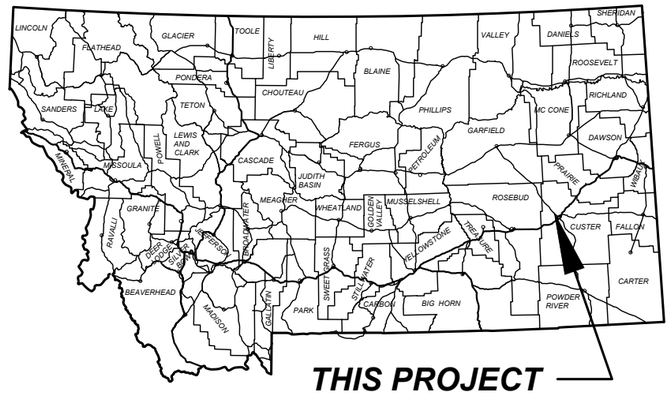
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PROJECT DESIGN DATA

PRESENT	2022	A.D.T. =	620
LETTING	2023	A.D.T. =	630
DESIGN	2043	A.D.T. =	770
		D.H.V. =	100
		TRUCKS =	6.9%
		V. =	50 MPH
		18 KIP ESAL'S =	22 Daily
		ANNUAL GROWTH RATE =	1.0%

ASSOCIATED PROJECT AGREEMENT NUMBERS	
R/W	
I.C.	STPS 489-1(10)0
P.E.	STPS 489-1(8)0

MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT STPS 489-1(9)0

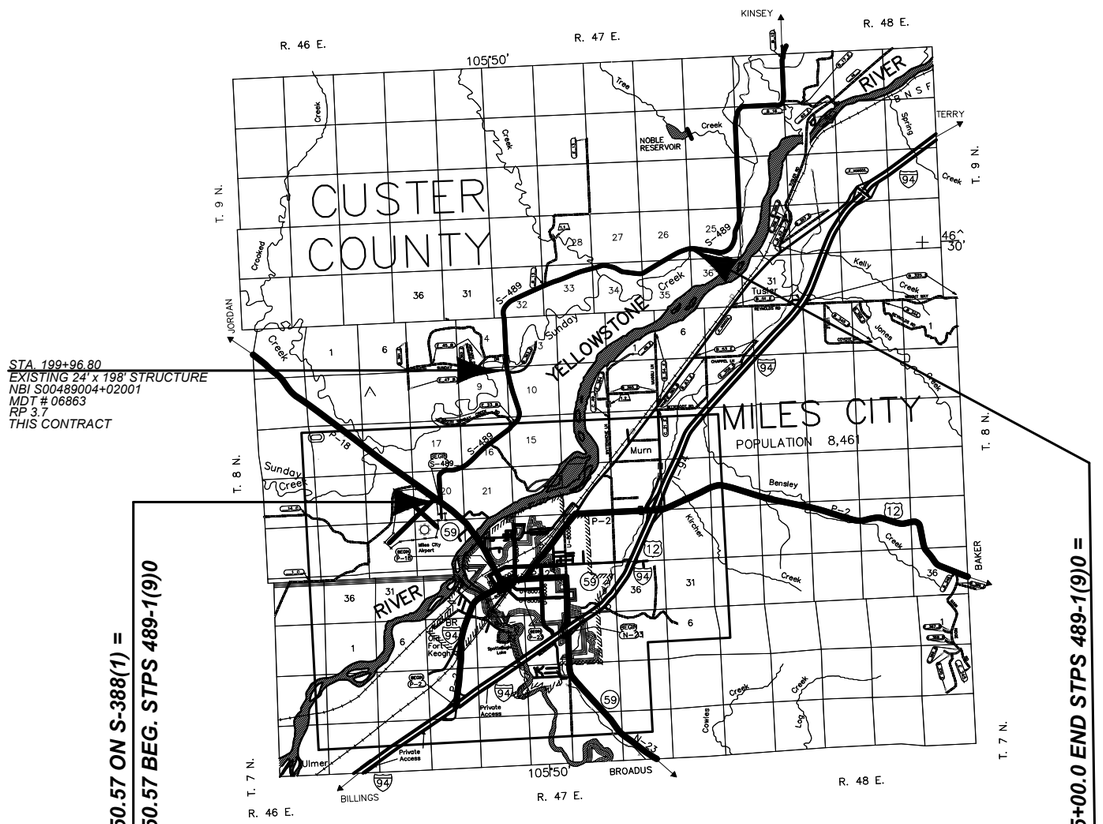
MILL, OVERLAY, SEAL & COVER

JCT MT 59-NORTHEAST (S-489)

CUSTER COUNTY

LENGTH 8.6 MILES

SURFACING SOURCES - CONTRACTOR FURNISHED



MONTANA
DEPARTMENT OF TRANSPORTATION

APPROVED BY:

HIGHWAYS ENGINEER

DocuSigned by:
Damian Krings
354C32D0BEB041E...

MONTANA
DAMIAN KRINGS
12113PE
LICENSED PROFESSIONAL ENGINEER

7/1/2024
DATE

SHEET NO. 1

TITLE

PROJECT NAME: JCT MT 59-NORTHEAST (S-489)
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY	A. BORSCHEL	9/14/23
REVIEWED BY	L. ZEIGLER	9/20/23
CHECKED BY	T. JOHNSON	2/22/24

MONTANA
Department of Transportation

ROAD PLANS

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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
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)
SEAL	= 0.42 GAL. PER SQ.YARD
COVER	= 25 LBS. PER SQ.YARD
LEVELING	= 50 TONS PER MILE

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
TAPER MILL AND FEATHER PAVING ON ALL FARM FIELD APPROACHES WITH A 12' WIDE PLANT MIX STRIP ADJACENT AND PARALLEL TO THE ROADWAY

MAILBOXES & MAILBOX TURNOUTS

CONSTRUCT MAILBOX TURNOUTS AT LOCATIONS SHOWN IN THE PLANS OR AS STAKED BY THE PROJECT MANAGER.

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

AS-BUILTS

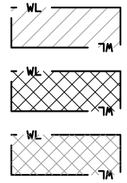
FOR HORIZONTAL ALIGNMENT AND STATIONING, REFER TO THE FOLLOWING "AS-BUILT" PROJECT:
S-388(1) - (1951)

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.

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

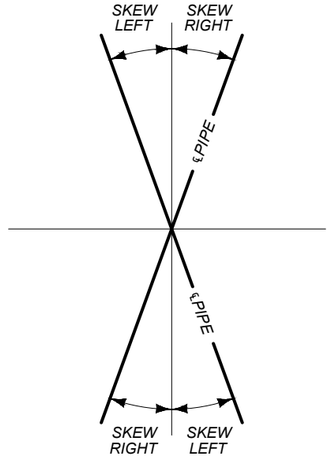
TEMPORARY WETLAND IMPACT AREAS

WETLAND DELINEATION TABLE

WETLAND DELINEATION TABLE	STATION		WETLAND AREA (acres)			REMARKS
	FROM	TO	DELINEATED AREA	TEMPORARY IMPACTED AREA ##	PERMANENT IMPACTED AREA	
W1	237+84	240+56	0.240	0.022	0.000	RT
W2	240+70	240+94	0.005	0.001	0.002	LT
W3	240+97	241+54	0.021	0.002	0.000	LT
W4	349+72	351+57	0.123	0.009	0.000	LT
W5	351+22	352+56	0.136	0.025	0.004	RT
TOTAL			0.53	0.06	0.01	

TEMPORARY IMPACT AREAS ARE ESTIMATED AND PROVIDED FOR INFORMATIONAL PURPOSES ONLY. TEMPORARY WETLAND IMPACTS SHOWN IN THE TABLE AND ANY OTHER IMPACTS ASSOCIATED WITH CONTRACTOR OPERATIONS ARE TO BE PERMITTED BY CONTRACTOR.

SKEW DIAGRAM



SHEET NO. 2

TABLE OF CONTENTS

PROJECT NAME: JCT MT 59-NORTHEAST (S-489)
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY: A. BORSCHEL 9/14/23
REVIEWED BY: L. ZEIGLER 9/20/23
CHECKED BY:

MONTANA Department of Transportation

ROAD PLANS

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NOTES

APPROACHES (FOR INFORMATION ONLY)

STATION	TYPE	linear feet				PROPOSED SURFACE	tons			gallons	sq. yards	REMARKS
		WIDTH	RADIUS #		LENGTH		PLANT MIX BIT. SURF. GR. S - MISC	PLANT MIX BIT. SURF. GR. S - 3/4"	ASPHALT CEMENT PG 58V-34	EMULS. ASPHALT TACK	AREA ## • ♦	
			LEFT	RIGHT								
18+00	FARM FIELD	23	25	25	12	12.0' PMS STRIP	5		0.3	2	47	LT.
18+00	FARM FIELD	27	20	20	12	12.0' PMS STRIP	5		0.3	2	49	RT.
50+00	FARM FIELD	26	15	15	12	12.0' PMS STRIP	4		0.2	2	43	LT.
50+50	FARM FIELD	28	20	50	12	12.0' PMS STRIP	5		0.3	3	57	RT.
94+08	FARM FIELD	26	15	15	12	12.0' PMS STRIP	4		0.2	2	43	LT.
94+08	FARM FIELD	28	20	50	12	12.0' PMS STRIP	5		0.3	3	57	RT.
129+60	FARM FIELD	20	15	15	12	12.0' PMS STRIP	4		0.2	2	39	RT.
137+75	FARM FIELD	20	25	20	12	12.0' PMS STRIP	4		0.2	2	42	RT.
144+66	FARM FIELD	24	35	35	12	12.0' PMS STRIP	5		0.3	3	50	LT.
159+16	FARM FIELD	24	20	15	12	12.0' PMS STRIP	4		0.2	2	43	LT.
163+15	FARM FIELD	16	25	25	12	12.0' PMS STRIP	4		0.2	2	38	LT.
186+68	FARM FIELD	35	15	15	12	12.0' PMS STRIP	5		0.3	3	55	RT.
231+50	FARM FIELD	14	15	15	12	12.0' PMS STRIP	3		0.2	1	27	LT.
309+42	FARM FIELD	14	15	15	12	12.0' PMS STRIP	3		0.2	1	27	LT.
309+48	FARM FIELD	12	15	15	12	12.0' PMS STRIP	2		0.1	1	24	RT.
348+79	FARM FIELD	28	20	25	12	12.0' PMS STRIP	5		0.3	3	52	RT.
385+39	FARM FIELD	14	15	15	12	12.0' PMS STRIP	3		0.2	1	26	RT.
445+00	FARM FIELD	18	20	20	12	12.0' PMS STRIP	3		0.2	2	34	RT.
SUBTOTAL	**FARM FIELD**						**73**	~	**4.2**	**37**	~	
31+36	MAILBOX TURNOUT	9	N/A	N/A	335	PAVE EXISTING	25		1.4	13	262	RT.
SUBTOTAL	**MAILBOX TURNOUT**						**25**	~	**1.4**	**13**	~	
31+15	PRIVATE	23	40	30	30	PAVE TO R/W	13		0.7	7	130	LT.
40+00	PRIVATE	75	30	30	4	PAVE TO CONCRETE	3		0.2	2	36	LT.
120+73	PRIVATE	12	35	50	51	PAVE TO R/W	46		2.5	24	473	RT. *
172+00	PRIVATE	14	30	40	47	PAVE TO R/W	39		2.1	20	403	LT. *
186+95	PRIVATE	14	60	40	63	PAVE TO R/W	20		1.1	10	204	LT.
212+56	PRIVATE	13	40	30	30	PAVE TO R/W	9		0.5	5	98	LT.
214+61	PRIVATE	30	45	30	30	PAVE TO R/W	20		1.1	10	204	LT. *
224+92	PRIVATE	14	40	35	20	PAVE TO R/W	9		0.5	5	92	LT.
277+88	PRIVATE	11	40	50	60	PAVE TO R/W	43		2.3	22	441	RT. *
297+76	PRIVATE	17	50	20	40	PAVE TO R/W	11		0.6	6	119	RT.
325+00	PRIVATE	15	20	25	50	PAVE TO R/W	10		0.5	5	105	LT.
340+45	PRIVATE	12	30	25	40	PAVE TO R/W	8		0.4	4	86	LT.
395+26	PRIVATE	12	30	25	45	PAVE TO R/W	27		1.5	14	282	RT. *
438+76	PRIVATE	15	40	30	40	PAVE TO R/W	12		0.6	6	121	RT.
445+00	PRIVATE	16	30	30	45	PAVE TO R/W	11		0.6	6	119	LT.
SUBTOTAL	**PRIVATE**						**281**	~	**15.2**	**146**	~	
24+50	PUBLIC	18	40	30	40	PAVE TO R/W		11	0.6	6	112	LT. RAZOR BACK RD. *
79+90	PUBLIC	20	50	60	55	PAVE TO R/W		17	0.9	9	180	RT. PIROGUE ISLAND RD.
120+52	PUBLIC	22	50	35	40	PAVE TO R/W		15	0.8	8	152	LT. S SUNDAY CREEK DR.
159+16	PUBLIC	19	45	50	64	PAVE TO R/W		20	1.1	10	206	RT. SUNRISE RD.
204+93	PUBLIC	40	45	45	45	PAVE TO R/W		28	1.5	15	290	LT. N SUNDAY CREEK DR.
298+08	PUBLIC	16	90	25	65	PAVE TO R/W		20	1.1	10	206	LT. COUNTY RD. 133.
SUBTOTAL	**PUBLIC**						~	**111**	**6.0**	**58**	~	

ALL RADII MEASURED TO FRONT OF GUTTER OR EDGE OF SHOULDER
M.O.C. - MEASURED ON CADD
* EXISTING MAILBOX TURNOUT INCLUDED IN QUANTITIES
● SEE DETAILS FOR APPROACH MILLING
♦ FARM FIELD APPROACH AREA BASED ON 12' PLANT MIX STRIP. FARM FIELD MILLING QUANTITY BASED ON 3' EXISTING.

SHEET NO. 3

NOTES

PROJECT NAME: JCT MT 59-NORTHEAST (S-489)
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY: A. BORSCHEL 2/23/23
REVIEWED BY: L. ZEIGLER 9/20/23
CHECKED BY:

MONTANA Department of Transportation

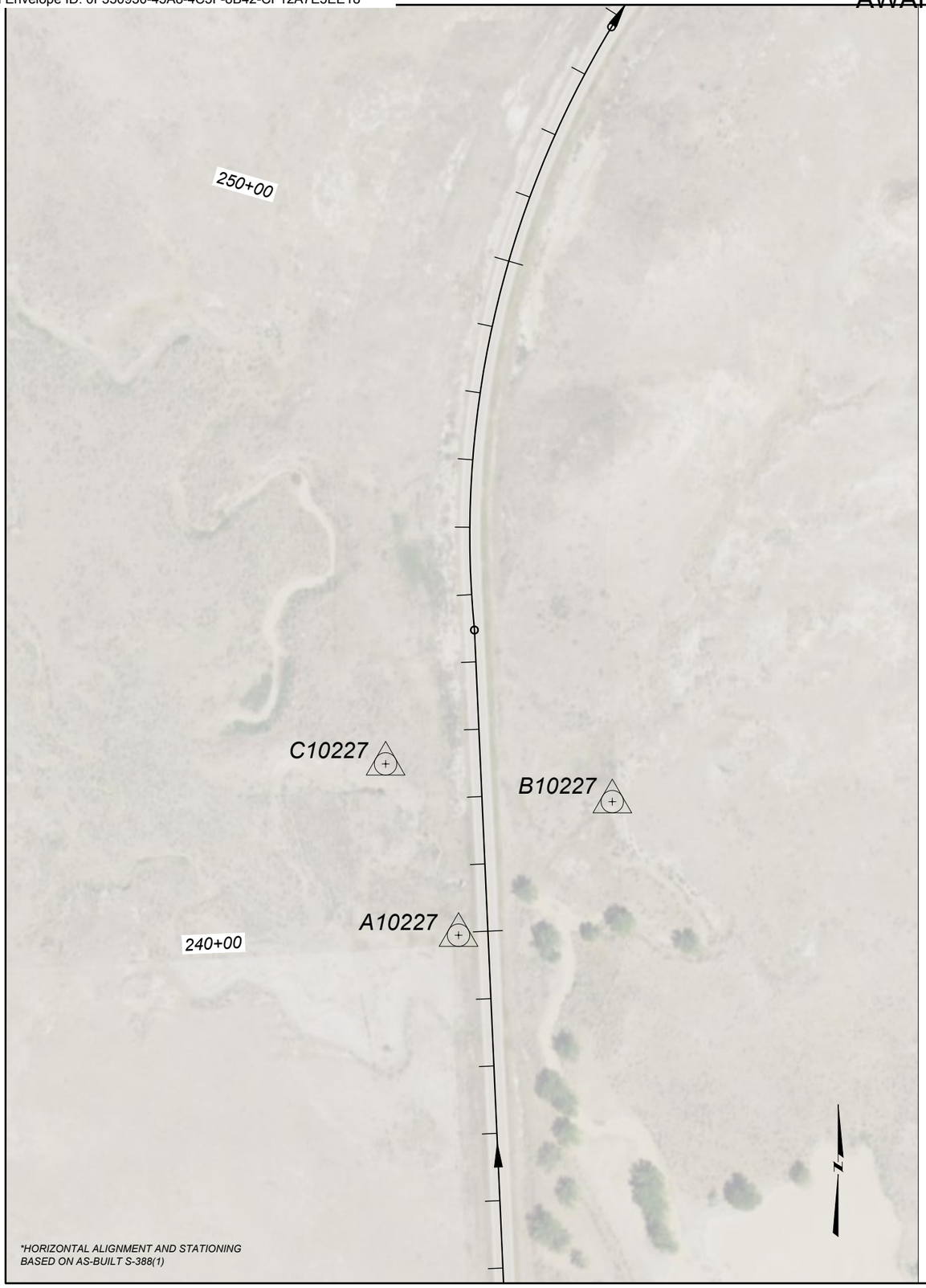
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*HORIZONTAL ALIGNMENT AND STATIONING BASED ON AS-BUILT S-388(1)

CONTROL ABSTRACT				
POINT NAME\NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
6996104	841217.504	2897921.692	2376.52	FND 2" ALUMINUM CAP STAMPED "6996104 2006". AT MP 6.626 ON ROUTE S-489. MARK IS 39' NORTH OF PTW. SET 3/4" ALUMINUM POST W/STICKER 3' NORTH.
A10227	835925.946	2888733.593	2414.78	SET MDT 2" A.C. ON 5/8" RBR STAMPED "A10227 2023". POINT IS LOCATED AT MM 4.488 ON THE W SIDE, ON S SIDE OF ABANDONDED APPROACH. THE MONUMENT LIES 16.5' NNE OF FNC CORNER, HANDHELD GPS COORDINATES ARE N 46-29-02.1" W 105-50-37.6"
B10227	836124.000	2888961.806	2417.30	SET MDT 2" A.C. ON 5/8" RBR STAMPED "B10227 2023". POINT IS LOCATED AT MM 4.523 ON THE E SIDE. THE MONUMENT LIES 6' W OF FNC AND 8.5' N OF TOS OF CREEK BANK, HANDHELD GPS COORDINATES ARE N 46-29-04.1" W 105-50-34.2"

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 0.99957565

BEARING SOURCE

GRID -- MONTANA COORDINATE SYSTEM NAD 83-2011

LEVEL DATUM SOURCE

ELEVATIONS ARE BASED ON DISTRICT DIGITAL LEVELS HOLDING THE PROJECT ELEVATION OF POINTS G10227,6996104,A10227.

SHEET NO. 4

CONTROL DIAGRAM

PROJECT NAME: JCT MT 59-NORTHEAST (S-489)
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY: A BORSCHEL 1/3/2024
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

ROAD PLANS

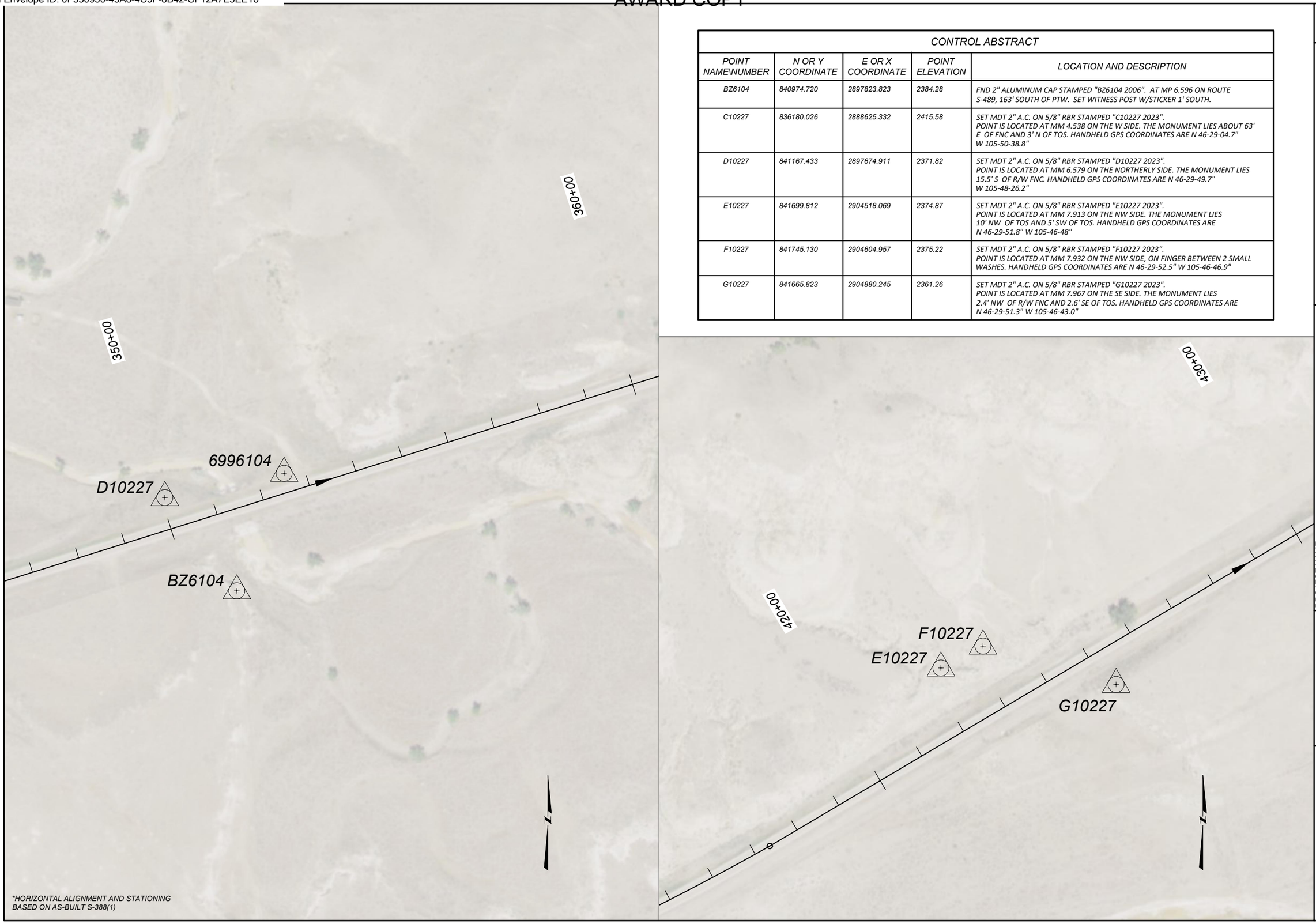
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CONTROL ABSTRACT				
POINT NAME\NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
BZ6104	840974.720	2897823.823	2384.28	FND 2" ALUMINUM CAP STAMPED "BZ6104 2006". AT MP 6.596 ON ROUTE S-489, 163' SOUTH OF PTW. SET WITNESS POST W/STICKER 1' SOUTH.
C10227	836180.026	2888625.332	2415.58	SET MDT 2" A.C. ON 5/8" RBR STAMPED "C10227 2023". POINT IS LOCATED AT MM 4.538 ON THE W SIDE. THE MONUMENT LIES ABOUT 63' E OF FNC AND 3' N OF TOS. HANDHELD GPS COORDINATES ARE N 46-29-04.7" W 105-50-38.8"
D10227	841167.433	2897674.911	2371.82	SET MDT 2" A.C. ON 5/8" RBR STAMPED "D10227 2023". POINT IS LOCATED AT MM 6.579 ON THE NORTHERLY SIDE. THE MONUMENT LIES 15.5' S OF R/W FNC. HANDHELD GPS COORDINATES ARE N 46-29-49.7" W 105-48-26.2"
E10227	841699.812	2904518.069	2374.87	SET MDT 2" A.C. ON 5/8" RBR STAMPED "E10227 2023". POINT IS LOCATED AT MM 7.913 ON THE NW SIDE. THE MONUMENT LIES 10' NW OF TOS AND 5' SW OF TOS. HANDHELD GPS COORDINATES ARE N 46-29-51.8" W 105-46-48"
F10227	841745.130	2904604.957	2375.22	SET MDT 2" A.C. ON 5/8" RBR STAMPED "F10227 2023". POINT IS LOCATED AT MM 7.932 ON THE NW SIDE, ON FINGER BETWEEN 2 SMALL WASHES. HANDHELD GPS COORDINATES ARE N 46-29-52.5" W 105-46-46.9"
G10227	841665.823	2904880.245	2361.26	SET MDT 2" A.C. ON 5/8" RBR STAMPED "G10227 2023". POINT IS LOCATED AT MM 7.967 ON THE SE SIDE. THE MONUMENT LIES 2.4' NW OF R/W FNC AND 2.6' SE OF TOS. HANDHELD GPS COORDINATES ARE N 46-29-51.3" W 105-46-43.0"



*HORIZONTAL ALIGNMENT AND STATIONING BASED ON AS-BUILT S-388(1)

SHEET NO.
5

CONTROL DIAGRAM

PROJECT NAME: JCT MT 59-NORTHEAST (S-489)
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY: A BORSCHEL 1/3/2024
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

ROAD PLANS

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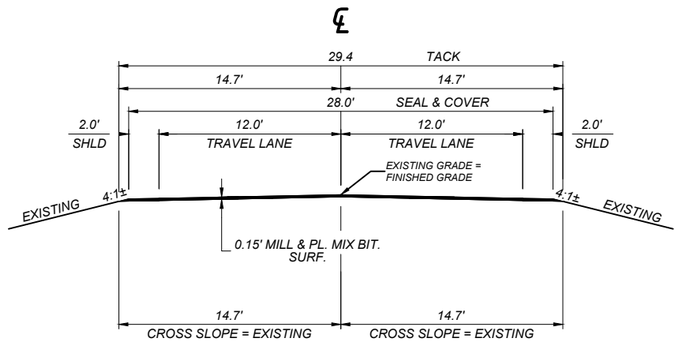
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TYPICAL SECTION NO. 1

MAINLINE

1+50.57			ONLY
1+50.57	TO	3+50.57	TRANS. TYP. NO. 1 TO TYP. NO 2
455+00.00			ONLY



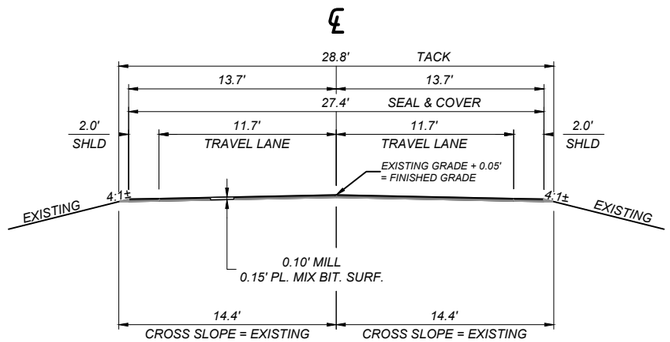
QUANTITIES							
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL			
	COVER	PLANT MIX		ASPHALT CEMENT	SEAL	EMULSIFIED ASPHALT TACK*	COLD MILLING
AREA square feet		4.31	square yards PER STATION		311	327	327
cubic yards PER STATION		16.0	tons PER STATION	1.66	0.56		
tons PER STATION		30.8	gals. PER STATION			16	
square yards PER STATION	311						

* BASED ON 1 APPLICATION

TYPICAL SECTION NO. 2

MAINLINE

3+50.57	TO	194+97.80	
194+97.80	TO	196+97.80	TRANS. TYP. NO. 2 TO TYP. NO. 3
204+95.80	TO	240+08.80	THEN TYP. NO. 6
241+17.60	TO	350+91.50	THEN TYP. NO. 6
352+14.50	TO	422+65.50	THEN TYP. NO. 6
423+02.60	TO	453+00.00	
453+00.00	TO	455+00.00	TRANS. TYP. NO. 2 TO TYP. NO 1



QUANTITIES							
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL			
	COVER	PLANT MIX		ASPHALT CEMENT	SEAL	EMULSIFIED ASPHALT TACK*	COLD MILLING
AREA square feet		4.22	square yards PER STATION		304	320	320
cubic yards PER STATION		15.6	tons PER STATION	1.63	0.54		
tons PER STATION		30.1	gals. PER STATION			16	
square yards PER STATION	304						

* BASED ON 1 APPLICATION

SHEET NO. 6

TYPICAL SECTIONS

PROJECT NAME: JCT MT 59-NORTHEAST (S-489)
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY	A. BORSCHEL	9/14/23
REVIEWED BY	L. ZEIGLER	9/20/23
CHECKED BY		

MONTANA Department of Transportation

ROAD PLANS

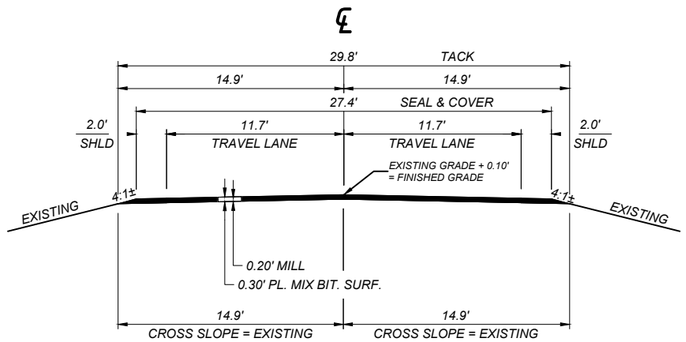
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TYPICAL SECTION NO. 3

MAINLINE



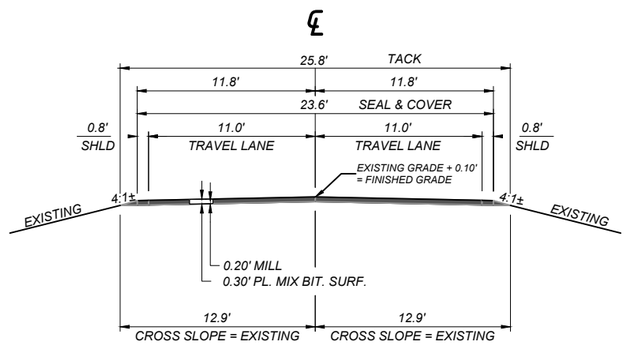
QUANTITIES							
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL			
	COVER	PLANT MIX		ASPHALT CEMENT	SEAL	EMULSIFIED ASPHALT TACK*	COLD MILLING
AREA square feet		8.58	square yards PER STATION		304	662	331
cubic yards PER STATION		31.8	tons PER STATION	3.31	0.54		
tons PER STATION		61.3	gals. PER STATION			33	
square yards PER STATION	304						

* BASED ON 2 APPLICATIONS

196+97.80				ONLY
196+97.80	TO	197+97.80		TRANS. TYP. NO. 3 TO TYP. NO. 4
202+95.80				ONLY
202+95.80	TO	204+95.80		TRANS. TYP. NO. 3 TO TYP. NO . 2

TYPICAL SECTION NO. 4

MAINLINE



QUANTITIES							
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL			
	COVER	PLANT MIX		ASPHALT CEMENT	SEAL	EMULSIFIED ASPHALT TACK*	COLD MILLING
AREA square feet		7.41	square yards PER STATION		262	574	287
cubic yards PER STATION		27.4	tons PER STATION	2.85	0.47		
tons PER STATION		52.8	gals. PER STATION			29	
square yards PER STATION	262						

* BASED ON 2 APPLICATIONS

197+97.80		TO	198+97.80	BE
200+95.80	BE	TO	201+95.80	
201+95.80		TO	202+95.80	TRANS. TYP. NO. 4 TO TYP. NO. 3

SHEET NO.
7

TYPICAL SECTIONS

PROJECT NAME JCT MT 59-NORTHEAST (S-489)
COUNTY CUSTER
PROJECT ID STPS 489-1(9)0
UPN 10227000

DESIGNED BY A. BORSCHEL 2/8/24
REVIEWED BY
CHECKED BY

MONTANA Department of Transportation

ROAD PLANS

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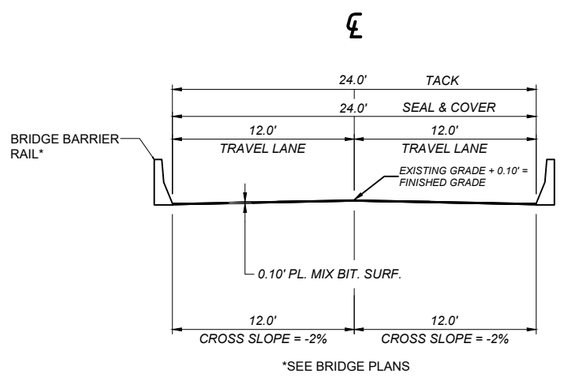
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198+97.80 BE TO 200+95.80 BE THEN TYP. NO. 4

TYPICAL SECTION NO. 5

MAINLINE



*SEE BRIDGE PLANS

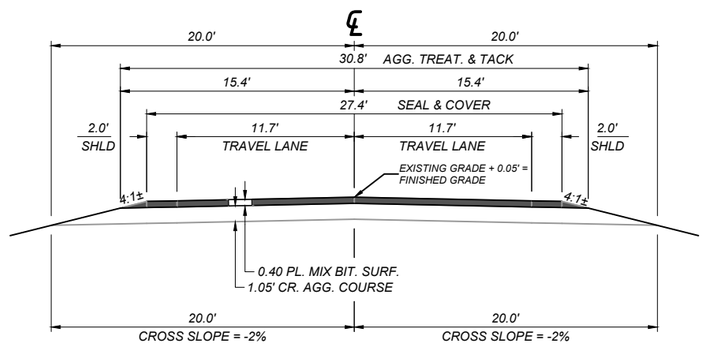
QUANTITIES						
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL		
	COVER	PLANT MIX		ASPHALT CEMENT	SEAL	EMULSIFIED ASPHALT TACK*
AREA square feet		2.40	square yards PER STATION		267	267
cubic yards PER STATION		8.9	tons PER STATION	0.47	0.47	
tons PER STATION		17.2	gals. PER STATION			13
square yards PER STATION	267					

* BASED ON 1 APPLICATION

TYPICAL SECTION NO. 6

MAINLINE

240+08.80 TO 241+17.60 THEN TYP. NO. 2
350+91.50 TO 352+14.50 THEN TYP. NO. 2
422+65.50 TO 423+02.60 THEN TYP. NO. 2



QUANTITIES								
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL			
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	SEAL	AGG. TREATMENT	EMULSIFIED ASPHALT TACK*
AREA square feet		11.64	37.17	square yards PER STATION		304	342	684
cubic yards PER STATION		43.1	137.7	tons PER STATION	4.49	0.54		
tons PER STATION		83.1		gals. PER STATION				34
square yards PER STATION	304							

* BASED ON 2 APPLICATIONS

SHEET NO. 8

TYPICAL SECTIONS

PROJECT NAME JCT MT 59-NORTHEAST (S-489)
COUNTY CUSTER
PROJECT ID STPS 489-1(9)0
UPN 10227000

DESIGNED BY A. BORSCHEL 2/8/24
REVIEWED BY
CHECKED BY

MONTANA Department of Transportation

ROAD PLANS

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SUMMARY

SURFACING

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	linear feet +	linear feet -	FOR	tons HYDRATED LIME	AGGREGATE sq. yards COVER TYPE I	AGGREGATE tons PLANT MIX BIT. SURF. GR. S - 3/4"	AGGREGATE tons PLANT MIX BIT. SURF. GR. S - MISC.	AGGREGATE cu. yards CRUSHED AGG. COURSE	BITUMINOUS MATERIAL tons ASPHALT CEMENT PG 58V-34	BITUMINOUS MATERIAL tons EMULSIFIED ASPHALT CHFRS-2P	BITUMINOUS MATERIAL gals. EMULSIFIED ASPHALT TACK	BITUMINOUS MATERIAL sq. yards AGG. TREAT.	REMARKS
1+50.57	3+50.57	200.00	200.00					615	61			3.3	1.1	32		TRANS. TYP. NO. 1 TO TYP. NO. 2
3+50.57	194+97.80	19,347.23	19,347.23					58,816	5,824			314.5	104.5	3,096		TYP. NO. 2
194+97.80	196+97.80	200.00	200.00					608	91			4.9	1.1	49		TRANS. TYP. NO. 2 TO TYP. NO. 3
196+97.80	197+97.80	100.00	100.00					283	57			3.1	0.5	31		TRANS. TYP. NO. 3 TO TYP. NO. 4
197+97.80	198+97.80	100.00	100.00					262	53			2.9	0.5	29		TYP. NO. 4
198+97.80 BE	200+95.80 BE	198.00	198.00					529	34			1.8	1.0	26		TYP. NO. 5
200+95.80	201+95.80	100.00	100.00					262	53			2.9	0.5	29		TYP. NO. 4
201+95.80	202+95.80	100.00	100.00					283	57			3.1	0.5	31		TRANS. TYP. NO. 4 TO TYP. NO. 3
202+95.80	204+95.80	200.00	200.00					608	91			4.9	1.1	49		TRANS. TYP. NO. 3 TO TYP. NO. 2
204+95.80	240+08.80	3,513.00	3,513.00					10,680	1,057			57.1	19.0	562		TYP. NO. 2
240+08.80	241+17.60	108.80	108.80					331	90		150	4.9	0.6	37	372	TYP. NO. 6
241+17.60	350+91.50	10,973.90	10,973.90					33,361	3,303			178.4	59.3	1,756		TYP. NO. 2
350+91.50	352+14.50	123.00	123.00					374	102		169	5.5	0.7	42	421	TYP. NO. 6
352+14.50	422+65.50	7,051.00	7,051.00					21,435	2,122			114.6	38.1	1,128		TYP. NO. 2
422+65.50	423+02.60	37.10	37.10					113	31		51	1.7	0.2	13	127	TYP. NO. 6
423+02.60	453+00.00	2,997.40	2,997.40					9,112	902			48.7	16.2	480		TYP. NO. 2
453+00.00	455+00.00	200.00	200.00					615	61			3.3	1.1	32		TRANS. TYP. NO. 2 TO TYP. NO. 1
						ADDITIONAL SURFACING			540	379		26.8		254		
TOTAL		**45,349.43**	**45,349.43**	~	~		**208**	**137,672**	**14,468**	**379**	**370**	**779.1**	**244.9**	**7,644**	**920**	

ADDITIONAL SURFACING (INCLUDED IN SURFACING FRAME)

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	linear feet +	linear feet -	FOR	tons HYDRATED LIME	AGGREGATE sq. yards COVER TYPE I	AGGREGATE tons PLANT MIX BIT. SURF. GR. S - 3/4"	AGGREGATE tons PLANT MIX BIT. SURF. GR. S - MISC.	AGGREGATE cu. yards CRUSHED AGG. COURSE	BITUMINOUS MATERIAL tons ASPHALT CEMENT PG 58V-34	BITUMINOUS MATERIAL tons EMULSIFIED ASHPALT CHFRS-2P	BITUMINOUS MATERIAL gals. EMULSIFIED ASPHALT TACK	BITUMINOUS MATERIAL sq. yards AGG. TREAT.	REMARKS
						FARM FIELD (18)				73		4.2		37		
						MAILBOX TURNOUT (1)				25		1.4		13		
						PRIVATE (15)				281		15.2		146		
						PUBLIC (6)			111			6.0		58		
						LEVELING			429							
SUBTOTAL		~	~	~	~		~	~	**540**	**379**	~	**26.8**	~	**254**	~	

GUARDRAIL

STATION FROM	STATION TO	linear feet REMOVE GUARDRAIL LEFT	linear feet REMOVE GUARDRAIL RIGHT	linear feet BOX BEAM GUARDRAIL LEFT	linear feet BOX BEAM GUARDRAIL RIGHT	each MASH BOX BEAM TERMINAL SECTION MBEAT LEFT	each MASH BOX BEAM TERMINAL SECTION MBEAT RIGHT	each END SECTION WIDENING LEFT	each END SECTION WIDENING RIGHT	each BOX BEAM BRIDGE APPROACH SECTION TYPE 3 LEFT	each BOX BEAM BRIDGE APPROACH SECTION TYPE 3 RIGHT	REMARKS
NEW RAIL												
197+71.86	198+97.80			90		1		1		1		
196+45.86	198+97.80				216		1		1		1	
200+95.80	202+21.74			90		1		1		1		
200+95.80	203+47.74				216		1		1		1	
REMOVE RAIL												
197+72.80	198+97.80	125.0										
196+47.80	198+97.80		250.0									
200+95.80	202+20.80	125.0										
200+95.80	203+45.80		250.0									
SUBTOTAL		**250.0**	**500.0**	**180**	**432**	**2**	**2**	**2**	**2**	**2**	**2**	
TOTAL		**750.0**		**612**		**4**		**4**		**4**		

MAILBOXES

STATION	each MAILBOXES	REMARKS
24+50	1	RT.
31+36	1	RT.
120+73	5	RT.
159+16	4	RT.
172+00	1	LT.
204+93	3	LT.
214+61	1	LT.
224+92	1	LT.
277+88	1	RT.
325+00	1	LT.
340+45	1	LT.
TOTAL	**20**	

SHEET NO. 9

SUMMARY

PROJECT NAME: JCT MT 59-NORTHEAST
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY: A. BORSCHEL 9/14/23
REVIEWED BY: L. ZEIGLER 9/20/23
CHECKED BY:

MONTANA Department of Transportation

ROAD PLANS

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SUMMARY

CULVERTS

STATION	linear feet			CLASS OR THK.	END SECTIONS		linear feet	cu. yards					sq. yards	linear feet	SKEW ANGLE	CULVERT IN PL. in x ft	REMARKS
	RCB	DOUBLE CELL RCB	RCP		LEFT	RIGHT	REMOVE PIPE CULVERT	STREAMBED MATERIAL	FOUNDATION MATERIAL	GRANULAR BEDDING MATERIAL	SPECIAL BACKFILL	CONCRETE - CLASS GENERAL	GEOTEXT. STAB.	HEIGHT OF COVER			
	15' X 11'	13' X 12'	30"														
240+64	114				2:1 SLOPE	2:1 SLOPE	97.0		173	86	1,477	14.1	570	3.7	17° RT.	120 X 97 SPCC	SITE 1 - RP 4.503
351+50		116			2:1 SLOPE	2:1 SLOPE	224.0	65	277	137	2,092	16.6	882	4.4	9° LT.	190 X 118 x 112 DBL SSPPA	SITE 2 - RP 6.604
422+84			82	CL. 2	FETS	FETS	93.0							3.6		30 X 93 CMP	SITE 3 - RP 7.903
TOTAL	114	116	82	~	~	~	414.0	65	450	223	3,569	30.7	1,452	~	~	~	

RUMBLE STRIPS

STATION		miles	gals	REMARKS
		RUMBLE STRIPS	EMULSIFIED ASPHALT FOG SEAL #	
FROM	TO	CENTERLINE TYPE 2		
1+50.57	455+00.00	8.5	997	
SUBTOTAL		8.5	997	
TOTAL		8.5	~	

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	414		414
STRIPING - YELLOW PAINT	gallon	128		128
WORDS & SYMBOLS - WHITE PAINT	gallon	1		1
STRIPING - WHITE EPOXY*	gallon		552	552
STRIPING - YELLOW EPOXY	gallon		171	171
WORDS & SYMBOLS - WHITE EPOXY	gallon		1	1
TEMPORARY STRIPING	linear feet			37,462
FINAL SWEEP AND BROOM	course mile			8.6

* 6" SHOULDER STRIPING.
# BASED ON 1 APPLICATION.

MISCELLANEOUS ITEMS *

STATION		each	REMARKS
		MISCELLANEOUS ITEMS	
FROM	TO		
236+14.00	245+14.00	1	SITE 1 - RP 4.503
347+00.00	356+00.00	1	SITE 2 - RP 6.604
418+34.00	427+34.00	1	SITE 3 - RP 7.903

* TEMPORARY WIDENING FOR PLACING NEW CULVERTS. SEE SPECIAL PROVISION.

COLD MILLING *

STATION		sq. yards					REMARKS
		COLD MILLING					
FROM	TO	0.10 ft	0.10 ft to 0.00 ft	0.10 ft to 0.15 ft	0.10 ft to 0.20 ft	0.20 ft	
1+50.57	3+50.57			654			CONNECTION TO PTW
3+50.57	194+97.80	61,271					TYP. NO. 2
194+97.80	196+97.80				662		TRANS. TYP. NO. 2 TO TYP. NO. 3
196+97.80	197+97.80					309	TRANS. TYP. NO. 3 TO TYP. NO. 4
197+97.80	198+97.80 BE					287	TYP. NO. 4
200+95.80 BE	201+95.80					287	TYP. NO. 4
201+95.80	202+95.80					309	TRANS. TYP. NO. 4 TO TYP. NO. 3
202+95.80	204+95.80				662		TRANS. TYP. NO. 3 TO TYP. NO. 2
204+95.80	240+08.80	11,242					TYP. NO. 2
241+17.50	350+91.50	35,117					TYP. NO. 2
352+14.50	422+65.50	22,563					TYP. NO. 2
423+02.60	453+00.00	9,592					TYP. NO. 2
453+00.00	455+00.00			654			CONNECTION TO PTW
			255				FARM FIELD APP. (18)
				262			MAILBOX TURNOUT (1)
				2,913			PRIVATE APP. (15)
				1,146			PUBLIC APP. (6)
SUBTOTAL		139,785	255	5,629	1,324	1,192	
TOTAL		148,185					

REVEGETATION

STATION		lump sum	cu. yards	acres		REMARKS
		REVEGE-TATION	TOPSOIL SALVAGING & PLACING	SEED	CONDITION SEEDBED	
FROM	TO					
236+14.00	245+14.00		616	1.1	1.1	SITE 1 - RP 4.503
347+00.00	356+00.00		566	1.1	1.1	SITE 2 - RP 6.604
418+34.00	427+34.00		422	0.8	0.8	SITE 3 - RP 7.903
TOTAL		1	# 1,604	# 3.0	# 3.0	

FOR INFORMATION ONLY

EQUIPMENT

STATION		hours	REMARKS
		MOTOR GRADER	
FROM	TO		
18+00	445+00	10	APPROACH SHAPING
TOTAL		10	

SHEET NO. 10

SUMMARY

PROJECT NAME: JCT MT 59-NORTHEAST (S-489)
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY: A. BORSCHEL 9/14/23
REVIEWED BY: L. ZEIGLER 9/20/23
CHECKED BY:

MONTANA Department of Transportation

ROAD PLANS

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HYDRAULIC DATA SUMMARY *

STATION	STREAM NAME (IF NAMED)	DRAINAGE AREA (mi^2)	SIZE/TYPE STRUCTURE ① ② ⑤	DESIGN FLOOD			BASE FLOOD (1%)		OVERTOPPING FLOOD ③ ④			REMARKS (FLOOD OF RECORD, Qp(max), etc.) ⑥
				MAGNITUDE (cfs)	FREQUENCY (%)	H.W. ELEV. (ft)	MAGNITUDE (cfs)	H.W. ELEV. (ft)	MAGNITUDE (cfs)	APPROX. FREQUENCY (%)	H.W. ELEV. (ft)	
240+64	-	3.95	15' x 11' RCB	1,544	4	2415.5	3,226	2418.5	1,754	3	2416.8	
351+50	CowCreek	23.6	13' x 12' RCB DBL	3,089	4	2373.3	5,941	2376.6	4,745	2	2374.5	
422+84	-	0.033	30" RCP	31	4	2351.7	60	2352.8	35	3	2352.1	

NOTES:
* H.W. ELEVATIONS SHOWN ARE BASED UPON PEAK FLOW ANALYSIS UNLESS NOTED IN REMARKS COLUMN.
ADDITIONAL GUIDANCE ON THE HYDRAULIC DATA SUMMARY SHEET CAN BE FOUND IN SECTION 11.8.2 OF THE HYDRAULICS MANUAL.

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 TOP LENGTH AND NUMBER OF SPANS OR BASE BID CULVERT SIZE AND SHAPE.

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 THROUGH THE Qp(max) EVENT. Qp(max) IS THE 200 YEAR EVENT FOR CULVERTS AND THE 500 YEAR EVENT FOR BRIDGES.

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

⑥ NOTE ANY CULVERTS THAT WERE SIZED USING THE HEADWATER EXCEPTION PROCEDURE PER SECTION 11.3.1.3.2 OF THE HYDRAULICS MANUAL. (FORMERLY CALLED PM10.)

EXCEEDANCE PROBABILITY

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

SHEET NO. 11

HYDRAULIC DATA SUMMARY

PROJECT NAME JCT MT 59-NORTHEAST (S-489)
COUNTY CUSTER
PROJECT ID STPS 489-1(9)0
UPN 10227000

DESIGNED BY
REVIEWED BY
CHECKED BY

MONTANA Department of Transportation

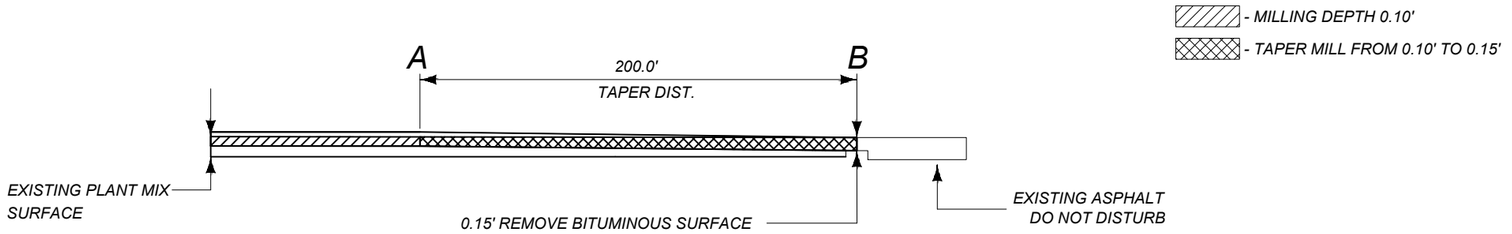
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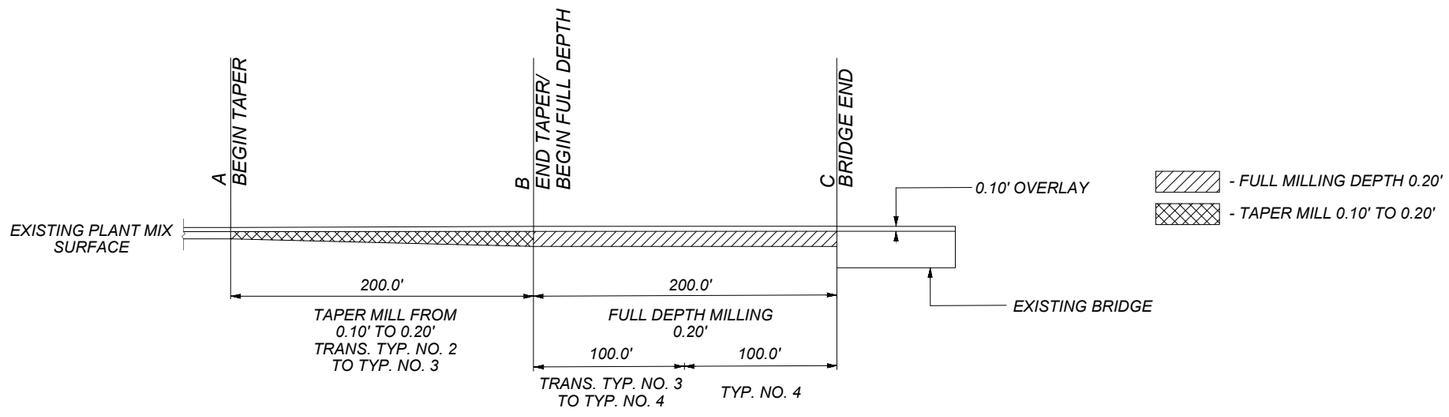
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CONNECTION TO PTW



STATIONS	
A	B
3+50.57	1+50.57
453+00.00	455+00.00



STATIONS		
A	B	C
194+97.80	196+97.80	198+97.80
204+95.80	202+95.80	200+95.80

BRIDGE END MILLING DETAIL

SHEET NO. 12

CONNECTION TO PTW
BRIDGE END TAPER MILLING
(NO SCALE)

PROJECT NAME: JCT MT 59-NORTHEAST (S-489)
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY	A. BORSCHEL	2/23/23
REVIEWED BY	L. ZEIGLER	9/20/23
CHECKED BY		

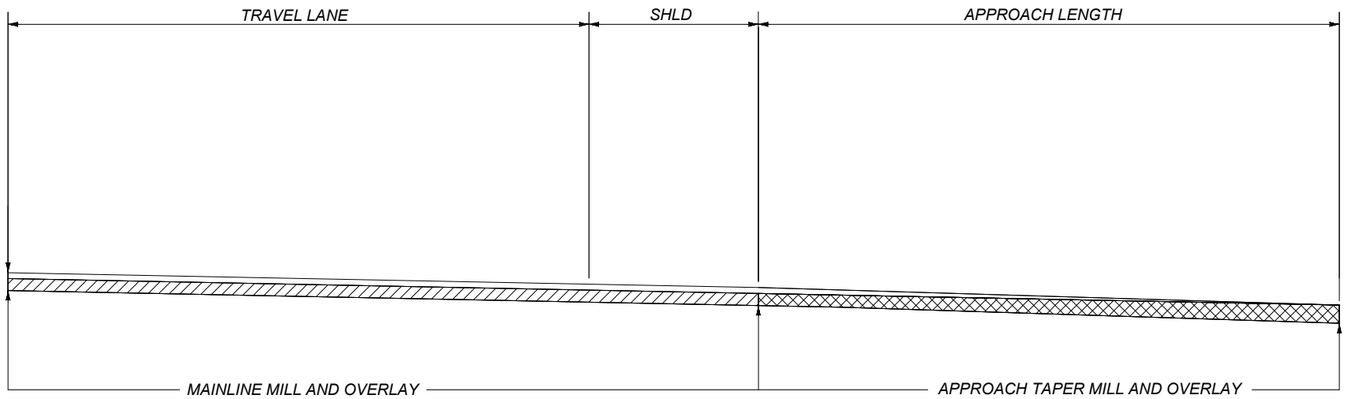
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- MAINLINE MILLING
- TAPER MILL FROM 0.10' TO 0.15'

*FOR PUBLIC AND PRIVATE APPROACHES ONLY.
**MILL INTO EXISTING CATTLEGUARDS.

APPROACH MILLING DETAIL

SHEET NO. 13

APPROACH MILLING (NO SCALE)

PROJECT NAME: JCT MT 59-NORTHEAST (S-489)
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY	A. BORSCHEL	2/23/23
REVIEWED BY	L. ZEIGLER	9/20/23
CHECKED BY		

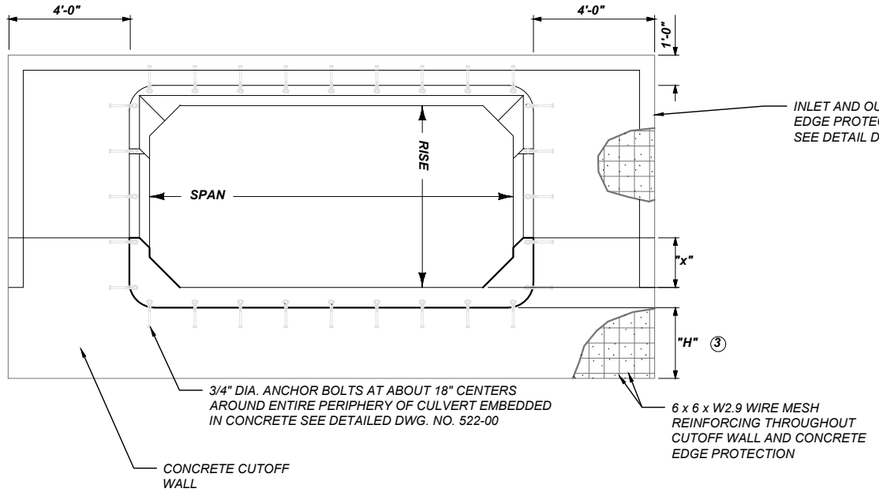
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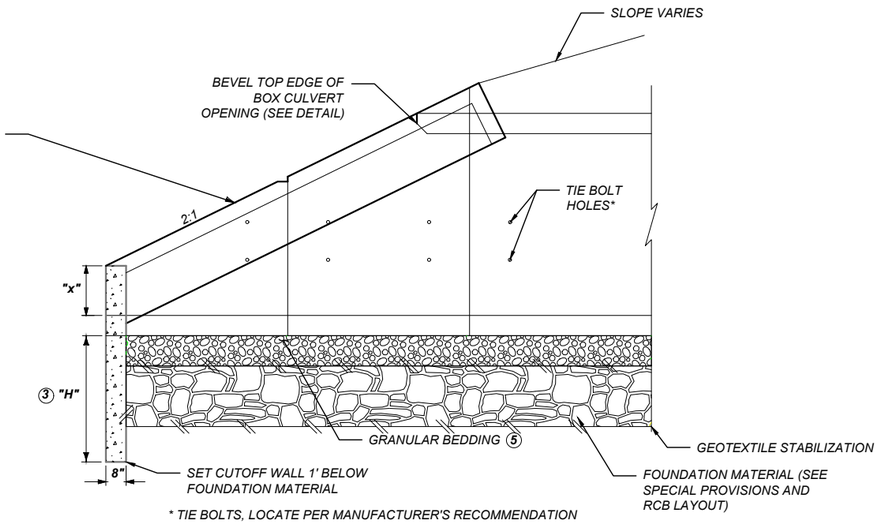
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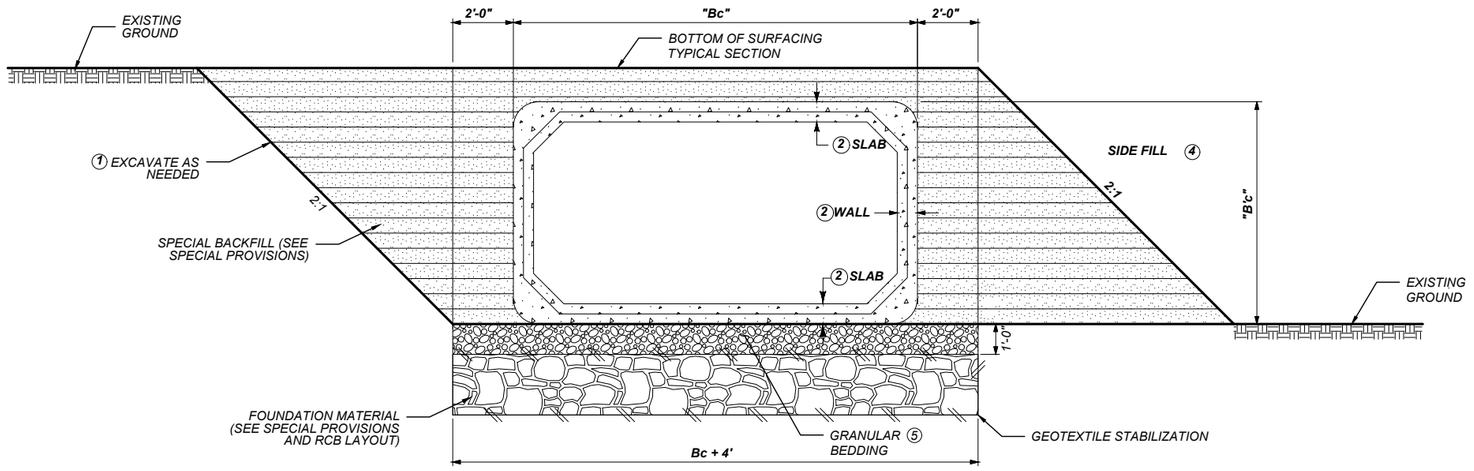




* TIE BOLTS, LOCATE PER MANUFACTURER'S RECOMMENDATION

SIDE ELEVATION

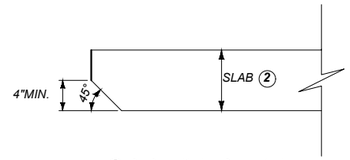
FRONT ELEVATION



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 DIMENSIONS 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 AND FOUNDATION MATERIAL REQUIREMENTS. THE CONTRACTOR HAS THE OPTION OF USING A SAND CUSHION ABOVE THE GRANULAR BEDDING TO FACILITATE JOINING OF THE BOX CULVERT SECTIONS.

DIMENSIONS											
RP	STATION	SPAN (ft.)	RISE (ft.)	LENGTH (ft.)	WALL (in.)	SLAB (in.)	"Bc" (ft.)	"x" (ft.)	"B'c" (ft.)	"H" (ft.)	COVER (ft.)
4.503	240+64	15	11	114	9	10	16.5	3.7	12.7	4.0	3.7

NOTE: INCLUDE REINFORCING MATERIAL, AND CONCRETE EDGE PROTECTION IN THE UNIT PRICE BID PER CUBIC YARD OF CLASS GENERAL CONCRETE. REINFORCED CONCRETE BOX CULVERT, CONCRETE CUTOFF WALLS, ANCHOR BOLTS, AND ALL INSTALLATION APPURTENANCES ARE FURNISHED BY MDT.

SHEET NO. 14

SLOPED END RCB DETAIL

PROJECT NAME: JCT MT 59-NORTHEAST (S-489)
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY
REVIEWED BY
CHECKED BY

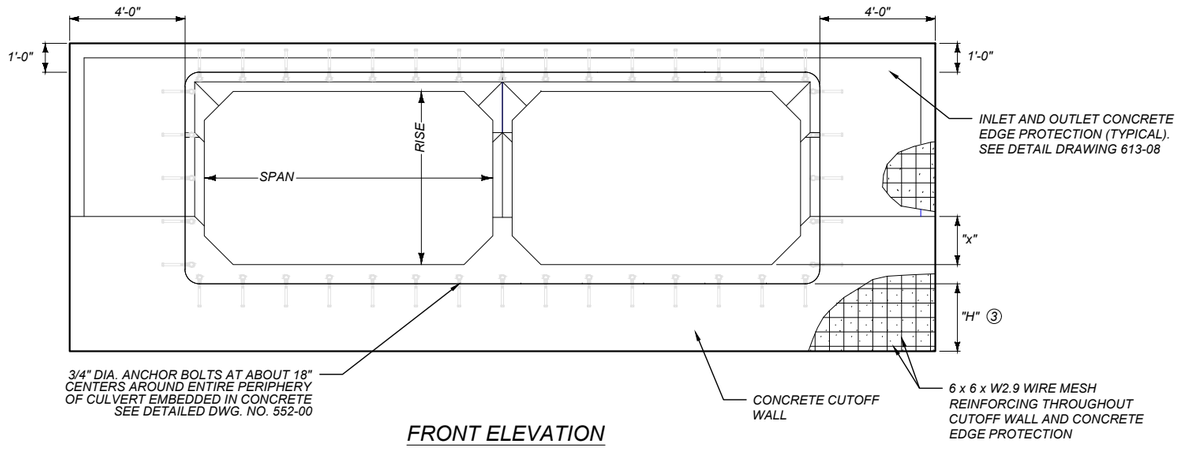
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MONTANA Department of Transportation

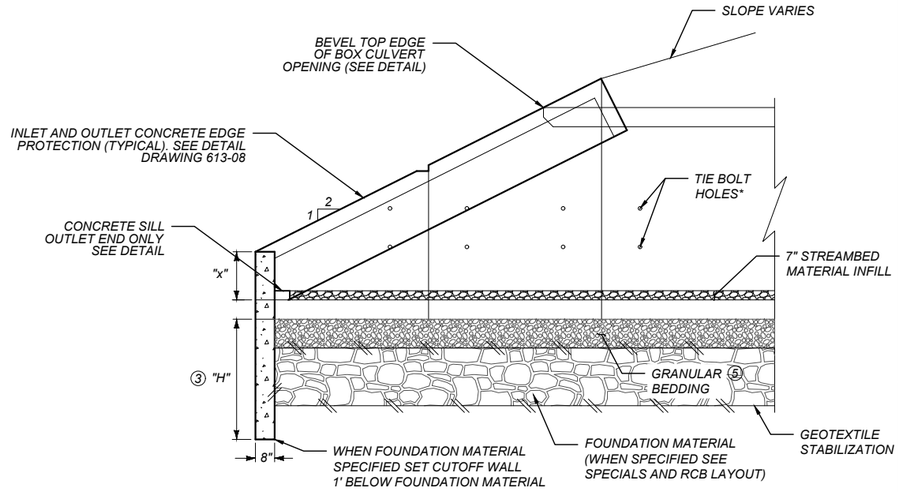
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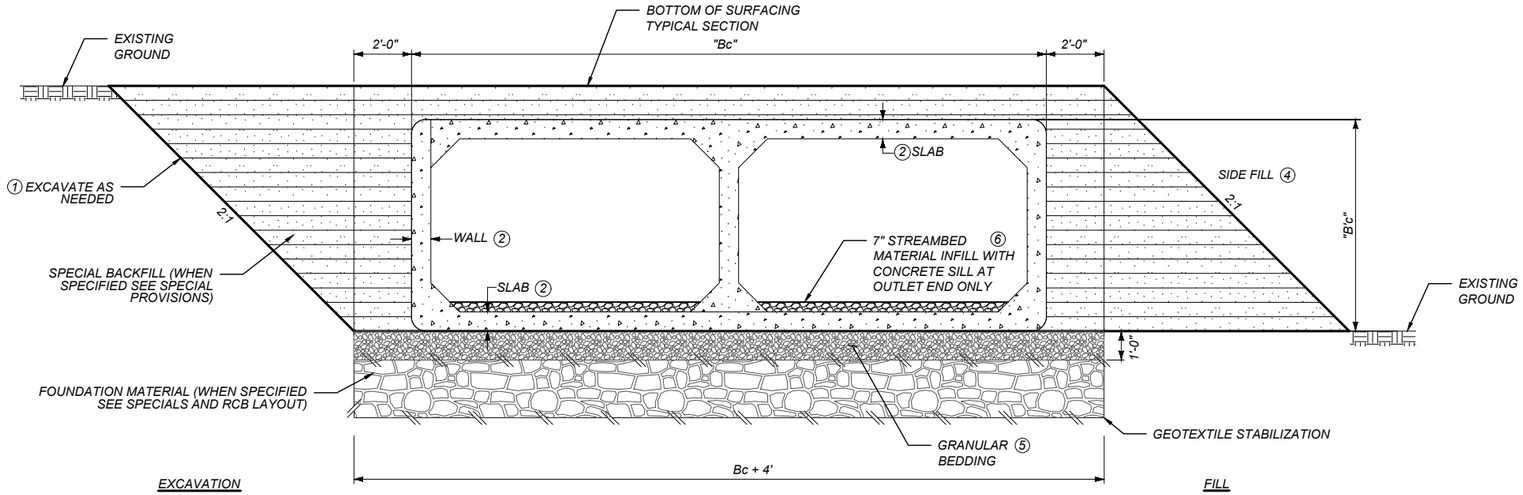


FRONT ELEVATION

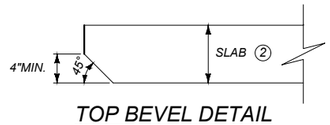


*TIE BOLTS, LOCATE PER MANUFACTURER'S RECOMMENDATION

SIDE ELEVATION



BEDDING DETAIL



TOP BEVEL DETAIL

DIMENSIONS											
RP	STATION	SPAN (ft.)	RISE (ft.)	LENGTH (ft.)	WALL (in.)	SLAB (in.)	"Bc" (ft.)	"x" (ft.)	"B'c" (ft.)	"H" (ft.)	COVER (ft.)
6.604	351+50	13	12	116	9	10	28.2	4.7	13.7	4.0	4.4

NOTE: INCLUDE REINFORCING, CUTOFF WALL, SILL, 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.

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 AND FOUNDATION MATERIAL REQUIREMENTS. THE CONTRACTOR HAD THE OPTION OF USING A SAND CUSHION ABOVE THE GRANULAR BEDDING TO FACILITATE JOINING OF THE BOX CULVERT SECTIONS.

⑥ BACKFILL RCB INVERT WITH 7" OF STREAMBED MATERIAL SALVAGED DURING CULVERT INSTALLATION.

SHEET NO. 15

SLOPED END DOUBLE RCB DETAIL

PROJECT NAME: JCT MT 59-NORTHEAST
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY
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CHECKED BY
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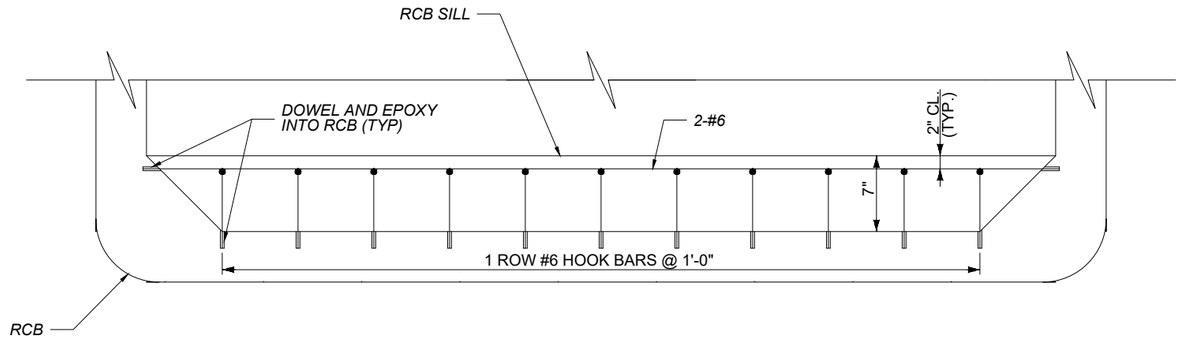
MONTANA Department of Transportation

ROAD PLANS

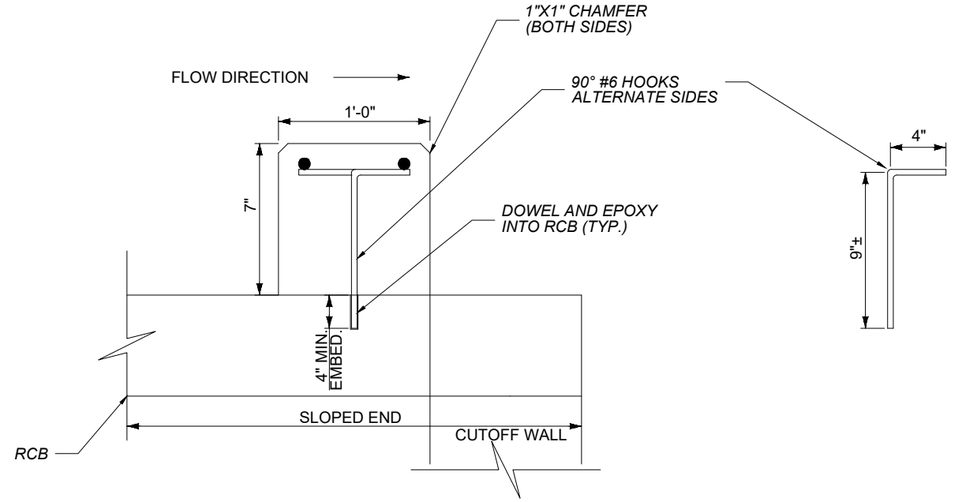
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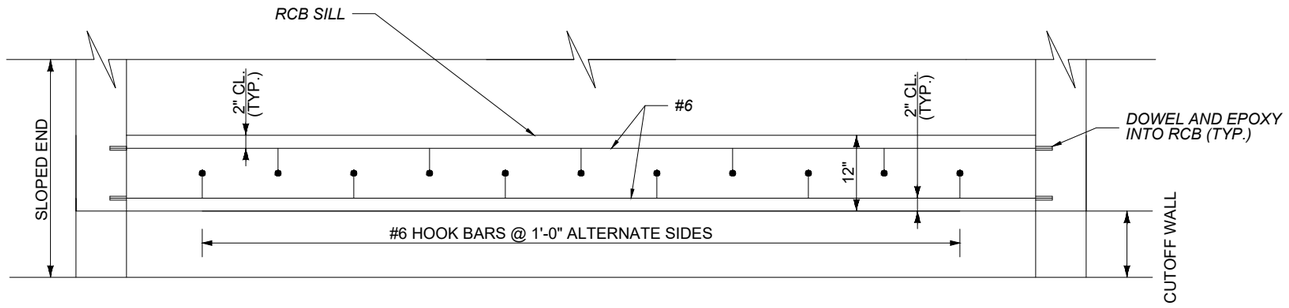
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PROFILE TYPICAL SILL



PRECAST BOX CULVERT TYPICAL SILL DETAIL



PLAN TYPICAL SILL

NOTES:

INSTALL SILLS AT LOCATION SHOWN IN SLOPED END RCB DETAIL.

INCLUDE REINFORCING MATERIAL AND CONCRETE SILL IN THE UNIT PRICE BID PER CUBIC YARD OF CLASS GENERAL CONCRETE.

FOR ALL DOWEL AND EPOXY INSTALLATIONS INTO THE RCB, MINIMUM EMBEDMENT DEPTH IS 4".

EPOXY RESIN BONDING ADHESIVE:
MEET THE REQUIREMENTS OF AASHTO M 235 TYPE 4.

SHEET NO.
16

CONCRETE SILL DETAIL

PROJECT NAME: JCT MT 59-NORTHEAST (S-489)
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

CHECKED BY
REVIEWED BY
DESIGNED BY

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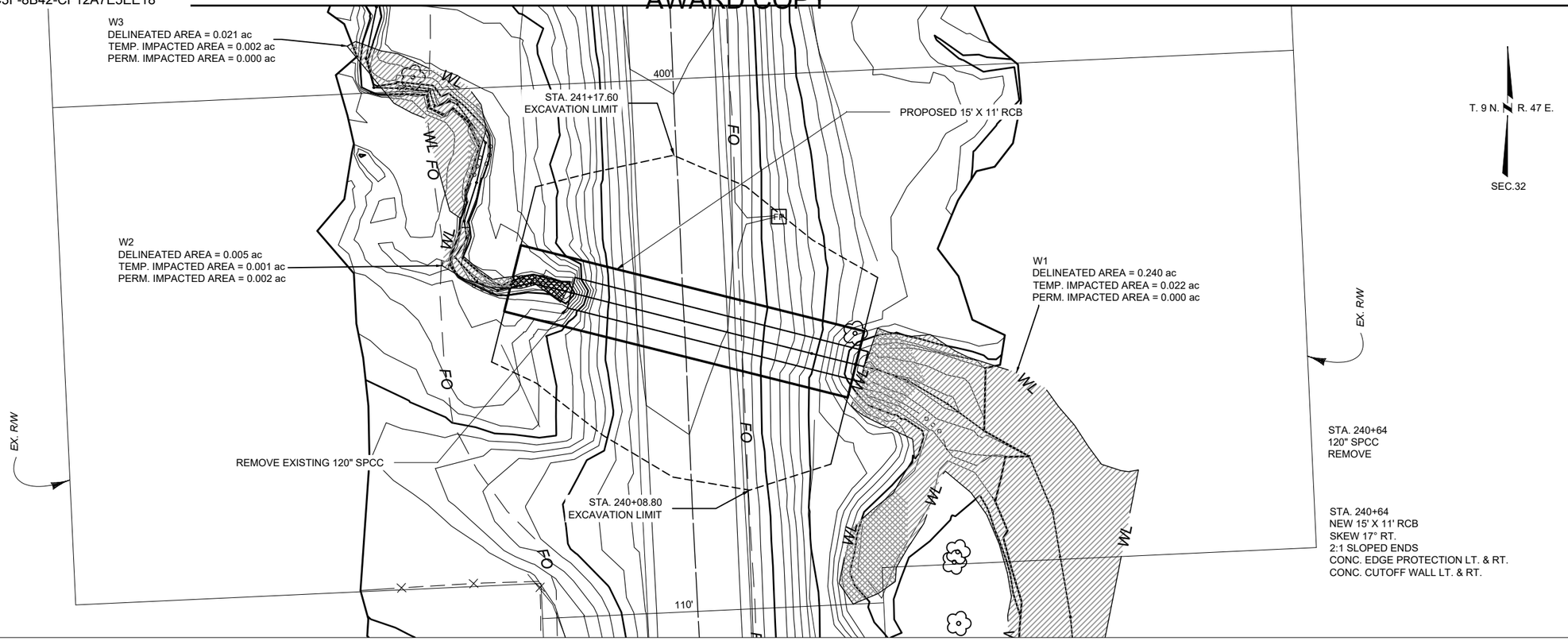
MONTANA Department of Transportation

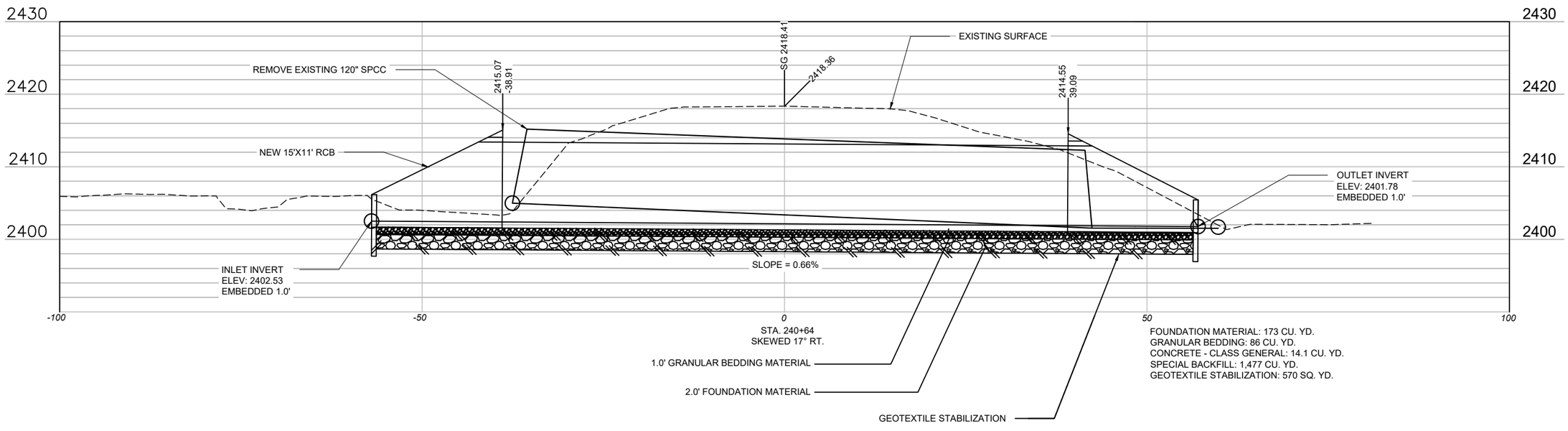
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SHEET NO. 17

SITE 1 & RCB GENERAL LAYOUT RP 4.503

PROJECT NAME: JCT MT 59-NORTHEAST (S-489)
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY	DATE
A. BORSCHEL	9/14/2023
REVIEWED BY	DATE
L. ZEIGLER	9/20/2023
CHECKED BY	

MONTANA
Department of Transportation

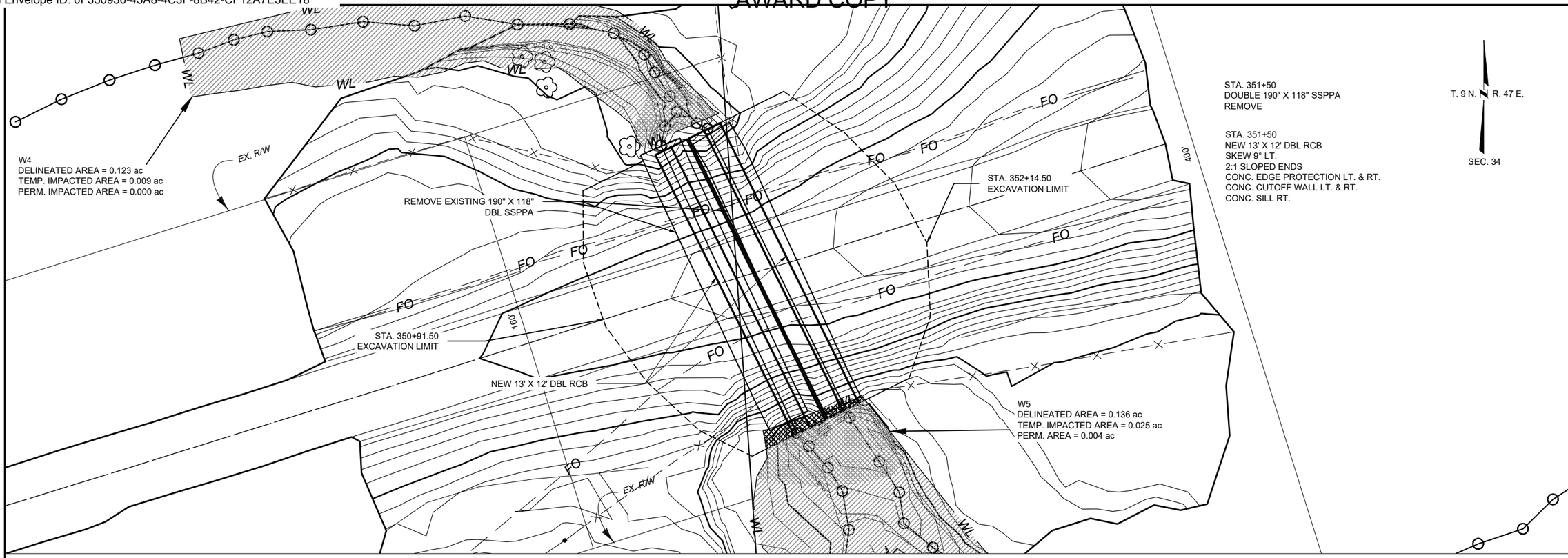
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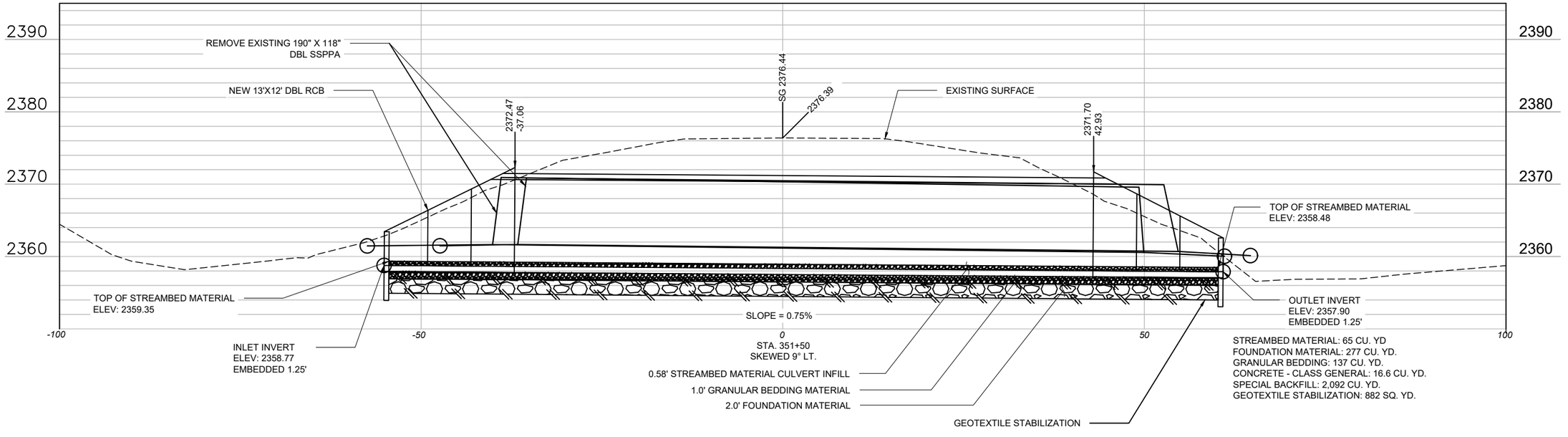
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SHEET NO.
18

SITE 2 &
RCB GENERAL LAYOUT
AT COW CREEK
RP 6.604

PROJECT NAME: JCT MT 59-NORTHEAST (S-489)
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY		REVIEWED BY		CHECKED BY	
A. BORSCHEL	9/14/2023	L. ZEIGLER	9/20/2023		

MONTANA
Department of Transportation

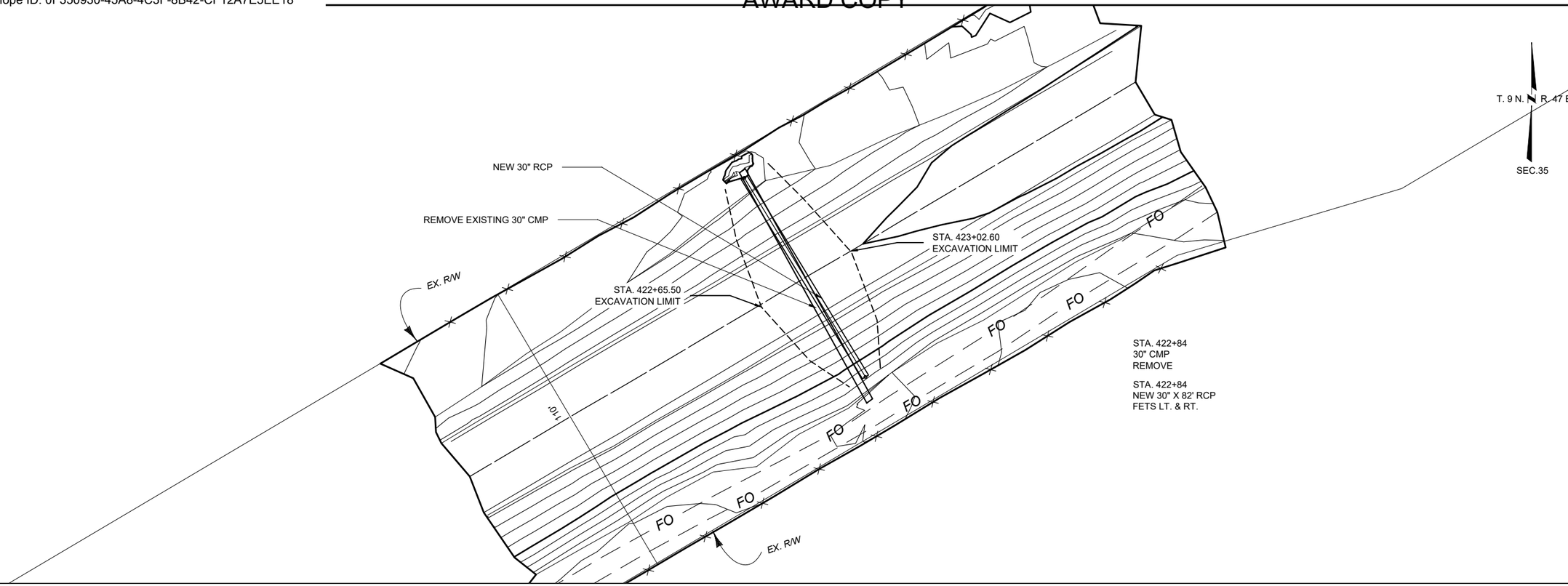
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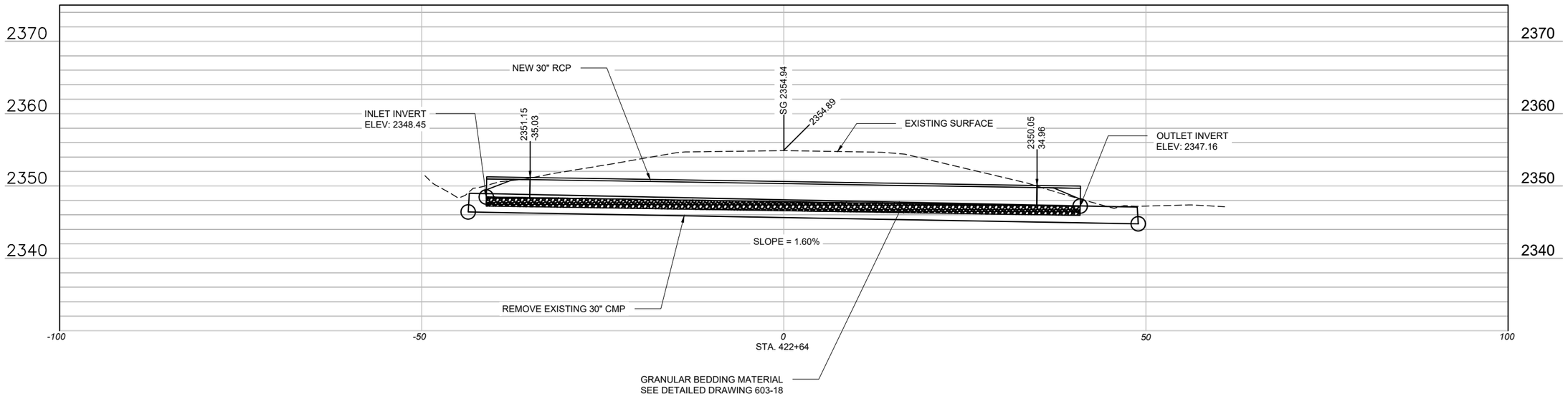
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AWARD COPY





SHEET NO.
19

SITE 3 &
30" RCP GENERAL LAYOUT
RP 7.903

PROJECT NAME: JCT MT 59-NORTHEAST (S-489)
COUNTY: CUSTER
PROJECT ID: STPS 489-1(9)0
UPN: 10227000

DESIGNED BY	A. BORSCHEL	9/14/23
REVIEWED BY	L. ZEIGLER	9/20/23
CHECKED BY		

MONTANA
Department of Transportation

ROAD PLANS

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SUMMARY
SIGNING & DELINEATION QUANTITIES

MATERIAL	TOTAL	UNIT
SIGNS-SHEET ALUMINUM-REFLECTIVE SHEETING(IV)		SQ. FOOT
SIGNS-SHEET ALUMINUM-REFLECTIVE SHEETING(XI)	*524.2*	SQ. FOOT
SIGNS-ALUMINUM SHEET INCREMENT SHEETING (IV)		SQ. FOOT
SIGNS-ALUMINUM SHEET INCREMENT SHEETING (XI)		SQ. FOOT
OVERLAY-SHEET ALUMINUM		SQ. FOOT
POSTS-STEEL "U"	*152*	POUNDS
POLES-TREATED WOOD-4" DIA.	*276*	LINEAR FT.
POLES-TREATED WOOD-5" DIA.	*498*	LINEAR FT.
POLES-TREATED TIMBER-CLASS 4		LINEAR FT.
POLES-TREATED TIMBER-CLASS 3		LINEAR FT.
POSTS-TUBULAR STEEL (ROUND)		POUNDS
POSTS-TUBULAR STEEL (SQUARE PERFORATED)		POUNDS
POSTS-STRUCTURAL STEEL		POUNDS
OVERHEAD STRUCTURE-METAL-CANTILEVER		EACH
OVERHEAD STRUCTURE-METAL-BRIDGE		EACH
HIGHWAY TRAFFIC STRIPING-WHITE		GAL.(S)
HIGHWAY TRAFFIC STRIPING-YELLOW		GAL.(S)
WORDS & SYMBOLS		GAL.(S)
TYPE 1 DELINEATOR	*233*	EACH
TYPE 2 DELINEATOR		EACH
PANEL DELIN. "A"	*60*	EACH
PANEL DELIN. "F"	*54*	EACH
REMOVE SIGNS	*36*	EACH
REMOVE SIGNS-GUIDE		EACH
RESET SIGNS		EACH
RESET SIGNS-GUIDE		EACH
FRANGIBLE SIGN POST BREAKAWAY DEVICE-		EACH
FRANGIBLE SIGN POST BREAKAWAY DEVICE-		EACH
SQUARE TUBULAR SLIPBASE BREAKAWAY DEVICE-3"		EACH

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SIGN LOCATION AND SPECIFICATIONS

REFERENCE POST	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	REFLECTIVITY	REMARKS
0.006 LT		R1-1																												R1-1 = USE AS IS
0.018 RT		M3-2 M1-12	24X12 24X24			10-0		4" Dia. POLE		12-9		5-0	3-0	2.0 4.0			14						1							REPLACE = M3-2 (EAST) REPLACE = M1-12 (MT489)
0.051 LT		M1-5 W1-7	24X24 21X15			10-0		4" Dia. POLE		13-2		5-0	3-0	4.0 2.2			14						1							REPLACE = M1-5 (MT59) W1-7 - DBL. ARROW
0.031 RT		N7-1 N7-1p	36x48 36x12			20-0		5" Dia. POLE		17-2		5-1	3-6	12.0 3.0				18				X	1							N7-1 = USE AS IS N7-1p = REPLACE
0.086 LT		W3-1A W99-1	36x36 REMOVE			10-0		4" Dia. POLE		14-7		5-0	3-0	9.0			16						1					FY		REPLACE = W3-1 REMOVE = W99-1
0.084 RT		G489-09A	84X24			30-0		4" Dia. POLE		X=13-5 Y=12-9		7-0	3-0	14.0			14 14						1							REPLACE = G489-09A KINSEY 18 - BBR
0.143 LT		M2-1 M1-5	21X15 24X24			10-0		4" Dia. POLE		13-2		5-0	3-0	2.2 4.0			14						1							REPLACE = M2-1 (JCT) M1-5.2 - MT 59
0.106 RT		R2-1 R2-3b	24X30 24X18			10-0		4" Dia. POLE		13-0		5-7	3-0	5.0 3.0			14						1							REPLACE = R2-1 (70) REPLACE = R2-3b (65)
0.143 RT		R2-2A	24X30			10-0		4" Dia. POLE		13-0		5-0	3-0	5.0			14						1							REPLACE = R2-2A (65)
0.319 RT		W1-2R W13-1(65)	30X30 18X18			10-0		4" Dia. POLE		13-10		5-7	3-0	6.2 2.3			14						1					FY		REPLACE = W1-2R, W13-1 FROM 0.220
0.365 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
0.395 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
0.425 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
0.474 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
0.504 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
0.534 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
0.598 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
0.628 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
0.658 LT		W1-2L W13-1 (65)	30X30 18X18			10-0		5" Dia. POLE		16-0		5-7	3-6	6.2 2.3			14					X						FY		REPLACE = W1-2R, W13-1 FROM 51+71.29
0.754 RT		W1-2R W13-1(65)	30X30 18x18			10-0		4" Dia. POLE		13-10		5-7	3-0	6.3 2.3			14											FY		NEW= W13-1(65), W1-2L
0.801 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
0.839 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
0.877 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
0.915 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
0.953 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
0.991 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
1.0 RT		D10-2	10X27 10X27			4-0		2LB/FT STEEL U		9-6		4-0	3-0	1.9 1.9								19		1						REPLACE = REF. POST (1)
1.029 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE		12-4		5-0	3-6	5.0 5.0				14				X						FY		NEW= (2) CHEVRONS
1.057 LT		W1-2R W13-1(65)	30x30 18x18			10-0		4" Dia. POLE		13-10		5-7	3-0	6.3 2.3			14											FY		NEW = W1-2(65)
1.455 RT		FWP-1	BY OTHERS																											FWP-1 = USE AS IS
1.478 RT		R1-1	30x30			6-0		4" Dia. POLE		11-6		5-0	3-0	5.2			12						1							REPLACE = R1-1

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.

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

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

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

ALL SIGNING NOT LISTED ON SPECIFICATION SHEETS ARE TO BE USE AS IS.

Adopt-A-Highway Signing

Contractor will confirm that the group name on the sign(s) currently existing at the time of construction corresponds to the group name on the sign(s) shown in plans. If name is different, Field Project Manager will contact Traffic & Safety Bureau Signing Section with correct name and a new sign design will be provided.

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SIGN LOCATION AND SPECIFICATIONS

REFERENCE POST	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 REMOVE	SIGNS RESET	GUIDE REMOVE	GUIDE RESET	REFLECTIVITY	REMARKS
1.917 RT		W11-3 W7-3aP	30x30 18x18			10-0		4" Dia. POLE	13-10			5-7	3-0	6.3 2.3			14							1						REPLACE = W11-3, W7-3aP
2.002 LT		N7-1 N7-1p	36x48 36x12			20-0		5" Dia. POLE	17-2			5-1	3-6	12.0 3.0				18					X	1						N7-1 = USE AS IS N7-1p = REPLACE
2.0 RT		D10-2	10X27 10X27			4-0		2LB/FT STEEL U	9-6			4-0	3-0	1.9 1.9								19		1						REPLACE = REF. POST (2)
2.270 LT		R1-1	30x30			6-0		4" Dia. POLE	11-6			5-0	3-0	5.2			12							1						REPLACE = R1-1
2.344 RT		W1-2R W13-1(65)	30x30 18x18			10-0		4" Dia. POLE	13-10			5-7	3-0	6.3 2.3			14						X						FY	NEW = W1-2R, W13-1
2.416 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X						FY	NEW= (2) CHEVRONS
2.454 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X						FY	NEW= (2) CHEVRONS
2.492 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X						FY	NEW= (2) CHEVRONS
2.530 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X						FY	NEW= (2) CHEVRONS
2.606 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X						FY	NEW= (2) CHEVRONS
2.644 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X						FY	NEW= (2) CHEVRONS
2.682 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X						FY	NEW= (2) CHEVRONS
2.720 RT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X						FY	NEW= (2) CHEVRONS
2.758 LT		W1-2R W13-1(65)	30x30 18x18			10-0		4" Dia. POLE	13-10			5-0	3-0	6.3 2.3			14												FY	NEW = W1-2R, W13-1(65)
3.0 RT		D10-2	10X27 10X27			4-0		2LB/FT STEEL U	9-6			4-0	3-0	1.9 1.9								19		1						REPLACE = REF. POST (3)
3.859 LT		R1-1	30x30			6-0		4" Dia. POLE	14-7			5-0	3-0	5.2			12							1						REPLACE = R1-1
4.0 RT		D10-2	10X27 10X27			4-0		2LB/FT STEEL U	9-6			4-0	3-0	1.9 1.9								19		1						REPLACE = REF. POST (4)
4.574 RT		W1-2R W13-1(65)	30X30 18x18			10-0		4" Dia. POLE	13-10			5-0	3-0	6.2			14							1					FY	NEW = W13-1(65) REPLACE = W1-2R
4.602 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X	1					FY	REPLACE = (2) CHEVRONS
4.640 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X	1					FY	REPLACE = (2) CHEVRONS
4.678 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X	1					FY	REPLACE = (2) CHEVRONS
4.716 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X	1					FY	REPLACE = (2) CHEVRONS
4.754 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X	1					FY	REPLACE = (2) CHEVRONS
4.792 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X	1					FY	REPLACE = (2) CHEVRONS
4.830 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X	1					FY	REPLACE = (2) CHEVRONS
4.868 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X	1					FY	REPLACE = (2) CHEVRONS
4.906 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X	1					FY	REPLACE = (2) CHEVRONS
4.944 LT		(2) W1-8	24x30 24x30			10-0		5" Dia. POLE	12-4			5-0	3-6	5.0 5.0				14					X	1					FY	REPLACE = (2) CHEVRONS

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.

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

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

ALL SIGNING NOT LISTED ON SPECIFICATION SHEETS ARE TO BE USE AS IS.

Adopt-A-Highway Signing

Contractor will confirm that the group name on the sign(s) currently existing at the time of construction corresponds to the group name on the sign(s) shown in plans. If name is different, Field Project Manager will contact Traffic & Safety Bureau Signing Section with correct name and a new sign design will be provided.

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SIGN LOCATION AND SPECIFICATIONS

REFERENCE POST	RAMP NO.	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	REFLECTIVITY	REMARKS
4.972 LT		W1-2L	30X30			10-0		4" Dia. POLE		13-4		5-0	3-0	6.2			14						1					FY	REPLACE = W1-2L
5.0 RT		D10-2	10X27 10X27			4-0		2LB/FT STEEL U		9-7		4-0	3-0	1.9 1.9								19	1						REPLACE = REF. POST (5)
6.0 RT		D10-2	10X27 10X27			4-0		2LB/FT STEEL U		9-7		4-0	3-0	1.9 1.9								19	1						REPLACE = REF. POST (6)
7.0 RT		D10-2	10X27 10X27			4-0		2LB/FT STEEL U		9-7		4-0	3-0	1.9 1.9								19	1						REPLACE = REF. POST (7)
8.0 RT		D10-2	10X27 10X27			4-0		2LB/FT STEEL U		9-7		4-0	3-0	1.9 1.9								19	1						REPLACE = REF. POST (8)
												TOTALS		524.2			276	498				152	36						

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.

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

ALL SIGNING NOT LISTED ON SPECIFICATION SHEETS ARE TO BE USE AS IS

DELINEATION TABLE	
TYPE 1 DELIN.	233
TYPE 2 DELIN.	0

PANEL DELIN. LEGEND		
⊣	PANEL DES "A"	60
⊢	PANEL DES "F"	54

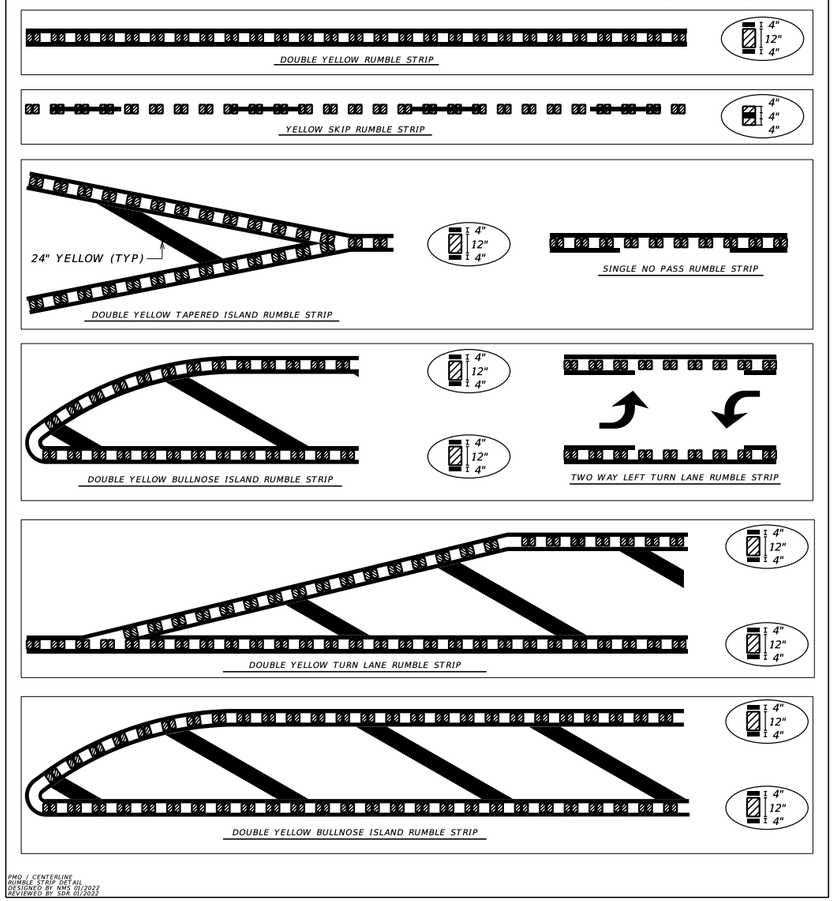
3	MONTANA Department of Transportation	C:\DGN\10227000sisum002.dgn	DESIGNED BY:	STEVEN MORANO	7/05/2023	SIGNING PLAN	JCT MT 59-NORTHEAST (S-489) / STPS 489-1(9)0
2		6/18/2024	REVIEWED BY:	TYREL MURFITT	1/19/2024		
1		12:03:21 PM CPS - U7498	CHECKED BY:	NATHAN STYREN	10/30/2023	CUSTER COUNTY	UPN 10227000 / S4

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DETAILS

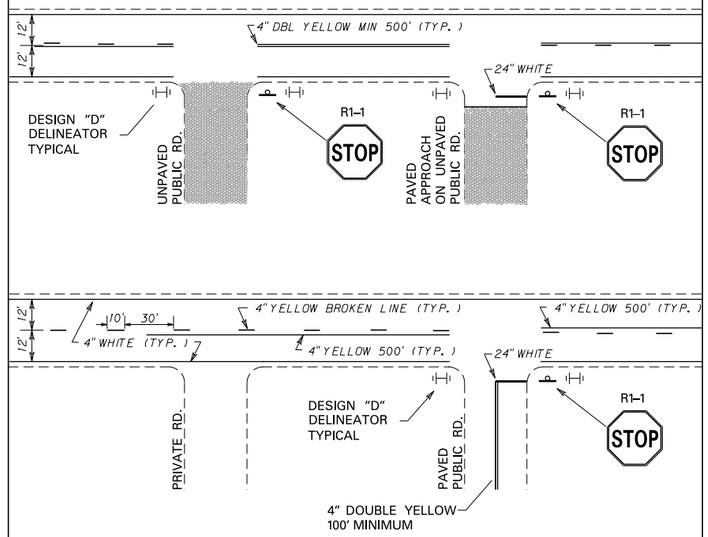
TYPICAL RURAL CENTERLINE PAVEMENT MARKINGS AND RUMBLE STRIPS. SEE ROAD DESIGN PLANS FOR RUMBLE STRIP QUANTITY (IF USED)



RMQ / CENTERLINE RUMBLE STRIP DETAIL
DESIGNED BY NMR 01/2022
REVIEWED BY SDM 01/2022

TYPICAL RURAL PAVEMENT MARKINGS

NO SCALE



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

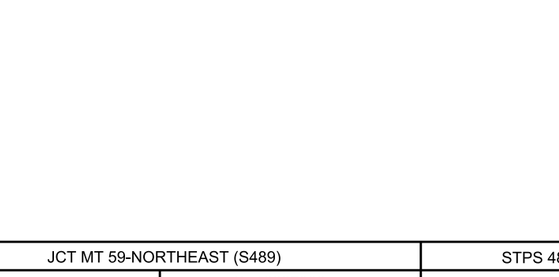
ALL PAVEMENT MARKINGS TO BE EPOXY UNLESS OTHERWISE SPECIFIED.

NOTES:

1. *SEE CENTERLINE RUMBLE STRIPS DTL. DWG. NO. 411-05 FOR ADDITIONAL INFORMATION.*
2. *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.*
3. *SEE CENTERLINE PAVEMENT MARKINGS FOR RURAL HIGHWAYS MEMO DATED JUNE 18, 2019*

CHEVRON PLACEMENT DETAIL

(GUIDANCE ONLY)



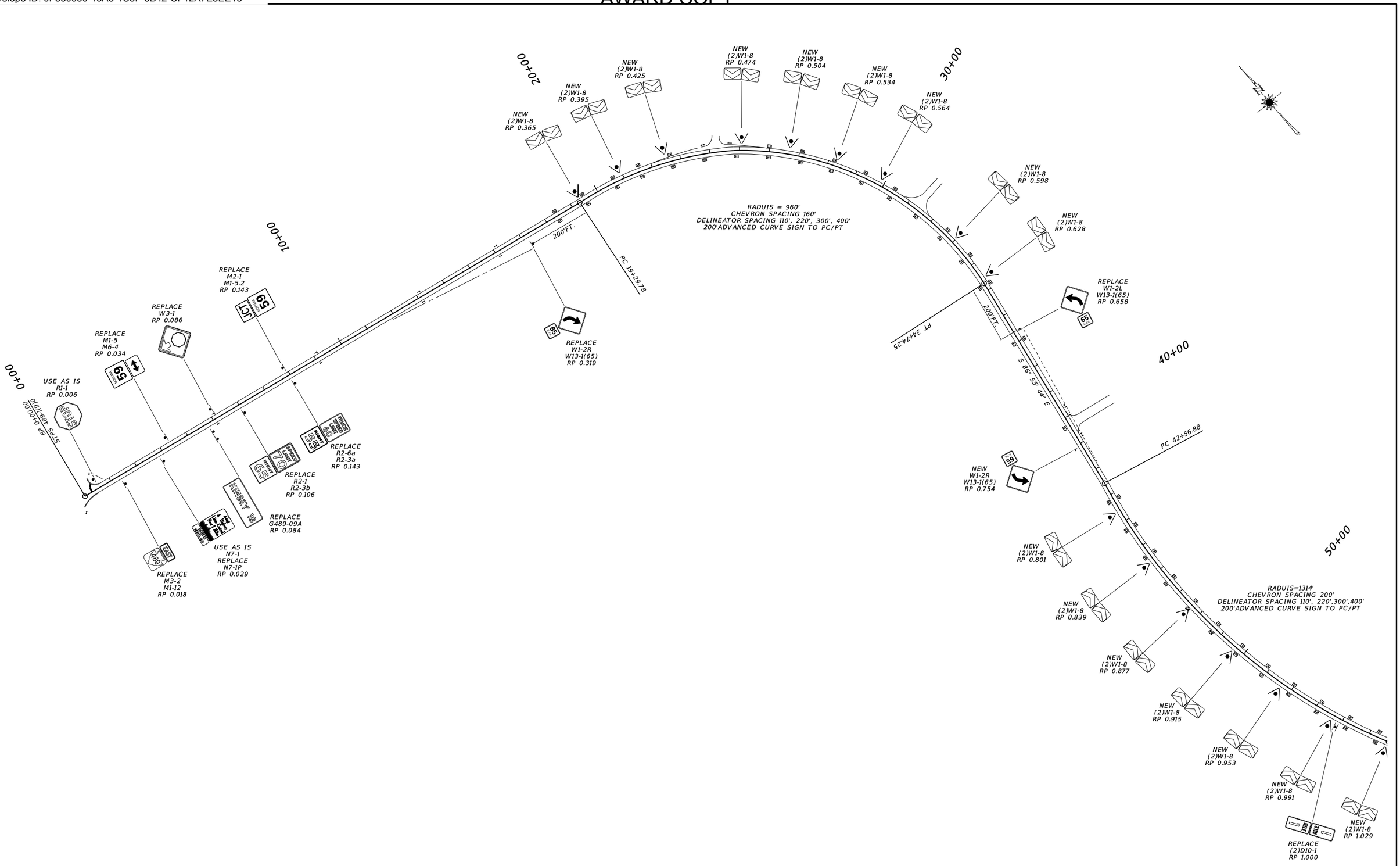
CURVE RADIUS	SIGN SPACING		R.P. CONVERSION
< 200'	40'	=	.008 +–
200' – 400'	80'	=	.015 +–
401' – 700'	120'	=	.023 +–
701' – 1250'	160'	=	.030 +–
> 1250'	200'	=	.038 +–

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)

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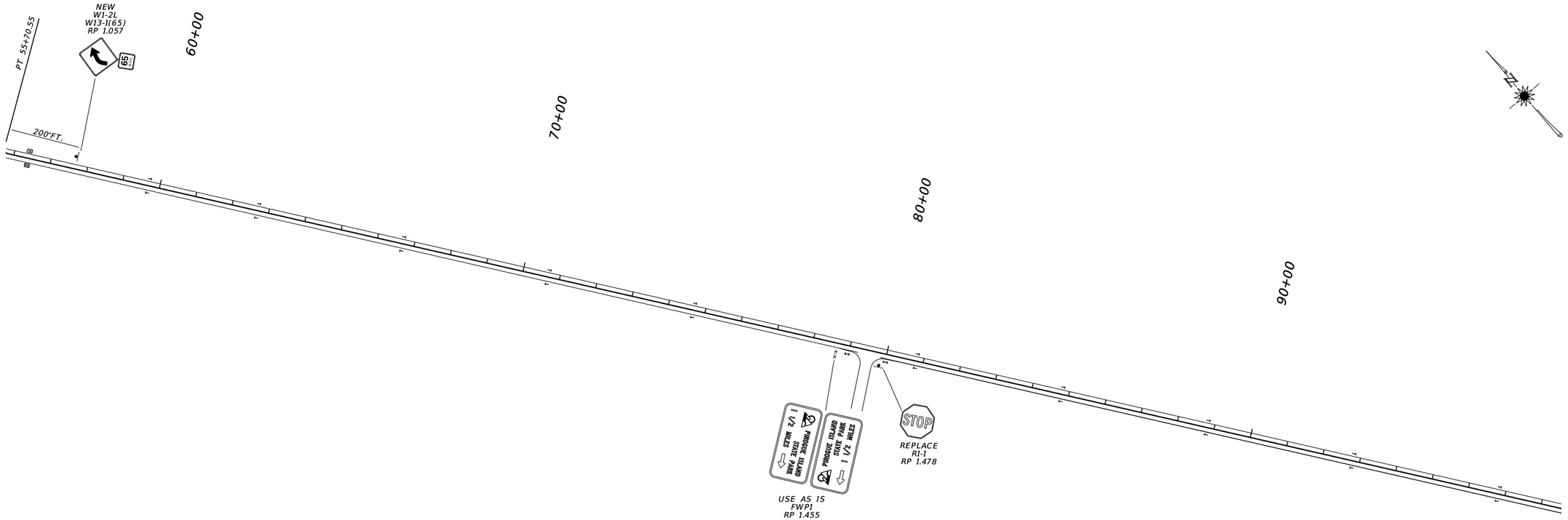
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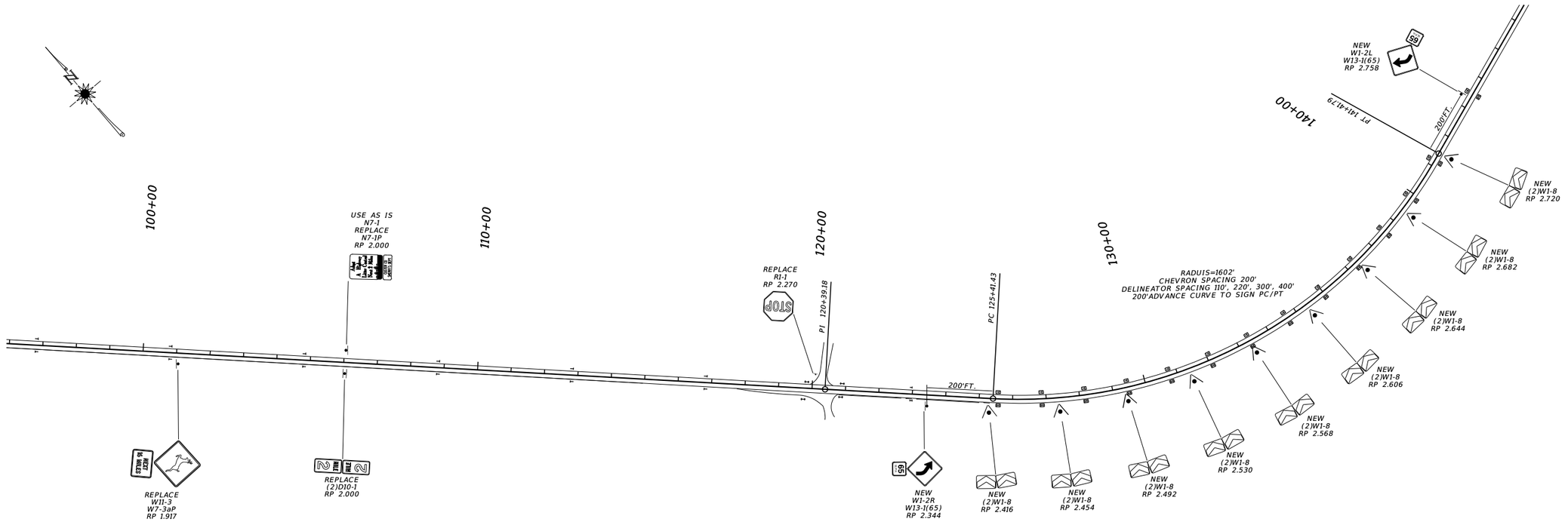


3	MONTANA Department of Transportation	C:\DGN\10227000sipln001.dgn	DESIGNED BY:	STEVEN MORANO	7/05/2023	SIGNING PLANS	JCT MT 59-NORTHEAST (S-489)	STPS 489-1(9)0
2		3/5/2024	REVIEWED BY:	TYREL MURFITT	1/19/2024			
1		10:39:52 AM CPS - U7498	CHECKED BY:	NATHAN STYREN	10/30/2023	CUSTER COUNTY	UPN 10227000	S6

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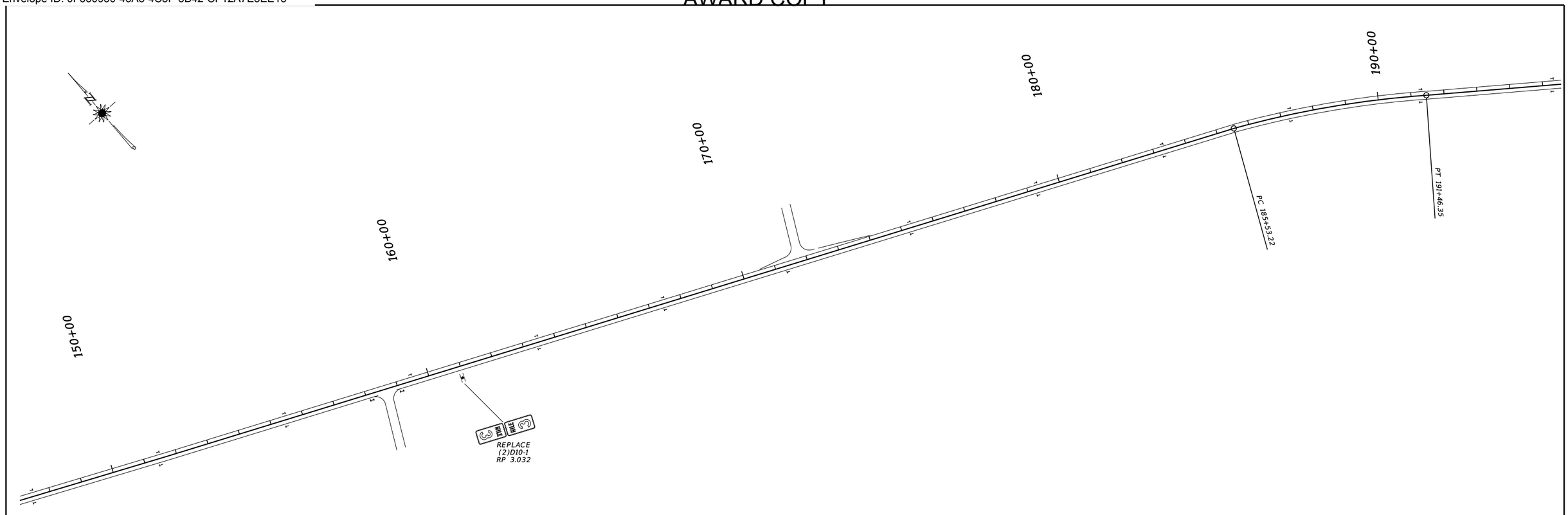


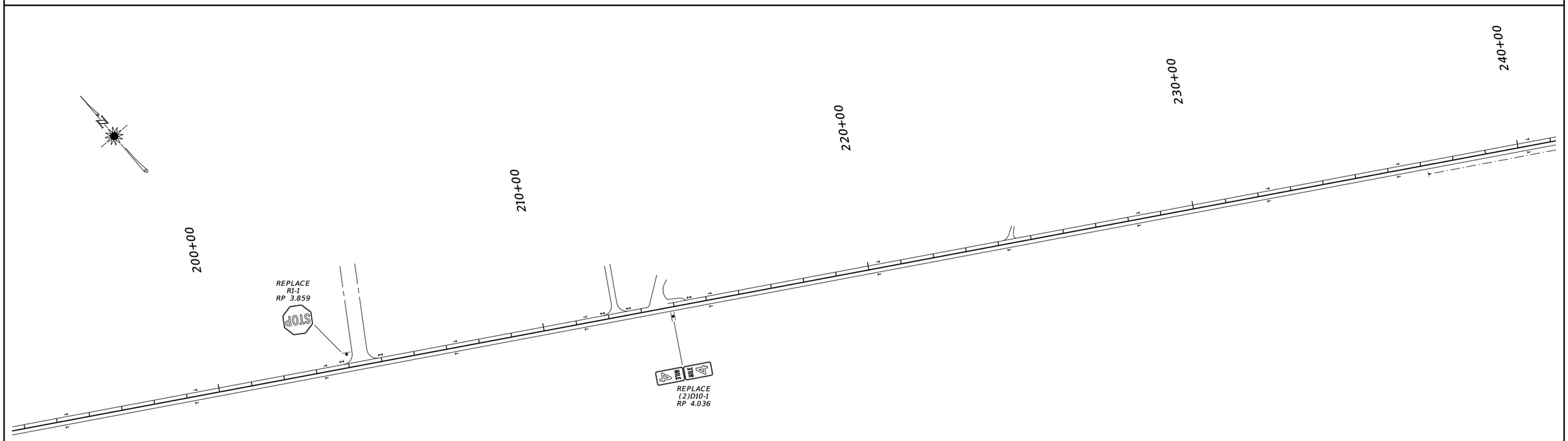


3	**MONTANA** Department of Transportation	C:\DGN\10227000sipln001.dgn	DESIGNED BY:	STEVEN MORANO	7/05/2023	SIGNING PLANS	JCT MT 59-NORTHEAST (S-489)	STPS 489-1(9)0
2		3/5/2024	REVIEWED BY:	TYREL MURFITT	1/19/2024			
1		10:39:56 AM CPS - U7498	CHECKED BY:	NATHAN STYREN	10/30/2023	CUSTER COUNTY	UPN 10227000	S7

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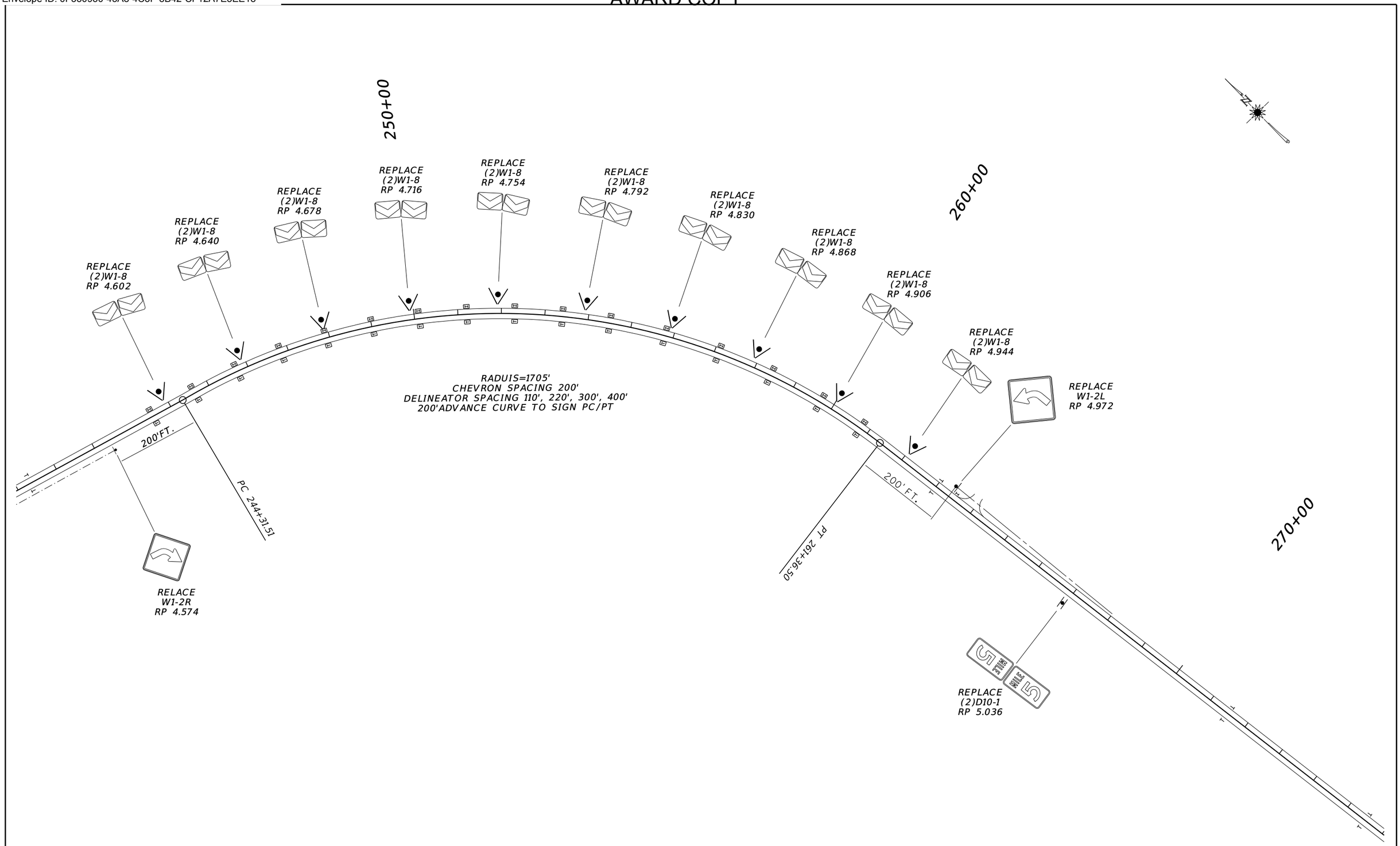




3	MONTANA Department of Transportation	C:\DGN\10227000sipln001.dgn	DESIGNED BY:	STEVEN MORANO	7/05/2023	SIGNING PLANS	JCT MT 59-NORTHEAST (S-489)	STPS 489-1(9)0
2		3/5/2024	REVIEWED BY:	TYREL MURFITT	1/19/2024			
1		10:40:00 AM CPS - U7498	CHECKED BY:	NATHAN STYREN	10/30/2023	CUSTER COUNTY	UPN 10227000	S8

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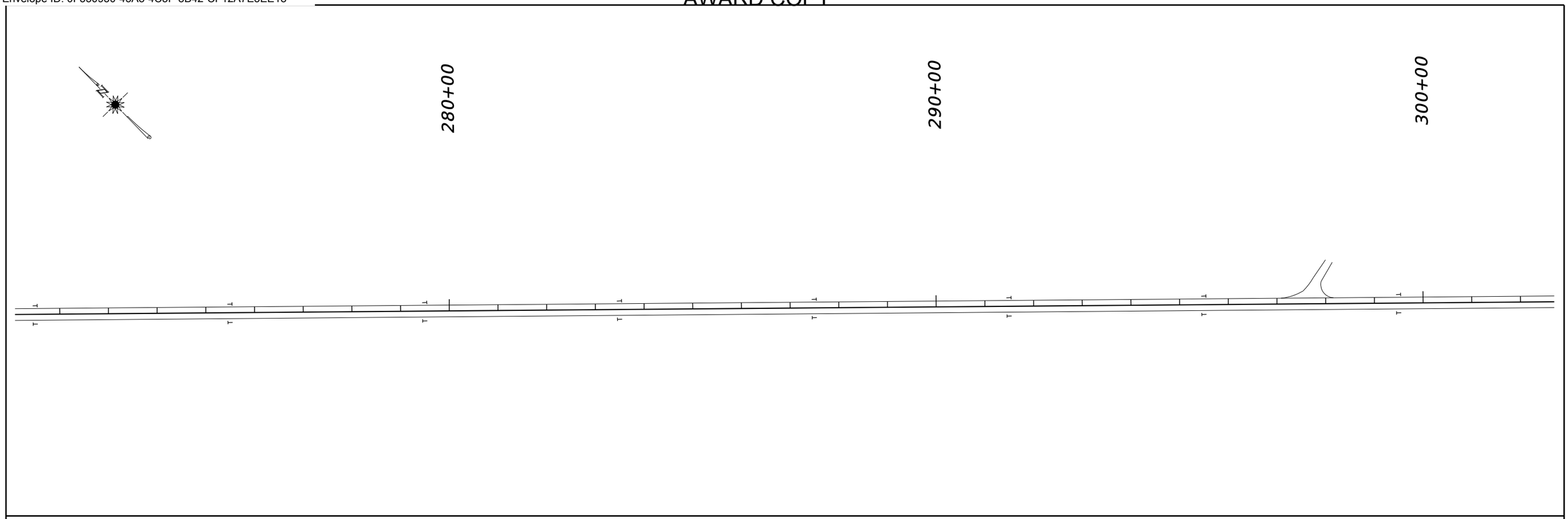
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3	MONTANA Department of Transportation	C:\DGN\10227000sipln002.dgn	DESIGNED BY:	STEVEN MORANO	7/05/2023	SIGNING PLANS	JCT MT 59-NORTHEAST (S-489)	STPS 489-1(9)0
2		3/5/2024	REVIEWED BY:	TYREL MURFITT	1/19/2024			
1		10:40:11 AM CPS - U7498	CHECKED BY:	NATHAN STYREN	10/30/2023	CUSTER COUNTY	UPN 10227000	S9

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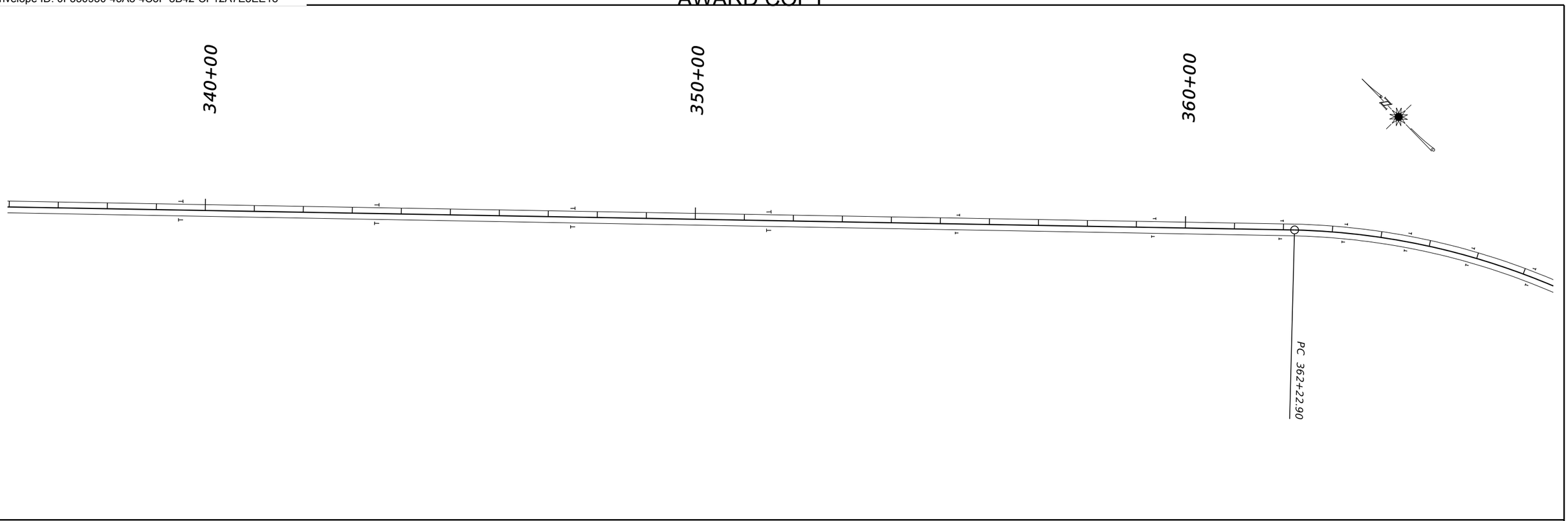
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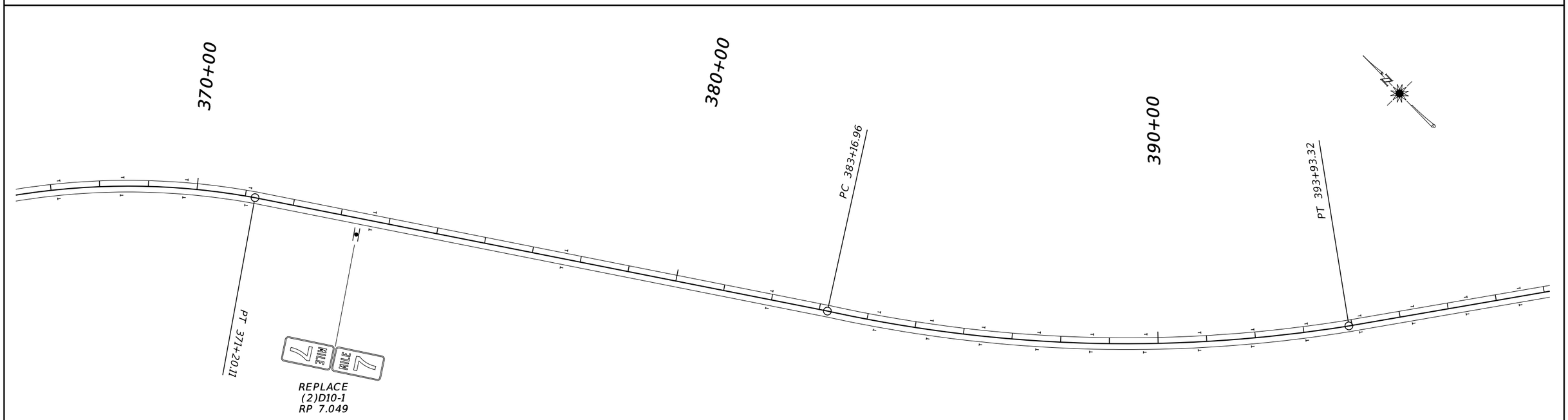


3	MONTANA Department of Transportation	C:\DGN\10227000sipln002.dgn	DESIGNED BY:	STEVEN MORANO	7/05/2023	SIGNING PLANS	JCT MT 59-NORTHEAST (S-489)	STPS 489-1(9)0
2		3/5/2024	REVIEWED BY:	TYREL MURFITT	1/19/2024			
1		10:40:15 AM CPS - U7498	CHECKED BY:	NATHAN STYREN	10/30/2023	CUSTER COUNTY	UPN 10227000	S10

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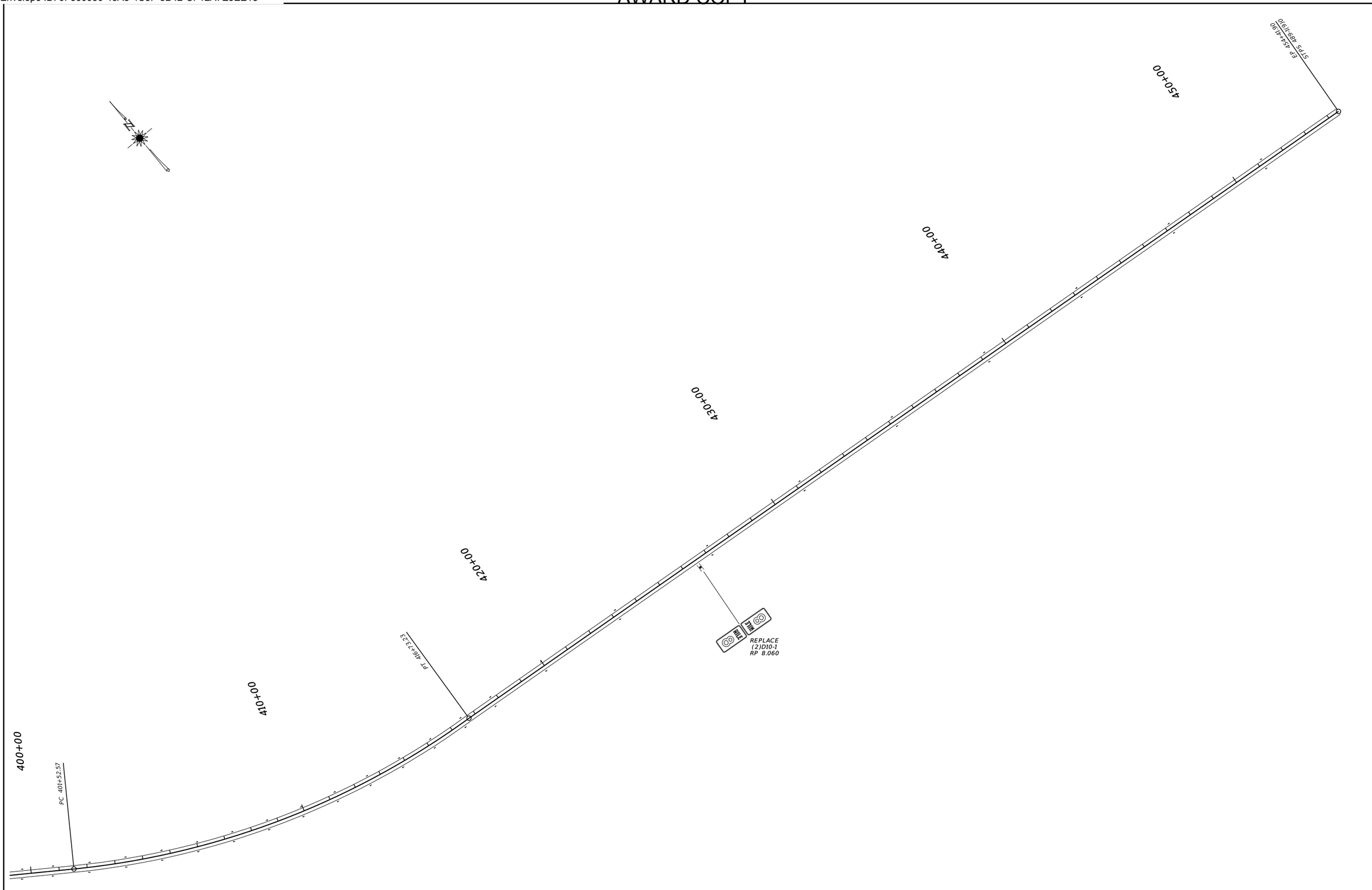




3	MONTANA Department of Transportation	C:\DGN\10227000sipln002.dgn	DESIGNED BY:	STEVEN MORANO	7/05/2023	SIGNING PLANS		JCT MT 59-NORTHEAST (S-489) / STPS 489-1(9)0
2		3/5/2024	REVIEWED BY:	TYREL MURFITT	1/19/2024			
1		10:40:18 AM CPS - U7498	CHECKED BY:	NATHAN STYREN	10/30/2023	CUSTER COUNTY		UPN 10227000 / S11

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2		3/5/2024	REVIEWED BY:	TYREL MURFITT	1/19/2024			
1		10:40:30 AM CPS - U7498	CHECKED BY:	NATHAN STYREN	10/30/2023	CUSTER COUNTY	UPN 10227000	S12

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ASSOCIATED PROJECT AGREEMENT NUMBERS	
P.E.	STPS 489-1(8)0

BRIDGE IDENTIFICATION	
MDT STR ID	NBI NUMBER
06863	S00489004+02001

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS AND QUANTITIES

FEDERAL AID PROJECT STPS 489-1(9)0

JCT MT 59 - NORTHEAST (S-489)

CUSTER 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	28471	LIST OF DRAWINGS AND ESTIMATED BRIDGE PLAN QUANTITIES
B2	28472	GENERAL NOTES
B3	28473	EXISTING CONCRETE BARRIER END - BR
B4	28474	REVISE CONCRETE BARRIER END - BR
B5	28475	REVISE CONCRETE BARRIER DETAILS
B6	28476	OVERLAY AT EXPANSION JOINTS

ESTIMATED BRIDGE PLAN QUANTITIES

MDT STR ID	FEATURE INTERSECTED	GENERAL LAYOUT DRAWING NUMBER	RESEAL EXISTING JOINTS (LN.FT.)	EXPANSION JOINT - PRECOMPRESSED (LN.FT.)	REVISE CONCRETE BARRIER RAIL END - BR (EACH)
6863	Sunday Creek	4853	52.0	28.0	4
		PROJECT TOTAL	52.0	28.0	4

SHEET NO.
B1

LIST OF DRAWINGS AND ESTIMATED BRIDGE PLAN QUANTITIES

REVISED			
REVISED			
REVISED			
CHECKED	I.E.S	2-14-24	
DRAWN	D.G.G.	1-22-24	
DESIGNED	I.E.S.	1-10-24	

1022700BRREH001.dwg \ QSH001

MONTANA Department of Transportation
BRIDGE BUREAU

4/16/2024 9:17:37 AM

UPN NUMBER
1022700

DRAWING NO.
28471

DocuSign Envelope ID: 0F350930-45A8-4C3F-8B42-CF12A7E5EE18

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GENERAL NOTES

WORK SITE VERIFICATION:

- *Plans were prepared from original drawings and as-built drawings. Survey information was not collected for this project and existing structure dimensions may vary from those shown on the drawings. Field verify dimensions before ordering materials. Notify the Project Manager and provide recommended plan revisions if the existing structure does not represent what is shown on the plans.*

- *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:

- *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.*

NEW REINFORCING STEEL:

- *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	*2⅜" (Existing)*
Bottom of Abutment Caps	*3"*
Concrete Barriers and Curbs	*1½"*

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

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

EXISTING REINFORCING STEEL (To Remain):

- *Remove hardened concrete and all other bond inhibiting materials from the existing reinforcing steel before placing fresh concrete.*

- *Replace existing reinforcing steel that is damaged during construction at no additional cost to the state. A bar is considered damaged if less than 75% of the bar diameter remains.*

- *Replace all existing reinforcing steel that has corroded to the point that less than 75% of the bar diameter remains.*

- *Repair damaged epoxy coating on the existing reinforcing steel with a coating that is specifically designed for repairing epoxy coated reinforcing steel.*

- *Include the cost of cleaning existing reinforcing, replacing corroded reinforcing, and repairing epoxy coating in associated items of work.*

ACRONYMS AND ABBREVIATIONS:

- *N.F. Denotes Near Face.*

- *F.F. Denotes Fill Face.*

- *E.F. Denotes Each Face.*

- *Cl. Denotes Clear Cover*

BRIDGE DECK REPAIR:

- *See the Standard Specifications for allowable deck repair concrete options.*

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

CONCRETE CONSTRUCTION JOINTS:

- *Roughen all construction joints to a minimum ¼" amplitude prior to placing new concrete.*

- *Avoid feathered edges by saw cutting ½" minimum before removing existing concrete.*

SHEET NO.
B2

GENERAL NOTES

SCALE: No Scale

PROJECT NAME
JCT MT 59 - NORTHEAST (S-489)

MDT STRUCTURE ID
06863

FEDERAL AID PROJECT
STPS 489-1(9)0

COUNTY
CUSTER

DESIGNED	J.E.S.	2-10-24
DRAWN	D.G.G.	2-22-24
CHECKED	J.E.S.	2-14-24
REVISED		
REVISED		
REVISED		
REVISED		

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MONTANA Department of Transportation
BRIDGE BUREAU

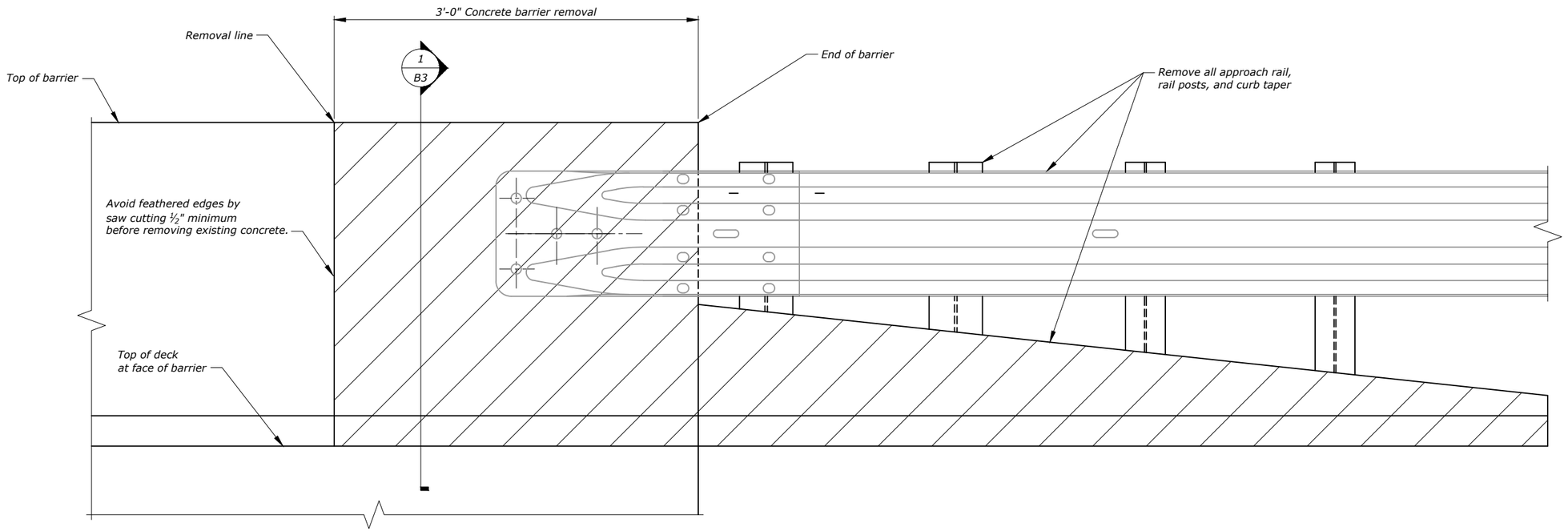
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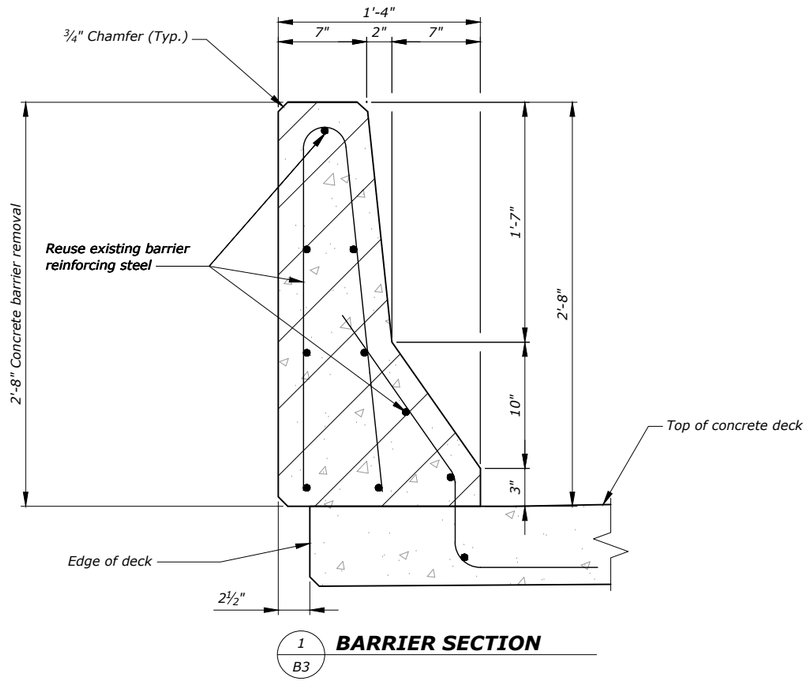
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PARTIAL EXISTING ELEVATION



1 B3 ***BARRIER SECTION***

NOTES

½" neat saw cut around entire perimeter at the removal line.

Estimated weight of Reinforcing Steel = 216 lbs.
Estimated volume of Concrete - Class Structure = 1.0 yd³

Estimated quantities are for one approach section only.

Include all costs associated with furnishing materials, equipment, labor, and incidentals necessary to complete the work in the unit price bid for Revise Concrete Barrier Rail End-BR.

See Detailed Drawing 606-53A for Box Beam Bridge Approach Section - Type 3 hardware and connection details.

See General Layout Dwg. No.4853 and Dwg. No. 14074 for more information.

Use Concrete - Class Structure in barrier.

Lap #4 bars 1-6 minimum.
Lap #5 bars 2-6 minimum.

SHEET NO. B3

EXISTING CONCRETE BARRIER END - BR

SCALE: 1" =1'-0"

PROJECT NAME **JCT MT 59 - NORTHEAST (S-489)**

MDT STRUCTURE ID **06863**

FEDERAL AID PROJECT **STPS 489-1(9)0**

COUNTY **CUSTER**

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REVISED				DRAWN	D.G.G.	1-22-24
REVISED				DESIGNED	Y.E.S.	1-20-24

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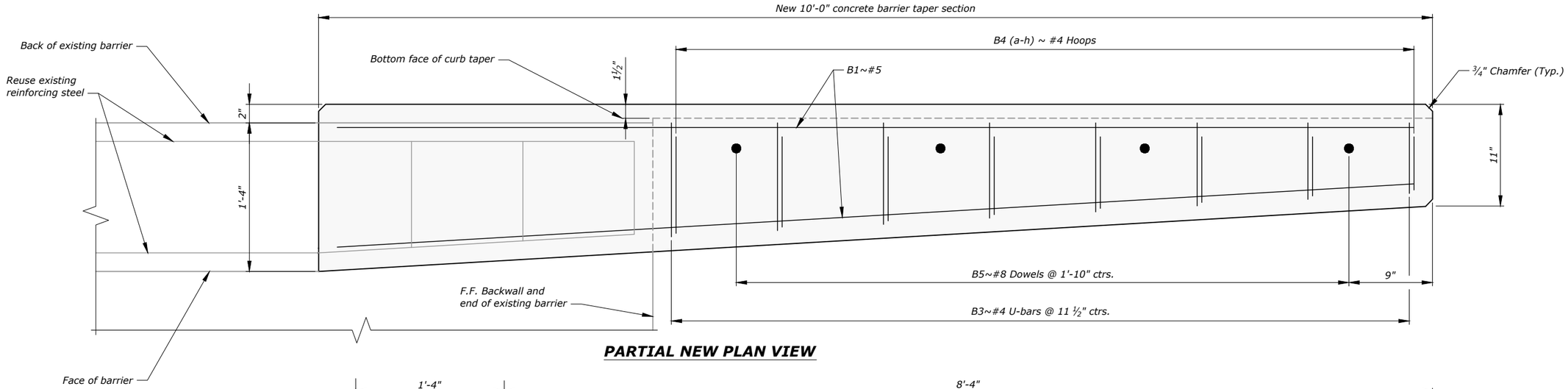
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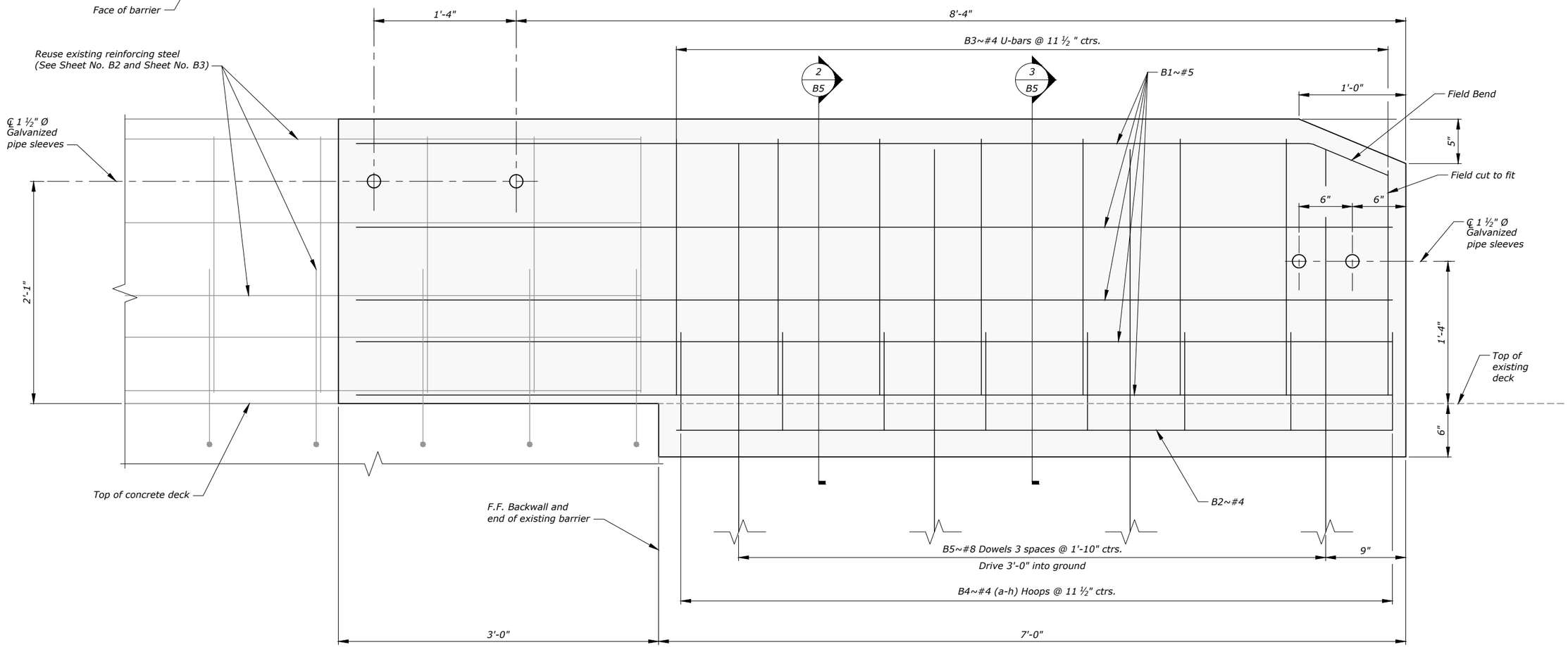
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PARTIAL NEW PLAN VIEW



PARTIAL NEW ELEVATION

NOTE: Bridge approach rail not shown for clarity. (See Detailed Drawing 606-53A for more detail.)

NOTE: Use Concrete Class - Structure for all barrier components.

SHEET NO.
B4

REVISE CONCRETE BARRIER END - BR

SCALE: 1" = 1'-0"

PROJECT NAME
JCT MT 59 - NORTHEAST (S-489)

MDT STRUCTURE ID
06863

FEDERAL AID PROJECT
STPS 489-1(9)0

COUNTY
CUSTER

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REVISED		DESIGNED	I.E.S. 1-10-24

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MONTANA Department of Transportation
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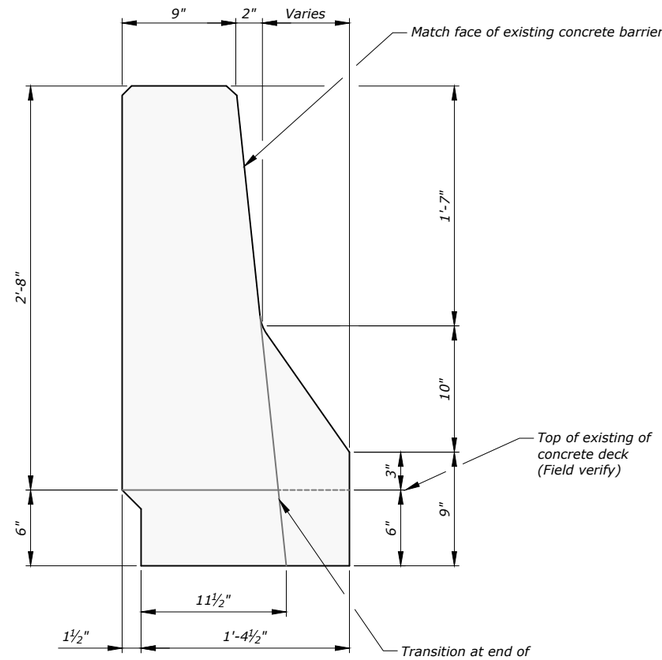
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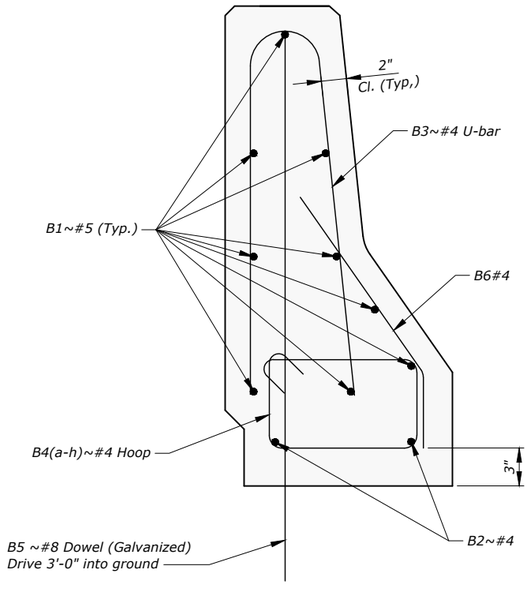
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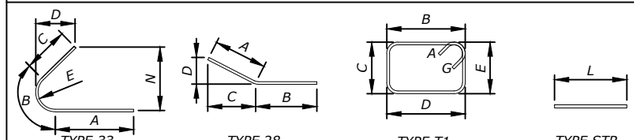
2 / B4 **SECTION**



3 / B4 **SECTION**

BILL OF REINFORCING STEEL
06173

(FOR INFORMATION PURPOSE ONLY)
(ALL DIMENSIONS ARE OUT TO OUT) .



Mark	Size	No.	Type	Length	A	B	C	D	E	G	N
B1	#5	9	STR	9'-8"							
B2	#4	2	STR	6'-8"							
B3	#4	8	33	5'-4"	2'-4"	0'-8"	2'-4"	2'-4"	0'-2 ½"		0'-8"
B4a	#4	1	T1	3'-7"	0'-5"	0'-9 ½"	0'-7"	0'-9 ½"	0'-7"	0'-5"	
B4b	#4	1	T1	3'-6"	0'-5"	0'-9"	0'-7"	0'-9"	0'-7"	0'-5"	
B4c	#4	1	T1	3'-5"	0'-5"	0'-8 ½"	0'-7"	0'-8 ½"	0'-7"	0'-5"	
B4d	#4	1	T1	3'-3"	0'-5"	0'-7 ½"	0'-7"	0'-7 ½"	0'-7"	0'-5"	
B4e	#4	1	T1	3'-2"	0'-5"	0'-7"	0'-7"	0'-7"	0'-7"	0'-5"	
B4f	#4	1	T1	3'-1"	0'-5"	0'-6 ½"	0'-7"	0'-6 ½"	0'-7"	0'-5"	
B4g	#4	1	T1	2'-11"	0'-5"	0'-5 ½"	0'-7"	0'-5 ½"	0'-7"	0'-5"	
B4h	#4	1	T1	2'-10"	0'-5"	0'-5"	0'-7"	0'-5"	0'-7"	0'-5"	
B5 *	#8	4	STR	6'-0"							
B6	#4	5	28	2'-0"	1'-5"	0'-7"	1'-2"	0'-10"			

NOTE: * Denotes galvanized steel reinforcing.

SHEET NO.
B5

REVISE CONCRETE BARRIER DETAILS

SCALE: 1"= 1'-0"

PROJECT NAME
JCT MT 59 - NORTHEAST (S-489)

MDT STRUCTURE ID
06863

FEDERAL AID PROJECT
STPS 489-1(9)0

COUNTY
CUSTER

REVISED	REVISED	REVISED	REVISED	CHECKED	J.E.S.	2-24-24	1022700\BRREH001.dwg \ REH003
				DRAWN	D.G.G.	1-22-24	
				DESIGNED	J.E.S.	1-10-24	

MONTANA Department of Transportation
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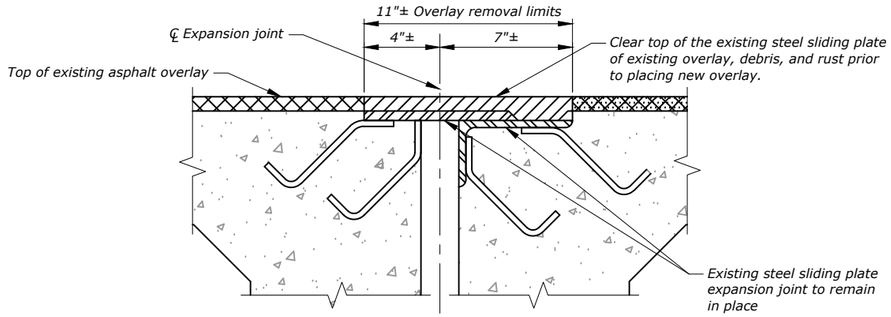
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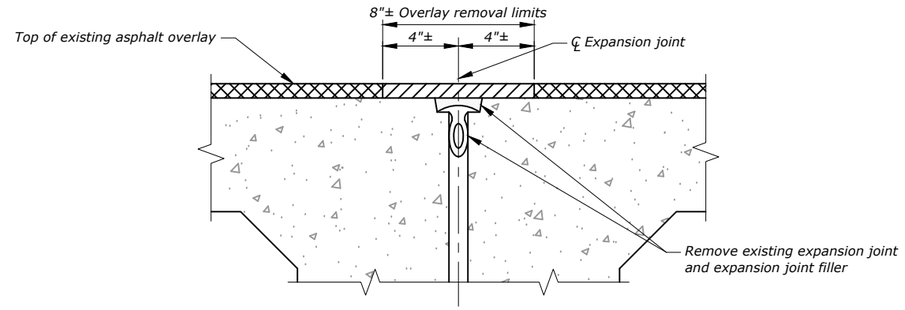
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EXISTING OVERLAY EXPANSION JOINT BENT NO.2

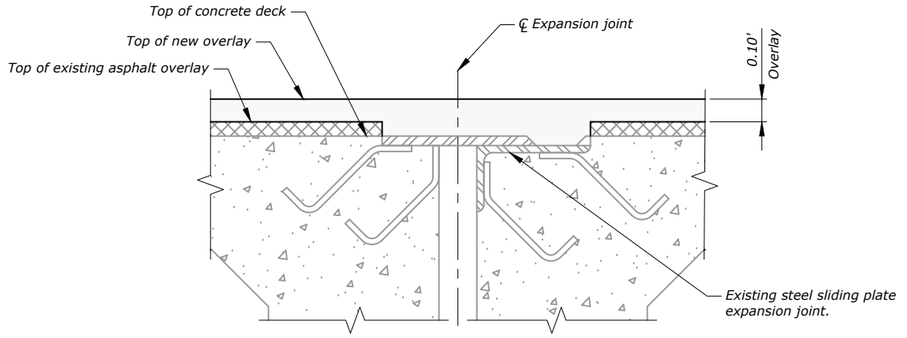
Scale ~ 1 ½" - 1'-0"

NOTE: Include cost of cleaning joints in the unit price bid for Reseal Joints.



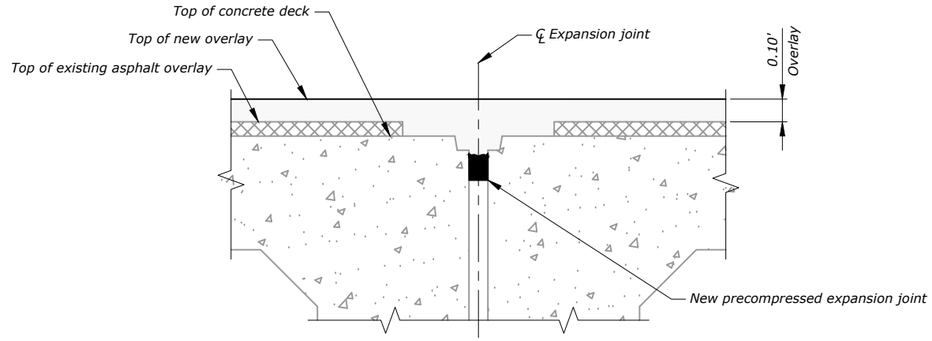
EXISTING OVERLAY EXPANSION JOINT BENT NO.3

Scale ~ 1 ½" - 1'-0"



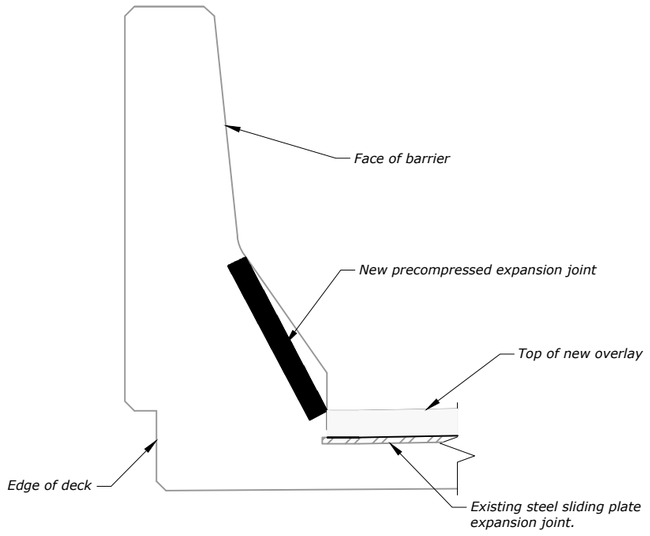
NEW OVERLAY EXPANSION JOINT BENT NO.2

Scale ~ 1 ½" - 1'-0"



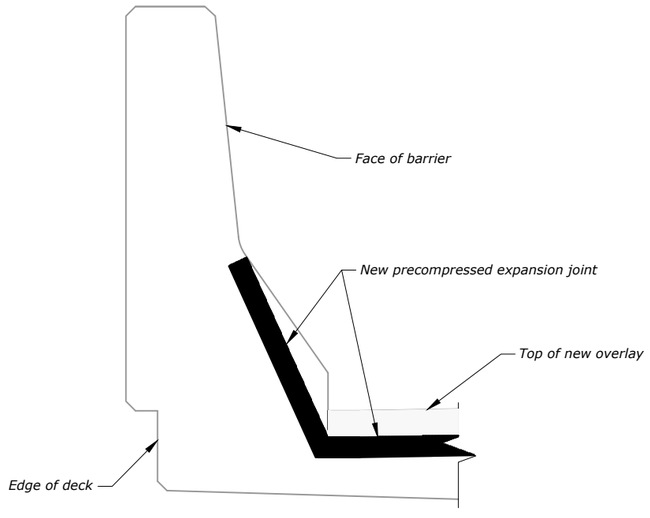
NEW OVERLAY EXPANSION JOINT BENT NO.3

Scale ~ 1 ½" - 1'-0"



NEW OVERLAY EXPANSION JOINT AT BENT NO.2

Scale ~ 1 ½" - 1'-0"



NEW OVERLAY EXPANSION JOINT AT BENT NO. 3

Scale ~ 1 ½" - 1'-0"

SHEET NO. B6

OVERLAY AT EXPANSION JOINTS

SCALE: As Shown

PROJECT NAME **JCT MT 59 - NORTHEAST (S-489)**

MDT STRUCTURE ID **06863**

FEDERAL AID PROJECT **STPS 489-1(9)0**

COUNTY **CUSTER**

REVISED	REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED
				Y.E.S.	D.G.G.	Y.E.S.
				2-24-24	1-22-24	1-10-24

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