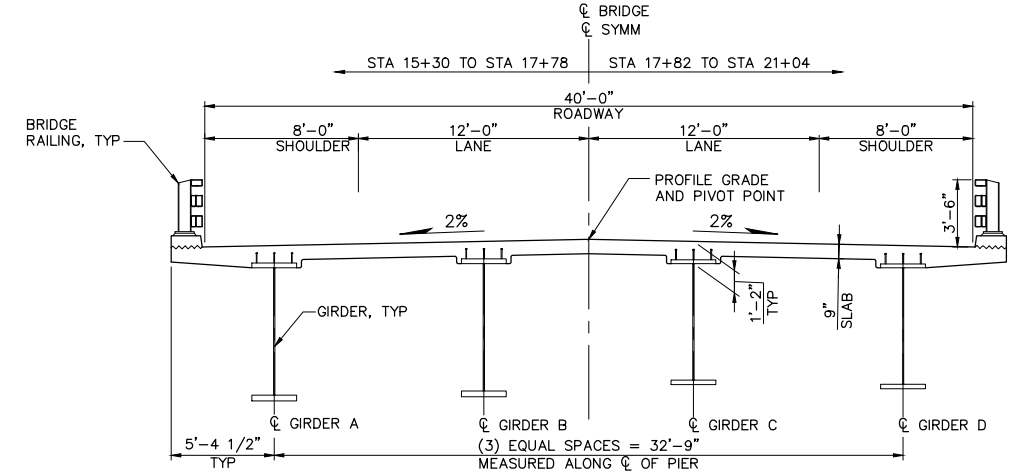
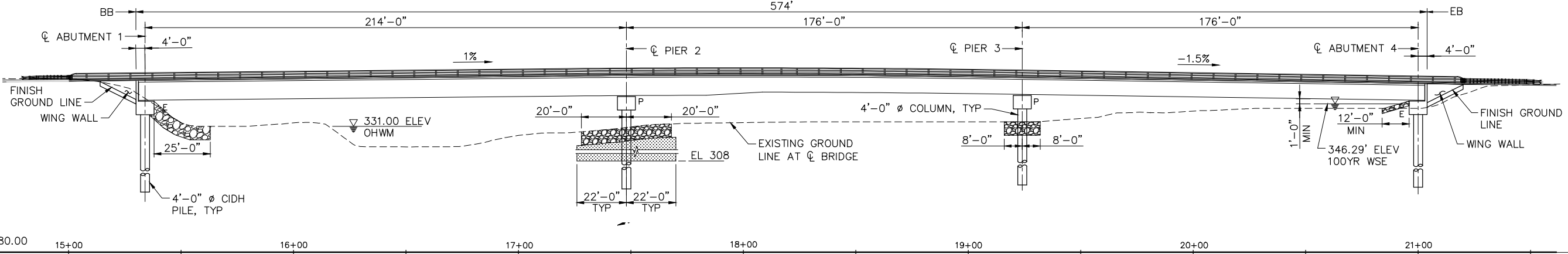


PROFILE GRADE
NO SCALE

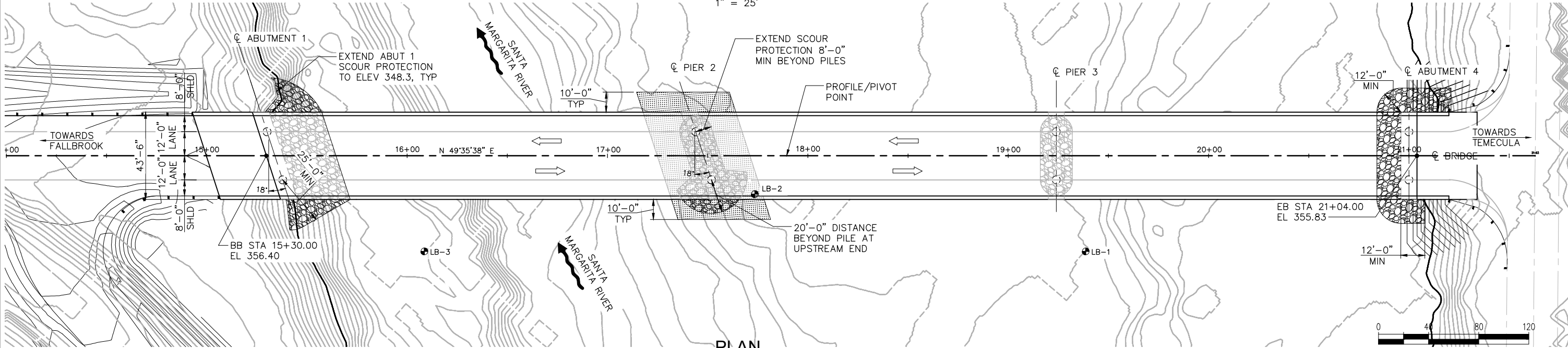
HATCH	DESCRIPTION
	RIPRAP SCOUR PROTECTION. SEE RIPRAP SCOUR PROTECTION NOTES ON SHEET B2.
	GROUND IMPROVEMENTS



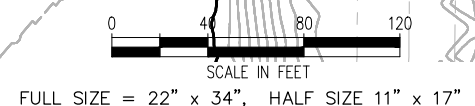
TYPICAL SECTION
1" = 5'



ELEVATION
1" = 25'



PLAN
1" = 25'



Plotted: Oct 12, 2021 - 4:00pm
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Layout: Layout1
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SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

BRIDGE GENERAL PLAN

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B1
SHEET NO.	14 OF 54

GENERAL NOTES LOAD & RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 8TH EDITION WITH CALIFORNIA AMENDMENTS, (ASSHTO-CA BDS-8).

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

DEAD LOAD: INCLUDES 35 PSF FOR FUTURE WEARING SURFACE

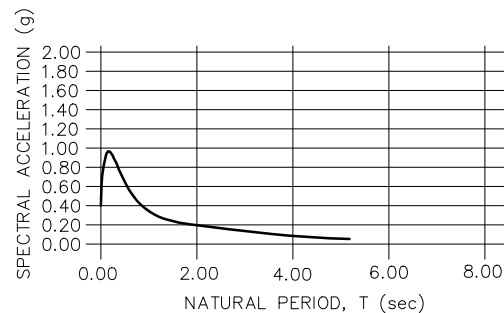
LIVE LOAD: HL-93 WITH LOW-BOY AND PERMIT DESIGN LOAD

SEISMIC LOADING:

MOMENT MAGNITUDE: $M_{max} = 7.7$

PEAK GROUND ACCELERATION: 0.4g

ACCELERATION RESPONSE SPECTRA FOR DESIGN:



REINFORCED CONCRETE: $f_y = 60,000$ psi
 $f'_c = 4,000$ psi (UNLESS NOTED OTHERWISE)
CONCRETE CIDH PILES AND CROSSBEAM $f'_c = 6,000$ psi

DECK, CURB, AND APPROACH SLAB CONCRETE SHALL CONTAIN AN APPROVED PIGMENT MATCHING THE WEATHERING STEEL GIRDER COLOR

STEEL GIRDER: SEE "STRUCTURAL STEEL NOTES" SHEET

THE BRIDGE DESIGN WAS BASED ON THE GEOTECHNICAL REPORT BY LEIGHTON GROUP. IN THE EVENT ADDITIONAL BORINGS ARE REQUIRED BY THE APPROVING AGENCY, THE CONTRACTOR SHALL PERFORM THE BORING(S) AND SUBMIT THE RESULTS TO THE ENGINEER.

RELATED CONTRACT DOCUMENTS

- CONSTRUCTION SPECIFICATIONS: CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS 2018
- STANDARD PLANS: CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS 2018

RIPRAP SCOUR PROTECTION NOTES:

- RIPRAP TYPICAL INSTALLATION SEQUENCE: EXCAVATE FOR RIPRAP PLACEMENT; PLACE GEOTEXTILE FABRIC; PLACE RIPRAP; BACKFILL AS NECESSARY TO TIE TO SURROUNDING GRADE.
- RIPRAP AT ABUTMENT 1, PIER 2, AND PIER 3 SHALL HAVE A MINIMUM D50 OF 33 INCHES, WHICH CORRESPONDS TO FHWA STANDARD RIPRAP CLASS IX GRADATION OR A CALTRANS STANDARD 1-TON GRADATION.
- RIPRAP FOR ABUTMENT 4 SHALL HAVE A MINIMUM D50 OF 12 INCHES, WHICH CORRESPONDS TO A STANDARD RIPRAP CLASS III GRADATION OR A CALTRANS STANDARD "LIGHT" GRADATION.
- THE RIPRAP SHALL HAVE A MINIMUM THICKNESS OF 6 FT AT ABUTMENT 1, PIER 2, AND PIER 3 AND 2 FT AT ABUTMENT 4, RIPRAP SHALL GENERALLY BE FLUSH WITH THE EXISTING GROUND ELEVATION.
- ROCK MATERIAL MUST MEET THE STANDARDS DESCRIBED IN SECTION 72-2.02B OF THE CALTRANS STANDARD SPECIFICATIONS.
- GEOTEXTILE MUST BE RSP (ROCK SLOPE PROTECTION) FABRIC AS DESCRIBED IN SECTION 72-2.02C OF THE CALTRANS STANDARD SPECIFICATIONS.

HYDRAULIC SUMMARY DATA TABLE				
DESCRIPTION	FLOOD OF RECORD	STANDARD FLOOD		DESIGN FLOOD
FREQUENCY	40 TO 50	100	50	100
DISCHARGE (CFS)	34,000	38,000	30,600	38,000
WATER SURFACE ELEV. (MSL)	N/A	346.29	344.93	346.29
VELOCITY (FPS)	N/A	8.7	8.2	8.7
BRIDGE LOW CHORD ELEV (MSL)	347.65	347.65	347.65	347.65

SCOUR DATA TABLE		
SUPPORT NO.	LONG TERM (DEGRADATION AND CONTRACTION) SCOUR ELEVATION (FT)	SHORT TERM (LOCAL) SCOUR DEPTH (FT)
ABUTMENT 1	336	0
PIER 2	327	15
PIER 3	327	11.5**
ABUTMENT 4	344	0

* SCOUR AT SUPPORT LOCATION; NOT AT ABUTMENT EMBANK TOE.
** DEPTH IS TRUNCATED AT THE BEDROCK ELEVATION AND IS LESS THAN THE CALCULATED 15 FT FOR PIER 3.

SUPPORT LOCATION	PILE TYPE	CUT-OFF ELEVATION (FT)		SERVICE-I LIMIT STATE LOAD PER SUPPORT (KIPS)		TOTAL PERMISSIBLE SUPPORT SETTLEMENT (INCHES)	FACTORED DESIGN LOADS (KIPS)						DESIGN PILE LENGTH (FROM CUT-OFF ELEVATION) (+FT)	DESIGN TIP ELEVATIONS ¹ (+FT)	SPECIFIED TIP ELEVATIONS ² (+FT)
		PILE A	PILE B	TOTAL	PERMANENT		STRENGTH LIMIT STATE/ CONSTRUCTION			EXTREME EVENT-I STATE					
							COMP. ($\psi_{os}=0.7$)		TENSION ($\psi_{os}=0.7$)	COMP. ($\psi_{os}=1.0$)		TENSION ($\psi_{os}=0.7$)			
		PER SUP-PORT	MAX PER PILE	PER SUP-PORT	MAX PER PILE		PER SUP-PORT	MAX PER PILE							
ABUTMENT 1	48" DIA CIDH PILE	341.87	342.01	860	650	1.0	2380	1190	N/A	N/A	860	N/A	19.71 (A-I) 17.71 (A-II) 17.71 (C) 27.85 (D)	322.16 (A-I) 324.16 (A-II) 324.16 (C) 314.02 (D)	314.02
PIER 2		335.25	335.75	1660	1310	1.0	4570	2285	N/A	N/A	2610	N/A	25.25 (A-I) 25.25 (A-II) 25.25 (C) 30.25 (D)	310.00 (A-I) 310.00 (A-II) 310.00 (C) 305.00 (D)	305.00
PIER 3		339.00	339.00	1415	1085	1.0	3920	1960	N/A	N/A	2175	N/A	24.00 (A-I) 24.00 (A-II) 24.00 (C) 28.00 (D)	315.00 (A-I) 315.00 (A-II) 315.00 (C) 311.00 (D)	311.00
ABUTMENT 4		342.08	342.08	745	530	1.0	2090	1045	N/A	N/A	895	N/A	22.08 (A-I) 22.08 (A-II) 22.08 (C) 29.08 (D)	320.00 (A-I) 320.00 (A-II) 320.00 (C) 313.00 (D)	313.00

NOTES:

- DESIGN TIP ELEVATIONS ARE CONTROLLED BY: (A-I) COMPRESSION (STRENGTH LIMIT), (B-I) TENSION (STRENGTH LIMIT), (A-II) COMPRESSION (EXTREME EVENT-I), (B-II) TENSION (EXTREME EVENT-I), (C) SETTLEMENT, (D) LATERAL (EXTREME EVENT-I).
- THE SPECIFIED TIP ELEVATION SHALL NOT BE RAISED WITHOUT APPROVAL FROM ENGINEER

Plotted: Oct 12, 2021 - 2:54pm
V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B2_GENERAL_NOTES.dwg
Layout: Layout1
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touniep



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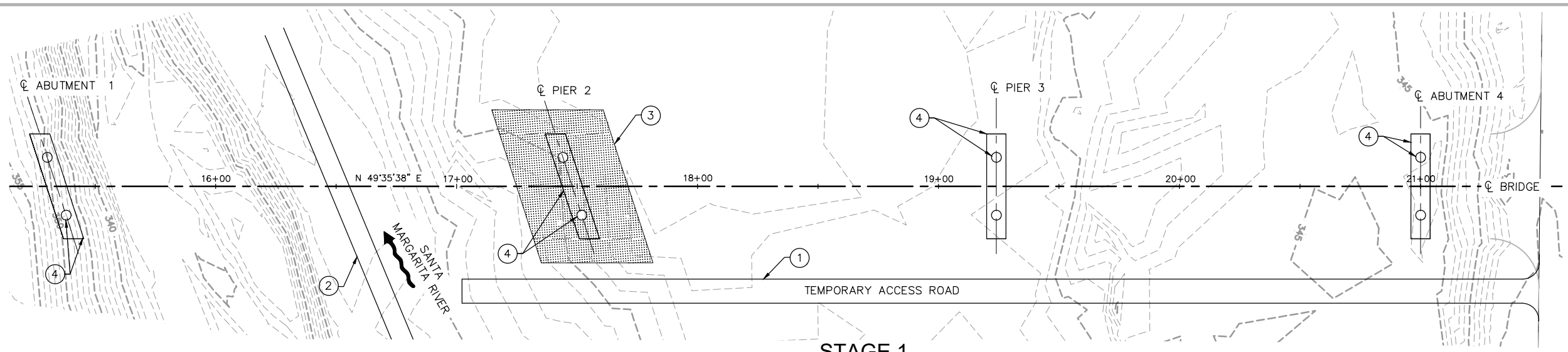
NO.	DATE	BY	REVISION

**SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA**

GENERAL NOTES

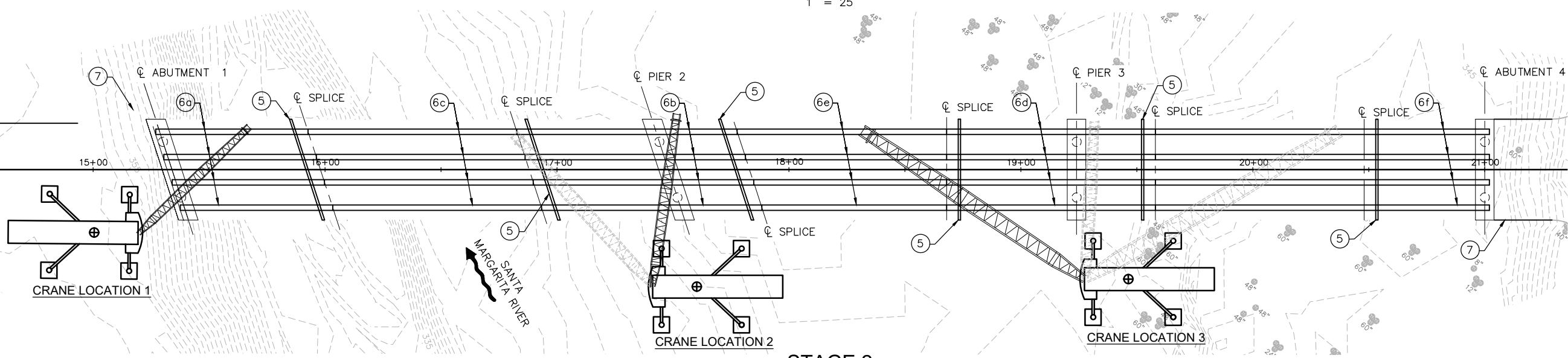
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DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B2
SHEET NO.	15 OF 54

FIRST IMPROVEMENT PLAN SUBMITTAL - NOT FOR CONSTRUCTION



STAGE 1
1" = 25'

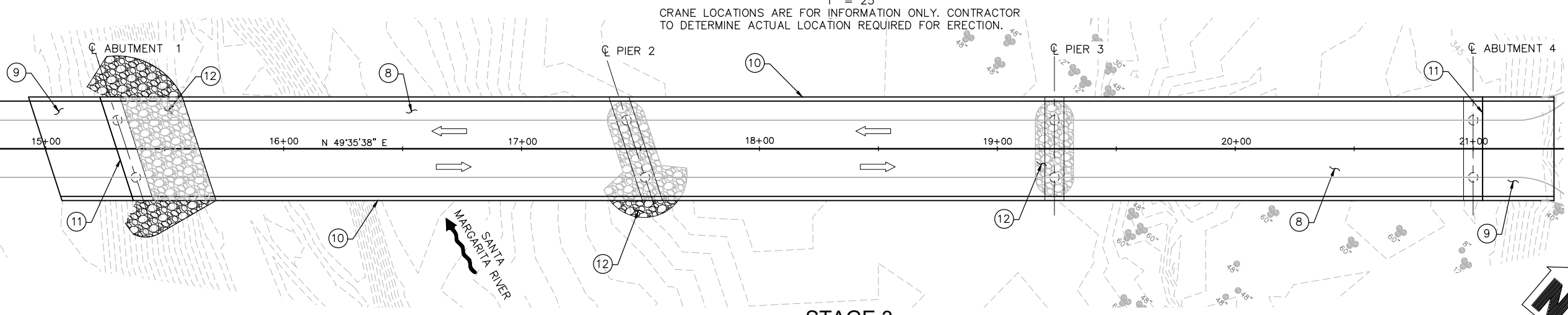
- STAGE 1**
- 1 CONSTRUCT ACCESS ROADS TO PIERS
 - 2 INSTALL TEMPORARY CREEK DIVERSION SYSTEM
 - 3 INSTALL GROUND IMPROVEMENTS
 - 4 INSTALL CIDH FOUNDATIONS, ABUTMENTS AND CROSS BEAMS



STAGE 2
1" = 25'

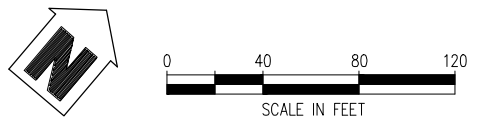
- STAGE 2**
- 5 CONSTRUCT TEMPORARY GIRDER SUPPORTS
 - 6 INSTALL STEEL GIRDERS, CROSS BRACING AND DIAPHRAGMS
 - 7 INSTALL WINGWALLS AND MSE WALLS

CRANE LOCATIONS ARE FOR INFORMATION ONLY. CONTRACTOR TO DETERMINE ACTUAL LOCATION REQUIRED FOR ERECTION.



STAGE 3
1" = 25'

- STAGE 3**
- 8 CAST DECK
 - 9 CAST APPROACH SLABS
 - 10 INSTALL BARRIER
 - 11 INSTALL EXPANSION JOINTS
 - 12 INSTALL SCOUR PROTECTION



FULL SIZE = 22" x 34", HALF SIZE 11" x 17"

Plotted: Oct 07, 2021 - 12:59pm tainiep Layout: Layout1 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B3_CONSTRUCTION_SEQUENCE.dwg



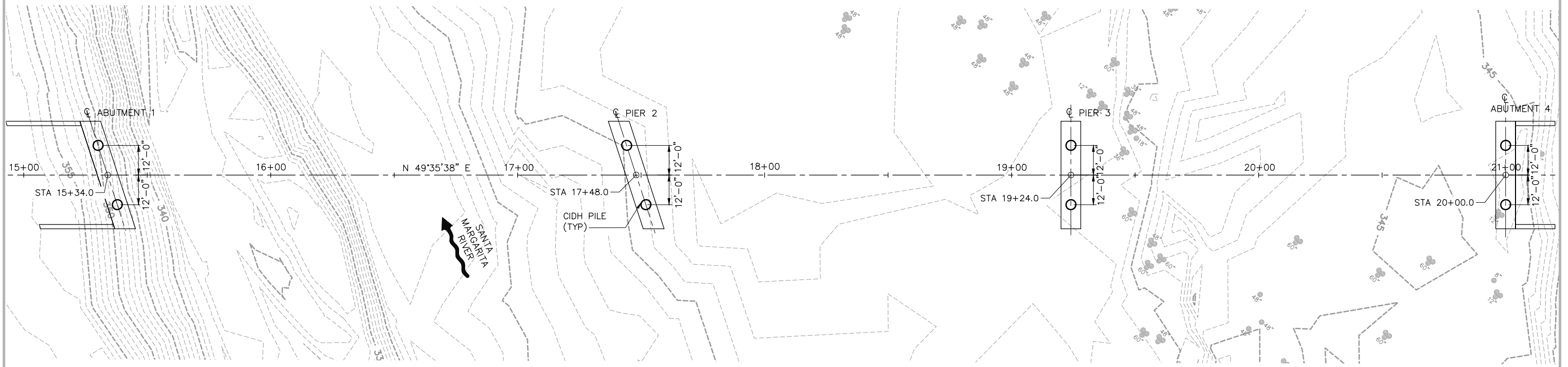
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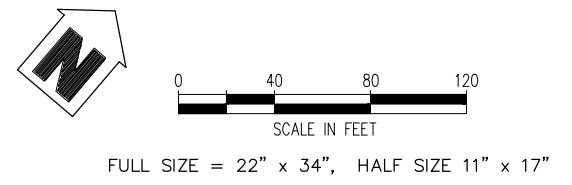
SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

SUGGESTED CONSTRUCTION SEQUENCE

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B3
SHEET NO.	16 OF 54



PLAN
 1" = 20'
 BEARING OF ABUTMENT 1 AND PIER 2 = 58°24'22" W
 BEARING OF PIER 3 AND ABUTMENT 4 = 40°24'22" W



Plotted: Oct 11, 2021 - 12:52pm touniep Layout: Layout1
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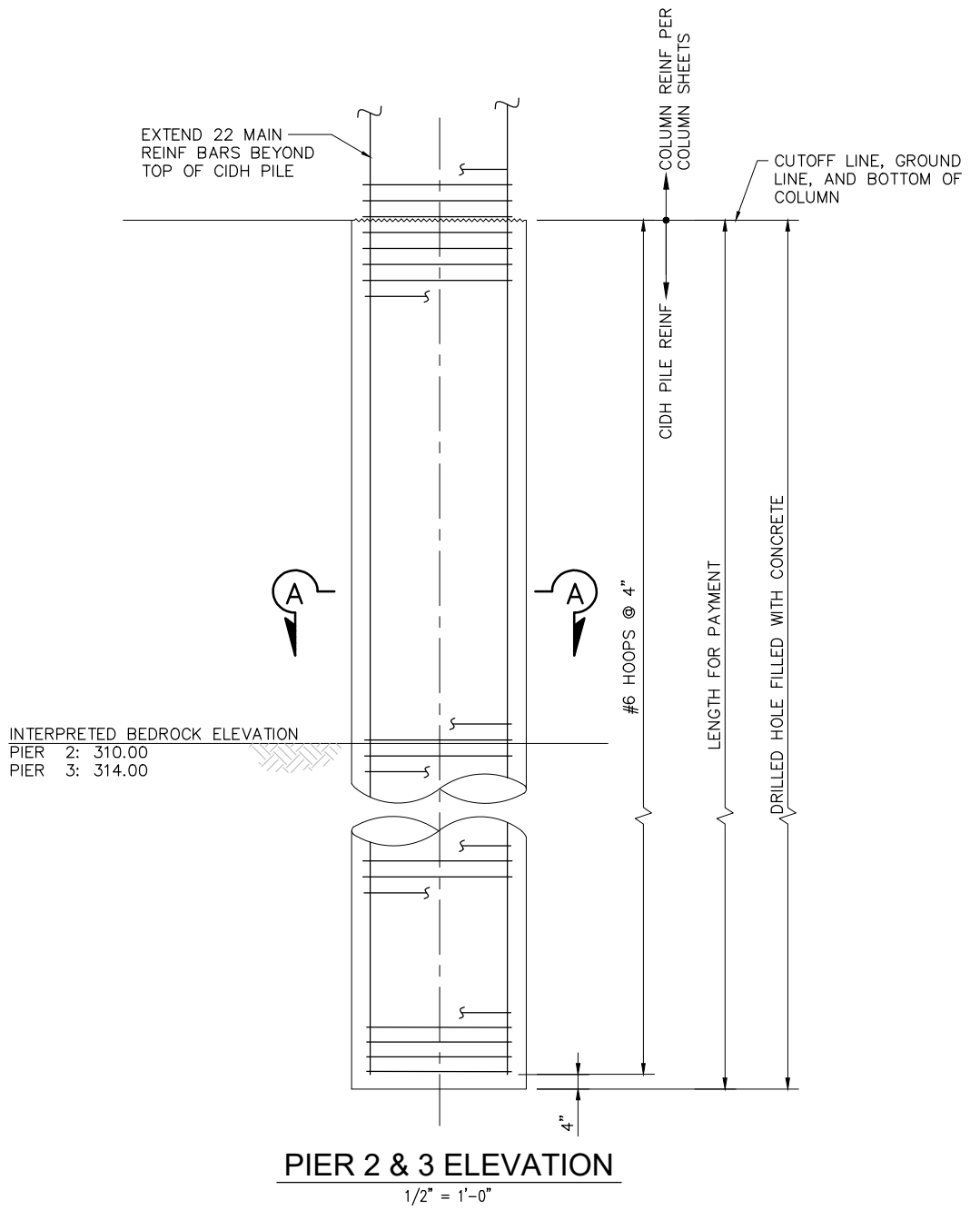


NO.	DATE	BY	REVISION

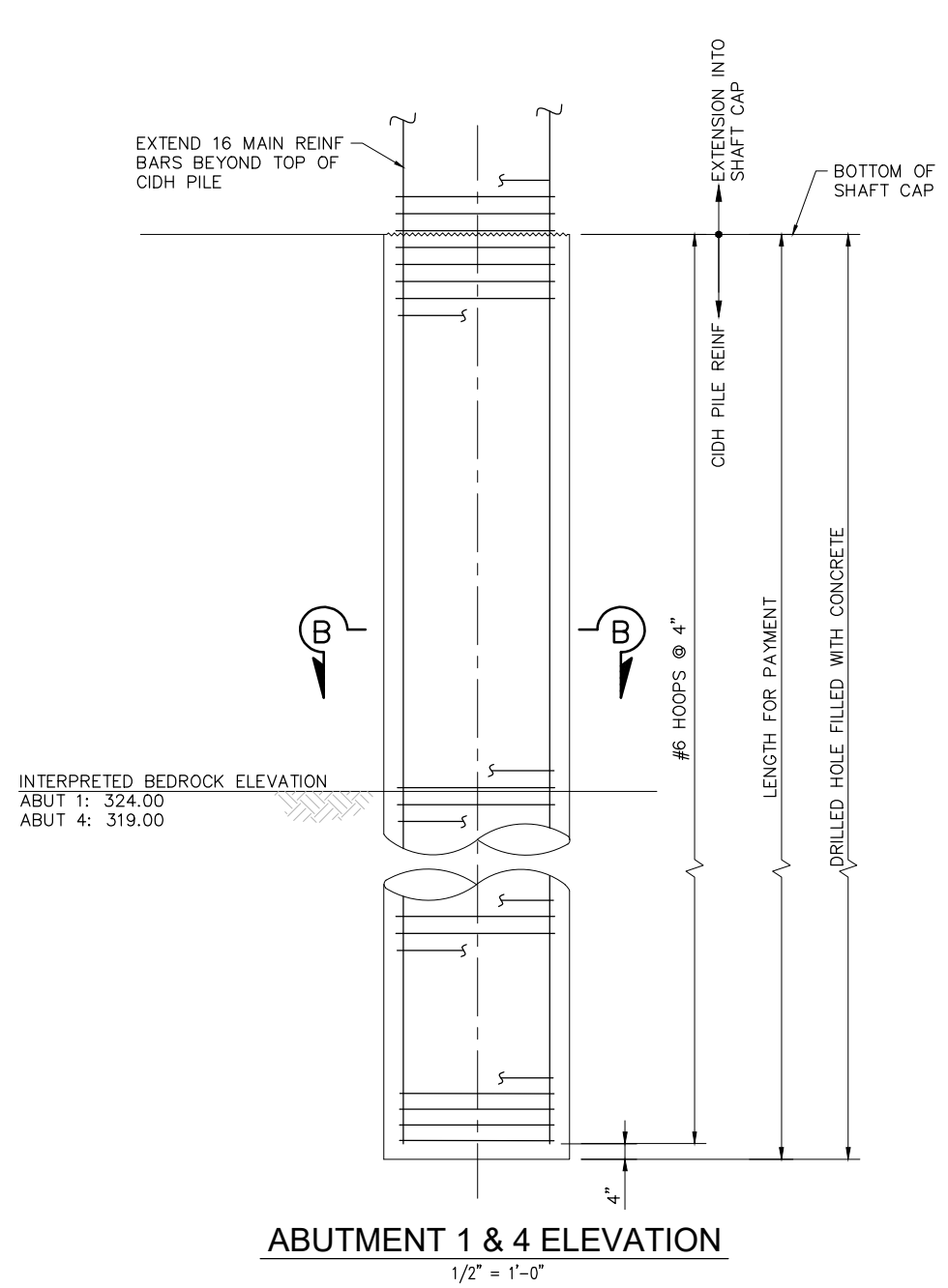
SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

FOUNDATION PLAN

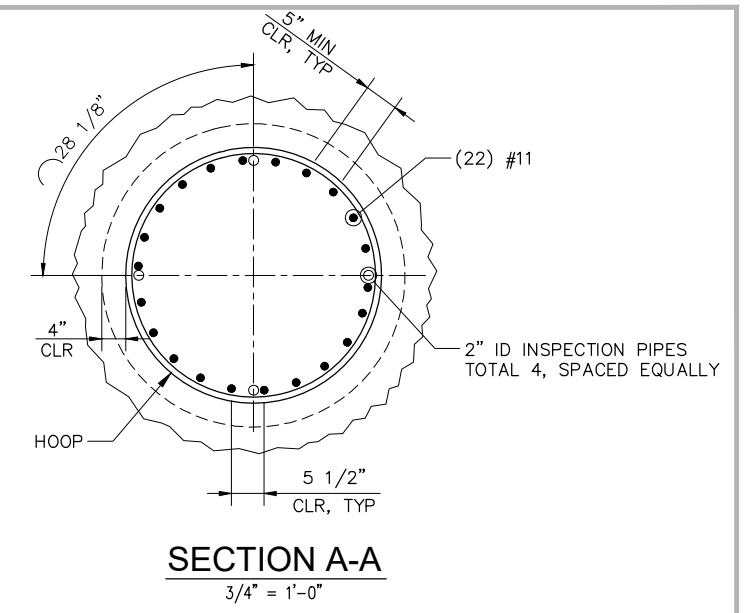
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CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B4
SHEET NO.	17 OF 54



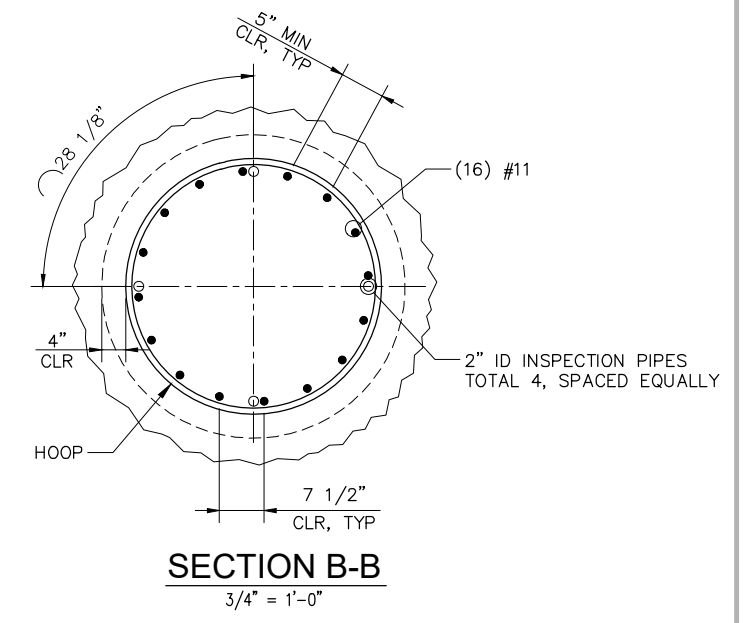
PIER 2 & 3 ELEVATION
1/2" = 1'-0"



ABUTMENT 1 & 4 ELEVATION
1/2" = 1'-0"



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



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

NOTES:

1. CIDH PILES SHALL BE EXTENDED ONLY IN ACCORDANCE WITH DETAILS SHOWN IN THE PROJECT PLANS.
2. VERTICAL CIDH PILE/COLUMN REINFORCEMENT SHALL NOT BE SPLICED.
3. HOOPS SHALL BE WELDED BY WELDED ULTIMATE BUTT SPLICE. STAGGER SPLICES BY 90 DEGREES AT EACH PLACEMENT.
4. INTERPRETED BEDROCK ELEVATIONS ARE APPROXIMATE. CONTRACTOR TO VERIFY ELEVATIONS PRIOR TO ORDERING MATERIAL.

NOTES CONT'D:

DESIGN NOTES:

REINFORCED CONCRETE
f_y = 60,000 psi
f' = 6,000 psi

DESIGN CAPACITY

1850 KIP (STRENGTH)
3000 KIP (EXTREME)

COMPRESSION:

667 KIP (SERVICE STATE)
1667 KIP (NOMINAL AXIAL STRUCTURAL RESISTANCE)

Plotted: Oct 11, 2021 - 3:22pm touniep Layout: Layout1 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B5_CAST_IN_DRILLED_HOLE_PILE_DETAILS.dwg



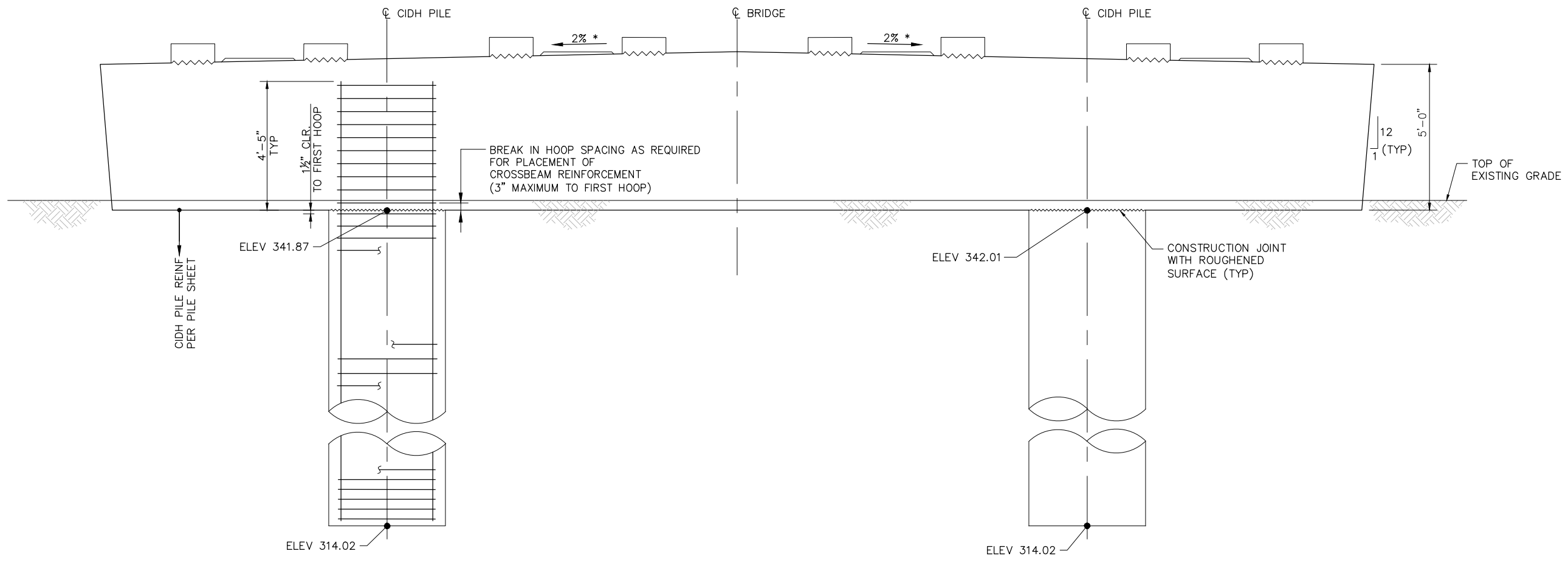
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SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

CAST IN DRILLED HOLE PILE DETAILS

DRAWN: SQ	PROJECT NO.: 10092000118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B5
SHEET NO.	18 OF 54



ELEVATION ABUTMENT 1

1/2" = 1'-0"

* CROSS SLOPE NORMAL TO ϕ BRIDGE
 LEFT COLUMN REINFORCEMENT AND DETAIL SHOWN
 RIGHT COLUMN SIMILAR.

Plotted: Oct 07, 2021 - 1:06pm Layout: Layout1
 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B6_ABUTMENT1_ELEVATION.dwg



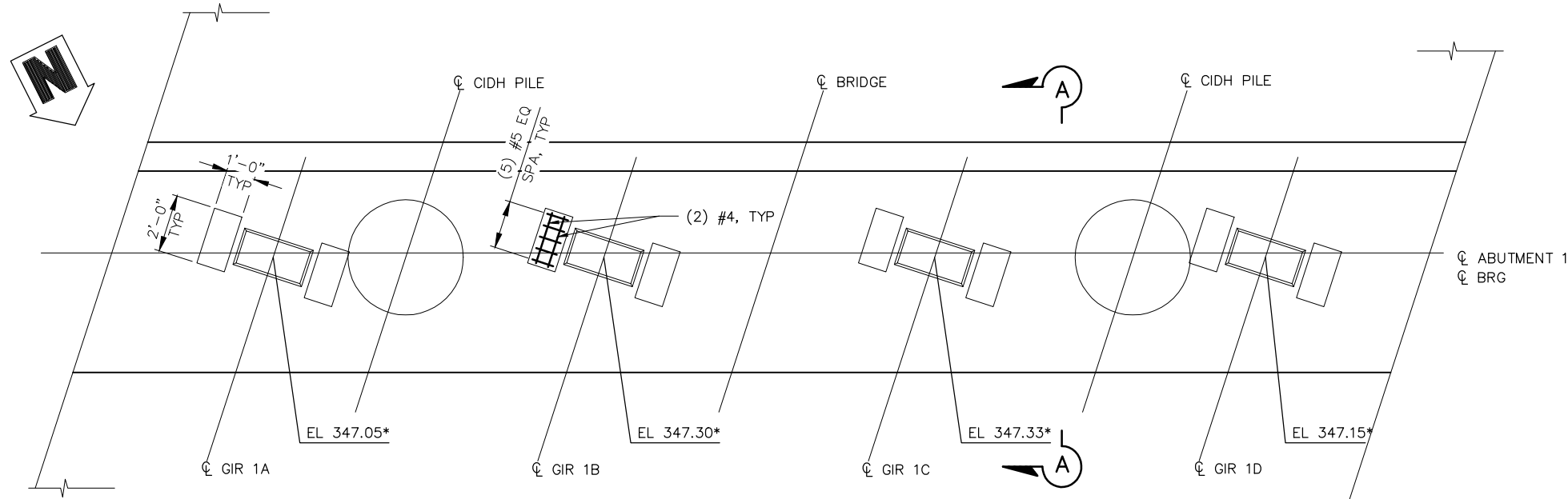
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SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

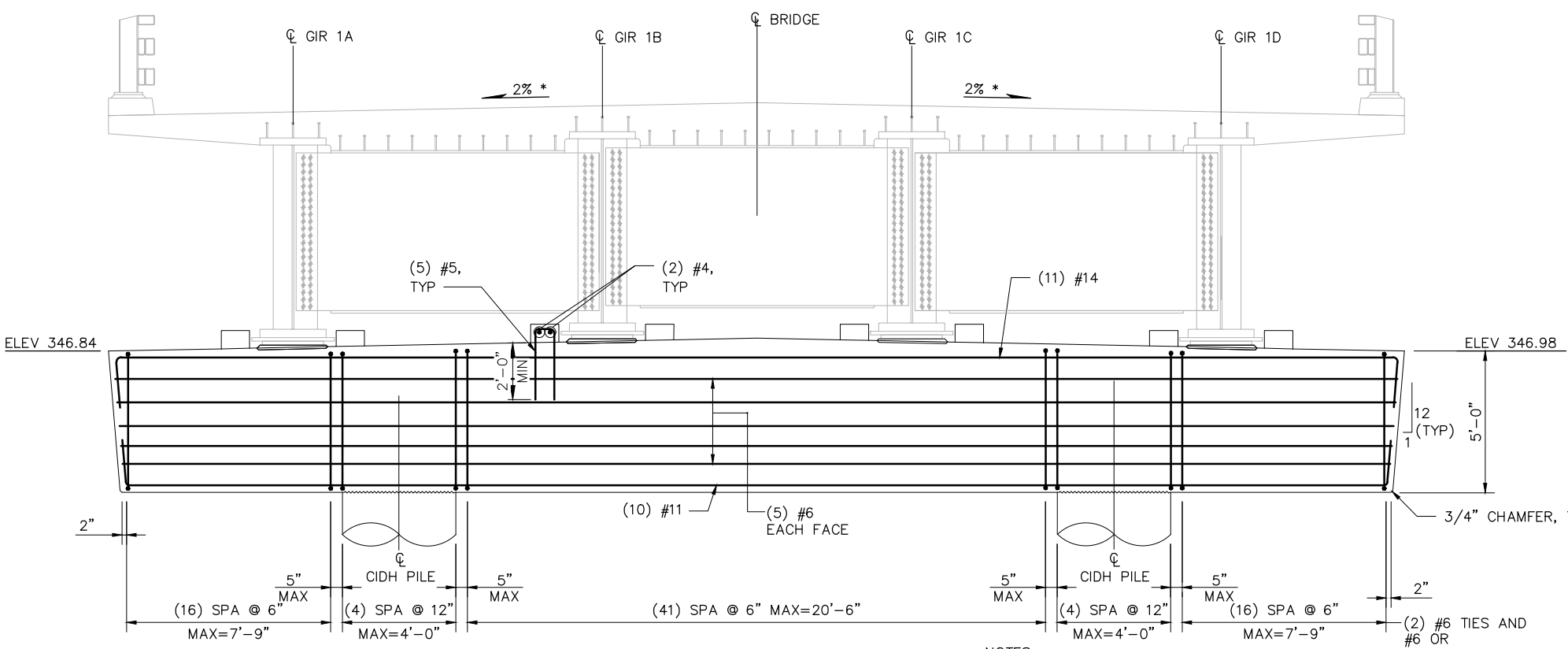
ABUTMENT 1 ELEVATION

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B6
SHEET NO.	19 OF 54



ABUTMENT 1 CROSSBEAM PLAN
1/2" = 1'-0"

* ELEVATIONS SHOWN ARE AT THE TOP OF GROUT PADS ALONG THE CENTERLINE BEARING.



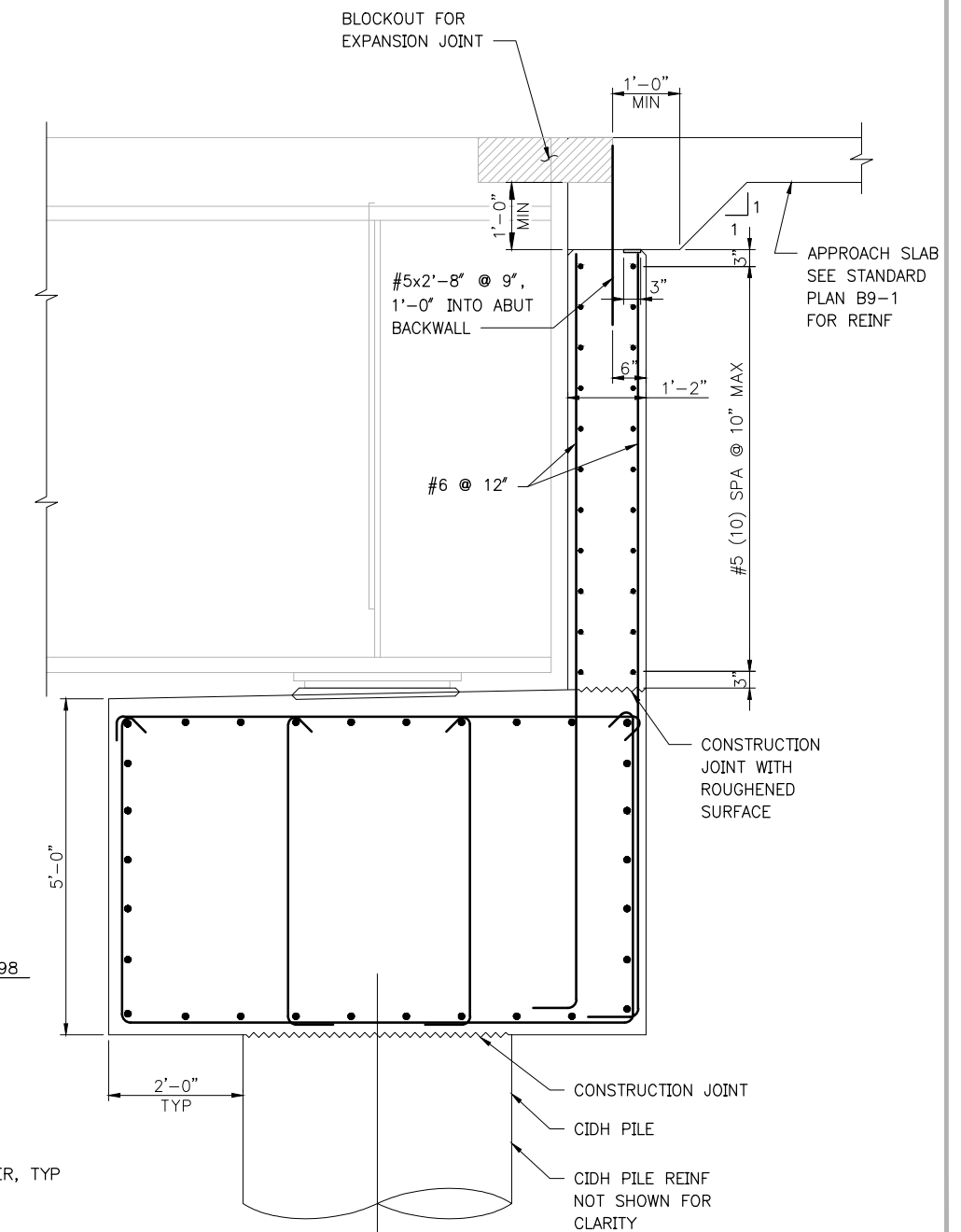
ABUTMENT 1 CROSSBEAM ELEVATION
3/8" = 1'-0"

* CROSS SLOPE NORMAL TO CL BRIDGE

NOTES:

1. SPLICES OF #14 AND #11 BARS SHALL BE A MECHANICAL OR WELDED SERVICE SPLICE. SPLICE OF BARS OVER SHAFT NOT PERMITTED.
2. SPLICES OF #6 BARS SHALL BE 2'-9".
3. STAGGER SPLICES OF ADJACENT BARS, UNLESS OTHERWISE NOTED.
4. WINGWALLS NOT SHOWN FOR CLARITY.

(2) #6 TIES AND #6 OR #6 STIRRUP SETS #6, TYP OR OVER COLUMN



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

Plotted: Oct 12, 2021 - 4:49pm tainiep Layout: Layout1 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B7_ABUTMENT1_CROSSBEAM_PLAN-ELEVATION.dwg



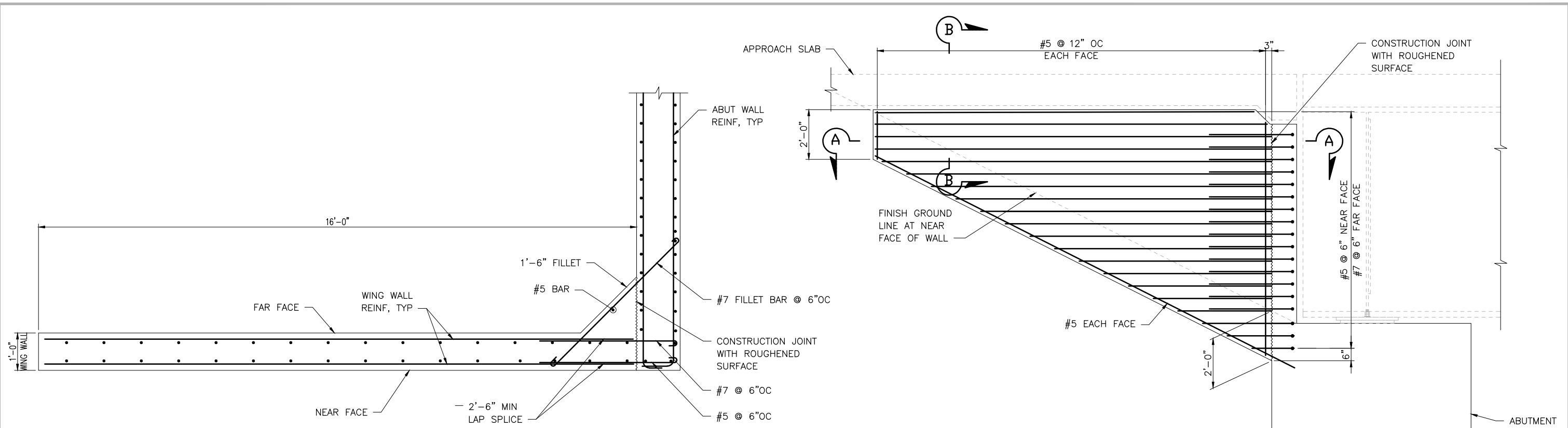
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SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

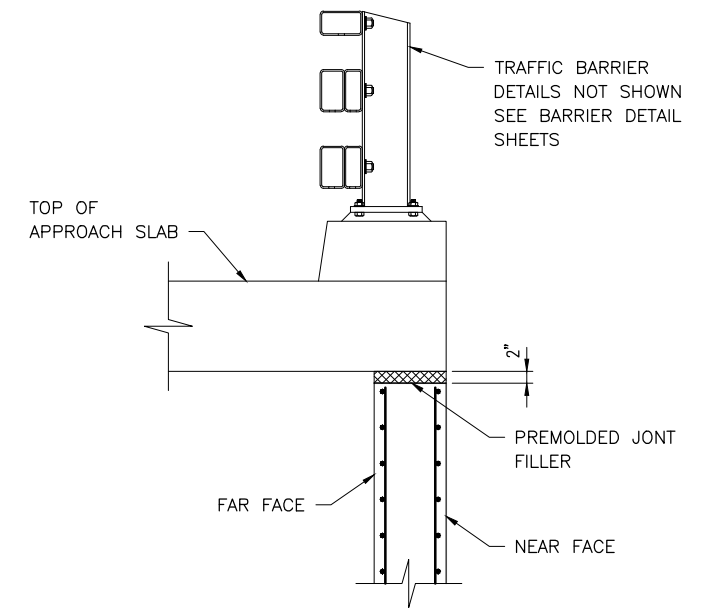
ABUTMENT 1 CROSSBEAM PLAN AND ELEVATION

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B7
SHEET NO.	20 OF 54



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

SECTION A-A
SCALE: 3/4" = 1'-0"



SECTION B-B
SCALE: 3/4" = 1'-0"

Plotted: Oct 11, 2021 - 4:42pm touniep Layout: Layout1
V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B8_ABUTMENT_DETAILS.dwg



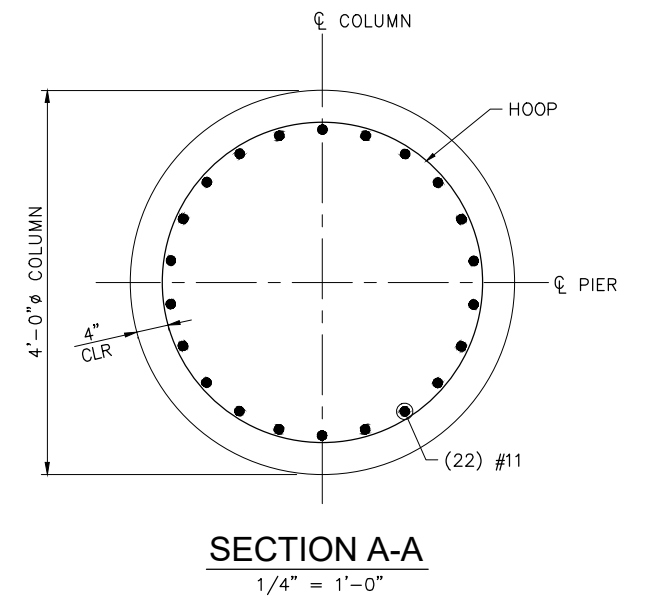
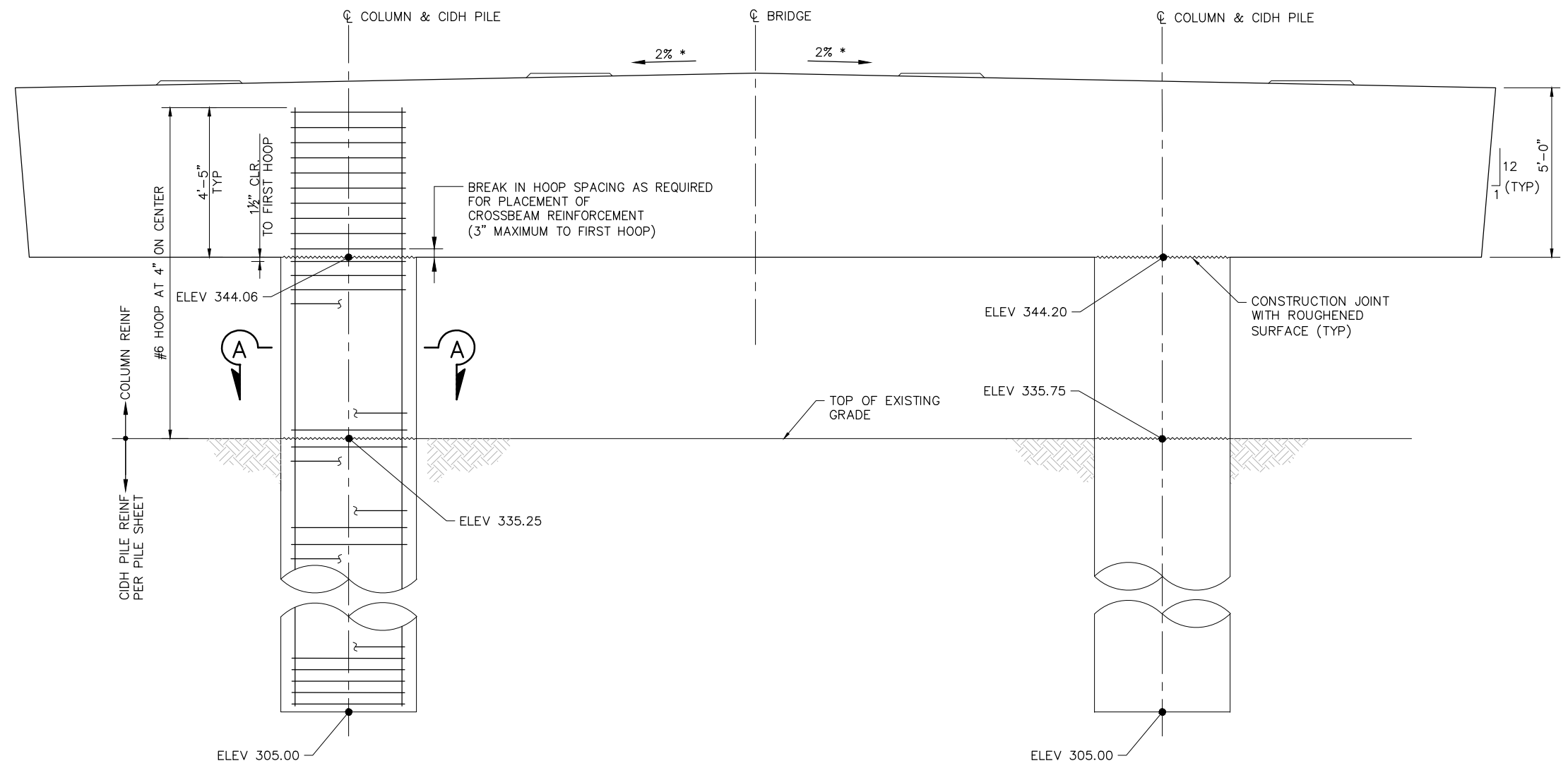
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SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

ABUTMENT 1 DETAILS

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B8
SHEET NO.	21 OF 54



Plotted: Oct 08, 2021 - 10:19am touniep Layout: Layout1
 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B9_PIER2_ELEVATION.dwg



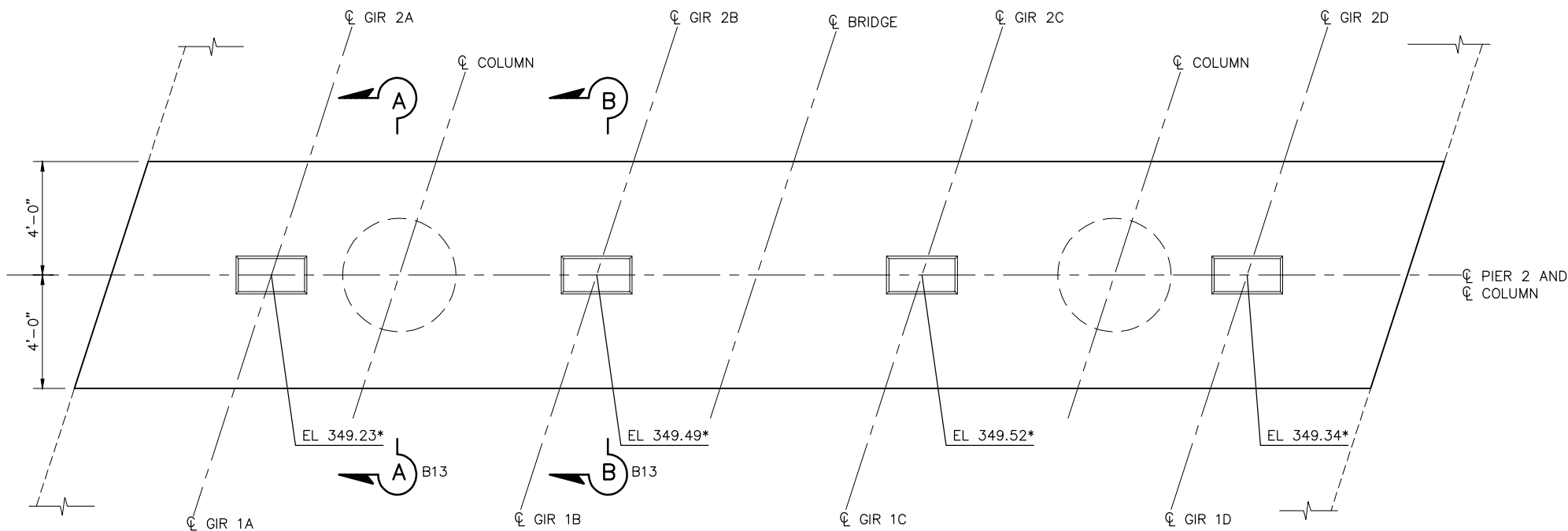
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NO.	DATE	BY	REVISION

SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

PIER 2 ELEVATION

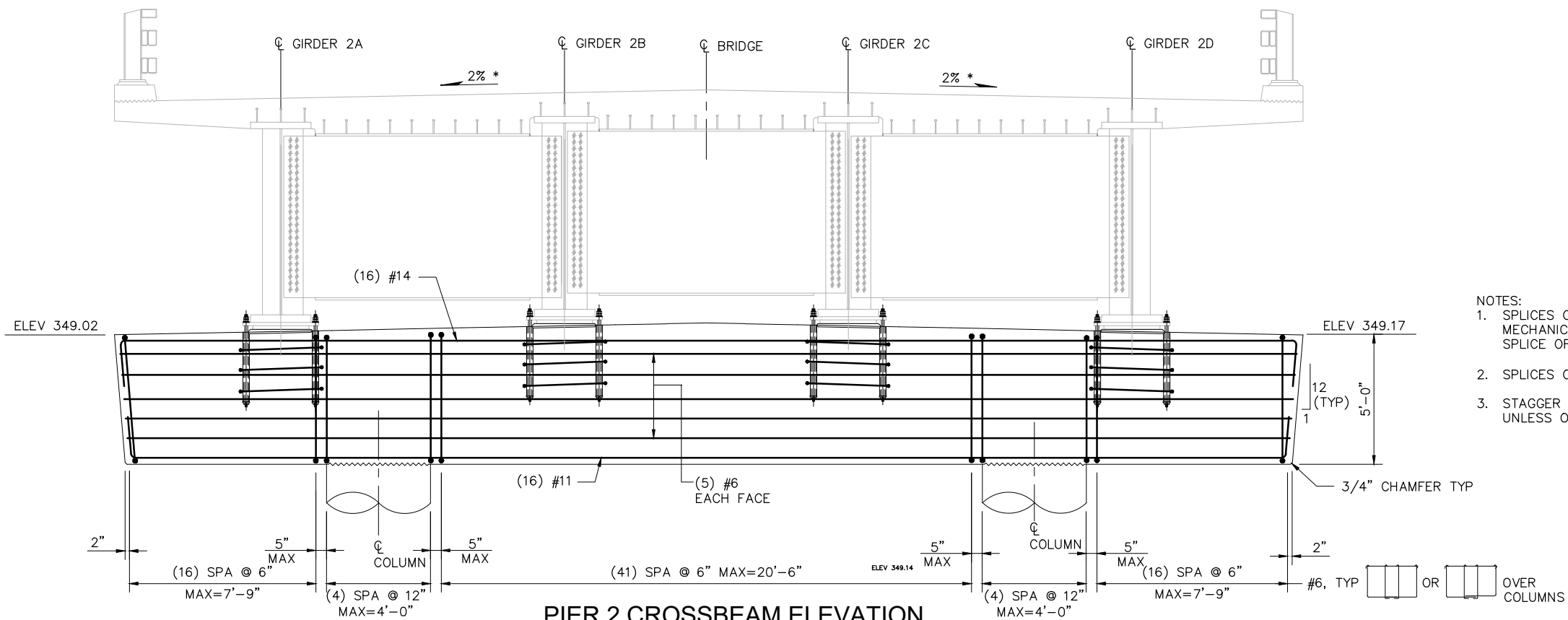
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CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B9
SHEET NO.	22 OF 54



PIER 2 CROSSBEAM PLAN

3/8" = 1'-0"

* ELEVATIONS SHOWN ARE AT THE TOP OF GROUT PADS ALONG THE CENTERLINE BEARING.



PIER 2 CROSSBEAM ELEVATION

3/8" = 1'-0"

* CROSS SLOPE NORMAL TO ϕ BRIDGE

- NOTES:
1. SPLICES OF #14 AND #11 BARS SHALL BE A MECHANICAL OR WELDED SERVICE SPLICE. SPLICE OF BARS OVER COLUMN NOT PERMITTED.
 2. SPLICES OF #6 BARS SHALL BE 2'-9"
 3. STAGGER SPLICES OF ADJACENT BARS, UNLESS OTHERWISE NOTED.

Plotted: Oct 08, 2021 - 11:53am touniep Layout: Layout1 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B10_PIER2_CROSSBEAM_PLAN-ELEVATION.dwg



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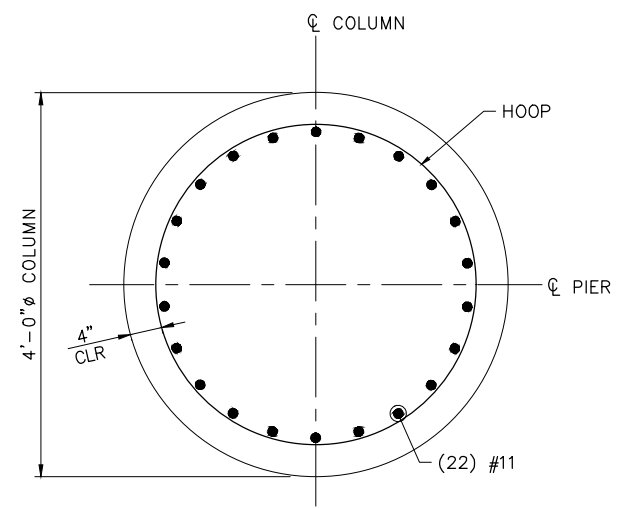
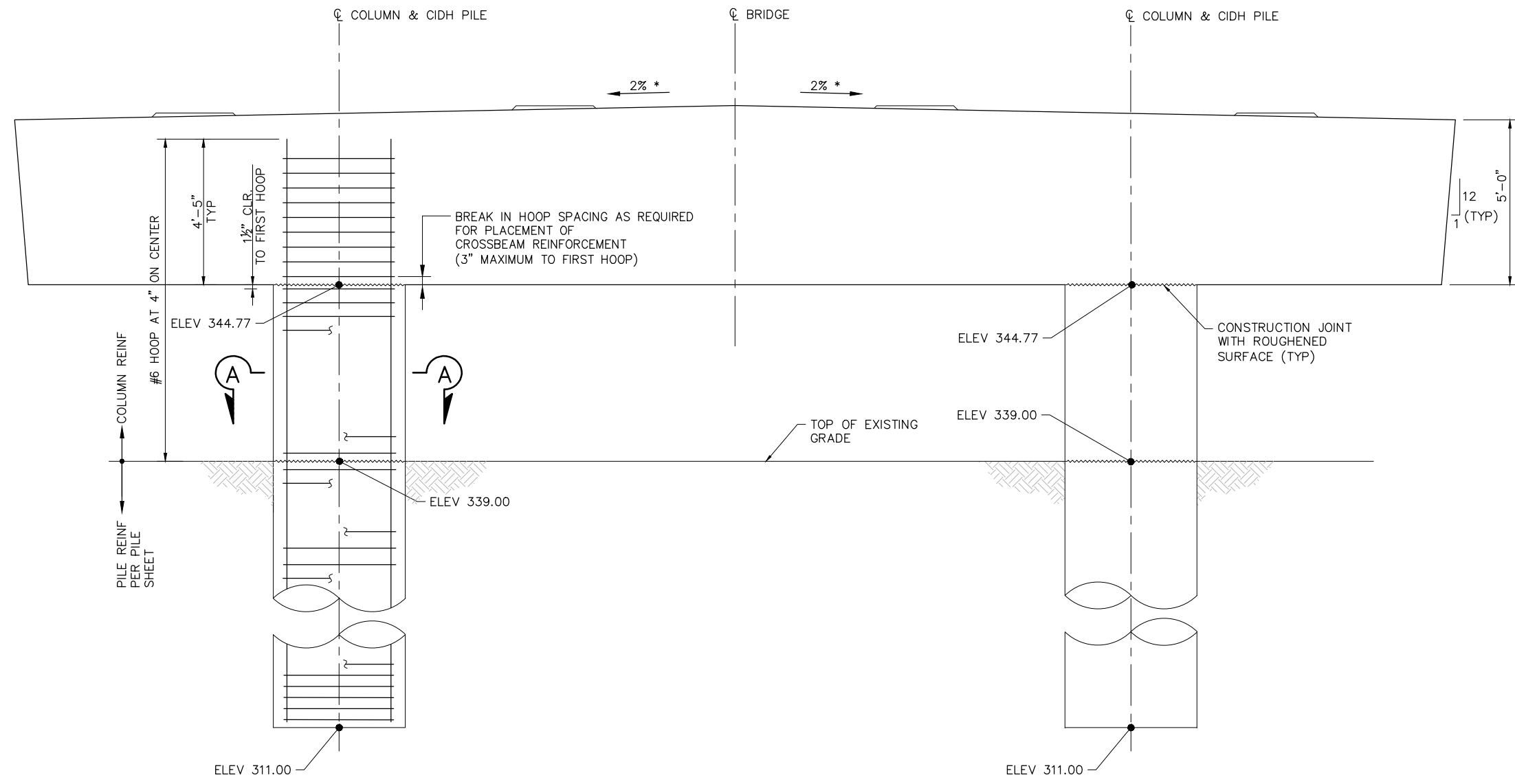
NO.	DATE	BY	REVISION

**SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA**

PIER 2 CROSSBEAM PLAN AND ELEVATION

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B10
SHEET NO.	23 OF 54

FIRST IMPROVEMENT PLAN SUBMITTAL - NOT FOR CONSTRUCTION



Plotted: Oct 08, 2021 - 3:54pm tounlep Layout: Layout1
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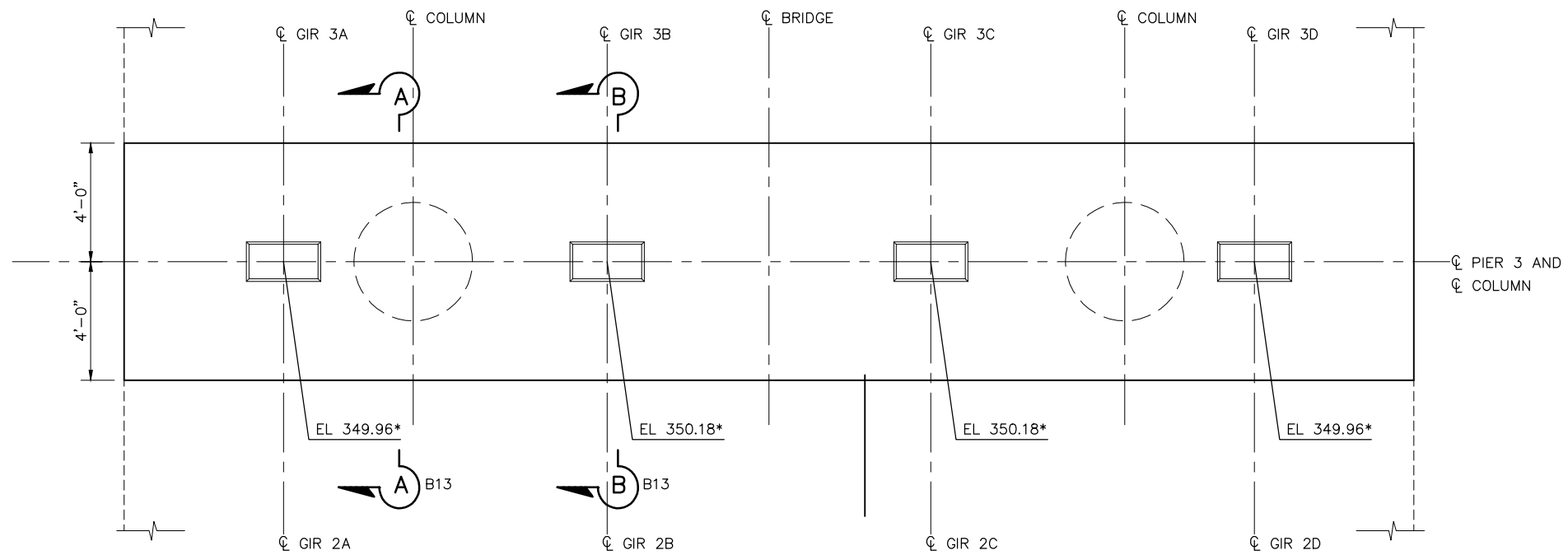


NO.	DATE	BY	REVISION

SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

PIER 3 ELEVATION

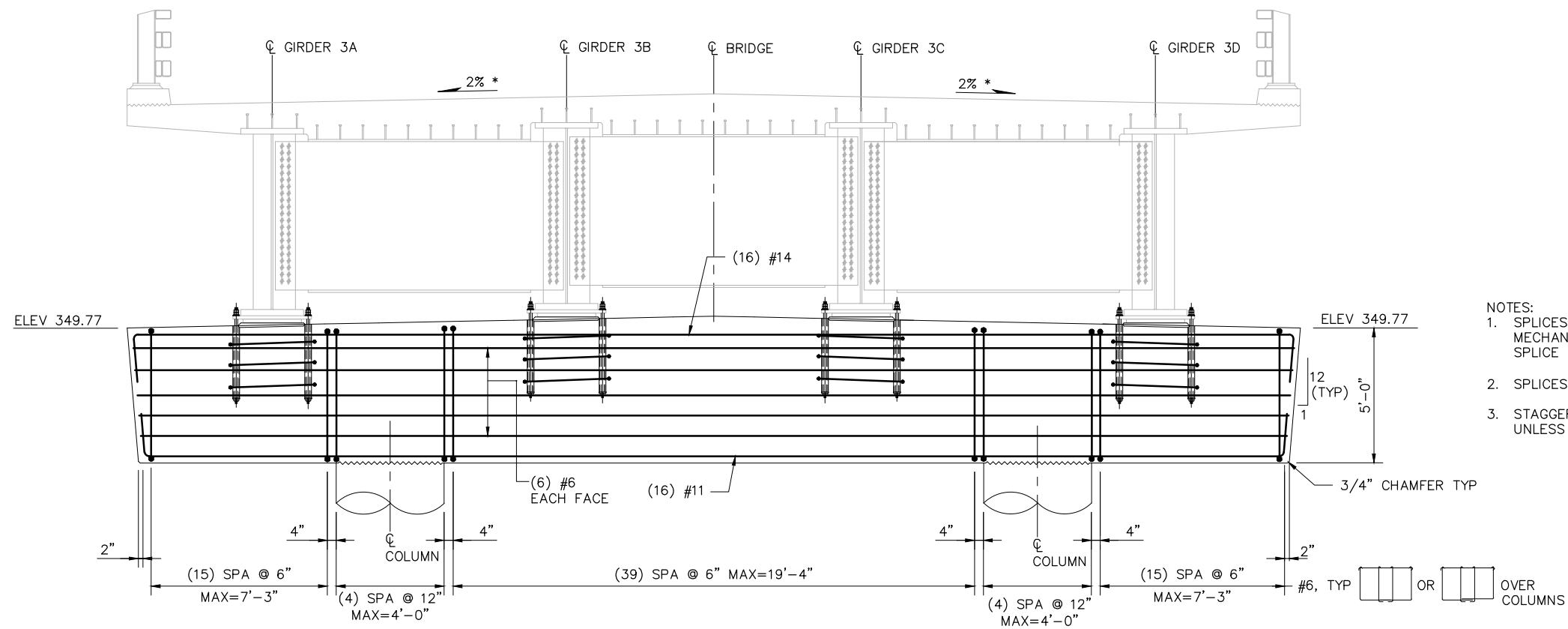
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DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B11
SHEET NO.	24 OF 54



PIER 3 CROSSBEAM PLAN

3/8" = 1'-0"

* ELEVATIONS SHOWN ARE AT THE TOP OF GROUT PADS ALONG THE CENTERLINE BEARING.



PIER 3 CROSSBEAM ELEVATION

3/8" = 1'-0"

* CROSS SLOPE NORMAL TO C BRIDGE

- NOTES:
1. SPLICES OF #14 AND #11 BARS SHALL BE A MECHANICAL OR WELDED SERVICE SPLICE. SPLICE OF BARS OVER COLUMN NOT PERMITTED.
 2. SPLICES OF #6 BARS SHALL BE 2'-9"
 3. STAGGER SPLICES OF ADJACENT BARS, UNLESS OTHERWISE NOTED.

FIRST IMPROVEMENT PLAN SUBMITTAL - NOT FOR CONSTRUCTION

Plotted: Oct 08, 2021 - 11:53am touniep Layout: Layout1
V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B12_PIER3_CROSSBEAM_PLAN-ELEVATION.dwg



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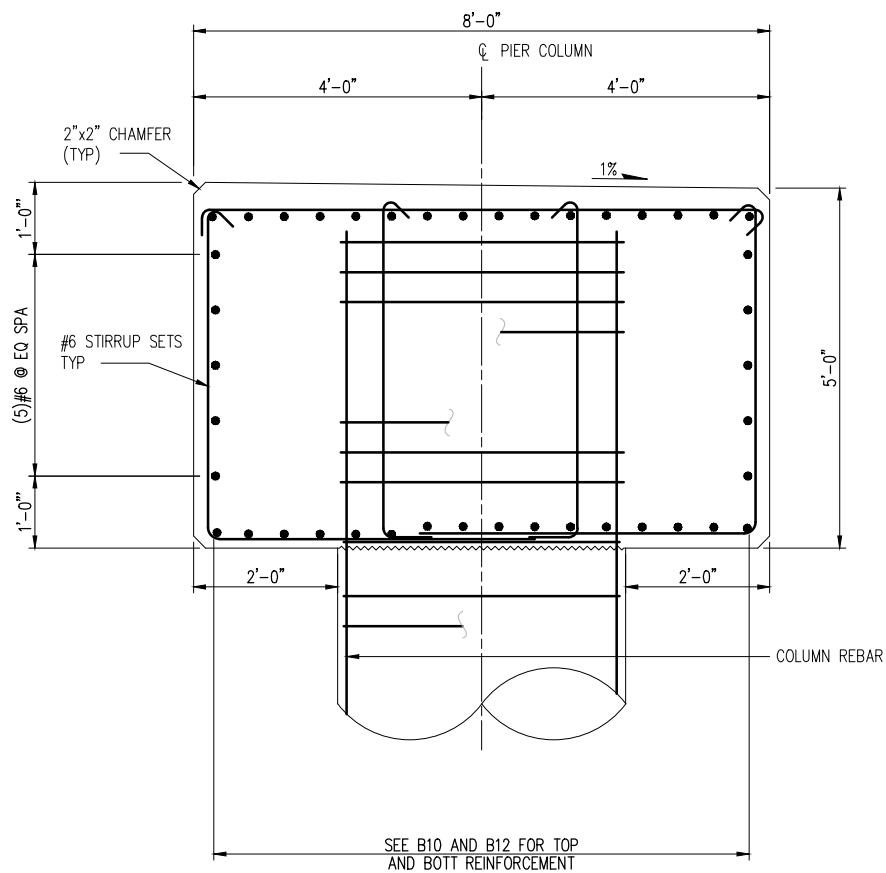
NO.	DATE	BY	REVISION

SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

PIER 3 CROSSBEAM PLAN AND ELEVATION

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B12
SHEET NO.	25 OF 54

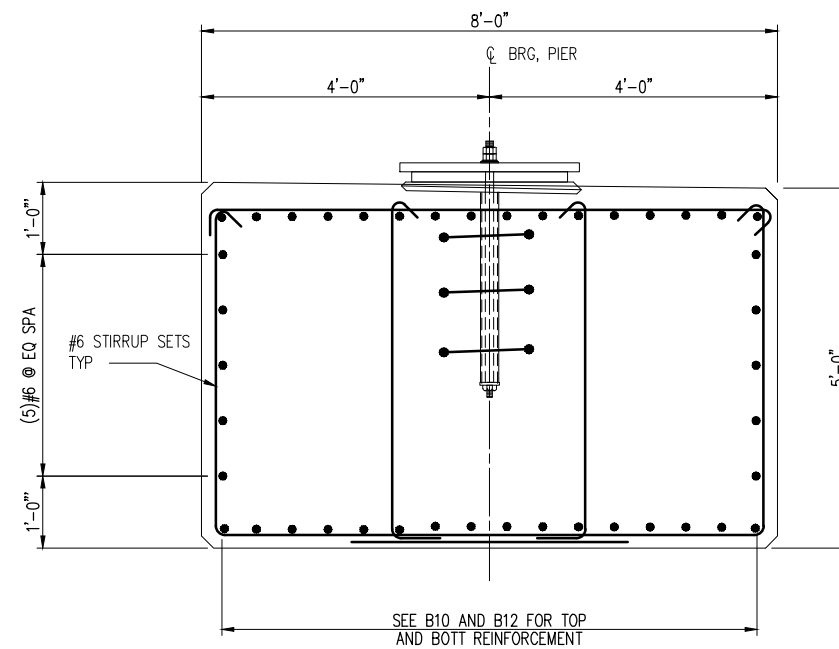
Plotted: Oct 08, 2021 - 12:32pm tainiep Layout: Layout1
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SECTION A-A

SCALE: 3/4" = 1'-0"

PIER 2 AND 3 SHOWN



SECTION B-B

SCALE: 3/4" = 1'-0"

PIER 2 AND 3 SHOWN

kpff

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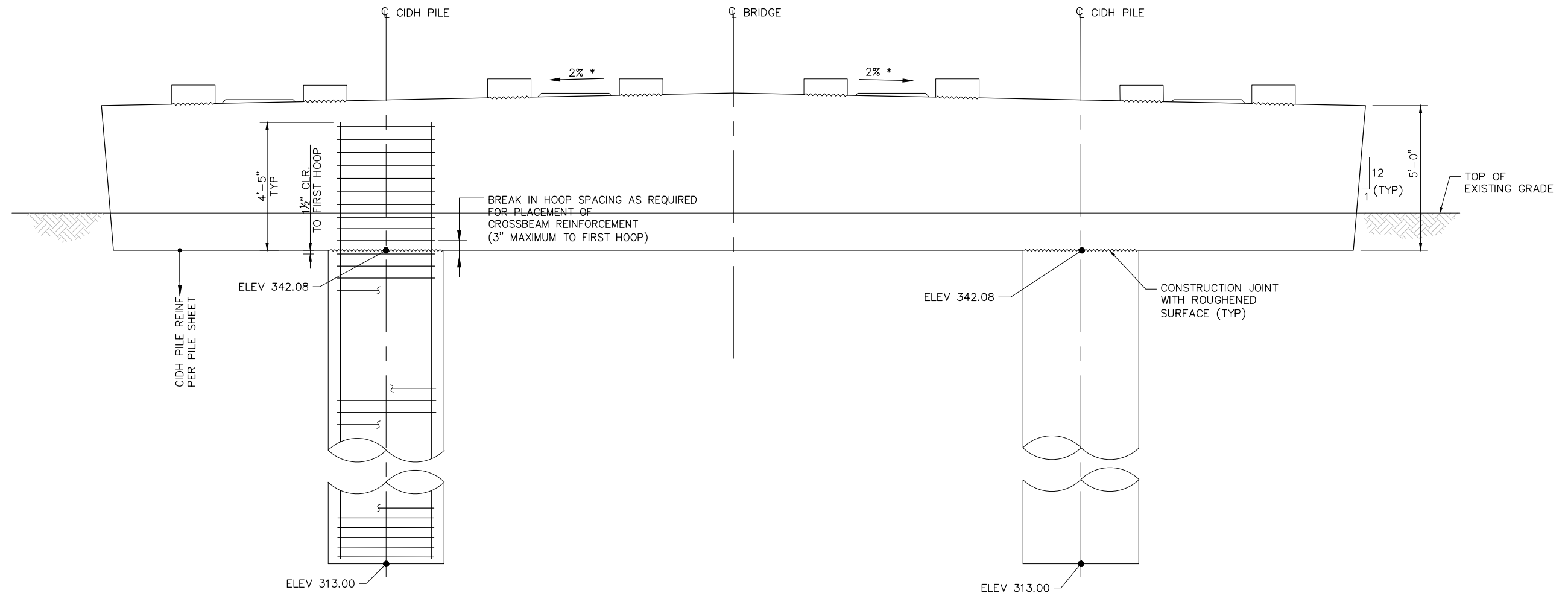
NO.	DATE	BY	REVISION

**SANDIA CREEK ROAD BRIDGE REPLACEMENT
 SAN DIEGO, CALIFORNIA**

PIER SECTIONS AND DETAILS 1

DRAWN: SQ	PROJECT NO.: 10092000118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B13
SHEET NO.	26 OF 54

FIRST IMPROVEMENT PLAN SUBMITTAL - NOT FOR CONSTRUCTION



ABUTMENT 4 ELEVATION

1/2" = 1'-0"

* CROSS SLOPE NORMAL TO C BRIDGE
 LEFT COLUMN REINFORCEMENT AND DETAIL SHOWN
 RIGHT COLUMN SIMILAR.

Plotted: Oct 08, 2021 - 10:50am tainiep Layout: Layout1
 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B14_ABUTMENT4_ELEVATION.dwg



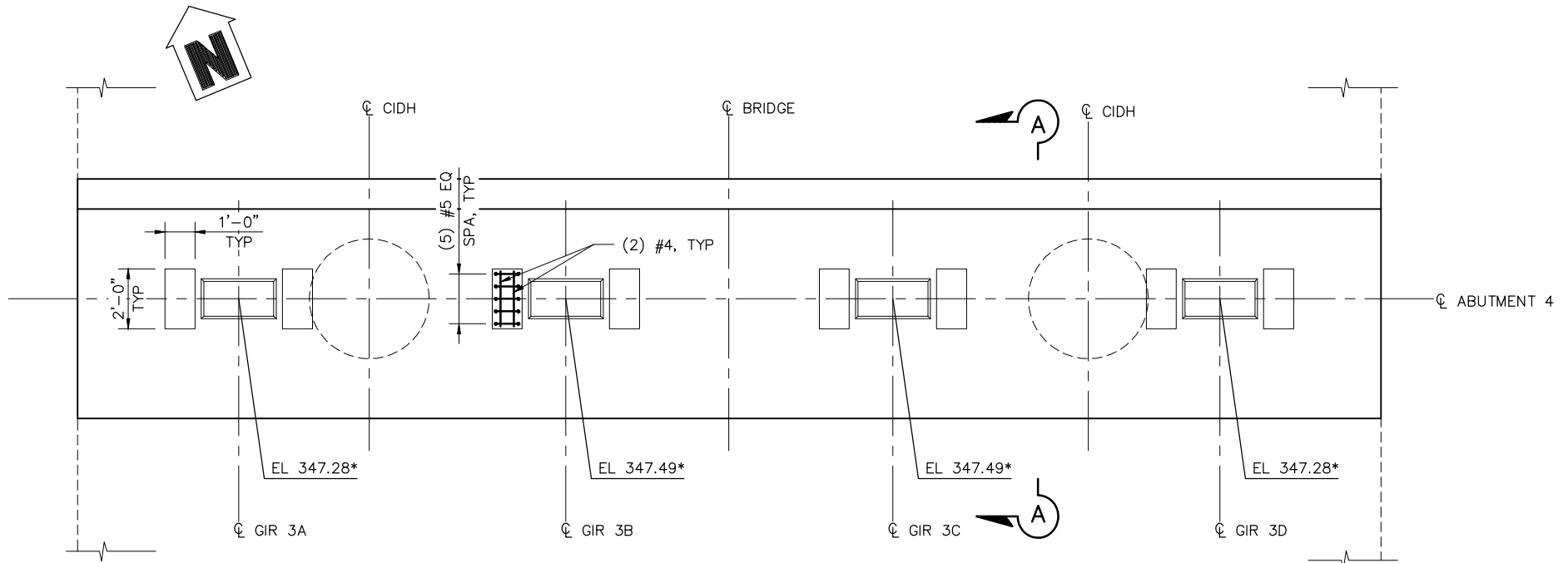
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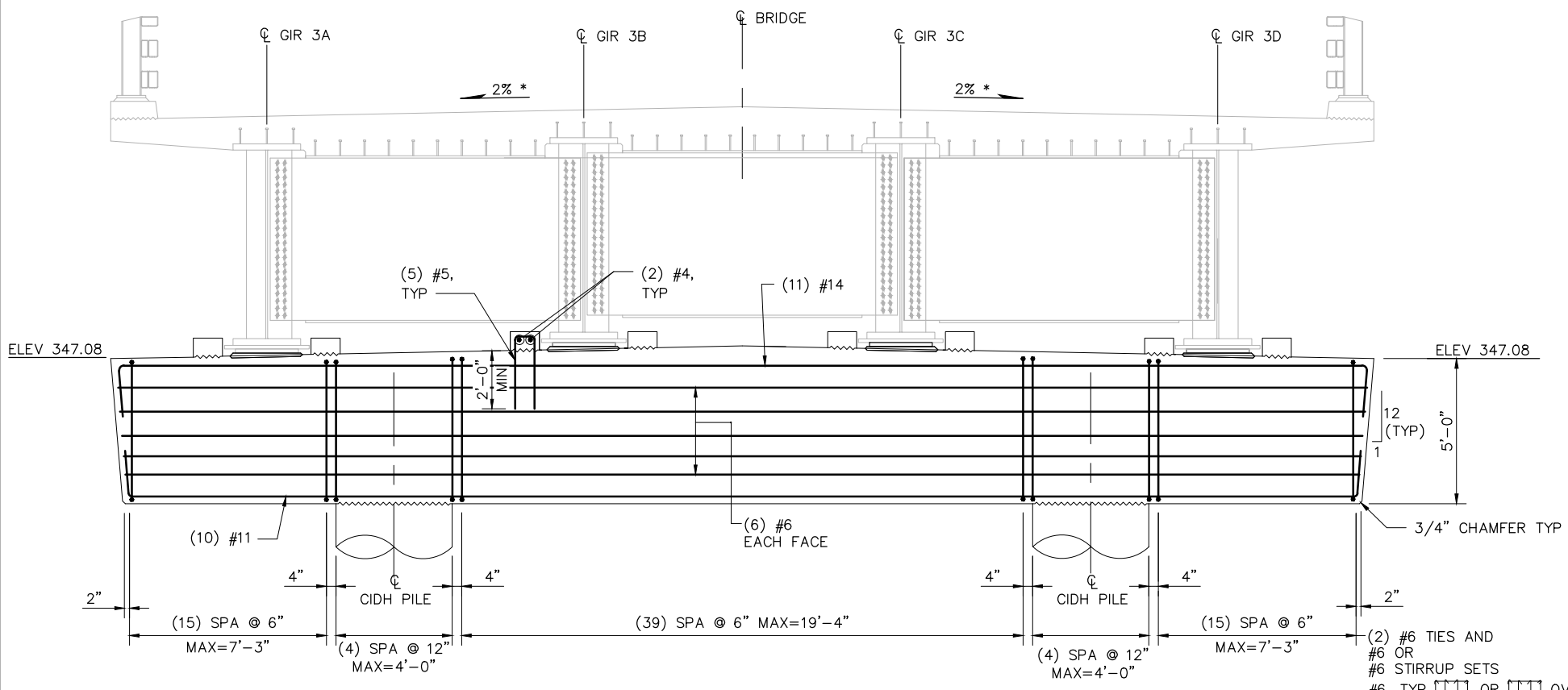
**SANDIA CREEK ROAD BRIDGE REPLACEMENT
 SAN DIEGO, CALIFORNIA**

ABUTMENT 4 ELEVATION

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B14
SHEET NO.	27 OF 54

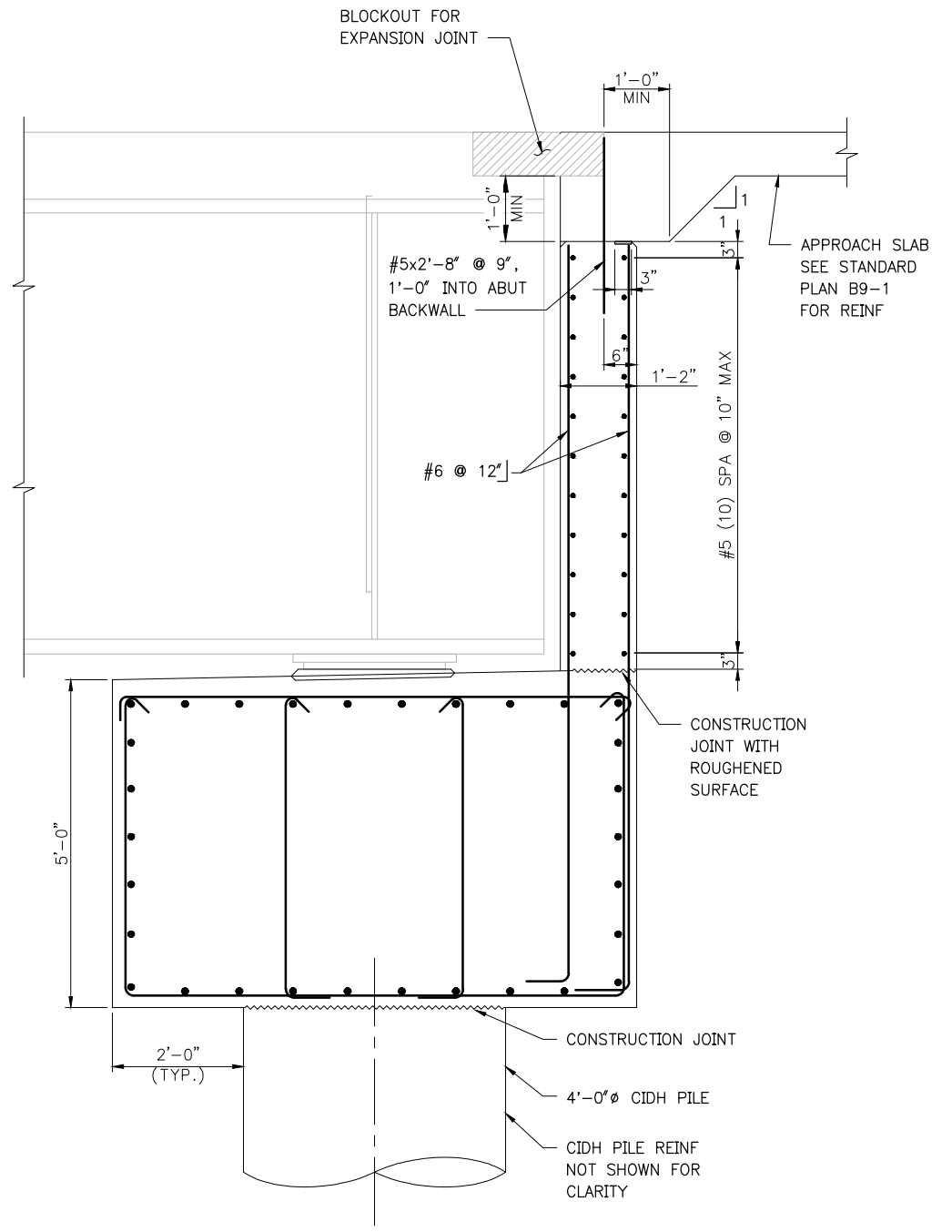


ABUTMENT 4 CROSSBEAM PLAN
 3/8" = 1'-0" * ELEVATIONS SHOWN ARE AT THE TOP OF GROUT PADS ALONG THE CENTERLINE BEARING.



ABUTMENT 4 CROSSBEAM ELEVATION
 3/8" = 1'-0" * CROSS SLOPE NORMAL TO CL BRIDGE

- NOTES:
1. SPLICES OF #14 AND #11 BARS SHALL BE A MECHANICAL OR WELDED SERVICE SPLICE. SPLICE OF BARS OVER COLUMN NOT PERMITTED.
 2. SPLICES OF #6 BARS SHALL BE 2'-9"
 3. STAGGER SPLICES OF ADJACENT BARS, UNLESS OTHERWISE NOTED.



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

Plotted: Oct 12, 2021 - 4:44pm Layout: Layout1
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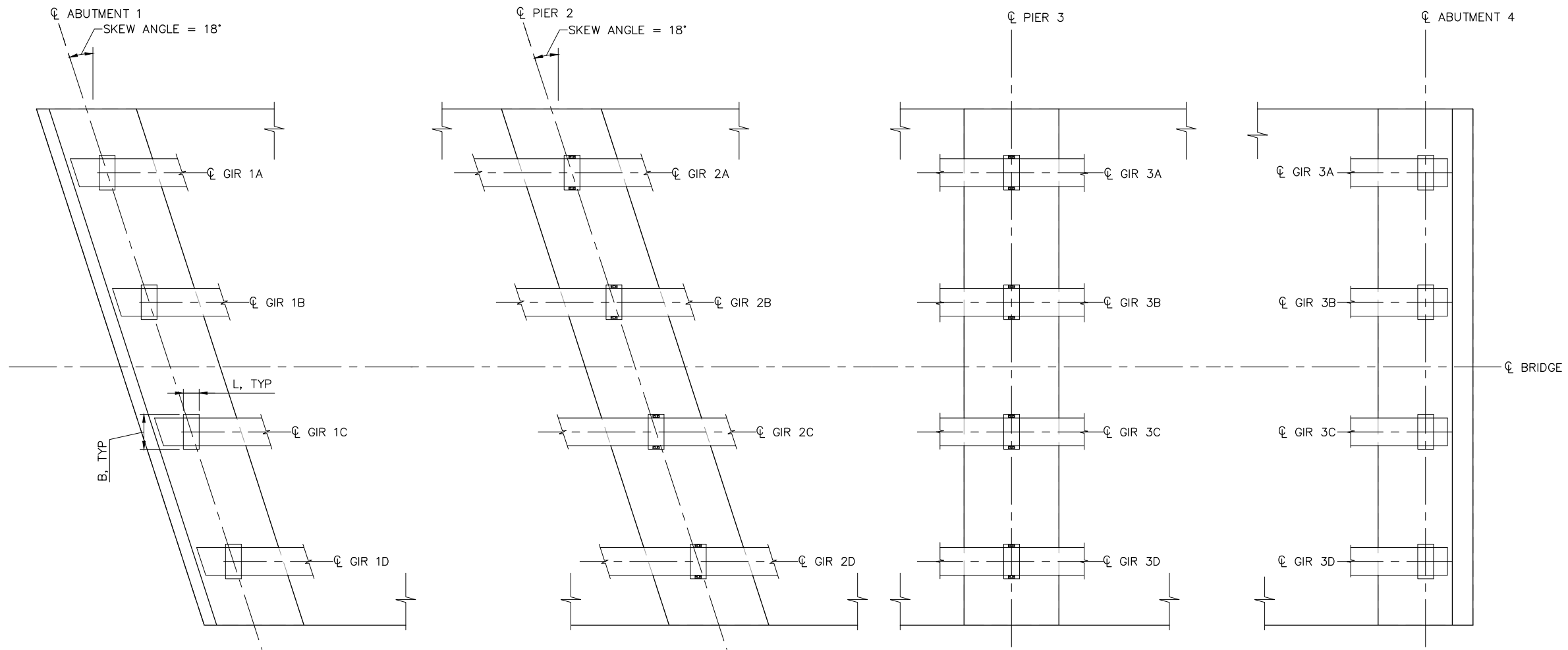
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SANDIA CREEK ROAD BRIDGE REPLACEMENT
 SAN DIEGO, CALIFORNIA

ABUTMENT 4 CROSSBEAM PLAN AND ELEVATION

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DRAWING NO.	B15
SHEET NO.	28 OF 54



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

Plotted: Oct 07, 2021 - 1:25pm
 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B16-BEARING_PLAN.dwg
 tauniep Layout: Layout1



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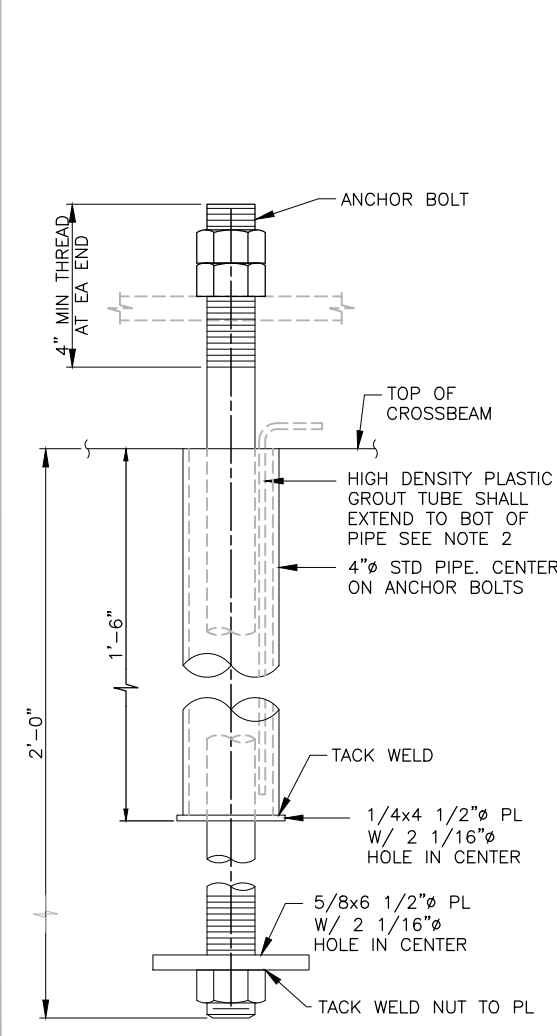
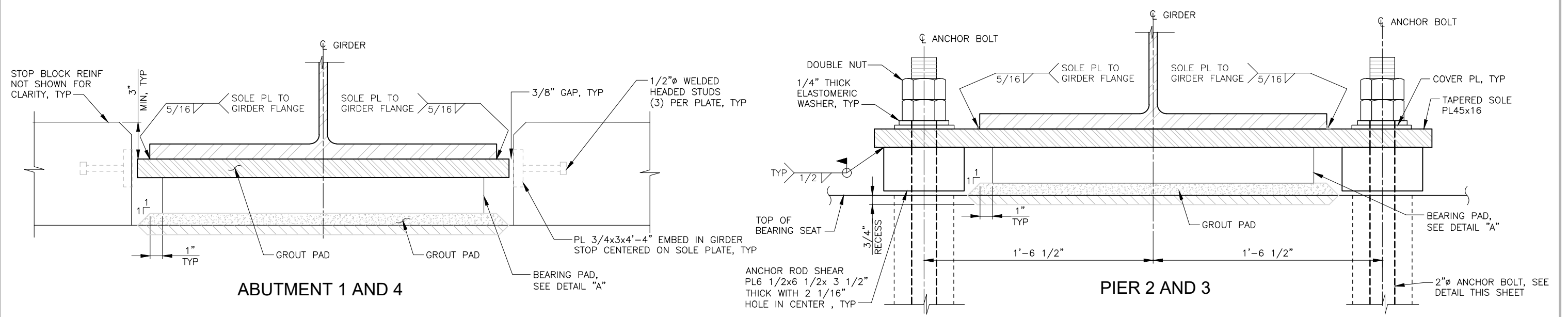
NO.	DATE	BY	REVISION

SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

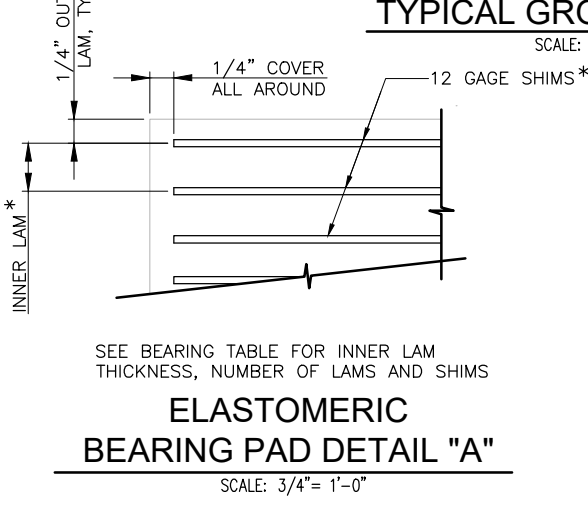
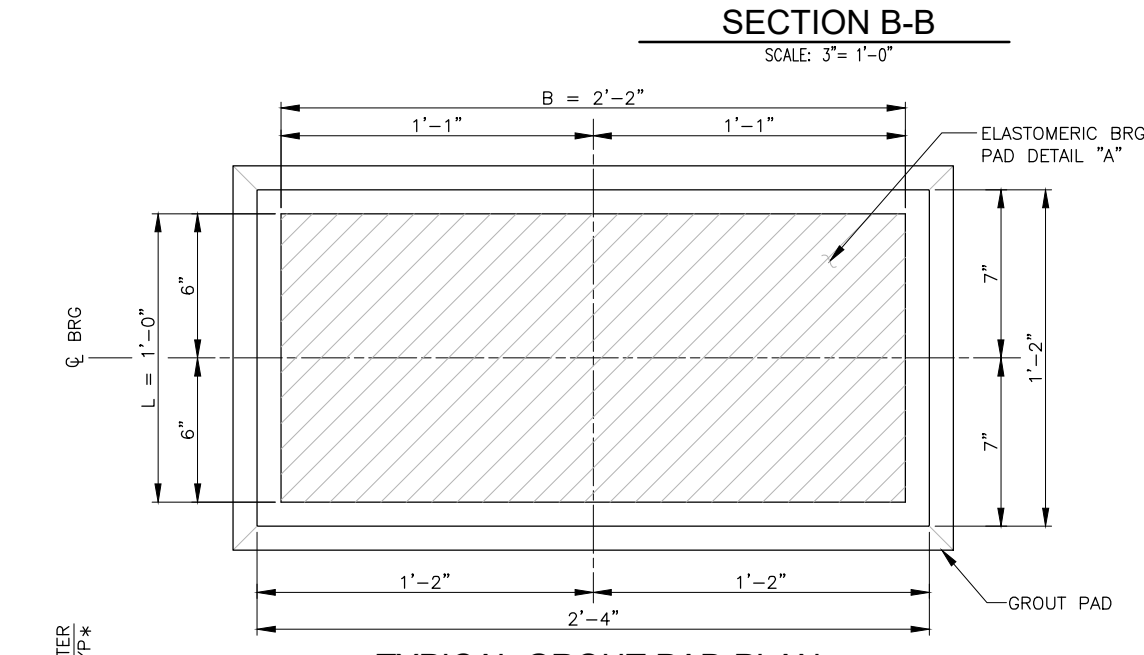
BEARING PLAN

DRAWN: SQ	PROJECT NO.: 10092000118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B16
SHEET NO.	29 OF 54

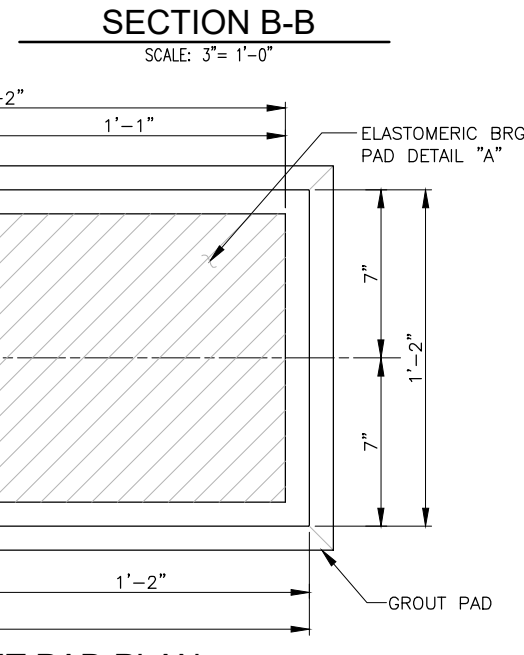
FIRST IMPROVEMENT PLAN SUBMITTAL - NOT FOR CONSTRUCTION



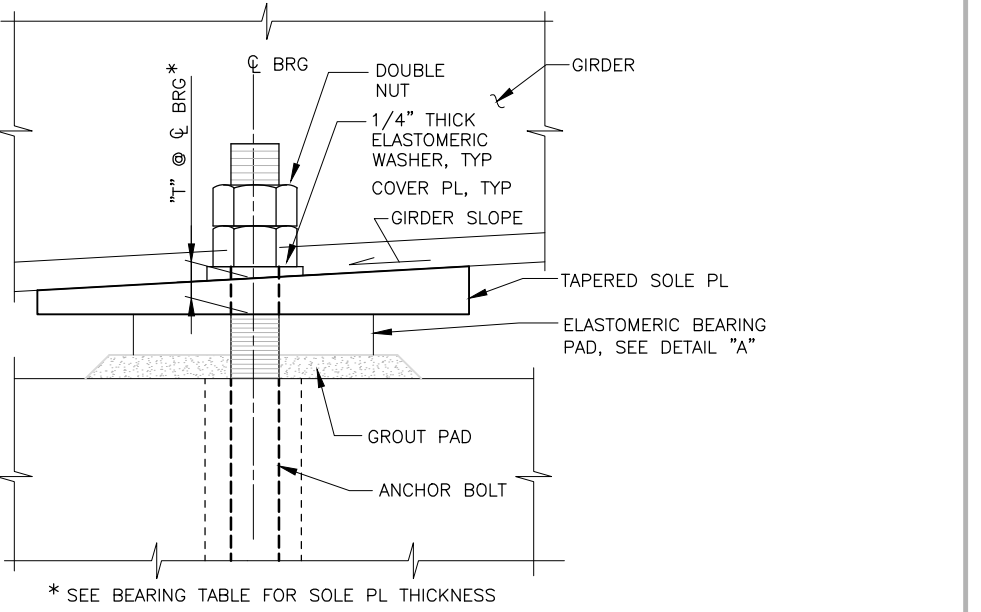
ANCHOR BOLT DETAIL
SCALE: 3" = 1'-0"



ELASTOMERIC BEARING PAD DETAIL "A"
SCALE: 3/4" = 1'-0"



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



BEARING VIEW A-A
SCALE: 3" = 1'-0"

PIER 2 SHOWN, OTHER ABUTMENTS AND PIERS SIMILAR. OMIT ANCHOR RODS AND SHEAR PL AT ABUTMENTS 1 AND 2. ANCHOR ROD SHEAR PLATE NOT SHOWN FOR CLARITY.

LOCATION	SERVICE 1 REACTIONS (KIPS)		NUMBER OF INNER LAMS	NUMBER OF OUTER LAMS	NUMBER OF SHIMS	INNER LAM (IN)	UNLOADED HEIGHT (IN)	LOADED HEIGHT DL ONLY (IN)	SOLE PL THICKNESS "T" (IN)
	DEAD LOAD	LIVE LOAD							
ABUTMENT 1	229	182	6	2	7	1/2	4.02	3.92	1.75
PIER 2	563	345	4	2	4	1/2	3.02	2.85	1.75
PIER 3	454	317	4	2	4	1/2	3.02	2.88	1.75
ABUTMENT 4	178	155	6	2	7	1/2	4.02	3.95	1.75

- NOTES:**
- ELASTOMERIC BEARING SHALL HAVE AN ELASTOMER SHEAR MODULUS OF 165 PSI. SHIMS SHALL CONFORM TO AASHTO M 251.
 - TOP OF GROUT PAD SHALL BE LEVEL AND HAVE A BROOM FINISH.
 - BOTTOM OF SOLE PLATE SHALL BE LEVEL AFTER DECK HAS BEEN PLACED.
 - ALL STEEL ASSEMBLIES SHALL BE GALVANIZED ACCORDING TO ASTM A 123.

Plotted: Oct 07, 2021 - 1:25pm
V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B17_BEARING_DETAILS_ABUTMENT1-4.dwg
Layout: Layout1
touniep
Layout: 1700232-B17_BEARING_DETAILS_ABUTMENT1-4.dwg



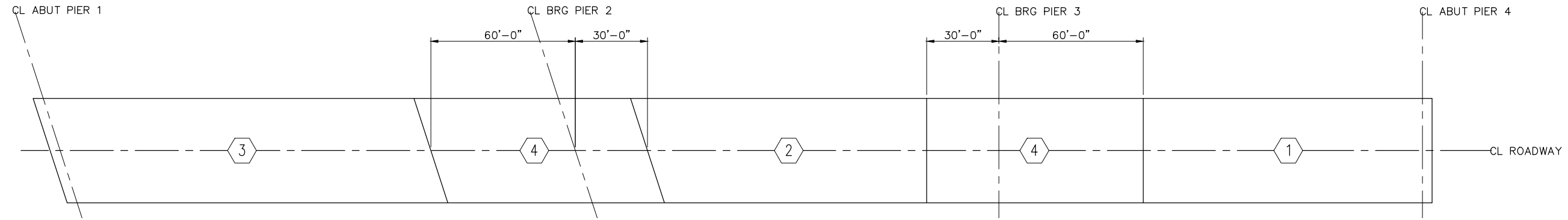
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**SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA**

BEARING DETAILS

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B17
SHEET NO.	30 OF 54



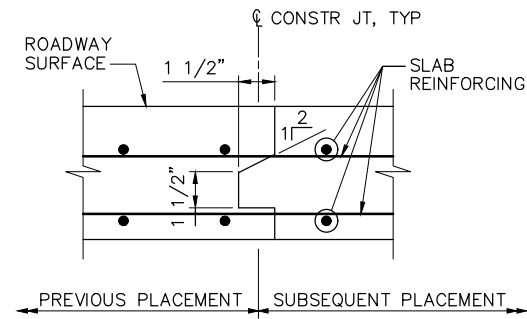
ROADWAY SLAB PLACEMENT - PLAN

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

NOTES:

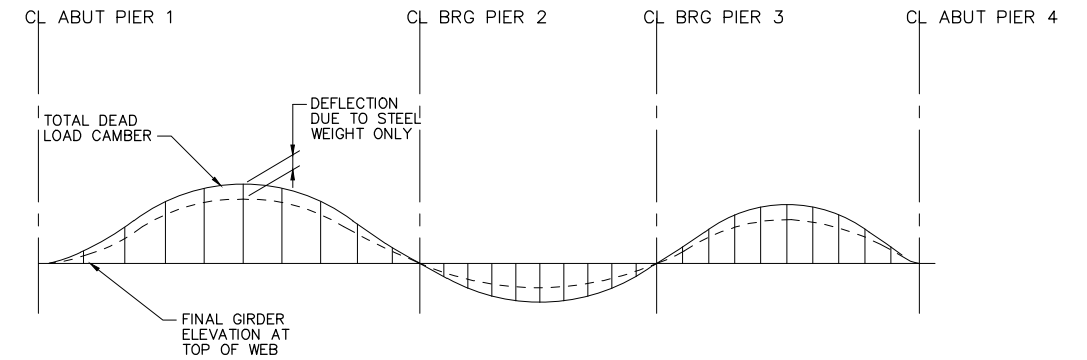
① ② ③ ④ INDICATES ORDER OF SLAB PLACEMENT.

1. PLACEMENT ① SHALL NOT BE MADE UNTIL AFTER ERECTION OF ALL STRUCTURAL STEEL.
2. CONCRETE SHALL BE PLACED IN ONE CONTINUOUS PLACEMENT WITHIN THE LIMITS SHOWN IN THE SLAB PLACEMENT SEQUENCE.
3. THE CONCRETE COMPRESSIVE STRENGTH SHALL EXCEED 1500 PSI BEFORE THE SUBSEQUENT PLACEMENT IS MADE.
4. TRANSVERSE CONSTRUCTION JOINTS SHALL BE PARALLEL TO THE CROSS FRAMES SHOWN ON THE GIRDER LAYOUT SHEETS.



TYPICAL CONSTRUCTION JOINT SECTION

SCALE: 3" = 1'-0"



DEAD LOAD CAMBER DIAGRAM

NOT TO SCALE

CAMBER POINTS	SPAN 1											SPAN 2									SPAN 3											
	TENTH POINTS											TENTH POINTS									TENTH POINTS											
	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0	
GIRDER A	TOTAL DEAD LOAD CAMBER (IN)	0	1.54	2.84	3.76	4.23	4.23	3.78	2.96	1.92	0.87	0	-0.36	-0.52	-0.49	-0.38	-0.28	-0.25	-0.29	-0.32	-0.27	0	0.66	1.50	2.32	2.96	3.33	3.33	2.96	2.23	1.20	0
	SELF WEIGHT OF STEEL CAMBER (IN)	0	0.72	1.34	1.78	2.02	2.03	1.83	1.45	0.96	0.44	0	-0.21	-0.34	-0.36	-0.33	-0.29	-0.25	-0.22	-0.20	-0.14	0	0.27	0.60	0.91	1.15	1.28	1.27	1.12	0.84	0.45	0
GIRDER B	TOTAL DEAD LOAD CAMBER (IN)	0	1.55	2.87	3.80	4.28	4.28	3.83	3.00	1.96	0.89	0	-0.38	-0.57	-0.57	-0.49	-0.40	-0.37	-0.38	-0.39	-0.30	0	0.69	1.53	2.36	3.02	3.38	3.38	3.00	2.25	1.22	0
	SELF WEIGHT OF STEEL CAMBER (IN)	0	0.73	1.35	1.79	2.03	2.05	1.85	1.46	0.97	0.45	0	-0.22	-0.35	-0.39	-0.37	-0.33	-0.29	-0.26	-0.22	-0.15	0	0.28	0.61	0.93	1.17	1.30	1.29	1.14	0.85	0.46	0
GIRDER C	TOTAL DEAD LOAD CAMBER (IN)	0	1.57	2.90	3.84	4.32	4.33	3.88	3.05	2.00	0.91	0	-0.40	-0.61	-0.65	-0.59	-0.52	-0.48	-0.47	-0.44	-0.33	0	0.71	1.57	2.41	3.07	3.43	3.42	3.03	2.28	1.23	0
	SELF WEIGHT OF STEEL CAMBER (IN)	0	0.73	1.36	1.80	2.04	2.06	1.86	1.48	0.98	0.98	0	-0.22	-0.36	-0.41	-0.40	-0.36	-0.32	-0.28	-0.23	-0.15	0	0.29	0.62	0.94	1.18	1.31	1.30	1.15	0.86	0.46	0
GIRDER D	TOTAL DEAD LOAD CAMBER (IN)	0	1.58	2.92	3.87	4.36	4.37	3.92	3.09	2.03	0.93	0	-0.41	-0.65	-0.72	-0.68	-0.62	-0.58	-0.55	-0.49	-0.35	0	0.73	1.60	2.45	3.11	3.47	3.46	3.06	2.30	1.24	0
	SELF WEIGHT OF STEEL CAMBER (IN)	0	0.74	1.36	1.82	2.06	2.07	1.87	1.49	0.99	0.46	0	-0.22	-0.37	-0.43	-0.43	-0.39	-0.35	-0.31	-0.25	-0.16	0	0.29	0.64	0.96	1.20	1.33	1.32	1.16	0.87	0.47	0

Plotted: Oct 07, 2021 - 1:25pm
 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B18_GIRDER CAMBER & SLAB POURING SEQ.dwg
 Layout: Layout1
 tainlep



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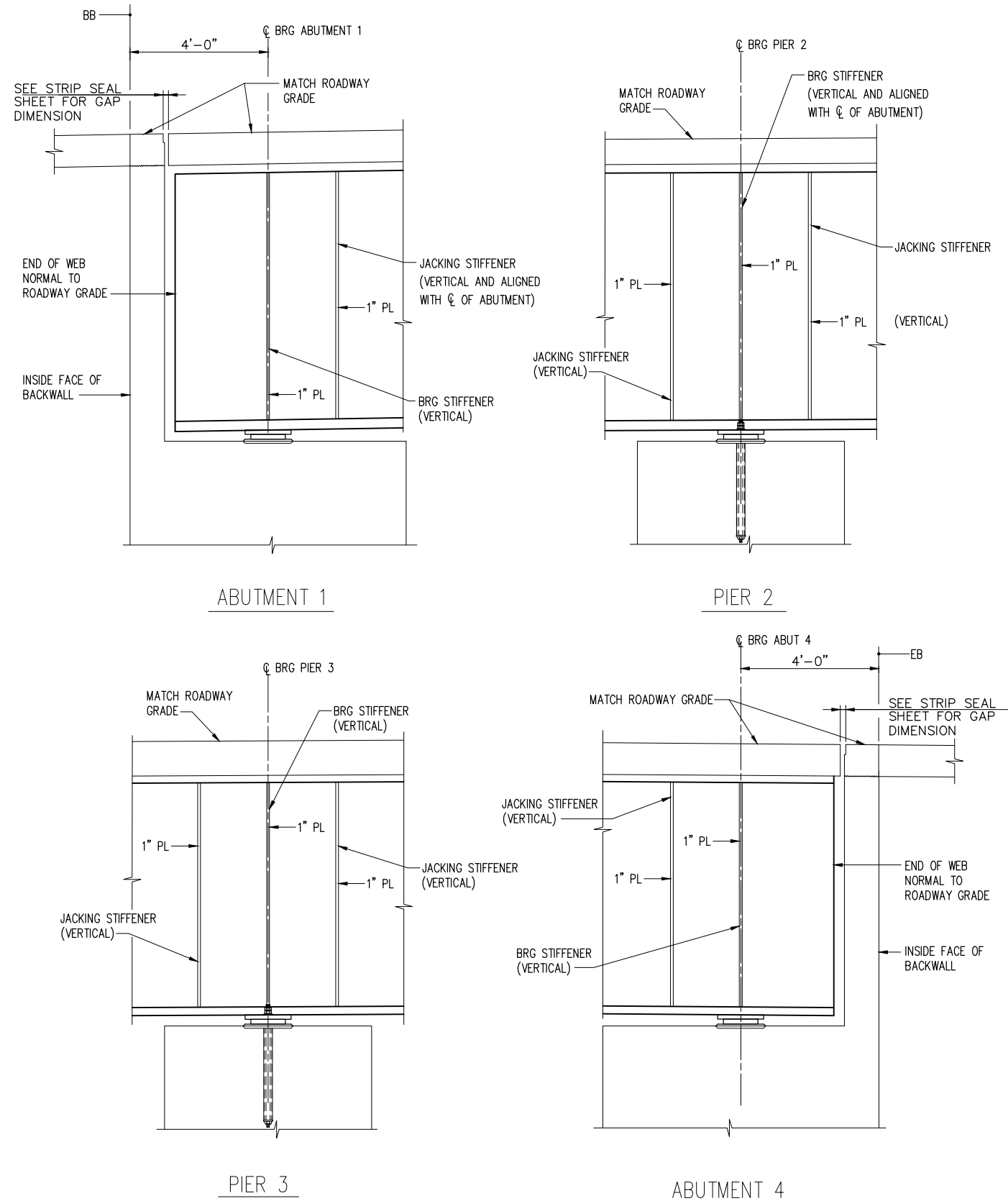
**SANDIA CREEK ROAD BRIDGE REPLACEMENT
 SAN DIEGO, CALIFORNIA**

GIRDER CAMBER AND SLAB POURING SEQUENCE

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DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B18
SHEET NO.	31 OF 54

STRUCTURAL STEEL NOTES:

- ALL STRUCTURAL STEEL SHALL BE STRUCTURAL LOW ALLOY STEEL AASHTO M270 GRADE 50W. FABRICATOR MAY SUBSTITUTE SECTIONS OF EQUAL OR GREATER STRENGTH AND STIFFNESS BASED ON AVAILABILITY, SUBJECT TO APPROVAL BY THE ENGINEER.
- ALL FIELD AND SHOP CONNECTIONS SHALL BE SLIP CRITICAL CLASS B AND MADE WITH HIGH STRENGTH BOLTS, WITH THE BOLT HEADS TOWARD THE OUTSIDE AND UNDERSIDE OF THE BRIDGE, UNLESS NOTED OTHERWISE. NUTS, BOLTS AND WASHERS SHALL CONFORM TO ASTM F3125 A325 BLACK WEATHER AND SHALL BE 7/8" DIA. THREADS SHALL NOT BE PERMITTED IN SHEAR PLANES. NUTS AND WASHERS SHALL CONFORM TO CALTRANS STANDARD SPECIFICATIONS. ALL CONNECTIONS SHOWN ARE FOR FIELD BOLTING. SHOP BOLTING MAY BE USED WHERE APPROVED IN THE SHOP PLANS.
- WELDING SHALL BE EQUAL IN STRENGTH TO THE PARENT METAL AND SHALL CONFORM TO THE CURRENT SPECIFICATIONS OF THE AMERICAN WELDING SOCIETY. ALL WELDING SHALL BE DONE TO MINIMIZE DISTORTION. THE WELDING SEQUENCES AND PROCEDURES TO BE USED SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO THE START OF WELDING. TOP FLANGES, BOTTOM FLANGES AND WEBS SHALL BE FABRICATED FULL LENGTH BETWEEN FIELD SPLICES PRIOR TO WELDING FLANGES TO WEBS. WELDING SEQUENCE: (1) FLANGE AND WEB SPLICES. (2) FLANGES TO WEB. (3) STIFFENERS TO WEBS AND FLANGES. (4) SHEAR CONNECTORS TO TOP FLANGE. WELDING ELECTRODES USED ON WEATHERING STEEL SHALL BE APPROPRIATE FOR WEATHERING STEEL. WELDING ELECTRODES SHALL BE A MINIMUM OF E60XX.
- THERE SHALL BE ONLY ONE BUTT SPlice PERMITTED FOR FLANGE AND WEB PLATES EXCEEDING 60 FEET IN LENGTH. PERMISSIBLE LOCATIONS ARE SHOWN IN THE PLANS. ALL PROPOSED BUTT SPLICES SHALL BE SHOWN ON THE SHOP DRAWINGS SUBMITTED FOR APPROVAL. THE ROLLING DIRECTION OF MILL PLATES FOR WEBS AND FLANGES AND THE LONGITUDINAL AXIS OF GIRDERS SHALL COINCIDE. THIS SHALL BE CLEARLY SHOWN ON SHOP PLANS. THE DIRECTION OF TENSILE STRESS IS PARALLEL TO THE LONGITUDINAL AXIS OF GIRDERS UNLESS NOTED OTHERWISE.
- PIER CROSS FRAMES AND ALL BEARING AND JACKING STIFFENERS SHALL BE VERTICAL UNDER TOTAL DEAD LOAD. INTERMEDIATE CROSS FRAMES SHALL BE NORMAL TO THE FLANGES.
- ALL DIMENSIONS ARE HORIZONTAL AND VERTICAL UNLESS OTHERWISE SHOWN.
- ALL WELDED SHEAR CONNECTORS SHALL BE 7/8" ϕ x 6".
- MEMBERS MARKED ∇ ARE MAIN LOAD CARRYING TENSILE MEMBERS OR TENSION COMPONENTS OF FLEXURAL MEMBERS AND SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TESTS AS DESCRIBED IN THE CALTRANS STANDARD SPECIFICATIONS.
- \otimes DENOTES TENSION BUTT WELD FOR FLANGES OR WEBS.
- BOLT HOLES REMAINING IN GIRDER WEBS UPON REMOVAL OF DECK FORMWORK AND TEMPORARY BRACING SHALL BE TREATED IN ACCORDANCE WITH THE CALTRANS STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL PROVIDE, AS REQUIRED, TEMPORARY BRACING AND/OR WEB STIFFENING AT LOCATIONS WHERE SLAB FORMS ARE ATTACHED TO UNBRACED OR UNSTIFFENED WEBS.



GIRDER END DETAILS
SCALE: 1/2" = 1'-0"

Plotted: Oct 07, 2021 - 1:26pm
 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B19_STRUCTURAL_STEEL_NOTES.dwg
 Layout: tauniep
 Design: tauniep



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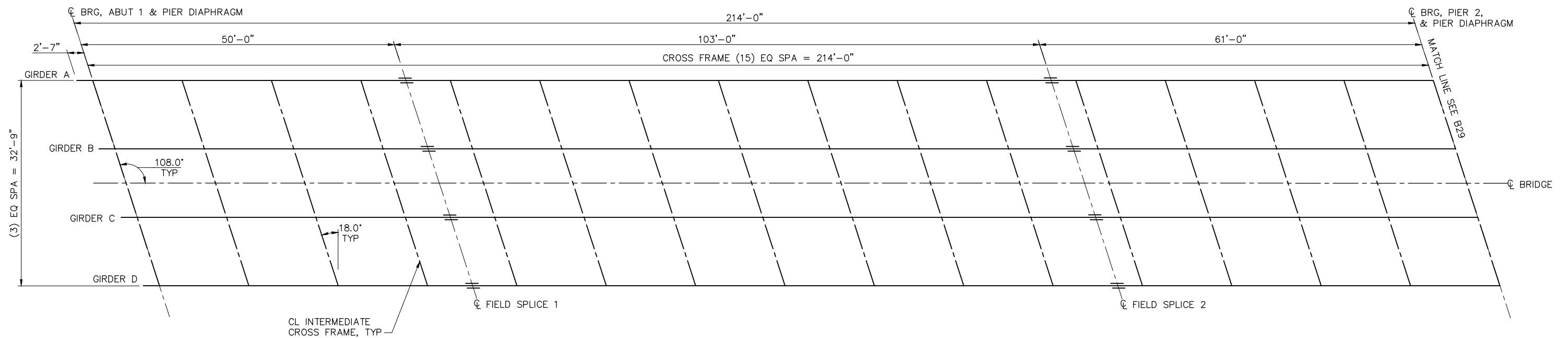
NO.	DATE	BY	REVISION

**SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA**

STRUCTURAL STEEL NOTES

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CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B19
SHEET NO.	32 OF 54

FIRST IMPROVEMENT PLAN SUBMITTAL - NOT FOR CONSTRUCTION



GIRDER LAYOUT - SPAN 1
1/8" = 1'-0"

Plotted: Oct 07, 2021 - 1:27pm
 User: tauniep
 Layout: Layout1
 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B20_GIRDER_LAYOUT-SPAN_1.dwg



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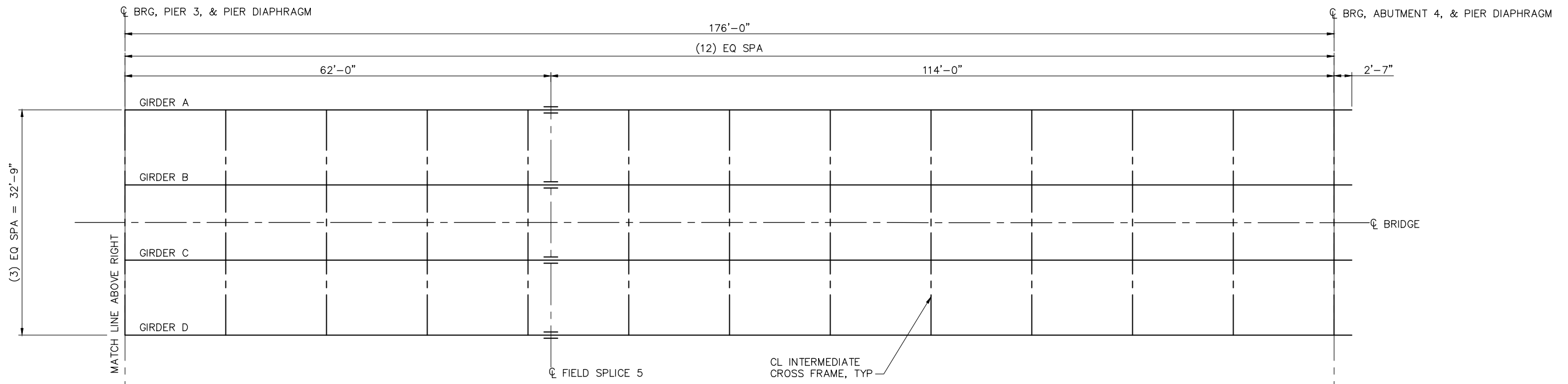
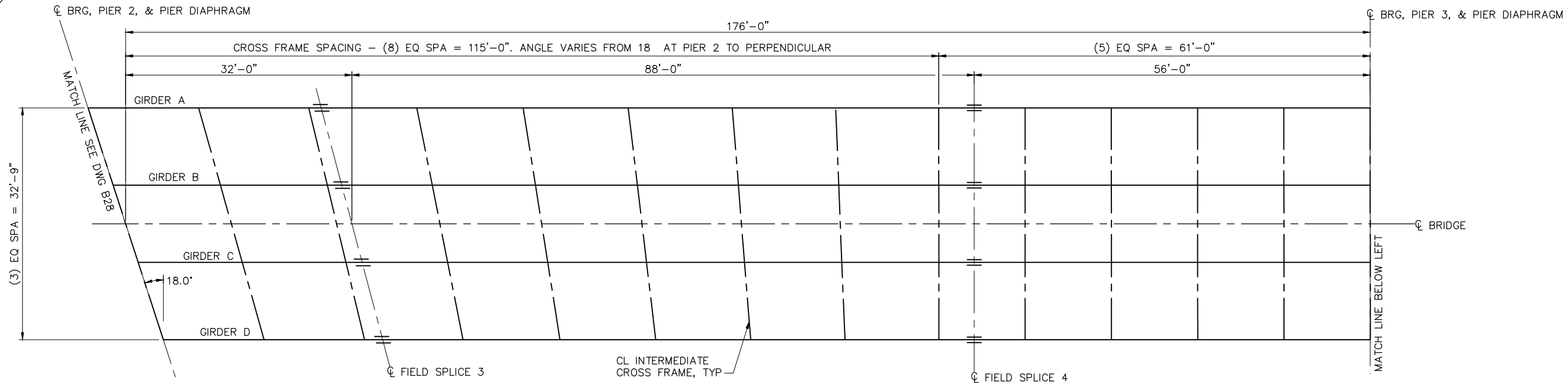
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SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

GIRDER LAYOUT - SPAN 1

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CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B20
SHEET NO.	33 OF 54

FIRST IMPROVEMENT PLAN SUBMITTAL - NOT FOR CONSTRUCTION



GIRDER LAYOUT - SPAN 2 AND 3
1/8" = 1'-0"

Plotted: Oct 11, 2021 - 3:25pm touniep Layout: Layout1
V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B21_GIRDER_LAYOUT-SPAN_2-3.dwg



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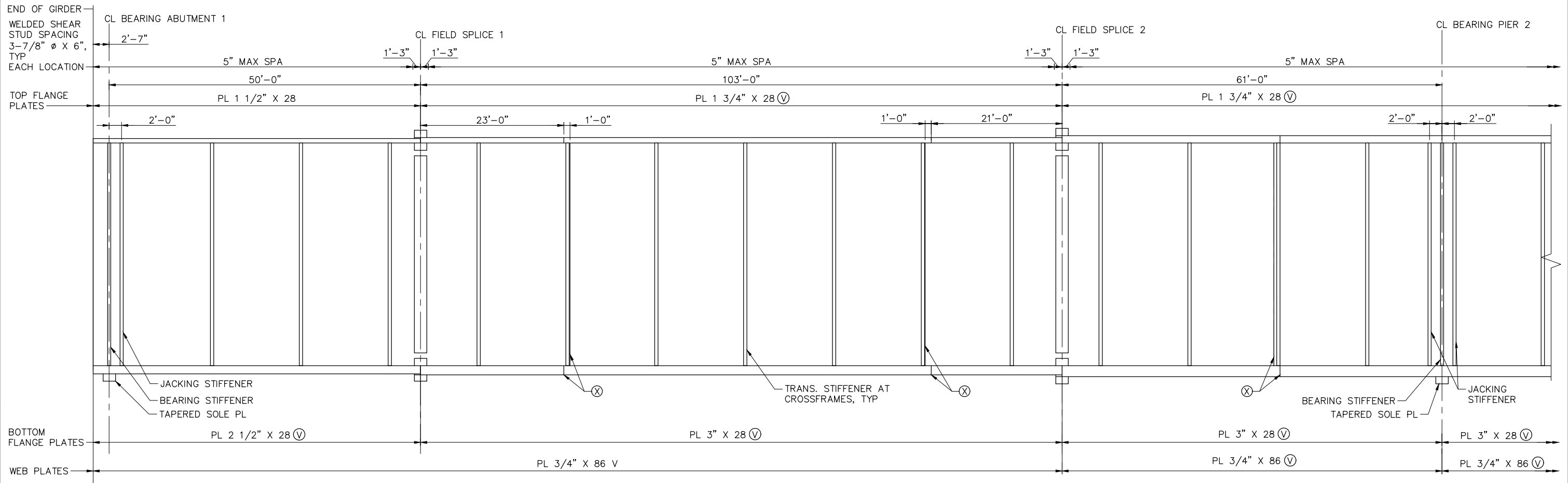
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SAN DIEGO, CALIFORNIA

GIRDER LAYOUT - SPAN 2 AND 3

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CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B21
SHEET NO.	34 OF 54

FIRST IMPROVEMENT PLAN SUBMITTAL - NOT FOR CONSTRUCTION



GIRDER ELEVATION - SPAN 1
NTS

Plotted: Oct 11, 2021 - 4:09pm touniep Layout: Layout1
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SAN DIEGO, CALIFORNIA

GIRDER ELEVATION - SPAN 1

DRAWN: SQ	PROJECT NO.: 10092000118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B22
SHEET NO.	35 OF 54

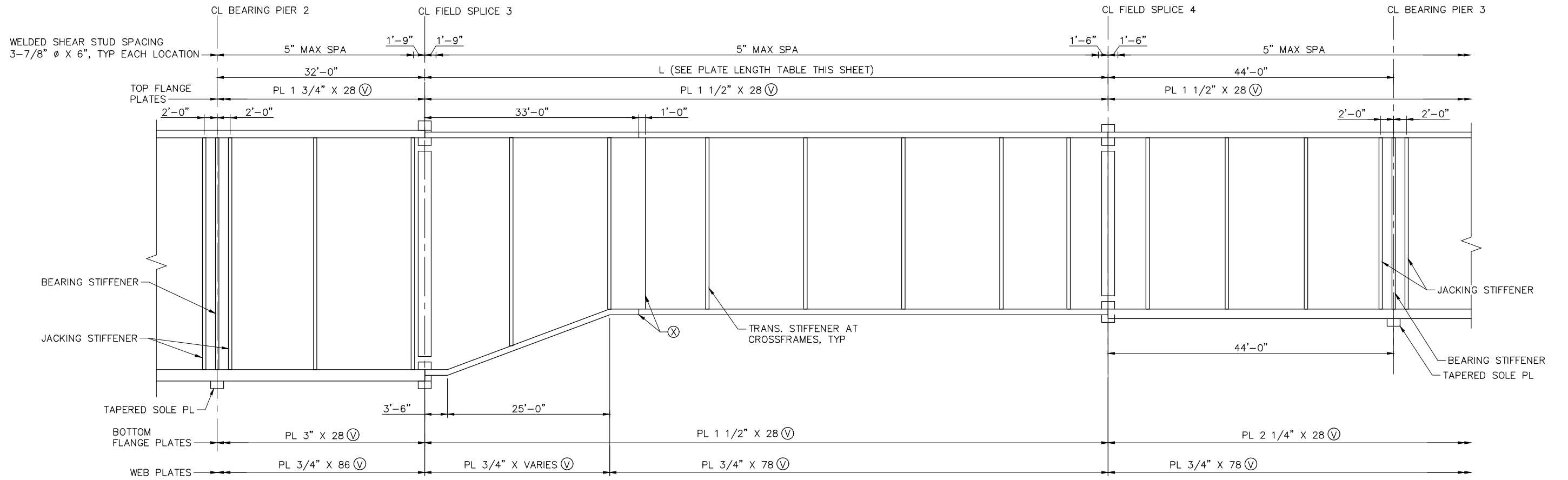


PLATE LENGTH (L) TABLE	
GIRDER	L
A	93'-3 7/8"
B	89'-9 5/16"
C	86'-2 11/16"
D	82'-8 1/8"

GIRDER ELEVATION - SPAN 2

NTS

GIRDER A SHOWN. GIRDER B, C, AND D SIMILAR.

Plotted: Oct 12, 2021 - 4:15pm touniep Layout: Layout1 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B23_GIRDER_ELEVATION_SPAN2.dwg



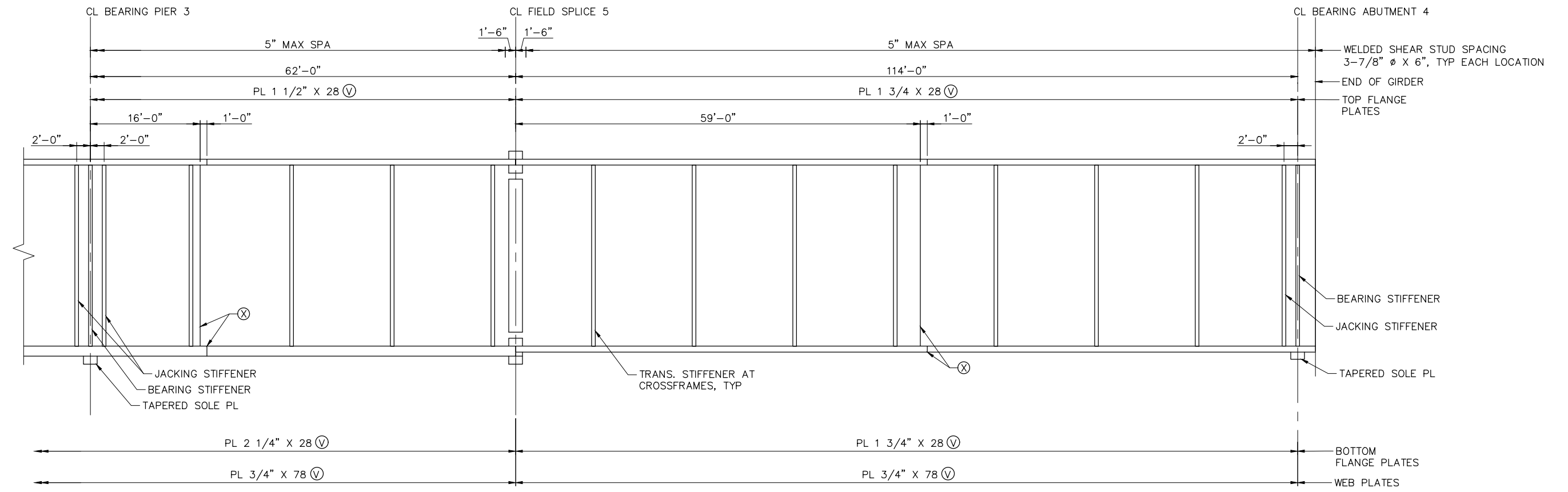
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NO.	DATE	BY	REVISION

SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

GIRDER ELEVATION - SPAN 2

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B23
SHEET NO.	36 OF 54



GIRDER ELEVATION - SPAN 3
NTS

Plotted: Oct 11, 2021 - 4:14pm tainiep Layout: Layout1
V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B24_GIRDER_ELEVATION_SPAN3.dwg



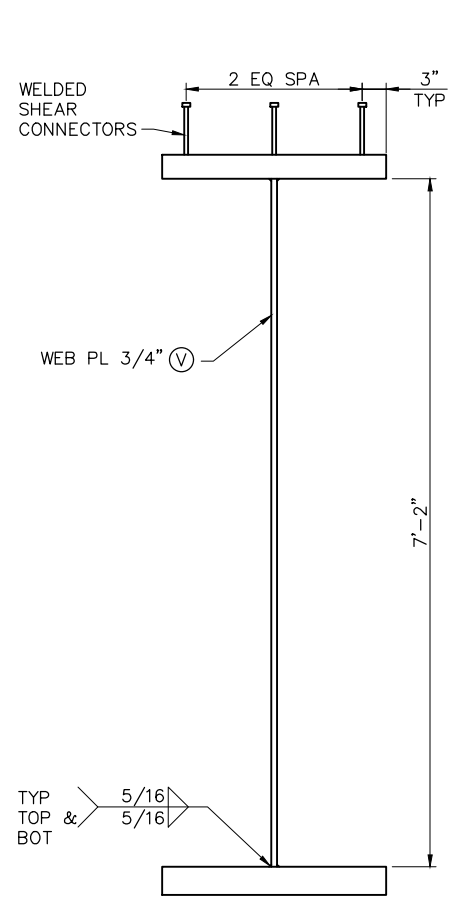
1601 5th Avenue, Suite 1300
Seattle, Washington 98101
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NO.	DATE	BY	REVISION

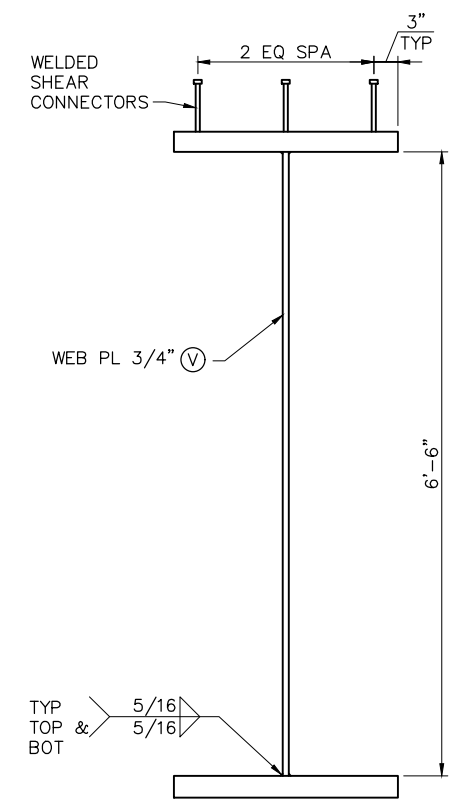
SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

GIRDER ELEVATION - SPAN 3

DRAWN: SQ	PROJECT NO.: 10092000118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B24
SHEET NO.	37 OF 54

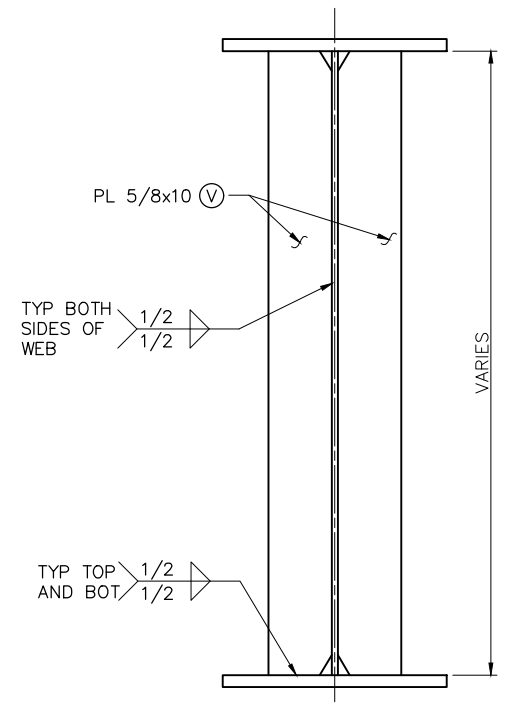


STA 15+30 TO STA 17+80

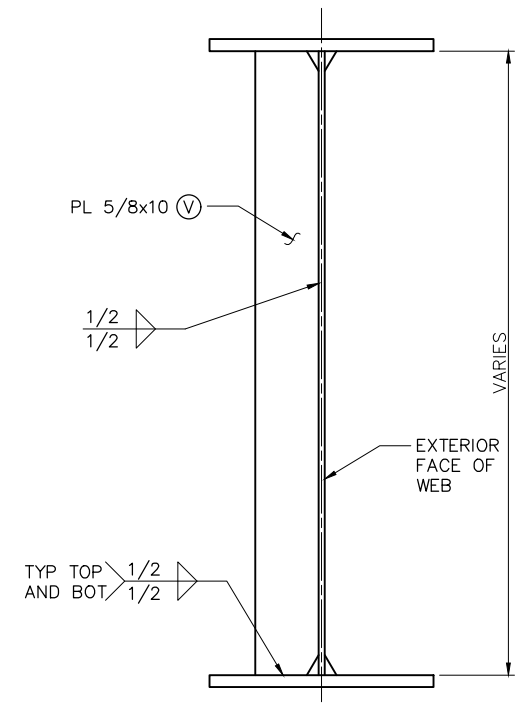


STA 18+08.5 TO STA 21+04

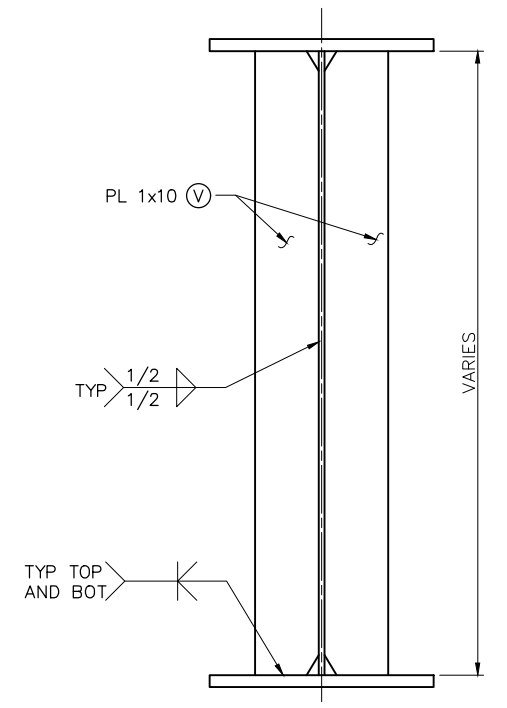
GIRDERS FROM STA 17+80 TO STA 18+08.5 ARE NOT SHOWN. WELDED SHEAR CONNECTORS AND WELDS SHALL BE SIMILAR.



INTERIOR GIRDERS



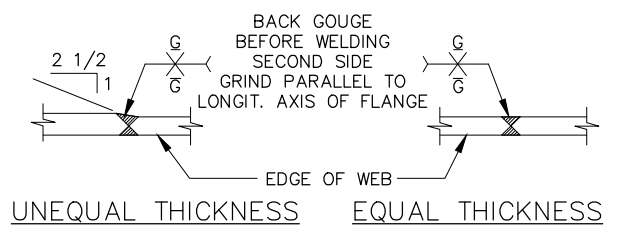
EXTERIOR GIRDERS



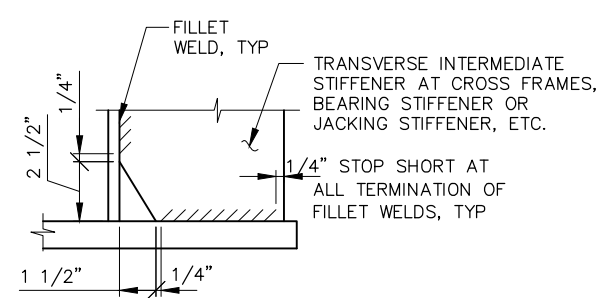
BEARING AND JACKING STIFFENER

TYPICAL GIRDER SECTION

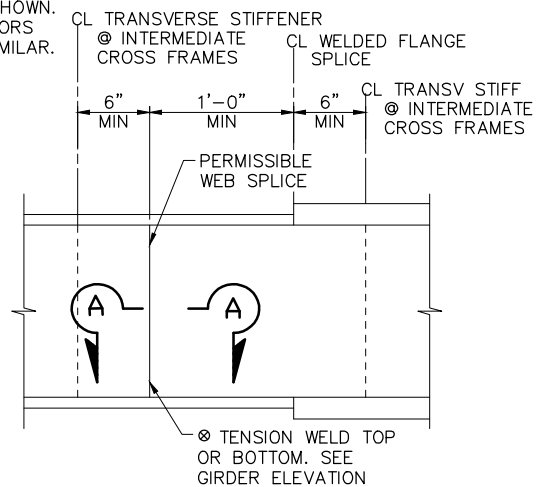
SCALE: 1" = 1'-0"



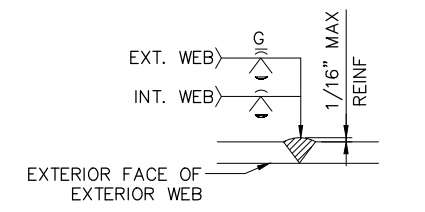
FLANGE SPLICE DETAILS



TYPICAL FILLET WELD TERMINATION DETAIL



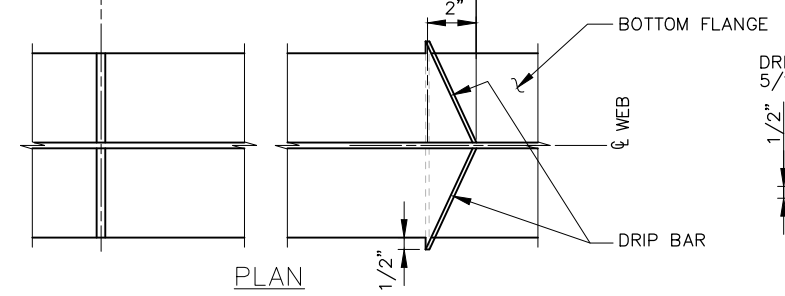
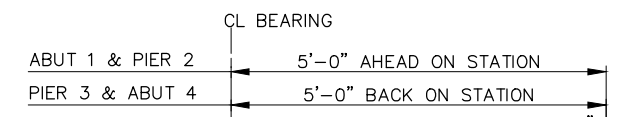
OPTIONAL WEB SPLICE - ELEVATION



SECTION A-A

TYPICAL STIFFENER

NTS
ALIGN STIFFENERS PARALLEL TO CROSS FRAMES. SEE GIRDER LAYOUT SHEETS FOR GEOMETRY.



EXTERIOR GIRDER DRIP PLATE DETAILS

NTS
ALIGN BEARING STIFFENERS PARALLEL TO PIER OR ABUTMENT CENTERLINE. ALIGN JACKING STIFFENERS PERPENDICULAR TO BRIDGE CENTERLINE.

Plotted: Oct 08, 2021 - 1:35pm touniep Layout: Layout1 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B25_GIRDER_DETAILS.dwg



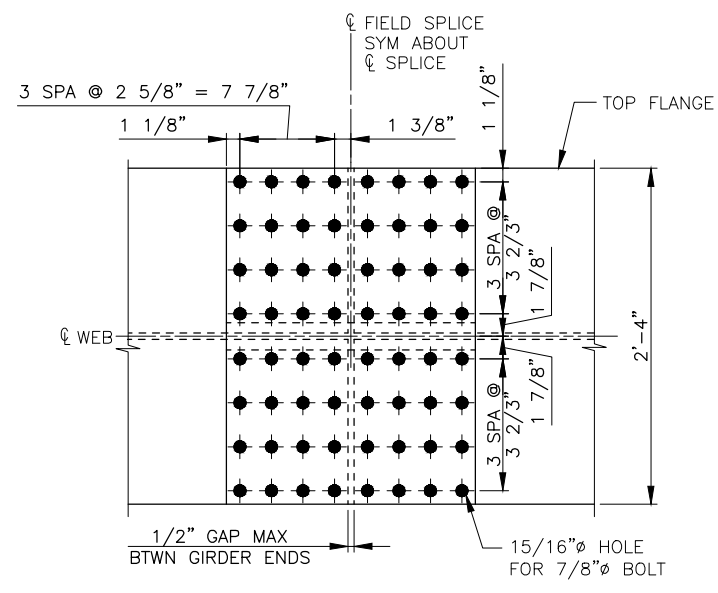
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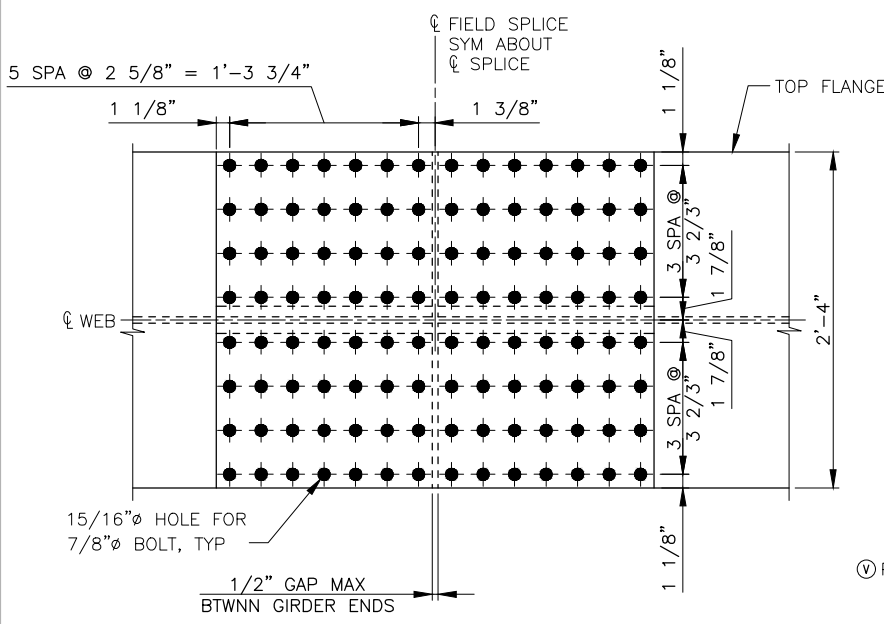
**SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA**

GIRDER DETAILS

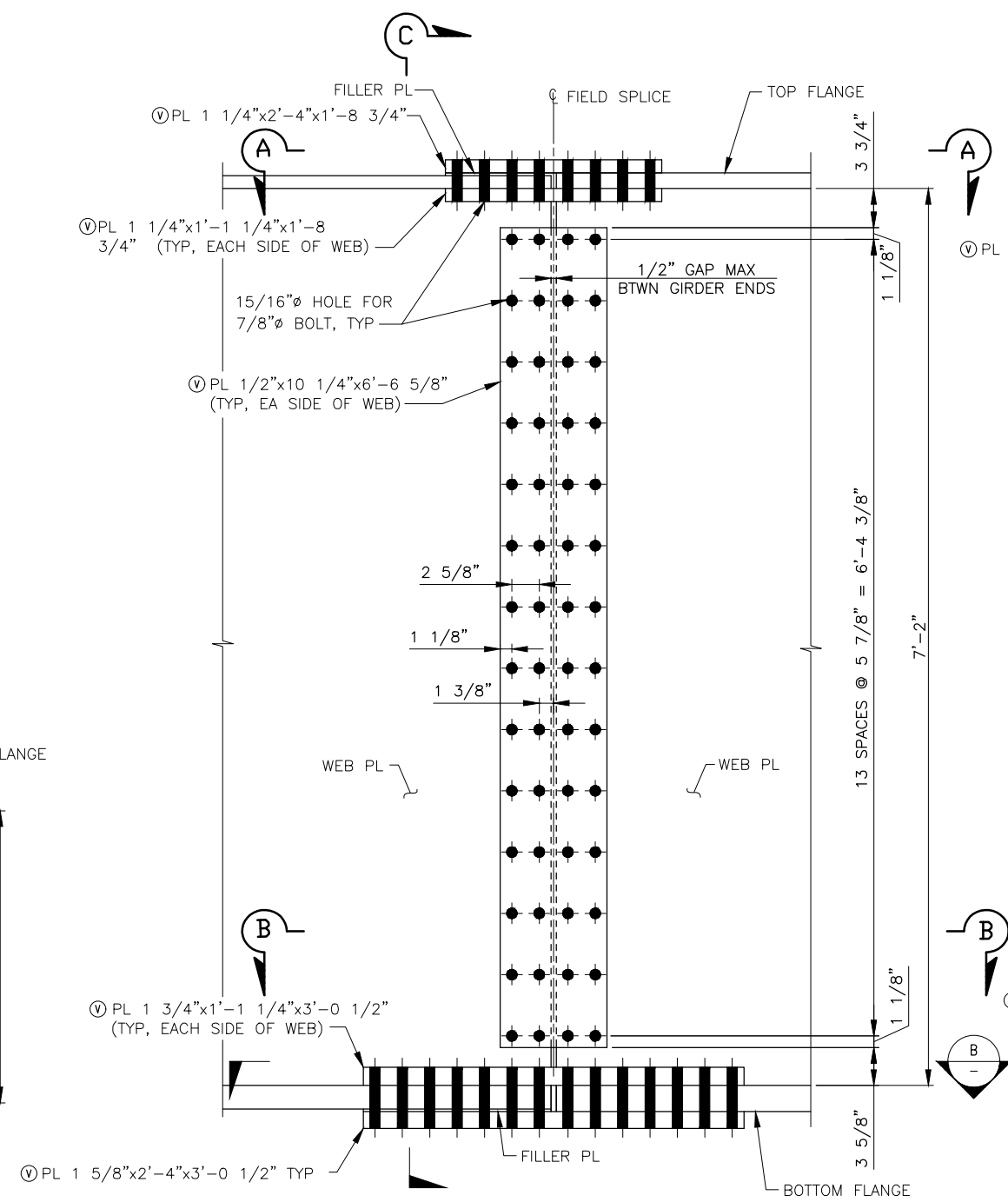
DRAWN: SQ	PROJECT NO.: 1009200018
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B25
SHEET NO.	38 OF 54



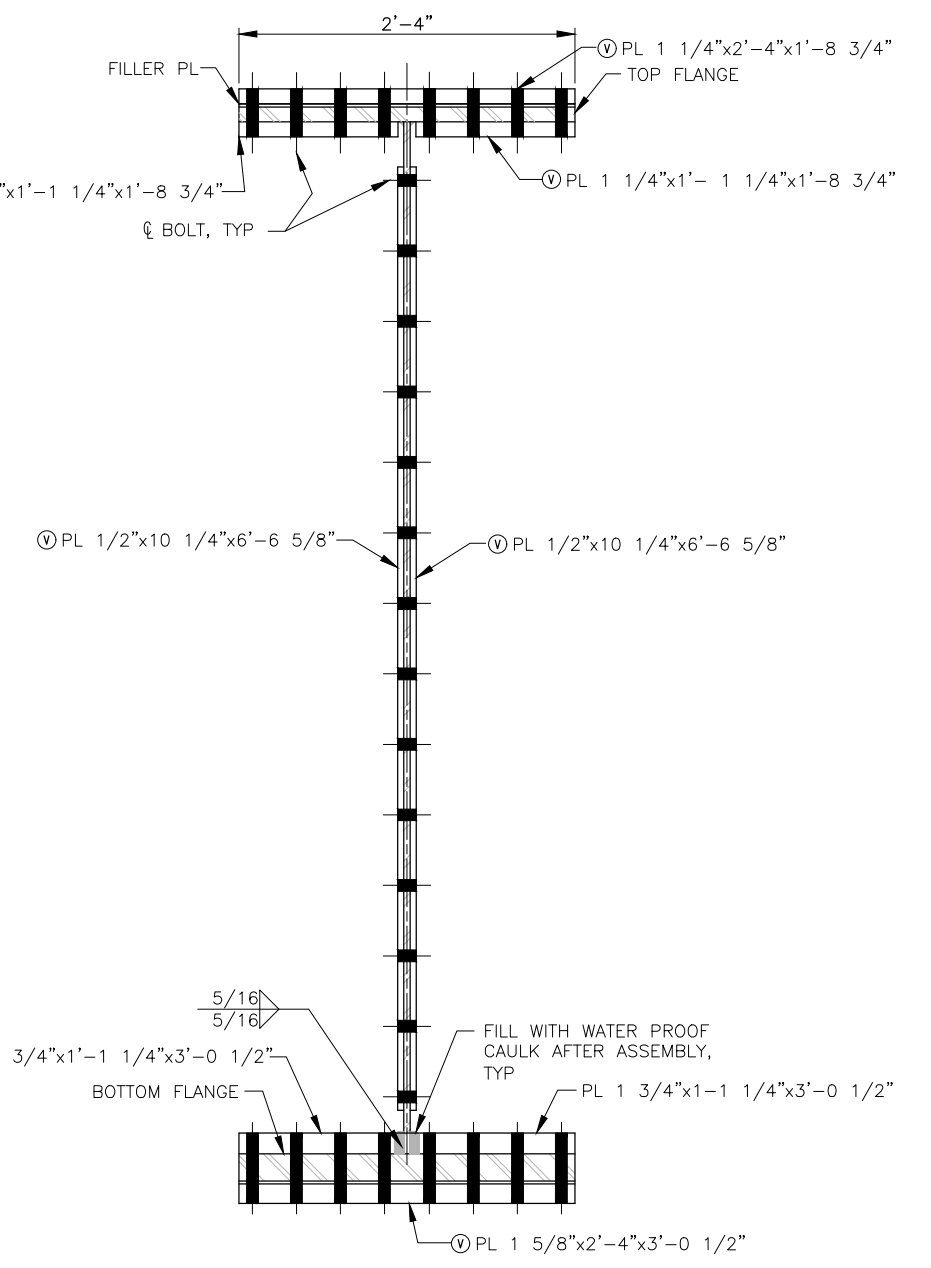
TOP FLANGE - SECTION A-A
SCALE: 1 1/2" = 1'-0"



BOTTOM FLANGE - SECTION B-B
SCALE: 1 1/2" = 1'-0"



**ELEVATION
GIRDER FIELD SPLICE 1**
SCALE: 1 1/2" = 1'-0"



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

Plotted: Oct 07, 2021 - 1:37pm tainiep Layout: Layout1
V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B26_GIRDER_SPLICE1_DETAILS.dwg



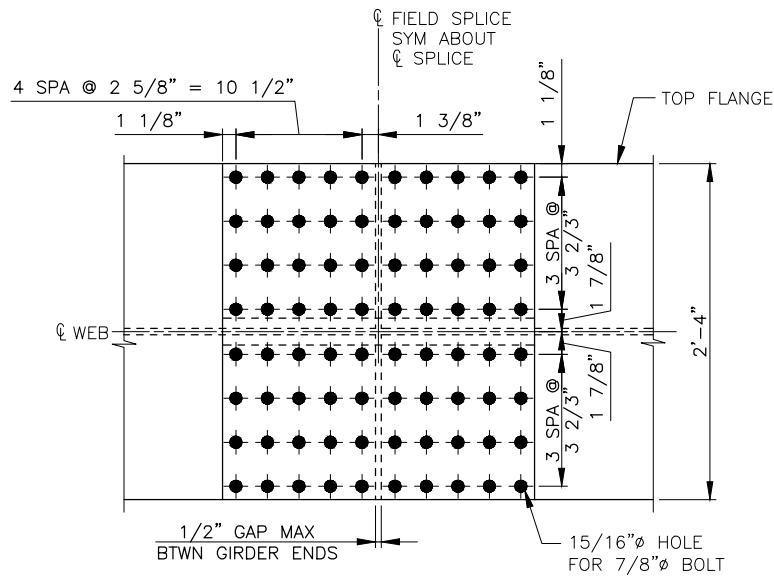
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NO.	DATE	BY	REVISION

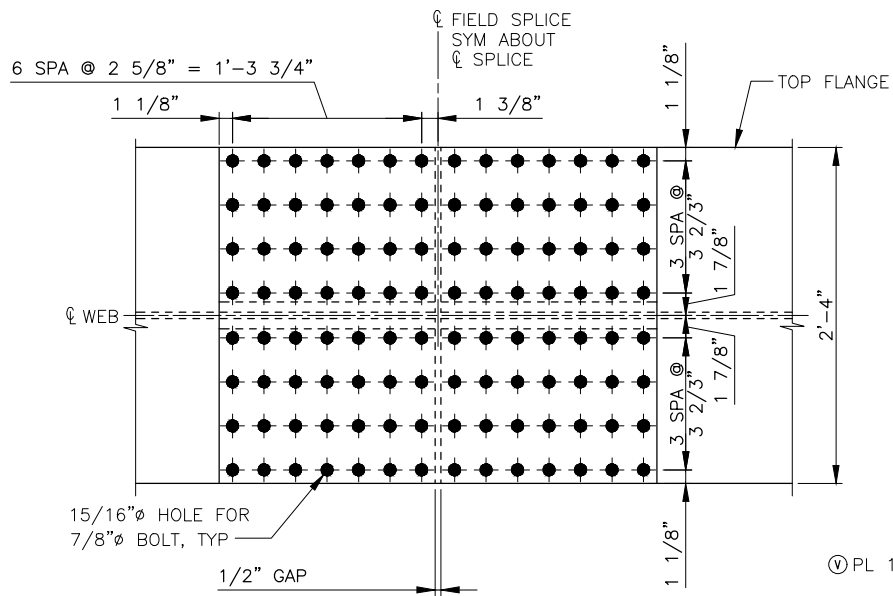
**SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA**

GIRDER FIELD SPLICE DETAILS

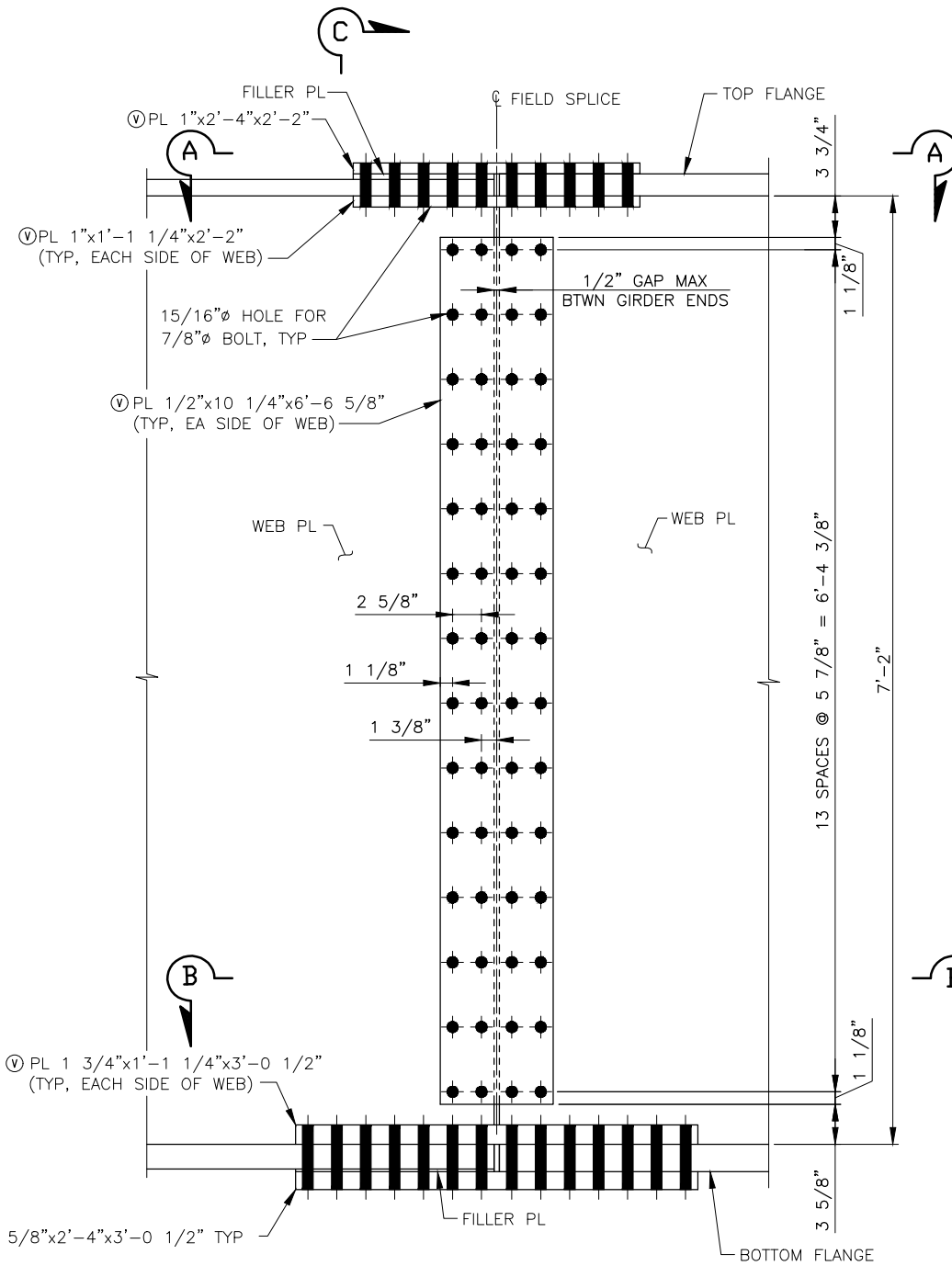
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DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B26
SHEET NO.	39 OF 54



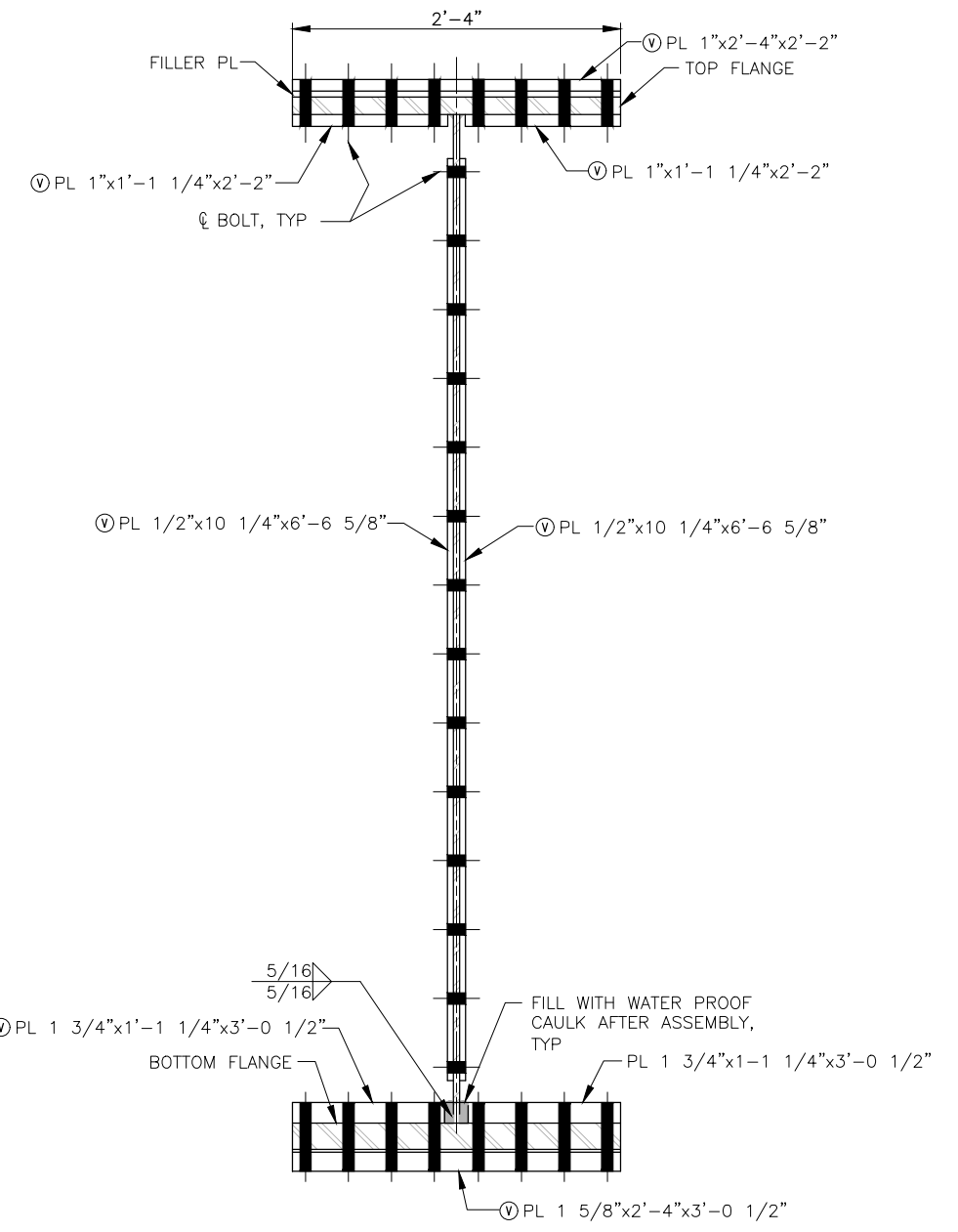
TOP FLANGE - SECTION A-A
SCALE: 1 1/2" = 1'-0"



BOTTOM FLANGE - SECTION B-B
SCALE: 1 1/2" = 1'-0"



**ELEVATION
GIRDER FIELD SPLICE 2**
SCALE: 1 1/2" = 1'-0"



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

Plotted: Oct 07, 2021 - 1:36pm tainiep Layout: Layout1 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B27_GIRDER_SPLICEZ_DETAILS.dwg



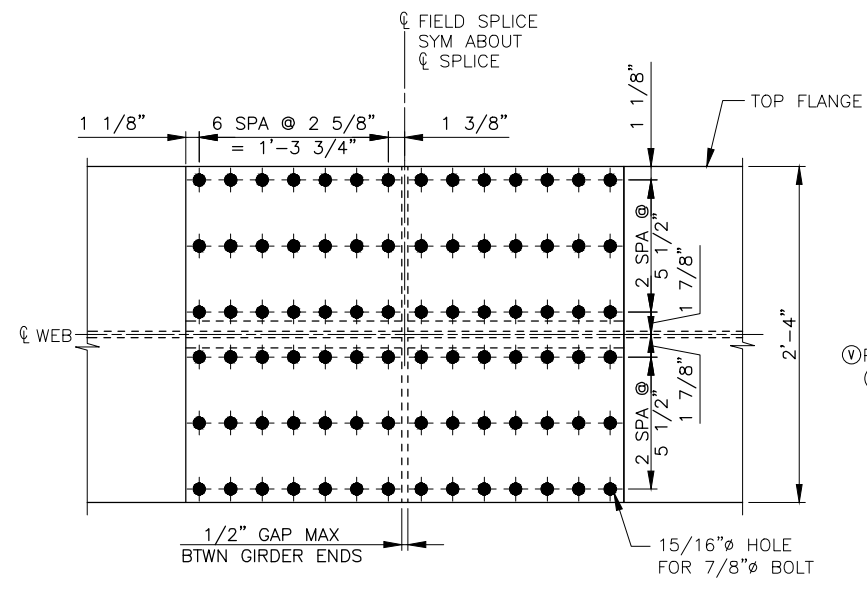
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NO.	DATE	BY	REVISION

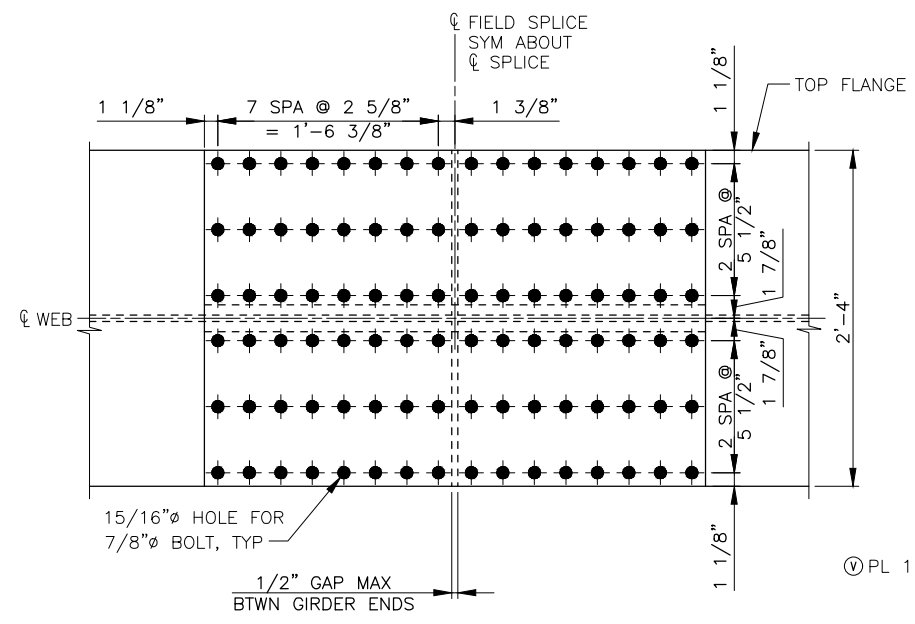
**SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA**

GIRDER FIELD SPLICE DETAILS

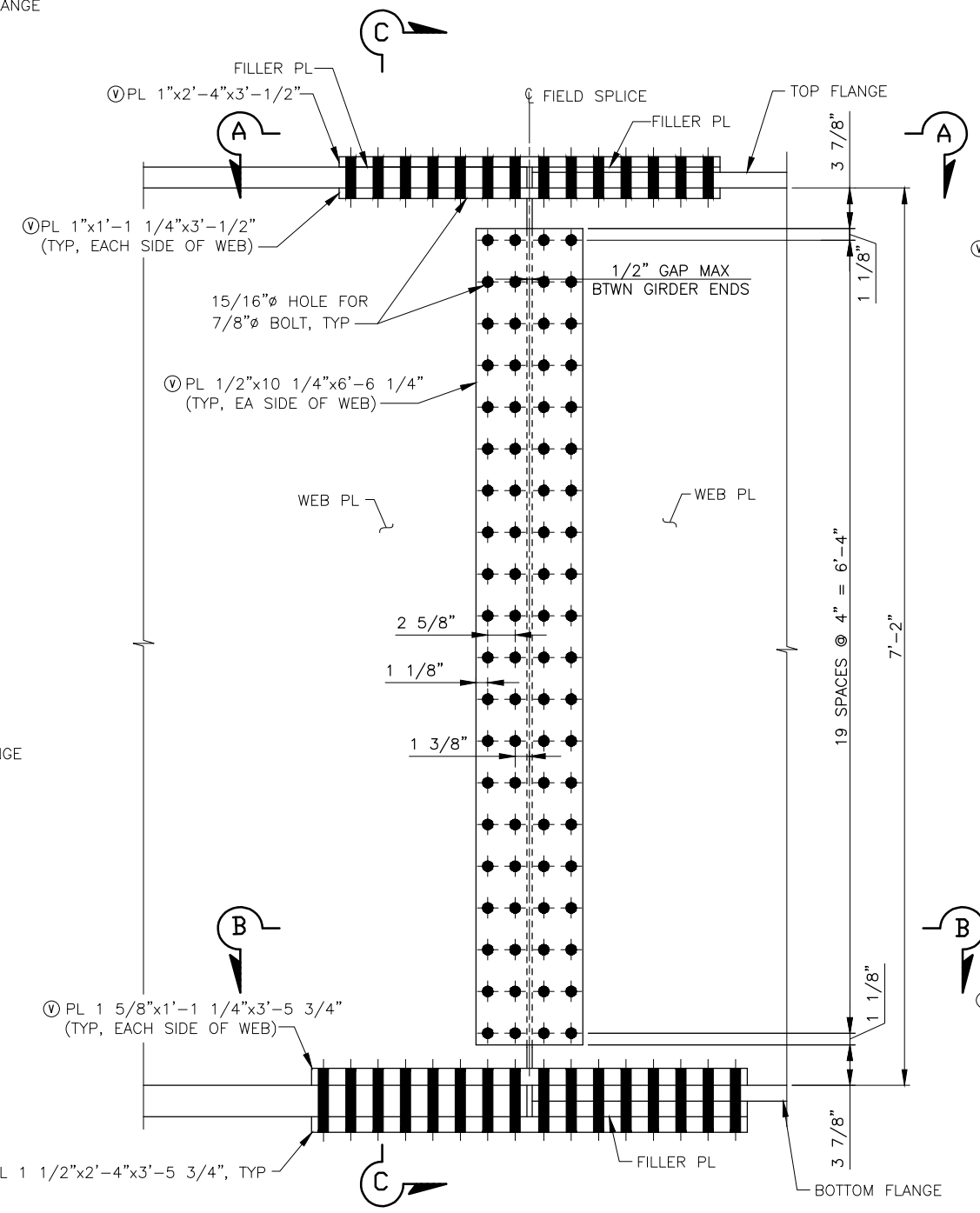
DRAWN: SQ	PROJECT NO.: 10092000118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B27
SHEET NO.	40 OF 54



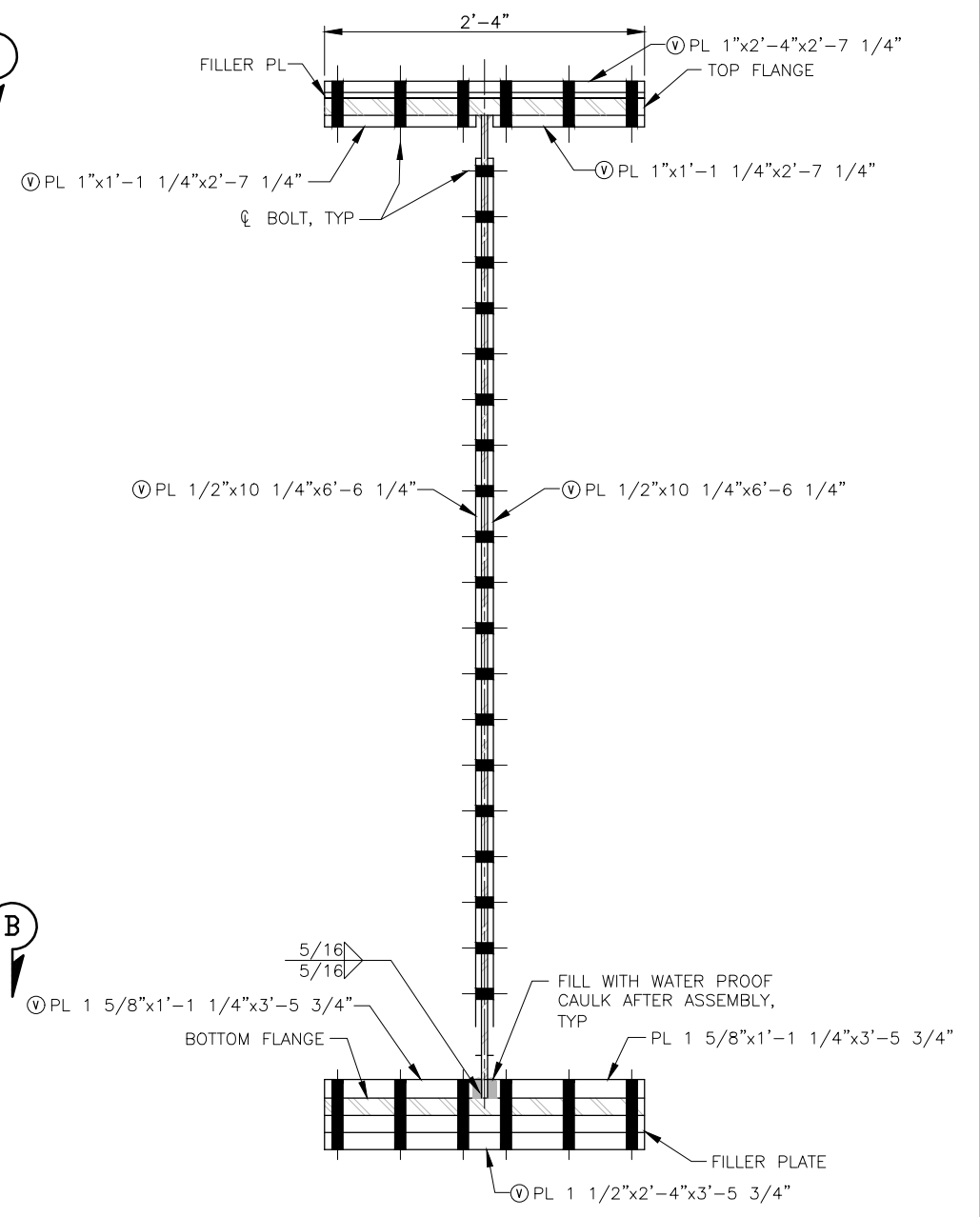
TOP FLANGE - SECTION A-A
SCALE: 1 1/2" = 1'-0"



BOTTOM FLANGE - SECTION B-B
SCALE: 1 1/2" = 1'-0"



**ELEVATION
GIRDER FIELD SPLICE 3**
SCALE: 1 1/2" = 1'-0"



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

Plotted: Oct 07, 2021 - 1:36pm Layout: Layout1
V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B28_GIRDER_SPLICE3_DETAILS.dwg



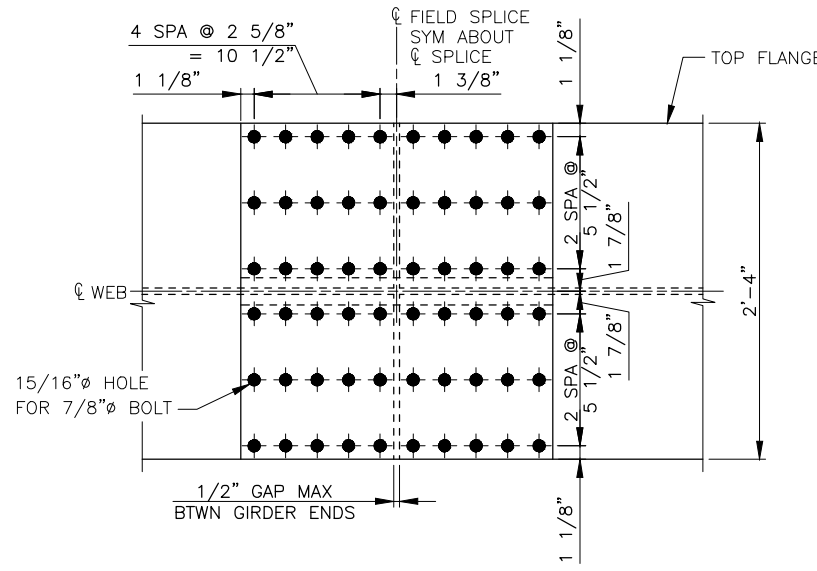
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NO.	DATE	BY	REVISION

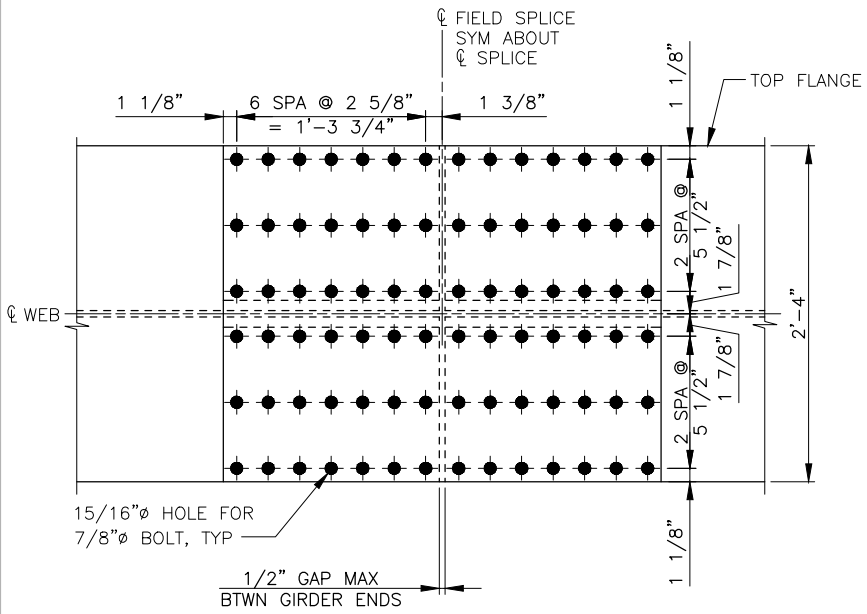
**SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA**

GIRDER FIELD SPLICE DETAILS

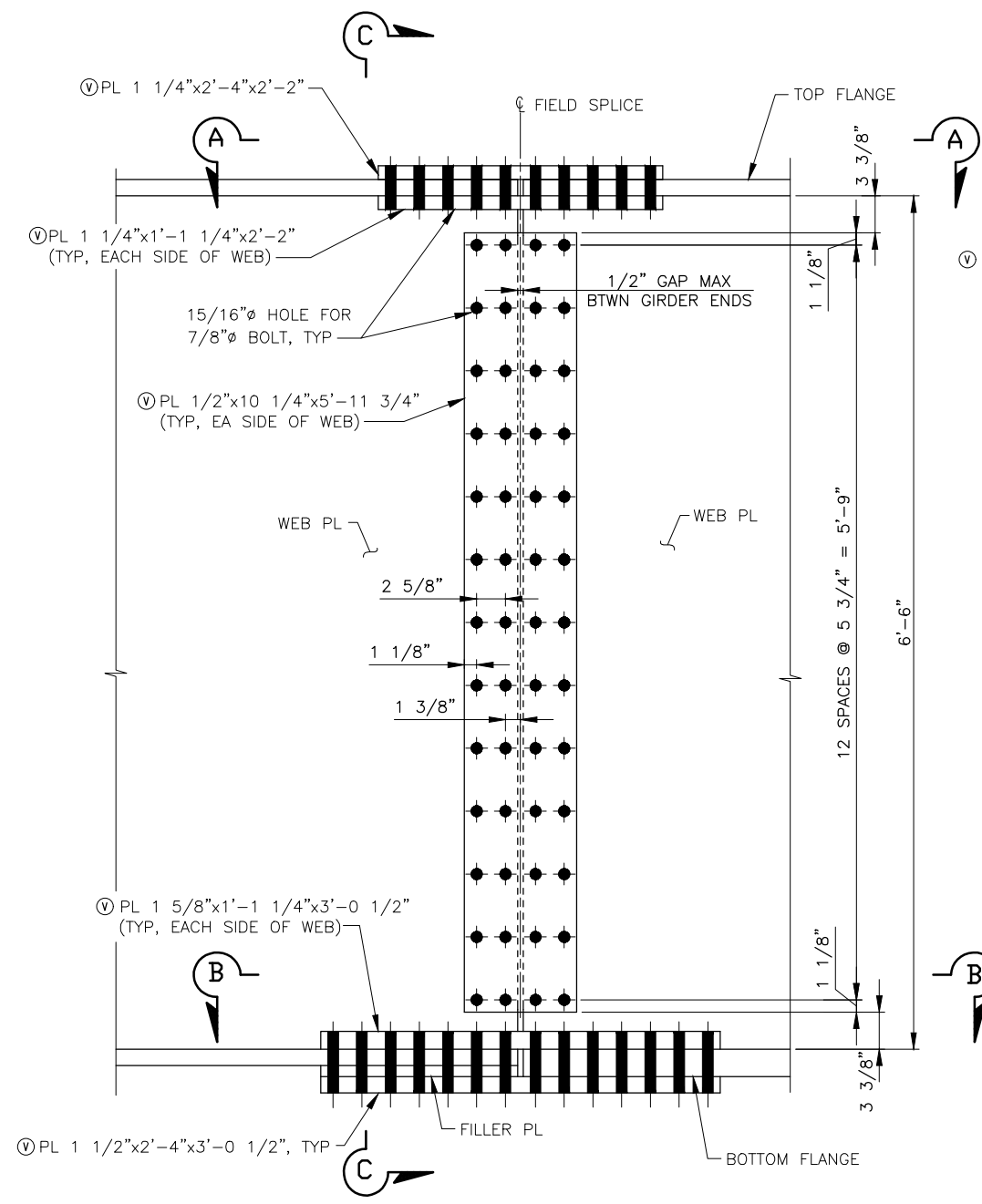
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DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B28
SHEET NO.	41 OF 54



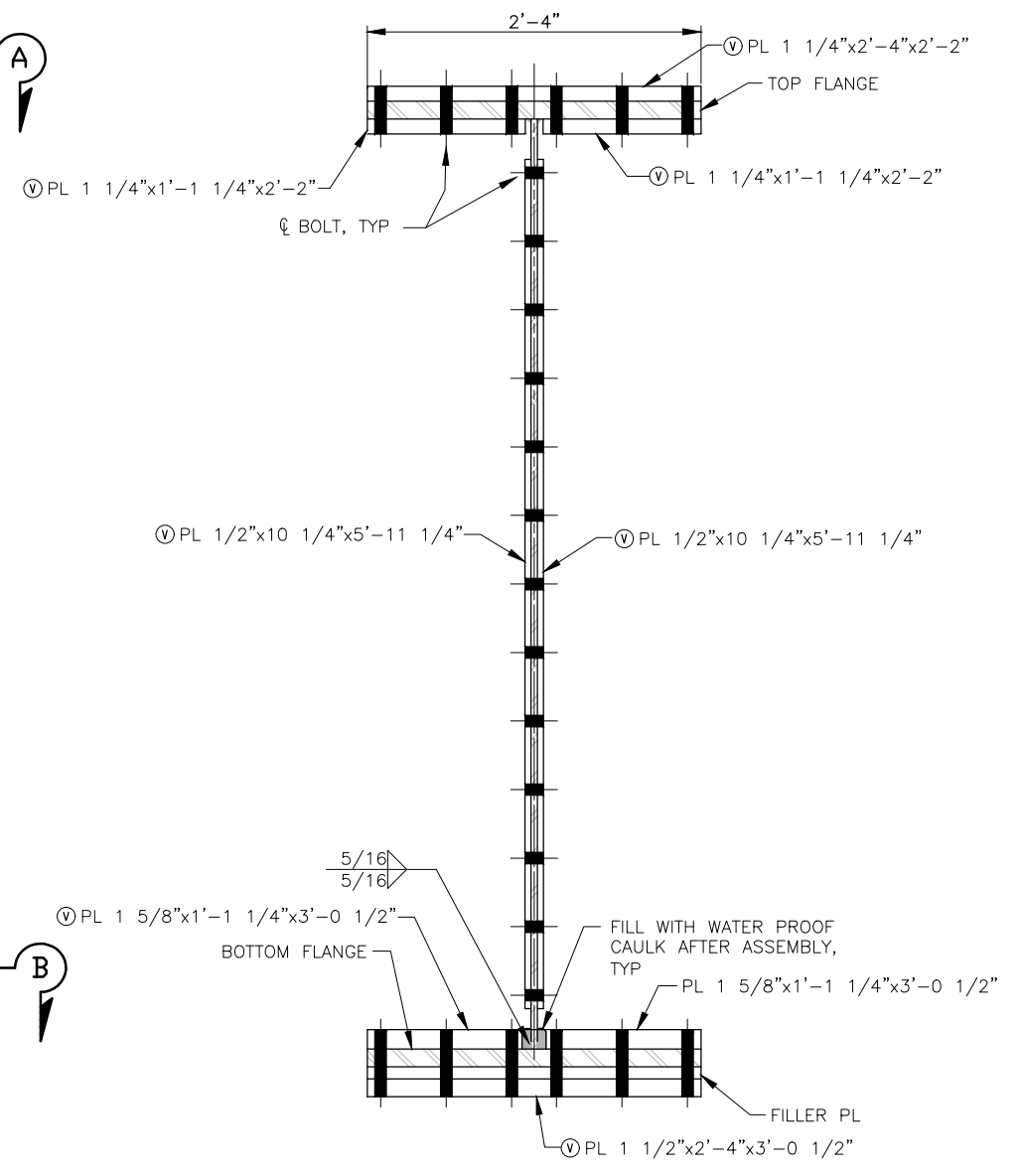
TOP FLANGE - SECTION A-A
SCALE: 1 1/2" = 1'-0"



BOTTOM FLANGE - SECTION B-B
SCALE: 1 1/2" = 1'-0"



**ELEVATION
GIRDER FIELD SPLICE 4**
SCALE: 1 1/2" = 1'-0"



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

Plotted: Oct 07, 2021 - 1:39pm tainiep Layout: Layout1 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B29_GIRDER_SPLICE4_DETAILS.dwg



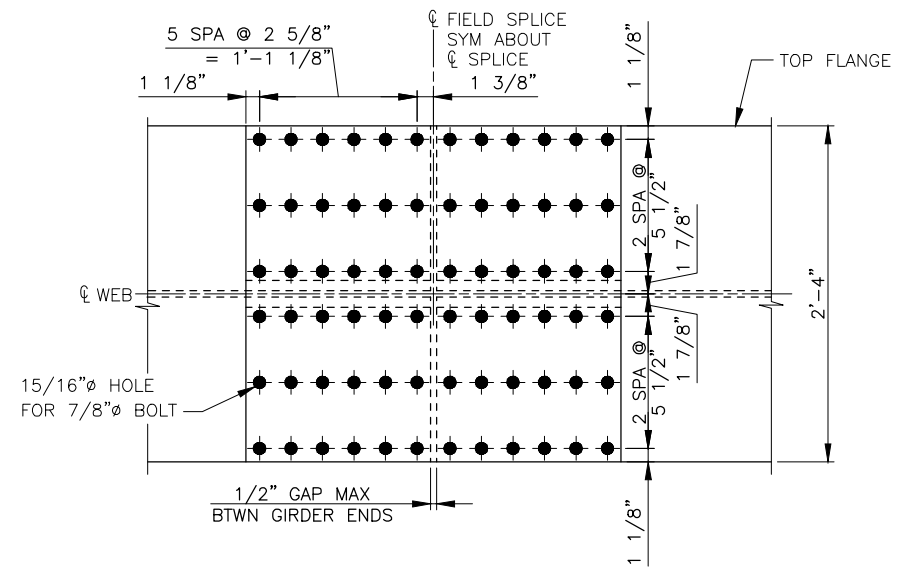
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Seattle, Washington 98101
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NO.	DATE	BY	REVISION

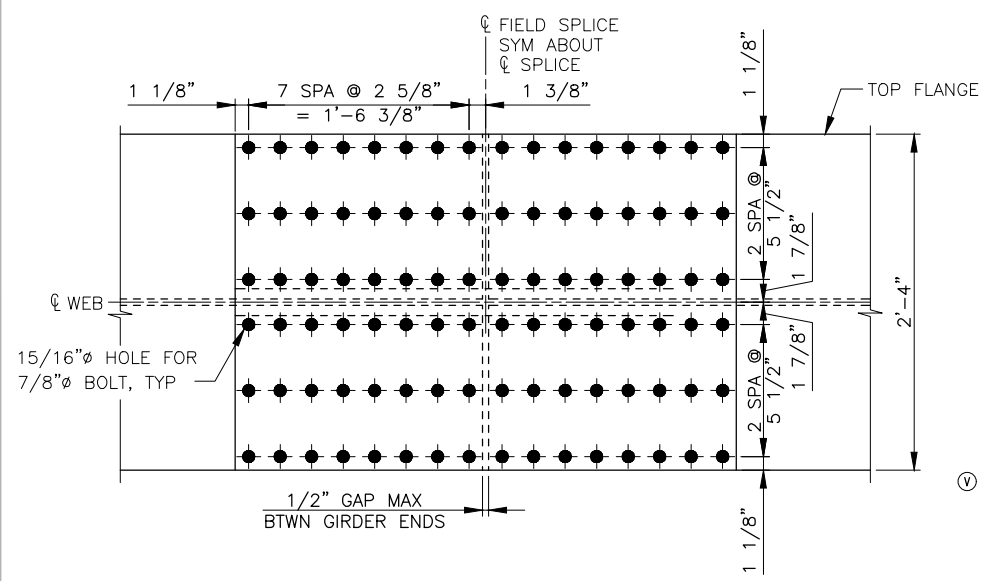
**SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA**

GIRDER FIELD SPLICE DETAILS

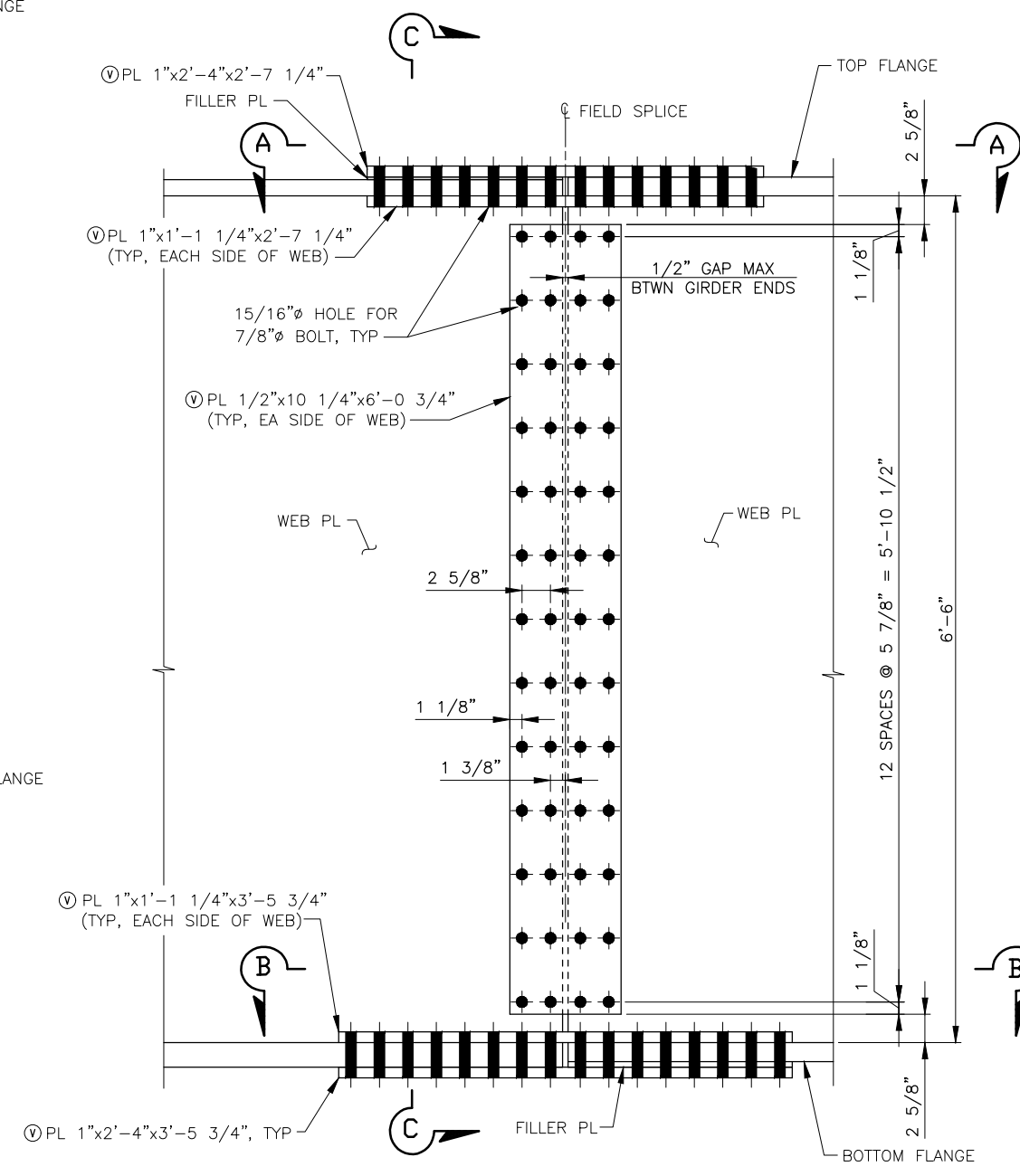
DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B29
SHEET NO.	42 OF 54



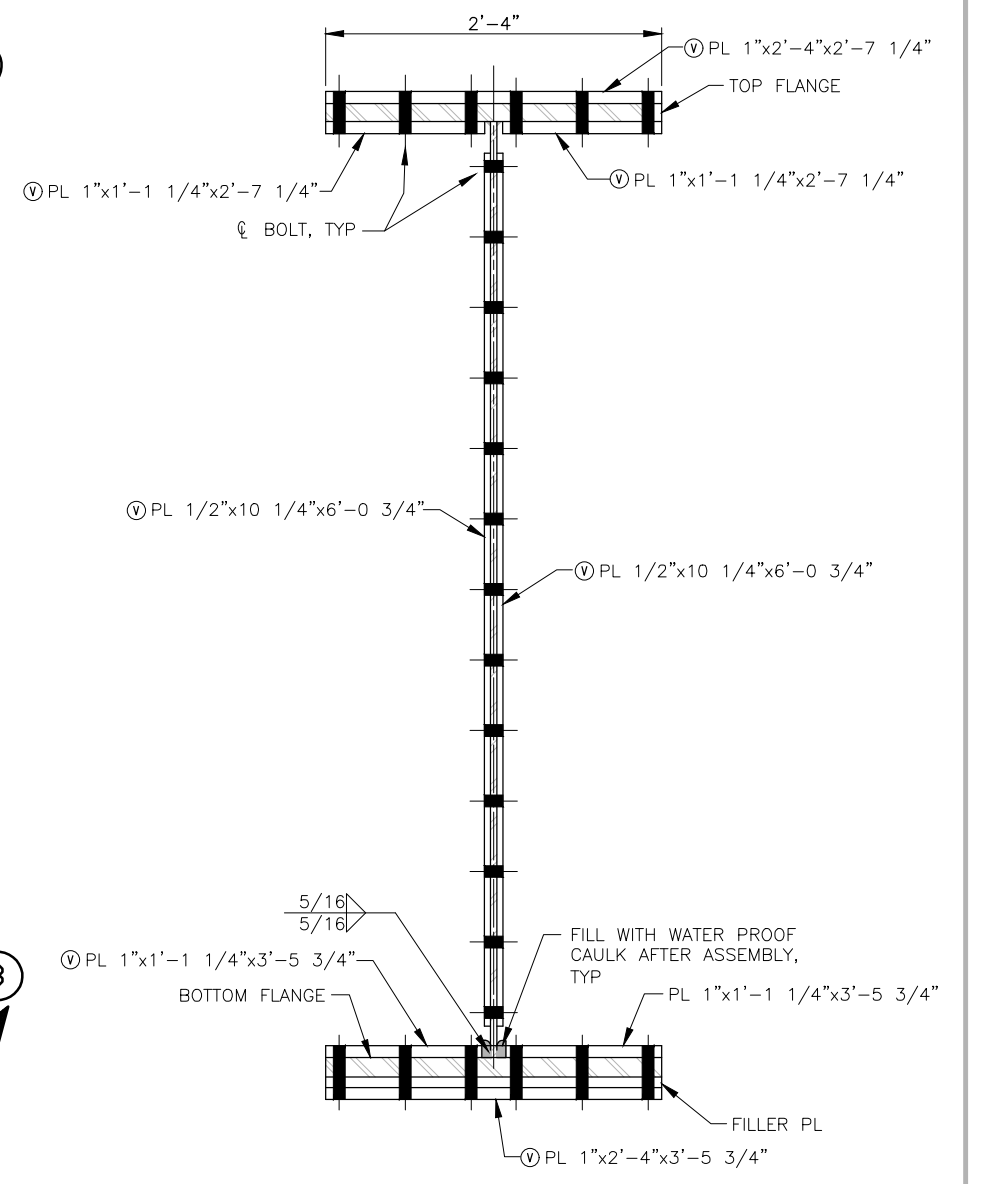
TOP FLANGE - SECTION A-A
SCALE: 1 1/2" = 1'-0"



BOTTOM FLANGE - SECTION B-B
SCALE: 1 1/2" = 1'-0"



**ELEVATION
GIRDER FIELD SPLICE 5**
SCALE: 1 1/2" = 1'-0"



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

Plotted: Oct 07, 2021 - 1:39pm touniep Layout: Layout1 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B30_GIRDER_SPLICES_DETAILS.dwg



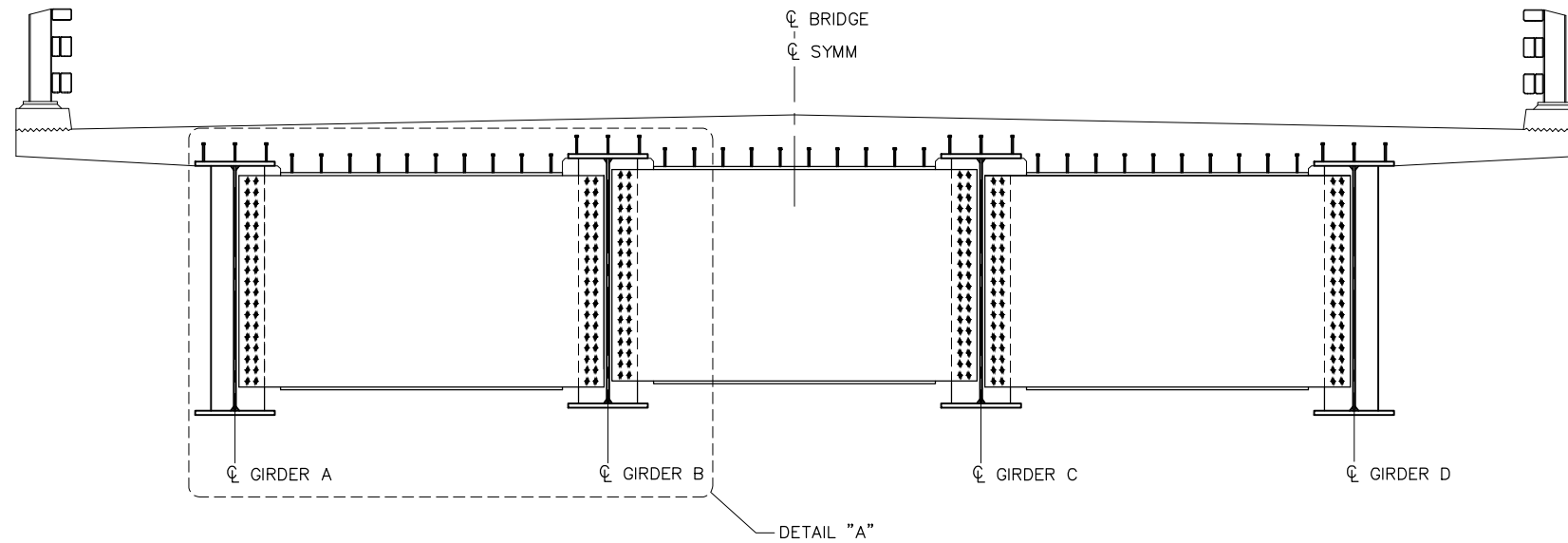
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**SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA**

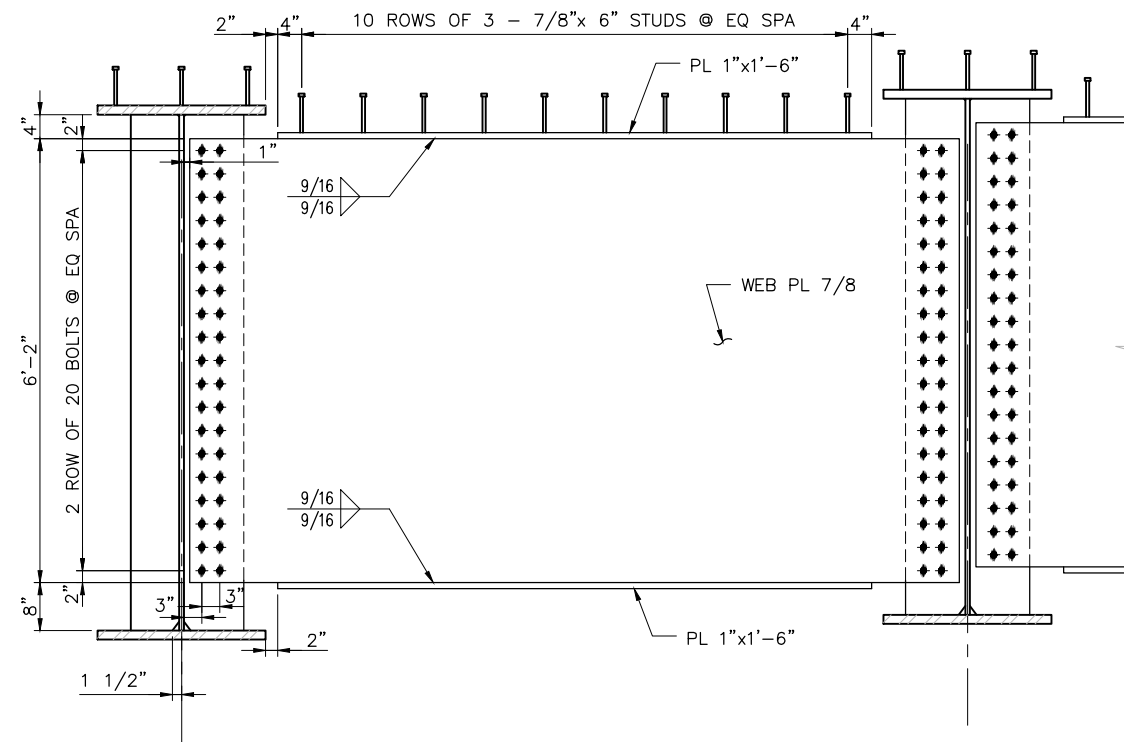
GIRDER FIELD SPLICE DETAILS

DRAWN: SQ	PROJECT NO.: 10092000118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B30
SHEET NO.	43 OF 54



TYPICAL CROSS SECTION

1/2" = 1'-0"



DIAPHRAGM DETAIL "A"

SCALE: 3/4" = 1'-0"

Plotted: Oct 07, 2021 - 1:42pm tainiep Layout: Layout1 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B31_CROSS_FRAMES_ABUT1_PIER2.dwg



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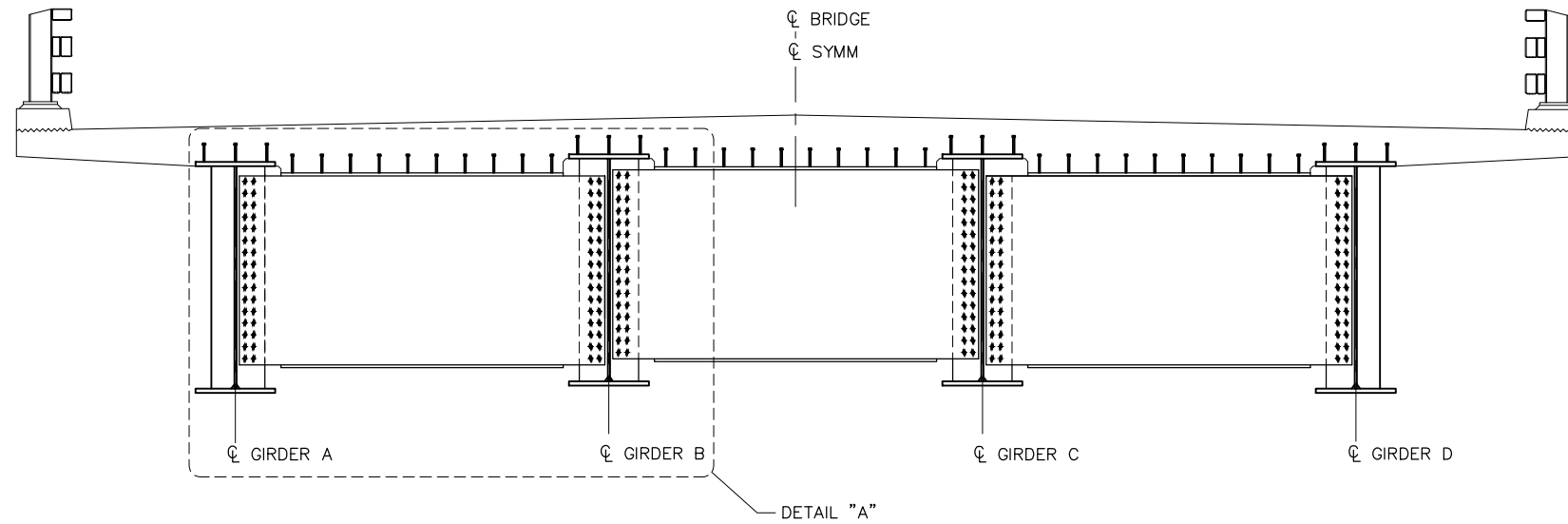
NO.	DATE	BY	REVISION

**SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA**

DIAPHRAGMS - ABUT 1 AND PIER 2

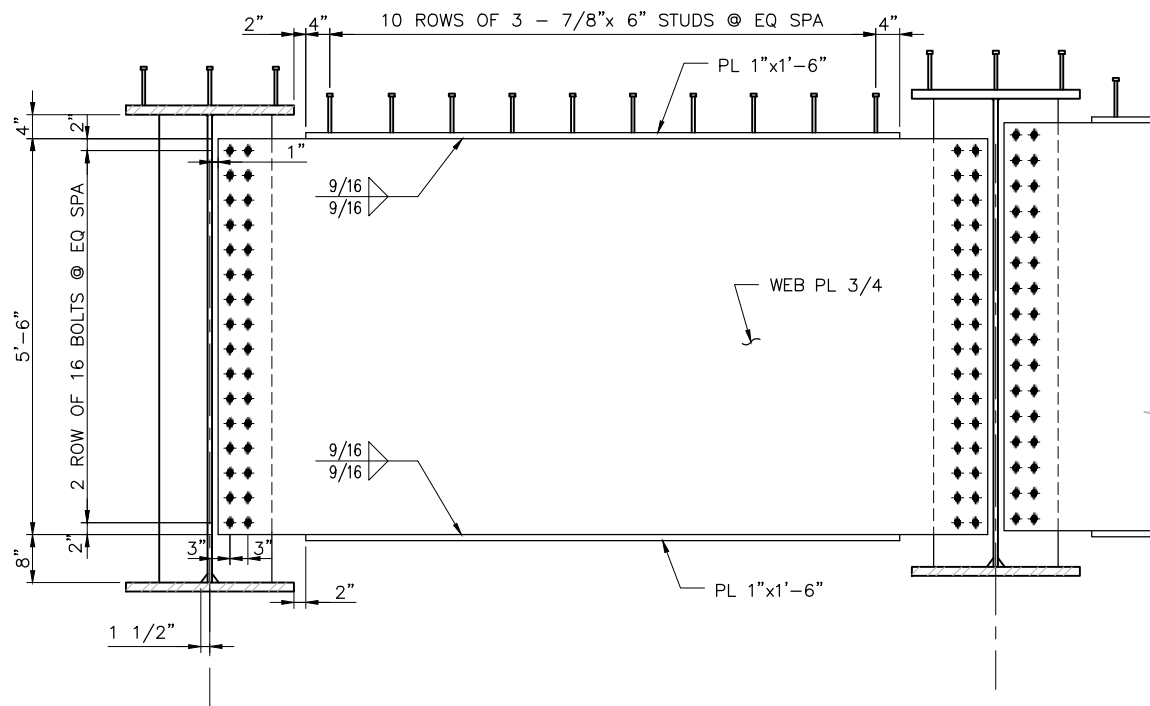
DRAWN: SQ	PROJECT NO.: 1009200018
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B31
SHEET NO.	44 OF 54

FIRST IMPROVEMENT PLAN SUBMITTAL - NOT FOR CONSTRUCTION



TYPICAL CROSS SECTION

3/8" = 1'-0"



DIAPHRAGM DETAIL "A"

SCALE: 3/4" = 1'-0"

Plotted: Oct 07, 2021 - 1:42pm
 Layout: Layout1
 Design: \1700232-B32_CROSS_FRAMES_PIER3_ABUT4.dwg
 User: tauniep
 Project: Santa Margarita Fish Passage



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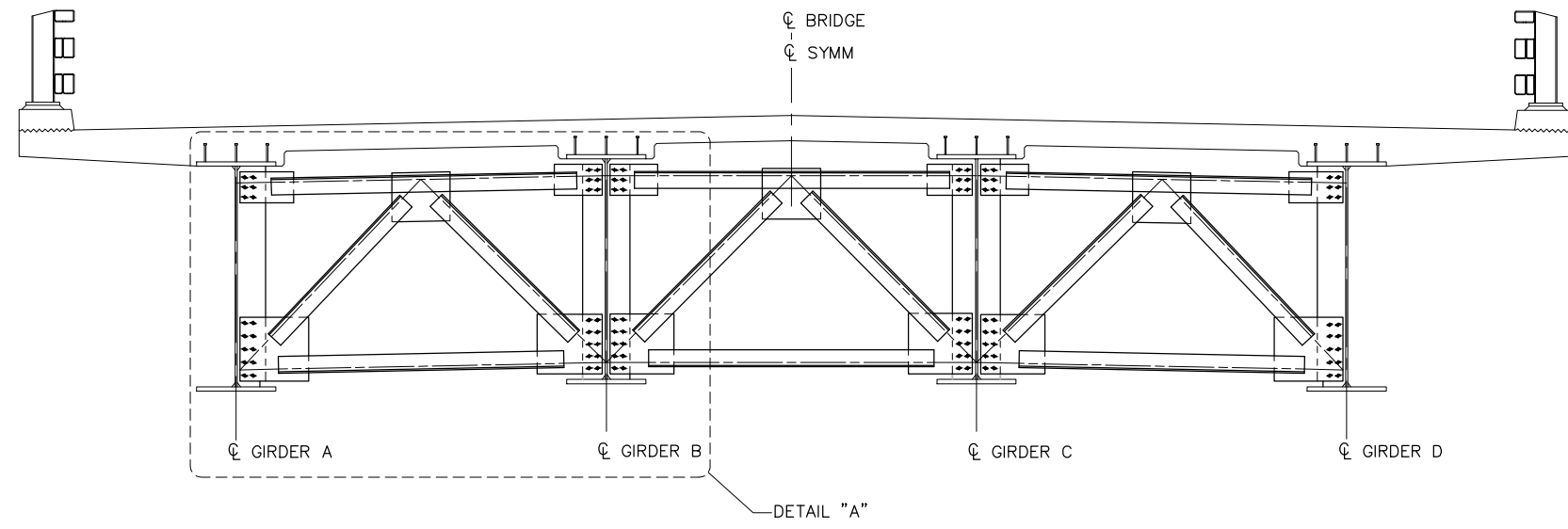
NO.	DATE	BY	REVISION

SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

DIAPHRAGMS - PIER 3 AND ABUT 4

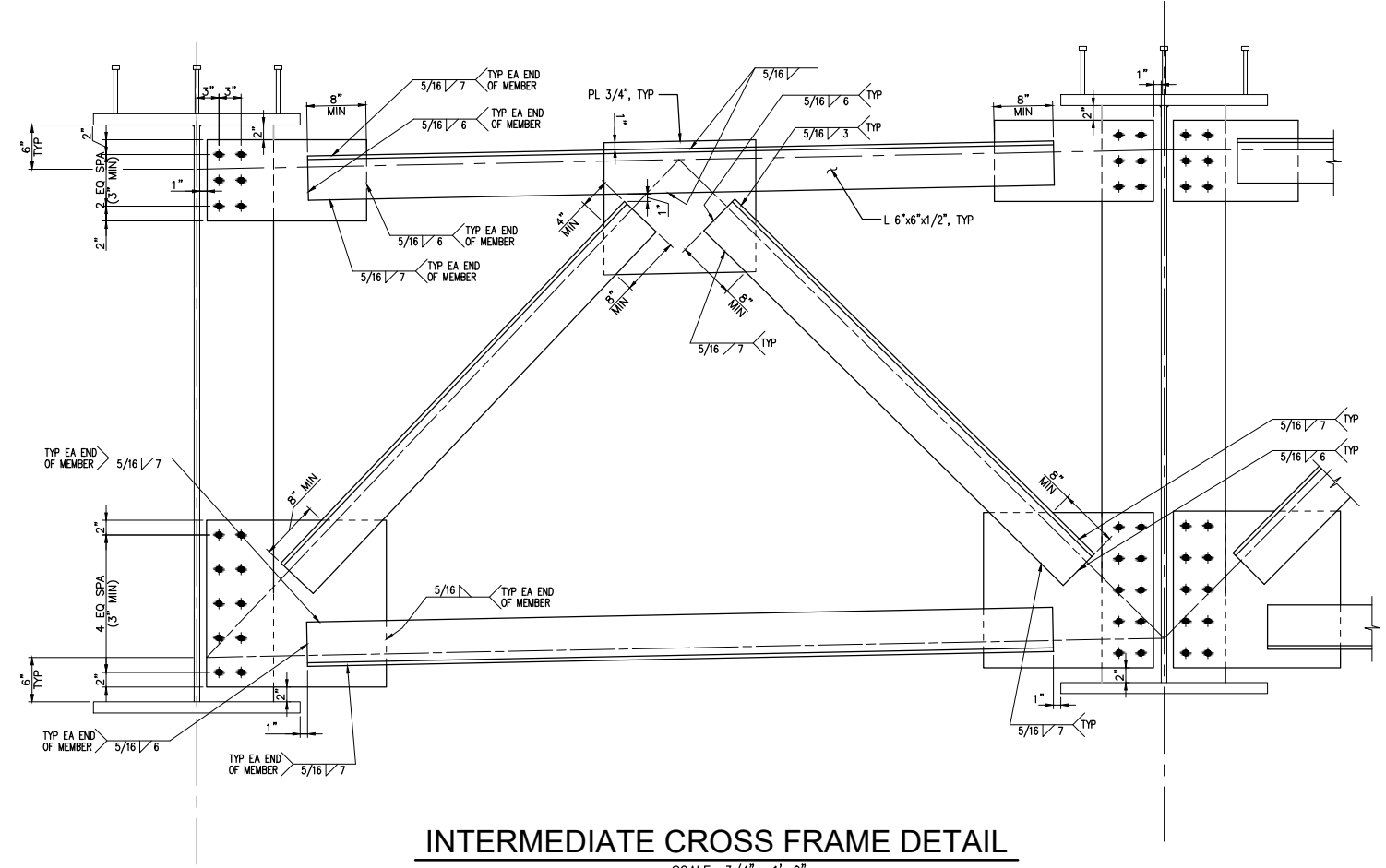
DRAWN: SQ	PROJECT NO.: 1009200018
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B32
SHEET NO.	45 OF 54

FIRST IMPROVEMENT PLAN SUBMITTAL - NOT FOR CONSTRUCTION



TYPICAL CROSS SECTION

3/8" = 1'-0"
SPAN 3 SECTION SHOWN, OTHER SPANS SIMILAR



SCALE: 3/4" = 1'-0"
SPAN 3 SECTION SHOWN, OTHER SPANS SIMILAR

NOTES:

1. ALL WELDS ARE 5/16" EXCEPT AS OTHERWISE INDICATED.
2. INTERMEDIATE CROSS FRAMES TO BE PLACED PARALLEL WITH ROADWAY CROSS SLOPE EXCEPT AS NOTED IN SPAN 2.

Plotted: Oct 07, 2021 - 1:43pm Layout: Layout1
 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B33_INTERMEDIATE_CROSS_FRAME.dwg



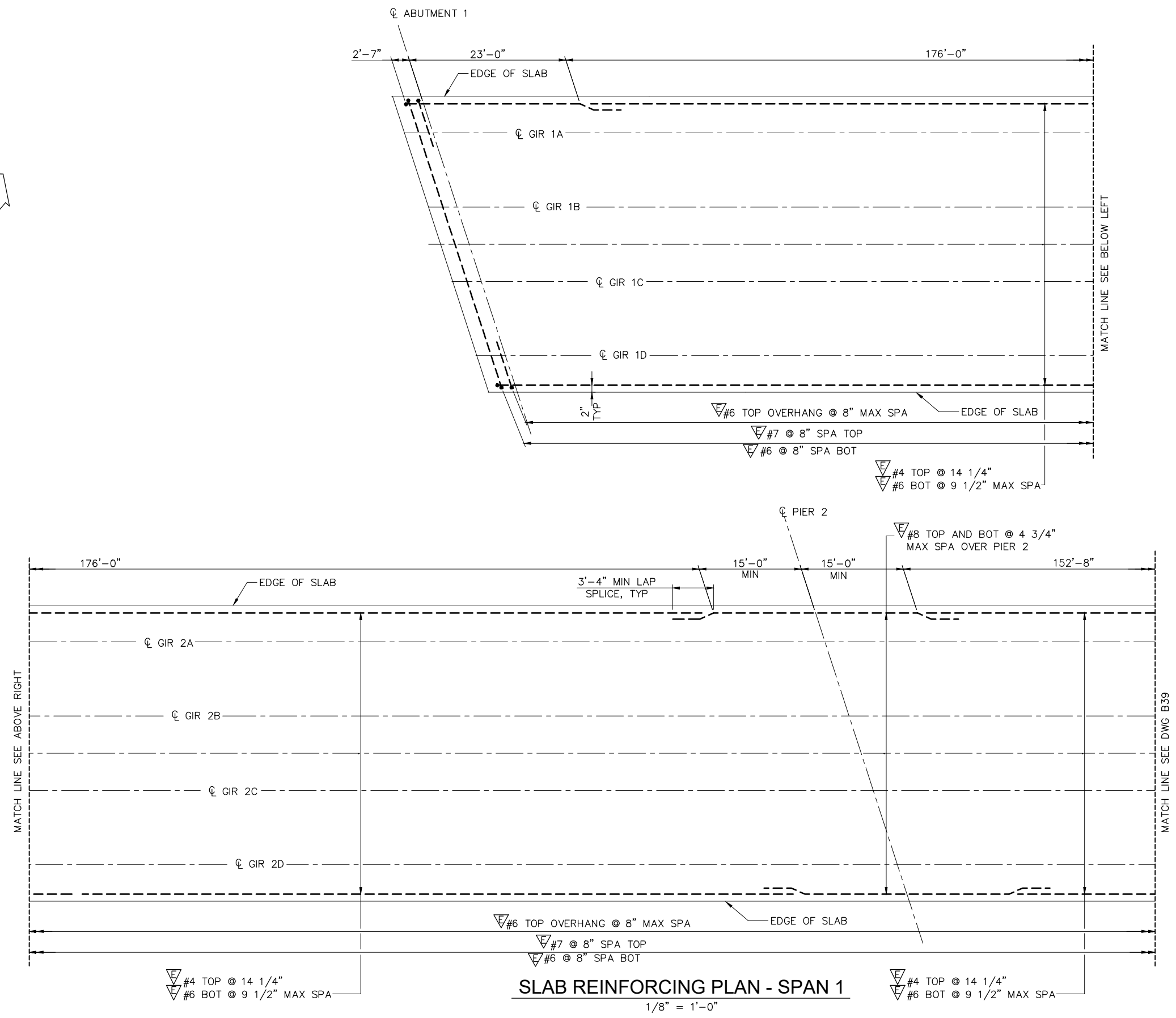
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NO.	DATE	BY	REVISION

**SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA**

INTERMEDIATE CROSS FRAMES

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B33
SHEET NO.	46 OF 54



- NOTE:**
1. NO MORE THAN 50% OF BARS SHALL BE SPLICED AT ONE LOCATION.
 2. FOR TYPICAL SECTION, SEE TYPICAL SECTION AND SLAB REINFORCEMENT SHEET.
 3. CURB BARS NOT SHOWN. SEE "BARRIER" SHEETS FOR DETAILS.

Plotted: Oct 11, 2021 - 4:20pm touniep Layout: Layout1
V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B34_SLAB_REINFORCING_PLAN1.dwg

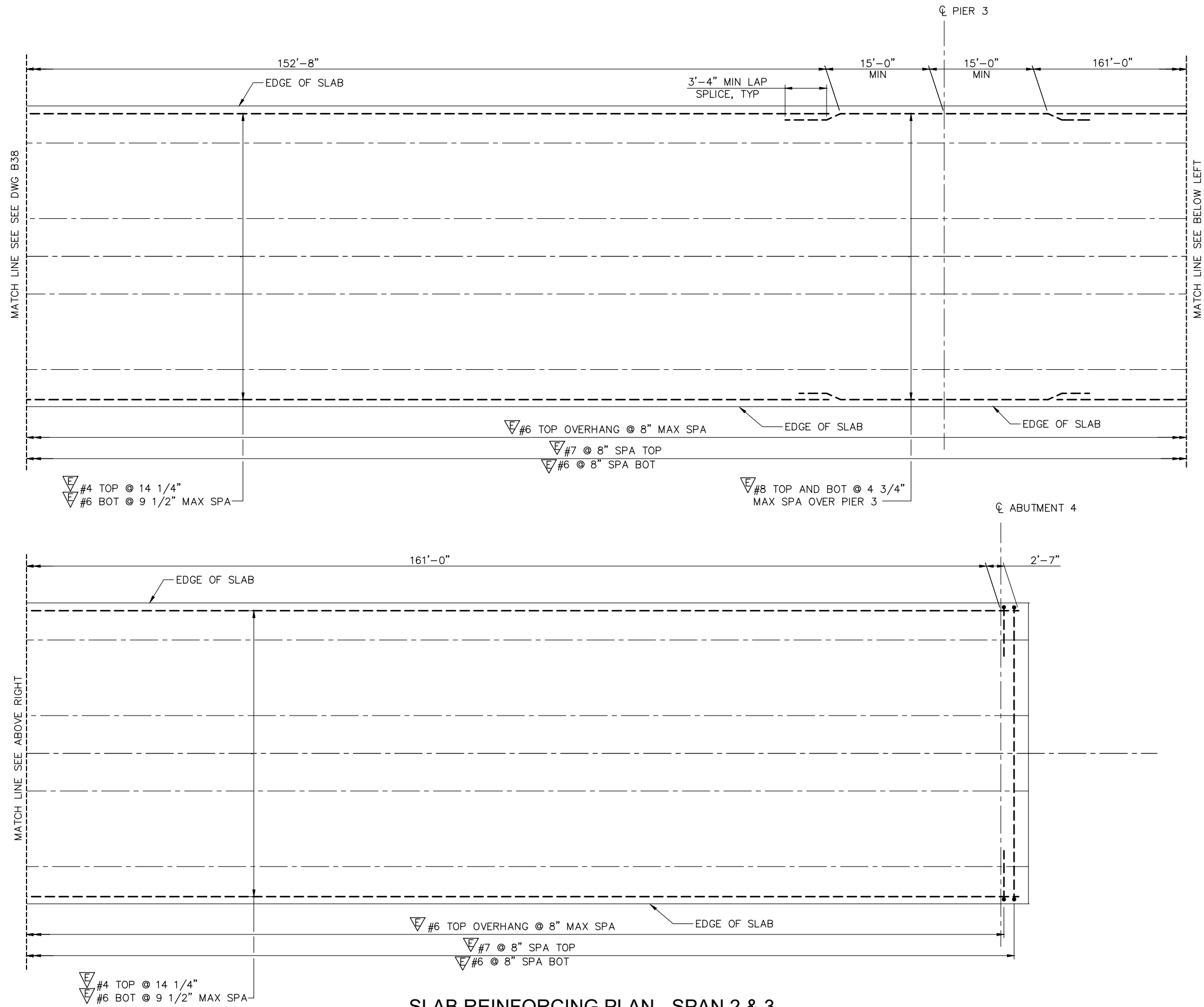


NO.	DATE	BY	REVISION

**SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA**

SLAB REINFORCING PLAN - SPAN 1

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B34
SHEET NO.	47 OF 54



SLAB REINFORCING PLAN - SPAN 2 & 3

1/8" = 1'-0"

Plotted: Oct 11, 2021 - 4:25pm touniep Layout: Layout1
 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B35_SLAB_REINF_PLAN2.dwg



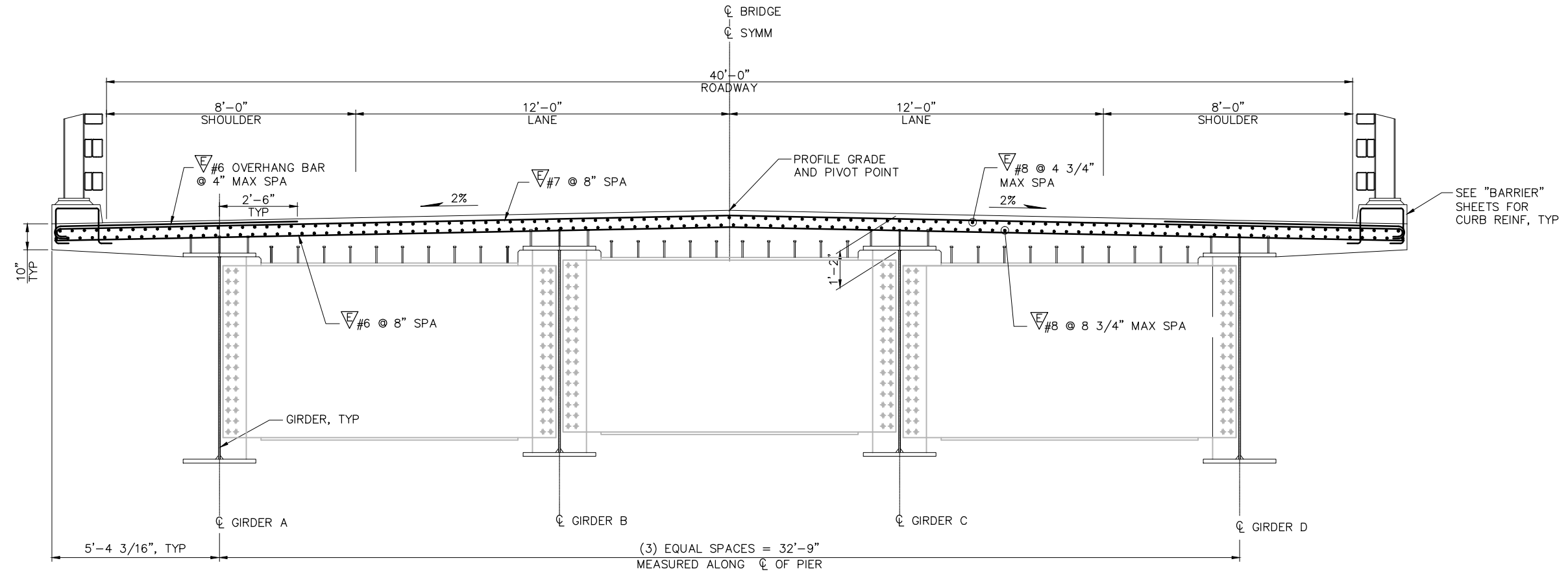
NO.	DATE	BY	REVISION

**SANDIA CREEK ROAD BRIDGE REPLACEMENT
 SAN DIEGO, CALIFORNIA**

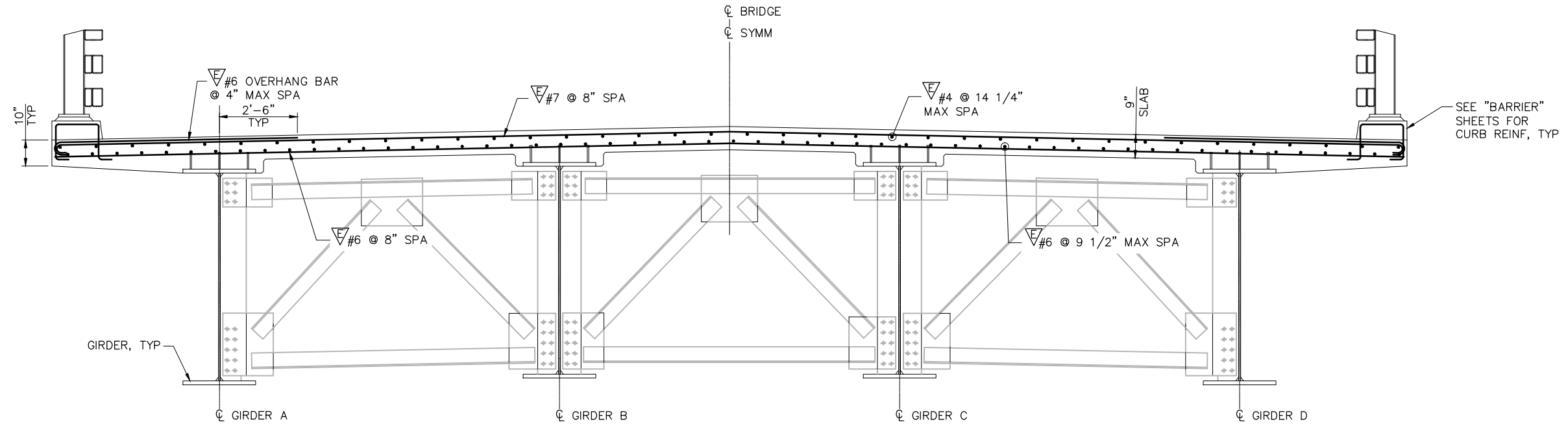
SLAB REINFORCING PLAN - SPAN 2 AND 3

DRAWN: SQ	PROJECT NO.: 10092000118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B35
SHEET NO.	48 OF 54

FIRST IMPROVEMENT PLAN SUBMITTAL - NOT FOR CONSTRUCTION



SLAB TYPICAL SECTION - OVER PIER
 1/2" = 1'-0"
 PIER 3 SHOWN. PIER 2 SIMILAR.



SLAB TYPICAL SECTION - MID SPAN
 1/2" = 1'-0"
 SPAN 3 SHOWN. OTHER SPANS SIMILAR.

Plotted: Oct 07, 2021 - 1:46pm tainiep Layout: Layout1 V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B36_TYPICAL_SECTION-SLAB_REINF.dwg



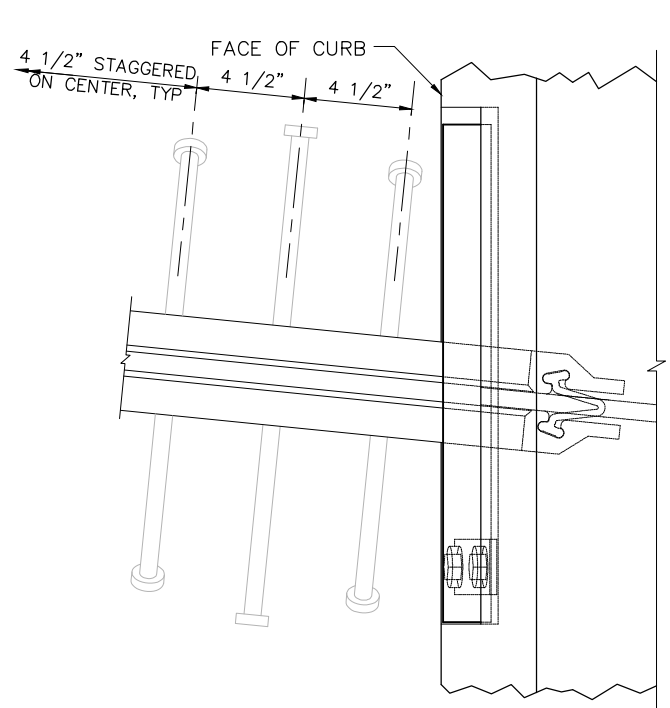
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NO.	DATE	BY	REVISION

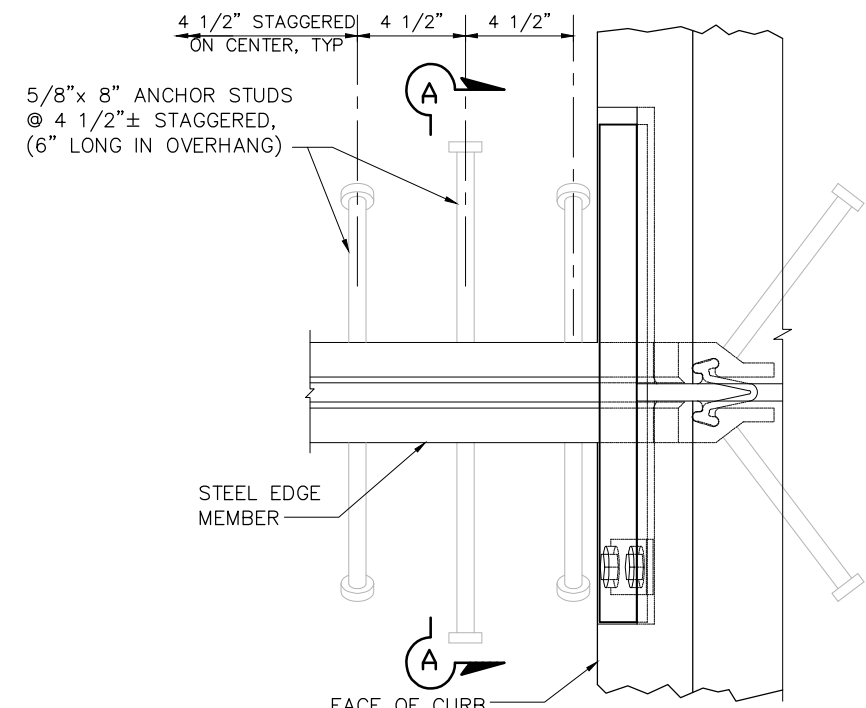
SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

TYPICAL SECTION AND SLAB REINFORCEMENT

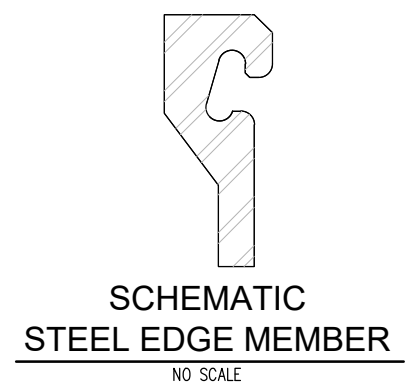
DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B36
SHEET NO.	49 OF 54



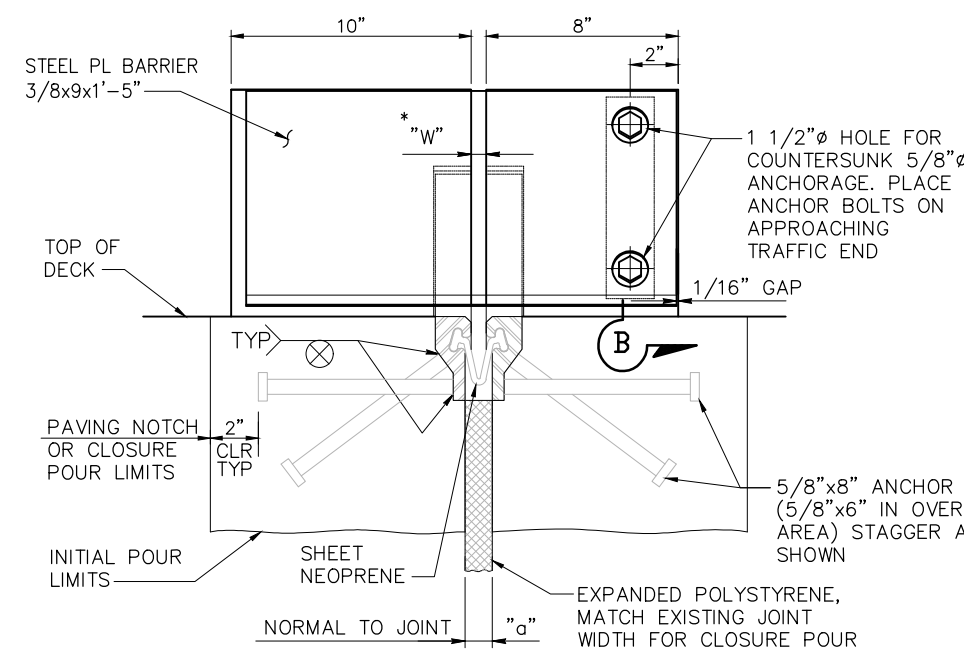
PLAN - ABUTMENT 1
SCALE: 3" = 1'-0"



PLAN - ABUTMENT 4
SCALE: 3" = 1'-0"

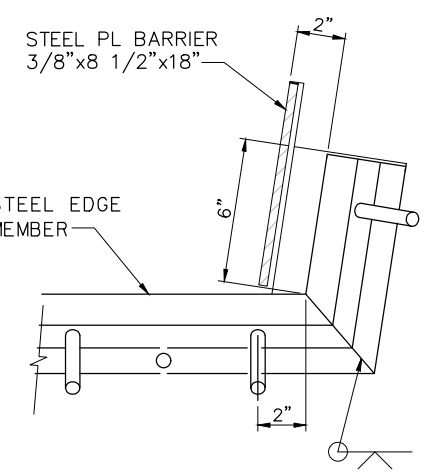


- NOTES:
1. ALTERNATIVELY, FILLET OR COMPLETE PENETRATION WELDS MAY BE USED AT ANCHOR STUDS.
 2. ALTERNATE TYPES OF ANCHOR STUDS MAY BE PERMITTED SUBJECT TO THE AUTHORIZATION BY THE ENGINEER.
 3. JOINT SEAL ASSEMBLY TO BE USED IN CONJUNCTION WITH CLOSURE POUR. (SEE OTHER SHEETS FOR LIMITS). CLOSURE POUR SHALL NOT BE PLACED UNTIL FINAL DECK SURFACE IS WITHIN THE TOLERANCES SPECIFIED.
 4. USE JOINT AT CROWN OF ROADWAY, AT ANY CHANGE IN TRANSVERSE SLOPE IN DECK AND AT CHANGES IN HORIZONTAL DIRECTION. PLACE OTHER JOINTS AT OR NEAR LANES. ALL METAL PARTS TO BE PAINTED OR GALVANIZED AFTER FABRICATION.
 5. SHEET NEOPRENE SHALL BE FABRICATED IN ONE CONTINUOUS PIECE AND SHALL BE FABRICATED TO BEND AROUND CORNERS. FIELD SPLICES OF THE NEOPRENE ARE NOT ALLOWED.
 6. INSERT ASSEMBLY OR EXPANSION ANCHORAGE FOR 5/8"x1 3/4" BOLTS. USE INSTALLATION BOLTS EXTENDED 1/2" MINIMUM PAST NUT AND COAT WITH BOND BREAKER, AFTER CONCRETE HAS CURED, REMOVE INSTALLATION BOLTS, INSTALL HS BOLTS AND SHEET NEOPRENE.
 7. USE SIDEWALK DETAIL AT ALL SIDEWALK JOINTS. USE BARRIER DETAIL LOW SIDE AT BOTH SIDES IF THE ROADWAY IS CROWNED, OR IF THE DIFFERENCE IN ELEVATION BETWEEN THE ENDS OF THE SEAL IS 6 INCHES OR LESS.
 8. α_c IS THE THERMAL EXPANSION COEFFICIENT FOR STEEL.
 9. ANCHOR STUDS SHALL CONFORM TO ASTM A108.

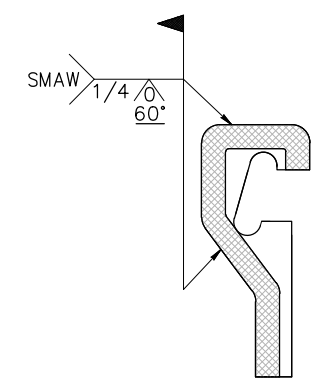


SECTION A-A
SCALE: 3" = 1'-0"

JOINT INFORMATION			"a" DIMENSIONS		
LOCATION	MOVEMENT RANGE (MR)	SKEW	WINTER	SPRING & FALL	SUMMER
ABUTMENT 1	3 1/2"	18°	3 5/8"	3 1/2"	2 3/4"
ABUTMENT 4	3"	0°	2 7/8"	3 3/2"	2 5/8"

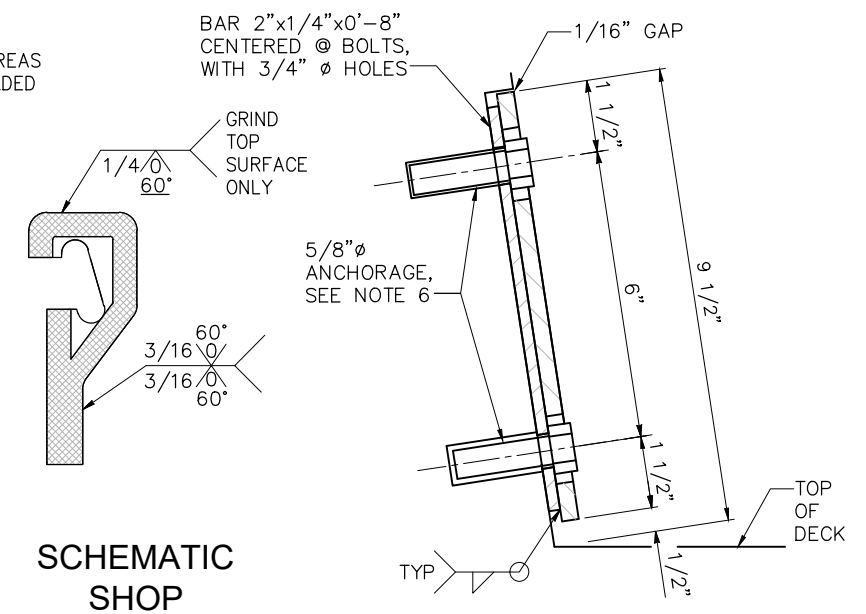


CURB DETAIL
SCALE: 3" = 1'-0"



SCHEMATIC FIELD WELD DETAIL
NO SCALE

NOTE: SHADED AREAS TO BE WELDED



SCHEMATIC SHOP WELD DETAIL
NO SCALE

SECTION B-B
SCALE: 6" = 1'-0"

* TO SET MINIMUM JOINT OPENING "W"

$$W = \begin{cases} 1 \frac{1}{2} + [(Max \text{ Str temperature in } ^\circ F) - (actual \text{ Str temperature in } ^\circ F)] * (\alpha_s) * (12) * (\text{contributory L in feet}) \\ 1 \frac{1}{2} \text{ Minimum} \\ \alpha_s = 0.0000065 \end{cases}$$

Plotted: Oct 07, 2021 - 1:47pm Layout: Layout1 touniep Design: 1700232-B37_STRIP_SEALS.dwg



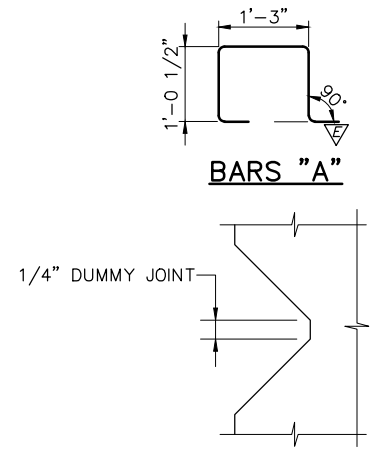
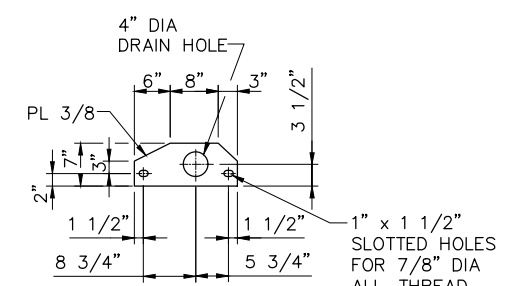
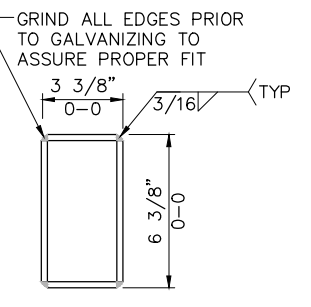
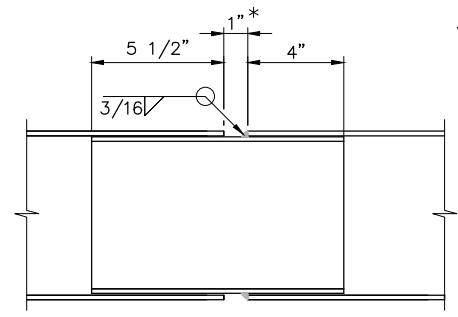
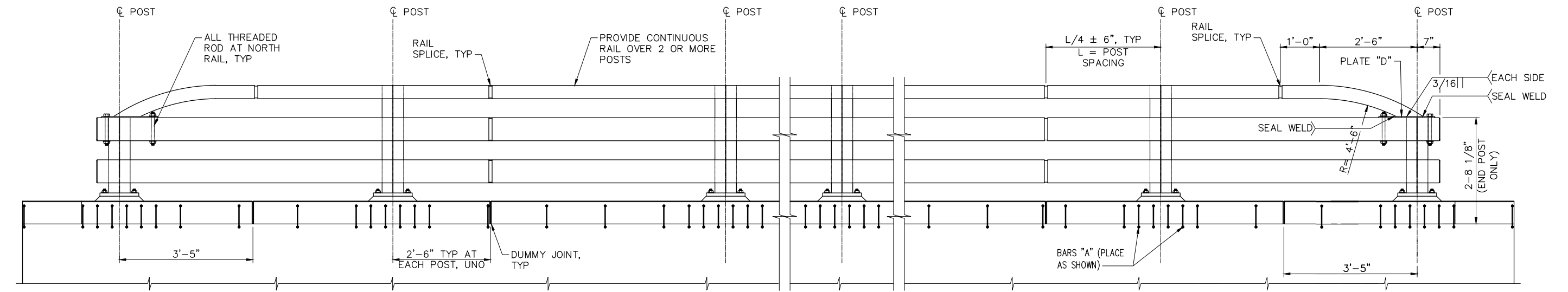
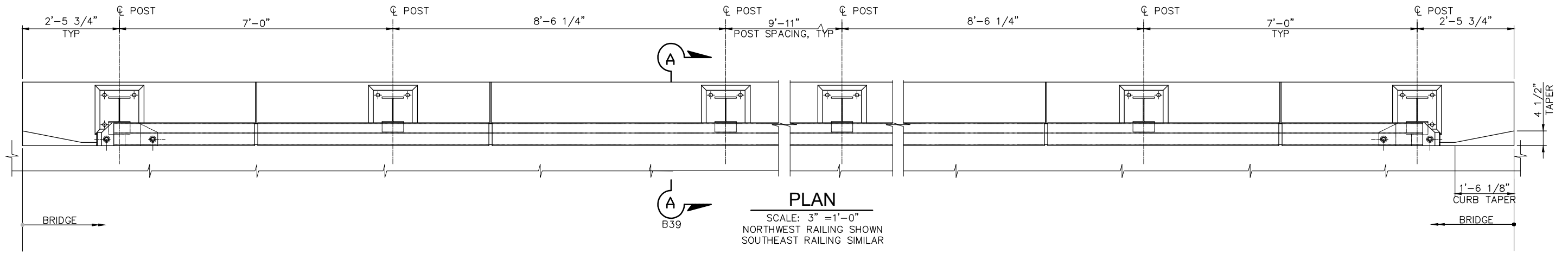
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NO.	DATE	BY	REVISION

SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

STRIP SEALS

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B37
SHEET NO.	50 OF 54



*** NOTE:**
1" GAP UNLESS NOTED OTHERWISE ON DETAIL PLANS. RAIL SPLICE SHALL BE ALIGNED WITH CURB EXPANSION JOINTS.

Plotted: Oct 12, 2021 - 4:35pm Layout: tauniep Layout: 1700232-B38_BARRIER1.dwg
V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B38_BARRIER1.dwg

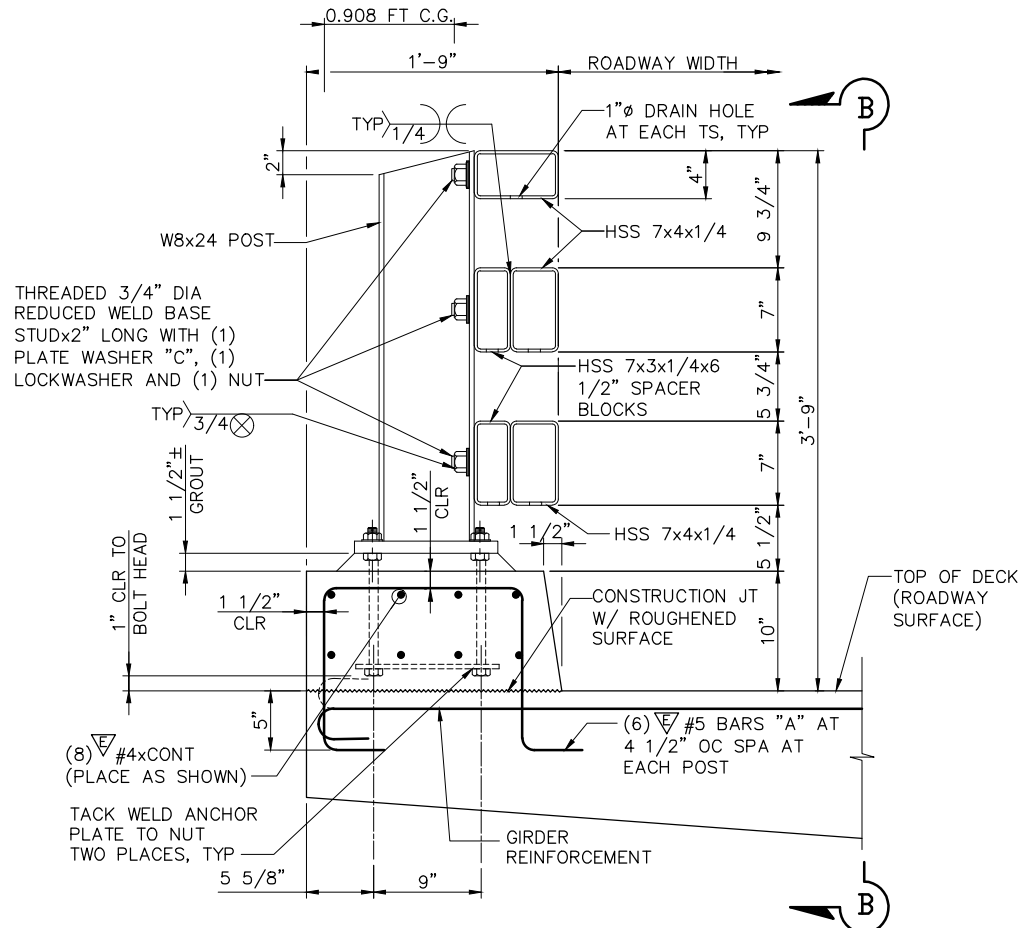


NO.	DATE	BY	REVISION

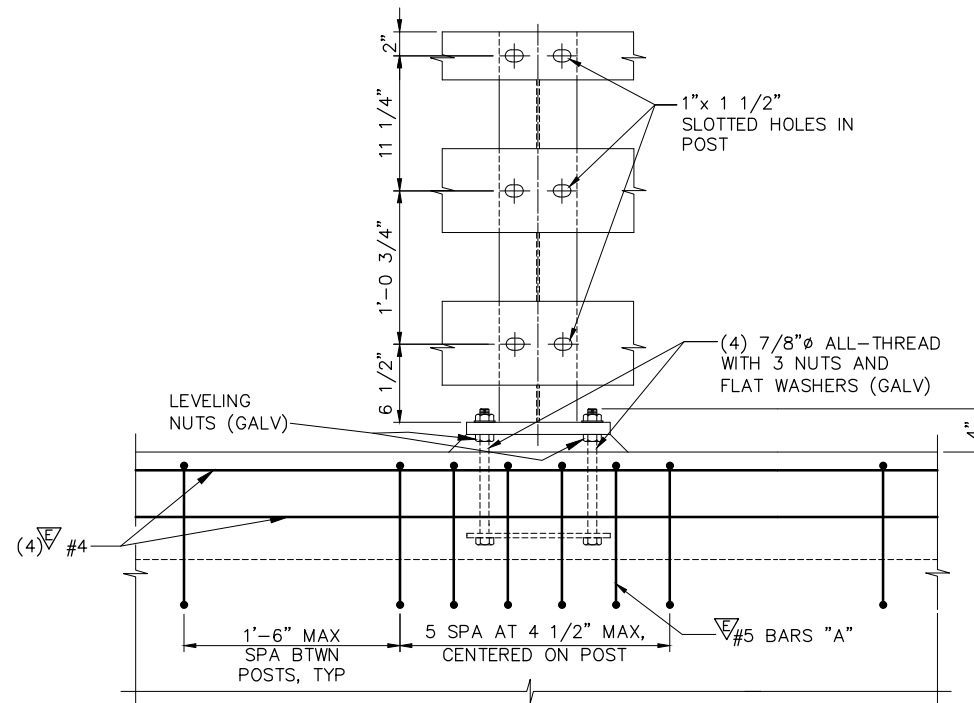
SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

BARRIER 1

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B38
SHEET NO.	51 OF 54



CURB AND POST DETAIL A-A
NTS
B38



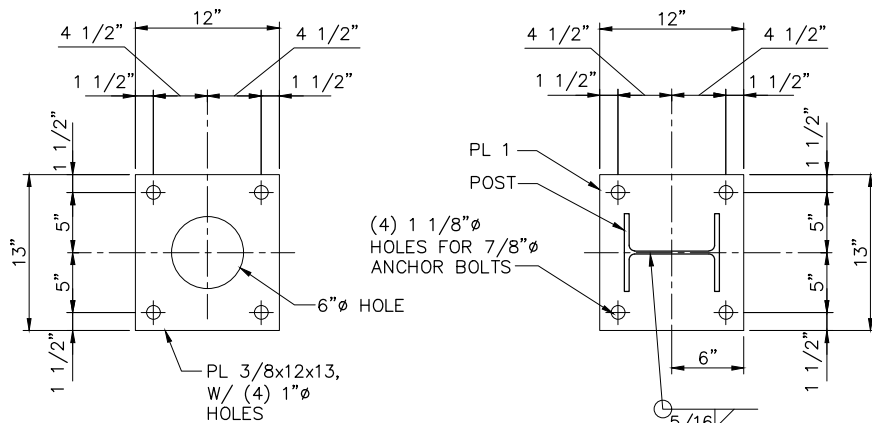
SECTION B-B
NTS

GENERAL NOTES:

1. ALL PLATES AND ROLLED SECTIONS SHALL BE STRUCTURAL LOW ALLOY STEEL AASHTO A874 OR A588 GRADE 50W.
2. NUTS, BOLTS, AND WASHERS SHALL CONFORM TO ASTM F3125 A325 BLACK WEATHER.
3. ANCHOR BOLTS SHALL BE ASTM A1554 GRADE 105.
4. FABRICATE RAILING TO THE HORIZONTAL AND VERTICAL ALIGNMENT OF THE STRUCTURE. INSTALL POSTS NORMAL TO GRADE.
5. PROVIDE RAIL SPLICE AS SHOWN ON BARRIER 1 SHEET.
6. HOT DIP GALVANIZE FASTENERS IN ACCORDANCE WITH AASHTO M111/M232 AFTER FABRICATION, EXCEPT AS NOTED.

DESIGN CAPACITIES

Pp(POST)= 41.2 KIPS
Mp (POST)= 62.7 KIP-FT
WGT.= 2.014 KIP/POST (INCLUDES 7" CURB)
CENTER OF GRAVITY= 0.908 FT



ANCHOR PLATE DETAILS
SCALE: 1 1/2" = 1'-0"

BASE PLATE DETAILS
SCALE: 1 1/2" = 1'-0"

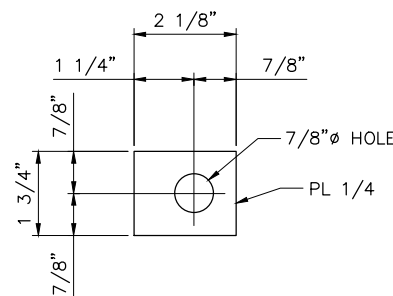
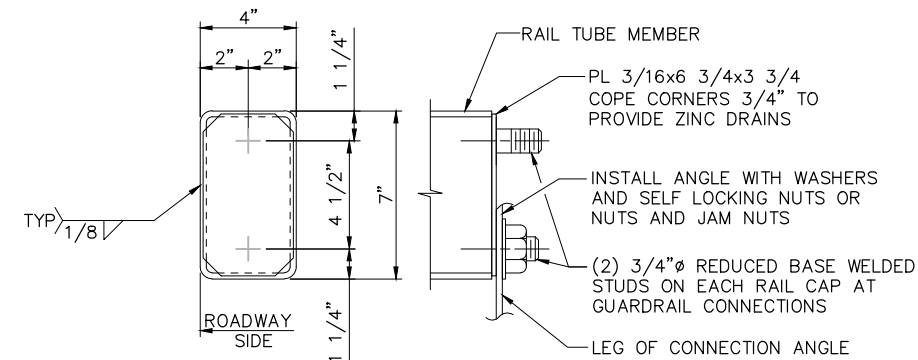


PLATE WASHER-'C'
SCALE: 6" = 1'-0"



RAIL CAP DETAILS
SCALE: 3" = 1'-0"

FIRST IMPROVEMENT PLAN SUBMITTAL - NOT FOR CONSTRUCTION

Plotted: Oct 12, 2021 - 4:39pm
V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B39_BARRIER2.dwg
tauniep Layout: Layout1



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NO.	DATE	BY	REVISION

SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

BARRIER 2

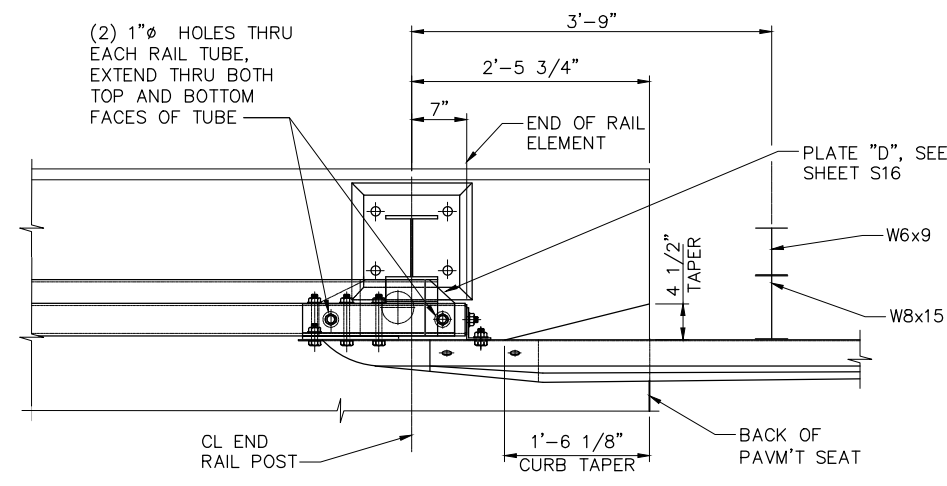
DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B39
SHEET NO.	52 OF 54

GENERAL NOTES:

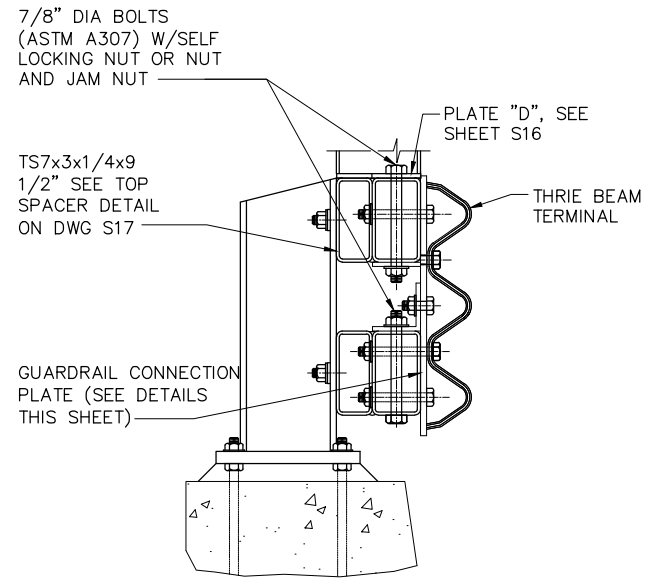
1. RAIL ELEMENTS FOR THE STRUCTURAL TUBING CONFORMING TO ASTM SPECIFICATION A500 GRADE B, A618 OR A501.
2. PROVIDE STEEL POSTS AND PLATES CONFORMING TO ASTM SPECIFICATION A36 UNLESS OTHERWISE NOTED.
3. ANCHOR BOLTS SHALL BE ASTM A1554 GRADE 105.
4. FABRICATE RAILING TO THE HORIZONTAL AND VERTICAL ALIGNMENT OF THE STRUCTURE. INSTALL POSTS NORMAL TO GRADE.
5. PROVIDE REINFORCING STEEL CONFORMING TO ASTM 706 OR AASHTO M31 (ASTM A615) GRADE 60.
6. PROVIDE RAIL SPLICE AS SHOWN ON BARRIER 1 SHEET.
7. HOT DIP GALVANIZED STRUCTURAL STEEL INCLUDING FASTENERS IN ACCORDANCE WITH AASHTO M111/M232 AFTER FABRICATION, EXCEPT AS NOTED.

DESIGN CAPACITIES

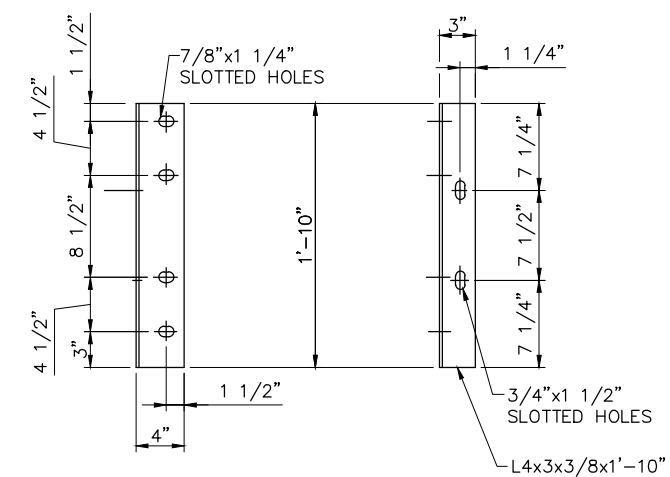
Pp(POST)= 41.2 KIPS
 Mp (POST)= 62.7 KIP-FT
 WGT.= 2.014 KIP/POST (INCLUDES 7" CURB)
 CENTER OF GRAVITY= 0.908 FT



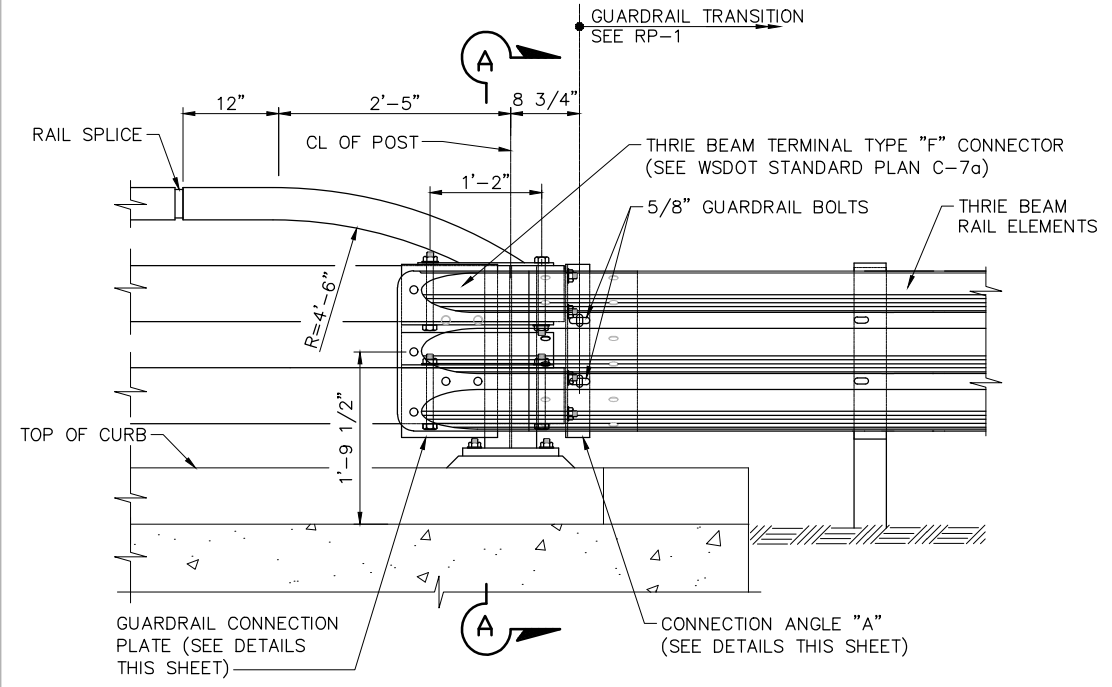
PLAN - TRANSITION CONNECTION
NTS



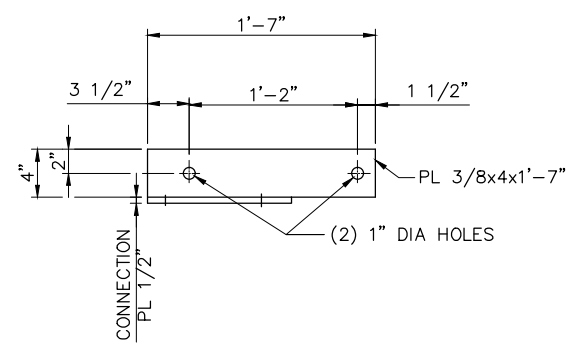
SECTION A-A
SCALE: 1 1/2" = 1'-0"



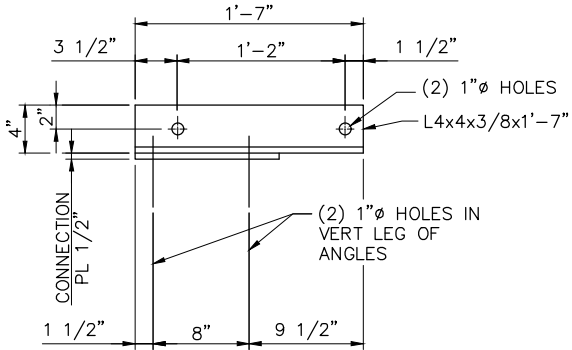
CONNECTION ANGLE "A"
SCALE: 1 1/2" = 1'-0"



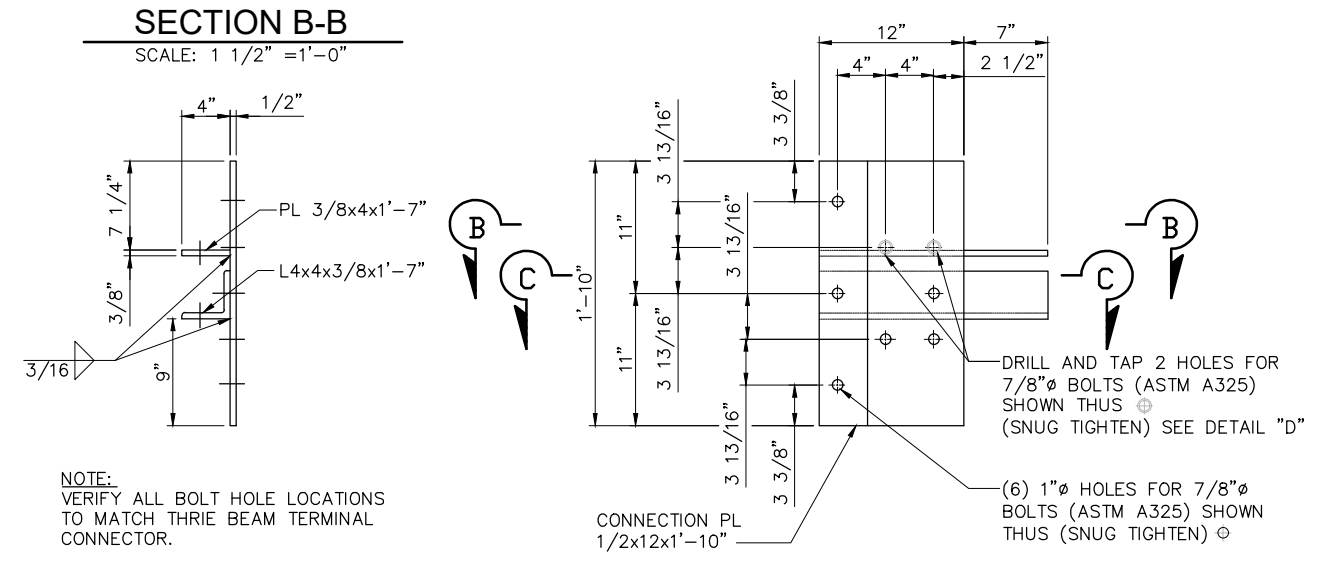
PLAN - TRANSITION CONNECTION
NTS



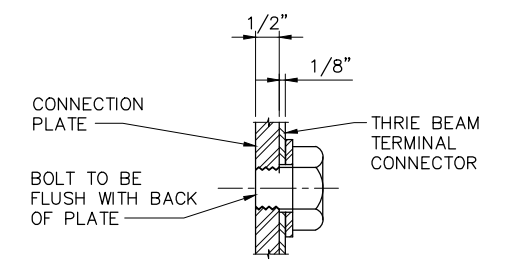
SECTION B-B
SCALE: 1 1/2" = 1'-0"



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



GUARDRAIL CONNECTION PLATE DETAILS
SCALE: 1 1/2" = 1'-0"



DETAIL "D"
NTS

NOTE:
VERIFY ALL BOLT HOLE LOCATIONS TO MATCH THRIE BEAM TERMINAL CONNECTOR.

NOTE:
VERIFY ALL BOLT HOLE LOCATIONS TO MATCH THRIE BEAM TERMINAL CONNECTOR.

DRILL AND TAP 2 HOLES FOR 7/8"Ø BOLTS (ASTM A325) SHOWN THUS ⊕ (SNUG TIGHTEN) SEE DETAIL "D"

(6) 1"Ø HOLES FOR 7/8"Ø BOLTS (ASTM A325) SHOWN THUS ⊙ (SNUG TIGHTEN)

Plotted: Oct 07, 2021 - 1:49pm
 Layout: Layout1
 Design: 1700232-B40_BARRIER3.dwg
 User: tauniep
 Message: (Santa Margarita Fish Passage)



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SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA

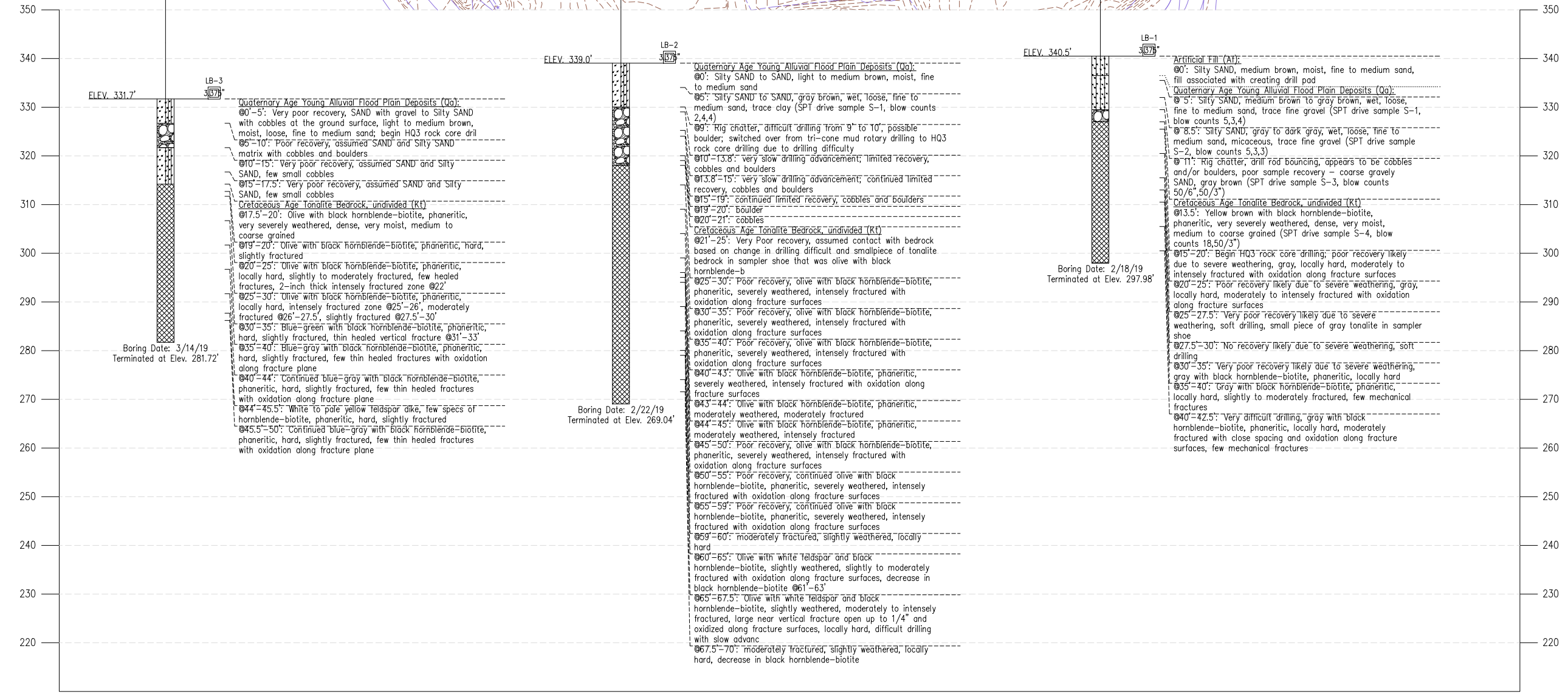
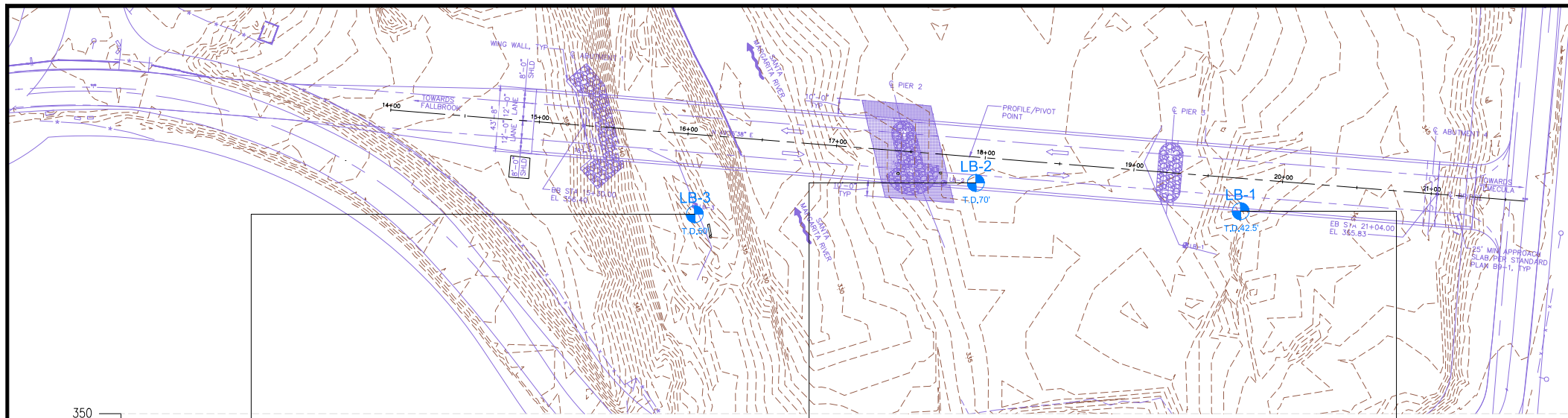
BARRIER 3

DRAWN: SQ	PROJECT NO.: 1009200118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B40
SHEET NO.	53 OF 54

LOG OF TEST BORING

Sandia Creek Drive Bridge Replacement Project
San Diego County, California

Proj: 12115.002	Eng/Geol: VPI/JMP
Scale: As Shown	Date: October 2020



Plotted: Oct 08, 2021 - 3:05pm tounlep Layout: Layout1
V:\1700232 (Santa Margarita Fish Passage)\Design\1700232-B41_LOG_OF_TEST_BORING.dwg



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NO.	DATE	BY	REVISION

**SANDIA CREEK ROAD BRIDGE REPLACEMENT
SAN DIEGO, CALIFORNIA**

LOG OF TEST BORING

DRAWN: SQ	PROJECT NO.: 10092000118
DESIGN: PKG	SCALE: AS SHOWN
CHECKED: AMS	DATE: 10/08/2021
DRAWING NO.	B41
SHEET NO.	54 OF 54

FIRST IMPROVEMENT PLAN SUBMITTAL - NOT FOR CONSTRUCTION