

GENERAL NOTES

Except as shown in the plans, structure excavation and backfill shall be in accordance with M-206-2, for Bridges.

Shoring may be required for excavation adjacent to the existing roadway and bridge. Temporary excavation support shall be paid for by Item 206 - Shoring.

Expansion joint material shall meet AASHTO Specification M213.

All concrete exposed to soil shall conform to Cementitious Materials Requirements Class 2, corresponding to sulfate exposure Class 2.

The final finish for all exposed concrete surfaces shall be a Class 2 final finish to one foot below the ground line.

Leveling pads are unlaminated bearings. They shall be cut or molded from AASHTO elastomer grade 3, 4, or 5 as described in Tables 705-1 and 705-2 with a durometer (Shore "A") hardness of 60.

The following structural steel shall be AASHTO M270 Grade 36 (ASTM A-36): diaphragms and expansion devices.

The following structural steel shall be AASHTO M270 Grade 50 (ASTM A-572): piling.

AASHTO M-222 (ASTM A-588) may be substituted for M270 Grade 50 (ASTM A-572) at no additional cost to the project.

Grade 60 reinforcing steel is required.

All reinforcing steel shall be epoxy coated unless otherwise noted.

Ⓝ denotes non coated reinforcing steel.

All the provisions for bridge deck concrete shall also apply to approach slab concrete.

The deck and girder designs assume the bridge deck can and shall be placed in a continuous, uninterrupted sequence between abutments. The bridge deck geometry and girder dead load deflections reflect this assumption.

An emergency deck construction joint may be located at the one quarter span point back from a pier or abutment with respect to the direction of the deck placement.

The following table gives the minimum lap splice length for epoxy coated reinforcing bars placed in accordance with subsection 602.06, unless noted otherwise. These splice lengths shall be increased by 25% for bars spaced at less than 6" on center or less than 2" of lateral cover.

Bar size	#4	#5	#6	#7	#8	#9	#10	#11
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Splice length for Class D Concrete	1'-10"	2'-3"	3'-4"	3'-11"	4'-5"	5'-6"	6'-10"	8'-2"
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When the Contractor elects to substitute epoxy coated reinforcement for black reinforcing bars, the minimum lap splice shall be as described above.

The following table gives the minimum lap splice length for black reinforcing bars placed in accordance with Subsection 602.06, unless noted otherwise. These splice lengths shall be increased by 25% for bars spaced at less than 6" on center or less than 2" of lateral cover.

Bar size	#4	#5	#6	#7	#8	#9	#10	#11
----------	----	----	----	----	----	----	-----	-----

Splice length for Class D Concrete	1'-6"	1'-11"	2'-3"	2'-7"	3'-0"	3'-8"	4'-7"	5'-5"
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The above splice lengths shall be increased by 20% for 3 bar bundles and 33% for 4 bar bundles.

The Contractor shall be responsible for the stability of the structure during construction.

Permanent precast concrete deck forms are not allowed.

- B.F. = Back Face
- Brg. = Bearing
- El. = Elevation
- HCL = Horizontal Control Line
- Typ. = Typical
- d_b = Bar Diameter

For structure number installation, see Standard S-614-12.

Stations, Elevations, and Dimensions contained in these plans are calculated from a recent field survey. The Contractor shall verify all dependent dimensions in the field before ordering or fabricating any material.

All longitudinal and transverse dimensions are measured horizontally and include no correction for grade.

The information shown on these plans concerning the type and location of underground utilities is not guaranteed to be accurate or all inclusive. The Contractor is responsible for making his own determination as to the type and location of underground utilities as may be necessary to avoid damage thereto. The Contractor shall contact the Utility Notification Center of Colorado at 811 (1-800-922-1987) at least 3 days (2 days not including the day of notification) prior to any excavation or other earthwork.

DESIGN DATA

AASHTO, Seventh Edition LRFD with current interims

Design Method: Load and Resistance Factor Design

Live Load: HL-93 (design truck or tandem, and design lane load, Colorado Permit Vehicle)

Dead Load: Assumes 36 lbs. per sq. ft. for bridge deck overlay
Assumes 5 lbs. per sq. ft. for utility loads
Assumes 5 lbs. per sq. ft. for permanent deck forms

Reinforced Concrete:
Class D Concrete: f'c = 4,500 psi
Reinforcing Steel: fy = 60,000 psi

Caisson Concrete:
Class BZ Concrete: f'c = 4,000 psi
Reinforcing Steel: fy = 60,000 psi

Precast prestressed Concrete:
Class PS Concrete f'c = (see details)
f's = 270,000 psi

SEISMIC DESIGN CRITERIA

Earthquake Design method: Forced Based (General Procedure per AASHTO 3.10.2.1)

Latitude = 38.312682°
Longitude = -104.652254°

AASHTO Spectrum for 7% PE in 75 years (1000yr Return Period)

Period (sec)	Sa (g)
0.0	0.052 PGA - Site Class B
0.2	0.114 Ss - Site Class B
1.0	0.036 S1 - Site Class B

Spectral Response Accelerations:
As = Fpga*PGA, SDs = Fa*Ss, and SD1 = Fv*S1

Fpga = 1.6, Fa = 1.6, Fv = 2.4	
Period (sec)	Sa (g)
0.0	0.083 As - Site Class D
0.2	0.182 SDs - Site Class D
1.0	0.086 SD1 - Site Class D

Operational Class:

Seismic Zone or Seismic Design Category: Zone= 1 or Category= A

Response Modification Factors:
R-Factor: 1.5 (Substructure type), R-Factor: 1.0 (Connections)

INDEX OF DRAWINGS

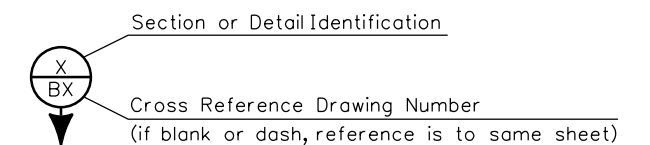
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BRIDGE DESCRIPTION

3-Span (55'-0"/73'-6"/55'-0") Bridge
Composite Concrete Slab
& Precast/Prestressed Concrete I Girder (BT42)
WB US 50 West over Wild Horse Dry Creek
60'-0" Roadway Curb to Curb
60°00'00" Skew
Bridge Rail Type 10



**Know what's below.
Call before you dig.**



Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	06/16	Checked By	06/16	Checked By	07/16
Checked By	JVL	Checked By	JVL	Checked By	KJS

Print Date: 1/19/2017			As Constructed No Revisions: Revised: Void:	US 50 WEST WESTBOUND OVER WILD HORSE DRY CREEK GENERAL INFORMATION		Project No./Code STA 0503-085
File Name: 20344BRDG_GenNotes.dgn						
Horiz. Scale: 1:1 Vert. Scale: As Noted Staff Bridge Branch - Unit 0226 Unit Leader: DDG				902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702	Region 2 DTD	Sheet Subset: Bridge Near: Pueblo, CO.

FELSBURG HOLT & ULLEVIG
6300 South Syracuse Way Suite 600
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06/16	SCR	06/16	CDM	07/16	SCR
07/16	CAO	07/16	SCR	07/16	KJS
Checked By	Checked By	Checked By	Checked By	Checked By	Checked By

ITEM NO.	DESCRIPTION	UNIT	SUPERSTRUCTURE	ABUTMENT 1	PIER 2	PIER 3	ABUTMENT 4	APPRDACH SLABS (2)	TOTALS
① 202-00400	REMOVAL OF BRIDGE	EA							1
206-00000	STRUCTURE EXCAVATION	CY		205	105	136	135		581
206-00100	STRUCTURE BACKFILL (CLASS 1)	CY		414			399		813
206-00360	MECHANICAL REINFORCEMENT OF SOIL	CY		373			356		729
206-01781	SHORING (AREA 1)	LS							1
206-01782	SHORING (AREA 2)	LS							1
208-00400	WATER CDNTRDL	LS							0.5
② 210-02900	RELAY RIPRAP	CY		332			347		679
211-03005	DEWATERING	LS							0.5
403-34871	HDT MIX ASPHALT (GRADING SX) (100) (PG 76-28)	TON	201					44	245
420-00102	GEOTEXTILE (EROSION CONTROL) (CLASS 1)	SY		1,246	302	302	1,060		2,910
502-11274	STEEL PILING (HP 12x74)	LF		301			280		581
503-00048	DRILLED CAISSON (48 INCH)	LF			125	125			250
506-00218	RIPRAP (18 INCH)	CY		1,063	280	280	703		2,326
515-00120	WATERPROOFING (MEMBRANE)	SY	1,238					274	1,512
518-01004	BRIDGE EXPANSION DEVICE (0-4 INCH)	LF						152	152
601-03040	CONCRETE CLASS D (BRIDGE)	CY	480	47	74	74	47	128	850
602-00000	REINFORCING STEEL	LB		210	12,425	12,340	210		25,185
602-00020	REINFORCING STEEL (EPOXY COATED)	LB	108,515	7,590	180	180	7,585	19,615	143,665
603-50015	15 INCH PLASTIC PIPE	LF						68	68
606-11000	BRIDGE RAIL TYPE 10	LF	372					95	467
613-00200	2 INCH ELECTRICAL CONDUIT	LF	372					110	482
618-00142	PRESTRESSED CONCRETE I (BT42)	LF	1,270						1,270

① Removal of Bridge shall include existing Str. No. K-18-AC to be removed a minimum of 2' below Finished Grade.

② Relay Riprap assumes 75% usable material of existing Riprap (18 Inch). Existing material is assumed to be Riprap (18 Inch) at least two layers (3.0') thick and measured from limits provided from EB Bridge Widening Plans.

Print Date: 1/19/2017	
File Name: 20344BRDG_SAQ.dgn	
Horiz. Scale: 1:1 Vert. Scale: As Noted	
Staff Bridge Branch - Unit 0226 Unit Leader: DDG	

Sheet Revisions		
Date:	Comments	Init.

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Region 2

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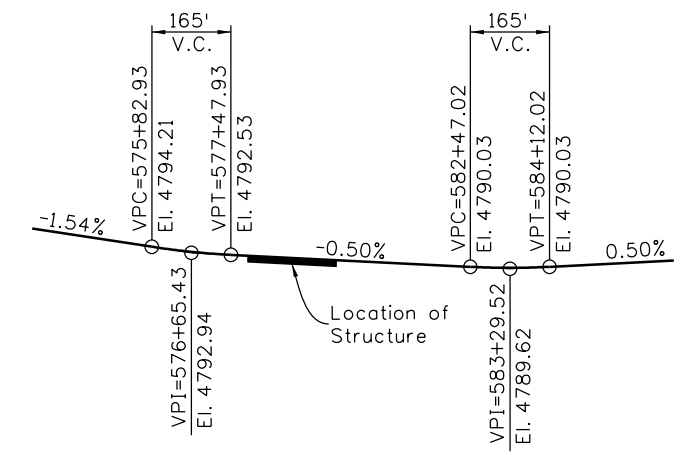
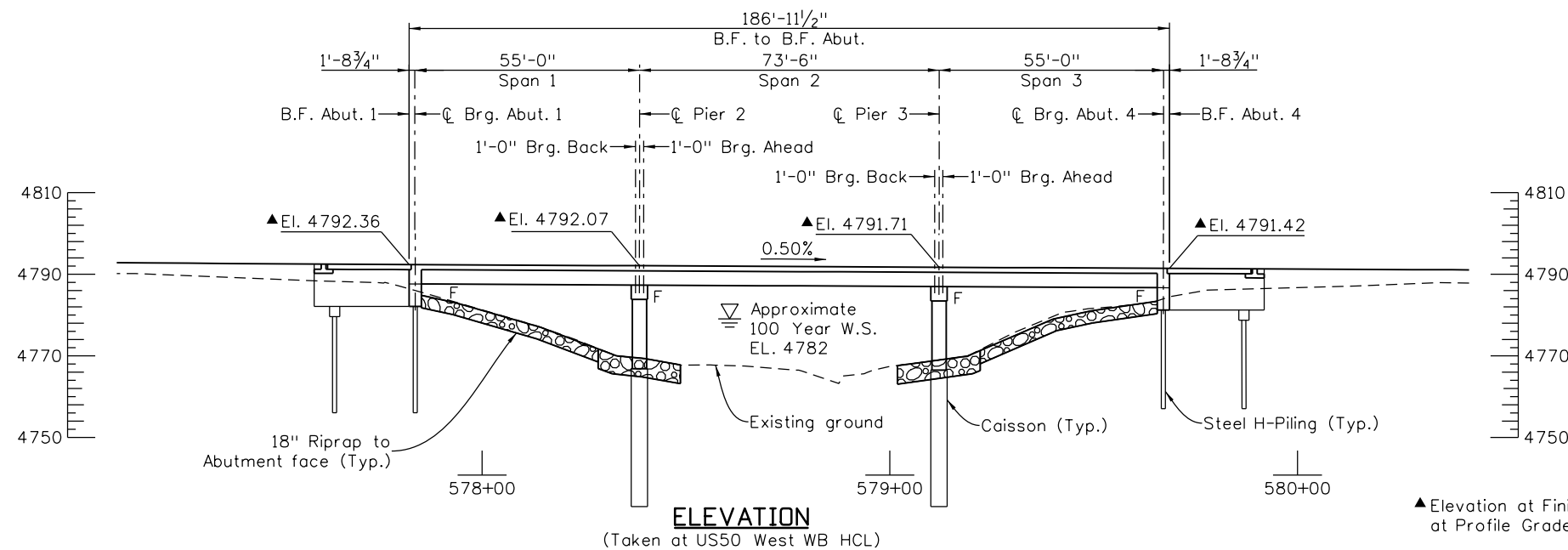
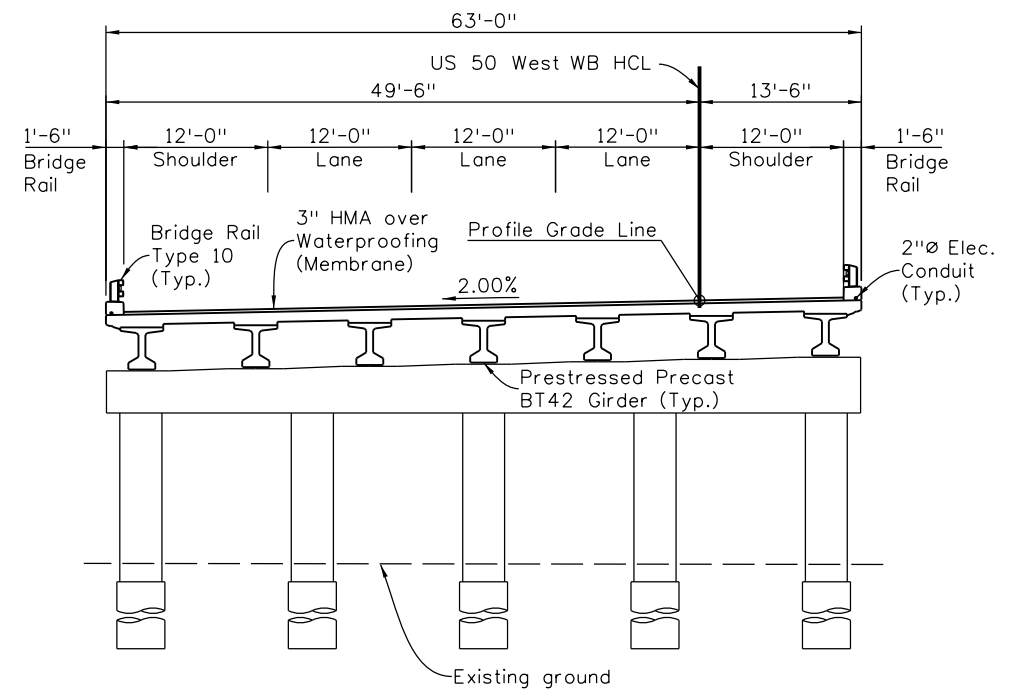
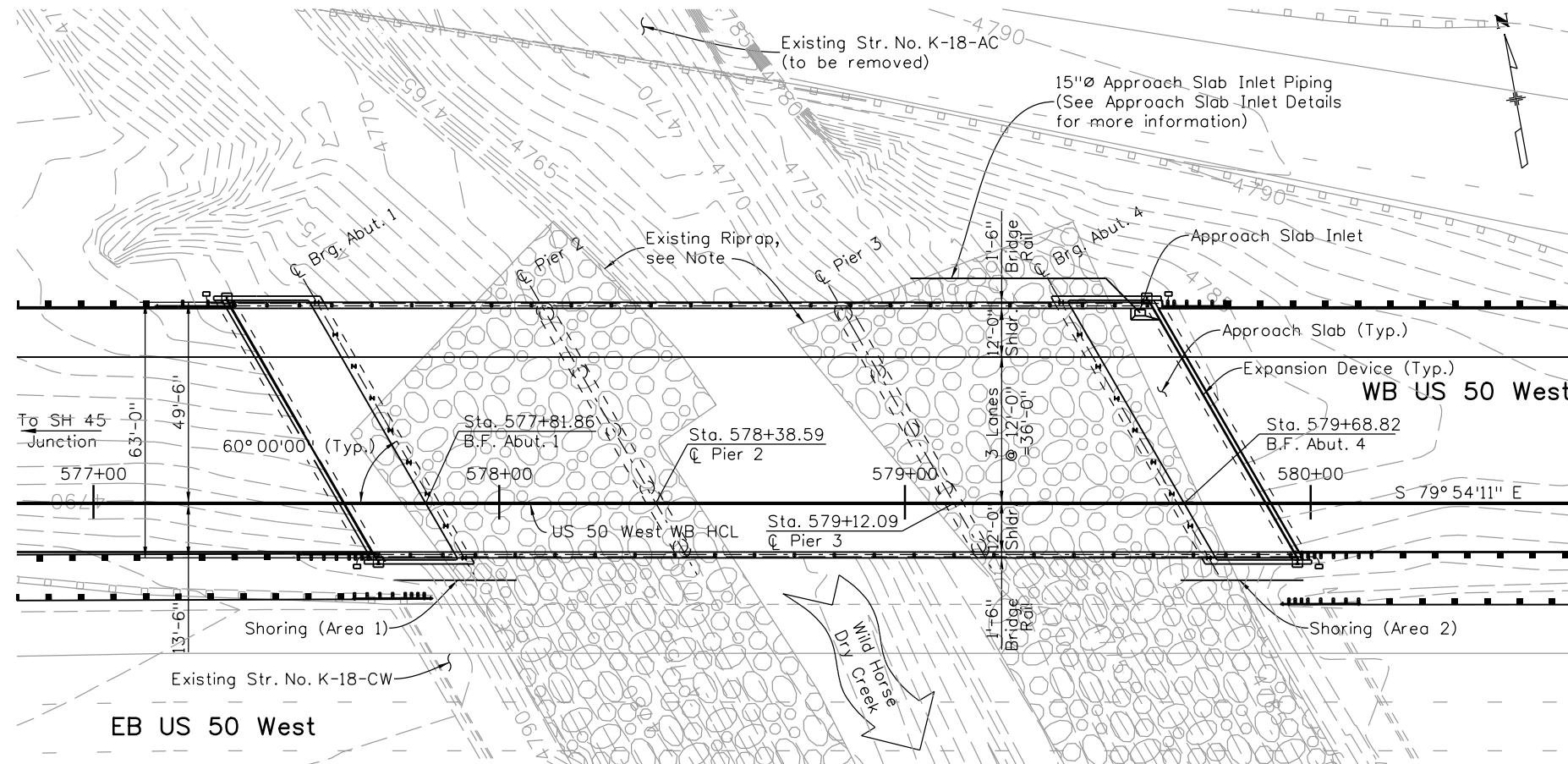
US 50 WEST WESTBOUND OVER WILD HORSE DRY CREEK SUMMARY OF QUANTITIES			
Designer:	S. Redd	Structure Numbers	K-18-DA
Detailer:	K. Soellner	Sheet Subset:	Bridge
		Subset Sheets:	B2 of 31

Project No./Code
STA 0503-085
20344
Sheet Number 105

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Design		Detail		Quantities	
DATE	INITIAL	DATE	INITIAL	DATE	INITIAL
06/16	SCR	06/16	CDM	06/16	SCR
07/16	CAD	07/16	SCR	07/16	KJS
Checked By	Checked By	Checked By	Checked By	Checked By	Checked By



NOTE:

Riprap shown in plan is from EB Bridge construction, to be modified as needed for final design. See Hydraulic Information Sheet for final riprap layout.

Print Date: 1/19/2017

File Name: 20344BRDG_GenLayout.dgn

Horiz. Scale: 1:40

Vert. Scale: As Noted

Staff Bridge Branch - Unit 0226

Unit Leader: DDG



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Region 2

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DTD

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Revised:

Void:

**US 50 WEST WESTBOUND
OVER WILD HORSE DRY CREEK
GENERAL LAYOUT**

Designer:	S. Redd	Structure Numbers	K-18-DA
Detailer:	K. Soellner	Subset Sheets:	B3 of 31

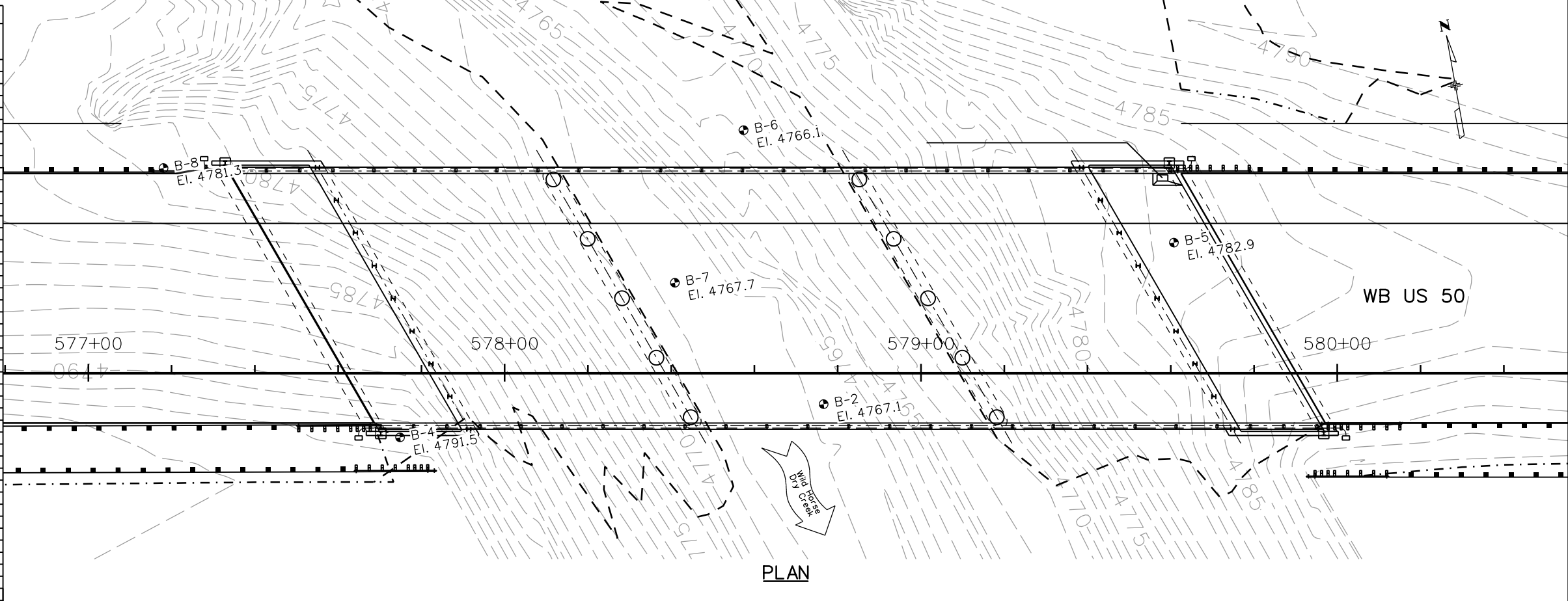
Project No./Code

STA 0503-085

20344

Sheet Number 106

SUMMARY OF TEST RESULTS										
Sample ID	Depth (ft)	Liquid Limit	Plasticity Index	% < #200 Sieve	Classification		Water Content (%)	Dry Density (%)	Sulfate (%)	
					USCS	AASHTO				
B-2	0-4	26	9	51	CL	A-4 (2)	11.2	125.9		
B-2	4						12.1			
B-2	9									
B-2	9.5	24	8	22	SC	A-2-4 (0)				
B-2	14						12.6			
B-2	19						9.4			
B-2	24						10.6			
B-4	0-15									
B-4	4						10.7	124.0		
B-4	9	30	16	54	CL	A-6 (5)	11.2	128.5		
B-4	14			47			11.3	125.9		
B-4	19	35	20	94	CL	A-6 (18)	18.2	110.8	1.74	
B-4	24						20.6	107.4		
B-4	29			25			13.9			
B-4	34						10.3			
B-4	39						15.8			
B-4	44						10.9			
B-4	49						5.0			
B-5	4						9.3	131.0		
B-5	9	30	17	72	CL	A-6 (10)	13.4	120.1	2.07	
B-5	14	32	17	80	CL	A-6 (12)	17.7	112.5		
B-5	19						21.8			
B-5	24						8.7			
B-5	29						6.4			
B-5	34						10.2			
B-5	44						1.9			
B-6	0-4	29	15	60	CL	A-6 (6)	12.5	125.9		
B-6	4						7.2			
B-6	14						9.3			
B-6	19						13.8			
B-6	24						5.7			
B-6	29						9.3	128.9		
B-7	4						8.4	128.9		
B-7	9						6.5			
B-7	14						15.2			
B-7	19						14.2			
B-7	24	24	10	47	SC	A-4 (1)			0.44	
B-7	29						13.4	115.8		
B-8	4						11.7	114.6	1.26	
B-8	9	23	8	63	CL	A-4 (2)				
B-8	14	27	12	56	CL	A-6 (4)				
B-8	29						15.2		0.39	
B-8	34	25	9	41	SC	A-4 (0)				
B-8	39						9.2			



LEGEND

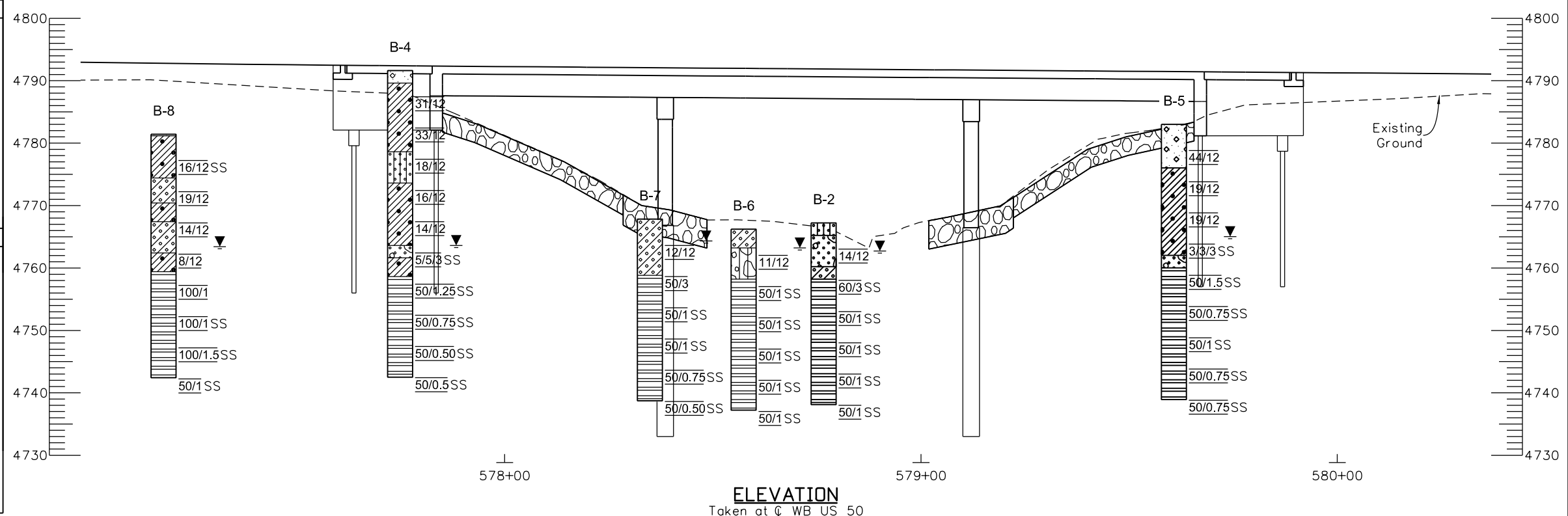
TEST BORING

- Ground Water Level At Time of Drilling
- 9 Blows for 12 Inches
- 50 Blows for 3 Inches
- Split Spoon Sampler Required 8 Blows for 6 Inches Required 6 Blows for 6 Inches Required 7 Blows for 6 Inches

TYPE OF MATERIAL

- Asphalt Pavement
- Fill - CLAY
- Fill - SAND
- TOPSOIL
- Native - SAND, gravelly
- Native - CLAY
- Native - CLAY, sandy
- Bedrock - CLAYSTONE
- Bedrock - SHALE
- Fill - Aggregate Base Course
- Fill - SAND
- Fill - CLAY
- Native - SAND, silty
- Native - SAND, clayey
- Native - CLAY, gravelly
- Native - GRAVEL, silty
- Bedrock - SANDSTONE

SEE INDIVIDUAL LOG SHEETS FOR ADDITIONAL DESCRIPTION OF MATERIAL ENCOUNTERED

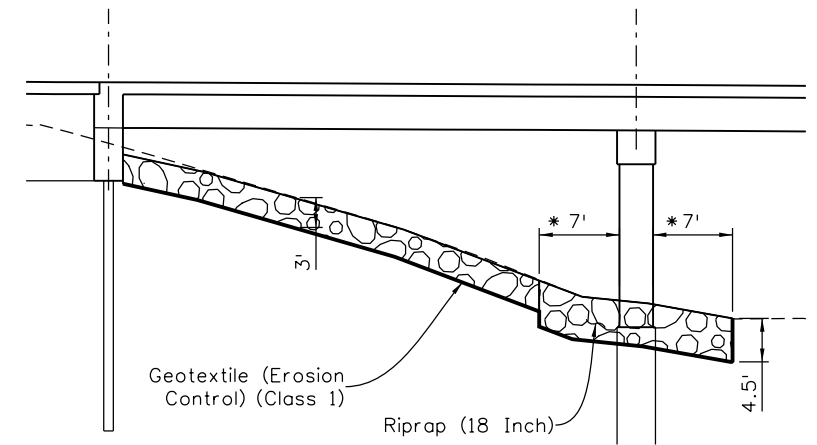
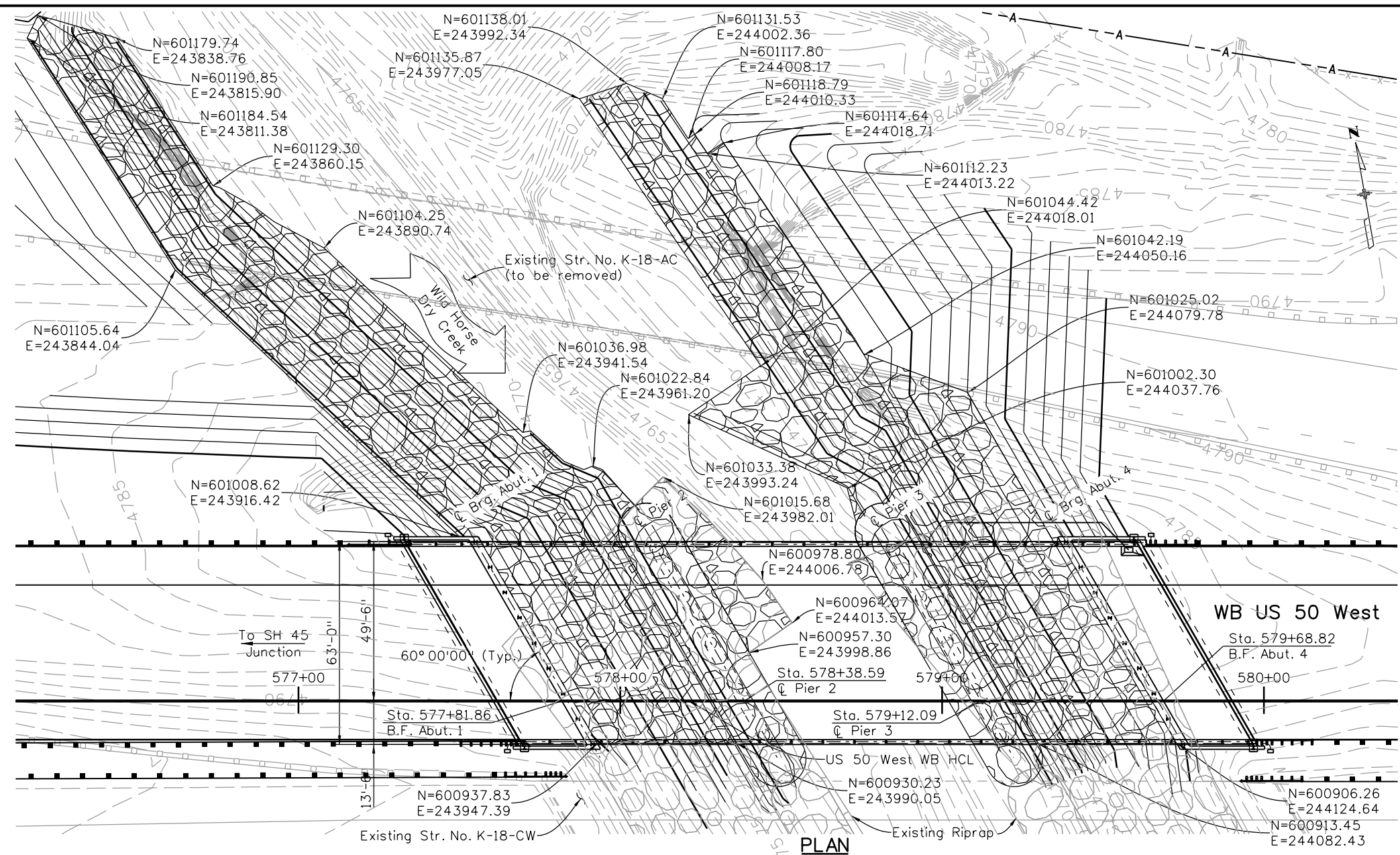


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Sheet Revisions Date: Comments Init.		Colorado Department of Transportation 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2		As Constructed No Revisions: Revised: Void:	
US 50 WEST WESTBOUND OVER WILD HORSE DRY CREEK ENGINEERING GEOLOGY		Project No./Code STA 0503-085 20344 Sheet Number 107		Designer: D. Hunt Detailer: D. Knight Sheet Subset: Bridge Structure Numbers: K-18-DA Subset Sheets: B4 of 31	

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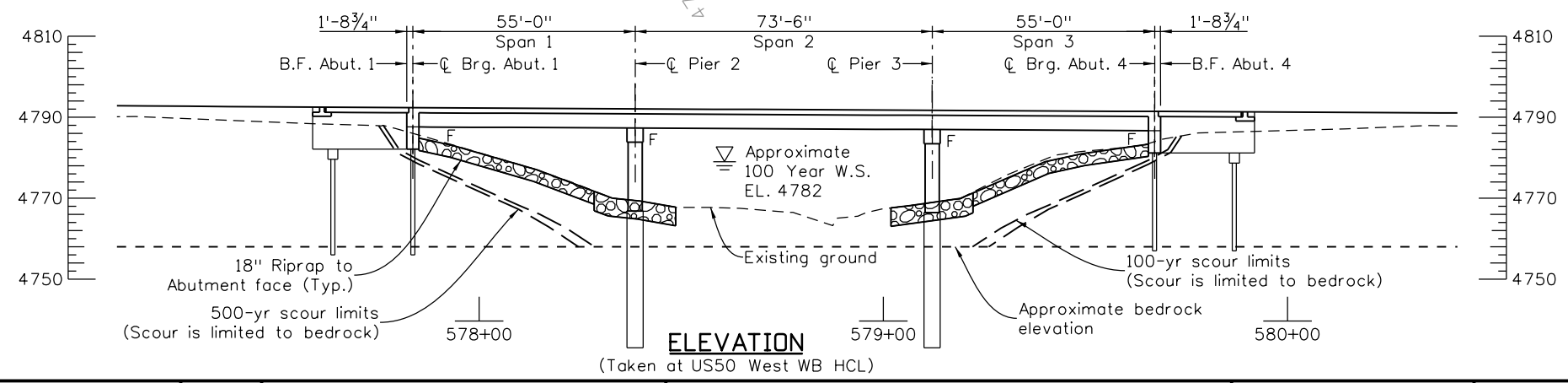
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DATE	INITIAL	DATE	INITIAL	DATE	INITIAL
06/16	SCR	06/16	CDM	06/16	SCR
07/16	CAD	07/16	Checked By	07/16	KJS
	Checked By		Checked By		Checked By



ABUTMENT AND PIER RIPRAP SECTION (TYP.)
* (Measured perpendicular to pier)

For Information Only

I.D.	Riprap (18") (CY)	Geotextile (Erosion Control) (Class 1) (SY)	Relay Riprap (CY)
Abut. 1	1063	1246	332
Pier 2	280	302	-
Pier 3	280	302	-
Abut. 4	703	1060	347



Print Date: 1/19/2017	Sheet Revisions			Colorado Department of Transportation 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2	As Constructed No Revisions: Revised: Void:	US 50 WEST WESTBOUND OVER WILD HORSE DRY CREEK HYDRAULIC INFORMATION (1 OF 2)			Project No./Code STA 0503-085
File Name: 20344BRDG_Hydraulics01.dgn	Date:	Comments:	Init.			Designer: M. Love Detailer: K. Soellner Sheet Subset: Bridge	Structure Numbers: K-18-DA Subset Sheets: B5 of 31	20344 Sheet Number 108	
Horiz. Scale: 1:40 Staff Bridge Branch - Unit 0226 	Vert. Scale: As Noted Unit Leader: DDG				CDOT Region 2 DTD				

100-YEAR RECURRENCE INTERVAL

FLOW UPSTREAM OF BRIDGE = 11,500 cfs
 DRAINAGE AREA = 55 SQ. MI.

CHANNEL DESCRIPTION

BOTTOM MATERIAL: COHESIVE NONCOHESIVE
 BOTTOM MAT. SIZE: CLAY SILT SAND GRAVEL COBBLES OTHERS _____
 STREAM FORM: STRAIGHT MEANDERING BRAIDED
 MANNING'S "n" FOR DESIGN: CHANNEL 0.069 OVERBANK 0.04
 DEBRIS: BRUSH TREES ICE OTHER _____

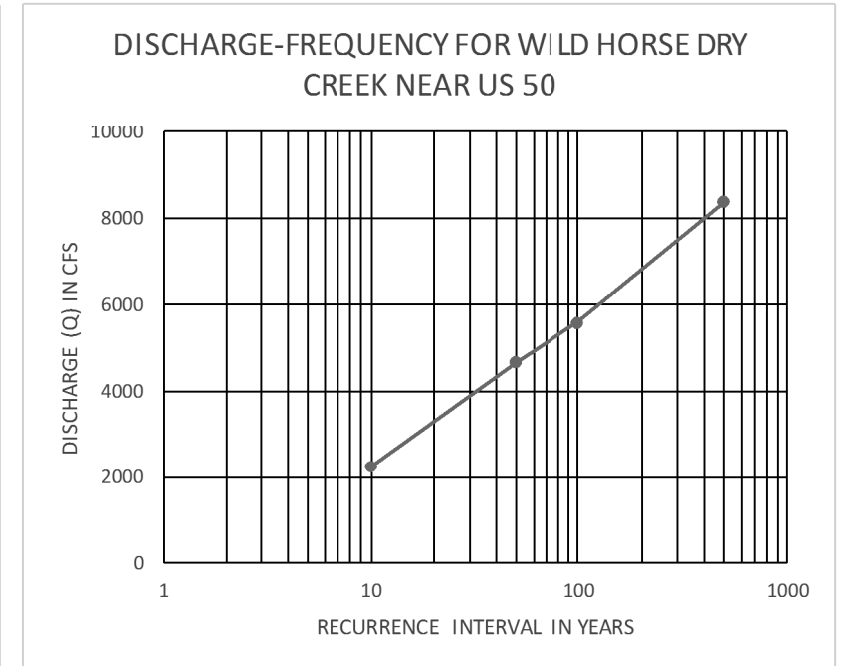
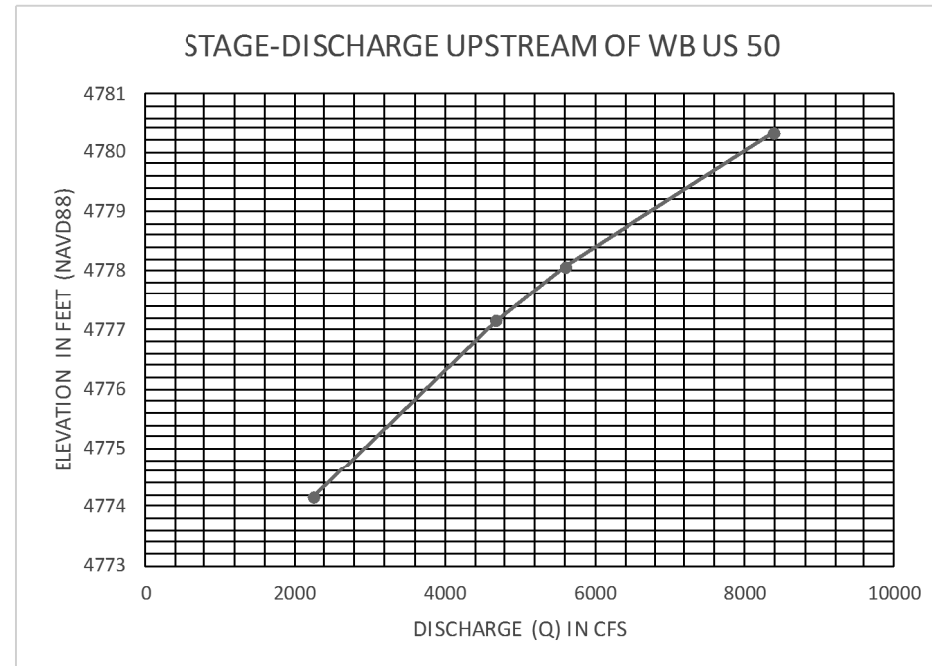
COMPARISON HYDRAULICS (100 YEAR EVENT)

AT SECTION 1639.716 LOCATED 56 FT UPSTREAM OF PROPOSED US50 BRIDGE

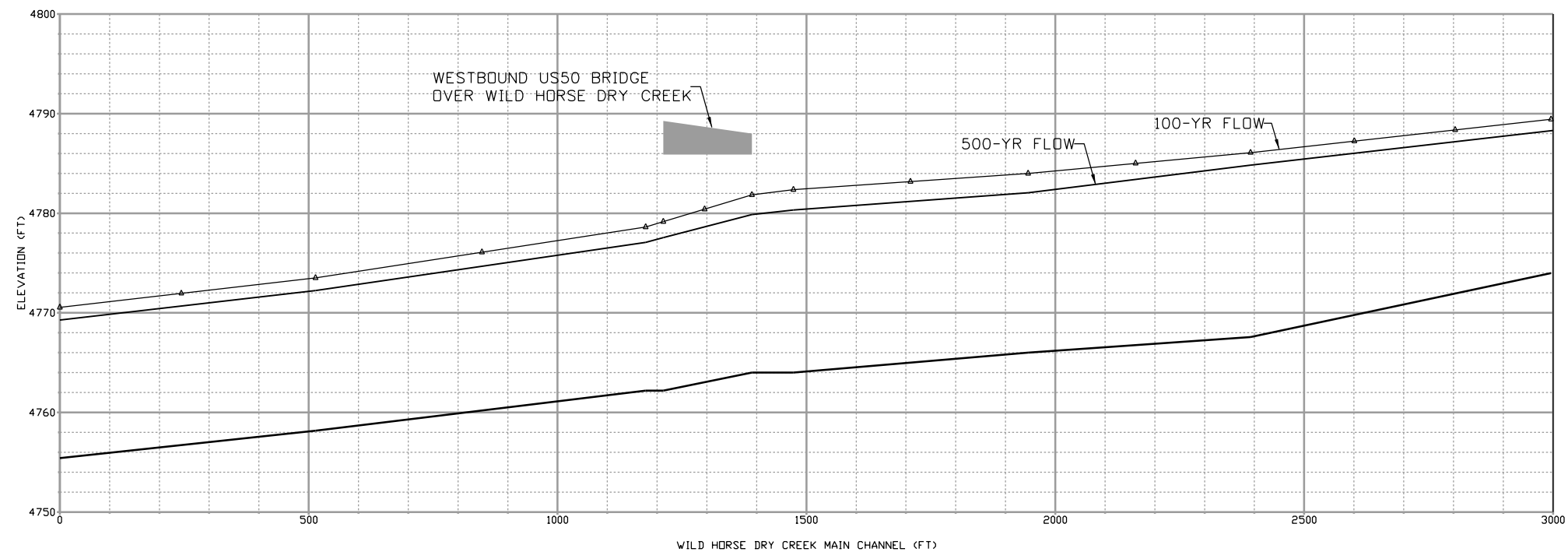
	VELOCITY (fps)		WS EL. (ft.)	MAX BACKWATER (ft.)	FROUDE NO.
	AVERAGE	CHANNEL			
EXISTING CONDITIONS	4.68	4.68	4783.27		0.23
PROPOSED CONDITIONS	5.70	5.70	4782.36	-0.91	0.32

HYDRAULIC DATA

LOCATION	LOW CHORD ELEVATION AT ABUT. FRONT FACE		100-YEAR WATER SURFACE ELEVATION
	ABUT. 1	ABUT. 4	
US50 BRIDGE, N. SIDE (DOWNSTREAM)	4787.77	4786.86	4779.16
US50 BRIDGE, S. SIDE (UPSTREAM)	4786.80	4785.89	4781.85



WILD HORSE DRY CREEK MAIN CHANNEL PROFILE



Design: Initial Date 06/16 07/16 07/16 08/16
 Checked By CAD SCR
 Quantities: Initial Date 06/16 07/16 07/16 08/16
 Checked By KJS
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Print Date: 1/19/2017
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 Staff Bridge Branch - Unit 0226 Unit Leader: DDG

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 Region 2 DTD

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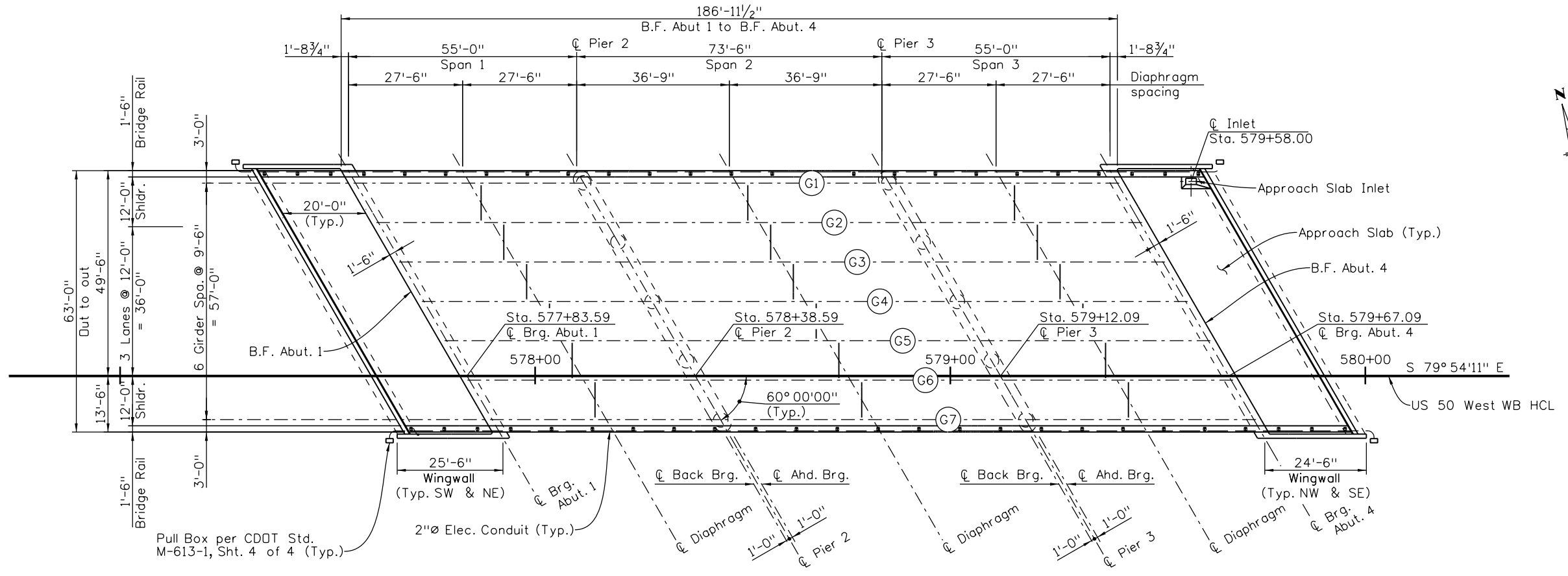
US 50 WEST WESTBOUND OVER WILD HORSE DRY CREEK HYDRAULIC INFORMATION (2 OF 2)

Designer: M. Love
 Detailer: K. Soellner
 Sheet Subset: Bridge

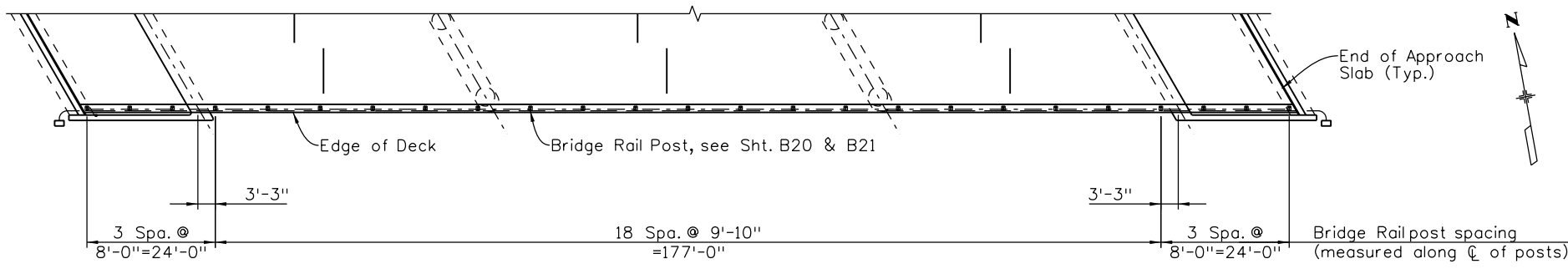
Structure Numbers: K-18-DA
 Subset Sheets: B6 of 31

Project No./Code

STA 0503-085
 20344
 Sheet Number 109



CONSTRUCTION LAYOUT



BRIDGE RAIL POST SPACING
(Shown at South Rail, North Rail Similar)

NOTES:

- Pull Boxes will not be paid for separately, but shall be included in the cost of Item 613 - 2 Inch Electrical Conduit.

Design		Detail		Quantities	
DATE	INITIAL	DATE	INITIAL	DATE	INITIAL
06/16	SCR	06/16	SCR	07/16	SCR
07/16	CAO	07/16	CAO	07/16	KJS

Print Date: 1/19/2017
File Name: 20344BRDG_ConstLayout.dgn
Horiz. Scale: 1:30 Vert. Scale: As Noted
Staff Bridge Branch - Unit 0226 Unit Leader: DDG
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Sheet Revisions		
Date:	Comments	Init.

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Region 2 **DTD**

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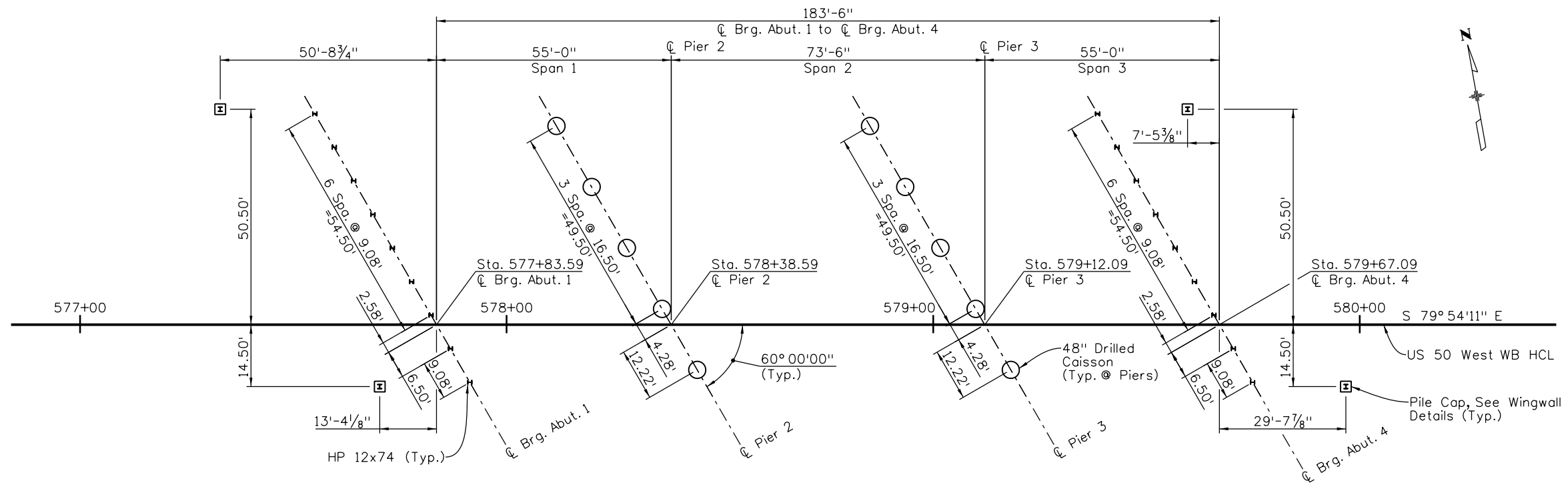
US 50 WEST WESTBOUND OVER WILD HORSE DRY CREEK CONSTRUCTION LAYOUT			
Designer:	S. Redd	Structure Numbers:	K-18-DA
Detailer:	K. Soellner	Subset Sheets:	B7 of 31
Sheet Subset:	Bridge		

Project No./Code
STA 0503-085
20344
Sheet Number 110

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Checked By CAD	07/16	Checked By	07/16	Checked By KJS	08/16



FOUNDATION LAYOUT

Print Date: 1/19/2017
File Name: 20344BRDG_FoundLayout.dgn
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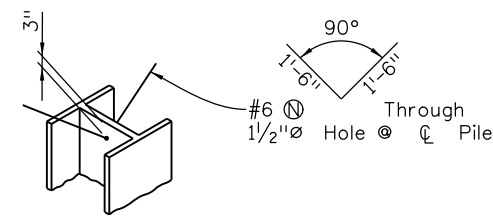
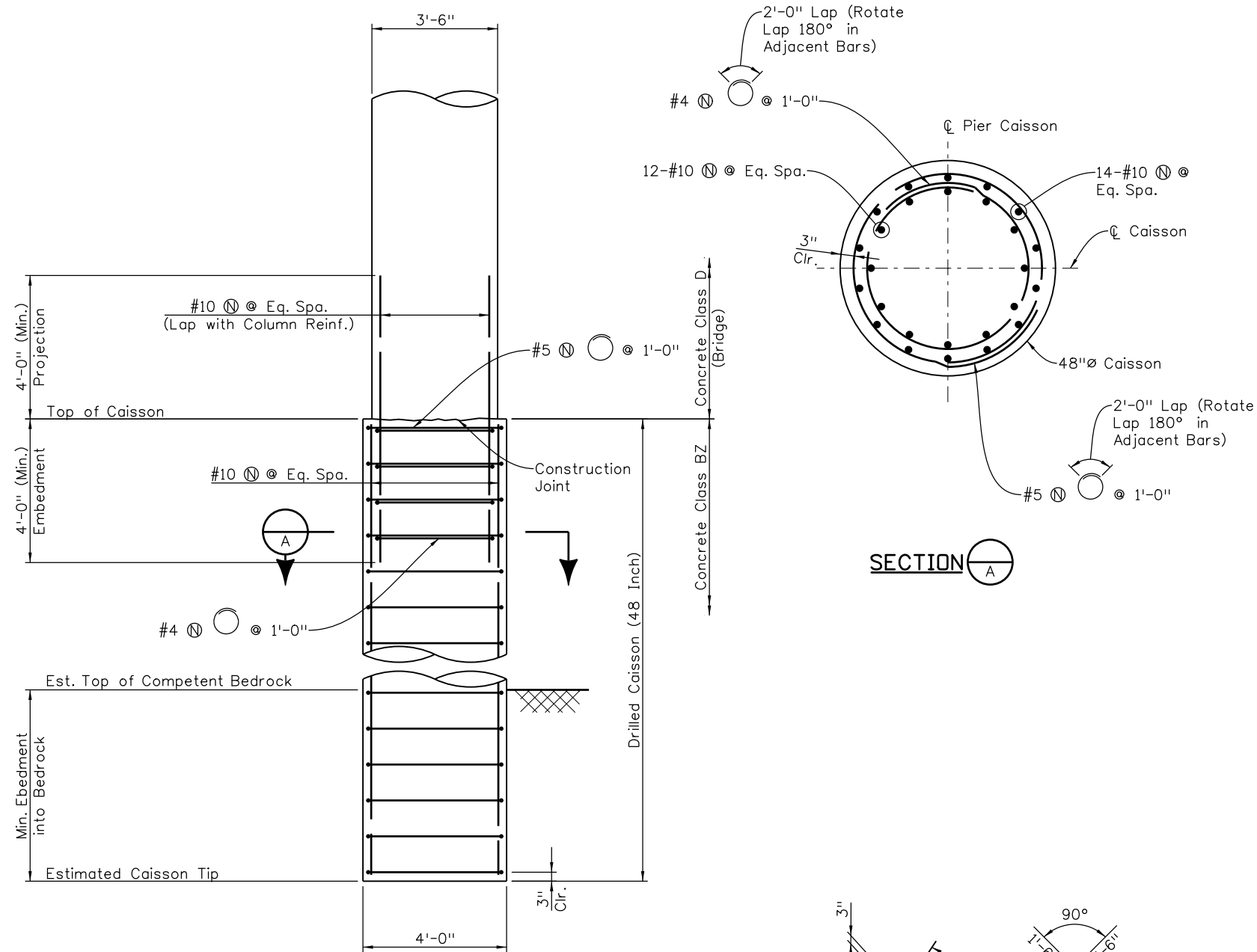
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Revised:
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US 50 WEST WESTBOUND OVER WILD HORSE DRY CREEK FOUNDATION LAYOUT			
Designer:	S. Redd	Structure Numbers	K-18-DA
Detailer:	K. Soellner	Sheet Subset:	Bridge
Sheet Subset: Bridge		Subset Sheets:	B8 of 31

Project No./Code
STA 0503-085
20344
Sheet Number 111

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07/16	CAO	07/16	SCR	07/16	KIS
Designed By	Checked By	Detailed By	Checked By	Quantities By	Checked By



PILE & CAISSON DATA							
LOCATION	MAX. LOAD (UNFACTORED) (kips)	MAX. LOAD (FACTORED) (kips)	ESTIMATED TOP OF BEDROCK ELEV.	ESTIMATED TIP ELEV.	CAISSON SIZE	PILE SIZE	MIN. EMBEDMENT INTO BEDROCK (FT.)
ABUTMENT 1	150	217	4759	4756	-	HP12x74	3
PIER 2 & 3	459	636	4758	4740	48"	-	18
ABUTMENT 4	150	217	4760	4757	-	HP12x74	3

DESIGN DATA:

Caissons and piles are designed per AASHTO LRFD.

Caissons:

Nominal Tip Resistance in Bedrock = 184 ksf
 Nominal Side Resistance in Bedrock = 15 ksf
 Resistance factors for Tip and Side Resistance are 0.55 and .60, respectively

Piles:

Nominal Bearing Resistance in Bedrock = 40 ksi (Grade 50 Steel)
 Resistance factor for Bearing Resistance is 0.65

PILING NOTES:

- All Piles are End Bearing HP12x74.
- All Piles shall be driven vertical. The web and flanges shall be aligned per the layout shown on sheets B8.
- Pile Driving Analyzer (PDA) is required for this project. The PDA monitoring shall be performed by the Contractor on one pile at each abutment in accordance with Section 502 of the Standard Specifications.
- Piles may stop above the Estimated Tip Elevation if the PDA Analysis indicates capacity has been reached and the pile has obtained the specified minimum embedment.
- Elevations shown shall be verified at the time of construction by the Geotechnical Engineer.

CAISSON NOTES:

- Caissons shall extend at least to the estimated tip elevation. Caissons shall be further advanced into the bedrock as determined by the geotechnical engineer, to obtain the specified minimum embedment.
- Top of competent bedrock elevation shall be verified at time of construction by the Engineer.
- The use of temporary casing during drilling caissons may be required. The cost of temporary casing shall not be paid for separately but shall be included in Item 503 - Drilled Caisson (48 Inch).
- The Contractor shall anticipate encountering hard bedrock during drilling.
- Contractor may be required to provide additional permanent casing above bedrock to facilitate caisson construction.
- Lap splices shall be securely tied or clamped. Approved mechanical couplers or butt welds in conformance with AWS may be substituted for lap splices. The Contractor is responsible for assembling and bracing the reinforcing cage to safely resist all loads imposed during handling and concrete placement.

Print Date: 1/27/2017

File Name: 20344BRDG_FoundDetails.dgn

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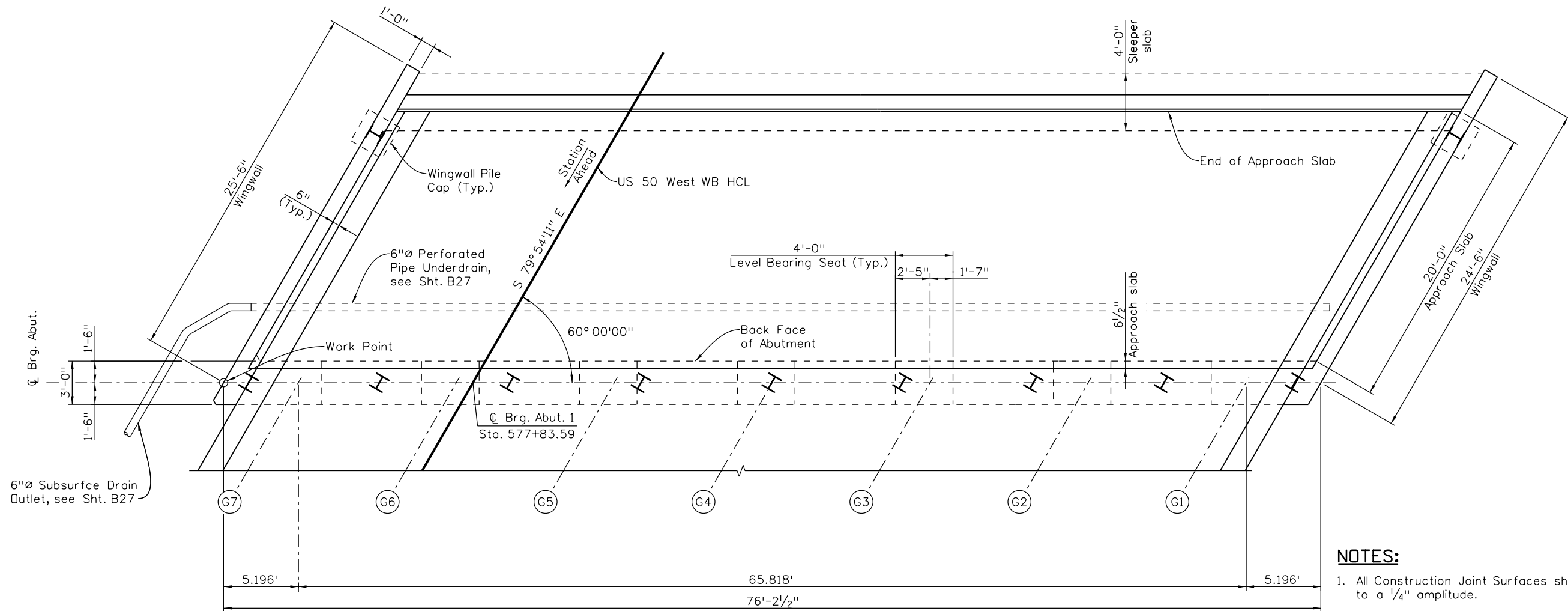
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No Revisions:		Designer: S. Redd	Structure: K-18-DA
Revised:		Detailer: K. Soellner	Numbers:
Void:		Sheet Subset: Bridge	Subset Sheets: B9 of 31

Project No./Code	
	STA 0503-085
	20344
	Sheet Number 112

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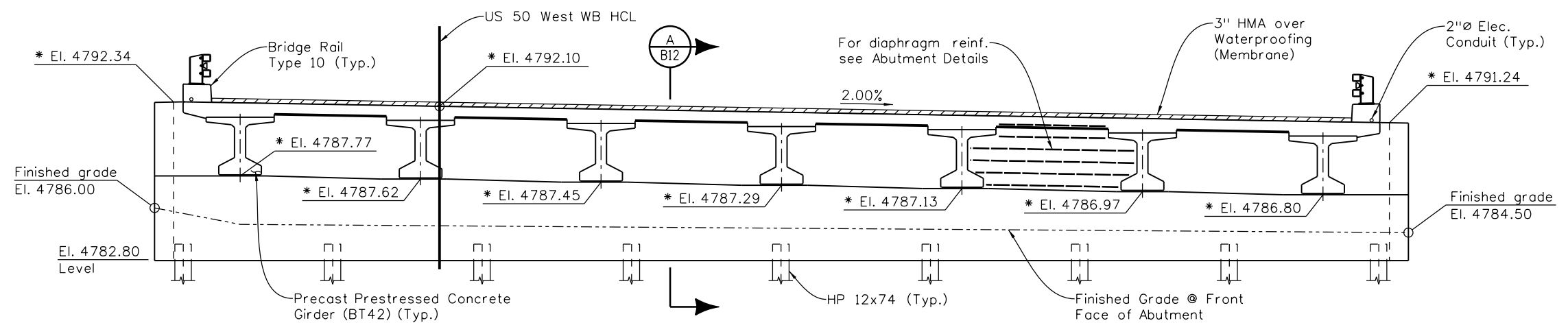


PLAN

NOTES:

1. All Construction Joint Surfaces shall be roughened to a 1/4" amplitude.
2. Alternate splice locations in adjacent lines. See General Notes for lap splice lengths.

* Elevations given at ϕ Brg.



ELEVATION

Print Date: 1/19/2017
File Name: 20344BRDG_Abut1Plan-Elev.dgn
Horiz. Scale: 1:1 Vert. Scale: As Noted
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Date:	Comments	Init.

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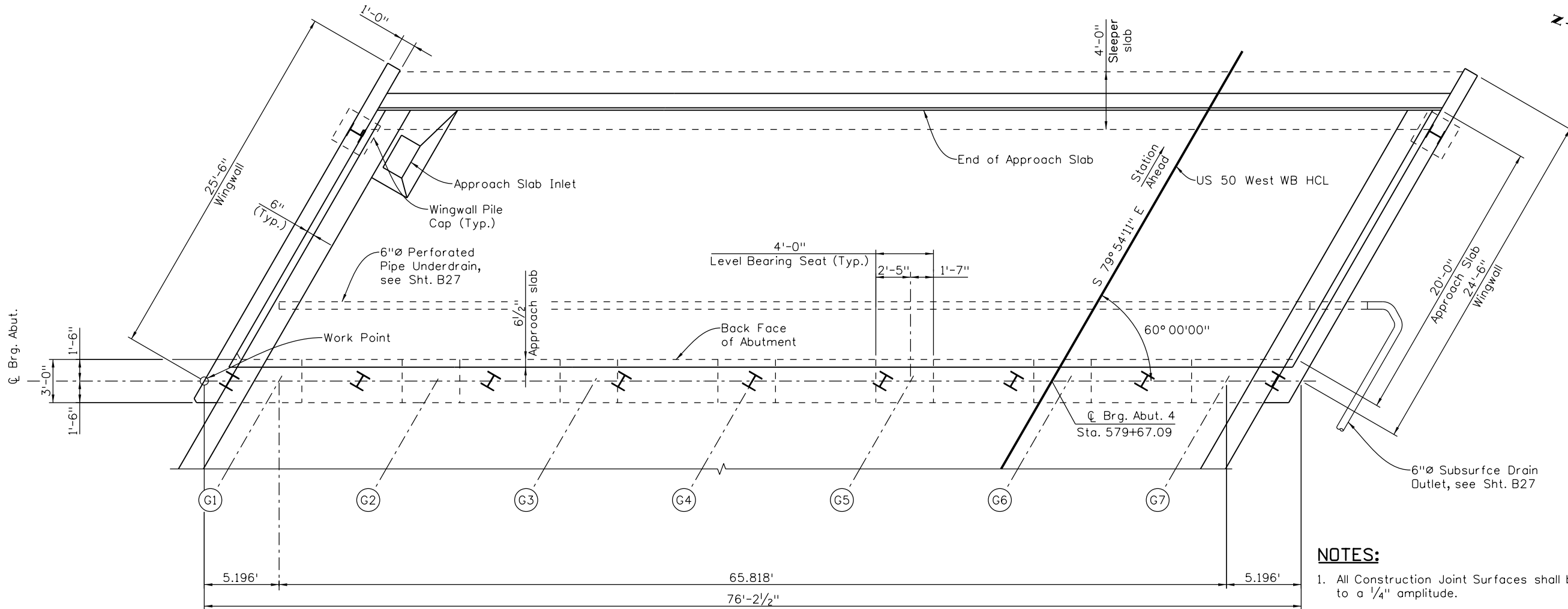
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Region 2 DTD

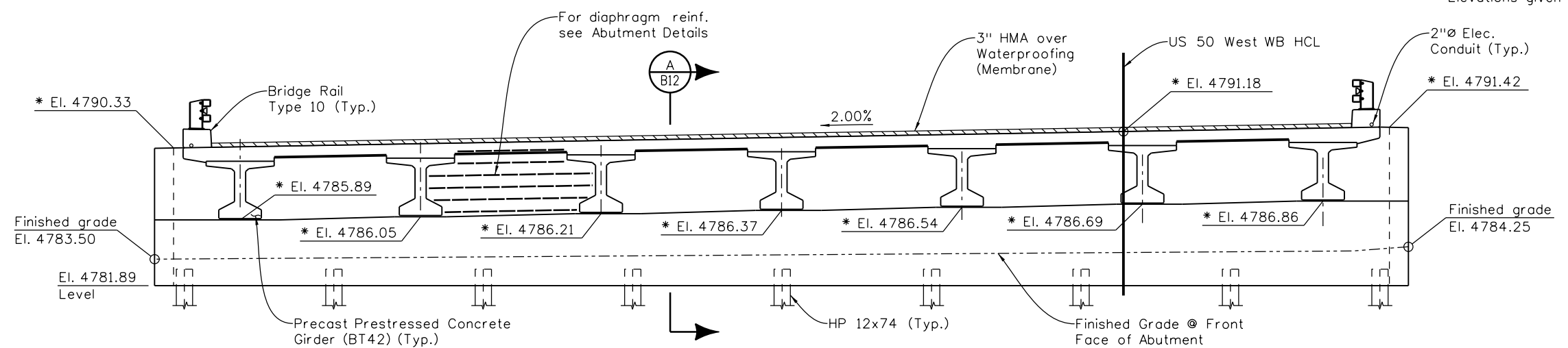
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Revised:
Void:

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Designer:	S. Redd	Structure Numbers	K-18-DA
Detailer:	K. Soellner	Subset Sheets:	B10 of 31
Sheet Subset:	Bridge		

Project No./Code
STA 0503-085
20344
Sheet Number 113



PLAN



ELEVATION

- NOTES:**
1. All Construction Joint Surfaces shall be roughened to a 1/4" amplitude.
 2. Alternate splice locations in adjacent lines. See General Notes for lap splice lengths.
- * Elevations given at \bar{C} Brg.

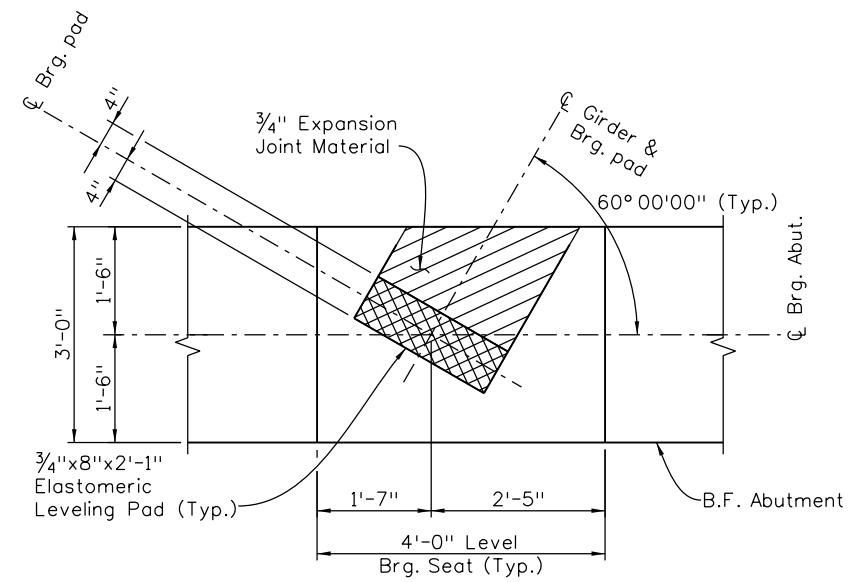
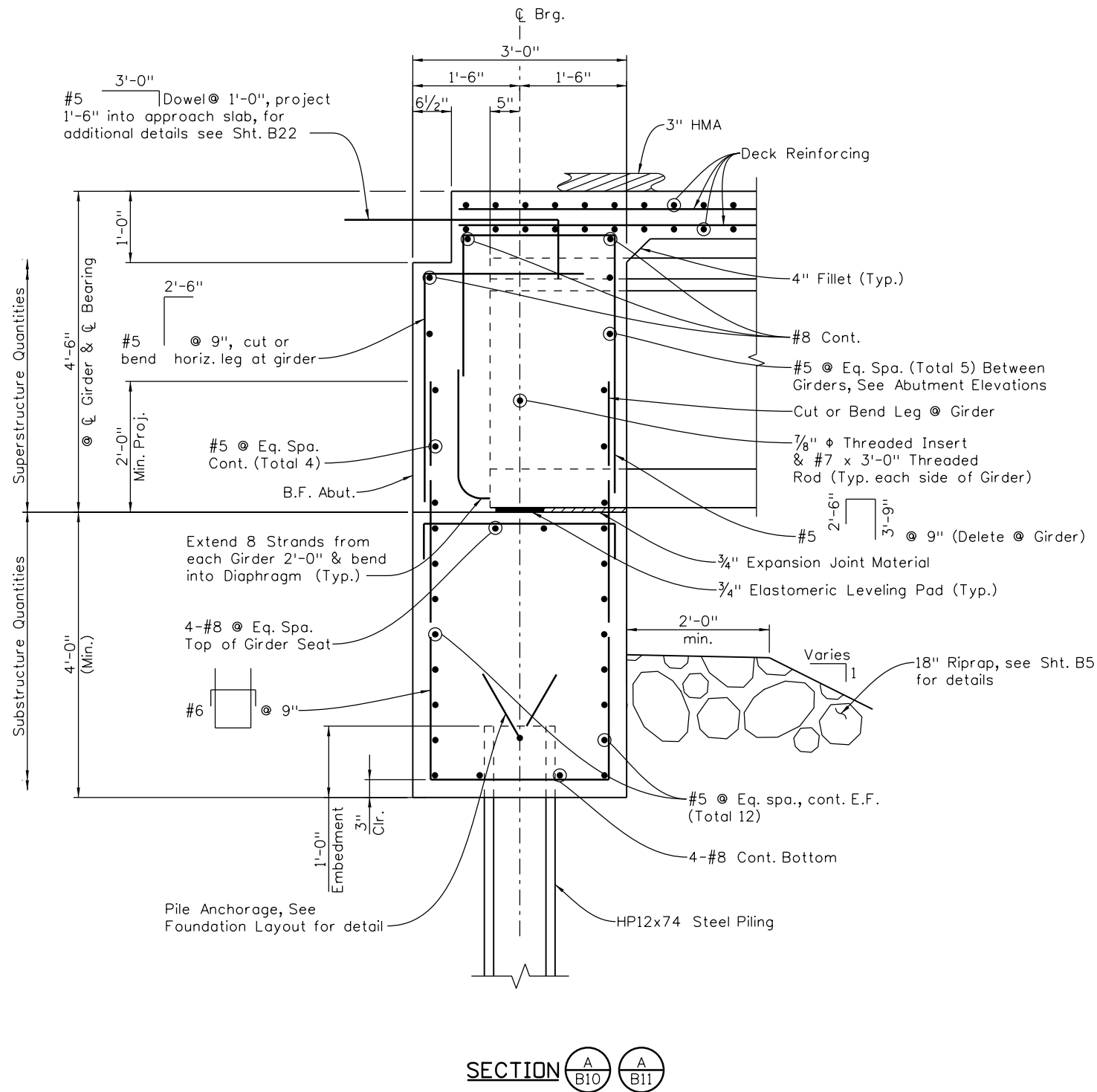
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Horiz. Scale: 1:1 Vert. Scale: As Noted					Region 2 DTD		Revised:		20344		
Staff Bridge Branch - Unit 0226 Unit Leader: DDG					CDOT		Void:		Sheet Number 114		
6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440								Designer: S. Redd Structure: K-18-DA Detailer: K. Soellner Numbers: Sheet Subset: Bridge Subset Sheets: B11 of 31			

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07/16	CAO	07/16	SCR	08/16	KJS
Designed By	Checked By	Detailed By	Checked By	Quantities By	Checked By



ABUTMENT BEARING DETAIL

NOTES:

1. Slab and portion of Abutment above Bearing Seat to be poured monolithically.
2. No portion of Abutment shall be backfilled until the deck concrete has reached 80% of its design strength.
3. Elastomeric bearing pad and expansion joint material will not be paid for separately, but shall be included in the Item 618 - Prestressed Concrete I Girders (BT42).
4. All Abutment and Wingwall Concrete shall be Class D (Bridge).

Print Date: 1/19/2017	0000
File Name: 20344BRDG_AbutDetails01.dgn	
Horiz. Scale: 1:1 Vert. Scale: As Noted	
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Date:	Comments	Init.

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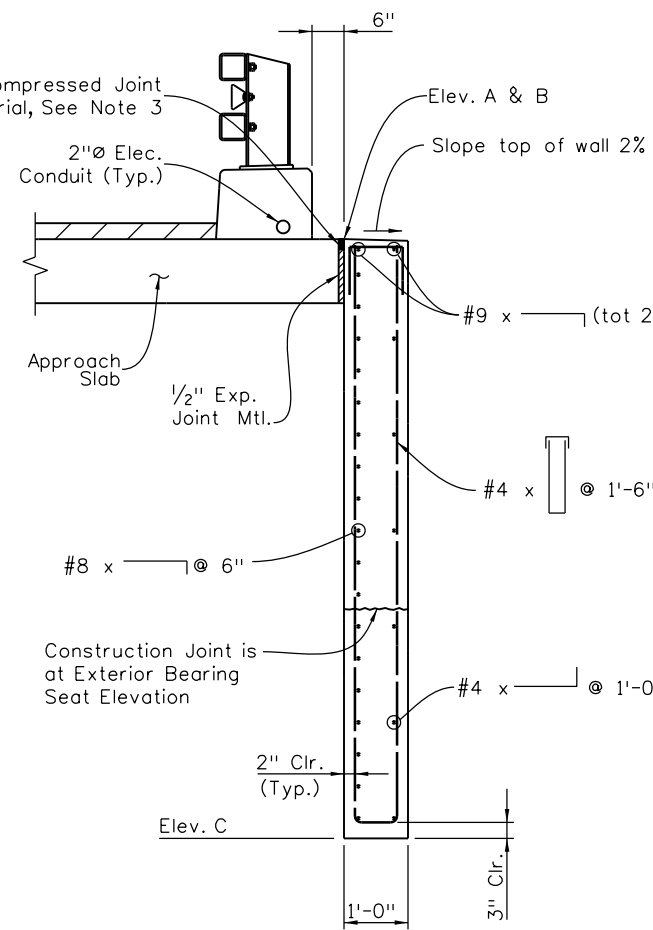
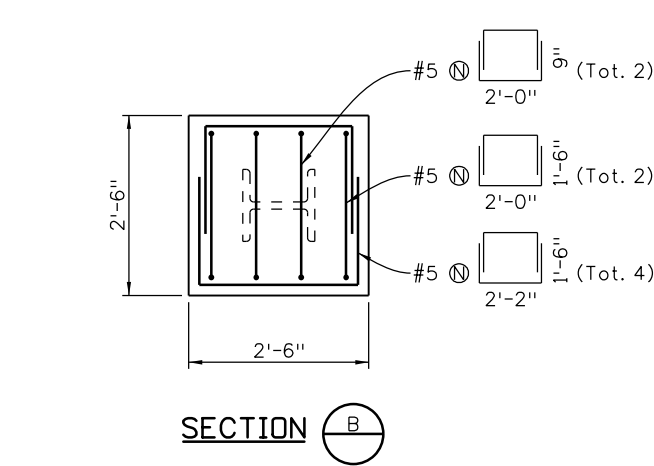
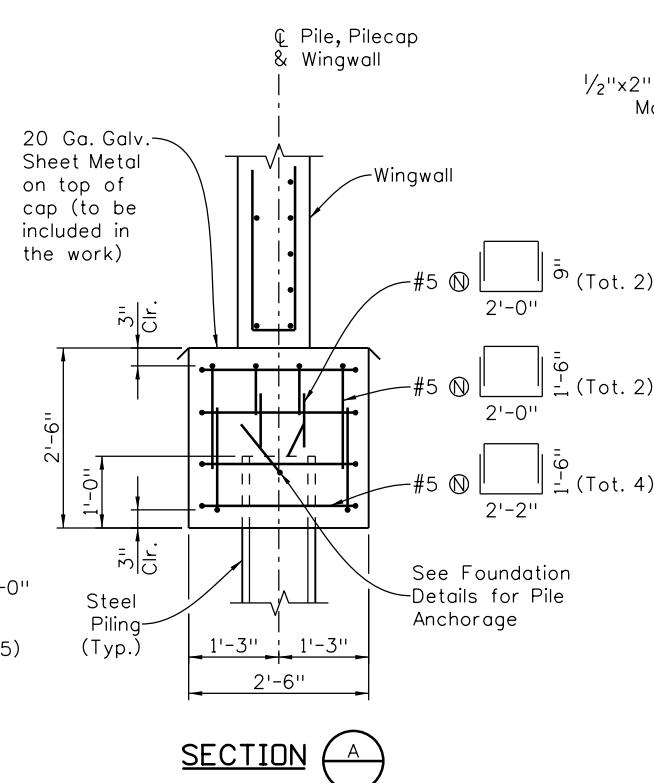
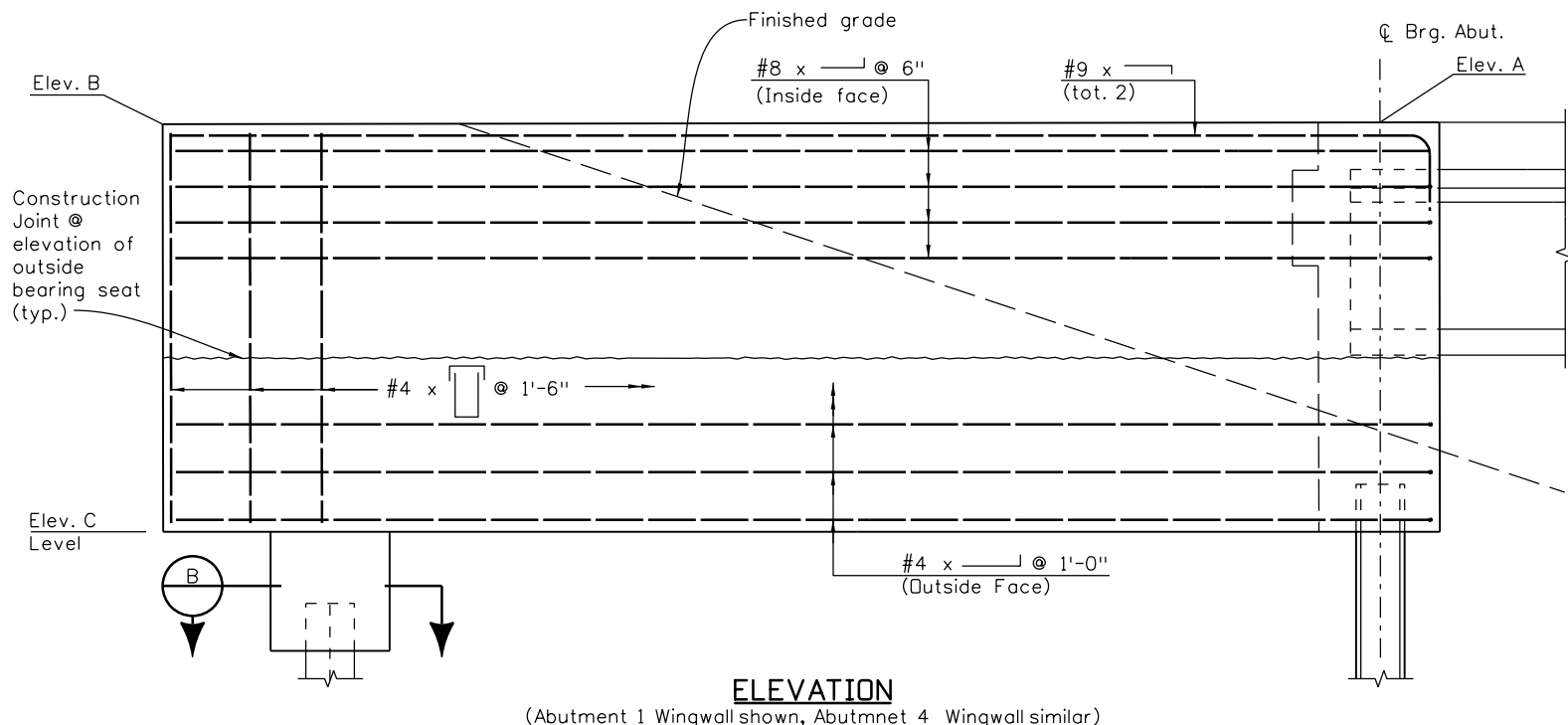
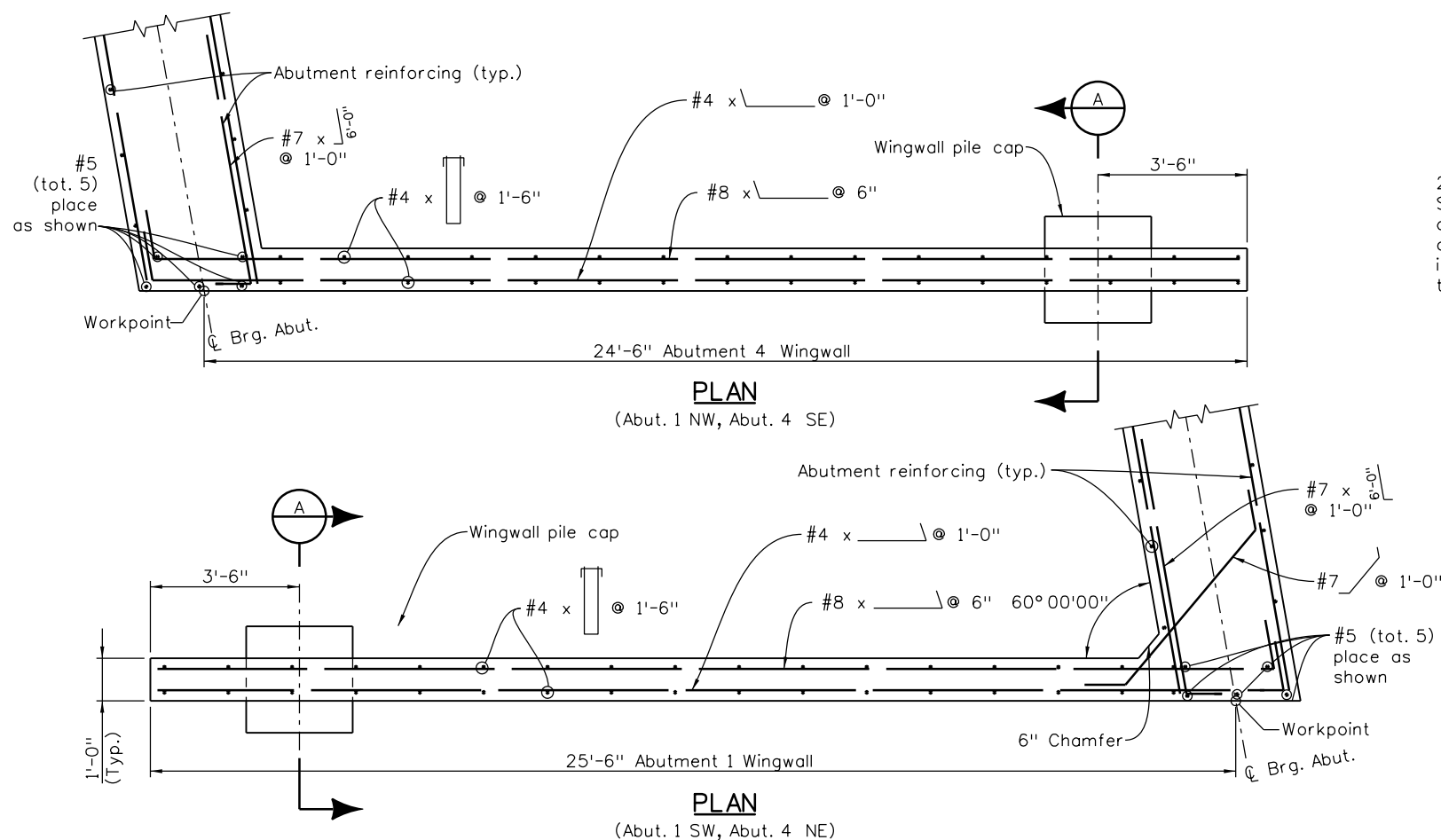
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US 50 WEST WESTBOUND OVER WILD HORSE DRY CREEK ABUTMENT DETAILS			
Designer:	S. Redd	Structure Numbers:	K-18-DA
Detailer:	K. Soellner	Sheet Subset:	Bridge
Sheet Subset: Bridge		Subset Sheets:	B12 of 31

Project No./Code
STA 0503-085
20344
Sheet Number 115

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07/16	CAO	07/16	SCR	07/16	KJS
Designed By	Checked By	Detailed By	Checked By	Quantities By	Checked By



Wingwall	Elev. A	Elev. B	Elev. C
Abut. 1 NW Wingwall	4791.24	4791.38	4782.80
Abut. 1 SW Wingwall	4792.34	4792.46	4782.80
Abut. 4 NE Wingwall	4790.33	4790.20	4781.89
Abut. 4 SE Wingwall	4791.42	4791.30	4781.89

- NOTES:**
- Contractor shall fill back face and front face of wingwall simultaneously (± 2 ft.)
 - Wingwall design assumes passive pressure from front face soil per CDDT Bridge Design Manual 7.1
 - Compressed Joint Material shall be pre-compressed, chemically resistant, open cell polyurethane foam sealant, impregnated with a water-repellent material, with adhesive backing on both sides. The Joint Material shall be epoxied in place, and all splices sealed, as recommended by the supplier of the Joint Material. The cost shall be included in the cost of Item 601, Class D Concrete.
- Acceptable Compressed Joint Material Alternatives:
 Will-Seal
 Seal-Mate #517
 Poly-Tite "N"
 Or Approved Equal

Print Date: 1/19/2017
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 Horiz. Scale: 1:1 Vert. Scale: As Noted
 Staff Bridge Branch - Unit 0226 Unit Leader: DDG

Date:	Comments	Init.

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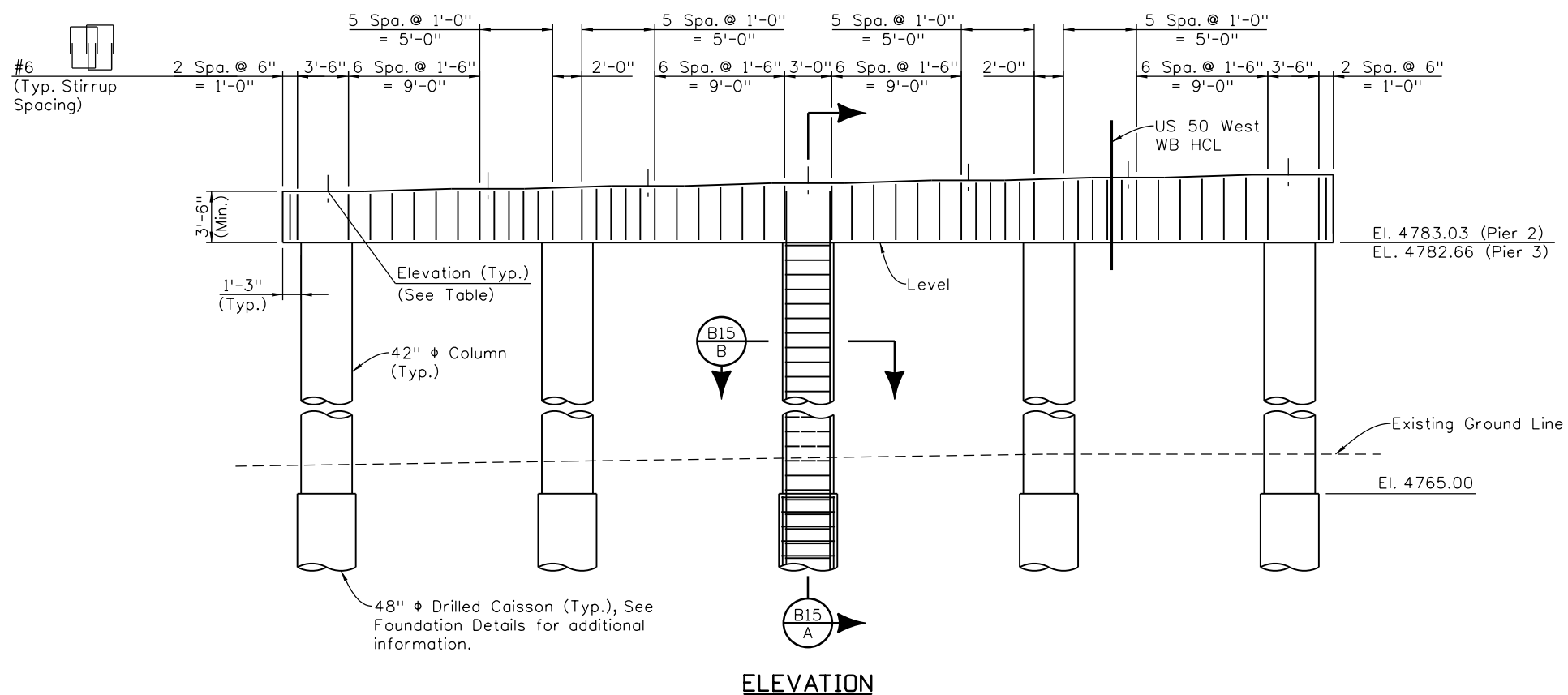
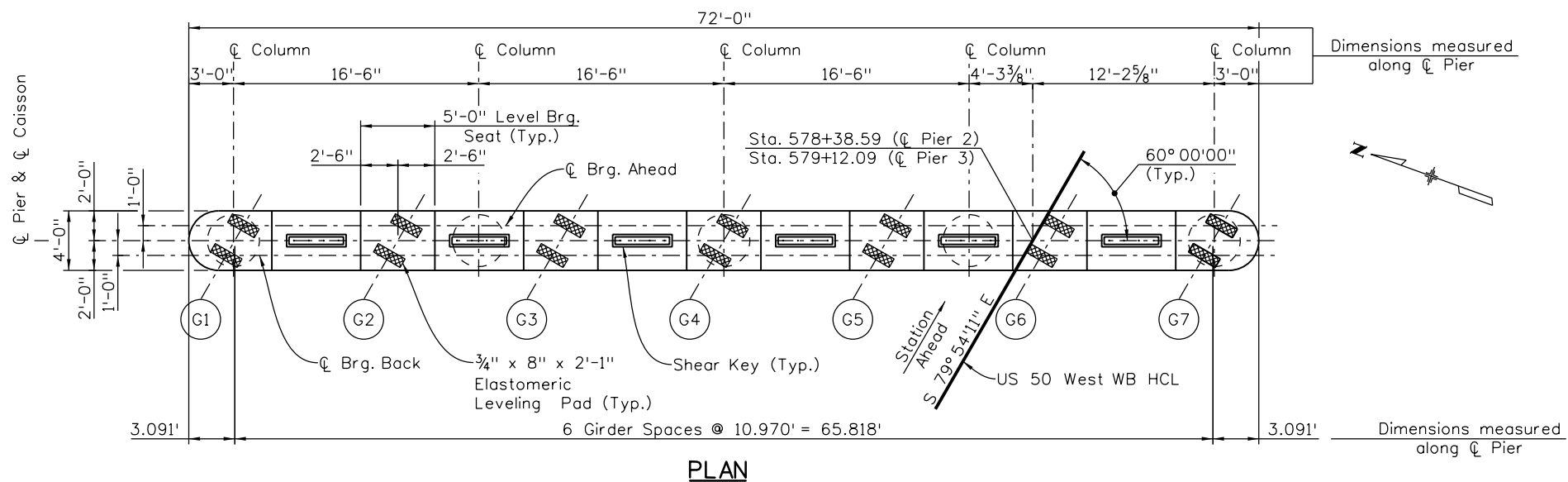
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 OVER WILD HORSE DRY CREEK
 WINGWALL DETAILS**

Designer: S. Redd Structure: K-18-DA
 Detailer: K. Soellner Numbers:
 Sheet Subset: Bridge Subset Sheets: B13 of 31

Project No./Code
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 20344
 Sheet Number **116**

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07/16	CAO	07/16	SCR	07/16	KJS
07/16	Checked By	07/16	Checked By	07/16	Checked By



BEARING SEAT ELEVATIONS		
GIRDER	PIER 2	PIER 3
G1	4786.53	4786.16
G2	4786.69	4786.32
G3	4786.85	4786.49
G4	4787.02	4786.65
G5	4787.18	4786.81
G6	4787.34	4786.97
G7	4787.50	4787.14

LAP SPLICE TABLE	
BAR SIZE	SPLICE LENGTH
#4	2'-0"
#5	2'-6"
#8	4'-0"

NOTES:

- Lap splice lengths shown on the General Notes may be used if splice locations in adjacent lines are alternated.
- Place splice for top #8 bar between columns. Place splice for bottom #8 bar over column.

Print Date: 1/19/2017
 File Name: 20344BRDG_PierPlan-Elev.dgn
 Horiz. Scale: 1:1 Vert. Scale: As Noted
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Sheet Revisions		
Date:	Comments	Init.

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Region 2 **DTD**

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**US 50 WEST WESTBOUND
 OVER WILD HORSE DRY CREEK
 PIER 2 & 3 PLAN & ELEVATION**

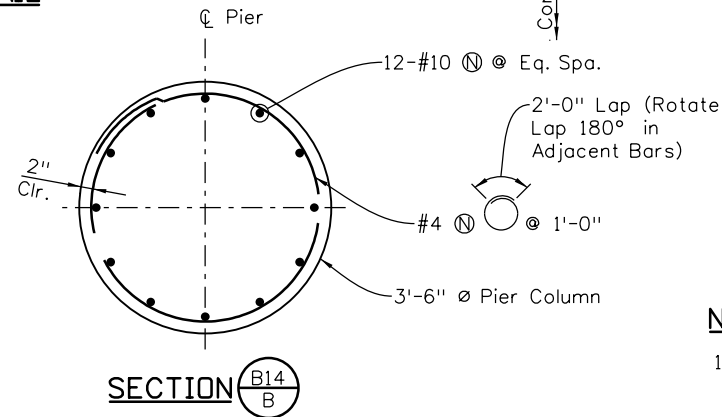
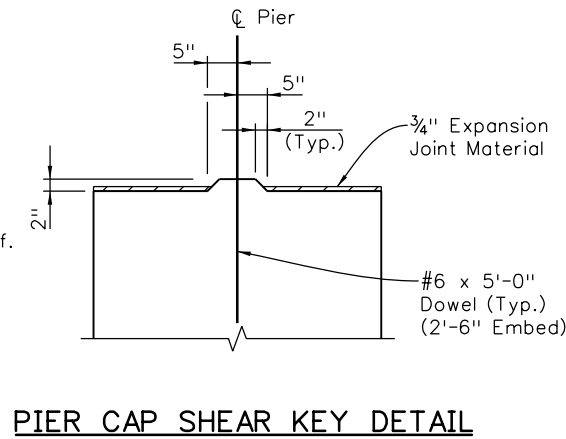
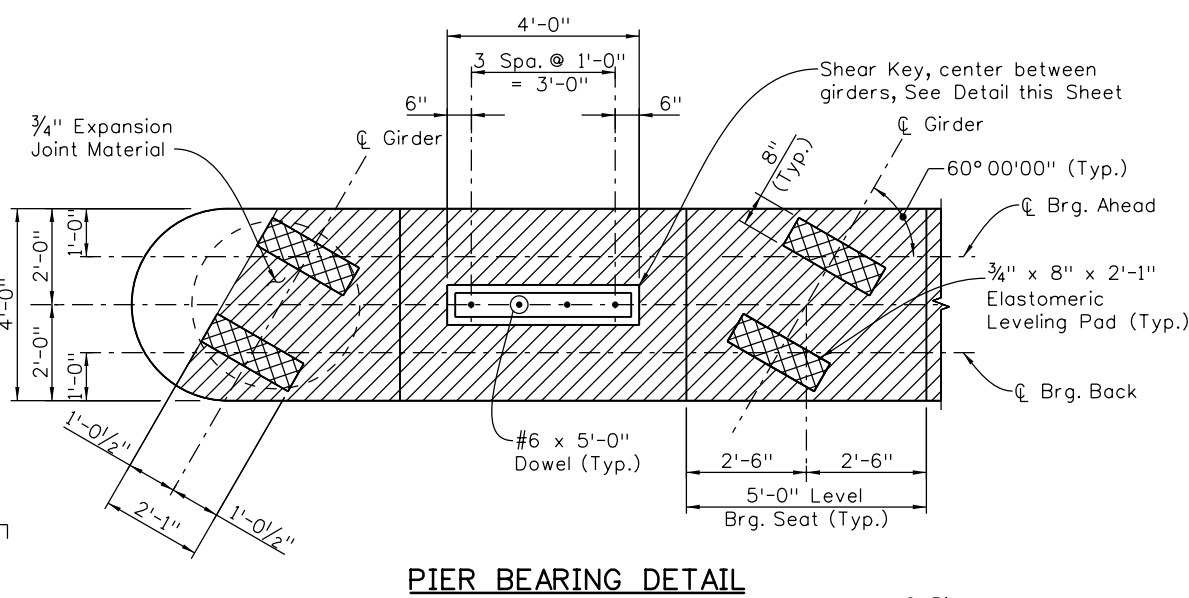
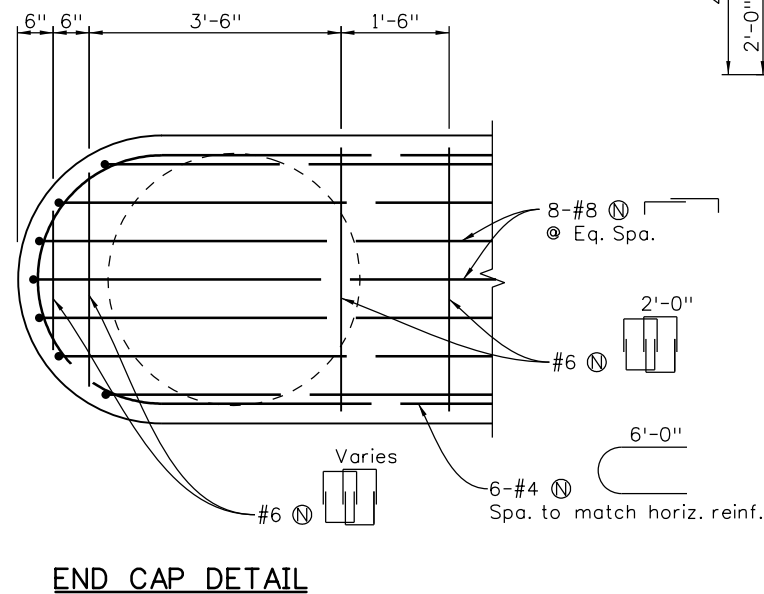
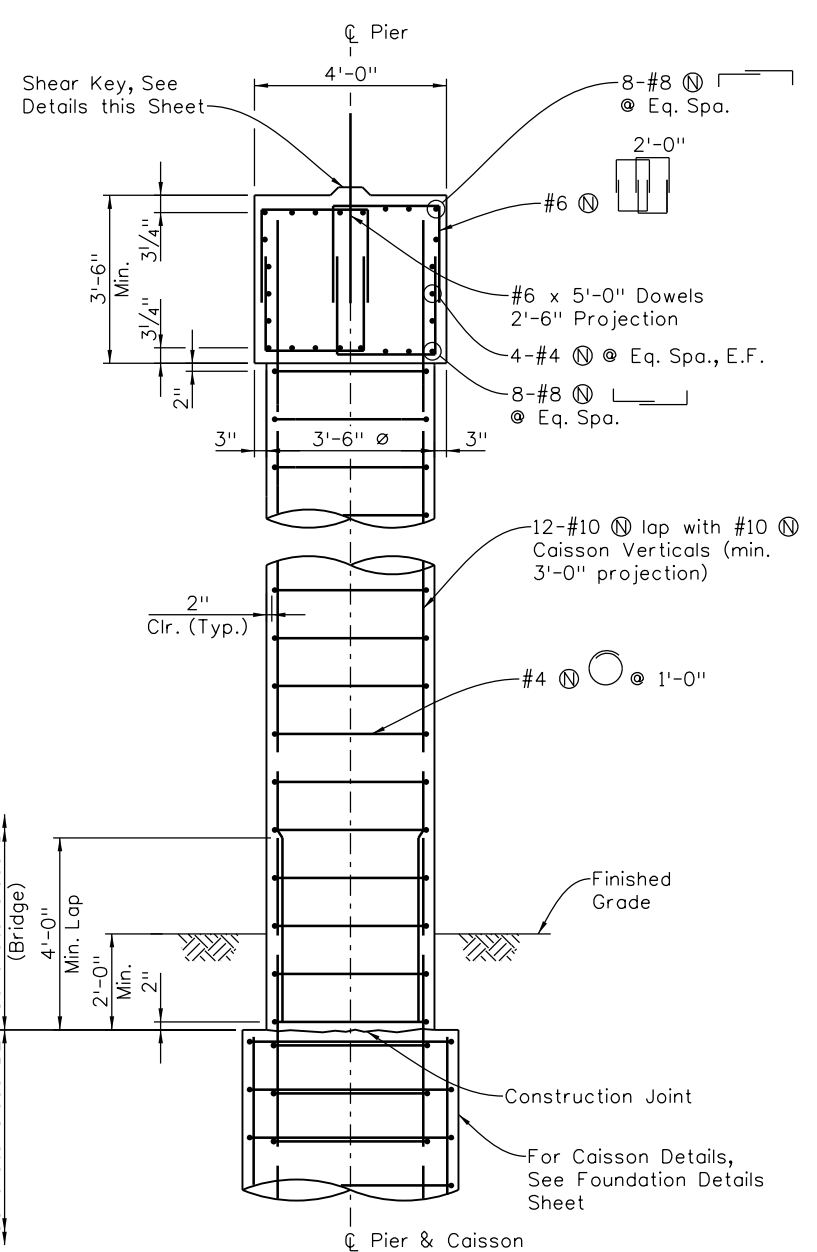
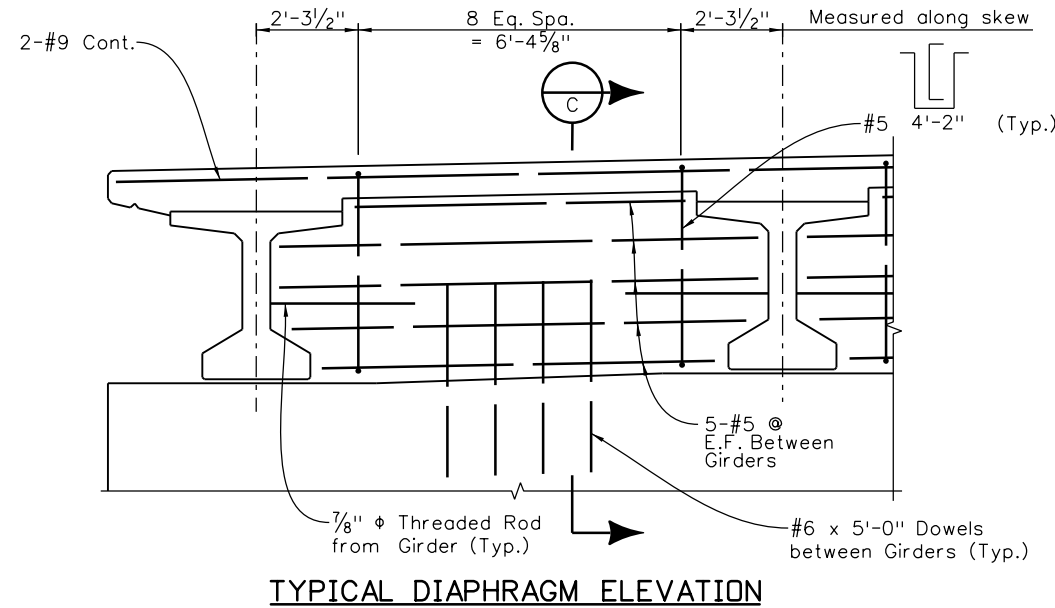
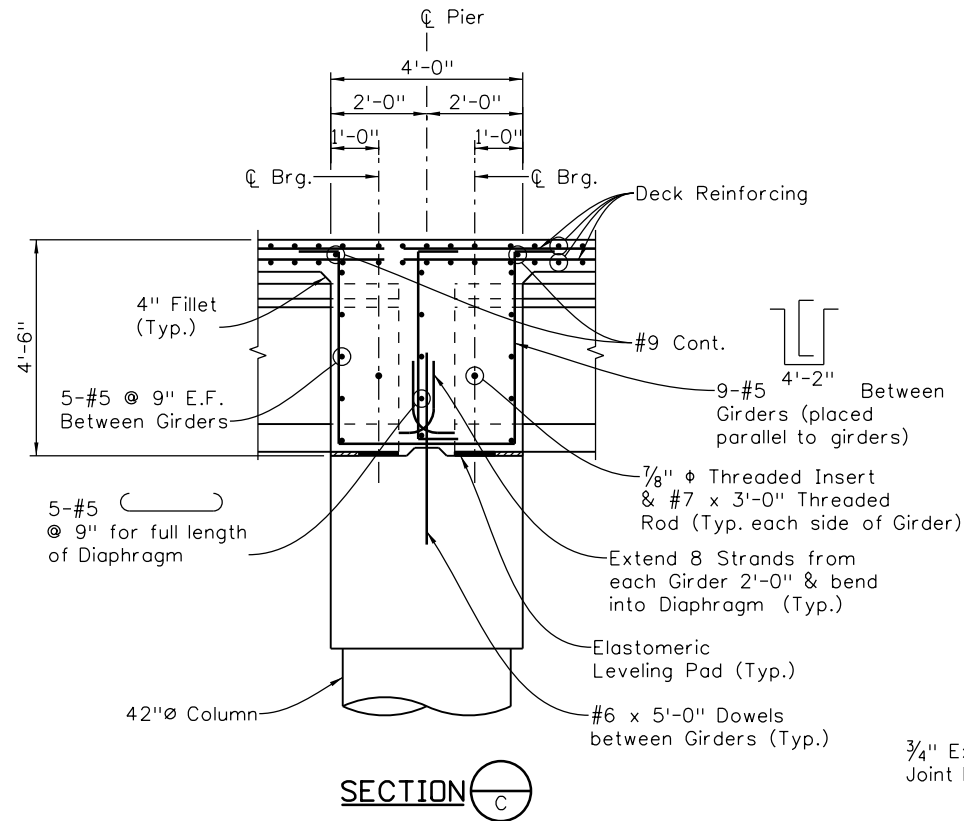
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 Detailer: K. Soellner
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STA 0503-085	20344
Sheet Number	117



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Designed By	Checked By	Detailed By	Checked By	Quantities By	Checked By



- NOTES:**
- All Construction Joint Surfaces shall be roughened to a 1/4" amplitude.
 - See Sheet B14 for splice lengths.

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Staff Bridge Branch - Unit 0226 Unit Leader: DDG	

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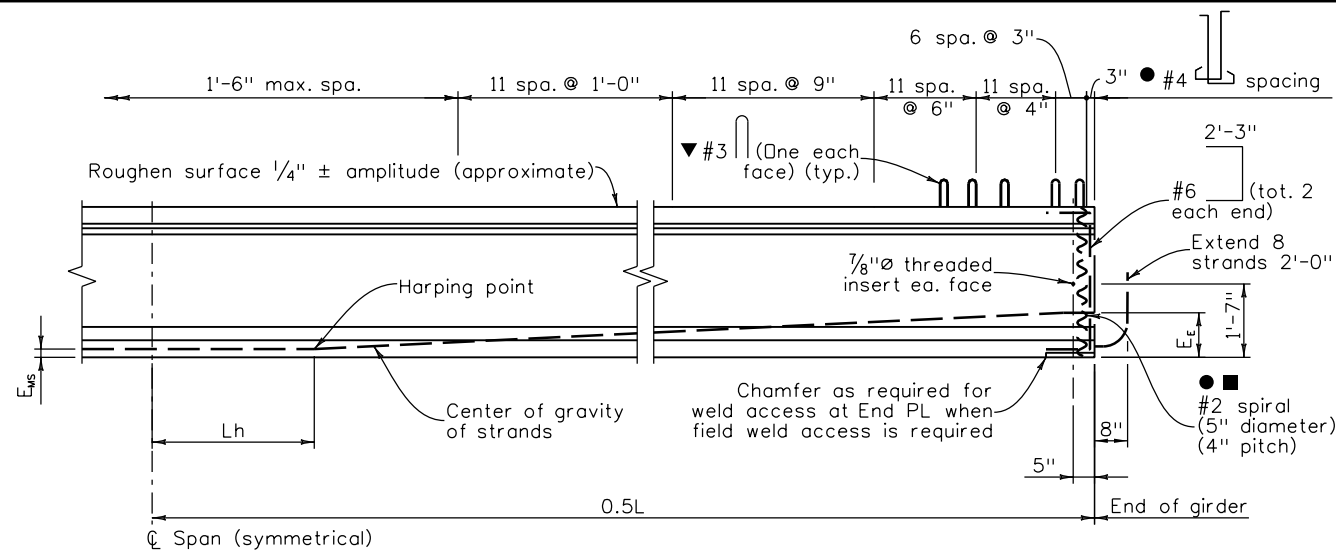
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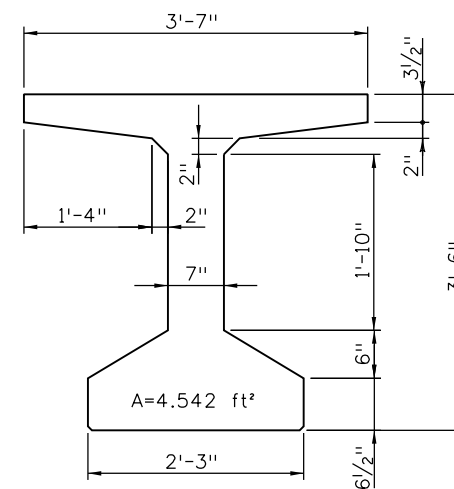
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Detailer:	K. Soellner	Subset Sheets:	B15 of 31
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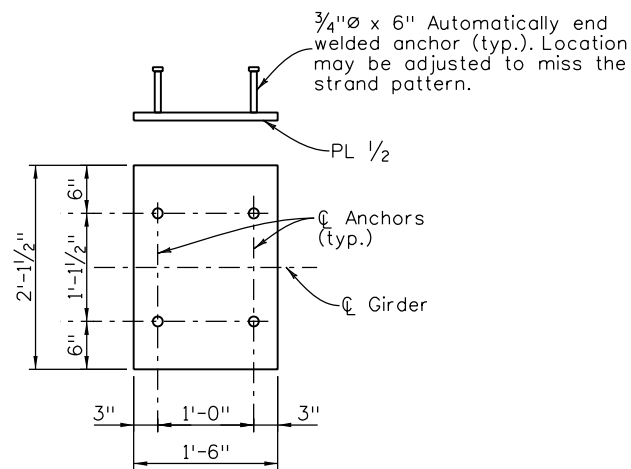
Project No./Code
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20344
Sheet Number 118



GIRDER ELEVATION



BT 42 DETAIL



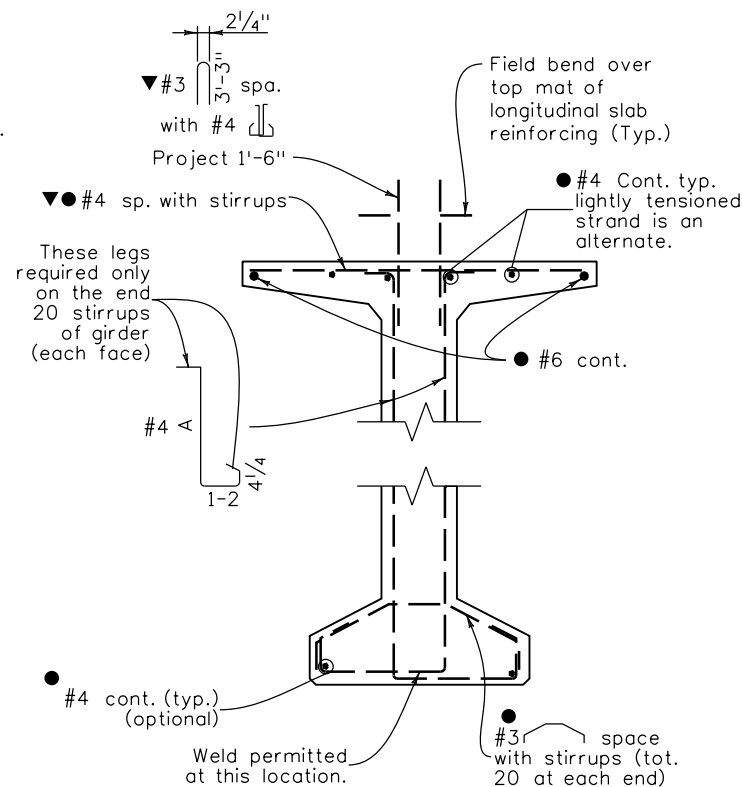
END PLATE DETAIL

Galvanize after fabrication

■ The Contractor may submit an alternate cross tie arrangement, at the end of the web, for approval by the Engineer.

▼ Space with #4 for stirrup spacings of 9" or more. Space at 1'-0" for stirrup spacings less than 9".

● D20 wires may be used in lieu of #4. 2 - D20 wires may be used in lieu of #6. D11 or W10.9 wires may be used in lieu of #3. W5 wires may be used in lieu of #2.



TYPICAL GIRDER SECTION

A = girder depth - 3"

NOTES:

All work necessary to fabricate and install the integral parts of the girder (including the intermediate diaphragms, 7/8" threaded rods, and leveling pads), as shown on the plans, shall be included in the bid price for Item No. 618, Prestressed Concrete I (BT42), with a pay unit of LF which shall be measured by dimension L.

When approved by the Engineer, a minimum of tack welding will be permitted on ASTM A706 uncoated reinforcing steel.

Reinforcing projecting from the top of the girder and reinforcing within eight feet of an expansion device in the bridge deck shall be epoxy coated. Damaged coating on girder reinforcing within the girder need not be repaired. The minimum cover for reinforcing steel is 1".

At girder ends not embedded in concrete diaphragms, cut strands off 1" below the surface of the concrete and finish with an approved epoxy grout. At girder ends embedded in concrete diaphragms, cut strands to project 3", except as shown. Do not make cosmetic repairs (damage less than 1/2" deep) to the parts of the girders embedded in concrete.

Use low relaxation strands meeting the requirements of ASTM A-416 Grade 270. The minimum clear distance between groups or individual strands shall be 2.3(d_s) but not less than 1/4". The minimum cover for prestressing steel is 1/2".

A minimum of two harping points shall be used per girder. Harped strands shall be well distributed at the girder ends, starting within 4" of the top of the girder and distributed such that there is no space between strands greater than 1'-0" at the end of the girder. As an alternate the Contractor may place #4 x 10'-0" in the sides of the end of the web parallel to the harped strands such that there is no space greater than 1'-0".

A_s* = minimum area of the prestressing steel.
d_s = nominal strand diameter.
f_s = ultimate strength of prestressing steel.
F_j = jacking force per girder.
F_f = final force per girder after all losses.
f_{ci} = required concrete strength at release of prestress force.
f_c = required concrete strength at 28 days of age.
L = length of girder along the grade of the girder.
Δ = deflection at centerline of span due to cast-in-place slab, diaphragms, asphalt, curbs, rails, and walks.

Concrete shall be Class PS.

Entrained air is not required for girder concrete.

Use 1/2" chamfer on all corners, except as noted.

Predicted camber is the camber for the girder alone at 60 days. Acceptable camber variability is limited to 20% over the predicted camber and 50% under the predicted camber or ± 1 inch, whichever is greater. The Contractor shall report to the Engineer values of camber which require remedial measures. The remedial measures shall be reviewed and approved by the Engineer. The costs associated with all remedial measures shall be borne by the Contractor.

Design		Detail		Quantities	
DATE	INITIAL	DATE	INITIAL	DATE	INITIAL
06/16	SCR	06/16	CDM	07/16	SCR
07/16	CAO	07/16	SCR	07/16	KJS
07/16	CAO	07/16	SCR	07/16	KJS

Girder Type	Span No.	Girder No.	L (Feet)	Lh (Feet)	A _s * (Square Inch)	E _{MS} (Inch)	E _E (Inch)	F _j (KIPS)	F _f (KIPS)	Concrete Strength		Δ (Inch)	Predicted Release Camber (Inch)	Predicted Camber (Inch)
										f _{ci} (PSI)	f _c (PSI)			
BT42	1 & 3	G1,G7	54.68	5.47	2.604	3.00	11.00	527	473	6000	7000	0.29	0.43	0.76
BT42	1 & 3	G2-G6	54.68	5.47	2.604	3.00	11.00	527	474	6000	7000	0.31	0.43	0.76
BT42	2	G1,G7	72.02	7.20	4.340	3.40	9.40	879	770	6000	7000	0.76	1.18	2.09
BT42	2	G2-G6	72.02	7.20	4.340	3.40	9.40	879	773	6000	7000	0.87	1.18	2.09

Print Date: 1/19/2017
File Name: 20344BRDG_GirderDetails.dgn
Horiz. Scale: 1:1 Vert. Scale: As Noted
Staff Bridge Branch - Unit 0226 Unit Leader: DDG

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Date:	Comments	Init.

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No Revisions:
Revised:
Void:

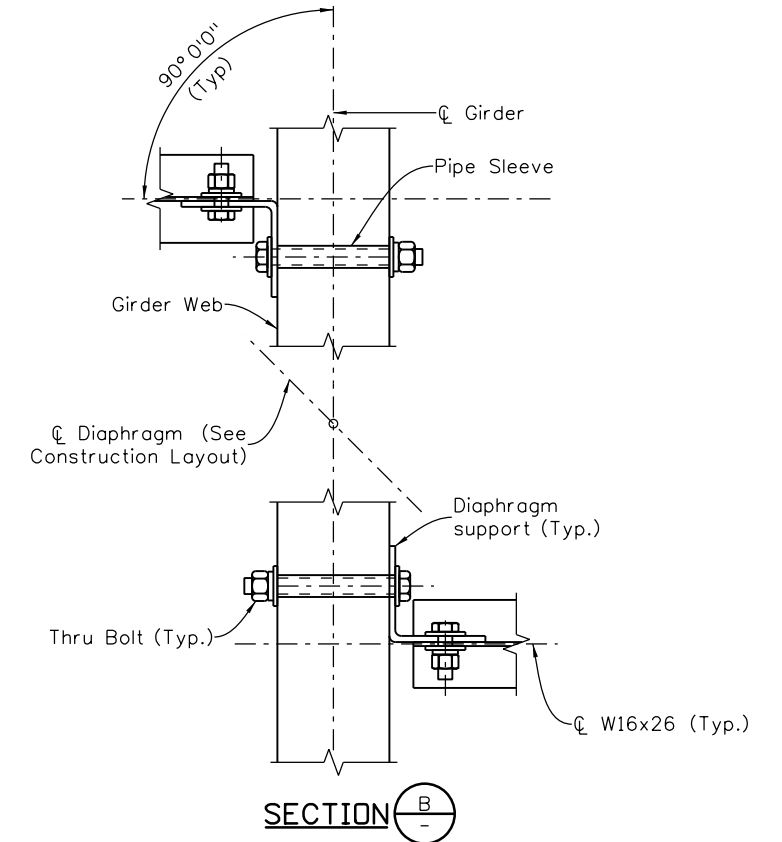
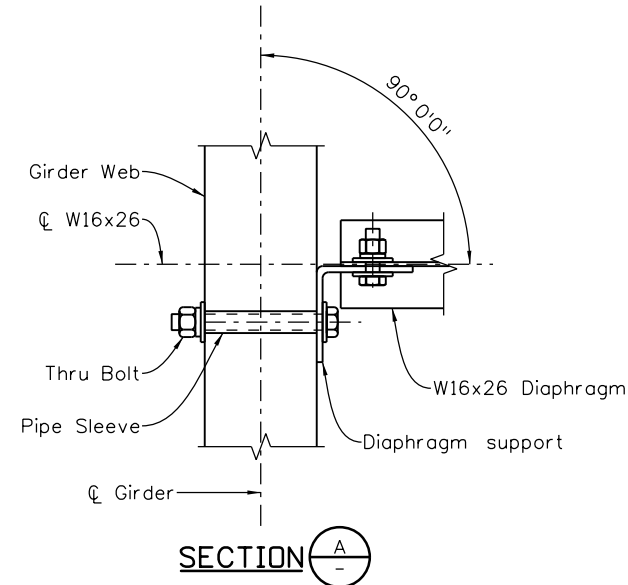
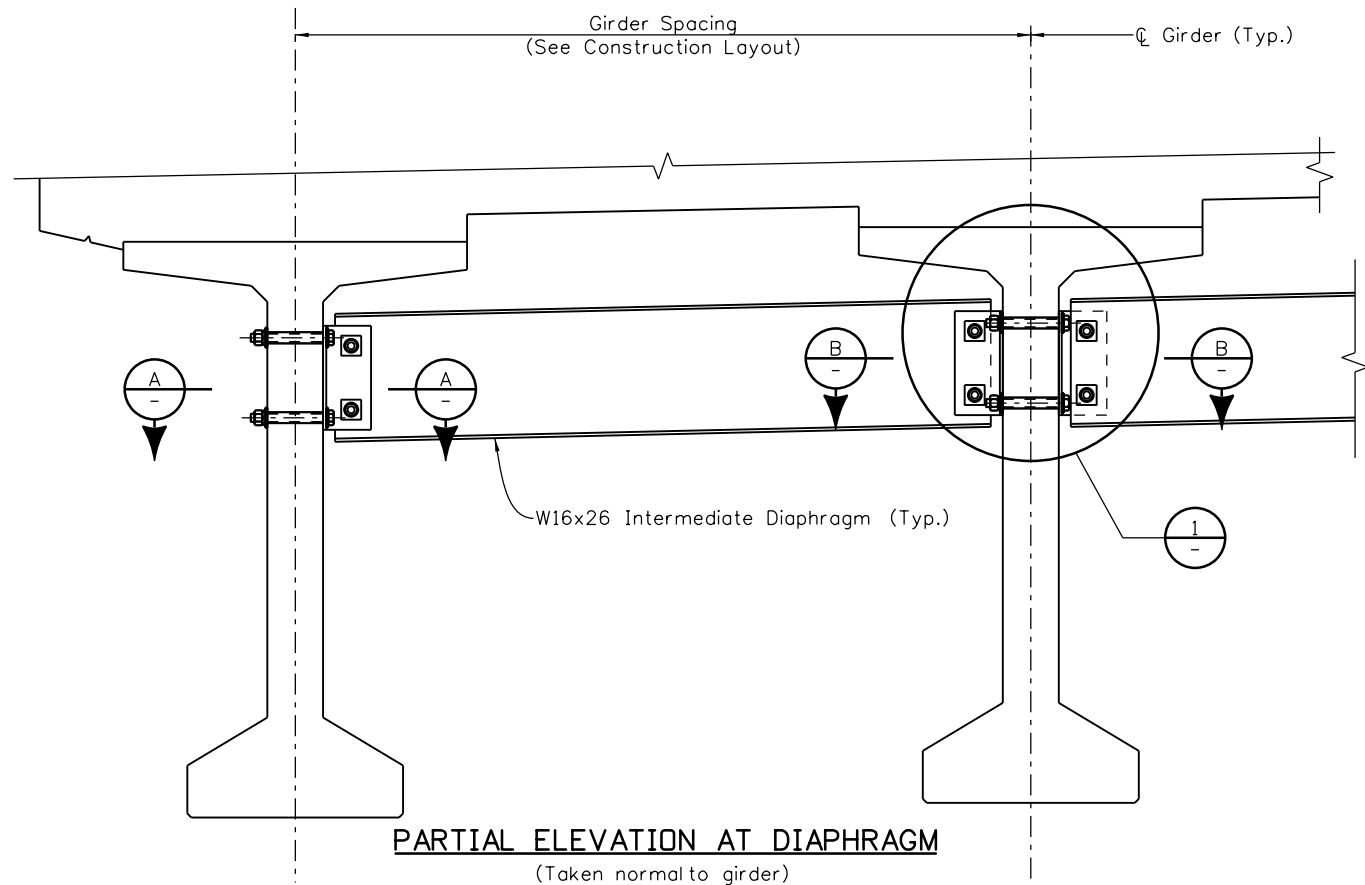
US 50 WEST WESTBOUND
OVER WILD HORSE DRY CREEK
PRESTRESSED CONCRETE BT42 GIRDER

Designer: S. Redd Structure: K-18-DA
Detailer: K. Soellner Numbers:
Sheet Subset: Bridge Subset Sheets: B16 of 31

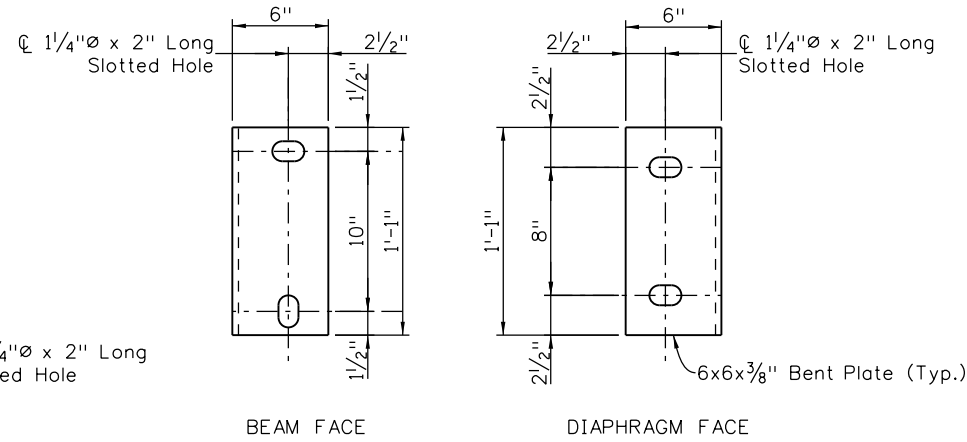
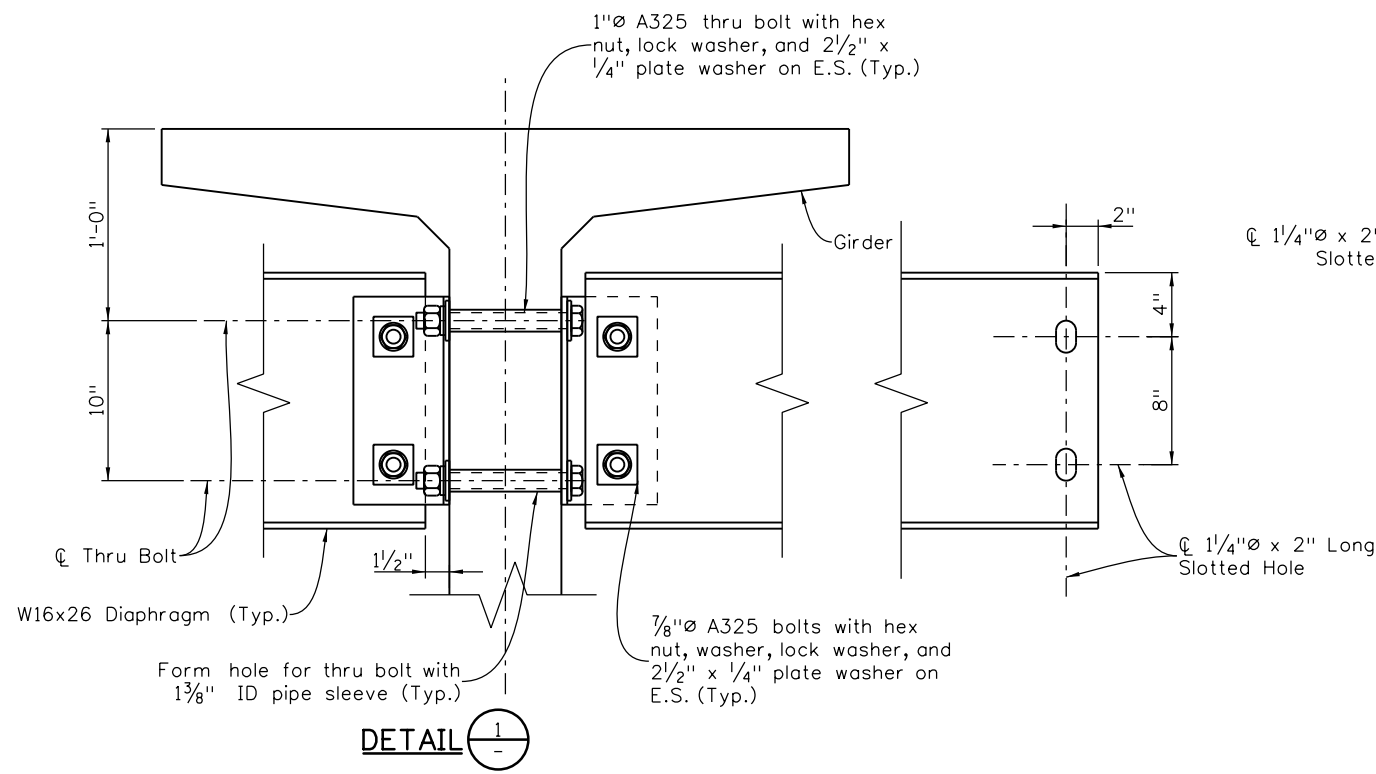
STA 0503-085
20344
Sheet Number 119

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 ken.soellner 11:08:53 AM

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07/16	CAO	07/16	SCR	07/16	KJS
07/16	Checked By	07/16	Checked By	07/16	Checked By



PARTIAL ELEVATION AT DIAPHRAGM
(Taken normal to girder)



DIAPHRAGM SUPPORT DETAIL

NOTES

1. See Construction Layout for Intermediate Diaphragm locations.
2. All diaphragm materials, including bolts, nuts, and washers shall be galvanized. Galvanize after fabrication.
3. Bolts, nuts and lock washers may be zinc plated in lieu of being galvanized.
4. The Contractor is responsible for determining necessary bracing requirements and for providing adequate bracing for the specific wind and weather conditions to be encountered for each specific project.
5. When bracing or diaphragms are required, no girders shall be erected and left unbraced. The intermediate diaphragms (when used) shall be connected to the adjacent girders simultaneously with the erection of the girders.
6. Use and installation of the intermediate diaphragms shall not relieve the Contractor of full responsibility to construct the Work in a manner which provides all necessary rigidity, supports all loads imposed, and provides in the finished structure the lines and grades indicated on the plans.

Print Date: 1/19/2017	0000
File Name: 20344BRDG_GirderDiaphragm.dgn	
Horiz. Scale: 1:1 Vert. Scale: As Noted	
Staff Bridge Branch - Unit 0226 Unit Leader: DDG	

Sheet Revisions		
Date:	Comments	Init.

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As Constructed
No Revisions:
Revised:
Void:

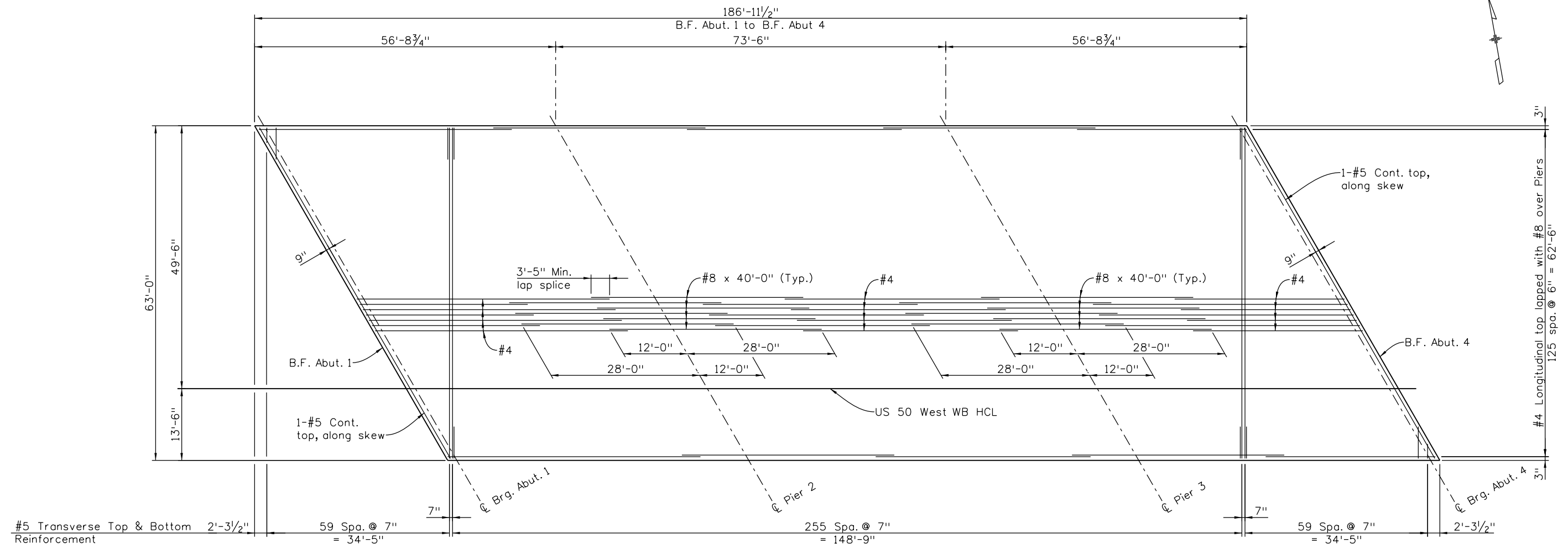
US 50 WEST WESTBOUND OVER WILD HORSE DRY CREEK GIRDER DIAPHRAGM DETAILS			
Designer:	S. Redd	Structure Numbers:	K-18-DA
Detailer:	K. Soellner	Sheet Subset:	Bridge
Sheet Subset:	Bridge	Subset Sheets:	B17 of 31

Project No./Code
STA 0503-085
20344
Sheet Number 120

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Design		Detail		Quantities	
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Designed By	06/16	CDM	06/16	Quantities By	07/16
Checked By	07/16	SCR	07/16	Checked By	08/16
				KJS	



DECK REINFORCING PLAN
 (#5 Longitudinal bottom reinforcing not shown)

NOTES:

- Deck concrete shall be Concrete Class D (Bridge).
- Alternate splice locations in adjacent lines. See General Notes for lap splice lengths not noted on this sheet.

Print Date: 1/19/2017
File Name: 20344BRDG_DeckReinf.dgn
Horiz. Scale: 1:1 Vert. Scale: As Noted
Staff Bridge Branch - Unit 0226 Unit Leader: DDG
6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440

Sheet Revisions		
Date:	Comments	Init.

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Region 2 **DTD**

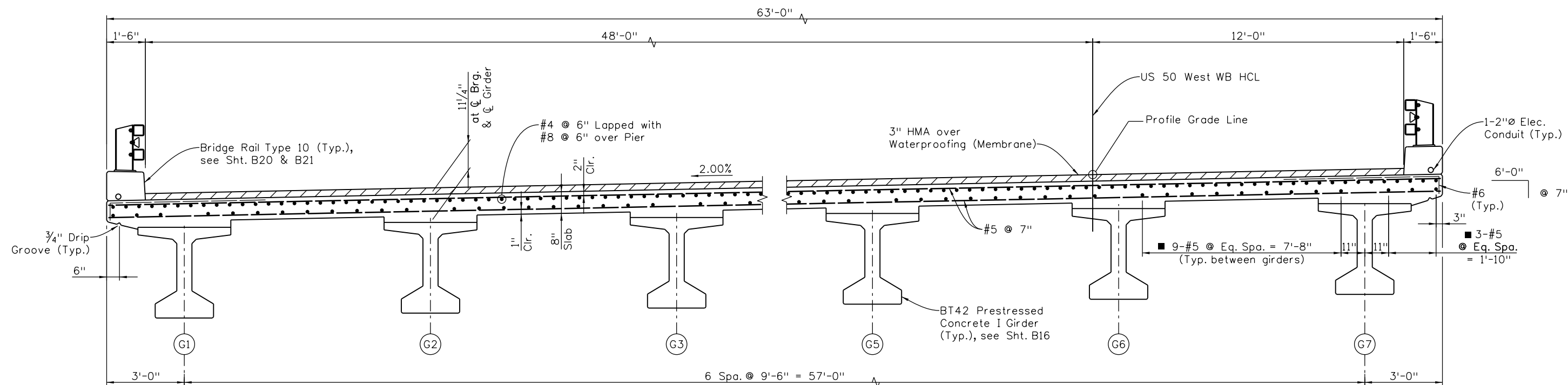
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Detailer:	K. Soellner	Sheet Subset:	Bridge
Sheet Subset:	Bridge	Subset Sheets:	B18 of 31

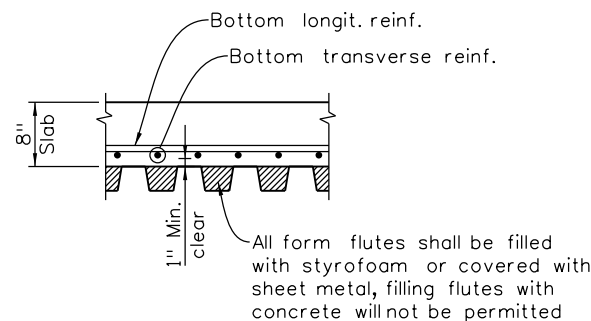
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STA 0503-085
20344
Sheet Number 121

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07/16	CAO	07/16	SCR	07/16	KJS
Checked By		Checked By		Checked By	
Designed By		Detailed By		Quantities By	



SUPERSTRUCTURE SECTION



PERMANENT STEEL DECK FORM


NOTES:

- Deck concrete shall be Concrete Class D (Bridge).
- Alternate splices in adjacent lines

Print Date: 1/19/2017	0000
File Name: 20344BRDG_SuperDetails.dgn	
Horiz. Scale: 1:1 Vert. Scale: As Noted	
Staff Bridge Branch - Unit 0226 Unit Leader: DDG	

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US 50 WEST WESTBOUND OVER WILD HORSE DRY CREEK SUPERSTRUCTURE DETAILS			
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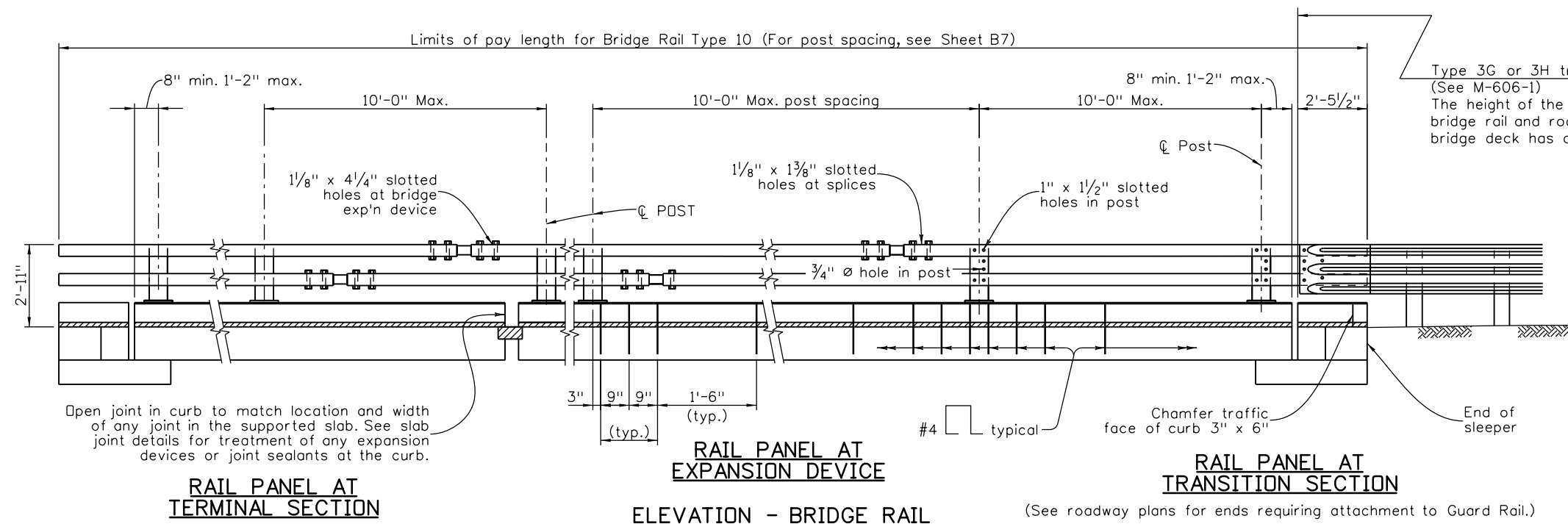
Project No./Code
STA 0503-085
20344
Sheet Number 122

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07/16	CAO	07/16	CAO	07/16	KJS
Designed By	Checked By	Detailed By	Checked By	Quantities By	Checked By



Type 3G or 3H transition
 (See M-606-1)
 The height of the transition will vary to match bridge rail and roadway guardrail: 1" when bridge deck has a 3" overlay.

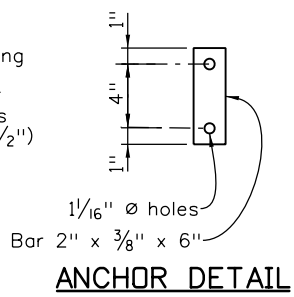
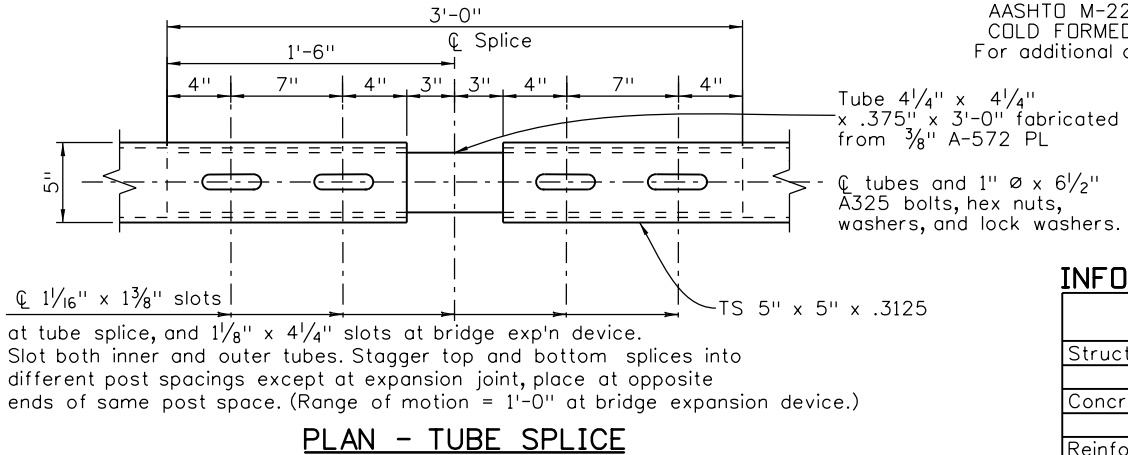
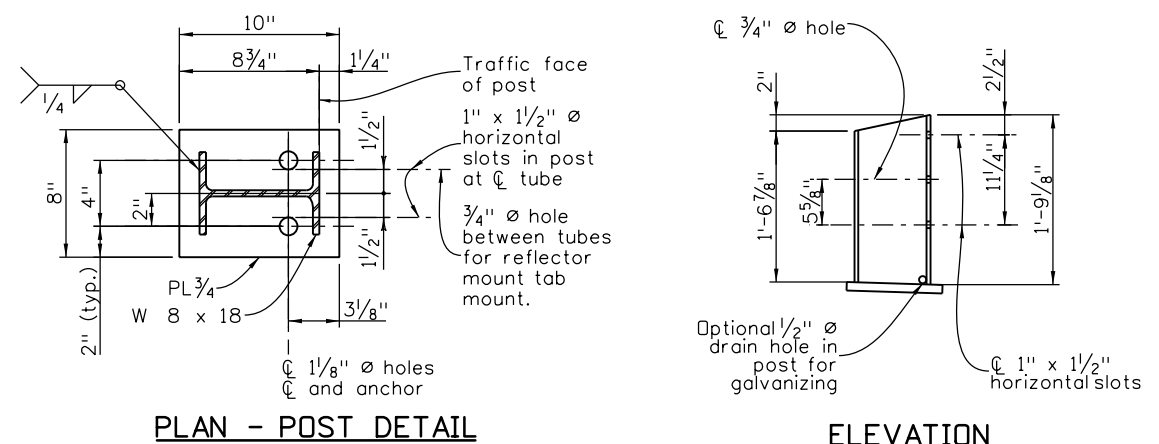
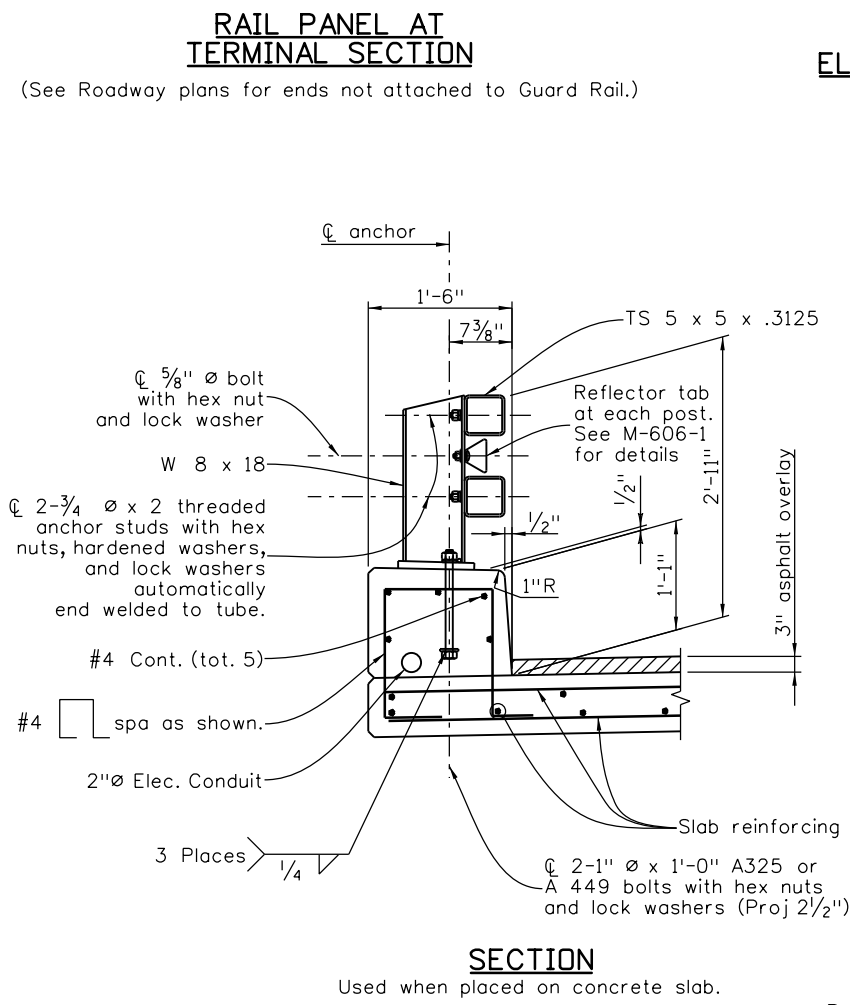
NOTES:
 All tubes shall be ASTM A-500 Grade B.
 All posts and base plates shall be ASTM A-572 Grade 50.
 All other steel shall be ASTM A-36 unless otherwise noted.
 The above material and all anchor bolts and miscellaneous bolts, nuts, and washers shall be galvanized after fabrication in accordance with Section 509. Concrete, reinforcing steel, and structural steel elements shall conform to the requirements of sections 601, 602 and 509, respectively.
 Post anchor, encased in concrete, shall be ASTM A-36 (AASHTO M-183) steel and need not be galvanized.

The tubes shall be shop bent or fabricated to fit horizontal curve when radius is less than 1,500 feet.
 Tubes shall be continuous over not less than two posts. No welded butt splices will be allowed in the tube sections.
 The centerline of the tube splice shall be 1'-8" minimum and 2'-6" maximum from the centerline of the posts.

All bolts that have lock washers shall be tightened to snug only.
 Posts shall be perpendicular to the longitudinal roadway grade.
 One or more 10'-0" post spacings may be reduced (6'-8" min.) in order to maintain dimensions from the end of the rail and expansion joints.

Payment will be made under item 606, Bridge Rail Type 10 for all posts, post anchors, base plates, backing plates, anchor bolts, miscellaneous bolts, nuts, washers, tubes, tube expansion devices, tube splices, end plates, curb concrete (Class D), curb reinforcing steel, and reflector tabs.
 Prior to fabrication of this item, three sets of working drawings which comply with the requirements of section 105, shall be submitted to the Engineer for information only.

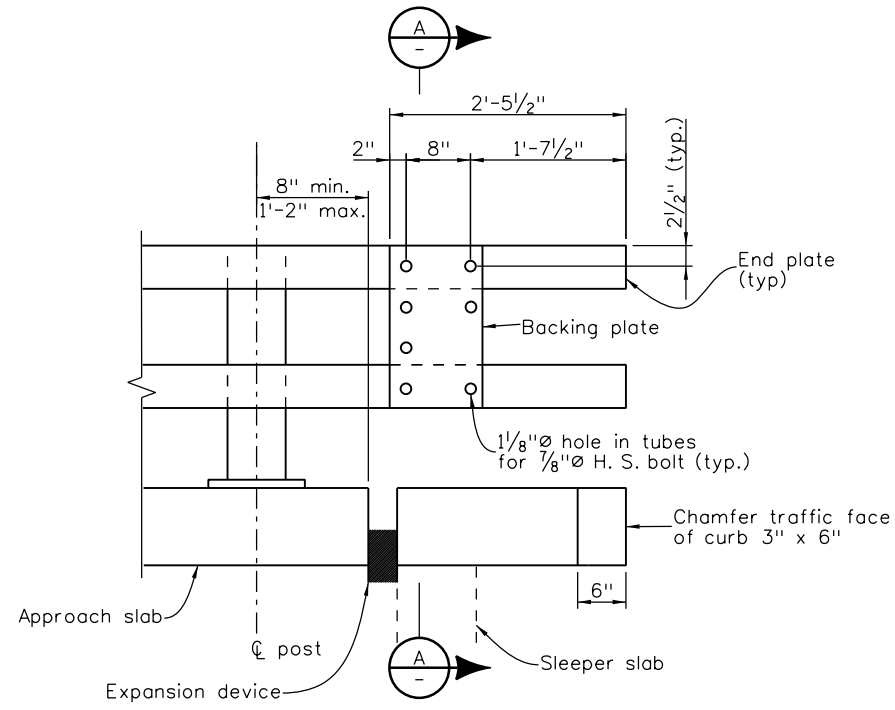
Structural Steel:
 AASHTO M-183 (ASTM A-36) $f_y = 36,000$ psi
 AASHTO M-223 (ASTM A-572) GRADE 50 $f_y = 50,000$ psi
 COLD FORMED ASTM A-500 GRADE B $f_y = 46,000$ psi
 For additional details see next rail sheets.



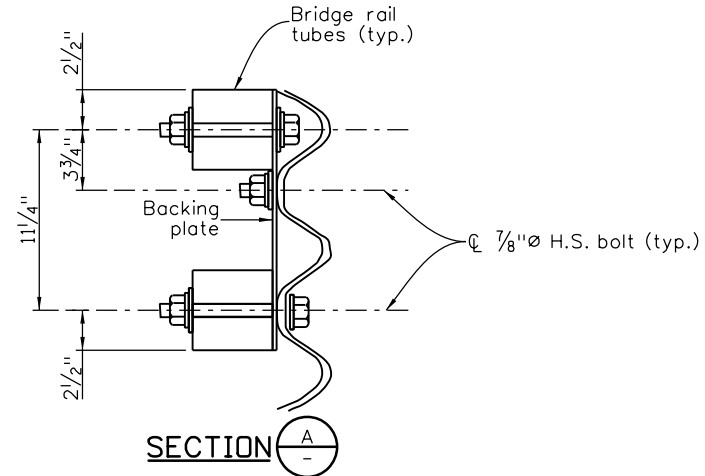
INFORMATION ONLY

DESCRIPTION	UNIT	PER LIN. FT.
Structural Steel (Galvanized)	LB.	45.1
Concrete Class D (Bridge)	CU.YD.	.06
Reinforcing Steel (Epoxy Coated)	LB.	6.6

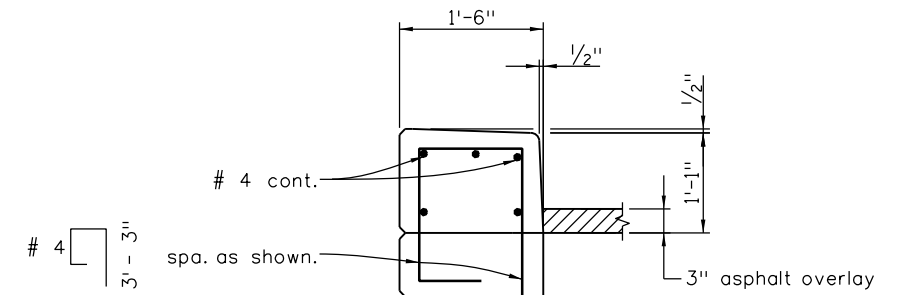
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File Name: 20344BRDG_BridgeRail01.dgn	Date:	Comments	Init.			No Revisions:				STA 0503-085
Horiz. Scale: 1:1				902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702	Revised:	Designer:	S. Redd	Structure	K-18-DA	20344
Staff Bridge Branch - Unit 0226	Unit Leader: DDG					Region 2	Void:	Detailer:	K. Soellner	Numbers
6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440				DTD				Sheet Subset:	Bridge	Subset Sheets:



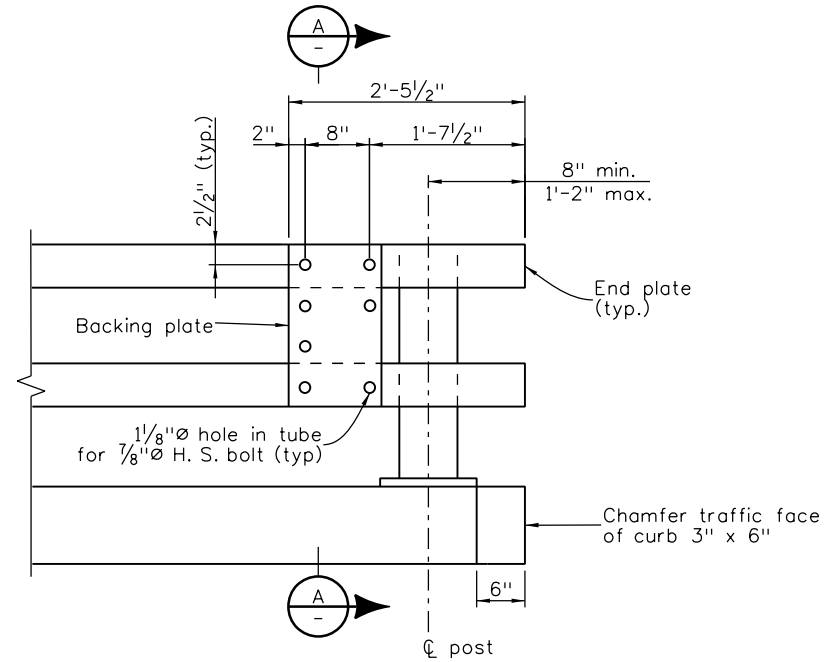
RAIL TUBE DETAILS
 (Use with Bridge Rail Type 10.)
 Thrie beam not shown.



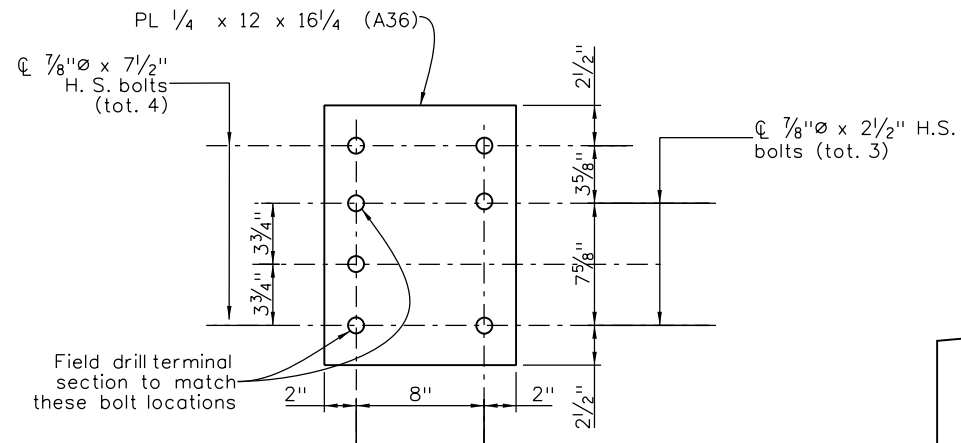
SECTION A-A



(Use when curb is placed on top of wall)

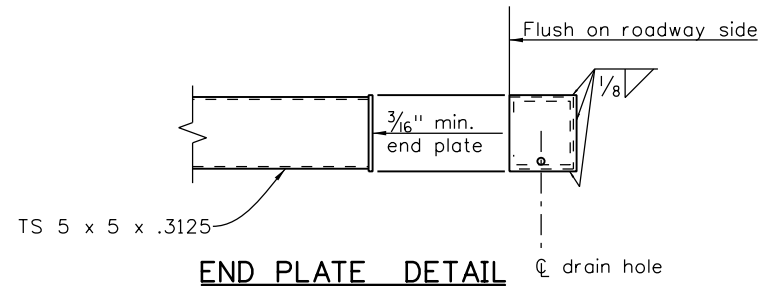


RAIL TUBE DETAILS
 (Use with Bridge Rail Type 10H
 or 10R.) Thrie beam not shown.

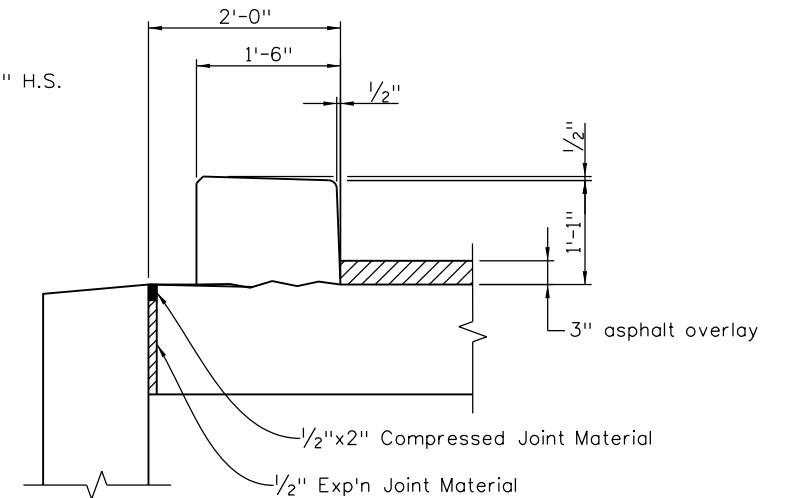


BACKING PLATE

Holes are 1/8\"/>



END PLATE DETAIL



SECTION A-A
 (Use when curb is to be placed on approach slab.)

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Print Date: 1/19/2017	
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Horiz. Scale: 1:1 Vert. Scale: As Noted	
Staff Bridge Branch - Unit 0226 Unit Leader: DDG	

Sheet Revisions		
Date:	Comments	Init.

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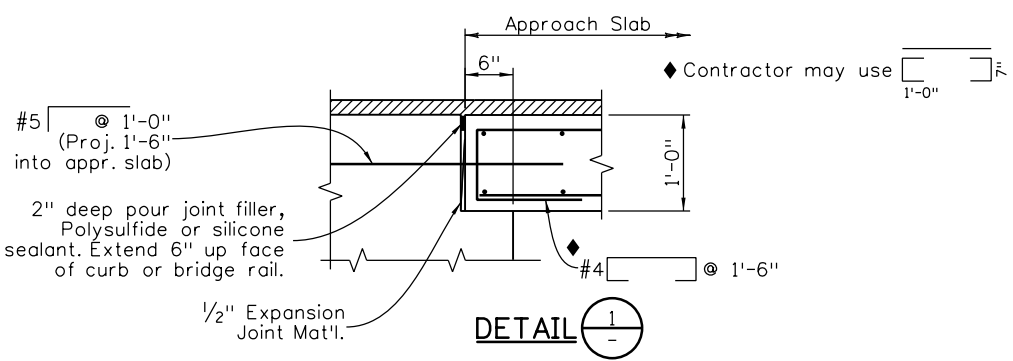
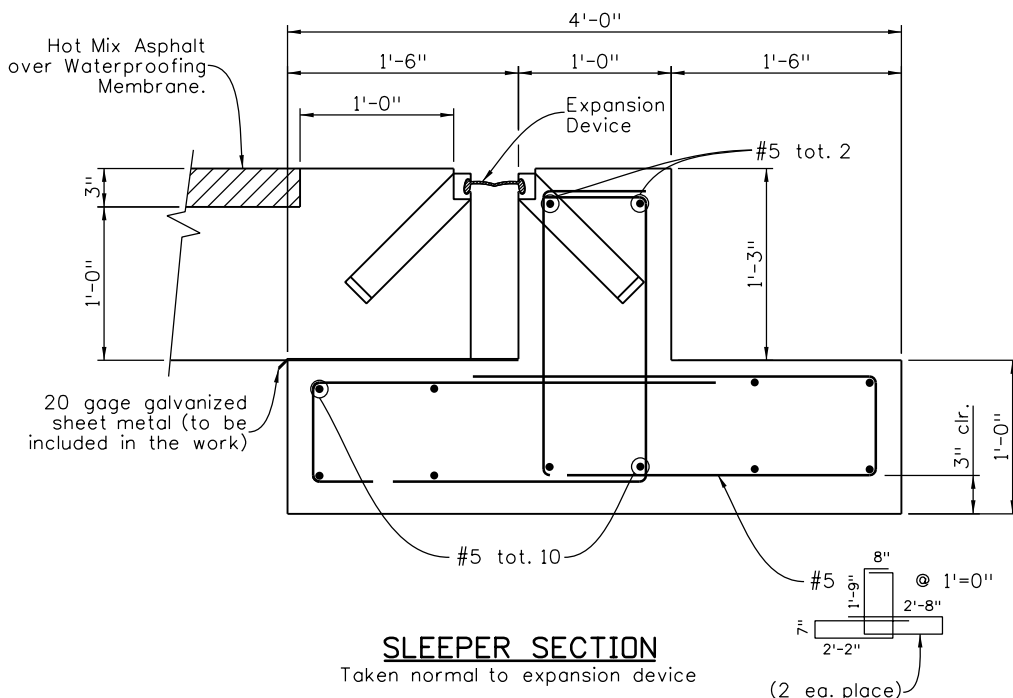
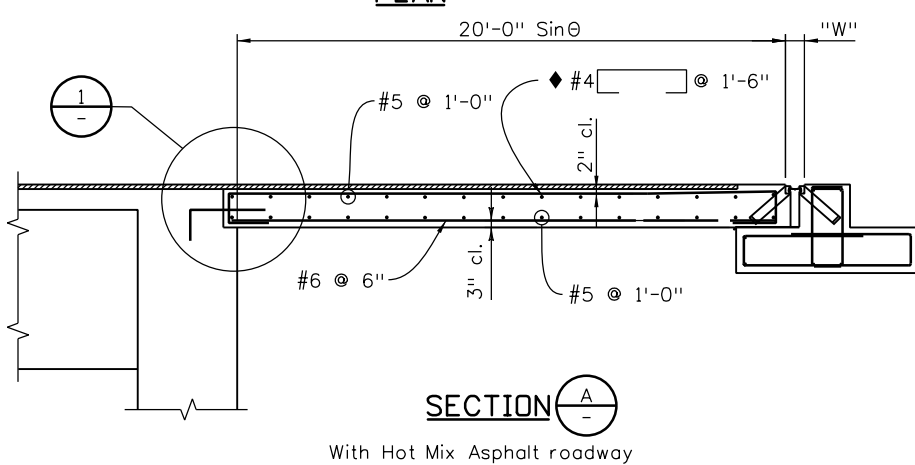
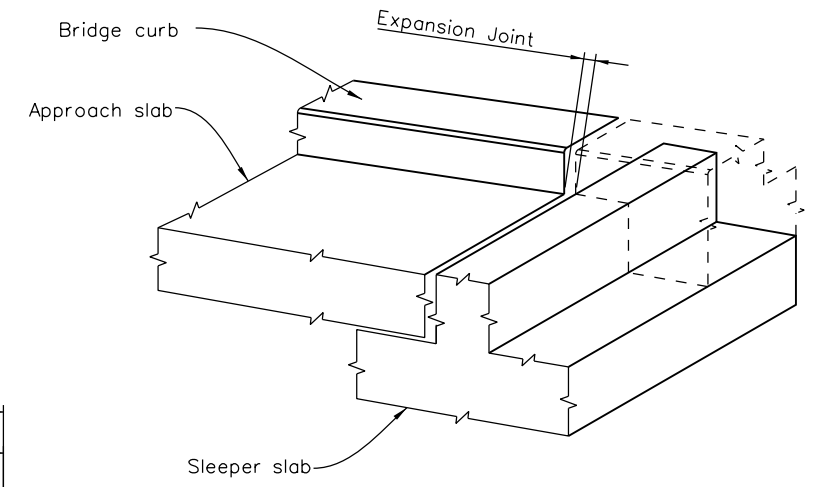
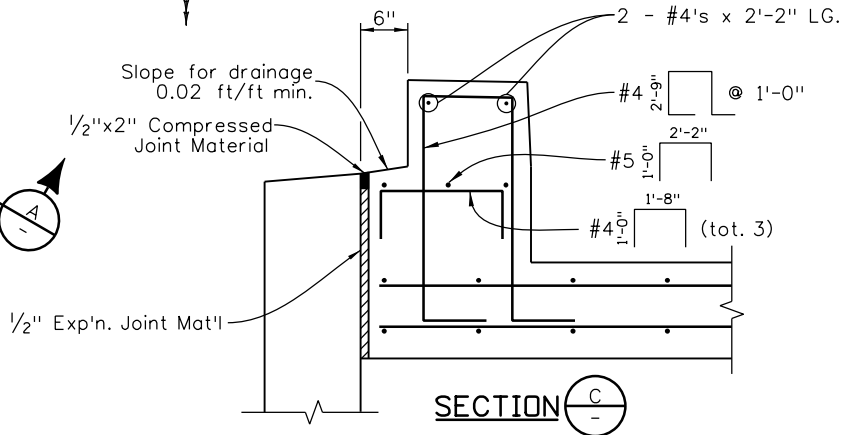
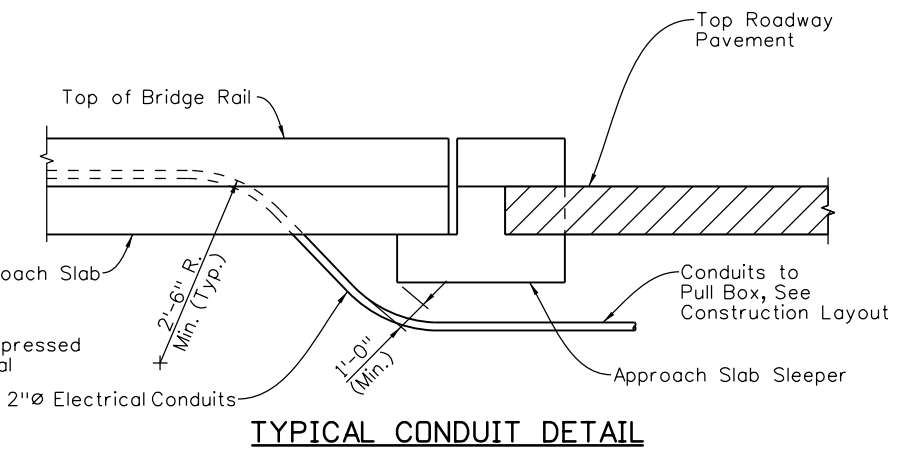
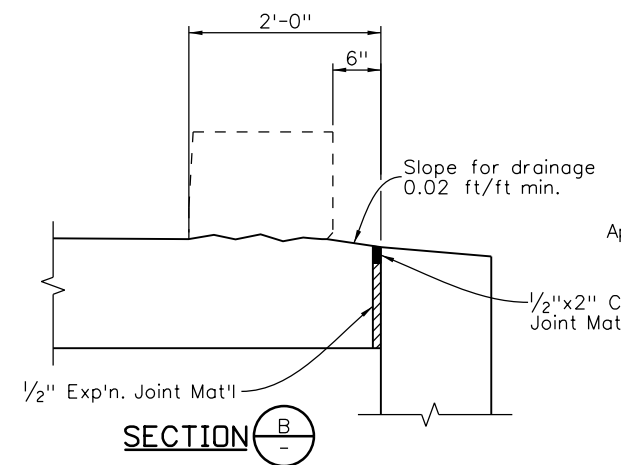
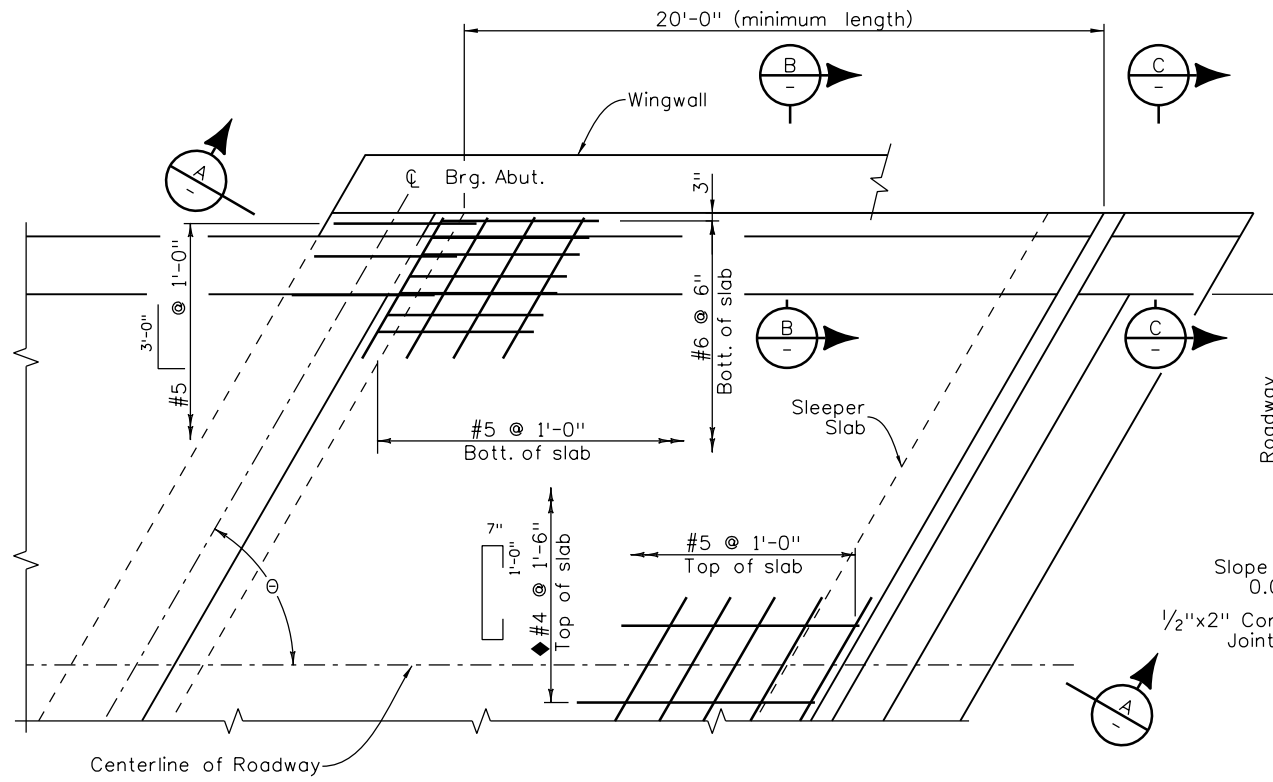
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Designer:	S. Redd	Structure Numbers:	K-18-DA
Detailer:	K. Soellner	Subset Sheets:	B21 of 31
Sheet Subset:	Bridge		

Project No./Code
STA 0503-085
20344
Sheet Number 124

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Checked By	10/7/18	Checked By	10/7/18	Checked By	10/7/18
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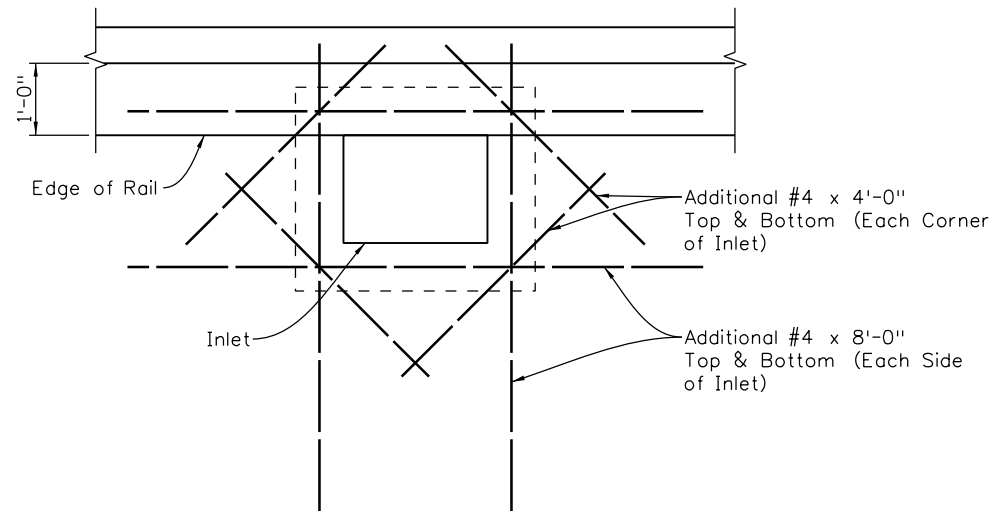


- NOTES:**
- Concrete Class D (Bridge) shall be used for approach slabs.
 - 1/2" expansion joint material shall meet AASHTO Spec. M213.
 - For expansion device details see Sht. B25 & B26.
 - For curb and rail details see Sht. B20 & B21.
 - Approach slab concrete shall be cured in accordance with the Specifications for Bridge Deck Concrete in Subsection 601.
 - The top surface of the post-tensioning block, if any, shall be covered with 1" of low density polystyrene foam.
 - For Compressed Joint Material see Sht. B13.
 - See Sht. B23 & B24 for approach slab inlet details. See Construction Layout for location.

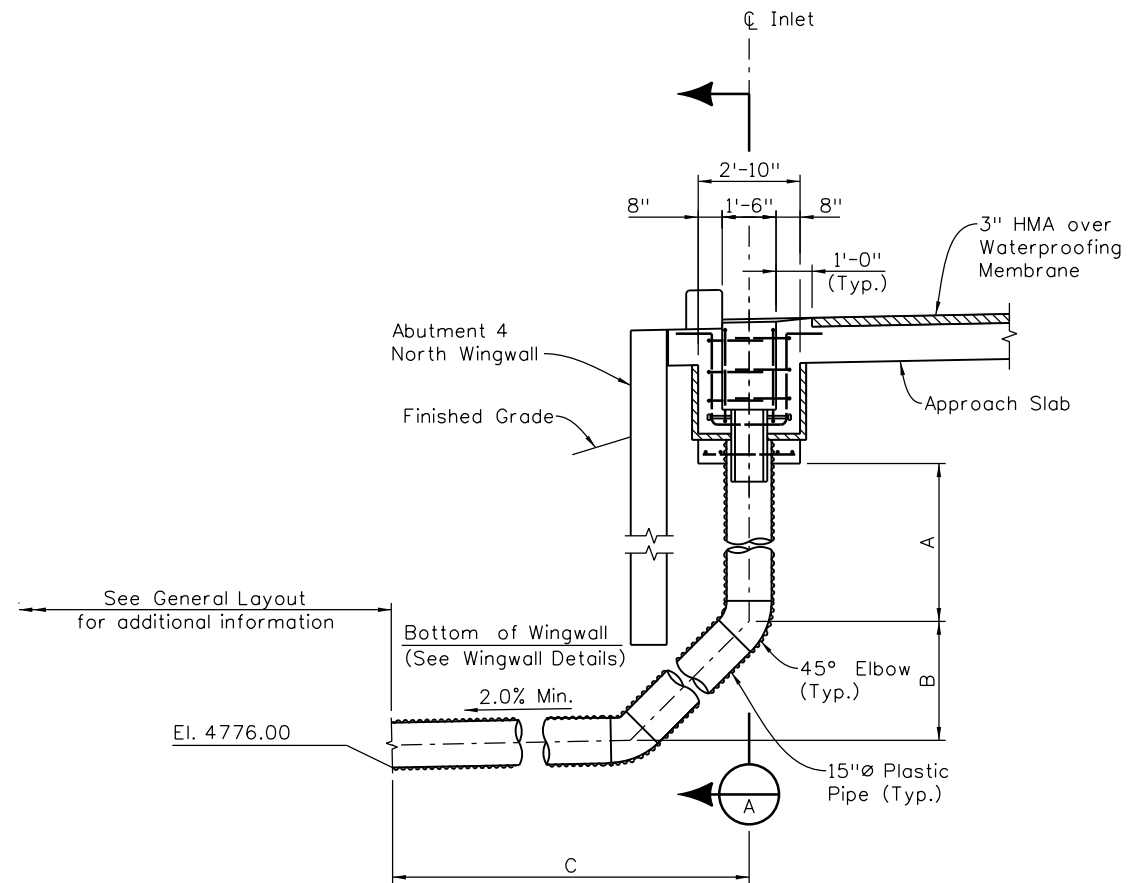
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File Name: 20344BRDG_ApprSlab.dgn		Date:	Comments	Init.	902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2	No Revisions:		STA 0503-085		20344	
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6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440								Sheet Subset: Bridge	Subset Sheets: B22 of 31	Sheet Number 125	

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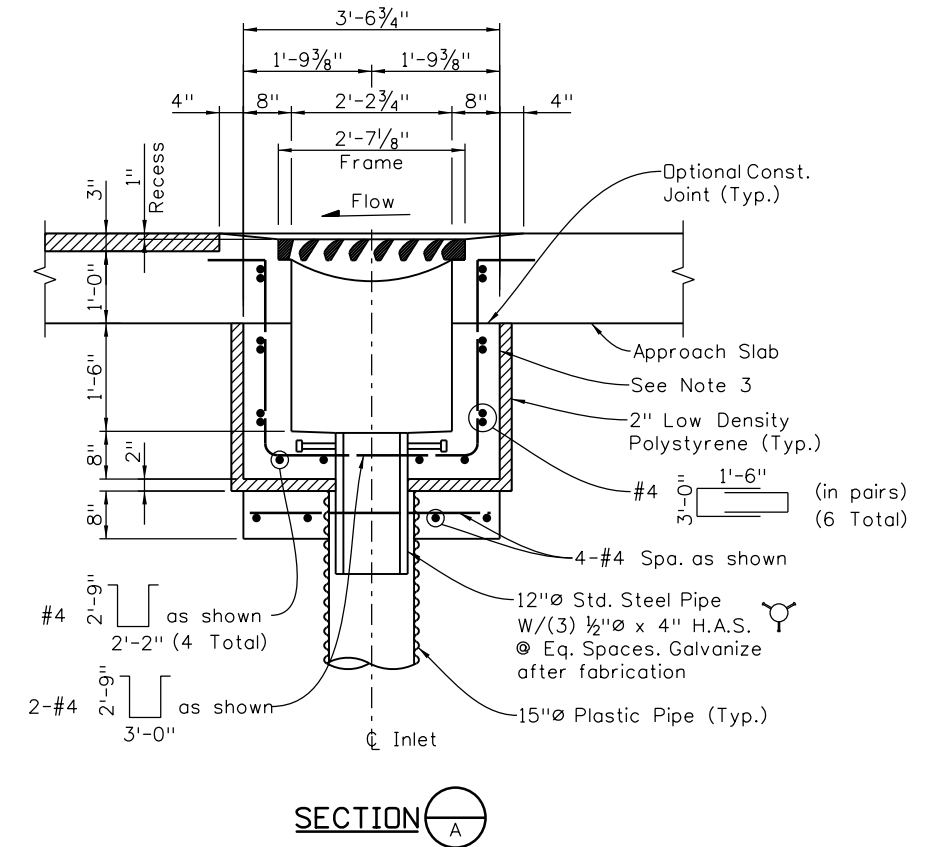


ADDITIONAL SLAB REINFORCING AT INLET



TYPICAL SECTION

OUTLET PIPE DIMENSIONS			
INLET	A	B	C
Abut. 4	4'-0"	3'-10"	60'
-	-	-	-



NOTES:

1. Cut approach slab reinforcing as required for inlet opening. Point cut ends of epoxy coated reinforcing with and approved coating.
2. Concrete shall be Class D (Bridge).
3. Provide inlet grate as shown on Sheet B24. Provide anchor bolts as shown on the Grate Installation Detail.
4. Grate to be installed during construction of inlet box with the vane grate bolted in place to the frame. The cost of the grate, grate frame, expn. joint material, expanded polystyrene, steel pipe and all miscellaneous items required to install the grate shall be included in the work.
5. For Grate & Frame Details, See Sheet B24.
6. Plastic pipe shall conform to the requirements of AASHTO M294, Type S. Plastic pipe shall be joined by watertight coupling as recommended by the pipe supplier or as approved. All joints shall be mechanically restrained to prevent separation.
7. The cost of all materials needed to construct and install the approach slab inlet will not be paid for separately, but shall be included in the Item 603, 15 Inch Plastic Pipe.
8. See General Layout for outlet pipe plan view.

Print Date: 1/19/2017
File Name: 20344BRDG_ApprInlet01.dgn
Horiz. Scale: 1:1 Vert. Scale: As Noted
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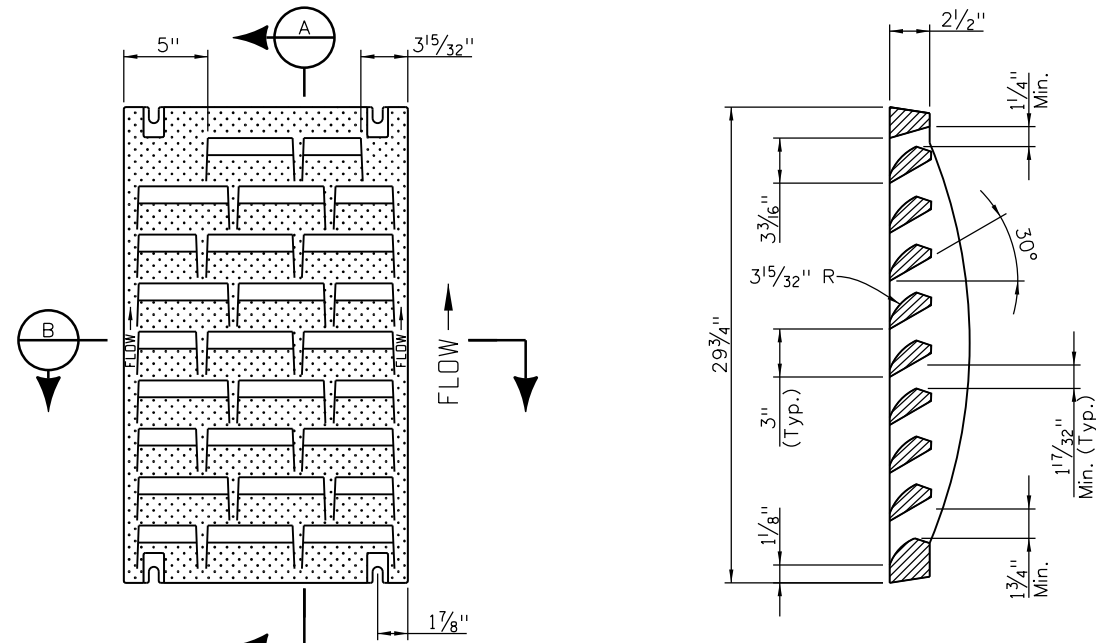
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Designer:	S. Redd	Structure	K-18-DA
Detailer:	K. Soellner	Numbers	
Sheet Subset:	Bridge	Subset Sheets:	B23 of 31

Project No./Code
STA 0503-085
20344
Sheet Number 126

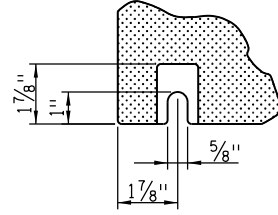
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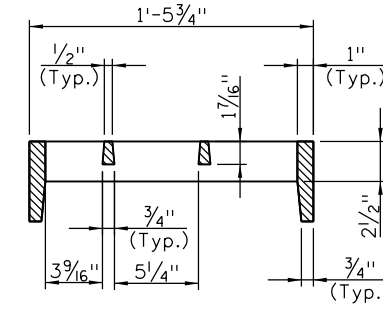


**PLAN
SINGLE GRATE**

SECTION A



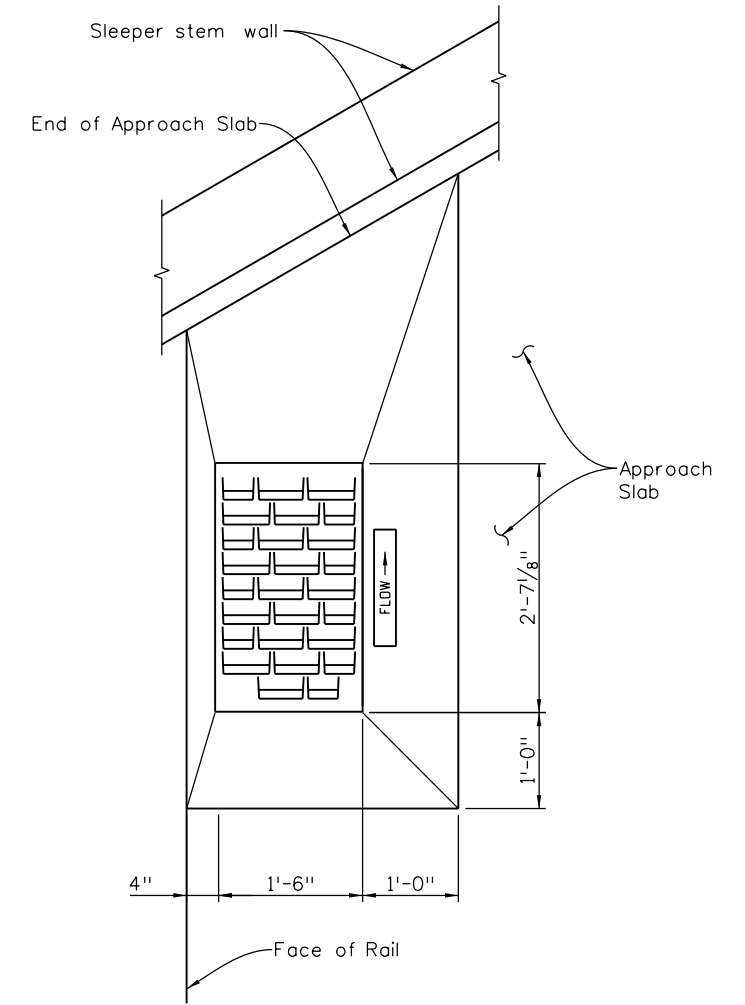
BOLT SLOT DETAIL
(Typ. @ each corner)



SECTION B

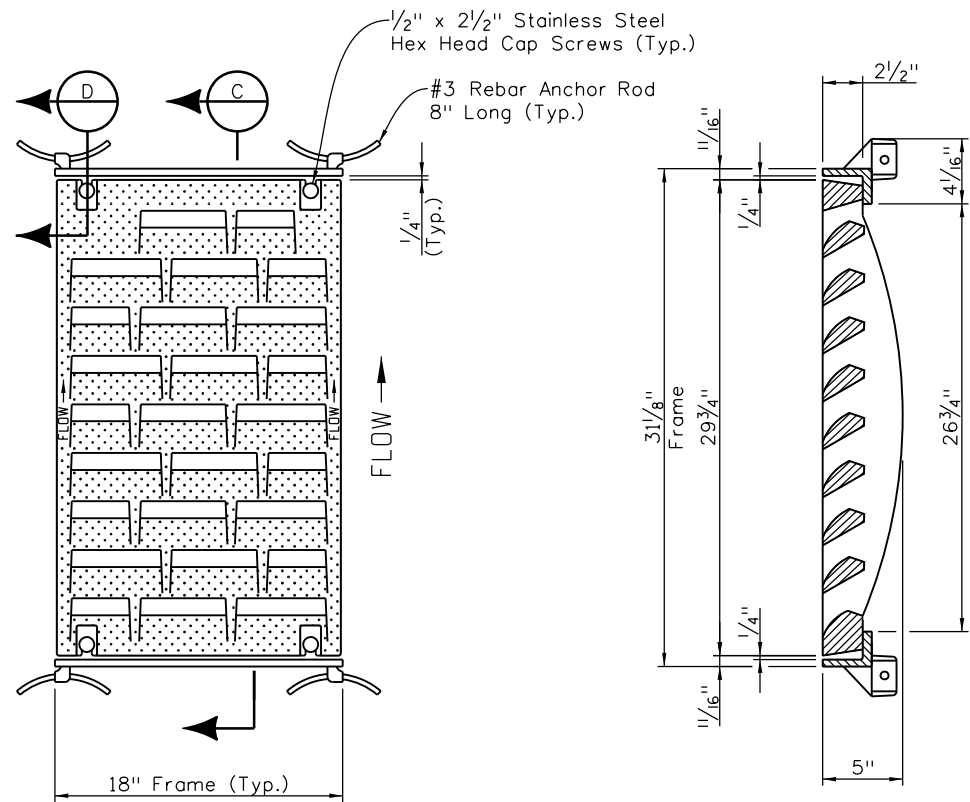
Grate and Frame Specification

Free open area: 1.31 Sq. Ft.
 Material: Cast Gray Iron Class 35,
 ASTM A48-83, AASHTO M105-82
 Finish: No paint
 Weight: Grate 170 lb each; Frame 29 lb each



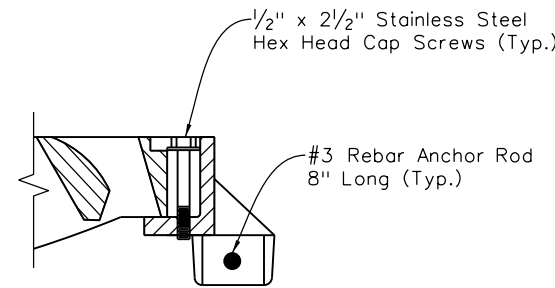
Note:
 The Contractor shall stamp Flow Arrow into top surface of the apron to indicate the direction of flow. These stamped arrows shall be 6" long, 1" high & 3/8" deep.

VANE GRATE INLET APRON

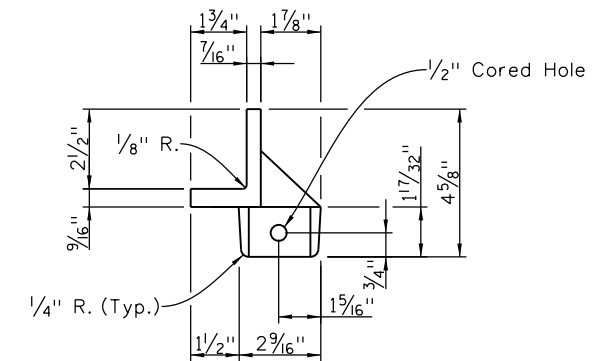


**PLAN
SINGLE GRATE WITH FRAME**

SECTION C



SECTION D



SECTION THRU FRAME

Print Date: 1/19/2017
 File Name: 20344BRDG_ApprInlet02.dgn
 Horiz. Scale: 1:1 Vert. Scale: As Noted
 Staff Bridge Branch - Unit 0226 Unit Leader: DDG

Sheet Revisions			
Date:	Comments	Init.	

Colorado Department of Transportation



902 Erie Avenue
 Pueblo, CO 81001
 Phone: 719-562-5509 FAX: 719-546-5702

Region 2 **DTD**

As Constructed

No Revisions:

Revised:

Void:

**US 50 WEST WESTBOUND
 OVER WILD HORSE DRY CREEK
 APPROACH SLAB INLET DETAILS (2 OF 2)**

Designer: S. Redd Structure: K-18-DA
 Detailer: K. Soellner Numbers:
 Sheet Subset: Bridge Subset Sheets: B24 of 31

Project No./Code

STA 0503-085

20344

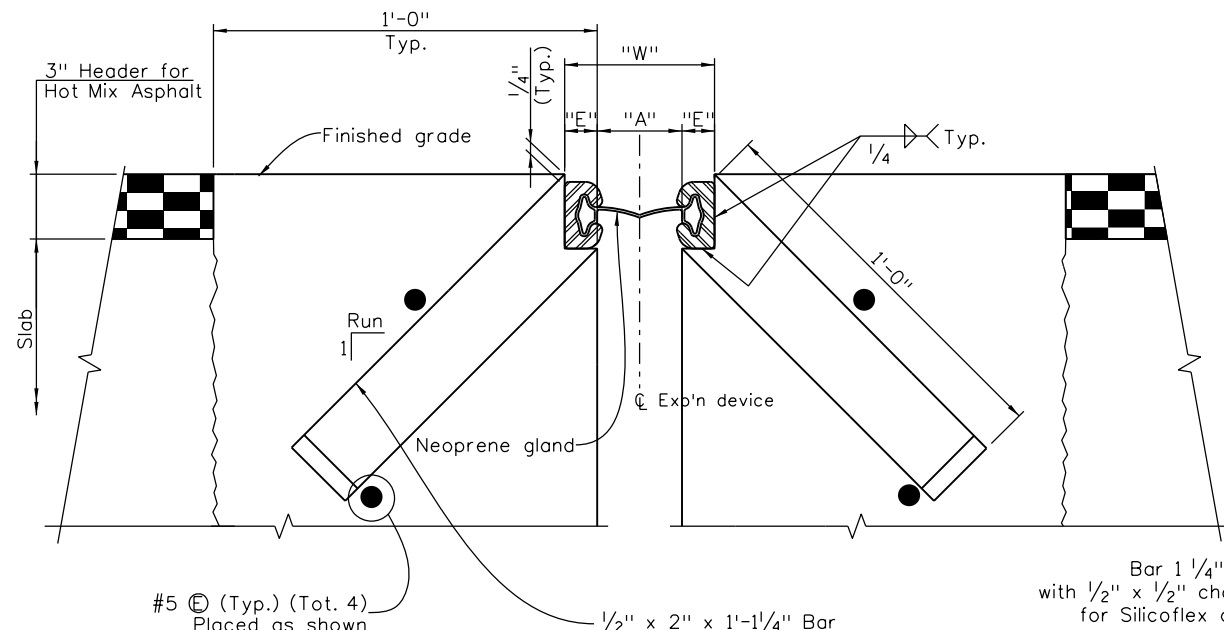
Sheet Number **127**

**FELSBURG
 HOLT &
 ULLEVIG**

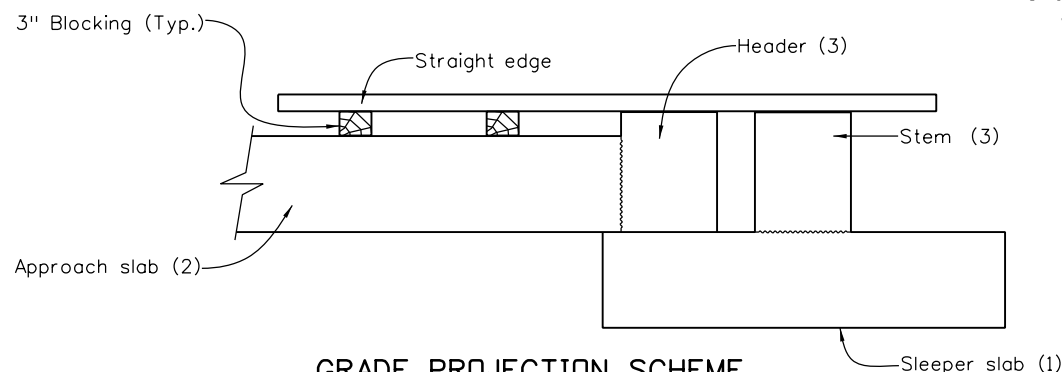
6300 South Syracuse Way
 Suite 600
 Centennial, CO 80111
 (303) 721-1440

ken.soellner 11:09:02 AM J:\112407-01\00 - 20344\Bridge\Drawings\Plot_Set\20344BRDG_ExpDevice01.dgn

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07/16	SCR	07/16	SCR	07/16	KJS
07/16	SCR	07/16	SCR	07/16	KJS



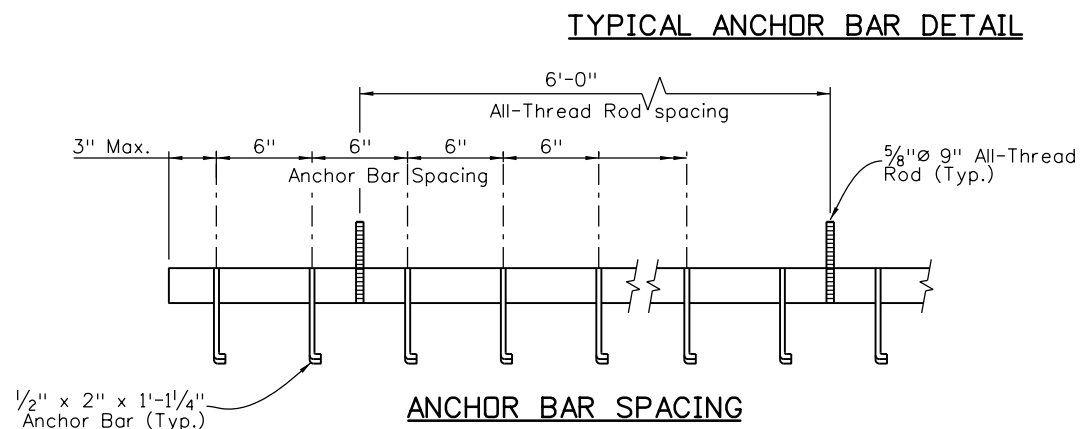
SECTION THRU STRIP SEAL BRIDGE EXPANSION DEVICE
Section taken perpendicular to ϕ exp'n device



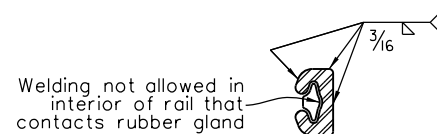
GRADE PROJECTION SCHEME
(Numbers in parenthesis refer to first, second and third concrete pours)

AIR TEMP	"A"	"W"*
-30° F	1 3/4"	4 1/4"
0° F	2"	4 1/2"
30° F	2 1/4"	4 3/4"
60° F	2 1/2"	5"
90° F	2 3/4"	5 1/4"
120° F	3"	5 1/2"

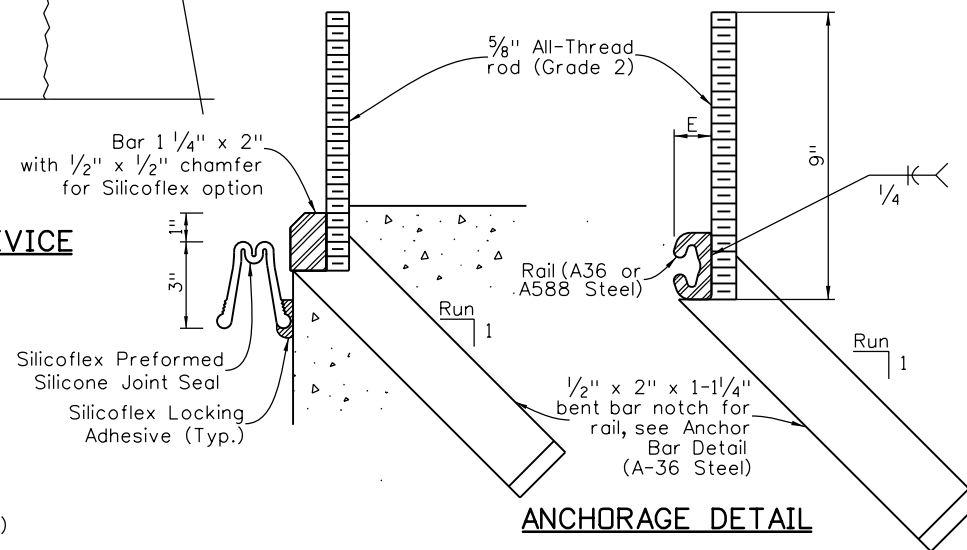
* For E = 1 1/4" (Min.)



ANCHOR BAR SPACING



RAIL FIELD SPLICE DETAIL



ANCHORAGE DETAIL

NOTES:

The expansion device shall be installed on grade, parallel to the slope and grade of the deck.

The expansion device shall not be set before the deck elevations have been approved by the Engineer. The Contractor shall take shots of the expansion device to achieve the required elevations for smoother rideability on bridge approaches.

After the concrete has attained initial set, the attachments used to hold the expansion device assembly in its proper position shall be removed.

"W" and "E" dimensions are dependent upon the particular expansion device supplied, and shall be shown on the working drawings.

See table for dimensions "A" and "W"; interpolate as needed. Do not install the gland until dimension "A" has opened up to at least 1 1/2" (2 1/2" for Silicoflex).

The neoprene gland shall be installed in one piece in accordance with Section 518 of the Standard Specifications.

See Section 518.09 in the Standard Specifications for water tight integrity testing requirements.

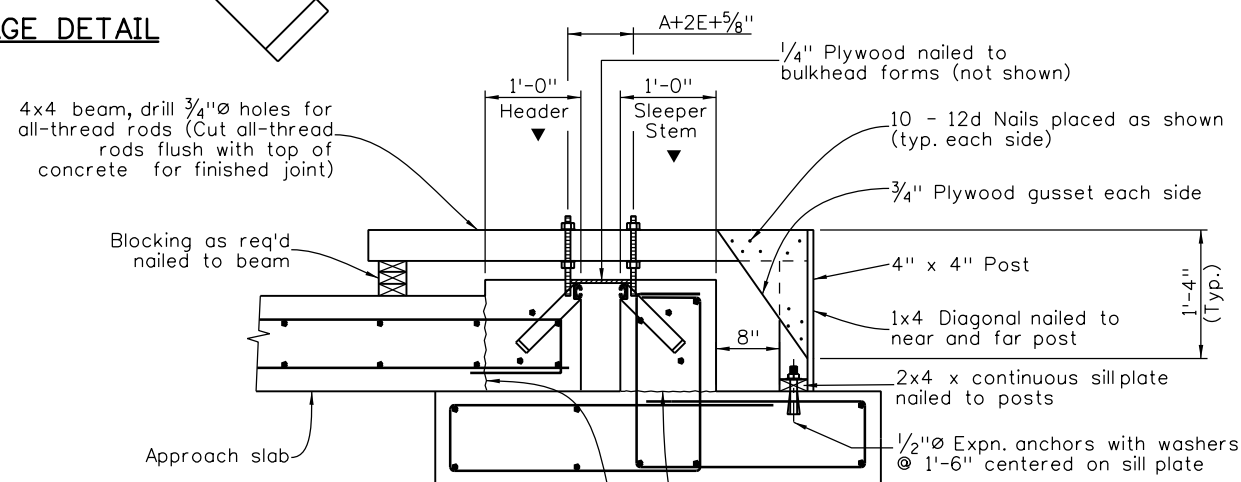
Set elevations at top of header and sleeper stem with the grade projection scheme.

All steel elements (whether grade A36 or A588) of the bridge expansion device, including cover plates, shall be hot dip galvanized after fabrication as per Section 509.11 of the Standard Specifications.

Use a run of 1 or more to accommodate existing conditions and a run of 1 for new construction.

ACCEPTABLE EXPANSION DEVICE ALTERNATES

- D.S. Brown A2R400-SSA2
- WABO SE400 Type A
- E-poxy Engineered Materials S400-A Strip Seal
- R. J. Watson Silicoflex SF 400



NOTES:

- Provide expansion device support as shown at 6'-0" intervals.
- For reinforcing not shown hereon, see approach slab details.

▼ Concrete shall be placed after expansion device has been adjusted to proper grade and approved by the engineer using the Grade Projection Scheme.

MINIMUM SUPPORT BRACKET REQUIREMENTS

Print Date: 1/19/2017
File Name: 20344BRDG_ExpDevice01.dgn
Horiz. Scale: 1:1 Vert. Scale: As Noted
Staff Bridge Branch - Unit 0226 Unit Leader: DDG
6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

902 Erie Avenue
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Region 2 DTD

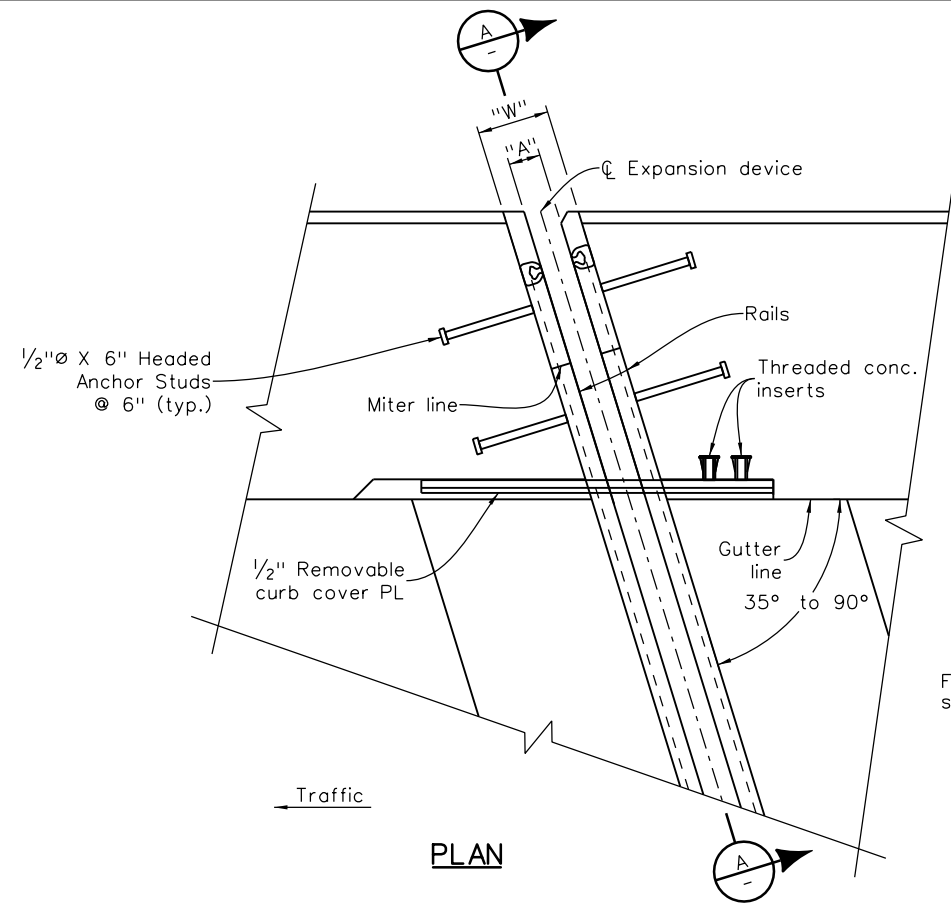
As Constructed
No Revisions:
Revised:
Void:

US 50 WEST WESTBOUND OVER WILD HORSE DRY CREEK EXPANSION DEVICE (0-4 INCH)			
Designer:	S. Redd	Structure Numbers	K-18-DA
Detailer:	K. Soellner	Subset Sheets:	B25 of 31
Sheet Subset:	Bridge		

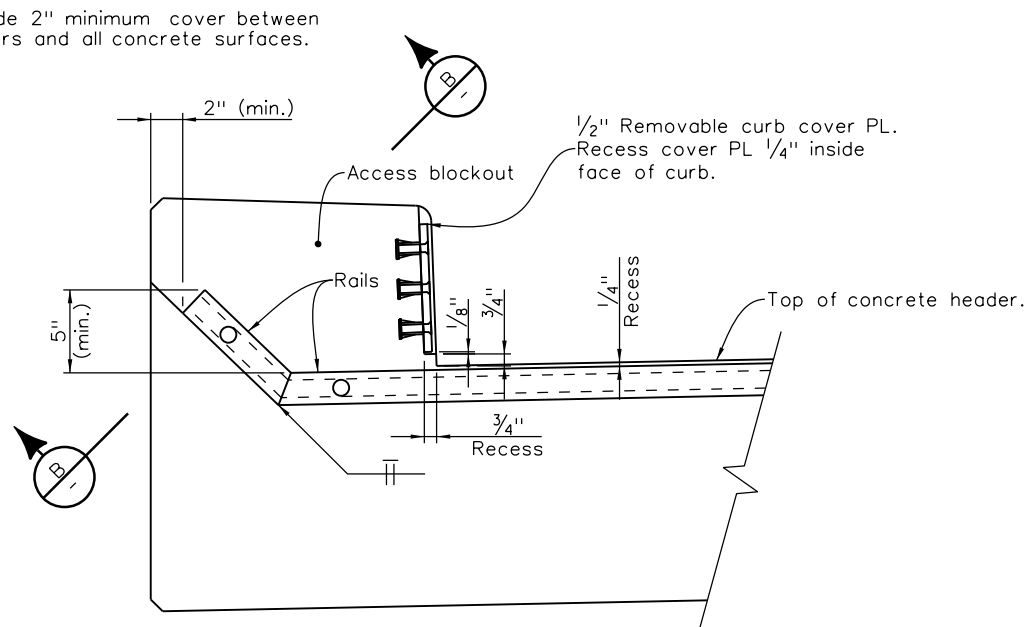
Project No./Code
STA 0503-085
20344
Sheet Number 128

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 ken.soellner 11:09:03 AM

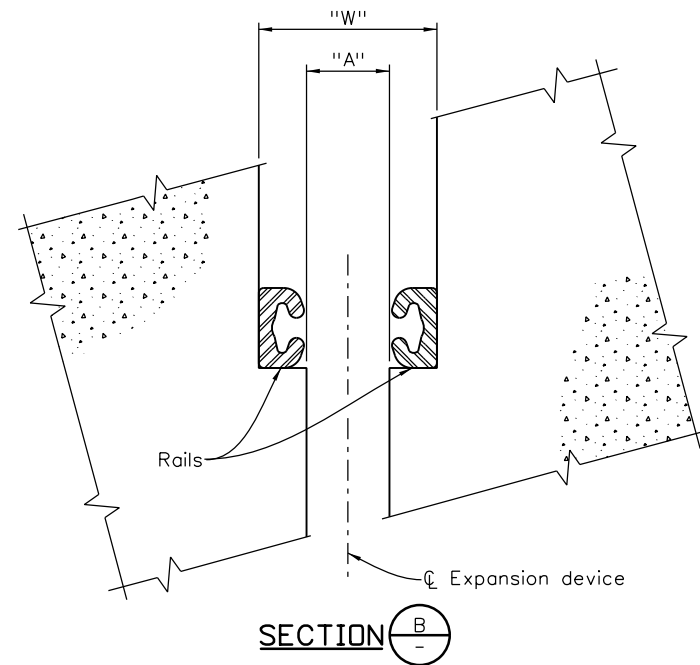
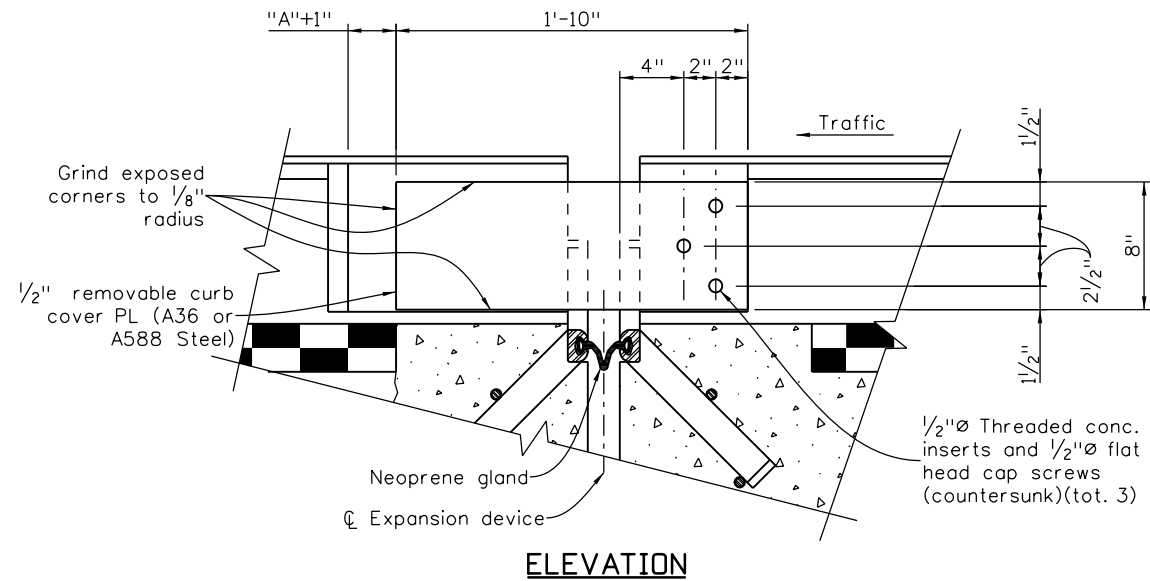
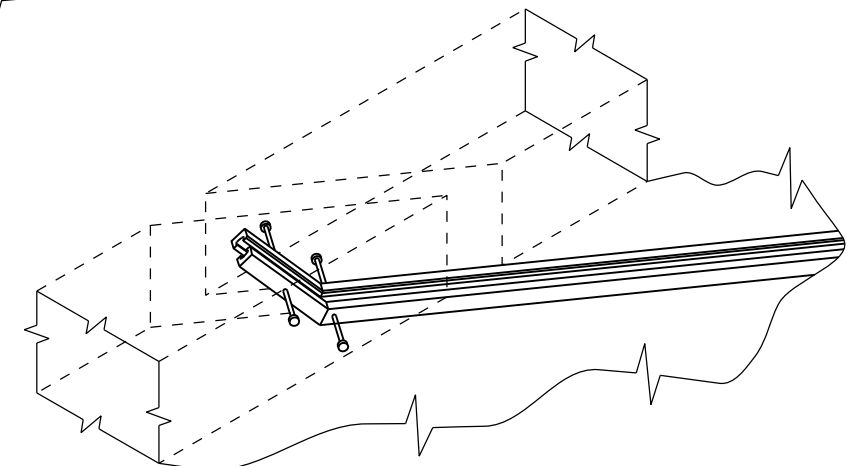
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06/16	SCR	06/16	CDM	06/16	SCR
07/16	CAD	07/16	SCR	07/16	KJS
Checked By	Checked By	Checked By	Checked By	Checked By	Checked By



Provide 2" minimum cover between anchors and all concrete surfaces.



For actual skew direction, see bridge plans.



Print Date: 1/19/2017	0000
File Name: 20344BRDG_ExpDevice02.dgn	
Horiz. Scale: 1:1 Vert. Scale: As Noted	
Staff Bridge Branch - Unit 0226 Unit Leader: DDG	

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Date:	Comments	Init.

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Region 2 DTD

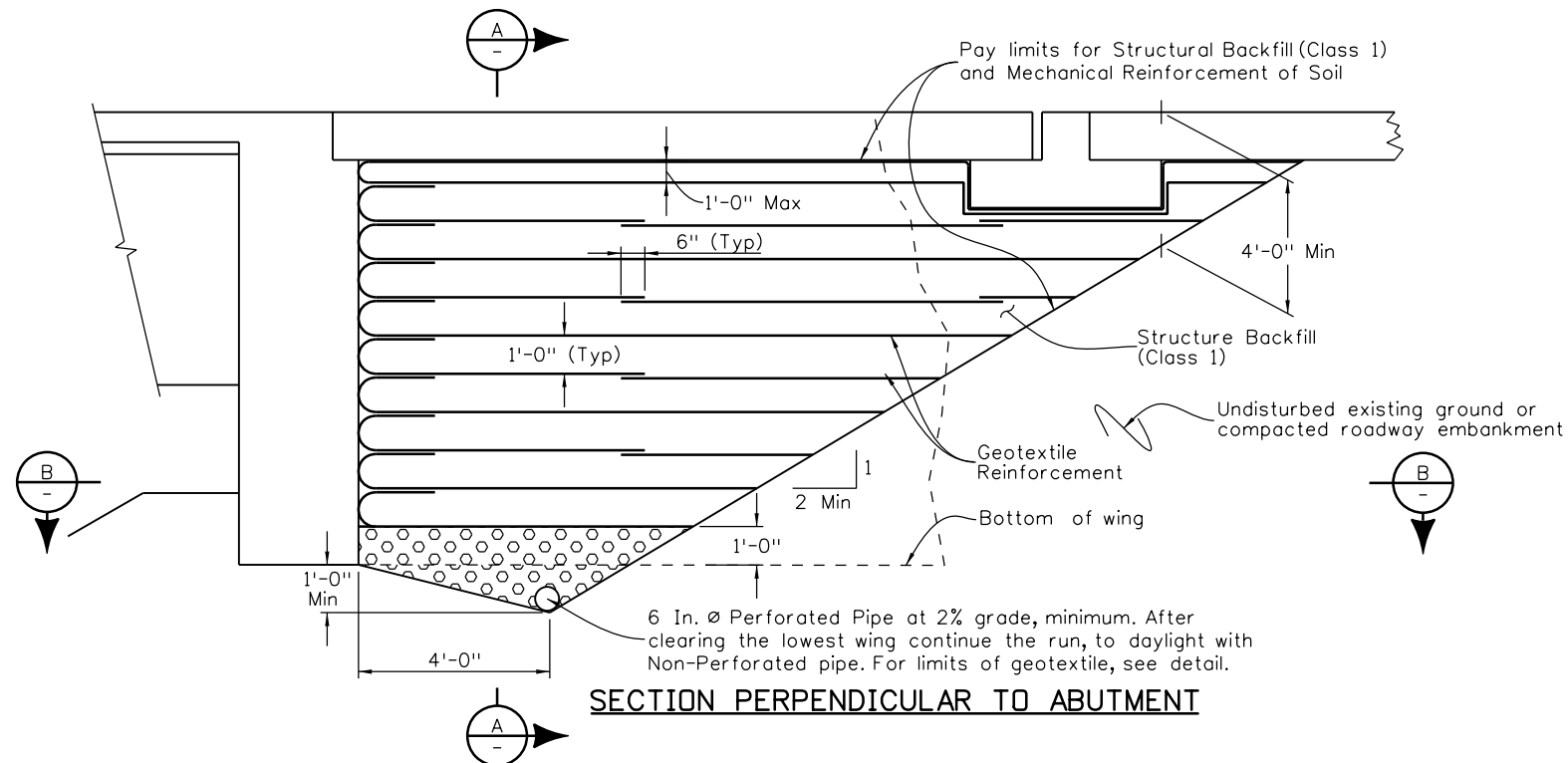
As Constructed
No Revisions:
Revised:
Void:

US 50 WEST WESTBOUND OVER WILD HORSE DRY CREEK EXPANSION DEVICE DETAILS			
Designer:	S. Redd	Structure Numbers	K-18-DA
Detailer:	K. Soellner	Subset Sheets:	B26 of 31
Sheet Subset:	Bridge		

Project No./Code	STA 0503-085
	20344
Sheet Number	129

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 ken.soellner 11:09:04 AM

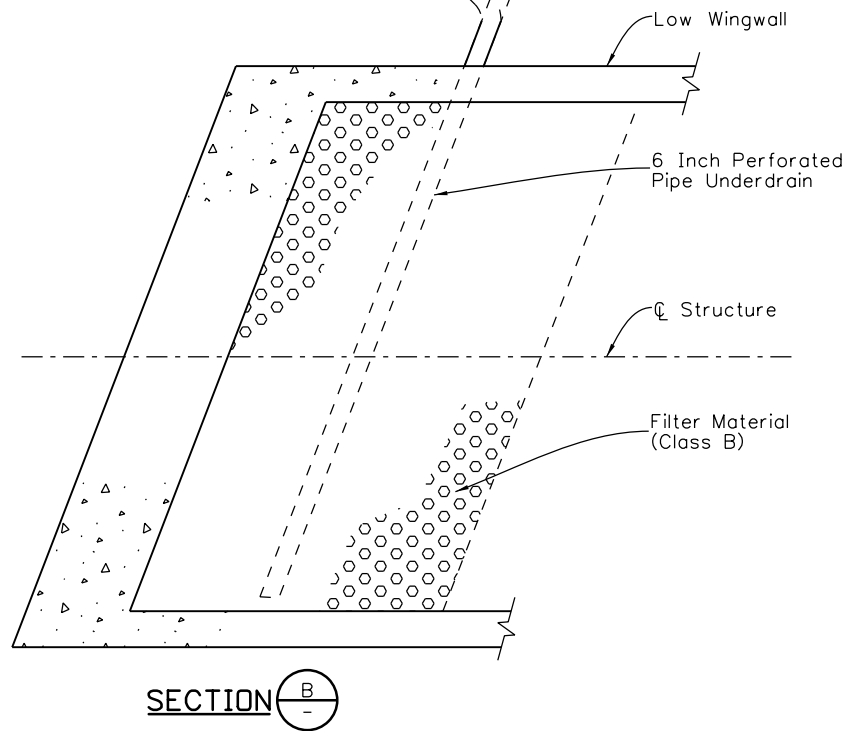
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07/16	Checked By	07/16	Checked By	07/16	Checked By



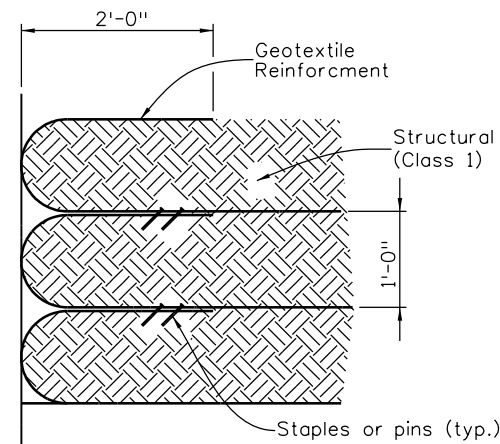
SECTION PERPENDICULAR TO ABUTMENT

Daylight 6"Ø Non-perforated pipe (Subsurface drain outlet).
 Max. bend in pipe = 45°

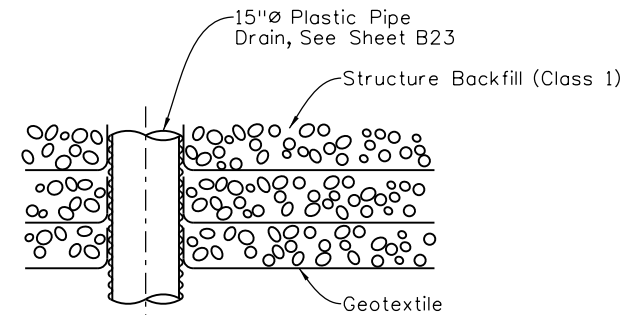
See M-605-1 for end treatment details



SECTION B



WRAP DETAIL

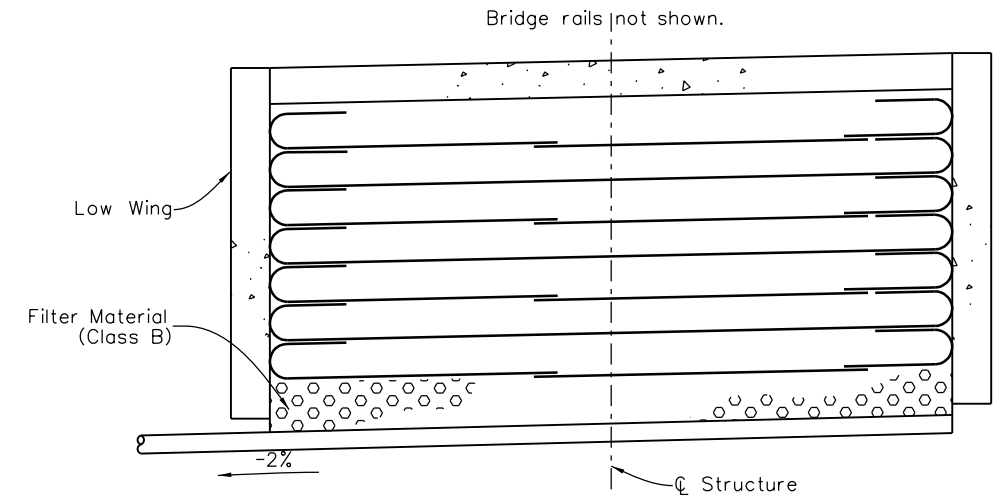


Pipe Penetration Notes:

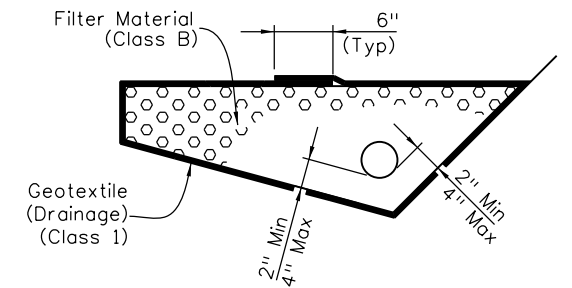
Geotextile layers remain continuous across the width of the abutment.

The Geotextile shall be Cross-Cut in an X pattern at the intersection with 15"Ø Plastic Pipe.

VERTICAL APPROACH SLAB INLET PIPE PENETRATION



SECTION A



6 INCH PERFORATED PIPE UNDERDRAIN

6 Inch Perforated Pipe Underdrain includes all Filter Material (Class B) and Geotextile (Drainage) (Class 1) surrounding the filter Material (Class B).

NOTES:

Geotextile reinforcement shall be woven fabric with a Minimum Average Roll Value of 4800 lb/ft for installations with a gap and 2400 lb/ft for installations without a gap based on ASTM D4595.

Geotextile Reinforcement shall be placed by alternating Machine Direction (MD) with Cross Machine Direction (XD) from layer to layer.

The Geotextile Reinforcement wrap at Back Face of Abutment shall be pulled back slack free with its end anchored to soil underneath with staples or pins.

Minimum splice of all Geofabric shall consist of 6" of overlap.

Payment for all work items shown will be made under Item 206 Mechanical Reinforcement of Soil (CY) and Item 206 Structure Backfill (Class 1) (CY) and Shall include the cost for 6 inch Ø Perforated Pipe underdrain and Subsurface Drain Outlet (6 inch Ø NonPerforated Pipe).

Installation of Pipe Underdrain and Subsurface Drain Outlet will conform to the Construction requirements of section 605.03 and 605.06, respectively.

Print Date: 1/19/2017	0000
File Name: 20344BRDG_Mech-backfill.dgn	
Horiz. Scale: 1:1 Vert. Scale: As Noted	
Staff Bridge Branch - Unit 0226 Unit Leader: DDG	
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Sheet Revisions		
Date:	Comments	Init.

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Region 2 DTD

As Constructed
No Revisions:
Revised:
Void:

US 50 WEST WESTBOUND OVER WILD HORSE DRY CREEK MECH. STAB. EARTH BACKFILL			
Designer:	S. Redd	Structure Numbers:	K-18-DA
Detailer:	K. Soellner	Sheet Subset:	Bridge
Sheet Subset: Bridge		Subset Sheets:	B27 of 31

Project No./Code
STA 0503-085
20344
Sheet Number 130

STRUCTURE ID: K-18-DA BRIDGE GEOMETRY (WIN2.1.0e) 16/11/10 07:04

DESCRIPTION

Units: feet;
 Project: STA 0503-085; Subaccount: 20344;
 Designer: K. Soellner; Detailer: K. Soellner;
 Location: US50 West WB over Wild Horse Dry Creek;
 Three Span (55'-0" / 73'-6" / 55'-0") Bridge
 Composite Concrete Slab and Precast/Prestressed Concrete BT42 Girders
 63'-0" Width out to out
 60'-0" Width curb to curb
 Bridge Rail Type 10

HORIZONTAL ALIGNMENT DATA

HORIZONTAL TANGENT

VERTICAL ALIGNMENT DATA

ELEVATION AT PI	ELEVATION AT GRADE	STATION	ELEVATION AT GRADE	ELEVATION AT PI	PERCENT GRADE
					-1.540000
4792.9400	4794.2105 PC 4793.1545 PI 4792.5276 PT	575+82.9300 576+65.4300 577+47.9300			
					-0.499932
4789.6200	4790.0324 PC 4789.8262 PI 4790.0325 PT	582+47.0200 583+29.5200 584+12.0200			
					0.500000

TABLE OF ROADWAY CROSS-SLOPES (SUPERELEVATION: E+ -NC-)

STATION	SLOPE LEFT	SLOPE RIGHT	VC LENGTH
---------	------------	-------------	-----------

OFFSET PROFILE CONTROL TO PIVOT POINT = 0.0000 FEET

LIMITS OF VALID ELEVATION AND CROSS-SLOPE DATA

BEGIN * UNLIMITED *
 END * UNLIMITED *

LAYOUT LINE DATA

LAYOUT LINE DEFINED TO BE COINCIDENT WITH HORIZONTAL CONTROL

LAYOUT LINE INTERSECTS REF LINE AT	HCL STA	OFFSET	X	Y
	577+83.5914	0.00000000	0.0000	0.0000

DEAD LOAD DEFLECTION DATA

DEFLECTIONS AT TENTH POINTS FROM FITTED CURVE

	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
FOR BENT LINE: CL BRG A1 AND OTHERS 07 CARD(S): 1 GIRDER LINES REFERENCED BY: A													
INCH	0.0000	0.0964	0.1822	0.2495	0.2923	0.3071	0.2928	0.2504	0.1832	0.0971	0.0000	INCH	
FOOT	0.0000	0.0080	0.0152	0.0208	0.0244	0.0256	0.0244	0.0209	0.0153	0.0081	0.0000	FOOT	
SLOPE	0.081931											-0.082808	SLOPE
FOR BENT LINE: P2 BRG AHD 07 CARD(S): 1 GIRDER LINES REFERENCED BY: A													
INCH	0.0000	0.2694	0.5170	0.7142	0.8408	0.8843	0.8408	0.7142	0.5170	0.2694	0.0000	INCH	
FOOT	0.0000	0.0224	0.0431	0.0595	0.0701	0.0737	0.0701	0.0595	0.0431	0.0224	0.0000	FOOT	
SLOPE	0.223933											-0.223933	SLOPE
FOR BENT LINE: CL BRG A1 AND OTHERS 07 CARD(S): 1 GIRDER LINES REFERENCED BY: B													
INCH	0.0000	0.1090	0.2042	0.2796	0.3283	0.3450	0.3280	0.2793	0.2040	0.1090	0.0000	INCH	
FOOT	0.0000	0.0091	0.0170	0.0233	0.0274	0.0287	0.0273	0.0233	0.0170	0.0091	0.0000	FOOT	
SLOPE	0.095600											-0.095930	SLOPE
FOR BENT LINE: P2 BRG AHD 07 CARD(S): 1 GIRDER LINES REFERENCED BY: B													
INCH	0.0000	0.3021	0.5787	0.7985	0.9393	0.9877	0.9393	0.7985	0.5787	0.3021	0.0000	INCH	
FOOT	0.0000	0.0252	0.0482	0.0665	0.0783	0.0823	0.0783	0.0665	0.0482	0.0252	0.0000	FOOT	
SLOPE	0.251929											-0.251929	SLOPE

BENT LINE DESCRIPTION	INTERSECTION POINT	OFFSET	ORDINATE	NORTHING	EASTING	PROJECT LENGTH FROM	Y-AXIS	BENT LINE LENGTH FROM	SKEW	GIRDER LINE CROSS-SLOPE	ROADWAY
:	STATION	OFFSET	ELEVATION	X	Y	:	:	D	M	S	:

* HORIZONTAL CONTROL LINE * AT FINISHED GRADE

END APPR	577+61.8593	0.0000	4792.4579	1	0.0000	-21.7321	600956.2817	243919.0956	0.0000	-30 00 00.00	-21.7321 +/- .020000
BF ABUT 1	577+81.8593	0.0000	4792.3579	1	0.0000	-1.7321	600952.7754	243938.7858	0.0000	-30 00 00.00	-1.7321 +/- .020000
CL BRG A1	577+83.5914	0.0000	4792.3493	10	0.0000	0.0000	600952.4717	243940.4911	0.0000	-30 00 00.00	0.0000 +/- .020000
P2 BRG BK	578+37.4367	0.0000	4792.0801	1	0.0000	53.8453	600943.0318	243993.5025	0.0000	-30 00 00.00	53.8453 +/- .020000
CL PIER 2	578+38.5914	0.0000	4792.0743	1	0.0000	55.0000	600942.8294	243994.6393	0.0000	-30 00 00.00	55.0000 +/- .020000
P2 BRG AHD	578+39.7461	0.0000	4792.0685	10	0.0000	56.1547	600942.6269	243995.7761	0.0000	-30 00 00.00	56.1547 +/- .020000
P3 BRG BK	579+10.9369	0.0000	4791.7126	1	0.0000	127.3455	600930.1461	244065.8643	0.0000	-30 00 00.00	127.3455 +/- .020000
CL PIER 3	579+12.0914	0.0000	4791.7069	1	0.0000	128.5000	600929.9437	244067.0009	0.0000	-30 00 00.00	128.5000 +/- .020000
P3 BRG AHD	579+13.2463	0.0000	4791.7011	10	0.0000	129.6549	600929.7412	244068.1380	0.0000	-30 00 00.00	129.6549 +/- .020000
CL BRG A4	579+67.0914	0.0000	4791.4319	1	0.0000	183.5000	600920.3014	244121.1491	0.0000	-30 00 00.00	183.5000 +/- .020000
BF ABUT 4	579+68.8236	0.0000	4791.4232	1	0.0000	185.2322	600919.9977	244122.8545	0.0000	-30 00 00.00	185.2322 +/- .020000
END APPR	579+88.8236	0.0000	4791.3233	0.0	0.0000	205.2322	600916.4914	244142.5447	0.0000	-30 00 00.00	205.2322 +/- .020000

Note: Elevations are at top of concrete Positive Roadway Cross Slope is These Stations, Coordinates, Offsets and Lengths define the layout of the structure in a two dimensional horizontal plane. Elevations define the final deck 3 Inches below Finished Grade. Upwards from the Profile Grade Line. grade of the finished concrete deck. Fabrication of structural components through the direct use of this information is not intended or advisable.

Print Date: 1/19/2017	Sheet Revisions			 Colorado Department of Transportation 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2	As Constructed No Revisions: Revised: Void:	US 50 WEST WESTBOUND OVER WILD HORSE DRY CREEK BRIDGE DECK ELEVATIONS (1 OF 4)			Project No./Code STA 0503-085 20344 Sheet Number 131
File Name: 20344BRDG_DeckElevs.dgn	Date:	Comments	Init.			Designer: S. Redd Detailer: K. Soellner Sheet Subset: Bridge	Structure Numbers K-18-DA Subset Sheets: B28 of 31		
Horiz. Scale: 1:1	Vert. Scale: As Noted								
Staff Bridge Branch - Unit 0226	Unit Leader: DDG								
 6300 South Syracuse Way Suite 600 Centennial, CO 80111 (303) 721-1440									

Design		Detail		Quantities	
Checked By	DATE	Checked By	DATE	Checked By	DATE
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Checked By	07/16	Checked By	07/16	Checked By	08/16

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Design	DATE	INITIAL	DATE	INITIAL
	06/16	CDM	07/16	KJS
Quantities	DATE	INITIAL	DATE	INITIAL
	06/16	SCR	07/16	KJS

LEFT EDGE OF DECK			PARALLEL TO HORIZONTAL CONTROL							0.250000 FEET BELOW FINISHED GRADE			
BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP	
END APPR	577+33.2805	-49.5000	4791.3676	-49.5000	-50.3109	601010.0253	243899.6375	-57.1577	-30 00 00.00	-21.7321	-0.020000		
BF ABUT 1	577+53.2805	-49.5000	4791.2608	-49.5000	-30.3109	601006.5190	243919.3277	-57.1577	-30 00 00.00	-1.7321	-0.020000		
CL BRG A1	577+55.0126	-49.5000	4791.2521	791.2521	-49.5000	-28.5788	601006.2154	243921.0330	-57.1577	-30 00 00.00	0.0000	-0.020000	
F-1	577+60.3971	-49.5000	4791.2252	791.2333	-49.5000	-23.1943	601005.2714	243926.3341			5.3845	-0.020000	
F-2	577+65.7816	-49.5000	4791.1983	791.2135	-49.5000	-17.8098	601004.3274	243931.6352			10.7691	-0.020000	
F-3	577+71.1662	-49.5000	4791.1714	791.1922	-49.5000	-12.4252	601003.3834	243936.9364			16.1536	-0.020000	
F-4	577+76.5507	-49.5000	4791.1445	791.1688	-49.5000	-7.0407	601002.4394	243942.2375			21.5381	-0.020000	
F-5	577+81.9352	-49.5000	4791.1176	791.1431	-49.5000	-1.6562	601001.4954	243947.5387			26.9227	-0.020000	
F-6	577+87.3197	-49.5000	4791.0906	791.1150	-49.5000	3.7283	601000.5514	243952.8398			32.3072	-0.020000	
F-7	577+92.7043	-49.5000	4791.0637	791.0846	-49.5000	9.1129	600999.6074	243958.1410			37.6917	-0.020000	
F-8	577+98.0888	-49.5000	4791.0368	791.0521	-49.5000	14.4974	600998.6634	243963.4421			43.0762	-0.020000	
F-9	578+03.4733	-49.5000	4791.0099	791.0180	-49.5000	19.8819	600997.7195	243968.7432			48.4608	-0.020000	
P2 BRG BK	578+08.8579	-49.5000	4790.9830	790.9830	-49.5000	25.2665	600996.7755	243974.0444	-57.1577	-30 00 00.00	53.8453	-0.020000	
CL PIER 2	578+10.0126	-49.5000	4790.9772		-49.5000	26.4212	600996.5730	243975.1812	-57.1577	-30 00 00.00	55.0000	-0.020000	
P2 BRG AHD	578+11.1673	-49.5000	4790.9714	790.9714	-49.5000	27.5759	600996.3706	243976.3180	-57.1577	-30 00 00.00	56.1547	-0.020000	
F-1	578+18.2863	-49.5000	4790.9358	790.9583	-49.5000	34.6949	600995.1225	243983.3268			63.2738	-0.020000	
F-2	578+25.4054	-49.5000	4790.9002	790.9433	-49.5000	41.8140	600993.8744	243990.3356			70.3929	-0.020000	
F-3	578+32.5245	-49.5000	4790.8646	790.9242	-49.5000	48.9331	600992.6263	243997.3444			77.5119	-0.020000	
F-4	578+39.6436	-49.5000	4790.8291	790.8991	-49.5000	56.0522	600991.3783	244004.3533			84.6310	-0.020000	
F-5	578+46.7627	-49.5000	4790.7935	790.8671	-49.5000	63.1713	600990.1302	244011.3621			91.7501	-0.020000	
F-6	578+53.8817	-49.5000	4790.7579	790.8279	-49.5000	70.2903	600988.8821	244018.3709			98.8692	-0.020000	
F-7	578+61.0008	-49.5000	4790.7223	790.7818	-49.5000	77.4094	600987.6340	244025.3797			105.9883	-0.020000	
F-8	578+68.1199	-49.5000	4790.6867	790.7298	-49.5000	84.5285	600986.3859	244032.3886			113.1073	-0.020000	
F-9	578+75.2390	-49.5000	4790.6511	790.6735	-49.5000	91.6476	600985.1378	244039.3974			120.2264	-0.020000	
P3 BRG BK	578+82.3581	-49.5000	4790.6155	790.6155	-49.5000	98.7667	600983.8898	244046.4062	-57.1577	-30 00 00.00	127.3453	-0.020000	
CL PIER 3	578+83.5126	-49.5000	4790.6097		-49.5000	99.9212	600983.6874	244047.5429	-57.1577	-30 00 00.00	128.5000	-0.020000	
P3 BRG AHD	578+84.6675	-49.5000	4790.6040	790.6040	-49.5000	101.0761	600983.4849	244048.6799	-57.1577	-30 00 00.00	129.6549	-0.020000	
F-1	578+90.0520	-49.5000	4790.5770	790.5851	-49.5000	106.4606	600982.2409	244055.9810			135.0394	-0.020000	
F-2	578+95.4365	-49.5000	4790.5501	790.5653	-49.5000	111.8451	600981.0969	244062.9821			140.4239	-0.020000	
F-3	579+00.8210	-49.5000	4790.5232	790.5440	-49.5000	117.2296	600980.8529	244069.9832			145.8084	-0.020000	
F-4	579+06.2055	-49.5000	4790.4963	790.5206	-49.5000	122.6141	600979.6089	244076.9843			151.1929	-0.020000	
F-5	579+11.5900	-49.5000	4790.4694	790.4950	-49.5000	127.9986	600978.3649	244083.9854			156.5774	-0.020000	
F-6	579+16.9745	-49.5000	4790.4424	790.4668	-49.5000	133.3831	600977.1209	244090.9865			161.9620	-0.020000	
F-7	579+22.3590	-49.5000	4790.4155	790.4364	-49.5000	138.7676	600975.8770	244097.9876			167.3465	-0.020000	
F-8	579+27.7435	-49.5000	4790.3886	790.4039	-49.5000	144.1521	600974.6280	244104.9887			172.7310	-0.020000	
F-9	579+33.1281	-49.5000	4790.3617	790.3698	-49.5000	149.5367	600973.3790	244111.9898			178.1155	-0.020000	
CL BRG A4	579+38.5126	-49.5000	4790.3348	790.3348	-49.5000	154.9212	600972.1300	244118.9909	-57.1577	-30 00 00.00	183.5000	-0.020000	
BF ABUT 4	579+40.2448	-49.5000	4790.3261		-49.5000	156.6534	600971.8810	244125.9910	-57.1577	-30 00 00.00	185.2322	-0.020000	
END APPR	579+60.2448	-49.5000	4790.2261		-49.5000	176.6534	600970.6320	244132.9921	-57.1577	-30 00 00.00	205.2322	-0.020000	

CL GIRDERLINE G1			PARALLEL TO HORIZONTAL CONTROL							0.250000 FEET BELOW FINISHED GRADE			
BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP	
END APPR	577+35.0125	-46.5000	4791.4174	-46.5000	-48.5789	601006.7681	243900.8167	-53.6936	-30 00 00.00	-21.7321	-0.020000		
BF ABUT 1	577+55.0126	-46.5000	4791.3121	-46.5000	-28.5789	601003.2618	243920.5070	-53.6936	-30 00 00.00	-1.7321	-0.020000		
CL BRG A1	577+56.7445	-46.5000	4791.3035	791.3035	-46.5000	-26.8468	601002.9582	243922.2123	-53.6936	-30 00 00.00	0.0000	-0.020000	
F-1	577+62.1291	-46.5000	4791.2766	791.2846	-46.5000	-21.4623	601002.0142	243927.5134			5.3845	-0.020000	
F-2	577+67.5137	-46.5000	4791.2497	791.2648	-46.5000	-16.0777	601001.0702	243932.8146			10.7691	-0.020000	
F-3	577+72.8982	-46.5000	4791.2227	791.2435	-46.5000	-10.6932	601000.1262	243938.1157			16.1536	-0.020000	
F-4	577+78.2827	-46.5000	4791.1958	791.2202	-46.5000	-5.3087	600999.1822	243943.4168			21.5381	-0.020000	
F-5	577+83.6673	-46.5000	4791.1689	791.1945	-46.5000	0.0759	600998.2382	243948.7180			26.9227	-0.020000	
F-6	577+89.0518	-46.5000	4791.1420	791.1664	-46.5000	5.4604	600997.2942	243954.0191			32.3072	-0.020000	
F-7	577+94.4363	-46.5000	4791.1151	791.1359	-46.5000	10.8449	600996.3502	243959.3202			37.6917	-0.020000	
F-8	577+99.8209	-46.5000	4791.0881	791.1034	-46.5000	16.2295	600995.4062	243964.6214			43.0762	-0.020000	
F-9	578+05.2054	-46.5000	4791.0612	791.0693	-46.5000	21.6140	600994.4623	243969.9225			48.4608	-0.020000	
P2 BRG BK	578+10.5899	-46.5000	4791.0343	791.0343	-46.5000	26.9985	600993.5183	243975.2236	-53.6936	-30 00 00.00	53.8453	-0.020000	
CL PIER 2	578+11.7446	-46.5000	4791.0285		-46.5000	28.1532	600993.3158	243976.3604	-53.6936	-30 00 00.00	55.0000	-0.020000	
P2 BRG AHD	578+12.8993	-46.5000	4791.0228	791.0228	-46.5000	29.3079	600993.1134	243977.4972	-53.6936	-30 00 00.00	56.1547	-0.020000	
F-1	578+20.0184	-46.5000	4790.9872	791.0096	-46.5000	36.4270	600991.8653	243984.5061			63.2738	-0.020000	
F-2	578+27.1375	-46.5000	4790.9516	790.9947	-46.5000	43.5461	600990.6172	243991.5149			70.3929	-0.020000	
F-3	578+34.2566	-46.5000	4790.9160	790.9755	-46.5000	50.6652	600989.3691	243998.5238			77.5119	-0.020000	
F-4	578+41.3756	-46.5000	4790.8804	790.9505	-46.5000	57.7842	600988.1211	244005.5325			84.6310	-0.020000	
F-5	578+48.4947	-46.5000	4790.8448	790.9185	-46.5000	64.9033	600986.8730	244012.5414			91.7501	-0.020000	
F-6	578+55.6138	-46.5000	4790.8092	790.8793	-46.5000	72.0224	600985.6249	244019.5502			98.8692	-0.020000	
F-7	578+62.7329	-46.5000	4790.7736	790.8331	-46.5000	79.1415	600984.3768	244026.5590			105.9883	-0.020000	
F-8	578+69.8520	-46.5000	4790.7380	790.7811	-46.5000	86.2606	600983.1287	244033.5679			113.1073	-0.020000	
F-9	578+76.9710	-46.5000	4790.7024	790.7249	-46.5000	93.3796	600981.8807	244040.5766			120.2264	-0.020000	
P3 BRG BK	578+84.0901	-46.5000	4790.6668	790.6668	-46.5000	100.4987	600980.6326	244047.5855	-53.6936	-30 00 00.00	127.3453	-0.020000	
CL PIER 3	578+85.2446	-46.5000	4790.6611		-46.5000	101.6532	600980.4302	244048.7221	-53.6936	-30 00 00.00	128.5000	-0.020000	
P3 BRG AHD	578+86.3995	-46.5000	4790.6553	790.6553	-46.5000	102.8081	600980.2277	244049.8591	-53.6936	-30 00 00.00	129.6549	-0.020000	
F-1	578+91.7840	-46.5000	4790.6284	790.6364	-46.5000	108.1926	600979.9837	244056.8680			135.0394	-0.020000	
F-2	578+97.1685	-46.5000	4790.6015	790.6167	-46.5000	113.5771	600979.7357	244063.8769			140.4239	-0.020000	
F-3	579+02.5530	-46.5000	4790.5746	790.5953	-46.5000	118.9616	600979.4877	244070.8858			145.8084	-0.020000	
F-4	579+07.9376	-46.5000	4790.5476	790.5720	-46.5000	124.3462	600979.2397	244077.8947			151.1929	-0.020000	
F-5	579+13.3221	-46.5000	4790.5207	790.5463	-46.5000	129.7307	600978.9917	244084.9036			156.5774	-0.020000	
F-6	579+18.7066	-46.5000	4790.4938	790.5182	-46.5000	135.1152	600978.7437	244091.9125			161.9		

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Design	INITIAL	DATE	Checked By	Checked By
	DATE	DATE		
Quantities	INITIAL	DATE	Checked By	Checked By
	DATE	DATE		

CL GIRDERLINE G3		PARALLEL TO HORIZONTAL CONTROL										0.250000 FEET BELOW FINISHED GRADE			
BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP			
END APPR	577+45.9822	-27.5000	4791.7374	-27.5000	-37.6092	600986.1393	243908.2855	-31.7543	-30 00 00.00	-21.7321	-0.020000				
BF ABUT 1	577+65.9822	-27.5000	4791.6373	-27.5000	-17.6092	600982.6330	243927.9758	-31.7543	-30 00 00.00	-1.7321	-0.020000				
CL BRG A1	577+67.7143	-27.5000	4791.6286	791.6286	-15.8771	600982.3293	243929.6811	-31.7543	-30 00 00.00	0.0000	-0.020000				
F-1	577+73.0988	-27.5000	4791.6017	791.6108	-10.4926	600981.3853	243934.9822			5.3845	-0.020000				
F-2	577+78.4833	-27.5000	4791.5748	791.5918	-5.1081	600980.4413	243940.2833			10.7691	-0.020000				
F-3	577+83.8679	-27.5000	4791.5479	791.5712	-0.2765	600979.4973	243945.5845			16.1536	-0.020000				
F-4	577+89.2524	-27.5000	4791.5210	791.5483	-27.5000	5.6610	600978.5533	243950.8856		21.5381	-0.020000				
F-5	577+94.6369	-27.5000	4791.4941	791.5228	-27.5000	11.0455	600977.6093	243956.1867		26.9227	-0.020000				
F-6	578+00.0214	-27.5000	4791.4671	791.4945	-27.5000	16.4300	600976.6654	243961.4878		32.3072	-0.020000				
F-7	578+05.4060	-27.5000	4791.4402	791.4635	-27.5000	21.8146	600975.7214	243966.7890		37.6917	-0.020000				
F-8	578+10.7905	-27.5000	4791.4133	791.4303	-27.5000	27.1991	600974.7774	243972.0901		43.0762	-0.020000				
F-9	578+16.1750	-27.5000	4791.3864	791.3955	-27.5000	32.5836	600973.8334	243977.3912		48.4608	-0.020000				
P2 BRG BK	578+21.5596	-27.5000	4791.3595	791.3595	-27.5000	37.9682	600972.8894	243982.6924	-31.7543	-30 00 00.00	53.8453	-0.020000			
CL PIER 2	578+22.7143	-27.5000	4791.3537	-27.5000	39.1229	600972.6869	243983.8292	-31.7543	-30 00 00.00	55.0000	-0.020000				
P2 BRG AHD	578+23.8690	-27.5000	4791.3479	791.3479	-27.5000	40.2776	600972.4845	243984.9661	-31.7543	-30 00 00.00	56.1547	-0.020000			
F-1	578+30.9880	-27.5000	4791.3123	791.3375	-27.5000	47.3966	600971.2364	243991.9748		63.2738	-0.020000				
F-2	578+38.1071	-27.5000	4791.2767	791.3250	-27.5000	54.5157	600969.9884	243998.9836		70.3929	-0.020000				
F-3	578+45.2262	-27.5000	4791.2411	791.3077	-27.5000	61.6348	600968.7403	244005.9925		77.5119	-0.020000				
F-4	578+52.3453	-27.5000	4791.2056	791.2838	-27.5000	68.7539	600967.4922	244013.0013		84.6310	-0.020000				
F-5	578+59.4644	-27.5000	4791.1700	791.2523	-27.5000	75.8730	600966.2441	244020.0102		91.7501	-0.020000				
F-6	578+66.5834	-27.5000	4791.1344	791.2126	-27.5000	82.9920	600964.9960	244027.0189		98.8692	-0.020000				
F-7	578+73.7025	-27.5000	4791.0988	791.1653	-27.5000	90.1111	600963.7479	244034.0278		105.9883	-0.020000				
F-8	578+80.8216	-27.5000	4791.0632	791.1114	-27.5000	97.2302	600962.4999	244041.0366		113.1073	-0.020000				
F-9	578+87.9407	-27.5000	4791.0276	791.0528	-27.5000	104.3493	600961.2518	244048.0454		120.2264	-0.020000				
P3 BRG BK	578+95.0598	-27.5000	4790.9920	790.9920	-27.5000	111.4684	600960.0037	244055.0543	-31.7543	-30 00 00.00	127.3455	-0.020000			
CL PIER 3	578+96.2143	-27.5000	4790.9862	-27.5000	112.6229	600959.8013	244056.1909	-31.7543	-30 00 00.00	128.5000	-0.020000				
P3 BRG AHD	578+97.3692	-27.5000	4790.9805	790.9805	-27.5000	113.7778	600959.5988	244057.3279	-31.7543	-30 00 00.00	129.6549	-0.020000			
F-1	579+02.7537	-27.5000	4790.9535	790.9626	-27.5000	119.1623	600958.6548	244062.6290		135.0394	-0.020000				
F-2	579+08.1382	-27.5000	4790.9266	790.9436	-27.5000	124.5468	600957.7108	244067.9301		140.4239	-0.020000				
F-3	579+13.5227	-27.5000	4790.8997	790.9230	-27.5000	129.9313	600956.7669	244073.2312		145.8084	-0.020000				
F-4	579+18.9072	-27.5000	4790.8728	790.9001	-27.5000	135.3158	600955.8229	244078.5323		151.1929	-0.020000				
F-5	579+24.2917	-27.5000	4790.8459	790.8746	-27.5000	140.7003	600954.8789	244083.8335		156.5775	-0.020000				
F-6	579+29.6762	-27.5000	4790.8189	790.8463	-27.5000	146.0848	600953.9349	244089.1346		161.9620	-0.020000				
F-7	579+35.0607	-27.5000	4790.7920	790.8153	-27.5000	151.4693	600952.9909	244094.4357		167.3465	-0.020000				
F-8	579+40.4452	-27.5000	4790.7651	790.7821	-27.5000	156.8538	600951.0469	244099.7368		172.7310	-0.020000				
F-9	579+45.8298	-27.5000	4790.7382	790.7473	-27.5000	162.2384	600949.1029	244105.0380		178.1155	-0.020000				
CL BRG A4	579+51.2143	-27.5000	4790.7113	790.7113	-27.5000	167.6229	600947.1589	244110.3391	-31.7543	-30 00 00.00	183.5000	-0.020000			
BF ABUT 4	579+52.9465	-27.5000	4790.7026	-27.5000	169.3551	600949.8553	244112.0445	-31.7543	-30 00 00.00	185.2322	-0.020000				
END APPR	579+78.4313	-27.5000	4790.6026	-27.5000	189.3551	600946.3490	244131.7347	-31.7543	-30 00 00.00	205.2322	-0.020000				

CL GIRDERLINE G5		PARALLEL TO HORIZONTAL CONTROL										0.250000 FEET BELOW FINISHED GRADE			
BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP			
END APPR	577+65.9518	-8.5000	4792.0625	-8.5000	-26.6396	600965.5104	243915.7543	-9.8150	-30 00 00.00	-21.7321	-0.020000				
BF ABUT 1	577+76.9518	-8.5000	4791.9625	-8.5000	-6.6396	600962.0041	243935.4445	-9.8150	-30 00 00.00	-1.7321	-0.020000				
CL BRG A1	577+78.6839	-8.5000	4791.9538	791.9538	-4.9075	600961.7004	243937.1498	-9.8150	-30 00 00.00	0.0000	-0.020000				
F-1	577+84.0685	-8.5000	4791.9269	791.9360	-0.4771	600960.7564	243942.4510			5.3845	-0.020000				
F-2	577+89.4530	-8.5000	4791.9000	791.9170	-8.5000	5.8616	600959.8124	243947.7521		10.7691	-0.020000				
F-3	577+94.8375	-8.5000	4791.8731	791.8964	-8.5000	11.2461	600958.8684	243953.0532		16.1536	-0.020000				
F-4	578+00.2220	-8.5000	4791.8461	791.8735	-8.5000	16.6306	600957.9245	243958.3543		21.5381	-0.020000				
F-5	578+05.6066	-8.5000	4791.8192	791.8480	-8.5000	22.0152	600956.9805	243963.6555		26.9227	-0.020000				
F-6	578+10.9911	-8.5000	4791.7923	791.8196	-8.5000	27.3997	600956.0365	243968.9566		32.3072	-0.020000				
F-7	578+16.3756	-8.5000	4791.7654	791.7886	-8.5000	32.7842	600955.0925	243974.2577		37.6917	-0.020000				
F-8	578+21.7602	-8.5000	4791.7385	791.7555	-8.5000	38.1688	600954.1485	243979.5589		43.0762	-0.020000				
F-9	578+27.1447	-8.5000	4791.7115	791.7206	-8.5000	43.5533	600953.2045	243984.8600		48.4608	-0.020000				
P2 BRG BK	578+32.5292	-8.5000	4791.6846	791.6846	-8.5000	48.9378	600952.2605	243990.1611	-9.8150	-30 00 00.00	53.8453	-0.020000			
CL PIER 2	578+33.6839	-8.5000	4791.6788	-8.5000	50.0925	600952.0581	243991.2980	-9.8150	-30 00 00.00	55.0000	-0.020000				
P2 BRG AHD	578+34.8386	-8.5000	4791.6731	791.6731	-8.5000	51.2472	600951.8556	243992.4348	-9.8150	-30 00 00.00	56.1547	-0.020000			
F-1	578+41.9577	-8.5000	4791.6375	791.6627	-8.5000	58.3663	600950.6076	243999.4436		63.2738	-0.020000				
F-2	578+49.0768	-8.5000	4791.6019	791.6501	-8.5000	65.4854	600949.3595	244006.4525		70.3929	-0.020000				
F-3	578+56.1959	-8.5000	4791.5663	791.6328	-8.5000	72.6045	600948.1114	244013.4613		77.5119	-0.020000				
F-4	578+63.3149	-8.5000	4791.5307	791.6090	-8.5000	79.7235	600946.8633	244020.4700		84.6310	-0.020000				
F-5	578+70.4340	-8.5000	4791.4951	791.5774	-8.5000	86.8426	600945.6152	244027.4789		91.7501	-0.020000				
F-6	578+77.5531	-8.5000	4791.4595	791.5378	-8.5000	93.9617	600944.3671	244034.4877		98.8692	-0.020000				
F-7	578+84.6722	-8.5000	4791.4239	791.4905	-8.5000	101.0808	600943.1191	244041.4966		105.9883	-0.020000				
F-8	578+91.7913	-8.5000	4791.3883	791.4366	-8.5000	108.1999	600941.8710	244048.5054		113.1073	-0.020000				
F-9	578+98.9103	-8.5000	4791.3528	791.3779	-8.5000	115.3189	600940.6229	244055.5142		120.2264	-0.020000				
P3 BRG BK	579+06.0294	-8.5000	4791.3172	791.3172	-8.5000	122.4380	600939.3748	244062.5230	-9.8150	-30 00 00.00	127.3455	-0.020000			
CL PIER 3	579+07.1839	-8.5000	4791.3114	-8.5000	123.5925	600939.1724	244063.6596	-9.8150	-30 00 00.00	128.5000	-0.020000				
P3 BRG AHD	579+08.3388	-8.5000	4791.3056	791.3056	-8.5000	124.7474	600938.9699	244064.7966	-9.8150	-30 00 00.00	129.6549	-0.020000			
F-1	579+13.7233	-8.5000	4791.2787	791.2878	-8.5000	130.1319	600937.0260	244070.0977		135.0394	-0.020000				
F-2	579+19.1078	-8.5000	4791.2518	791.2688	-8.5000	135.5164	600935.0820	244075.3988		140.4239	-0.020000				
F-3	579+24.4924	-8.5000	4791.2249	791.2482	-8.5000	140.9010	600933.1380	244080.7001		145.8084	-0.020000				
F-4	579+29.8769	-8.5000	4791.1979	791.2253	-8.5000	146.2855	600931.1940	244086.0012		151.1929	-0.020000				
F-5	579+35.2614	-8.5000	4791.1710	791.1998	-8.5000	151.6700	600929.2500	244091.3023		156.5775	-0.020000				
F-6	579+40.6459	-8.5000	4791.1441	791.1714	-8.5000	157.0545	600927.3060	244096.6034		161.9620	-0.020000				
F-7	579+46.0304	-8.5000	4791.1172	791.1405	-8.5000	162.4390	600925.3620	244101.9045		167					

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Checked By	06/16	Checked By	06/16	Quantities By	07/16
Checked By	07/16	Checked By	07/16	Checked By	08/16

CL GIRDERLINE G6		PARALLEL TO HORIZONTAL CONTROL								0.250000 FEET BELOW FINISHED GRADE			
BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP	
END APPR	577+62.4367	1.0000	4792.2250		1.0000	-21.1547	600955.1959	243919.4887	1.1547	-30 00 00.00	-21.7321	+0.020000	
BF ABUT 1	577+82.4367	1.0000	4792.1250		1.0000	-1.1547	600951.6896	243939.1790	1.1547	-30 00 00.00	-1.7321	+0.020000	
CL BRG A1	577+84.1688	1.0000	4792.1164	792.1164	1.0000	0.5774	600951.3860	243940.8842	1.1547	-30 00 00.00	0.0000	+0.020000	
F-1	577+89.5533	1.0000	4792.0895	792.0895	1.0000	5.9619	600950.4420	243946.1853			5.3845	+0.020000	
F-2	577+94.9378	1.0000	4792.0625	792.0796	1.0000	11.3464	600949.4980	243951.4865			10.7691	+0.020000	
F-3	578+00.3223	1.0000	4792.0356	792.0589	1.0000	16.7309	600948.5540	243956.7876			16.1536	+0.020000	
F-4	578+05.7069	1.0000	4792.0087	792.0361	1.0000	22.1155	600947.6100	243962.0888			21.5381	+0.020000	
F-5	578+11.0914	1.0000	4791.9818	792.0105	1.0000	27.5000	600946.6660	243967.3899			26.9227	+0.020000	
F-6	578+16.4759	1.0000	4791.9549	791.9822	1.0000	32.8845	600945.7220	243972.6910			32.3072	+0.020000	
F-7	578+21.8605	1.0000	4791.9280	791.9512	1.0000	38.2691	600944.7780	243977.9922			37.6917	+0.020000	
F-8	578+27.2450	1.0000	4791.9010	791.9180	1.0000	43.6536	600943.8340	243983.2933			43.0762	+0.020000	
F-9	578+32.6295	1.0000	4791.8741	791.8832	1.0000	49.0381	600942.8901	243988.5944			48.4608	+0.020000	
P2 BRG BK	578+38.0141	1.0000	4791.8472	791.8472	1.0000	54.4227	600941.9461	243993.8956	1.1547	-30 00 00.00	53.8453	+0.020000	
CL PIER 2	578+39.1688	1.0000	4791.8414		1.0000	55.5774	600941.7436	243995.0324	1.1547	-30 00 00.00	55.0000	+0.020000	
P2 BRG AHD	578+40.3235	1.0000	4791.8357	791.8357	1.0000	56.7321	600941.5412	243996.1692	1.1547	-30 00 00.00	56.1547	+0.020000	
F-1	578+47.4425	1.0000	4791.8001	791.8252	1.0000	63.8511	600940.2931	244003.1780			63.2738	+0.020000	
F-2	578+54.5616	1.0000	4791.7645	791.8127	1.0000	70.9702	600939.0450	244010.1868			70.3929	+0.020000	
F-3	578+61.6807	1.0000	4791.7289	791.7954	1.0000	78.0893	600937.7969	244017.1957			77.5119	+0.020000	
F-4	578+68.7998	1.0000	4791.6933	791.7716	1.0000	85.2084	600936.5489	244024.2045			84.6310	+0.020000	
F-5	578+75.9189	1.0000	4791.6577	791.7400	1.0000	92.3275	600935.3008	244031.2133			91.7501	+0.020000	
F-6	578+83.0379	1.0000	4791.6221	791.7004	1.0000	99.4465	600934.0527	244038.2221			98.8692	+0.020000	
F-7	578+90.1570	1.0000	4791.5865	791.6531	1.0000	106.5656	600932.8046	244045.2309			105.9883	+0.020000	
F-8	578+97.2761	1.0000	4791.5509	791.5992	1.0000	113.6847	600931.5565	244052.2398			113.1073	+0.020000	
F-9	579+04.3952	1.0000	4791.5153	791.5405	1.0000	120.8038	600930.3084	244059.2486			120.2264	+0.020000	
P3 BRG BK	579+11.5143	1.0000	4791.4797	791.4797	1.0000	127.9229	600929.0604	244066.2575	1.1547	-30 00 00.00	127.3455	+0.020000	
CL PIER 3	579+12.6688	1.0000	4791.4740		1.0000	129.0774	600928.8580	244067.3941	1.1547	-30 00 00.00	128.5000	+0.020000	
P3 BRG AHD	579+13.8237	1.0000	4791.4682	791.4682	1.0000	130.2323	600928.6555	244068.5311	1.1547	-30 00 00.00	129.6549	+0.020000	
F-1	579+19.2082	1.0000	4791.4413	791.4504	1.0000	135.6168	600927.7115	244073.8322			135.0394	+0.020000	
F-2	579+24.5927	1.0000	4791.4144	791.4314	1.0000	141.0013	600926.7675	244079.1333			140.4239	+0.020000	
F-3	579+29.9772	1.0000	4791.3874	791.4107	1.0000	146.3858	600925.8235	244084.4344			145.8084	+0.020000	
F-4	579+35.3617	1.0000	4791.3605	791.3879	1.0000	151.7703	600924.8795	244089.7355			151.1929	+0.020000	
F-5	579+40.7462	1.0000	4791.3336	791.3624	1.0000	157.1548	600923.9356	244095.0366			156.5775	+0.020000	
F-6	579+46.1307	1.0000	4791.3067	791.3340	1.0000	162.5393	600922.9916	244100.3377			161.9620	+0.020000	
F-7	579+51.5152	1.0000	4791.2798	791.3030	1.0000	167.9238	600922.0476	244105.6388			167.3465	+0.020000	
F-8	579+56.8997	1.0000	4791.2528	791.2698	1.0000	173.3083	600921.1036	244110.9399			172.7310	+0.020000	
F-9	579+62.2842	1.0000	4791.2259	791.2350	1.0000	178.6928	600920.1596	244116.2411			178.1155	+0.020000	
CL BRG A4	579+67.6688	1.0000	4791.1990	791.1990	1.0000	184.0774	600919.2156	244121.5423	1.1547	-30 00 00.00	183.5000	+0.020000	
BF ABUT 4	579+69.4010	1.0000	4791.1904		1.0000	185.8096	600918.9119	244123.2476	1.1547	-30 00 00.00	185.2322	+0.020000	
END APPR	579+94.4010	1.0000	4791.0904		1.0000	205.8096	600915.4056	244142.9379	1.1547	-30 00 00.00	205.2322	+0.020000	

RIGHT GUTTER LINE		PARALLEL TO HORIZONTAL CONTROL								0.250000 FEET BELOW FINISHED GRADE			
BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP	
END APPR	577+68.7875	12.0000	4792.4133		12.0000	-14.8039	600943.2529	243923.8127	13.8564	-30 00 00.00	-21.7321	+0.020000	
BF ABUT 1	577+88.7875	12.0000	4792.3133		12.0000	5.1961	600939.7466	243943.5029	13.8564	-30 00 00.00	-1.7321	+0.020000	
CL BRG A1	577+90.5196	12.0000	4792.3046	792.3046	12.0000	6.9282	600939.4429	243945.2082	13.8564	-30 00 00.00	0.0000	+0.020000	
F-1	577+95.9041	12.0000	4792.2777	792.2857	12.0000	12.3127	600938.4989	243950.5093			5.3845	+0.020000	
F-2	578+01.2887	12.0000	4792.2508	792.2660	12.0000	17.6973	600937.5549	243955.8105			10.7691	+0.020000	
F-3	578+06.6732	12.0000	4792.2239	792.2447	12.0000	23.0818	600936.6110	243961.1116			16.1536	+0.020000	
F-4	578+12.0577	12.0000	4792.1970	792.2213	12.0000	28.4663	600935.6670	243966.4127			21.5381	+0.020000	
F-5	578+17.4423	12.0000	4792.1700	792.1956	12.0000	33.8509	600934.7230	243971.7139			26.9226	+0.020000	
F-6	578+22.8268	12.0000	4792.1431	792.1675	12.0000	39.2354	600933.7790	243977.0151			32.3072	+0.020000	
F-7	578+28.2113	12.0000	4792.1162	792.1371	12.0000	44.6199	600932.8350	243982.3162			37.6917	+0.020000	
F-8	578+33.5958	12.0000	4792.0893	792.1046	12.0000	50.0044	600931.8910	243987.6173			43.0762	+0.020000	
F-9	578+38.9804	12.0000	4792.0624	792.0705	12.0000	55.3890	600930.9470	243992.9185			48.4608	+0.020000	
P2 BRG BK	578+44.3649	12.0000	4792.0354	792.0354	12.0000	60.7735	600930.0030	243998.2196	13.8564	-30 00 00.00	53.8453	+0.020000	
CL PIER 2	578+45.5196	12.0000	4792.0297		12.0000	61.9282	600929.8006	243999.3564	13.8564	-30 00 00.00	55.0000	+0.020000	
P2 BRG AHD	578+46.6743	12.0000	4792.0239	792.0239	12.0000	63.0829	600929.5982	244000.4932	13.8564	-30 00 00.00	56.1547	+0.020000	
F-1	578+53.7934	12.0000	4791.9883	792.0108	12.0000	70.2020	600928.3501	244007.5021			63.2738	+0.020000	
F-2	578+60.9125	12.0000	4791.9527	791.9958	12.0000	77.3211	600927.1020	244014.5109			70.3929	+0.020000	
F-3	578+68.0315	12.0000	4791.9171	791.9766	12.0000	84.4401	600925.8539	244021.5196			77.5119	+0.020000	
F-4	578+75.1506	12.0000	4791.8815	791.9516	12.0000	91.5592	600924.6058	244028.5285			84.6310	+0.020000	
F-5	578+82.2697	12.0000	4791.8459	791.9196	12.0000	98.6783	600923.3577	244035.5373			91.7501	+0.020000	
F-6	578+89.3888	12.0000	4791.8104	791.8804	12.0000	105.7974	600922.1097	244042.5462			98.8692	+0.020000	
F-7	578+96.5079	12.0000	4791.7748	791.8343	12.0000	112.9165	600920.8616	244049.5550			105.9883	+0.020000	
F-8	579+03.6269	12.0000	4791.7392	791.7823	12.0000	120.0355	600919.6135	244056.5637			113.1073	+0.020000	
F-9	579+10.7460	12.0000	4791.7036	791.7260	12.0000	127.1546	600918.3654	244063.5726			120.2264	+0.020000	
P3 BRG BK	579+17.8651	12.0000	4791.6680	791.6680	12.0000	134.2737	600917.1173	244070.5814	13.8564	-30 00 00.00	127.3455	+0.020000	
CL PIER 3	579+19.0196	12.0000	4791.6622		12.0000	135.4282	600916.9149	244071.7181	13.8564	-30 00 00.00	128.5000	+0.020000	
P3 BRG AHD	579+20.1745	12.0000	4791.6565	791.6565	12.0000	136.5831	600916.7125	244072.8551	13.8564	-30 00 00.00	129.6549	+0.020000	
F-1	579+25.5590	12.0000	4791.6295	791.6376	12.0000	141.9676	600915.4685	244079.8646			135.0394	+0.020000	
F-2	579+30.9435	12.0000	4791.6026	791.6178	12.0000	147.3521	600914.2245	244083.8737			140.4239	+0.020000	
F-3	579+36.3280	12.0000	4791.5757	791.5965	12.0000	152.7366	600913.0805	244088.8828			145.8084	+0.020000	
F-4	579+41.7125	12.0000	4791.5488	791.5731	12.0000	158.1211	600911.9365	244094.8919			151.1929	+0.020000	
F-5	579+47.0971	12.0000	4791.5219	791.5474	12.0000	163.5057	600910.7925	244100.9010			156.5775	+0.020000	
F-6	579+52.4816	12.0000	4791.4949	791.5193	12.0000	168.8902	600909.6485	244106.9101			161.9620	+0.020000	
F-7	579+57.8661												