEN LUPINE	2.00	83%
LUPINUS SUCCULENTUS	ARROYO LUPINE	3.00	83%
MIMULUS AURANTIACUS PUNIECEUS	MISSION RED MONKEYFLOWER	2.00	3%
NEMOPHILA MACULATE	FIVE SPOT	1.00	83%
NEMOPHILA MENZIESII	BABY BLUE EYES	2.00	83%
PHACELIA CAMPANULARIA	CALIFORNIA BLUEBELLS	1.00	83%
SISYRHINCHIUM BELLUM	BLUE EYED GRASS	1.00	78%
	TOTAL:	20.00	

PLANTING NOTES

1. BARK MULCH: INSTALL A UNIFORM THREE INCH LAYER OF BARK MULCH, SEE SPECS, IN ALL PLANTING AREAS, INCLUDING VINE PLANTING STRIP. MULCH SHALL NOT TOUCH TREE TRUNKS. MULCH SAMPLE SHALL BE SUBMITTED AND APPROVED BY CITY ENGINEER PRIOR TO INSTALLATION.
2. EXISTING PLANT MATERIAL: PROTECT ALL EXISTING PLANT MATERIAL TO REMAIN, SEE CIVIL PLANS. AVOID OR MINIMIZE SOIL DISTURBANCE WITHIN OR NEAR EXISTING TREES TO REMAIN. CONTRACTOR TO REPAIR ANY DAMAGES INCURRED AS A DIRECT RESULT OF THIS CONTRACT TO THE OWNER'S SATISFACTION AT NO ADDITIONAL COST.
3. TOPSOIL: CONTRACTOR SHALL EXCAVATE ALL PLANTING AREAS, PER CIVIL PLANS, A MINIMUM OF 24" DEPTH. ALL EXISTING GRAVEL, ROADWAY PAVEMENT AND AGGREGATE BASE WITHIN THE PLANTING AREAS SHALL BE REMOVED BEFORE INSTALLING AMENDED TOPSOIL. TOPSOIL SHALL BE INSTALLED 3" BELOW FINISH GRADE OF SURROUNDING HARDSCAPE TO ALLOW FOR 3" LAYER OF MULCH. REFER TO CIVIL PLANS FOR PLANTING AREA GRADING AND SLOPES.
4. SOILS TESTING: SEE SPECIFICATIONS FOR TESTING OF TOPSOIL AND AMENDMENTS. IN ADDITION, CONTRACTOR SHALL SUBMIT A FIVE GALLON SAMPLE OF NATIVE TOPSOIL FROM ANY AREAS PREVIOUSLY COVERED BY PAVING, TO WAYPOINT ANALYTICAL, (714) 282-8777, FOR CONTAMINATION TESTING. TESTING REQUIRES FOUR TO FIVE WEEKS. CONTRACTOR SHALL ALLOW SUFFICIENT TIME FOR TESTING PRIOR TO CONSTRUCTION.
5. ROOT BARRIERS: CONTRACTOR SHALL INSTALL LINEAR ROOT BARRIER ANYWHERE TREES ARE LOCATED WITHIN 5-FEET OF PAVEMENT AS SHOWN ON PLANS, PER SPECIFICATIONS. SEE DETAIL.
6. TREES: INSTALL PER PLANS AND DETAILS.
7. SHRUB AND GROUNDCOVER: SHRUBS AND GROUNDCOVER SHALL NOT BE PLANTED WITHIN 3' MINIMUM OF ANY TREES. INSTALL PER DETAILS.
8. PROPOSED TREE QUANTITIES:
   TOTAL TREES REMOVED: 33
   TOTAL TREES PROPOSED: 65

PRELIMINARY ENGINEERING

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK
PLANTING LEGEND

APPROVED: _____ DATE _____ CITY ENGINEER

APPROVED: _____ DATE _____ PUBLIC WORKS DIRECTOR

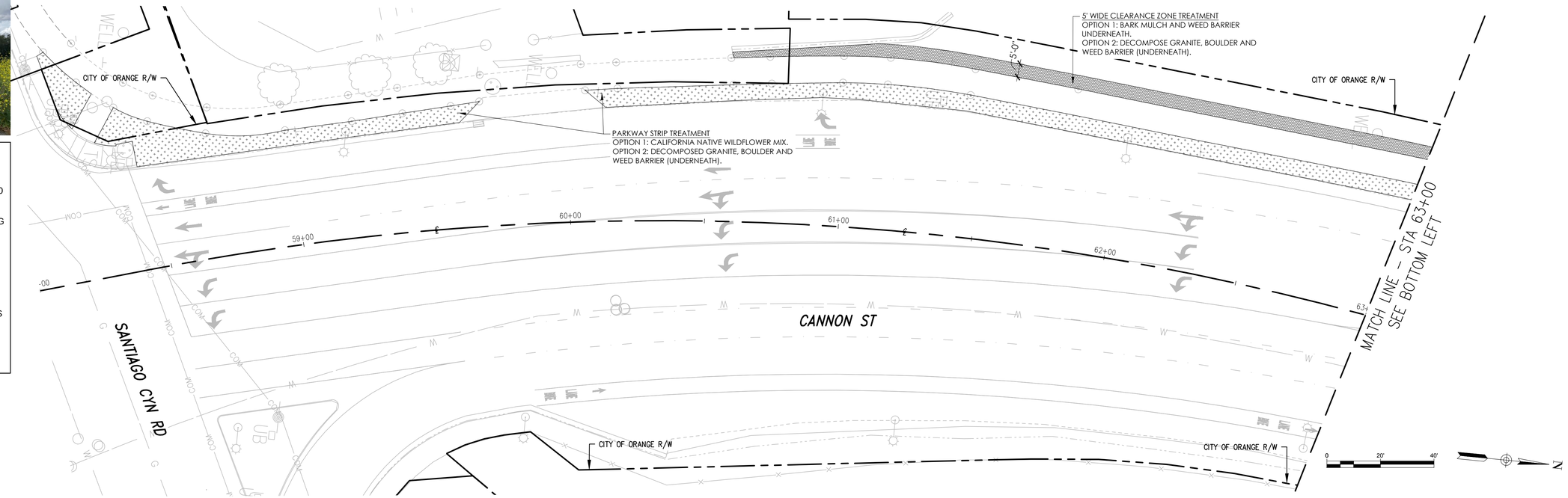
	NAME	DATE
DRAWN	RO	01/05/23
DESIGNED	JG/RO	01/05/23
CHECKED	CA	01/05/23

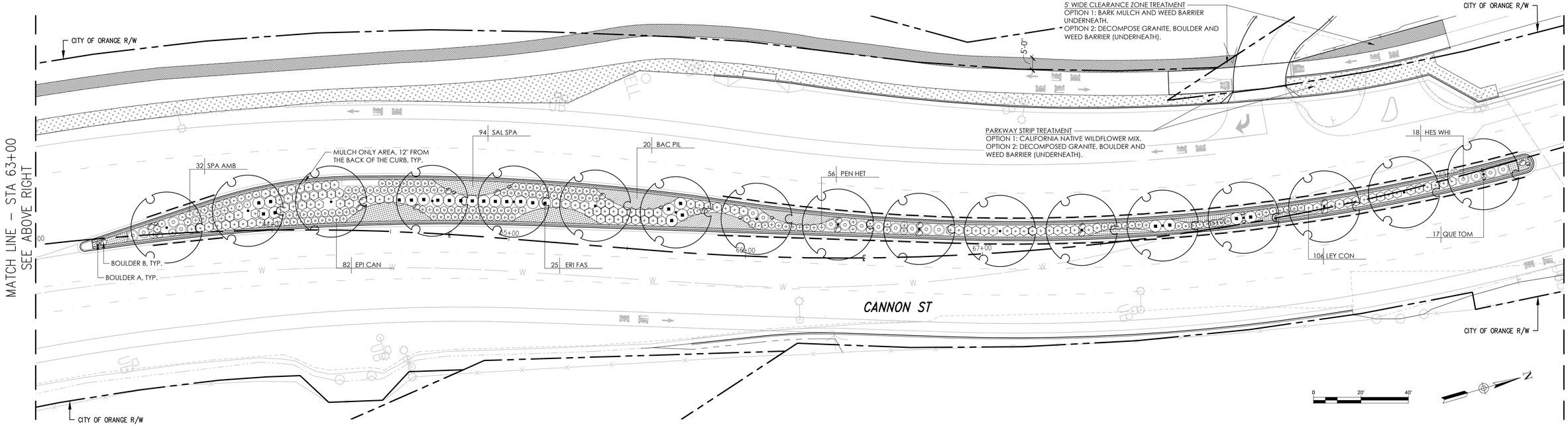
SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B.____ PG.____

SHEET **11** OF **XX** SHEETS

22-00092

SITE NOTES:
FROM THE RECENT SITE VISIT, BLACK MUSTARD (BRASSICA NIGRA) IS FOUND OCCUPYING THE PLANTING AREA ON BOTH SIDES OF THE EXISTING TRAIL NEAR STA 58+00 TO 69+00. THIS PLANT IS CONSIDERED INVASIVE THAT OFTEN OUT-COMPETES THE NATIVE VEGETATION. PER PREVIOUS MEETING CONVERSATION, THE CITY IS INTERESTED TO UTILIZE NATIVE, NON-IRRIGATE SEED MIX FOR THE PARKWAY STRIP. IN THIS CASE, EXCAVATION OF EXISTING SOIL MIGHT BE NEEDED TO REMOVE THE BLACK MUSTARD, AND BACK FILL WITH IMPORTED TOP SOIL. THEN A THOUGHTFUL WEED ABATEMENT PROGRAM AND CONSISTENT LONG-TERM MAINTENANCE EFFORT IS REQUIRED FOR THIS AREA TO AVOID THE BLACK MUSTARD TAKING OVER THE AREA. THEREFORE, TWO OPTIONS ARE PROVIDED AT THIS PHASE FOR CITY'S CONSIDERATION.





PRELIMINARY ENGINEERING

CITY OF ORANGE
OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

PLANTING PLAN
STATIONS 58+00 TO 69+50

APPROVED: _____ DATE _____ CITY ENGINEER

APPROVED: _____ DATE _____ PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	RO	01/05/23
DESIGNED	JG/RO	01/05/23
CHECKED	CA	01/05/23

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B. _____ PG. _____

SHEET **12** OF **XX** SHEETS

22-00092

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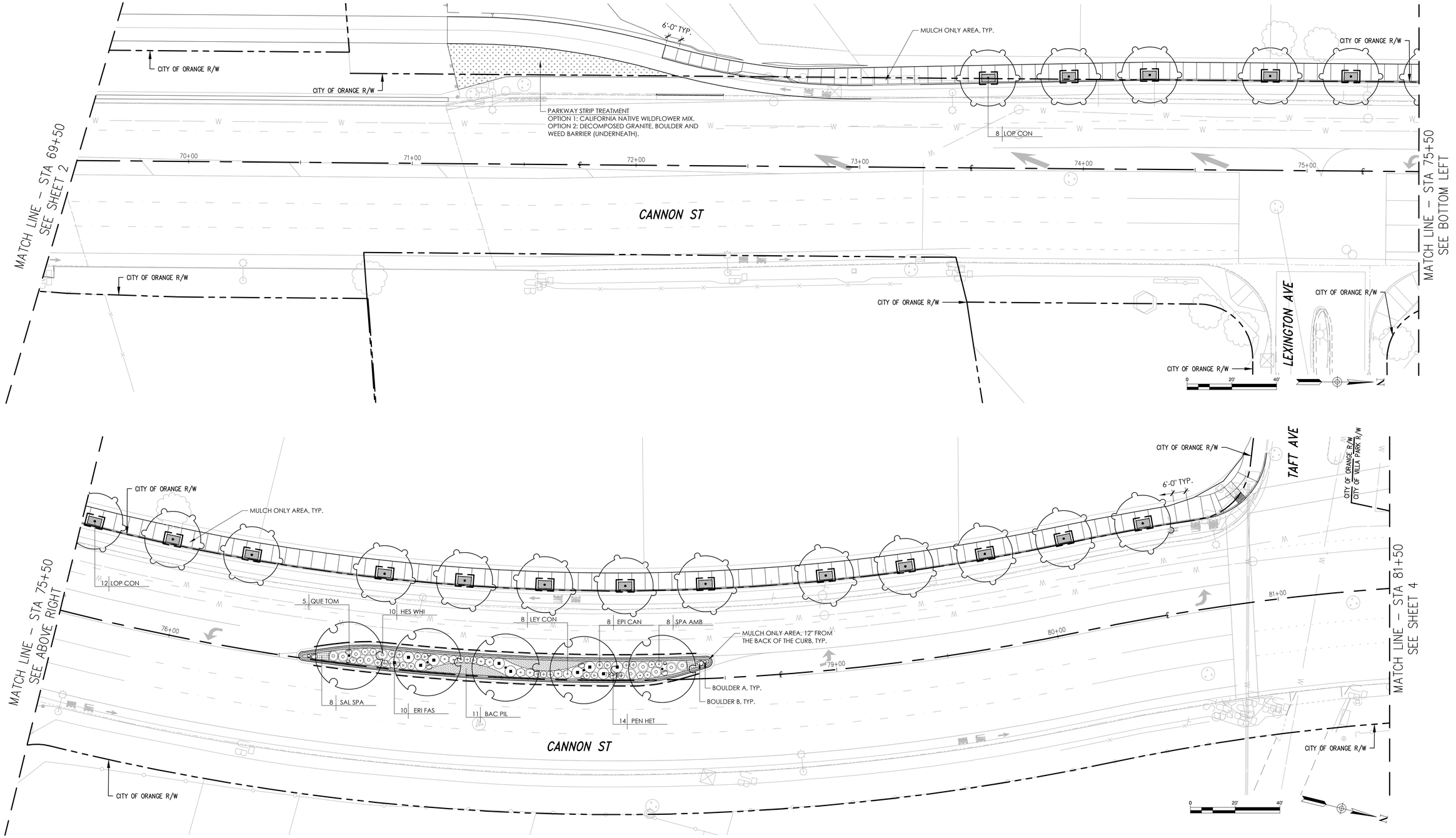

PRELIMINARY ENGINEERING

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

PLANTING PLAN
STATIONS 69+50 TO 81+50

APPROVED: _____ DATE _____ CITY ENGINEER

APPROVED: _____ DATE _____ PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	RO	01/05/23
DESIGNED	JG/RO	01/05/23
CHECKED	CA	01/05/23

SCALE: HORIZ. AS NOTED, VERT. AS NOTED

F.B. _____ PG. _____

SHEET **13** OF **XX** SHEETS

22-00092

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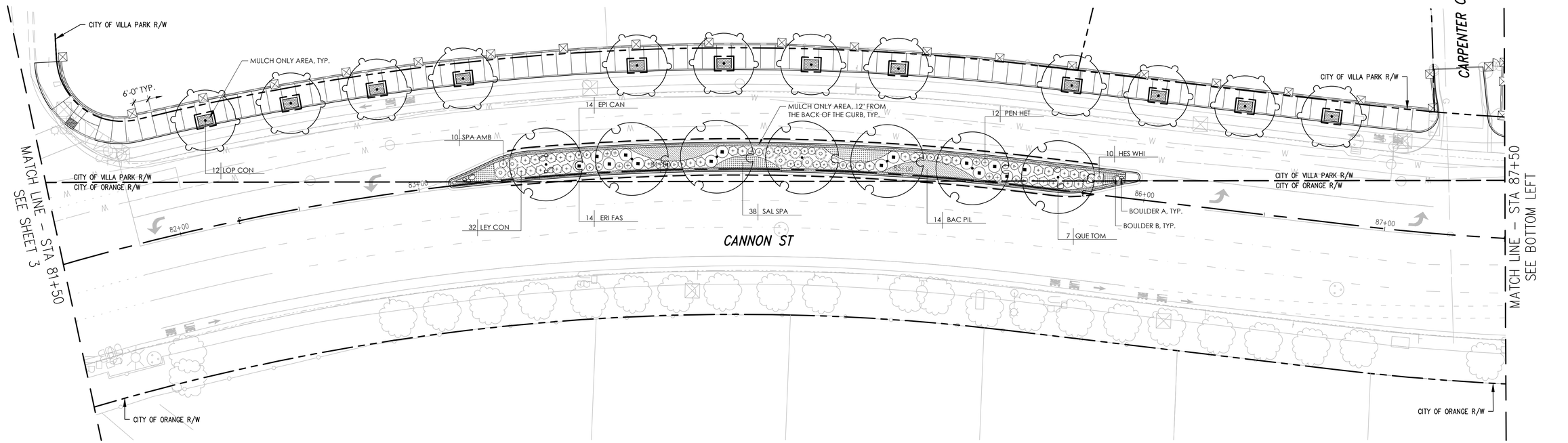
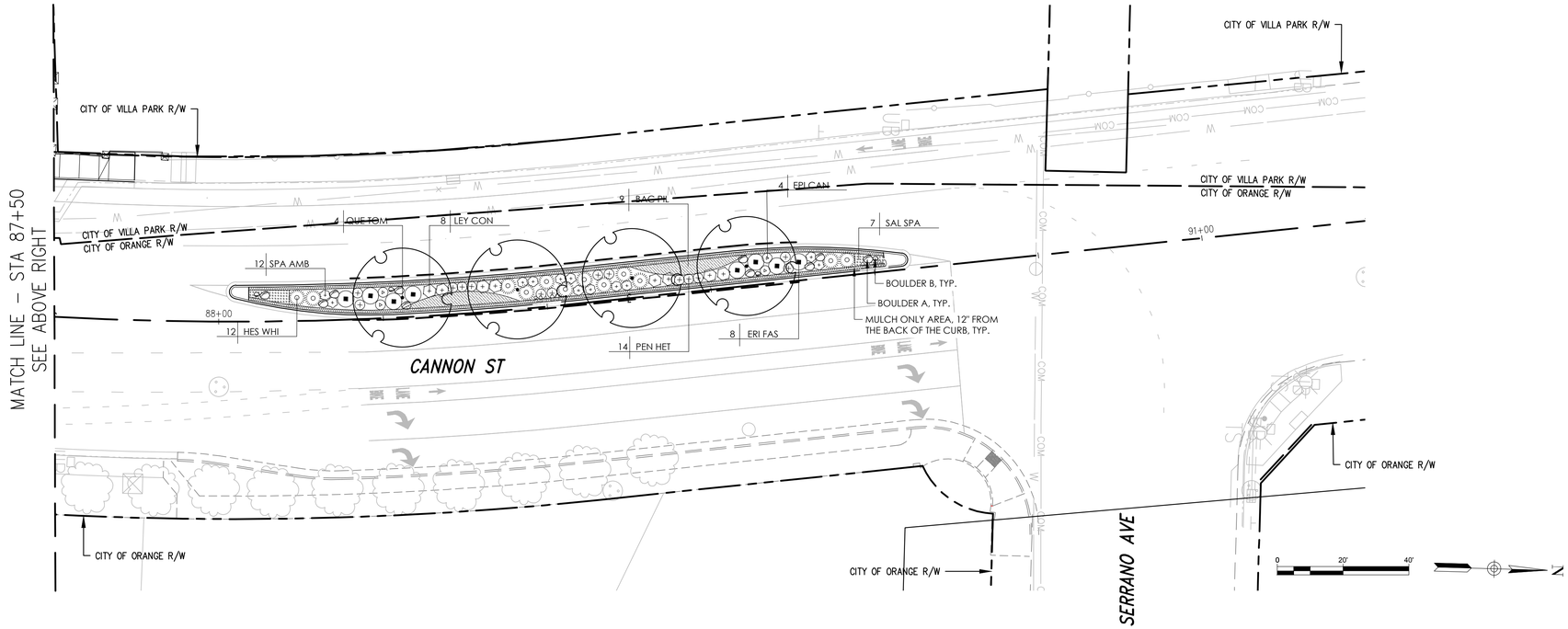




PRELIMINARY ENGINEERING

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS

SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

PLANTING PLAN
STATIONS 81+50 TO 91+50

APPROVED: _____ DATE _____ CITY ENGINEER

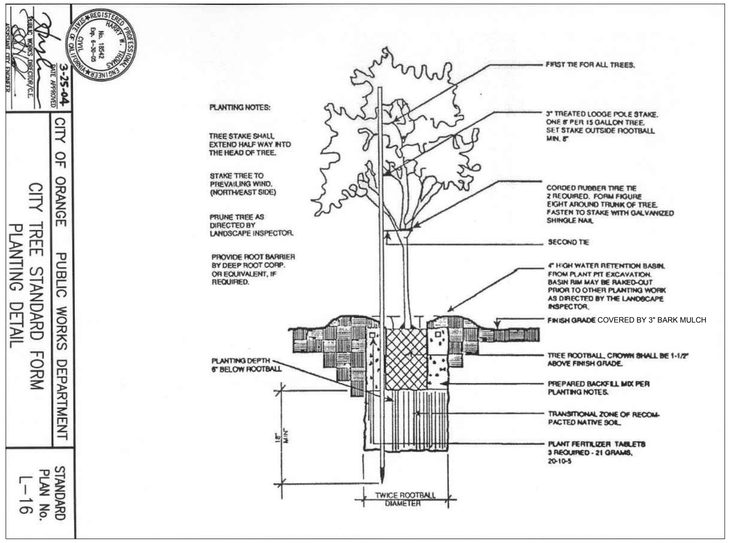
APPROVED: _____ DATE _____ PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	RO	01/05/23
DESIGNED	JG/RO	01/05/23
CHECKED	CA	01/05/23

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B. _____ PG. _____

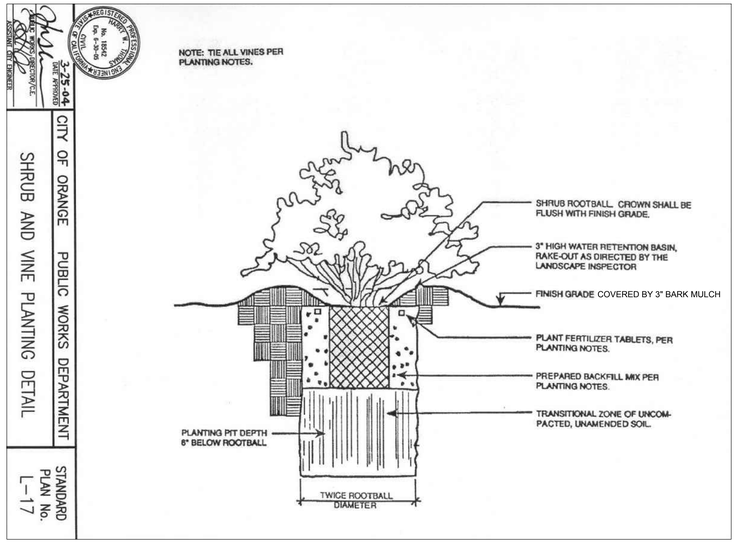
SHEET **14** OF **XX** SHEETS

22-00092



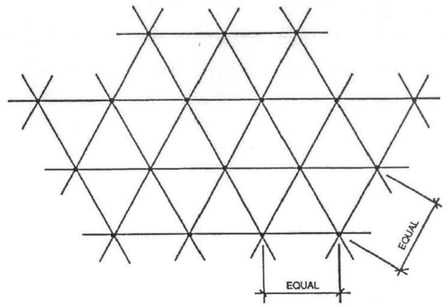
CITY OF ORANGE PUBLIC WORKS DEPARTMENT
CITY TREE STANDARD FORM PLANTING DETAIL
STANDARD PLAN No. L-16

1 PD-1 TREE PLANTING
CITY OF ORANGE PUBLIC WORKS DEPARTMENT STANDARDS N.T.S.



CITY OF ORANGE PUBLIC WORKS DEPARTMENT
SHRUB AND VINE PLANTING DETAIL
STANDARD PLAN No. L-17

2 PD-1 SHRUB AND VINE PLANTING
CITY OF ORANGE PUBLIC WORKS DEPARTMENT STANDARDS N.T.S.



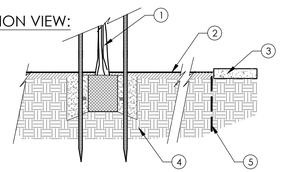
NOTE:

1. ALL SHRUBS/GROUND COVER TO BE PLANTED AT EQUAL SPACING (TRIANGULAR) UNLESS OTHERWISE INDICATED ON PLANS: SEE LEGEND FOR SPACING REQUIREMENTS.

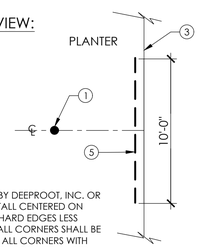
CITY OF ORANGE PUBLIC WORKS DEPARTMENT
SHRUB & GROUND COVER SPACING
STANDARD PLAN No. L-18

3 PD-1 SHRUB & GROUNDCOVER SPACING
CITY OF ORANGE PUBLIC WORKS DEPARTMENT STANDARDS N.T.S.

SECTION VIEW:



PLAN VIEW:



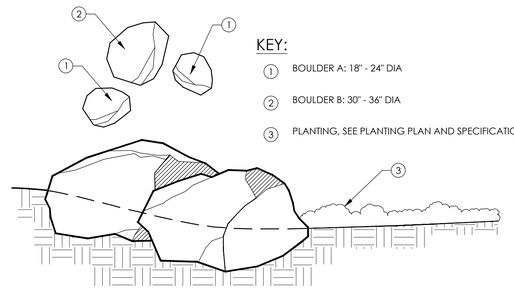
KEY:

1. TREE PLANTING
2. BARK MULCH, REFER TO SPECIFICATIONS
3. ADJACENT CURB OR PAVEMENT, SEE PLAN
4. NATIVE OR IMPORT SOIL
5. LINEAR ROOT BARRIER, BY DEEPROOT, INC. OR APPROVED EQUAL. INSTALL CENTERED ON TREE, PARALLEL TO ALL HARD EDGES LESS THAN 5'-0" FROM TREE. ALL CORNERS SHALL BE 90 DEGREES. CONNECT ALL CORNERS WITH MANUFACTURER'S COUPLINGS. INSTALL PER MANUFACTURER'S SPECIFICATIONS. ALIGN TOP OF ROOT BARRIER PANELS FLUSH WITH FINISHED GRADE IN PLANTER

NOTES:

1. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR MORE INFORMATION.

4 PD-1 TREE ROOT BARRIER
N.T.S.



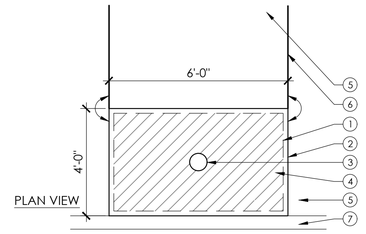
KEY:

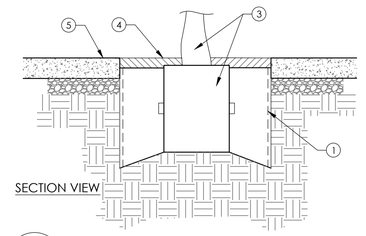
1. BOULDER A: 18" - 24" DIA
2. BOULDER B: 30" - 36" DIA
3. PLANTING, SEE PLANTING PLAN AND SPECIFICATIONS

NOTES:

1. BOULDERS TO BE PLACED 1/3 HEIGHT INTO GRADE WITH NO ACUTE ANGLES BETWEEN ROCK FACE AND FINISH GRADE. MINIMUM SIZE 18" IN DIAMETER. LANDSCAPE ARCHITECT TO FIELD VERIFY PLACEMENT OF ALL BOULDERS.

5 PD-1 BOULDER PLACEMENT
N.T.S.





KEY:

1. ROOT BARRIER
2. TREE WELL
3. TREE AND ASSOCIATED ROOT BALL, CENTER IN TREE WELL.
4. BARK MULCH
5. ADJACENT CONCRETE PAVEMENT, SEE CIVIL PLANS.
6. CONCRETE SCORE JOINT
7. CURB

6 PD-1 TREE WELL
N.T.S.

PRELIMINARY ENGINEERING

CITY OF ORANGE
OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS
SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK
PLANTING DETAILS

APPROVED: _____ DATE CITY ENGINEER
APPROVED: _____ DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	RO	01/05/23
DESIGNED	JG/RO	01/05/23
CHECKED	CA	01/05/23

SCALE: HORIZ. AS NOTED VERT. AS NOTED | F.B._____ PG._____ | SHEET 15 OF XX SHEETS

22-00092

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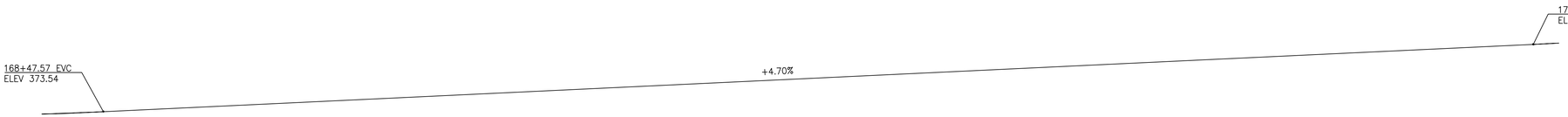
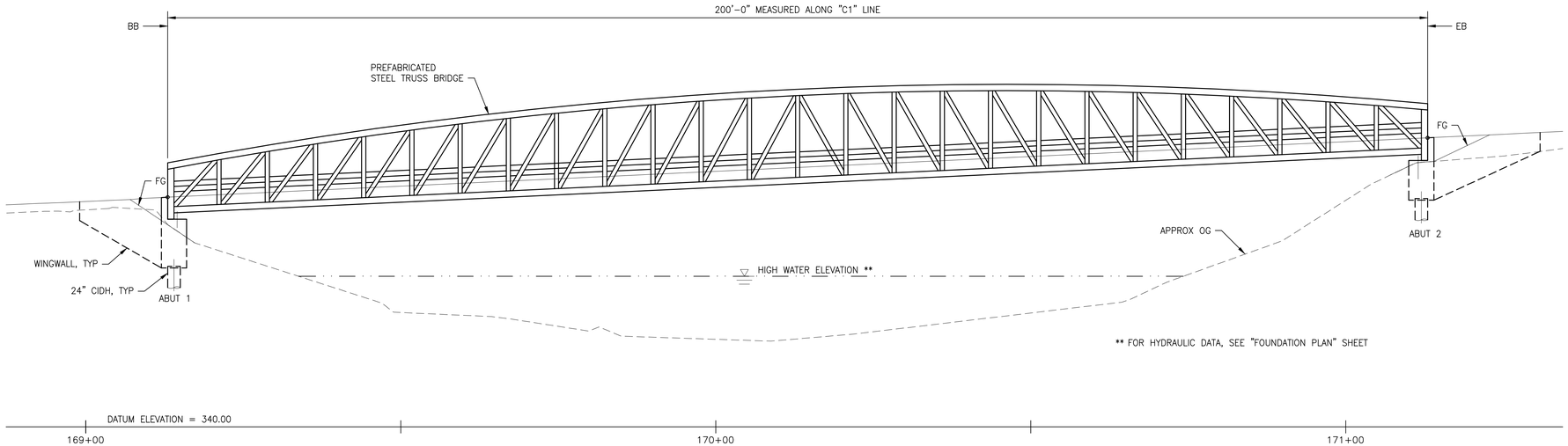
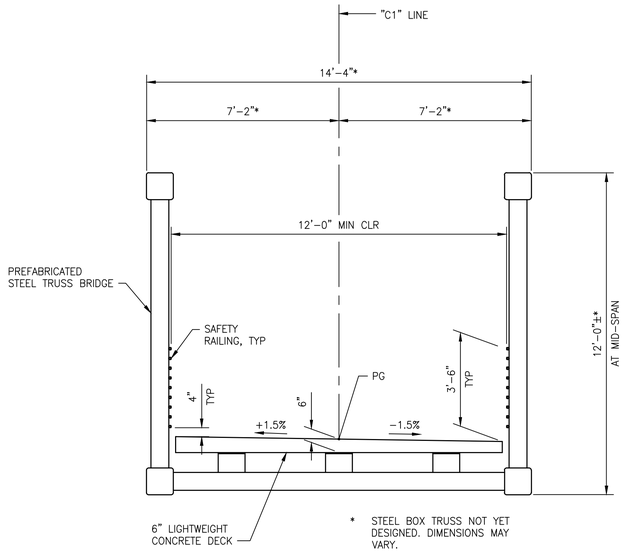
By: Ryan Ortiz on 1/26/2024 3:29 PM



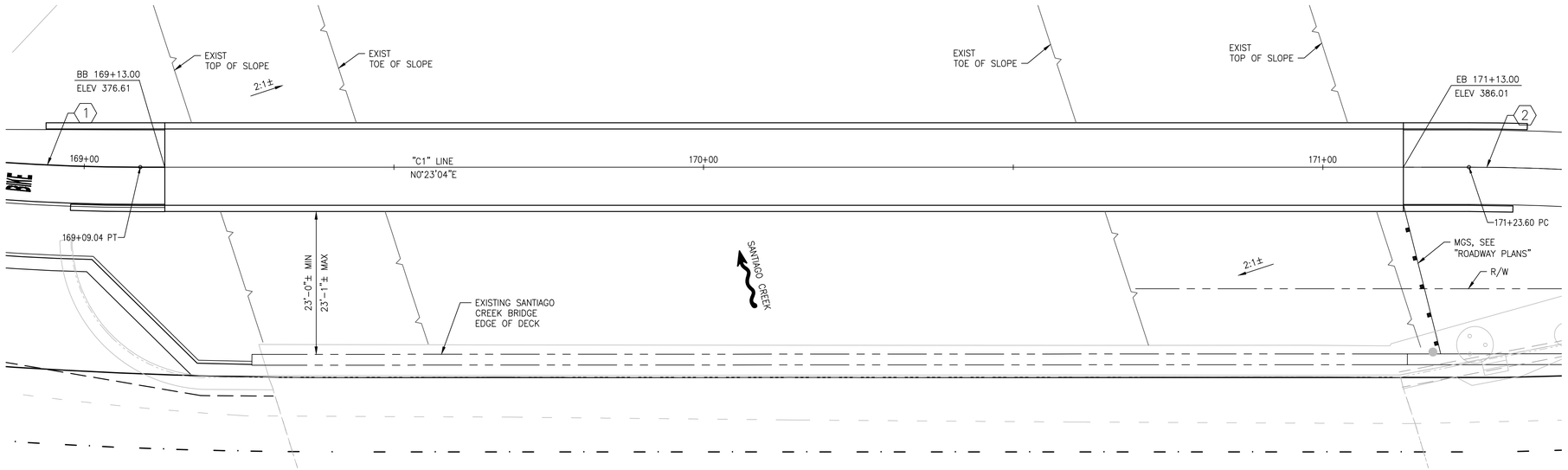
PROFILE GRADE
NO SCALE



ELEVATION
SCALE: 1" = 10'



TYPICAL SECTION
SCALE: 3/8" = 1'-0"



PLAN
SCALE: 1" = 10'

CURVE DATA

1 "C1" LINE	2 "C1" LINE
R = 320.0'	R = 320.00'
Δ = 10°59'46"	Δ = 15°29'18"
T = 30.80'	T = 43.52'
L = 61.41'	L = 86.50'

NOTE:
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PRELIMINARY ENGINEERING

CITY OF ORANGE
OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS
SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

CANNON STREET PEDESTRIAN BRIDGE
GENERAL PLAN

REGISTERED PROFESSIONAL ENGINEER
KHALTUM OOLEY
NO. 56838
Exp. 03/31/25
CIVIL
STATE OF CALIFORNIA

APPROVED:	APPROVED:
DATE CITY ENGINEER	DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	JV	
DESIGNED	LO	
CHECKED	MM	

SCALE: HORIZ. AS NOTED VERT. AS NOTED | F.B._____ PG. _____ | SHEET###OF # SHEETS

22-00092

J:\Orange-22-00092-Cannon St Widening\CADD\Structures\Sheets\01_CannonSt-PB_GP.dwg
By: Jose Valenzuela on 1/26/2024 9:15 AM

GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION AND THE CALIFORNIA AMENDMENTS, PREFACE DATED APRIL 2019.

AASHTO LRFD GUIDE SPECIFICATIONS FOR DESIGN OF PEDESTRIAN BRIDGES, 2ND EDITION, DECEMBER 2009

SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC), VERSION 2.0 DATED APRIL 2019.

DEAD LOADING: MAXIMUM TRUSS DL INCLUDING DECK MUST NOT EXCEED 75 KIPS

LIVE LOADING: H10 AND 90 PSF PEDESTRIAN LOADING.

SEISMIC LOADING:
SOIL PROFILE: Vs30 = 310 m/s (1017 ft/s)
MOMENT MAGNITUDE: 6.61
PEAK GROUND ACCELERATION 0.55g
SEE ARS CURVE

REINFORCED CONCRETE:
fy = 60 ksi
f'c = 3.6 ksi UNLESS OTHERWISE NOTED
N = 8

STRUCTURAL STEEL: (EXCEPT FOR PREFABRICATED STEEL TRUSS BRIDGE MEMBERS)

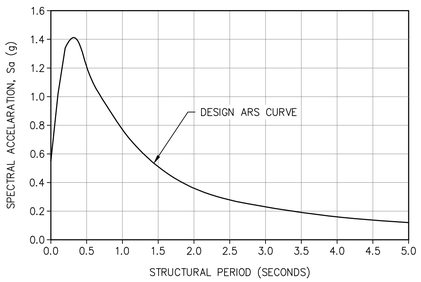
PLATES	: ASTM A709/A709M
BOLTS, NUTS, WASHERS	: ASTM A325, TYPE 1
ANGLES	: ASTM A36

ANCHOR BOLTS, WASHERS, NUTS AND LOCK NUTS MUST BE WEATHERING STEEL.

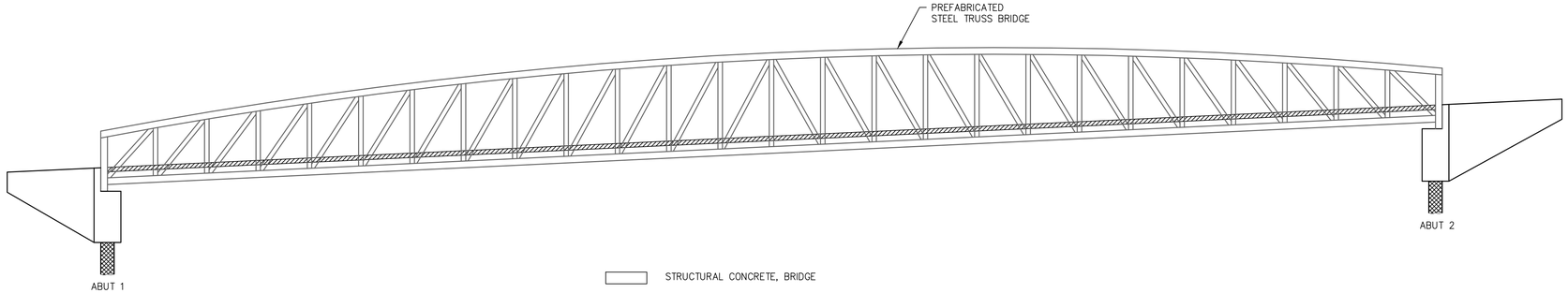
QUANTITIES

STRUCTURE EXCAVATION (BRIDGE)	53	CY
STRUCTURE BACKFILL (BRIDGE)	69	CY
24" CAST-IN-DRILL HOLE CONCRETE PILING	300	LF
STRUCTURAL CONCRETE, BRIDGE	331	CY
LIGHTWEIGHT CONCRETE	44	CY
BAR REINFORCING STEEL (BRIDGE)	54,409	LB
MISCELLANEOUS METAL (BRIDGE)	3,343	LB
FURNISH PREFABRICATED STEEL TRUSS BRIDGE (200')	1	EA
ERECT PREFABRICATED STEEL TRUSS BRIDGE (200')	1	EA

INDEX TO PLANS



ARS DESIGN CURVE
(5% DAMPING)



STRUCTURAL CONCRETE, BRIDGE

LIGHTWEIGHT CONCRETE

CAST-IN-DRILLED-HOLE CONCRETE PILE (f'c = 4.0 ksi @ 28 DAYS)

CONCRETE STRENGTH AND TYPE LIMITS
NO SCALE

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PRELIMINARY ENGINEERING

CITY OF ORANGE
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IMPROVEMENT PLANS
SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

CANNON STREET PEDESTRIAN BRIDGE
INDEX TO PLANS

REGISTERED PROFESSIONAL ENGINEER — KHAI TUN ODO V — NO. 56838 Exp. 03/31/25 — CIVIL — STATE OF CALIFORNIA

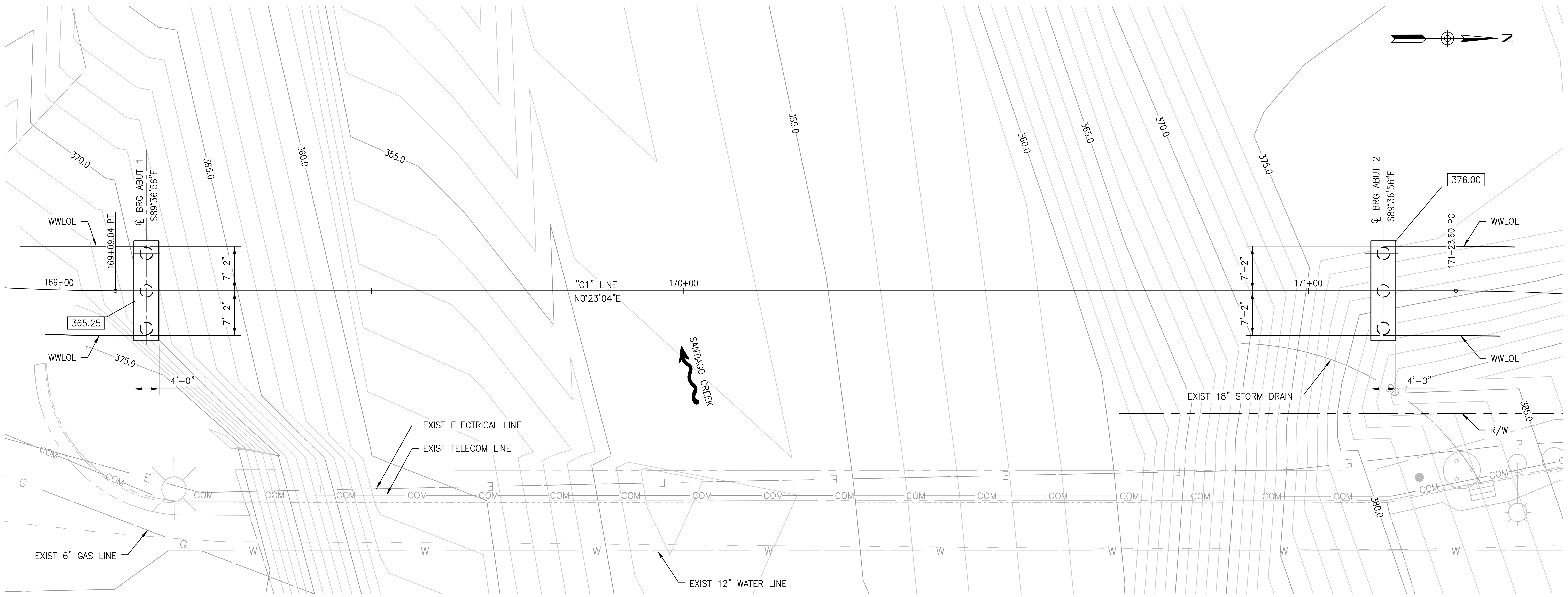
APPROVED: _____ DATE CITY ENGINEER

APPROVED: _____ DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN		
DESIGNED		
CHECKED		

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B.____ PG.____ SHEET###OF # SHEETS

22-00092



FOUNDATION PLAN

SCALE: 1" = 10'

NOTES

1. FOR HORIZONTAL ALIGNMENT AND VERTICAL PROFILE, SEE "GENERAL PLAN" SHEET.
2. FOR UTILITIES, SEE "ROADWAY PLANS".

LEGEND

XXX.XX — BOTTOM OF ABUTMENT ELEVATION (FEET)

CIDH PILE

DATUM

NATIONAL GEODETIC VERTICAL DATUM OF 1988 (NGVD 88)
NORTH AMERICAN DATUM OF 1983 (NAD 83)

BENCHMARKS

BENCHMARK NO. 1:

BENCHMARK NO. 2

PILE DATA TABLE

LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	SPECIFIED TIP ELEVATION (ft)	CUT-OFF ELEVATION (ft)
		COMPRESSION	TENSION			
ABUTMENT 1	24" CIDH PILE	260	0	+326(a) +345(c) +335(d)	+326	365.50
ABUTMENT 2	24" CIDH PILE	250	0	+344(a) +356(c) +348(d)	+344	376.25

NOTE:
1. DESIGN TIP ELEVATIONS ARE CONTROLLED BY THE FOLLOWING DEMANDS: (a) COMPRESSION; (b) TENSION, (c) SETTLEMENT, AND (d) LATERAL LOADS.
2. THE SPECIFIED TIP ELEVATION SHALL NOT BE RAISED.

HYDROLOGIC SUMMARY

DRAINAGE AREA : 91 SQUARE MILES

FREQUENCY (YEARS)	DESIGN FLOOD	BASE FLOOD	FLOOD OF RECORD
	50-YEAR	100-YEAR	X-YEAR
DISCHARGE	4,000 CFS	6,000 CFS	6,600 CFS
WATER SURFACE ELEVATION AT BRIDGE	361.81 FT	363.91 FT	364.3 FT

FLOOD PLAIN DATA ARE BASED UPON INFORMATION AVAILABLE WHEN THE PLANS WERE PREPARED AND ARE SHOWN TO MEET FEDERAL REQUIREMENTS. THE ACCURACY OF SAID INFORMATION IS NOT WARRANTED BY THE CITY AND INTERESTED OR AFFECTED PARTIES SHOULD MAKE THEIR OWN INVESTIGATION.

0 10' 20'

PRELIMINARY ENGINEERING

REGISTERED PROFESSIONAL ENGINEER KHALUN ODDITY NO. S6838 Exp. 03/31/25 CIVIL STATE OF CALIFORNIA

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS
SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

CANNON STREET PEDESTRIAN BRIDGE
FOUNDATION PLAN

APPROVED: DATE CITY ENGINEER

APPROVED: DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	JV	
DESIGNED	LO	
CHECKED	MM	

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B.____ PG.____ SHEET #### OF # SHEETS

22-00092

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

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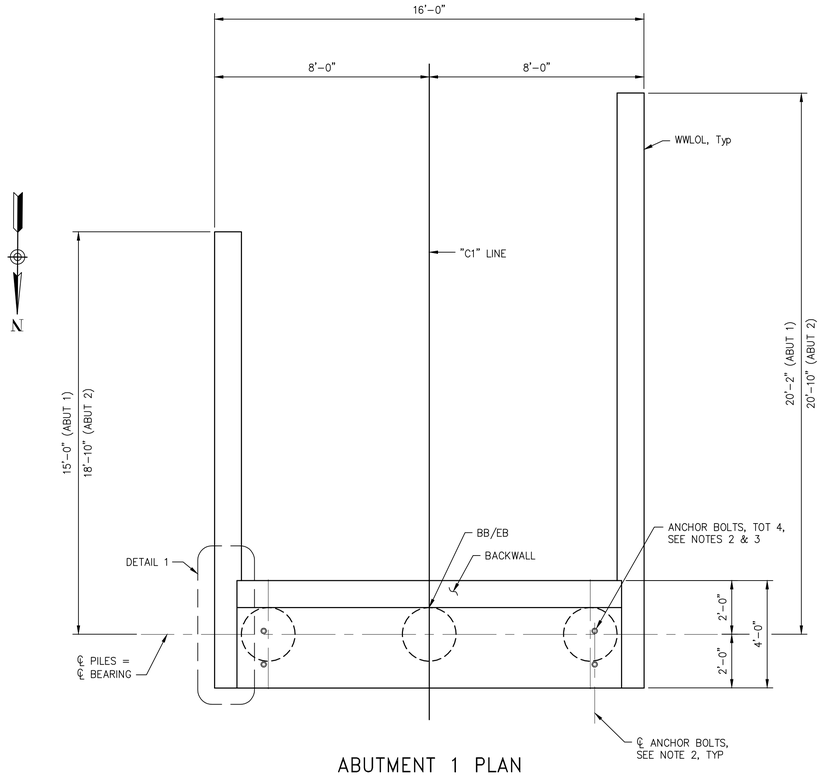
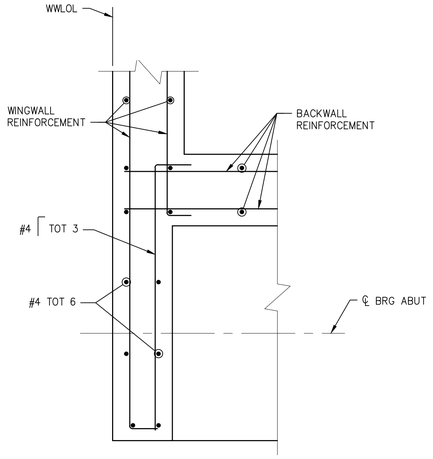
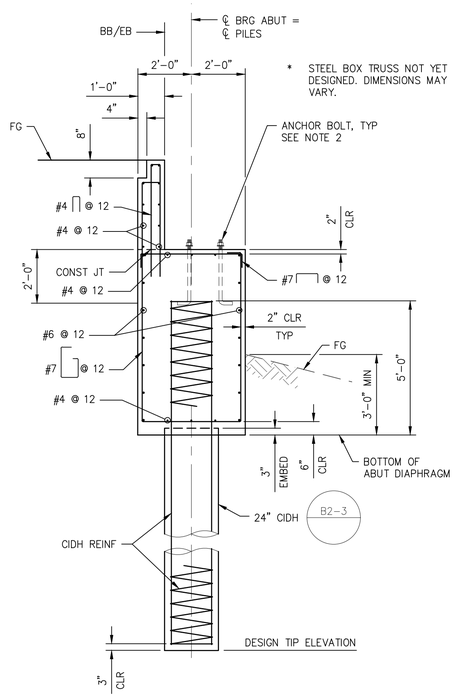
By: Jojo Valenzuela on 1/26/2024 9:22 AM



ABUTMENT 1 PLAN
SCALE: 3/8" = 1'-0"

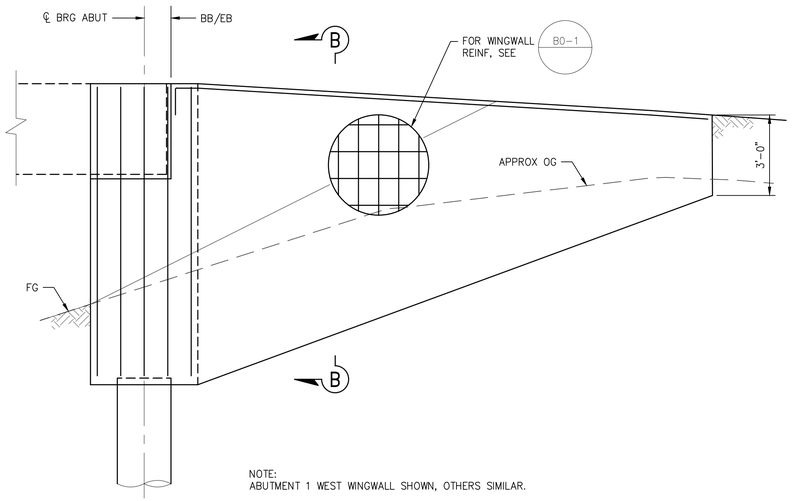


DETAIL 1
SCALE: 1" = 1'-0"



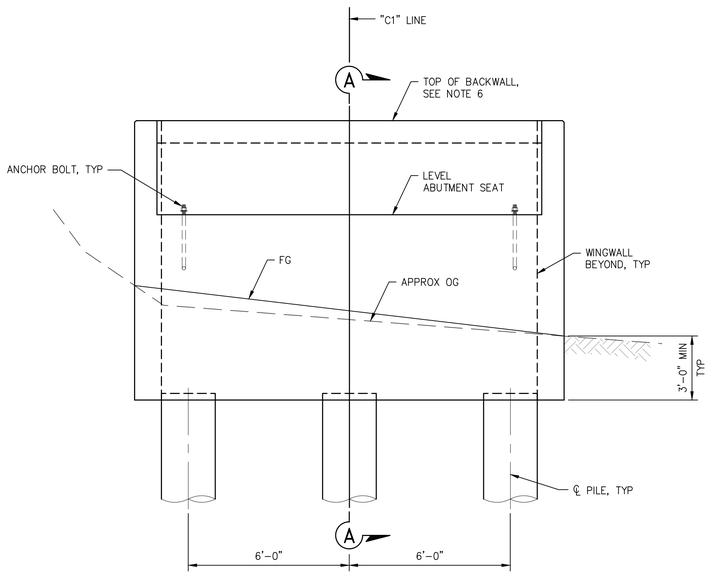
* STEEL BOX TRUSS NOT YET DESIGNED. DIMENSIONS MAY VARY.

SECTION A-A
SCALE: 3/8" = 1'-0"

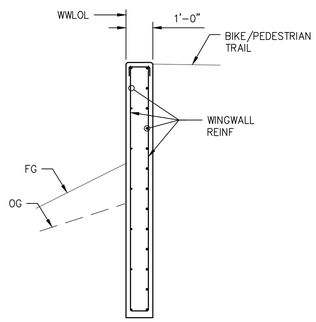


NOTE:
ABUTMENT 1 WEST WINGWALL SHOWN, OTHERS SIMILAR.

WINGWALL ELAVATION
SCALE: 3/8" = 1'-0"



ABUTMENT 1 ELEVATION
SCALE: 3/8" = 1'-0"



SECTION B-B
SCALE: 3/8" = 1'-0"

NOTE:
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NOTES

1. THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
2. FOR PREFABRICATED STEEL TRUSS BRIDGE DETAILS, SEE TRUSS MANUFACTURER'S APPROVED DRAWINGS. CONTRACTOR MUST COORDINATE, SUPPLY AND INSTALL ANCHOR BOLTS PER TRUSS MANUFACTURER'S PLANS.
3. SLOTS AND HOLES IN BEARING PLATES AND BEARINGS ARE SHOWN FOR 1"ø ANCHOR BOLTS. THE ACTUAL HOLES AND SLOT SIZES MUST BE PER PREFABRICATED STEEL TRUSS BRIDGE MANUFACTURER'S DESIGNED ANCHOR BOLT SIZES.
4. DIMENSIONS MARKED WITH (*) WILL BE DEPENDENT UPON PREFABRICATED STEEL TRUSS BRIDGE MANUFACTURER'S APPROVED DRAWINGS.
5. POUR BACKWALL CONCRETE AFTER LEVELING OF THE BRIDGE IS COMPLETED. TOP OF BACKWALL INCLUDING "JOINT CLOSURE PLATE" ASSEMBLY MUST SLOPE TO CONFORM WITH THE DECK SLOPE AND PROFILE GRADE.
6. BEARING PLATES, BEARING PADS, ANCHOR BOLT SIZES ETC, MUST BE DETERMINED BY THE PREFABRICATED STEEL TRUSS BRIDGE MANUFACTURER. DETAILS SHOWN ARE FOR BIDDING PURPOSES ONLY.
7. ABUTMENT 1 LAYOUT AND DETAILS SHOWN, ABUTMENT 2 SIMILAR.

PRELIMINARY ENGINEERING

CITY OF ORANGE
OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS
SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

CANNON STREET PEDESTRIAN BRIDGE
ABUTMENT LAYOUT

REGISTERED PROFESSIONAL ENGINEER
KAILUN OOI YU
NO. S6838
Exp. 03/31/25
STATE OF CALIFORNIA
CIVIL

APPROVED:	APPROVED:
DATE CITY ENGINEER	DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	JV	
DESIGNED	LO	
CHECKED	MM	

SCALE: HORIZ. AS NOTED VERT. AS NOTED | F.B.____ PG. ____ | SHEET###OF # SHEETS

22-00092

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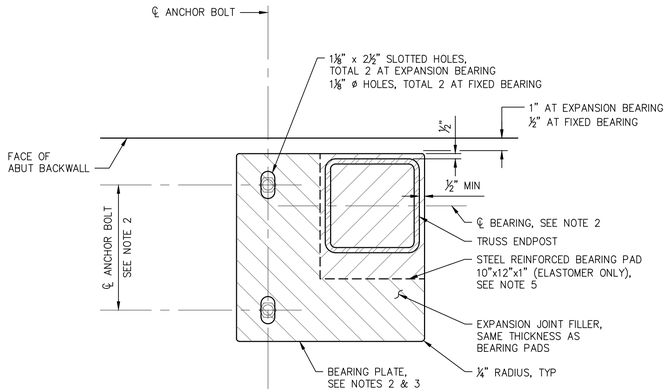
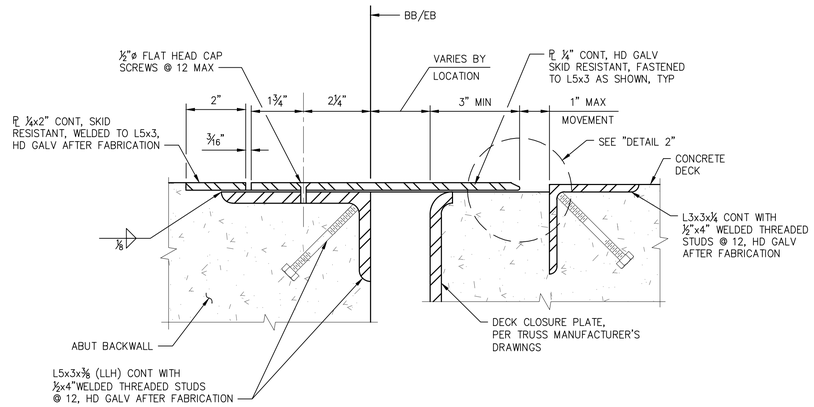


INDICATES ELASTOMERIC BEARING PAD

INDICATES EXPANSION JOINT FILLER

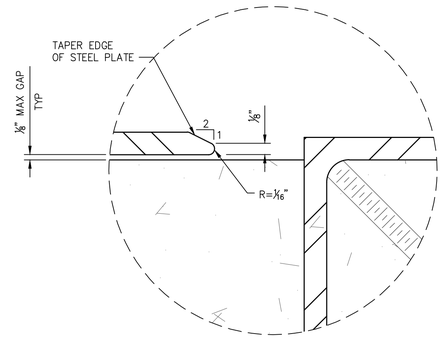
BEARING PLATE DETAIL

NOT TO SCALE



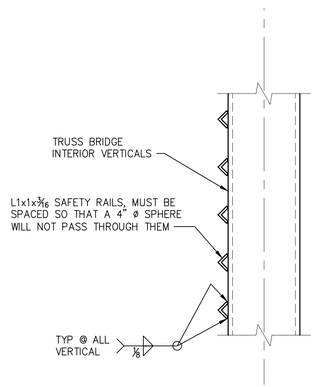
JOINT CLOSURE PLATE DETAIL

NOT TO SCALE



DETAIL 2

NOT TO SCALE



SAFETY RAIL DETAIL

NOT TO SCALE

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NOTES

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2. FOR PREFABRICATED STEEL TRUSS BRIDGE DETAILS, SEE TRUSS MANUFACTURER'S APPROVED DRAWINGS. CONTRACTOR MUST COORDINATE, SUPPLY AND INSTALL ANCHOR BOLTS PER TRUSS MANUFACTURER'S PLANS.
3. SLOTS AND HOLES IN BEARING PLATES AND BEARINGS ARE SHOWN FOR 1"ø ANCHOR BOLTS. THE ACTUAL HOLES AND SLOT SIZES MUST BE PER PREFABRICATED STEEL TRUSS BRIDGE MANUFACTURER'S DESIGNED ANCHOR BOLT SIZES.
4. BEARING PLATES, BEARING PADS, ANCHOR BOLT SIZES, ETC MUST BE DETERMINED BY THE PREFABRICATED STEEL TRUSS BRIDGE MANUFACTURER. DETAILS SHOWN ARE FOR BIDDING PURPOSES ONLY.
5. EPOXY BOND BEARING PAD AND JOINT FILLER TO THE ABUTMENT SEAT. APPLY LIGHT COAT OF COMMERCIAL QUALITY GREASE TO TOP OF BEARING PAD AT EXPANSION BEARING ONLY.
6. BRIDGE MANUFACTURER TO SUPPLY AND INSTALL LOAD LIMITATION PLAQUE ON BRIDGE.

PRELIMINARY ENGINEERING

REGISTERED PROFESSIONAL ENGINEER KHALTUN DOOTA NO. S6838 Exp. 03/31/25 STATE OF CALIFORNIA CIVIL

CITY OF ORANGE

OFFICE OF THE CITY ENGINEER

IMPROVEMENT PLANS
SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

CANNON STREET PEDESTRIAN BRIDGE
JOINT CLOSURE PLATE DETAILS

APPROVED:	APPROVED:
DATE CITY ENGINEER	DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	JV	
DESIGNED	LO	
CHECKED	MM	

SCALE: HORIZ. AS NOTED VERT. AS NOTED | F.B._____ PG. _____ | SHEET###OF # SHEETS

22-00092

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By: Jojo Valenzuela on 1/26/2024 9:23 AM

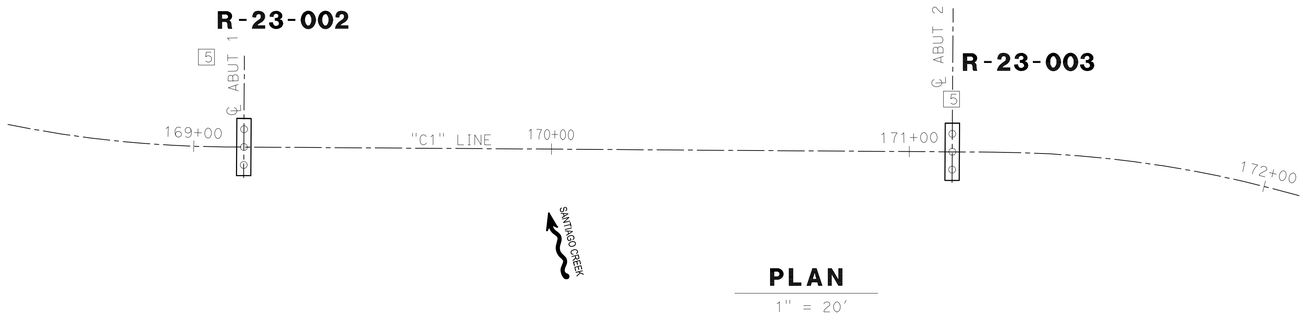
NOTES:

(1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2022).

(2) 1.4" samples were taken using a Standard Penetration Sampler and 2.4" samples were taken using a California Modified Sampler; multiply California Modified Sampler blowcounts by 0.65 to convert to equivalent SPT blowcounts.

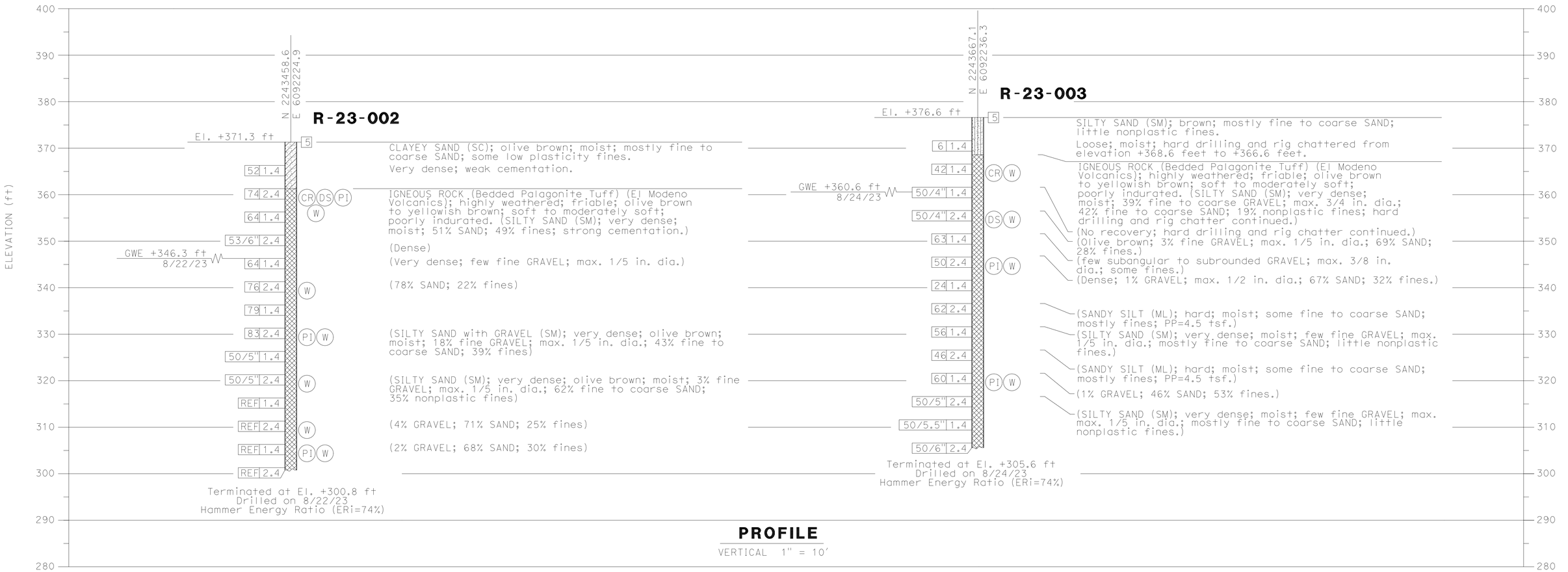
(3) An automatic trip hammer system consisting of a hammer weight of 140 lbs falling a distance of 30" drop was used to advance the samplers.

(4) For Soil Legend, see A10F and A10G of the Caltrans Standard Plans.



PLAN

1" = 20'



PROFILE

VERTICAL 1" = 10'

BOREHOLE LOCATION TABLE

Hole ID	Alignment Name	Station and Offset
R-23-002	"C1" Line	169+03 24.3 Lt.
R-23-003	"C1" Line	171+12 15.2 Lt.

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PRELIMINARY ENGINEERING

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IMPROVEMENT PLANS
SANTIAGO CREEK BIKE TRAIL NORTH
FROM CANNON STREET TO SANTIAGO OAKS REGIONAL PARK

CANNON STREET PEDESTRIAN BRIDGE
LOG-OF-TEST-BORINGS 1 OF 1

REGISTERED PROFESSIONAL ENGINEER
ALEXANDRIAN THURSTROM
NO. GE 3123
EXP. 9-30-2025
GEOTECHNICAL
STATE OF CALIFORNIA

APPROVED: _____ DATE CITY ENGINEER

APPROVED: _____ DATE PUBLIC WORKS DIRECTOR

	NAME	DATE
DRAWN	TN	
DESIGNED		
CHECKED	PR	

SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B._____ PG._____ SHEET###OF # SHEETS

22-00092

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By: Jojo Valenzuela on 1/26/2024 10:32 AM