



Exhibit B

Project Drawings

FILED

07/22/25

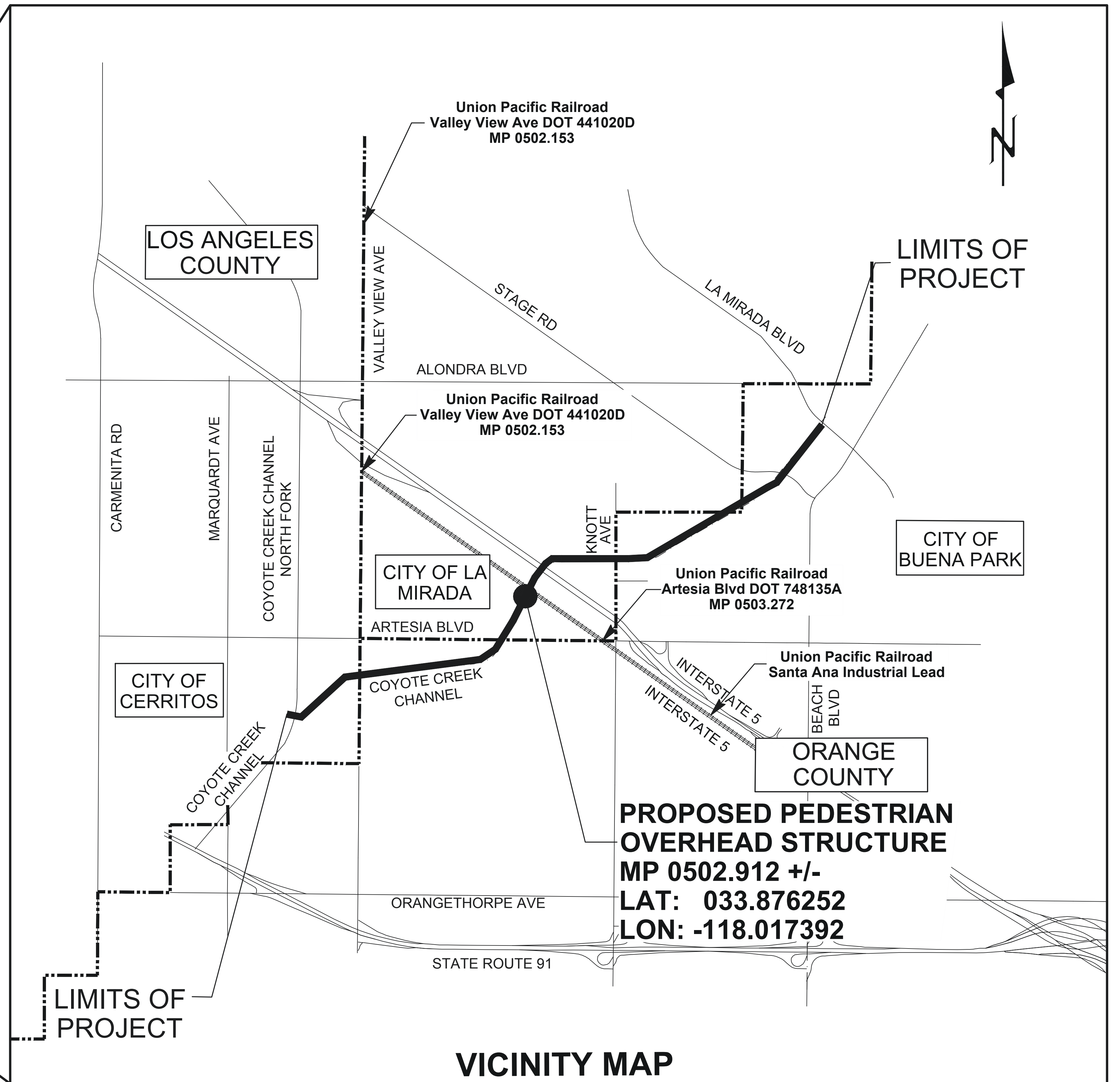
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A2507011

Exhibit B1 – Vicinity Maps



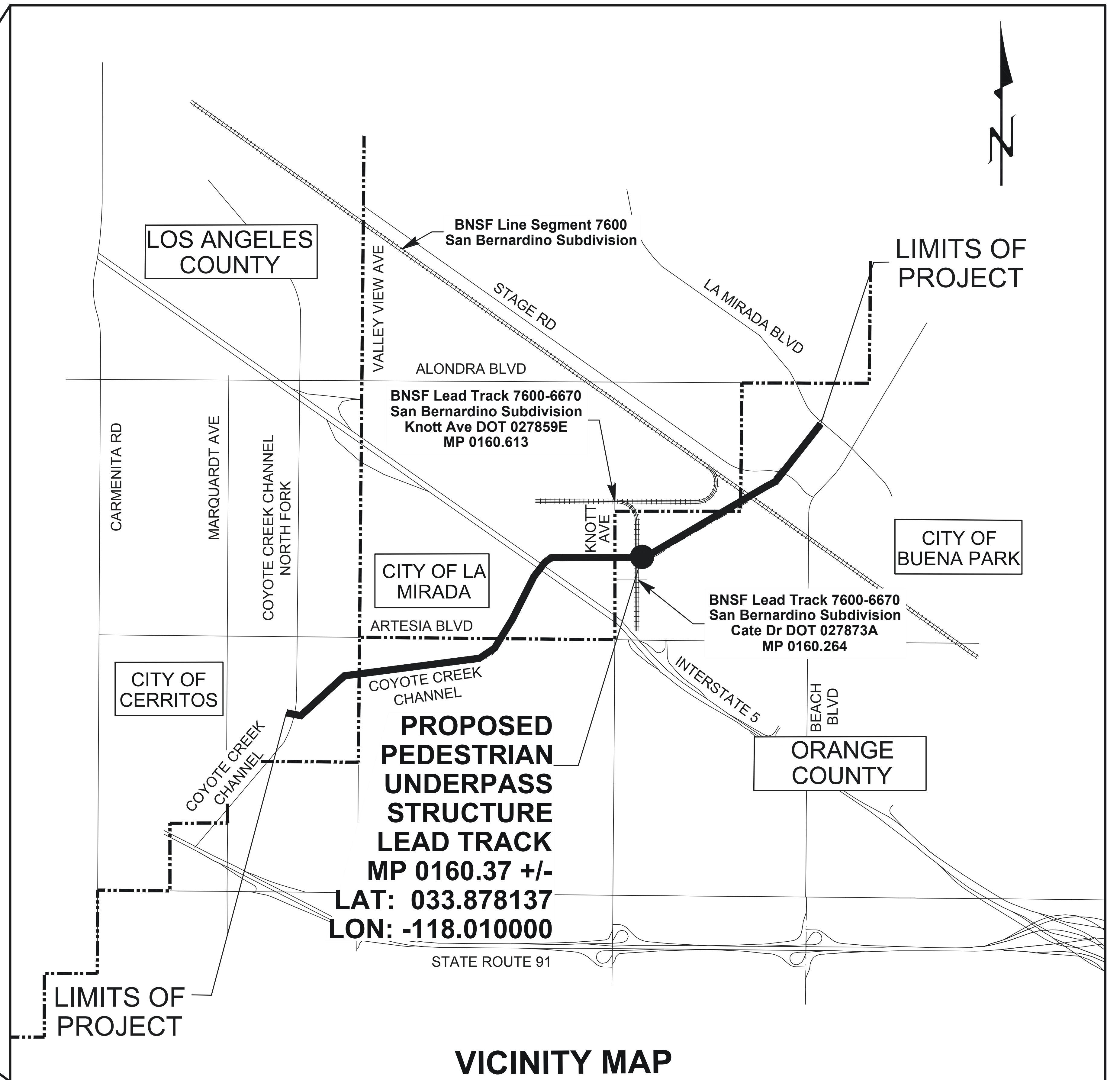
LOCATION MAP
NO SCALE



VICINITY MAP
NO SCALE



LOCATION MAP
NO SCALE

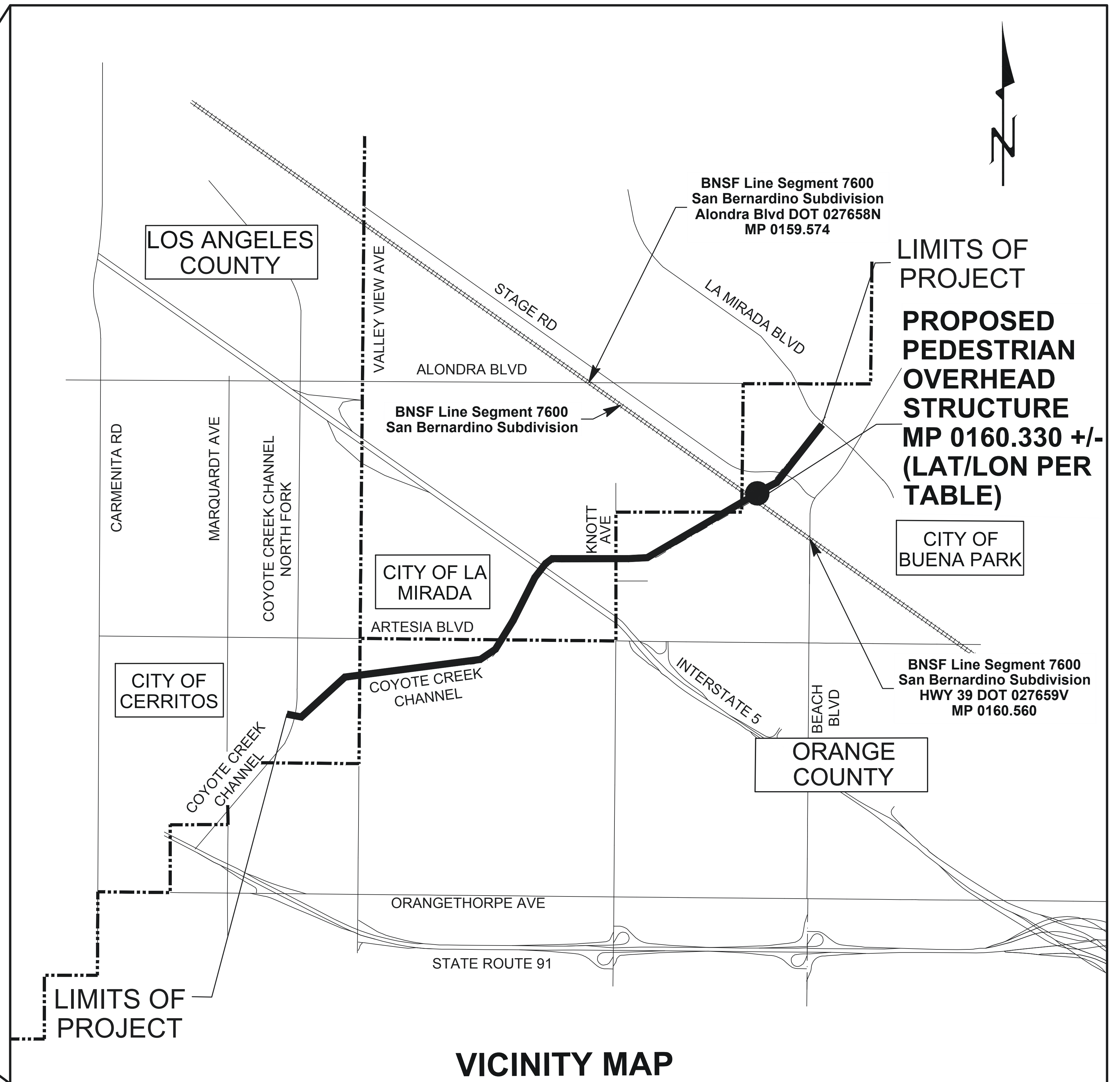


VICINITY MAP
NO SCALE



LOCATION MAP
NO SCALE

TRACK NO.	LATITUDE	LONGITUDE
ML1	033.882081	-118.001601
ML2	033.882053	-118.001642
ML3	033.882028	-118.001679



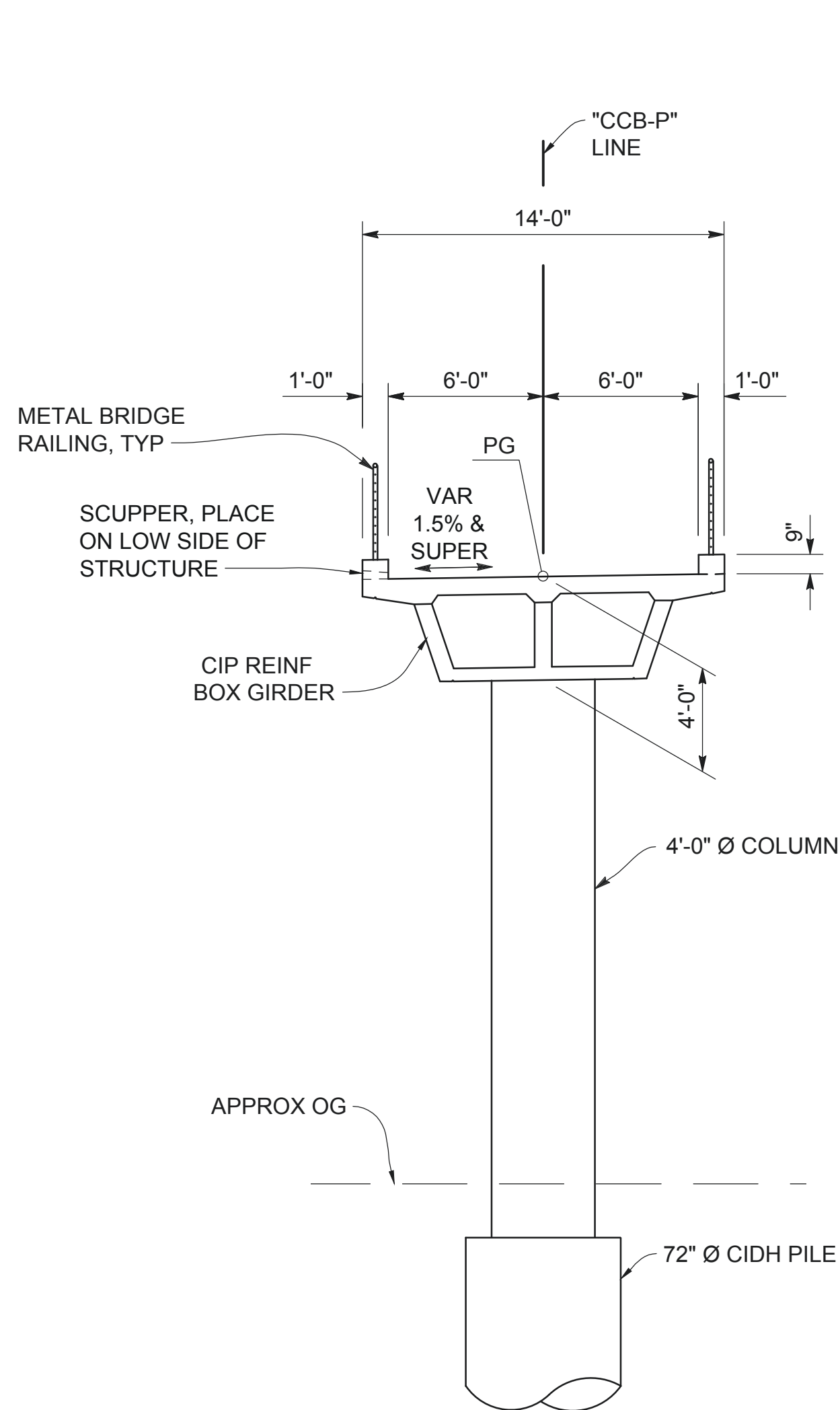
VICINITY MAP
NO SCALE

Exhibit B

Project Drawings

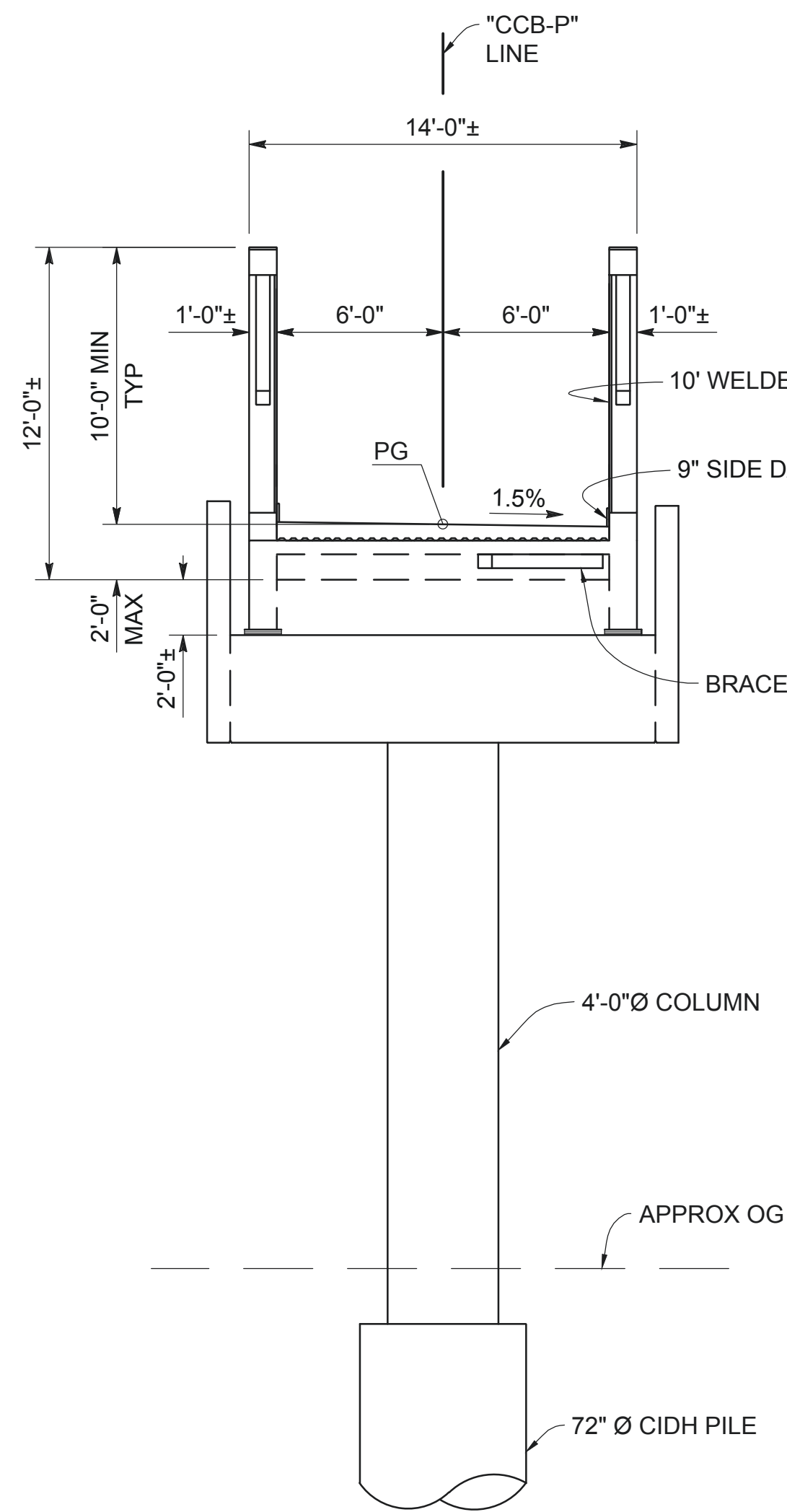
Exhibit B2 – Structure Drawings

Exhibit B2-1 - Coyote Creek Bikeway Trail over UPRR Santa Ana Industrial
Lead Track



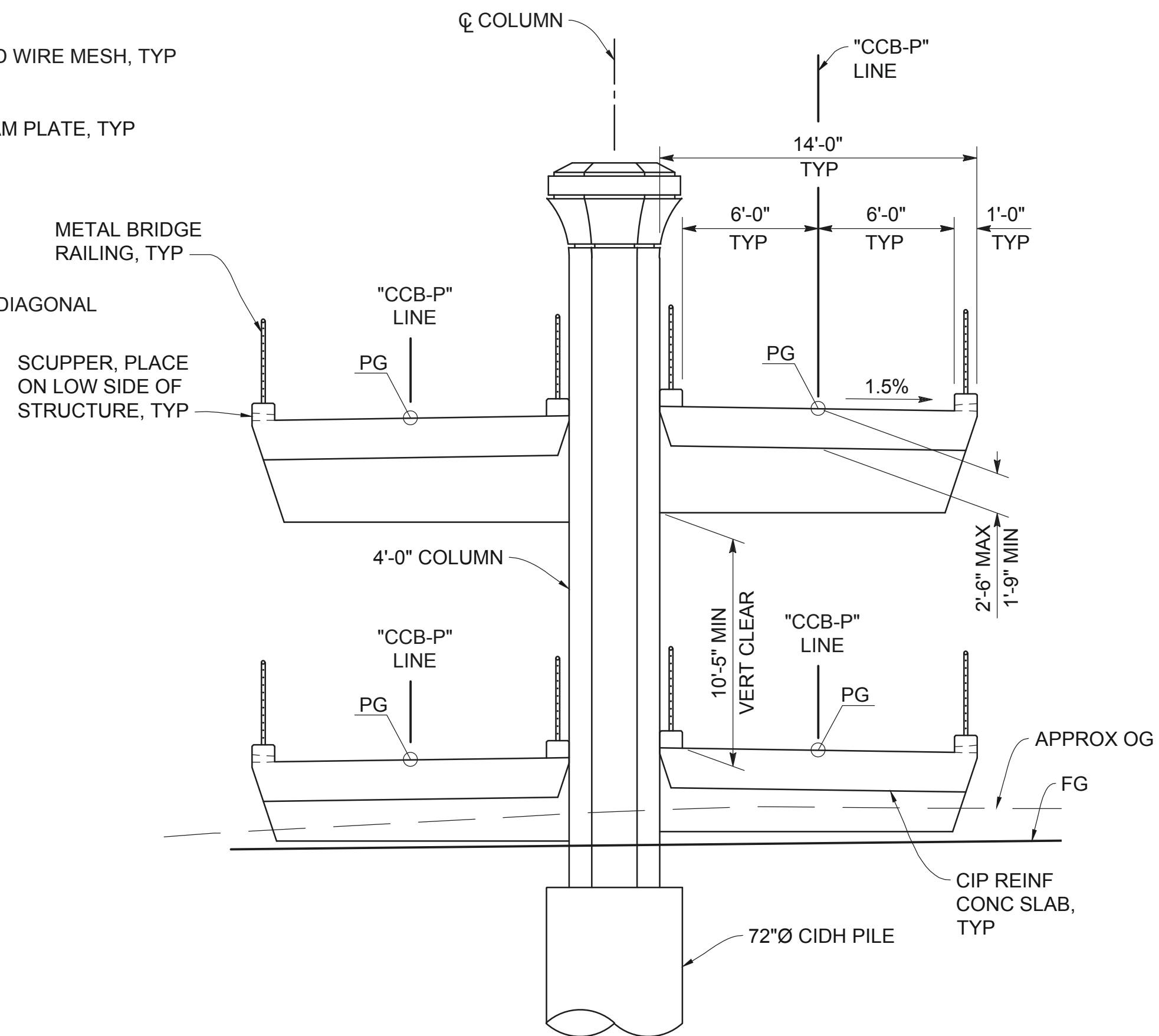
TYPICAL SECTION - BENT 2 THRU 5

1" = 5'



TYPICAL SECTION - BENT 6 AND 7

1" = 5'



TYPICAL SECTION - BENT 8 THRU 12

1" = 5'

NOTE: BENT 12 SHOWN. FOR BENT SECTIONS, SEE "RAMP BENT LAYOUT" SHEET.

LOCATION: CITY OF LA MIRADA, LOS ANGELES COUNTY, CALIFORNIA

UPRR SANTA ANA INDUSTRIAL LEAD TRACK MP 0502.912±

95% SUBMITTAL
"NOT FOR CONSTRUCTION"



MARK	DESCRIPTION	DATE	APPR

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER
MARSHALL E. MOORE
No. 93657
Exp. 03-30-25
CIVIL
STATE OF CALIFORNIA

DATE: SCALE: MARSHALL E. MOORE, P.E.

DESIGNED BY: SHIMMIDY
CHECKED BY: GBHKT/ETD
DRAWN BY: ET

DRAWING NO.: 03_GP3 (SECTIONS)
FILE NAME: 03_GP3 (SECTIONS)
PLOT DATE: April 11, 2025
SCALE: PREPARED BY: MARK THOMAS

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
UPRR PEDESTRIAN OH

GENERAL
PLAN No. 3

SHEET

S-92

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1. COORDINATION: USE THE UNION PACIFIC RAILROAD PUBLIC PROJECTS MANUAL AS A GUIDE TO ASSISTING IN ADMINISTERING, COORDINATING, PLANNING, AND IMPLEMENTING YOUR PROJECT.
2. DESIGN REVIEW: PRIOR TO CONSTRUCTION, OBTAIN RAILROAD REVIEW AND APPROVAL OF ALL RELEVANT CONSTRUCTION ITEMS, INCLUDING BUT NOT LIMITED TO, SHORING, TRACK & GROUND MONITORING, ERECTION, DEMOLITION, AND FALSEWORK. ALL DESIGNS MUST ADHERE TO THE MOST RESTRICTIVE PROVISIONS OF THE CURRENT UPRR AND AREMA STANDARDS AND GUIDELINES IN EFFECT AT THE TIME THE WORK IS EXECUTED. ALLOW A MINIMUM OF 4 WEEKS FOR REVIEW AND APPROVAL OF EACH SUBMITTAL. FOR SUBMITTALS NOT IN ACCORDANCE WITH THESE NOTES, LONGER REVIEW TIMES SHALL BE EXPECTED.
3. OPERATIONS: PROJECTS SHALL BE DESIGNED SUCH THAT ALL CONSTRUCTION ACTIVITIES AND PHASING WILL NOT COMPROMISE SAFETY NOR IMPACT RAILROAD OPERATIONS.
4. PASSING TRAINS: RAILROAD REQUIREMENTS DO NOT ALLOW WORK WITHIN 50 FEET OF TRACK CENTERLINE WHEN A TRAIN PASSES THE WORK SITE AND ALL PERSONNEL MUST CLEAR THE AREA WITHIN 25 FEET OF THE TRACK CENTERLINE AND SECURE ALL EQUIPMENT.
5. WORK WINDOWS: CONSTRUCTION ACTIVITIES MUST BE PERFORMED WITHIN NATURALLY OCCURRING TRACK WINDOWS. COORDINATE ALL REQUESTS FOR CONSTRUCTION WORK WITH WINDOWS WITH THE RAILROAD'S DESIGNATED REPRESENTATIVE TO ENSURE THAT THE WORK IS SCHEDULED TO ELIMINATE ANY POTENTIAL DISRUPTION TO THE RAILROAD'S OPERATIONS.
6. TOP OF RAIL SURVEY: VERIFY THE ELEVATION OF THE EXISTING TOP-OF-RAIL PROFILE BEFORE STARTING CONSTRUCTION. TOP-OF-RAIL SURVEY SHALL BE PERFORMED FOR 1000 FEET ON EITHER SIDE OF PROPOSED OVERHEAD STRUCTURE. ADDITIONAL VERTICAL CLEARANCE MAY BE REQUIRED FOR ADJUSTMENT OF SAG IN VERTICAL CURVE, FUTURE TRACK RAISE, FLOOD CONSIDERATIONS, CONSTRUCTION AND MAINTENANCE PURPOSES. BRING ALL DISCREPANCIES TO THE ATTENTION OF THE RAILROAD PRIOR TO CONSTRUCTION.
7. TEMPORARY CONSTRUCTION CLEARANCES: CONSTRUCTION ACTIVITIES ARE NOT ALLOWED WITHIN THE TEMPORARY CONSTRUCTION CLEARANCE ENVELOPE PER THE CURRENT UPRR GUIDELINES FOR RAILROAD GRADE SEPARATION PROJECTS AND GUIDELINES FOR TEMPORARY SHORING.
8. PERMANENT CLEARANCE ENVELOPE: THE MINIMUM PERMANENT VERTICAL CLEARANCE SHALL BE 23'-4" MEASURED FROM TOP OF HIGHEST RAIL TO THE LOWEST OBSTRUCTION UNDER THE STRUCTURE. THE EXTENT OF THIS VERTICAL CLEARANCE SHALL BE A MINIMUM OF 9 FEET TO THE FIELD SIDE OF THE OUTERMOST EXISTING OR FUTURE TRACKS, MEASURED PERPENDICULAR FROM THE CENTERLINE OF SAID TRACKS. IN CURVED TRACK, 9 FEET SHALL BE INCREASED EITHER 6 INCHES TOTAL OR 1.5 INCHES FOR EVERY DEGREE OF CURVE, WHICHEVER IS GREATER. THE PERMANENT VERTICAL CLEARANCE SHALL EXTEND TO COVER ALL EXISTING AND FUTURE TRACKS, INCLUDING THE SPACE IN BETWEEN.
9. VERIFY PERMANENT CLEARANCES: ALL PERMANENT CLEARANCES SHALL BE VERIFIED THROUGHOUT CONSTRUCTION. A COMPLIANCE REPORT SHALL BE SUBMITTED TO THE RAILROAD BEFORE PROJECT CLOSING. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE RAILROAD.
10. PERMANENT CLEARANCES FOR BID: THE PERMANENT VERTICAL AND HORIZONTAL DESIGN CLEARANCES, WHICH ARE SPECIFIED IN THE BID DOCUMENTS APPROVED BY THE RAILROAD, MUST BE MAINTAINED IN RELATION TO THE TOP-OF-RAIL AND CENTERLINE OF EXISTING AND FUTURE TRACKS, RESPECTIVELY. ANY REDUCTION OF THESE CLEARANCES IS NOT PERMITTED.
11. DRAINAGE: THE PROPOSED PROJECT SHALL NOT INCREASE THE QUANTITY AND/OR CHARACTERISTICS OF THE FLOW IN THE RAILROAD'S DITCHES AND/OR DRAINAGE STRUCTURES.
12. BEFORE YOU DIG: APPROPRIATE MEASURES FOR THE LOCATION AND PROTECTION OF UPRR FACILITIES SHALL BE ADDRESSED IN THE PLANS AND CONTRACT DOCUMENTS. FOR SPECIFIC RAILROAD REQUIREMENTS AND ADDITIONAL INFORMATION REFER TO WWW.UP.COM/CBUD. ABANDONMENT OF UTILITIES MUST FOLLOW THE UPRR GUIDELINES FOR ABANDONMENT OF SUBSURFACE UTILITY STRUCTURES.
13. ERECTION OVER THE RAILROAD TRACK SHALL BE DESIGNED TO CAUSE NO INTERRUPTION TO ALL RAILROAD OPERATIONS.
14. THE CONTRACTOR MUST SUBMIT A PROPOSED METHOD OF EROSION AND SEDIMENT CONTROL AND HAVE THE METHOD APPROVED BY THE RAILROAD PRIOR TO BEGINNING ANY GRADING ON THE PROJECT SITE.
15. THE TRUSS SIDE DAM PLATE SHALL PREVENT STORMWATER FROM DRAINING ONTO THE RAILROAD RIGHT OF WAY.
16. WORK WITHIN 25' OF TRACK AND/OR OVER TRACK AND/OR WITH POTENTIAL TO FOUL WILL REQUIRE RAILROAD FLAGGING.
17. SITE SHALL BE ACCESSED WHERE POSSIBLE WITHOUT CROSSING TRACK EXCEPT AT ESTABLISHED CROSSING. IF TRACK CROSSINGS BY VEHICLES OR EQUIPMENT ARE REQUIRED AWAY FROM EXISTING TRACK CROSSING, COORDINATE WITH THE RAILROAD FLAGGER.
18. EQUIPMENT UNDER LOAD SHALL NOT BE SUPPORTED ON TRACK OR BALLAST AT ANY TIME.

* SEE UNION PACIFIC RAILROAD - BNSF RAILWAY "GUIDELINES FOR RAILROAD GRADE SEPARATION PROJECTS".

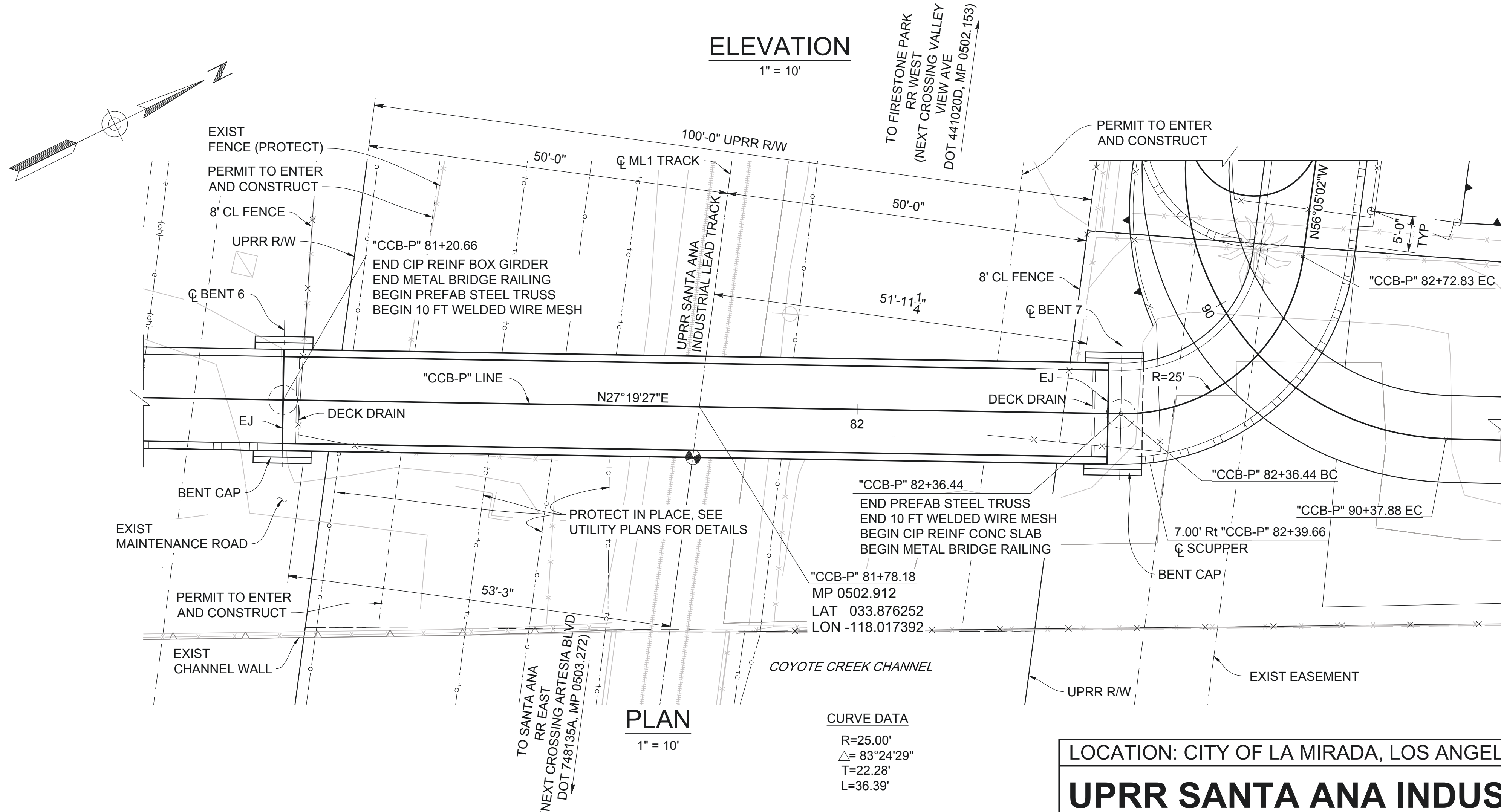
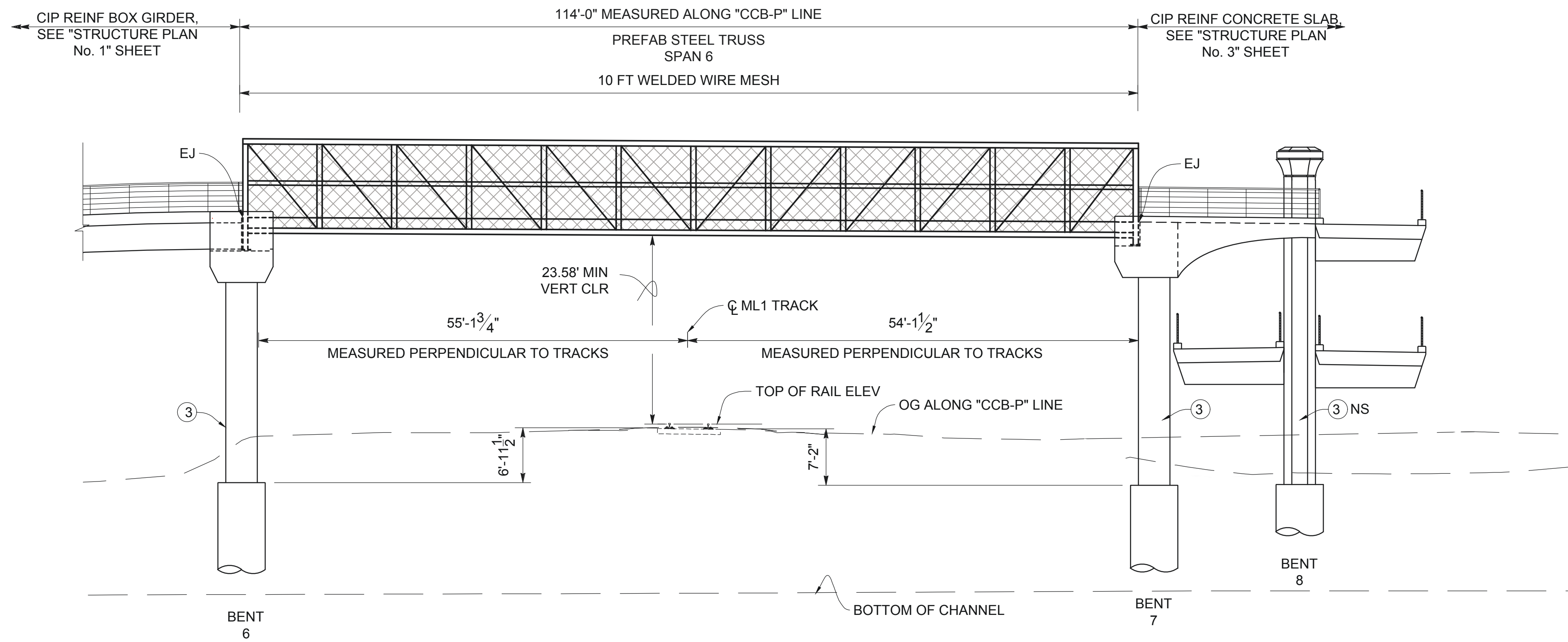


- # TEMPORARY CONSTRUCTION CLEARANCE



1. ALL DIMENSIONS ARE MEASURED PERPENDICULAR TO C OF TRACK.
2. ANY SHORING SYSTEM THAT IMPACTS RAILROAD OPERATIONS AND/OR SUPPORTS RAILROAD EMBANKMENT SHALL BE DESIGNED AND CONSTRUCTED PER THE UPRR/BNSF GUIDELINES FOR TEMPORARY SHORING.
3. NO CONSTRUCTION ACTIVITIES SHALL BE PERMITTED WITHIN ZONE A, AS DEFINED BY FIGURE 1 OF THE UPRR/BNSF GUIDELINES FOR TEMPORARY SHORING, WITHOUT THE FOLLOWING:
 - A. RAILROAD APPROVED SHORING SYSTEM IN PLACE.
 - B. IMPLEMENTATION AND EXECUTION OF RAILROAD APPROVED TRACK MONITORING AND CONTINGENCY PLANS.





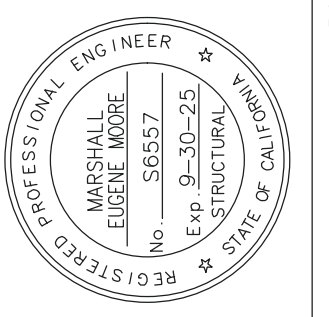
- LEGEND:
- ③ PAINT "BENT NO. XX"
 - ⊕ INDICATES POINT OF MINIMUM VERTICAL CLEARANCE

NOTE:
FOR RAMP GEOMETRY, SEE "RAMP LAYOUT" SHEETS.



MARK	DESCRIPTION	DATE	APPR

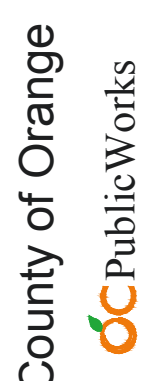
PREPARED UNDER THE RESPONSIBLE CHARGE OF:



DATE

MARSHALL E. MOORE, P.E.

DESIGNED BY:	CHECKED BY:	DRAWN BY:	ET	DRAWING NO.:	FILE NAME:	PLOT DATE:	SCALE:
SHIMMIDY	GBH/KTD	ET		09_SP 2 (TRUSS)	09_SP 2 (TRUSS)	April 11, 2025	SCALE



County of Orange
Public Works

PREPARED BY:



MARK THOMAS

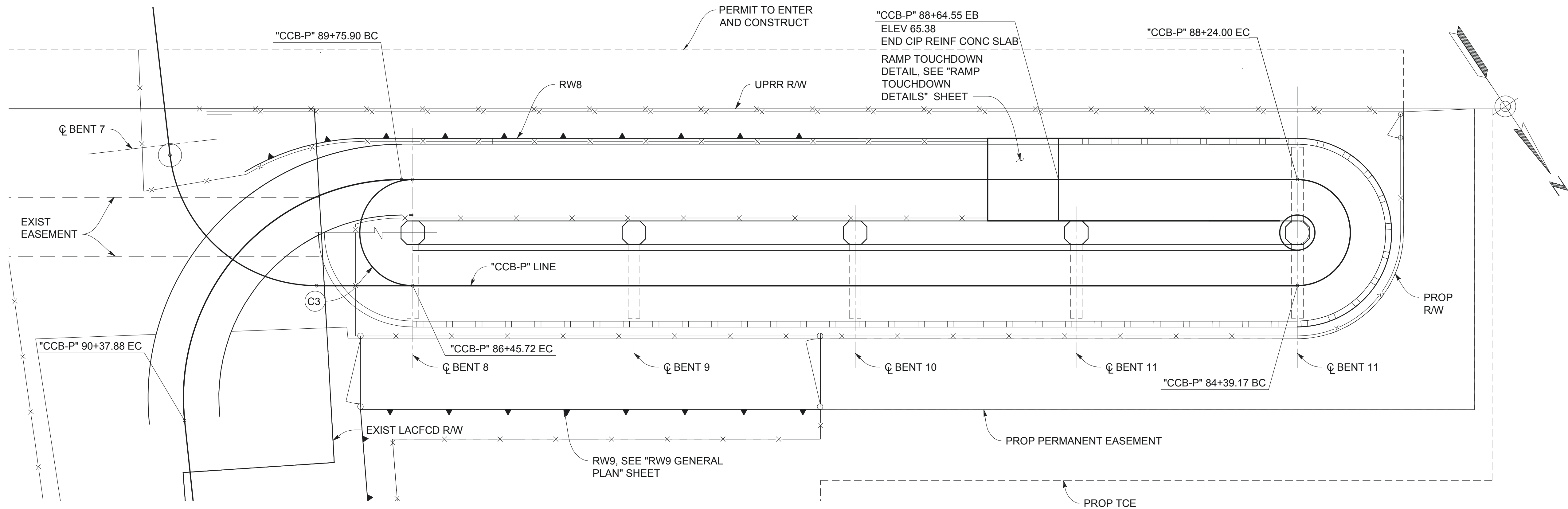
ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
UPRR PEDESTRIAN OH

**STRUCTURE
PLAN No. 2**

SHEET

S-97

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PLAN - LOWER LEVEL
1" = 10'

CURVE DATA				
No. X	R	Δ	T	L
(C3)	9.00'	180°00'00"	-	28.27'
(C4)	9.00'	180°00'00"	-	28.27'
(C5)	37.00'	95°58'55"	41.08'	61.98'



MARK	DESCRIPTION	DATE	APPR

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER
MARSHALL E. MOORE
E.L. 56657
No. 9330-05
EX-STRUCTURAL
STATE OF CALIFORNIA

DATE

MARSHALL E. MOORE, P.E.

DESIGNED BY: SHIMMIDY
DRAWN BY: ET
CHECKED BY: GBH/KT/ID

DRAWING NO.: 11_SP 4 RAMP_L02 (LOWER)
FILE NAME: 11_SP 4 RAMP_L02 (LOWER)
PLOT DATE: April 11, 2025
SCALE:

County of Orange
PublicWorks

PREPARED BY: MARK THOMAS

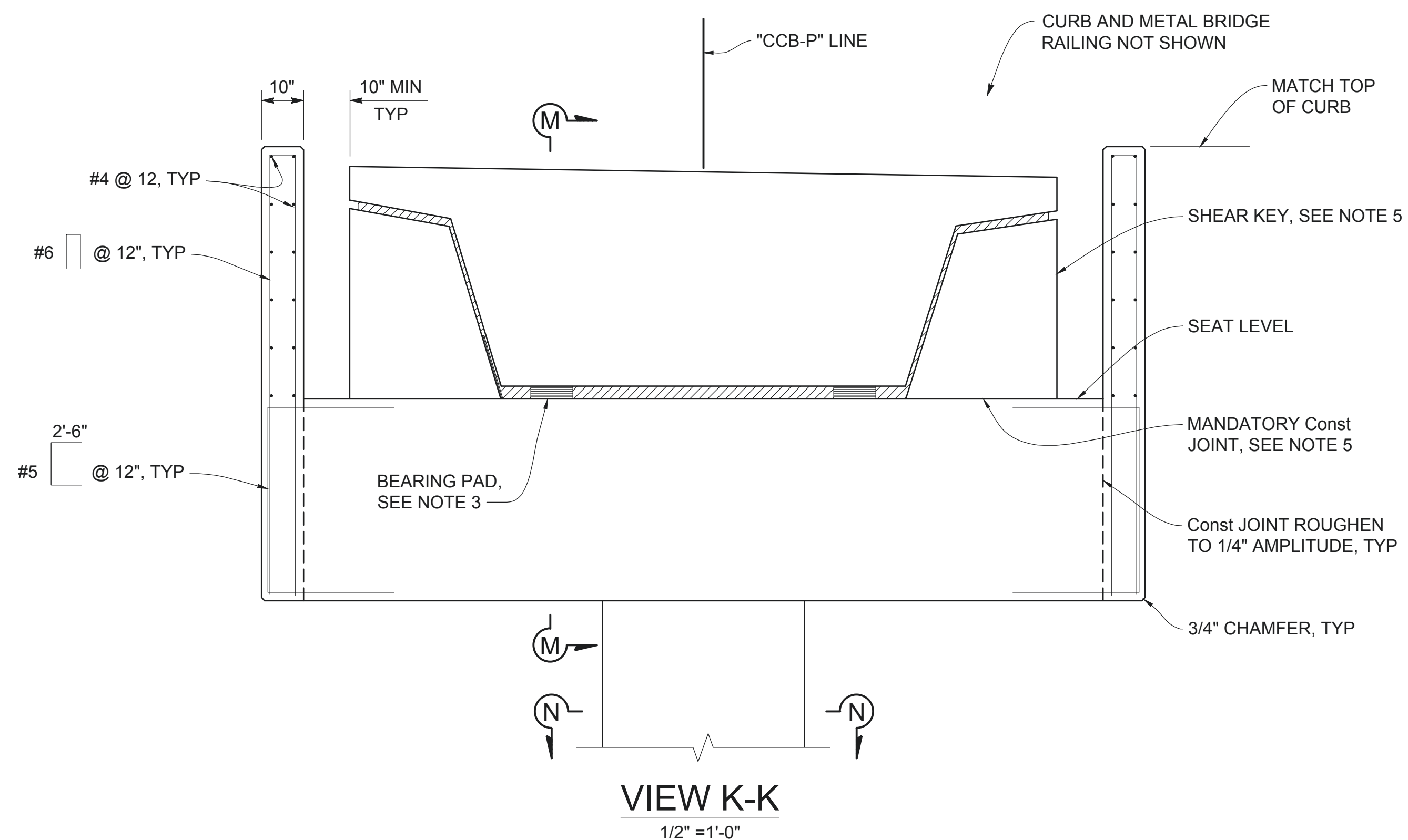
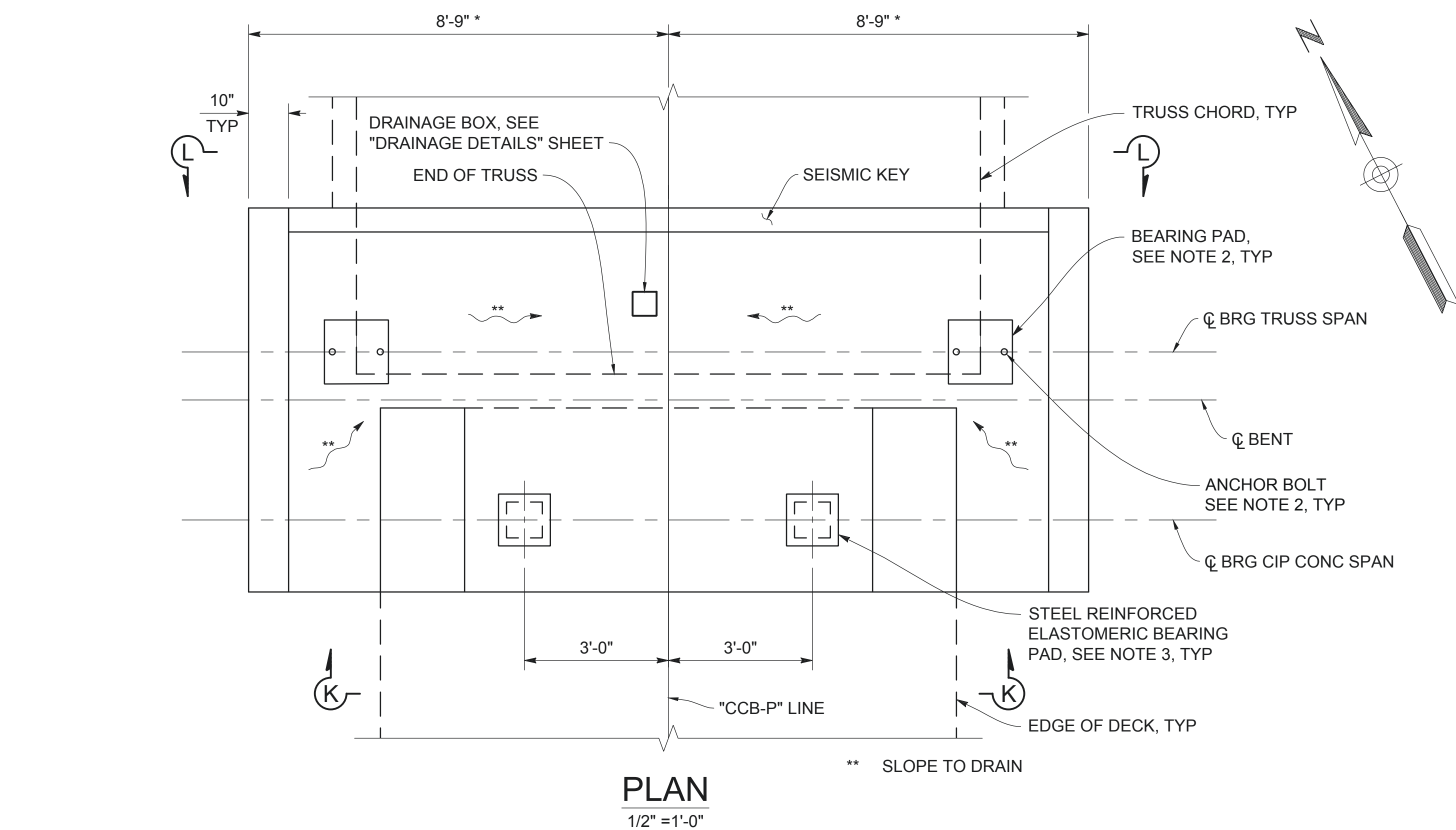
ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
UPRR PEDESTRIAN OH

RAMP
LAYOUT No. 2

SHEET

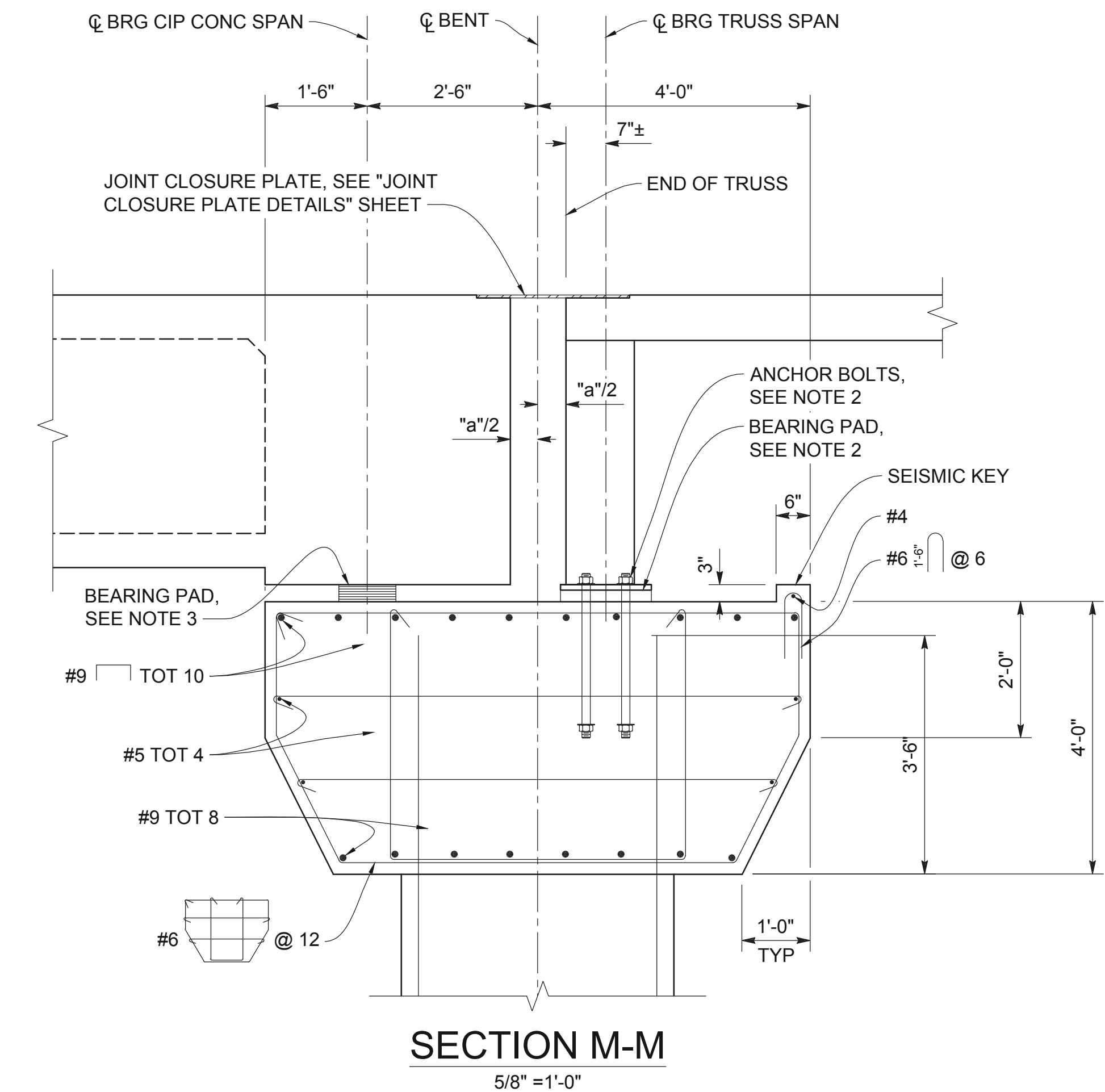
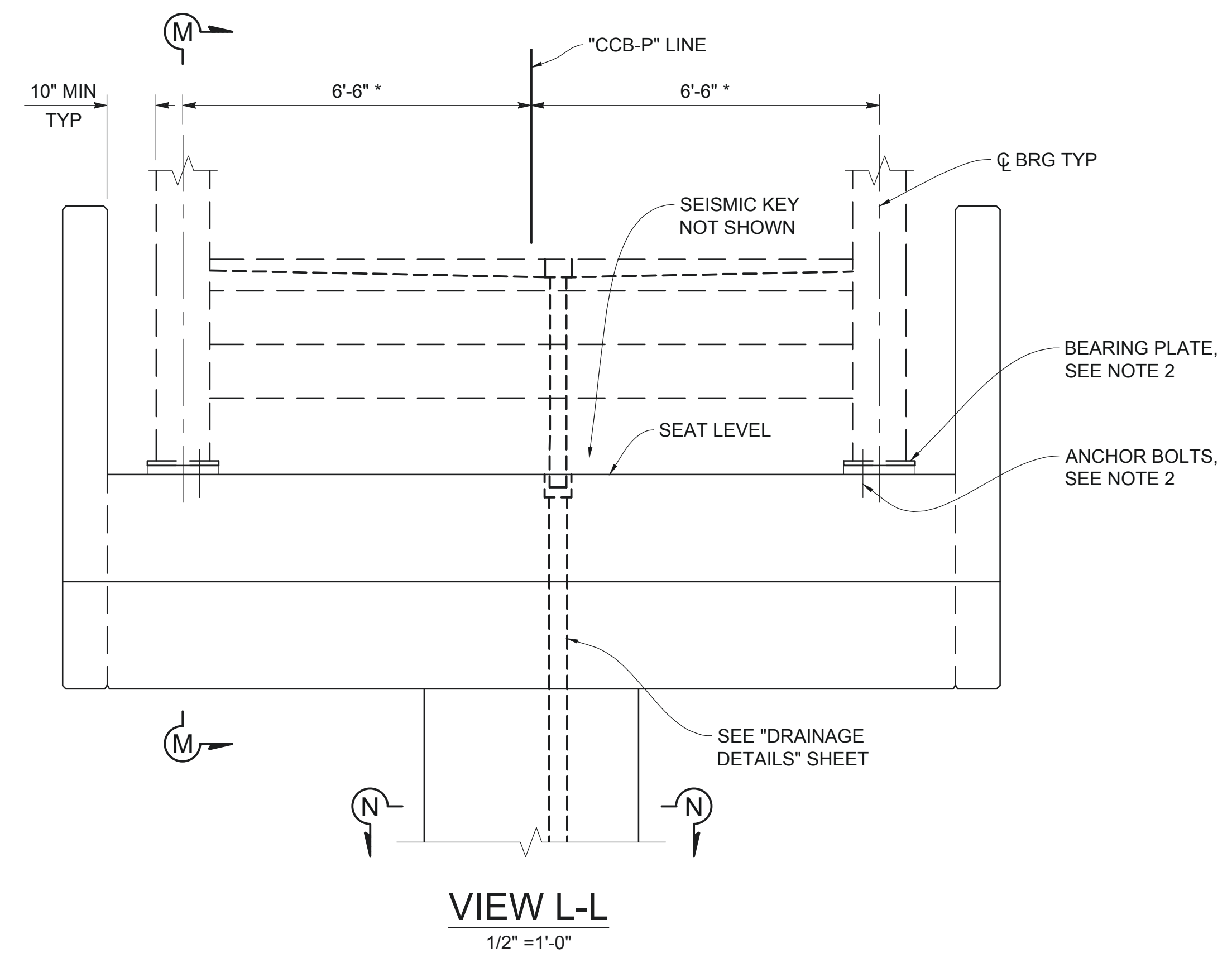
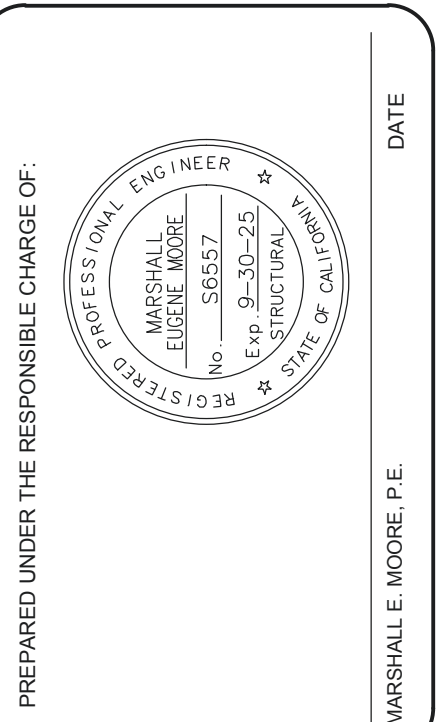
S-99

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NOTES:

1. DIMENSIONS MARKED WITH (*) MAY CHANGE PER PREFABRICATED TRUSS MANUFACTURER DRAWING.
2. FOR ANCHOR BOLT AND BEARING PLATE DETAILS, AND "SECTION N-N", SEE "BENTS & DETAILS" SHEET.
3. FOR BEARING PAD DETAILS, SEE "ABUTMENT LAYOUT" SHEET.
4. FOR SHEAR KEY DETAILS, SEE "BENTS & DETAILS" SHEET.
5. FOR "a" DIMENSION SEE "JOINT CLOSURE PLATE DETAILS" SHEET.

[illegible]



County of Orange

Public Works

DESIGNED BY:

SHIMMIDY

DRAWN BY:

ET

CHECKED BY:

GBR/HB/TD

PREPARED BY:

DRAWING NO.:

34_Bent_O_Lay

FILE NAME:

34_Bent_O_Lay

DATE:

Aug 11, 2025

SCALE:

SCALE



MARK

THOMAS

**ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
UPRR PEDESTRIAN OH**

SHEET

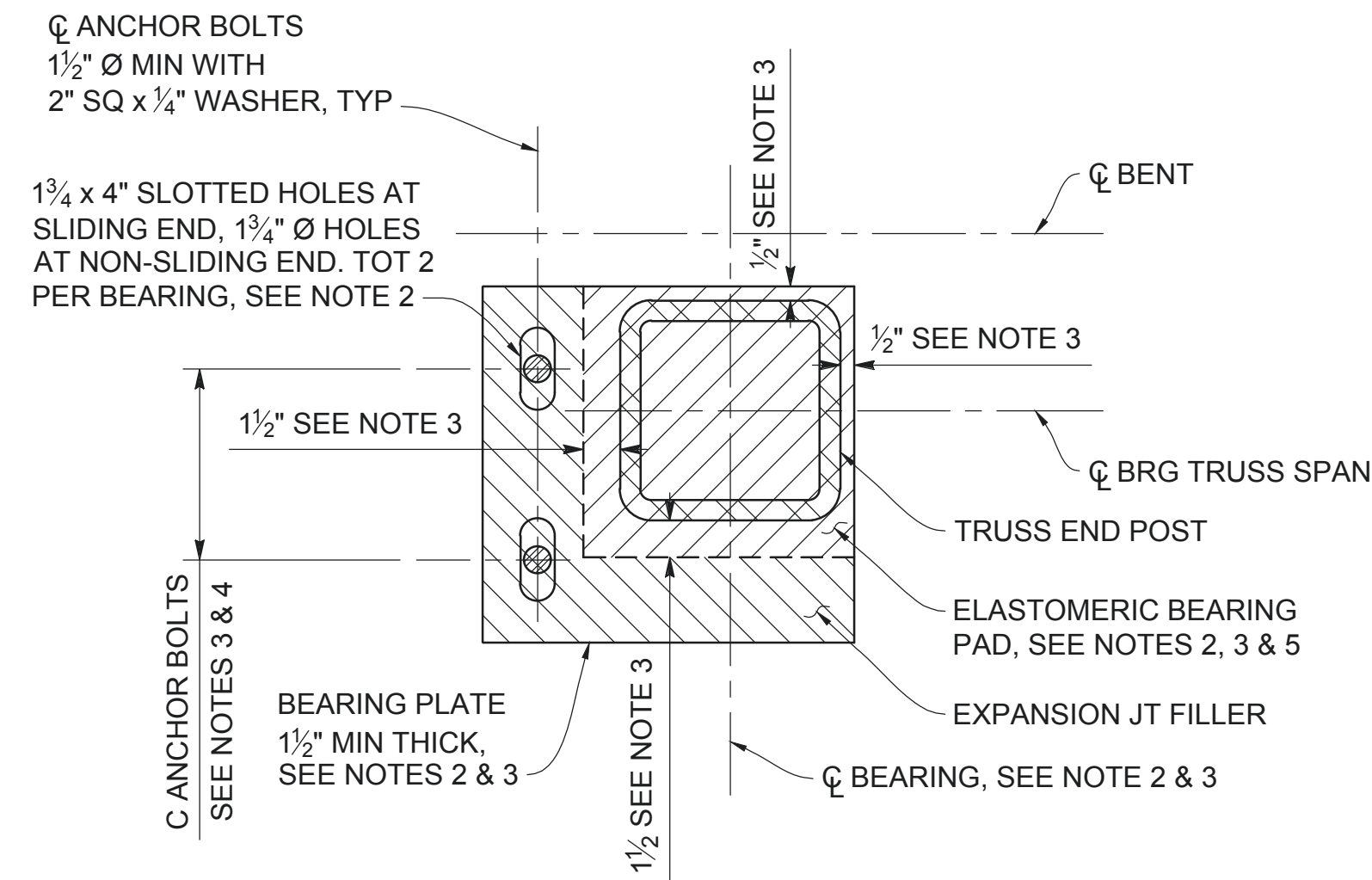
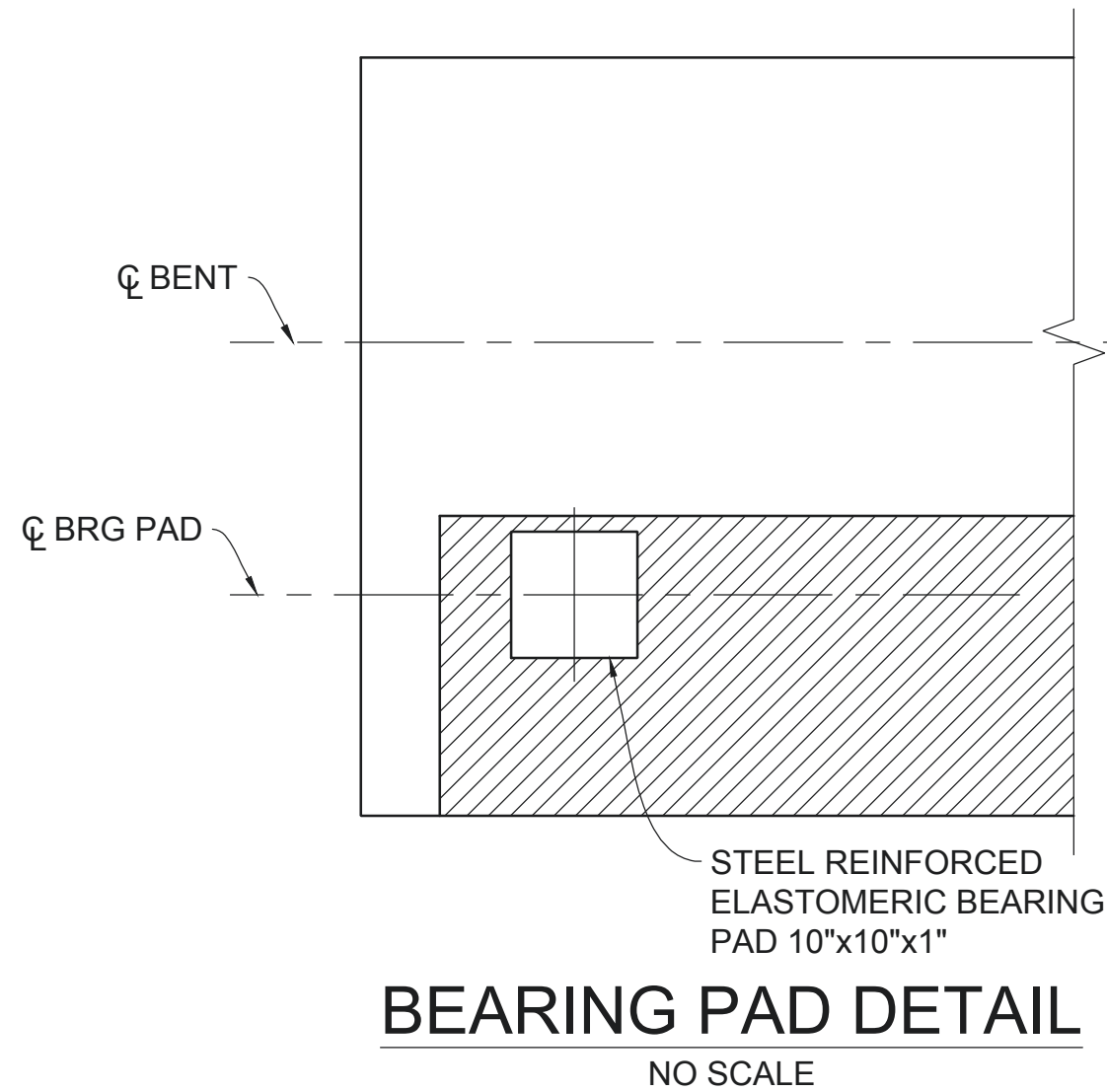
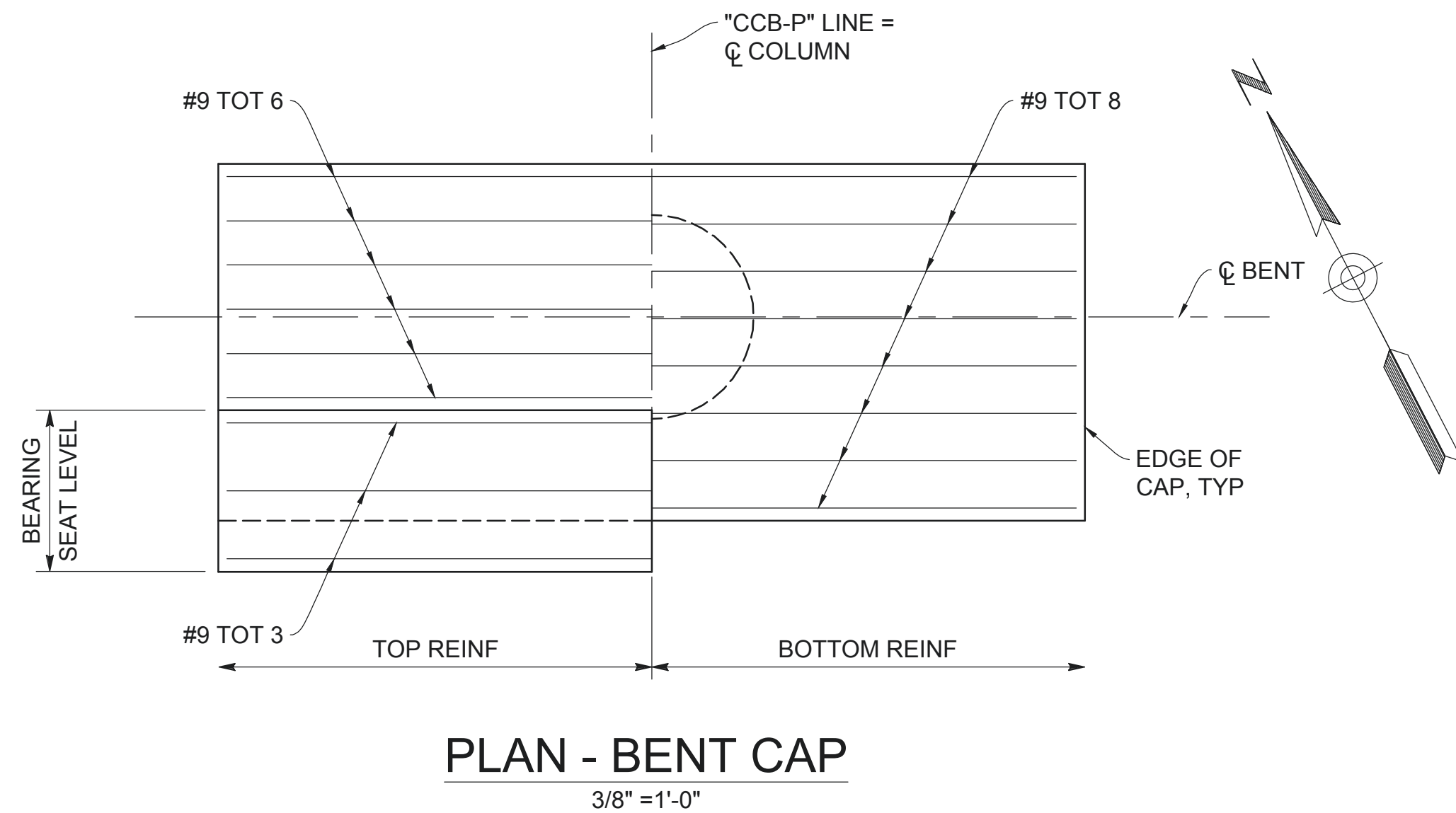
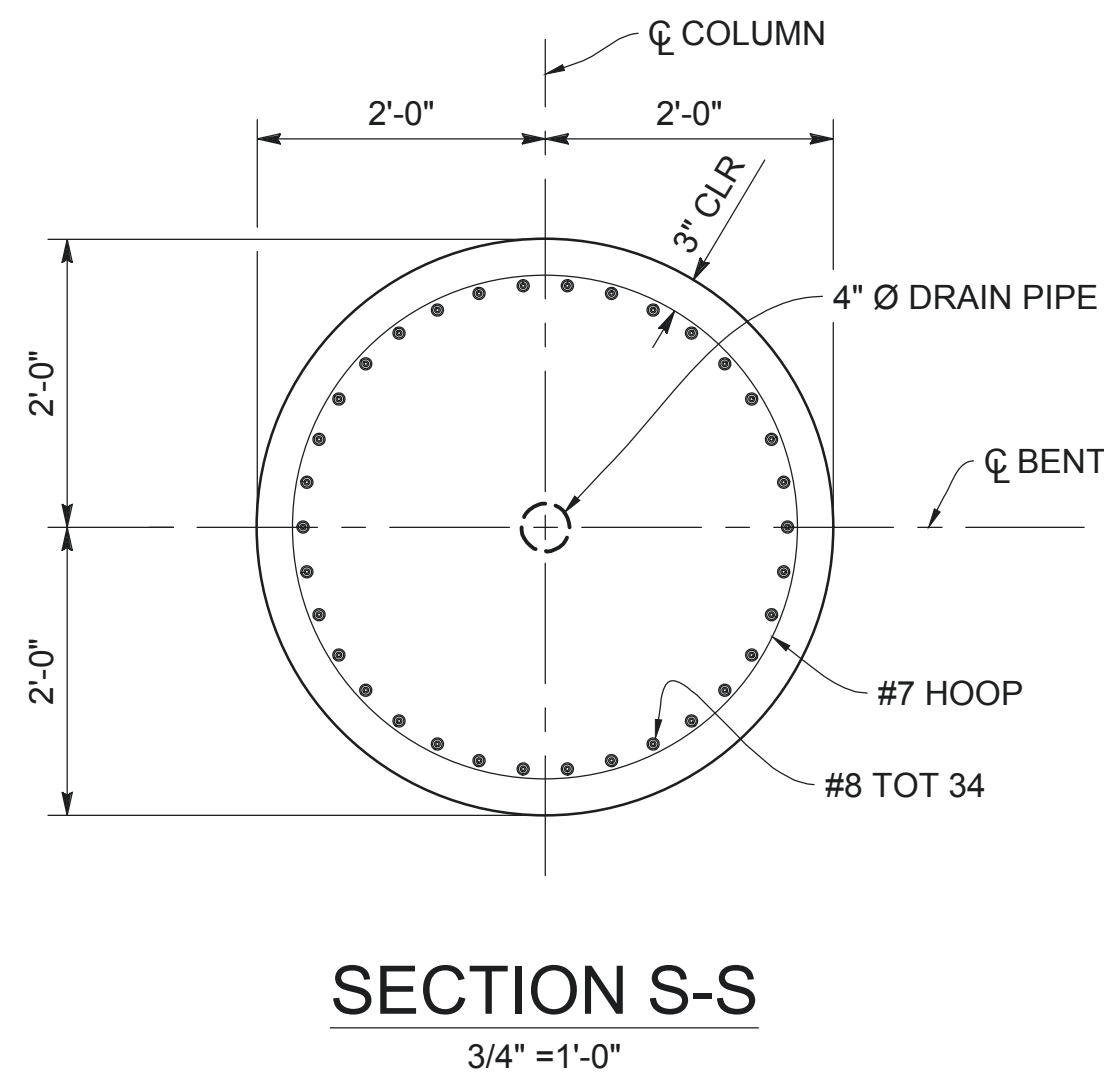
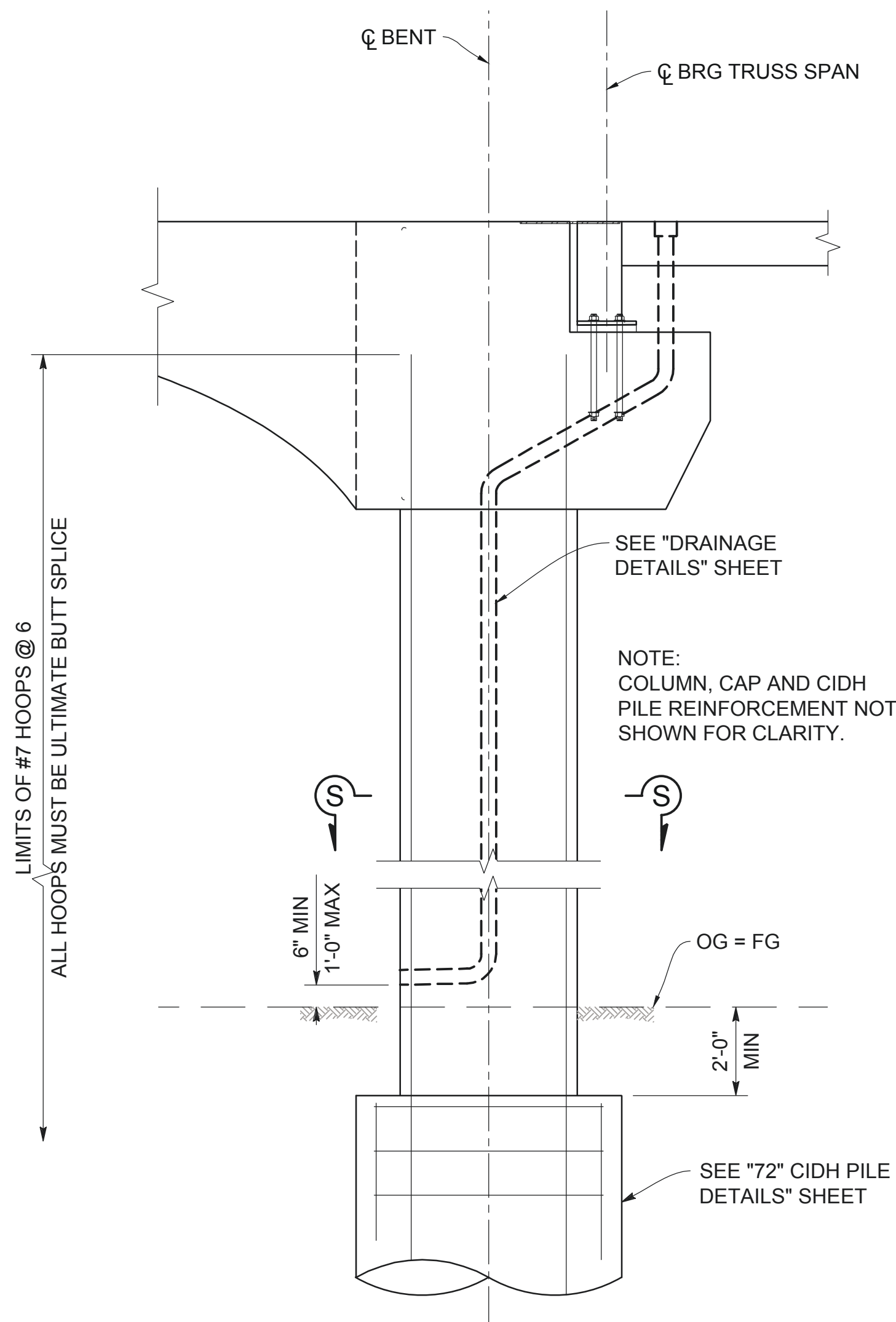
S-116

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LOCATION: CITY OF LA MIRADA, LOS ANGELES COUNTY, CALIFORNIA

95% SUBMITTAL
"NOT FOR CONSTRUCTION"

UPRR SANTA ANA INDUSTRIAL LEAD TRACK MP 0502.912±

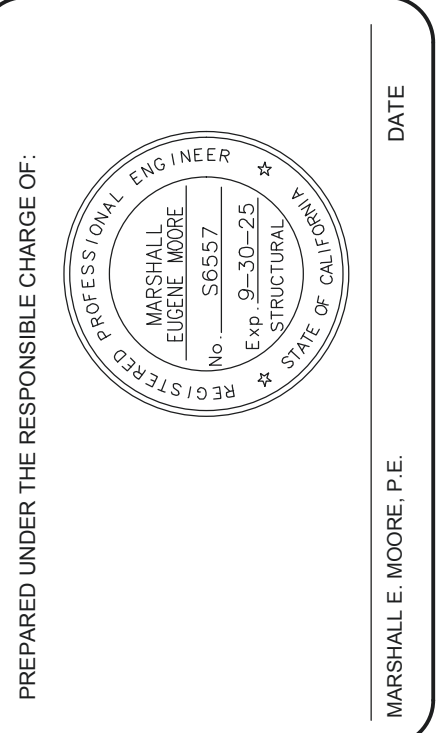


NOTES:

- CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS AND COORDINATE ALL PLANS PRIOR TO ORDERING OR FABRICATING ANY MATERIAL.
- FOR STEEL TRUSS BRIDGE DETAILS, SEE "PREFABRICATED STEEL TRUSS BRIDGE APPROVED DRAWINGS" BY THE PREFABRICATED TRUSS MANUFACTURER. SLOTS AND HOLES IN BEARING PLATES AND BEARINGS ARE SHOWN FOR 1 1/2" (MIN) Ø ANCHOR BOLTS FOR UNIFORM BIDS. THE ACTUAL ANCHOR BLOTS, HOLES AND SLOT SIZES MUST BE PER PREFABRICATED TRUSS MANUFACTURER'S APPROVED DESIGN OR MINIMUM AS SHOWN, MODIFIED TO SUIT. CONTRACTOR MUST COORDINATE, FURNISH AND INSTALL ANCHOR BOLTS AND WASHERS PER PREFABRICATED TRUSS MANUFACTURER'S PLANS.
- USE MINIMUM 16" X 16" X 2" STEEL REINFORCED ELASTOMERIC BEARING PADS. BEARING PLATES, BEARING PADS, ANCHOR BOLT SIZES, ETC. MUST BE DETERMINED BY THE PREFABRICATED TRUSS MANUFACTURER'S DESIGN. APPROXIMATE DETAILS SHOWN ARE FOR UNIFORM BID ONLY.
- ANCHOR BOLTS, WASHERS, NUTS AND LOCK NUTS MUST BE ASTM A325 OR BETTER AND GALVANIZED.
- EPOXY BOND BEARING PADS AND JOINT FILLERS (OF SAME THICKNESS AS BEARING PADS) TO THE BENT CAP. APPLY LIGHT COAT OF COMMERCIAL QUALITY GREASE TO TOP OF ELASTOMERIC BEARING PADS AT THE SLIDING END ONLY.
- PREFABRICATED TRUSS MANUFACTURER TO SUPPLY AND INSTALL LOAD LIMITATION PLAQUE ON BRIDGE.
- MANDATORY CONSTRUCTION JOINT MUST BE SMOOTH FINISHED AND LINED WITH 15 POUND BUILDING PAPER.
- MAIN VERTICAL SHEAR KEY REINFORCEMENT MUST BE CENTERED IN SHEAR KEY.
- SEE "ELECTRICAL PLANS" FOR DETAILS NOT SHOWN.
- NO SPLICES ALLOWED IN LONGITUDINAL REINFORCEMENTS.



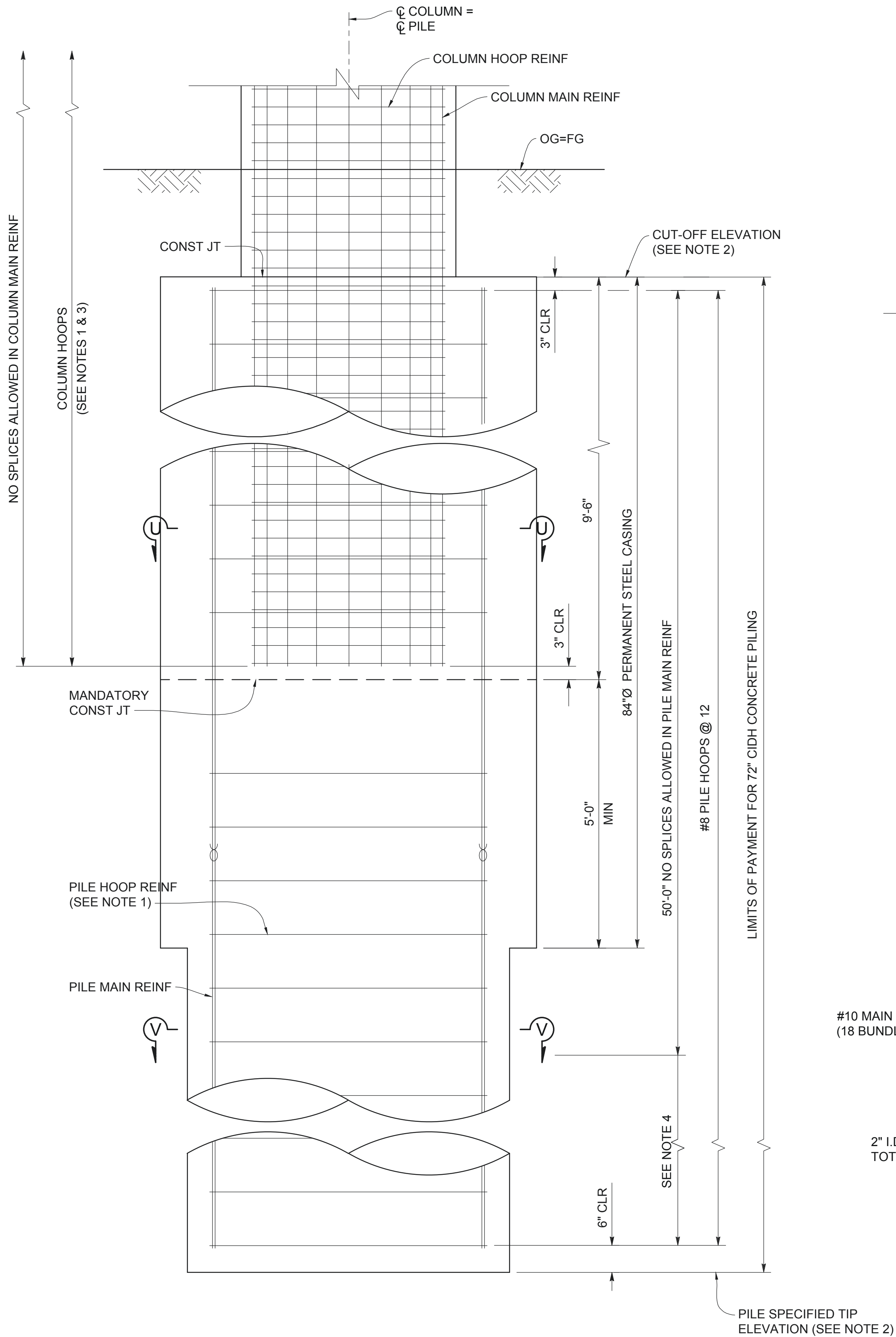
MARK	DESCRIPTION	DATE	APPR.



DESIGNED BY: SHIMMIDY
DRAWN BY: ET
CHECKED BY: GBH/KTD
FILE NAME: 35a_Bent_7_Dis
PLOT DATE: April 11, 2025
SCALE: SCALE

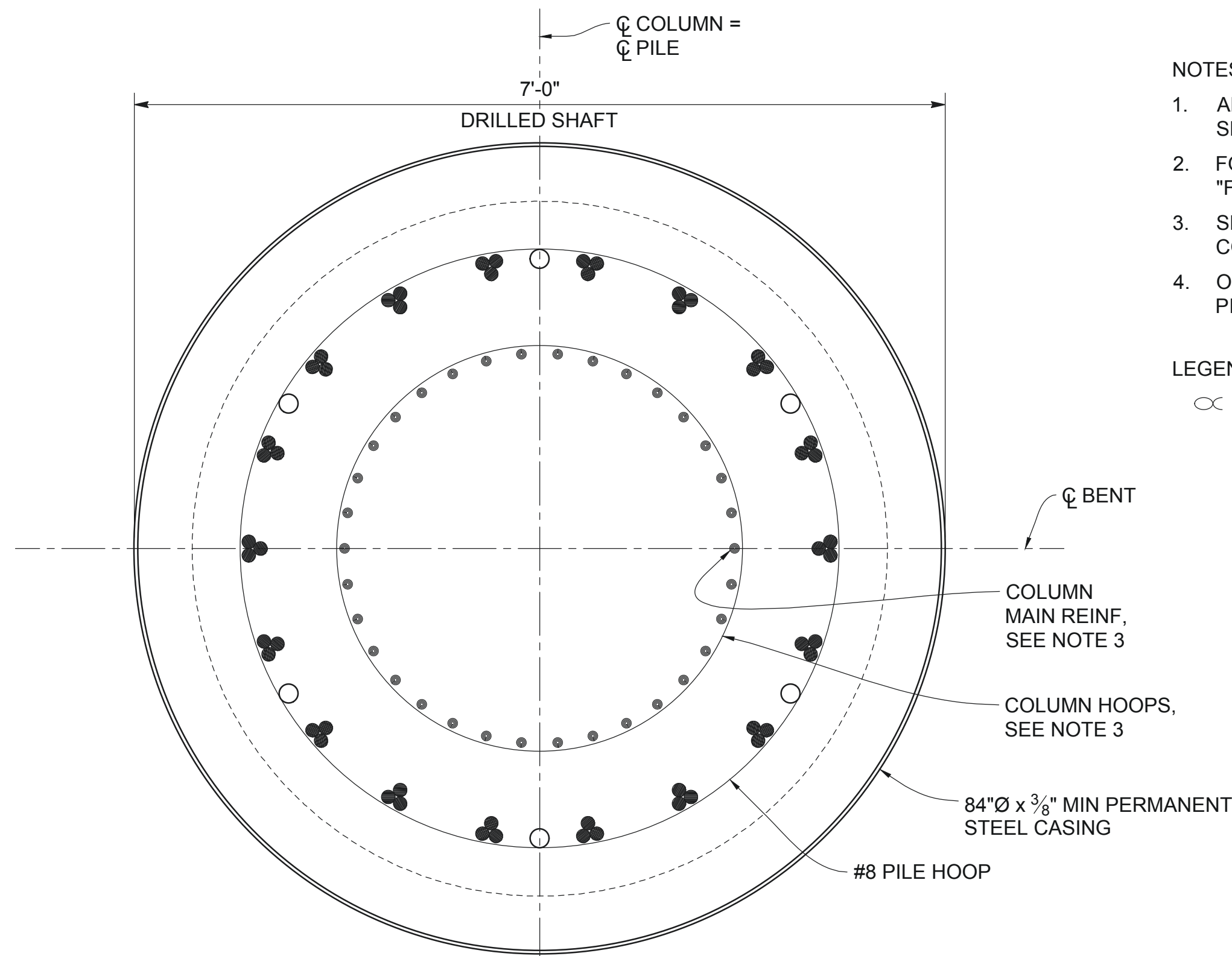
County of Orange
Public Works
PREPARED BY: MARK THOMAS

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
UPRR PEDESTRIAN OH
BENT 7
DETAILS



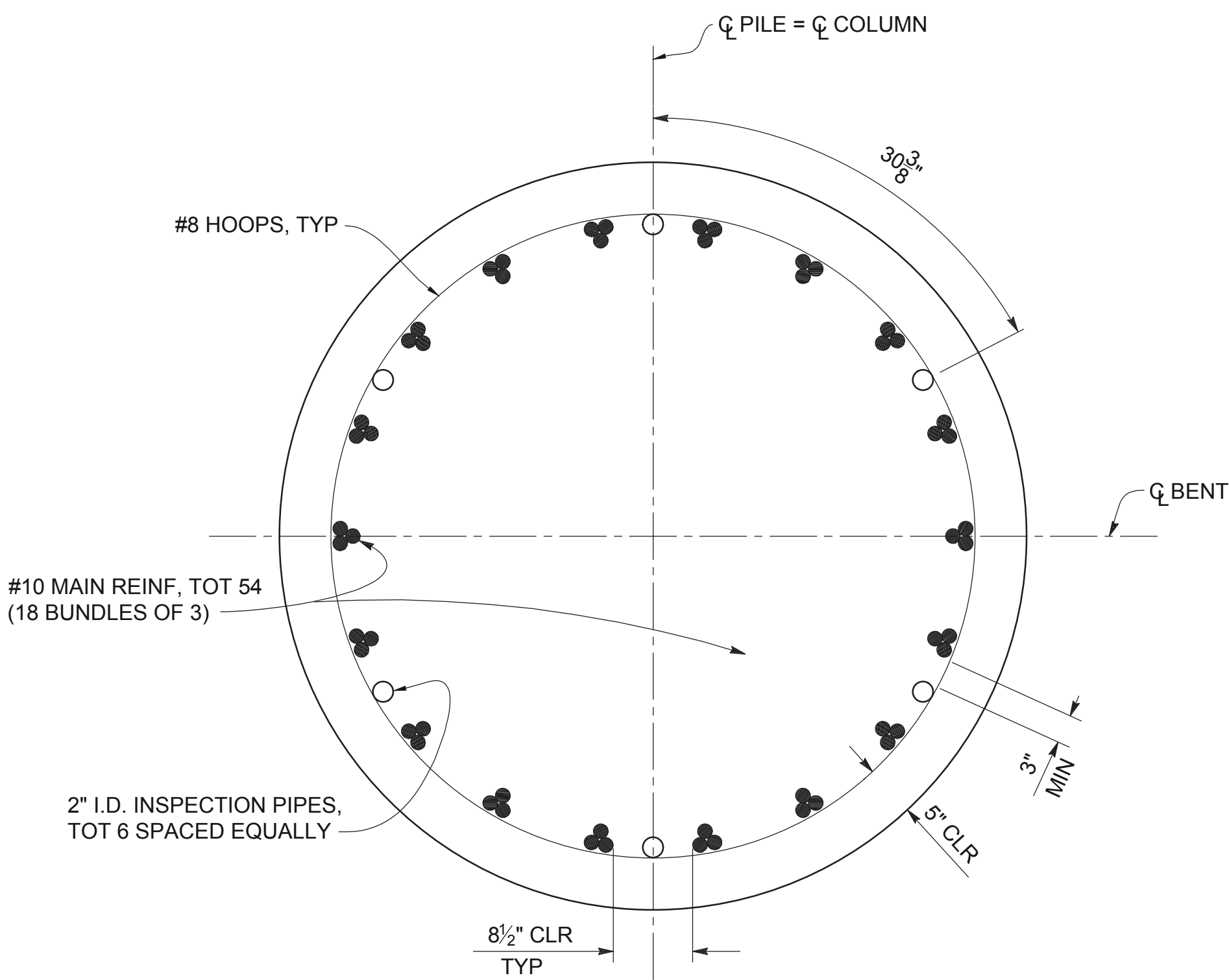
CIDH CONCRETE PILE ELEVATION

3/4" = 1'-0"



SECTION U-U

1" = 1'-0"



NOTE: FOR DETAILS NOT SHOWN, SEE "SECTION M-M"

SECTION V-V

1" = 1'-0"

NOTES:

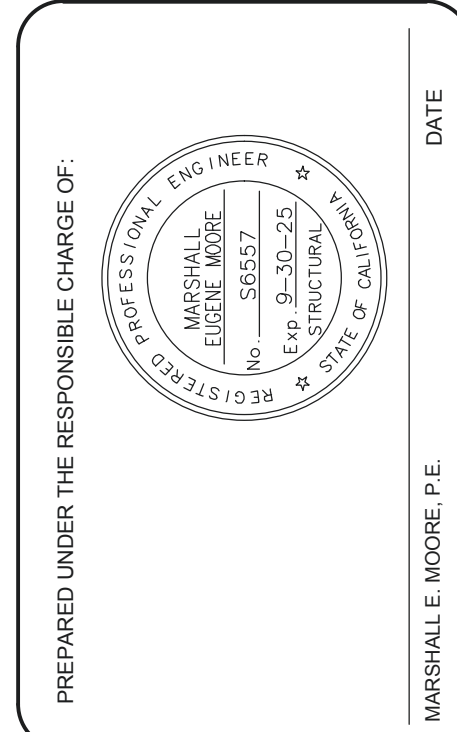
1. ALL COLUMN AND CIDH PILE HOOPS MUST UTILIZE ULTIMATE BUTT SPLICES.
2. FOR SPECIFIED TIP ELEVATION AND CUT-OFF ELEVATION, SEE "FOUNDATION PLAN" SHEETS.
3. SEE "BENT 2 THRU 5 DETAILS" AND "BENT 6 DETAILS" SHEETS FOR COLUMN REINFORCEMENT DETAILS.
4. ONLY STAGGERED "ULTIMATE BUTT" SPLICE IS ALLOWED IN MAIN CIDH PILE REINFORCEMENT IN THIS ZONE.

LEGEND:

∞ INDICATES BUNDLED BARS



MARK	DESCRIPTION	DATE	APPR.



DESIGNED BY: SHIMMIDY
DRAWN BY: ET
CHECKED BY: GBH/KT/DTD

DRAWING NO.: 36_72_CIDH_Dtl
FILE NAME: 36_72_CIDH_Dtl
PLOT DATE: April 11, 2025
SCALE: SCALE

County of Orange
PublicWorks

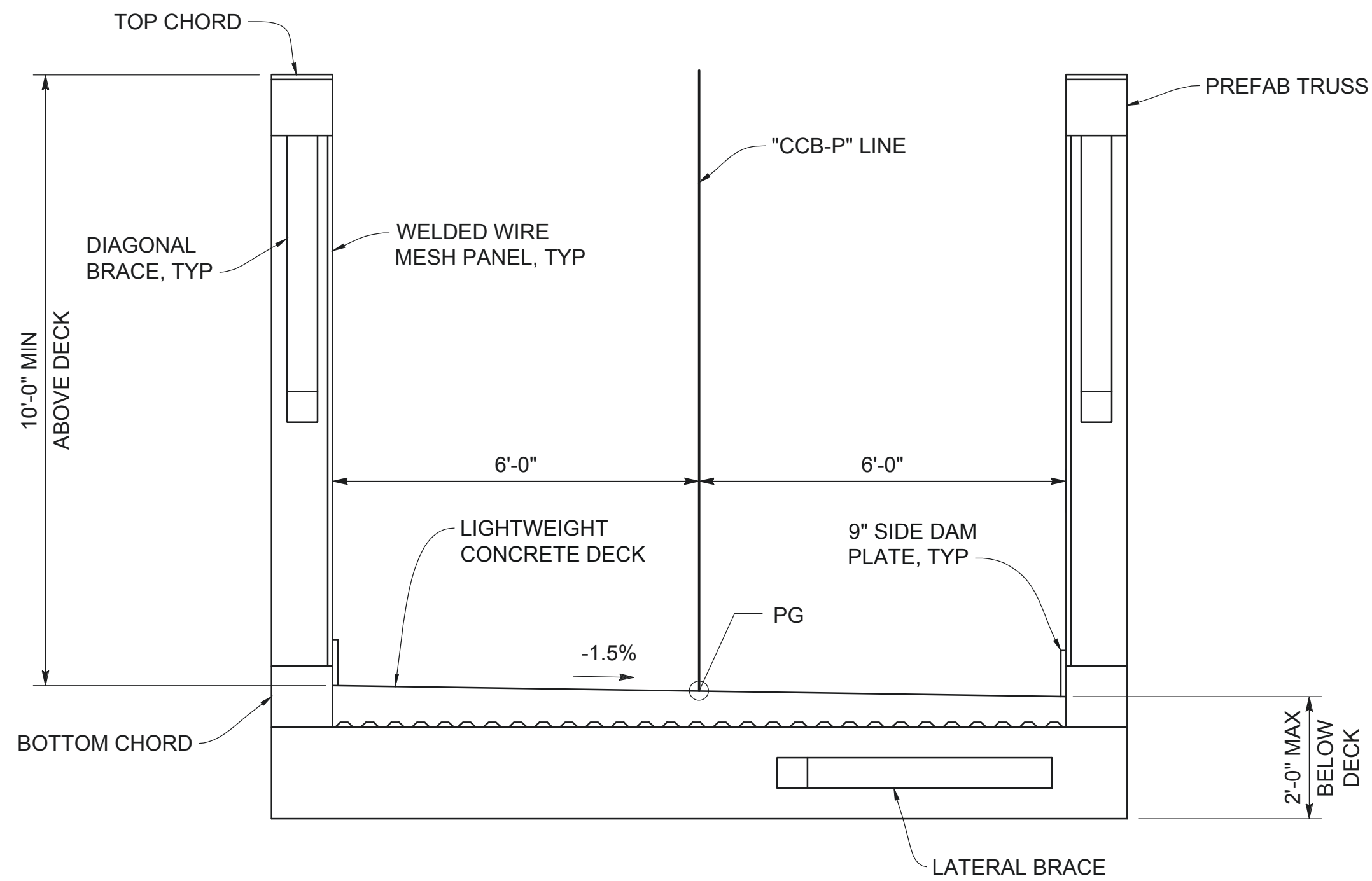
PREPARED BY: MARK THOMAS

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
UPRR PEDESTRIAN OH
BENT 2-7 CIDH
PILE DETAILS

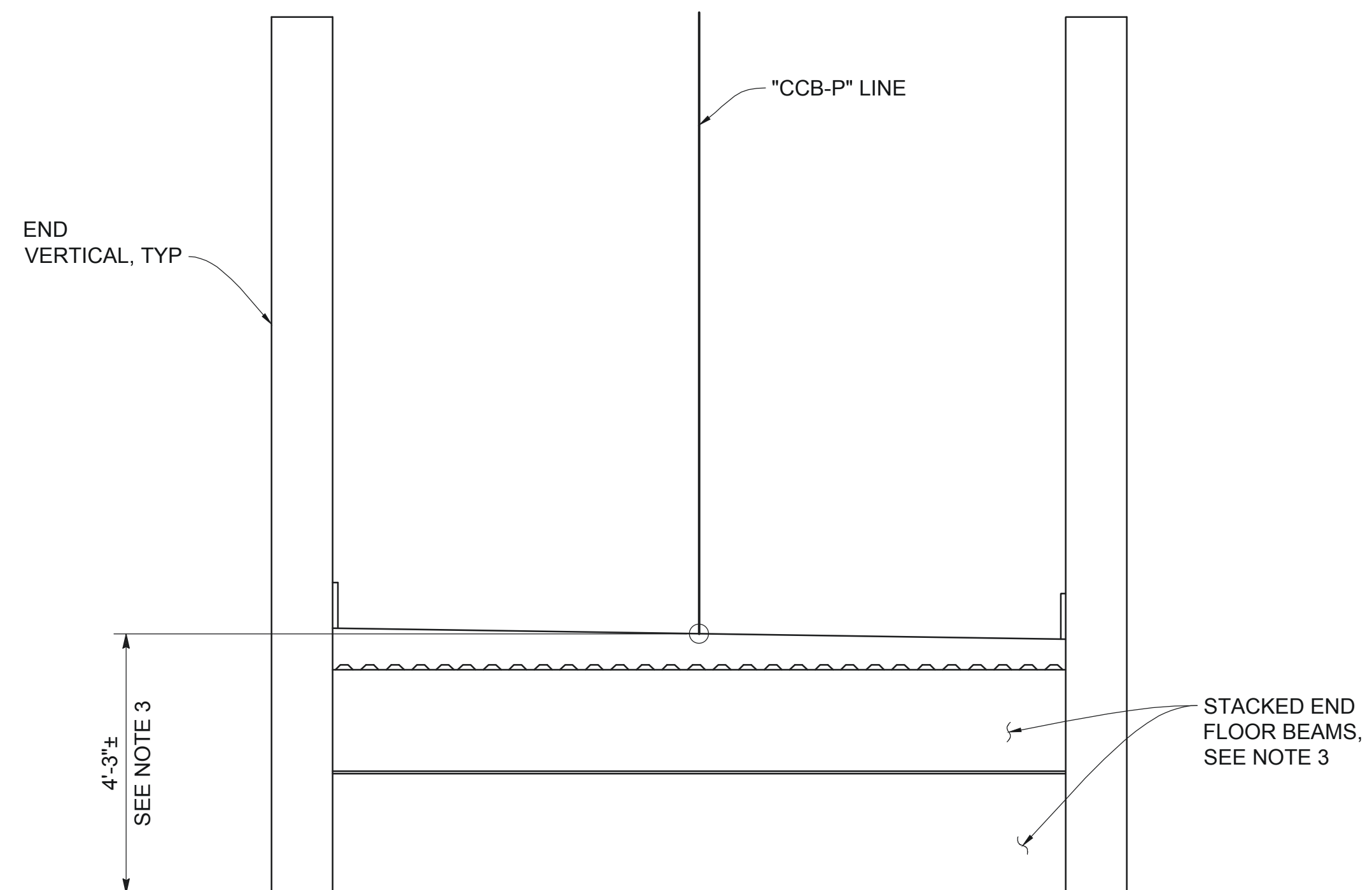
LOCATION: CITY OF LA MIRADA, LOS ANGELES COUNTY, CALIFORNIA

UPRR SANTA ANA INDUSTRIAL LEAD TRACK MP 0502.912±

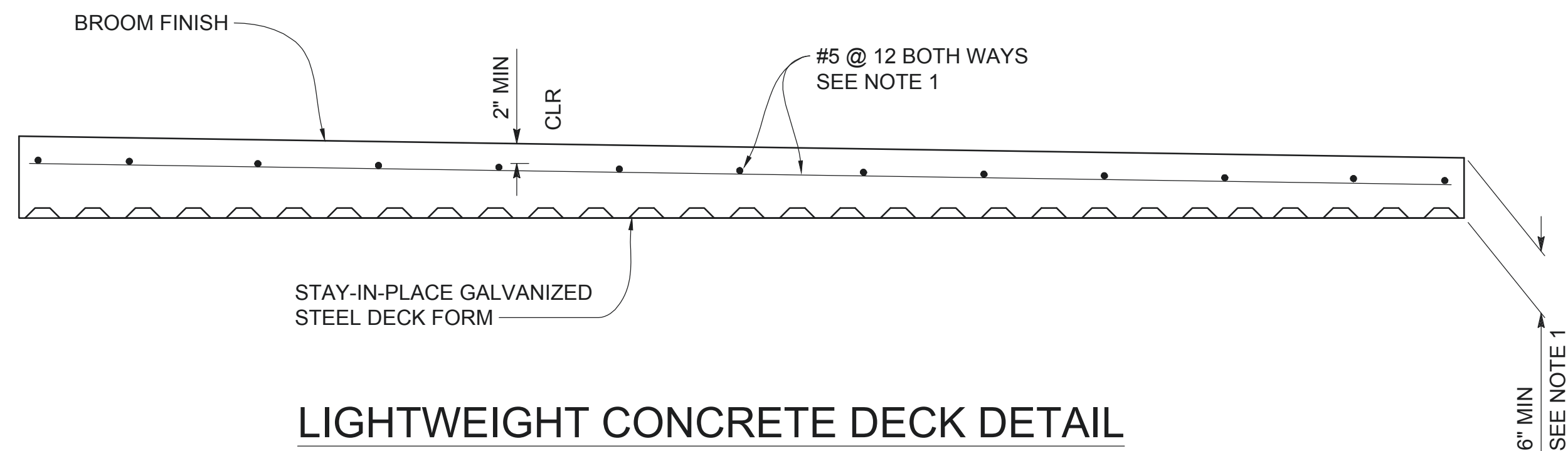
95% SUBMITTAL
"NOT FOR CONSTRUCTION"



TYPICAL SECTION SPAN 6
1/2" = 1'-0"



SPAN 6 SECTION AT BENT 6 AND BENT 7
1/2" = 1'-0"
FOR INFORMATION NOT SHOWN, SEE "TYPICAL SECTION SPAN 6"

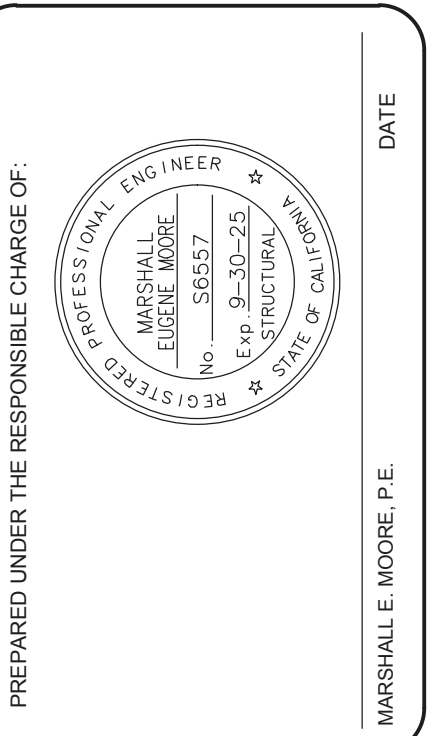


LIGHTWEIGHT CONCRETE DECK DETAIL
1" = 1'-0"

- NOTES:
1. DECK REINFORCEMENT SHOWN FOR UNIFORM BID ONLY. ACTUAL DECK REINFORCEMENT MUST BE PER PREFABRICATED TRUSS MANUFACTURER APPROVED DESIGN.
 2. ALL FASTENERS MUST BE TYPE 3
 3. CONTRACTOR TO VERIFY DEPTH OF STACKED END FLOOR BEAMS TO PLACE CONCRETE DECK LEVEL WITH ADJACENT SPANS.



MARK	DESCRIPTION	DATE	APPR



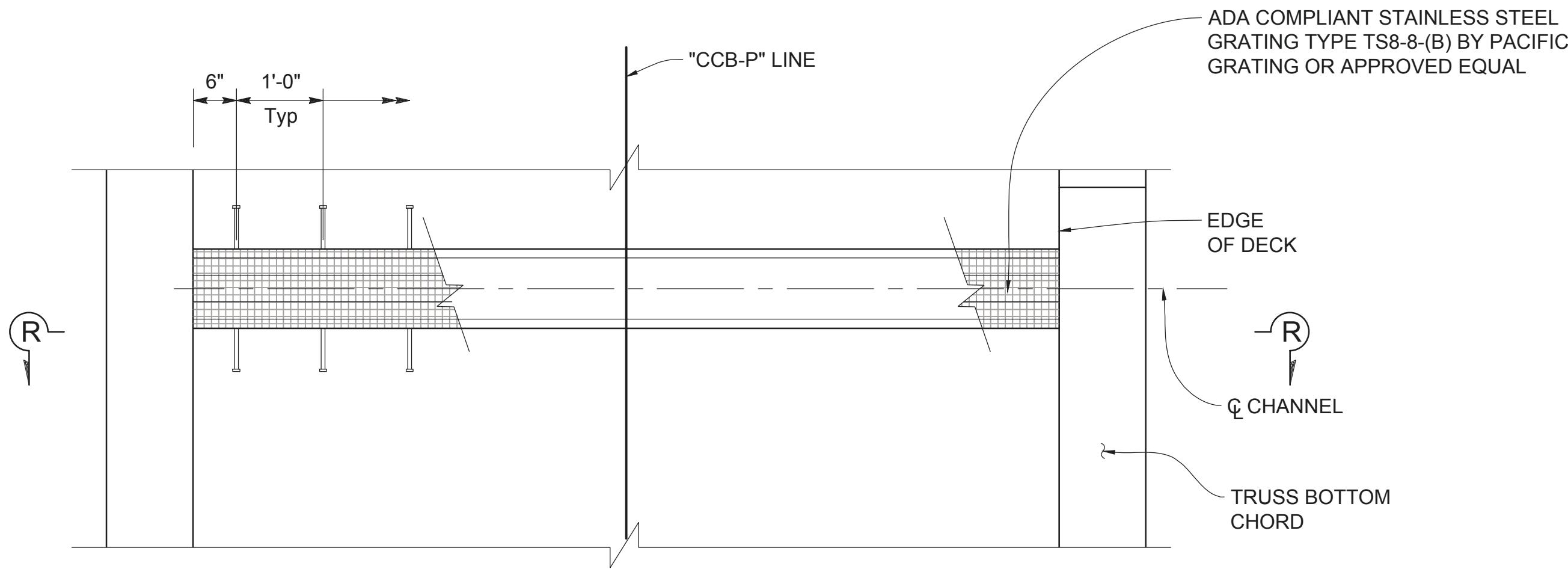
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DRAWN BY: ET	DRAWING NO.: 41_TS_2	FILE NAME: 41_TS_2	PLOT DATE: April 11, 2025
County of Orange Public Works		PREPARED BY: MARK THOMAS	

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
UPRR PEDESTRIAN OH
**TYPICAL
SECTION No. 2**

SHEET
S-123
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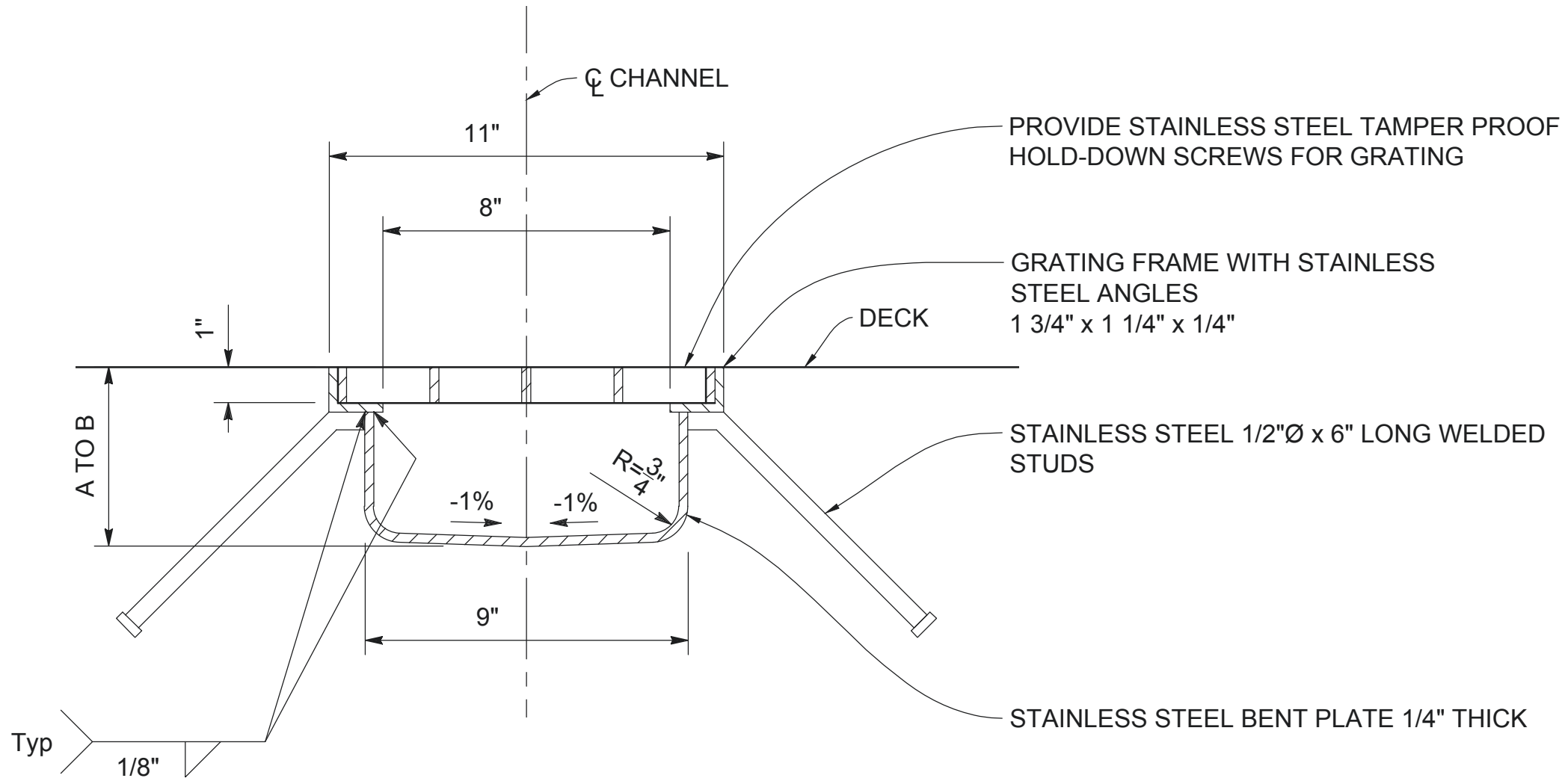
LOCATION: CITY OF LA MIRADA, LOS ANGELES COUNTY, CALIFORNIA
UPRR SANTA ANA INDUSTRIAL LEAD TRACK MP 0502.912±
95% SUBMITTAL
"NOT FOR CONSTRUCTION"

NOTE:
1. ALL DRAINAGE PIPE TO BE WELDED STEEL PIPE AND GALVANIZED EXCEPT WHERE INDICATED ON THE PLANS. FITTINGS AND BENDS MUST HAVE A MINIMUM WALL THICKNESS OF 1/8". ALL JOINTS OR CONNECTIONS TO BE BUTT WELDED OR CONNECTED BY A STEEL PIPE SLEEVE AND TO BE SMOOTH THROUGHOUT INSIDE OF PIPE. ALL BENDS TO BE 18" MINIMUM RADIUS MEASURED ALONG C PIPE. ALL BENDS TO BE SMOOTH.



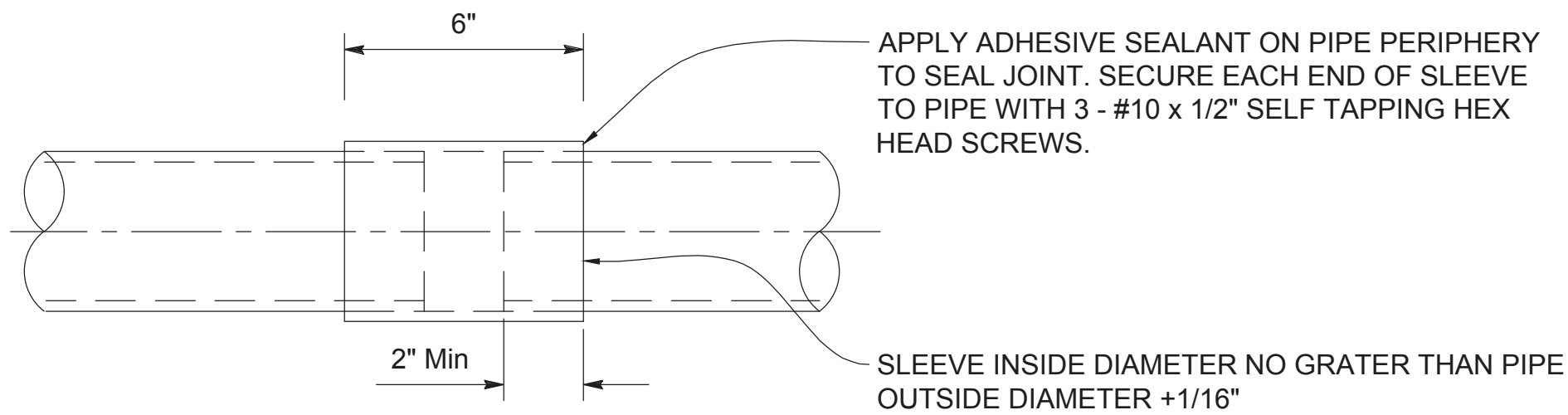
DECK DRAIN PLAN

3/4" = 1'-0"



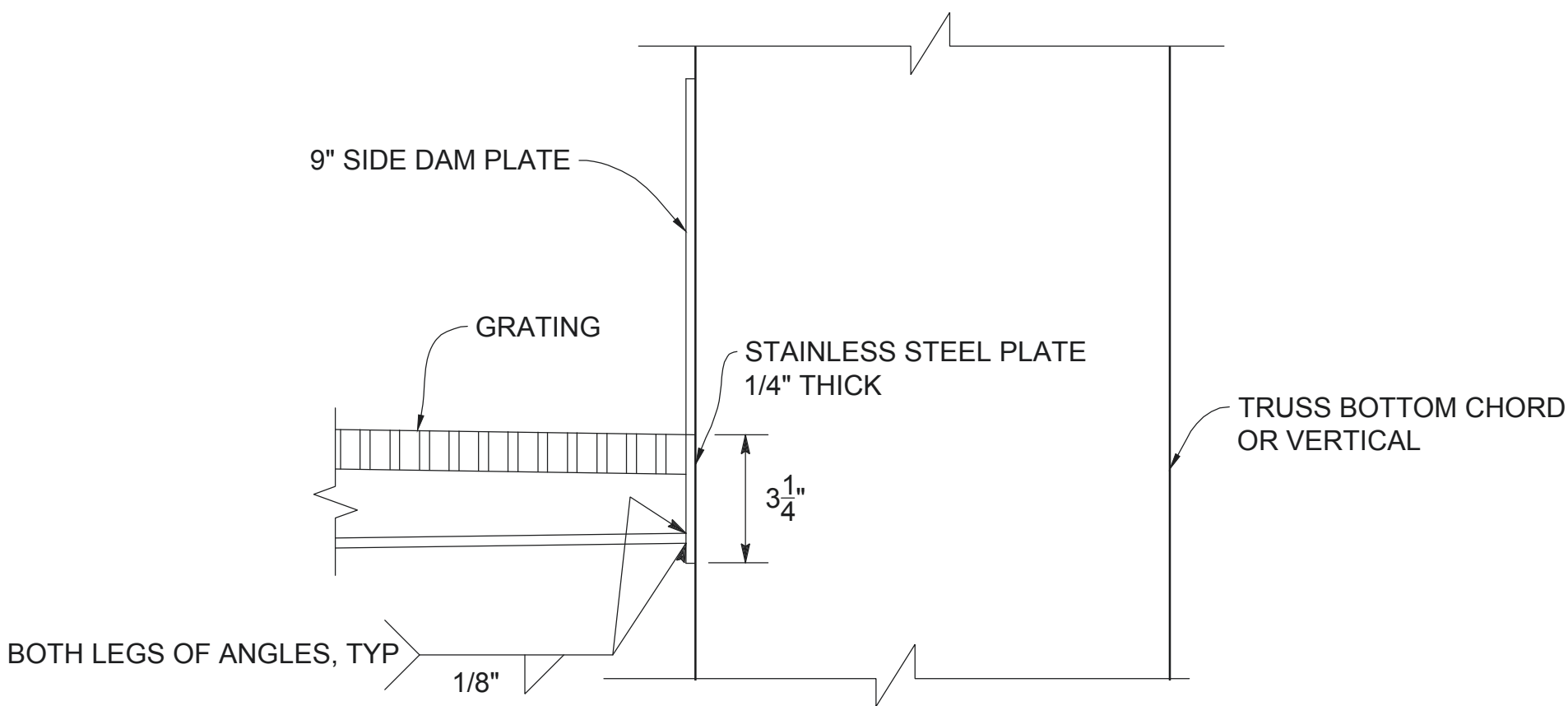
DECK DRAIN CHANNEL DETAIL

3" = 1'-0"



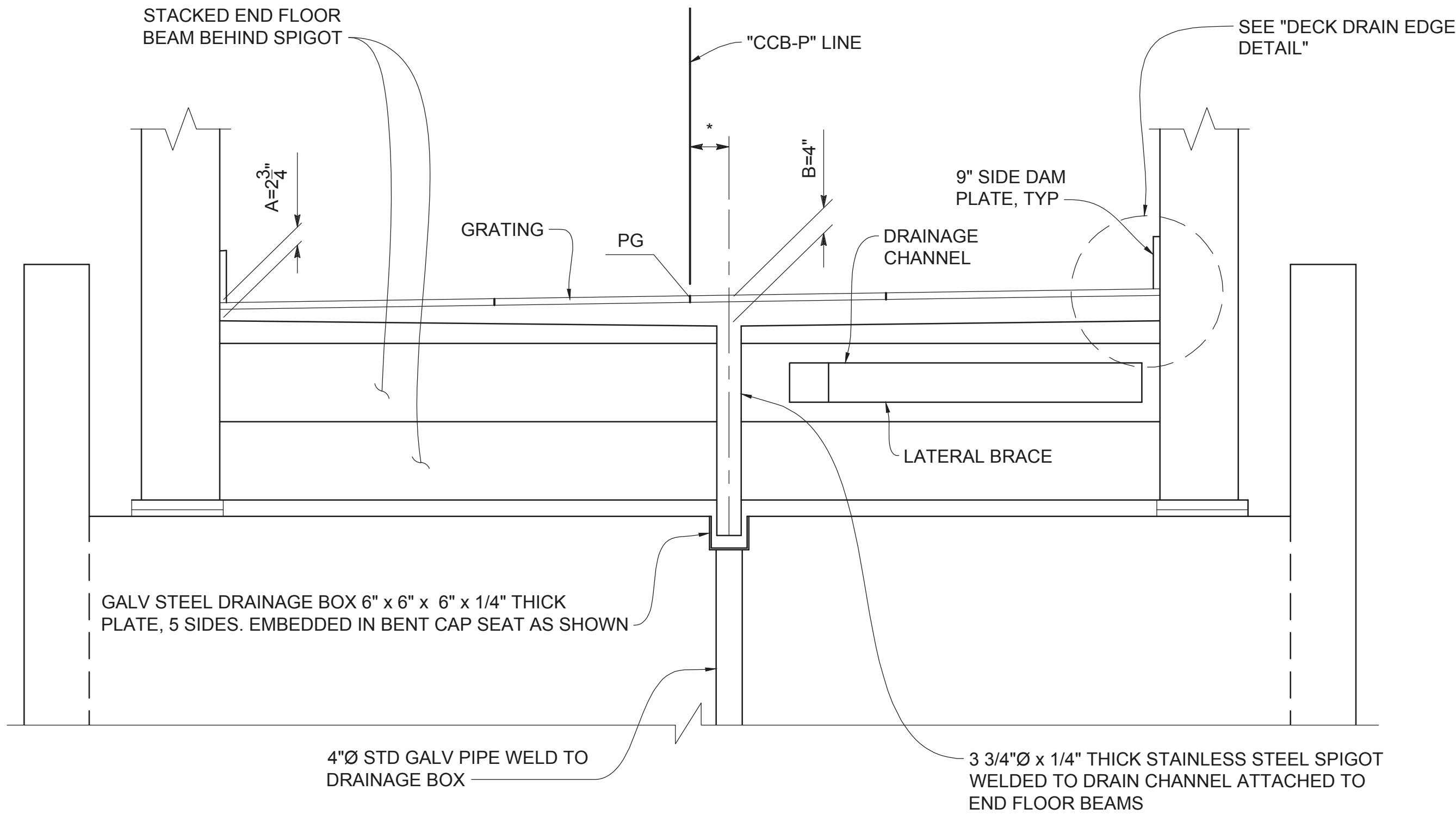
DRAIN PIPE SLEEVE CONNECTION

3" = 1'-0"



DECK DRAIN EDGE DETAIL

3" = 1'-0"



SECTION R-R
AT BENTS 6 AND 7

3/4" = 1'-0"



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER
MARSHALL E. MOORE, P.E.
No. 93657
Exp. 12-31-25
CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER

DATE

MARSHALL E. MOORE, P.E.

DESIGNED BY: SHIMMIDY
DRAWN BY: ET
CHECKED BY: GBH/KET/ID

DRAWING NO.: 60_DDD_1
FILE NAME: 60_DDD_1
PLOT DATE: April 11, 2025
SCALE: SCALE

County of Orange
PublicWorks

PREPARED BY:
MARK THOMAS

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
UPRR PEDESTRIAN OH

DECK
DRAINAGE
DETAILS

SHEET

S-142

298 of 378

LOCATION: CITY OF LA MIRADA, LOS ANGELES COUNTY, CALIFORNIA

UPRR SANTA ANA INDUSTRIAL LEAD TRACK MP 0502.912±

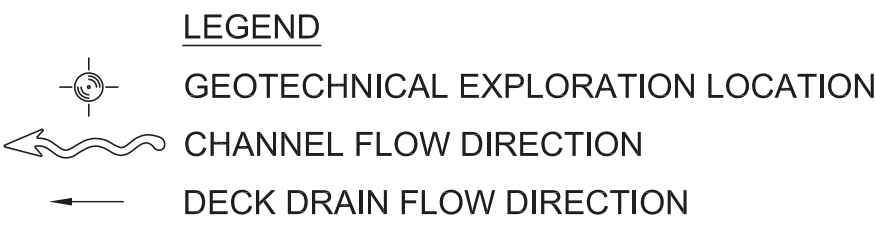
95% SUBMITTAL
"NOT FOR CONSTRUCTION"

Exhibit B

Project Drawings

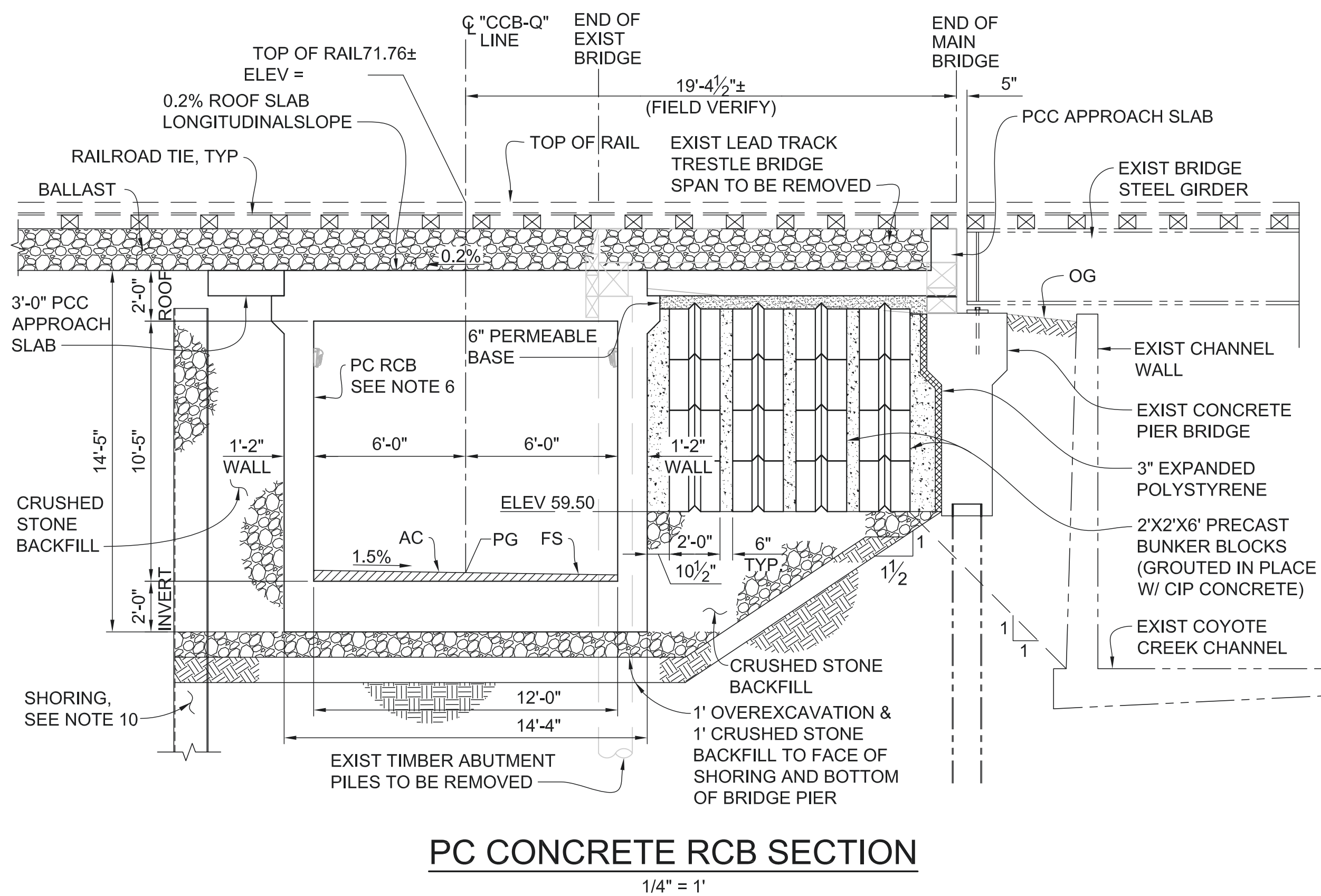
Exhibit B2 – Structure Drawings

Exhibit B2-2 - Coyote Creek Bikeway Trail under BNSF Lead Track 7600-6670
San Bernardino Subdivision

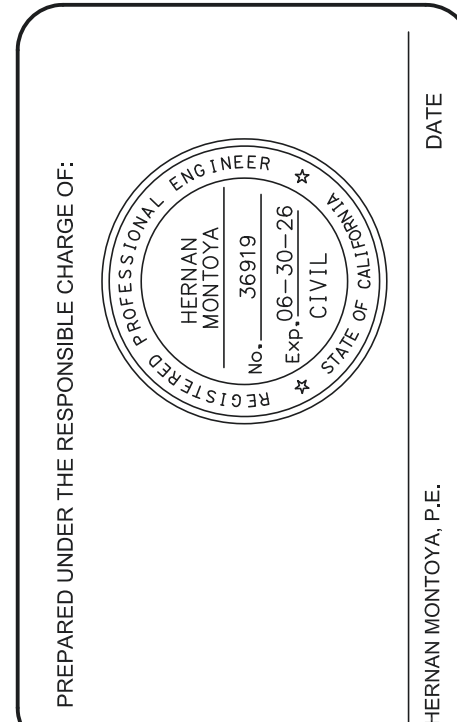


- ### NOTES
1. THE CONTRACTOR SHALL VERIFY IN ADVANCE ALL PERTINENT DIMENSIONS AND ELEVATIONS THAT MIGHT DIRECTLY AFFECT FABRICATION OR CONSTRUCTION.
 2. ALL HORIZONTAL RETAINING WALL DIMENSIONS ARE MEASURED ALONG THE RETAINING WALL LAYOUT LINE (RW LOL).
 3. FOR "CCB-Q" LINE PROFILE DATA, SEE "ROAD PLANS".
 4. EXISTING DRAINAGE STRUCTURE AND EXISTING 36" STORM DRAIN TO BE REMOVED AND ABANDONED. SEE "ROAD PLANS".
 5. STORM DRAIN STRUCTURE AND STORM DRAIN LINE TO BE CONSTRUCTED. SEE "DRAINAGE PLANS".
 6. 10'-5" HIGH X 12' WIDE PRECAST CONCRETE UNDERPASS STRUCTURE.
 7. STEEL PIPE STRUT SPACED AT 20' ± BETWEEN LOCATIONS INDICATED ON PLAN.
 8. CHAIN LINK FENCE PER CALTRANS STANDARD PLAN A85.
 9. EXPANSION JOINT EXTENDS FROM TOP OF PARAPET TO BOTTOM OF INVERT SLAB.
 10. PERMANENT SHEET PILE SHORING. SEE SHEET S-30 & S-31.
 11. STEEL SHEET PILING, WEATHERING STEEL. SEE SHEETS S-14 TO S-16.
 12. 12' WIDE APPROACH SLABS.

LOCATION:	BUENA PARK, ORANGE COUNTY, CALIFORNIA
RAIL SYSTEM:	BNSF RR
BRIDGE NAME:	OC BIKEWAY SEGMENT Q UNDERPASS
SUBDIVISION:	SAN BERNARDINO (LA MIRADA STATION)
DOT No.:	TBD
RAILROAD MILEPOST:	160.37
PLAN LEVEL:	60% SUBMITTAL
LATITUDE/LONGITUDE:	33.878137, -118.010000
CPUC X-ING No.:	TBD



GEOTECHNICAL BORING DATA		
HOLE ID	ALIGNMENT	STATION & OFFSET
CPT-23-052	"CCB-Q" LINE	204+88, 21' LT
R-22-053	"CCB-Q" LINE	206+51, 27' LT

[illegible]

	DESIGNED BY:	H. MONTOYA
	DRAWN BY:	CHECKED BY:
	D. NIETO	H. MONTOYA
PREPARED BY:	DRAWING NO.:	
		FILE NAME:
		S-282_BNSF_UP.GP.dwg
22301 GILBERT, SUITE E • RANDOLPH SANTA MONICA, CA 90408 (818) 796-5052 • FAX (818) 796-1761		SCALE:
		4/17/2025 5:04 PM
		AS SHOWN

ORANGE COUNTY
BIKEWAY LOOP
SEGMENTS O, P AND Q

BNSF UNDERPASS

**GENERAL
PLAN**

SHEET

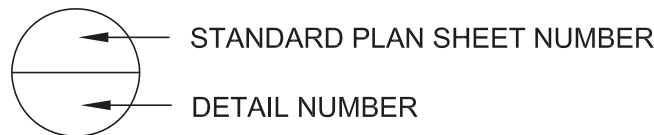
S-78

BNSF SAN BERNARDINO SUBDIVISION MP 0160.37 ±

INDEX TO PLANS

SHEET NO	TITLE	
S-28	181	GENERAL PLAN
S-29	182	INDEX TO PLANS / LIMITS OF EXCAVATION & BACKFILL
S-30	183	RCB PLAN AND SECTIONS
S-31	184	CONSTRUCTION STAGING DETAILS No 1
S-32	185	CONSTRUCTION STAGING DETAILS No 2
S-33	186	RCB DETAILS No 1
S-34	187	RCB DETAILS No 2

PLAN SYMBOLS

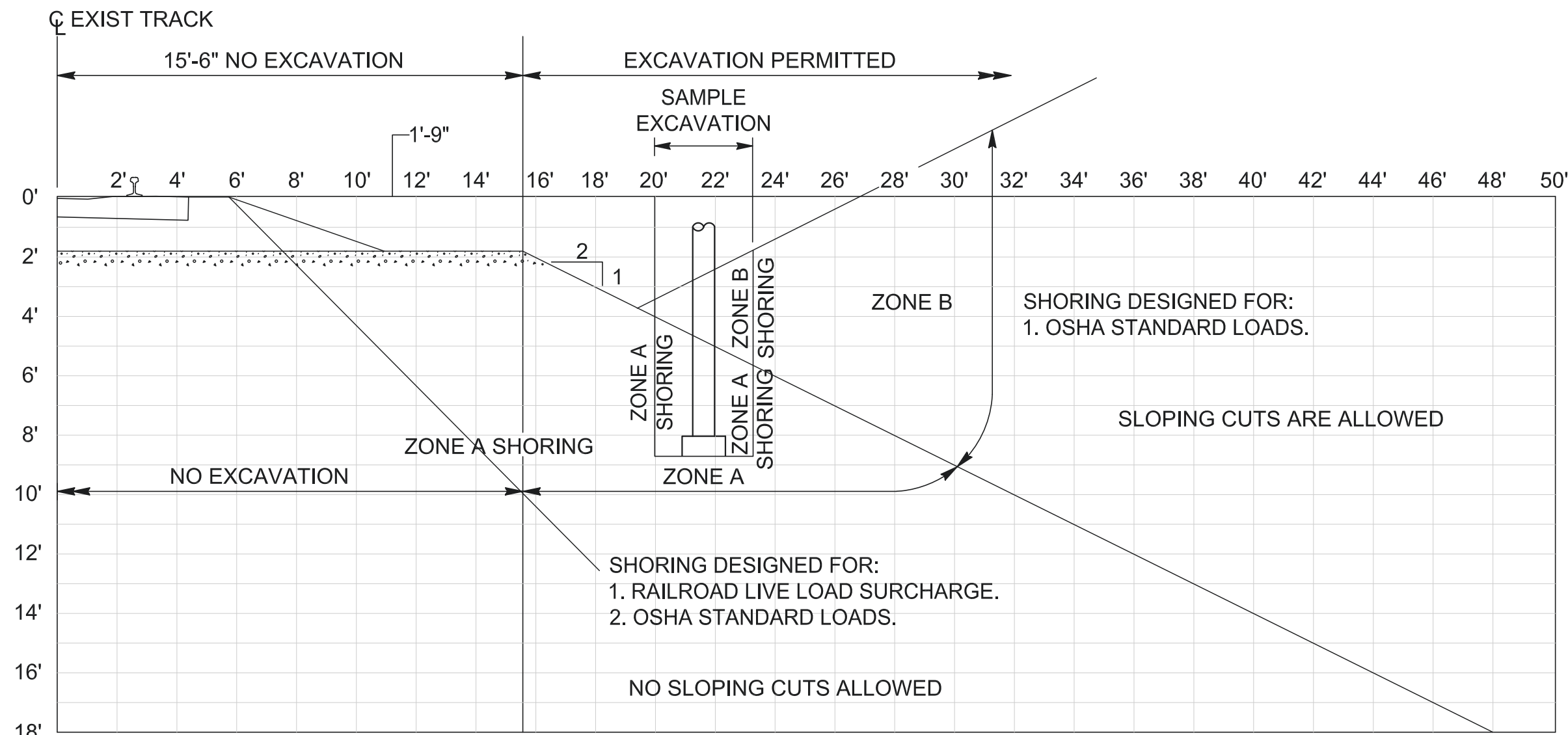


STANDARD PLANS 2024

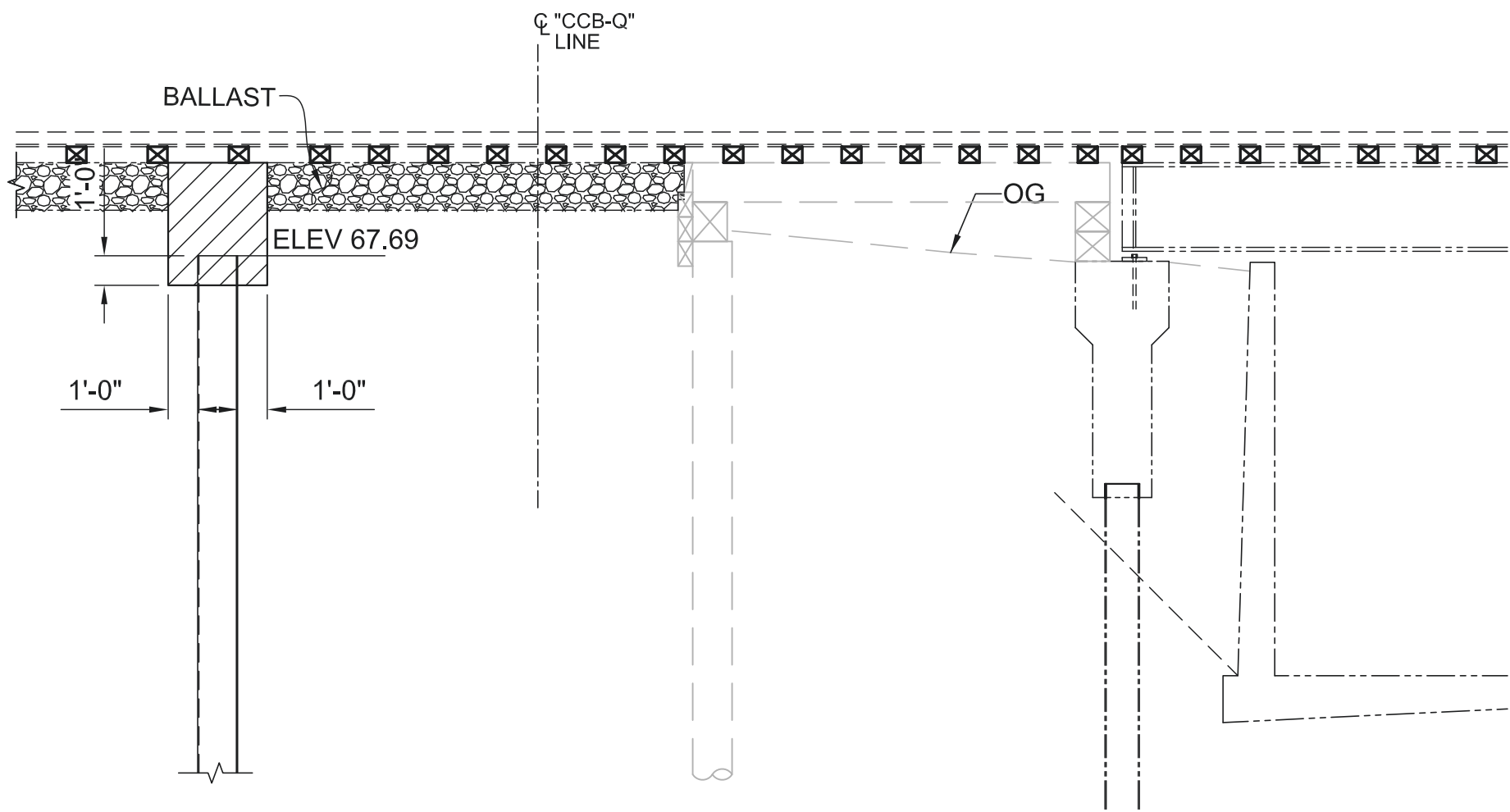
A3A	ABBREVIATIONS (SHEET 1 OF 3)
A3B	ABBREVIATIONS (SHEET 2 OF 3)
A3C	ABBREVIATIONS (SHEET 3 OF 3)
A10A	LEGEND - LINES AND SYMBOLS (SHEET 1 OF 5)
A10B	LEGEND - LINES AND SYMBOLS (SHEET 2 OF 5)
A10C	LEGEND - LINES AND SYMBOLS (SHEET 3 OF 5)
A10D	LEGEND - LINES AND SYMBOLS (SHEET 4 OF 5)
A10E	LEGEND - LINES AND SYMBOLS (SHEET 5 OF 5)
A10F	LEGEND - SOIL (SHEET 1 OF 2)
A10G	LEGEND - SOIL (SHEET 2 OF 2)
A62B	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE SURCHARGE AND WALL
A62G	EXCAVATION AND BACKFILL PRECAST REINFORCED CONCRETE BOX CULVERT
A85	CHAIN LINK FENCE
A85A	CHAIN LINK FENCE DETAILS
A85B	CHAIN LINK FENCE DETAILS
B0-3	BRIDGE DETAILS
B3-7A	RETAINING WALL TYPE 6 (CASE 1)

SHORING NOTES

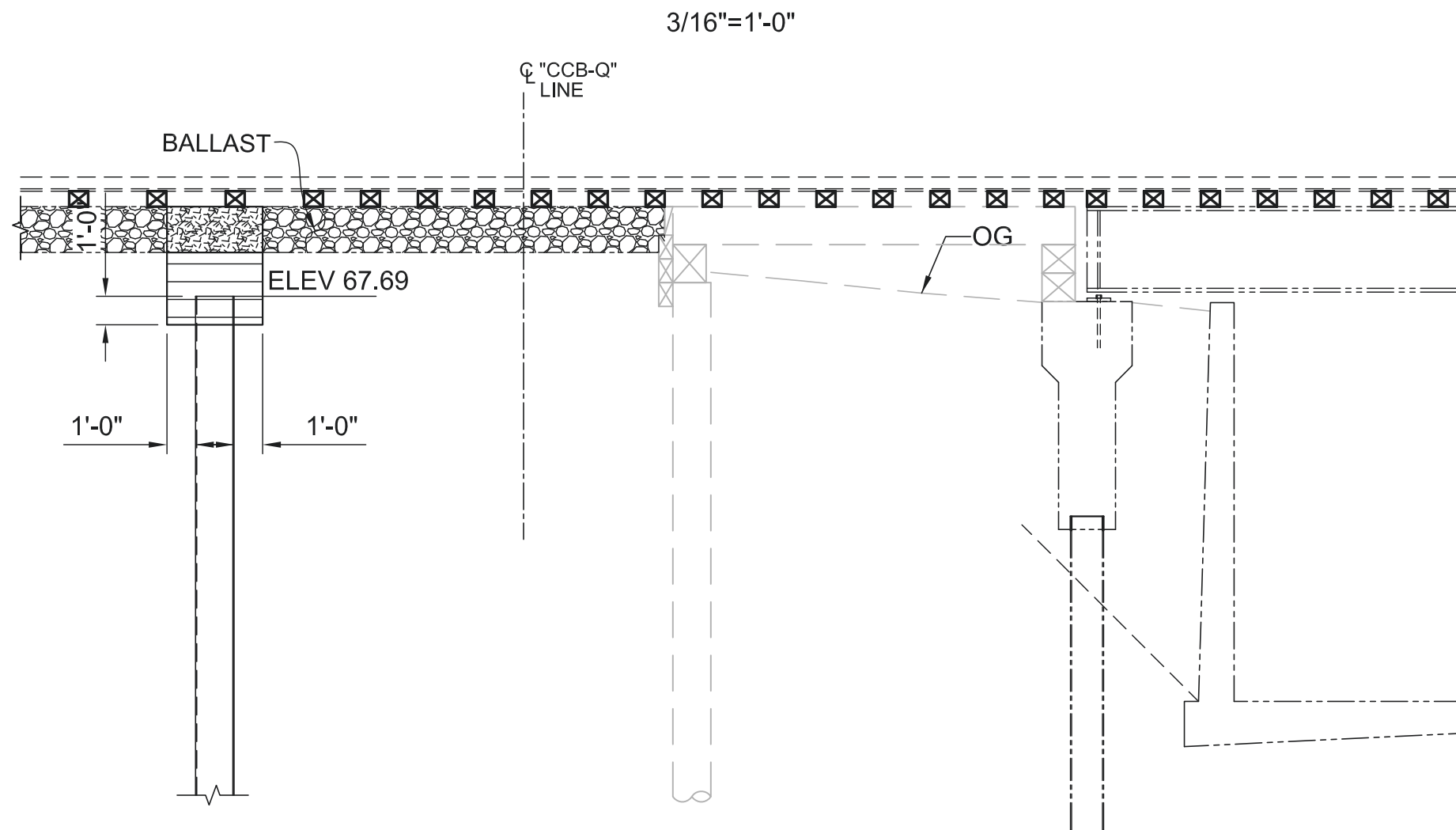
- ALL DIMENSIONS ARE MEASURED PERPENDICULAR TO CENTERLINE OF TRACK.
- PRIOR TO COMMENCING ANY WORK, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE RAILROAD DETAILED PLANS INDICATING THE NATURE AND EXTENT OF THE TRACK PROTECTION SHORING PROPOSED. THE CONTRACTOR SHALL INSTALL THE TEMPORARY SHORING SYSTEM PER THE APPROVED PLANS. DESIGN OF THE TEMPORARY SHORING SYSTEM TO COMPLY WITH GUIDELINES FOR TEMPORARY SHORING (2021).
- FOR EXCAVATIONS WHICH ENGROACH INTO ZONE A, SHORING PLANS SHALL BE ACCOMPANIED BY DESIGN CALCULATIONS. PLANS AND CALCULATIONS MUST BE SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE WORK WILL BE PERFORMED.



TRACK PROTECTION SHORING ZONES



LIMITS OF PAYMENT FOR EXCAVATION - STAGE 2



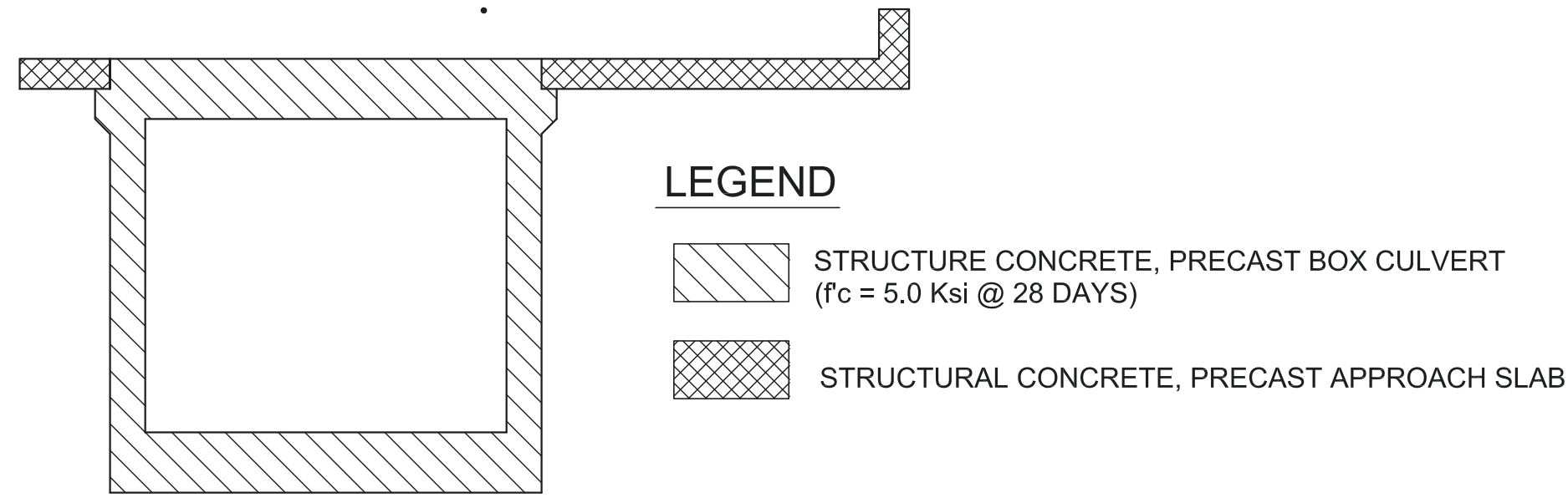
LIMITS OF PAYMENT FOR BACKFILL - STAGE 3

LEGEND

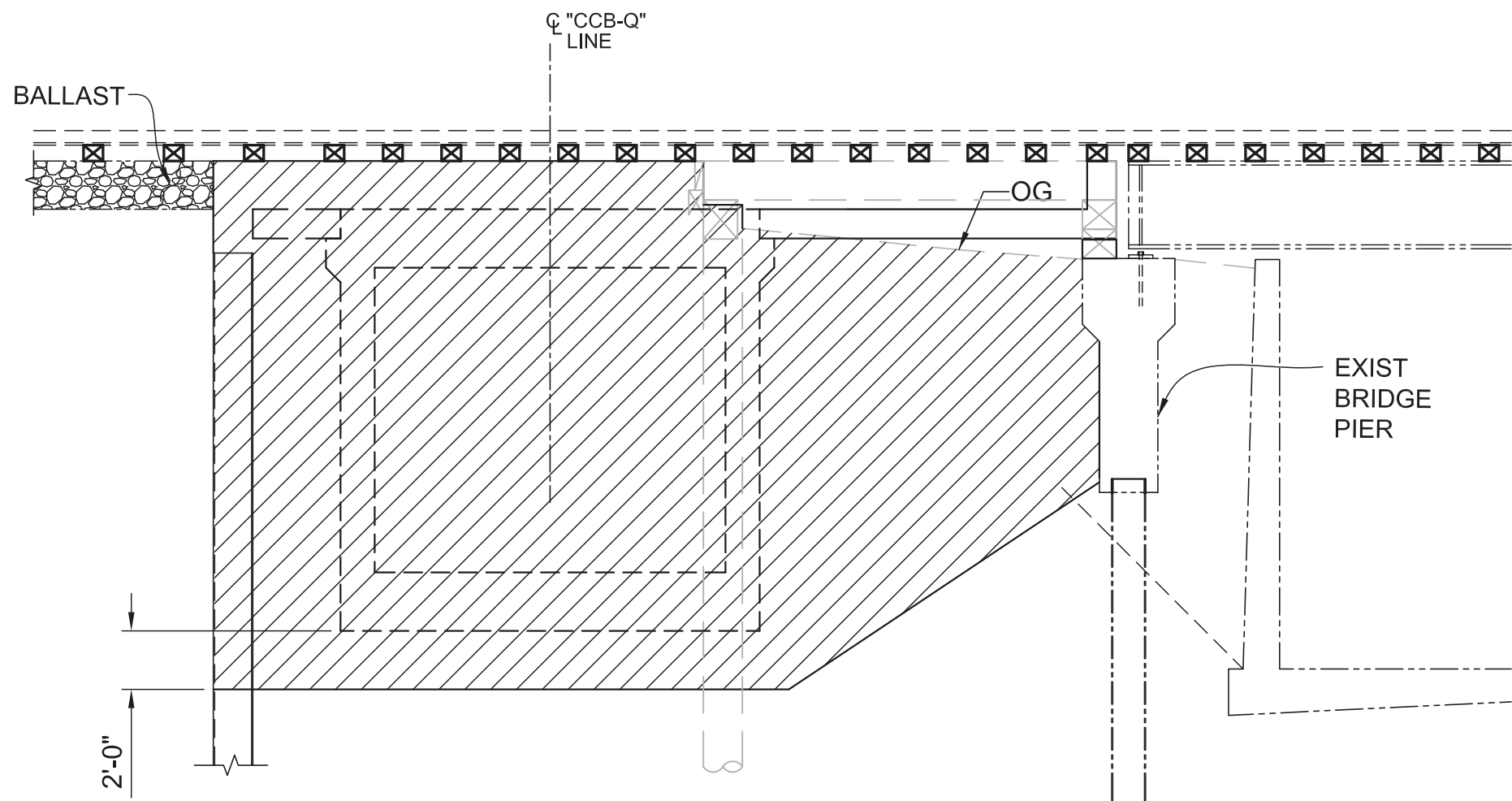
- STRUCTURE EXCAVATION (BNSF CULVERT)
- STRUCTURE BACKFILL (BNSF CULVERT) 95% RELATIVE COMPACTION
- CONCRETE BACKFILL
- PERVIOUS BACKFILL MATERIAL (CRUSHED GRAVEL)
- BALLAST

NOTES:

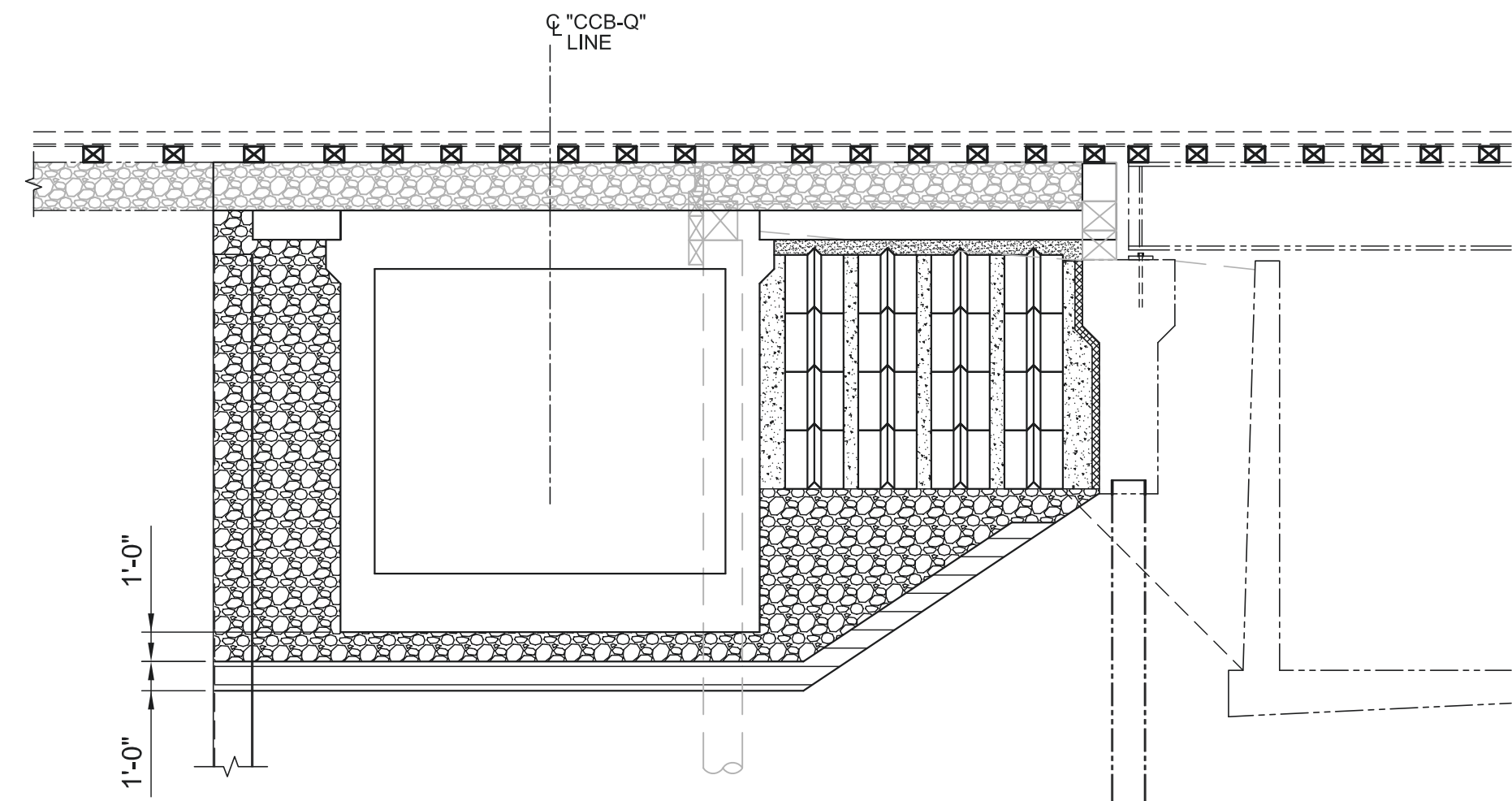
- SLOPE OR SHORE EXCAVATION SIDES AS NECESSARY.
- DIMENSIONS SHOWN ARE MINIMUM.



CONCRETE STRENGTH AND TYPE LIMITS



LIMITS OF PAYMENT FOR EXCAVATION - STAGES 4 & 5



LIMITS OF PAYMENT FOR BACKFILL - STAGE 7,8 & 9



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER
HERNAN MONTOYA
No. 36919
Exp. 06-30-26
CIVIL
STATE OF CALIFORNIA

DATE

HERNAN MONTOYA, P.E.

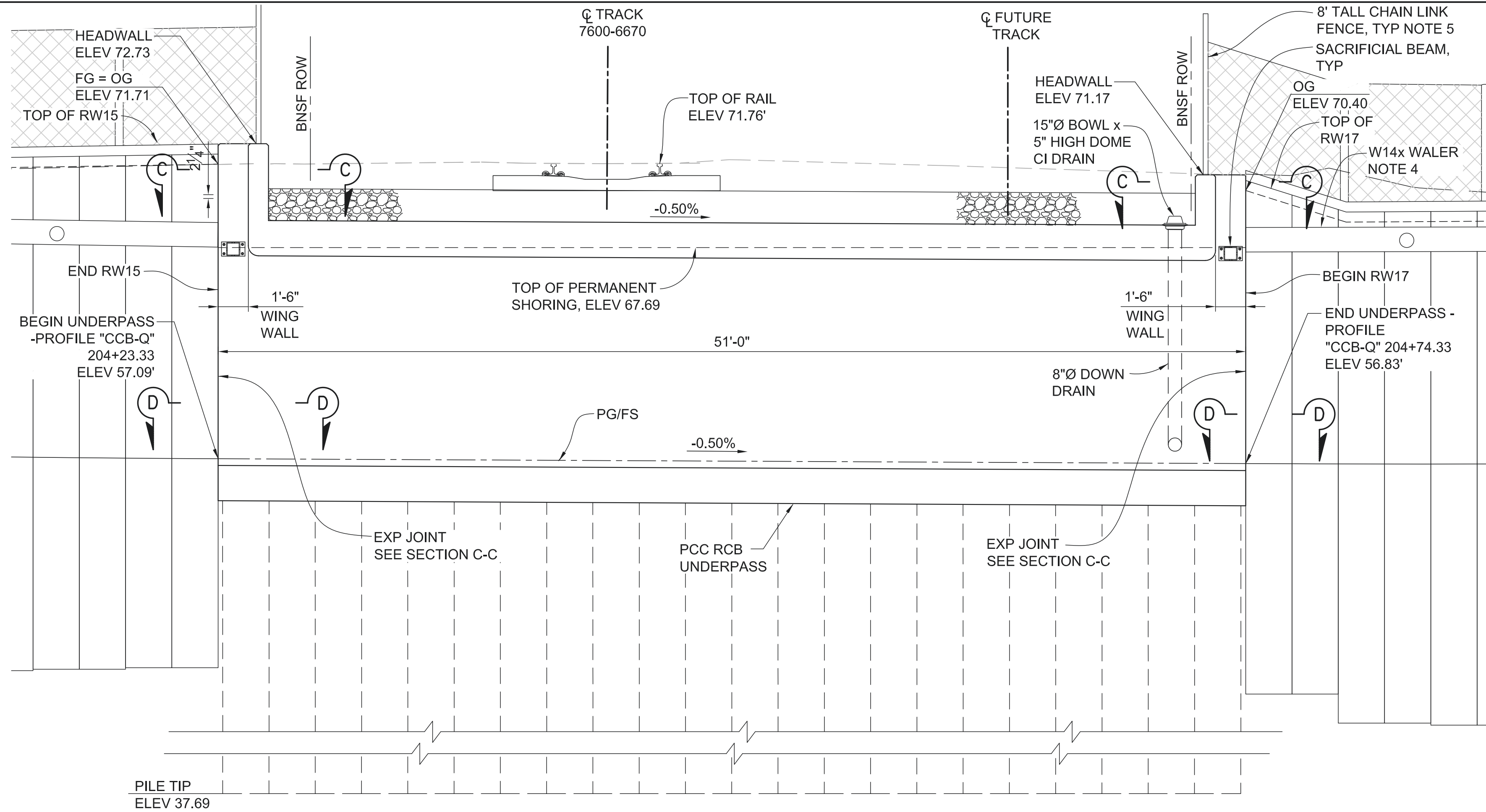
DESIGNED BY: H. MONTOYA
CHECKED BY: H. MONTOYA
DRAWN BY: C. SANCHEZ
DRAWING NO.:
FILE NAME: S-29_BNSF_UP-RCB.dwg
PLOT DATE: 3/26/2025 5:00 PM
SCALE: AS SHOWN

County of Orange
PublicWorks
PREPARED BY: A R C O N
22201 SHERBORN, SUITE E-1, MANASSA PARK, FLORIDA 34017
(888) 786-8102 • FAX: (888) 786-1781

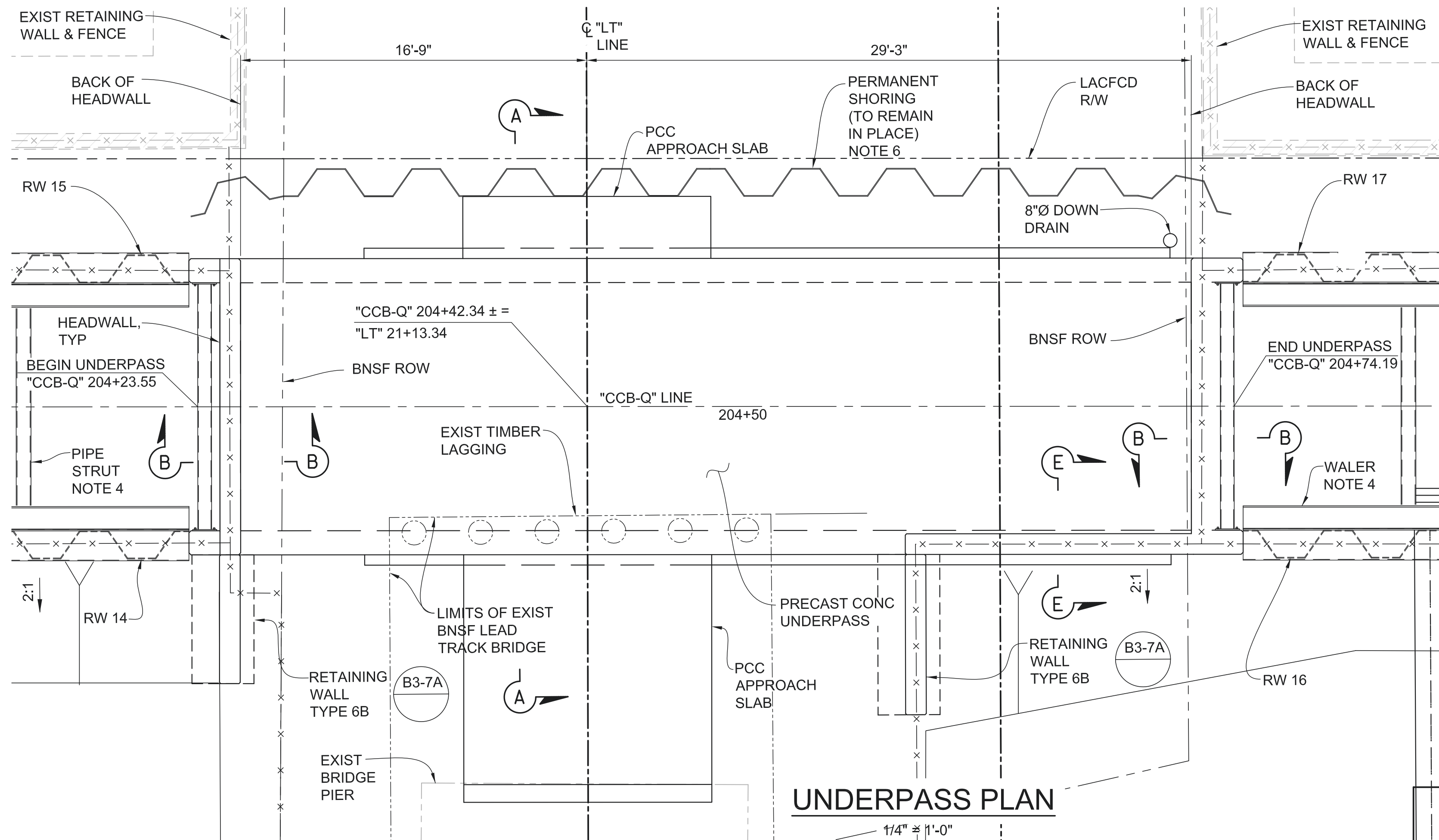
ORANGE COUNTY
BIKEWAY LOOP
SEGMENTS O, P AND Q
BNSF UNDERPASS
INDEX TO PLANS /
LIMITS OF
EXCAVATION &
BACKFILL

SHEET

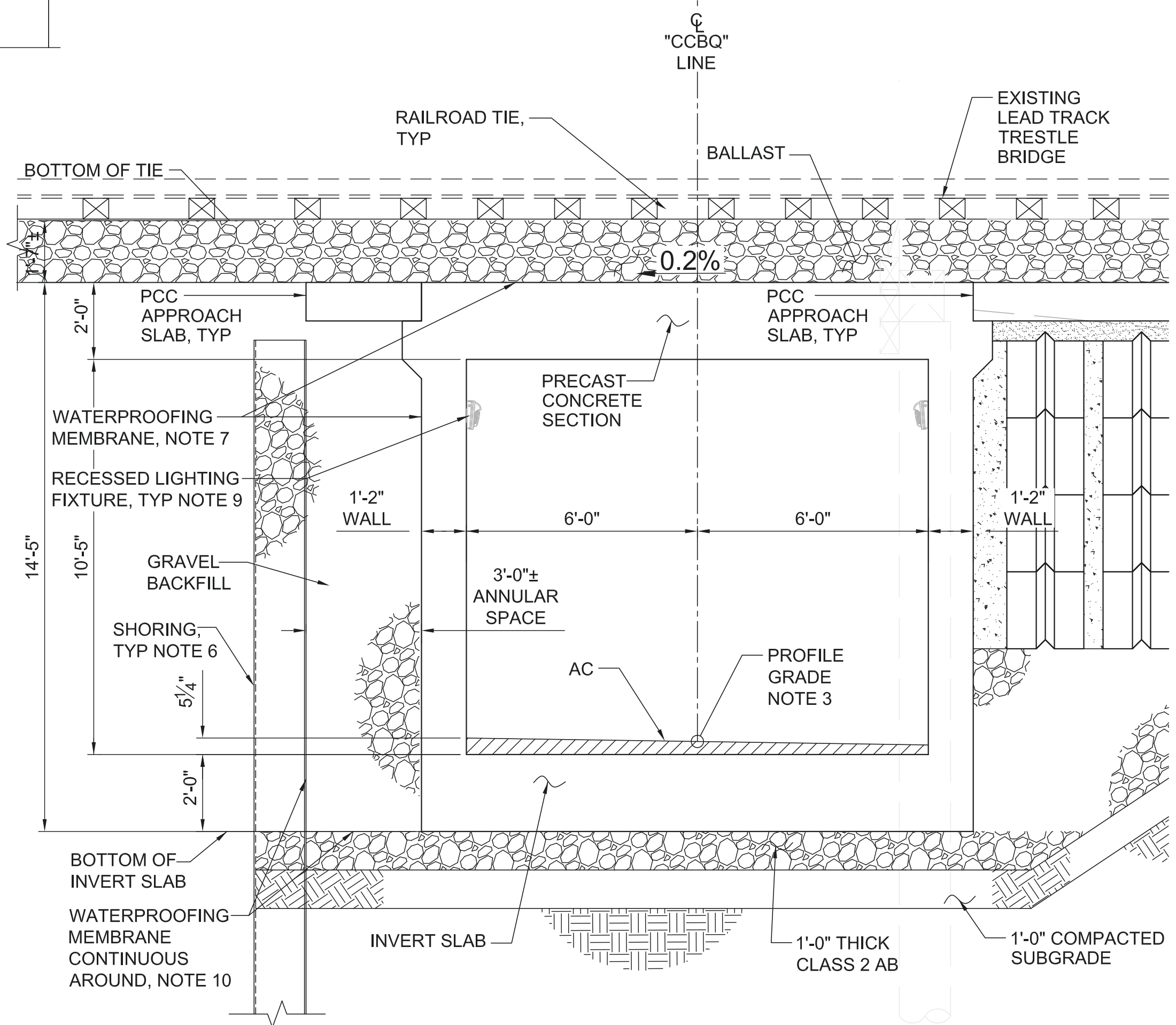
S-79



UNDERPASS BOX PROFILE
1/4" = 1'-0"



UNDERPASS PLAN
1/4" = 1'-0"



TYPICAL SECTION A-A
AT UNDERPASS STRUCTURE
3/8" = 1'-0"

NOTES

1. THE CONTRACTOR SHALL VERIFY IN ADVANCE ALL PERTINENT DIMENSIONS AND ELEVATIONS THAT MIGHT DIRECTLY AFFECT FABRICATION OR CONSTRUCTION.
2. ALL HORIZONTAL DIMENSIONS RE MEASURED ALONG THE RETAINING WALL LAYOUT LINE (RW LOL).
3. FOR "CCB-Q" LINE PROFILE GRADE DATA, SEE "ROAD PLANS"
4. STEEL WALER AND PIPE STRUTS SPACED AT 20' ± BETWEEN LOCATIONS INDICATED ON PLAN.
5. CHAIN LINK FENCE PER CALTRANS STANDARD PLAN A85.
6. SHORING SYSTEM AT UNDERPASS TO REMAIN PERMANENTLY IN PLACE.
7. WATERPROOFING MEMBRANE SHALL BE CONTINUOUS AROUND THE UNDERPASS STRUCTURE.
8. FOR BIKE PATH SECTION SEE "ROAD PLANS".
9. MOUNTED LIGHTING FIXTURES AND CONDUITS PER ELECTRICAL PLANS.
10. SEE SHEET S-62 FOR SECTIONS B-B, C-C, D-D, E-E, AND F-F.
11. SEE SHEET S-63 FOR SECTION G-G, ADDITIONAL PC RCB DETAILS, AND GENERAL STRUCTURE NOTES.



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER
HERNAN MONTOYA
No. 785916
Exp. 12-30-25
CIVIL
STATE OF CALIFORNIA

DATE

HERNAN MONTOYA, P.E.

DESIGNED BY: H. MONTOYA
CHECKED BY: H. MONTOYA
DRAWN BY: C. SANCHEZ
DRAWING NO.: S-30-BNSF-UP-RCB.dwg
FILE NAME: S-30-BNSF-UP-RCB.dwg
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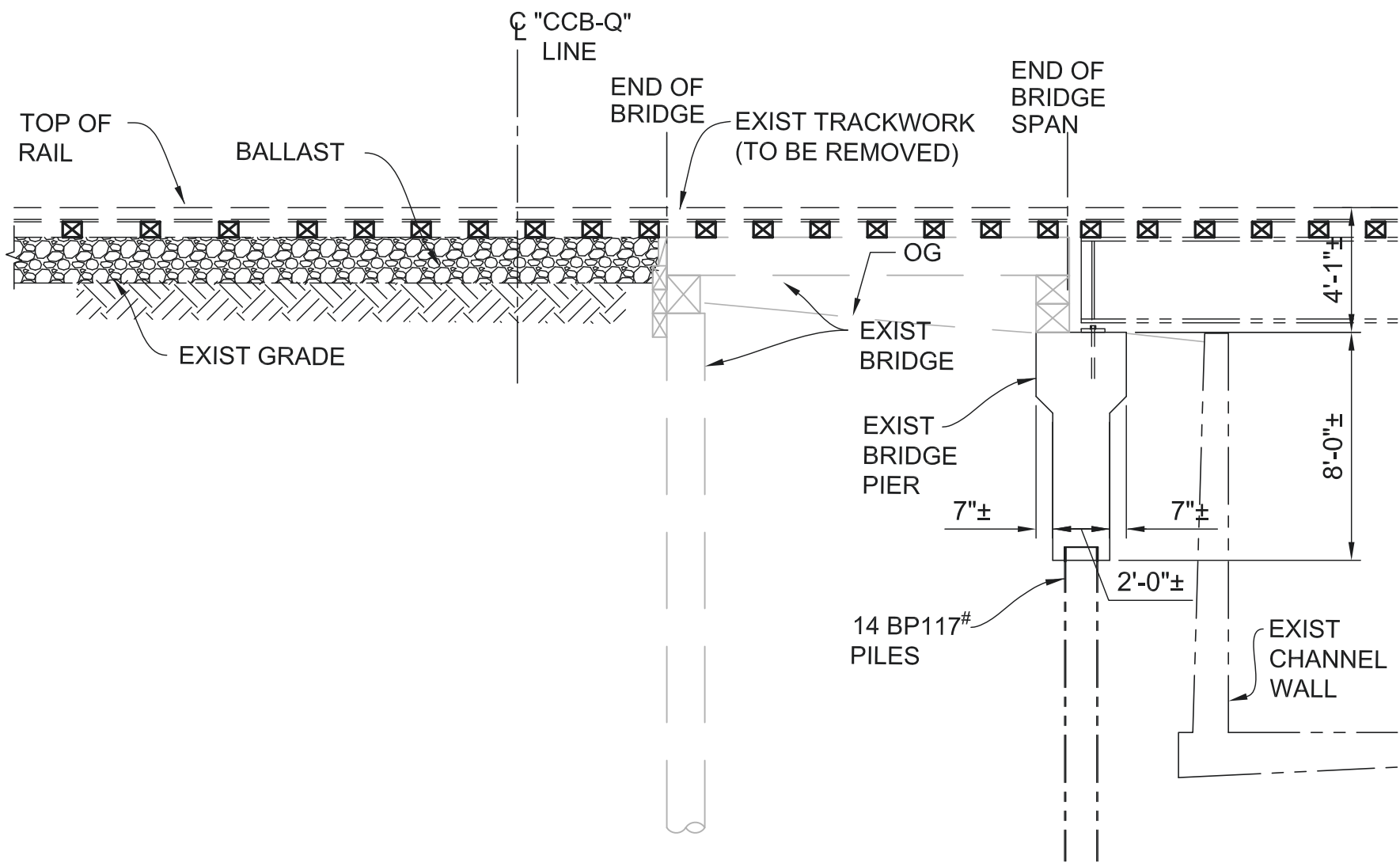
County of Orange
PublicWorks

PREPARED BY: A R C O N
22201 SHELTON, SUITE 100, SANTA ANA, CALIFORNIA 92705
(949) 766-8102 • FAX: (949) 766-1791

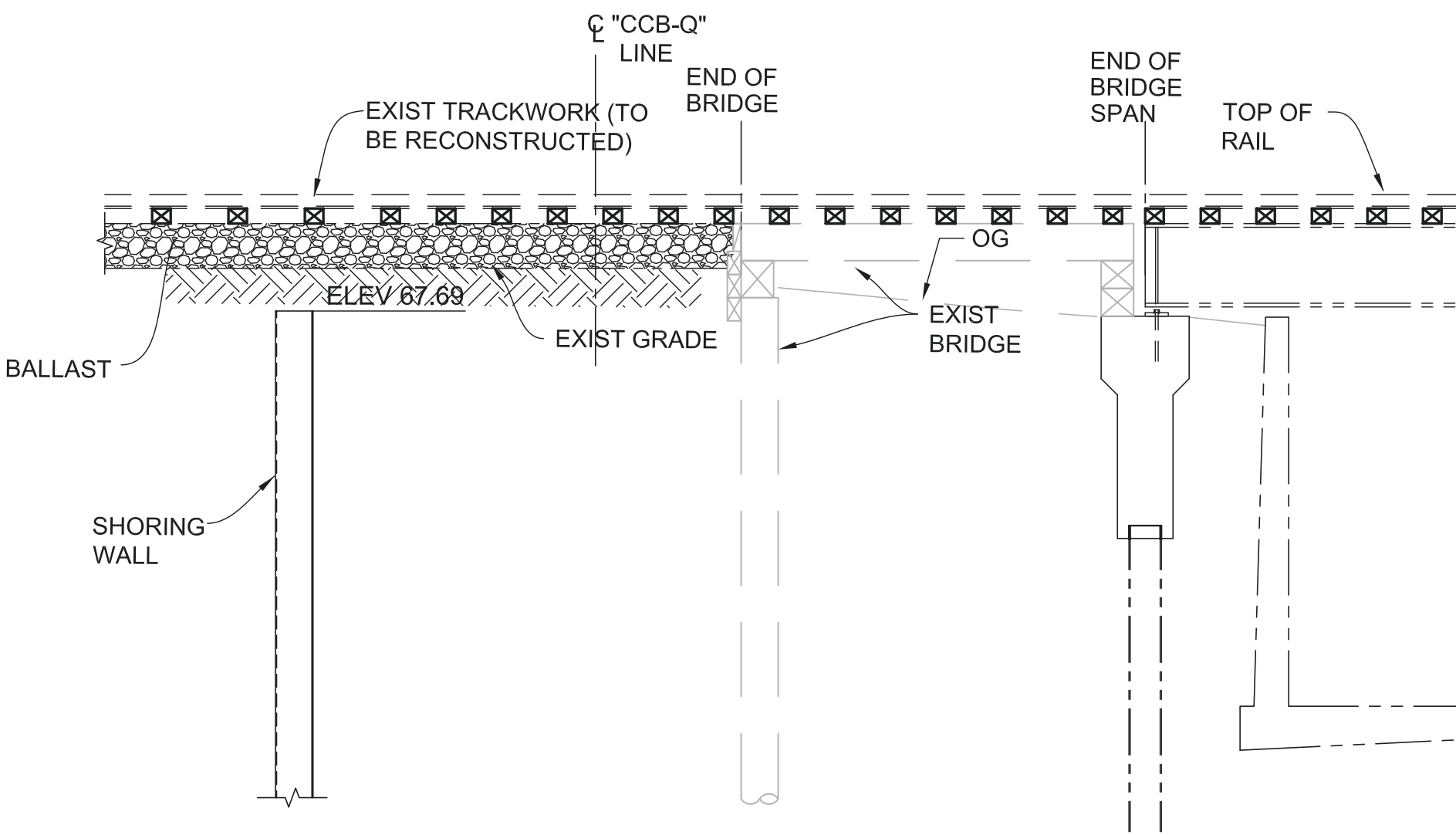
ORANGE COUNTY
BIKEWAY LOOP
SEGMENTS O, P AND Q
BNSF UNDERPASS
RCB PLAN
AND SECTION

SHEET

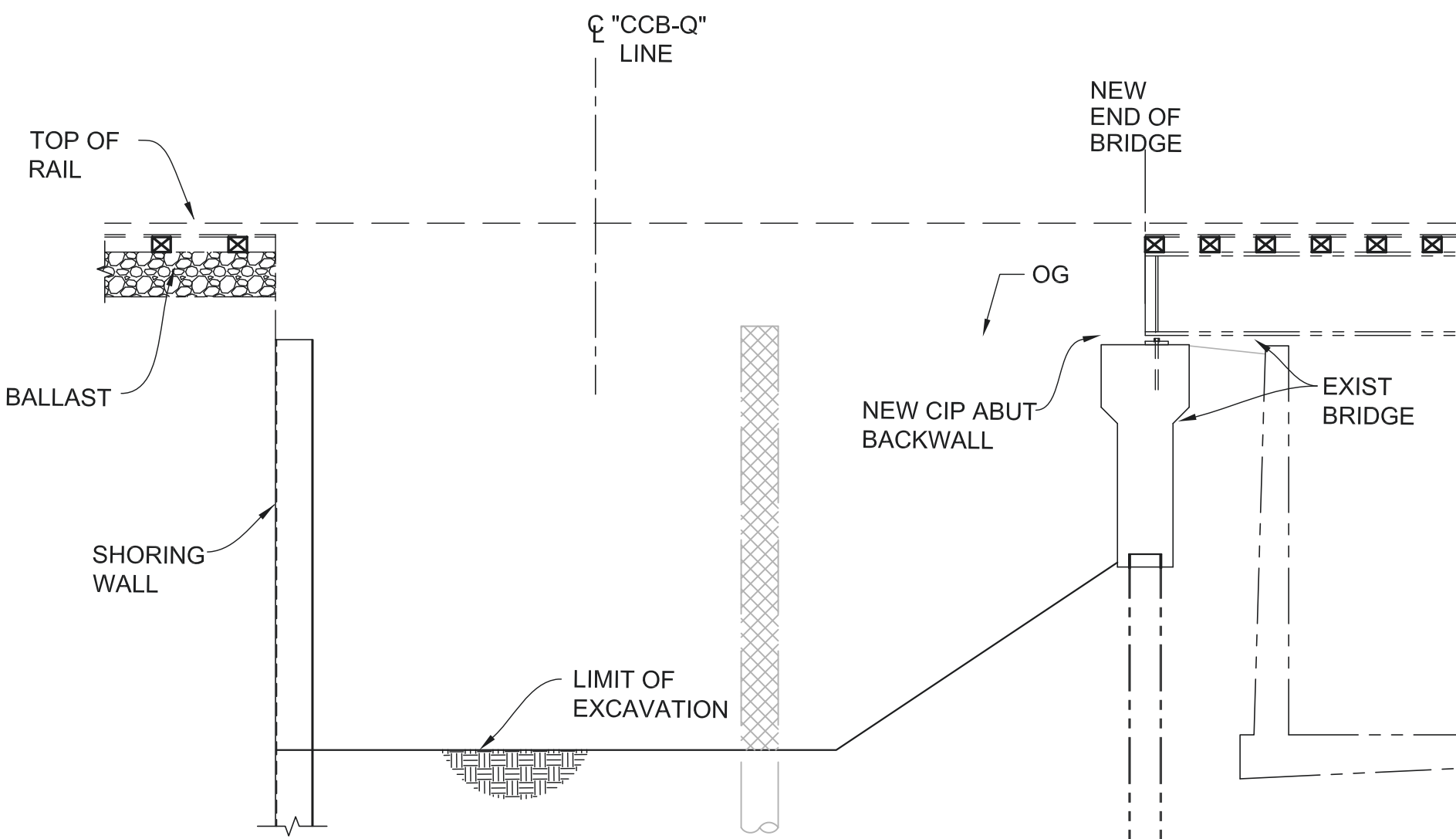
S-80



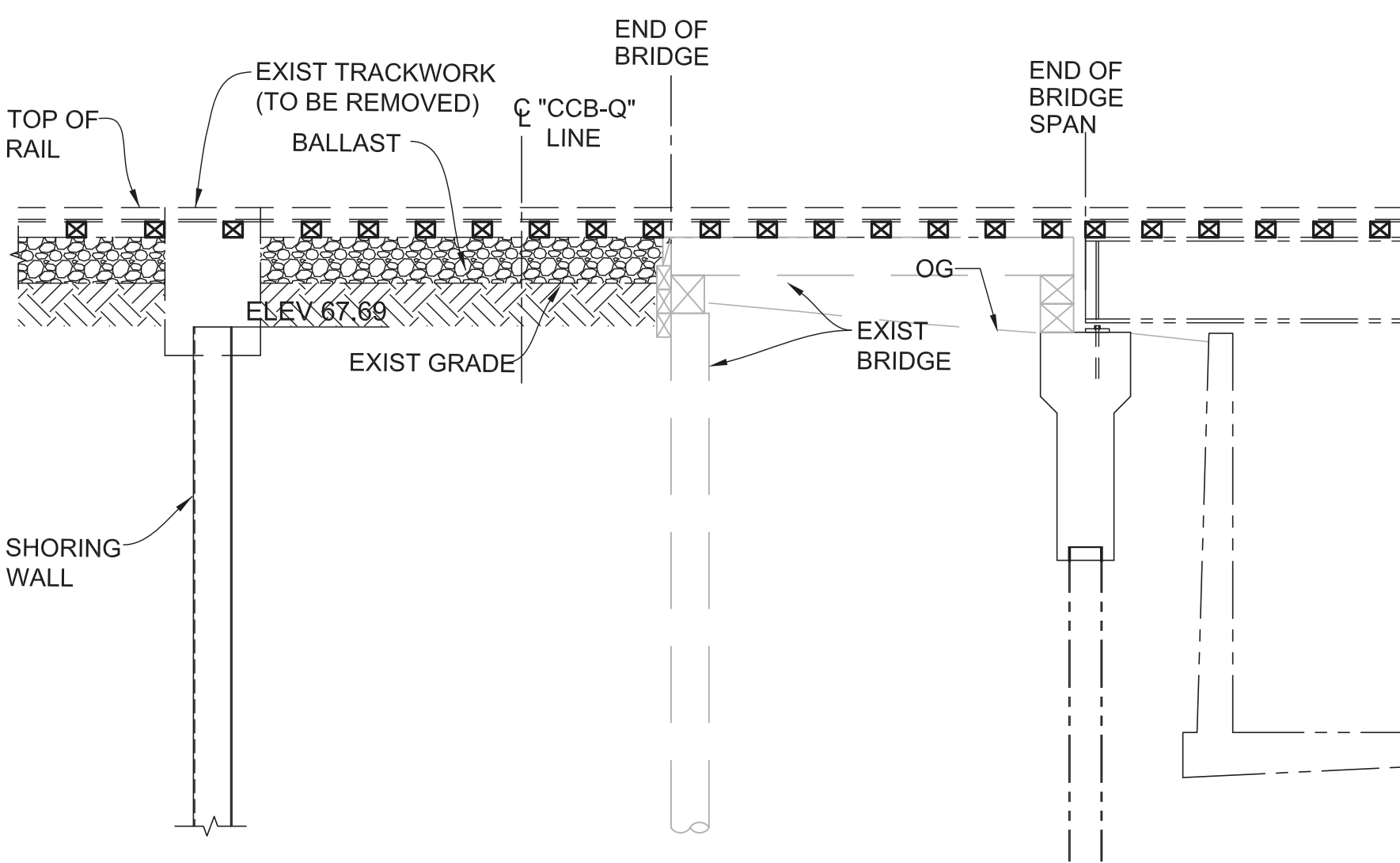
STAGE 1
3/16"=1'-0"



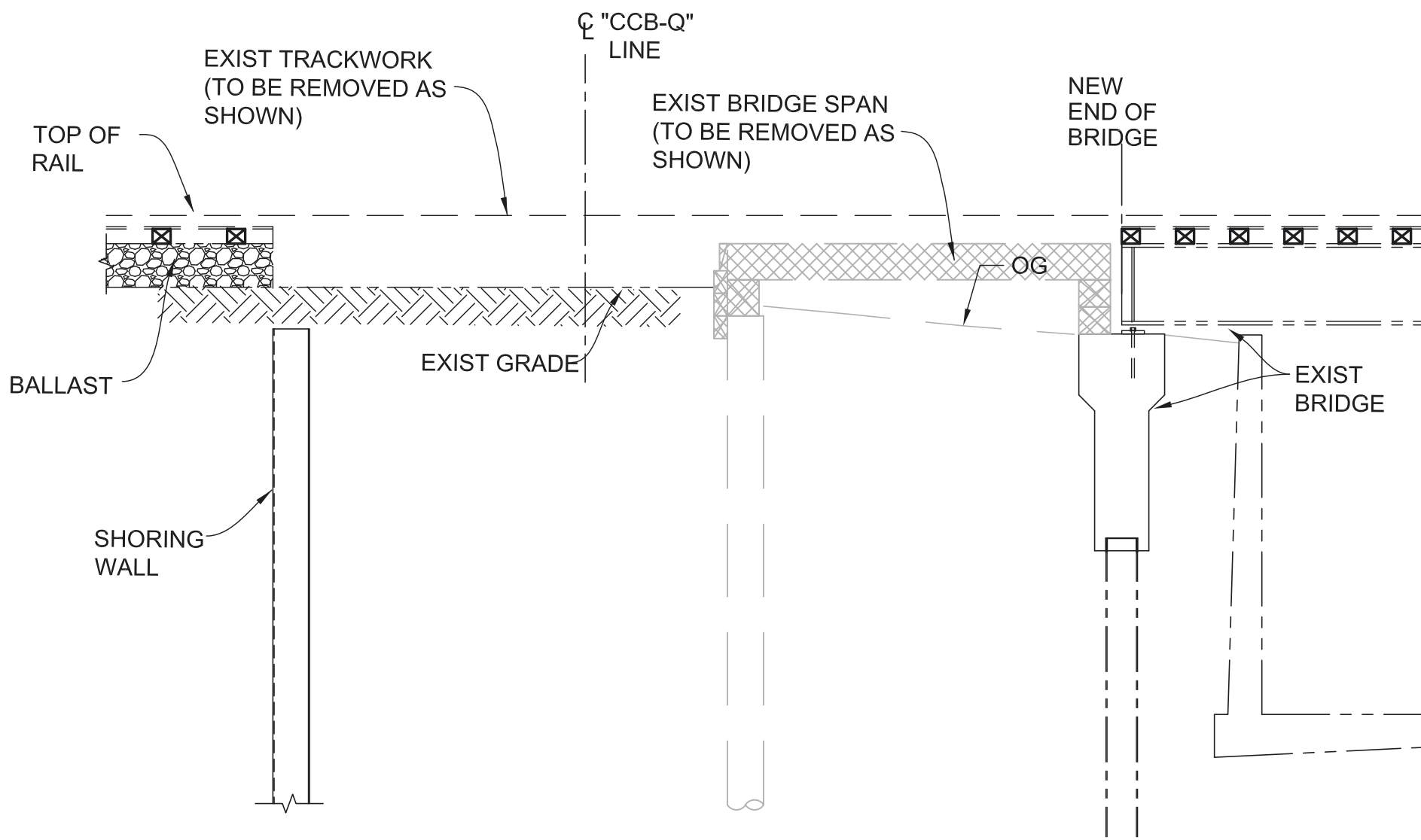
STAGE 3
3/16"=1'-0"



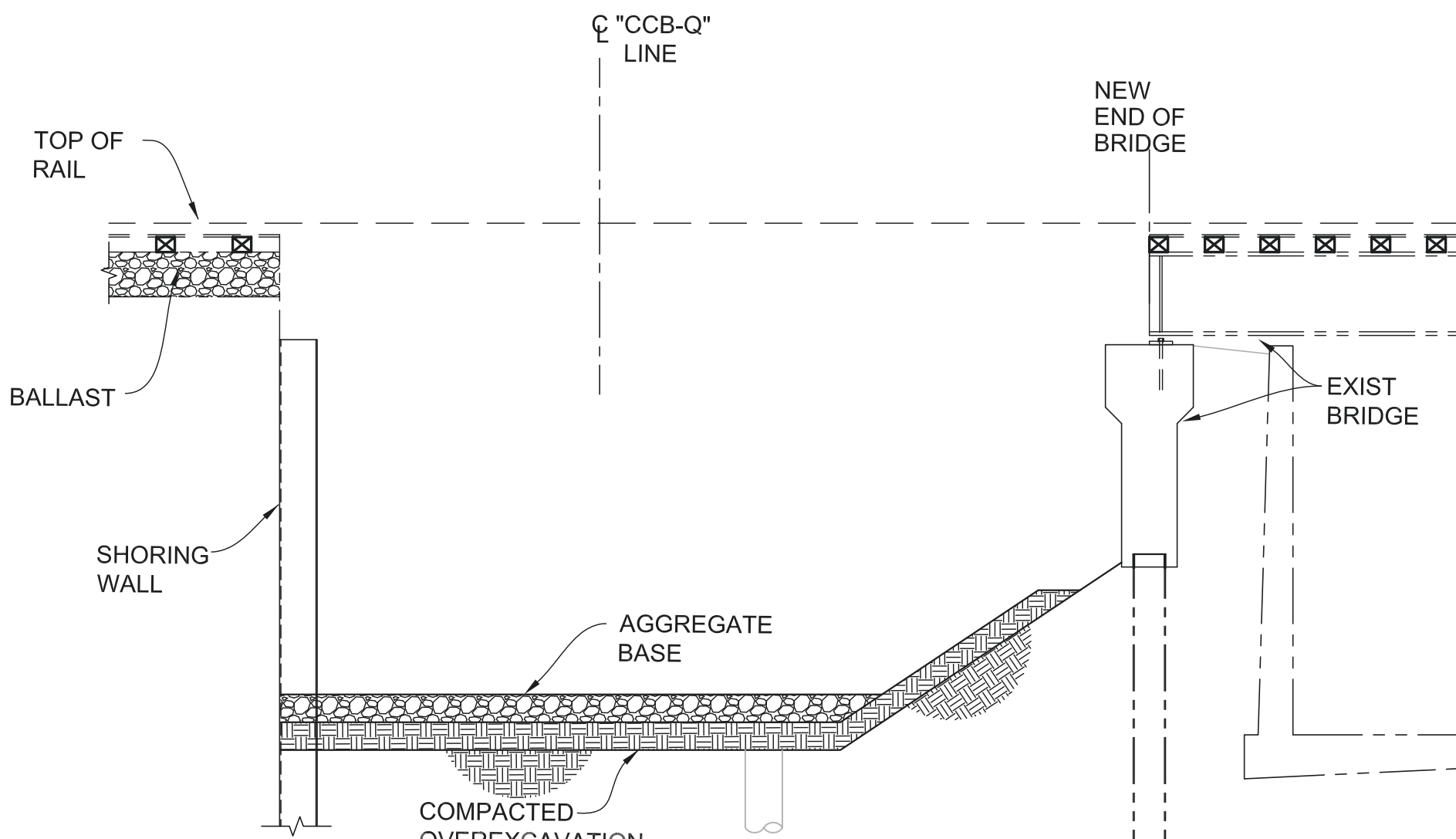
STAGE 5
3/16"=1'-0"



STAGE 2
3/16"=1'-0"



STAGE 4
3/16"=1'-0"



STAGE 6
3/16"=1'-0"

CONSTRUCTION STAGING NOTES

- STAGE 1
TEMPORARY SHUTDOWN OF RAIL OPERATIONS ON THE LEAD TRACK TO ALLOW CONSTRUCTION OF SHORING:
- A. EXISTING TRACKWORK TO BE REMOVED PRIOR TO INSTALLATION OF SHORING.
 - B. SHUTDOWNS ONLY OCCUR DURING HOURS OUTSIDE OF NORMAL RAIL OPERATION WITH APPROVAL BY BNSF.
- STAGE 2
INSTALL SHEET PILING SHORING WALL FROM BELOW EXISTING GRADE:
- A. EXCAVATE GRADE AS REQUIRED FOR INSTALLATION OF SHEET PILES.
 - B. INSTALL WALL ON BOTH SIDES OF THE PROPOSED TUNNEL STRUCTURES FOLLOWING APPROVED STAGING DRAWINGS.
 - C. WALL TO REMAIN IN PLACE AFTER COMPLETION OF CONSTRUCTION.

- STAGE 3
BACKFILL AND COMPACT EXCAVATION, RECONSTRUCT TRACKWORK AND RESUME RAIL OPERATIONS:
- A. IT IS ANTICIPATED THAT SHORING MAY REQUIRE MULTIPLE PERIODS OF RAIL OPERATION SHUTDOWN TO COMPLETE SHORING INSTALLATION.

- STAGE 4
TEMPORARY SHUTDOWN OF RAIL OPERATIONS ON THE LEAD TRACK TO ALLOW CONSTRUCTION OF UNDERPASS:
- A. EXISTING TRACKWORK TO BE REMOVED PRIOR TO CONSTRUCTION OF PRECAST CONCRETE UNDERPASS STRUCTURE.
 - B. IT IS ANTICIPATED THAT RAIL OPERATIONS WILL BE SHUTDOWN FOR LESS THAN ONE WEEK TO ALLOW CONSTRUCTION OF THE UNDERPASS.

- STAGE 5
PERFORM EXCAVATION BETWEEN SHORING WALL AND EXISTING BRIDGE ABUTMENT:
- A. WHILE ADVANCING THE EXCAVATION, INSTALL TEMPORARY SHORING, AS REQUIRED.
 - B. INSTALL NEW CIP BACKWALL ON EXIST BRIDGE PIER

STAGE 6
PERFORM GROUND IMPROVEMENT, CONSTRUCT AGGREGATE BASE.

APPROXIMATE ELEVATIONS

TOP OF RAIL: 71.76'

EXIST GRADE: 68.84'

LIMIT OF EXCAVATION: 53.75'

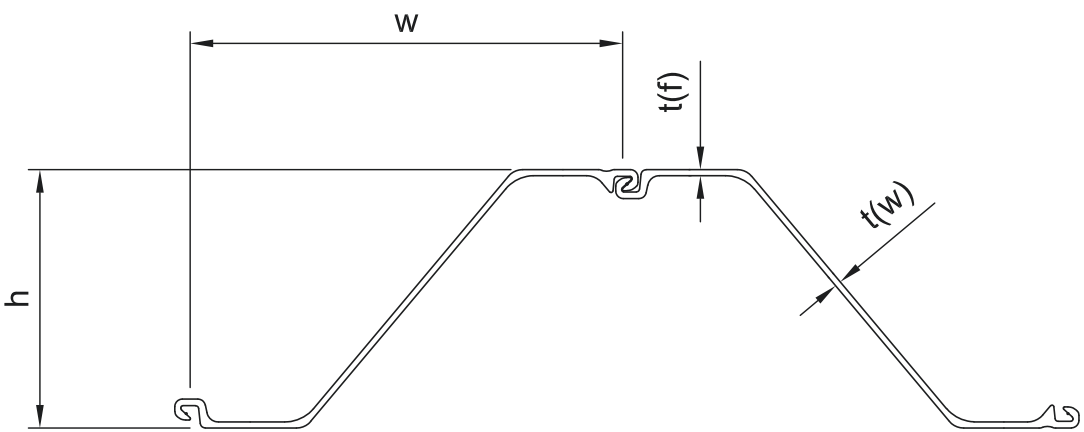
SHEET PILE DESIGN CRITERIA:

ASTM A572 STEEL SHEET PILE SECTION OR APPROVED EQUIVALENT.

YIELD STRENGTH: 60 KSI MIN.
TENSILE STRENGTH: 75 KSI MIN.

FINAL SHEET PILE SECTIONS TO BE APPROVED BY THE ENGINEER.

WIDTH (w) in.	HEIGHT (h) in.	MINIMUM THICKNESS		MINIMUM CROSS SECT. AREA (in ² /ft)	MINIMUM SECTION MODULUS in ³ /ft	MINIMUM MOMENT OF INERTIA in ⁴ /ft
		t(f) in.	t(w) in.			
27.56	16.25	0.480	0.480	8.57	41.47	336.9



SHEET PILE SECTION

1" = 1'



APPR.	DATE	DESCRIPTION	MARK

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER
HERNAN MONTOYA
No. 06-30-25
CIVIL
STATE OF CALIFORNIA

DATE

HERNAN MONTOYA, P.E.

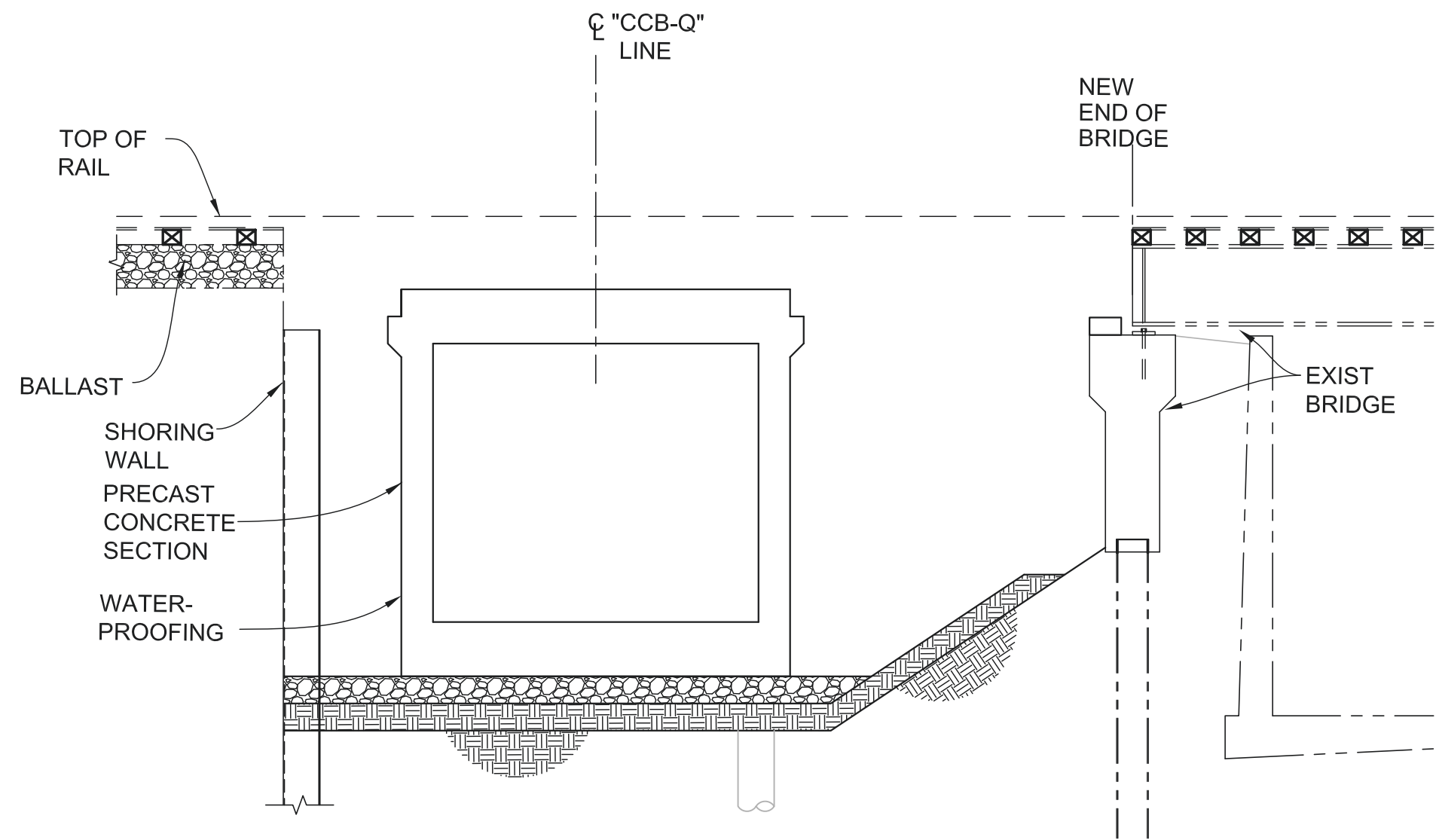
DESIGNED BY: H. MONTOYA
CHECKED BY: H. MONTOYA
DRAWN BY: C. SANCHEZ

FILE NAME: S-31_BNSF_UP-CS.dwg
PLOT DATE: 4/7/2025 2:01 PM
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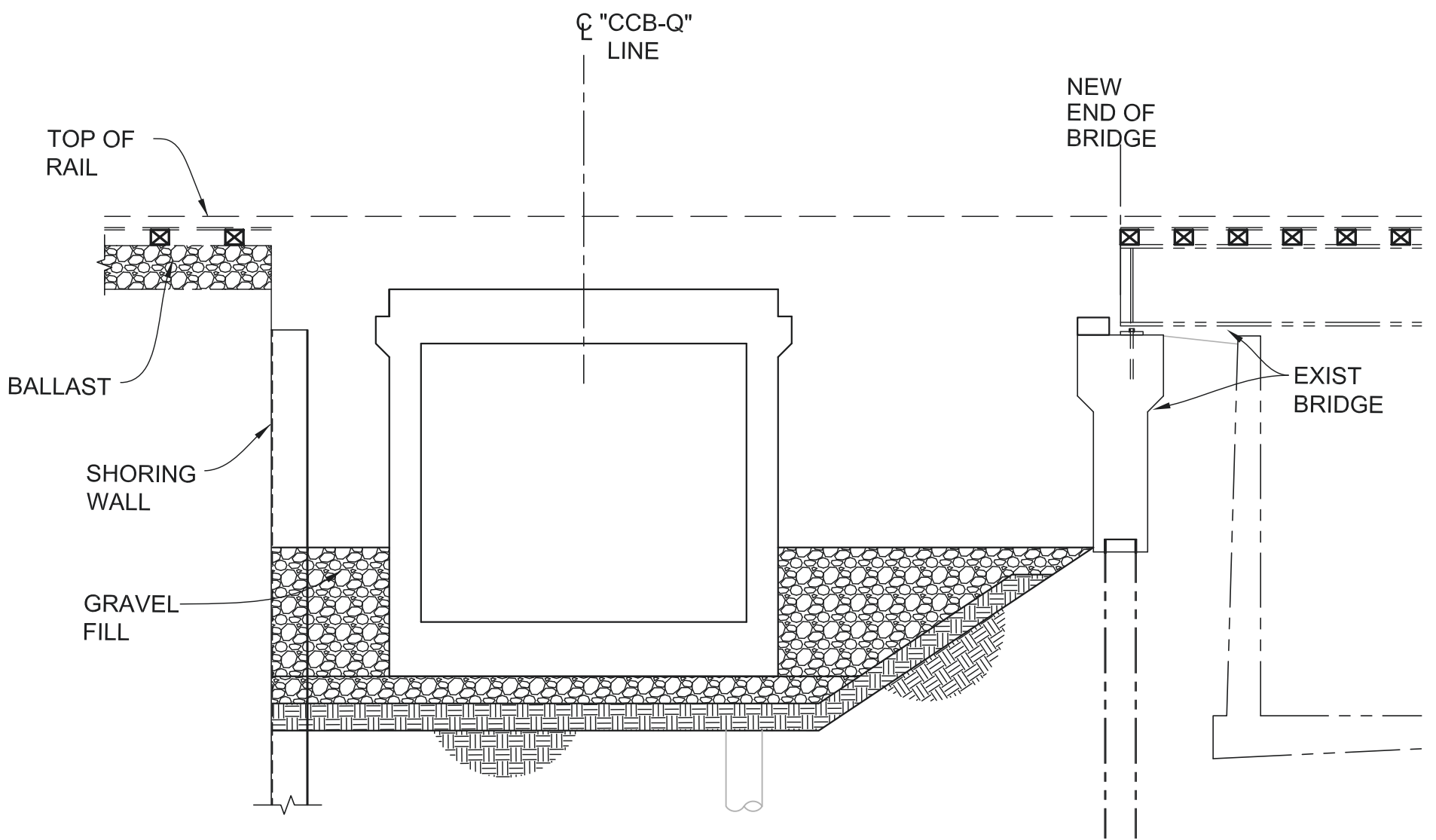
County of Orange
Public Works

PREPARED BY: A R C O N
22200 SHERBORN, SUITE 100, IRVINE, CALIFORNIA 92614
(949) 766-0102 • FAX: (949) 766-1701

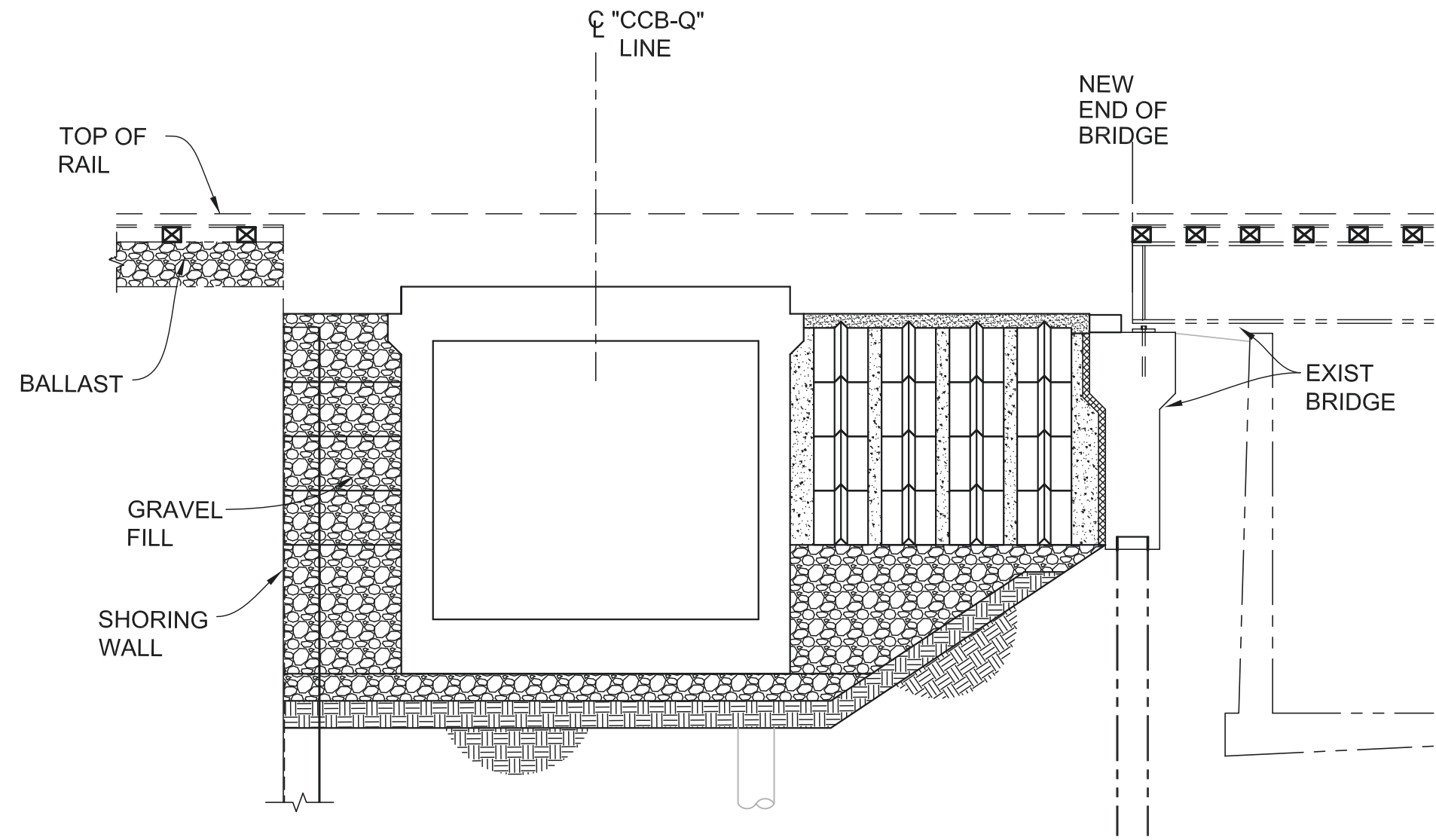
ORANGE COUNTY
BIKEWAY LOOP
SEGMENTS O, P AND Q
BNSF UNDERPASS
CONSTRUCTION
STAGING
DETAILS No 1



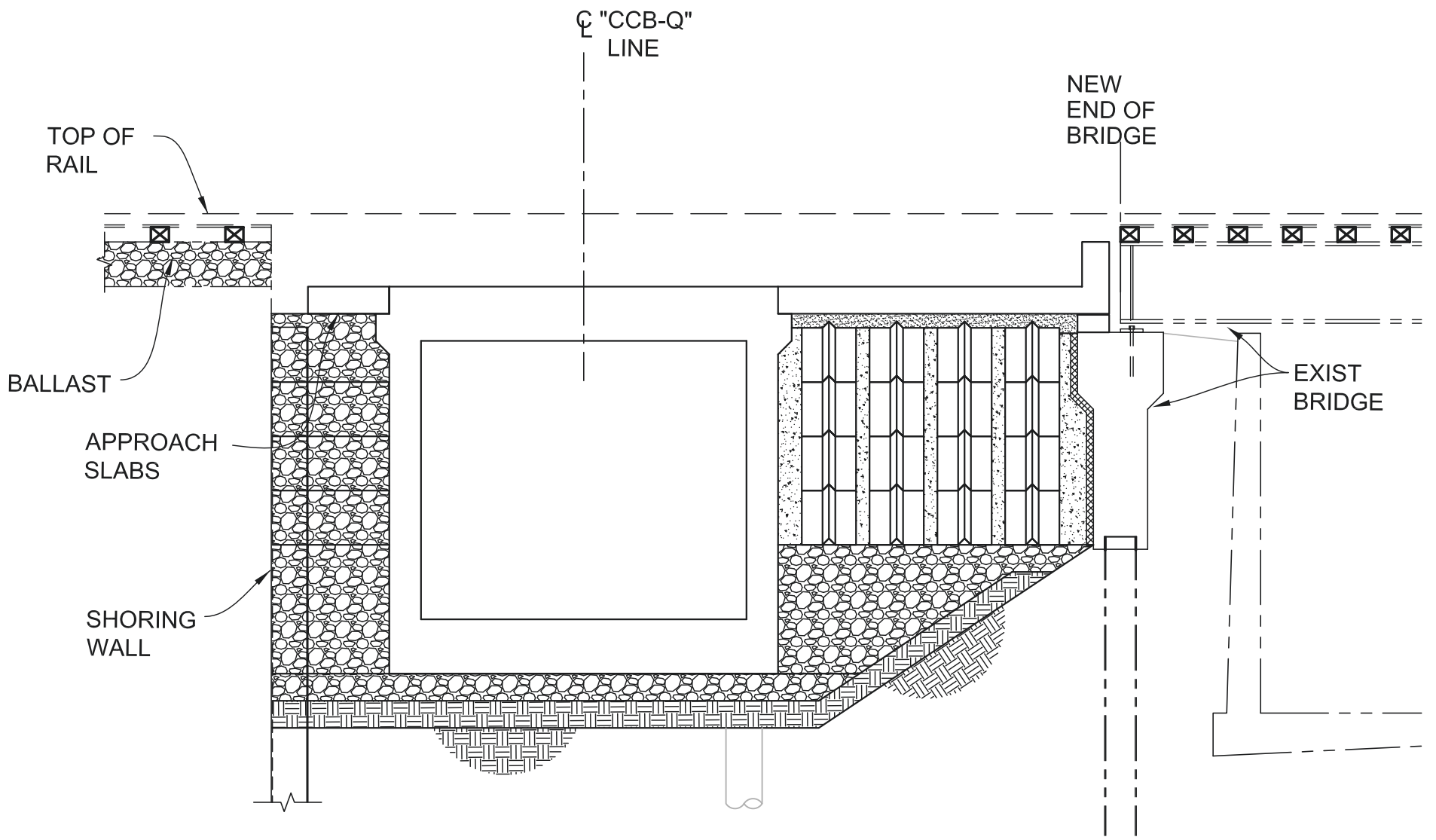
STAGE 7
3/16"=1'-0"



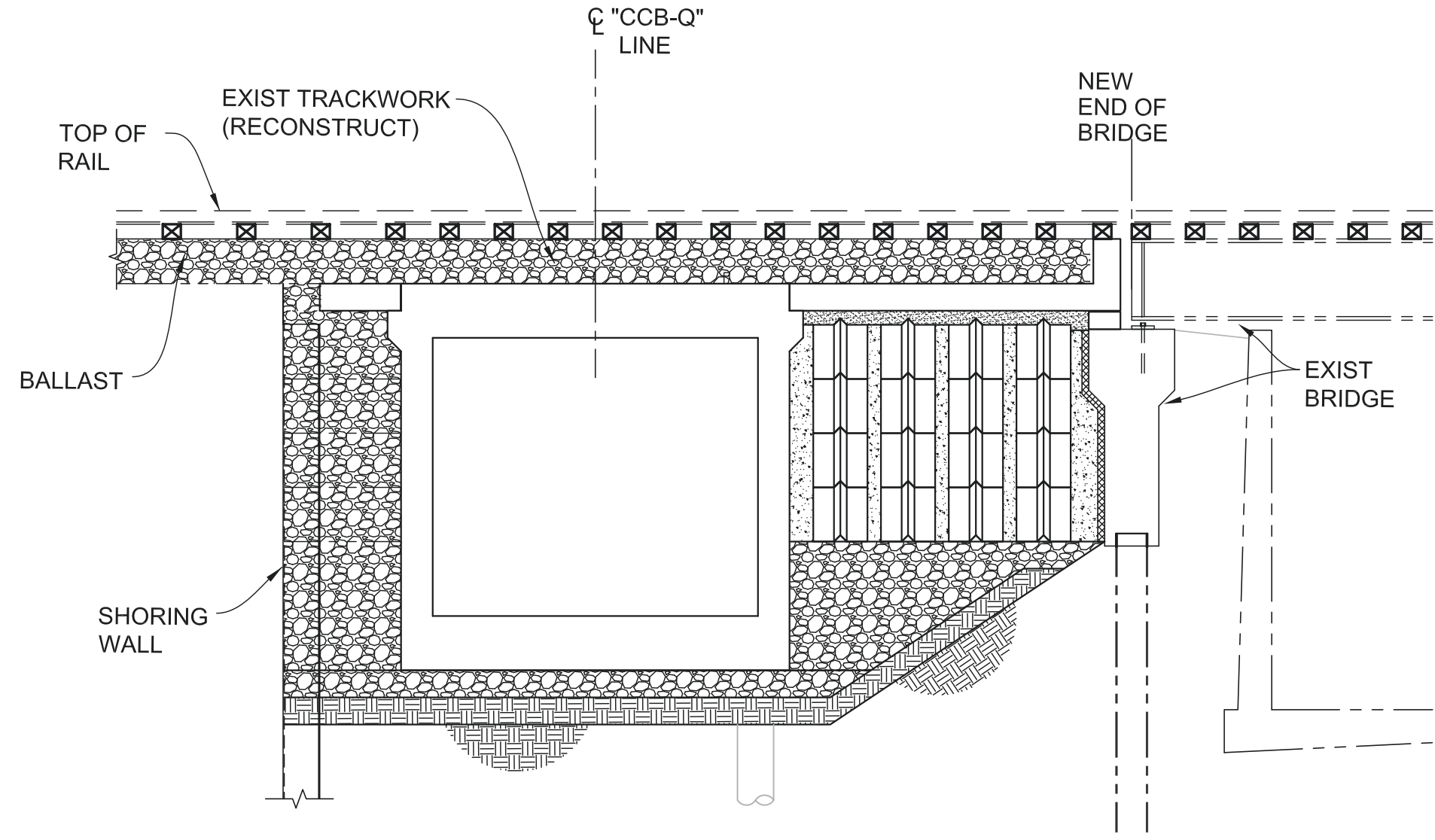
STAGE 8
3/16"=1'-0"



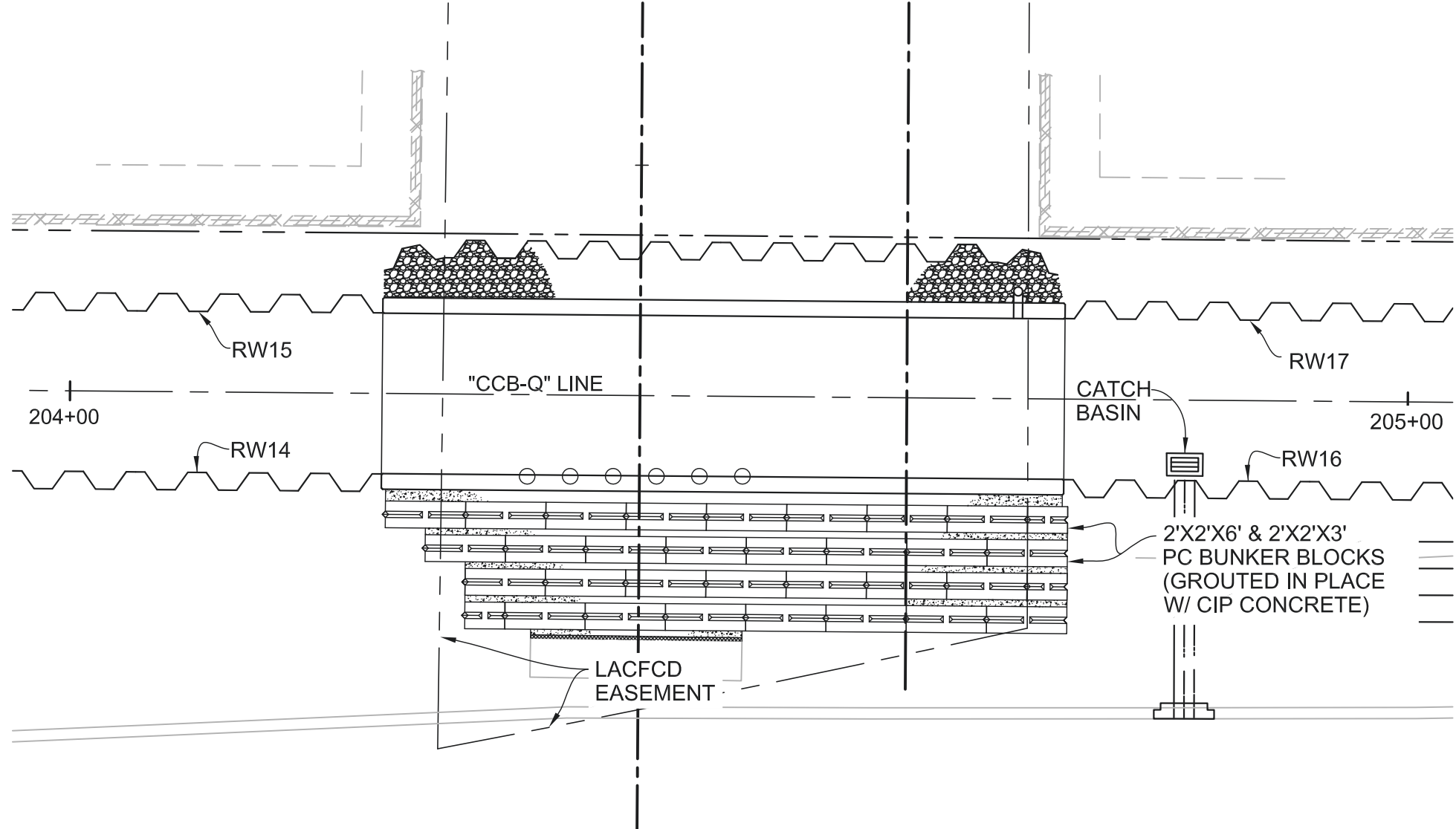
STAGE 9
3/16"=1'-0"



STAGE 10
3/16"=1'-0"



STAGE 11
3/16"=1'-0"

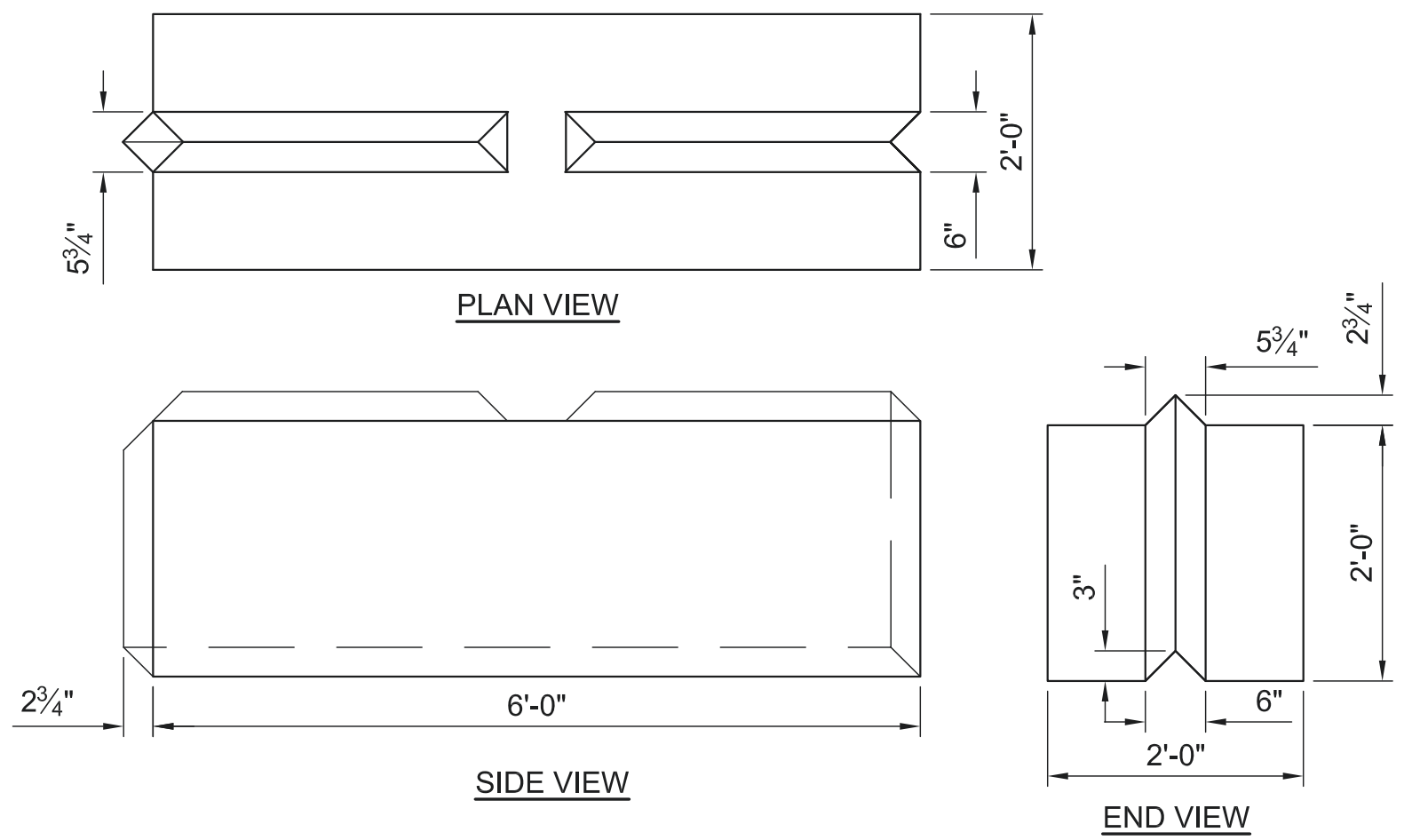


PC BUNKER BLOCK LAYOUT
1"=10'-0"

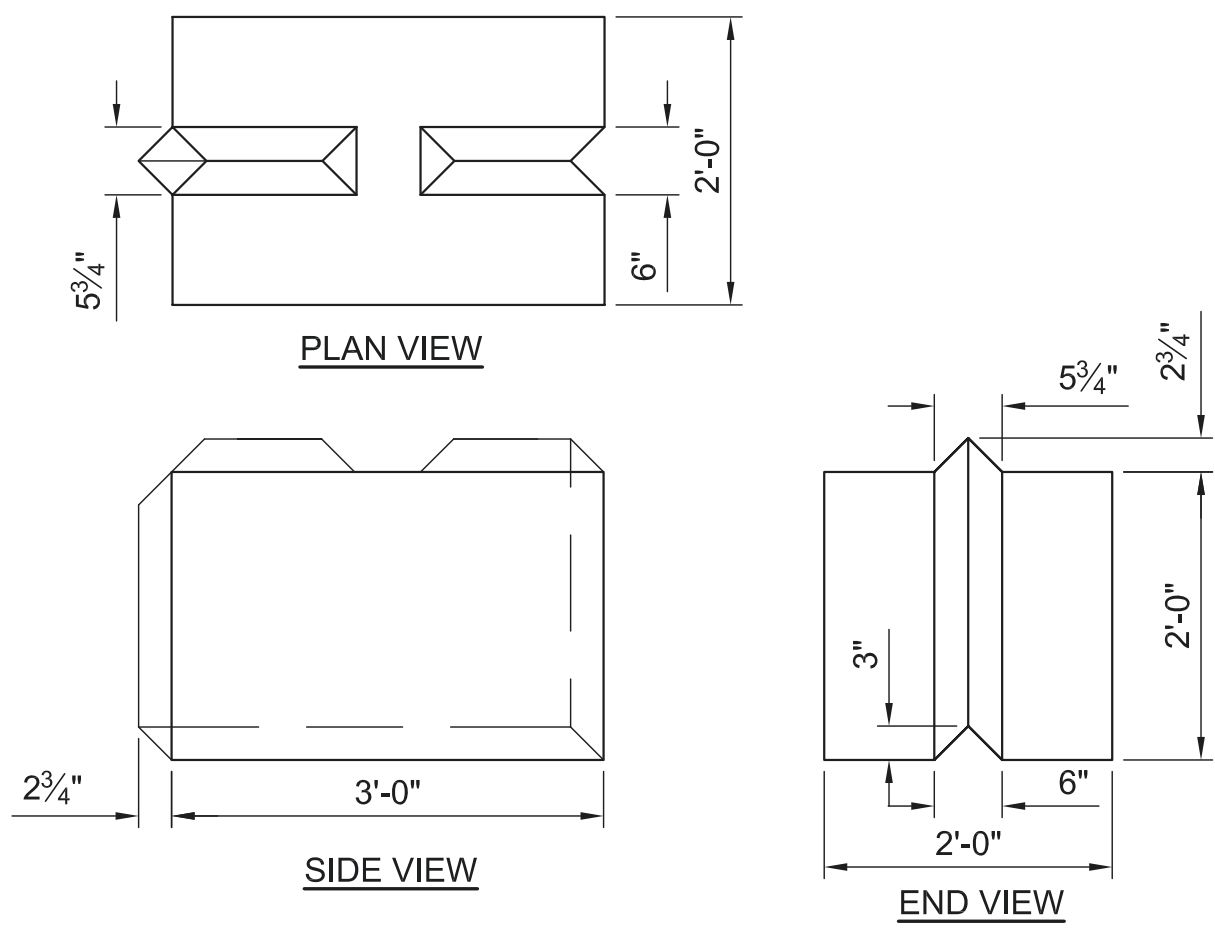
CONSTRUCTION STAGING NOTES

- STAGE 7**
INSTALL PRECAST CONCRETE UNDERPASS UNITS:
- A. PRECAST UNITS TO BE PLACED AGAINST PREVIOUSLY COMPLETED UNITS IN SUCH A MANNER AS TO ASSURE AN ADEQUATE SEAL BETWEEN ADJACENT UNITS.
 - B. INSTALL WATERPROOFING ON RCB WALLS AND ROOF
- STAGE 8**
INSTALL BOTTOM GRAVEL BACKFILL
- STAGE 9**
- A. INSTALL 2'x2'x6' BUNKER BLOCKS AND FILL WITH CIP CONCRETE
 - B. INSTALL GRAVEL BACKFILL 2' IN LIFTS TO MATCH BUNKER BLOCKS AS THEY ARE INSTALLED
- STAGE 10**
INSTALL APPROACH SLABS AND WATERPROOFING ON TOP OF UNDERPASS.
- STAGE 11**
RECONSTRUCT TRACK WORK AND RESUME RAIL OPERATIONS.

APPROXIMATE ELEVATIONS
TOP OF RAIL: 71.76'
EXIST GRADE: 68.84'
LIMIT OF EXCAVATION: 53.75'



6'-0" BIN BLOCK
3/4"=1'-0"



3'-0" HALF BIN BLOCK
3/4"=1'-0"



APPR.	DATE	DESCRIPTION	MARK

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

HERNAN MONTOYA, P.E.

DATE

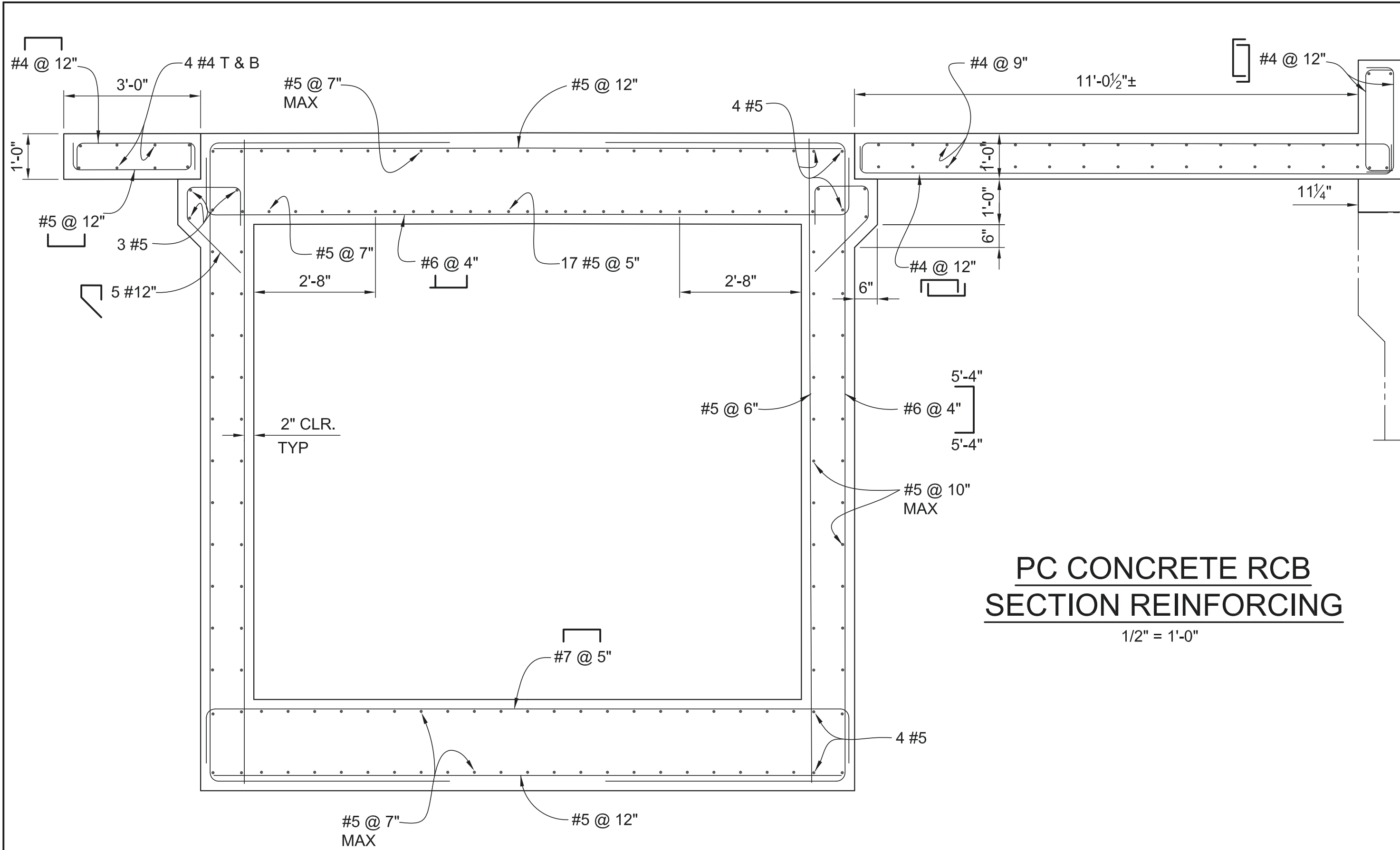
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CHECKED BY: H. MONTOYA
DRAWN BY: C. SANCHEZ

FILE NAME: S-82 BNSF_UP-CS.dwg
PLOT DATE: 4/7/2025 2:02 PM
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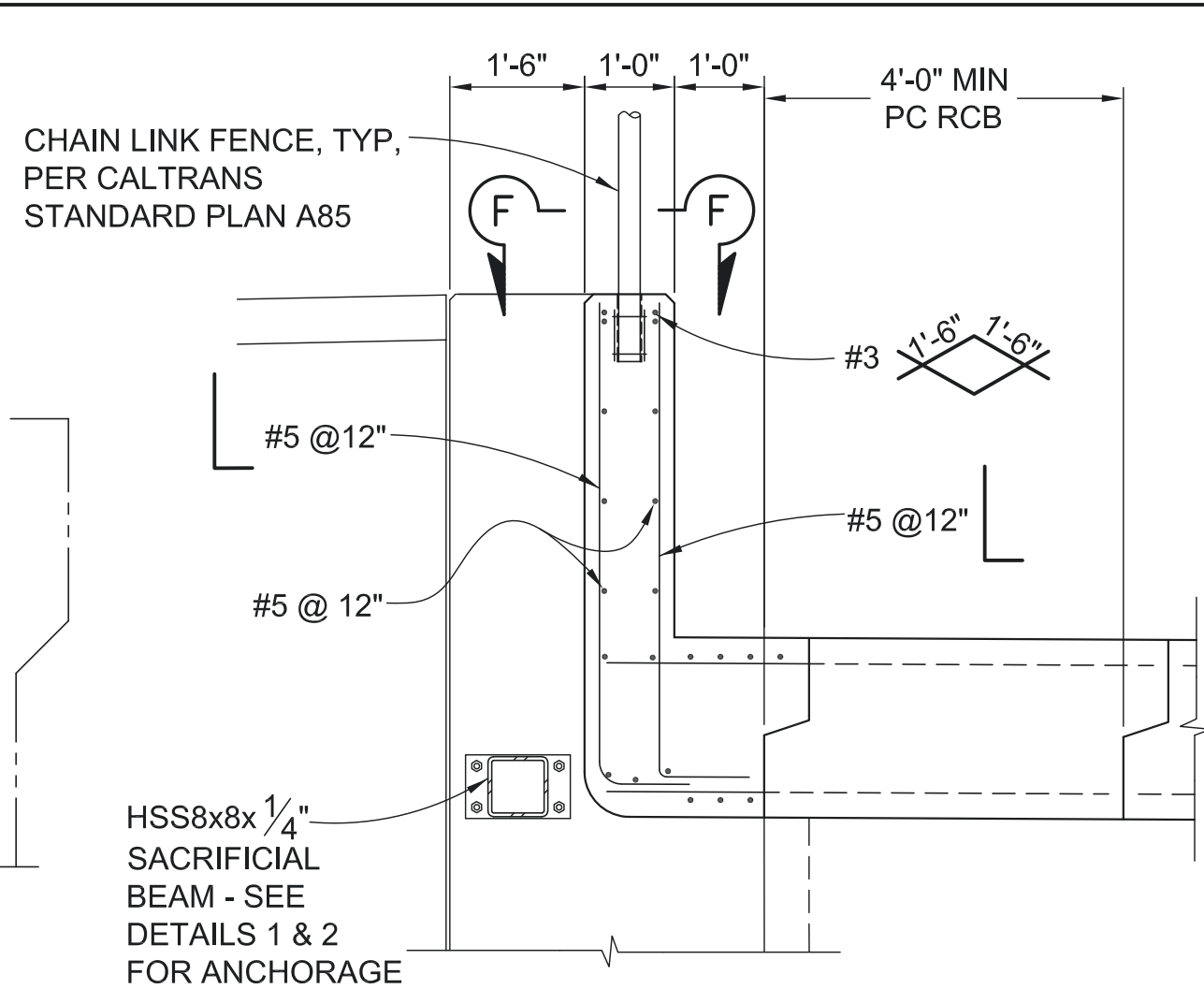
County of Orange
Public Works

PREPARED BY: **A R C O N**
22200 ELIOT, SUITE 100, IRVINE, CALIFORNIA 92614
(949) 766-8102 • FAX: (949) 766-1791

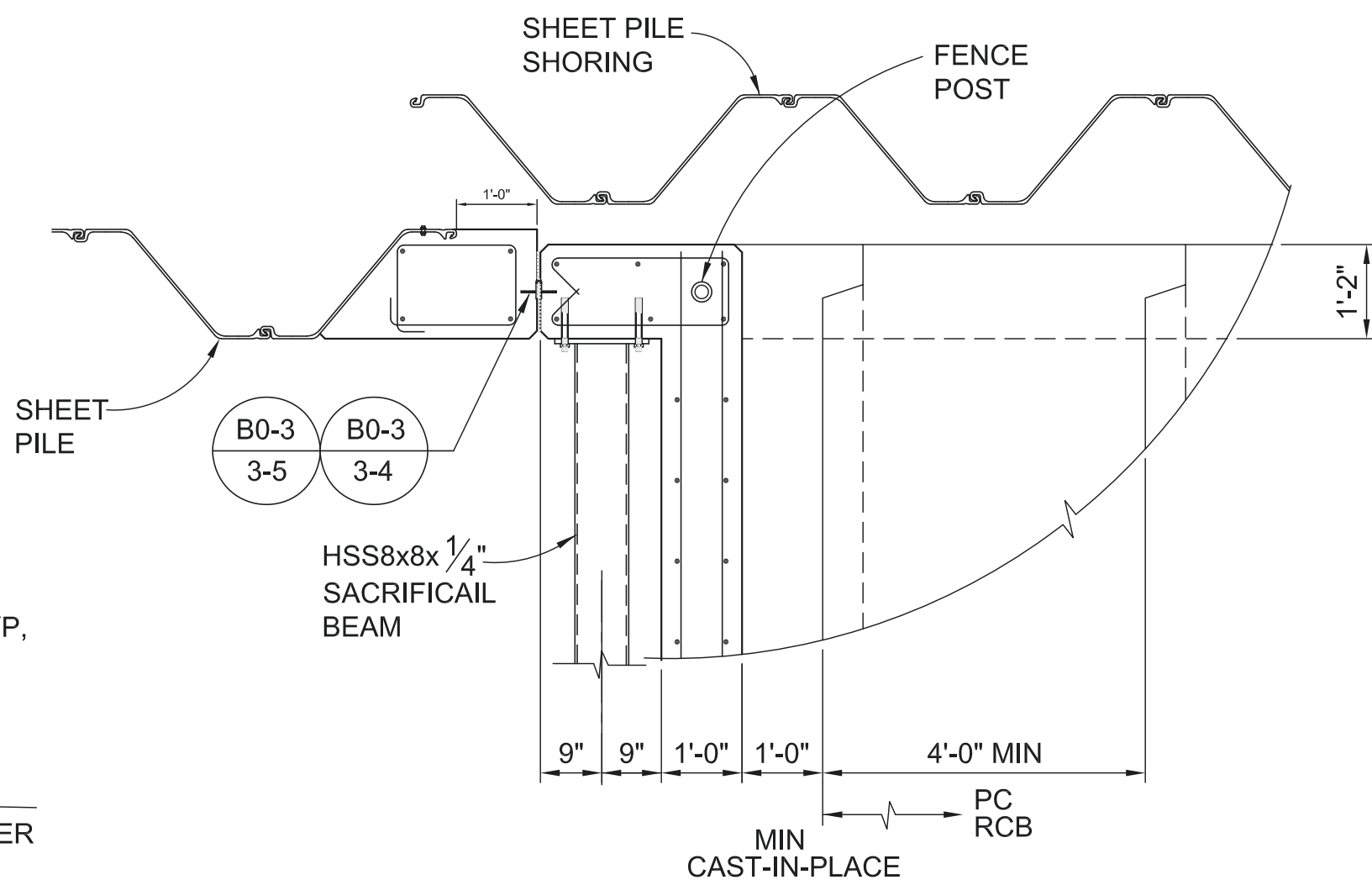
ORANGE COUNTY
BIKEWAY LOOP
SEGMENTS O, P AND Q
BNSF UNDERPASS
**CONSTRUCTION
STAGING
DETAILS No 2**



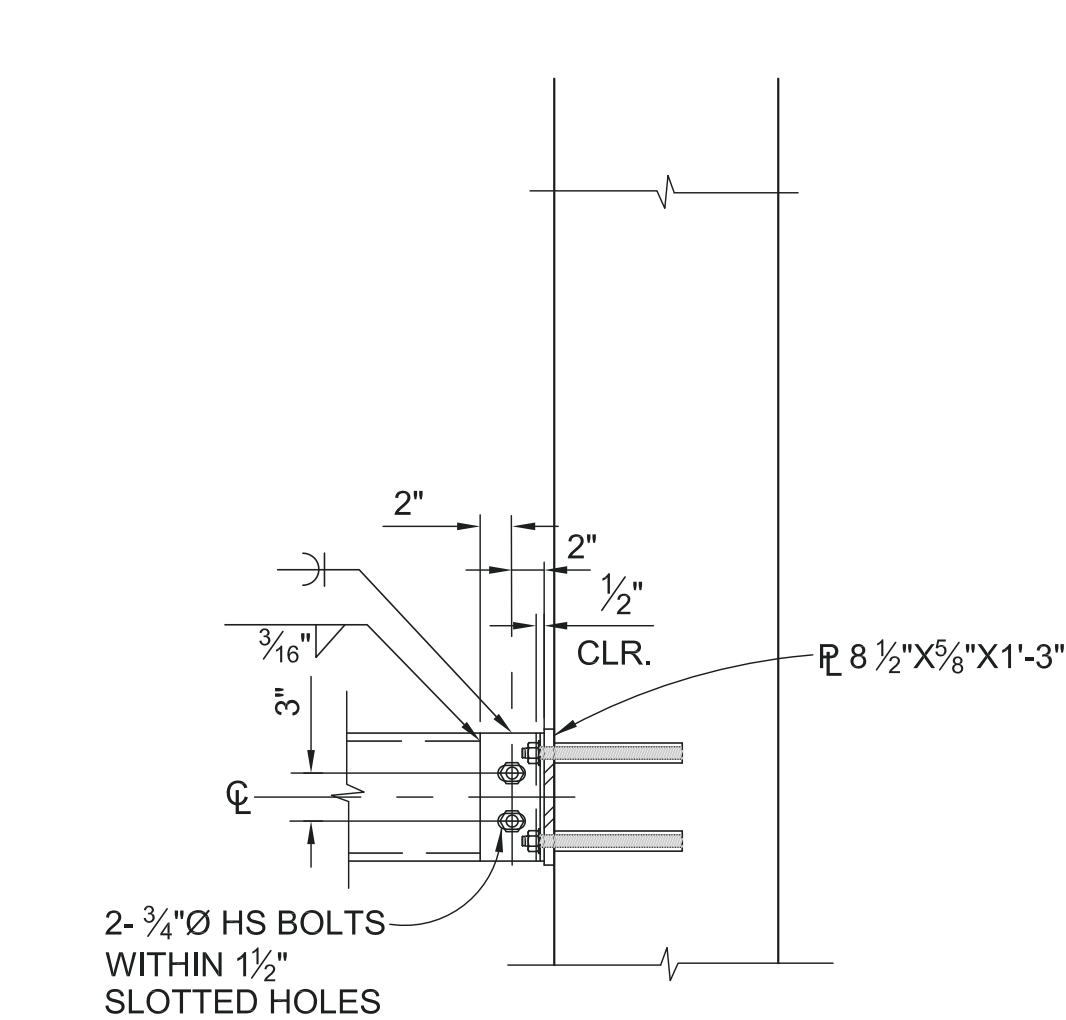
PC CONCRETE RCB
SECTION REINFORCING
1/2" = 1'-0"



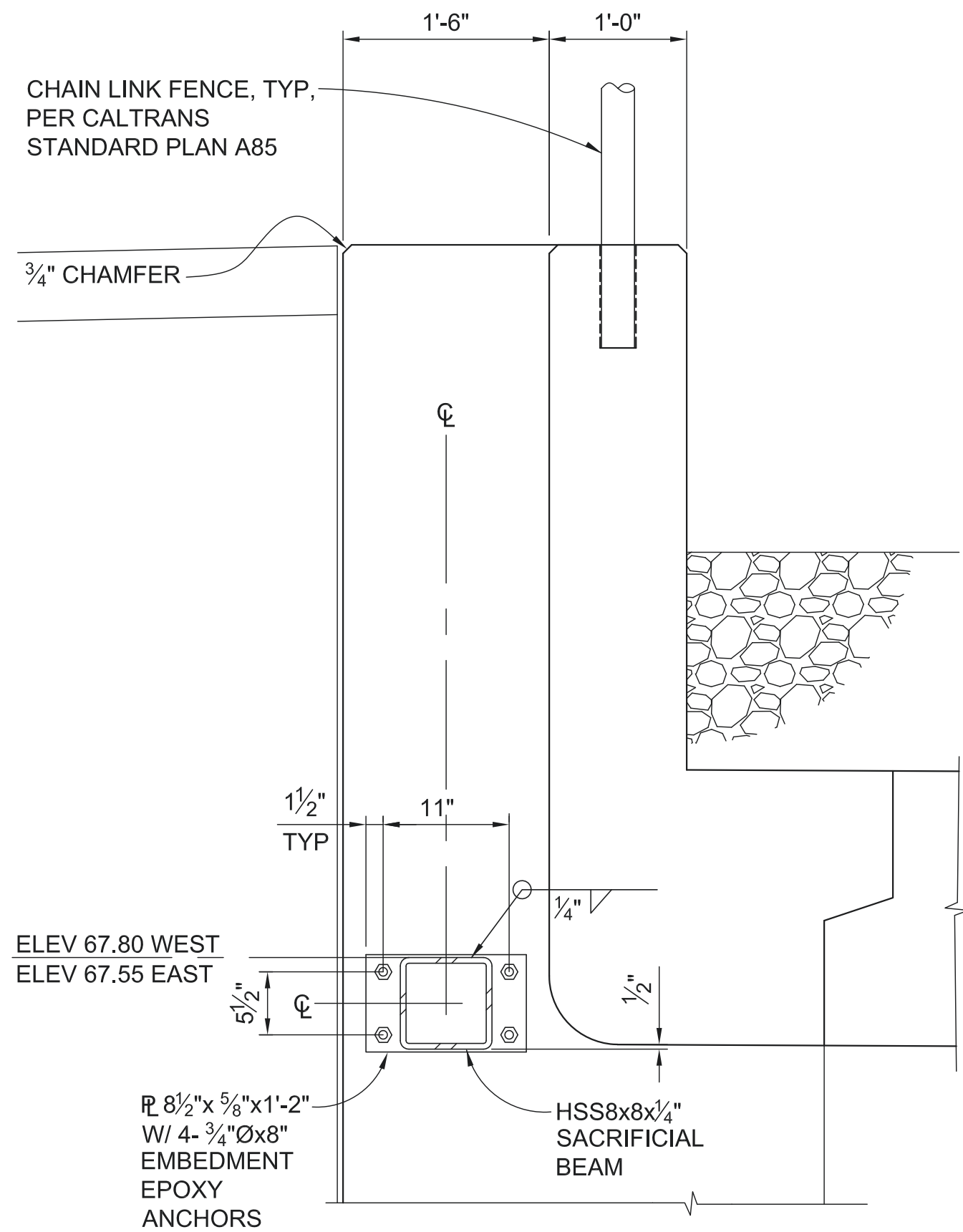
SECTION B-B
RCB PARAPET WALL
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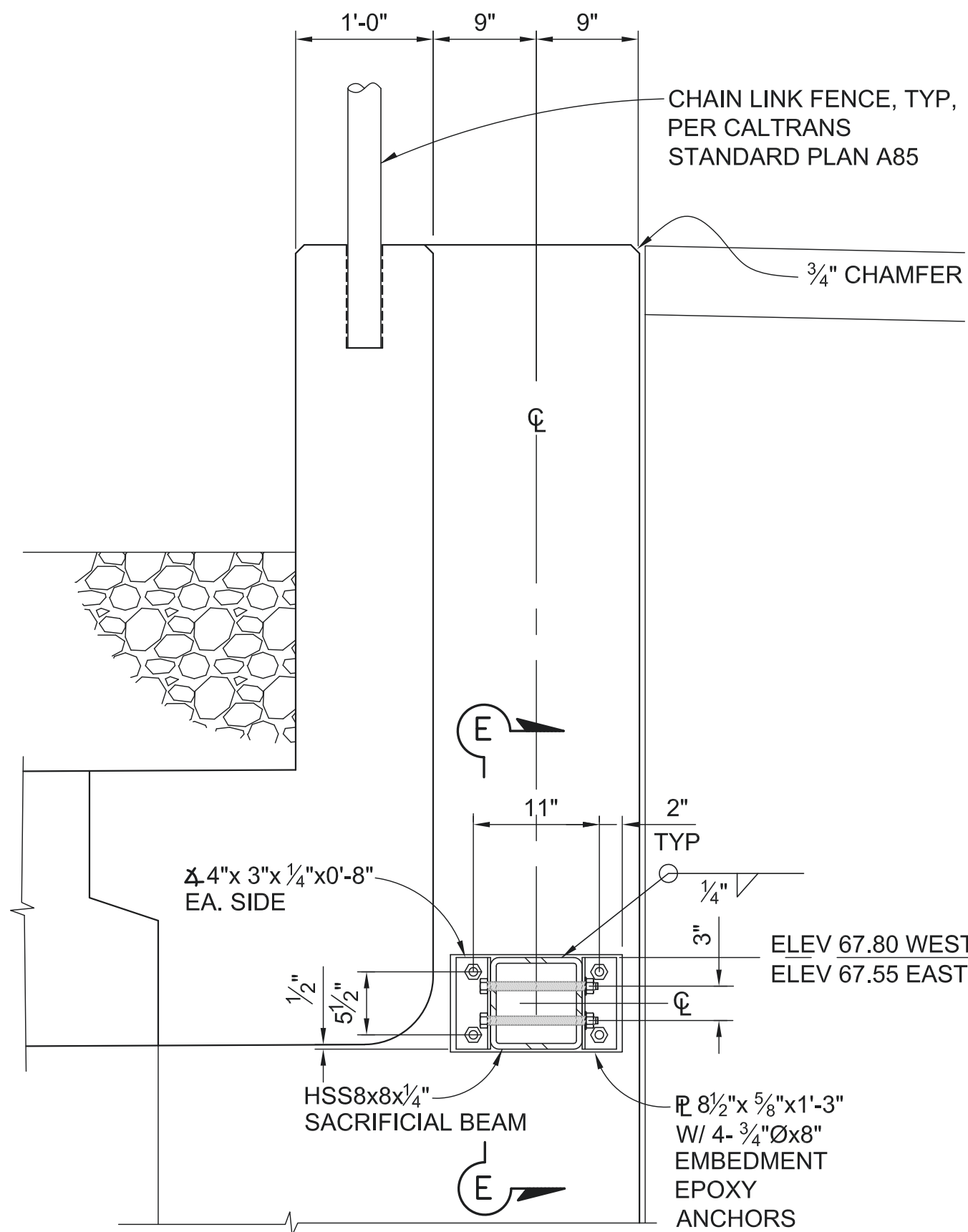
SECTION C-C
SACRIFICIAL BEAM TO WING WALLS
1/2" = 1'-0"



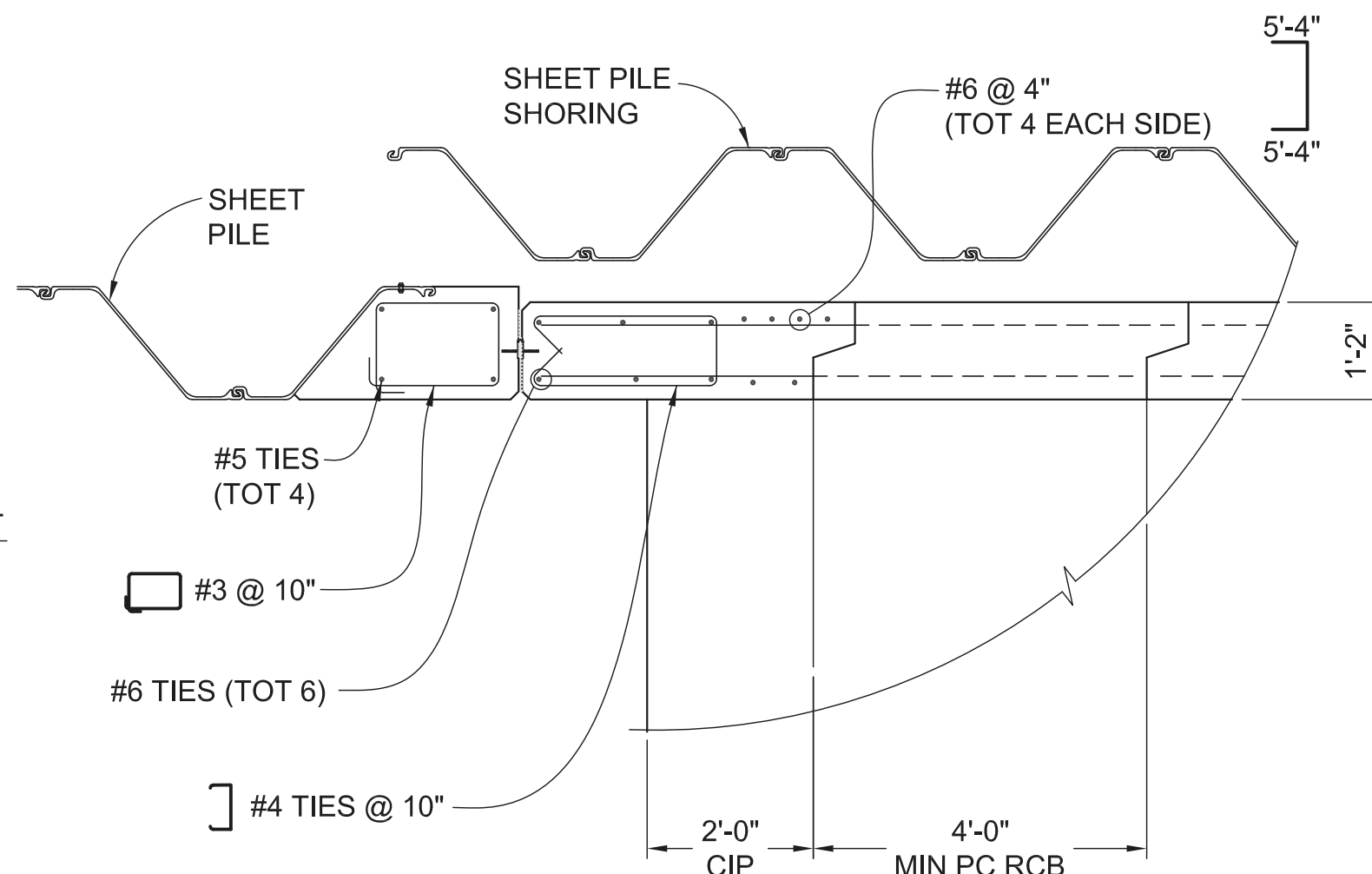
SECTION E-E
SACRIFICIAL BEAM ANCHORAGE
1" = 1'-0"



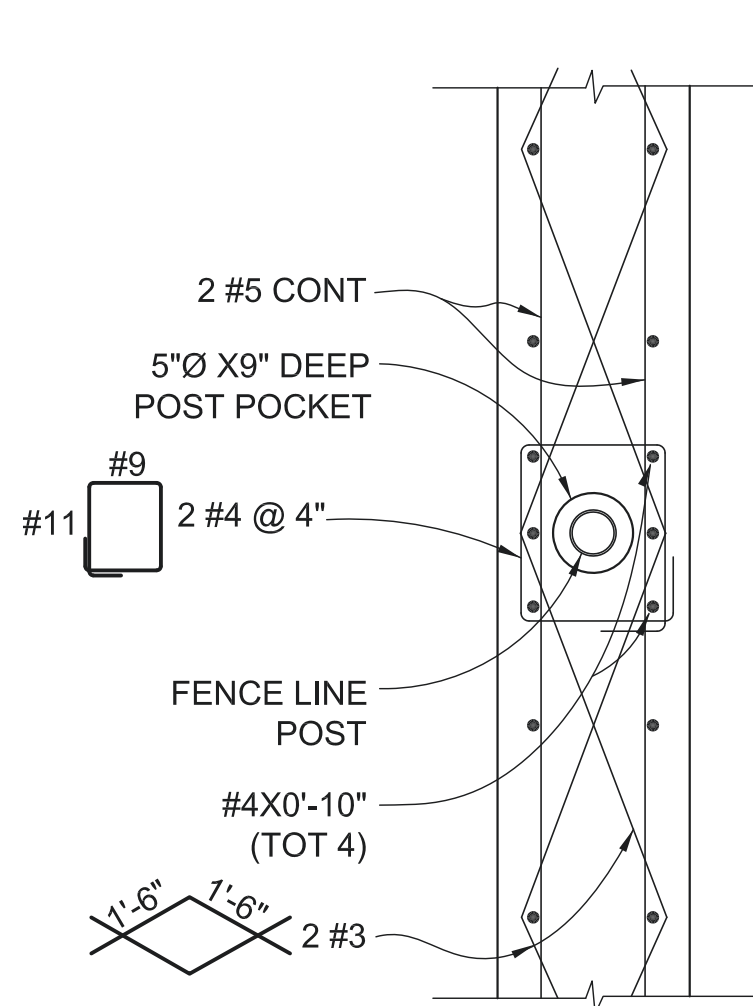
DETAIL 1
SACRIFICIAL BEAM ANCHORAGE
(FIXED END)
1" = 1'-0"



DETAIL 2
SACRIFICIAL BEAM ANCHORAGE
(EXPANSION END)
1" = 1'-0"



SECTION D-D
WING WALL
1/2" = 1'-0"



SECTION F-F
PARAPET WALL FENCE
1" = 1'-0"

DESIGN NOTES:

SPECIFICATIONS:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS,
6TH EDITION WITH CALIFORNIA AMENDMENTS.

EARTH LOAD:

EARTH PRESSURES FOR TWO CONDITIONS:
120 PCF VERT, 40 PCF HORIZ
120 PCF VERT, 120 PCF HORIZ

UNIT STRESSES:

$f_c = 5.0$ ksi
 $f_y = 60.0$ ksi
 $n = 7$

SHEAR:

BASED ON

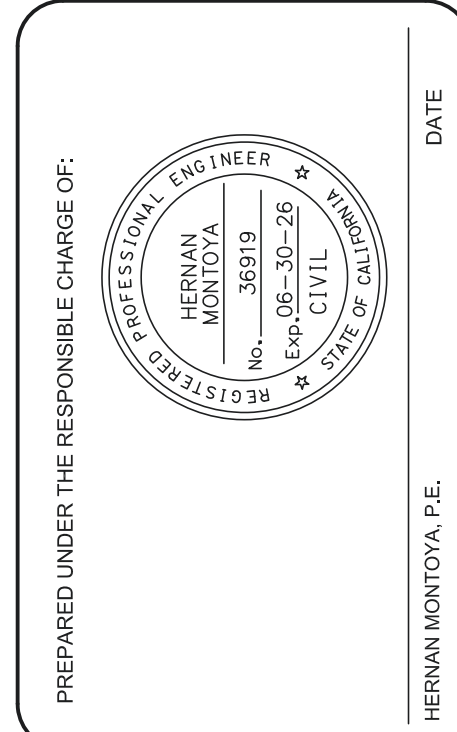
$V_c = \{2.14 \sqrt{f'_c} + 4600 \frac{A_s V_{ude}}{b d_e M_u}\} b d_e \leq 4.0 \sqrt{f'_c} b d_e$ (Pounds)
 V_c shall not be less than $3.00 \sqrt{f'_c} b d_e$

NOTES:

- THE INSIDE AND OUTSIDE SURFACES OF THE RCB ROOF SHALL BE MARKED "TOP".
- SOIL PRESSURES SHOWN ARE FACTORED PER AREMA CODE AND INCLUDE SOIL WEIGHT OF FILL OVER BOX, SELF WEIGHT OF BOX AND LIVE LOAD WITH IMPACT.



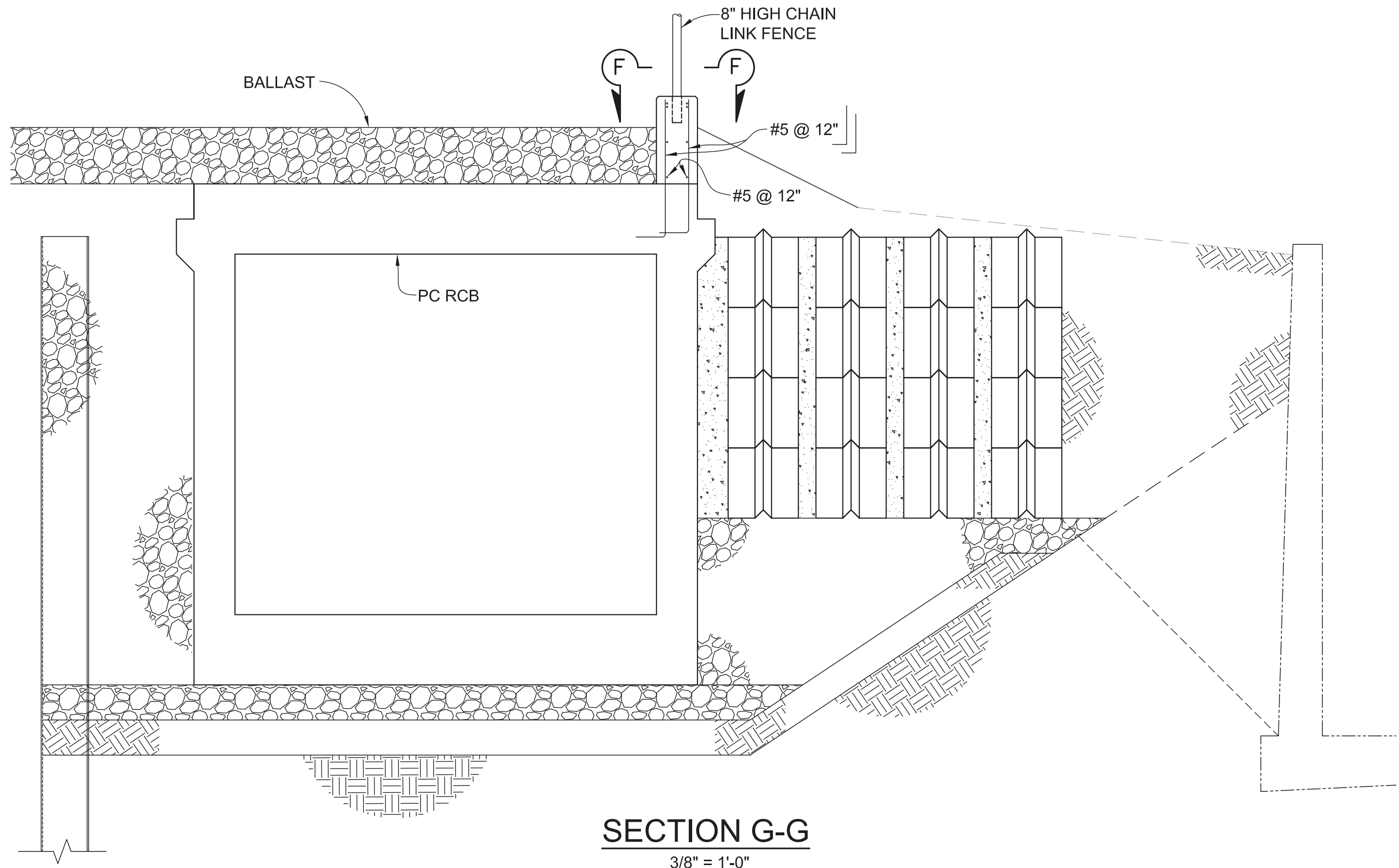
MARK	DESCRIPTION	DATE	APPR.



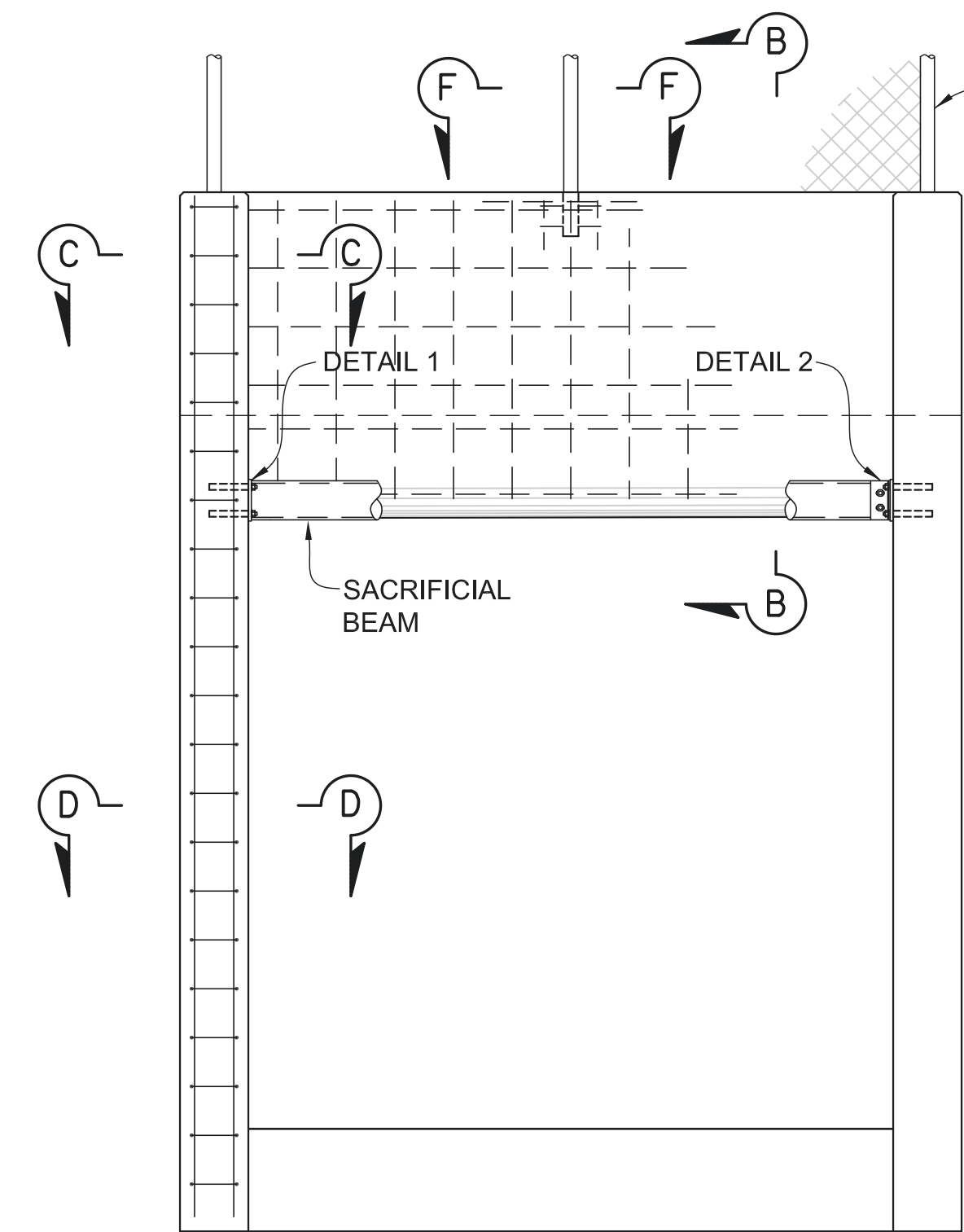
DESIGNED BY: H. MONTOYA	CHECKED BY: H. MONTOYA	FILE NAME: S-33_BNSF_UP-RCB.dwg	SCALE: AS SHOWN
DRAWN BY: C. SANCHEZ	DRAWING NO.:	PLOT DATE:	
County of Orange Public Works PREPARED BY: A R C C O N 22200 SHERIDAN, SUITE E - IRVING, CALIFORNIA 92614 (949) 766-8102 - FAX: (949) 766-1701			

ORANGE COUNTY
BIKEWAY LOOP
SEGMENTS O, P AND Q
BNSF UNDERPASS
RCB
DETAILS No 1

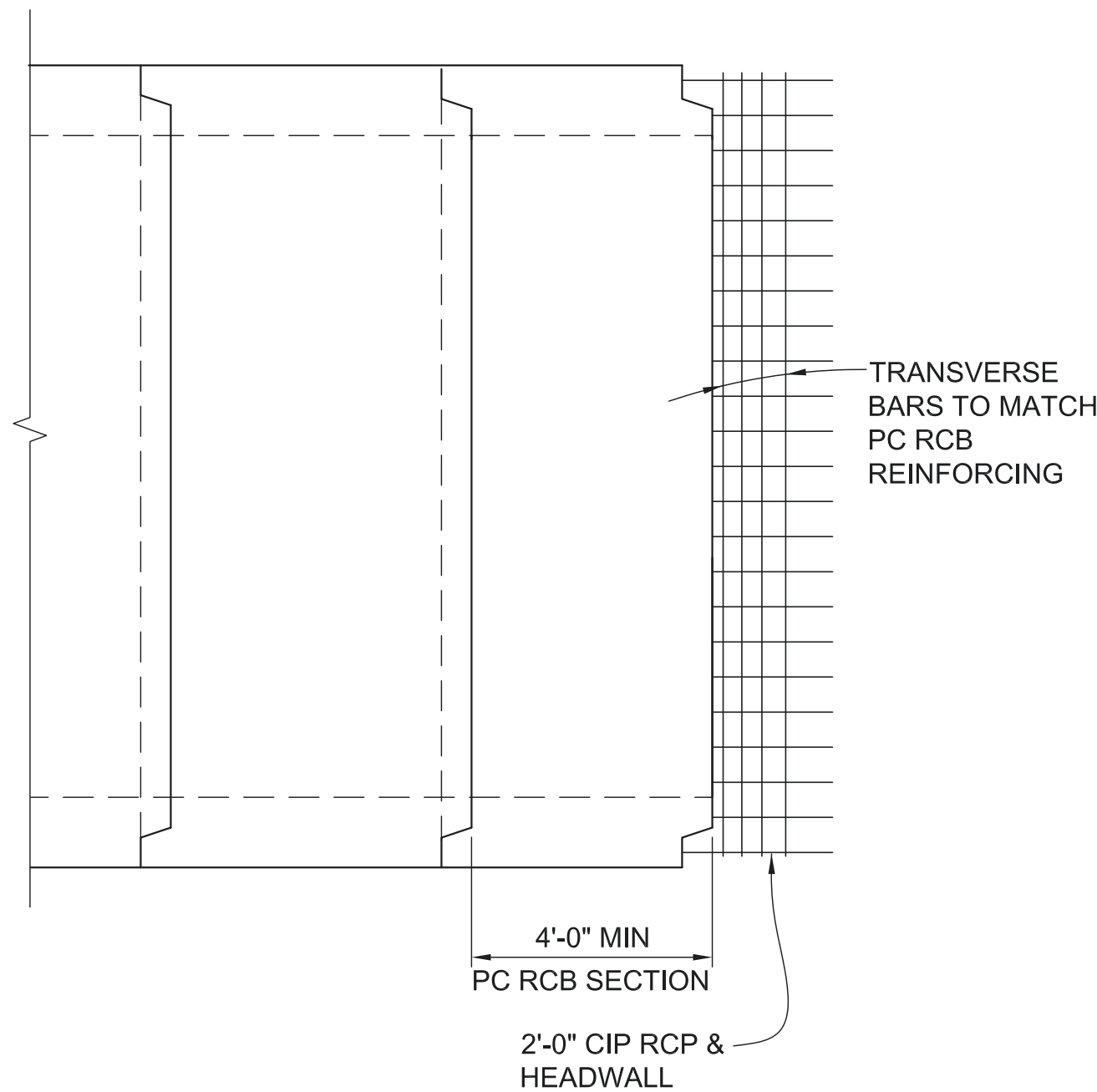
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S-83



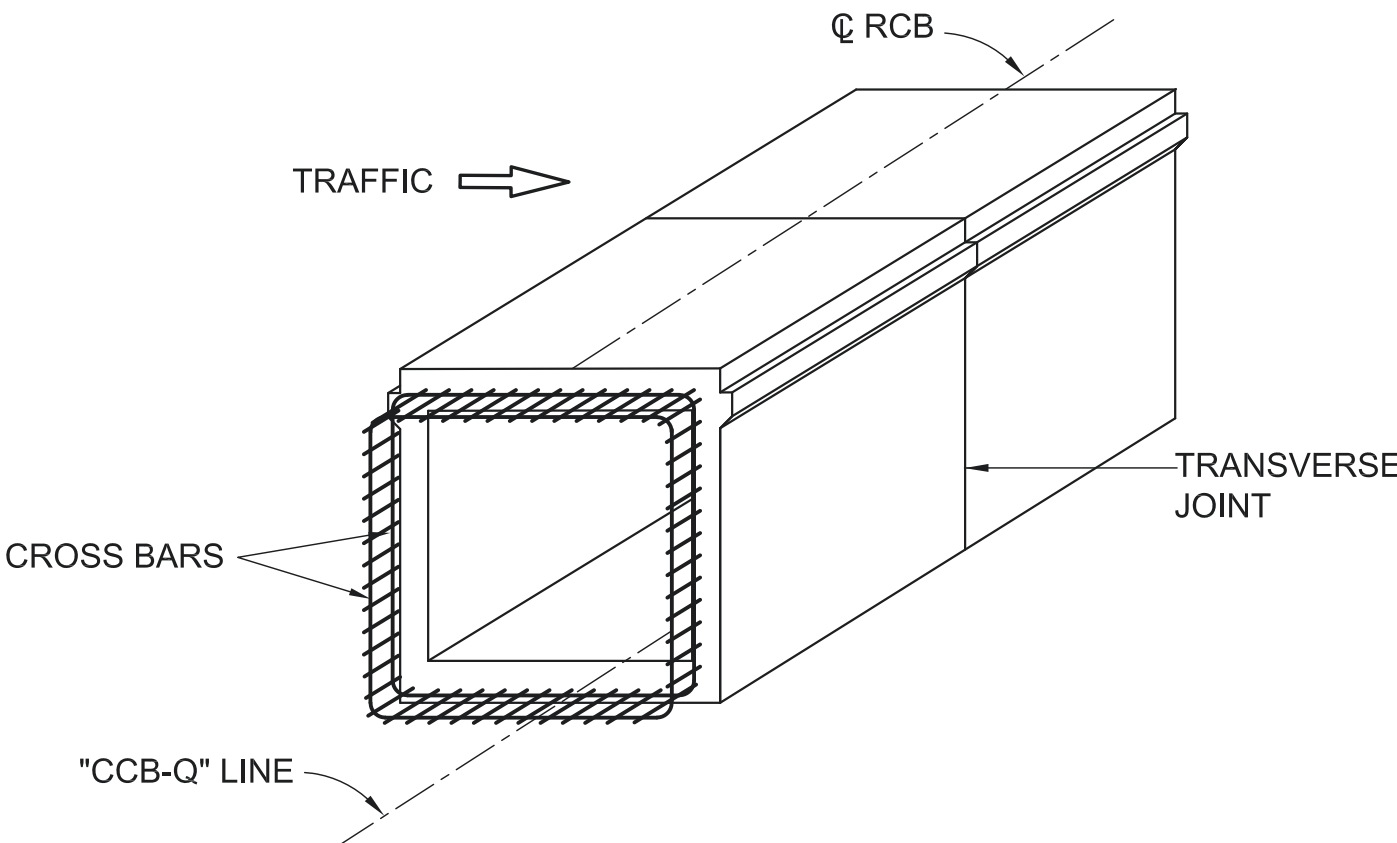
SECTION G-G
3/8" = 1'-0"



CAST-IN-PLACE
END ELEVATION
3/8" = 1'-0"

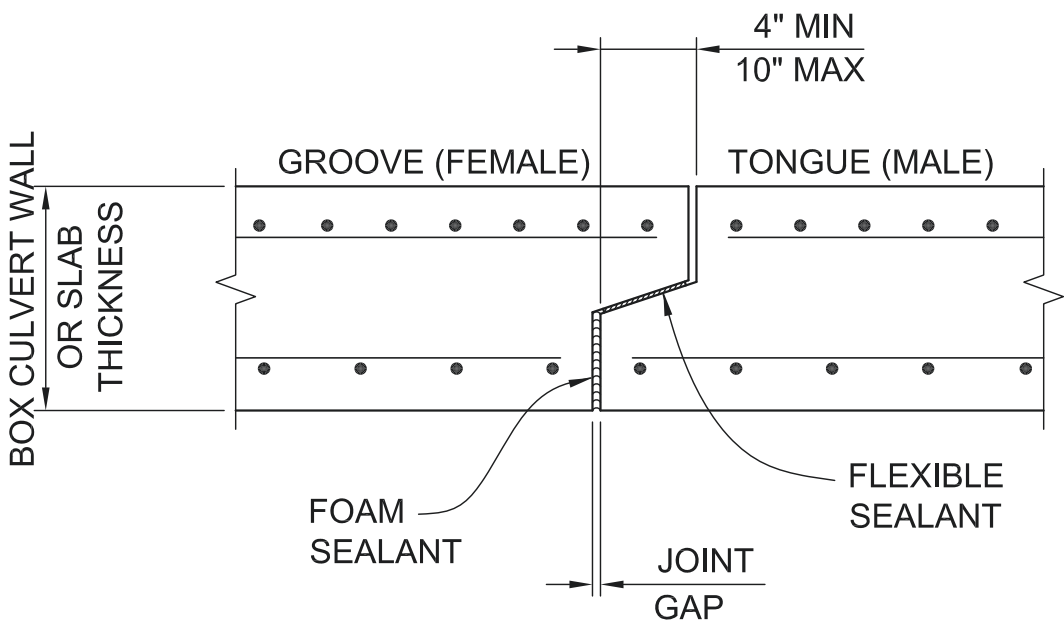


PARTIAL PLAN VIEW
FOR ILLUSTRATIVE PURPOSES ONLY
NTS

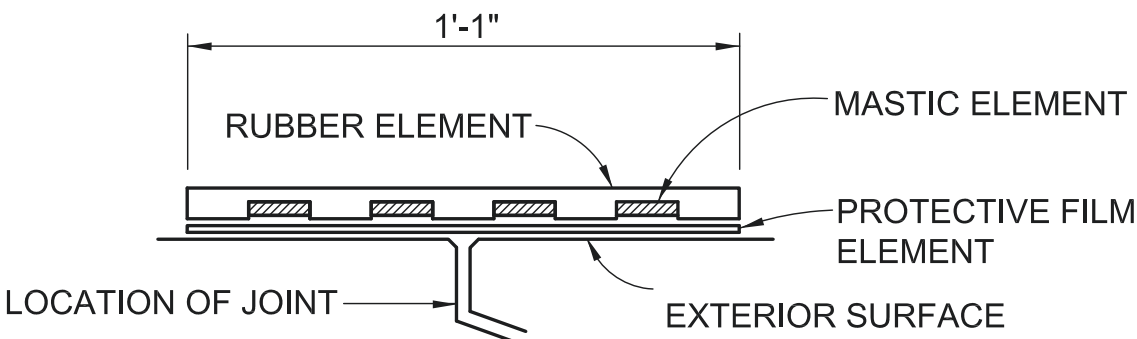


PRECAST RCB TERMINOLOGY

NOTE: INNER AND OUTER REINFORCEMENT TO BE EXPOSED AS REQUIRED TO TIE TO CAST-IN-PLACE CONSTRUCTION.



PRECAST BOX CULVERT JOINT DETAIL
NTS



EXTERNAL SEALING BAND SCHEMATIC
NTS

GENERAL STRUCTURE NOTES

- THE 2022 A.R.E.M.A. (AMERICAN RAILWAY ENGINEERING AND MAINTENANCE ASSOCIATION - MANUAL FOR RAILWAY ENGINEERING) CODE IS THE GOVERNING DESIGN CODE FOR THE FOLLOWING STRUCTURES:
 - PRECAST CONCRETE UNDERPASS
 - PORTIONS OF RETAINING WALLS LOCATED WITHIN THE RAILROAD SHORING ZONE AS DEFINED IN THE BNSF/UPRR GUIDELINES FOR TEMPORARY SHORING, SECTION 3.1
- THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, EIGHTH EDITION WITH CALIFORNIA AMENDMENTS (AASHTO-CA BDS-8) CODE IS THE GOVERNING DESIGN CODE FOR THE FOLLOWING STRUCTURES:
 - PORTIONS OF RETAINING WALLS LOCATED OUTSIDE THE RAILROAD SHORING ZONE AS DEFINED IN THE BNSF/UPRR GUIDELINES FOR TEMPORARY SHORING, SECTION 3.1
- MATERIALS:
 - UNLESS OTHERWISE NOTED OR SPECIFIED, THE MINIMUM COMPRESSIVE CONCRETE STRENGTH AT 28 DAYS SHALL BE:
 - $f_c = 5000$ psi: PRECAST CONCRETE UNDERPASS
 - $f_c = 4000$ psi: ALL OTHER CONCRETE ELEMENTS
 - REINFORCING STEEL: ASTM A706, GRADE 60
 - STEEL WIDE FLANGE BEAM AND CHANNEL: ASTM A572 OR A992, GRADE 50
 - PIPE STRUT STEEL: ASTM A53, GRADE B
 - SHEET PILE: ASTM A588, GRADE 50, WEATHERING STEEL
- PRECAST CONCRETE UNDERPASS DESIGN LOADS:
 - DEAD LOAD:
 - SELF WEIGHT, BALLAST, TIES, RAIL, FENCE
 - LIVE LOAD:
 - COOPER E80, PLUS IMPACT
 - EARTH FORCES:
 - SOIL UNIT WEIGHT: 120 PCF
 - ACTIVE LATERAL EARTH PRESSURE
 - COEFFICIENT: 0.33 MINIMUM, 1.0 MAXIMUM
 - AT-REST LATERAL EARTH PRESSURE
 - COEFFICIENT: 0.50
 - ULTIMATE PASSIVE LATERAL RESISTANCE 2000 PSF (UNIFORM DISTRIBUTION)
- RETAINING WALL DESIGN LOADS:
 - DEAD LOAD:
 - SELF WEIGHT, STRUTS, WALES, CABLE RAILING
 - LIVE LOAD:
 - CONSTRUCTION AND TRAFFIC SURCHARGE LATERAL PRESSURE DISTRIBUTION 2 FEET OF SOIL USING 120 PCF UNIT WEIGHT
 - EARTH FORCES:
 - SOIL UNIT WEIGHT 120 PCF
 - ACTIVE LATERAL EARTH PRESSURE
 - COEFFICIENT: 0.33
 - AT-REST LATERAL EARTH PRESSURE
 - COEFFICIENT: 0.50
 - ULTIMATE PASSIVE LATERAL RESISTANCE: 2000 PSF (UNIFORM DISTRIBUTION)
 - SEISMIC: PEAK GROUND ACCELERATION (PGA) EQUAL TO 0.57G
- STANDARDS
 - CALTRANS STANDARD PLANS, 2023 EDITION.

NOTES:

- SEE SHEET S-33 FOR SECTIONS B-B, C-C, D-D, AND DETAILS 1 & 2.



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER
HERNAN MONTOYA, P.E.
No. 76939
Exp. 06-30-2026
CIVIL
STATE OF CALIFORNIA

DATE

DESIGNED BY:

DRAWN BY: C. SANCHEZ

CHECKED BY: H. MONTOYA

DRAWING NO.: S-34, BNSF-UP-RCB.dwg

FILE NAME: S-34, BNSF-UP-RCB.dwg

PLOT DATE: 3/28/2025 5:00 PM

SCALE: AS SHOWN

County of Orange
PublicWorks

PREPARED BY: A R C O N

22201 ELBERTA, SUITE 100, IRVINE, CA 92614
(949) 766-8102 • FAX: (949) 766-1701

ORANGE COUNTY
BIKEWAY LOOP
SEGMENTS O, P AND Q

BNSF UNDERPASS

RCB

DETAILS No 2

SHEET

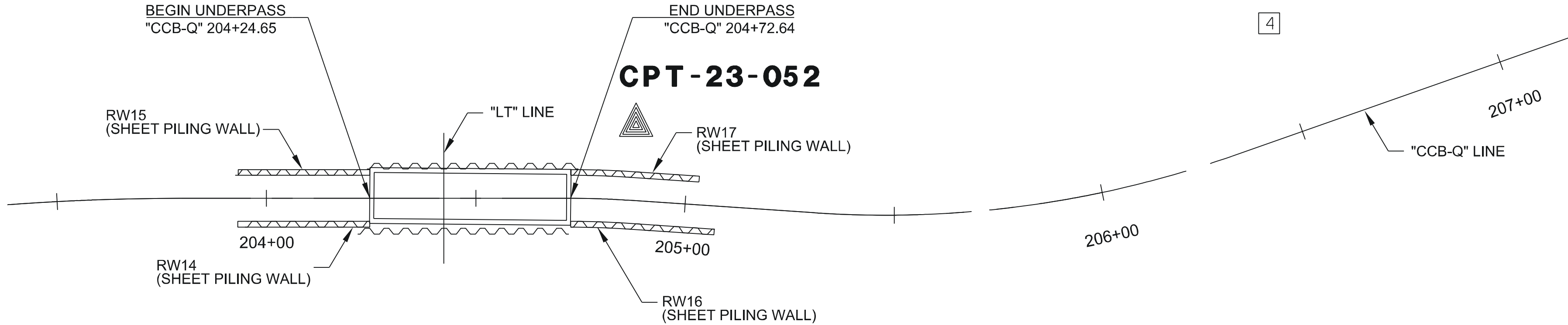
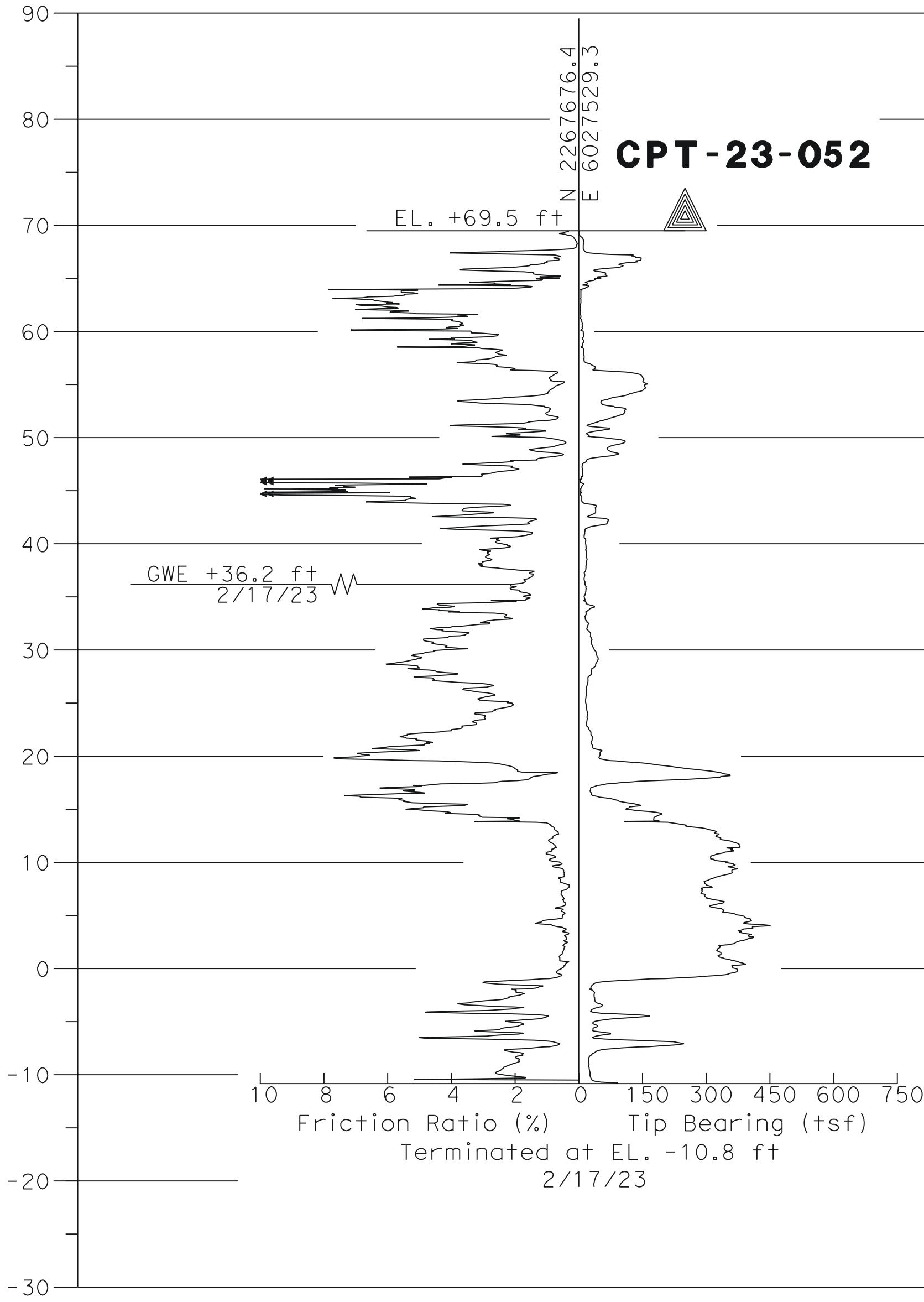
S-84

BENCH MARK:
XXX

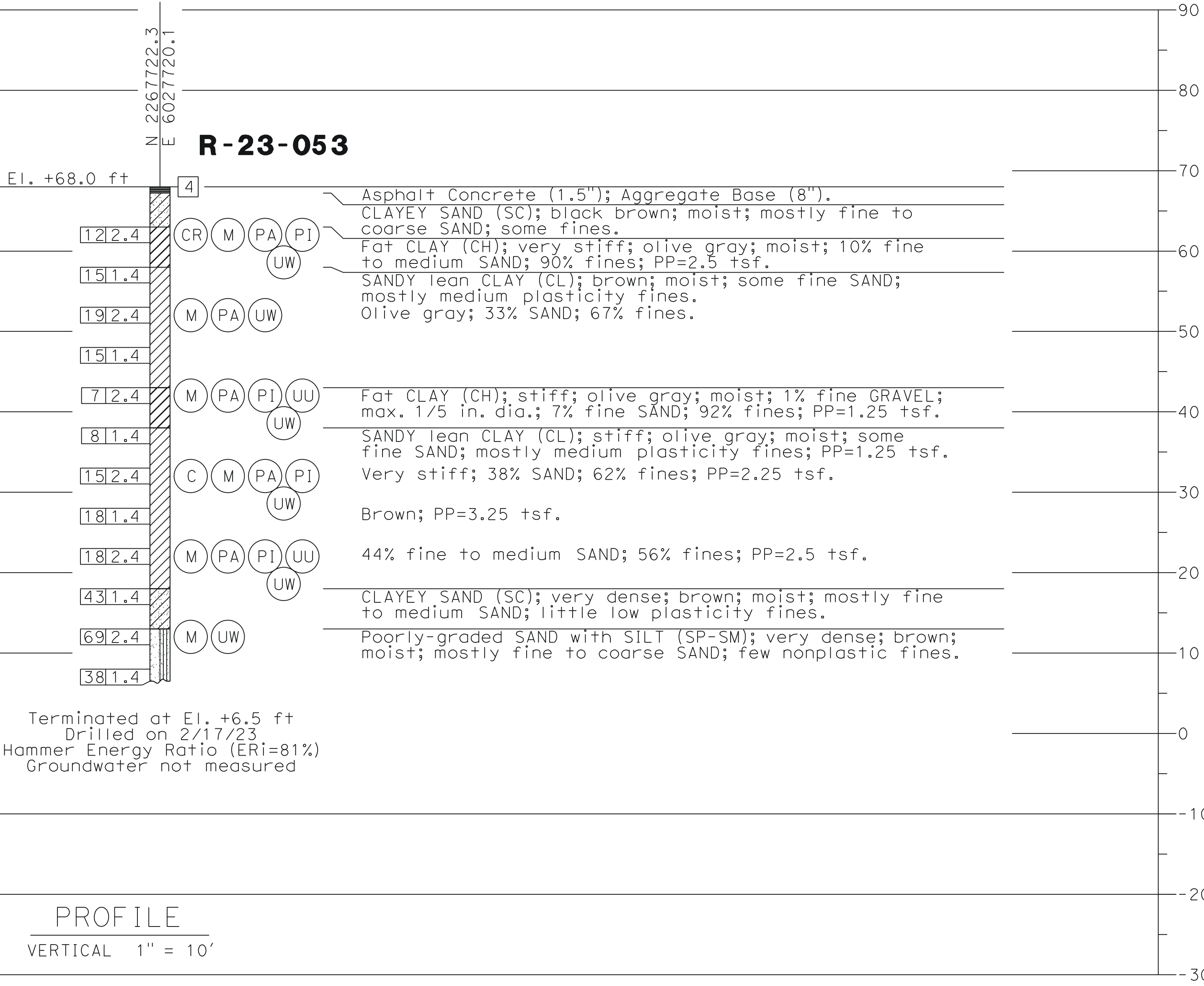
NOTES:

- (1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).
- (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" was used to advance the samplers.
- (4) For Soil Legend, see Caltrans Standard Plans A10E and A10G.

BOREHOLE LOCATION TABLE		
Hole ID	Alignment Name	Station and Offset
CPT-23-052	"CCB-Q" Line	204+87 18 Lt.
R-23-053	"CCB-Q" Line	206+51 27 Lt.



PLAN
1" = 20'

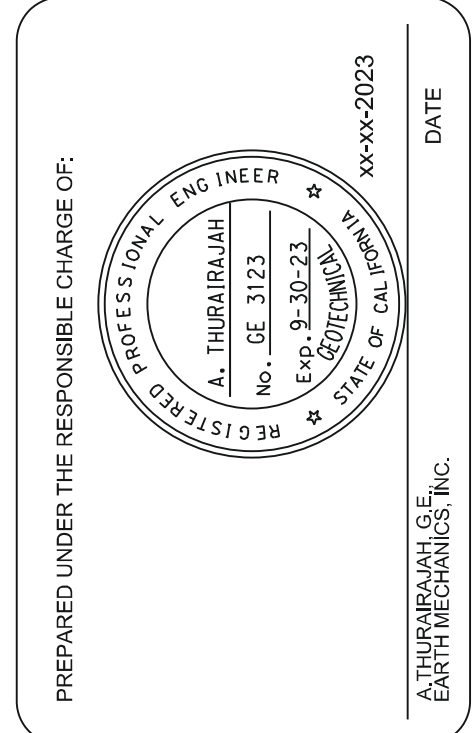


PROFILE
VERTICAL 1" = 10'

BNSF SAN BERNARDINO SUBDIVISION MP 0160.37 ±



MARK	DESCRIPTION	DATE	APPR.



DESIGNED BY:	CHECKED BY:	W.O. NO.	SCALE:
-	A. Thirubajalan	-	-
DRAWN BY:	DRAWING NUMBER:	FILE NAME:	PLOT DATE:
P. Sudhi	-	-	-
County of Orange OC Public Works	Earth Mechanics, Inc. Geotechnical and Earthquake Engineering 13602 Avenida Street, Suite B Fountain Valley, California 92708	PREPARED BY:	

ORANGE COUNTY
BIKEWAY LOOP
SEGMENTS O, P AND Q
BNSF UNDERPASS
LOG OF TEST
BORINGS
1 OF 1

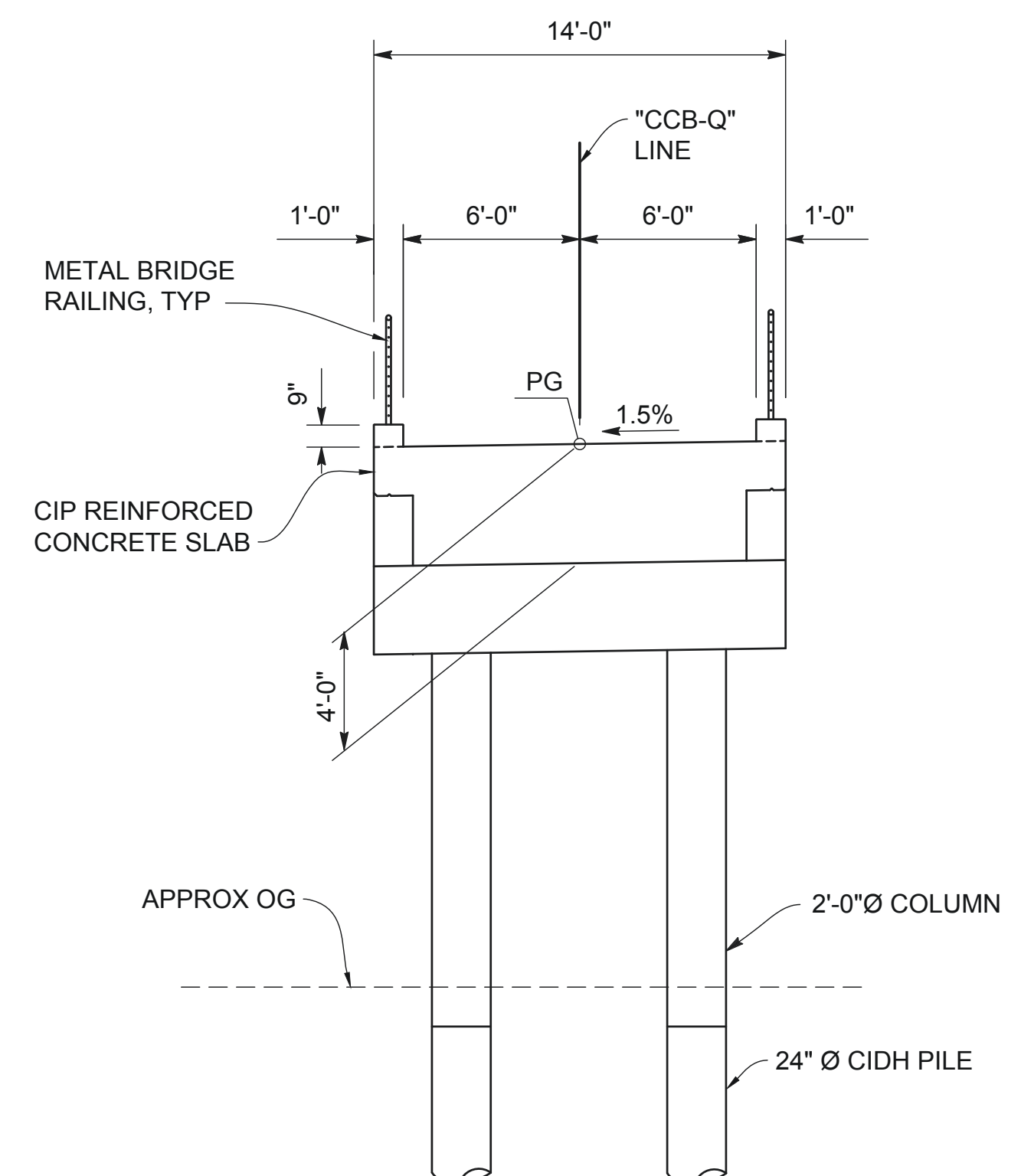
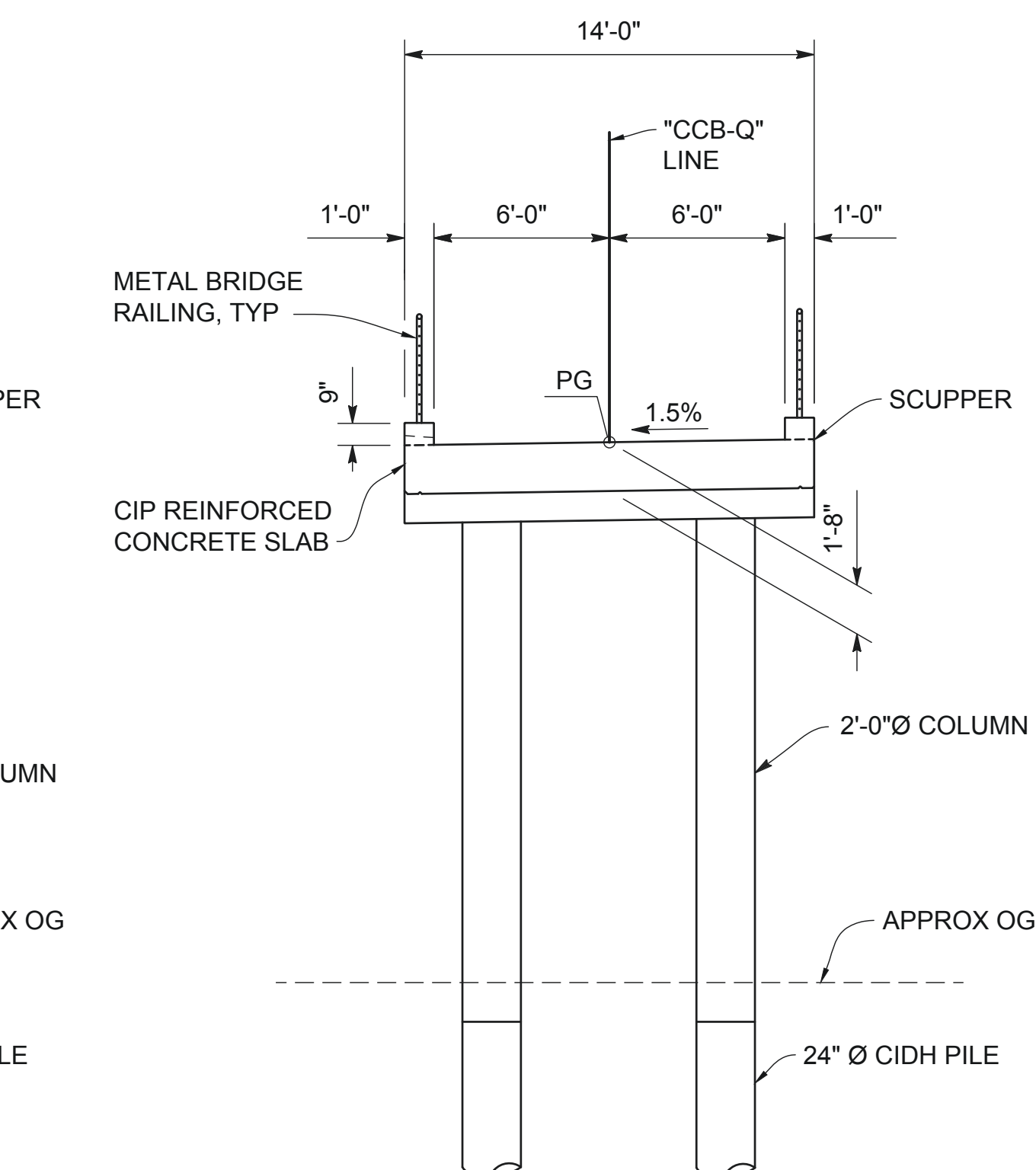
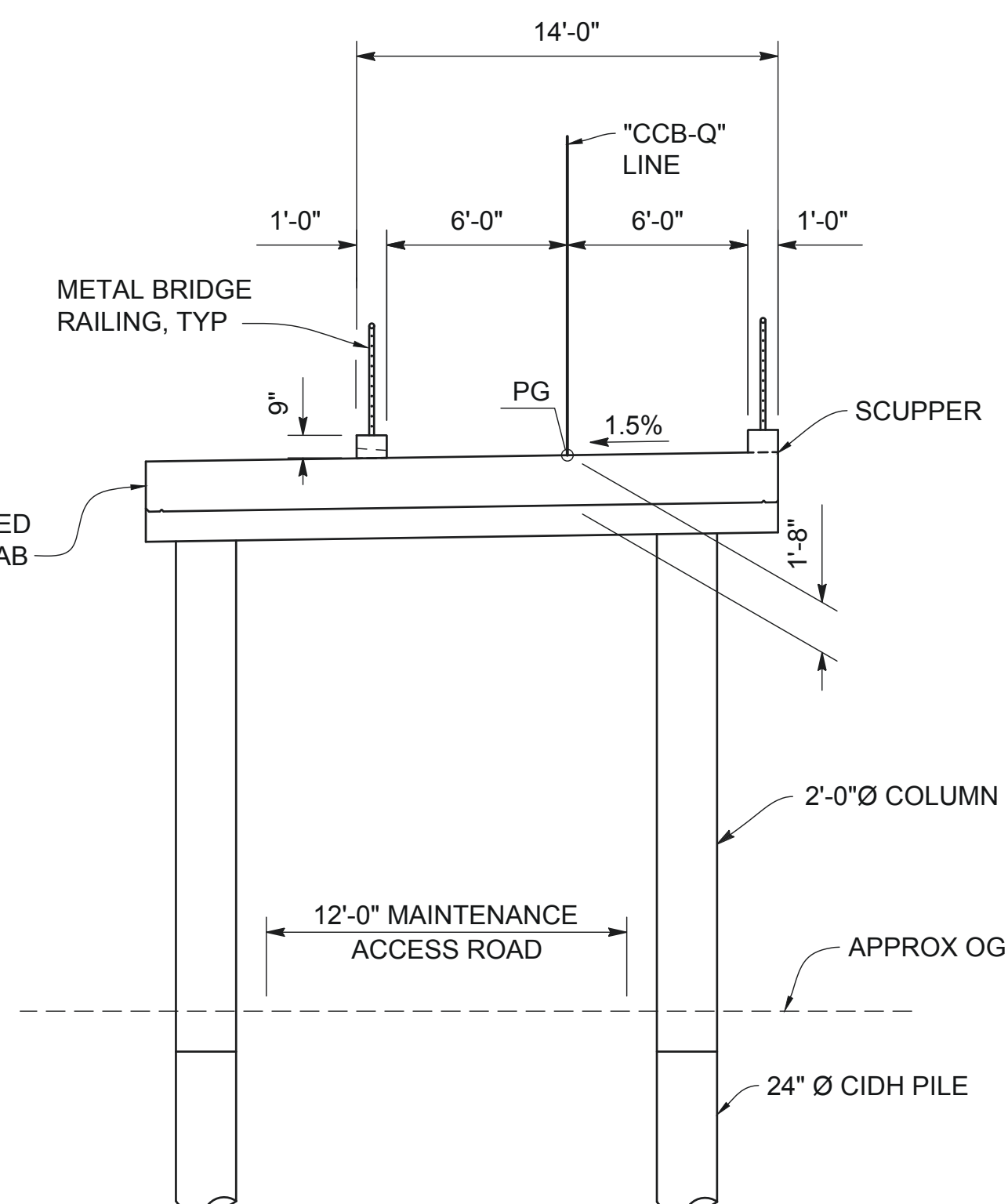
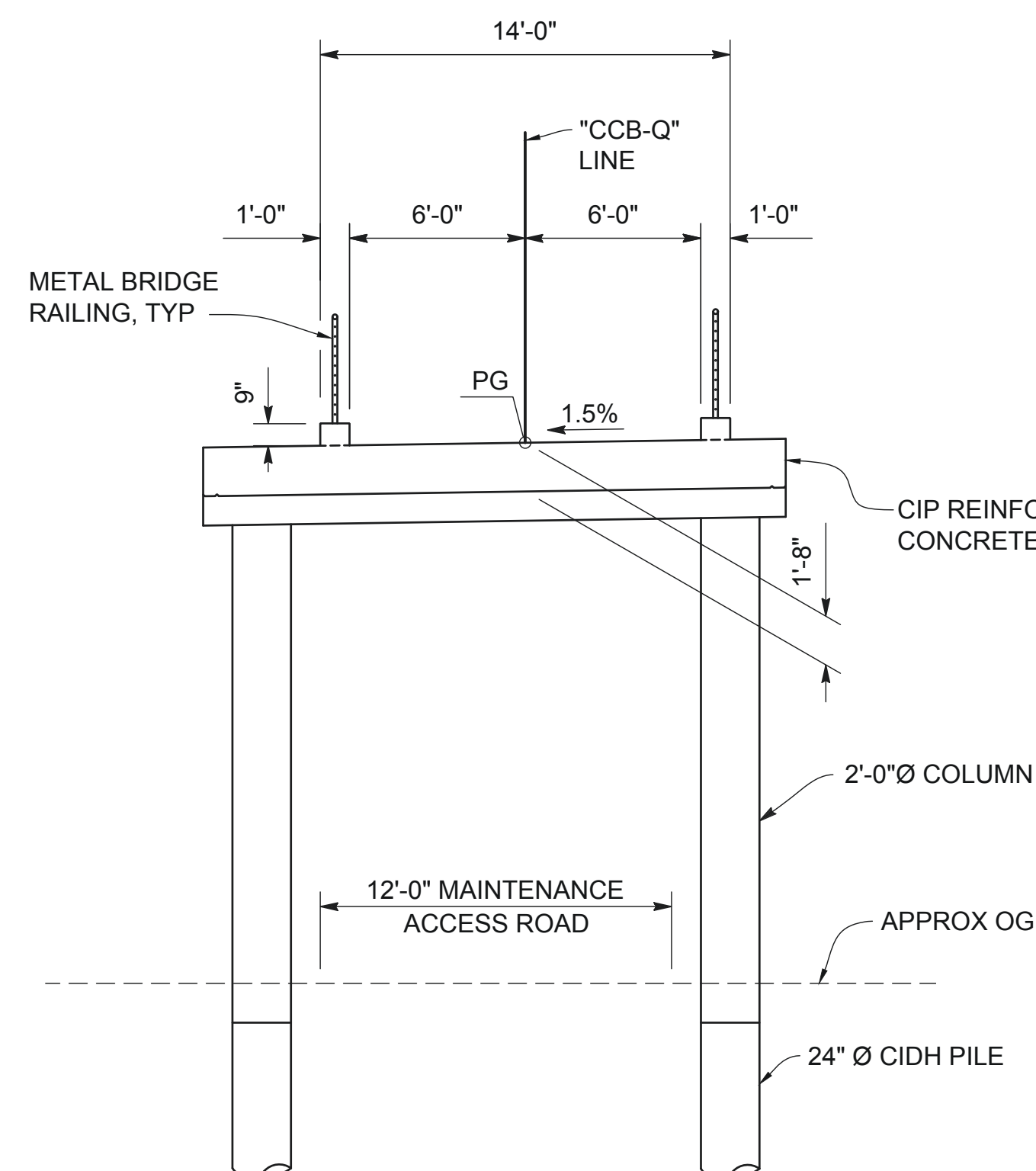
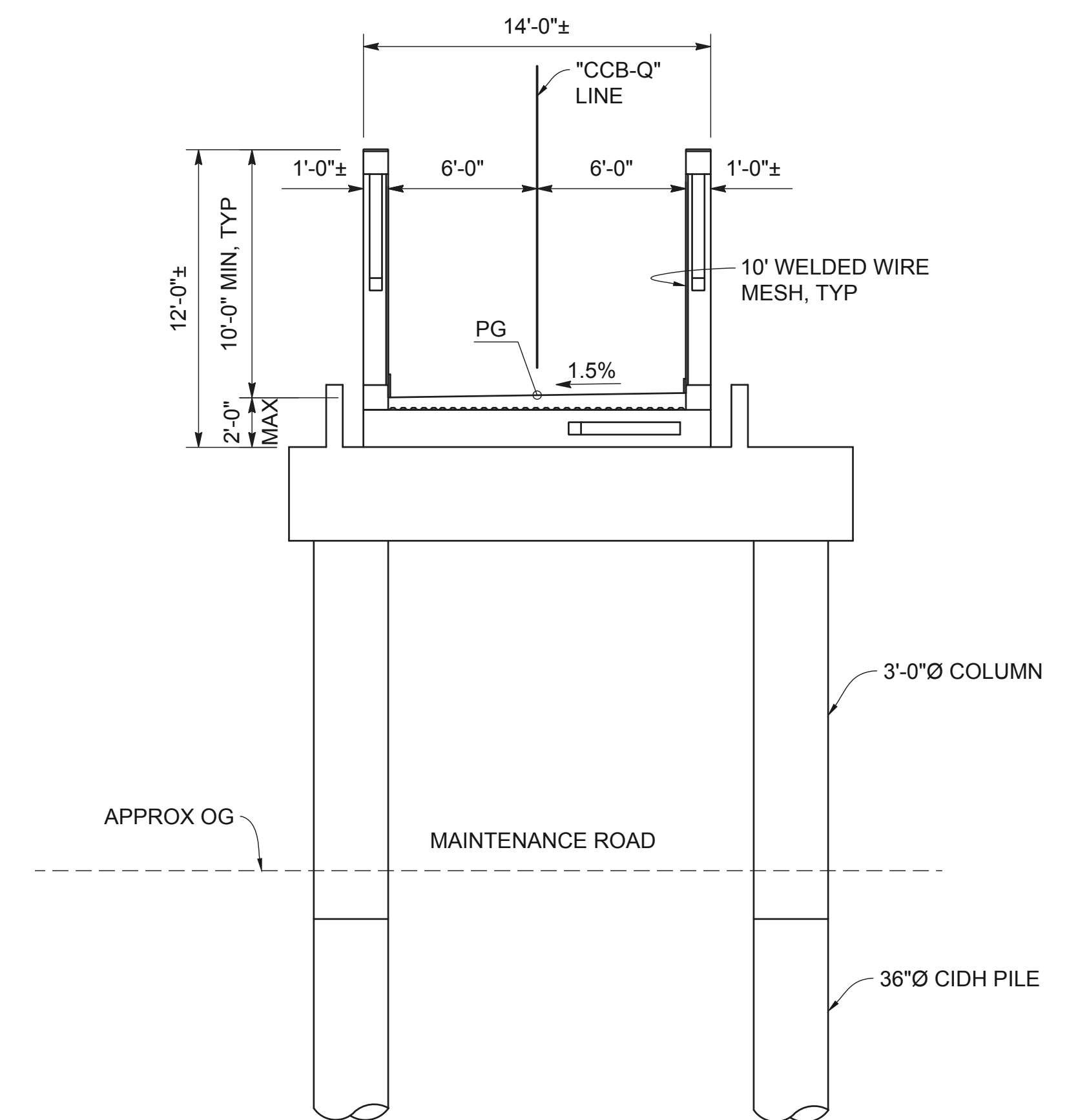
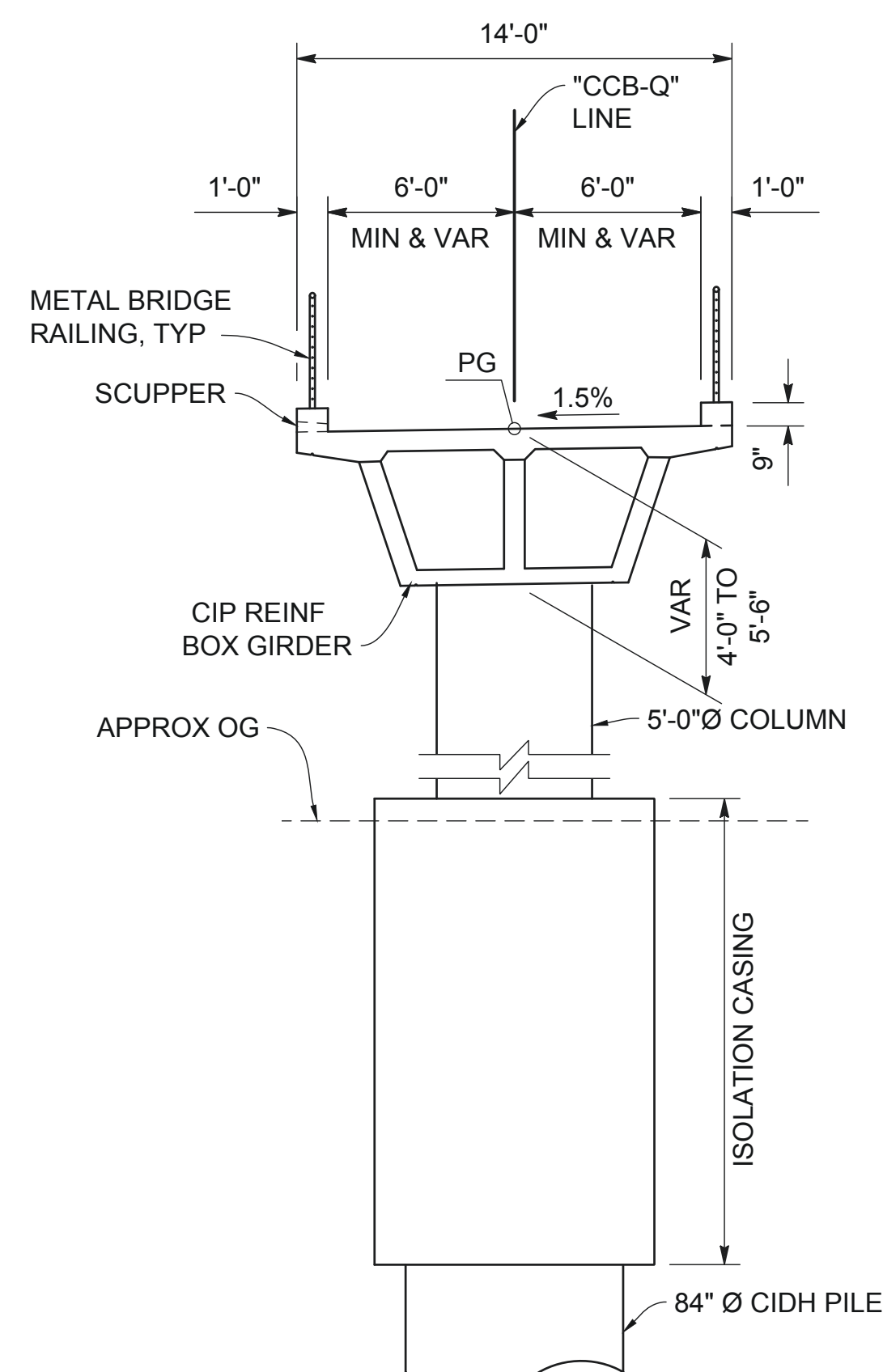
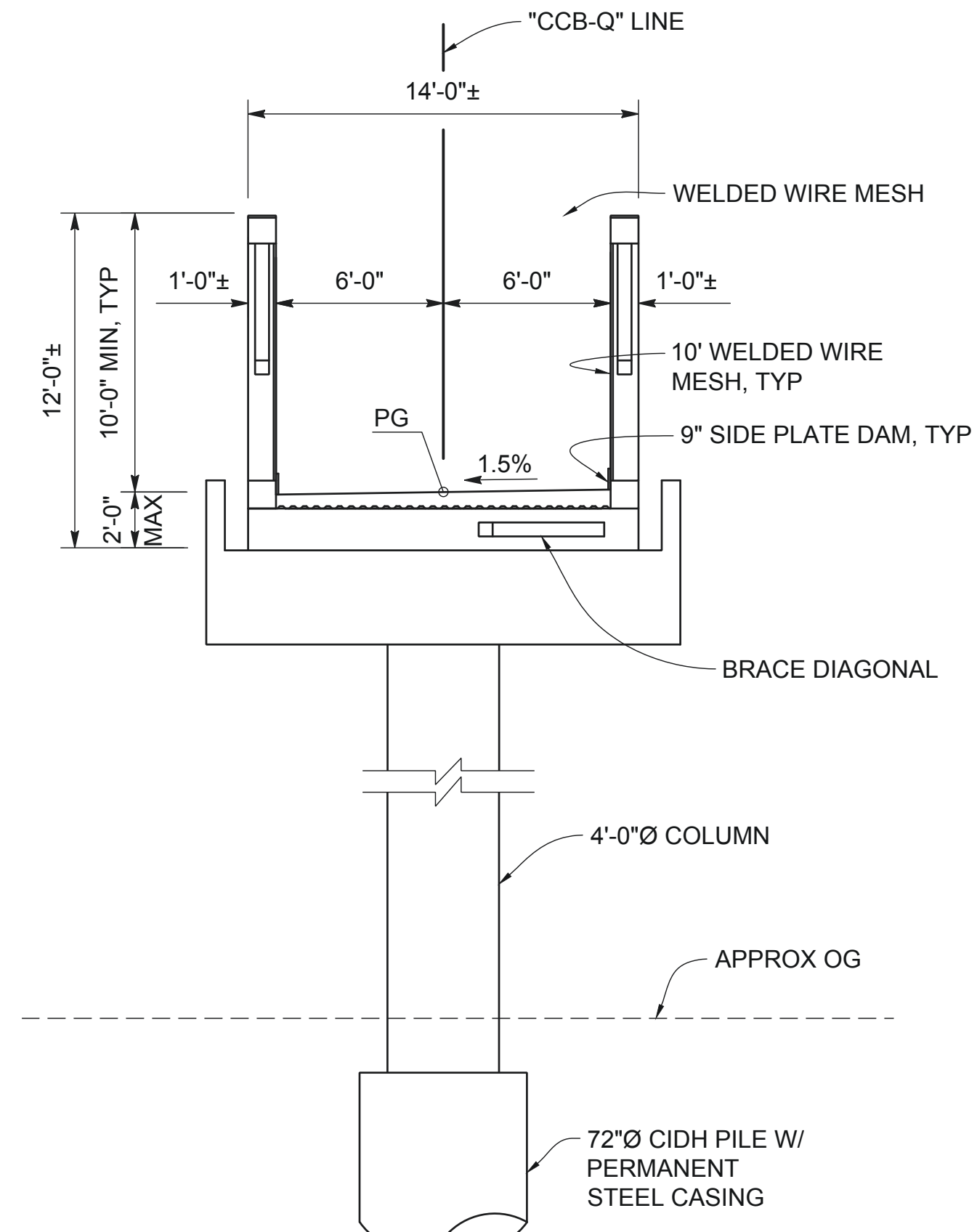
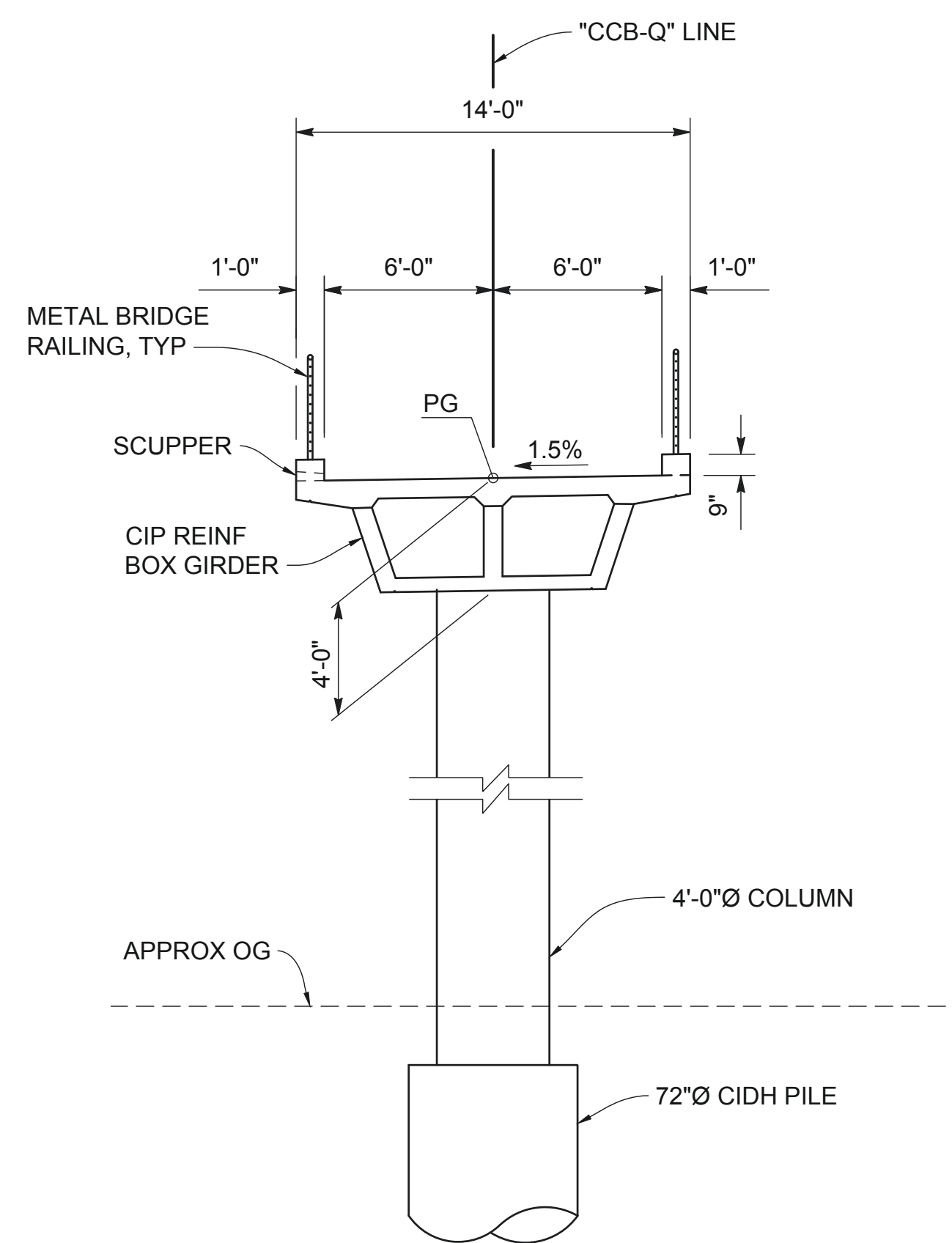
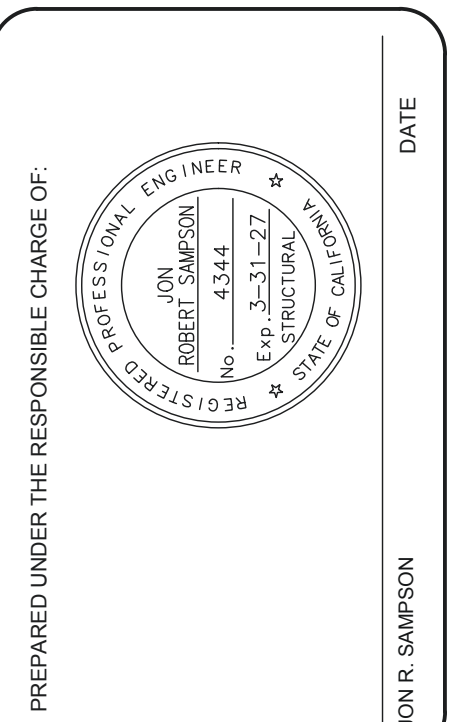
SHEET
S-X
X OF X

Exhibit B

Project Drawings

Exhibit B2 – Structure Drawings

Exhibit B2-3 - Coyote Creek Bikeway Trail over BNSF Line Segment 7600 San Bernardino Subdivision

[illegible]



DESIGNED BY: JS

DRAWN BY: _____

ET: _____

CHECKED BY: _____

03. GP3 (SECTIONS)

FILE NAME: 03. GP3 (SECTIONS)

PLOT DATE: April 14, 2025

SCALE: AS SHOWN

**ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
BNSF PEDESTRIAN OH
GENERAL
PLAN NO. 3**

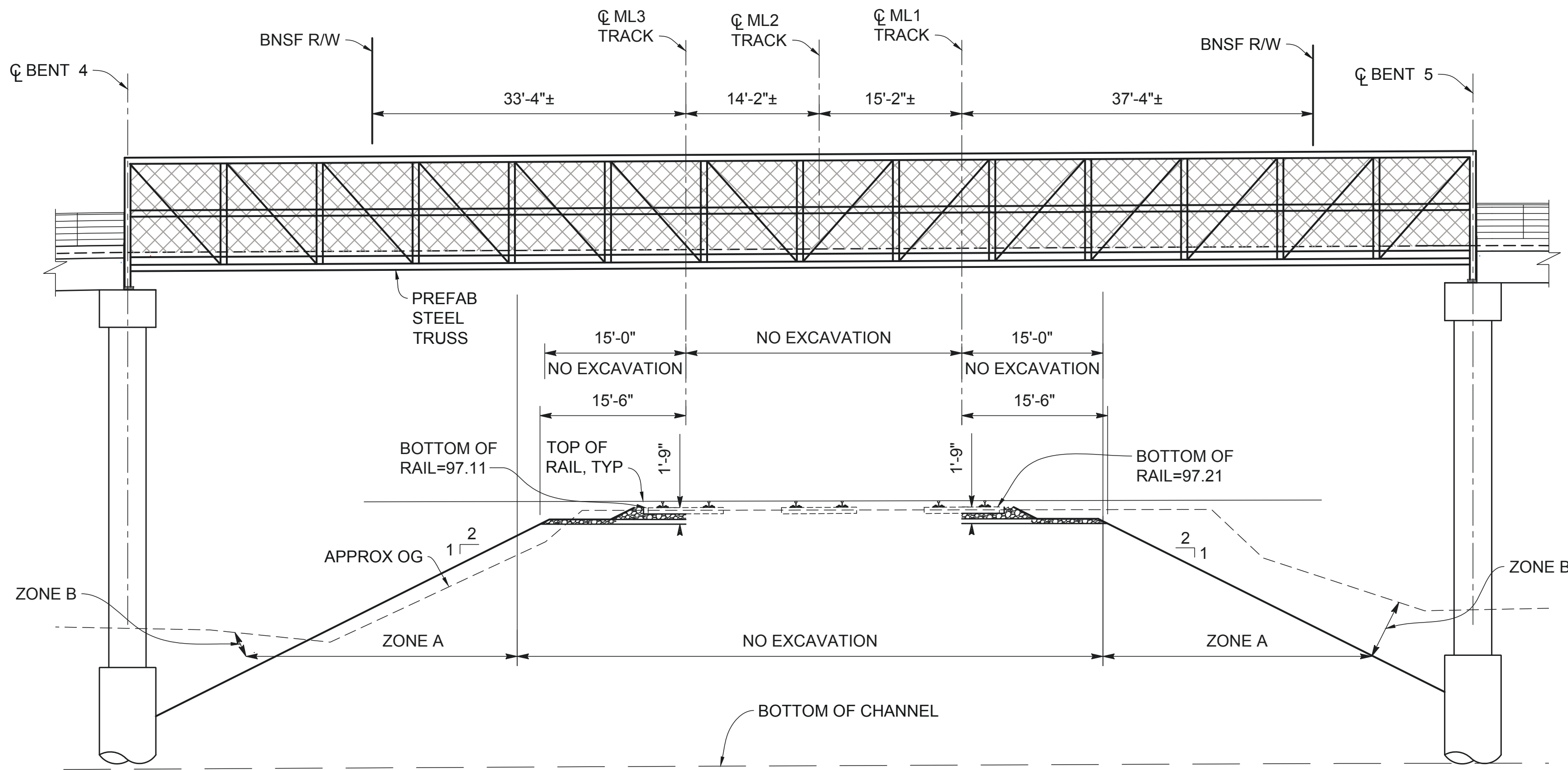
SHEET

S-147

303 of 378

**95% SUBMITTAL
"NOT FOR CONSTRUCTION"**

BNSF SAN BERNARDINO SUBDIVISION MP 0160.330±



TEMPORARY SHORING LIMITS

1" = 10'

ZONE A SHORING DESIGNED FOR:
1. RAILROAD LIVE LOAD SURCHARGE.
2. OSHA STANDARD LOADS.

NO SLOPE CUTS ARE ALLOWED IN ZONE A

ZONE B SHORING DESIGNED FOR:
1. OSHA STANDARD LOADS.
SLOPE CUTS ARE ALLOWED IN ZONE B

NOTES:

1. ALL DIMENSIONS ARE MEASURED PERPENDICULAR TO ϵ OF TRACK.
2. ANY SHORING SYSTEM THAT IMPACTS RAILROAD OPERATIONS AND/OR SUPPORTS RAILROAD EMBANKMENT SHALL BE DESIGNED AND CONSTRUCTED PER THE UPRR/BNSF GUIDELINES FOR TEMPORARY SHORING.
3. NO CONSTRUCTION ACTIVITIES SHALL BE PERMITTED WITHIN ZONE A, AS DEFINED BY FIGURE 1 OF THE UPRR/BNSF GUIDELINES FOR TEMPORARY SHORING, WITHOUT THE FOLLOWING:
A. RAILROAD APPROVED SHORING SYSTEM IN PLACE.
B. IMPLEMENTATION AND EXECUTION OF RAILROAD APPROVED TRACK MONITORING AND CONTINGENCY PLANS.

95% SUBMITTAL
"NOT FOR CONSTRUCTION"

BNSF SAN BERNARDINO SUBDIVISION MP 0160.330±



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER
JON R. SAMPSON
No. 43344
Exp. 3-31-27
Structural
State of California

DATE

JON R. SAMPSON

DESIGNED BY: JS
CHECKED BY: KNTD/GEB/UR
DRAWN BY: ET

DRAWING NO.: 05_GP5 (TRACK CLEAR)
FILE NAME: 05_GP5 (TRACK CLEAR)
PLOT DATE: April 14, 2025
SCALE: AS SHOWN

County of Orange
PublicWorks

PREPARED BY: MARK THOMAS

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
BNSF PEDESTRIAN OH

GENERAL
PLAN NO. 5

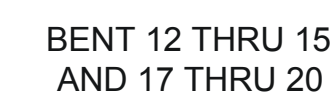
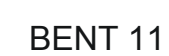
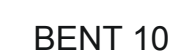
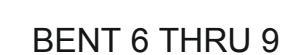
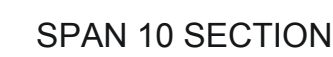
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S-149

305 of 378

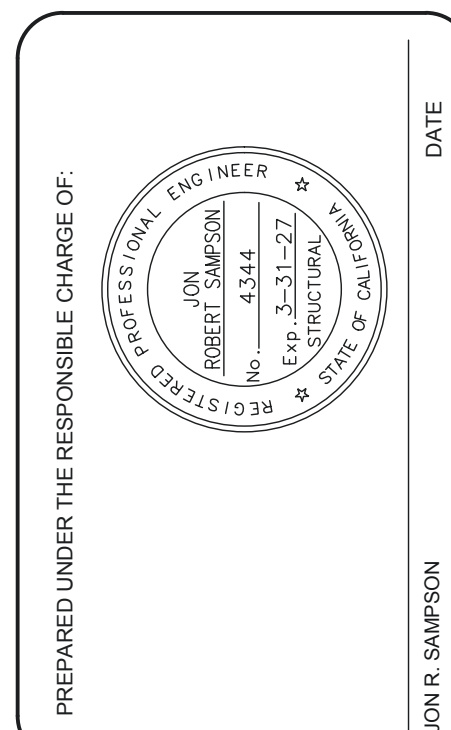
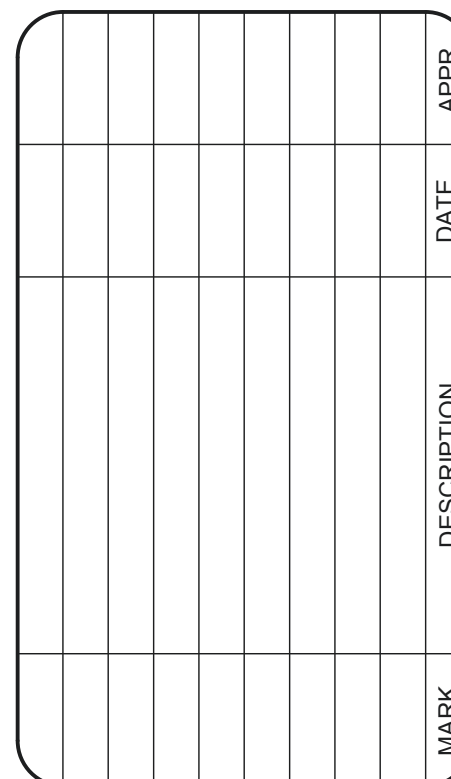


NO SCALE



NO SCALE

BNSF SAN BERNARDINO SUBDIVISION MP 0160.330±



	DESIGNED BY:		JS
	DRAWN BY:	CHECKED BY:	
	ET	KN/DGB/TBJR	
	DRAWING NO.: 07_IP2		
PREPARED BY:	FILE NAME:		07_IP2
	PLOT DATE:		April 14, 2025
	SCALE:		AS SHOWN

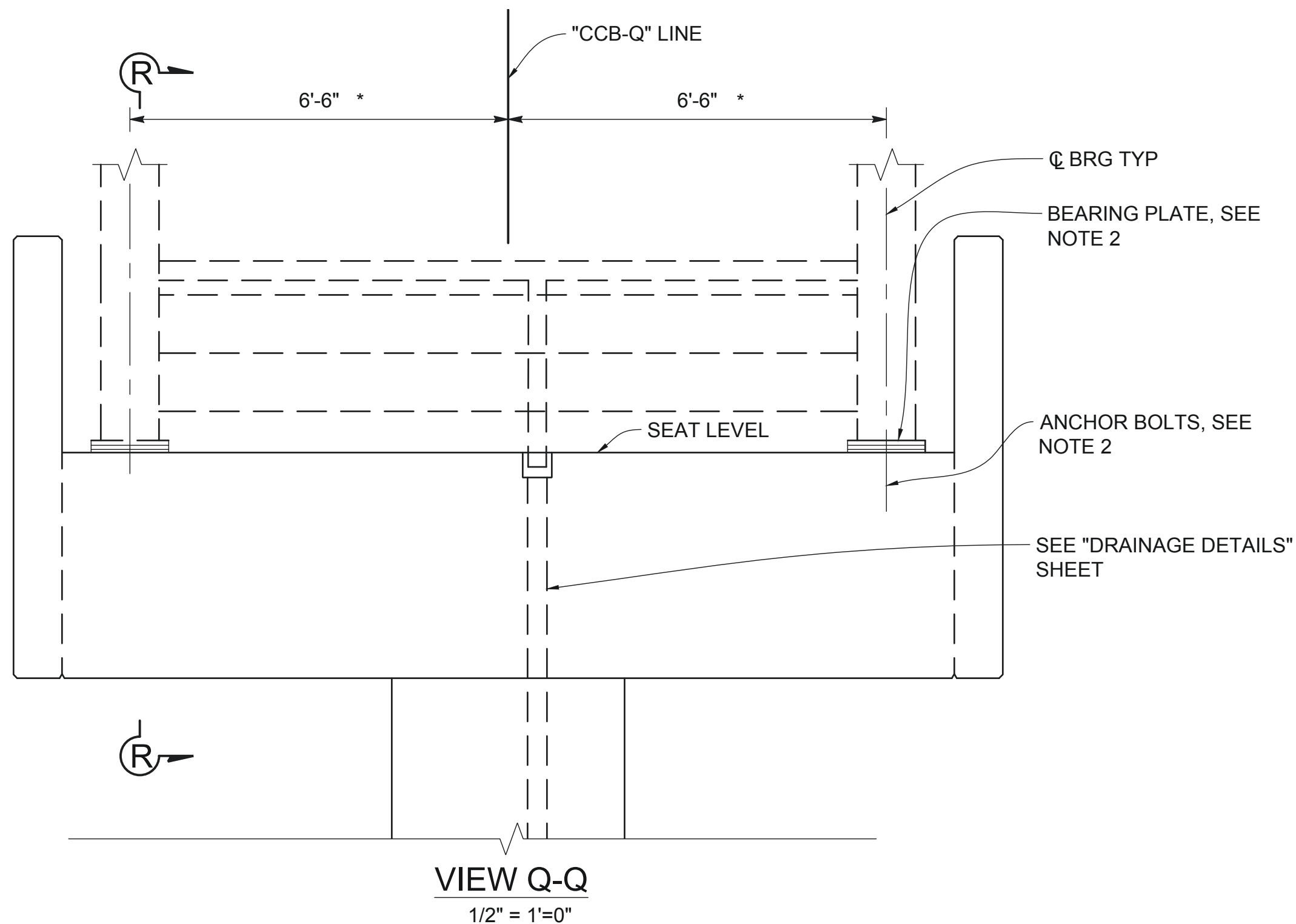
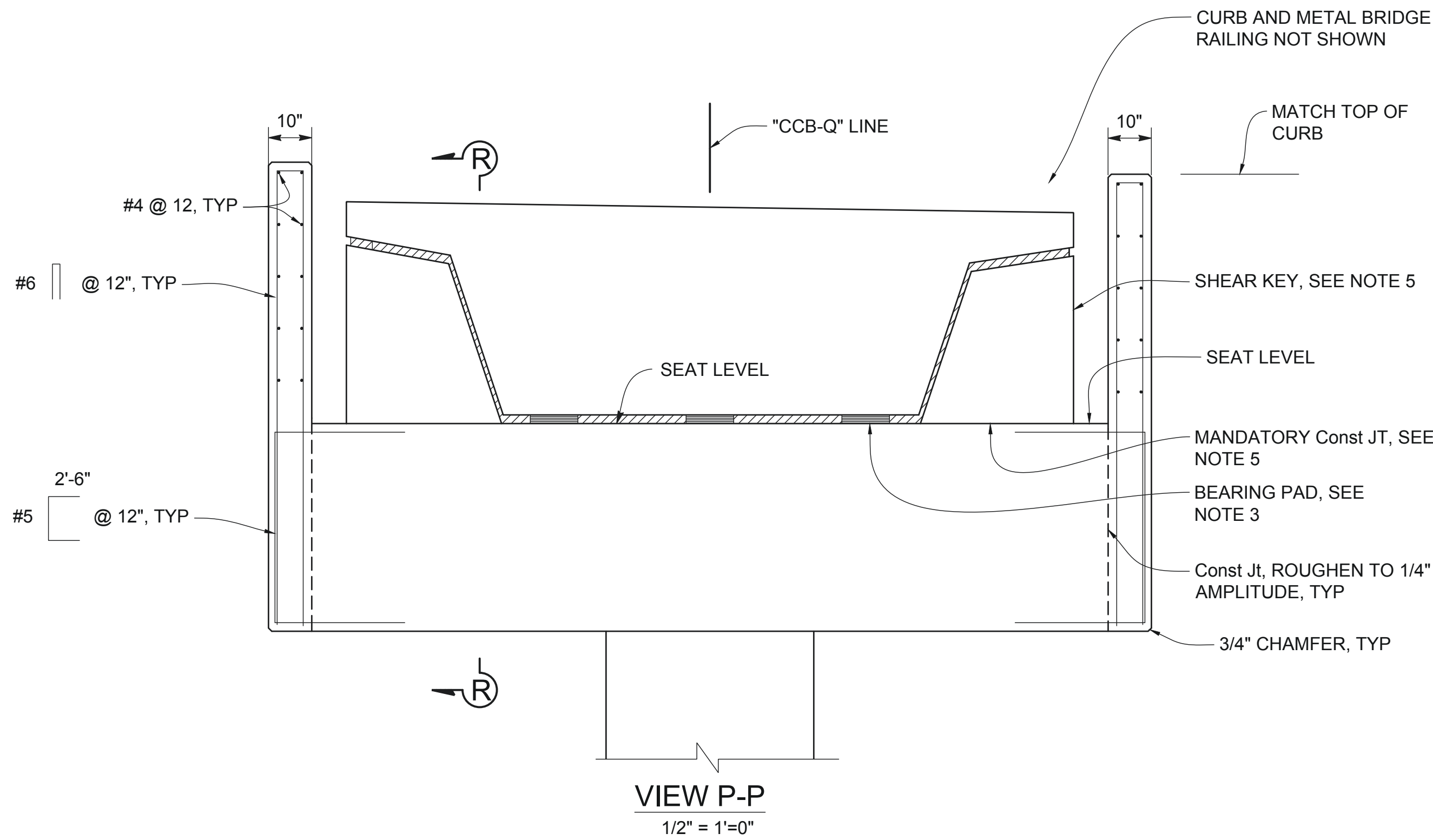
ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
BNSF PEDESTRIAN OH

**CONCRETE
STRENGTH AND
TYPE LIMITS**

SHEET

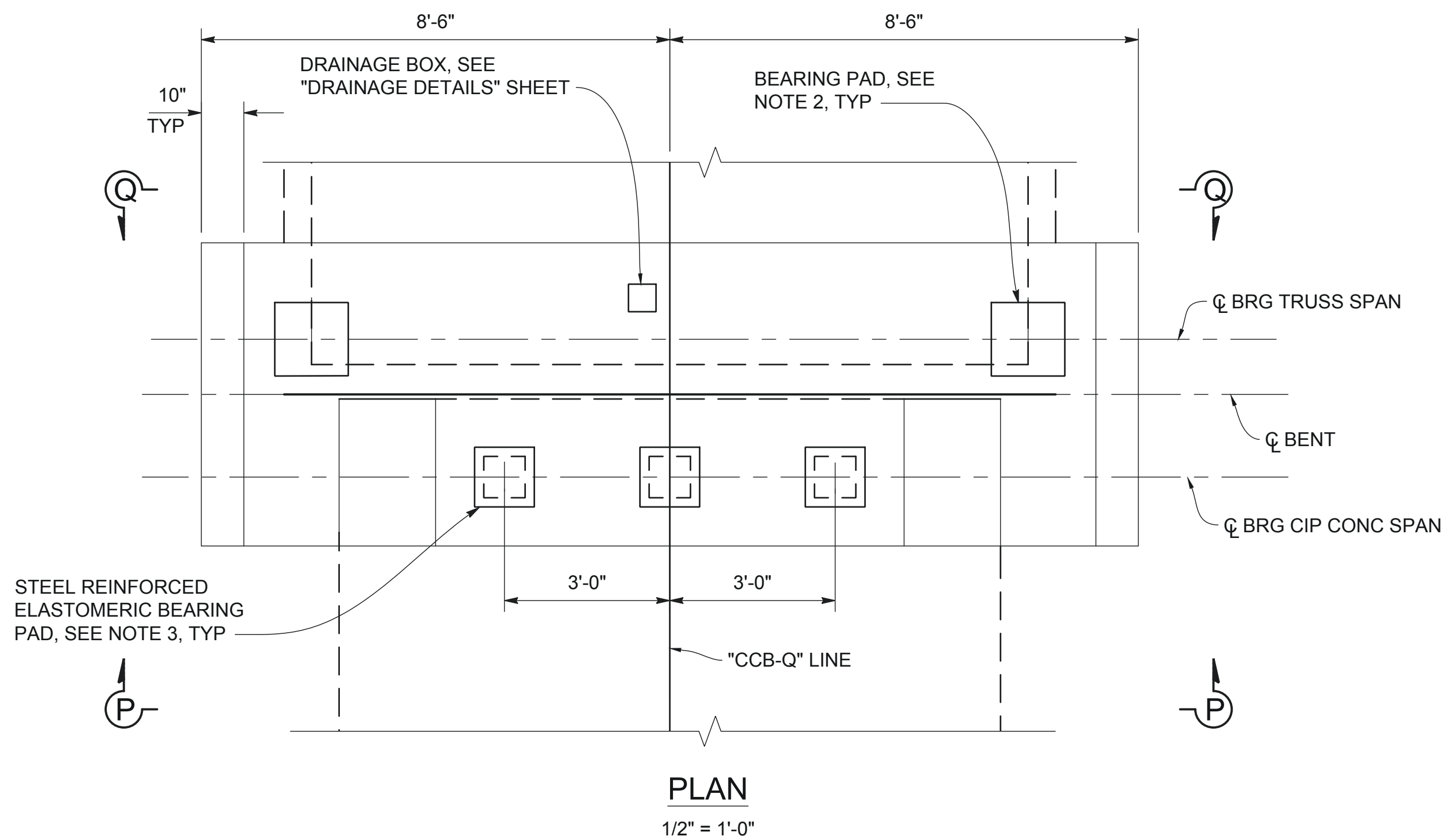
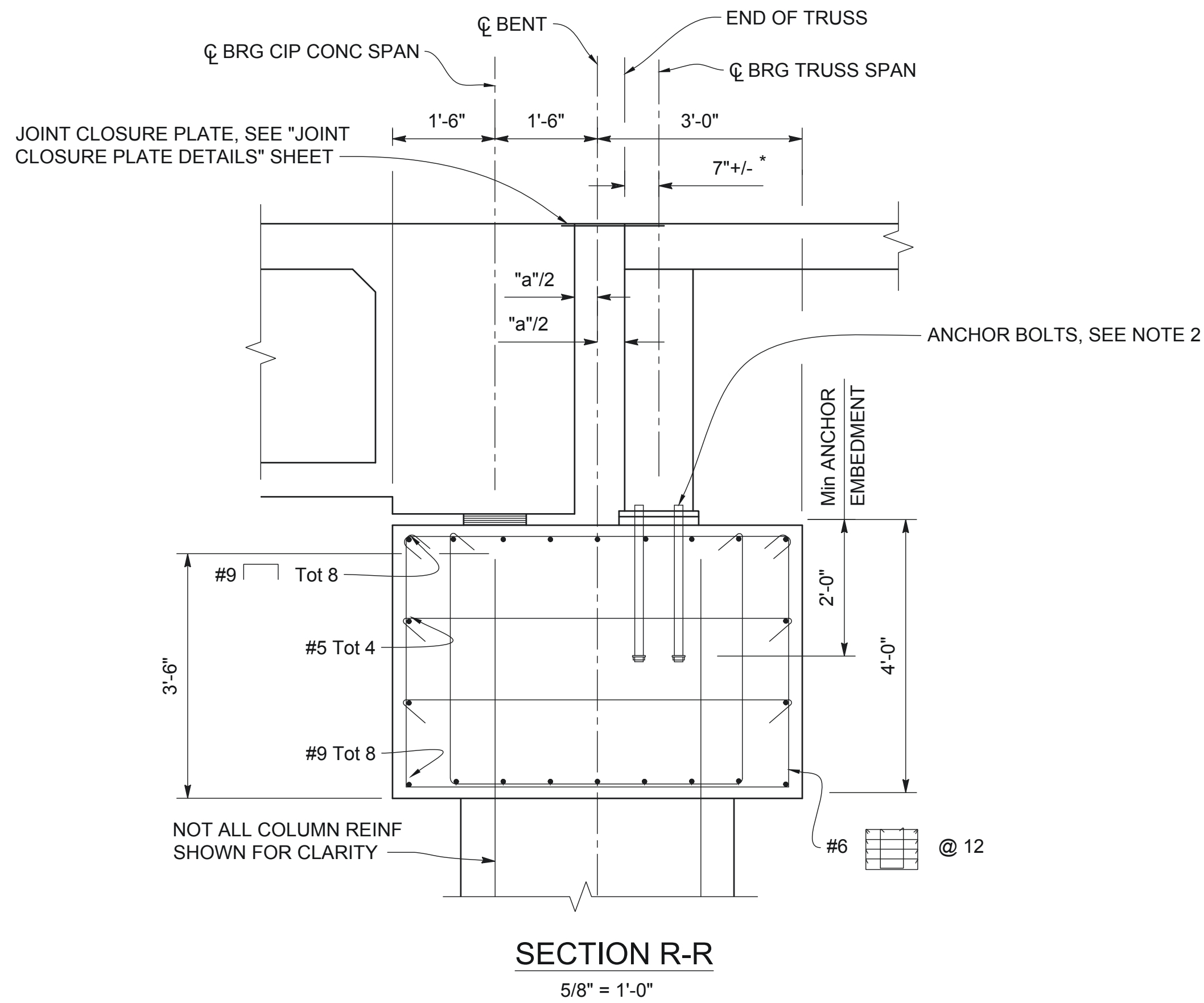
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307 of 378

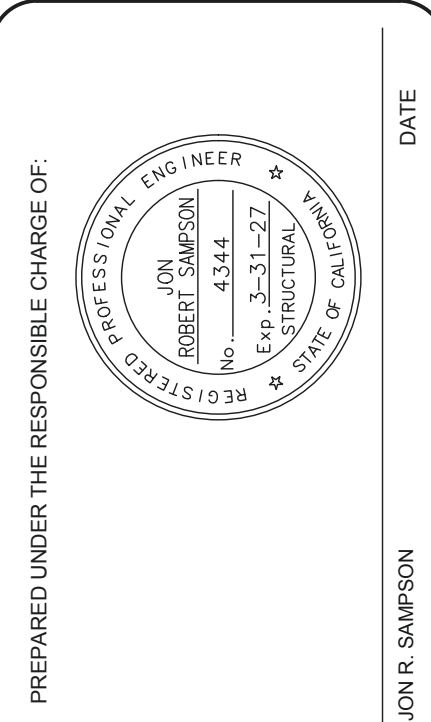


NOTES:

- DIMENSIONS MARKED WITH (*) MAY CHANGE PER PREFABRICATED TRUSS MANUFACTURER DRAWING.
- FOR ANCHOR BOLT AND BEARING PLATE DETAILS, AND "SECTION N-N", SEE "BENTS 4 AND 5 DETAILS" SHEET.
- FOR BEARING PAD DETAILS, SEE "BENT 4 AND 5 DETAILS" SHEET.
- BENT 4 SHOWN, BENT 5 SIMILAR.
- FOR SHEAR KEY DETAILS, SEE "BENTS 4 AND 5 DETAILS" SHEET.
- FOR "A" DIMENSION SEE "JOINT CLOSURE PLATE DETAILS" SHEET.



MARK	DESCRIPTION	DATE	APPR.



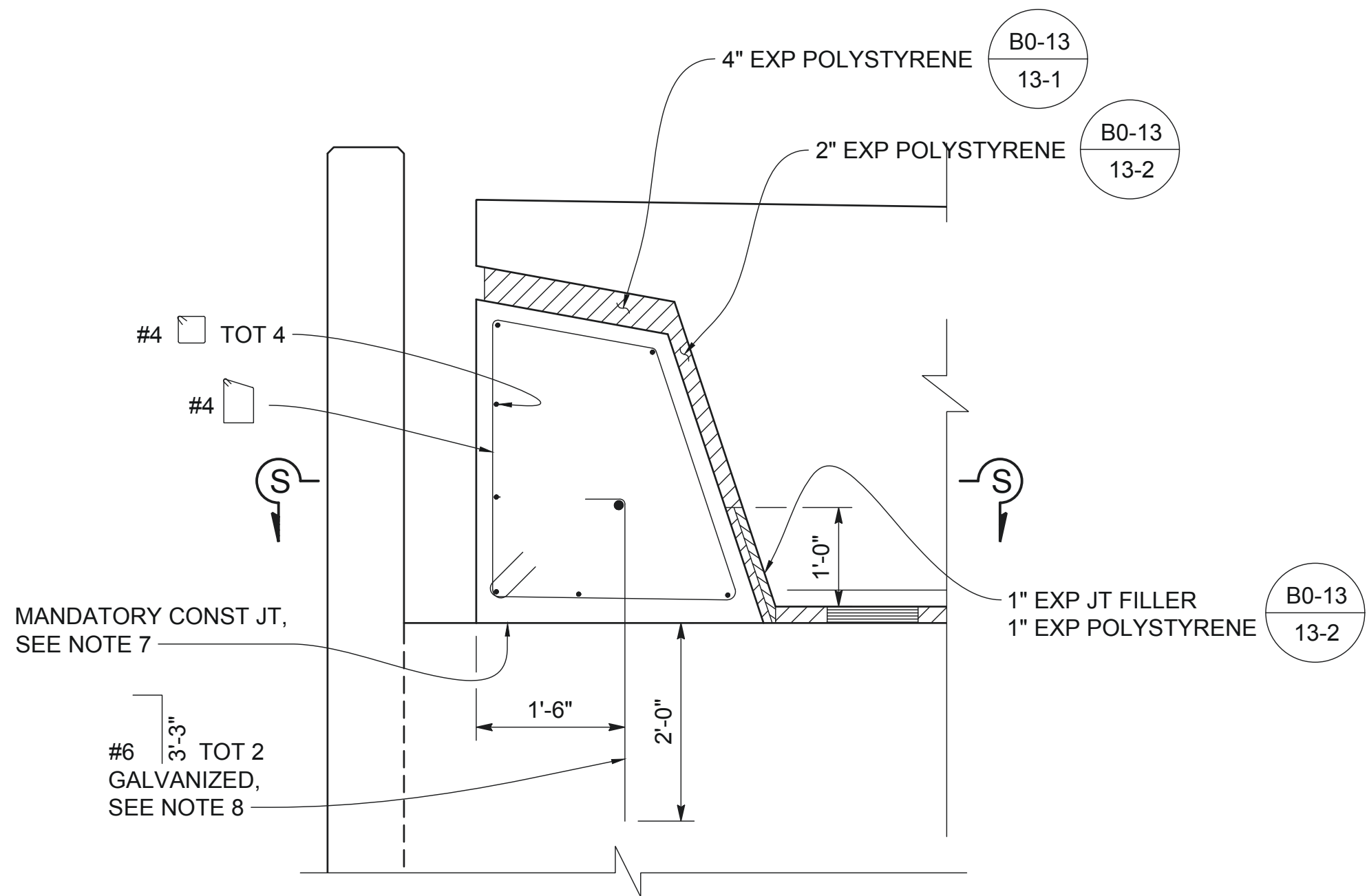
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DRAWN BY: ET	ET	PLOT DATE: April 14, 2025		
County of Orange PublicWorks	PREPARED BY: MARK THOMAS			

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
BNSF PEDESTRIAN OH
BENT 4 AND 5
LAYOUT

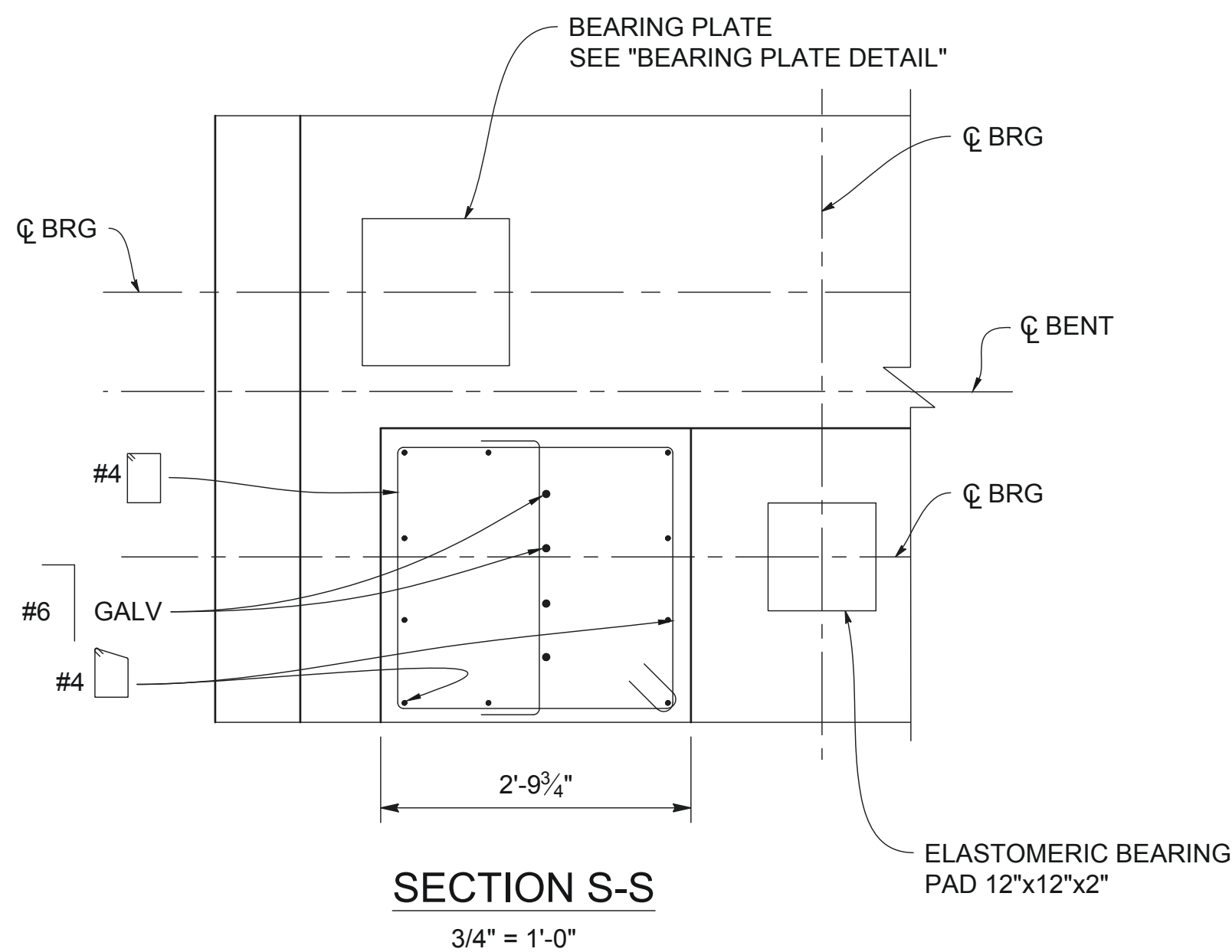
SHEET
S-176
332 of 378

95% SUBMITTAL
"NOT FOR CONSTRUCTION"

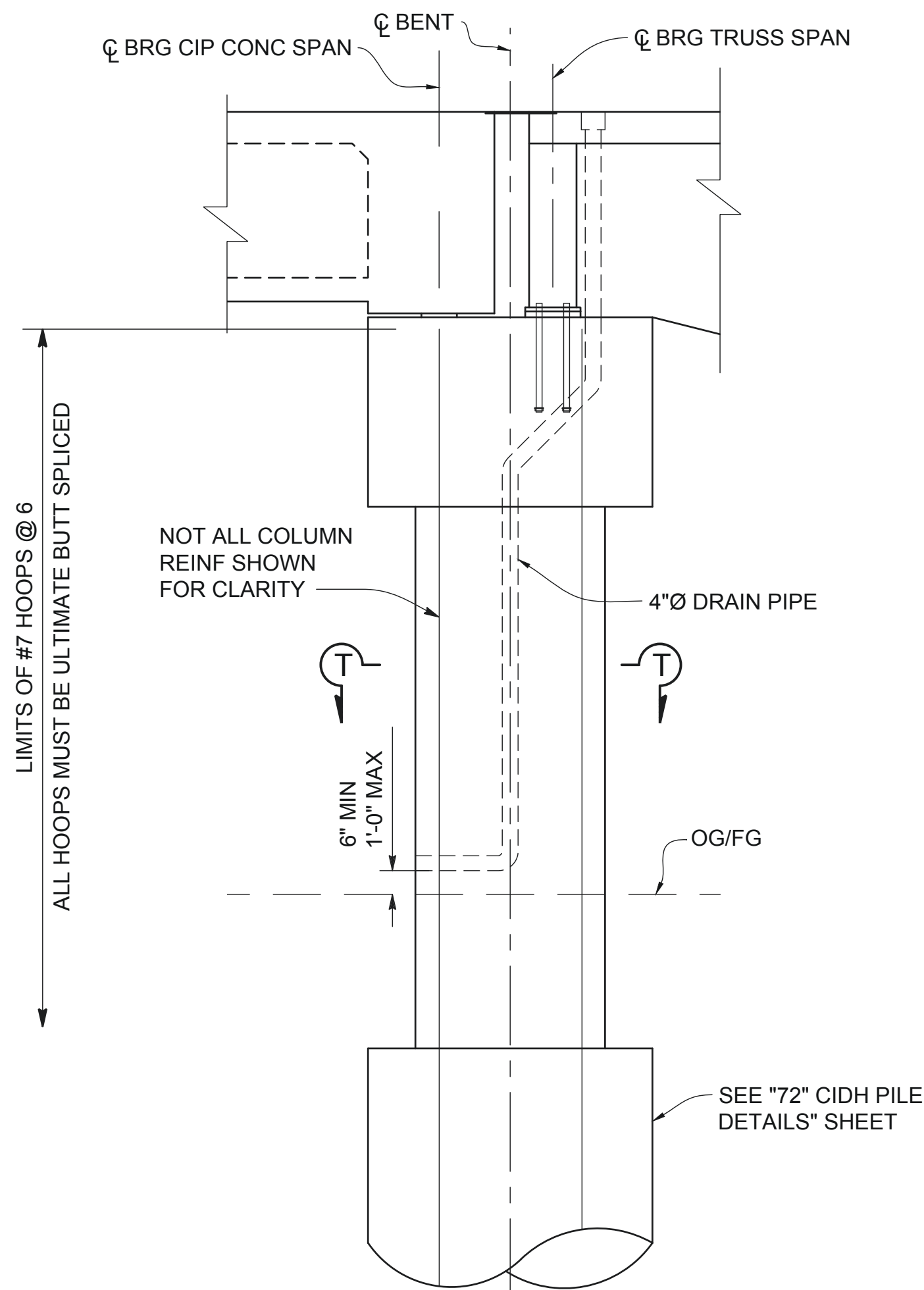
BNSF SAN BERNARDINO SUBDIVISION MP 0160.330±



BENT SHEAR KEY
3/4" = 1'-0"

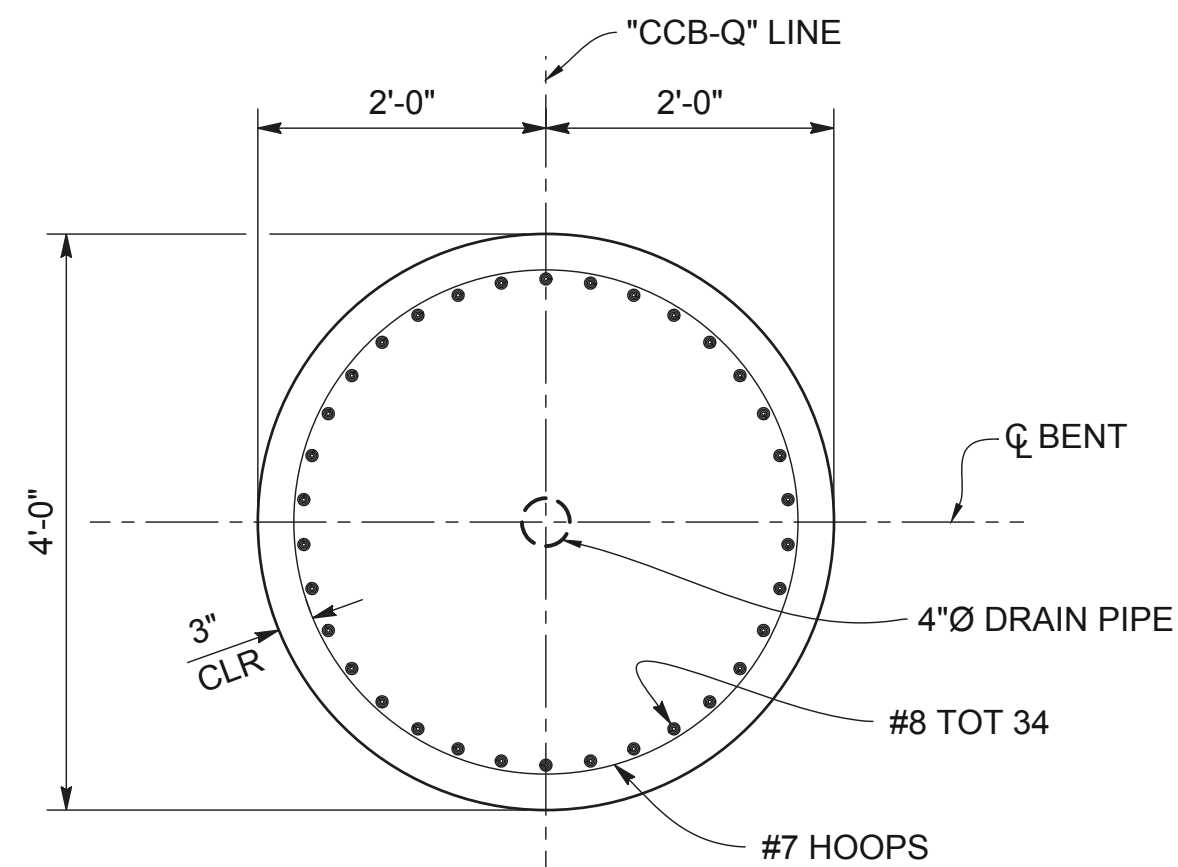


SECTION S-S
3/4" = 1'-0"

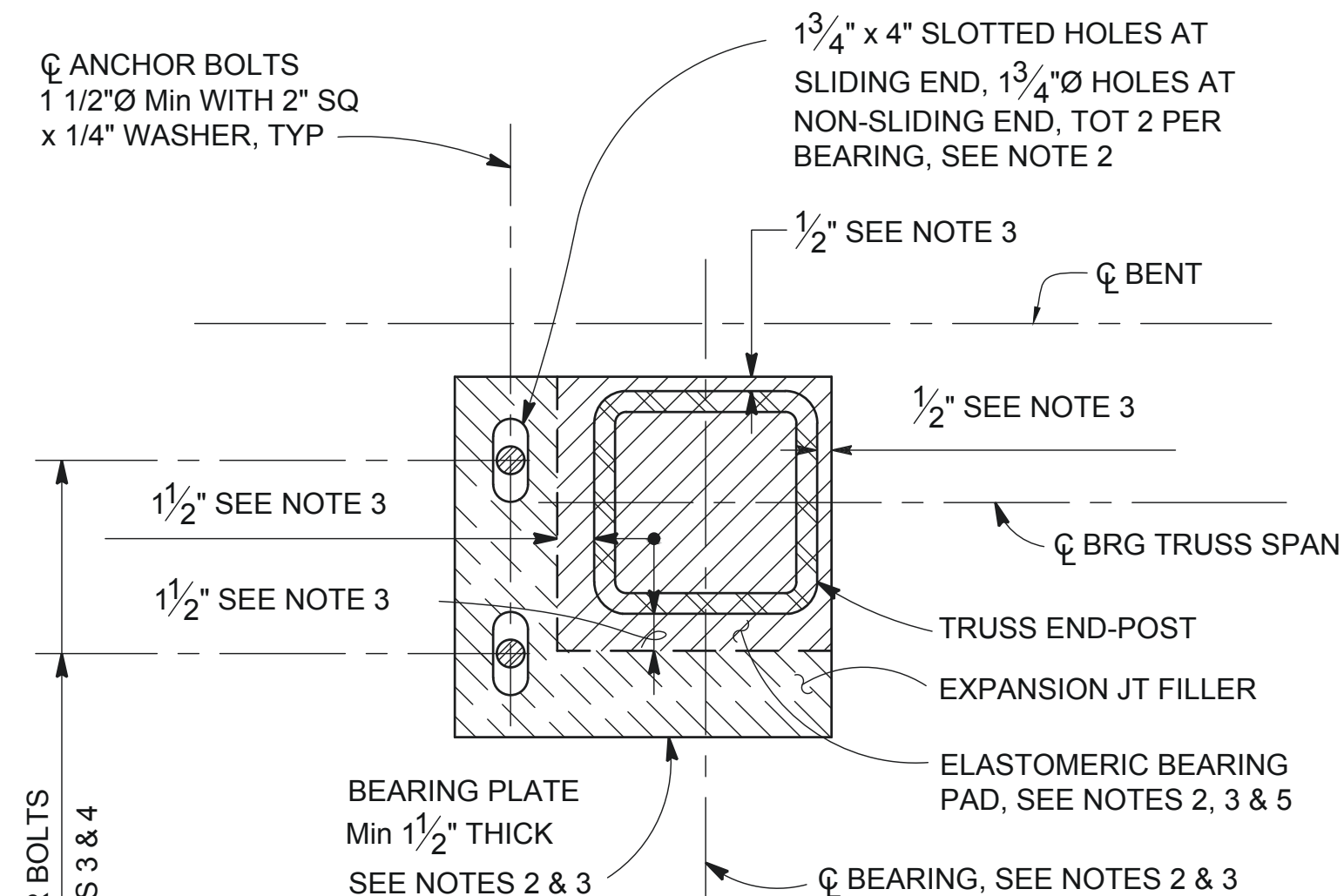


SIDE ELEVATION
3/8" = 1'-0"

NOTE: COLUMN, CAP AND CIDH PILE REINFORCEMENT NOT SHOWN FOR CLARITY.



SECTION T-T
3/4" = 1'-0"



INDICATES ELASTOMERIC BEARING PAD
INDICATES EXPANSION JOINT FILLER

TRUSS BEARING PLATE DETAIL
NO SCALE

NOTES:

- CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS AND COORDINATE ALL PLANS PRIOR TO ORDERING OR FABRICATING ANY MATERIAL.
- FOR STEEL TRUSS BRIDGE DETAILS, SEE "PREFABRICATED STEEL TRUSS BRIDGE APPROVED DRAWINGS" BY THE PREFABRICATED TRUSS MANUFACTURER. SLOTS AND HOLES IN BEARING PLATES AND BEARINGS ARE SHOWN FOR 1 1/2" (MIN) Ø ANCHOR BOLTS FOR UNIFORM BIDS. THE ACTUAL ANCHOR BLOTS, HOLES AND SLOT SIZES MUST BE PER PREFABRICATED TRUSS MANUFACTURER'S APPROVED DESIGN OR MINIMUM AS SHOWN, MODIFIED TO SUIT. CONTRACTOR MUST COORDINATE, FURNISH AND INSTALL ANCHOR BOLTS AND WASHERS PER PREFABRICATED TRUSS MANUFACTURER'S PLANS.
- USE MINIMUM 16" X 16" X 2" STEEL REINFORCED ELASTOMERIC BEARING PADS. BEARING PLATES, BEARING PADS, ANCHOR BOLT SIZES, ETC. MUST BE DETERMINED BY THE PREFABRICATED TRUSS MANUFACTURER'S DESIGN. APPROXIMATE DETAILS SHOWN ARE FOR UNIFORM BID ONLY.
- ANCHOR BOLTS, WASHERS, NUTS AND LOCK NUTS MUST BE ASTM A325 OR BETTER AND GALVANIZED.
- EPOXY BOND BEARING PADS AND JOINT FILLERS (OF SAME THICKNESS AS BEARING PADS) TO THE BENT CAP. APPLY LIGHT COAT OF COMMERCIAL QUALITY GREASE TO TOP OF ELASTOMERIC BEARING PADS AT THE SLIDING END ONLY.
- PREFABRICATED TRUSS MANUFACTURER TO SUPPLY AND INSTALL LOAD LIMITATION PLAQUE ON BRIDGE.
- MANDATORY CONSTRUCTION JOINT MUST BE SMOOTH FINISHED AND LINED WITH 15 POUND BUILDING PAPER.
- MAIN VERTICAL SHEAR KEY REINFORCEMENT MUST BE CENTERED IN SHEAR KEY.
- SEE "ELECTRICAL PLANS" FOR DETAILS NOT SHOWN.
- NO SPLICES ALLOWED IN LONGITUDINAL REINFORCEMENTS

95% SUBMITTAL
"NOT FOR CONSTRUCTION"

BNSF SAN BERNARDINO SUBDIVISION MP 0160.330±



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER
JON R. SAMPSON
No. 33,314
EXPIRATION DATE 3-31-27
STATE OF CALIFORNIA

DATE

JON R. SAMPSON

DESIGNED BY: JS
DRAWN BY: ET
CHECKED BY: KNTD/GEB/JUR

County of Orange
PublicWorks

PREPARED BY: MARK THOMAS

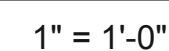
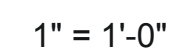
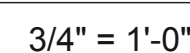
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PLOT DATE: April 14, 2025
SCALE: AS SHOWN

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
BNSF PEDESTRIAN OH
**BENT 4 AND 5
DETAILS**

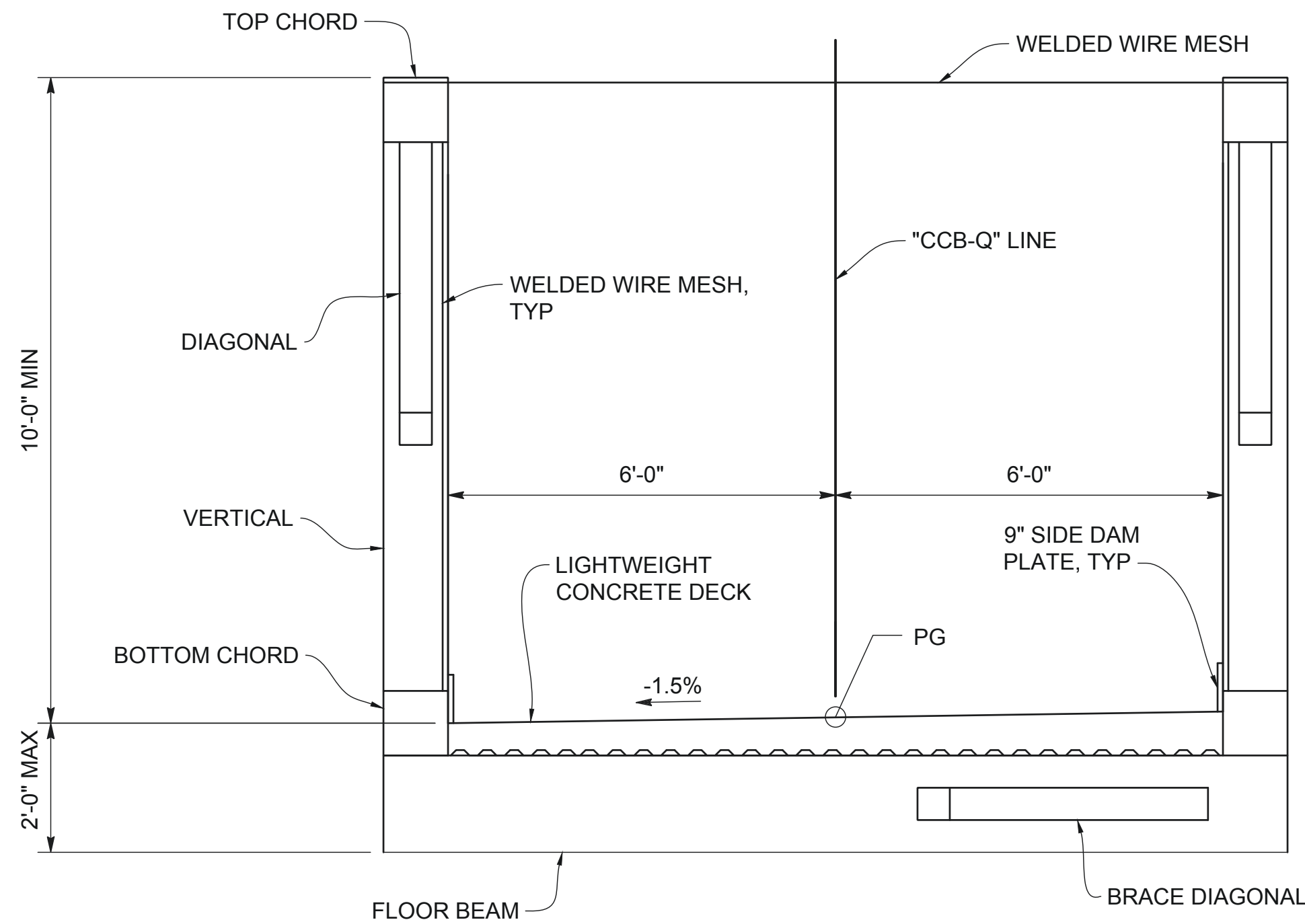
SHEET

S-177

333 of 378

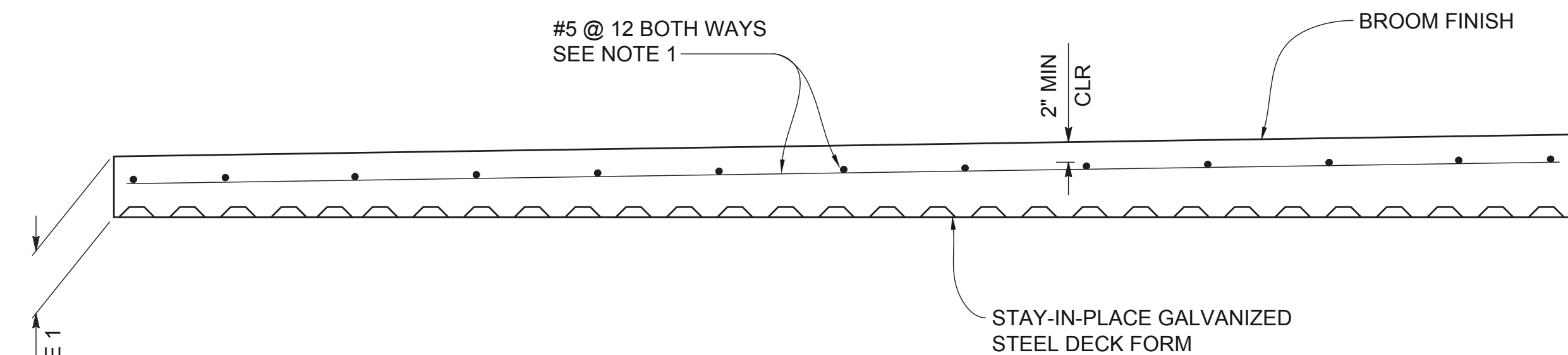


- BNSF SAN BERNARDINO SUBDIVISION MP 0160.330±**



TYPICAL SECTION

1/2" = 1'-0"



LIGHTWEIGHT CONCRETE DECK DETAIL

1" = 1'-0"

NOTES:

1. DECK REINFORCEMENT SHOWN FOR UNIFORM BID ONLY. ACTUAL DECK REINFORCEMENT MUST BE PER PREFABRICATED TRUSS MANUFACTURER APPROVED DESIGN.
2. ALL FASTENERS MUST BE HOT-DIP GALVANIZED AFTER FABRICATION.
3. CONTRACTOR TO VERIFY DEPTH OF STACKED END FLOOR BEAMS TO PLACE CONCRETE DECK LEVEL WITH ADJACENT SPANS.

95% SUBMITTAL
"NOT FOR CONSTRUCTION"

BNSF SAN BERNARDINO SUBDIVISION MP 0160.330±



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

DATE: _____

JON R. SAMPSON

DESIGNED BY: JS

CHECKED BY: KNYD/GEB/UR

DRAWN BY: ET

DRAWING NO.: 47_TS_02 (TRUSS)

FILE NAME: 47_TS_02 (TRUSS)

PLOT DATE: April 14, 2025

SCALE: AS SHOWN

County of Orange
PublicWorks

PREPARED BY: **MARK THOMAS**

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
BNSF PEDESTRIAN OH

**TYPICAL
SECTION NO. 2**

SHEET

S-191

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1. ALL DRAINAGE PIPE TO BE WELDED STEEL PIPE AND GALVANIZED EXCEPT WHERE INDICATED ON THE PLANS. FITTINGS AND BENDS MUST HAVE A MINIMUM WALL THICKNESS OF 1/8". ALL JOINTS OR CONNECTIONS TO BE BUTT WELDED OR CONNECTED BY A STEEL PIPE SLEEVE AND TO BE SMOOTH THROUGHOUT INSIDE OF PIPE. ALL BENDS TO BE 18" MINIMUM RADIUS MEASURED ALONG C PIPE. ALL BENDS TO BE SMOOTH.

[illegible]

DECK DRAIN CHANNEL DETAIL

* POSITION TRANSVERSELY TO AVOID DIAGONAL

SECTION R-R
AT BENTS 4,5,10 & 11

6"

2" Min

APPLY ADHESIVE SEALANT ON PIPE PERIPHERY TO SEAL JOINT. SECURE EACH END OF SLEEVE TO PIPE WITH 3 - #10 x 1/2" SELF TAPPING HEX HEAD SCREWS.

SLEEVE INSIDE DIAMETER NO GRATER THAN PIPE OUTSIDE DIAMETER +1/16"

The diagram illustrates a sleeve joint assembly. A horizontal pipe is shown with a sleeve attached to its center. The sleeve has a length of 6 inches. The sleeve is secured to the pipe with three self-tapping hex head screws on each end. The sleeve's inside diameter must be no greater than the pipe's outside diameter plus 1/16 inch. The sleeve must overlap the pipe by a minimum of 2 inches on each side.

DRAIN PIPE SLEEVE CONNECTION

9" SIDE DAM PLATE

GRATING

STAINLESS STEEL PLATE
1/4" THICK

3 1/4"

TRUSS BOTTOM CHORD

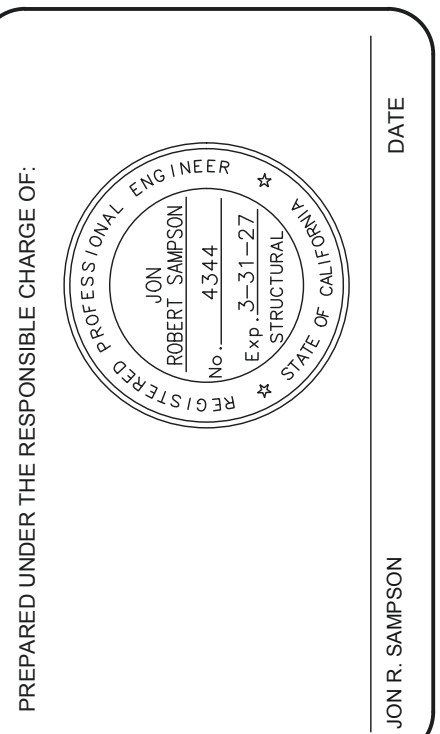
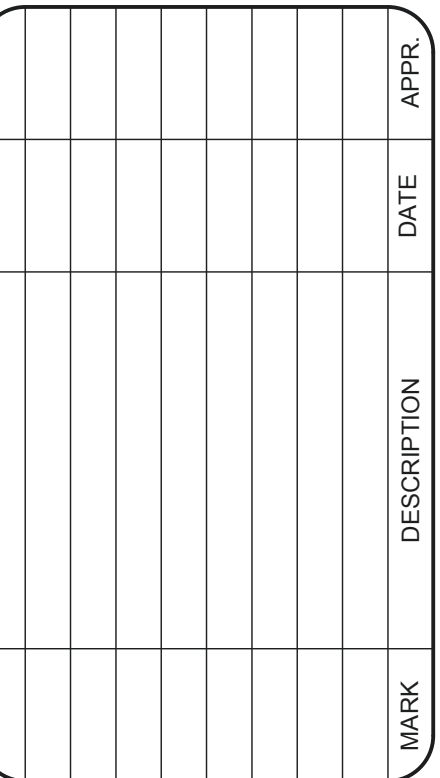
BOTH LEGS OF ANGLES, TYP

1/8"

DECK DRAIN EDGE DETAIL

**95% SUBMITTAL
"NOT FOR CONSTRUCTION"**

BNSF SAN BERNARDINO SUBDIVISION MP 0160.330±



	DESIGNED BY:		JS	CHECKED BY:	KN/DG/DB/TB/JJR
	DRAWN BY:		ET		
	PREPARED BY:		DRAWING NO.: 50_DDD		
			FILE NAME: 50_DDD		
			DATE: April 14, 2025 SCALE: AS SHOWN		

**ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
NSF PEDESTRIAN OH**

S-202

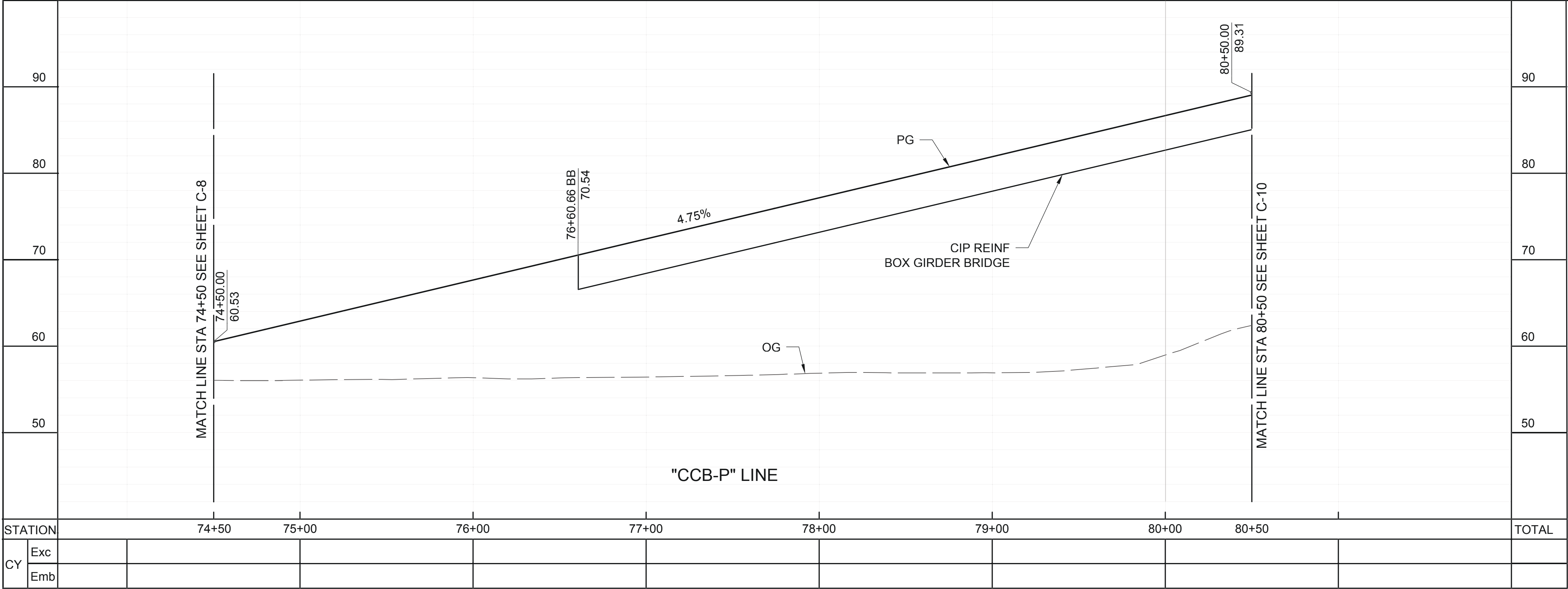
358 of 378

Exhibit B

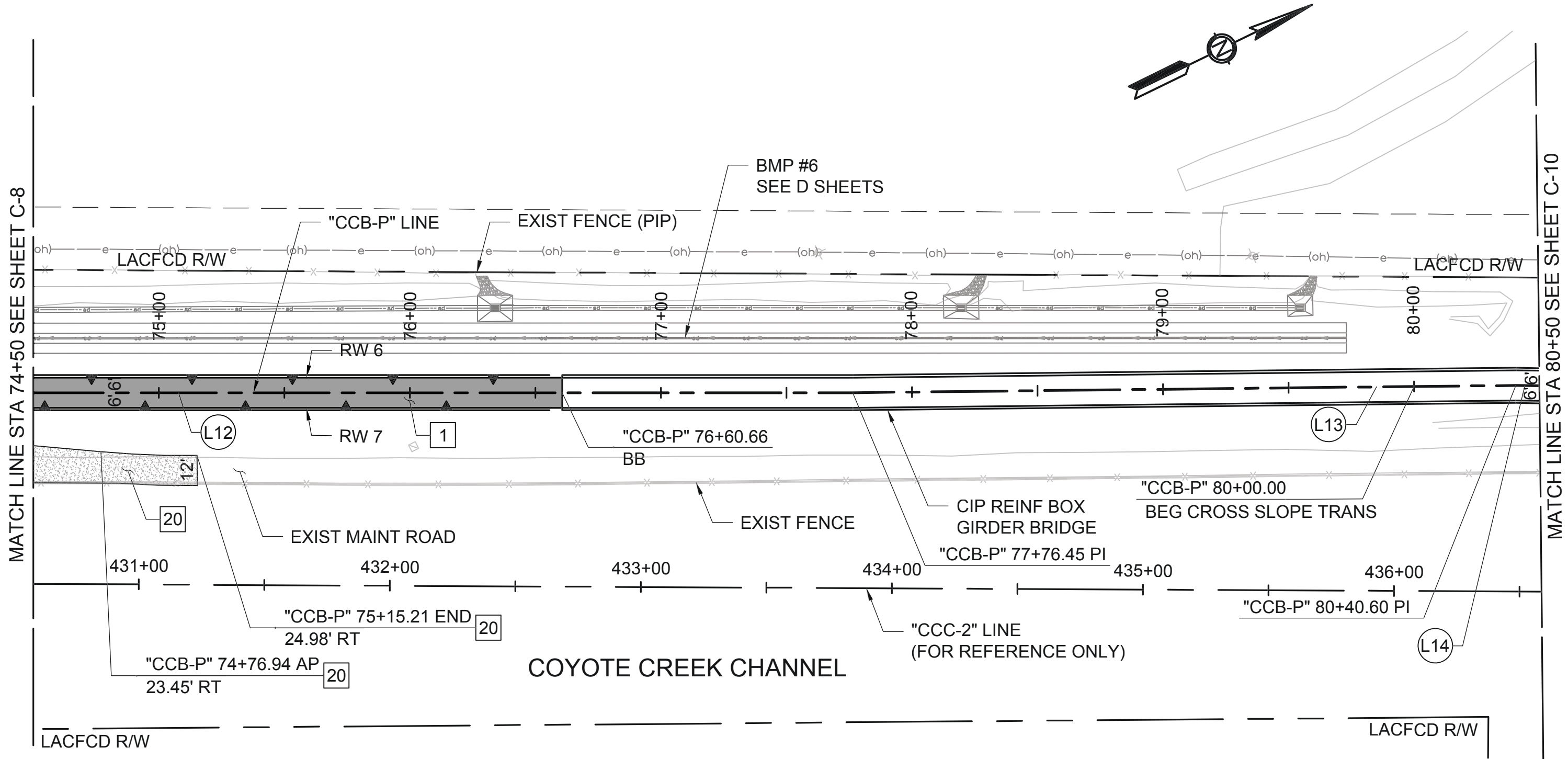
Project Drawings

Exhibit B3 – Bikeway Drawings

Exhibit B3-1 - Coyote Creek Bikeway Trail over UPRR Santa Ana Industrial
Lead Track



PROFILE
HORIZ 1" = 40'
VERT. 1" = 8'



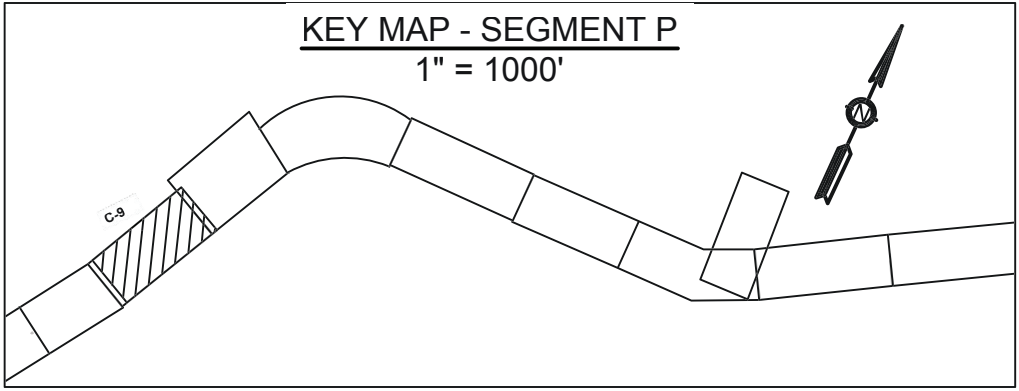
LINE TABLE		
(No.)	L	D
(L12)	420.30'	N26°22'39"E
(L13)	264.15'	N25°44'55"E
(L14)	195.84'	N27°19'27"E

PLAN SCALE 1" = 40'

CONSTRUCTION NOTES

- 1
- CONSTRUCT AC PAVEMENT (0.30' AC / 0.50' AB).

20



LEGEND

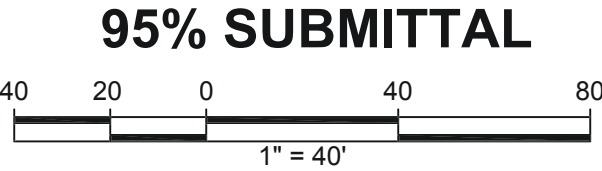
- ASPHALT CONCRETE
- CRUSHED AGGREGATE BASE

GENERAL NOTES

1.
- FOR DRAINAGE REMOVAL/IMPROVEMENTS, SEE DRAINAGE (D) SHEETS.

2.

3.



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER
Ravi Shah
No. C79183
Exp. 03-31-25
CIVIL
State of California

DATE

Ravi Shah, P.E.

DESIGNED BY: XE
DRAWN BY: SUK
CHECKED BY: XE

County of Orange
Public Works

DRAWING NO.: C-9.dwg
FILE NAME: C-9.dwg
PLOT DATE: 4/25/2025 3:34 PM
SCALE: AS SHOWN

PREPARED BY:
MARK THOMAS

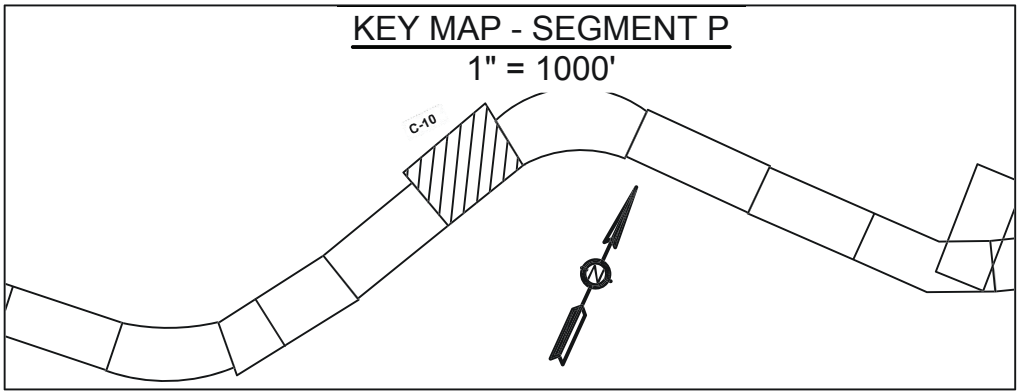
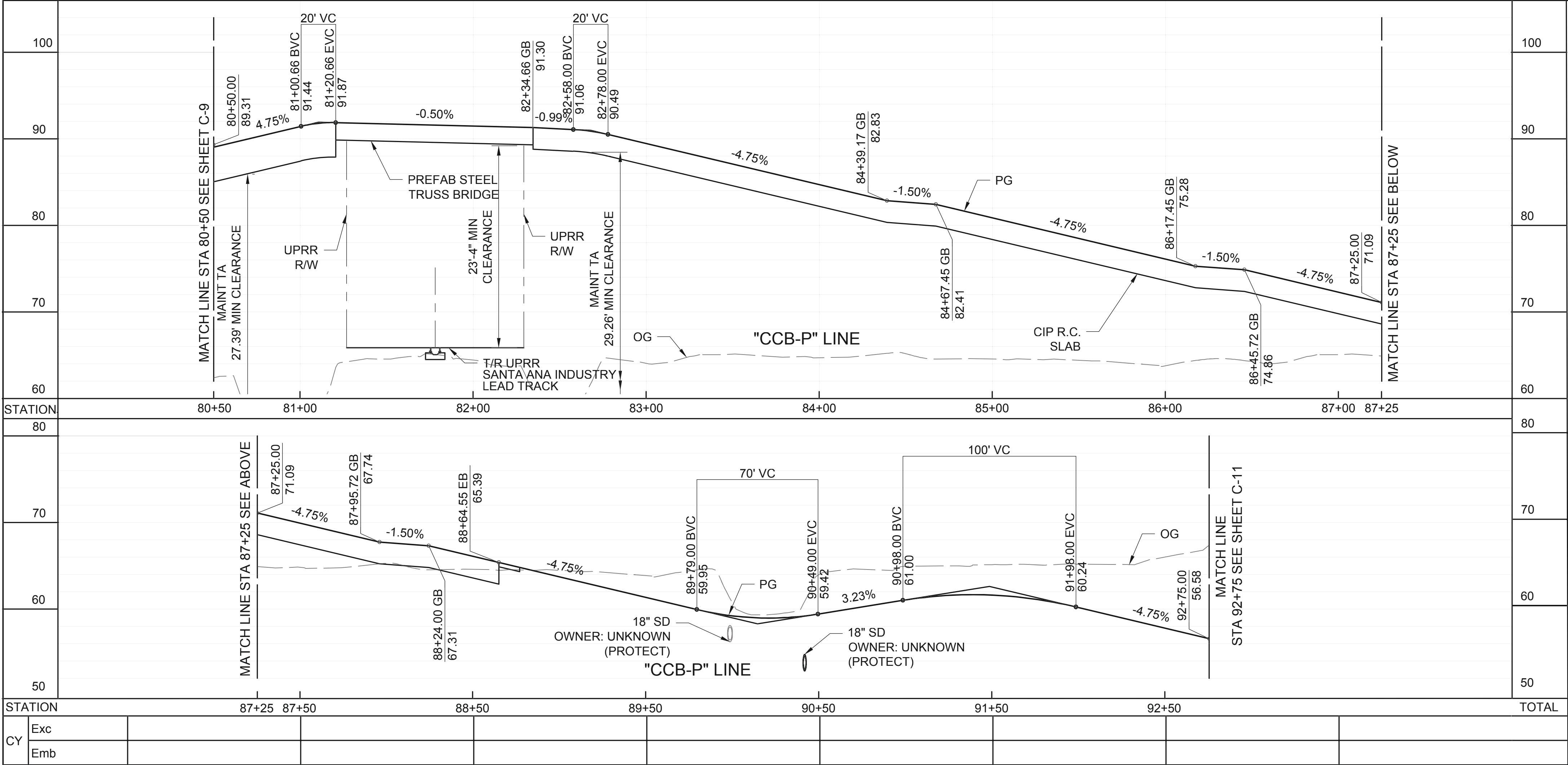
ORANGE COUNTY
BIKEWAY LOOP
SEGMENTS O, P AND Q
STA. 74+50 TO STA. 80+50

BIKE PATH
PLAN &
PROFILE

SHEET

C-9

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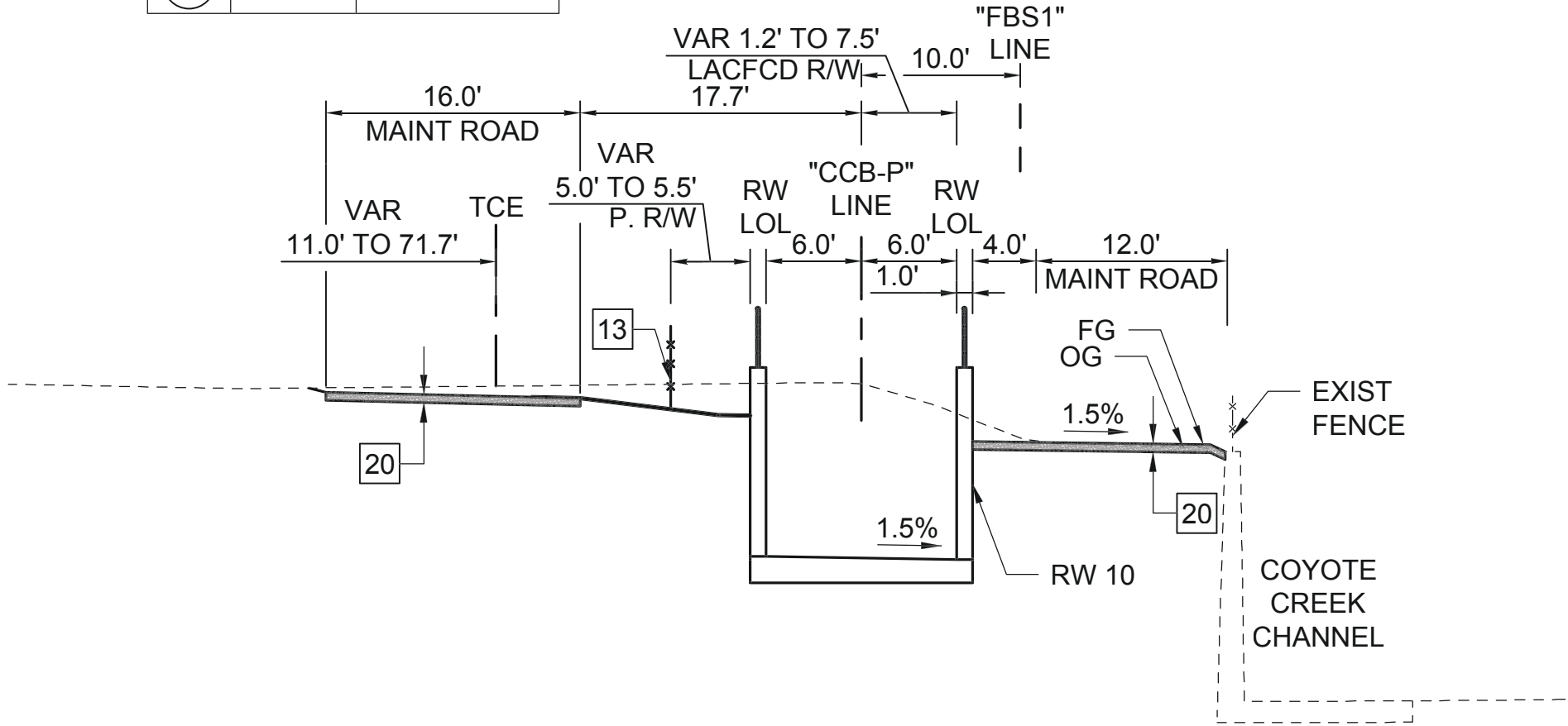


- LEGEND**
- ASPHALT CONCRETE
 - CRUSHED AGGREGATE BASE
 - PROPOSED R/W
 - PERMANENT EASEMENT (TYPE PER PLAN)
 - TEMPORARY CONSTRUCTION EASEMENT

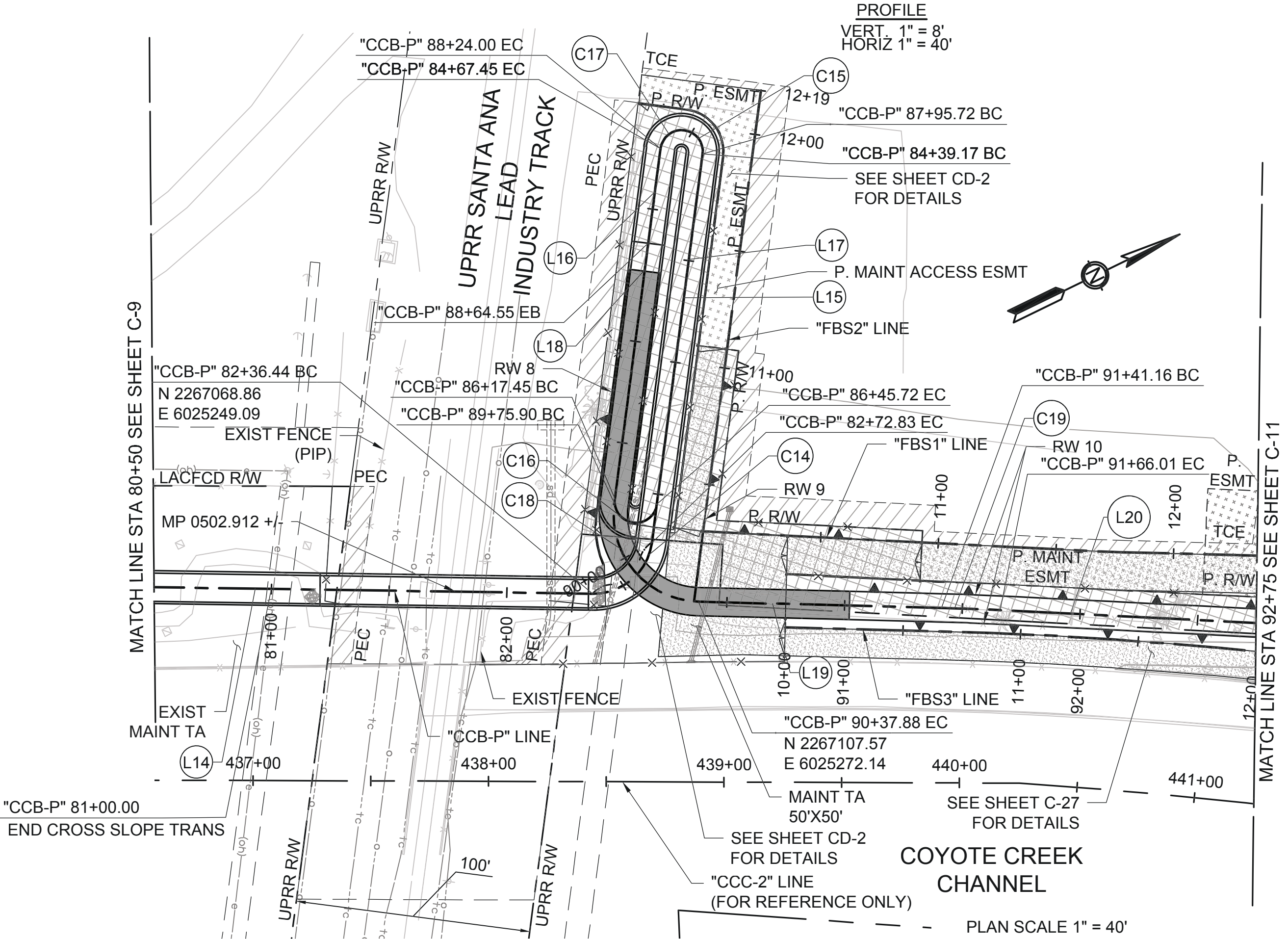
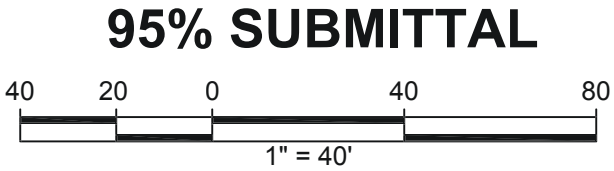
- GENERAL NOTES**
- FOR DRAINAGE REMOVAL/IMPROVEMENTS, SEE DRAINAGE (D) SHEETS.
 - FOR STRUCTURAL IMPROVEMENTS, SEE STRUCTURE (S) SHEETS.
 - FOR CONSTRUCTION DETAILS, SEE CONSTRUCTION DETAIL (CD) SHEETS.

CURVE TABLE				
C	R	Δ	T	L
C14	25.00'	83°24'29"	22.28'	36.39'
C15	9.00'	180°00'00"	—	28.27'
C16	9.00'	180°00'00"	—	28.27'
C17	9.00'	180°00'00"	—	28.27'
C18	37.00'	95°58'55"	41.08'	61.98'
C19	1000.00'	1°25'25"	12.42'	24.85'

LINE TABLE		
No.	L	D
L14	195.84'	N27°19'27"E
L15	166.34'	N56°05'02"W
L16	150.00'	S56°05'02"E
L17	166.34'	N56°05'02"W
L18	150.00'	S56°05'02"E
L19	103.28'	N27°56'03"E
L20	144.69'	N29°21'28"E



TYPICAL SECTION
STA 90+45 STA 93+42
NTS



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

RAVI SHAH, P.E.

DATE: _____

DESIGNED BY: XE
CHECKED BY: XE
DRAWN BY: SJL
SCALE: AS SHOWN

County of Orange
PublicWorks

PREPARED BY: **MARK THOMAS**

DRAWING NO.: C-10.dwg
FILE NAME: C-10.dwg
PLOT DATE: 4/25/2025 3:39 PM

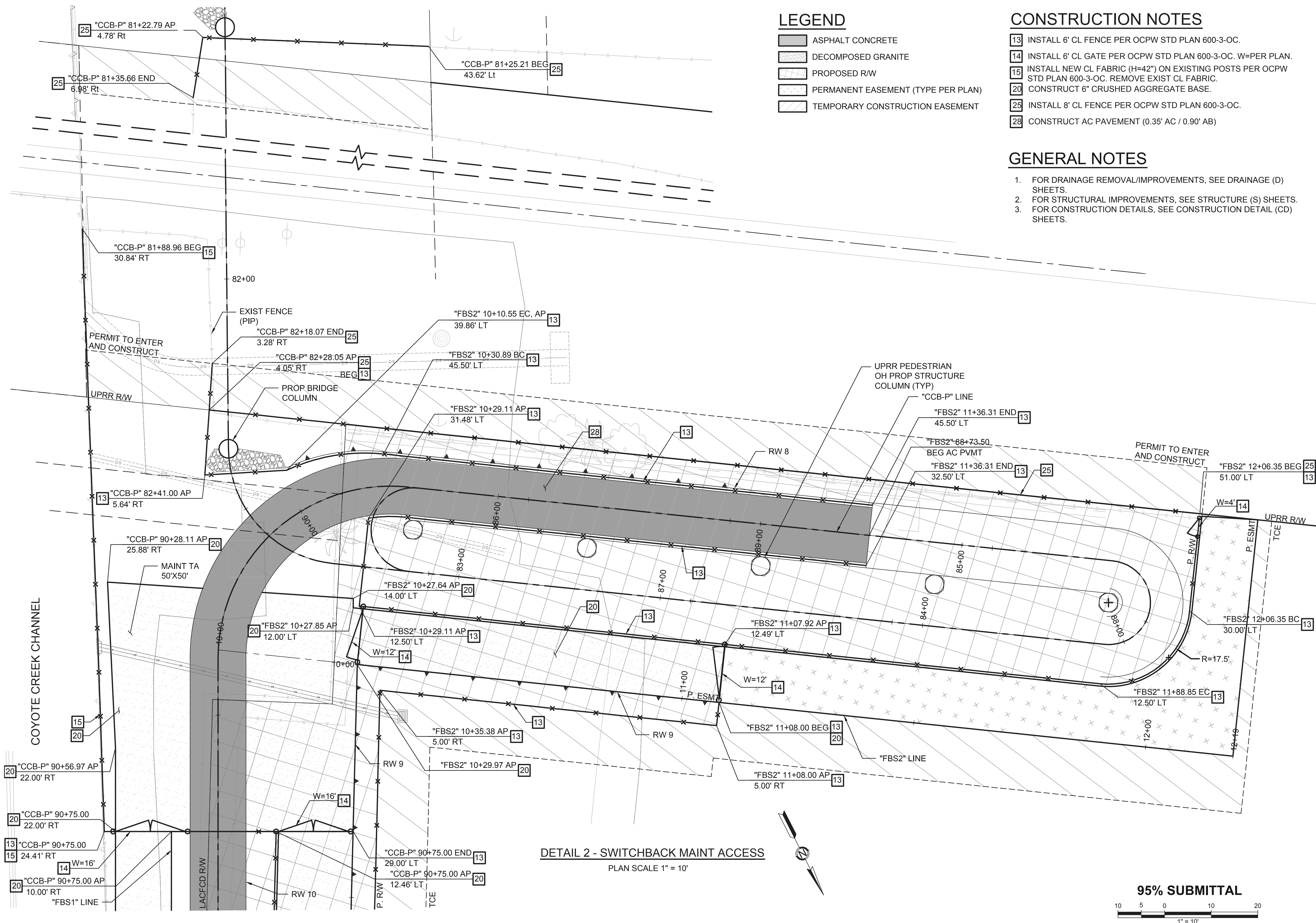
ORANGE COUNTY
BIKEWAY LOOP
SEGMENTS O, P AND Q
STA 80+50 TO STA 92+75

**BIKE PATH
PLAN &
PROFILE**

SHEET

C-10

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LEGEND

- ASPHALT CONCRETE
- DECOMPOSED GRANITE
- PROPOSED R/W
- PERMANENT EASEMENT (TYPE PER PLAN)
- TEMPORARY CONSTRUCTION EASEMENT

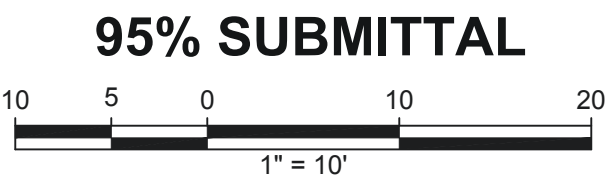
CONSTRUCTION NOTES

- 13 INSTALL 6' CL FENCE PER OCPW STD PLAN 600-3-OC.
- 14 INSTALL 6' CL GATE PER OCPW STD PLAN 600-3-OC. W=PER PLAN.
- 15 INSTALL NEW CL FABRIC (H=42") ON EXISTING POSTS PER OCPW STD PLAN 600-3-OC. REMOVE EXIST CL FABRIC.
- 20 CONSTRUCT 6" CRUSHED AGGREGATE BASE.
- 25 INSTALL 8' CL FENCE PER OCPW STD PLAN 600-3-OC.
- 28 CONSTRUCT AC PAVEMENT (0.35' AC / 0.90' AB)

GENERAL NOTES

- 1. FOR DRAINAGE REMOVAL/IMPROVEMENTS, SEE DRAINAGE (D) SHEETS.
- 2. FOR STRUCTURAL IMPROVEMENTS, SEE STRUCTURE (S) SHEETS.
- 3. FOR CONSTRUCTION DETAILS, SEE CONSTRUCTION DETAIL (CD) SHEETS.

DETAIL 2 - SWITCHBACK MAINT ACCESS
PLAN SCALE 1" = 10'



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER
RAVI SHAH
No. C79183
Exp. 03-31-26
CIVIL
STATE OF CALIFORNIA

DATE

RAVI SHAH, P.E.

DESIGNED BY: XE
CHECKED BY: XE
DRAWN BY: MD

SCALE: AS SHOWN

COUNTY OF ORANGE
Public Works

PREPARED BY: MARK THOMAS

DRAWING NO.: CD-3.dwg
FILE NAME: CD-3.dwg
PLOT DATE: Friday, April 25, 2025

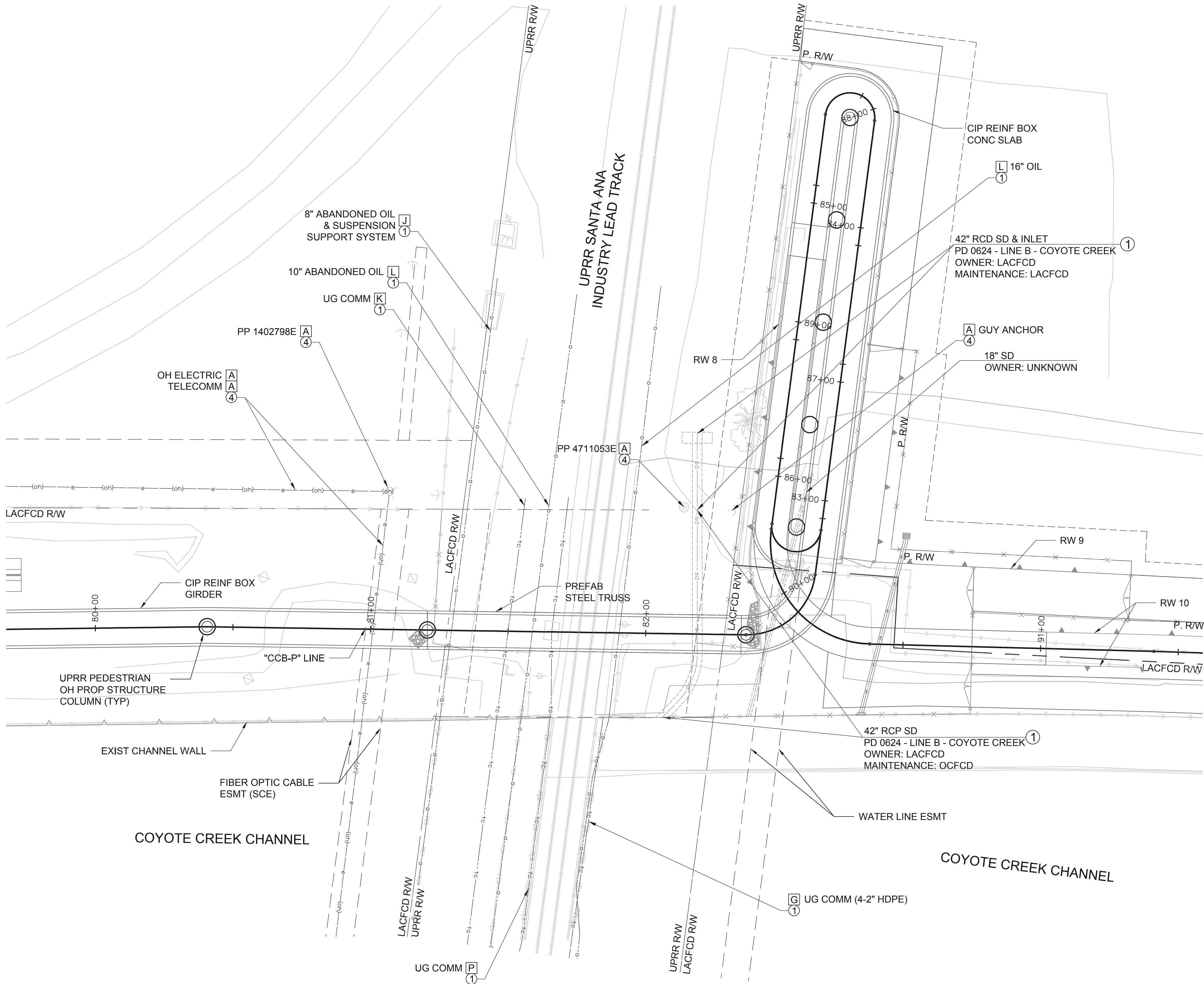
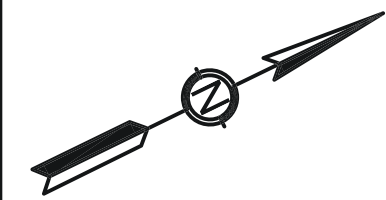
ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q

CONSTRUCTION
DETAILS

SHEET

CD-3

60 of 378



DISPOSITION NOTES

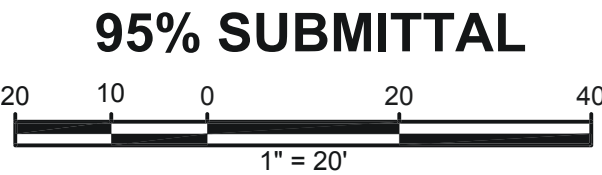
- ① REMAIN IN PLACE
- ④ RELOCATE, BY OTHERS

UTILITY NOTES

- A SOUTHERN CALIFORNIA EDISON (SCE)
- G VERIZON/MCI
- J US NAVY
- K LEVEL 3 / CTL NATIONAL
- L KINDER MORGAN
- P SPRINT
- # POTHOLE (SEE POTHOLE TABLE DWG UT-11)

GENERAL NOTES

- FOR DRAINAGE REMOVAL/IMPROVEMENTS, SEE DRAINAGE (D) SHEETS.
- FOR STRUCTURAL IMPROVEMENTS, SEE STRUCTURE (S) SHEETS.



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER
RAVI SHAH
No. C79183
Exp. 03-31-26
CIVIL
STATE OF CALIFORNIA

DATE

RAVI SHAH, P.E.

DESIGNED BY: XE
DRAWN BY: SC
CHECKED BY: XE

County of Orange
PublicWorks

PREPARED BY: MARK THOMAS

DRAWING NO.: UT-4.dwg
FILE NAME: UT-4.dwg
PLOT DATE: Thursday, April 17, 2025
SCALE: AS SHOWN

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q

UTILITY
PLAN

SHEET

UT-4

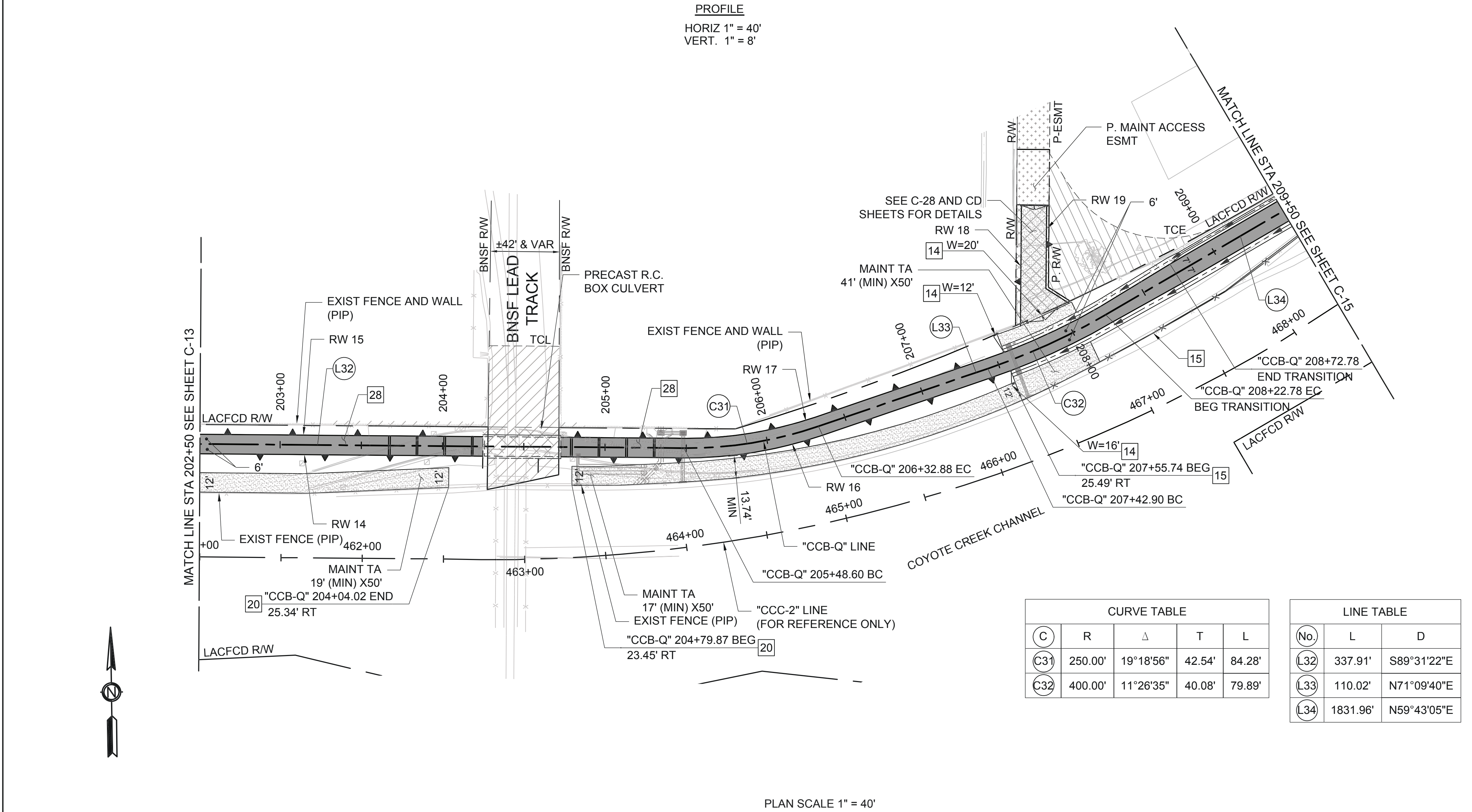
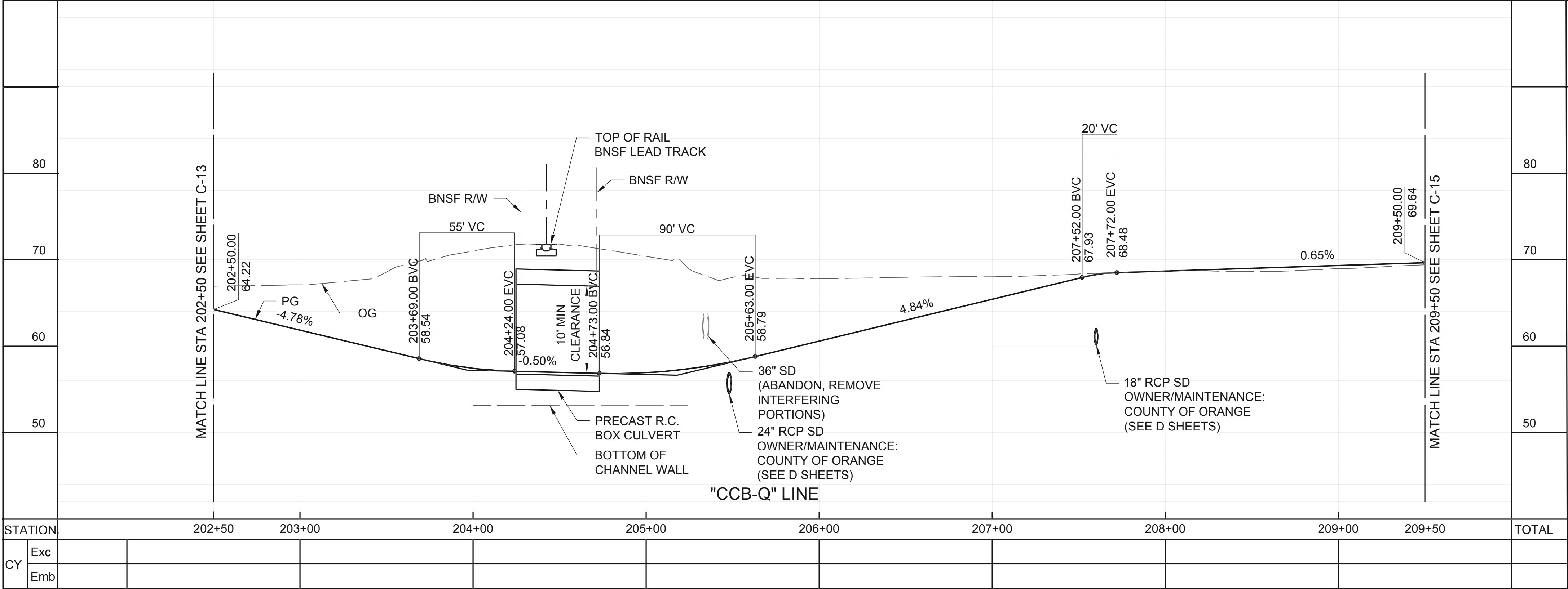
118 of 378

Exhibit B

Project Drawings

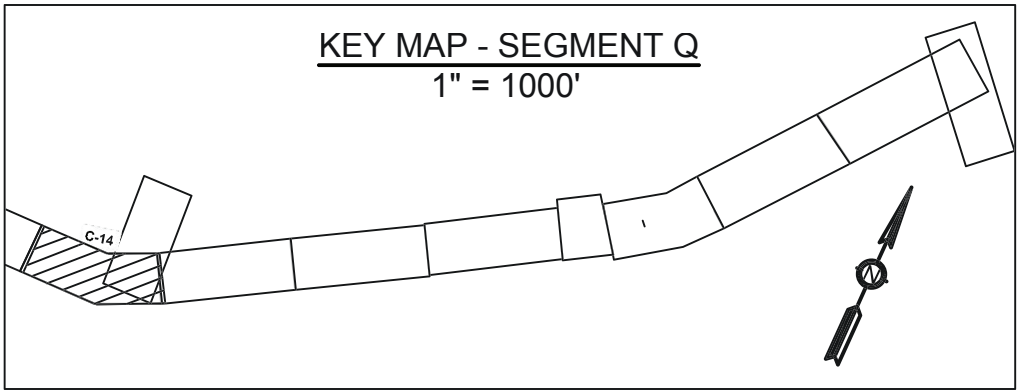
Exhibit B3 – Bikeway Drawings

Exhibit B3-2 - Coyote Creek Bikeway Trail under BNSF Lead Track 7600-6670
San Bernardino Subdivision



CONSTRUCTION NOTES

- 14 INSTALL 6" CL GATE PER OCPW STD PLAN 600-3-OC. W=PER PLAN.
- 15 INSTALL NEW CL FABRIC (H=42") ON EXISTING POSTS PER OCPW STD PLAN 600-3-OC. REMOVE EXIST CL FABRIC.
- 20 CONSTRUCT 6" CRUSHED AGGREGATE BASE.
- 28 CONSTRUCT AC PAVEMENT (0.35' AC / 0.90' AB)

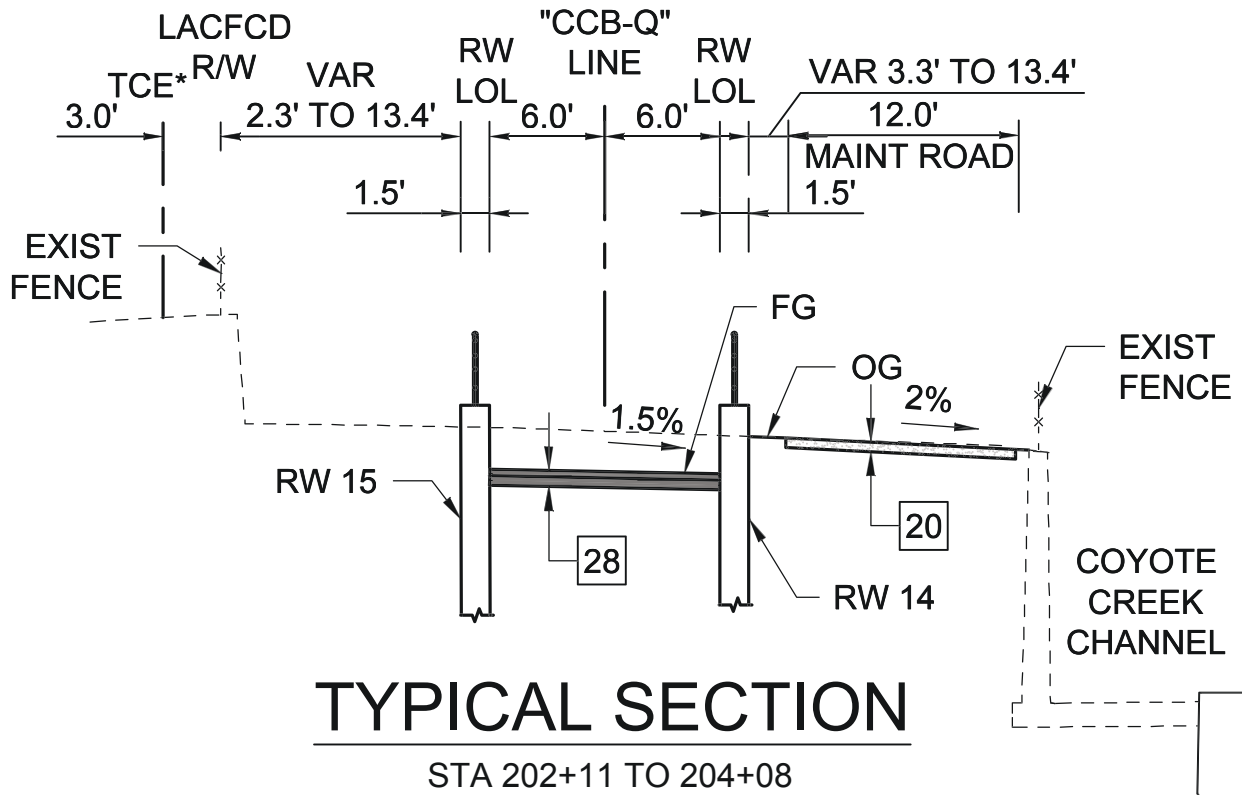


GENERAL NOTES

- 1. FOR DRAINAGE REMOVAL/IMPROVEMENTS, SEE DRAINAGE (D) SHEETS.
- 2. FOR STRUCTURAL IMPROVEMENTS, SEE STRUCTURE (S) SHEETS.
- 3. FOR CONSTRUCTION DETAILS, SEE CONSTRUCTION DETAIL (CD) SHEETS.

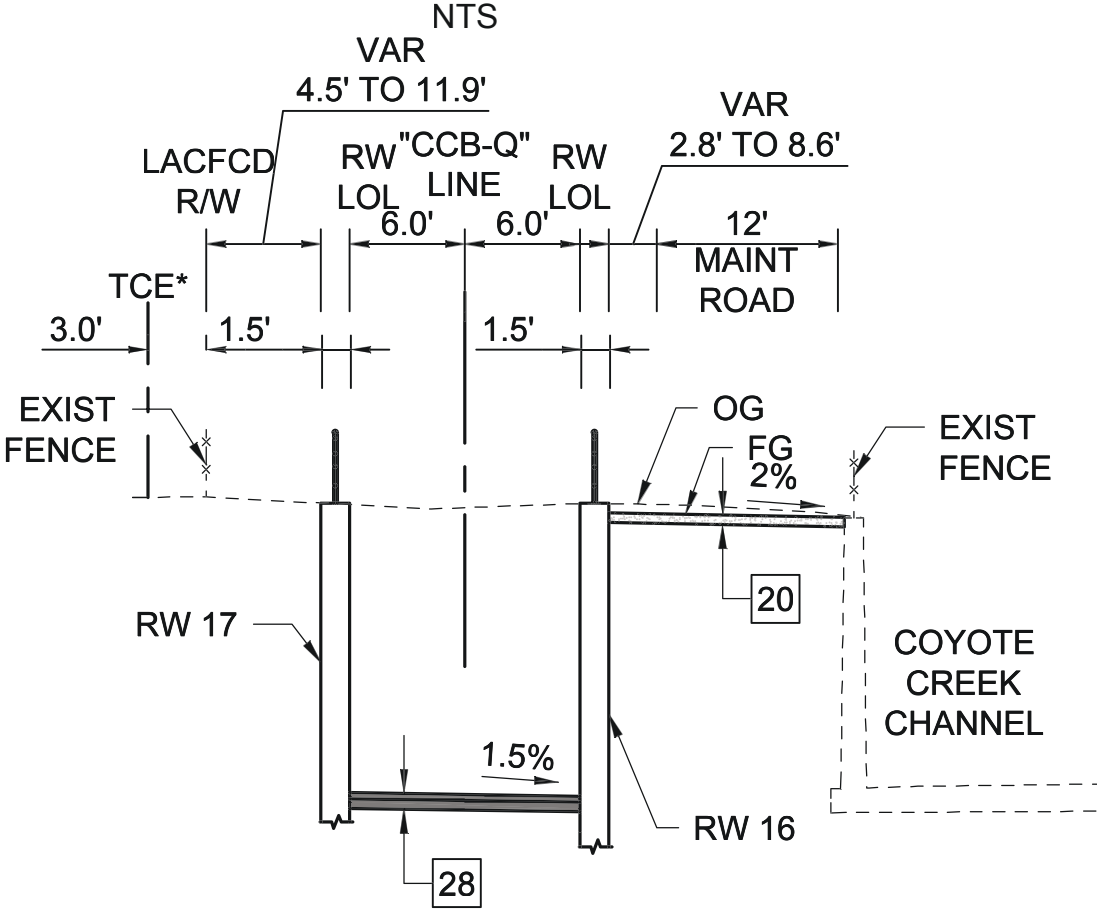
LEGEND

- ASPHALT CONCRETE
- CRUSHED AGGREGATE BASE
- PERMANENT EASEMENT (TYPE PER PLAN)
- PROPOSED BOX CULVERT, SIZE PER PLAN
- PROPOSED R/W
- TEMPORARY CONSTRUCTION EASEMENT



TYPICAL SECTION

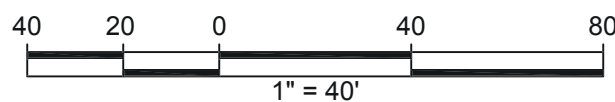
STA 202+11 TO 204+08



TYPICAL SECTION

STA 204+87 TO 207+56

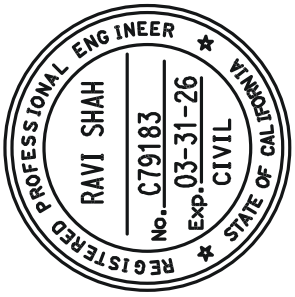
95% SUBMITTAL





MARK	DESCRIPTION	DATE	APPR

PREPARED UNDER THE RESPONSIBLE CHARGE OF:



DATE: _____

RAVI SHAH, P.E.

DESIGNED BY:	CHECKED BY:	DRAWN BY:	SCALE:
XE	XE	SJK	AS SHOWN

County of Orange

PublicWorks

PREPARED BY:



ORANGE COUNTY

BIKEWAY LOOP

SEGMENTS O, P AND Q

STA. 202+50 TO STA. 209+50

BIKE PATH

PLAN & PROFILE

SHEET

C-14

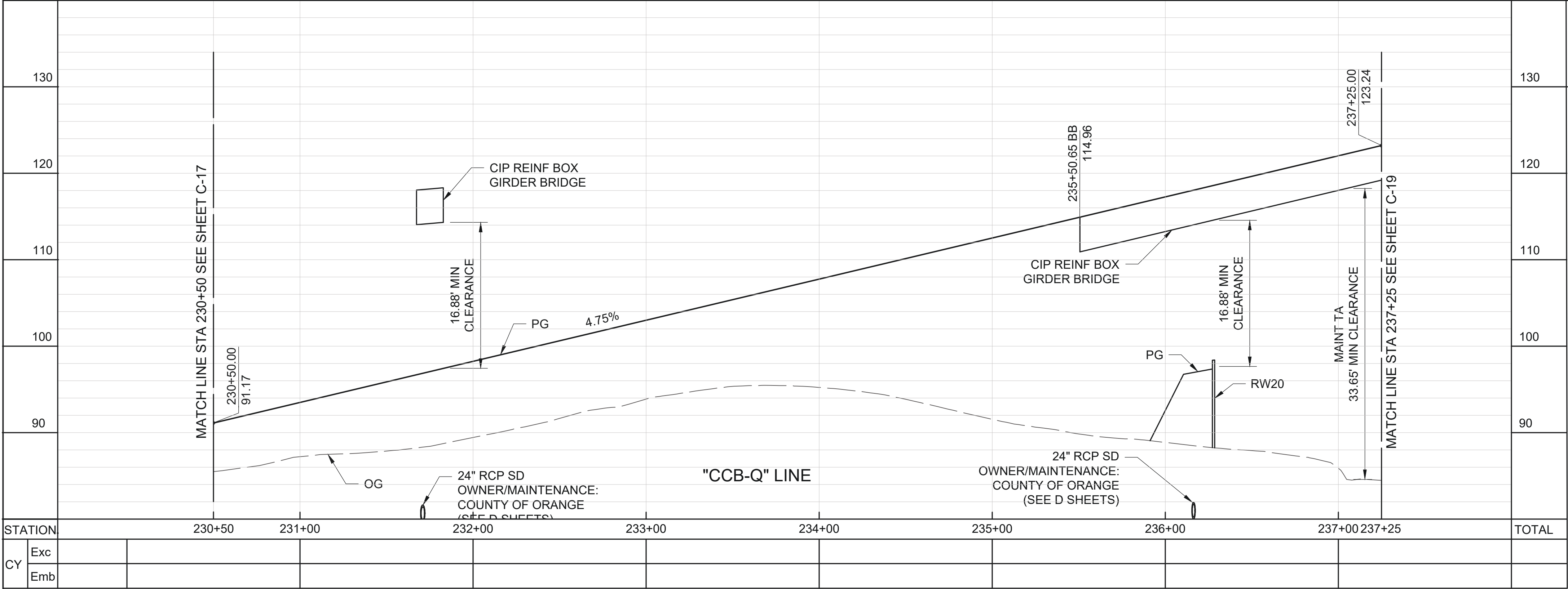
42 of 378

Exhibit B

Project Drawings

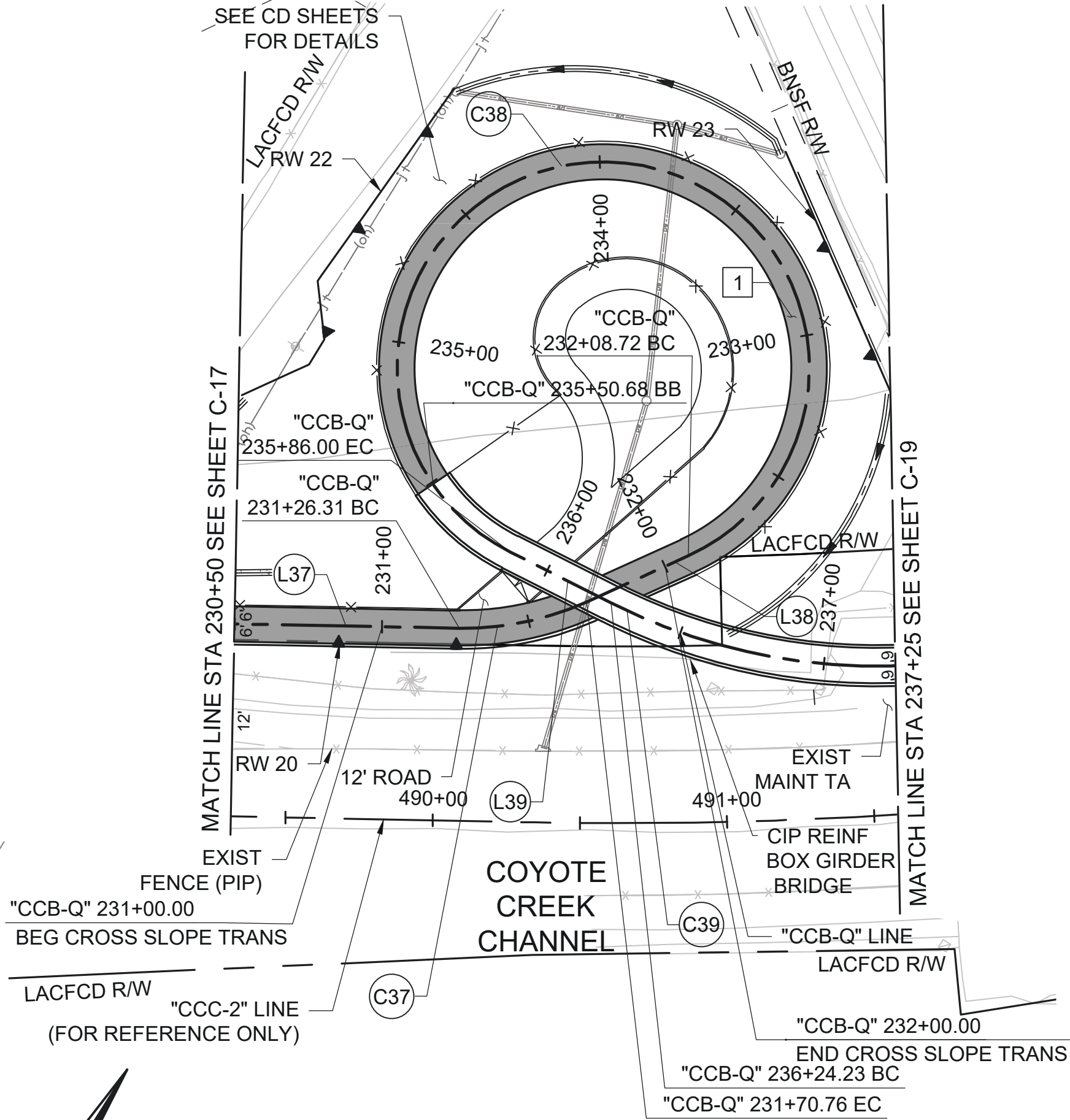
Exhibit B3 – Bikeway Drawings

Exhibit B3-3 - Coyote Creek Bikeway Trail over BNSF Line Segment 7600 San Bernardino Subdivision



PROFILE

HORIZ 1" = 40'
VERT. 1" = 8'



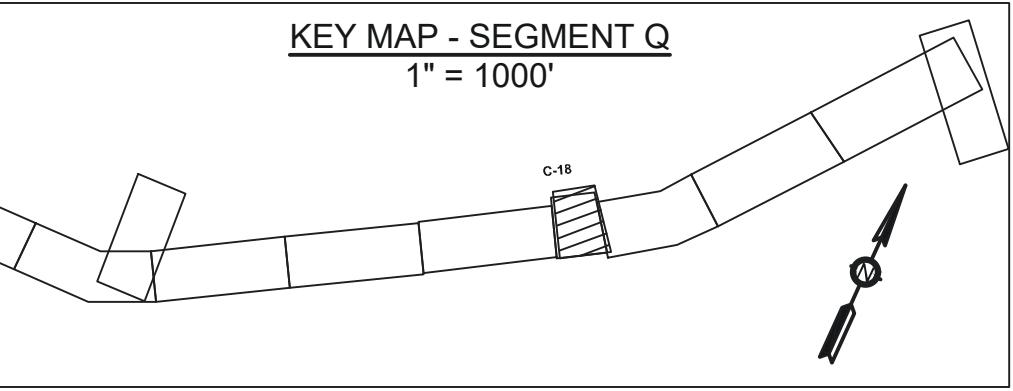
LINE TABLE		
(No)	L	D
(L37)	332.07'	N59°43'05"E
(L38)	37.95'	N34°14'54"E
(L39)	38.23'	N85°26'11"E

CURVE TABLE				
(C)	R	Δ	T	L
(C37)	100.00'	25°28'11"	22.60'	44.45'
(C38)	70.00'	308°48'43"	33.53'	377.28'
(C39)	200.00'	33°48'20"	60.77'	118.00'

PLAN SCALE 1" = 40'

CONSTRUCTION NOTES

- 1 CONSTRUCT AC PAVEMENT (0.30' AC / 0.50' AB).

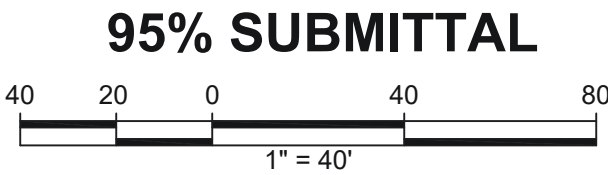


GENERAL NOTES

- FOR DRAINAGE REMOVAL/IMPROVEMENTS, SEE DRAINAGE (D) SHEETS.
- FOR STRUCTURAL IMPROVEMENTS, SEE STRUCTURE (S) SHEETS.
- FOR CONSTRUCTION DETAILS, SEE CONSTRUCTION DETAIL (CD) SHEETS.

LEGEND

ASPHALT CONCRETE



MARK	DESCRIPTION	DATE	APPR

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER
RAVI SHAH
No. C79183
Exp. 03-31-25
CIVIL
COUNTY OF CALIFORNIA

DATE

RAVI SHAH, P.E.

DESIGNED BY: XE
DRAWN BY: XE
CHECKED BY: XE

County of Orange
Public Works

DRAWING NO.: C-18.dwg
FILE NAME: C-18.dwg
PLOT DATE: 4/22/2025 9:35 AM
SCALE: AS SHOWN

PREPARED BY:
MARK THOMAS

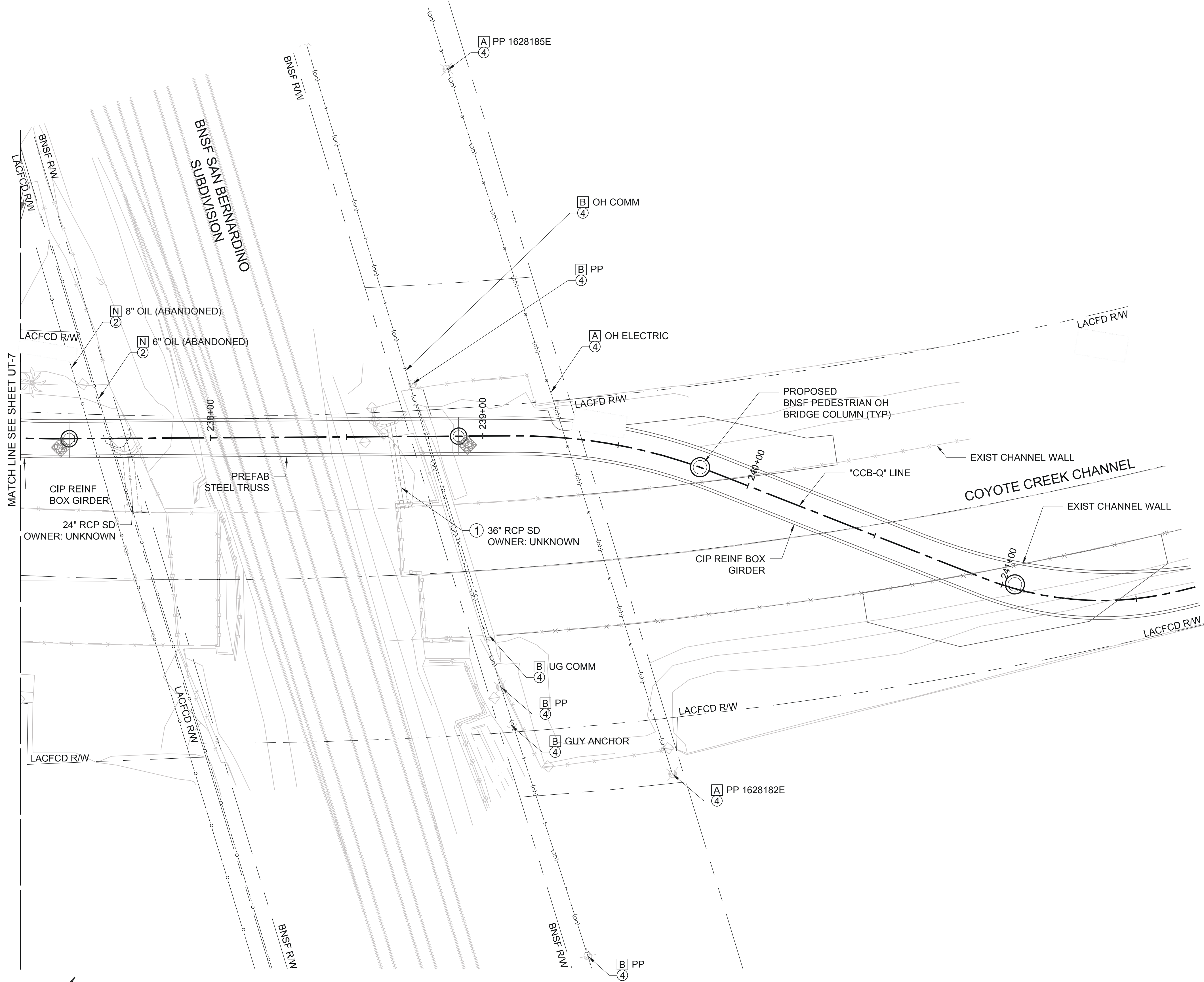
ORANGE COUNTY
BIKEWAY LOOP
SEGMENTS O, P AND Q
STA. 230+50 TO STA. 237+75

BIKE PATH
PLAN &
PROFILE

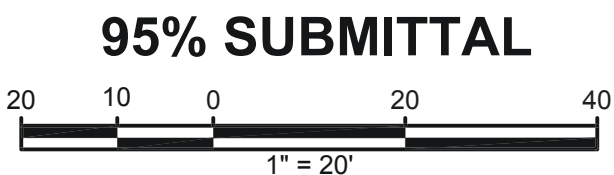
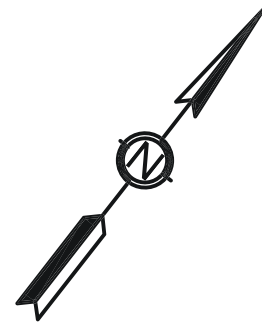
SHEET

C-18

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MATCH LINE SEE SHEET UT-7



DISPOSITION NOTES

- ① REMAIN IN PLACE
- ② REMOVE CONFLICTING PORTIONS
- ④ RELOCATE, BY OTHERS

UTILITY NOTES

- A SOUTHERN CALIFORNIA EDISON (SCE)
- B AT&T
- N CHEVRON

GENERAL NOTES

- FOR DRAINAGE REMOVAL/IMPROVEMENTS, SEE DRAINAGE (D) SHEETS.
- FOR STRUCTURAL IMPROVEMENTS, SEE STRUCTURE (S) SHEETS.



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

Ravi Shah, P.E.

DATE

DESIGNED BY:
XE

DRAWN BY:
SG

CHECKED BY:
XE

County of Orange
Public Works

PREPARED BY:
MARK THOMAS

DRAWING NO.:
UT-8.dwg

FILE NAME:
UT-8.dwg

PLOT DATE:
Thursday, April 17, 2025

SCALE:
AS SHOWN

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q

UTILITY
PLAN

SHEET

UT-8

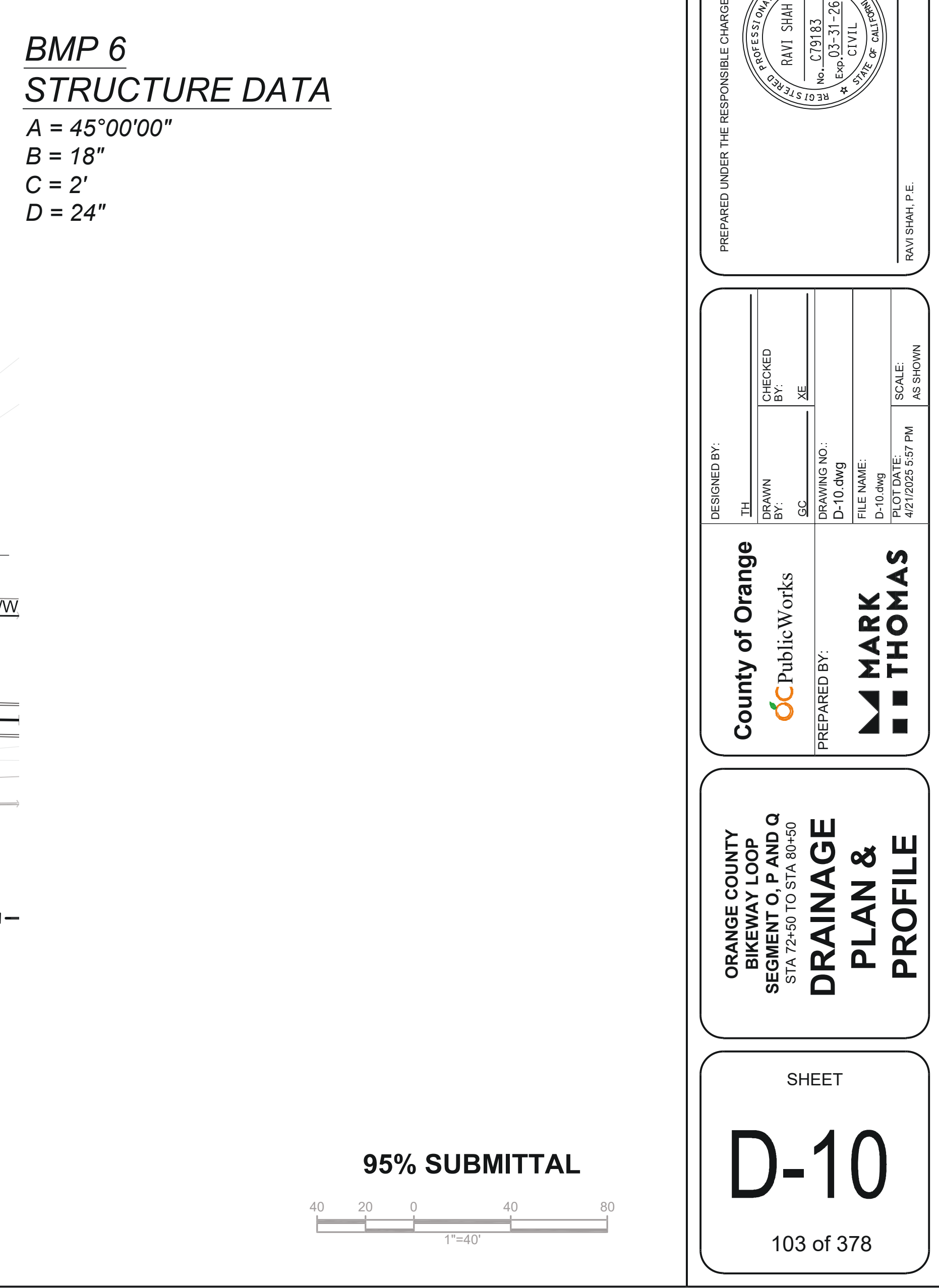
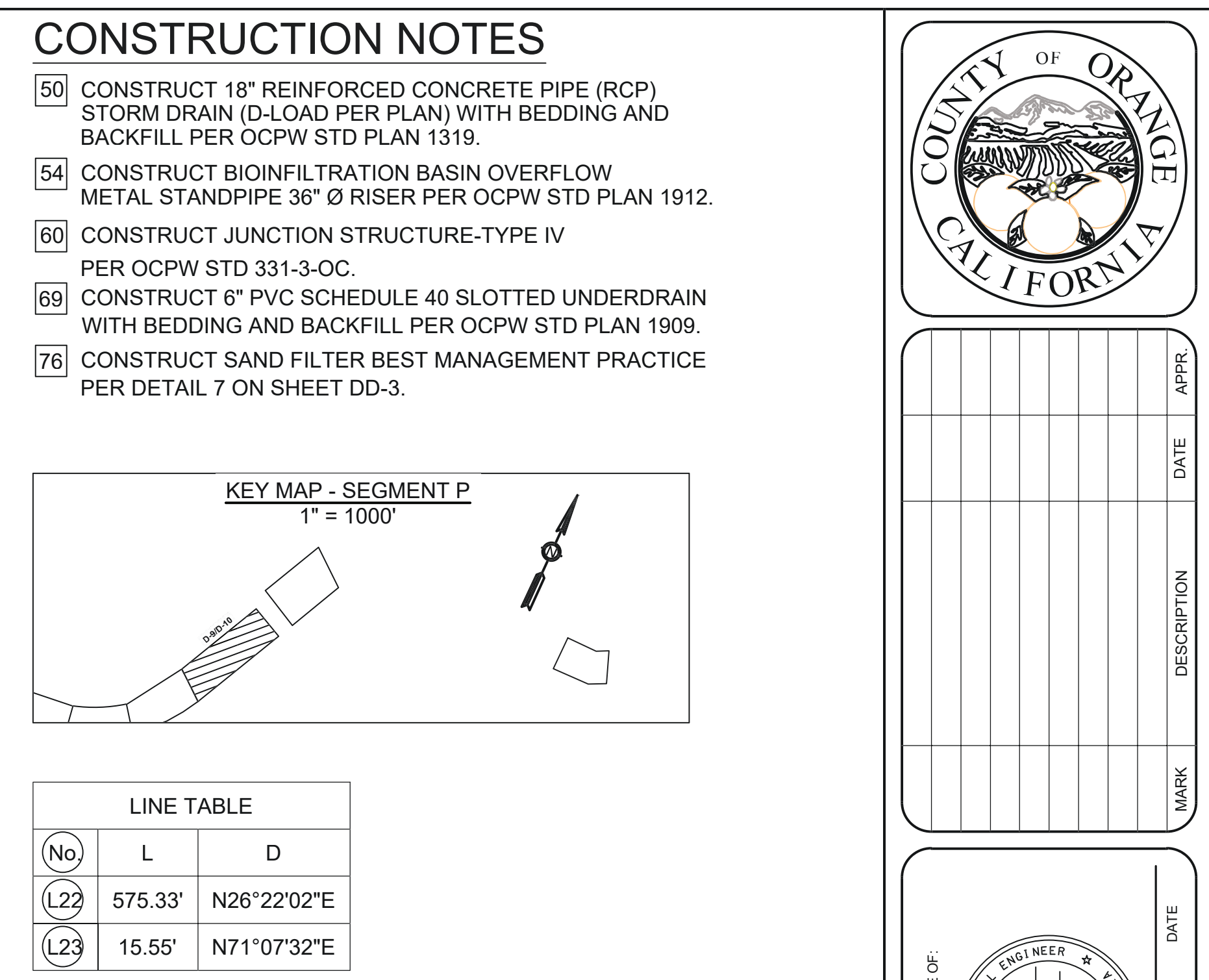
122 of 378

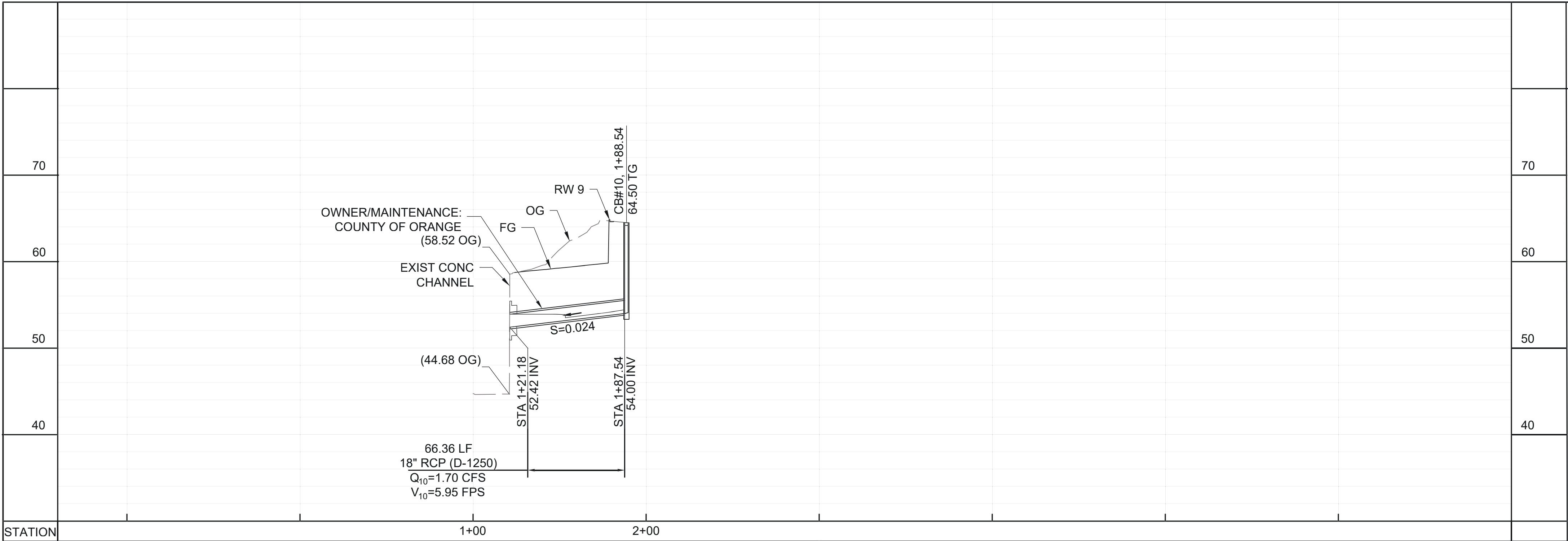
Exhibit B

Project Drawings

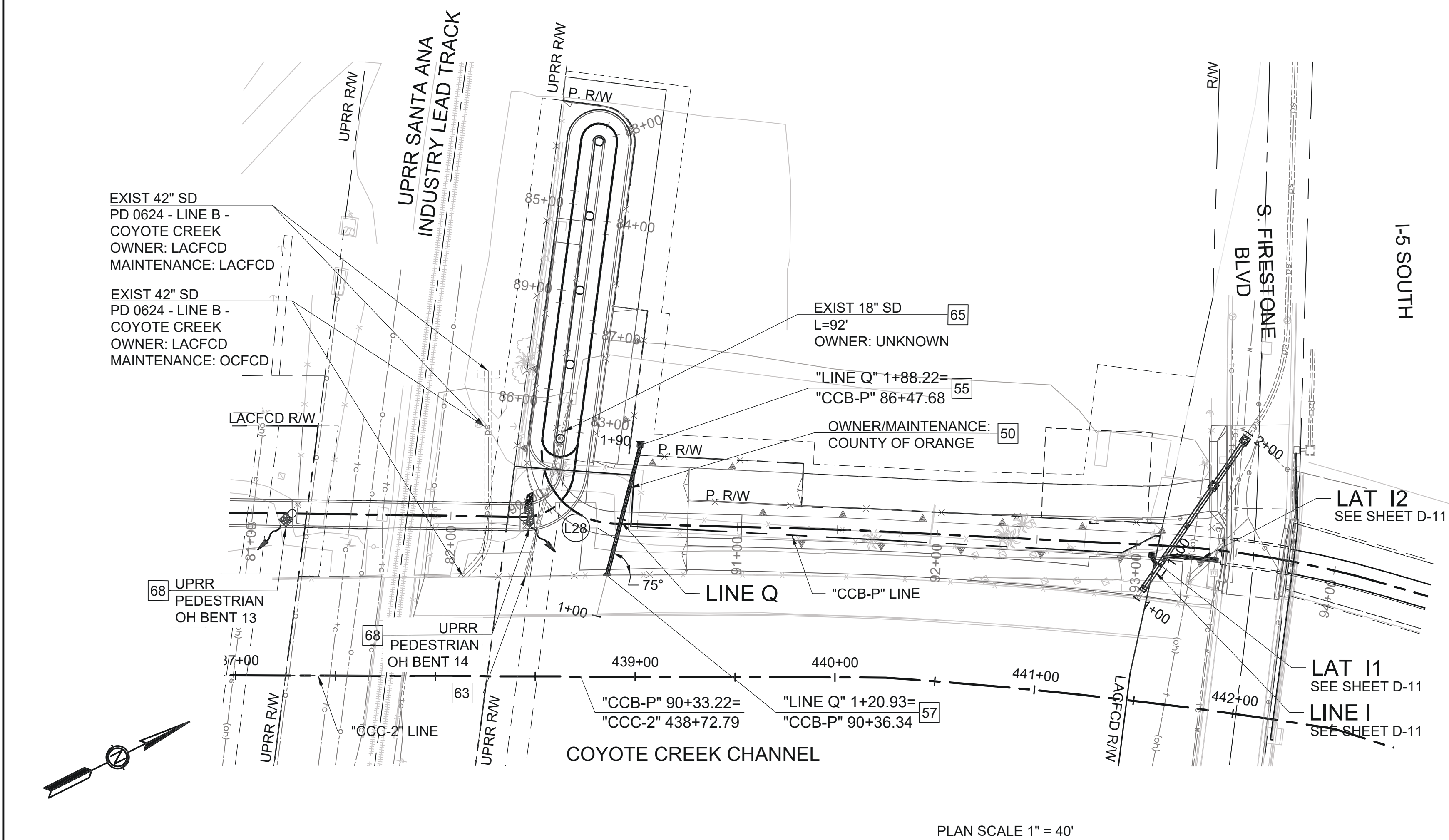
Exhibit B4 – Drainage Drawings

Exhibit B4-1 - Coyote Creek Bikeway Trail over UPRR Santa Ana Industrial
Lead Track



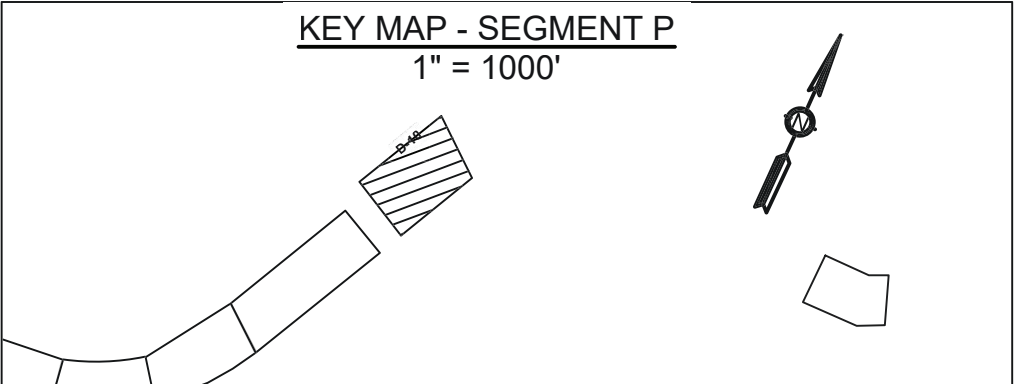


LINE Q
PROFILE
HORIZ 1" = 40'
VERT. 1" = 8'



CONSTRUCTION NOTES

- 50 CONSTRUCT 18" REINFORCED CONCRETE PIPE (RCP) STORM DRAIN (D-LOAD PER PLAN) WITH BEDDING AND BACKFILL PER OCPW STD PLAN 1319.
- 55 CONSTRUCT INLET PER CALTRANS STD PLAN D72B, TYPE G1.
- 57 CONSTRUCT JUNCTION STRUCTURE (PIPE TO CHANNEL WALL) PER DETAIL 1 ON SHEET DD-1.
- 63 CONSTRUCT ABANDONMENT SEAL OF OUTLET STRUCTURE PER SPPWC STD PLAN 381-2.
- 65 REMOVE & DISPOSE CONFLICTING STORM DRAIN PIPE. SIZE AND LENGTH PER PLAN.
- 68 CONSTRUCT RIPRAP APRON PER DET 6 ON SHEET DD-3.

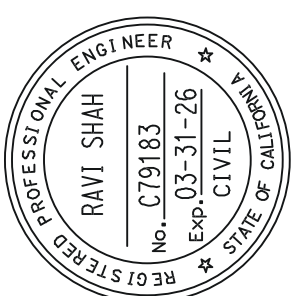


LINE TABLE		
No	L	D
L28	86.50'	N49°05'26"W



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:



DATE

RAVI SHAH, P.E.

DESIGNED BY:

TH

CHECKED BY:

AE

DRAWN BY:

SC

DRAWING NO.:

D-12.dwg

FILE NAME:

D-12.dwg

PLOT DATE:

4/21/2025 6:02 PM

SCALE:

AS SHOWN

County of Orange

OC Public Works

PREPARED BY:

 MARK THOMAS

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q
STA 90+50 TO STA 94+50

DRAINAGE
PLAN &
PROFILE

SHEET

D-12

105 of 378



LINE D
LINE H
LINE J
LINE K
LINE L



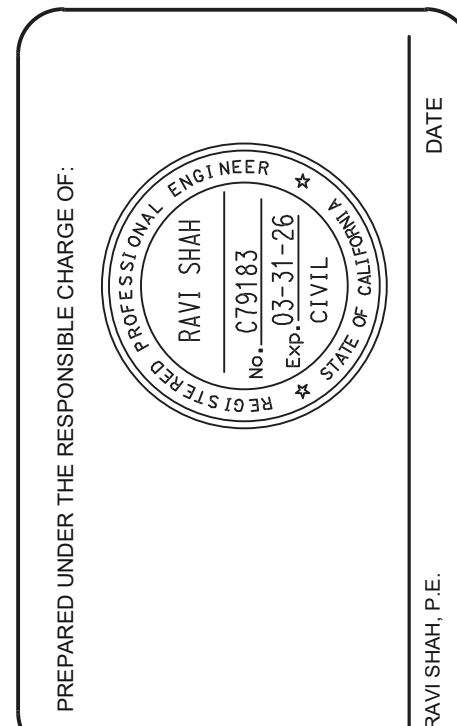
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BMP-2
BMP-3
BMP-4
BMP-5
BMP-6



UPRR BENT 13
UPRR BENT 14
BNSF BENT 3
BNSF BENT 4
BNSF BENT 10
BNSF BENT 11



LAT I1
LAT I2

[illegible]

	DESIGNED BY:		TH	
	DRAWN BY:	CHECKED BY:		
	SC	XE		
	DRAWING NO.: DD-3 dwg			
	FILE NAME:		DD-3 dwg	
	PLOT DATE:		4/21/2025 6:13 PM	
	SCALE:		AS SHOWN	

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q

**DRAINAGE
DETAILS**

SHEET

DD-3

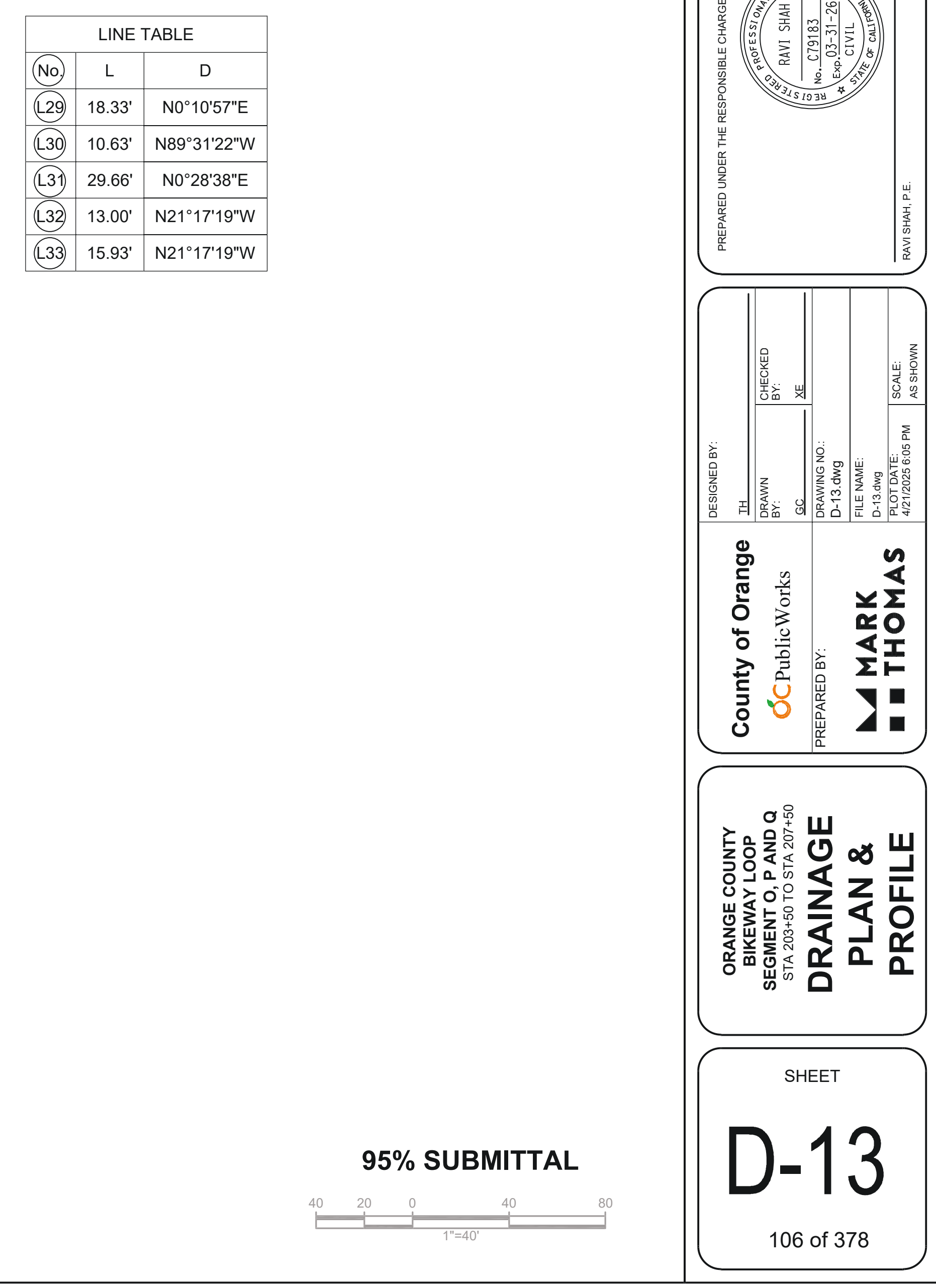
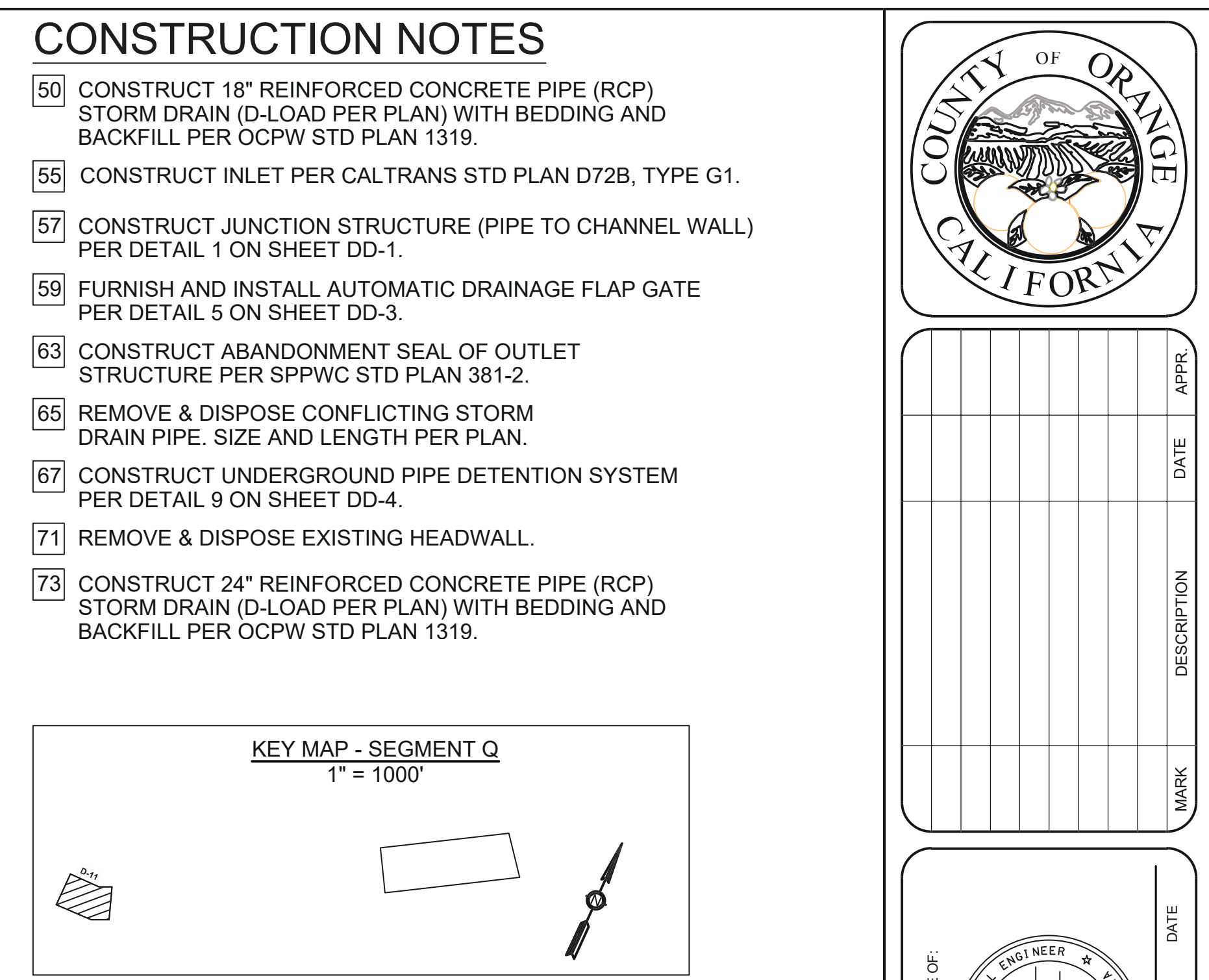
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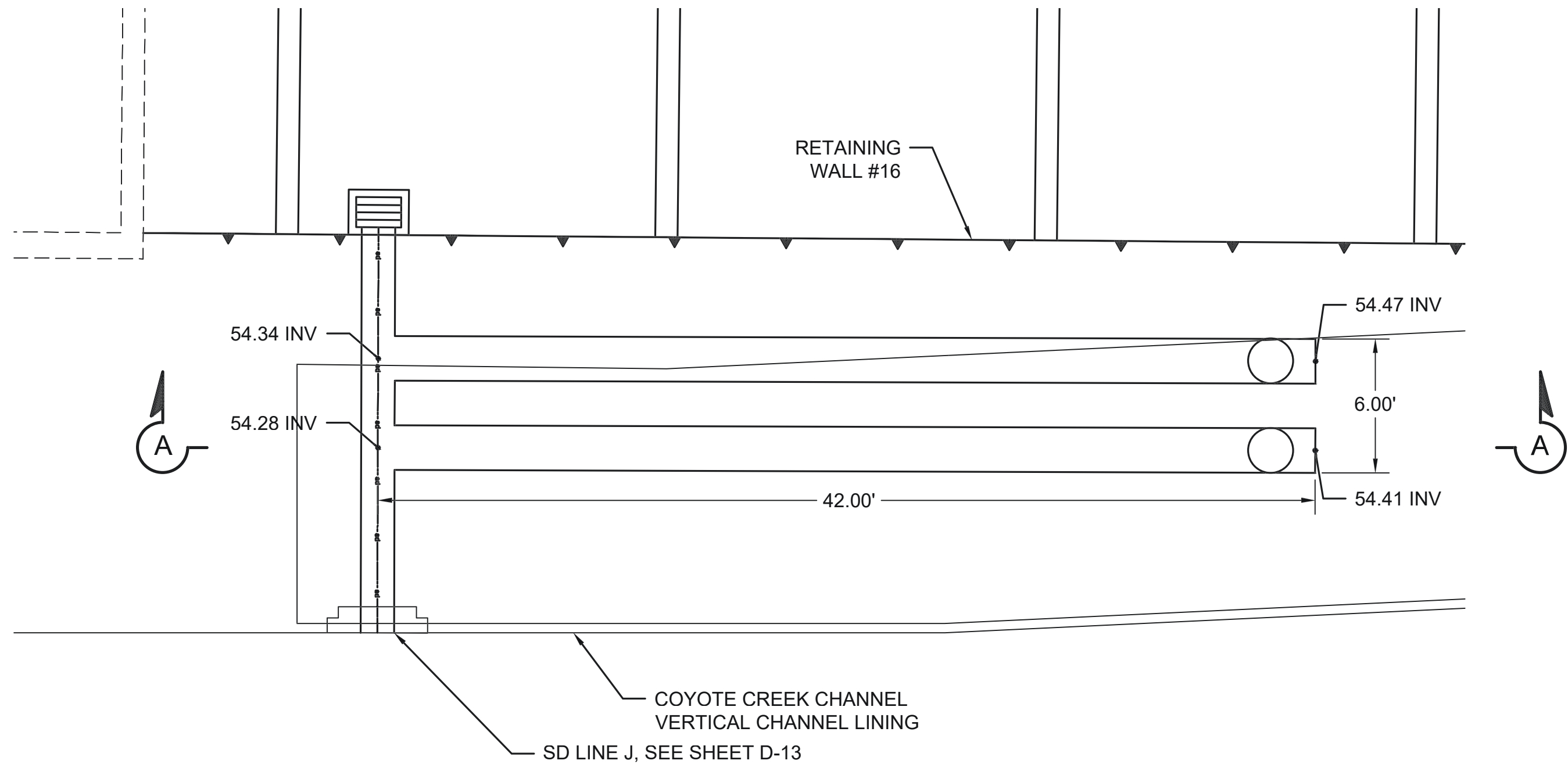
Exhibit B

Project Drawings

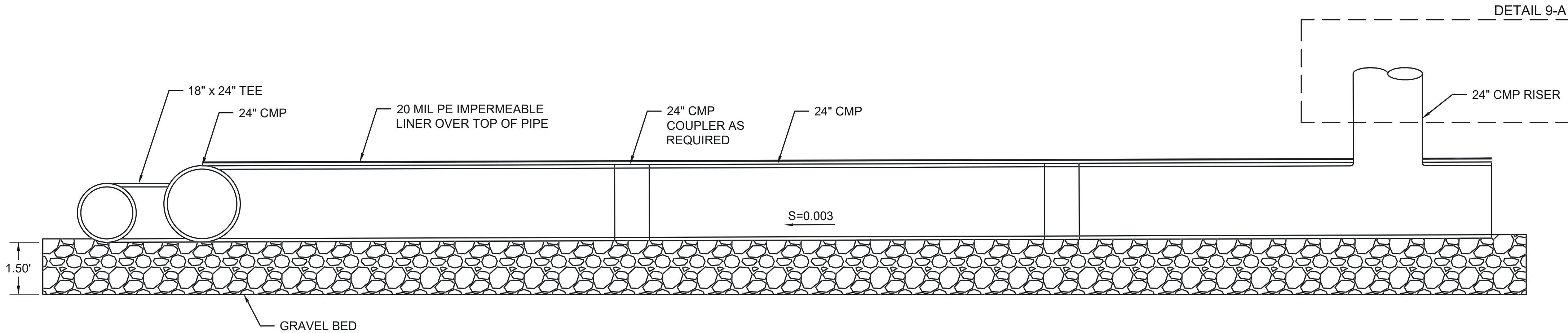
Exhibit B4 – Drainage Drawings

Exhibit B4-2 - Coyote Creek Bikeway Trail under BNSF Lead Track 7600-6670
San Bernardino Subdivision

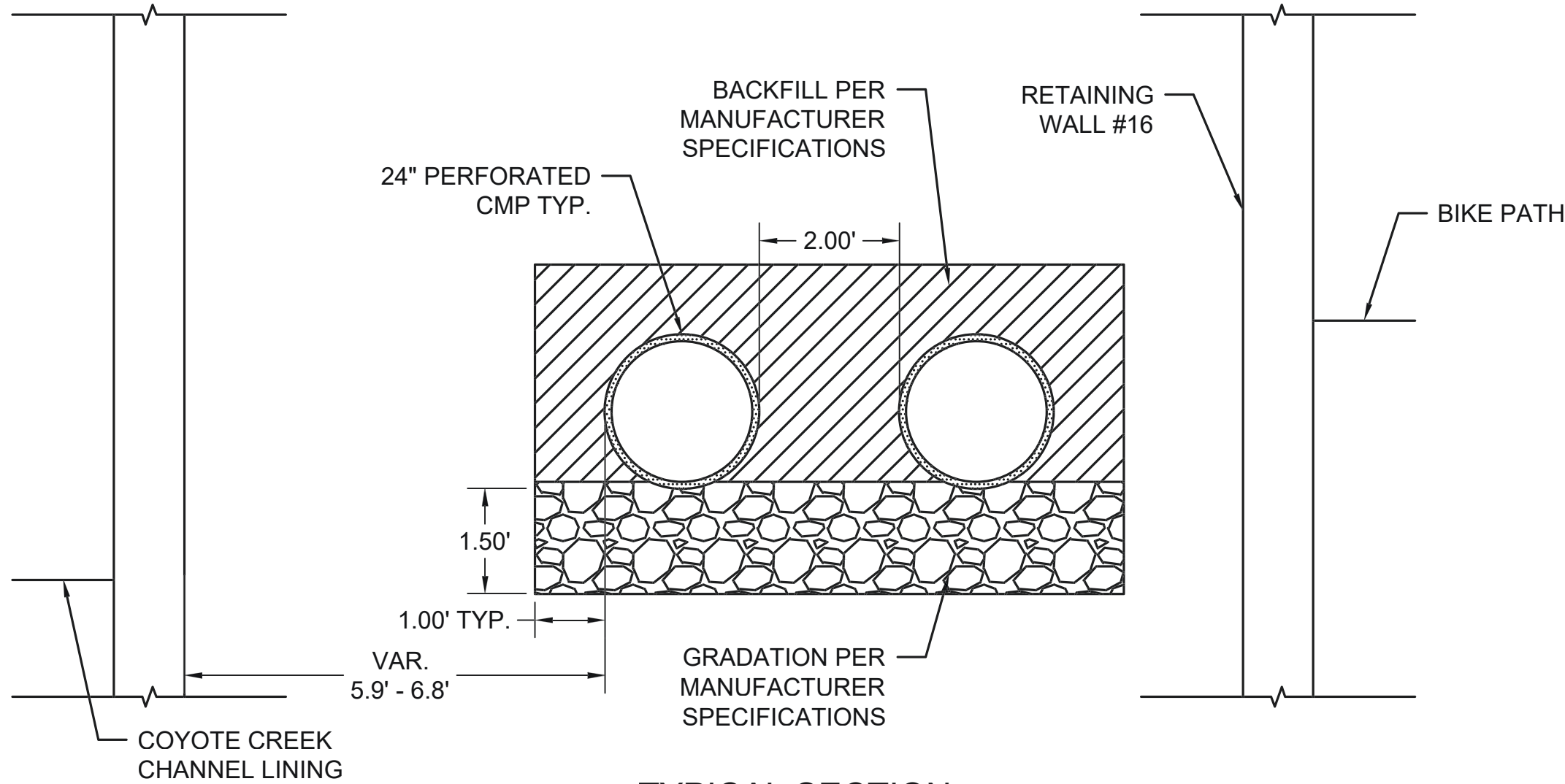




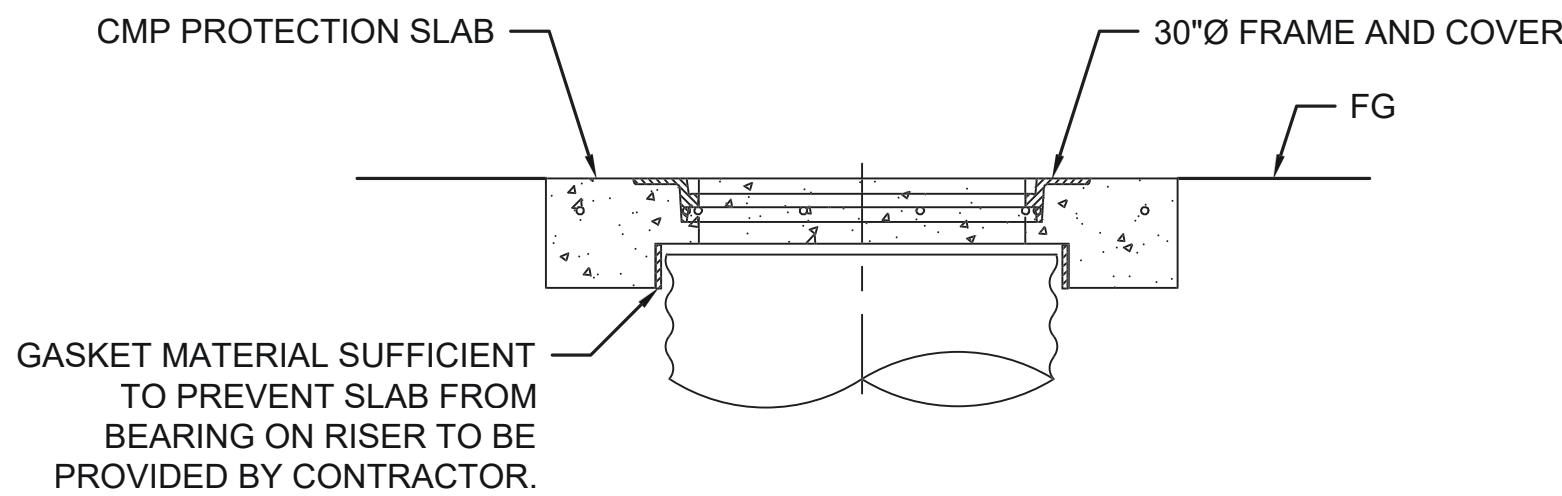
PLAN
SCALE 1" = 5'



SECTION A-A



TYPICAL SECTION
NOT TO SCALE



DETAIL 9-A

DETAIL 9

UNDERGROUND PIPE DETENTION SYSTEM

FOUNDATION/BEDDING PREPARATION

PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER. ONCE THE FOUNDATION PREPARATION IS COMPLETE, THE 4 INCHES OF A WELL-GRADED GRANULAR MATERIAL SHALL BE PLACED AS THE BEDDING.

BACKFILL

THE BACKFILL MATERIAL SHALL BE FREE-DRAINING ANGULAR WASHED STONE 3/4" - 2" PARTICLE SIZE. MATERIAL SHALL BE PLACED IN 8"-10" MAXIMUM LIFTS. MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR-TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS. COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE PROJECT ENGINEER OR HIS REPRESENTATIVE IS SATISFIED WITH THE LEVEL OF COMPACTION. INADEQUATE COMPACTION CAN LEAD TO EXCESSIVE DEFLECTIONS WITHIN THE SYSTEM AND SETTLEMENT OF THE SOILS OVER THE SYSTEM. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO-LIFT DIFFERENTIAL BETWEEN THE SIDES OF ANY PIPE IN THE SYSTEM AT ALL TIMES DURING THE BACKFILL PROCESS. BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON ANY PIPES IN THE SYSTEM.

EQUIPMENT USED TO PLACE AND COMPACT THE BACKFILL SHALL BE OF A SIZE AND TYPE SO AS NOT TO DISTORT, DAMAGE, OR DISPLACE THE PIPE. ATTENTION MUST BE GIVEN TO PROVIDING ADEQUATE MINIMUM COVER FOR SUCH EQUIPMENT, AND MAINTAINING BALANCED LOADING ON ALL PIPES IN THE SYSTEM, DURING ALL SUCH OPERATIONS.

OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS. REFER TO TYPICAL BACKFILL DETAIL FOR MATERIAL REQUIRE



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

DATE

RAVI SHAH, P.E.

DESIGNED BY: JH
CHECKED BY: AE
DRAWN BY: SC

SCALE: AS SHOWN

DRAWING NO.: DD-4.dwg
FILE NAME: DD-4.dwg
PLOT DATE: 4/21/2025 6:13 PM

County of Orange
Public Works

PREPARED BY: MARK THOMAS

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q

DRAINAGE
DETAILS

SHEET

DD-4

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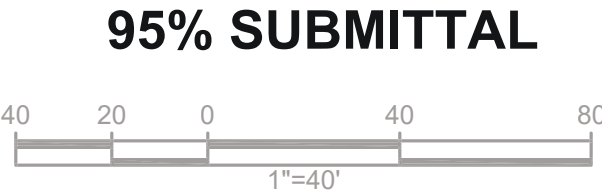


Exhibit B

Project Drawings

Exhibit B4 – Drainage Drawings

Exhibit B4-3 - Coyote Creek Bikeway Trail over BNSF Line Segment 7600 San Bernardino Subdivision



LINE D
LINE H
LINE J
LINE K
LINE L



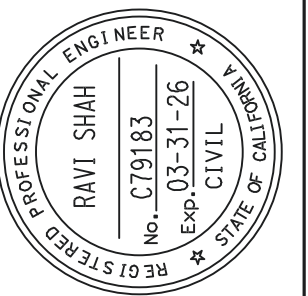
BMP-1
BMP-2
BMP-3
BMP-4
BMP-5
BMP-6



UPRR BENT 13
UPRR BENT 14
BNSF BENT 3
BNSF BENT 4
BNSF BENT 10
BNSF BENT 11



LAT I1
LAT I2

[illegible]

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

RAVI SHAH, P.E. _____ DATE _____

	DESIGNED BY:	
	TH	CHECKED BY:
	DRAWN BY:	SCALE:
	SC	AS SHOWN
PREPARED BY: MARK THOMAS		
DRAWING NO.: DD-3.0mg		
FILE NAME: DD3.0mg		
DATE: 4/27/2023 6:13 PM		

ORANGE COUNTY
BIKEWAY LOOP
SEGMENT O, P AND Q

DRAINAGE DETAILS

SHEET

DD-3

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