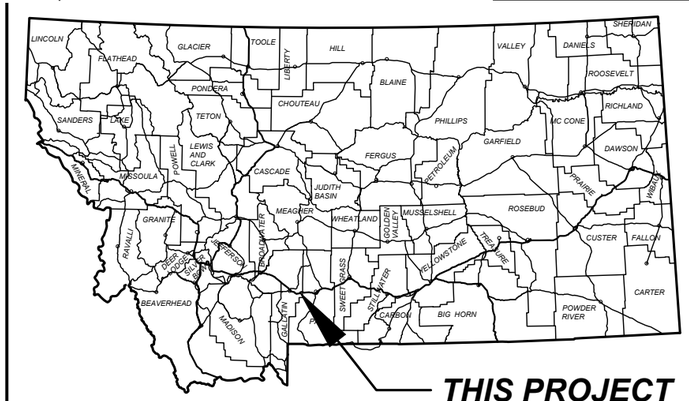
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MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT NO. IM 90-6(151)319

COLD MILL, PLANT MIX SURFACING, SEAL & COVER, GUARDRAIL, & GRADING
BOZEMAN HILL - EAST
GALLATIN & PARK COUNTIES

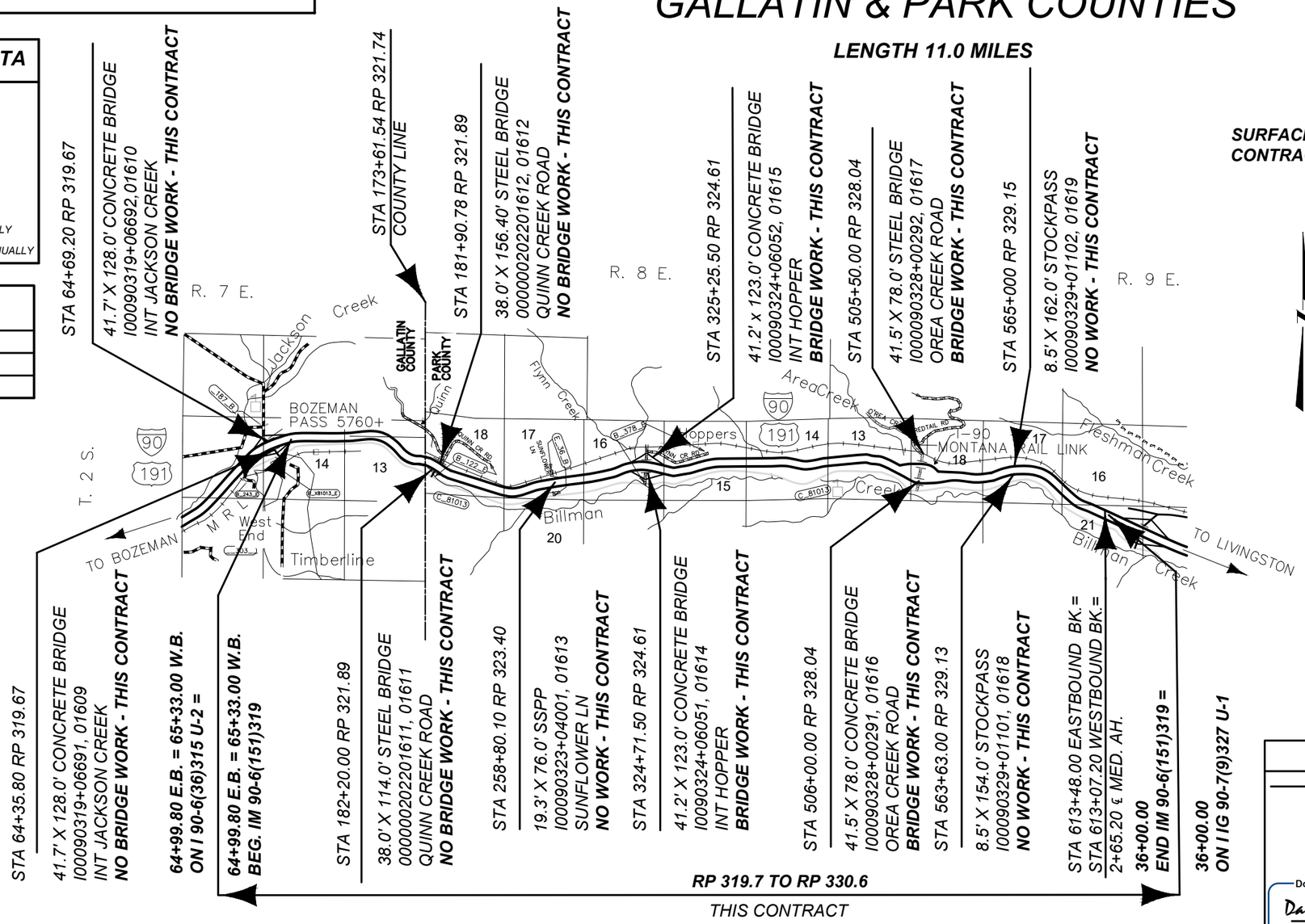
LENGTH 11.0 MILES

PROJECT DESIGN DATA			
PRESENT	2023	A.D.T. =	16,180
LETTING	2023	A.D.T. =	16,180
DESIGN	2043	A.D.T. =	22,660
		D.H.V. =	2,450
		TRUCKS =	16.7%
		V. =	50 MPH
		18 KIP ESAL'S =	1,412 DAILY
		GROWTH RATE =	1.7% ANNUALLY

ASSOCIATED PROJECT AGREEMENT NUMBERS	
R/W	
I.C.	
P.E.	IM 90-6(150)319

RELATED PROJECTS
HSIP 90-6(175)289

SURFACING SOURCE - CONTRACTOR FURNISHED



MONTANA DEPARTMENT OF TRANSPORTATION

HIGHWAYS ENGINEER

DocuSigned by: Damian Krings 354C32D8BEB041E...

MONTANA DAMIAN KRINGS 12113PE LICENSED PROFESSIONAL ENGINEER

7/1/2024 DATE

MONTANA Department of Transportation

ROAD PLANS

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DESIGNED BY		PROJECT NAME	BOZEMAN HILL - EAST
P. RUMLEY	07/07/2023		
REVIEWED BY		COUNTY	GALLATIN & PARK COUNTIES
J. BERAN	10/25/2023		
CHECKED BY		PROJECT ID	IM 90-6(151)319
T. JOHNSON	01/18/2024	UPN	9467000
9467000RDTTL001.DWG			

SHEET NO. 1

TITLE SHEET

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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 RECYCLED 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
PMS JOINT SEALING	= 0.10 GAL. PER SQ. YARD (UNDILUTED)
CRACK FILLING - MASTIC	= 1.5 LBS. PER LINEAR FOOT
CRACK SEALANT	= 0.5 LBS. PER LINEAR FOOT

AS-BUILTS

FOR HORIZONTAL ALIGNMENT AND STATIONING, REFER TO THE FOLLOWING "AS-BUILT" PROJECTS:

I-IG 90-7(9)327 U-1 (ORIGINAL CONST. - 1962)
I 90-3(38)318 (ORIGINAL CONST. - 1974)
I 90-7(36) 321 U-1 (ORIGINAL CONST. - 1978)
I 90-6(36)315 U-2 (ORIGINAL CONST. - 1979)
IM 90-6(63)318 (OVERLAY - 1993)
IM 90-6(128)318 (OVERLAY - 2010)

ROAD WEATHER INFORMATION SYSTEM (RWIS) SITE - RP 321.80

AN EXISTING RWIS IS LOCATED AT R.P. 321.80
PERFORM WORK AS DESCRIBED IN SPECIAL PROVISIONS

AUTOMATIC TRAFFIC RECORDER (ATR) SITE - RP 323.15

AN EXISTING ATR IS LOCATED NEAR R.P. 323.15 AND HAS BEEN ABANDONED

UTILITIES

CALL THE UTILITIES UNDERGROUND LOCATION CENTER (811) OR OTHER NOTIFICATION SYSTEM FOR THE MARKING AND LOCATION OF ALL LINES AND SERVICES BEFORE EXCAVATING.

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.

EDGE OF PAVEMENT COORDINATE TABLE

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
121+50.00	POT	519,664.792	1,632,699.690	BEGIN ROCK CUT STAKING
127+50.00	POT	519,699.411	1,633,298.690	END ROCK CUT STAKING

SHEET NO.
2

TABLE OF CONTENTS, NOTES SHEET

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

ROAD PLANS

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CONTROL DIAGRAM

SCALE: N/A

CONTROL ABSTRACT

POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
A9467	519,483.373	1,632,595.098	5645.31	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "A9467" FLUSH WITH THE GROUND. THE MONUMENT IS ON BOZEMAN HILL RD. N SIDE 6.2' S OF THE EXISTING R/W FENCE AND 23.7' FROM THE CENTERLINE AT MM 1.332. SET LATH 3' N OF CAP PAINTED AND FLAGGED
B9467	519,666.722	1,632,574.442	5650.00	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "B9467" FLUSH WITH THE GROUND. THE MONUMENT IS ON I-90 WEST BOUND, 9.2' N OF THE EOP, 32.5' SE OF EXIT SIGN AND AT MM 320.714. SET LATH 3' N OF CAP PAINTED AND FLAGGED.
C9467	519,786.220	1,632,560.650	5658.55	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "C9467" FLUSH WITH THE GROUND. THE MONUMENT IS ON I-90 WEST BOUND, 45.9' N OF THE EOP, 4' S OF THE EXISTING R/W FENCE AND AT MM 320.714. SET LATH 3' N OF CAP PAINTED AND FLAGGED.
D9467	519,872.684	1,632,997.487	5757.63	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "D9467" 0.2 ABOVE THE GROUND IN A ROCK MOUND. THE MONUMENT IS ON I-90 WEST BOUND, 63.0' N OF THE EOP, AT MM 320.791. SET LATH 3' N OF CAP PAINTED AND FLAGGED.
E9467	519,686.965	1,632,979.331	5668.60	SET MDT 2" CONTROL CAP ON 5/8" X 30" STAMPED "E9467" FLUSH WITH THE GROUND. THE MONUMENT IS ON I-90 WEST BOUND, 6.0' N OF THE EOP, AT MM 320.791. SET LATH 3' N OF CAP PAINTED AND FLAGGED
F9467	519,494.121	1,632,970.728	5665.57	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "F9467" FLUSH WITH THE GROUND. THE MONUMENT IS ON BOZEMAN HILL RD. N SIDE 8.6' S OF THE EXISTING R/W FENCE AND 23' N FROM THE CENTERLINE AT MM 1.403. SET LATH 3' N OF CAP PAINTED AND FLAGGED.
G9467	519,495.610	1,633,332.930	5679.73	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "G9467" FLUSH WITH THE GROUND. THE MONUMENT IS ON BOZEMAN HILL RD. N SIDE 15.2' S OF THE EXISTING R/W FENCE AND 30.3' N FROM THE CENTERLINE AT MM 1.472. SET LATH 3' N OF CAP PAINTED AND FLAGGED
H9467	519,707.218	1,633,305.358	5682.78	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "H9467" FLUSH WITH THE GROUND. THE MONUMENT IS ON I-90 WEST BOUND, 8.5' N OF THE EOP, AT MM 320.852. SET LATH 3' N OF CAP PAINTED AND FLAGGED
J9467	519,989.072	1,633,264.216	5802.58	SET MDT 2" CONTROL CAP ON 5/8" X 30" REBAR STAMPED "J9467" FLUSH WITH THE GROUND. THE MONUMENT IS ON I-90 WEST BOUND, 95.32' N OF THE EOP, AT MM 320.852. SET LATH 3' N OF CAP PAINTED AND FLAGGED

BEARING SOURCE

GRID - MONTANA COORDINATE SYSTEM NAD83-2011

LEVEL DATUM SOURCE

ELEVATIONS ARE BASED ON NAVD88 DATUM USING GEOID 12A. THE COMBINATION SCALE FACTOR (CSF) FOR THIS PROJECT IS 0.999394853
NOTE: FINAL ELEVATIONS ARE GNSS DERIVED



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 0.999394853

SHEET NO. 3

CONTROL DIAGRAM AND EDGE OF PAVEMENT COORDINATE TABLE

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation
ROAD PLANS

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TYPICAL SECTION NO. 1

MAINLINE, EASTBOUND
(REVERSE FOR WESTBOUND)

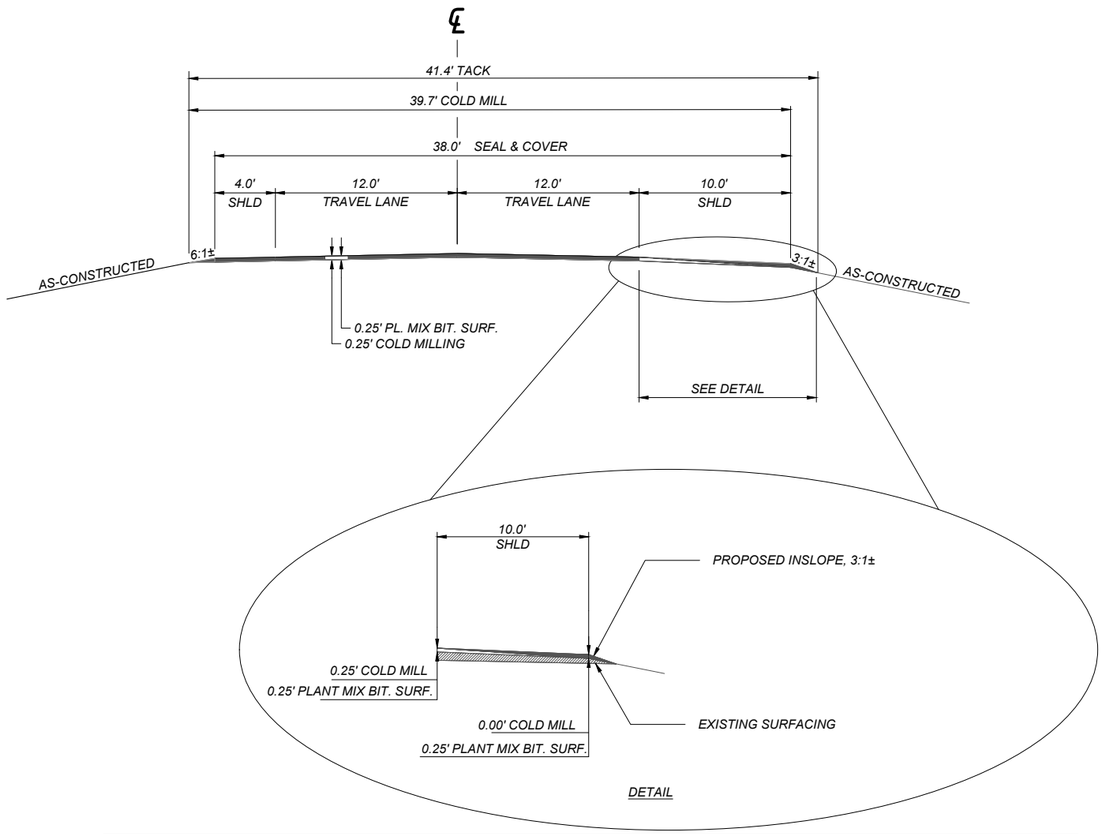
EASTBOUND LANES

64+99.80	BE		65+99.80		FROM JACKSON CREEK INTERCHANGE, THEN TYP. NO. 2
323+10.00		TO	324+10.00	BE	TO HOPPER INTERCHANGE
325+33.00	BE		326+33.00		FROM HOPPER INTERCHANGE, THEN TYP. NO. 2
504+61.00		TO	505+61.00	BE	TO O'REA CREEK ROAD
506+39.00	BE	TO	507+39.00		FROM O'REA CREEK ROAD

WESTBOUND LANES

65+33.20	BE		66+33.20		FROM JACKSON CREEK INTERCHANGE, THEN TYP. NO. 2
323+64.00		TO	324+64.00	BE	TO HOPPER INTERCHANGE
325+87.00	BE		326+87.00		FROM HOPPER INTERCHANGE (SEE NOTE, SEE DETAIL), THEN TYP. NO. 2
504+11.00		TO	505+11.00	BE	TO O'REA CREEK ROAD
505+89.00	BE		506+89.00		FROM O'REA CREEK ROAD, THEN TYP. NO. 2

NOTE: PLACE A SMALL AMOUNT OF PLANT MIX AT BRIDGE END FOR TAPERED CONCRETE CURB



QUANTITIES

UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL			COLD MILLING - 0.00' - 0.25'	COLD MILLING - 0.25'
	COVER	PLANT MIX		ASPHALT CEMENT	EMULSIFIED ASPHALT SEAL	EMULSIFIED ASPHALT TACK*		
AREA square feet		9.81	square yards PER STATION		422	900	111	330
cubic yards PER STATION		36.3	tons PER STATION	3.78	0.75			
tons PER STATION		70.0	gals. PER STATION			45		
square yards PER STATION	422							

* BASED ON 2 APPLICATIONS

SHEET NO. 4

TYPICAL SECTIONS

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

ROAD PLANS

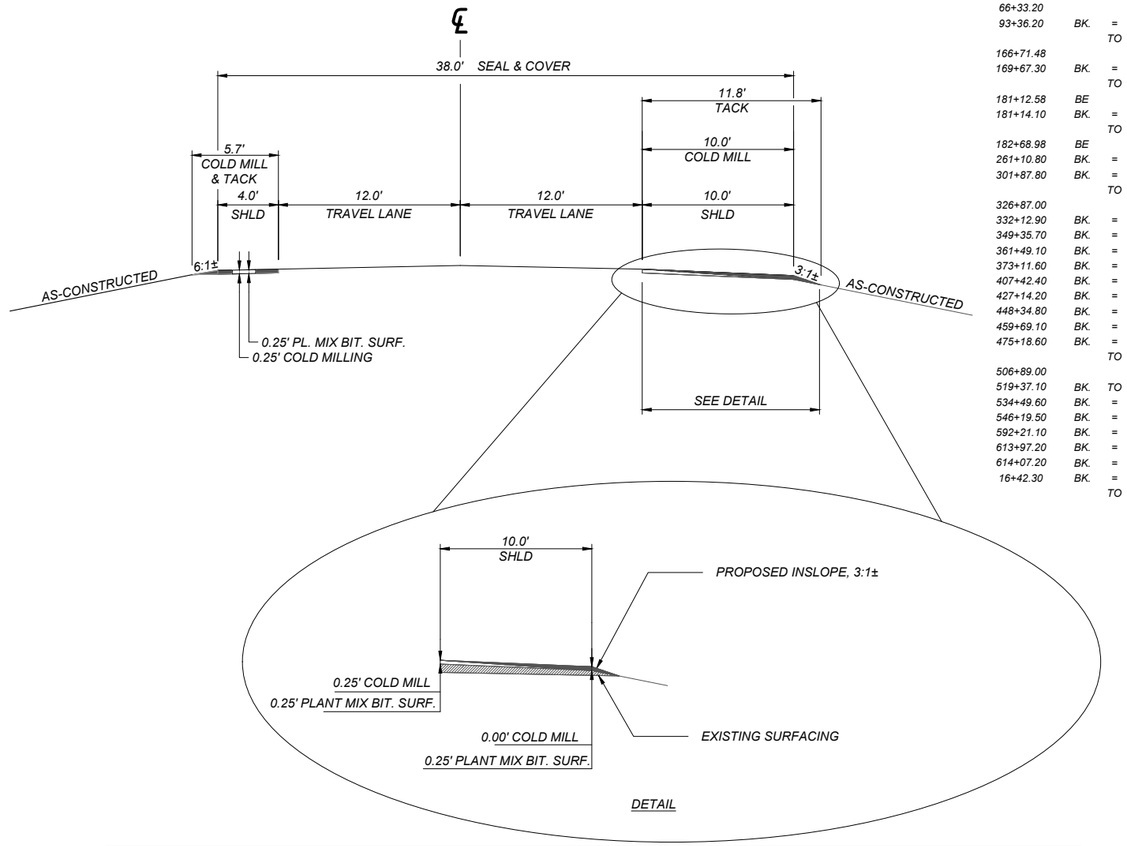
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TYPICAL SECTION NO. 2

MAINLINE, EASTBOUND
(REVERSE FOR WESTBOUND)



QUANTITIES								
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL			COLD MILLING - 0.00' - 0.25'	COLD MILLING - 0.25'
	COVER	PLANT MIX		ASPHALT CEMENT	EMULSIFIED ASPHALT SEAL	EMULSIFIED ASPHALT TACK*		
AREA square feet		3.94	square yards PER STATION		422	389	111	63
cubic yards PER STATION		14.6	tons PER STATION	1.52	0.75			
tons PER STATION		28.1	gals. PER STATION			19		
square yards PER STATION	422							

* BASED ON 2 APPLICATIONS

EASTBOUND LANES

65+99.80				
92+49.60	BK.	=	92+30.20	AH. EQUATION
152+12.80	BK.	=	152+23.00	AH. EQUATION
		TO	153+29.32	THEN TYP. NO. 3
163+32.52				
168+05.80	BK.	=	168+10.50	AH. EQUATION
180+76.60	BK.	=	180+69.10	AH. EQUATION
		TO	181+63.00	BE TO QUINN CREEK ROAD
182+77.00	BE	TO	225+84.70	FROM QUINN CREEK ROAD, THEN TYP. NO. 3
243+85.86				
260+92.40	BK.	=	261+01.60	AH. EQUATION
301+99.60	BK.	=	301+87.80	AH. EQUATION
		TO	323+10.00	THEN TYP. NO. 1
326+33.00				
331+77.90	BK.	=	332+13.10	AH. EQUATION
		TO	334+81.64	THEN TYP. NO. 3
349+60.44				
361+27.90	BK.	=	361+38.70	AH. EQUATION
420+84.90	BK.	=	420+88.70	AH. EQUATION
487+78.00	BK.	=	487+58.60	AH. EQUATION
		TO	504+61.00	THEN TYP. NO. 1
507+39.00				
559+50.80	BK.	=	559+51.00	AH. EQUATION
613+45.10	BK.	=	613+48.00	AH. EQUATION
613+48.00	BK.	=	2+65.20	AH. PROJECT EQUATION
16+42.30	BK.	=	16+43.60	AH. EQUATION
		TO	36+00.00	

WESTBOUND LANES

66+33.20				
93+36.20	BK.	=	92+30.20	AH. EQUATION
		TO	131+06.40	THEN TYP. NO. 3
166+71.48				
169+67.30	BK.	=	170+33.80	AH. EQUATION
		TO	181+12.58	BE TO QUINN CREEK ROAD
181+12.58	BE			
181+14.10	BK.	=	180+69.10	AH. EQUATION ON BRIDGE
		TO	182+68.98	BE EQUATION ON BRIDGE
182+68.98	BE			FROM QUINN CREEK ROAD.
261+10.80	BK.	=	261+01.60	AH. EQUATION
301+87.80	BK.	=	301+99.60	AH. EQUATION
		TO	323+64.00	THEN TYP. NO. 1
326+87.00				
332+12.90	BK.	=	331+78.10	AH. EQUATION
349+35.70	BK.	=	349+61.70	AH. EQUATION
361+49.10	BK.	=	361+38.70	AH. EQUATION
373+11.60	BK.	=	373+12.60	AH. EQUATION
407+42.40	BK.	=	407+43.70	AH. EQUATION
427+14.20	BK.	=	427+29.50	AH. EQUATION
448+34.80	BK.	=	448+37.20	AH. EQUATION
459+69.10	BK.	=	459+70.80	AH. EQUATION
475+18.60	BK.	=	475+21.80	AH. EQUATION
		TO	504+11.00	THEN TYP. NO. 1
506+89.00				
519+37.10	BK.	TO	519+38.60	AH. EQUATION
534+49.60	BK.	=	534+52.30	AH. EQUATION
546+19.50	BK.	=	546+17.50	AH. EQUATION
592+21.10	BK.	=	592+17.80	AH. EQUATION
613+97.20	BK.	=	614+07.20	AH. EQUATION
614+07.20	BK.	=	2+65.20	AH. PROJECT EQUATION
16+42.30	BK.	=	16+43.60	AH. EQUATION
		TO	36+00.00	

SHEET NO. 5

TYPICAL SECTIONS

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

ROAD PLANS

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TYPICAL SECTION NO. 3

MAINLINE, EASTBOUND
(REVERSE FOR WESTBOUND)

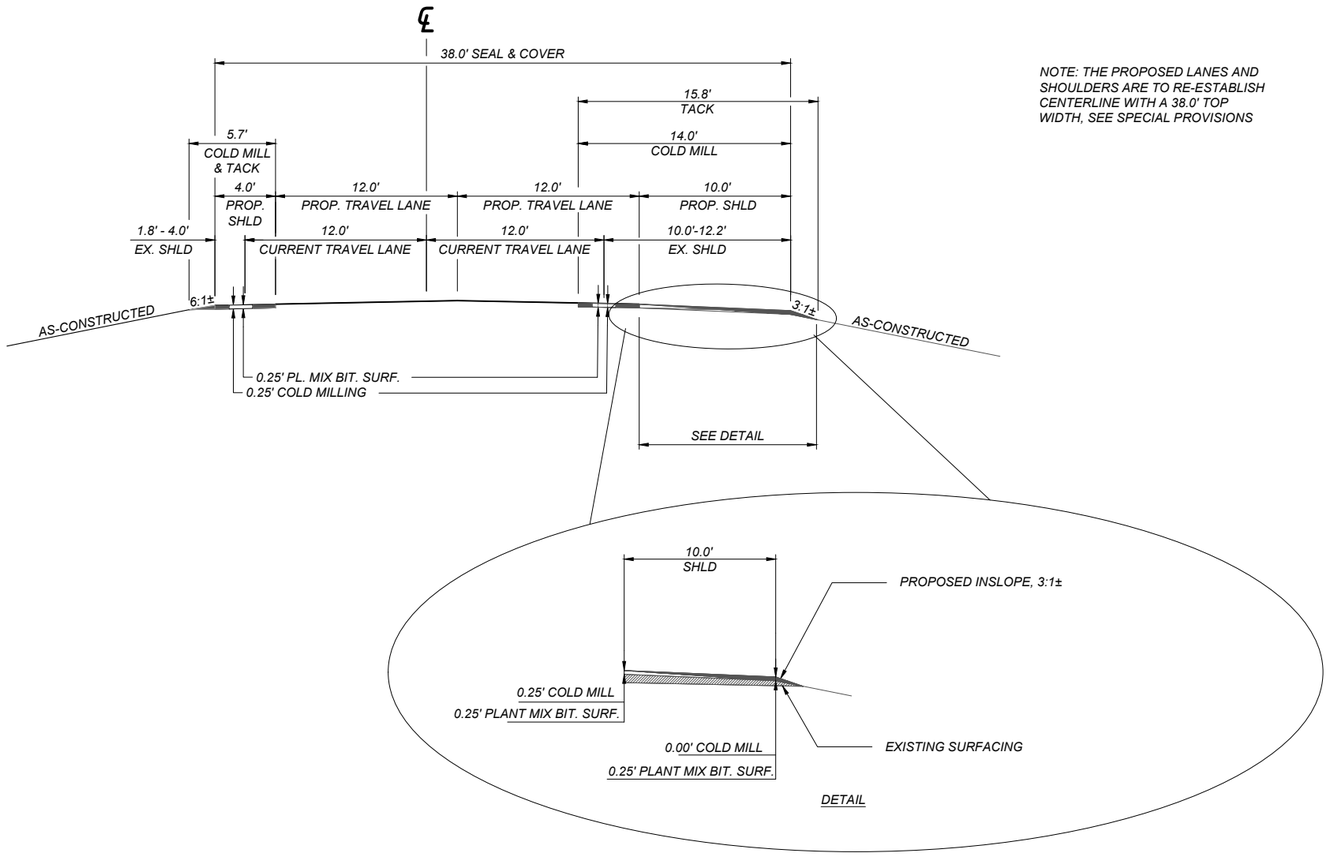
EASTBOUND LANES

153+29.32		TO	163+32.52	THEN TYP. NO. 2
225+84.70				
241+54.60	BK.	=	242+55.60	AH. EQUATION
		TO	243+85.86	THEN TYP. NO. 2
334+81.64				
349+74.70	BK.	=	349+48.70	AH. EQUATION
		TO	349+60.44	THEN TYP. NO. 2

WESTBOUND LANES

131+06.40				
153+06.40	BK.	=	152+23.00	AH. EQUATION
		TO	166+71.48	THEN TYP. NO. 2

NOTE: THE PROPOSED LANES AND SHOULDERS ARE TO RE-ESTABLISH CENTERLINE WITH A 38.0' TOP WIDTH, SEE SPECIAL PROVISIONS



QUANTITIES

UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL			COLD MILLING - 0.00' - 0.25'	COLD MILLING - 0.25'
	COVER	PLANT MIX		ASPHALT CEMENT	EMULSIFIED ASPHALT SEAL	EMULSIFIED ASPHALT TACK*		
AREA square feet		4.94	square yards PER STATION		422	478	111	108
cubic yards PER STATION		18.3	tons PER STATION	1.91	0.75			
tons PER STATION		35.3	gals. PER STATION			24		
square yards PER STATION	422							

* BASED ON 2 APPLICATIONS

SHEET NO. 6

TYPICAL SECTIONS

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

ROAD PLANS

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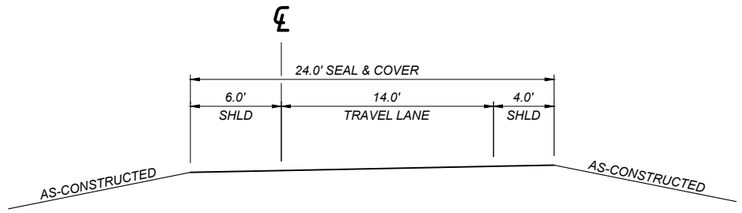
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TYPICAL SECTION NO. 4

JACKSON CREEK INTERCHANGE "W2" RAMP
HOPPER INTERCHANGE "H4" RAMP (REVERSE FOR "H2" RAMP)

JACKSON CREEK INTERCHANGE			
64+43.30	TO	65+56.90	RAMP W2 THEN TYP. NO. 6
66+04.90	TO	74+47.00	RAMP W2
74+47.00		79+00.00	RAMP W2 CONN. TO PTW
HOPPER INTERCHANGE			
312+00.00	TO	316+50.00	RAMP H4 CONN. TO PTW
316+50.00		324+59.60	RAMP H4
324+69.50	TO	330+70.00	RAMP H2
330+70.00	TO	335+28.00	RAMP H2 CONN. TO PTW

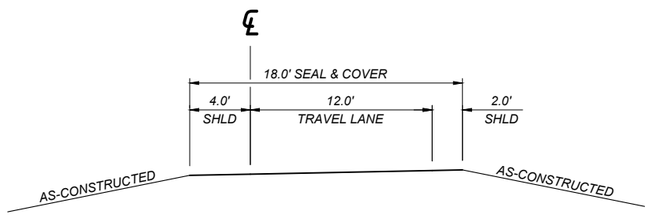


QUANTITIES			
UNIT	AGGREGATE COVER	UNIT	BITUMINOUS MATERIAL EMULSIFIED ASPHALT SEAL
AREA square feet		square yards PER STATION	267
cubic yards PER STATION		tons PER STATION	0.48
tons PER STATION		gals. PER STATION	
square yards PER STATION	267		

TYPICAL SECTION NO. 5

JACKSON CREEK INTERCHANGE (REVERSE FOR "W3" RAMP)
HOPPER INTERCHANGE "H3" RAMP (REVERSE FOR "H1" RAMP)

JACKSON CREEK INTERCHANGE			
64+53.40	TO	65+67.40	RAMP W3 THEN TYP. NO. 7
66+15.40	TO	75+00.00	RAMP W3
75+00.00		84+00.00	RAMP W3, CONN. TO PTW
HOPPER INTERCHANGE			
306+00.00	TO	315+00.00	RAMP H1 GORE AND TAPER TO MAINLINE
315+00.00	TO	325+38.30	RAMP H1
325+27.90	TO	335+00.00	RAMP H3
335+00.00	TO	344+00.00	RAMP H3 GORE AND TAPER TO MAINLINE



QUANTITIES			
UNIT	AGGREGATE COVER	UNIT	BITUMINOUS MATERIAL EMULSIFIED ASPHALT SEAL
AREA square feet		square yards PER STATION	200
cubic yards PER STATION		tons PER STATION	0.36
tons PER STATION		gals. PER STATION	
square yards PER STATION	200		

SHEET NO.
7

TYPICAL SECTIONS

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

ROAD PLANS

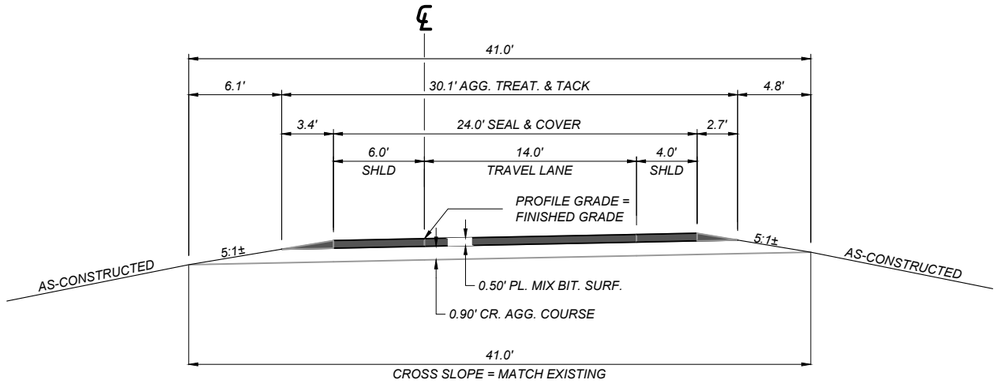
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TYPICAL SECTION NO. 6

JACKSON CREEK INTERCHANGE, "W2" RAMP, CATTLE GUARD REMOVAL

JACKSON CREEK INTERCHANGE
65+56.90 TO 66+04.90 RAMP W2 THEN TYP. NO. 4



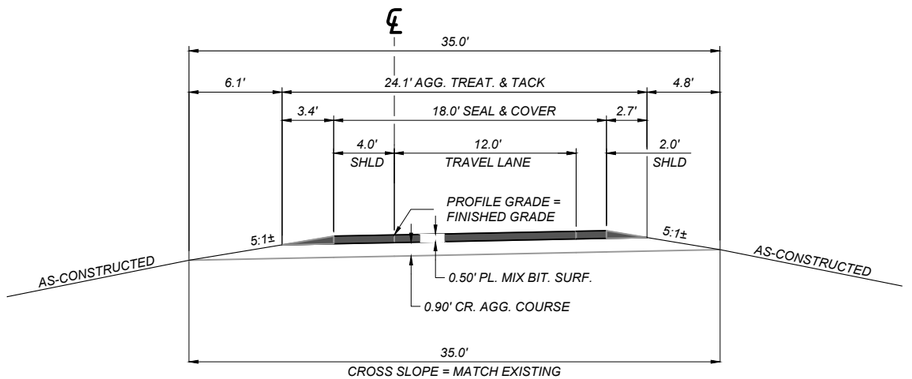
QUANTITIES							
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL		
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	EMULSIFIED ASPHALT SEAL	EMULSIFIED ASPHALT TACK*
AREA square feet		13.53	32.00	square yards PER STATION		267	1,003
cubic yards PER STATION		50.1	118.5	tons PER STATION	5.22	0.48	
tons PER STATION		96.6		gals. PER STATION			50
square yards PER STATION	267						

* BASED ON 3 APPLICATIONS

TYPICAL SECTION NO. 7

JACKSON CREEK INTERCHANGE, "W3" RAMP, CATTLE GUARD REMOVAL

JACKSON CREEK INTERCHANGE
65+67.40 TO 66+15.40 RAMP W3 THEN TYP. NO. 5



QUANTITIES							
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL		
	COVER	PLANT MIX	CR. AGG. COURSE		ASPHALT CEMENT	EMULSIFIED ASPHALT SEAL	EMULSIFIED ASPHALT TACK*
AREA square feet		10.53	26.60	square yards PER STATION		200	803
cubic yards PER STATION		39.0	98.5	tons PER STATION	4.06	0.36	
tons PER STATION		75.2		gals. PER STATION			40
square yards PER STATION	200						

* BASED ON 3 APPLICATIONS

SHEET NO. 8

TYPICAL SECTIONS

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

ROAD PLANS

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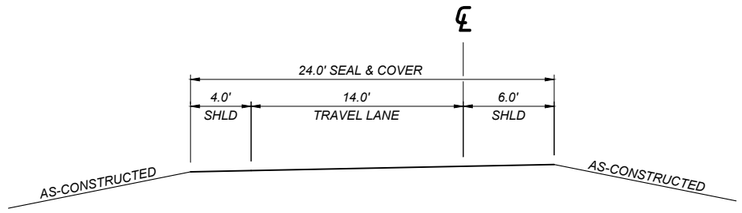
TYPICAL SECTION NO. 8

EASTBOUND REST AREA "E1" RAMP

EASTBOUND REST AREA

409+50.00	TO	418+20.00		RAMP E1 TYP. NO. 8 THEN TYP. NO. 9
435+20.00	TO		*	RAMP E1
442+52.80	BK.	442+00.00	AH.	EQUATION
		451+00.00		RAMP E1

* 442+52.80 BK. RAMP E1 = 442+00.00 AH. EASTBOUND ON MAINLINE



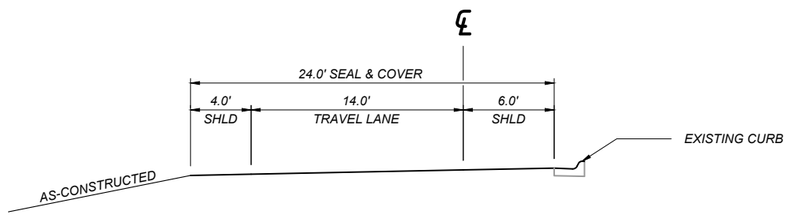
QUANTITIES			
UNIT	AGGREGATE COVER	UNIT	BITUMINOUS MATERIAL EMULSIFIED ASPHALT SEAL
AREA square feet		square yards PER STATION	267
cubic yards PER STATION		tons PER STATION	0.48
tons PER STATION		gals. PER STATION	
square yards PER STATION	267		

TYPICAL SECTION NO. 9

EASTBOUND REST AREA "E1" RAMP

EASTBOUND REST AREA

418+20.00	TO	424+80.00	RAMP E1 THEN TYP. NO. 10
427+80.00	TO	435+20.00	RAMP E1 THEN TYP. NO. 8



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

SHEET NO. 9

TYPICAL SECTIONS

PROJECT NAME: BOZEMAN HILL - EAST

COUNTY: GALLATIN & PARK COUNTIES

PROJECT ID: IM 90-6(151)319

UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023

REVIEWED BY:

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MONTANA Department of Transportation

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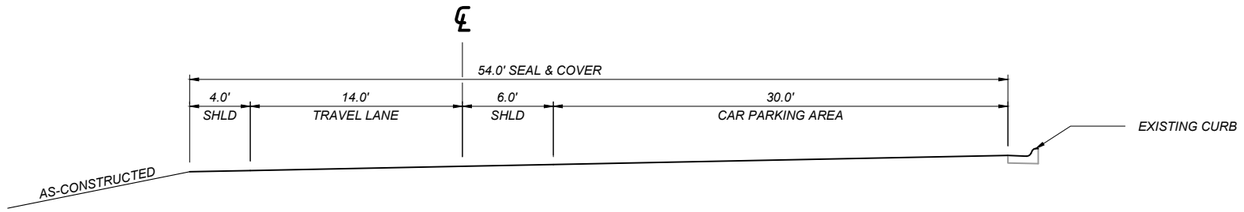
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TYPICAL SECTION NO. 10

EASTBOUND REST AREA "E1" RAMP

EASTBOUND REST AREA

424+80.00	TO	427+80.00	RAMP E1 THEN TYP. NO. 9



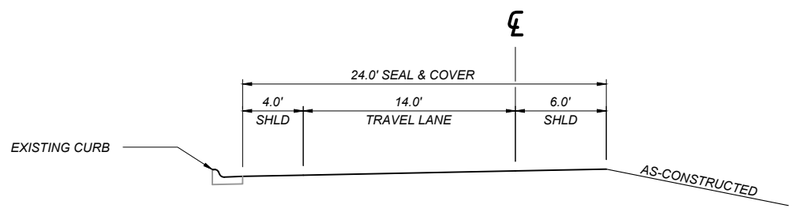
QUANTITIES			
UNIT	AGGREGATE COVER	UNIT	BITUMINOUS MATERIAL EMULSIFIED ASPHALT SEAL
AREA square feet		square yards PER STATION	600
cubic yards PER STATION		tons PER STATION	1.07
tons PER STATION		gals. PER STATION	
square yards PER STATION	600		

TYPICAL SECTION NO. 11

EASTBOUND REST AREA "E2" RAMP

EASTBOUND REST AREA

418+20.00	TO	423+45.00	RAMP E2
423+45.00	TO	425+00.00	RAMP E2 TRANS. TYP. NO. 11 TO TYP. NO. 12
430+20.00	TO	436+95.00	RAMP E2



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

SHEET NO. 10

TYPICAL SECTIONS

PROJECT NAME: BOZEMAN HILL - EAST

COUNTY: GALLATIN & PARK COUNTIES

PROJECT ID: IM 90-6(151)319

UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023

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ROAD PLANS

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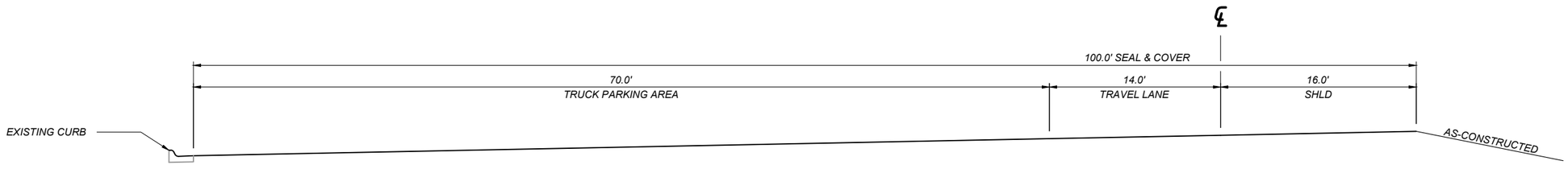
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TYPICAL SECTION NO. 12

EASTBOUND REST AREA "E2" RAMP

EASTBOUND REST AREA

425+00.00	TO	428+70.00	RAMP E2
428+70.00	TO	430+20.00	RAMP E2 TYP. NO. 12 TRANS. TO TYP. NO. 11



QUANTITIES			
	AGGREGATE		BITUMINOUS MATERIAL
UNIT	COVER	UNIT	EMULSIFIED ASPHALT SEAL
AREA square feet		square yards PER STATION	1111
cubic yards PER STATION		tons PER STATION	1.98
tons PER STATION		gals. PER STATION	
square yards PER STATION	1111		

SHEET NO. 11

TYPICAL SECTIONS

PROJECT NAME: BOZEMAN HILL - EAST

COUNTY: GALLATIN & PARK COUNTIES

PROJECT ID: IM 90-6(151)319

UPN: 9467000

DESIGNED BY		DATE
P. RUMLEY		07/07/2023
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 square yards COVER TYPE 2	AGGREGATE tons PLANT MIX BIT. SURF. GR. S - 3/4"	AGGREGATE cubic yards CRUSHED AGG. COURSE	BITUMINOUS MATERIAL tons ASPHALT CEMENT PG 70-28	BITUMINOUS MATERIAL tons EMULSIFIED ASPHALT CHFRS-2P	BITUMINOUS MATERIAL gals EMULSIFIED ASPHALT TACK	sq. yards COLD MILLING 0.00 - 0.25 ft	sq. yards COLD MILLING 0.25 ft	REMARKS
EASTBOUND																
64+99.80 BE	65+99.80	100.00	100.00					422	70		3.8	0.8	45	111	330	TYP. NO. 1
65+99.80																
92+49.60 BK.	92+30.20 AH.			19.40		EQUATION										
152+12.80 BK.	152+23.00 AH.				10.20	EQUATION										
	153+29.32	8,729.52	8,738.72					36,877	2,456		132.8	65.5	1,660	9,700	5,505	TYP. NO. 2
153+29.32	163+32.52	1,003.20	1,003.20					4,234	354		19.2	7.5	241	1,114	1,083	TYP. NO. 3
163+32.52																
168+05.80 BK.	168+10.50 AH.				4.70	EQUATION										
180+76.60 BK.	180+69.10 AH.			7.50		EQUATION										
181+63.00 BE	182+77.00 BE				114.00	BRIDGE										QUINN CREEK ROAD
	225+84.70	6,252.18	6,140.98					25,915	1,726		93.3	46.1	1,167	6,816	3,869	TYP. NO. 2
225+84.70																
241+54.60 BK.	242+55.60 AH.				101.00	EQUATION										
	243+85.86	1,801.16	1,700.16					7,175	600		32.5	12.8	408	1,887	1,836	TYP. NO. 3
243+85.86																
260+92.40 BK.	261+01.60 AH.				9.20	EQUATION										
301+99.60 BK.	301+87.80 AH.			11.80		EQUATION										
	323+10.00	7,924.14	7,926.74					33,451	2,227		121	59.5	1,506	8,799	4,994	TYP. NO. 2
323+10.00																
324+10.00 BE	325+33.00 BE				123.00	BRIDGE										HOPPER INTERCHANGE
	326+33.00	323.00	200.00					844	140		7.6	1.5	90	222	660	TYP. NO. 1
326+33.00																
331+77.90 BK.	332+13.10 AH.				35.20	EQUATION										
	334+81.64	848.64	813.44					3,433	229		12.4	6.1	155	903	512	TYP. NO. 2
334+81.64																
349+74.70 BK.	349+48.70 AH.			26.00		EQUATION										
	349+60.44	1,478.80	1,504.80					6,350	531		28.7	11.3	361	1,670	1,625	TYP. NO. 3
349+60.44																
361+27.90 BK.	361+38.70 AH.				10.80	EQUATION										
420+84.90 BK.	420+88.70 AH.				3.80	EQUATION										
487+78.00 BK.	487+58.60 AH.			19.40		EQUATION										
	504+61.00	15,500.56	15,505.36					65,433	4,357		235.7	116.3	2,946	17,211	9,768	TYP. NO. 2
504+61.00																
505+61.00 BE	506+39.00 BE				78.00	BRIDGE										O'REA CREEK ROAD
	507+39.00	278.00	200.00					844	140		7.6	1.5	90	222	660	TYP. NO. 1
507+39.00																
559+50.80 BK.	559+51.00 AH.				0.20	EQUATION										
613+45.10 BK.	613+48.00 AH.				2.90	EQUATION										
613+48.00 BK.	2+65.20 AH.			61,082.80		PROJECT EQUATION										
16+42.30 BK.	16+43.60 AH.				1.30	EQUATION										
	36+00.00	-47,139.00	13,939.40					58,824	3,917		211.9	104.5	2,648	15,473	8,782	TYP. NO. 2
EASTBOUND SUBTOTAL		-2,899.80	57,772.80	61,166.90	494.30			243,802	16,747	~	906.0	433.4	11,317	64,128	39,624	

SHEET NO. 12

SUMMARY

PROJECT NAME BOZEMAN HILL - EAST
COUNTY GALLATIN & PARK COUNTIES
PROJECT ID IM 90-6(151)319
UPN 9467000

DESIGNED BY P. RUMLEY 07/07/2023
REVIEWED BY
CHECKED BY

MONTANA Department of Transportation

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SUMMARY

SURFACING (CONTINUED)

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	linear feet +	linear feet -	FOR	tons HYDRATED LIME	AGGREGATE square yards COVER TYPE 1	AGGREGATE tons PLANT MIX BIT. SURF. GR. S - 3/4"	AGGREGATE tons PLANT MIX BIT. SURF. GR. S - 3/4" MISC	BITUMINOUS MATERIAL tons ASPHALT CEMENT PG 70-28	BITUMINOUS MATERIAL tons SEAL CHFRS-2P	BITUMINOUS MATERIAL tons EMULSIFIED ASPHALT TACK	sq. yards COLD MILLING 0.00 - 0.25 ft	sq. yards COLD MILLING 0.25 ft	REMARKS
WESTBOUND																
65+33.20 BE	66+33.20	100.00	100.00					422	70		3.8	0.8	45	111	330	TYP. NO. 1
66+33.20																
93+36.20 BK.	92+30.20 AH.			106.00		EQUATION										
	131+06.40	6,473.20	6,579.20					27,764	1,849		100.0	49.3	1,250	7,303	4,145	TYP. NO. 2
131+06.40																
153+06.40 BK.	152+23.00 AH.			83.40		EQUATION										
	166+71.48	3,565.08	3,648.48					15,397	1,288		69.7	27.4	876	4,050	3,940	TYP. NO. 3
166+71.48																
169+67.30 BK.	170+33.80 AH.				66.50	EQUATION										
181+12.58 BE	181+14.10				1.52											QUINN CREEK ROAD
181+14.10 BK.	180+69.10 AH.			45.00		EQUATION ON BRIDGE										
	182+68.98 BE				199.88	BRIDGE										QUINN CREEK ROAD
261+10.80 BK.	261+01.60 AH.			9.20		EQUATION										
301+87.80 BK.	301+99.60 AH.				11.80	EQUATION										
	323+64.00	15,692.52	15,467.02					65,271	4,346		235	116.0	2,939	17,168	9,744	TYP. NO. 2
323+64.00																
324+64.00 BE	325+87.00 BE				123.00	BRIDGE										HOPPER INTERCHANGE
	326+87.00	323.00	200.00					844	140		8	1.5	90	222	660	TYP. NO. 1
326+87.00																
332+12.90 BK.	331+78.10 AH.			34.80		EQUATION										
349+35.70 BK.	349+61.70 AH.				26.00	EQUATION										
361+49.10 BK.	361+38.70 AH.			10.40		EQUATION										
373+11.60 BK.	373+12.60 AH.				1.00	EQUATION										
407+42.40 BK.	407+43.70 AH.				1.30	EQUATION										
427+14.20 BK.	427+29.50 AH.				15.30	EQUATION										
448+34.80 BK.	448+37.20 AH.				2.40	EQUATION										
459+69.10 BK.	459+70.80 AH.				1.70	EQUATION										
475+18.60 BK.	475+21.80 AH.				3.20	EQUATION										
	504+11.00	17,724.00	17,718.30					74,771	4,979		269	132.9	3,366	19,667	11,163	TYP. NO. 2
504+11.00																
505+11.00 BE	505+89.00 BE				78.00	BRIDGE										O'REA CREEK ROAD
	506+89.00	278.00	200.00					844	140		8	1.5	90	222	660	TYP. NO. 1
506+89.00																
519+37.10 BK.	519+38.60 AH.				1.50	EQUATION										
534+49.60 BK.	534+52.30 AH.				2.70	EQUATION										
546+19.50 BK.	546+17.50 AH.			2.00		EQUATION										
592+21.10 BK.	592+17.80 AH.			3.30		EQUATION										
613+97.20 BK.	614+07.20 AH.				10.00	EQUATION										
614+07.20 BK.	2+65.20 AH.			61,142.00		PROJECT EQUATION										
16+42.30 BK.	16+43.60 AH.				1.30	EQUATION										
	36+00.00	-47,089.00	14,042.80					59,261	3,946		213.5	105.3	2,668	15,588	8,847	TYP. NO. 2
WESTBOUND SUBTOTAL		-2,933.20	57,955.80	61,436.10	547.10			244,574	16,758	~	906.6	434.7	11,324	64,331	39,489	
						ADDITIONAL SURFACING		44,030	1,021	185	55.1	79.2	348		6,169	
TOTAL		**-5,833**	**115,729**	**122,603**	**1,041**		**483**	**532,406**	**34,526**	**185**	**1,867.7**	**947.5**	**22,989**	**128,459**	**85,282**	

SHEET NO. 13

SUMMARY

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

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SUMMARY

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 square yards COVER TYPE 2	AGGREGATE tons PLANT MIX BIT. SURF. GR. S - 3/4"	AGGREGATE cubic yards CRUSHED AGG. COURSE	BITUMINOUS MATERIAL tons ASPHALT CEMENT PG 70-28	BITUMINOUS MATERIAL tons EMULSIFIED ASPHALT CHFRS-2P	BITUMINOUS MATERIAL gals EMULSIFIED ASPHALT TACK	sq. yards COLD MILLING 0.00 - 0.25 ft.	sq. yards COLD MILLING 0.25 ft.	REMARKS
JACKSON CREEK INTERCHANGE																
64+43.30	65+56.90	113.60	113.60					406				0.5				RAMP W2 TYP. NO. 4* (SEE NOTE 1)
65+56.90	66+04.90	48.00	48.00			CATTLE GUARD REMOVAL		128	46	#100	2.5	0.2	24			RAMP W2 TYP. NO. 6
66+04.90	74+47.00	842.10	842.10					2,248				4.0				RAMP W2 TYP. NO. 4* (SEE NOTE 1)
74+47.00	79+00.00	453.00	453.00					862				1.5				RAMP W2 TYP. NO. 4, CONN. TO PTW* (SEE NOTE 2)
64+53.40	65+67.40	114.00	114.00					290				0.4				RAMP W3 TYP. NO. 5* (SEE NOTE 1)
65+67.40	66+15.40	48.00	48.00			CATTLE GUARD REMOVAL		96	36	#85	1.9	0.2	19			RAMP W3 TYP. NO. 7
66+15.40	75+00.00	884.60	884.60					1,769				3.2				RAMP W3 TYP. NO. 5
75+00.00	84+00.00	900.00	900.00					492				1.6				RAMP W3 TYP. NO. 5, CONN. TO PTW* (SEE NOTE 2)
HOPPER INTERCHANGE																
306+00.00	315+00.00	900.00	900.00					1,182				2.1				RAMP H1 TYP. NO. 5* (SEE NOTE 2)
315+00.00	325+38.30	1,038.30	1,030.30		8.00	CATTLE GUARD		2,214				4.0				RAMP H1 TYP. NO. 5* (SEE NOTE 1)
312+00.00	316+50.00	450.00	450.00					541				1.0				RAMP H4 TYP. NO. 4, CONN. TO PTW* (SEE NOTE 2)
316+50.00	324+59.60	809.60	801.60		8.00	CATTLE GUARD		2,305				4.1				RAMP H4 TYP. NO. 4* (SEE NOTE 1)
324+69.50	330+70.00	600.50	592.50		8.00	CATTLE GUARD		1,726				3.1				RAMP H2 TYP. NO. 4* (SEE NOTE 1)
330+70.00	335+28.00	458.00	458.00					922				1.6				RAMP H2 TYP. NO. 4, CONN. TO PTW* (SEE NOTE 2
325+27.90	335+00.00	972.10	964.10		8.00	CATTLE GUARD		2,050				3.7				RAMP H3 TYP. NO. 5* (SEE NOTE 1)
335+00.00	344+00.00	900.00	900.00					1,373				2.5				RAMP H3 TYP. NO. 5, CONN. TO PTW* (SEE NOTE 2)
EASTBOUND REST AREA																
409+50.00	413+85.00	435.00	435.00					637				1.1				RAMP E1 TYP. NO. 8, CONN. TO PTW* (SEE NOTE 2)
413+85.00	418+20.00	435.00	435.00					1,161				2.1				RAMP E1 TYP. NO. 8
418+20.00	424+80.00	660.00	660.00					1,762				3.2				RAMP E1 TYP. NO. 9
424+80.00	427+80.00	300.00	300.00					1,800				3.2				RAMP E1 TYP. NO. 10
427+80.00	435+20.00	740.00	740.00					1,976				3.6				RAMP E1 TYP. NO. 9
435+20.00	442+52.80	732.80	732.80					1,957				3.5				RAMP E1 TYP. NO. 8
442+52.80 BK.	442+00.00 AH.			52.80		EQUATION										
	451+00.00	847.20	900.00					1,202				2.2				RAMP E1 TYP. NO. 8, CONN. TO PTW* (SEE NOTE 2)
418+20.00	423+45.00	525.00	525.00					1,402				2.5				RAMP E2 TYP. NO. 11
423+45.00	425+00.00	155.00	155.00					1,068				1.9				RAMP E2 TRANS. TYP. NO. 11 TO TYP. NO. 12
425+00.00	428+70.00	370.00	370.00					4,111				7.3				RAMP E2 TYP. NO. 12
428+70.00	430+20.00	150.00	150.00					1,033				1.8				RAMP E2 TRANS. TYP. NO. 12 TO TYP. NO. 11
430+20.00	436+95.00	675.00	675.00					1,802				3.2				RAMP E2 TYP. NO. 11
132+80.00	142+30.00	950.00	950.00					1,792	301		16.3	3.2	98		1,960	WESTBOUND TURNOUT*
140+30.00	145+00.00	470.00	470.00					933	156		8.4	1.7	47		1,007	EASTBOUND TURNOUT*
213+00.00	221+00.00	800.00	800.00					932	161		8.7	1.7	53		1,068	WESTBOUND CHAIN-UP (1), INCLUDES TAPER*
252+00.00	260+00.00	800.00	800.00					746	130		7.0	1.3	44		872	EASTBOUND CHAIN REMOVAL, INCLUDES TAPER*
421+00.00	429+00.00	800.00	800.00					1,112	191		10.3	2.0	63		1,262	WESTBOUND CHAIN-UP (2), INCLUDES TAPER*
SUBTOTAL		~	~	~	~		~	44,030	1,021	185	55.1	79.2	348	~	6,169	

* INCLUDES AREAS MEASURED WITH AERIAL IMAGERY, MICROSOFT
# INCLUDES CATTLE GUARD BACKFILL MATERIAL
NOTE 1: INCLUDES RETURN RADII
NOTE 2: INCLUDES GORE AREA TAPER TO MAINLINE

SHEET NO. 14

SUMMARY

PROJECT NAME BOZEMAN HILL - EAST
COUNTY GALLATIN & PARK COUNTIES
PROJECT ID IM 90-6(151)319
UPN 9467000

DESIGNED BY P. RUMLEY 07/07/2023
REVIEWED BY
CHECKED BY

MONTANA Department of Transportation

ROAD PLANS

5/21/2024 8:46 AM

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SUMMARY

GUARDRAIL

STATION FROM	STATION TO	linear feet: REMOVE GUARDRAIL LEFT	REMOVE GUARDRAIL RIGHT	MGS GUARDRAIL LEFT	MGS GUARDRAIL RIGHT	RAISE GUARDRAIL# LEFT	RAISE GUARDRAIL# RIGHT	each: MASH W-BEAM TERMINAL SECTION LEFT	MASH W-BEAM TERMINAL SECTION RIGHT	MGS ONE-WAY DEPARTURE TERMINAL SECTION LEFT	MGS ONE-WAY DEPARTURE TERMINAL SECTION RIGHT	MASH THRIE BEAM BRIDGE APPROACH SECTION LEFT	MASH THRIE BEAM BRIDGE APPROACH SECTION RIGHT	RESET OPTIONAL TERMINAL SECTION LEFT	RESET OPTIONAL TERMINAL SECTION RIGHT	RESET ONE-WAY DEPARTURE TERMINAL SECTION LEFT	RESET ONE-WAY DEPARTURE TERMINAL SECTION RIGHT	RESET BRIDGE APPROACH SECTION LEFT	RESET BRIDGE APPROACH SECTION RIGHT	REMARKS
EASTBOUND																				
64+99.80 BE	69+74.80						437.5										1		1	*JACKSON CREEK INTERCHANGE, S.E. CORNER
154+66.58																				STATION EQUATION
168+05.80 BK.	168+10.50 AH.																			STATION EQUATION
180+76.60 BK.	180+69.10 AH.																			STATION EQUATION, QUINN CREEK ROAD
	181+63.78 BE						2,625.0								1				1	*QUINN CREEK ROAD, S.W. CORNER
179+08.00																				STATION EQUATION, QUINN CREEK ROAD
180+76.60 BK.	180+69.10 AH.																			STATION EQUATION, QUINN CREEK ROAD
	181+63.00 BE					187.5								1				1		*QUINN CREEK ROAD, N.W. CORNER
182+77.00 BE	185+14.50						200.0										1		1	*QUINN CREEK ROAD, S.E. CORNER
227+48.38																				APPROX. RP 322.74
241+54.60 BK.	242+55.60 AH.																			STATION EQUATION
260+92.40 BK.	261+01.60 AH.																			STATION EQUATION
	263+22.56						3,650.0								1		1			APPROX. RP 322.74 TO RP 323.44
291+16.06	296+91.06						528.1								1		1			APPROX. RP 323.95 TO RP 324.06
302+30.14	314+67.64						1,190.6								1		1			APPROX. RP 328.75 TO RP 328.88
319+22.50	324+10.00 BE						428.1								1				1	*HOPPERS INTERCHANGE, S.W. CORNER
321+60.00	324+10.00 BE					190.6								1				1		*HOPPERS INTERCHANGE, N.W. CORNER
325+33.00 BE	327+08.00						137.5										1		1	*HOPPERS INTERCHANGE, S.E. CORNER
502+21.00	505+46.00		325.0																	O'REA CREEK ROAD, S.W. CORNER
502+24.13	505+46.00				250.0				1				1							O'REA CREEK ROAD, S.W. CORNER
502+71.00	505+46.00	275.0																		O'REA CREEK ROAD, N.W. CORNER
502+74.13	505+46.00			200.0				1				1								O'REA CREEK ROAD, N.W. CORNER
506+54.00	507+16.50		62.5																	O'REA CREEK ROAD, S.E. CORNER
506+54.00	507+16.50				12.5						1		1							O'REA CREEK ROAD, S.E. CORNER
543+72.26	550+84.76		712.5																	APPROX. RP 328.75 TO RP 328.88
543+84.76	550+81.64				662.5				1		1									APPROX. RP 328.75 TO RP 328.88
26+85.90	30+98.40	412.5																		VMS SIGN W. OF LIVINGSTON
26+98.40	30+95.28			362.5				1		1										VMS SIGN W. OF LIVINGSTON
SUBTOTAL		687.5	1,100.0	562.5	925.0	378.1	9,196.8	2	2	1	2	1	2	2	5	~	6	2	5	
WESTBOUND																				
65+33.20 BE	70+45.70					453.1								1				1		*JACKSON CREEK INTERCHANGE, N.E. CORNER
65+33.20 BE	67+83.20						190.6								1				1	*JACKSON CREEK INTERCHANGE, S.E. CORNER
157+66.58																				STATION EQUATION, QUINN CREEK ROAD
169+67.30 BK.	170+33.80 AH.																			STATION EQUATION, QUINN CREEK ROAD
	181+12.58 BE					2,362.5										1		1		*QUINN CREEK ROAD, N.W. CORNER
157+17.94																				STATION EQUATION, QUINN CREEK ROAD
169+67.30 BK.	170+33.80 AH.																			STATION EQUATION, QUINN CREEK ROAD
	181+12.58 BE						2,300.0										1		1	*QUINN CREEK ROAD, S.W. CORNER
182+68.98 BE	185+43.98						203.1								1				1	*QUINN CREEK ROAD, S.E. CORNER
182+68.98 BE	191+81.48					840.6								1				1		*QUINN CREEK ROAD, N.E. CORNER
224+68.18	241+43.18						1,625.0								1		1			APPROX. RP 322.72 TO RP 323.03
260+19.52																				APPROX. RP 323.39
261+10.80 BK.	261+01.60 AH.																			STATION EQUATION
	263+72.82					315.6								1		1				APPROX. RP 323.39 TO RP 323.46
323+01.50	324+64.00 BE					125.0										1		1		*HOPPERS INTERCHANGE, N.W. CORNER
325+87.00 BE	328+24.50					178.1										1		1		*HOPPERS INTERCHANGE, N.E. CORNER
325+87.00 BE	328+24.50						178.1										1		1	*HOPPERS INTERCHANGE, S.E. CORNER
407+63.36																				APPROX. RP 326.14
407+42.40 BK.	407+43.70 AH.																			STATION EQUATION
	415+52.16						737.5								1		1			APPROX. RP 326.14 TO RP 326.28
504+21.00	504+96.00		75.0																	O'REA CREEK ROAD, S.W. CORNER
504+33.50	504+96.00				25.0						1		1							O'REA CREEK ROAD, S.W. CORNER
506+04.00	508+79.00	275.0																		O'REA CREEK ROAD, N.E CORNER
506+04.00	508+75.88			200.0				1				1								O'REA CREEK ROAD, N.E CORNER
506+04.00	508+79.00		275.0																	O'REA CREEK ROAD, N.W. CORNER
506+04.00	508+75.88				200.0				1				1							O'REA CREEK ROAD, N.W. CORNER
527+88.80	534+13.80		625.0																	APPROX. RP 328.44 TO RP 328.56
528+01.30	534+23.18				575.0				1		1									APPROX. RP 328.44 TO RP 328.56
30+98.40	35+10.90		412.5																	VMS SIGN W. OF LIVINGSTON
31+10.90	35+20.28				362.5				1		1									VMS SIGN W. OF LIVINGSTON
SUBTOTAL		275.0	1,387.5	200.0	1,162.5	4,274.9	5,234.3	1	3	~	3	1	2	3	4	4	4	5	4	
TOTAL		3,450.0		2,850.0		19,084.1		8		6		6		14		14		16		

* GUARDRAIL LENGTH INCLUDES HEIGHT TRANSITION SECTION
\# SEE SPECIAL PROVISON

SHEET NO. 15

SUMMARY

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:
9467000RDSUM001.DWG

MONTANA Department of Transportation
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SUMMARY

PAVEMENT MARKINGS

ITEM	UNIT	INTERIM APPLICATION #	FINAL APPLICATION	TOTAL
STRIPING - WHITE PAINT	gallon	558		558
STRIPING - YELLOW PAINT	gallon	807		807
WORDS & SYMBOLS - WHITE PAINT	gallon	6		6
STRIPE GROOVING	lnft		225,380	225,380
STRIPING - WHITE EPOXY	gallon		744	744
STRIPING - YELLOW EPOXY	gallon		1,076	1,076
WORDS & SYMBOLS - WHITE EPOXY	gallon		8	8
YELLOW CURB EPOXY	gallon		51	51
TEMPORARY STRIPING	lnft			116,272
FINAL SWEEP AND BROOM	mile			26.0

BASED ON 1 APPLICATION.

CATTLE GUARD*

STATION	each CATTLE GUARD 20 ft (HEAVY DUTY)	each CATTLE GUARD 24 ft (HEAVY DUTY)	REMOVE CATTLE GUARD	REMARKS
65+81			1	JACKSON CREEK INTERCHANGE, RAMP W2
65+91			1	JACKSON CREEK INTERCHANGE, RAMP W3
323+22		1	1	HOPPER INTERCHANGE, RAMP H4
324+01	1		1	HOPPER INTERCHANGE, RAMP H1
325+95		1	1	HOPPER INTERCHANGE, RAMP H2
326+66	1		1	HOPPER INTERCHANGE, RAMP H3
TOTAL	2	2	6	

*SEE DETAILS

RUMBLE STRIPS

STATION FROM	STATION TO	miles RUMBLE STRIPS CONTINUOUS	miles RUMBLE STRIPS INTERMITTENT	gals EMULSIFIED ASPHALT FOG SEAL #	REMARKS
EASTBOUND					
64+99.80 BE	75+00.00		0.2	23	TO RAMP W3 NOSE
64+99.80 BE	180+76.00 BE	2.2		258	
84+00.00	140+30.00		1.1	129	RAMP W3 TAPER TO E.B. TURNOUT
145+00.00	180+76.00 BE		0.7	82	FROM TURNOUT
182+09.00 BE	252+50.00		1.3	153	FROM BRIDGE TO CHAIN REMOVAL
182+09.00 BE	324+10.00 BE	2.7		317	
259+50.00	302+00.00		0.8	94	FROM CHAIN REMOVAL TO RAMP H4 TAPER
312+00.00	324+10.00 BE		0.2	23	FROM RAMP H4 NOSE
325+33.00 BE	335+00.00		0.2	23	TO RAMP H3 NOSE
325+33.00 BE	505+61.00 BE	3.4		399	
344+00.00	408+50.00		1.2	141	FROM RAMP H3 TAPER TO 1ST RAMP E1 TAPER
413+85.00	442+58.00		0.5	59	FROM RAMP E1 GORE TO 2ND RAMP E1 TAPER
451+00.00	505+61.00 BE		1.0	117	FROM 2ND RAMP E1 TAPER TO BRIDGE
506+39.00 BE	36+00.00	2.7	2.7	634	
SUBTOTAL		11.0	9.9	~	
WESTBOUND					
65+33.20 BE	79+00.00		0.3	35	TO RAMP W2 NOSE
65+33.20 BE	180+98.50 BE	2.2		258	
89+00.00	132+80.00		0.8	94	RAMP W2 TAPER TO W.B. TURNOUT
142+30.00	180+98.50 BE		0.7	82	FROM TURNOUT
182+31.50 BE	213+50.00		0.6	70	TO CHAIN-UP AREA (1)
182+31.50 BE	324+10.00 BE	2.7		317	
220+50.00	306+00.00		1.6	188	FROM CHAIN-UP AREA (1) TO RAMP H1 TAPER
315+00.00	324+10.00 BE		0.2	23	FROM RAMP H1 NOSE
325+33.00 BE	335+28.00		0.2	23	TO RAMP H2 NOSE
345+28.00	421+00.00		1.4	164	FROM RAMP H2 TAPER TO CHAIN-UP AREA (2)
325+33.00 BE	505+11.00 BE	3.4		399	
429+00.00	505+11.00 BE		1.4	164	FROM CHAIN-UP AREA (2) TO BRIDGE
505+89.00 BE	36+00.00	2.8	2.8	657	
SUBTOTAL		11.1	10.0	~	
TOTAL		42.0		~	

FOR INFORMATION ONLY, INCLUDE IN THE COST OF RUMBLE STRIPS

BLASTING CONSULTANT

STATION FROM	STATION TO	lump sum BLASTING CONSULTANT	REMARKS
121+50.00	127+50.00	1	
TOTAL		1	

GRADING

STATION	cubic yards UNCL. EXC.	ADJUSTED EXC.*	ADJUSTED EXCESS EXC.*	UNADJUSTED EMB.	REMARKS
121+50.00					
	43,201	49,681	49,404	277	LT.
127+50.00					
TOTAL	43,201	# 49,681	# 49,404	# 277	

FOR INFORMATION ONLY
* ADJUSTED FOR 15% SWELL

SHEET NO. 16

SUMMARY

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

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MONTANA Department of Transportation

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SUMMARY

TEMPORARY BARRIER RAIL*

STATION FROM	STATION TO	linear feet: TEMPORARY BARRIER RAIL	linear feet: RESET TEMPORARY BARRIER RAIL	each: TEMPORARY IMPACT ATTENUATOR	each: RESET TEMPORARY IMPACT ATTENUATOR	REMARKS
EASTBOUND LANES						
320+90.00	326+20.00	530		1		PHASE 1 – HOPPERS INTERCHANGE, 01614
320+90.00	326+20.00		530		1	PHASE 2 – HOPPERS INTERCHANGE, 01614
502+39.00 BE	507+29.00	490		1		PHASE 1 – O'REA CREEK ROAD, 01616
502+39.00 BE	507+29.00		490		1	PHASE 2 – O'REA CREEK ROAD, 01616
WESTBOUND LANES						
121+00.00	130+30.00	930		1		ROCK EXCAVATION CLEAN UP
323+74.00	329+04.00	530		1		PHASE 1 – HOPPERS INTERCHANGE, 01615
323+74.00	329+04.00		530		1	PHASE 2 – HOPPERS INTERCHANGE, 01615
504+21.00	509+11.00	490		1		PHASE 1 – O'REA CREEK ROAD, 01617
504+21.00	509+11.00		490		1	PHASE 2 – O'REA CREEK ROAD, 01617
TOTAL		2,970	2,040	5	4	

* SEE DETAIL SHEET

DRAINAGE CHUTES *

STATION FROM	STATION TO	cu. yards: RANDOM RIPRAP CL. 1	cu. yards: CRUSHED AGG. COURSE	sq. yards: TURF REIN. MAT / NATURAL FIBER	REMARKS
325+86.00		1.5	10	18	01614, E.B., S.E. CORNER, CAC QTY. INCL. BACKFILL UNDER STRUCTURE
326+47.00		1.5	10	26	01615, W.B., S.E. CORNER, CAC QTY. INCL. BACKFILL UNDER STRUCTURE
TOTAL		3.0	20	43	

* PER STD. DWG. 613-18

REVEGETATION

STATION FROM	STATION TO	lump sum: REVEGE-TATION	cu. yards: TOPSOIL PLACING	acres: SEED	acres: CONDITION SEEDBED	REMARKS
121+50.00	127+50.00	0.50	185	0.3	0.3	FOR DITCH AT ROCK OUTCROPPING
64+99.80 B.E.	30+95.28	0.20	280	0.5	0.5	E.B. GUARDRAIL, SEE GUARDRAIL FRAME FOR SPECIFIC LOCATIONS
65+33.20 B.E.	35+20.28	0.20	275	0.5	0.5	W.B. GUARDRAIL, SEE GUARDRAIL FRAME FOR SPECIFIC LOCATIONS
325+33.00 B.E.		0.05	15			FOR EROSION REPAIR AT HOPPERS INTERCHANGE, EASTBOUND
325+87.00 B.E.		0.05	15			FOR EROSION REPAIR AT HOPPERS INTERCHANGE, WESTBOUND
TOTAL		1	# 770	# 1.3	# 1.3	

FOR INFORMATION ONLY

CURB

STATION FROM	STATION TO	linear feet: CONCRETE CURB LEFT	linear feet: CONCRETE CURB RIGHT	REMARKS
325+33.00 BE	325+83.00		50.0	01614, FOR TRM DRAINAGE CHUTE
325+93.00	326+43.00		50.0	01615, FOR TRM DRAINAGE CHUTE
SUBTOTAL		~	100.0	
TOTAL		100.0		

CRACK SEALING*

STATION FROM	STATION TO	PMS JOINT SEALING** square yards	PMS JOINT SEALING** linear feet	TRANVSERSE AND LONGITUDINAL CRACK SEALING, EXISTING CRACKS pounds	TRANVSERSE AND LONGITUDINAL CRACK SEALING, EXISTING CRACKS linear feet	MASTIC CRACK FILLING pounds	MASTIC CRACK FILLING linear feet	REMARKS
64+99.80 BE	36+00.00					86,660	57,773	E.B. QTY., CL JOINT, ACCOUNTS FOR EQ'S AND BRIDGES
65+33.20 BE	36+00.00					86,934	57,956	W.B. QTY., CL JOINT, ACCOUNTS FOR EQ'S AND BRIDGES
64+99.80 BE	36+00.00			1,152	2,304			E.B. QTY.
65+33.20 BE	36+00.00			1,008	2,016			W.B. QTY.
153+29.36	163+32.52	223	1,003					E.B., FOR SEALING SHOULDER JOINT
225+84.70								
241+54.60 BK.	242+55.60 AH.							
	243+85.86	423	1,902					E.B., FOR SEALING SHOULDER JOINT
131+06.40								
153+06.40 BK.	152+23.00 AH.							
	166+71.48	774	3,482					W.B., FOR SEALING SHOULDER JOINT
225+84.70								
241+54.60 BK.	242+55.60 AH.							
	243+85.86	423	1,902					E.B., FOR SEALING SHOULDER JOINT
334+81.64								
349+74.70 BK.	349+48.70 AH.							
	349+60.44	323	1,453					E.B., FOR SEALING SHOULDER JOINT
TOTAL		2,165	#	2,160	#	173,594	#	

* SEE DETAIL SHEET
** SEE SPECIAL PROVISIONS
# FOR INFORMATION ONLY

SHEET NO. 17

SUMMARY

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

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DETAIL



SHEET NO. 18

JACKSON CR. INTERCHANGE DETAIL (NO SCALE)

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

ROAD PLANS

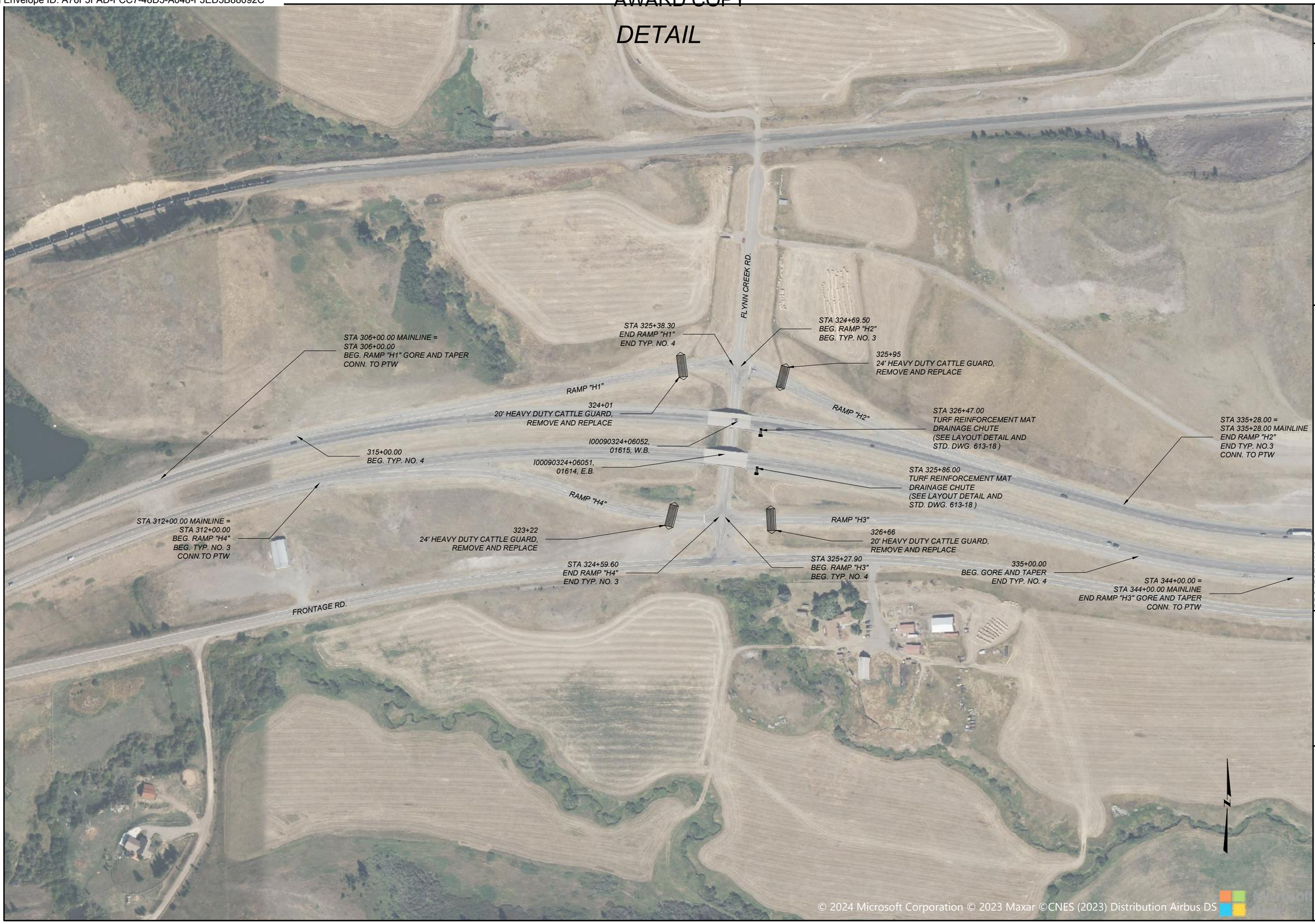
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DETAIL



SHEET NO. 19

HOPPER INTERCHANGE DETAIL (NO SCALE)

PROJECT NAME: **BOZEMAN HILL - EAST**

COUNTY: **GALLATIN & PARK COUNTIES**

PROJECT ID: **IM 90-6(151)319**

UPN: **9467000**

DESIGNED BY	DATE
P. RUMLEY	07/07/2023
REVIEWED BY	
CHECKED BY	

9467000RDDET001.DWG

MONTANA Department of Transportation

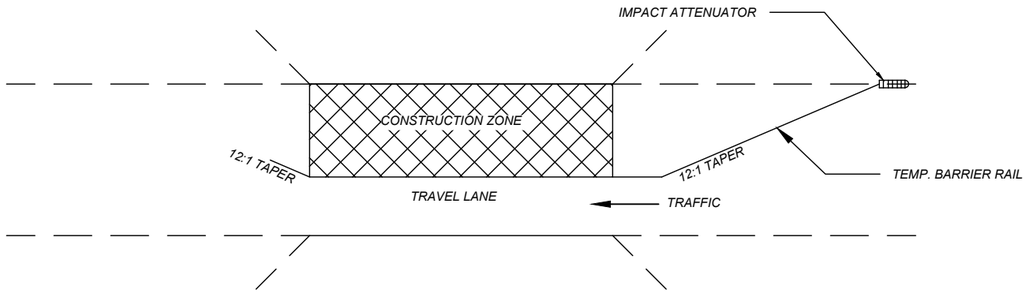
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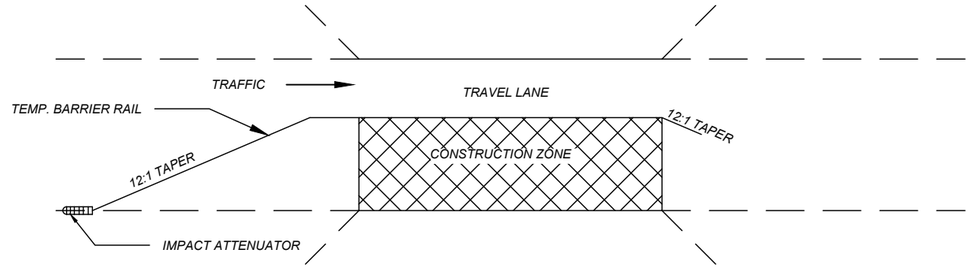
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DETAIL



BRIDGE PHASE I CONSTRUCTION DIAGRAM
WESTBOUND#

I00090324+06052 (01615)
I00090328+00292 (01617)



BRIDGE PHASE I CONSTRUCTION DIAGRAM
EASTBOUND

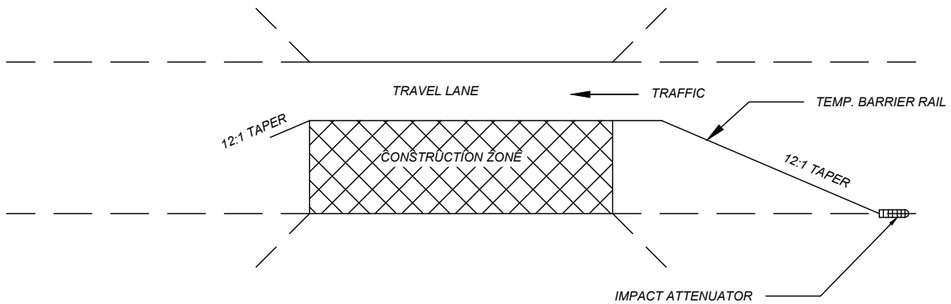
I00090324+06051 (01614)
I00090328+00291 (01616)

- USE THIS LAYOUT FOR ROCK EXCAVATION CLEAN UP, STA. 121+50 TO STA. 127+50

WORK ZONE WIDTHS

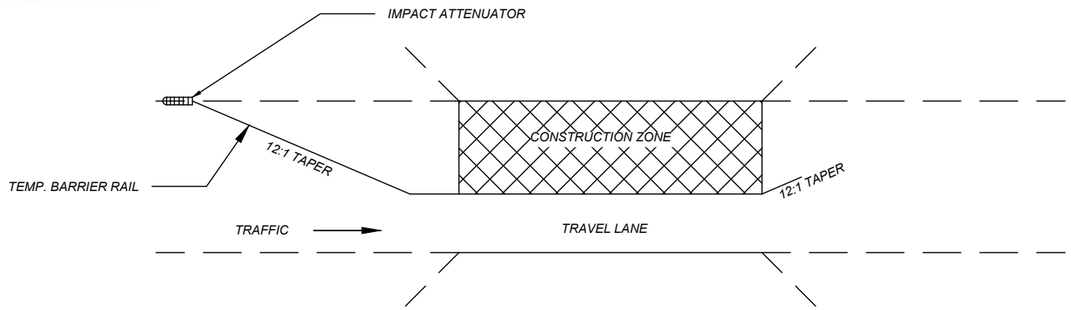
MDT STRUCTURE ID	CONSTRUCTION ZONE WIDTH*	TRAVEL LANE WIDTH
EAST BOUND		
01614	22'-2"	19'-0"
01616	22'-6"	19'-0"
WEST BOUND		
ROCK OUTCROPPING	19'-0"	19'-0"
01615	22'-2"	19'-0"
01617	22'-6"	19'-0"

* INCLUDES TEMPORARY BARRIER RAIL WIDTH



BRIDGE PHASE II CONSTRUCTION DIAGRAM
WESTBOUND

I00090324+06052 (01615)
I00090328+00292 (01617)



BRIDGE PHASE II CONSTRUCTION DIAGRAM
EASTBOUND

I00090324+06051 (01614)
I00090328+00291 (01616)

SHEET NO.
20

TEMPORARY BARRIER RAIL DETAIL

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:
9467000RDDET001.DWG

MONTANA Department of Transportation

ROAD PLANS

4/15/2024 3:29 PM

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DETAIL

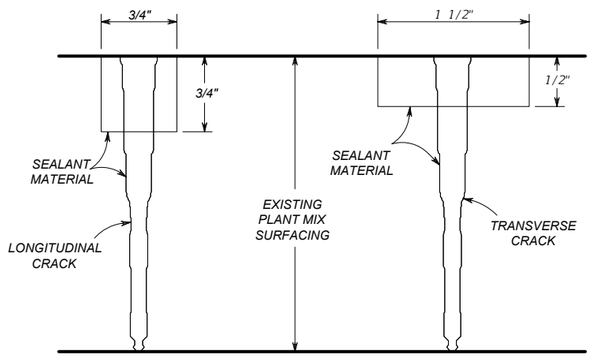
CRACKS LESS THAN 1"*

LONGITUDINAL CRACK

ROUT 3/4" WIDE x 3/4" DEEP
PRIOR TO APPLYING SEALANT

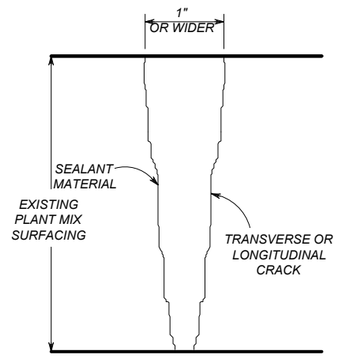
TRANSVERSE CRACK

ROUT 1 1/2" WIDE x 1/2" DEEP
PRIOR TO APPLYING SEALANT



CRACKS 1" OR WIDER*

LEAVE EXISTING CRACK SEAL IN PLACE



* SEE CRACK SEALING FRAME FOR LOCATIONS

SHEET NO.
21

CRACK SEALING DETAIL

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

ROAD PLANS

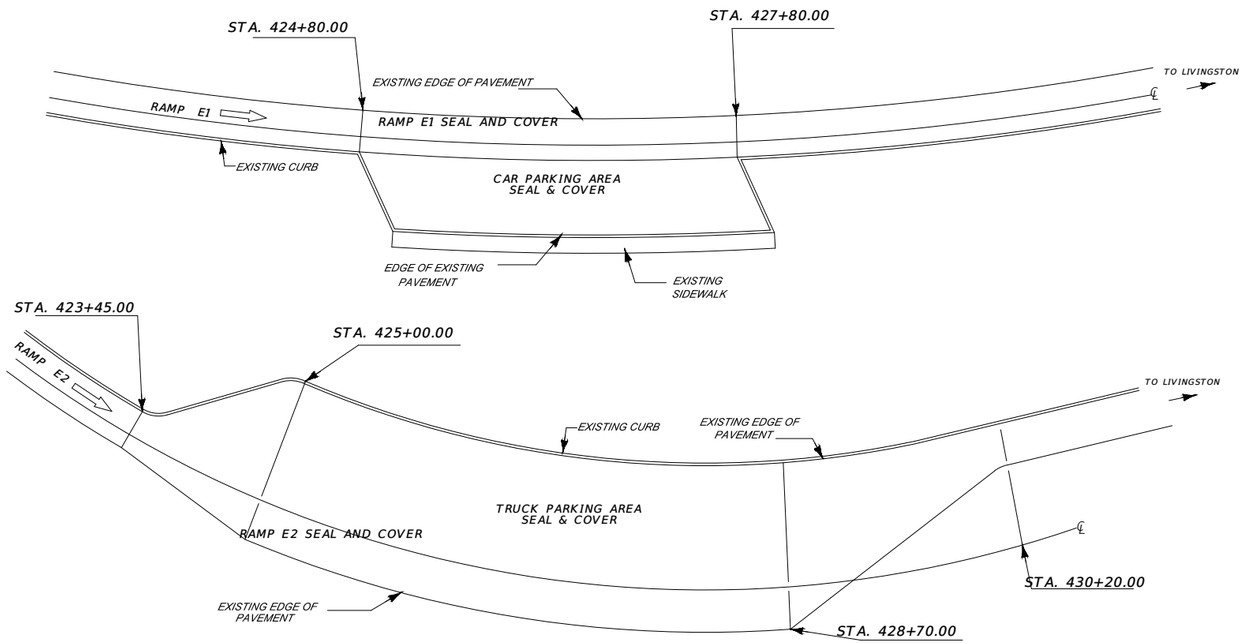
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DETAIL



N

SHEET NO.
22

EASTBOUND REST AREA
DETAIL
(NO SCALE)

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY	P. RUMLEY	07/07/2023
REVIEWED BY		
CHECKED BY		

MONTANA
Department of Transportation

ROAD PLANS

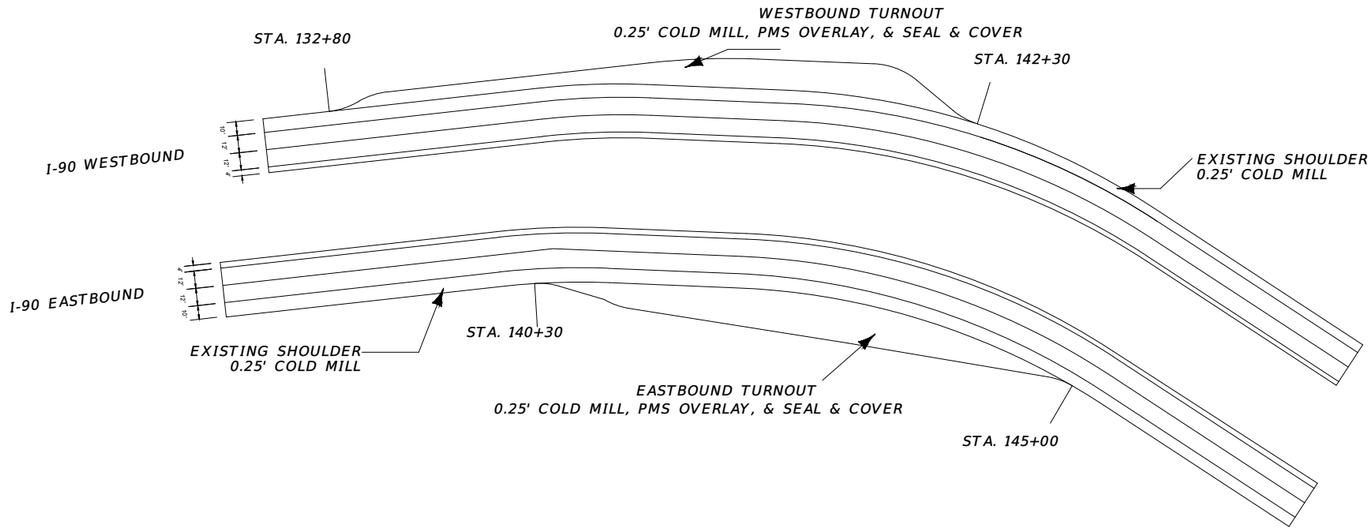
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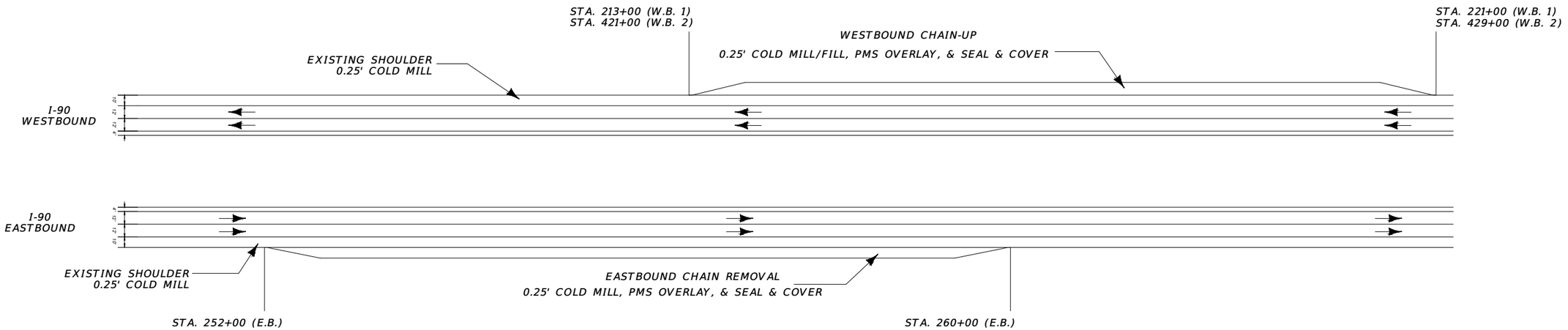
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AWARD COPY

DETAIL





SHEET NO.
23

BOZEMAN HILL TURNOUTS AND CHAIN-UP/REMOVAL AREAS
DETAIL
(NO SCALE)

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY	DATE	REVIEWED BY	CHECKED BY	
P. RUMLEY	07/07/2023			9467000RDDET001.DWG

MONTANA
Department of Transportation

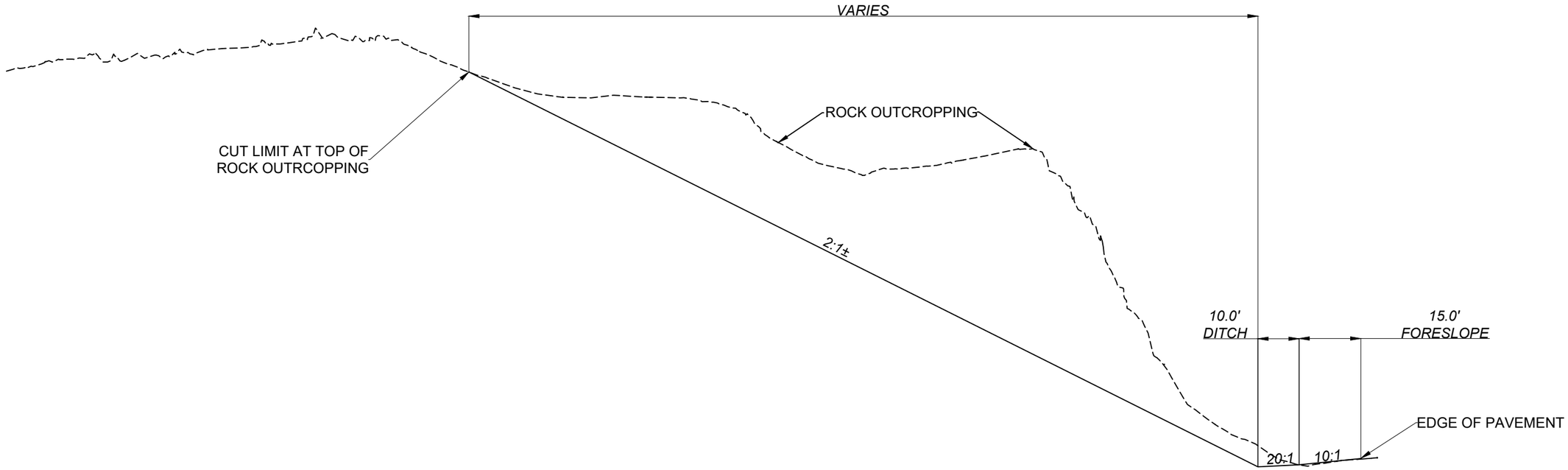
ROAD PLANS

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AWARD COPY

DETAIL



ROCK EXCAVATION DETAIL (NO SCALE)

SHEET NO. 24

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 09/15/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

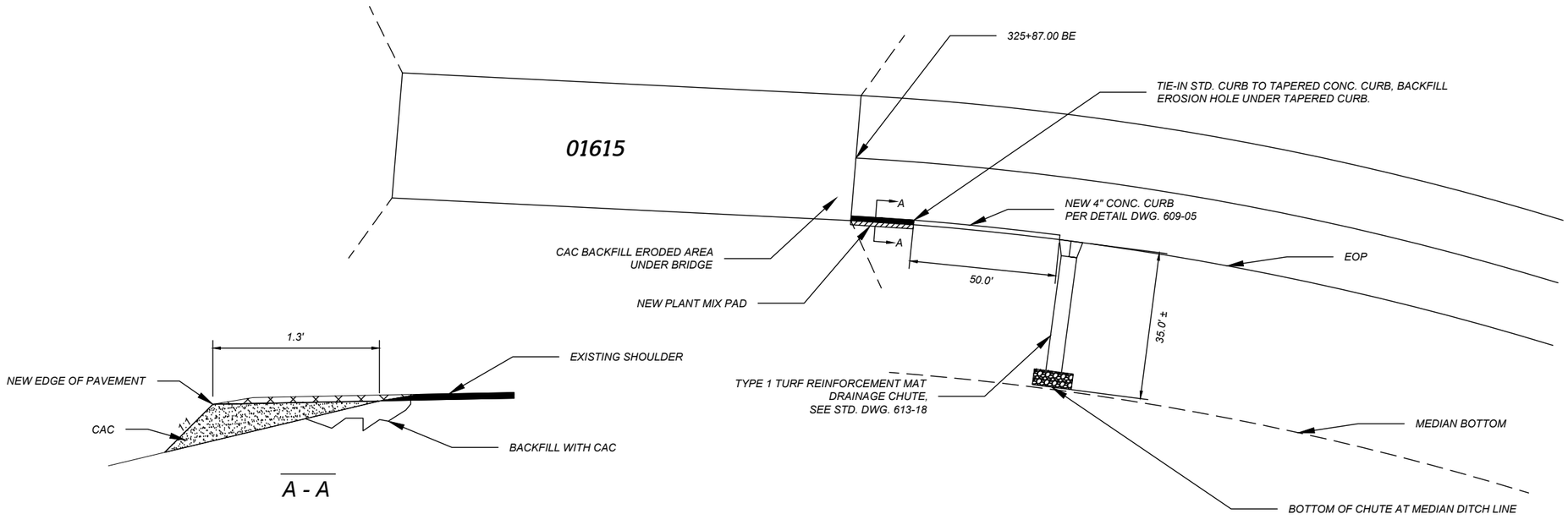
ROAD PLANS

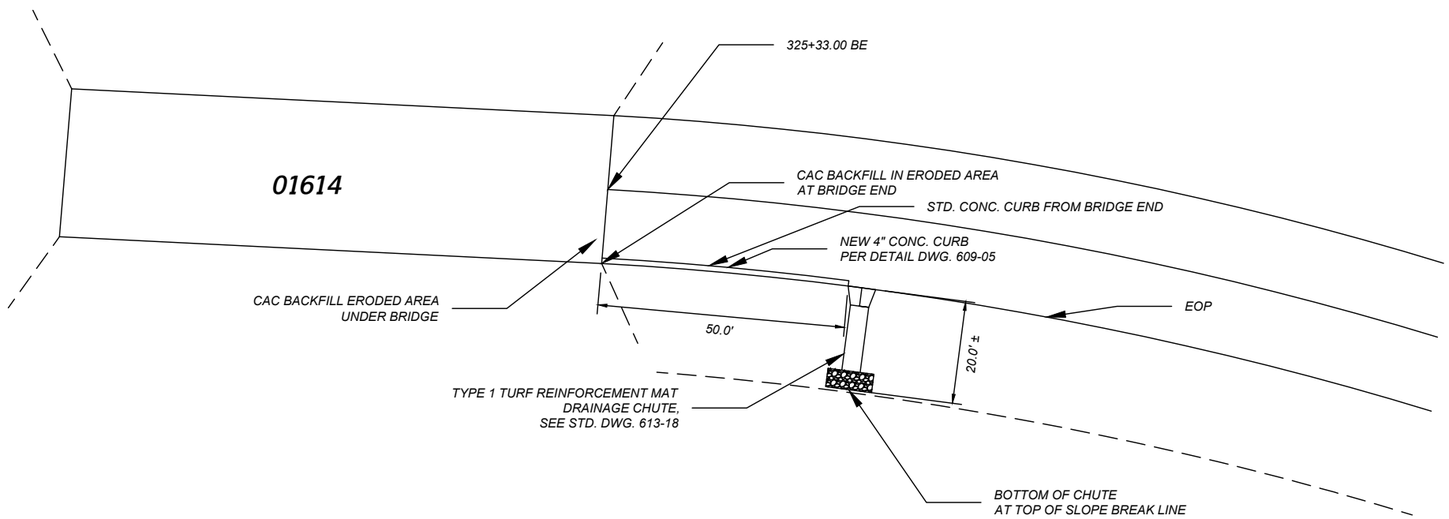
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AWARD COPY

DETAIL





N

SHEET NO. 25

TURF REINFORCEMENT MAT DRAINAGE CHUTE LAYOUT DETAIL (NO SCALE)

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

9467000RDDET001.DWG

MONTANA Department of Transportation

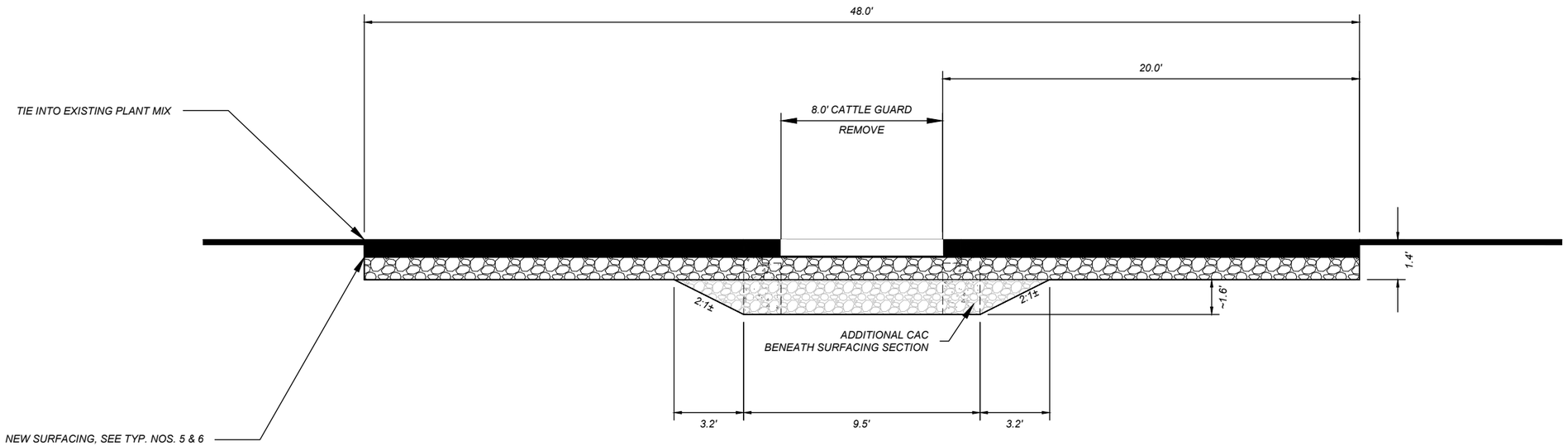
ROAD PLANS

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AWARD COPY

DETAIL



SHEET NO. 26

JACKSON CREEK INTERCHANGE
CATTLE GUARD REMOVAL
PROFILE VIEW
DETAIL
(NO SCALE)

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA
Department of Transportation

ROAD PLANS

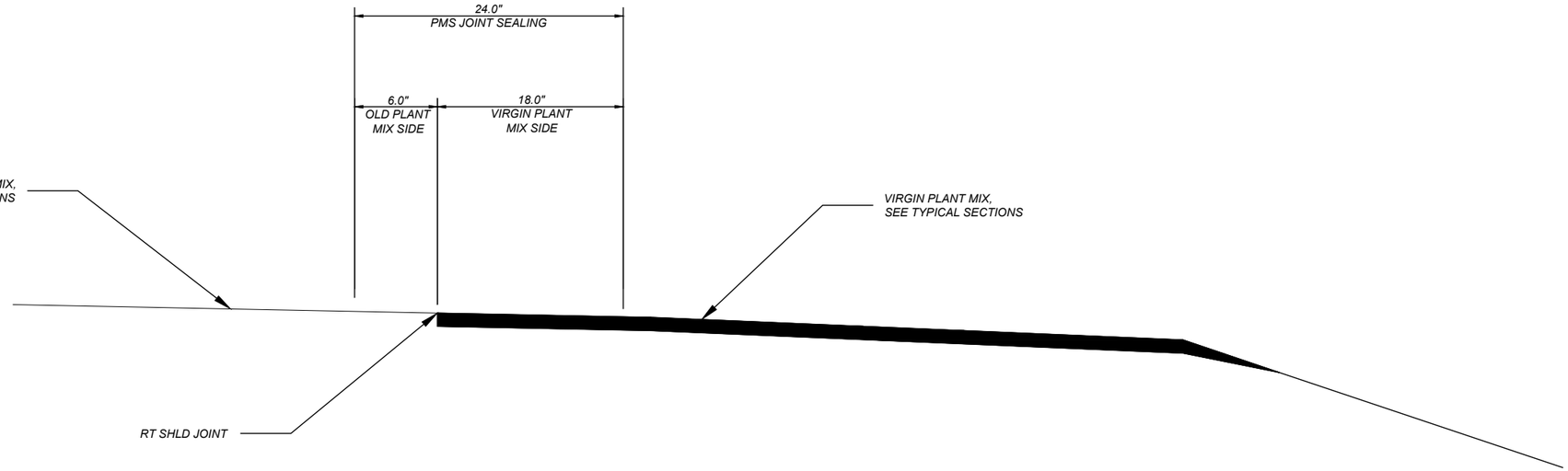
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AWARD COPY

DETAIL



SHEET NO. 27

PMS JOINT SEALING OFFSET DETAIL (NO SCALE)

PROJECT NAME: **BOZEMAN HILL - EAST**
COUNTY: **GALLATIN & PARK COUNTIES**
PROJECT ID: **IM 90-6(151)319**
UPN: **9467000**

DESIGNED BY	DATE
P. RUMLEY	07/07/2023
REVIEWED BY	
CHECKED BY	

MONTANA Department of Transportation

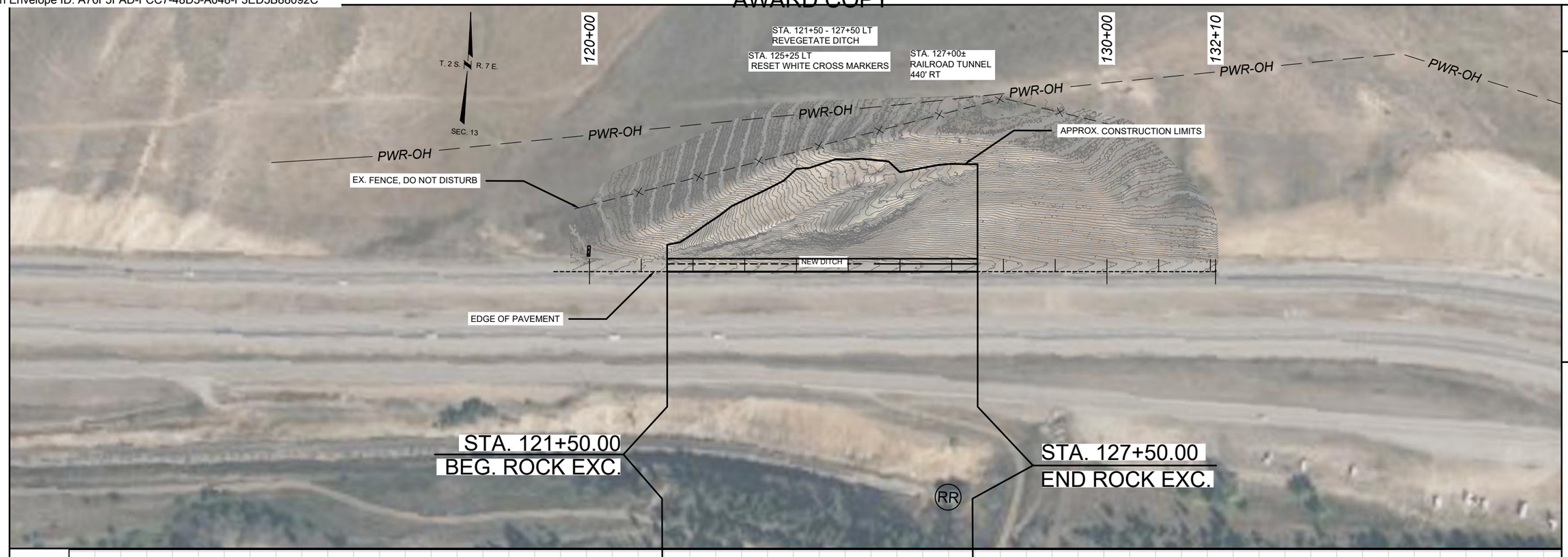
ROAD PLANS

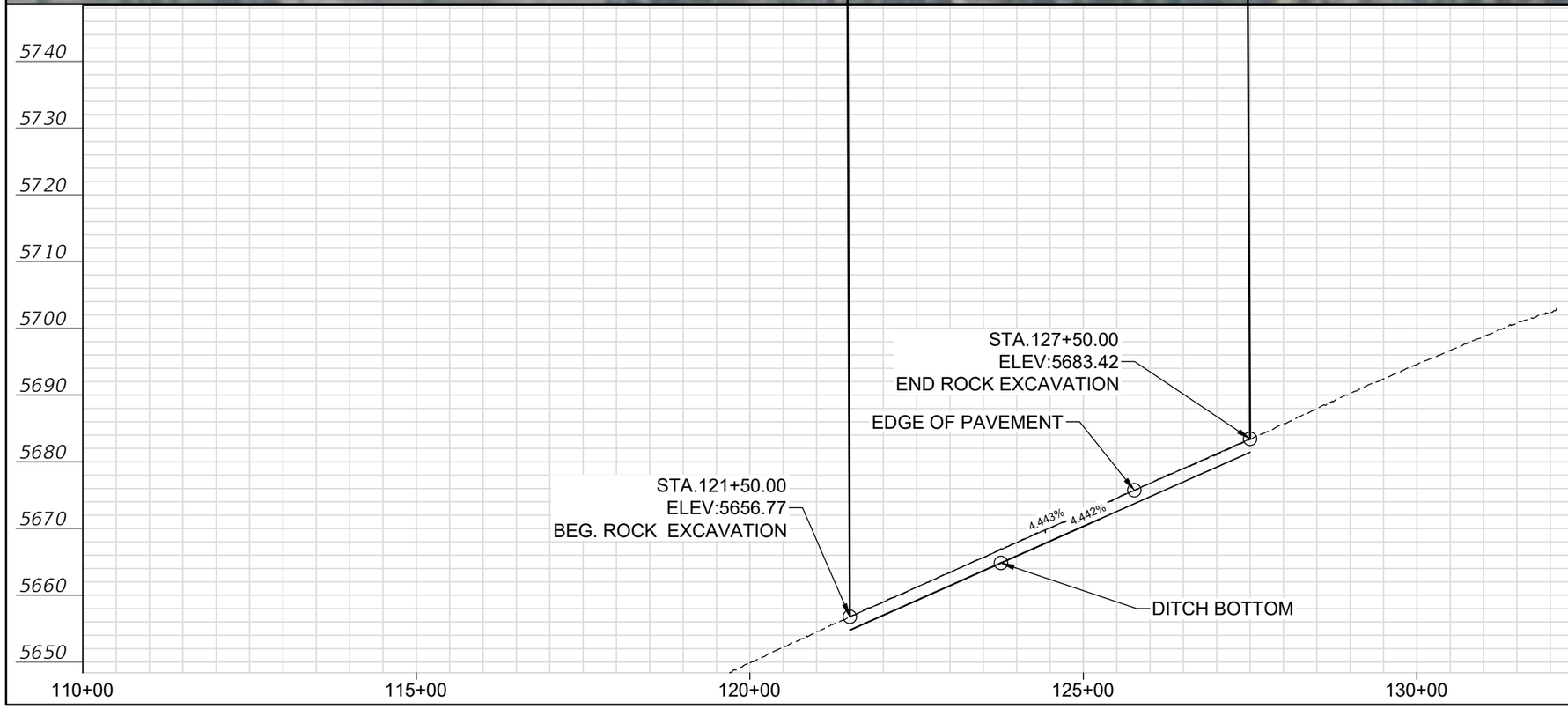
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AWARD COPY





SHEET NO. 28

PLAN AND PROFILE

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY	DATE	REVIEWED BY	CHECKED BY
P. RUMLEY	07/07/2023		

9467000RDCRR001.DWG

MONTANA Department of Transportation

ROAD PLANS

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SUMMARY
SIGNING & DELINEATION QUANTITIES

MATERIAL	TOTALS	UNIT
SIGNS-SHEET ALUM SHT INCR XI	1,844.3	SQFT
SIGNS-ALUM REFL SHEET XI	1,271.5	SQFT
REMOVE SIGN	112	EACH
REMOVE SIGN-GUIDE	43	EACH
POSTS-TUBULAR STEEL	2,136	LB
POSTS-STEEL U SIGN	872	LB
POSTS-STEEL STRUCTURAL SIGN	3,022	LB
POLES-TREATED WOOD 4 IN	52	LNFT
POLES-TREATED WOOD 5 IN	354	LNFT
FRANG SIGN POST BKWY-S4 X 7.7 (S100X11)	14	EACH
FRANG SIGN POST BKWY-S5 X 10 (S130X15)	4	EACH
FRANG SIGN POST BKWY-W8 X 18 (W200 X 27)	3	EACH
FRANG SIGN POST BKWY-3.5 IN RD (89MM)	16	EACH
FRANG SIGN POST BKWY-4 IN RD (100 MM)	1	EACH
PANEL DELINEATOR DESIGN D	8	EACH
PANEL DELINEATOR DESIGN G	71	EACH
PANEL DELINEATOR DESIGN H	303	EACH
DELINEATOR SNOWPOLE-DES A	180	EACH
DELINEATOR TYPE 1	745	EACH

SANDERSON STEWART

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AWARD COPY

SIGN LOCATION AND SPECIFICATION

Lt.	STATION / RP	Rt.	RAMP NO.	SIGN NO.	PANEL SIZE	REFL SHTG BACK- GRND	REFL SHTG 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 XI	SIGN PANEL (SQ. FT.) ALUM. SHEET INCREMENT XI	SIGN PANEL (SQ. FT.) ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.) 4" TOP DIA.	TIMBER POLE (LINEAR FT.) 5" TOP DIA.	TIMBER POLE (LINEAR FT.) 6" 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	ANGLE IRON	REMARKS
I-90																																	
	319.00	Rt.	EB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 319
Lt.	319.00		WB	D10-6	USE AS IS																												RP 319
Lt.	319.02		WB	N7-1	3-0 x 4-0	XI	XI									12.0											1						RSFO
Lt.	319.03		WB	W20-1 W16-3P	USE AS IS USE AS IS																												Orange Construction Sign, Hinged Orange Construction Sign, 2 MILES
Lt.	319.04		WB	IS12-10	9-0 x 3-6	XI	XI										31.5												1				RSFO, Chain Removal Area
	319.19			M3-4A	2-6 x 1-3	XI	XI									3.1																	RSFO
Lt.			WB	M1-1	3-0 x 3-0	XI	XI									7.2																	RSFO, I-90
				M3-3	2-0 x 1-0	XI										2.0																	RSFO
				M1-4	2-6 x 2-0	XI										5.0											1						RSFO, US 191
	319.20			W20-1	USE AS IS																												Orange Construction Sign, Hinged
Lt.			WB	W16-3P	USE AS IS																												Orange Construction Sign, 2 MILES
	319.39			E-319	9-0 x 2-6	XI	XI										22.5														*		RSFO, Exit 319
		Rt.	EB	G5-110	12-6 x 8-0	XI	XI										100.0							*74				1					RSFO, Jackson Cr Road
	319.53																																
		Rt.	EB	EG-319	7-6 x 5-0	XI	XI	10-0	4-8	S4x7.7		X = 13-2 Y = 13-3		7-0	3-6		37.5							199		■			1				
	319.57																																
		Rt.	EB	W8-12B	4-0 x 4-0	XI										16.0											1						RSFO, Hinged, WATCH FOR ICE ON BRIDGE
	319.68																																
Lt.			WB	IS9-1	9-0 x 5-0	XI	XI										45.0												1				RSFO, Chain Removal Area 1/2 Mile
	319.80																																
Lt.			WB	W8-12B	4-0 x 4-0	XI										16.0											1						RSFO, Hinged, WATCH FOR ICE ON BRIDGE
	319.82																																
Lt.			WB	EG-319	7-6 x 5-0	XI	XI										37.5												1				RSFO, Exit 319
	320.00																																
		Rt.	EB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 320
	320.00			E-319	9-0 x 2-6	XI	XI										22.5														*		
Lt.			WB	G5-110	12-6 x 8-0	XI	XI										100.0							*74					1				RSFO, Exit 319, Jackson Cr Road
Lt.	320.00		WB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 320
	320.01																																
		Rt.	EB	G13-320	12-6 x 3-6	XI	XI	20-0	7-6	W8x18		X = 12-11 Y = 13-0		5-0	5-6		43.8							456		■			1				Trooper James H. Anderson Memorial Highway

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

RSFO = REPLACE SIGN FACE ONLY
BBR = BACKBRACING REQUIRED

X — STANDARD BREAKAWAY DEVICE:
-FOR WOOD POST SEE DETAILED DRAWING 619-20.

■ — FRANGIBLE SIGN POST BREAKAWAY DEVICE REQUIRED.
-FOR STRUCURAL STEEL SEE DETAILED DRAWING 619-13.
-FOR METAL POLE SEE DETAILED DRAWING 619-12.

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.

* = 2 EA. 2½"x2½"x⅜"x6'-4" Angle Iron Required (74 lbs.)

SANDERSON STEWART

DocuSign Envelope ID: A76F5FAD-FCC7-48D5-A048-F3ED5B88092C

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SIGN LOCATION AND SPECIFICATION

Lt.	STATION / RP	Rt.	RAMP NO.	SIGN NO.	PANEL SIZE	REFL SHTG BACK- GRND	REFL SHTG 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 XI	SIGN PANEL (SQ. FT.) ALUM. SHEET INCREMENT XI	SIGN PANEL (SQ. FT.) ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.) 4" TOP DIA.	TIMBER POLE (LINEAR FT.) 5" TOP DIA.	TIMBER POLE (LINEAR FT.) 6" 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	ANGLE IRON	REMARKS
	320.14			M3-2A	2-6 x 1-3	XI	XI									3.1																	RSFO
		Rt.	EB	M1-1	3-0 x 3-0	XI	XI									7.2																	RSFO, I-90
				M3-1	2-0 x 1-0	XI										2.0																	RSFO
				M1-4	2-6 x 2-0	XI										5.0												1					RSFO, US 191
	320.34			R2-1	USE AS IS																												Speed Limit 80
		Rt.	EB	R2-2	USE AS IS																												Trucks 70
	320.35			R2-1	4-0 x 5-0	XI											20.0																BBR, Speed Limit 75
Lt.			WB	R2-2	4-0 x 3-0	XI		10-0		W8x18		15-9		7-0	5-6		12.0							287		■	1						BBR, Trucks 70
	320.46																																
Lt.			WB	W3-5	4-0 x 4-0	XI		10-0		3.5" STEEL PIPE		13-7		7-0	3-0	16.0						125				■	1						BBR, 75 MPH AHEAD
	320.58																																
		Rt.	EB	D7-3	4-0 x 3-0 x 2-6	XI	XI	10-0		5" WOOD POLE		15-2		7-0	3-6	9.8				16						X	1						BBR, Historic Point 1/2 Mile
	320.74			E-319	9-0 x 2-6	XI	XI										22.5														*		RSFO, Exit 319
Lt.			WB	G3-112	15-0 x 8-6	XI	XI										127.5							*74					1				RSFO, Jackson Cr Road 1 Mile
	320.97																																
		Rt.	WB	R10-11	USE AS IS																												
	321.00																																
		Rt.	EB	N7-1	3-0 x 4-0	XI	XI									12.0											1						RSFO, BBR
	321.00																																
		Rt.	EB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 321
Lt.	321.00		WB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 321
	321.01																																
		Rt.	EB	N6-2P	7-6 x 3-6	XI	XI										26.3												1				RSFO, Absaroka Mtn Range
Lt.	321.03		WB	R10-11	USE AS IS																												
Lt.	321.05		WB	R10-11	USE AS IS																												
Lt.	321.07		WB	R10-11	USE AS IS																												
Lt.	321.10		WB	R10-11	USE AS IS																												
Lt.	321.11		WB	R10-11	USE AS IS																												
Lt.	321.12		WB	R10-11	USE AS IS																												

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

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-FOR STRUCURAL STEEL SEE DETAILED DRAWING 619-13.
-FOR METAL POLE SEE DETAILED DRAWING 619-12.

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.

* = 2 EA. 2½"x2½"x¾"x6'-4" Angle Iron Required (74 lbs.)

SANDERSON STEWART

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SIGN LOCATION AND SPECIFICATION

Lt.	STATION / RP	Rt.	RAMP NO.	SIGN NO.	PANEL SIZE	REFL SHTG BACK- GRND	REFL SHTG 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 XI	SIGN PANEL (SQ. FT.) ALUM. SHEET INCREMENT XI	SIGN PANEL (SQ. FT.) ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.) 4" TOP DIA.	TIMBER POLE (LINEAR FT.) 5" TOP DIA.	TIMBER POLE (LINEAR FT.) 6" 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	ANGLE IRON	REMARKS
	321.15																																
		Rt.	EB	R10-11	USE AS IS																												
	321.15																																
	MED			(2) R4-14	2-6 x 2-0	XI										10.0											1						RSFO, Mount back-to-back
	321.17																																
		Rt.	EB	R10-11	USE AS IS																												
	321.19																																
Lt.			WB	N7-1	3-0 x 4-0	XI	XI									12.0											1						RSFO, BBR
	321.21																																
		Rt.	EB	R10-11	USE AS IS																												
	321.56																																
Lt.			WB	D7-3	4-0 x 3-0 x 2-6	XI	XI	5-0		5" WOOD POLE		14-4		7-0	3-6	9.8				16						X	1						BBR, Historic Point 1/2 Mile
	321.74																																
		Rt.	EB	N6-3M	5-6 x 3-6	XI	XI	6-0	3-4	5" WOOD POLE		X=15-3 Y=15-9		7-0	3-6		19.3			32						X							Park County
	321.74																																
Lt.			WB	N6-3N	6-0 x 3-6	XI	XI										21.0													1			RSFO, Gallatin County
	321.75																																
		Rt.	EB	W8-12B	4-0 x 4-0	XI										16.0											1						RSFO, Hinged, WATCH FOR ICE ON BRIDGE
	321.98																																
Lt.			WB	D12-321	7-0 x 4-0	XI	XI										28.0													1			RSFO, Weather Info
	322.00																																
		Rt.	EB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 322
	322.00																																
Lt.			WB	D10-6	1-0 x 4-0	XI	XI	2-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 322
	322.05																																
Lt.			WB	N6-2Q	7-6 x 3-6	XI	XI										26.3													1			RSFO, BRIDGER MTN RANGE
	322.08																																
Lt.			WB	W8-12B	4-0 x 4-0	XI		2-0		3.5" STEEL PIPE		11-10		7-0	3-0	16.0						108				■	1						BBR, Hinged, WATCH FOR ICE ON BRIDGE
	322.67																																
		Rt.	EB	IS9-1	9-0 x 5-0	XI	XI										45.0													1			RSFO, Chain Removal Area 1/2 Mile
	322.68																																
Lt.			WB	IS12-12	6-0 x 3-6	XI	XI										21.0													1			RSFO, Chain Up Area
	323.00																																
		Rt.	EB	D10-6	1-0 x 4-0	XI	XI	2-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 323
	323.00																																
Lt.			WB	N7-1	3-0 x 4-0	XI	XI	6-0		5" WOOD POLE		15-1		7-0	3-6	12.0				16						X	1						BBR

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

RSFO = REPLACE SIGN FACE ONLY
BBR = BACKBRACING REQUIRED

X — *STANDARD BREAKAWAY DEVICE: -FOR WOOD POST SEE DETAILED DRAWING 619-20.*

■ — *FRANGIBLE SIGN POST BREAKAWAY DEVICE REQUIRED. -FOR STRUCURAL STEEL SEE DETAILED DRAWING 619-13. -FOR METAL POLE SEE DETAILED DRAWING 619-12.*

FY — *= TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.*

✱ — *= 2 EA. 2½"x2½"x¾"x6'-4" Angle Iron Required (74 lbs.)*

SANDERSON STEWART

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SIGN LOCATION AND SPECIFICATION

Lt.	STATION / RP	Rt.	RAMP NO.	SIGN NO.	PANEL SIZE	REFL SHTG BACK- GRND	REFL SHTG 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 XI	SIGN PANEL (SQ. FT.) ALUM. SHEET INCREMENT XI	SIGN PANEL (SQ. FT.) ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.) 4" TOP DIA.	TIMBER POLE (LINEAR FT.) 5" TOP DIA.	TIMBER POLE (LINEAR FT.) 6" 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	ANGLE IRON	REMARKS
	323.00																																
Lt.			WB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 323
	323.01																																
		Rt.	EB	N7-1	3-0 x 4-0	XI	XI	2-0		5" WOOD POLE		15-2		7-0	3-6	12.0				16						X	1						BBR
	323.20																																
		Rt.	EB	IS12-10	9-0 x 3-6	XI	XI										31.5												1				RSFO, Chain Removal Area
	323.71																																
Lt.			WB	G11-311	12-6 x 5-0	XI	XI										62.5												1				RSFO, BOZEMAN 15; THREE FORKS 46; BUTTE 100
	323.86			E-324	9-0 x 2-6	XI	XI										22.5															*	RSFO, EXIT 324
		Rt.	EB	G6-21	15-0 x 5-0	XI	XI										75.0							*74					1				RSFO, RANCH ACCESS 1/2 MILE
	323.96			R2-1	4-0 x 5-0	XI											20.0																RSFO, SPEED LIMIT 80
Lt.			WB	R2-2	4-0 x 3-0	XI											12.0											1					RSFO, TRUCKS 70
	323.99																																
Lt.			WB	G13-320	12-6 x 3-6	XI	XI										43.8												1				RSFO, Trooper James H. Anderson Memorial Highway
	324.00																																
		Rt.	EB	D10-6	1-0 x 4-0	XI	XI	2-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 324
	324.00																																
Lt.			WB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 324
	324.16			M3-4A	2-6 x 1-3	XI	XI									3.1																RSFO
Lt.			WB	M1-1	3-0 x 3-0	XI	XI									7.2																RSFO, I-90
				M3-3	2-0 x 1-0	XI										2.0																RSFO
				M1-4	2-6 x 2-0	XI										5.0											1					RSFO, US 191
	324.30																																
	MED			(2) R4-14	2-6 x 2-0	XI		6-0		4" WOOD POLE		13-6		7-0	3-0	10.0			14								1						Mount back-to-back
	324.47																																
		Rt.	EB	EG-324	7-6 x 5-0	XI	XI	6-0	4-6	S4x7.7		X=12-6 Y=13-3		7-0	3-6		37.5							201		■			1				BBR, EXIT 324
	324.49																																
		Rt.	EB	W8-12B	4-0 x 4-0	XI										16.0											1					RSFO, Hinged, WATCH FOR ICE ON BRIDGE
	324.69																																
Lt.			WB	EG-324	USE AS IS																												EXIT 324
	324.85																																
Lt.			WB	W8-12B	4-0 x 4-0	XI										16.0											1					RSFO, Hinged, WATCH FOR ICE ON BRIDGE
	325.00																																
		Rt.	EB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 325
	325.00																																
Lt.			WB	N7-1	3-0 x 4-0	XI	XI									12.0											1					RSFO

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FY — *= TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.*

* — *= 2 EA. 2½"x2½"x⅜"x6'-4" Angle Iron Required (74 lbs.)*

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	325.00									3.0 LB																							
Lt.			WB	D10-6	1-0 x 4-0	XI	XI	6-0		U POST		12-0		4-0	3-0	4.0									36		1						RP 325
	325.01																																
		Rt.	EB	N7-1	3-0 x 4-0	XI	XI									12.0											1						RSFO
	325.02			W11-3	4-0 x 4-0	XI				3.5" STEEL						16.0																	
		Rt.	EB	W7-3A	2-0 x 1-6	XI		6-0		PIPE		12-11		6-0	3-0	3.0						118				■							NEXT 10 MILES
	325.07			M3-2A	2-6 x 1-3	XI	XI									3.1																	RSFO
		Rt.	EB	M1-1	3-0 x 3-0	XI	XI									7.2																	RSFO, I-90
				M3-1	2-0 x 1-0	XI										2.0																	RSFO
				M1-4	2-6 x 2-0	XI										5.0											1						RSFO, US 191
	325.20																																
	MED			(2) R4-14	2-6 x 2-0	XI										10.0											1						RSFO, Mount back-to-back
	325.25			R2-1	4-0 x 5-0	XI											20.0															RSFO, SPEED LIMIT 80
		Rt.	EB	R2-2	4-0 x 3-0	XI											12.0										1						RSFO, TRUCKS 70
	325.26			E-324	9-0 x 2-6	XI	XI										22.5															*	RSFO, EXIT 324
Lt.			WB	G6-21	15-0 x 5-0	XI	XI										75.0							*74				1					RSFO, RANCH ACCESS 1/2 MILE
	325.44																																
		Rt.	EB	G11-312	12-0 x 5-0	XI	XI										60.0											1					RSFO, Livingston 7; Big Timber 41; Billings 123
	325.69																																
		Rt.	EB	D7-5	USE AS IS			10-0		5" WOOD POLE		15-2		7-0	3-6					16						X	1						
	325.74																																
		Rt.	EB	IS13-2	USE AS IS																												Parking Area 1/2 Mile
	325.92																																
		Rt.	EB	D12-326	7-0 x 4-0	XI	XI	10-0	4-3	S4x7.7		X=13-6 Y=13-11		7-0	3-6		28.0							211		■			1					BBR, Weather Info
	326.00									3.0 LB																							
		Rt.	EB	D10-6	1-0 x 4-0	XI	XI	6-0		U POST		12-0		4-0	3-0	4.0									36		1						RP 326
	326.00									3.0 LB																							
Lt.			WB	D10-6	1-0 x 4-0	XI	XI	6-0		U POST		12-0		4-0	3-0	4.0									36		1						RP 326
	326.17																																
		Rt.	EB	D7-6R	4-0 x 3-0 x 2-6	XI	XI	10-0		5" WOOD POLE		16-4		7-0	3-0	17.0				18						X	1						Historic Point
	326.20									3.5" STEEL																							
		Rt.	EB	W13-2	4-0 x 5-0	XI		6-0		PIPE		11-6		7-0	3-0	20.0						105				■	1				FY		BBR
	326.58																																
Lt.			WB	IS12-12	6-0 x 3-6	XI	XI									21.0													1					RSFO, Chain Up Area
	327.00									3.0 LB																							
		Rt.	EB	D10-6	1-0 x 4-0	XI	XI	6-0		U POST		12-0		4-0	3-0	4.0									36		1						RP 327

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-FOR STRUCURAL STEEL SEE DETAILED DRAWING 619-13.
-FOR METAL POLE SEE DETAILED DRAWING 619-12.

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.

* = 2 EA. 2½"x2½"x¾"x6'-4" Angle Iron Required (74 lbs.)

SANDERSON STEWART

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SIGN LOCATION AND SPECIFICATION

Lt.	STATION / RP	Rt.	RAMP NO.	SIGN NO.	PANEL SIZE	REFL SHTG BACK- GRND	REFL SHTG 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 XI	SIGN PANEL (SQ. FT.) ALUM. SHEET INCREMENT XI	SIGN PANEL (SQ. FT.) ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.) 4" TOP DIA.	TIMBER POLE (LINEAR FT.) 5" TOP DIA.	TIMBER POLE (LINEAR FT.) 6" 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	ANGLE IRON	REMARKS
Lt.	327.00		WB	N7-1	USE AS IS																												
Lt.	327.00		WB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 327
	327.01	Rt.	EB	N7-1	USE AS IS																												
	327.15 MED			(2) R4-14	2-6 x 2-0	XI										5.0											1						RSFO
	327.15 MED			R4-14	2-6 x 2-0	XI										5.0											1						RSFO
	327.89	Rt.	EB	W8-12B	4-0 x 4-0	XI										16.0											1						RSFO, Hinged, WATCH FOR ICE ON BRIDGE
	328.00	Rt.	EB	D10-6	1-0 x 4-0	XI	XI	2-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 328
Lt.	328.00		WB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36								RP 328
Lt.	328.16		WB	W8-12B	4-0 x 4-0	XI										16.0											1						RSFO, Hinged, WATCH FOR ICE ON BRIDGE
	328.20	Rt.	EB	W23-1	REUSE			10-0		3.5" STEEL PIPE		13-2		7-0	3-0							120				■	1						BBR, GUSTY CROSSWINDS
	329.00	Rt.	EB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 329
	329.00	Rt.	EB	N7-1	3-0 x 4-0	XI	XI	10-0		3.5" STEEL PIPE		14-0		7-0	3-0	12.0						128				■	1						
Lt.	329.00		WB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 329
Lt.	329.00		WB	N7-1	3-0 x 4-0	XI	XI									12.0											1						
	329.13 MED		EB	R4-14	2-6 x 2-0	XI										5.0											1						RSFO
	329.15 MED		WB	R4-14	2-6 x 2-0	XI										5.0											1						RSFO
	329.20	Rt.	EB	E9-4	12-6 x 5-0	XI	XI										62.5												1				RSFO, LIVINGSTON NEXT 3 EXITS
	329.34	Rt.	EB	CUSTOM	USE AS IS																												ROAD CLOSED USE EXIT 330

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FY — *= TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.*

✳ — *= 2 EA. 2½"x2½"x⅜"x6'-4" Angle Iron Required (74 lbs.)*

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AWARD COPY

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	329.34 MED		EB	CUSTOM	USE AS IS																												ROAD CLOSED USE EXIT 330
	329.52	Rt.	EB	G7-329	USE AS IS																												CITY CENTER EXIT 330
	329.74 MED		EB	W23-1	REUSE			6-0		3.5" STEEL PIPE		12-6		7-0	3-0							114				■							Hinged, ROAD CLOSED 1 MILE
	329.74	Rt.	EB	W23-1	REUSE			6-0		3.5" STEEL PIPE		12-8		7-0	3-0							115				■							Hinged, ROAD CLOSED 1 MILE
Lt.	329.80		WB	W11-3	4-0 x 4-0	XI		6-0		3.5" STEEL PIPE		12-11		6-0	3-0	16.0						118				■							
	329.81	Rt.	EB	E-330 G2-20 G30-239	USE AS IS USE AS IS USE AS IS																												EXIT 330 Livingston 1 Mile Historic District
	330.00	Rt.	EB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 330
Lt.	330.00		WB	D10-6	1-0 x 4-0	XI	XI	6-0		3.0 LB U POST		12-0		4-0	3-0	4.0									36		1						RP 330
	330.01	Rt.	EB	N7-1 N7-1P	USE AS IS USE AS IS																												Park County Democrats
Lt.	330.07		WB	W8-10C	4-0 x 4-0	XI										16.0											1					RSFO, ICY ROAD
	330.07 MED		WB	W8-10C	4-0 x 4-0	XI										16.0											1					RSFO, ICY ROAD
	330.09 MED			(2) R4-14	2-6 x 2-0	XI										10.0											1					RSFO, Mount back-to-back
	330.09	Rt.	EB	W8-10C	4-0 x 4-0	XI										16.0											1					RSFO, ICY ROAD
	330.09 MED		EB	W8-10C	4-0 x 4-0	XI										16.0											1					RSFO, ICY ROAD
	330.14	Rt.	EB	W23-1	USE AS IS																												Hinged, ROAD CLOSED 1/2 MILE
	330.14 MED		EB	W23-1	USE AS IS																												Hinged, ROAD CLOSED 1/2 MILE
	331.50	Rt.	EB	W11-3	4-0 x 4-0	XI		6-0		3.5" STEEL PIPE		13-3		6-0	3-0	16.0						121				■							
Lt.	332.80		WB	W11-3	4-0 x 4-0	XI		2-0		3.5" STEEL PIPE		12-4		6-0	3-0	16.0						112				■							

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SIGN LOCATION AND SPECIFICATION

Lt.	STATION / RP	Rt.	RAMP NO.	SIGN NO.	PANEL SIZE	REFL SHTG BACK- GRND	REFL SHTG 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 XI	SIGN PANEL (SQ. FT.) ALUM. SHEET INCREMENT XI	SIGN PANEL (SQ. FT.) ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.) 4" TOP DIA.	TIMBER POLE (LINEAR FT.) 5" TOP DIA.	TIMBER POLE (LINEAR FT.) 6" 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	ANGLE IRON	REMARKS
	333.30	Rt.	EB	W11-3	4-0 x 4-0	XI		2-0		3.5" STEEL PIPE		12-6		6-0	3-0	16.0						114				■							
	334.90		WB	W11-3 W7-3A	4-0 x 4-0 2-0 x 1-6	XI XI		6-0		4" STEEL PIPE		13-9		6-0	3-0	16.0 3.0						148				■							NEXT 10 MILES
I-90 OFF-RAMPS																																	
	319.53	Rt.	A	W3-1A	4-0 x 4-0	XI		6-0		3.5" STEEL PIPE		12-6		7-0	3.0	16.0						114				■	1						BBR
	319.58																																
Lt.			A	R5-1A	3-6 x 2-6	XI	XI									8.8											1						RSFO
	319.58	Rt.	A	R5-1A	3-6 x 2-6	XI	XI	10-0		4" WOOD POLE		11-5		5-0	3-0	8.8			12														
	319.60	Rt.	A	GS8-55	11-0 x 4-0	XI	XI	10-0	6-7	S5x10		X=12-10 Y=14-4		7-0	3-6		44.0							272		■			1				Jackson Cr Rd Left; No Services
	319.64	Rt.	A	LA-2	2-0 x 1-0	XI		6-0		2.0 LB U POST		10-8		5-0	3-0	2.0									21		1						RSFO
	319.66	Rt.	A	R1-1	4-0 x 4-0	XI	XI									13.3											1						RSFO
Lt.	319.67		C	R1-1	4-0 x 4-0	XI	XI									13.3											1						RSFO
Lt.	319.69		C	LA-2	2-0 x 1-0	XI										2.0											1						RSFO
Lt.	319.74		C	GS8-56	11-0 x 4-0	XI	XI	10-0	6-7	S5x10		X=12-10 Y=14-4		7-0	3-6		44.0							272		■			1				Jackson Cr Rd Right; No Services
Lt.	319.77		C	R5-1A	3-6 x 2-6	XI	XI									8.8											1						RSFO
	319.77	Rt.	C	R5-1A	3-6 x 2-6	XI	XI	10-0		4" WOOD POLE		11-5		5-0	3-0	8.8			12														
	319.80	Rt.	C	W3-1A	4-0 x 4-0	XI										16.0											1						RSFO
	324.48	Rt.	A	W3-1A	4-0 x 4-0	XI										16.0											1						RSFO
	324.51	Rt.	A	R5-1A	3-6 x 2-6	XI	XI									8.8											1						RSFO
Lt.	324.51		A	R5-1A	3-6 x 2-6	XI	XI									8.8											1						RSFO
	324.53	Rt.	A	IS8-1	9-0 x 2-0	XI	XI										18.0												1				RSFO, No Services

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

RSFO = REPLACE SIGN FACE ONLY
BBR = BACKBRACING REQUIRED

X — STANDARD BREAKAWAY DEVICE:
-FOR WOOD POST SEE DETAILED DRAWING 619-20.

■ — FRANGIBLE SIGN POST BREAKAWAY DEVICE REQUIRED.
-FOR STRUCURAL STEEL SEE DETAILED DRAWING 619-13.
-FOR METAL POLE SEE DETAILED DRAWING 619-12.

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.

✳ = 2 EA. 2½"x2½"x⅜"x6'-4" Angle Iron Required (74 lbs.)

SANDERSON STEWART

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	324.57																																
		Rt.	A	LA-2	2-0 x 1-0	XI										2.0											1						RSFO
	324.59																																
		Rt.	A	R1-1	4-0 x 4-0	XI	XI									13.3											1						RSFO
	324.62																																
Lt.			C	R1-1	USE AS IS																												
	324.63																																
Lt.			C	LA-2	2-0 x 1-0	XI										2.0											1						RSFO
	324.67																																
		Rt.	C	R5-1A	3-6 x 2-6	XI	XI									8.8											1						RSFO
	324.67																																
		Rt.	C	R5-1A	3-6 x 2-6	XI	XI									8.8											1						RSFO
	324.67																																
Lt.			C	R5-1A	3-6 x 2-6	XI	XI									8.8											1						RSFO
	324.67																																
Lt.			C	IS8-1	9-0 x 2-0	XI	XI										18.0													1				RSFO, No Services
Lt.	324.69		C	W3-1A	4-0 x 4-0	XI										16.0											1						RSFO
Lt.	326.31		A	IS15-2	6-6 x 6-6	XI	XI										42.3												1				RSFO, Parking Area
	326.32																																
		Rt.	A	R5-1A	3-6 x 2-6	XI	XI									8.8											1						RSFO
	326.38			TRK D4-2	4-0 x 4-0	XI	XI									16.0																	
		Rt.	A	R5-15	2-0 x 1-6	XI										3.0											1						RSFO
	326.49																																
		Rt.	A	R5-1	3-0 x 3-0	XI	XI									9.0											1						RSFO
	326.49																																
Lt.			A	R5-1	3-0 x 3-0	XI	XI									9.0											1						RSFO
I-90 ON-RAMPS																																	
Lt.	319.64		B	LA-1	2-0 x 1-0	XI		6-0		2.0 LB U POST		11-2		5-0	3-0	2.0									23		1						
Lt.	319.64		B	D13-3	4-0 x 2-6	XI	XI										10.0												1				RSFO
	319.69																																
		Rt.	D	D13-3	4-0 x 2-6	XI	XI										10.0												1				RSFO

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FY — *= TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.*

✳ — *= 2 EA. 2½"x2½"x⅜"x6'-4" Angle Iron Required (74 lbs.)*

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	319.69	Rt.	D	LA-1	2-0 x 1-0	XI										2.0											1						RSFO
Lt.	324.59		B	LA-1	2-0 x 1-0	XI										2.0											1						RSFO
Lt.	324.59		B	D13-3	4-0 x 2-6	XI	XI										10.0												1				RSFO
	324.62	Rt.	D	D13-3	4-0 x 2-6	XI	XI										10.0												1				RSFO
	324.62	Rt.	D	LA-1	2-0 x 1-0	XI										2.0											1						RSFO
JACKSON CREEK RD[1]																																	
	0.00	Rt.		G8-14	9-6 x 4-0	XI	XI	25-0	5-8	S4x7.7		X = 13-0 Y = 13-0		7-0	3-6		38.0							200		■			1				LEFT Frontage Rd; No Services
	0.02	Rt.		R3-2B	3-0 x 4-0	XI		10-0		5" WOOD POLE		13-7		5-0	3-6	12.0				14						X	1						
	0.04			R6-1R	3-0 x 1-0	XI										3.0																	
Lt.				R6-1L	3-0 x 1-0	XI										3.0																	
				R5-1	3-0 x 3-0	XI	XI	10-0		5" WOOD POLE		13-7		5-0	3-6	9.0				14						X	1						Mount on Back
	0.04			R6-1L	3-0 x 1-0	XI										3.0																	
Lt.				R6-1R	3-0 x 1-0	XI										3.0																	
				R5-1	3-0 x 3-0	XI	XI	10-0		5" WOOD POLE		13-7		5-0	3-6	9.0				14						X	1						Mount on Back
	0.05	Rt.		G9-56	7-6 x 4-0	XI	XI	10-0	4-6	S4x7.7		X = 11-4 Y = 12-2		7-0	3-6		30.0							180		■			1				Butte Straight Billings Right
	0.05									5" WOOD																							
Lt.				R3-1B	3-0 x 4-0	XI		10-0		POLE		13-6		5-0	3-6	12.0				14						X	1						
	0.06			M3-4A	2-0 x 1-0	XI	XI									2.0																	BBR
		Rt.		M3-2A	2-0 x 1-0	XI	XI									2.0																	BBR
				M1-1	2-0 x 2-0	XI	XI									3.2																	BBR, I-90
				M1-1	2-0 x 2-0	XI	XI									3.2																	BBR, I-90
				M6-3A	1-9 x 1-3	XI	XI									2.2																	BBR
				M6-1AR	1-9 x 1-3	XI	XI									2.2																	BBR
				M3-2A	2-0 x 1-0	XI	XI									2.0																	BBR, Mount on Back
				M1-1	2-0 x 2-0	XI	XI									3.2																	BBR, I-90, Mount on Back
				M6-1AL	1-9 x 1-3	XI	XI	10-0		3.5" STEEL PIPE		12-9		5-0	3-0	2.2						116				■	1						BBR, Mount on Back
	0.07																																
Lt.				G8-53	7-6 x 2-0	XI	XI										15.0												1				RSFO, Left Billings
	0.08	Rt.		G8-19	6-0 x 2-0	XI	XI										12.0												1				RSFO, Left Butte

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NOTE:
1. JACKSON CREEK RD REFERENCE POSTS BEGIN AT RP 0.00 AT THE INTERSECTION OF JACKSON CREEK RD AND WEST BOZEMAN HILL RD/US HWY 10 WEST AND INCREASE TO THE NORTH.

SANDERSON STEWART

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	0.11			M3-2A	2-0 x 1-0	XI	XI									2.0																		BBR
Lt.				M3-4A	2-0 x 1-0	XI	XI									2.0																		BBR
				M1-1	2-0 x 2-0	XI	XI									3.2																		BBR, I-90
				M1-1	2-0 x 2-0	XI	XI									3.2																		BBR, I-90
				M6-3A	1-9 x 1-3	XI	XI									2.2																		BBR
				M6-1AR	1-9 x 1-3	XI	XI									2.2																		BBR
				M3-4A	2-0 x 1-0	XI	XI									2.0																		BBR, Mount on Back
				M1-1	2-0 x 2-0	XI	XI									3.2																		BBR, I-90, Mount on Back
				M6-1AL	1-9 x 1-3	XI	XI			3.5" STEEL						2.2																		BBR, Mount on Back
								10-0		PIPE		13-4		5-0	3-0							122				■	1						
	0.12									5" WOOD																								
		Rt.		R3-1B	3-0 x 4-0	XI		10-0		POLE		13-6		5-0	3-6	12.0				14						X	1							
	0.12			R6-1R	3-0 x 1-0	XI										3.0																		
		Rt.		R6-1L	3-0 x 1-0	XI										3.0																		Mount on Back
				R5-1	3-0 x 3-0	XI	XI			5" WOOD						9.0																		
								10-0		POLE		13-6		5-0	3-6					14						X	1							
	0.13			R6-1R	3-0 x 1-0	XI										3.0																		
		Rt.		R6-1L	3-0 x 1-0	XI										3.0																		Mount on Back
				R5-1	3-0 x 3-0	XI	XI			5" WOOD						9.0																		
								10-0		POLE		13-6		5-0	3-6					14						X	1							
	0.14									5" WOOD																								
Lt.				R3-2B	3-0 x 4-0	XI		10-0		POLE		13-6		5-0	3-6	12.0				14						X	1							
	0.17									4" WOOD																								
		Rt.		R2-1	2-0 x 2-6	XI		10-0		POLE		13-6		7-0	3-0	5.0				14														SPEED LIMIT 35
	0.18																																	
		Rt.		G13-57	9-0 x 2-0	XI	XI										18.0														1			RSFO, BRIDGER RD 8
	0.18											X = 11-10																					
Lt.				G9-57	7-6 x 4-0	XI	XI	10-0	4-6	S4x7.7		Y = 12-7		7-0	3-6		30.0							188		■			1				BILLINGS STRAIGHT BUTTE RIGHT
FLYNN CREEK RD[1]																																	
	0.00																																	
		Rt.		G8-58	10-0 x 2-0	XI	XI										20.0														1			RSFO, LEFT COKEDALE RD
	0.00																																	
		Rt.		G13-10	8-0 x 3-0	XI	XI										24.0														1			RSFO, FRONTAGE RD BOTH WAYS
	0.01																																	
Lt.				R1-1	USE AS IS																													
	0.01																																	
Lt.				D3-324	USE AS IS																													FLYNN CREEK RD
	0.02									5" WOOD																								
		Rt.		R3-2B	3-0 x 4-0	XI		10-0		POLE		13-6		5-0	3-6	12.0				14						X	1							
	0.02			R6-1R	3-0 x 1-0	XI										3.0																		
Lt.				R6-1L	3-0 x 1-0	XI										3.0																		Mount on Back
				R5-1	3-0 x 3-0	XI	XI			5" WOOD						9.0																		
								10-0		POLE		13-1		5-0	3-6					14						X	1							

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	0.03			M3-4A	2-0 x 1-0	XI	XI									2.0																		BBR
		Rt.		M3-2A	2-0 x 1-0	XI	XI									2.0																		BBR
				M1-1	2-0 x 2-0	XI	XI									3.2																		BBR, I-90
				M1-1	2-0 x 2-0	XI	XI									3.2																		BBR, I-90
				M6-3A	1-9 x 1-3	XI	XI									2.2																		BBR
				M6-1AR	1-9 x 1-3	XI	XI									2.2																		BBR
				M3-2A	2-0 x 1-0	XI	XI									2.0																		BBR, Mount on Back
				M1-1	2-0 x 2-0	XI	XI									3.2																		BBR, I-90, Mount on Back
				M6-1AL	1-9 x 1-3	XI	XI	10-0		3.5" STEEL PIPE		12-9		5-0	3-0	2.2						116				■	1							BBR, Mount on Back
	0.03			G9-56	7-6 x 4-0	XI	XI	10-0	4-6	S4x7.7		X = 11 8 Y = 12-6		7-0	3-6		30.0							186		■	1							Butte Straight Billings Right
	0.03			R6-1R	3-0 x 1-0	XI										3.0																		
Lt.				R6-1L	3-0 x 1-0	XI										3.0																		Mount on Back
				R5-1	3-0 x 3-0	XI	XI	10-0		5" WOOD POLE		13-10		5-0	3-6	9.0				14						X	1							
	0.03			R3-1B	3-0 x 4-0	XI		10-0		5" WOOD POLE		13-6		5-0	3-6	12.0				14						X	1							
Lt.																																		
	0.06			G8-53	7-6 x 2-0	XI	XI										15.0												1					RSFO, Left Billings
Lt.																																		
	0.07			G8-19	6-0 x 2-0	XI	XI										12.0												1					RSFO, Left Butte
		Rt.																																
	0.09			R3-1B	3-0 x 4-0	XI		10-0		5" WOOD POLE		13-6		5-0	3-6	12.0				14						X	1							
		Rt.																																
	0.10			R6-1L	3-0 x 1-0	XI										3.0																		
		Rt.		R6-1R	3-0 x 1-0	XI										3.0																		Mount on Back
				R5-1	3-0 x 3-0	XI	XI	10-0		5" WOOD POLE		13-8		5-0	3-6	9.0				14						X	1							
	0.10			M3-2A	2-0 x 1-0	XI	XI									2.0																		BBR
Lt.				M3-4A	2-0 x 1-0	XI	XI									2.0																		BBR
				M1-1	2-0 x 2-0	XI	XI									3.2																		BBR, I-90
				M1-1	2-0 x 2-0	XI	XI									3.2																		BBR, I-90
				M6-3A	1-9 x 1-3	XI	XI									2.2																		BBR
				M6-1AR	1-9 x 1-3	XI	XI									2.2																		BBR
				M3-4A	2-0 x 1-0	XI	XI									2.0																		BBR, Mount on Back
				M1-1	2-0 x 2-0	XI	XI									3.2																		BBR, I-90, Mount on Back
				M6-1AL	1-9 x 1-3	XI	XI	10-0		3.5" STEEL PIPE		13-4		5-4	3-0	2.2						122				■	1							BBR, Mount on Back
	0.11			R6-1R	3-0 x 1-0	XI										3.0																		
		Rt.		R6-1L	3-0 x 1-0	XI										3.0																		Mount on Back
				R5-1	3-0 x 3-0	XI	XI	10-0		5" WOOD POLE		13-8		5-0	3-6	9.0				14						X	1							
	0.12			R3-2B	3-0 x 4-0	XI		10-0		5" WOOD POLE		13-6		5-0	3-6	12.0				14						X	1							
Lt.																																		
												TOTALS				1,271.5	1,844.3		52	354		2,136		3,022	872		112		43					

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

RSFO = REPLACE SIGN FACE ONLY
BBR = BACKBRACING REQUIRED

X — *STANDARD BREAKAWAY DEVICE: -FOR WOOD POST SEE DETAILED DRAWING 619-20.*

■ — *FRANGIBLE SIGN POST BREAKAWAY DEVICE REQUIRED. -FOR STRUCURAL STEEL SEE DETAILED DRAWING 619-13. -FOR METAL POLE SEE DETAILED DRAWING 619-12.*

FY — *= TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.*

✳ — *= 2 EA. 2½"x2½"x¾"x6'-4" Angle Iron Required (74 lbs.)*

DELINEATOR LEGEND

⊣	DELINEATOR DES "A"	320
⊣⊢	DELINEATOR DES "B"	100
⊢⊣	DELINEATOR DES "D"	8
⊣<	DELINEATOR DES "G"	44
⊣>	DELINEATOR DES "H"	153
×⊣⊢	DELINEATOR DES "BJ"	77
×⊣<	DELINEATOR DES "GJ"	43
⊢	PANEL DELINEATOR DESIGN "D"	8
⊣>	PANEL DELINEATOR DESIGN "G"	71
×⊣	PANEL DELINEATOR DESIGN "H"	303
⊢⊣⊢	DELINEATOR SNOWPOLE-DES "A"	180

NOTE:
1. FLYNN CREEK RD REFERENCE POSTS BEGIN AT RP 0.00 AT THE INTERSECTION OF FLYNN CREEK RD AND WEST BOZEMAN HILL RD/US HWY 10 WEST AND INCREASE TO THE NORTH.

SANDERSON STEWART

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DETAILS

SNOWPOLE DELINEATOR DETAIL

FIELD INSTALLATION

1. INSTALL A ⅜" THICK x 1¼" WIDE x 6' LONG SNOWPOLE EXTENSION IN THE METAL U-CHANNEL AS SHOWN. FASTEN THE EXTENSION WITH ONE ¼" x 3" BOLT AND ONE ¼" x 1" BOLT 12" BELOW THE TOP OF THE METAL U-CHANNEL AS SHOWN.

2. ATTACH TWO REFLECTORS TO THE TOP OF THE EXTENSION AS SHOWN. ATTACH TWO REFLECTORS TO THE METAL U-CHANNEL AS SHOWN.

A ¼" x 1" BOLT - 2 REQUIRED

B ¼" x 3" BOLT - 1 REQUIRED

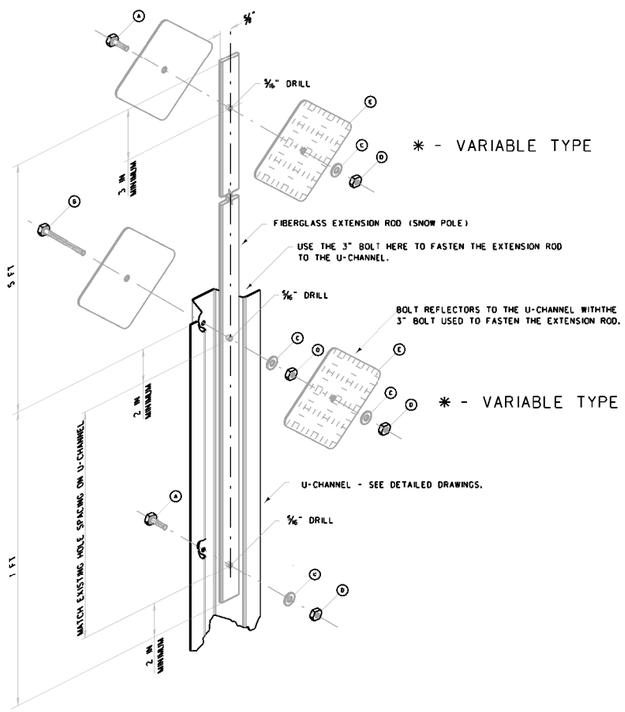
C ⅜" FLAT WASHER - 4 REQUIRED

D ¼" HEX NUT - 4 REQUIRED

E REFLECTOR - 2 OR 4 REQUIRED

* = MATCH SNOWPOLE DELINEATOR WITH ROADWAY DELINEATOR. REFER TO DETAIL DRAWING 619-34/36 FOR TYPE

DETAIL SHOWN IS BID AS ONE UNIT (INCLUDES SNOWPOLE, STEEL U-POST & DELINEATORS)



NOTES:

POSITION DELINEATOR FACES PERPENDICULAR TO THE TANGENT TO CURVE CENTERLINE.

PLACE DELINEATORS AT A CONSTANT CLEARANCE DISTANCE FROM THE EDGE OF THE PAVEMENT EXCEPT WHERE GUARDRAIL OR OTHER OBSTRUCTIONS INTERFERE.
ALIGN THE DELINEATORS WITH THE INSIDE EDGE OF THE OBSTRUCTION.
CLEARANCE FOR DELINEATORS IS 6'-0" ON INTERSTATE HIGHWAYS, 4'-0" ON PRIMARY AND SECONDARY HIGHWAYS OR AS DETERMINED BY THE ENGINEER.
THE STANDARD MOUNTING HEIGHT IS 4'-0" TO THE TOP OF THE POST. SUPPLY POST LENGTHS TO MAINTAIN THE PROPER MOUNTING HEIGHT AND A MINIMUM OF 18" EMBEDMENT.

SPACE DELINEATORS ACCORDING TO DETAILED DRAWING 619-36.
UNDER NORMAL SPACING, SHOULD A DELINEATOR FALL WITHIN A CROSSROAD OR APPROACH, IT MAY BE MOVED IN EITHER DIRECTION A DISTANCE NOT TO EXCEED ONE QUARTER OF THE NORMAL SPACING. ELIMINATE DELINEATORS STILL FALLING IN SUCHAREAS.

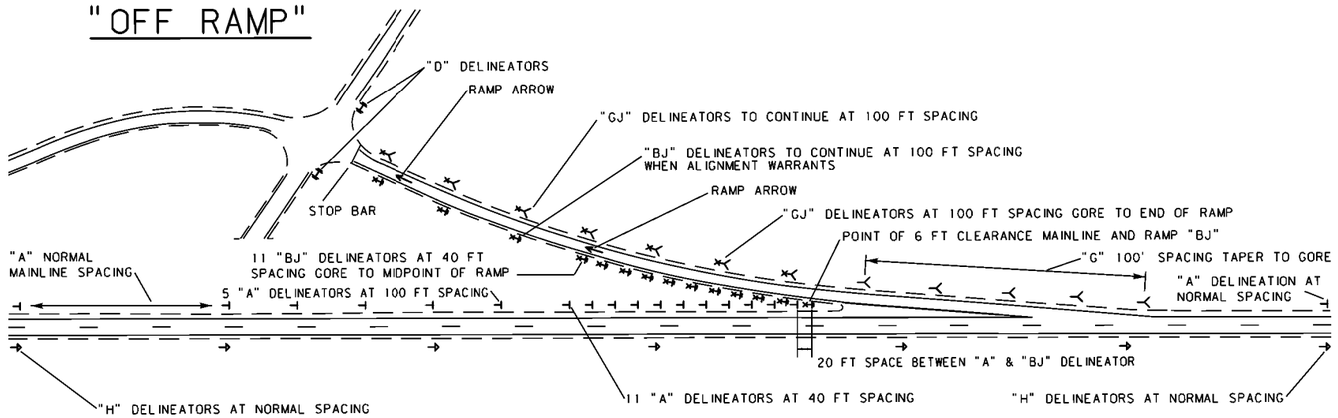
SANDERSON STEWART

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DETAILS

NEW RAMP DELINEATION DETAIL

"OFF RAMP"

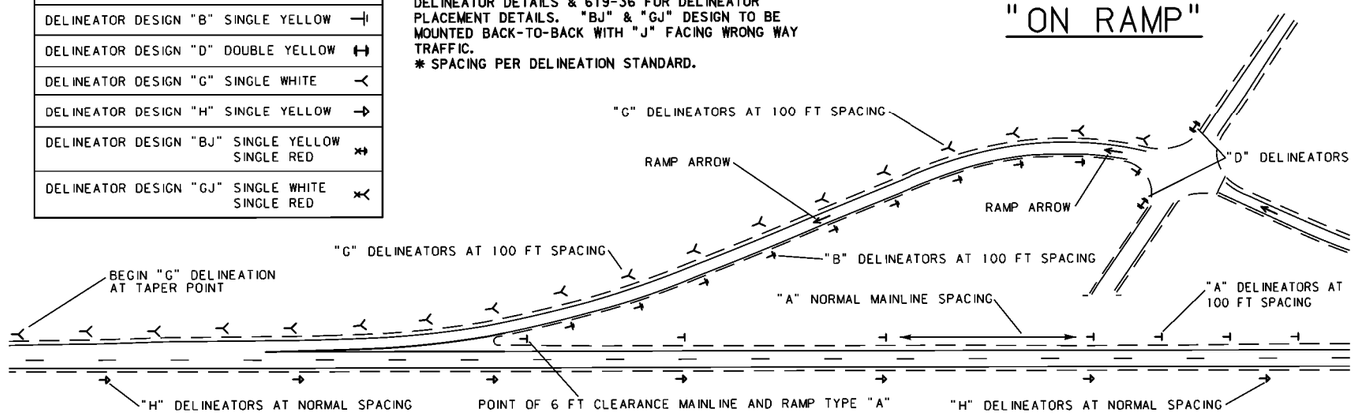


LEGEND

DELINEATOR DESIGN "A" SINGLE WHITE	⊣
DELINEATOR DESIGN "B" SINGLE YELLOW	⊣
DELINEATOR DESIGN "D" DOUBLE YELLOW	⊣⊢
DELINEATOR DESIGN "G" SINGLE WHITE	≺
DELINEATOR DESIGN "H" SINGLE YELLOW	⊣
DELINEATOR DESIGN "BJ" SINGLE YELLOW SINGLE RED	⊣
DELINEATOR DESIGN "GJ" SINGLE WHITE SINGLE RED	≺

NOTE:
ALL DELINEATORS AT 6 FT CLEARANCE FROM EDGE OF PAVEMENT. SEE DETAILED DRAWING 619-34 FOR DELINEATOR DETAILS & 619-36 FOR DELINEATOR PLACEMENT DETAILS. "BJ" & "GJ" DESIGN TO BE MOUNTED BACK-TO-BACK WITH "J" FACING WRONG WAY TRAFFIC.
*** SPACING PER DELINEATION STANDARD.**

"ON RAMP"



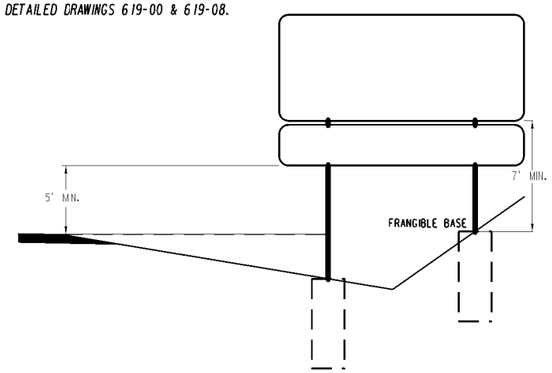
SANDERSON STEWART

3	MONTANA Department of Transportation	...\9467000\SI\9467000SIDET01.dgn	DESIGNED BY R.TEIXEIRA	9/2023	SIGNING PLANS	BOZEMAN HILL - EAST	IM 90-6(151)319
2		4/29/2024	CHECKED BY J.STASZCUK	9/2023			
1		4:30:00 PM rteixeira	REVIEWED BY R.SCHROEDER	9/2023	GALLATIN & PARK COUNTIES	UPN 9467000	S15

DocuSign Envelope ID: A76F5FAD-FCC7-48D5-A048-F3ED5B88092C

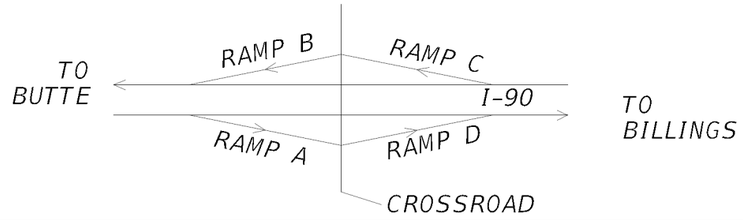
DETAILS

MINIMUM MOUNTING HEIGHTS SHOWN IN LOCATION AND SPECIFICATION SHEETS REFER TO THE BOTTOM OF THE MAJOR PANEL. MOUNTING HEIGHTS WILL INCREASE WITH ADDITIONAL PANELS.
SEE DETAILED DRAWINGS 619-00 & 619-08.

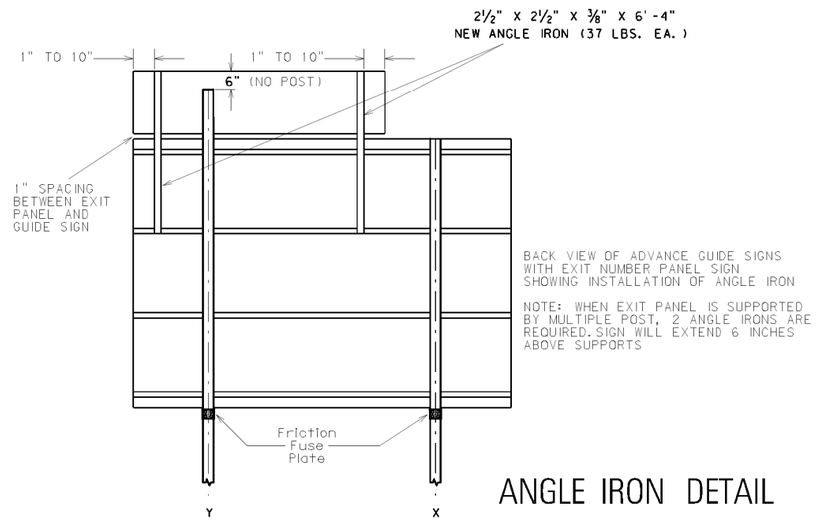


GUIDE SIGN MOUNTING HEIGHT DETAIL

TYPICAL RAMP LAYOUT



R.S.F.O. GUIDE SIGNS with EXIT PANELS



BACK VIEW OF ADVANCE GUIDE SIGNS WITH EXIT NUMBER PANEL SIGN SHOWING INSTALLATION OF ANGLE IRON

NOTE: WHEN EXIT PANEL IS SUPPORTED BY MULTIPLE POST, 2 ANGLE IRONS ARE REQUIRED. SIGN WILL EXTEND 6 INCHES ABOVE SUPPORTS

ANGLE IRON DETAIL

SANDERSON STEWART

3	MONTANA Department of Transportation	...\9467000\SI\9467000SIDET01.DGN	DESIGNED BY	R.TEIXEIRA	9/2023	SIGNING PLANS	BOZEMAN HILL - EAST	IM 90-6(151)319
2		4/29/2024	CHECKED BY	J.STASZCUK	9/2023			
1		4:30:07 PM rteixeira	REVIEWED BY	R.SCHROEDER	9/2023	GALLATIN & PARK COUNTIES	UPN 9467000	S16

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AWARD COPY

ASSOCIATED PROJECT AGREEMENT NUMBERS	
P.E.	IM 90-6(150)319

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS AND QUANTITIES

FEDERAL AID PROJECT IM 90-6(151)319

BOZEMAN HILL - EAST

PARK COUNTY

BRIDGE IDENTIFICATION	
MDT STR ID	NBI NUMBER
01614	I00090324+06051
01615	I00090324+06052
01616	I00090328+00291
01617	I00090328+00292

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	28467	LIST OF DRAWING AND BRIDGE PLAN QUANTITIES
B2	28468	GENERAL NOTES AND BRIDGE DECK REPAIR
B3	28469	REVISE CONCRETE BARRIER END - BR
B4	28470	REVISE CONCRETE BARRIER END - BR DETAILS

ESTIMATED BRIDGE PLAN QUANTITIES

MDT STR ID	FEATURE INTERSECTED	GENERAL LAYOUT DRAWING NUMBER	BRIDGE DECK CRACK SEAL (YD²)	CLASS A BRIDGE DECK REPAIR (YD²)	CLASS B BRIDGE DECK REPAIR (YD²)	REVISE CONCRETE BARRIER RAIL END - BR (EACH)
01614	INT HOPPER	11427	568.7	3.1		
01615	INT HOPPER	11427	568.7	0.4		
01616	OREA CREEK ROAD	11434	363.0	4.7		4.0
01617	OREA CREEK ROAD	11434	362.5	0.3		4.0
		PROJECT TOTAL	1862.9	8.5	5.0	8.0

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

SHEET NO.
B1

LIST OF DRAWING AND BRIDGE PLAN QUANTITIES

REVISED	REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED
				A.E.K	D.G.G.	T.E.W.
				10-30-23	5-24-24	5-23-23

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MONTANA Department of Transportation
BRIDGE BUREAU

11/30/2023 8:39:35 AM

UPN NUMBER
9467000

DRAWING NO.
28467

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

- 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	1 ½"

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.

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

- Minimum Lap Splice Length:
  #4E = 35"
  #5E = 44"

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.

MATERIALS:

- Standard Specifications, Division 700 - Materials controls unless specified otherwise.

- Heavy Hex Nuts: ASTM A563, Grade DH.

- Pipe sleeves: ASTM A53, Grade B

- Hex Nut: ASTM A563, Grade A / Flat Washer: ASTM F844.

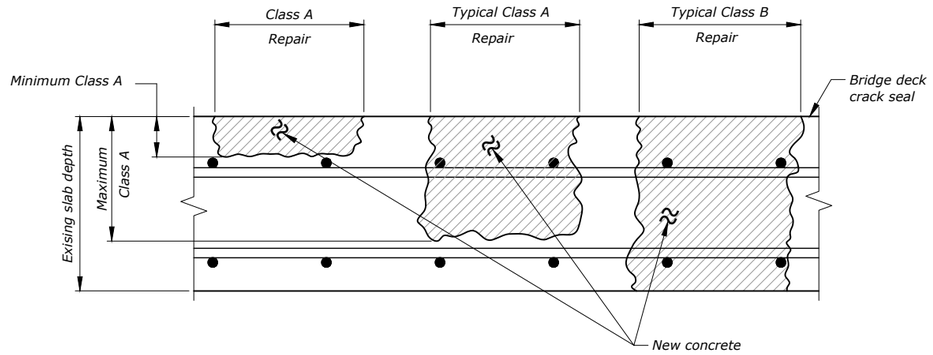
SURFACE FINISHES:

- Galvanize all bolts, nuts, washers, and pipe sleeves in accordance with ASTM F2329.

- Rail posts, structural tubing, and plates must be either painted in accordance with the Standard Specifications or Galvanized per AASHTO M 111. Remove burrs and high spots from around all holes before applying the surface finish.

BRIDGE RAIL FABRICATION & CONSTRUCTION:

- Shop drawing approval from the Department of Transportation must be received before beginning fabrication.



BRIDGE DECK REPAIR AND CRACK SEAL
No Scale
(01614, 01615 01616, 01617)

BRIDGE WIDTH TABLE

MDT STRUCTURE ID	FACE OF BARRIER TO FACE OF BARRIER
01614	41'-2"
01615	41'-2"
01616	41'-2"
01617	41'-2"

NOTE: See Road Plans for Temporary/Reset Temporary Barrier Rail quantities.

SHEET NO.
B2

GENERAL NOTES AND BRIDGE DECK REPAIR

SCALE: No Scale

PROJECT NAME
BOZEMAN HILL - EAST

MDT STRUCTURE ID
AS SHOWN

FEDERAL AID PROJECT
IM 90-6(151)319

COUNTY
PARK

REVISED	C'HECKED	10-3-23
REVISED	DRAWN	5-24-23
REVISED	DESIGNED	5-23-24
REVISED		

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MONTANA
Department of Transportation
BRIDGE BUREAU

11/30/2023 8:39:36 AM

UPN NUMBER
9467000

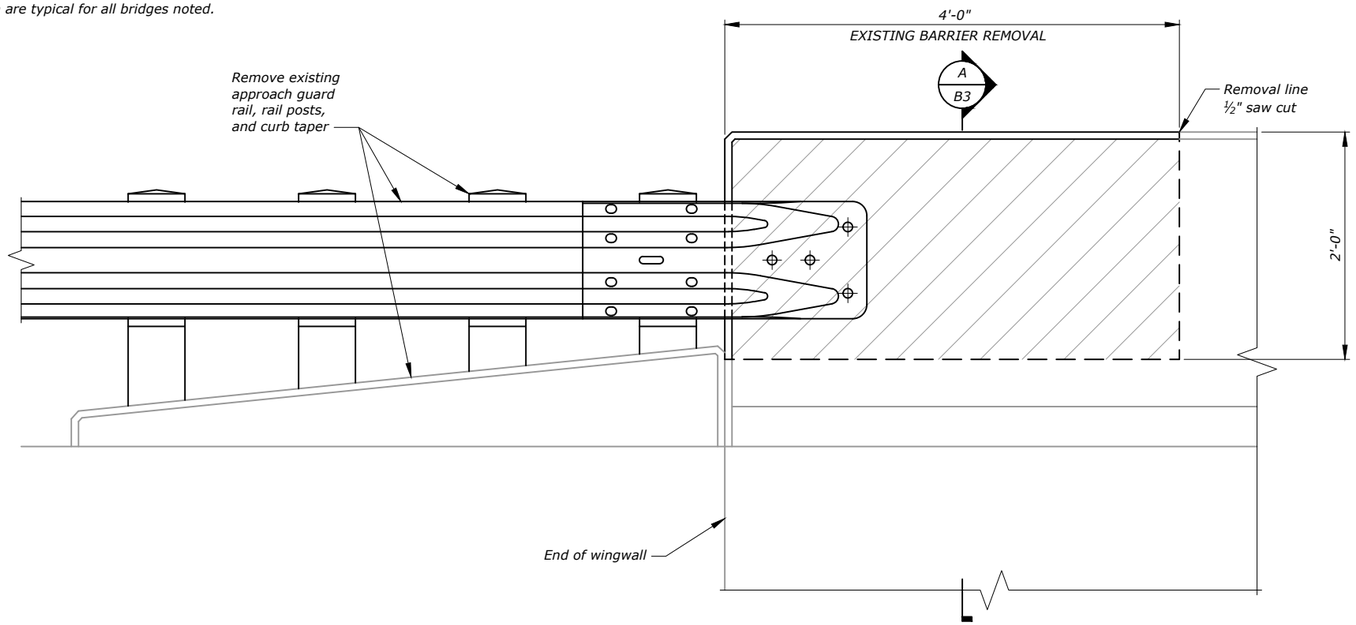
DRAWING NO.
28468

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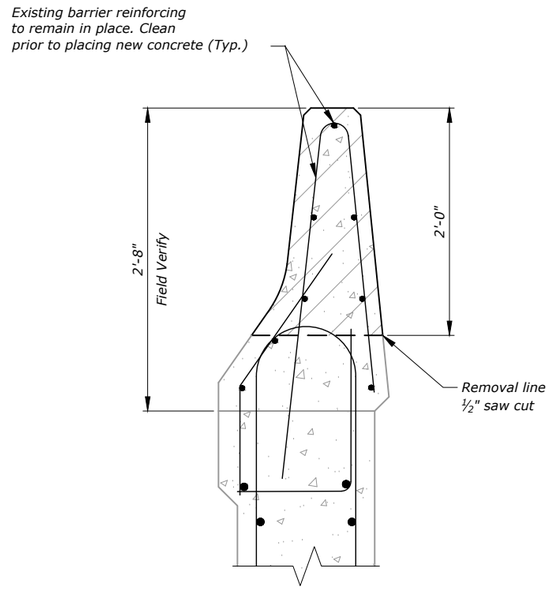
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SHEET NOTES:

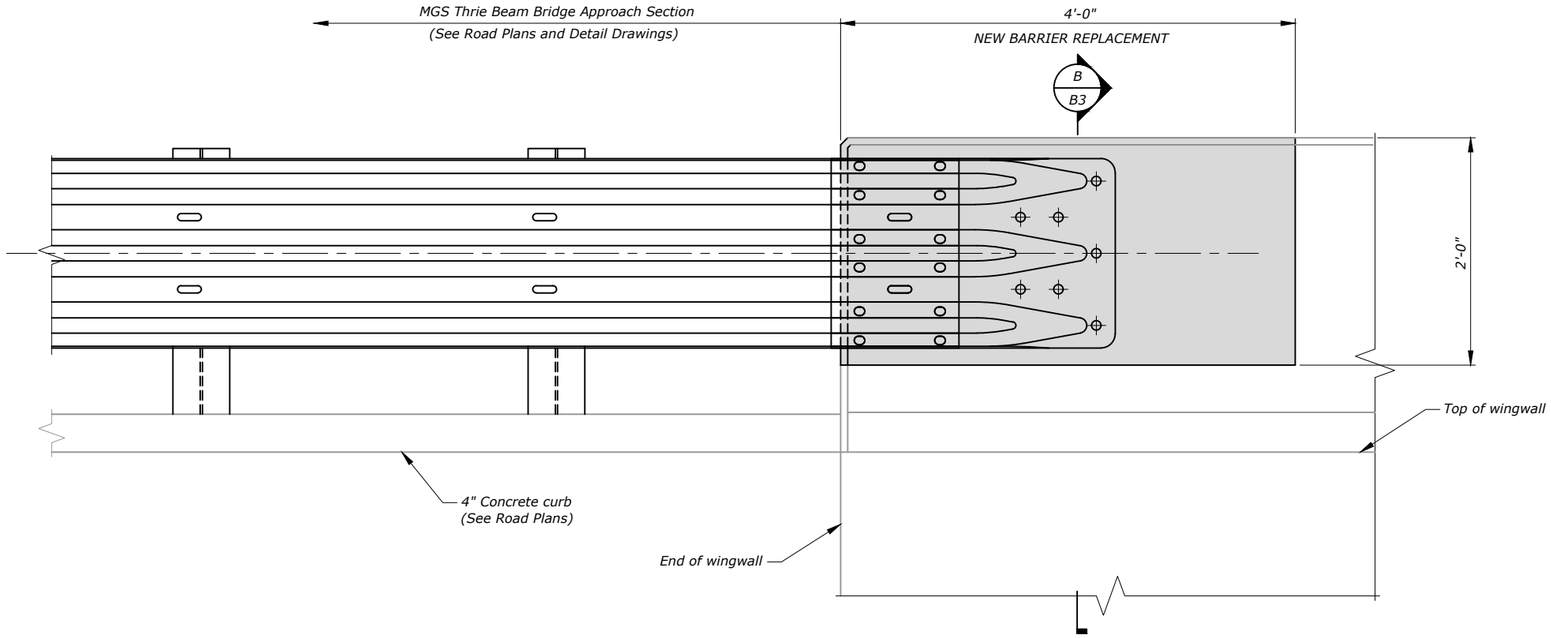
1. *The details shown are typical for all bridges noted.*



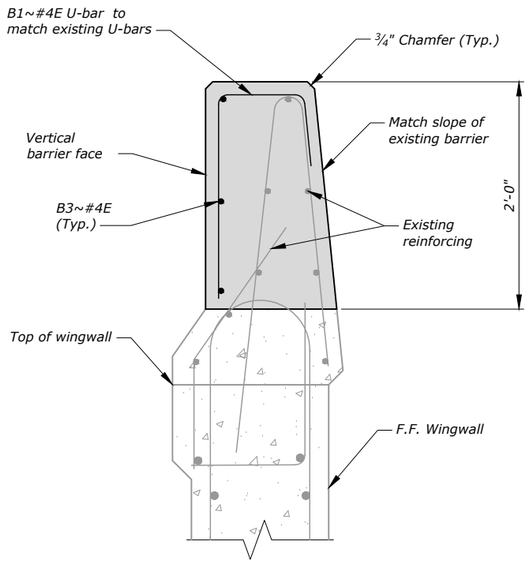
EXISTING BARRIER END ELEVATION



A / B3 ***EXISTING BARRIER SECTION***



NEW BARRIER END ELEVATION



B / B3 ***NEW BARRIER SECTION***

NOTE: *MGS Thrie Beam Approach Section omitted for clarity.*

SHEET NO.
B3

REVISE CONCRETE BARRIER END - BR

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

PROJECT NAME
BOZEMAN HILL - EAST

MDT STRUCTURE ID
01616, 01617

FEDERAL AID PROJECT
IM 90-6(151)319

COUNTY
PARK

REVISED	REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED	9467000BREH001.dwg \ REH001
				A.E.K.	D.G.G.	T.E.W.	
				10-30-23	5-24-23	5-23-24	

MONTANA Department of Transportation — BRIDGE BUREAU

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9467000

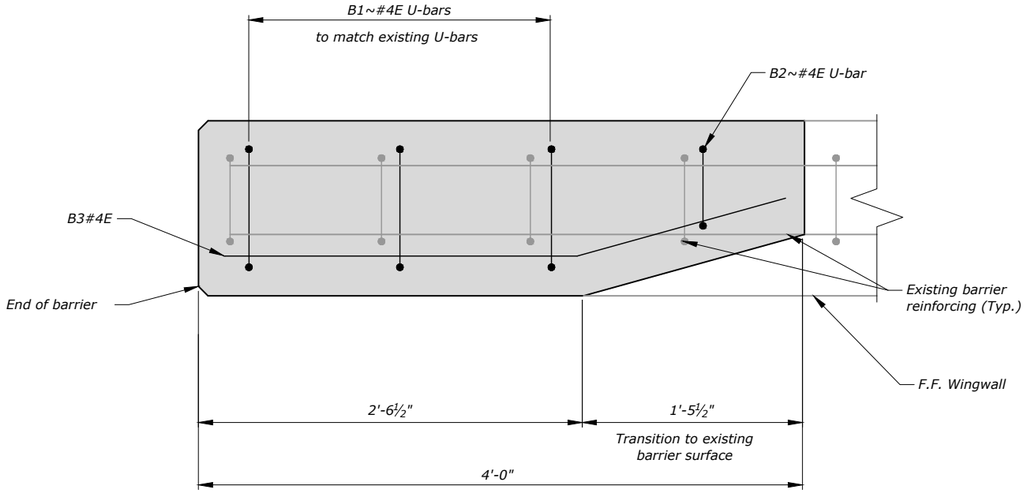
DRAWING NO.
28469

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AWARD COPY

SHEET NOTES:

1. Barrier reinforcing shown is typical for both bridges, left side and right side.

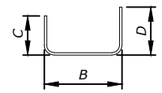


BARRIER REINFORCING PLAN VIEW

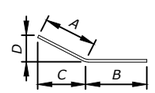
BILL OF REINFORCING STEEL

(FOR INFORMATION PURPOSES ONLY)
(ALL DIMENSIONS ARE OUT TO OUT)

(FOR ONE LOCATION ONLY)

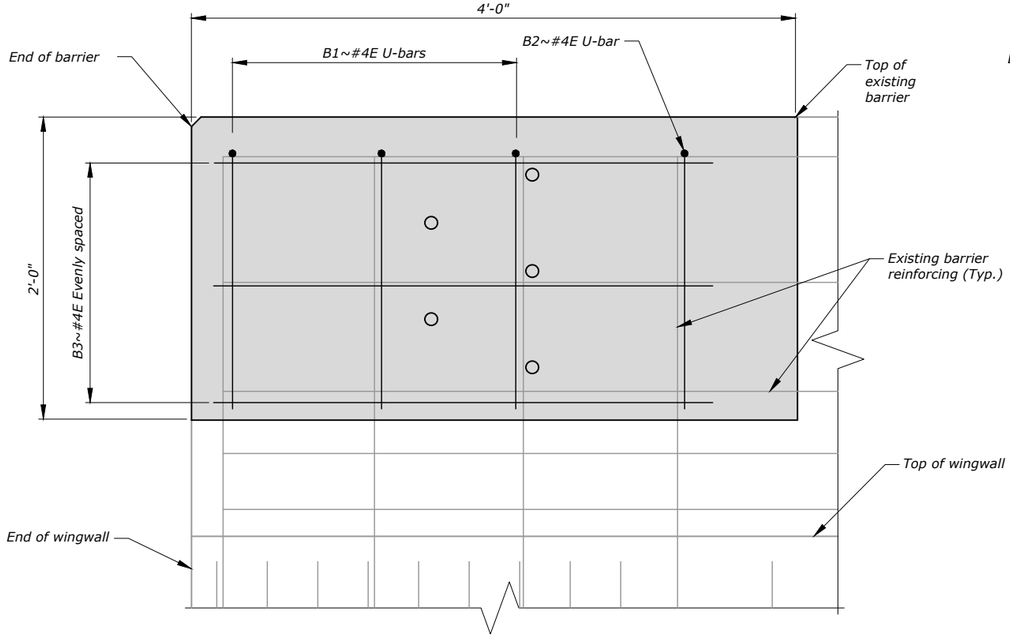


TYPE 17

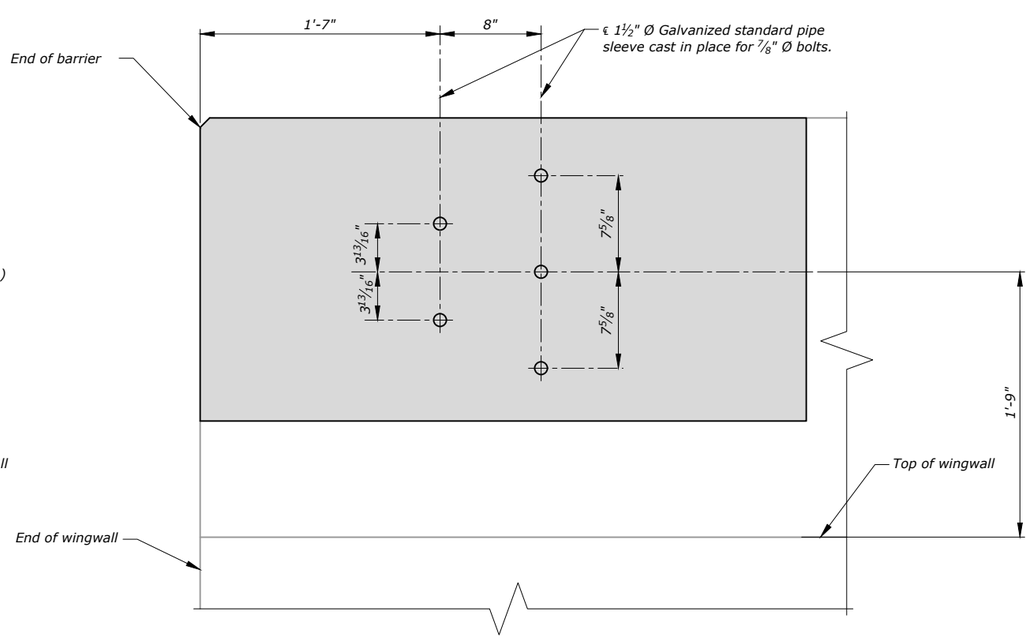


TYPE 28

Mark	Size	No.	Type	Length	A	B	C	D	E	G	N
B1	#4E	3	17	3'-1½"		0'-8½"	0'-7½"	1'-9½"			
B2	#4E	1	17	3'-0"		0'-7"	0'-7½"	1'-9½"			
B3	#4E	3	28	3'-9"	1'-5"	2'-4"	1'-4 ½"	0'-4 ½"			



BARRIER REINFORCING ELEVATION VIEW



APPROACH RAIL ATTACHMENT ELEVATION VIEW

SHEET NO.
B4

REVISE CONCRETE BARRIER END - BR DETAILS

SCALE: 1" = 1'-0

PROJECT NAME
BOZEMAN HILL - EAST

MDT STRUCTURE ID
01616, 01617

FEDERAL AID PROJECT
IM 90-6(151)319

COUNTY
PARK

REVISED				CHECKED	A.E.K.	10-30-23
REVISED				DRAWN	D.G.G.	5-24-23
REVISED				DESIGNED	T.E.W.	5-23-23

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MONTANA Department of Transportation
BRIDGE BUREAU

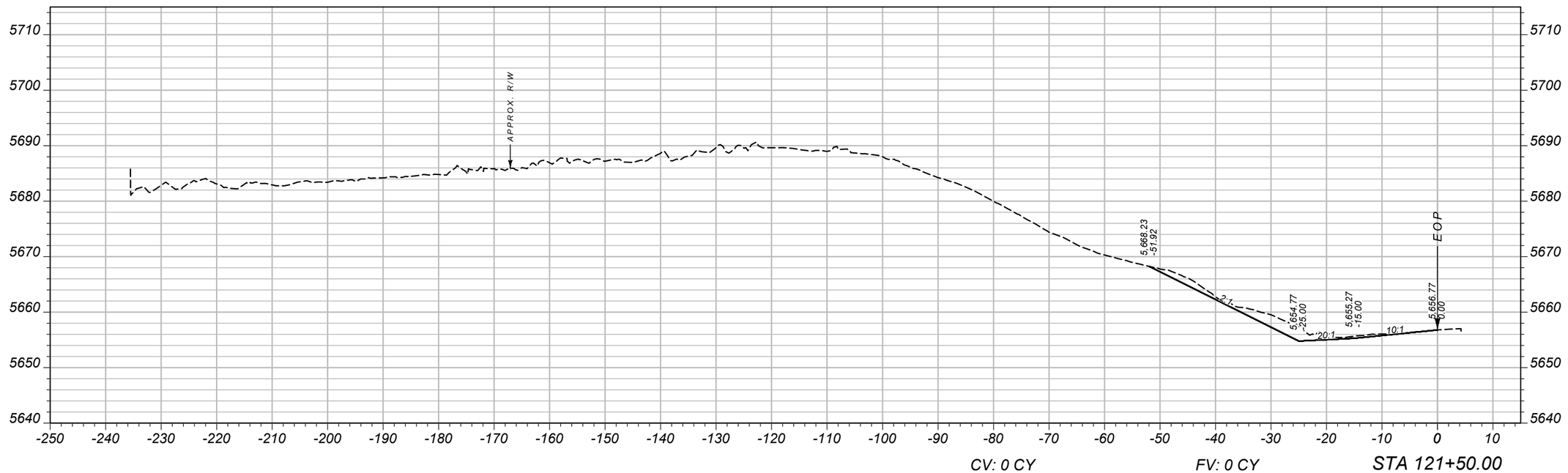
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UPN NUMBER
9467000

DRAWING NO.
28470

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SHEET NO.
1

MAINLINE

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY	P. RUMLEY	07/07/2023	
REVIEWED BY	J. BERAN	11/02/2023	
CHECKED BY	T. JOHNSON	01/18/2024	

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Department of Transportation

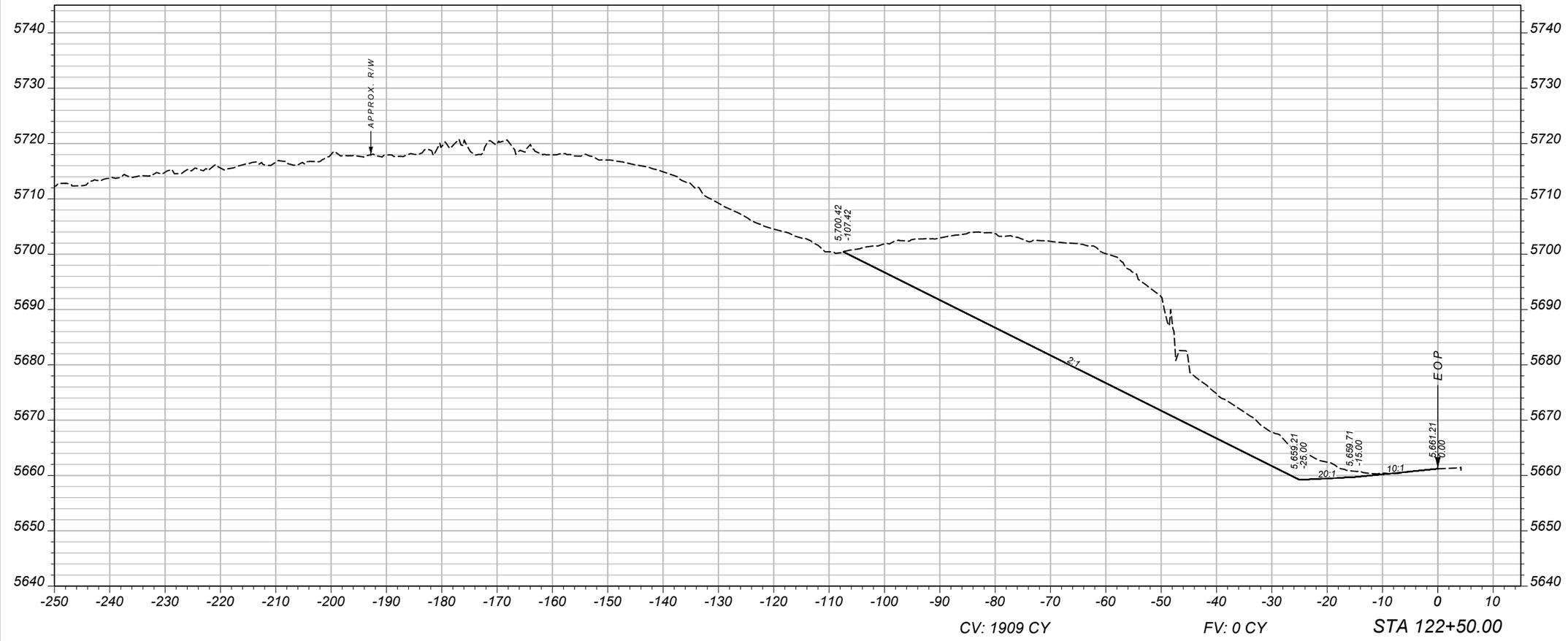
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2

MAINLINE

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

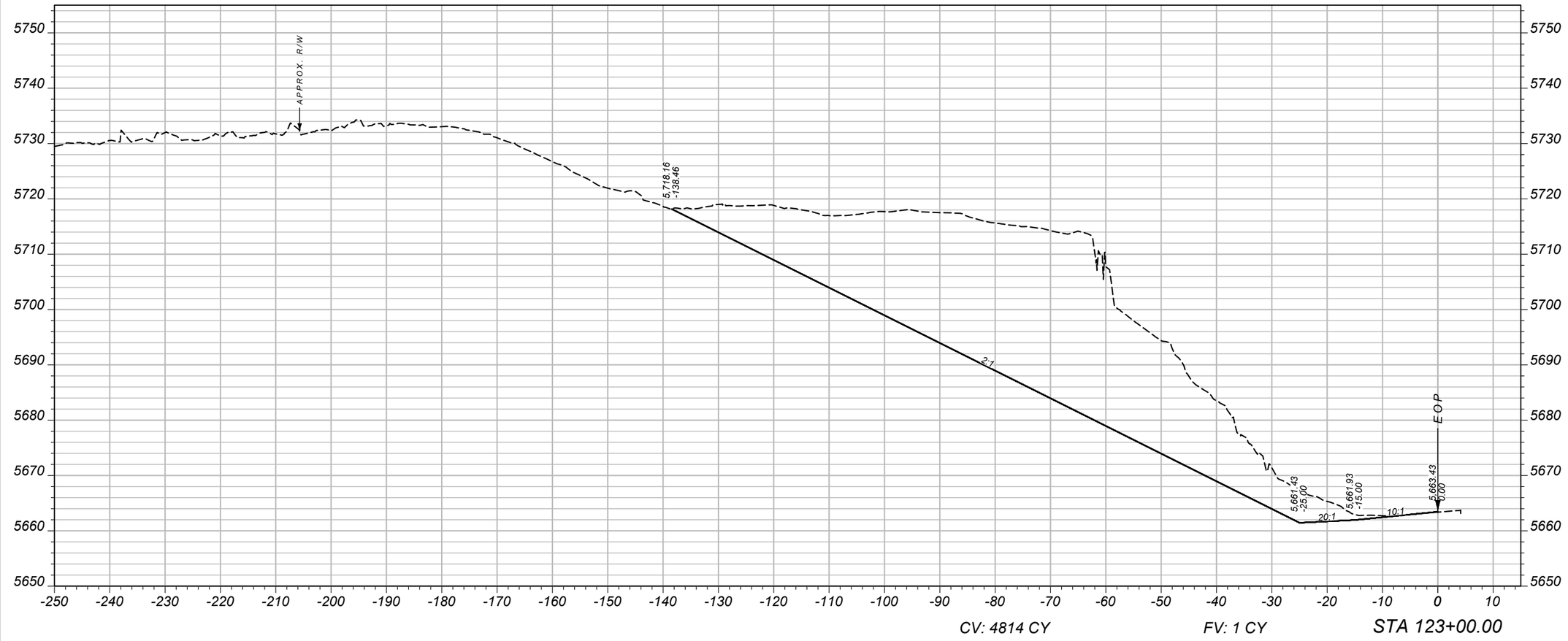
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SHEET NO.
3

MAINLINE

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

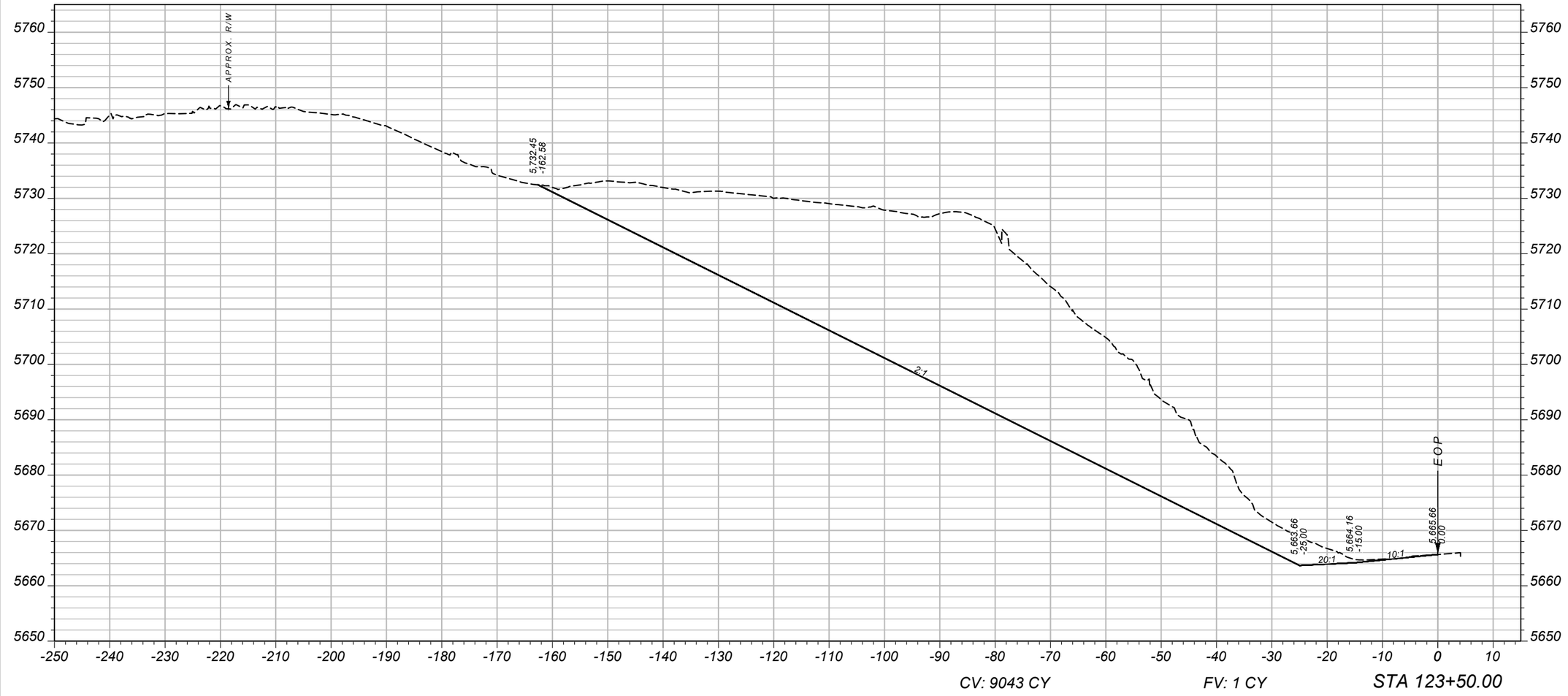
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SHEET NO. 4

MAINLINE

PROJECT NAME: BOZEMAN HILL - EAST

COUNTY: GALLATIN & PARK COUNTIES

PROJECT ID: IM 90-6(151)319

UPN: 9467000

DESIGNED BY	P. RUMLEY	07/07/2023
REVIEWED BY		
CHECKED BY		

MONTANA Department of Transportation

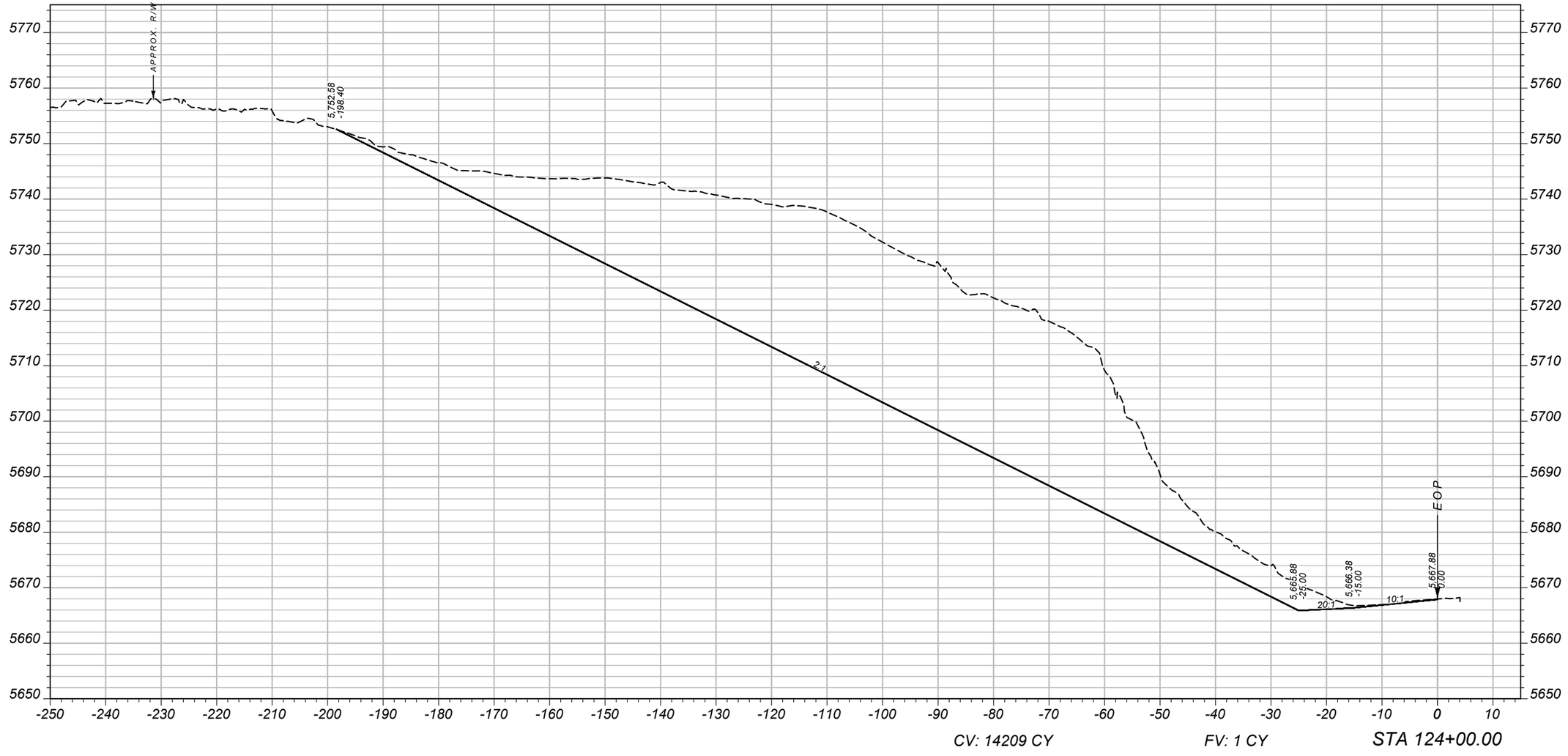
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SHEET NO. 5

MAINLINE

PROJECT NAME: BOZEMAN HILL - EAST

COUNTY: GALLATIN & PARK COUNTIES

PROJECT ID: IM 90-6(151)319

UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023

REVIEWED BY:

CHECKED BY:

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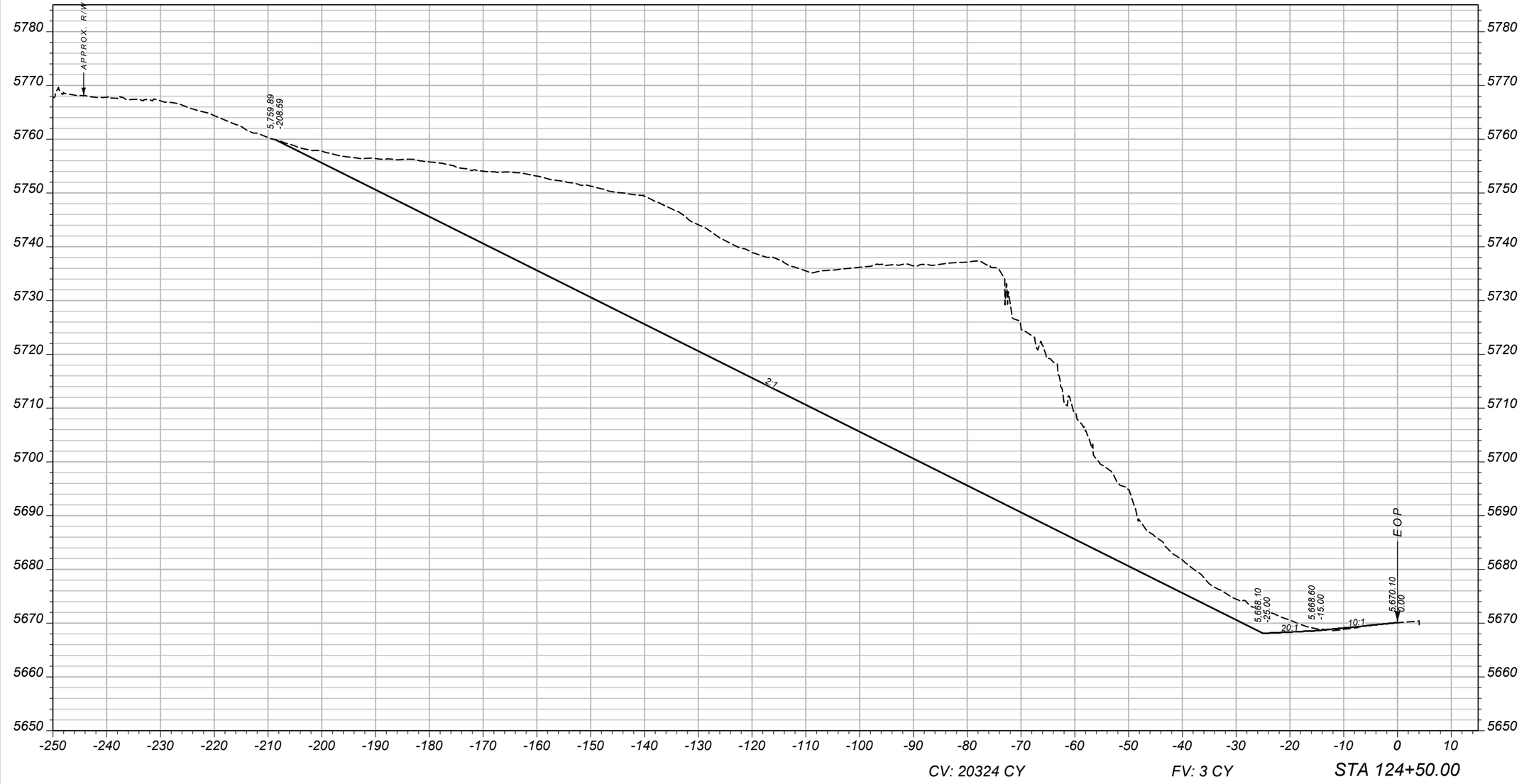
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SHEET NO.
6

MAINLINE

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

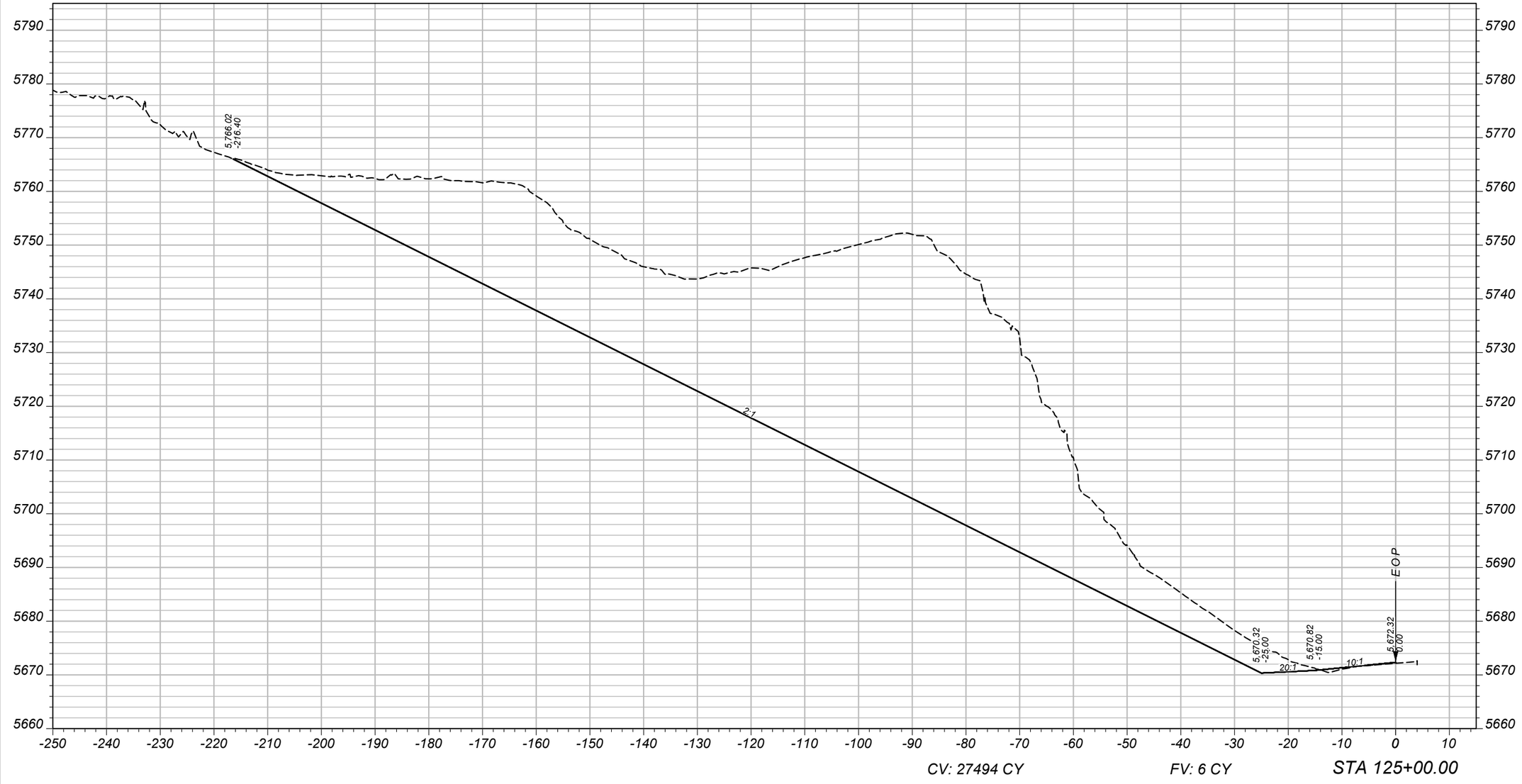
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PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

MONTANA Department of Transportation

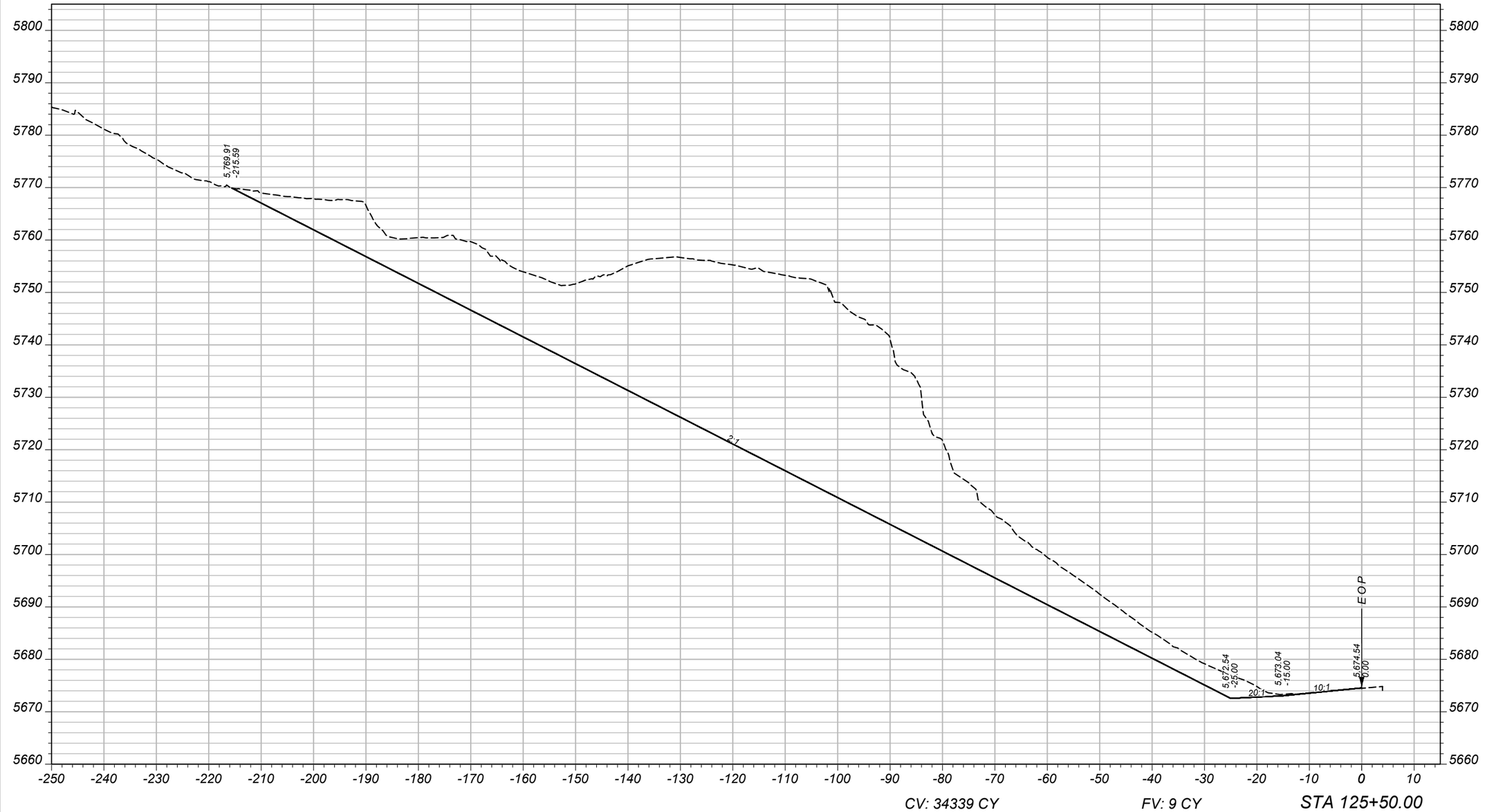
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SHEET NO.
8

MAINLINE

PROJECT NAME: BOZEMAN HILL - EAST
COUNTY: GALLATIN & PARK COUNTIES
PROJECT ID: IM 90-6(151)319
UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
CHECKED BY:

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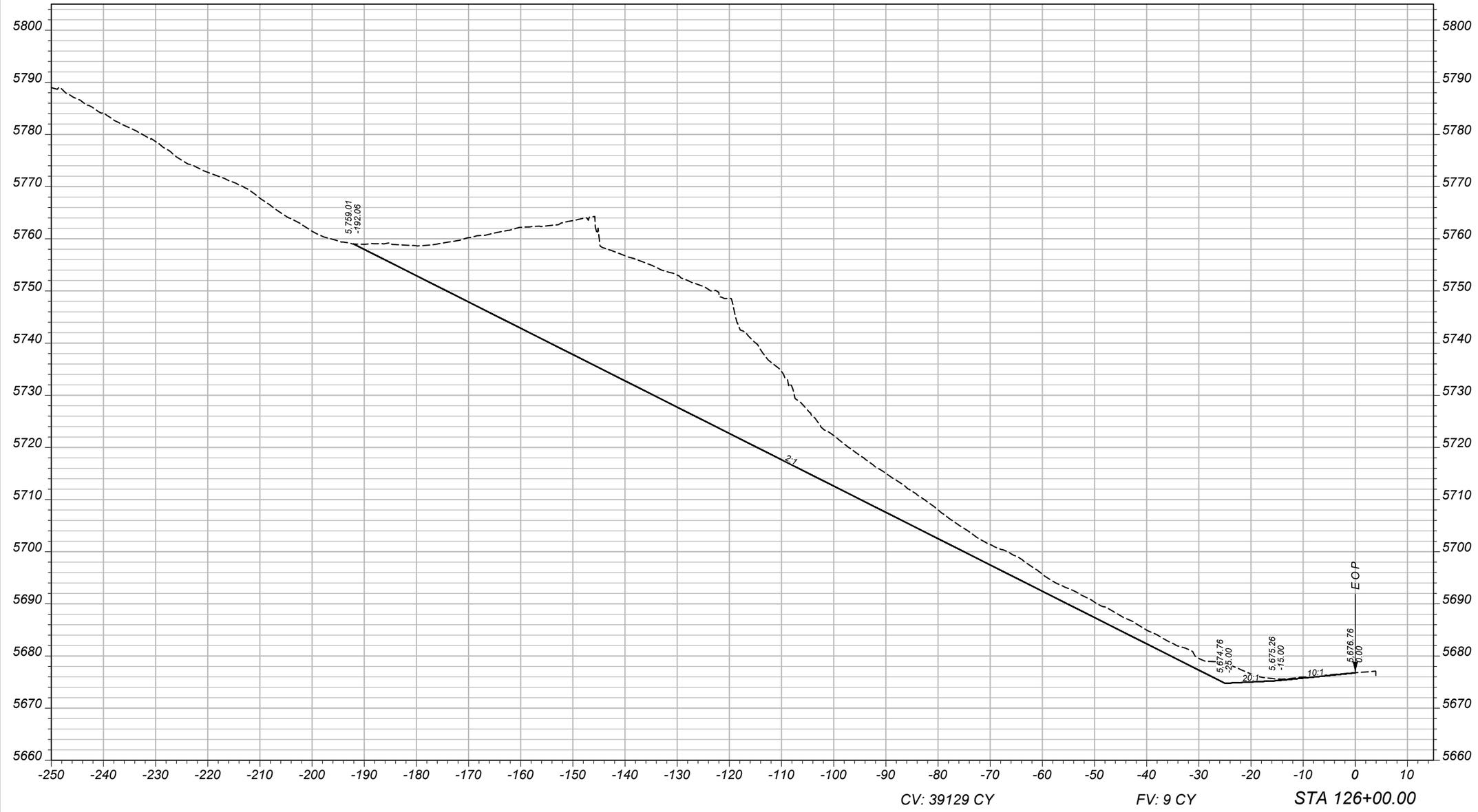
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SHEET NO. 9

MAINLINE

PROJECT NAME: BOZEMAN HILL - EAST

COUNTY: GALLATIN & PARK COUNTIES

PROJECT ID: IM 90-6(151)319

UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023

REVIEWED BY:

CHECKED BY:

MONTANA Department of Transportation

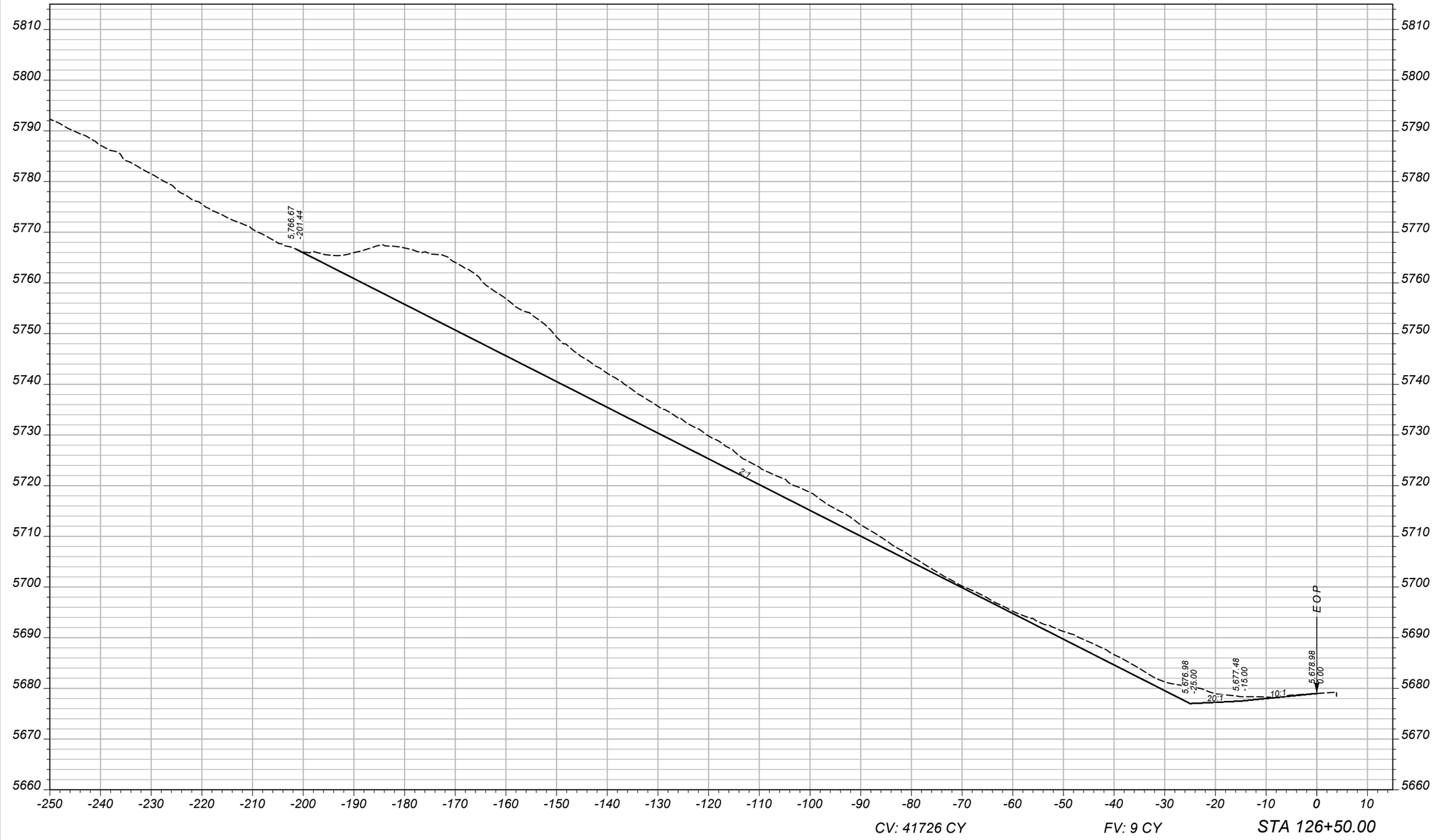
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SHEET NO.
10

MAINLINE

PROJECT NAME	BOZEMAN HILL - EAST
COUNTY	GALLATIN & PARK COUNTIES
PROJECT ID	IM 90-6(151)319
UPN	9467000

DESIGNED BY	07/07/2023	
P. RUMLEY		
REVIEWED BY		
CHECKED BY		

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Department of Transportation

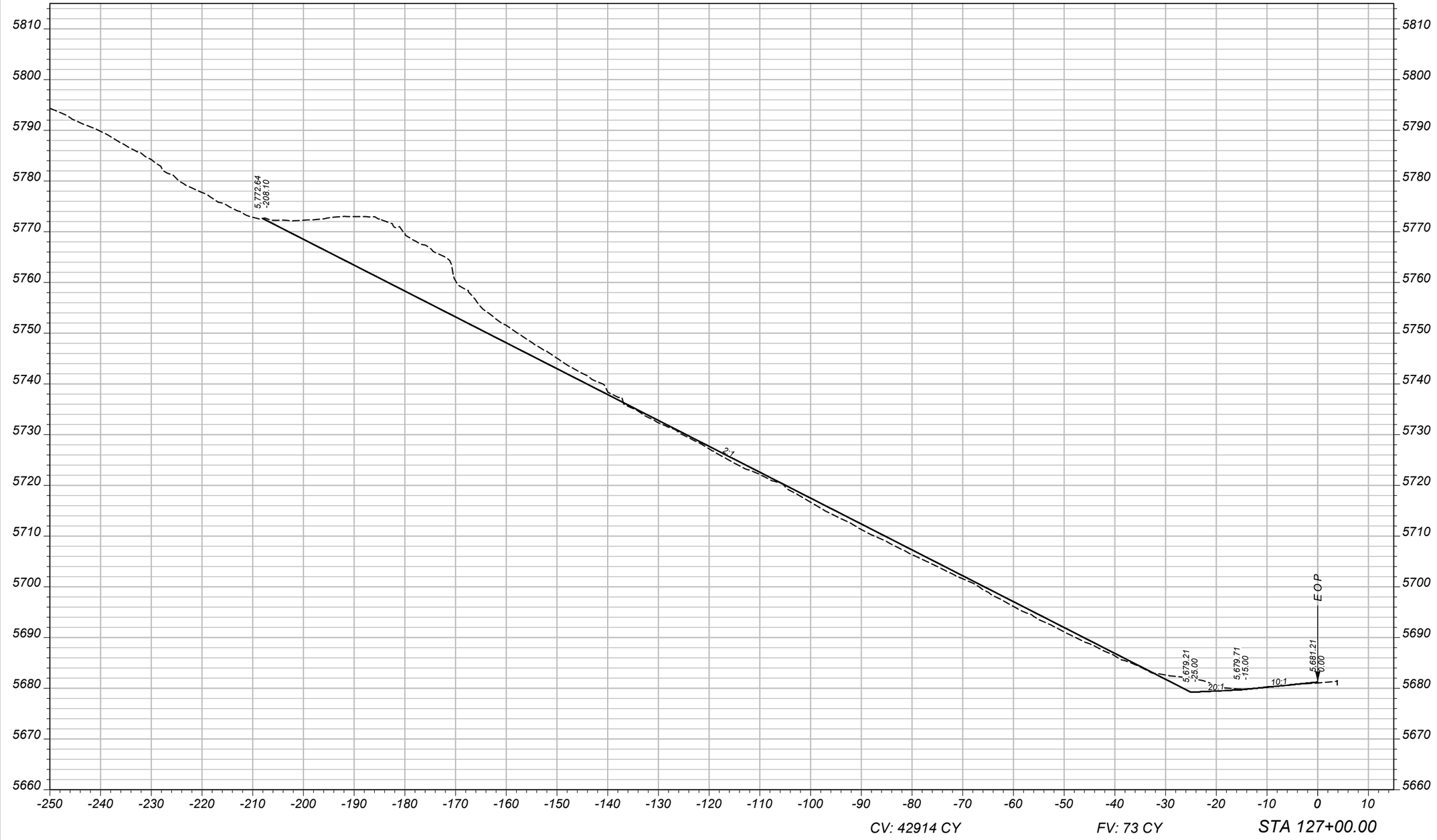
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SHEET NO.
11

MAINLINE

PROJECT NAME: **BOZEMAN HILL - EAST**
COUNTY: **GALLATIN & PARK COUNTIES**
PROJECT ID: **IM 90-6(151)319**
UPN: **9467000**

DESIGNED BY: P. RUMLEY 07/07/2023
REVIEWED BY:
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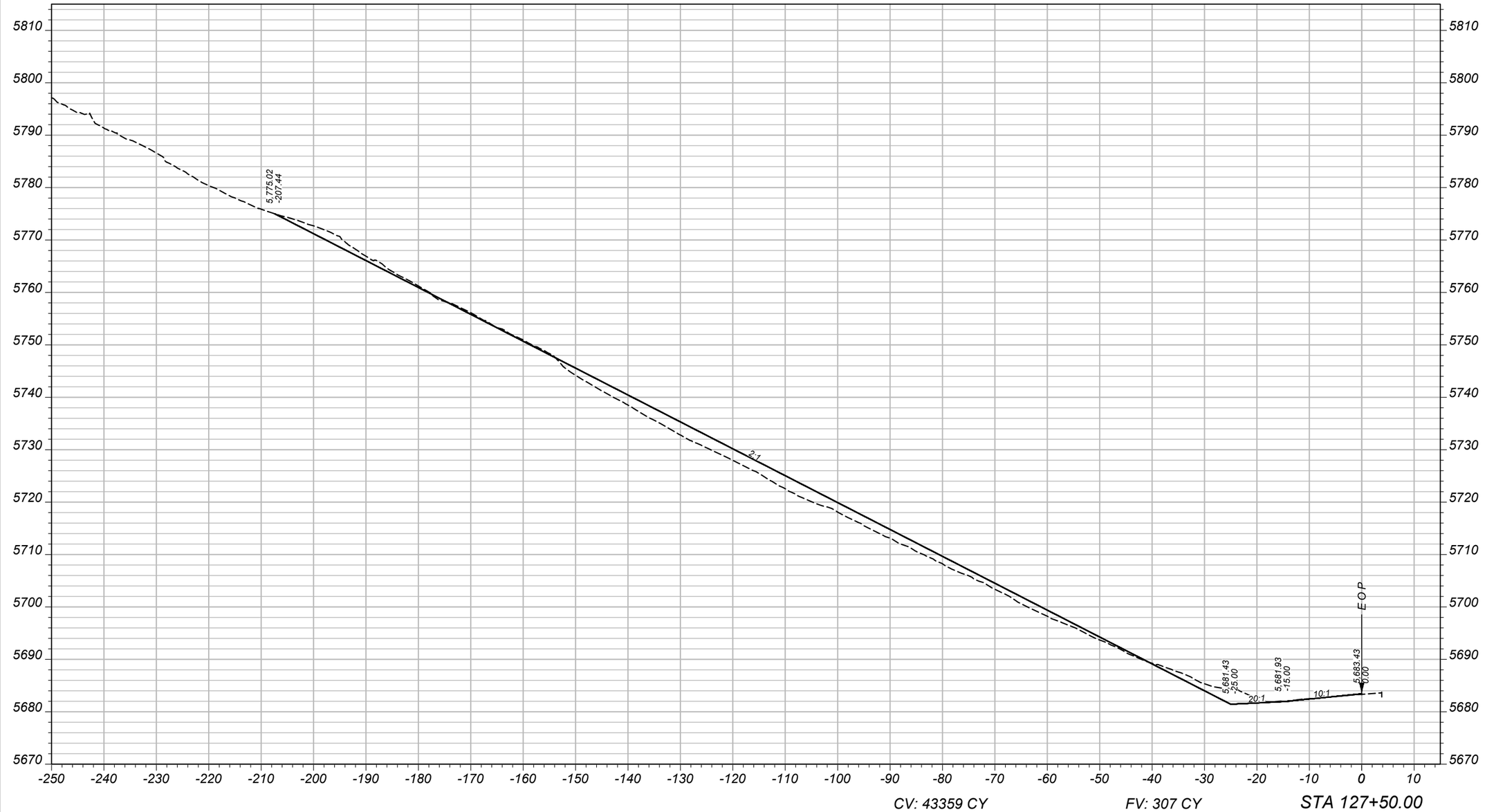
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SHEET NO. 12

MAINLINE

PROJECT NAME: BOZEMAN HILL - EAST

COUNTY: GALLATIN & PARK COUNTIES

PROJECT ID: IM 90-6(151)319

UPN: 9467000

DESIGNED BY: P. RUMLEY 07/07/2023

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