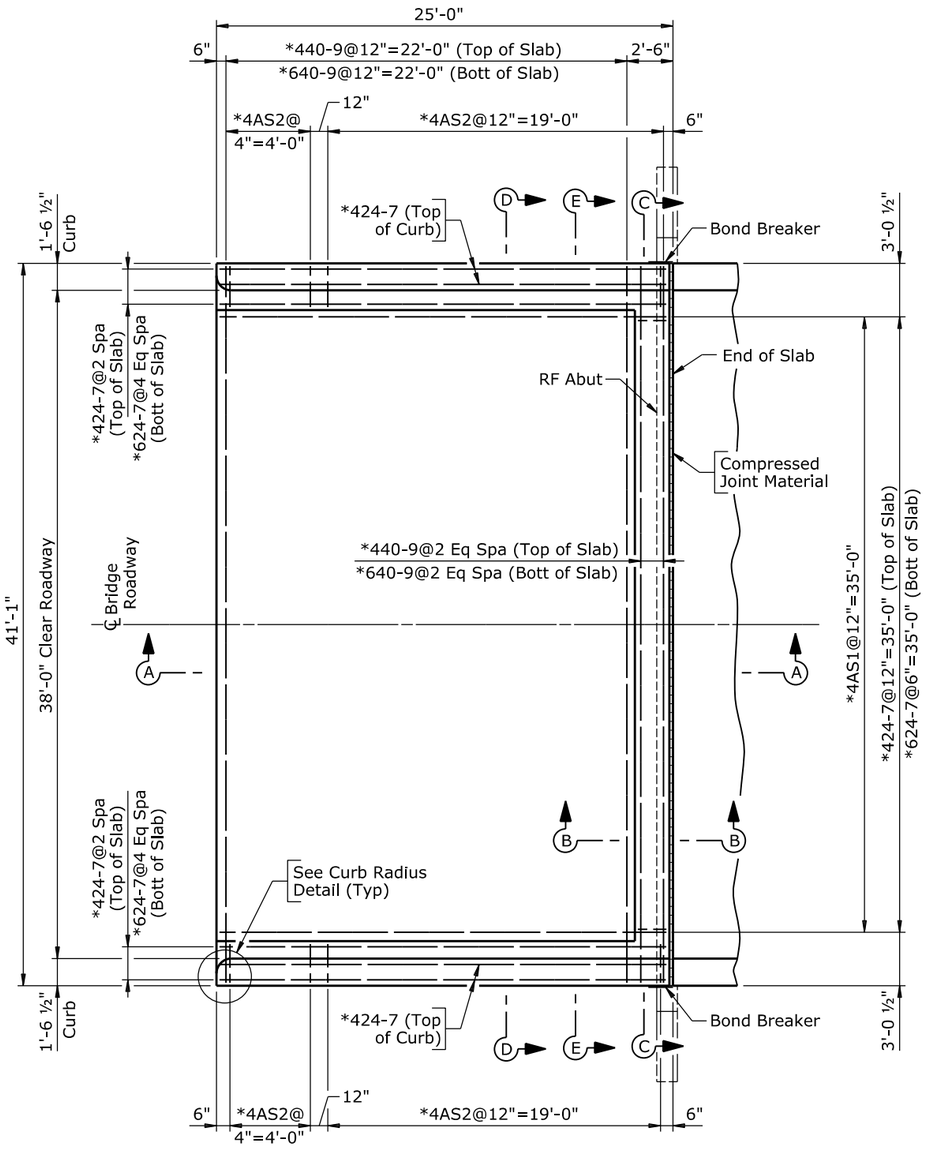
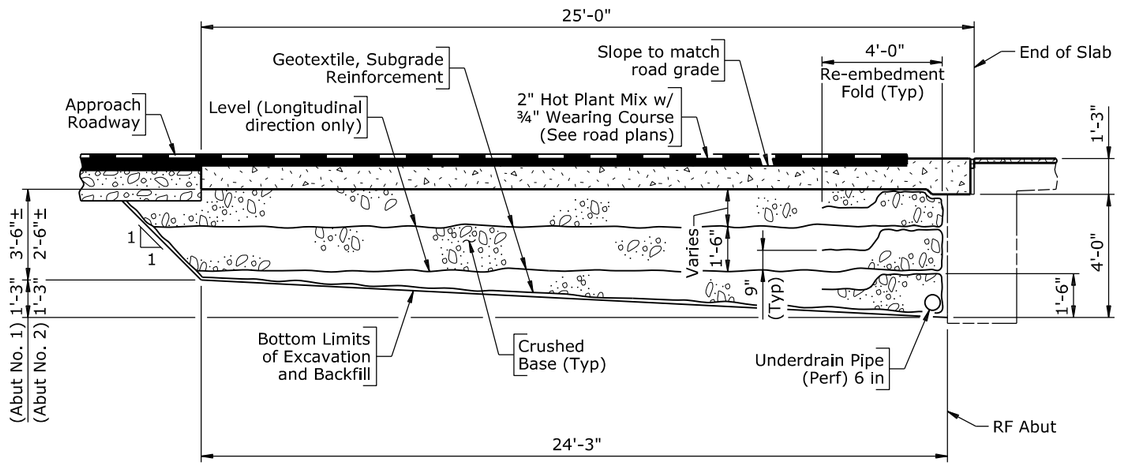
Wyo. Proj. I252137

Sheet B17 of B81 Sheets

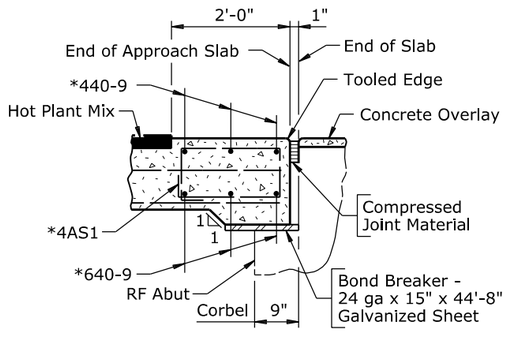


PLAN

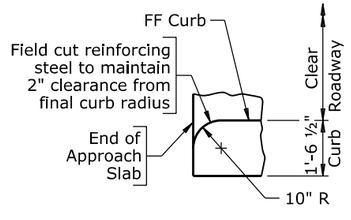
(Abut No. 1 - SBL and Abut No. 2 - NBL shown,
Abut No. 2 - SBL and Abut No. 1 - NBL similar)



SECTION A-A



SECTION B-B



CURB RADIUS DETAIL

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

DATE

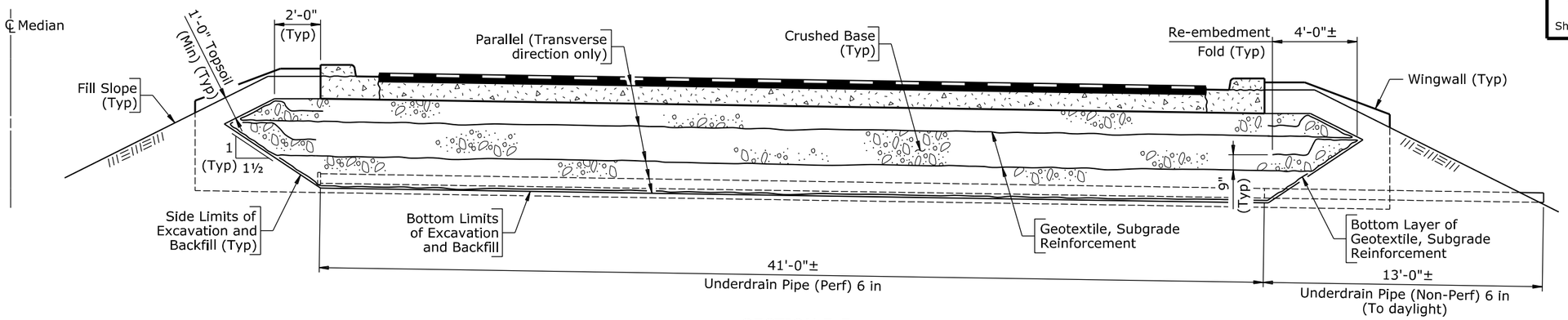
DESIGN ____ ✓ ____
DETAIL BBB ✓ AAA
QTY'S GGG ✓ DDD

Design Section L M Nop

Drwg No. 0014 Sheet 17 of 30

I252137_7ap1.dgn

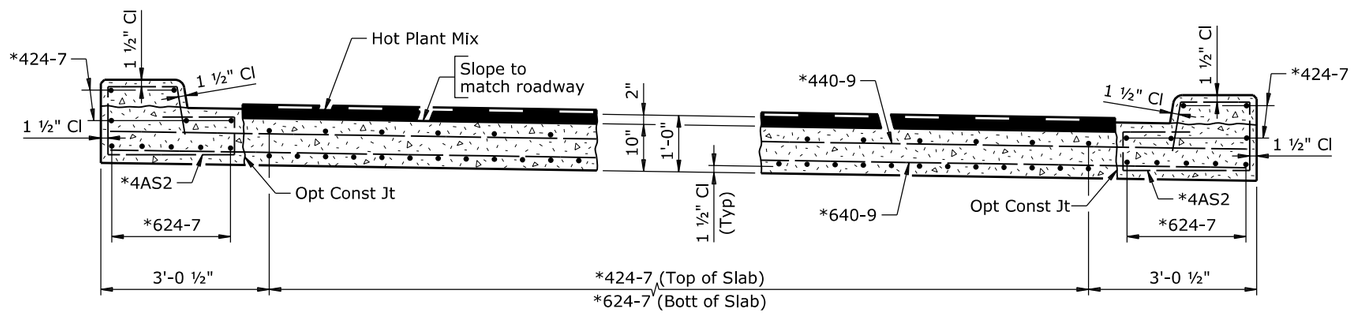
Wyo. Proj.	I252137			
Sheet	B18	of	B81	Sheets



SECTION E-E

SECTION C-C

(Showing typical curb and gutter dimensions)



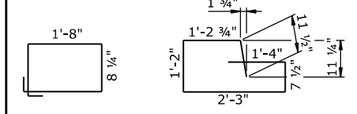
SECTION D-D

(Showing typical curb and gutter reinforcing steel)

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



*4AS1 (Tie) (5'-6")

*4AS2 (Tie) (7'-7")

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)

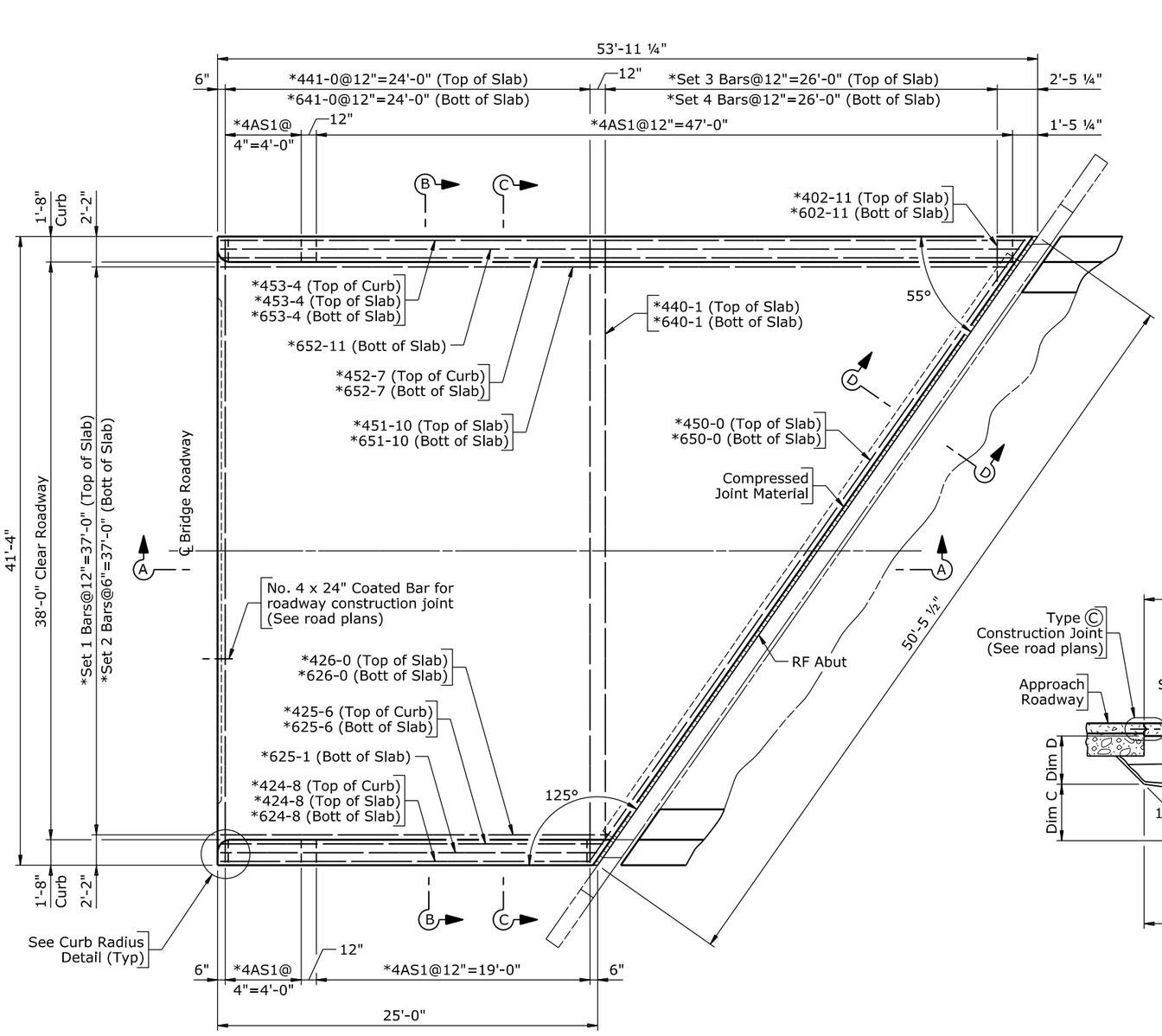
I252137 PI

APPROVED / DATE	DESIGN	DETAIL	QTY'S	Design Section	L M Nop
	____ ✓ ____	BBB ✓ AAA	GGG ✓ DDD	Drwg No. 0014	Sheet 18 of 30

I252137_7ap2.dgn

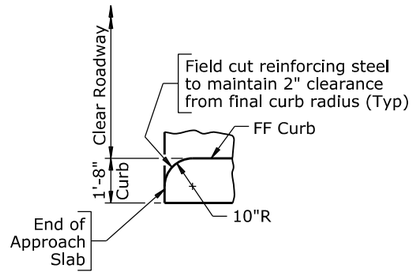
Wyo. Proj. I805125

Sheet B41 of B62 Sheets



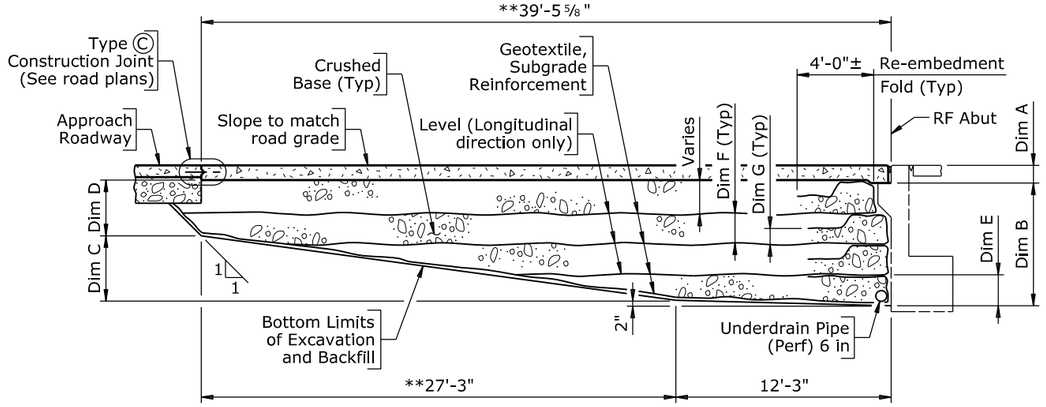
PLAN

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



CURB RADIUS DETAIL

TABLE OF DIMENSIONS				
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 ½"	9"	10 ½"	9"



SECTION A-A

Note: 1) Dimensions preceded by a double asterisk (**) are measured at ℄ 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

APPROVED

DATE

APPROACH SLAB DETAILS

BRIDGE REHABILITATION

STA 3439+13

Walcott Jct. - Laramie Road

Herrick Lane Section

I805125 AI

DESIGN ____ ✓ ____
DETAIL QQQ ✓ SSS
QTY'S QQQ ✓ TTT

Design Section B C Def

Drwg No. 0015 Sheet 9 of 12

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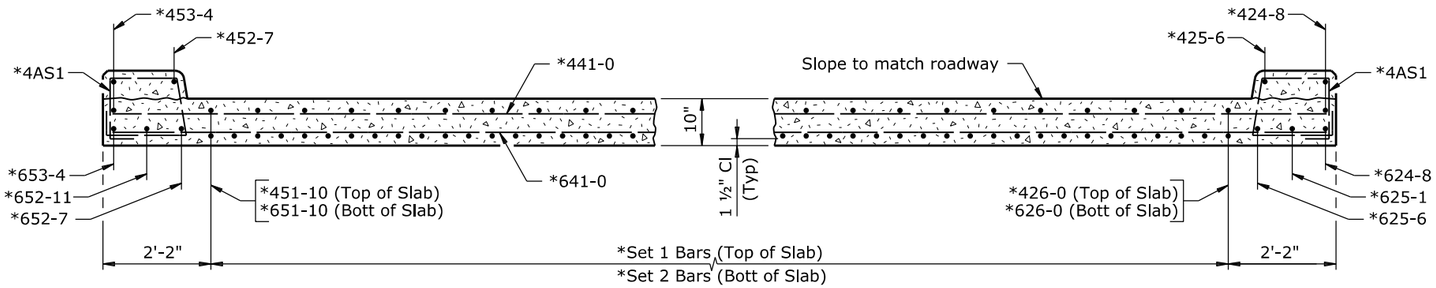
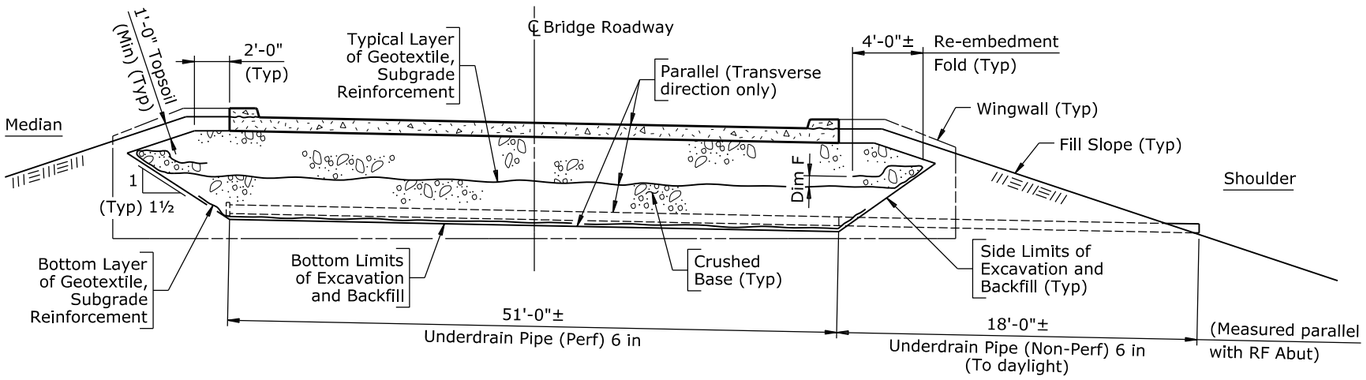
Wyo. Proj. I805125

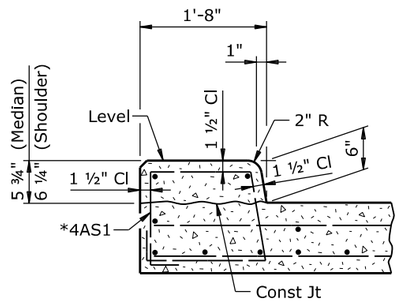
Sheet B42 of B62 Sheets



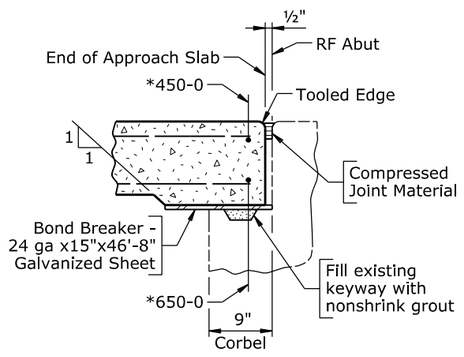
SECTION B-B



SECTION C-C



TYPICAL CURB SECTION

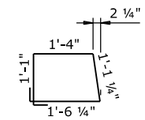


SECTION D-D

BILL OF REINFORCEMENT

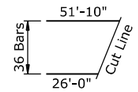
Location	Mark	Number Required Per Approach Slab
Approach Slab and Curbs	*4AS1	94
	*424-8	2
	*425-6	1
	*441-0	25
	*450-0	1
	*452-7	1
	*453-4	2
	*Set 1 Bars	1
	*Set 3 Bars	1
	*624-8	1
	*625-1	1
	*625-6	1
	*641-0	25
	*650-0	1
	*652-7	1
	*652-11	1
	*653-4	1
	*Set 2 Bars	1
	*Set 4 Bars	1
	‡**Weight	*9611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

Bending Diagram

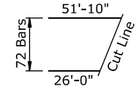


*4AS1 (Tie)
(5'-10")

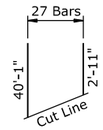
Set Diagrams



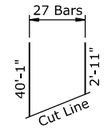
*Set 1 Bars (No. 4 Bars)
(Avg length=38'-11")



*Set 2 Bars (No. 6 Bars)
(Avg length=38'-11")



*Set 3 Bars (No. 4 Bars)
(Avg length=21'-6")



*Set 4 Bars (No. 6 Bars)
(Avg length=21'-6")

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

DATE

DESIGN ___ ✓ ___
DETAIL QQQ ✓ SSS
QTY'S QQQ ✓ TTT

Design Section B C Def

Drwg No. 0015 Sheet 10 of 12

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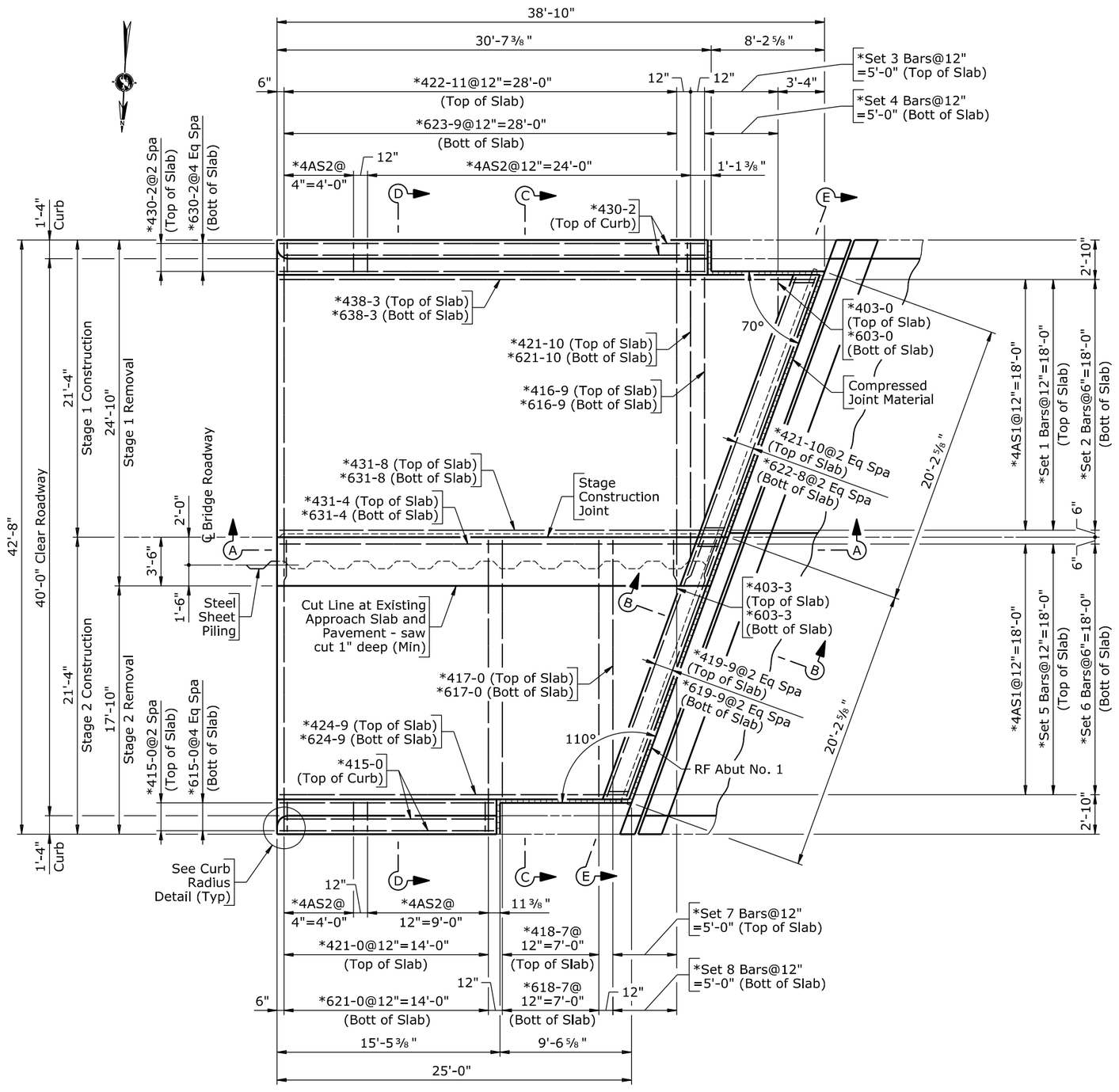
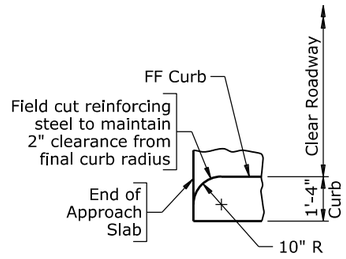
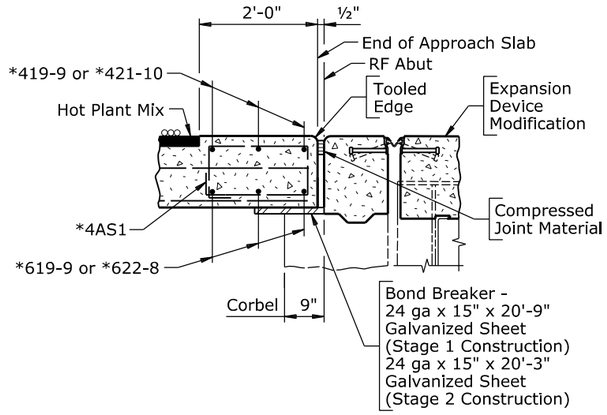
Wyo. Proj.	N311074			
Sheet	B9	of	B48	Sheets



PLAN



CURB RADIUS DETAIL



SECTION B-B

Note:
1) Lap bond breakers 6" minimum.
2) Place *4AS1 bars parallel with ℄ 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 / DATE	DESIGN CCC ✓ AAA	Design Section	L M Nop
	DETAIL BBB ✓ EEE	Drwg No. 0010	Sheet 9 of 15
	QTY'S		

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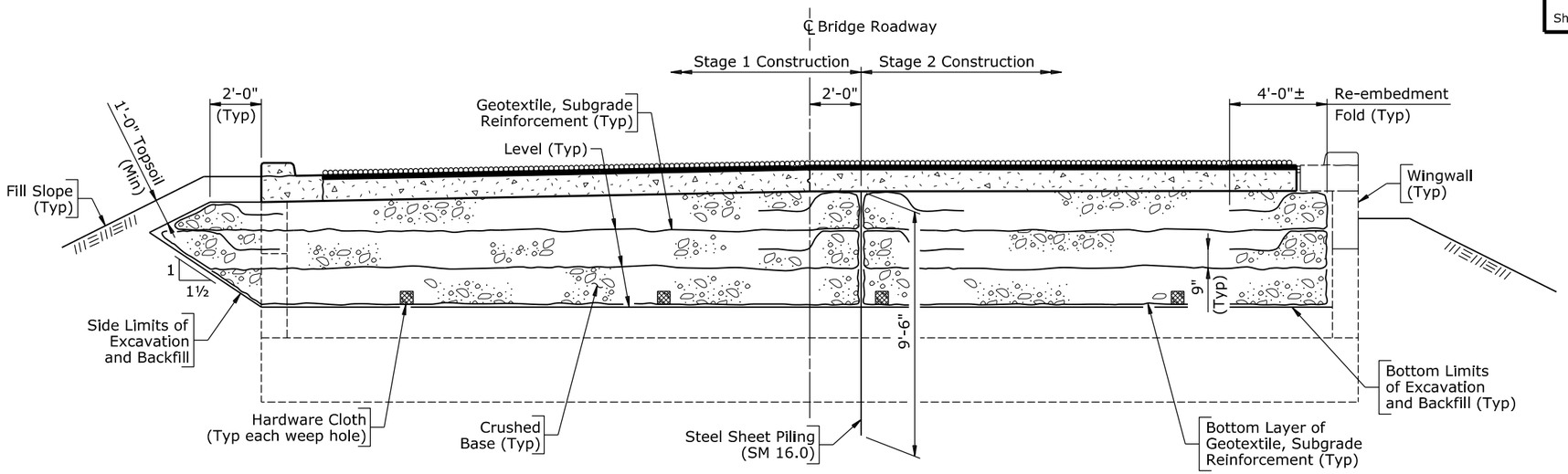
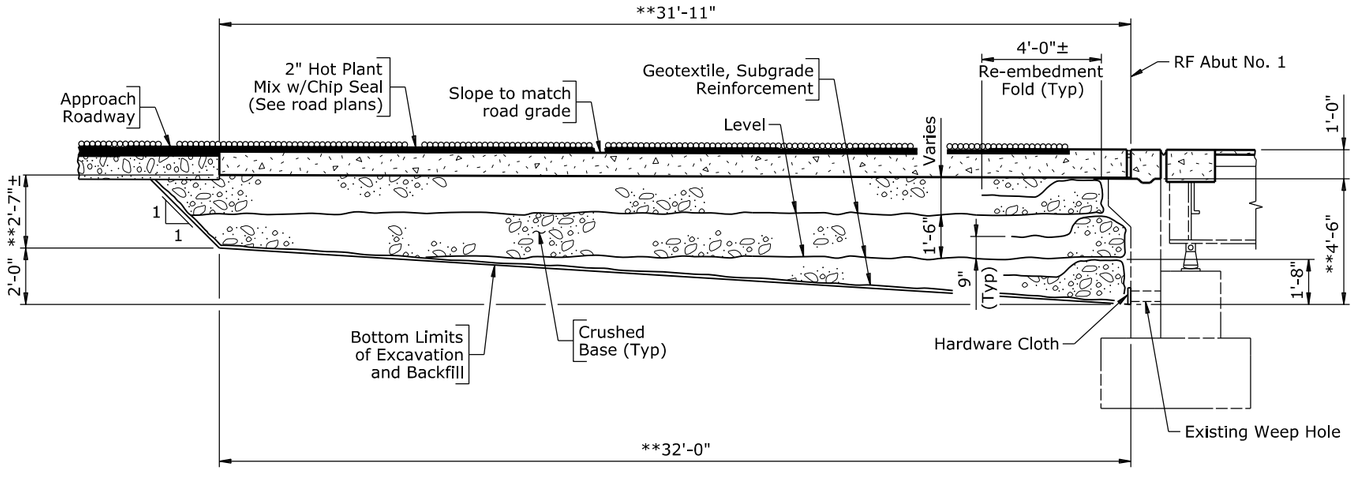
Wyo. Proj. N311074

Sheet B10 of B48 Sheets



SECTION C-C



SECTION A-A

Note: 1) Dimensions preceded by a double asterisk (**) are measured at ℄ 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 (Mininum 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

REVISIONS

APPROACH SLAB DETAILS

BRIDGE REHABILITATION

STA 197+38

Cody - Greybull

Cody East Section

N311074 Pa

APPROVED

DATE

DESIGN ___ ✓ ___
DETAIL CCC ✓ AAA
QTY'S BBB ✓ EEE

Design Section L M Nop

Drwg No. 0010 Sheet 10 of 15

N311074_1ap2.dgn

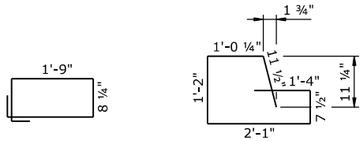
Wyo. Proj. N311074

Sheet B11 of B48 Sheets

BILL OF REINFORCEMENT

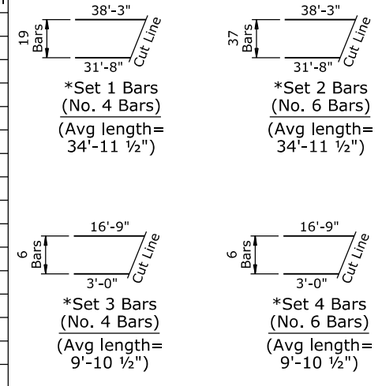
Location	Mark	Number Required: Stage 1 Construction	Number Required: Stage 2 Construction
Approach Slab and Curbs	*4AS1	19	19
	*4AS2	38	23
	*415-0	———	5
	*418-7	———	8
	*419-9	———	3
	*421-0	———	15
	*421-10	4	———
	*422-11	29	———
	*430-2	5	———
	*Set 1 Bars	1	———
	*Set 3 Bars	1	———
	*Set 5 Bars	———	1
	*Set 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

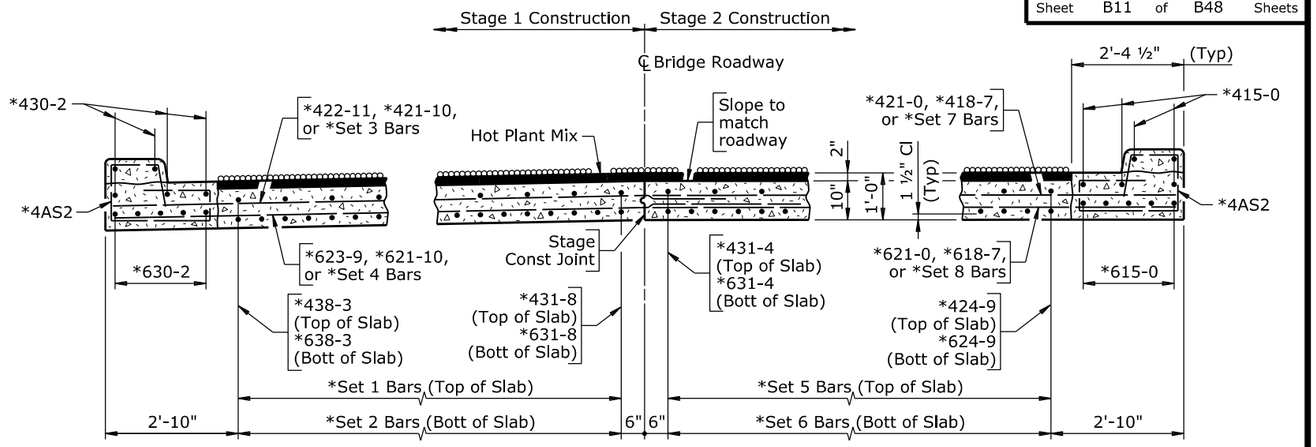
Bending Diagrams



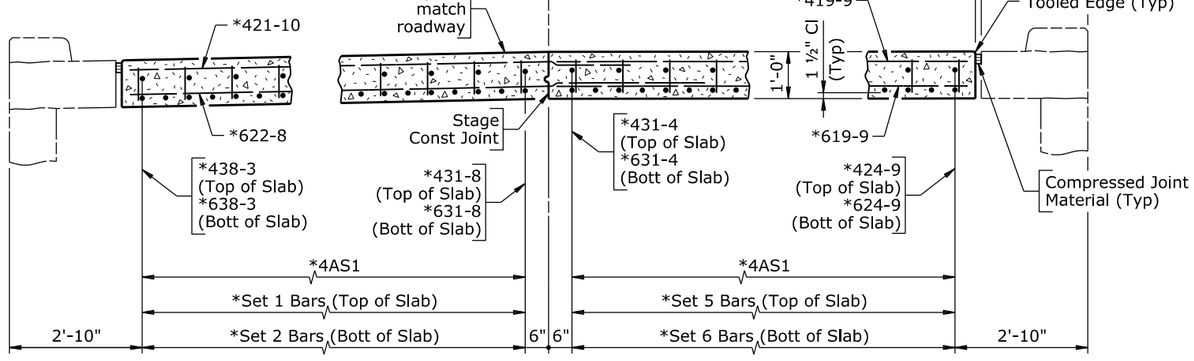
*4AS1 (Tie) (5'-8")

*4AS2 (Tie) (7'-3")



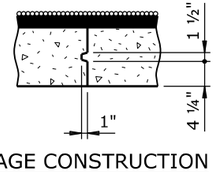


SECTION D-D

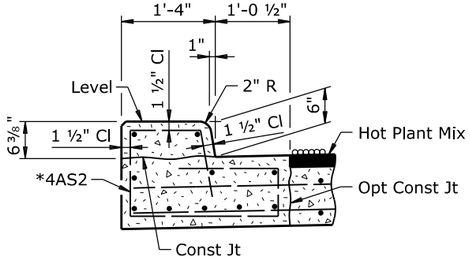


SECTION E-E

(Dimensions are perpendicular to ℄ Bridge Roadway)



STAGE CONSTRUCTION JOINT DETAIL



TYPICAL CURB AND GUTTER SECTION

Note: 1) Ensure the reinforcing steel fabricator prefixes approach slab bar marks at Abutment No. 1 with numeral 2.

¤ 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

REVISIONS

APPROVED

DATE

APPROACH SLAB DETAILS

BRIDGE REHABILITATION

STA 197+38

Cody - Greybull

Cody East Section

N311074 Pa

DESIGN ——— ✓ ———
DETAIL CCC ✓ AAA
QTY'S BBB ✓ EEE

Design Section L M Nop

Drwg No. 0010 Sheet 11 of 15

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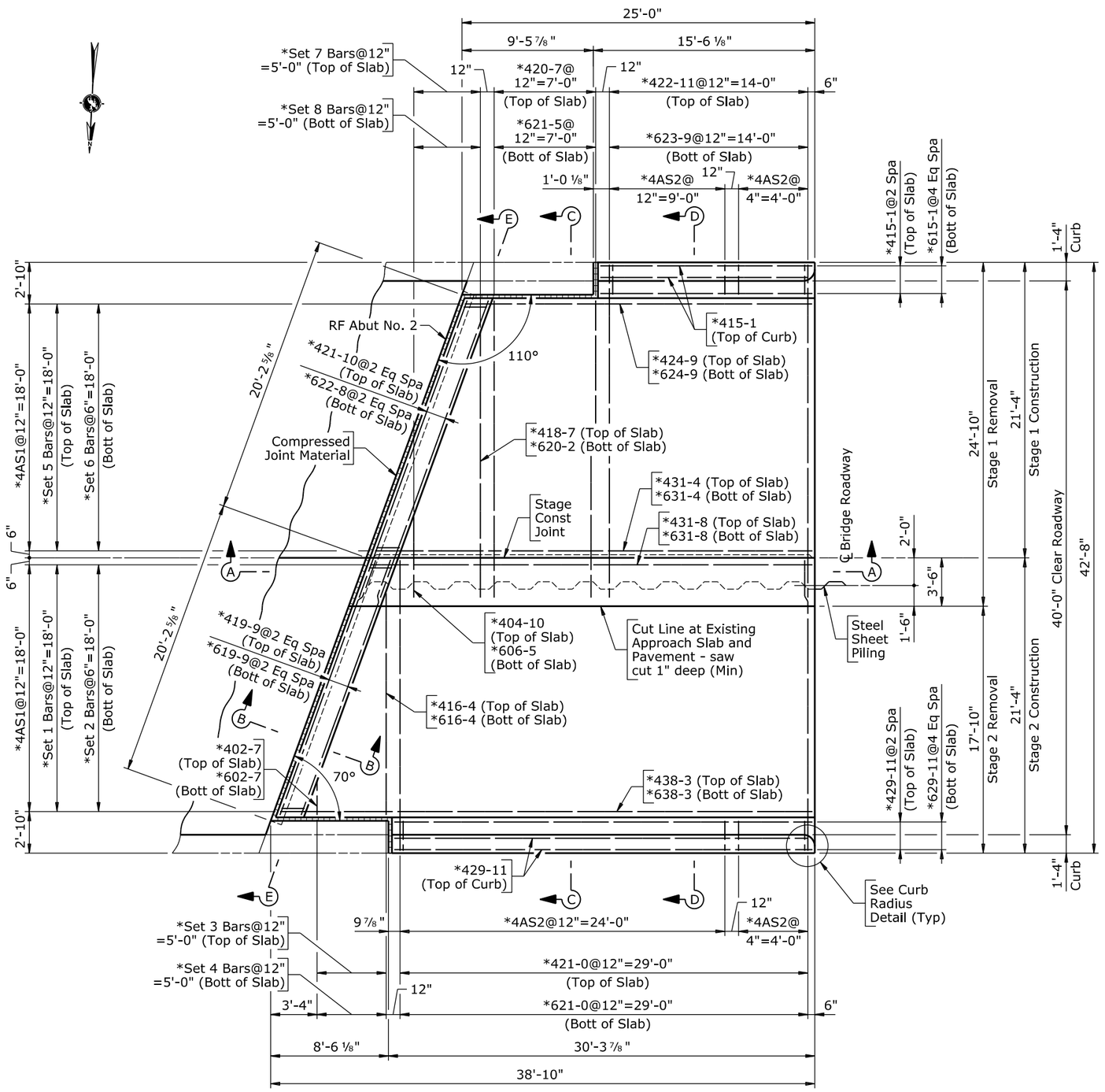
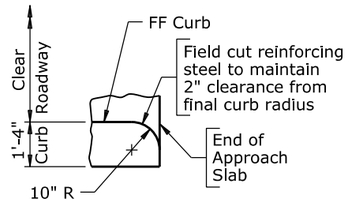
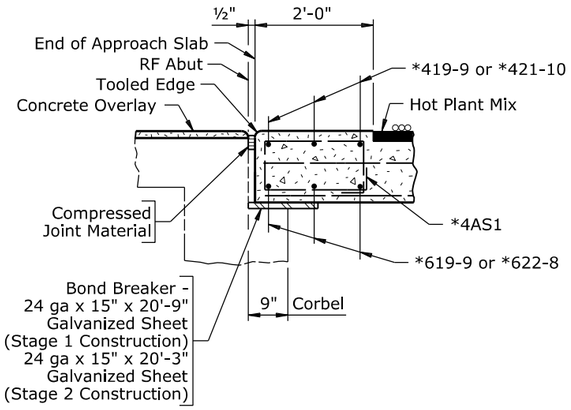
Wyo. Proj.	N311074			
Sheet	B12	of	B48	Sheets



PLAN



CURB RADIUS DETAIL



SECTION B-B

Note:
1) Lap bond breakers 6" minimum.
2) Place *4AS1 bars parallel with ℄ Bridge Roadway.
3) Extend *Set 7 Bars 1'-9" past construction joint.
   Extend *Set 8 Bars 2'-7" past construction joint.
4) Extend compressed joint material up front face and across top of curbs.
5) For Bridge Railing Modification Details, see Sheets No. 6 thru 8.
6) For Sections A-A and C-C, see Sheet No. 13.
7) For Sections D-D and E-E, see Sheet No. 14.

ABUTMENT NO. 2

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

REVISIONS

APPROVED

DATE

APPROACH SLAB DETAILS

BRIDGE REHABILITATION

STA 197+38

Cody - Greybull

Cody East Section

N311074 Pa

DESIGN	___ ✓ ___	Design Section	L M Nop
DETAIL	CCC ✓ AAA		
QTY'S	BBB ✓ EEE	Drwg No. 0010	Sheet 12 of 15

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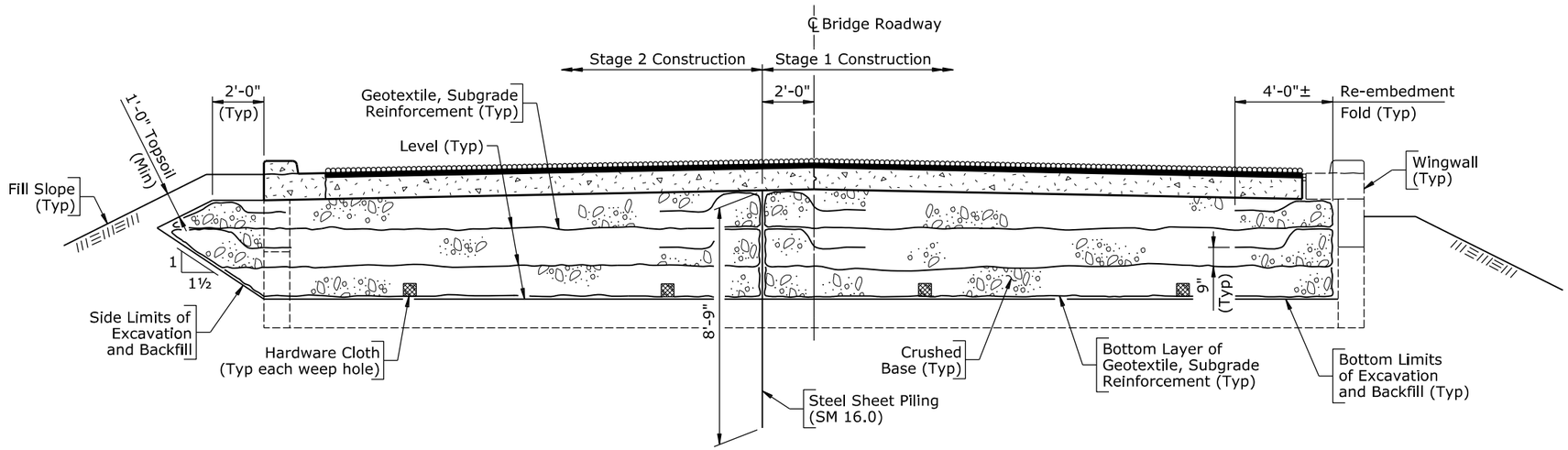
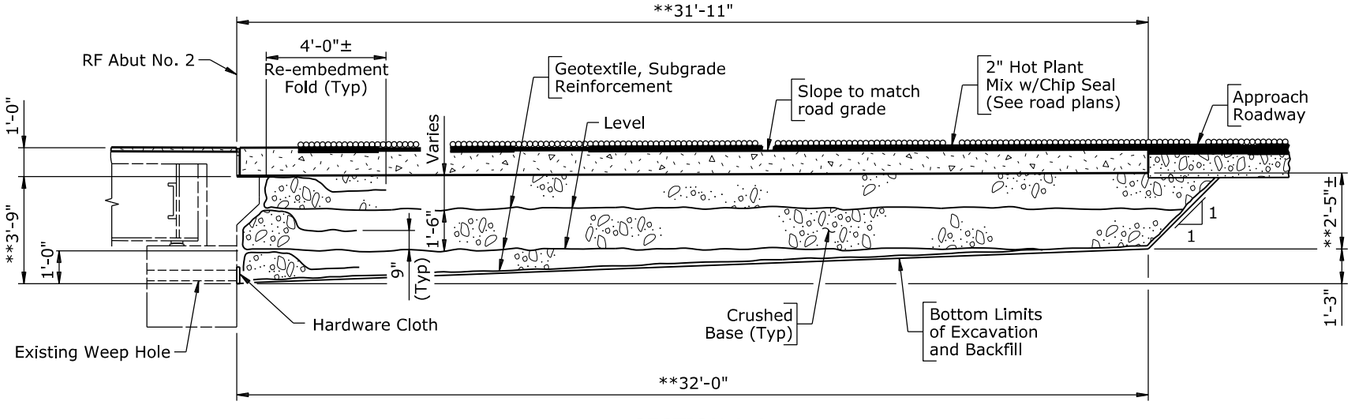


SECTION C-C



SECTION A-A

Note: 1) Dimensions preceded by a double asterisk (**) are measured at ℄ 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 (Mininum 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

REVISIONS

APPROACH SLAB DETAILS

BRIDGE REHABILITATION

STA 197+38

Cody - Greybull

Cody East Section

N311074 Pa

APPROVED

DATE

DESIGN ___ ✓ ___
DETAIL CCC ✓ AAA
QTY'S BBB ✓ EEE

Design Section L M Nop

Drwg No. 0010 Sheet 13 of 15

N311074_1ap5.dgn

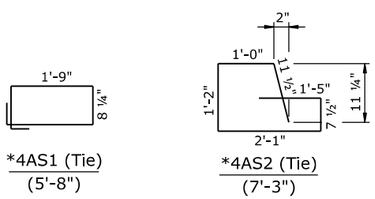
Wyo. Proj. N311074

Sheet B14 of B48 Sheets

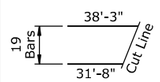
BILL OF REINFORCEMENT

Location	Mark	Number Required: Stage 1 Construction	Number Required: Stage 2 Construction
Approach Slab and Curbs	*4AS1	19	19
	*4AS2	23	38
	*415-1	5	———
	*419-9	———	3
	*420-7	8	———
	*421-0	———	30
	*421-10	3	———
	*422-11	15	———
	*429-11	———	5
	*Set 1 Bars	———	1
	*Set 3 Bars	———	1
	*Set 5 Bars	1	———
	*Set 7 Bars	1	———
	*615-1	5	———
	*619-9	———	3
	*621-0	———	30
	*621-5	8	———
	*622-8	3	———
	*623-9	15	———
	*629-11	———	5
	*Set 2 Bars	———	1
	*Set 4 Bars	———	1
	*Set 6 Bars	1	———
	*Set 8 Bars	1	———
	¤*Weight	*3706 LB	*4586 LB

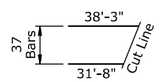
Bending Diagrams



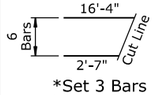
Set Diagrams



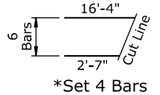
*Set 1 Bars (No. 4 Bars) (Avg length= 34'-11 ½")



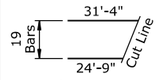
*Set 2 Bars (No. 6 Bars) (Avg length= 34'-11 ½")



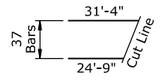
*Set 3 Bars (No. 4 Bars) (Avg length= 9'-5 ½")



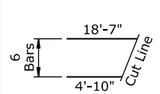
*Set 4 Bars (No. 6 Bars) (Avg length= 9'-5 ½")



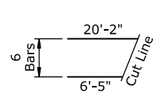
*Set 5 Bars (No. 4 Bars) (Avg length= 28'-0 ½")



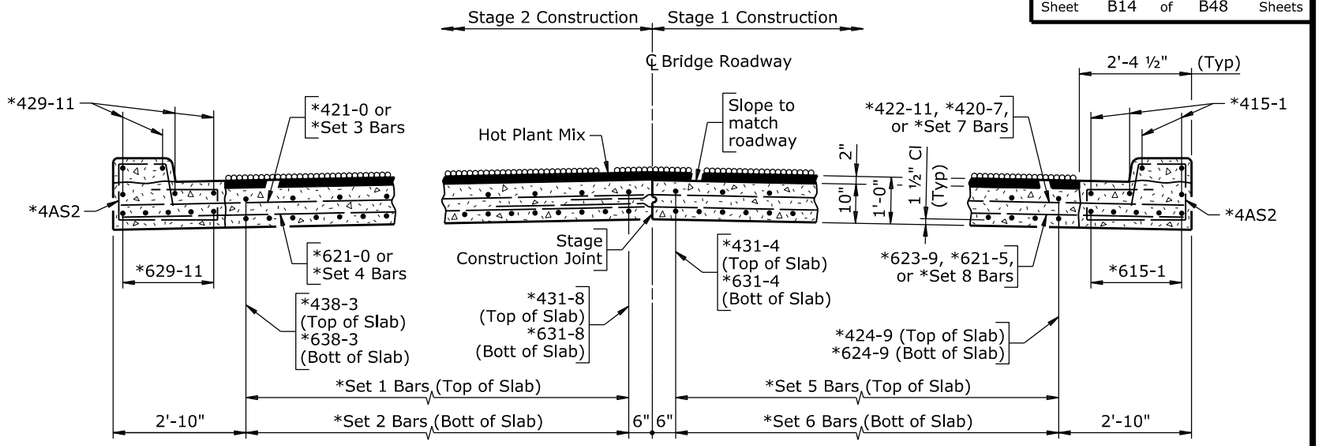
*Set 6 Bars (No. 6 Bars) (Avg length= 28'-0 ½")



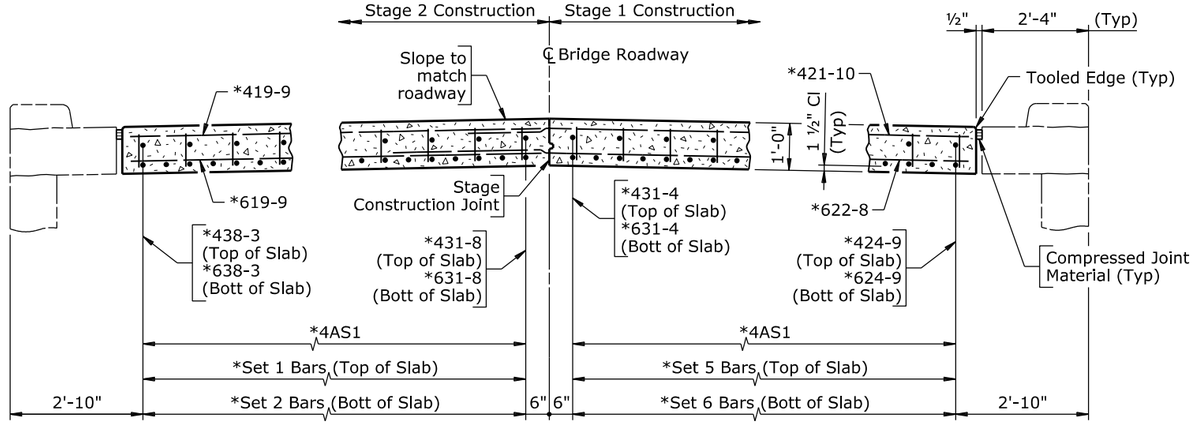
*Set 7 Bars (No. 4 Bars) (Avg length= 11'-8 ½")



*Set 8 Bars (No. 6 Bars) (Avg length= 13'-3 ½")

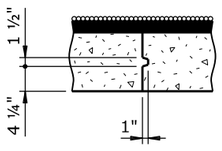


SECTION D-D

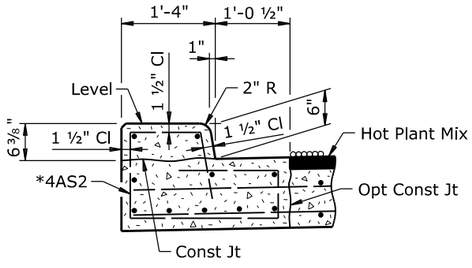


SECTION E-E

(Dimensions are perpendicular to ℄ Bridge Roadway)



STAGE CONSTRUCTION JOINT DETAIL



TYPICAL CURB AND GUTTER SECTION

Note: 1) Ensure the reinforcing steel fabricator prefixes approach slab bar marks at Abutment No. 2 with numeral 3.

¤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

REVISIONS

APPROACH SLAB DETAILS

BRIDGE REHABILITATION

STA 197+38

Cody - Greybull

Cody East Section

N311074 Pa

APPROVED

DATE

DESIGN ——— ✓ ———

DETAIL CCC ✓ AAA

QTY'S BBB ✓ EEE

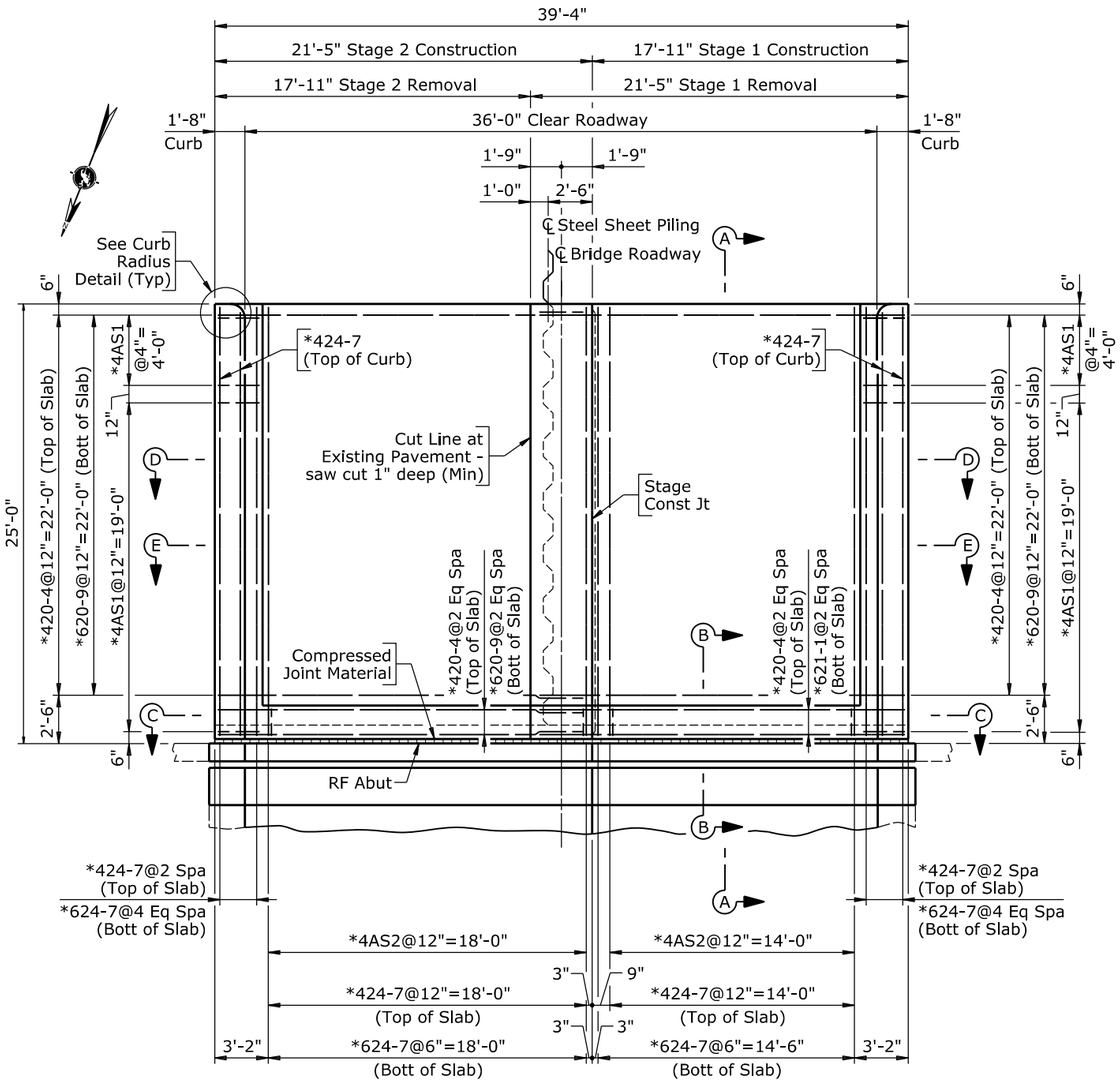
Design Section L M Nop

Drwg No. 0010 Sheet 14 of 15

N311074_1ap6.dgn

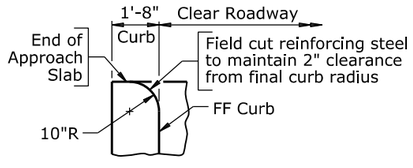
Wyo. Proj. P232037

Sheet B11 of B27 Sheets

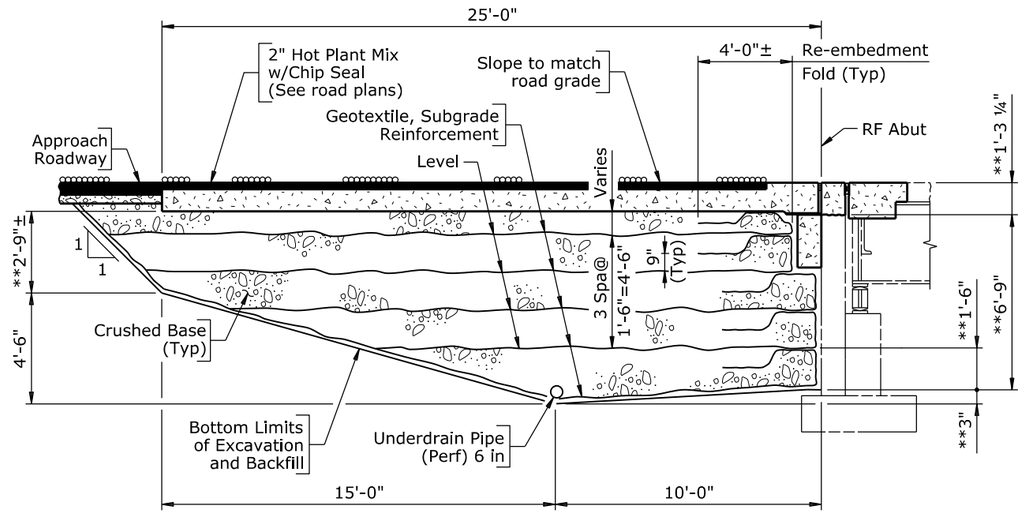


PLAN

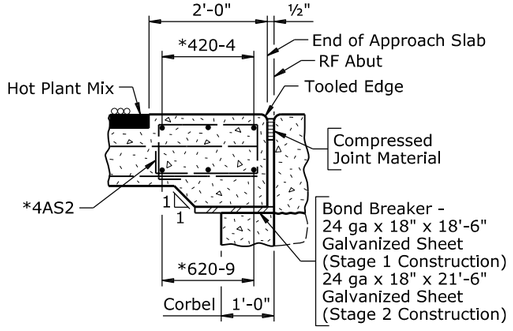
(Abut No. 1 shown, Abut No. 2 similar)



CURB RADIUS DETAIL



SECTION A-A



SECTION B-B

Note: 1) Dimensions preceded by a double asterisk (**) are measured at ℄ 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

REVISIONS

APPROVED

DATE

APPROACH SLAB DETAILS

BRIDGE REHABILITATION

VARIOUS LOCATIONS

Rock River - Laramie

Bosler South Section

P232037 AI

DESIGN ___ ✓ ___

DETAIL JJJ ✓ HHH

QTY'S JJJ ✓ OOO

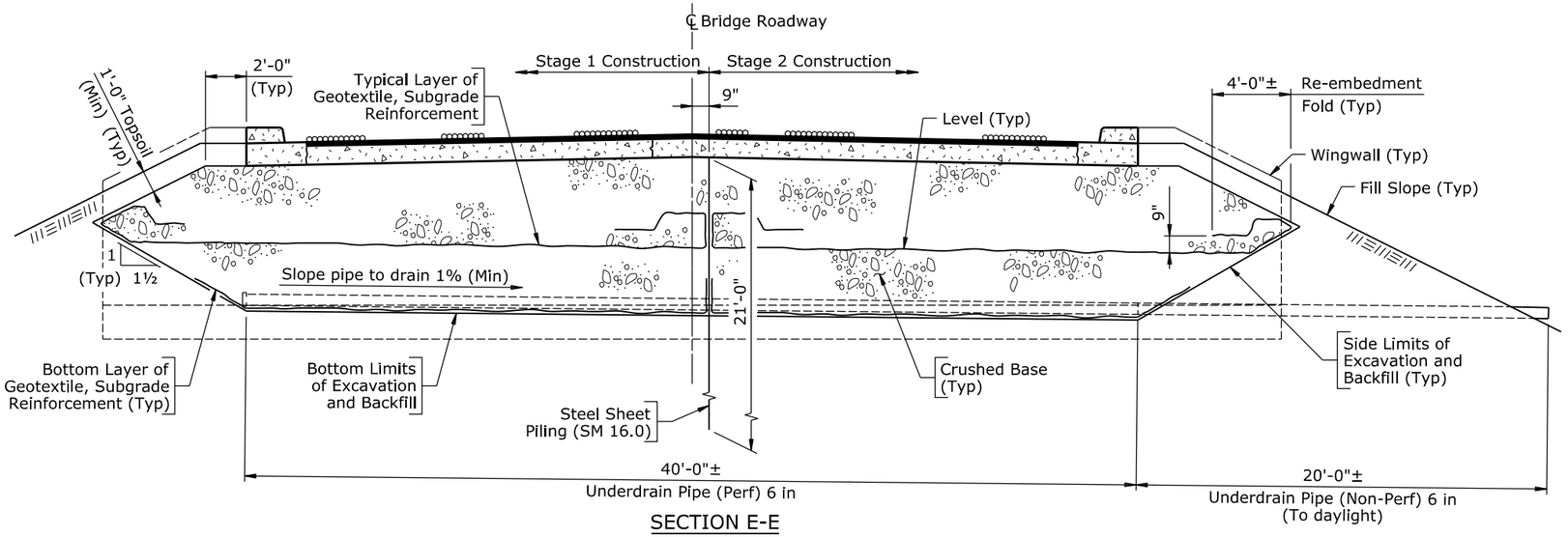
Design Section Q R Stuv

Drwg No. 0012 Sheet 11 of 14

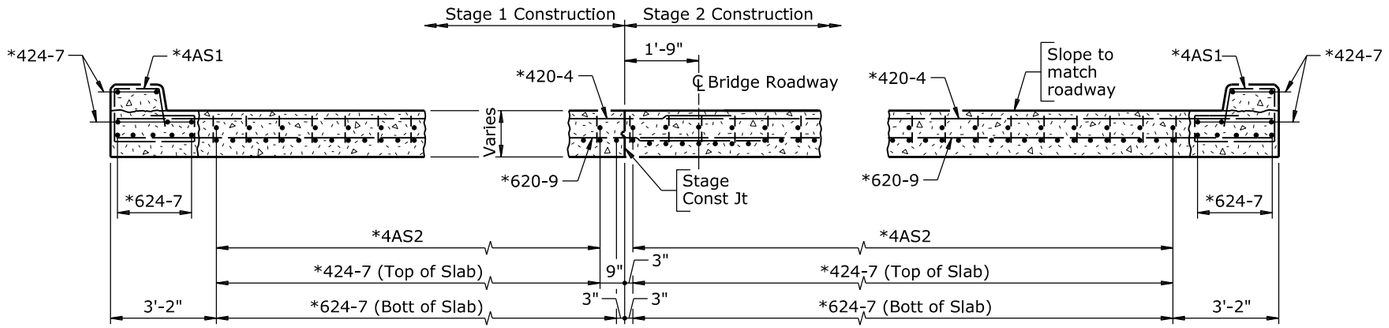
P232037_1ap1.dgn

Wyo. Proj. P232037

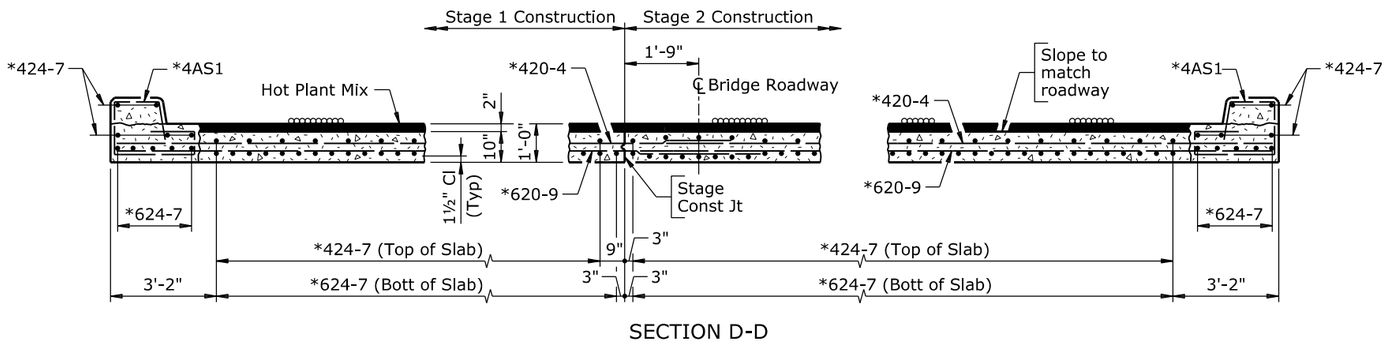
Sheet B12 of B27 Sheets



SECTION E-E

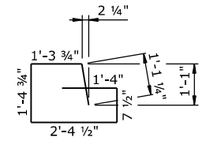


SECTION C-C

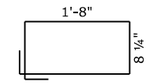


SECTION D-D

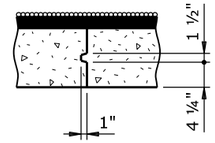
BILL OF REINFORCEMENT			
Location	Mark	Number Required Per Approach Slab	
		Stage 1 Construction	Stage 2 Construction
Approach Slab and Curbs	*4AS1	33	33
	*4AS2	15	19
	*420-4	26	26
	*424-7	20	24
	*620-9	26	26
	*624-7	35	42
	‡**Weight	*3022 LB	*3361 LB
Bending Diagrams			



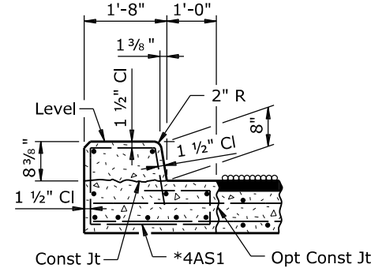
*4AS1 (Tie)
(8'-3")



*4AS2 (Tie)
(5'-6")



STAGE CONSTRUCTION JOINT DETAIL



TYPICAL CURB AND GUTTER SECTION

Note: 1) Ensure the reinforcing steel fabricator prefixes approach slab bar marks with numeral 6 at Abutment No. 1 and numeral 7 at Abutment No. 2.
‡2) Approach slab reinforcing steel is not included in the quantity of reinforcing steel.
3) Extend bottom layer of geotextile up sheet piling and side limits of excavation and backfill to bottom of first layer of geotextile.
4) For location of Sections C-C, D-D, and E-E, see Sheet No. 11.

BRIDGE OVER LARAMIE RIVER

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

REVISIONS

APPROACH SLAB DETAILS

BRIDGE REHABILITATION
VARIOUS LOCATIONS
Rock River - Laramie
Bosler South Section

P232037 AI

APPROVED
DATE

DESIGN ____ ✓ ____
DETAIL JJJ ✓ HHH
QTY'S JJJ ✓ OOO

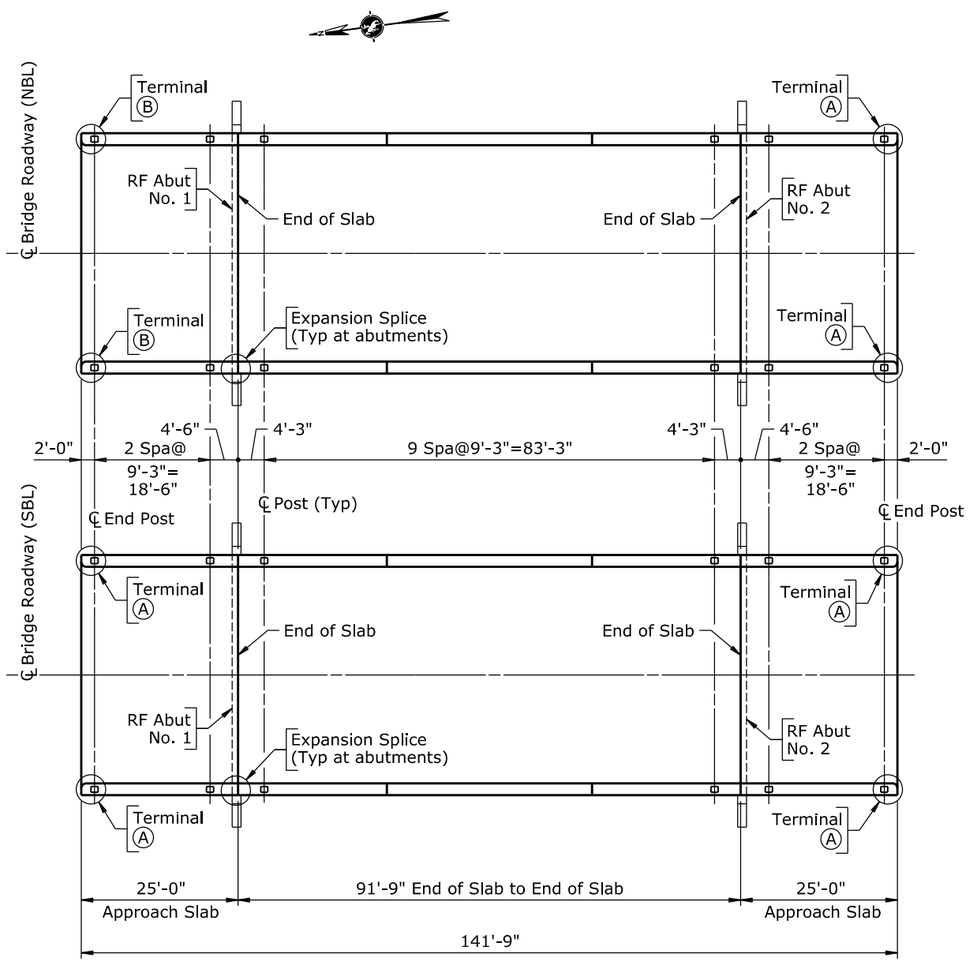
Design Section Q R Stuv

Drwg No. 0012 Sheet 12 of 14

P232037_1ap2.dgn

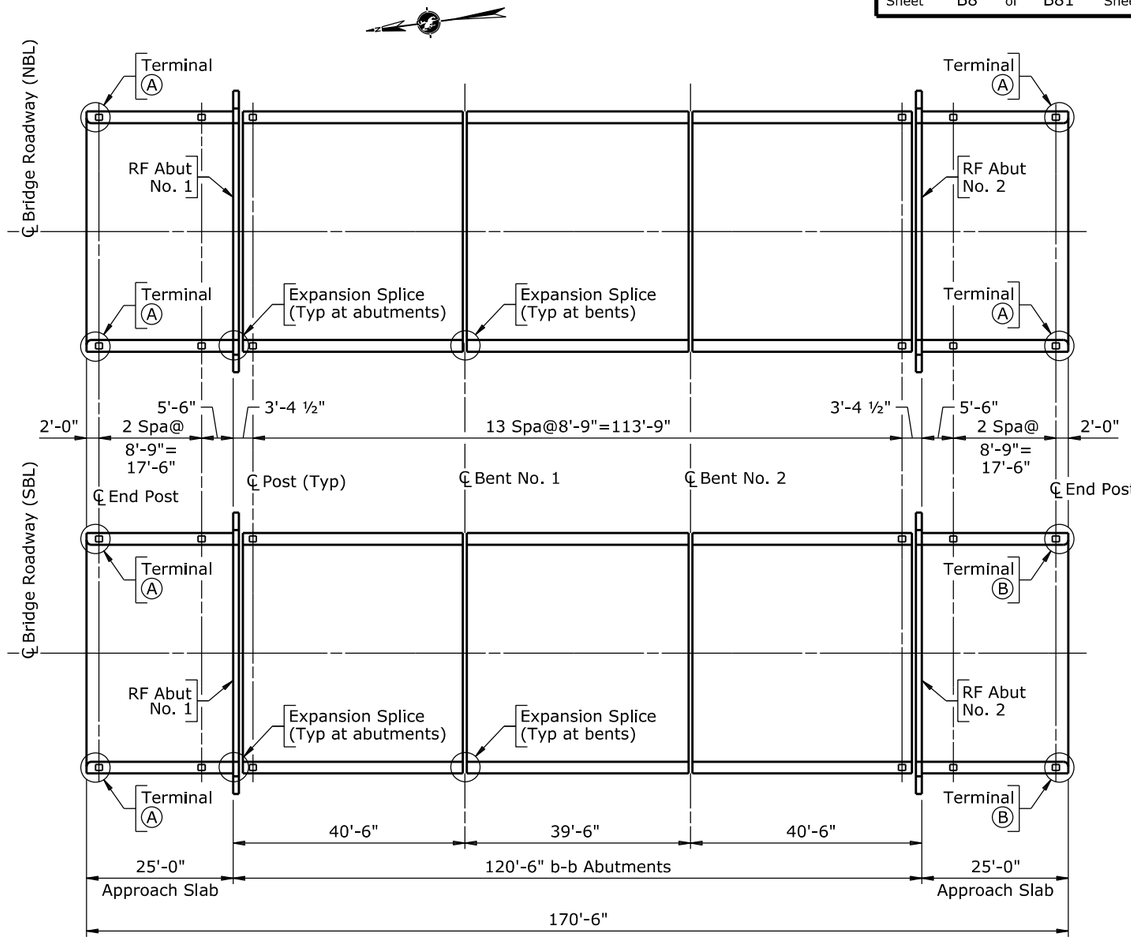
Wyo. Proj. I252137

Sheet B8 of B81 Sheets



PLAN AT STA 384+32

(20 posts with adhesive anchorage system req'd per structure on bridge)
(12 posts with full anchorages req'd per structure on approach slabs)



PLAN AT STA 386+96

(28 posts with adhesive anchorage system req'd per structure on bridge)
(12 posts with full anchorages req'd per structure on approach slabs)

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

Note: Ensure the expansion splice is loacted 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

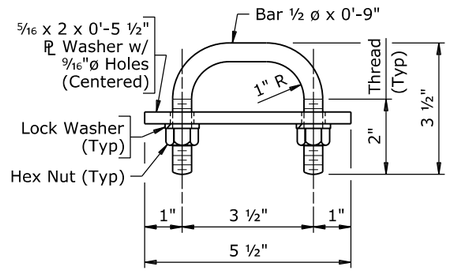
DATE

DESIGN ____ ✓ ____
DETAIL BBB ✓ AAA
QTY'S GGG ✓ DDD

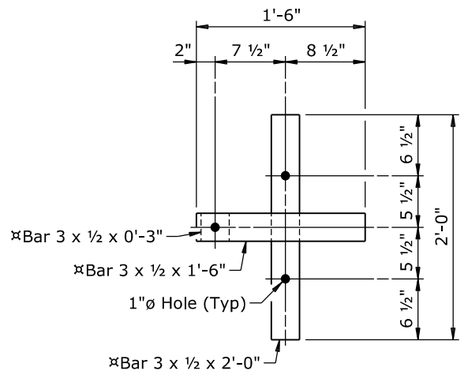
Design Section L M NOP

Drwg No. 0014 Sheet 8 of 30

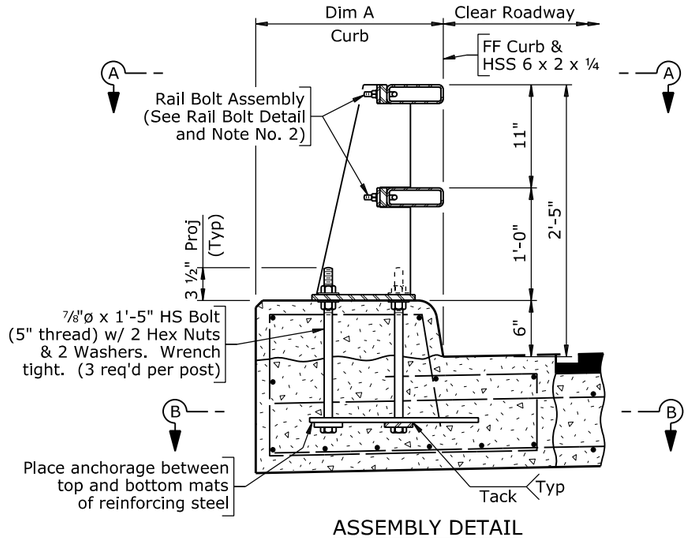
I252137_7br1.dgn



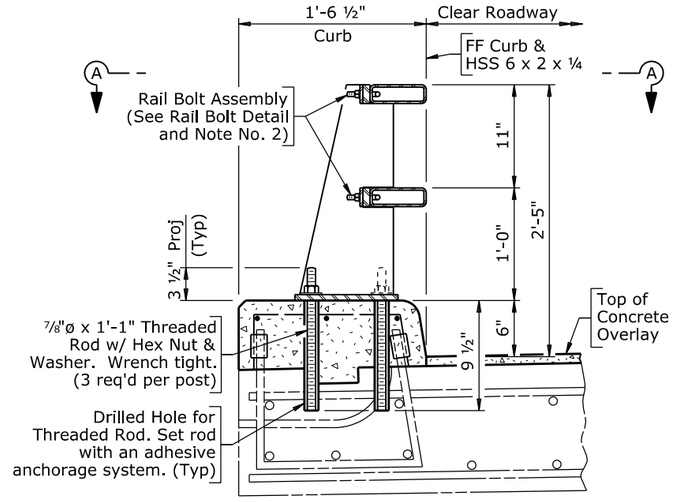
RAIL BOLT DETAIL



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

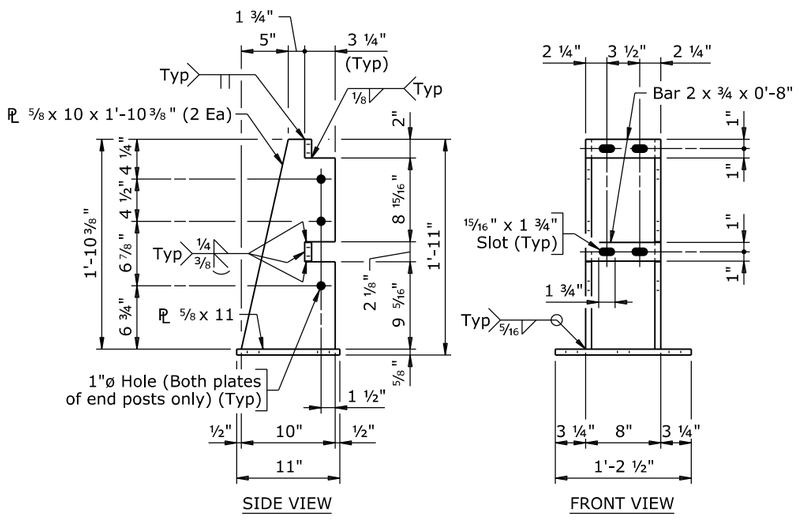


ASSEMBLY DETAIL
(Shown near ℄ Post on approach slab)

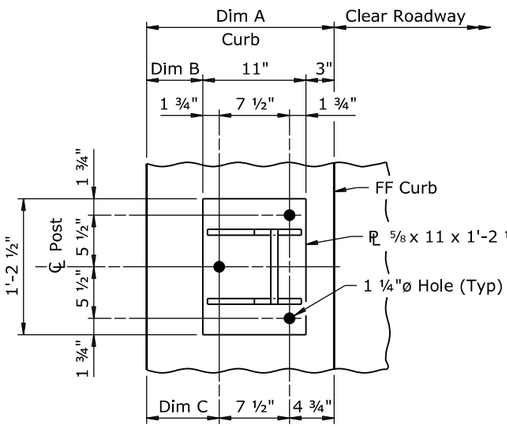


TYPICAL SECTION
(Shown near ℄ Post on bridge slab at Sta 384+32 and Sta 386+96)

TABLE OF DIMENSIONS			
Location	Dim A	Dim B	Dim C
Sta 119+05	1'-4"	2"	3 ¾"
Sta 384+32	1'-6 ½"	4 ½"	6 ¼"
Sta 386+96	1'-6 ½"	4 ½"	6 ¼"



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



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"ø 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

REVISIONS

BRIDGE RAILING DETAILS

BRIDGE REHABILITATION
VARIOUS LOCATIONS
Wheatland - Glendo Road
(Cassa North Section)

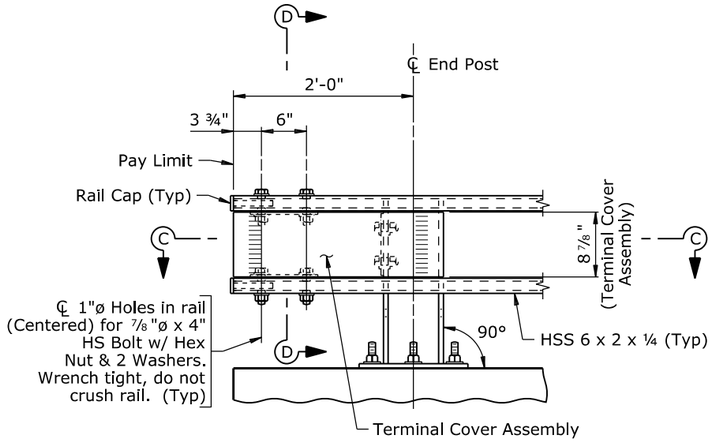
I252137 Pl

APPROVED
DATE

DESIGN ____ ✓ ____
DETAIL BBB ✓ AAA
QTY'S GGG ✓ DDD

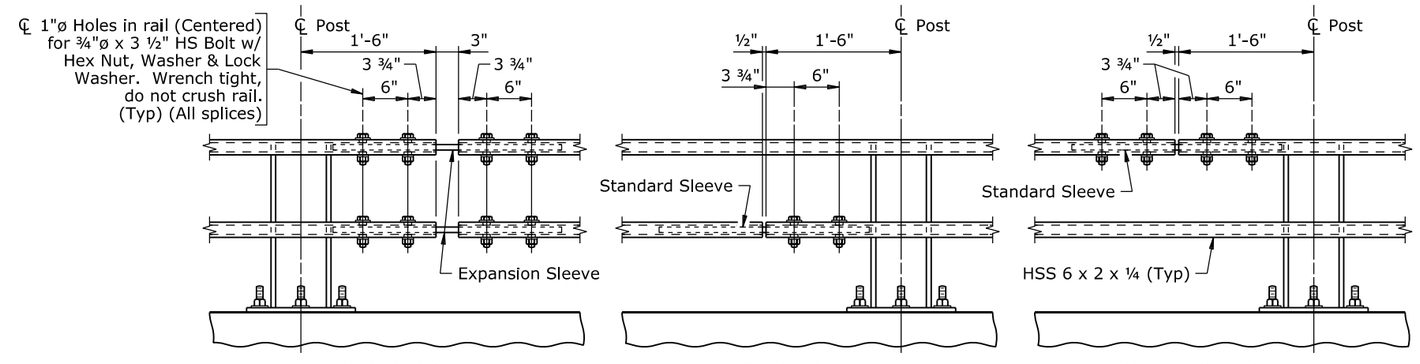
Design Section L M Nop
Drwg No. 0014 Sheet 9 of 30

I252137_7br2.dgn

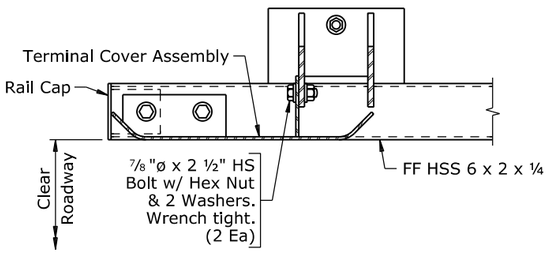


ELEVATION AT TERMINAL

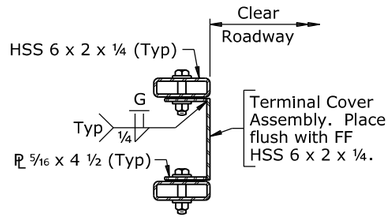
TERMINAL COMPONENT REQUIREMENTS		
Approach Guardrail Connection	Rail Caps Required	Terminal Cover Assembly Required
MGS Approach Guardrail	Yes (Without bolts)	‡No
Box Beam w/ Rubrail Approach Guardrail	No	No
No Approach Guardrail	Yes (With bolts)	Yes



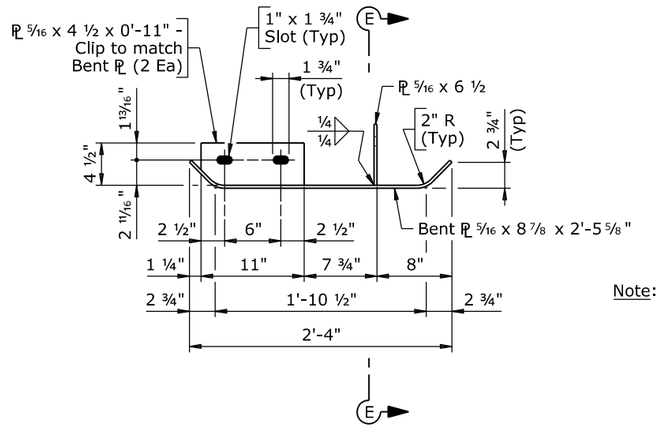
SPLICE DETAILS



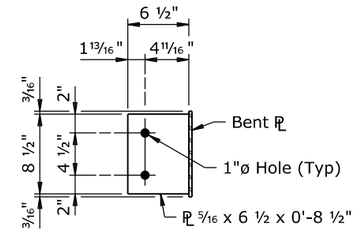
SECTION C-C



SECTION D-D



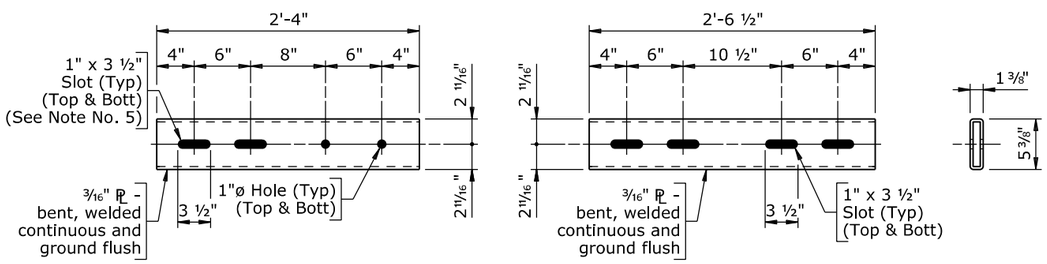
TERMINAL COVER ASSEMBLY DETAIL



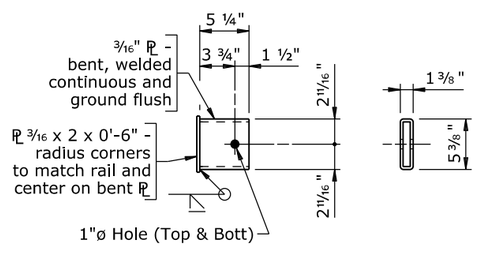
SECTION E-E

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

REVISIONS

BRIDGE RAILING DETAILS

BRIDGE REHABILITATION
VARIOUS LOCATIONS
Wheatland - Glendo Road
(Cassa North Section)

I252137 PI

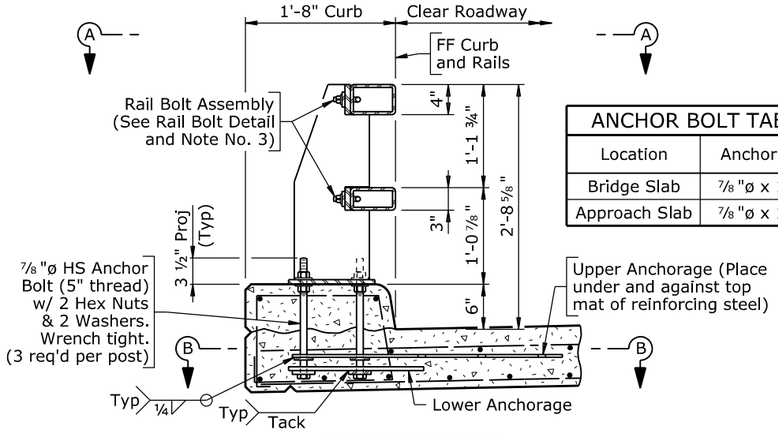
APPROVED
DATE

DESIGN ___ ✓ ___
DETAIL BBB ✓ AAA
QTY'S GGG ✓ DDD

Design Section L M Nop
Drwg No. 0014 Sheet 10 of 30

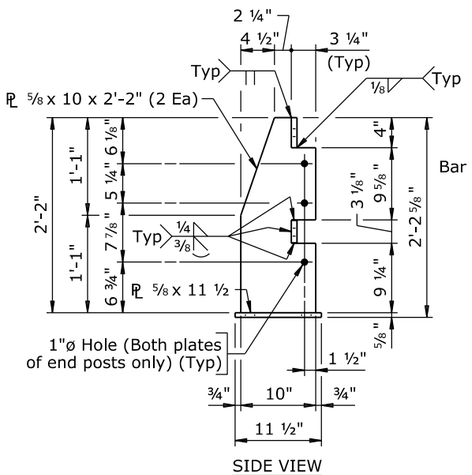
Standard Sheet Dated 9-3-13
Revised 6-16-14

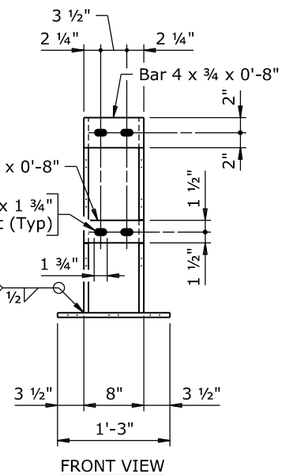
I252137_7br3.dgn



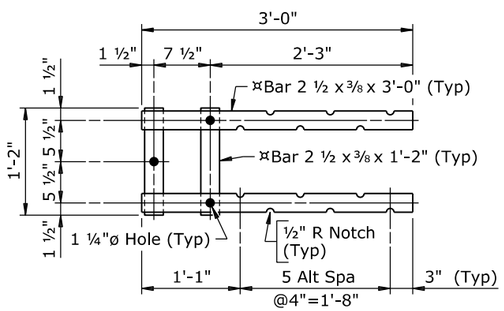
ANCHOR BOLT TABLE	
Location	Anchor Bolt
Bridge Slab	7/8"ø x 1'-3"
Approach Slab	7/8"ø x 1'-6"

ASSEMBLY DETAIL
(Shown near ℄ Post)
(Bridge slab shown, approach slab similar)

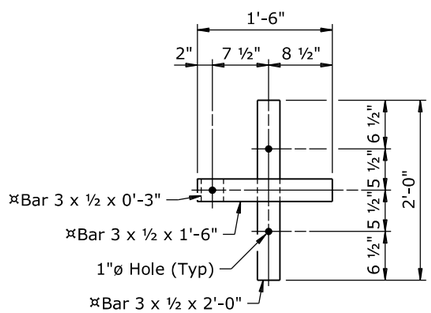




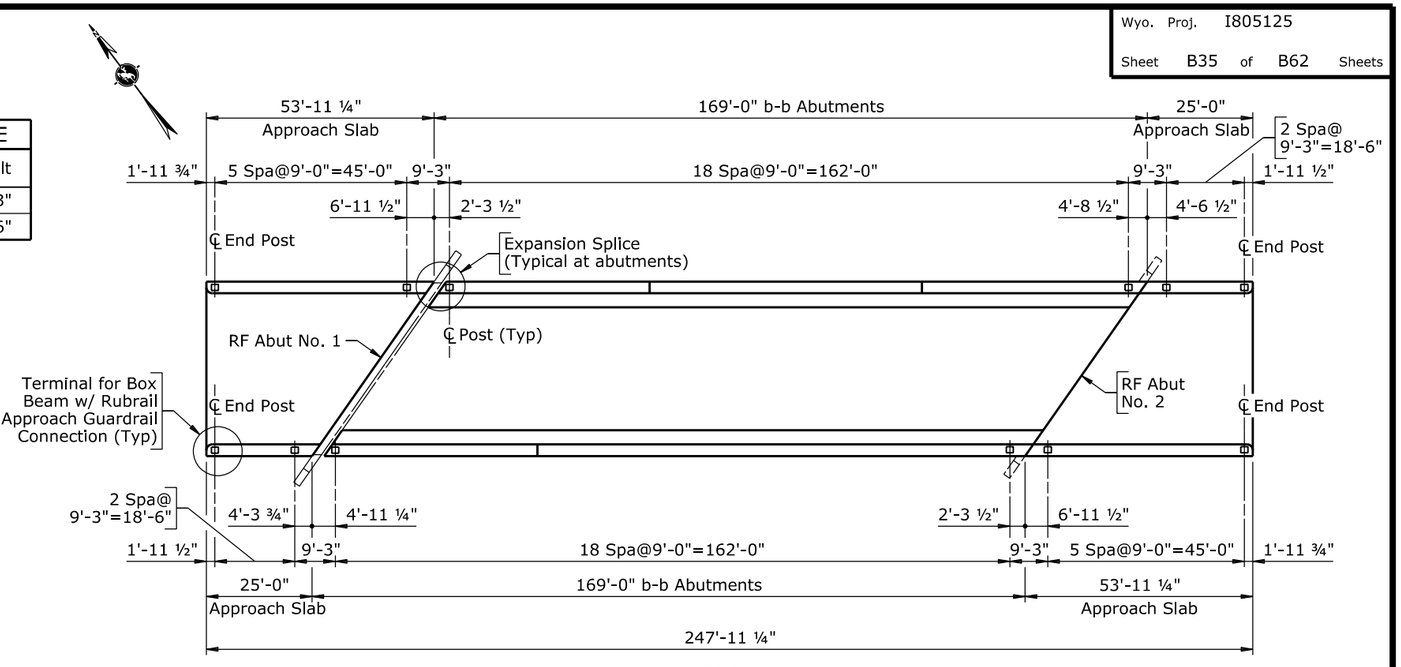
POST DETAILS
(See View A-A for anchor bolt hole spacing)



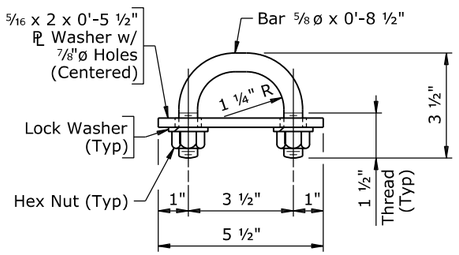
SECTION B-B
(Showing upper anchorage)
(¤Not galvanized)



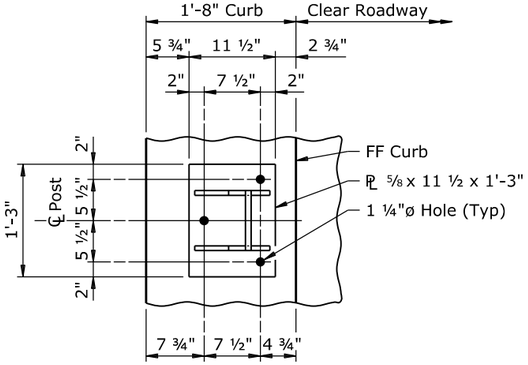
SECTION B-B
(Showing lower anchorage)
(¤Not galvanized)



PLAN
(EBL shown, WBL similar)
(38 posts req'd on bridge per lane)
(18 posts req'd on approach slabs per lane)



RAIL BOLT DETAIL



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

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 1/16"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 Al

APPROVED
DATE

DESIGN ____ ✓ ____
DETAIL QQQ ✓ SSS
QTY'S QQQ ✓ TTT

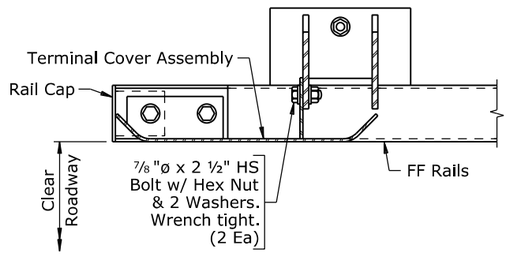
Design Section B C Def
Drwg No. 0015 Sheet 3 of 12

Standard Sheet Dated 9-3-13

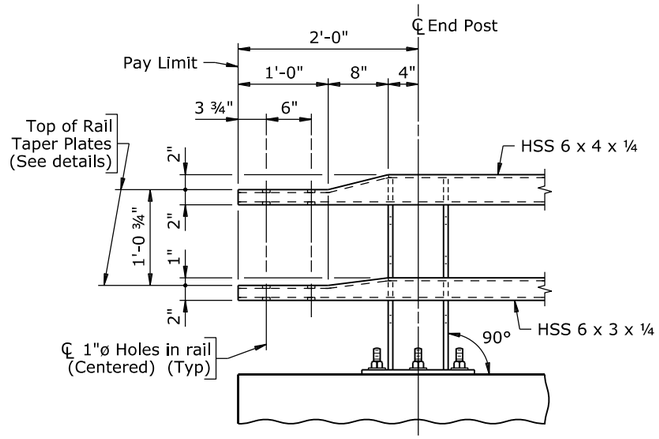
I805125_4br1.dgn

Wyo. Proj.	I805125
Sheet	B36 of B62 Sheets

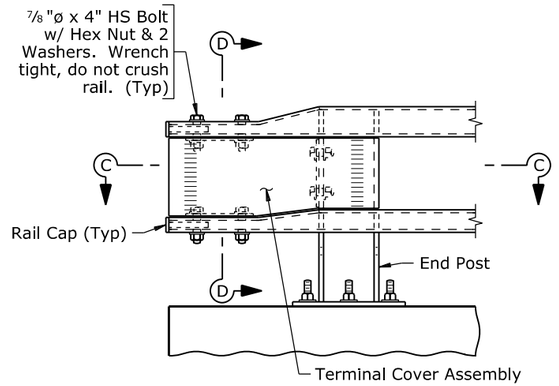
TERMINAL COMPONENT REQUIREMENTS		
Approach Guardrail Connection	Rail Caps Required	Terminal Cover Assembly Required
MGS Approach Guardrail	Yes (Without bolts)	‡No
Box Beam w/ Rubrail Approach Guardrail	No	No
No Approach Guardrail	Yes (With bolts)	Yes



SECTION C-C

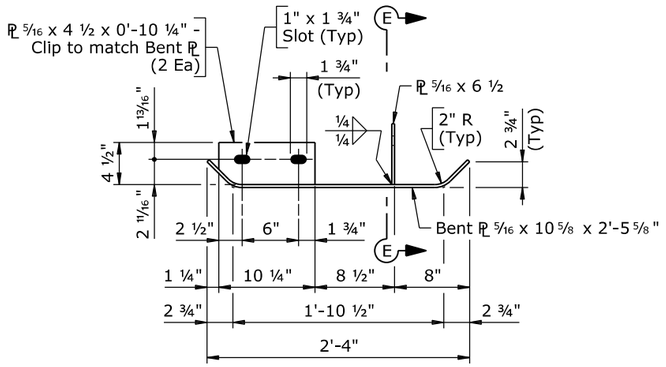


SHOWING RAILS

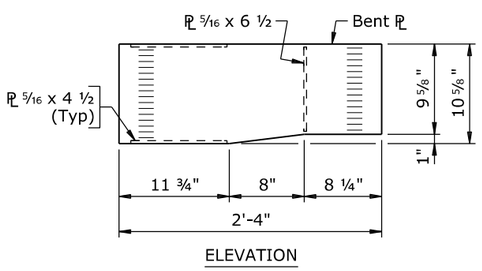


SHOWING RAIL CAPS AND TERMINAL COVER ASSEMBLY

ELEVATIONS AT TERMINAL

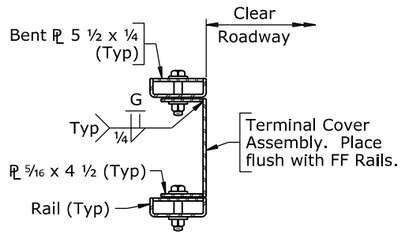


PLAN

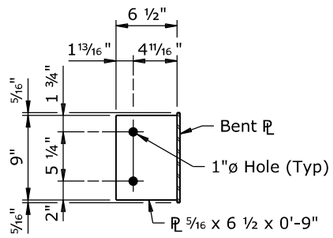


ELEVATION

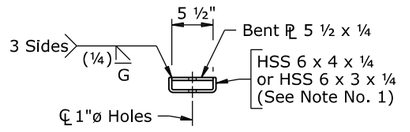
TERMINAL COVER ASSEMBLY DETAILS



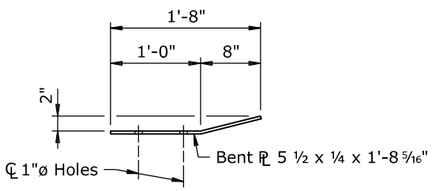
SECTION D-D



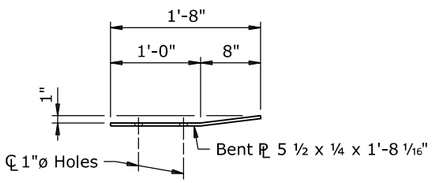
SECTION E-E



END VIEW

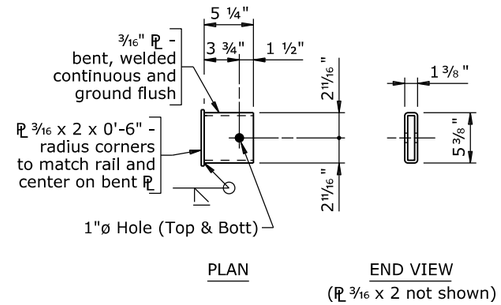


ELEVATION OF BENT PLATE FOR TOP RAIL
(HSS 6 x 4 x ¼ not shown)



ELEVATION OF BENT PLATE FOR BOTTOM RAIL
(HSS 6 x 3 x ¼ not shown)

RAIL TAPER PLATE DETAILS



PLAN END VIEW
(℄ ⅜ 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

REVISIONS

BRIDGE RAILING DETAILS

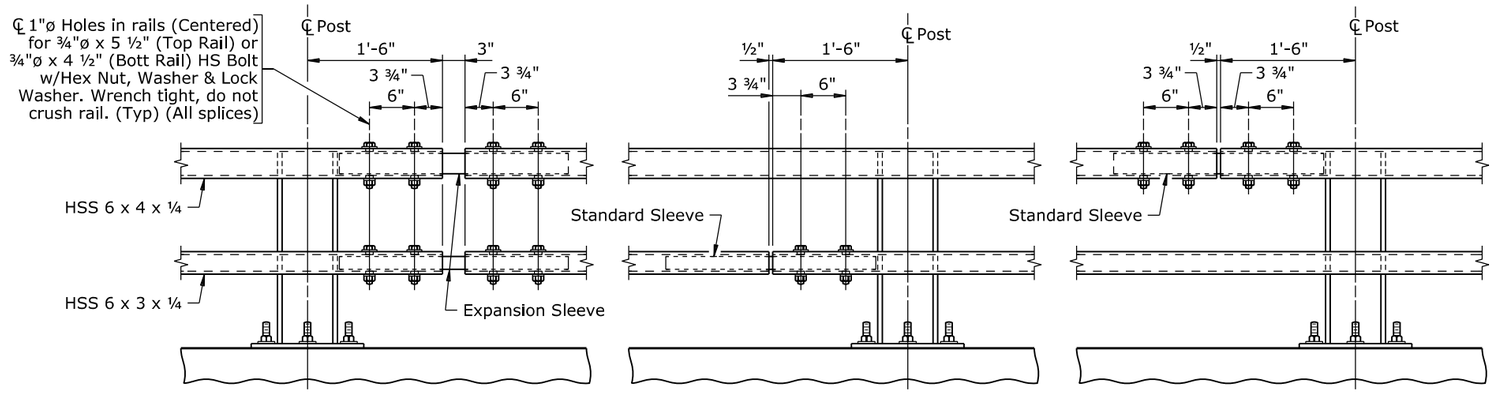
BRIDGE REHABILITATION
STA 3439+13
Walcott Jct. - Laramie Road
Herrick Lane Section

I805125 AI

APPROVED	DESIGN QQQ ✓	Design Section B C Def
DATE	DETAIL QQQ ✓ SSS	
	QTY'S QQQ ✓ TTT	Drwg No. 0015 Sheet 4 of 12

Standard Sheet Dated 9-3-13
Revised 6-16-14

I805125_4br2.dgn

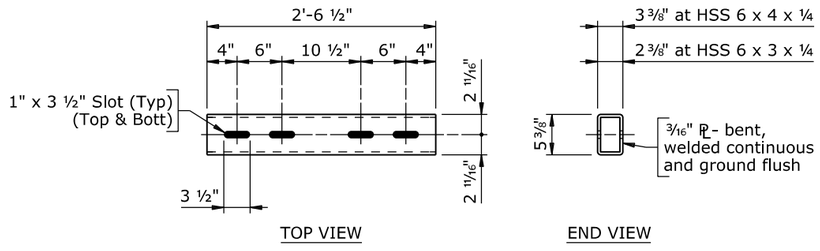


EXPANSION SPLICE
(Top and bottom rail)

STANDARD SPLICE
(Top or bottom rail)

DOUBLE-BOLTED SPLICE
(Top or bottom rail)

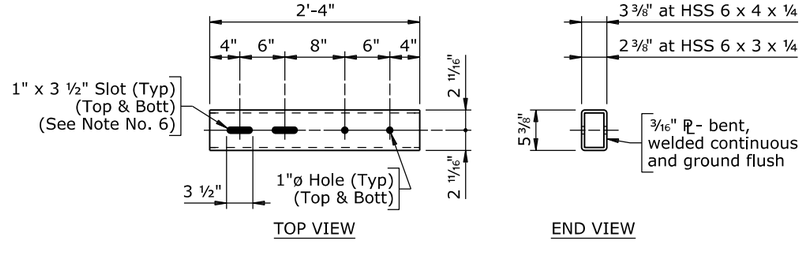
SPLICE DETAILS



TOP VIEW

END VIEW

EXPANSION SLEEVE DETAILS



TOP VIEW

END VIEW

STANDARD SLEEVE DETAILS

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

REVISIONS

BRIDGE RAILING DETAILS

BRIDGE REHABILITATION
STA 3439+13
Walcott Jct. - Laramie Road
Herrick Lane Section
I805125 Al

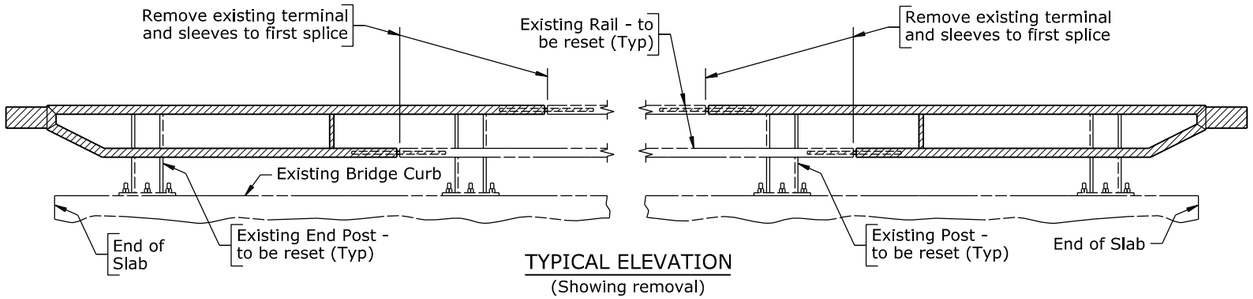
APPROVED
DATE

DESIGN ___ ✓ ___
DETAIL QQQ ✓ SSS
QTY'S QQQ ✓ TTT

Design Section B C Def
Drwg No. 0015 Sheet 5 of 12

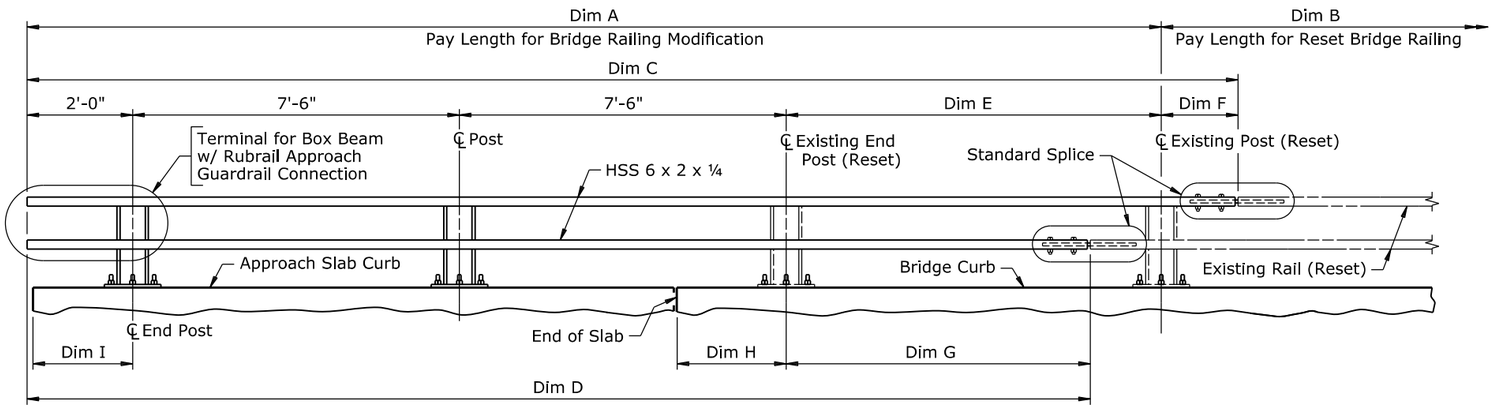
Standard Sheet Dated 9-3-13

I805125_4br3.dgn

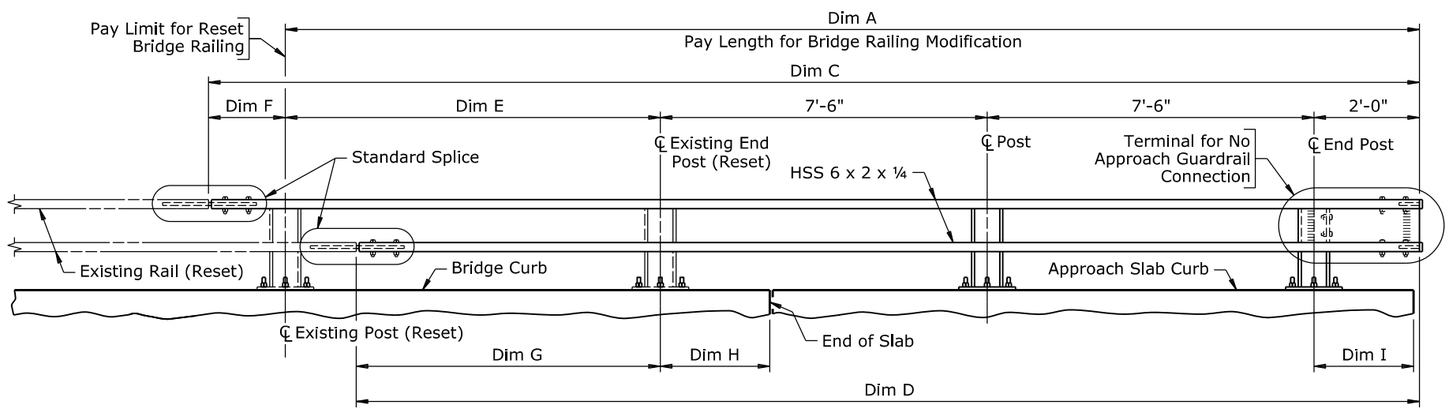


TYPICAL ELEVATION
(Showing removal)

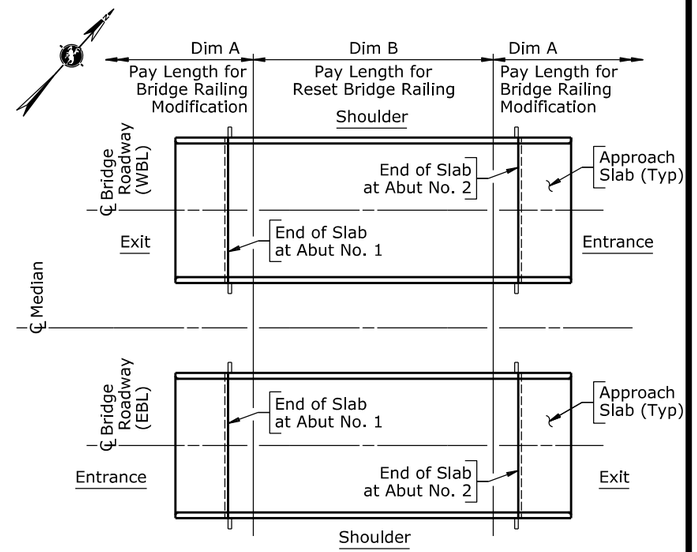
TABLE OF DIMENSIONS										
Location			Dim A	Dim B	Dim C	Dim D	Dim E	Dim F	Dim G	Dim H	Dim I
EBL	Entrance	Shoulder	25'-9 ⅛"	61'-0"	27'-3 ¼"	24'-2 ¼"	8'-9 ⅛"	1'-6 ⅛"	7'-2 ¼"	1'-10 ½"	1'-10 ½"
		Median	25'-9 ¼"	60'-11 ¾"	27'-3 ⅛"	24'-2 ¼"	8'-9 ¼"	1'-5 ⅞"	7'-2 ¼"	1'-10 ⅝"	1'-10 ⅝"
	Exit	Shoulder	25'-9 ⅛"	———	27'-2 ¾"	24'-2"	8'-9 ⅛"	1'-5 ⅝"	7'-2"	1'-10 ⅜"	1'-10 ⅜"
		Median	25'-9 ¼"	———	27'-3"	24'-1 ¾"	8'-9 ¼"	1'-5 ¾"	7'-1 ¾"	1'-10 ½"	1'-10 ½"
WBL	Entrance	Shoulder	25'-9"	61'-3 ¼"	27'-3 ¼"	24'-1 ¾"	8'-9"	1'-6 ¼"	7'-1 ¾"	1'-10 ½"	1'-10 ½"
		Median	25'-8 ¾"	61'-3 ¼"	27'-2 ½"	24'-2 ¼"	8'-8 ¾"	1'-5 ¾"	7'-2 ¼"	1'-10 ⅜"	1'-10 ⅜"
	Exit	Shoulder	25'-8 ¾"	———	27'-2 ¾"	24'-2"	8'-8 ¾"	1'-6"	7'-2"	1'-10 ½"	1'-10 ½"
		Median	25'-9"	———	27'-3 ⅛"	24'-1 ¾"	8'-9"	1'-6 ⅛"	7'-2 ¼"	1'-10 ⅝"	1'-10 ⅝"



ELEVATION AT ENTRANCE
(Showing new construction)



ELEVATION AT EXIT
(Showing new construction)



PLAN

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

BLAIR ROAD SEPARATION

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

REVISIONS

BRIDGE RAILING MODIFICATION DETAILS

BRIDGE REHABILITATION
VARIOUS LOCATIONS
Laramie - Cheyenne
(Vedauwoo West Section)

I805130 AI

APPROVED
DATE

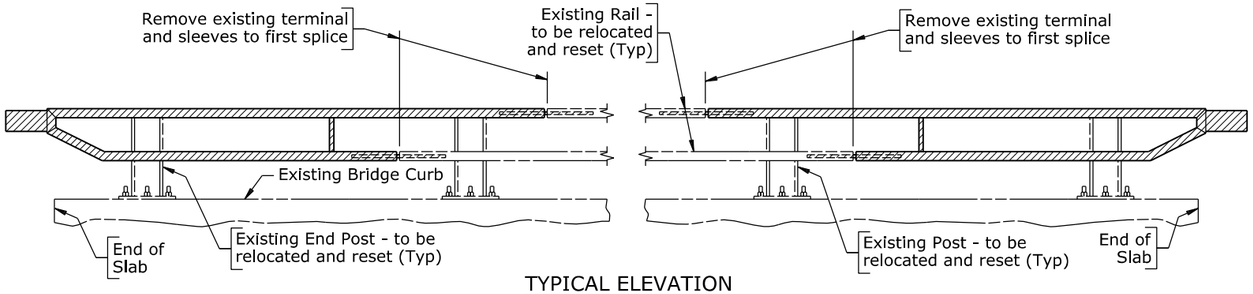
DESIGN ——— ———
DETAIL RRR ✓ TTT
QTY'S YYY ✓ TTT

Design Section B C Def
Drwg No. 0013 Sheet 3 of 14

I805130_rm1.dgn

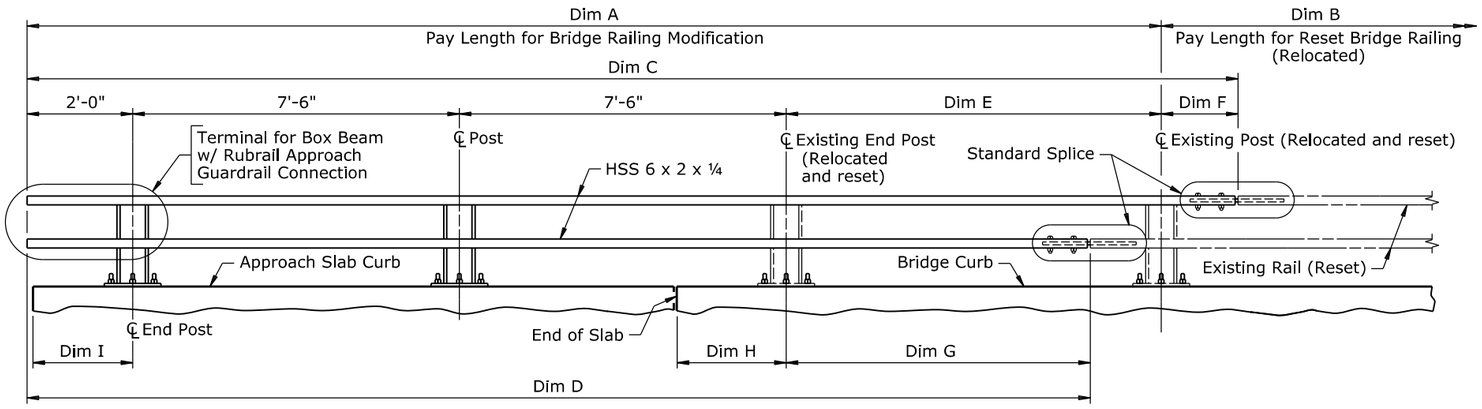
Wyo. Proj. I805130

Sheet B4 of B25 Sheets

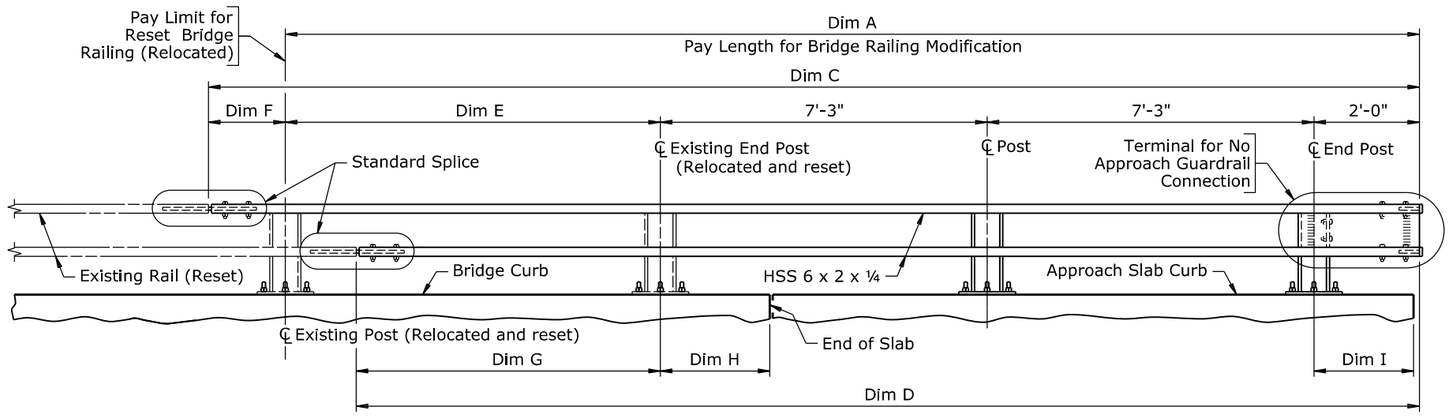


TYPICAL ELEVATION
(Showing removal)

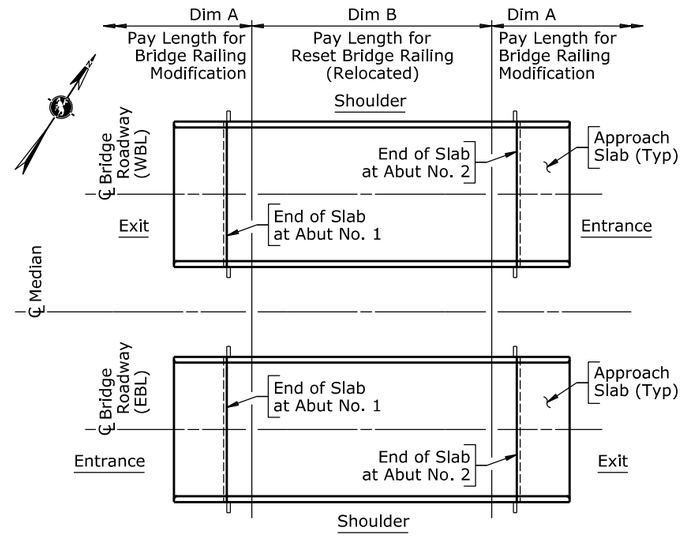
TABLE OF DIMENSIONS										
Location			Dim A	Dim B	Dim C	Dim D	Dim E	Dim F	Dim G	Dim H	Dim I
EBL	Entrance	Shoulder	26'-3"	61'-0"	27'-9 ¼"	24'-8 ½"	8'-9"	1'-6 ¼"	7'-2 ½"	2'-6"	2'-0"
		Median	26'-3 ⅛"	60'-11 ¾"	27'-8 ⅝"	24'-7 ¾"	8'-9 ⅛"	1'-5 ½"	7'-1 ¾"	2'-6 ⅛"	2'-0 ⅛"
	Exit	Shoulder	25'-3 ⅛"	——	26'-8 ⅝"	23'-7 ¾"	8'-9 ⅛"	1'-5 ½"	7'-1 ¾"	1'-5 ⅞"	1'-11 ⅞"
		Median	25'-3"	——	26'-9 ⅜"	23'-8 ⅛"	8'-9"	1'-6 ⅜"	7'-2 ⅛"	1'-6"	2'-0"
WBL	Entrance	Shoulder	26'-3"	61'-0 ¼"	27'-9 ⅝"	24'-7 ¼"	8'-9"	1'-6 ⅝"	7'-1 ¼"	2'-6"	2'-0"
		Median	26'-2 ¾"	61'-0 ¼"	27'-9"	24'-8 ¼"	8'-8 ¾"	1'-6 ¼"	7'-2 ¼"	2'-5 ⅞"	1'-11 ⅞"
	Exit	Shoulder	25'-2 ¾"	——	26'-8 ¾"	23'-8 ½"	8'-8 ¾"	1'-6"	7'-2 ½"	1'-6"	2'-0"
		Median	25'-3"	——	26'-8 ⅝"	23'-8 ⅝"	8'-9"	1'-5 ⅝"	7'-2 ⅝"	1'-6 ⅛"	2'-0 ⅛"



ELEVATION AT ENTRANCE
(Showing new construction)



ELEVATION AT EXIT
(Showing new construction)



PLAN

Note: Relocate existing posts 7 ½" toward the exit. Reset existing posts using new anchorages.

VEDAUWOO INTERCHANGE

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

REVISIONS

BRIDGE RAILING MODIFICATION DETAILS

BRIDGE REHABILITATION
VARIOUS LOCATIONS
Laramie - Cheyenne
(Vedauwoo West Section)

I805130 AI

APPROVED
DATE

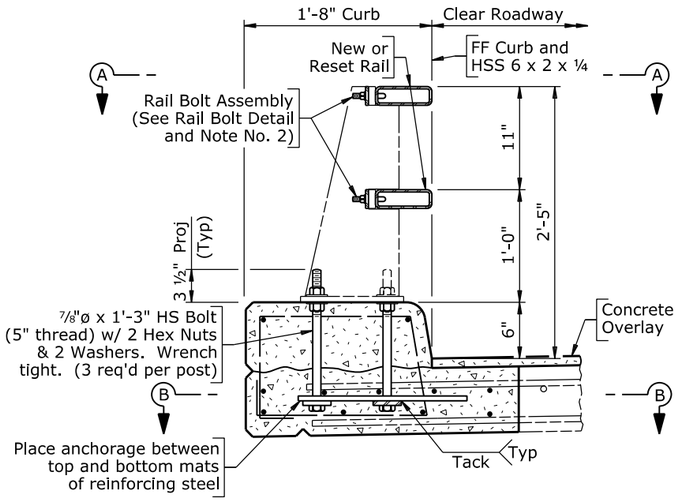
DESIGN ——
DETAIL RRR TTT
QTY'S YYY TTT

Design Section B C Def

Drwg No. 0013 Sheet 4 of 14

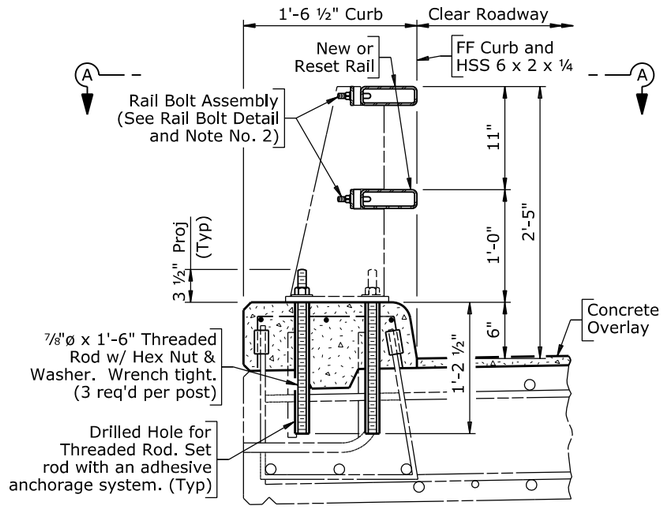
I805130_rm2.dgn

Wyo. Proj.	I805130
Sheet	B5 of B25 Sheets



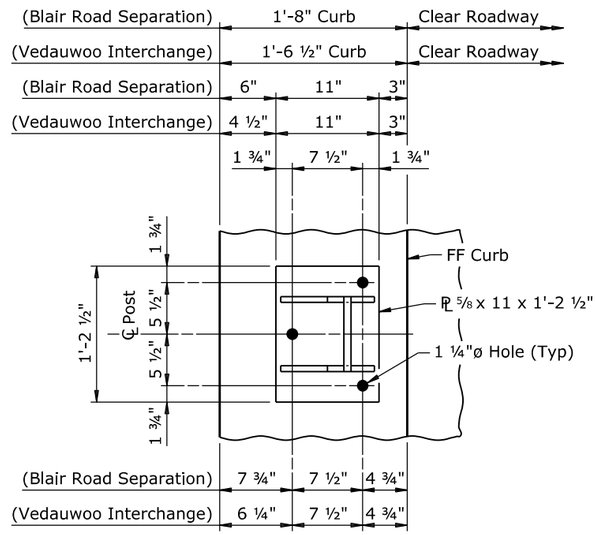
ASSEMBLY DETAIL AT BLAIR ROAD SEPARATION

(Shown near ℄ Existing Post on bridge slab)
(20 anchorages req'd per lane)



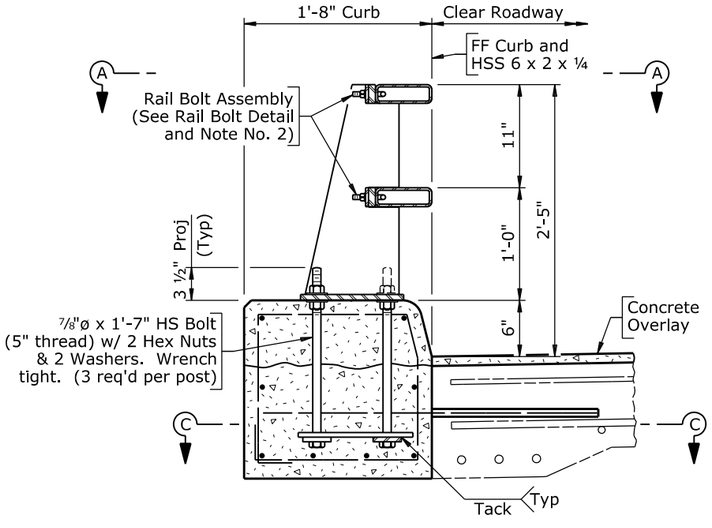
ASSEMBLY DETAIL AT VEDAUWOO INTERCHANGE

(Shown near ℄ Existing Post on bridge slab)
(20 post locations req'd per lane)



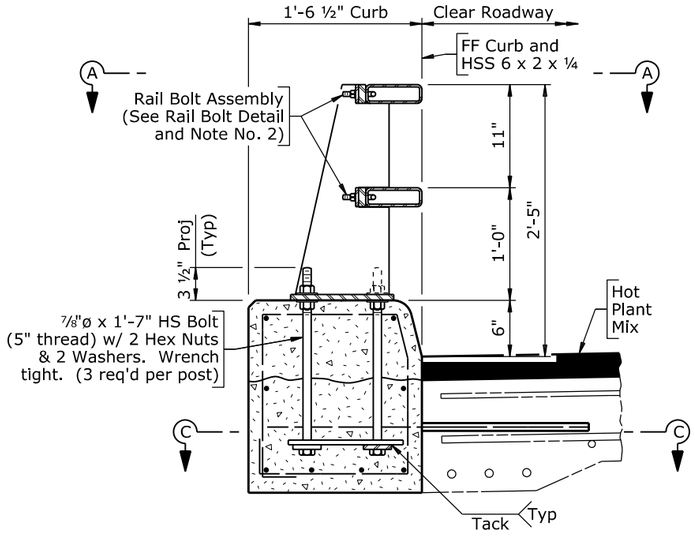
VIEW A-A

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



ASSEMBLY DETAIL AT BLAIR ROAD SEPARATION

(Shown near ℄ Post on approach slab)
(8 posts and anchorages req'd per lane)



ASSEMBLY DETAIL AT VEDAUWOO INTERCHANGE

(Shown near ℄ Post on approach slab)
(8 posts and anchorages req'd per lane)

Note:
1) Anchor bolts may be tack welded to anchorage (Shop or field).
2) At post locations, drill two 1 1⁄16"ø 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.

ALL LOCATIONS

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

REVISIONS

BRIDGE RAILING MODIFICATION DETAILS

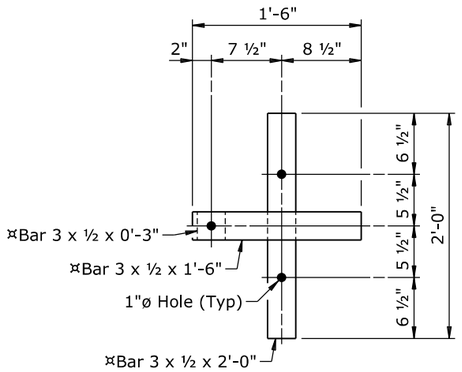
BRIDGE REHABILITATION
VARIOUS LOCATIONS
Laramie - Cheyenne
(Vedauwoo West Section)

I805130 Al

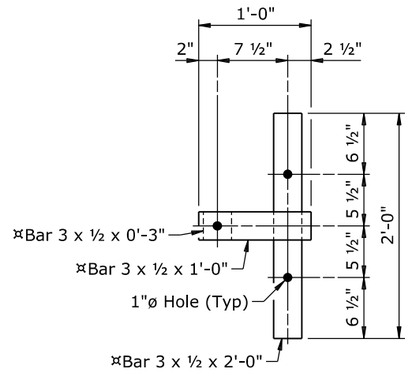
APPROVED	DESIGN		Design Section B C Def
DATE	DETAIL	RRR ✓ TTT	
	QTY'S	YYY ✓ TTT	Drwg No. 0013 Sheet 5 of 14

I805013_rm3.dgn

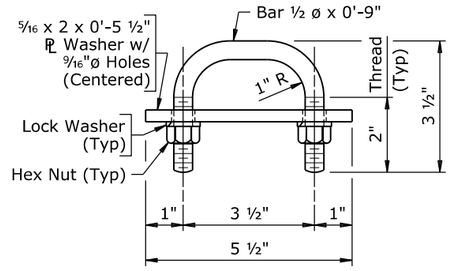
Wyo. Proj.	I805130			
Sheet	B6	of	B25	Sheets



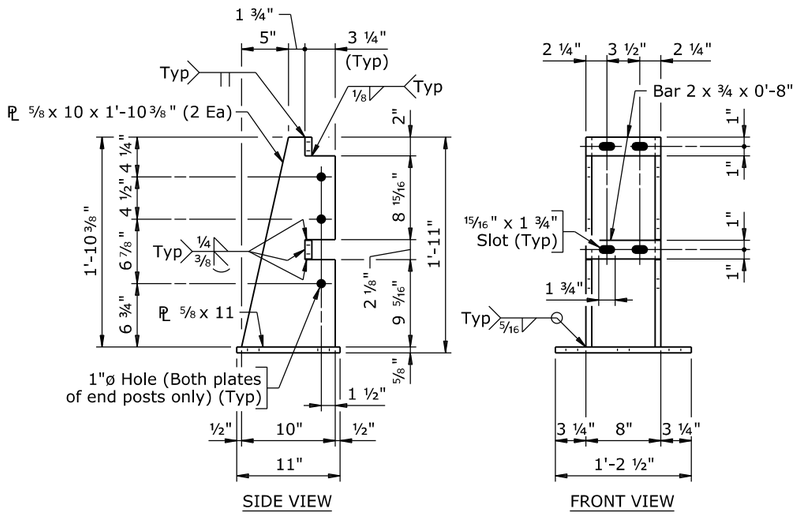
SECTION B-B
(¤Not galvanized)
(Anchor bolts and slab not shown)



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

REVISIONS

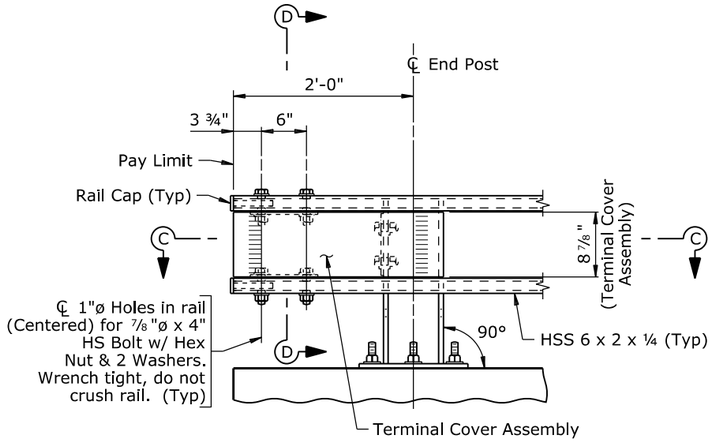
BRIDGE RAILING MODIFICATION DETAILS

BRIDGE REHABILITATION
VARIOUS LOCATIONS
Laramie - Cheyenne
(Vedauwoo West Section)
I8050130 AI

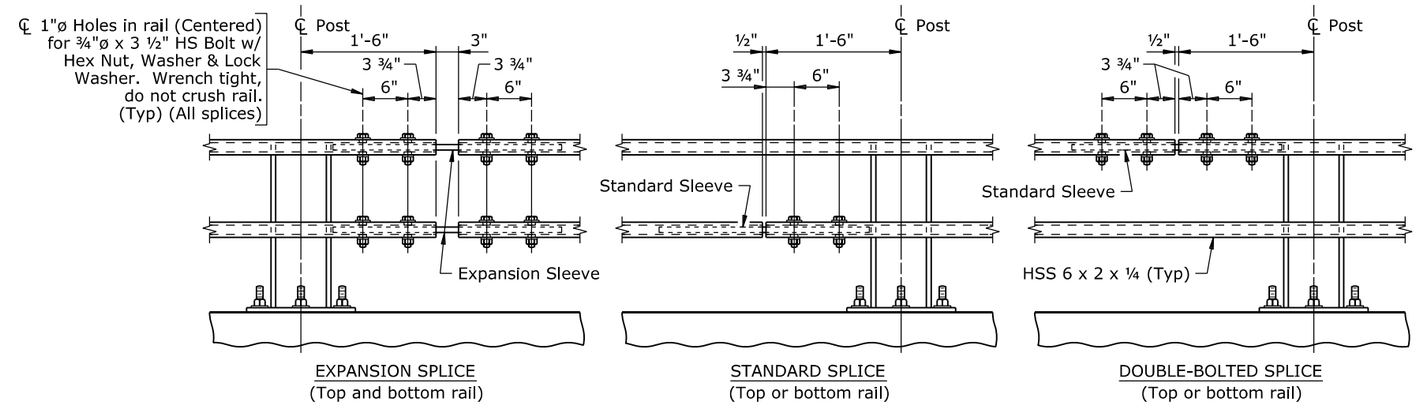
APPROVED
DATE

DESIGN			Design Section B C Def
DETAIL	RRR	TTT	
QTY'S	YYY	TTT	Drwg No. 0013 Sheet 6 of 14

I805130_rm4.dgn

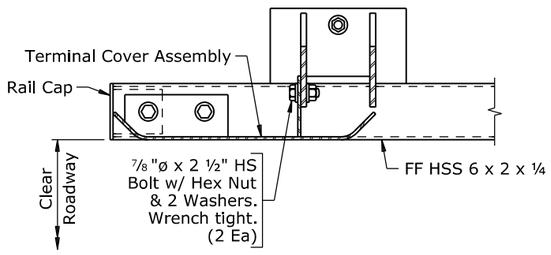


ELEVATION AT TERMINAL

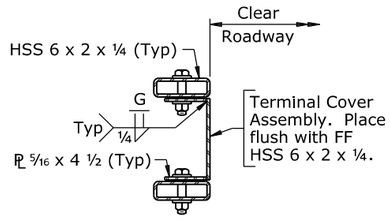


SPLICE DETAILS

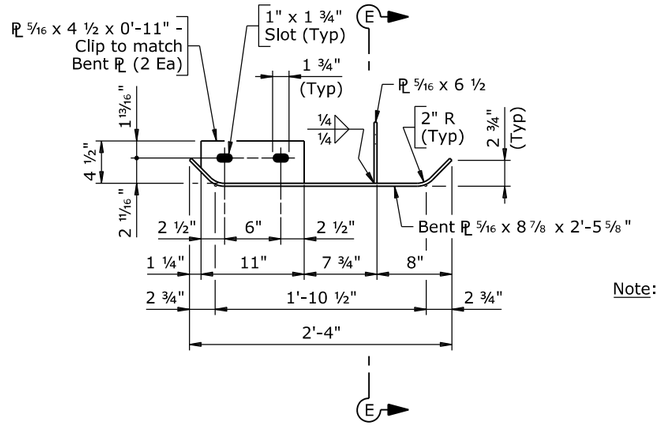
TERMINAL COMPONENT REQUIREMENTS		
Approach Guardrail Connection	Rail Caps Required	Terminal Cover Assembly Required
MGS Approach Guardrail	Yes (Without bolts)	‡No
Box Beam w/ Rubrail Approach Guardrail	No	No
No Approach Guardrail	Yes (With bolts)	Yes



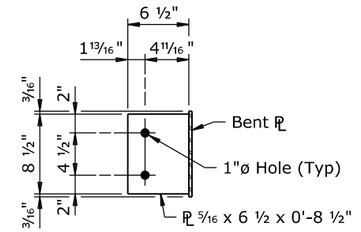
SECTION C-C



SECTION D-D



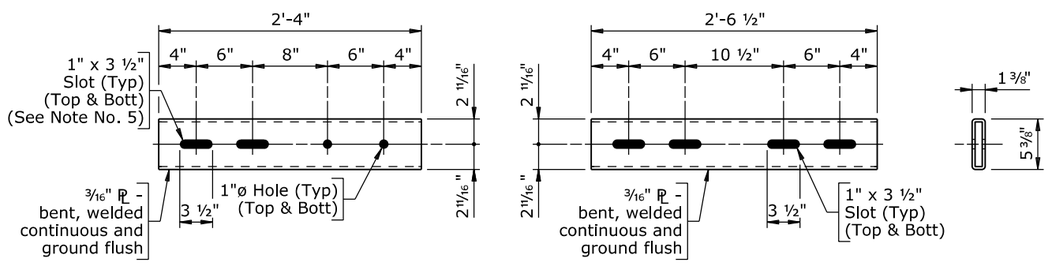
TERMINAL COVER ASSEMBLY DETAIL



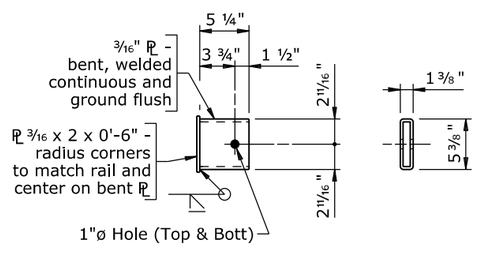
SECTION E-E

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

REVISIONS

BRIDGE RAILING MODIFICATION DETAILS

BRIDGE REHABILITATION
VARIOUS LOCATIONS
Laramie - Cheyenne
(Vedauwoo West Section)
I805130 AI

APPROVED			
DATE	DESIGN ___ ✓ ___	Design Section	B C Def
	DETAIL RRR ✓ TTT	Drwg No. 0013	Sheet 7 of 14
	QTY'S YYY ✓ TTT		

Standard Sheet Dated 9-3-13
Revised 6-16-14

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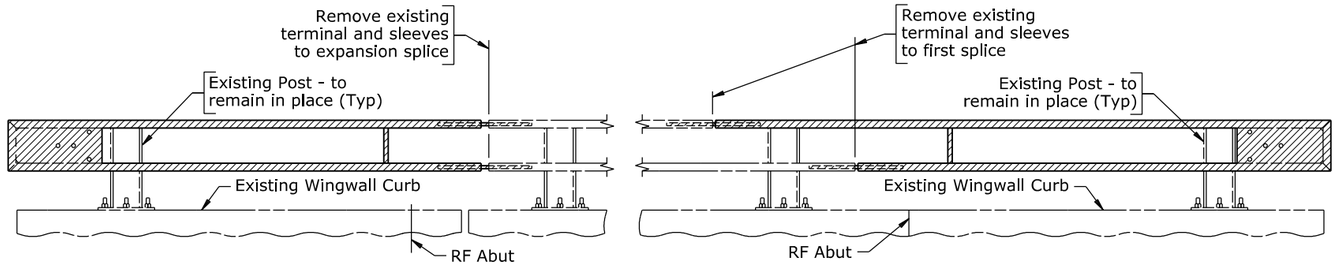
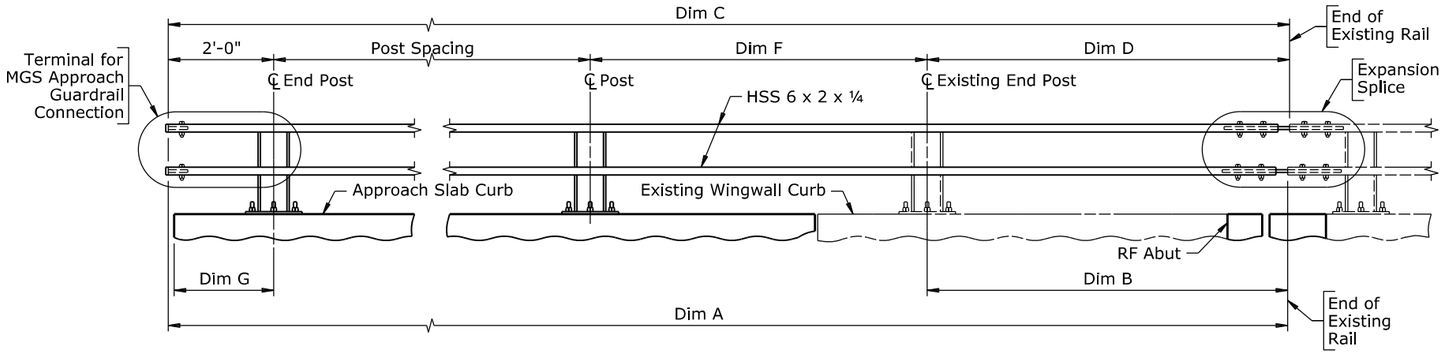


ABUTMENT NO. 1
(SE corner shown, NE corner similar)

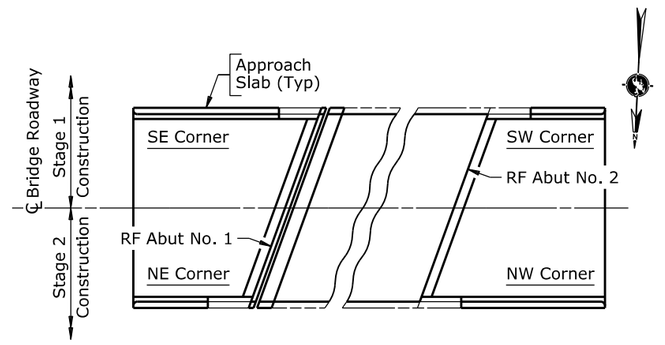
ABUTMENT NO. 2
(SW corner shown, NW corner similar)

TYPICAL ELEVATION
(Showing removal)

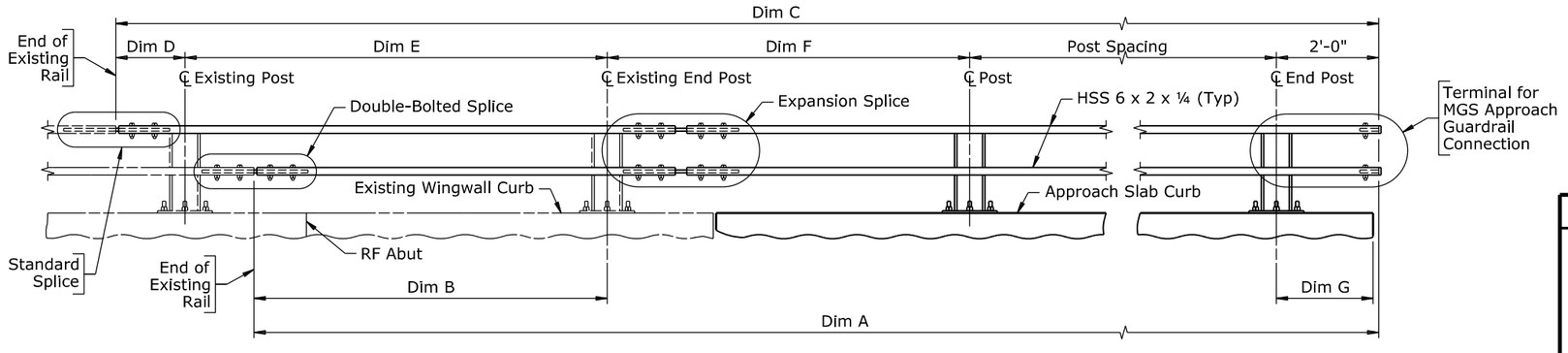
TABLE OF DIMENSIONS									
Location	Dim A	Dim B	Dim C	Dim D	Dim E	Dim F	Dim G	Post Spacing	No. of Posts Req'd
SE Corner	40'-11"	7'-8"	40'-11 ½"	7'-8 ½"	——	7'-6"	1'-10 5/8"	3 Spa @7'-11" =23'-9"	4
NE Corner	25'-6 ¾"	7'-7 ¾"	25'-6 ¾"	7'-7 ¾"	——	8'-0"	2'-0 5/8"	1 Spa @7'-11"	2
SW Corner	26'-0 ¾"	7'-10 ¾"	29'-1 ¼"	1'-7 ¾"	9'-3 ½"	8'-3"	1'-10 7/8"	1 Spa @7'-11"	2
NW Corner	40'-8"	7'-5"	43'-8 ½"	1'-7"	8'-10 ½"	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



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

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.

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

REVISIONS

BRIDGE RAILING MODIFICATION DETAILS

BRIDGE REHABILITATION

STA 197+38

Cody - Greybull

Cody East Section

N311074 Pa

APPROVED

DATE

DESIGN —— ✓ ——
DETAIL CCC ✓ AAA
QTY'S BBB ✓ EEE

Design Section L M Nop

Drwg No. 0010 Sheet 6 of 15

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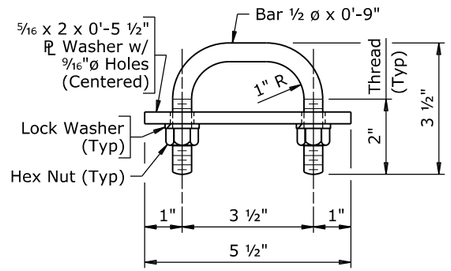
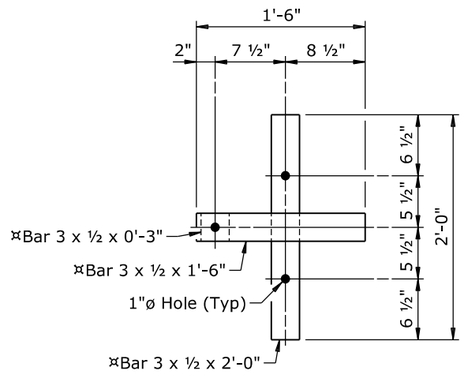
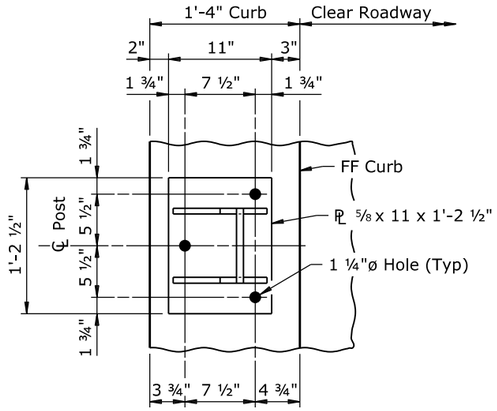


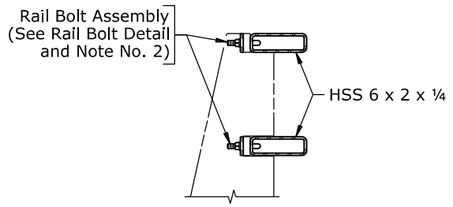
RAIL BOLT DETAIL



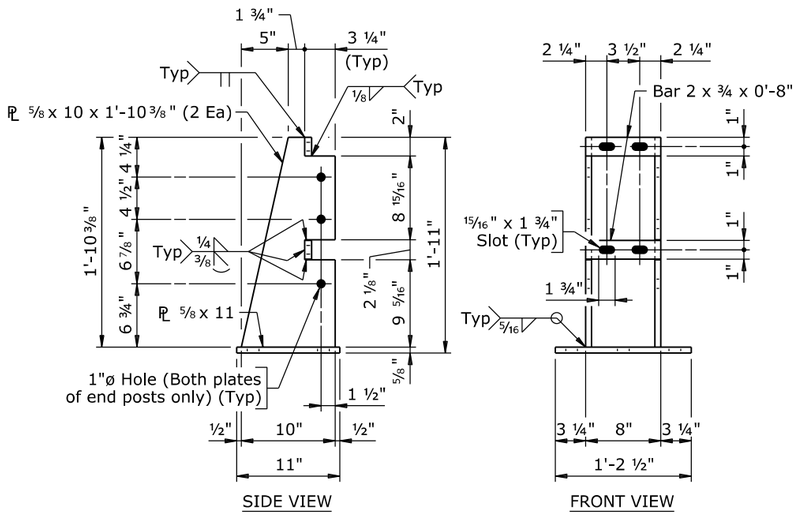
SECTION B-B
(¤Not galvanized)
(Anchor bolts and slab not shown)



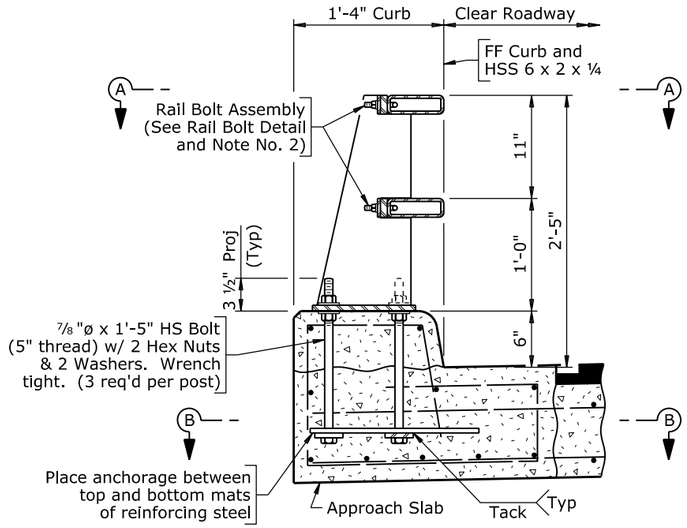
VIEW A-A
(Anchor bolts, rails, and rail bolts not shown)



RAIL INSTALLATION DETAIL
(Showing new rails at existing post)



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



ASSEMBLY DETAIL
(Shown near ℄ Post)

Note:
1) Anchor bolts may be tack welded to anchorage (Shop or field).
2) At post locations, drill two 1 1/16"ø holes in each rail 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

REVISIONS

BRIDGE RAILING MODIFICATION DETAILS

BRIDGE REHABILITION

STA 197+38

Cody - Greybull

Cody East Section

N311074 Pa

APPROVED

DATE

DESIGN ____ ✓ ____
DETAIL CCC ✓ AAA
QTY'S BBB ✓ EEE

Design Section L M Nop

Drwg No. 0010 Sheet 7 of 15

Standard Sheet Dated 9-3-13

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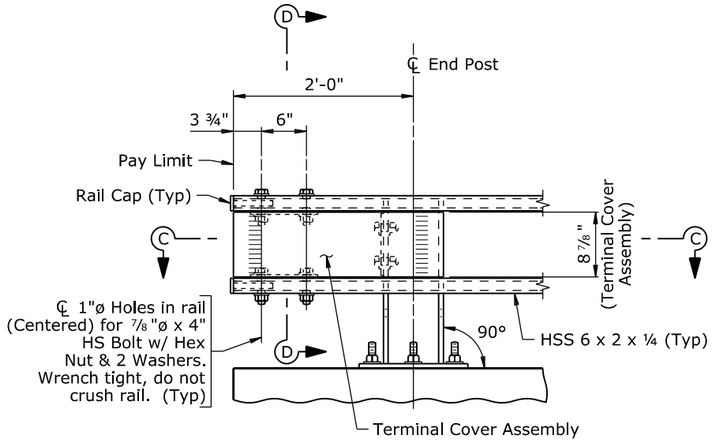
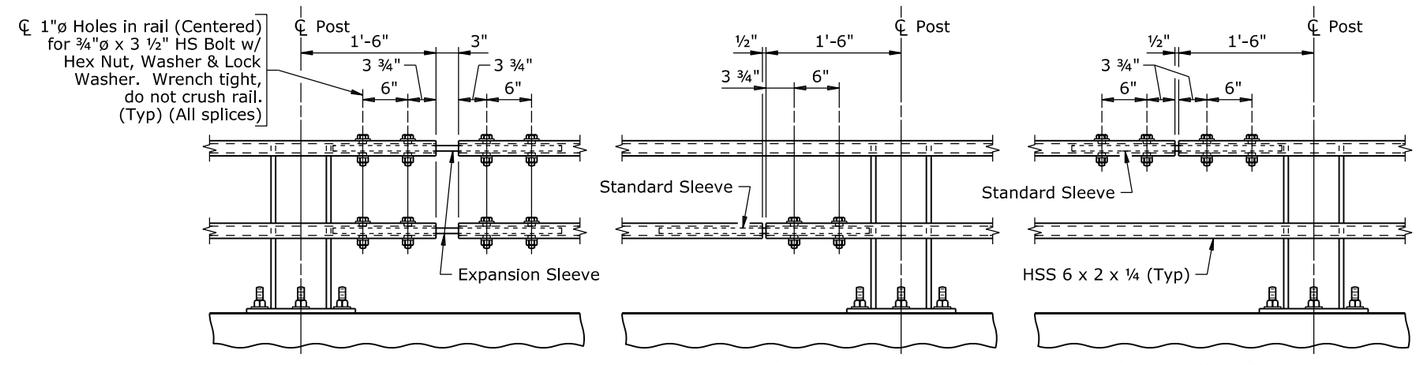
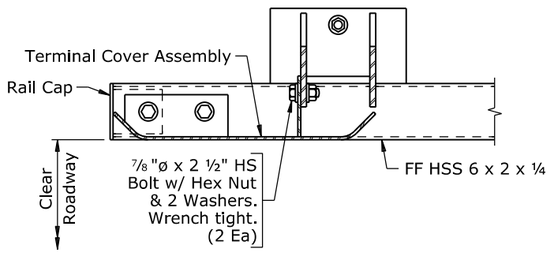


ELEVATION AT TERMINAL

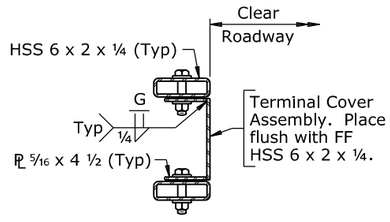


SPLICE DETAILS

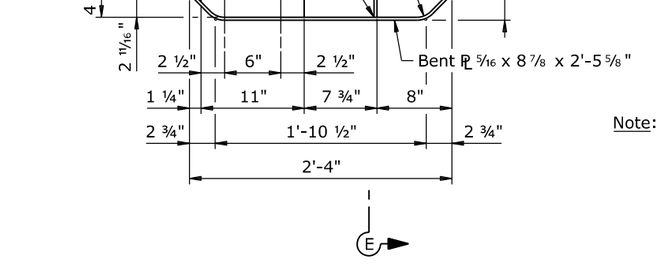
TERMINAL COMPONENT REQUIREMENTS		
Approach Guardrail Connection	Rail Caps Required	Terminal Cover Assembly Required
MGS Approach Guardrail	Yes (Without bolts)	‡No
Box Beam w/ Rubrail Approach Guardrail	No	No
No Approach Guardrail	Yes (With bolts)	Yes



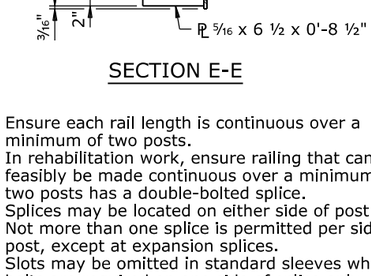
SECTION C-C



SECTION D-D

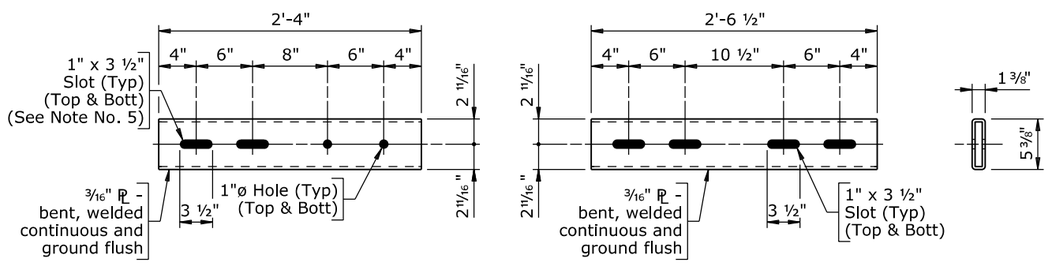


TERMINAL COVER ASSEMBLY DETAIL

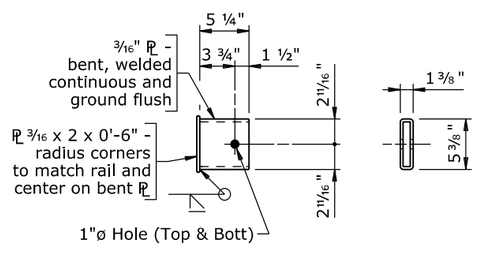


SECTION E-E

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

REVISIONS

BRIDGE RAILING MODIFICATION DETAILS

BRIDGE REHABILITATION
STA 197+38
Cody - Greybull
Cody East Section
N311074 Pa

APPROVED
DATE

DESIGN	___	___	Design Section L M Nop
DETAIL	CCC	AAA	
QTY'S	BBB	EEE	Drwg No. 0010 Sheet 8 of 15

Standard Sheet Dated 9-3-13
Revised 6-16-14

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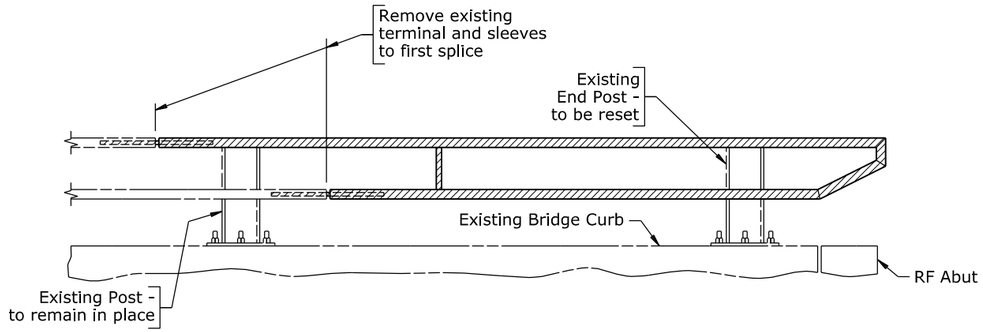
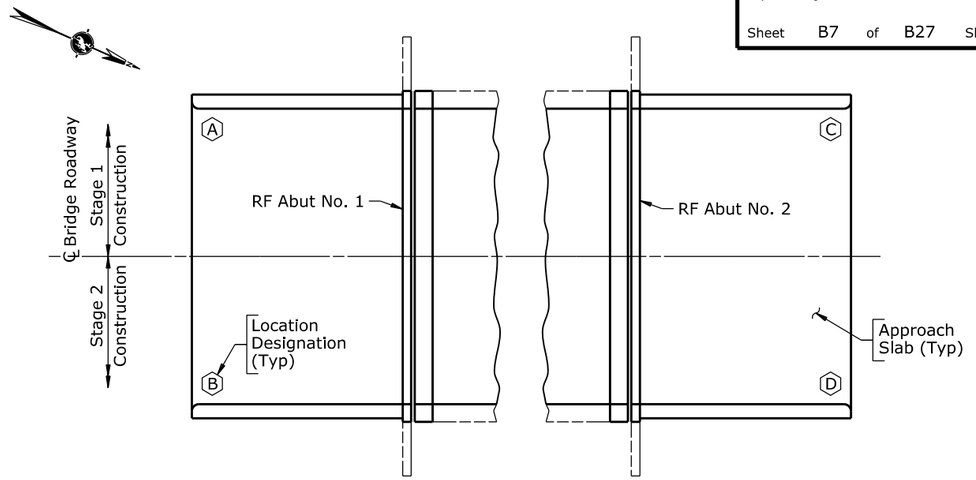
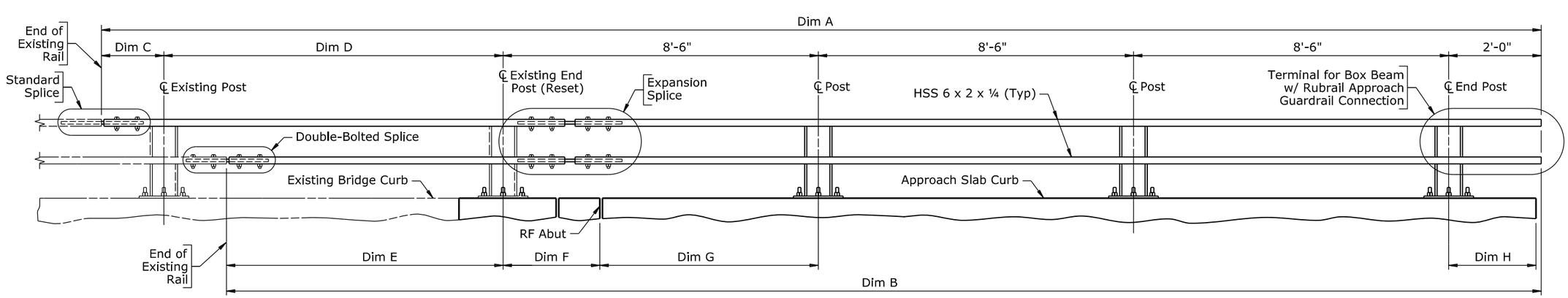


TYPICAL ELEVATION
(Showing removal)



PLAN



TYPICAL ELEVATION
(Showing new construction)
(3 new posts req'd each corner)

TABLE OF DIMENSIONS								
Location	Dim A	Dim B	Dim C	Dim D	Dim E	Dim F	Dim G	Dim H
Ⓐ	38'-0 ⅛"	35'-0 ⅛"	1'-6 ½"	8'-11 ⅝"	7'-6 ⅛"	2'-5 ¾"	6'-0 ¼"	1'-11 ¾"
Ⓑ	38'-0 ⅜"	34'-11 ¾"	1'-6 ½"	8'-11 ⅞"	7'-5 ¾"	2'-6"	6'-0"	2'-0"
Ⓒ	38'-0 ⅜"	35'-0 ⅜"	1'-6 ½"	8'-11 ⅞"	7'-6 ⅜"	2'-6 ½"	5'-11 ½"	2'-0 ½"
Ⓓ	38'-0"	35'-0"	1'-6 ¼"	8'-11 ¾"	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

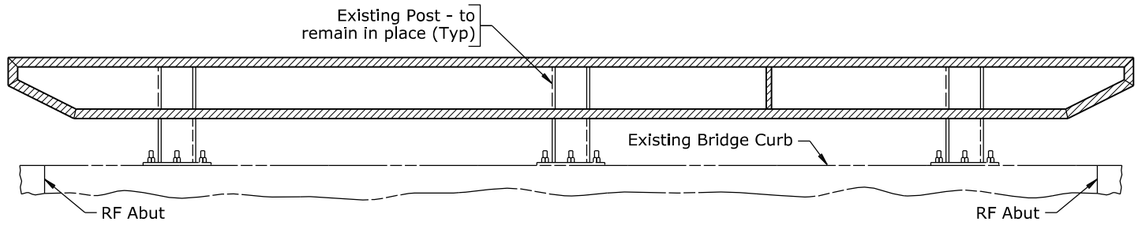
P232037 Al

APPROVED
DATE

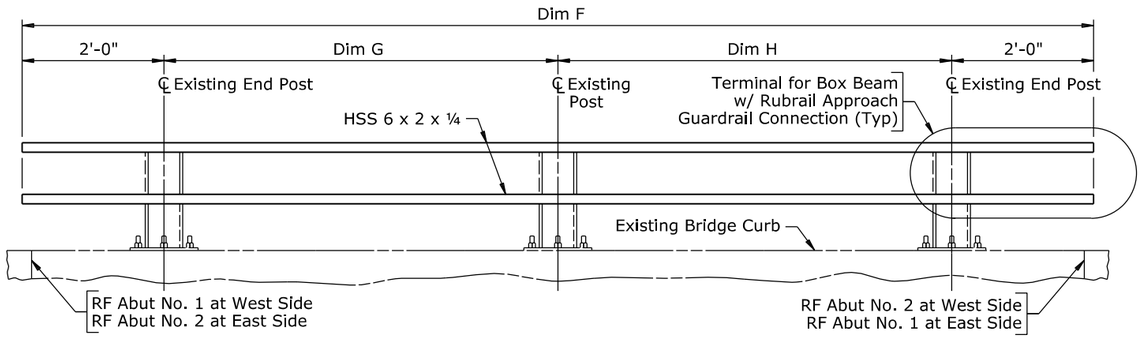
DESIGN ___ ✓ ___
DETAIL LLL ✓ HHH
QTY'S JJJ ✓ OOO

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

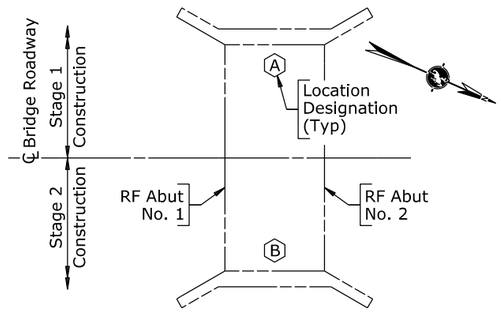
P232037_1rm1.dgn



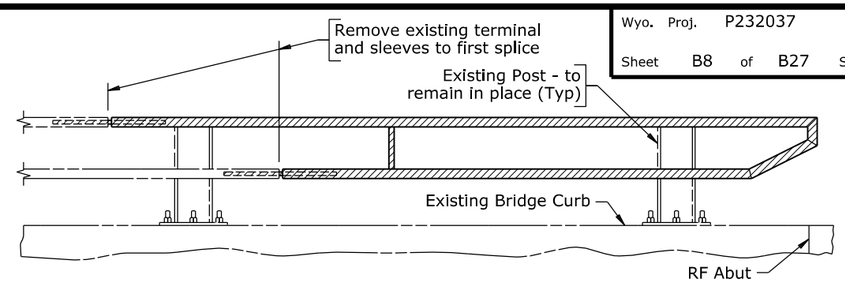
TYPICAL ELEVATION AT BRIDGE OVER OASIS DITCH
(Showing removal)



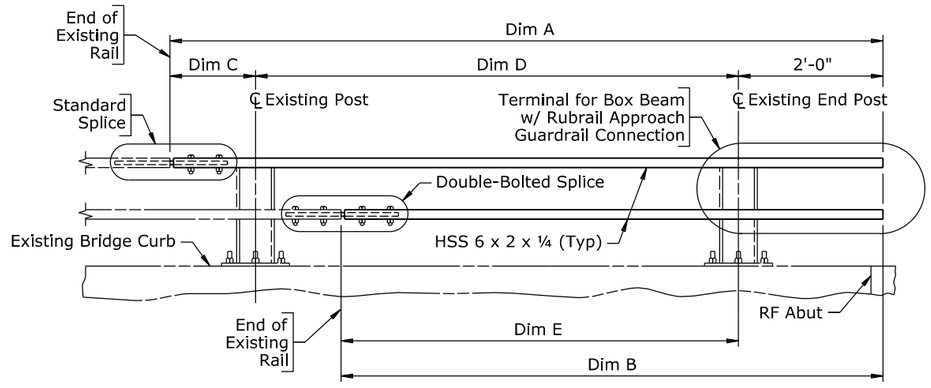
TYPICAL ELEVATION AT BRIDGE OVER OASIS DITCH
(Showing new construction)



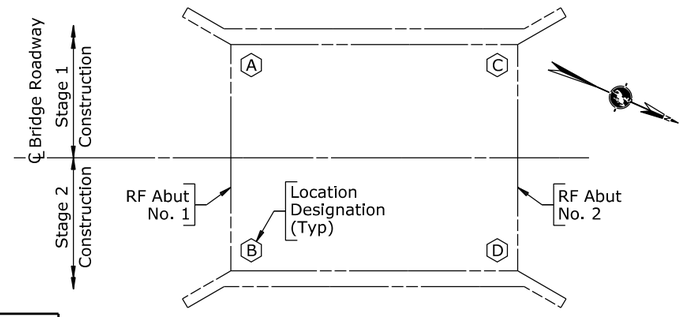
PLAN AT BRIDGE OVER OASIS DITCH



TYPICAL ELEVATION AT BRIDGE OVER FLOODWATER CREEK
(Showing removal)



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



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 ½"	10'-1 ½"	1'-6"	9'-7 ½"	8'-1 ½"	———	———	———
	B	13'-1 ½"	10'-1"	1'-6"	9'-7 ½"	8'-1"	———	———	———
	C	13'-1 ½"	10'-0 ½"	1'-6 ¼"	9'-7 ¼"	8'-0 ½"	———	———	———
	D	13'-1 ¼"	10'-0 5/8"	1'-6 ½"	9'-6 ¾"	8'-0 5/8"	———	———	———
Bridge Over Oasis Ditch	A	———	———	———	———	———	18'-0 ½"	7'-0 ½"	7'-0"
	B	———	———	———	———	———	18'-0 3/8"	7'-0 ½"	6'-11 7/8"

BRIDGE OVER FLOODWATER CREEK
BRIDGE OVER OASIS DITCH

WYOMING DEPARTMENT OF TRANSPORTATION
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BRIDGE RAILING MODIFICATION DETAILS

BRIDGE REHABILITATION
VARIOUS LOCATIONS
Rock River - Laramie
Bosler South Section

P232037 Al

APPROVED
DATE

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

Design Section Q R Stuv
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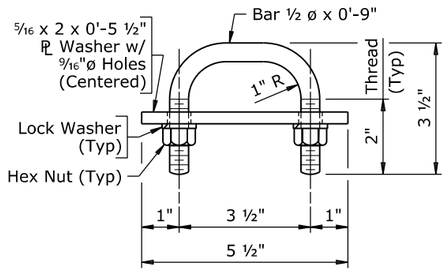
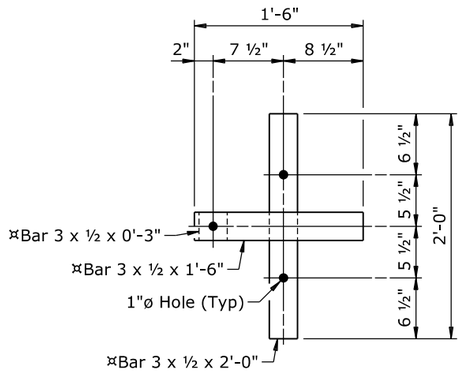
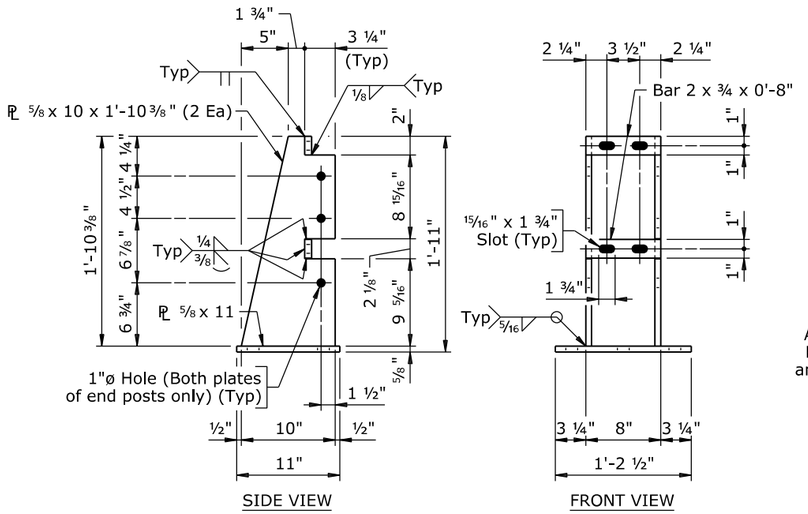


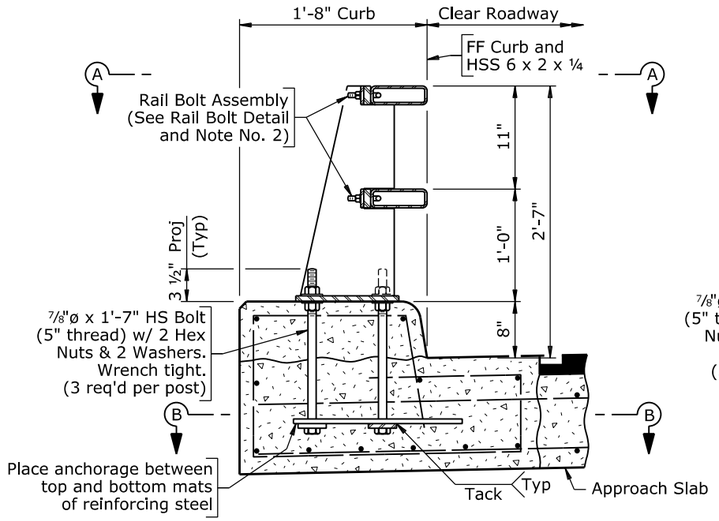
RAIL BOLT DETAIL
(60 req'd)



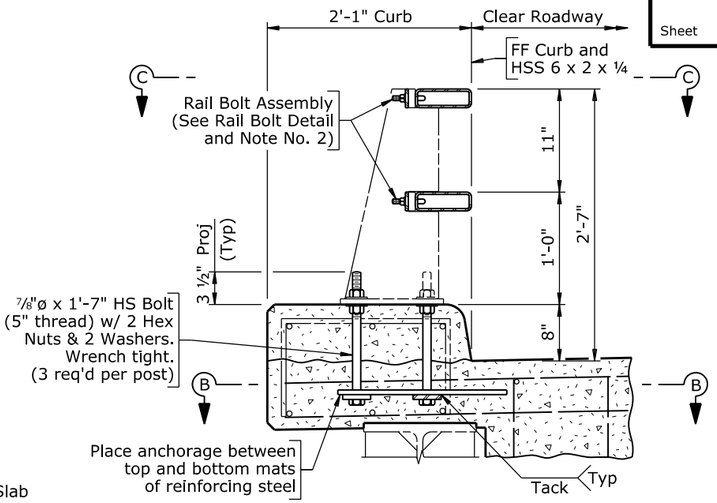
SECTION B-B
(¤Not galvanized)
(Anchor bolts and slab not shown)



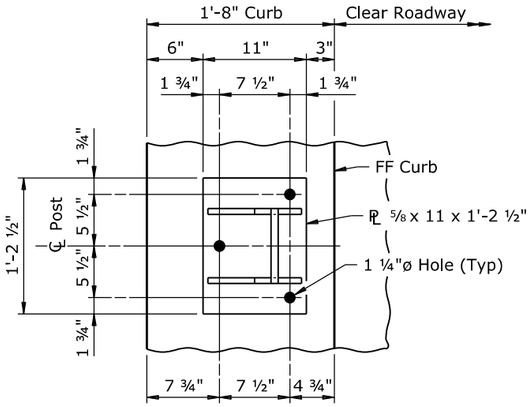
POST DETAILS
(See View A-A for anchor bolt hole spacing)



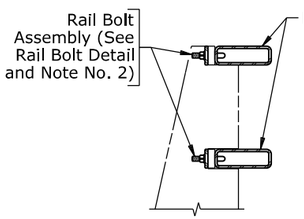
ASSEMBLY DETAIL AT BRIDGE OVER LARAMIE RIVER
(Shown near ℄ New Post)



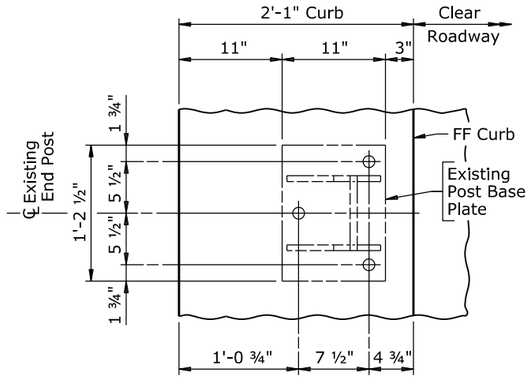
ASSEMBLY DETAIL AT BRIDGE OVER LARAMIE RIVER
(Shown near ℄ Existing End Post)



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



RAIL INSTALLATION DETAIL
(Showing new rails at existing post)



VIEW C-C
(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"ø 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.

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

WYOMING DEPARTMENT OF TRANSPORTATION
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BRIDGE REHABILITATION
VARIOUS LOCATIONS
Rock River - Laramie
Bosler South Section

P232037 Al

APPROVED
DATE

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

Design Section Q R Stuv
Drwg No. 0012 Sheet 9 of 14

Standard Sheet Dated 9-3-13

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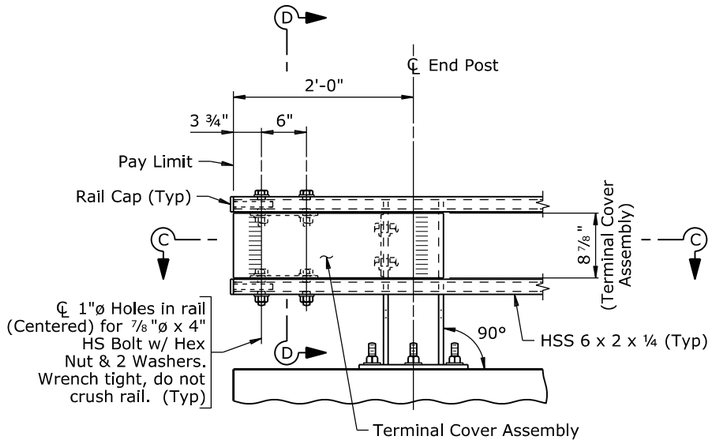
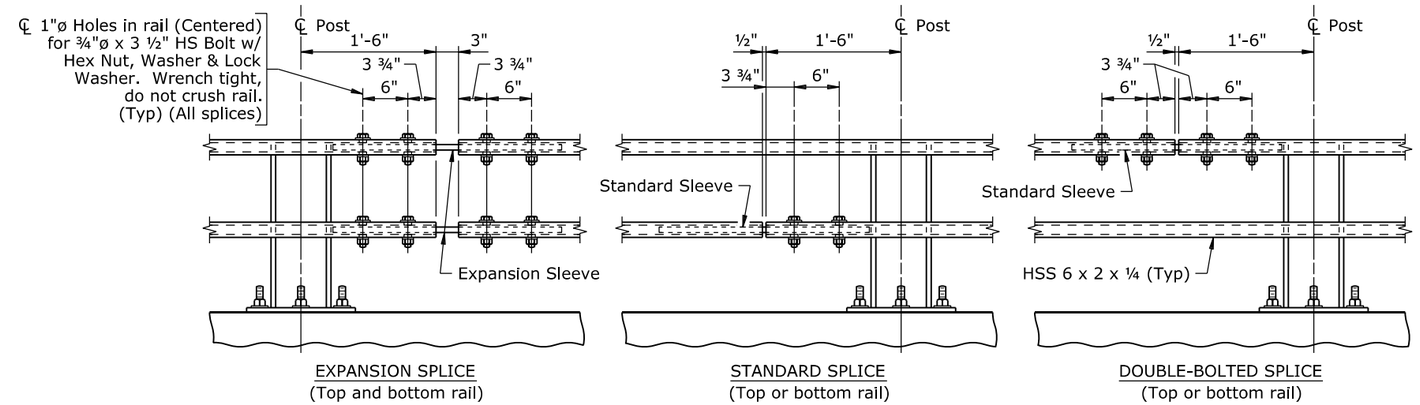
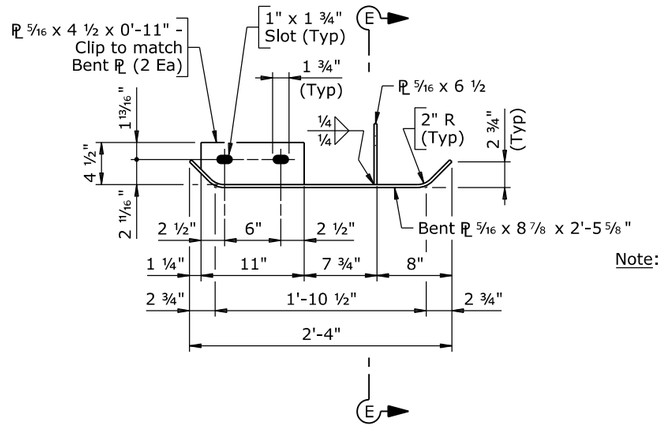


ELEVATION AT TERMINAL

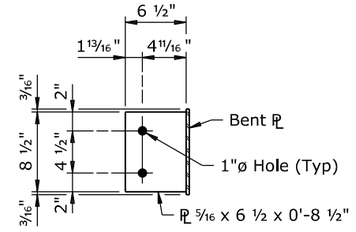
TERMINAL COMPONENT REQUIREMENTS		
Approach Guardrail Connection	Rail Caps Required	Terminal Cover Assembly Required
MGS Approach Guardrail	Yes (Without bolts)	‡No
Box Beam w/ Rubrail Approach Guardrail	No	No
No Approach Guardrail	Yes (With bolts)	Yes



SPLICE DETAILS

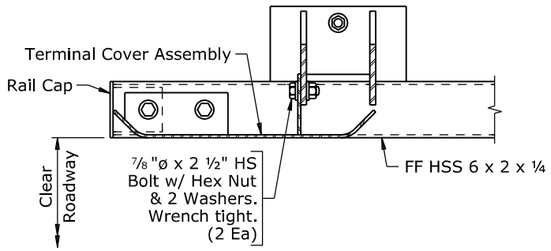


TERMINAL COVER ASSEMBLY DETAIL

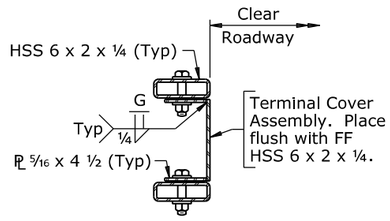


SECTION E-E

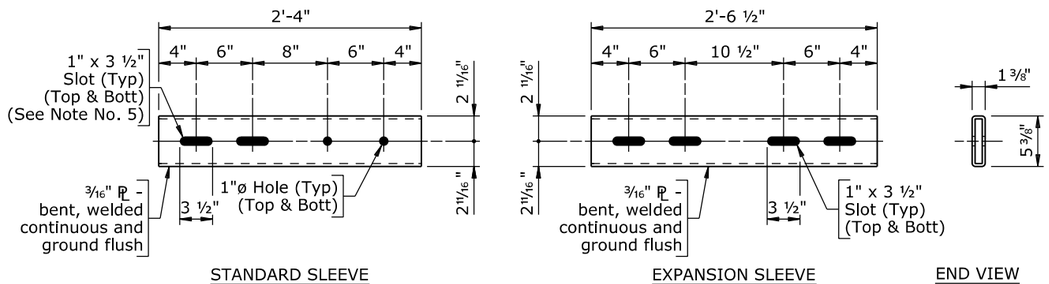
Note:
1) Ensure each rail length is continuous over a minimum of two posts.
2) In rehabilitation work, ensure railing that cannot feasibly be made continuous over a minimum of two posts has a double-bolted splice.
3) Splices may be located on either side of post.
4) Not more than one splice is permitted 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.



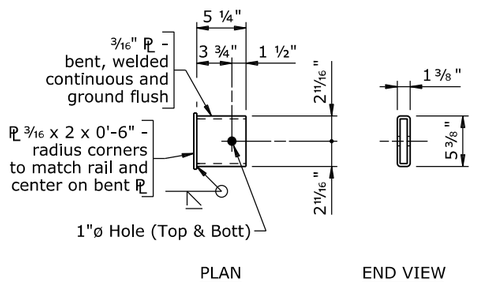
SECTION C-C



SECTION D-D



SLEEVE DETAILS



RAIL CAP DETAILS

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

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

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BRIDGE REHABILITATION
VARIOUS LOCATIONS
Rock River - Laramie
Bosler South Section

P232037 AI

APPROVED
DATE

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

Design Section Q R Stuv
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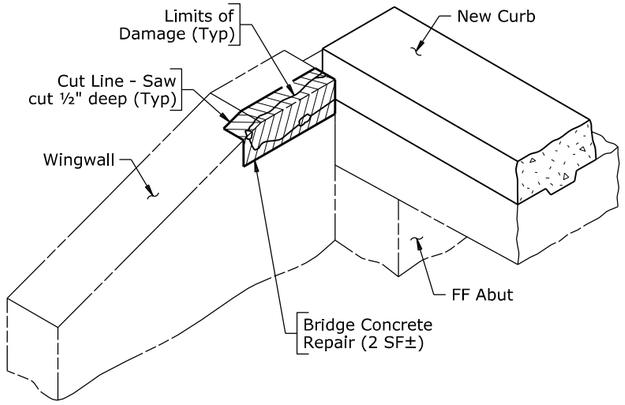
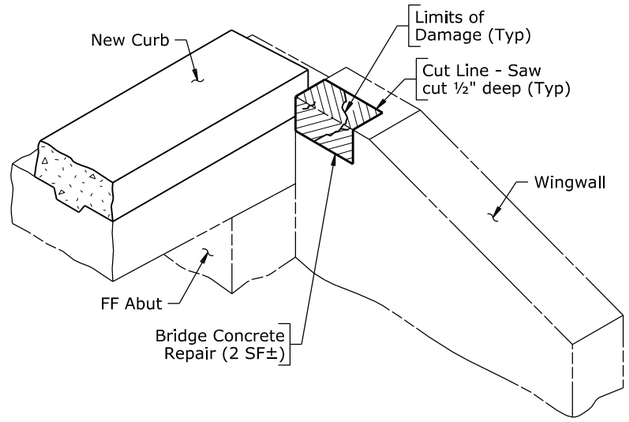
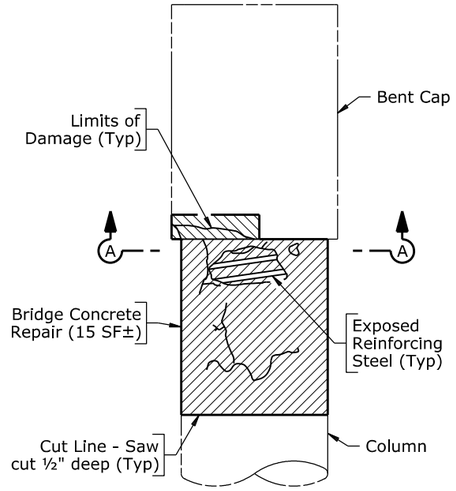


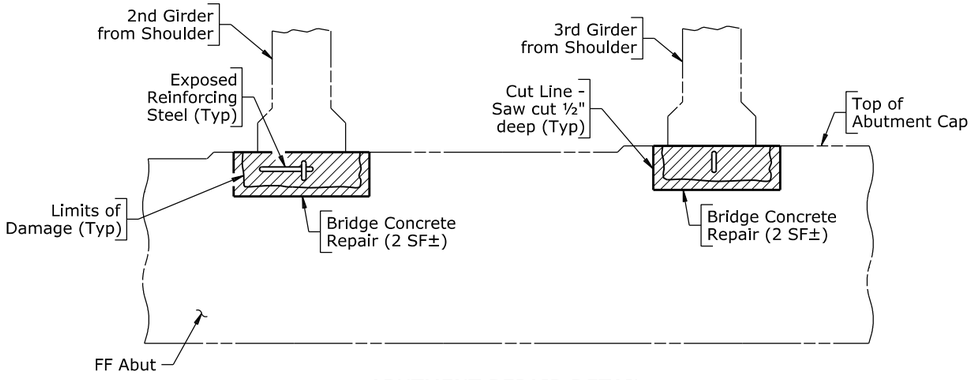
WINGWALL REPAIR DETAIL
(Sta 384+32 (SBL) - Abut No. 1 - Shoulder)



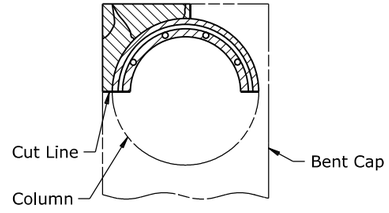
WINGWALL REPAIR DETAIL
(Sta 384+32 (SBL) - Abut No. 2 - Shoulder)



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
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BRIDGE CONCRETE REPAIR DETAILS

BRIDGE REHABILITATION
VARIOUS LOCATIONS
Wheatland - Glendo Road
(Cassa North Section)

I252137 PI

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DATE

DESIGN ___ ✓ ___
DETAIL BBB ✓ AAA
QTY'S GGG ✓ DDD

Design Section L M Nop
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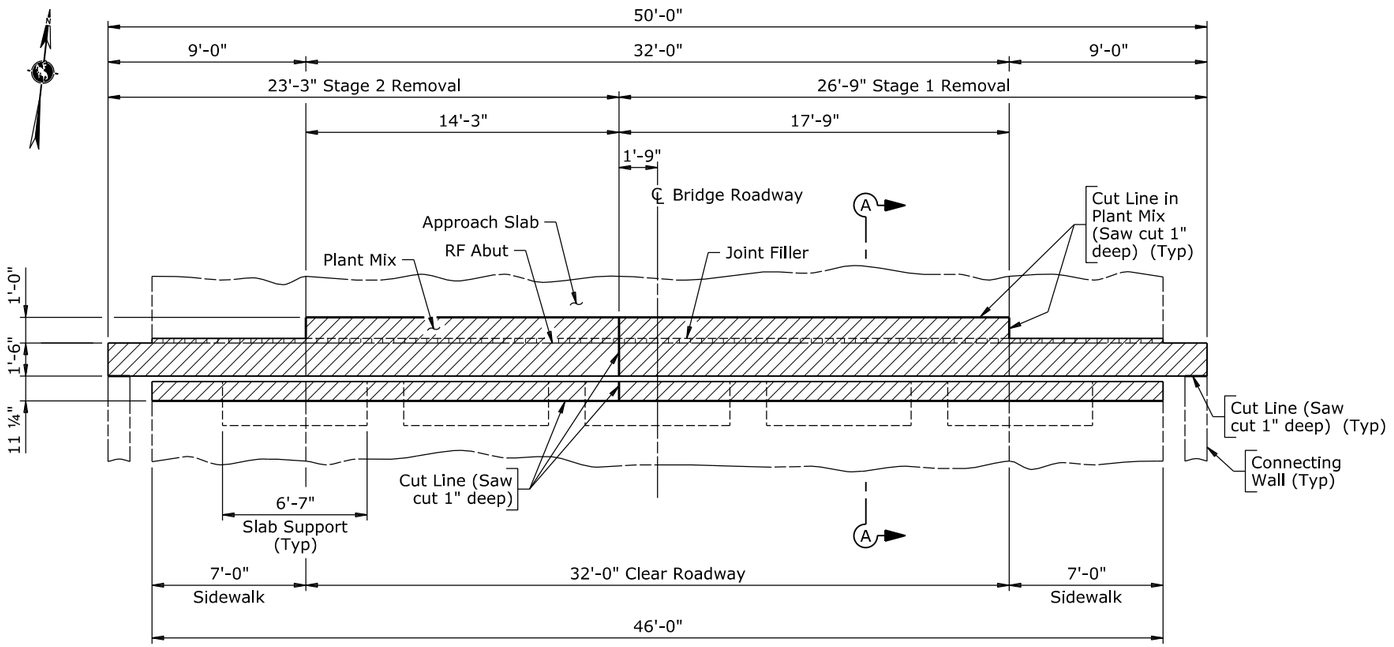
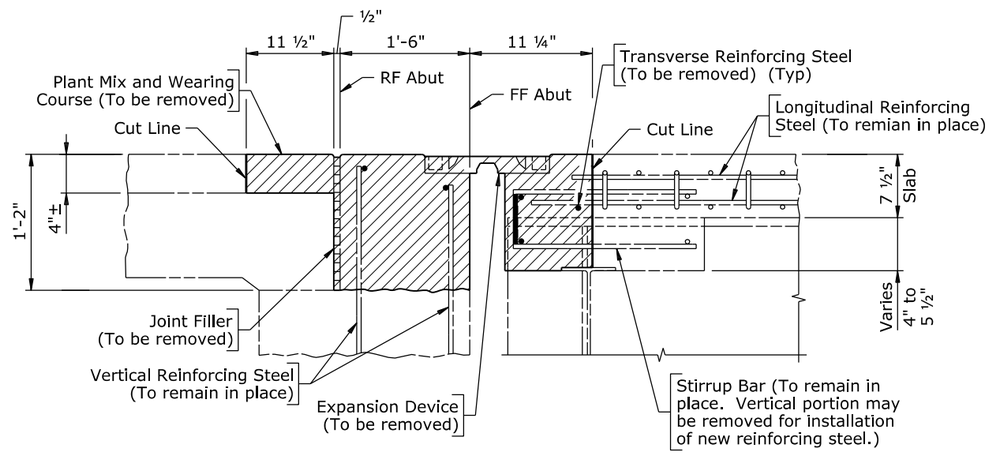
Wyo. Proj. 1507033				
Sheet B2	of	B14	Sheets	

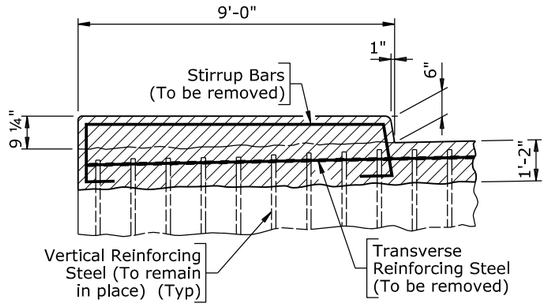


PLAN

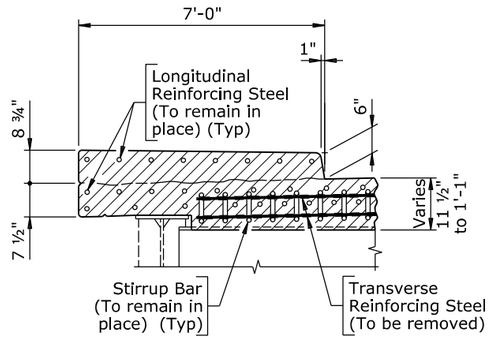
(Showing removal)
(Expansion device and reinforcing steel not shown)
(Abut No. 1 shown, Abut No. 2 similar)



SECTION A-A



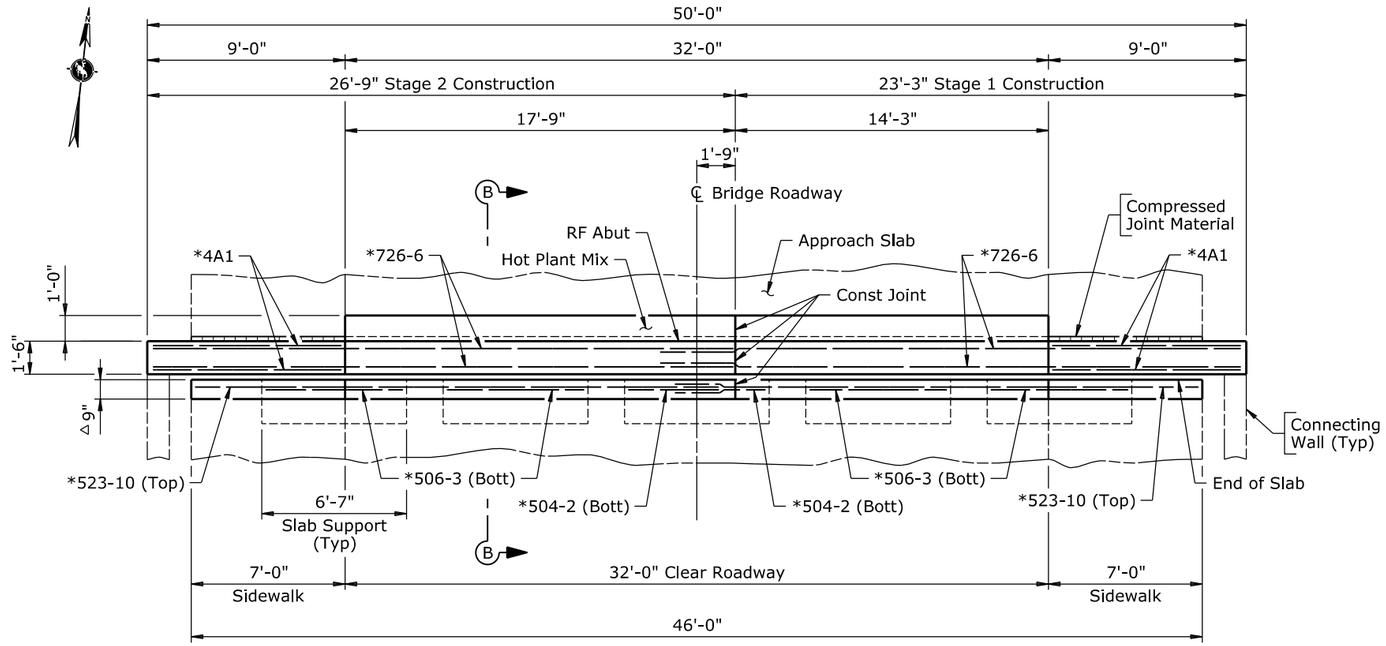
SECTION AT ABUTMENT SIDEWALKS



SECTION AT SLAB SIDEWALKS

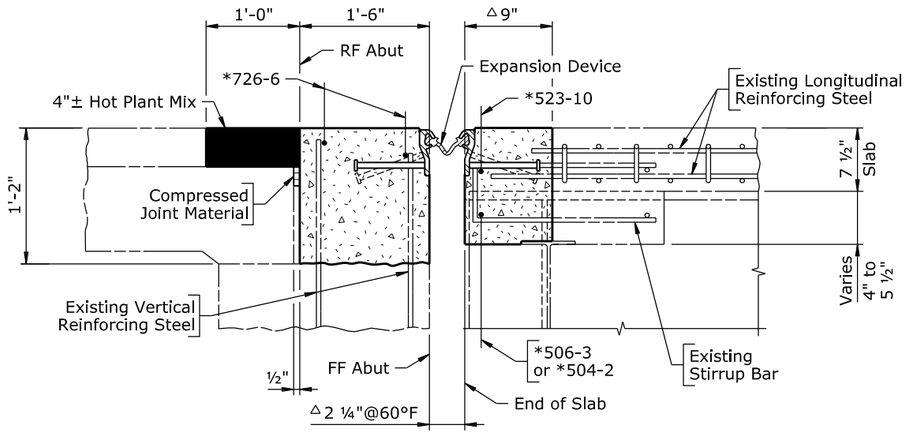
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS	EXPANSION JOINT DETAILS BRIDGE REHABILITATION BRIDGE OVER SUNLIGHT CREEK Chief Joseph Highway (WYO 296) 1507033 Pa		
APPROVED DATE	DESIGN ___ ✓ ___ DETAIL QQQ ✓ TTT QTY'S QQQ ✓ TTT	Design Section B C Def	
		Drwg No. 0011	Sheet 2 of 6

1507033_ex1.dgn



PLAN

(Expansion device steel 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.
△2) Increase the opening between front face abutment and end of slab ⅛" for each 10° F below 60° F and decrease the opening ⅛" 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
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BRIDGE REHABILITATION

BRIDGE OVER SUNLIGHT CREEK

Chief Joseph Highway (WYO 296)

1507033 Pa

APPROVED

DATE

DESIGN ____ ✓ ____
DETAIL QQQ ✓ TTT
QTY'S QQQ ✓ TTT

Design Section B C Def

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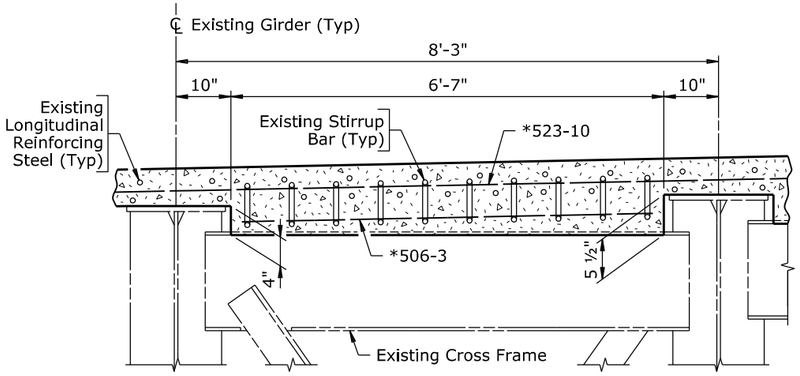
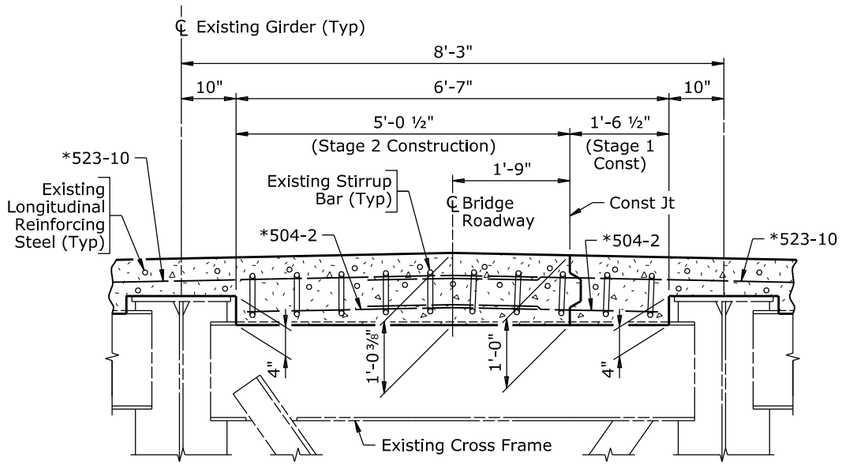
1507033_ex2.dgn

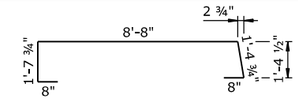


TYPICAL SECTION AT SLAB SUPPORT
(4 req'd)

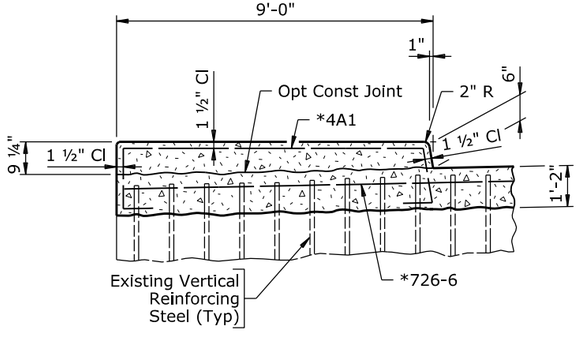


SLAB SUPPORT SECTION AT CONSTRUCTION JOINT

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			



*4A1 (Stirrup)
(13'-1")



SECTION AT ABUTMENT SIDEWALKS

Note: 1) Construct new sidewalks to match existing sidewalks.
2) 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
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BRIDGE REHABILITATION

BRIDGE OVER SUNLIGHT CREEK

Chief Joseph Highway (WYO 296)

1507033 Pa

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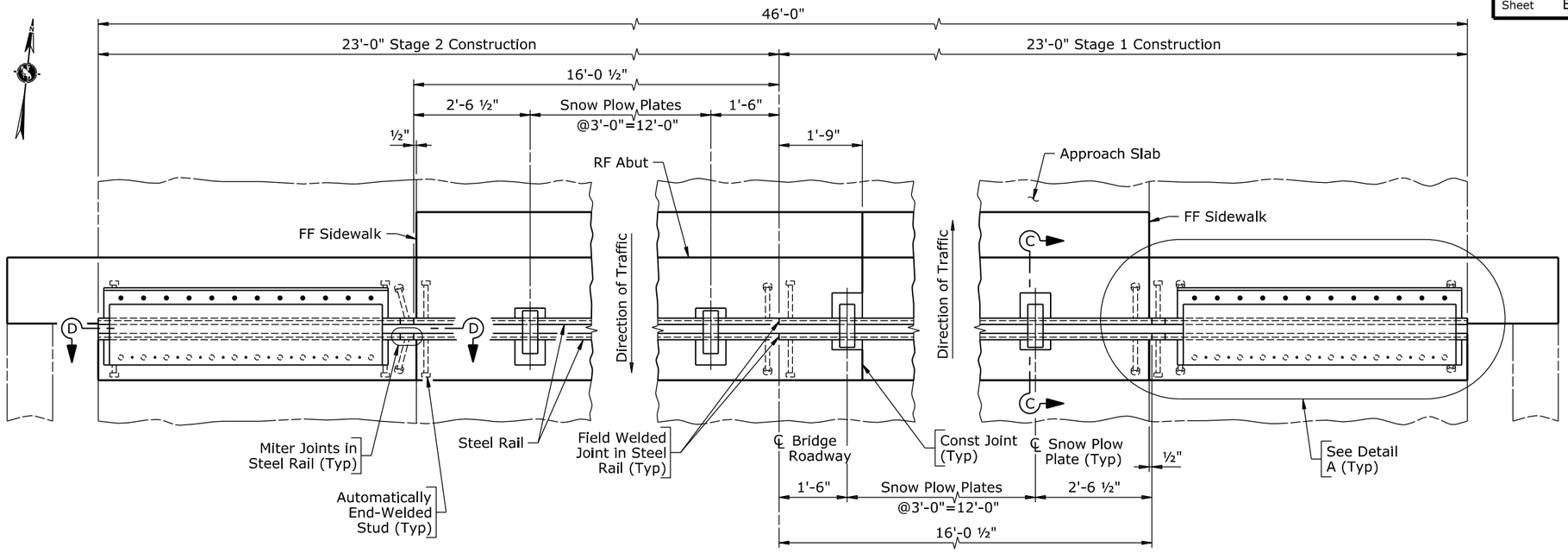
DATE

DESIGN ___ ✓ ___
DETAIL QQQ ✓ TTT
QTY'S QQQ ✓ TTT

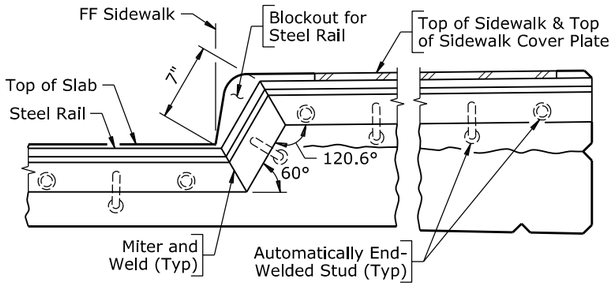
Design Section B C Def

Drwg No. 0011 Sheet 4 of 6

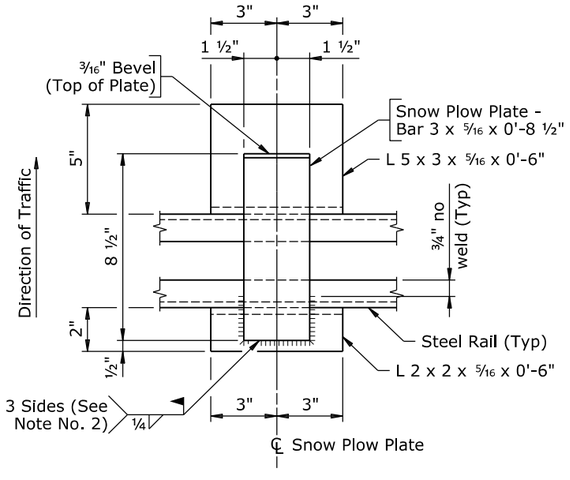
1507033_ex3.dgn



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
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EXPANSION JOINT DETAILS

BRIDGE REHABILITATION

BRIDGE OVER SUNLIGHT CREEK

Chief Joseph Highway (WYO 296)

1507033 Pa

APPROVED
DATE

DESIGN ___ ✓ ___
DETAIL QQQ ✓ TTT
QTY'S QQQ ✓ TTT

Design Section B C Def

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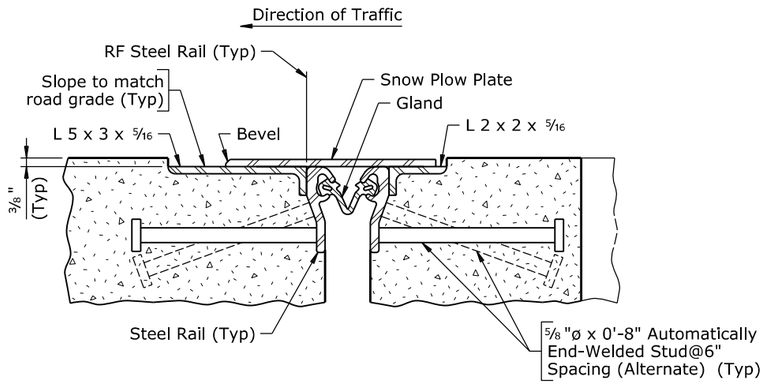
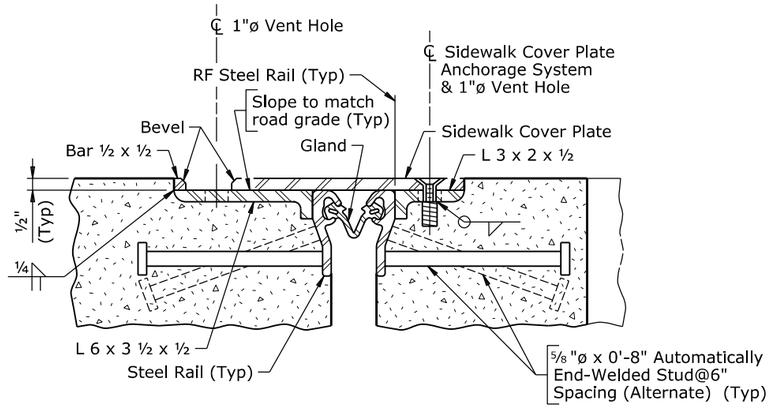
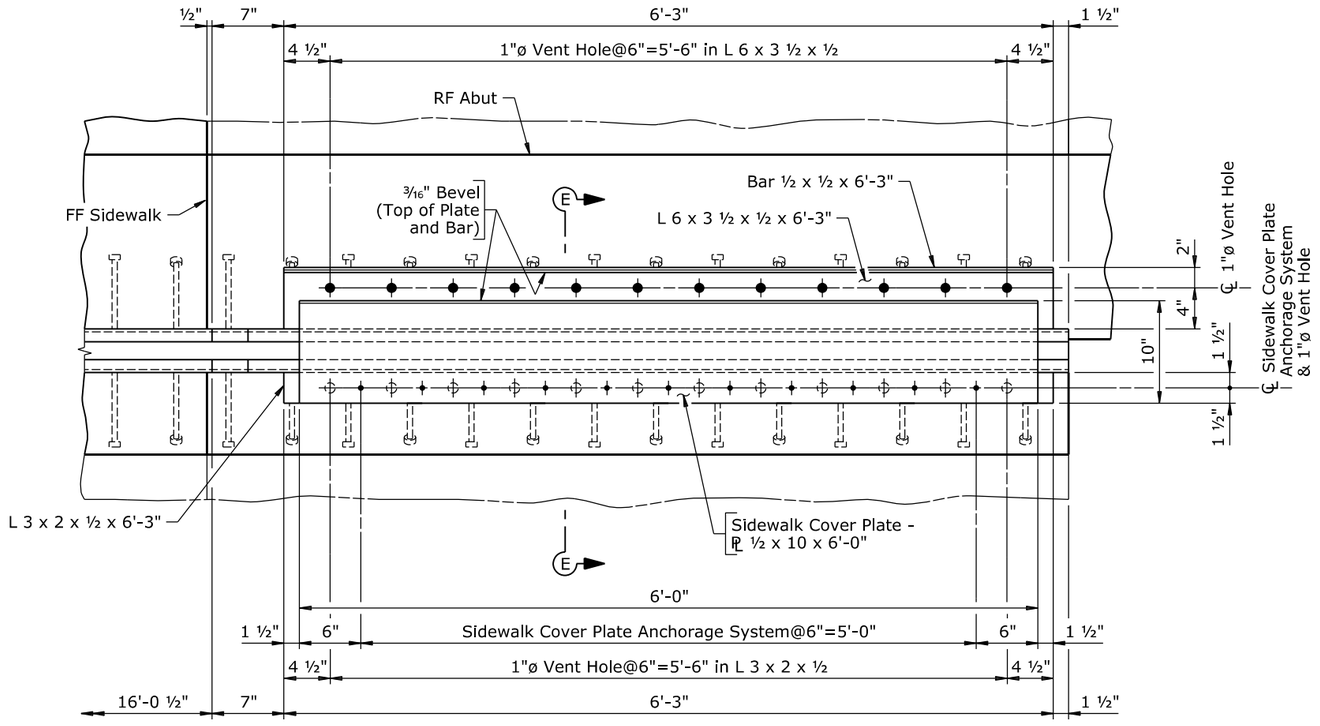


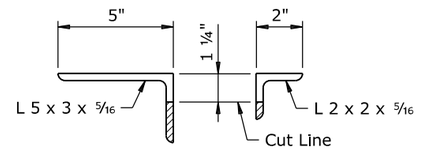
SECTION C-C



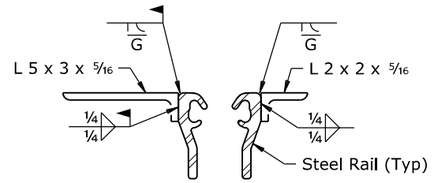
SECTION E-E



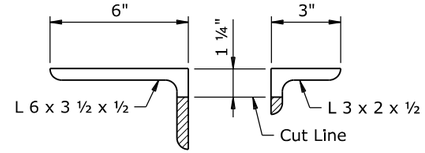
DETAIL A
(Cap screws not shown)



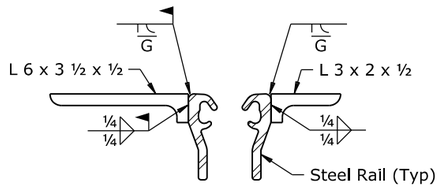
ANGLE CUT DETAIL AT SNOW PLOW PLATE



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"ø hole in sidewalk cover plate, 9/16"ø hole in L 3 x 2 x ½, ½"ø x 1 ¾" 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.

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

REVISIONS

EXPANSION JOINT DETAILS

BRIDGE REHABILITATION

BRIDGE OVER SUNLIGHT CREEK

Chief Joseph Highway (WYO 296)

1507033 Pa

APPROVED

DATE

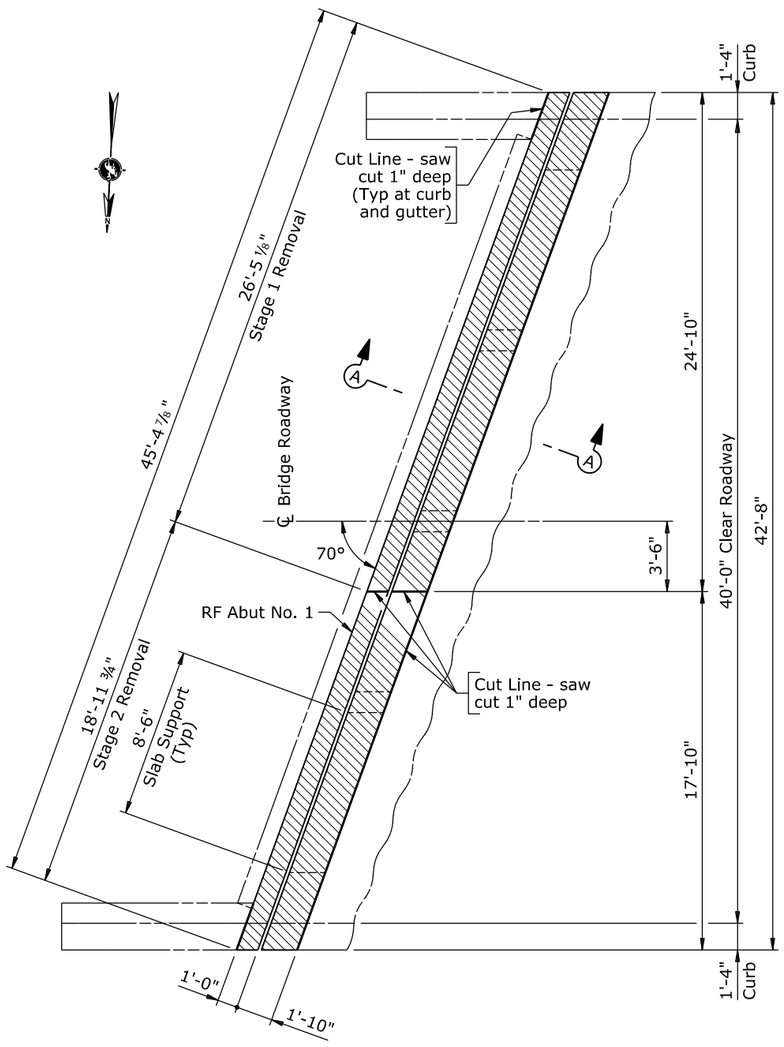
DESIGN ___ ✓ ___
DETAIL QQQ ✓ TTT
QTY'S QQQ ✓ TTT

Design Section B C Def

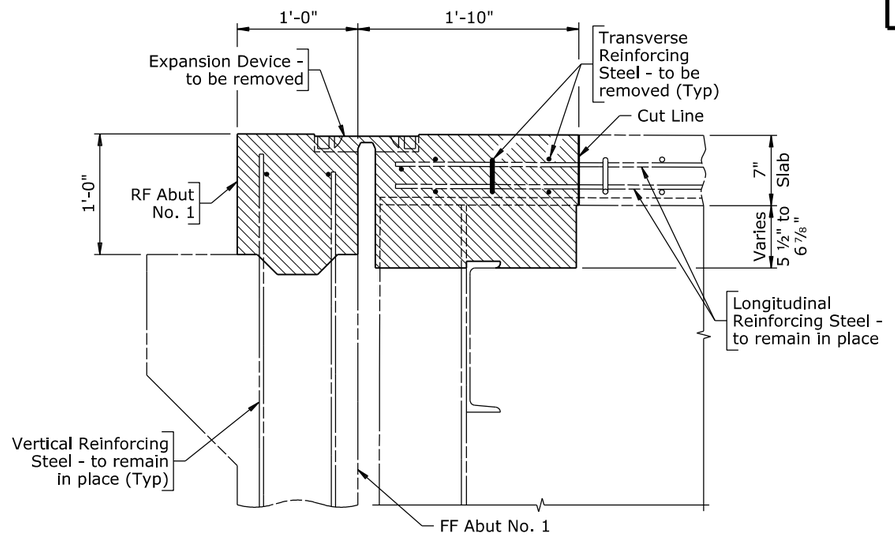
Drwg No. 0011 Sheet 6 of 6

1507033_ex5.dgn

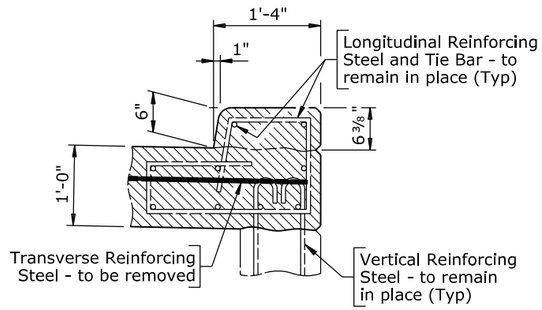
Wyo. Proj.	N311074			
Sheet	B3	of	B48	Sheets



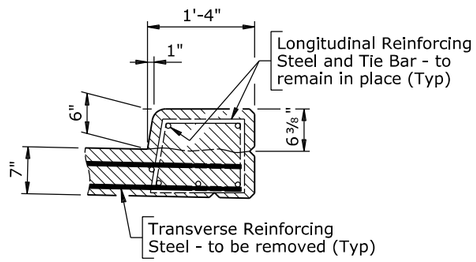
PLAN
(Showing removal)
(Expansion device and reinforcing steel not shown)



SECTION A-A



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

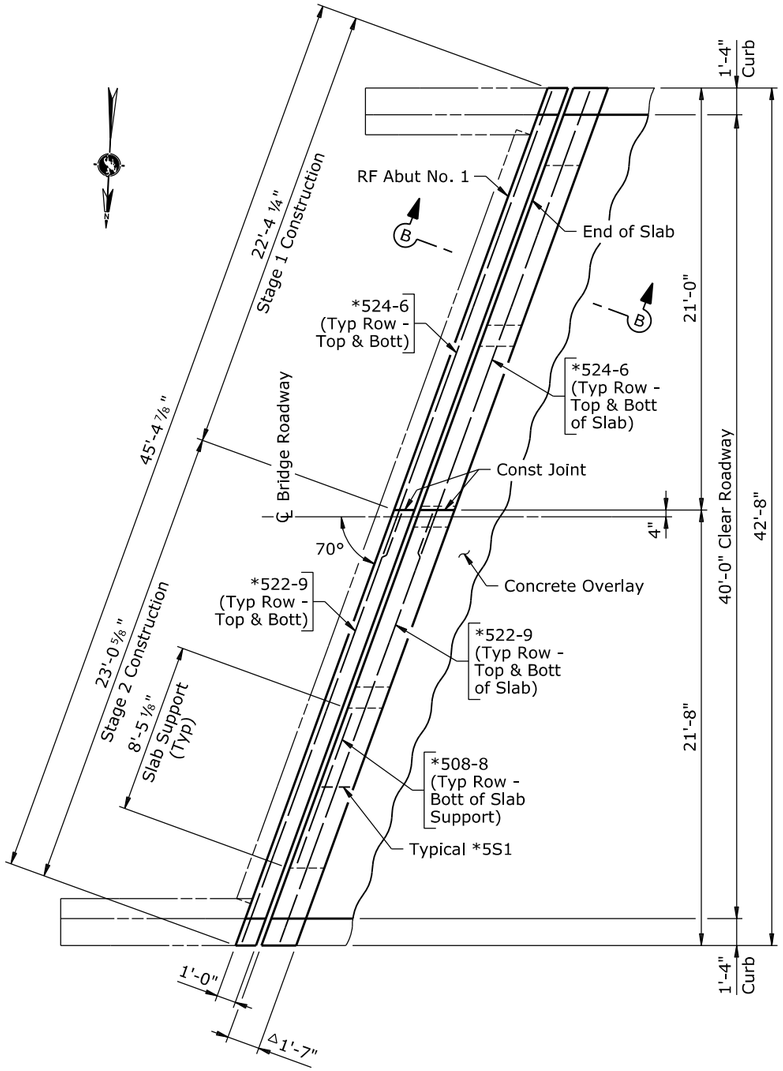


SECTION AT SLAB CURBS
(Shown perpendicular to edge of slab)

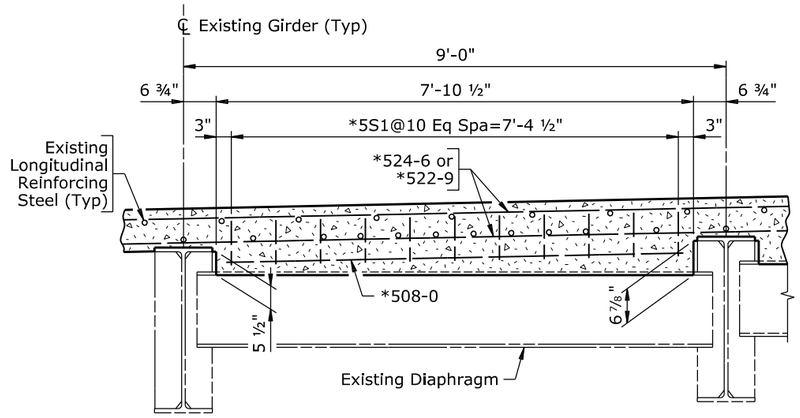
ABUTMENT NO. 1

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

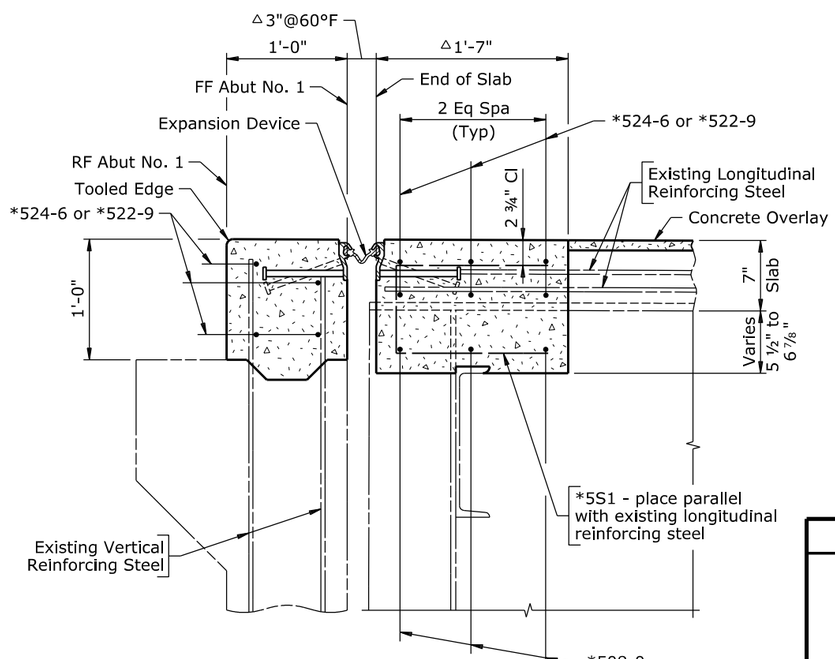
N311074_1ex1.dgn



PLAN
(Expansion device not shown)

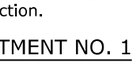


TYPICAL SECTION AT SLAB SUPPORT
(Shown prependicular to ℄ Bridge Roadway)
(4 req'd)



SECTION B-B
(Snow plow plate not shown)

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			



*5S1 (Stirrup)
(3'-6")

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 1/16" for each 10° F below 60° F and decrease the opening 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.
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.

ABUTMENT NO. 1

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

REVISIONS

EXPANSION JOINT DETAILS

BRIDGE REHABILITATION
STA 197+38
Cody - Greybull
Cody East Section
N311074 Pa

APPROVED
DATE

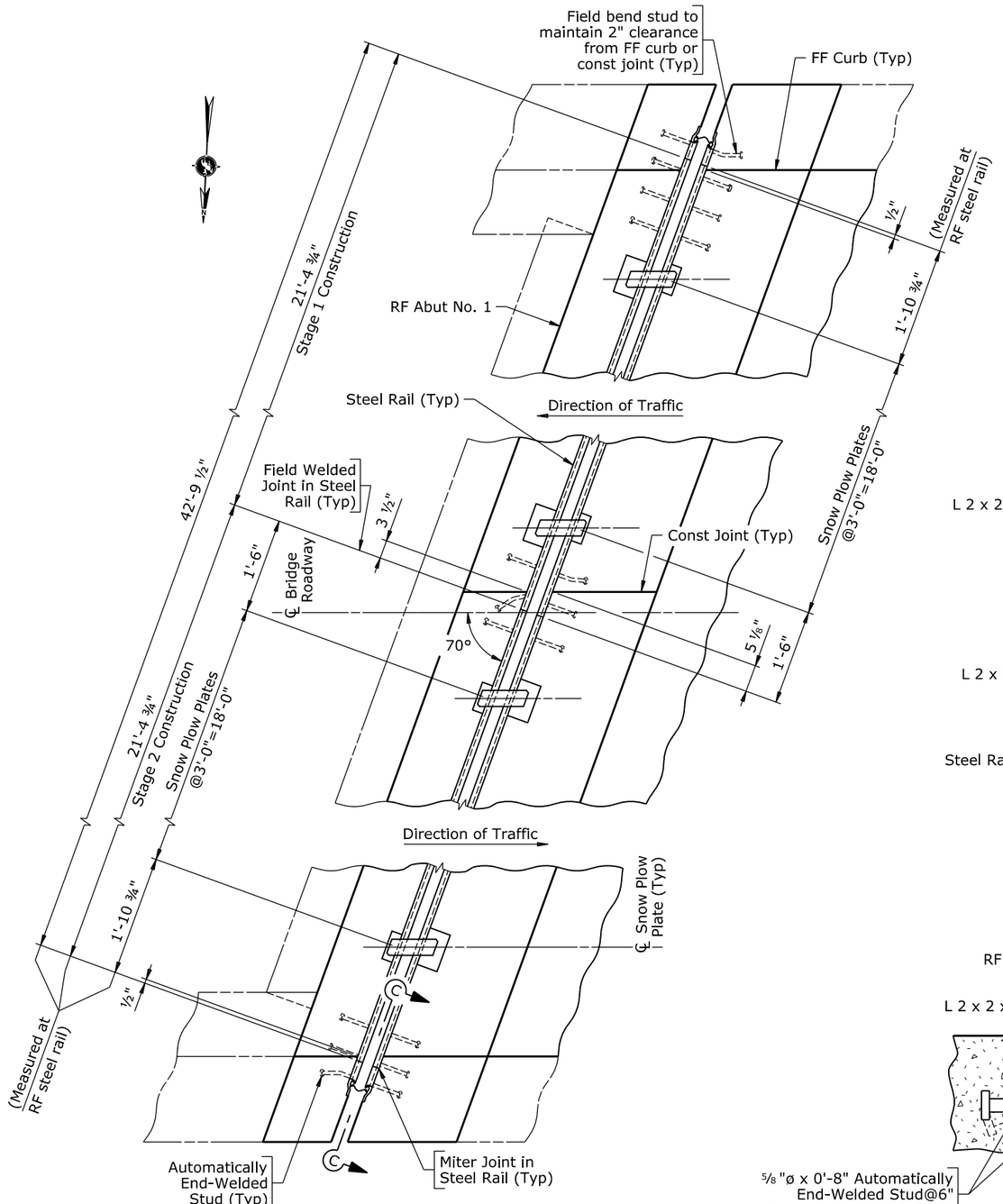
DESIGN ——— ✓ ———
DETAIL CCC ✓ AAA
QTY'S BBB ✓ EEE

Design Section L M Nop
Drwg No. 0010 Sheet 4 of 15

N311074_1ex2.dgn

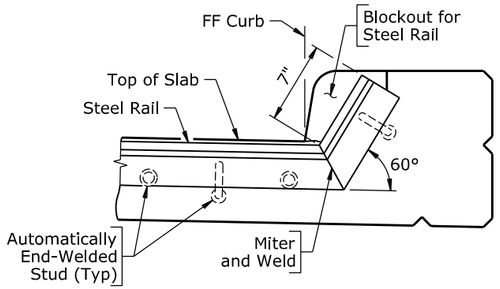
Wyo. Proj. N311074

Sheet B5 of B48 Sheets



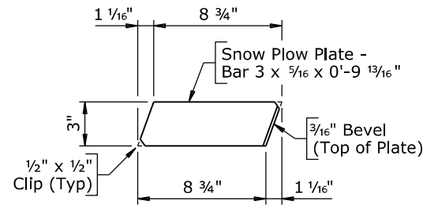
PLAN

(Showing expansion device layout)

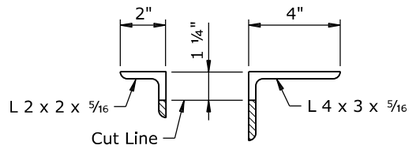


VIEW C-C

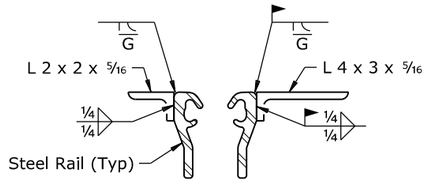
(Typical each slab curb, abutment curbs similar)
(Gland not shown)



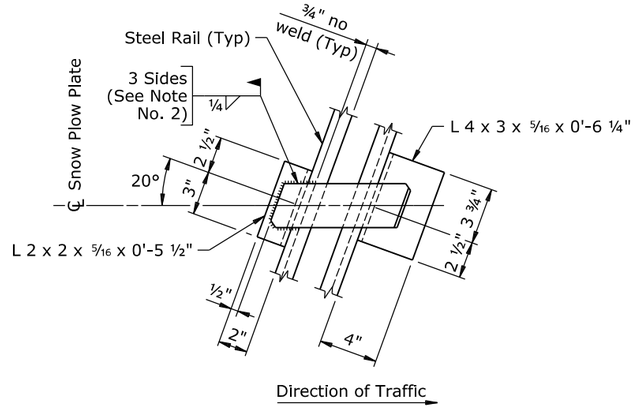
SNOW PLOW PLATE DETAIL



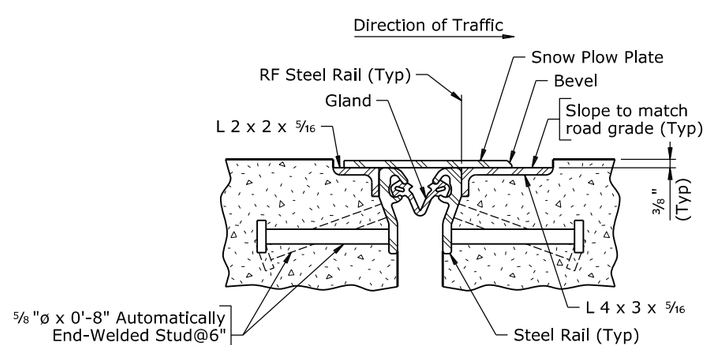
ANGLE CUT DETAIL



ANGLE WELD DETAIL



SNOW PLOW PLATE ASSEMBLY DETAIL



TYPICAL SECTION

(Shown at snow plow plate)

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

REVISIONS

EXPANSION JOINT DETAILS

BRIDGE REHABILITATION

STA 197+38

Cody - Greybull

Cody East Section

N311074 Pa

APPROVED

DATE

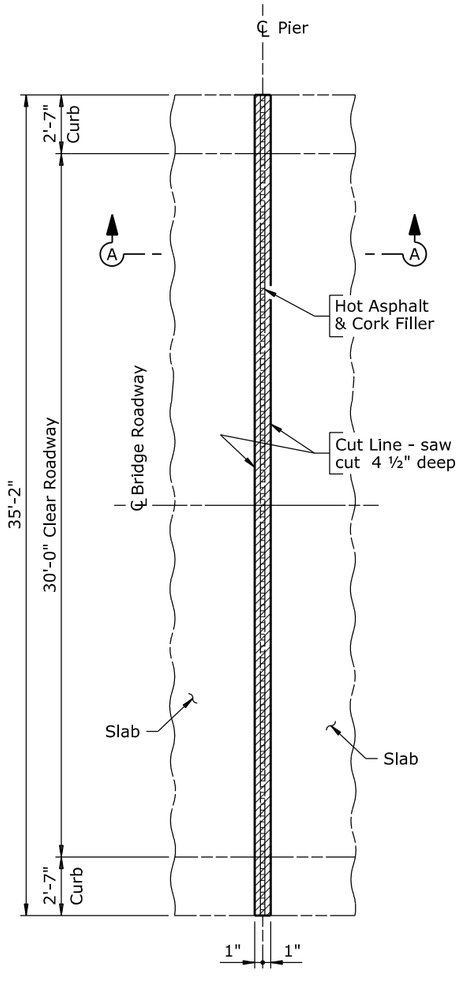
DESIGN ____ ✓ ____
DETAIL CCC ✓ AAA
QTY'S BBB ✓ EEE

Design Section L M Nop

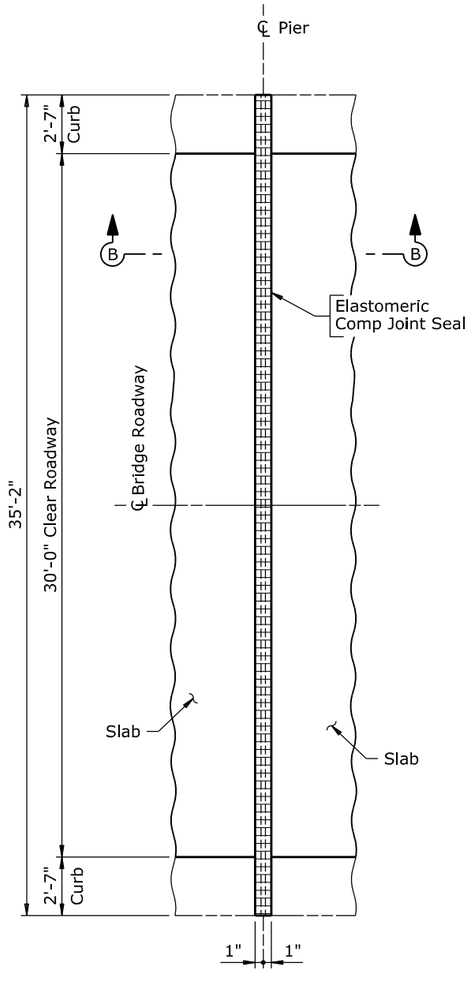
Drwg No. 0010 Sheet 5 of 15

N311074_1ex3.dgn

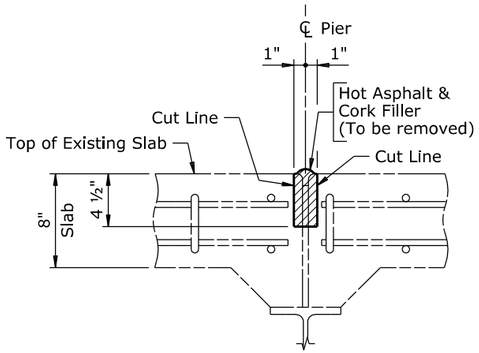
Wyo. Proj.	B164018
Sheet	B152 of B221 Sheets



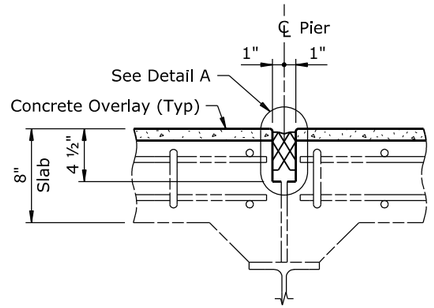
PLAN
(Showing removal)



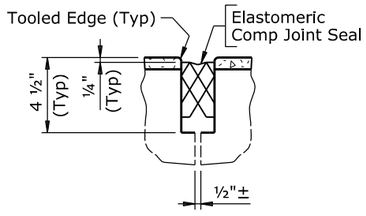
PLAN
(Showing new construction)



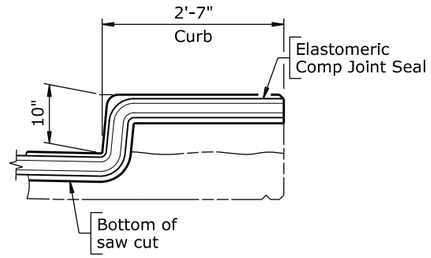
SECTION A-A



SECTION B-B



DETAIL A



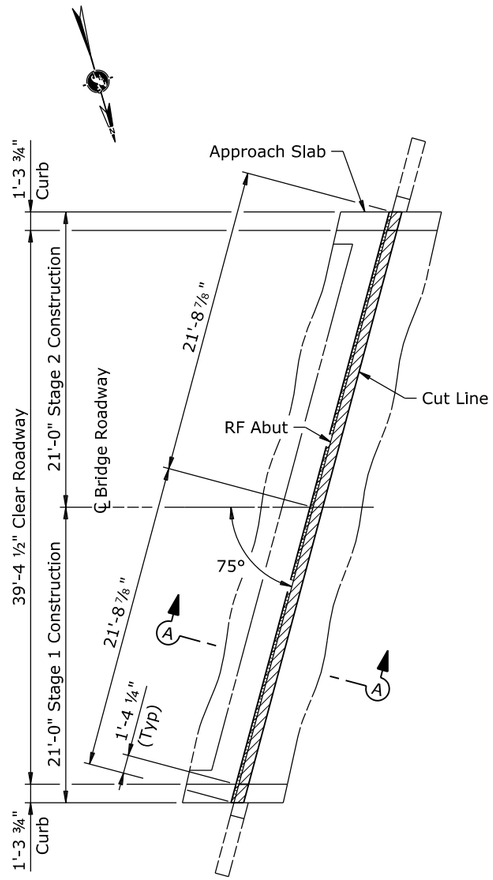
DETAIL AT CURBS

LITTLE GOOSE CREEK

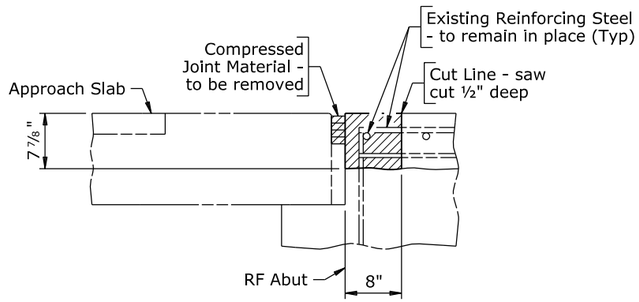
PIERS NO. 1 & 2

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

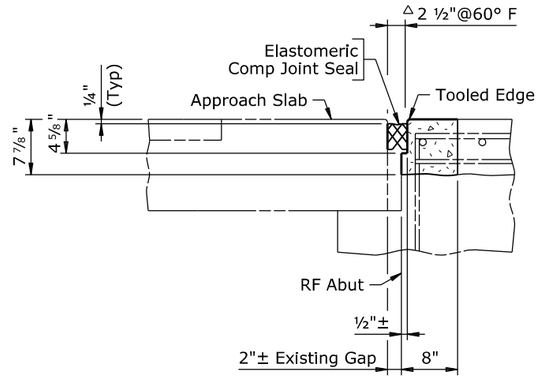
B164018_2jt.dgn



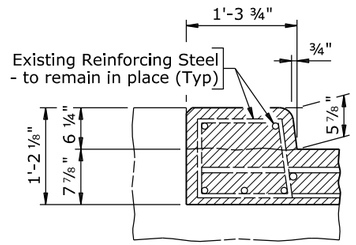
PLAN
(Abut No. 1 shown, Abut No. 2 similar)
(Showing removal, new construction similar)



SECTION A-A
(Showing removal)



SECTION A-A
(Showing new construction)



SECTION AT CURBS
(Showing removal, new construction similar)

Note: △ 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

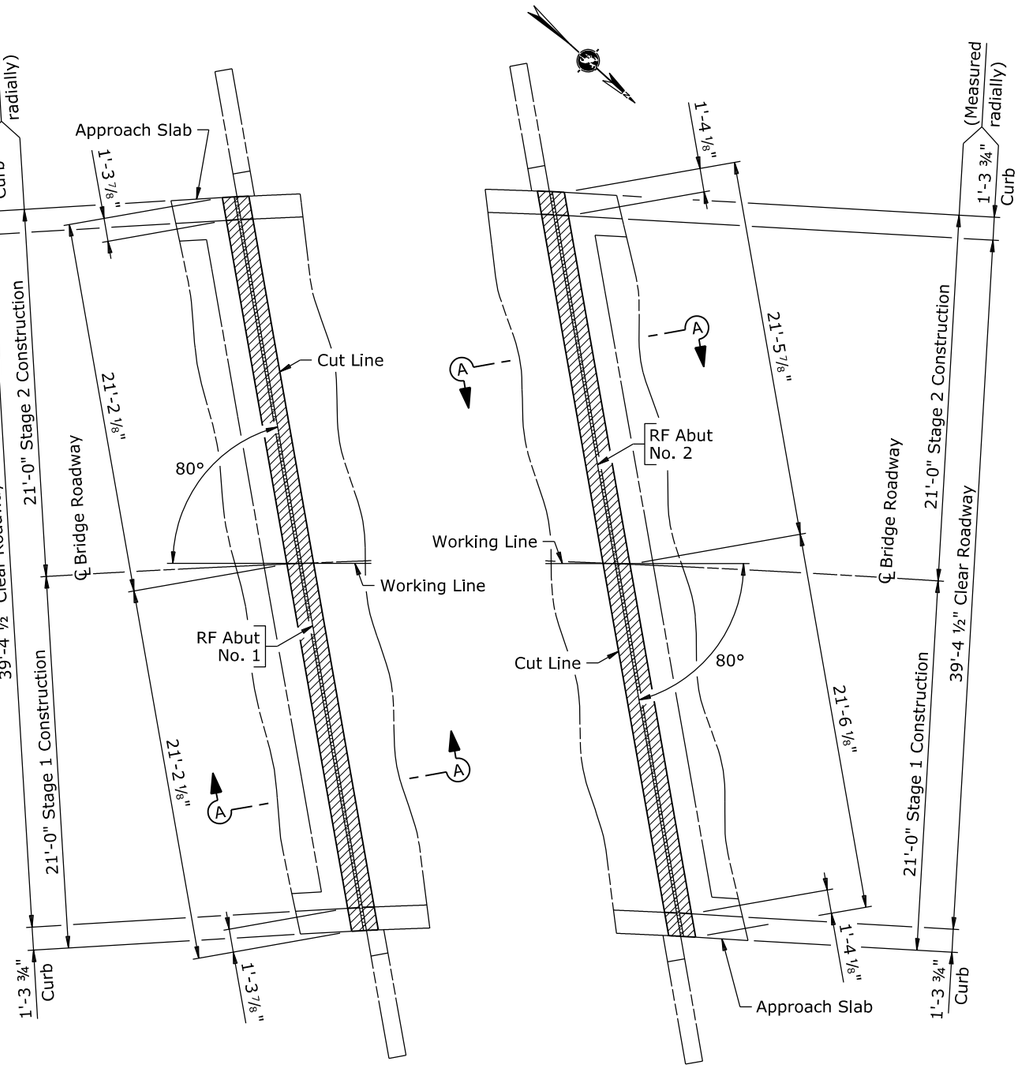
District 5

B175020 Multiple Co.

REVIEW ____ I	DESIGN ____ ✓ ____	Design Section Y
APPROVAL ____ I	DETAIL Y ✓ Y	
	QTY'S Y ✓ Y	Drwg No. Y Sheet 20 of 95

B175020_05ex.dgn

Wyo. Proj.	B175020
Sheet	B26 of B222 Sheets



PLAN
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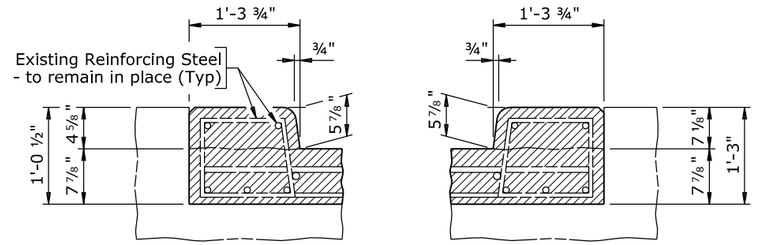
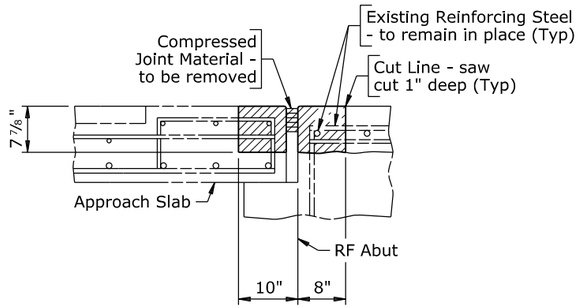
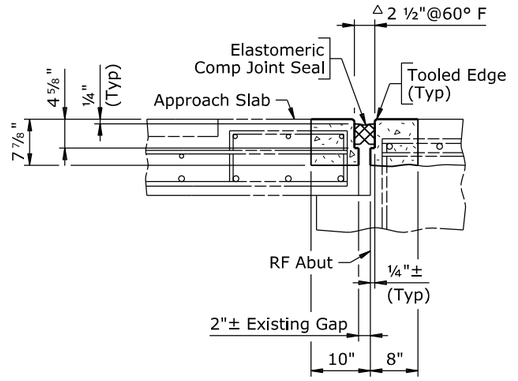


SECTION AT CURBS
(Showing removal, new construction similar)



SECTION A-A
(Showing removal)



SECTION A-A
(Showing new construction)

Note: △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

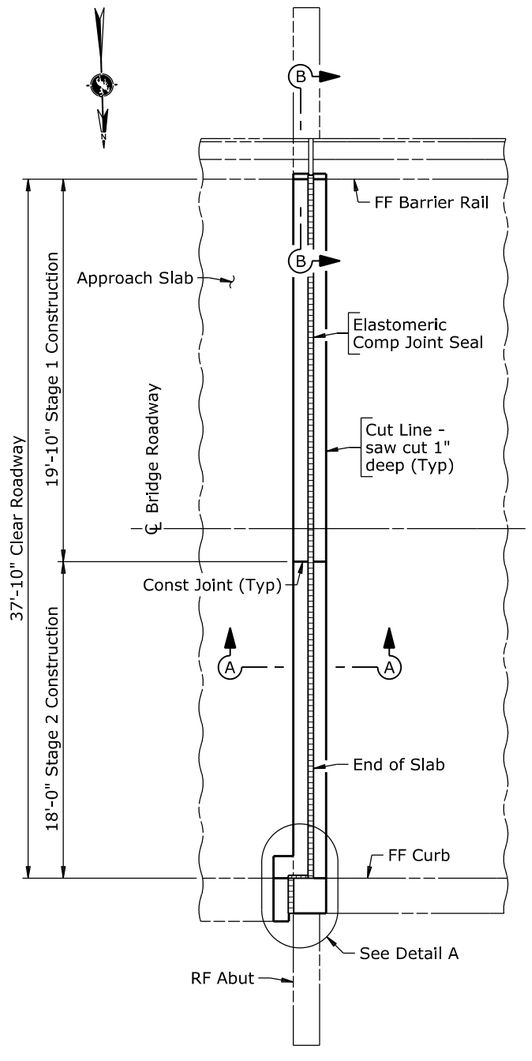
VARIOUS LOCATIONS

District 5

B175020 Multiple Co.

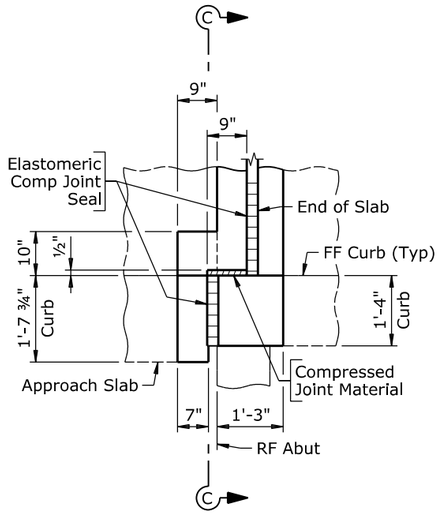
REVIEW	DESIGN Y ✓ Y	Design Section	Y
APPROVAL	DETAIL Y ✓ Y	Drwg No.	Y
	QTY'S Y ✓ Y	Sheet	26 of 95

B175020_08ex.dgn

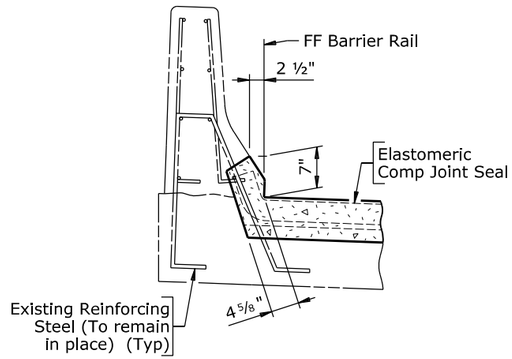


PLAN

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

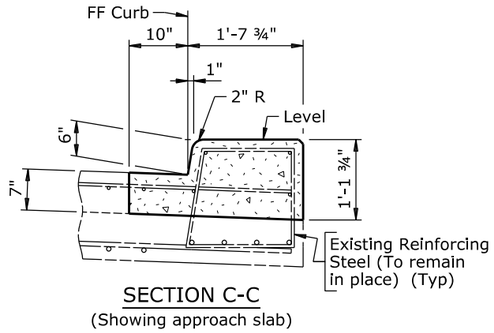


DETAIL A



SECTION B-B

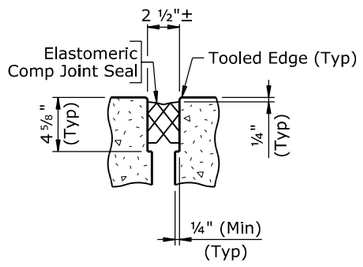
(Approach slab shown, bridge slab similar)



SECTION C-C

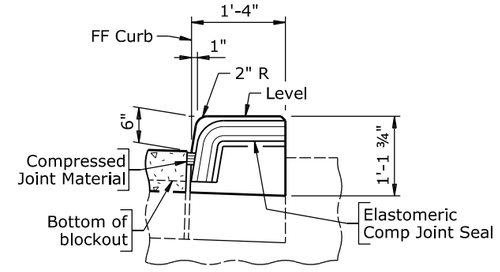
(Showing approach slab)

SECTION A-A



DETAIL B

(Typical at curb)



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

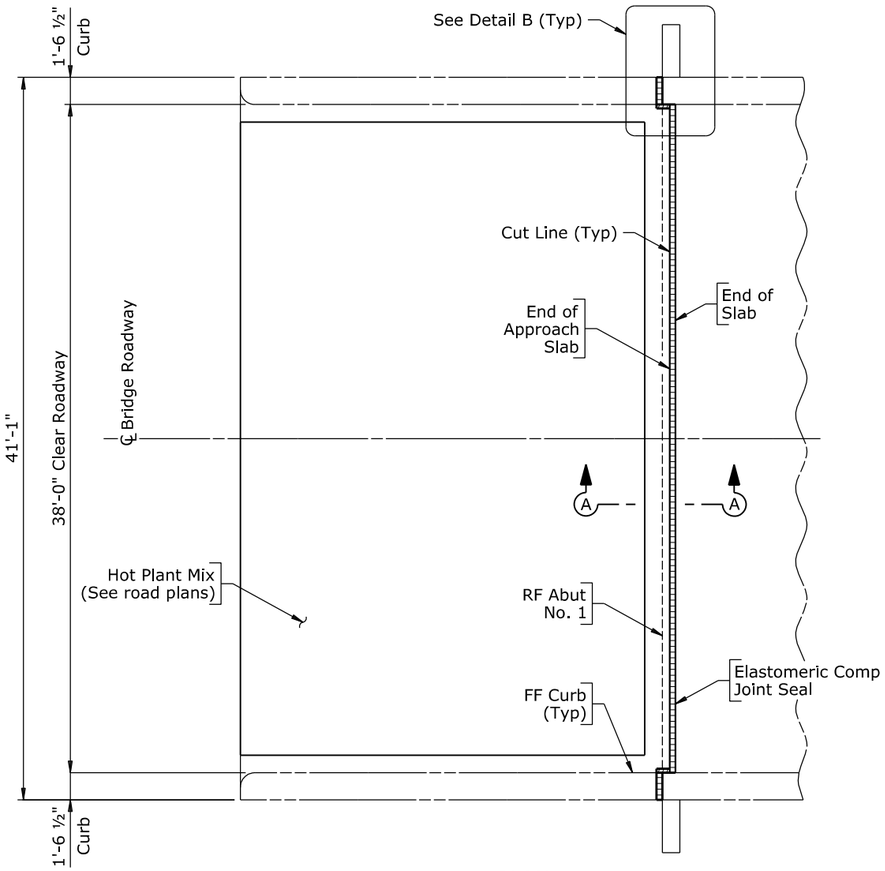
B183012 Ui

REVIEW I
APPROVAL I

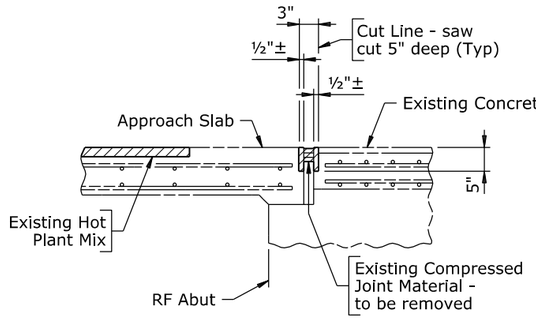
DESIGN ___ ✓ ___
DETAIL Q ✓ Q
QTY'S Q ✓ Q

Design Section Q
Drwg No. Q
Sheet 27 of 50

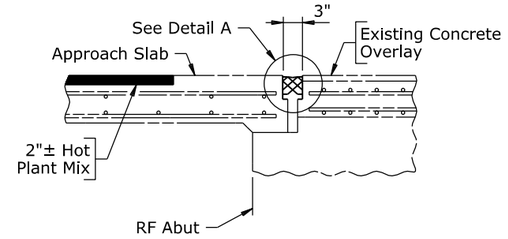
B183012_2jt.dgn



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

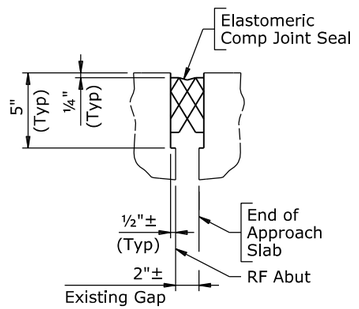


SHOWING REMOVAL

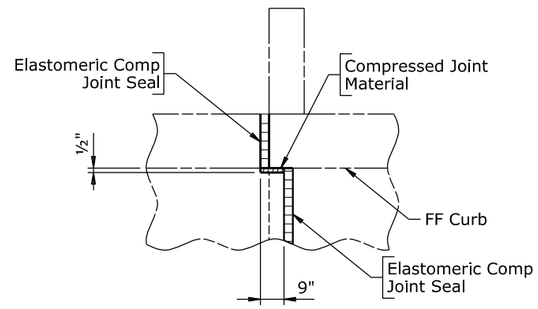


SHOWING NEW CONSTRUCTION

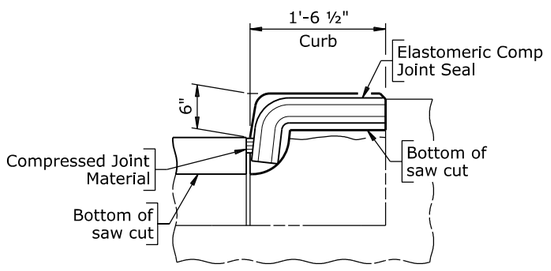
SECTION A-A



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

REVISIONS

JOINT DETAILS

BRIDGE REHABILITATION

VARIOUS LOCATIONS

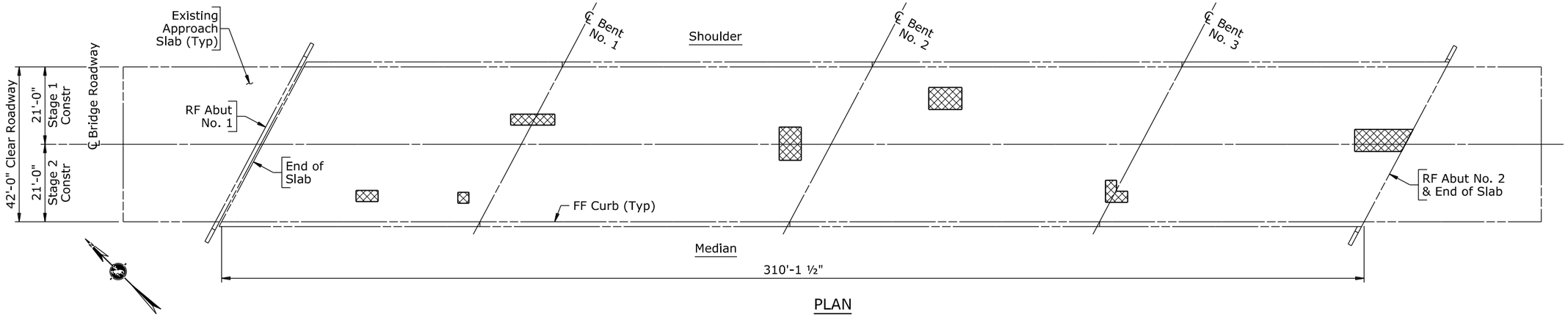
Rawlins - Creston Jct (WBL)

I803145 Sw

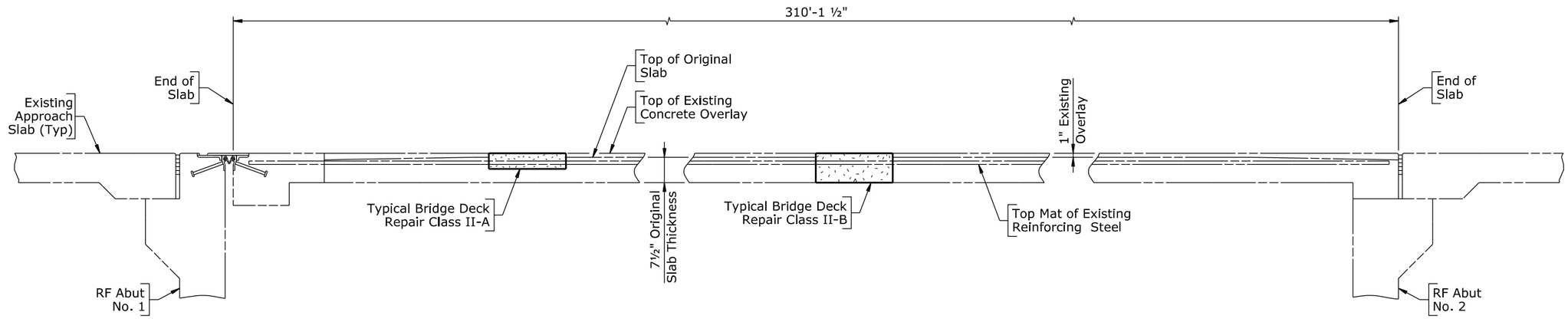
REVIEW I	DESIGN ___ ✓ ___	Design Section X	
APPROVAL I	DETAIL X ✓ X		
	QTY'S X ✓ X	Drwg No. X	Sheet 6 of 20

I803145_1jm.dgn

Wyo. Proj.	B172014			
Sheet	B7	of	B228	Sheets



PLAN



LONGITUDINAL SECTION

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

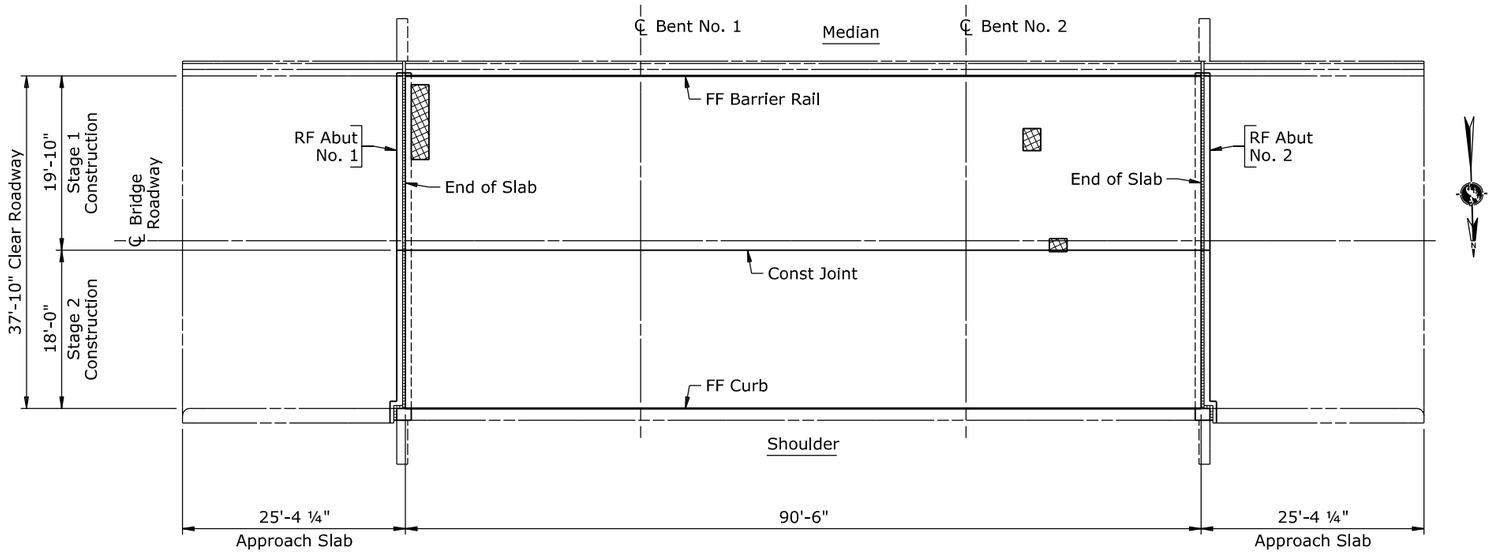
BSNF OVERPASS (NBL)

District 2

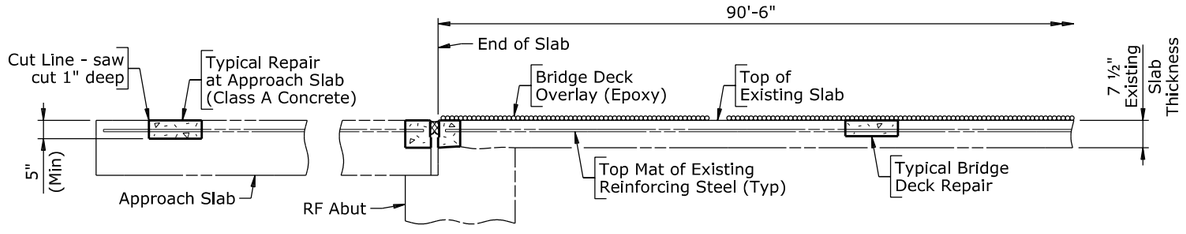
B172014 Co

REVIEW ____ I	DESIGN ____ ✓ ____	Design Section	U R Slackin
APPROVAL ____ I	DETAIL JIM ✓ BOB	Drwg No. X	Sheet 7 of 11
	QTY'S BBY ✓ JOE		

B172014_2dr.dgn



PLAN



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

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

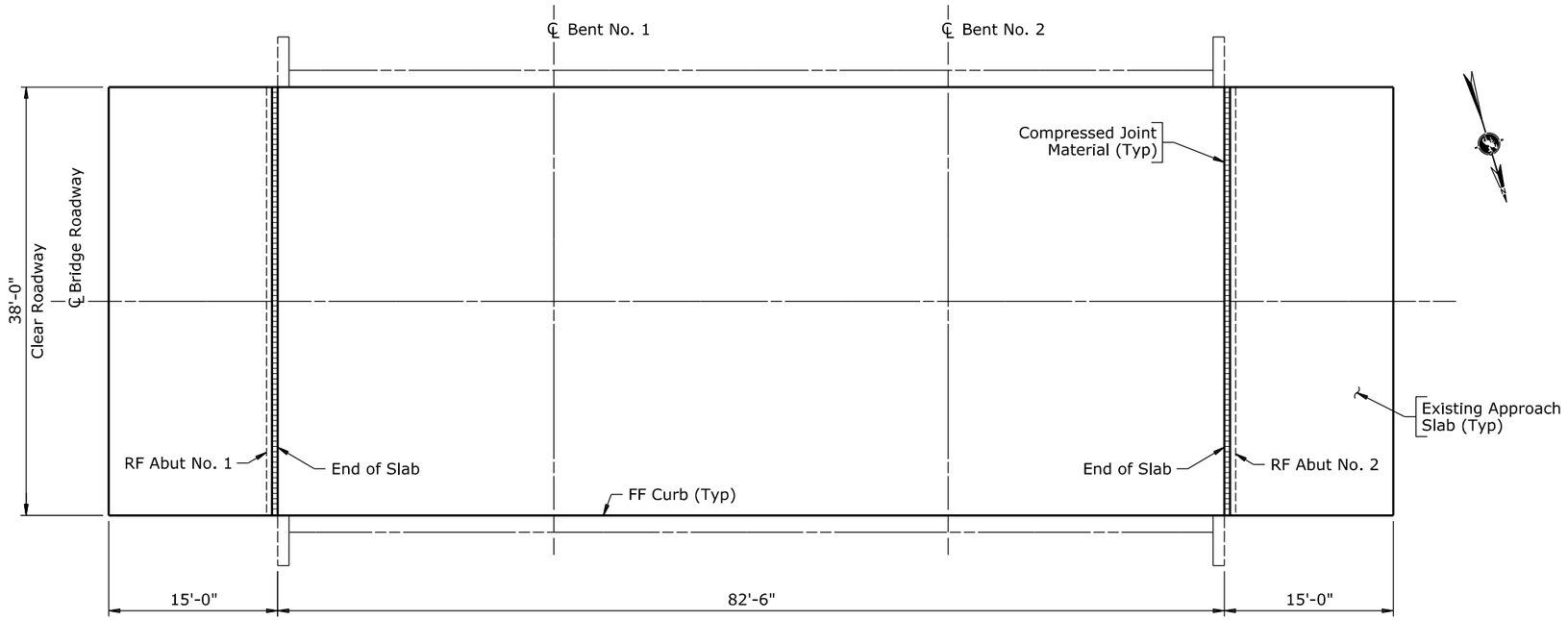
B183012 Ui

REVIEW ____ I	DESIGN ____ ✓ ____	Design Section X
APPROVAL ____ I	DETAIL X ✓ X	
	QTY'S X ✓ X	Drwg No. X Sheet 28 of 51

B183012_2rs.dgn

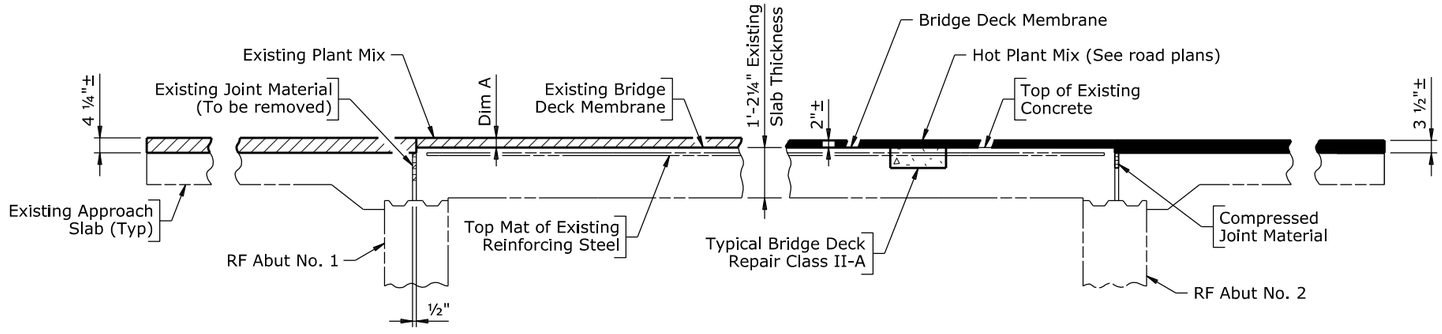
Wyo. Proj. I804260

Sheet B3 of B24 Sheets



PLAN

TABLE OF DIMENSIONS	
Structure No.	Dimension A
AUI	2 ¾"±
AUJ	3 ½"±
AUM	3 ½"±
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

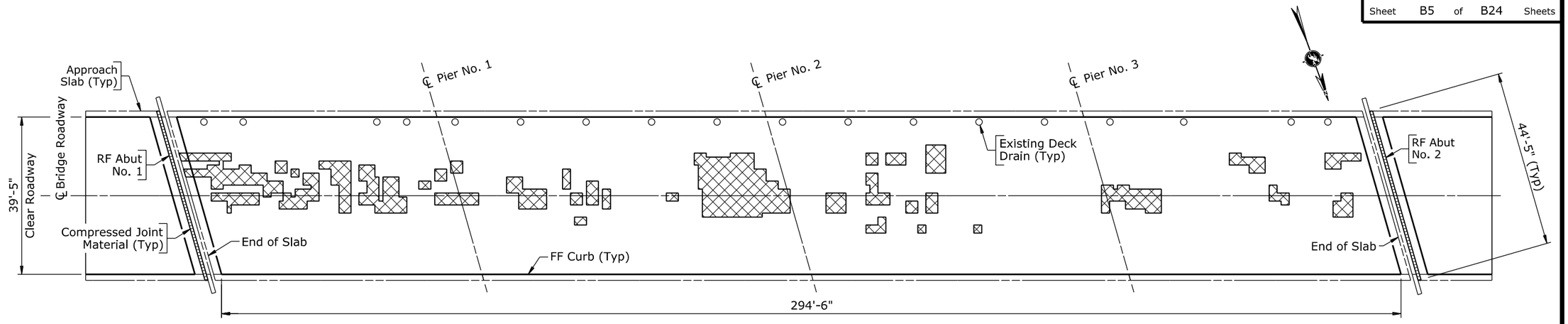
I804260 Cb

REVIEW I	DESIGN ___ ✓ ___	Design Section X	
APPROVAL I	DETAIL X ✓ X	Drwg No. X	Sheet 3 of 6
	QTY'S X ✓ X		

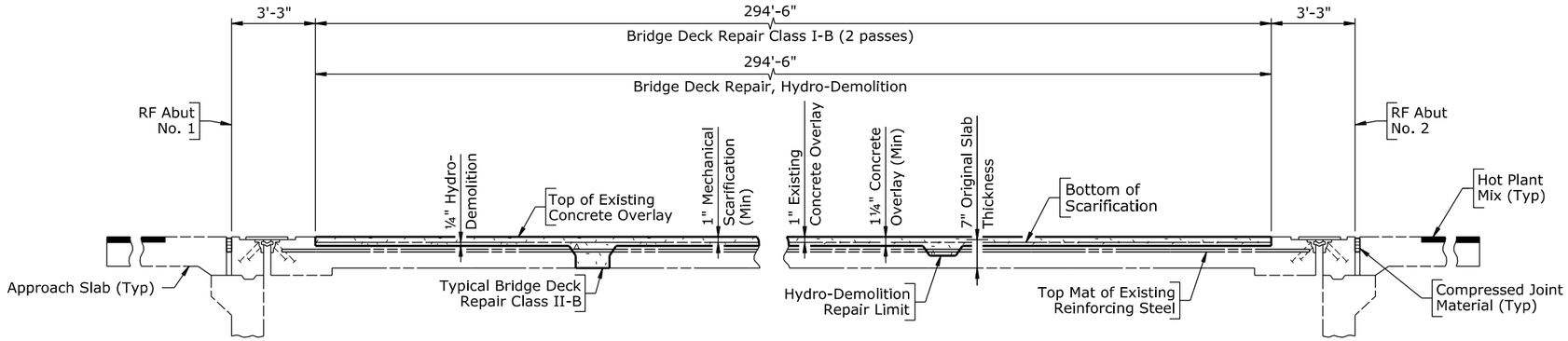
I804260_1rs.dgn

Wyo. Proj. I804260

Sheet B5 of B24 Sheets



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 ¼" 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

REVISIONS

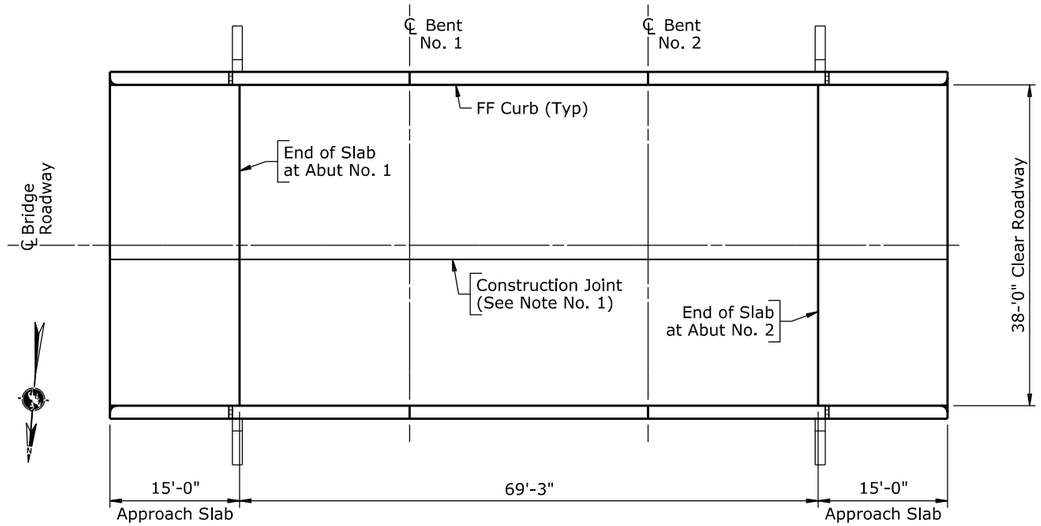
RESURFACING DETAILS

BRIDGE REHABILITATION
VARIOUS LOCATIONS
Rawlins - Walcott Junction
Fort Steele Section

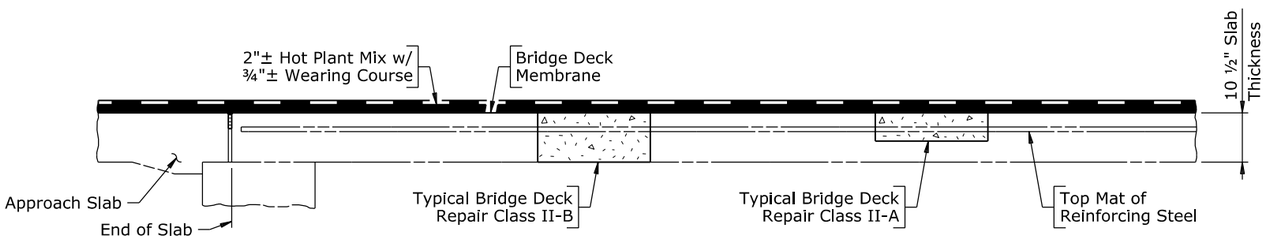
I804260 Cb

REVIEW I	DESIGN ✓	Design Section X	
APPROVAL I	DETAIL X ✓ X	Drwg No. X	Sheet 5 of 6
	QTY'S X ✓ X		

I804260_2rs.dgn



PLAN



PART LONGITUDINAL SECTION
(Showing new asphalt overlay)

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 ¾".

STRUCTURES NO. AYN, AYO, AYP & AYQ

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

REVISIONS

RESURFACING DETAILS

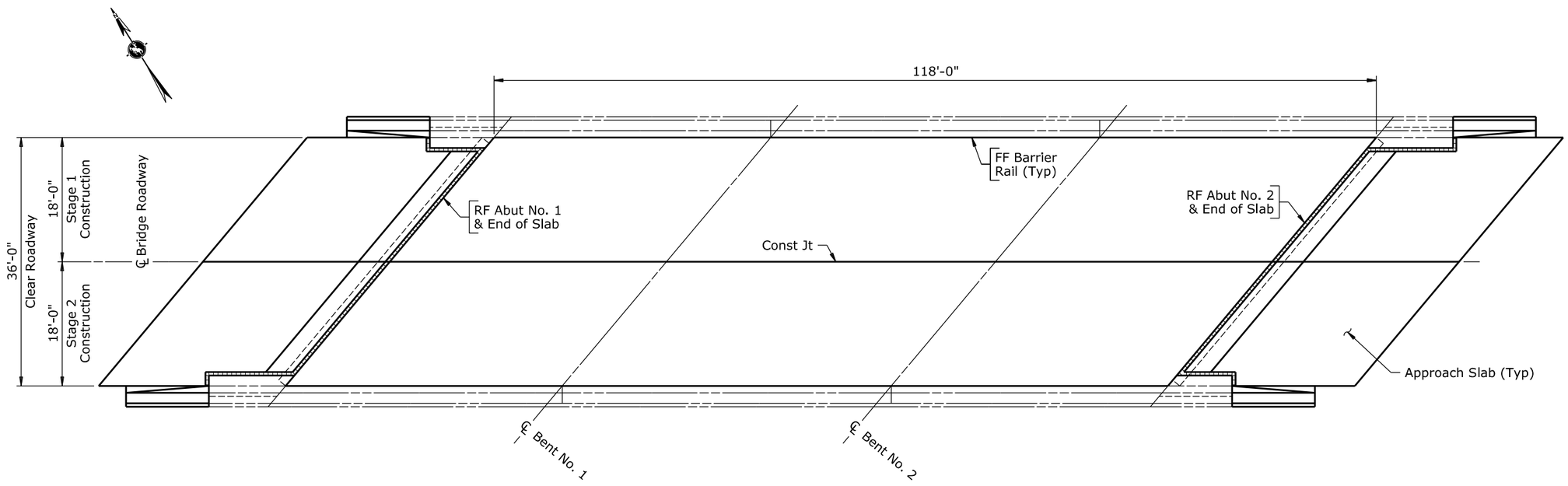
STRUCTURE REHABILITATION
VARIOUS LOCATIONS
I-80
Otto Road Section

I806200 La

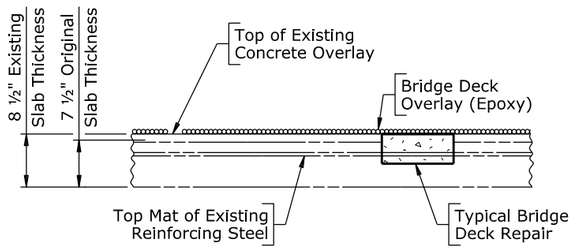
REVIEW ____ I	DESIGN ____ ✓ ____	Design Section X	
APPROVAL ____ I	DETAIL X ✓ X	Drwg No. X	Sheet 9 of 12
	QTY'S X ✓ X		

I806200_rs.dgn

Wyo. Proj.	N403008
Sheet	B10 of B44 Sheets



PLAN



TYPICAL SECTION

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

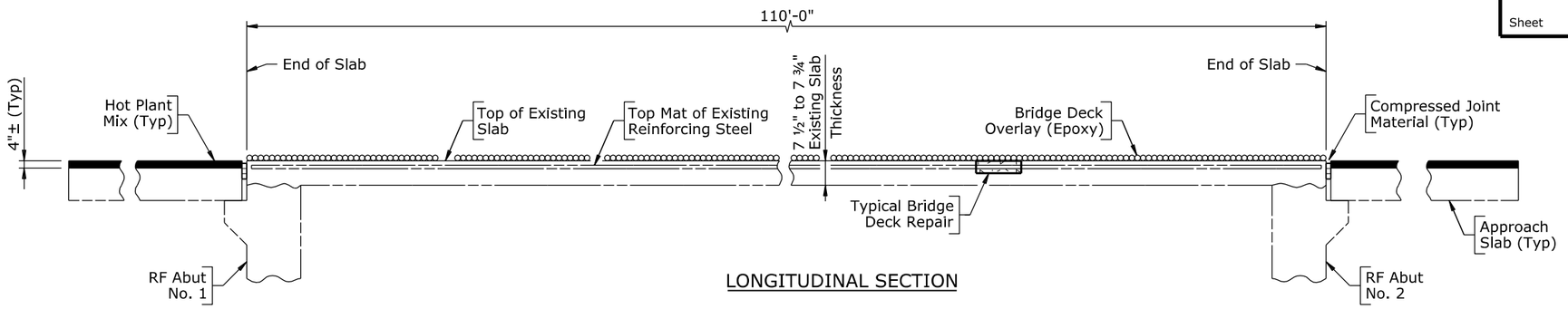
N403008 Ni

REVIEW ____ I	DESIGN ____ ✓ ____	Design Section X	
APPROVAL ____ I	DETAIL X ✓ X	Drwg No. X	Sheet 10 of 22
	QTY'S X ✓ X		

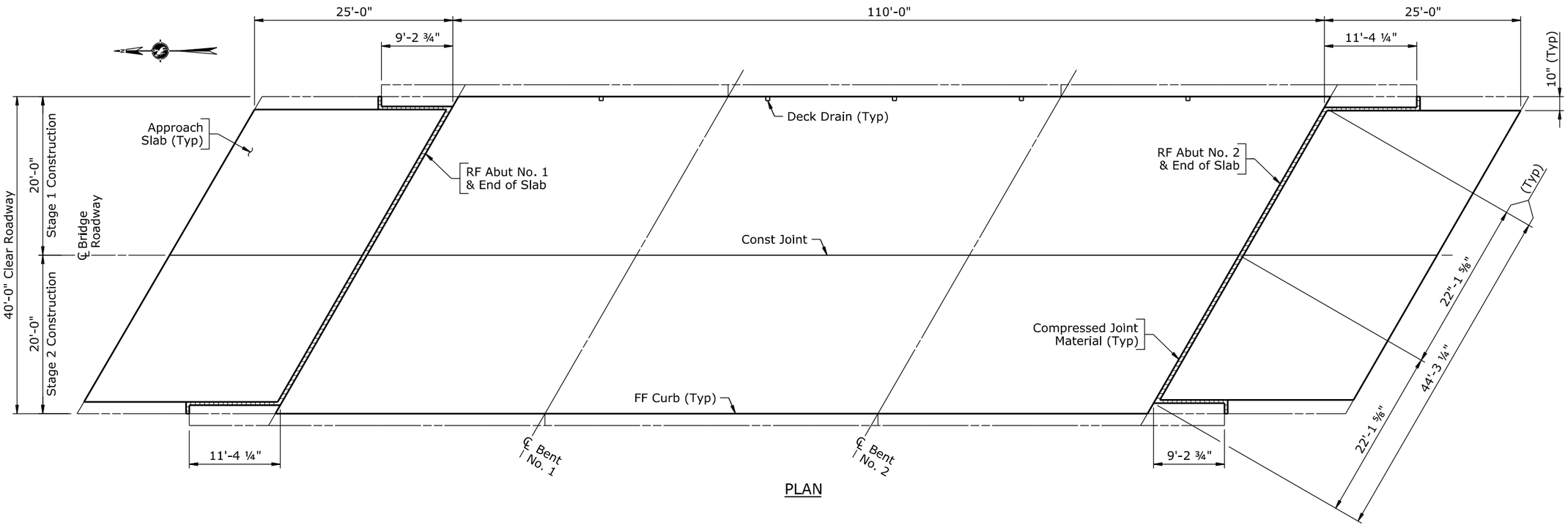
N403008_1rs.dgn

Wyo. Proj. P111012

Sheet B6 of B13 Sheets



LONGITUDINAL SECTION



PLAN

BRIDGE OVER LITTLE MUDDY CREEK

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.

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

REVISIONS

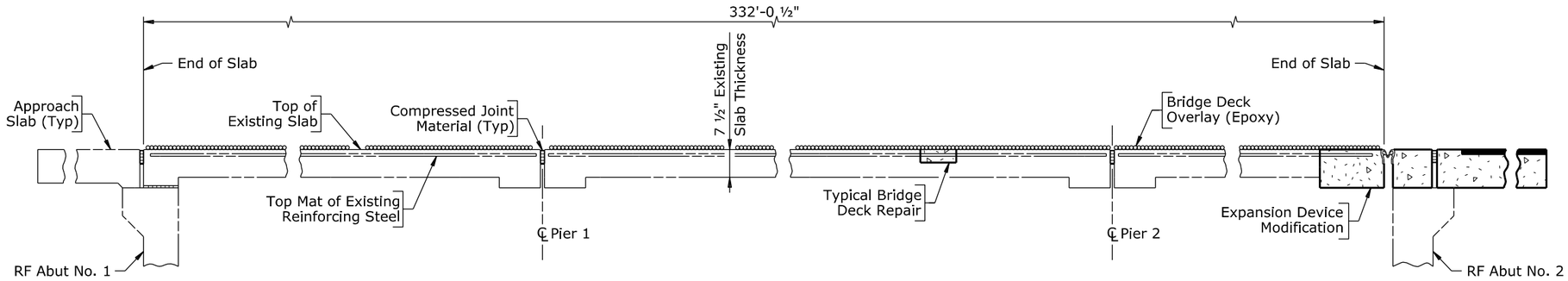
RESURFACING DETAILS

BRIDGE REHABILITATION
VARIOUS LOCATIONS
Lazeart Junction-Kemmerer
Cumberland South

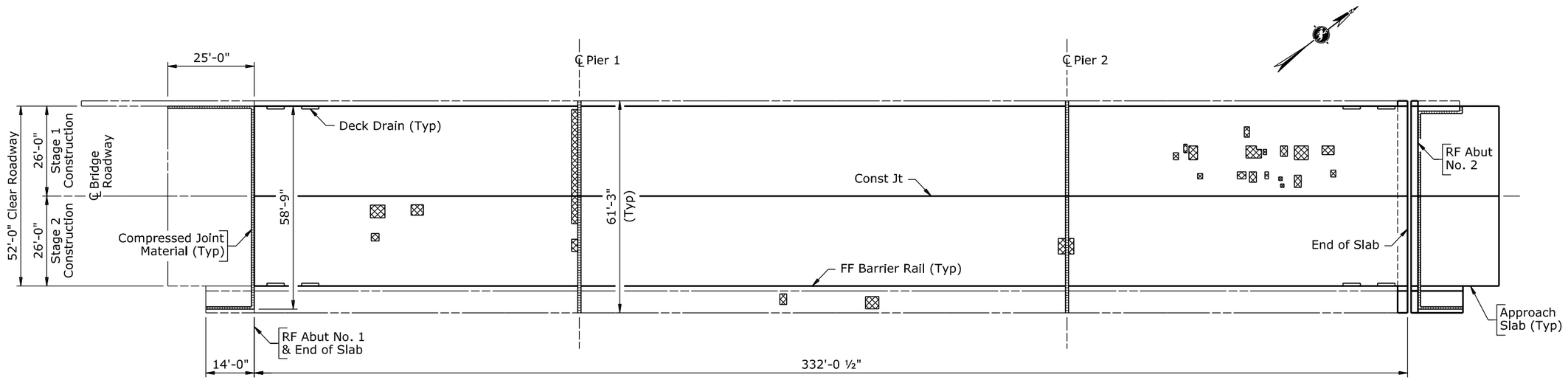
P111012 Ln & Ui

REVIEW ____ I	DESIGN ____ ✓ ____	Design Section X	
APPROVAL ____ I	DETAIL X ✓ X	Drwg No. X	Sheet 6 of 6
	QTY'S X ✓ X		

P111012_2rs.dgn



LONGITUDINAL SECTION



PLAN

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.

STRUCTURE NO. EFE

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

REVISIONS

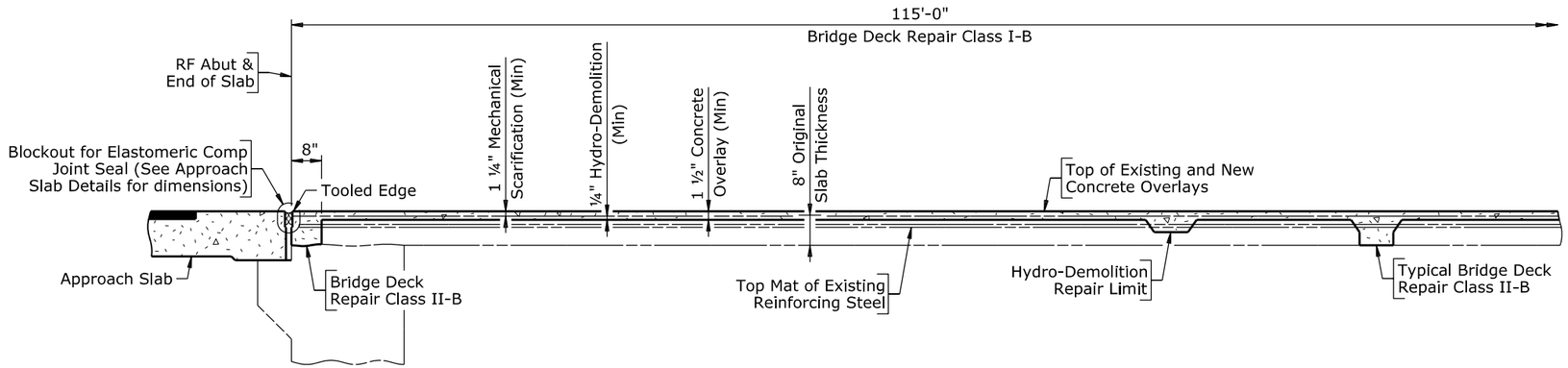
RESURFACING DETAILS
BRIDGE REHABILITATION
VARIOUS LOCATIONS
Kemmerer Streets
US 189
P112023 Ln

REVIEW ____ I
APPROVAL ____ I

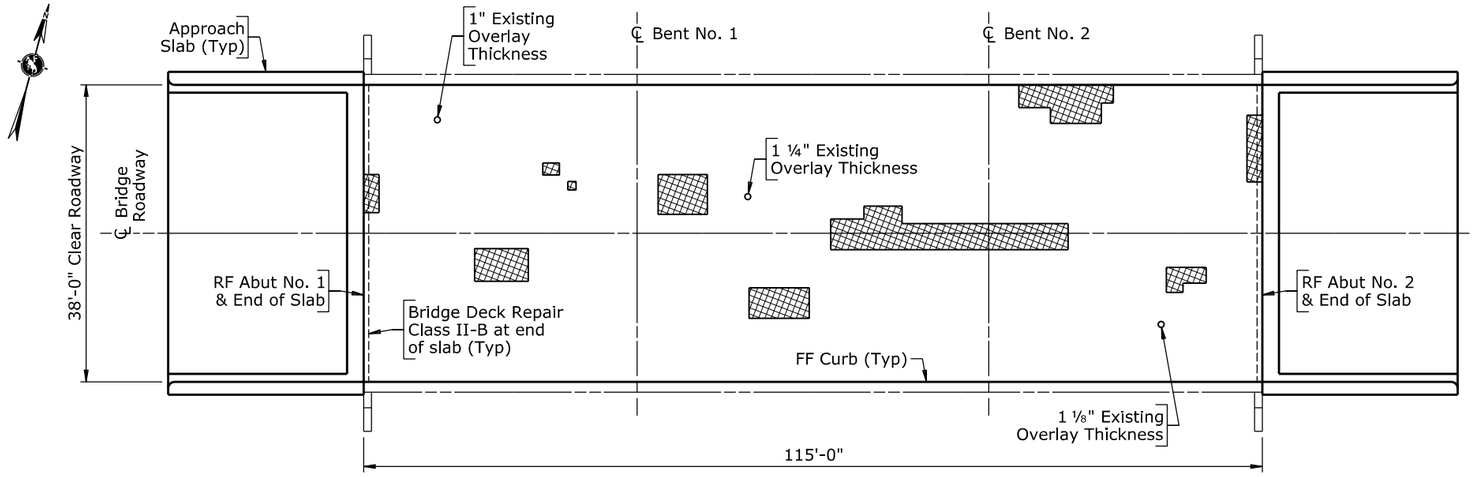
DESIGN ____ ✓ ____
DETAIL X ✓ X
QTY'S X ✓ X

Design Section X
Drwg No. X
Sheet 20 of 22

P112023_1rs.dgn



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 ¼" 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.

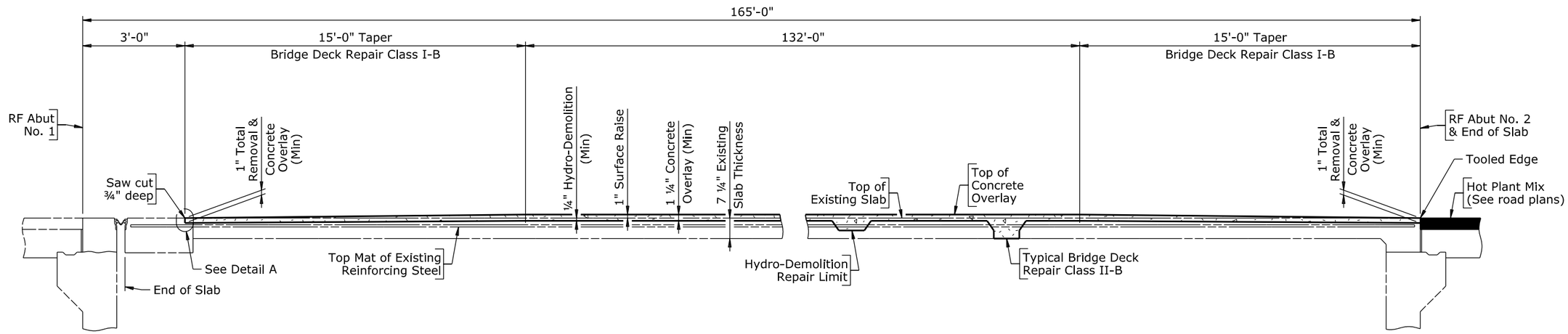
BRIDGE OVER DONKEY CREEK (EBL)

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM		
REVISIONS	RESURFACING DETAILS	
APPROVED DATE	DESIGN ___ ✓ ___ DETAIL X ✓ X QTY'S X ✓ X	Design Section X Drwg No. 0016 Sheet 1 of 3

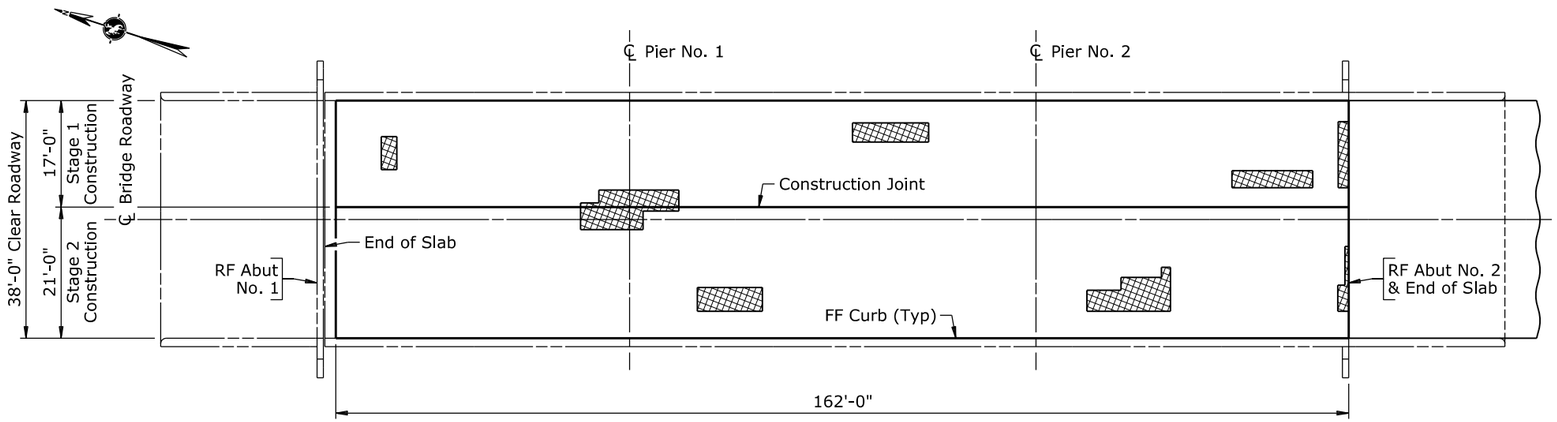
Hydro_Example_1.dgn

Wyo. Proj. X

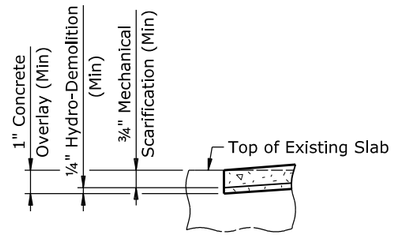
Sheet BX of BX Sheets



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 ¼" 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

REVISIONS

RESURFACING DETAILS

APPROVED

DATE

DESIGN ___ ✓ ___
DETAIL X ✓ X
QTY'S X ✓ X

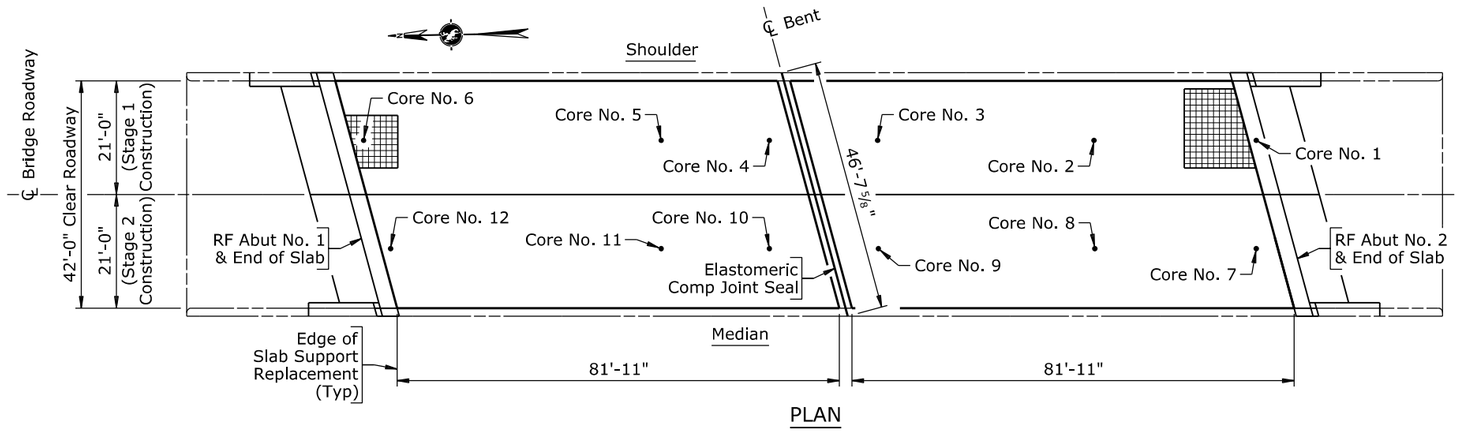
Design Section X

Drwg No. 0016 Sheet 2 of 3

Hydro_Example_2.dgn

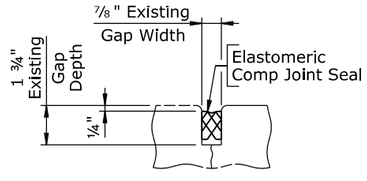
Wyo. Proj. X

Sheet BX of BX Sheets

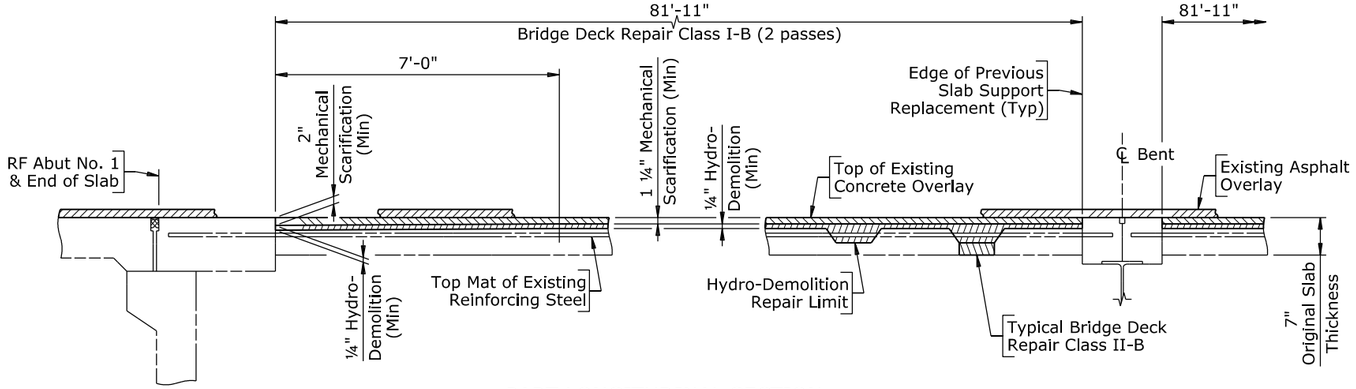


PLAN

TABLE OF CORE DATA			
Location	Existing Modified Concrete Overlay Thickness	Location	Existing Modified Concrete Overlay Thickness
Core No. 1	1"	Core No. 7	2"
Core No. 2	1 ½"	Core No. 8	1"
Core No. 3	2 ½"	Core No. 9	1 ¼"
Core No. 4	1 ¾"	Core No. 10	1 ½"
Core No. 5	2"	Core No. 11	2"
Core No. 6	1 ¾"	Core No. 12	1 ½"

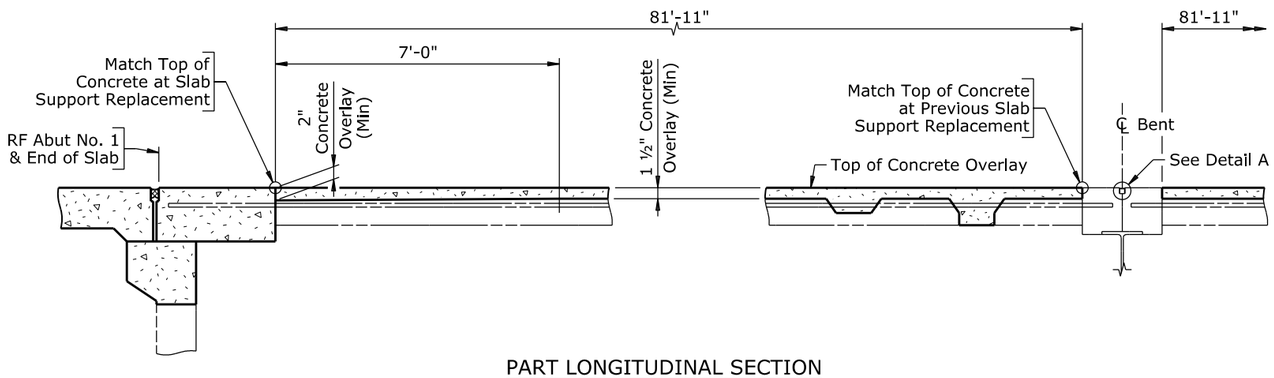


DETAIL A



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 ¼" 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".

ML25I, RM 8.84 (NBL)

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

REVISIONS

RESURFACING DETAILS

APPROVED

DATE

DESIGN ____ ✓ ____
DETAIL X ✓ X
QTY'S X ✓ X

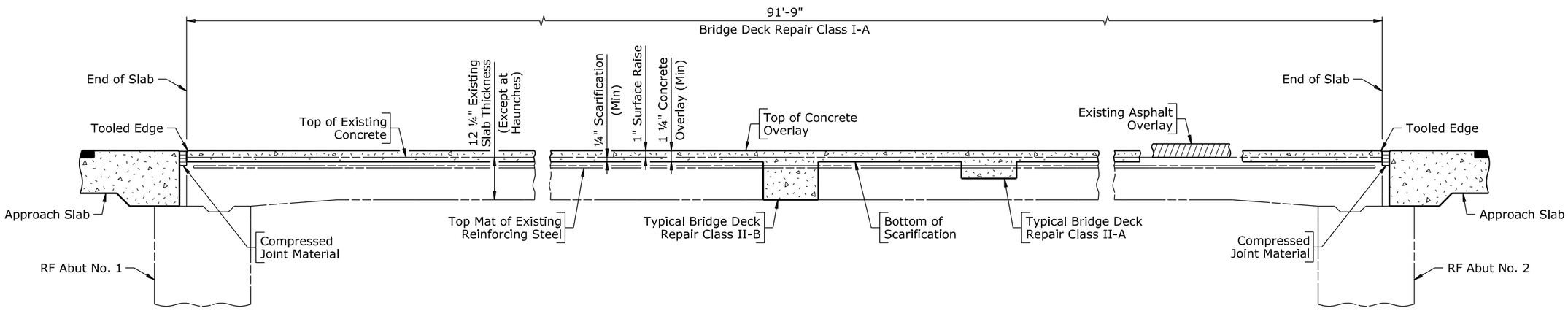
Design Section X

Drwg No. 0016 Sheet 3 of 3

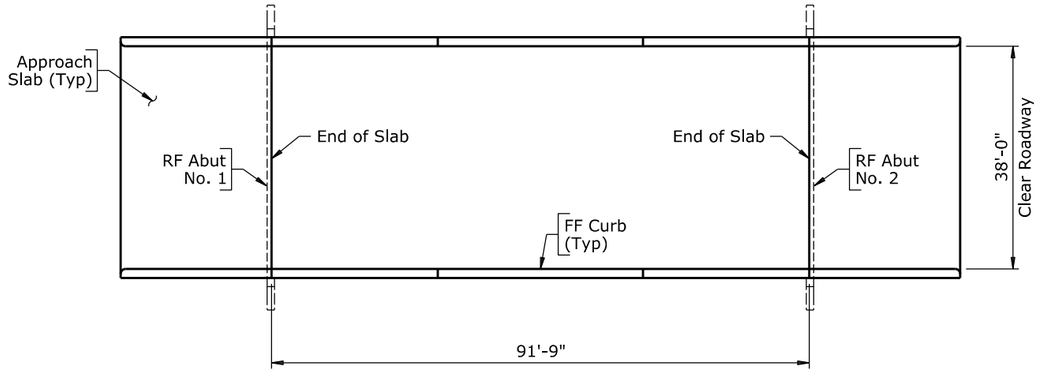
Hydro_Example_3.dgn

Wyo. Proj. I252137

Sheet B22 of B81 Sheets



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

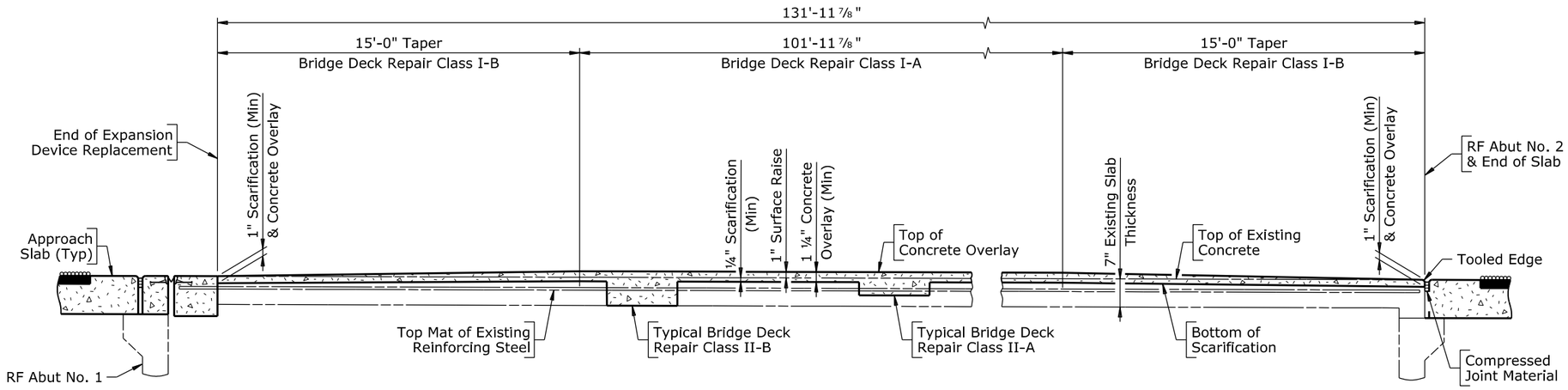
DATE

DESIGN ____ ✓ ____
DETAIL BBB ✓ AAA
QTY'S GGG ✓ DDD

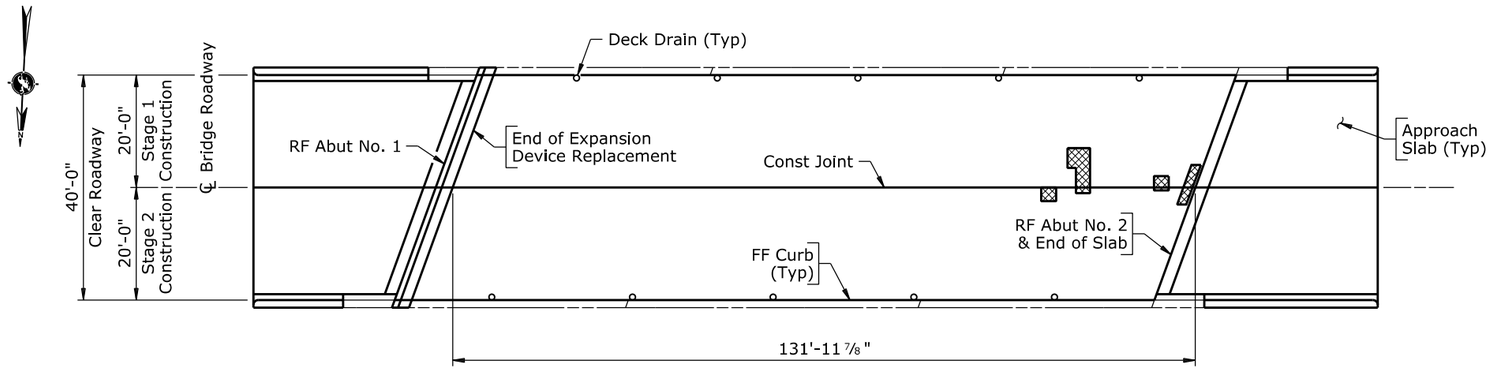
Design Section L M Nop

Drwg No. 0014 Sheet 22 of 30

I252137_7rs.dgn



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

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RESURFACING DETAILS

BRIDGE REHABILITATION
STA 197+38
Cody - Greybull
Cody East Section

N311074 Pa

APPROVED
DATE

DESIGN ___ ✓ ___
DETAIL CCC ✓ AAA
QTY'S BBB ✓ EEE

Design Section L M Nop
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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
  - Bridge Drwg No. 5858 ---- 2 & 10 of 11
- Lodgepole Creek
  - Bridge Drwg No. 4892 ---- 2 & 7 of 9
  - Bridge Drwg No. 7173 ---- 10 of 10

Special Provisions:

SP-600XX	Special Items LS-A and EA-A (Splice Bolt Inspection and Replacement)

Supplementary Specificatons:

SS-100K	Adjustment for Structural Steel
SS-500B	Welder Qualification
SS-500G	Structural Concrete with Quality Control and Quality Acceptance
SS-500H	Expansion Joint (Gland)
SS-500J	Bridge Concrete Repair
SS-500K	Bridge Deck Overlay (Epoxy)
SS-500M	Concrete Bridge Deck Repair
SS-500N	Bridge Deck Repair, Hydro-Demolition

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INDEX OF STRUCTURES

FEATURE INTERSECTED	STRUCTURE NUMBER	ROUTE	RM	COUNTY
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
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DETAIL X ✓ X
QTY'S ____ ✓ ____

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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	———	———	———	
217.01043	GEOTEXTILE, SUBGRADE REINFORCEMENT	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
514.00025	REINFORCING STEEL (COATED)	LS	LUMP SUM	———	540 LB	———	———	1240 LB	———	———	———	1780 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

REVISIONS

ESTIMATED QUANTITIES

BRIDGE REHABILITATION

VARIOUS LOCATIONS

District 4

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REVIEW ___ !	DESIGN ___ ✓ ___	Design Section X	
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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.

BAR MARKS

Straight Bars: Size — Length (e.g. 508-3)

Bent Bars: Size — Designation (e.g. 4A2)

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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VARIOUS LOCATIONS

District 4

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BRIDGE REHABILITATION
VARIOUS LOCATIONS
DISTRICT 2

B172014

NATRONA COUNTY

INDEX OF DRAWINGS

INDEX OF STRUCTURES

STRUCTURE NUMBER	FEATURE INTERSECTED	ROUTE	RM	LANE
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

REFERENCES

WYDOT Plans: Sheet No.
Structure No. AIB
Bridge Drwg No. 3045 ---------- 1, 2, & 4 of 4
Bridge Drwg No. 5569 ---------- 2, 5-11, 11a, 13, & 14 of 14
Structures No. AIF and DKU
Bridge Drwg No. 3073 ---------- 1-3, 5, & 6 of 7
Bridge Drwg No. 5056 ---------- 3 of 4
Bridge Drwg No. 5598 ---------- 2, 5-12, 14-18, 20, & 21 of 22
Bridge Drwg No. 6507 ---------- 3 & 4 of 10
Structures No. AIH and DKV
Bridge Drwg No. 3055 ---------- 1-3, 5, & 6 of 7
Bridge Drwg No. 5056 ---------- 3 of 4
Bridge Drwg No. 5407 ---------- 7 of 8
Bridge Drwg No. 5597 ---------- 2, 5-10, & 12-16 of 20
Bridge Drwg No. 6507 ---------- 3 & 4 of 10
Structures No. FDG and FDH
Bridge Drwg No. 5376 ------ 2, 5-7, 11-13, 15-17, & 21-23 of 25
Structure No. CWD
Bridge Drwg No. 4459 ------ 2, 6-9, 12-14, 17-19, 21, & 22 of 22
Bridge Drwg No. 7311 ---------- 3 & 53 of 53

Special Provisions:
SP-500XB Finger Joint Expansion Device
SP-600HT Special Item SF-A (Silicone-Modified Elastomeric Coating)
SP-600HU Special Item LS-A (Bearing Device Cleaning)

Supplementary Specifications:
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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ESTIMATED QUANTITIES - CODE 14

ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	STRUCTURE NO. AIB	STRUCTURE NO. AIF	STRUCTURE NO. DKU	STRUCTURE NO. AIH	STRUCTURE NO. DKV	STRUCTURE NO. FDG	STRUCTURE NO. FDH	STRUCTURE NO. CWD	ESTIMATE
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	
217.01043	GEOTEXTILE, SUBGRADE REINFORCEMENT	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

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

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ESTIMATED QUANTITIES

BRIDGE REHABILITATION

VARIOUS LOCATIONS

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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

Straight Bars: Size — Length (e.g. 508-3)

Bent Bars: Size — Designation (e.g. 4A2)

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.

POLYETHELYNE 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.

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

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BRIDGE REHABILITATION

VARIOUS LOCATIONS

District 2

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BRIDGE REHABILITATION
VARIOUS LOCATIONS
WHEATLAND - GLENDO ROAD
(CASSA NORTH SECTION)

I252137

PLATTE COUNTY

INDEX OF DRAWINGS

Reference Sheets:	Sheet No.
Sta 119+05	B31-B37 & B49-B50
Sta 384+32	B38-B40 & B49-B55
Sta 386+96	B41-B48 & B49-B55

INDEX OF STRUCTURES

Station	Feature Intersected	Structure Number	Lane	Route	RM
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	———	———	———	———	
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	———	———	———	———	———	
217.01043	GEOTEXTILE, SUBGRADE REINFORCEMENT	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	305.2 CY
514.00015	REINFORCING STEEL	LS	LUMP SUM	31,370 LB	———	1000 LB	———	———	———	32,370 LB
514.00025	REINFORCING STEEL (COATED)	LS	LUMP SUM	380 LB	380 LB	2260 LB	2260 LB	1880 LB	1880 LB	9040 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	———	———	———	———	280 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.

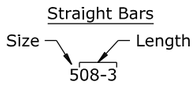
HAZARDOUS MATERIALS: The paint systems on the steel components of the existing structures may contain materials including lead and chromium that are hazardous if ingested, inhaled, or otherwise absorbed.

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.

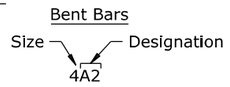
REINFORCING STEEL: Ensure reinforcing steel conforms to ASTM A 615 (Grade 60) for all bars, including ties and stirrups. Concrete cover to face of reinforcing steel is 2" unless noted. Dimensions for bent bars are out to out. Ensure bars marked with an asterisk (*) are coated.

BAR MARKS

Straight Bars



Bent Bars



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 ½" above the original concrete surface. Do not damage the bridge decks while removing the remaining ½" of asphalt. The approximate depth of existing asphalt is as follows:

Sta 384+32 - NBL ---- 2"
SBL ---- 2 ¾"
Sta 386+96 - NBL ---- 4 ¼"
SBL ---- 2 ¾"

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

WYDOT Plans: Sheet No.

Sta 119+05
- Bridge Drwg No. 4526 ---------- 2 & 4-8 of 8
- Bridge Drwg No. 5522 ---------- 2 of 4

Sta 384+32
- Bridge Drwg No. 3378 ---------- 1 of 1
- Bridge Drwg No. S-546 ---------- 1 & 2 of 2

Sta 386+96
- Bridge Drwg No. 3379 ---------- 1-5 of 5
- Bridge Drwg No. S-538 ---------- 1 of 1
- Bridge Drwg No. 5255 ---------- 1 & 2 of 2

All Locations
- Bridge Drwg No. 6169 ---------- 4 & 6 of 6
- Bridge Drwg No. 4173 ---------- 1, 3 & 4 of 4
- Bridge Drwg No. 3518 ---------- 1 & 2 of 2

Supplementary Specifications:

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

WYOMING DEPARTMENT OF TRANSPORTATION
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BRIDGE REHABILITATION
VARIOUS LOCATIONS
Wheatland - Glendo Road
(Cassa North Section)

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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	
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	82 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	———	———	———	———	44 FT
512.01010	BEARING DEVICE MODIFICATION	LS	LUMP SUM	———	———	———	5 EA	1 EA	6 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

INDEX OF STRUCTURES

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		

INDEX OF DRAWINGS

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REFERENCES

WYDOT Plans: Sheet No.

- Sta 107+87 (EBL)
  - Bridge Drwg No. 3622 ---------- 1, 4-6, 8-12, & 14 of 15
  - Bridge Drwg No. 3664 ---------- 1 of 3
  - Bridge Drwg No. 6423 ----- 7, 8, 14, 16, 20, 22, & 23 of 23
  - Capitol City Steel Company Inc., Sealed Expansion Joint Shop Details ---------- E1 & 1
- Sta 215+52 (EBL) & Sta 215+43 (WBL)
  - Bridge Drwg No. 3157 ---------- 1 & 4 of 5
  - Bridge Drwg No. S-513 ---------- 1 & 2 of 2
  - Bridge Drwg No. 5799 ---------- 2, 6, & 11-18 of 18
  - Bridge Drwg No. 6423 ---------- 22 & 23 of 23
- Sta 229+19 (EBL) & Sta 230+12 (WBL)
  - Bridge Drwg No. 3205 ---------- 1-7 of 7
  - Bridge Drwg No. 3560 ---------- 1 & 2 of 2
  - Bridge Drwg No. 4333 ---------- 2 & 4 of 4
  - Bridge Drwg No. 6301 ---------- 4, 7, & 8 of 9

Special Provisions:

SP-500XD	Expansion Joint (Repair/Modification)
SP-500XM	Bearing Device Modification

Supplementary Specifications:

SS-100G	Worker and Environmental Controls for Lead Paint Removal
SS-100K	Adjustment for Structural Steel
SS-200E	Concrete Bridge Deck Removal
SS-500B	Welder Qualification
SS-500H	Expansion Joint (Gland)
SS-500J	Bridge Concrete Repair
SS-500K	Bridge Deck Overlay (Epoxy)
SS-500M	Concrete Bridge Deck Repair
SS-500N	Bridge Deck Repair, Hydro-Demolition

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.

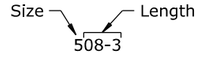
Ensure the AASHTO T 303 (ASTM C 1260), and ASTM C 1567 tests have been performed within 12 months of the submittal date.

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.

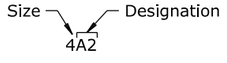
REINFORCING STEEL: Ensure reinforcing steel conforms to ASTM A 615 (Grade 60) for all bars, including ties and stirrups. Concrete cover to face of reinforcing steel is 2" unless noted. Dimensions for bent bars are out to out. Ensure bars marked with an asterisk (*) are coated.

BAR MARKS

Straight Bars



Bent Bars



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

WYOMING DEPARTMENT OF TRANSPORTATION
BRIDGE PROGRAM

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	BRIDGE REHABILITATION VARIOUS LOCATIONS Buffalo Marginal I-90/I-25 Interchange Section I902122 Jo

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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
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