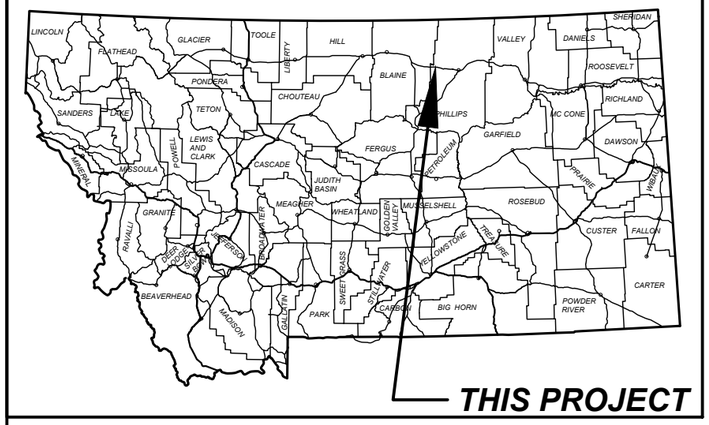
DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY



MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT STPS 204-1(6)0

RESURFACING - ASPHALT

DODSON - SOUTH

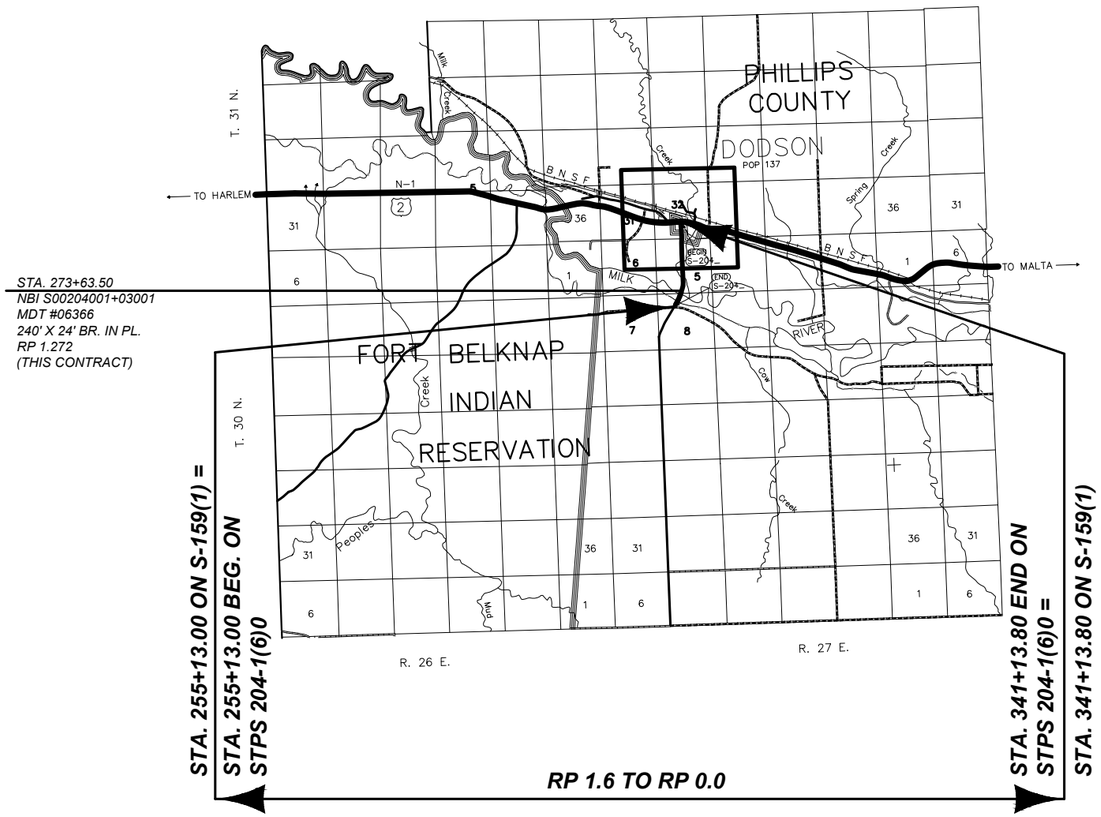
PHILLIPS

LENGTH 1.6 MILES

SURFACING SOURCES -
CONTRACTOR FURNISHED

ASSOCIATED PROJECT AGREEMENT NUMBERS	
R/W	
I.C.	
P.E.	STPS 204-1(5)0

RELATED PROJECTS
STPB 204-1(4)1



N

SHEET NO. 1

TITLE

PROJECT NAME	DODSON - SOUTH
COUNTY	PHILLIPS
PROJECT ID	STPS 204-1(6)0
UPN	10226000
CHECKED BY	JRF
REVIEWED BY	
DESIGNED BY	AB
	6/7/2023
	1/11/2023
	10226000RDTTL001.DWG

MONTANA
Department of Transportation

ROAD PLANS

7/25/2023 4:40 PM

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

TABLE OF CONTENTS

ROAD PLANS	SHEET NO.
TITLE SHEET	1
TABLE OF CONTENTS	2
NOTES	2
LINEAR & LEVEL DATA	2
TYPICAL SECTIONS	3-4
SUMMARIES	5-6
SURFACING	5
ADDITIONAL SURFACING	5
GUARDRAIL	5
MANHOLES IN PLACE	6
COLD MILLING	6
PAVEMENT MARKINGS	6
EQUIPMENT	6
DETAILS	7
CONNECTION TO PTW	7
BRIDGE END TAPER MILLING	7
SIGNING PLANS	
SUMMARY	S1
SPECIFICATIONS	S2-S4
DETAILS	S5-S7
PLANS	S8-S10
BRIDGE PLANS	
BRIDGE PLANS	B1-B4

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
ASPHALT CEMENT - GRADE S - 3/4" AGG.	= 5.4% OF PL.MIX BIT.SURF.
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)
SEAL	= 0.42 GAL. PER SQ.YARD
COVER	= 25 LBS. PER SQ.YARD

APPROACHES

PROVIDE THE FOLLOWING SURFACING:
0.15' PLANT MIX BITUMINOUS SURF.

PLANT MIX SURFACE ALL PUBLIC APPROACHES TO R/W
PLANT MIX SURFACE ALL PRIVATE APPROACHES TO R/W
FEATHER PAVING ON ALL FARM FIELD APPROACHES WITH A 12' WIDE PLANT MIX STRIP ADJACENT AND PARALLEL TO THE ROADWAY

APPROACHES (FOR INFORMATION ONLY)

STATION	TYPE	linear feet				PROPOSED SURFACE	tons	gallons	REMARKS
		WIDTH	RADIUS #		LENGTH		COMM PLANT MIX BIT. SURF. 3/4" PG 58V-34	EMULS. ASPHALT TACK	
			LEFT	RIGHT					
255+75	Farm Field	26	11	16	12	12.0' PMS STRIP	4	2	LT.
260+23	Farm Field	13	14	16	12	12.0' PMS STRIP	3	1	LT.
260+23	Farm Field	15	20	20	12	12.0' PMS STRIP	3	2	RT.
266+63	Farm Field	12	15	17	12	12.0' PMS STRIP	2	1	LT.
266+63	Farm Field	13	15	15	12	12.0' PMS STRIP	2	1	RT.
267+63	Farm Field	15	25	25	12	12.0' PMS STRIP	6	2	LT.
267+63	Farm Field	20	25	25	12	12.0' PMS STRIP	7	3	RT.
268+83	Farm Field	13	17	28	12	12.0' PMS STRIP	3	2	LT.
268+83	Farm Field	17	17	23	12	12.0' PMS STRIP	3	2	RT.
279+59	Farm Field	23	17	52	12	12.0' PMS STRIP	3	2	RT.
299+24	Farm Field	19	12	15	12	12.0' PMS STRIP	3	2	LT.
301+09	Farm Field	16	22	33	12	12.0' PMS STRIP	4	2	RT.
312+64	Farm Field	22	22	17	12	12.0' PMS STRIP	4	2	RT.
313+66	Farm Field	28	21	15	12	12.0' PMS STRIP	5	2	LT. Within Dodson City Limits.
324+34	Farm Field	28	18	16	12	12.0' PMS STRIP	4	2	RT. Within Dodson City Limits.
SUBTOTAL	**FARM FIELD**						**56**	**28**	
279+94	Private	12	29	25	25	PAVE TO R/W	6	3	LT.
286+94	Private	10	30	26	28	PAVE TO R/W	6	3	RT.
293+59	Private	11	20	21	19	PAVE TO R/W	4	2	LT.
300+02	Private	9	31	27	26	PAVE TO R/W	5	3	RT.
327+44	Private	31	39	138	29	PAVE TO R/W	21	11	RT. Within Dodson City Limits.
336+58	Private	13	31	30	18	PAVE TO R/W	5	3	LT. Within Dodson City Limits.
340+23	Private	16	17	17	18	PAVE TO R/W	4	2	LT. Within Dodson City Limits.
SUBTOTAL	**PRIVATE**						**51**	**27**	
255+91	Public	32	47	32	42	PAVE TO R/W	20	11	RT.
322+37	Public	21	46	60	38	PAVE TO R/W	18	9	RT. Within Dodson City Limits.
326+18	Public	22	40	33	29	PAVE TO R/W	11	6	RT. Within Dodson City Limits.
330+54	Public	54	33	31	17	PAVE TO R/W	13	7	LT. Within Dodson City Limits.
337+74	Public	36	42	30	18	PAVE TO R/W	11	5	LT. Within Dodson City Limits.
337+74	Public	21	29	33	27	PAVE TO R/W	10	5	RT. Within Dodson City Limits.
SUBTOTAL	**PUBLIC**						**83**	**43**	

ALL RADII MEASURED TO FRONT OF GUTTER OR EDGE OF SHOULDER
*DIMENSIONS MEASURED IN CADD, FIELD VERIFIY AND MATCH EXISTING.

WETLANDS

WETLANDS MAY EXIST ADJACENT TO THE ROADWAY AND BEYOND THE PROJECT LIMITS. A WETLAND DELINEATION HAS NOT BEEN COMPLETED FOR THIS PROJECT. IMPACTS TO WETLAND AREAS ARE NOT ANTICIPATED IN ASSOCIATION WITH THE PROPOSED WORK. NO PERMITS HAVE BEEN OBTAINED. ANY ACTION IMPACTING WETLAND AREAS WITHOUT THE APPROPRIATE PERMITTING IS THE RESPONSIBILITY OF THE CONTRACTOR.

REFERENCE POSTS

STATIONING ON THIS PROJECT INCREASES FROM SOUTH TO NORTH. REFERENCE POSTS INCREASE FROM NORTH TO SOUTH.

COLD MILLING

ANY MILLINGS NOT USED IN THIS PROJECT ARE TO BE STOCKPILED. STOCKPILE MILLINGS AT THE ROAD INSIDE OF THE EAST ENTRANCE OF THE PHILLIPS COUNTY FAIRGROUNDS . CONTACT JOHN CARNAHAN AT OFFICE: (406) 654-2429 CELL: (406) 390-6735 OR ROB JAYNES AT (406) 654-4150 TWO WEEKS PRIOR TO ARRANGE FOR DELIVERY. ANY COSTS INCURRED ARE INCLUDED IN THE UNIT BID PRICE FOR COLD MILLINGS.

SHEET NO. 2

TABLE OF CONTENTS

PROJECT NAME: DODSON - SOUTH
COUNTY: PHILLIPS
PROJECT ID: STPS 204-1(6)0
UPN: 10226000
1/11/2023
AB
DESIGNED BY
REVIEWED BY
CHECKED BY
10226000RDTTL002.DWG

MONTANA Department of Transportation

ROAD PLANS

8/1/2023 3:15 PM

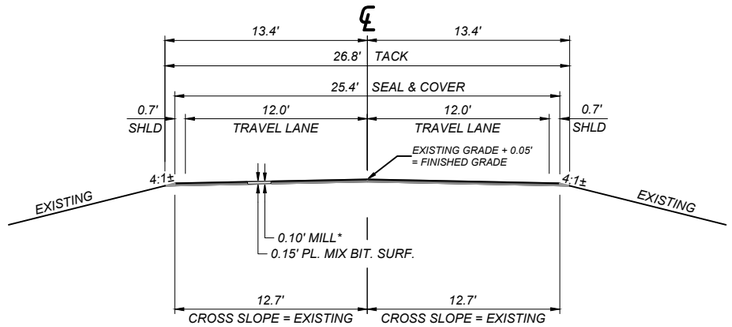
DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY

TYPICAL SECTION NO. 1

MAINLINE

255+13.00	TO	269+43.50	
269+43.50	TO	270+43.50	TRANS. TYP. NO. 1 TO TYP. NO. 2
277+83.50	TO	341+13.80	



* NO MILLING FROM STA. 266+35.00 TO STA. 267+65.00

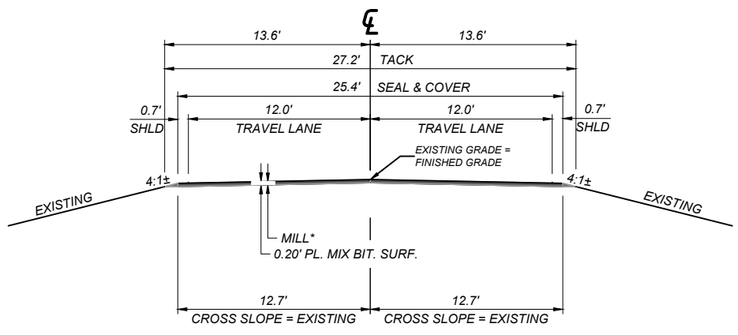
QUANTITIES					
UNIT	AGGREGATE		UNIT	BIT. MATERIAL	
	COVER	PLANT MIX		SEAL	EMULSIFIED ASPHALT TACK*
AREA square feet		3.92	square yards PER STATION	282	298
cubic yards PER STATION		14.5	tons PER STATION	0.50	
tons PER STATION		27.9	gals. PER STATION		15
square yards PER STATION	282				

* BASED ON 1 APPLICATION

TYPICAL SECTION NO. 2

MAINLINE

270+43.50	TO	271+93.50	
271+93.50	TO	272+43.50	BE TRANS. TYP. NO. 2 TO TYP. NO. 3
275+33.50	TO	276+83.50	
276+83.50	TO	277+83.50	TRANS. TYP. NO. 2 TO TYP. NO. 1



* MILLING DEPTH VARIES. SEE DETAIL.

QUANTITIES					
UNIT	AGGREGATE		UNIT	BIT. MATERIAL	
	COVER	PLANT MIX		SEAL	EMULSIFIED ASPHALT TACK*
AREA square feet		5.26	square yards PER STATION	282	302
cubic yards PER STATION		19.5	tons PER STATION	0.50	
tons PER STATION		37.6	gals. PER STATION		15
square yards PER STATION	282				

* BASED ON 1 APPLICATION

SHEET NO. 3

TYPICAL SECTIONS

PROJECT NAME: DODSON - SOUTH
COUNTY: PHILLIPS
PROJECT ID: STPS 204-1(6)0
UPN: 10226000

CHECKED BY			1/11/2023
REVIEWED BY			AB
DESIGNED BY			10226000RDTYP001.DWG

MONTANA Department of Transportation

ROAD PLANS

7/20/2023 11:38 AM

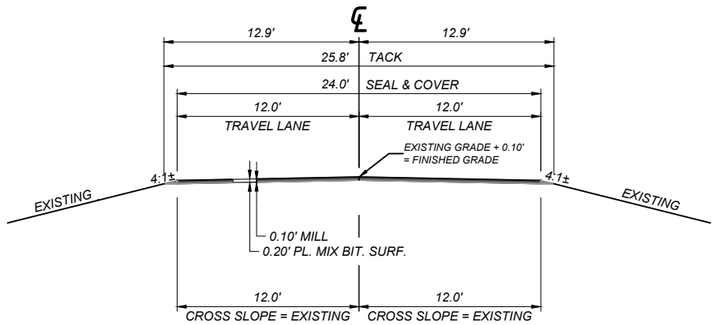
DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY

TYPICAL SECTION NO. 3

MAINLINE

272+43.50	BE		ONLY
274+83.50	BE		ONLY
274+83.50	TO	275+33.50	TRANS TYP. NO. 3 TO TYP. NO. 2



QUANTITIES					
UNIT	AGGREGATE		UNIT	BIT. MATERIAL	
	COVER	PLANT MIX		SEAL	EMULSIFIED ASPHALT TACK*
AREA square feet		4.98	square yards PER STATION	267	287
cubic yards PER STATION		18.4	tons PER STATION	0.48	
tons PER STATION		35.5	gals. PER STATION		14
square yards PER STATION	267				

* BASED ON 1 APPLICATION

SHEET NO. 4

TYPICAL SECTIONS

PROJECT NAME	DODSON - SOUTH
COUNTY	PHILLIPS
PROJECT ID	STPS 204-1(6)0
UPN	10226000
DESIGNED BY	AB
REVIEWED BY	
CHECKED BY	
6/12/2023	

MONTANA Department of Transportation

ROAD PLANS

6/12/2023 4:20 PM

10226000RDTYP001.DWG

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

SUMMARY

SURFACING

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	linear feet +	linear feet -	FOR	AGGREGATE sq. yards COVER TYPE I	AGGREGATE tons COMM PLANT MIX BIT. SURF. 3/4" PG 58V-34	BITUMINOUS MATERIAL tons EMULSIFIED ASPHALT CHFRS-2P	BITUMINOUS MATERIAL gals. EMULSIFIED ASPHALT TACK	REMARKS
255+13.00											
262+99.00 BK.	263+95.90 AH.				96.90	EQUATION					
	269+43.50	1,430.50	1,333.60				3,761	372	6.7	200	TYP. NO. 1
269+43.50	270+43.50	100.00	100.00				282	33	0.5	15	TRANS. TYP. NO 1 TO TYP. NO. 2
270+43.50	271+93.50	150.00	150.00				423	56	0.8	23	TYP. NO. 2
271+93.50	272+43.50	50.00	50.00				137	18	0.2	7	TRANS, TYP. NO. 2 TO TYP. NO. 3
	272+43.50										TYP. NO. 3. ONLY
272+43.50 BE.	274+83.50 BE.	240.00	0.00		240.00	BRIDGE					
274+83.50											TYP. NO. 3. ONLY
274+83.50	275+33.50	50.00	50.00				137	18	0.2	7	TRANS. TYP. NO. 3 TO TYP. NO. 2
275+33.50	276+83.50	150.00	150.00				423	56	0.8	23	TYP. NO. 2
276+83.50	277+83.50	100.00	100.00				282	33	0.5	15	TRANS. TYP. NO 2 TO TYP. NO. 1
277+83.50	341+13.80	6,330.30	6,330.30				17,851	1,766	31.7	950	TYP. NO. 1
						ADDITIONAL SURFACING		190		98	
TOTAL		**8,600.80**	**8,263.90**	**0.00**	**336.90**		**23,296**	**2,542**	**41.4**	**1,338**	

ADDITIONAL SURFACING (INCLUDED IN SURFACING FRAME)

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	linear feet +	linear feet -	FOR	AGGREGATE tons COMM PLANT MIX BIT. SURF. 3/4" PG 58V-34	BIT. MATERIAL gals. EMULSIFIED ASPHALT TACK	REMARKS
						PUBLIC APPROACH (1)	20	11	
						PRIVATE APPROACH (4)	21	11	
						FARM FIELD APPROACH (15)	47	24	
						PUBLIC APPROACH IN DODSON (5)	63	32	
						PRIVATE APPROACH IN DODSON (3)	30	16	
						FARM FIELD APPROACH IN DODSON (2)	9	4	
SUBTOTAL		~	~	~	~		**190**	**98**	

GUARDRAIL

STATION FROM	STATION TO	linear feet REMOVE GUARDRAIL LEFT	linear feet REMOVE GUARDRAIL RIGHT	linear feet BOX BEAM GUARDRAIL 8 FT POST LEFT	linear feet BOX BEAM GUARDRAIL 8 FT POST RIGHT	each MASH BOX BEAM TERMINAL SECTION MBEAT LEFT	each MASH BOX BEAM TERMINAL SECTION MBEAT RIGHT	each GUARDRAIL END SECTION WIDENING LEFT	each GUARDRAIL END SECTION WIDENING RIGHT	each BOX BEAM TO W-BEAM TRANSITION SECTION LEFT	each BOX BEAM TO W-BEAM TRANSITION SECTION RIGHT	each MASH THRIE-BEAM BRIDGE APPROACH SECTION LEFT	each MASH THRIE-BEAM BRIDGE APPROACH SECTION RIGHT	REMARKS
NEW RAIL														
271+63.94	272+43.50 BE.			18	18	1	1	1	1	1	1	1	1	
274+83.50 BE.	275+63.06			18	18	1	1	1	1	1	1	1	1	
REMOVE RAIL														
272+08.50	272+33.50	25.0	25.0											
274+93.50	275+18.50	25.0	25.0											
SUBTOTAL		**50.0**	**50.0**	**36**	**36**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	
TOTAL		**100.0**		**72**		**4**		**4**		**4**		**4**		

SHEET NO. 5

SUMMARY

PROJECT NAME: DODSON - SOUTH
COUNTY: PHILLIPS
PROJECT ID: STPS 204-1(6)0
UPN: 10226000

CHECKED BY			
REVIEWED BY			
DESIGNED BY	AB	1/11/2023	10226000RDSUM001.DWG

MONTANA Department of Transportation

ROAD PLANS

7/25/2023 4:39 PM

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY

SUMMARY

COLD MILLING *

STATION		sq. yards				REMARKS
FROM	TO	0.10 ft	0.10 to 0.15 ft	0.10 to 0.20 ft	0.20 ft	
255+13.00	257+13.00		596			BEG. CONNECTION.
257+13.00	266+35.00	2,457				TYP. NO. 1.
267+65.00	269+43.50	532				TYP. NO. 1
269+43.50	270+43.50			302		TRANS. TYP NO. 1. TO TYP. NO. 2.
270+43.50	271+93.50			151	302	TYP. NO. 2.
271+93.50	272+43.50			151		TRANS. TYP. NO. 2 TO TYP. NO. 3
274+83.50	275+33.50			151		TRANS. TYP. NO. 3 TO TYP. NO. 2
275+33.50	276+83.50			151	302	TYP. NO. 2.
276+83.50	277+83.50			302		TRANS. TYP. NO. 2 TO TYP. NO. 1
277+83.50	339+13.80	18,255				TYP. NO. 1.
339+13.80	341+13.80		596			END CONNECTION.
SUBTOTAL		21,244	1,192	1,208	604	
TOTAL		24,248				

* SEE DETAILS

EQUIPMENT

STATION		hours	REMARKS
FROM	TO	MOTOR GRADER	
255+75	337+74	5	CLEARING VEGETATION AT APPROACHES.
TOTAL		5	

PAVEMENT MARKINGS

ITEM	UNIT	INTERIM APPLICA-TION #	FINAL APPLICA-TION	TOTAL
STRIPING - WHITE PAINT	gallon	58		58
STRIPING - YELLOW PAINT	gallon	100		100
WORDS & SYMBOLS - WHITE PAINT	gallon	3		3
STRIPING - WHITE EPOXY	gallon		78	78
STRIPING - YELLOW EPOXY	gallon		106	106
WORDS & SYMBOLS - WHITE EPOXY	gallon		4	4
TEMPORARY STRIPING	linear feet			8,983
FINAL SWEEP AND BROOM	course mile			1.6

BASED ON 1 APPLICATION.

MANHOLES IN PLACE #*

STATION	each ADJUST MANHOLE		REMARKS
	LEFT	RIGHT	
324+34.0	1		22' LT. SANITARY SEWER.
327+48.0	1		11' LT. SANITARY SEWER.
SUBTOTAL	2	0	
TOTAL	2		

FUNDING - 100% STATE SHARE
* USE CONCRETE APRON PER DETAILED DRAWING 621-05

SHEET NO. 6

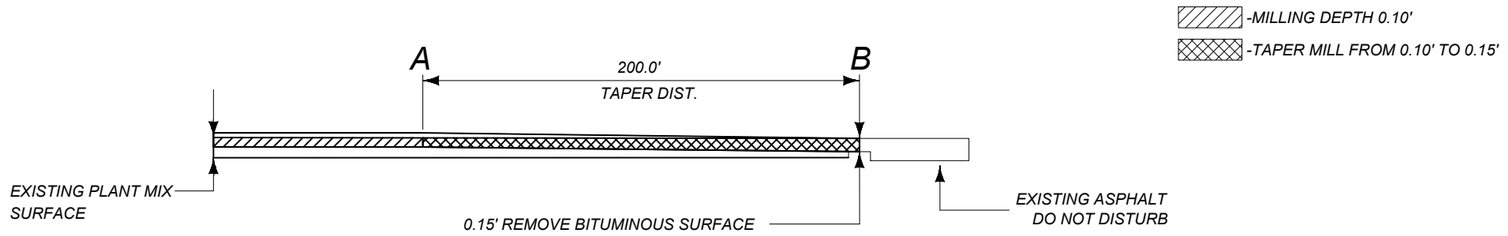
SUMMARY

PROJECT NAME: DODSON - SOUTH
COUNTY: PHILLIPS
PROJECT ID: STPS 204-1(6)0
UPN: 10226000
1/11/2023
AB
DESIGNED BY
REVIEWED BY
CHECKED BY
1022600RDSUM001.DWG

MONTANA Department of Transportation
ROAD PLANS
7/25/2023 4:39 PM

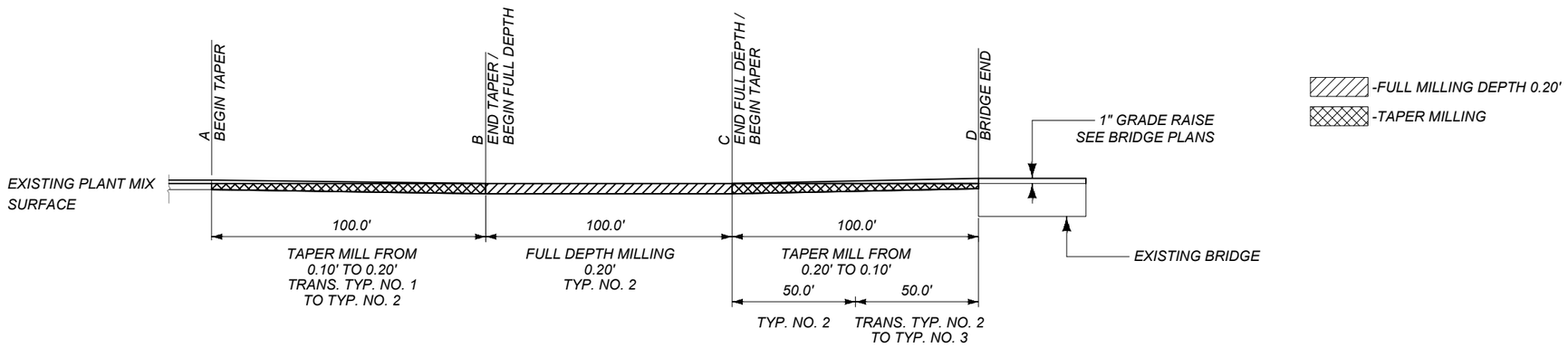
DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

CONNECTION TO PTW DETAIL



STATIONS	
A	B
257+13.00	255+13.00
339+13.80	341+13.80

BRIDGE END MILLING DETAIL



STATIONS			
A	B	C	D
269+43.50	270+43.50	271+43.50	272+43.50
277+83.50	276+83.50	275+83.50	274+83.50

SHEET NO. 7

DETAILS
CONNECTION TO PTW
BRIDGE END TAPER MILLING
(NO SCALE)

PROJECT NAME: DODSON - SOUTH
COUNTY: PHILLIPS
PROJECT ID: STPS 204-1(6)0
UPN: 10226000
CHECKED BY:
REVIEWED BY:
DESIGNED BY: AB 1/11/2023
10226000RDDET001.DWG

MONTANA
Department of Transportation

ROAD PLANS

6/13/2023 10:20 AM

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

SUMMARY
SIGNING & DELINEATION QUANTITIES

MATERIAL	TOTAL	UNIT
SIGNS-ALUM REFL SHEET IV		SQ. FOOT
SIGNS-ALUM REFL SHEET XI	286.9	SQ. FOOT
SIGNS-ALUM SHEET INCR IV		SQ. FOOT
SIGNS-ALUM SHEET INCR XI	39	SQ. FOOT
OVERLAY-SHEET ALUMINUM		SQ. FOOT
POSTS-STEEL U SIGN	20	POUNDS
POLES-TREATED WOOD 4 IN	362	LINEAR FT.
POLES-TREATED WOOD 5 IN	176	LINEAR FT.
POLES-TREATED TIMBER-CLASS 4		LINEAR FT.
POLES-TREATED TIMBER-CLASS 3		LINEAR FT.
POSTS-TUBULAR STEEL		POUNDS
POSTS-TUBULAR STEEL-SQ-PERF		POUNDS
POSTS-STEEL STRUCTURAL SIGN		POUNDS
OVERHEAD STR/METAL-CANTILEVER		EACH
OVERHEAD STR/METAL-BRIDGE		EACH
HIGHWAY TRAFFIC STRIPING-WHITE		GAL.(S)
HIGHWAY TRAFFIC STRIPING-YELLOW		GAL.(S)
WORDS & SYMBOLS		GAL.(S)
DELINEATOR DES A	45	EACH
DELINEATOR DES B		EACH
DELINEATOR DES C		EACH
DELINEATOR DES D	12	EACH
DELINEATOR DES E		EACH
DELINEATOR DES F	7	EACH
DELINEATOR DES G		EACH
DELINEATOR DES H		EACH
REMOVE SIGNS	30	EACH
REMOVE SIGNS-GUIDE	1	EACH
RESET SIGNS		EACH
RESET SIGNS-GUIDE		EACH
FRANG SIGN POST BKWY-		EACH
FRANG SIGN POST BKWY-		EACH
SQ TUBLR SLIP BASE BKWY-3 IN		EACH

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY

SIGN LOCATION AND SPECIFICATIONS

STATION	RAMP NO.	SIGN NO.	PANEL SIZE	REFL SHTG TYPE: BACK-GROUND	REFL SHTG TYPE: LEGEND	FEET: CLEARANCE	FEET: SIGN SUPPORT SPACING	TYPE OF SUPPORT	FEET: CANTILEVER	FEET: SUPPORT LENGTH (ESTIMATED)	FEET: SUPPORT LENGTH (INSTALLED)	FEET: MOUNTING HEIGHT	FEET: FOUNDATION DEPTH	SIGN PANEL (SQ. FT.): SHEET ALUMINUM	SIGN PANEL (SQ. FT.): ALUMINUM SHEET INCREMENT	SIGN PANEL (SQ. FT.): ALUMINUM SHEET OVERLAY	TIMBER POLE (LINEAR FT.): 4" TOP DIA.	TIMBER POLE (LINEAR FT.): 5" TOP DIA.	STEEL POST(LBS.): ROUND TUBULAR	STEEL POST(LBS.): SQUARE TUBULAR	STEEL POST(LBS.): STRUCTURAL STEEL	STEEL POST(LBS.): "U" POST	BREAKAWAY	SIGNS/GUIDE: REMOVE	SIGNS/GUIDE: RESET	SIGNS/GUIDE: REMOVE	SIGNS/GUIDE: RESET	REMARKS
11+17 RT		D3 D3	42X10 42X10	XI XI	XI XI	6-0		4" DIA POLE		13-5		5-0	3-0	2.9 2.9			14							1					D3s = S WAGNER RD
		D3 D3	30X10 30X10	XI XI	XI XI									2.1 2.1															D3s = STAGE RD
		R1-1	30X30	XI	XI									5.2															STOP - REPLACE
20+99 LT RT		OM-3 OM-3	REMOVE REMOVE																					1 1					REMOVE OM-3 (2)
21+76 LT RT		OM-3 OM-3	REMOVE REMOVE																					1 1					REMOVE OM-3 (2)
26+24 RT		W1-2L W13-1	30X30 18X18	XI XI		10-0		4" DIA POLE		14-10		5-7	3-0	6.3 2.3			16											FY	LEFT CURVE 55 MPH SUPPLEMENTAL
26+61 LT RT		OM-3 OM-3	REMOVE REMOVE																					1 1					REMOVE OM-3 (2)
26+70 RT		N6-2	36X12	XI	XI	5-0		4" DIA POLE		10-7		5-0	3-0	3.0			12											BGR	MILK RIVER - NEW
28+73 LT		N6-2	36X12	XI	XI	5-0		4" DIA POLE		10-7		5-0	3-0	3.0			12											BGR	MILK RIVER - NEW
28+79 LT RT		OM-3 OM-3	REMOVE REMOVE																					1 1					REMOVE OM-3 (2)
29+39 RT		W1-8 W1-8	24X30 24X30	XI XI		10-0		5" DIA POLE		13-9		5-0	3-6	5.0 5.0				14						X				FY	(2) CHEVRONS - NEW
30+99 RT		W1-8 W1-8	24X30 24X30	XI XI		10-0		5" DIA POLE		13-9		5-0	3-6	5.0 5.0				14						X				FY	(2) CHEVRONS - NEW
32+59 RT		W1-8 W1-8	24X30 24X30	XI XI		10-0		5" DIA POLE		13-9		5-0	3-6	5.0 5.0				14						X				FY	(2) CHEVRONS - NEW
34+19 RT		W1-8 W1-8	24X30 24X30	XI XI		10-0		5" DIA POLE		13-9		5-0	3-6	5.0 5.0				14						X				FY	(2) CHEVRONS - NEW
35+79 RT		W1-8 W1-8	24X30 24X30	XI XI		10-0		5" DIA POLE		13-9		5-0	3-6	5.0 5.0				14						X				FY	(2) CHEVRONS - NEW
38+16 LT		W1-2R W13-1	30X30 18X18	XI XI		10-0		4" DIA POLE		14-10		5-7	3-0	6.3 2.3			16											FY	RIGHT CURVE 55 MPH SUPPLEMENTAL
41+62 LT		D10-1 D10-1	10X18 10X18	XI XI	XI XI	4-0		2# STL U POST		9-7		4-0	3-0	1.3 1.3									20		1				REFERENCE POST 1 - REPLACE
52+95 RT		W3-5	36X36	XI	XI	10-0		5" DIA POLE		15-2		5-0	3-6	9.0				16						X	1				REDUCE SPEED LIMIT (45) AHEAD - REPLACE
63+14 LT		R2-2A	24X30	XI		10-0		4" DIA POLE		13-0		5-0	3-0	5.0			14								1				TRUCK SPEED LIMIT (65)

MOUNTING HEIGHT REQUIREMENTS:
MOUNTING HEIGHTS SHOWN REFER TO THE BOTTOM OF THE MAJOR PANEL. SEE DETAILED DRAWINGS 619-00 & 619-08.

X = STANDARD BREAKAWAY DEVICE:
- FOR WOOD POST SEE DETAILED DRAWING 619-20.
- FOR STRUCTURAL STEEL SEE DETAILED DRAWING 619-13.

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.

FYG = TYPE XI FLUORESCENT YELLOW-GREEN SHEETING REQUIRED.

BGR = BEHIND GUARDRAIL

BBR = BACKBRACING REQUIRED:
- FOR WOOD POST 2" x 4" REQ'D.
- FOR STRUCTURAL STEEL 2" x 2" x 1/4" ANGLE IRON REQ'D.

3	MONTANA Department of Transportation	C:\DGN\10226000sisum001.dgn	DESIGNED BY	SHANE C WATSON		SIGNING PLANS	DODSON - SOUTH	STPS 204-1(6)0
2		5/30/2023	CHECKED BY	NATHAN STYREN		PHILLIPS COUNTY	UPN #10226000	S2
1		11:38:01 AM CPS - U752A						

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY

SIGN LOCATION AND SPECIFICATIONS

STATION	RAMP NO.	SIGN NO.	PANEL SIZE	REFL SHTG TYPE: BACK-GROUND	REFL SHTG TYPE: LEGEND	FEET: CLEARANCE	FEET: SIGN SUPPORT SPACING	TYPE OF SUPPORT	FEET: CANTILEVER	FEET: SUPPORT LENGTH (ESTIMATED)	FEET: SUPPORT LENGTH (INSTALLED)	FEET: MOUNTING HEIGHT	FEET: FOUNDATION DEPTH	SIGN PANEL (SQ. FT.): SHEET ALUMINUM	SIGN PANEL (SQ. FT.): ALUMINUM SHEET INCREMENT	SIGN PANEL (SQ. FT.): ALUMINUM SHEET OVERLAY	TIMBER POLE (LINEAR FT.): 4" TOP DIA.	TIMBER POLE (LINEAR FT.): 5" TOP DIA.	STEEL POST(LBS.): ROUND TUBULAR	STEEL POST(LBS.): SQUARE TUBULAR	STEEL POST(LBS.): STRUCTURAL STEEL	STEEL POST(LBS.): "U" POST	BREAKAWAY	SIGNS/GUIDE: REMOVE	SIGNS/GUIDE: RESET	SIGNS/GUIDE: REMOVE	SIGNS/GUIDE: RESET	REMARKS
65+14 LT		R2-1 R2-3	24X30 24X18	XI	 XI	10-0		4" DIA POLE		14-4		5-7	3-0	5.0 3.0			16							1					SPEED LIMIT (70) W/NIGHT SPEED LIMIT (65) - REPLACE
65+14 RT		R2-1	24X30	XI		10-0		4" DIA POLE		13-3		5-0	3-0	5.0			14							1					SPEED LIMIT (45) - REPLACE
67+78 RT		N6-1	48x24	XI	XI	10-0		4" DIA POLE		13-0		5-0	3-0	8.0			14												ENTERING DODSON - REPLACE
72+70 RT		W3-5	36X36	XI	XI	10-0		4" DIA POLE		14-7		5-0	3-0	9.0			16												REDUCE SPEED LIMIT (25) AHEAD - REPLACE
76+35 LT		D3-1	REMOVE																					1					D3s = SIXTH ST E/HWY 204
76+49 RT		D3 D3	36X10 36X10	XI XI	XI XI	6-0		4" DIA POLE		13-4		5-0	3-0	2.5 2.5			14												D3s = SIXTH ST E
		D3 D3	36X10 36X10	XI XI	XI XI									2.5 2.5															D3s = HWY 204
		R1-1	30X30	XI	XI									5.2															STOP - NEW
80+21 LT		D3	REMOVE																					1					D3s = FIFTH ST E/HWY 204
80+35 RT		D3 D3	36X10 36X10	XI XI	XI XI	6-0		4" DIA POLE		13-4		5-0	3-0	2.5 2.5			14												D3s = FIFTH ST E
		D3 D3	36X10 36X10	XI XI	XI XI									2.5 2.5															D3s = HWY 204
		R1-1	30X30	XI	XI									5.2															STOP - NEW
82+70 RT		R2-1	24X30	XI		10-0		4" DIA POLE		12-6		5-0	3-0	5.0			14							1					SPEED LIMIT (25) - REPLACE
82+70 LT		R2-1	24X30	XI		10-0		4" DIA POLE		12-6		5-0	3-0	5.0			14							1					SPEED LIMIT (45) - REPLACE
83+86 LT		D3 D3	42X10 42X10	XI XI	XI XI	6-0		4" DIA POLE		13-4		5-0	3-0	2.9 2.9			14												D3s = FOURTH ST W
		D3 D3	36X10 36X10	XI XI	XI XI									2.5 2.5															D3s = HWY 204
		R1-1	30X30	XI	XI									5.2															STOP - NEW
84+75 RT		S1-1	36X36	XI		10-0		4" DIA POLE		15-11		7-0	3-0	6.8			16							1				FYG	SCHOOL ZONE - REPLACE
89+00 RT		M2-1 M1-4	21X15 24X24	XI XI		10-0		4" DIA POLE		16-1		7-0	3-0	2.2 4.0			18							1					JUNCTION US HIGHWAY 2 - REPLACE
91+09 LT		S1-1	36X36	XI		10-0		4" DIA POLE		15-11		7-0	3-0	6.8			16							1				FYG	SCHOOL ZONE - REPLACE

MOUNTING HEIGHT REQUIREMENTS:
MOUNTING HEIGHTS SHOWN REFER TO THE BOTTOM OF THE MAJOR PANEL. SEE DETAILED DRAWINGS 619-00 & 619-08.

X = STANDARD BREAKAWAY DEVICE:
- FOR WOOD POST SEE DETAILED DRAWING 619-20.
- FOR STRUCTURAL STEEL SEE DETAILED DRAWING 619-13.

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.

FYG = TYPE XI FLUORESCENT YELLOW-GREEN SHEETING REQUIRED.

BGR = BEHIND GUARDRAIL

BBR = BACKBRACING REQUIRED:
- FOR WOOD POST 2" x 4" REQ'D.
- FOR STRUCTURAL STEEL 2" x 2" x 1/4" ANGLE IRON REQ'D.

3	MONTANA Department of Transportation	C:\DGN\10226000sisum001.dgn	DESIGNED BY	SHANE C WATSON		SIGNING PLANS	DODSON - SOUTH	STPS 204-1(6)0
2		5/30/2023	CHECKED BY	NATHAN STYREN		PHILLIPS COUNTY	UPN #10226000	S3
1		11:38:04 AM CPS - U752X						

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY

SIGN LOCATION AND SPECIFICATIONS

		SIGN NO.	PANEL SIZE	REFL SHTG TYPE: BACK-GROUND	REFL SHTG TYPE: LEGEND	FEET: CLEARANCE	FEET: SIGN SUPPORT SPACING	TYPE OF SUPPORT	CANTILEVER	FEET: SUPPORT LENGTH (ESTIMATED)	FEET: SUPPORT LENGTH (INSTALLED)	FEET: MOUNTING HEIGHT	FEET: FOUNDATION DEPTH	SIGN PANEL (SQ. FT.): SHEET ALUMINUM	SIGN PANEL (SQ. FT.): ALUMINUM SHEET INCREMENT	SIGN PANEL (SQ. FT.): ALUMINUM SHEET OVERLAY	TIMBER POLE (LINEAR FT.): 4" TOP DIA.	TIMBER POLE (LINEAR FT.): 5" TOP DIA.	STEEL POST(LBS.): ROUND TUBULAR	STEEL POST(LBS.): SQUARE TUBULAR	STEEL POST(LBS.): STRUCTURAL STEEL	STEEL POST(LBS.): "U" POST	BREAKAWAY	SIGNS/GUIDE: REMOVE	SIGNS/GUIDE: RESET	SIGNS/GUIDE: REMOVE	SIGNS/GUIDE: RESET	REMARKS
91+16 LT		D3 D3	42X10 42X10	X1 X1	X1 X1	6-0		4" DIA POLE		15-5		7-0	3-0	2.9 2.9			16						1					D3s = SECOND ST W
		D3 D3	36X10 36X10	X1 X1	X1 X1									2.5 2.5														D3s = HWY 204
		R1-1	30X30	X1	X1									5.2														STOP - REPLACE
91+76 RT		D3 D3	42X10 42X10	X1 X1	X1 X1	6-0		4" DIA POLE		15-5		7-0	3-0	2.9 2.9			16						1					D3s = SECOND ST E
		D3 D3	36X10 36X10	X1 X1	X1 X1									2.5 2.5														D3s = HWY 204
		R1-1	30X30	X1	X1									5.2														STOP - REPLACE
91+78 RT		D3	REMOVE																				1					D3s = 2ND ST E/HWY 204
91+92 RT		W3-1	36X36	X1	X1	10-0		5" DIA POLE		17-8		7-0	3-0	9.0				18				X	1					STOP AHEAD - REPLACE
92+81 LT		M3-3 M1-12	24x12 24x24	X1 X1		10-0		4" DIA POLE		16-1		7-0	3-0	2.0 4.0			18						1					S-204 W/SOUTH PANEL - REPLACE
92+93 RT		M1-4 M6-4	24X24 21X15	X1 X1		10-0		4" DIA POLE		16-1		7-0	3-0	4.0 2.2			18						1					US-2 W/DIR. ARROW - REPLACE
93+62 LT		R2-1	24X30	X1		10-0		4" DIA POLE		15-3		7-0	3-0	5.0			16						1					SPEED LIMIT (25) - REPLACE
94+64 RT		D3 D3	36X10 36X10	X1 X1	X1 X1	2-0		5" DIA POLE		15-1		7-0	3-6	2.5 2.5				16				X	1				BGR	D3s = HWY 204
		D3 D3	36X10 36X10	X1 X1	X1 X1									2.5 2.5														D3s = US HWY 2
		R1-1	36X36	X1	X1									7.5														STOP - REPLACE
94+68 LT		D3	REMOVE																				1					D3s = FIRST ST W
95+32		W1-7A	72x42	X1				5" DIA POLE		X=13-0 Y=13-0					21.0			14 14				X					BGR	FY BBR W1-7A - NEW
95+32		G01-0A	72x36	X1	X1			5" DIA POLE		X=12-6 Y=12-6					18.0			14 14				X		1			BGR	BBR <-- HAVRE/MALTA --> REPLACE
TOTALS														286.9	39.0		362	176					30		1			

MOUNTING HEIGHT REQUIREMENTS: MOUNTING HEIGHTS SHOWN REFER TO THE BOTTOM OF THE MAJOR PANEL. SEE DETAILED DRAWINGS 619-00 & 619-08.

X = STANDARD BREAKAWAY DEVICE:
- FOR WOOD POST SEE DETAILED DRAWING 619-20.
- FOR STRUCTURAL STEEL SEE DETAILED DRAWING 619-13.

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.

FYG = TYPE XI FLUORESCENT YELLOW-GREEN SHEETING REQUIRED.

BGR = BEHIND GUARDRAIL

BBR = BACKBRACING REQUIRED:
- FOR WOOD POST 2" x 4" REQ'D.
- FOR STRUCTURAL STEEL 2" x 2" x 1/4" ANGLE IRON REQ'D.

DELINEATION TABLE		
⊣	DESIGN "A"	45
⊣|	DESIGN "B"	___
⊣⊢	DESIGN "C"	___
|⊣⊢|	DESIGN "D"	12
⊣|||	DESIGN "E"	___
⊢|	DESIGN "F"	7
⊣<	DESIGN "G"	___
⊣▷	DESIGN "H"	___
⊣×	DESIGN "J"	___
×⊣|	DESIGN "BJ"	___
×⊣<	DESIGN "GJ"	___
		___

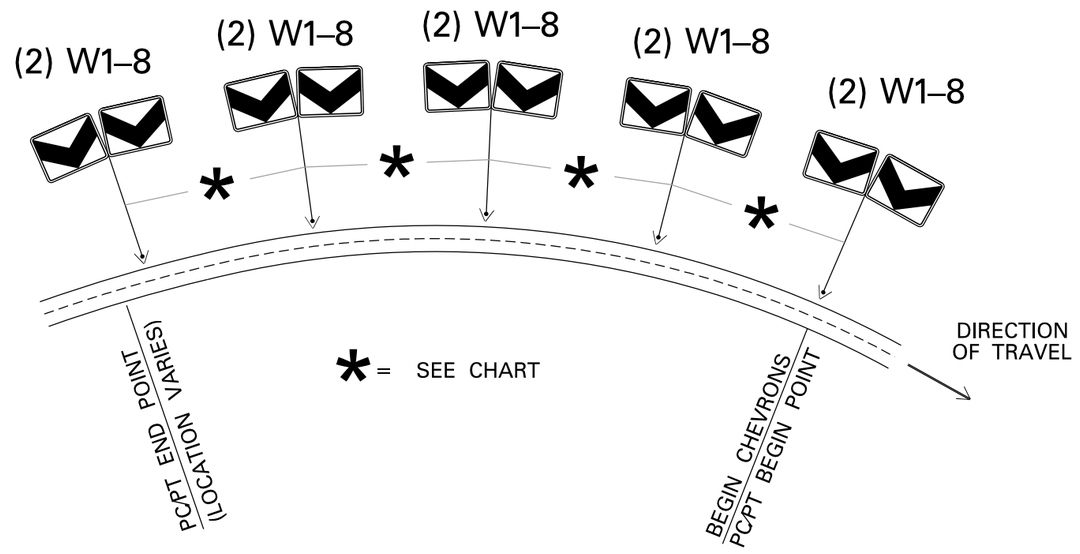
3	MONTANA Department of Transportation	C:\DGN\10226000sisum002.dgn	DESIGNED BY	SHANE C WATSON		SIGNING PLANS	DODSON - SOUTH	STPS 204-1(6)0
2		5/30/2023	CHECKED BY	NATHAN STYREN		PHILLIPS COUNTY	UPN #10226000	S4
1		11:38:12 AM CPS - U752						

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

DETAILS

CHEVRON PLACEMENT DETAIL

(GUIDANCE ONLY)



CURVE RADIUS	SIGN SPACING		R.P. CONVERSION
< 200′	40′	=	.008 +–
200′ – 400′	80′	=	.015 +–
401′ – 700′	120′	=	.023 +–
701′ – 1250′	160′	=	.030 +–
> 1250′	200′	=	.038 +–

1) SEE SPEC SHEET FOR CHEVRON PLACEMENT

2) USE BEGINNING OF CURVE LOCATION AS REFERENCE POINT TO INSTALL CHEVRONS (BEGIN POINT – ALWAYS ON OUTSIDE OF CURVE IN DIRECTION OF TRAVEL)

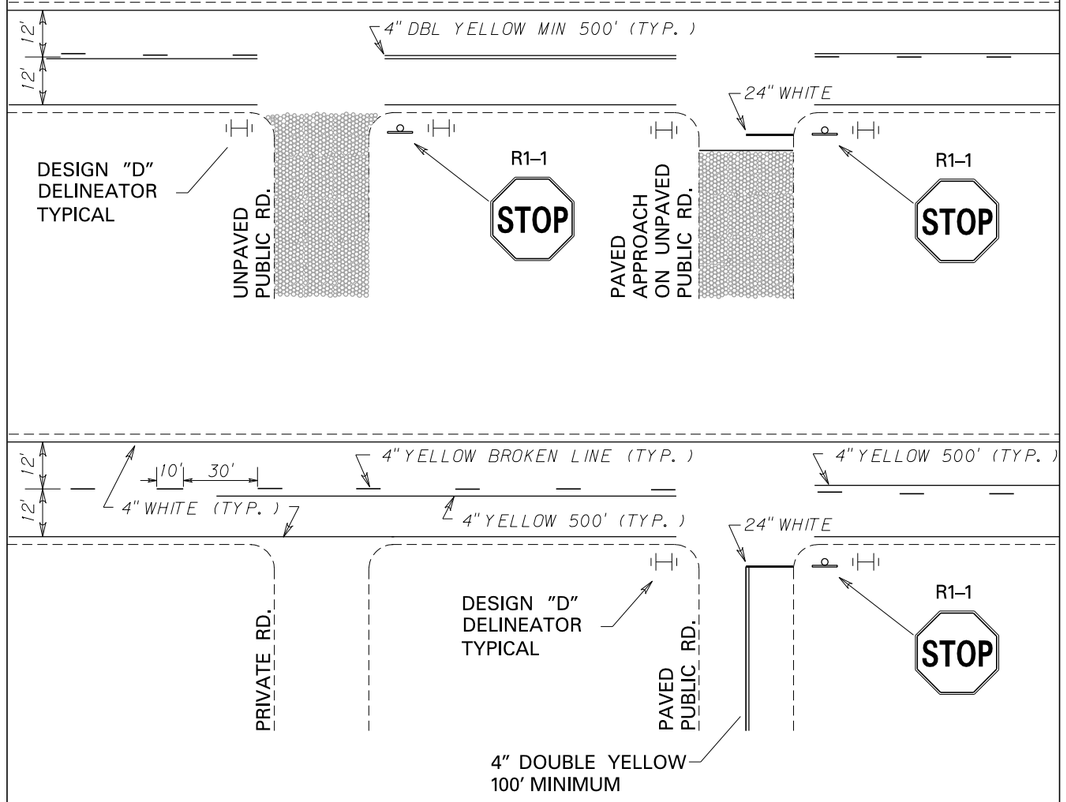
DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY

DETAILS

TYPICAL RURAL PAVEMENT MARKINGS

NO SCALE



NOTE: FINAL CENTERLINE CONFIGURATION AND NO PASSING ZONES TO BE DETERMINED BY THE PROJECT MANAGER.

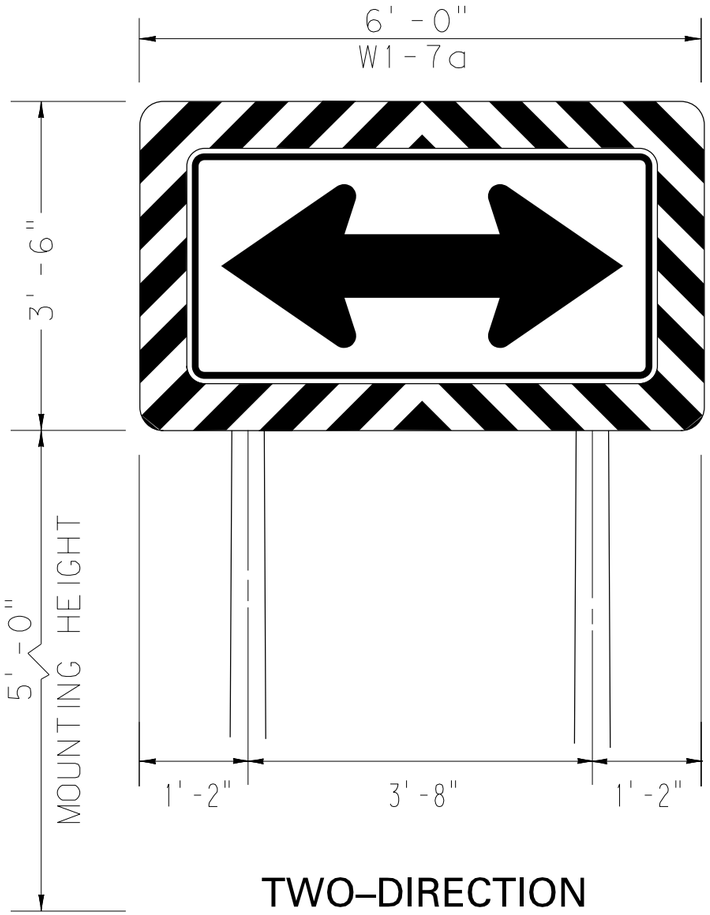
ALL PAVEMENT MARKINGS TO BE EPOXY UNLESS OTHERWISE SPECIFIED.

NOTES:

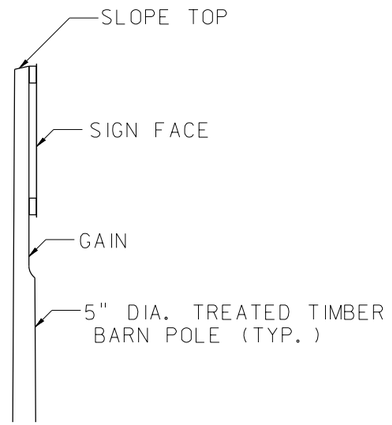
1. *ALL PAVEMENT MARKINGS ARE TO CONFORM TO THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD HIGHWAY SIGNS" PUBLICATIONS, FROM THE FEDERAL HIGHWAY ADMINISTRATION.*
2. *SEE CENTERLINE PAVEMENT MARKINGS FOR RURAL HIGHWAYS MEMO DATED JUNE 18, 2019*

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

DETAILS



TWO–DIRECTION
LARGE ARROW

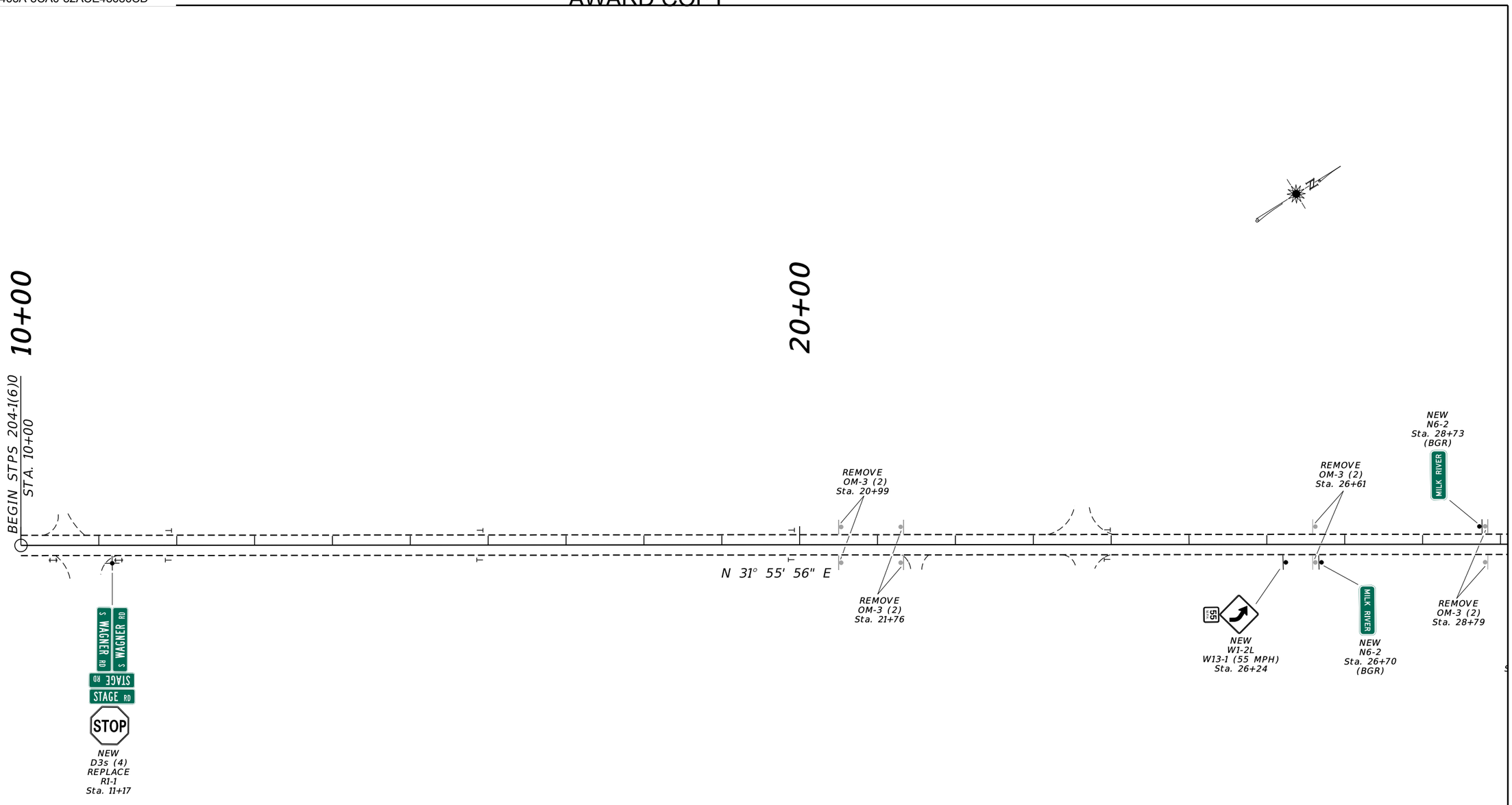


NOTE: MOUNT 60"x30" W1-7 TWO-DIRECTION ARROW DESIGN ON 72"X42" ALUMINUM INCREMENT WITH 6" WIDE DIAGONAL BORDER AROUND THE PERIMETER. DIAGONAL STRIPES ARE 3" IN WIDTH APPLIED AT A 45 DEGREE ANGLE.

NOTE: DETERMINE POLE LENGTHS IN THE FIELD TO COMPLY WITH MOUNTING HEIGHTS AND EMBEDMENT DEPTHS.

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY

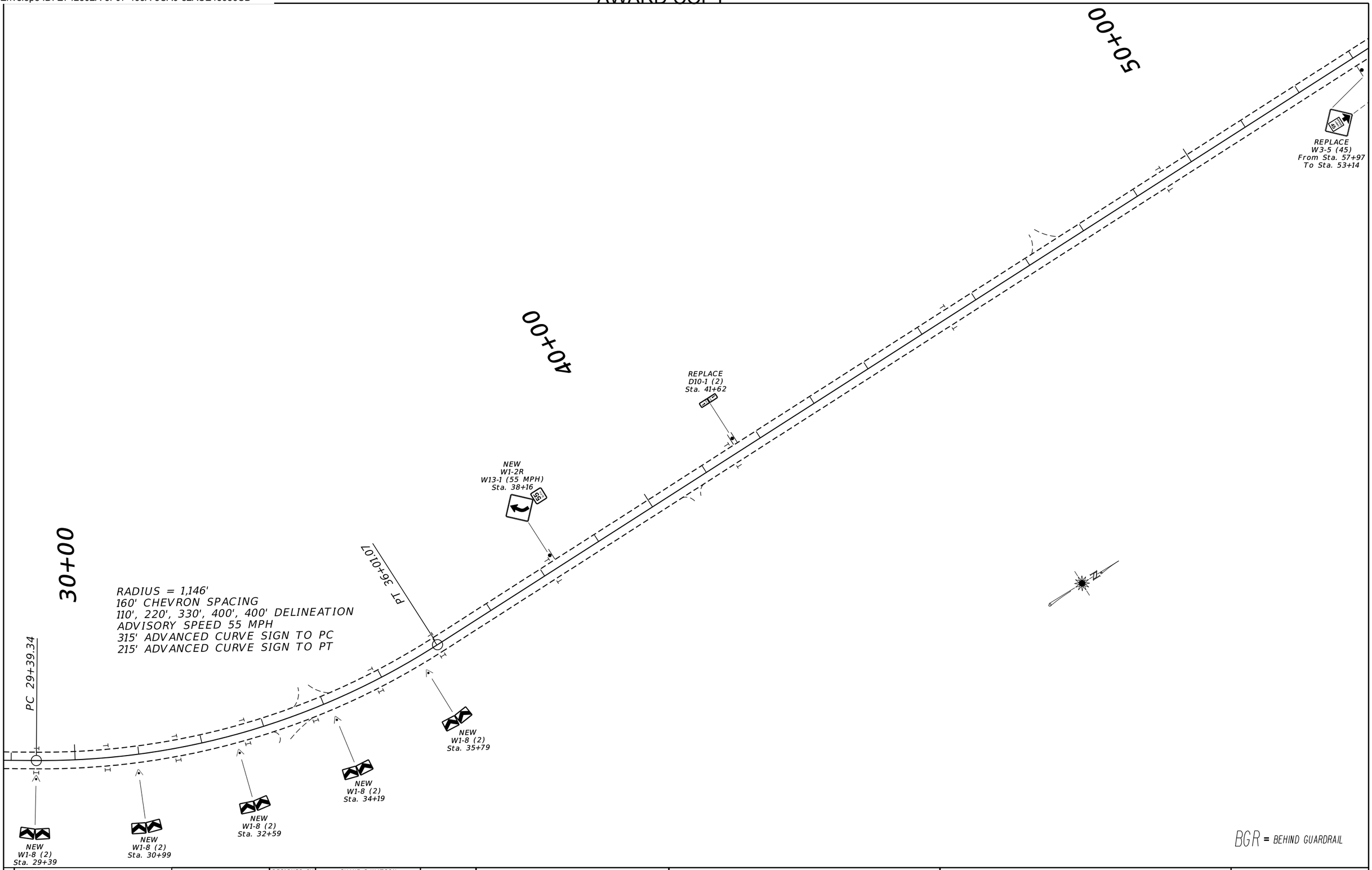


BGR = BEHIND GUARDRAIL

3	MONTANA Department of Transportation	C:\DGN\10226000simap002.dgn	DESIGNED BY	SHANE C WATSON		SIGNING PLANS	DODSON - SOUTH	STPS 204-1(6)0
2		5/30/2023						
1		11:38:35 AM CPS - U752	CHECKED BY	NATHAN STYREN		PHILLIPS COUNTY	UPN #10226000	S8

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY



BGR = BEHIND GUARDRAIL

3	MONTANA Department of Transportation	C:\DGN\10226000simap002.dgn	DESIGNED BY	SHANE C WATSON	SIGNING PLANS	DODSON - SOUTH	STPS 204-1(6)0
2		5/30/2023					
1		11:38:38 AM CPS - U752A	CHECKED BY	NATHAN STYREN	PHILLIPS COUNTY	UPN #10226000	S9

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY

60+00

70+00

ENTIRE SPEED LIMIT TRANSITION TO BE MOVED 100' SOUTH OF CURRENT POSITION

REPLACE
R2-2a (65 MPH)
From Sta. 64+14
To Sta. 63+14

TRUCKS 65

REPLACE
R2-1 (70 MPH)
R2-3 (65 MPH)
From Sta. 66+14
To Sta. 65+14

SPEED LIMIT 70
AUTO 65

N 1° 09' 08" W

SPEED LIMIT 45

REPLACE
R2-1 (45 MPH)
From Sta. 66+14
To Sta. 65+14

ENTERING DODSON

REPLACE
N6-1
Sta. 67+78

NEW
W3-5 (25)
Sta. 72+70

BGR = BEHIND GUARDRAIL

80+00

90+00

REMOVE
D3
Sta. 76+35

REMOVE
D3s
Sta. 80+21

REPLACE
R2-1 (45 MPH)
Sta. 82+70

NEW
D3s (4)
R1-1
Sta. 83+86

STOP
HWY 204
FOURTH ST

REPLACE
R2-1 (25 MPH)
Sta. 82+70

REPLACE
S1-1
Sta. 84+75

NEW
D3s (4)
R1-1
Sta. 91+16

STOP
HWY 204
SECOND ST W

REPLACE
S1-1
Sta. 91+09

REPLACE
M2-1
M1-4
Sta. 89+00

REPLACE
M3-3
M1-12
Sta. 92+81

SOUTH 204

REPLACE
R2-1 (25 MPH)
Sta. 93+62

SPEED LIMIT 25

REMOVE
D3s
Sta. 94+68

END STPS 204-1(6)0
STA. 94+78

US HWY 2

REPLACE
G01-0A
Sta. 95+32
(BGR)

MALTA ← HAVRE →

SIXTH ST E
HWY 204
STOP

NEW
D3s (4)
R1-1
Sta. 76+49

FIFTH ST E
HWY 204
STOP

NEW
D3s (4)
R1-1
Sta. 80+35

SECOND ST E
HWY 204
STOP

NEW
D3s (4)
REPLACE
R1-1
Sta. 91+76

REMOVE
D3s
Sta. 91+78

REPLACE
W3-1
Sta. 91+92

REPLACE
M1-4.2
M6-4
Sta. 92+93

STOP

US HWY 2
HWY 204

NEW
D3s (4)
REPLACE
R1-1
Sta. 94+64
(BGR)

NEW
W1-7A
PLACE IN
VIEW OF
ROAD PATH
Sta. 95+32
(BGR)

3	MONTANA Department of Transportation	C:\DGN\10226000simap002.dgn	DESIGNED BY	SHANE C WATSON		SIGNING PLANS	DODSON - SOUTH / STPS 204-1(6)0
2		5/30/2023	CHECKED BY	NATHAN STYREN		PHILLIPS COUNTY	UPN #10226000 / S10
1		11:38:41 AM CPS - U752					

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY

ASSOCIATED PROJECT AGREEMENT NUMBERS	
P.E.	STPS 204-1(5)0

BRIDGE IDENTIFICATION	
MDT STR ID	NBI NUMBER
06366	S00204001+03001

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS AND QUANTITIES

FEDERAL AID PROJECT STPS 204-1(6)0

DODSON - SOUTH

PHILLIPS 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	28152	LIST OF DRAWINGS AND ESTIMATED BRIDGE PLAN QUANTITIES
B2	28153	GENERAL NOTES AND DECK REPAIR DETAILS
B3	28154	EXPANSION JOINT REPLACEMENT DETAILS
B4	28155	THRIE BEAM RAIL DETAILS

ESTIMATED BRIDGE PLAN QUANTITIES

FEATURE CROSSED	GENERAL LAYOUT DRAWING NO.	REVISE JOINT (LN. FT.)	JOINT SEALS - POLYURETHANE (LN. FT.)	REVISE BRIDGE RAIL - THRIE BEAM (LN. FT.)	EXPANSION JOINT - PRECOMPRESSED (LN. FT.)	BRIDGE DECK MILLING (YD²)	CLASS B BRIDGE DECK REPAIR (YD²)	*CONCRETE CLASS OVERLAY (YD²)	CONCRETE CLASS OVERLAY -FIXED (UNIT)	TRANSVERSE DECK GROOVING (YD²)
MILK RIVER	3347	53.3	56.7	493.0	56.7	639.2	5.0	639.2	500.0	588.7
PROJECT TOTAL		53.3	56.7	493.0	56.7	639.2	5.0	639.2	500.0	588.7

*NOTE: Concrete-Class Overlay quantities are based on the minimum overlay thickness specified on sheet B2. Hydrodemolition may result in increased removal limits and increased overlay quantities.

NOTE: Specific Class B deck repair areas are not identified in the contract. Class B deck repair quantities are provided as a contingency. The Project Manager will identify any Class B deck repair areas if they are needed.

SHEET NO.
B1

LIST OF DRAWINGS AND ESTIMATED BRIDGE PLAN QUANTITIES

REVISED				J.E.S.	05-01-23
REVISED				J.D.C.	03-14-23
REVISED				J.D.C.	03-14-23
REVISED				CHECKED	
				DRAWN	
				DESIGNED	

10226000BRREH001.dwg \ QSH001

8/10/2023 3:03:03 PM

MONTANA Department of Transportation
BRIDGE BUREAU

UPN NUMBER
10226000

DRAWING NO.
28152

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY

GENERAL NOTES

SPECIFICATIONS:
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.

The current version of the Standard and Supplemental Specifications for Road and Bridge Construction, adopted by the Montana Department of Transportation, applies.

See Standard Specifications and Special Provisions for Traffic Control and Sequence of Operations.

All dimensions are in feet and inches except as noted. Verify all necessary dimensions of the existing structures in the field before ordering materials. 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.

REINFORCING STEEL:
Unless specified otherwise on the drawings, provide 2" minimum concrete cover measured from the face of the concrete to the face of any reinforcing steel, 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.

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

Include cleaning exposed existing reinforcing steel in other items of work.

The suffix E denotes epoxy coated reinforcing steel.

BRIDGE DECK REPAIR:
See the bridge deck repair section of the Standard Specifications for allowable repair concrete options.

Quantities shown for Class A and B Bridge Deck Repair may vary from actual field quantities.

Do not allow traffic onto the repaired deck until the repair concrete has reached 3500-psi compressive strength minimum.

Establish a control elevation at bridge before removing or milling the deck.

Right and Left side of the structure are referenced to increasing stationing.

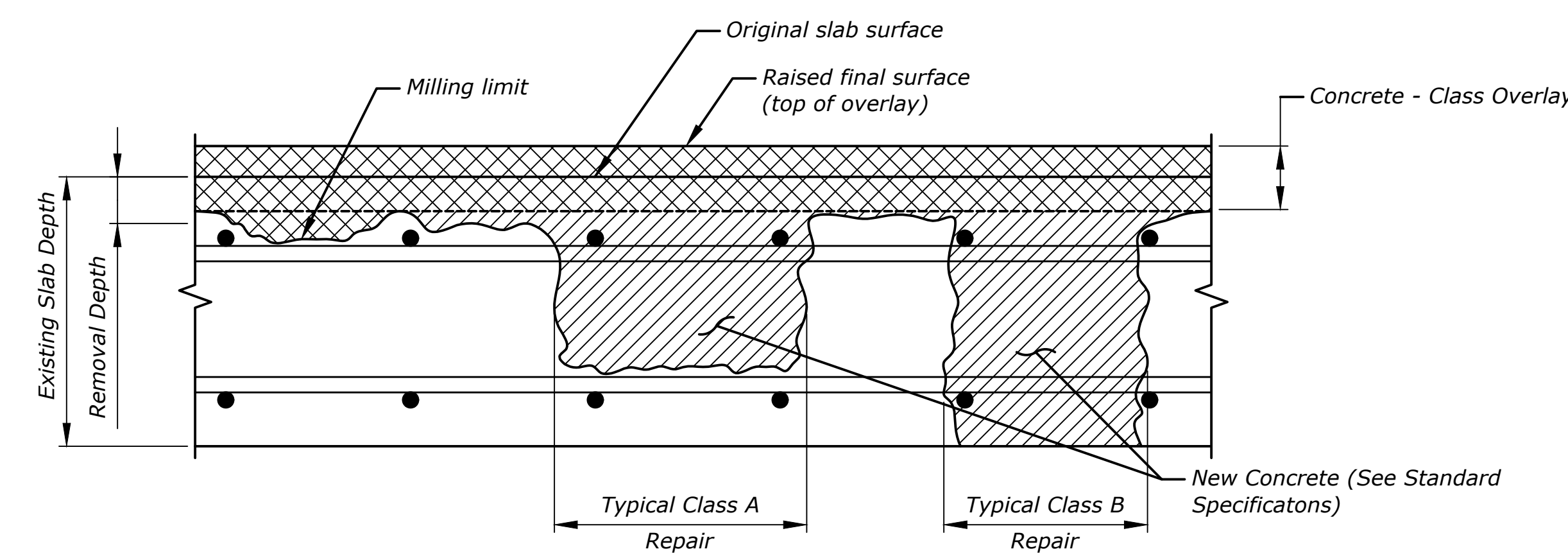
Use Concrete Class Overlay on bridge decks requiring thick overlays.

Submit for approval any substitution of rapid setting Portland cement concrete for Concrete Class Structure Low Slump or Concrete Class Structure. Traffic will not be permitted on concrete repairs until the specified strength is attained.

Use Hydrodemolition for all milling operations shown on the plans.

BRIDGE RAIL:
Revise Bridge Rail - Thrie Beam is paid for by the linear foot which is full compensation for all resources necessary to complete the item. The number of linear feet of Revise Bridge Rail - Thrie Beam for payment is the distance between centerlines of the end bridge rail posts as shown on Sheet No. B4. Use posts and plates conforming to AASHTO M 270 Grade 36 T3. Use metal guardrail conforming to AASHTO M 180.

Remove existing rails, rail posts, and hardware as shown on Sheet No. B4.



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

NOTE: For removal depths, see Table of Bridge Treatments.

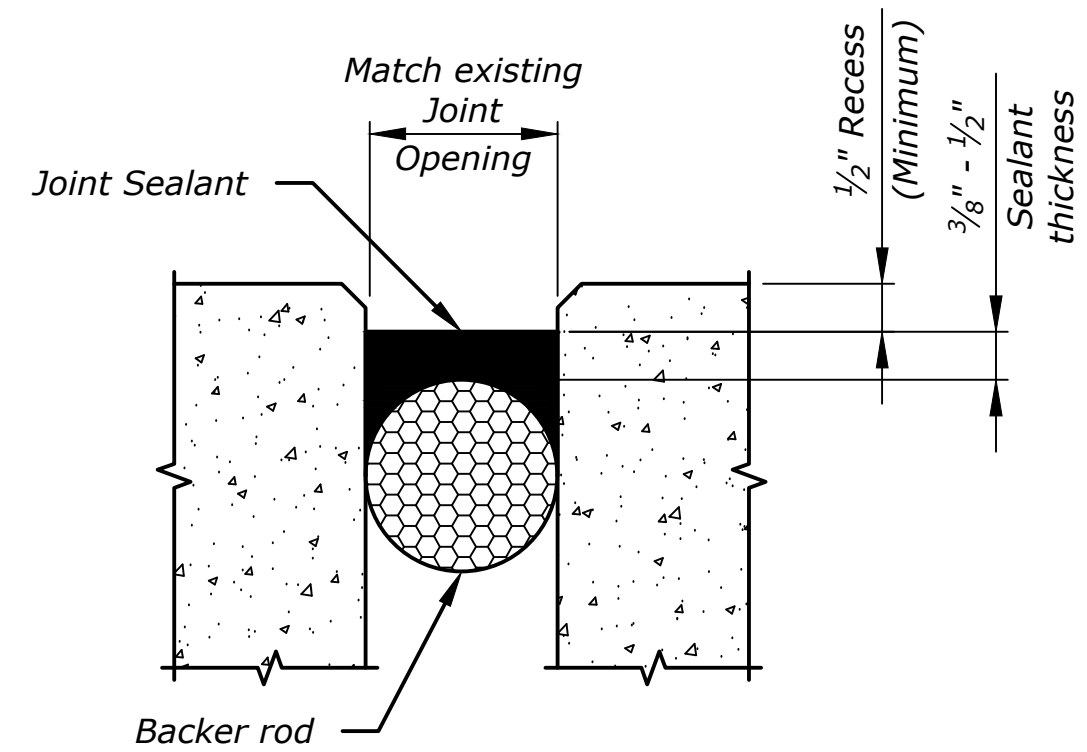
BRIDGE DECK REPAIR AND THICK OVERLAY DEFINITION

No Scale

TABLE OF BRIDGE TREATMENTS				
DECK TREATMENT	**REMOVAL DEPTH**	**OVERLAY THICKNESS AT CURB**	**OVERLAY THICKNESS AT ℄ ROADWAY**	**TOTAL GRADE RAISE**
CONCRETE CLASS OVERLAY (THICK)	1 ½"	2 ¼"	2 ½"	As Shown

Estimated volume of Class Overlay concrete - 35.2 yd³

NOTE: Include all costs associated with the application of a Silane Deck Seal after Transverse Deck Grooving is complete in the unit price bid for Concrete - Class Overlay.

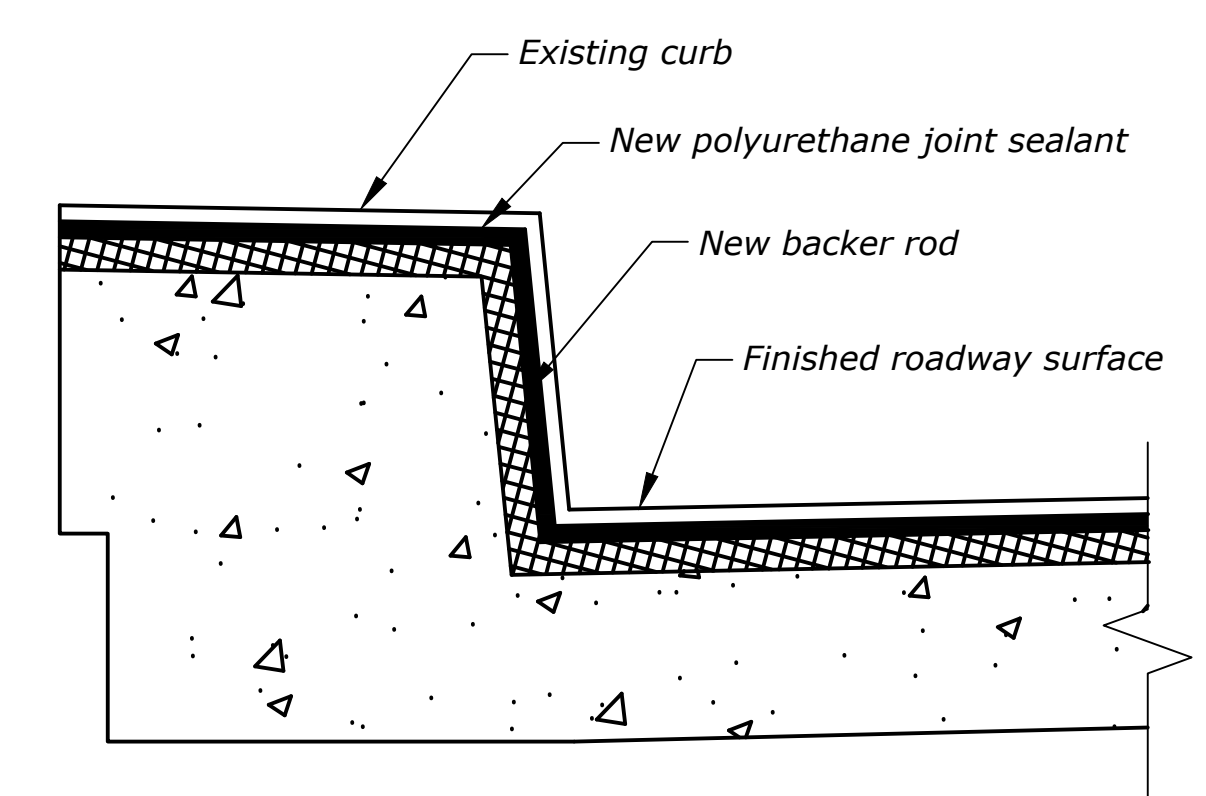


JOINT SEALANT DETAIL

No Scale

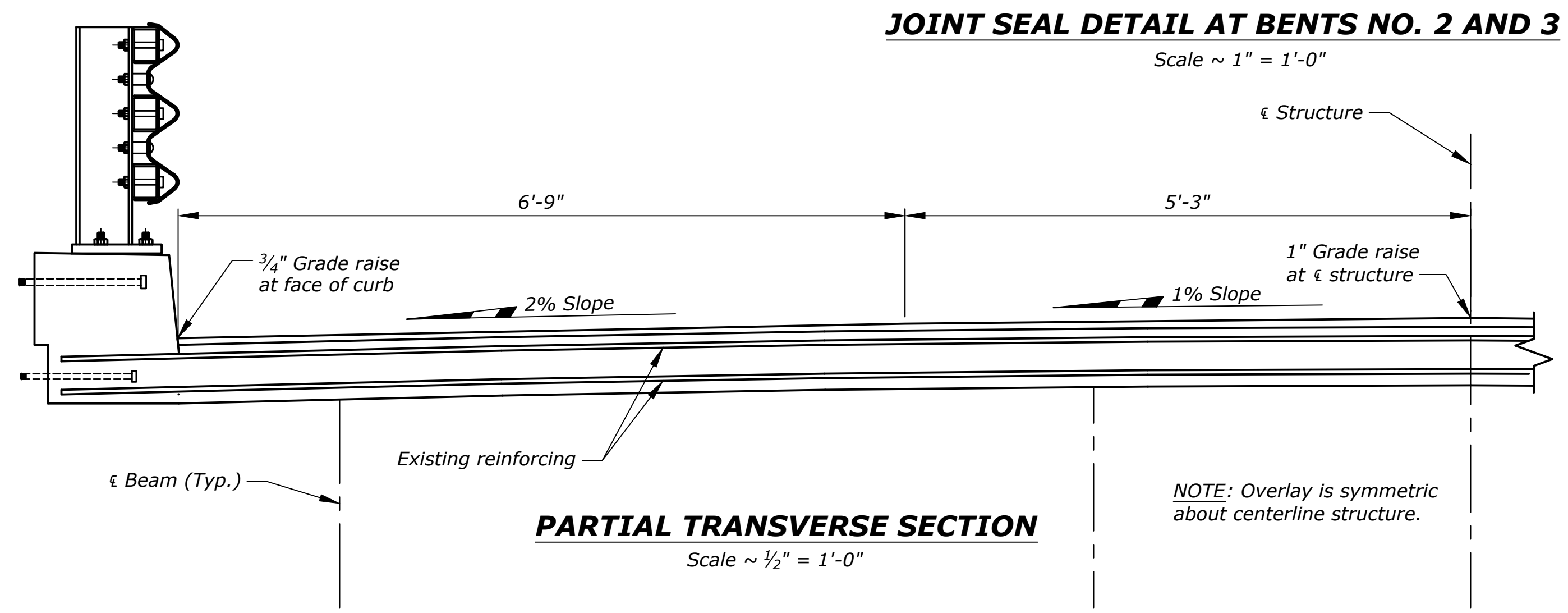
NOTE: Install polyurethane joint sealant according to the Special Provisions and manufacturers recommendations.

NOTE: Include all costs associated with providing and placing new joint seal in the unit price bid for Joint Seals - Polyurethane.



JOINT SEAL DETAIL AT BENTS NO. 2 AND 3

Scale ~ 1" = 1'-0"



NOTE: Overlay is symmetric about centerline structure.

PARTIAL TRANSVERSE SECTION

Scale ~ ½" = 1'-0"

SHEET NO. B2

GENERAL NOTES AND DECK REPAIR DETAILS

SCALE: As Noted

PROJECT NAME DODSON - SOUTH

MDT STRUCTURE ID 06366

FEDERAL AID PROJECT STPS 204-1(6)0

COUNTY PHILLIPS

REVISED		
REVISED		
REVISED		
REVISED		
CHECKED	J.E.S.	05-01-23
DRAWN	L.D.C.	03-14-23
DESIGNED	L.D.C.	03-14-23

10226000BRREH001.dwg \ SUM001

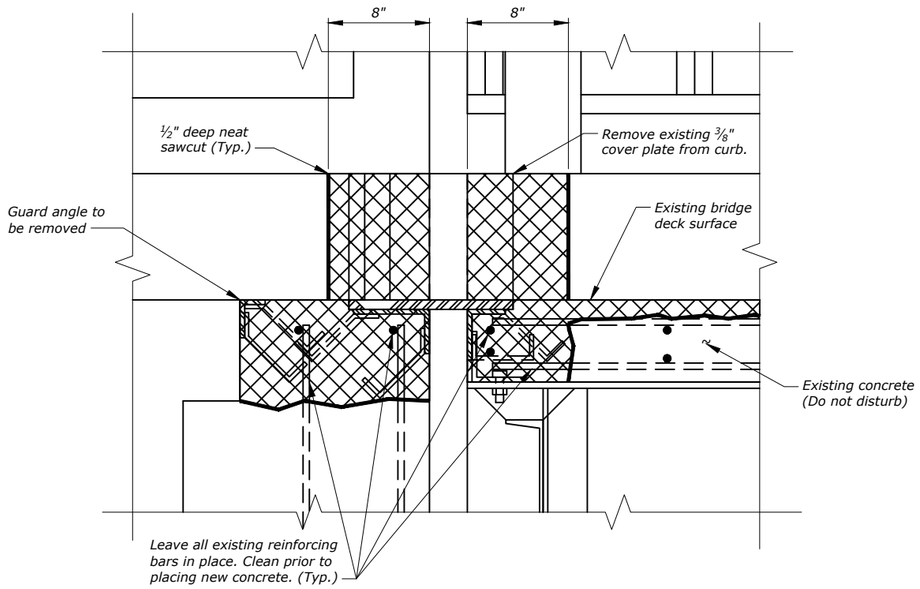
MONTANA Department of Transportation — BRIDGE BUREAU

8/10/2023 3:03:08 PM

UPN NUMBER 10226000

DRAWING NO. 28153

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

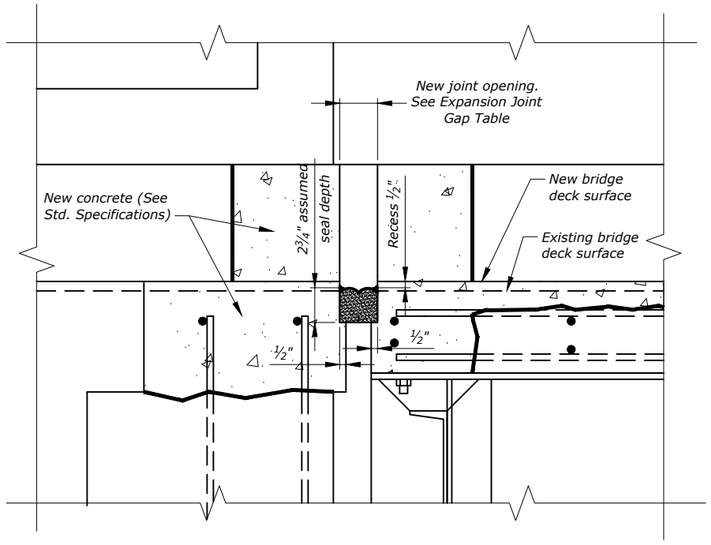


EXPANSION JOINT REMOVAL DETAIL

Scale ~ 1" = 1'-0"

NOTE: Include all costs associated with removing the existing joint, and guard angle placing new reinforcing steel and concrete that is required to complete the work in the unit price bid for Revise Joint.

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



EXPANSION JOINT DETAIL

Scale ~ 1" = 1'-0"

NOTE: Verify gap openings before ordering materials.

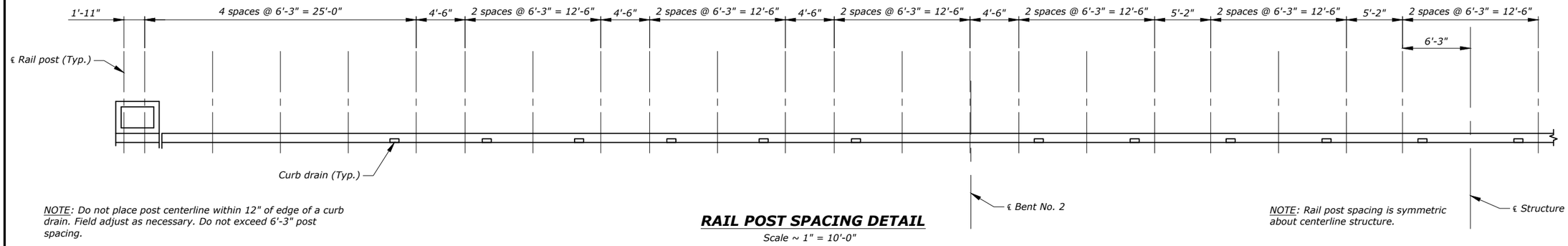
NOTE: Provide a new expansion joint capable of accommodating the total movement shown in the table of expansion joint gaps. The minimum installation width is assumed to be 2 ¾". Install expansion joint according to the Special Provisions and manufacturers recommendations. Include all costs associated with providing and placing new joint in the unit price bid for Expansion Joint - Precompressed.

LOCATION	EXISTING EXPANSION JOINT GAP		
	120°F (min)	-40°F (max)	60°F (normal)
BENT NO. 1	2 ¼"	4 5/16"	3"
BENT NO. 4	2 5/8"	3 9/16"	3"

NOTE: Verify existing joint opening width matches as-built values for current temperature. Adjust new joint as needed to accommodate any variation.

LOCATION	NEW EXPANSION JOINT GAP		
	120°F (min)	-40°F (max)	60°F (normal)
BENT NO. 1	2"	4"	2 ¾"
BENT NO. 4	2 ⅜"	3 ⅜"	2 ¾"

NOTE: Adjust joint openings at Bent No. 1 - 1/16" per 5°F and Bent No. 4 - 1/16" per 10°F.



NOTE: Do not place post centerline within 12" of edge of a curb drain. Field adjust as necessary. Do not exceed 6'-3" post spacing.

RAIL POST SPACING DETAIL

Scale ~ 1" = 10'-0"

NOTE: Rail post spacing is symmetric about centerline structure.

SHEET NO. B3

EXPANSION JOINT REPLACEMENT DETAILS

SCALE: As Noted

PROJECT NAME **DODSON - SOUTH**

MDT STRUCTURE ID **06366**

FEDERAL AID PROJECT **STPS 204-1(6)0**

COUNTY **PHILLIPS**

REVISED	REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED	10226000BRREH001.dwg \ REH001
				D.E.S.	J. D.C.	J. D.C.	
				05-01-23	03-14-23	03-14-23	

MONTANA Department of Transportation — BRIDGE BUREAU

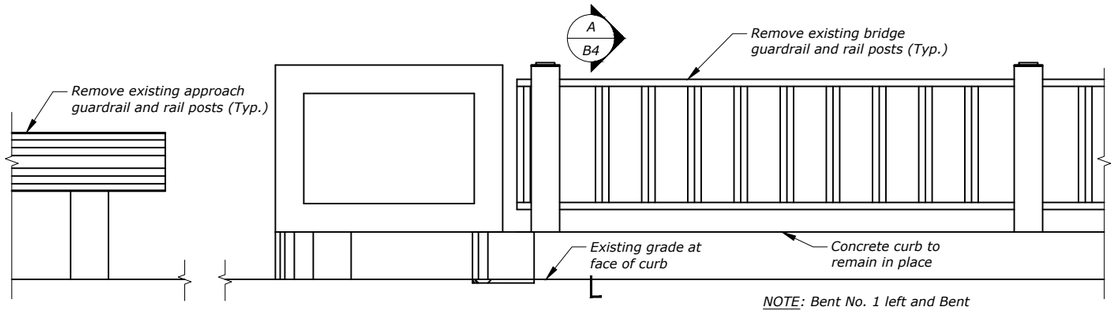
8/10/2023 3:03:14 PM

UPN NUMBER 10226000

DRAWING NO. 28154

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

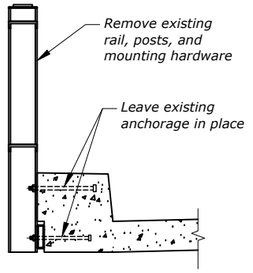
AWARD COPY



EXISTING ELEVATION VIEW

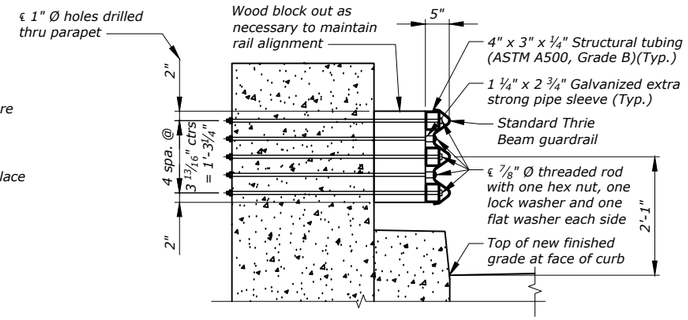
Scale ~ 3/8" = 1'-0"

NOTE: Bent No. 1 left and Bent No. 4 right shown. Bent No. 1 right and Bent No. 4 left similar.



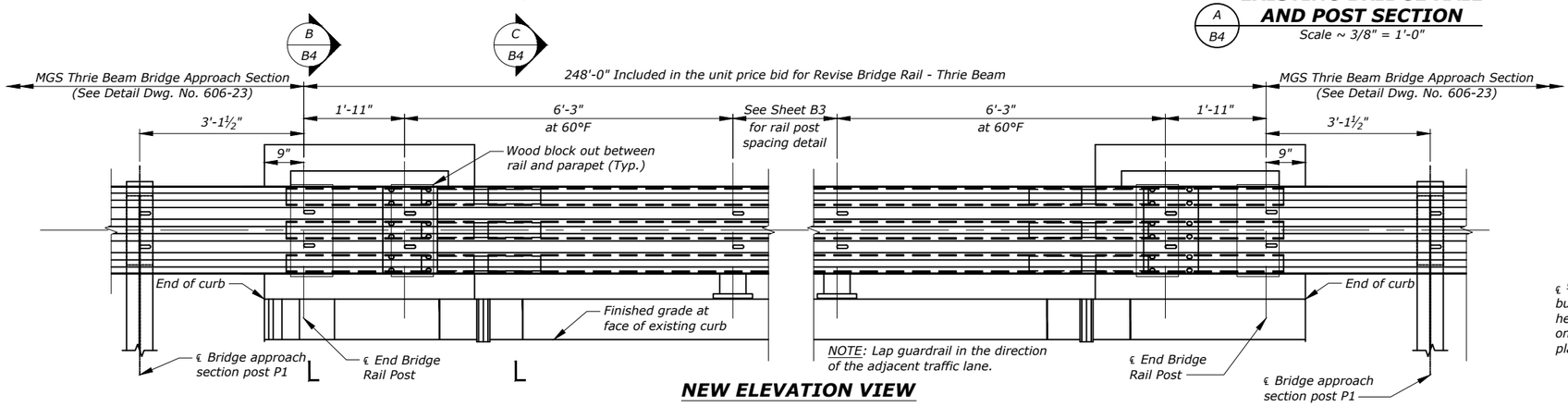
A B4 **EXISTING BRIDGE RAIL AND POST SECTION**

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



B B4 **NEW RAIL AND PARAPET SECTION**

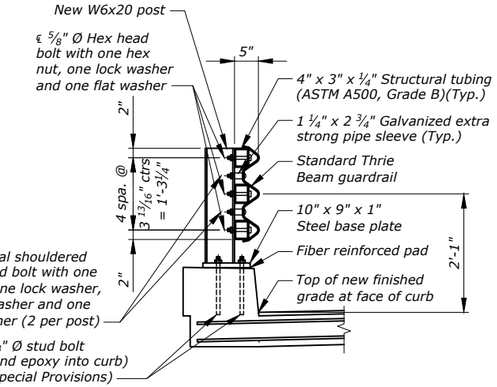
Scale ~ 3/8" = 1'-0"



NOTE: Lap guardrail in the direction of the adjacent traffic lane.

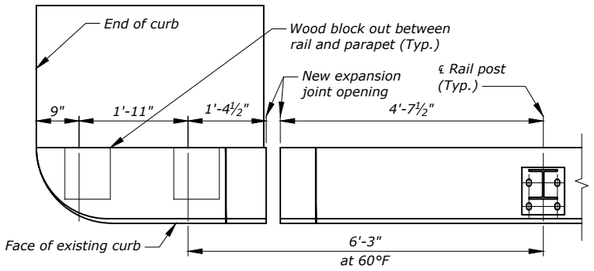
NEW ELEVATION VIEW

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



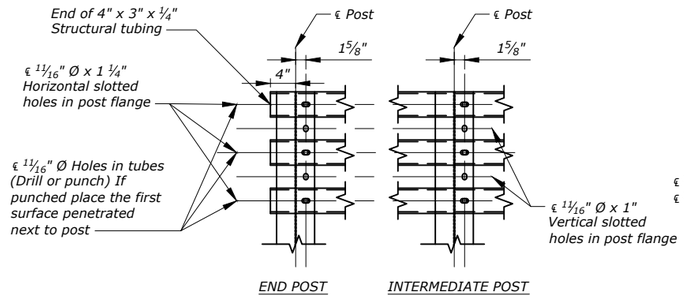
C B4 **NEW RAIL AND CURB SECTION**

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



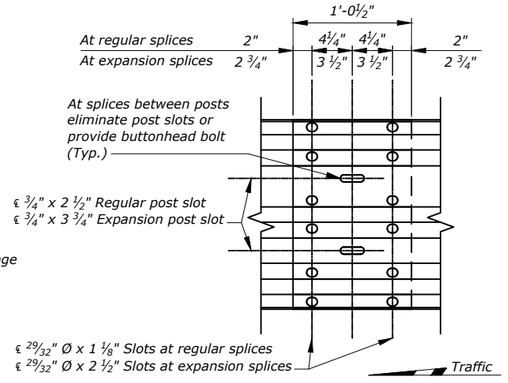
END BLOCK LOCATION DETAIL

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



RAIL POST DETAIL

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

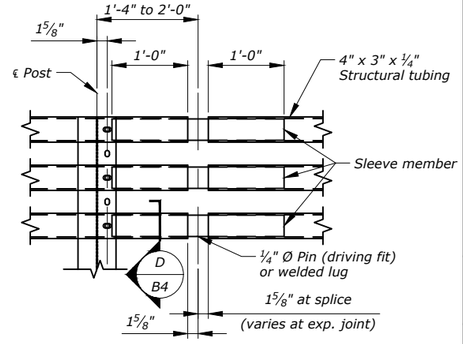


NOTE: Provide ⅝" Ø oval shoulder buttonhead bolts with hex nuts at all splice slots.

NOTE: At expansion slots in Thrie Beam, tighten bolts snugly.

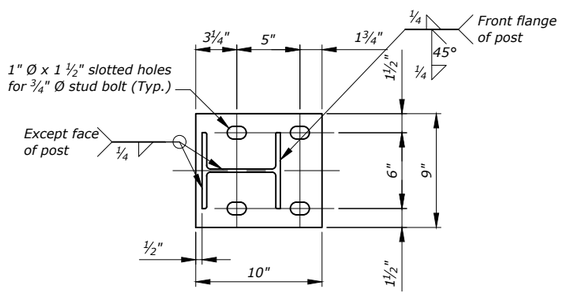
RAIL SPLICE DETAIL

Scale ~ ¾" = 1'-0"



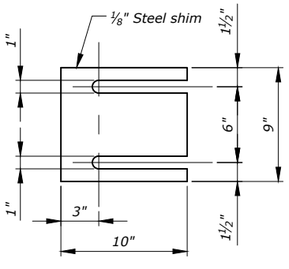
TUBE SPLICE DETAIL

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



STEEL BASE PLATE DETAIL

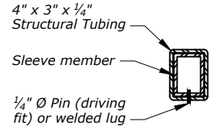
Scale ~ 1" = 1'-0"



RAIL POST SHIM DETAIL

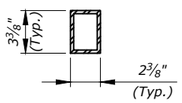
Scale ~ 1" = 1'-0"

NOTE: Furnish shims as necessary to adjust rail to grade. Place shims between fiber reinforced pads. Place shims with slots toward roadway centerline.



D B4 **TUBE SPLICE SECTION**

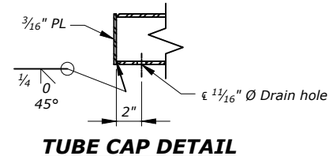
Scale ~ 1" = 1'-0"



NOTE: Fabricate sleeves using channels, angles, plates, or bent plates meeting the dimensions shown. Weld and grind smooth as required. Fabricate sleeves using no more than four welds. Fabricate sleeves with a minimum wall thickness of ¼".

SLEEVE FABRICATION OPTIONS

Scale ~ 1" = 1'-0"



TUBE CAP DETAIL

Scale ~ 1" = 1'-0"

SHEET NO. B4

THRIE BEAM RAIL DETAILS

SCALE: As Noted

PROJECT NAME **DODSON - SOUTH**

MDT STRUCTURE ID **06366**

FEDERAL AID PROJECT **STPS 204-1(6)0**

COUNTY **PHILLIPS**

REVISED					T.E.S.	05-01-23
REVISED					T.D.C.	03-14-23
REVISED					T.D.C.	03-14-23
CHECKED						
DRAWN						
DESIGNED						

10226000BRREH001.dwg \REH002

8/10/2023 3:03:19 PM

MONTANA Department of Transportation

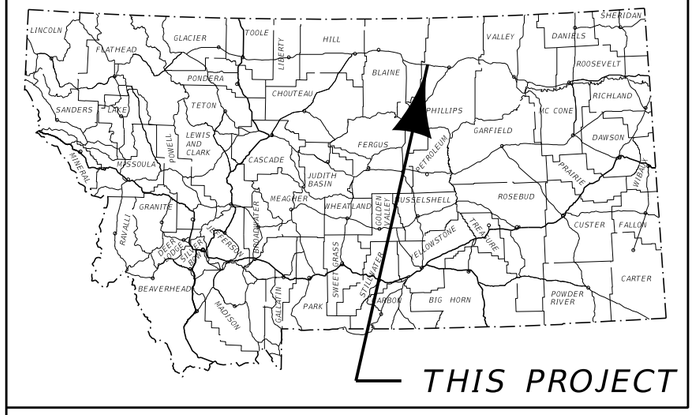
BRIDGE BUREAU

UPN NUMBER 10226000

DRAWING NO. 28155

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY



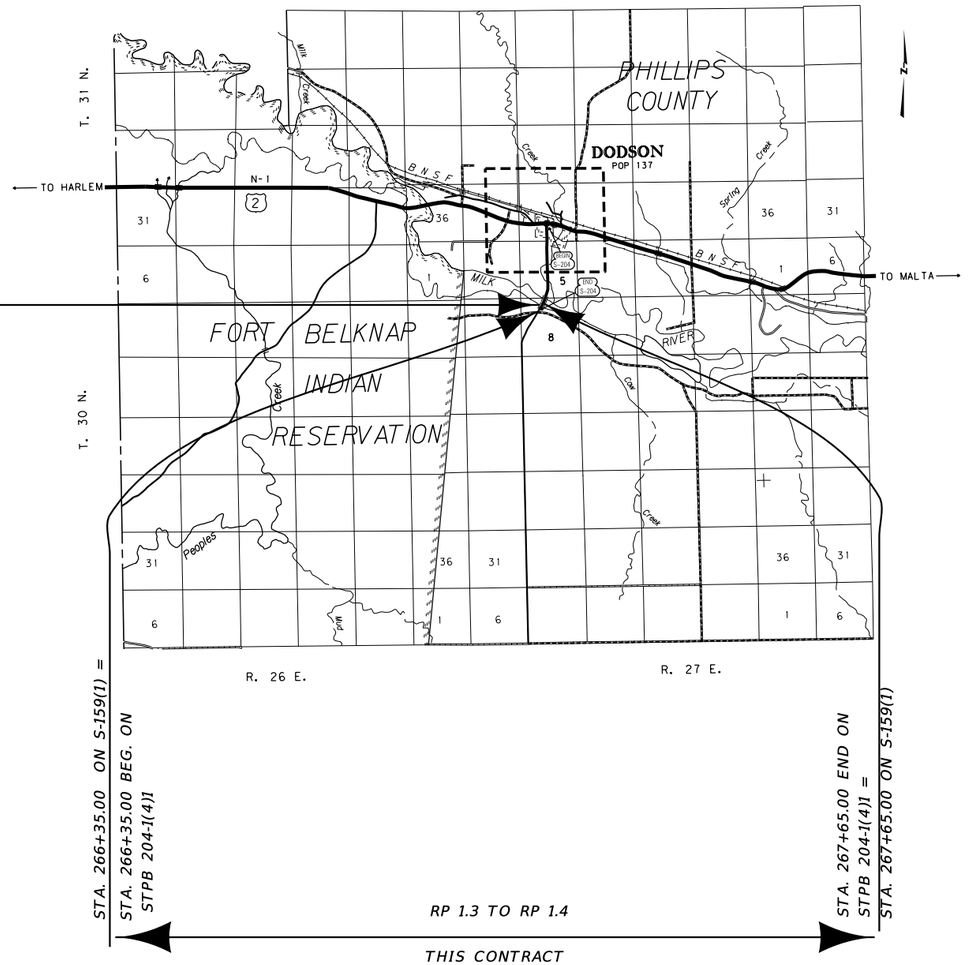
MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT STPB 204-1(4)1
BRIDGE REPLACEMENT WITH CULVERT
DODSON SOUTH CANAL-1M S DODSON
PHILLIPS COUNTY

DESIGN DATA		
PRESENT	2023	A.D.T. = 100
LETTING	2023	A.D.T. = 100
DESIGN	2043	A.D.T. = 130
		D.H.V. = 20
		TRUCKS = 6.0 %
		V. = 50 MPH
		18 KIP ESAL'S = 2 DAILY
		GROWTH RATE = 1.0 % ANNUALLY

LENGTH 0.1 MILES

SURFACING SOURCES -
CONTRACTOR FURNISHED



RELATED PROJECTS
STPS 204-1(6)0

ASSOCIATED PROJECT AGREEMENT NUMBERS	
R / W	
I.C.	
P. E.	STPB 204-1(3)1

MONTANA
DEPARTMENT OF TRANSPORTATION

MALCOLM "MACK" LONG
DIRECTOR OF TRANSPORTATION

APPROVED BY:

HIGHWAYS ENGINEER

DocuSigned by:
Damian Krings
354C32D8BEB041E...

DAMIAN KRINGS 12113PE
MONTANA PROFESSIONAL ENGINEER LICENSED

2/22/2024
DATE

3	MONTANA Department of Transportation	C:\DGN\9553001rdtl001.dgn	DESIGNED BY	A. BORSCHEL	2/9/2022
2		1/2/2024	REVIEWED BY	L. ZIEGLER	2/24/2023
		2:19:04 PM CPS - U695A	CHECKED BY	J. FLEMING	6/7/2023

ROAD PLANS

UPN 9553001

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

TABLE OF CONTENTS

ROAD PLANS	SHEET NO.
TITLE SHEET	1
TABLE OF CONTENTS	2
NOTES	2
CENTERLINE COORDINATE TABLE	2
LEVEL DATA	3
CONTROL DIAGRAM	3
TYPICAL SECTIONS	4
SUMMARIES	5-6
SURFACING	5
ADDITIONAL SURFACING	5
GRADING	5
REMOVE STRUCTURE	5
CULVERTS	6
REVEGETATION	6
GUARDRAIL	6
DETAILS	7
DOUBLE RCB WITH WINGWALLS	7
PLAN & PROFILE	8
CROSS SECTIONS	
MAINLINE	1-3

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
ASPHALT CEMENT - GRADE S - 3/4" AGG.	= 5.4% OF PL.MIX BIT.SURF.
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 (RUMBLE STRIPS)	= 0.10 GAL. PER SQ.YARD (UNDILUTED)

APPROACHES

APPROACH SURFACING IS INCLUDED IN THE TIED PROJECT STPS 204-1(6)0

PAVEMENT MARKING

PAVEMENT MARKING QUANTITIES INCLUDED IN THE TIED PROJECT STPS 204-1(6)0

WETLANDS

WETLANDS EXIST ADJACENT TO THE ROADWAY AND MAY EXIST BEYOND THE PROJECT LIMITS. WETLAND AREAS AND PERMANENT WETLAND IMPACT AREAS WITHIN THE PROJECT LIMITS HAVE BEEN DELINEATED AND ARE SHOWN ON THE PLANS. ANY ACTION IMPACTING WETLAND AREAS OUTSIDE OF THE PERMANENT IMPACT AREAS SHOWN IS THE RESPONSIBILITY OF THE CONTRACTOR.



DELINEATED WETLAND AREAS



PERMANENT WETLAND IMPACTED AREAS

CLEARING AND GRUBBING

CLEAR AND GRUB TO CONSTRUCTION LIMITS. INCLUDE THE COST OF CLEARING AND GRUBBING IN THE UNIT PRICE BID FOR EMB. IN PLACE

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.

PUBLIC LAND SURVEY MONUMENTS

ALL MONUMENTS TO BE REMOVED AND RELOCATED OR RESET BY STATE FORCES.

FUTURE TOP WIDTH

FINISHED TOP WIDTH HAS BEEN INCREASED BY 2.0' TO ACCOMODATE OVERLAY FROM THE TIED PROJECT STPS 204-1(6)0.

REFERENCE POSTS

STATIONING ON THIS PROJECT INCREASES FROM SOUTH TO NORTH. REFERENCE POSTS INCREASE FROM NORTH TO SOUTH.

SOILS INFORMATION

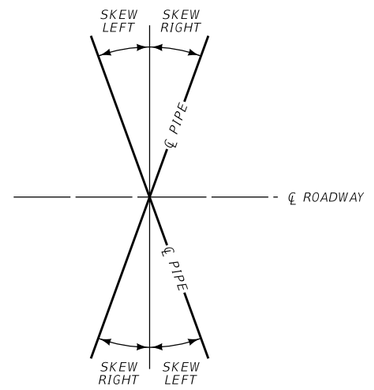
SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION. THE LOCATION OF GEOTECHNICAL BORINGS IS SHOWN ON THE PLAN VIEW WITH THE FOLLOWING SYMBOL:

BORING NUMBER



(GEOTECHNICAL BORING)

SKEW DIAGRAM



WETLAND DELINEATION TABLE

WETLAND DESIGNATION	STATION FROM	STATION TO	WETLAND AREA (ACRES) DELINEATED AREA		WETLAND AREA (ACRES) IMPACTED AREA (PERM.)	REMARKS
W1	267+75	269+24	0.255		0.000	RT *
W2	267+46	267+67	0.007		0.000	RT *
W3	267+35	267+54	0.018		0.003	LT
W4	266+26	266+68	0.035		0.005	LT *
W5	266+80	267+04	0.034		0.005	RT
TOTAL			0.35		0.01	

* AREA OF EXISTING WETLAND EXTENDS BEYOND PLAN LIMITS

CENTERLINE ALIGNMENT COORDINATE TABLE

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
265+35.00	POT	1,507,157.943	2,271,836.425	
266+35.00	POT	1,507,242.822	2,271,889.298	
267+65.00	POT	1,507,353.165	2,271,958.032	
268+65.00	POT	1,507,438.044	2,272,010.905	

GPK NAME: J0B955.GPK CHAIN NAME: S204 PROFILE NAME: PROPOSED

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

CONTROL DIAGRAM

SCALE: N/A

NOTE:
THIS PROJECT IS ON THE MONTANA COORDINATE SYSTEM NAD83-2011 .
NORTHING AND EASTING COORDINATES ARE EXPRESSED IN UNITS OF
INTERNATIONAL FEET AND ELEVATIONS ARE IN UNITS OF U.S. SURVEY FEET.

DIMENSIONS SHOWN ON THE PLANS ARE GRID. ALL SURVEY AND STAKING REQUIRE
THE USE OF A COMBINATION SCALE FACTOR (CSF) TO CONVERT GRID DIMENSIONS
TO GROUND DIMENSIONS (GRID DISTANCE / CSF = GROUND DISTANCE).
THE CSF FOR THIS PROJECT IS 0.99957046.

CONTROL ABSTRACT

POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
A9553	1,506,847.080	2,271,560.758	2306.84	SET 2" A.C. ON 5/8" X 30" REBAR STAMPED "A9553 2018". POINT IS LOCATED 1.511 MILES SOUTH ON HWY 204, 55' WEST OF THE WEST EDGE OF PTW AND 17' NORTH OF CENTERLINE OF APPROACH, 2' EAST OF NORTH-SOUTH FENCE. SET WITNESS POST 1' WEST OF CAP.
B9553	1,506,799.121	2,271,675.295	2309.35	SET 2" A.C. ON 5/8" X 30" REBAR STAMPED "B9553 2018". POINT IS LOCATED 1.511 MILES SOUTH ON HWY 204, 40' EAST OF EAST EDGE OF PTW AND 29' NORTH OF CENTERLINE OF APPROACH, 2' WEST OF NORTH-SOUTH FENCE. SET WITNESS POST 1' EAST OF CAP.
C9553	1,507,489.672	2,272,090.069	2287.29	SET 2" A.C. ON 5/8" X 30" REBAR STAMPED "C9553 2018". POINT IS LOCATED 1.356 MILES SOUTH ON HWY 204, 28' EAST OF EAST EDGE OF PTW AND 30' SOUTH OF CENTERLINE OF APPROACH, SET WITNESS POST 3' EAST CAP.
D9553	1,508,393.235	2,272,552.677	2292.18	SET 2" A.C. ON 5/8" X 30" REBAR STAMPED "D9553 2018". POINT IS LOCATED 1.165 MILES SOUTH ON HWY 204, 17' EAST OF EAST EDGE OF PTW AND 21' NORTH OF CENTERLINE OF APPROACH, SET WITNESS POST 3' EAST CAP.
J275	1,506,484.416	2,272,216.506	2325.09	



LEVEL DATA

BEARING SOURCE

GRID -- MONTANA COORDINATE SYSTEM NAD 83- 2011

LEVEL DATUM SOURCE

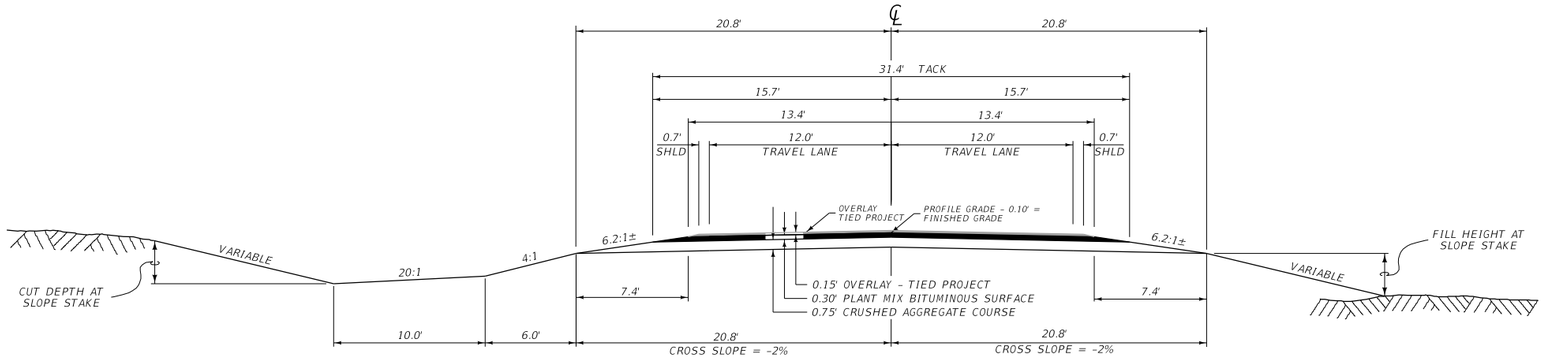
NAVD 88 (GNSS DERIVED ELEVATIONS USING GEOID 12A)

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

TYPICAL SECTION NO. 1

MAINLINE

266+35.00 TO 267+65.00 TYP. NO. 1



QUANTITIES					
UNIT	AGGREGATE		UNIT	BIT. MATERIAL	
	PLANT MIX	CR. AGG. COURSE		EMULSIFIED ASPHALT TACK*	
AREA square feet	8.73	27.38	square yards PER STATION	698	
cubic yards PER STATION	32.3	101.4	tons PER STATION		
tons PER STATION	62.3		gals. PER STATION	35	
square yards PER STATION					

*BASED ON 2 APPLICATIONS

* FILL SLOPES	
0' - 10'	4:1
10' - 30'	3:1
OVER 30'	2:1

* BACK SLOPES	
0' - 5'	5:1
5' - 10'	4:1
10' - 15'	3:1
OVER 20'	2:1

* SEE CROSS SECTIONS FOR DEVIATIONS

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY

SUMMARY

SURFACING

STATION		linear feet		FOR	AGGREGATE		BIT. MATERIAL	REMARKS
					tons	cu. yards	gals.	
FROM	TO	GROSS	NET		COMM PLANT MIX BIT. SURF. 3/4" PG 58V-34	CRUSHED AGG. COURSE	EMULSIFIED ASPHALT TACK	
266+35.00	267+65.00	130.00	130.00		81	132	46	TYP. NO. 1
TOTAL		130.00	130.00		81	132	46	

GRADING

STATION		cu. yards		REMARKS
		EXC.	EMB. IN PLACE	
FROM	TO			
266+35.00	267+65.00	103	2,144	
TOTAL		#103	2144	

#FOR INFORMATION ONLY

REMOVE STRUCTURE

STATION	lump sum	REMARKS
	REMOVE STRUCTURE	
267+00	1.0	S00204001+04001,06367
TOTAL	1.0	

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

SUMMARY

CULVERTS

STATION	linear feet	END SECTIONS		cu. yards					sq. yards	linear feet		
	DOUBLE CELL RCB *			STREAMBED MATERIAL	FOUNDATION MATERIAL	GRANULAR BEDDING MATERIAL	SPECIAL BACKFILL	CONCRETE - CLASS GENERAL	GEOTEXT. STAB.	HEIGHT OF COVER	SKEW ANGLE	REMARKS
	14' X10'	LEFT	RIGHT									
267+00	70	FL. WING WALLS	FL. WING WALLS	73	176	88	878	89.8	560	3.9	9° LT	NEW NBI NUMBER: 000000202306367
TOTAL	70	~	~	73	176	88	878	#89.8	560	~	~	

* INCLUDE WINGWALLS, PRECAST CONCRETE CURBS, CUTOFF WALLS, SPECIAL BACKFILL BEHIND WINGWALLS, WINGWALL GRANULAR BEDDING, WEEP HOLE FILTERS AND GEOCOMPOSITE STRIP DRAINS IN THE COST OF THE CULVERT.
#FOR INFORMATION ONLY. INCLUDE IN COST OF THE CULVERT.

REVEGETATION

STATION		lump sum	cu. yards	acres			REMARKS
		REVEGE-TATION	TOPSOIL SALVAGING & PLACING	SEED	FERTILIZER	CONDITION SEEDBED	
FROM	TO						
266+35	267+65	1	52	0.12	0.12	0.12	
TOTAL		1	#52	#0.12	#0.12	#0.12	

#FOR INFORMATION ONLY

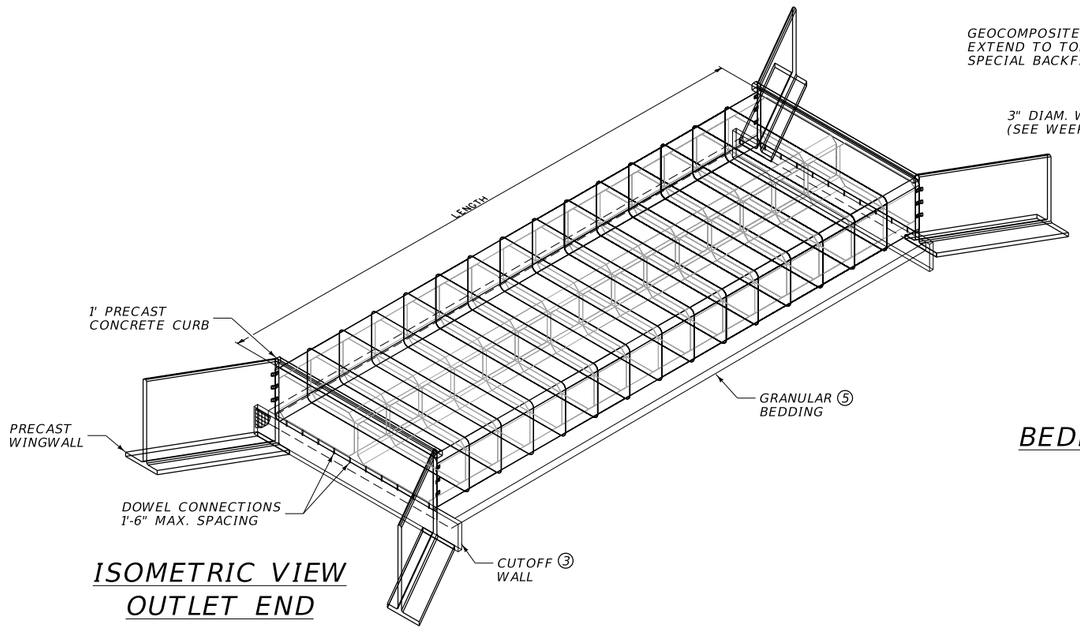
GUARDRAIL

STATION		linear feet		REMARKS
		REMOVE GUARDRAIL		
FROM	TO	LEFT	RIGHT	
REMOVE RAIL				
266+35	266+69	34.0	34.0	
267+80	268+09	29.0	29.0	
SUBTOTAL		63.0	63.0	
TOTAL		126.0		

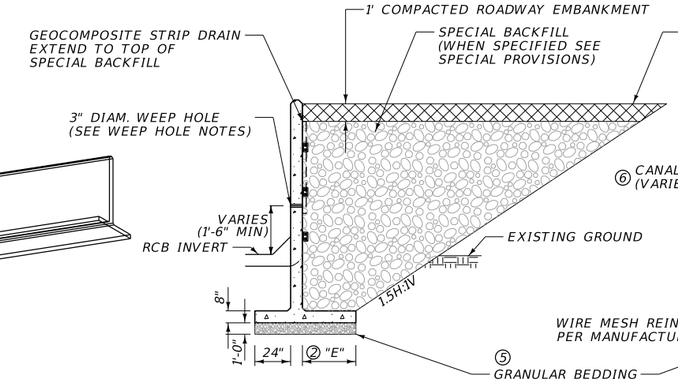
DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY

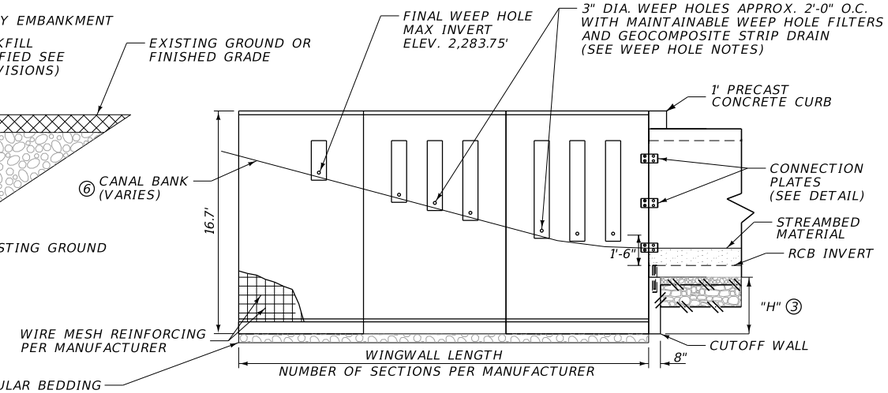
DETAIL



ISOMETRIC VIEW OUTLET END



PRECAST WINGWALL BEDDING AND BACKFILL DETAIL



PRECAST WINGWALL DETAIL SIDE VIEW

WINGWALL ATTRIBUTES				
STATION	LENGTH (ft.)	HEIGHT (ft.)	FLARE ANGLE φ (°)	ESTIMATED NUMBER OF WEEP HOLES
266+80 LT	42	16.7	60	19
266+91 RT	30	16.7	60	13
267+09 LT	42	16.7	75	19
267+20 RT	34	16.7	60	15

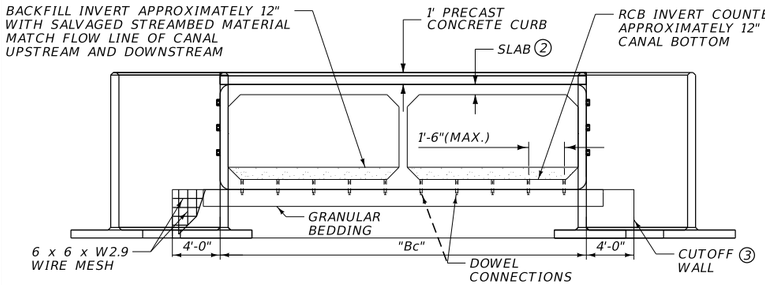
WEEP HOLE NOTES:

INSTALL 3" WEEP HOLES AT APPROX. 2'-0" O.C. TO FIT FIELD CONDITIONS. LOCATE WEEP HOLES 3" TO 6" ABOVE THE FINISHED GRADE ELEV. OF THE CANAL BANKS.

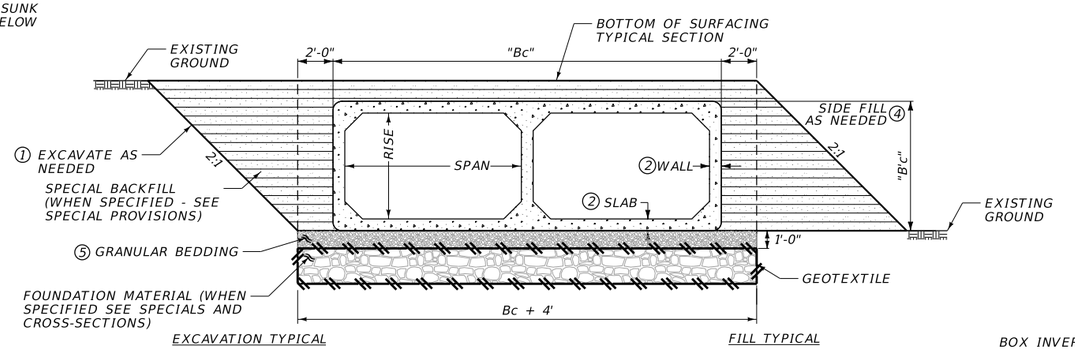
THE ESTIMATED NUMBER OF WEEP HOLES PER WINGWALL IS BASED ON EXISTING GROUND SURVEY. THE ACTUAL NUMBER MAY VARY BASED ON THE FINISHED GRADE OF THE CANAL BANKS.

INSTALL JET FILTER 3" MAINTAINABLE WEEP HOLE FILTER WITH BACKFLOW PREVENTER (JF3SSCVLV) IN EACH WEEP HOLE.

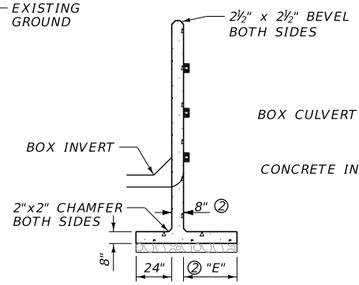
*INSTALL 12" GEOCOMPOSITE STRIP DRAIN ON BACK OF WALL PER MANUFACTURER'S RECOMMENDATION. EXTEND STRIP DRAIN TO TOP OF SPECIAL BACKFILL**



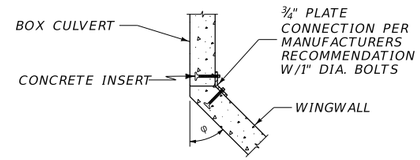
PRECAST DOUBLE CELL ⑦ BOX CULVERT WITH CUTOFF WALL AND PRECAST WINGWALLS



BOX CULVERT BEDDING DETAIL



PRECAST WINGWALL DETAIL END VIEW



ANGLE CONNECTION PLATE 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.*

⑥ *RESTORE FINISHED GRADE BANKS TO APPROXIMATELY MATCH EXISTING.*

⑦ *TWO SINGLE CELL BOX CULVERTS MAY BE SUBSTITUTED FOR A DOUBLE CELL. SET THE SINGLE CELL CULVERTS SIDE BY SIDE WITH A UNIFORM GAP 1" TO 4" WIDE BETWEEN THE ADJACENT EXTERIOR WALLS, AND COMPLETELY FILL THE GAP WITH NON-EXCAVATABLE CLSM. INSTALL JOINT WRAP PER THE SPECIAL PROVISIONS ON THE FIRST BOX PLACED. FOR THE SECOND BOX, JOINT WRAP MAY BE OMITTED ON THE WALL ADJACENT TO THE FIRST BOX. INCLUDE THE COST OF CLSM AND OTHER ITEMS NEEDED TO SUBSTITUTE SINGLE CELL BOX CULVERTS FOR DOUBLE CELL IN THE RCB UNIT PRICE. TWO SINGLE CELL BOX CULVERTS ARE MEASURED FOR LENGTH AS ONE DOUBLE CELL.*

DIMENSIONS										
STATION	SPAN (ft.)	RISE (ft.)	LENGTH (ft.)	WALL (in.)	SLAB (in.)	"E" (in.)	"Bc" (ft.)	"B'c" (ft.)	"H" (ft.)	COVER (ft.)
267+00.00	14	10	70	8	10	40	30	11.7	4	3.9

NOTE: QUANTITIES ARE BASED ON THE DIMENSIONS IN THE TABLE. PROVIDE BOX CULVERTS MEETING ASTM C1577.

INCLUDE PRECAST FLARED WINGWALLS, PRECAST CONCRETE CURBS, CUTOFF WALLS, SPECIAL BACKFILL BEHIND PRECAST FLARED WINGWALLS, WEEP HOLE FILTERS, GEOCOMPOSITE STRIP DRAINS, AND GRANULAR BEDDING BENEATH THE PRECAST FLARED WINGWALLS IN THE UNIT PRICE BID PER LINEAR FOOT OF RCB.

**PROVIDE A GEOCOMPOSITE STRIP DRAIN CONSTRUCTED OF A POLYMERIC DRAINAGE CORE WITH A MINIMUM COMPRESSIVE STRENGTH OF 9000 PSF PER ASTM D 1621 AND A MINIMUM FLOW CAPACITY OF 20 GPM PER ASTM D 4716. THE STRIP DRAIN MUST BE WRAPPED IN A SUBSURFACE DRAINAGE GEOTEXTILE FILTER MEETING THE REQUIREMENTS OF HIGH SURVIVABILITY, CLASS B OF SECTION 716.*

DETAIL
DOUBLE RCB WITH WINGWALLS

NOT TO SCALE

NO SCALE

3	MONTANA Department of Transportation	C:\DGN\9553001rddet001.dgn	DESIGNED BY J BERAN	3-8-2021	ROAD PLANS	DODSON SOUTH CANAL-1M S DODSON	STPB 204-1(4)1
2		1/2/2024	REVIEWED BY				
		2:20:11 PM CPS - U695	CHECKED BY		PHILLIPS COUNTY	UPN 9553001	7

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY

260+00

T. 50 N., R. 27 E.

SEC. 8

EX. R/W

POT 263+95.90

W4

POT 266+35.00

DODSON SOUTH CANAL

W3

POT 267+65.00

270+00

EX. R/W

N 31° 55' 10" E

EX. R/

FO 160

FO

FO

120

EX. R/W

EQUATION:
STA 262+99.00 BK =
STA 263+95.90 AH

STA 266+35
BEGIN STPB 204-1(4)1

267+00
STRUCTURE IN PL
REMOVE

W5

267+00
NEW 14' x 10' DBL CELL RCB
SKEW 9° LT

W2

W1

STA 267+65
END STPB 204-1(4)1

FO

FO

EX. R/W

120

100

EX. R/W

266+35 TO 266+69
REMOVE GUARDRAIL LT & RT

267+80 TO 268+09
REMOVE GUARDRAIL LT & RT

266+35.00
2,292.35

267+65.00
2,291.15

400' VC

-4.290%

+0.348%

266+10.00
EL 2,290.49

2300

2290

2280

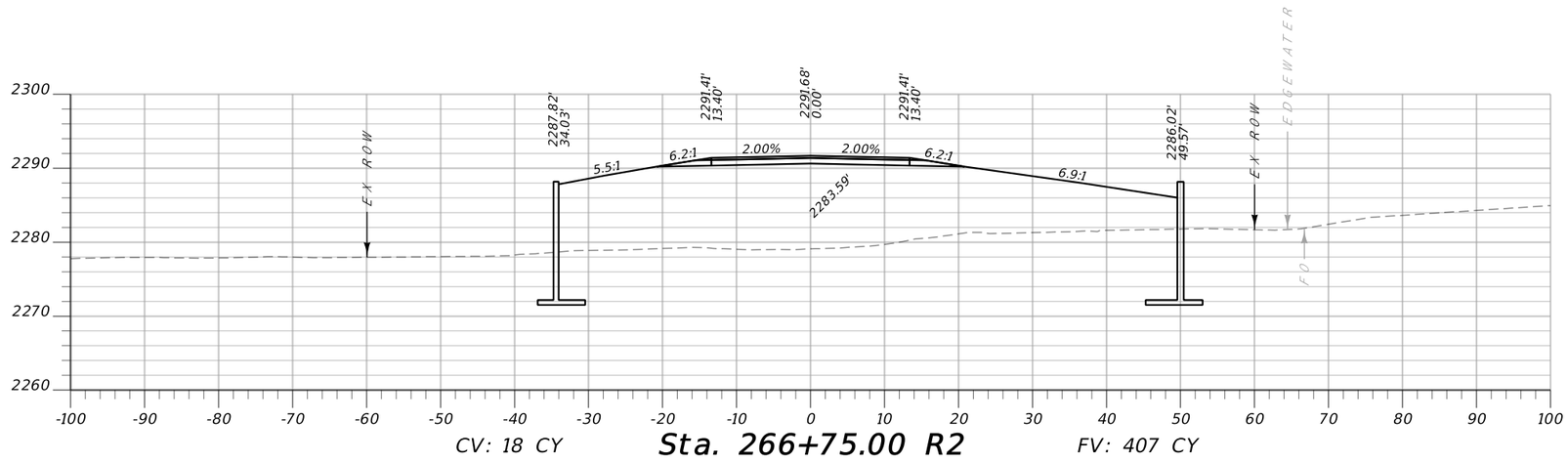
2270

265+00

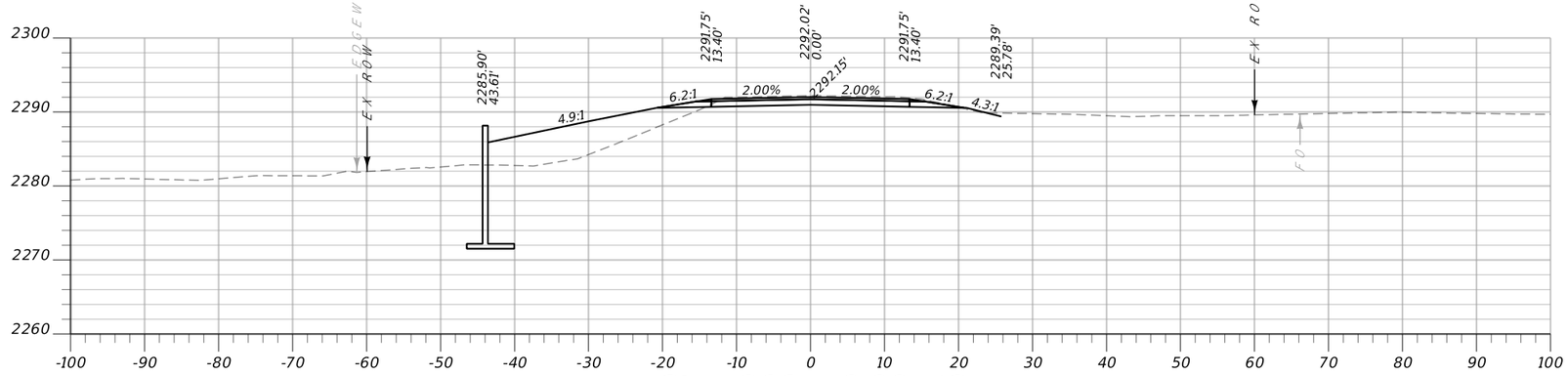
270+00

3	MONTANA Department of Transportation	C:\DGN\9553001rdplp001.dgn	DESIGNED BY	A. BORSCHEL	2/9/2022	ROAD PLANS	DODSON SOUTH CANAL-1M S DODSON / STPB 204-1(4)1
2		1/2/2024	REVIEWED BY				
		2:20:23 PM CPS - U695.1	CHECKED BY			PHILLIPS COUNTY	UPN 9553001 / 8

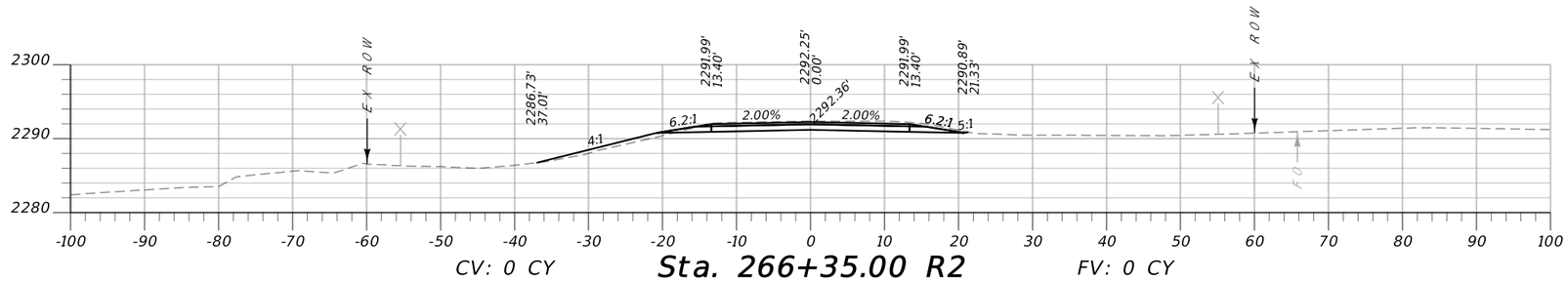
DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD



CV: 18 CY **Sta. 266+75.00 R2** FV: 407 CY



CV: 22 CY **Sta. 266+50.00 R2** FV: 30 CY

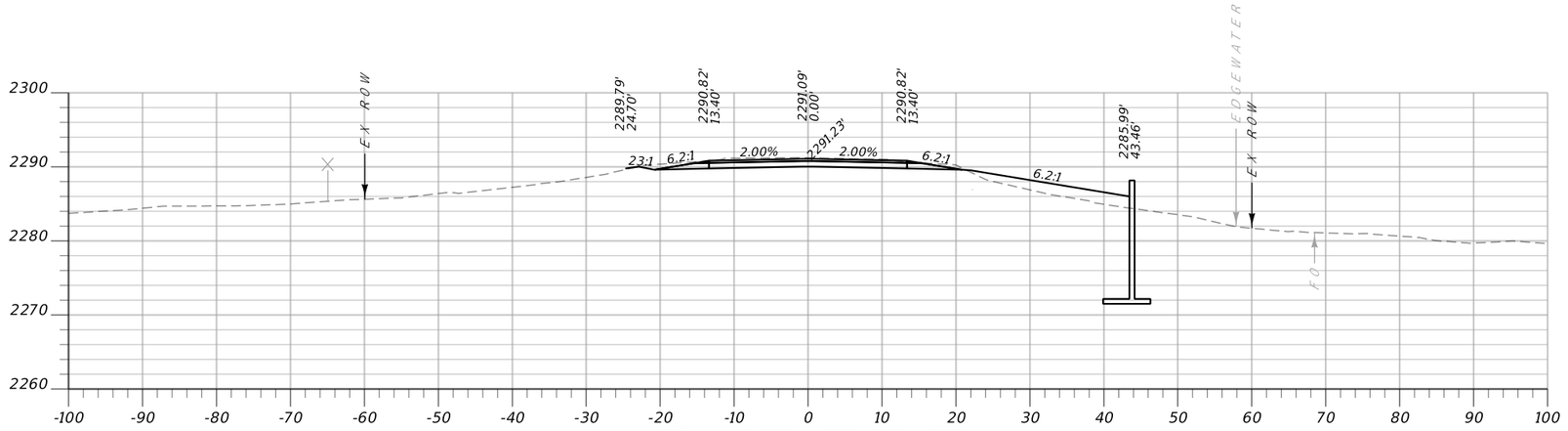


CV: 0 CY **Sta. 266+35.00 R2** FV: 0 CY

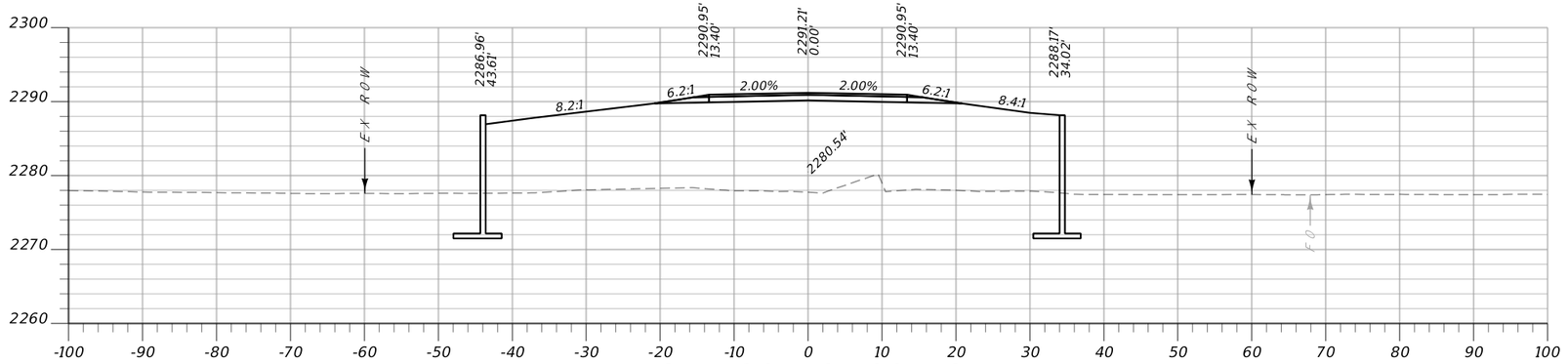
MONTANA Department of Transportation	C:\DGN\9553001rdlay001.dgn	DESIGNED BY A. BORSCHEL	2/8/2022	MAINLINE CROSS SECTIONS	DODSON SOUTH CANAL-1M S DODSON	STPB 204-1(4)1
	6/12/2023	REVIEWED BY				
	10:36:05 AM CPS - U6951	CHECKED BY		PHILLIPS COUNTY	UPN 9553001	SHEET 1

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

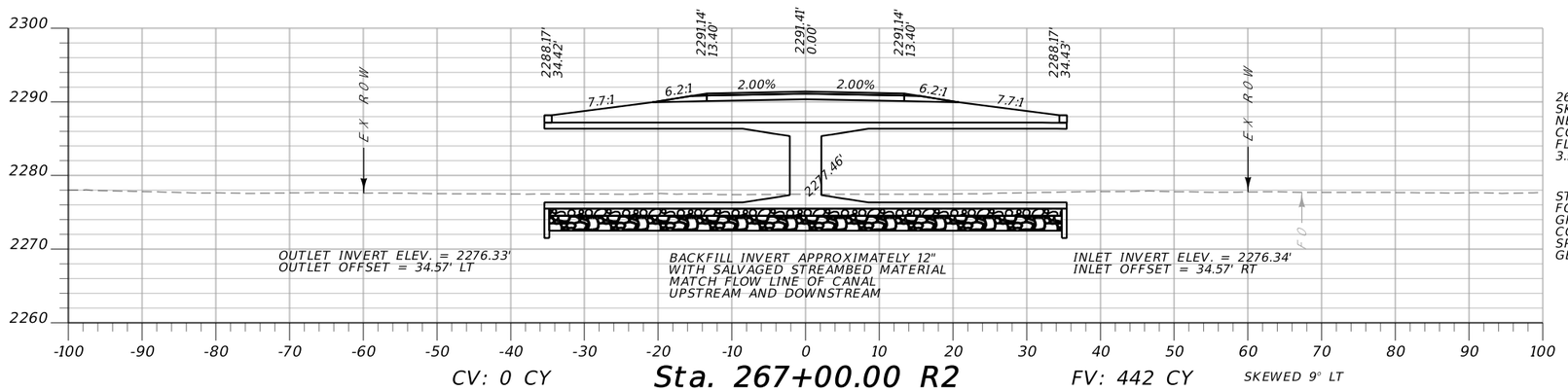
AWARD COPY



CV: 21 CY **Sta. 267+50.00 R2** FV: 417 CY



CV: 0 CY **Sta. 267+25.00 R2** FV: 485 CY



CV: 0 CY **Sta. 267+00.00 R2** FV: 442 CY SKEWED 9° LT

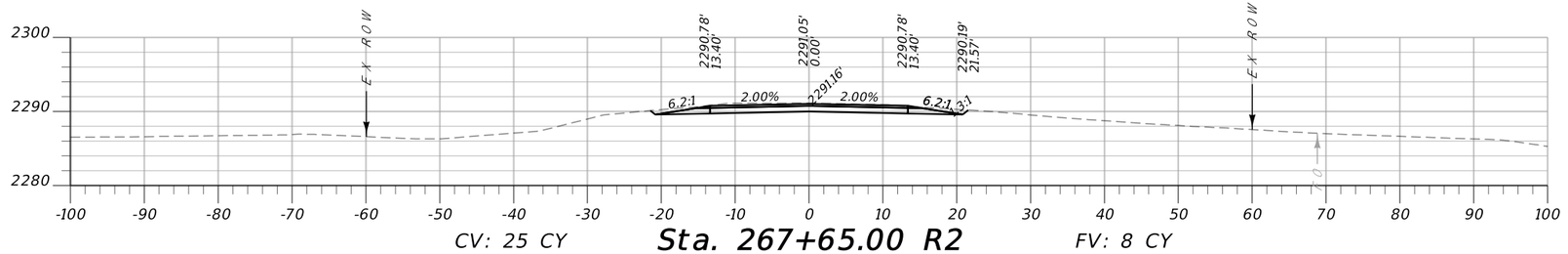
267+00
SKEW 9° LT
NEW 14' x 10' x 70.0' DOUBLE CELL RCB
CONC. CUT OFF WALLS LT & RT
FLARED WING WALLS LT & RT
3.9' COVER

STREAMBED MATERIAL: 73 CU. YD.
FOUNDATION MATERIAL: 176 CU. YD.
GRANULAR BEDDING: 88 CU. YD.
CONCRETE - CLASS GENERAL: 89.8 CU. YD.
SPECIAL BACKFILL: 878 CU. YD.
GEOTEXTILE STABILIZATION: 560 SQ. YD.

MONTANA Department of Transportation	C:\DGN\9553001rdlay001.dgn	DESIGNED BY A. BORSCHEL	2/8/2022	MAINLINE CROSS SECTIONS	DODSON SOUTH CANAL-1M S DODSON	STPB 204-1(4)1
	6/12/2023	REVIEWED BY		PHILLIPS COUNTY	UPN 9553001	SHEET 2
	10:36:08 AM CPS - U6951	CHECKED BY				

DocuSign Envelope ID: E742802A-3F07-463A-8CA0-82ACE48686CD

AWARD COPY



CV: 25 CY **Sta. 267+65.00 R2** FV: 8 CY

MONTANA Department of Transportation	C:\DGN\9553001rdlay001.dgn	DESIGNED BY A. BORSCHEL	2/8/2022	MAINLINE CROSS SECTIONS	DODSON SOUTH CANAL-1M S DODSON	STPB 204-1(4)1
	6/12/2023	REVIEWED BY				
	10:36:11 AM CPS - U6951	CHECKED BY		PHILLIPS COUNTY	UPN 9553001	SHEET 3