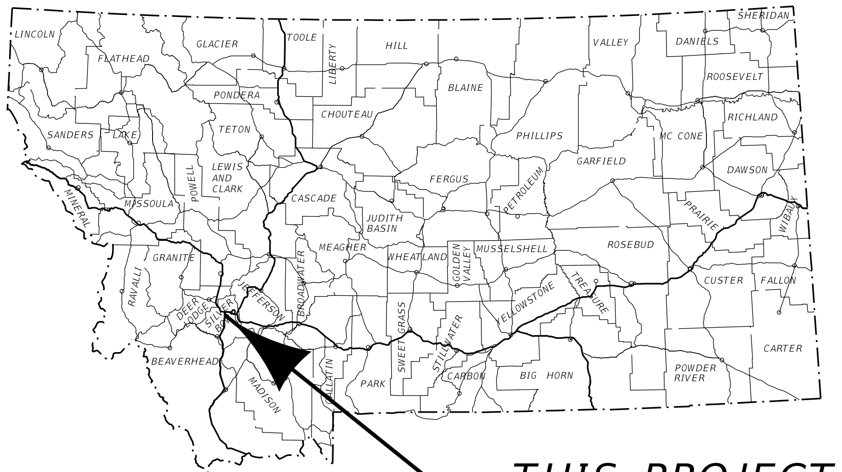
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THIS PROJECT

MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT IM 15-2(130)116
SEAL & COVER, CULVERT REPLACEMENT
BUXTON - NORTH & SOUTH
SILVER BOW COUNTY

PROJECT DESIGN DATA

PRESENT 2021	A.D.T. =	5,120
LETTING 2023	A.D.T. =	5,300
DESIGN 2043	A.D.T. =	7,420
	D.H.V. =	1020
	TRUCKS =	19.4 %
	V. =	70 MPH
	18 KIP ESAL'S =	591 DAILY
	GROWTH RATE =	1.7 % ANNUALLY

LENGTH 4.9 MILES

SURFACING SOURCES -
CONTRACTOR FURNISHED

STA. 357+11.65 RP 120.69
I00015120+06971
BRIDGE ID 01098
613.5' X 28.0' CONCRETE BRIDGE
LOCAL-CREEK-RARUS RR
THIS CONTRACT

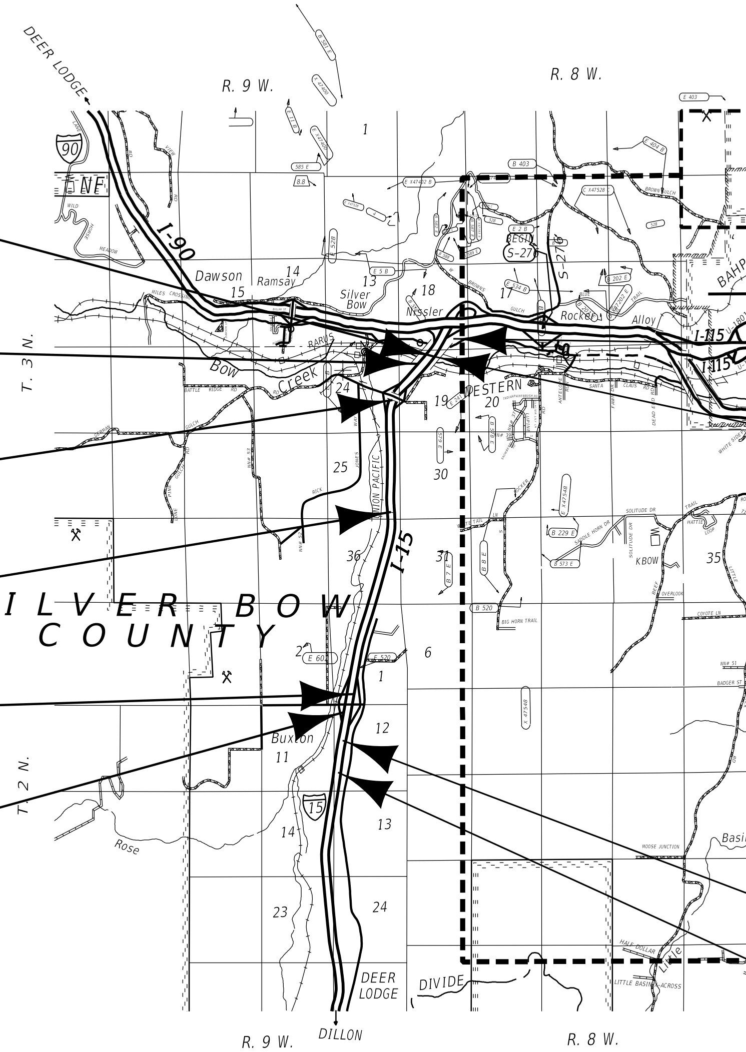
STA. 356+77.15 RP 120.69
I00015120+06972
BRIDGE ID 01099
598.5' X 28.0' CONCRETE BRIDGE
LOCAL-CREEK-RARUS RR
THIS CONTRACT

STA. 45+18.65 RP 0.099
L47534000+00101
BRIDGE ID 04457
209.5' X 31.4' CONCRETE BRIDGE
INT VICTOR I 15 003
NOT THIS CONTRACT

STA. 250+19.00 RP 118.62
I00015118+06001
STRUCTURE ID 01097
216.0' X 14.3' X 8.9' STEEL CULVERT
1M S SILVER BOW
THIS CONTRACT

STA. 122+39.00 RP 116.31
I00015116+03161
BRIDGE ID 01095
128.0' X 41.5' CONCRETE BRIDGE
INT BUXTON-BUXTON RD
THIS CONTRACT

STA. 122+32.00 RP 116.31
I00015116+03162
BRIDGE ID 01096
128.0' X 41.5' CONCRETE BRIDGE
INT BUXTON-BUXTON RD
THIS CONTRACT



STA 24+80.0 ON
I-ING-15-2(8)118 =
STA 360+18.50 (NORTHBOUND)
STA 359+76.30 (SOUTHBOUND)
END IM 15-2(130)116

CROSSOVER AND GUARDRAIL BEYOND PROJECT LIMITS RP 121.00

RP 115.9 to RP 120.8
THIS CONTRACT

STA 100+00.00 (NORTHBOUND)
STA 100+00.00 (SOUTHBOUND)
BEGIN IM 15-2(130)116 =
STA 1052+00.0 ON
IR 15-2(51)116

CROSSOVER BEYOND
PROJECT LIMITS
RP 115.86

MONTANA
DEPARTMENT OF TRANSPORTATION

MALCOLM "MACK" LONG
DIRECTOR OF TRANSPORTATION

APPROVED BY:

HIGHWAYS
ENGINEER

MONTANA — DAMIAN KRINGS 12113PE — LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Damian Krings
1C71361CE866454...

5/1/2023
DATE

3 / 2	MONTANA Department of Transportation	C:\DGN\9462000rdttl001.dgn	DESIGNED BY	B. BOONE	11/2/2021
		4/25/2023	REVIEWED BY	K. MUELLER	12/2/2022
		3:31:59 PM CPS - U6908	CHECKED BY	T. JOHNSON	12/14/2022

ROAD PLANS
UPN 9462000

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NOTES

BASIS OF PLAN QUANTITIES

(QUANTITIES FOR ESTIMATING PURPOSES ONLY)

COMP. AGGREGATE WEIGHT	= 3700 LBS. PER CUBIC YARD
COMP. WEIGHT OF PL. MIX BIT. SURF.	= 3855 LBS. PER CUBIC YARD
HYDRATED LIME	= 1.4% OF PL.MIX BIT.SURF.
BITUMINOUS MATERIAL	= 8.5 LBS. PER GAL.
EMULSIFIED ASPHALT - TACK (ALL OTHER SURFACES)	= 0.05 GAL. PER SQ.YARD (UNDILUTED)
EMULSIFIED ASPHALT - FOG SEAL (S & C)	= 0.075 GAL. PER SQ.YARD (UNDILUTED)
EMULSIFIED ASPHALT - FOG SEAL (RUMBLE STRIPS)	= 0.10 GAL. PER SQ.YARD (UNDILUTED)
SEAL	= 0.42 GAL. PER SQ.YARD
COVER	= 25 LBS. PER SQ.YARD

UTILITIES

CALL THE UTILITIES UNDERGROUND LOCATION CENTER (811) OR OTHER NOTIFICATION SYSTEM FOR THE MARKING AND LOCATION OF ALL LINES AND SERVICES BEFORE EXCAVATING. ALL CLEARANCES OR DEPTHS PROVIDED FOR UTILITIES ARE FROM EXISTING GROUND LINE.

DO NOT DISTURB

GUARDRAIL AND CURBING ALONG THE SILVER BOW INTERCHANGE RAMPS AND SILVER BOW BRIDGE.

AS-BUILTS

FOR HORIZONTAL ALIGNMENT REFER TO THE FOLLOWING "AS-BUILT" PROJECT(S):
I-ING-15-2(8)118 (ORIGINAL CONST. - 1961)
I-15-2(38)120 (GRADE/GRAVEL - 1978)
IR 15-2(51)116 (OVERLAY - 1987)

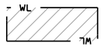
STATIONING

PLANS WERE STATIONED WITH AN ASSUMED STATION BEGINNING AT 100+00.00.

STATIONING USED IN PLANS WAS GENERATED BY BEST FIT METHOD
IT IS NOT INTENDED TO BE EXACT, BUT REPRESENTS LOCATIONS WHERE WORK IS REQUIRED.

WETLANDS

WETLANDS EXIST ADJACENT TO THE ROADWAY AND MAY EXIST BEYOND THE PROJECT LIMITS. WETLAND AREAS WITHIN THE PROJECT LIMITS AT THE SAWMILL GULCH CULVERT REPLACEMENT HAVE BEEN DELINEATED AND ARE SHOWN ON THE PLANS. OTHER WETLAND AREAS THROUGHOUT THE PROJECT LIMITS HAVE NOT BEEN DELINEATED. IMPACTS TO WETLAND AREAS ARE NOT ANTICIPATED IN ASSOCIATION WITH THE PROPOSED WORK. NO PERMITS HAVE BEEN OBTAINED. ANY ACTION IMPACTING WETLAND AREAS IS THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE PERMITTED ACCORDINGLY.



DELINEATED WETLAND AREAS

PERMANENT WETLAND IMPACTED AREAS

WETLAND DELINEATION TABLE

WETLAND DESIGNATION	STATION FROM	STATION TO	WETLAND AREA (acres) DELINEATED AREA	WETLAND AREA (acres) PERMANENT IMPACTED AREA	REMARKS
WL-1	250+26	251+38	0.041	0.000	SAWMILL GULCH
TOTAL			0.04	0.00	

LINEAR DATA

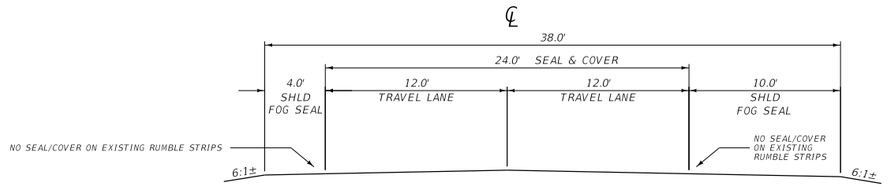
NORTHBOUND		
LENGTH OF ROADWAY SILVER BOW COUNTY	2 LANE RURAL	25,277.00 ft
LENGTH OF BRIDGES SILVER BOW COUNTY	2 LANE RURAL	741.50 ft
TOTAL LENGTH OF IM 15-2(130)116	2 LANE RURAL	26,018.50 ft
SOUTHBOUND		
LENGTH OF ROADWAY SILVER BOW COUNTY	2 LANE RURAL	25,250.00 ft
LENGTH OF BRIDGES SILVER BOW COUNTY	2 LANE RURAL	726.30 ft
TOTAL LENGTH OF IM 15-2(130)116	2 LANE RURAL	25,976.30 ft

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TYPICAL SECTION NO. 1

NORTHBOUND REVERSE FOR SOUTHBOUND



NORTHBOUND

100+00.00	TO	119+55.00	THEN TYP. SEC. NO. 2
125+23.00	TO	249+50.00	THEN TYP. SEC. NO. 4
250+80.00	TO	352+05.00	THEN TYP. SEC. NO. 2

SOUTHBOUND

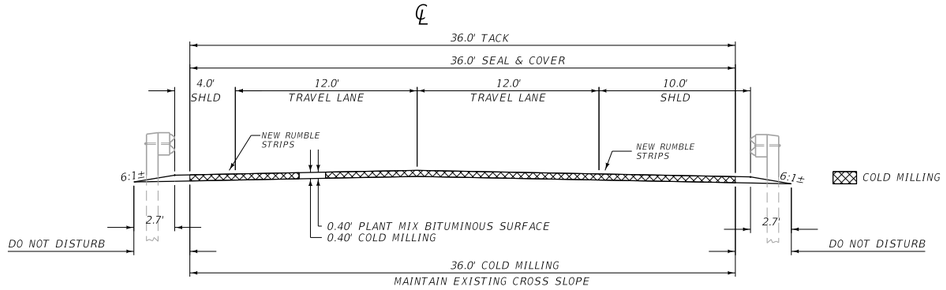
100+00.00	TO	119+48.00	THEN TYP. SEC. NO. 2
125+16.00	TO	249+65.00	THEN TYP. SEC. NO. 4
250+95.00	TO	351+78.00	THEN TYP. SEC. NO. 2

QUANTITIES

UNIT	AGGREGATE	UNIT	BITUMINOUS MATERIAL	
	COVER		EMULSIFIED ASPHALT SEAL	EMULSIFIED ASPHALT FOG SEAL
AREA square feet		square yards PER STATION	267	156
cubic yards PER STATION		tons PER STATION	0.48	
tons PER STATION		gals. PER STATION		12
square yards PER STATION	267			

TYPICAL SECTION NO. 2

BRIDGE END COLD MILLING-
NORTHBOUND REVERSE FOR SOUTHBOUND



NORTHBOUND

119+55.00	TO	121+55.00	THEN TYP. SEC. NO. 3
123+23.00	TO	125+23.00	THEN TYP. SEC. NO. 1
352+05.00	TO	352+85.00	
352+85.00	TO	354+05.00 BE	TRANS. TYP. SEC. NO. 2 TO TYP. SEC. NO. 5

SOUTHBOUND

119+48.00	TO	121+48.00	THEN TYP. SEC. NO. 3
123+16.00	TO	125+16.00	THEN TYP. SEC. NO. 1
351+78.00	TO	352+58.00	
352+58.00	TO	353+78.00 BE	TRANS. TYP. SEC. NO. 2 TO TYP. SEC. NO. 5

QUANTITIES

UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL	
	COVER	PLANT MIX		EMULSIFIED ASPHALT SEAL	EMULSIFIED ASPHALT TACK*
AREA square feet		14.40	square yards PER STATION	400	800
cubic yards PER STATION		53.3	tons PER STATION	0.71	
tons PER STATION		102.7	gals. PER STATION		40
square yards PER STATION	400				

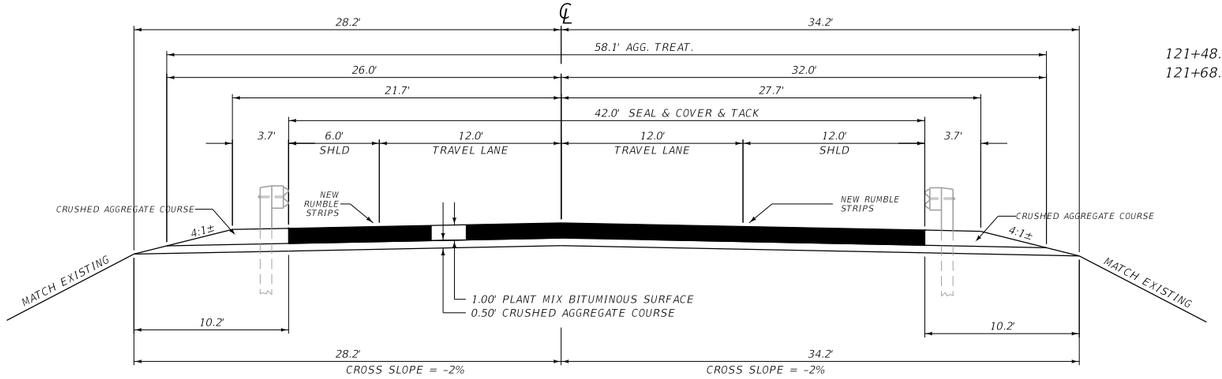
*BASED ON 2 APPLICATIONS

3	MONTANA Department of Transportation	C:\DGN\9462000rdtyp001.dgn	DESIGNED BY	B. BOONE	11/2/2021	ROAD PLANS	BUXTON - NORTH & SOUTH / IM 15-2(130)116
2		4/25/2023	REVIEWED BY	K. MUELLER	12/2/2022		
		3:32:14 PM CPS - U6908	CHECKED BY	T. JOHNSON	12/14/2022	SILVER BOW COUNTY	UPN 9462000 / 03

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TYPICAL SECTION NO. 3

APPROACH-SLAB REMOVAL (BUXTON INT. BRIDGE ENDS)
NORTHBOUND REVERSE FOR SOUTHBOUND



NORTHBOUND
121+55.00
121+75.00 BE TO 123+03.00 BE
123+23.00 THEN TYP. SEC. NO. 2

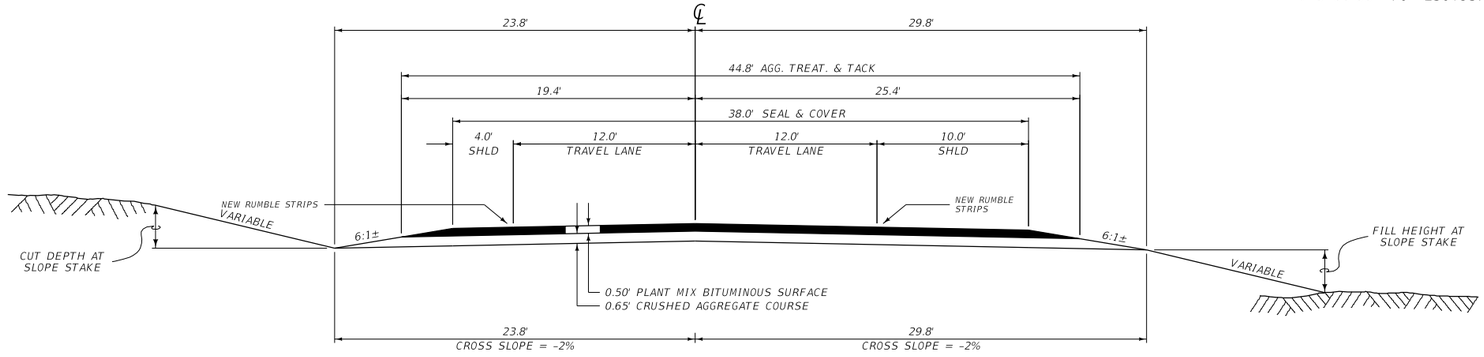
SOUTHBOUND
121+48.00
121+68.00 BE TO 122+96.00 BE
123+16.00 THEN TYP. SEC. NO. 2

QUANTITIES							
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL		
	COVER	PLANT MIX	CR. AGG. COURSE		EMULSIFIED ASPHALT SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*
AREA square feet		42.00	41.86	square yards PER STATION	467	646	2,335
cubic yards PER STATION		155.6	155.0	tons PER STATION	0.83		
tons PER STATION		299.9		gals. PER STATION			117
square yards PER STATION	467						

*BASED ON 5 APPLICATIONS

TYPICAL SECTION NO. 4

(NORTHBOUND -REVERSE FOR SOUTHBOUND)
(BOX CULVERT)



NORTHBOUND
249+50.00 TO 250+80.00 THEN TYP. SEC. NO. 1

SOUTHBOUND
249+65.00 TO 250+95.00 THEN TYP. SEC. NO. 1

QUANTITIES							
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL		
	COVER	PLANT MIX	CR. AGG. COURSE		EMULSIFIED ASPHALT SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*
AREA square feet		20.70	31.98	square yards PER STATION	422	498	1,494
cubic yards PER STATION		76.7	118.4	tons PER STATION	0.75		
tons PER STATION		147.8		gals. PER STATION			75
square yards PER STATION	422						

*BASED ON 3 APPLICATIONS

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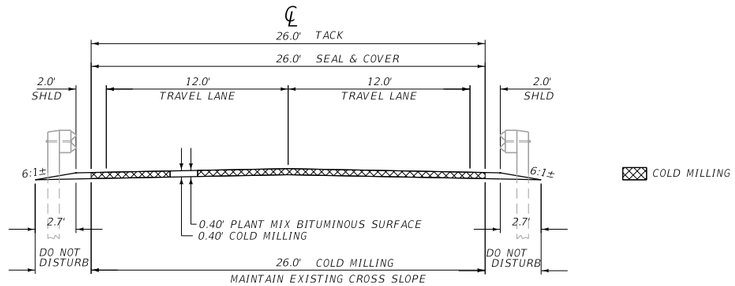
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TYPICAL SECTION NO. 5

BRIDGE TRANSITION

NORTHBOUND
354+05.00 BE ONLY

SOUTHBOUND
353+78.00 BE ONLY



QUANTITIES					
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL	
	COVER	PLANT MIX		EMULSIFIED ASPHALT SEAL	EMULSIFIED ASPHALT TACK*
AREA square feet		10.40	square yards PER STATION	289	578
cubic yards PER STATION		38.5	tons PER STATION	0.52	
tons PER STATION		74.2	gals. PER STATION		29
square yards PER STATION	289				

*BASED ON 2 APPLICATIONS

TYPICAL SECTION NO. 6

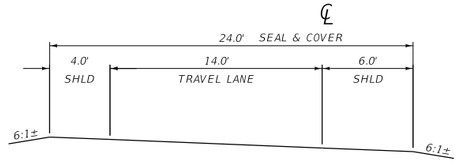
RAMPS

BUXTON INT.

0+00.00	TO	12+82.44	"H" RAMP
0+00.00	TO	18+03.39	"G" RAMP
0+00.00	TO	14+93.98	"F" RAMP
0+00.00	TO	21+18.99	"E" RAMP

SILVER BOW INT.

0+00.00	TO	13+66.44	"H-4" RAMP
0+00.00	TO	16+12.60	"H-3" RAMP
0+00.00	TO	13+89.12	"H-2" RAMP
0+00.00	TO	9+30.90	"H-1" RAMP



QUANTITIES				
UNIT	AGGREGATE	UNIT	BITUMINOUS MATERIAL	
	COVER		EMULSIFIED ASPHALT SEAL	
AREA square feet		square yards PER STATION	267	
cubic yards PER STATION		tons PER STATION	0.48	
tons PER STATION		gals. PER STATION		
square yards PER STATION	267			

2	MONTANA Department of Transportation	C:\DGN\9462000rdtyp001.dgn	DESIGNED BY B. BOONE	11/2/2021	ROAD PLANS	BUXTON - NORTH & SOUTH / UPN 9462000	IM 15-2(130)116
1		4/25/2023	REVIEWED BY K. MUELLER	12/2/2022	SILVER BOW COUNTY		05
		3:32:23 PM CPS - U6908	CHECKED BY T. JOHNSON	12/14/2022			

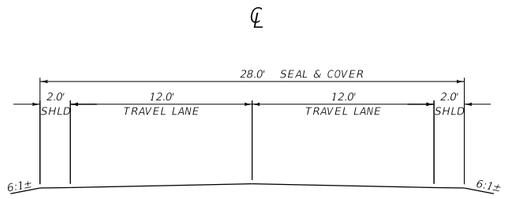
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TYPICAL SECTION NO. 7

CROSS ROADS (H-LINE, X-LINE)

42+58.00	TO	44+13.90 BE	SILVER BOW INT. - "H-LINE
46+23.40 BE	TO	47+55.33	SILVER BOW INT. - "H-LINE
46+93.00	TO	53+89.51	BUXTON INT. - "X-LINE"



QUANTITIES			
UNIT	AGGREGATE COVER	UNIT	BITUMINOUS MATERIAL EMULSIFIED ASPHALT SEAL
AREA square feet		square yards PER STATION	311
cubic yards PER STATION		tons PER STATION	0.56
tons PER STATION		gals. PER STATION	
square yards PER STATION	311		

3	MONTANA Department of Transportation	C:\DGN\9462000rdtyp002.dgn	DESIGNED BY	B. BOONE	12/2/2022	ROAD PLANS	BUXTON - NORTH & SOUTH / IM 15-2(130)116
2		4/25/2023	REVIEWED BY	K. MUELLER	12/2/2022		
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SUMMARY

SURFACING

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	linear feet +	linear feet -	FOR	AGGREGATE sq. yards COVER TYPE II	AGGREGATE tons COMMERCIAL MIX PG 70-28	AGGREGATE cu. yards CRUSHED AGG. COURSE	BITUMINOUS MATERIAL tons EMULSIFIED ASPHALT CHFRS-2P	BITUMINOUS MATERIAL gals. EMULSIFIED ASPHALT FOG SEAL CSS-1H	BITUMINOUS MATERIAL gals. EMULSIFIED ASPHALT TACK	BITUMINOUS MATERIAL sq. yards AGG. TREAT.	REMARKS
NORTHBOUND														
100+00.00	119+55.00	1,955.00	1,955.00				5,220			9.4	235			TYP. SEC. NO. 1
119+55.00	121+55.00	200.00	200.00				800	205		1.4		80		TYP. SEC. NO. 2
121+55.00	121+75.00 BE	20.00	20.00			APPROACH SLAB TO BE REMOVED	93	60	31	0.2		23	129	TYP. SEC. NO. 3
121+75.00 BE	123+03.00 BE	128.00			128.00	BRIDGE								
123+03.00 BE	123+23.00	20.00	20.00			APPROACH SLAB TO BE REMOVED	93	60	31	0.2		23	129	TYP. SEC. NO. 3
123+23.00	125+23.00	200.00	200.00				800	205		1.4		80		TYP. SEC. NO. 2
125+23.00	249+50.00	12,427.00	12,427.00				33,180			59.6	1,491			TYP. SEC. NO. 1
249+50.00	250+80.00	130.00	130.00				549	192	154	1.0		98	647	TYP. SEC. NO 4
250+80.00	352+05.00	10,125.00	10,125.00				27,034			48.6	1,215			TYP. SEC. NO. 1
352+05.00	352+85.00	80.00	80.00				320	82		0.6		32		TYP. SEC. NO. 2
352+85.00	354+05.00 BE	120.00	120.00				414	106		0.7		45		TRANS. TYP. SEC. NO. 2 TO TYP. SEC. NO. 5
354+05.00 BE	360+18.50 BE	613.50			613.50	BRIDGE								
NORTHBOUND SUBTOTAL		26,018.50	25,277.00	~	741.50		68,503	910	216	123.1	2,941	381	905	
SOUTHBOUND														
100+00.00	119+48.00	1,948.00	1,948.00				5,201			9.4	234			TYP. SEC. NO. 1
119+48.00	121+48.00	200.00	200.00				800	205		1.4		80		TYP. SEC. NO. 2
121+48.00	121+68.00 BE	20.00	20.00			APPROACH SLAB TO BE REMOVED	93	60	31	0.2		23	129	TYP. SEC. NO. 3
121+68.00 BE	122+96.00 BE	128.00			128.00	BRIDGE								
122+96.00 BE	123+16.00	20.00	20.00			APPROACH SLAB TO BE REMOVED	93	60	31	0.2		23	129	TYP. SEC. NO. 3
123+16.00	125+16.00	200.00	200.00				800	205		1.4		80		TYP. SEC. NO. 2
125+16.00	249+65.00	12,449.00	12,449.00				33,239			59.8	1,494			TYP. SEC. NO. 1
249+65.00	250+95.00	130.00	130.00				549	192	154	1.0		98	647	TYP. SEC. NO 4
250+95.00	351+78.00	10,083.00	10,083.00				26,922			48.4	1,210			TYP. SEC. NO. 1
351+78.00	352+58.00	80.00	80.00				320	82		0.6		32		TYP. SEC. NO. 2
352+58.00	353+78.00 BE	120.00	120.00				414	106		0.7		45		TRANS. TYP. SEC. NO. 2 TO TYP. SEC. NO. 5
353+78.00 BE	359+76.50 BE	598.50			598.50	BRIDGE								
SOUTHBOUND SUBTOTAL		25,976.50	25,250.00	~	726.50		68,431	910	216	123.1	2,938	381	905	
						ADDITIONAL SURFACING	27,091	89	51	48.6		35	234	
TOTAL		~	~	~	~		164,025	1,909	483	294.8	5,879	797	2,044	

ADDITIONAL SURFACING (INCLUDED IN SURFACING FRAME)

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	linear feet +	linear feet -	FOR	AGGREGATE sq. yards COVER TYPE II	AGGREGATE tons COMMERCIAL MIX PG 70-28	AGGREGATE cu. yards CRUSHED AGG. COURSE	BITUMINOUS MATERIAL tons EMULSIFIED ASPHALT CHFRS-2P	BITUMINOUS MATERIAL gals. EMULSIFIED ASPHALT TACK	BITUMINOUS MATERIAL sq. yards AGG. TREAT.	REMARKS
SOUTHBOUND													
312+70.00	314+20.00	150.00	150.00			DIGOUT- PAVE. REPLACE.	33	75	51	0.1	35	234	SEE DETAIL
(BUXTON INT.)													
0+00.00	5+36.87	536.87	268.44				717			1.3			TYP. SEC. NO. 6 "H" RAMP INCL: GORE & TAPER TO MAINLINE
5+36.87	12+82.44	745.57	737.57		8.00	CATTLEGUARD	1,969	# 2		3.5			TYP. SEC. NO. 6 "H" RAMP
0+00.00	12+50.63	1,250.63	625.32				1,670			3.0			TYP. SEC. NO. 6 "E" RAMP INCL: GORE & TAPER TO MAINLINE
12+50.63	21+18.99	868.36	860.36		8.00	CATTLEGUARD	2,297	# 2		4.1			TYP. SEC. NO. 6 "E" RAMP
0+00.00	7+31.28	731.28	723.28		8.00	CATTLEGUARD	1,931	# 2		3.5			TYP. SEC. NO. 6 "F" RAMP
7+31.28	14+93.98	762.70	381.35				1,018			1.8			TYP. SEC. NO. 6 "F" RAMP INCL: GORE & TAPER TO MAINLINE
0+00.00	9+03.39	903.39	895.39		8.00	CATTLEGUARD	2,391	# 2		4.3			TYP. SEC. NO. 6 "G" RAMP
9+03.39	18+03.39	900.00	450.00				1,202			2.2			TYP. SEC. NO. 6 "G" RAMP INCL: GORE & TAPER TO MAINLINE
46+93.00	53+89.51	696.51	696.51				2,166			3.9			TYP. SEC. NO. 7 "X-ROAD" (BUXTON INT.)
(SILVER BOW INT.)													
0+00.00	4+50.00	450.00	225.00				601			1.1			TYP. SEC. NO. 6 "H-4" RAMP INCL: GORE & TAPER TO MAINLINE
4+50.00	13+66.44	916.44	916.44				2,447			4.4			TYP. SEC. NO. 6 "H-4" RAMP
0+00.00	6+52.80	652.80	652.80				1,743			3.1			TYP. SEC. NO. 6 "H-3" RAMP
6+52.80	16+12.60	959.80	479.90				1,281			2.3			TYP. SEC. NO. 6 "H-3" RAMP INCL: GORE & TAPER TO MAINLINE
0+00.00	4+61.10	461.10	461.10				1,231			2.2			TYP. SEC. NO. 6 "H-1" RAMP
4+61.10	9+30.90	469.80	234.90				627			1.1			TYP. SEC. NO. 6 "H-1" RAMP INCL: GORE & TAPER TO MAINLINE
0+00.00	4+74.75						415			0.7			"H-1" RIGHT TURN LANE - MEASURED IN CADD
0+00.00	8+99.92	899.92	449.96				1,201			2.2			TYP. SEC. NO. 6 "H-2" RAMP INCL: GORE & TAPER TO MAINLINE
8+99.92	13+89.12	489.20	489.20				1,306			2.3			TYP. SEC. NO. 6 "H-2" RAMP
42+58.00					8.00	CATTLEGUARD		# 4					
44+13.90 BE	46+23.40 BE				209.50	BRIDGE							
	47+55.33	497.33	271.83		8.00	CATTLEGUARD	845	# 2		1.5			TYP. SEC. NO. 7 "H-LINE" (SILVER BOW INT.)
SUBTOTAL		~	~	~	~		27,091	89	51	48.6	35	234	

2' X 0.4' THICK. OF PLANT MIX FOR EACH SIDE OF CATTLEGUARD REPLACEMENT

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SUMMARY

TEMPORARY GUARDRAIL

STATION		linear feet				each						REMARKS
		REMOVE GUARDRAIL		TEMPORARY METAL GUARDRAIL		TEMPORARY OPTIONAL TERMINAL SECTION		TEMPORARY BRIDGE APPROACH SECTION TYPE 3		GUARDRAIL END SECTION WIDENING		
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	
NORTHBOUND												
123+03.00 BE	124+28.00			50.0		1		1		1		NB LT
123+03.00 BE	124+28.00				50.0		1		1		1	NB RT
243+54.50	243+79.50		25.0									REMOVE EXISTING DEPARTURE SECTION
243+54.50	244+54.50				50.0		1				1	NB RT
312+98.00	313+23.00	25.0										REMOVE EXISTING DEPARTURE SECTION
312+98.00	314+98.00			150.0		1				1		NB LT
313+04.00	313+29.00		25.0									REMOVE EXISTING DEPARTURE SECTION
313+04.00	315+04.00				150.0		1				1	NB RT
347+77.50	348+02.50	25.0										REMOVE EXISTING DEPARTURE SECTION
347+77.50	349+27.50				100.0	1				1		NB LT
360+18.50 BE	360+93.50					1		1		1		NB LT
SOUTHBOUND												
115+18.00	115+43.00	25.0										REMOVE EXISTING DEPARTURE SECTION
114+93.00	115+43.00					1				1		SB LT
121+43.00	121+68.00 BE	25.0										REMOVE RAIL
121+43.00	121+68.00 BE							1				SB LT
120+43.00	121+68.00 BE				50.0		1		1		1	SB RT
156+11.50	156+36.50	25.0										REMOVE EXISTING DEPARTURE SECTION
154+36.50	156+36.50			150.0		1				1		SB LT
188+82.00	189+07.00	25.0								1		REMOVE EXISTING DEPARTURE SECTION
188+07.00	189+07.00			50.0		1						SB LT
242+59.50	242+84.50	25.0										REMOVE EXISTING DEPARTURE SECTION
239+84.50	242+84.50			250.0		1				1		SB LT
312+70.00	312+95.00	25.0										REMOVE EXISTING DEPARTURE SECTION
310+95.00	312+95.00			150.0		1				1		SB LT
312+75.00	313+00.00		25.0									REMOVE EXISTING DEPARTURE SECTION
311+00.00	313+00.00				150.0		1				1	SB RT
346+53.00	346+78.00	25.0								1		REMOVE EXISTING DEPARTURE SECTION
344+28.00	346+78.00			200.0		1						SB LT
347+28.00	347+53.00		25.0								1	REMOVE EXISTING DEPARTURE SECTION
346+53.00	347+53.00				50.0		1					SB RT
SUBTOTAL		225.0	100.0	1,000.0	600.0	10	6	3	2	10	6	
TOTAL		325.0		1,600.0		16		5		16		

CATTLE GUARD

STATION	each			REMARKS
	CATTLE GUARD		REMOVE CATTLE GUARD	
	HEAVY DUTY 20 ft	HEAVY DUTY 24 ft		
20+25		1	1	RAMP "E" BUXTON INT.
1+00		1	1	RAMP "F" BUXTON INT.
11+86		1	1	RAMP "H" BUXTON INT.
1+15		1	1	RAMP "G" BUXTON INT.
42+58	1	1	2	H-LINE SILVER BOW INT.
47+55		1	1	H-LINE SILVER BOW INT.
TOTAL	1	6	7	

COLD MILLING

STATION		sq. yards	REMARKS
		COLD MILLING	
FROM	TO	0.40 ft	
NORTHBOUND			
119+75.00	121+75.00 BE	800	TYP. SEC. NO. 2
123+03.00 BE	125+03.00	800	TYP. SEC. NO. 2
352+05.00	352+85.00	320	TYP. SEC. NO. 2
352+85.00	354+05.00 BE	413	TRANS. TYP. SEC. NO. 2 TO TYP. SEC. NO. 5
SOUTHBOUND			
119+68.00	121+68.00 BE	800	TYP. SEC. NO. 2
122+96.00 BE	124+96.00	800	TYP. SEC. NO. 2
351+78.00	352+58.00	320	TYP. SEC. NO. 2
352+58.00	353+78.00 BE	413	TRANS. TYP. SEC. NO. 2 TO TYP. SEC. NO. 5
TOTAL		4,666	

TEMPORARY BARRIER RAIL

STATION		linear feet		each		REMARKS
		TEMPORARY BARRIER RAIL	RESET TEMPORARY BARRIER RAIL	TEMPORARY IMPACT ATTENUATOR	RESET TEMPORARY IMPACT ATTENUATOR	
FROM	TO					
NORTHBOUND						
248+00.00	251+00.00	300		2		RCB INSTALLATION PHASE 1
SOUTHBOUND						
248+50.00	251+50.00		300		2	RCB INSTALLATION PHASE 2
TOTAL		300	300	2	2	

CURB

STATION		linear feet				REMARKS
		REMOVE CURB		CONCRETE CURB 4 INCHES		
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	
NORTHBOUND						
121+65.00	121+75.00 BE			10.0	10.0	BRIDGE CORNER
123+03.00 BE	123+13.00			10.0	10.0	BRIDGE CORNER
353+95.00	354+05.00 BE			10.0	10.0	BRIDGE CORNER
360+18.50 BE	360+28.50			10.0	10.0	BRIDGE CORNER
SOUTHBOUND						
121+58.00	121+68.00 BE			10.0	10.0	BRIDGE CORNER
122+96.00 BE	123+06.00				10.0	BRIDGE CORNER
122+96.00 BE	128+16.00	520.0		520.0		BRIDGE CORNER
353+68.00	353+78.00 BE			10.0	10.0	
359+76.50 BE	359+86.50			10.0	10.0	
SUBTOTAL		520.0	~	590.0	80.0	
TOTAL		520.0		670.0		

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SUMMARY

GUARDRAIL

STATION		linear feet										each						REMARKS
		REMOVE GUARDRAIL		RESET GUARDRAIL		MGS GUARDRAIL		MGS GUARDRAIL LONG POST		HIGH-TENSION CABLE RAIL		MASH W-BEAM TERMINAL SECTION		MASH THRIE-BEAM BRIDGE APPROACH SECTION		GUARDRAIL END SECTION WIDENING		
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	
NEW RAIL																		
(NORTHBOUND)																		
118+15.63	121+75.00 BE					287.5						1		1		1		
120+53.10	121+75.00 BE						50.0						1		1		1	
123+03.00 BE	124+24.88					50.0						1		1		1		
123+03.00 BE	124+24.88						50.0						1		1		1	
238+79.50	244+48.25								500.0				2				2	NEW RAIL OVER NEW RCB
247+33.13	251+89.38						387.5						2				2	
309+10.50	314+91.75					512.5						2				2		
311+91.50	314+97.75						237.5						2				2	
344+27.50	349+21.25					425.0						2				2		
345+20.63	354+05.00 BE								812.5				1		1		1	
350+45.63	354+05.00 BE					287.5						1		1		1		
360+18.50 BE	360+56.00						25.0								1			REMOVE TRANSITION AND TIE INTO EXISTING GUARDRAIL
360+18.50 BE	360+90.38											1		1		1		
(SOUTHBOUND)																		
114+96.13	121+68.00 BE					600.0						1		1				
120+46.13	121+68.00 BE						50.0						1		1		1	
122+96.00 BE	129+17.88					550.0						1		1		1		
122+96.00 BE	126+55.38						287.5						1		1		1	
154+42.75	174+86.50							1,975.0				2				2		
188+13.25	199+19.50							1,037.5				2				2		
239+90.75	253+43.88							1,237.5				2				2		INCLUDES NEW RAIL OVER NEW RCB
311+01.25	314+07.50					237.5						2				2		
311+06.25	316+62.50						487.5						2				2	
344+31.13	353+78.00 BE					875.0						1		1				
346+56.13	353+78.00 BE						650.0						1		1			
359+76.50 BE	360+42.10						25.0								1			REMOVE TRANSITION AND TIE INTO EXISTING GUARDRAIL
359+76.50 BE	360+42.10					25.0								1				REMOVE TRANSITION AND TIE INTO EXISTING GUARDRAIL
REMOVE RAIL																		
(NORTHBOUND)																		
118+12.50	121+75.00 BE	362.5																REMOVAL INCLUDES OTS, BAS
120+50.00	121+75.00 BE		125.0															REMOVAL INCLUDES OTS, BAS
238+67.00	243+54.50		487.5															REMOVAL INCLUDES OTS
308+98.00	312+98.00	400.0																REMOVAL INCLUDES OTS
311+79.00	313+04.00		125.0															REMOVAL INCLUDES OTS
344+15.00	347+77.50	362.5																REMOVAL INCLUDES OTS
345+17.50	354+05.00 BE		887.5															REMOVAL INCLUDES OTS, BAS
350+42.50	354+05.00 BE	362.5																REMOVAL INCLUDES OTS, BAS
360+18.50 BE	360+71.60		53.1															REMOVAL INCLUDES BAS & MTL-MGS TRANSITION
(SOUTHBOUND)																		
115+43.00	121+43.00	600.0																
122+96.00 BE	129+21.00	625.0																REMOVAL INCLUDES BAS, OTS
122+96.00 BE	126+58.50		362.5															REMOVAL INCLUDES BAS, OTS
156+36.50	174+99.00	1,862.5																REMOVAL INCLUDES OTS
189+07.00	199+32.00	1,025.0																REMOVAL INCLUDES OTS
242+84.50	248+72.00	587.5																REMOVAL INCLUDES OTS
312+95.00	314+20.00	125.0																REMOVAL INCLUDES OTS
313+00.00	316+75.00		375.0															REMOVAL INCLUDES OTS
346+78.00	353+78.00 BE	700.0																REMOVAL INCLUDES BAS
347+53.00	353+78.00 BE		625.0															REMOVAL INCLUDES BAS
359+76.50 BE	360+29.60		53.1															REMOVAL INCLUDES BAS & MTL-MGS TRANSITION
359+76.50 BE	360+29.60	53.1																REMOVAL INCLUDES BAS & MTL-MGS TRANSITION
360+42.10	366+88.10		646.0		646.0													CROSS OVER INSTALLMENT RP 121.00
86+22.00	96+89.91										584							CROSS OVER CLOSURE
148+09.00	159+25.00										608							CROSS OVER CLOSURE
267+62.00	273+45.00										342							CROSS OVER CLOSURE
340+57.00	346+47.00										345							CROSS OVER CLOSURE
SUBTOTAL		7,065.6	3,739.7	~	646.0	3,850.0	2,250.0	4,250	1,313	~	1,879	19	14	8	8	17	13	
TOTAL		10,805.3		646.0		6,100.0		5,563		1,879		33		16		30		

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SUMMARY

FENCING

STATION FROM	STATION TO	linear feet FARM FENCE TYPE F2-32WW	each FARM FENCE PANEL SINGLE FW	each FARM FENCE PANEL DOUBLE FW	REMARKS
20+25.00 LT			2	1	RAMP "E" BUXTON INT.
20+25.00 RT		# 90	1		RAMP "E" BUXTON INT.
1+00 LT		# 50	1		RAMP "F" BUXTON INT.
1+00 RT		# 90	1		RAMP "F" BUXTON INT.
11+86.00 LT		# 90	1		RAMP "H" BUXTON INT.
11+86.00 RT		# 60	1		RAMP "H" BUXTON INT.
1+15.00 LT		# 105	1		RAMP "G" BUXTON INT.
1+15.00 RT		# 60	1		RAMP "G" BUXTON INT.
42+59.00 LT		# 50	1	1	H-LINE SILVER BOW INT. TURN LANE
42+59.00 RT		# 30	1		H-LINE SILVER BOW INT.
47+55.00 LT		# 25	2		H-LINE SILVER BOW INT.
47+55.00 RT		# 25	2		
BOX CULVERT					
250+19 RT		150	3	2	NB MAINLINE BOX CULVERT
250+19 LT		250	2	2	SB MAINLINE BOX CULVERT
TOTAL		1,075	20	6	

FOR SHOEFLY DETOUR TO REPLACE CATTLE GUARD. SEE SPECIAL PROVISIONS.

MEDIAN CROSSOVER *

STATION FROM	STATION TO	each CROSSOVER RECLAMATION	each CROSSOVER - CONST., MAINTAIN, & REMOVE	each CROSSOVER - CONST., MAINTAIN, & CLOSE	REMARKS
86+22	96+90	1		1	PERMANENT DOUBLE CROSSOVER
148+09	159+25	1		1	PERMANENT DOUBLE CROSSOVER
267+62	273+45	1		1	PERMANENT DOUBLE CROSSOVER
340+57	346+47	1		1	PERMANENT DOUBLE CROSSOVER
360+15	366+02	1	1		TEMPORARY DOUBLE CROSSOVER
TOTAL		5	1	4	

* SEE DETAIL

REVEGETATION

STATION FROM	STATION TO	lump sum REVEGE-TATION	cu. yards TOPSOIL SALVAGING & PLACING	acres SEED NO. 1	acres SEED NO.3	acres CONDITION SEEDBED	REMARKS
249+50.00	250+95.00	1	260	0.3	0.2	0.5	
TOTAL		1	# 260	# 0.3	# 0.2	# 0.5	

FOR INFORMATION ONLY

TRAFFIC CONTROL

STATION FROM	STATION TO	each CROSSOVER	miles TWO-WAY TRAFFIC	REMARKS
86+22.22	159+25.01	2		TWO-WAY CROSSOVER
148+09.06	273+44.90	2		TWO-WAY CROSSOVER
340+56.65	366+02.11	2		TWO-WAY CROSSOVER
			1.0	96+89 TO 148+09 NORTHBOUND
			1.0	96+89 TO 148+09 SOUTHBOUND
			2.1	159+25 TO 267+62 NORTHBOUND
			2.1	159+25 TO 267+62 SOUTHBOUND
			0.3	346+46 TO 360+15 NORTHBOUND
			0.3	346+46 TO 360+15 SOUTHBOUND
TOTAL		6	6.8	

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SUMMARY

CULVERTS

STATION	linear feet	END SECTIONS		linear feet	cu. yards					sq. yards	linear feet	SKEW ANGLE	CULVERT IN PL. in x ft	REMARKS
	RCB			REMOVE PIPE CULVERT	FOUND-ATION MATERIAL	GRANULAR BEDDING MATERIAL	SPECIAL BACKFILL	CONCRETE - CLASS GENERAL	CULVERT EXCAVATION #	GEOTEXT. STAB.	HEIGHT OF COVER			
	9' X 9'	LEFT	RIGHT											
250+19				218.0								26.0 RT.	171" X 218.0' SPPAC	
250+19	234	CUTOFF WALL, SLOPED END SECTION (2:1), CONCRETE EDGE PROTECTION	CUTOFF WALL, SLOPED END SECTION (2:1), CONCRETE EDGE PROTECTION		247	124	6,932	13.8	7,740.0	310	7.4	26.0 RT.		REPLACES STRUCTURE ID 01097
TOTAL	234	~	~	218.0	247	124	6,932	13.8	~	310	~	~	~	

FOR INFORMATION ONLY

BITUMINOUS PAVEMENT REMOVAL

STATION		sq. yards	REMARKS
		REMOVE BITUMINOUS PAVEMENT	
FROM	TO		
312+45.00	314+20.00	272	SOUTHBOUND SEE DETAIL
TOTAL		272	

APPROACH SLABS

STATION	lump sum	REMARKS
	REMOVE APPROACH SLAB	
121+65 NB	1.0	BRIDGE APPROACH SLAB (BUXTON)
123+13 NB	1.0	BRIDGE APPROACH SLAB (BUXTON)
121+58 SB	1.0	BRIDGE APPROACH SLAB (BUXTON)
123+06 SB	1.0	BRIDGE APPROACH SLAB (BUXTON)
TOTAL	4	

RUMBLE STRIPS

STATION		miles		gals	REMARKS
		RUMBLE STRIPS		EMULSIFIED ASPHALT FOG SEAL #	
FROM	TO	CONTIN-UOUS	INTER-MITTENT		
NORTHBOUND					
119+55.00	121+75.00 BE	0.04	0.04		TYPICAL SEC. NO. 2 & 3
123+03.00 BE	125+23.00	0.04	0.04		TYPICAL SEC. NO. 3 & 2
249+50.00	250+80.00	0.02	0.02		TYPICAL SEC. NO. 4
352+05.00	352+85.00	0.02	0.02		TYPICAL SEC. NO. 2
352+85.00	354+05.00	0.02	0.02		TRANS. TYP. NO. 2 TO TYP. SEC. NO. 5
SOUTHBOUND					
119+48.00	121+68.00 BE	0.04	0.04		TYPICAL SEC. NO. 2 & 3
122+96.00 BE	125+16.00	0.04	0.04		TYPICAL SEC. NO. 3 & 2
249+65.00	250+95.00	0.02	0.02		TYPICAL SEC. NO. 4
351+78.00	352+58.00	0.02	0.02		TYPICAL SEC. NO. 2
352+58.00	353+78.00 BE	0.02	0.02		TRANS. TYP. NO. 2 TO TYP. SEC. NO. 5
SUBTOTAL		0.3	0.3	10.2	
TOTAL		0.6		~	

FOR INFORMATION ONLY, INCLUDE IN THE COST OF RUMBLE STRIPS

PAVEMENT MARKINGS

ITEM	UNIT	INTERIM APPLICA-TION #	FINAL APPLICA-TION	TOTAL
STRIPING - WHITE PAINT	gallon	282		282
STRIPING - YELLOW PAINT	gallon	208		208
WORDS & SYMBOLS - WHITE PAINT	gallon	12		12
STRIPING - WHITE EPOXY	gallon		376	376
STRIPING - YELLOW EPOXY	gallon		277	277
WORDS & SYMBOLS - WHITE EPOXY	gallon		16	16
TEMPORARY STRIPING	linear feet			15,442
FINAL SWEEP AND BROOM	course mile			9.8

BASED ON SINGLE APPLICATION.

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AWARD COPY

HYDRAULIC DATA SUMMARY *

STATION	STREAM NAME (IF NAMED)	DRAINAGE AREA (mi^2)	SIZE/TYPE STRUCTURE ① ② ⑤	DESIGN FLOOD MAGNITUDE (cfs)	DESIGN FLOOD FREQUENCY (%)	DESIGN FLOOD H.W. ELEV. (ft)	BASE FLOOD (1%) MAGNITUDE (cfs)	BASE FLOOD (1%) H.W. ELEV. (ft)	OVERTOPPING FLOOD ③ ④ MAGNITUDE (cfs)	OVERTOPPING FLOOD ③ ④ APPROX. FREQUENCY (%)	OVERTOPPING FLOOD ③ ④ H.W. ELEV. (ft)	REMARKS (FLOOD OF RECORD), Qp(max), etc. ⑥
250+19	Sawmill Gulch	4	9' x 9' RCB	186	1	5392.86	186	5392.86	1,194	~	5402.89	QP(max)

NOTES: * H.W. ELEVATIONS SHOWN ARE BASED UPON PEAK FLOW ANALYSIS UNLESS NOTED IN REMARKS COLUMN.

① STRUCTURE SIZE OR TYPE AND RELATED HYDRAULIC DATA MAY NOT REFLECT CHANGES MADE DUE TO R/W OR OTHER CONSIDERATIONS (I.E. STOCKPASS ADDED, STRUCTURE SIZE OR TYPE CHANGED, ROAD GRADE CHANGED DURING CONSTRUCTION, ETC.)

② BRIDGE LENGTH SHOWN EQUALS THE WATER SURFACE WIDTH IN THE OPENING AT THE DESIGN H.W. ELEVATION MEASURED NORMAL TO FLOW.

③ OVERTOPPING IS DEFINED AS FLOW OVER THE ROAD, FLOW THROUGH A SIGNIFICANT RELIEF STRUCTURE OR FLOW OVER THE BASIN DIVIDE WHICHEVER IS LOWER.

④ FOR THOSE CROSSINGS NOTED BY Qp(max) IN THE REMARKS COLUMN OVERTOPPING DOES NOT OCCUR AND THE FLOOD MAGNITUDE LISTED CORRESPONDS TO THE FLOOD OF SECTION 650.115 (a)(1)(ii) OF FEDERAL-AID POLICY GUIDE; SUBCHAPTER G, PART 650, SUBPART A (DEC. 1991).
THE FLOOD SPECIFIED IS SUBJECT TO STATE-OF-THE-ART CAPABILITY TO ESTIMATE THE EXCEEDANCE PROBABILITY (PIPES 0.5%; BRIDGE 0.2%).

⑤ HIGH WATER ELEVATIONS MAY VARY SLIGHTLY DEPENDING UPON THE PIPE OPTION SELECTED.

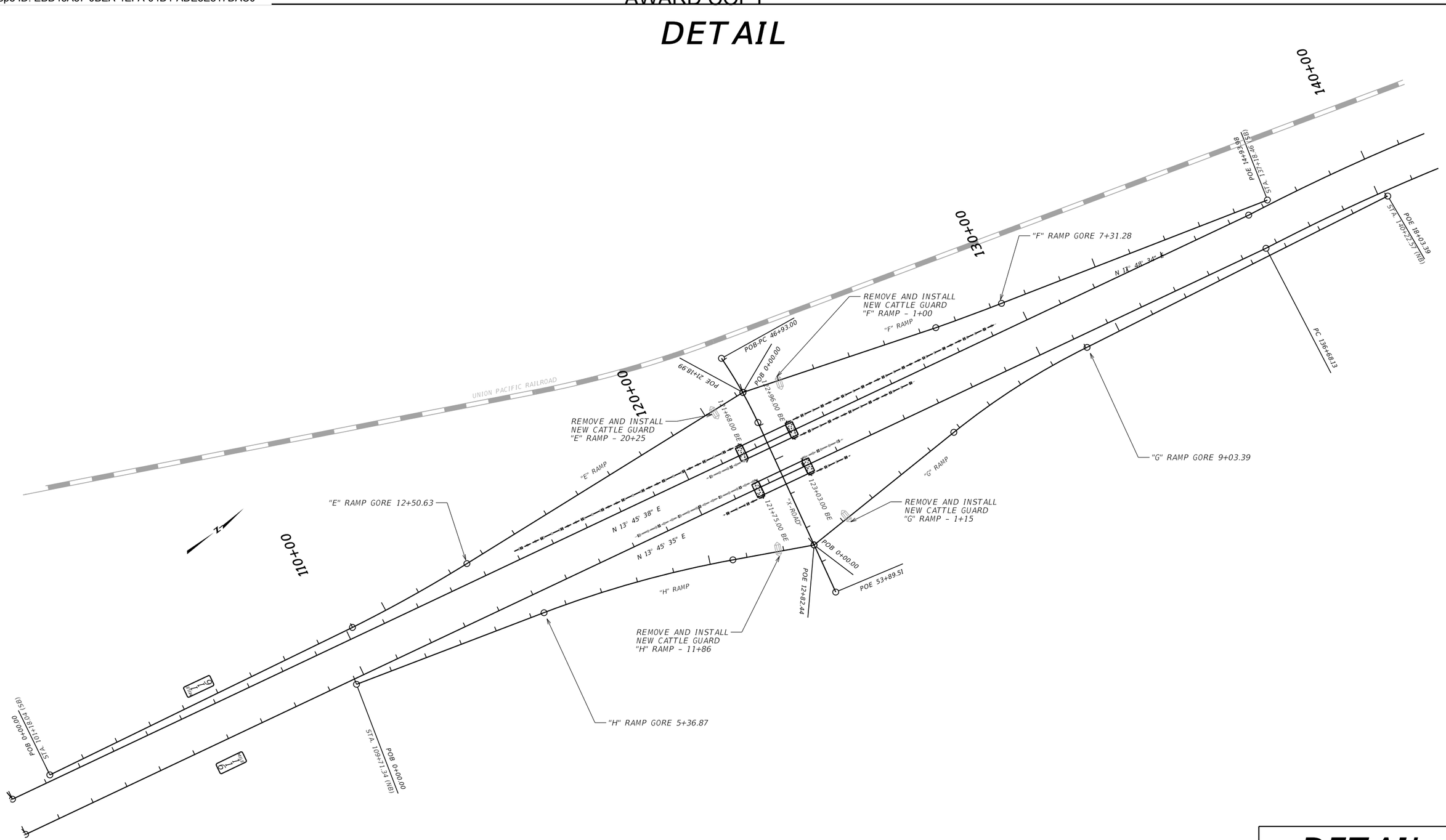
⑥ PROCEDURE MEMORANDUM NO. 10, HYDRAULICS MANUAL CHAPTER 9 APPENDIX H.

EXCEEDANCE PROBABILITIES

25 YEAR	4% CHANCE
50 YEAR	2% CHANCE
100 YEAR	1% CHANCE
200 YEAR	0.5% CHANCE
500 YEAR	0.2% CHANCE

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DETAIL



DETAIL

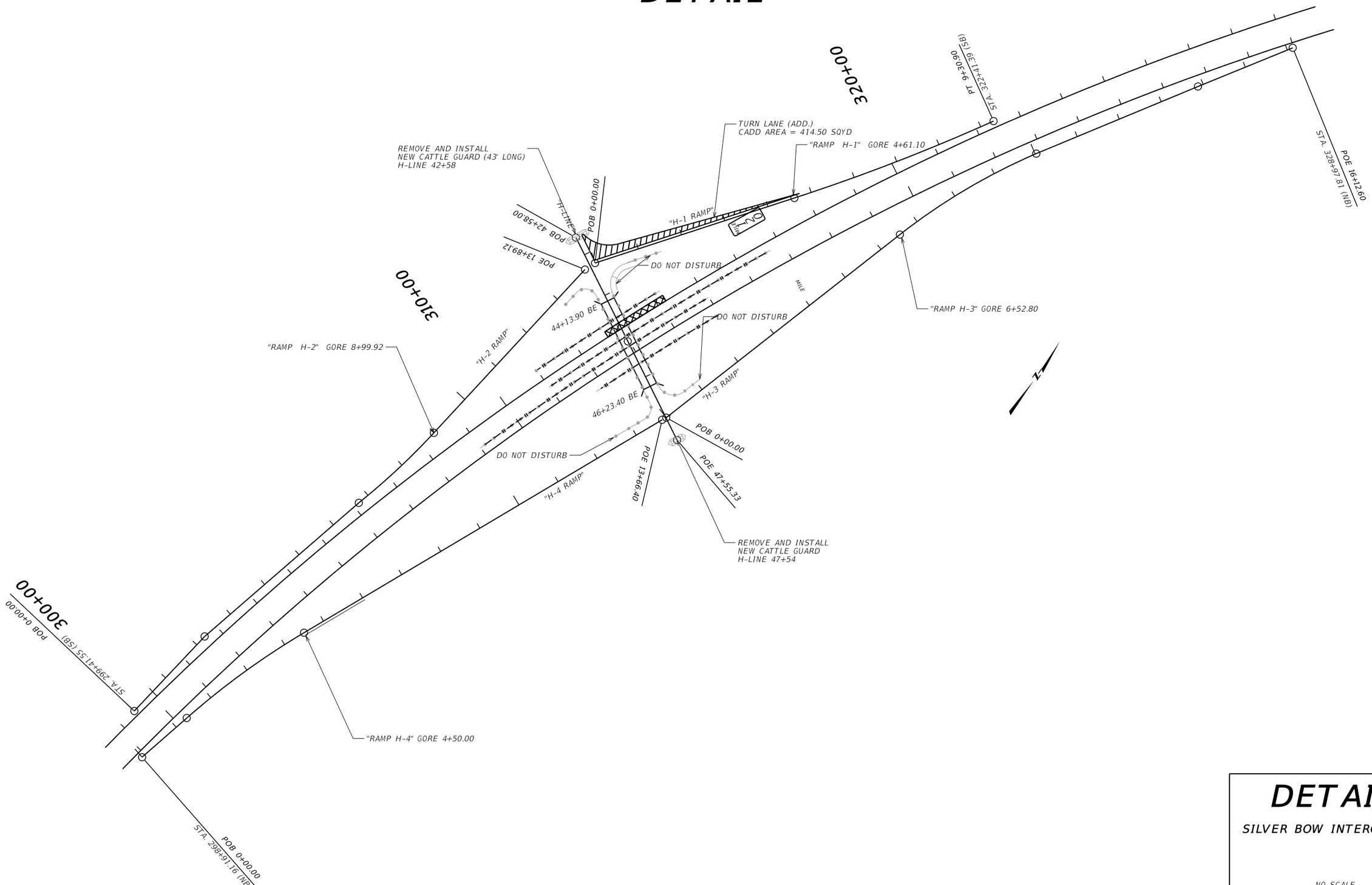
BUXTON INTERCHANGE

NO SCALE

3	MONTANA Department of Transportation	C:\DGN\9462000rddet002.dgn	DESIGNED BY	B. BOONE	11/2/2021	ROAD PLANS	BUXTON - NORTH & SOUTH	IM 15-2(130)116
2		4/25/2023	REVIEWED BY	K. MUELLER	12/2/2022			
		3:33:57 PM CPS - U6908	CHECKED BY	T. JOHNSON	12/14/2022	SILVER BOW COUNTY	UPN 9462000	13

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DETAIL



DETAIL

SILVER BOW INTERCHANGE

NO SCALE

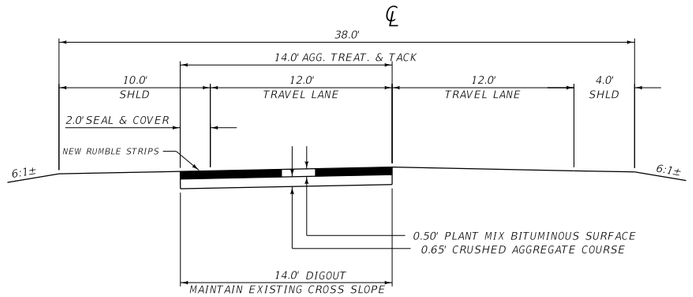
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		4/25/2023	REVIEWED BY K. MUELLER	12/2/2022				
		3:34:02 PM CPS - U6908	CHECKED BY T. JOHNSON	12/14/2022	SILVER BOW COUNTY		UPN 9462000	14

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DETAIL

(SILVER BOW INTERCHANGE)

SOUTHBOUND
312+70.00 TO 314+20.00



NOTE: SAW CUT AND REMOVE EXISTING PMS.
RECOMPACT EXISTING SUBGRADE.
ALL ASSOCIATED WORK IS INCLUDED IN THE COST OF REMOVE BITUMINOUS PAVEMENT

QUANTITIES

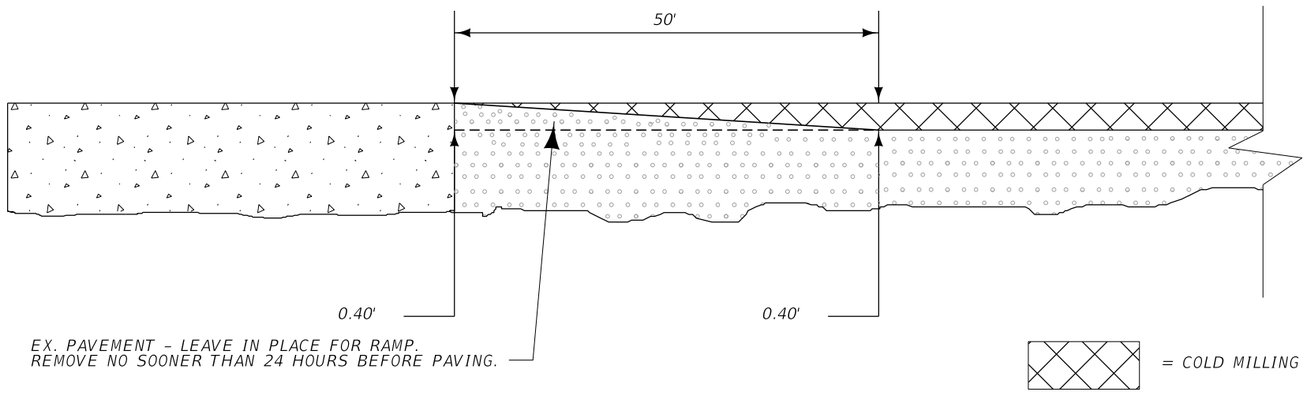
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL		
	COVER	PLANT MIX	CR. AGG. COURSE		AGG. TREATMENT	EMULSIFIED ASPHALT SEAL	EMULSIFIED ASPHALT TACK*
AREA square feet		7.00	9.10	square yards PER STATION	156	22	468
cubic yards PER STATION		25.9	33.7	tons PER STATION		0.04	
tons PER STATION		49.9		gals. PER STATION			23
square yards PER STATION	22						

*BASED ON 3 APPLICATIONS

DETAIL

PAVEMENT REPLACEMENT
(SILVER BOW INTERCHANGE)

NO SCALE



NOTE:
TAPERED MILLING DETAIL
APPLIES TO PTW CONNECTIONS AND
TEMPORARY RAMP CONNECTIONS AT
BRIDGE ENDS/CONCRETE APPROACH SLABS.

DETAIL

TEMPORARY MILLING
CONNECTION

NO SCALE

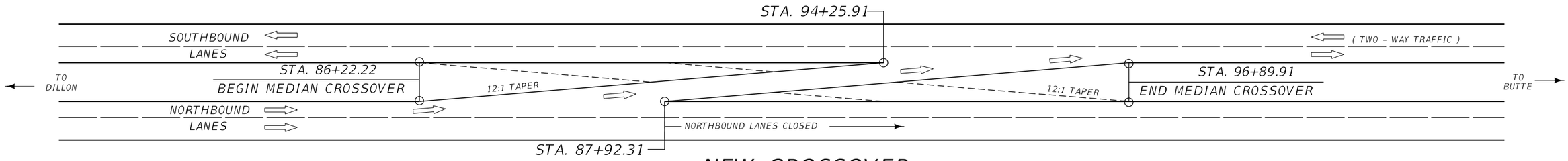
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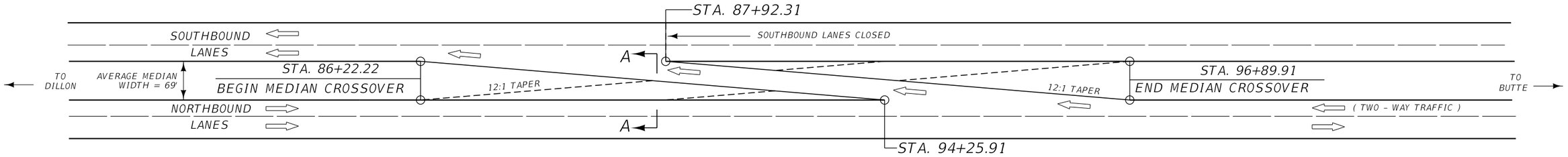
NOTE: STATIONING IS APPROXIMATE. FIELD ADJUST LOCATION TO AVOID EXISTING INLETS. MEDIAN DRAINS SHOWN FOR INFORMATION ONLY. CONTRACTOR TO PROVIDE POSITIVE DRAINAGE FOR THE WORK ZONE.

DETAIL

BUXTON SOUTH – OFF OF PROJECT LIMITS

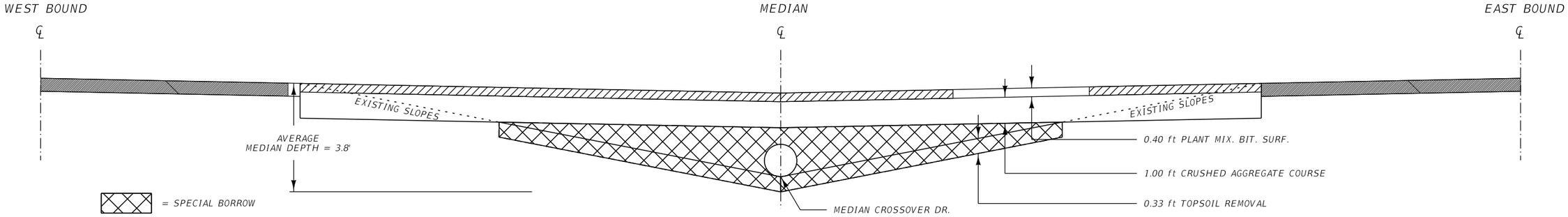


NEW CROSSOVER (NORTHBOUND LANES CLOSED)

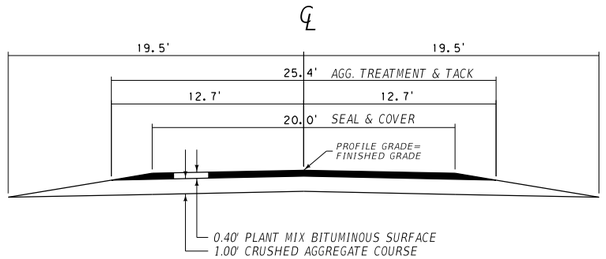


NEW CROSSOVER (SOUTHBOUND LANES CLOSED)

SECTION A-A



PERMANENT CROSSOVER TYPICAL SECTION



PERMANENT MEDIAN CROSSOVER

(QUANTITIES FOR INFORMATION PURPOSES ONLY)

20.0' FINISHED TOP – DOUBLE CROSSOVER
0.40' PLANT MIX SURFACING
1.00' CRUSHED AGGREGATE COURSE

ESTIMATED QUANTITIES FOR ONE CROSSOVER (FROM CADD AREA):

COVER	7,620 SQ. YARDS
SEAL	13.4 TONS
PLANT MIX SURFACING (GRADE S)	2065 TONS
ASPHALT CEMENT 5.4% (PG 70-28)	111.5 TONS
CRUSHED AGGREGATE COURSE	2,095 CUBIC YARDS
SPECIAL BORROW	1,985 CUBIC YARDS
AGGREGATE TREATMENT	7,620 SQ. YARDS
EMULSIFIED ASPHALT – TACK	762 GALS
18" DRAIN	324 FEET – 18" DRAIN
RACETS	2 EACH

DETAIL

MEDIAN CROSSOVER
BUXTON SOUTH
STA. 91+09.11

NO SCALE

2	MONTANA Department of Transportation	C:\DGN\9462000rddet004.dgn	DESIGNED BY	B. BOONE	11/2/2021	ROAD PLANS	BUXTON - NORTH & SOUTH / IM 15-2(130)116
1		4/25/2023	REVIEWED BY	K. MUELLER	12/2/2022		
		3:34:27 PM CPS - U6908	CHECKED BY	T. JOHNSON	12/14/2022	SILVER BOW COUNTY	UPN 9462000 / 16

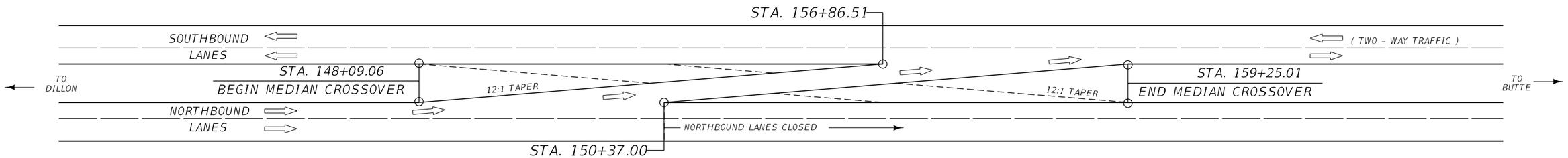
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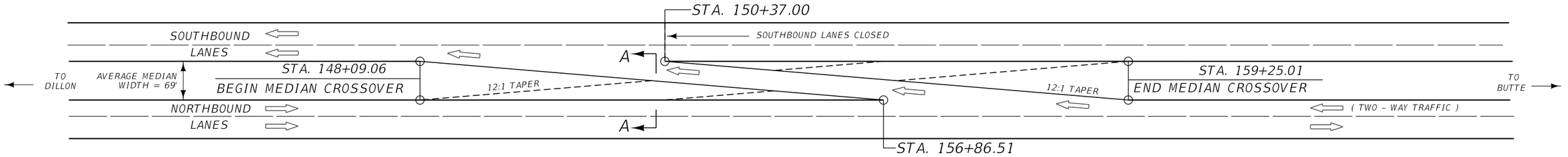
NOTE: STATIONING IS APPROXIMATE. FIELD ADJUST LOCATION TO AVOID EXISTING INLETS. MEDIAN DRAINS SHOWN FOR INFORMATION ONLY. CONTRACTOR TO PROVIDE POSITIVE DRAINAGE FOR THE WORK ZONE.

DETAIL

BUXTON NORTH

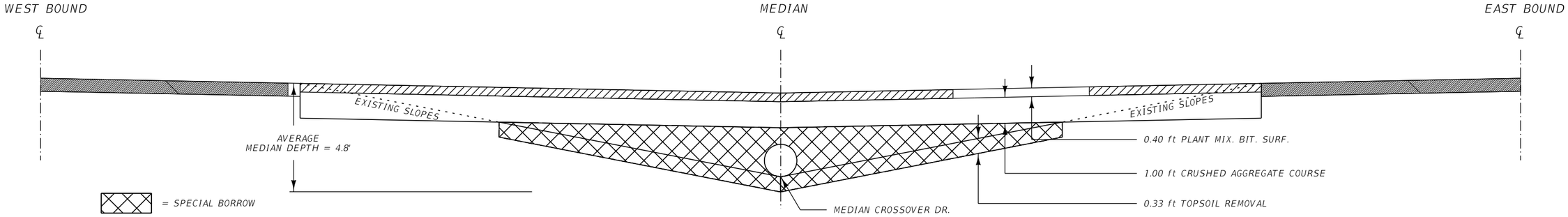


NEW CROSSOVER (NORTHBOUND LANES CLOSED)

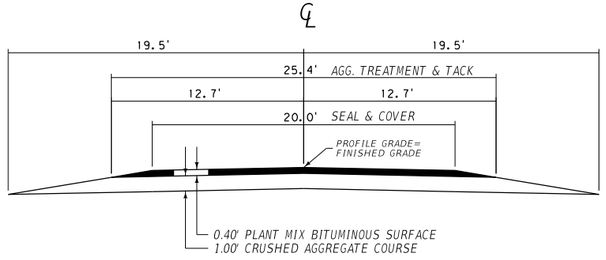


NEW CROSSOVER (SOUTHBOUND LANES CLOSED)

SECTION A-A



PERMANENT CROSSOVER TYPICAL SECTION



PERMANENT MEDIAN CROSSOVER

(QUANTITIES FOR INFORMATION PURPOSES ONLY)

20.0' FINISHED TOP - DOUBLE CROSSOVER
0.40' PLANT MIX SURFACING
1.00' CRUSHED AGGREGATE COURSE

ESTIMATED QUANTITIES FOR ONE CROSSOVER (FROM CADD AREA):

COVER	7,620 SQ. YARDS
SEAL	13.4 TONS
PLANT MIX SURFACING (GRADE S)	2065 TONS
ASPHALT CEMENT 5.4% (PG 70-28)	111.5 TONS
CRUSHED AGGREGATE COURSE	2,095 CUBIC YARDS
SPECIAL BORROW	1,985 CUBIC YARDS
AGGREGATE TREATMENT	7,620 SQ. YARDS
EMULSIFIED ASPHALT - TACK	762 GALS
18" DRAIN	324 FEET - 18" DRAIN
RACETS	2 EACH

DETAIL

MEDIAN CROSSOVER
BUXTON NORTH
STA. 151+16.98

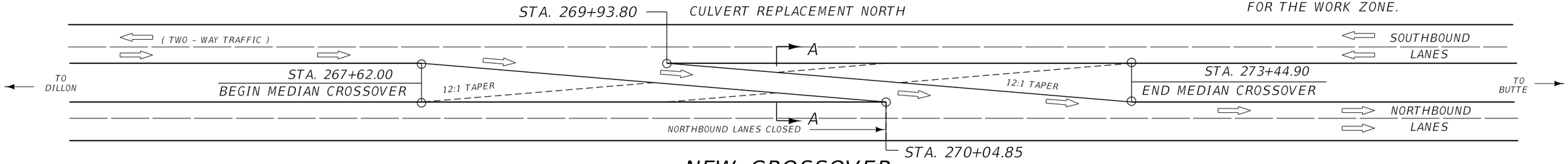
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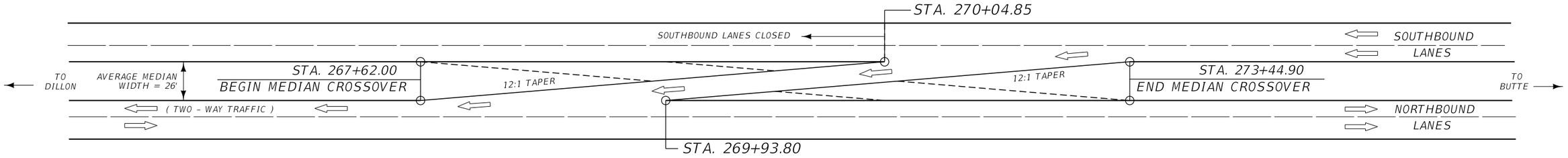
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DETAIL

NOTE: STATIONING IS APPROXIMATE. FIELD ADJUST LOCATION TO AVOID EXISTING INLETS. MEDIAN DRAINS SHOWN FOR INFORMATION ONLY. CONTRACTOR TO PROVIDE POSITIVE DRAINAGE FOR THE WORK ZONE.

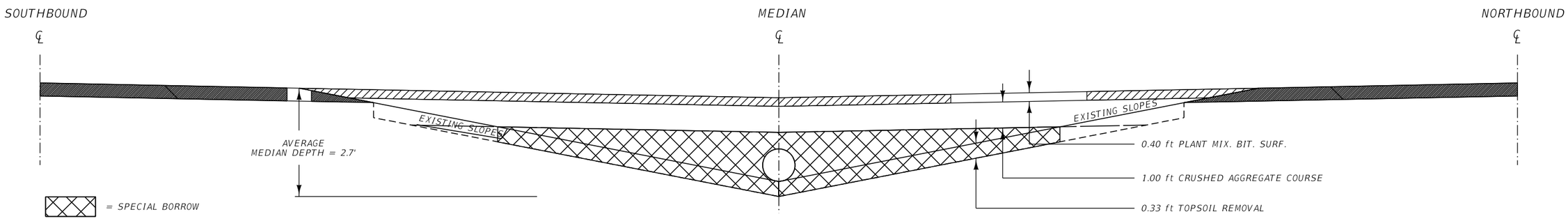


NEW CROSSOVER (NORTHBOUND LANES CLOSED)

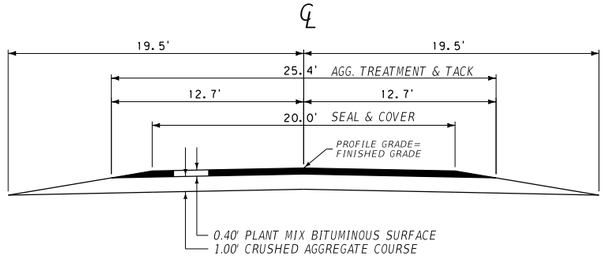


NEW CROSSOVER (SOUTHBOUND LANES CLOSED)

SECTION A-A



PERMANENT CROSSOVER TYPICAL SECTION



PERMANENT MEDIAN CROSSOVER

(QUANTITIES FOR INFORMATION PURPOSES ONLY)

20.0' FINISHED TOP - DOUBLE CROSSOVER
- 0.40' PLANT MIX SURFACING
- 1.00' CRUSHED AGGREGATE COURSE

ESTIMATED QUANTITIES FOR ONE CROSSOVER (FROM CADD AREA):

COVER	1,789 SQ. YARDS
SEAL	3.1 TONS
PLANT MIX SURFACING (GRADE S)	566 TONS
ASPHALT CEMENT 5.4% (PG 70-28)	30.6 TONS
CRUSHED AGGREGATE COURSE	640 CUBIC YARDS
SPECIAL BORROW	270 CUBIC YARDS
AGGREGATE TREATMENT	1,789 SQ. YARDS
EMULSIFIED ASPHALT - TACK	179 GALS
18" DRAIN	296 FEET
RACETS	2 EACH

DETAIL

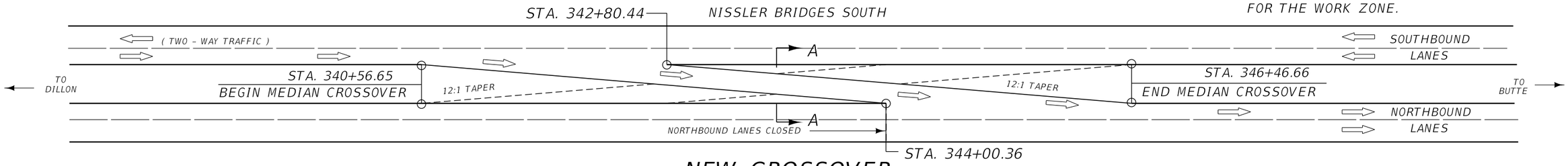
MEDIAN CROSSOVER
CULVERT REPLACEMENT
NORTH
STA. 270+46.69

NO SCALE

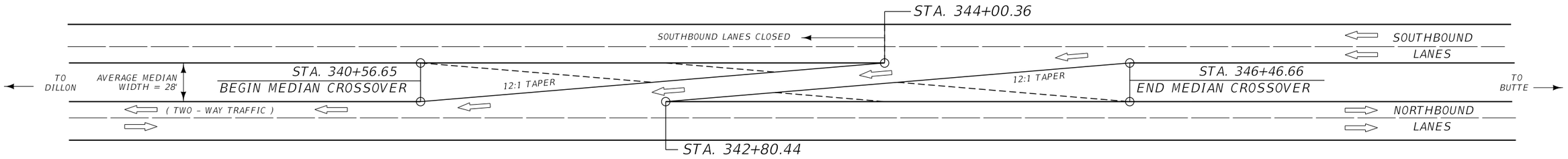
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DETAIL

NOTE: STATIONING IS APPROXIMATE. FIELD ADJUST LOCATION TO AVOID EXISTING INLETS. MEDIAN DRAINS SHOWN FOR INFORMATION ONLY. CONTRACTOR TO PROVIDE POSITIVE DRAINAGE FOR THE WORK ZONE.

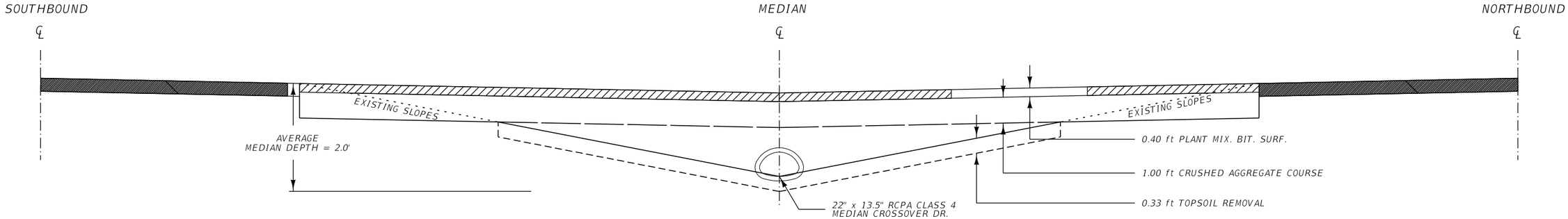


NEW CROSSOVER (NORTHBOUND LANES CLOSED)

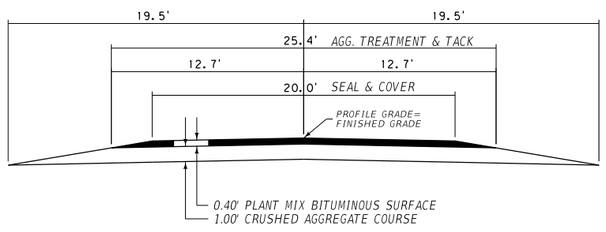


NEW CROSSOVER (SOUTHBOUND LANES CLOSED)

SECTION A-A



PERMANENT CROSSOVER TYPICAL SECTION



PERMANENT MEDIAN CROSSOVER

(QUANTITIES FOR INFORMATION PURPOSES ONLY)

20.0' FINISHED TOP - DOUBLE CROSSOVER
- 0.40' PLANT MIX SURFACING
- 1.00' CRUSHED AGGREGATE COURSE

ESTIMATED QUANTITIES FOR ONE CROSSOVER (FROM CADD AREA):

COVER	1,789 SQ. YARDS
SEAL	3.1 TONS
PLANT MIX SURFACING (GRADE S)	566 TONS
ASPHALT CEMENT 5.4% (PG 70-28)	30.6 TONS
CRUSHED AGGREGATE COURSE	535 CUBIC YARDS
AGGREGATE TREATMENT	1789 SQ. YARDS
EMULSIFIED ASPHALT - TACK	180 GALS
22" x 13.5" RCPA DRAIN (CLASS 4)	280 FEET
RACETS	2 EACH

DETAIL

MEDIAN CROSSOVER
NISSLER BRIDGES SOUTH
STA. 343+41.29

NO SCALE

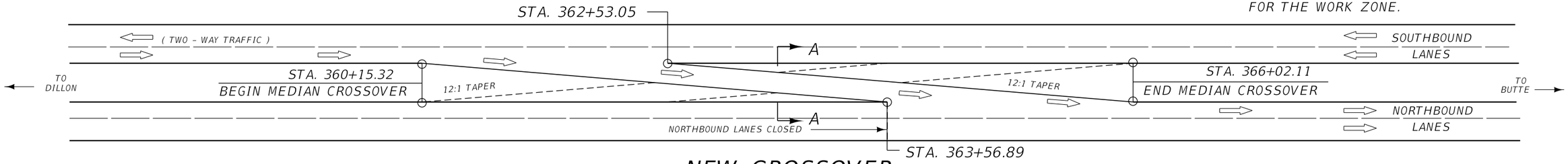
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1		4/25/2023	REVIEWED BY	K. MUELLER	12/2/2022		UPN 9462000 / 19
		3:34:49 PM CPS - U6908	CHECKED BY	T. JOHNSON	12/14/2022	SILVER BOW COUNTY	

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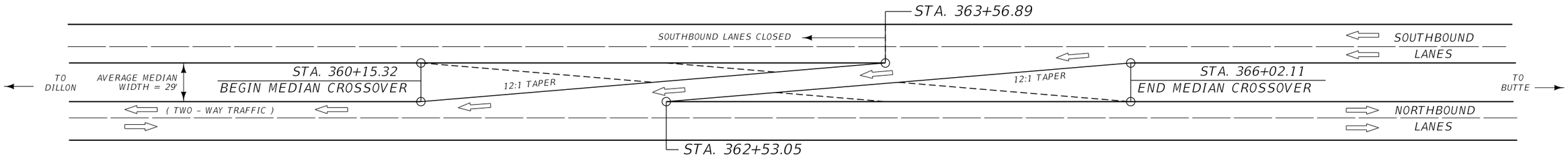
NOTE: STATIONING IS APPROXIMATE. FIELD ADJUST LOCATION TO AVOID EXISTING INLETS. MEDIAN DRAINS SHOWN FOR INFORMATION ONLY. CONTRACTOR TO PROVIDE POSITIVE DRAINAGE FOR THE WORK ZONE.

DETAIL

NISSLER BRIDGES NORTH

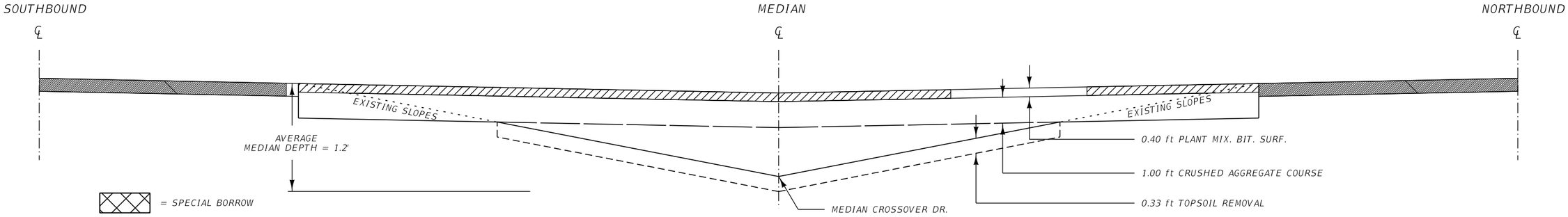


NEW CROSSOVER (NORTHBOUND LANES CLOSED)

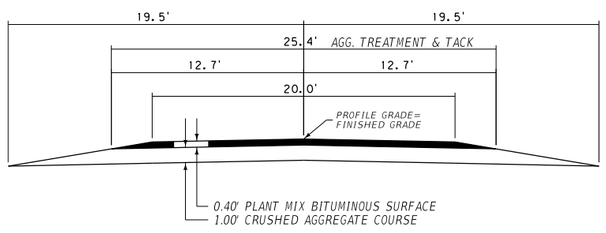


NEW CROSSOVER (SOUTHBOUND LANES CLOSED)

SECTION A-A



TEMPORARY CROSSOVER TYPICAL SECTION



TEMPORARY MEDIAN CROSSOVER (DESIGN SPEED = 35 MPH)

(QUANTITIES FOR INFORMATION PURPOSES ONLY)

20.0' FINISHED TOP - DOUBLE CROSSOVER
- 0.40' PLANT MIX SURFACING
- 1.00' CRUSHED AGGREGATE COURSE

ESTIMATED QUANTITIES FOR ONE CROSSOVER (FROM CADD AREA):

PLANT MIX SURFACING (GRADE S)	620 TONS
ASPHALT CEMENT 5.4% (PG 70-28)	33.5 TONS
CRUSHED AGGREGATE COURSE	580 CUBIC YARDS
AGGREGATE TREATMENT	2,000 SQ. YARDS
EMULSIFIED ASPHALT - TACK	200 SQ. YARDS
18" DRAIN	266 FEET - 18" DRAIN

DETAIL

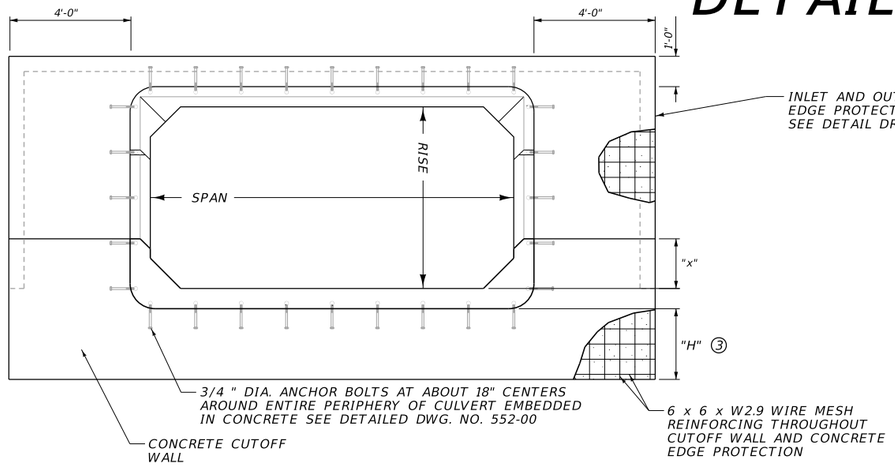
MEDIAN CROSSOVER
NISSLER BRIDGES NORTH
STA. 363+06.86

NO SCALE

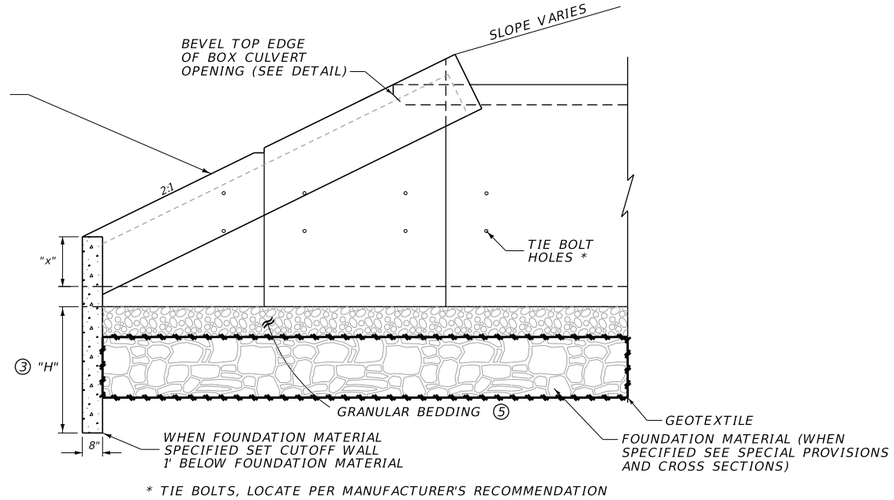
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		4/25/2023	REVIEWED BY K. MUELLER	12/2/2022			
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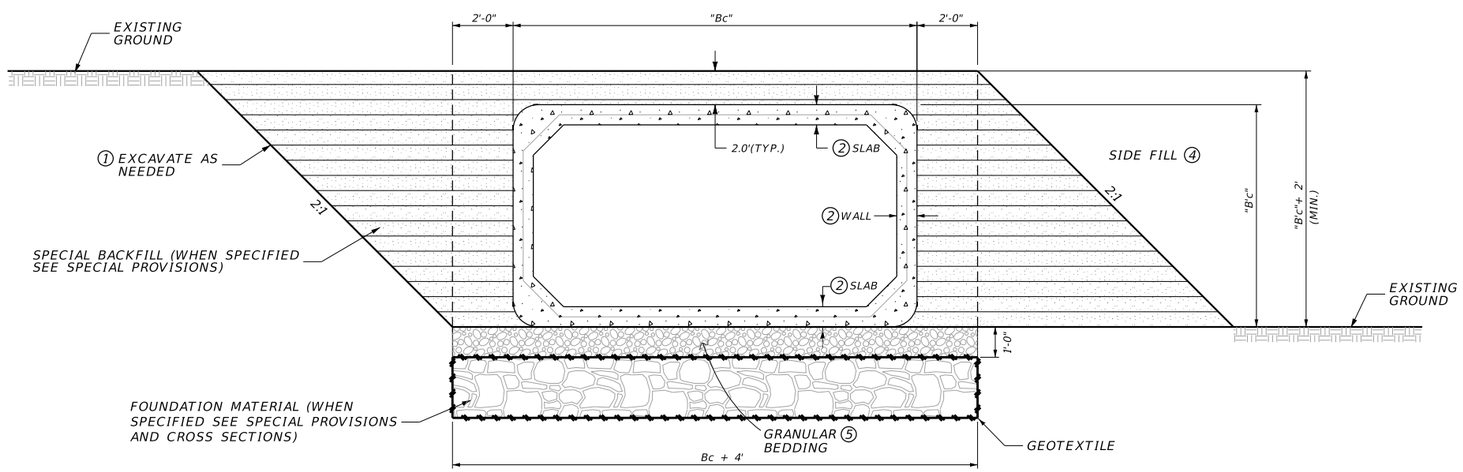


FRONT ELEVATION



* TIE BOLTS, LOCATE PER MANUFACTURER'S RECOMMENDATION

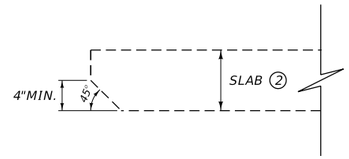
SIDE ELEVATION



EXCAVATION TYPICAL

BEDDING DETAIL

FILL TYPICAL



TOP BEVEL DETAIL

NOTES:

① EXCAVATE A SUFFICIENT AMOUNT TO PROVIDE A SAFE WORKING ENVIRONMENT AND TO ALLOW ACHIEVEMENT OF ALL CULVERT INSTALLATION AND COMPACTION REQUIREMENTS. SLOPE, BENCH OR PROVIDE SHORING FOR ALL EXCAVATIONS IN ACCORDANCE WITH THE U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION.

② FOR ESTIMATING QUANTITIES ONLY. ACTUAL DIMENSION TO BE DETERMINED BY PRECAST MANUFACTURER.

③ 3'-0" MIN.OR 1'-0" BELOW BOTTOM OF FOUNDATION MATERIAL IF SPECIFIED.

④ COMPACT AND PLACE SIDE FILL PER SECTION 603 AND 203.

⑤ SEE SECTION 701 OF THE STANDARD SPECIFICATIONS FOR GRANULAR BEDDING REQUIREMENTS. THE CONTRACTOR HAS THE OPTION OF USING A SAND CUSHION ABOVE THE GRANULAR BEDDING TO FACILITATE JOINING OF THE BOX CULVERT SECTIONS.

DIMENSIONS										
STATION	SPAN (ft.)	RISE (ft.)	LENGTH (ft.)	WALL (in.)	SLAB (in.)	"Bc" (ft.)	"x" (ft.)	"B'c" (ft.)	"H" (ft.)	COVER (ft.)
250+19	9	9	234	8	8	10.33	1.67	10.33	4	7.4

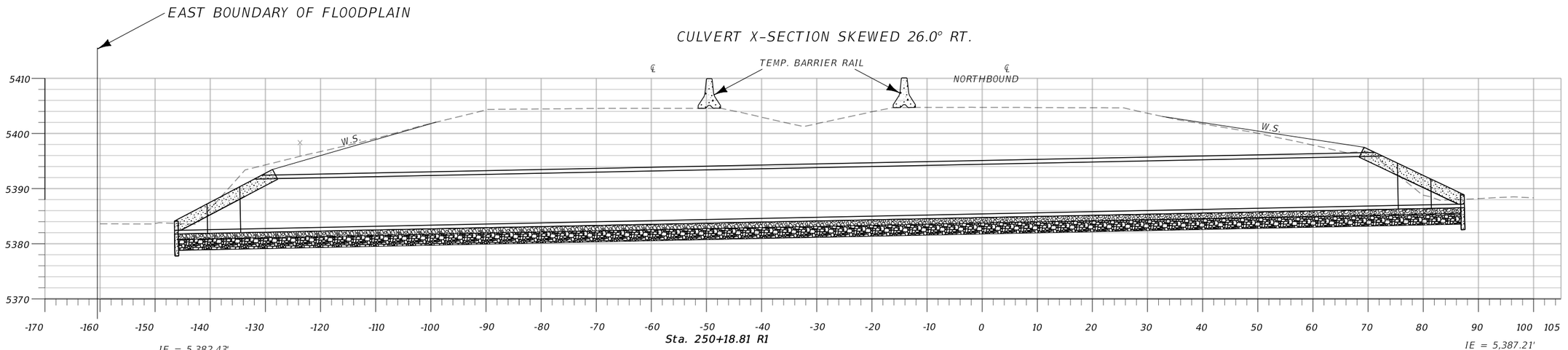
NOTE: INCLUDE REINFORCING MATERIAL, CUTOFF WALL, AND CONCRETE EDGE PROTECTION IN THE UNIT PRICE BID PER CUBIC YARD OF CLASS GENERAL CONCRETE.
INCLUDE ANCHOR BOLTS IN THE UNIT PRICE BID PER LINEAR FOOT OF CULVERT.
PROVIDE BOX CULVERTS MEETING ASTM C1577.
QUANTITIES ARE BASED ON THE DIMENSIONS IN THE TABLE.

DETAIL
SLOPED END
RCB DETAIL
NO SCALE

NO SCALE

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DETAIL

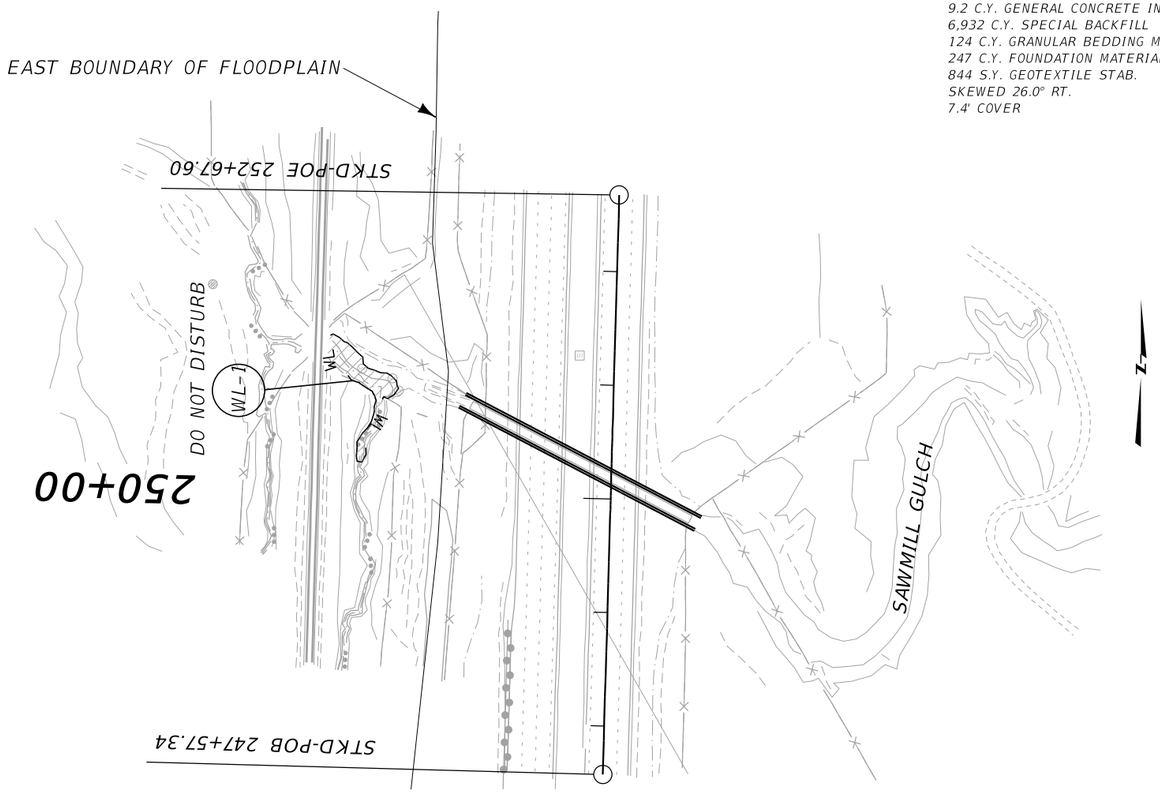


IE = 5,382.43'
EMBED 12"
STA. 250+82.33 (NB)
130.80 LT

250+19.00
EXISTING 14'-3" X 8'-11" SPPAC
REMOVE

250+19.00
NEW 9' x 9' x 234' RCB DR.
2:1 SLOPED ENDS LT. & RT.
4.6 C.Y. GENERAL CONCRETE CUTOFF WALLS LT. & RT.
9.2 C.Y. GENERAL CONCRETE INLET & OUTLET EDGE PROT.
6,932 C.Y. SPECIAL BACKFILL
124 C.Y. GRANULAR BEDDING MATERIAL
247 C.Y. FOUNDATION MATERIAL
844 S.Y. GEOTEXTILE STAB.
SKEWED 26.0° RT.
7.4' COVER

IE = 5,387.21'
EMBED 12"
STA. 249+83.82 (NB)
70.56 RT



DETAIL

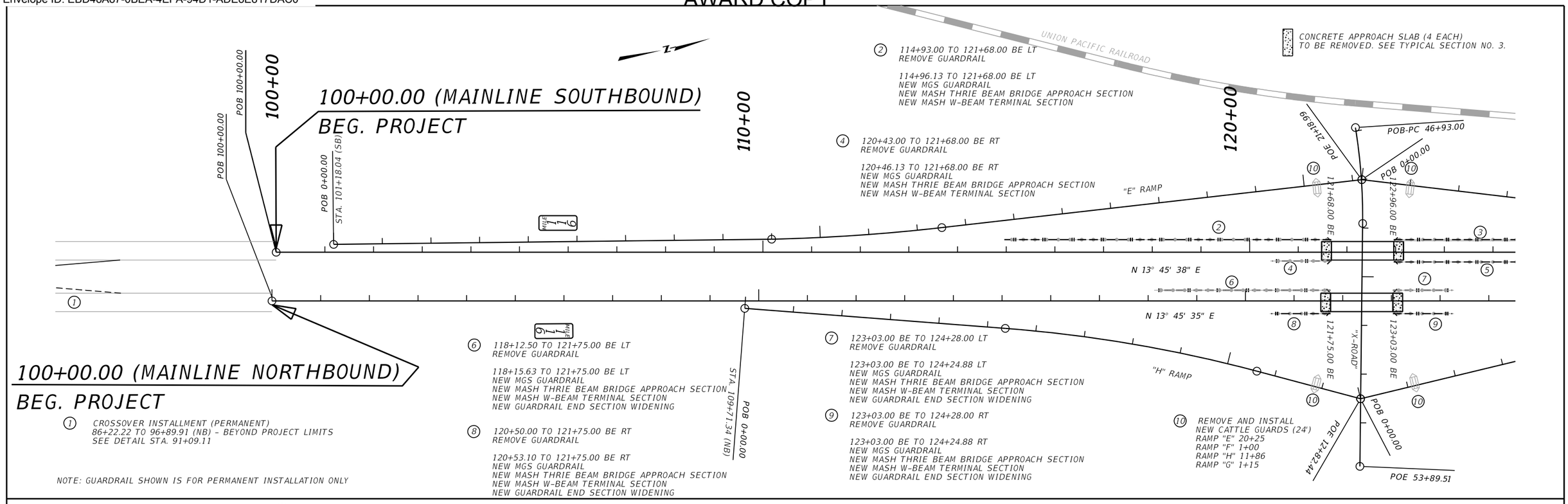
RCB PLAN/PROFILE
DETAIL

NO SCALE

2	MONTANA Department of Transportation	C:\DGN\9462000rddet005.dgn	DESIGNED BY B. BOONE	11/2/2021	ROAD PLANS		BUXTON - NORTH & SOUTH	IM 15-2(130)116
1		4/25/2023	REVIEWED BY K. MUELLER	12/2/2022				
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(1) CROSSOVER INSTALLMENT (PERMANENT)
86+22.22 TO 96+89.91 (NB) - BEYOND PROJECT LIMITS
SEE DETAIL STA. 91+09.11

NOTE: GUARDRAIL SHOWN IS FOR PERMANENT INSTALLATION ONLY

(2) 114+93.00 TO 121+68.00 BE LT
REMOVE GUARDRAIL

114+96.13 TO 121+68.00 BE LT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE APPROACH SECTION
NEW MASH W-BEAM TERMINAL SECTION

(3) 122+96.00 BE TO 129+21.00 LT
REMOVE GUARDRAIL

122+96.00 BE TO 129+17.88 LT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE APPROACH SECTION
NEW MASH W-BEAM TERMINAL SECTION
NEW GUARDRAIL END SECTION WIDENING

STA.122+96.00 BE TO 128+16.00 LT
REMOVE AND REPLACE 4-INCH CURBING

(4) 120+43.00 TO 121+68.00 BE RT
REMOVE GUARDRAIL

120+46.13 TO 121+68.00 BE RT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE APPROACH SECTION
NEW MASH W-BEAM TERMINAL SECTION

(5) 122+96.00 BE TO 126+58.50 RT
REMOVE GUARDRAIL

122+96.00 BE TO 126+55.38 RT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE APPROACH SECTION
NEW MASH W-BEAM TERMINAL SECTION
NEW GUARDRAIL END SECTION WIDENING

(6) 118+12.50 TO 121+75.00 BE LT
REMOVE GUARDRAIL

118+15.63 TO 121+75.00 BE LT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE APPROACH SECTION
NEW MASH W-BEAM TERMINAL SECTION
NEW GUARDRAIL END SECTION WIDENING

(7) 123+03.00 BE TO 124+28.00 LT
REMOVE GUARDRAIL

123+03.00 BE TO 124+24.88 LT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE APPROACH SECTION
NEW MASH W-BEAM TERMINAL SECTION
NEW GUARDRAIL END SECTION WIDENING

(8) 120+50.00 TO 121+75.00 BE RT
REMOVE GUARDRAIL

120+53.10 TO 121+75.00 BE RT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE APPROACH SECTION
NEW MASH W-BEAM TERMINAL SECTION
NEW GUARDRAIL END SECTION WIDENING

(9) 123+03.00 BE TO 124+28.00 RT
REMOVE GUARDRAIL

123+03.00 BE TO 124+24.88 RT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE APPROACH SECTION
NEW MASH W-BEAM TERMINAL SECTION
NEW GUARDRAIL END SECTION WIDENING

(10) REMOVE AND INSTALL
NEW CATTLE GUARDS (24')
RAMP "E" 20+25
RAMP "F" 1+00
RAMP "H" 11+86
RAMP "G" 1+15

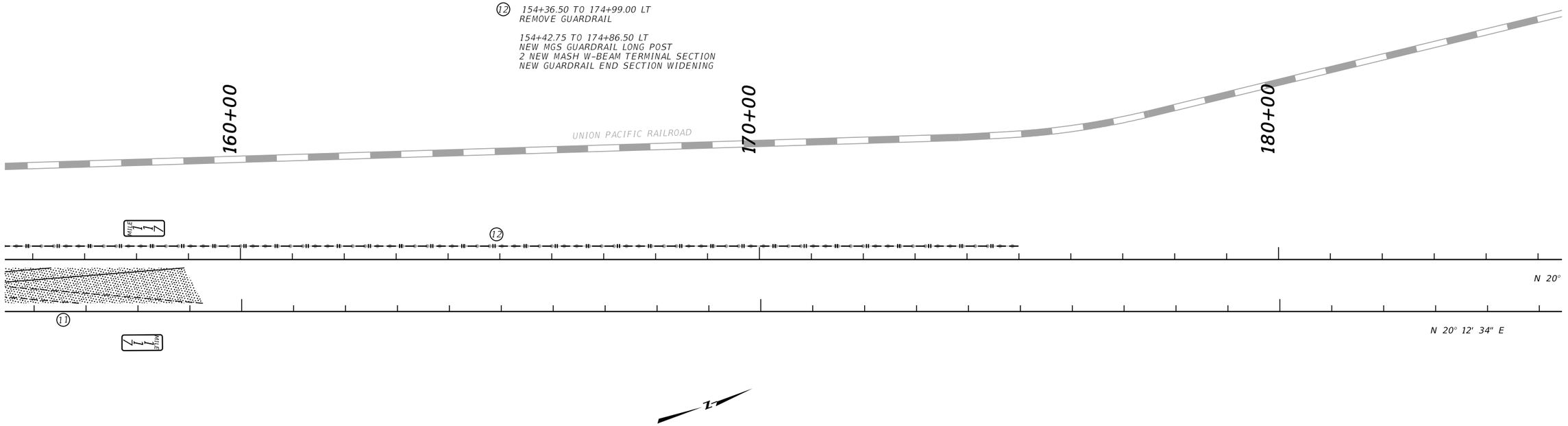
(11) CROSSOVER INSTALLMENT (PERMANENT)
148+09.06 TO 159+25.01 (NB)
SEE DETAIL STA. 151+16.98

NOTE: GUARDRAIL SHOWN IS FOR PERMANENT INSTALLATION ONLY

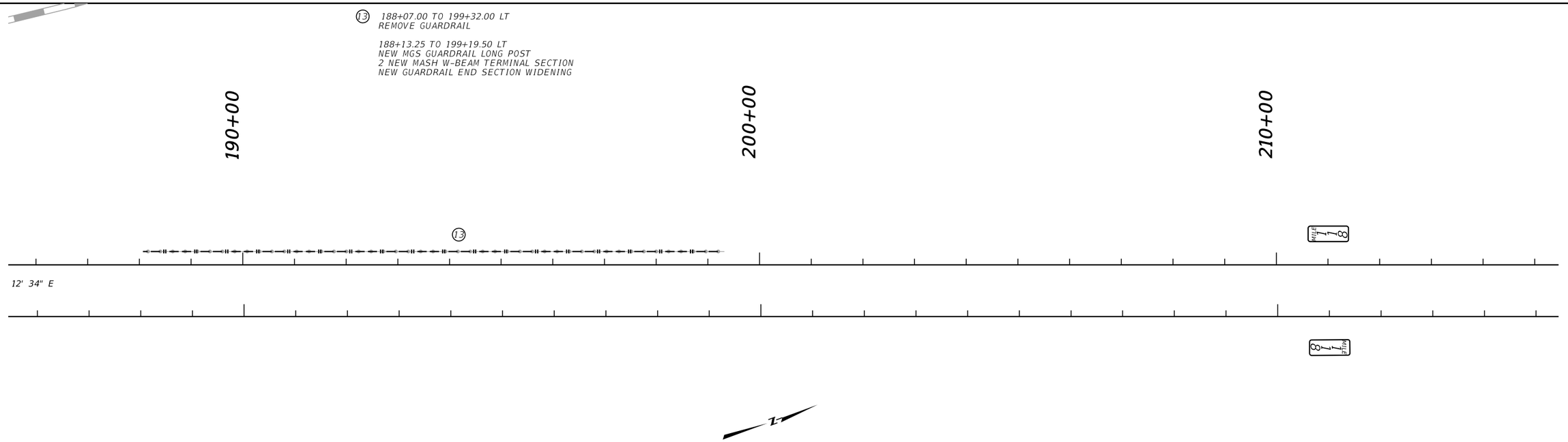
3	MONTANA Department of Transportation	C:\DGN\9462000rdpln001.dgn	DESIGNED BY	B. BOONE	10/20/2021	ROAD PLANS	BUXTON - NORTH & SOUTH / IM 15-2(130)116
2		4/25/2023	REVIEWED BY	K. MUELLER	12/2/2022		
		3:35:24 PM CPS - U6908	CHECKED BY	T. JOHNSON	12/14/2022	SILVER BOW COUNTY	UPN 9462000 / 23

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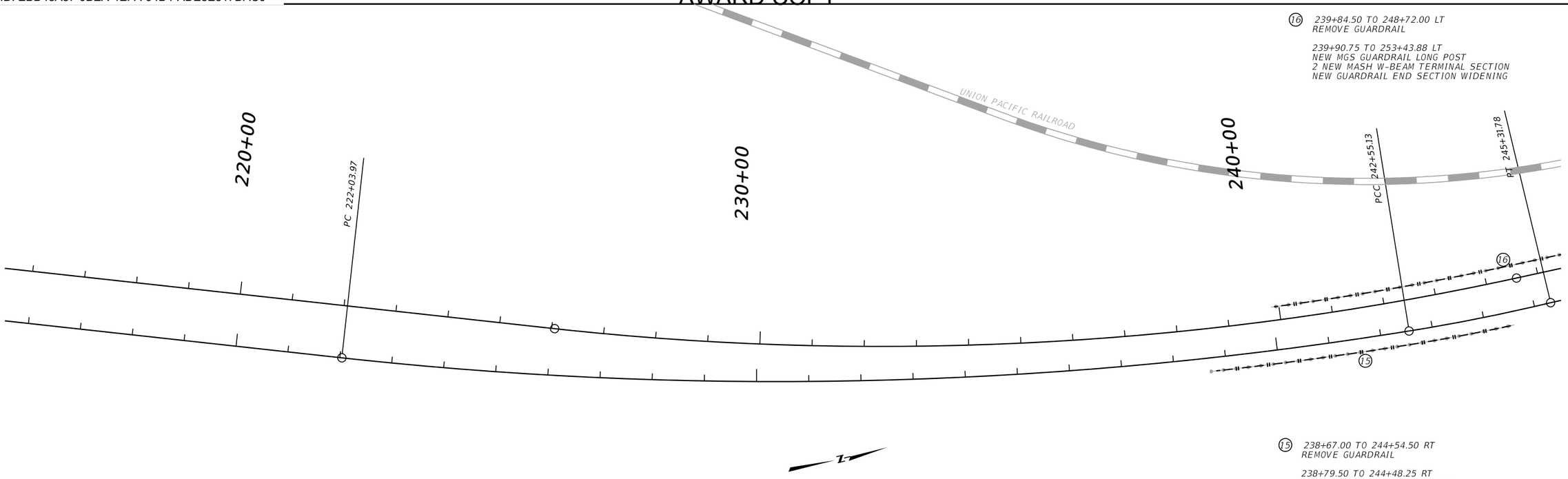
NOTE: GUARDRAIL SHOWN IS FOR PERMANENT INSTALLATION ONLY



NOTE: GUARDRAIL SHOWN IS FOR PERMANENT INSTALLATION ONLY

3 / 1	MONTANA Department of Transportation	C:\DGN\9462000rdpln001.dgn	DESIGNED BY B. BOONE	10/20/2021	ROAD PLANS	BUXTON - NORTH & SOUTH	IM 15-2(130)116
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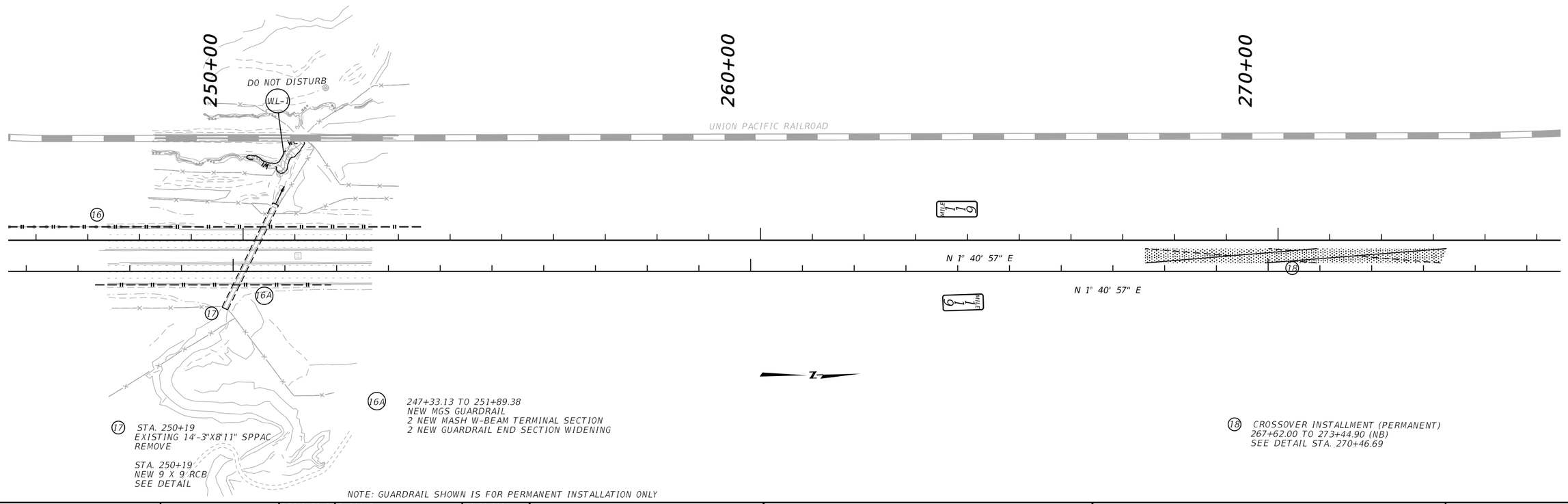
16 239+84.50 TO 248+72.00 LT
REMOVE GUARDRAIL

239+90.75 TO 253+43.88 LT
NEW MGS GUARDRAIL LONG POST
2 NEW MASH W-BEAM TERMINAL SECTION
NEW GUARDRAIL END SECTION WIDENING

15 238+67.00 TO 244+54.50 RT
REMOVE GUARDRAIL

238+79.50 TO 244+48.25 RT
NEW MGS GUARDRAIL LONG POST
2 NEW MASH W-BEAM TERMINAL SECTION
NEW GUARDRAIL END SECTION WIDENING

NOTE: GUARDRAIL SHOWN IS FOR PERMANENT INSTALLATION ONLY



16A 247+33.13 TO 251+89.38
NEW MGS GUARDRAIL
2 NEW MASH W-BEAM TERMINAL SECTION
2 NEW GUARDRAIL END SECTION WIDENING

17 STA. 250+19
EXISTING 14'-3"X8'11" SPPAC
REMOVE

STA. 250+19
NEW 9 X 9 RCB
SEE DETAIL

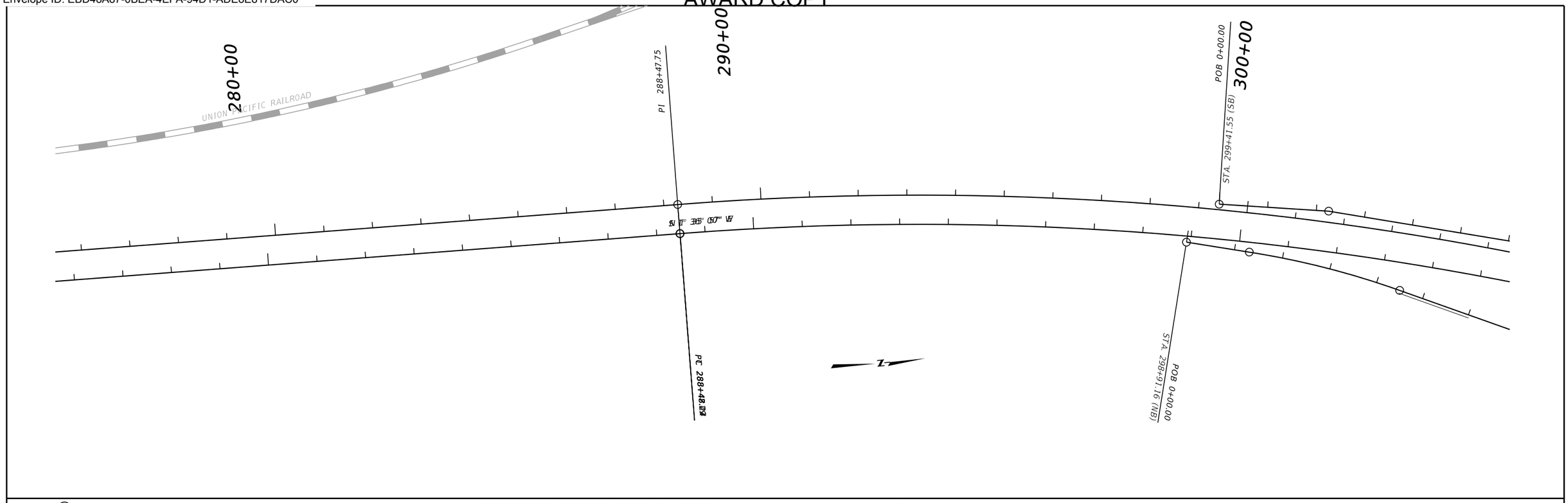
18 CROSSOVER INSTALLMENT (PERMANENT)
267+62.00 TO 273+44.90 (NB)
SEE DETAIL STA. 270+46.69

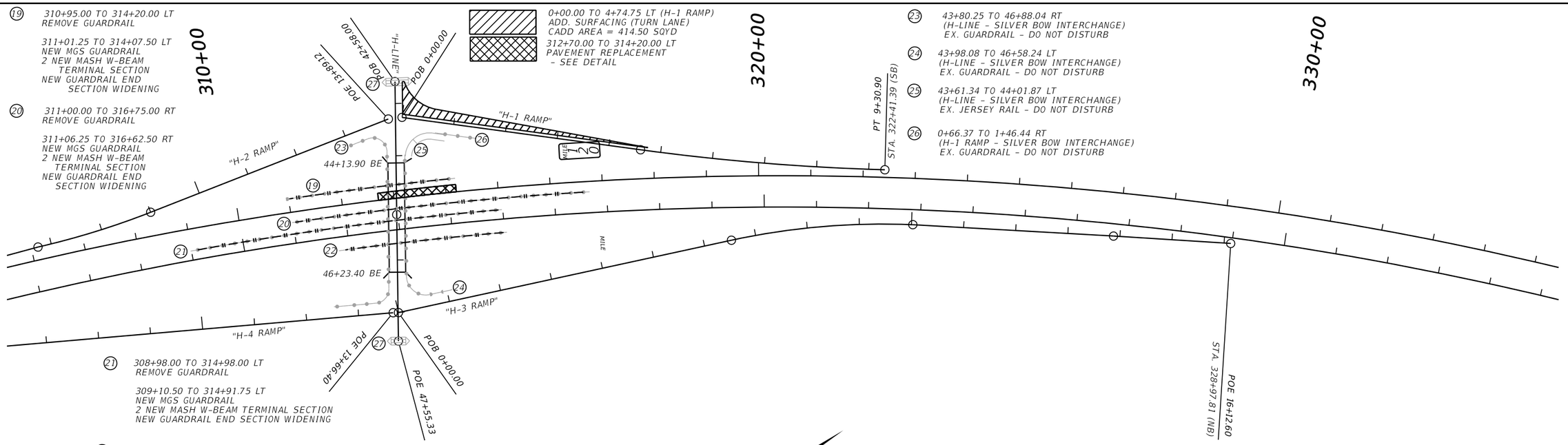
NOTE: GUARDRAIL SHOWN IS FOR PERMANENT INSTALLATION ONLY

2	MONTANA Department of Transportation	C:\DGN\9462000rdpln001.dgn	DESIGNED BY B. BOONE	10/20/2021	ROAD PLANS	BUXTON - NORTH & SOUTH	IM 15-2(130)116
1		4/25/2023	REVIEWED BY K. MUELLER	12/2/2022			
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(19) 310+95.00 TO 314+20.00 LT
REMOVE GUARDRAIL

311+01.25 TO 314+07.50 LT
NEW MGS GUARDRAIL
2 NEW MASH W-BEAM
TERMINAL SECTION
NEW GUARDRAIL END
SECTION WIDENING

(20) 311+00.00 TO 316+75.00 RT
REMOVE GUARDRAIL

311+06.25 TO 316+62.50 RT
NEW MGS GUARDRAIL
2 NEW MASH W-BEAM
TERMINAL SECTION
NEW GUARDRAIL END
SECTION WIDENING

(21) 308+98.00 TO 314+98.00 LT
REMOVE GUARDRAIL

309+10.50 TO 314+91.75 LT
NEW MGS GUARDRAIL
2 NEW MASH W-BEAM TERMINAL SECTION
NEW GUARDRAIL END SECTION WIDENING

(22) 311+79.00 TO 315+04.00 RT
REMOVE GUARDRAIL

311+91.50 TO 314+97.75 RT
NEW MGS GUARDRAIL
2 NEW MASH W-BEAM TERMINAL SECTION
NEW GUARDRAIL END SECTION WIDENING

0+00.00 TO 4+74.75 LT (H-1 RAMP)
ADD. SURFACING (TURN LANE)
CADD AREA = 414.50 SQYD

312+70.00 TO 314+20.00 LT
PAVEMENT REPLACEMENT
- SEE DETAIL

(23) 43+80.25 TO 46+88.04 RT
(H-LINE - SILVER BOW INTERCHANGE)
EX. GUARDRAIL - DO NOT DISTURB

(24) 43+98.08 TO 46+58.24 LT
(H-LINE - SILVER BOW INTERCHANGE)
EX. GUARDRAIL - DO NOT DISTURB

(25) 43+61.34 TO 44+01.87 LT
(H-LINE - SILVER BOW INTERCHANGE)
EX. JERSEY RAIL - DO NOT DISTURB

(26) 0+66.37 TO 1+46.44 RT
(H-1 RAMP - SILVER BOW INTERCHANGE)
EX. GUARDRAIL - DO NOT DISTURB

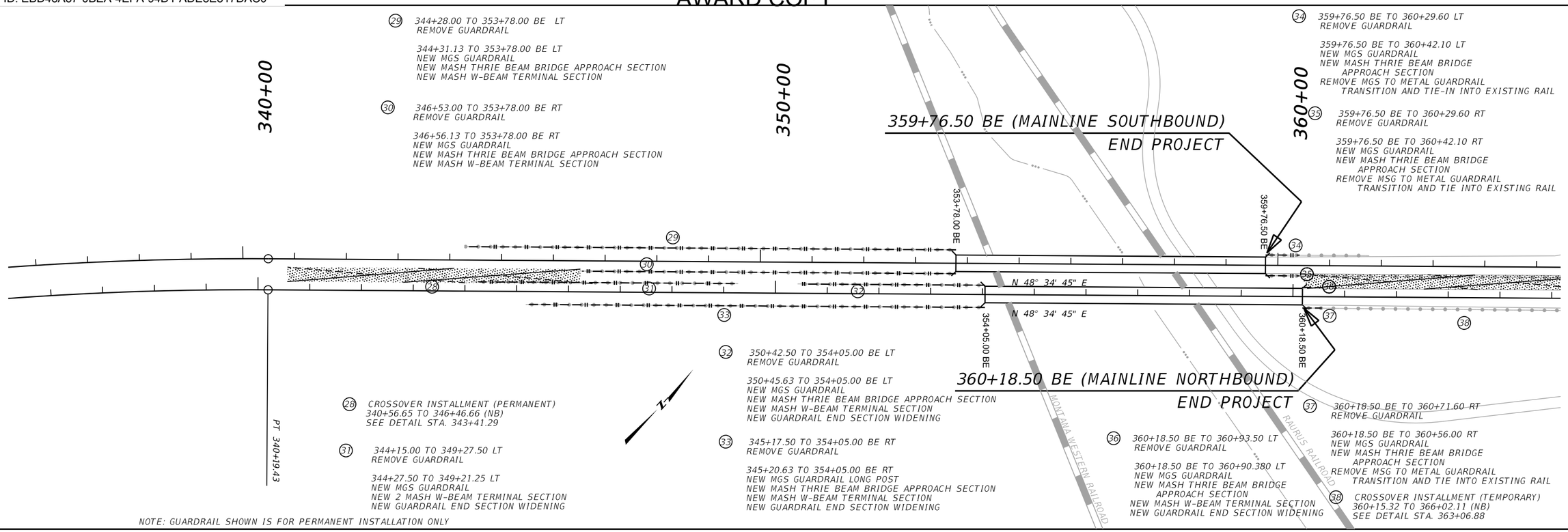
(27) REMOVE AND INSTALL
NEW CATTLE GUARDS
H-LINE 42+59 (48' LONG) EXISTING IS 43' LONG
H-LINE 47+55 (24' LONG)

NOTE: GUARDRAIL SHOWN IS FOR PERMANENT INSTALLATION ONLY

3	MONTANA Department of Transportation	C:\DGN\9462000rdpln002.dgn	DESIGNED BY B. BOONE	10/20/2021	ROAD PLANS	BUXTON - NORTH & SOUTH	IM 15-2(130)116
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29 344+28.00 TO 353+78.00 BE LT
REMOVE GUARDRAIL

344+31.13 TO 353+78.00 BE LT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE APPROACH SECTION
NEW MASH W-BEAM TERMINAL SECTION

30 346+53.00 TO 353+78.00 BE RT
REMOVE GUARDRAIL

346+56.13 TO 353+78.00 BE RT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE APPROACH SECTION
NEW MASH W-BEAM TERMINAL SECTION

28 CROSSOVER INSTALLMENT (PERMANENT)
340+56.65 TO 346+46.66 (NB)
SEE DETAIL STA. 343+41.29

31 344+15.00 TO 349+27.50 LT
REMOVE GUARDRAIL

344+27.50 TO 349+21.25 LT
NEW MGS GUARDRAIL
NEW 2 MASH W-BEAM TERMINAL SECTION
NEW GUARDRAIL END SECTION WIDENING

NOTE: GUARDRAIL SHOWN IS FOR PERMANENT INSTALLATION ONLY

32 350+42.50 TO 354+05.00 BE LT
REMOVE GUARDRAIL

350+45.63 TO 354+05.00 BE LT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE APPROACH SECTION
NEW MASH W-BEAM TERMINAL SECTION
NEW GUARDRAIL END SECTION WIDENING

33 345+17.50 TO 354+05.00 BE RT
REMOVE GUARDRAIL

345+20.63 TO 354+05.00 BE RT
NEW MGS GUARDRAIL LONG POST
NEW MASH THRIE BEAM BRIDGE APPROACH SECTION
NEW MASH W-BEAM TERMINAL SECTION
NEW GUARDRAIL END SECTION WIDENING

34 359+76.50 BE TO 360+29.60 LT
REMOVE GUARDRAIL

359+76.50 BE TO 360+42.10 LT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE
APPROACH SECTION
REMOVE MGS TO METAL GUARDRAIL
TRANSITION AND TIE-IN INTO EXISTING RAIL

35 359+76.50 BE TO 360+29.60 RT
REMOVE GUARDRAIL

359+76.50 BE TO 360+42.10 RT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE
APPROACH SECTION
REMOVE MSG TO METAL GUARDRAIL
TRANSITION AND TIE INTO EXISTING RAIL

36 360+18.50 BE TO 360+93.50 LT
REMOVE GUARDRAIL

360+18.50 BE TO 360+90.380 LT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE
APPROACH SECTION
NEW MASH W-BEAM TERMINAL SECTION
NEW GUARDRAIL END SECTION WIDENING

37 360+18.50 BE TO 360+71.60 RT
REMOVE GUARDRAIL

360+18.50 BE TO 360+56.00 RT
NEW MGS GUARDRAIL
NEW MASH THRIE BEAM BRIDGE
APPROACH SECTION
REMOVE MSG TO METAL GUARDRAIL
TRANSITION AND TIE INTO EXISTING RAIL

38 CROSSOVER INSTALLMENT (TEMPORARY)
360+15.32 TO 366+02.11 (NB)
SEE DETAIL STA. 363+06.88

3 / 1	MONTANA Department of Transportation	C:\DGN\9462000rdpln002.dgn	DESIGNED BY B. BOONE	10/20/2021	ROAD PLANS	BUXTON - NORTH & SOUTH	IM 15-2(130)116
		4/25/2023	REVIEWED BY K. MUELLER	12/2/2022			
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ASSOCIATED PROJECT AGREEMENT NUMBERS	
P.E.	IM 15-2(129)116

BRIDGE IDENTIFICATION	
MDT STR ID	NBI NUMBER
01095	I00015116+03161
01096	I00015116+03162
01098	I00015120+06971
01099	I00015120+06972

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS AND QUANTITIES

FEDERAL AID PROJECT IM 15-2(130)116

BUXTON-NORTH & SOUTH

SILVER BOW COUNTY

SCALES SHOWN ON BRIDGE PLANS SHEETS
ARE FOR HALF SIZE (11X17) PRINTS
FULL SIZE PRINTS ARE APPROXIMATELY TWICE
ORIGINAL SCALE

LIST OF DRAWINGS

SHEET NO.	DWG. NO.	TITLE
B1	28000	LIST OF DRAWINGS & ESTIMATED BRIDGE PLAN QUANTITIES
B2	28001	GENERAL NOTES AND BRIDGE DECK REPAIR
B3	28002	REMOVE GUARD ANGLE
B4	28003	REVISE CONCRETE BARRIER RAIL - BR
B5	28004	CONCRETE BARRIER RAIL DETAILS
B6	28005	BARRIER REINFORCING STEEL PLACEMENT DIAGRAM
B7	28006	REVISE CONCRETE BARRIER END - BR
B8	28007	REVISE CONCRETE BARRIER END DETAILS & DECK JOINTS
B9	28008	PAINT EXISTING STRUCTURAL STEEL
B10	28009	PAINT EXISTING STRUCTURAL STEEL DETAILS

ESTIMATED BRIDGE PLAN QUANTITIES

MDT I.D. STRUCTURE NUMBER	FEATURE INTERSECTED	GENERAL LAYOUT DRAWING NUMBER	MISCELLANEOUS ITEMS - REMOVAL (LUMP SUM)	REMOVE GUARD ANGLE (LN.FT.)	TRANSVERSE DECK GROOVING (LN.FT.)	BRIDGE DECK CRACK SEAL (YD²)	PAINT EXISTING STRUCTURAL STEEL (YD²)	EXPANSION JOINTS PRECOMPRESSED (LN.FT.)	BRIDGE DECK MILLING (YD²)	CLASS A BRIDGE DECK REPAIR (YD²)	CLASS B BRIDGE DECK REPAIR (YD²)	CONCRETE - CLASS OVERLAY (YD²)	* ESTIMATED OVERLAY CONCRETE VOLUME (YD³)	REVISE CONCRETE BARRIER RAIL - BR (LN.FT.)	REVISE CONCRETE BARRIER END - BR (EACH)
01095	INT BUXTON - BUXTON RD	10675		83.0	563.2	594.8			587.9			587.9	16.5	261.0	
01096	INT BUXTON - BUXTON RD	10675		83.0	563.2	594.8			587.9			587.9	16.5	261.0	
01098	LOCAL - CREEK - RARUS RR	4576	0.5			1912.6	182.1	107.0		6.0					4.0
01099	LOCAL - CREEK - RARUS RR	4590	0.5			1865.9	182.1	107.0		10.0					4.0
	PROJECT TOTAL		1.0	166.0	1126.4	4968.1	364.2	214.0	1175.8	16.0	5.0	1175.8	33.0	522.0	8.0

NOTE: Specific Class B Bridge Deck Repair areas are not identified in the contract. Class B Bridge Deck Repair quantities are provided as a contingency. The Project Manager will indentify any Class B Bridge Deck Repair areas if they are needed.

* NOTE: Estimated overlay concrete volume will not be measured for payment. The quantity shown will be used to determine overrun quantity for payment, if applicable.

SHEET NO.
B1

LIST OF DRAWINGS & ESTIMATED BRIDGE PLAN QUANTITIES

REVISED	REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED	11-15-22	5-11-22	5-9-22
				A.E.K.	D.G.G.	D.M.P			

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1/13/2023 12:29:55 PM

MONTANA Department of Transportation
BRIDGE BUREAU

UPN NUMBER
9462000

DRAWING NO.
28000

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GENERAL NOTES

WORK SITE VERIFICATION:

1. Plans were prepared from original drawings and as-built drawings. No additional survey information was procured for this project. Existing structure dimensions may vary from those shown on the drawings. Verify all dimensions necessary to complete the work.

2. Obtain approval of shop plans from the State of Montana, Department of Transportation before beginning fabrication. If the dimensions and details of the existing structure are not as shown on the plans, vary construction as necessary to best suit existing conditions and the nature of the intended work.

SPECIFICATIONS:

1. The design was performed in accordance with the AASHTO LRFD Bridge Design Specifications, 9th Edition, 2020.

2. The Montana Department of Transportation Standard and Supplemental Specifications for road and bridge construction 2020, and the Special Provisions govern unless otherwise noted. The awarded contract will specify the version of the Standard Specifications used on this project.

REINFORCING STEEL:

1. Unless specified otherwise on the drawings, the minimum concrete cover measured from the face of the concrete to the face of any reinforcing steel is 2" except as noted below:

Bottom of Slab	1"
Top of Slab	2 ½"
Bottom of Abutment Caps	3"
Concrete Barriers and Curbs	1 ½"

Concrete cover to any tie bar is ½" less than what is listed above.

2. Use new deformed type reinforcing steel meeting the requirements of AASHTO M 31 Grade 60.

3. The suffix "E" denotes epoxy coated reinforcing steel.

4. Replace existing reinforcing steel damaged during construction that is called to remain in place at no additional cost to the State.

5. Include the cost of cleaning existing reinforcing steel in associated items of work.

ACRONYMS AND ABBREVIATIONS:

1. N.F. Denotes Near Face.

2. F.F. Denotes Fill Face.

3. E.F. Denotes Each Face.

OPENING TO TRAFFIC:

1. Do not allow traffic onto the bridges until all concrete has reached a minimum compressive strength of 3500 psi or as approved by the design engineer.

BRIDGE DECK REPAIR:

1. Survey the existing deck and finished grade before milling the bridge deck.

2. See the Standard Specifications for allowable deck repair concrete options.

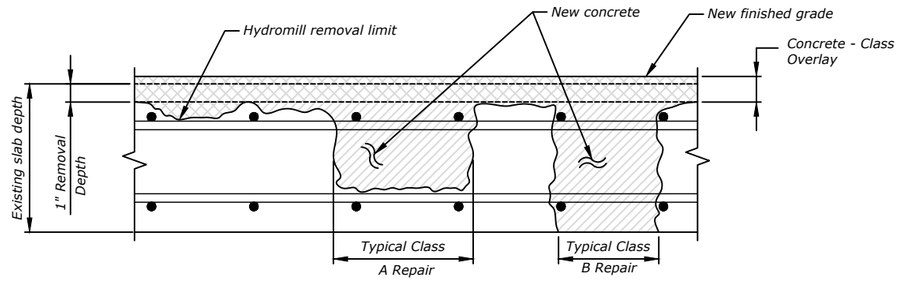
3. Field measured deck repair quantities may vary from the quantities shown on plans.

4. Repair all deck joint headers prior to installing the new precompressed joint seals, where applicable.

BRIDGE DECK OVERLAY

MDT STUCTURE ID NUMBER	DECK TREATMENT	CONCRETE REMOVAL DEPTH	MINIMUM OVERLAY THICKNESS	GRADE RAISE	* BRIDGE DECK CRACK SEAL	EXISTING ROADWAY SECTION
01095	MODIFIED CONCRETE OVERLAY	1"	1½"	½"	YES	2%
01096		1"	1½"	½"	YES	2%

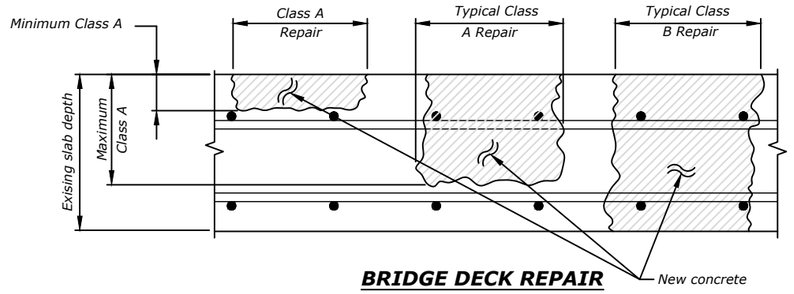
* Apply a Bridge Deck Crack Seal to the concrete overlay no sooner than 28-days from the placement of the overlay or as allowed by the crack seal manufacturer. Transverse deck groove after applying the bridge deck crack seal.



NOTE: Reinforcing steel may be located above the milling limit.

BRIDGE DECK REPAIR AND CONCRETE OVERLAY

No Scale
(01095, 01096)



BRIDGE DECK REPAIR

No Scale
(01098, 01099)

SHEET NO. B2

GENERAL NOTES AND BRIDGE DECK REPAIR

SCALE: No Scale

PROJECT NAME **BUXTON-NORTH & SOUTH**

MDT STRUCTURE ID **01095, 01096, 01098, 01999**

FEDERAL AID PROJECT **IM 15-2(130)116**

COUNTY **SILVER BOW**

CHECKED	A.E.K.	11-15-22
DRAWN	D.G.G.	5-11-22
DESIGNED	D.M.P.	5-9-22

REVISED
REVISED
REVISED
REVISED

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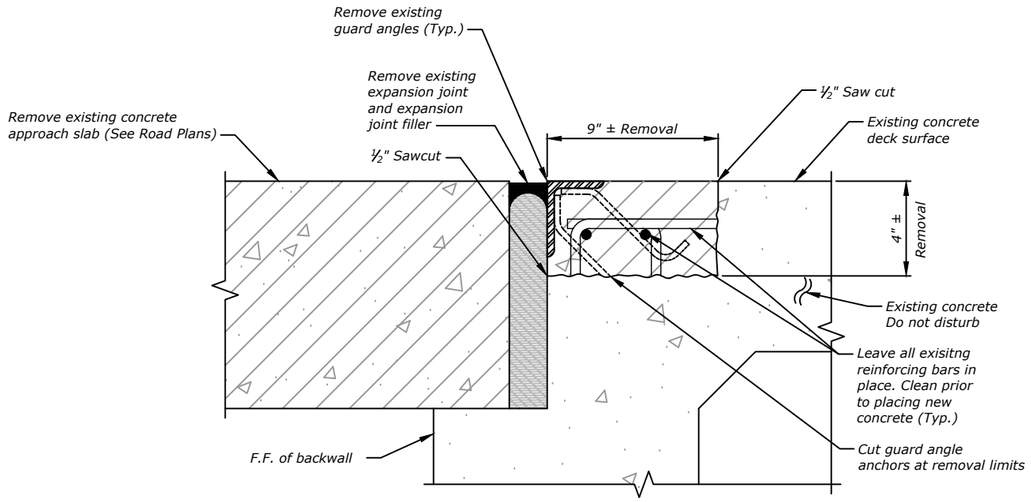
MONTANA Department of Transportation
BRIDGE BUREAU

UPN NUMBER 9462000

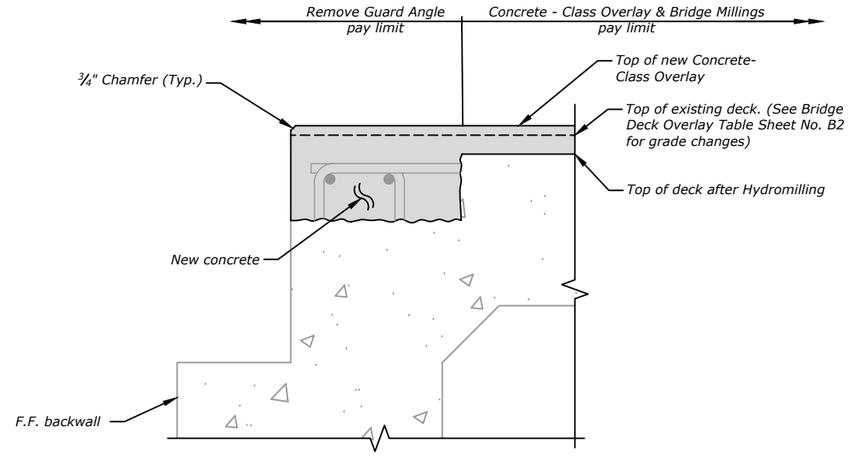
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EXISTING GUARD ANGLE REMOVAL AT BRIDGE END



NEW BRIDGE END DETAIL

GUARD ANGLE REMOVAL DETAILS

(01095, 01096)

NOTE: If two transverse reinforcing bars are not present within 3" of top of the slab, place new epoxy coated #4 transverse bars as necessary so there are two bars within the repair area. Ensure new bars have a minimum 1 ½" clear cover.

NOTE: Include all costs associated with guard angle removal and asphalt or subgrade removal and replacement in the unit price bid for Remove Guard Angle.

SHEET NO. B3

REMOVE GUARD ANGLE

SCALE: No Scale

PROJECT NAME BUXTON-NORTH & SOUTH

MDT STRUCTURE ID 01095, 01096

FEDERAL AID PROJECT IM 15-2(130)116

COUNTY SILVER BOW

REVISED			
REVISED			
REVISED			
REVISED			
CHECKED	A.E.K.	11-15-22	
DRAWN	D.G.G.	5-11-22	
DESIGNED	D.M.P.	5-9-22	9462000BRREH001.dwg \ SUN002

MONTANA Department of Transportation

BRIDGE BUREAU

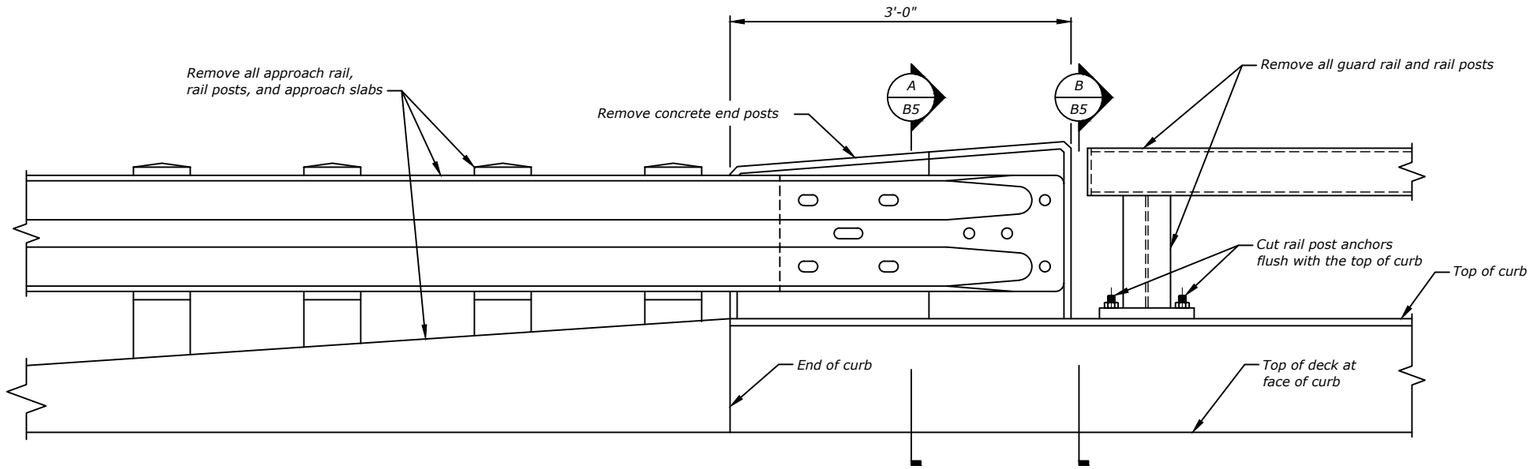
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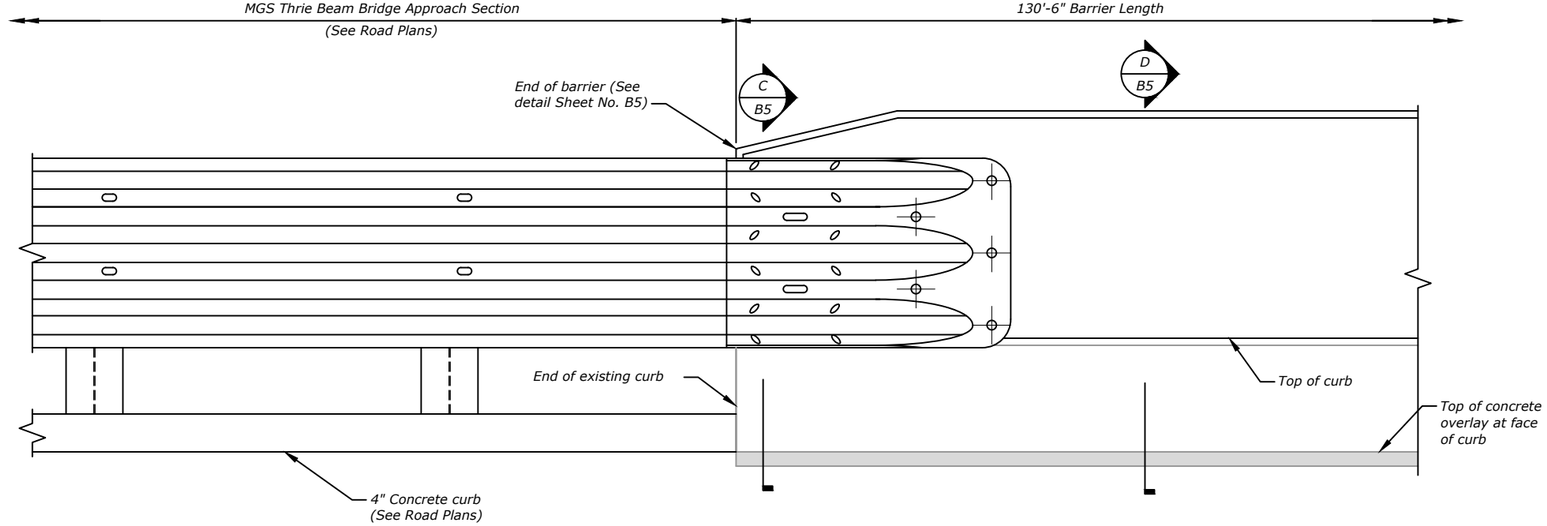
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AWARD COPY



EXISTING PARTIAL ELEVATION



NEW PARTIAL ELEVATION

SHEET NO.
B4

REVISE CONCRETE BARRIER RAIL - BR

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

PROJECT NAME
BUXTON-NORTH & SOUTH

MDT STRUCTURE ID
01095, 01096

FEDERAL AID PROJECT
IM 15-2(130)116

COUNTY
SILVER BOW

REVISED				CHECKED	A.E.K.	11-15-22
REVISED				DRAWN	D.G.G.	5-11-22
REVISED				DESIGNED	D.M.P.	5-9-22

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MONTANA Department of Transportation
BRIDGE BUREAU

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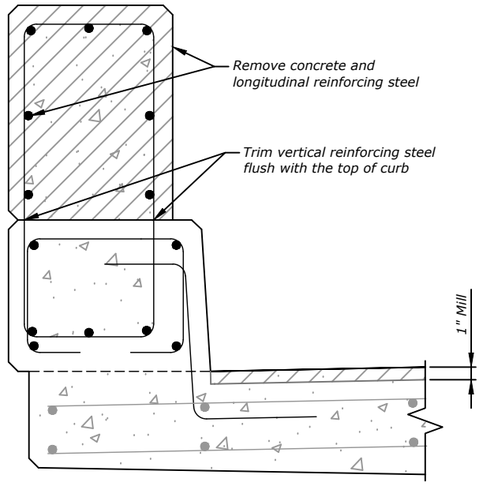
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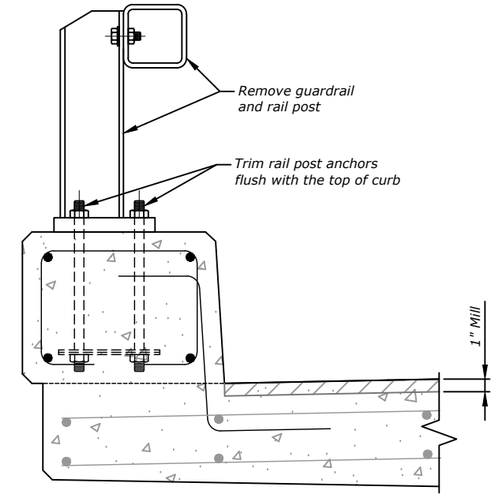
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NOTES

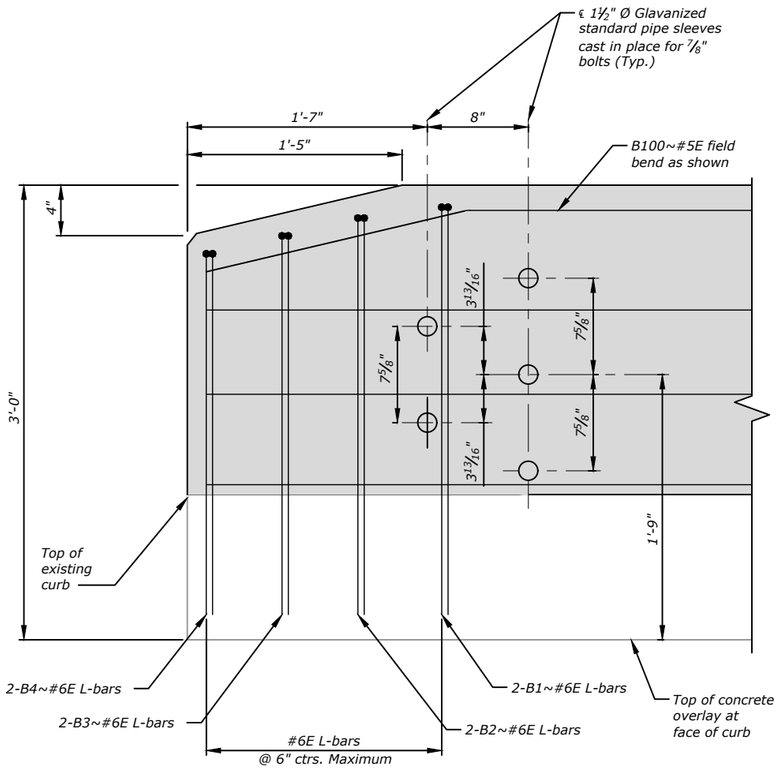
1. Anchor all #6E L-bars into the existing curb using an epoxy adhesive. (See Special Provisions)
2. Coat the trimmed ends of rail post anchors with a cold galvanizing spray.



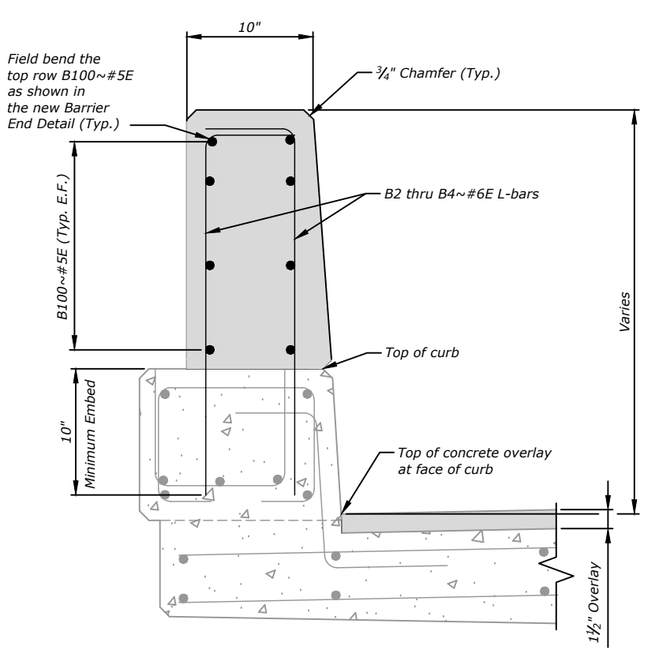
A B4 **EXISTING CONCRETE ENDPOST**



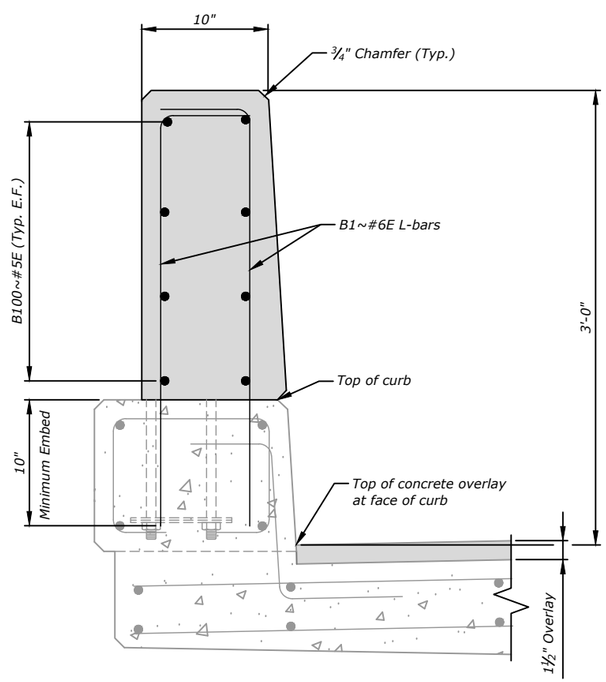
B B4 **EXISTING GUARDRAIL ON CURB**



NEW BARRIER END



C B4 **NEW BARRIER AT END OF CURB**



D B4 **NEW BARRIER ON CURB**

SHEET NO. B5

CONCRETE BARRIER RAIL DETAILS

SCALE: 1" = 1'-0"

PROJECT NAME **BUXTON-NORTH & SOUTH**

MDT STRUCTURE ID **01095, 01096**

FEDERAL AID PROJECT **IM 15-2(130)116**

COUNTY **SILVER BOW**

A.E.K.	11-15-22	REVISED
D.G.G.	5-11-22	REVISED
D.M.P.	5-9-22	REVISED
DESIGNED		REVISED
DRAWN		REVISED
CHECKED		REVISED

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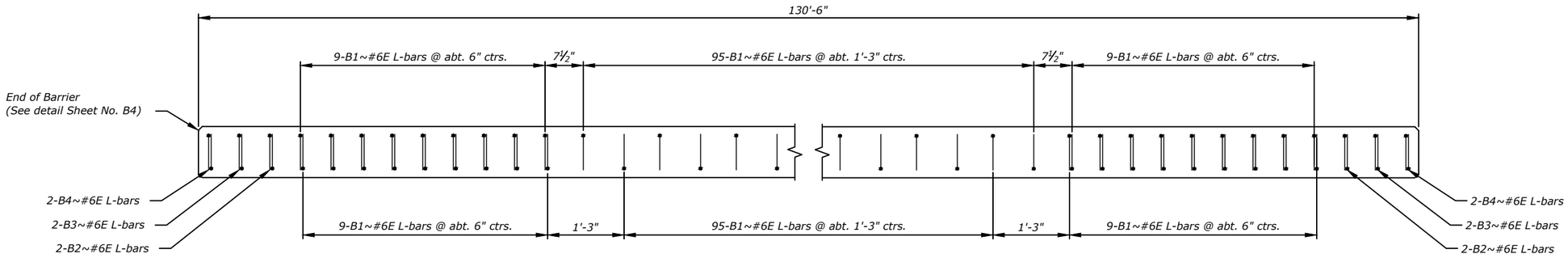
MONTANA Department of Transportation — BRIDGE BUREAU

UPN NUMBER 9462000

DRAWING NO. 28004

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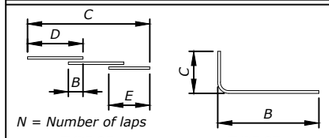


BARRIER REINFORCING STEEL PLACEMENT DIAGRAM

BILL OF REINFORCING STEEL
01095, 01096

(ONE STRUCTURE ONLY)

(ALL DIMENSIONS ARE OUT TO OUT)



N = Number of laps

TYPE 27 TYPE 37

Mark	Size	No.	Type	Length	A	B	C	D	E	G	N
B100	#5E	16	27	136'-3"		3'-0"	130'-3"	60'-0"	16'-3'		2
B1	#6E	452	37	3'-4"		2'-9"	O'-7"				
B2	#6E	8	37	3'-3"		2'-8"	0'-7"				
B3	#6E	8	37	3'-1½"		2-6½"	0'-7"				
B4	#6E	8	37	3-0½"		2-5½"	0'-7'				

NOTE: A lap length of 3'-0" has been provided. A Minimum lap length of 2'-6" is required.

SHEET NO.
B6

BARRIER REINFORCING STEEL PLACEMENT DIAGRAM

SCALE: No Scale

PROJECT NAME
BUXTON-NORTH & SOUTH

MDT STRUCTURE ID
01095, 01096

FEDERAL AID PROJECT
IM 15-2(130)116

COUNTY
SILVER BOW

REVISED	REVISED	REVISED	REVISED				CHECKED	DRAWN	DESIGNED	11-15-22	5-11-22	5-9-22
							A.E.K.	D.G.G.	D.M.P.			

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MONTANA Department of Transportation

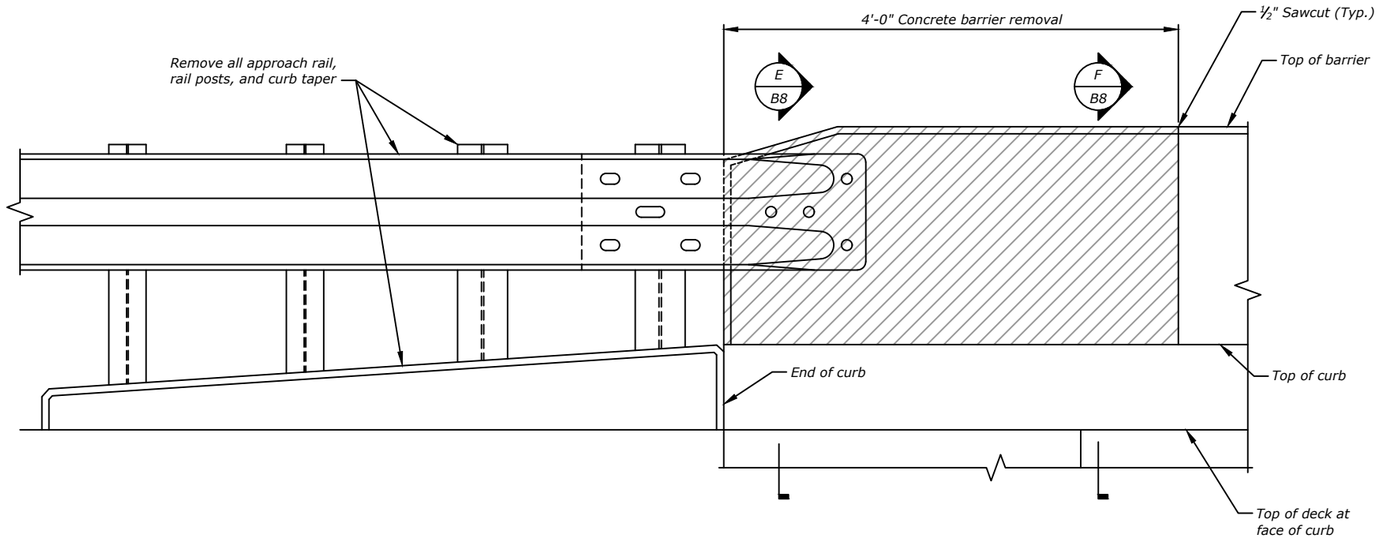
BRIDGE BUREAU

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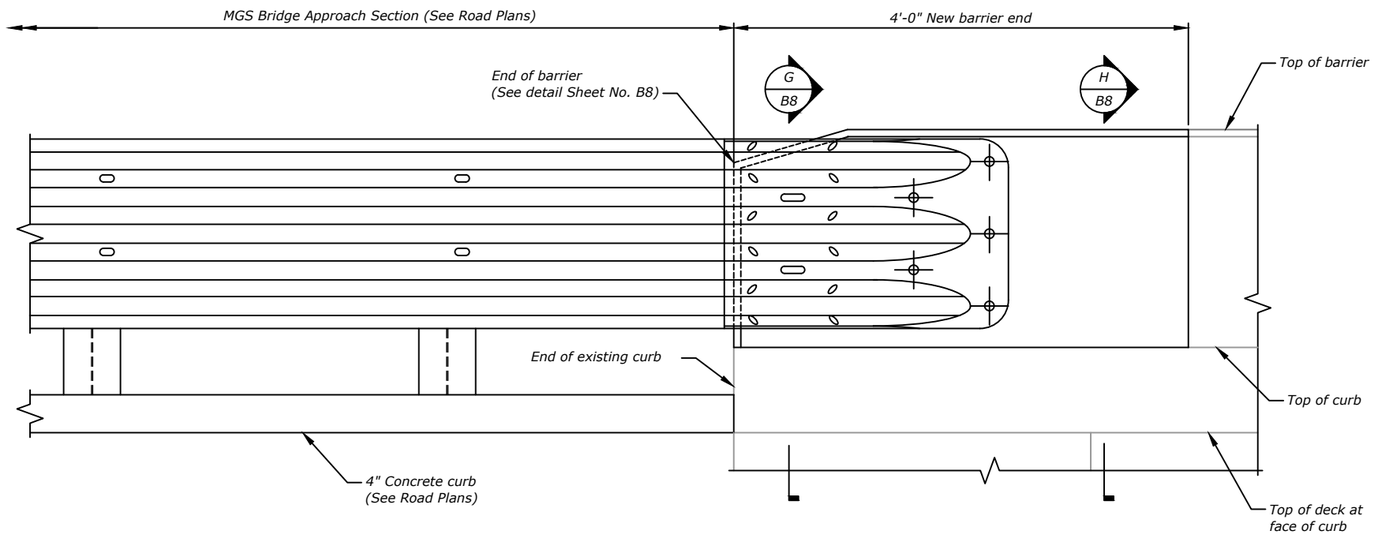
UPN NUMBER
9462000

DRAWING NO.
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EXISTING PARTIAL ELEVATION



NEW PARTIAL ELEVATION

SHEET NO. B7

REVISE CONCRETE BARRIER END - BR

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

PROJECT NAME **BUXTON-NORTH & SOUTH**

MDT STRUCTURE ID **01098, 01099**

FEDERAL AID PROJECT **IM 15-2(130)116**

COUNTY **SILVER BOW**

REVISED	REVISED	REVISED	REVISED	CHECKED	A.E.K.	11-15-22	9462000BRREH001.dwg \ REH004
				DRAWN	D.G.G.	5-11-22	
				DESIGNED	D.M.P.	5-9-22	

MONTANA Department of Transportation — BRIDGE BUREAU

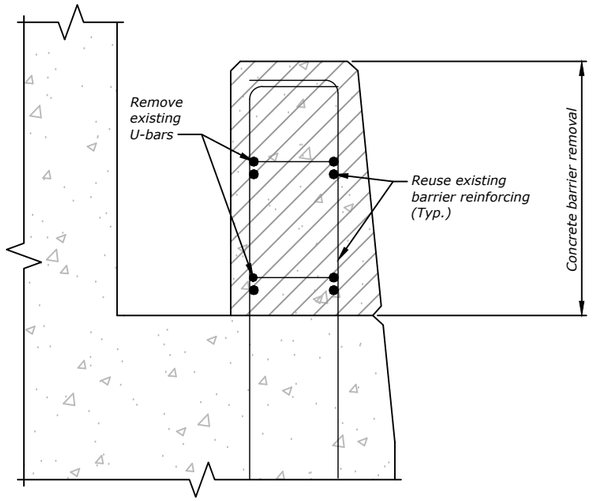
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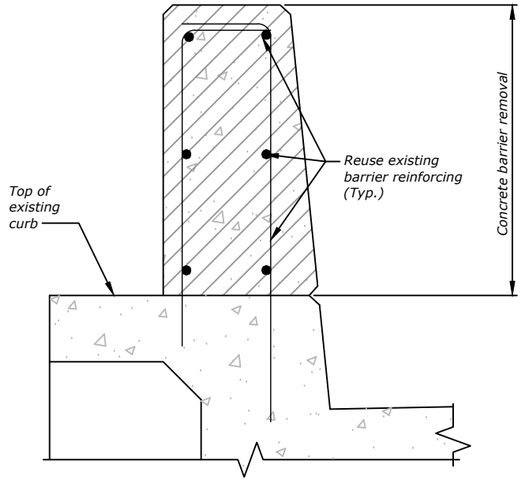
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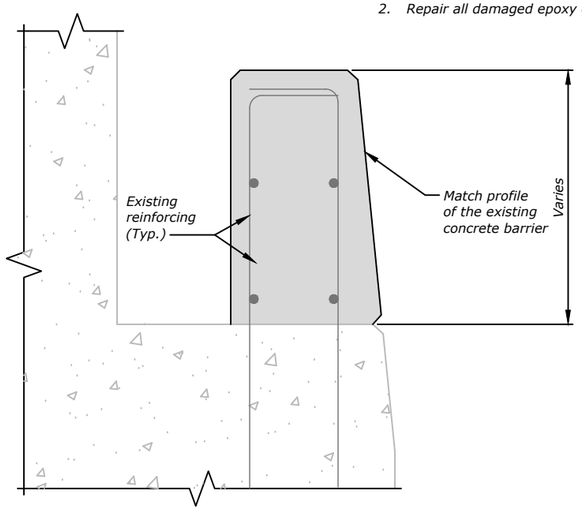
E / B7 **EXISTING BARRIER AT END OF CURB**
Scale: 1" = 1'-0"



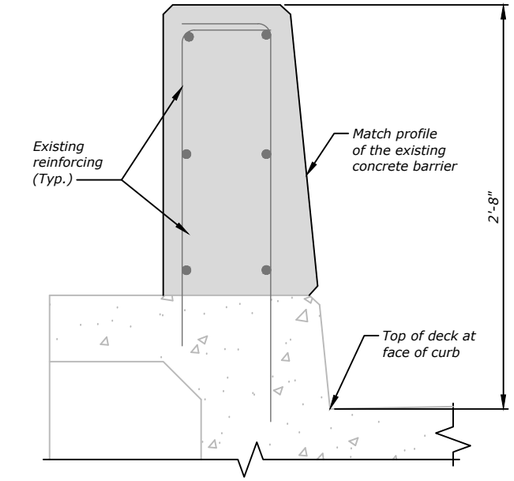
F / B7 **EXISTING GUARDRAIL ON CURB**
Scale: 1" = 1'-0"

NOTES:

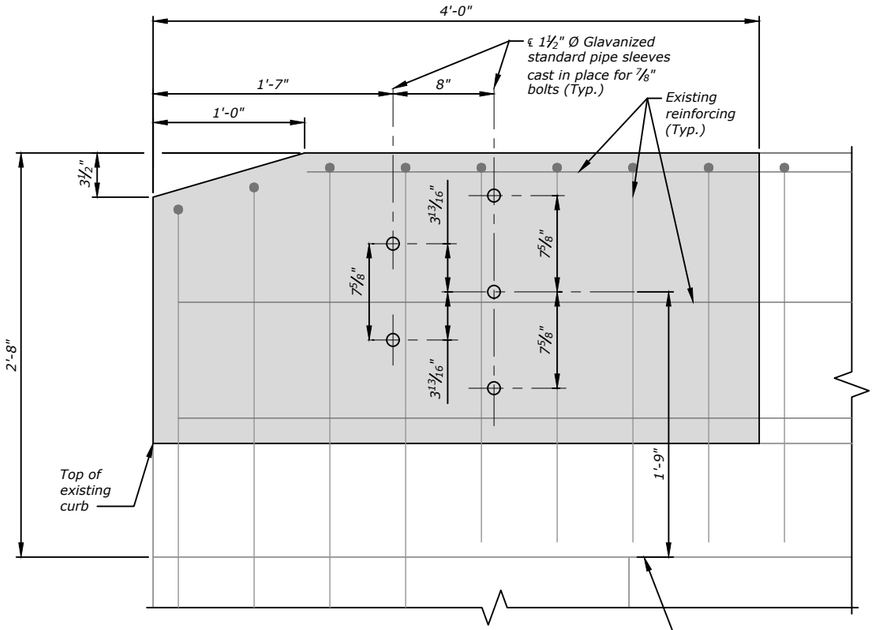
1. Clean existing reinforcing steel prior to placing new concrete.
2. Repair all damaged epoxy coating on th reinforcing steel.



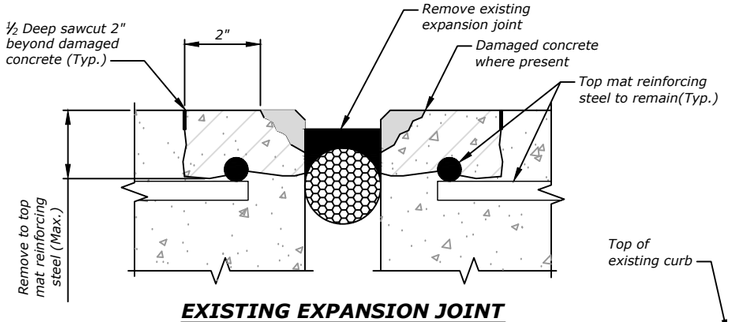
G / B7 **NEW BARRIER AT END OF CURB**
Scale: 1" = 1'-0"



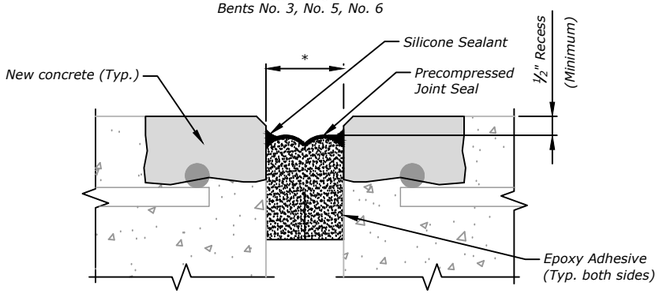
H / B7 **NEW BARRIER ON CURB**
Scale: 1" = 1'-0"



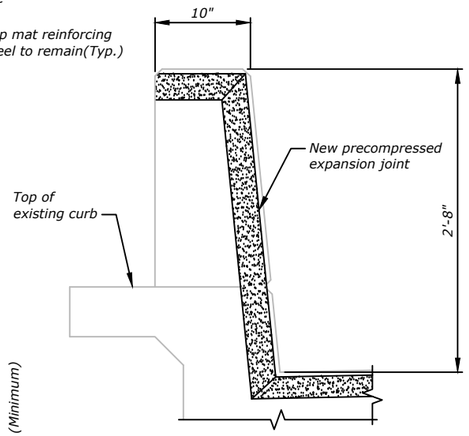
NEW BARRIER END
Scale: 1" -1'-0"



EXISTING EXPANSION JOINT
&
DAMAGED CONCRETE HEADER
No Scale
Bents No. 3, No. 5, No. 6



PRECOMPRESSED JOINT SEAL
&
CONCRETE HEADER REPAIR
No Scale
Bents No. 3, No. 5, No. 6



PRECOMPRESSED EXPANSION JOINT SECTION
Scale: ¾" = 1'-0"

*** TABLE OF EXPANSION GAPS (01098, 01099)**

LOCATION	TEMPERATURE (°F)					
	-40	0	38	60	90	113
BENT NO. 3	1¼"	2"	1⅝"	1½"	1¼"	1⅛"
BENT NO. 5	2"	1¾"	1⅝"	1½"	1⅜"	1 3/16"
BENT NO. 6	2"	1¾"	1⅝"	1½"	1⅜"	1¼"

Bent No. 3 Temperature change for every ⅛" of movement 16.6
Bent No. 5 Temperature change for every ⅛" of movement 23.5
Bent No. 6 Temperature change for every ⅛" of movement 25.8

SHEET NO.
B8

REVISE CONCRETE BARRIER END DETAILS & DECK JOINTS

SCALE: As Shown

PROJECT NAME
BUXTON-NORTH & SOUTH

MDT STRUCTURE ID
01098, 01099

FEDERAL AID PROJECT
IM 15-2(130)116

COUNTY
SILVER BOW

REVISED		A.E.K.	11-15-22
REVISED		D.G.G.	5-11-22
REVISED		D.M.P.	5-9-22
CHECKED		946200BRREH001.dwg \ REH005	
DRAWN			
DESIGNED			

MONTANA Department of Transportation
BRIDGE BUREAU
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UPN NUMBER
9462000

DRAWING NO.
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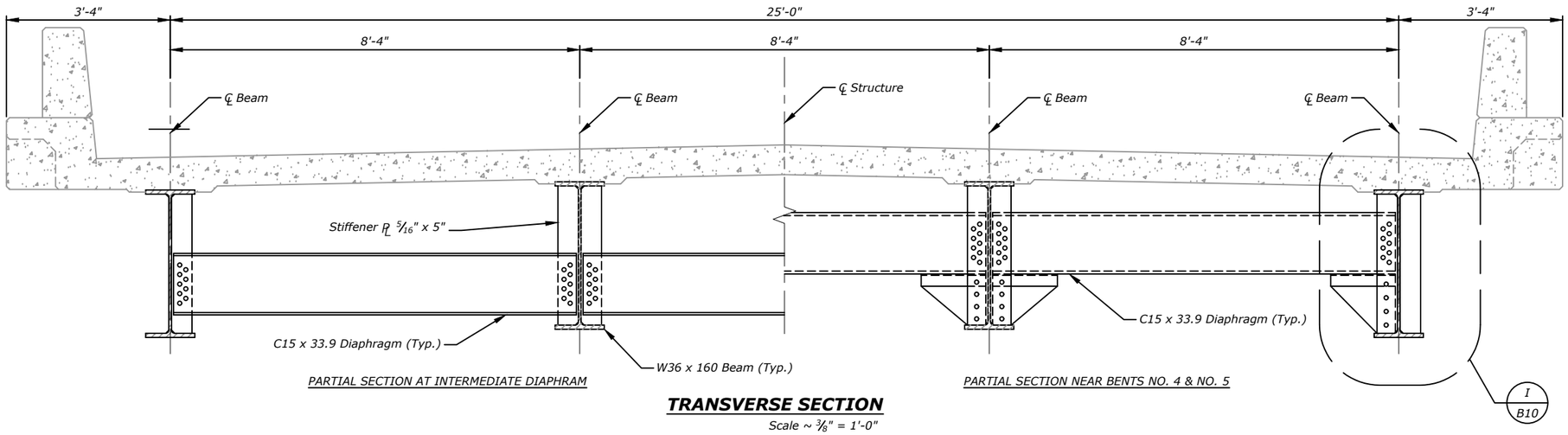
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NOTES

Full paint removal and 3 coat paint system.

New paint transition onto existing paint.

(1) Apply stripe coats of primer and intermediate coats.

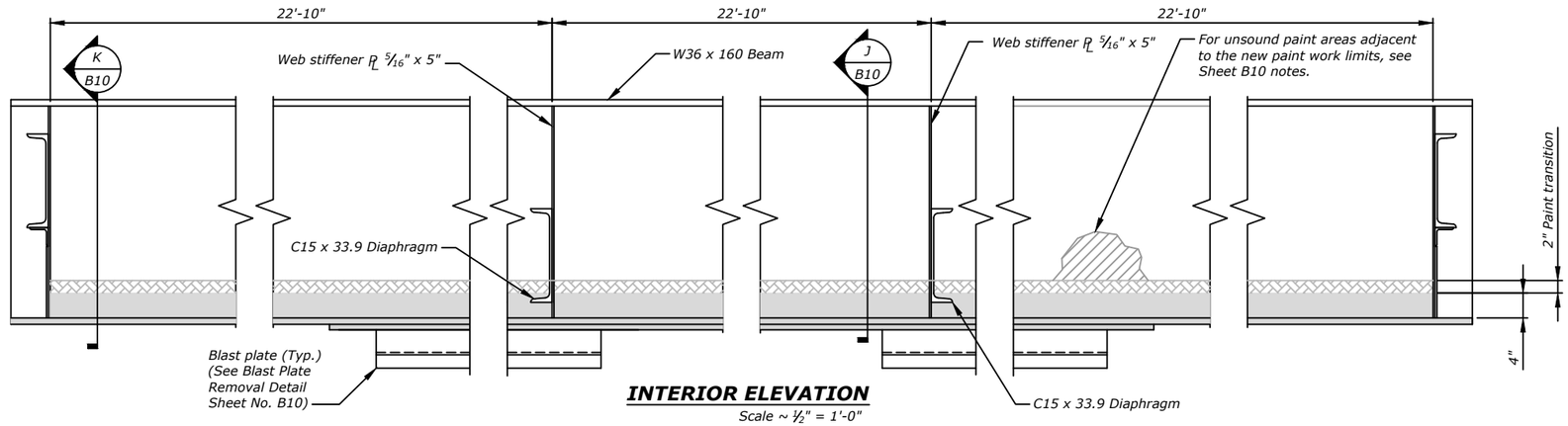


PARTIAL SECTION AT INTERMEDIATE DIAPHRAM

PARTIAL SECTION NEAR BENTS NO. 4 & NO. 5

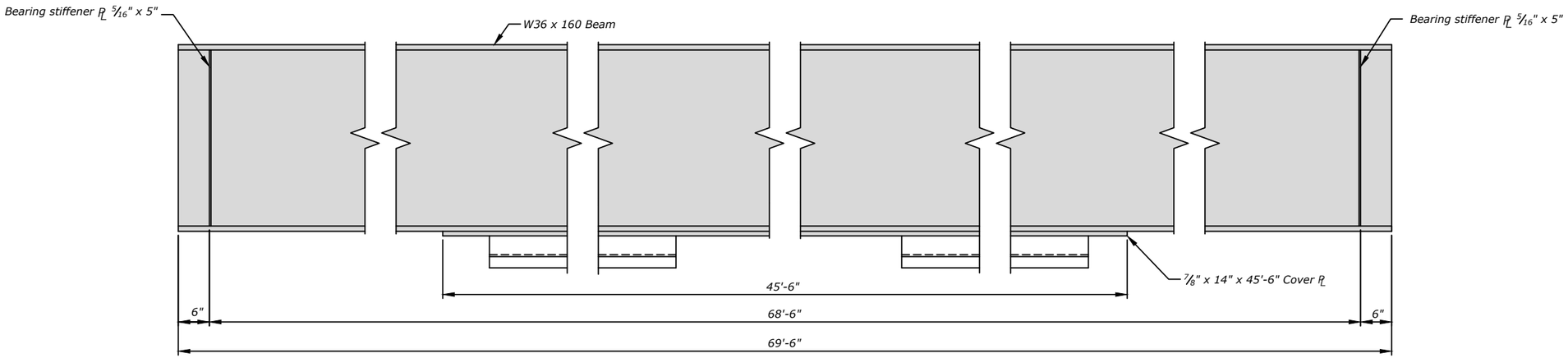
TRANSVERSE SECTION

Scale ~ 3/8" = 1'-0"



INTERIOR ELEVATION

Scale ~ 1/2" = 1'-0"



EXTERIOR ELEVATION

Scale ~ 1/2" = 1'-0"

SHEET NO.
B9

PAINT EXISTING STRUCTURAL STEEL

SCALE: As shown

PROJECT NAME
BUXTON-NORTH & SOUTH

MDT STRUCTURE ID
01098, 01099

FEDERAL AID PROJECT
IM 15-2(130)116

COUNTY
SILVER BOW

REVISED	REVISED	REVISED	REVISED	CHECKED	A.E.K.	11-15-22
				DRAWN	D.G.G.	5-11-22
				DESIGNED	D.M.P.	5-9-22

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MONTANA Department of Transportation
BRIDGE BUREAU

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UPN NUMBER
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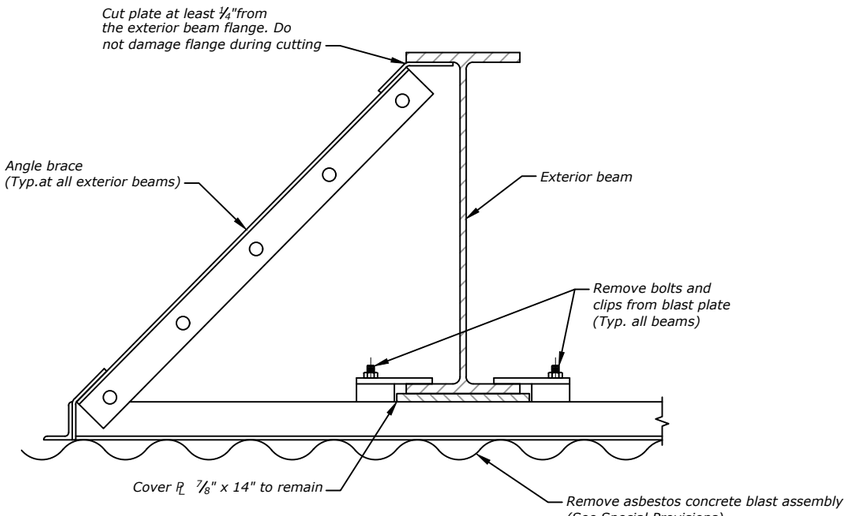
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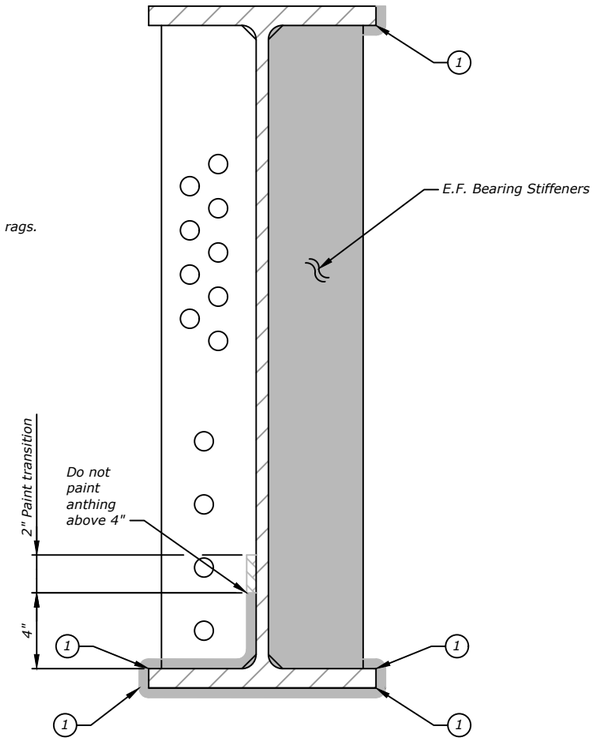
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NOTES

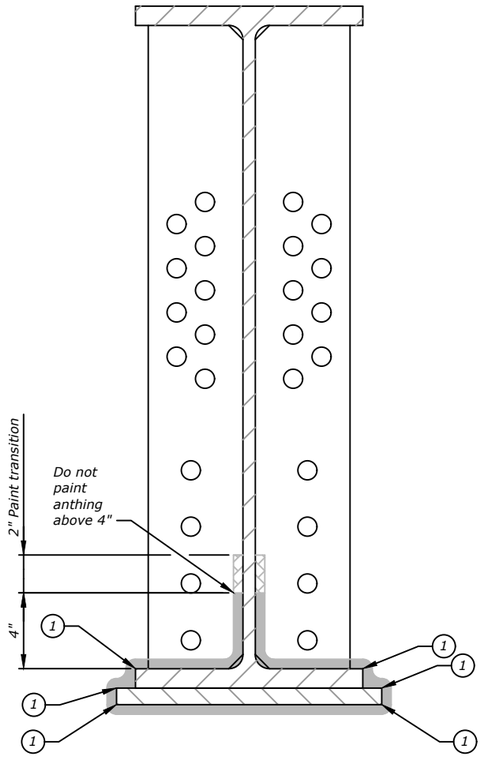
1. See Sheet B9 for paint hatching description.
2. Apply exterior beam stripe coats (1) to the entire beam lengths.
3. Apply interior stripe coats (1) between the bearing stiffeners.
4. Only prepare steel surfaces that can be primed in the same day.
5. Prime the bare steel extending 2" onto the existing coating using organic zinc primer.
6. For areas of rust or unsound coating adjacent to the paint limits, prepare these areas according to the contract documents.
7. Prepare the paint transition areas by abrading (Scuff with 180 - 220 grit sandpaper) and feathering the edge. Solvent wipe and clean with rags.



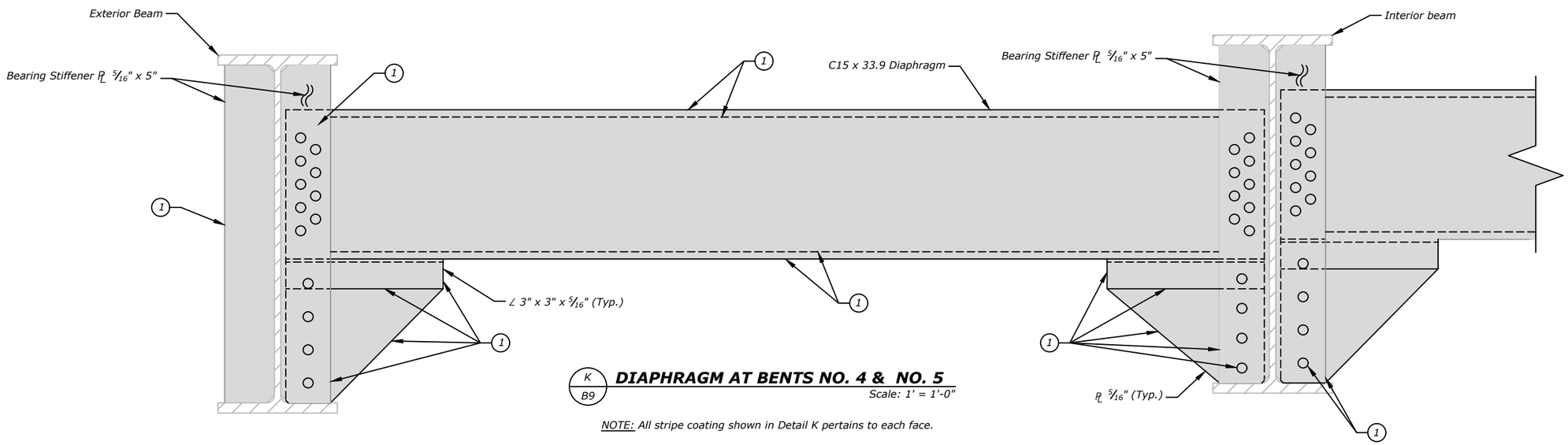
BLAST PLATE REMOVAL DETAIL
Scale: ¾" = 1'-0"



I / B9 **EXTERIOR BEAM**
Scale: 1 1/2" = 1'-0"



J / B9 **INTERIOR BEAM**
Scale: 1 1/2" = 1'-0"



K / B9 **DIAPHRAGM AT BENTS NO. 4 & NO. 5**
Scale: 1' = 1'-0"

NOTE: All stripe coating shown in Detail K pertains to each face.

SHEET NO. B10

PAINT EXISTING STRUCTURAL STEEL DETAILS

SCALE: As Shown

PROJECT NAME **BUXTON-NORTH & SOUTH**

MDT STRUCTURE ID **01098, 01099**

FEDERAL AID PROJECT **IM 15-2(130)116**

COUNTY **SILVER BOW**

	REVISED	REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED
					A.E.K.	D.G.G.	D.M.P.
					11-15-22	5-11-22	5-9-22

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MONTANA Department of Transportation — BRIDGE BUREAU

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UPN NUMBER 9462000

DRAWING NO. 28009