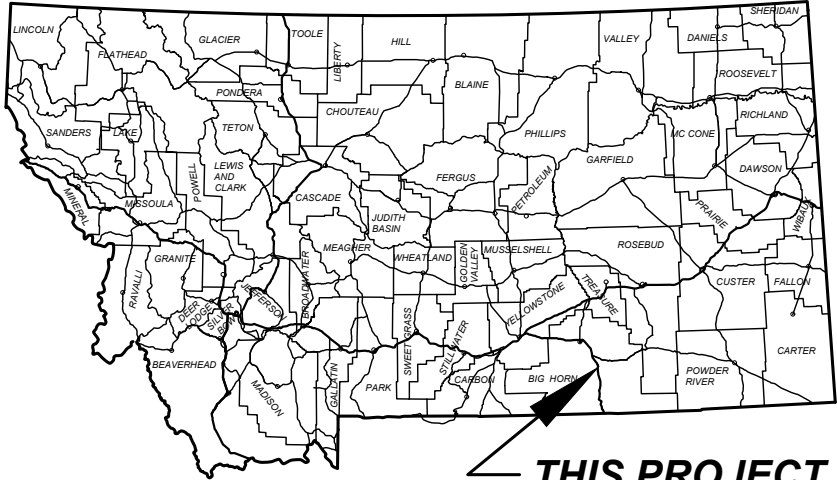


MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT IM 90-9(141)517
MILL, OVERLAY, CROSSOVER, GUARDRAIL
GARRYOWEN -SOUTH
BIG HORN COUNTY



PROJECT DESIGN DATA

PRESENT	2026	A.D.T. = 3,990
LETTING	2026	A.D.T. = 3,990
DESIGN	2046	A.D.T. = 4,870
		D.H.V. = 780
		TRUCKS = 27.1%
		V. = 70 MPH
		18 KIP ESAL'S = 632
		GROWTH RATE = 1.0%

ASSOCIATED PROJECT
AGREEMENT NUMBERS

R/W	
I. C.	
P. E.	IM 90-9(140)517

STA 285+32.25, RP 517.5
28.0' X 156.0' BRIDGE
MDT ID 01819
NBI I00090517+05021
EB LITTLE BIGHORN RIVER

STA 285+23.35 RP 517.5
41.3' X 161.6' BRIDGE
MDT ID 01820
NBI I00090517+05022
WB LITTLE BIGHORN RIVER

STA. 604+95.00, RP 523.6
41.3' X 78.0' BRIDGE
MDT ID 01827
NBI I00090523+06361
EB SEP COUNTY ROAD

STA 605+05.00, RP 523.6
41.3' X 78.0' BRIDGE
MDT ID 01828
NBI I00090523+06362
WB SEP COUNTY ROAD

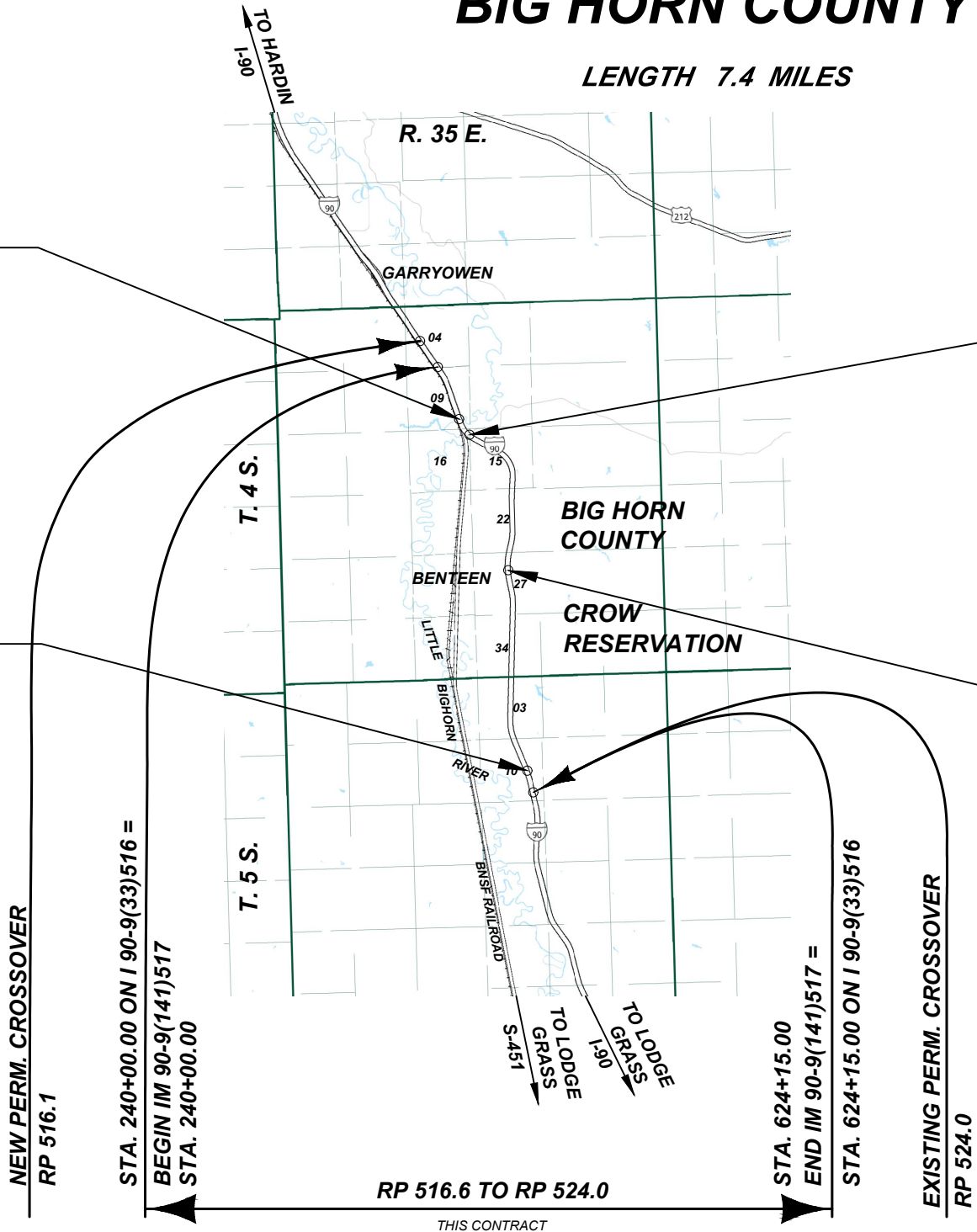
SURFACING SOURCES -
CONTRACTOR FURNISHED

STA 301+51.00, RP 517.8
41.3' X 100.0' BRIDGE
MDT ID 01821
NBI I00090517+08091
EB SEP RENO CREEK ROAD

STA 301+51.00, RP 517.8
41.3' X 100.0' BRIDGE
MDT ID 01822
NBI I00090517+08092
WB SEP RENO CREEK ROAD

STA 432+00.00, RP 520.3
41.3' X 78.0' BRIDGE
MDT ID 01824
NBI I00090520+03611
EB SEP COUNTY ROAD

STA 432+00.00, RP 520.3
41.3' X 78.0' BRIDGE
MDT ID 01825
NBI I00090520+03612
WB SEP COUNTY ROAD



MONTANA
DEPARTMENT OF TRANSPORTATION

APPROVED BY:
HIGHWAYS
ENGINEER

APPROVED

By David Holien at 12:25 pm, Aug 26, 2026

DATE

MONTANA
DAVID
HOLIEN
20186PE
PROFESSIONAL ENGINEER

SHEET NO.

1

TITLE

PROJECT NAME
GARRYOWEN - SOUTH

COUNTY
BIG HORN

PROJECT ID
IM 90-9(141)517

UPN
10066000

DESIGNED BY
B LANGE

05/2026

REVIEWED BY
C HOPKINS

05/2026

CHECKED BY
J CERECK

04/2026

10066000RDTL001.DWG

MONTANA
Department of Transportation

ROAD PLANS

7/20/2026 7:49 AM

TABLE OF CONTENTS

<u>ROAD PLANS</u>	<u>SHEET NO.</u>
TITLE SHEET	1
TABLE OF CONTENTS	2
NOTES	2
CONTROL DIAGRAM	3
TYPICALS	4
SUMMARIES	5-8
SURFACING	5
ADDITIONAL SURFACING	5
COLD MILLING	6
CRACK SEALING	6
DIGOUT EXCAVATION	6
EQUIPMENT	6
RUMBLE STRIPS	6
SPECIAL BORROW	6
GRADING	6
GUARDRAIL	7
GUARDRAIL END SECTION WIDENING	7
TEMPORARY GUARDRAIL	8
TRAFFIC CONTROL	8
WIDE LOAD MARSHALLING	8
REVEGETATION	8
PAVEMENT MARKINGS	8
MEDIAN Crossover	8
DETAILS	9-15
FULL WIDTH DIGOUT	9
BRIDGE END ADDITIONAL SURFACING	10
U-TURN MEDIAN OPENING	11
PROJECT BEGIN CONNECTION	12
PROJECT END CONNECTION	13
NEW MEDIAN Crossover AT RP 516.1	14
EXISTING MEDIAN Crossover AT RP 524.0	15
PLANS	16-21
STRAIGHT LINE DIAGRAM	16-21
<u>SIGNING PLANS</u>	
SIGNING PLANS	S1-S3
<u>BRIDGE PLANS</u>	
BRIDGE PLANS	B1-B9

NOTES

BASIS OF PLAN QUANTITIES

(QUANTITIES FOR ESTIMATING PURPOSES ONLY)	
COMP. AGGREGATE WEIGHT	= 3625 LBS. PER CUBIC YARD
COMP. WEIGHT OF PL. MIX BIT. SURF.	= 4167 LBS. PER CUBIC YARD
ASPHALT CEMENT - GRADE S - 3/4" AGG.	= 5.2% OF PL.MIX BIT.SURF.
HYDRATED LIME	= 1.4% OF PL.MIX BIT.SURF.
BITUMINOUS MATERIAL	= 8.5 LBS. PER GAL.
EMULSIFIED ASPHALT - TACK (ALL OTHER SURFACES)	= 0.05 GAL. PER SQ.YARD (UNDILUTED)
EMULSIFIED ASPHALT - FOG SEAL (RUMBLE STRIPS)	= 0.10 GAL. PER SQ.YARD (UNDILUTED)
SEAL	= 0.42 GAL. PER SQ.YARD
COVER	= 25 LBS. PER SQ.YARD
CRACK SEALING	= 1.5 LBS. PER FT.
CRACK FILLING - MASTIC	= 2.0 LBS. PER FT.

UTILITIES

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

WETLANDS

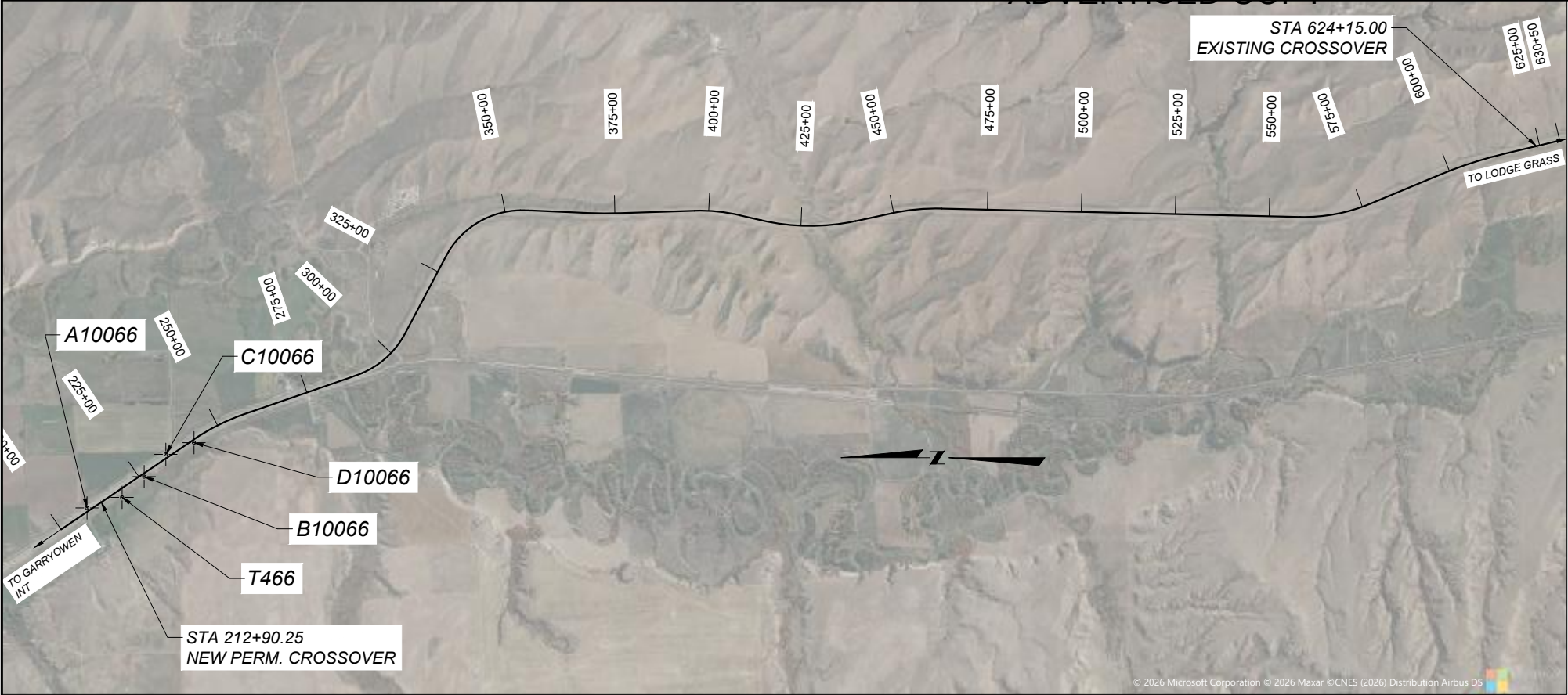
WETLANDS MAY EXIST ADJACENT TO THE ROADWAY AND MAY EXIST BEYOND THE PROJECT LIMITS. A WETLAND DELINEATION HAS NOT BEEN COMPLETED FOR THIS PROJECT. IMPACTS TO WETLAND AREAS ARE NOT ANTICIPATED IN ASSOCIATION WITH THE PROPOSED WORK. NO PERMITS HAVE BEEN OBTAINED. ANY ACTION IMPACTING WETLAND AREA WITHOUT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

AS-BUILT

FOR HORIZONTAL ALIGNMENT AND STATIONING, REFER TO THE FOLLOWING "AS-BUILT" PROJECT(S):
I 90-9(28)509 (PLANT MIX SURFACING - 1979)
IR 90-9(71)509 (OVERLAY, WEIGH STATION REVISION, BRIDGE - 1992)

TABLE OF CONTENTS & NOTES

	PROJECT NAME		GARRYOWEN - SOUTH	
	DESIGNED BY	05/2026	COUNTY	
	REVIEWED BY		PROJECT ID	BIG HORN
	C HOPKINS	05/2026		
ROAD PLANS	CHECKED BY		IM 90-9(141)517	
	J CERECK	04/2026	UPN	
	10066000RDTTL001.DWG		10066000	
7/20/2026 7:49 AM				



CONTROL DIAGRAM

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 0.99958507

BEARING SOURCE
GRID -- MONTANA COORDINATE SYSTEM NAD 83-2011
LEVEL DATUM SOURCE
ELEVATIONS DERIVED FROM DIFFERENTIAL LEVELS, HOLDING NGS PUBLISHED
ELEVATION AT: T486

SHEET NO.
3

CONTROL DIAGRAM

CONTROL ABSTRACT			
POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION
A10066	467,818.349	2,505,151.672	3,127.32
B10066	466,298.193	2,505,982.136	3,133.82
C10066	465,720.447	2,506,577.760	3,137.74
D10066	464,791.497	2,506,885.790	3,140.88
T486	466,885.100	2,505,431.384	3,135.52



MONTANA

Department of Transportation

ROAD PLANS

7/20/2026 8:17 AM

DESIGNED BY
B LANGEL

REVIEWED BY
C HOPKINS

CHECKED BY
J CERECK

PROJECT NAME
GARRYOWEN - SOUTH

COUNTY
BIG HORN

PROJECT ID
IM 90-9(141)517

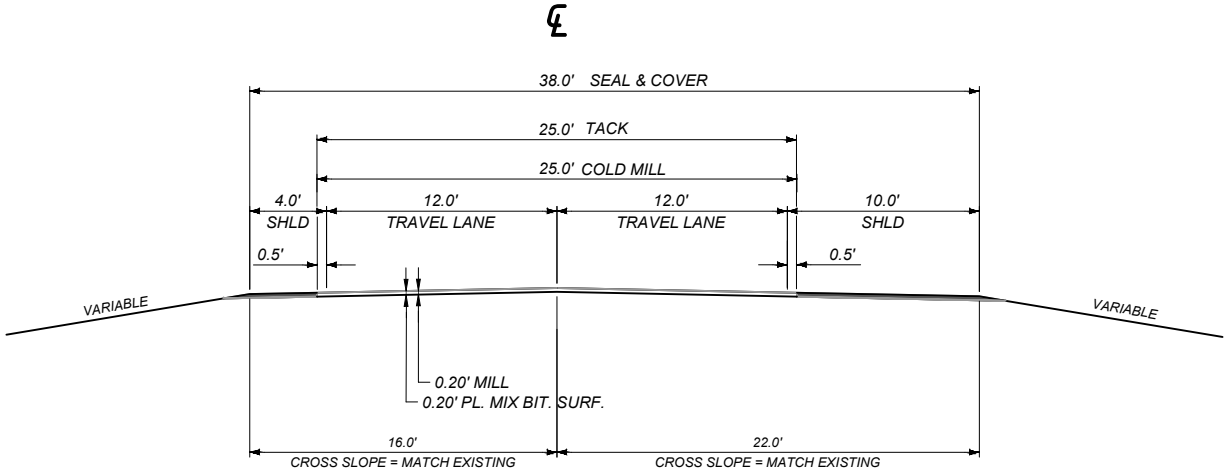
TUPN
10066000

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###

TYPICAL SECTION NO. 1

I-90
(REVERSE FOR WESTBOUND)



QUANTITIES							
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL			COLD MILLING
	COVER	PLANT MIX		ASPHALT CEMENT	EMULSIFIED ASPHALT SEAL	EMULSIFIED ASPHALT TACK*	
AREA square feet		5.00	square yards PER STATION		422	278	278
cubic yards PER STATION		18.5	tons PER STATION	2.00	0.75		
tons PER STATION		38.5	gals. PER STATION			14	
square yards PER STATION	422						

* BASED ON ONE APPLICATION

EASTBOUND

237+68.00	TO	240+00.00	PROJECT BEGIN CONNECTION
240+00.00	TO	284+53.25	BE THEN LITTLE BIGHORN RIVER BRIDGE
286+11.25	BE TO	300+99.50	BE THEN RENO CREEK ROAD BRIDGE
302+02.50	BE TO	431+60.75	BE THEN COUNTY ROAD BRIDGE
432+39.25	BE TO	604+55.50	BE THEN COUNTY ROAD BRIDGE
605+34.50	BE TO	624+15.00	END PROJECT

WESTBOUND

237+83.00	TO	240+00.00	PROJECT BEGIN CONNECTION
240+00.00	TO	284+41.05	BE THEN LITTLE BIGHORN RIVER BRIDGE
286+05.65	BE TO	300+99.50	BE THEN RENO CREEK ROAD BRIDGE
302+02.50	BE TO	431+60.10	BE THEN COUNTY ROAD BRIDGE
432+39.90	BE TO	604+65.45	BE THEN COUNTY ROAD BRIDGE
605+44.55	BE TO	624+15.00	END PROJECT

NOTES:

- DISTANCE BETWEEN BRIDGE END STATIONS MAY NOT MATCH BRIDGE LENGTHS CALLED OUT ON TITLE SHEET AS OVERALL BRIDGE LENGTHS ARE MEASURED FROM CENTERLINE-OF-BEARING TO CENTERLINE-OF-BEARING OF THE ABUTMENTS.
- FINAL MILL LIMITS AND DEPTH MAY BE ADJUSTED BASED ON FIELD CONDITIONS AS DIRECTED BY THE PROJECT MANAGER.

SHEET NO.

4

TYPICAL SECTIONS

PROJECT NAME
GARRYOWEN - SOUTH

COUNTY

BIG HORN

PROJECT ID

IM 90-9(141)517

UPN

10066000

DESIGNED BY

B LANGE

05/2026

REVIEWED BY

C HOPKINS

05/2026

CHECKED BY

J CERECK

04/2026

10066000RDTYP001.DWG



ROAD PLANS

7/20/2026 7:50 AM

SUMMARIES

SURFACING															
STATION		linear feet				FOR	HYDRATED LIME	AGGREGATE				BITUMINOUS MATERIAL			REMARKS
		GROSS	NET	+	-			sq. yards	tons	tons	cu. yards	tons		gals.	
								COVER TYPE 2	PLANT MIX SURF. - 3/4"	PLANT MIX BIT. SURF. - MISC.	CRUSHED AGG. COURSE	ASPHALT BINDER PG 58V-34	EMULSIFIED ASPHALT CHFRS-2P	EMULSIFIED ASPHALT TACK	
FROM	TO														
EASTBOUND															
240+00.00															
257+73.10 BK	257+37.50 AH			35.60		EQUATION									
284+53.25 BE	286+11.25 BE				158.00	BIGHORN RIVER BRIDGE									
300+99.50 BE	302+02.50 BE				103.00	SEP. RENO CREEK RD BRIDGE									
356+68.10 BK	357+21.90 AH				53.80	EQUATION									
372+00.50 BK	367+80.40 AH			420.10		EQUATION									
431+60.75 BE	432+39.25 BE				78.50	SEP. COUNTY RD BRIDGE									
461+74.80 BK	461+89.60 AH				14.80	EQUATION									
558+15.10 BK	558+06.10 AH			9.00		EQUATION									
604+55.50 BE	605+34.50 BE				79.00	SEP. COUNTY RD BRIDGE									
616+75.90 BK	616+86.00 AH				10.10	EQUATION									
	624+15.00	38,415.00	38,382.50					161,974	14,777			768.4	287.9	5,374	TYP. NO. 1
SUBTOTAL		38,415.00	38,382.50	464.70	497.20			161,974	14,777			768.4	287.9	5,374	EASTBOUND
WESTBOUND															
240+00.00															
257+73.10 BK	257+37.50 AH			35.60		EQUATION									
284+41.05 BE	286+05.65 BE				164.60	BIGHORN RIVER BRIDGE									
300+99.50 BE	302+02.50 BE				103.00	SEP. RENO CREEK RD BRIDGE									
357+45.60 BK	356+91.80 AH			53.80		EQUATION									
372+00.50 BK	367+80.40 AH			420.10		EQUATION									
431+60.10 BE	432+39.90 BE				79.80	SEP. COUNTY RD BRIDGE									
464+00.80 BK	463+86.00 AH			14.80		EQUATION									
558+15.10 BK	558+06.10 AH			9.00		EQUATION									
604+65.45 BE	605+44.55 BE				79.10	SEP. COUNTY RD BRIDGE									
613+74.10 BK	613+64.10 AH			10.00		EQUATION									
	624+15.00	38,415.00	38,531.80					162,604	14,835			771.4	289.0	5,394	TYP. NO. 1
SUBTOTAL		38,415.00	38,531.80	543.30	426.50			162,604	14,835			771.4	289.0	5,394	WESTBOUND
						ADDITIONAL SURFACING		3,245	3,224	423	3,240	189.6	5.8	1,116	
TOTAL		76,830.00	76,914.30	1,008.00	923.70		466	327,823	32,836	423	3,240	1,729.4	582.7	11,884	

ADDITIONAL SURFACING * (INCLUDED IN SURFACING FRAME)															
STATION		linearfeet				FOR	HYDRATED LIME	AGGREGATE				BITUMINOUS MATERIAL			REMARKS
		GROSS	NET	+	-			sq. yards	tons		cu. yards	tons		gals.	
								COVER TYPE 2	PLANT MIX SURF. - 3/4"	PLANT MIX BIT. SURF - MISC	CRUSHED AGG. COURSE	ASPHALT BINDER PG 58V-34	EMULSIFIED ASPHALT CHFRS-2P	EMULSIFIED ASPHALT TACK	
FROM	TO														
237+83.00	240+00.00	217.00	217.00			PROJECT BEGIN CONNECTION		916	84				1.6	30	EASTBOUND
237+68.00	240+00.00	232.00	232.00			PROJECT BEGIN CONNECTION		979	89				1.7	32	WESTBOUND
						BRIDGE END ADD SURFACING (14)			1,862					476	SEE DETAIL FOR DIMENSIONS AND LOCATIONS
282+91.05	284+41.05 BE	150.00	150.00			DIGOUT NO. 1			230		518			89	WESTBOUND FULL WIDTH
419+50.00	421+50.00	200.00	200.00			DIGOUT NO. 2			307		691			114	EASTBOUND FULL WIDTH
432+39.25 BE	435+39.25	300.00	300.00			DIGOUT NO. 3			460		1,036			164	EASTBOUND FULL WIDTH
560+50.00	561+75.00	125.00	125.00			DIGOUT NO. 4			192		432			76	EASTBOUND FULL WIDTH
266+55.00						U-TURN MEDIAN OPENING		414		130	173		0.7	41	
386+35.00						U-TURN MEDIAN OPENING		303		95	126		0.5	30	
510+00.00						U-TURN MEDIAN OPENING		633		198	264		1.1	63	
SUBTOTAL		1,224.00	1,224.00	~	~		~	3,245	3,224	423	3,240	189.6	5.8	1,116	

*SEE DETAILS

GARRYOWEN - SOUTH

PROJECT NAME

COUNTY

PROJECT ID

UPN

10066000

10066000RDSUM001.DWG



ROAD PLANS

7/20/2026 8:18 AM

COLD MILLING *				
STATION		sq. yards	COLD MILLING	REMARKS
FROM	TO	0.20 ft		
EASTBOUND				
237+68.00	240+00.00	644		EASTBOUND PROJECT BEGIN CONNECTION
240+00.00	284+53.25 BE	12,469		EASTBOUND - TYPICAL NO. 1
286+11.25 BE	300+99.50 BE	4,134		EASTBOUND - TYPICAL NO. 1
302+02.50 BE	431+60.75 BE	37,013		EASTBOUND - TYPICAL NO. 1
432+39.25 BE	604+55.50 BE	47,807		EASTBOUND - TYPICAL NO. 1
605+34.50 BE	624+15.00	5,196		EASTBOUND - TYPICAL NO. 1
		2,396		BRIDGE END ADD SURFACING - SEE DETAIL
SUBTOTAL		109,659		
WESTBOUND				
237+83.00	240+00.00	603		WESTBOUND PROJECT BEGIN CONNECTION
240+00.00	284+41.05 BE	12,435		WESTBOUND - TYPICAL NO. 1
286+05.65 BE	300+99.50 BE	4,150		WESTBOUND - TYPICAL NO. 1
302+02.50 BE	431+60.10 BE	37,310		WESTBOUND - TYPICAL NO. 1
432+39.90 BE	604+65.45 BE	47,915		WESTBOUND - TYPICAL NO. 1
605+44.55 BE	624+15.00	5,223		WESTBOUND - TYPICAL NO. 1
		2,396		BRIDGE END ADD SURFACING - SEE DETAIL
SUBTOTAL		110,032		
TOTAL		219,690		

* SEE DETAILS

CRACK SEALING						
STATION		TRANSVERSE & LONGITUDINAL CRACK SEALING				REMARKS
		CRACK SEALING		CRACK FILLING - MASTIC		
		NEW	NEW			
FROM	TO	pounds	linear feet	pounds	linear feet	
240+00.00	624+15.00	8,406	5,604			SHOULDERS ONLY
240+00.00	624+15.00			76,292	38,146	MILLED SURFACE ONLY
SUBTOTAL		8,406	5,604	76,292	38,146	
TOTAL		8,406	#	76,292	#	

FOR INFORMATION ONLY

DIGOUT EXCAVATION *			
STATION		cu. yards	REMARKS
		DIGOUT EXCAVATION	
FROM	TO		
282+91.05	284+41.05 BE	1,503	
419+50.00	421+50.00	2,004	
432+39.25 BE	435+39.25	3,006	
560+50.00	561+75.00	1,252	
TOTAL		7,765	

* SEE DETAIL

SEE SPECIAL BORROW SUMMARY FRAME FOR GEOTEXTILE STABILIZATION QUANTITIES

EQUIPMENT			
STATION		hours	REMARKS
		MOTOR GRADER	
FROM	TO		
386+35		1	TO SHAPE EXISTING U-TURN MEDIAN OPENING
510+00		1	TO SHAPE EXISTING U-TURN MEDIAN OPENING
TOTAL		2	

SPECIAL BORROW				
STATION		cu. yards	sq. yards	REMARKS
		SPECIAL BORROW - NEAT LINE	GEOTEX. STAB.	
FROM	TO			
266+55.00		276	414	
282+91.05	284+41.05 BE	905	1,383	
419+50.00	421+50.00	1,207	1,844	
432+39.25 BE	435+39.25	1,811	1,483	
560+50.00	561+75.00	755	1,153	
TOTAL		4,954	6,278	

GRADING				
STATION	cu. yards			REMARKS
	UNCL. EXC.	EXCESS EXC.	EMB.+	
266+55.00	97			CONSTRUCT NEW U-TURN MEDIAN OPENING
325+60.00	120			REMOVE EXISTING U - TURN MEDIAN OPENING
TOTAL		#0	#0	

FOR INFORMATION ONLY

RUMBLE STRIPS					
STATION		miles		gals	REMARKS
		RUMBLE STRIPS		EMULSIFIED ASPHALT FOG SEAL #	
		CONTINUOUS	INTERMITTENT		
FROM	TO				
EASTBOUND					
282+53.25	284+53.25 BE		0.04	4	BRIDGE END ADD SURFACING LT
282+53.25	284+53.25 BE	0.04		4	BRIDGE END ADD SURFACING RT
286+11.25 BE	288+11.25		0.04	4	BRIDGE END ADD SURFACING LT
286+11.25 BE	288+11.25	0.04		4	BRIDGE END ADD SURFACING RT
298+99.50	300+99.50 BE		0.04	4	BRIDGE END ADD SURFACING LT
298+99.50	300+99.50 BE	0.04		4	BRIDGE END ADD SURFACING RT
302+02.50 BE	304+02.50		0.04	4	BRIDGE END ADD SURFACING LT
302+02.50 BE	304+02.50	0.04		4	BRIDGE END ADD SURFACING RT
419+50.00	421+50.00		0.04	4	DIGOUT NO. 2 E.B. LT
419+50.00	421+50.00	0.04		4	DIGOUT NO. 2 E.B. RT
429+60.75	431+60.75 BE		0.04	4	BRIDGE END ADD SURFACING LT
429+60.75	431+60.75 BE	0.04		4	BRIDGE END ADD SURFACING RT
432+39.25 BE	435+39.25		0.06	7	DIGOUT NO. 3 E.B. LT
432+39.25 BE	435+39.25	0.06		7	DIGOUT NO. 3 E.B. RT
560+50.00	561+75.00		0.02	3	DIGOUT NO. 4 E.B. LT
560+50.00	561+75.00	0.02		3	DIGOUT NO. 4 E.B. RT
602+55.50	604+55.50 BE		0.04	4	BRIDGE END ADD SURFACING LT
602+55.50	604+55.50 BE	0.04		4	BRIDGE END ADD SURFACING RT
605+34.50 BE	607+34.50		0.04	4	BRIDGE END ADD SURFACING LT
605+34.50 BE	607+34.50	0.04			BRIDGE END ADD SURFACING RT
SUBTOTAL		0.38	0.38	80.00	
WESTBOUND					
282+91.05	284+41.05 BE		0.03	3	DIGOUT NO. 1 W.B. LT
282+91.05	284+41.05 BE	0.03		3	DIGOUT NO. 1 W.B. RT
286+05.65 BE	288+05.65		0.04	4	BRIDGE END ADD SURFACING LT
286+05.65 BE	288+05.65	0.04		4	BRIDGE END ADD SURFACING RT
298+99.50	300+99.50		0.04	4	BRIDGE END ADD SURFACING LT
298+99.50	300+99.50	0.04		4	BRIDGE END ADD SURFACING RT
302+02.50 BE	304+02.50		0.04	4	BRIDGE END ADD SURFACING LT
302+02.50 BE	304+02.50	0.04		4	BRIDGE END ADD SURFACING RT
429+60.10	431+60.10		0.04	4	BRIDGE END ADD SURFACING LT
429+60.10	431+60.10	0.04		4	BRIDGE END ADD SURFACING RT
432+39.90 BE	434+39.90		0.04	4	BRIDGE END ADD SURFACING LT
432+39.90 BE	434+39.90	0.04		4	BRIDGE END ADD SURFACING RT
602+65.45	604+65.45		0.04	4	BRIDGE END ADD SURFACING LT
602+65.45	604+65.45	0.04		4	BRIDGE END ADD SURFACING RT
605+44.55 BE	607+44.55		0.04	4	BRIDGE END ADD SURFACING LT
605+44.55 BE	607+44.55	0.04			BRIDGE END ADD SURFACING RT
SUBTOTAL		0.29	0.29	58.00	
SUBTOTAL		0.68	0.68	138	
TOTAL		1.35	~		

FOR INFORMATION ONLY, INCLUDE IN THE COST OF RUMBLE STRIPS

PROJECT NAME

GARRYOWEN - SOUTH

COUNTY

BIG HORN

PROJECT ID

IM 90-9(141)517

UPN

10066000

DESIGNED BY

B L ANGL

05/2026

REVIEWED BY

C HOPKINS

05/2026

CHECKED BY

J CERECK

04/2026

10066000RDSUM001.DWG



ROAD PLANS

7/20/2026 8:18 AM

GUARDRAIL										
STATION		linear feet				each				REMARKS
		REMOVE GUARDRAIL		MGS GUARDRAIL		MASH W-BEAM TERMINAL SECTION		MASH THRIE-BEAM BRIDGE APPROACH SECTION		
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	
EASTBOUND										
NEW RAIL										
282+15.63	284+50.00			162.5		1		1		LITTLE BIG HORN RIVER BRIDGE - APP. LT. SEE NOTE
282+40.63	284+50.00				137.5		1		1	LITTLE BIG HORN RIVER BRIDGE - APP. RT. SEE NOTE
286+14.50	286+98.88				12.5		1		1	LITTLE BIG HORN RIVER BRIDGE - DEP. RT. SEE NOTE
286+14.50	287+86.38			100.0		1		1		LITTLE BIG HORN RIVER BRIDGE - DEP. LT. SEE NOTE
296+51.43	300+85.80				362.5		1		1	SEP. RENO CREEK RD BRIDGE - APP. RT.
297+00.13	300+84.50			312.5		1		1		SEP. RENO CREEK RD BRIDGE - APP. LT.
302+16.20	303+88.08			100.0		1		1		SEP. RENO CREEK RD BRIDGE - DEP. LT.
302+16.20	307+68.08				480.0		1		1	SEP. RENO CREEK RD BRIDGE - DEP. RT.
427+61.93	431+46.30			312.5		1		1		SEP. COUNTYRD BRIDGE - APP. LT.
429+49.43	431+46.30				125.0		1		1	SEP. COUNTYRD BRIDGE - APP. RT.
432+53.70	433+38.08				12.5		1		1	SEP. COUNTYRD BRIDGE - DEP. RT.
432+53.70	434+25.58			100.0		1		1		SEP. COUNTYRD BRIDGE - DEP. LT.
444+86.73	455+92.98				1037.5		2			RT.
526+76.25	539+07.50				1162.5		2			RT.
600+61.63	604+46.00			312.5		1		1		SEP. COUNTYRD BRIDGE - APP. LT.
602+49.13	604+46.00				125.0		1		1	SEP. COUNTYRD BRIDGE - APP. RT.
605+44.00	609+94.00				437.5		1		1	SEP. COUNTYRD BRIDGE - DEP. RT.
605+44.00	607+15.88			100.0		1		1		SET. COUNTYRD BRIDGE - DEP. LT.
SUBTOTAL				1,400.0	3,892.5	8	12	8	8	
REMOVE RAIL										
282+00.00	284+50.00	250.0								LITTLE BIG HORN RIVER BRIDGE - APP. LT.
282+25.00	284+50.00		225.0							LITTLE BIG HORN RIVER BRIDGE - APP. RT.
296+35.80	300+85.80		450.0							SEP. RENO CREEK RD BRIDGE - APP. RT.
296+84.50	300+84.50	400.0								SEP. RENO CREEK RD BRIDGE - APP. LT.
302+16.20	307+78.70		562.5							SEP. RENO CREEK RD BRIDGE - DEP. RT.
427+46.30	431+46.30	400.0								SEP. COUNTYRD BRIDGE - APP. LT.
429+33.80	431+46.30		212.5							SEP. COUNTYRD BRIDGE - APP. RT.
444+86.73	456+24.23		1,137.5							RT.
526+57.50	539+20.00		1,262.5							RT.
600+46.00	604+46.00	400.0								SEP. COUNTYRD BRIDGE - APP. LT.
602+33.50	604+46.00		212.5							SEP. COUNTYRD BRIDGE - APP. RT.
605+44.00	609+94.00		450.0							SEP. COUNTYRD BRIDGE - DEP. RT.
SUBTOTAL		1,450.0	4,512.5							
WESTBOUND										
NEW RAIL										
282+70.92	284+42.80				100.0		1		1	LITTLE BIG HORN RIVER BRIDGE - DEP. RT.
283+51.03	284+35.40			12.5		1		1		LITTLE BIG HORN RIVER BRIDGE - DEP. LT.
286+00.00	288+34.38			162.5		1		1		LITTLE BIG HORN RIVER BRIDGE - APP. LT.
286+07.40	289+91.78				312.5		1		1	LITTLE BIG HORN RIVER BRIDGE - APP. RT.
299+13.92	300+85.80			100.0		1		1		SEP. RENO CREEK RD BRIDGE - DEP. LT.
300+01.43	300+85.80				12.5		1		1	SEP. RENO CREEK RD BRIDGE - DEP. RT.
302+18.50	306+02.88				312.5		1		1	SEP. RENO CREEK RD BRIDGE - APP. RT.
302+19.80	305+54.18			262.5		1		1		SEP. RENO CREEK RD BRIDGE - APP. LT.
427+11.33	431+45.70			362.5		1		1		SEP. COUNTYRD BRIDGE - DEP. LT.
429+73.82	431+45.70				100.0		1		1	SEP. COUNTYRD BRIDGE - DEP. RT.
432+54.30	434+51.18			125.0		1		1		SEP. COUNTYRD BRIDGE - APP. LT.
432+54.30	436+38.68				312.5		1		1	SEP. COUNTYRD BRIDGE - APP. RT.
449+50.00	463+21.88			1,325.0		2				LT.
534+42.15	545+60.90			1,050.0		2				LT.
602+83.52	604+55.40				100.0		1		1	SEP. COUNTYRD BRIDGE - DEP. RT.
603+71.03	604+55.40			12.5		1		1		SEP. COUNTYRD BRIDGE - DEP. LT.
605+54.00	611+25.88			500.0		1		1		SEP. COUNTYRD BRIDGE - APP. LT.
605+54.00	609+38.38				312.5		1		1	SEP. COUNTYRD BRIDGE - APP. RT.
SUBTOTAL				3,912.5	1,562.5	12	8	8	8	
REMOVE RAIL										
286+00.00	288+50.00	250.0								LITTLE BIG HORN RIVER BRIDGE - APP. LT.
286+07.40	290+07.40		400.0							LITTLE BIG HORN RIVER BRIDGE - APP. RT.
302+18.50	306+18.50		400.0							SEP. RENO CREEK RD BRIDGE - APP. RT.
302+19.80	305+69.80	350.0								SEP. RENO CREEK RD BRIDGE - APP. LT.
426+95.70	431+45.70	450.0								SEP. COUNTYRD BRIDGE - DEP. LT.
432+54.30	434+66.80	212.5								SEP. COUNTYRD BRIDGE - APP. LT.
432+54.30	436+54.30		400.0							SEP. COUNTYRD BRIDGE - APP. RT.
449+62.50	463+31.25	1,387.5								LT.
534+00.00	545+29.50	1,129.5								LT.
605+54.00	611+41.50	587.5								SEP. COUNTYRD BRIDGE - APP. LT.
605+54.00	609+54.00		400.0							SEP. COUNTYRD BRIDGE - APP. RT.
SUBTOTAL		4,367.0	1,600.0							
SUBTOTAL		5,817.0	6,112.5	5,312.5	5,455.0	20	20	16	16	
TOTAL		11,930		10,768		40		32		

RT AND LT BASED ON ALIGNMENT DIRECTION
NOTE: USE 12:1 TAPER ON EASTBOUND LITTLE BIG HORN RIVER BRIDGE GUARDRAIL BEGINNING AT THE START OF STANDARD MGS RAIL TO TRANSITION TO FULL TYPICAL WIDTH.

GUARDRAIL END SECTION WIDENING				
STATION		each		REMARKS
		GUARDRAIL END SECTION WIDENING #		
FROM	TO	LEFT	RIGHT	
EASTBOUND				
282+15.63	284+50.00	1		LITTLE BIG HORN RIVER BRIDGE - APP. LT.
282+40.63	284+50.00		1	LITTLE BIG HORN RIVER BRIDGE - APP. RT.
286+14.50	286+98.88		1	LITTLE BIG HORN RIVER BRIDGE - DEP. RT.
286+14.50	287+86.38	1		LITTLE BIG HORN RIVER BRIDGE - DEP. LT.
296+51.43	300+85.80		1	SEP. RENO CREEK RD BRIDGE - APP. RT.
297+00.13	300+84.50	1		SEP. RENO CREEK RD BRIDGE - APP. LT.
302+16.20	303+88.08	1		SEP. RENO CREEK RD BRIDGE - DEP. LT.
302+16.20	307+68.08		1	SEP. RENO CREEK RD BRIDGE - DEP. RT.
427+61.93	431+46.30	1		SEP. COUNTY RD BRIDGE - APP. LT.
429+49.43	431+46.30		1	SEP. COUNTY RD BRIDGE - APP. RT.
432+53.70	433+38.08		1	SEP. COUNTY RD BRIDGE - DEP. RT.
432+53.70	434+25.58	1		SEP. COUNTY RD BRIDGE - DEP. LT.
444+86.73	455+92.98		2	RT.
526+76.25	539+07.50		2	RT.
600+61.63	604+46.00	1		SEP. COUNTY RD BRIDGE - APP. LT.
602+49.13	604+46.00		1	SEP. COUNTY RD BRIDGE - APP. RT.
605+44.00	609+94.00		1	SEP. COUNTY RD BRIDGE - DEP. RT.
605+44.00	607+15.88	1		SET. COUNTY RD BRIDGE - DEP. LT.
WESTBOUND				
282+70.92	284+42.80		1	LITTLE BIG HORN RIVER BRIDGE - DEP. RT.
283+51.03	284+35.40	1		LITTLE BIG HORN RIVER BRIDGE - DEP. LT.
286+00.00	288+34.38	1		LITTLE BIG HORN RIVER BRIDGE - APP. LT.
286+07.40	289+91.78		1	LITTLE BIG HORN RIVER BRIDGE - APP. RT.
299+13.92	300+85.80	1		SEP. RENO CREEK RD BRIDGE - DEP. LT.
300+01.43	300+85.80		1	SEP. RENO CREEK RD BRIDGE - DEP. RT.
302+18.50	306+02.88		1	SEP. RENO CREEK RD BRIDGE - APP. RT.
302+19.80	305+54.18	1		SEP. RENO CREEK RD BRIDGE - APP. LT.
427+11.33	431+45.70	1		SEP. COUNTY RD BRIDGE - DEP. LT.
429+73.82	431+45.70		1	SEP. COUNTY RD BRIDGE - DEP. RT.
432+54.30	434+51.18	1		SEP. COUNTY RD BRIDGE - APP. LT.
432+54.30	436+38.68		1	SEP. COUNTY RD BRIDGE - APP. RT.
449+50.00	463+21.88	2		LT.
534+42.15	545+60.90	2		LT.
602+83.52	604+55.40		1	SEP. COUNTY RD BRIDGE - DEP. RT.
603+71.03	604+55.40	1		SEP. COUNTY RD BRIDGE - DEP. LT.
605+54.00	611+25.88	1		SEP. COUNTY RD BRIDGE - APP. LT.
605+54.00	609+38.38		1	SEP. COUNTY RD BRIDGE - APP. RT.
SUBTOTAL		20	20	
TOTAL		40		

UTILIZE COLD MILLINGS IN LIEU OF SHOULDER GRAVEL UNTIL MILLINGS ARE EXHAUSTED.
SUPPLEMENT REMAINING QUANTITIES WITH SHOULDER GRAVEL.

TEMPORARY GUARDRAIL										
STATION		linear feet		each						REMARKS
		TEMPORARY METAL GUARDRAIL		TEMPORARY OPTIONAL TERMINAL SECTION		TEMPORARY BRIDGE APPROACH SECTION TYPE 1		TEMPORARY BRIDGE APPROACH SECTION TYPE 3		
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	
EASTBOUND										
286+14.50	286+98.88		25.0		1				1	LITTLE BIGHORN RIVER BRIDGE - DEP. RT
268+14.50	287+86.38	112.5		1				1		LITTLE BIGHORN RIVER BRIDGE - DEP. LT
302+16.20	303+88.08	112.5		1		1				SEP RENO CREEK RD BRIDGE - DEP. LT
307+68.08	307+68.08				1					SEP RENO CREEK RD BRIDGE - DEP. RT
432+53.70	433+38.08		25.0		1		1			SEP COUNTY RD BRIDGE - DEP. RT
432+53.70	434+25.58	112.5		1		1				SEP COUNTY RD BRIDGE - DEP. LT
455+92.98	455+92.98				1					RT.
539+07.50	539+07.50				1					RT.
605+44.00	607+15.88	112.5		1		1				SEP COUNTY RD BRIDGE - DEP. LT
609+94.00	609+94.00				1					SEP COUNTY RD BRIDGE - DEP. RT
SUBTOTAL		450	50	4	6	3	1	1	1	
WESTBOUND										
282+70.92	384+42.80		112.5		1		1			LITTLE BIGHORN RIVER BRIDGE - DEP. RT
283+51.03	284+35.40			1		1				LITTLE BIGHORN RIVER BRIDGE - DEP. LT
299+13.92	300+85.80	112.5		1		1				SEP RENO CREEK RD BRIDGE - DEP. LT
300+01.43	300+85.80		25.0		1		1			SEP RENO CREEK RD BRIDGE - DEP. RT
427+11.33	427+11.33				1					SEP COUNTY RD BRIDGE - DEP. RT
429+73.82	431+45.70	112.5		1		1				SEP COUNTY RD BRIDGE - DEP. LT
449+62.50	449+62.50			1						LT.
534+42.15	534+42.15			1						LT.
602+83.52	604+55.40		112.5		1		1			SEP COUNTY RD BRIDGE - DEP. RT
603+71.03	604+55.40	25.0		1		1				SEP COUNTY RD BRIDGE - DEP. LT
SUBTOTAL		#275	#250	#6	#4	#4	#3	#	#	
SUBTOTAL		450	50	4	6	3	1	1	1	
TOTAL		500		10		4		2		

RT AND LT BASED ON DRIVING DIRECTION
WESTBOUND QUANTITIES NOT INCLUDED IN TOTAL. IN CASE THAT EASTBOUND LANES ARE CLOSED FIRST, USE WESTBOUND QUANTITIES IN LIEU OF EASTBOUND.

REVEGETATION						
STATION		lump sum	cu. yards	acres		REMARKS
		REVEGE-TATION	TOPSOIL PLACING	SEED	CONDITION SEEDBED	
FROM	TO					
266+55		0.17	14	0.03	0.03	FOR NEW MEDIAN U-TURN RP 517.1
282+91	284+41	0.17	82	0.15	0.15	FOR DIGOUT NO. 1, WESTBOUND
325+60	325+60	0.17	16	0.03	0.03	FOR REMOVAL OF MEDIAN U-TURN RP 518.3
419+50	421+50	0.17	110	0.20	0.20	FOR DIGOUT NO. 2, EASTBOUND
432+39	435+39	0.17	164	0.15	0.15	FOR DIGOUT NO. 3, EASTBOUND
560+50	561+75	0.17	69	0.13	0.13	FOR DIGOUT NO. 4, EASTBOUND
TOTAL		1	# 455	# 0.7	# 0.7	

FOR INFORMATION ONLY

MEDIAN CROSSOVER *					
STATION		each			REMARKS
		CROSSOVER - MAINTAIN, & CLOSE	CROSSOVER RECLAMATION	CROSSOVER - CONST., MAINTAIN, & CLOSE	
FROM	TO				
207+90.47	217+55.78		1	1	NEW PERMANENT CROSSOVER
620+15.00	628+15.00	1			EXISTING CROSSOVER
TOTAL		1	1	1	

* SEE DETAIL

TRAFFIC CONTROL				
STATION			miles	REMARKS
		CROSS OVER	TWO-WAY TRAFFIC	
FROM	TO			
209+28.00	216+52.50	2		MEDIAN CROSSOVER AT R.P. 516.4
620+15.00	628+15.00	2		MEDIAN CROSSOVER AT R.P. 524.0
225+19.00	624+15.00		7.6	R.P. 516.4 TO R.P. 524.0 EASTBOUND
225+19.00	624+15.00		7.6	R.P. 516.4 TO R.P. 524.0 WESTBOUND
TOTAL		4	15.2	

WIDE LOAD MARSHALLING			
STATION		lump sum	REMARKS
		WIDE LOAD MARSHALLING	
FROM	TO		
207+00.00	624+15.00	1.0	
TOTAL		1.0	

PAVEMENT MARKINGS					
ITEM	UNIT	INTERIM APPLICA-TION #	FINAL APPLICA-TION	TOTAL	
STRIPING - WHITE PAINT	gallon	334		334	
STRIPING - YELLOW PAINT	gallon	267		267	
STRIPING - WHITE EPOXY	gallon		445	445	
STRIPING - YELLOW EPOXY	gallon		356	356	
FINAL SWEEP AND BROOM	course mile			14.8	

BASED ON 2 APPLICATIONS.

SHEET NO.

8

SUMMARIES

PROJECT NAME

GARRYOWEN - SOUTH

COUNTY

BIG HORN

PROJECT ID

IM 90-9(141)517

UPN

10066000

DESIGNED BY

B LANGEL

05/2026

REVIEWED BY

C HOPKINS

05/2026

CHECKED BY

J CERECK

04/2026

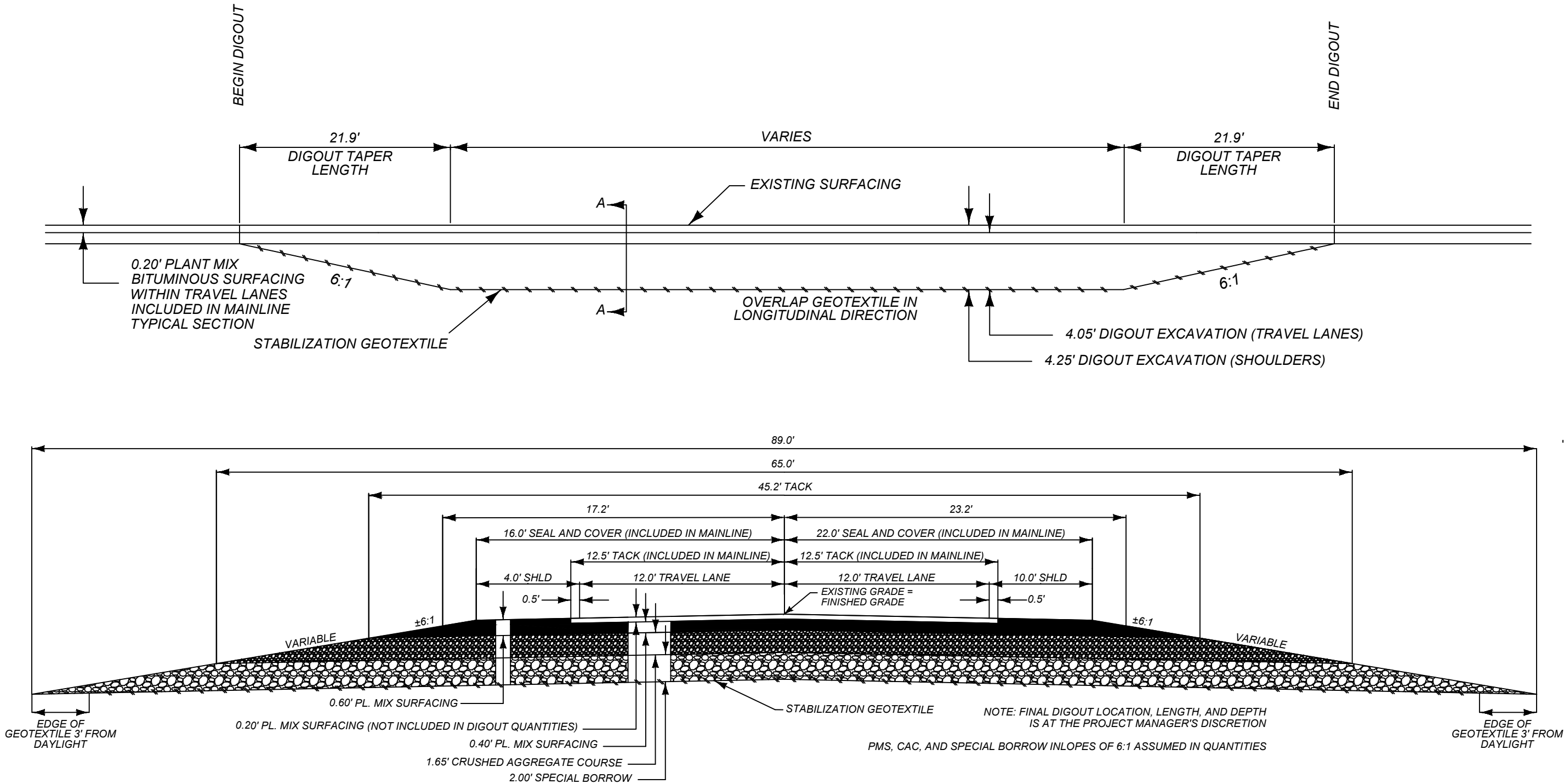
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MONTANA

Department of Transportation

ROAD PLANS

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SECTION A-A

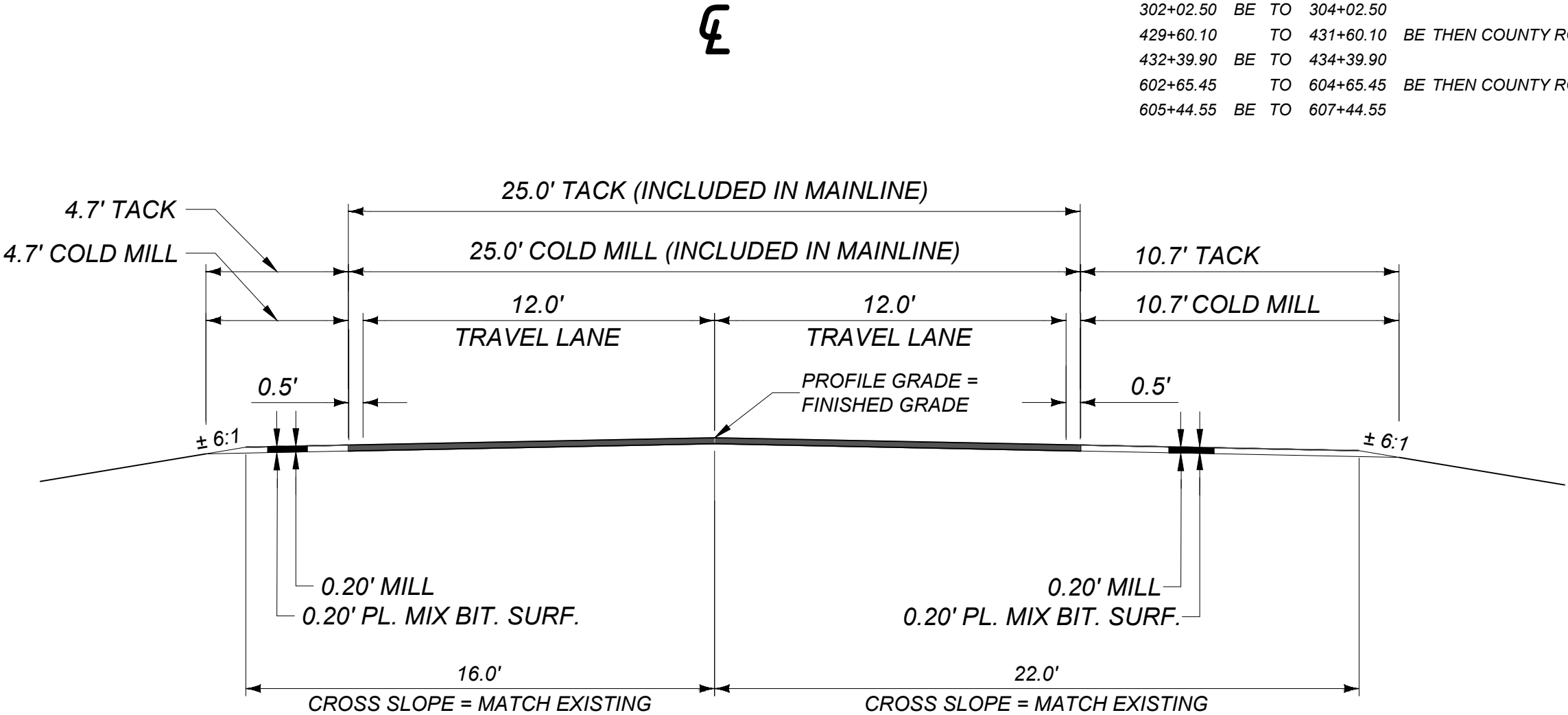
QUANTITIES - FULL WIDTH DIGOUT							
UNIT	AGGREGATE			STAB. GEOTEXTILE	UNIT	BITUMINOUS MATERIAL	
	PLANT MIX**	CRUSHED AGG. COURSE	SPECIAL BORROW			ASPHALT BINDER	EMULSIFIED ASPHALT TACK *
AREA square feet	19.86	93.23	162.96		square yards PER STATION		
cubic yards PER STATION	73.6	345.3	603.6		tons PER STATION	8.28	50
tons PER STATION	153.3				gals PER STATION		
square yards PER STATION				922.2			

* BASED ON TWO APPLICATIONS

**INCLUDES SHOULDER

EASTBOUND			
282+53.25	TO	284+53.25	BE THEN LITTLE BIGHORN RIVER BRIDGE
286+11.25	BE TO	288+11.25	
298+99.50	TO	300+99.50	BE THEN RENO CREEK ROAD BRIDGE
302+02.50	BE TO	304+02.50	
429+60.75	TO	431+60.75	BE THEN COUNTY ROAD BRIDGE
602+55.50	TO	604+55.50	BE THEN COUNTY ROAD BRIDGE
605+34.50	BE TO	607+34.50	

WESTBOUND			
286+05.65	BE TO	288+05.65	
298+99.50	TO	300+99.50	BE THEN RENO CREEK ROAD BRIDGE
302+02.50	BE TO	304+02.50	
429+60.10	TO	431+60.10	BE THEN COUNTY ROAD BRIDGE
432+39.90	BE TO	434+39.90	
602+65.45	TO	604+65.45	BE THEN COUNTY ROAD BRIDGE
605+44.55	BE TO	607+44.55	



NOTE: FINAL LENGTH OF BRIDGE END ADDITIONAL SURFACING IS AT PROJECT MANAGER'S DISCRETION.

QUANTITIES				
UNIT	AGGREGATE	UNIT	BITUMINOUS MATERIAL	
	PLANT MIX		ASPHALT BINDER	EMULSIFIED ASPHALT TACK *
AREA square feet	2.88	square yards PER STATION		171.11
cubic yards PER STATION	32.00	tons PER STATION	3.47	
tons PER STATION	66.67	gals PER STATION		8.56

* BASED ON ONE APPLICATION

SHEET NO.
10

BRIDGE END ADDITIONAL SURFACING DETAIL

PROJECT NAME
GARRYOWEN - SOUTH

COUNTY
BIG HORN

PROJECT ID
IM 90-9(141)517

UPN
10066000

DESIGNED BY
B LANGEL

REVIEWED BY
C HOPKINS

CHECKED BY
J CERECK

DATE
05/2026

DATE
05/2026

DATE
05/2026

DATE
05/2026

MONTANA
Department of Transportation

ROAD PLANS

7/20/2026 8:18 AM

U-TURN MEDIAN
OPENING DETAIL

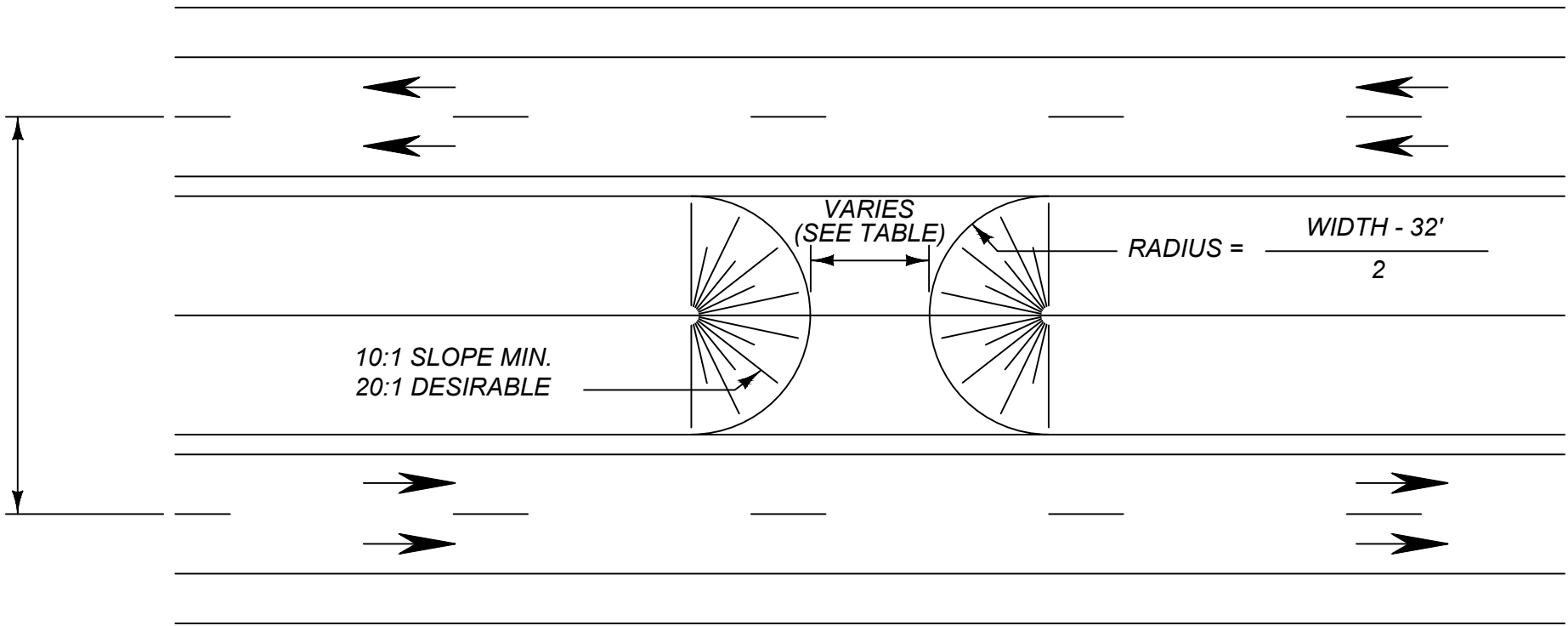
LOCATION

266+55.00 CONSTRUCT & PAVE NEW U-TURN OPENING R.P. 517.1
325+60.00 REMOVE EXISTING U-TURN OPENING R.P. 518.3
386+35.00 PAVE EXISTING U-TURN OPENING R.P. 519.5
510+00.00 PAVE EXISTING U-TURN OPENING R.P. 521.8

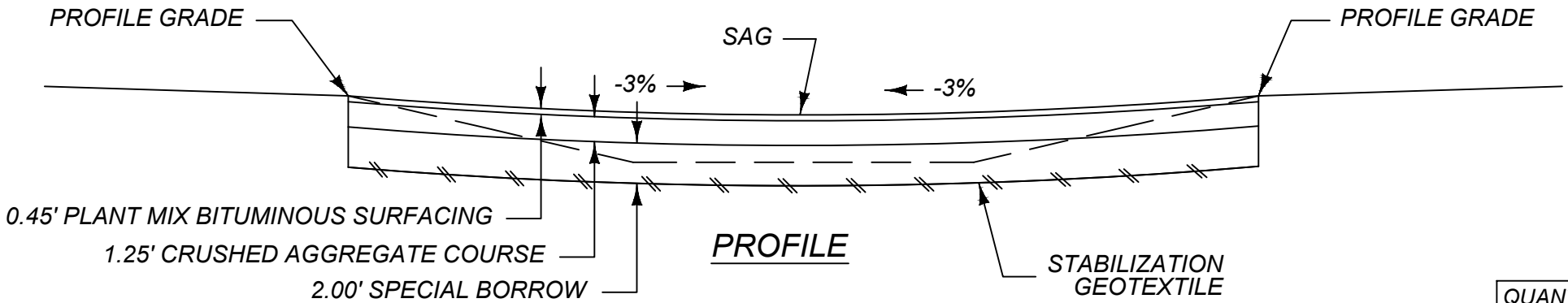
OPENING WIDTHS

LOCATION	WIDTH (FT)
266+55 (RP 517.1)	90
386+35 (RP 519.5)	24
510+00 (RP 521.8)	24

WIDTH
(£ TO £)



PLAN



PROFILE

MEDIAN WIDTHS 36' TO 76'

1. LOCATE AND CONSTRUCT TURNOUT AT STA 266+55 TO BE USED AS A DITCH BLOCK ON THE NORTH SIDE OF THE EXISTING MEDIAN INLET AT STA 267+50 TO PREVENT PONDING NEXT TO THE TURNOUT. DO NOT DISTURB OR OBSTRUCT EXISTING MEDIAN INLET.
2. FINAL LOCATION TO BE DETERMINED BY PROJECT MANAGER.

QUANTITIES FOR U TURN MEDIAN OPENINGS

NOTE: SEE ADDITIONAL SURFACING AND
GRADING SUMMARY FRAMES FOR QUANTITIES.

QUANTITIES MEASURED ON C.A.D.

PROJECT NAME

GARRYOWEN - SOUTH

COUNTY

BIG HORN

PROJECT ID

IM 90-9(141)517

UPN

10066000

DESIGNED BY

B LANGE 05/2026

REVIEWED BY

C HOPKINS 05/2026

CHECKED BY

J CERECK 04/2026

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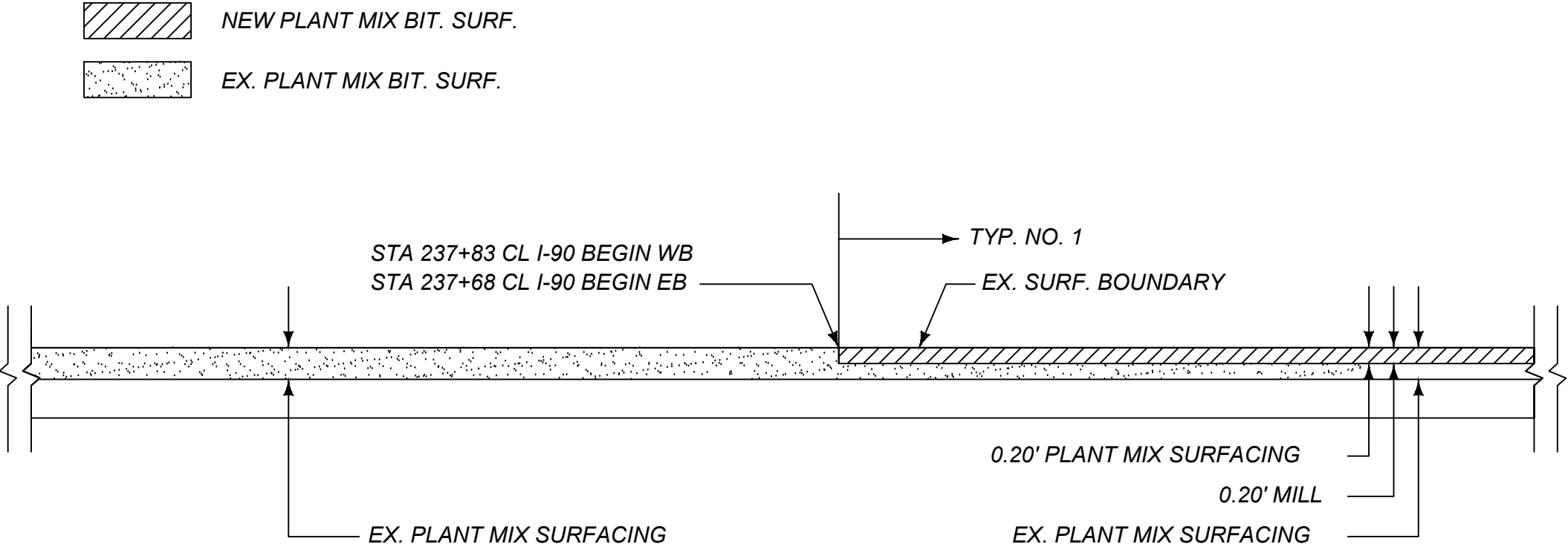
ROAD PLANS

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PROJECT BEGIN CONNECTION - PLAN VIEW

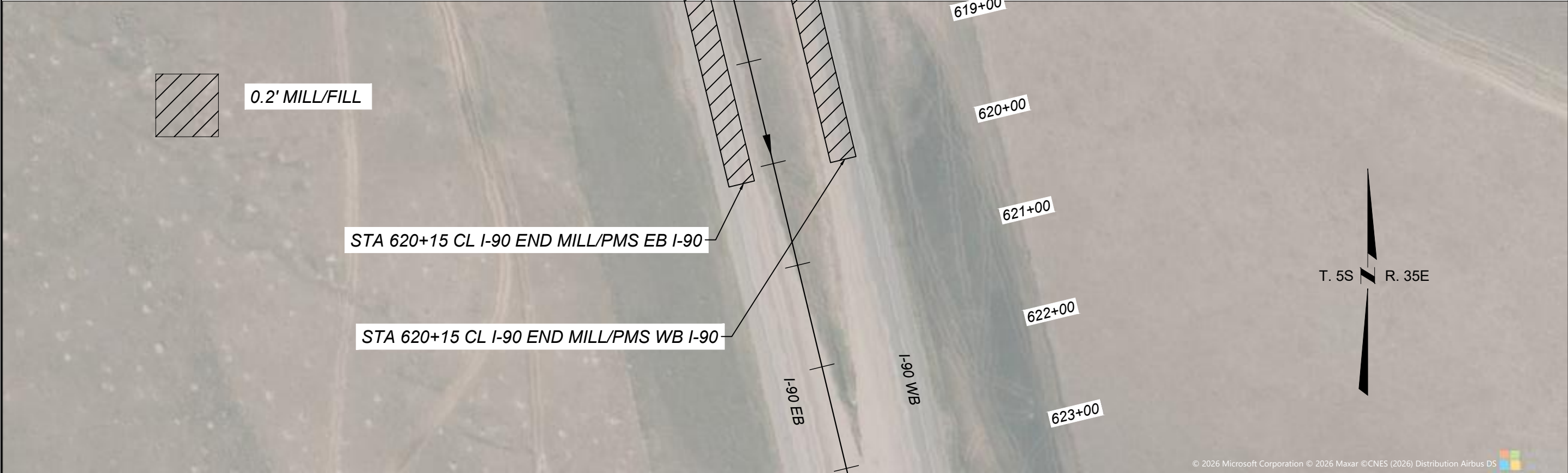


PROJECT BEGIN CONNECTION -PROFILE VIEW

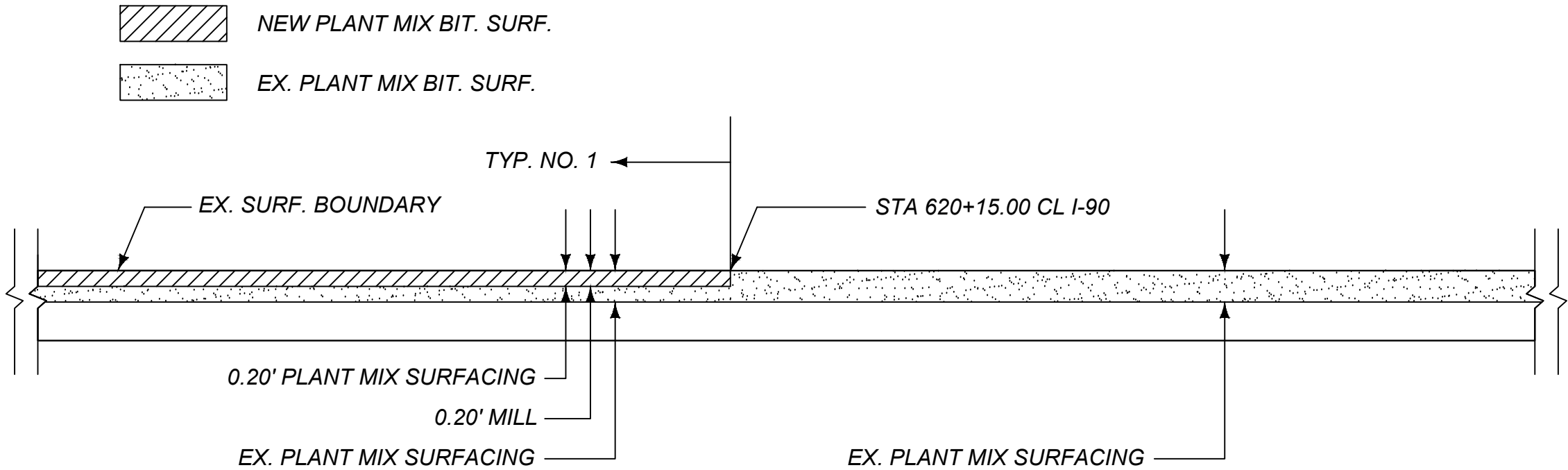


SHEET NO.		12		PROJECT BEGIN CONNECTION DETAIL			
 MONTANA Department of Transportation		DESIGNED BY		PROJECT NAME			
		B LANGE		GARRYOWEN - SOUTH			
		REVIEWED BY		COUNTY			
		C HOPKINS		BIG HORN			
ROAD PLANS		CHECKED BY		PROJECT ID			
		J CERECK		IM 90-9(141)517			
				UPN			
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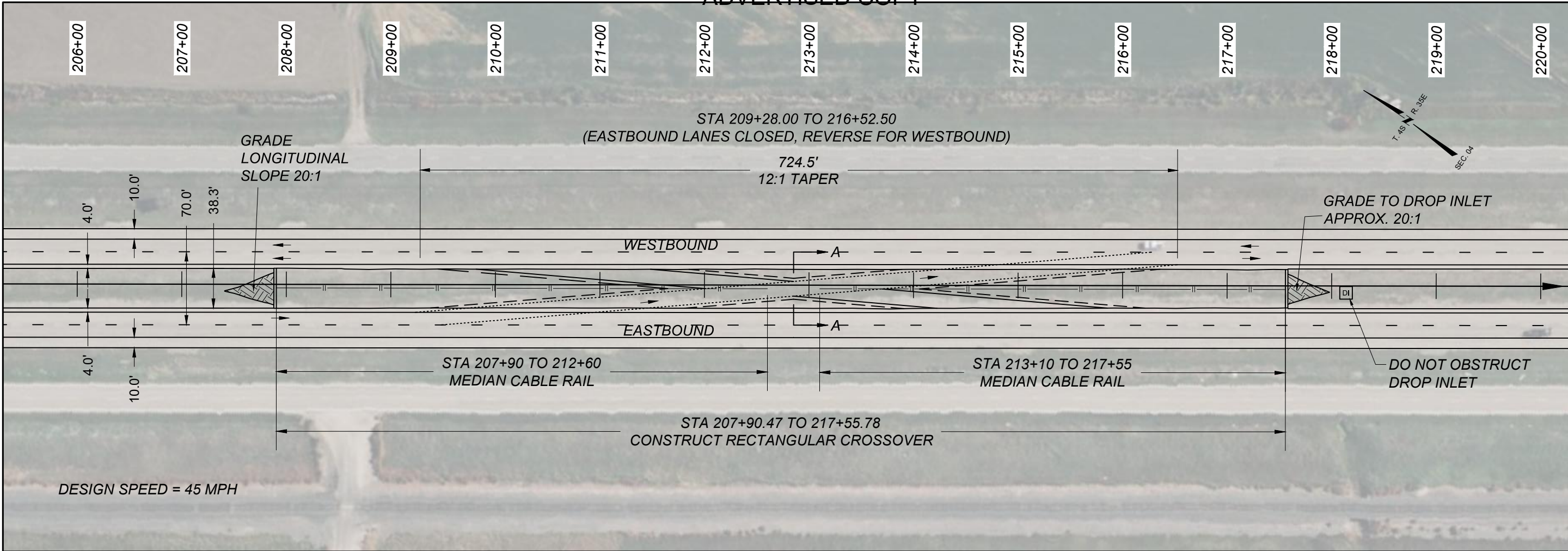
PROJECT END CONNECTION - PLAN VIEW



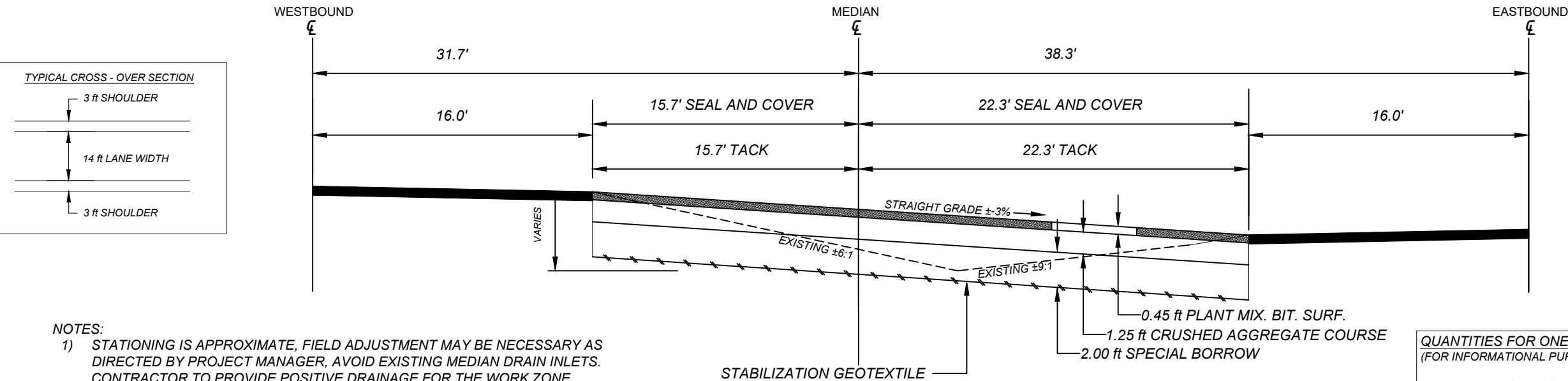
PROJECT END CONNECTION - PROFILE VIEW



SHEET NO.		13	
PROJECT NAME		GARRYOWEN - SOUTH	
COUNTY		BIG HORN	
PROJECT ID		IM 90-9(141)517	
UPN		10066000	
DESIGNED BY	05/2026	REVIEWED BY	05/2026
B LANGE		C HOPKINS	
CHECKED BY	04/2026	10066000RDET002.DWG	
J CEREC			
MONTANA Department of Transportation		ROAD PLANS	
7/20/2026 8:19 AM			



SECTION A-A

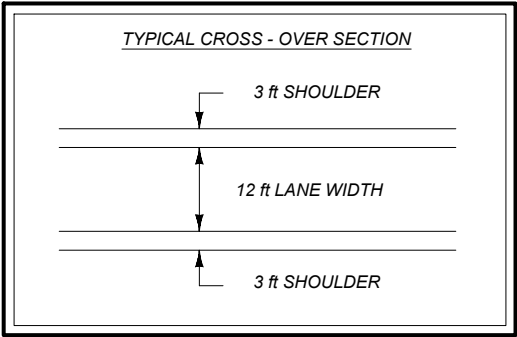
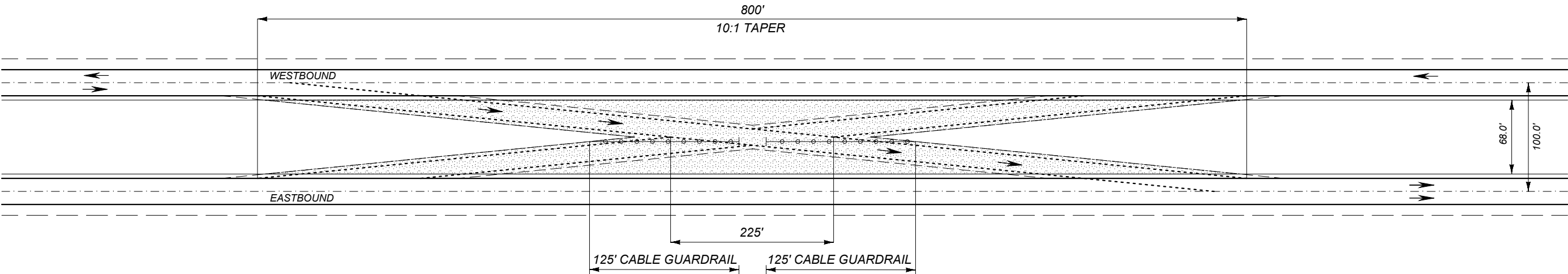


- NOTES:
- 1) STATIONING IS APPROXIMATE, FIELD ADJUSTMENT MAY BE NECESSARY AS DIRECTED BY PROJECT MANAGER, AVOID EXISTING MEDIAN DRAIN INLETS. CONTRACTOR TO PROVIDE POSITIVE DRAINAGE FOR THE WORK ZONE. MEDIAN INSLOPES 20:1 FOR PERMANENT CROSSOVER.
 - 2) CABLE GUARDRAIL TO BE NCHRP 350 APPROVED FOR USE IN MEDIANS FOR BOTH TEMPORARY AND PERMANENT APPLICATIONS.
 - 3) 50 FT OPENING TO BE LEFT IN CENTER OF CABLE GUARDRAIL UPON CLOSURE FOR USE AS A MAINTENANCE TURNAROUND.

QUANTITIES FOR ONE MEDIAN CROSSOVER
(FOR INFORMATIONAL PURPOSES ONLY)

PLANT MIX BIT. SURF. GR. S-3/4" = 1,247 TONS
ASPHALT BINDER 58V-34 = 65 TONS
CRUSHED AGGREGATE COURSE = 1,671 CU YD
SPECIAL BORROW = 2,674 CU YD
UNCLASS. EXCAVATION = 1,604 CU YD
STABILIZATION GEOTEXTILE = 4,010 SQ YD
CABLE GUARDRAIL = 915 FT
EMULSIFIED ASPHALT - TACK = 798 GAL (2 APPS.)
SEAL = 1,676 GAL
COVER = 3,390 SQ YD

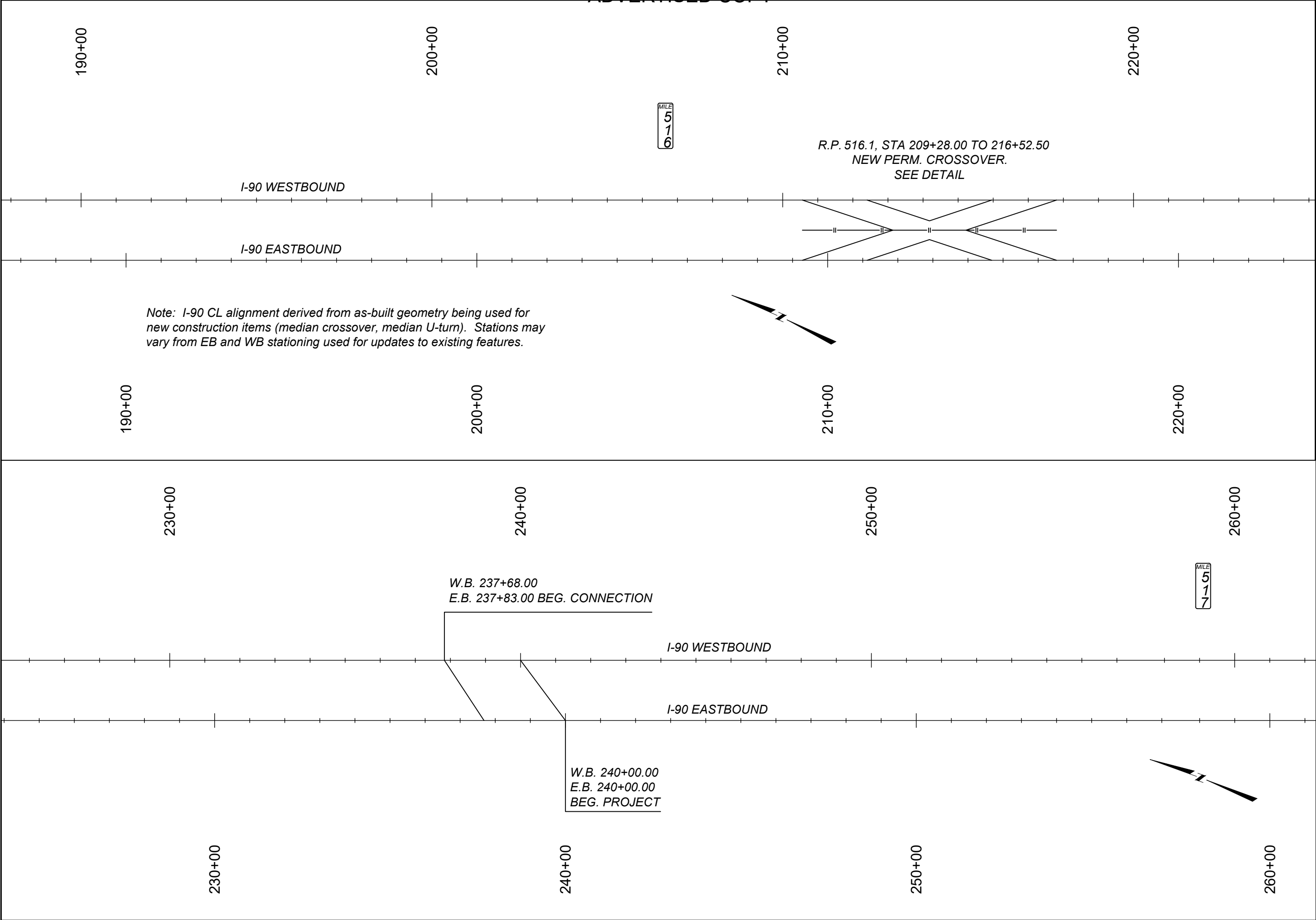
STA. 620+15.0 TO 628+15.0
(EASTBOUND LANES CLOSED, REVERSE FOR WESTBOUND)



QUANTITIES FOR ONE MEDIAN CROSSOVER
(FOR INFORMATIONAL PURPOSES ONLY)
CABLE GUARDRAIL = 250 ft.

- NOTES:
- 1) STATIONING IS APPROXIMATE, FIELD ADJUSTMENT MAY BE NECESSARY AS DIRECTED BY PROJECT MANAGER, AVOID EXISTING MEDIAN DRAIN INLETS. CONTRACTOR TO PROVIDE POSITIVE DRAINAGE FOR THE WORK ZONE. MEDIAN INSLOPES 20:1 FOR PERMANENT CROSSOVER.
 - 2) CABLE GUARDRAIL TO BE AN NCHRP 350 APPROVED FOR USE IN MEDIANS FOR BOTH TEMPORARY AND PERMANENT APPLICATIONS.
 - 3) REMOVE AND STOCKPILE EXISTING LENGTH OF MEDIAN CABLE GUARDRAIL & RESET UPON COMPLETION OF PROJECT.
 - 4) 50 FT OPENING TO BE LEFT IN CENTER OF CABLE GUARDRAIL UPON CLOSURE FOR USE AS A MAINTENANCE TURNAROUND.

 MONTANA Department of Transportation	PROJECT NAME GARRYOWEN - SOUTH		COUNTY BIG HORN	
	DESIGNED BY B LANGE	05/2026	REVIEWED BY C HOPKINS	05/2026
	PROJECT ID IM 90-9(141)517		UPN 10066000	
	ROAD PLANS		7/20/2026 8:19 AM	

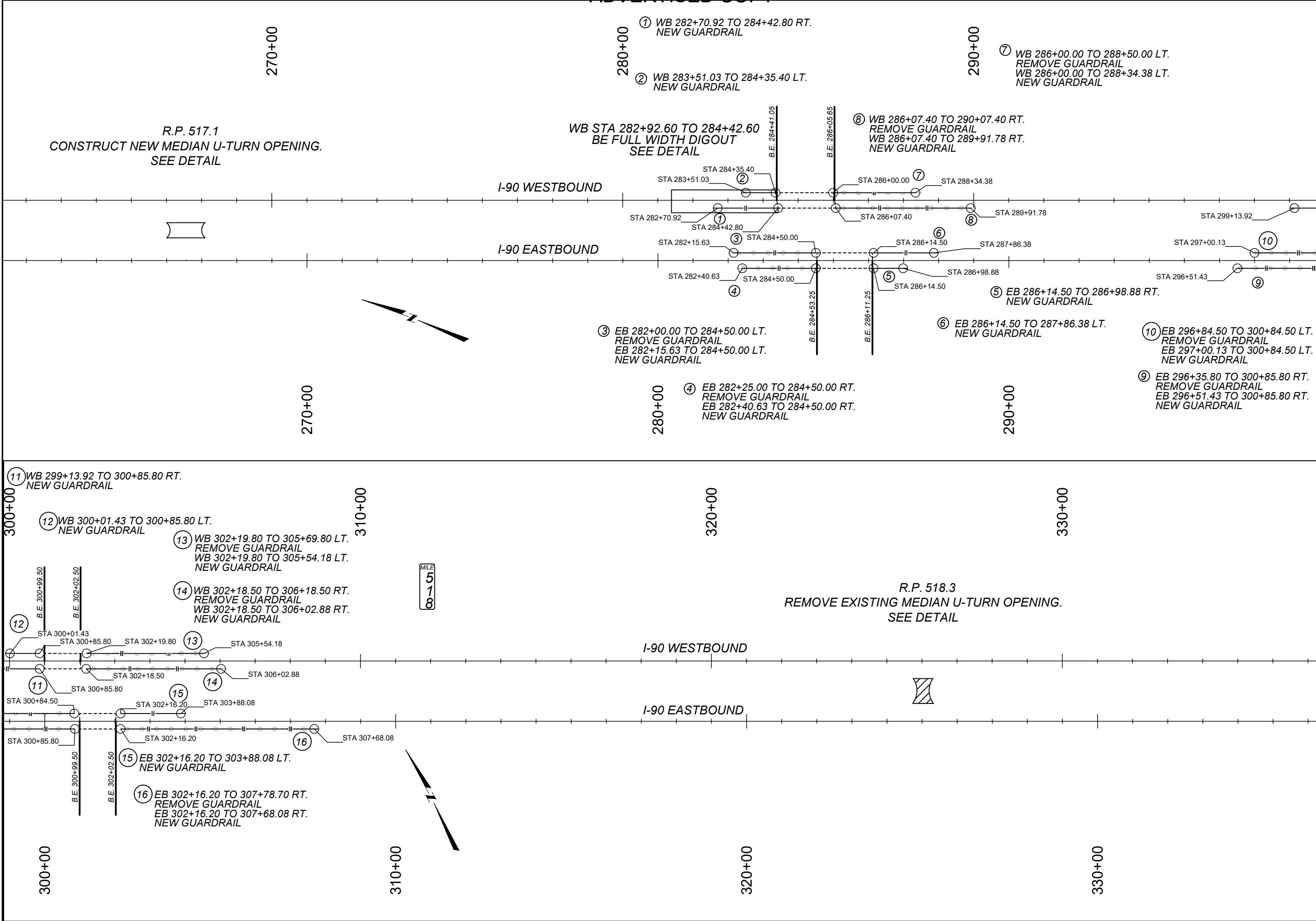


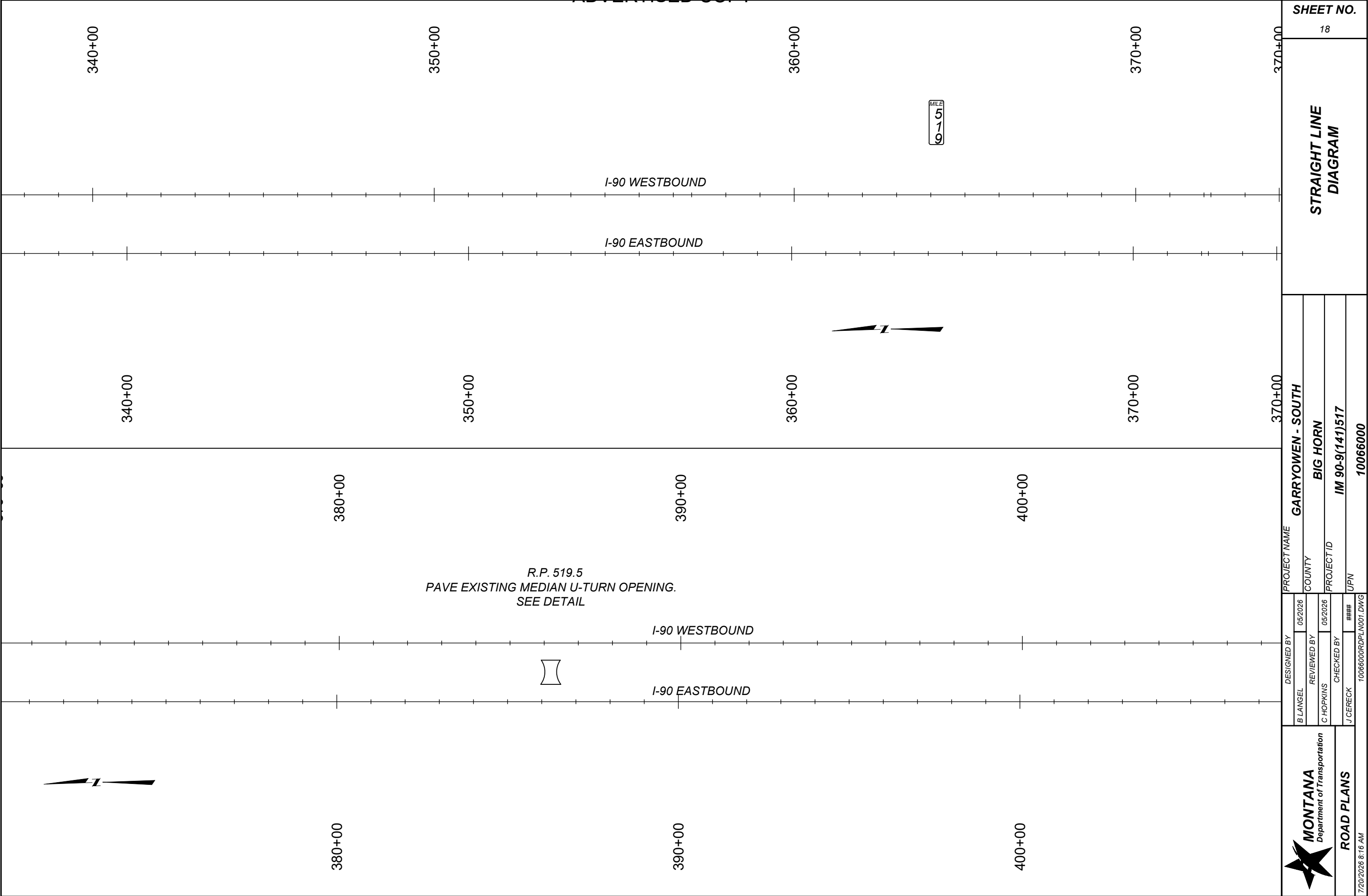
 MONTANA Department of Transportation		DESIGNED BY	PROJECT NAME	
		B L ANGEL	GARRYOWEN - SOUTH	
ROAD PLANS		REVIEWED BY	COUNTY	
		C HOPKINS	BIG HORN	
		CHECKED BY	PROJECT ID	
		J CERECK	IM 90-9(141)517	
		###	TUPN	
		10066000RDPLN001.DWG		
7/20/2026 8:16 AM		10066000		

SHEET NO.

16

**STRAIGHT LINE
DIAGRAM**





SHEET NO.

18

STRAIGHT LINE
DIAGRAM

PROJECT NAME
GARRYOWEN - SOUTH

COUNTY

BIG HORN

PROJECT ID

IM 90-9(141)517

UPN

10066000



ROAD PLANS

7/20/2026 8:16 AM

STRAIGHT LINE
DIAGRAM

PROJECT NAME
GARRYOWEN - SOUTH

COUNTY
BIG HORN

PROJECT ID
IM 90-9(141)517

UPN
10066000

DESIGNED BY
B L ANGEL

05/2026

REVIEWED BY
C HOPKINS

05/2026

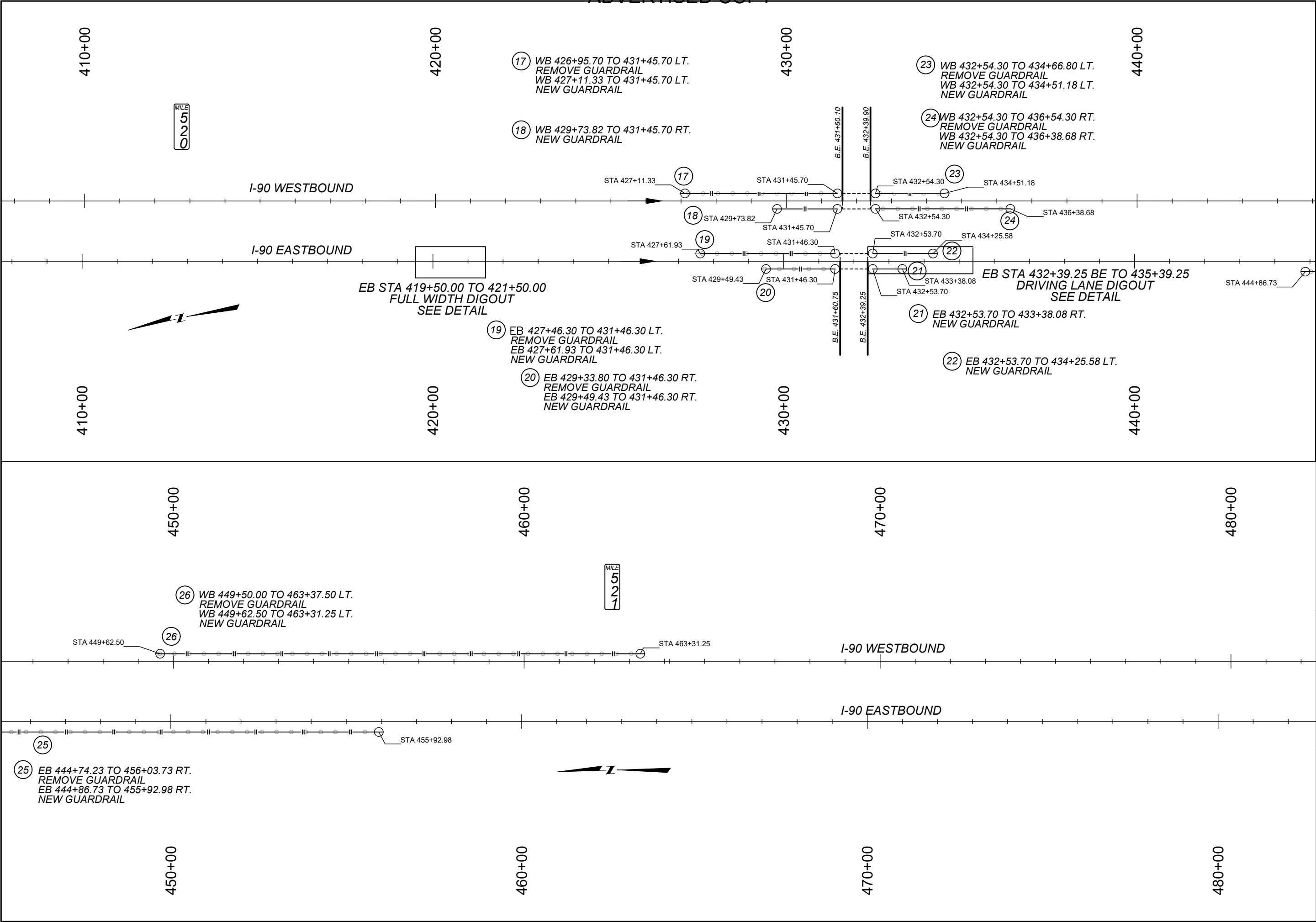
CHECKED BY
J CERECK

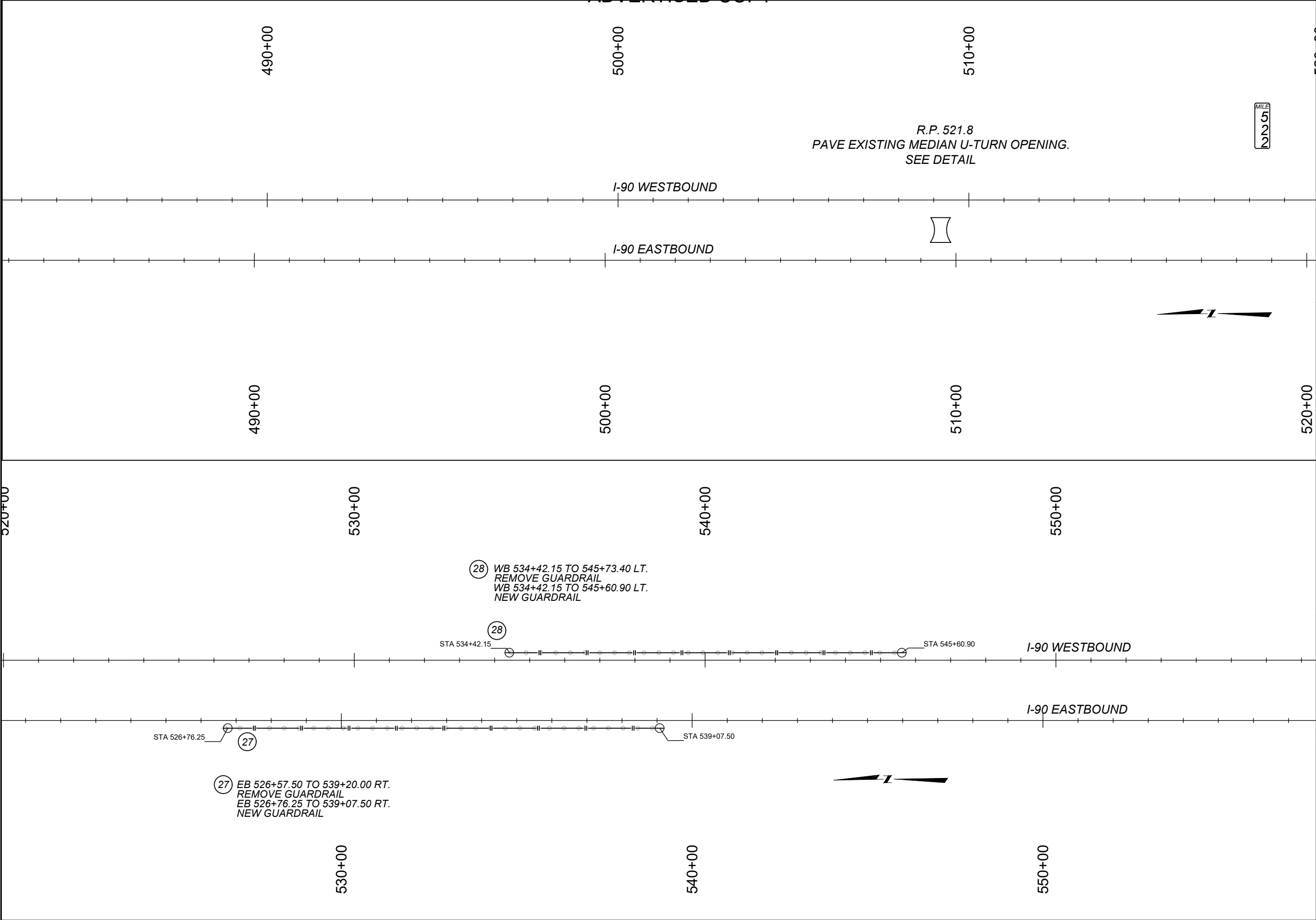
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ROAD PLANS

7/20/2026 8:16 AM





SHEET NO.	
20	
STRAIGHT LINE DIAGRAM	
PROJECT NAME	
GARRYOWEN - SOUTH	
COUNTY	
BIG HORN	
PROJECT ID	
IM 90-9(141)517	
UPN	
10066000	
DESIGNED BY	05/2026
B LANGE	
REVIEWED BY	05/2026
C HOPKINS	
CHECKED BY	###
J CERCK	
10066000RDPLN001.DWG	
MONTANA Department of Transportation	
ROAD PLANS	
7/20/2026 8:16 AM	

STRAIGHT LINE
DIAGRAM

PROJECT NAME
GARRYOWEN - SOUTH

COUNTY
BIG HORN

PROJECT ID
IM 90-9(141)517

UPN
10066000

DESIGNED BY
B LANGE

05/2026

REVIEWED BY
C HOPKINS

05/2026

CHECKED BY
J CERECK

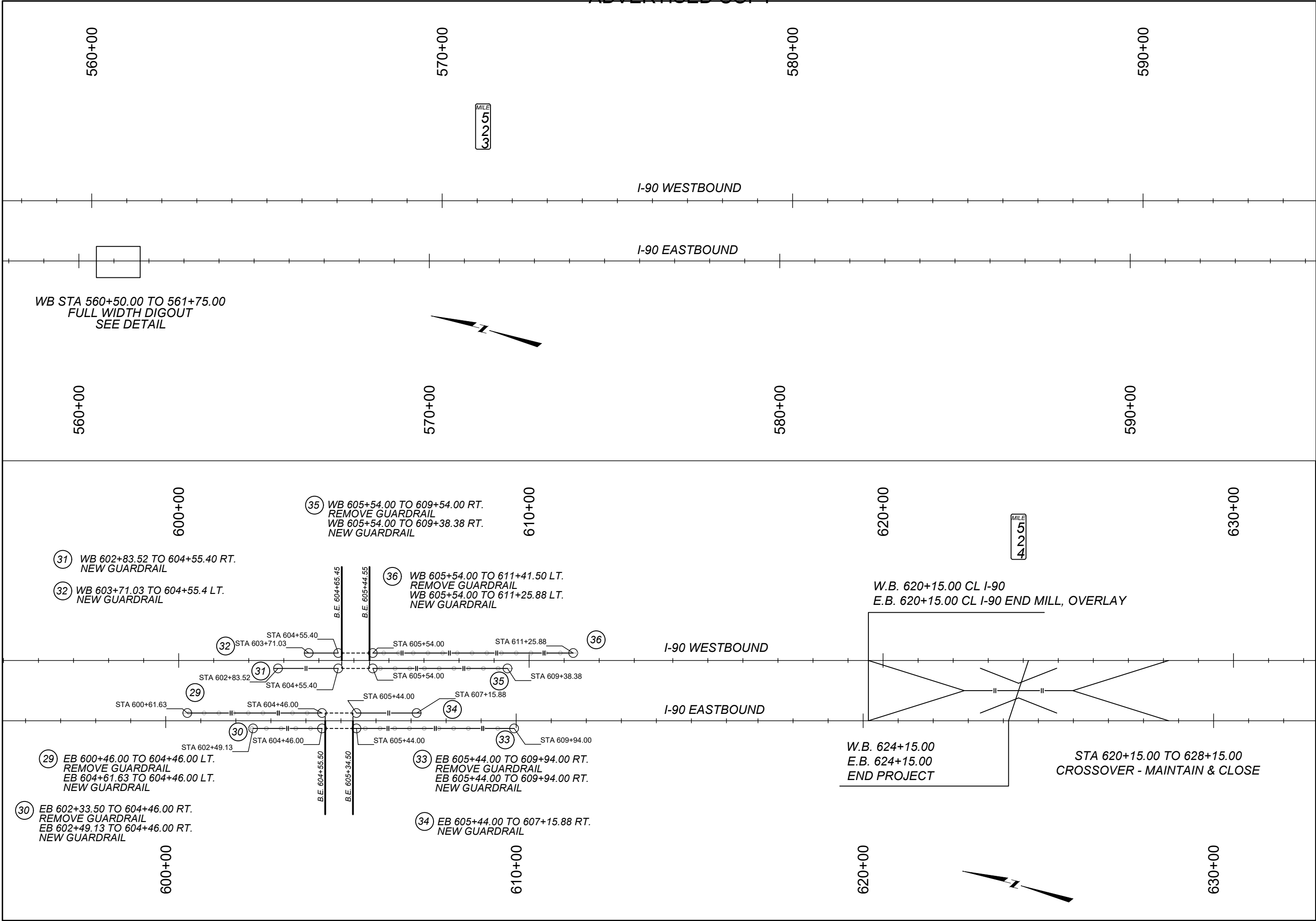
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MONTANA
Department of Transportation

ROAD PLANS

7/20/2026 8:16 AM



NOTES AND ABBREVIATIONS:

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

SIGNING AND PAVEMENT MARKING LOCATIONS ARE APPROXIMATE. PROJECT MANAGER TO FIELD ADJUST AS NECESSARY.

- MBB = MOUNT BACK TO BACK
- BBR = BACKBRACING REQUIRED:
 - FOR WOOD POLE SEE DET. DWG. 619-22
 - FOR STEEL POST 2" X 2" X 1/4" REQUIRED. SEE DET. DWG. 619-19
 - FOR STRUCTURAL STEEL POST 2 3/4" X 2 3/8" EXTRUDED "T" SECTION BACKBRACE REQUIRED. SEE DET. DWG. 619-19
 - FOR GUIDE SIGN PANELS, USE EXTRUDED "T" SECTION BACKBRACE. SEE DET. DWG. 619-04USE HARDWARE MEETING REQUIREMENTS OF SECTION 704
- RSFO = REPLACE SIGN FACE ONLY
- BGR = BEHIND GUARDRAIL

SUMMARY
SIGNING & DELINEATION QUANTITIES

MATERIAL	TOTAL	UNIT
SIGNS-ALUM REFL SHEET XI	192.0	SQFT
SIGNS-ALUM SHEET INCR XI	63.0	SQFT
REMOVE SIGN	19	EACH
POSTS-STEEL U SIGN	476	LB
POLES-TREATED WOOD 4 IN	5	EACH
PANEL DELINEATOR DESIGN A	33	EACH
PANEL DELINEATOR DESIGN H	33	EACH
DELINEATOR TYPE 1	500	EACH

SHEET NO.

S1

SIGNING NOTES AND
SUMMARY FRAME

PROJECT NAME
GARRYOWEN - SOUTH

COUNTY
BIG HORN

PROJECT ID
IM 90-9(141)517

TUPN
10066000

DESIGNED BY
K. DEWITT

08/2026

REVIEWED BY
D. VERNON

08/2026

CHECKED BY
S. PATTERSON

08/2026

10066000SISUMZ01.DWG



SIGNING PLANS

8/3/2026 11:57 AM

◀ DOWL

SIGN LOCATION			PANEL SPECIFICATIONS					SIGN ASSEMBLY SPECIFICATIONS										SIGN ASSEMBLY QUANTITIES													ADDITIONAL INFORMATION		
ACCUMULATED MILEAGE (AM)	LFT / MDN / RGT / OH	ACTION	SIGN NO. (MUTCD / MT)	PANEL SIZE (INCHES)			FY OR FYG	BACKBRACING REQ'D / 1 OR 2 ANGLE IRONS REQ'D MOUNT BACK TO BACK / CHEVRON ANGLE MOUNT	FEET CLEARANCE / OFFSET (SHOULDER TO EDGE OF SIGN)	TYPE OF SUPPORT	FEET				CANTILEVER	BREAKAWAY TYPE	BEHIND GUARDRAIL	PANEL (SQ. FT.)		WOOD POLE (EACH)			STEEL POST (LBS.)				# OF BREAKAWAYS	REMOVE		RESET		SIGN IMAGE	REMARKS
											SUPPORT SPACING	MOUNTING HEIGHT	FOUNDATION DEPTH	SUPPORT LENGTH (ESTIMATED)				SHEET ALUMINUM	SHEET ALUMINUM INCREMENT	4" TOP DIA.	5" TOP DIA.	6" TOP DIA.	ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST		SIGN	GUIDE	SIGN	GUIDE		
				W	X	H					X	Y	Z																				
I-90 (FROM WEST TO EAST)																																	
514.709	R	REPLACE	D10-6	12	X	48			6.0	3.0lb Steel U Post		4.0	3.0	12.0				4.0								36		1				REPLACE - REFERENCE POST (517)	
514.724	L	REPLACE	D10-6	12	X	48			6.0	3.0lb Steel U Post		4.0	3.0	12.0				4.0								36		1				REPLACE - REFERENCE POST (517)	
514.800	M	NEW	R5-11 (2x)	30	X	24		MBB	15.0	4" Treated Wood Pole		7.0	3.0	14.5				10.0		1												NEW - AUTHORIZED VEHICLES ONLY	
515.054	R	RSFO	W8-13	48	X	48		BBR									16.0															RSFO - BRIDGE ICES BEFORE ROAD (HINGED PANEL)	
515.200	R	RSFO	N6-2	108	X	42		BBR									BGR		31.5													RSFO - LITTLE BIGHORN RIVER	
515.205	M	REPLACE	OM3-L	12	X	36	FY		1.0	2.0lb Steel U Post		4.0	3.0	11.0			BGR	3.0								22		1				REPLACE - OBJECT MARKER	
515.205	R	REPLACE	OM3-R	12	X	36	FY		1.0	2.0lb Steel U Post		4.0	3.0	11.0			BGR	3.0								22		1				REPLACE - OBJECT MARKER	
515.235	L	RSFO	N6-2	108	X	42		BBR									BGR		31.5													RSFO - LITTLE BIGHORN RIVER	
515.375	L	RSFO	W8-13	48	X	48		BBR									16.0															RSFO - BRIDGE ICES BEFORE ROAD (HINGED PANEL)	
515.380	R	RSFO	W8-13	48	X	48		BBR									16.0															RSFO - BRIDGE ICES BEFORE ROAD (HINGED PANEL)	
515.696	L	RSFO	W8-13	48	X	48		BBR									16.0															RSFO - BRIDGE ICES BEFORE ROAD (HINGED PANEL)	
515.721	R	REPLACE	D10-6	12	X	48			6.0	3.0lb Steel U Post		4.0	3.0	12.0				4.0								36		1				REPLACE - REFERENCE POST (518)	
515.731	L	REPLACE	D10-6	12	X	48			6.0	3.0lb Steel U Post		4.0	3.0	12.0				4.0								36		1				REPLACE - REFERENCE POST (518)	
515.986	M	REMOVE SIGN	R5-11 (2x)																								1					REMOVE - AUTHORIZED VEHICLES ONLY	
516.713	R	USE AS IS	D10-6																													USE AS IS - REFERENCE POST (519)	
516.728	L	USE AS IS	D10-6																													USE AS IS - REFERENCE POST (519)	
517.219	M	REUSE	R5-11						12.0	4" Treated Wood Pole			3.0	14.0					1									1				REUSE - AUTHORIZED VEHICLES ONLY	
517.224	M	REUSE	R5-11						12.0	4" Treated Wood Pole			3.0	14.0					1									1				REUSE - AUTHORIZED VEHICLES ONLY	
517.715	R	REPLACE	D10-6	12	X	48			6.0	3.0lb Steel U Post		4.0	3.0	12.0				4.0								36		1				REPLACE - REFERENCE POST (520)	
517.720	L	REPLACE	D10-6	12	X	48			6.0	3.0lb Steel U Post		4.0	3.0	12.0				4.0								36		1				REPLACE - REFERENCE POST (520)	

SHEET NO.
S2

SIGNING LOCATION & SPECIFICATION

PROJECT NAME
GARRYOWEN - SOUTH

COUNTY
BIG HORN

PROJECT ID
IM 90-9(141)517

UPN
10066000

DESIGNED BY
K. DEWITT

REVIEWED BY
D. VERNON

CHECKED BY
S. PATTERSON

DATE
08/2026

MONTANA
Department of Transportation

SIGNING PLANS

10066000SUNZ01.DWG
8/3/2026 11:57 AM

DOWL

SIGN LOCATION			PANEL SPECIFICATIONS					SIGN ASSEMBLY SPECIFICATIONS								SIGN ASSEMBLY QUANTITIES														ADDITIONAL INFORMATION			
ACCUMULATED MILEAGE (AM)	LFT / MDN / RGT / OH	ACTION	SIGN NO. (MUTCD / MT)	PANEL SIZE (INCHES)			FY OR FYG	BACKBRACING REQ'D / 1 OR 2 ANGLE IRONS REQ'D MOUNT BACK TO BACK / CHEVRON ANGLE MOUNT	FEET CLEARANCE / OFFSET (SHOULDER TO EDGE OF SIGN)	TYPE OF SUPPORT	FEET				CANTILEVER	BREAKAWAY TYPE	BEHIND GUARDRAIL	PANEL (SQ. FT.)		WOOD POLE (EACH)			STEEL POST (LBS.)				# OF BREAKAWAYS	REMOVE		RESET		SIGN IMAGE	REMARKS
											SUPPORT SPACING	MOUNTING HEIGHT	FOUNDATION DEPTH	SUPPORT LENGTH LENGTH (ESTIMATED)				SHEET ALUMINUM	SHEET ALUMINUM INCREMENT	4" TOP DIA.	5" TOP DIA.	6" TOP DIA.	ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST		SIGN	GUIDE	SIGN	GUIDE		
				W	X	H								X																			
517.943	R	RSFO	W8-13	48	X	48											16.0															RSFO - BRIDGE ICES BEFORE ROAD (HINGED PANEL)	
518.231	L	RSFO	W8-13	48	X	48											16.0															RSFO - BRIDGE ICES BEFORE ROAD (HINGED PANEL)	
518.667	R	REPLACE	D10-6	12	X	48		6.0	3.0lb Steel U Post		4.0	3.0	12.0				4.0								36	1						REPLACE - REFERENCE POST (521)	
518.673	L	REPLACE	D10-6	12	X	48		6.0	3.0lb Steel U Post		4.0	3.0	12.0			BGR	4.0								36	1						REPLACE - REFERENCE POST (521)	
519.550	M	REUSE	R5-11					10.0	4" Treated Wood Pole		7.0	3.0	13.7					1								1						REUSE - AUTHORIZED VEHICLES ONLY	
519.559	M	REUSE	R5-11					10.0	4" Treated Wood Pole		7.0	3.0	13.7					1								1						REUSE - AUTHORIZED VEHICLES ONLY	
519.733	R	REPLACE	D10-6	12	X	48		6.0	3.0lb Steel U Post		4.0	3.0	12.0				4.0								36	1						REPLACE - REFERENCE POST (522)	
519.735	L	REPLACE	D10-6	12	X	48		6.0	3.0lb Steel U Post		4.0	3.0	12.0				4.0								36	1						REPLACE - REFERENCE POST (522)	
520.732	R	REPLACE	D10-6	12	X	48		6.0	3.0lb Steel U Post		4.0	3.0	12.0				4.0								36	1						REPLACE - REFERENCE POST (523)	
520.742	L	USE AS IS	D10-6																													USE AS IS - REFERENCE POST (523)	
521.218	R	RSFO	W8-13	48	X	48											16.0															RSFO - BRIDGE ICES BEFORE ROAD (HINGED PANEL)	
521.539	L	RSFO	W8-13	48	X	48											16.0															RSFO - BRIDGE ICES BEFORE ROAD (HINGED PANEL)	
521.739	R	USE AS IS	D10-6																													USE AS IS - REFERENCE POST (524)	
521.744	L	REPLACE	D10-6	12	X	48		6.0	3.0lb Steel U Post		4.0	3.0	12.0				4.0								36	1						REPLACE - REFERENCE POST (524)	

ALL SHEET TOTALS										192.0	63.0	5							476	19				
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DELINEATION SPECIFICATIONS		
SYMBOL	DESIGN	TOTAL
	A	241
	B (BLUE)	6
	B	6
	B (BLUE/YELLOW)	6
	H	241
	Panel A	33
	Panel H	33

SHEET NO.
S3

SIGNING LOCATION &
SPECIFICATION

PROJECT NAME
GARRYOWEN - SOUTH

COUNTY
BIG HORN

PROJECT ID
IM 90-9(141)517

UPN
10066000

DESIGNED BY
K. DEWITT

REVIEWED BY
D. VERNON

CHECKED BY
S. PATTERSON

DATE
08/2026

MONTANA
Department of Transportation

SIGNING PLANS

10066000(S)JUN201.DWG
8/3/2026 11:57 AM

ASSOCIATED PROJECT
AGREEMENT NUMBERS

P.E.	IM 90-9(140)517
------	-----------------

BRIDGE IDENTIFICATION	
MDT STR ID	NBI NUMBER
01819	I00090517+05021
01820	I00090517+05022
01821	I00090517+08091
01822	I00090517+08092
01824	I00090520+03611
01825	I00090520+03612
01827	I00090523+06361
01828	I00090523+06362

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS AND QUANTITIES

FEDERAL AID PROJECT IM 90-9(141)517

GARRYOWEN - SOUTH

BIG HORN COUNTY

LIST OF DRAWINGS

<u>SHEET NO.</u>	<u>DWG. NO.</u>	<u>TITLE</u>	<u>SHEET NO.</u>	<u>DWG. NO.</u>	<u>TITLE</u>
B1	21230	LIST OF DRAWINGS AND ESTIMATED BRIDGE PLAN QUANTITIES			
B2	21231	GENERAL NOTES AND DECK REPAIR DETAILS			
<u>LITTLE BIGHORN RIVER (01819 EB)</u>			<u>LITTLE BIGHORN RIVER (01820 WB)</u>		
B3	21232	PARTIAL EXISTING & NEW ELEVATION VIEWS - NEW THRIE BEAM RAIL	B6	21235	EXISTING & NEW ELEVATION VIEWS - CONCRETE BARRIER ENDS
B4	21233	REVISE BRIDGE RAIL - THRIE BEAM DETAILS 1	B7	21236	BARRIER END REINFORCING DETAILS & BILL OF REINFORCING STEEL
B5	21234	REVISE BRIDGE RAIL - THRIE BEAM DETAILS 2	<u>SEP RENO CR RD (01821 EB & 01822 WB), SEP COUNTY RD (01824 EB & 01825 WB) & SEP COUNTY RD (01827 EB & 01828 WB)</u>		
			B8	21237	EXISTING & NEW ELEVATION VIEWS - CONCRETE BARRIER ENDS
			B9	21238	BARRIER END REINFORCING DETAILS & BILL OF REINFORCING STEEL

ESTIMATED BRIDGE PLAN QUANTITIES

MDT STR ID	FEATURE INTERSECTED	GENERAL LAYOUT DRAWING NUMBER	REMOVE GUARD ANGLE (LN.FT.)	BRIDGE DECK CRACK SEAL (YD ²)	REVISE BRIDGE RAIL - THRIE BEAM (LN.FT.)	* CLASS A BRIDGE DECK REPAIR (YD ²)	** CLASS B BRIDGE DECK REPAIR (YD ²)	REVISE CONC BARRIER RAIL END - BR (EACH)
01819	LITTLE BIGHORN RIVER	3719	56.0	485.3	319.0	5.8		
01820	LITTLE BIGHORN RIVER	11160	83.9	749.5		0.7		4.0
01821	SEP RENO CREEK ROAD	11170	82.7	463.9				4.0
01822	SEP RENO CREEK ROAD	11170	82.7	463.9				4.0
01824	SEP COUNTY ROAD	11176	82.7	363.6		0.1		4.0
01825	SEP COUNTY ROAD	11176	82.7	363.6		0.1		4.0
01827	SEP COUNTY ROAD	11179	82.7	363.9		0.1		4.0
01828	SEP COUNTY ROAD	11179	82.7	363.9		0.3		4.0
PROJECT TOTAL			636.1	3617.6	319.0	7.1	5.0	28.0

* **NOTE:** Specific Class A Deck Repair areas are not identified in the Contract. See additional notes on Sheet No. B2.
The Project Manager will identify any Class A Bridge Deck Repair areas if they are needed.

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

BY
APPROVED

By Andy Cullison at 8:03 am, Aug 26, 2026

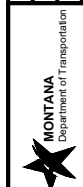


SCALES SHOWN ON BRIDGE PLANS SHEETS
ARE FOR HALF SIZE (11X17) PRINTS
FULL SIZE PRINTS ARE APPROXIMATELY TWICE
ORIGINAL SCALE

SHEET NO.
B1

**LIST OF DRAWINGS AND
ESTIMATED BRIDGE PLAN
QUANTITIES**

DESIGNED	G.J.N.	01-23-26
DRAWN	G.J.N.	01-23-26
CHECKED	D.C.M.	04-07-26
REVISED		
REVISED		
REVISED		
REVISED		



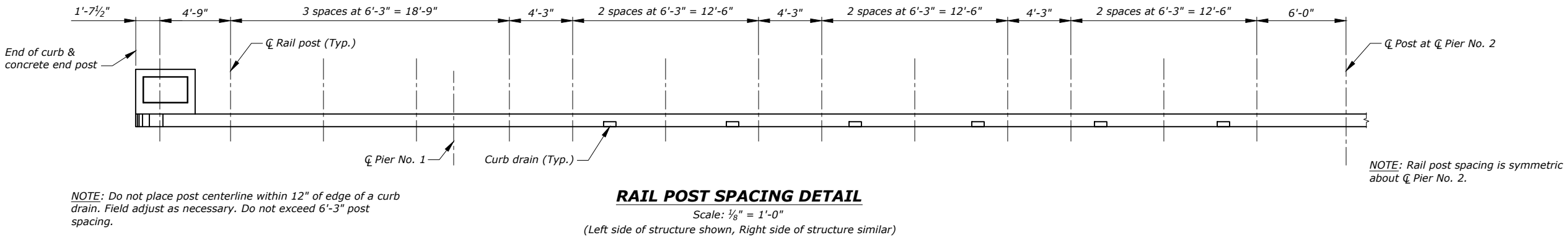
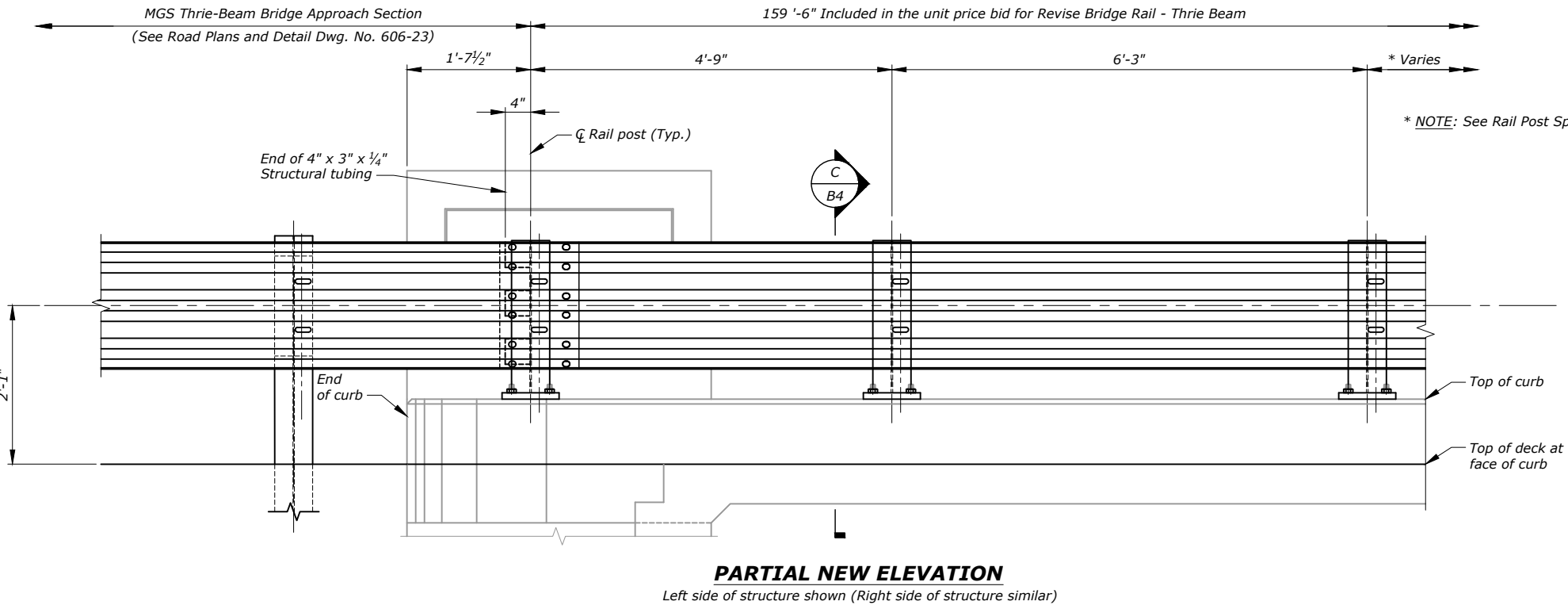
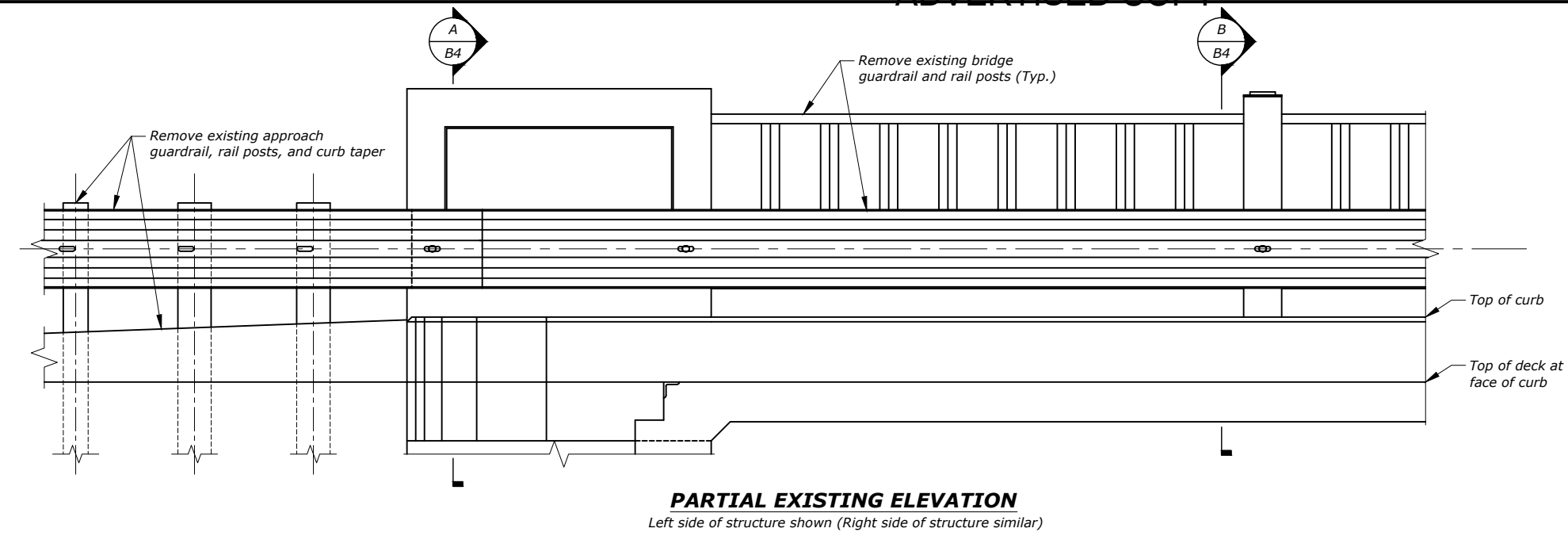
UPN NUMBER
10066000

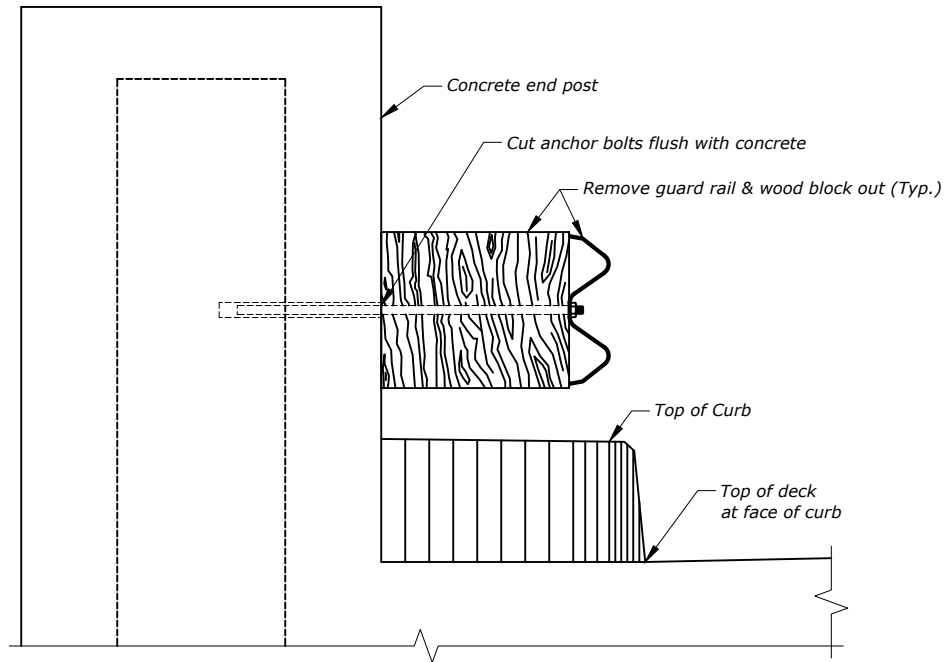
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21230

6/3/2026 9:49:58 AM

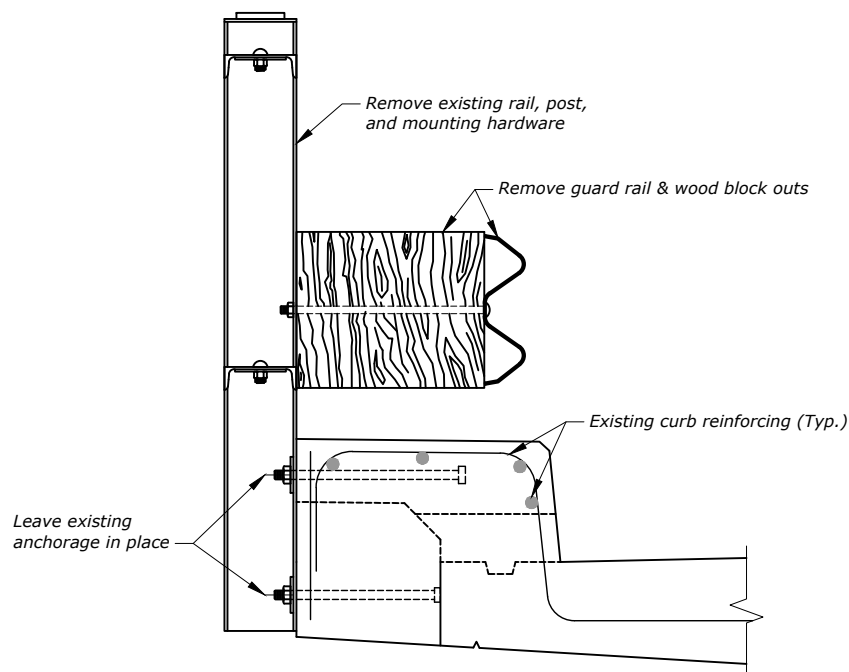
REVISE BRIDGE RAIL NOTES:

1. Include all costs associated with removing the existing bridge guardrail, rail posts and related hardware in the unit price bid for "Revise Bridge Rail - Thrie Beam."
2. Include all costs to furnish and install new metal thrie beam, tubing, posts, anchor bolts, hardware and all labor, other materials and equipment necessary to complete the item in the unit price bid for "Revise Bridge Rail - Thrie Beam."
3. Set the rail parallel to the roadway grade. Adjust rail to proper rail height using vertical slots in rail post or rail post shims.
4. Lap splice all thrie - beam rail in the direction of traffic.
5. Right and left side of structure is referenced to traffic flow.
6. See Sheet No. B2 for additional notes.

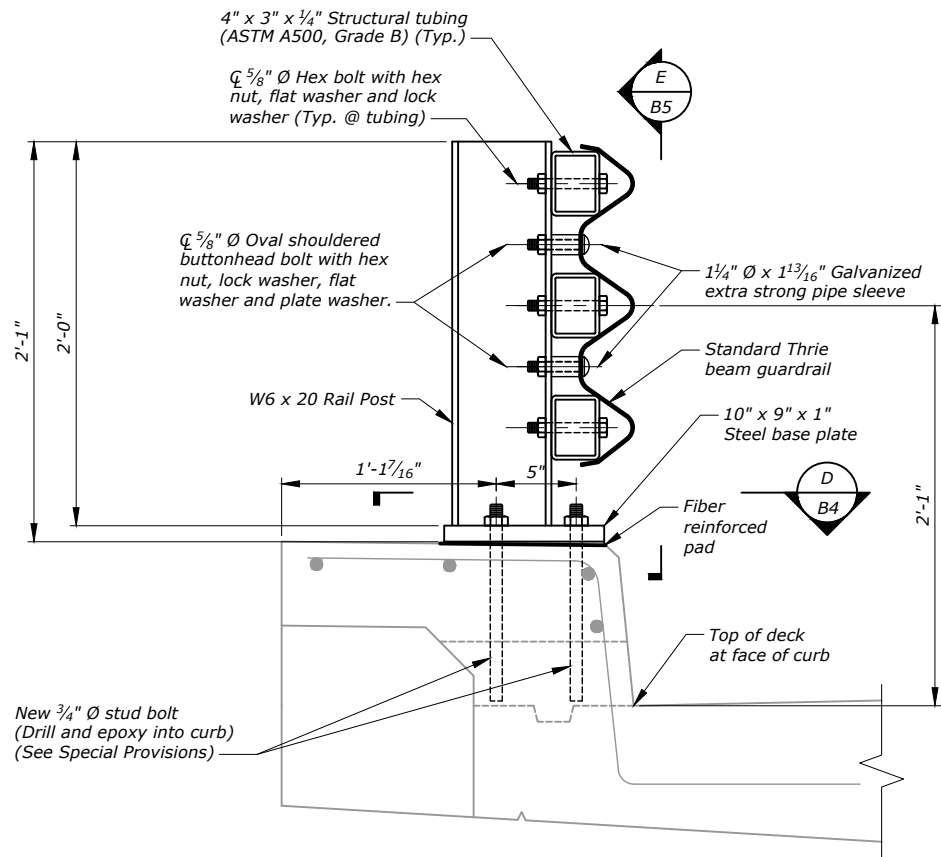




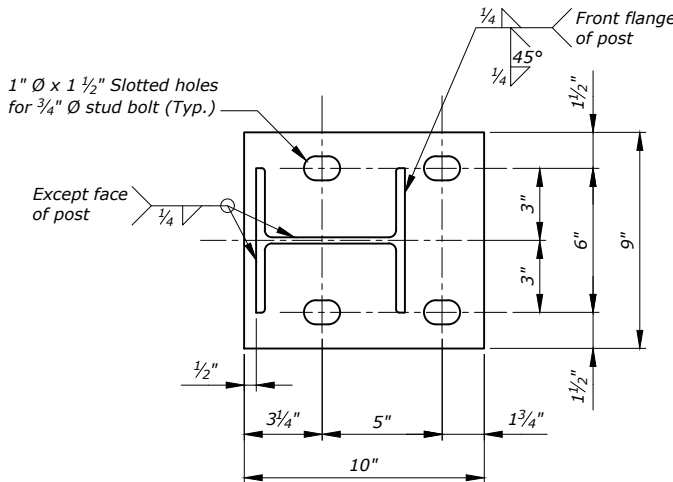
A
B3 **EXISTING GUARDRAIL AT END OF CURB**



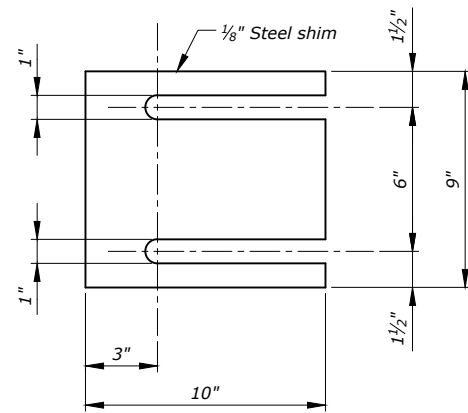
B
B3 **EXISTING GUARDRAIL ON CURB**



C
B3 **NEW RAIL & POST SECTION**
Scale: 1" = 1'-0"

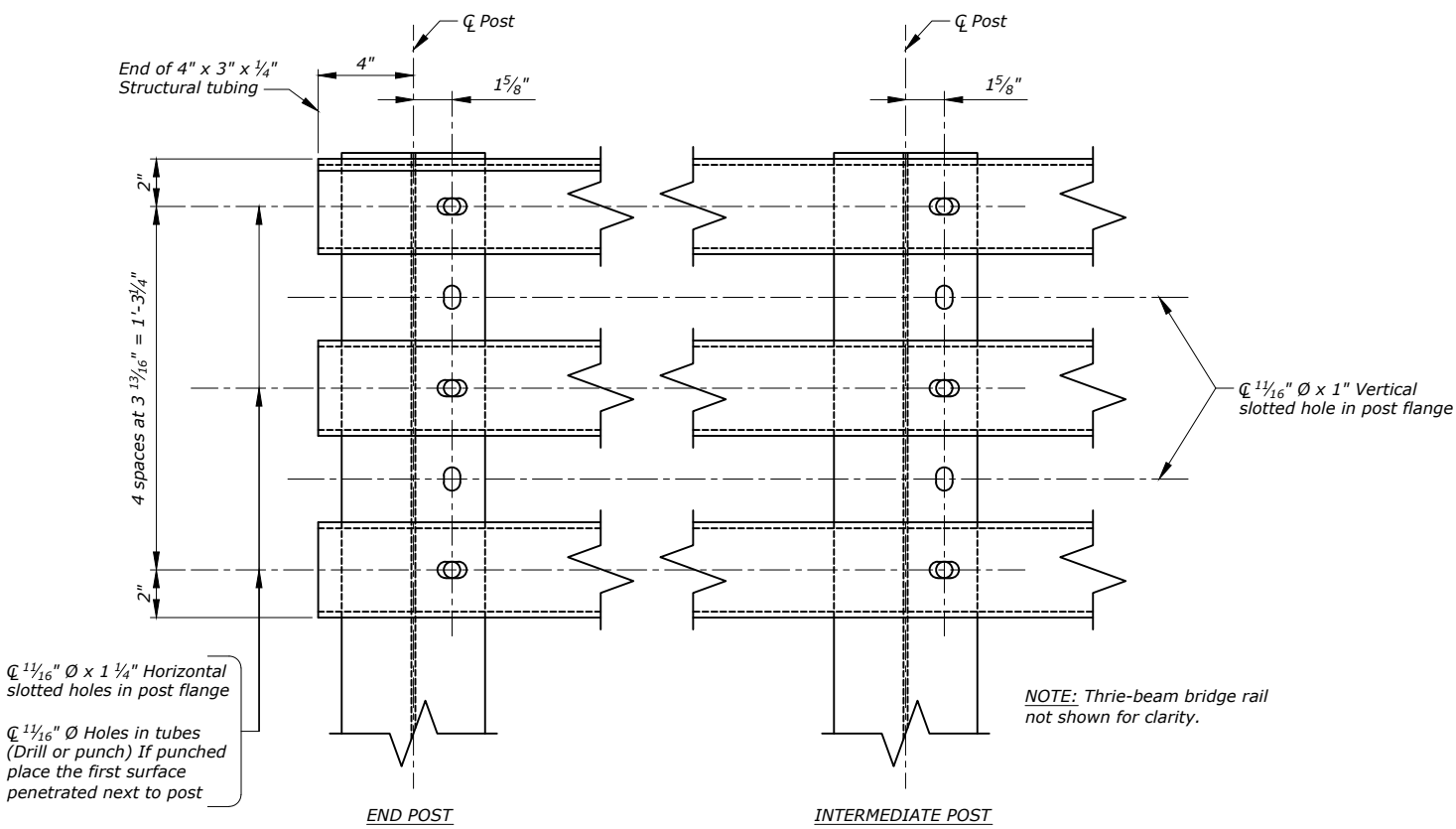


D
B4 **STEEL BASE PLATE**
Scale: 1 1/2" = 1'-0"

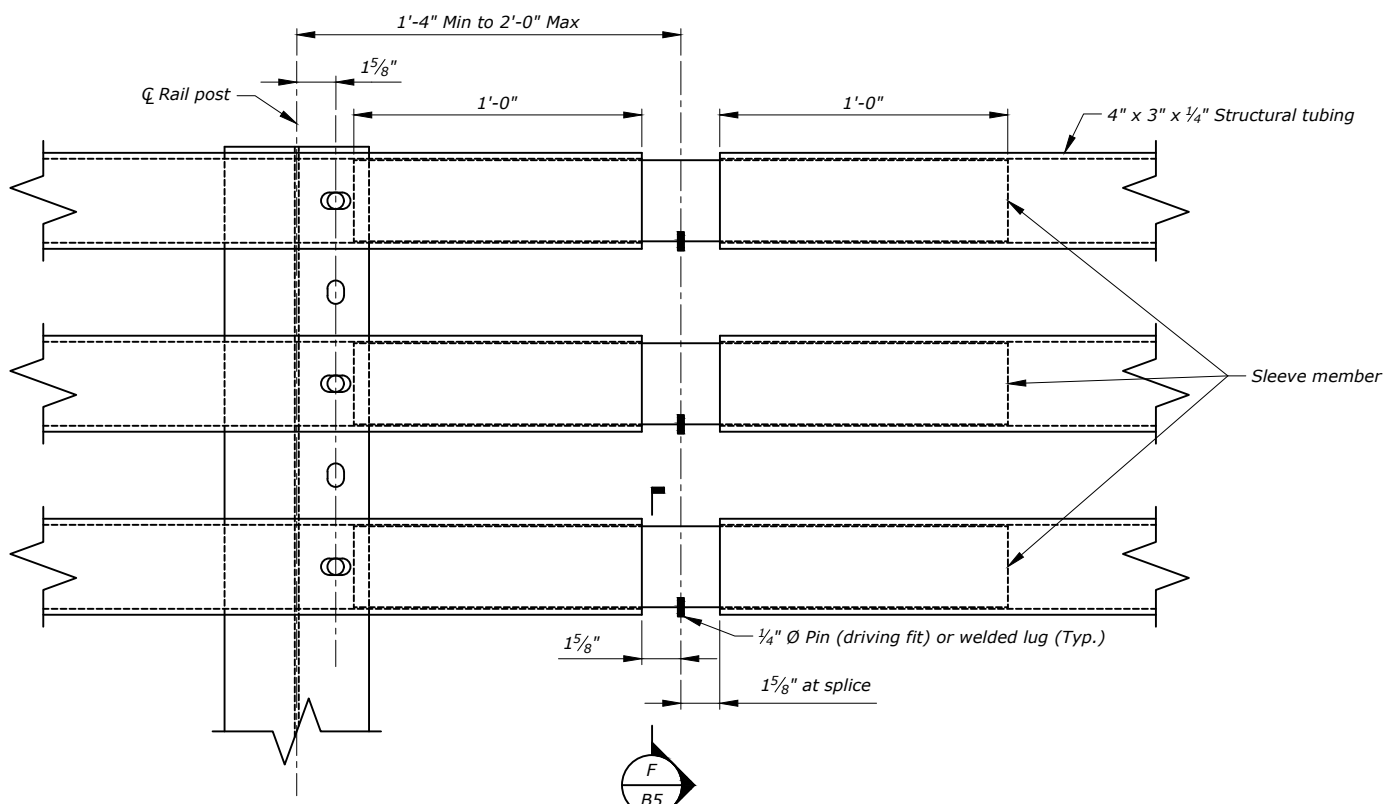


RAIL POST SHIM DETAIL
Scale: 1 1/2" = 1'-0"

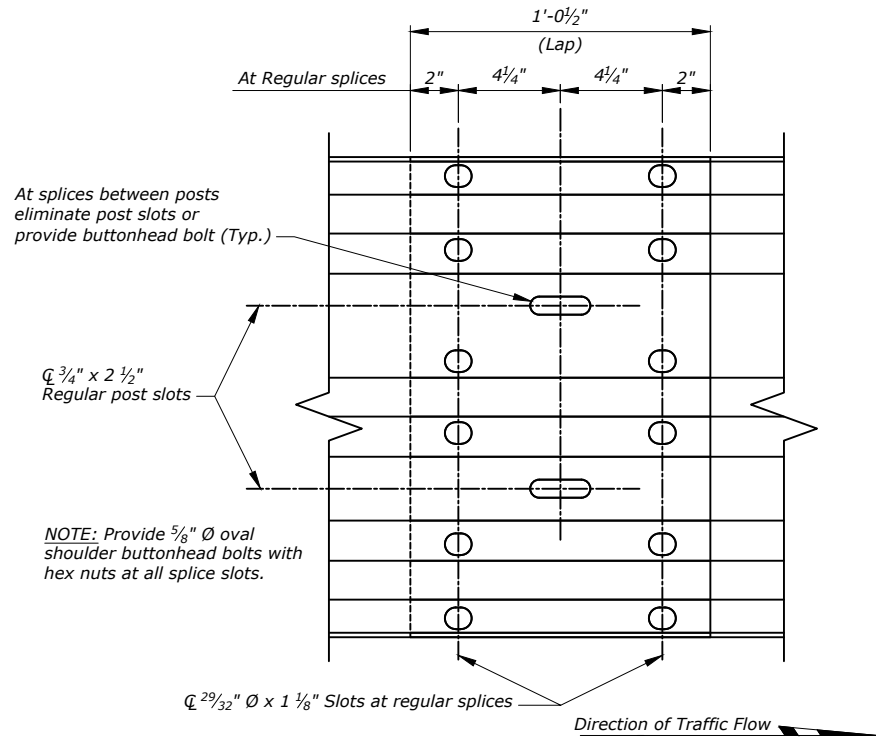
SHEET NO. B4		REVISE BRIDGE RAIL - THRIE BEAM DETAILS 1		PROJECT NAME GARRYOWEN - SOUTH		FEDERAL AID PROJECT IM 90-9(141)517		COUNTY BIG HORN		MDT STRUCTURE ID 01819 (E.B.)		SCALE: 3/4" = 1'-0" Except As Noted	
REVISED	REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED	DATE	BY	DATE	BY	DATE	BY	DATE
							04-07-26	J.C.M.	01-23-26	S.J.N.	01-23-26		
MONTANA Department of Transportation		BRIDGE BUREAU		UPN NUMBER 10066000		DRAWING NO. 21233		6/7/2026 9:50:13 AM		10066000RREH001.dwg \REV002			



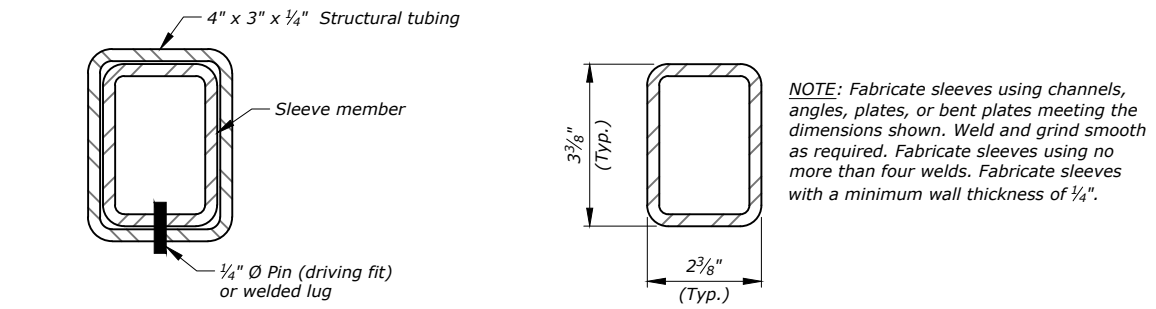
E
B4
RAIL POST VIEW



TUBE SPLICE DETAIL

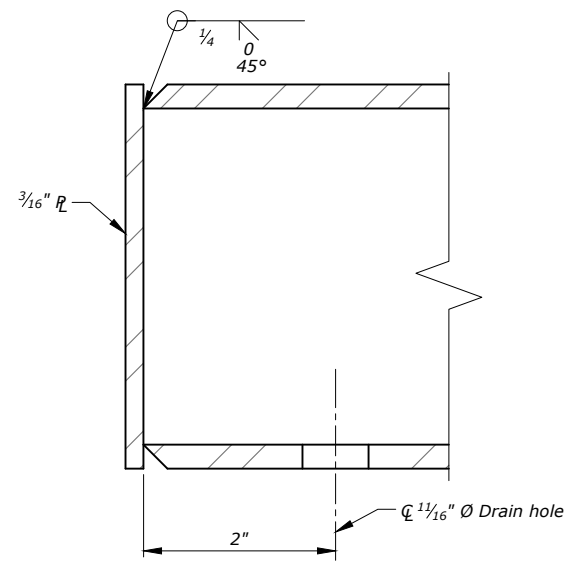


RAIL SPLICE DETAIL



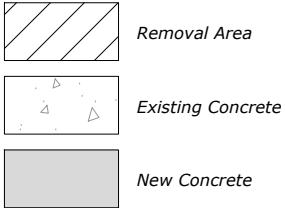
F
B5
TUBE SPLICE SECTION
Scale: 3" = 1'-0"

SLEEVE FABRICATION OPTIONS
Scale: 3" = 1'-0"

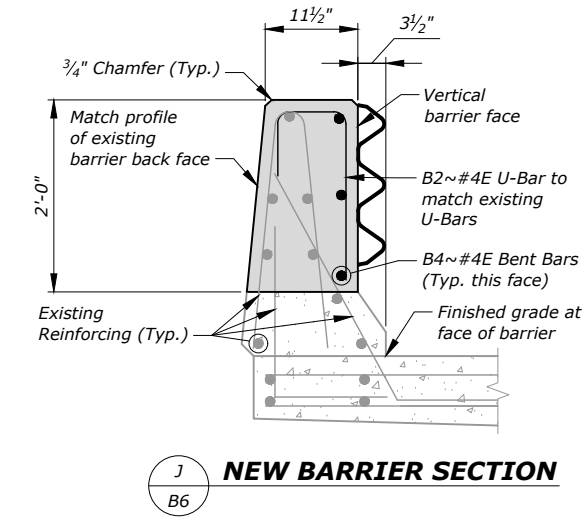
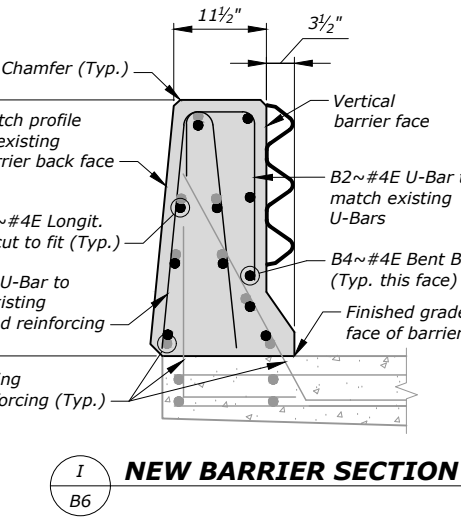
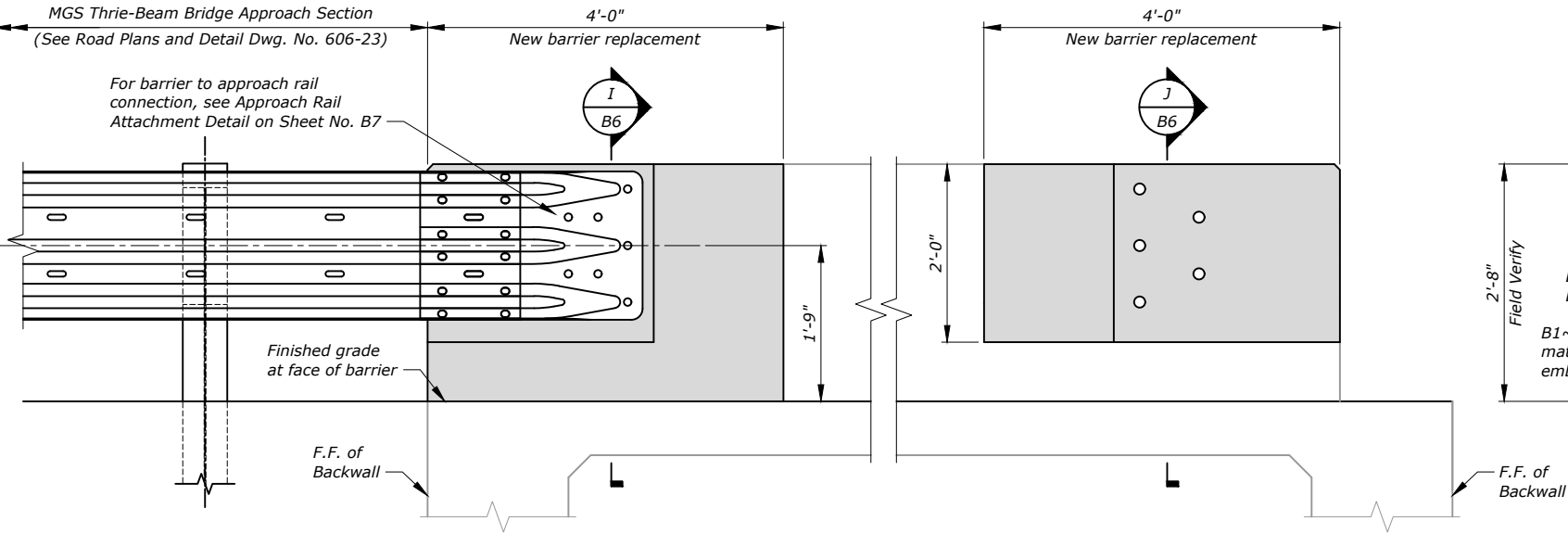
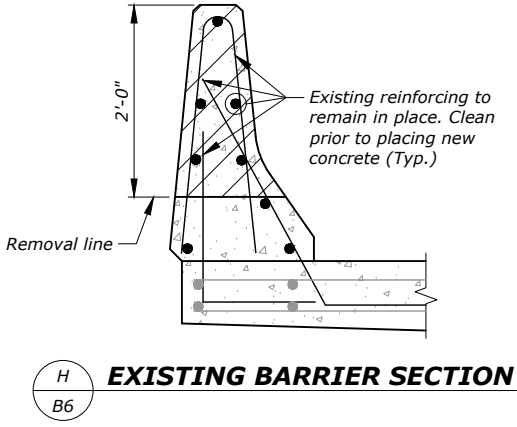
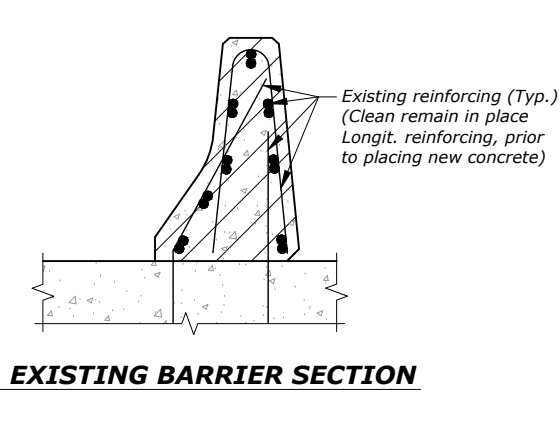
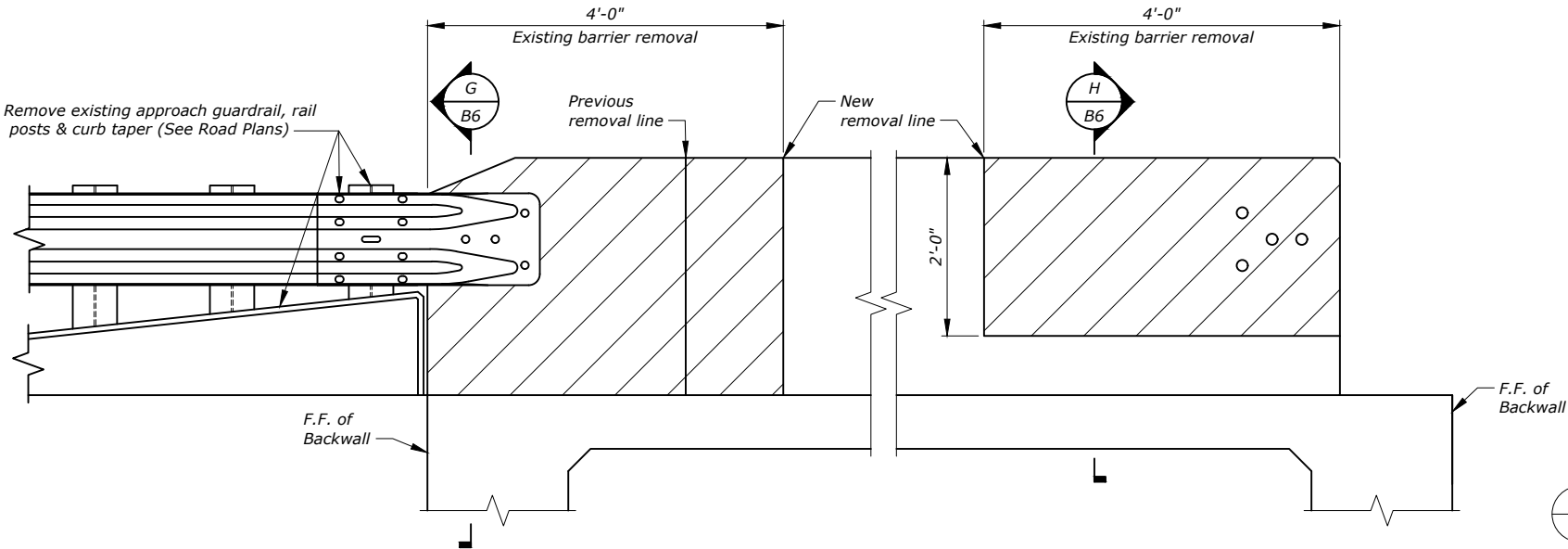


TUBE CAP DETAIL
Scale: 6" = 1'-0"

SHEET NO. B5		REVISE BRIDGE RAIL - THRIE BEAM DETAILS 2		PROJECT NAME GARRYOWEN - SOUTH		FEDERAL AID PROJECT IM 90-9(141)517		COUNTY BIG HORN		REVISED	REVISED	REVISED	REVISED	DESIGNED	6/7/2026 9:50:18 AM
SCALE: 1 1/2" = 1'-0" Except As Noted		MDT STRUCTURE ID 01819 (E.B.)		UPN NUMBER 10066000		DRAWING NO. 21234		DRAWN S.J.N.		CHECKED S.J.N.	04-07-26	01-23-26	01-23-26	10066000BRREH001.dwg \ REF003	



- REVISE CONCRETE BARRIER RAIL END NOTES:**
1. Include all costs associated with removing existing barrier end, cleaning exposed reinforcing steel, preparation of surfaces, placing new reinforcing steel and barrier end hardware, and placing new concrete in the unit price bid for Revise Conc Barrier Rail End - BR.
 2. See Road Plans for payment for removal of existing approach rail, rail posts and curb tapers.
 3. Right and left side of structure is referenced to traffic flow.
 4. Place a 1/2" deep neat saw cut at the removal line around the perimeter of the barrier.
 5. See Sheet No. B2 for additional notes.
 6. See Sheet No. B7 for Barrier End Reinforcing Details, and Bill of Reinforcing Steel.

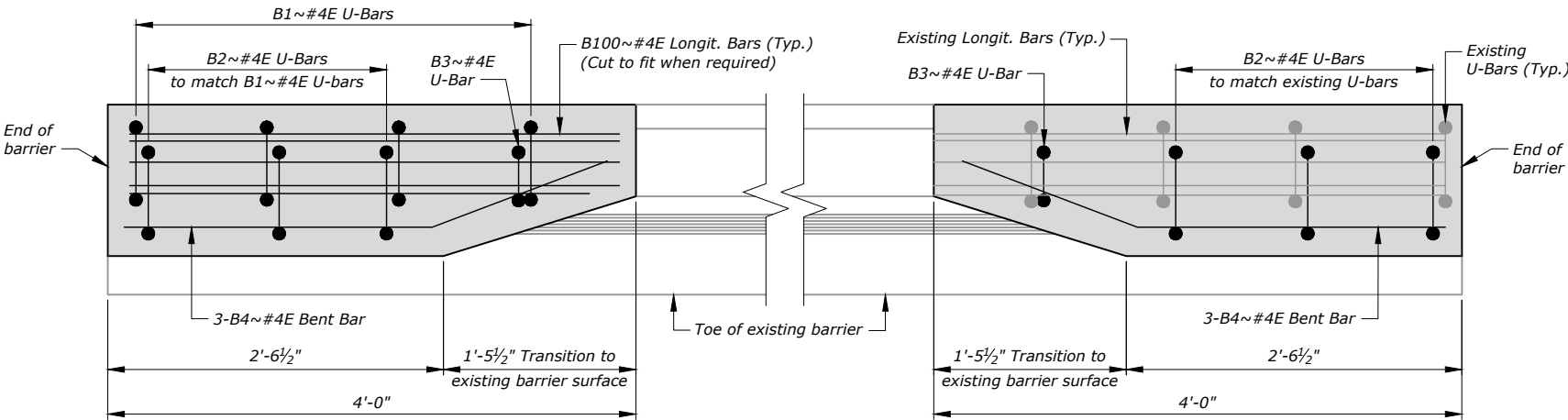


SHEET NO. B6	
EXISTING & NEW ELEVATION VIEWS - CONCRETE BARRIER ENDS	
PROJECT NAME GARRYOWEN - SOUTH	MDT STRUCTURE ID 01820 (W.B.)
FEDERAL AID PROJECT IM 90-9(141)517	COUNTY BIG HORN
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED
CHECKED	CHECKED
DRAWN	DRAWN
DESIGNED	DESIGNED
100660000RRRHH001.dwg \ REF004	
MONTANA Department of Transportation	
BRIDGE BUREAU	
UPN NUMBER 10066000	
DRAWING NO. 21235	

BARRIER END REINFORCING DETAIL NOTES:

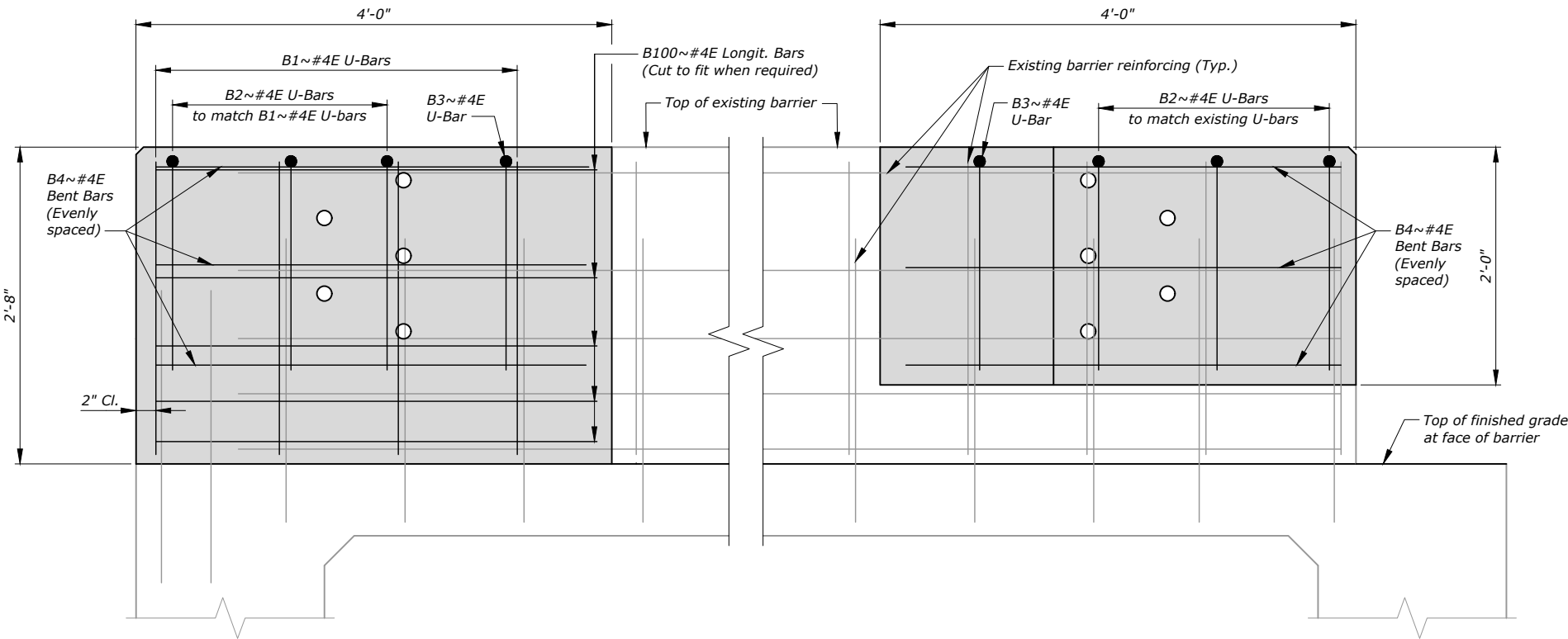
1. Additional existing barrier and slab reinforcing omitted for clarity.
2. Verify all dimensions in the field before ordering materials and fabrication.
3. The suffix E denotes epoxy coated reinforcing.

BILL OF REINFORCING STEEL											
(ALL DIMENSIONS ARE OUT TO OUT) FOR INFORMATION PURPOSES ONLY											
TYPE 17			TYPE 28			TYPE 33			TYPE STR		
Mark	Size	No.	Type	Length	A	B	C	D	E	G	N
B1	#4E	8	33	5'-1 1/2"	2'-4"	5 1/2"	2'-4"	2'-5"	1 1/2"		9"
B2	#4E	12	17	3'-1"		8 1/2"	7 1/2"	1'-9"			
B3	#4E	4	17	2'-10"		5 1/2"	7 1/2"	1'-9"			
B4	#4E	12	28	3'-9"	1'-5"	2'-4"	1'-3 1/2"	6"			
B100	#4E	16	STR	3'-8 1/2"							



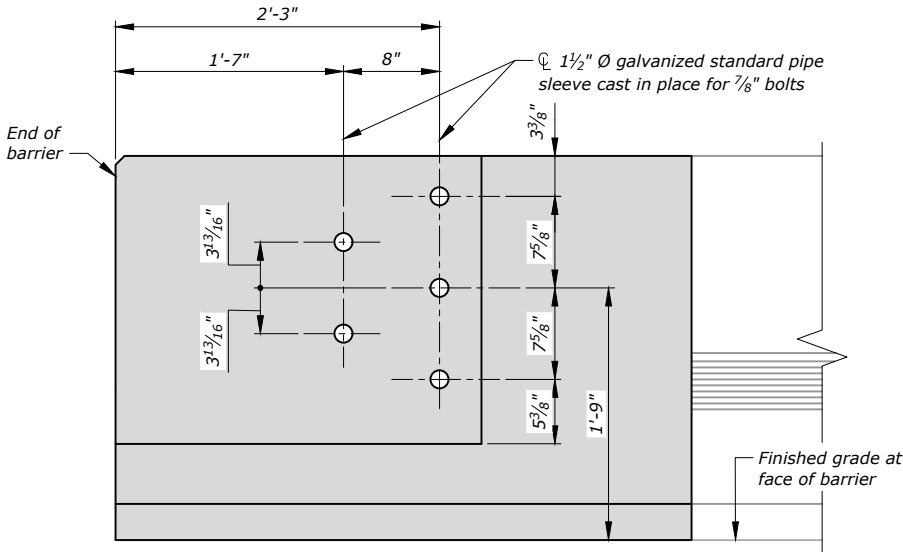
BARRIER REINFORCING PLAN VIEW

Left side of structure shown, Right side of structure similar



BARRIER REINFORCING ELEVATION VIEW

Left side of structure shown, Right side of structure similar



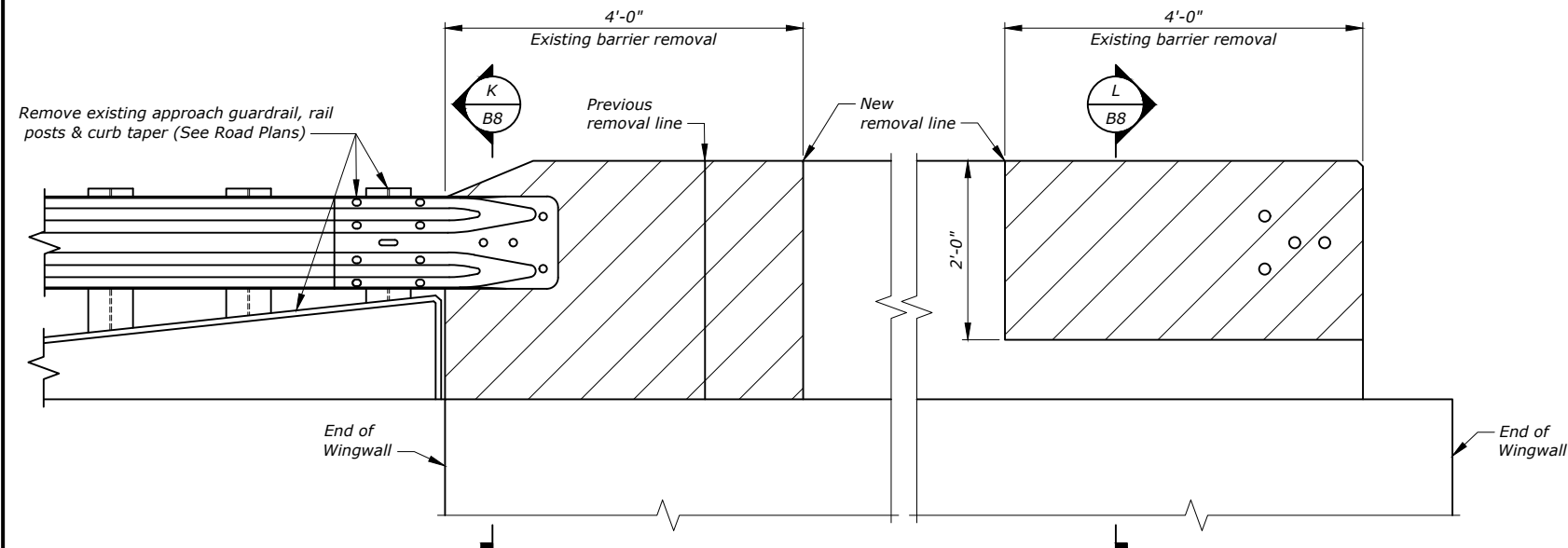
**APPROACH RAIL ATTACHMENT
ELEVATION VIEW**

Approach end shown (departure end similar)

SHEET NO. B7		PROJECT NAME GARRYOWEN - SOUTH		FEDERAL AID PROJECT IM 90-9(141)517	
BARRIER END REINFORCING DETAILS & BILL OF REINFORCING STEEL		MDT STRUCTURE ID 01820 (W.B.)		COUNTY BIG HORN	
SCALE: 3/4" = 1'-0"		DRAWN 01-23-26		DESIGNED 01-23-26	
UPN NUMBER 10066000		DRAWING NO. 21236		MONTANA Department of Transportation BRIDGE BUREAU	

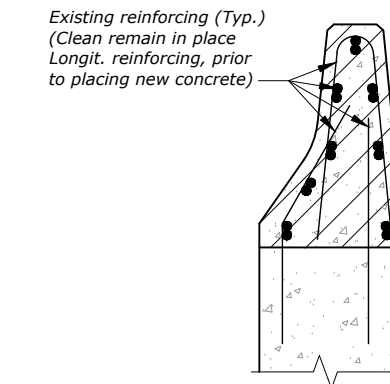
REVISE CONCRETE BARRIER RAIL END NOTES:

1. See Sheet Nos. B2 & B6 for additional notes.
2. See Sheet No. B9 for Barrier End Reinforcing Details, and Bill of Reinforcing Steel.

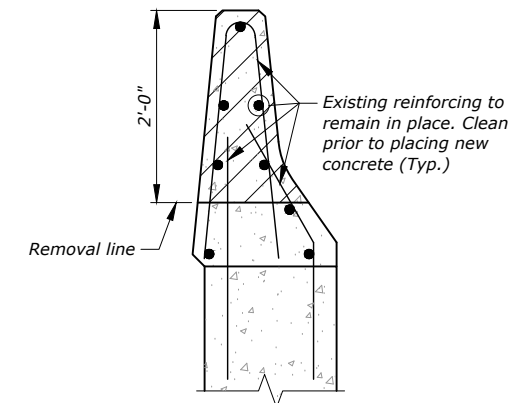


EXISTING ELEVATION VIEW

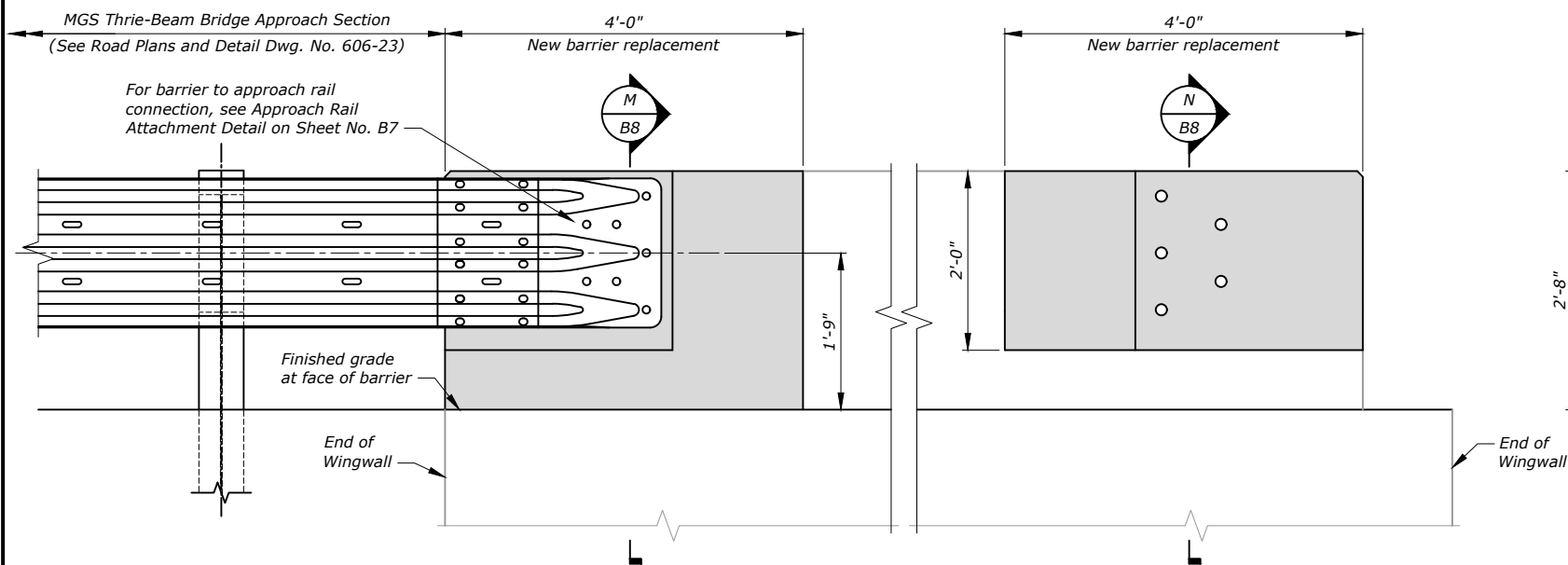
Left side of structure shown, Right side of structure similar



EXISTING BARRIER SECTION

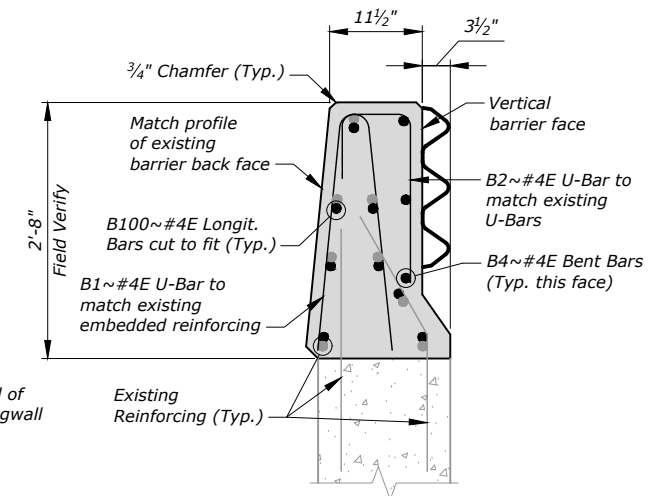


EXISTING BARRIER SECTION

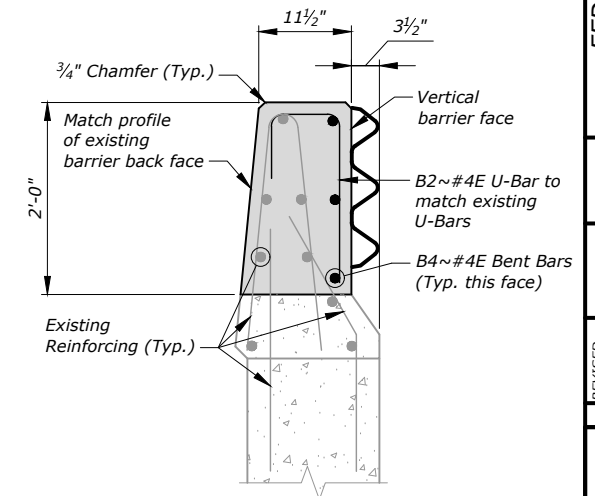


NEW ELEVATION VIEW

Left side of structure shown, Right side of structure similar



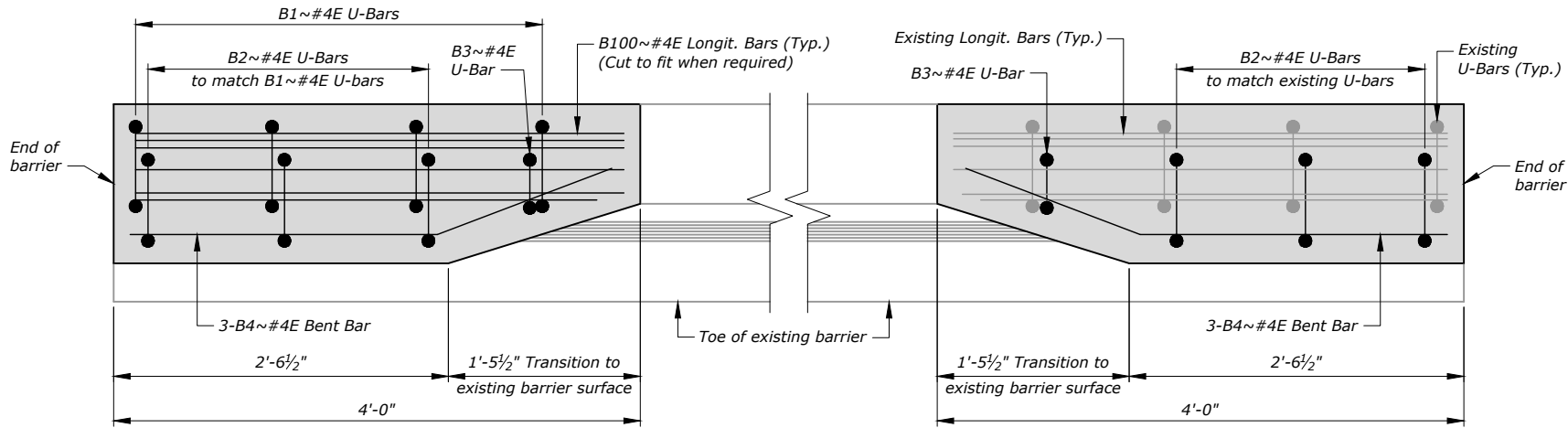
NEW BARRIER SECTION



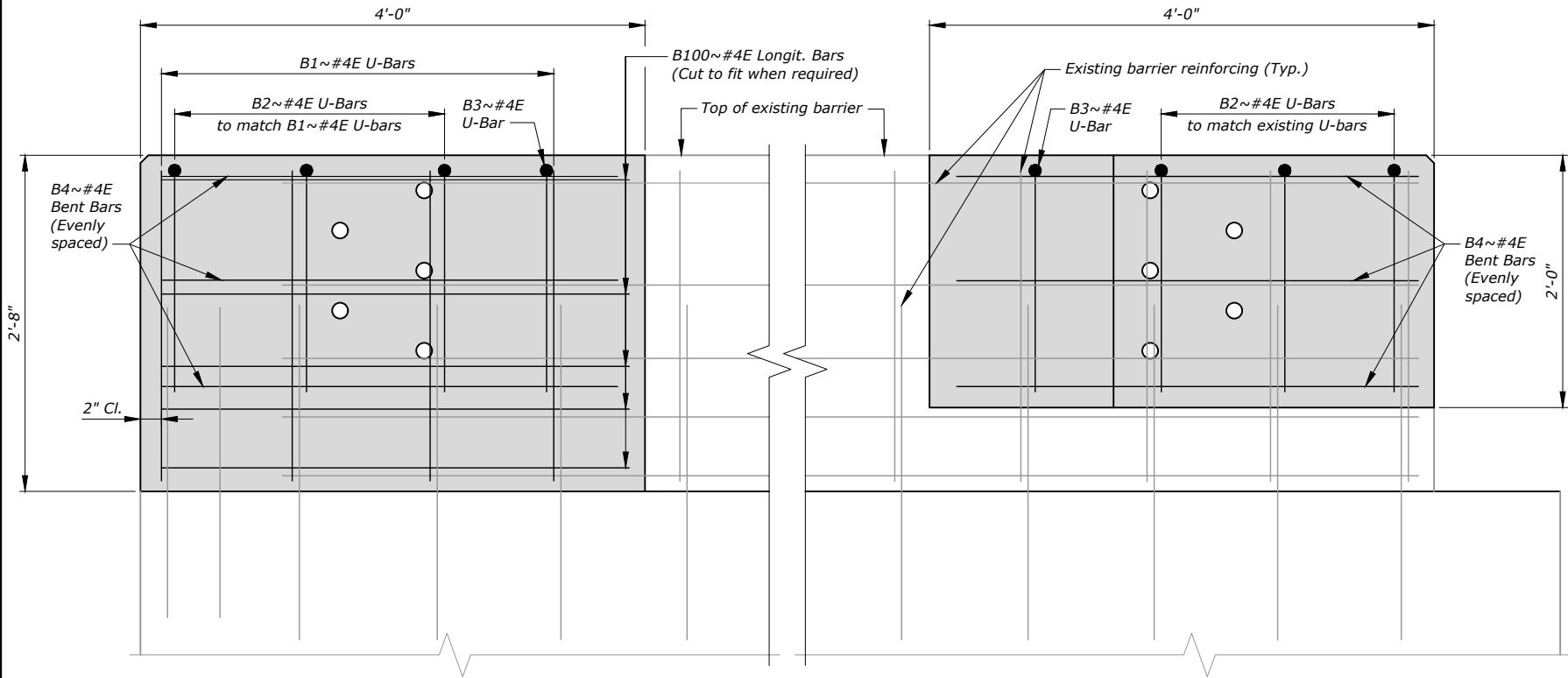
NEW BARRIER SECTION

BARRIER END REINFORCING DETAIL NOTES:

- 1. Additional existing barrier and slab reinforcing omitted for clarity.
- 2. Verify all dimensions in the field before ordering materials and fabrication.
- 3. The suffix E denotes epoxy coated reinforcing.



BARRIER REINFORCING PLAN VIEW
Left side of structure shown, Right side of structure similar



BARRIER REINFORCING ELEVATION VIEW
Left side of structure shown, Right side of structure similar

BILL OF REINFORCING STEEL												(ALL DIMENSIONS ARE OUT TO OUT) FOR INFORMATION PURPOSES ONLY			
TYPE 17			TYPE 28			TYPE 33			TYPE STR						
Mark	Size	No.	Type	Length	A	B	C	D	E	G	N				
FOR 01821 E.B.															
B1	#4E	8	33	5'-1½"	2'-4"	5½"	2'-4"	2'-5"	1½"		9"				
B2	#4E	12	17	3'-1"		8½"	7½"	1'-9"							
B3	#4E	4	17	2'-10"		5½"	7½"	1'-9"							
B4	#4E	12	28	3'-9"	1'-5"	2'-4"	1'-3 ½"	6"							
B100	#4E	16	STR	3'-8½"											
FOR 01822 W.B.															
B1	#4E	8	33	5'-1½"	2'-4"	5½"	2'-4"	2'-5"	1½"		9"				
B2	#4E	12	17	3'-1"		8½"	7½"	1'-9"							
B3	#4E	4	17	2'-10"		5½"	7½"	1'-9"							
B4	#4E	12	28	3'-9"	1'-5"	2'-4"	1'-3 ½"	6"							
B100	#4E	16	STR	3'-8½"											
FOR 01824 E.B.															
B1	#4E	8	33	5'-1½"	2'-4"	5½"	2'-4"	2'-5"	1½"		9"				
B2	#4E	12	17	3'-1"		8½"	7½"	1'-9"							
B3	#4E	4	17	2'-10"		5½"	7½"	1'-9"							
B4	#4E	12	28	3'-9"	1'-5"	2'-4"	1'-3 ½"	6"							
B100	#4E	16	STR	3'-8½"											
FOR 01825 W.B.															
B1	#4E	8	33	5'-1½"	2'-4"	5½"	2'-4"	2'-5"	1½"		9"				
B2	#4E	12	17	3'-1"		8½"	7½"	1'-9"							
B3	#4E	4	17	2'-10"		5½"	7½"	1'-9"							
B4	#4E	12	28	3'-9"	1'-5"	2'-4"	1'-3 ½"	6"							
B100	#4E	16	STR	3'-8½"											
FOR 01827 E.B.															
B1	#4E	8	33	5'-1½"	2'-4"	5½"	2'-4"	2'-5"	1½"		9"				
B2	#4E	12	17	3'-1"		8½"	7½"	1'-9"							
B3	#4E	4	17	2'-10"		5½"	7½"	1'-9"							
B4	#4E	12	28	3'-9"	1'-5"	2'-4"	1'-3 ½"	6"							
B100	#4E	16	STR	3'-8½"											
FOR 01828 W.B.															
B1	#4E	8	33	5'-1½"	2'-4"	5½"	2'-4"	2'-5"	1½"		9"				
B2	#4E	12	17	3'-1"		8½"	7½"	1'-9"							
B3	#4E	4	17	2'-10"		5½"	7½"	1'-9"							
B4	#4E	12	28	3'-9"	1'-5"	2'-4"	1'-3 ½"	6"							
B100	#4E	16	STR	3'-8½"											

SHEET NO.
B9

BARRIER END REINFORCING
DETAILS & BILL OF
REINFORCING STEEL

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

PROJECT NAME
GARRYOWEN - SOUTH

MDT STRUCTURE ID
01821, 01822, 01824, 01825,
01827, 01828

FEDERAL AID PROJECT
IM 90-9(141)517

COUNTY
BIG HORN

REVISIONS

10066000BRRR001.dwg | REV007

UPN NUMBER
10066000

DRAWING NO.
21238