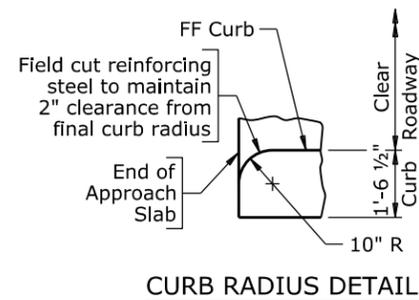
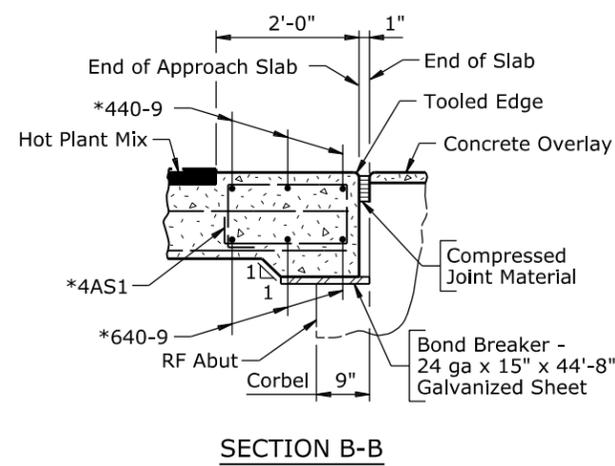
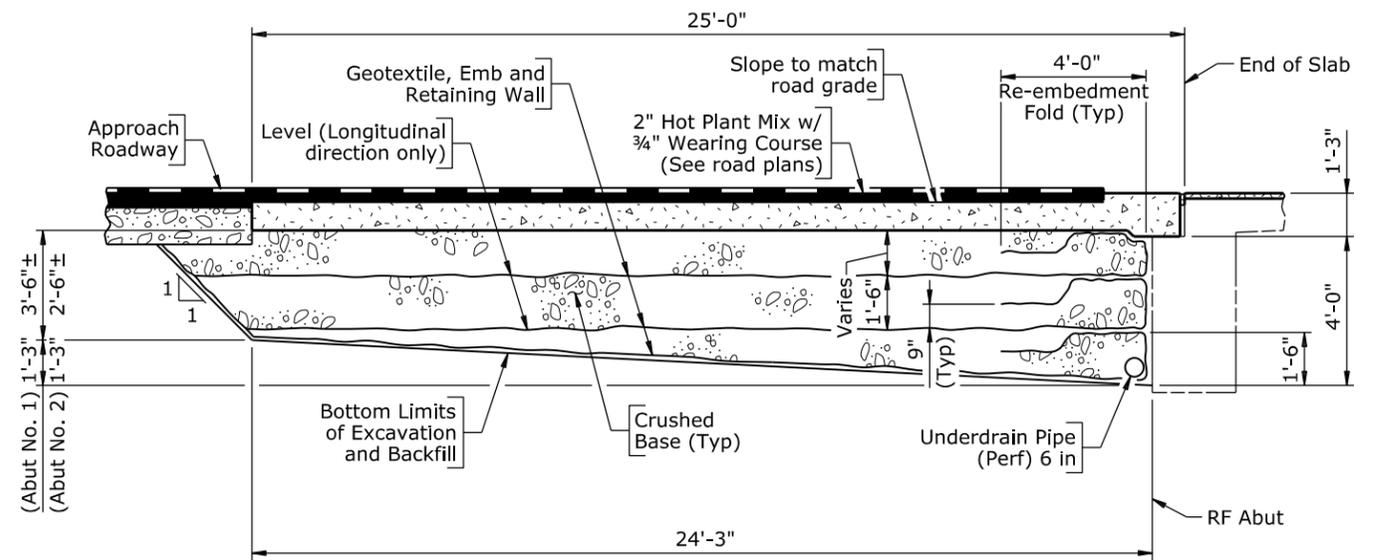
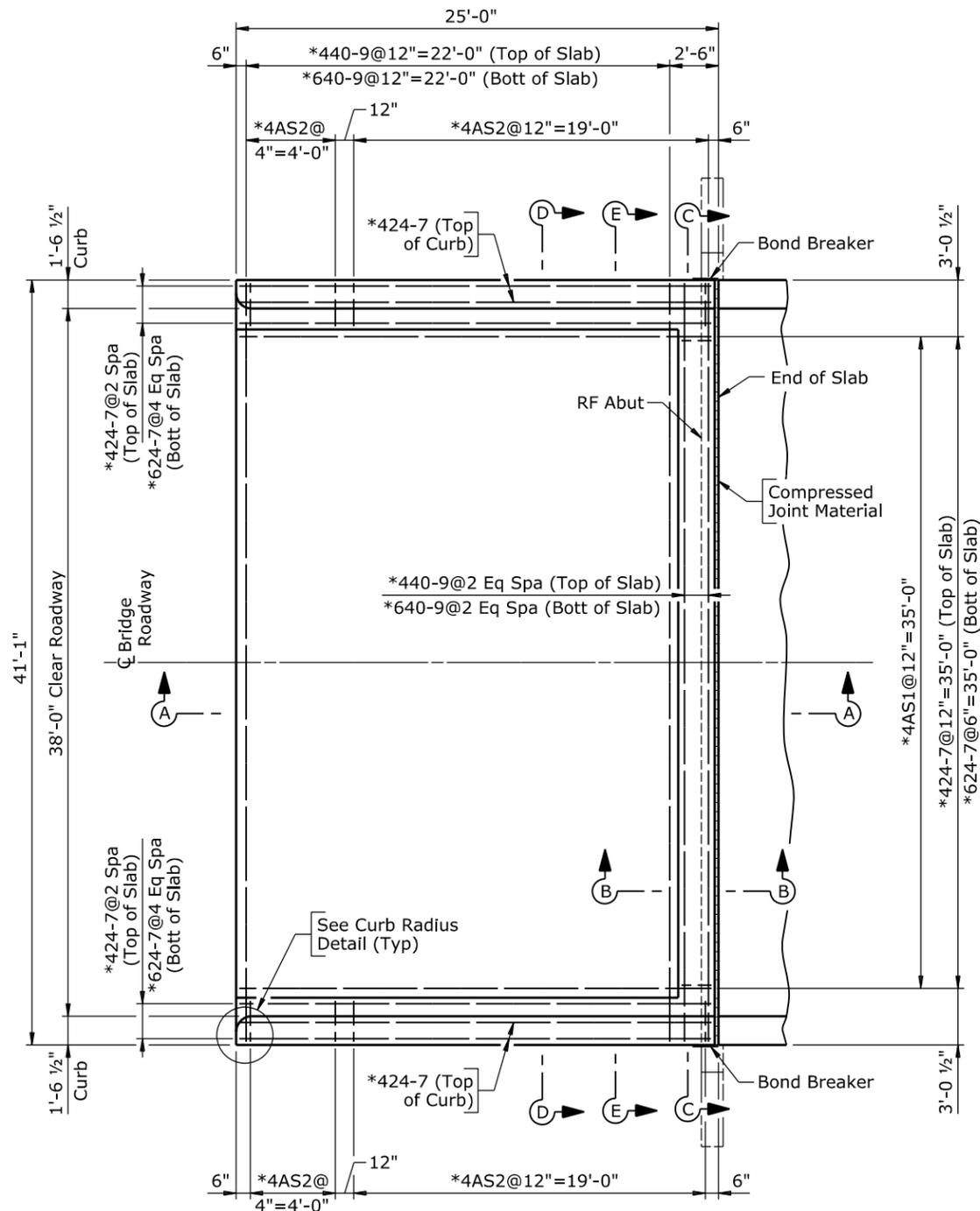


Nov 2019

4.22 - Example



- Note: 1) Extend bond breaker up sides of approach slabs to top of wingwalls.
 2) Extend compressed joint material up front face and across top of curbs.
 3) For Sections C-C, D-D, and E-E, see Sheet No. 18.
 4) For Bridge Railing Details, see Sheets No. 8 thru 10.

STA 384+32

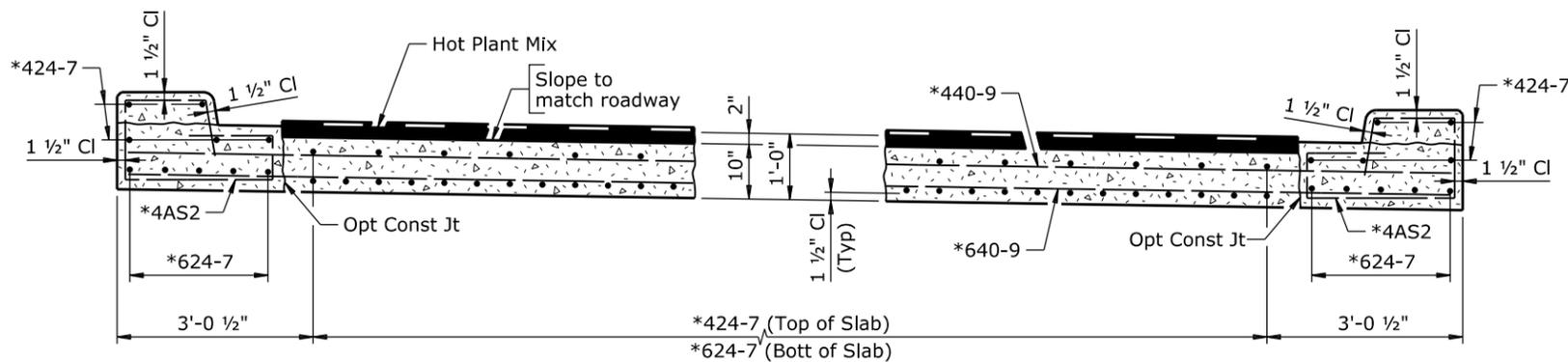
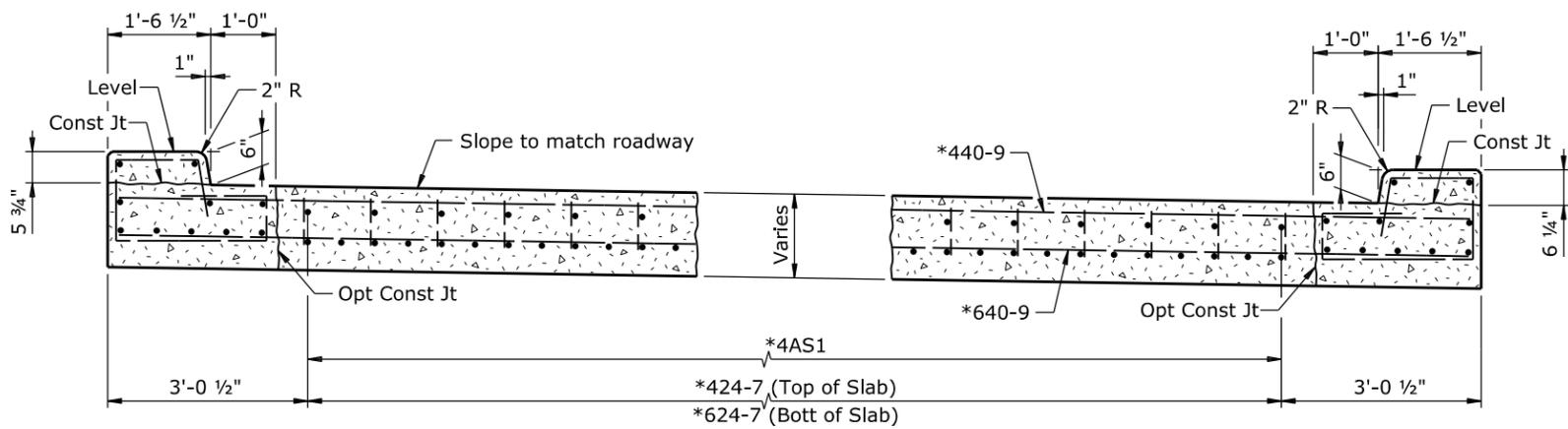
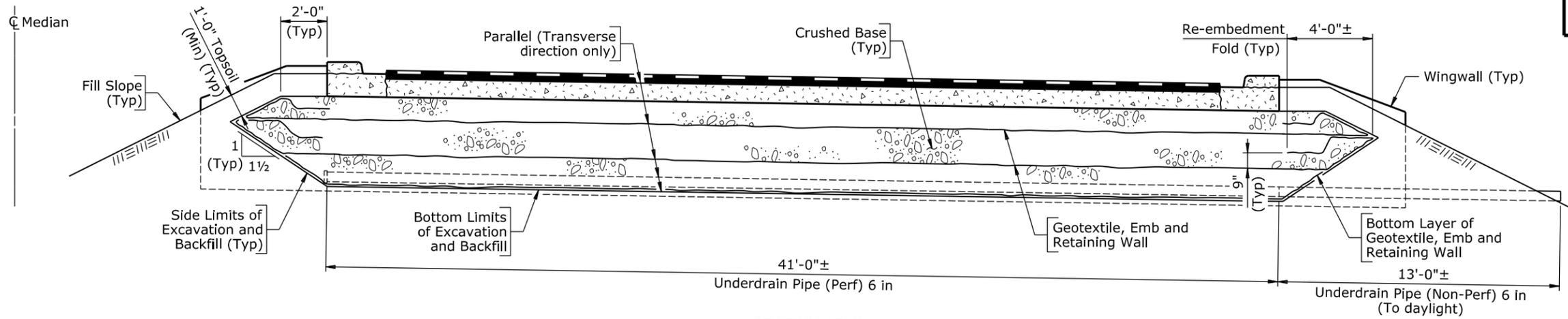
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS		APPROACH SLAB DETAILS	
BRIDGE REHABILITATION			
VARIOUS LOCATIONS			
Wheatland - Glendo Road (Cassa North Section)			
I252137		PI	
APPROVED	DESIGN	Design Section L M Nop	
DATE	DETAIL	Drwg No. 0014 Sheet 17 of 30	
	QTY'S	BBB ✓ AAA GGG ✓ DDD	

Section 4.22 - Preservation and Rehabilitation

Nov 2019

4.22 - Example

Wyo. Proj. I252137
 Sheet B18 of B81 Sheets



BILL OF REINFORCEMENT		
Location	Mark	Number Required Per Approach Slab
Approach Slab and Curbs	*4AS1	36
	*4AS2	66
	*424-7	46
	*440-9	27
	*624-7	81
	*640-9	27
	*Weight	*6601 LB

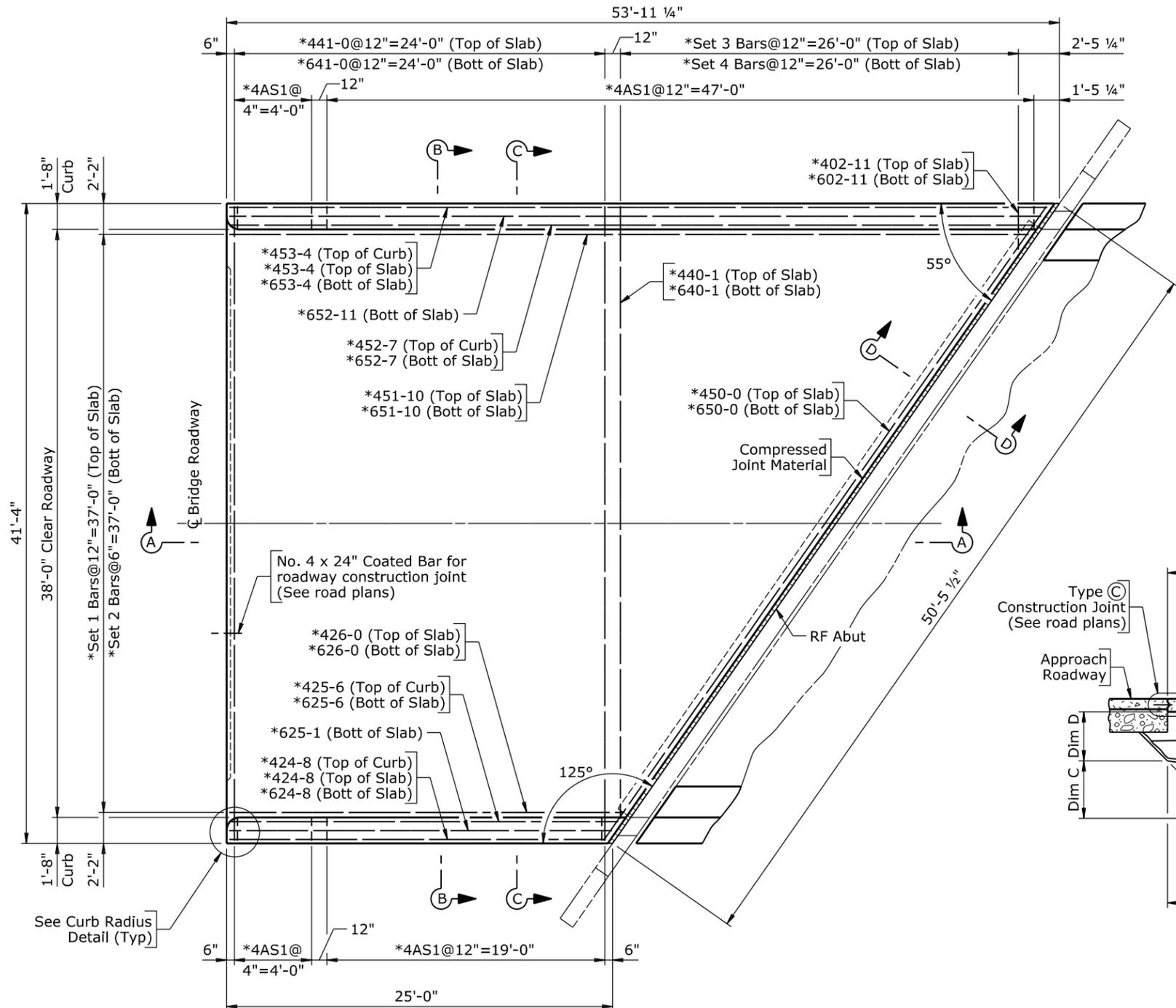
Bending Diagrams	
<p>*4AS1 (Tie) (5'-6")</p>	<p>*4AS2 (Tie) (7'-7")</p>

- Note: 1) Ensure the reinforcing steel fabricator prefixes bar marks this sheet as follows:
 Abutment No. 1 - NBL ----- Numeral 15
 Abutment No. 2 - NBL ----- Numeral 16
 Abutment No. 1 - SBL ----- Numeral 17
 Abutment No. 2 - SBL ----- Numeral 18
- 2) Approach slab reinforcing steel is not included in the quantity of reinforcing steel.
 3) Extend bottom layer of geotextile up side limits of excavation and backfill to bottom of first layer of geotextile.
 4) For locations of Sections C-C, D-D, and E-E, see Sheet No. 17.

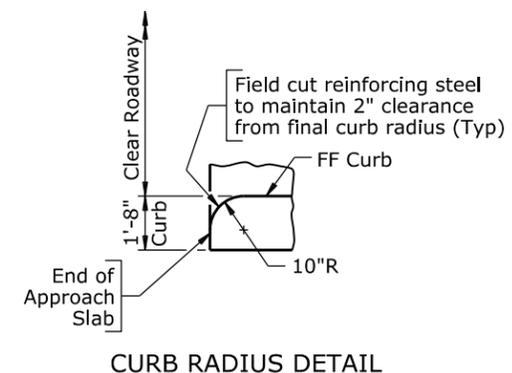
STA 384+32

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS		APPROACH SLAB DETAILS	
BRIDGE REHABILITATION VARIOUS LOCATIONS Wheatland - Glendo Road (Cassa North Section)			
		I252137	PI
APPROVED	DESIGN	Design Section	L M Nop
DATE	DETAIL	Drwg No.	0014 Sheet 18 of 30
	QTY'S		

Section 4.22 - Preservation and Rehabilitation

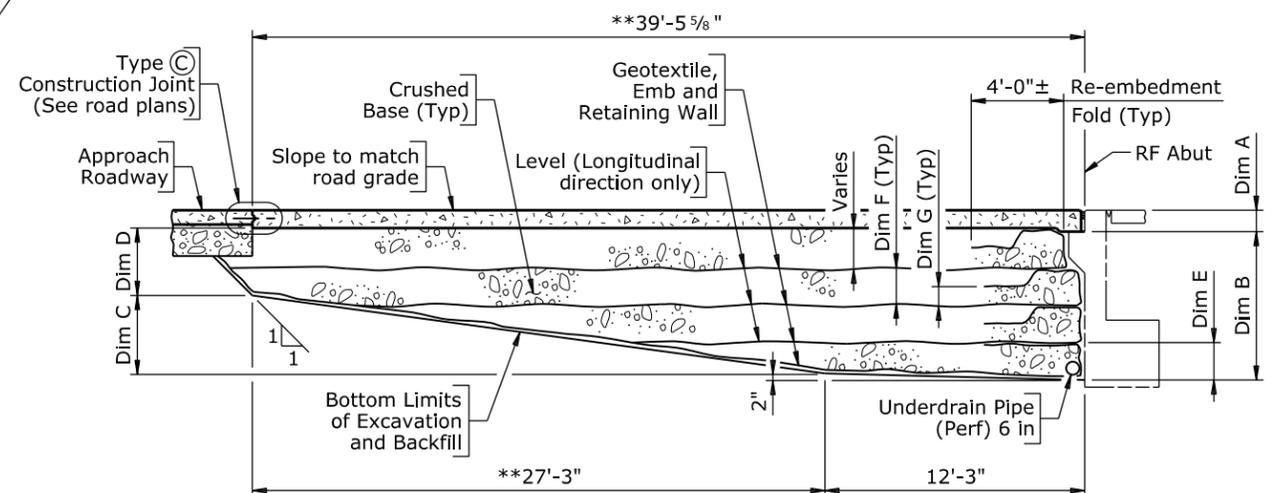


PLAN
 (Abut No. 1 - EBL shown, Abut No. 2 - EBL, Abut No. 1 - WBL, and Abut No. 2 - WBL similar)



CURB RADIUS DETAIL

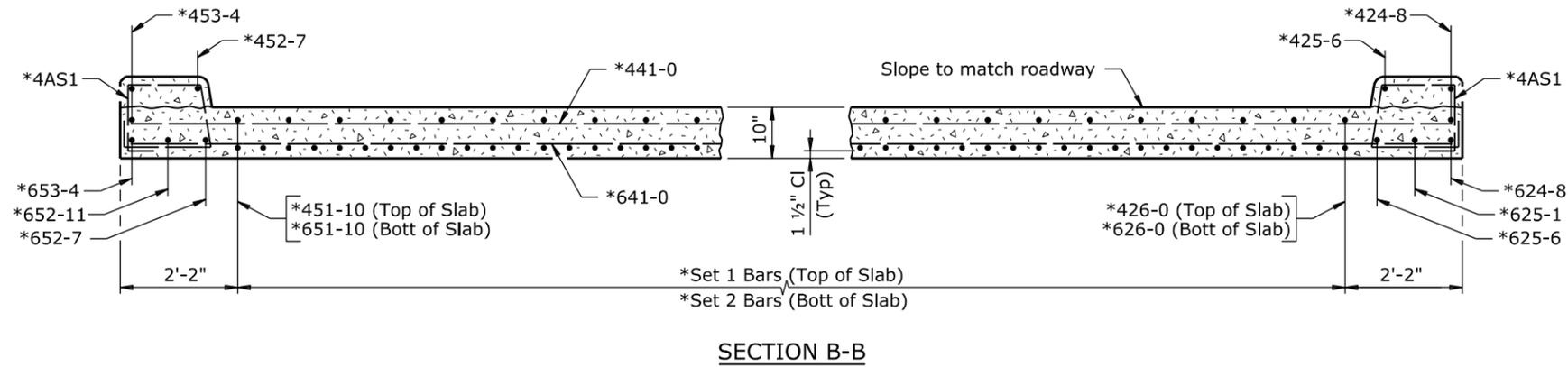
Dimension	EBL		WBL	
	Abut No. 1	Abut No. 2	Abut No. 1	Abut No. 2
A	1'-2 7/8"	1'-2 7/8"	1'-2"	1'-2"
B	6'-9"	5'-9"	6'-9"	5'-9"
C	3'-9"	4'-0"	3'-6"	3'-9"
D	2'-10"±	2'-0"±	3'-1"±	2'-2"±
E	1'-9"	1'-6"	1'-9"	1'-6"
F	1'-9"	1'-6"	1'-9"	1'-6"
G	10 1/2"	9"	10 1/2"	9"



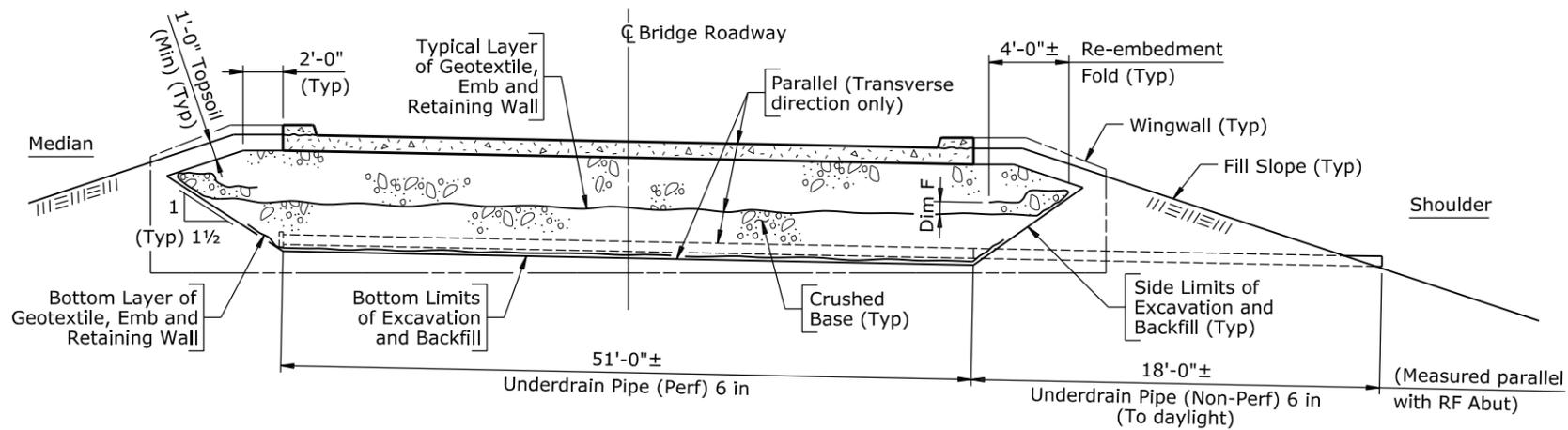
SECTION A-A

- Note:**
- 1) Dimensions preceded by a double asterisk (**) are measured at \bar{C} Bridge Roadway.
 - 2) Extend compressed joint material up front face and across top of curbs.
 - 3) For Bridge Railing Details, see Sheets No. 3 thru 5.
 - 4) For Sections B-B, C-C, and D-D, see Sheet No. 10.

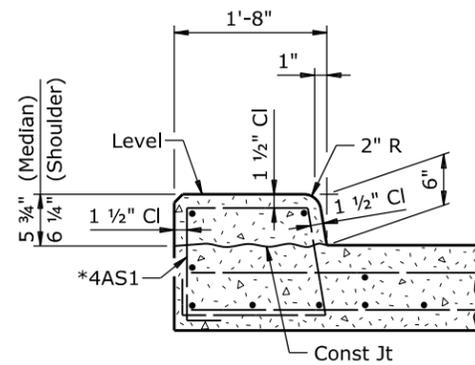
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS		APPROACH SLAB DETAILS	
BRIDGE REHABILITATION			
STA 3439+13			
Walcott Jct. - Laramie Road			
Herrick Lane Section			
I805125		AI	
APPROVED	DESIGN	Design Section B C Def	
DATE	DETAIL	Drwg No. 0015	Sheet 9 of 12
	QTY'S		



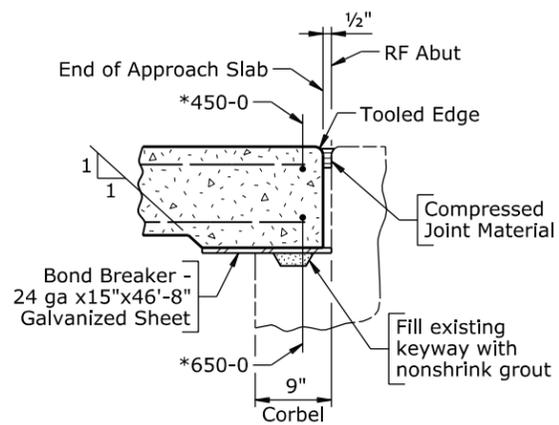
SECTION B-B



SECTION C-C



TYPICAL CURB SECTION

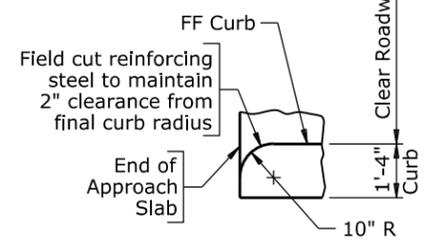
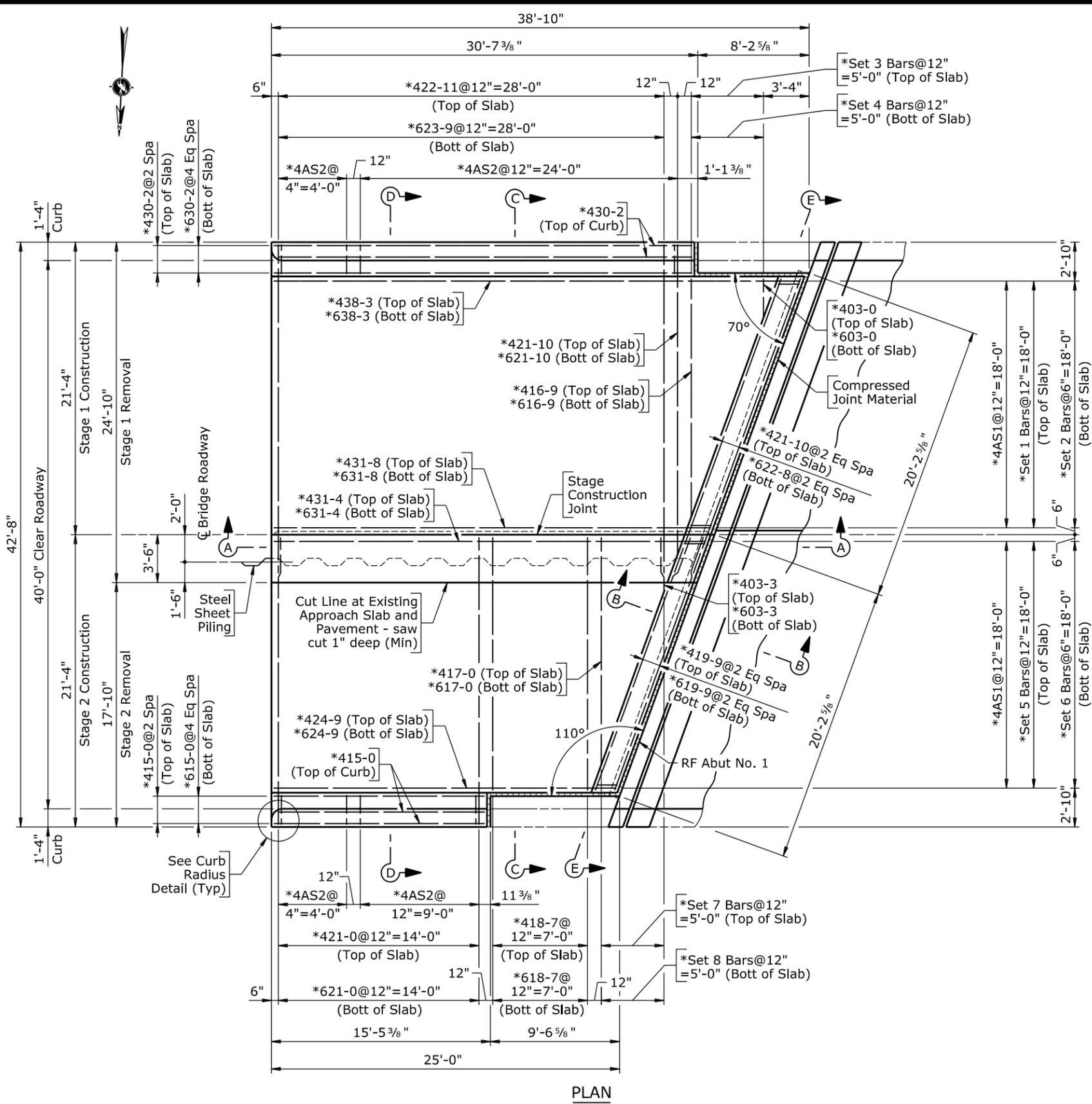


SECTION D-D

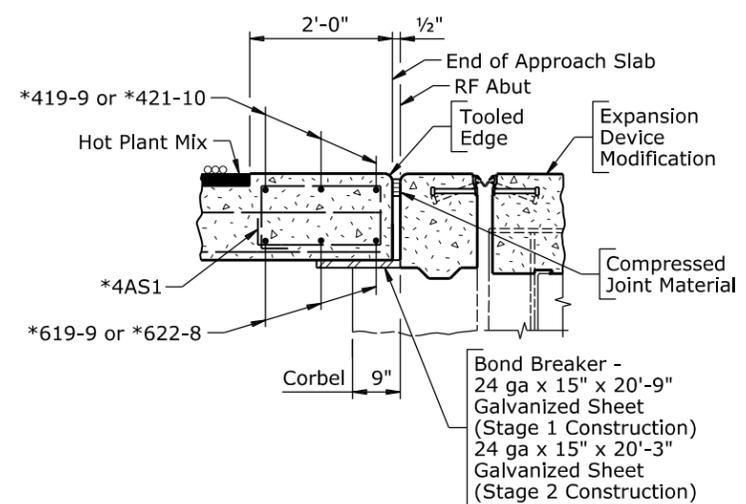
BILL OF REINFORCEMENT			
Location	Mark	Number Required Per Approach Slab	Set Diagrams
Approach Slab and Curbs	*4AS1	94	
	*424-8	2	
	*425-6	1	
	*441-0	25	
	*450-0	1	
	*452-7	1	
	*453-4	2	
	*Set 1 Bars	1	
	*Set 3 Bars	1	
	*624-8	1	
	*625-1	1	
	*625-6	1	
	*641-0	25	
	*650-0	1	
	*652-7	1	
	*652-11	1	
*653-4	1		
*Set 2 Bars	1		
*Set 4 Bars	1		
**Weight	*9611 LB		

- Note:** 1) Ensure the reinforcing steel fabricator prefixes approach slab bar marks as follows:
 Abutment No. 1 - EBL ----- Numeral 3
 Abutment No. 2 - EBL ----- Numeral 4
 Abutment No. 1 - WBL ----- Numeral 5
 Abutment No. 2 - WBL ----- Numeral 6
- 2) Approach slab reinforcing steel is not included in the quantity of reinforcing steel.
- 3) Extend bottom layer of geotextile up side limits of excavation and backfill to bottom of first layer of geotextile.
- 4) For Table of Dimensions and locations of Sections B-B, C-C, and D-D, see Sheet No. 9.

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS		APPROACH SLAB DETAILS	
		BRIDGE REHABILITATION	
		STA 3439+13	
		Walcott Jct. - Laramie Road	
		Herrick Lane Section	
		I805125	AI
APPROVED	DESIGN	Design Section	B C Def
DATE	DETAIL	Drwg No.	0015 Sheet 10 of 12
	QTY'S		



CURB RADIUS DETAIL



SECTION B-B

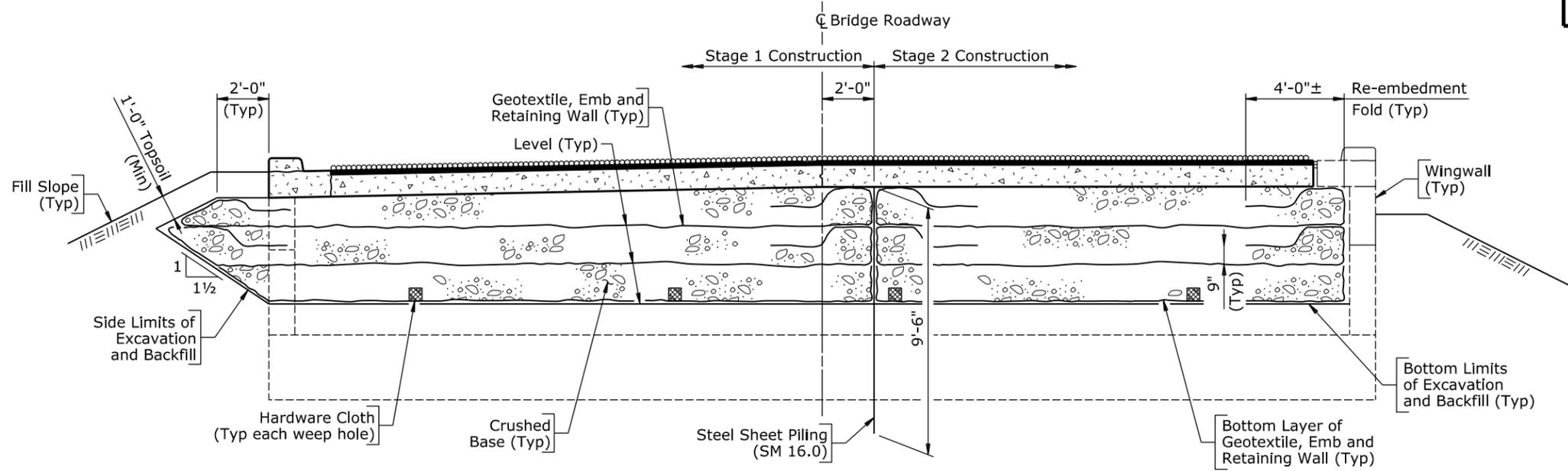
- Note:
- 1) Lap bond breakers 6" minimum.
 - 2) Place *4AS1 bars parallel with ϕ Bridge Roadway.
 - 3) Extend compressed joint material up front face and across top of curbs.
 - 4) For Bridge Railing Modification Details, see Sheets No. 6 thru 8.
 - 5) For Sections A-A and C-C, see Sheet No. 10.
 - 6) For Sections D-D and E-E, see Sheet No. 11.

ABUTMENT NO. 1

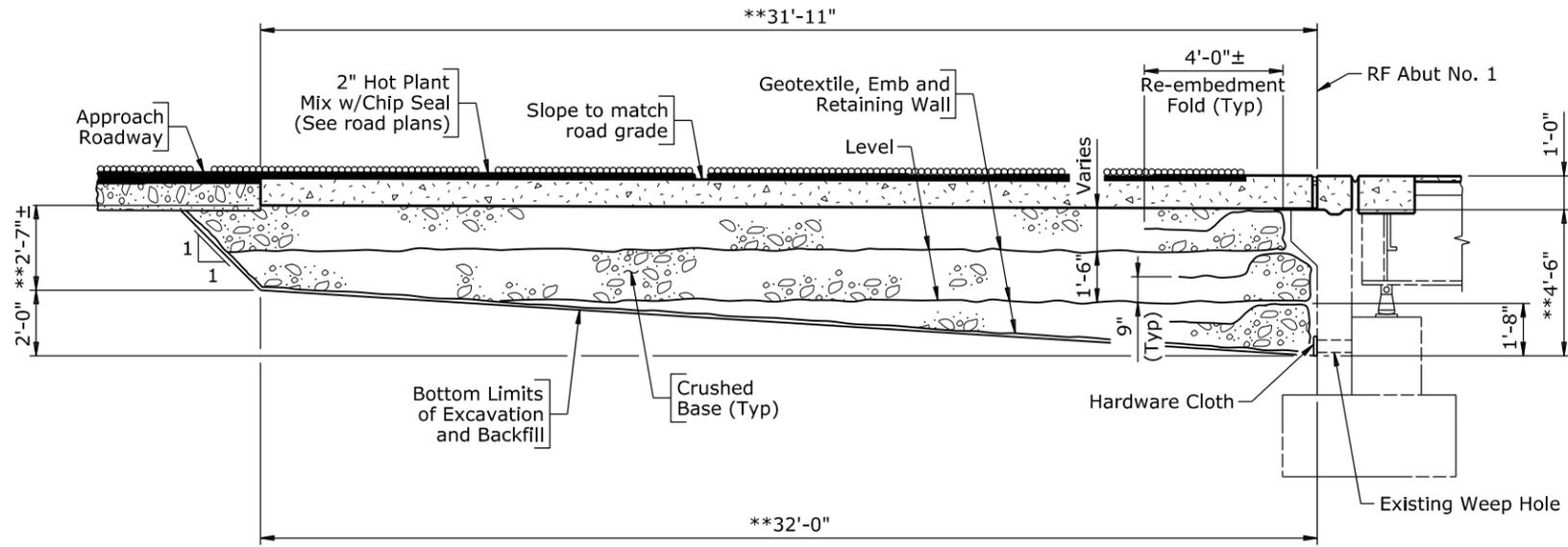
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS		APPROACH SLAB DETAILS	
BRIDGE REHABILITATION			
STA 197+38			
Cody - Greybull			
Cody East Section			
N311074		Pa	
APPROVED	DESIGN	Design Section	L M Nop
DATE	DETAIL	Drwg No.	0010
	QTY'S	Sheet	9 of 15

Nov 2019

4.22 - Example



SECTION C-C



SECTION A-A

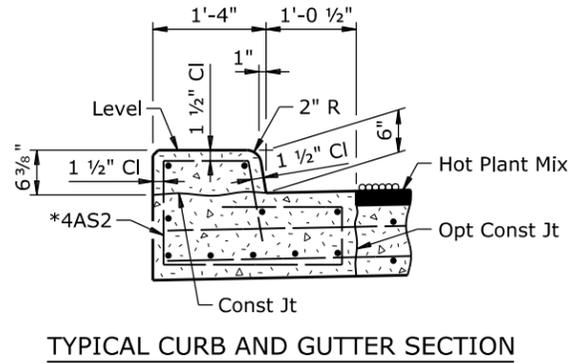
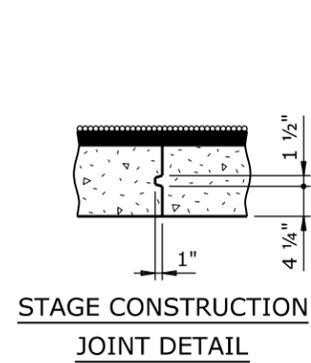
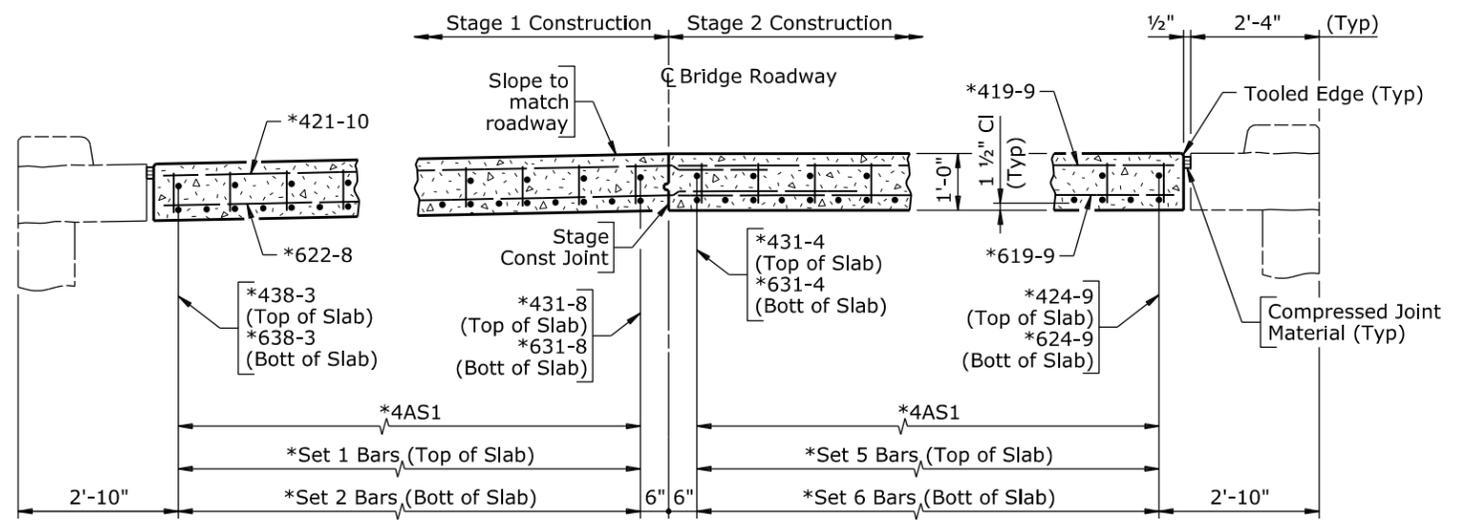
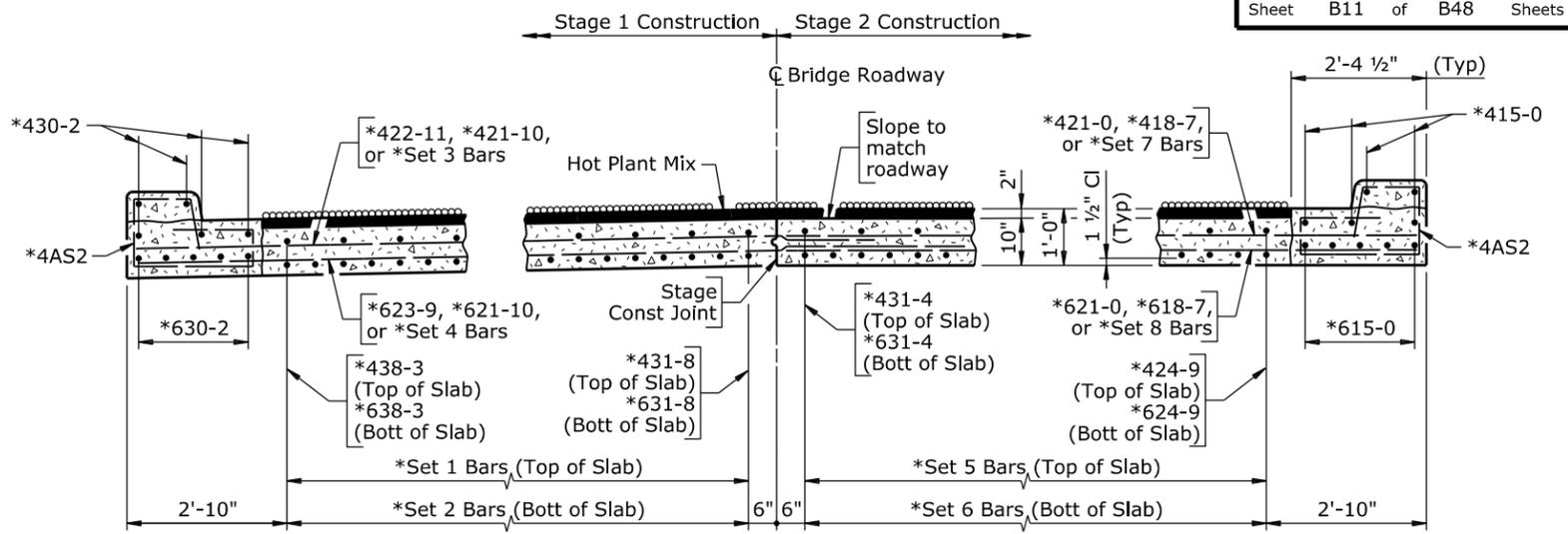
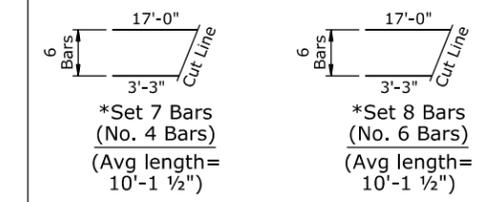
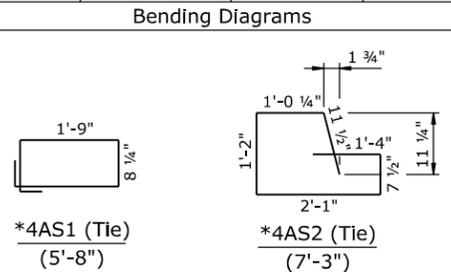
- Note:**
- 1) Dimensions preceded by a double asterisk (**) are measured at \bar{C} Bridge Roadway.
 - 2) Extend bottom layer of geotextile up sheet piling and side limits of excavation and backfill to bottom of first layer of geotextile.
 - 3) Clean existing weep holes. Place one 6" x 6" piece of aluminum or galvanized steel wire 4 mesh hardware cloth (Minimum wire diameter 0.03") centered over pipe end and firmly anchor to rear face abutment.
 - 4) For location of Sections A-A and C-C, see Sheet No. 9.

ABUTMENT NO. 1

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
APPROACH SLAB DETAILS			
BRIDGE REHABILITATION			
STA 197+38			
Cody - Greybull			
Cody East Section			
N311074			Pa
APPROVED	DESIGN	CCC ✓ AAA	Design Section L M Nop
DATE	DETAIL	BBB ✓ EEE	Drwg No. 0010 Sheet 10 of 15
QTY'S			

Section 4.22 - Preservation and Rehabilitation

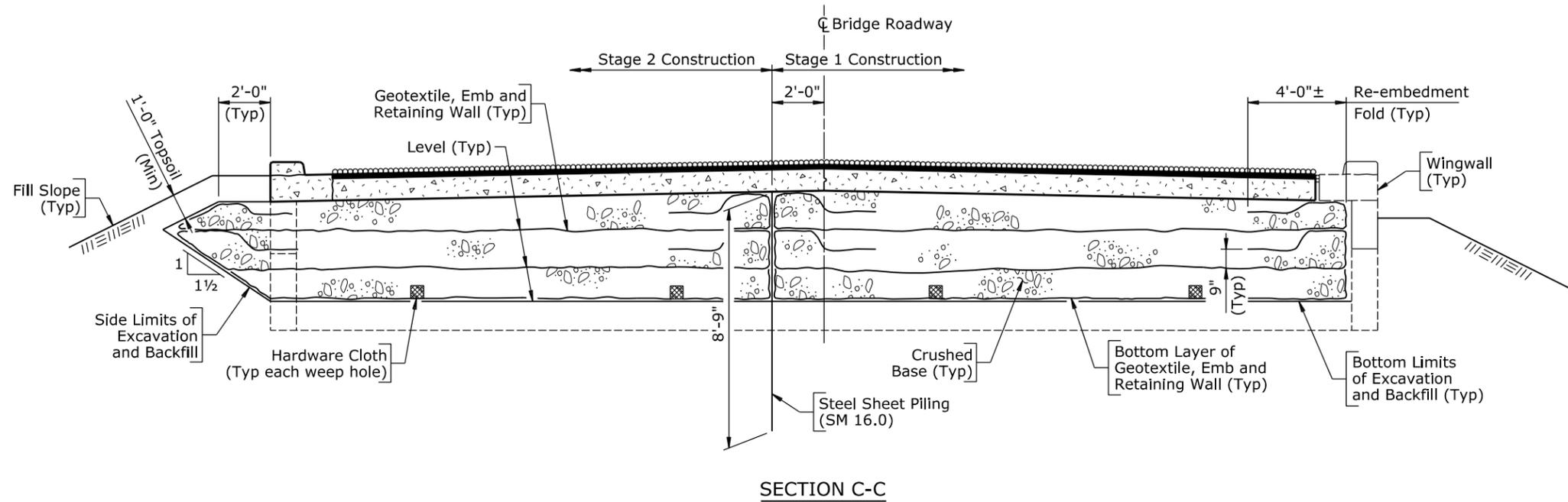
BILL OF REINFORCEMENT				
Location	Mark	Number Required		Set Diagrams
		Stage 1 Construction	Stage 2 Construction	
Approach Slab and Curbs	*4AS1	19	19	
	*4AS2	38	23	
	*415-0		5	
	*418-7		8	
	*419-9		3	
	*421-0		15	
	*421-10	4		
	*422-11	29		
	*430-2	5		
	*Set 1 Bars	1		
	*Set 3 Bars	1		
	*Set 5 Bars		1	
	*Set 7 Bars		1	
	*615-0		5	
	*618-7		8	
	*619-9		3	
	*621-0		15	
	*621-10	1		
	*622-8	3		
	*623-9	29		
	*630-2	5		
	*Set 2 Bars	1		
	*Set 4 Bars	1		
*Set 6 Bars		1		
*Set 8 Bars		1		
∑ *Weight		*4770 LB	*3527 LB	



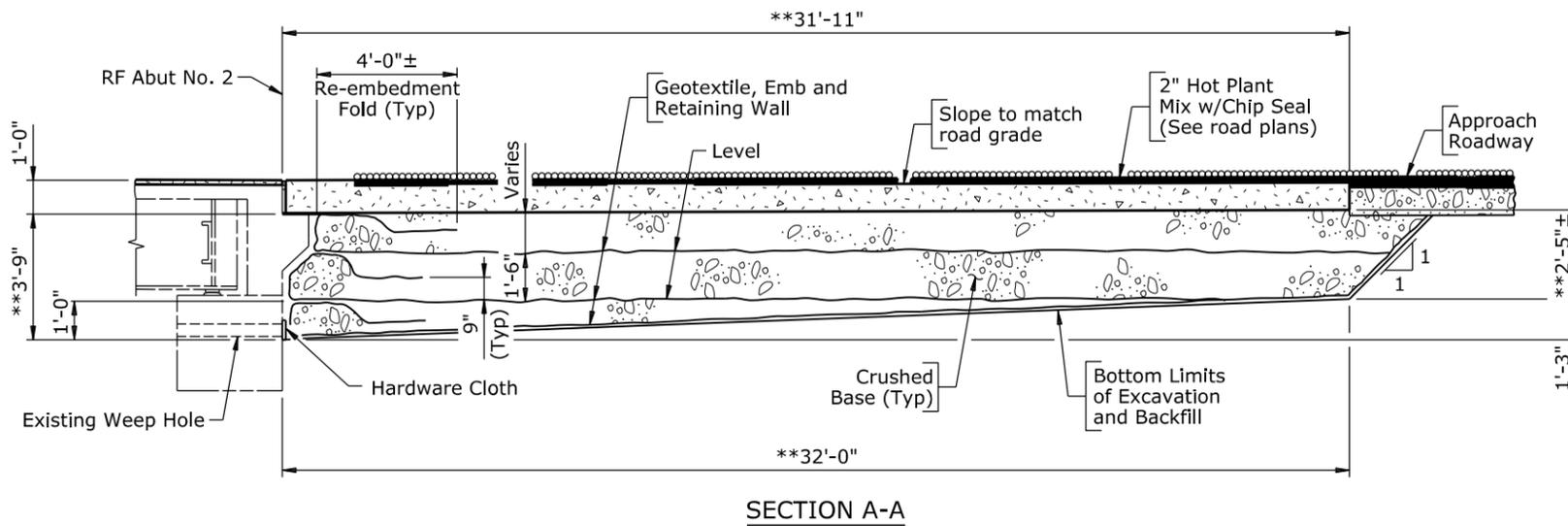
Note: 1) Ensure the reinforcing steel fabricator prefixes approach slab bar marks at Abutment No. 1 with numeral 3 for stage 1 construction and numeral 4 for stage 2 construction.
 2) Approach slab reinforcing steel is not included in the quantity of reinforcing steel.
 3) For location of Sections D-D and E-E, see Sheet No. 9.

ABUTMENT NO. 1

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
APPROACH SLAB DETAILS			
BRIDGE REHABILITATION			
STA 197+38			
Cody - Greybull			
Cody East Section			
N311074		Pa	
DESIGN	CCC ✓ AAA ✓	Design Section	L M Nop
DATE	BBB ✓ EEE ✓	Drwg No.	0010
QTY'S		Sheet	11 of 15



SECTION C-C



SECTION A-A

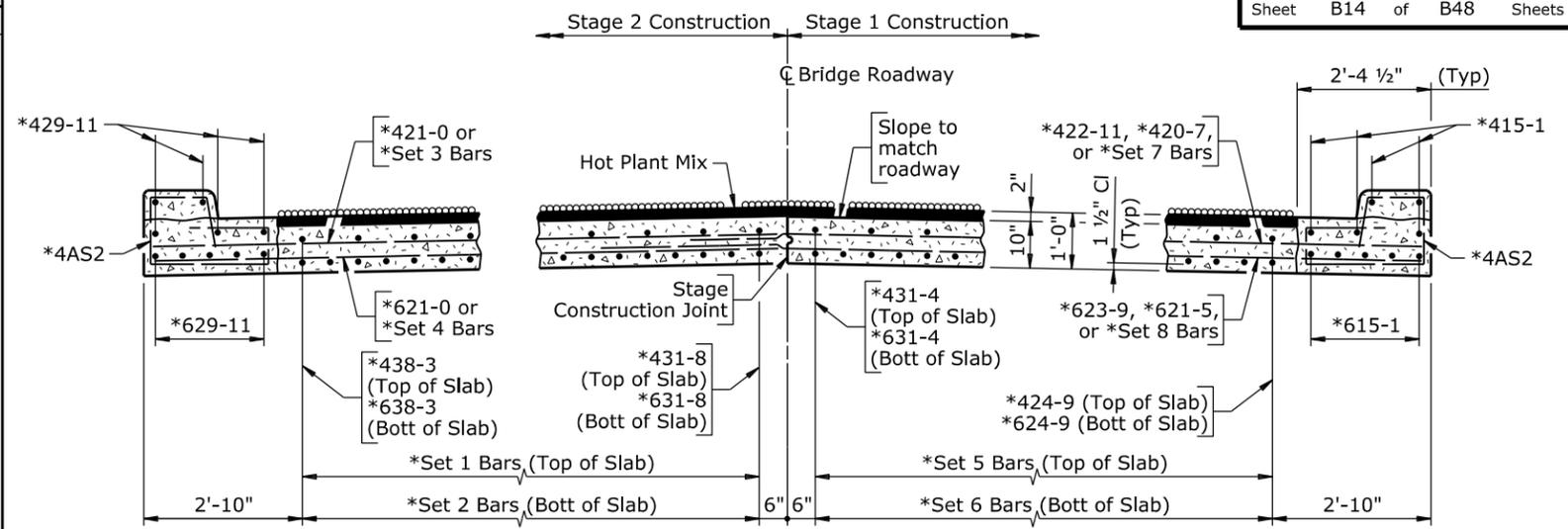
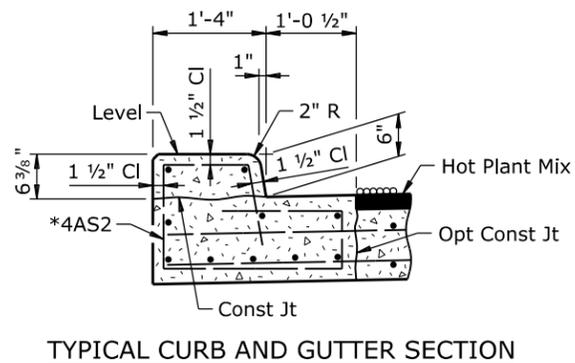
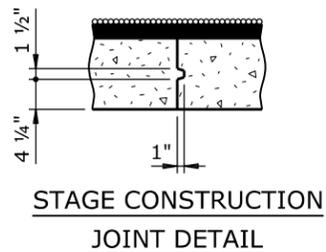
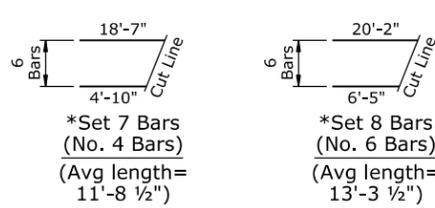
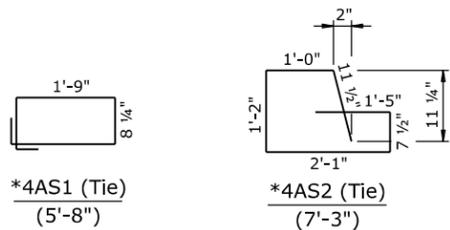
- Note:**
- 1) Dimensions preceded by a double asterisk (**) are measured at \bar{C} Bridge Roadway.
 - 2) Extend bottom layer of geotextile up sheet piling and side limits of excavation and backfill to bottom of first layer of geotextile.
 - 3) Clean existing weep holes. Place one 6" x 6" piece of aluminum or galvanized steel wire 4 mesh hardware cloth (Minimum wire diameter 0.03") centered over pipe end and firmly anchor to rear face abutment.
 - 4) For location of Sections A-A and C-C, see Sheet No. 12.

ABUTMENT NO. 2

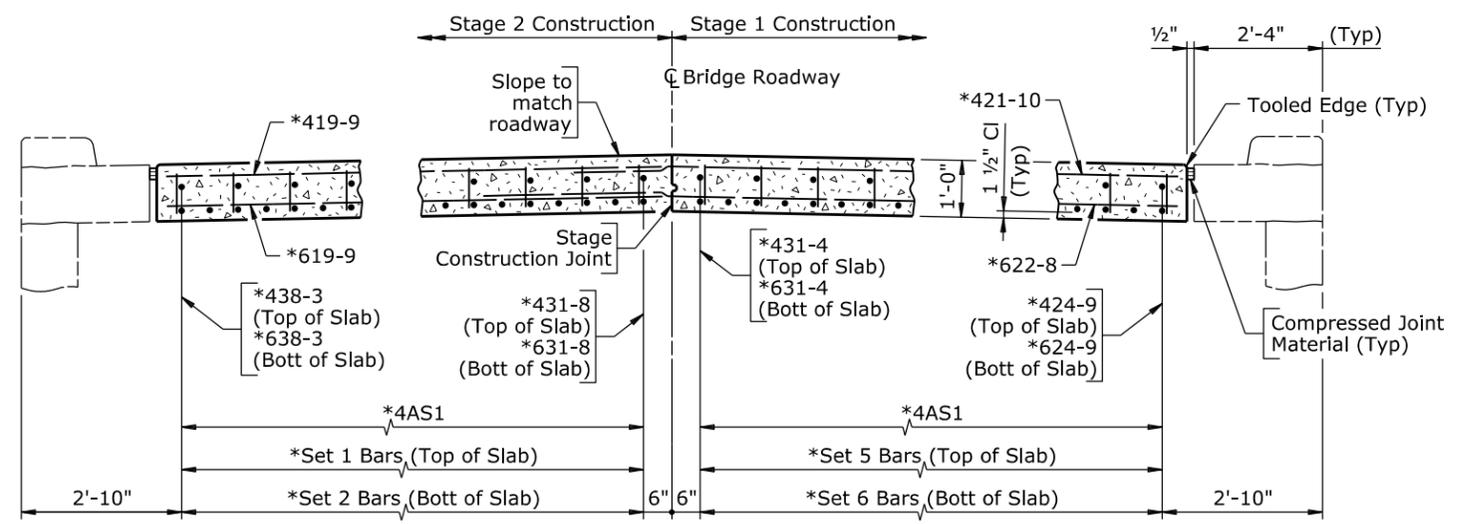
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
APPROACH SLAB DETAILS			
BRIDGE REHABILITATION			
STA 197+38			
Cody - Greybull			
Cody East Section			
N311074			Pa
APPROVED	DESIGN	CCC ✓ AAA	Design Section L M Nop
DATE	DETAIL	BBB ✓ EEE	Drwg No. 0010 Sheet 13 of 15
QTY'S			

BILL OF REINFORCEMENT				
Location	Mark	Number Required		Set Diagrams
		Stage 1 Construction	Stage 2 Construction	
Approach Slab and Curbs	*4AS1	19	19	19 Bars 38'-3" Cut Line
	*4AS2	23	38	
	*415-1	5		*Set 1 Bars (No. 4 Bars) (Avg length= 34'-11 1/2")
	*419-9		3	
	*420-7	8		6 Bars 16'-4" Cut Line
	*421-0		30	
	*421-10	3		*Set 3 Bars (No. 4 Bars) (Avg length= 9'-5 1/2")
	*422-11	15		
	*429-11		5	6 Bars 2'-7" Cut Line
	*Set 1 Bars		1	
	*Set 3 Bars		1	*Set 5 Bars (No. 4 Bars) (Avg length= 28'-0 1/2")
	*Set 5 Bars	1		
	*Set 7 Bars	1		19 Bars 31'-4" Cut Line
	*615-1	5		
	*619-9		3	*Set 7 Bars (No. 4 Bars) (Avg length= 11'-8 1/2")
	*621-0		30	
	*621-5	8		6 Bars 18'-7" Cut Line
	*622-8	3		
	*623-9	15		*Set 7 Bars (No. 4 Bars) (Avg length= 11'-8 1/2")
	*629-11		5	
*Set 2 Bars		1	6 Bars 4'-10" Cut Line	
*Set 4 Bars		1		6 Bars 4'-10" Cut Line
*Set 6 Bars	1		*Set 7 Bars (No. 4 Bars) (Avg length= 11'-8 1/2")	
*Set 8 Bars	1			*Set 8 Bars (No. 6 Bars) (Avg length= 13'-3 1/2")
∗ *Weight	*3706 LB	*4586 LB		

Bending Diagrams



SECTION D-D



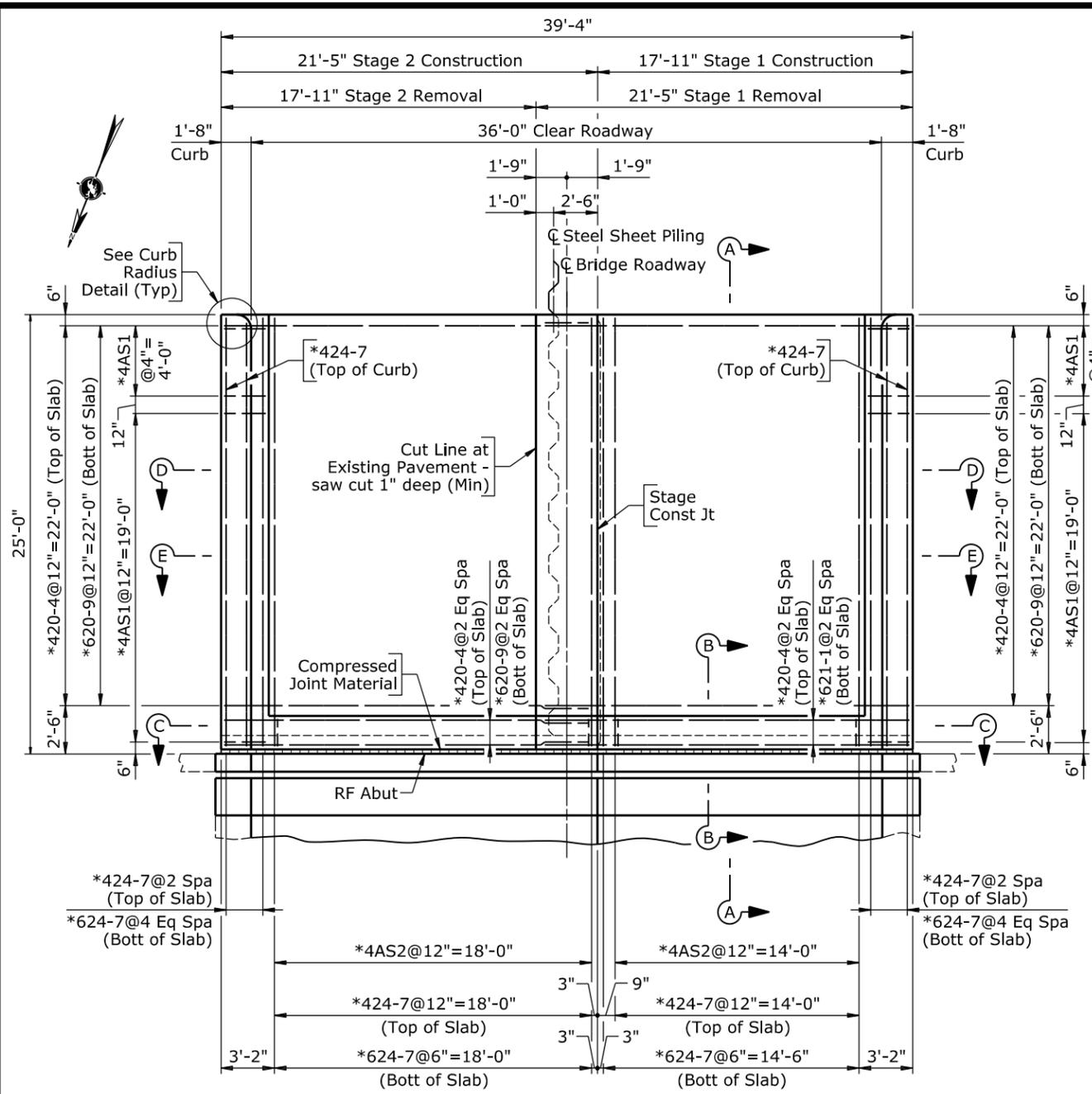
SECTION E-E

(Dimensions are perpendicular to \bar{C} Bridge Roadway)

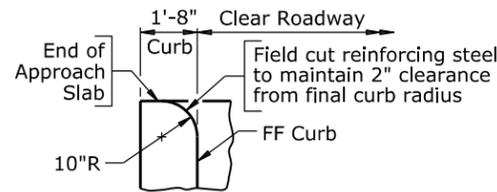
- Note: 1) Ensure the reinforcing steel fabricator prefixes approach slab bar marks at Abutment No. 2 with numeral 5 for stage 1 construction and numeral 6 for stage 2 construction.
 2) Approach slab reinforcing steel is not included in the quantity of reinforcing steel.
 3) For location of Sections D-D and E-E, see Sheet No. 12.

ABUTMENT NO. 2

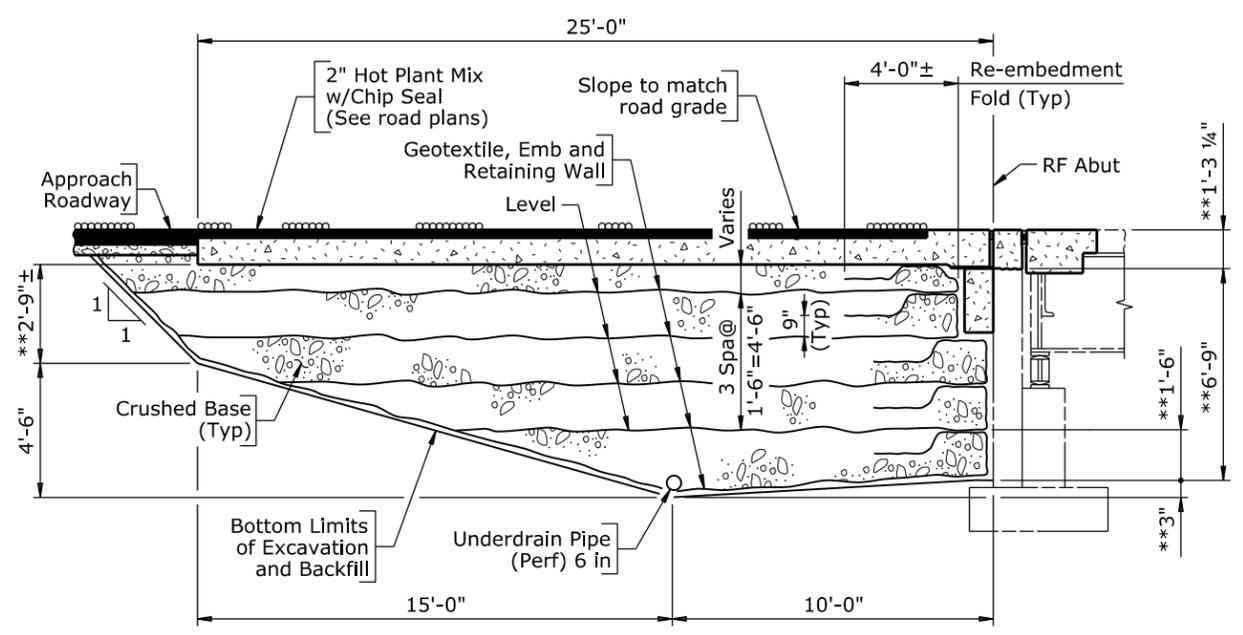
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
APPROACH SLAB DETAILS			
BRIDGE REHABILITATION			
STA 197+38			
Cody - Greybull			
Cody East Section			
N311074		Pa	
APPROVED	DESIGN	Design Section	L M Nop
DATE	DETAIL	Drwg No.	0010
	QTY'S	Sheet	14 of 15



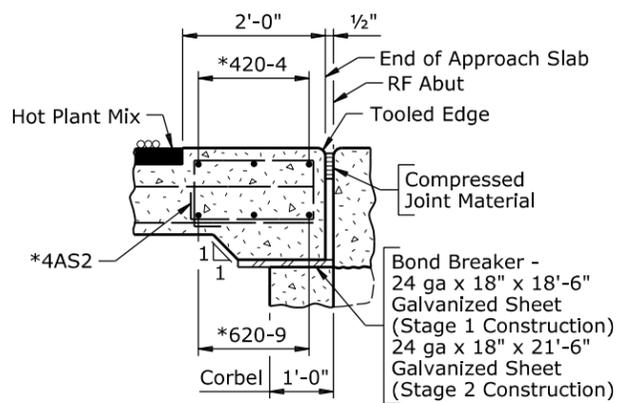
PLAN
(Abut No. 1 shown, Abut No. 2 similar)



CURB RADIUS DETAIL



SECTION A-A



SECTION B-B

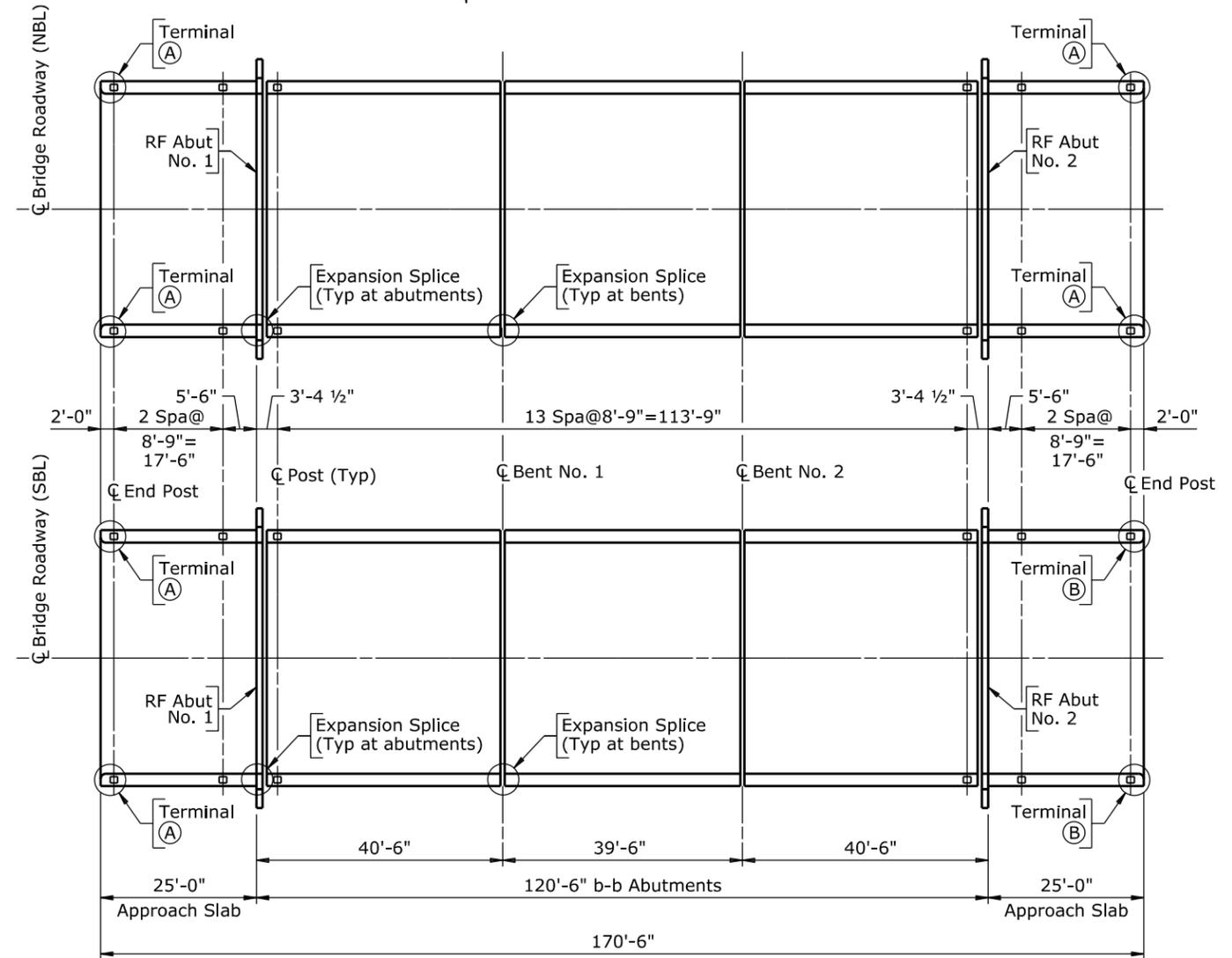
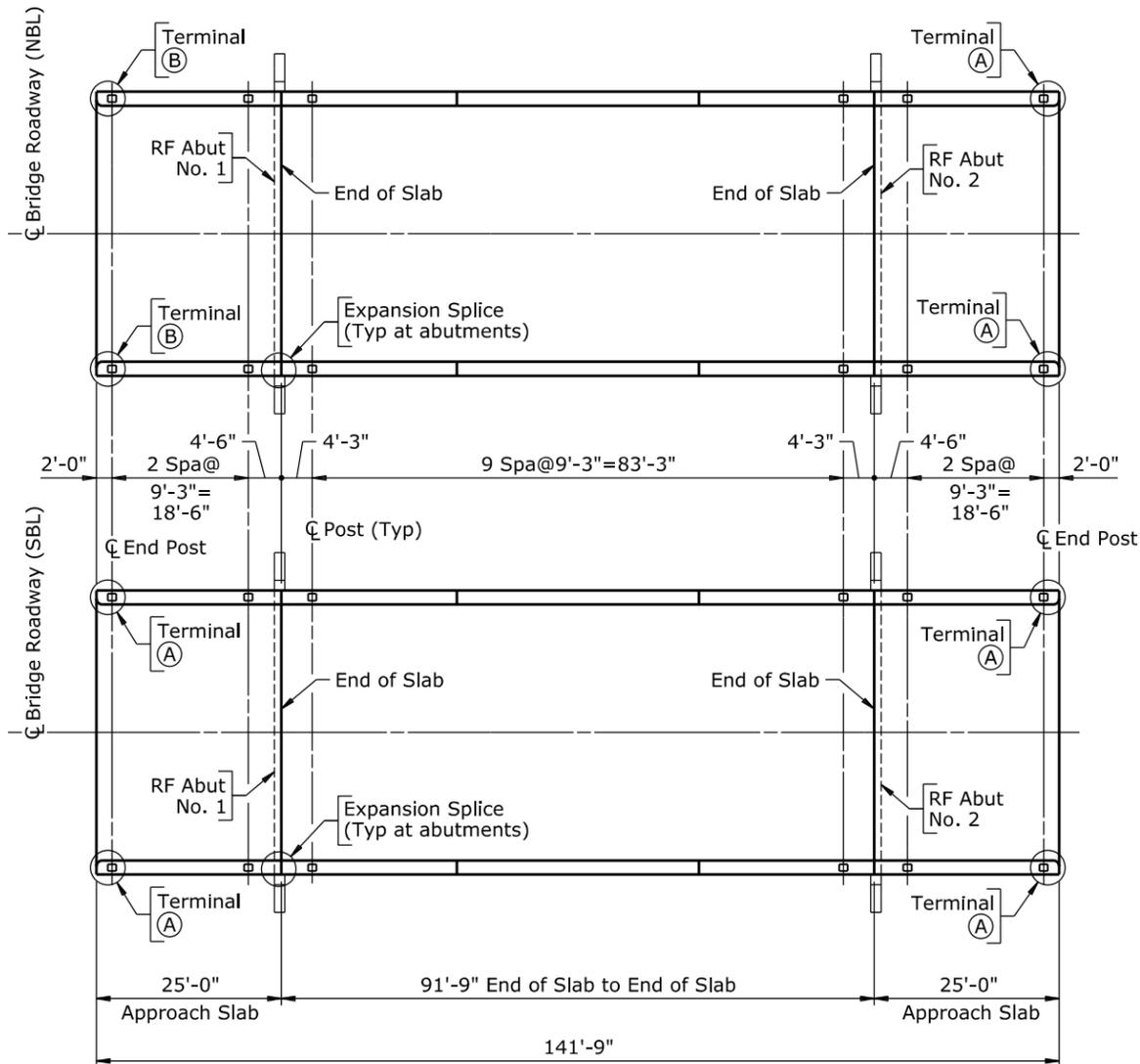
- Note:**
- 1) Dimensions preceded by a double asterisk (**) are measured at \bar{C} Bridge Roadway.
 - 2) Lap bond breakers 6" minimum.
 - 3) Extend compressed joint material up front face and across top of curbs.
 - 4) For Sections C-C, D-D, and E-E, see Sheet No. 12.
 - 5) For Bridge Railing Modification Details, see Sheets No. 7, 9, and 10.

BRIDGE OVER LARAMIE RIVER

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
APPROACH SLAB DETAILS			
BRIDGE REHABILITATION			
VARIOUS LOCATIONS			
Rock River - Laramie			
Bosler South Section			
P232037			AI
APPROVED	DESIGN	DETAIL	Q R Stuv
DATE	JJJ	HHH	Drwg No. 0012
	JJJ	OOO	Sheet 11 of 14

Sept 2015

4.22 - Example



TERMINAL DESIGNATIONS	
Terminal Designation	Approach Guardrail Connection
(A)	Box Beam w/ Rubrail Approach Guardrail
(B)	No Approach Guardrail

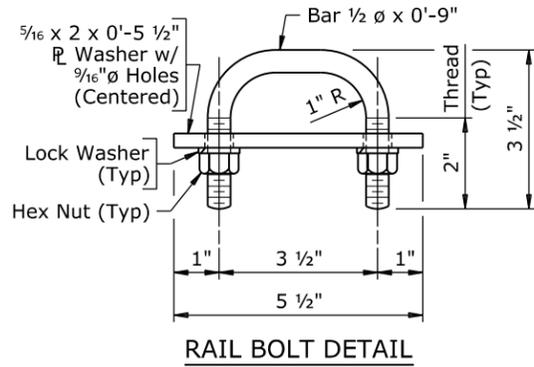
Note: Ensure the expansion splice is located in the railing panel which passes over the bridge expansion joint as indicated on the plan.

STA 384+32
 STA 386+96

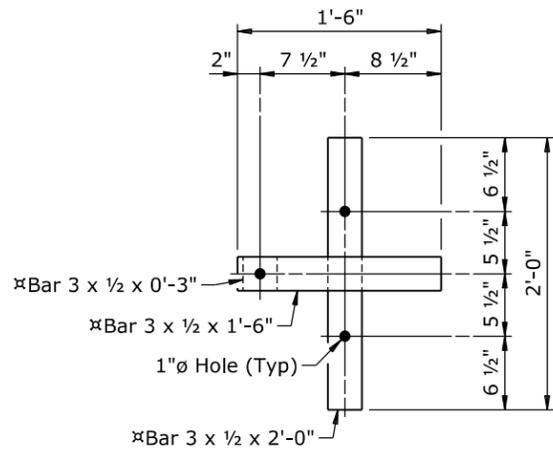
WYOMING DEPARTMENT OF TRANSPORTATION
 BRIDGE PROGRAM

REVISIONS	BRIDGE RAILING DETAILS	
	BRIDGE REHABILITATION	
	VARIOUS LOCATIONS	
	Wheatland - Glendo Road	
	(Cassa North Section)	
	I252137	PI
APPROVED	DESIGN: <u>BBB</u> ✓ <u>AAA</u>	Design Section L M NOP
DATE	DETAIL: <u>GGG</u> ✓ <u>DDD</u>	Drwg No. 0014 Sheet 8 of 30

Section 4.22 - Preservation and Rehabilitation

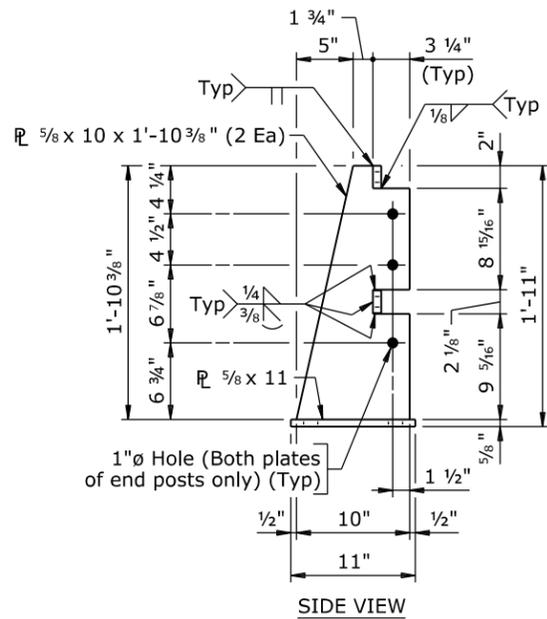


RAIL BOLT DETAIL

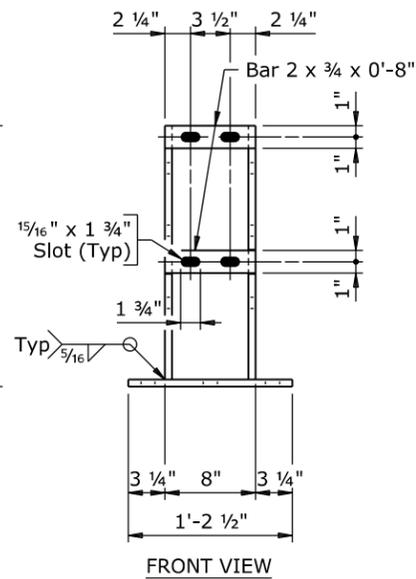


SECTION B-B

(Not galvanized)
(Anchor bolts and slab not shown)



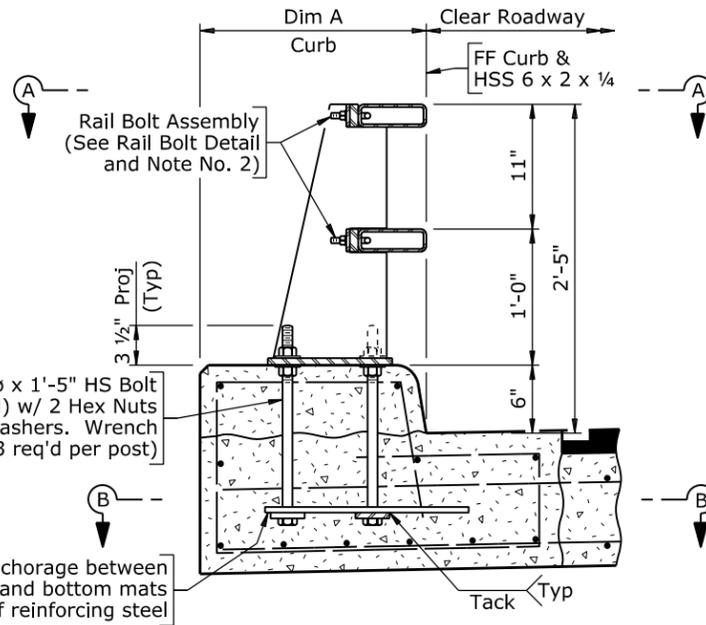
SIDE VIEW



FRONT VIEW

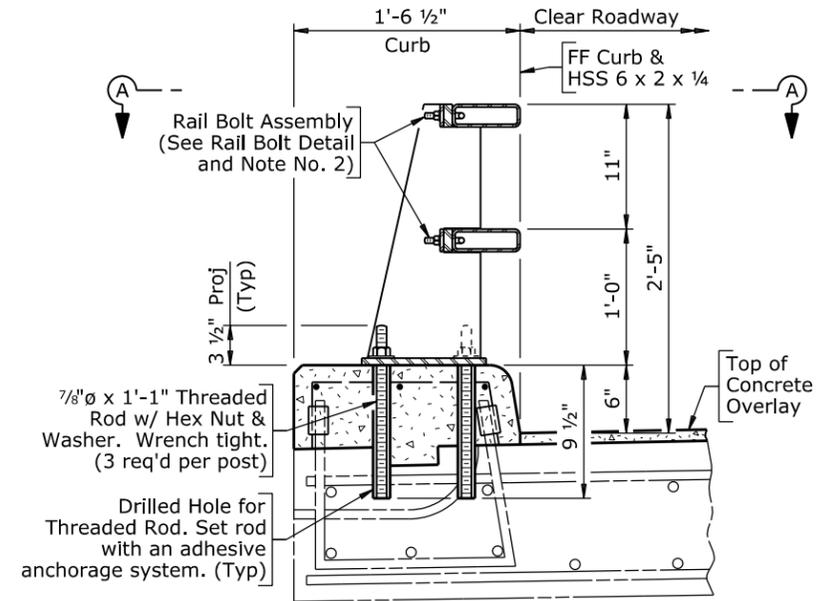
POST DETAILS

(See View A-A for anchor bolt hole spacing)



ASSEMBLY DETAIL

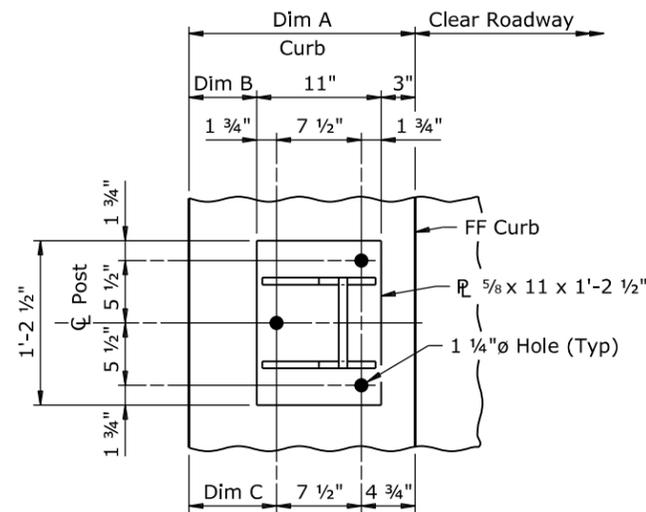
(Shown near C Post on approach slab)



TYPICAL SECTION

(Shown near C Post on bridge slab at Sta 384+32 and Sta 386+96)

TABLE OF DIMENSIONS			
Location	Dim A	Dim B	Dim C
Sta 119+05	1'-4"	2"	3 3/4"
Sta 384+32	1'-6 1/2"	4 1/2"	6 1/4"
Sta 386+96	1'-6 1/2"	4 1/2"	6 1/4"



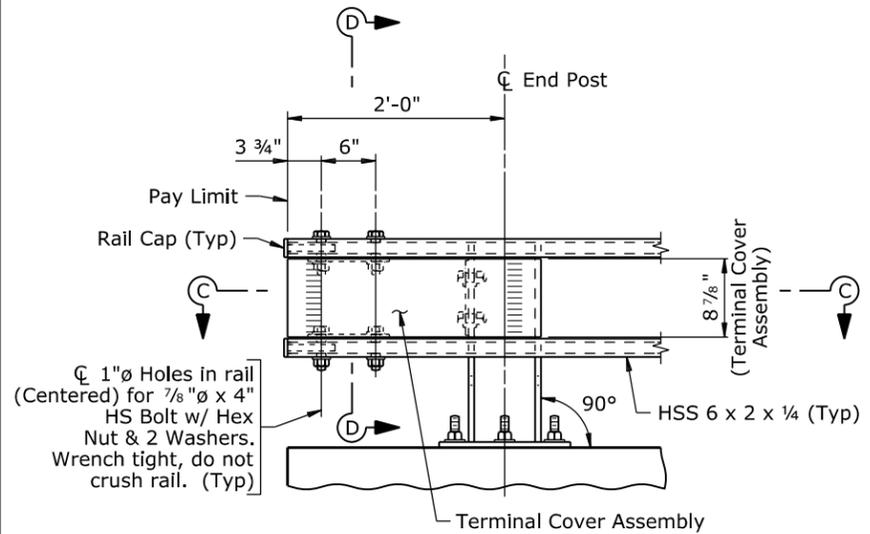
VIEW A-A

(Anchor bolts, rails, and rail bolts not shown)

- Note:
- 1) Anchor bolts may be tack welded to anchorage (Shop or field).
 - 2) At post locations, drill two 1 1/16 inch diameter holes in the rails to receive rail bolts (Shop or field). See Post Details for hole spacing.
 - 3) Paint surfaces of the railing components that have been cut, drilled, or otherwise damaged with two coats of zinc-rich paint conforming to ASTM A 780.
 - 4) After installing rails, paint exposed bolt threads with two coats of zinc-rich paint conforming to ASTM A 780.

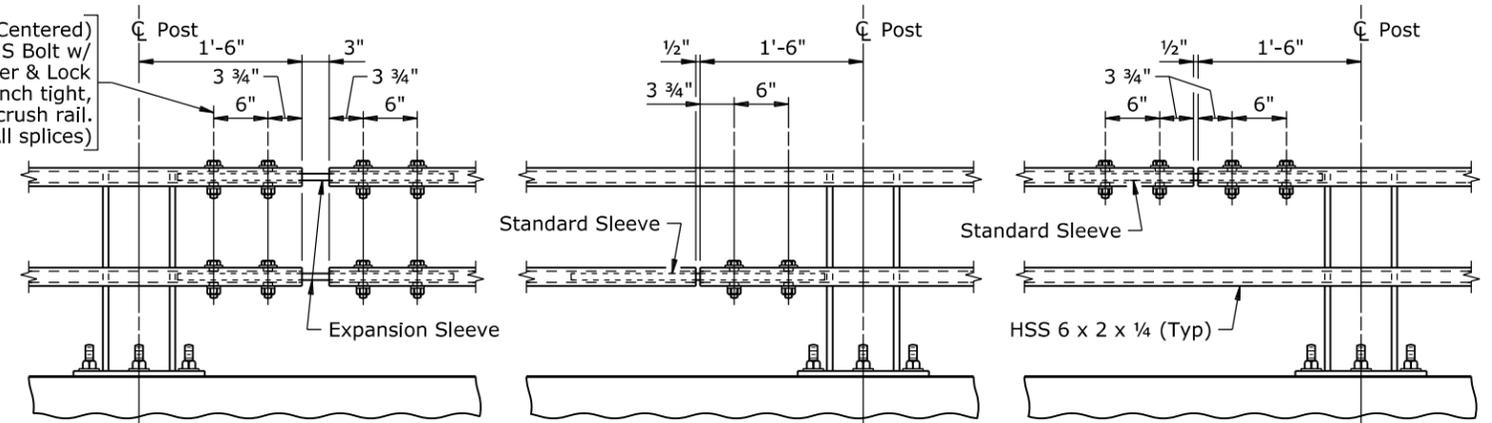
ALL LOCATIONS

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
BRIDGE RAILING DETAILS			
BRIDGE REHABILITATION VARIOUS LOCATIONS Wheatland - Glendo Road (Cassa North Section)			
I252137		PI	
APPROVED	DESIGN	Design Section L M Nop	
DATE	DETAIL	Drwg No. 0014 Sheet 9 of 30	
	QTY'S	GGG DDD	



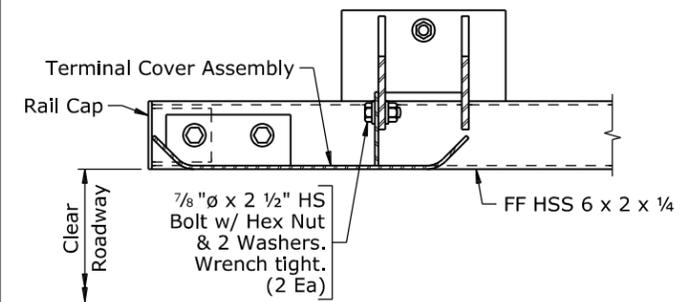
ELEVATION AT TERMINAL

1" ϕ Holes in rail (Centered) for 3/4" ϕ x 3 1/2" HS Bolt w/ Hex Nut, Washer & Lock Washer. Wrench tight, do not crush rail. (Typ) (All splices)

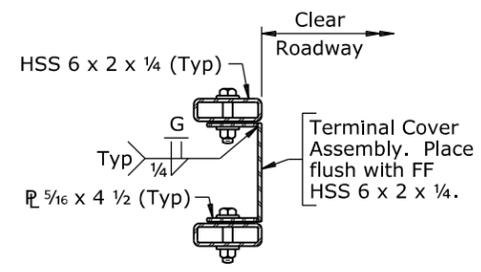


EXPANSION SPLICE (Top and bottom rail)
STANDARD SPLICE (Top or bottom rail)
DOUBLE-BOLTED SPLICE (Top or bottom rail)
SPLICE DETAILS

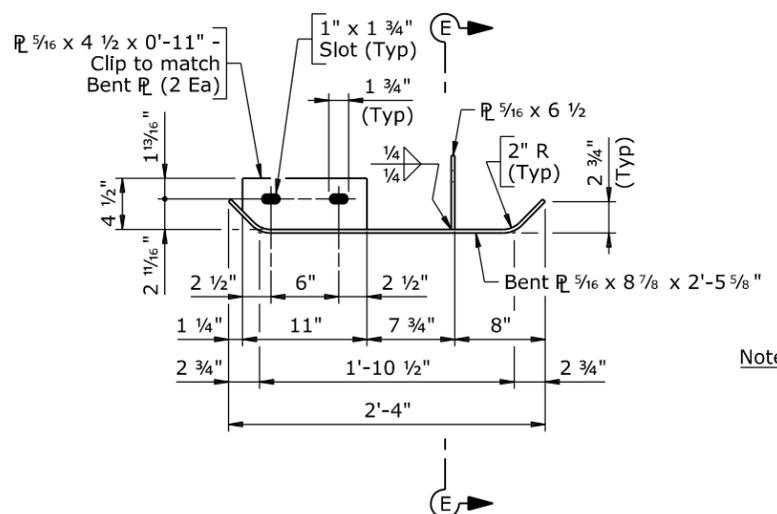
TERMINAL COMPONENT REQUIREMENTS		
Approach Guardrail Connection	Rail Caps Required	Terminal Cover Assembly Required
MGS Approach Guardrail	Yes (Without bolts)	± No
Box Beam w/ Rubrail Approach Guardrail	No	No
No Approach Guardrail	Yes (With bolts)	Yes



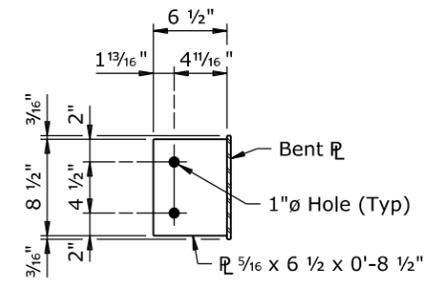
SECTION C-C



SECTION D-D



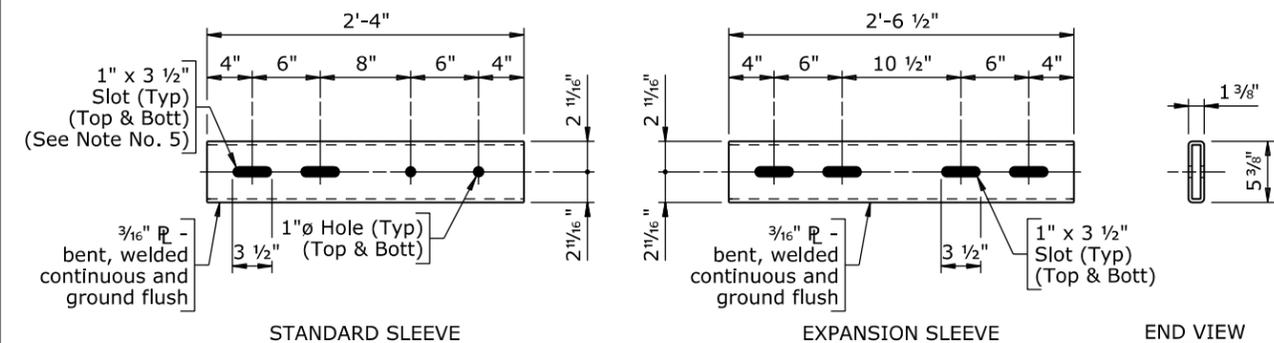
TERMINAL COVER ASSEMBLY DETAIL



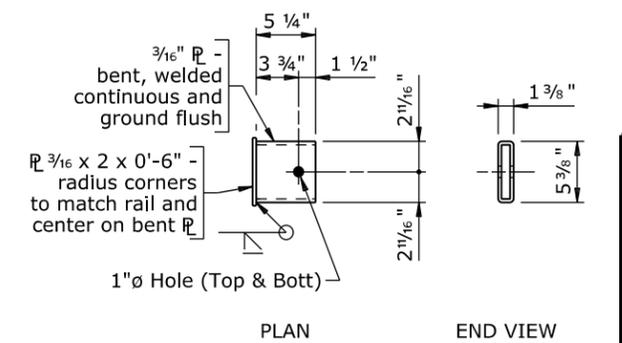
SECTION E-E

- Note:
- 1) Ensure each rail length is continuous over a minimum of two posts.
 - 2) In rehabilitation work, ensure railing that cannot feasibly be made continuous over a minimum of two posts has a double-bolted splice.
 - 3) Splices may be located on either side of post.
 - 4) Not more than one splice is permitted per side of post, except at expansion splices.
 - 5) Slots may be omitted in standard sleeves where bolts are required on one side of splice only.
 - 6) Do not shop splice rails.
 - 7) Terminal components removed during rehabilitation work will remain the property of the department.
 - ±8) Installation of MGS approach guardrail will require other fabricated assemblies to be connected to end post. See road plans for details and pay item.

ALL LOCATIONS



SLEEVE DETAILS



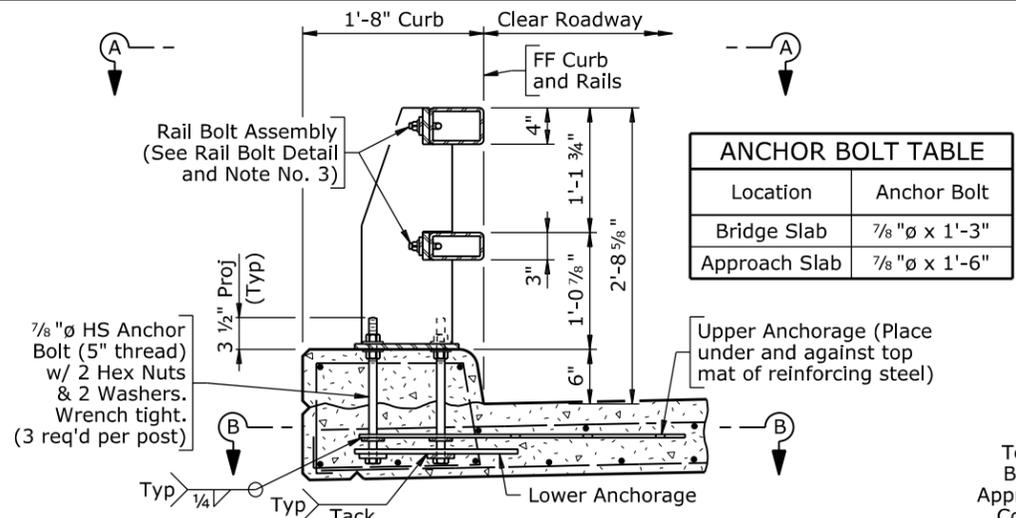
RAIL CAP DETAILS

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
BRIDGE RAILING DETAILS			
BRIDGE REHABILITATION			
VARIOUS LOCATIONS			
Wheatland - Glendo Road (Cassa North Section)			
I252137		PI	
APPROVED	DESIGN	Design Section L M Nop	
DATE	DETAIL	Drwg No. 0014	Sheet 10 of 30
	QTY'S	GGG	DDD

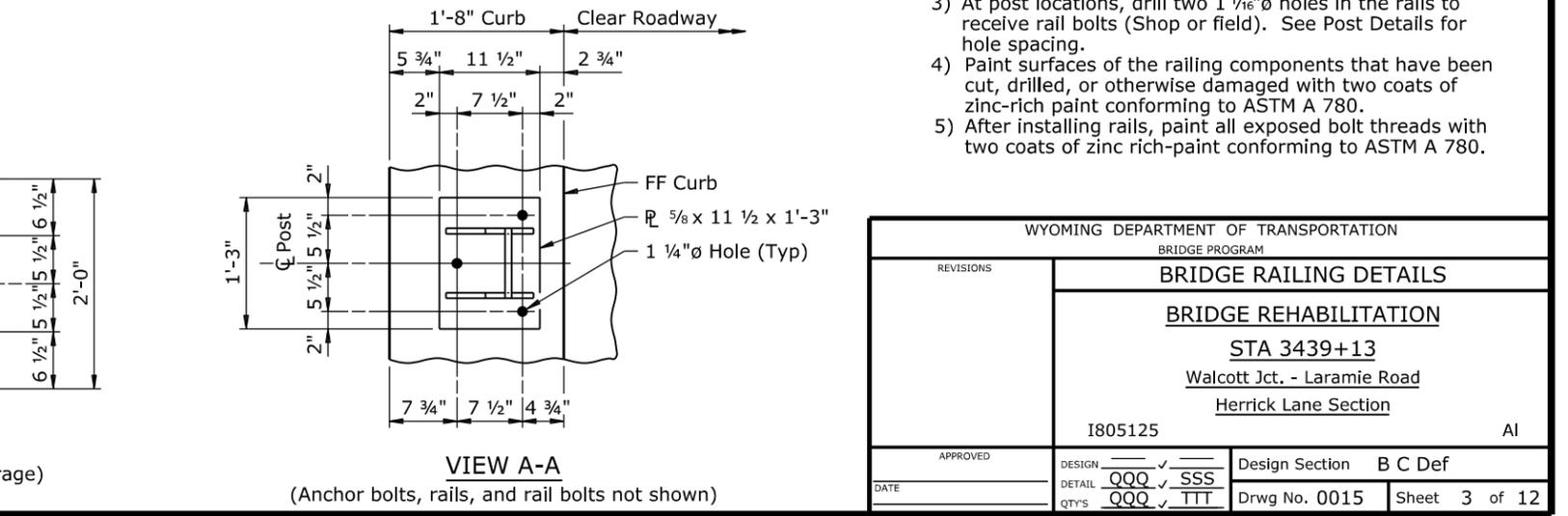
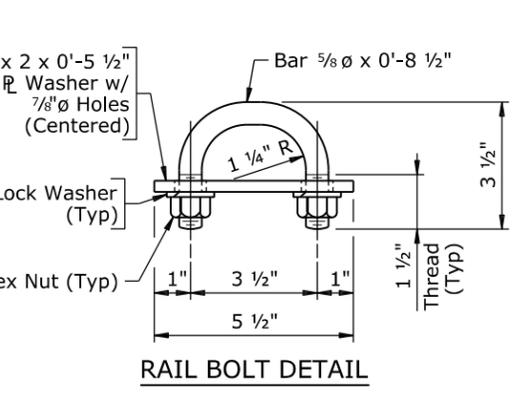
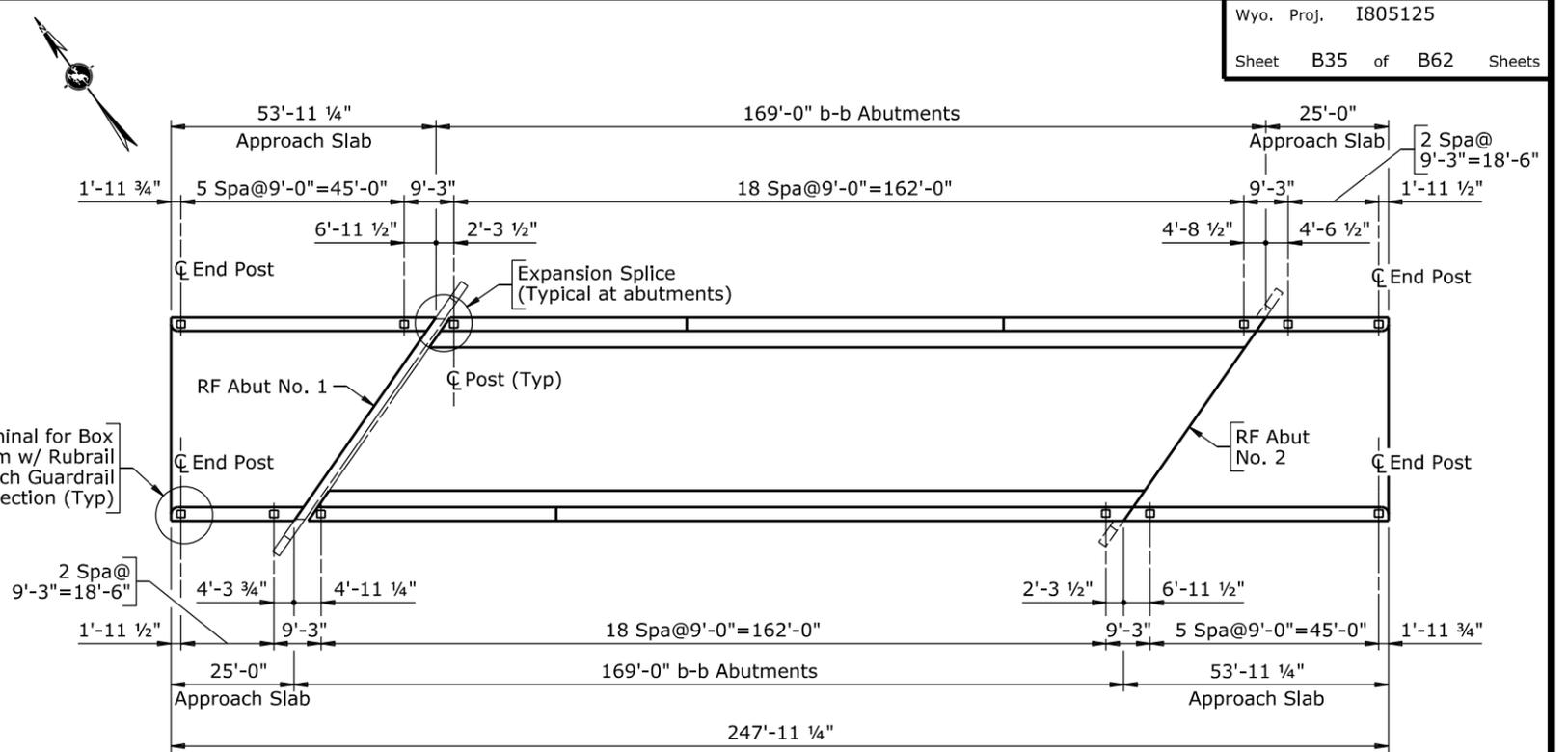
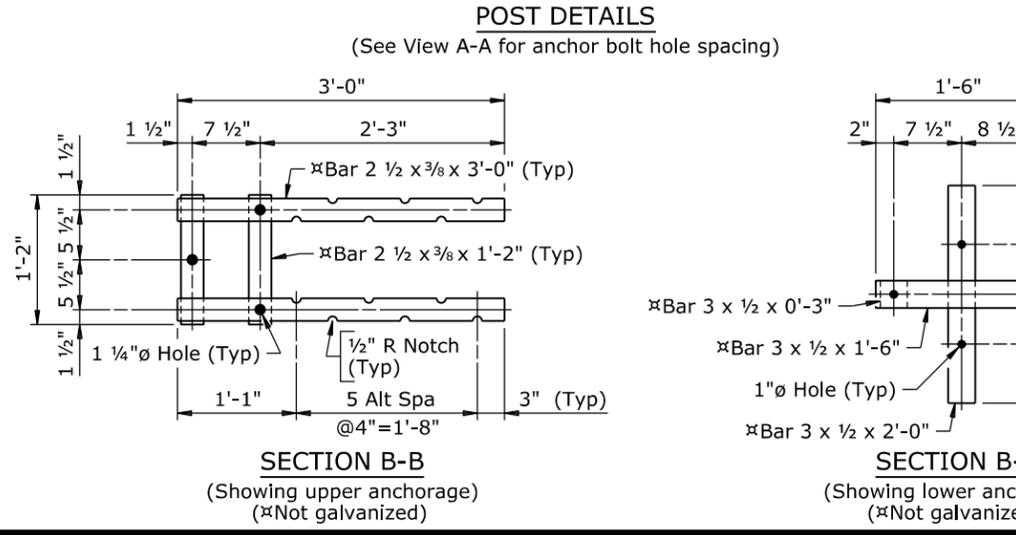
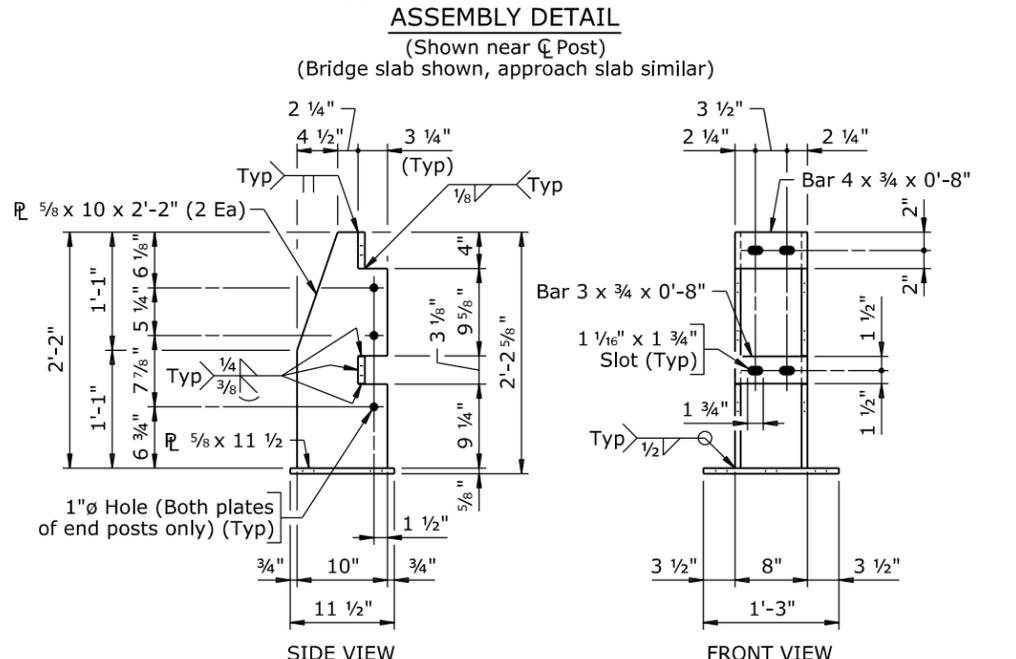
Sept 2015

4.22 - Example

Wyo. Proj. I805125
Sheet B35 of B62 Sheets



ANCHOR BOLT TABLE	
Location	Anchor Bolt
Bridge Slab	7/8"Ø x 1'-3"
Approach Slab	7/8"Ø x 1'-6"

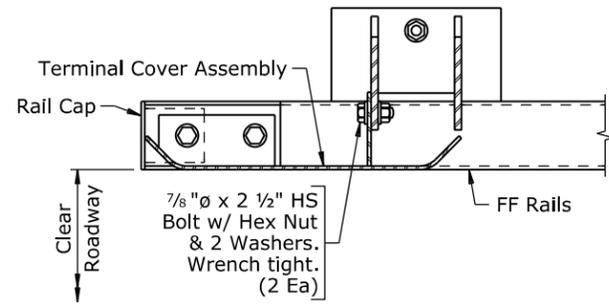


- Note:**
- 1) Ensure the expansion splice is located in the railing panel which passes over the bridge expansion joint as indicated on the plan.
 - 2) Anchor bolts may be tack welded to lower anchorage (Shop or field).
 - 3) At post locations, drill two 1 1/4"Ø holes in the rails to receive rail bolts (Shop or field). See Post Details for hole spacing.
 - 4) Paint surfaces of the railing components that have been cut, drilled, or otherwise damaged with two coats of zinc-rich paint conforming to ASTM A 780.
 - 5) After installing rails, paint all exposed bolt threads with two coats of zinc rich-paint conforming to ASTM A 780.

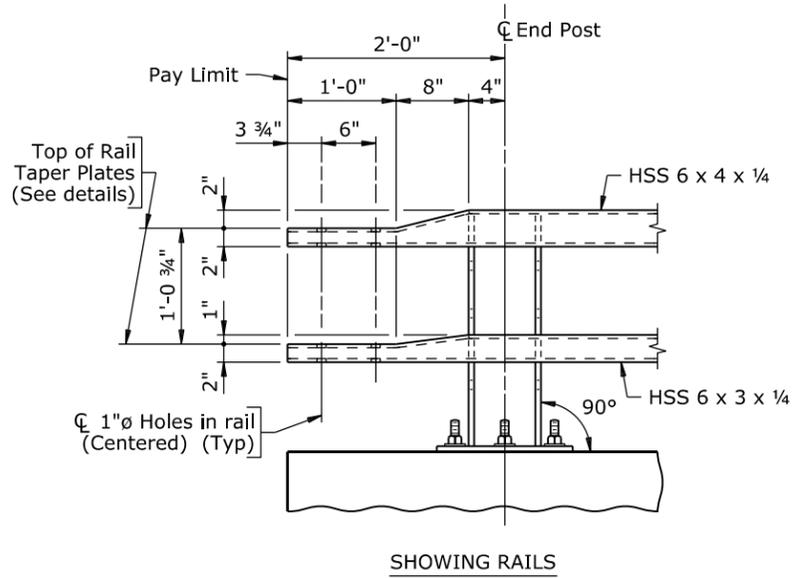
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS		BRIDGE RAILING DETAILS	
		BRIDGE REHABILITATION	
		STA 3439+13	
		Walcott Jct. - Laramie Road	
		Herrick Lane Section	
		I805125	AI
APPROVED	DESIGN	Design Section B C Def	
DATE	DETAIL	Drwg No. 0015	Sheet 3 of 12
	QTY'S		

Section 4.22 - Preservation and Rehabilitation

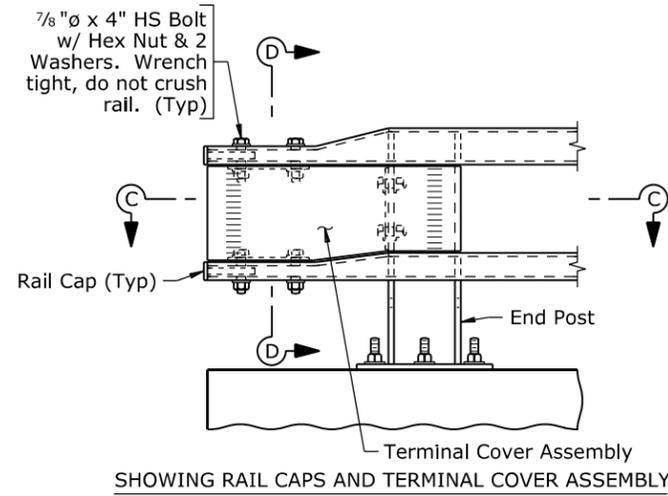
TERMINAL COMPONENT REQUIREMENTS		
Approach Guardrail Connection	Rail Caps Required	Terminal Cover Assembly Required
MGS Approach Guardrail	Yes (Without bolts)	≠No
Box Beam w/ Rubrail Approach Guardrail	No	No
No Approach Guardrail	Yes (With bolts)	Yes



SECTION C-C

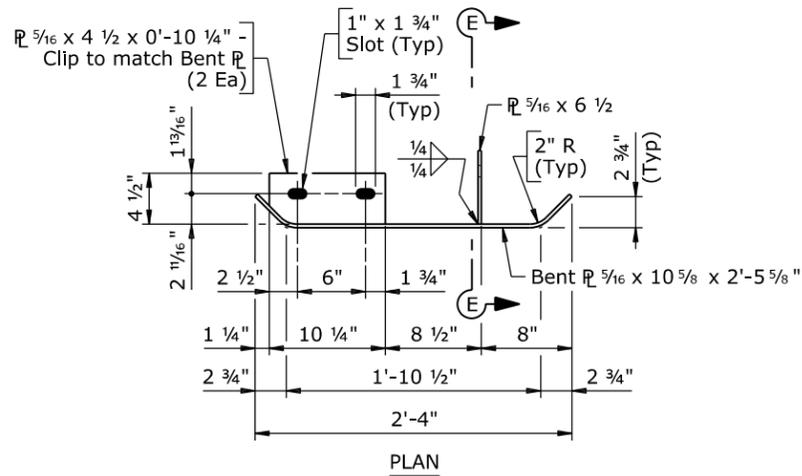


SHOWING RAILS

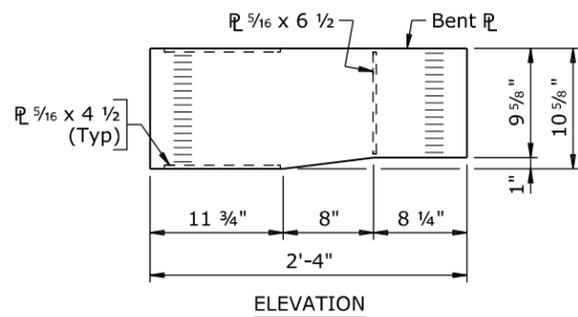


SHOWING RAIL CAPS AND TERMINAL COVER ASSEMBLY

ELEVATIONS AT TERMINAL

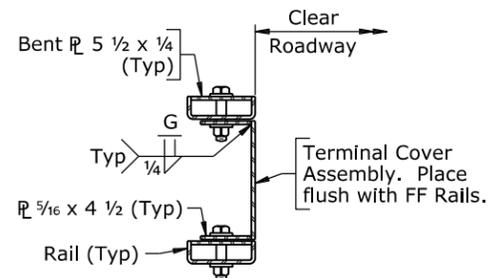


PLAN

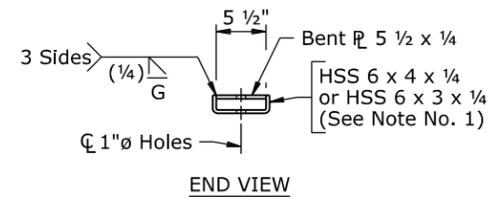


ELEVATION

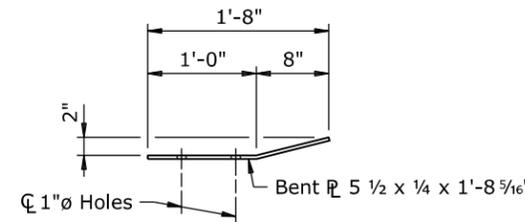
TERMINAL COVER ASSEMBLY DETAILS



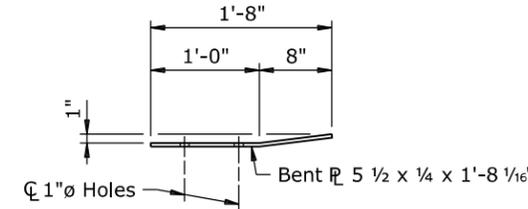
SECTION D-D



END VIEW

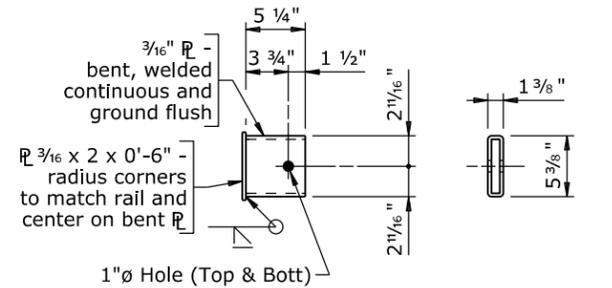


ELEVATION OF BENT PLATE FOR TOP RAIL
(HSS 6 x 4 x 1/4 not shown)



ELEVATION OF BENT PLATE FOR BOTTOM RAIL
(HSS 6 x 3 x 1/4 not shown)

RAIL TAPER PLATE DETAILS



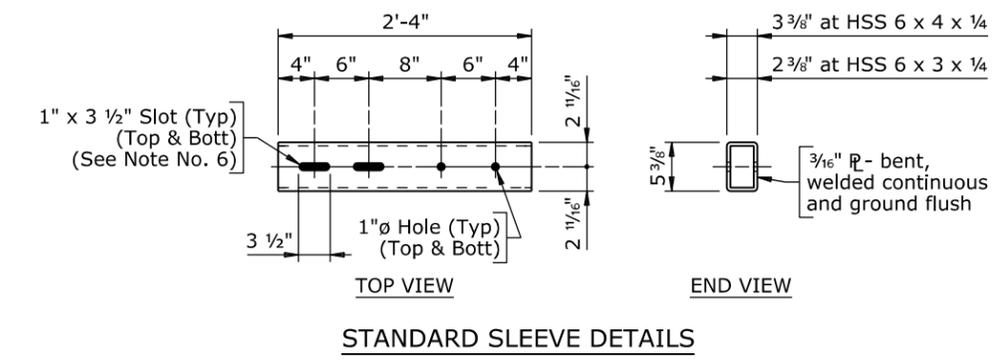
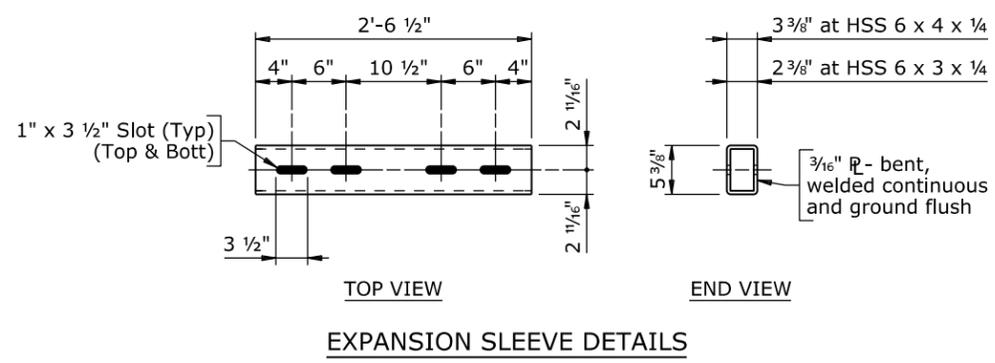
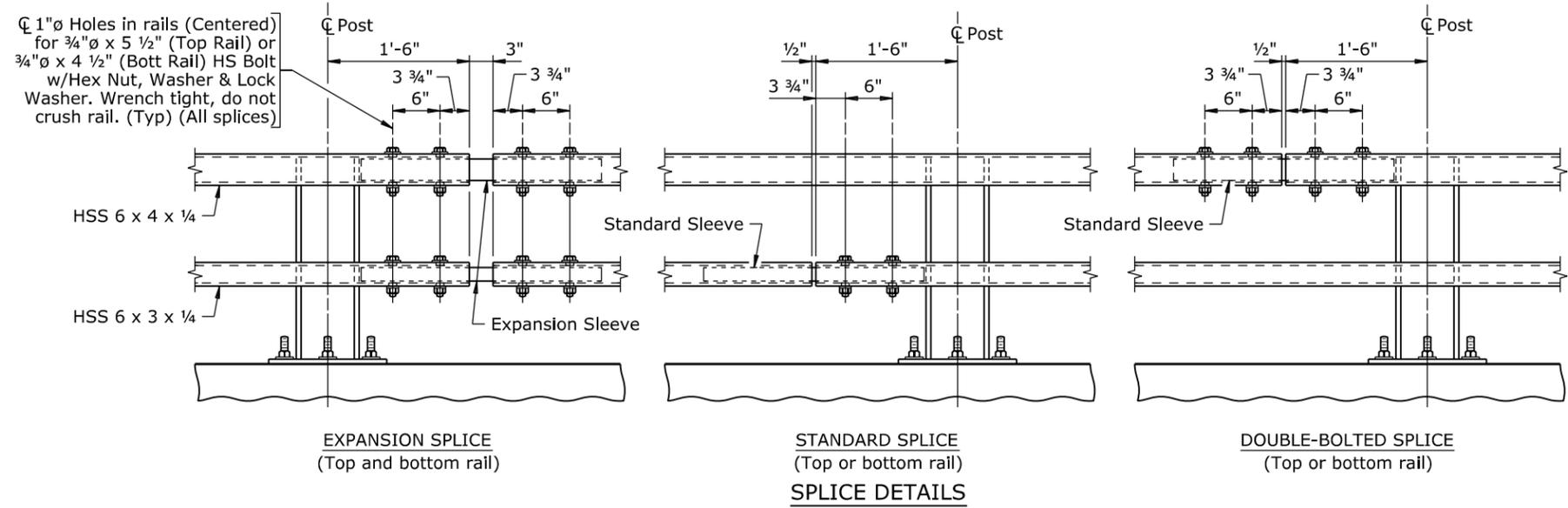
PLAN

END VIEW
(PL 3/16 x 2 not shown)

RAIL CAP DETAILS

- Note: 1) Cut top and bottom rails as required for fabrication of tapered end sections.
2) Installation of MGS approach guardrail will require other fabricated assemblies to be connected to end post. See road plans for details and pay item.

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
BRIDGE RAILING DETAILS		BRIDGE REHABILITATION	
STA 3439+13		Walcott Jct. - Laramie Road	
Herrick Lane Section		I805125	
AI		Design Section B C Def	
APPROVED	DESIGN	Q00 ✓ SSS	Drwg No. 0015
DATE	DETAIL	Q00 ✓ TTT	Sheet 4 of 12
		QTY'S	



- Note:**
- 1) Ensure each rail length is continuous over a minimum of two posts.
 - 2) In rehabilitation work, ensure railing that cannot feasibly be made continuous over a minimum of two posts has a double-bolted splice.
 - 3) Splices may be located on either side of post.
 - 4) Not more than one splice is permitted per side of post, except at expansion splices.
 - 5) Do not shop splice rails.
 - 6) Slots may be omitted in standard sleeves where bolts are required on one side of splice only.

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
BRIDGE RAILING DETAILS			
BRIDGE REHABILITATION			
STA 3439+13			
Walcott Jct. - Laramie Road			
Herrick Lane Section			
I805125			AI
APPROVED	DESIGN	Design Section B C Def	
DATE	DETAIL	Drwg No. 0015	Sheet 5 of 12
	QTY'S		

Sept 2015

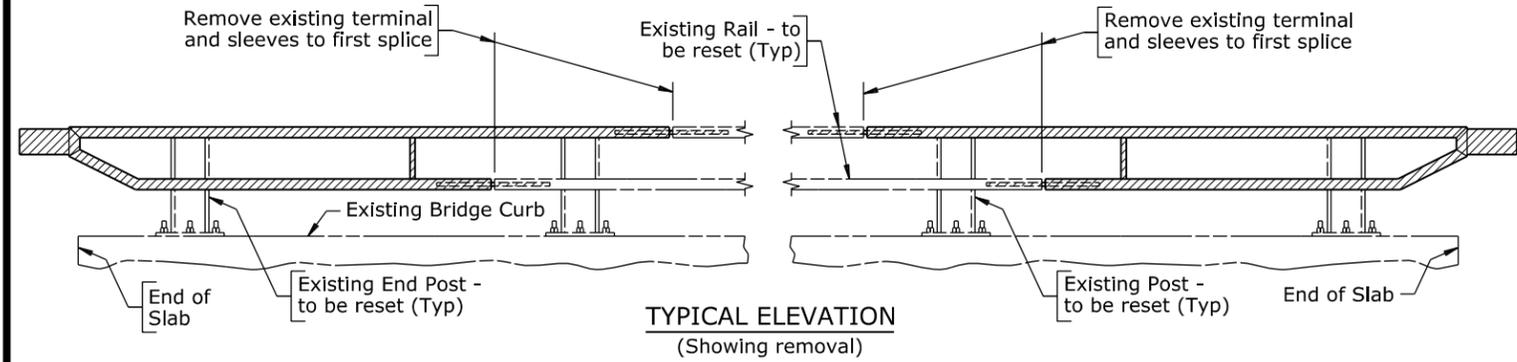
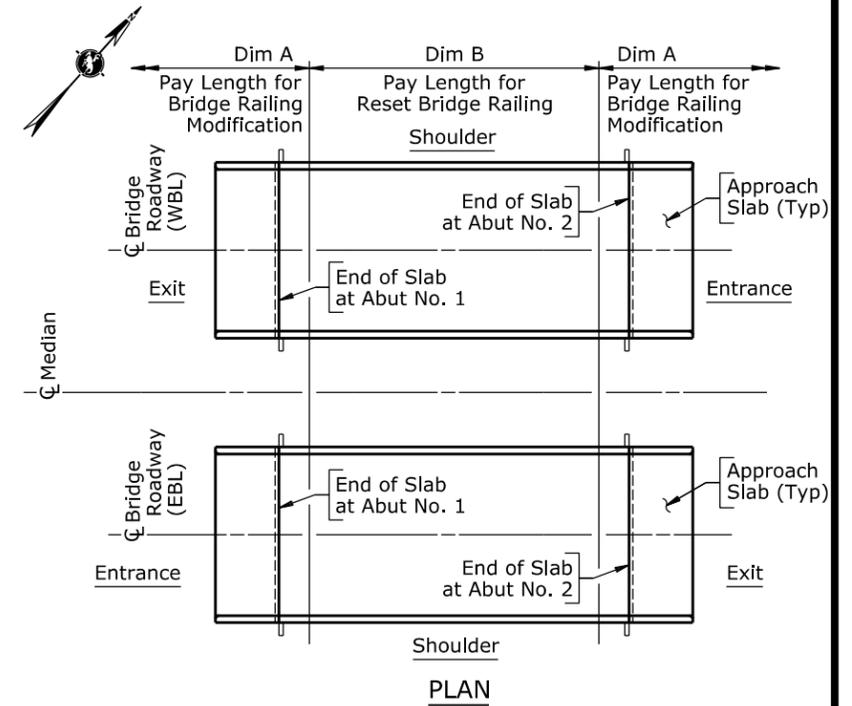
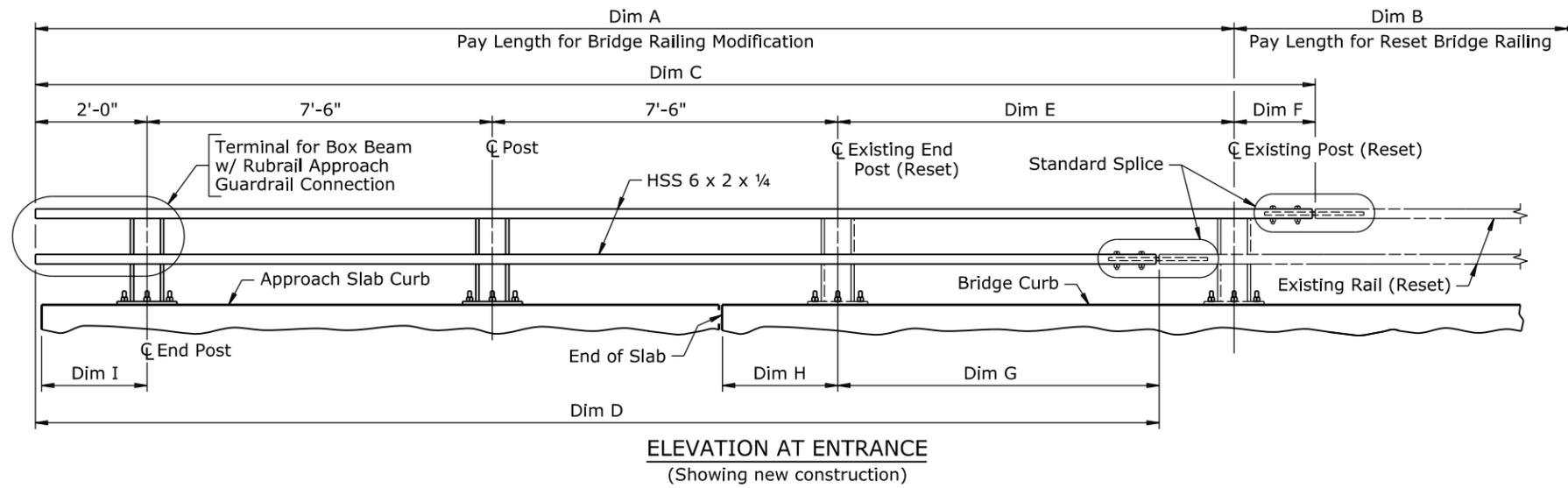


TABLE OF DIMENSIONS											
Location		Dim A	Dim B	Dim C	Dim D	Dim E	Dim F	Dim G	Dim H	Dim I	
EBL	Entrance	Shoulder	25'-9 1/8"	61'-0"	27'-3 1/4"	24'-2 1/4"	8'-9 1/8"	1'-6 1/8"	7'-2 1/4"	1'-10 1/2"	1'-10 1/2"
	Median		25'-9 1/4"	60'-11 3/4"	27'-3 1/8"	24'-2 1/4"	8'-9 1/4"	1'-5 7/8"	7'-2 1/4"	1'-10 5/8"	1'-10 5/8"
EBL	Exit	Shoulder	25'-9 1/8"	—	27'-2 3/4"	24'-2"	8'-9 1/8"	1'-5 5/8"	7'-2"	1'-10 3/8"	1'-10 3/8"
	Median		25'-9 1/4"	—	27'-3"	24'-1 3/4"	8'-9 1/4"	1'-5 3/4"	7'-1 3/4"	1'-10 1/2"	1'-10 1/2"
WBL	Entrance	Shoulder	25'-9"	61'-3 1/4"	27'-3 1/4"	24'-1 3/4"	8'-9"	1'-6 1/4"	7'-1 3/4"	1'-10 1/2"	1'-10 1/2"
	Median		25'-8 3/4"	61'-3 1/4"	27'-2 1/2"	24'-2 1/4"	8'-8 3/4"	1'-5 3/4"	7'-2 1/4"	1'-10 3/8"	1'-10 3/8"
WBL	Exit	Shoulder	25'-8 3/4"	—	27'-2 3/4"	24'-2"	8'-8 3/4"	1'-6"	7'-2"	1'-10 1/2"	1'-10 1/2"
	Median		25'-9"	—	27'-3 1/8"	24'-1 3/4"	8'-9"	1'-6 1/8"	7'-2 1/4"	1'-10 5/8"	1'-10 5/8"



Note: Reset existing posts at original spacing using new anchorages.

BLAIR ROAD SEPARATION

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
BRIDGE RAILING MODIFICATION DETAILS			
BRIDGE REHABILITATION VARIOUS LOCATIONS Laramie - Cheyenne (Vedauwoo West Section)			
I805130		AI	
APPROVED	DESIGN	Design Section B C Def	
DATE	DETAIL	RRR	TTT
	QTY'S	YYY	TTT
Drwg No. 0013		Sheet 3 of 14	

4.22 - Example

Section 4.22 - Preservation and Rehabilitation

Sept 2015

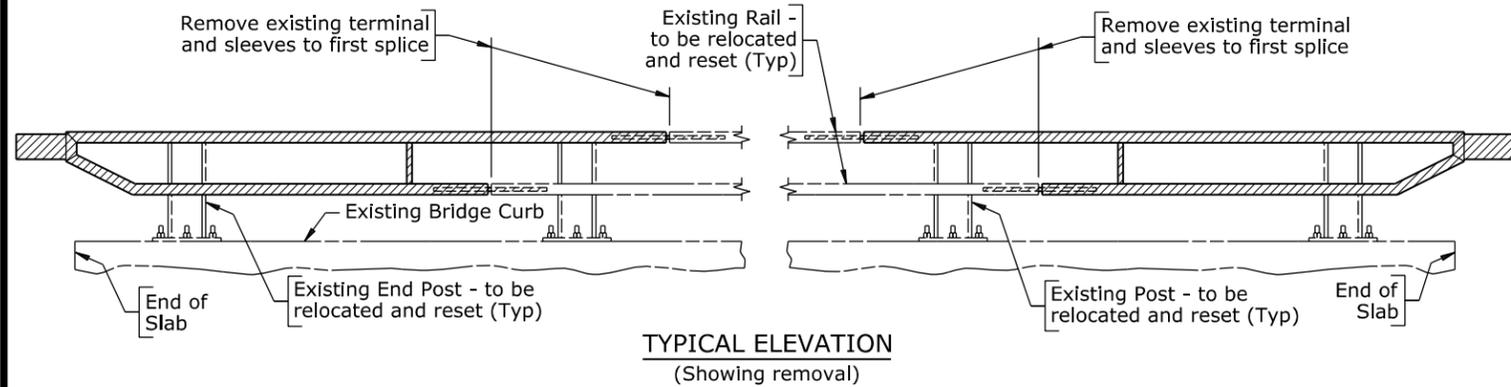
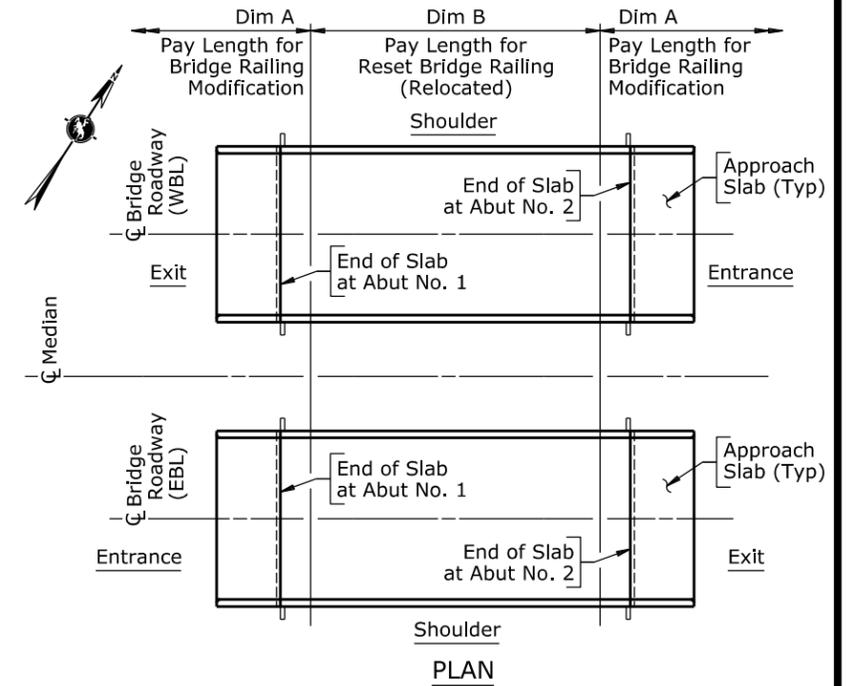
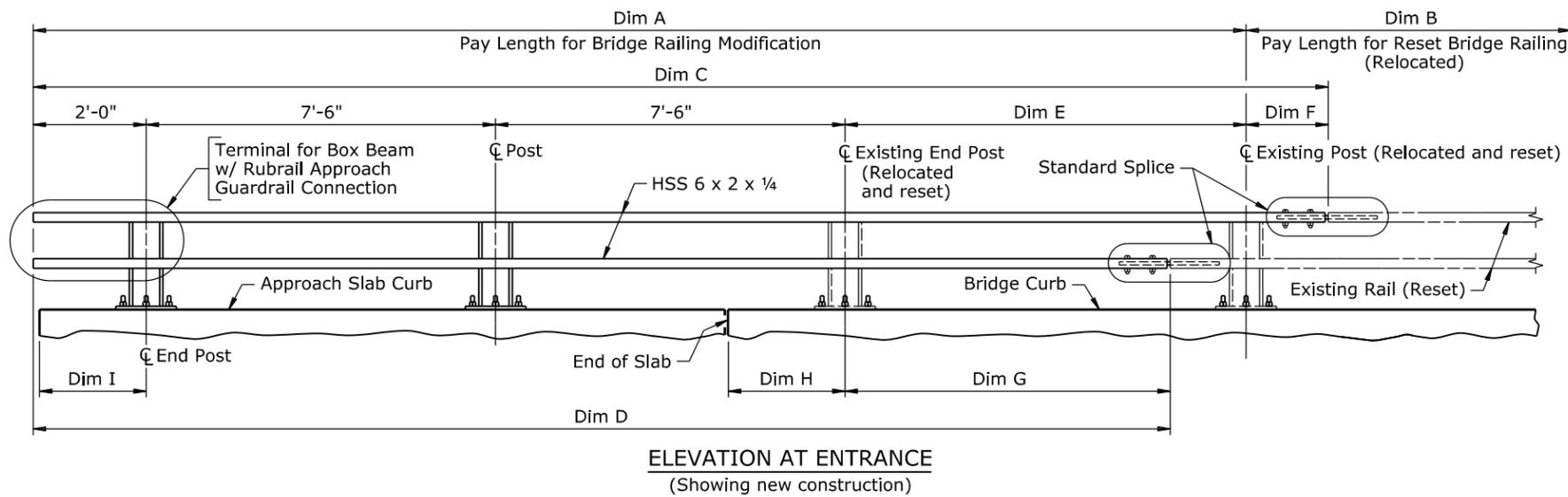
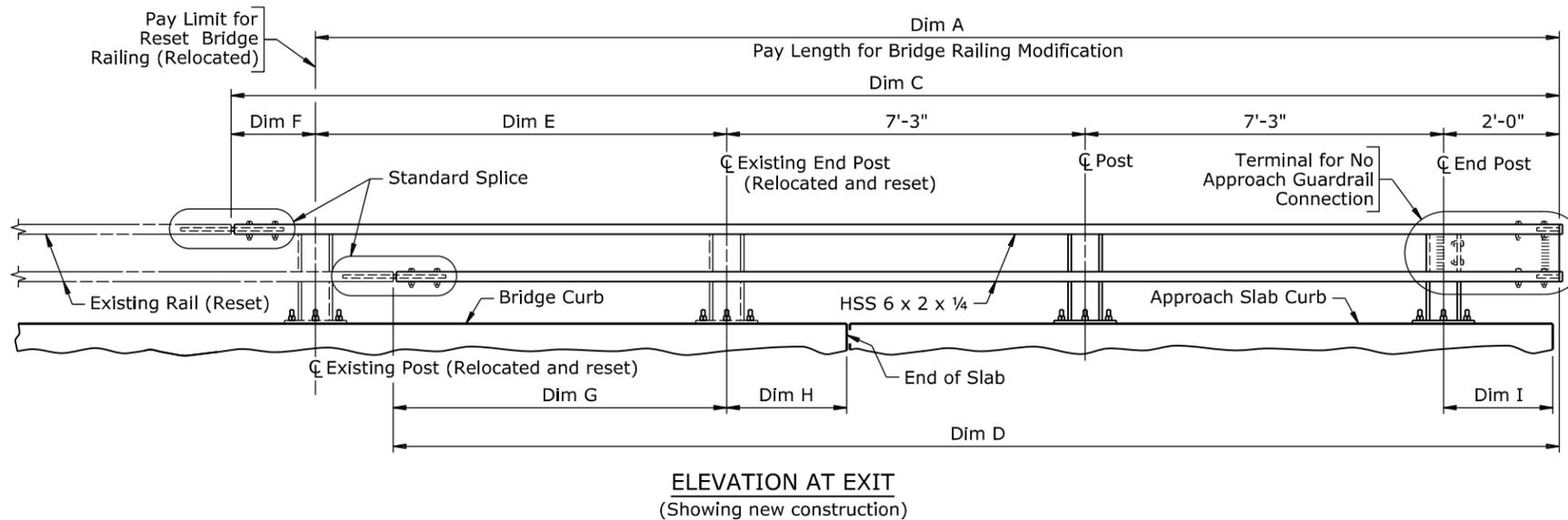


TABLE OF DIMENSIONS											
Location		Dim A	Dim B	Dim C	Dim D	Dim E	Dim F	Dim G	Dim H	Dim I	
EBL	Entrance	Shoulder	26'-3"	61'-0"	27'-9 1/4"	24'-8 1/2"	8'-9"	1'-6 1/4"	7'-2 1/2"	2'-6"	2'-0"
		Median	26'-3 1/8"	60'-11 3/4"	27'-8 5/8"	24'-7 3/4"	8'-9 1/8"	1'-5 1/2"	7'-1 3/4"	2'-6 1/8"	2'-0 1/8"
	Exit	Shoulder	25'-3 1/8"	—	26'-8 5/8"	23'-7 3/4"	8'-9 1/8"	1'-5 1/2"	7'-1 3/4"	1'-5 7/8"	1'-11 7/8"
		Median	25'-3"	—	26'-9 3/8"	23'-8 1/8"	8'-9"	1'-6 3/8"	7'-2 1/8"	1'-6"	2'-0"
WBL	Entrance	Shoulder	26'-3"	61'-0 1/4"	27'-9 5/8"	24'-7 1/4"	8'-9"	1'-6 5/8"	7'-1 1/4"	2'-6"	2'-0"
		Median	26'-2 3/4"	61'-0 1/4"	27'-9"	24'-8 1/4"	8'-8 3/4"	1'-6 1/4"	7'-2 1/4"	2'-5 7/8"	1'-11 7/8"
	Exit	Shoulder	25'-2 3/4"	—	26'-8 3/4"	23'-8 1/2"	8'-8 3/4"	1'-6"	7'-2 1/2"	1'-6"	2'-0"
		Median	25'-3"	—	26'-8 5/8"	23'-8 5/8"	8'-9"	1'-5 5/8"	7'-2 5/8"	1'-6 1/8"	2'-0 1/8"



Note: Relocate existing posts 7 1/2" toward the exit. Reset existing posts using new anchorages.



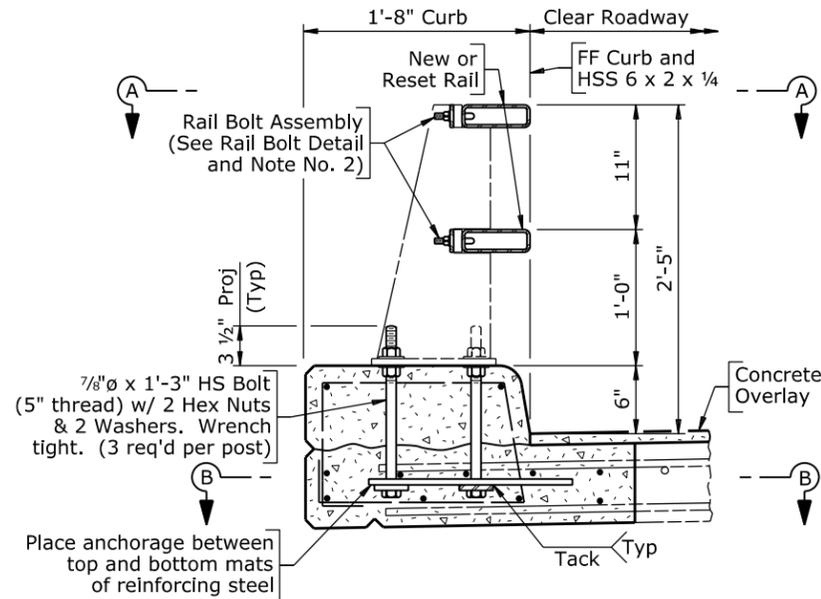
VEDAUWOO INTERCHANGE

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
BRIDGE RAILING MODIFICATION DETAILS			
BRIDGE REHABILITATION VARIOUS LOCATIONS Laramie - Cheyenne (Vedauwoo West Section)			
I805130		AI	
APPROVED	DESIGN	Design Section B C Def	
DATE	DETAIL	RRR	TTT
	QTY'S	YYY	TTT
Drwg No. 0013		Sheet 4 of 14	

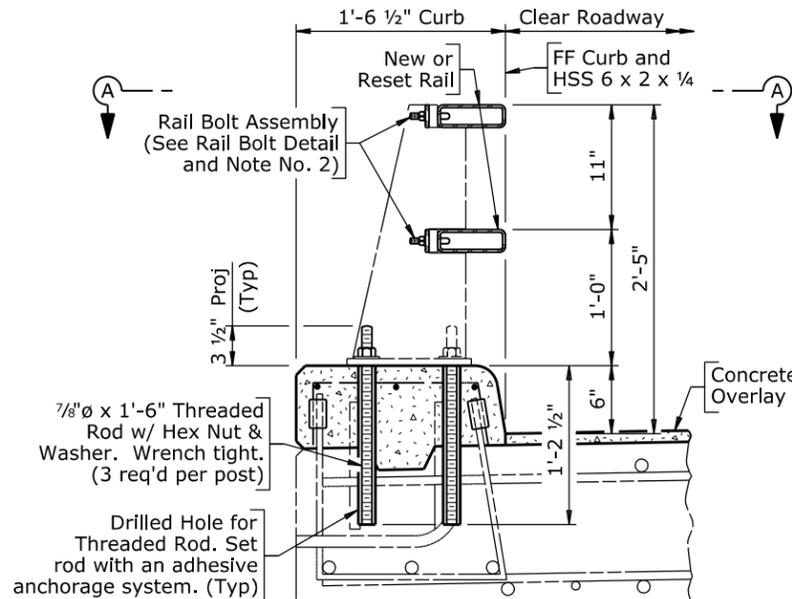
4.22 - Example

Section 4.22 - Preservation and Rehabilitation

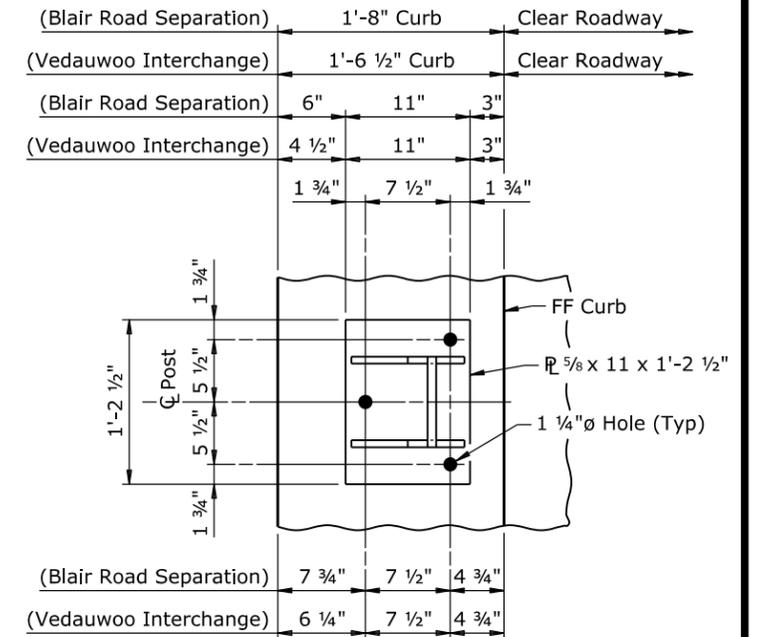
Sept 2015



ASSEMBLY DETAIL AT BLAIR ROAD SEPARATION
(Shown near ϕ Existing Post on bridge slab)
(20 anchorages req'd per lane)

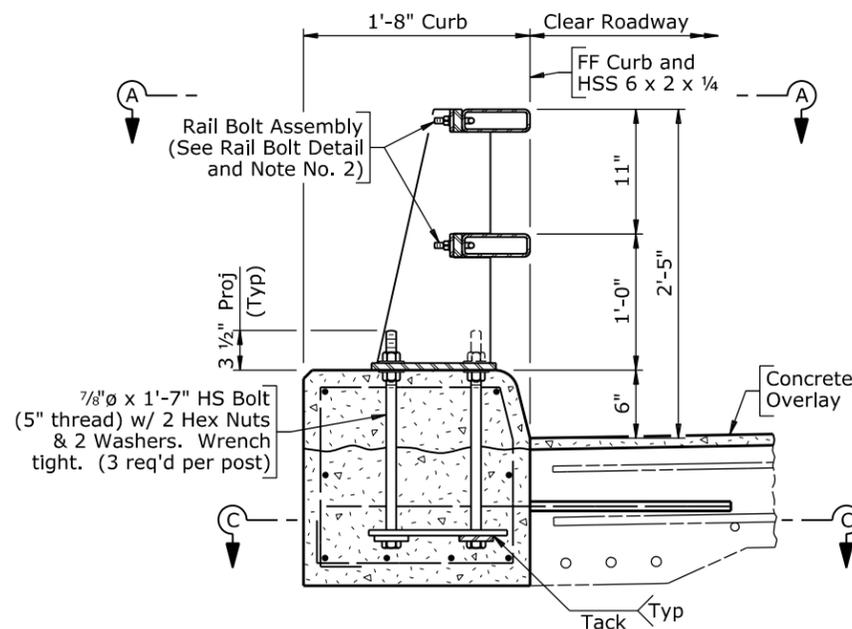


ASSEMBLY DETAIL AT VEDAUWOO INTERCHANGE
(Shown near ϕ Existing Post on bridge slab)
(20 post locations req'd per lane)

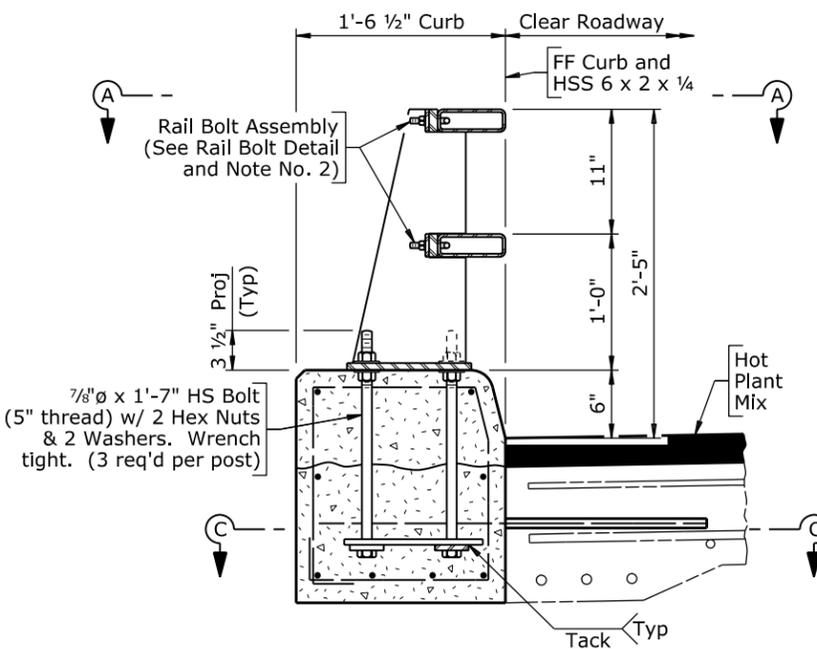


VIEW A-A
(Anchor bolts, rails, and rail bolts not shown)
(New posts shown, existing posts similar)

- Note:**
- 1) Anchor bolts may be tack welded to anchorage (Shop or field).
 - 2) At post locations, drill two 1 1/8" ϕ holes in the new rails to receive rail bolts (Shop or field). See Post Details, Sheet No. 6, for hole spacing.
 - 3) Place and properly align reset posts at Vedauwoo Interchange after placing new concrete.
 - 4) Before installing rails, paint cut, drilled, or otherwise damaged surface areas of the railing components with two coats of zinc rich paint conforming to ASTM A 780.
 - 5) After installing the rails, paint exposed bolt threads with two coats of zinc rich paint conforming to ASTM A 780.
 - 6) For Sections B-B and C-C and Rail Bolt Detail, see Sheet No. 13.



ASSEMBLY DETAIL AT BLAIR ROAD SEPARATION
(Shown near ϕ Post on approach slab)
(8 posts and anchorages req'd per lane)



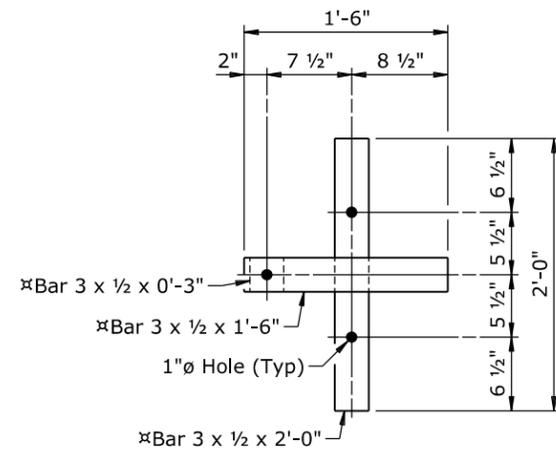
ASSEMBLY DETAIL AT VEDAUWOO INTERCHANGE
(Shown near ϕ Post on approach slab)
(8 posts and anchorages req'd per lane)

ALL LOCATIONS

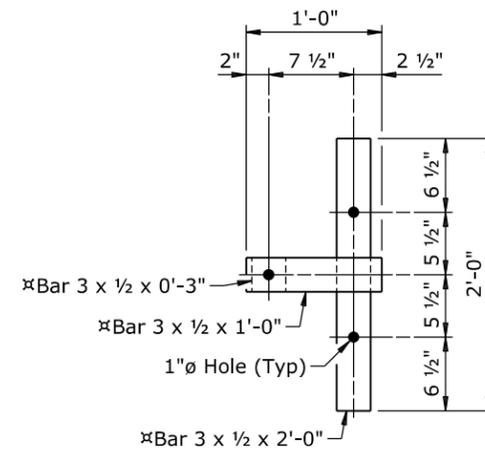
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
BRIDGE RAILING MODIFICATION DETAILS			
BRIDGE REHABILITATION VARIOUS LOCATIONS Laramie - Cheyenne (Vedauwoo West Section)			
I805130		AI	
APPROVED	DESIGN	Design Section B C Def	
DATE	DETAIL	Drwg No. 0013	Sheet 5 of 14
	QTY'S		

4.22 - Example

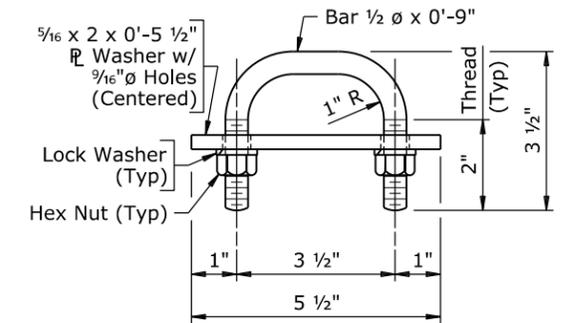
Section 4.22 - Preservation and Rehabilitation



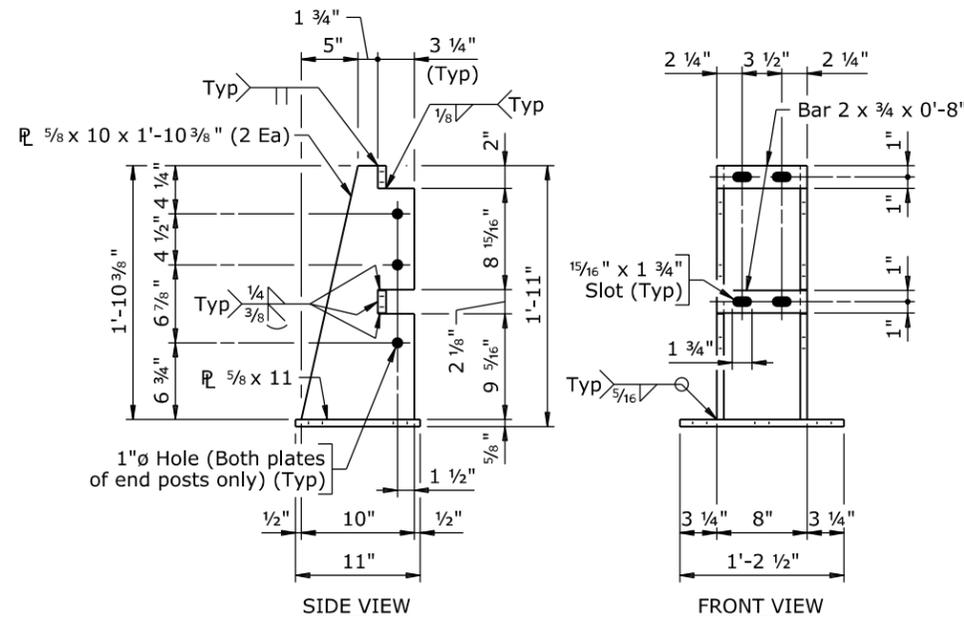
SECTION B-B
(Not galvanized)
(Anchor bolts and slab not shown)



SECTION C-C
(Not galvanized)
(Anchor bolts and slab not shown)



RAIL BOLT DETAIL
(56 req'd per lane at Blair Road Separation)
(56 req'd per lane at Vedauwoo Interchange)

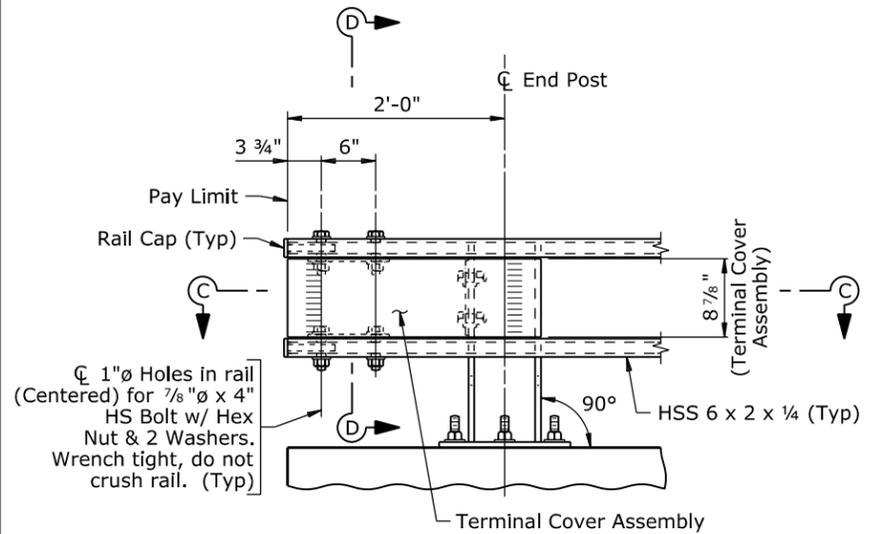


POST DETAILS
(See View A-A for anchor bolt hole spacing)

Note: For View A-A and location of Sections B-B and C-C, see Sheet No. 5.

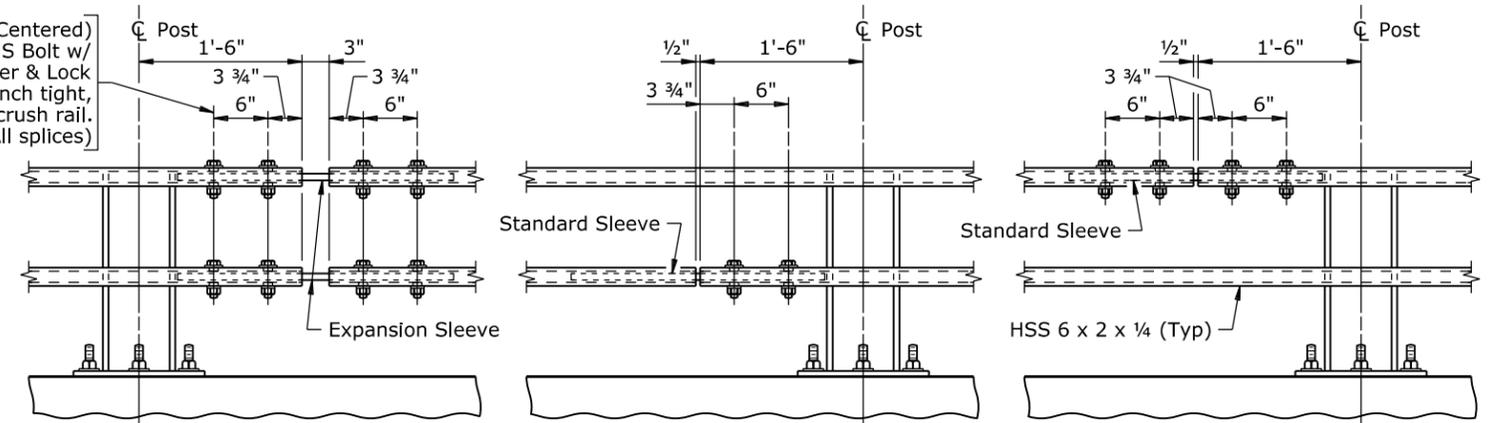
ALL LOCATIONS

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
BRIDGE RAILING MODIFICATION DETAILS			
BRIDGE REHABILITATION VARIOUS LOCATIONS Laramie - Cheyenne (Vedauwoo West Section)			
I8050130		AI	
APPROVED	DESIGN	Design Section B C Def	
DATE	DETAIL	Drwg No. 0013	Sheet 6 of 14
	QTY'S		



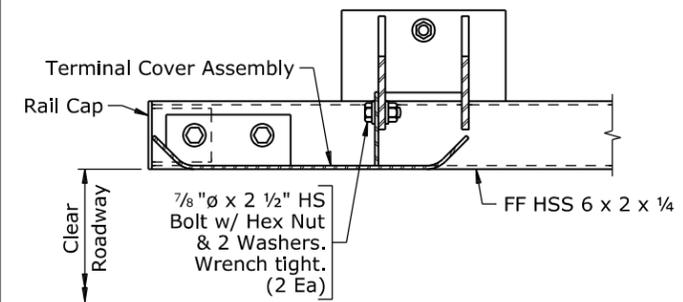
ELEVATION AT TERMINAL

1" diameter Holes in rail (Centered) for 3/4" diameter x 3 1/2" HS Bolt w/ Hex Nut, Washer & Lock Washer. Wrench tight, do not crush rail. (Typ) (All splices)

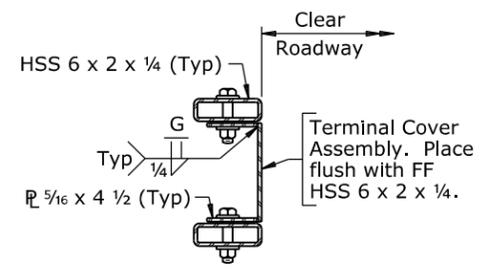


EXPANSION SPLICE (Top and bottom rail)
STANDARD SPLICE (Top or bottom rail)
DOUBLE-BOLTED SPLICE (Top or bottom rail)
SPLICE DETAILS

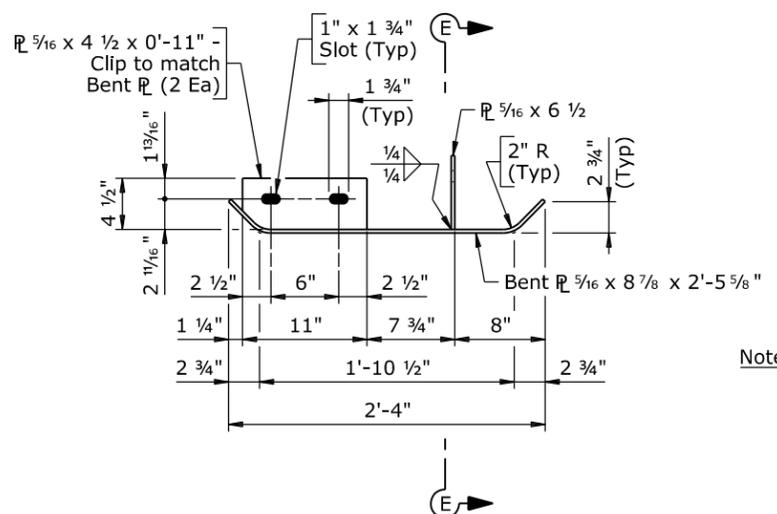
TERMINAL COMPONENT REQUIREMENTS		
Approach Guardrail Connection	Rail Caps Required	Terminal Cover Assembly Required
MGS Approach Guardrail	Yes (Without bolts)	± No
Box Beam w/ Rubrail Approach Guardrail	No	No
No Approach Guardrail	Yes (With bolts)	Yes



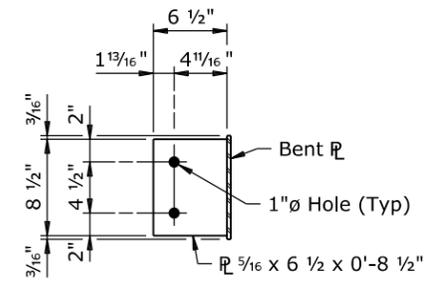
SECTION C-C



SECTION D-D



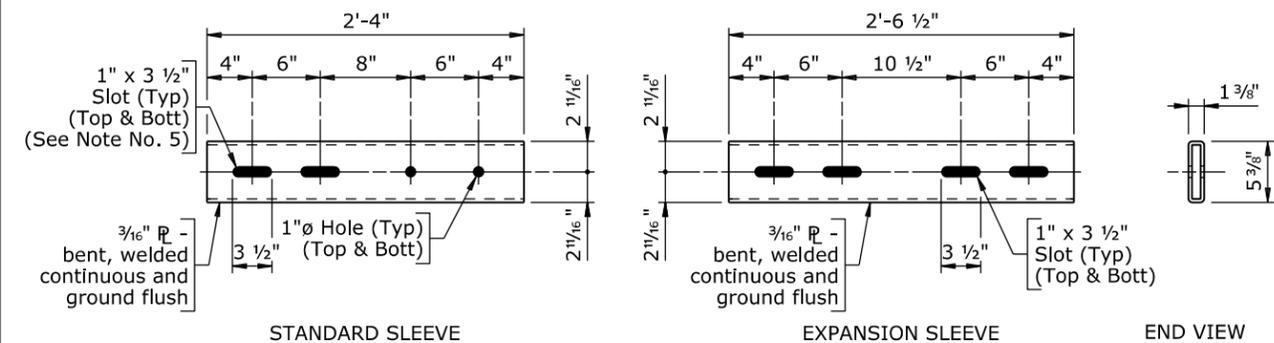
TERMINAL COVER ASSEMBLY DETAIL



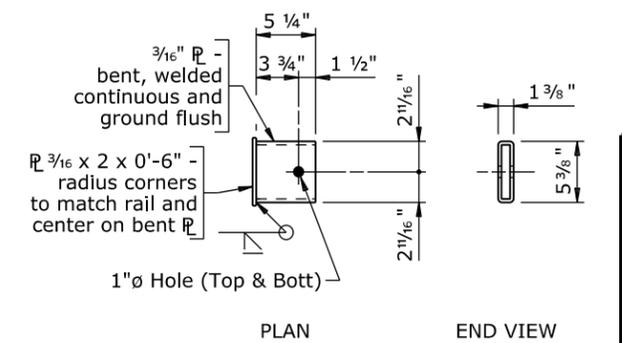
SECTION E-E

- Note:
- 1) Ensure each rail length is continuous over a minimum of two posts.
 - 2) In rehabilitation work, ensure railing that cannot feasibly be made continuous over a minimum of two posts has a double-bolted splice.
 - 3) Splices may be located on either side of post.
 - 4) Not more than one splice is permitted per side of post, except at expansion splices.
 - 5) Slots may be omitted in standard sleeves where bolts are required on one side of splice only.
 - 6) Do not shop splice rails.
 - 7) Terminal components removed during rehabilitation work will remain the property of the department.
 - ±8) Installation of MGS approach guardrail will require other fabricated assemblies to be connected to end post. See road plans for details and pay item.

ALL LOCATIONS



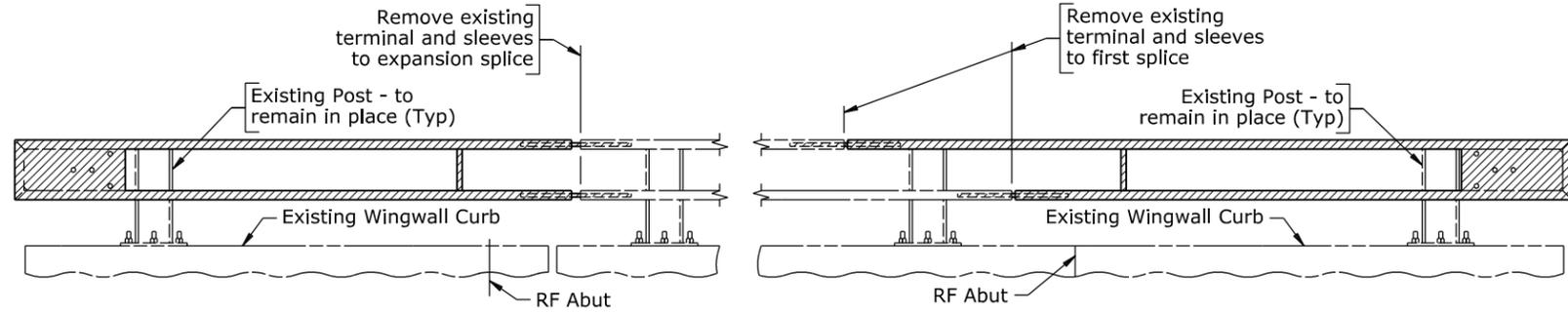
SLEEVE DETAILS



RAIL CAP DETAILS

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
BRIDGE RAILING MODIFICATION DETAILS			
BRIDGE REHABILITATION VARIOUS LOCATIONS Laramie - Cheyenne (Vedauwoo West Section)			
I805130		AI	
APPROVED	DESIGN	Design Section B C Def	
DATE	DETAIL	Drwg No. 0013	Sheet 7 of 14
	QTY'S		

Sept 2015

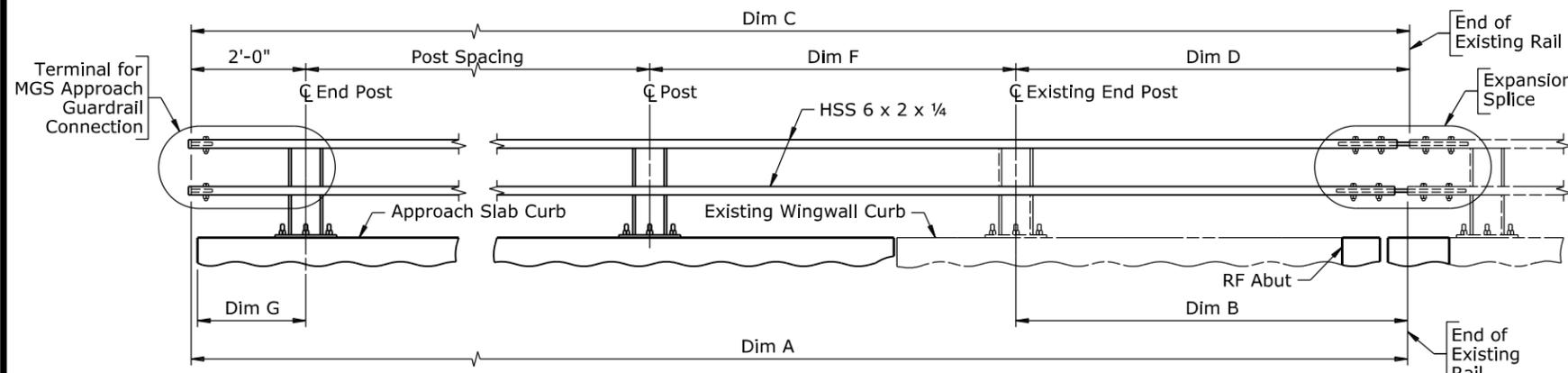


ABUTMENT NO. 1
 (SE corner shown, NE corner similar)

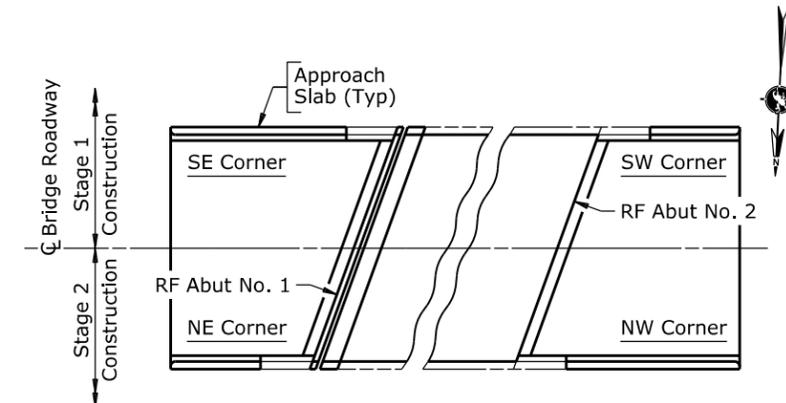
ABUTMENT NO. 2
 (SW corner shown, NW corner similar)

TYPICAL ELEVATION
 (Showing removal)

TABLE OF DIMENSIONS									
Location	Dim A	Dim B	Dim C	Dim D	Dim E	Dim F	Dim G	Post Spacing	No. of Posts Req'd
SE Corner	40'-11"	7'-8"	40'-11 1/2"	7'-8 1/2"	—	7'-6"	1'-10 5/8"	3 Spa @7'-11" =23'-9"	4
NE Corner	25'-6 3/4"	7'-7 3/4"	25'-6 3/4"	7'-7 3/4"	—	8'-0"	2'-0 5/8"	1 Spa @7'-11"	2
SW Corner	26'-0 3/4"	7'-10 3/4"	29'-1 1/4"	1'-7 3/4"	9'-3 1/2"	8'-3"	1'-10 7/8"	1 Spa @7'-11"	2
NW Corner	40'-8"	7'-5"	43'-8 1/2"	1'-7"	8'-10 1/2"	7'-6"	1'-11 3/8"	3 Spa @7'-11" =23'-9"	4

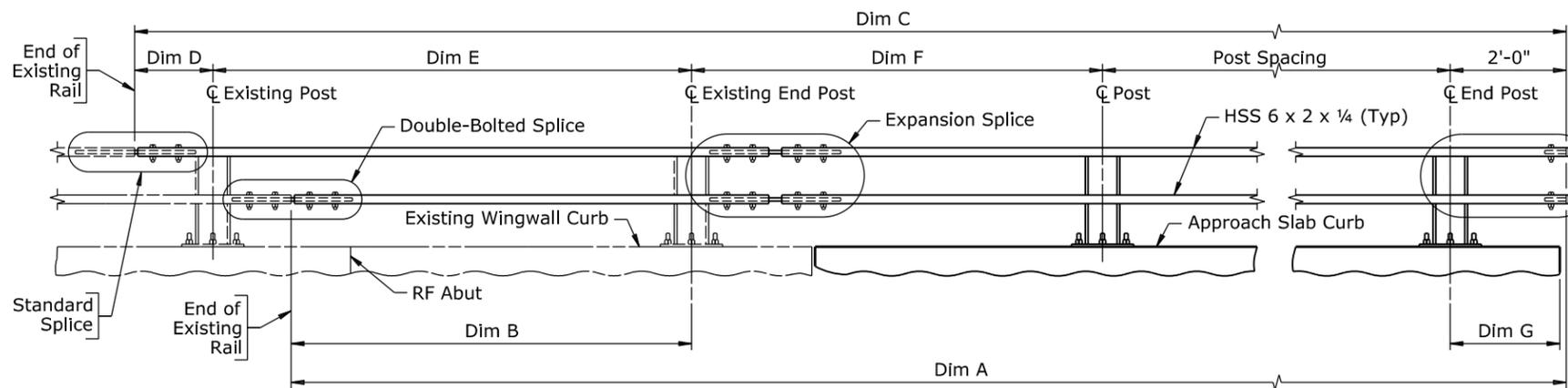


ABUTMENT NO. 1 ELEVATION
 (Showing new construction)
 (SE corner shown, NE corner similar)



PLAN

- Note:
- 1) Ensure the expansion splice is located in the railing panel which passes over the bridge joint as indicated in the elevations.
 - 2) Field drill existing rails as required for installation of new splices. Grind rough edges of drilled areas.
 - 3) The estimated quantity for bridge railing modification is based on the average of dimension A and dimension C at each location.

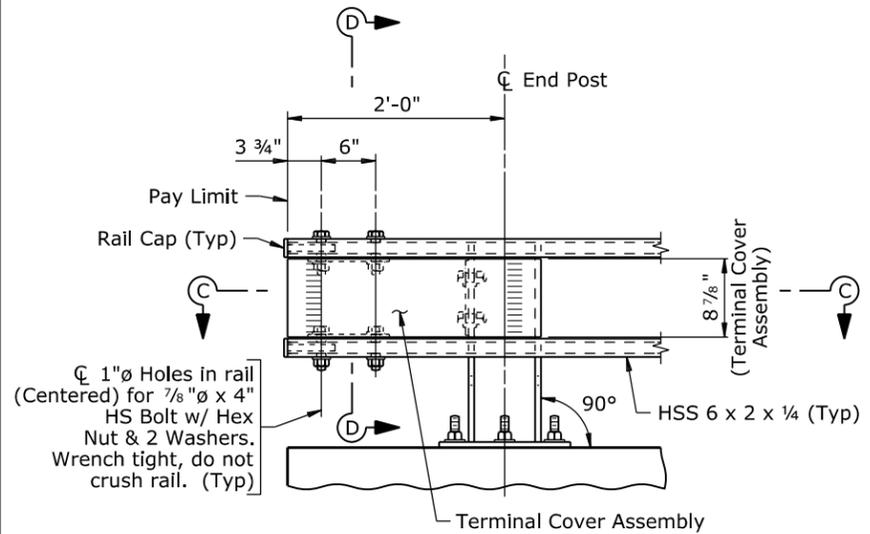


ABUTMENT NO. 2 ELEVATION
 (Showing new construction)
 (SW corner shown, NW corner similar)

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS		BRIDGE RAILING MODIFICATION DETAILS	
		BRIDGE REHABILITATION	
		STA 197+38	
		Cody - Greybull	
		Cody East Section	
		N311074	Pa
APPROVED	DESIGN	Design Section L M Nop	
DATE	DETAIL	CCC ✓ AAA	Drwg No. 0010 Sheet 6 of 15
	QTY'S	BBB ✓ EEE	

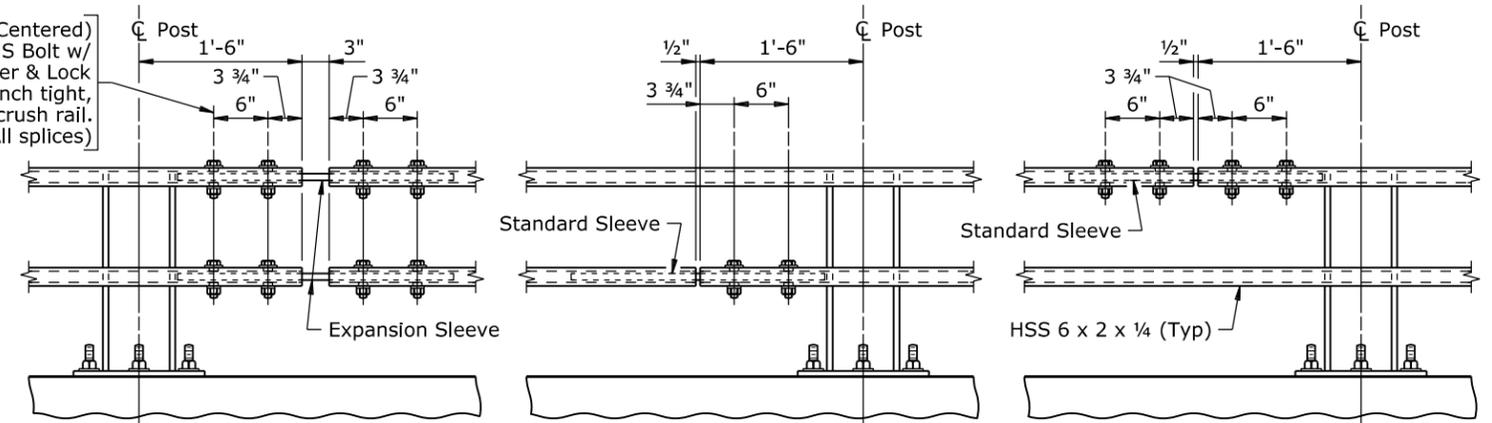
4.22 - Example

Section 4.22 - Preservation and Rehabilitation



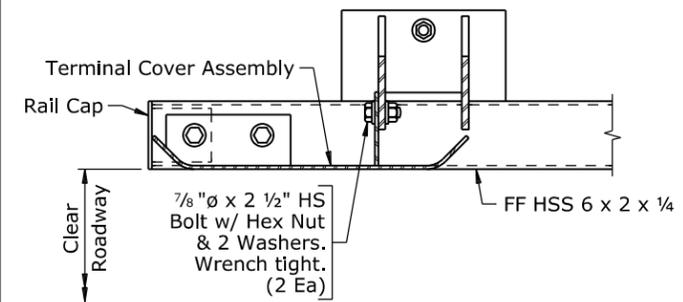
ELEVATION AT TERMINAL

1" ϕ Holes in rail (Centered) for 3/4" ϕ x 3 1/2" HS Bolt w/ Hex Nut, Washer & Lock Washer. Wrench tight, do not crush rail. (Typ) (All splices)

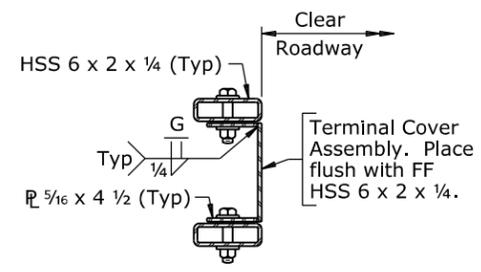


EXPANSION SPLICE (Top and bottom rail)
STANDARD SPLICE (Top or bottom rail)
DOUBLE-BOLTED SPLICE (Top or bottom rail)
SPLICE DETAILS

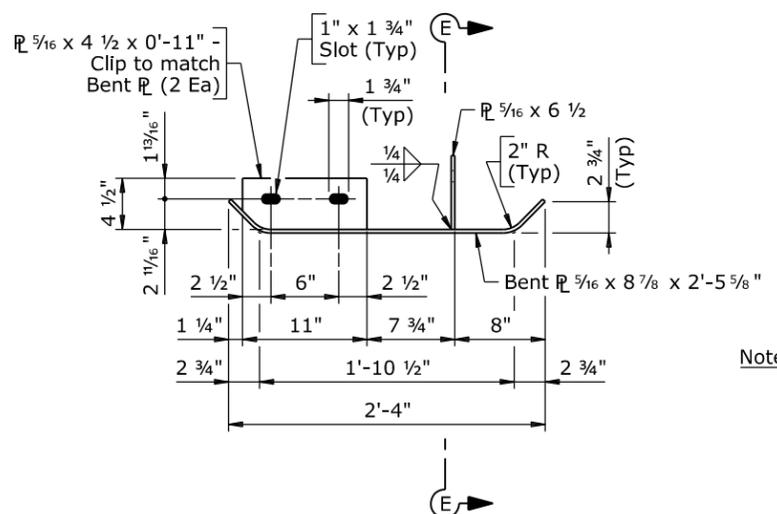
TERMINAL COMPONENT REQUIREMENTS		
Approach Guardrail Connection	Rail Caps Required	Terminal Cover Assembly Required
MGS Approach Guardrail	Yes (Without bolts)	± No
Box Beam w/ Rubrail Approach Guardrail	No	No
No Approach Guardrail	Yes (With bolts)	Yes



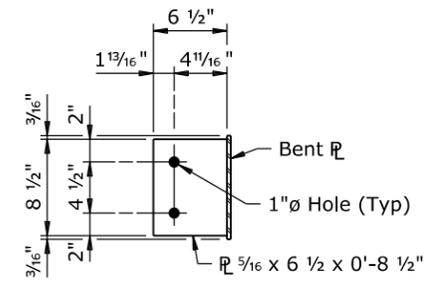
SECTION C-C



SECTION D-D

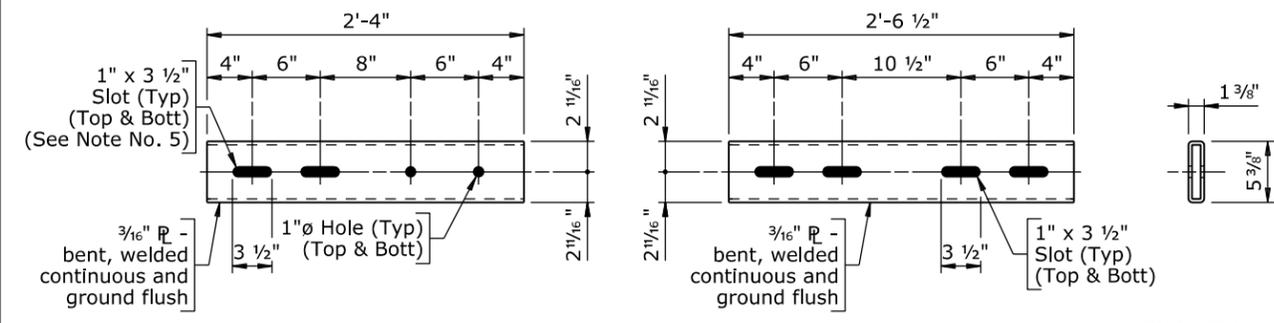


TERMINAL COVER ASSEMBLY DETAIL

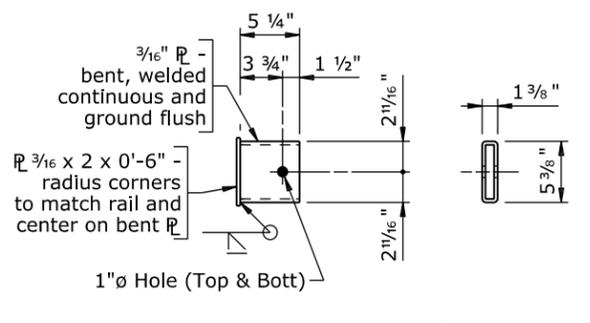


SECTION E-E

- Note:
- 1) Ensure each rail length is continuous over a minimum of two posts.
 - 2) In rehabilitation work, ensure railing that cannot feasibly be made continuous over a minimum of two posts has a double-bolted splice.
 - 3) Splices may be located on either side of post.
 - 4) Not more than one splice is permitted per side of post, except at expansion splices.
 - 5) Slots may be omitted in standard sleeves where bolts are required on one side of splice only.
 - 6) Do not shop splice rails.
 - 7) Terminal components removed during rehabilitation work will remain the property of the department.
 - ±8) Installation of MGS approach guardrail will require other fabricated assemblies to be connected to end post. See road plans for details and pay item.



SLEEVE DETAILS



RAIL CAP DETAILS

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
BRIDGE RAILING MODIFICATION DETAILS		BRIDGE REHABILITATION	
		STA 197+38	
		Cody - Greybull	
		Cody East Section	
N311074		Pa	
APPROVED	DESIGN	Design Section	L M Nop
DATE	DETAIL	Drwg No. 0010	Sheet 8 of 15
	QTY'S	BBB	EEE

Sept 2015

4.22 - Example

Wyo. Proj. P232037
Sheet B7 of B27 Sheets

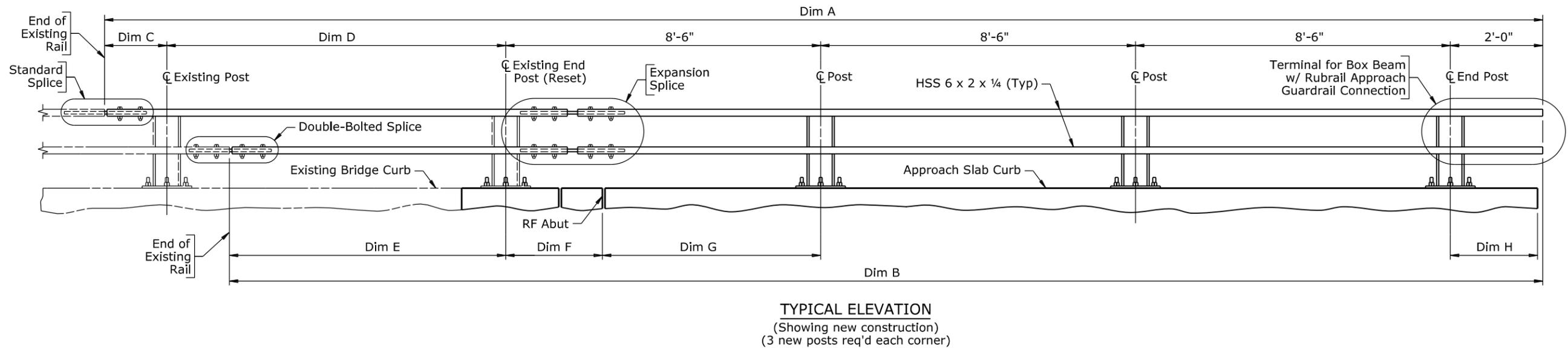
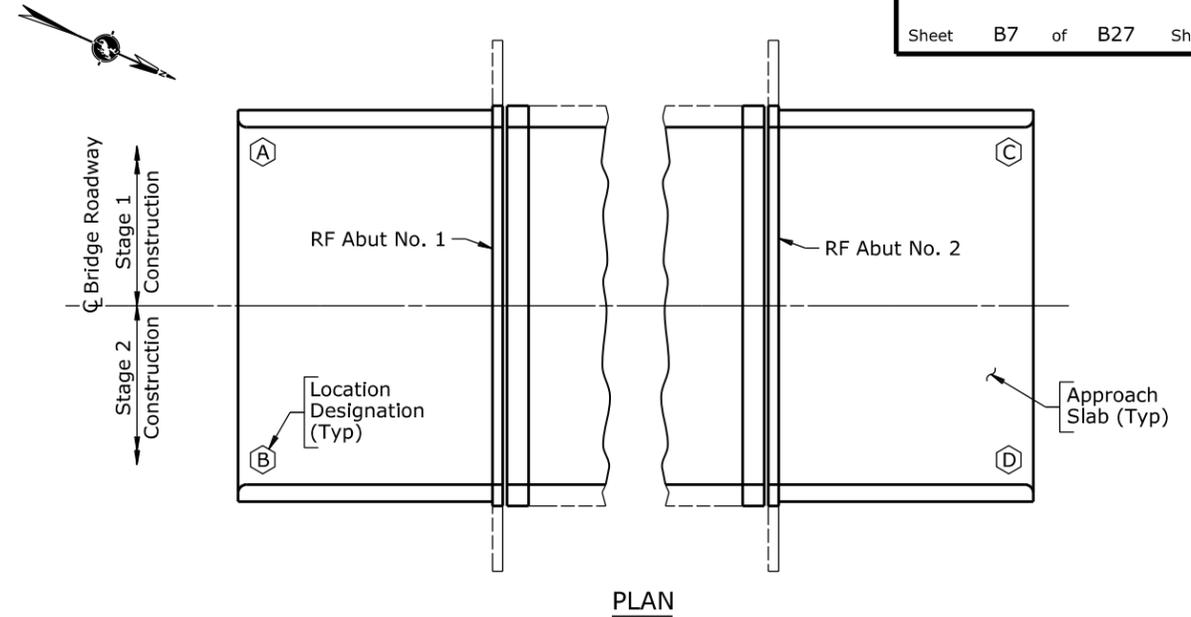
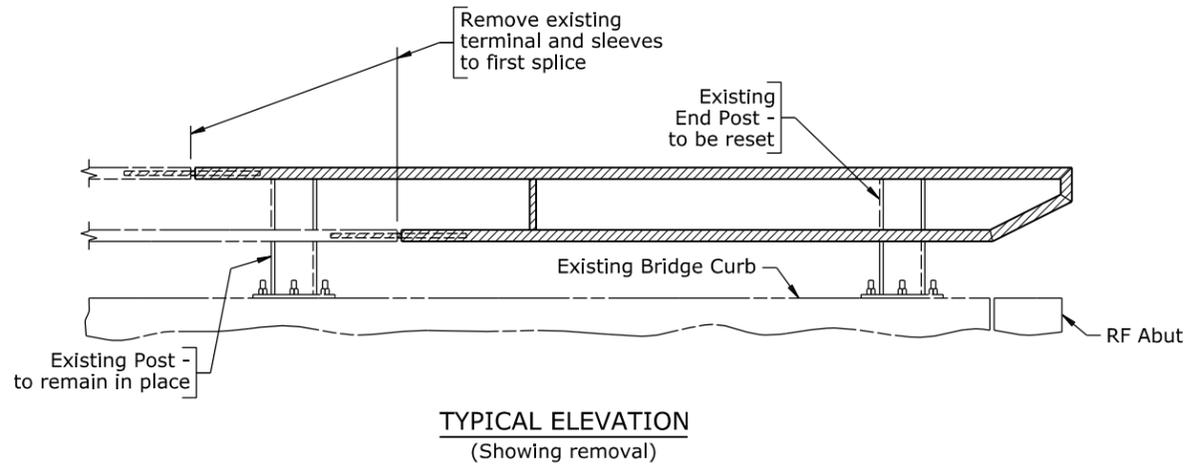


TABLE OF DIMENSIONS								
Location	Dim A	Dim B	Dim C	Dim D	Dim E	Dim F	Dim G	Dim H
A	38'-0 1/8"	35'-0 1/8"	1'-6 1/2"	8'-11 5/8"	7'-6 1/8"	2'-5 3/4"	6'-0 1/4"	1'-11 3/4"
B	38'-0 3/8"	34'-11 3/4"	1'-6 1/2"	8'-11 7/8"	7'-5 3/4"	2'-6"	6'-0"	2'-0"
C	38'-0 3/8"	35'-0 3/8"	1'-6 1/2"	8'-11 7/8"	7'-6 3/8"	2'-6 1/2"	5'-11 1/2"	2'-0 1/2"
D	38'-0"	35'-0"	1'-6 1/4"	8'-11 3/4"	7'-6"	2'-6"	6'-0"	2'-0"

- Note:
- 1) Ensure the expansion splice is located in the railing panel which passes over the bridge expansion joint as shown in the Typical Elevation.
 - 2) Field drill existing rails as required for installation of new splices. Grind rough edges of drilled areas.
 - 3) Reset existing end posts in new concrete with new anchorages.
 - 4) The estimated quantity for bridge railing modification is based on the average of dimension A and dimension B at each location.

BRIDGE OVER LARAMIE RIVER

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

REVISIONS

BRIDGE RAILING MODIFICATION DETAILS

BRIDGE REHABILITATION
VARIOUS LOCATIONS
Rock River - Laramie
Bosler South Section

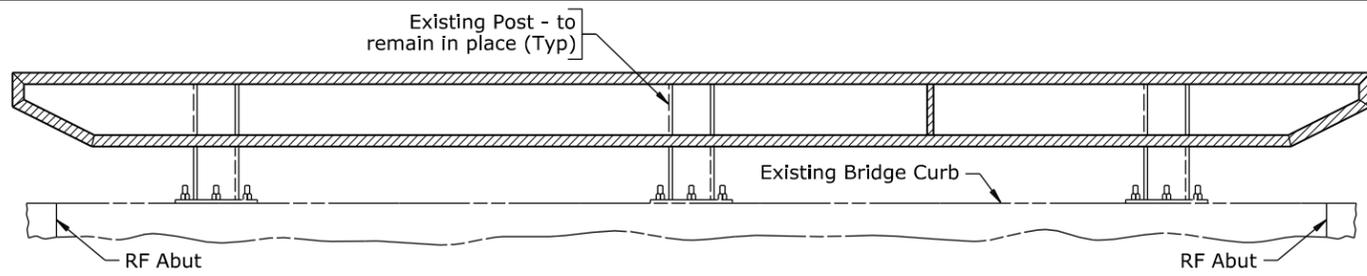
P232037 AI

APPROVED

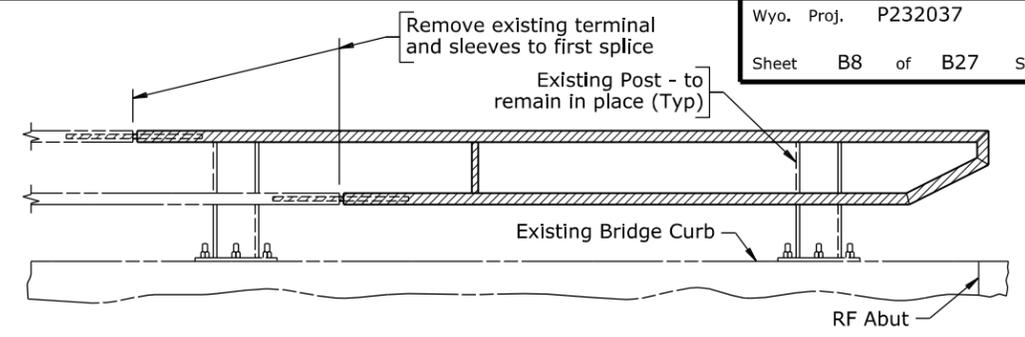
DESIGN: LLL ✓ HHH
DETAIL: JJJ ✓ OOO
QTY'S: JJJ ✓ OOO

Design Section Q R Stuv
Drwg No. 0012 Sheet 7 of 14

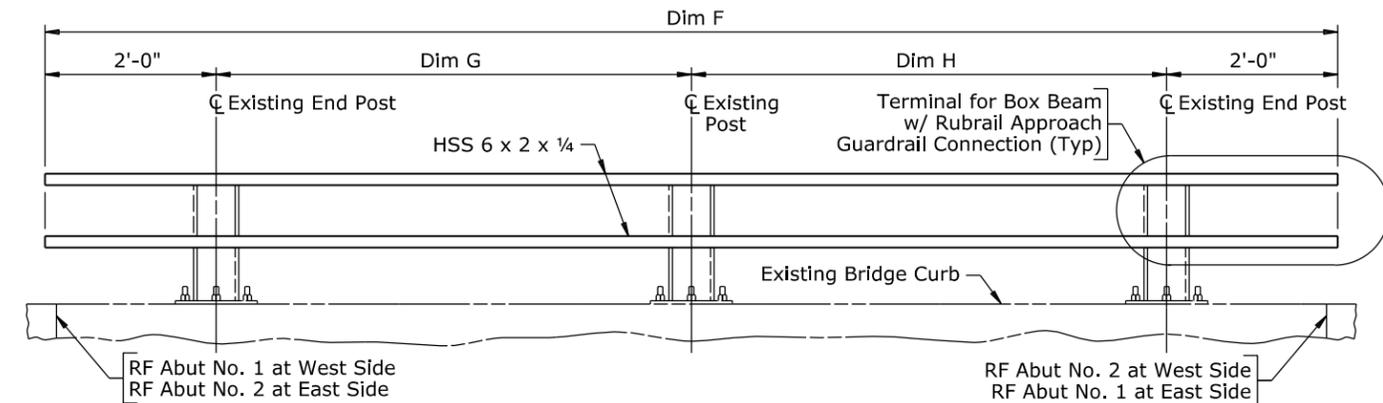
Section 4.22 - Preservation and Rehabilitation



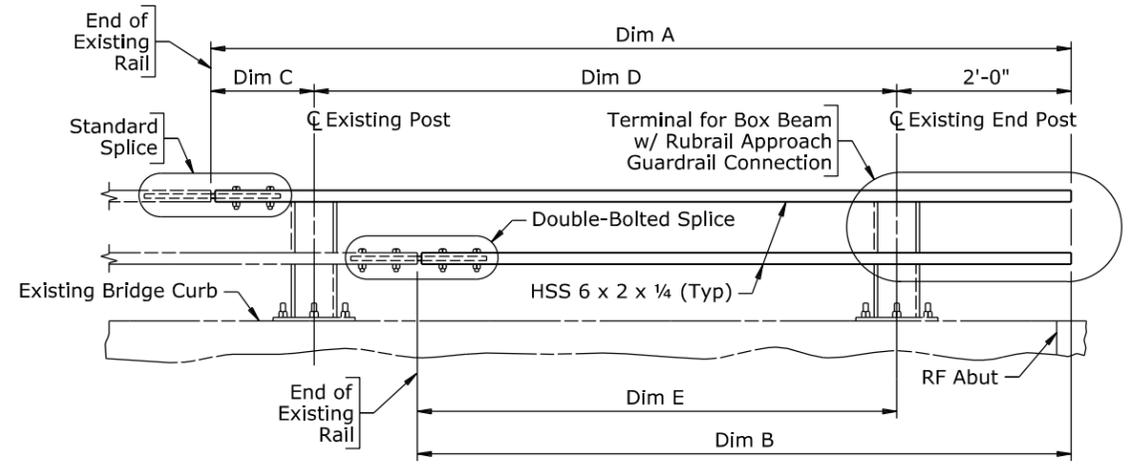
TYPICAL ELEVATION AT BRIDGE OVER OASIS DITCH
(Showing removal)



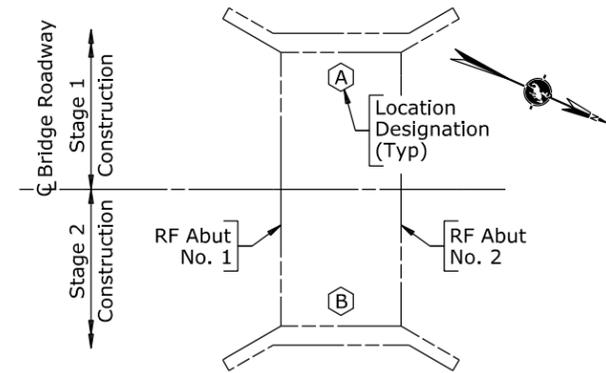
TYPICAL ELEVATION AT BRIDGE OVER FLOODWATER CREEK
(Showing removal)



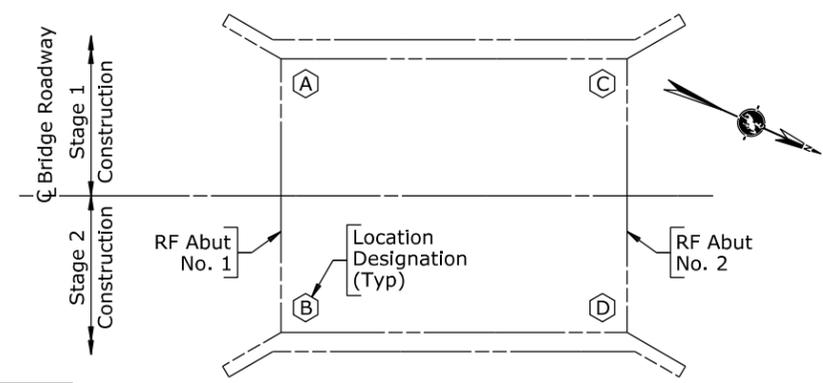
TYPICAL ELEVATION AT BRIDGE OVER OASIS DITCH
(Showing new construction)



TYPICAL ELEVATION AT BRIDGE OVER FLOODWATER CREEK
(Showing new construction)



PLAN AT BRIDGE OVER OASIS DITCH



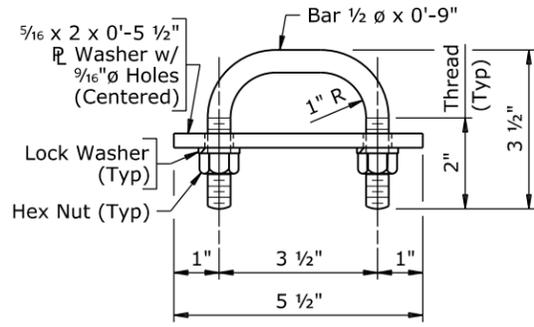
PLAN AT BRIDGE OVER FLOODWATER CREEK

- Note:
- 1) Field drill existing rails as required for installation of new splices. Grind rough edges of drilled areas.
 - 2) The estimated quantity for bridge railing modification at Bridge Over Floodwater Creek is based on the average of dimension A and dimension B at each location.
 - 3) The estimated quantity for bridge railing modification at Bridge Over Oasis Ditch is dimension F at each location.

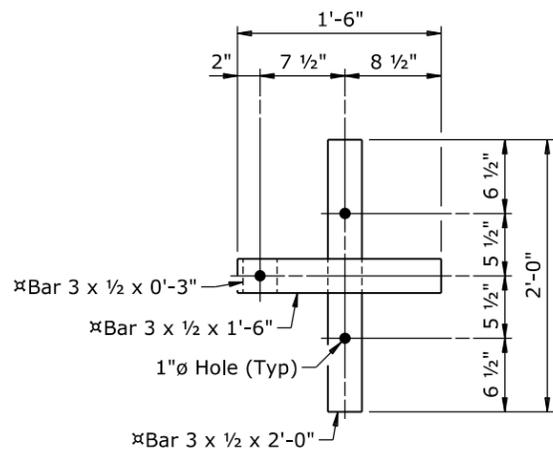
TABLE OF DIMENSIONS									
Location		Dim A	Dim B	Dim C	Dim D	Dim E	Dim F	Dim G	Dim H
Bridge Over Floodwater Creek	(A)	13'-1 1/2"	10'-1 1/2"	1'-6"	9'-7 1/2"	8'-1 1/2"	—	—	—
	(B)	13'-1 1/2"	10'-1"	1'-6"	9'-7 1/2"	8'-1"	—	—	—
	(C)	13'-1 1/2"	10'-0 1/2"	1'-6 1/4"	9'-7 1/4"	8'-0 1/2"	—	—	—
	(D)	13'-1 1/4"	10'-0 5/8"	1'-6 1/2"	9'-6 3/4"	8'-0 5/8"	—	—	—
Bridge Over Oasis Ditch	(A)	—	—	—	—	—	18'-0 1/2"	7'-0 1/2"	7'-0"
	(B)	—	—	—	—	—	18'-0 3/8"	7'-0 1/2"	6'-11 7/8"

BRIDGE OVER FLOODWATER CREEK
BRIDGE OVER OASIS DITCH

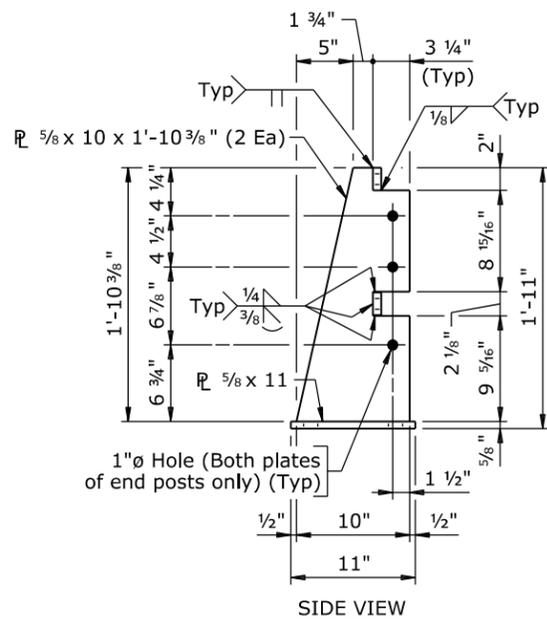
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS		BRIDGE RAILING MODIFICATION DETAILS	
BRIDGE REHABILITATION VARIOUS LOCATIONS Rock River - Laramie Bosler South Section			
		P232037	AI
APPROVED	DESIGN	Design Section Q R Stuv	
DATE	DETAIL	Drwg No. 0012	Sheet 8 of 14
	QTY'S		



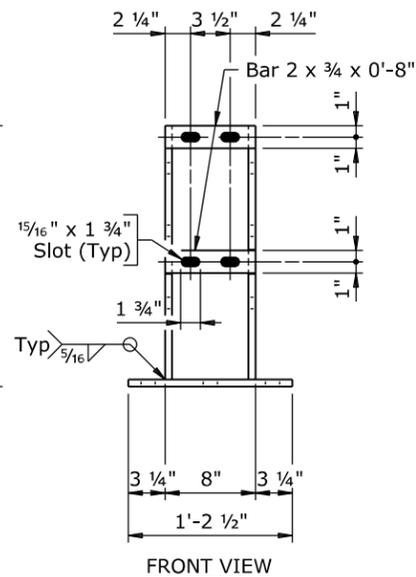
RAIL BOLT DETAIL
(60 req'd)



SECTION B-B
(Not galvanized)
(Anchor bolts and slab not shown)

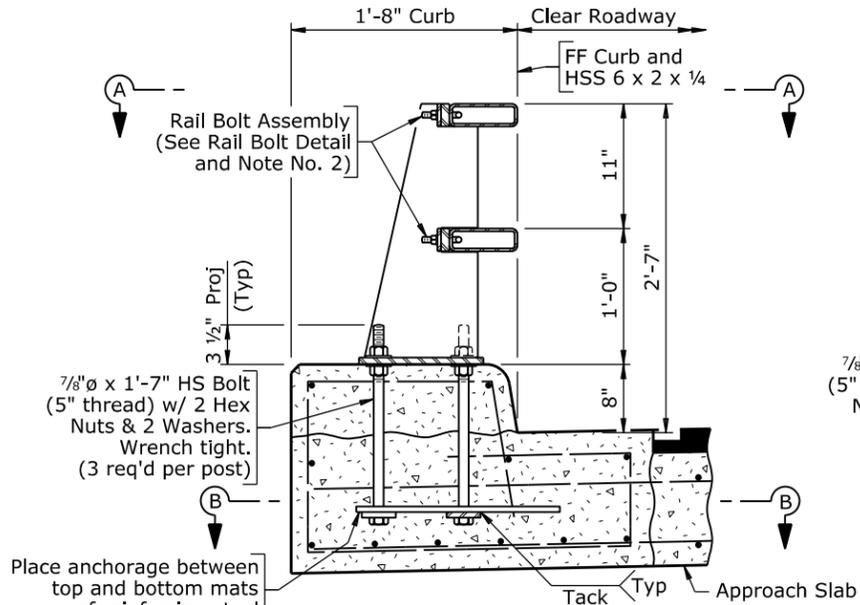


SIDE VIEW

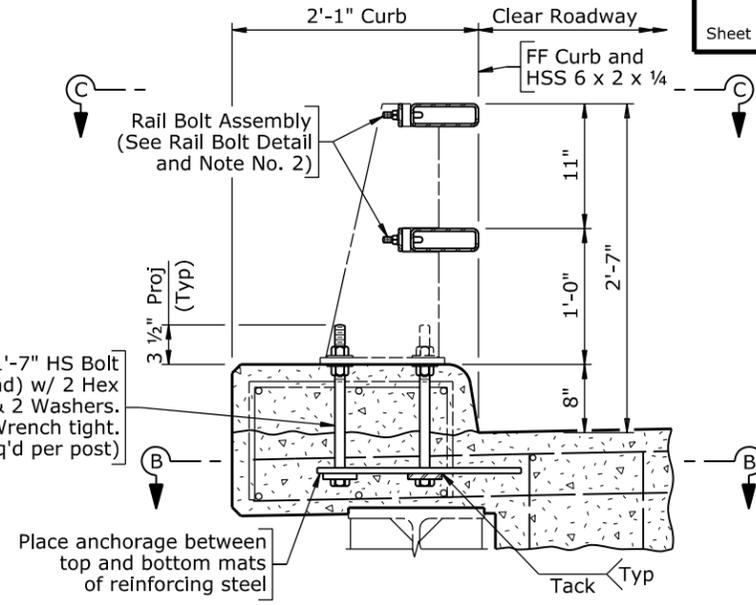


FRONT VIEW

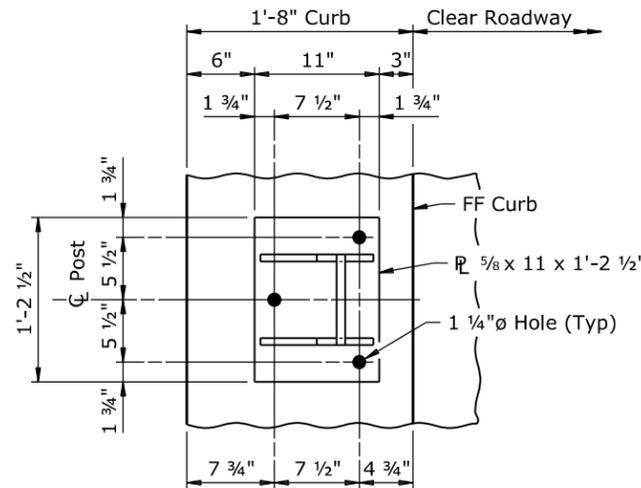
POST DETAILS
(See View A-A for anchor bolt hole spacing)



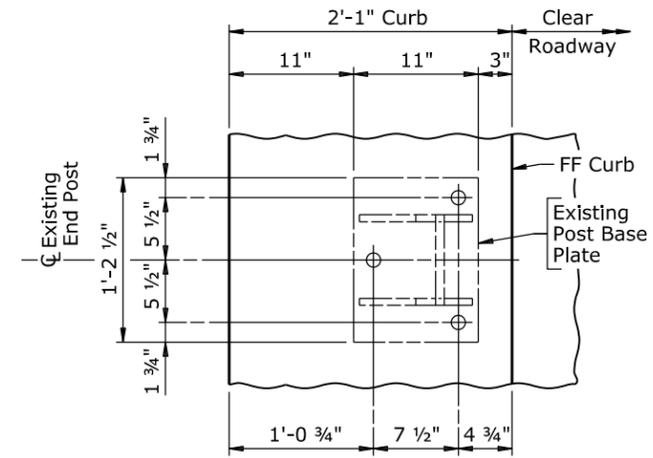
ASSEMBLY DETAIL AT BRIDGE OVER LARAMIE RIVER
(Shown near \varnothing New Post)



ASSEMBLY DETAIL AT BRIDGE OVER LARAMIE RIVER
(Shown near \varnothing Existing End Post)

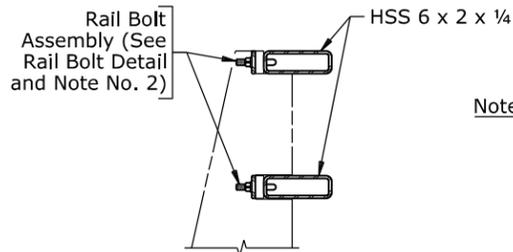


VIEW A-A
(Anchor bolts, rails, and rail bolts not shown)



VIEW C-C
(Anchor bolts, rails, and rail bolts not shown)

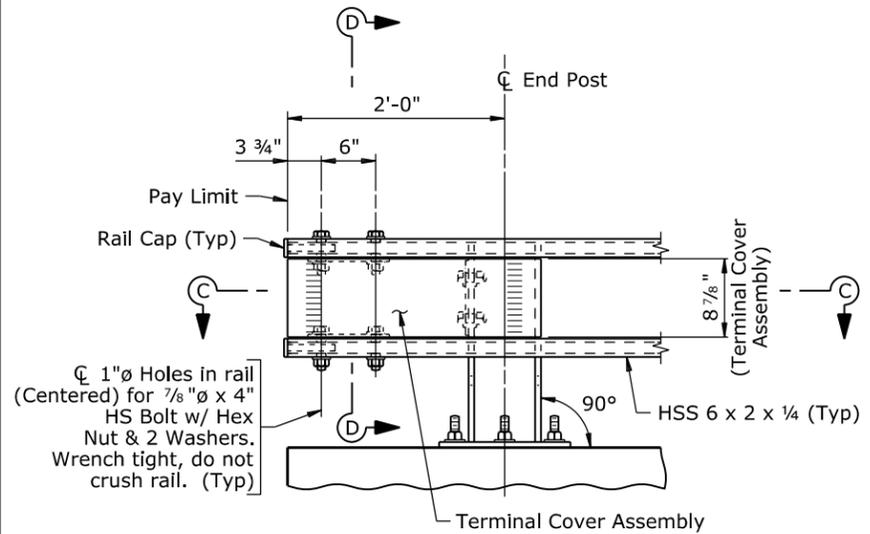
BRIDGE OVER LARAMIE RIVER
BRIDGE OVER FLOODWATER CREEK
BRIDGE OVER OASIS DITCH



RAIL INSTALLATION DETAIL
(Showing new rails at existing post)

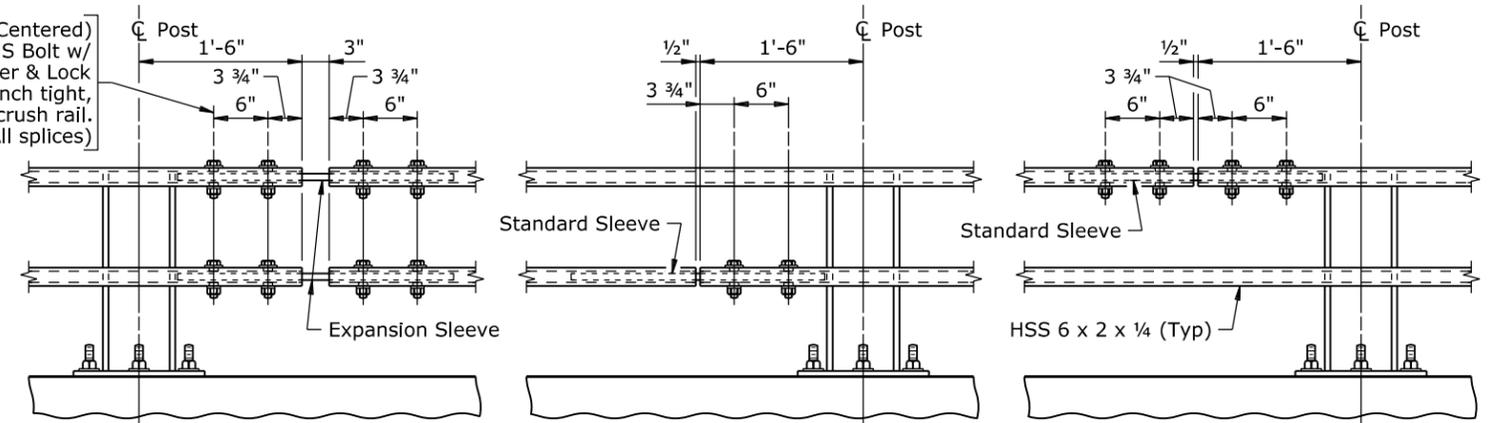
- Note:**
- 1) Anchor bolts may be tack welded to anchorage (Shop or field).
 - 2) At post locations, drill two 1 1/16" diameter holes in the rails to receive rail bolts (Shop or field). See Post Details for hole spacing.
 - 3) Paint surfaces of the railing components that have been cut, drilled, or otherwise damaged with two coats of zinc-rich paint conforming to ASTM A 780.
 - 4) After installing rails, paint exposed bolt threads with two coats of zinc-rich paint conforming to ASTM A 780.

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
BRIDGE RAILING MODIFICATION DETAILS			
BRIDGE REHABILITATION VARIOUS LOCATIONS Rock River - Laramie Bosler South Section			
P232037		AI	
APPROVED	DESIGN	Design Section Q R Stuv	
DATE	DETAIL	Drwg No. 0012	Sheet 9 of 14
	QTY'S	LLL ✓ JJJ ✓	HHH ✓ OOO ✓



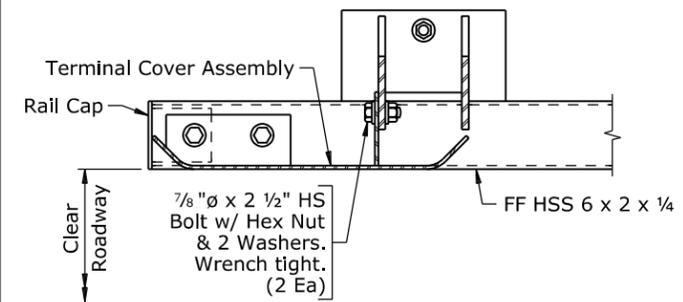
ELEVATION AT TERMINAL

1" ϕ Holes in rail (Centered) for 3/4" ϕ x 3 1/2" HS Bolt w/ Hex Nut, Washer & Lock Washer. Wrench tight, do not crush rail. (Typ) (All splices)

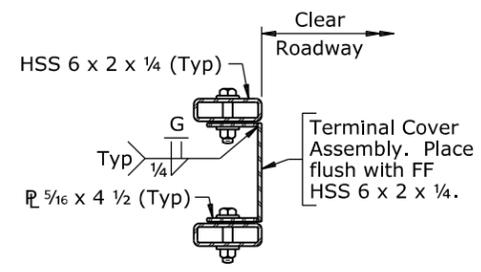


EXPANSION SPLICE (Top and bottom rail)
STANDARD SPLICE (Top or bottom rail)
DOUBLE-BOLTED SPLICE (Top or bottom rail)
SPLICE DETAILS

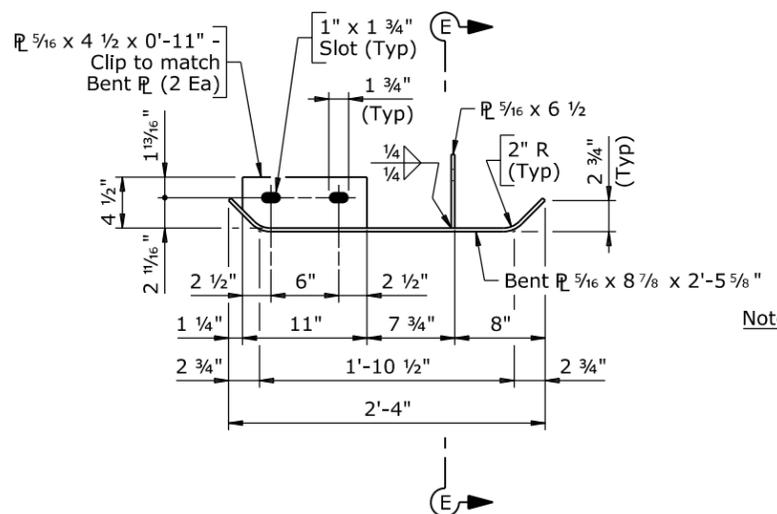
TERMINAL COMPONENT REQUIREMENTS		
Approach Guardrail Connection	Rail Caps Required	Terminal Cover Assembly Required
MGS Approach Guardrail	Yes (Without bolts)	± No
Box Beam w/ Rubrail Approach Guardrail	No	No
No Approach Guardrail	Yes (With bolts)	Yes



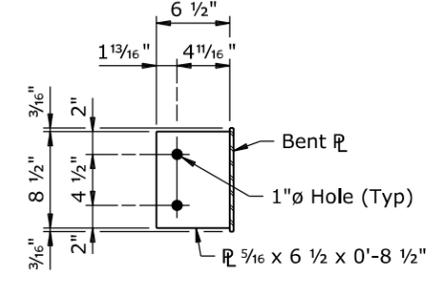
SECTION C-C



SECTION D-D



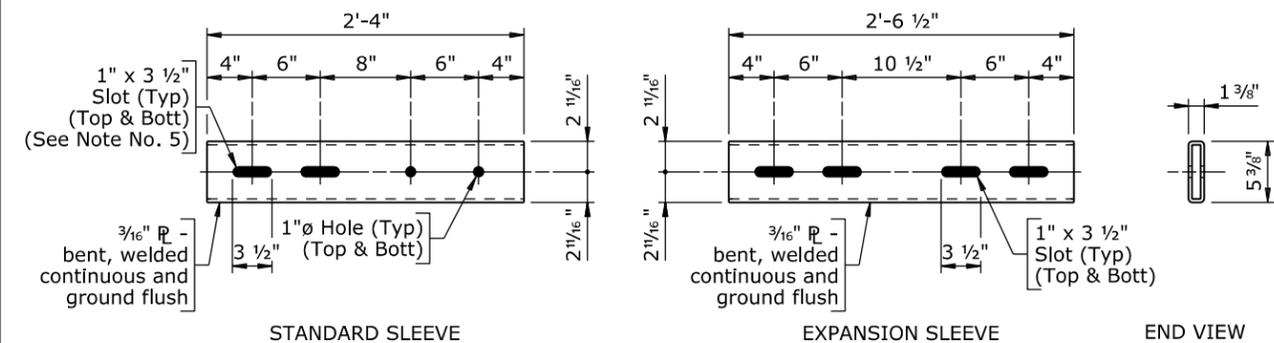
TERMINAL COVER ASSEMBLY DETAIL



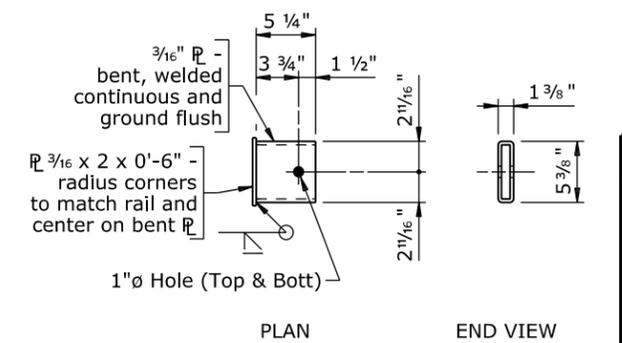
SECTION E-E

- Note:
- 1) Ensure each rail length is continuous over a minimum of two posts.
 - 2) In rehabilitation work, ensure railing that cannot feasibly be made continuous over a minimum of two posts has a double-bolted splice.
 - 3) Splices may be located on either side of post.
 - 4) Not more than one splice is permitted per side of post, except at expansion splices.
 - 5) Slots may be omitted in standard sleeves where bolts are required on one side of splice only.
 - 6) Do not shop splice rails.
 - 7) Terminal components removed during rehabilitation work will remain the property of the department.
 - 8) Installation of MGS approach guardrail will require other fabricated assemblies to be connected to end post. See road plans for details and pay item.

BRIDGE OVER LARAMIE RIVER
BRIDGE OVER FLOODWATER CREEK
BRIDGE OVER OASIS DITCH



SLEEVE DETAILS

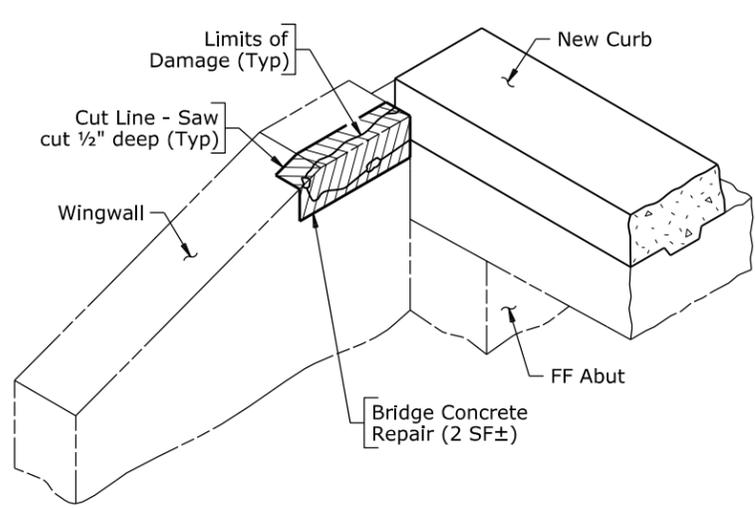


RAIL CAP DETAILS

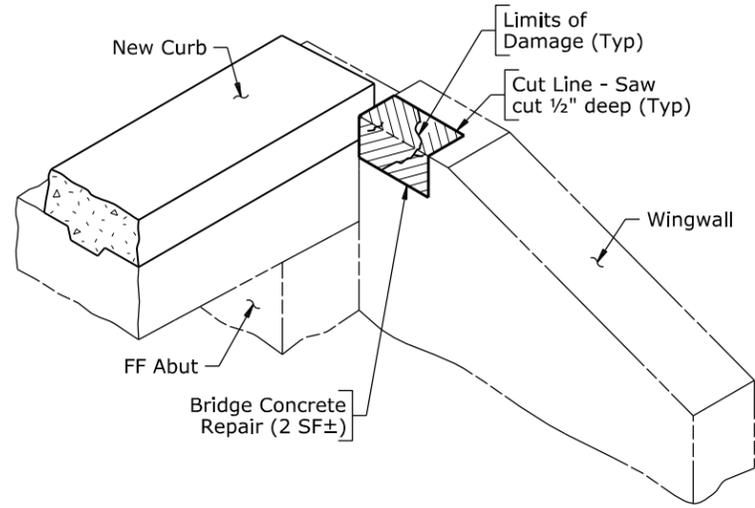
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
BRIDGE RAILING MODIFICATION DETAILS			
BRIDGE REHABILITATION VARIOUS LOCATIONS Rock River - Laramie Bosler South Section			
P232037		AI	
APPROVED	DESIGN	Design Section Q R Stuv	
DATE	DETAIL	Drwg No. 0012	Sheet 10 of 14
	QTY'S	JJJ	OOO

Sept 2015

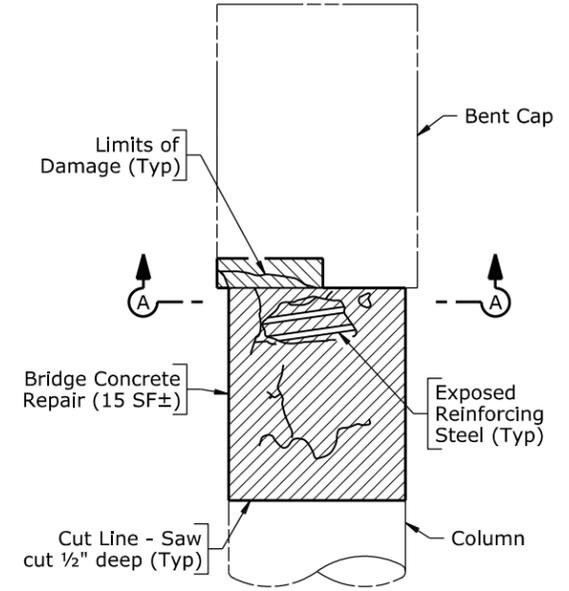
4.22 - Example



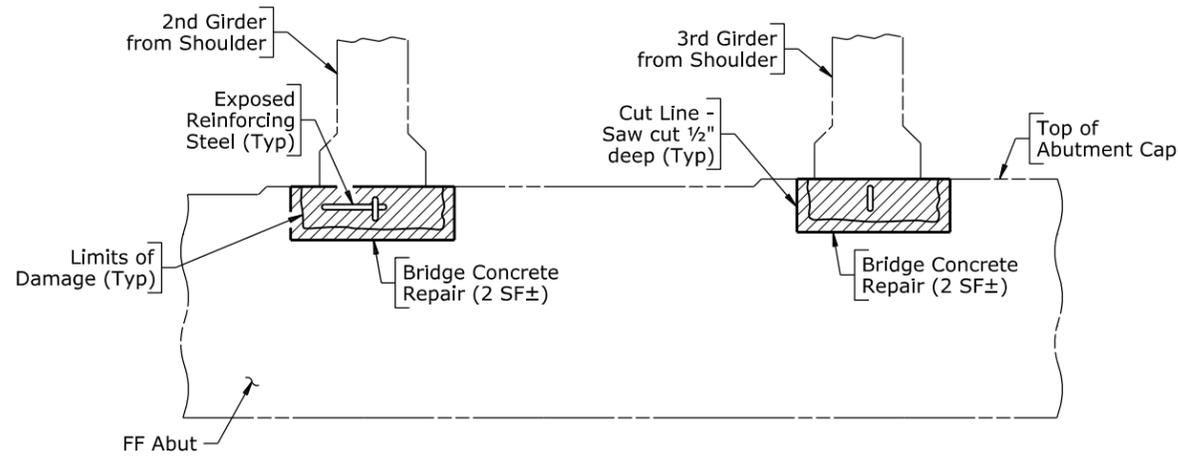
WINGWALL REPAIR DETAIL
 (Sta 384+32 (SBL) - Abut No. 1 - Shoulder)



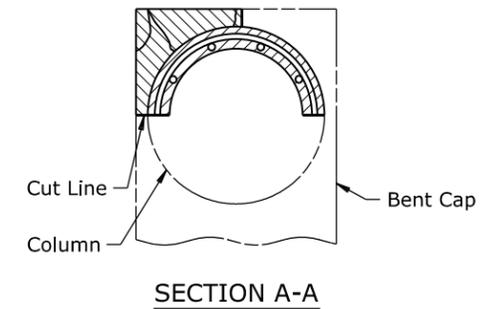
WINGWALL REPAIR DETAIL
 (Sta 384+32 (SBL) - Abut No. 2 - Shoulder)



BENT REPAIR DETAIL
 (Sta 386+96 (NBL) - Bent No. 1 - Shoulder)



ABUTMENT REPAIR DETAIL
 (Sta 386+96 (SBL) - Abut No. 1)



SECTION A-A
 STA 384+32 (SBL)
 STA 386+96

Note: Repair hatched areas to original lines of construction.

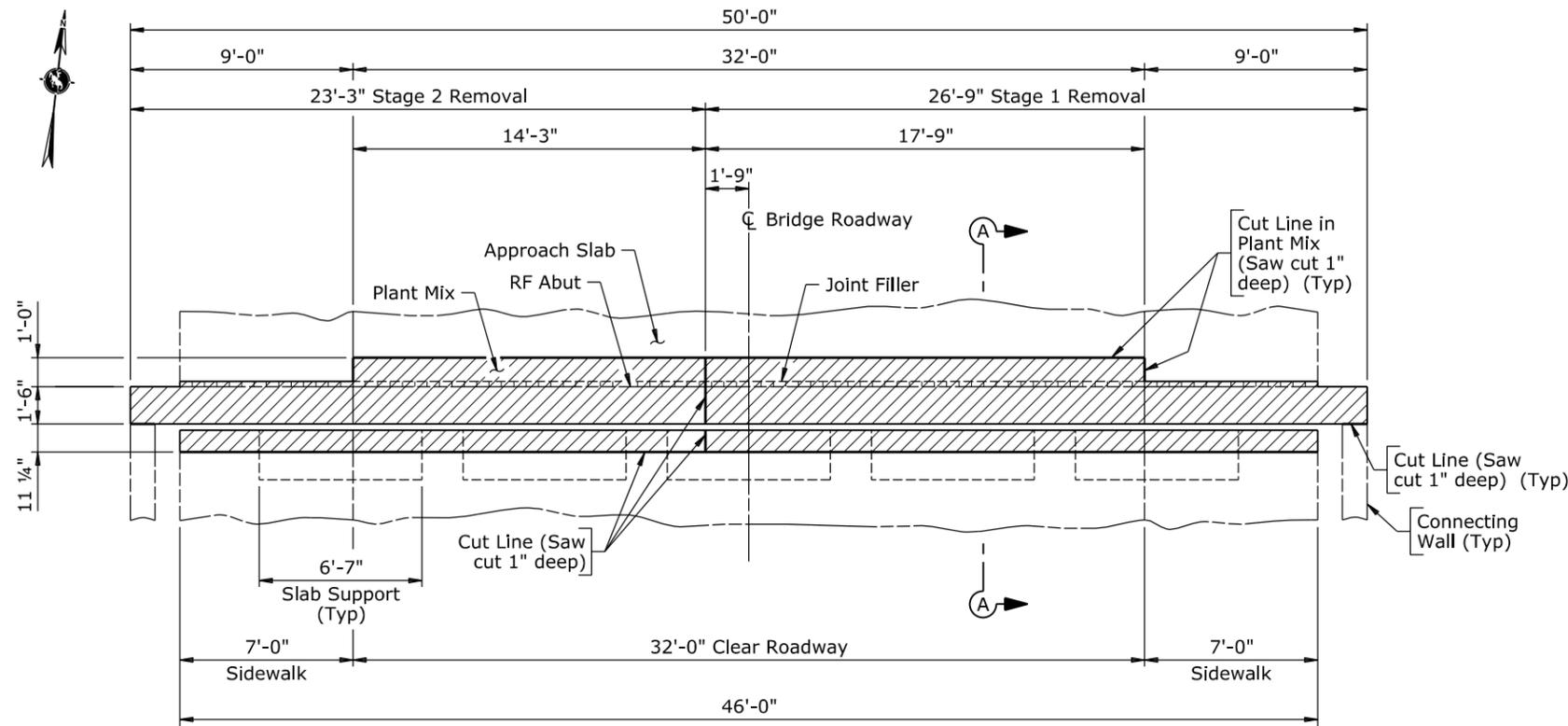
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS	BRIDGE CONCRETE REPAIR DETAILS		
	BRIDGE REHABILITATION VARIOUS LOCATIONS Wheatland - Glendo Road (Cassa North Section)		
	I252137		PI
APPROVED	DESIGN <u>BBB</u> ✓ <u>AAA</u>	Design Section L M Nop	
DATE	DETAIL <u>GGG</u> ✓ <u>DDD</u>	Drwg No. 0014	Sheet 24 of 30

Section 4.22 - Preservation and Rehabilitation

Nov 2018

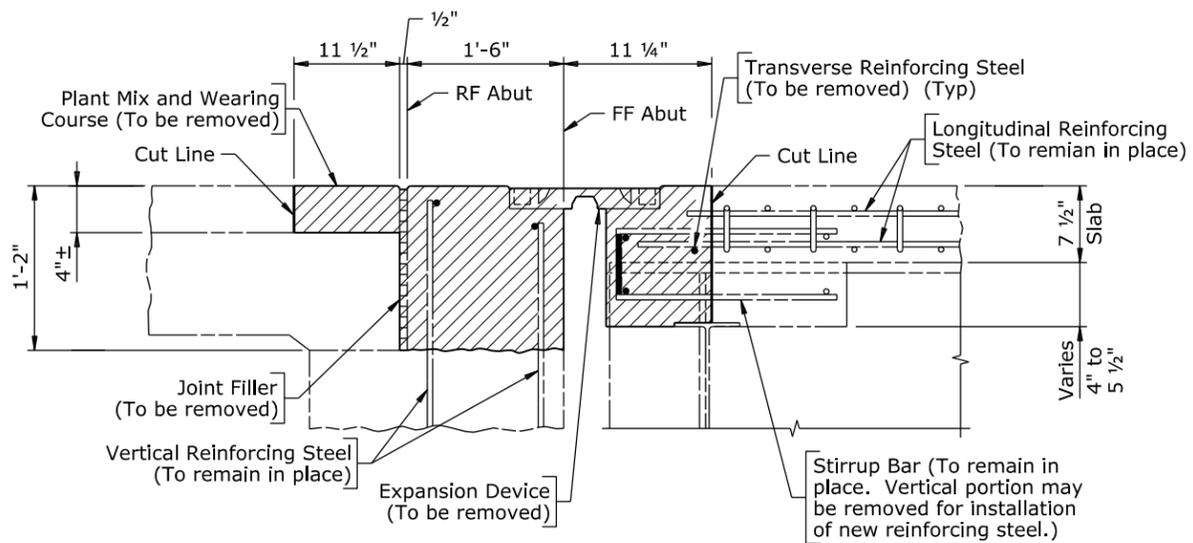
4.22 - Example

Wyo. Proj. 1507033
Sheet B2 of B14 Sheets

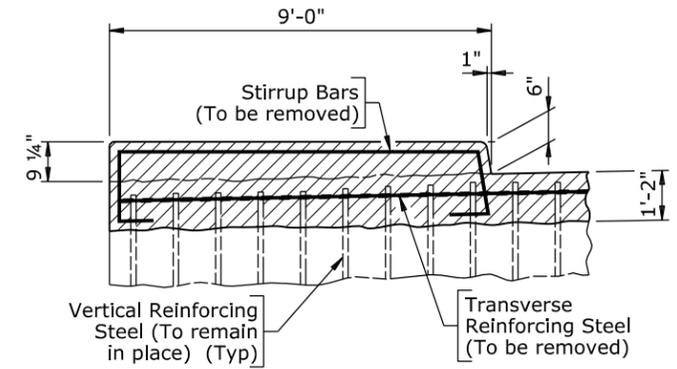


PLAN

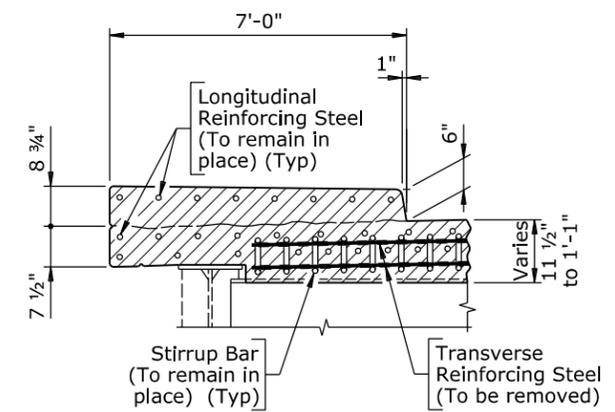
(Showing removal)
(Expansion device and reinforcing steel not shown)
(Abut No. 1 shown, Abut No. 2 similar)



SECTION A-A



SECTION AT ABUTMENT SIDEWALKS



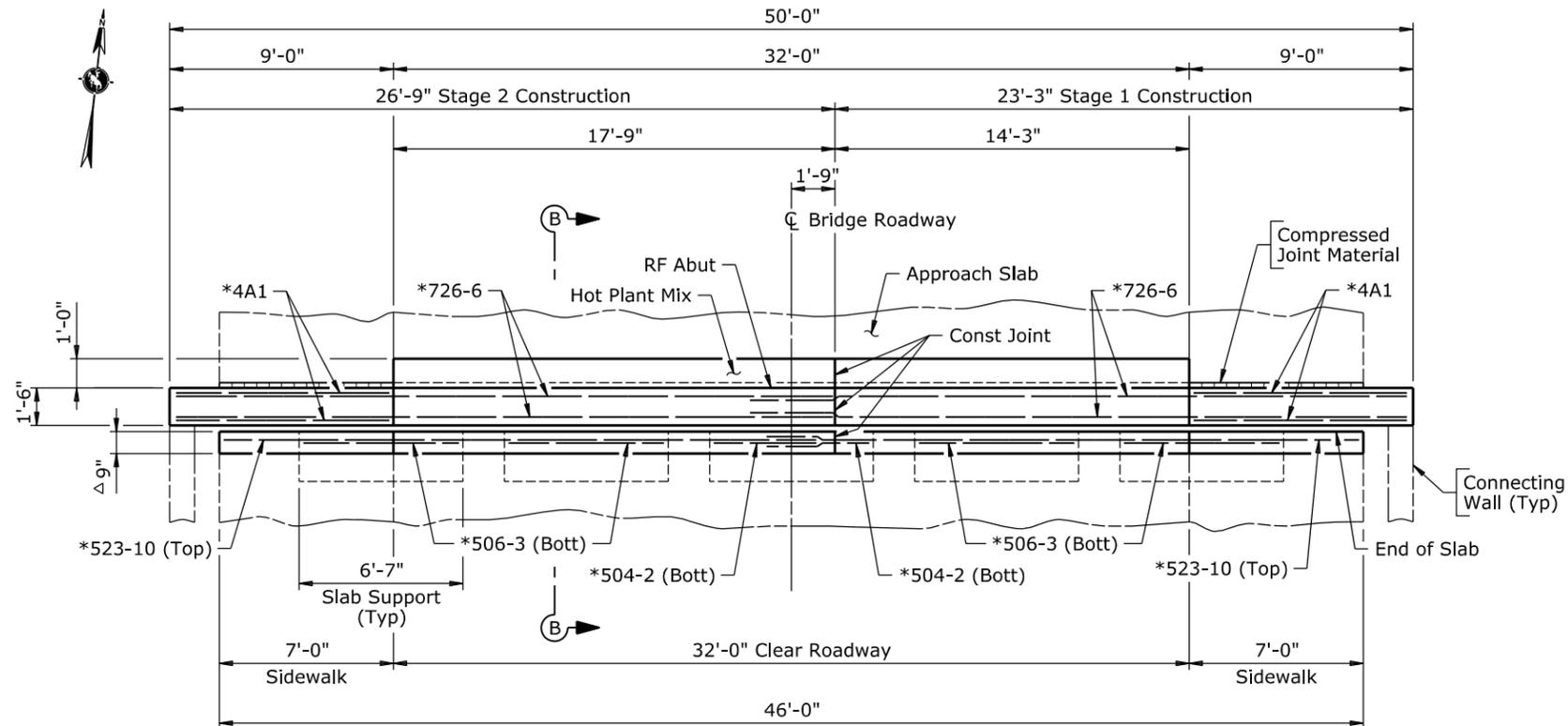
SECTION AT SLAB SIDEWALKS

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
EXPANSION JOINT DETAILS			
BRIDGE REHABILITATION			
BRIDGE OVER SUNLIGHT CREEK			
Chief Joseph Highway (WYO 296)			
1507033 Pa			
APPROVED	DESIGN	Design Section B C Def	
DATE	DETAIL	Drwg No. 0011	Sheet 2 of 6
	QTY'S		

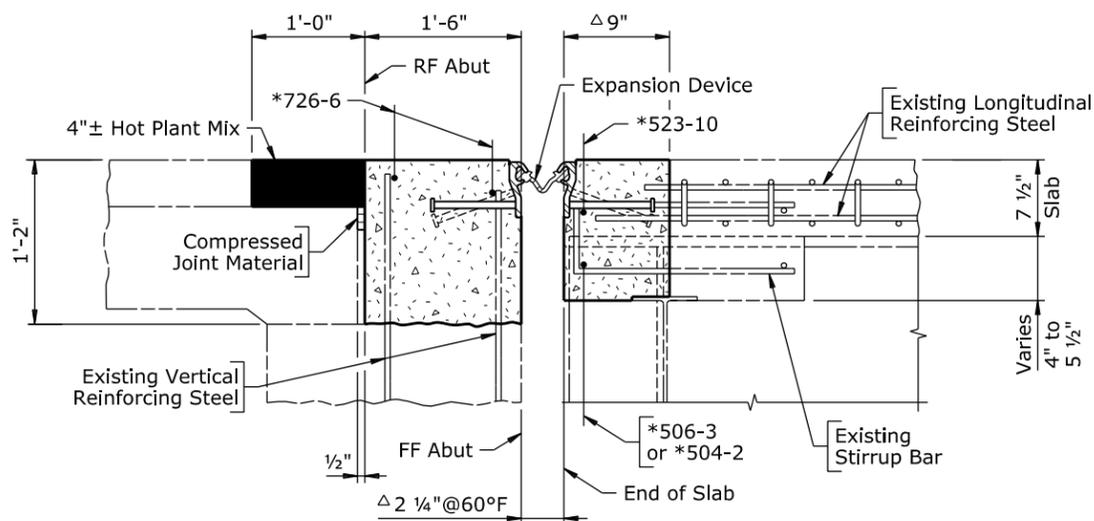
Section 4.22 - Preservation and Rehabilitation

Nov 2019

4.22 - Example



PLAN
 (Expansion device not shown)
 (Abut No. 1 shown, Abut No. 2 similar)

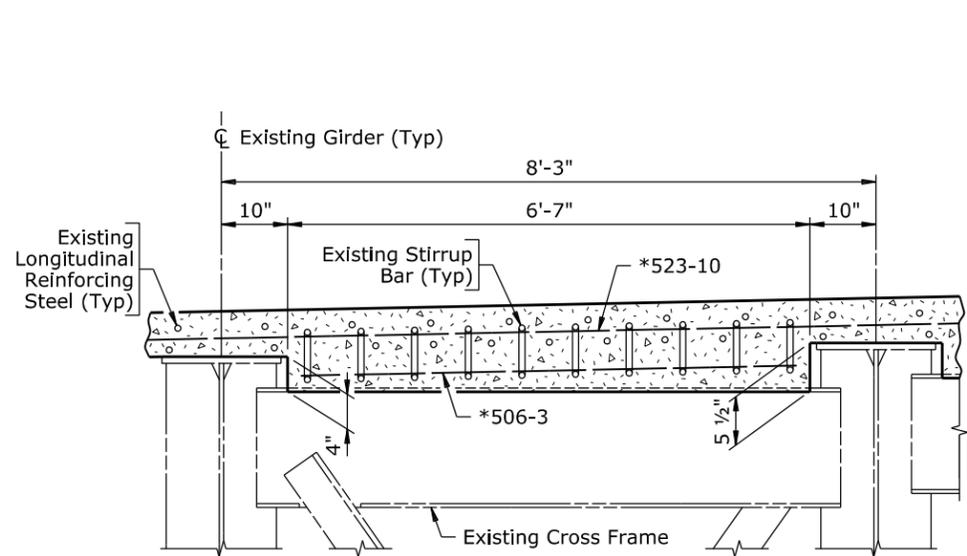


SECTION B-B

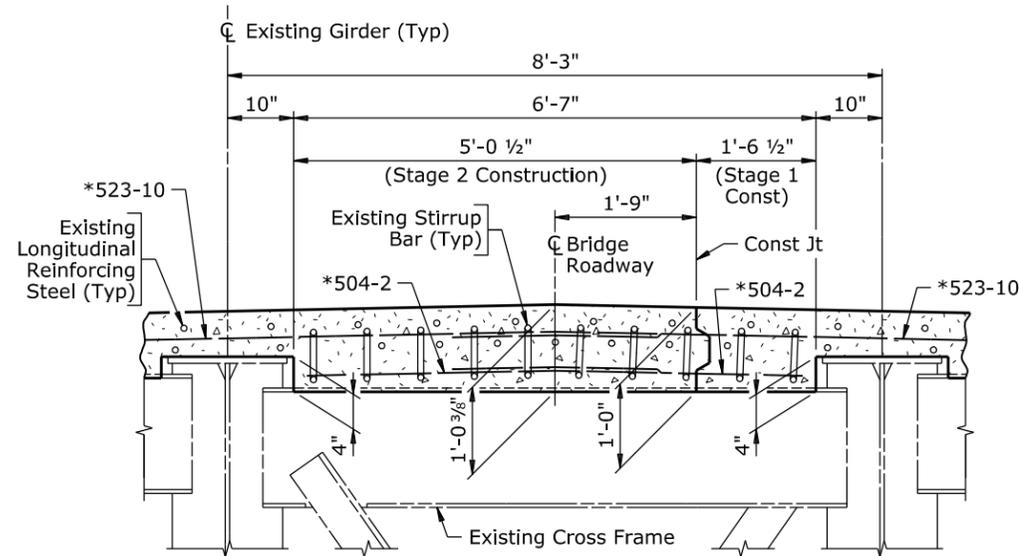
- Note:** 1) Extend compressed joint material up front face and across top of sidewalks.
 Δ2) Increase the opening between front face abutment and end of slab 1/8" for each 10° F below 60° F and decrease the opening 1/8" for each 10° F above 60° F. Account for variance in slab forming.
 3) For slab support details and Section At Abutment Sidewalks, see Sheet No. 4.

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
EXPANSION JOINT DETAILS			
BRIDGE REHABILITATION			
BRIDGE OVER SUNLIGHT CREEK			
Chief Joseph Highway (WYO 296)			
1507033		Pa	
APPROVED	DESIGN	Design Section B C Def	
DATE	DETAIL	Drwg No. 0011	Sheet 3 of 6
	QTY'S		

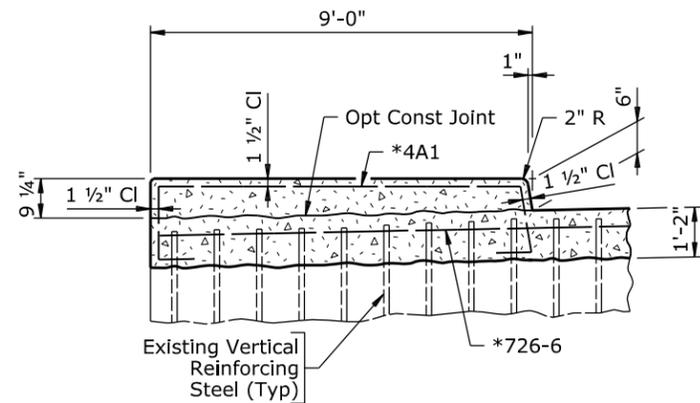
Section 4.22 - Preservation and Rehabilitation



TYPICAL SECTION AT SLAB SUPPORT
(4 req'd)



SLAB SUPPORT SECTION AT CONSTRUCTION JOINT



SECTION AT ABUTMENT SIDEWALKS

BILL OF REINFORCEMENT			
Location	Mark	Number Required per Abut	
		Stage 1 Construction	Stage 2 Construction
Expansion Joint	*4A1	2	2
	*504-2	1	1
	*506-3	2	2
	*523-10	1	1
	*726-6	2	2
	*Weight	*169 LB	*169 LB

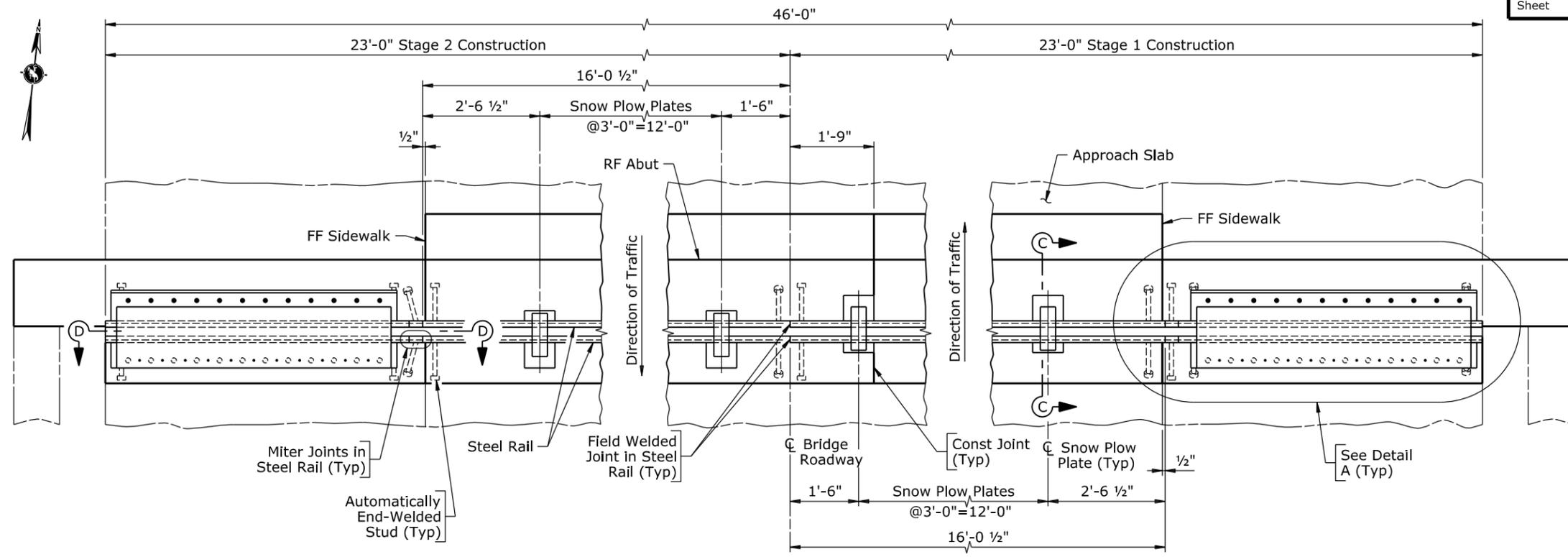
Bending Diagram	

- Note: 1) Construct new sidewalks to match existing sidewalks.
2) Ensure the reinforcing steel fabricator prefixes expansion joint bar marks with numeral 1 for stage 1 construction and numeral 2 for stage 2 construction.
3) The estimated quantity of class B concrete is 5.1 CY for stage 1 construction and 5.5 CY for stage 2 construction.

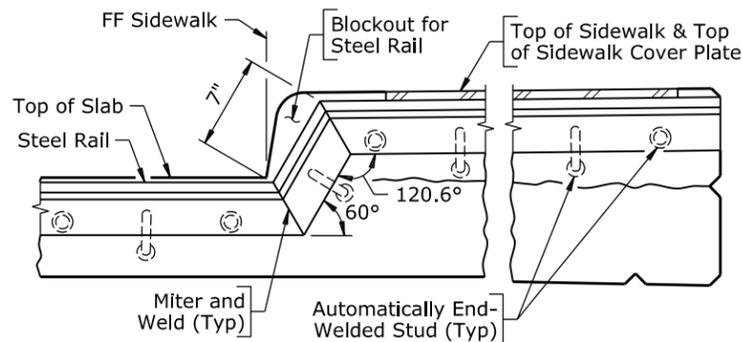
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS	EXPANSION JOINT DETAILS		
	BRIDGE REHABILITATION		
	BRIDGE OVER SUNLIGHT CREEK Chief Joseph Highway (WYO 296) 1507033 Pa		
APPROVED	DESIGN	Design Section B C Def	
DATE	DETAIL	Drwg No. 0011	Sheet 4 of 6
	QTY'S		

Nov 2018

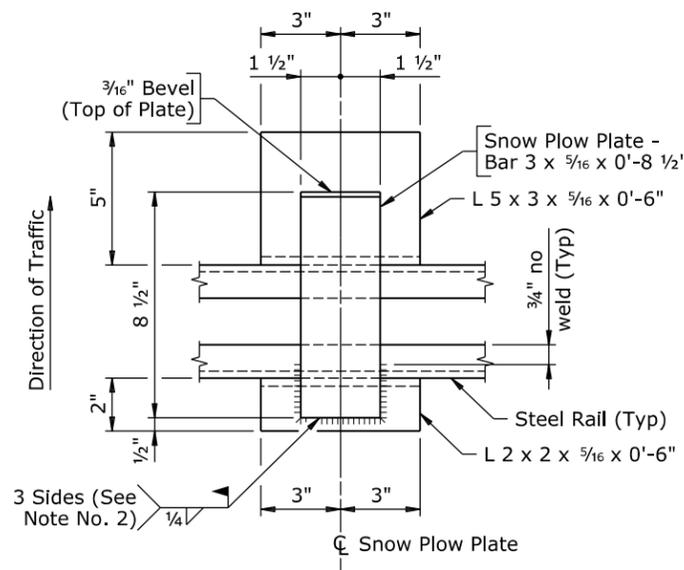
4.22 - Example



PLAN
 (Showing expansion device layout)
 (Abut No. 1 shown, Abut No. 2 similar)



VIEW D-D
 (Typical each slab sidewalk, abutment sidewalks similar)
 (Gland not shown)



SNOW PLOW PLATE ASSEMBLY DETAIL

- Note:**
- 1) Ensure the expansion device fabricator includes additional length in steel rails at the field welded joint to account for grade, slope and variances in actual conditions. Field cut steel rails for proper fit in accordance with the fabricator's recommendations.
 - 2) Do not warp snow plow plates or damage gland during welding. Do not exceed 150° F preheat temperature.
 - 3) For Section C-C and Detail A, see Sheet No. 5.

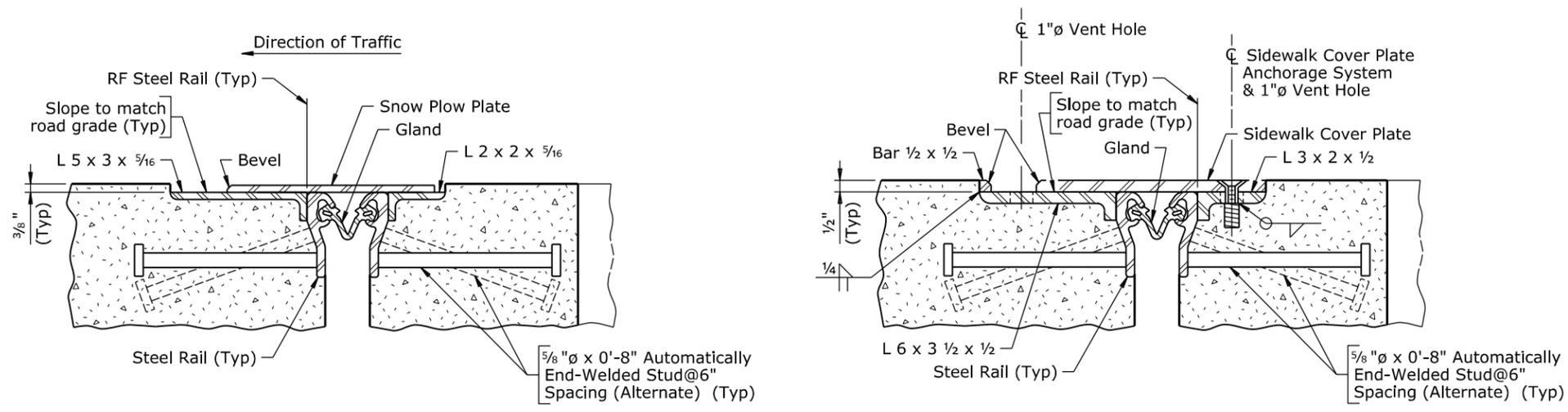
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
EXPANSION JOINT DETAILS			
BRIDGE REHABILITATION			
BRIDGE OVER SUNLIGHT CREEK			
Chief Joseph Highway (WYO 296)			
1507033		Pa	
APPROVED	DESIGN	Design Section B C Def	
DATE	DETAIL	Drwg No. 0011	Sheet 5 of 6
	QTY'S		

Section 4.22 - Preservation and Rehabilitation

Nov 2018

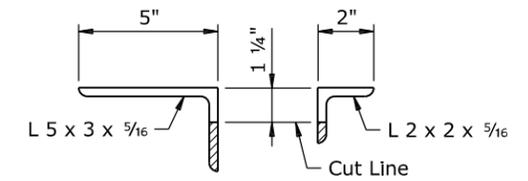
4.22 - Example

Wyo. Proj. 1507033
 Sheet B5 of B14 Sheets

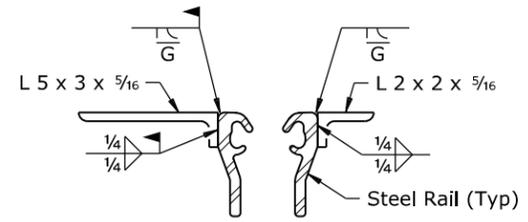


SECTION C-C

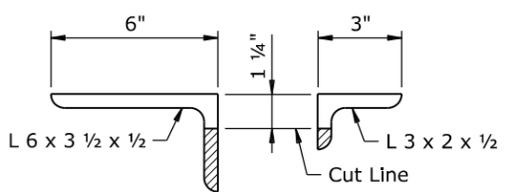
SECTION E-E



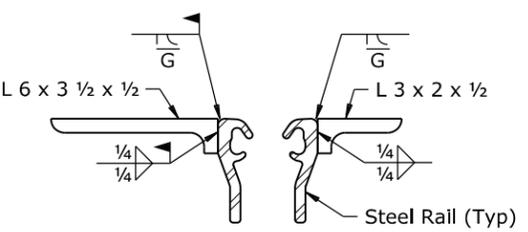
ANGLE CUT DETAIL AT SNOW PLOW PLATE



ANGLE WELD DETAIL AT SNOW PLOW PLATE

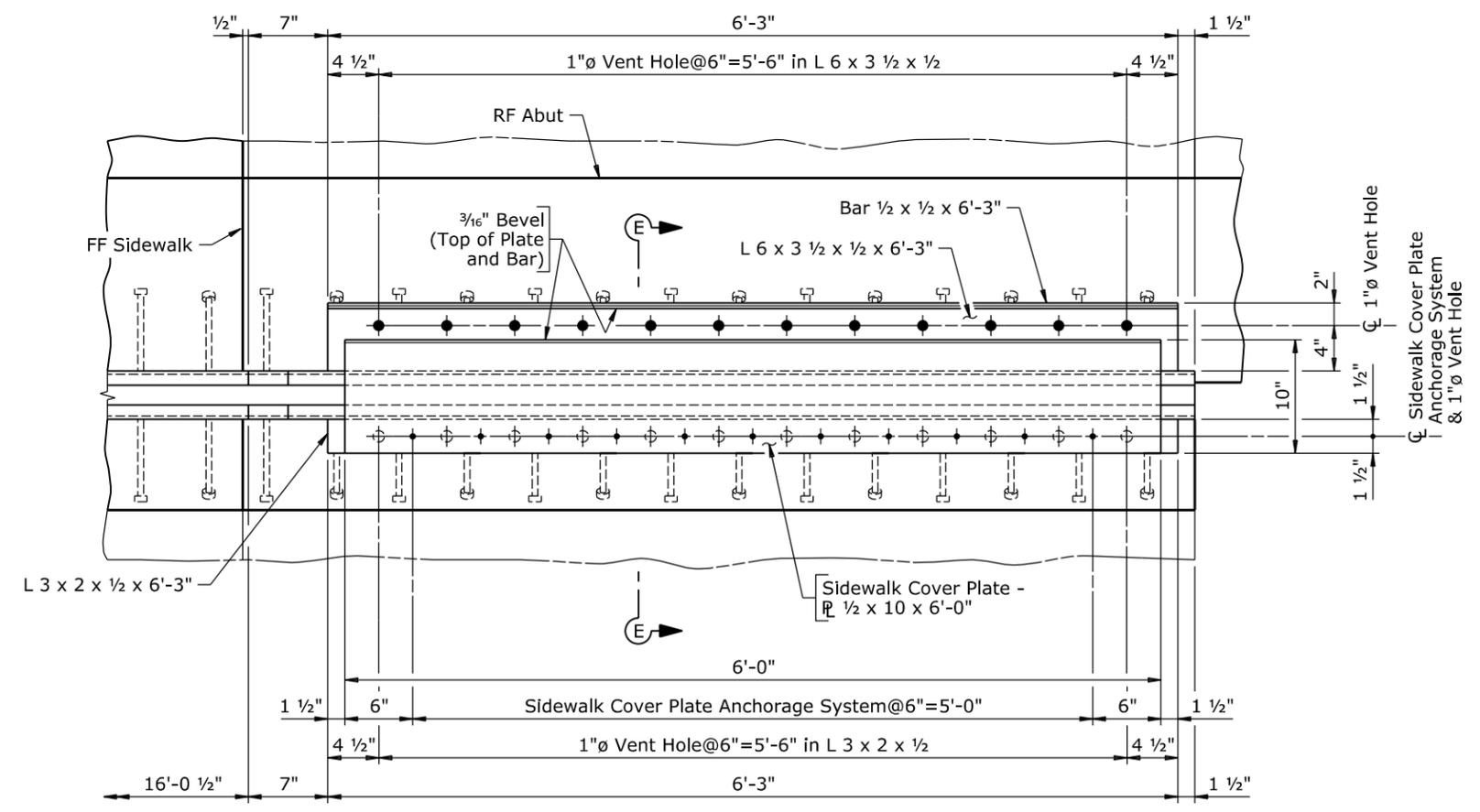


ANGLE CUT DETAIL AT SIDEWALK COVER PLATE



ANGLE WELD DETAIL AT SIDEWALK COVER PLATE

Note: 1) Sidewalk cover plate anchorage system consists of a 9/16" hole in sidewalk cover plate, 9/16" hole in L 3 x 2 x 1/2, 1/2" x 1 3/4" socket flat countersunk head cap screw, and ferrule insert or equivalent.
 2) For location of Section C-C and Detail A, see Sheet No. 4.



DETAIL A
 (Cap screws not shown)

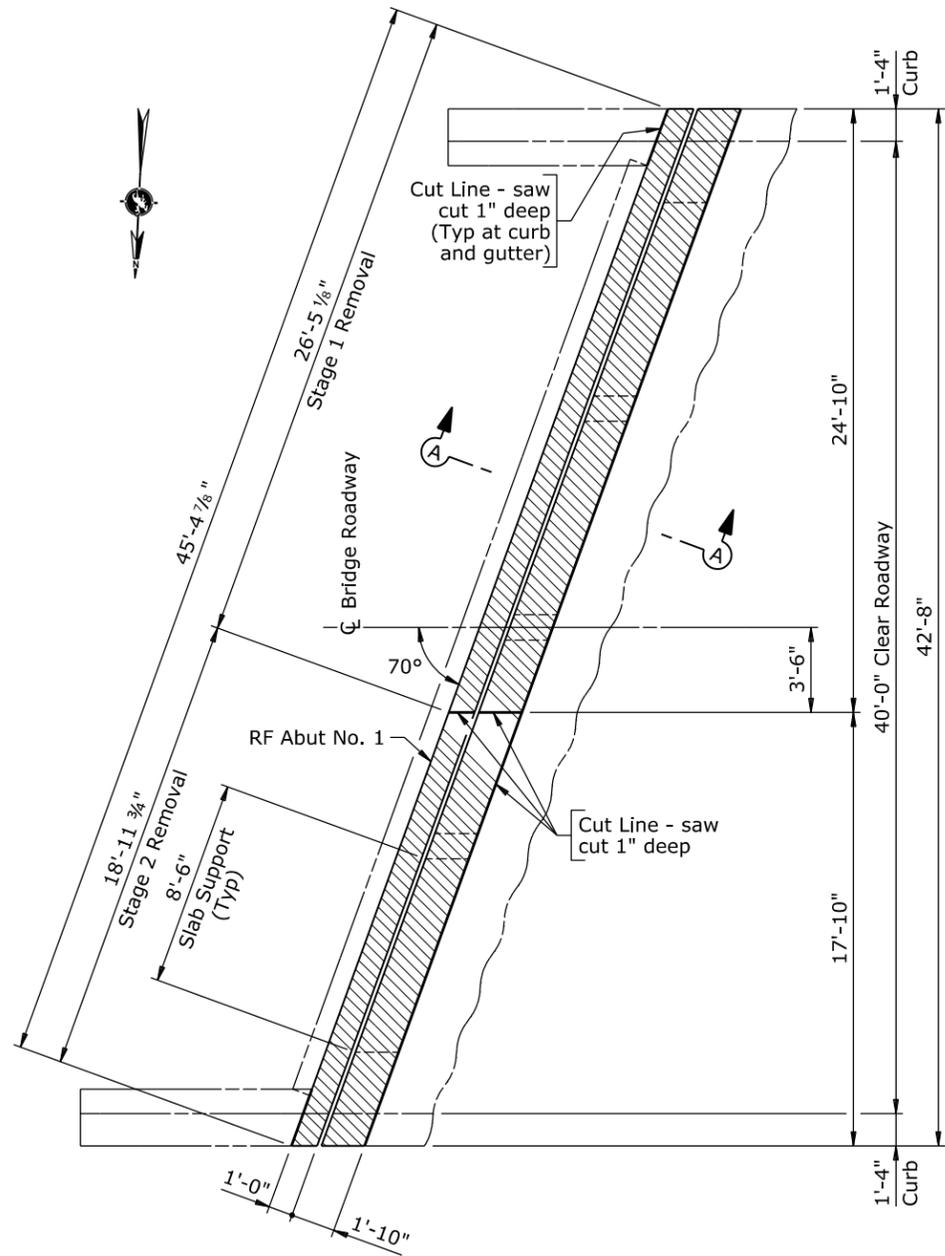
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
EXPANSION JOINT DETAILS			
BRIDGE REHABILITATION			
BRIDGE OVER SUNLIGHT CREEK			
Chief Joseph Highway (WYO 296)			
1507033			Pa
APPROVED	DESIGN	Design Section B C Def	
DATE	DETAIL	Drwg No. 0011	Sheet 6 of 6
	QTY'S		

Section 4.22 - Preservation and Rehabilitation

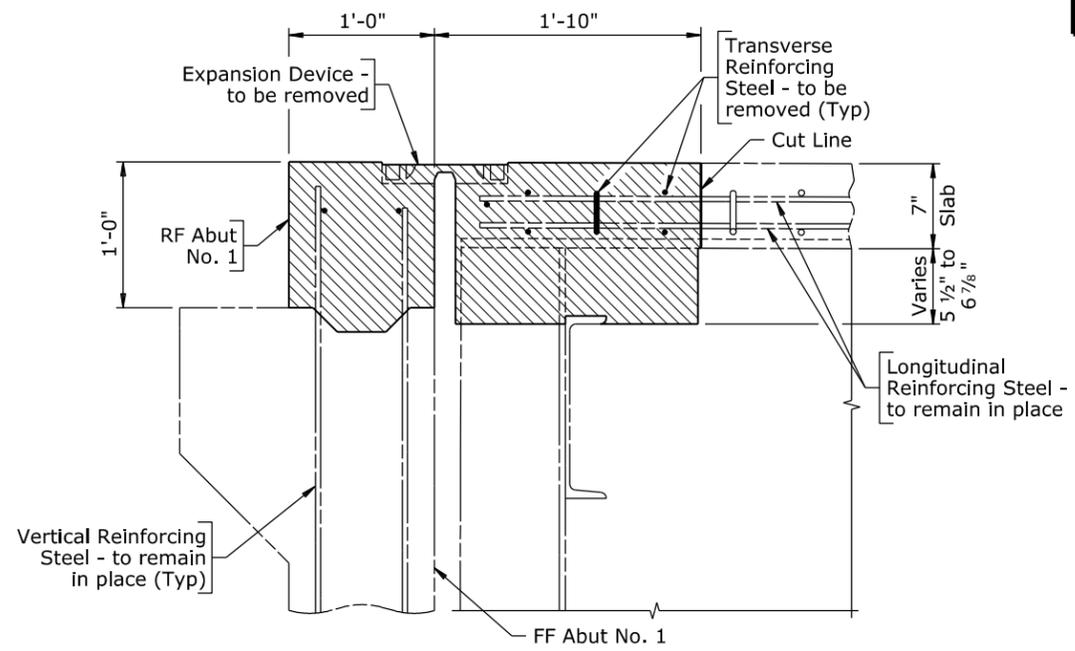
Sept 2015

4.22 - Example

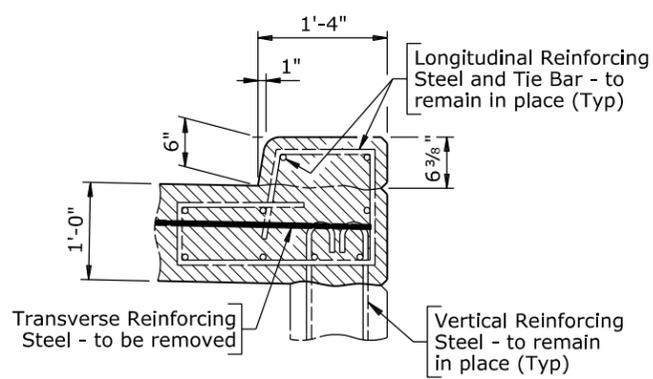
Wyo. Proj. N311074
 Sheet B3 of B48 Sheets



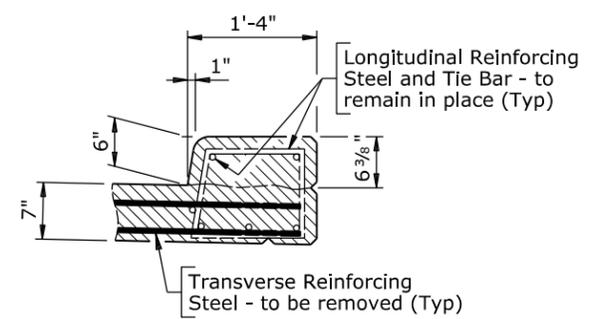
PLAN
 (Showing removal)
 (Expansion device and reinforcing steel not shown)



SECTION A-A



SECTION AT ABUTMENT CURBS
 (Shown perpendicular to edge of slab)

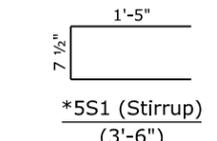


SECTION AT SLAB CURBS
 (Shown perpendicular to edge of slab)

ABUTMENT NO. 1

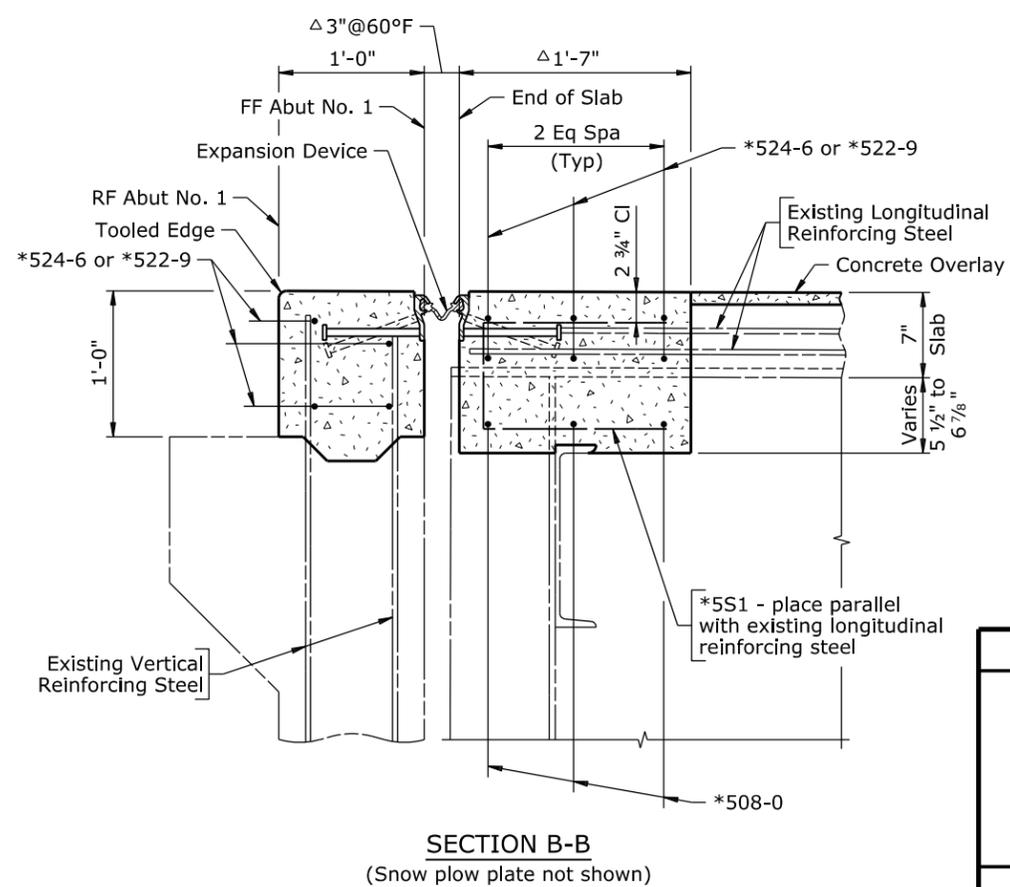
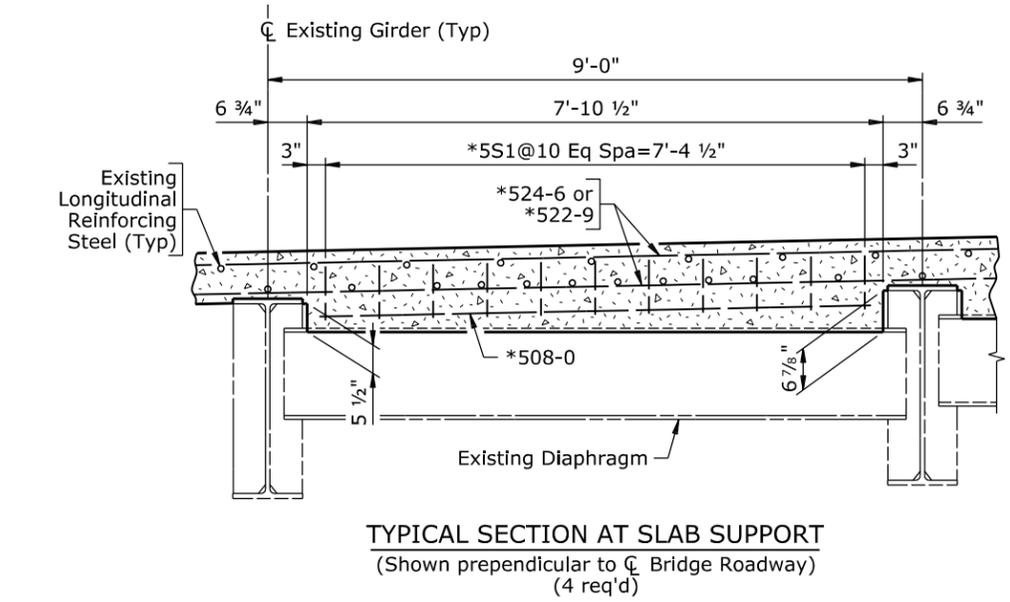
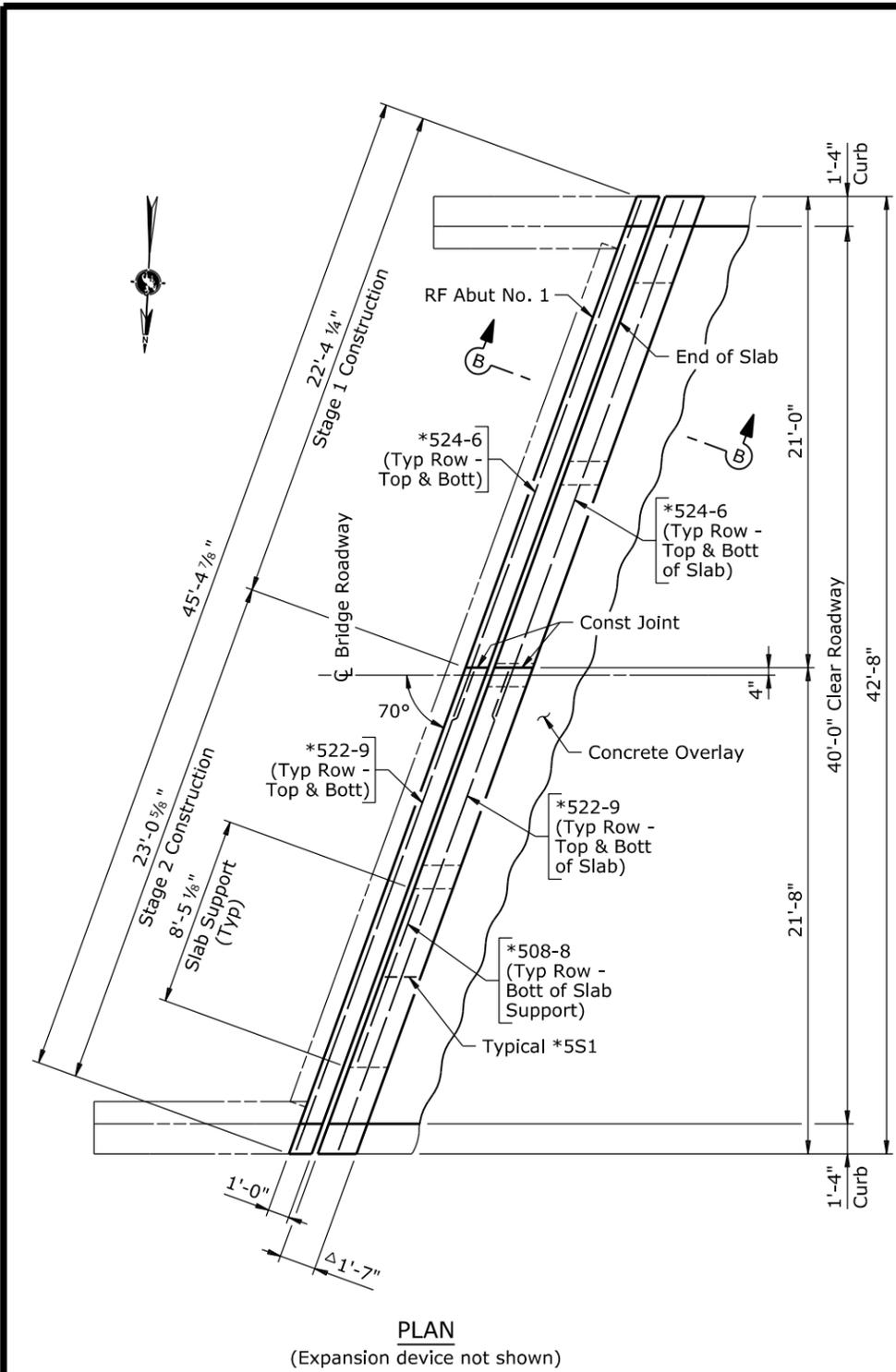
WYOMING DEPARTMENT OF TRANSPORTATION			
BRIDGE PROGRAM			
REVISIONS	EXPANSION JOINT DETAILS		
	BRIDGE REHABILITATION		
	STA 197+38		
	Cody - Greybull Cody East Section		
DESIGN		N311074 Pa	
DATE		Design Section L M Nop	
DETAIL		Drwg No. 0010 Sheet 3 of 15	
QTY'S		Pa	

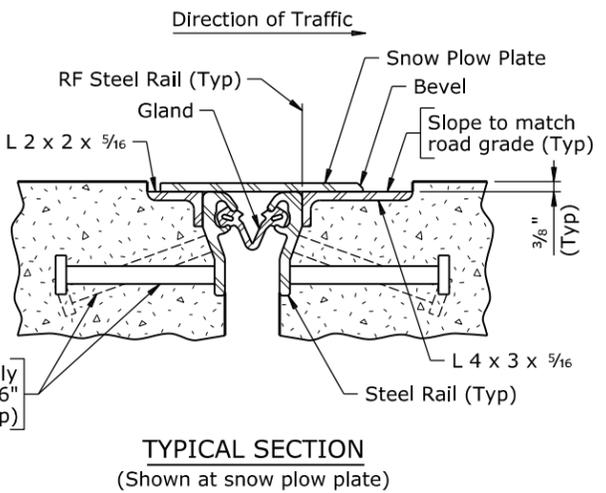
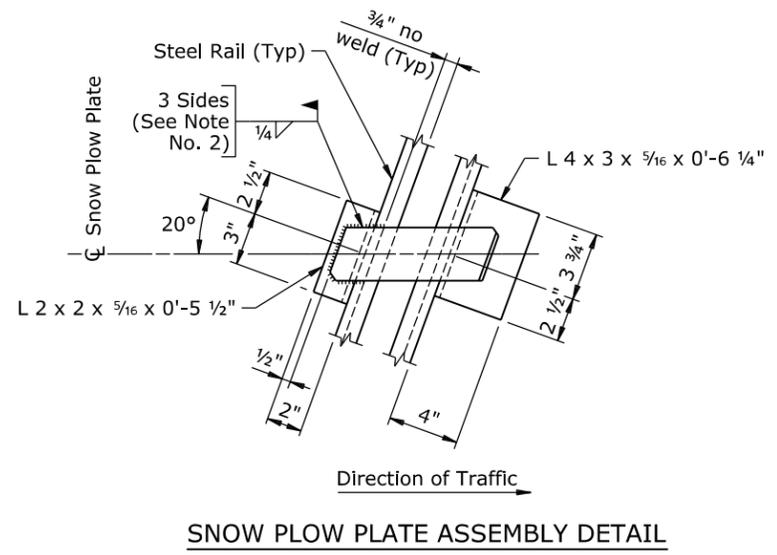
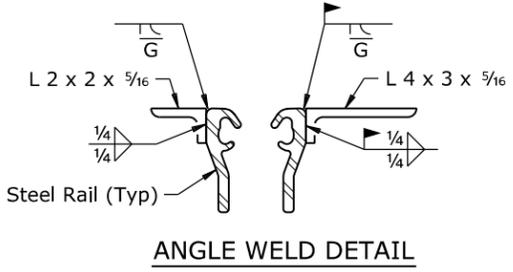
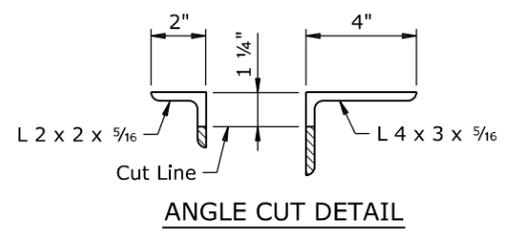
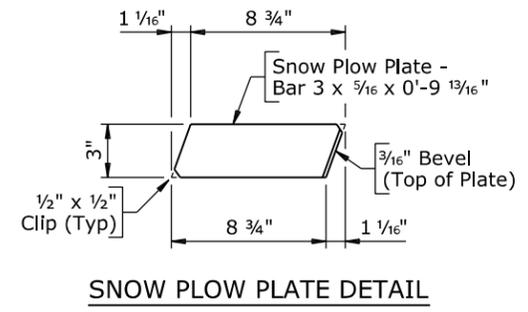
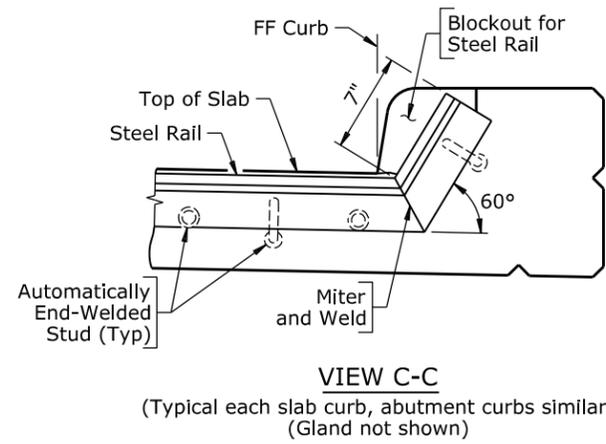
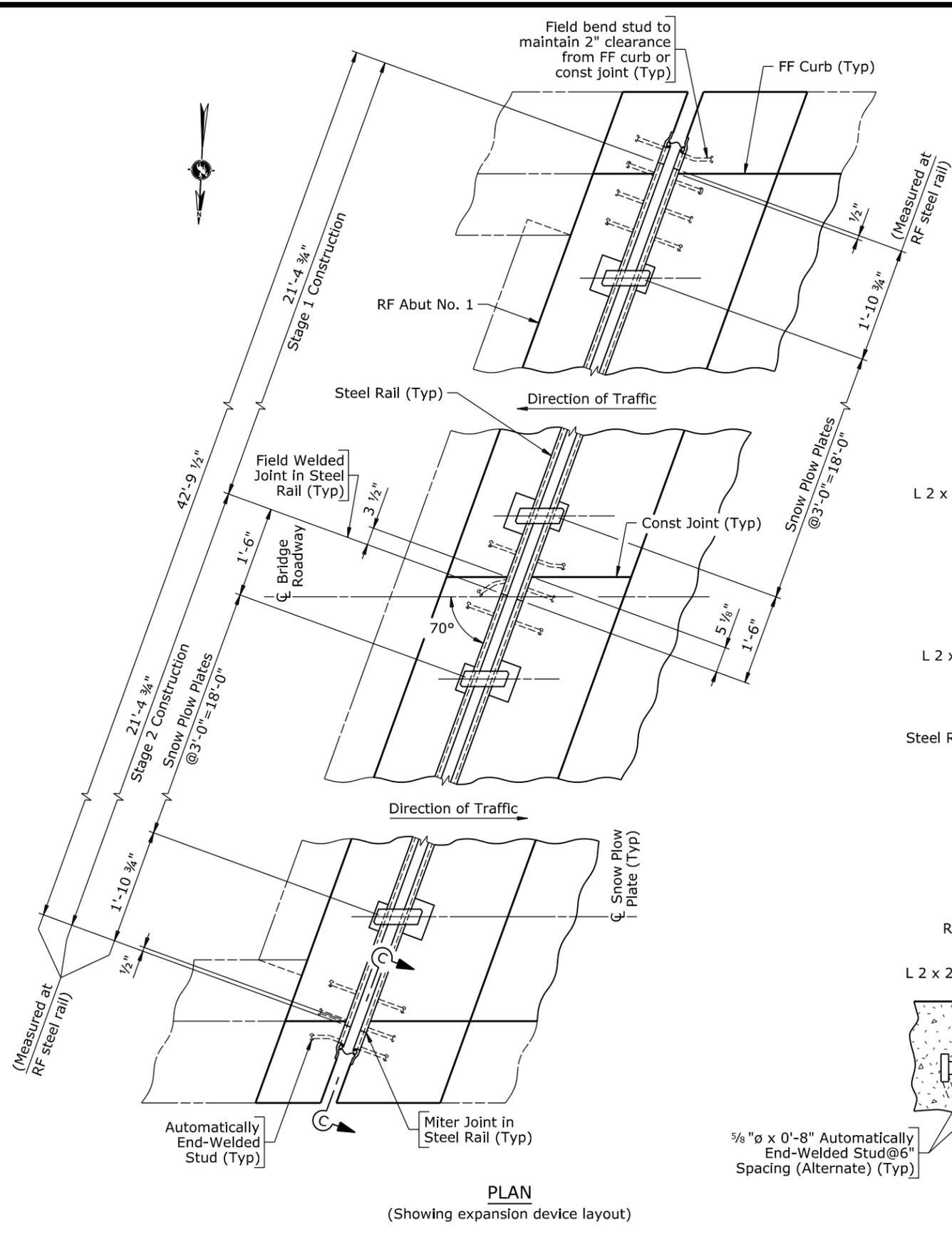
Section 4.22 - Preservation and Rehabilitation

BILL OF REINFORCEMENT			
Location	Mark	Number Required	
		Stage 1 Construction	Stage 2 Construction
Expansion Joint	*5S1	22	22
	*508-0	6	6
	*522-9		10
	*524-6	10	
	*Weight	*386 LB	*368 LB
Bending Diagram			
			

- Note:
- 1) Shift *5S1 spacing, as necessary, to miss automatically end-welded studs.
 - 2) Increase the opening between front face abutment and end of slab $\frac{1}{16}$ " for each 10° F below 60° F and decrease the opening $\frac{1}{16}$ " for each 10° F above 60° F. Account for variance in slab forming.
 - 3) Construct new curbs to match the existing curbs.
 - 4) Ensure the reinforcing steel fabricator prefixes expansion joint bar marks with numeral 1 for stage 1 construction and numeral 2 for stage 2 construction.
 - 5) The estimated quantity of class A concrete for the expansion joint is 2.2 CY for stage 1 construction and 2.4 CY for stage 2 construction.

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
EXPANSION JOINT DETAILS			
BRIDGE REHABILITATION			
STA 197+38 Cody - Greybull Cody East Section			
N311074		Pa	
APPROVED	DESIGN	Design Section L M Nop	
DATE	DETAIL	Drwg No. 0010	Sheet 4 of 15
	QTY'S	BBB ✓ EEE ✓	

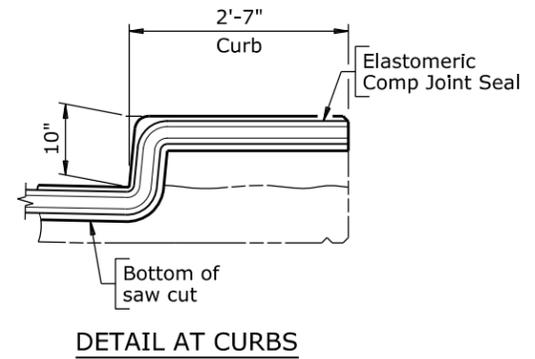
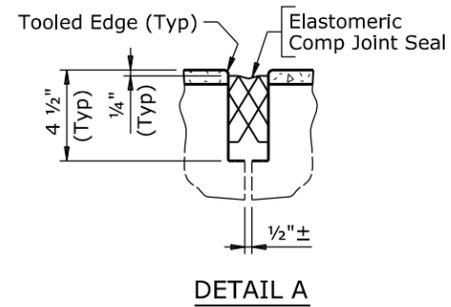
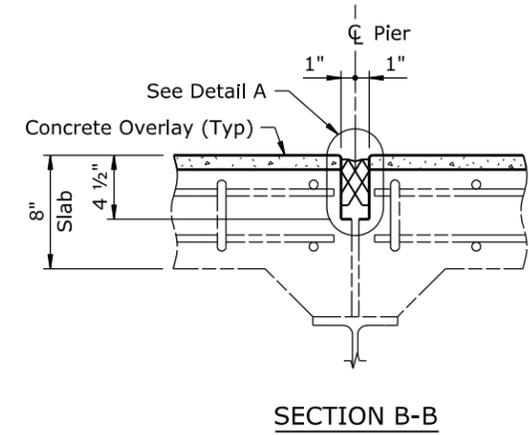
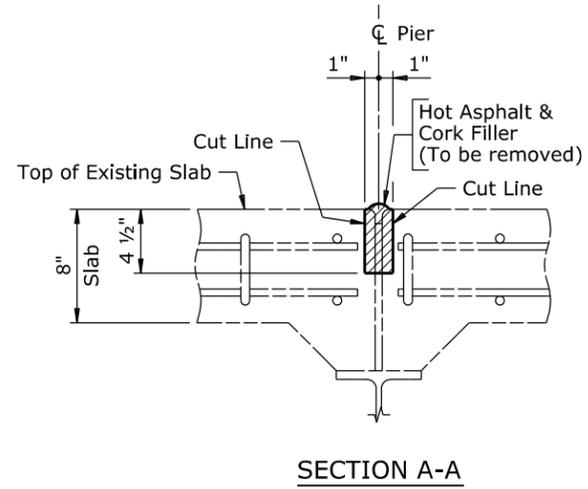
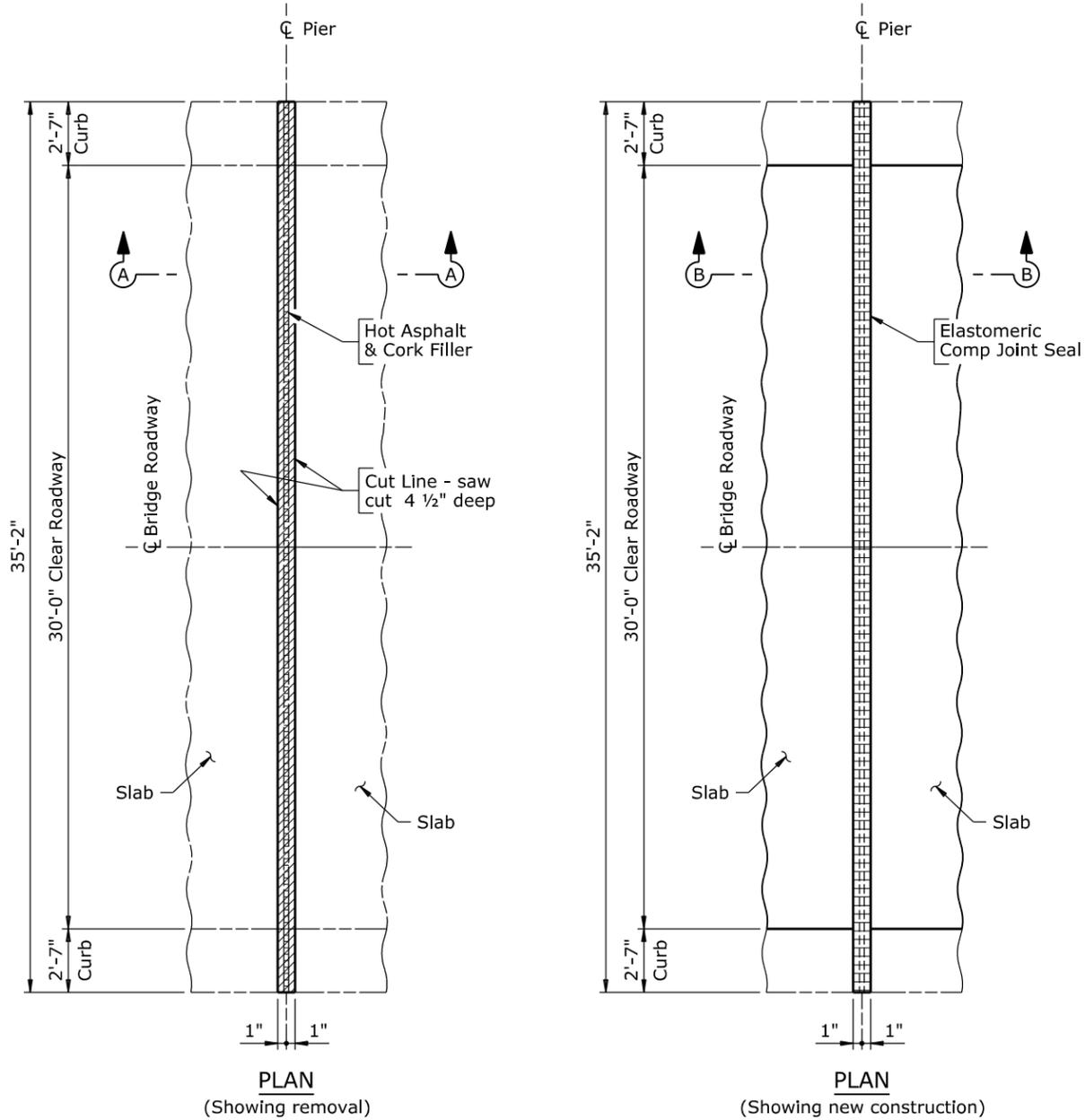




Note: 1) Ensure the expansion device fabricator includes additional length in the steel rails to account for grade, slope and variances in actual conditions. Field cut steel rails for proper fit in accordance with the fabricator's recommendations.
2) Do not warp snow plow plates or damage gland during welding. Do not exceed 150° F preheat temperature.

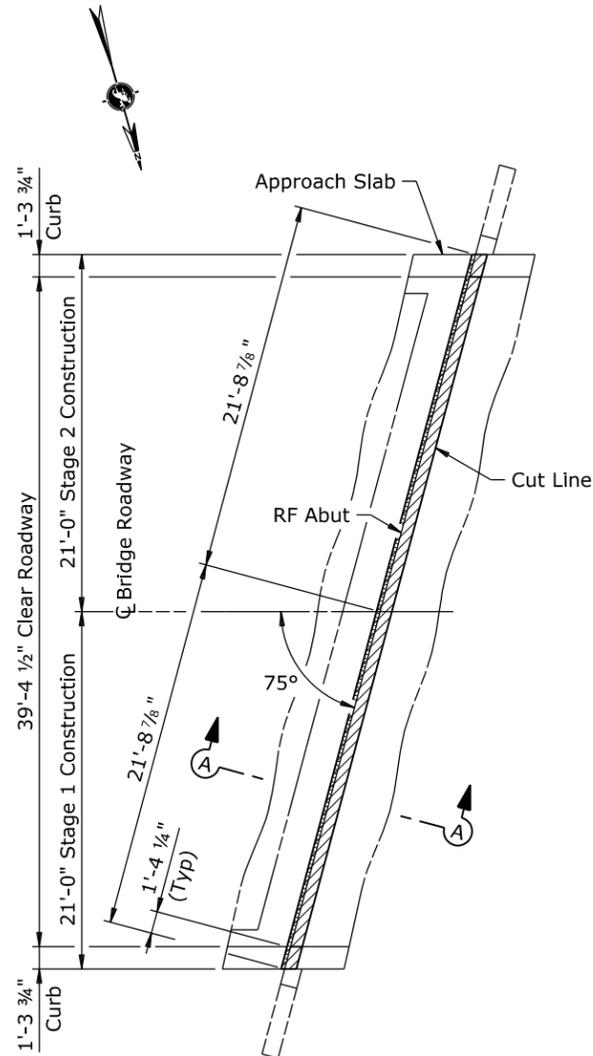
ABUTMENT NO. 1

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
EXPANSION JOINT DETAILS			
BRIDGE REHABILITATION			
STA 197+38 Cody - Greybull Cody East Section			
N311074			Pa
APPROVED	DESIGN	Design Section L M Nop	
DATE	DETAIL	CCC ✓ AAA	Drwg No. 0010 Sheet 5 of 15
	QTY'S	BBB ✓ EEE	

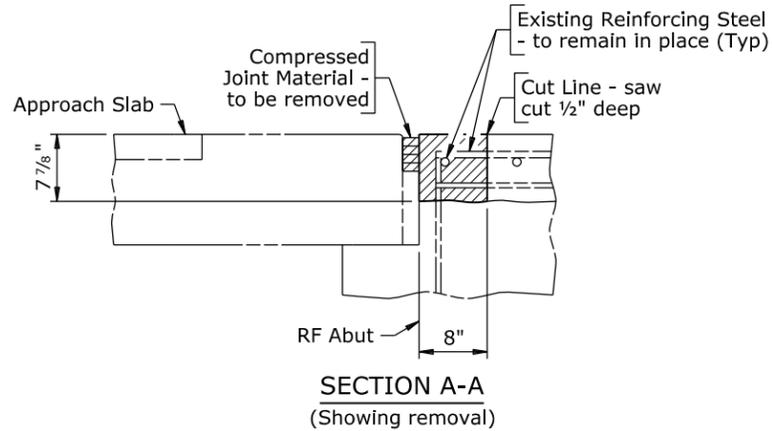


LITTLE GOOSE CREEK
 PIERS NO. 1 & 2

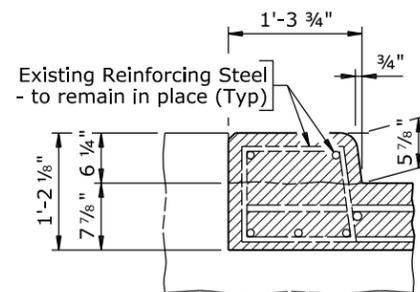
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS	JOINT DETAILS		
	BRIDGE REHABILITATION		
	VARIOUS LOCATIONS		
		District 4	
	B164018	Various	
DESIGN	____/____/____	Design Section	Z
DETAIL	Z/____/____	Drwg No.	Z
QTY'S	Z/____/____	Sheet	11 of 40



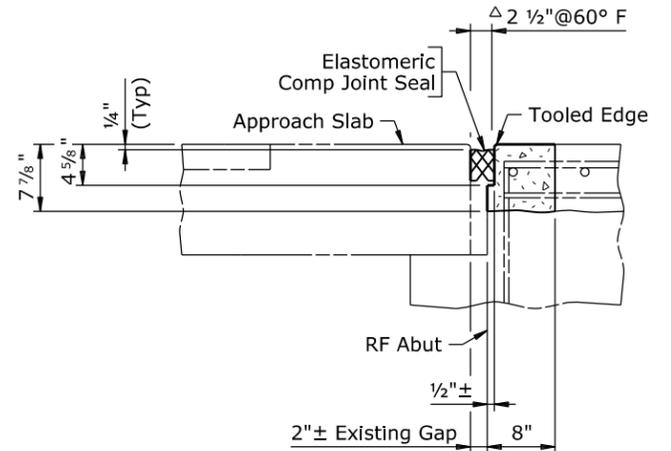
PLAN
(Abut No. 1 shown, Abut No. 2 similar)
(Showing removal, new construction similar)



SECTION A-A
(Showing removal)



SECTION AT CURBS
(Showing removal, new construction similar)

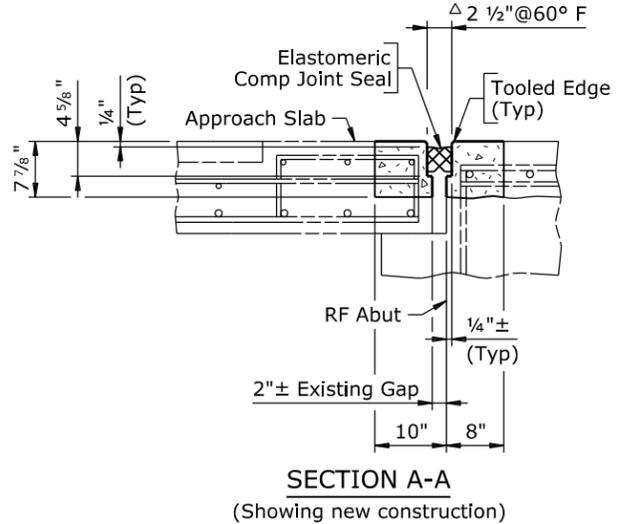
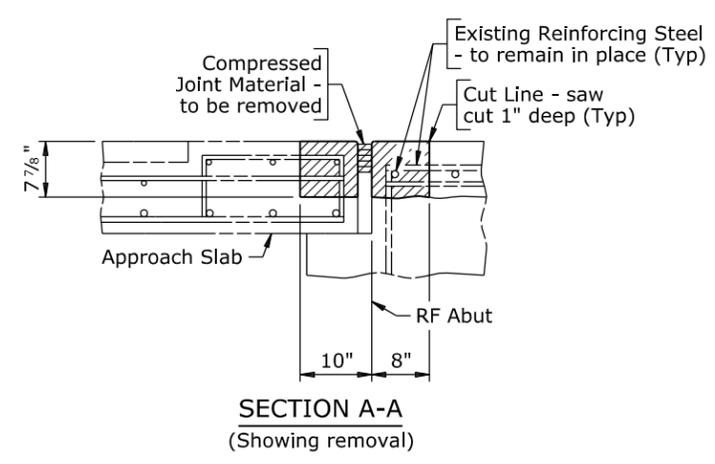
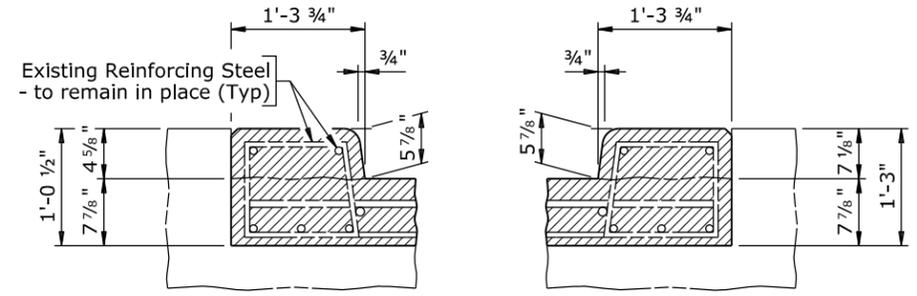
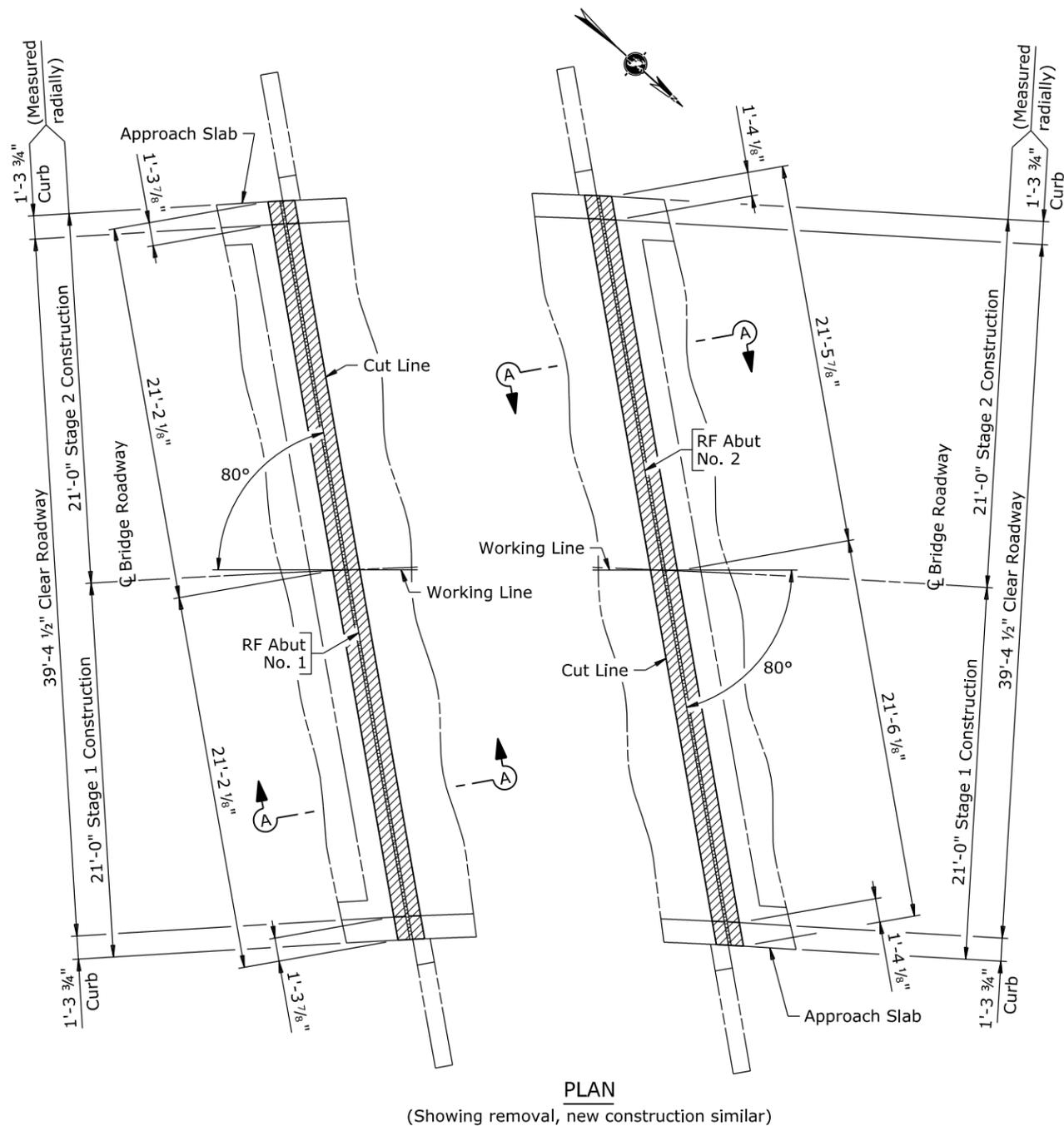


SECTION A-A
(Showing new construction)

- Note: Δ 1) Increase the opening between rear face abutment and approach slab $1/16$ " for each 20° F below 60° F and decrease the opening $1/16$ " for each 20° F above 60° F.
 2) Extend elastomeric compression joint seal up front face and across top of curbs.
 3) The estimated quantity of class A concrete for the joint modification is 0.8 CY for stage 1 construction and 0.8 CY for stage 2 construction.

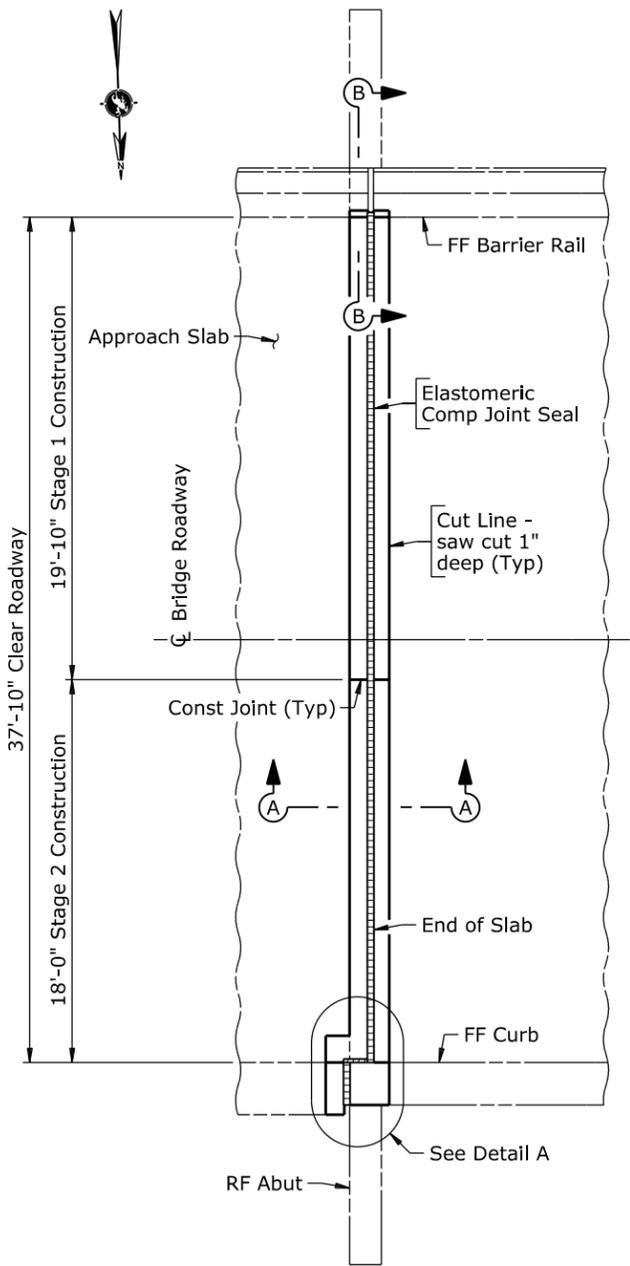
STRUCTURE NO. JIP

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS	JOINT DETAILS		
	BRIDGE REHABILITATION		
	VARIOUS LOCATIONS		
	District 5		
	B175020	Multiple Co.	
DESIGN	✓	Design Section	Y
DETAIL	Y ✓ Y	Drwg No. Y	Sheet 20 of 95
APPROVAL	Y ✓ Y		

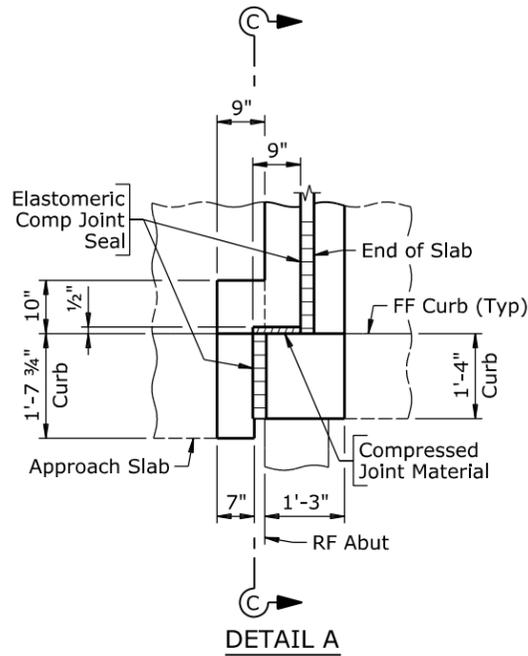


- Note: Δ 1) Increase the opening between rear face abutment and approach slab 1/16" for each 20° F below 60° F and decrease the opening 1/16" for each 20° F above 60° F.
 2) Extend elastomeric compression joint seal up front face and across top of curbs.
 3) The estimated quantity of class A concrete for the joint modification is 1.5 CY for stage 1 construction and 1.5 CY for stage 2 construction.

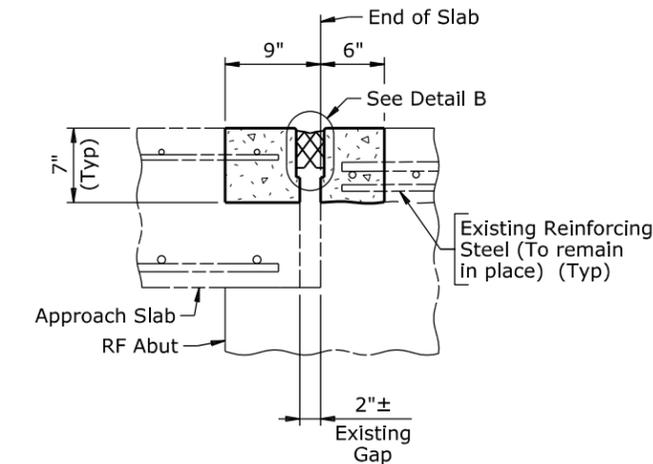
STRUCTURE NO. JIV			
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS	JOINT DETAILS		
	BRIDGE REHABILITATION		
	VARIOUS LOCATIONS		
	District 5		
	B175020	Multiple Co.	
REVIEW	DESIGN	Design Section	Y
APPROVAL	DETAIL	Drwg No. Y	Sheet 26 of 95
	QTY'S		



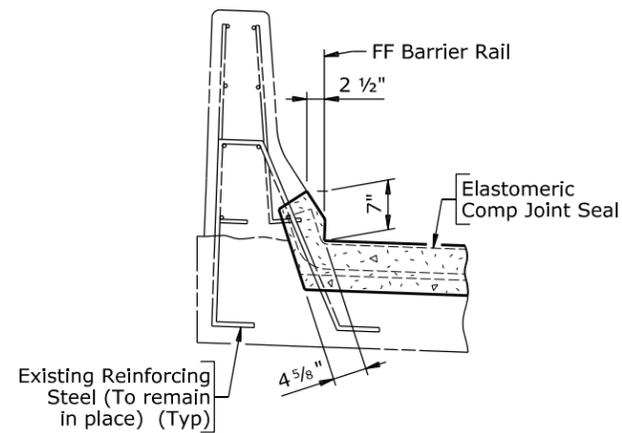
PLAN
 (Abut No. 1 shown, Abut No. 2 similar)
 (New construction shown, removal similar)



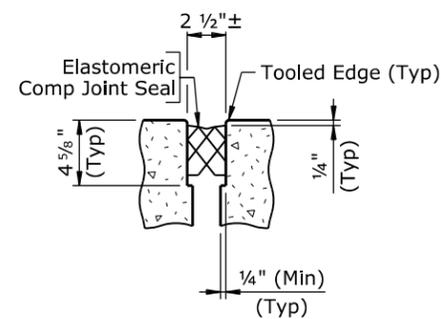
DETAIL A



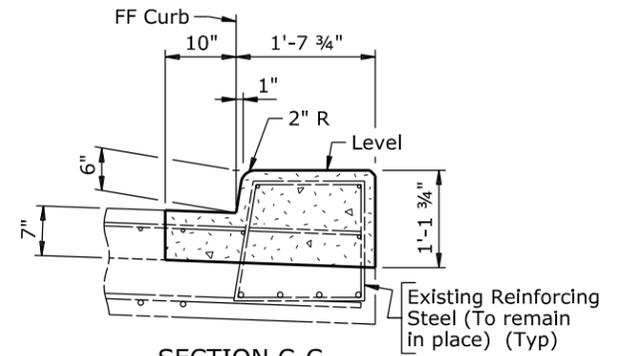
SECTION A-A



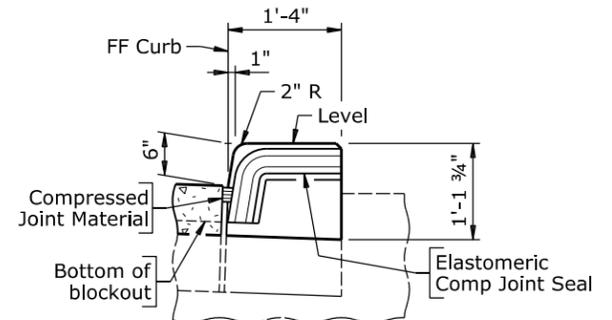
SECTION B-B
 (Approach slab shown, bridge slab similar)



DETAIL B
 (Typical at curb)



SECTION C-C
 (Showing approach slab)

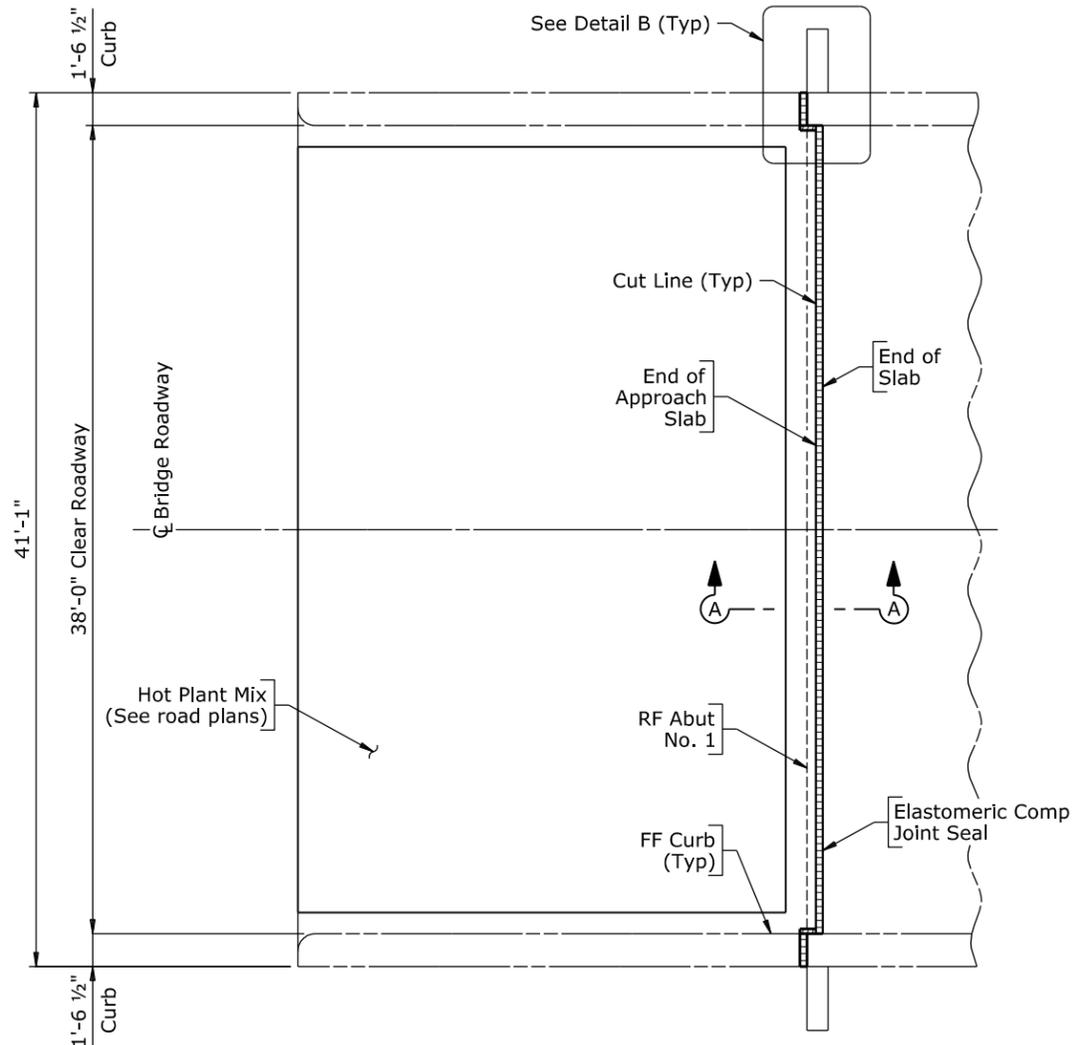


VIEW C-C
 (Showing end of bridge curb)

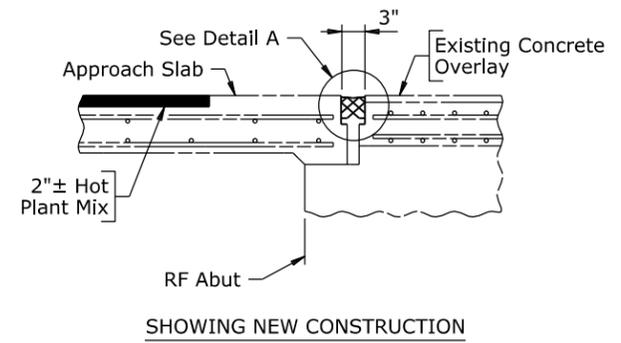
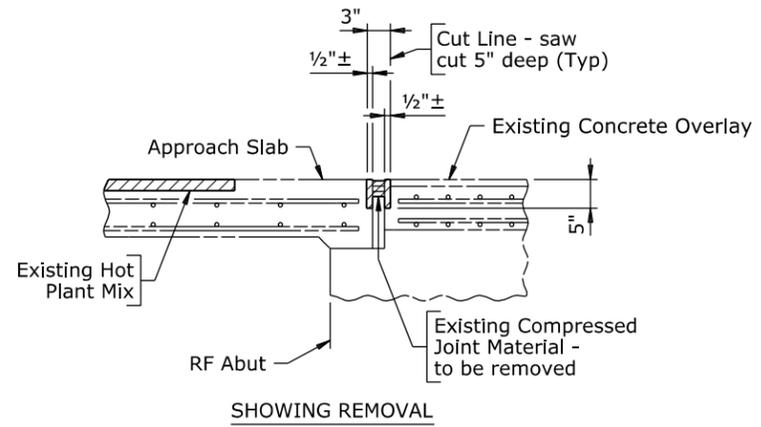
Note: 1) Gap width adjustment for temperature is not required.
 2) The estimated quantity of class A concrete required for the joint modifications at this location is as follows:
 Stage 1 Construction ---- 1.0 CY
 Stage 2 Construction ---- 1.2 CY

ML80D, RM 4.51

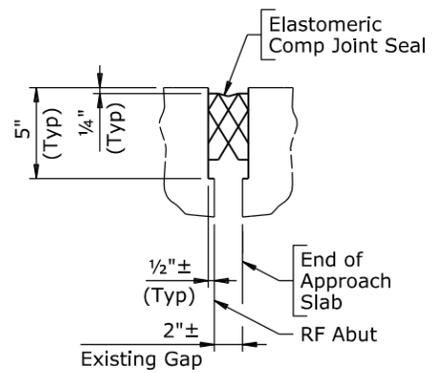
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS		JOINT DETAILS	
		BRIDGE REHABILITATION	
		VARIOUS LOCATIONS	
		District 3	
		B183012	UI
DESIGN	Q	Design Section	Q
DETAIL	Q	Drwg No.	Q
APPROVAL	Q	Sheet	27 of 50



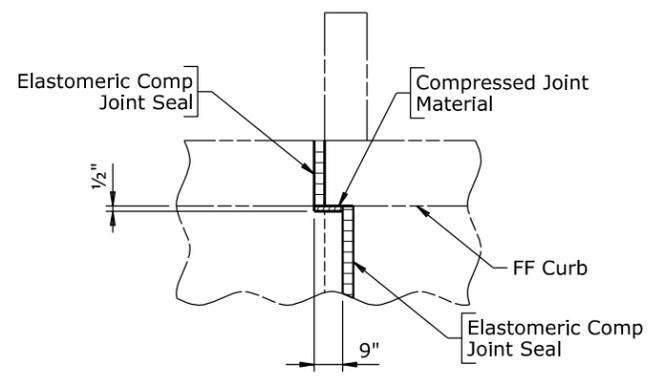
PLAN
(Showing new construction)
(Abut No. 1 shown, Abut No. 2 similar)



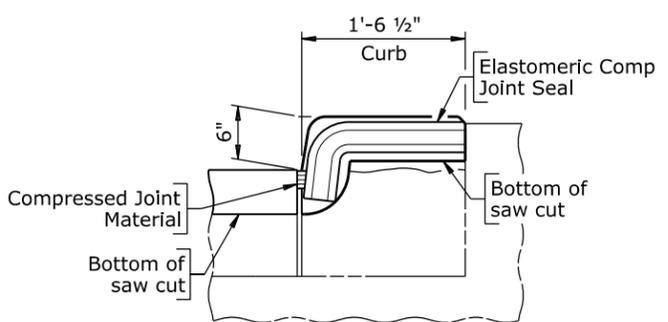
SECTION A-A



DETAIL A
(Typical at curbs)



DETAIL B



DETAIL AT CURBS

Note: Gap width adjustment for temperature is not required.

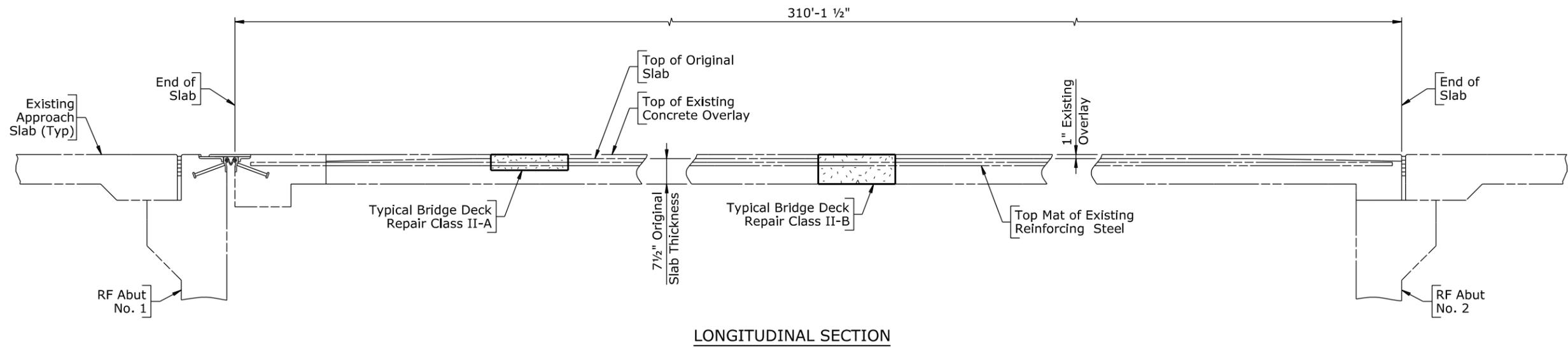
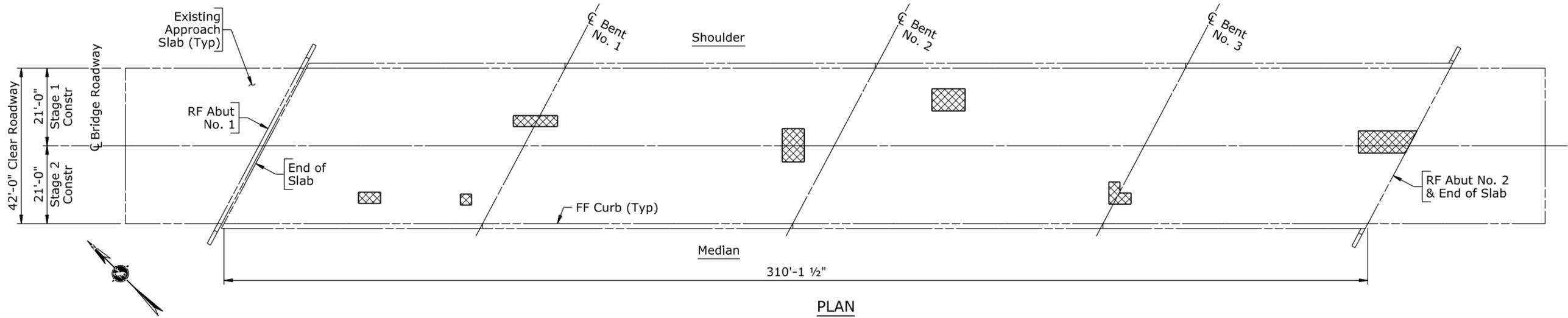
RM 187.20

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
JOINT DETAILS			
BRIDGE REHABILITATION			
VARIOUS LOCATIONS			
Rawlins - Creston Jct (WBL)			
I803145		Sw	
REVISIONS	DESIGN	Design Section	X
	DETAIL	Drwg No. X	Sheet 6 of 20
	QTY'S		

Nov 2018

4.22 - Example

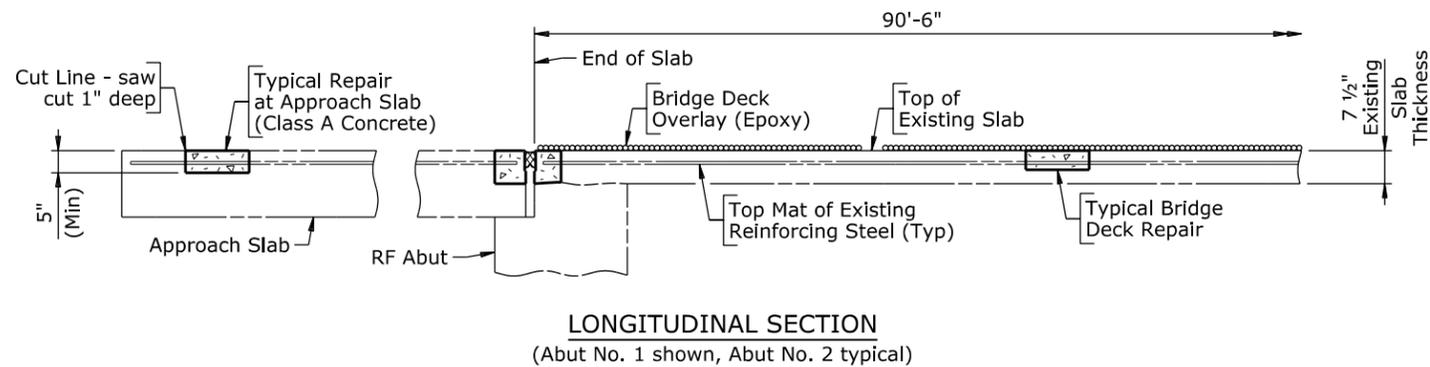
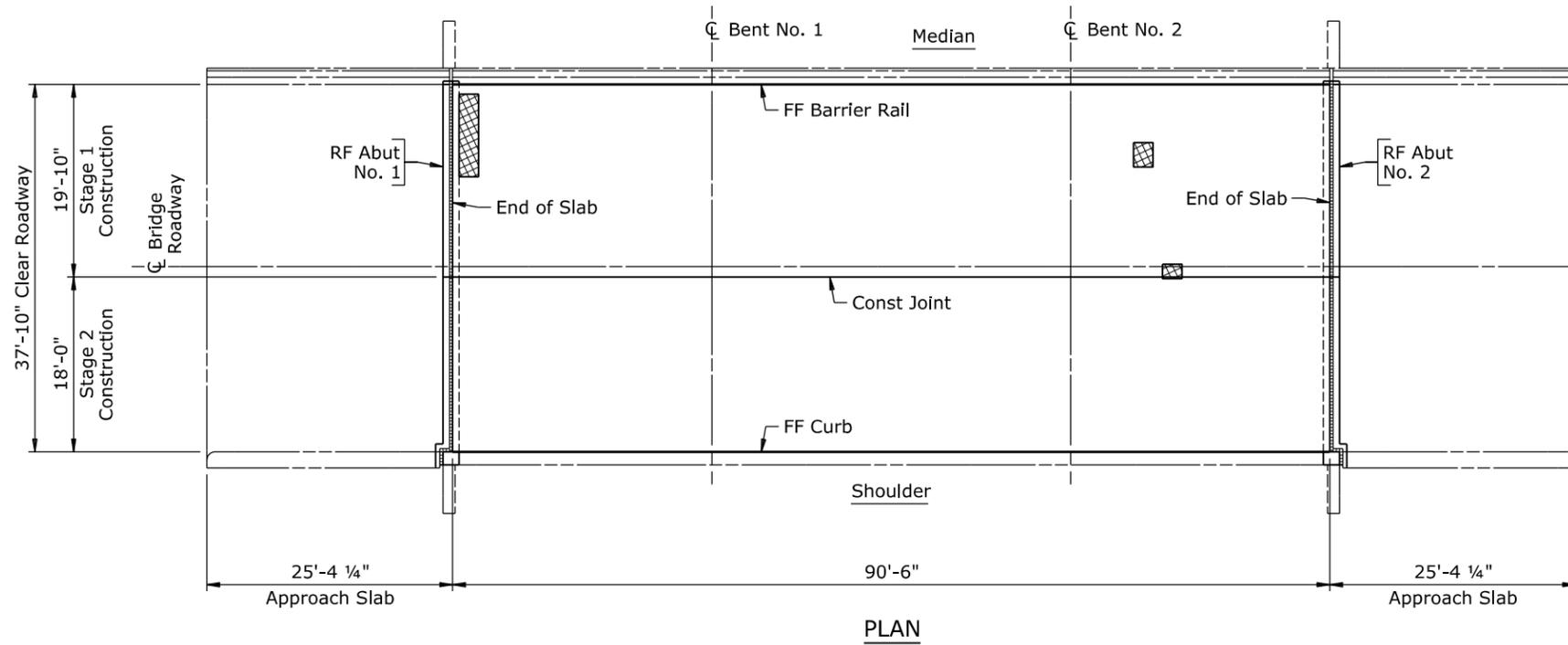
Wyo. Proj. B172014
 Sheet B7 of B228 Sheets



Note: 1) Cross-hatched areas indicate approximate locations of unsound concrete as determined by visual inspection and sounding performed in May 2016.
 2) The engineer will visually inspect and sound the deck to identify areas requiring class II-A or II-B repair. Estimated quantities have been included to secure unit bid prices.

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS		DECK REPAIR DETAILS	
		BRIDGE REHABILITATION	
		BSNF OVERPASS (NBL)	
		District 2	
		B172014	Co
DESIGN	JIM	BOB	Design Section U R Slackin
DETAIL	BBY	JOE	Drwg No. X
APPROVAL			Sheet 7 of 11

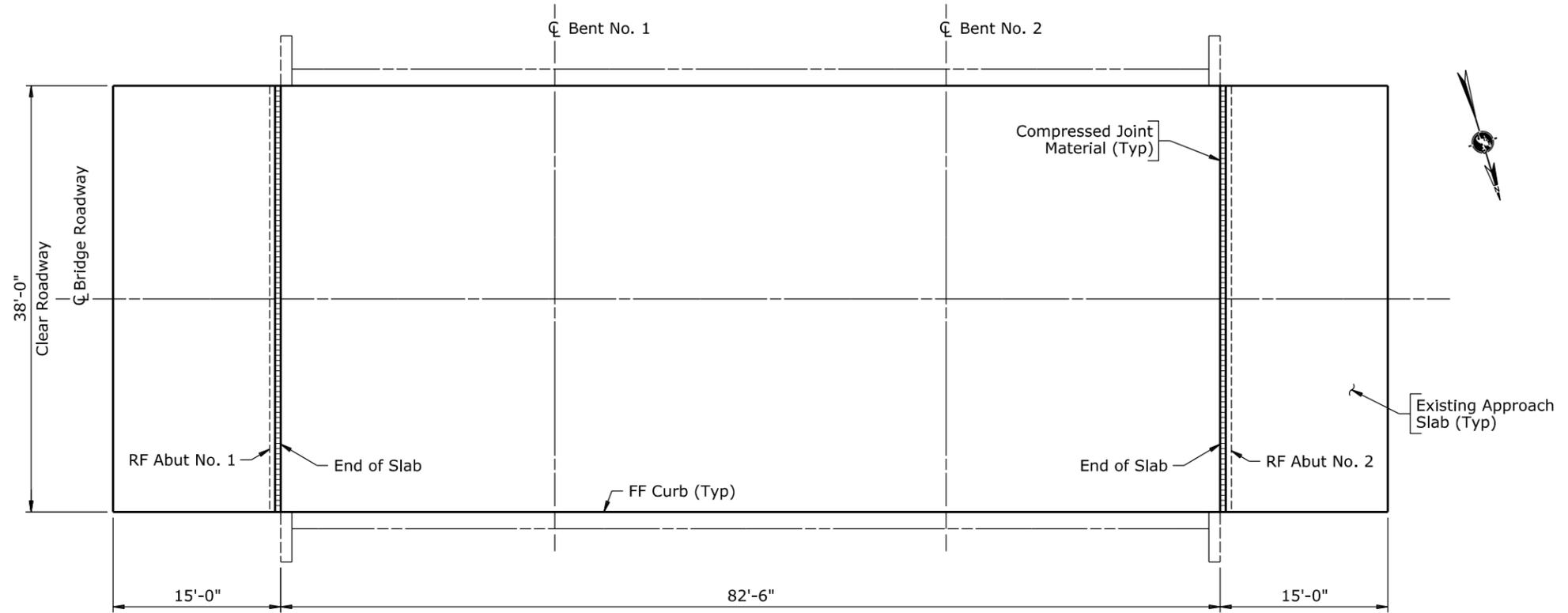
Section 4.22 - Preservation and Rehabilitation



- Note:
- 1) Cross-hatched areas indicate approximate locations of unsound concrete as determined by visual inspection and sounding performed in April 2014.
 - 2) The engineer will visually inspect and sound the bridge deck to identify areas requiring bridge deck repair. An estimated quantity has been included to secure a unit bid price.
 - 3) The engineer will visually inspect and sound the approach slabs to identify areas requiring repair. Estimated quantities of removal of concrete and class A concrete have been included to secure unit bid prices.
 - 4) Ensure the construction joint will not be in a wheel path of normal traffic flow. Location of the joint may be adjusted as approved by the engineer.
 - 5) Do not cover compression joint seals with epoxy overlay.

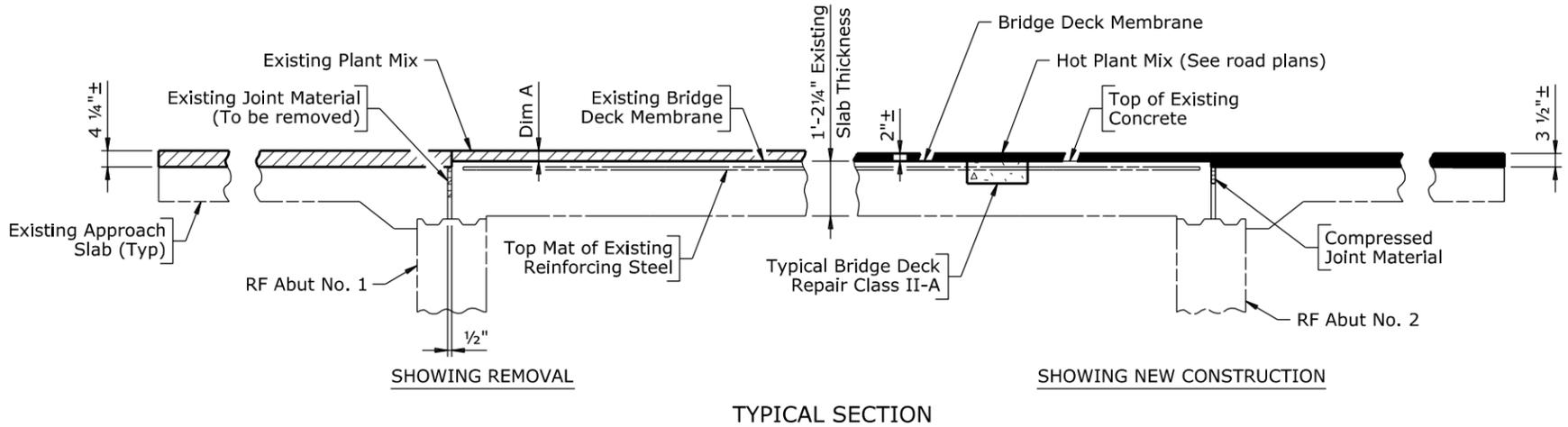
ML80D, RM 4.51

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS	RESURFACING DETAILS		
	BRIDGE REHABILITATION		
	VARIOUS LOCATIONS		
	District 3		
	B183012	UI	
REVIEW _____	DESIGN _____	Design Section	X
APPROVAL _____	DETAIL X ✓ X	Drwg No. X	Sheet 28 of 51
	QTY'S X ✓ X		



PLAN

TABLE OF DIMENSIONS	
Structure No.	Dimension A
AUI	2 3/4"±
AUJ	3 1/2"±
AUM	3 1/2"±
AUN	3"±

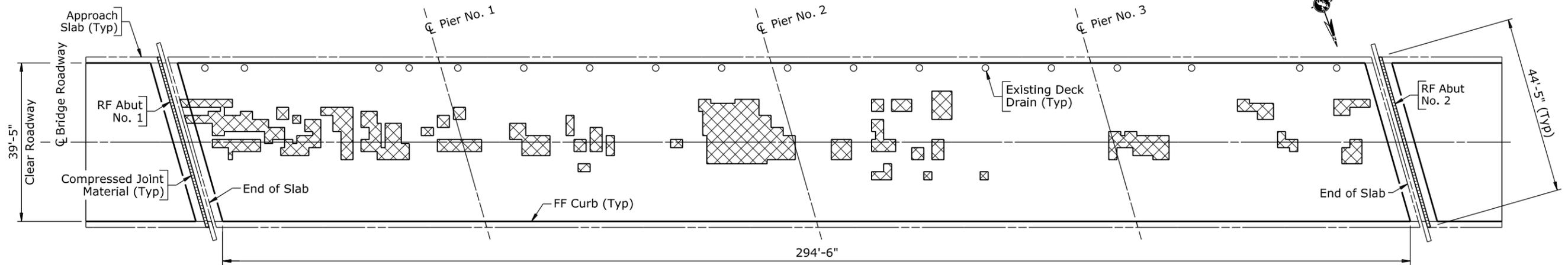


TYPICAL SECTION

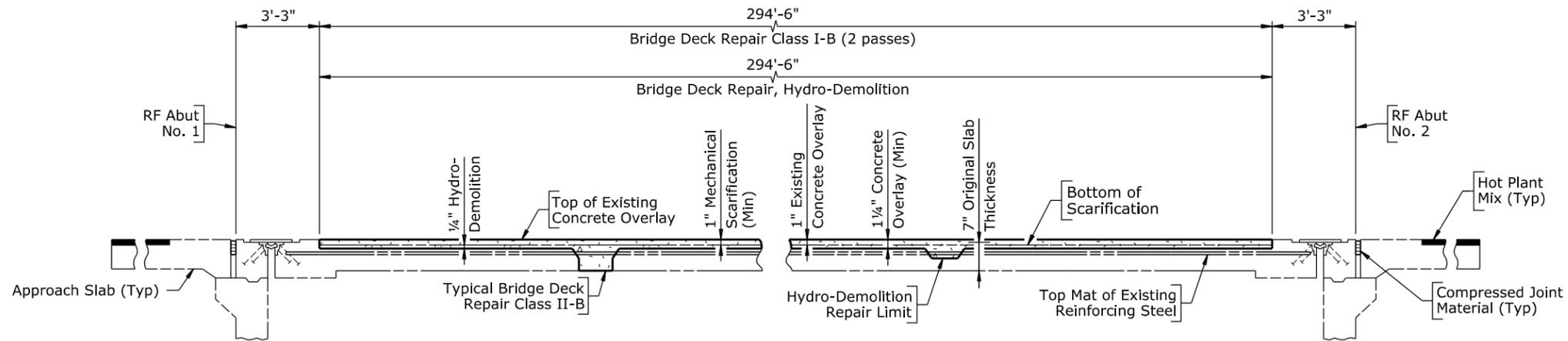
Note: 1) After the bridge deck membrane is removed, the engineer will visually inspect and sound the deck to identify areas requiring class II-A repair. An estimated quantity has been included to secure a unit bid price.
2) Extend the bridge deck membrane up front face of curbs 2".

FORT STEELE INTERCHANGE (EBL & WBL)
MACHINERY PASS (EBL & WBL)

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS		RESURFACING DETAILS	
		BRIDGE REHABILITATION VARIOUS LOCATIONS Rawlins - Walcott Junction Fort Steele Section	
		I804260	Cb
DESIGN	_____	Design Section	X
DETAIL	X ✓ X	Drwg No. X	Sheet 3 of 6
QTY'S	X ✓ X		



PLAN

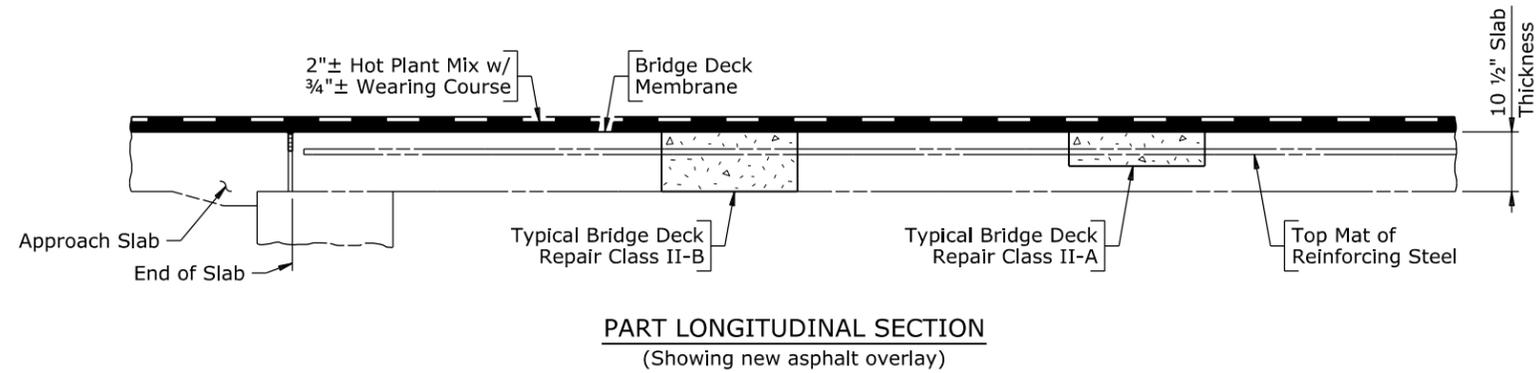
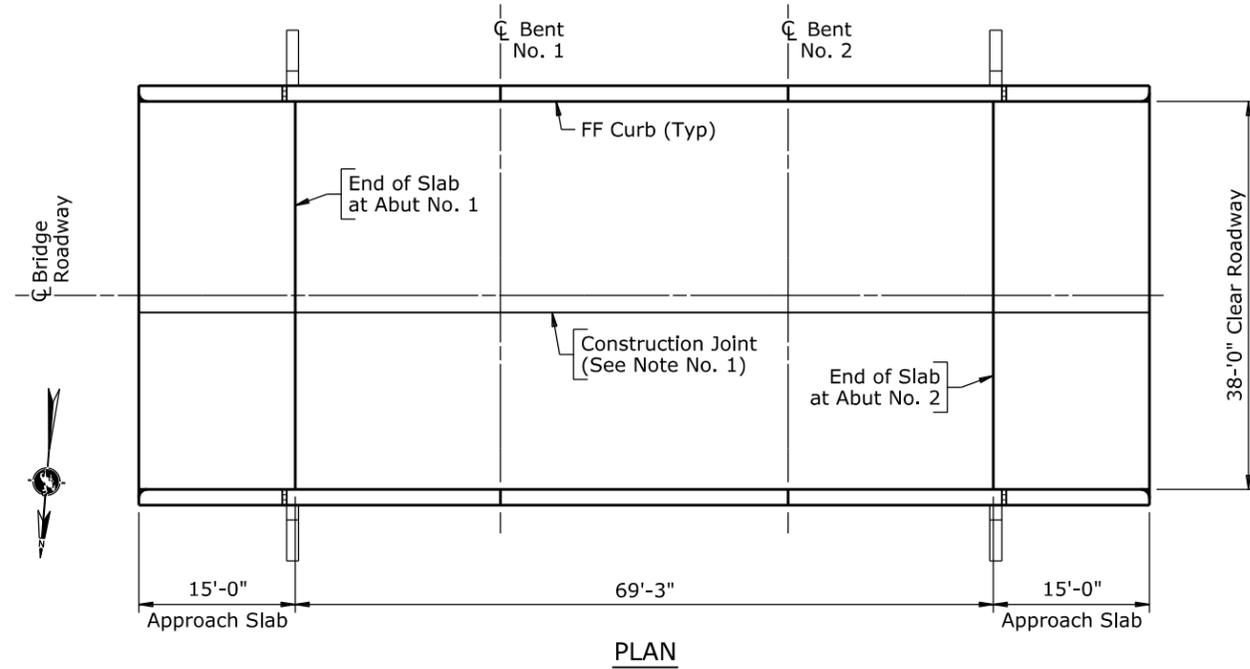


LONGITUDINAL SECTION

- Note:**
- 1) Cross-hatched areas indicate approximate locations of unsound concrete as determined by visual inspection and sounding performed in July 2016.
 - 2) Completely remove the existing modified concrete overlay using class I-B scarification. After scarification, use hydro-demolition to remove an additional 1/4" of the original bridge deck and unsound concrete up to one-half the original deck thickness.
 - 3) After hydro-demolition operations are complete, the engineer will visually inspect and sound the deck to identify areas requiring additional repair. An estimated quantity of class II-B repair has been included to secure a unit bid price.
 - 4) Bridge railing may be temporarily removed to place screed rails during resurfacing. If rails are removed from the posts, use new rail bolt assemblies for reinstallation. For Rail Bolt Detail, see Sheet No. X.
 - 5) The engineer will provide assistance in setting screed rails to obtain the correct elevations.
 - 6) Extend compression joint material up front face and across the top of curbs. Curb height is 6".
 - 7) Do not plug deck drains.

BRIDGE OVER NORTH PLATTE RIVER (EBL)

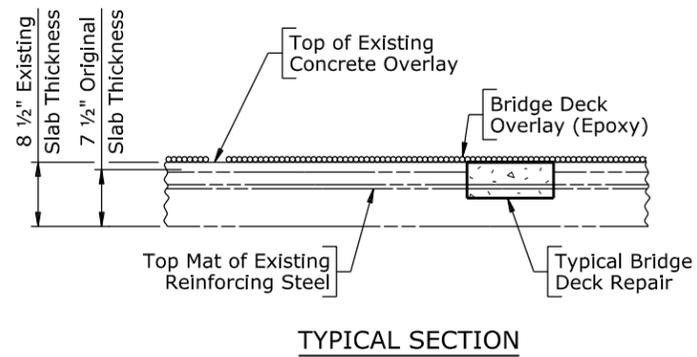
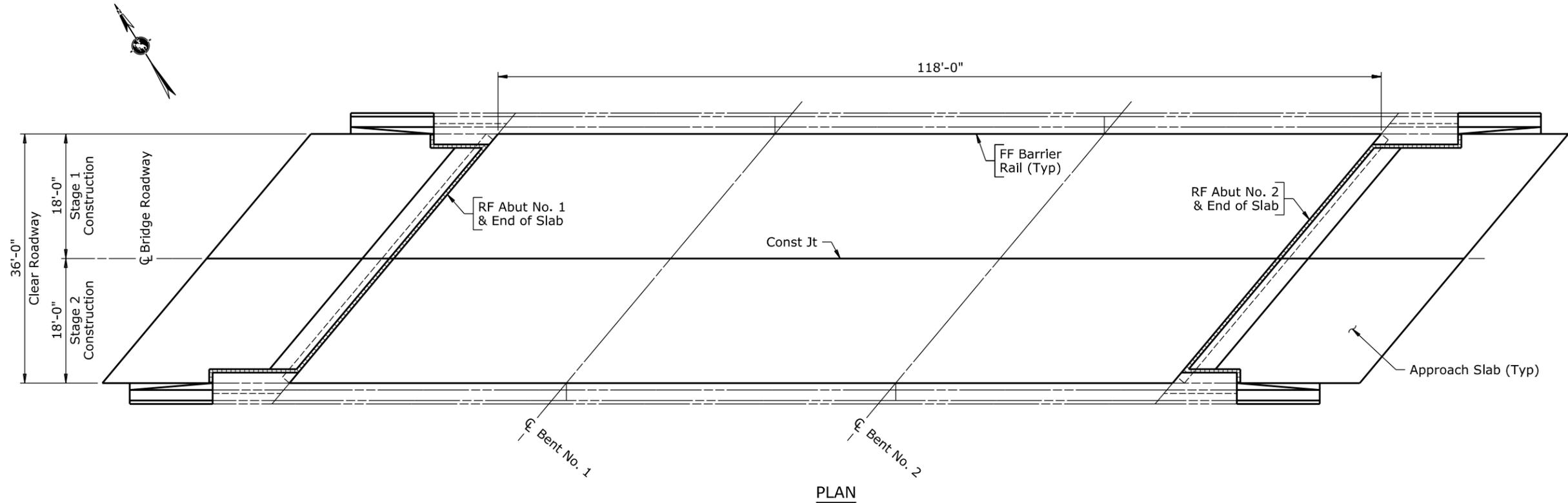
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
RESURFACING DETAILS			
BRIDGE REHABILITATION			
VARIOUS LOCATIONS			
Rawlins - Walcott Junction			
Fort Steele Section			
I804260			Cb
REVISIONS	DESIGN	Design Section	X
	DETAIL	Drwg No. X	Sheet 5 of 6
	QTY'S		



- Note: 1) Place joint for two stage construction as necessary to accommodate single-lane traffic during construction and as approved by the engineer.
 2) After removal of existing plant mix, the engineer will inspect and sound the bridge deck to identify areas requiring class II-A or II-B repairs. Estimated quantities have been included to secure unit bid prices.
 3) Extend the bridge deck membrane up front face of curbs 2 3/4".

STRUCTURES NO. AYN, AYO, AYP & AYQ

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS	RESURFACING DETAILS		
	STRUCTURE REHABILITATION VARIOUS LOCATIONS		
	I-80 Otto Road Section		
1806200		La	
DESIGN	_____	Design Section	X
DETAIL	X ✓ X	Drwg No. X	Sheet 9 of 12
QTY'S	X ✓ X		



- Note: 1) The engineer will visually inspect and sound the deck to identify areas requiring bridge deck repair. An estimated quantity has been included to secure a unit bid price.
 2) Do not cover compressed joint material at approach slabs with epoxy overlay.

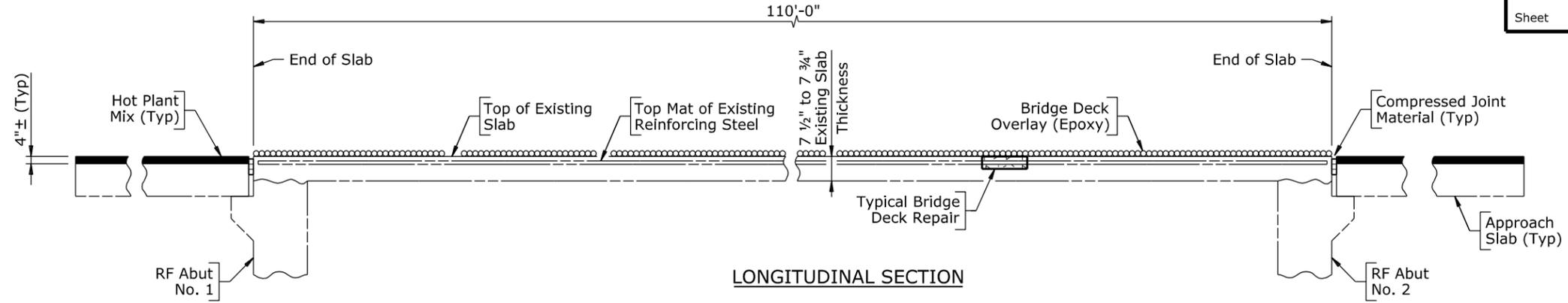
STRUCTURE NO. FDY

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS	RESURFACING DETAILS		
	BRIDGE REHABILITATION		
	VARIOUS LOCATIONS		
	Lusk - Van Tassell		
	East Section		
	N403008		Ni
DESIGN	_____	Design Section	X
DETAIL	X ✓ X	Drwg No. X	Sheet 10 of 22
QTY'S	X ✓ X		

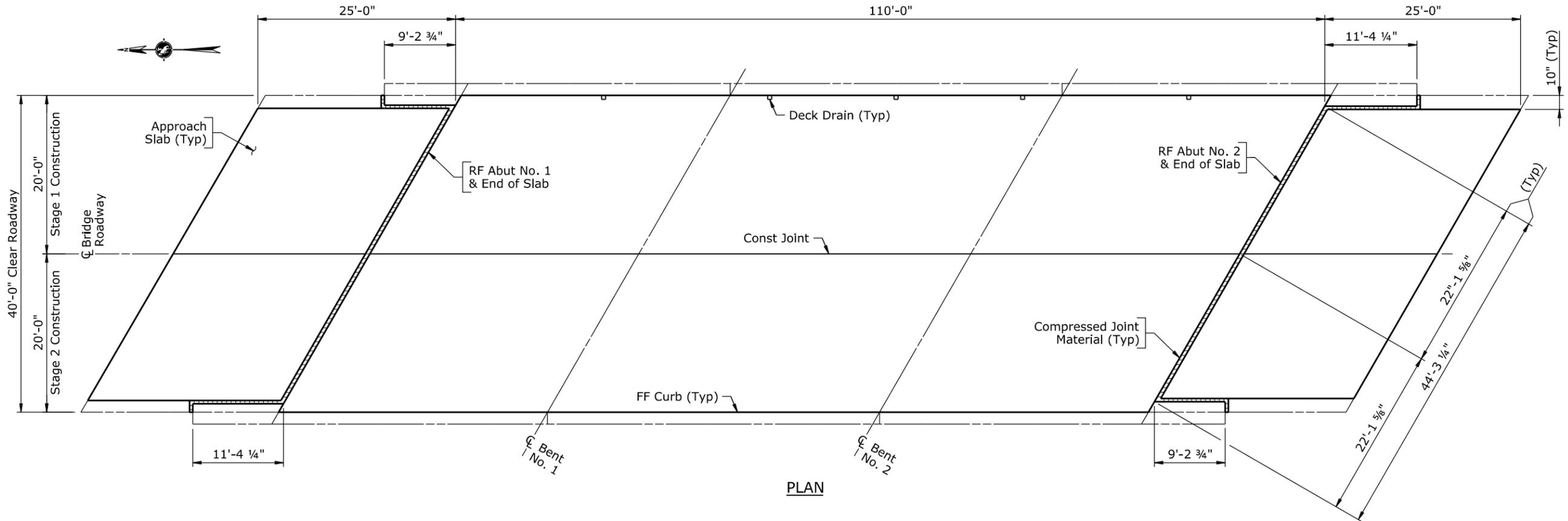
Nov 2018

4.22 - Example

Wyo. Proj. P111012
 Sheet B6 of B13 Sheets



LONGITUDINAL SECTION



PLAN

BRIDGE OVER LITTLE MUDDY CREEK

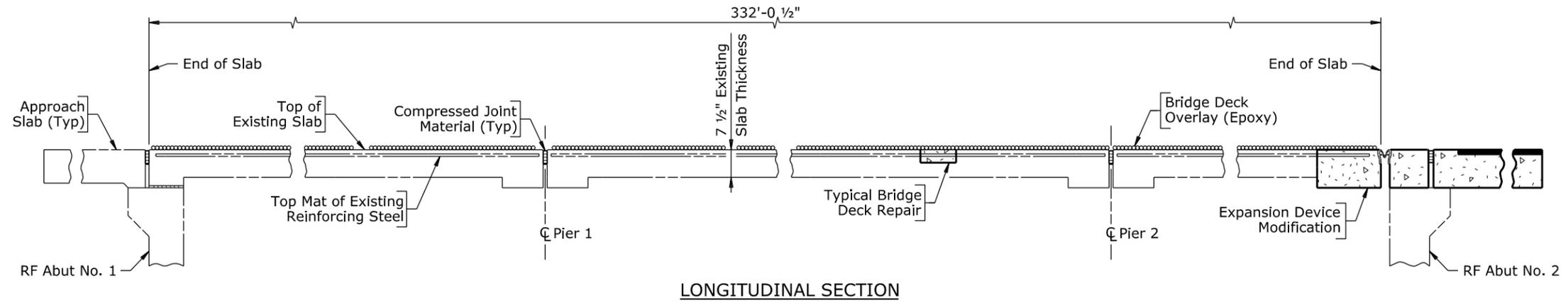
WYOMING DEPARTMENT OF TRANSPORTATION			
BRIDGE PROGRAM			
REVISIONS	RESURFACING DETAILS		
	BRIDGE REHABILITATION		
	VARIOUS LOCATIONS		
Lazear Junction-Kemmerer			
Cumberland South			
P111012		Ln & UI	
DESIGN	_____	Design Section	X
DETAIL	X ✓ X	Drwg No. X	Sheet 6 of 6
QTY'S	X ✓ X		

Note: 1) The engineer will visually inspect and sound the deck to identify areas requiring bridge deck repair. An estimated quantity has been included to secure a bid price.
 2) Do not cover compressed joint material or plug deck drains with epoxy overlay.

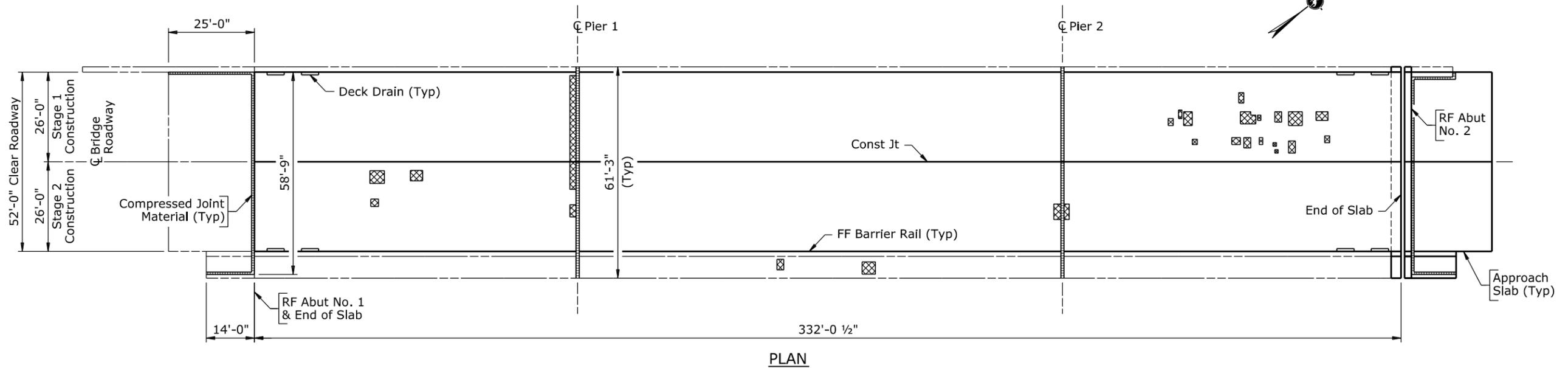
Section 4.22 - Preservation and Rehabilitation

Nov 2018

4.22 - Example



LONGITUDINAL SECTION



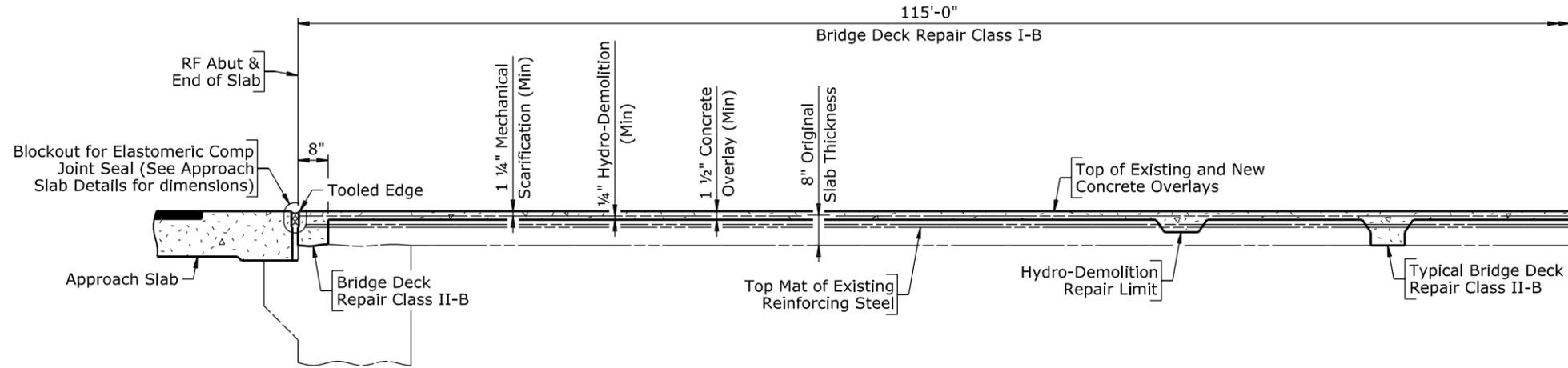
PLAN

STRUCTURE NO. EFE

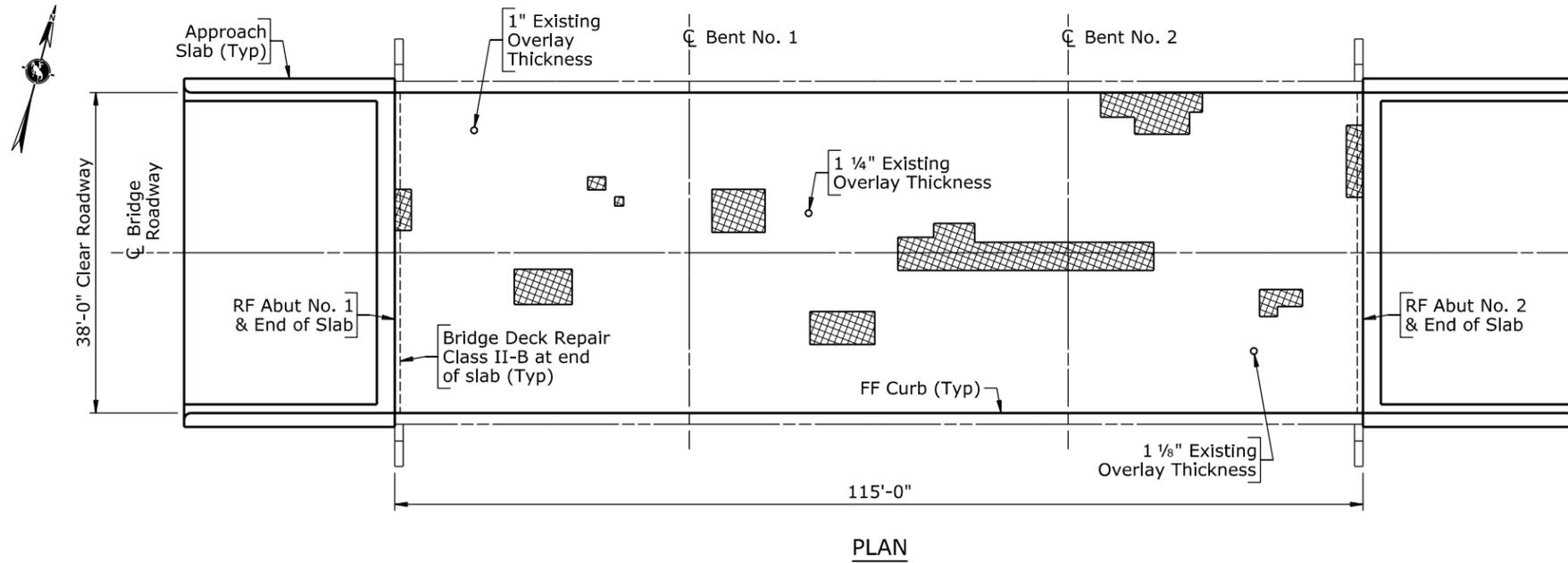
- Note: 1) Cross-hatched areas indicate approximate locations of unsound concrete as determined by visual inspection and sounding performed in May 2012.
 2) The engineer will visually inspect and sound the bridge deck and sidewalk to identify areas requiring bridge deck repair. An estimated quantity has been included to a secure unit bid price.
 2) Place compressed joint material through concrete barrier.
 3) Do not cover compressed joint material or plug deck drains with epoxy overlay.

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
RESURFACING DETAILS			
BRIDGE REHABILITATION			
VARIOUS LOCATIONS			
Kemmerer Streets			
US 189			
P112023		Ln	
REVISIONS	DESIGN	Design Section	X
	DETAIL	Drwg No. X	Sheet 20 of 22
	QTY'S		

Section 4.22 - Preservation and Rehabilitation



PART LONGITUDINAL SECTION
(Abut No. 1 shown, Abut No. 2 typical)



PLAN

- Note:**
- 1) Cross-hatched areas indicate approximate locations of unsound concrete as determined by visual inspection and sounding performed in August 2013.
 - 2) Completely remove the existing modified concrete overlay using class I-B scarification. After scarification, use hydro-demolition to remove an additional 1/4" of the original bridge deck and unsound concrete up to one-half the original deck thickness.
 - 3) After hydro-demolition operations are complete, the engineer will visually inspect and sound the deck to identify areas requiring additional repair. An estimated quantity of class II-B repair has been included to secure a unit bid price.
 - 4) Bridge railing may be temporarily removed to place screed rails during resurfacing. If rails are removed from the posts, use new rail bolt assemblies for reinstallation. For Rail Bolt Detail, see Sheet No. X.
 - 5) The engineer will provide assistance in setting screed rails to obtain the correct elevations.
 - 6) For Approach Slab Details, see Sheets No. X-X.

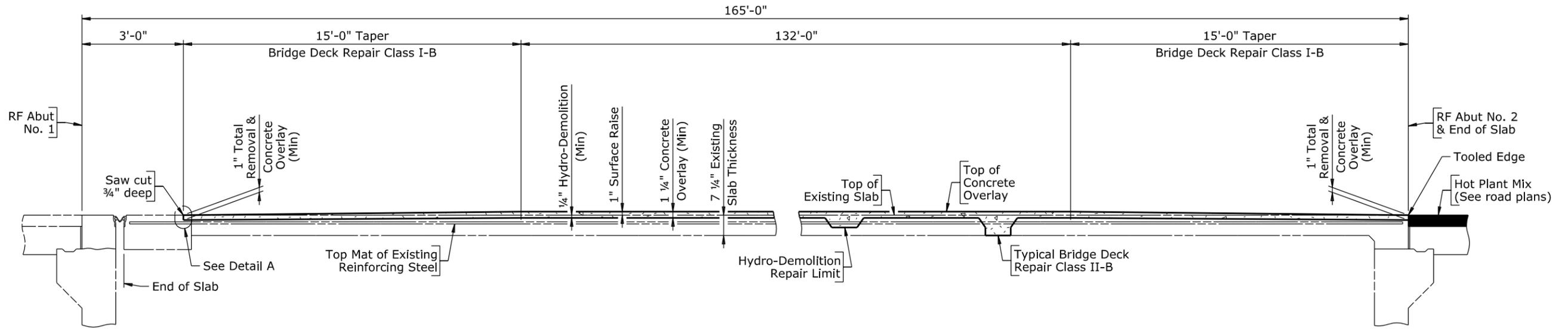
BRIDGE OVER DONKEY CREEK (EBL)

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS		RESURFACING DETAILS	
APPROVED		DESIGN <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Design Section X
DATE		DETAIL <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Drwg No. 0016 Sheet 1 of 3
		QTY'S <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	

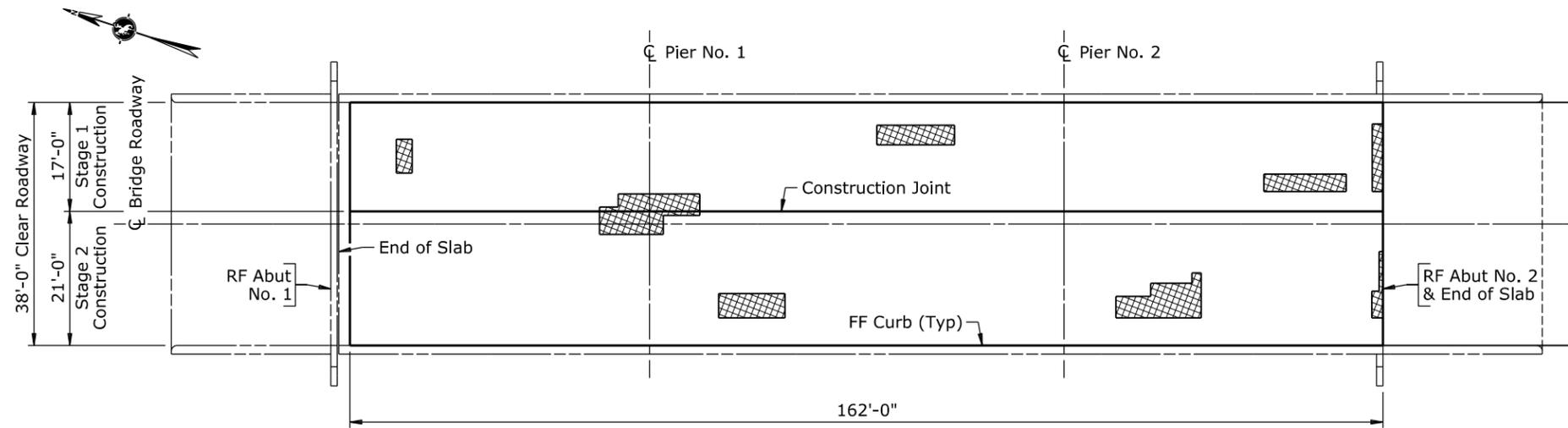
Sept 2015

4.22 - Example

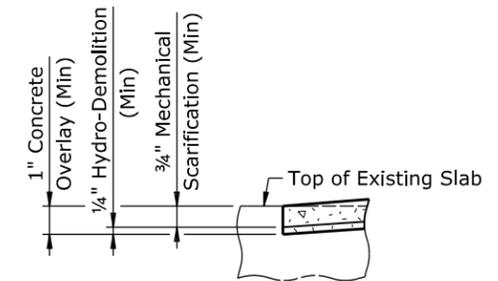
Wyo. Proj. X
Sheet BX of BX Sheets



LONGITUDINAL SECTION



PLAN



DETAIL A
(Near Abut No. 1 shown, end of slab at Abut No. 2 similar)

RM 387.00 (SBL)

- Note:**
- 1) Cross-hatched areas indicate approximate locations of unsound concrete as determined by visual inspection and sounding performed in August 2013.
 - 2) Use class I-B scarification in the taper areas. After scarification, use hydro-demolition to remove 1/4" of the entire bridge deck and unsound concrete up to one-half the deck thickness.
 - 3) After hydro-demolition operations are complete, the engineer will visually inspect and sound the deck to identify areas requiring additional repair. An estimated quantity of class II-B repair has been included to secure a unit bid price.
 - 4) Ensure the construction joint will not be in a wheel path of normal traffic flow. Location of the joint may be adjusted as approved by the engineer.
 - 5) Bridge railing may be temporarily removed to place screed rails during resurfacing. If rails are removed from the posts, use new rail bolt assemblies for reinstallation. For Rail Bolt Detail, see Sheet No. X.
 - 6) The engineer will provide assistance in setting screed rails to obtain the correct elevations.

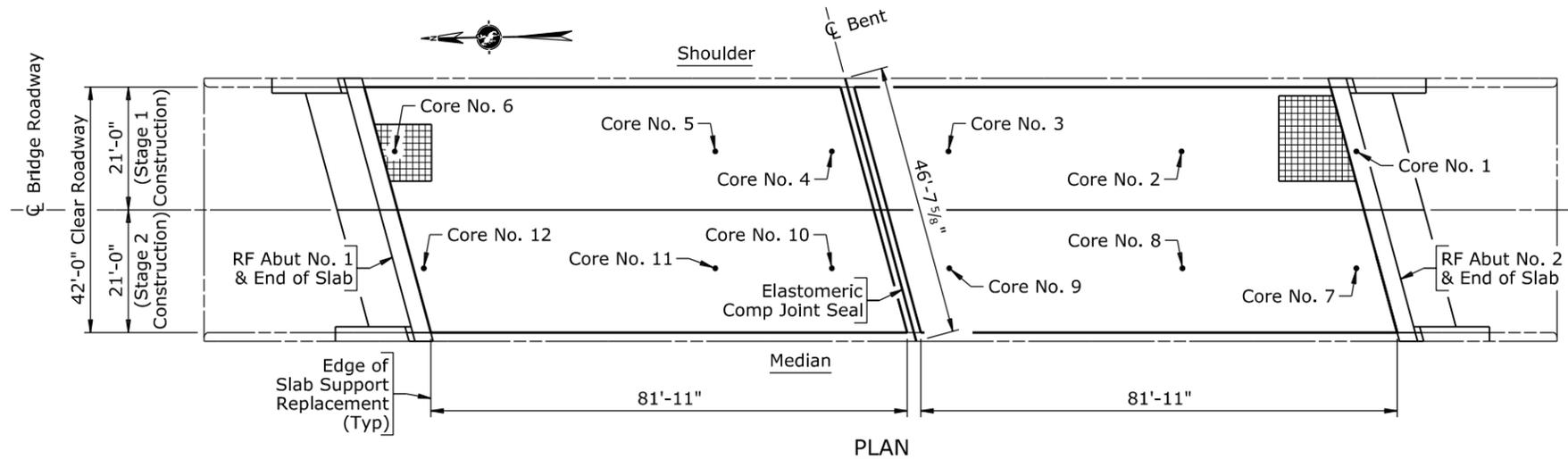
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
RESURFACING DETAILS			
REVISIONS			
APPROVED	DESIGN	Design Section X	
DATE	DETAIL	Drwg No. 0016 Sheet 2 of 3	
	QTY'S		

Section 4.22 - Preservation and Rehabilitation

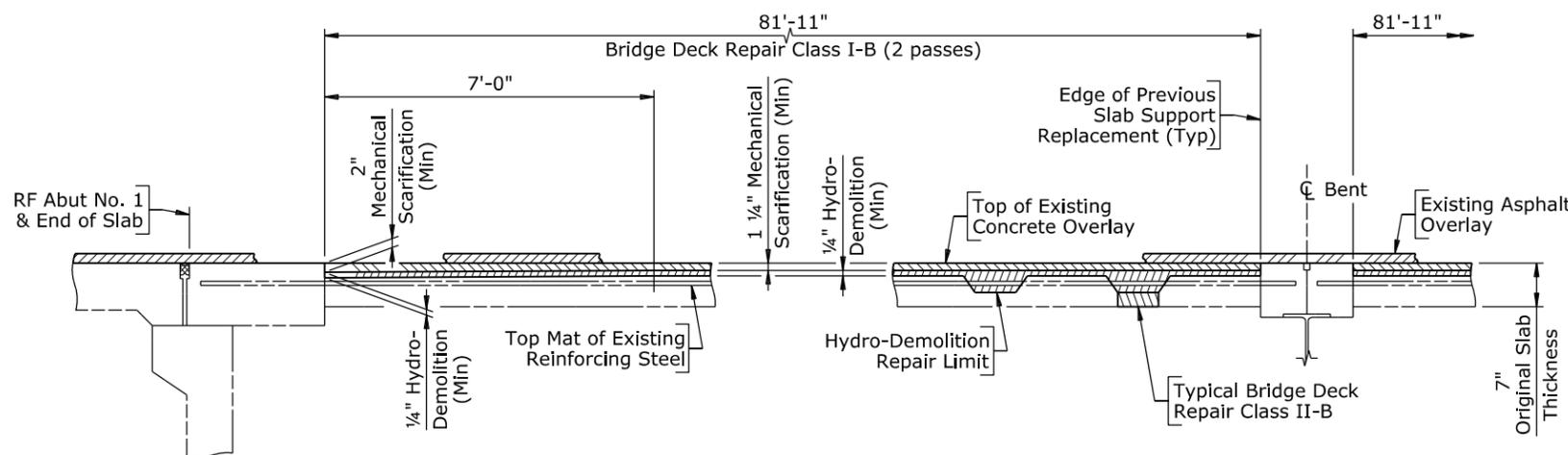
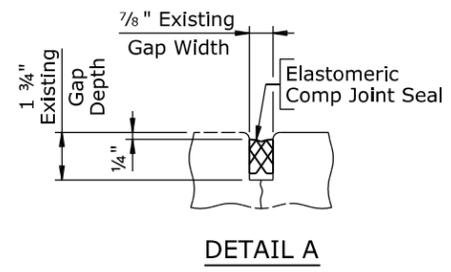
Sept 2015

4.22 - Example

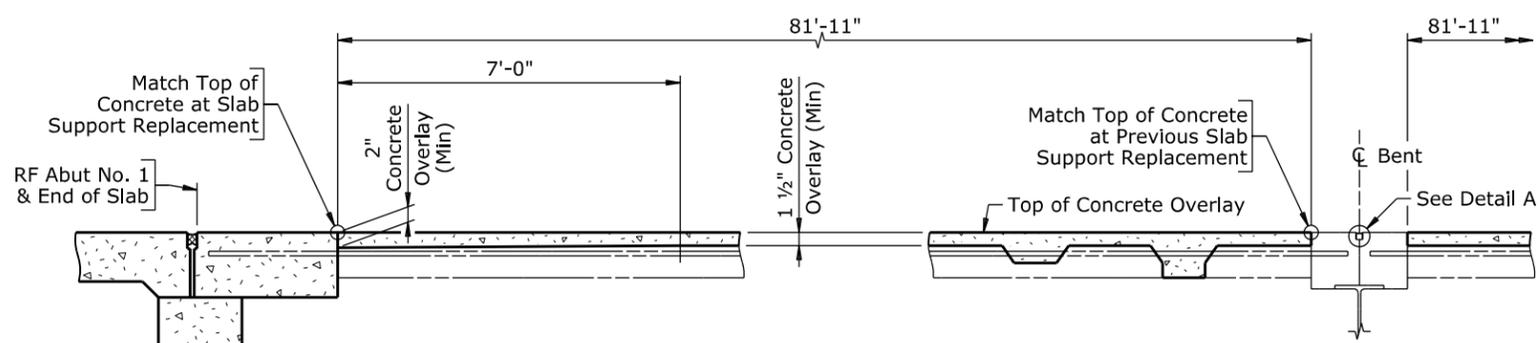
Wyo. Proj. X
Sheet BX of BX Sheets



Location	Existing Modified Concrete Overlay Thickness	Location	Existing Modified Concrete Overlay Thickness
Core No. 1	1"	Core No. 7	2"
Core No. 2	1 1/2"	Core No. 8	1"
Core No. 3	2 1/2"	Core No. 9	1 1/4"
Core No. 4	1 3/4"	Core No. 10	1 1/2"
Core No. 5	2"	Core No. 11	2"
Core No. 6	1 3/4"	Core No. 12	1 1/2"



PART LONGITUDINAL SECTION
(Abut No. 1 shown, Abut No. 2 similar)
(Showing removal of existing overlays)



PART LONGITUDINAL SECTION
(Abut No. 1 shown, Abut No. 2 similar)
(Showing new overlay)

- Note:**
- 1) Completely remove the existing modified concrete overlay using class I-B scarification. After scarification, use hydro-demolition to remove an additional 1/4" of the original bridge deck and unsound concrete up to one-half the original deck thickness.
 - 2) After hydro-demolition operations are complete, the engineer will visually inspect and sound the deck to identify areas requiring additional repair. An estimated quantity of class II-B repair has been included to secure a unit bid price.
 - 3) Cross-hatched areas indicate known locations requiring class II-B repair as determined by visual inspection and sounding performed in September 2014.
 - 4) Bridge railing may be temporarily removed to place screed rails during resurfacing. If rails are removed from the posts, use new rail bolt assemblies for reinstallation. For Rail Bolt Detail, see Sheet No. X.
 - 5) The engineer will provide assistance in setting screed rails to obtain the correct elevations.
 - 6) Extend elastomeric compression joint seal at bent up front face and across top of curbs. The exposed curb height is 6".

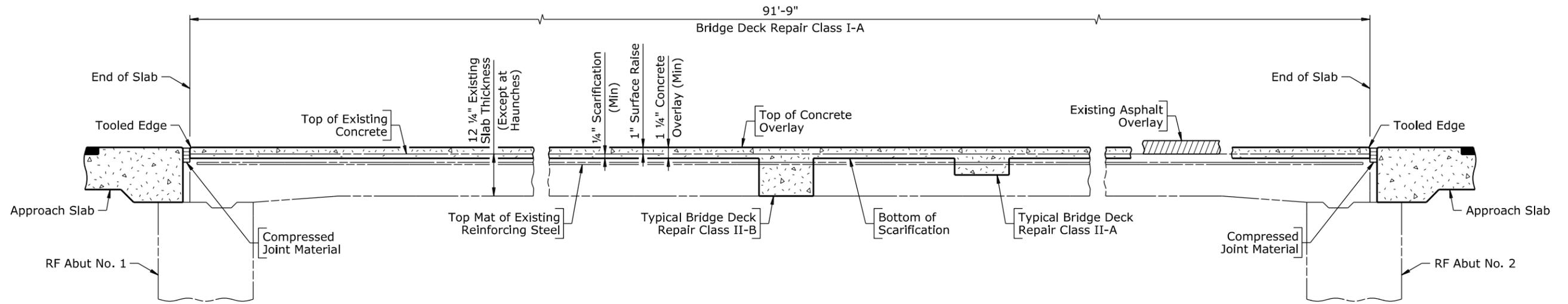
ML251, RM 8.84 (NBL)

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
RESURFACING DETAILS			
REVISIONS			
APPROVED	DESIGN	DATE	QTY'S
	_____	_____	_____
	X	X	X
	X	X	X
		Design Section X	
		Drwg No. 0016	Sheet 3 of 3

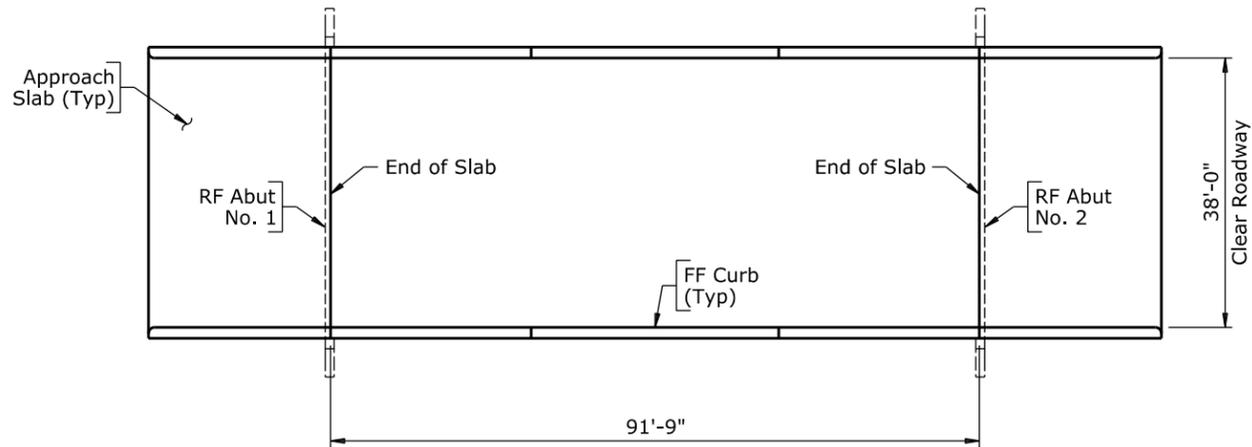
Section 4.22 - Preservation and Rehabilitation

Sept 2015

4.22 - Example



LONGITUDINAL SECTION



PLAN
 (NBL shown, SBL similar)

- Note:**
- 1) After scarification, the engineer will visually inspect and sound the deck to identify areas requiring class II-A or II-B repair. Estimated quantities have been included to secure unit bid prices.
 - 2) Bridge railing may be temporarily removed to place screed rails during resurfacing. If the rails are removed from the posts, use new rail bolt assemblies for reinstallation. For Rail Bolt Detail, see Sheet No. 9.
 - 3) The engineer will provide assistance in setting screed rails to obtain the correct elevations.

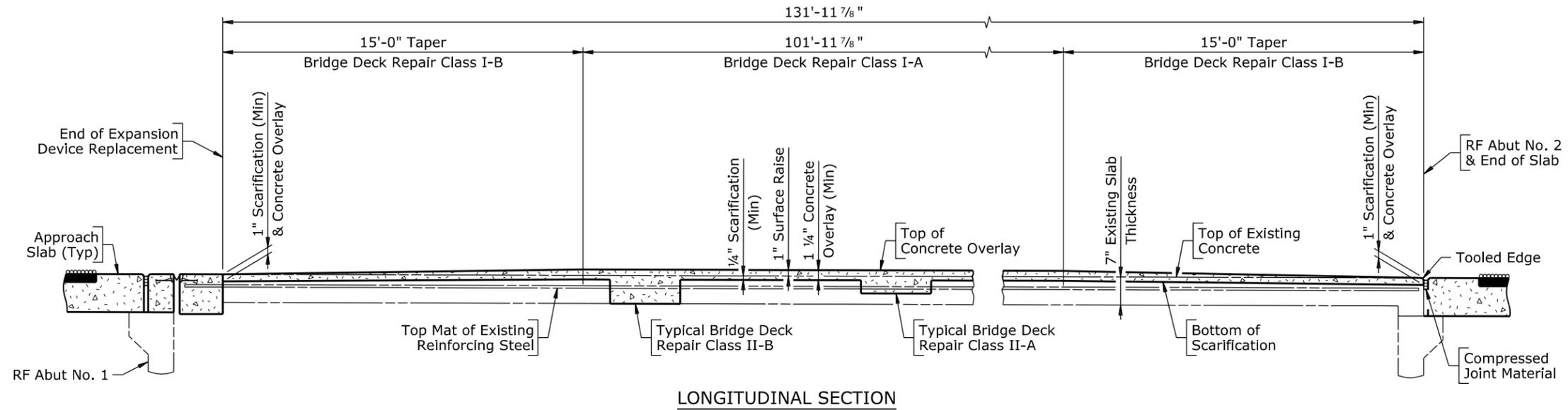
STA 384+32

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS	RESURFACING DETAILS		
	BRIDGE REHABILITATION		
	VARIOUS LOCATIONS Wheatland - Glendo Road (Cassa North Section)		
I252137		PI	
APPROVED	DESIGN	Design Section L M Nop	
DATE	DETAIL	Drwg No. 0014 Sheet 22 of 30	
	QTY'S		

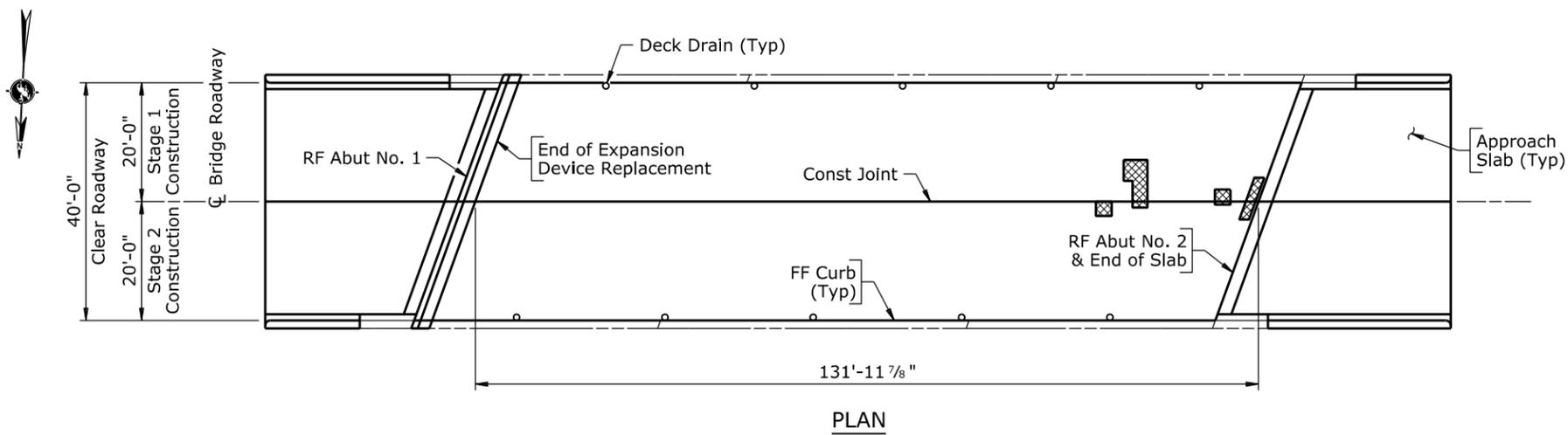
Section 4.22 - Preservation and Rehabilitation

Sept 2015

4.22 - Example



LONGITUDINAL SECTION



PLAN

- Note:
- 1) Cross-hatched areas indicate approximate locations of unsound concrete as determined by visual inspection and sounding performed in November 2006.
 - 2) After scarification, the engineer will visually inspect and sound the deck to identify areas requiring class II-A or II-B repair. Estimated quantities have been included to secure unit bid prices.
 - 3) Bridge railing may be temporarily removed to place screed rails during resurfacing. If the rails are removed from the posts, use new rail bolt assemblies for reinstallation. For Rail Bolt Detail, see Sheet No. 7.
 - 4) The engineer will provide assistance in setting screed rails to obtain the correct elevations.
 - 5) Do not plug deck drains.

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS		RESURFACING DETAILS	
		BRIDGE REHABILITATION	
		STA 197+38	
		Cody - Greybull	
		Cody East Section	
		N311074	Pa
APPROVED	DESIGN	Design Section	L M Nop
DATE	DETAIL	Drwg No. 0010	Sheet 15 of 15
	QTY'S	BBB ✓ AAA	EEE ✓

Section 4.22 - Preservation and Rehabilitation

BRIDGE REHABILITATION

VARIOUS LOCATIONS

DISTRICT 4

B164018

MULTIPLE COUNTIES

REFERENCES

WYDOT Plans:	Sheet No.
French Creek	
Bridge Drwg No. 2769 -----	1 - 5 of 5
Little Goose Creek	
Bridge Drwg No. 2006 -----	1, 2, 4, 5, & 7 of 7
Spotted Horse Creek	
Bridge Drwg No. 4798 -----	2 & 13 of 14
Bridge Drwg No. 7013 -----	10 & 11 of 13
Horse Creek	
Bridge Drwg No. 5174 -----	2 & 9 of 11
Bridge Drwg No. 7013 -----	12 of 13
Coal Haul Road	
Bridge Drwg No. 7292 -----	3, 5, 19, 21 - 23, 27 - 29, 38, 39, & 43 of 46
Black Thunder Creek	
Bridge Drwg No. 4979 -----	2, 5, 11, & 12 of 12
Bridge Drwg No. 7332 -----	3 & 6 of 6
Skull Creek	
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French Creek	AXY	ML59B	300.42	Johnson
Little Goose Creek	CZZ	ML60B	29.68	Sheridan
Spotted Horse Creek	DCK	ML302B	69.58	Campbell
Horse Creek	EOH	ML302B	80.04	Campbell
Coal Haul Road	MFH	ML302B	100.40	Campbell
Black Thunder Creek	DFX	ML2300B	36.31	Weston
Skull Creek	FLX	ML2300B	3.56	Weston
Lodgepole Creek	DDN	ML2302B	25.76	Weston

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM REVISIONS			
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ESTIMATED QUANTITIES - CODE 14												
ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	FRENCH CREEK	LITTLE GOOSE CREEK	SPOTTED HORSE CREEK	HORSE CREEK	COAL HAUL ROAD	BLACK THUNDER CREEK	SKULL CREEK	LODGEPOLE CREEK	ESTIMATE
202.03460	REMOVAL OF CONCRETE	LS	LUMP SUM	---	4 CY	2 CY	---	7 CY	---	---	---	13 CY
206.03100	FLOWABLE BACKFILL	CY	3	---	---	1	---	---	2	---	---	
209.01000	WATER	MG	144	---	127	1	---	---	16	---	---	
212.02100	DRY EXCAVATION	CY	440	---	---	---	---	---	440	---	---	
217.01010	GEOTEXTILE, EROSION CONTROL	SY	88	---	---	---	---	88	---	---	---	
217.01030	GEOTEXTILE, EMB AND RETAINING WALL	SY	1172	---	---	---	---	---	1172	---	---	
301.01085	CRUSHED BASE	CY	404	---	---	10	---	---	394	---	---	
503.01000	BRIDGE RAILING	FT	110	110	---	---	---	---	---	---	---	
503.01100	BRIDGE RAILING MODIFICATION	FT	81	---	---	---	---	---	81	---	---	
503.01310	RESET BRIDGE RAILING	FT	35	11	22	---	---	2	---	---	---	
504.11630	STEEL SHEET PILING (SM 30.0)	SF	1363	---	---	---	---	---	1363	---	---	
507.01000	REINFORCED CONC APPROACH SLABS	SY	207	---	---	---	---	---	207	---	---	
511.06000	MACHINE-PLACED RIPRAP	CY	40	---	---	---	---	40	---	---	---	
512.01012	EXPANSION JOINT (GLAND)	FT	83	---	---	---	---	83	---	---	---	
512.01040	COMPRESSED JOINT MATERIAL	FT	91	---	---	9	---	45	37	---	---	
512.01050	ELASTOMERIC COMP JOINT SEAL	FT	313	---	111	60	69	---	73	---	---	
513.00005	CLASS A CONCRETE	LS	LUMP SUM	---	3.4 CY	2.0 CY	---	6.8 CY	---	---	---	12.2 CY 1780 LB
514.00025	REINFORCING STEEL (COATED)	LS	LUMP SUM	---	540 LB	---	---	1240 LB	---	---	---	
515.02740	BRIDGE DECK REPAIR CLASS II-B	SY	5	---	5	---	---	---	---	---	---	
515.02750	BRIDGE DECK REPAIR	SY	52	2	---	5	15	15	5	5	5	
515.02807	RIGID CONCRETE OVERLAY	CY	15.2	---	15.2	---	---	---	---	---	---	
515.02810	BRIDGE DECK REPAIR, HYDRO-DEMOLITION	SY	422	---	422	---	---	---	---	---	---	
599.00047	BRIDGE DECK OVERLAY (EPOXY)	SY	4187	453	---	409	420	1623	491	360	431	
599.00080	BRIDGE CONCRETE REPAIR	SF	29	25	4	---	---	---	---	---	---	
+ 640.00001	SPECIAL ITEM LS-A	LS	LUMP SUM	---	---	---	---	LUMP SUM	---	---	---	
* 640.00004	SPECIAL ITEM EA-A	EA	10	---	---	---	---	10	---	---	---	
900.60000	CONTRACTOR QUALITY CONTROL (CONCRETE)	LS	LUMP SUM	---	LUMP SUM	LUMP SUM	---	LUMP SUM	LUMP SUM	---	---	

+ SPLICE BOLT INSPECTION
* SPLICE BOLT REPLACEMENT

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
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GENERAL NOTES

SPECIFICATIONS: WYDOT Standard Specifications for Road and Bridge Construction, 2010 Edition.

DIMENSIONS: Longitudinal dimensions are horizontal and include no correction for grade. Slopes are vertical : horizontal.

LINE STYLE DESIGNATION: Phantom lines indicate existing structure, solid lines indicate new construction, hatched areas indicate removal.

FIELD MEASUREMENTS: Field verify dimensions before ordering materials.

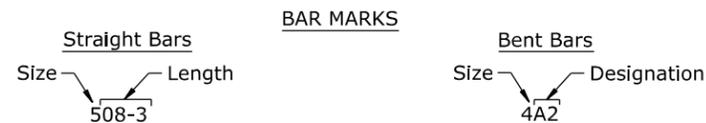
CONSTRUCTION SAFETY REQUIREMENTS: To ensure safety of the users below, employ removal and reconstruction methods to prevent debris from falling below the structures. Use warning signs and a debris containment system. Work necessary for these requirements is incidental to applicable contract pay items.

CONSTRUCTION SEQUENCE: At Little Goose Creek, the bridge will be closed during construction. At other locations, work on one half of the structure at a time with traffic carried on the other half during construction.

HAZARDOUS MATERIALS: The paint system on the steel components of the existing structures may contain materials including lead and chromium that are hazardous if ingested, inhaled, or otherwise absorbed.

CONCRETE: Use modified concrete for resurfacing and bridge deck repairs, except at epoxy overlay locations. Use class A concrete at all other locations, including approach slabs, except where designated as bridge concrete repair.

REINFORCING STEEL: Ensure reinforcing steel conforms to ASTM A 615 (Grade 60) for all bars, including ties and stirrups. Concrete cover to face of reinforcing steel is 2" unless noted. Dimensions for bent bars are out to out. Ensure bars marked with an asterisk (*) are coated.



THREADED RODS: Ensure threaded rods conform to ASTM F 1554 (Grade 105).

ADHESIVE ANCHORAGE SYSTEM: Use one of the following products:
 CIA-GEL 6000-GP as manufactured by MiTek USA, Inc.
 Red Head C6+ as manufactured by ITW Commercial Construction
 Sure Anchor I J-51 as manufactured by Dayton Superior
 HIT-RE 500 V3 as manufactured by Hilti, Inc.
 Drill and prepare holes and install the threaded rods in accordance with the adhesive system manufacturer's recommendations to provide a pullout strength of equal or greater capacity to the threaded rod. Work necessary for the adhesive anchorage system is incidental to the contract pay items Bridge Railing and Bearing Device Modification.

EXPANSION JOINT (GLAND): Use one of the following products:
 Wabo StripSeal system with type "R" steel rails and SE-400 gland as manufactured by Watson Bowman Acme Corp.
 Steelflex Strip Seal Expansion Joint System with SSCM2 steel rails and A2R-400 gland as manufactured by D.S. Brown

COMPRESSED JOINT MATERIAL: Use one of the following products:
 FS-050 as manufactured by Watson Bowman Acme Corp.
 BOR-0050 as manufactured by Emseal Joint Systems, Ltd.

ELASTOMERIC COMP JOINT SEAL: Use one of the following products at Little Goose Creek, Pier No. 1 and Pier No. 2:
 WA-300 as manufactured by Watson Bowman Acme Corp.
 CV-3000 as manufactured by D.S. Brown
 Use one of the following products at Little Goose Creek, Abutment No. 2:
 WA-500 as manufactured by Watson Bowman Acme Corp.
 CV-5001 as manufactured by D.S. Brown
 Use one of the following products at Spotted Horse Creek:
 WA-400 as manufactured by Watson Bowman Acme Corp.
 CV-4000 as manufactured by D.S. Brown
 Use one of the following products at Black Thunder Creek:
 WA-250 as manufactured by Watson Bowman Acme Corp.
 CV-2502 as manufactured by D.S. Brown
 Use one of the following products at Horse Creek, Abutment No. 1:
 WA-350 as manufactured by Watson Bowman Acme Corp.
 CV-3500 as manufactured by D.S. Brown
 Use one of the following products at Horse Creek, Abutment No. 2:
 WA-500 as manufactured by Watson Bowman Acme Corp.
 CV-4500 as manufactured by D.S. Brown

CRUSHED BASE: Use crushed base conforming to grading L from a contractor furnished source. Compact the crushed base in accordance with Subsection 301.4.2.3, Placing.

WATER: The estimated quantity of water for compaction of crushed base is 0.040 MG per cubic yard. The estimated quantity of water for hydro-demolition is 0.100 MG per square yard.

MACHINE-PLACED RIPRAP: Use stones conforming to class II gradation from a contractor furnished source.

DRY EXCAVATION: The estimated estimated quantity of dry excavation is calculated below existing finished grade to the limits shown at approach slabs and includes removal of the existing approach slabs.

REMOVAL OF CONCRETE: Remove portions of the existing structure to the limits shown. Do not damage existing concrete to remain in place. Use a 30 LB pneumatic hammer for general removal and a 15 LB pneumatic hammer within 1'-0" of removal limits. Do not use larger removal equipment unless approved by the Stage Bridge Engineer.

Thoroughly clean concrete from reinforcing steel to remain in place and straighten as required. Remove and replace damaged reinforcing steel with the same size bar and weld-splice or mechanically splice where necessary at no additional cost to the department.

REMOVAL OF JOINT MATERIAL: Remove existing joint material at the locations shown and prepare the concrete surfaces in accordance with the new joint material manufacturer's recommendations. Work necessary for clearing the gap and surface preparation is incidental to the contract pay items Compressed Joint Material and Elastomeric Comp Joint Seal.

REMOVAL OF SURFACING: At Spotted Horse Creek, portions of a previous methylmethacrylate overlay remain intact and will need removed before surface preparation for the new overlay. Work necessary to remove the existing overlay is incidental to the contract pay item Bridge Deck Overlay (Epoxy).

EPOXY RESIN BONDING COMPOUND: At reconstruction locations using class A concrete, clean the roughened surfaces of the existing concrete and coat with epoxy resin bonding compound. If the bonding compound gels before concrete placement, remove by sandblasting and reapply. Use bonding compound conforming to Subsection 810.6, Epoxy Resin. Mix and apply in accordance with the manufacturer's recommendations. Work necessary for the epoxy resin bonding compound is incidental to the contract pay item Class A Concrete.

RESURFACING: Complete modified concrete resurfacing operations within two working days after flush cleaning activities for each stage of construction. Only equipment required for the resurfacing operations will be allowed on the bridge after flush cleaning.

RESET BRIDGE RAILING: Work necessary to remove and reset the bridge railing posts for the bridge concrete repair at French Creek and for the expansion device replacement at Abutment No. 1 at Coal Haul Road will be paid for under the contract pay item Reset Bridge Railing.

WEEP HOLES: At Black Thunder Creek, work necessary for the wire mesh and cleaning the weep holes is incidental to the contract pay item Crushed Base.

SPLICE BOLT INSPECTION AND REPLACEMENT: At Coal Haul Road, the inspection report notes loose field splice bolts on the second girder from the west side (Girder No. 2), bottom flange. Inspect this location and replace loose bolts with new high strength bolts.

Work necessary to inspect the splice bolts will be paid for under the contract pay item Special Item LS-A. Replacement bolts will be paid for under the contract pay item Special Item EA-A, a number has been included to secure a unit bid price.

BRIDGE OFFICE NOTIFICATION: The engineer will notify the State Bridge Engineer in writing within 14 calendar days after work has been completed at each structure.

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BRIDGE REHABILITATION

VARIOUS LOCATIONS

DISTRICT 2

B172014

NATRONA COUNTY

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SP-600HT Special Item SF-A (Silicone-Modified Elastomeric Coating)	
SP-600HU Special Item LS-A (Bearing Device Cleaning)	
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SS-100K Adjustment for Structural Steel	
SS-500B Welder Qualification	
SS-500F Automatically End-Welded Studs	
SS-500J Bridge Concrete Repair	
SS-500M Concrete Bridge Deck Repair	
SS-500N Bridge Deck Repair, Hydro-Demolition	

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AIB	Bryan Stock Trail Interchange Underpass	ML9208B	0.02	SS
AIF	McKinley Street Interchange	ML25I	187.53	NBL
DKU	McKinley Street Interchange	ML25D	187.53	SBL
AIH	Center Street Interchange	ML25I	188.19	NBL
DKV	Center Street Interchange	ML25D	188.19	SBL
FDG	Poplar Street Interchange	ML25I	188.60	NBL
FDH	Poplar Street Interchange	ML25D	188.60	SBL
CWD	North Platte River	ML258B	8.72	SS

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ESTIMATED QUANTITIES - CODE 14												
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202.03460	REMOVAL OF CONCRETE	LS	LUMP SUM	55 CY	8 CY	7 CY	7 CY	7 CY	—	3 CY	8 CY	95 CY
209.01000	WATER	MG	456	—	62	62	62	62	104	104	—	
212.02100	DRY EXCAVATION	CY	2080	—	—	—	—	—	700	820	560	
217.01030	GEOTEXTILE, EMB AND RETAINING WALL	SY	8009	—	—	—	—	—	2505	2677	2827	
301.01085	CRUSHED BASE	CY	1780	—	—	—	—	—	590	710	480	
501.01000	STRUCTURAL STEEL	LS	LUMP SUM	—	820 LB	550 LB	690 LB	550 LB	550 LB	550 LB	3400 LB	7110 LB
503.01100	BRIDGE RAILING MODIFICATION	FT	845	—	—	—	—	—	—	—	845	
503.01310	RESET BRIDGE RAILING	FT	26	26	—	—	—	—	—	—	—	
504.11616	STEEL SHEET PILING (SM 16.0)	SF	966	—	—	—	—	—	—	—	966	
505.01000	BRIDGE BARRIER	FT	149	—	19	15	15	10	42	48	—	
507.01000	REINFORCED CONC APPROACH SLABS	SY	780	—	—	—	—	—	279	279	222	
508.01100	SLOPE PAVING REPAIR/MODIFICATION	SY	130	—	—	—	—	—	65	65	—	
512.01000	EXPANSION JOINT (REPAIR/MODIFICATION)	LS	LUMP SUM	—	—	—	—	—	—	—	131 FT	131 FT
512.01040	COMPRESSED JOINT MATERIAL	FT	607	128	72	72	71	70	68	68	58	
512.01050	ELASTOMERIC COMP JOINT SEAL	FT	704	—	76	76	76	76	200	200	—	
513.00005	CLASS A CONCRETE	LS	LUMP SUM	65.8 CY	5.5 CY	5.4 CY	5.5 CY	5.6 CY	24.0 CY	27.3 CY	8.1 CY	147.2 CY
514.00015	REINFORCING STEEL	LS	LUMP SUM	690 LB	—	—	—	—	—	410 LB	—	1100 LB
514.00025	REINFORCING STEEL (COATED)	LS	LUMP SUM	290 LB	780 LB	760 LB	760 LB	760 LB	4420 LB	4420 LB	1670 LB	13,860 LB
514.02710	BRIDGE DECK REPAIR CLASS I-A	SY	266	266	—	—	—	—	—	—	—	
515.02720	BRIDGE DECK REPAIR CLASS I-B	SY	4915	410	1097	1097	1097	1097	—	—	—	
515.02740	BRIDGE DECK REPAIR CLASS II-B	SY	91	5	19	19	19	19	5	5	—	
515.02807	RIGID CONCRETE OVERLAY	CY	346.7	25.0	46.1	46.1	46.1	46.1	67.1	67.1	3.1	
515.02810	BRIDGE DECK REPAIR, HYDRO-DEMOLITION	SY	4554	—	620	620	620	620	1037	1037	—	
599.00080	BRIDGE CONCRETE REPAIR	SF	214	20	55	67	22	40	10	—	—	
605.10006	UNDERDRAIN PIPE (PERF) 6 IN	FT	360	—	—	—	—	—	102	102	156	
605.20006	UNDERDRAIN PIPE (NON-PERF) 6 IN	FT	76	—	—	—	—	—	24	28	24	
627.01005	EPOXY RESIN INJECTION	FT	17	17	—	—	—	—	—	—	—	
640.00001	SPECIAL ITEM LS-A	LS	LUMP SUM	—	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	—	—	—	LUMP SUM
640.00019	SPECIAL ITEM SF-A	SF	363	363	—	—	—	—	—	—	—	

‡ BEARING DEVICE CLEANING
 ✕ SILICONE-MODIFIED ELASTOMERIC COATING

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GENERAL NOTES

SPECIFICATIONS: WYDOT Standard Specifications for Road and Bridge Construction, 2010 Edition.

DIMENSIONS: Longitudinal dimensions are horizontal and include no correction for grade. Slopes are vertical : horizontal.

LINestyle DESIGNATION: Phantom lines indicate existing structure, solid lines indicate new construction, hatched areas indicate removal.

FIELD MEASUREMENTS: Field verify dimensions before ordering materials.

CONSTRUCTION SAFETY REQUIREMENTS: To ensure safety of the users below, employ removal and reconstruction methods to prevent debris from falling below the structures. Use warning signs and a debris containment system. Work necessary for these requirements is incidental to applicable contract pay items.

CONSTRUCTION SEQUENCE: At Structures No. AIB and CWD, work on one half of the structure at a time with traffic carried on the other half during construction. Other locations will be closed during construction.

CONCRETE: At Structure No. AIB, use modified concrete for resurfacing. Use class A concrete for bridge deck repairs and all other locations except where designated as bridge concrete repair.

At all other locations, use modified concrete for resurfacing and bridge deck repairs. Use class A concrete at all other locations except where designated as bridge concrete repair.

CONCRETE AGGREGATE: Ensure all concrete mix designs employed in the project meet the following alkali-silica reactivity (ASR) screening.

Conduct the AASHTO T 303 (ASTM C 1260) test using a combined sample of fine aggregate and coarse aggregate, in the same proportions that will be used in the concrete mix design. If the test results indicate an expansion at 16 days from casting of 0.10 percent or less, the aggregate is considered non-reactive and mitigation measures are not required.

If the test results indicate an expansion at 16 days from casting of greater than 0.10 percent, mitigate the aggregate reactivity through the use of class F fly ash as approved for ASR mitigation in accordance with the Materials Testing Manual, silica fume, and/or lithium nitrate additive. Demonstrate adequate mitigation by conducting the ASTM C 1567 test and ensuring the test results indicate an expansion at 16 days from casting of 0.10 percent or less. When conducting the ASTM C 1567 test, use a combined sample of fine aggregate and coarse aggregate, in the same proportions that will be used in the concrete mix design and use the cementitious material that is to be used in the mix design.

Ensure the AASHTO T 303 (ASTM C 1260), and ASTM C 1567 tests have been performed within 12 months of the submittal date.

Submit qualifying AASHTO T 303 (ASTM C 1260) and ASTM C 1567 test results to the engineer a minimum of 14 calendar days before concrete production. Submit test results to the Materials Program along with each mix design request.

HAZARDOUS MATERIALS: The paint system on the steel components of the existing structures may contain materials including lead and chromium which are hazardous if ingested, inhaled, or otherwise absorbed.

REINFORCING STEEL: Ensure reinforcing steel conforms to ASTM A 615 (Grade 60) for all bars, including ties and stirrups. Concrete cover to face of reinforcing steel is 2" unless noted. Dimensions for bent bars are out to out. Ensure bars marked with an asterisk (*) are coated.

BAR MARKS



STRUCTURAL STEEL: Ensure steel components for the bridge barrier expansion plates conform to ASTM A 709 (Grade 36) and are galvanized after fabrication. Use galvanized hardware.

Ensure steel components for the drain system conform to ASTM A 709 (Grade 36) and ASTM A 53 (Grade A or B) and are galvanized after fabrication. Use galvanized hardware.

ADHESIVE ANCHORAGE SYSTEM: Use one of the following products:

- CIA-GEL 6000-GP as manufactured by Mitek USA, Inc.
 - Red Head C6+ as manufactured by ITW Commercial Construction
 - Sure Anchor I (J-51) as manufactured by Dayton Superior
 - HIT-RE 500 V3 as manufactured by Hilti, Inc.
- Drill and prepare holes and install the reinforcing steel in accordance with the adhesive system manufacturer's recommendations to provide a pullout strength of equal or greater capacity to the reinforcing steel. Work necessary for the adhesive anchorage system is incidental to the contract pay item Reinforced Conc Approach Slabs.

COMPRESSED JOINT MATERIAL: Use one of the following products:

- FS-050 as manufactured by Watson Bowman Acme Corp.
- BOR-0050 as manufactured by Emseal Joint Systems, Ltd.

ELASTOMERIC COMP JOINT SEAL: Use one of the following products:

- WA-300 as manufactured by Watson Bowman Acme Corp.
- CV-3000 as manufactured by D.S. Brown

PREFORMED EXPANSION JOINT FILLER: Work necessary for preformed expansion joint filler is incidental to the contract pay items Bridge Barrier, Slope Paving Repair / Modification, and Class B Concrete.

DRY EXCAVATION: The estimated quantity of dry excavation is calculated below existing finished grade to the limits shown at approach slabs and includes removal of the existing approach slabs.

REMOVAL OF CONCRETE: Remove portions of the existing structure to the limits shown. Do not damage existing concrete to remain in place. Use a 30 LB pneumatic hammer for general removal and a 15 LB pneumatic hammer within 1'-0" of removal limits. Do not use larger removal equipment unless approved by the Stage Bridge Engineer.

Thoroughly clean concrete from reinforcing steel to remain in place and straighten as required. Remove and replace damaged reinforcing steel with the same size bar and weld-splice or mechanically splice where necessary at no additional cost to the department.

REMOVAL OF JOINT MATERIAL: Remove existing joint material at the locations shown and prepare the concrete surfaces in accordance with the new joint material manufacturer's recommendations. Work necessary for clearing the gap and surface preparation is incidental to the contract pay items Compressed Joint Material and Elastomeric Comp Joint Seal.

CROSS FRAME REMOVAL: Remove existing cross frames at abutments as required for concrete removal and joint modifications. Reattach cross frames using new high strength bolts in accordance with Subsection 501.4.2.3, Connections Using High Strength Bolts. Work necessary for cross frame removal and reattachment is incidental to the contract pay item Removal of Concrete.

CONDUIT REMOVAL: At Structure No. AIB, work necessary to remove the conduit is incidental to the contract pay item, Removal of Concrete.

EPOXY RESIN BONDING COMPOUND: At reconstruction locations using class A concrete, clean the adjoining surfaces of the existing concrete and coat with epoxy resin bonding compound. If the bonding compound gels before concrete placement, remove by sandblasting and reapply. Use bonding compound conforming to Subsection 810.6 Epoxy Resin. Mix and apply in accordance with the manufacturer's recommendations. Work necessary for the epoxy resin bonding compound is incidental to the contract pay item Class A Concrete.

BRIDGE RAILING HARDWARE INSPECTION: At Structure No. AIB, inspect rail bolts and splice bolts and replace loose or missing components. Work necessary to inspect and replace hardware is incidental to the contract pay item Reset Bridge Railing.

BRIDGE RAILING POSTS: Work necessary to replace the indicated bridge railing posts is incidental to the contract pay item Bridge Railing Modification.

POLYETHYLENE SHEETING: Use 4 mil polyethylene sheeting. Lap sheeting 6 inches minimum at joints. Work necessary for polythylene sheeting is incidental to the contract pay item Reinforced Concrete Approach Slabs.

FELT PAPER: Use 30-pound asphalt-saturated organic felt paper. Work necessary for the felt paper is incidental to the contract pay item Reinforced Conc Approach Slabs.

CRUSHED BASE: Use crushed base conforming to grading L from a contractor furnished source. Compact the crushed base in accordance with Subsection 301.4.2.3, Placing.

RESURFACING: Complete modified concrete resurfacing operations within two working days after flush cleaning activities for each stage of construction. Only equipment required for the resurfacing operations will be allowed on the bridge after flush cleaning.

WATER: The estimated quantity of water for compaction of crushed base is 0.040 MG per cubic yard. The estimated quantity of water for hydro-demolition is 0.100 MG per square yard.

BRIDGE OFFICE NOTIFICATION: The engineer will notify the State Bridge Engineer in writing within 14 calendar days after work has been completed at each structure.

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B172014		Na	
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BRIDGE REHABILITATION

VARIOUS LOCATIONS

WHEATLAND - GLENDON ROAD

(CASSA NORTH SECTION)

I252137

PLATTE COUNTY

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Sta 119+05 -----	B31-B37 & B49-B50
Sta 384+32 -----	B38-B40 & B49-B55
Sta 386+96 -----	B41-B48 & B49-B55

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119+05	Machinery Pass	AFF	NBL	ML25I	109.12
		AFG	SBL	ML25D	
384+32	Middle Bear Interchange	AFD	NBL	ML25I	104.04
		AFE	SBL	ML25D	
386+96	Middle Bear Creek	AFB	NBL	ML25I	103.99
		AFC	SBL	ML25D	

ESTIMATED QUANTITIES - CODE 14										
ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	STA 119+05		STA 384+32		STA 386+96		ESTIMATE
				NBL	SBL	NBL	SBL	NBL	SBL	
199.00000	CONTROLS FOR LEAD PAINT REMOVAL	LS	LUMP SUM	LUMP SUM	LUMP SUM	---	---	---	---	305.2 CY 32,370 LB 9040 LB 280 FT
202.03251	REMOVAL OF BRIDGE RAILING	FT	856	---	---	187	187	241	241	
202.03410	REMOVAL OF SURFACING	TON	280	---	---	41	56	111	72	
202.03465	REMOVAL OF CONCRETE	CY	82	4	4	13	13	24	24	
209.01000	WATER	MG	176	54	54	14	14	20	20	
212.02100	DRY EXCAVATION	CY	5790	2320	1430	490	430	560	560	
212.03900	PERVIOUS BACKFILL MATERIAL	CY	40	30	---	10	---	---	---	
217.01010	GEOTEXTILE, EROSION CONTROL	SY	1150	1150	---	---	---	---	---	
217.01030	GEOTEXTILE, EMB AND RETAINING WALL	SY	9560	1580	1580	1380	1380	1820	1820	
301.01085	CRUSHED BASE	CY	4280	1330	1330	330	330	480	480	
503.01000	BRIDGE RAILING	FT	1256	---	---	287	287	341	341	
503.01100	BRIDGE RAILING MODIFICATION	FT	222	111	111	---	---	---	---	
507.01000	REINFORCED CONC APPROACH SLABS	SY	1442	256	256	236	236	229	229	
508.01000	REINFORCED CONC SLOPE PAVING	SY	1942	885	---	1057	---	---	---	
512.01040	COMPRESSED JOINT MATERIAL	FT	602	131	131	85	85	85	85	
512.01050	ELASTOMERIC COMP JOINT SEAL	FT	338	---	---	---	---	169	169	
513.00005	CLASS A CONCRETE	LS	LUMP SUM	242.5 CY	4.1 CY	20.2 CY	6.2 CY	16.1 CY	16.1 CY	
514.00015	REINFORCING STEEL	LS	LUMP SUM	31,370 LB	---	1000 LB	---	---	---	
514.00025	REINFORCING STEEL (COATED)	LS	LUMP SUM	380 LB	380 LB	2260 LB	2260 LB	1880 LB	1880 LB	
515.02710	BRIDGE DECK REPAIR CLASS I-A	SY	2308	326	326	368	368	460	460	
515.02730	BRIDGE DECK REPAIR CLASS II-A	SY	114	16	16	18	18	23	23	
515.02740	BRIDGE DECK REPAIR CLASS II-B	SY	12	2	2	2	2	2	2	
515.02807	RIGID CONCRETE OVERLAY	CY	102	14	14	17	17	20	20	
516.42020	PAINT REPAIR - BRIDGE RAILING	LS	LUMP SUM	140 FT	140 FT	---	---	---	---	
599.00080	BRIDGE CONCRETE REPAIR	SF	21	---	---	---	3	13	5	
605.10006	UNDERDRAIN PIPE (PERF) 6 in	FT	512	90	90	83	83	83	83	
605.20006	UNDERDRAIN PIPE (NON-PERF) 6 in	FT	174	30	30	25	25	32	32	
900.60000	CONTRACTOR QUALITY CONTROL (CONCRETE)	LS	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	

WYOMING DEPARTMENT OF TRANSPORTATION			
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GENERAL NOTES

SPECIFICATIONS: WYDOT Standard Specifications for Road and Bridge Construction, 2010 Edition.

DIMENSIONS: Longitudinal dimensions are horizontal and include no correction for grade. Slopes are vertical : horizontal.

LINE STYLE DESIGNATION: Phantom lines indicate existing structure, solid lines indicate new construction, hatched areas indicate removal.

FIELD MEASUREMENTS: Field verify dimensions before ordering materials.

CONSTRUCTION SAFETY REQUIREMENTS: At Sta 384+32, to ensure safety of the users below, employ removal and reconstruction methods to prevent debris from falling below the structures. Use warning signs and a debris containment system. Work necessary for these requirements is incidental to applicable contract pay items.

HAZARDOUS MATERIALS: The paint systems on the steel components of the existing structures may contain materials including lead and chromium that are hazardous if ingested, inhaled, or otherwise absorbed.

CONCRETE: Use modified concrete for resurfacing and bridge deck repairs. Use class A concrete at all other locations except where designated as bridge concrete repair.

REINFORCING STEEL: Ensure reinforcing steel conforms to ASTM A 615 (Grade 60) for all bars, including ties and stirrups. Concrete cover to face of reinforcing steel is 2" unless noted. Dimensions for bent bars are out to out. Ensure bars marked with an asterisk (*) are coated.

BAR MARKS



ELASTOMERIC COMP JOINT SEAL: Use one of the following products:
WJ-350 as manufactured by Watson Bowman Acme Corp.
CV-3500 as manufactured by D.S. Brown.

COMPRESSED JOINT MATERIAL: Use one of the following products:
FS-050 as manufactured by Watson Bowman Acme Corp.
BOR-0050 as manufactured by Emseal Joint Systems, Ltd.

WEEP HOLE ASSEMBLIES: Work necessary for the weep hole assemblies is incidental to the contract pay item Class B Concrete.

PREFORMED EXPANSION JOINT FILLER: Work necessary for the preformed expansion joint filler is incidental to the contract pay item Reinforced Conc Slope Paving.

SLOPE PAVING AND RETAINING WALLS: Work necessary for the slope paving and retaining walls is paid for under the NBL's respective contract pay items.

BRIDGE RAILING ANCHOR BOLTS: Use threaded rods conforming to ASTM F 1554 (Grade 105).

ADHESIVE ANCHORAGE SYSTEM: Use one of the following products:
CIA-GEL 6000-GP as manufactured by MiTek USA, Inc.
Red Head C6+ as manufactured by ITW Commercial Construction
Sure Anchor I J-51 as manufactured by Dayton Superior
HIT-RE 500 V3 as manufactured by Hilti, Inc.
Drill and prepare holes and install the threaded rods in accordance with the adhesive system manufacturer's recommendations to provide a pullout strength of equal or greater capacity to the threaded rod. Work necessary for the adhesive anchorage system is incidental to the contract pay item Bridge Railing.

DRY EXCAVATION: The estimated quantity of dry excavation is calculated below existing ground line at retaining walls and below existing finished grade to the limits shown at approach slabs, including removal of the existing approach slabs.

REMOVAL OF ASPHALT: Remove the existing asphalt overlays from the bridge decks listed below by cold milling to approximately 1/2" above the original concrete surface. Do not damage the bridge decks while removing the remaining 1/2" of asphalt. The approximate depth of existing asphalt is as follows:

- Sta 384+32 - NBL ---- 2"
- SBL ---- 2 3/4"
- Sta 386+96 - NBL ---- 4 1/4"
- SBL ---- 2 3/4"

REMOVAL OF CONCRETE: Remove portions of the existing structure to the limits shown. Do not damage existing concrete to remain in place. Use a 30 LB pneumatic hammer for general removal and a 15 LB pneumatic hammer within 1'-0" of removal limits. Do not use larger removal equipment unless approved by the Stage Bridge Engineer.

Thoroughly clean concrete from reinforcing steel to remain in place and straighten as required. Remove and replace damaged reinforcing steel with the same size bar and weld-splice or mechanically splice where necessary at no additional cost to the department.

EPOXY RESIN BONDING COMPOUND: At reconstruction locations using class A concrete, clean the roughened surfaces of the existing concrete and coat with epoxy resin bonding compound. If the bonding compound gels before concrete placement, remove by sandblasting and reapply. Use bonding compound conforming to Subsection 810.6, Epoxy Resin. Mix and apply in accordance with manufacturer's recommendations. Work necessary for the epoxy resin bonding compound is incidental to the contract pay item Class A Concrete.

WEEP HOLE GROUTING: At Sta 119+05, fill existing weep holes with nonshrink grout before placing reinforced bridge approach fills. Work necessary for grouting the weep holes is incidental to the contract pay item Crushed Base.

RESURFACING: Complete resurfacing operations within two working days after flush cleaning activities. Only equipment required for the resurfacing operations will be allowed on the bridge after flush cleaning.

EROSION REPAIR: At Sta 119+05 and Sta 384+32, repair eroded areas on the berm slopes with roadway fill material compacted to 95% density. Work necessary for the erosion repair is incidental to the contract pay item Reinforced Conc Slope Paving.

PAINT REPAIR: Paint the existing bridge railing remaining in place at Sta 119+05 with epoxy-mastic paint.

CRUSHED BASE: Use crushed base conforming to grading L from a contractor furnished source. Compact the crushed base in accordance with Subsection 301.4.2.3, Placing.

WATER: The estimated quantity of water for compaction of crushed base is 0.040 MG per cubic yard.

BRIDGE OFFICE NOTIFICATION: The engineer will notify the State Bridge Engineer in writing within 14 calendar days after work has been completed at each structure.

REFERENCES

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Bridge Drwg No. 5522 -----	2 of 4
Sta 384+32	
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Bridge Drwg No. S-546 -----	1 & 2 of 2
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SS-100G	Worker and Environmental Controls for Lead Paint Removal
SS-100K	Adjustment for Structural Steel
SS-500J	Bridge Concrete Repair
SS-500G	Structural Concrete with Quality Control and Quality Acceptance
SS-500M	Concrete Bridge Deck Repair

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BRIDGE REHABILITATION

VARIOUS LOCATIONS

BUFFALO MARGINAL

I-90/I-25 INTERCHANGE SECTION

I902122

JOHNSON COUNTY

ESTIMATED QUANTITIES - CODE 14									
ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	STA 107+87 (EBL)	STA 215+52 (EBL)	STA 215+43 (WBL)	STA 229+19 (EBL)	STA 230+12 (WBL)	ESTIMATE
199.00000	CONTROLS FOR LEAD PAINT REMOVAL	LS	LUMP SUM	LUMP SUM	---	---	LUMP SUM	LUMP SUM	82 CY
202.03251	REMOVAL OF BRIDGE RAIL	FT	1770	468	346	346	305	305	
202.03460	REMOVAL OF CONCRETE	LS	LUMP SUM	1 CY	9 CY	7 CY	33 CY	32 CY	
217.01010	GEOTEXTILE, EROSION CONTROL	SY	94	73	---	21	---	---	
417.05010	SEALING JOINTS (CONC PVMT)	FT	55	55	---	---	---	---	
503.01000	BRIDGE RAILING	FT	1758	468	342	342	303	303	
511.06000	MACHINE-PLACED RIPRAP	CY	40	30	---	10	---	---	
512.01000	EXPANSION JOINT (REPAIR/MODIFICATION)	LS	LUMP SUM	44 FT	---	---	---	---	
512.01010	BEARING DEVICE MODIFICATION	LS	LUMP SUM	---	---	---	5 EA	1 EA	
512.01012	EXPANSION JOINT (GLAND)	FT	182	---	42	42	49	49	
512.01040	COMPRESSED JOINT MATERIAL	FT	346	---	80	80	93	93	
512.01050	ELASTOMERIC COMP JOINT SEAL	FT	92	48	44	---	---	---	
513.00005	CLASS A CONCRETE	LS	LUMP SUM	0.3 CY	8.7 CY	6.2 CY	32.9 CY	31.7 CY	79.8 CY
514.00015	REINFORCING STEEL	LS	LUMP SUM	---	---	---	120 LB	---	120 LB
514.00025	REINFORCING STEEL (COATED)	LS	LUMP SUM	20 LB	1050 LB	890 LB	11,210 LB	11,210 LB	24,380 LB
515.02720	BRIDGE DECK REPAIR CLASS I-B	SY	2536	---	---	---	1268	1268	
515.02730	BRIDGE DECK REPAIR CLASS II-A	SY	49	---	38	7	4	---	
515.02740	BRIDGE DECK REPAIR CLASS II-B	SY	23	---	5	5	8	5	
515.02750	BRIDGE DECK REPAIR	SY	40	40	---	---	---	---	
515.02807	RIGID CONCRETE OVERLAY	CY	62.0	---	6.0	2.1	28.3	25.6	
515.02810	BRIDGE DECK REPAIR, HYDRO-DEMOLITION	SY	1044	---	---	---	522	522	
516.42010	PAINT REPAIR-STRUCTURAL STEEL	LS	LUMP SUM	3246 SF	---	---	1809 SF	2359 SF	7414 SF
599.00047	BRIDGE DECK OVERLAY (EPOXY)	SY	2252	740	756	756	---	---	
599.00080	BRIDGE CONCRETE REPAIR	SF	25	---	6	---	17	2	
627.01005	EPOXY RESIN INJECTION	FT	56	18	---	---	17	21	
701.19600	REMOVE CONDUIT SYSTEM	LS	LUMP SUM	---	210 FT	---	---	---	210 FT

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Sta 107+87 (EBL), Sta 215+52 (EBL) & Sta 215+43 (WBL) -----	B73-B74
Sta 215+52 (EBL) & Sta 215+43 (WBL) -----	B75-B88
Sta 229+19 (EBL) & Sta 230+12 (WBL) -----	B89-B102

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STATION	LANE	ROUTE	STRUCTURE NUMBER	RM	FEATURE INTERSECTED
107+87	EBL	ML90I	BDD	56.36	Old US 87 Separation (Business 87/25/90 Interchange)
215+52	EBL	ML90I	BDH	58.38	Clear Creek
215+43	WBL	ML90D	BDI		
229+19	EBL	ML90I	BDJ	58.65	US 16 Interchange
230+12	WBL	ML90D	BDK		

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Bridge Drwg No. 3622 -----	1, 4-6, 8-12, & 14 of 15
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SP-500XD Expansion Joint (Repair/Modification)	
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SS-100G Worker and Environmental Controls for Lead Paint Removal	
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SS-200E Concrete Bridge Deck Removal	
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SS-500H Expansion Joint (Gland)	
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GENERAL NOTES

SPECIFICATIONS: WYDOT Standard Specifications for Road and Bridge Construction, 2010 Edition.

DIMENSIONS: Longitudinal dimensions are horizontal and include no correction for grade, unless noted. Slopes are vertical : horizontal.

LINE STYLE DESIGNATION: Phantom lines indicate existing structure, solid lines indicate new construction, hatched areas indicate removal.

FIELD MEASUREMENTS: Field verify dimensions before ordering materials.

CONSTRUCTION SAFETY REQUIREMENTS: To ensure safety of the users below, employ removal and reconstruction methods to prevent debris from falling below the structures. Use warning signs and a debris containment system. Work necessary for these requirements is incidental to applicable contract pay items.

CONSTRUCTION SEQUENCE: At each location, work on one half of the structure at a time with traffic carried on the other half during construction.

HAZARDOUS MATERIALS: The paint systems on the steel components of the existing structures may contain materials including lead and chromium that are hazardous if ingested, inhaled, or otherwise absorbed.

CONCRETE: Use modified concrete for resurfacing and bridge deck repairs. Use class A concrete at all other locations except where designated as bridge concrete repair.

CONCRETE AGGREGATE: Ensure all concrete mix designs employed in the project meet the following alkali-silica reactivity (ASR) screening.

Conduct the AASHTO T 303 (ASTM C 1260) test using a combined sample of fine aggregate and coarse aggregate, in the same proportions that will be used in the concrete mix design. If the test results indicate an expansion at 16 days from casting of 0.10 percent or less, the aggregate is considered non-reactive and mitigation measures are not required.

If the test results indicate an expansion at 16 days from casting of greater than 0.10 percent, mitigate the aggregate reactivity through the use of class F fly ash as approved for ASR mitigation in accordance with the Materials Testing Manual, silica fume, and/or lithium nitrate additive. Demonstrate adequate mitigation by conducting the ASTM C 1567 test and ensuring the test results indicate an expansion at 16 days from casting of 0.10 percent or less. When conducting the ASTM C 1567 test, use a combined sample of fine aggregate and coarse aggregate, in the same proportions that will be used in the concrete mix design and use the cementitious material that is to be used in the mix design.

Ensure the AASHTO T 303 (ASTM C 1260), and ASTM C 1567 tests have been performed within 12 months of the submittal date.

Submit qualifying AASHTO T 303 (ASTM C 1260) and ASTM C 1567 test results to the engineer a minimum of 14 calendar days before concrete production. Submit test results to the Materials Program along with each mix design request.

REINFORCING STEEL: Ensure reinforcing steel conforms to ASTM A 615 (Grade 60) for all bars, including ties and stirrups. Concrete cover to face of reinforcing steel is 2" unless noted. Dimensions for bent bars are out to out. Ensure bars marked with an asterisk (*) are coated.

THREADED ROD: Use threaded rods conforming to ASTM F 1554 (Grade 105) for the bridge railing anchorages. Use threaded rods conforming to ASTM F 1554 (Grade 36) for the bearing device modifications.

ADHESIVE ANCHORAGE SYSTEM: Use one of the following products:
CIA-GEL 6000-GP as manufactured by MiTek USA, Inc.
Red Head C6+ as manufactured by ITW Commercial Construction
Sure Anchor I J-51 as manufactured by Dayton Superior
HIT-RE 500 V3 as manufactured by Hilti, Inc.
Drill and prepare holes and install the threaded rods in accordance with the adhesive system manufacturer's recommendations to provide a pullout strength of equal or greater capacity to the threaded rod. Work necessary for the adhesive anchorage system is incidental to the contract pay items Bridge Railing and Bearing Device Modification.

EXPANSION JOINT (REPAIR/MODIFICATION): For the strip seal gland replacement at Sta 107+87 (EBL), use an SE-300 gland as manufactured by Watson Bowman Acme Corp. The existing steel rails are type "R", fabricated in year 1997. Ensure the new gland is compatible with the existing steel rails.

Work necessary for the snow plow plates at this location will be paid for under the contract pay item Expansion Joint (Repair/Modification).

EXPANSION JOINT (GLAND): Use one of the following products at Sta 215+52 (EBL), Sta 215+43 (WBL), Sta 229+19 (EBL) & Sta 230+12 (WBL):
Wabo StripSeal system with type "R" steel rails and SE-400 gland as manufactured by Watson Bowman Acme Corp.
Steelflex Strip Seal Expansion Joint System with SSCM2 steel rails and A2R-400 gland as manufactured by D.S. Brown

COMPRESSED JOINT MATERIAL: Use one of the following products:
FS-050 as manufactured by Watson Bowman Acme Corp.
BOR-0050 as manufactured by Emseal Joint Systems, Ltd.

ELASTOMERIC COMP JOINT SEAL: Use one of the following products at Sta 107+87 (EBL):
WA-250 as manufactured by Watson Bowman Acme Corp.
CV-2502 as manufactured by D.S. Brown
Use one of the following products at Sta 215+52 (EBL):
WA-400 as manufactured by Watson Bowman Acme Corp.
CV-4000 as manufactured by D.S. Brown

BAR MARKS



WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
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GENERAL NOTES

MACHINE-PLACED RIPRAP: Use stones conforming to class II gradation from a contractor furnished source.

REMOVAL OF BRIDGE RAIL: Remove the existing bridge railing at all locations. Cut anchor bolts flush with concrete surface and grind smooth. Paint cut ends with two coats of zinc-rich paint conforming to ASTM A 780.

REMOVAL OF CONCRETE: Remove portions of the existing structure to the limits shown. Do not damage existing concrete to remain in place. Use a 30 LB pneumatic hammer for general removal and a 15 LB pneumatic hammer within 1'-0" of removal limits. Do not use larger removal equipment unless approved by the Stage Bridge Engineer.

Thoroughly clean concrete from reinforcing steel to remain in place and straighten as required. Remove and replace damaged reinforcing steel with the same size bar and weld-splice where necessary at no additional cost to the department.

REMOVE CONDUIT SYSTEM: Remove the existing rigid conduit and all hardware attached to the bottom flange of the shoulder exterior girder at Sta 215+52 (EBL). Remove buried ends of conduit to 1'-0" minimum below ground line or as directed by the engineer. The engineer will ensure any cables within the conduit are inactive before removal.

CAP SCREW TIGHTENING: Tighten the cap screw at the end of the bearing pin assembly on the shoulder exterior girder at Abutment No. 2 at Sta 215+52 (EBL). Work necessary for tightening the cap screw is incidental to the contract pay item Remove Conduit System.

REMOVAL OF JOINT MATERIAL: Remove existing joint material at the locations shown and prepare the concrete surfaces in accordance with the new joint material manufacturer's recommendations. Work necessary for clearing the gap and surface preparation is incidental to the contract pay item Compressed Joint Material.

PREFORMED EXPANSION JOINT FILLER: Work necessary for the preformed expansion joint filler is incidental to the contract pay item Class A Concrete.

SEALING JOINTS (CONC PVMT): Install hot-poured elastic sealant with backer rod in accordance with Section 417, Sealing Existing Concrete Pavement Joints and Cracks.

EPOXY RESIN BONDING COMPOUND: At reconstruction locations using class A concrete, clean the roughened surfaces of the existing concrete and coat with epoxy resin bonding compound. If the bonding compound gels before concrete placement, remove by sandblasting and reapply. Use bonding compound conforming to Subsection 810.6, Epoxy Resin. Mix and apply in accordance with the manufacturer's recommendations. Work necessary for the epoxy resin bonding compound is incidental to the contract pay item Class A Concrete.

RESURFACING: Complete modified concrete resurfacing operations within two working days after flush cleaning activities for each stage of construction. Only equipment required for the resurfacing operations will be allowed on the bridge after flush cleaning.

PAINT REPAIR: Paint the following exposed steel surfaces at Sta 107+87 (EBL):
Girders, bearings, cross frames, and stiffeners within 5'-0" of centerline of each bent. Bottom flange of the shoulder exterior girder, from Bent No. 1 to Bent No. 2. Use a blue top coat color.
Paint the following exposed steel surfaces at Sta 229+19 (EBL):
Girders, bearings, diaphragms, and stiffeners within 5'-0" of the end of girders at Abutment No. 2 and within 5'-0" of centerline of each bent. Modified bearing at the shoulder exterior girder at Abutment No. 1. Bottom flange of the shoulder exterior girder and 6" up each face of the web from Abutment No. 1 to Bent No. 1. 5'-0" of the bottom flange of all girders at impact damage near the center of the center span. Use aluminum paint.
Paint the following exposed steel surfaces at Sta 230+12 (WBL):
Girders, bearings, diaphragms, and stiffeners within 5'-0" of the end of girders at Abutment No. 2 and within 5'-0" of centerline of each bent. Top and bottom flanges of the shoulder and median exterior girders, full length. Use aluminum paint.
Collect and contain rags and rinse water used for surface preparation as specified for "Other Debris" in accordance with Supplementary Specification SS-100G, Worker and Environmental Controls for Lead Paint Removal.

BRIDGE OFFICE NOTIFICATION: The engineer will notify the State Bridge Engineer in writing within 14 calendar days after work has been completed at each structure.

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS	GENERAL NOTES		
	BRIDGE REHABILITATION		
	VARIOUS LOCATIONS		
	Buffalo Marginal		
	I-90/I-25 Interchange Section		
	I902122	Jo	
REVIEW _____	DESIGN _____	Design Section	X
APPROVAL _____	DETAIL <u>X</u> _____	Drwg No. X	Sheet 3 of 54
	QTY'S _____		