

THE CONTRACTOR MUST POSSESS THE CLASS (OR CLASSES) OF LICENSES AS SPECIFIED IN THE "NOTICE TO BIDDERS."

CALL BEFORE YOU DIG

THE CONTRACTOR SHALL CALL "UNDERGROUND SERVICE ALERT" (USA) AT 800-227-2600 AT LEAST 2 WORKING DAYS PRIOR TO PERFORMING ANY EXCAVATION

PRIOR TO WORKING IN THE UNION PACIFIC RAILROAD (UPRR) RIGHT OF WAY, CONTRACTOR IS REQUIRED TO ENTER INTO A CONTRACTOR'S RIGHT OF ENTRY AGREEMENT, AS REQUIRED BY THE PUBLIC HIGHWAY OVERPASS AGREEMENT DATED 2/7/2023.

SHEET INDEX

SHEET NO	DESCRIPTION
1	COVER SHEET
2	TYPICAL SECTIONS & GENERAL NOTES
3	PROJECT CONTROL
4	LAYOUT PLAN
5	REMOVAL PLAN
6-9	CONSTRUCTION DETAILS
10	UTILITY PLAN
11-12	TRAFFIC HANDLING PLAN
13	SUMMARY OF QUANTITIES
14	EROSION CONTROL
15	RAILROAD SAFETY IMPROVEMENTS
16-39	STRUCTURE PLANS

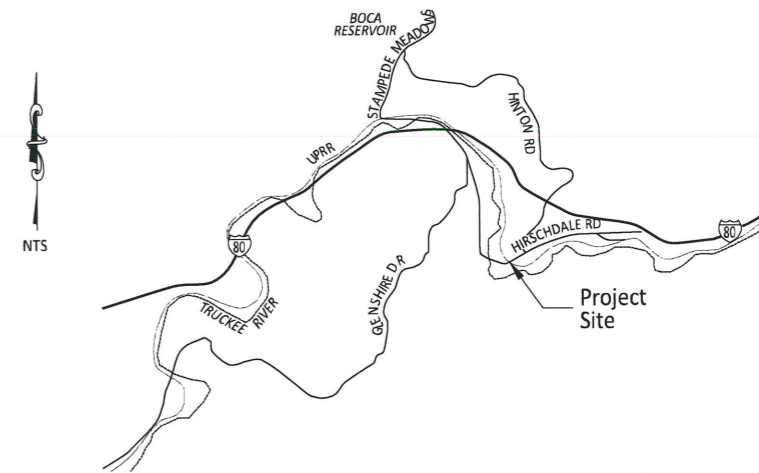
NEVADA COUNTY Department of Public Works Project Plans

for

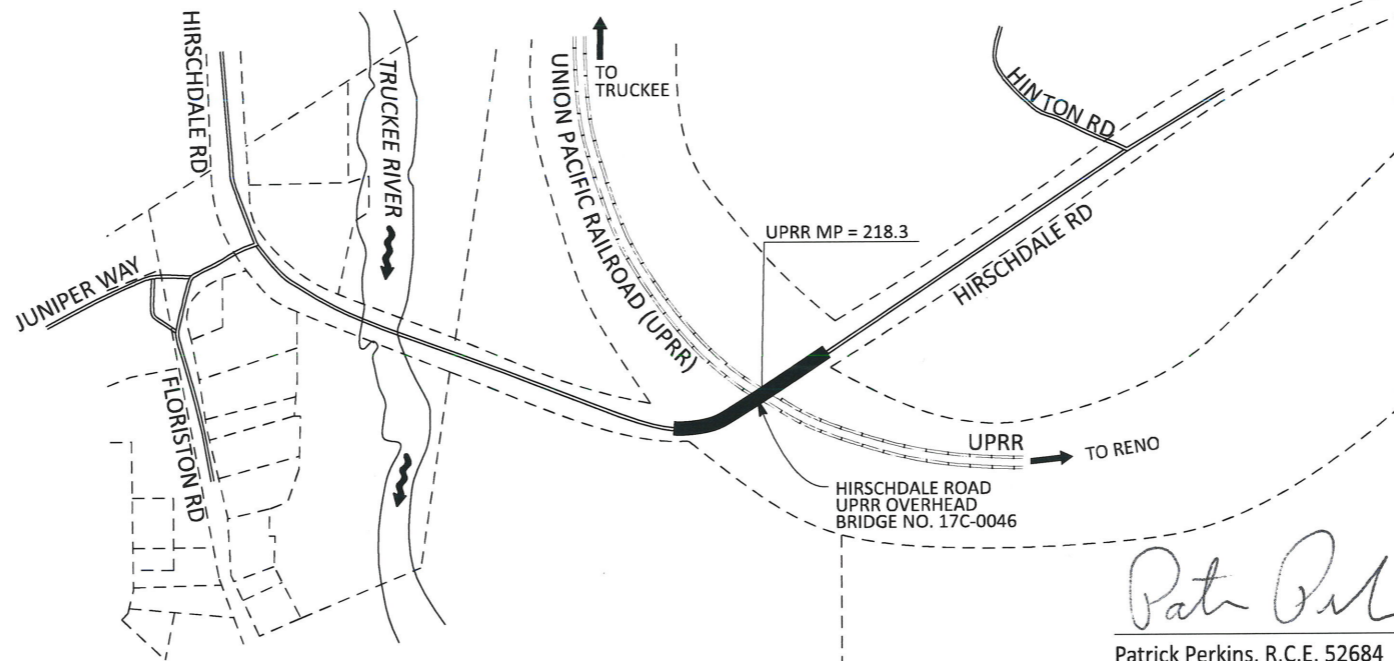
Hirschdale Road at Hinton (UPRR) Overhead Rehabilitation Project

Federal Project No. BRLO-5917 (097)

To be supplemented by the Nevada County Standards and Standard Road Drawings and the California Department of Transportation Standard Plans and Specifications dated 2023.



VICINITY MAP



Patrick Perkins

Patrick Perkins, R.C.E. 52684
Principal Engineer, Department of Public Works

6/27/24

Date

George Schureck

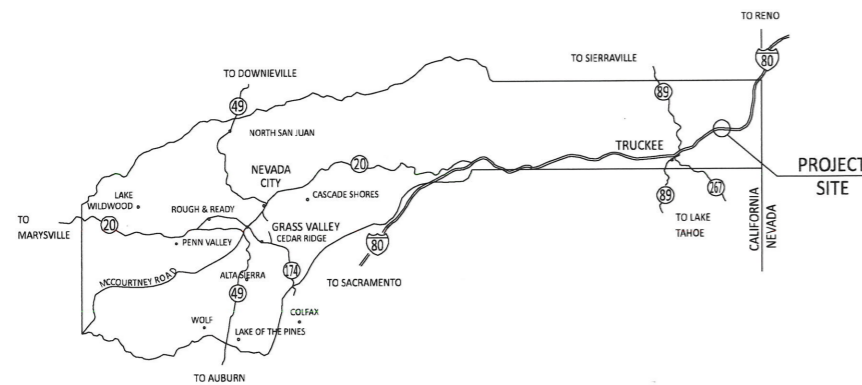
George Schureck
Interim Director, Department of Public Works

6/27/24

Date

Chairperson
Board of Supervisors

Date



INDEX MAP

Scale in miles

UPRR CONTACTS

Railroad Project Representative: Trevor Taylor, ttaylor@benesch.com, 916-245-2517
Rail Flagging Services: Michael Upton, mupton@up.com, 402-501-1237
Telephone UPRR at 1-800-336-9193 for information on buried fiber optic cables.

UTILITY CONTACTS

LUMEN: Marlo Shelton, Marlo.Shelton@lumen.com, 510-708-8210
Zayo: Monica Pino, monica.pino@zayo.com, 916-804-0573
AT&T: Lee Nieto, LN1985@att.com, 916-505-7308
AT&T Legacy/Shasta Consulting Group (AT&T Corp): Jake Carnes, jakecarnes@shastagroup.net, 530-643-6756

REVISIONS		
NO.	DESCRIPTION	DATE



DESIGNED BY DORKEN ENGINEERING
FOR
NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION



**HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)**
COVER SHEET

BRIDGE No.	17C-0046
DESIGNED:	K. MOE
DRAWN:	K. MOE
CHECKED:	R. SANDERS
JOB NO:	2250
DATE:	MARCH 2024

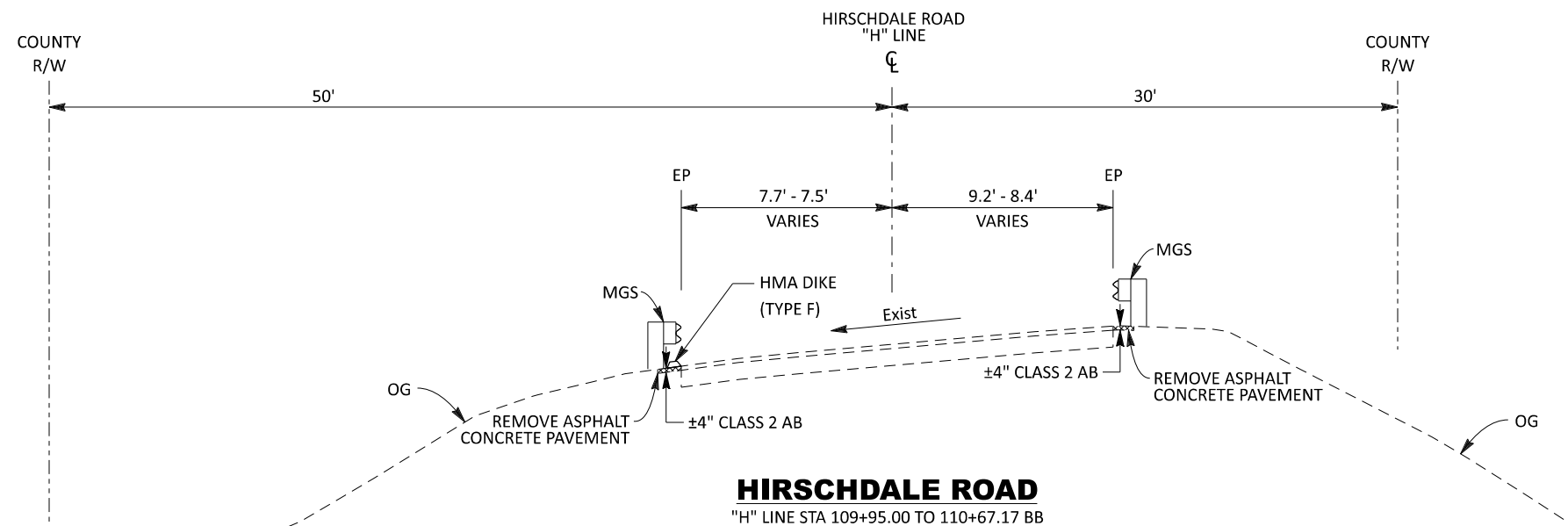
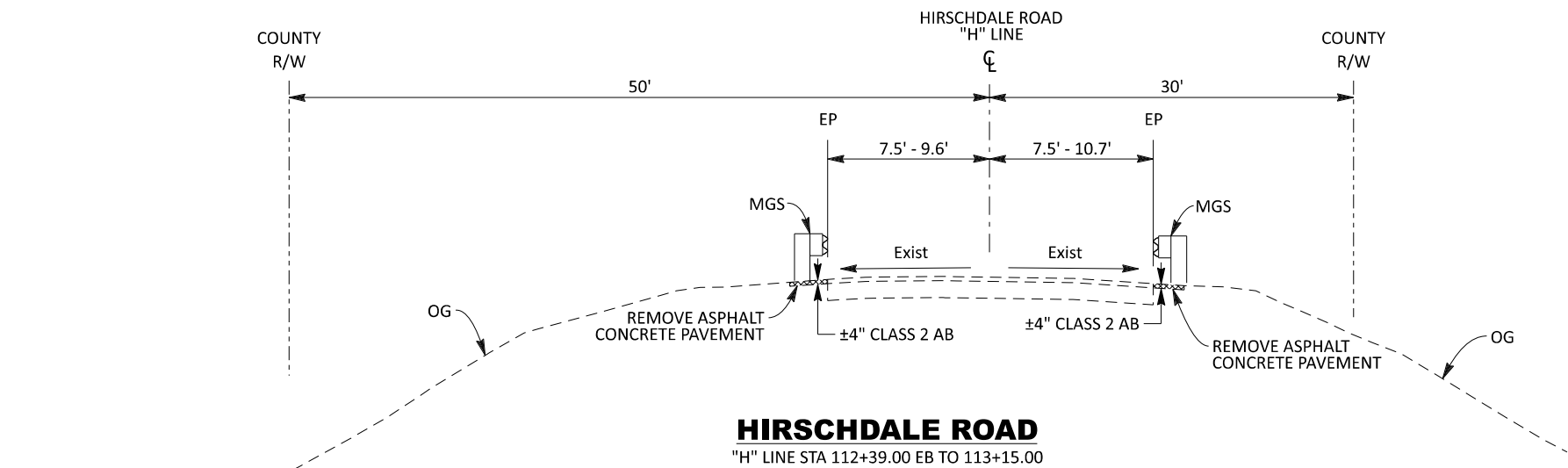
SHEET
1
OF 39 SHEETS

NOTES:

1. FOR BRIDGE TYPICAL SECTIONS, SEE STRUCTURE PLANS.
2. FOR OVERLAY LIMITS, SEE LAYOUT PLAN.

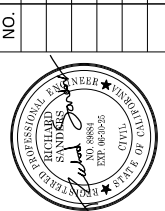
DUST CONTROL NOTES:

1. SENSITIVE GROUND AREAS WILL EITHER NEED TO BE COVERED WITH CRANE MATS OR ONLY ACCESSED BY "LOW PRESSURE" EQUIPMENT (BELOW 20 psi/2.88 ksf).
2. THE COUNTY AND CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL ADEQUATE DUST CONTROL MEASURES ARE IMPLEMENTED IN A TIMELY MANNER DURING ALL PHASES OF PROJECT DEVELOPMENT AND CONSTRUCTION.
3. ALL MATERIAL EXCAVATED, STOCKPILED, OR GRADED SHALL BE SUFFICIENTLY WATERED, TREATED, OR COVERED TO PREVENT FUGITIVE DUST FROM LEAVING THE PROPERTY BOUNDARIES AND CAUSING A PUBLIC NUISANCE OR A VIOLATION OF AN AMBIENT AIR STANDARD. WATERING SHOULD OCCUR AT LEAST TWICE DAILY, WITH COMPLETE SITE COVERAGE.
4. ALL UNPAVED AREAS WITH VEHICLE TRAFFIC SHALL BE WATERED OR HAVE DUST PALLIATIVE APPLIED AS NECESSARY FOR REGULAR STABILIZATION OF DUST EMISSIONS.
5. ALL ON-SITE VEHICLE TRAFFIC SHALL BE LIMITED TO A SPEED OF 15 MILES PER HOUR (MPH) ON UNPAVED ROADS.
6. ALL LAND CLEARING, GRADING, EARTH MOVING, OR EXCAVATION ACTIVITIES ON A PROJECT SHALL BE SUSPENDED AS NECESSARY TO PREVENT EXCESSIVE WINDBLOWN DUST WHEN WINDS ARE EXPECTED TO EXCEED 20 MPH
7. ALL INACTIVE PORTIONS OF THE PROJECT SITE SHALL BE COVERED, SEEDED WITH A STERILE OR NATIVE SEED MIX, OR WATERED UNTIL A SUITABLE COVER IS ESTABLISHED. ALTERNATIVELY, THE COUNTY MAY APPLY COUNTY-APPROVED NON-TOXIC SOIL STABILIZERS (ACCORDING TO MANUFACTURE'S SPECIFICATIONS) TO ALL INACTIVE CONSTRUCTION AREAS (PREVIOUSLY GRADED AREAS WHICH REMAIN INACTIVE FOR (96 HOURS) IN ACCORDANCE WITH THE LOCAL GRADING ORDINANCE.
8. ALL MATERIAL TRANSPORTED OFF-SITE SHALL BE EITHER SUFFICIENTLY WATERED OR SECURELY COVERED TO PREVENT PUBLIC NUISANCE, AND THERE MUST BE A MINIMUM OF SIX (6) INCHES OF FREEBOARD IN THE BED OF THE TRANSPORT VEHICLE.
9. PAVED STREETS ADJACENT TO THE PROJECT SHALL BE SWEEPED OR WASHED AT THE END OF EACH DAY, OR MORE FREQUENTLY IF NECESSARY, TO REMOVE EXCESSIVE OR VISIBLY RAISED ACCUMULATIONS OF DIRT AND/OR MUD WHICH MAY HAVE RESULTED FROM ACTIVITIES AT THE PROJECT SITE.
10. OPEN BURNING OF VEGETATIVE MATERIAL SHALL BE PROHIBITED. SUITABLE ALTERNATIVES INCLUDE CHIPPING, MULCHING, OR CONVERSION TO BIOMASS FUEL.
11. TEMPORARY TRAFFIC CONTROL SHALL BE PROVIDED DURING ALL PHASES OF CONSTRUCTION TO IMPROVE TRAFFIC FLOW, AS DEEMED APPROPRIATE BY THE COUNTY TO IMPROVE TRAFFIC FLOW.
12. THE CONSTRUCTION CONTRACTOR SHALL DIRECT ANY GENERATOR OR COMPRESSOR EXHAUST IN A DIRECTION AWAY FROM RESIDENCES AND RESIDENTIAL OUTDOOR USE AREAS.
13. THE CONSTRUCTION CONTRACTOR SHALL MEET THE NORTHERN SIERRA AIR QUALITY MANAGEMENT DISTRICT AND CALIFORNIA AIR RESOURCES BOARD REQUIREMENTS FOR THE REDUCTION OF CONSTRUCTION-RELATED EMISSIONS BY ENSURING THAT THE FOLLOWING IS DONE EITHER PRIOR TO OR DURING CONSTRUCTION OF THE PROJECT.
 - i. THE CONSTRUCTION CONTRACTOR SHALL PROPERLY AND ROUTINELY MAINTAIN ALL CONSTRUCTION EQUIPMENT AS RECOMMENDED BY THE MANUFACTURERS' MANUALS, TO CONTROL EXHAUST EMISSIONS;
 - ii. THE CONSTRUCTION CONTRACTOR SHALL ENSURE THAT CONSTRUCTION EQUIPMENT IS SHUT DOWN WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME TO REDUCE EMISSIONS ASSOCIATED WITH CONSTRUCTION EQUIPMENT IDLING; AND,
 - iii. THE CONSTRUCTION CONTRACTOR SHALL LIMIT THE HOURS OF OPERATION OF HEAVY DUTY EQUIPMENT AND/OR THE AMOUNT OF EQUIPMENT IN USE SIMULTANEOUSLY.



REVISIONS

NO.	DESCRIPTION	BY	DATE



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 DEPARTMENT OF PUBLIC WORKS
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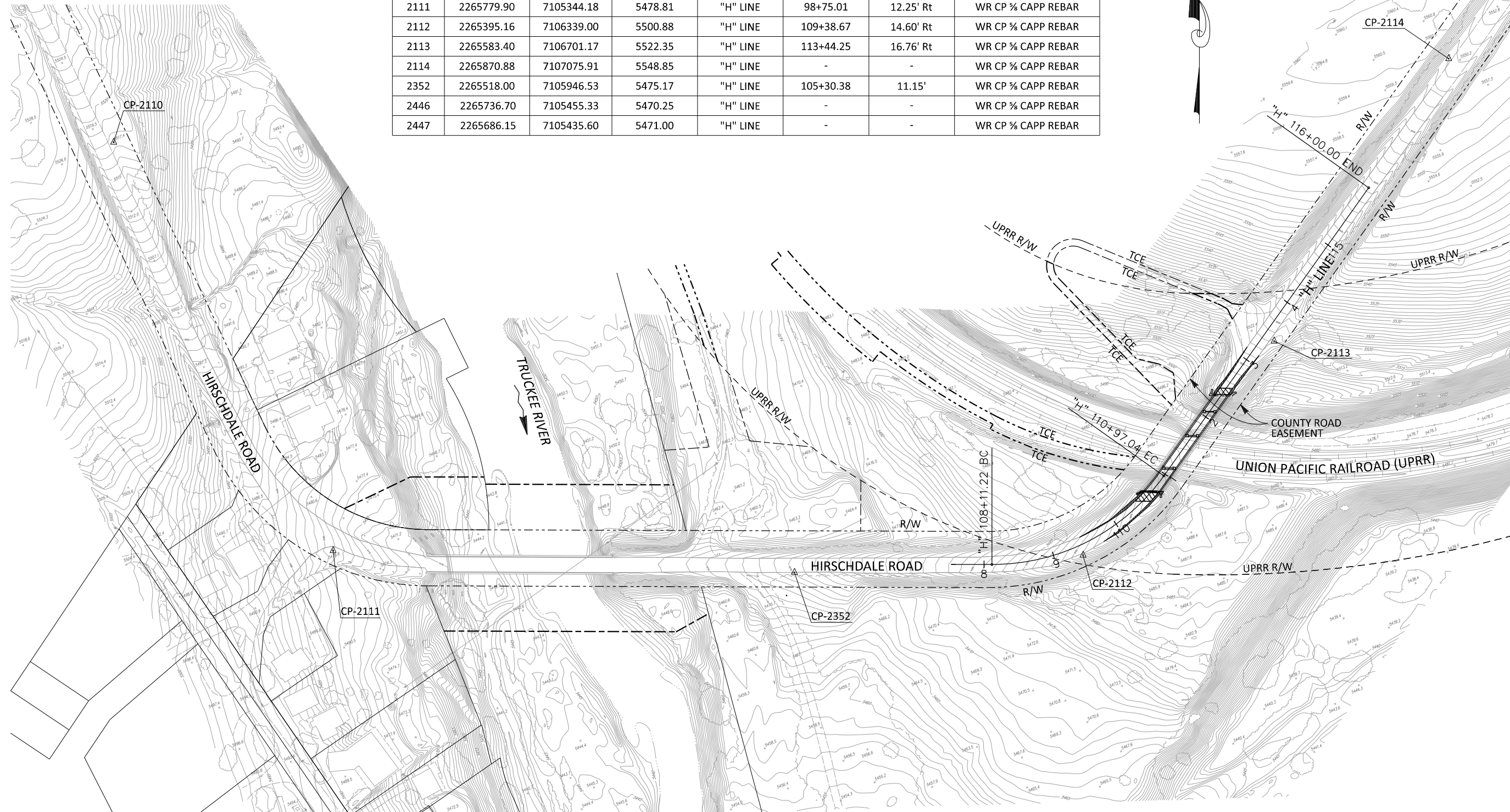
**HIRSCHDALE ROAD OVERHEAD
 (REHABILITATION)**
 TYPICAL SECTIONS

BRIDGE No.	17C-0046
DESIGNED:	K. MOE
DRAWN:	K. MOE
CHECKED:	R. SANDERS
JOB NO:	2250
DATE:	MARCH 2024

LEGEND:

△ SURVEY CONTROL POINT

CONTROL POINTS							
POINT #	NORTHING	EASTING	ELEVATION	LINE	STATION	OFFSET	DESCRIPTION
2110	2266433.94	7105258.66	5517.43	"H" LINE	-	-	WR CP ¾ CAPP REBAR
2111	2265779.90	7105344.18	5478.81	"H" LINE	98+75.01	12.25' Rt	WR CP ¾ CAPP REBAR
2112	2265395.16	7106339.00	5500.88	"H" LINE	109+38.67	14.60' Rt	WR CP ¾ CAPP REBAR
2113	2265583.40	7106701.17	5522.35	"H" LINE	113+44.25	16.76' Rt	WR CP ¾ CAPP REBAR
2114	2265870.88	7107075.91	5548.85	"H" LINE	-	-	WR CP ¾ CAPP REBAR
2352	2265518.00	7105946.53	5475.17	"H" LINE	105+30.38	11.15'	WR CP ¾ CAPP REBAR
2446	2265736.70	7105455.33	5470.25	"H" LINE	-	-	WR CP ¾ CAPP REBAR
2447	2265686.15	7105435.60	5471.00	"H" LINE	-	-	WR CP ¾ CAPP REBAR



PLAN
1"=75'

BASIS OF BEARING AND DATUM

HORIZONTAL DATUM: CALIFORNIA STATE PLANE COORDINATE SYSTEM ZONE 2 BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83)
VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

NOTES:

FOR LIMITS OF TCE'S SEE APPENDIX OF THE SPECIAL PROVISIONS.

REVISIONS

NO.	DESCRIPTION	BY	DATE



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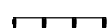



**HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)**
PROJECT CONTROL

BRIDGE No. 17C-0046
DESIGNED: K. MOE
DRAWN: K. MOE
CHECKED: R. SANDERS
JOB NO: 2250
DATE: MARCH 2024

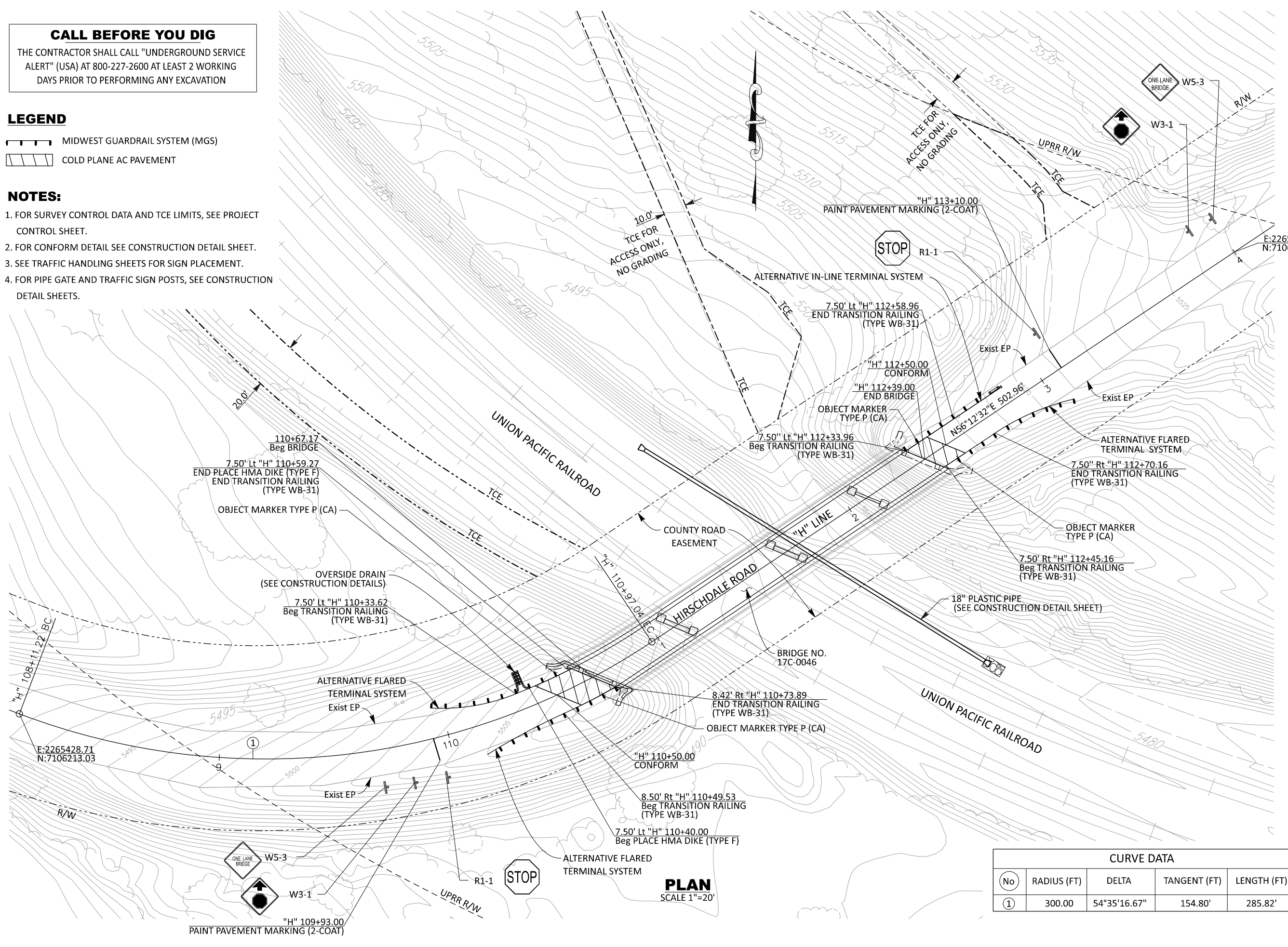
CALL BEFORE YOU DIG
 THE CONTRACTOR SHALL CALL "UNDERGROUND SERVICE ALERT" (USA) AT 800-227-2600 AT LEAST 2 WORKING DAYS PRIOR TO PERFORMING ANY EXCAVATION

LEGEND

-  MIDWEST GUARDRAIL SYSTEM (MGS)
-  COLD PLANE AC PAVEMENT

NOTES:

1. FOR SURVEY CONTROL DATA AND TCE LIMITS, SEE PROJECT CONTROL SHEET.
2. FOR CONFORM DETAIL SEE CONSTRUCTION DETAIL SHEET.
3. SEE TRAFFIC HANDLING SHEETS FOR SIGN PLACEMENT.
4. FOR PIPE GATE AND TRAFFIC SIGN POSTS, SEE CONSTRUCTION DETAIL SHEETS.



CURVE DATA				
No	RADIUS (FT)	DELTA	TANGENT (FT)	LENGTH (FT)
①	300.00	54°35'16.67"	154.80'	285.82'

PLAN
 SCALE 1"=20'

REVISIONS		
NO.	DESCRIPTION	DATE



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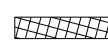


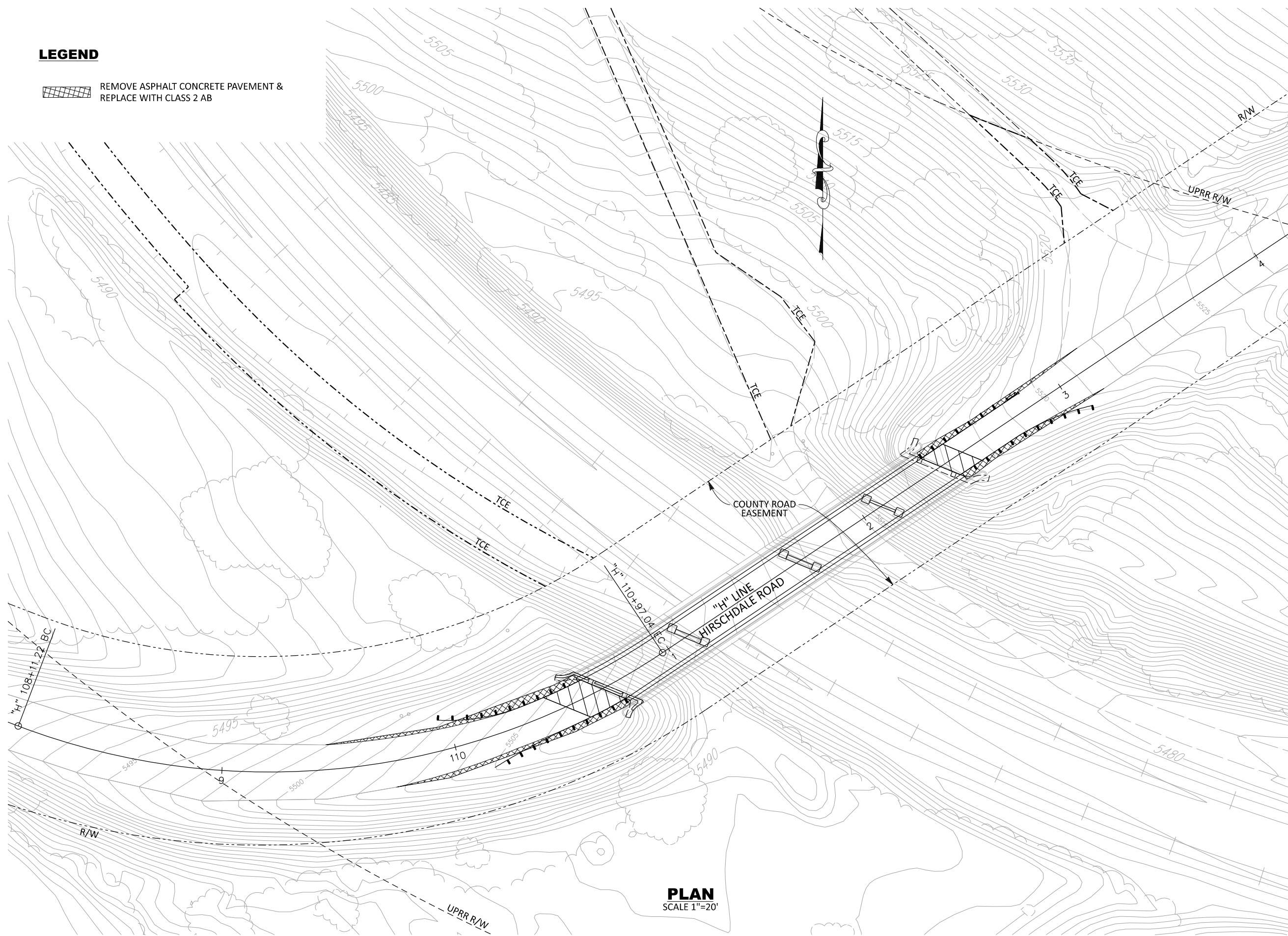
HIRSCHDALE ROAD OVERHEAD (REHABILITATION)
 LAYOUT PLAN

BRIDGE No. 17C-0046
 DESIGNED: K. MOE
 DRAWN: K. MOE
 CHECKED: R. SANDERS
 JOB NO: 2250
 DATE: MARCH 2024

SHEET
4
 OF 39 SHEETS

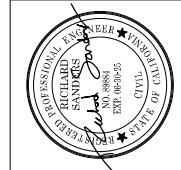
LEGEND

 REMOVE ASPHALT CONCRETE PAVEMENT & REPLACE WITH CLASS 2 AB



PLAN
SCALE 1"=20'

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**HIRSCHDALE ROAD OVERHEAD
 (REHABILITATION)**
 REMOVAL PLAN

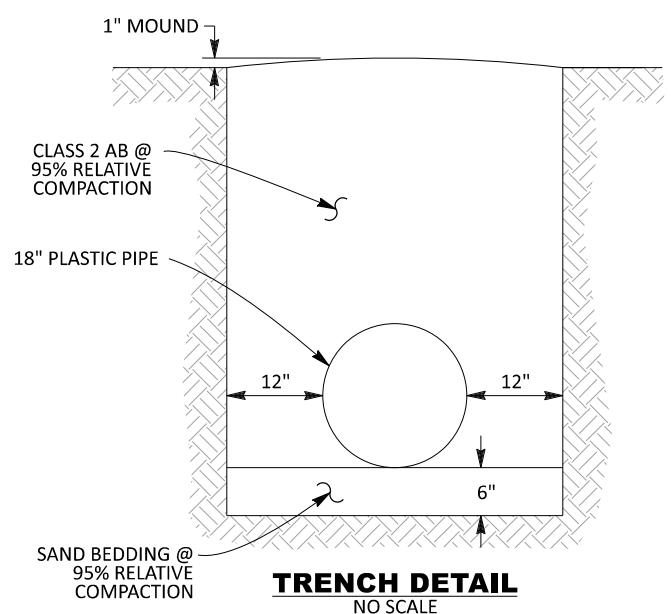
BRIDGE No. 17C-0046
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 DATE: MARCH 2024

SHEET
5
 OF 39 SHEETS

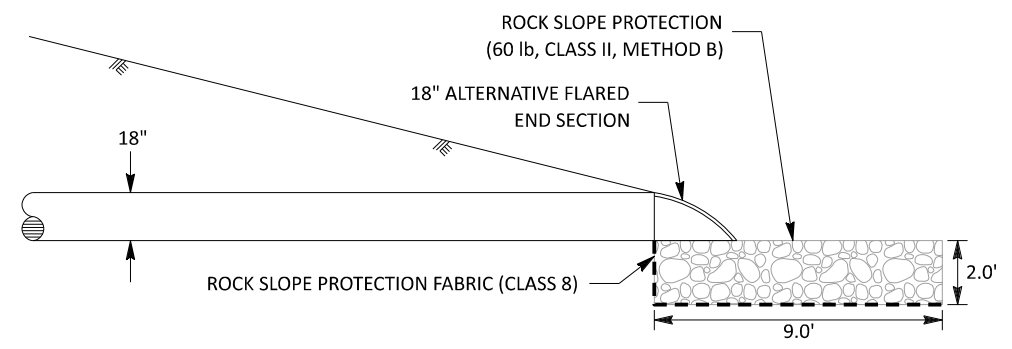


PLAN - DRAINAGE DETAIL
NO SCALE

NOTES:
1. EXACT DRAINAGE LOCATION TO BE DETERMINED BY THE ENGINEER.



TRENCH DETAIL
NO SCALE



ELEVATION - DRAINAGE DETAIL
NO SCALE

REVISIONS			
NO.	DESCRIPTION	BY	DATE

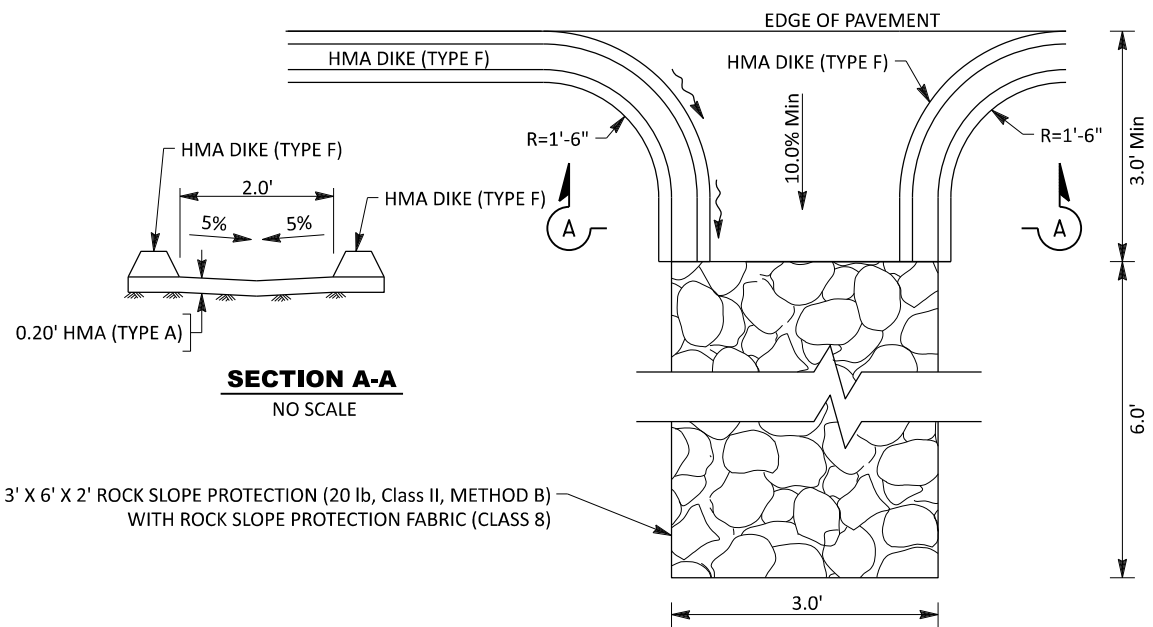


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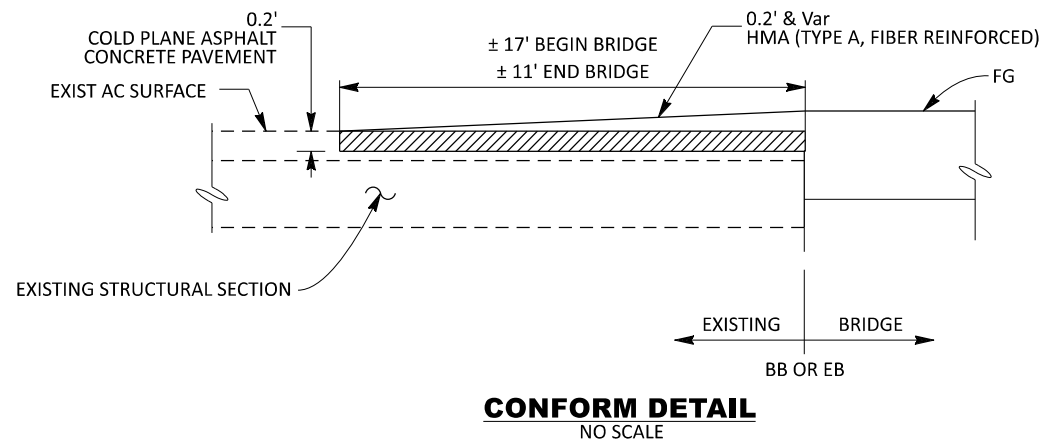


**HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)**
CONSTRUCTION DETAIL NO. 1

BRIDGE No.	17C-0046
DESIGNED:	K. MOE
DRAWN:	K. MOE
CHECKED:	R. SANDERS
JOB NO:	2250
DATE:	MARCH 2024

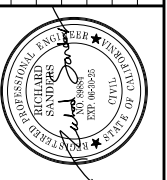


OVERSIDE DRAIN DETAIL
NO SCALE



CONFORM DETAIL
NO SCALE

NO.	DESCRIPTION	BY	DATE



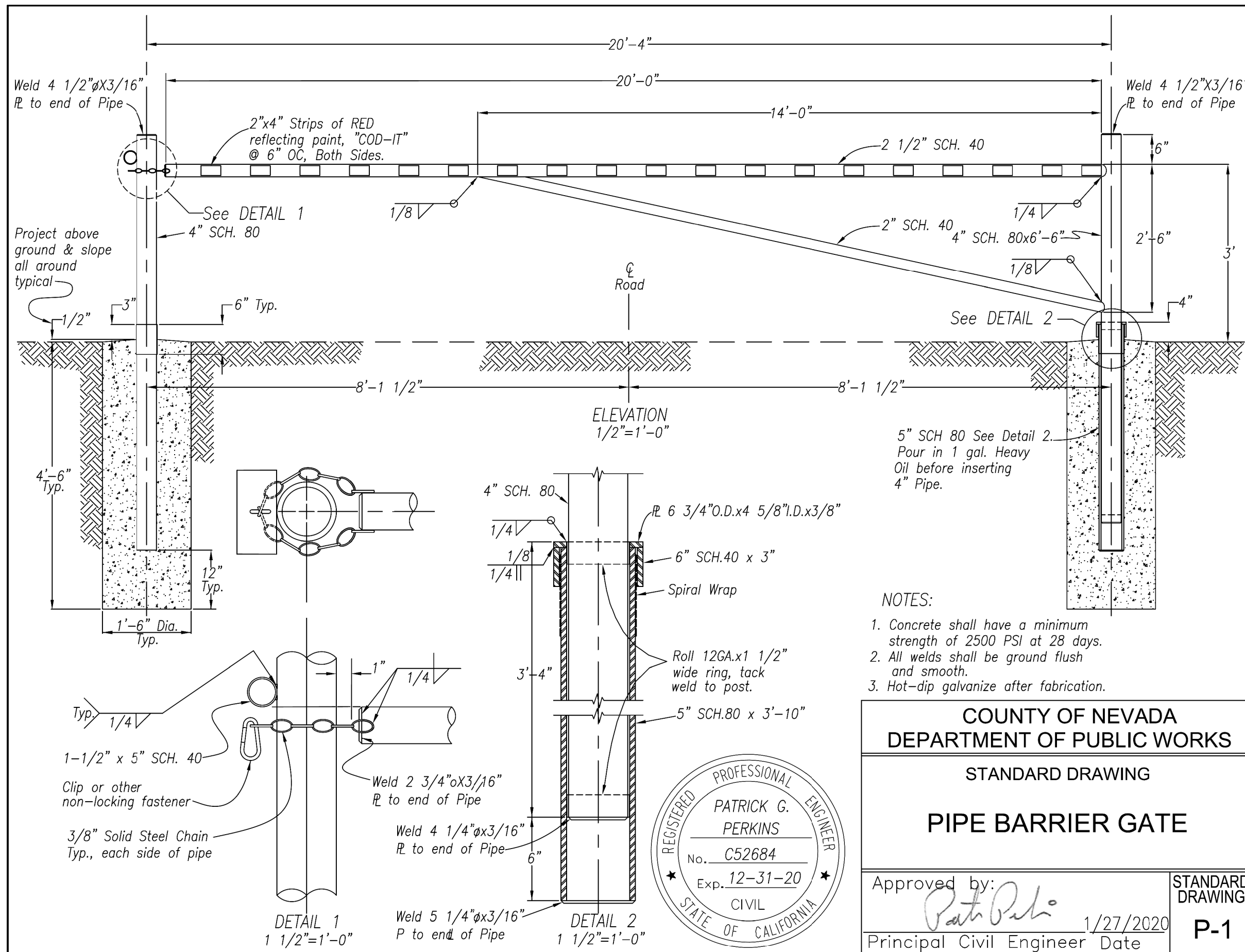
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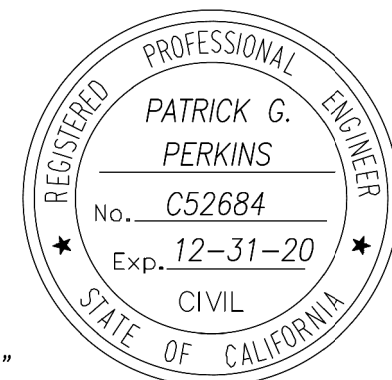
**HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)**
CONSTRUCTION DETAIL NO. 2

BRIDGE No.	17C-0046
DESIGNED:	K. MOE
DRAWN:	K. MOE
CHECKED:	R. SANDERS
JOB NO:	2250
DATE:	MARCH 2024

SHEET
7
OF 39 SHEETS



- NOTES:
1. Concrete shall have a minimum strength of 2500 PSI at 28 days.
 2. All welds shall be ground flush and smooth.
 3. Hot-dip galvanize after fabrication.



**COUNTY OF NEVADA
DEPARTMENT OF PUBLIC WORKS**

STANDARD DRAWING

PIPE BARRIER GATE

Approved by: *Patrick Perkins* 1/27/2020
Principal Civil Engineer Date

**STANDARD DRAWING
P-1**

REVISIONS	
NO.	DATE

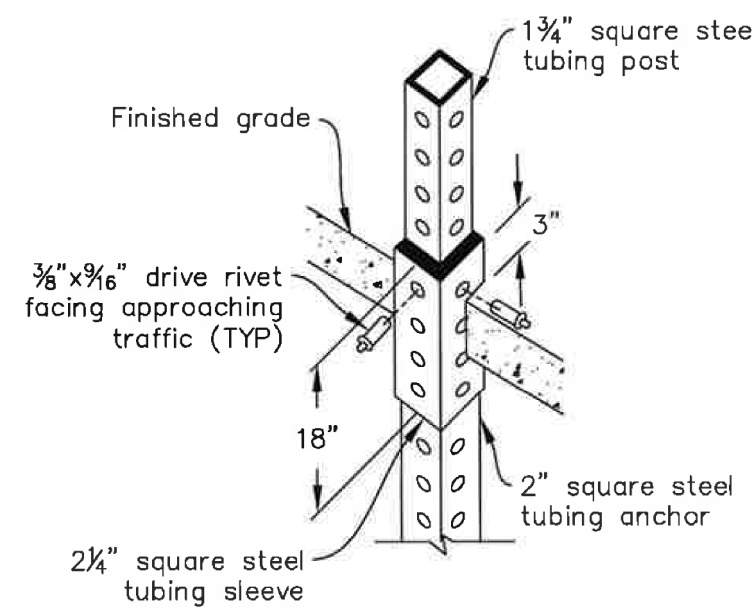
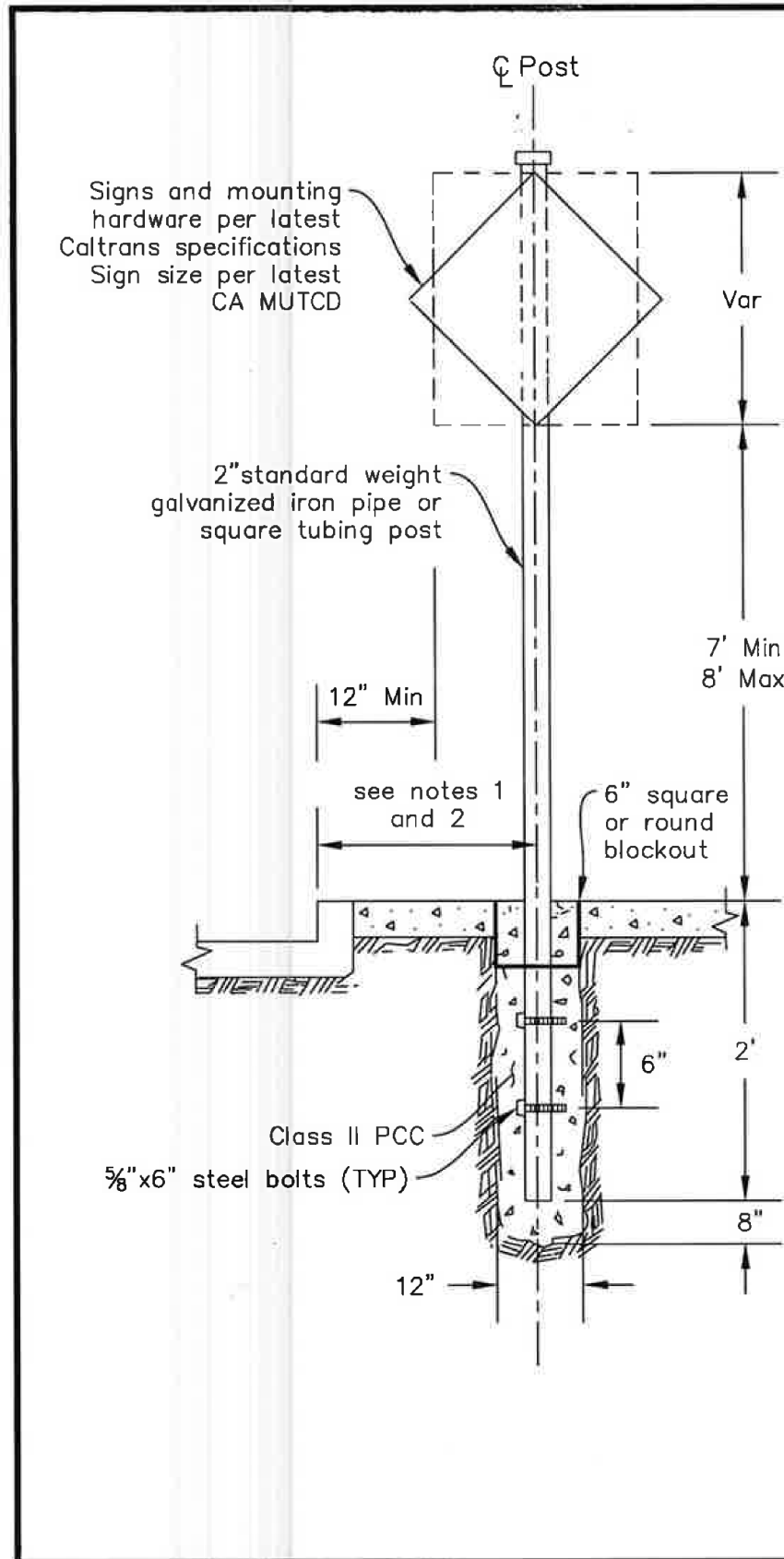
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FOR
NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION

**HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)**

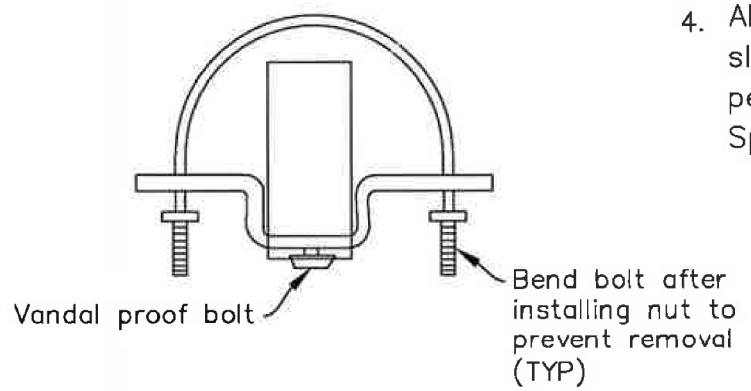
CONSTRUCTION DETAIL NO. 3

BRIDGE No. 17C-0046
DESIGNED: K. MOE
DRAWN: K. MOE
CHECKED: R. SANDERS
JOB NO: 2250
DATE: MARCH 2024

SHEET
8
OF 39 SHEETS



Post/Sleeve/Anchor Detail



Sign Bracket Detail

NOTES:

1. 1' behind SW with monolithic SW less than 10' wide. 3' behind curb with monolithic SW 10' wide. 3' behind curb with landscaping.
2. 8' Min to 30' Max from ETW in areas with no SW.
3. Class II PCC sign foundation to be flush with finished grade in areas with no SW.
4. All metal posts and anchor sleeves shall be galvanized per latest Caltrans Standard Specifications.



COUNTY OF NEVADA DEPARTMENT OF PUBLIC WORKS	
LOCAL RURAL ROAD SYSTEM TRAFFIC SIGN METAL POST	
Approved <i>Patrick Perkins</i> 7-29-21 Principal Civil Engineer Date	STANDARD DRAWING T-1

NO.	DESCRIPTION	BY	DATE	REVISIONS



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HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
CONSTRUCTION DETAIL NO. 4

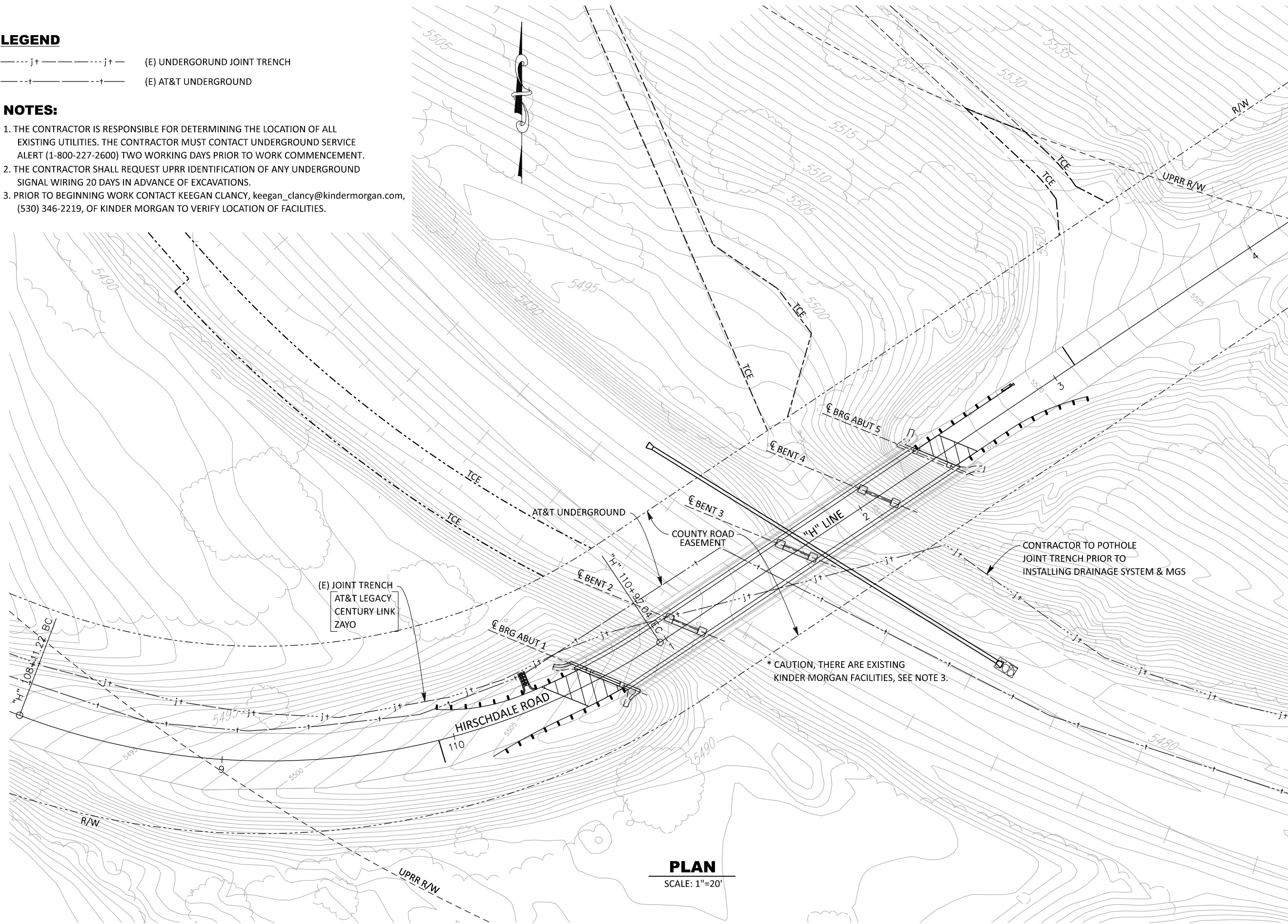
BRIDGE No.	17C-0046
DESIGNED:	K. MOE
DRAWN:	K. MOE
CHECKED:	R. SANDERS
JOB NO:	2250
DATE:	MARCH 2024

LEGEND

- j+---j+--- (E) UNDERGROUND JOINT TRENCH
- +---+--- (E) AT&T UNDERGROUND

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR MUST CONTACT UNDERGROUND SERVICE ALERT (1-800-227-2600) TWO WORKING DAYS PRIOR TO WORK COMMENCEMENT.
2. THE CONTRACTOR SHALL REQUEST UPRR IDENTIFICATION OF ANY UNDERGROUND SIGNAL WIRING 20 DAYS IN ADVANCE OF EXCAVATIONS.
3. PRIOR TO BEGINNING WORK CONTACT KEEGAN CLANCY, keegan_clancy@kindermorgan.com, (530) 346-2219, OF KINDER MORGAN TO VERIFY LOCATION OF FACILITIES.



PLAN
SCALE: 1"=20'

REVISIONS	
NO.	DESCRIPTION



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**HIRSCHDALE ROAD OVERHEAD
 (REHABILITATION)
 UTILITY PLAN**

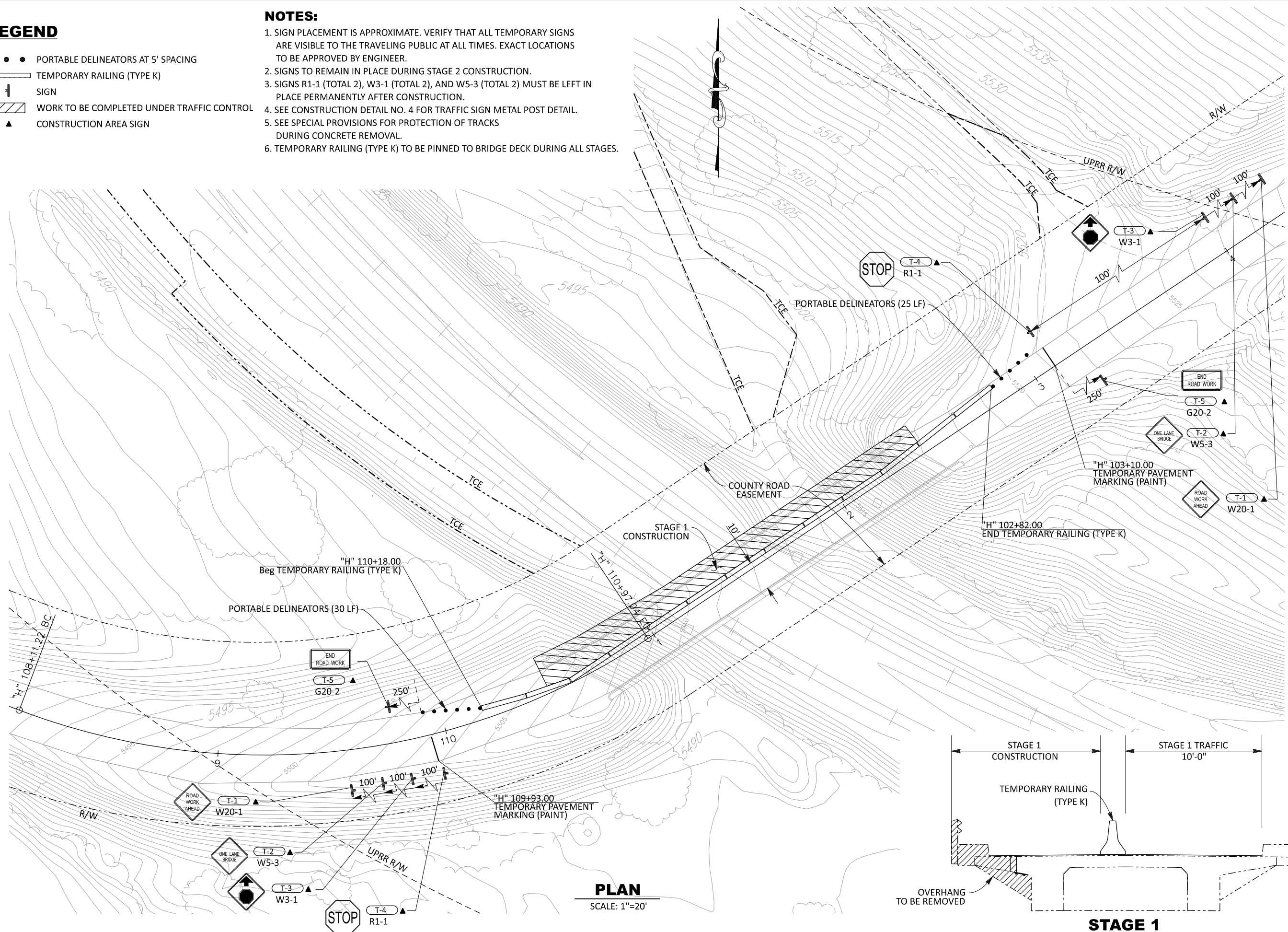
BRIDGE No.	17C-0046
DESIGNED:	J. BARAJAS
DRAWN:	J. BARAJAS
CHECKED:	R. SANDERS
JOB NO:	2250
DATE:	MARCH 2024

LEGEND

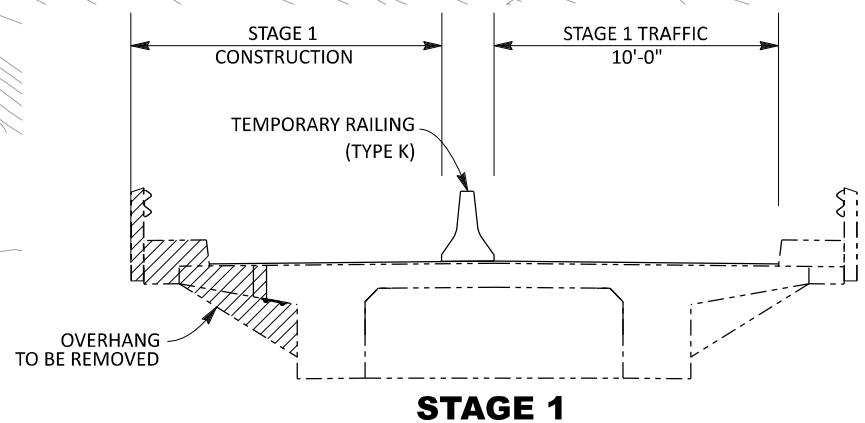
- • • PORTABLE DELINEATORS AT 5' SPACING
- ▬▬▬ TEMPORARY RAILING (TYPE K)
- ⊥ SIGN
- ▨▨▨ WORK TO BE COMPLETED UNDER TRAFFIC CONTROL
- ▲ CONSTRUCTION AREA SIGN

NOTES:

1. SIGN PLACEMENT IS APPROXIMATE. VERIFY THAT ALL TEMPORARY SIGNS ARE VISIBLE TO THE TRAVELING PUBLIC AT ALL TIMES. EXACT LOCATIONS TO BE APPROVED BY ENGINEER.
2. SIGNS TO REMAIN IN PLACE DURING STAGE 2 CONSTRUCTION.
3. SIGNS R1-1 (TOTAL 2), W3-1 (TOTAL 2), AND W5-3 (TOTAL 2) MUST BE LEFT IN PLACE PERMANENTLY AFTER CONSTRUCTION.
4. SEE CONSTRUCTION DETAIL NO. 4 FOR TRAFFIC SIGN METAL POST DETAIL.
5. SEE SPECIAL PROVISIONS FOR PROTECTION OF TRACKS DURING CONCRETE REMOVAL.
6. TEMPORARY RAILING (TYPE K) TO BE PINNED TO BRIDGE DECK DURING ALL STAGES.



PLAN
SCALE: 1"=20'



STAGE 1

REVISIONS	
NO.	DESCRIPTION



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DESIGN/CONSTRUCTION DIVISION

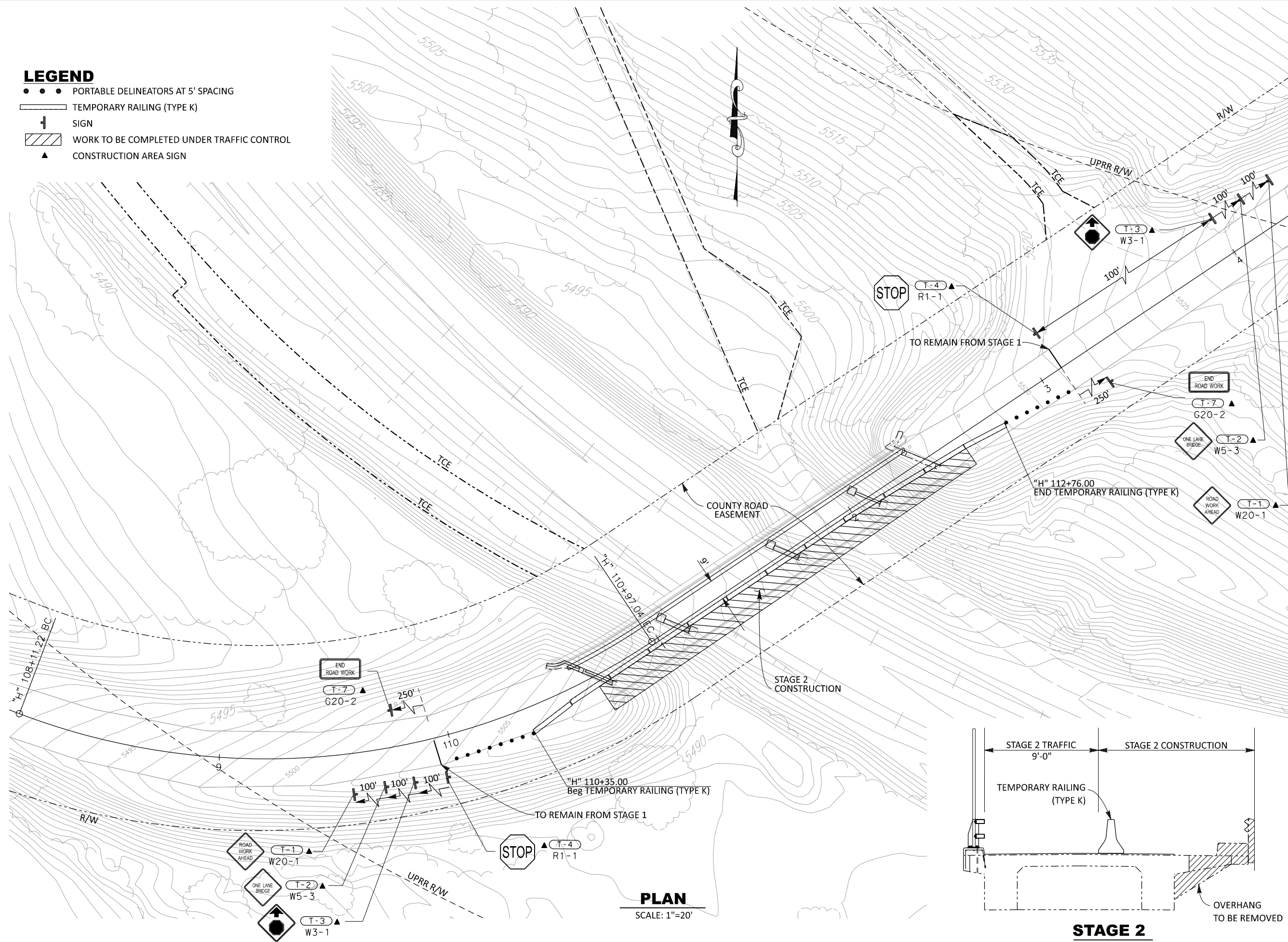


**HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
STAGE 1
TRAFFIC HANDLING PLAN**

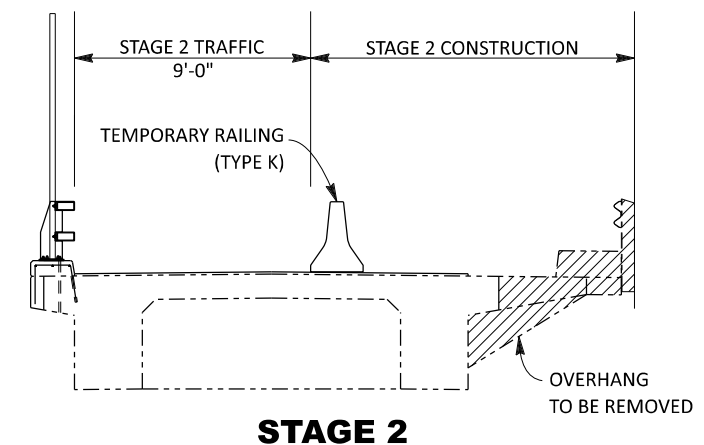
BRIDGE No. 17C-0046
DESIGNED: K. MOE
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CHECKED: R. SANDERS
JOB NO: 2250
DATE: MARCH 2024

LEGEND

- ● ● PORTABLE DELINEATORS AT 5' SPACING
- ▬ TEMPORARY RAILING (TYPE K)
- ⊥ SIGN
- ▨ WORK TO BE COMPLETED UNDER TRAFFIC CONTROL
- ▲ CONSTRUCTION AREA SIGN

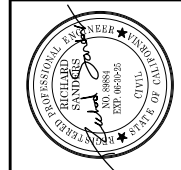


PLAN
SCALE: 1"=20'

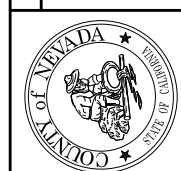


STAGE 2

REVISIONS			
NO.	DESCRIPTION	BY	DATE



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NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION



**HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
STAGE 2
TRAFFIC HANDLING PLAN**

BRIDGE No. 17C-0046
DESIGNED: K. MOE
DRAWN: K. MOE
CHECKED: R. SANDERS
JOB NO: 2250
DATE: MARCH 2024

ROADWAY QUANTITIES

LOCATION	HMA (TYPE A, FIBER REINFORCED)	AGGREGATE BASE (CLASS 2)	COLD PLANE ASPHALT CONCRETE PAVEMENT	REMOVE ASPHALT CONCRETE PAVEMENT	PLACE HMA DIKE (TYPE F)	PLACE HMA (MISCELLANEOUS AREA)	PAINT PAVEMENT MARKING (2-COAT)	ROADSIDE SIGN - ONE POST	OBJECT MARKER TYPE P (CA)
	TON	CY	SQYD	SQFT	LF	SQYD	SQFT	EA	EA
"H" LINE	6	10	49	717	19	2	20	6	4

GUARDRAIL SYSTEM

LOCATION	ALTERNATIVE IN-LINE TERMINAL SYSTEM	TRANSITION RAILING (WB-31)	ALTERNATIVE FLARED TERMINAL SYSTEM
	EA	EA	EA
"H" LINE	1	4	3

DRAINAGE QUANTITIES

LOCATION	18" PLASTIC PIPE	18" ALTERNATIVE FLARED END SECTION	ROCK SLOPE PROTECTION (20 lb, CLASS II, METHOD B)	ROCK SLOPE PROTECTION (60 lb, CLASS II, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)
	LF	EA	CY	CY	SQYD
"H" LINE	173	2	2	4	18

TEMPORARY ROADSIDE SIGN QUANTITIES (N)

Sign NO.	SIGN CODE	SIGN MESSAGE	SIGN QUANTITY
			EA
T-1	W20-1	ROAD WORK AHEAD	2
T-5	G20-2	END ROAD WORK	2

NOTE: SIGNS NOT SHOWN ARE QUANTIFIED UNDER ROADSIDE SIGN - ONE POST
* (N) INDICATES NOT A PAY ITEM

TRAFFIC HANDLING QUANTITIES

LOCATION	TEMPORARY RAILING (TYPE K)	PORTABLE DELINEATORS	TEMPORARY PAVEMENT MARKING (PAINT)
	LF	EA	SQFT
STAGE 1	260	11	21
STAGE 2	240	15	-
TOTAL	500	26	21

EROSION CONTROL

STATION	HYDROSEED	BONDED FIBER MATRIX	FIBER ROLLS	ROLLED EROSION CONTROL PRODUCT (JUTE MESH)	TEMPORARY HIGH-VISIBILITY FENCE
	SQFT	SQFT	LF	SQFT	LF
"H" 109+00.00 TO "H" 111+24.73	16780	16780	750	12585	310
"H" 112+06.24 TO "H" 113+80.00	10640	10640	570	7980	1630
TOTAL	27420	27420	1320	20565	1940

REVISIONS

NO.	DESCRIPTION	BY	DATE



DESIGNED BY DOKKEN ENGINEERING
FOR
NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION



**HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)**
SUMMARY OF QUANTITIES

BRIDGE No. 17C-0046
DESIGNED: K. MOE
DRAWN: K. MOE
CHECKED: R. SANDERS
JOB NO: 2250
DATE: MARCH 2024

LEGEND

- BITTERBRUSH SERIES AREA
- ROLLED EROSION CONTROL PRODUCT (JUTE MESH)
- FIBER ROLL
- TEMPORARY HIGH-VISIBILITY FENCE

NOTES:

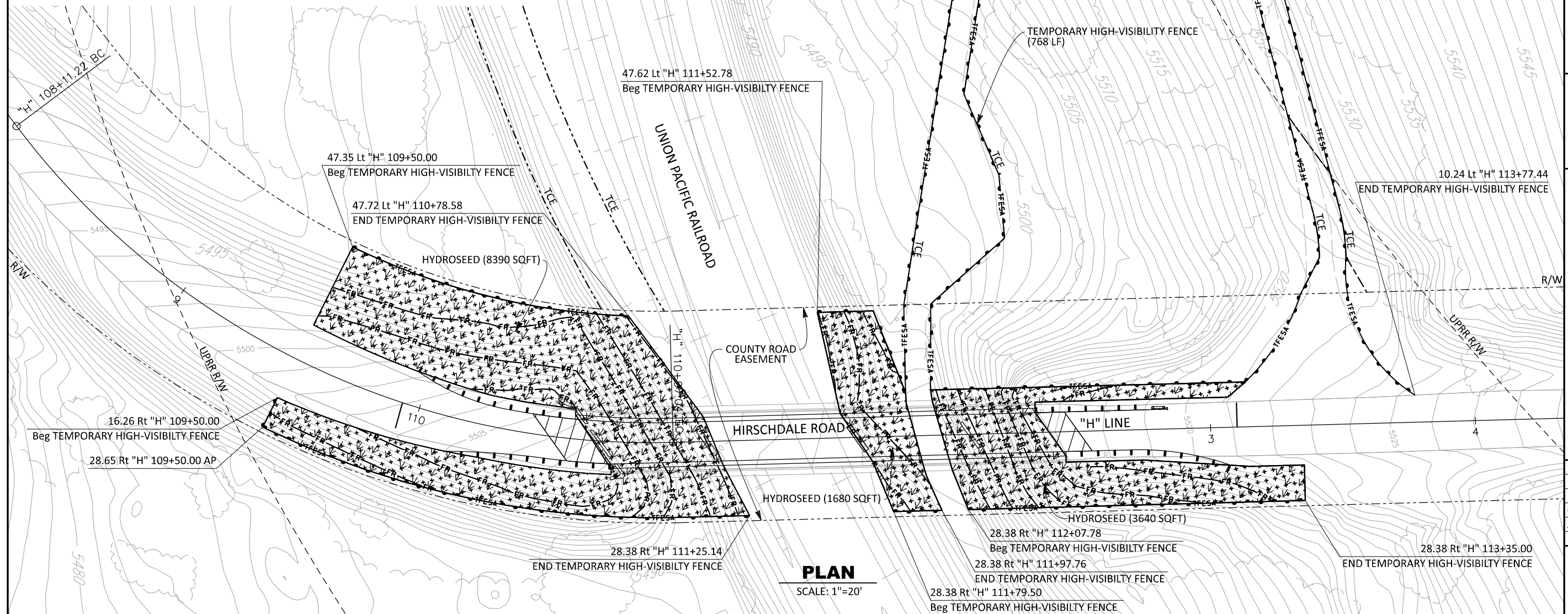
1. APPLY HYDROSEED TO ALL DISTURBED OR NEWLY FORMED SLOPES PER REQUIREMENTS IN SPECIAL PROVISIONS.

BITTERBRUSH SERIES HYDROSEED MIX

Common Name	% PURITY	% GERM	LB/acre
Shrubs			
Antelope Bush (<i>Purshia tridentata</i>)	95	75	38.7
Great Basin Sagebrush (<i>Artemisia tridentata</i>)	10	65	3.0
Rubber Rabbitbush (<i>Chrysothamnus nauseosus</i>)	15	80	10.5
Grasses			
Bent Grass (<i>Agrostis exarata</i>)	95	80	0.3
Bottlebrush Squirreltail (<i>Elymus elymoides</i>)	90	75	5.2
California Brome (<i>Bromus carinatus</i>)	95	90	12.2
Slender Wheatgrass (<i>Elymus trachycaulus</i>)	90	85	7.6
Tufted Hairgrass (<i>Deschampsia cespitosa</i>)	90	80	1.0
TOTAL			78.7

EROSION CONTROL

SEQUENCE	ITEM	MATERIAL		APPLICATION RATE
		DESCRIPTION	TYPE	
STEP 1	HYDROSEED	SEED	BITTERBRUSH	78.7 LB/acre
		BONDED FIBER MATRIX	WOOD	2000 LB/acre
STEP 2	ROLLED EROSION CONTROL PRODUCT	JUTE MESH	-	-
STEP 3	FIBER ROLL	FIBER ROLL	8" TO 10" Dia	-



PLAN

SCALE: 1"=20'

REVISIONS	
NO.	DESCRIPTION

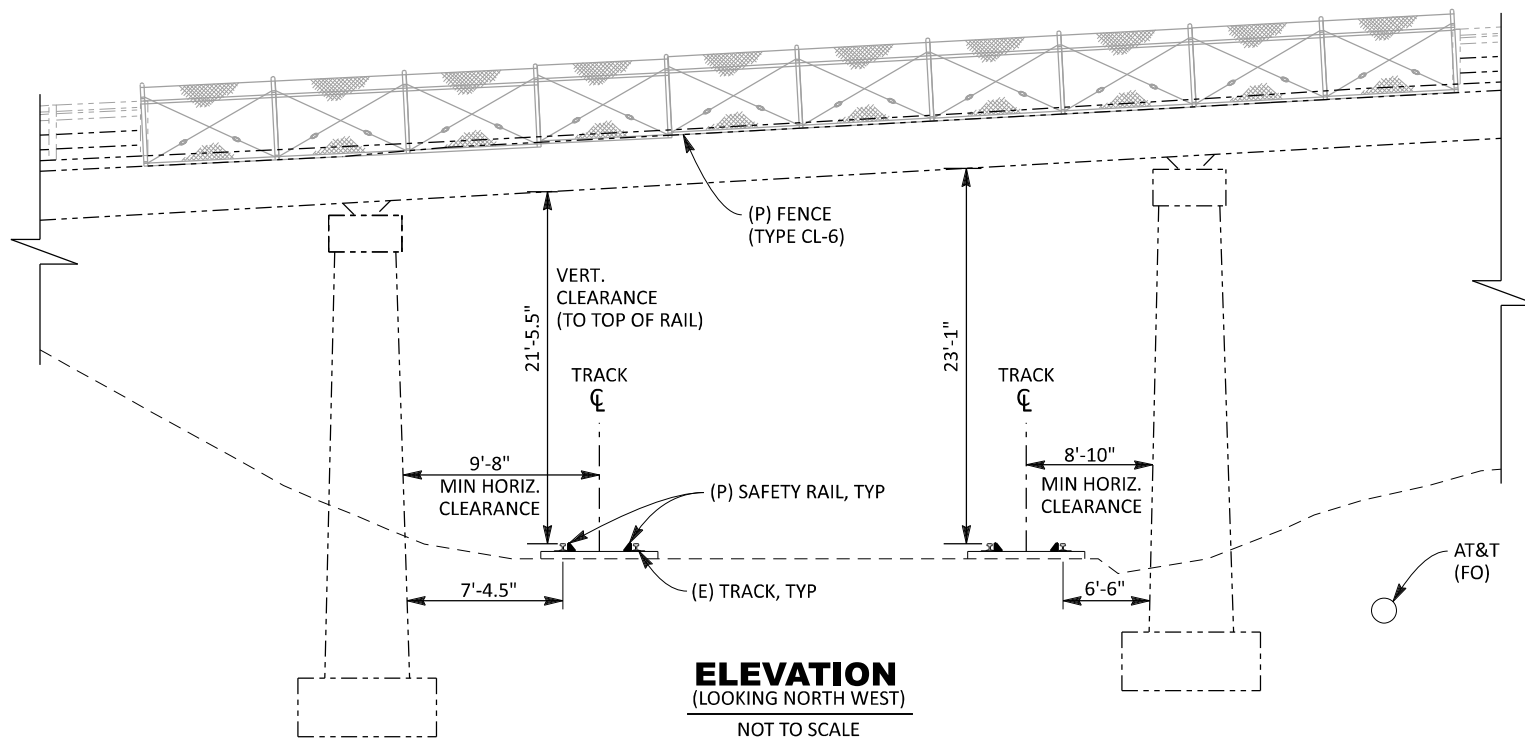
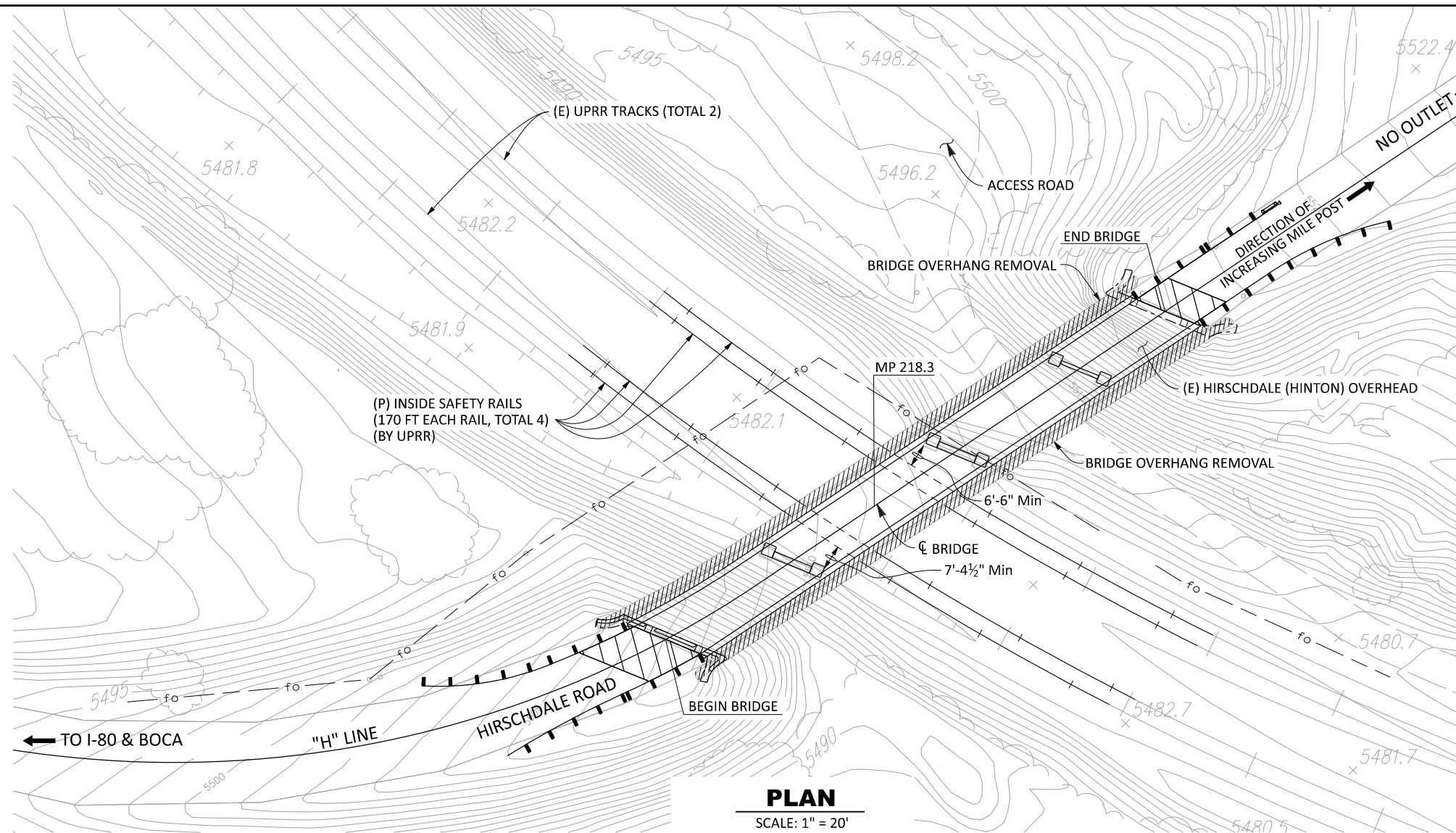


DESIGNED BY DOKKEN ENGINEERING
 FOR
NEVADA COUNTY
 DEPARTMENT OF PUBLIC WORKS
 DESIGN/CONSTRUCTION DIVISION



**HIRSCHDALE ROAD OVERHEAD
 (REHABILITATION)**
 PERMANENT EROSION CONTROL

BRIDGE No. 17C-0046
 DESIGNED: K. MOE
 DRAWN: K. MOE
 CHECKED: R. SANDERS
 JOB NO: 2250
 DATE: MARCH 2024



LEGEND:

- (E) EXISTING
- (P) PROPOSED
- x— (P) FENCE (TYPE CL-6)
- +— (P) SAFETY RAIL
- |— (E) TRACK
- ▲— (P) SAFETY RAIL
- fo— AT&T FIBER OPTIC

RAILROAD INFORMATION

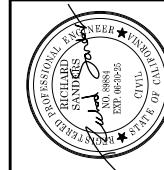
MP 216.1, ROSEVILLE SUBDIVISION
 DOT CROSSING No. 753190K
 CPUC CROSSING No. 001A-216.10-A

TRAFFIC DATA (DAILY):
 FREIGHT = 20
 AMTRAC = 2

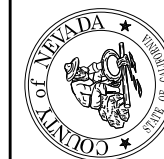
NOTES:

1. FOR OVERHEAD REHABILITATION DETAILS SEE STRUCTURAL PLANS.

REVISIONS	
NO.	DESCRIPTION

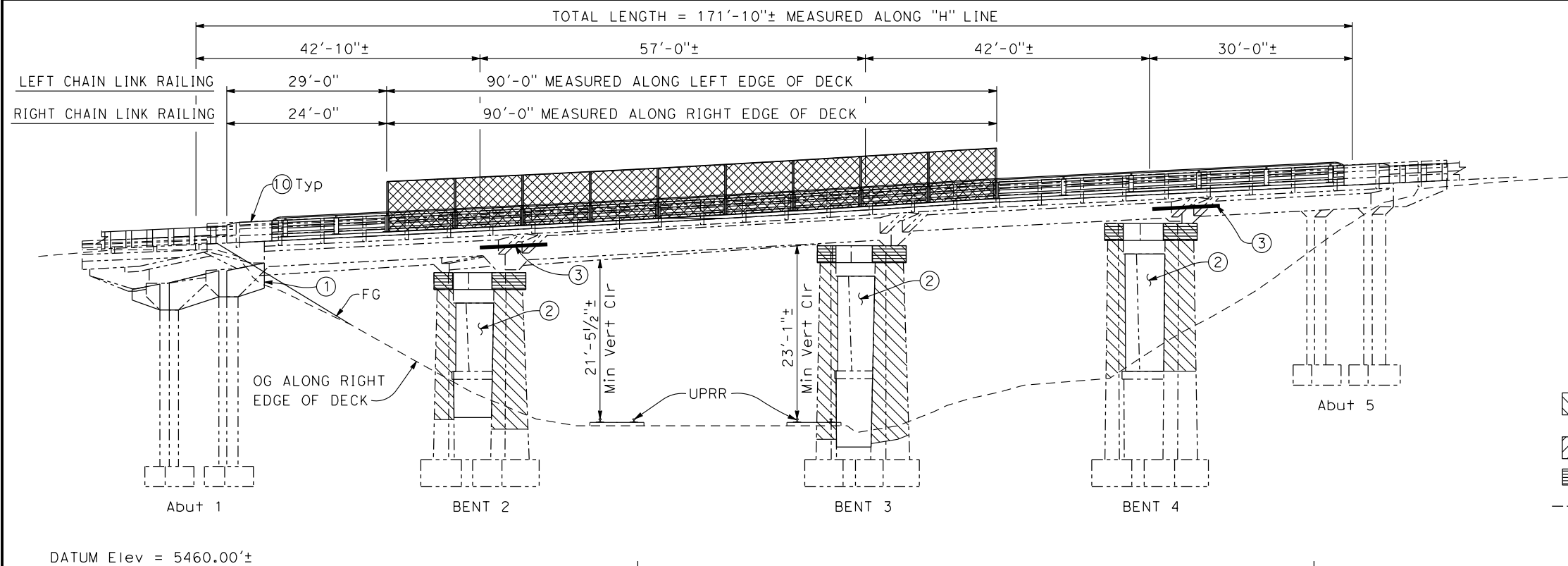


DESIGNED BY DOKKEN ENGINEERING
 FOR
NEVADA COUNTY
 DEPARTMENT OF PUBLIC WORKS
 DESIGN/CONSTRUCTION DIVISION



**HIRSCHDALE ROAD OVERHEAD
 (REHABILITATION)**
 RAILROAD SAFETY IMPROVEMENTS

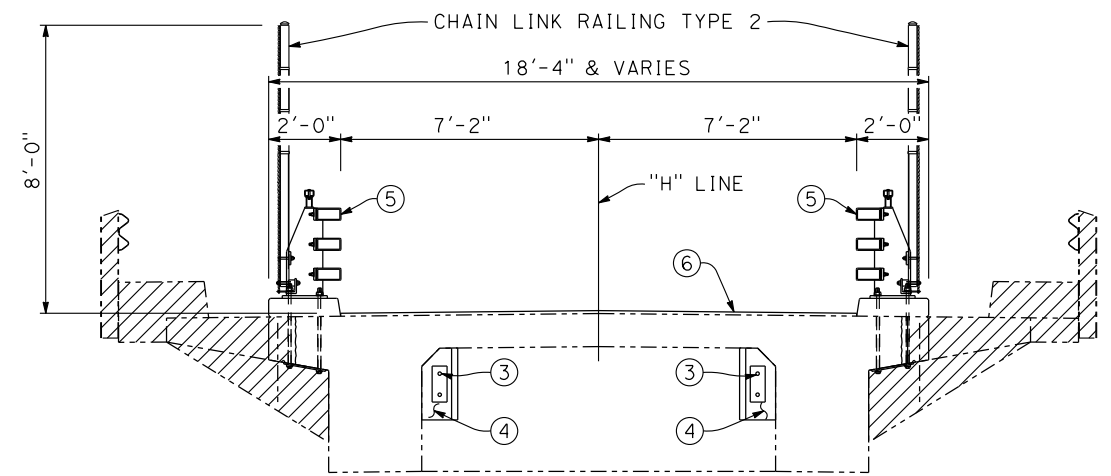
BRIDGE No.	17C-0046
DESIGNED:	K. MOE
DRAWN:	K. MOE
CHECKED:	M. GRIGGS
JOB NO:	2250
DATE:	MARCH 2024



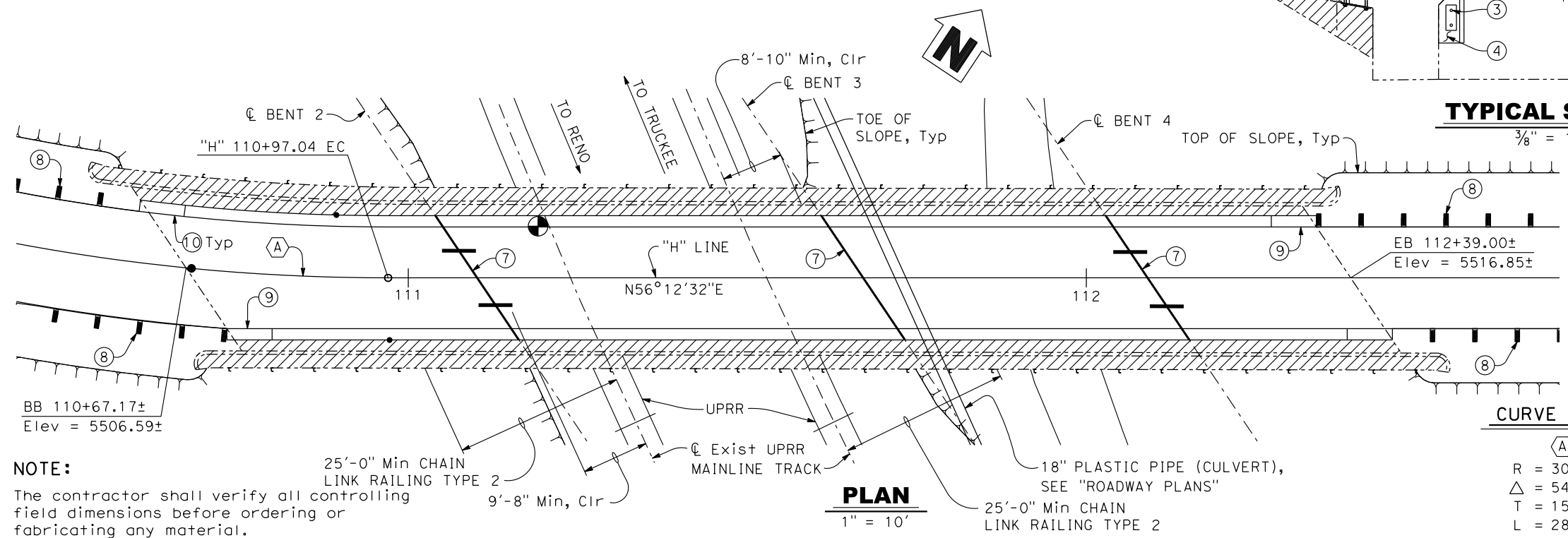
DATUM Elev = 5460.00'±

ELEVATION
1" = 10'

- LEGEND**
- ① REINFORCED CONCRETE BELOW ABUTMENT DIAPHRAGM
 - ② INFILL CONCRETE WALL
 - ③ LONGITUDINAL RESTRAINER
 - ④ DIAPHRAGM BOLSTER
 - ⑤ CALIFORNIA ST-75 BRIDGE RAIL WITH TUBULAR BICYCLE RAILING
 - ⑥ REMOVE EXISTING AC OVERLAY AND ADD POLYESTER CONCRETE OVERLAY (1" THICK)
 - ⑦ REPLACE JOINT SEAL (TYPE B MR = 1")
 - ⑧ MIDWEST GUARDRAIL SYSTEM
 - ⑨ PAINT "BR NO 17C0046" & "CONSTRUCTED 1926"
 - ⑩ APPROACH END BLOCK, TYP (4 LOCATIONS)
- REPAIR CRACKS AND SPALLS AND REFINISH CONCRETE SURFACE
 - DENOTES BRIDGE REMOVAL (PORTION)
 - COMPOSITE COLUMN CASING
 - DENOTES EXISTING STRUCTURE
 - DENOTES POINT OF MINIMUM VERTICAL CLEARANCE



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



PLAN
1" = 10'

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

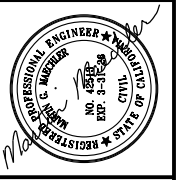
CURVE DATA

R	= 300.00'
Δ	= 54° 35' 17"
T	= 154.80'
L	= 285.82'

NOTE:
FOR BAT EXCLUSION AND SWALLOW REQUIREMENTS, SEE SECTION 14 OF THE SPECIAL PROVISIONS

RAILROAD INFORMATION
MP 216.1, ROSEVILLE SUBDIVISION
DOT CROSSING No. 753190K
CPUC CROSSING No. 001A-216.10-A

REVISIONS	
NO.	DESCRIPTION



NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION

HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
GENERAL PLAN

BRIDGE NO.:	17C0046
DESIGNED:	MM
DRAWN:	KD
CHECKED:	GM
JOB NO.:	2250
DATE:	MAY, 2024
SHEET	16
OF 39 SHEETS	

INDEX TO PLANS

SHEET NO.	TITLE
16	GENERAL PLAN
17	INDEX TO PLANS
18	ABUTMENT 1 REHAB DETAILS NO. 1
19	ABUTMENT 1 REHAB DETAILS NO. 2
20	BENTS 2 AND 3 REHAB DETAILS
21	BENT 4 REHAB DETAILS
22	TYPICAL SECTION
23	CABLE RESTRAINER TYPE 2 DETAILS
24	CABLE RESTRAINER HARDWARE DETAILS
25	SPALL AND CRACK REPAIR DETAILS NO. 1
26	SPALL AND CRACK REPAIR DETAILS NO. 2
27	SPALL AND CRACK REPAIR DETAILS NO. 3
28	SPALL AND CRACK REPAIR DETAILS NO. 4
29	SPALL AND CRACK REPAIR DETAILS NO. 5
30	SPALL AND CRACK REPAIR DETAILS NO. 6
31	SPALL AND CRACK REPAIR DETAILS NO. 7
32	COMPOSITE COLUMN CASING
33	CALIFORNIA ST-75 BRIDGE RAIL DETAILS No. 1
34	CALIFORNIA ST-75 BRIDGE RAIL DETAILS No. 2
35	CALIFORNIA ST-75 BRIDGE RAIL DETAILS No. 3
36	CALIFORNIA ST-75 BRIDGE RAIL DETAILS No. 4
37	CALIFORNIA ST-75 BRIDGE RAIL DETAILS No. 5
38	CHAIN LINK RAILING TYPE 2 DETAILS No. 1
39	CHAIN LINK RAILING TYPE 2 DETAILS No. 2

QUANTITIES

Item	Total
Structure Excavation (Bridge)	23 CY
Structure Backfill (Bridge)	11 CY
Structural Concrete, Bridge	53 CY
Diaphragm Bolster	8 EA
Drill and Bond Dowel	325 LF
Drill and Bond Dowel (Chemical Adhesive)	50 LF
Joint Seal (MR=1")	65 LF
Bar Reinforcing Steel (Bridge)	3,451 LB
Bar Reinforcing Steel (Epoxy Coated)(Bridge)	3,318 LB
Inject Crack (Epoxy)	148 LF
Repair Spalled Surface Area	67 SQFT
Remove Asphalt Concrete Surfacing	3,135 SQFT
Prepare Concrete Bridge Deck Surface	2,585 SQFT
Furnish Polyester Concrete Overlay	216 CF
Place Polyester Concrete Overlay	2,585 SQFT
Core Concrete (1 1/2")	144 LF
Core Concrete (3")	18 LF
Bridge Removal (Portion)	1 LS
Composite Column Casings	220 SQFT
Carbon Fiber Anchor	36 EA
Miscellaneous Metal (Restrainer-Cable Type 2)	828 LB
Chain Link Railing Type 2	180 LF
California ST-75 Bridge Rail	346 LF
Tubular Bicycle Railing	324 LF

**GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN**

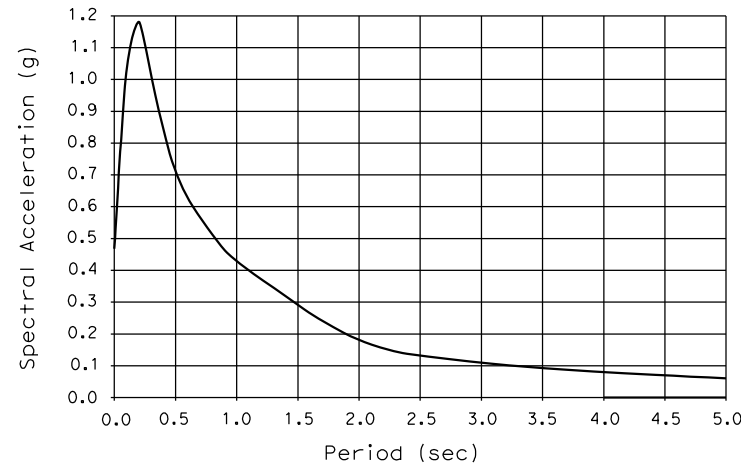
DESIGN: AASHTO LRFD Bridge Design Specifications, 8th Edition with Caltrans Amendments 8th Edition.

SEISMIC DESIGN: Caltrans Memo To Designers 20-4 Dated, June 2016

DEAD LOAD: Includes 0.035 ksf for future wearing surface

LIVE LOAD: HL-93, Caltrans' "Low Boy" and CA P-15 Permit.

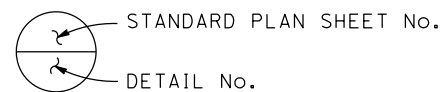
SEISMIC LOAD: Soil profile : $V_{s30} = 560$ m/s
Maximum Magnitude : 6.7
Peak Rock Acceleration = 0.53g



REINFORCED CONCRETE: $f_y = 60$ ksi
 $f'_c = 3.6$ ksi
 $n = 8$

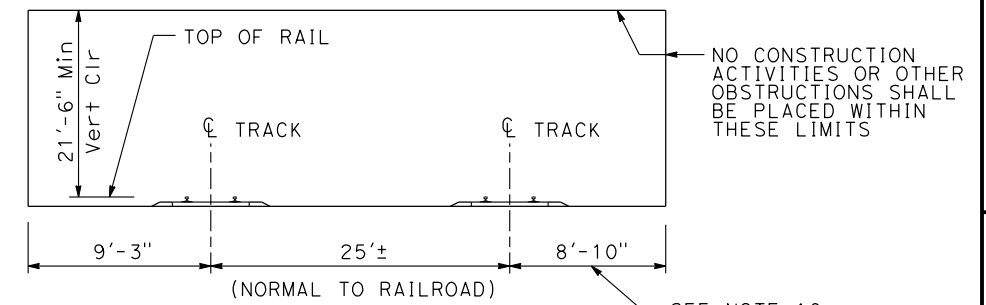
STANDARD PLANS DATED 2023

Sheet No.	Title
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)
A10H	LEGEND - ROCK
A62B	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE SURCHARGE AND WALL
A77U3A	MIDWEST GUARDRAIL SYSTEM - CONNECTIONS TO ABUTMENTS AND WALLS
A77U3B	MIDWEST GUARDRAIL SYSTEM - CONNECTIONS TO ABUTMENTS AND WALLS
B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")



RAILROAD CONSTRUCTION NOTES:

- All shoring systems that impact the Railroad's operations and/or supports the Railroad's embankment shall be designed and constructed per Railroad Guidelines for Temporary Shoring.
- All demolitions within the Railroad's right-of-way and/or demolition that may impact the Railroad's tracks or operations shall comply with the Railroad's Demolition requirements.
- Erection over the Railroad's track shall be planned such that it enables the track(s) to remain open to traffic per the Railroad's requirements.
- The elevation of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies between field survey and dimensions on plans shall be brought to the attention of the Railroad prior to construction.
- The proposed grade separation project shall not change the quantity and/or characteristics of the flow in the Railroad's ditches and/or drainage structures.
- The contractor must submit a proposed method of erosion and sediment control and have the method approved by the Railroad.
- For Railroad coordination please refer to the Railroad's Coordination Requirements as part of the Special Provisions of the project.
- Temporary Construction Clearances, including falsework clearance, shall comply with "Minimum Construction Clearance Envelope" detail.
- All permanent clearances shall be verified before project closeout.
- All work closer to the tracks than 15.0 feet shall be submitted to the Railroad Project Representative for a variance approval through the engineer at least 60 days in advance of the work.



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE

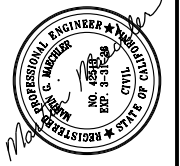
NO SCALE

GENERAL REQUIREMENTS

- All work within 25' of track centerline requires Railroad flagging protection. Contractor to coordinate with UPRR.
- All equipment and personnel to perform work shall remain outside of the Minimum Construction Clearance Envelope, except when working in designated and approved track windows.
- Per Railroad requirements, all personnel must clear the area within 25 feet of the track center line and secure all equipment when a train passes the work site.
- Site shall be accessed without crossing track except at existing public road crossings. If track crossings by vehicles or equipment are required away from existing track crossings, coordinate with Railroad flagger.
- No equipment shall be supported on the track, ties or ballast under load at any time.

REVISIONS

NO.	DATE	BY	DESCRIPTION



NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION



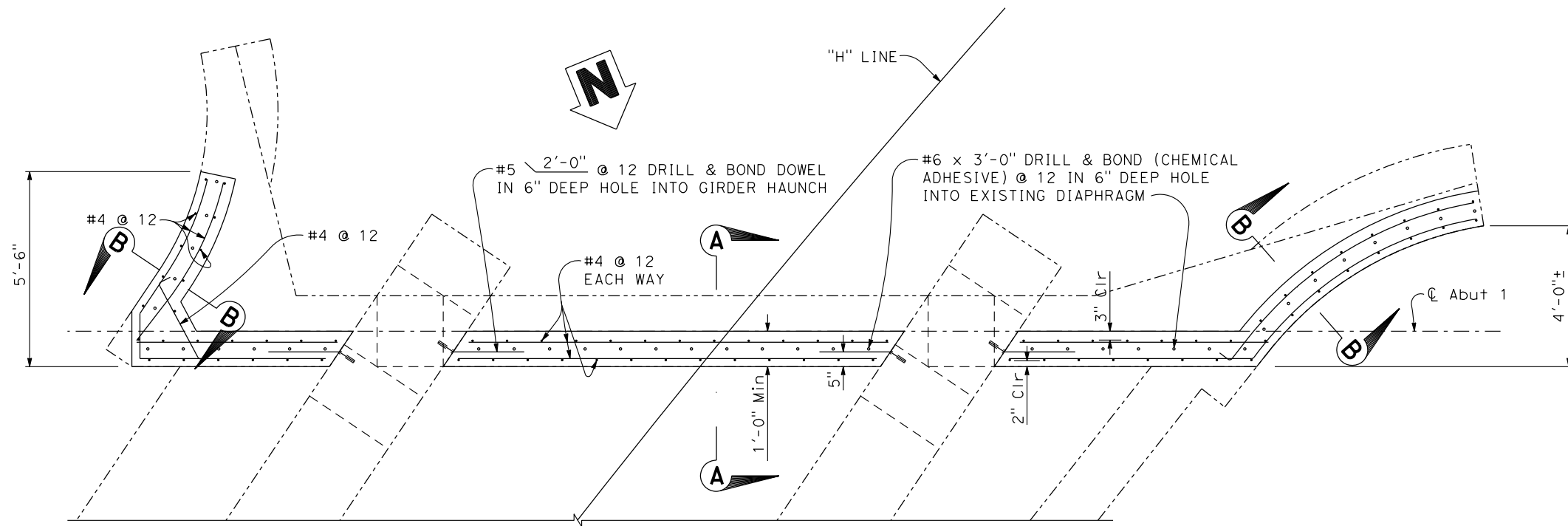
HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
INDEX TO PLANS

BRIDGE NO.: 17C0046
DESIGNED: MM
DRAWN: KD
CHECKED: GM
JOB NO: 2250
DATE: MAY, 2024

SHEET

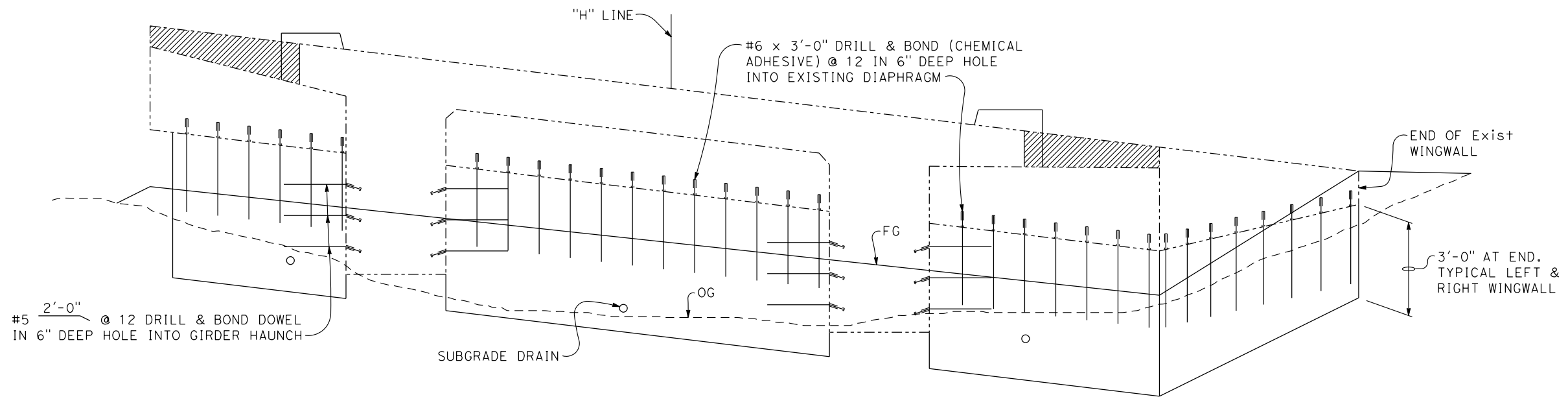
17

OF 39 SHEETS



ABUTMENT 1 PLAN

1/2" = 1'-0"



ABUTMENT 1 ELEVATION

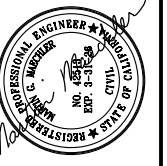
1/2" = 1'-0"

NOTES:

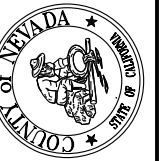
1. For Sections A-A & B-B, see "ABUTMENT 1 REHAB DETAILS NO. 2" sheet.
2. The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

REVISIONS

NO.	DESCRIPTION	BY	DATE



NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION



HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
ABUTMENT 1 REHAB DETAILS NO. 1

BRIDGE NO.: 17C0046

DESIGNED: MM

DRAWN: KD

CHECKED: GM

JOB NO: 2250

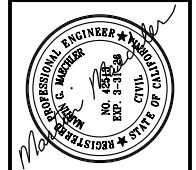
DATE: MAY, 2024

SHEET

18

OF 39 SHEETS

REVISIONS	
NO.	DATE

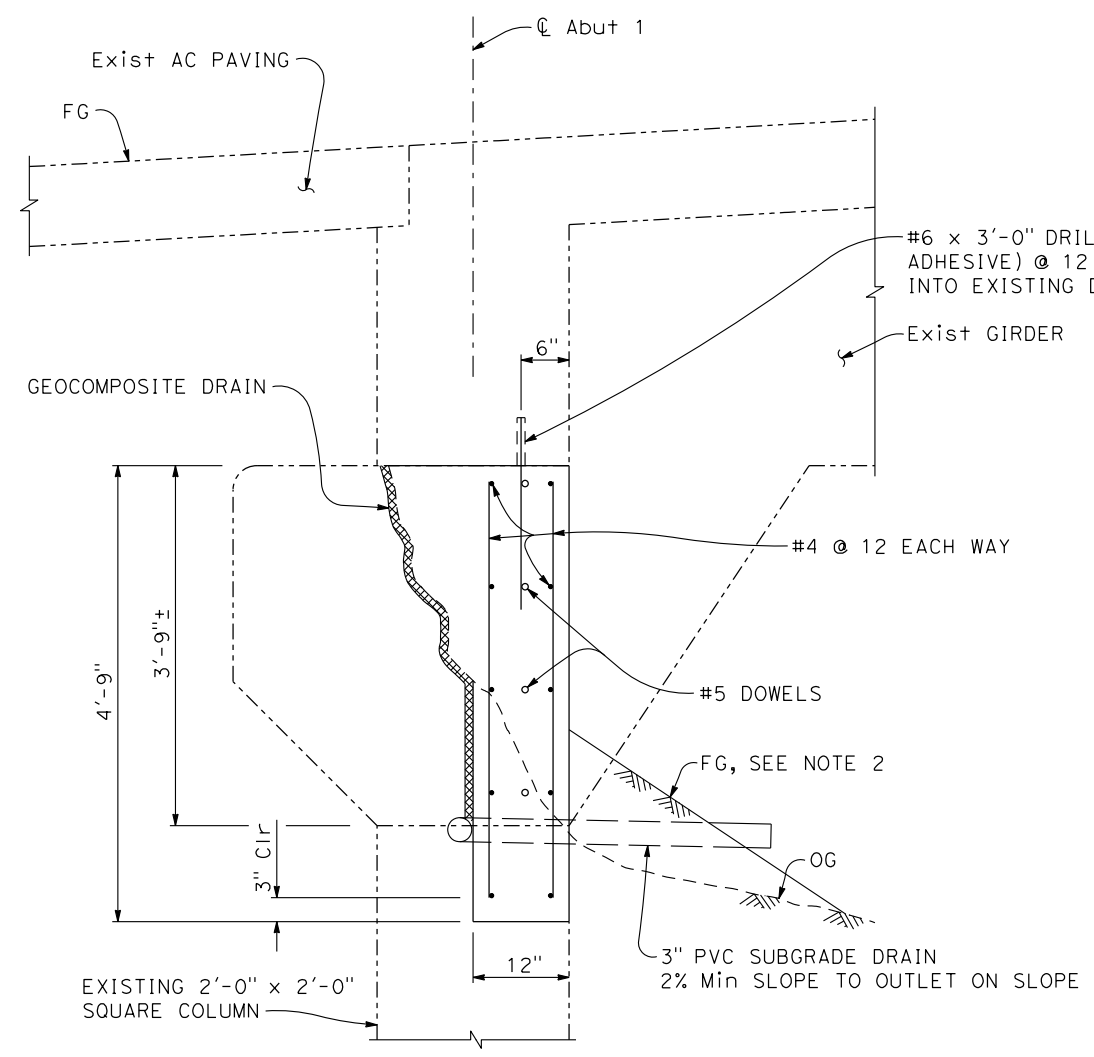


NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION



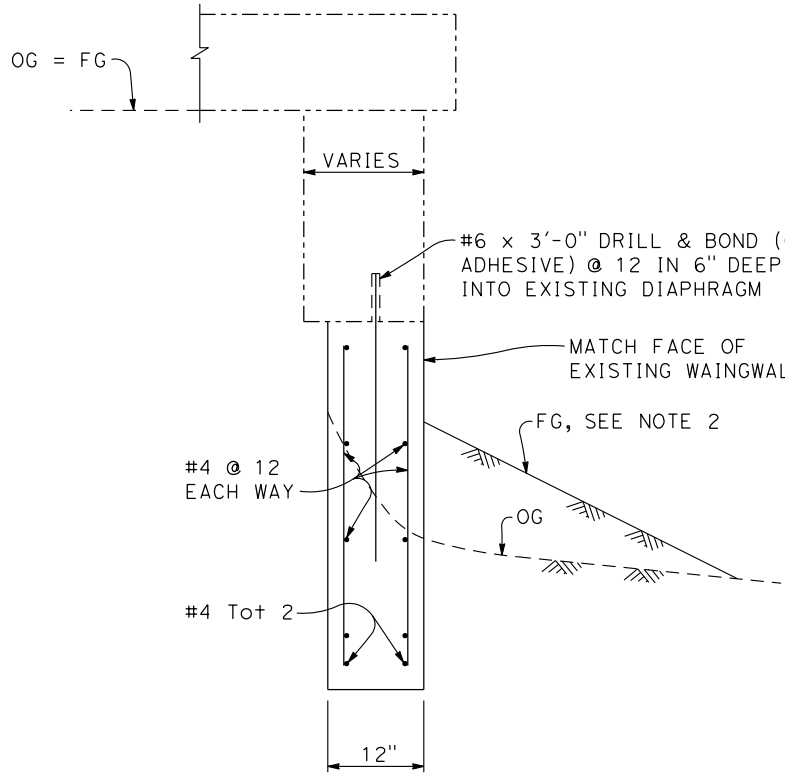
HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
ABUTMENT 1 REHAB DETAILS NO. 2

BRIDGE NO.:	17C0046
DESIGNED:	MM
DRAWN:	KD
CHECKED:	GM
JOB NO.:	2250
DATE:	MAY, 2024



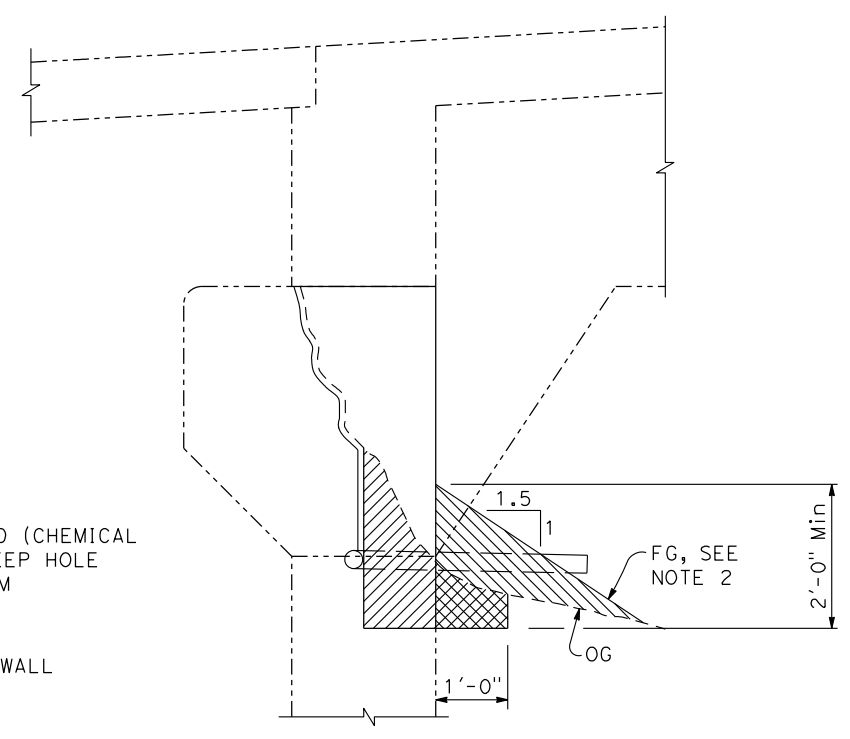
SECTION A-A

1" = 1'-0"



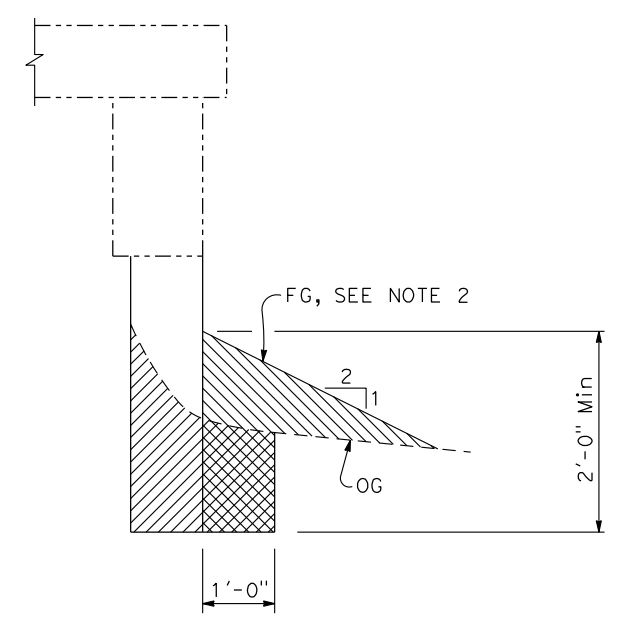
SECTION B-B

1" = 1'-0"



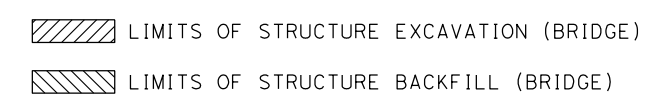
SECTION @ ABUTMENT

NO SCALE



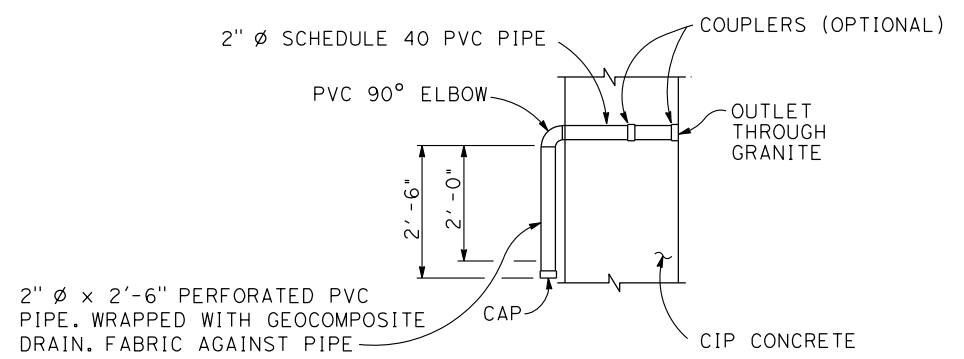
SECTION @ WINGWALL

NO SCALE



LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL (BRIDGE)

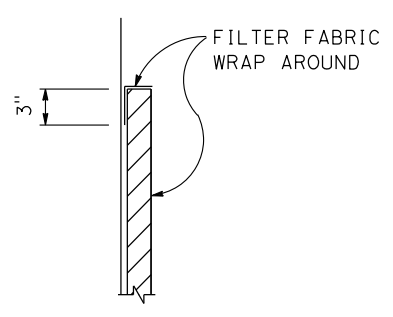
NO SCALE



PLAN VIEW-BASE OF WALL

GEOCOMPOSITE DRAIN DETAIL

NO SCALE

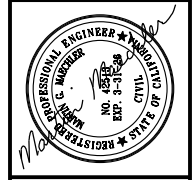


TOP OF WALL

NOTES:

1. For location of Sections A-A & B-B, see "ABUTMENT 1 REHAB DETAILS NO. 1" sheet.
2. FG must not be lower than OG.
3. The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

REVISIONS	
NO.	DESCRIPTION



NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION

HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
BENTS 2 AND 3
REHAB DETAILS

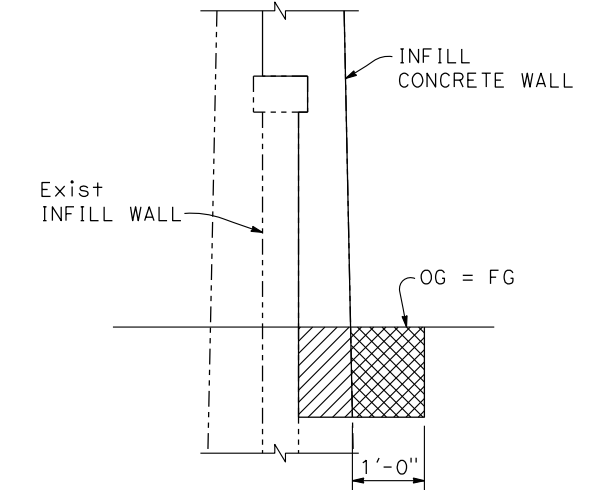
BRIDGE NO.: 17C0046
DESIGNED: MM
DRAWN: KD
CHECKED: GM
JOB NO: 2250
DATE: MAY, 2024

LEGEND

- DOWEL (A) : #5 $\frac{10''}{}$ @ 12 EACH WAY. DRILL & BOND IN 5" DEEP HOLE
- DOWEL (B) : #5 $\frac{1'-6''}{}$ @ 12 EACH WAY. DRILL & BOND IN 5" DEEP HOLE
- DOWEL (C) : #5 x 2'-0" @ 12 EACH WAY. DRILL & BOND IN 5" DEEP HOLE
- DOWEL (D) : #5 x 2'-0" @ 12. DRILL & BOND (CHEMICAL ADHESIVE) IN 6" DEEP HOLE
- COMPOSITE COLUMN CASING, CARBON FIBER REINFORCED POLYMER WRAP

NOTES:

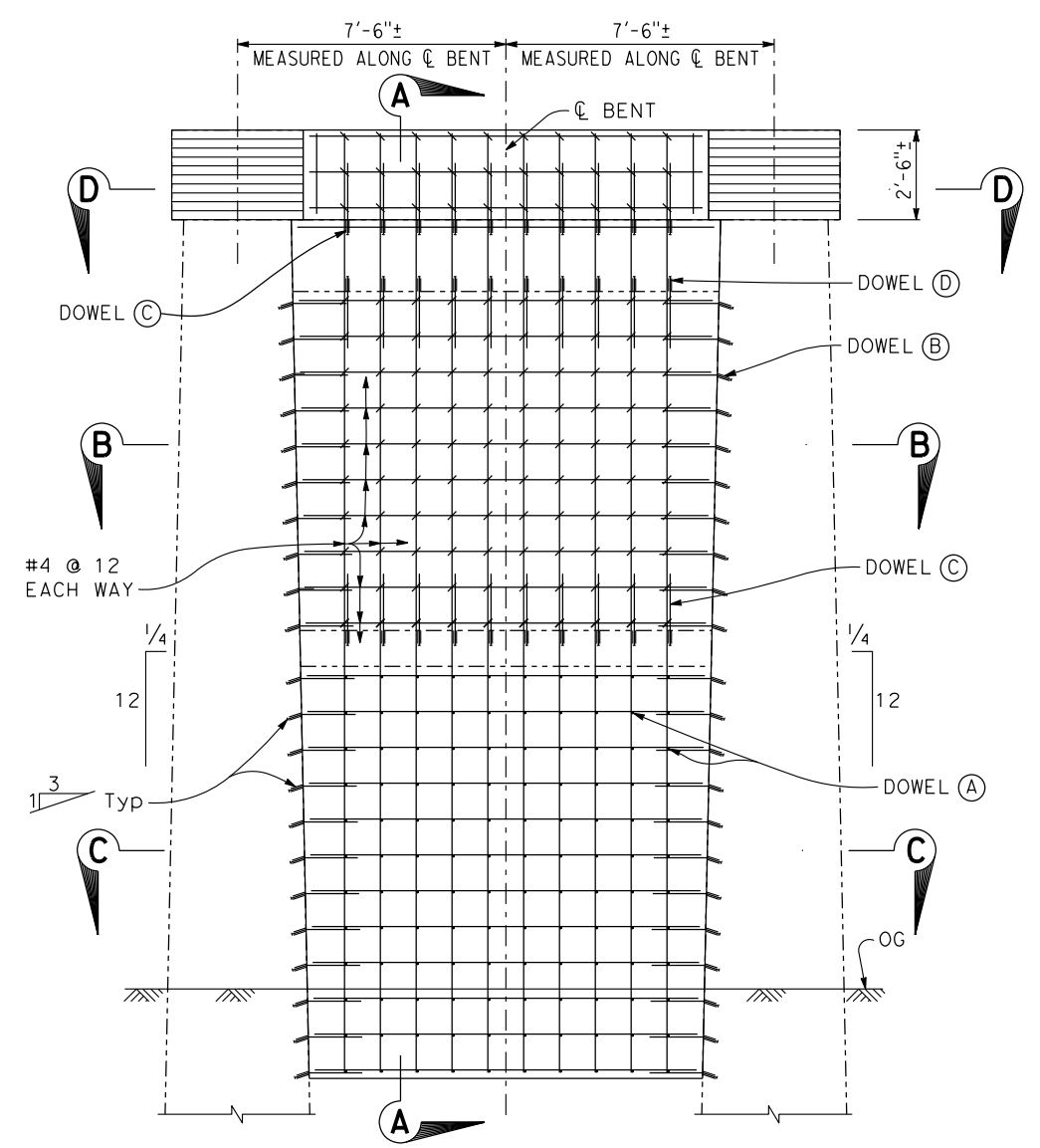
1. The contractor shall verify all controlling field dimensions before ordering or fabricating any material.
2. Railroad review and approval of shoring, demolition, forming and falsework plans are required prior to their commencement. Due to restricted clearances and proximity to track, detailed work plans shall be provided that show proposed access, equipment, and material staging areas, work schedules and procedures, and required track windows for each activity.



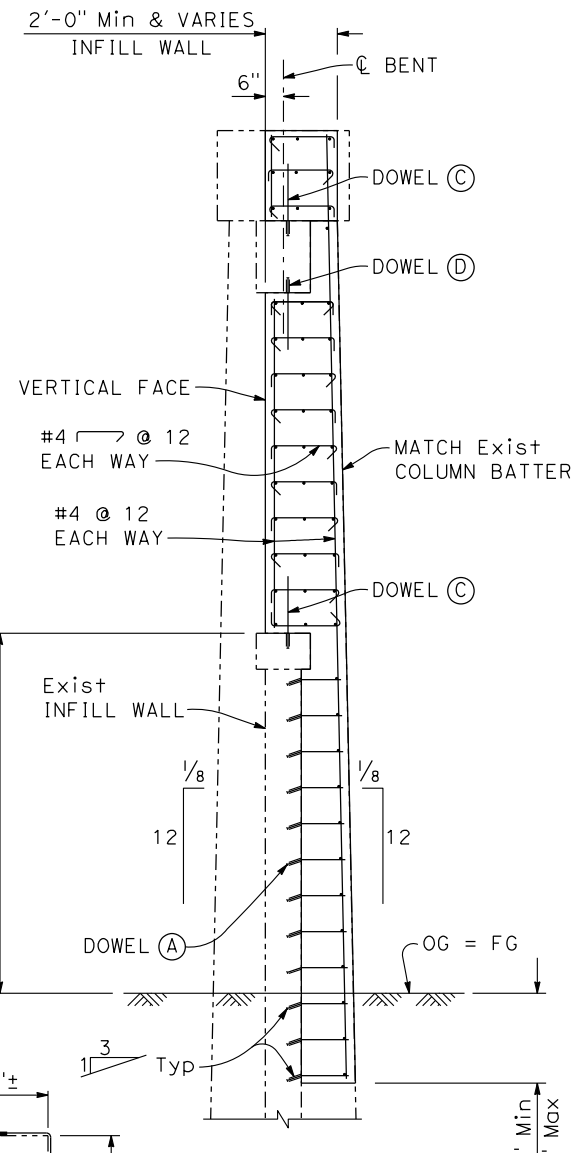
- LIMITS OF STRUCTURE EXCAVATION (BRIDGE)
- LIMITS OF STRUCTURE BACKFILL (BRIDGE)

LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL (BRIDGE)

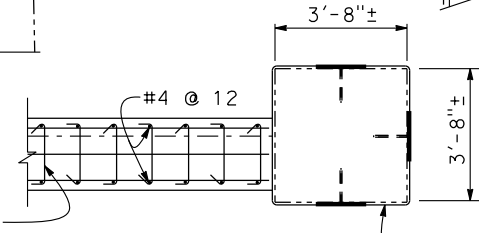
NO SCALE



ELEVATION
 $\frac{3}{8}'' = 1'-0''$

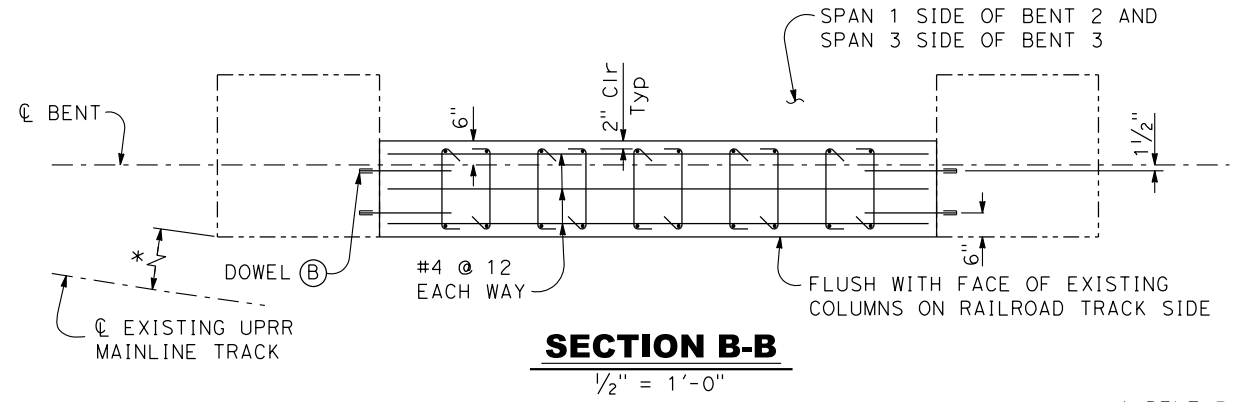


SECTION A-A
 $\frac{3}{8}'' = 1'-0''$

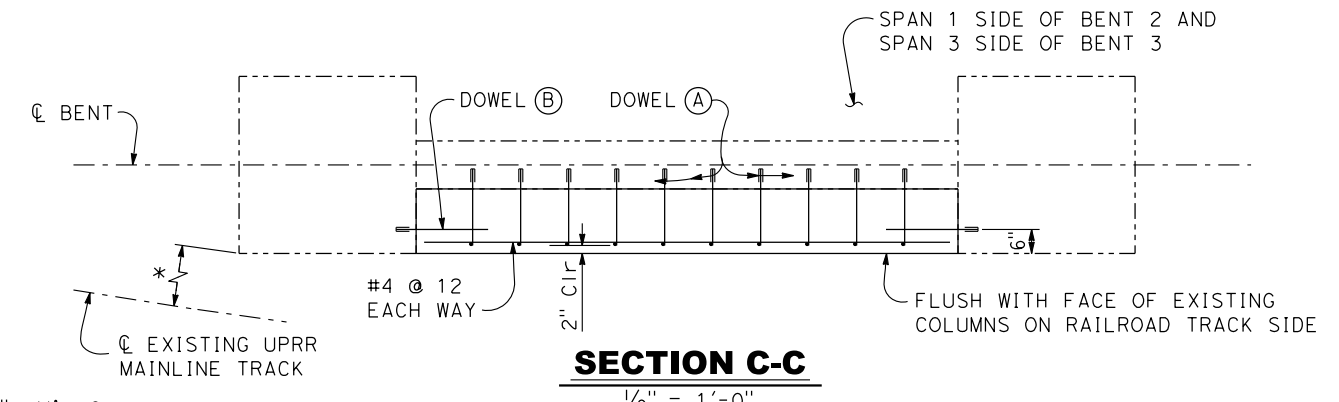


PART SECTION D-D
 $\frac{3}{8}'' = 1'-0''$

CARBON FRP COLUMN WRAP AND CFRP ANCHOR, SEE "COMPOSITE COLUMN CASING" SHEET. PLACE PRIOR TO CONSTRUCTING INFILL WALL.

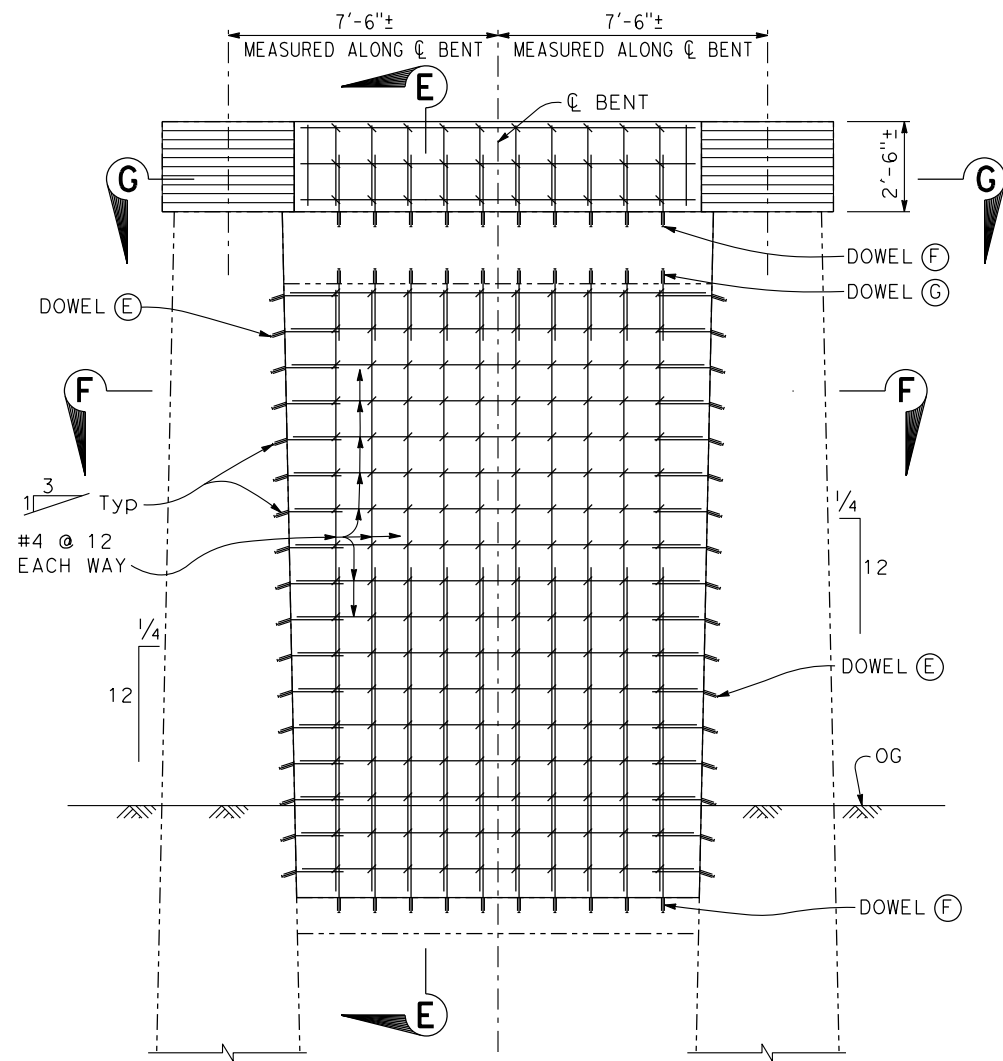


SECTION B-B
 $\frac{1}{2}'' = 1'-0''$

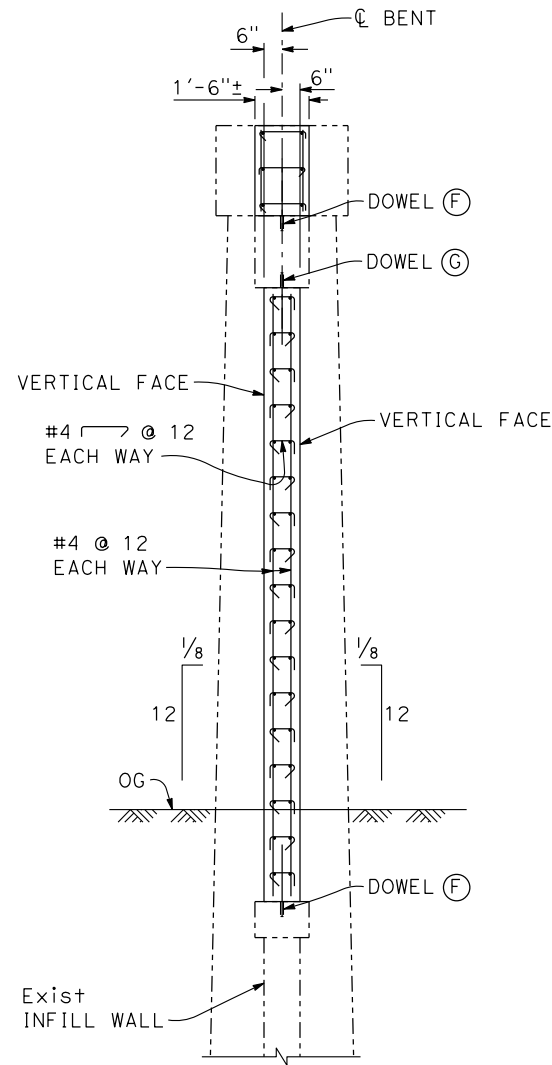


SECTION C-C
 $\frac{1}{2}'' = 1'-0''$

* BENT 3 8'-10"± Min Cir
BENT 2 9'-8"± Min Cir



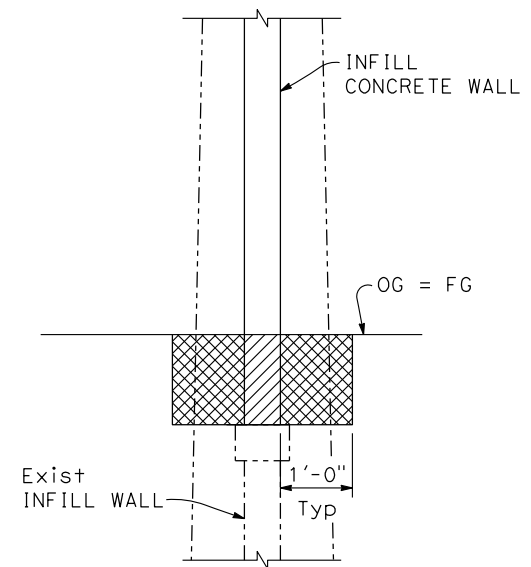
ELEVATION
 $\frac{3}{8}'' = 1'-0''$



SECTION E-E
 $\frac{3}{8}'' = 1'-0''$

LEGEND

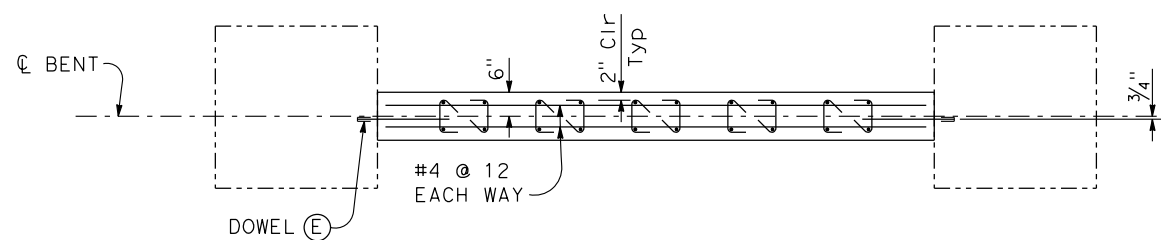
- DOWEL (E) : #5 1'-6" @ 12 EACH WAY. DRILL & BOND IN 5" DEEP HOLE
- DOWEL (F) : #5 x 2'-0" @ 12 EACH WAY. DRILL & BOND IN 5" DEEP HOLE
- DOWEL (G) : #5 x 2'-0" @ 12. DRILL & BOND (CHEMICAL ADHESIVE) IN 6" DEEP HOLE
- COMPOSITE COLUMN CASING, CARBON FIBER REINFORCED POLYMER WRAP



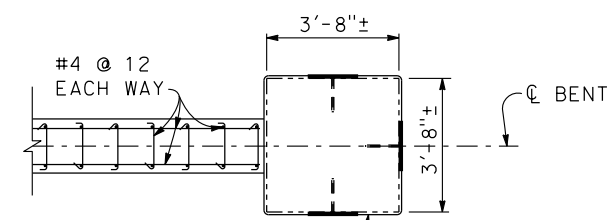
- LIMITS OF STRUCTURE EXCAVATION (BRIDGE)
- LIMITS OF STRUCTURE BACKFILL (BRIDGE)

LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL (BRIDGE)

NO SCALE



SECTION F-F
 $\frac{1}{2}'' = 1'-0''$



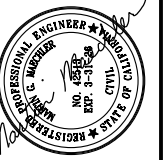
PART SECTION G-G
 $\frac{3}{8}'' = 1'-0''$

CARBON FRP COLUMN WRAP AND CFRP ANCHOR, SEE "COMPOSITE COLUMN CASING" SHEET. PLACE PRIOR TO CONSTRUCTING INFILL WALL.

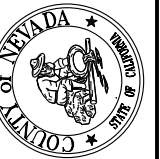
NOTE:

The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

REVISIONS	
NO.	DESCRIPTION



NEVADA COUNTY
 DEPARTMENT OF PUBLIC WORKS
 DESIGN/CONSTRUCTION DIVISION



HIRSCHDALE ROAD OVERHEAD
 (REHABILITATION)
 BENT 4 REHAB DETAILS

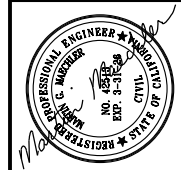
BRIDGE NO.: 17C0046
DESIGNED: MM
DRAWN: KD
CHECKED: GM
JOB NO: 2250
DATE: MAY, 2024

SHEET

21

OF 39 SHEETS

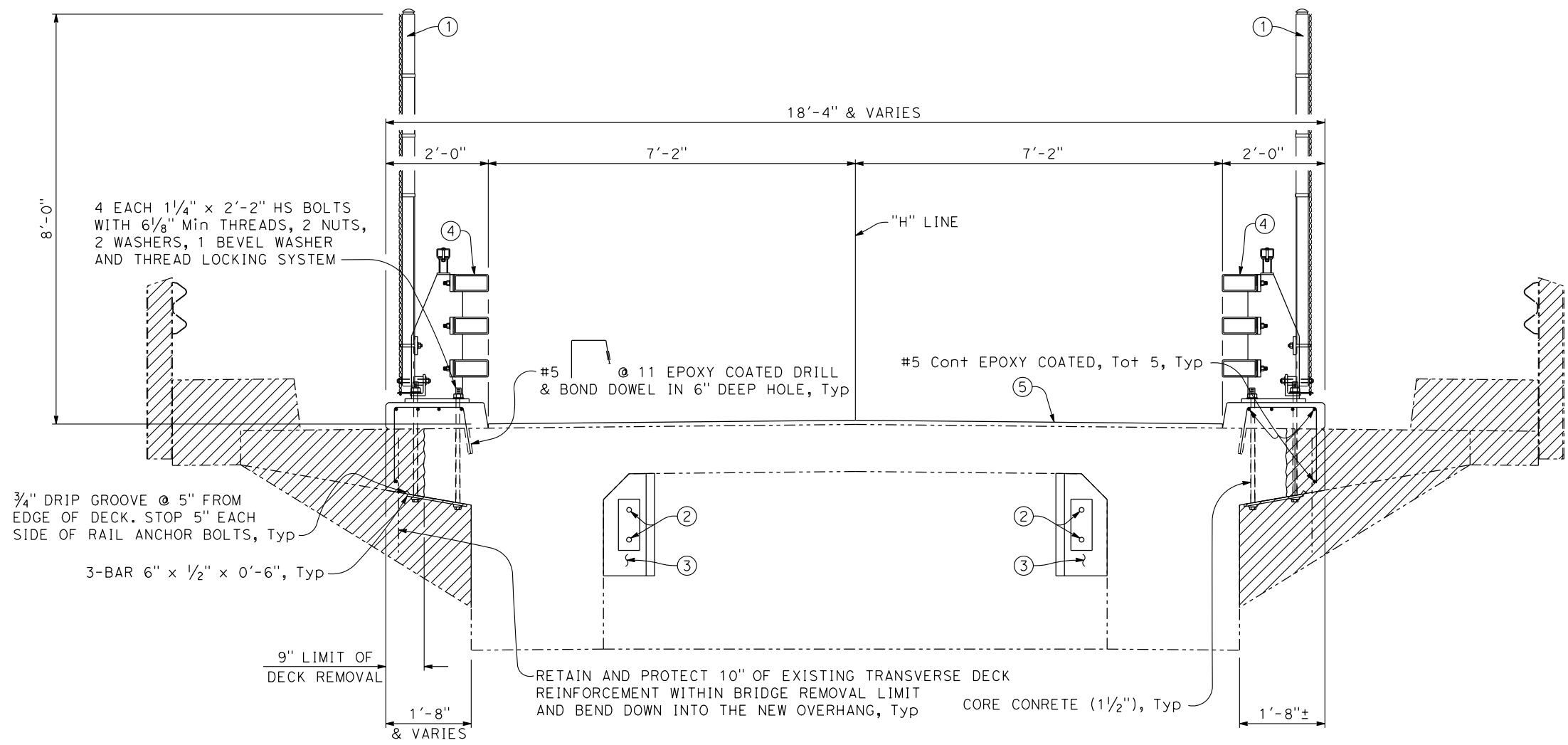
REVISIONS	
NO.	DATE



NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION

HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
TYPICAL SECTION

BRIDGE NO.:	17C0046
DESIGNED:	MM
DRAWN:	KD
CHECKED:	GM
JOB NO.:	2250
DATE:	MAY, 2024



TYPICAL SECTION

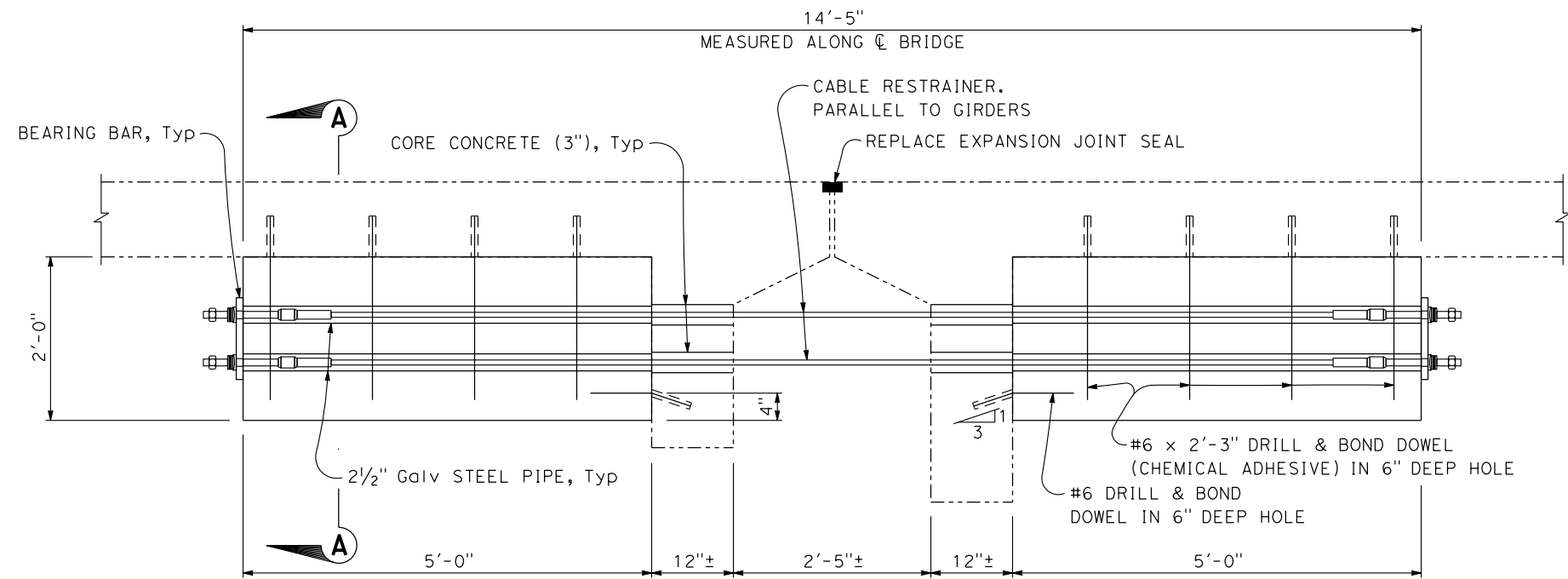
3/4" = 1'-0"

LEGEND

- ① CHAIN LINK RAILING TYPE 2
 - ② LONGITUDINAL RESTRAINER
 - ③ DIAPHRAGM BOLSTER
 - ④ CALIFORNIA ST-75 BRIDGE RAIL WITH TUBULAR BICYCLE RAIL
 - ⑤ REMOVE EXISTING AC OVERLAY AND ADD POLYESTER CONCRETE OVERLAY (1" THICK)
- DENOTES BRIDGE REMOVAL (PORTION)
 DENOTES EXISTING STRUCTURE

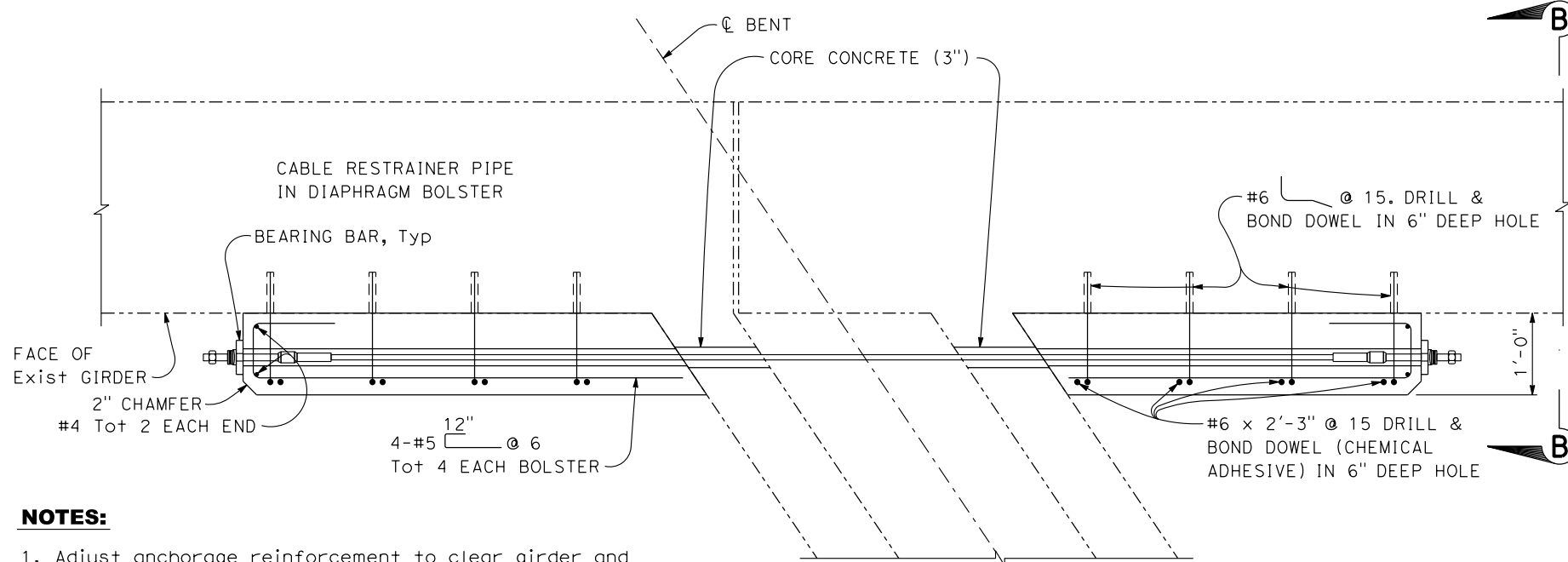
NOTE:

The contractor shall verify all controlling field dimensions before ordering or fabricating any material.



ELEVATION

1" = 1'-0"

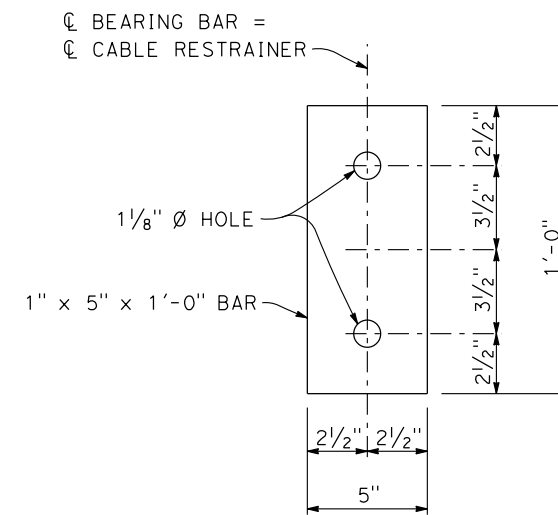


PLAN

1" = 1'-0"

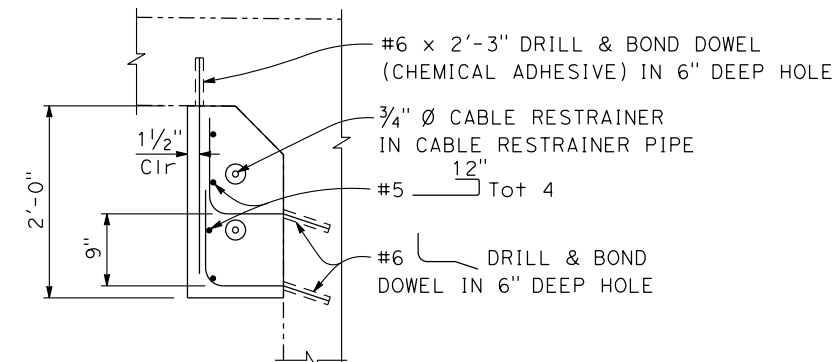
NOTES:

1. Adjust anchorage reinforcement to clear girder and diaphragm reinforcement.
2. Cable Restrainer Pipes must be 2 1/2" std galvanized pipe. The Pipes must be aligned to form a straight line the entire length of the restrainers and must be parallel to the centerline of the girder. The pipes must not extend beyond the concrete faces and shall have smooth edges to prevent damage to restrainers. During construction pipe ends shall be capped to prevent debris intrusion.
3. Anchorage surface must be perpendicular to the girder.
4. For Cable Restrainer and Hardware details see: "Cable Restrainer Hardware Details" sheet.
5. The contractor shall verify all controlling field dimensions before ordering or fabricating any material.



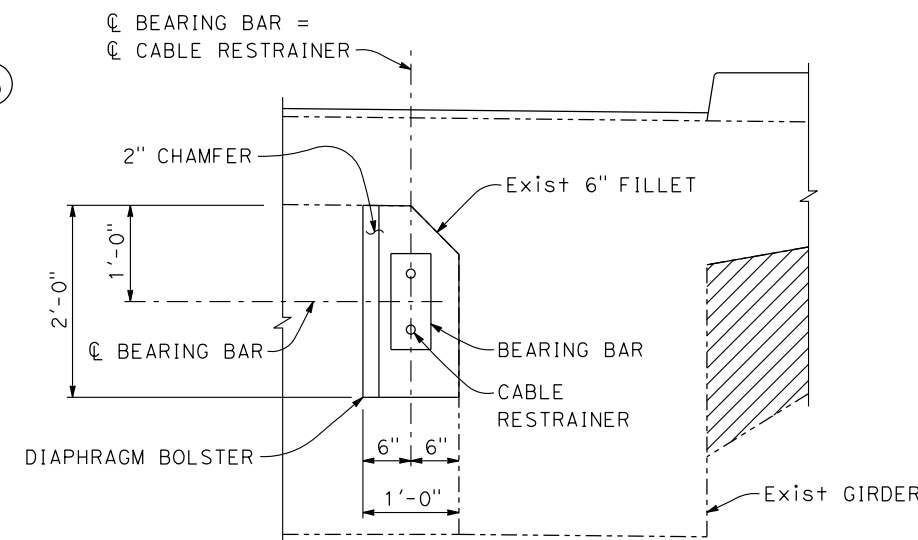
BEARING BAR

3" = 1'-0"



SECTION A-A

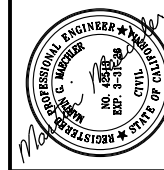
1" = 1'-0"



VIEW B-B

1" = 1'-0"

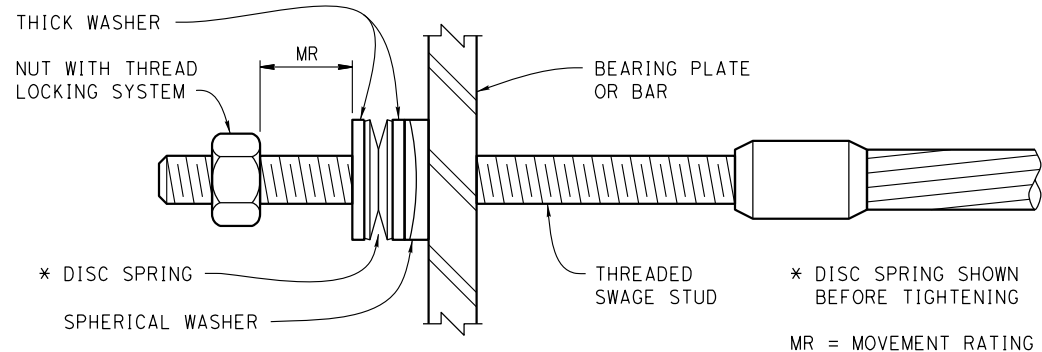
REVISIONS	
NO.	DESCRIPTION



NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION

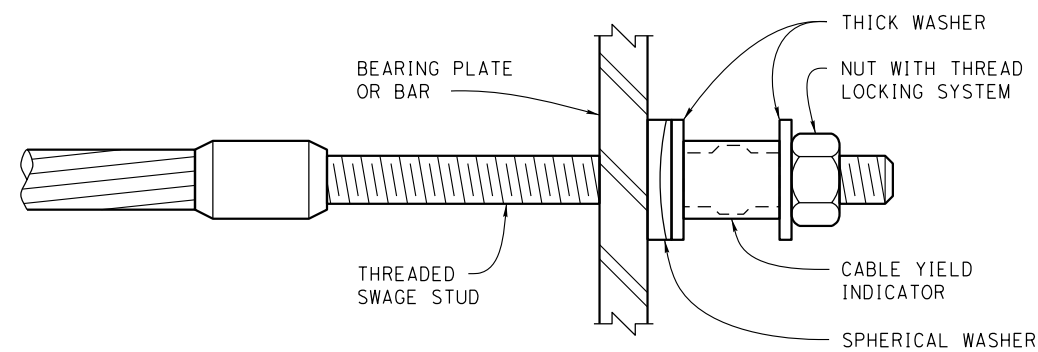
HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
CABLE RESTRAINER
TYPE 2 DETAILS

BRIDGE NO.: 17C0046
DESIGNED: MM
DRAWN: KD
CHECKED: GM
JOB NO: 2250
DATE: MAY, 2024



DISC SPRING HARDWARE

6" = 1'-0"

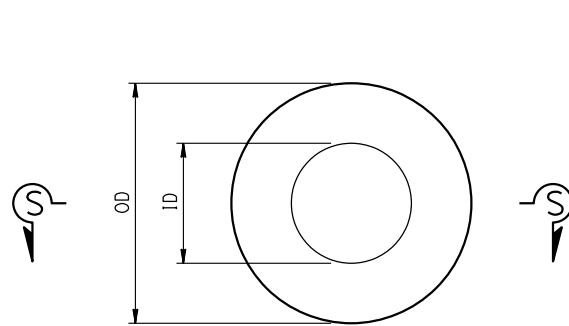


CABLE YIELD INDICATOR HARDWARE

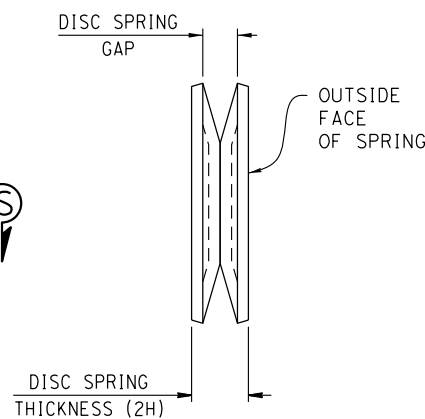
6" = 1'-0"

Notes

1. Place the Cable Yield Indicator hardware on the Supported side of the Hinge. Place the Disc Spring hardware on the Hinge Seat side.
2. All exposed, non-painted hardware must be galvanized. Dimensions shown are before galvanizing except as noted.
3. Nuts must not be set until after the completion of prestressing for CIP prestressed bridges.
4. In corrosive environments, add a Locking Nut instead of the Thread Locking System.

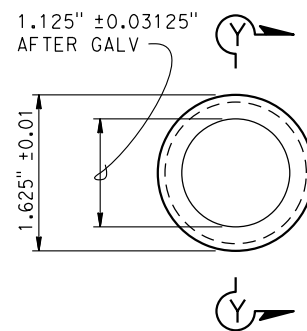


END VIEW

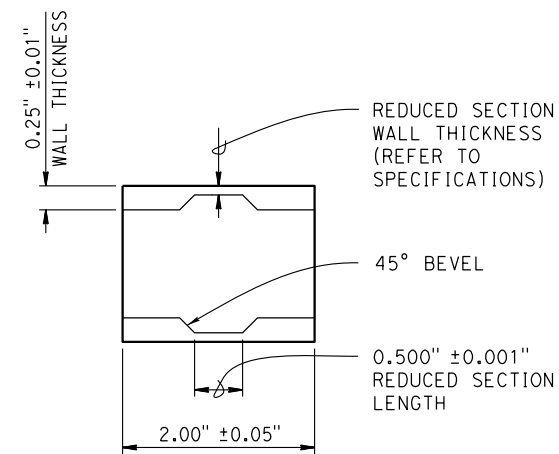


ASSEMBLED SPRING

Before Nut Tightening



END VIEW



SECTION Y-Y

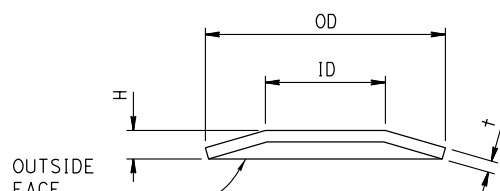
CABLE YIELD INDICATOR

1" = 1"

RESTRAINER UNIT INSTALLATION PROCEDURE

For typical straight Restrainers, girder to opposite girder alignment:

1. Install Spherical Washers, Thick Washers, Cable Yield Indicator and Nut with Thread Locking System on the Supported side.
2. Install Spherical Washers, Thick Washers, Disc Spring and Nut on the Hinge Seat side.
3. Tighten the nuts on the Hinge Seat side of restrainer units until the Disc Springs collapse and there is no gap remaining between the discs.
4. Place thread locking system on the threaded stud and back off the nut from the Disc Spring a distance equal to the maximum additional amount that the hinge is expected to open, relative to existing ambient conditions, for the Movement Rating (MR) as shown on the Structure plans.

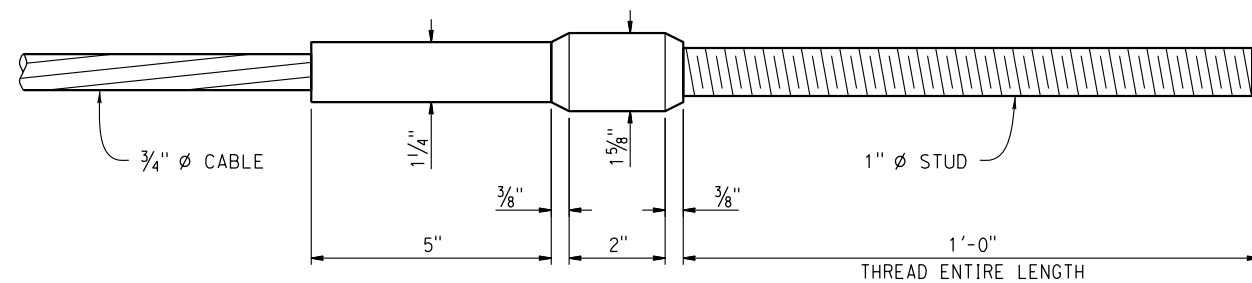


SECTION S-S

Single Disc

DISC SPRING

1" = 1"



CABLE END SWAGE STUD DETAIL

6" = 1'-0"

DISC SPRING AND WASHER DIMENSIONS

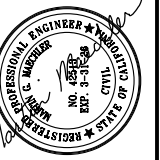
RESTRAINER LENGTH	DISC SPRING					SPHERICAL WASHER			THICK WASHER		
	L (ft)	ID	OD	t	H	COLOR CODE	ID	OD	NOMINAL THICKNESS	ID	OD
00.0 - 25.0	1.125	2.00	0.065	0.130	WHITE	1.125	2.00	0.75	1.125	2.00	0.25
25.1 - 31.9	1.125	2.00	0.084	0.136	RED	1.125	2.00	0.75	1.125	2.00	0.25
32.0 - 37.9	1.125	2.00	0.097	0.145	BLUE	1.125	2.00	0.75	1.125	2.00	0.25
37.9 < L	1.125	2.50	0.120	0.180	YELLOW	1.125	2.50	0.75	1.125	2.50	0.25

Restrainer Length (L) :
Use effective cable length, measured from the outer faces of Bearing Plates or Bar. See Bridge detail sheets for approximate length.

Use ASTM F436, Standard Specification for Hardened Steel Washers for all OD and ID dimensions for washers and discs springs.

Dimensions are inches unless otherwise noted.

REVISIONS	
NO.	DATE



NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION



HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
CABLE RESTRAINER
HARDWARE DETAILS

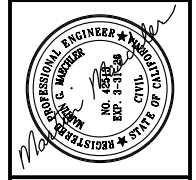
BRIDGE NO.: 17C0046
DESIGNED: MM
DRAWN: KD
CHECKED: GM
JOB NO: 2250
DATE: MAY, 2024

SHEET

24

OF 39 SHEETS

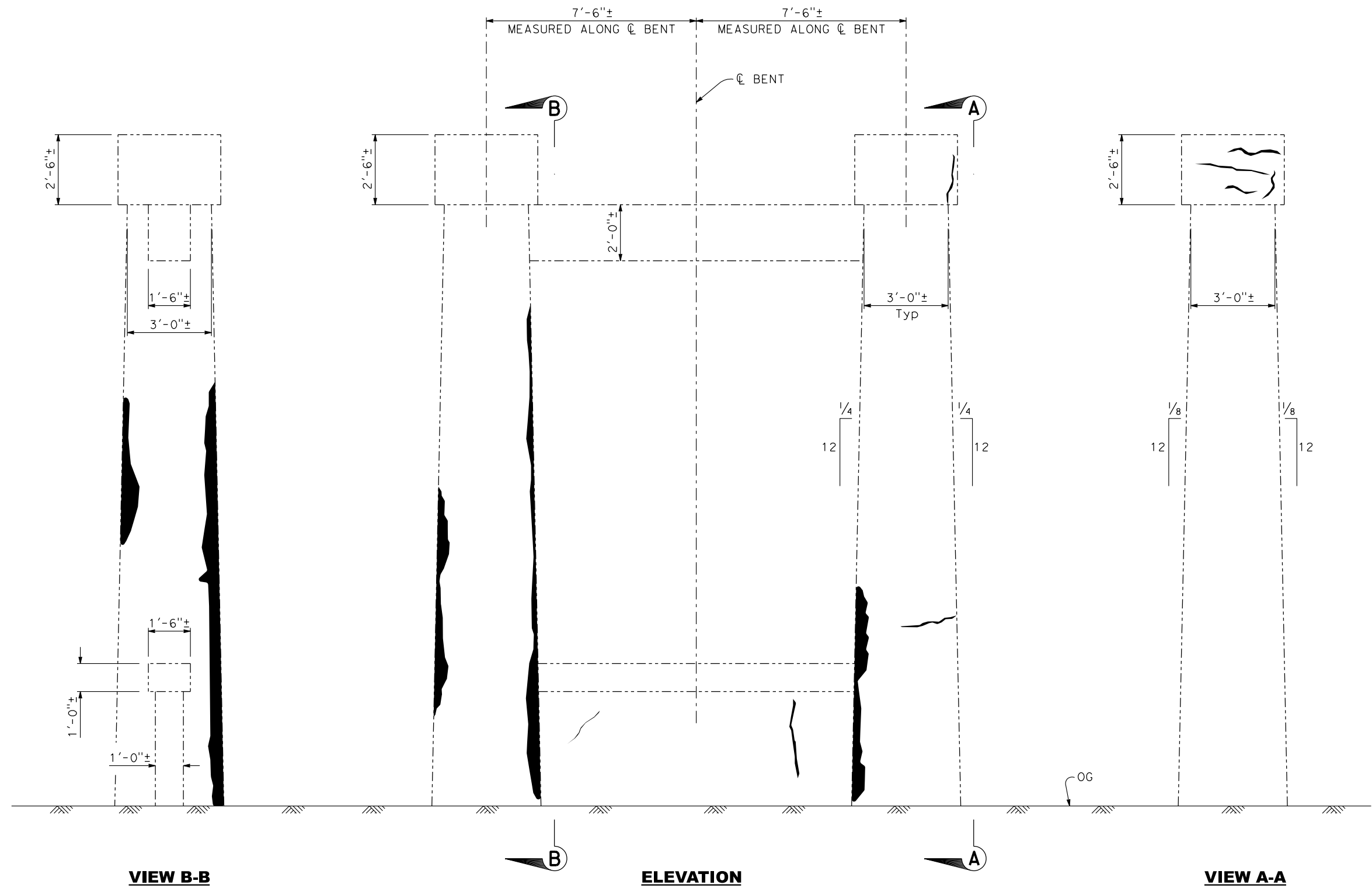
REVISIONS	
NO.	DATE



NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION

HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
SPALL AND CRACK
REPAIR DETAILS NO. 1

BRIDGE NO.:	17C0046
DESIGNED:	MM
DRAWN:	KD
CHECKED:	GM
JOB NO.:	2250
DATE:	MAY, 2024



VIEW B-B

ELEVATION

VIEW A-A

BENT 2 SOUTH FACE

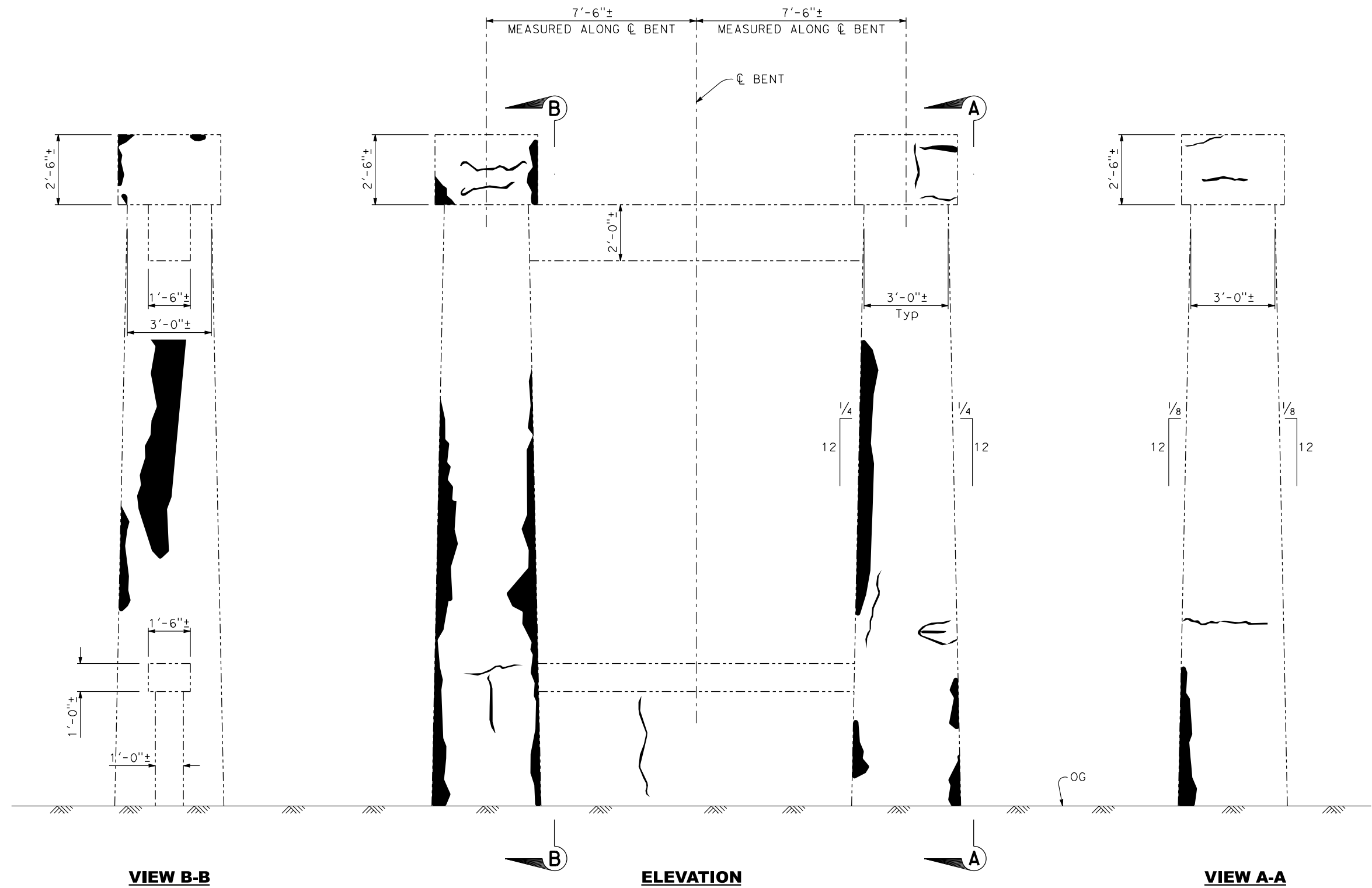
1/2" = 1'-0"

LEGEND

- EPOXY CRACK INJECTION (8 mils to 250 mils)
- REPAIR SPALLED OR DELAMINATED SURFACE AREA

NOTE:

The contractor shall verify all controlling field dimensions before ordering or fabricating any material.



VIEW B-B



ELEVATION

VIEW A-A

BENT 2 NORTH FACE

1/2" = 1'-0"

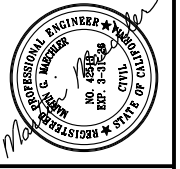
LEGEND

-  EPOXY CRACK INJECTION (8 mils to 250 mils)
-  REPAIR SPALLED OR DELAMINATED SURFACE AREA

NOTE:

The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

REVISIONS	
NO.	DATE



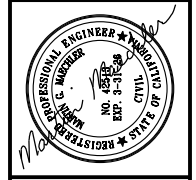
NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION



HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
SPALL AND CRACK
REPAIR DETAILS NO. 2

BRIDGE NO.: 17C0046
DESIGNED: MM
DRAWN: KD
CHECKED: GM
JOB NO: 2250
DATE: MAY, 2024

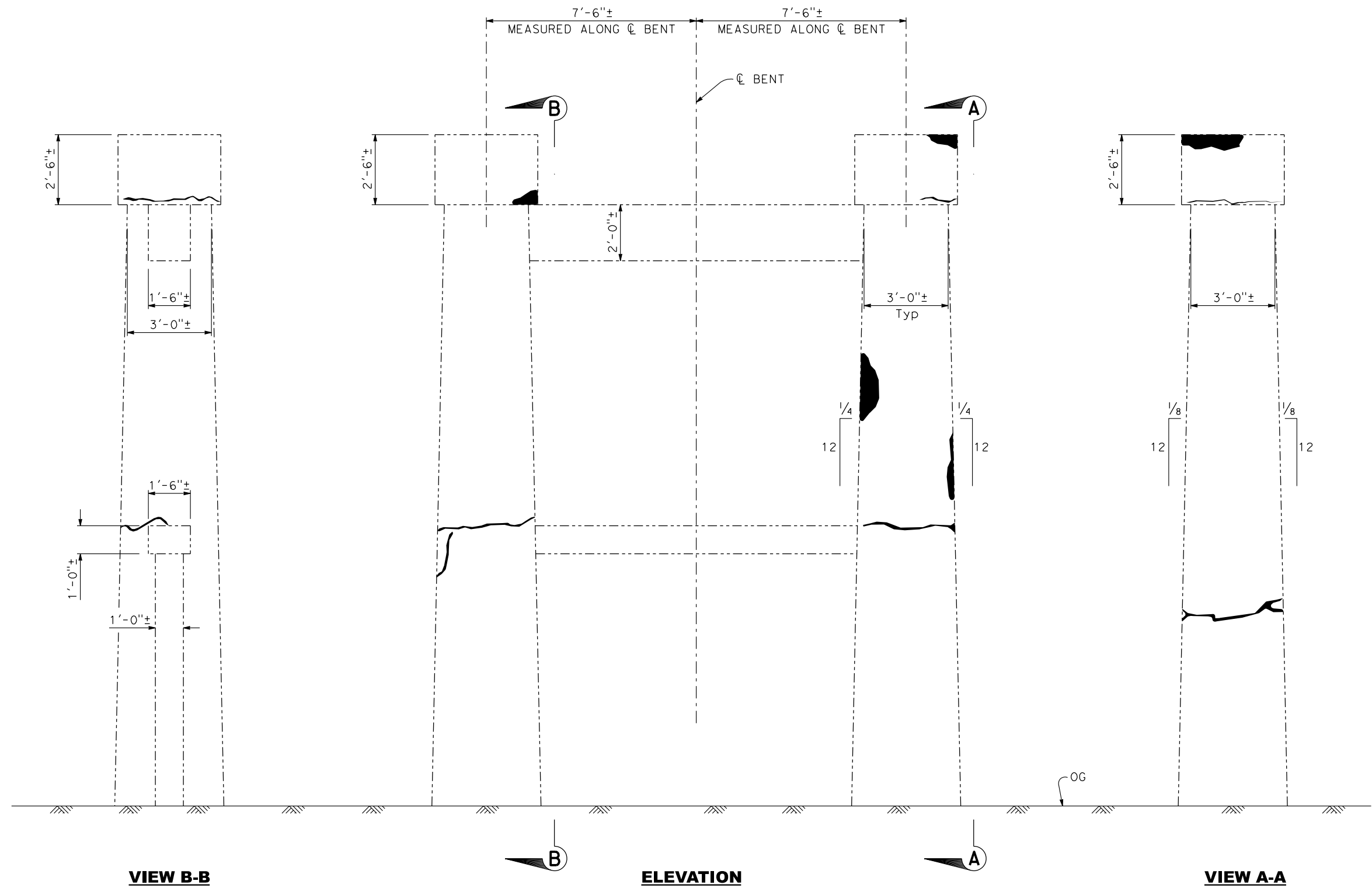
REVISIONS	
NO.	DATE



NEVADA COUNTY
 DEPARTMENT OF PUBLIC WORKS
 DESIGN/CONSTRUCTION DIVISION

HIRSCHDALE ROAD OVERHEAD
 (REHABILITATION)
 SPALL AND CRACK
 REPAIR DETAILS NO. 3

BRIDGE NO.:	17C0046
DESIGNED:	MM
DRAWN:	KD
CHECKED:	GM
JOB NO.:	2250
DATE:	MAY, 2024

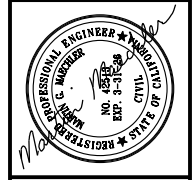


BENT 3 SOUTH FACE
 $\frac{1}{2}'' = 1'-0''$


- LEGEND**
- EPOXY CRACK INJECTION (8 mils to 250 mils)
 - REPAIR SPALLED OR DELAMINATED SURFACE AREA

NOTE:
 The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

REVISIONS	
NO.	DATE

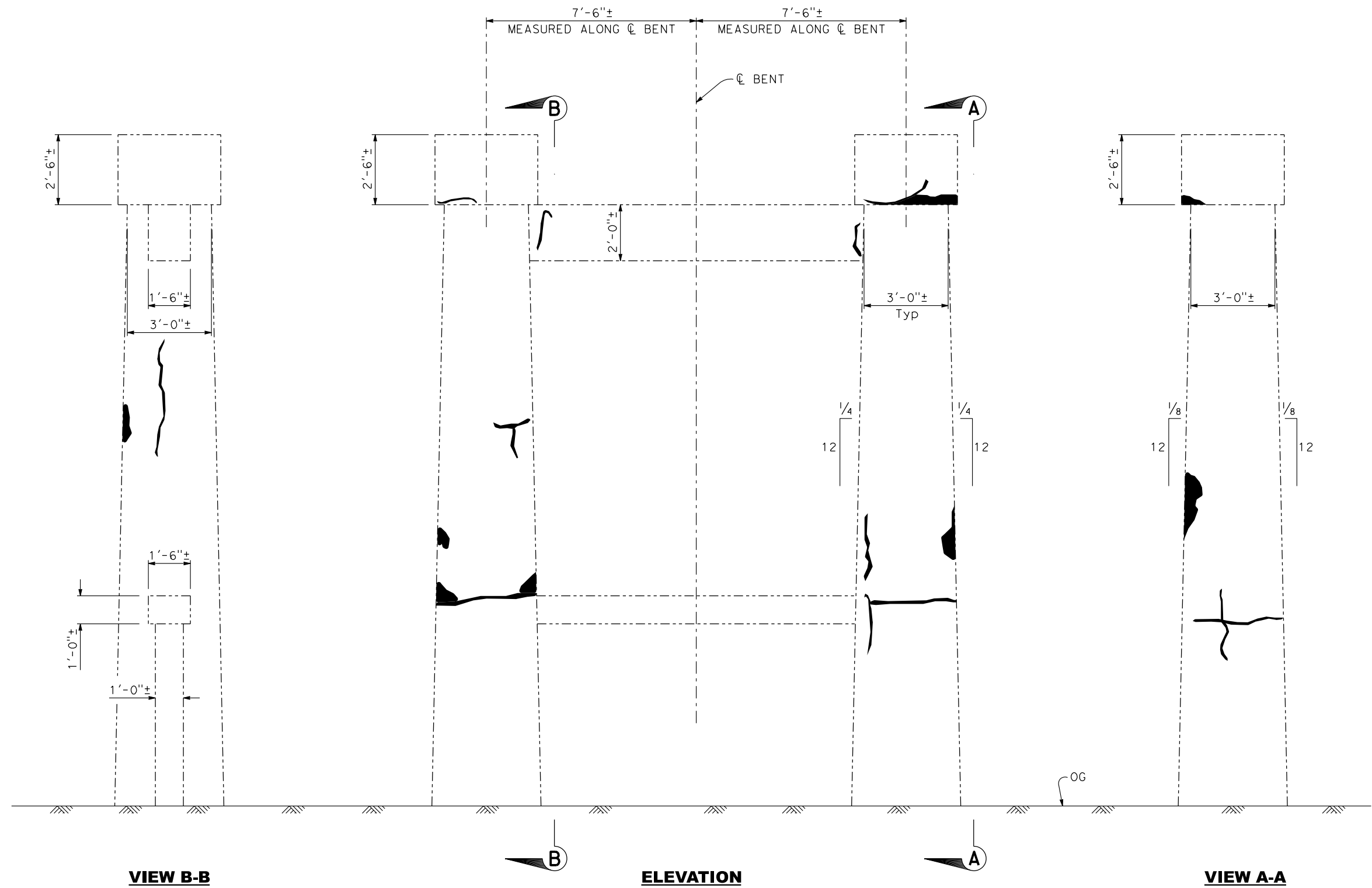


NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION



HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
SPALL AND CRACK
REPAIR DETAILS NO. 4



BRIDGE NO.:	17C0046
DESIGNED:	MM
DRAWN:	KD
CHECKED:	GM
JOB NO.:	2250
DATE:	MAY, 2024



BENT 3 NORTH FACE

1/2" = 1'-0"

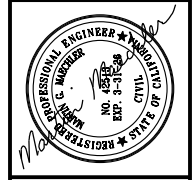
LEGEND

-  EPOXY CRACK INJECTION (8 mils to 250 mils)
-  REPAIR SPALLED OR DELAMINATED SURFACE AREA

NOTE:

The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

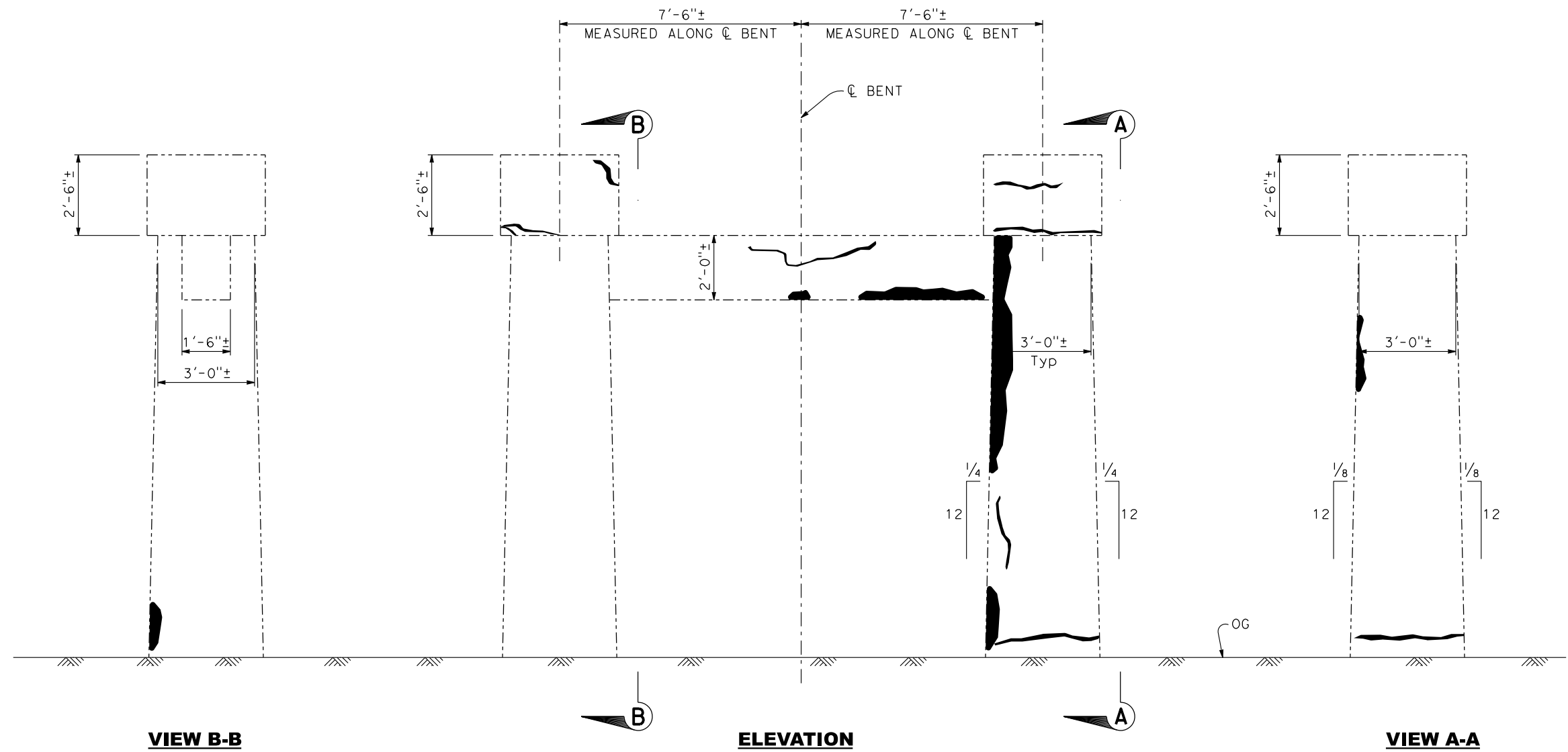
REVISIONS	
NO.	DATE

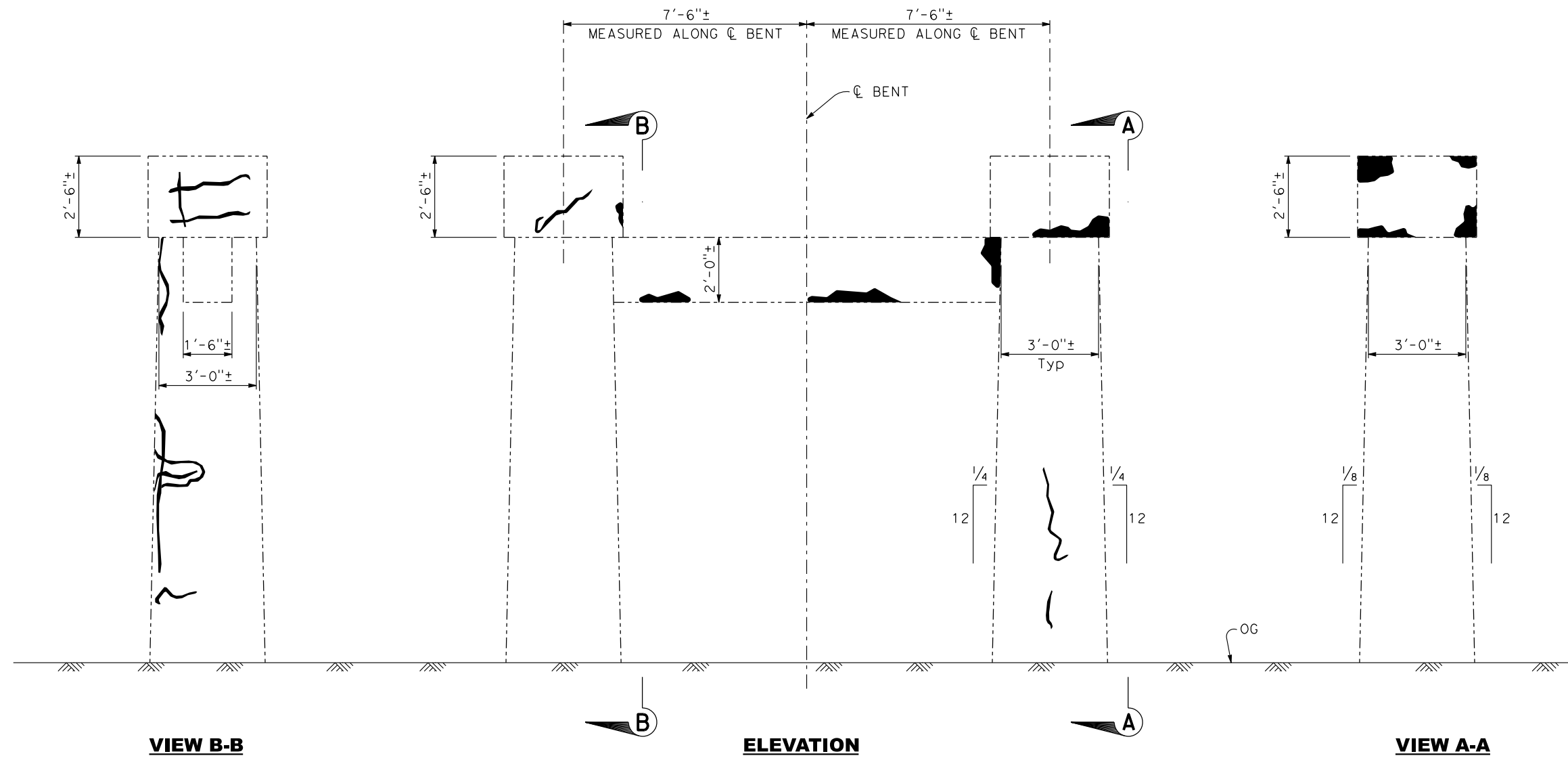


NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION

HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
SPALL AND CRACK
REPAIR DETAILS NO. 5

BRIDGE NO.:	17C0046
DESIGNED:	MM
DRAWN:	KD
CHECKED:	GM
JOB NO.:	2250
DATE:	MAY, 2024





VIEW B-B

ELEVATION

VIEW A-A

BENT 4 NORTH FACE

1/2" = 1'-0"

LEGEND

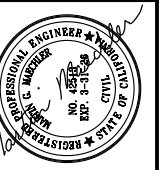
 EPOXY CRACK INJECTION (8 mils to 250 mils)

 REPAIR SPALLED OR DELAMINATED SURFACE AREA

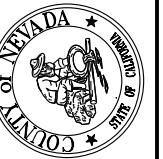
NOTE:

The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

REVISIONS	
NO.	DATE

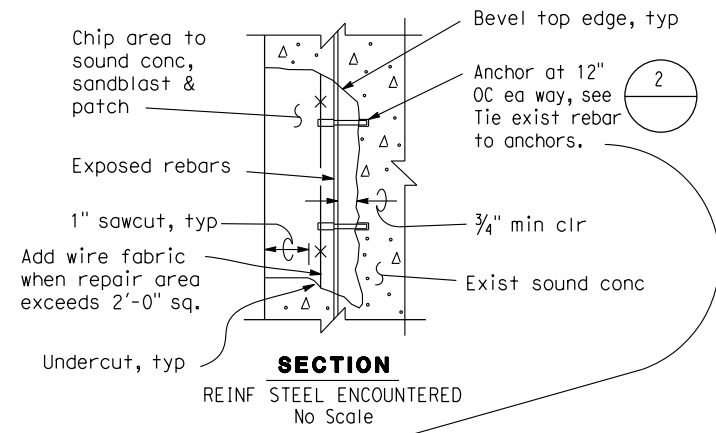


NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION

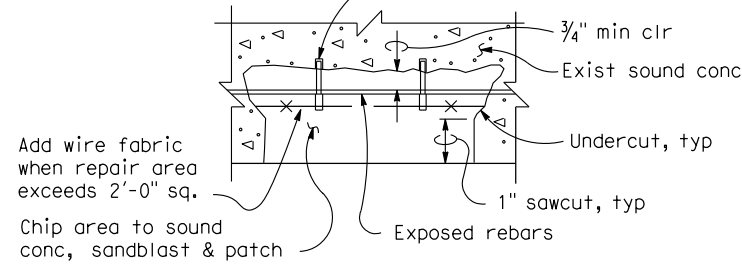


HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
SPALL AND CRACK
REPAIR DETAILS NO. 6

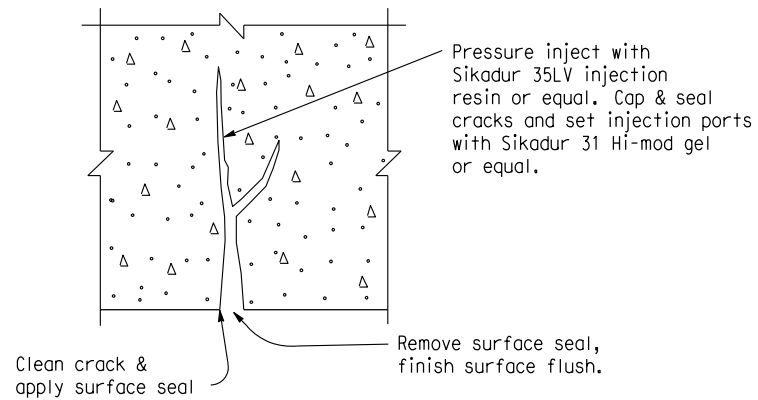
BRIDGE NO.: 17C0046
DESIGNED: MM
DRAWN: KD
CHECKED: GM
JOB NO: 2250
DATE: MAY, 2024



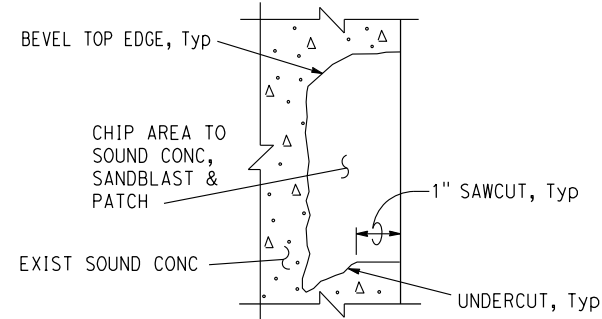
SECTION
REINF STEEL ENCOUNTERED
No Scale



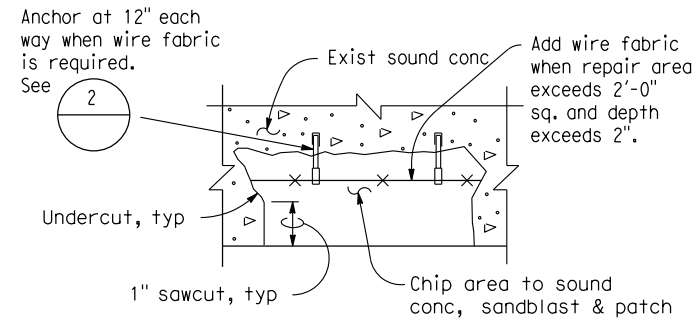
SECTION AT SOFFIT
REINF STEEL ENCOUNTERED
No Scale



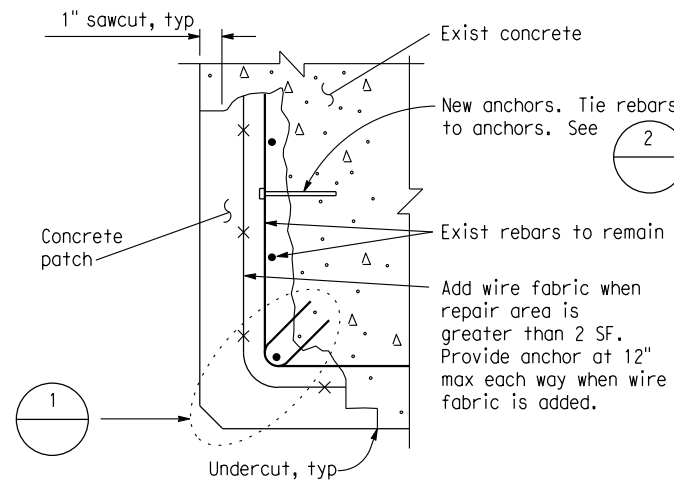
SECTION
No Scale



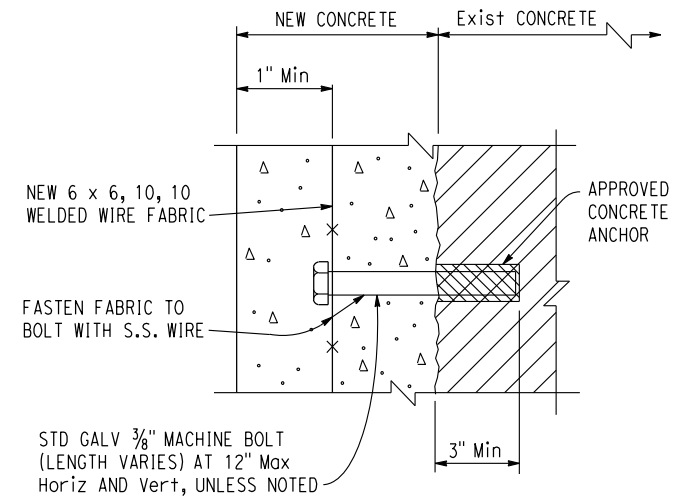
SECTION
REINF STEEL ENCOUNTERED
No Scale



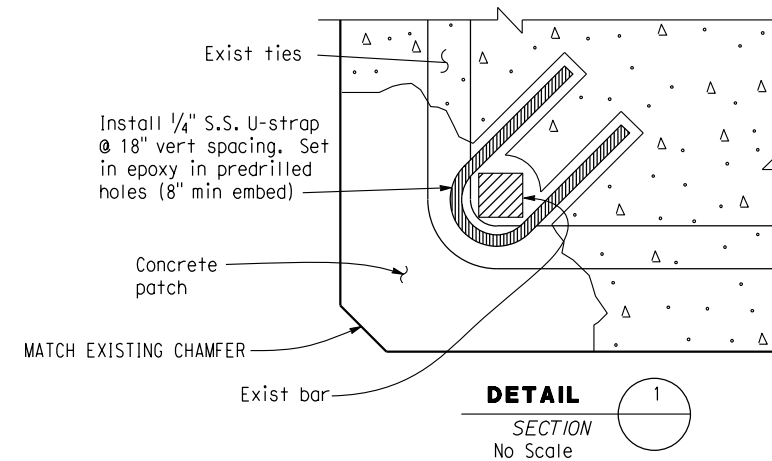
SECTION AT SOFFIT
REINF STEEL ENCOUNTERED
No Scale



SECTION
AT CORNERS
No Scale



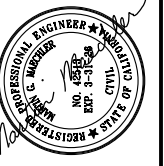
DETAIL
MECHANICAL EXPANSION ANCHOR
No Scale



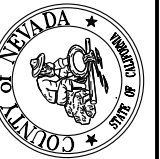
DETAIL
SECTION
No Scale

REVISIONS

NO.	DESCRIPTION	BY	DATE



NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION



HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
SPALL AND CRACK
REPAIR DETAILS NO. 7

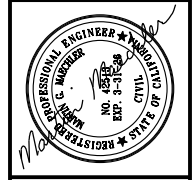
BRIDGE NO.: 17C0046
DESIGNED: MM
DRAWN: KD
CHECKED: GM
JOB NO: 2250
DATE: MAY, 2024

SHEET

31

OF 39 SHEETS

REVISIONS	
NO.	DESCRIPTION



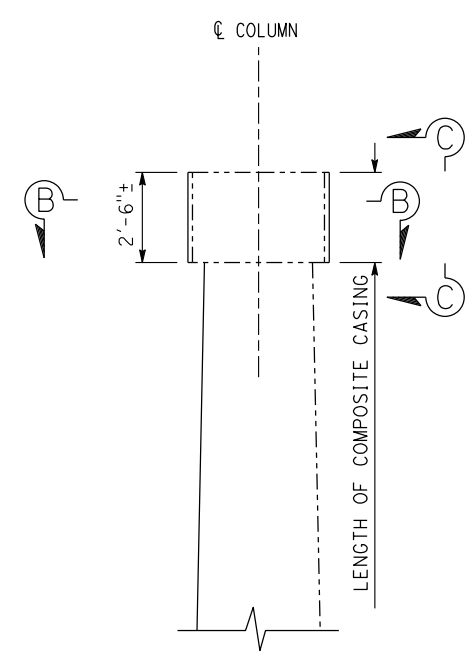
NEVADA COUNTY
 DEPARTMENT OF PUBLIC WORKS
 DESIGN/CONSTRUCTION DIVISION

**HIRSCHDALE ROAD OVERHEAD
 (REHABILITATION)
 COMPOSITE COLUMN CASING**

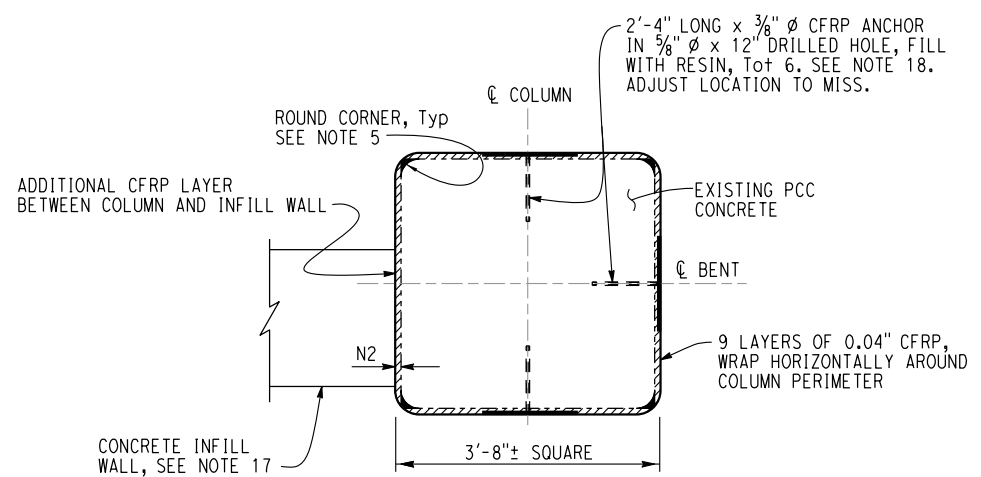
BRIDGE NO.:	17C0046
DESIGNED:	MM
DRAWN:	KD
CHECKED:	GM
JOB NO.:	2250
DATE:	MAY, 2024

CARBON NOTES:

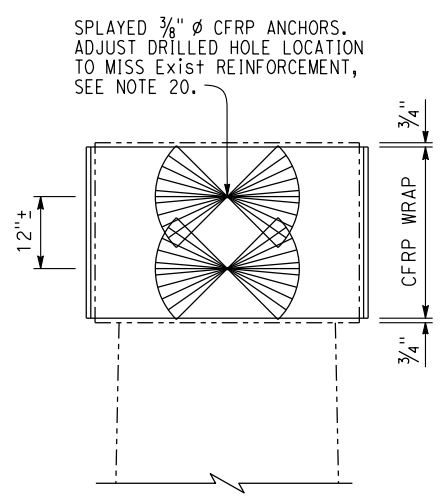
- For all subsequent notes, surfaces shall be defined as the surface to receive the composite. Fabric refers to the unidirectional or bi-directional fiber. Fiber Reinforced Polymer (FRP) composite is Carbon fiber and Epoxy resin.
- All surfaces shall be prepared for bonding by means of abrasive blasting or grinding.
- All surfaces shall be cleaned by hand or by oil-free compressed air. All surfaces shall be free of moisture, oils, loose material, debris, or dust.
- All cutting of fabrics, mixing of epoxy, and wetting out of fabric and handling, shall be done in a manner to ensure that the composite materials are free of moisture, oils, debris or dust.
- For non-circular columns remove any sharp corners/edges to a 1 1/2" radius minimum.
- A primer coat of epoxy shall be applied to the surface and allowed to cure for a minimum of one hour before the application of the FRP composite, or when a tacky surface is obtained.
- Surfaces shall be free of voids, protrusions, and sharp edges. Any voids or uneven surfaces shall be filled with a thickened epoxy.
- Carbon composite system used shall be selected from a list of Caltrans Prequalified composite systems.
- Fabric shall be completely saturated prior to application to the surface. No dry fiber placement is allowed, unless fabric used has removable backing or procedure has been approved by prequalification.
- The composite casing shall adhere firmly to the existing column surface.
- Detail/feather all fabric edges, including termination points, edges and seams with a thickened epoxy; no fiber or cross stitching shall protrude from the surface. Detailing/feathering shall extend a minimum of 6".
- Each composite section shall be wrapped using continuous fabric not less than 2'-0" in height. All wraps of continuous weave shall be terminated a minimum of 12" past the starting point of the initial wrap. Subsequent wraps shall be started (butted) at the ending point of the last wrap.
- For non-circular columns use number of layers specified in the "RECTANGULAR COLUMN" table.
- Existing non-circular column surfaces shall be straight or slightly convexed outward at all areas, otherwise, the surface shall be filled with thickened epoxy.
- Minimum number of layers for the CFRP System is based on minimum nominal composite layer thickness of 0.04".
- Perform crack and spall repair for existing concrete before composite column casing construction.
- Place composite column casing prior to constructing concrete infill wall between columns. Protect composite casing from damage during infill wall construction.
- Splayed anchor to be installed between CFRP layer #5 & #6, counting from interior outwards, and splay branching in both directions within ±60° with respect to the fiber wrap direction.



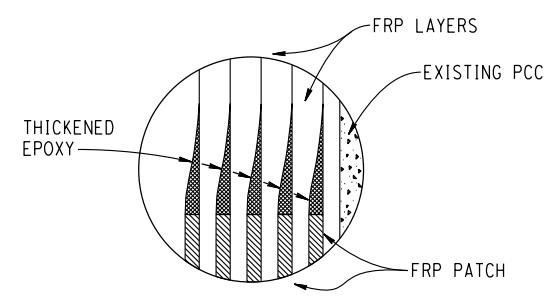
COLUMN RETROFIT
NO SCALE



SECTION B-B
NO SCALE



VIEW C-C
NO SCALE



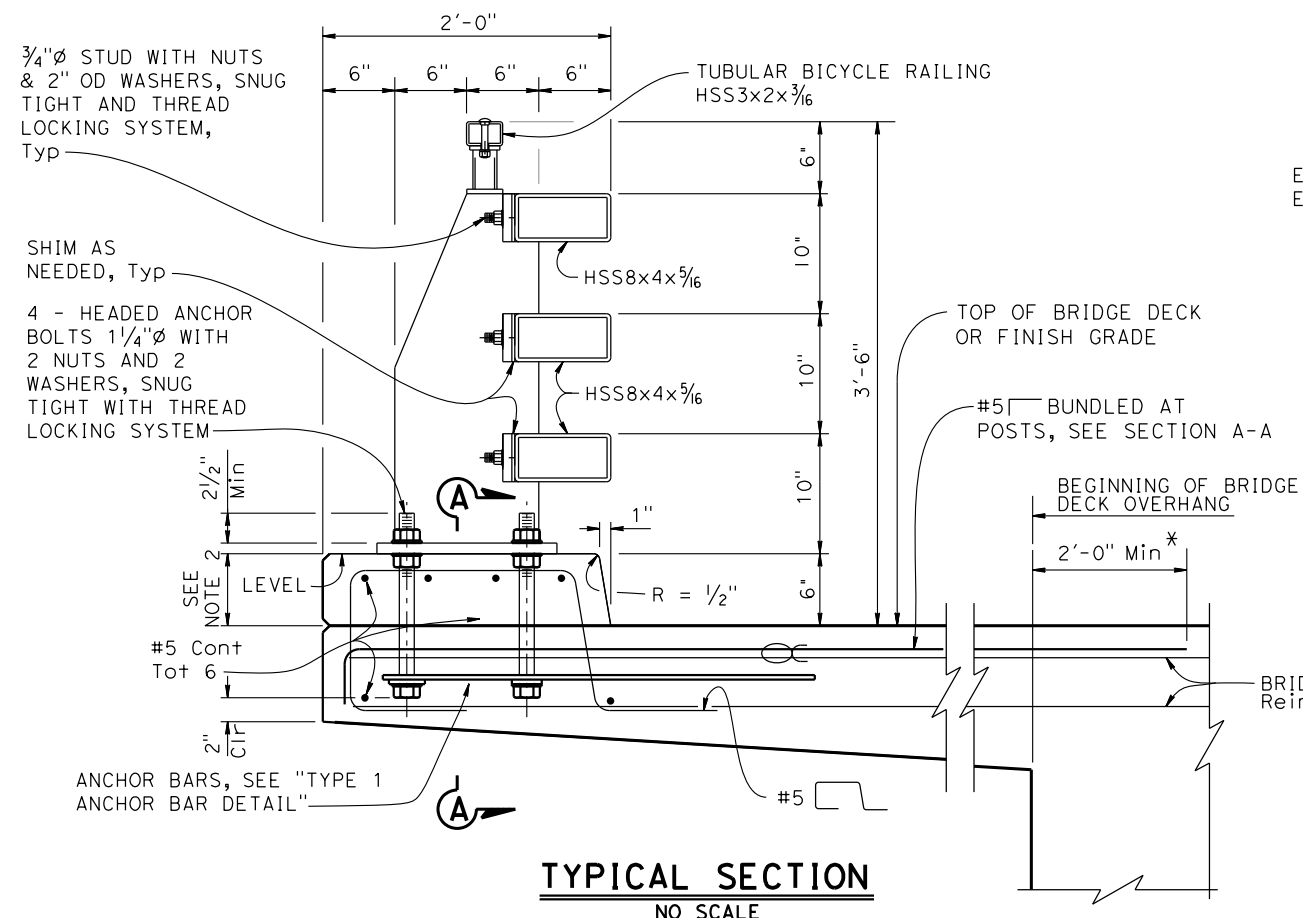
LEGEND

----- INDICATES EXISTING STRUCTURE

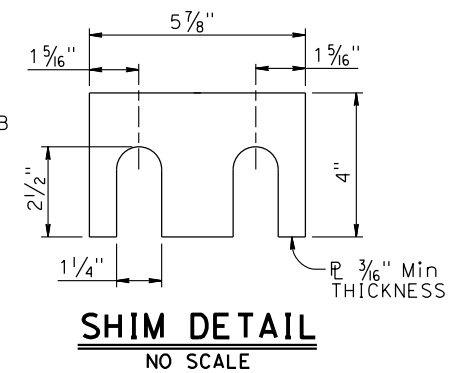
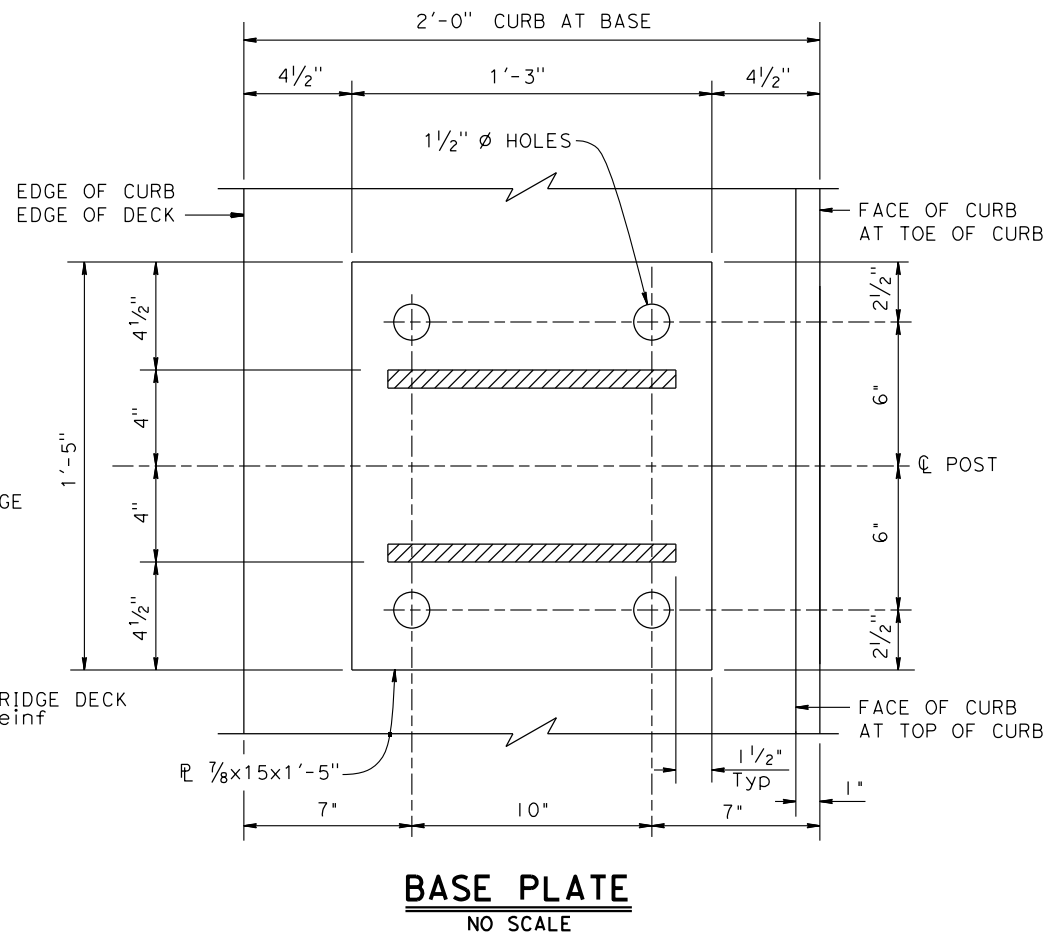
————— INDICATES NEW CONSTRUCTION

CARBON FRP SYSTEM		
RECTANGULAR COLUMN, NUMBER OF LAYERS (Min)		
COLUMN WIDTH	N1	N2
12"		2
18"		2
24"		3
30"		3
36"		4
44" Max		9 *

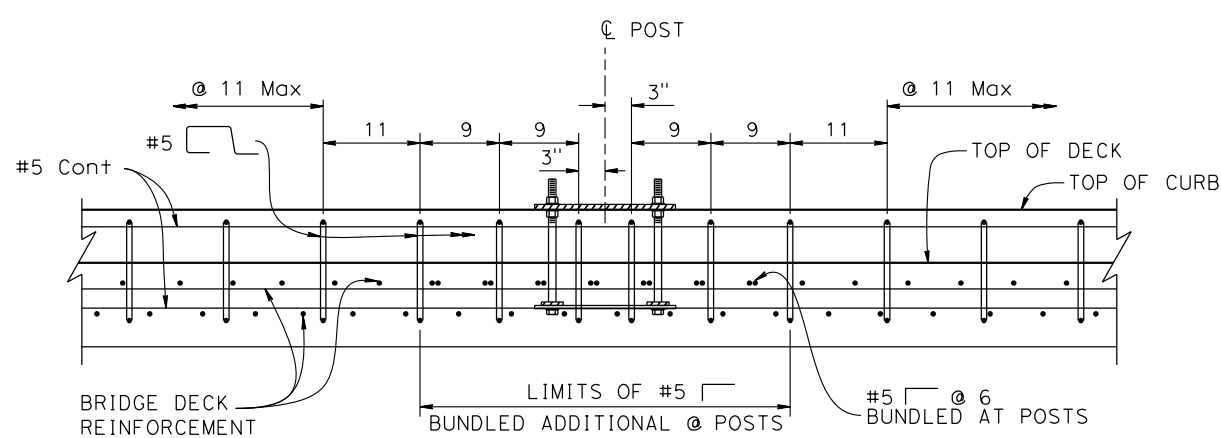
* Add sacrificial layer of FRP on infill wall side of column between infill wall. Prior to constructing



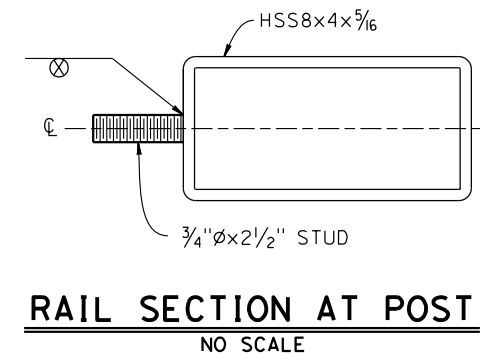
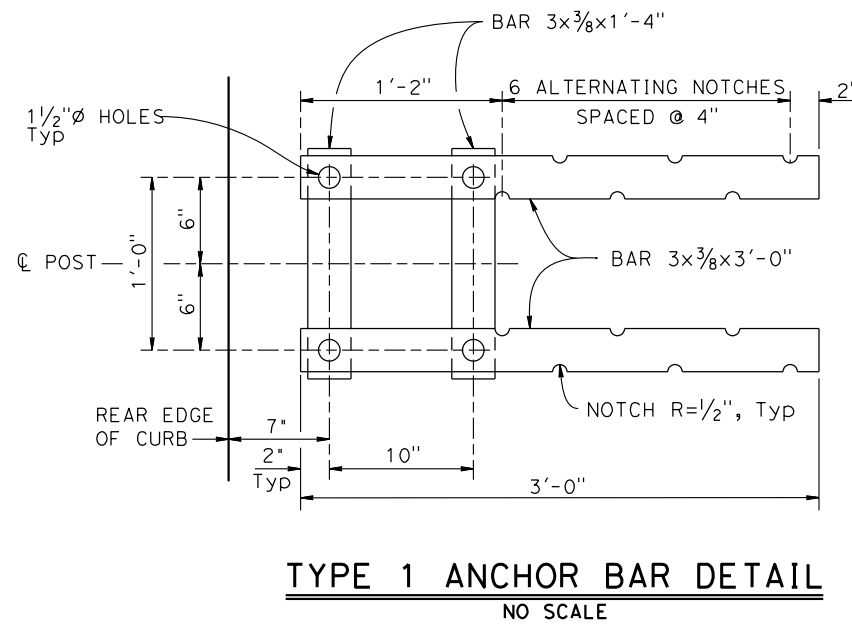
* #5 Bundled at posts to extend 2'-0" Min beyond beginning of bridge deck overhang.



NOTE:
Shim as needed between posts and HSS rail tubes.



NOTE: Post not shown for clarity.



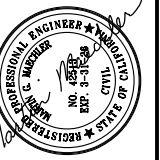
NOTES:

- Anchor bolts may be tack welded to anchor bars.
- Curb dimension at back side of rail will vary with bridge deck cross slope, and if overlay is placed on the bridge deck. For the same reasons, the anchor bolt lengths will vary.
- Use extra thick washers for anchor bolts, with a minimum thickness of 0.305" and a maximum thickness of 0.375".
- All reinforcement in railing concrete to be epoxy coated.

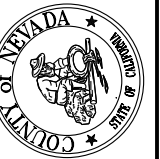
LEGEND:

⊕ Bundled reinforcement

REVISIONS	
NO.	DESCRIPTION



NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION



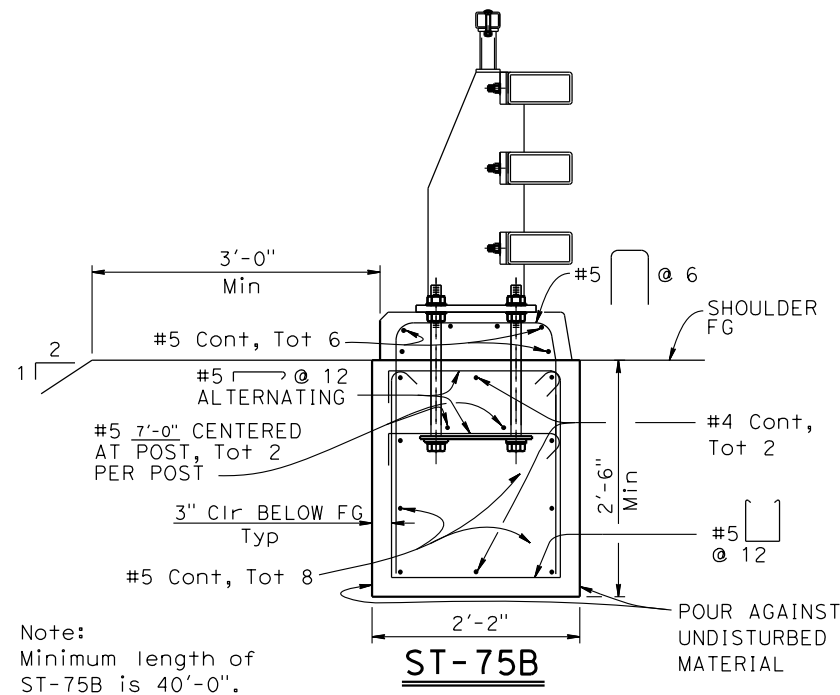
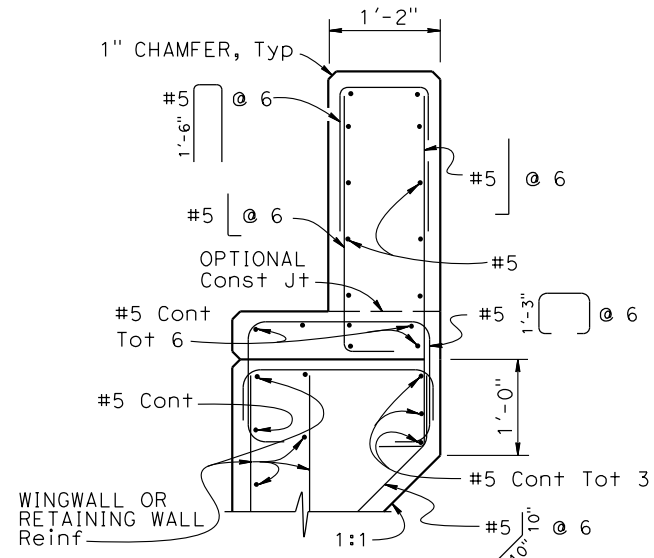
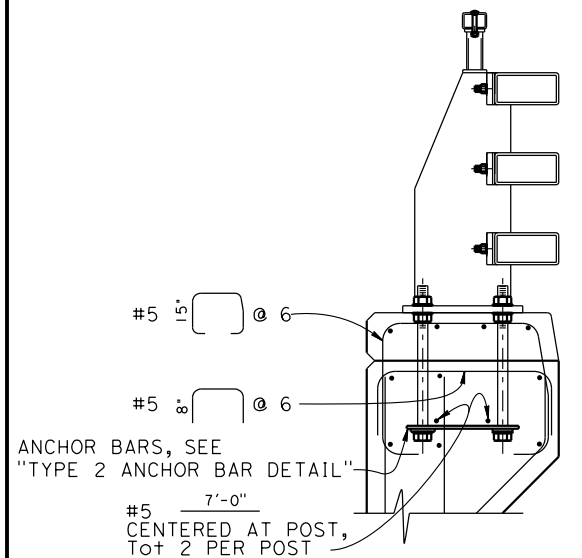
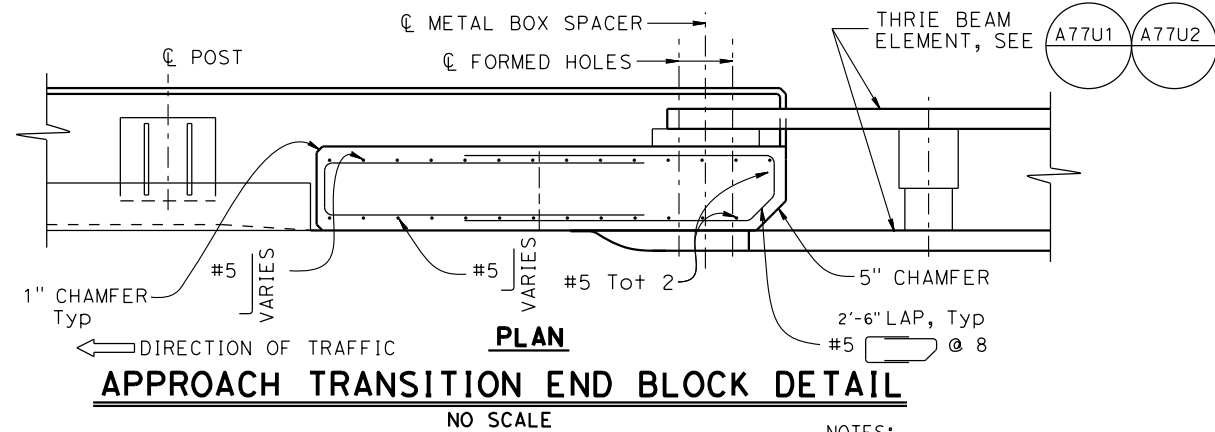
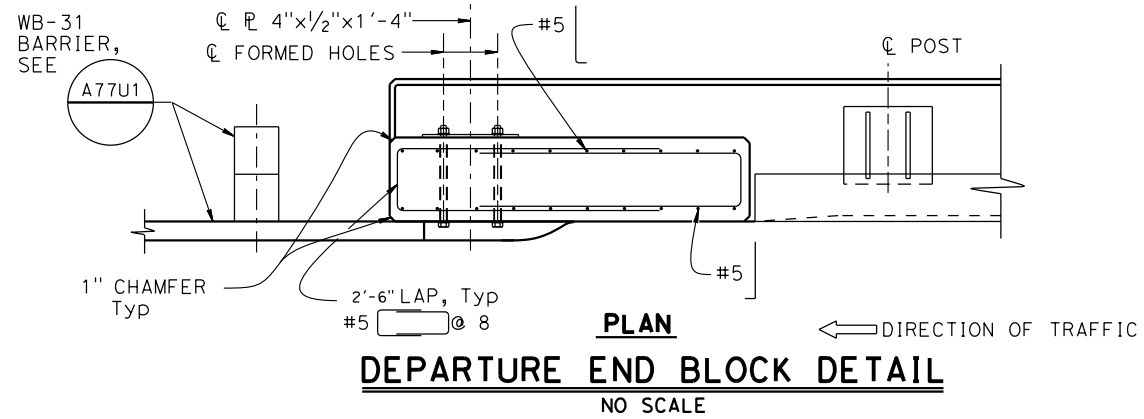
HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
CALIFORNIA ST-75 BRIDGE RAIL
DETAILS No. 1

BRIDGE NO.: 17C0046
DESIGNED: MM
DRAWN: KD
CHECKED: GM
JOB NO: 2250
DATE: MAY, 2024

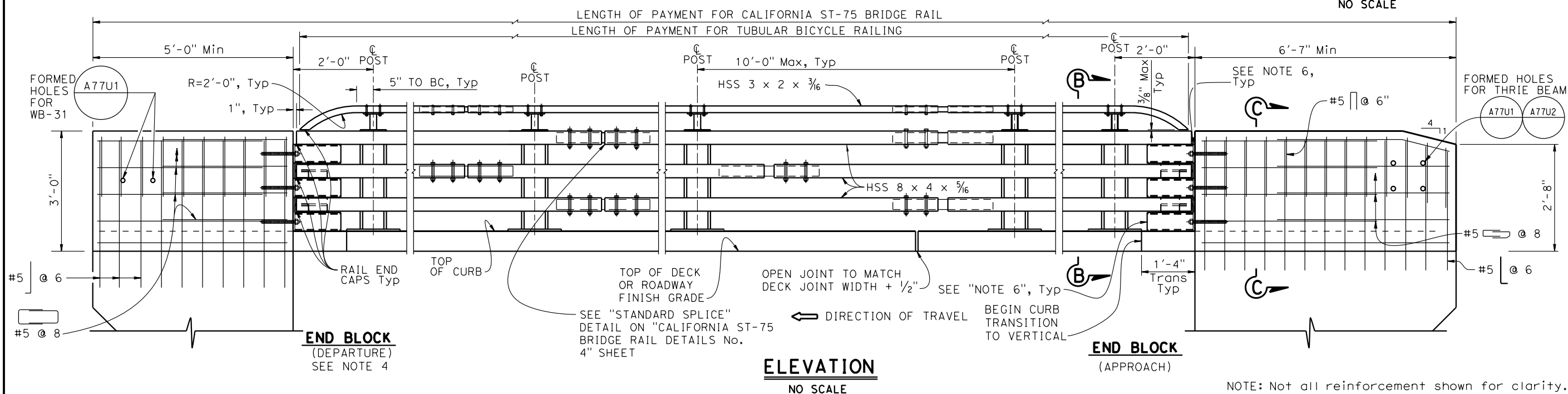
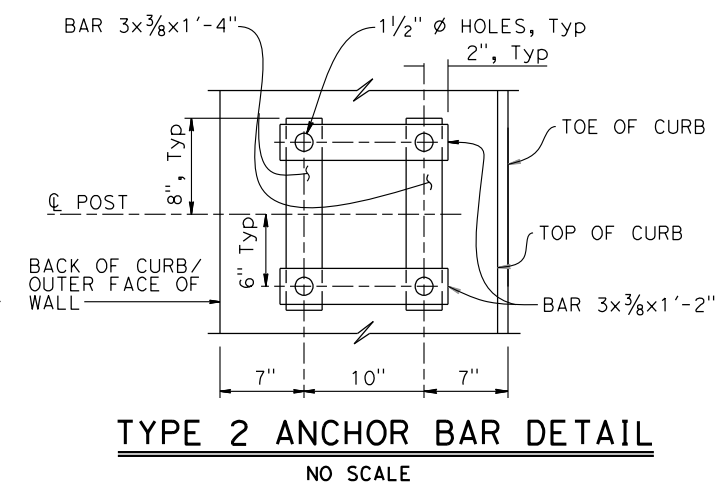
SHEET

33

OF 39 SHEETS



- NOTES:
- All horizontal members are parallel to longitudinal profile grade.
 - Posts are normal to profile grade of structure.
 - Posts are vertical to the transverse cross section.
 - If departure end block is within the Clear Recovery Zone (CRZ, 30 feet for expressways and freeways and 20 feet for conventional highways) of opposing traffic, then use the approach end block at the departure end.
 - Anchor bolts may be tack welded to anchor bars.
 - For parapet shoes details see "CALIFORNIA ST-76 BRIDGE RAIL DETAILS No. 5" SHEET.
 - All reinforcement in railing concrete to be epoxy coated.



REVISIONS	
NO.	DATE



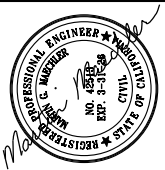
NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION

HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
CALIFORNIA ST-75 BRIDGE RAIL
DETAILS No. 2

BRIDGE NO.: 17C0046
DESIGNED: MM
DRAWN: KD
CHECKED: GM
JOB NO: 2250
DATE: MAY, 2024

NOTE: Not all reinforcement shown for clarity.

REVISIONS	
NO.	DATE

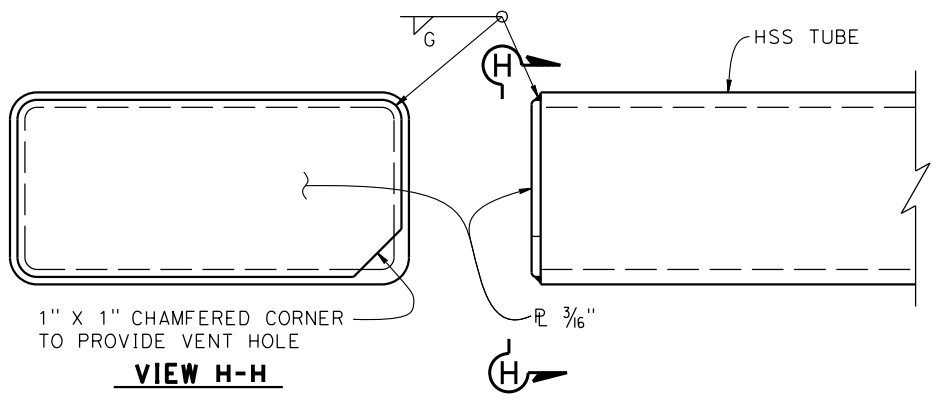


NEVADA COUNTY
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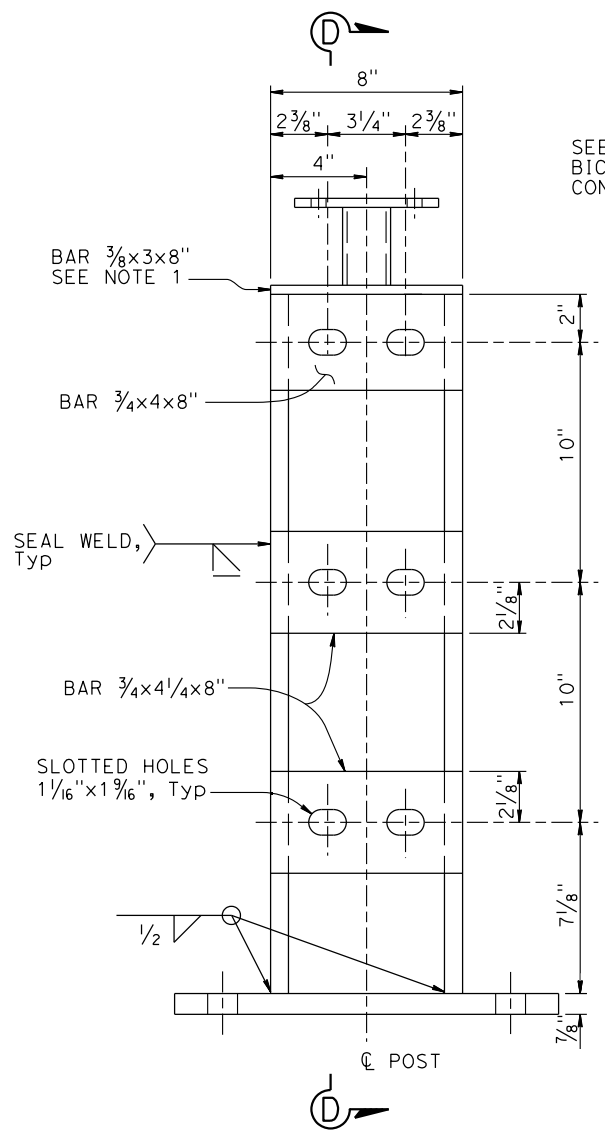
HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
CALIFORNIA ST-75 BRIDGE RAIL
DETAILS No. 3

BRIDGE NO.: 17C0046
DESIGNED: MM
DRAWN: KD
CHECKED: GM
JOB NO: 2250
DATE: MAY, 2024

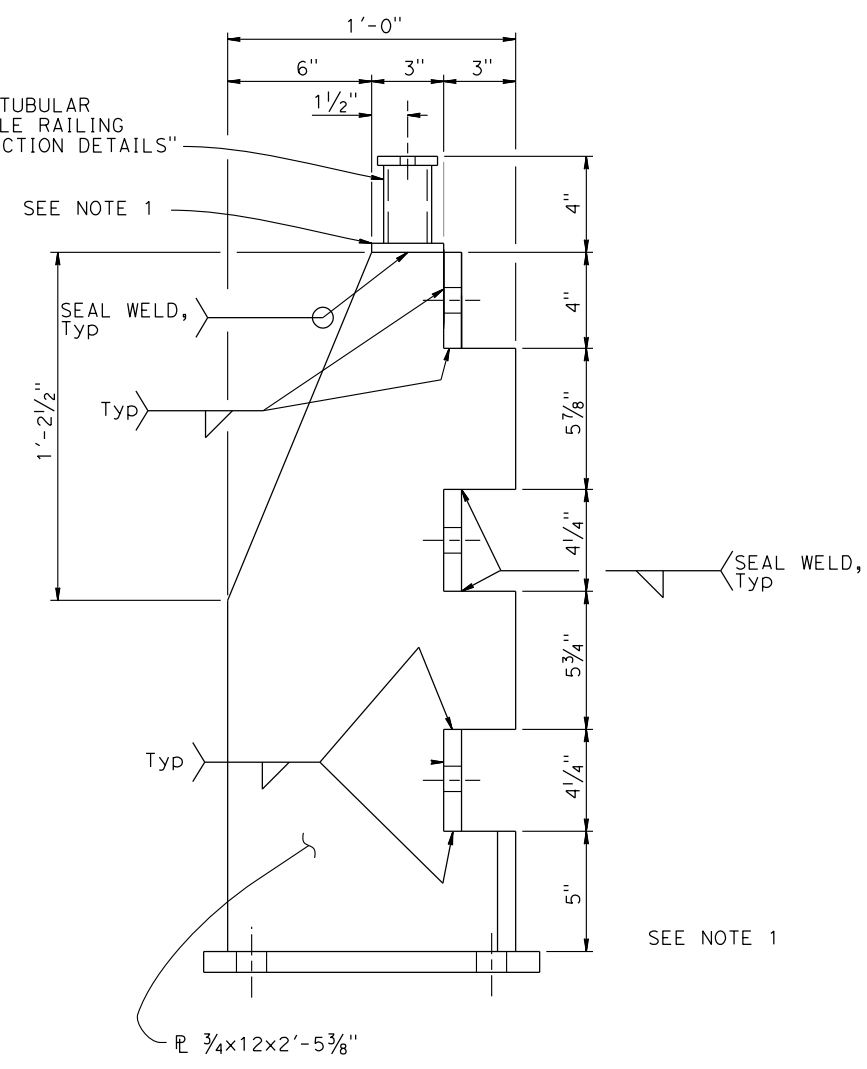


RAIL END CAP
NO SCALE

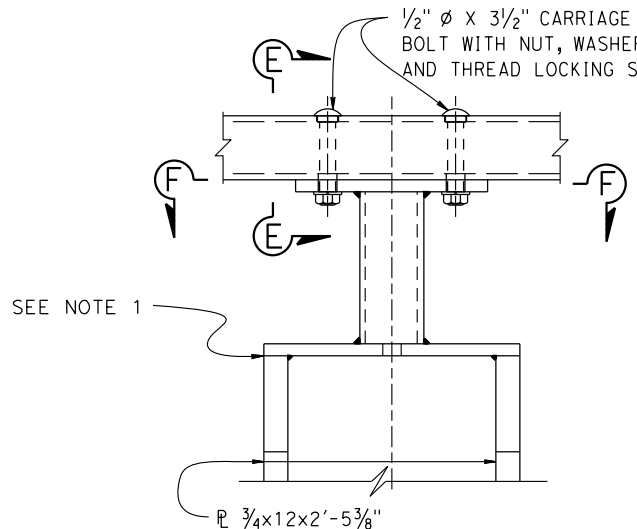
NOTE: For vehicular rail tube and bicycle railing tubes.



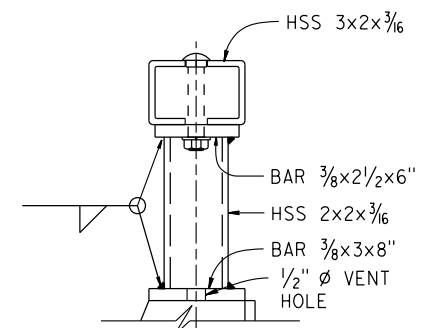
POST DETAIL
NO SCALE



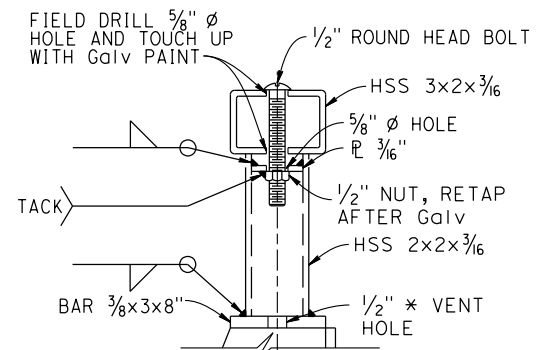
SECTION D-D
NO SCALE



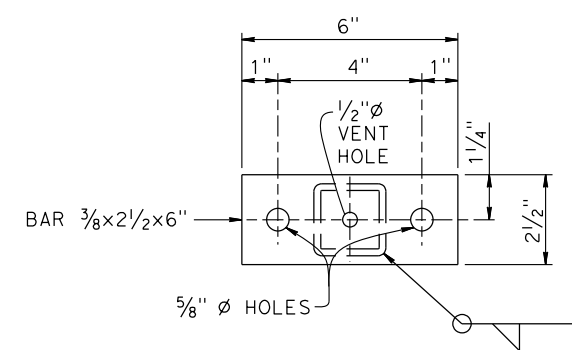
ELEVATION



SECTION E-E



**SECTION E-E
ALTERNATIVE**

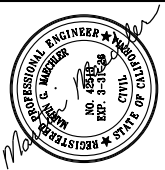


SECTION F-F

NOTE:
1. For access controlled freeways and expressways where bicycle traffic is prohibited by signage on the on-ramps, the bicycle railing (includes bar 3/8x3x8 and above) may be omitted.

TUBULAR BICYCLE RAILING CONNECTION DETAILS
NO SCALE

REVISIONS	
NO.	DESCRIPTION



NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION

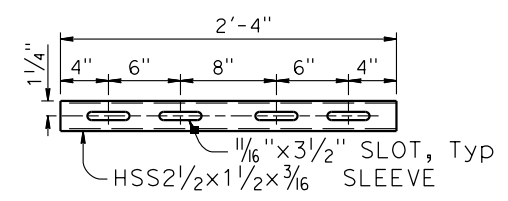


HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
CALIFORNIA ST-75 BRIDGE RAIL
DETAILS No. 4

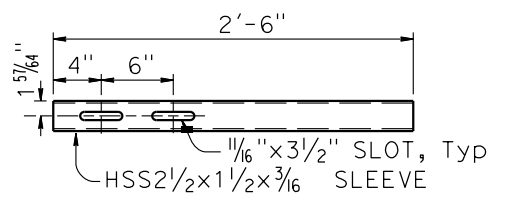
BRIDGE NO.: 17C0046
DESIGNED: MM
DRAWN: KD
CHECKED: GM
JOB NO: 2250
DATE: MAY, 2024

NOTES:

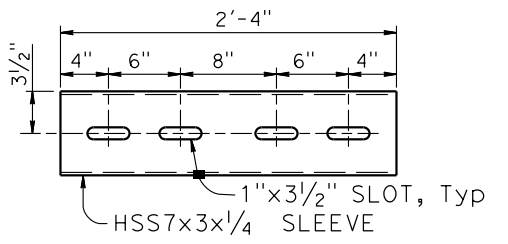
1. HS bolts with nut and washers, snug tightened, and thread locking system.
2. Use $\frac{1}{2}$ " ϕ x $\frac{3}{16}$ " BOLTS (HSS3x2x $\frac{3}{16}$)
Use $\frac{3}{4}$ " ϕ x $\frac{5}{16}$ " BOLTS (HSS8x4x $\frac{5}{16}$)
3. Each rail length must be continuous over a minimum of two posts.
4. The fabricator must check that the tubular sleeve splices conform to the dimensions indicated to assure proper clearance.
5. Except for expansion splices, not more than one splice permitted per same side of post.



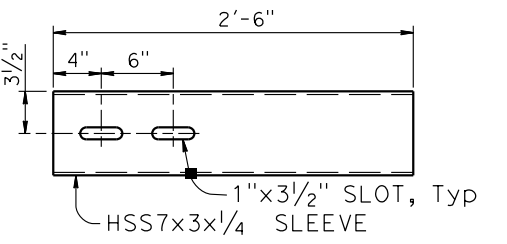
HSS3x2x $\frac{3}{16}$ RAIL



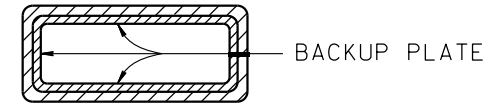
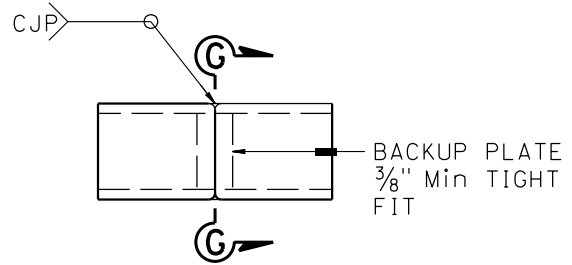
HSS3x2x $\frac{3}{16}$ RAIL



HSS8x4x $\frac{5}{16}$ RAIL



HSS8x4x $\frac{5}{16}$ RAIL



SECTION G-G

ALTERNATE TUBE WELDED STANDARD SPLICE

NO SCALE

STANDARD SLEEVES

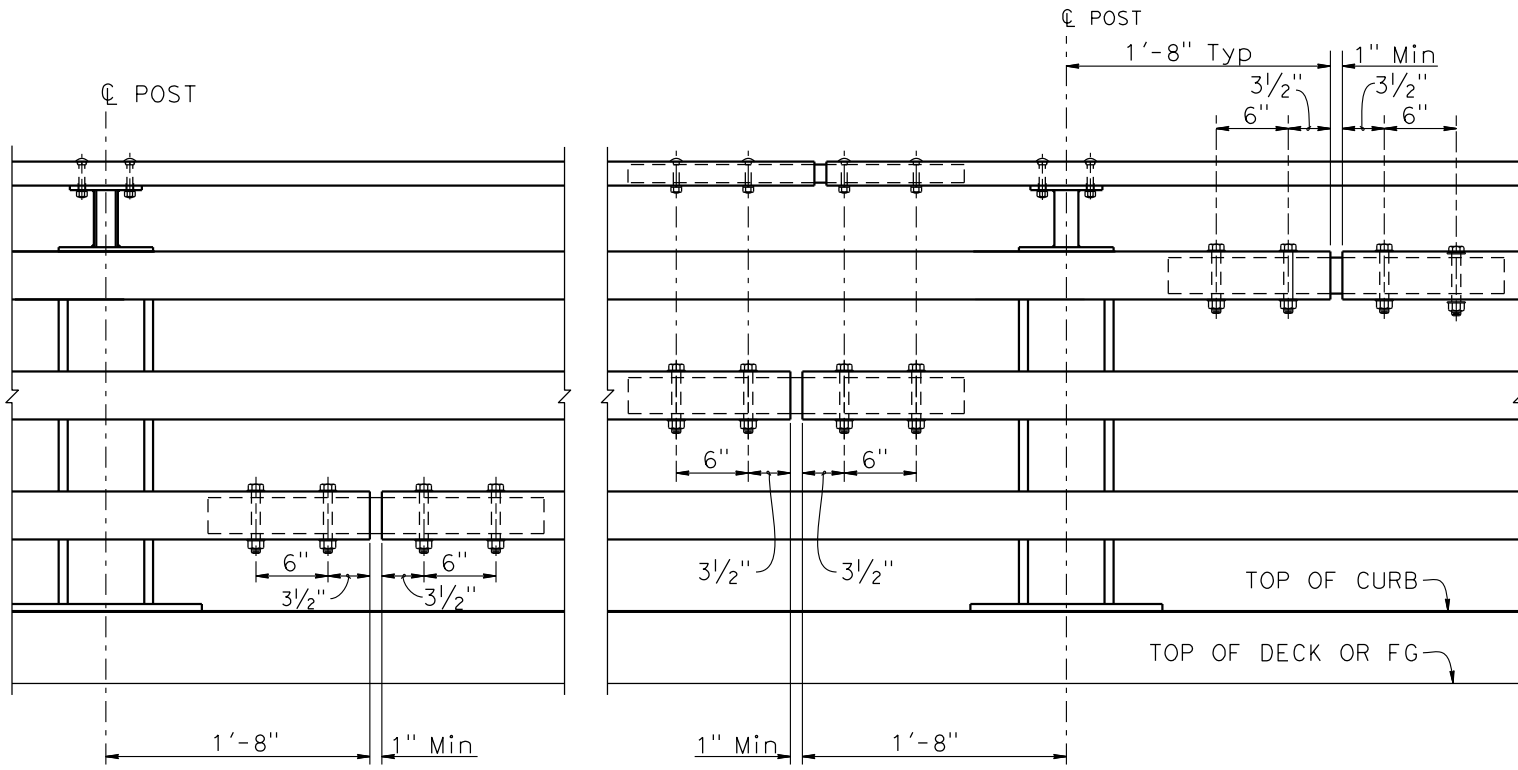
DETAILS

NO SCALE

EXPANSION SLEEVES

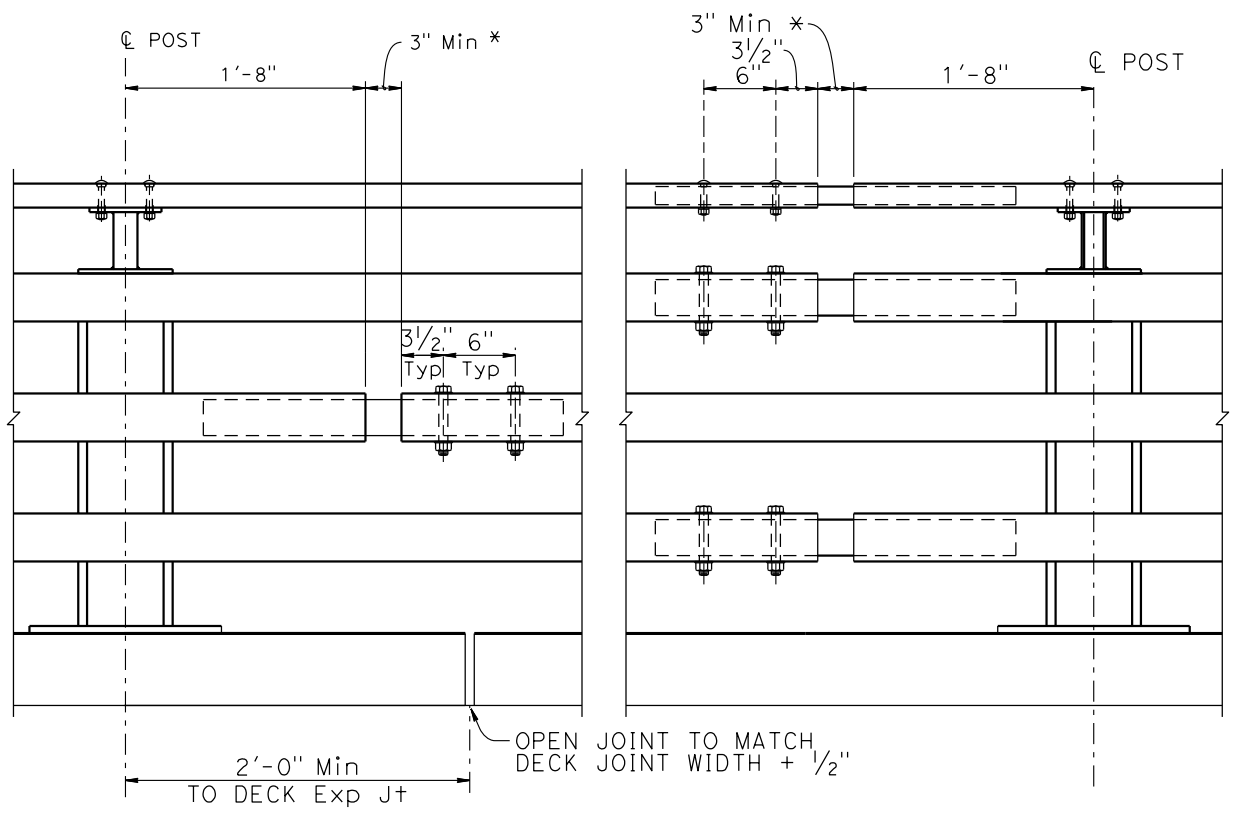
DETAILS

NO SCALE



STANDARD SPLICE

NO SCALE

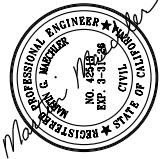


EXPANSION SPLICE

NO SCALE

* Match deck or wall joint

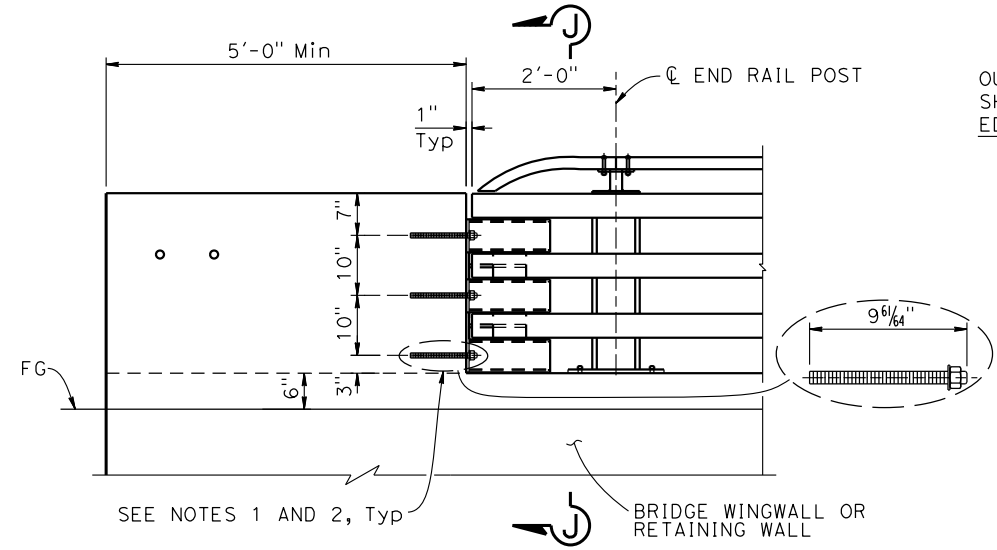
REVISIONS	
NO.	DESCRIPTION



NEVADA COUNTY
 DEPARTMENT OF PUBLIC WORKS
 DESIGN/CONSTRUCTION DIVISION

**HIRSCHDALE ROAD OVERHEAD
 (REHABILITATION)
 CALIFORNIA ST-75 BRIDGE RAIL**
 DETAILS No. 5

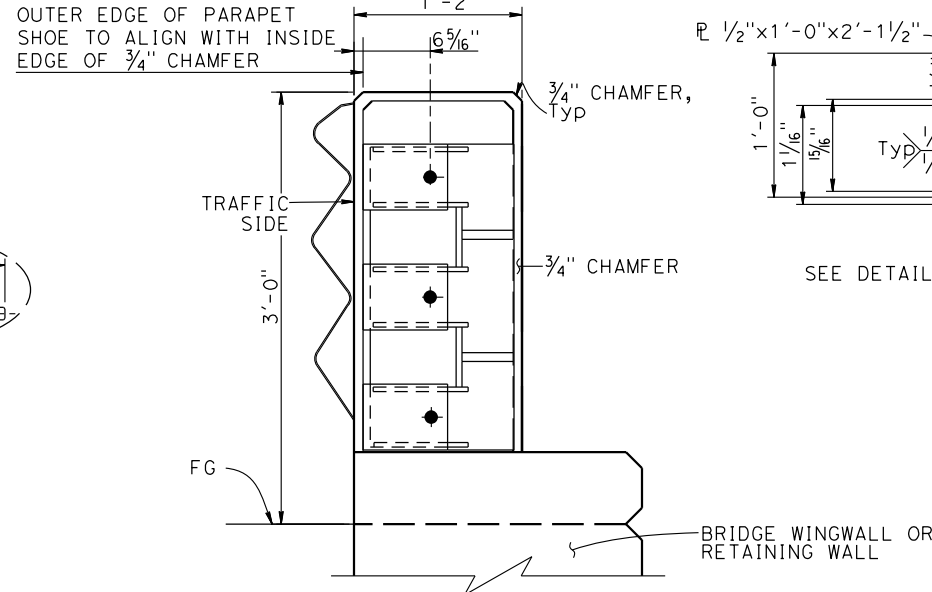
BRIDGE NO.:	17C0046
DESIGNED:	MM
DRAWN:	KD
CHECKED:	GM
JOB NO.:	2250
DATE:	MAY, 2024



PARAPET SHOE AT DEPARTURE END BLOCK

$\frac{3}{4}'' = 1'-0''$

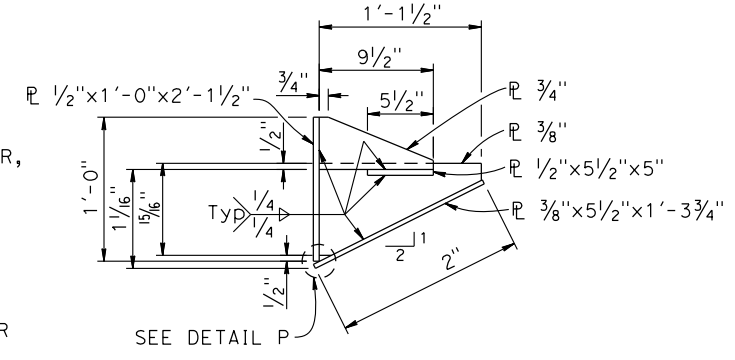
NOTE: Parapet shoe connection to approach end block is similar.



SECTION J-J

$\frac{3}{4}'' = 1'-0''$

NOTE: Bridge railing not shown for clarity.

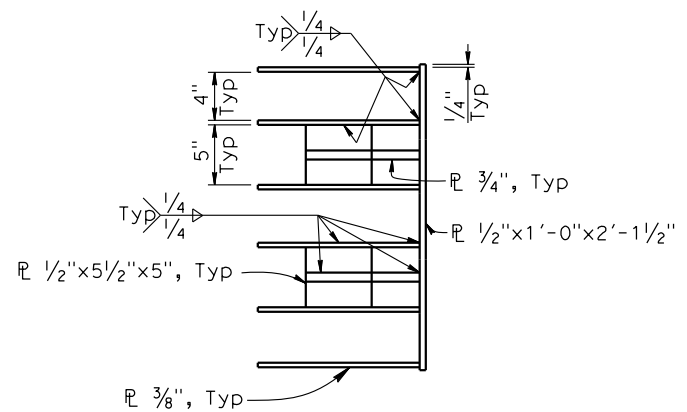


SECTION K-K

$1\frac{1}{2}'' = 1'-0''$

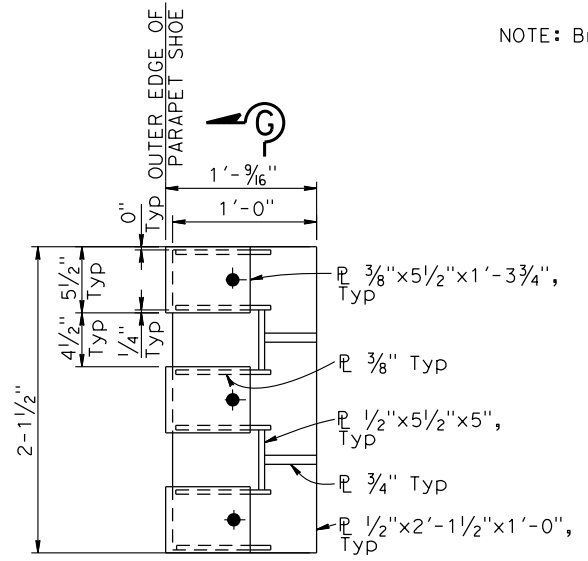
NOTES:

- Anchor bolts must be $\frac{7}{8}''$ Dia and ASTM F1554 Grade 105 fully threaded rods with heavy hex nut and one hardened washer ($1\frac{3}{4}''$ OD) each. Embed threaded rods 8" into concrete anchor block with DRILL AND BOND (CHEMICAL ADHESIVE) anchorage system.
- DRILL AND BOND (CHEMICAL ADHESIVE) anchorages is subjected to approval of Engineer. Installation procedure must comply with manufacturer's instructions.



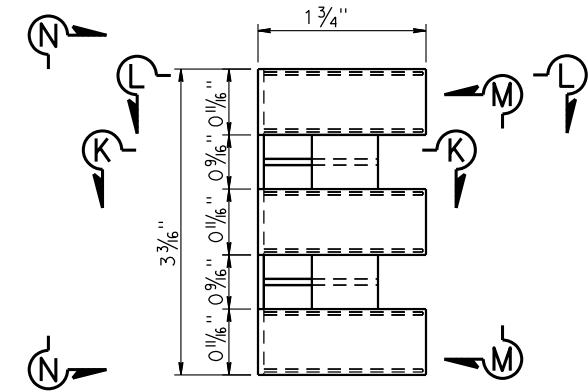
SECTION O-O

$1\frac{1}{2}'' = 1'-0''$



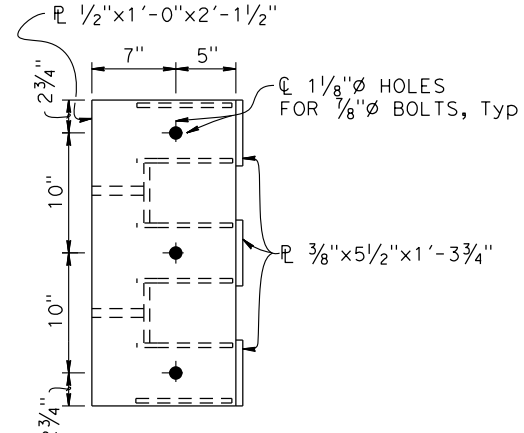
VIEW M-M

$1\frac{1}{2}'' = 1'-0''$



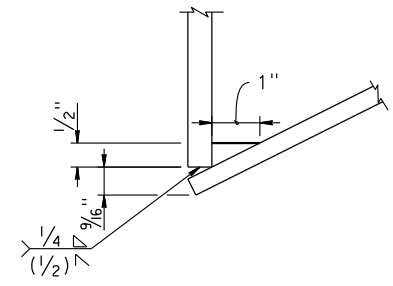
PARAPET SHOE ELEVATION

$1\frac{1}{2}'' = 1'-0''$



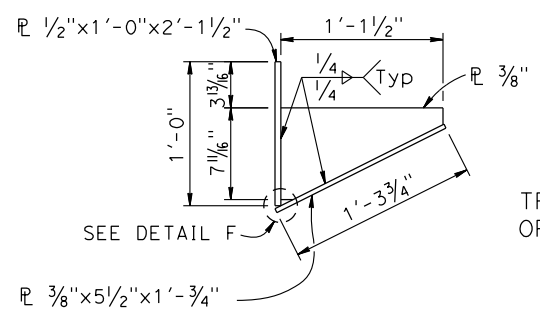
VIEW N-N

$1\frac{1}{2}'' = 1'-0''$



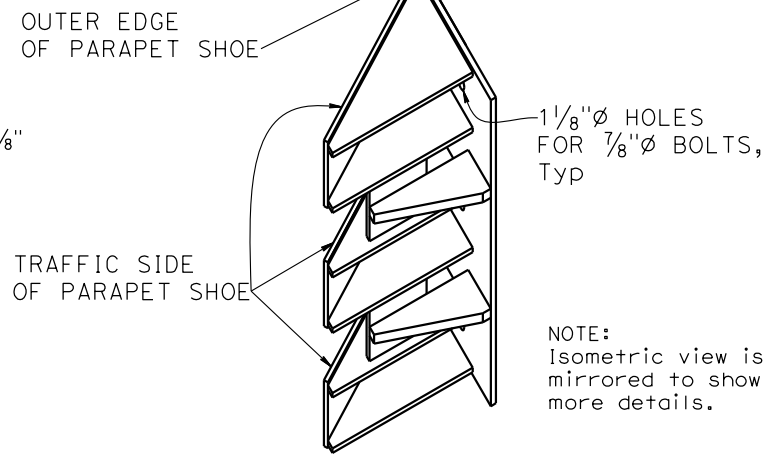
DETAIL F

$6'' = 1'-0''$



SECTION L-L

$1\frac{1}{2}'' = 1'-0''$



ISOMETRIC VIEW

$1\frac{1}{2}'' = 1'-0''$

REVISIONS	
NO.	DESCRIPTION

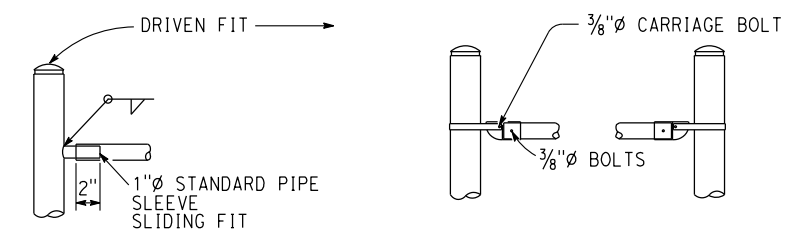
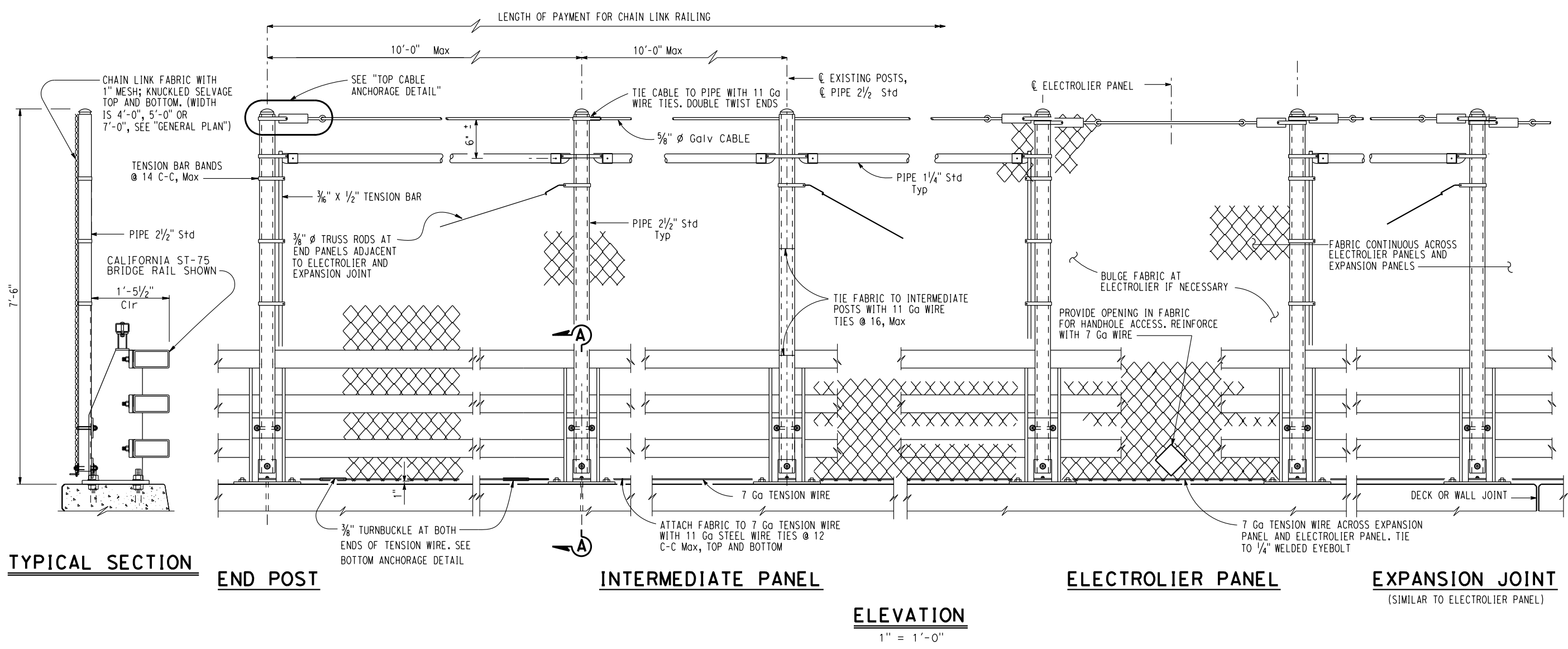


NEVADA COUNTY
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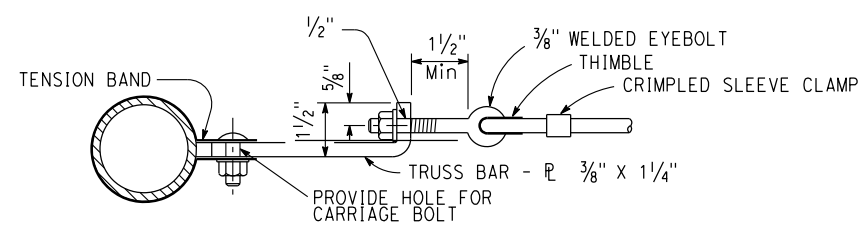


HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
CHAIN LINK RAILING TYPE 2
DETAILS No. 1

BRIDGE NO.: 17C0046
DESIGNED: MM
DRAWN: KD
CHECKED: GM
JOB NO: 2250
DATE: MAY, 2024



END BRACE DETAILS
1 1/2" = 1'-0"

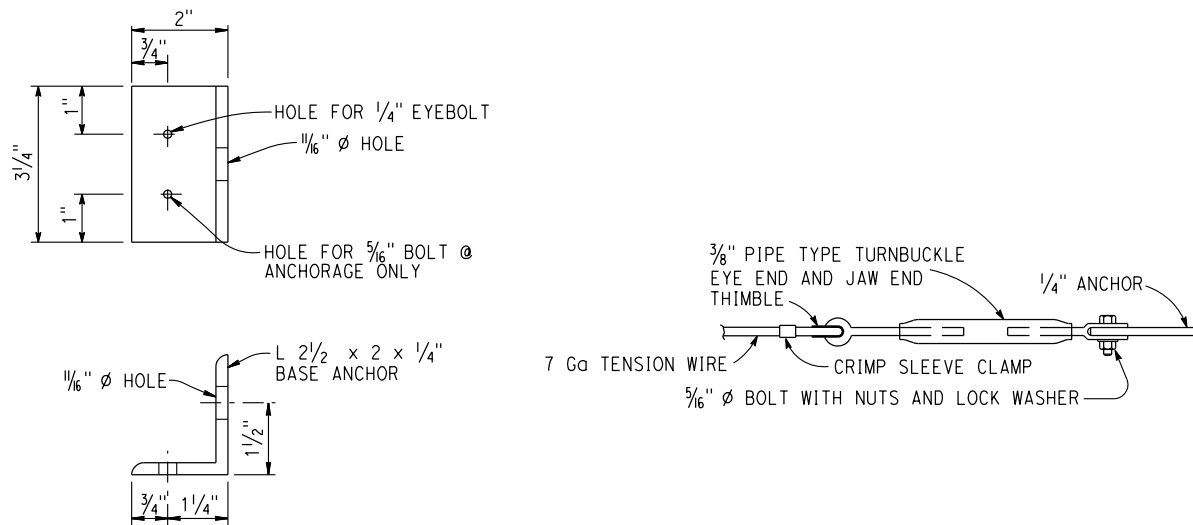
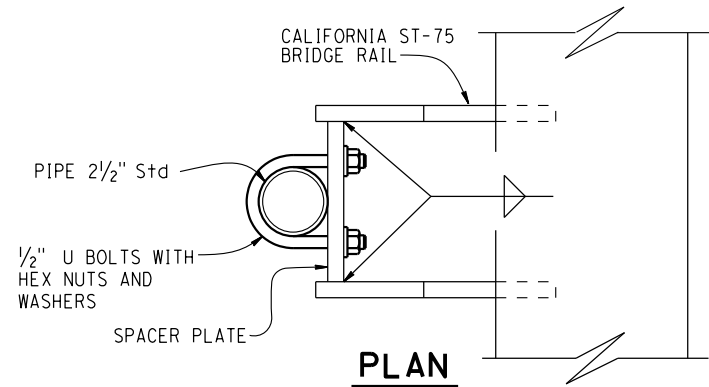


NOTE:
A two sided tension band is an allowable alternative for Intermediate Chain Link Panels

TOP CABLE ANCHORAGE DETAIL
NO SCALE

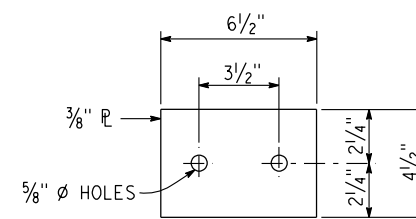
- NOTES:
- Posts shall be vertical.
 - Railing shall conform to horizontal and vertical alignment.
 - When rail is on slope, place fabric parallel to post.
 - Alternative details may be submitted by the Contractor for Engineer approval.
 - Provide thimbles at all cable loops
 - Peen all 3/8" Ø bolts
 - See "GENERAL PLAN" for end post location
 - At intermediate posts only. Contractor has the option of either 1/8" x 2" strap or 1/4" anchor plate with eyebolt
 - For "SECTION A-A", see "CHAIN LINK RAILING TYPE 2 DETAILS No. 2" sheet

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

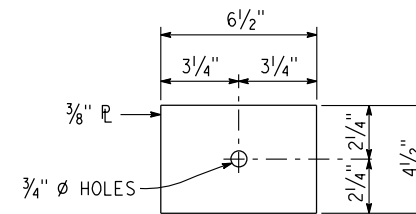


BOTTOM ANCHORAGE DETAILS

6" = 1'-0"



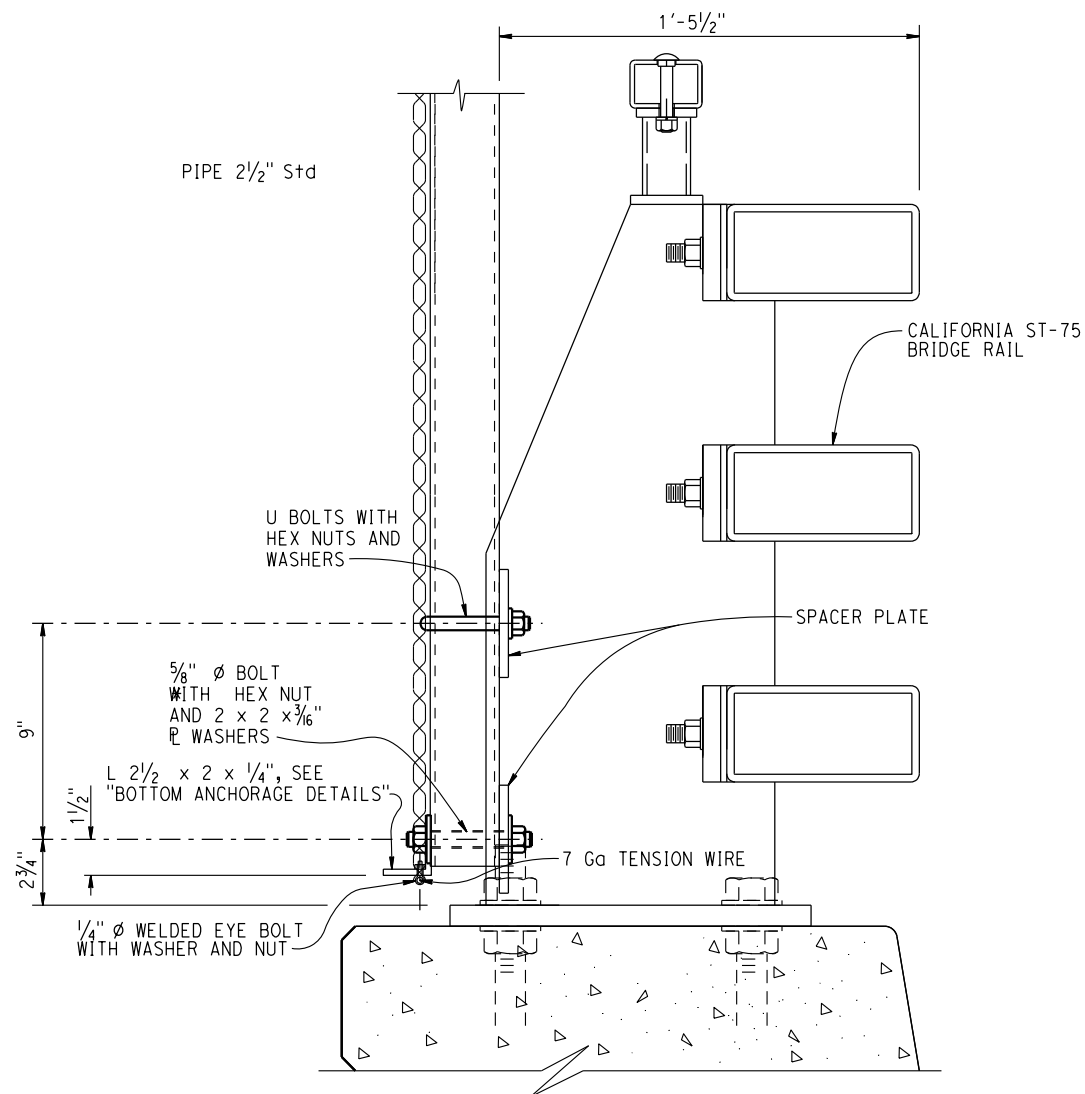
UPPER



LOWER

SPACER PLATE

3" = 1'-0"

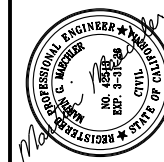


* IF NECESSARY, SEE "NUT/BOLT EXTENSION"

ELEVATION SECTION A-A

3" = 1'-0"

REVISIONS	
NO.	DESCRIPTION



NEVADA COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN/CONSTRUCTION DIVISION



HIRSCHDALE ROAD OVERHEAD
(REHABILITATION)
CHAIN LINK RAILING TYPE 2
DETAILS No. 2

BRIDGE NO.:	17C0046
DESIGNED:	MM
DRAWN:	KD
CHECKED:	GM
JOB NO.:	2250
DATE:	MAY, 2024

SHEET

39

OF 39 SHEETS