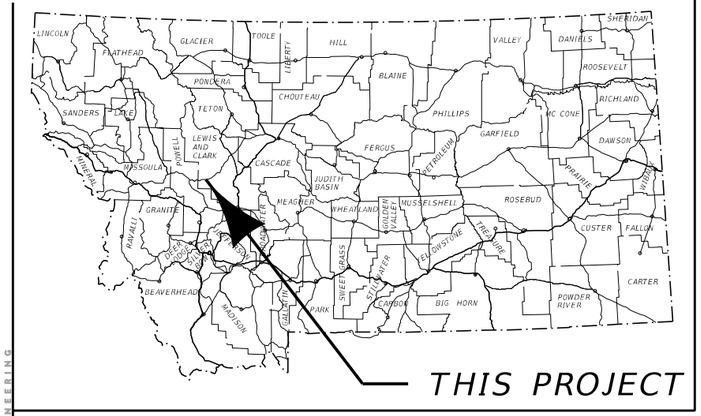
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MONTANA DEPARTMENT OF TRANSPORTATION

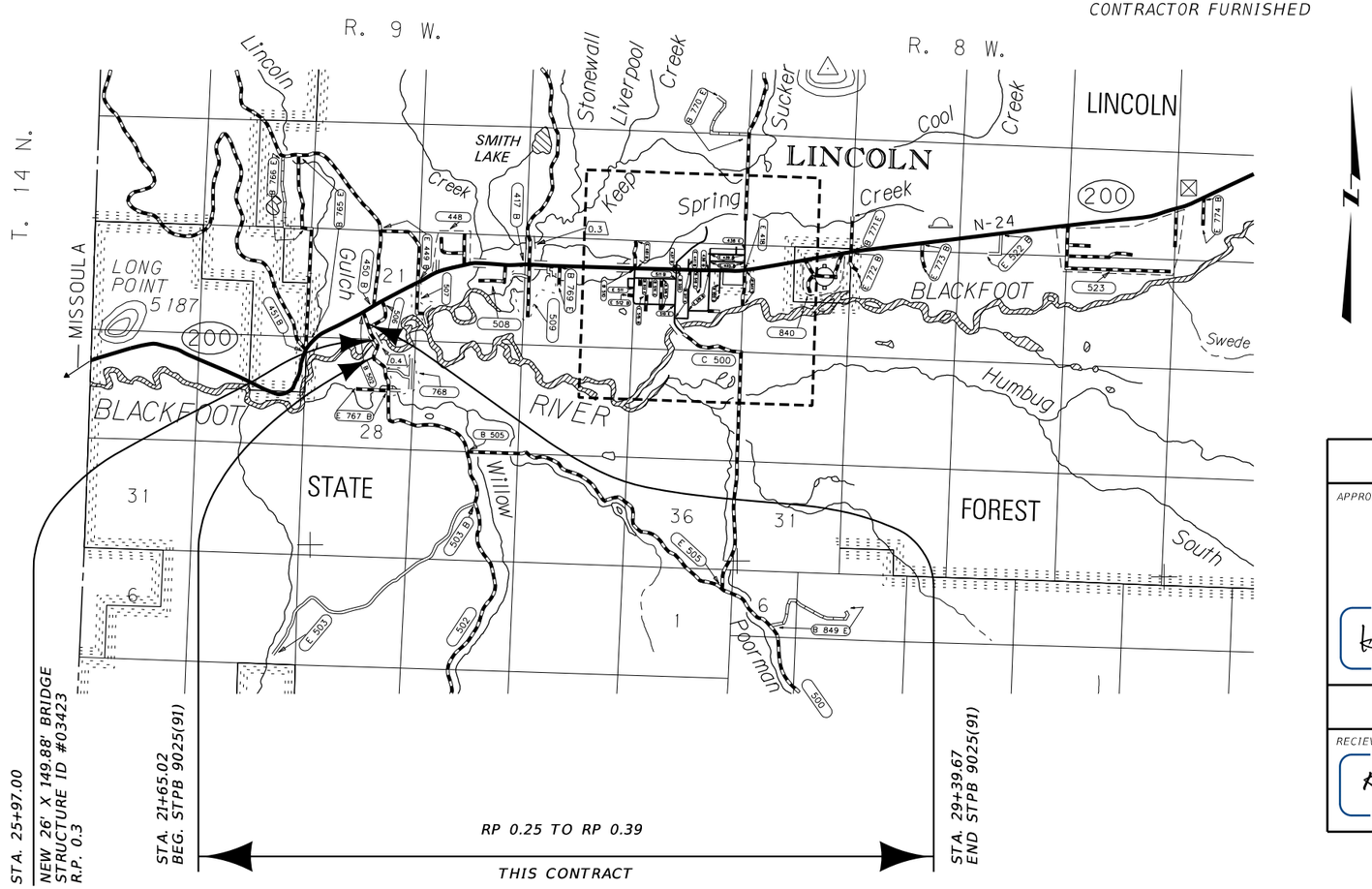


FEDERAL AID PROJECT STPB 9025(91)
BRIDGE REPLACEMENT
BLACKFOOT RIVER - 3M W LINCOLN
LEWIS & CLARK COUNTY

PROJECT DESIGN DATA	
PRESENT 2021	A.D.T. = 110
LETTING 2023	A.D.T. = 110
DESIGN 2043	A.D.T. = 130
	D.H.V. = 20
	ASSUMED TRUCKS = 5%
	V. = 30 MPH
	ASSUMED 18 KIP ESAL'S = 7
	GROWTH RATE = 1.0%

LENGTH 0.1 MILES

SURFACING SOURCES - CONTRACTOR FURNISHED



PLANS PREPARED BY

GreatWest ENGINEERING
2501 BELT VIEW DRIVE
HELENA, MT 59601
(406)449-8627

APPROVED BY:

MONTANA PROFESSIONAL ENGINEER LICENSED KARL F. YAKAWICH 15133 PE

DocuSigned by: Karl Yakawich 4791B33005A9454... 2/5/2024 DATE

MONTANA DEPARTMENT OF TRANSPORTATION

RECIEVED BY: CONSULTANT DESIGN ENGINEER

DocuSigned by: Kelly Williams EF7F5DDAB5A7471... 2/5/2024 DATE

ASSOCIATED PROJECT AGREEMENT NUMBERS	
R / W	STPB 9025(92)
I.C.	
P. E.	STPB 9025(90)

3	MONTANA Department of Transportation	..\9776000\RD\9776000rdTT.dgn	DESIGNED BY	R. HOLM, L. WILLIAMS	11/27/2023	ROAD PLANS
2		12/6/2023	REVIEWED BY	R. HOLM	11/27/2023	
		2:11:31 PM RHolm	CHECKED BY	K. YAKAWICH	11/27/2023	UPN 9776000

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TABLE OF CONTENTS

ROAD PLANS	SHEET NO.
TITLE SHEET	1
TABLE OF CONTENTS	2
NOTES	2
LINEAR & LEVEL DATA	3
CENTERLINE COORDINATE TABLE	3
CONTROL DIAGRAM	4
TYPICAL SECTIONS	5-6
SUMMARIES	7-9
GRADING	7
ADDITIONAL GRADING	7
SURFACING	7
ADDITIONAL SURFACING	7
REMOVE STRUCTURE	8
BRIDGE END BACKFILL	8
SPECIAL BORROW	8
SIGNING	8
RANDOM RIPRAP	8
EMBANKMENT PROTECTORS	8
REVEGETATION	8
GUARDRAIL	9
FENCING	9
BIOENGINEERED BANK	9
HYDRAULIC DATA SUMMARY	10
DETAILS	11-16
BRIDGE END BACKFILL	11
RIPRAP LAYOUT	12
BIOENGINEERED BANK TYPICAL SECTION	13
PUBLIC APPROACH 28+40.17 RT	14
FARM FIELD APPROACH 50+85.43 RT	14
FARM FIELD APPROACH 23+99.75 LT	15
FARM FIELD APPROACH 27+85.85 LT	15
PEDESTRIAN PASS	16
PLAN & PROFILE	17

BRIDGE PLANS	
LIST OF DRAWINGS AND SUMMARY	B1
BRIDGE PLANS	B2-B9
STANDARD DRAWINGS	2 SHEETS

CROSS SECTIONS	
MAINLINE	1-15

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 - 3/8" AGG.	= 6.2% 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)

APPROACHES

CONSTRUCT APPROACHES TO A 24' FINISHED TOP ON A 35' SUBGRADE UNLESS NOTED OTHERWISE IN THE PLANS.

CLEARING AND GRUBBING

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

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.

SOILS INFORMATION

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

BORING NUMBER

(GEOTECHNICAL BORING)

PUBLIC LAND SURVEY MONUMENTS

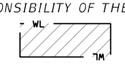
ALL MONUMENTS TO BE REMOVED AND RELOCATED OR RESET BY STATE FORCES.

MISC. TO BE MOVED OR REMOVED BY OTHERS

ALL PRIVATELY OWNED SIGNS TO BE REMOVED BY OWNER.

WETLANDS

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

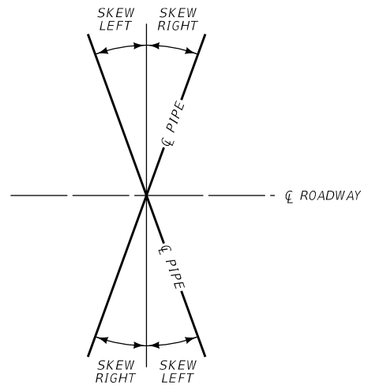


DELINEATED WETLAND AREAS



PERMANENT WETLAND IMPACTED AREAS

SKEW DIAGRAM



SIGNING

SALVAGE ALL SIGNS REMOVED OR REPLACED TO LEWIS & CLARK COUNTY ROAD DEPARTMENT.

WETLAND DELINEATION TABLE

WETLAND DESIGNATION	STATION		WETLAND AREA (acres)		REMARKS
			DELINEATED AREA	PERMANENT IMPACTED AREA	
	FROM	TO			
WL-4A	20+13	23+56	0.022	0.008	RT
WL-8	20+24	20+47	0.011	0.000	RT
WL-7	22+95	23+71	0.003	0.001	LT
WL-5	23+18	23+36	0.004	0.003	RT
WL-3	23+54	23+71	0.015	0.004	RT
WL-6	23+63	24+36	0.010	0.004	LT
WL-4B	23+77	24+02	0.001	0.001	RT
WL-2	24+71	25+20	0.012	0.007	RT
WL-1A	25+43	26+05	0.099	0.001	RT, BLACKFOOT RIVER
WL-1B	26+49	27+26	0.061	0.033	RT, BLACKFOOT RIVER
TOTAL			0.24	0.06	

APPROACHES (FOR INFORMATION ONLY)

STATION	TYPE	linear feet				EXISTING SURFACING	feet		PROPOSED SURFACE	sq. yards	cubic yards		sq. yards	REMARKS
		WIDTH	RADIUS #		LENGTH		PMS THK.	CTS THK.		P.C.C.P. 8 IN	CR. TOP SURFACING (MODIFIED) ##	SPECIAL BORROW NEATLINE	AGG. TREAT.	
			LEFT	RIGHT										
23+50.00	FARM FIELD	24	25	25	67.4	GRAVEL		0.6	GRAVEL		42	143		RT
23+99.75	FARM FIELD	24	25	20	117.9	GRAVEL		0.6	GRAVEL		73	244		LT
27+85.85	FARM FIELD	24	24	25	127.4	GRAVEL		0.6	GRAVEL		78	469		LT
28+40.17	PUBLIC	24	20	125	89.5	GRAVEL		0.75	GRAVEL		75	11		RT, DOROTHY DRIVE
28+55.00	FARM FIELD	24	25	20	16.1	GRAVEL		0.6	GRAVEL		24	5		LT
50+85.43	FARM FIELD	24	25	20	96.0	GRAVEL		0.6	GRAVEL		60	113		RT
SUBTOTAL										0	352	985	0	

ALL RADII MEASURED TO FRONT OF GUTTER OR EDGE OF SHOULDER
SEE SPECIAL PROVISIONS

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LINEAR AND LEVEL DATA

BEARING SOURCE

GRID -- MONTANA COORDINATE SYSTEM NAD 83-2011

LEVEL DATUM SOURCE

NAVD 88 ELEVATIONS DERIVED FROM DIFFERENTIAL LEVELS HOLDING BMS Y80

CENTERLINE ALIGNMENT COORDINATE TABLE

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
10+00.00	POT	997,176.155	1,160,454.315	BEGIN ALIGNMENT
10+92.96	PC	997,268.027	1,160,440.165	
12+57.86	PI	997,431.010	1,160,415.060	
14+18.06	PT	997,570.215	1,160,326.655	
15+45.35	PC	997,677.662	1,160,258.420	
18+14.31	PI	997,904.708	1,160,114.230	
20+66.52	PT	998,173.416	1,160,125.936	
21+65.02	POT	998,271.819	1,160,130.222	BEGIN STPB 9025(91)
22+69.42	PC	998,376.121	1,160,134.766	
23+36.10	PI	998,442.738	1,160,137.668	
23+99.75	PT	998,501.951	1,160,107.009	
25+20.40	POT	998,609.094	1,160,051.533	BRIDGE END
26+73.60	POT	998,745.139	1,159,981.091	BRIDGE END
27+20.90	PC	998,787.141	1,159,959.344	
28+30.42	PI	998,884.396	1,159,908.987	
29+39.67	PT	998,987.039	1,159,870.793	END STPB 9025(91)
37+01.33	POT	999,700.881	1,159,605.168	END ALIGNMENT

GPK NAME: J0B977.GPK CHAIN NAME: DESIGN PROFILE NAME: DESIGN P

DOROTHY DRIVE ALIGNMENT COORDINATE TABLE

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
50+00.00	POT	998,894.798	1,159,908.050	BEGIN ALIGNMENT
50+20.47	POT	998,914.779	1,159,912.506	BEGIN APPROACH
51+10.00	POT	999,002.161	1,159,931.992	END APPROACH
53+61.80	POT	999,247.923	1,159,986.798	END ALIGNMENT

GPK NAME: J0B977.GPK CHAIN NAME: DOROTHY PROFILE NAME: DOROTHY P

APPROACH 50+85.43 RT ALIGNMENT COORDINATE TABLE

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
0+00.00	POT	998,978.178	1,159,926.644	BEGIN ALIGNMENT
0+12.00	POT	998,975.566	1,159,938.356	BEGIN APPROACH
0+16.15	PC	998,974.664	1,159,942.405	
0+53.87	PT	998,953.971	1,159,972.873	
0+53.87	PC	998,953.971	1,159,972.873	
1+01.94	PT	998,932.082	1,160,013.609	
1+08.01	POT	998,932.008	1,160,019.677	END APPROACH
1+33.45	PC	998,931.694	1,160,045.114	
2+20.54	PT	998,962.149	1,160,124.496	END ALIGNMENT

GPK NAME: J0B977.GPK CHAIN NAME: APP5085 PROFILE NAME: APP5085_P

APPROACH 23+99.75 LT ALIGNMENT COORDINATE TABLE

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
0+00.00	POT	998,501.951	1,160,107.009	BEGIN ALIGNMENT
0+12.00	POT	998,496.434	1,160,096.353	BEGIN APPROACH
0+25.79	PC	998,490.091	1,160,084.103	
0+66.35	PT	998,487.244	1,160,044.756	
0+66.35	PC	998,487.244	1,160,044.756	
1+29.87	PT	998,469.595	1,159,988.101	END APPROACH
1+47.33	POT	998,455.529	1,159,977.770	END ALIGNMENT

GPK NAME: J0B977.GPK CHAIN NAME: APP2400 PROFILE NAME: APP2400_P

APPROACH 27+85.85 LT ALIGNMENT COORDINATE TABLE

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
0+00.00	POT	998,845.346	1,159,930.526	BEGIN ALIGNMENT
0+12.00	POT	998,840.216	1,159,919.678	BEGIN APPROACH
0+56.72	PC	998,821.102	1,159,879.253	
0+89.22	PT	998,798.943	1,159,856.253	
1+14.65	PT	998,798.943	1,159,856.253	END APPROACH
1+56.79	POT	998,738.979	1,159,825.113	END ALIGNMENT

GPK NAME: J0B977.GPK CHAIN NAME: APP2786 PROFILE NAME: APP2786_P

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CONTROL DIAGRAM

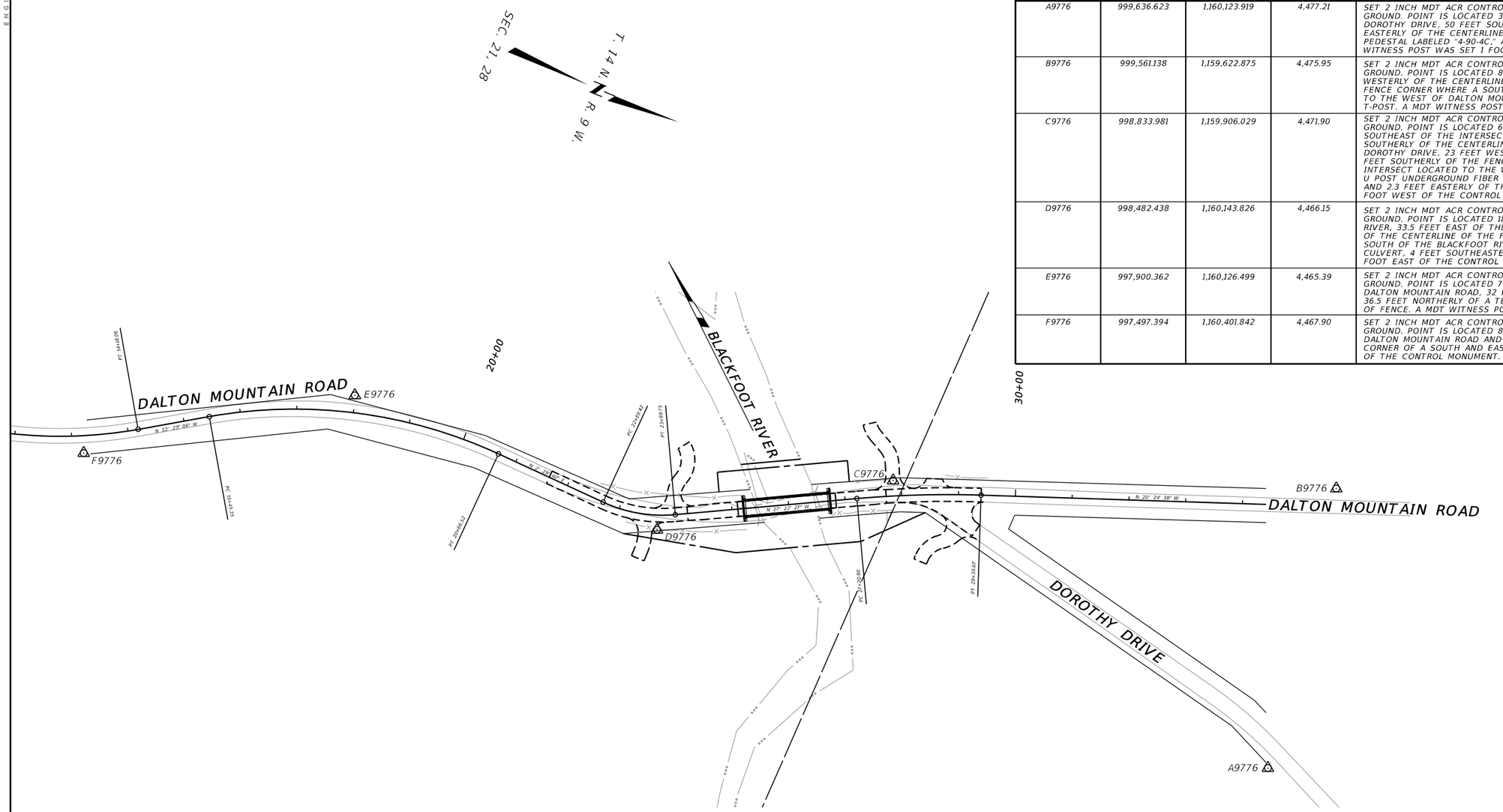
SCALE: 1"=200'

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 0.99918151.

CONTROL ABSTRACT

POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
A9776	999,636.623	1,160,123.919	4,477.21	SET 2 INCH MDT ACR CONTROL MONUMENT STAMPED "MDT A9776 2020" FLUSH WITH THE GROUND. POINT IS LOCATED 330 FEET SOUTHERLY OF THE INTERSECTION OF ELK ROAD AND DOROTHY DRIVE, 50 FEET SOUTH OF THE APPROACH TO THE PROPERTY LABELED "1148," 30 FEET EASTERLY OF THE CENTERLINE OF DOROTHY DRIVE, 10 FEET EASTERLY OF A TELEPHONE PEDESTAL LABELED "4-90-4C," AND 8 FEET EASTERLY FROM A FIBER OPTIC MARKER. A MDT WITNESS POST WAS SET 1 FOOT SOUTHEAST OF THE CONTROL MONUMENT.
B9776	999,561.138	1,159,622.875	4,475.95	SET 2 INCH MDT ACR CONTROL MONUMENT STAMPED "MDT B9776 2020" FLUSH WITH THE GROUND. POINT IS LOCATED 80 FEET SOUTHERLY OF THE CENTERLINE OF ELK LANE, 32.5 FEET WESTERLY OF THE CENTERLINE OF DALTON MOUNTAIN ROAD, 40 FEET SOUTHERLY OF THE FENCE CORNER WHERE A SOUTH RUN OF FENCE INTERSECTS A WEST RUN OF FENCE LOCATED TO THE WEST OF DALTON MOUNTAIN ROAD, 5 FEET EAST OF THE SOUTH RUN OF FENCE T-POST. A MDT WITNESS POST WAS SET 1 FOOT WEST OF THE CONTROL MONUMENT.
C9776	998,833.981	1,159,906.029	4,471.90	SET 2 INCH MDT ACR CONTROL MONUMENT STAMPED "MDT C9776 2020" FLUSH WITH THE GROUND. POINT IS LOCATED 65 FEET SOUTHWESTERLY OF A POWER POLE LOCATED TO THE SOUTHEAST OF THE INTERSECTION OF DOROTHY DRIVE AND DALTON MOUNTAIN ROAD, 55 FEET SOUTHERLY OF THE CENTERLINE INTERSECTIONS BETWEEN DALTON MOUNTAIN ROAD AND DOROTHY DRIVE, 23 FEET WESTERLY OF THE CENTERLINE OF DALTON MOUNTAIN ROAD, 23.5 FEET SOUTHERLY OF THE FENCE CORNER WHERE A SOUTH AND WEST RUN OF FENCE INTERSECT LOCATED TO THE WEST OF DALTON MOUNTAIN ROAD, 11.5 FEET NORTH OF A 3 INCH U POST UNDERGROUND FIBER OPTIC MAKER, 4.5 FEET FROM THE SOUTHERN MOST GATE POST, AND 2.3 FEET EASTERLY OF THE SOUTH RUN OF FENCE. A MDT WITNESS POST WAS SET 1 FOOT WEST OF THE CONTROL MONUMENT.
D9776	998,482.438	1,160,143.826	4,466.15	SET 2 INCH MDT ACR CONTROL MONUMENT STAMPED "MDT D9776 2020" FLUSH WITH THE GROUND. POINT IS LOCATED 180 FEET SOUTHERLY OF THE SOUTH BANK OF THE BLACKFOOT RIVER, 33.5 FEET EAST OF THE CENTERLINE OF DALTON MOUNTAIN ROAD, 15 FEET NORTHERLY OF THE CENTERLINE OF THE FIRST APPROACH ON THE EAST OF DALTON MOUNTAIN ROAD SOUTH OF THE BLACKFOOT RIVER, 11.5 FEET EASTERLY OF THE INVERT OF A 18 INCH CMP CULVERT, 4 FEET SOUTHEASTERLY OF A INCH FENCE POST. A MDT WITNESS POST WAS SET 1 FOOT EAST OF THE CONTROL MONUMENT.
E9776	997,900.362	1,160,126.499	4,465.39	SET 2 INCH MDT ACR CONTROL MONUMENT STAMPED "MDT E9776 2020" FLUSH WITH THE GROUND. POINT IS LOCATED 750 FEET SOUTH OF THE BLACKFOOT RIVER BRIDGE ALONG DALTON MOUNTAIN ROAD, 32 FEET WEST OF THE CENTERLINE OF DALTON MOUNTAIN ROAD, 36.5 FEET NORTHERLY OF A TELEPHONE PEDESTAL, 2 FEET EASTERLY OF A NORTH-SOUTH RUN OF FENCE. A MDT WITNESS POST WAS SET 1 FOOT WEST OF THE CONTROL MONUMENT.
F9776	997,497.394	1,160,401.842	4,467.90	SET 2 INCH MDT ACR CONTROL MONUMENT STAMPED "MDT F9776 2020" FLUSH WITH THE GROUND. POINT IS LOCATED 8.5 FEET SOUTHEASTERLY OF A STREET INTERSECTION SIGN FOR DALTON MOUNTAIN ROAD AND SHERLOCK LANE, AND 5 FEET SOUTHEASTERLY FROM A FENCE CORNER OF A SOUTH AND EAST RUN OF FENCE. A MDT WITNESS POST WAS SET 1 FOOT EAST OF THE CONTROL MONUMENT.



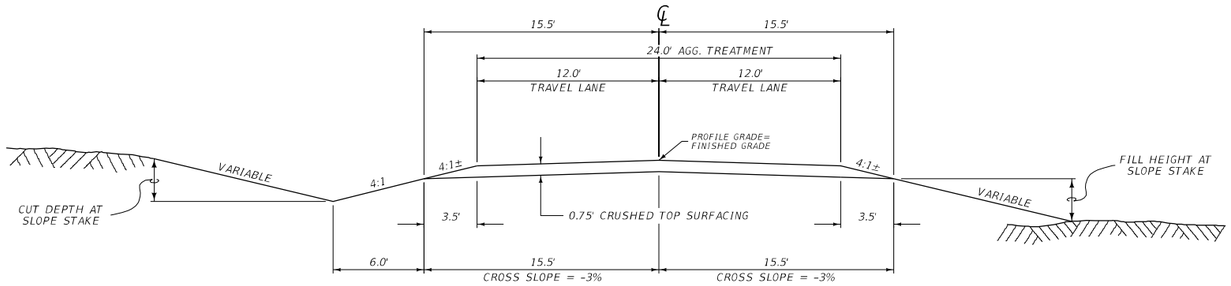
3	MONTANA Department of Transportation	...\9776000\RD\9776000rdTRDES16.dwg	DESIGNED BY	R. HOLM, L. WILLIAMS	12/6/2023	ROAD PLANS	BLACKFOOT RIVER – 3M W LINCOLN / STPB 9025(91)
2		12/6/2023	REVIEWED BY	R. HOLM	12/6/2023		
		2:11:36 PM RHolm	CHECKED BY	K. YAKAWICH	12/6/2023	LEWIS & CLARK COUNTY	UPN 9776000 / SHEET 4

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TYPICAL SECTION NO. 1

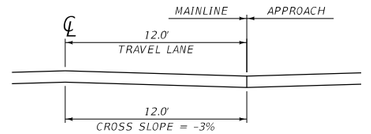
MAINLINE

21+65.02			BEGIN PROJECT
21+65.02	TO	22+91.02	TRANS TYP NO 1 TO TYP NO 2
24+21.55	TO	24+46.55	TRANS TYP NO 1 TO TYP NO 3 (LT LANE -3%, TRANS RT LANE 2.38% TO 0.30%)
27+72.45	TO	29+39.67	
29+39.67			END PROJECT



QUANTITIES				
UNIT	AGGREGATE		UNIT	BIT. MTL.
	CR. TOP SURFACING	CR. AGG. COURSE		AGG. TREATMENT
AREA square feet cubic yards PER STATION tons PER STATION square yards PER STATION	20.63 76.1		square yards PER STATION tons PER STATION gals. PER STATION	

1. END SECTION DETAIL



27+92.64 TO 29+39.67 RT

* FILL SLOPES	
0' - 10'	4:1
10' - 20'	3:1
20' - 30'	2:1
OVER 30'	2:1

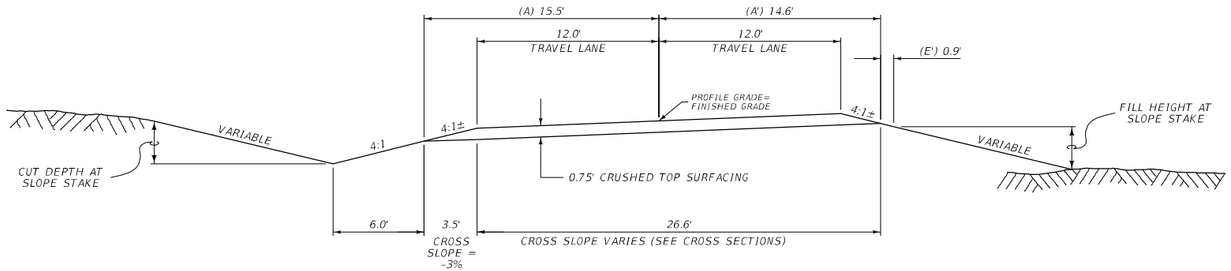
* BACK SLOPES	
0' - 5'	4:1
5' - 10'	3:1
10' - 15'	2:1
15' - 20'	2:1
OVER 20'	2:1

* SEE CROSS SECTIONS FOR DEVIATIONS

TYPICAL SECTION NO. 2

MAINLINE (REVERSE DIMENSIONS FOR CURVE RT)

22+91.02	TO	23+78.15	4% LT
23+78.15	TO	24+14.15	TRANS TYP NO 2 TO TYP NO 1 (TRANS LT LANE -4% TO -3%, RT LANE 4% TO 3%)
24+14.15	TO	24+21.55	CONT TRANS TYP NO 2 TO TYP NO 1 (LT LANE -3%, TRANS RT LANE 3% TO 2.38%)



FOR QUANTITIES SEE TYPICAL NO. 1

SUPER %	WIDTHS (ft)								
	A	B	C	D	A'	B'	C'	D'	E'
4%	15.5				14.6				0.9

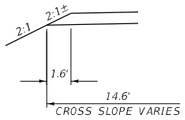
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TYPICAL SECTION NO. 3

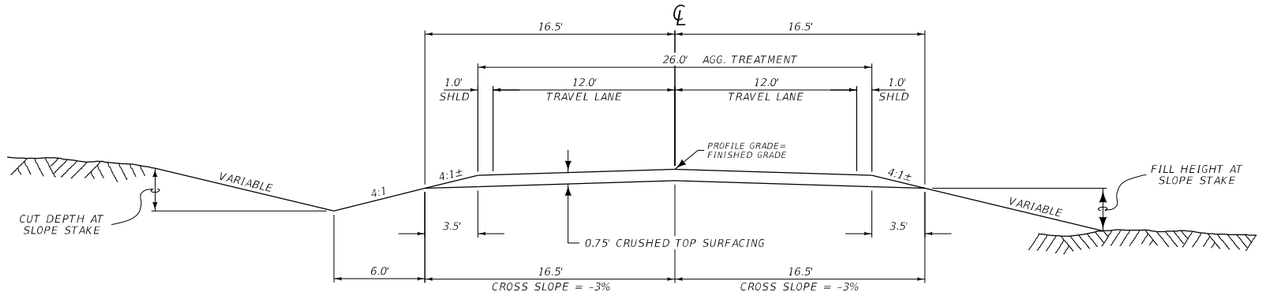
MAINLINE

24+46.55	TO	24+50.15	(LT LANE -3%, TRANS RT LANE 0.30% TO 0.00%)
24+50.15	TO	24+75.00	(TRANS LT LANE -3% TO -2.31%, RT LANE 0.00% TO -1.38%) THEN TO TYP NO 4
27+20.90	TO	27+47.45	TRANS 2% NC TO 3% NC
27+47.45	TO	27+72.45	TRANS TYP NO 3 TO TYP NO 1

1. END SECTION DETAIL



24+59.05 TO 24+75.00 LT TRANS STD TYP NO 3 TO END SECTION DETAIL
27+20.90 TO 27+47.45 LT END SECTION DETAIL
27+47.45 TO 27+72.45 LT TRANS END SECTION DETAIL TO STD TYP NO 3



QUANTITIES				
UNIT	AGGREGATE		UNIT	BIT. MTL.
	CR. TOP SURFACING	CR. AGG. COURSE		AGG. TREATMENT
AREA square feet cubic yards PER STATION tons PER STATION square yards PER STATION	22.05 81.7		square yards PER STATION tons PER STATION gals. PER STATION	

* FILL SLOPES	
0' - 10'	4:1
10' - 20'	3:1
20' - 30'	2:1
OVER 30'	2:1

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

* SEE CROSS SECTIONS FOR DEVIATIONS

TYPICAL SECTION NO. 4

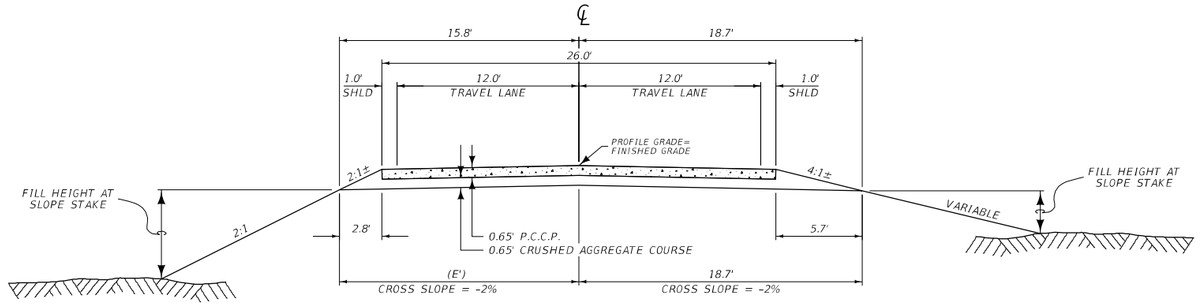
MAINLINE

24+75.00	TO	24+86.15	(TRANS LT LANE -2.31% TO -2%, RT LANE -1.38% TO -2%)
24+86.15	TO	25+10.41	
25+10.41	TO	25+20.40 B.E.	APPROACH SLAB, SEE NOTE #2
26+73.60 B.E.	TO	26+83.59	APPROACH SLAB, SEE NOTE #2
26+83.59	TO	27+20.90	
27+20.90			END P.C.C.P., THEN TO TYP NO 3

NOTES:

1. ADD A 3/4" CHAMFER TO TRANSVERSE TOP EDGE OF P.C.C.P. AT BEGINNING AND END OF TYP. NO. 4
   STA. 24+75.00
   STA. 27+20.90

2. APPROACH SLABS ARE LOCATED ON EACH END OF THE BRIDGE. REPLACE THE TYP. NO. 4 PCCP AND CAC SURFACING WITH 1.00' DEPTH APPROACH SLAB (SEE BRIDGE PLANS) ON 0.30' DEPTH CAC IN THE FOLLOWING STATION RANGES. SUBGRADE AND HINGE POINT LOCATIONS AND ELEVATIONS REMAIN AS SHOWN IN TYP. NO. 4.
   STA. 25+10.41 TO 25+20.40 B.E.
   STA. 26+73.60 B.E. TO 26+83.59



QUANTITIES				
UNIT	AGGREGATE		UNIT	BIT. MTL.
	P.C.C.P.	CR. AGG. COURSE		AGG. TREATMENT
AREA square feet cubic yards PER STATION tons PER STATION square yards PER STATION	288.9	22.43 83.1	square yards PER STATION tons PER STATION gals. PER STATION	

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SUMMARY

GRADING

STATION	cubic yards			REMARKS
	UNCL. EXC.	EXCESS EXC.	EMB.+	
21+65.02				
	1,135	1,135		
25+20.40 B.E.				
				DALTON MOUNTAIN ROAD BRIDGE
26+73.60 B.E.				
	1,025	1,025		
29+39.67				
TOTAL	2,160	# 2,160	# 0	

FOR INFORMATION ONLY

ADDITIONAL GRADING

STATION		cubic yards			REMARKS
		INCL. IN ROADWAY		ADD. UNCL. EXC.	
FROM	TO	UNCL. EXC.	EMB.+		
23+50.00		15			FARM FIELD APP. RT
23+99.75		45			FARM FIELD APP. LT
24+66.40	25+20.40 B.E.	260			BRIDGE END BACKFILL
24+99.56	25+65.36	715			SOUTH ABUTMENT EXC.
26+30.57	26+94.44	585			NORTH ABUTMENT EXC.
26+73.60 B.E.	27+34.62	205			BRIDGE END BACKFILL
27+85.85		35			FARM FIELD APP. LT
28+55.00		20			FARM FIELD APP. LT
50+00.00	51+10.00	85			DOROTHY DRIVE PUBLIC APPROACH
50+85.43		30			FARM FIELD APP. RT
TOTAL		~	~	0	

SURFACING

STATION		linear feet				FOR	AGGREGATE			BITUMINOUS MATERIAL	REMARKS
							square yards	cubic yards		square yards	
FROM	TO	GROSS	NET	+	-		P.C.C.P. 8 IN	CR. TOP SURFACING (MODIFIED) #	CRUSHED AGG. COURSE	AGG. TREAT.	
21+65.02	22+91.02	126.00	126.00					96			TRANS TYP SEC NO 1 TO TYP SEC NO 2
22+91.02	23+78.15	87.13	87.13					66			TYPICAL SECTION NO 2
23+78.15	24+21.55	43.40	43.40					33			TRANS TYP SEC NO 2 TO TYP SEC NO 1
24+21.55	24+46.55	25.00	25.00					20			TRANS TYP SEC NO 1 TO TYP SEC NO 3
24+46.55	24+75.00	28.45	28.45					23			TYPICAL SECTION NO 3
24+75.00	25+10.41	35.41	35.41				102		29		TYPICAL SECTION NO 4
25+10.41	25+20.40 B.E.	9.99	9.99						5		TYPICAL SECTION NO 4, APPROACH SLAB, CAC ONLY
25+20.40 B.E.	26+73.60 B.E.	153.20	0.00		153.20	BRIDGE					
26+73.60 B.E.	26+83.59	9.99	9.99						5		TYPICAL SECTION NO 4, APPROACH SLAB, CAC ONLY
26+83.59	27+20.90	37.31	37.31				108		31		TYPICAL SECTION NO 4
27+20.90	27+47.45	26.55	26.55					22			TYPICAL SECTION NO 3
27+47.45	27+72.45	25.00	25.00					20			TRANS TYP SEC NO 3 TO TYP SEC NO 1
27+72.45	29+39.67	167.22	167.22					127			TYPICAL SECTION NO 1
						ADDITIONAL SURFACING		444			
TOTAL		774.65	621.45	0.00	153.20		210	851	70	0	

SEE SPECIAL PROVISIONS

ADDITIONAL SURFACING (INCLUDED IN SURFACING FRAME)

STATION		linear feet				FOR	AGGREGATE			BITUMINOUS MATERIAL	REMARKS
							square yards	cubic yards		square yards	
FROM	TO	GROSS	NET	+	-		P.C.C.P. 8 IN	CR. TOP SURFACING (MODIFIED) #	CRUSHED AGG. COURSE	AGG. TREAT.	
24+16.38	25+20.40 B.E.					GUARDRAIL AGG. WIDENING LT & RT		58			
26+73.60 B.E.	27+17.51					GUARDRAIL AGG. WIDENING LT		12			
26+73.60 B.E.	27+77.63					GUARDRAIL AGG. WIDENING RT		22			
						APPROACHES		352			
SUBTOTAL		~	~	~	~		0	444	0	0	

SEE SPECIAL PROVISIONS

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SUMMARY

REMOVE STRUCTURE

STATION	lump sum REMOVE STRUCTURE	REMARKS
25+97.45	1	25.9' W X 110' L, BLACKFOOT RIVER
TOTAL	1	

SIGNING

SIGN NO.	ITEM #	UNIT	QUANTITY	REMARKS
W5-3/W13-1P	REMOVE	EACH	2	22+83 RT, 28+13 LT
R12-1	REMOVE	EACH	2	24+73 RT, 27+21 LT
OM-3L/OM-3R	REMOVE	EACH	4	25+40 LT, 25+45 RT, 26+50 LT, 26+55 RT
W1-4	REMOVE	EACH	1	25+91 RT
R1-2	REMOVE	EACH	1	26+96 LT
W3-2	REMOVE	EACH	1	27+65 LT
R1-2	REPLACE	EACH	1	51+02.66 LT, 11 FT GALV. STEEL 3 LB/FT U-POST W/ BREAKAWAY
TOTAL			12	

SALVAGE ALL SIGNS REMOVED OR REPLACED TO LEWIS & CLARK COUNTY ROAD DEPARTMENT.

BRIDGE END BACKFILL

STATION FROM	STATION TO	cubic yards BRIDGE END BACKFILL * TYPE 3	square yards GEOTEXTILE PERM. EROS. CONTROL HIGH SURV. CLASS B	REMARKS
24+66.40	25+20.40 B.E.	466	346	
26+73.60 B.E.	27+34.62	449	328	
TOTAL		915	674	

* MEASUREMENT FOR PAYMENT IS THE FINAL IN-PLACE VOLUME

RANDOM RIPRAP

STATION FROM	STATION TO	cubic yards RANDOM RIPRAP CL. 2	TYPE 2 FILTER MATERIAL #	square yards GEOTEXTILE PERM. EROS. CONTROL * HIGH SURV. CLASS B	RIPRAP REVEGE-TATION	REMARKS
24+99.56	25+65.36	329.6	74	615	295	SOUTH BRIDGE END
26+30.57	26+94.44	342.8	77	630	306	NORTH BRIDGE END
TOTAL		672.4	~	1,245	601	

FOR INFORMATION ONLY- INCLUDED IN RIPRAP REVEGETATION BID ITEM

* 16 OZ/SY GEOTEXTILE REQUIRED UNDER CLASS 2 RIPRAP. SEE SPECIAL PROVISIONS.

SPECIAL BORROW

STATION FROM	STATION TO	cubic yards SPECIAL BORROW NEATLINE	REMARKS
21+65.02	25+20.40 B.E.	696	USE SPECIAL BORROW IN PLACE OF EMB.+ FOR ALL ROADWORK
21+65.02	25+20.40 B.E.	86	TOPSOIL REPLACEMENT
23+50.00		143	FARMFIELD APPROACH RT
23+99.75		244	FARMFIELD APPROACH LT
24+82.07		5	EMB. PROTECTOR LT
24+82.07		20	EMB. PROTECTOR RT
26+73.60 B.E.	29+39.67	365	USE SPECIAL BORROW IN PLACE OF EMB.+ FOR ALL ROADWORK
26+73.60 B.E.	29+39.67	44	TOPSOIL REPLACEMENT
27+11.93		5	EMB. PROTECTOR LT
27+11.93		5	EMB. PROTECTOR RT
27+85.85		469	FARMFIELD APPROACH LT
28+55.00		5	FARMFIELD APPROACH LT
50+00.00	51+10.00	11	DOROTHY ROAD PUBLIC APPROACH
50+00.00	51+10.00	14	TOPSOIL REPLACEMENT
50+85.43		113	FARMFIELD APPROACH RT
TOTAL		2,225	

EMBANKMENT PROTECTORS

STATION FROM	STATION TO	linear feet EMBANKMENT PROTECTOR 18" LEFT	linear feet EMBANKMENT PROTECTOR 18" RIGHT	linear feet CONCRETE CURB 4" LEFT	linear feet CONCRETE CURB 4" RIGHT	cubic yards BANK PROTECTION TYPE 3	square yards MISC. ITEMS #	square yards GEOTEXTILE PERM. EROS. CONTROL HIGH SURV. CLASS B	REMARKS
24+80.07	25+20.40 B.E.	14	28	46.2	46.2	6.0	24		RT & LT, USE CONCRETE OR PMS SURFACING
26+73.60 B.E.	27+13.93	10	26	46.2	46.2	6.0	24		RT & LT, USE CONCRETE OR PMS SURFACING
SUBTOTAL		24	54	92.4	92.4				
TOTAL		78		184.8		12.0	48	0	

SEE SPECIAL PROVISIONS

REVEGETATION

STATION FROM	STATION TO	lump sum REVEGE-TATION	cu. yards TOPSOIL SALVAGING & PLACING #	acres SEED #	acres FERTILIZER #	acres CONDITION SEEDBED #	REMARKS
21+65.02	29+39.67	1.0	197	0.4	0.4	0.4	
TOTAL		1	~	~	~	~	

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SUMMARY

GUARDRAIL

STATION		linear feet						each				REMARKS
		REMOVE GUARDRAIL		MGS GUARDRAIL LONG POSTS		INTERSECTING ROADWAY TERMINAL SECTION (MGS)		MASH W-BEAM OPTIONAL TERMINAL SECTION #		MASH W-BEAM BRIDGE APPROACH SECTION TYPE 3		
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	
NEW RAIL												
24+46.54	25+18.41							1	1	1	1	
26+75.54	27+47.42								1		1	
26+75.54	27+73.73			50.0		62.5				1		IRTS RADIUS = 24 FT
REMOVE RAIL												
SUBTOTAL		0.0	0.0	50.0	0.0	62.5	0.0	1	2	2	2	
TOTAL		0.0		50.0		62.5		3		4		

USE ROAD SYSTEMS MSKT TERMINAL SECTION ONLY TO MATCH COUNTY ROAD DEPT. STOCKED HARDWARE.

FENCING

STATION		linear feet					each				linear feet		REMARKS
		FARM FENCE		WILDLIFE-FRIENDLY FENCE		TEMP. FENCE	FARM FENCE PANEL		DEADMAN	PEDESTRIAN PASS	FARM GATE		
		TYPE F4M	TYPE F5W	TYPE 1 WF4-SBBS-I6W	TYPE 6 WF4-4B-12W		SINGLE	DOUBLE					
FROM	TO						FW	FW			TYPE G2	TYPE G3	
21+65.02	23+94.80				180		1	2					LT, TIE TO EX. FENCE
23+94.80	24+10.63										16		LT
24+10.63	25+19.57				84		1	3					LT, WING TO BRIDGE
26+74.43	27+78.04				80		2	1					LT, WING TO BRIDGE
27+78.04	27+93.74										16		LT
27+93.74	28+48.22				39		2						LT
28+48.22	28+63.97										16		LT
28+63.97	29+39.67				54		1	1					LT, TIE TO EX. FENCE
21+65.02	23+43.08				156		2	1					RT, TIE TO EX. FENCE
23+43.08	23+56.88										16		RT
23+56.88	24+79.59				111		1	1					RT
24+79.59										1			RT
24+81.71	25+19.57				37		1	1					RT, WING TO BRIDGE
26+74.43	28+89.81				193		3	2					RT, WING TO BRIDGE, EXTENDS TO FARM FIELD APP. GATE
50+76.81	50+92.81										16		RT
50+92.81	21+09.31							1					RT, END WITH DOUBLE PANEL
TOTAL		0	0	0	934	0	14	13	2	1	80	0	

BIOENGINEERED BANK

STATION		lump sum	cubic yards		square yards			linear feet		each	acres	REMARKS
		BIOENGINEERED BANK	TOPSOIL #	TYPE 2 FILTER MATERIAL #	COIR NETTING #	EROSION CONTROL BLANKET #	EROSION CONTROL BLANKET #	20" COIR LOGS #	FASCINE #	WILLOW CUTTINGS # ##	SEED #	
FROM	TO					HIGH PERF.	LONG TERM					
25+16.91	25+56.21	0.5	82	35	427	427	366	258	129	1,769	0.1	SOUTH BANK
26+38.30	26+64.85	0.5	76	33	396	396	372	238	119	1,641	0.1	NORTH BANK
		1	~	~	~	~	~	~	~	~	~	

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INCLUDES 15% MORTALITY FACTOR

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HYDRAULIC DATA SUMMARY *

STATION	STREAM NAME (IF NAMED)	SIZE / TYPE STRUCTURE (1)(1A)	DESIGN FLOOD			BASE FLOOD (1%)		OVERTOPPING FLOOD (2)(3)			REMARKS (FLOOD OF RECORD, Qp(max), etc.) (5)
			MAGNITUDE (cfs)	FREQUENCY (%)	H.W. ELEV. (ft)	MAGNITUDE (cfs)	H.W. ELEV. (ft)	MAGNITUDE (cfs)	APPROX. FREQUENCY (%)	H.W. ELEV. (ft)	
25+97.00	BLACKFOOT RIVER	128' - SINGLE SPAN BRIDGE	4,420	4	4,467.43	6,283	4,468.28	4,420	4	4,467.43	OVERTOPS PTW AT APPROX. STA. 21+90

NOTES :

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

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

(1A) BRIDGE LENGTH SHOWN EQUALS THE WATER SURFACE WIDTH IN THE OPENING AT THE DESIGN H.W. ELEVATION MEASURED NORMAL TO FLOW.

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

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

(4) HIGH WATER ELEVATIONS MAY VARY SLIGHTLY DEPENDING UPON THE PIPE OPTION SELECTED.

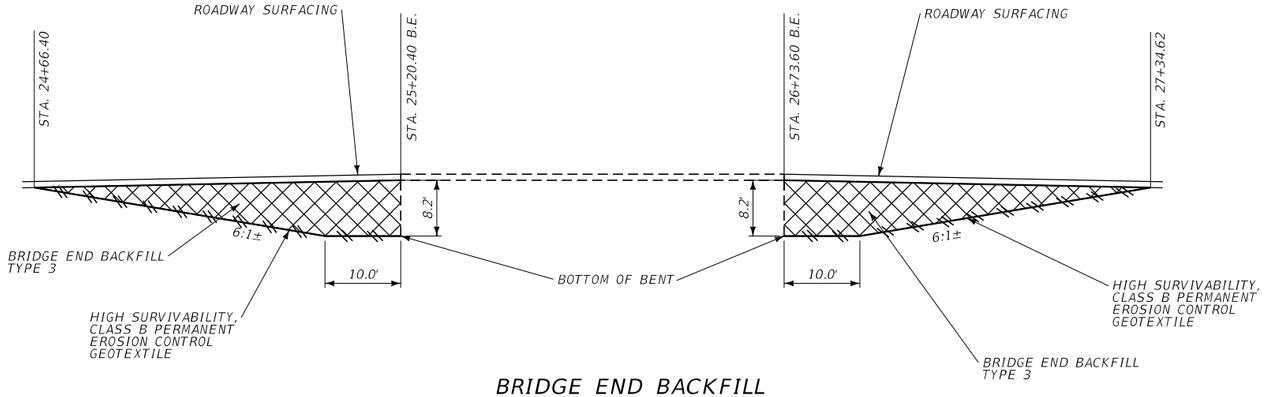
(5) PROCEDURE MEMORANDUM NO.10, HYDRAULICS MANUAL CHAPTER 9 APPENDIX H.

EXCEEDANCE	PROBABILITIES
10 YEAR	10% CHANCE
25 YEAR	4% CHANCE
50 YEAR	2% CHANCE
100 YEAR	1% CHANCE
200 YEAR	.5% CHANCE
500 YEAR	.2% CHANCE

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DETAIL



BRIDGE END BACKFILL

BRIDGE END BACKFILL

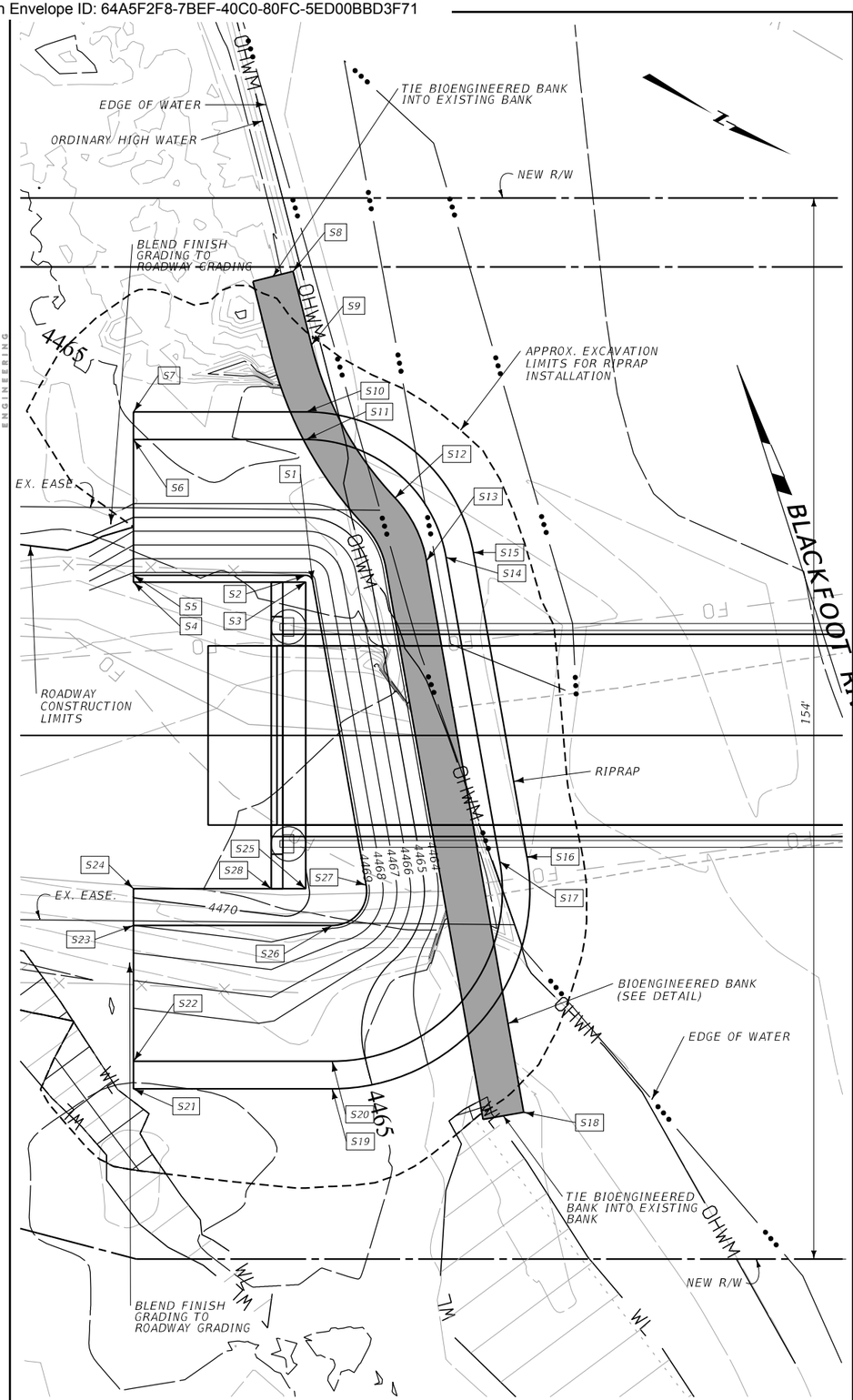
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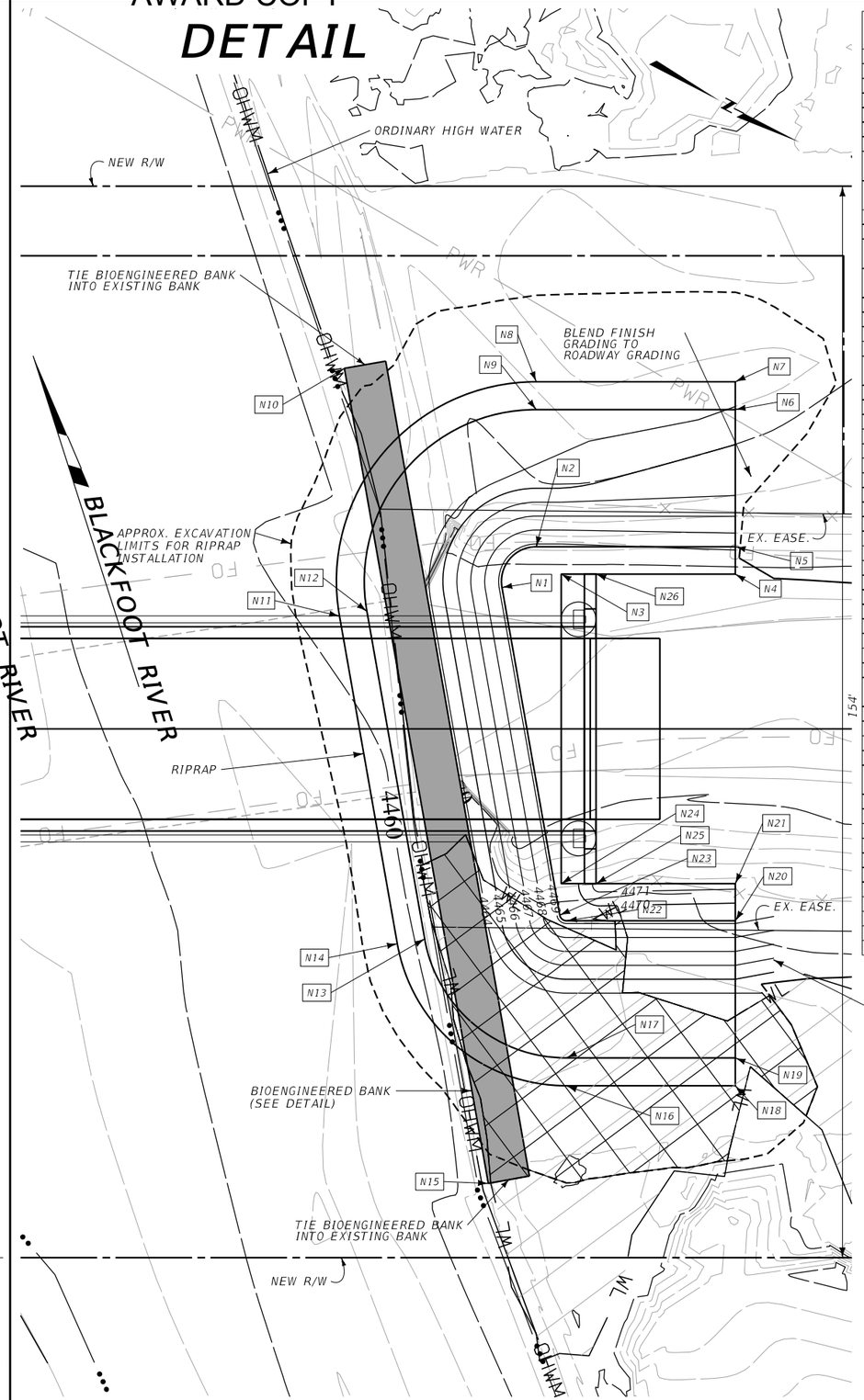
3 2	MONTANA Department of Transportation	...\9776000\RD\9776000rdDET01.dgn 12/6/2023 2:11:55 PM RHolm	DESIGNED BY REVIEWED BY CHECKED BY	R. HOLM, L. WILLIAMS R. HOLM K. YAKAWICH	9/20/2023 9/20/2023 9/20/2023	ROAD PLANS LEWIS & CLARK COUNTY	BLACKFOOT RIVER - 3M W LINCOLN UPN 9776000	STPB 9025(91) SHEET 11

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DETAIL





POINTS	N OR Y COORDINATE	E OR X COORDINATE	TOP OF RIPRAP ELEVATION	F.G. ELEVATION	REMARKS
S1	998,603.355	1,160,029.253	4,468.70	4,469.20	TOP OF SLOPE
S2	998,602.104	1,160,028.970	4,468.70	4,469.20	TOP OF SLOPE
S3	998,602.560	1,160,029.860	4,468.80	4,469.30	TOP OF BENCH
S4	998,580.360	1,160,041.355	4,468.80	4,469.30	TOP OF BENCH
S5	998,579.900	1,160,040.467	4,468.70	4,469.20	TOP OF SLOPE
S6	998,570.842	1,160,022.973	4,458.85	4,464.83	TOP OF KEYWAY
S7	998,569.003	1,160,019.421	4,458.85	4,465.15	TOP OF KEYWAY
S8	998,580.197	1,159,990.656		4,463.30	TOP OF BIO-ENGINEERED BANK
S9	998,587.467	1,159,998.912		4,463.30	TOP OF BIO-ENGINEERED BANK
S10	998,591.293	1,160,007.879	4,458.85	4,463.30	TOP OF KEYWAY
S11	998,593.118	1,160,011.439	4,458.85	4,463.30	TOP OF KEYWAY
S12	998,608.452	1,160,013.052		4,463.30	TOP OF BIO-ENGINEERED BANK
S13	998,616.714	1,160,019.049		4,463.30	TOP OF BIO-ENGINEERED BANK
S14	998,619.011	1,160,017.295	4,458.85	4,461.62	TOP OF KEYWAY
S15	998,622.189	1,160,014.866	4,458.85	4,461.58	TOP OF KEYWAY
S16	998,649.401	1,160,050.490	4,458.85	4,462.00	TOP OF KEYWAY
S17	998,646.222	1,160,052.918	4,458.85	4,461.67	TOP OF KEYWAY
S18	998,666.043	1,160,083.628		4,463.30	TOP OF BIO-ENGINEERED BANK
S19	998,639.789	1,160,093.398	4,458.85	4,465.66	TOP OF KEYWAY
S20	998,637.950	1,160,089.846	4,458.85	4,465.53	TOP OF KEYWAY
S21	998,614.175	1,160,106.660	4,458.85	4,464.85	TOP OF KEYWAY
S22	998,612.336	1,160,103.108	4,458.85	4,465.16	TOP OF KEYWAY
S23	998,603.278	1,160,085.614	4,468.70	4,469.20	TOP OF SLOPE
S24	998,600.822	1,160,080.871	4,469.23	4,470.35	TOP OF BENCH
S25	998,623.022	1,160,069.377	4,469.55	4,470.05	TOP OF BENCH
S26	998,628.892	1,160,072.352	4,468.70	4,469.20	TOP OF SLOPE
S27	998,630.566	1,160,064.877	4,468.70	4,469.20	TOP OF SLOPE
S28	998,618.585	1,160,071.674	4,469.23	4,470.93	TOP OF BENCH
N1	998,724.530	1,159,968.877	4,468.70	4,469.20	TOP OF SLOPE
N2	998,726.205	1,159,961.402	4,468.70	4,469.20	TOP OF SLOPE
N3	998,731.212	1,159,963.246	4,469.57	4,470.07	TOP OF BENCH
N4	998,753.413	1,159,951.751	4,469.09	4,470.24	TOP OF BENCH
N5	998,751.601	1,159,948.252	4,468.70	4,469.20	TOP OF SLOPE
N6	998,742.543	1,159,930.758	4,458.85	4,464.08	TOP OF KEYWAY
N7	998,740.704	1,159,927.206	4,458.85	4,463.77	TOP OF KEYWAY
N8	998,717.147	1,159,943.908	4,458.85	4,463.90	TOP OF KEYWAY
N9	998,715.307	1,159,940.355	4,458.85	4,464.21	TOP OF KEYWAY
N10	998,689.968	1,159,951.322		4,463.30	TOP OF BIO-ENGINEERED BANK
N11	998,705.696	1,159,983.263	4,458.85	4,460.44	TOP OF KEYWAY
N12	998,708.875	1,159,980.835	4,458.85	4,460.74	TOP OF KEYWAY
N13	998,737.899	1,160,018.832	4,458.85	4,459.50	TOP OF KEYWAY
N14	998,734.720	1,160,021.260	4,458.85	4,459.15	TOP OF KEYWAY
N15	998,762.152	1,160,045.822		4,463.30	TOP OF BIO-ENGINEERED BANK
N16	998,765.706	1,160,028.201	4,458.85	4,463.97	TOP OF KEYWAY
N17	998,763.867	1,160,024.649	4,458.85	4,464.02	TOP OF KEYWAY
N18	998,787.227	1,160,017.058	4,458.85	4,463.76	TOP OF KEYWAY
N19	998,785.387	1,160,013.506	4,458.85	4,463.86	TOP OF KEYWAY
N20	998,776.329	1,159,996.012	4,468.70	4,469.20	TOP OF SLOPE
N21	998,773.873	1,159,991.268	4,469.23	4,471.40	TOP OF BENCH
N22	998,754.809	1,160,007.155	4,468.70	4,469.20	TOP OF SLOPE
N23	998,753.554	1,160,006.874	4,468.70	4,469.20	TOP OF SLOPE
N24	998,751.673	1,160,002.763	4,468.80	4,469.30	TOP OF BENCH
N25	998,756.109	1,160,000.467	4,469.23	4,471.59	TOP OF BENCH
N26	998,735.648	1,159,960.950	4,469.09	4,470.16	TOP OF BENCH

RIPRAP LAYOUT

SCALE: 1" = 20'

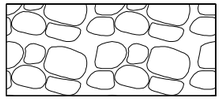
3 / 1	MONTANA Department of Transportation	...\9776000\RD\9776000rdDET.dgn	DESIGNED BY	R. HOLM, L. WILLIAMS	9/20/2023	ROAD PLANS	BLACKFOOT RIVER – 3M W LINCOLN / UPN 9776000 / STPB 9025(91) / SHEET 12
		12/6/2023	REVIEWED BY	R. HOLM	9/20/2023		
		2:11:56 PM RHolm	CHECKED BY	K. YAKAWICH	9/20/2023	LEWIS & CLARK COUNTY	

DocuSign Envelope ID: 64A5F2F8-7BEF-40C0-80FC-5ED00BBD3F71

AWARD COPY

DETAIL

LEGEND



RANDOM RIPRAP

NATIVE MATERIAL

TYPE 2 FILTER MATERIAL

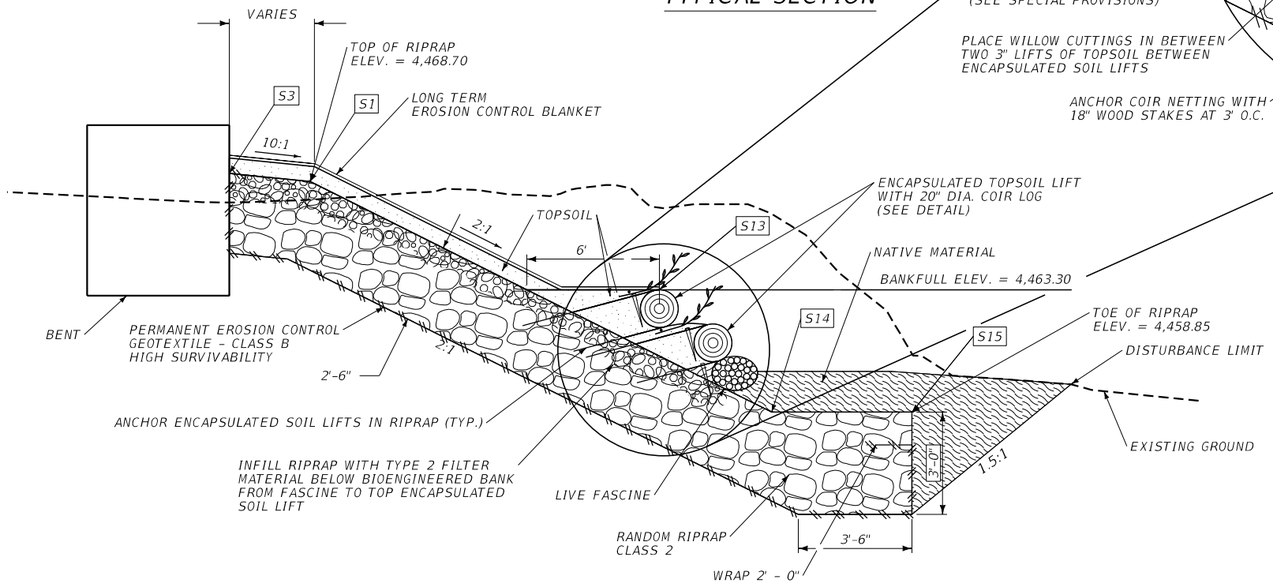
EXISTING GROUND

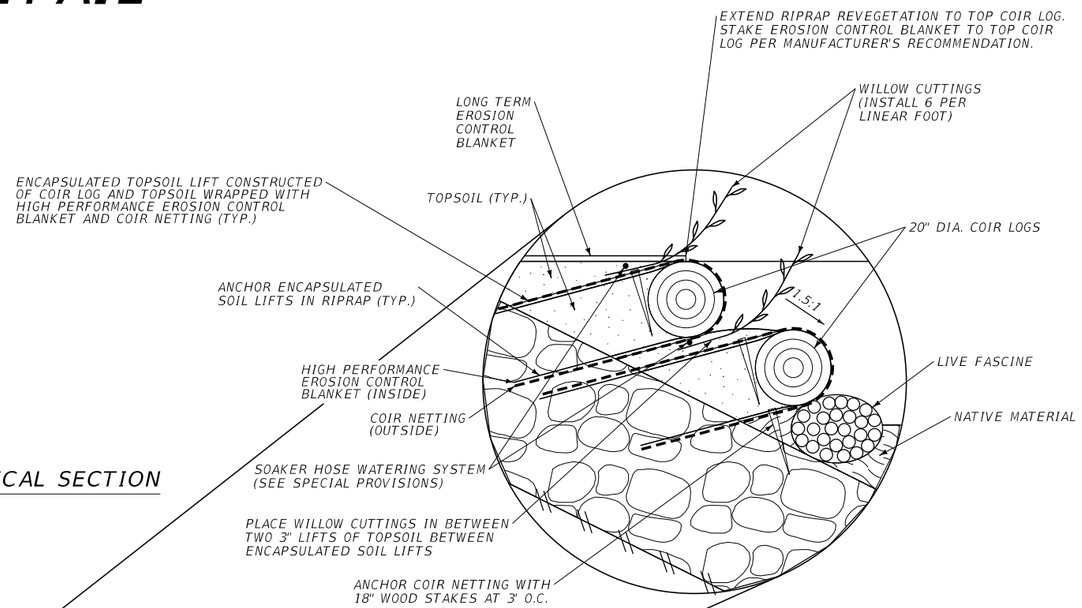
XX TYPICAL STAKING POINT LOCATION

NOTES:

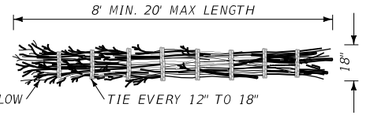
1. FILL RIPRAP VOIDS WITH TYPE 2 FILTER MATERIAL, OR A MATERIAL OF SIMILAR GRADATION OBTAINED ON SITE TO PROVIDE A UNIFORM SURFACE FOR THE PLACEMENT OF TOPSOIL AND BIOENGINEERED BANK COMPONENTS, AS APPROVED BY THE ENGINEER. FILTER MATERIAL UNDER RIPRAP REVEGETATION IS INCLUDED IN THE RIPRAP REVEGETATION BID ITEM. FILTER MATERIAL UNDER BIOENGINEERED BANK IS INCLUDED IN THE BIOENGINEERED BANK BID ITEM.
2. PLACE TOPSOIL WITH A MINIMUM THICKNESS OF 6".
3. BIOENGINEERED BANK DETAILS ARE TO BE USED AS A VISUAL GUIDE FOR RIPRAP REVEGETATION. REFER TO RIPRAP LAYOUT DETAIL FOR SPECIFIC ELEVATIONS AND GEOMETRIC CONFIGURATION OF THE RIPRAP LAYOUT.
4. REFER TO THE SPECIAL PROVISIONS FOR PLANTING AND SEEDING SPECIFICATIONS.
5. MINIMIZE DISTURBANCE INSTALLING RIPRAP AND CONSTRUCTING BRIDGE.
6. TIE BIOENGINEERED BANK INTO THE EXISTING BANKS AT RIPRAP EXCAVATION LIMITS.

TYPICAL SECTION





FASCINE



NOTES:

1. STAKE FASCINE EVERY 3' O.C.
2. OVERLAP ADJACENT FASCINE BUNDLES A MIN. OF 18". OVERLAP IN THE DOWNSTREAM DIRECTION TO PREVENT RIVER FLOW FROM DISLODGING FASCINE.
3. SUMMARY FRAME QUANTITY DOES NOT INCLUDE OVERLAP.

BIOENGINEERED BANK TYPICAL SECTION

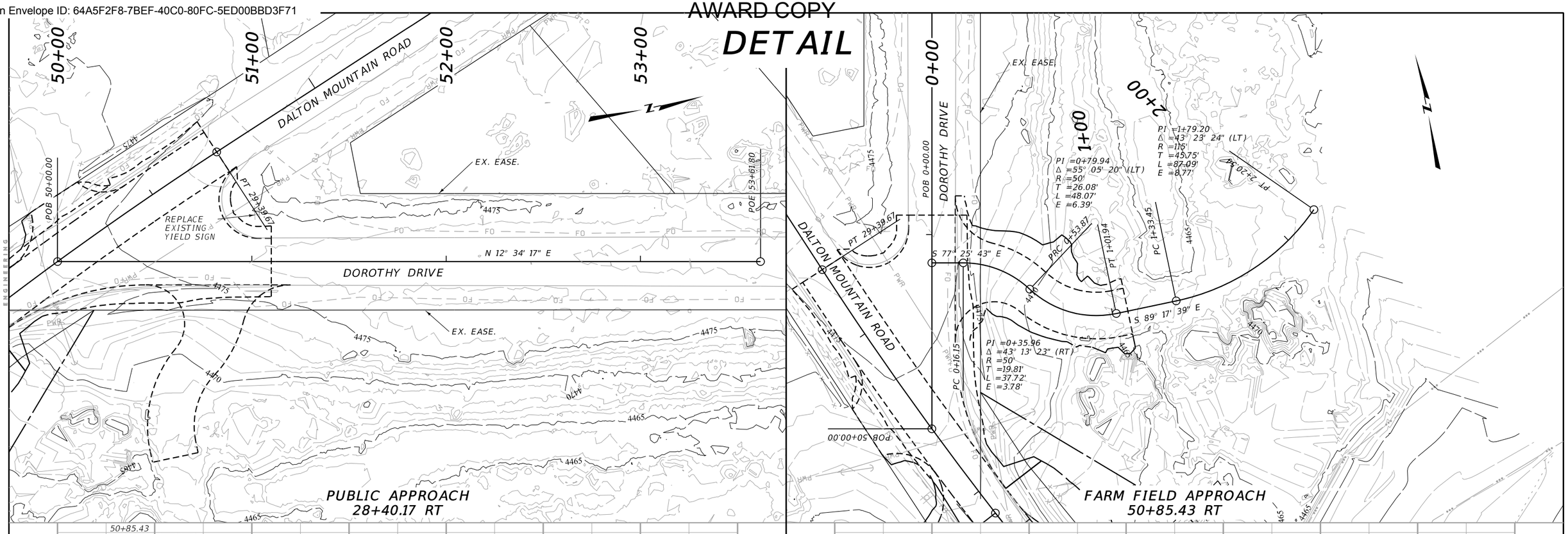
NO SCALE

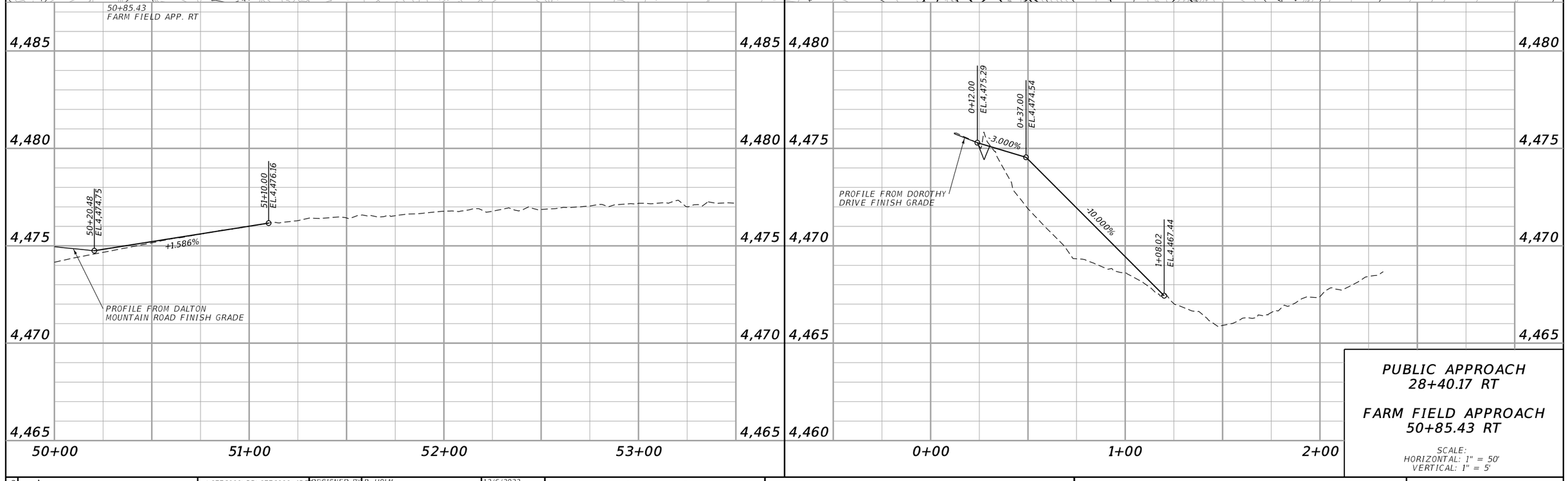
2	MONTANA Department of Transportation	...\9776000\RD\9776000rdDETAILS	DESIGNED BY	R. HOLM, L. WILLIAMS	11/27/2023	ROAD PLANS	BLACKFOOT RIVER - 3M W LINCOLN / STPB 9025(91)
		12/6/2023	REVIEWED BY	R. HOLM	11/27/2023		
1		2:11:58 PM RHolm	CHECKED BY	K. YAKAWICH	11/27/2023	LEWIS & CLARK COUNTY	UPN 9776000 / SHEET 13

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DETAIL





PUBLIC APPROACH
28+40.17 RT

FARM FIELD APPROACH
50+85.43 RT

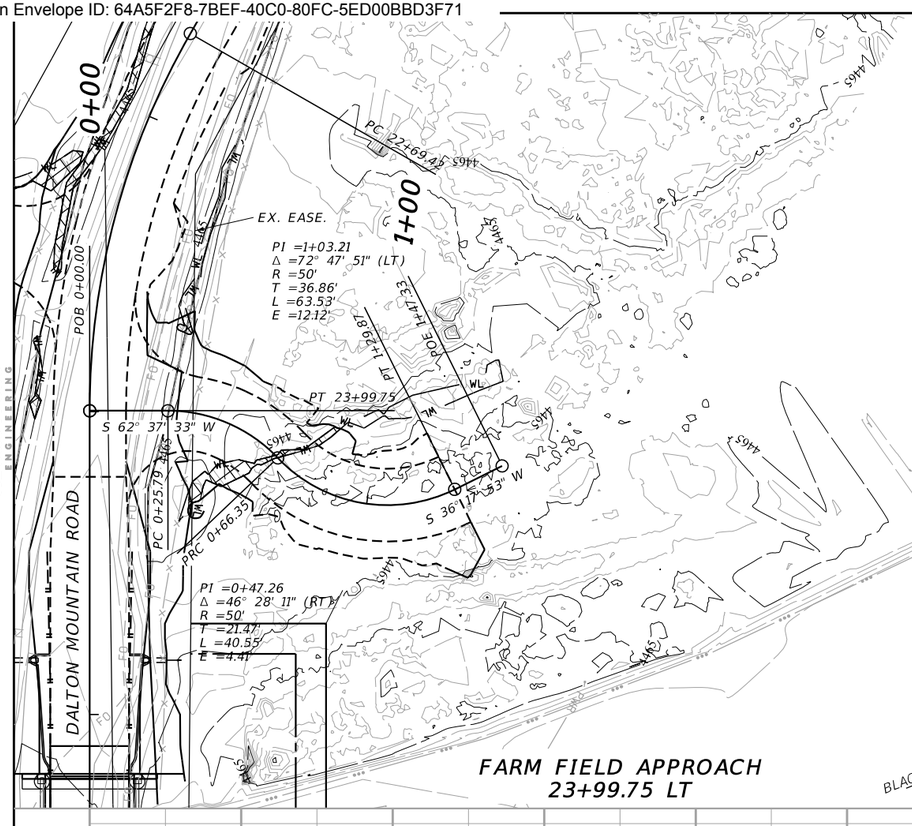
SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

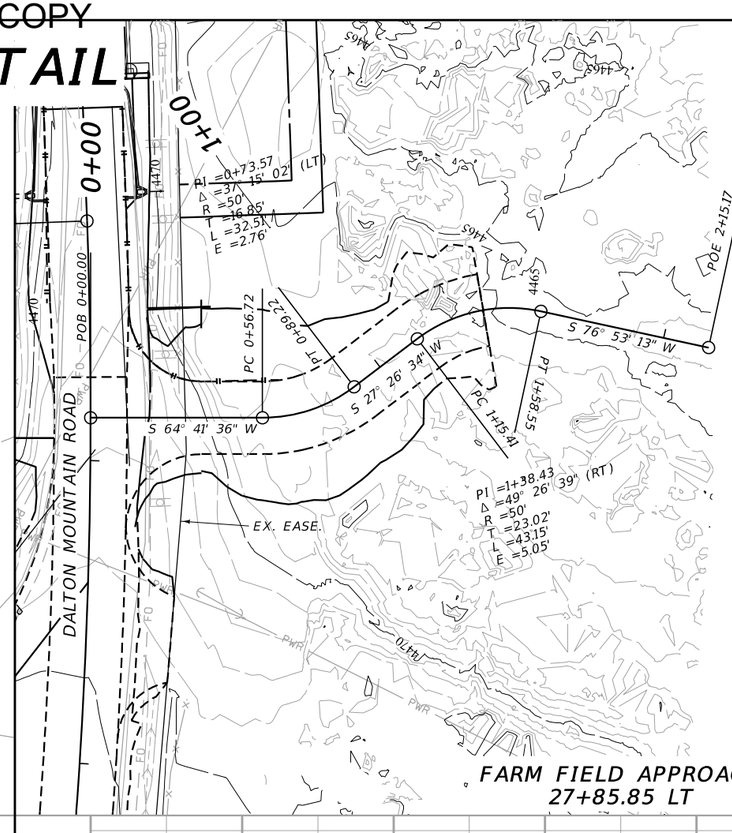
3	MONTANA Department of Transportation	...\9776000\RD\9776000rdDES.dgn	DESIGNED BY R. HOLM	12/6/2023	ROAD PLANS	BLACKFOOT RIVER – 3M W LINCOLN	STPB 9025(91)
2		12/6/2023	REVIEWED BY R. HOLM	12/6/2023			
		2:12:02 PM RHolm	CHECKED BY K. YAKAWICH	12/6/2023	LEWIS & CLARK COUNTY	UPN 9776000	SHEET 14

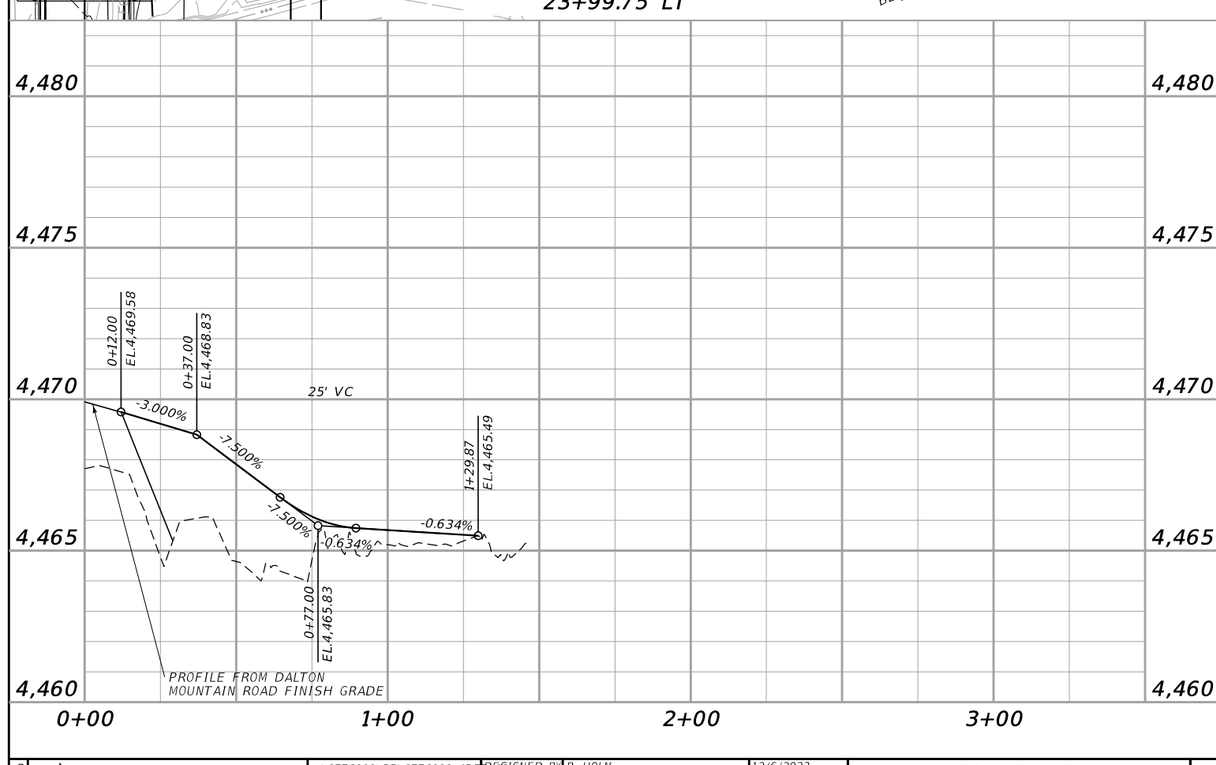
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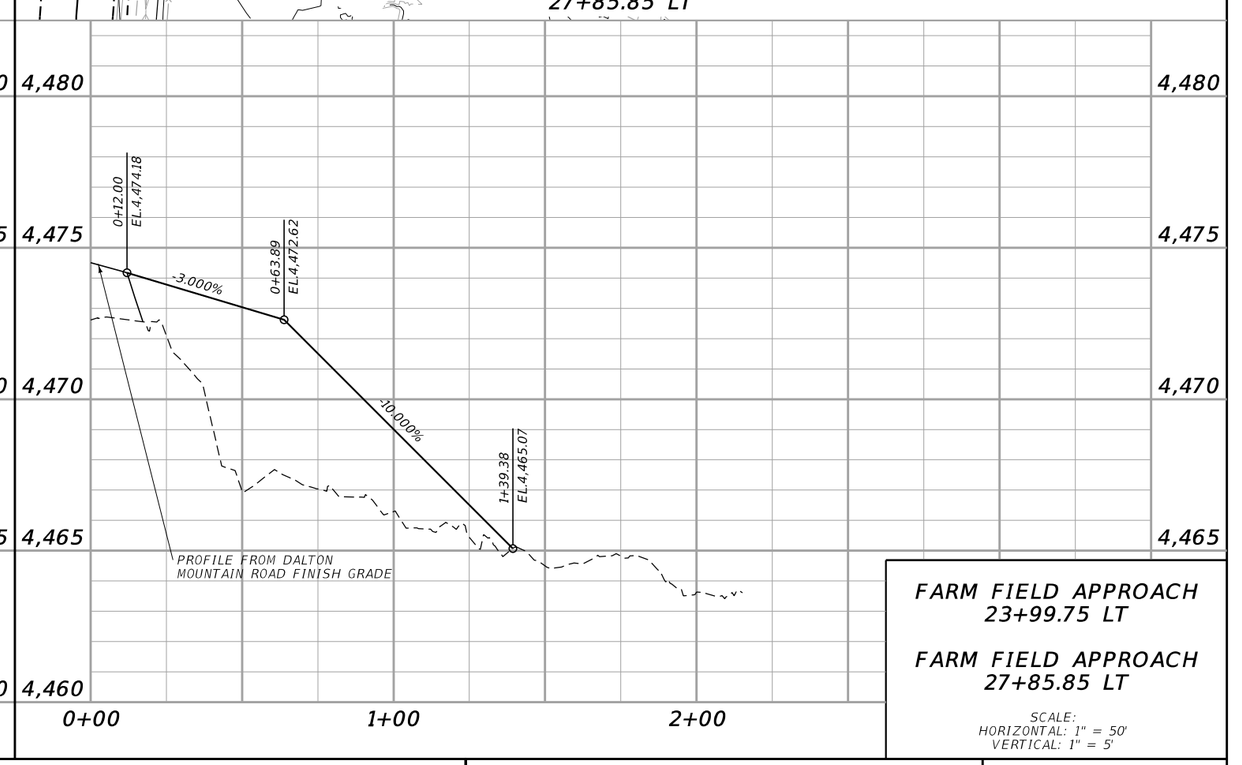
AWARD COPY

DETAIL









FARM FIELD APPROACH
23+99.75 LT

FARM FIELD APPROACH
27+85.85 LT

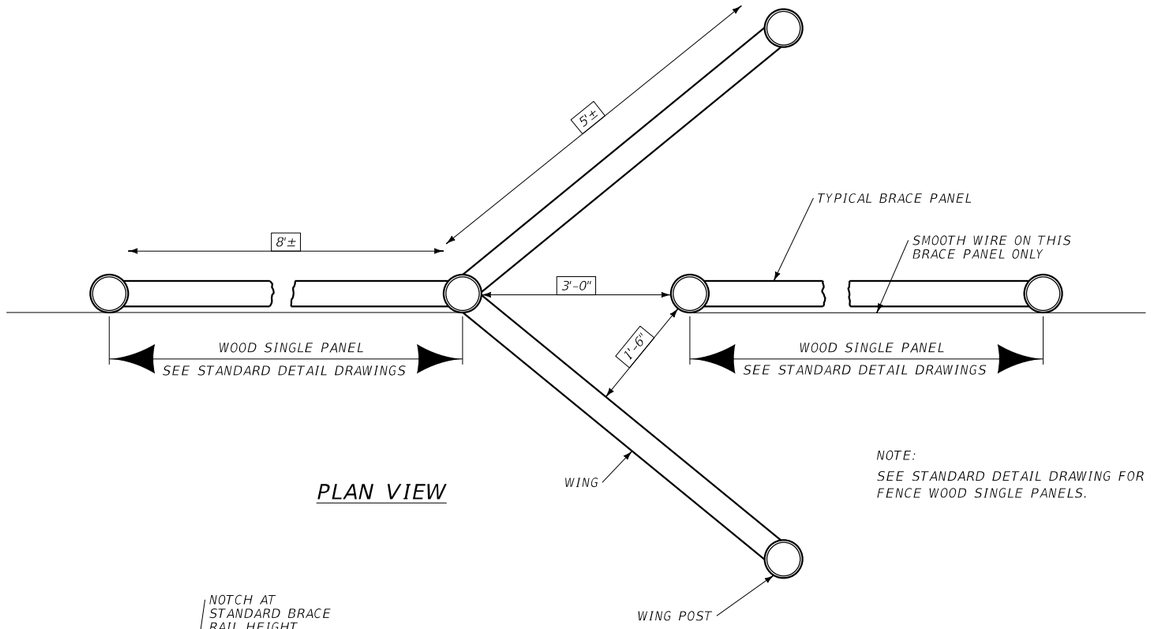
SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

3	MONTANA Department of Transportation	...\9776000\RD\9776000rdDES.dgn	DESIGNED BY	R. HOLM	12/6/2023	ROAD PLANS	BLACKFOOT RIVER - 3M W LINCOLN / STPB 9025(91)
1		12/6/2023	REVIEWED BY	R. HOLM	12/6/2023		
		2:12:04 PM RHolm	CHECKED BY	K. YAKAWICH	12/6/2023	LEWIS & CLARK COUNTY	UPN 9776000 / SHEET 15

DocuSign Envelope ID: 64A5F2F8-7BEF-40C0-80FC-5ED00BBD3F71

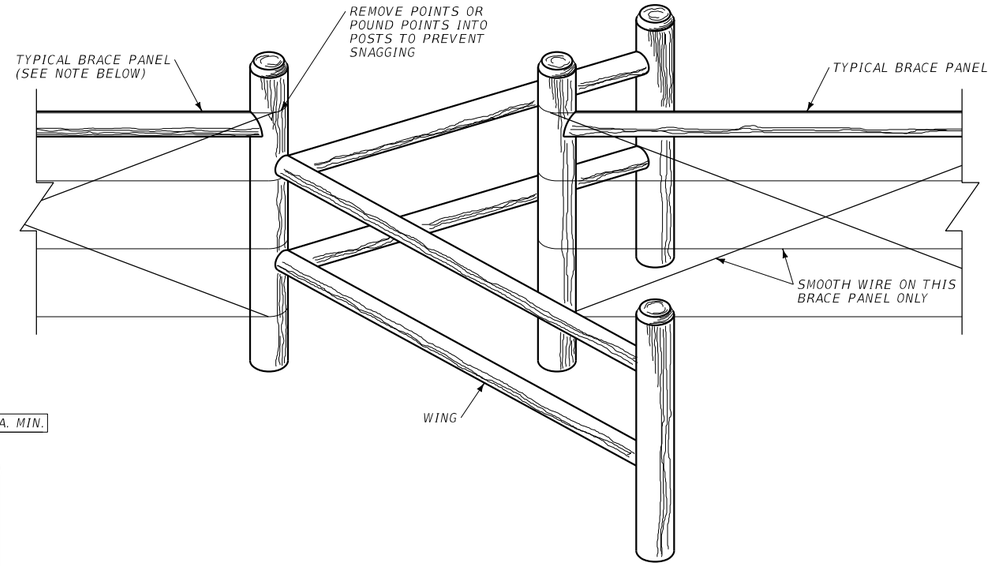
AWARD COPY

DETAIL



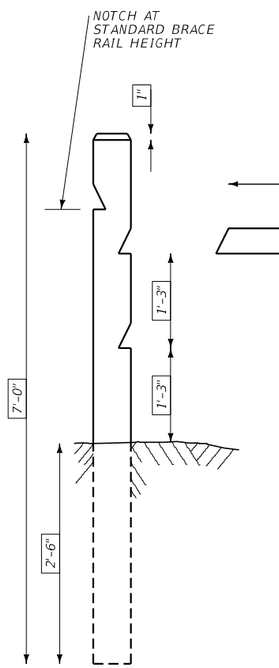
PLAN VIEW

NOTE:
SEE STANDARD DETAIL DRAWING FOR FARM FENCE WOOD SINGLE PANELS.

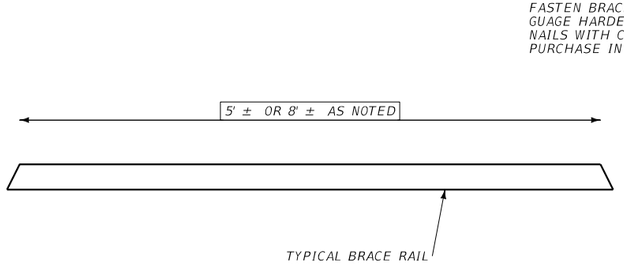


PERSPECTIVE

NOTE:
THE WOOD SINGLE PANEL (TYPICAL BRACE PANEL) WILL BE INSTALLED TO FIT FIELD CONDITIONS. SEE STANDARD DETAIL DRAWING FOR WIRE SPACING.



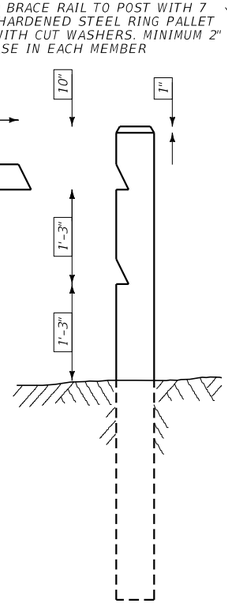
BRACE POST



ELEVATION VIEW - FRONT

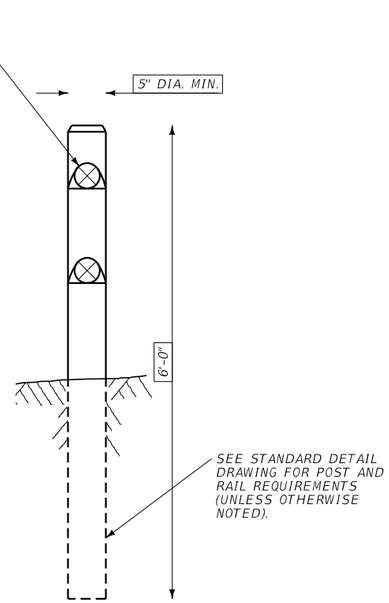
NOTE:
BRACE AND POST SHALL FIT TOGETHER SNUGLY. A MINIMUM OF 60% OF THE END AREA OF THE POLE SHALL BEAR ON THE POST NOTCH. THERE SHALL BE NO GAP GREATER THAN 1/4".
POSTS AND BRACES TO BE FULL LENGTH PRESSURE TREATED.

SEE STANDARD DETAIL DRAWING FOR BRACE RAIL CONNECTIONS.



WING POST

ELEVATION VIEW - SIDE



WING POST

PEDESTRIAN PASS

NO SCALE

2	MONTANA Department of Transportation	...\9776000\RD\9776000rdDETAIL.dgn	DESIGNED BY	R. HOLM	9/20/2023	ROAD PLANS	BLACKFOOT RIVER - 3M W LINCOLN / STPB 9025(91)
1		12/6/2023	REVIEWED BY	R. HOLM	9/20/2023		
		2:12:05 PM RHolm	CHECKED BY	K. YAKAWICH	9/20/2023	LEWIS & CLARK COUNTY	UPN 9776000 / SHEET 16

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GreatWest ENGINEERING

Wetland ID = WL-7
Measured Area = 0.003 ac
Impacted Area = 0.001 ac

Wetland ID = WL-6
Measured Area = 0.010 ac
Impacted Area = 0.004 ac

PI =23+36.10
Δ =29° 52' 07" (LT)
R =250'
T =66.68'
L =130.33'
E =8.74'
S =4% LT

20+00

20+32.53
20.29
CALC. R/W MON.

PC 22+69.42

23+12.65
21.13
CALC. R/W MON.

PT 23+99.75

24+80.00 R/W
EX. EASE. = R/W
24+70.00
BEG. CONST. PMT.
BEG. ACQUISITION LT

24+80.00 R/W
68'

R/W
78'
LOW WATER MARK = R/W
78'

BLACKFOOT RIVER

PARCEL 3 EASEMENT LINE

PARCEL 2 EASEMENT LINE

27+10.00 R/W
68'

27+20.90
END CONST. PMT.

27+10.00 R/W =
EX. EASE.
27+65.00
BEG. EASE.
27+80.00
END EASE.
END ACQUISITION LT

27+96.96
31.61
CALC. R/W MON.

28+10.44
30.62'
CALC. R/W MON.

UTILITY CROSSINGS
25+05.20 FIBER OPTIC X-ING ℄ - DEPTH UNKNOWN
27+72.03 POWER LINE X-ING ℄ - 25.9' CLEAR
28+32.32 POWER LINE X-ING ℄ - 23.1' CLEAR
29+58.82 FIBER OPTIC X-ING ℄ - DEPTH UNKNOWN

LATERAL CONFLICTS
21+65.02 TO 22+71.70 - FIBER OPTIC LT - DEPTH UNKNOWN
23+81.02 TO 26+95.08 - FIBER OPTIC LT - DEPTH UNKNOWN
25+20.60 TO 29+11.31 - FIBER OPTIC RT - DEPTH UNKNOWN

DO NOT DISTURB
28+15.54 48.05' RT - GUY WIRE
28+22.45 25.53' RT - POWER POLE

30+00
SEC. 21, 28
T. 14 N., R. 9 W.

DALTON MOUNTAIN ROAD

EX. EASE.

ST-1

N 2° 29' 40" E

PI =18+14.31
Δ =34° 54' 46" (RT)
R =855'
T =268.96'
L =521.18'
E =41.29'

20+36.08
39.75'
CALC. R/W MON.

PT 20+86.52

ST-102

ST-101

N 27° 22' 27" W

ST-101A

N 20° 24' 38" W

60'

ST-2

29+39.67 (MAINLINE)
END STPB 9025(91)

DOROTHY DRIVE

PT 29+39.67

ST-3

ST-3A

29+90.01
58.24'
CALC. R/W MON.

29+99.93
33.43'
CALC. R/W MON.

Wetland ID = WL-8
Measured Area = 0.011 ac
Impacted Area = 0.000 ac

Wetland ID = WL-4A
Measured Area = 0.022 ac
Impacted Area = 0.008 ac

21+65.02 (MAINLINE)
BEG. STPB 9025(91)

23+17.51
40.48'
CALC. R/W MON.
EX. EASE. = R/W
BEG. ACQUISITION RT

Wetland ID = WL-3
Measured Area = 0.015 ac
Impacted Area = 0.004 ac

Wetland ID = WL-5
Measured Area = 0.004 ac
Impacted Area = 0.003 ac

Wetland ID = WL-4B
Measured Area = 0.001 ac
Impacted Area = 0.001 ac

24+82.07
NEW EMB. PROTECTOR LT & RT

R/W 25+00.00
76'

Wetland ID = WL-2
Measured Area = 0.012 ac
Impacted Area = 0.007 ac

Wetland ID = WL-1A
Measured Area = 0.099 ac
Impacted Area = 0.001 ac

25+97.00
NEW 26' x 149.88' BRIDGE

25+97.45
25.9' X 110' BRIDGE IN PL
REMOVE

R/W 27+20.90
76'

27+11.93
NEW EMB. PROTECTOR LT & RT

27+95.62
28.41'
CALC. R/W MON.

28+40.56
31.26'
CALC. R/W MON.
R/W = EX. EASE.
END ACQUISITION RT

PI =28+30.42
Δ =6° 57' 49" (RT)
R =1,800'
T =109.52'
L =218.77'
E =3.33'
S =NC

Wetland ID = WL-1B
Measured Area = 0.061 ac
Impacted Area = 0.033 ac

23+99.75
FARM FIELD APP. LT

23+50.00
FARM FIELD APP. RT

NEW GUARDRAIL LT
+46.54

NEW GUARDRAIL RT
+18.41

25+97.00
EL.4,475.83

25+20.40 B.E.
EL.4,473.53

24+16.38 TO 25+20.40 B.E.
GUARDRAIL AGG. WIDENING LT & RT

200' VC

21+65.02
EL.4,466.50

+3.000%

+0.311%

23+00.00
EL.4,466.92

24+66.40 TO 25+20.40 B.E.
BRIDGE END BACKFILL
(SEE DETAIL)

149.88' VC

24+99.56 TO 25+65.36
CLASS 2 RIPRAP
(SEE DETAIL)

27+85.85
FARM FIELD APP. LT

28+55.00
FARM FIELD APP. LT

FARM FIELD APP. RT

NEW GUARDRAIL LT
+73.73

28+40.17
PUBLIC APP. RT

+75.54

NEW GUARDRAIL RT
+47.42

29+11.11
FARM FIELD APP. RT

26+73.60 B.E.
EL.4,475.06

26+73.60 B.E. TO 27+17.51
GUARDRAIL AGG. WIDENING LT

26+73.60 B.E. TO 27+77.63
GUARDRAIL AGG. WIDENING RT

200' VC

-1.000%

+3.000%

-1.000%

+1.588%

29+39.67
EL.4,476.28

27+90.00
EL.4,473.90

26+73.60 B.E. TO 27+34.62
BRIDGE END BACKFILL
(SEE DETAIL)

26+30.57 TO 26+94.44
CLASS 2 RIPRAP
(SEE DETAIL)

SCALE:
HORIZ. SCALE: 1" = 100'
VERT. SCALE: 1" = 10'

4,490
4,480
4,470
4,460
4,450

20+00 22+00 24+00 26+00 28+00 30+00 32+00

3	MONTANA Department of Transportation	...\9776000\RD\9776000rdPLN.dgn	DESIGNED BY R. HOLM, L. WILLIAMS	12/6/2023	ROAD PLANS	BLACKFOOT RIVER - 3M W LINCOLN	STPB 9025(91)
2		12/6/2023	REVIEWED BY R. HOLM	12/6/2023			
		2:12:09 PM RHolm	CHECKED BY K. YAKAWICH	12/6/2023	LEWIS & CLARK COUNTY	UPN 9776000	SHEET 17

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ASSOCIATED PROJECT AGREEMENT NUMBERS	
P. E.	STPB 9025(90)

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS AND QUANTITIES

FEDERAL AID PROJECT STPB 9025(91)

BLACKFOOT RIVER – 3 M W LINCOLN

LEWIS AND CLARK COUNTY

BRIDGE IDENTIFICATION	
MDT STR ID	NBI NUMBER
03423	000000202303423

DocuSigned by:
BY: karl Yakawich
4791B33005A9454...
DATE: 2/5/2024

KARL F. YAKAWICH 15133 PE LICENSED PROFESSIONAL ENGINEER MONTANA

SCALES SHOWN ON BRIDGE PLAN SHEETS ARE FOR FULL SIZE (22 X 34) PRINTS REDUCED PRINTS ARE APPROXIMATELY ONE-HALF ORIGINAL SCALE

LIST OF DRAWINGS

SHEET NO.	DWG. NO.	TITLE
BRIDGE DRAWINGS		
B1	28401	LIST OF DRAWINGS & ESTIMATED BRIDGE PLAN QUANTITIES
B2	28402	GENERAL LAYOUT AT STA. 25+97.00
B3	28403	FOOTING PLAN
B4	28404	BENT NO. 1 & NO. 2
B5	28405	BENT NO. 1 & NO. 2 DETAILS
B6	28406	DRILLED SHAFT DETAILS & BILL OF REINFORCING
B7	28407	BENT & APPROACH SLAB BILL OF REINFORCING
B8	28408	APPROACH SLAB & JOINT DETAILS
B9	28409	TRANSVERSE SECTION

DWG. NO.	TITLE
STANDARD DRAWINGS	
SBR-W830 (REVISED 3-15-17)	STANDARD BRIDGE RAIL TYPE W830
SBR-WTRM (REVISED 1-19-16)	STANDARD BRIDGE RAIL TYPE W740 & W830 TERMINATION DETAILS

ESTIMATED BRIDGE PLAN QUANTITIES

LOCATION	LENGTH (FT)	CONCRETE - CLASS STRUCTURE (YD3)	CONCRETE - CLASS DRILLED SHAFT (YD3)	REINFORCING STEEL			DRILLED SHAFT - 5.0 FT (FT)	PERMANENT DRILLED SHAFT CASING - 5.0 FT (LB)	TEMPORARY DRILLED SHAFT CASING - 5.0 FT (FT)	THERMAL INTEGRITY PROFILER (EACH)	BRIDGE SUPERSTRUCTURE (LUMP SUM)	APPROACH SLAB - CONCRETE (YD2)	GEOCOMPOSITE DRAIN (YD2)	BRIDGE RAIL-W830 (FT) *
				REGULAR (LB)	EPOXY (LB)	SEISMIC (LB)								
BENT NO. 1		57.3	122.1	22043.0	1374.0	6821.0	167.9	6328.2	167.9	2			37.5	
BENT NO. 2		57.3	124.1	22352.0	1374.0	6937.0	170.6	7282.2	170.6	2			37.5	
SUPERSTRUCTURE	150.0				3086.0						1	57.8		308.8
TOTAL	150.0	114.6	246.2	44395.0	5834.0	13758.0	338.5	13610.4	338.5	4	1	57.8	75.0	308.8

*FINAL DIMENSIONS TO BE DETERMINED BY CONTRACTOR BASED ON PREFABRICATED STEEL TRUSS LAYOUT AND DESIGN.

SHEET NO. B1

LIST OF DRAWINGS & ESTIMATED BRIDGE PLAN QUANTITIES

SCALE: No Scale

BRIDGE OVER BLACKFOOT RIVER

AT STA. 25+97.00

FEDERAL AID PROJECT STPB 9025(91)

LEWIS AND CLARK COUNTY

REVISED	REVISED	REVISED	REVISED	CHECKED	12-06-23	K.F.Y.
				DRAWN	12-06-23	B.G.J.
				DESIGNED	12-06-23	G.C.G.

9776000BRQSHZ01.DWG

12/20/2023 12:08:48 PM

MONTANA DEPARTMENT OF TRANSPORTATION MDT BRIDGE BUREAU

ROUTE 25502

REF POINT REF POINT

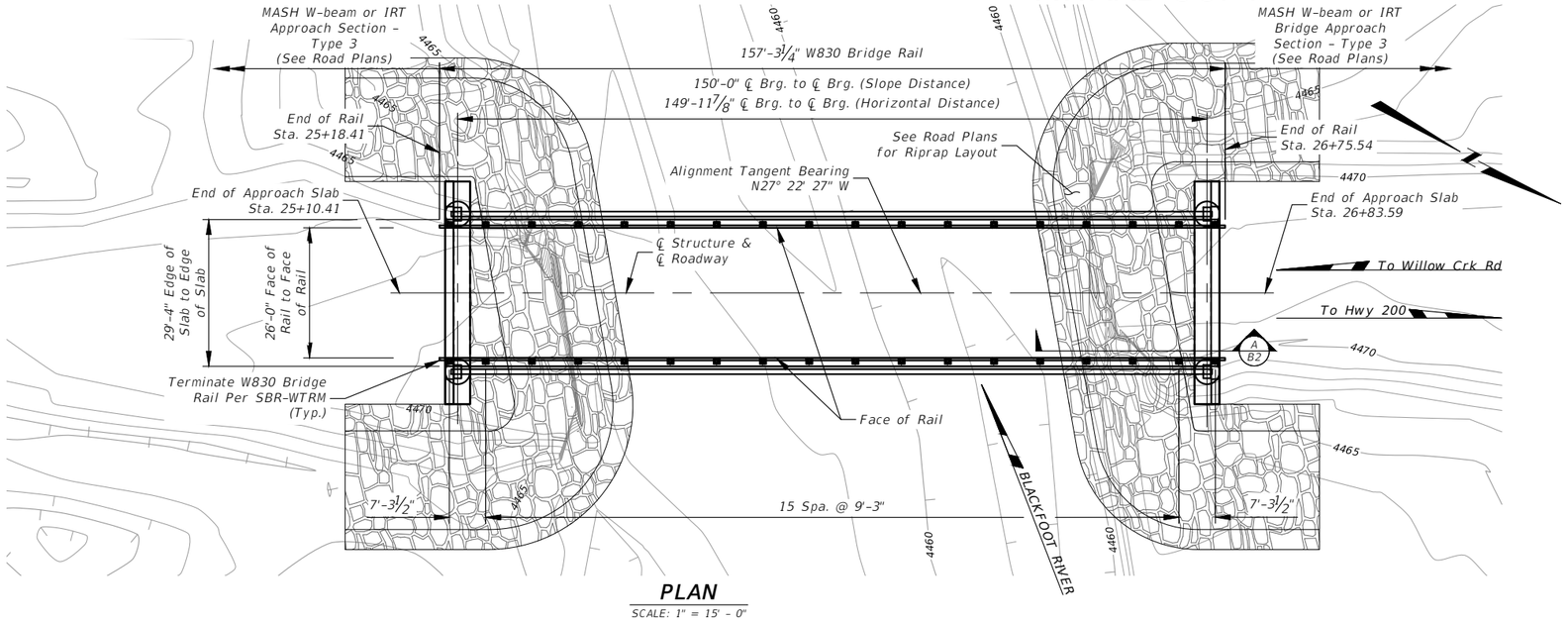
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UPN NUMBER 9776000

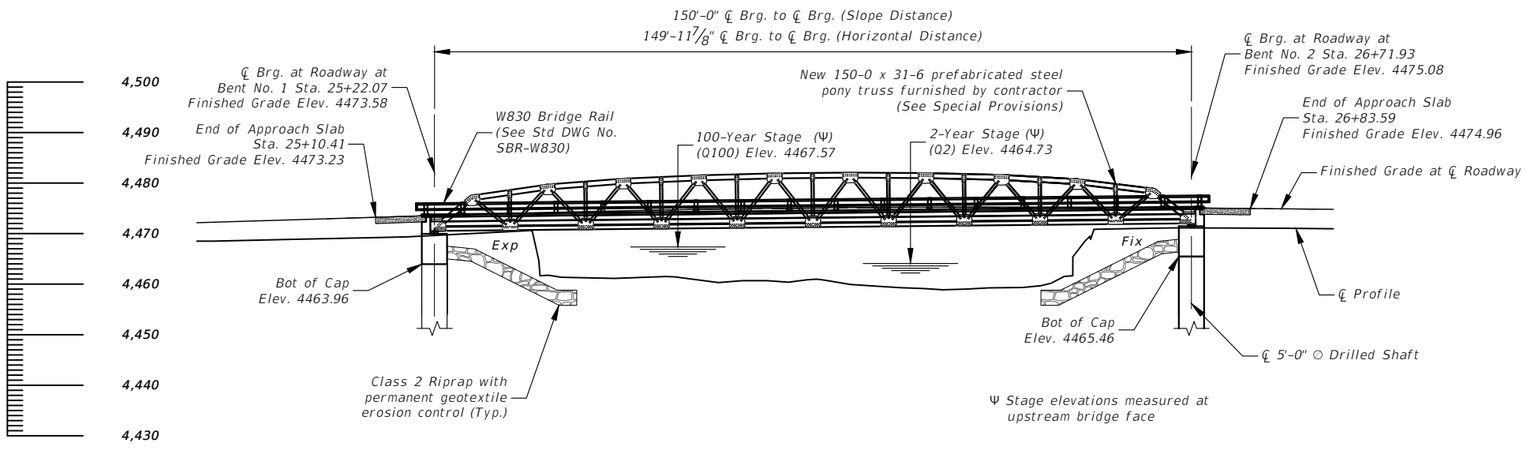
DRAWING NO. 28401

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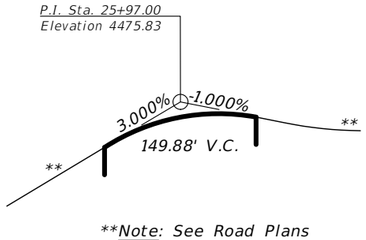


PLAN
SCALE: 1" = 15' – 0"



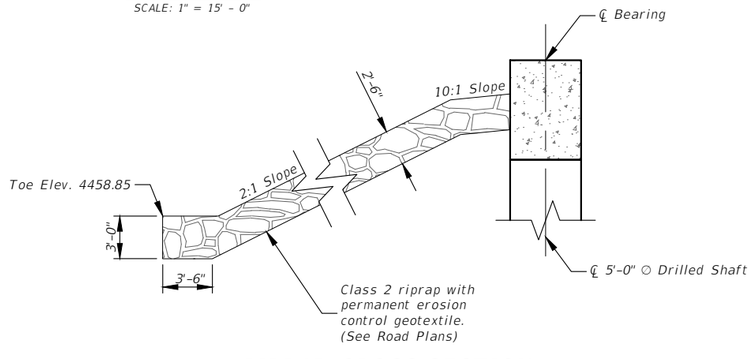
Ψ Stage elevations measured at upstream bridge face

ELEVATION
SCALE: 1" = 15' – 0"



**Note: See Road Plans

PROFILE GRADE
No Scale



A B2 **RIPRAP CROSS-SECTION**
SCALE: 3/16" = 1-0

NOTES

FINISHED GRADE: Finished grade of bridge at centerline roadway is the same as the Profile Grade shown on the Road Plans.

LIVE LOAD: Standard HL-93 Loading.

SPECIFICATIONS: Montana Department of Transportation Standard and Supplemental Specifications for Road and Bridge Construction; 2020 Edition; V5.0 and any amendments thereto, and the Special Provisions govern unless otherwise noted. The design was prepared in accordance – with AASHTO LRFD Bridge Design Specifications, Ninth edition with current Interim revisions.

REINFORCING STEEL: Use new deformed type reinforcing steel meeting the requirements of AASHTO M 31 Grade 60, or ASTM Specification A706 Grade 60 as specified. Include all costs associated with furnishing and placing new reinforcing steel in the unit price bid for either Reinforcing Steel or Reinforcing Steel Epoxy. Include all costs associated with furnishing and placing ASTM A706 reinforcing steel in the unit price bid for either Reinforcing Steel – Seismic.

REINFORCING STEEL SUFFIX: The suffix E denotes epoxy coated reinforcing steel. The suffix W denotes ASTM A706 reinforcing steel.

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

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

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

CAST IN PLACE CONCRETE: Unless otherwise approved or specified, use Concrete Class – Structure for all substructure concrete, Concrete Class Structure Low Slump for all deck, approach slab, and curb concrete, and Concrete Class Drilled Shaft for all drilled shaft concrete.

CONCRETE STRENGTH: For structural design purposes only, use f'c = 4000 p.s.i. for Concrete Class Structure, Concrete Class Structure – Low Slump, and Concrete Class Drilled Shaft.

STRUCTURE EXCAVATION: Include structure excavation in the unit price bid for Concrete Class Structure.

TRAFFIC CONTROL PLAN AND SEQUENCE OF OPERATIONS: See Special Provisions.

UTILITIES: Call 1-800-424-5555 for utility locates at least two working days prior to starting any constrcution activity that could disturb the utility.

EXISTING STRUCTURES: Remove the existing structure (see Road Plan sheets and Special Provisions).

STATE PLANE COORDINATES: Stations shown on the bridge plans are state plane grid stations based on (NAD83-2011). Dimensions shown on the bridge plans are horizontal ground distances and not state plane grid distances. The combination scale factor (CSF) at this location is 0.99918151.

Horizontal ground distance x CSF = Grid Distance
Grid Distance/CSF = Distance to stake.

HYDRAULIC DATA

Drift:	Heavy
Low Scour Elevation:	4457.40
Ice:	Light
Drainage Area:	383 sq. mi.
2-Year Flow:	1,587 cfs
∗2-Year Stage (Q2):	4464.94
2-Year Velocity:	2.98 fps
25-Year Flood Flow:	4,420 cfs
∗25-Year Flood Stage (Q25):	4467.43
25-Year Flood Velocity:	5.16 fps
100-Year Flood Flow:	6,283 cfs
∗100-Year Flood Stage (Q100):	4468.28
100-Year Flood Velocity:	5.89 fps
Actual Low Beam Elevation:	4470.50
Allowable Low Beam Elevation:	4470.50

Also See Hydraulic Data Summary Sheet.
∗Stage elevations are measured approximately 150 feet upstream of the proposed bridge and include backwater.

SHEET NO. B2

GENERAL LAYOUT

SCALE: As Noted

BRIDGE OVER BLACKFOOT RIVER

AT STA. 25+97.00

FEDERAL AID PROJECT STPB 9025(91)

LEWIS AND CLARK COUNTY

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							CHECKED	
							DRAWN	
							DESIGNED	

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MONTANA DEPARTMENT OF TRANSPORTATION BRIDGE BUREAU

ROUTE 25502

REF POINT REF POINT

MDT STR. ID 03423

UPN NUMBER 9776000

DRAWING NO. 28402

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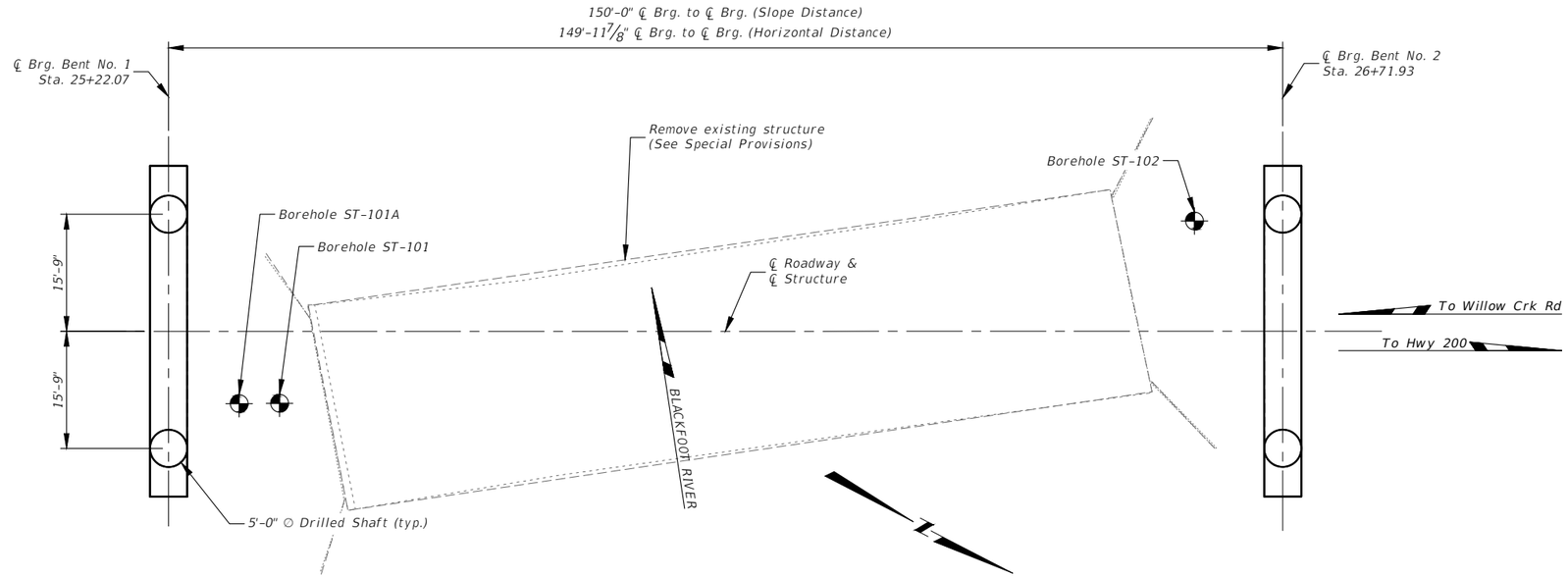
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DRILLED SHAFT INFORMATION

LOCATION	DESIGN 5.0 FOOT DRILLED SHAFT TIP ELEVATION	TOP OF 5.0 FOOT DRILLED SHAFT ELEVATION	ESTIMATED DRILLED SHAFT LENGTH (FT)	APPROXIMATE GROUND ELEVATION	BOTTOM OF PERMANENT DRILLED SHAFT CASING	ESTIMATED DRILLED SHAFT CASING LENGTH (FT)	APPROXIMATE LENGTH OF DRILLED SHAFT BELOW GROUND
BENT NO. 1	4380.00	4463.96	83.96	4469.64	4454.00	9.96	83.96
BENT NO. 2	4380.00	4465.46	85.46	4471.12	4454.00	11.46	85.46

COORDINATE TABLE

LOCATION	N COORDINATE	E COORDINATE	DESCRIPTION
BENT NO. 1	998610.57	1160050.77	Centerline bearing at centerline roadway
BENT NO. 2	998743.66	1159981.86	Centerline bearing at centerline roadway



FOOTING PLAN

SCALE: 1" = 10' - 0"

NOTE: Dimensions shown for Bent No. 1 are typical for Bent No. 2.

NOTE: Existing structure location is approximate. Verify location.

NOTE: See the special provisions for boring logs and subsurface information.

SHEET NO. B3

FOOTING PLAN

SCALE: As Noted

BRIDGE OVER BLACKFOOT RIVER

AT STA. 25+97.00

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ROUTE 25502

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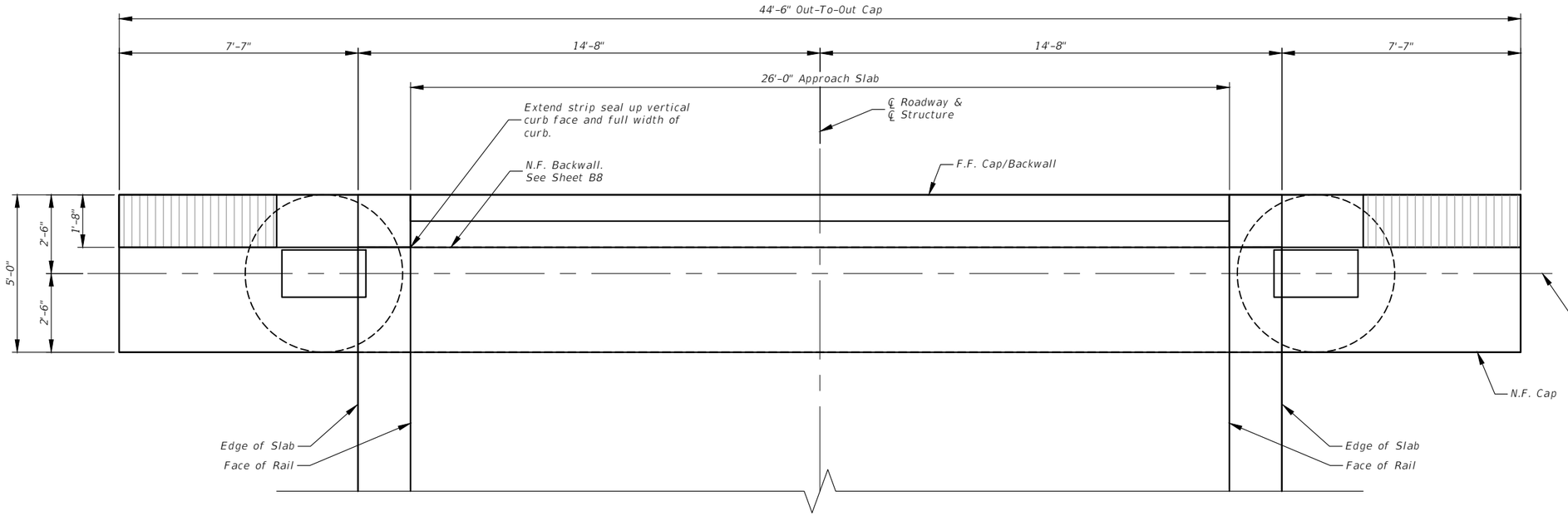
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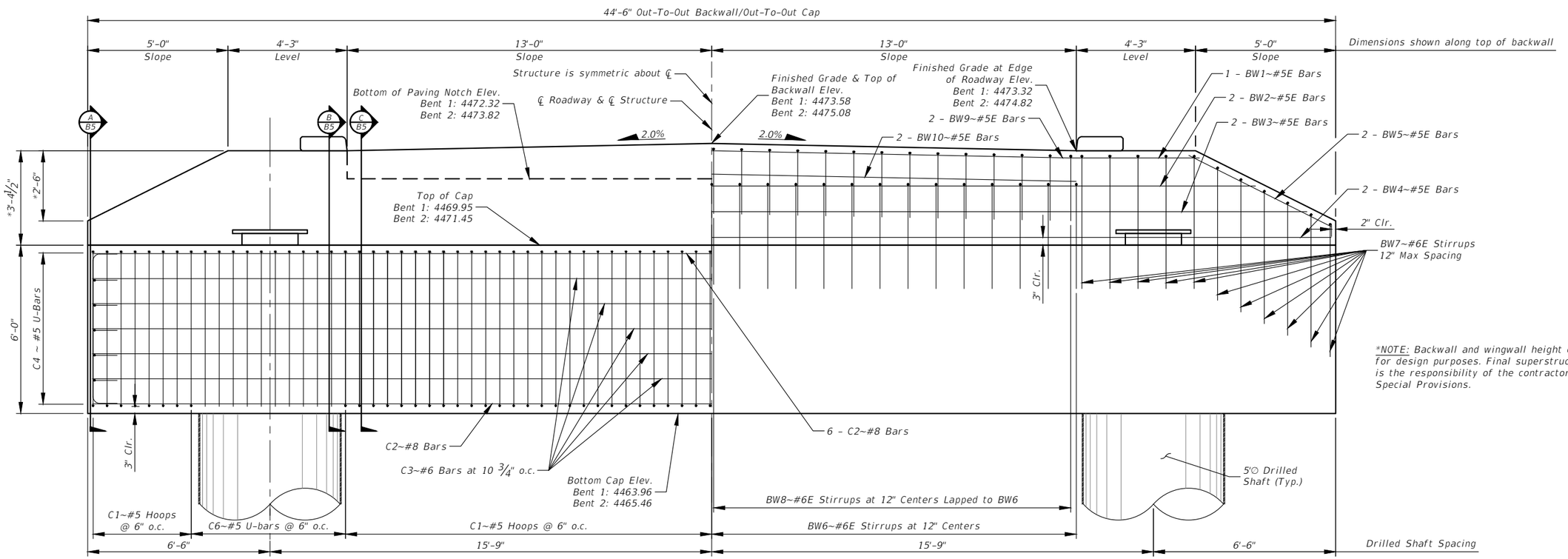


BENT NO. 1 & 2 PLAN

SCALE: 1/2" = 1'-0"

NOTES:

1. N.F. denotes near face
   F.F. denotes fill face
2. Ensure reinforcing steel does not interfere with anchor bolt placement.
3. See sheet B7 for Bill of Reinforcing.
4. All concrete in cap and backwall is Class Structure.
5. Bent No. 1 Shown Back on Line
   Bent No. 2 Shown Ahead on Line
6. Stagger stirrup height to match slope of backwall.
7. Bent No. 1 & 2 Elevation shown along ℄ bearing.



BENT NO. 1 & 2 ELEVATION

Bent No. 1 Shown Back On Line
Bent No. 2 Shown Ahead On Line

*NOTE: Backwall and wingwall height estimated for design purposes. Final superstructure depth is the responsibility of the contractor. See Special Provisions.

SHEET NO. B4

BENT NO. 1 & NO. 2

SCALE: 1/2" = 1'-0"

BRIDGE OVER BLACKFOOT RIVER

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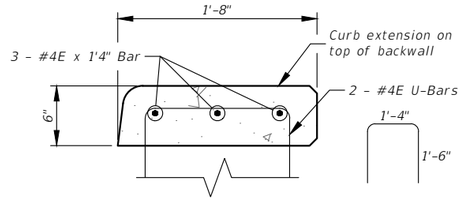
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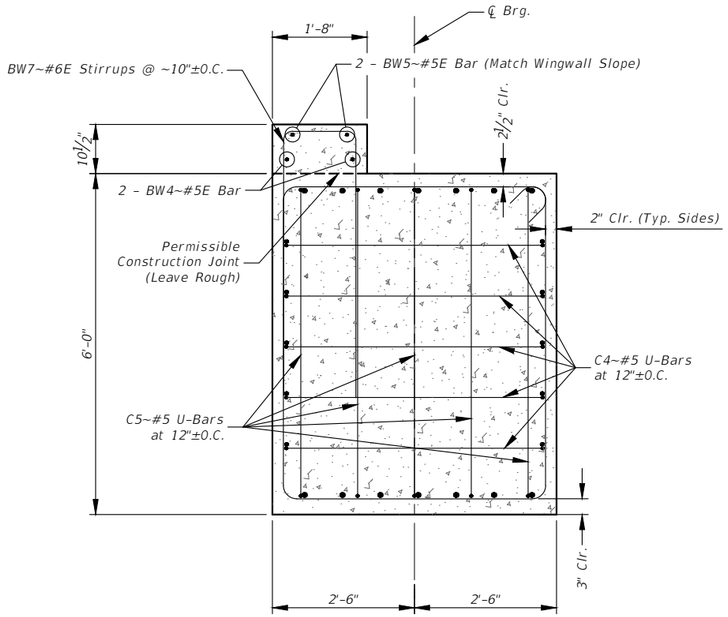
BACKWALL CURB EXTENSION

NO SCALE

NOTE: Final truss bearings type & location determined by truss supplier. Ensure cap reinforcing steel does not interfere with anchor bolt placement.

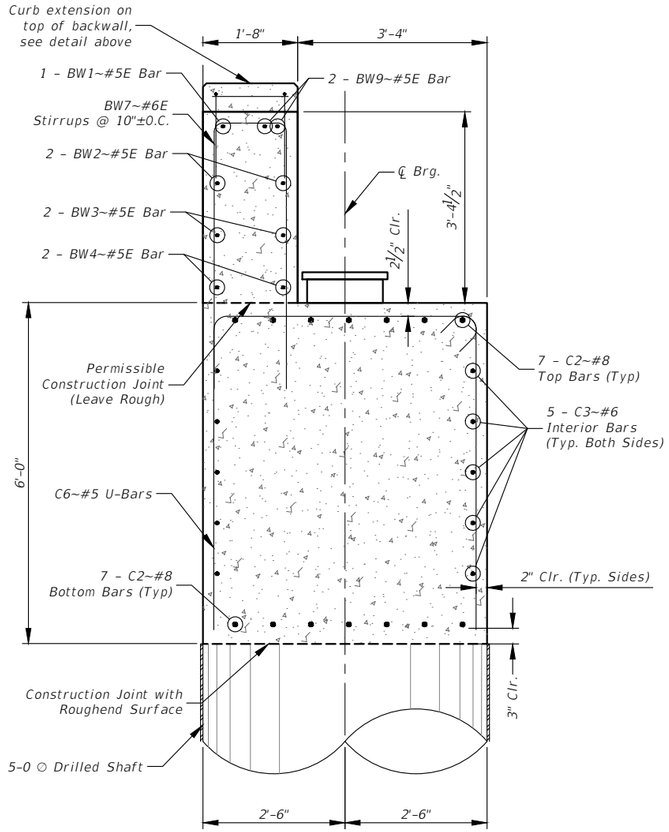
*NOTE: Backwall and wingwall height estimated for design purposes. Final superstructure depth is the responsibility of the contractor. See Special Provisions.

NOTE: Include the cost of concrete and reinforcing steel for the backwall curb extension in the Bridge Rail - W830 item.



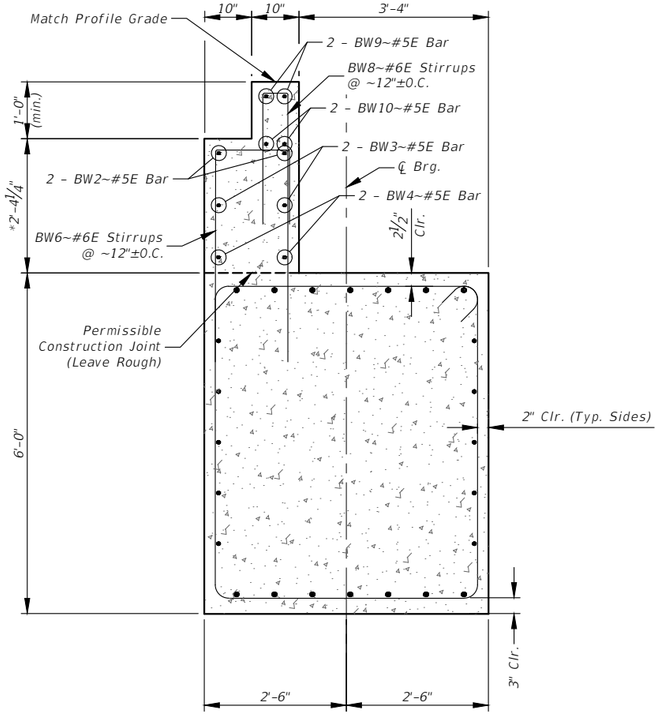
A/B4 BENT SECTION

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



B/B4 BENT SECTION

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



C/B4 BENT SECTION

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

SHEET NO. B5

BENT NO. 1 & NO. 2 DETAILS

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

BRIDGE OVER BLACKFOOT RIVER

AT STA. 25+97.00

FEDERAL AID PROJECT STPB 9025(91)

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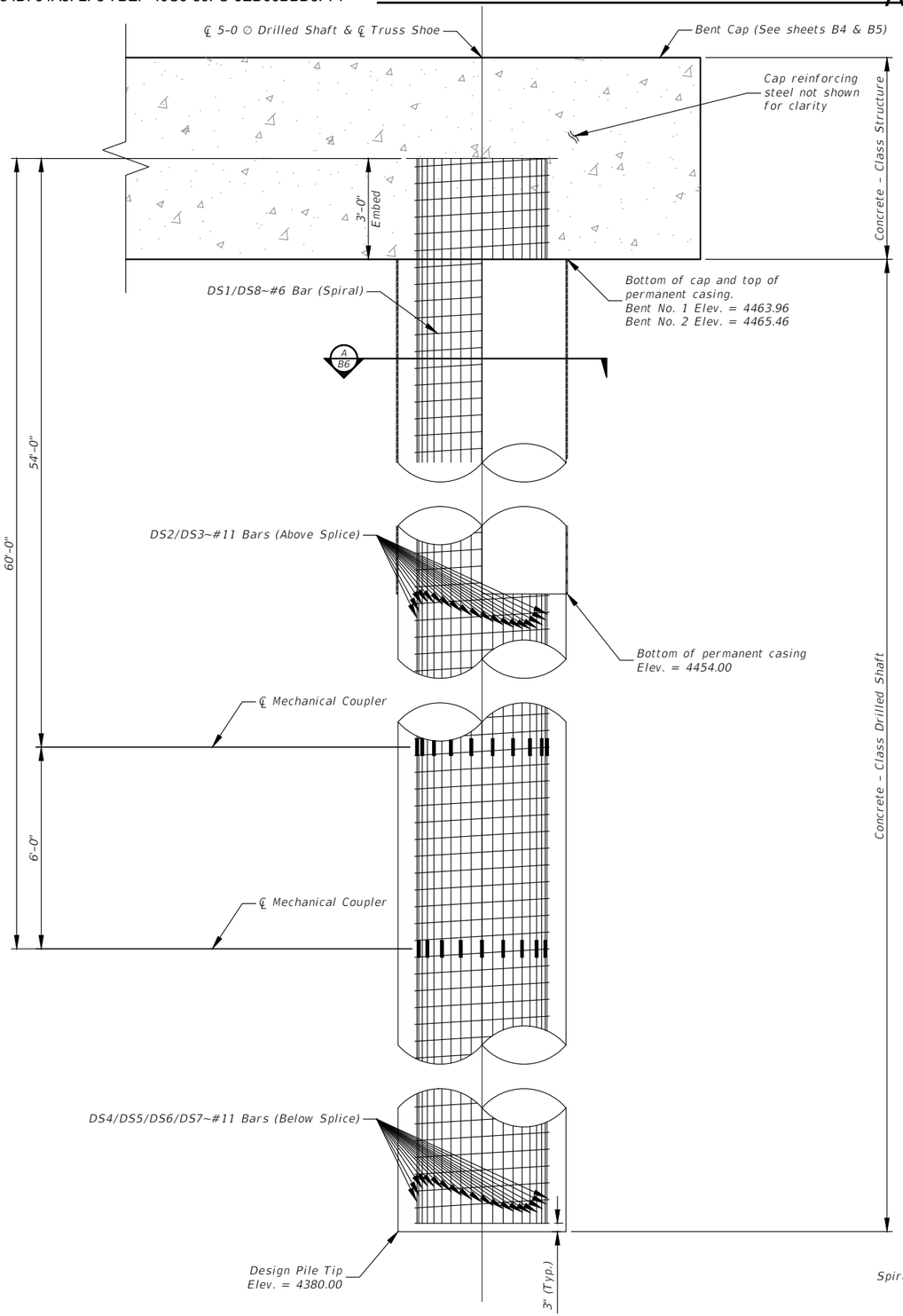
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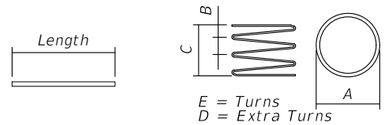
DRILLED SHAFT ELEVATION

SCALE: 1/2" = 1'-0"

BILL OF REINFORCING STEEL

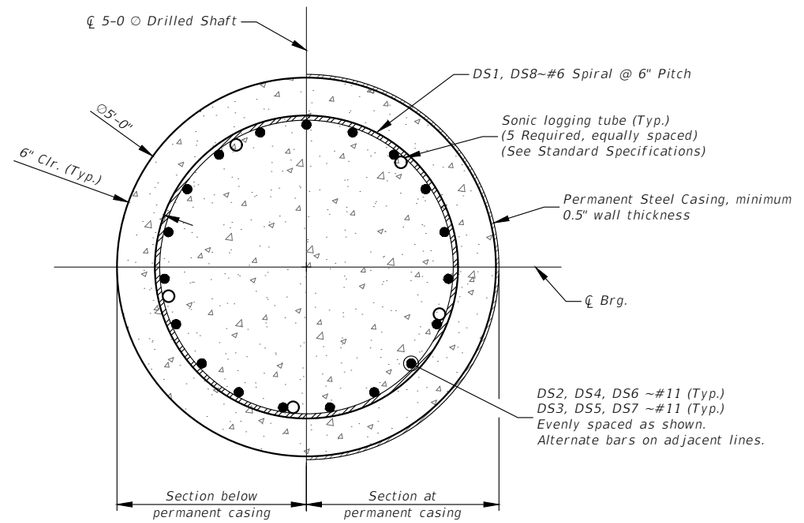
FOR ALL DRILLED SHAFTS

(ALL DIMENSIONS ARE OUT-TO-OUT)



TYPE STR TYPE SP

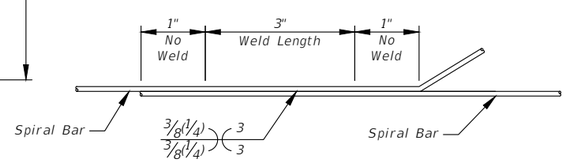
Mark	Size	No.	Type	Length	A	B	C	D	E	G	N
DS1	#6W	2	SP	2226 - 0	4 - 0	0 - 6	86 - 8 1/2	1 1/2	177		
DS2	#11	36	STR	60 - 0							
DS3	#11	40	STR	54 - 0							
DS4	#11	18	STR	26 - 8 1/2							
DS5	#11	20	STR	32 - 8 1/2							
DS6	#11	18	STR	28 - 2 1/2							
DS7	#11	20	STR	34 - 2 1/2							
DS8	#6W	2	SP	2263 - 9	4 - 0	0 - 6	88 - 2 1/2	1 1/2	180		



A B6 DRILLED SHAFT SECTION

SCALE: 1" = 1'-0"

NOTE: Use a certified welder to weld according to AWS D1.4. Use filler material meeting the requirements of AWS A5.5



SPIRAL LAP DETAIL

NO SCALE

NOTES:

1. Use DS1 bars for Bent No. 1 and use DS8 bars for Bent No. 2.
2. Use mechanical splices for #11 drilled shaft bars. Alternate location of mechanical splices as shown.
3. Reinforcing steel lengths shown do not include any modifications required to install splices.
4. Ensure CSL tubes extend to bottom of shaft.
5. Alternate DS2 and DS3 bars on adjacent lines to stagger the mechanical splices.
   - 5.1. Bent No. 1: DS4 bars shall be mechanically spliced to DS2 bars. DS5 bars shall be mechanically spliced to DS3 bars.
   - 5.2. Bent No. 2: DS6 bars shall be mechanically spliced to DS2 bars. DS7 bars shall be mechanically spliced to DS3 bars.
6. Ensure reinforcing steel does not interfere with anchor bolt placement.
7. Permanent casing inside diameter may be adjusted. Use an inside diameter between 5-0 and 5-9. Minimum permanent casing thickness is 1/2" thick; increase thickness as required for placement.
8. Sonic logging tubes do not extend more than 1-8 above permanent casing.
9. Terminate spiral at each end by contact lap of 1 1/2 turns in length.

SHEET NO. B6

DRILLED SHAFT DETAILS & BILL OF REINFORCING

SCALE: As Noted

BRIDGE OVER BLACKFOOT RIVER

AT STA. 25+97.00

FEDERAL AID PROJECT STPB 9025(91)

LEWIS AND CLARK COUNTY

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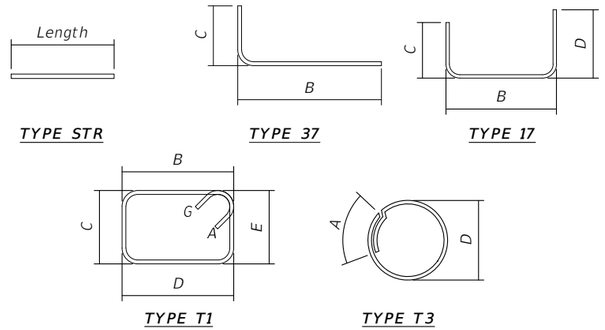
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BILL OF REINFORCING STEEL

FOR ONE BENT AND APPROACH SLAB ONLY

(ALL DIMENSIONS ARE OUT-TO-OUT)



Mark	Size	No.	Type	Length	A	B	C	D	E	G	N
BW1	#5E	2	STR	4 - 2 1/2							
BW2	#5E	2	STR	38 - 9 1/2							
BW3	#5E	2	STR	42 - 5 1/2							
BW4	#5E	2	STR	44 - 2							
BW5	#5E	4	STR	5 - 8							
BW6	#6E	27	17	8 - 8		1 - 4	3 - 9	3 - 9			
BW7	#6E	22	17	10 - 6		1 - 4	4 - 9	4 - 9			
BW8	#6E	27	17	7 - 9	3 - 2	0 - 6	2 - 4	2 - 4			
BW9	#5E	2	STR	34 - 9 1/2							
BW10	#5E	2	STR	26 - 0							
C1	#5	69	T1	21 - 7	0 - 5 1/2	4 - 8	5 - 6 1/2	4 - 8	5 - 6 1/2	0 - 5 1/2	
C2	#8	14	STR	44 - 2							
C3	#6	10	STR	44 - 2							
C4	#5	10	17	7 - 7		4 - 7	1 - 6	1 - 6			
C5	#5	20	17	8 - 5		5 - 5	1 - 6	1 - 6			
C6	#5	20	17	15 - 9		4 - 8	5 - 6 1/2	5 - 6 1/2			
A1	#5E	27	37	3 - 0		1 - 6	1 - 6				
A2	#6E	27	STR	9 - 6							
A3	#5E	27	STR	9 - 6							
A4	#5E	22	STR	25 - 6							
A5	#5E	54	17	3 - 4 1/2		0 - 4 1/2	1 - 6	1 - 6			

REINFORCING STEEL LAP LENGTHS

BAR DIAMETER	LAP LENGTH
#5 OR #5W	2-2
#6 OR #6W	2-7
#7 OR #7W	3-3
#8 OR #8W	4-3
#9 OR #9W	5-4
#10 OR #10W	6-9
#11 OR #11W	8-4
#5E	3-3
#6E	3-10
#7E	4-10
#8E	6-4
#9E	8-0
#10E	10-2
#11E	12-6

NOTES:

1. Bar quantities shown above are for a single bent and approach slab.

SHEET NO. B7

BENT & APPROACH SLAB BILL OF REINFORCING

SCALE: None

BRIDGE OVER BLACKFOOT RIVER

AT STA. 25+97.00

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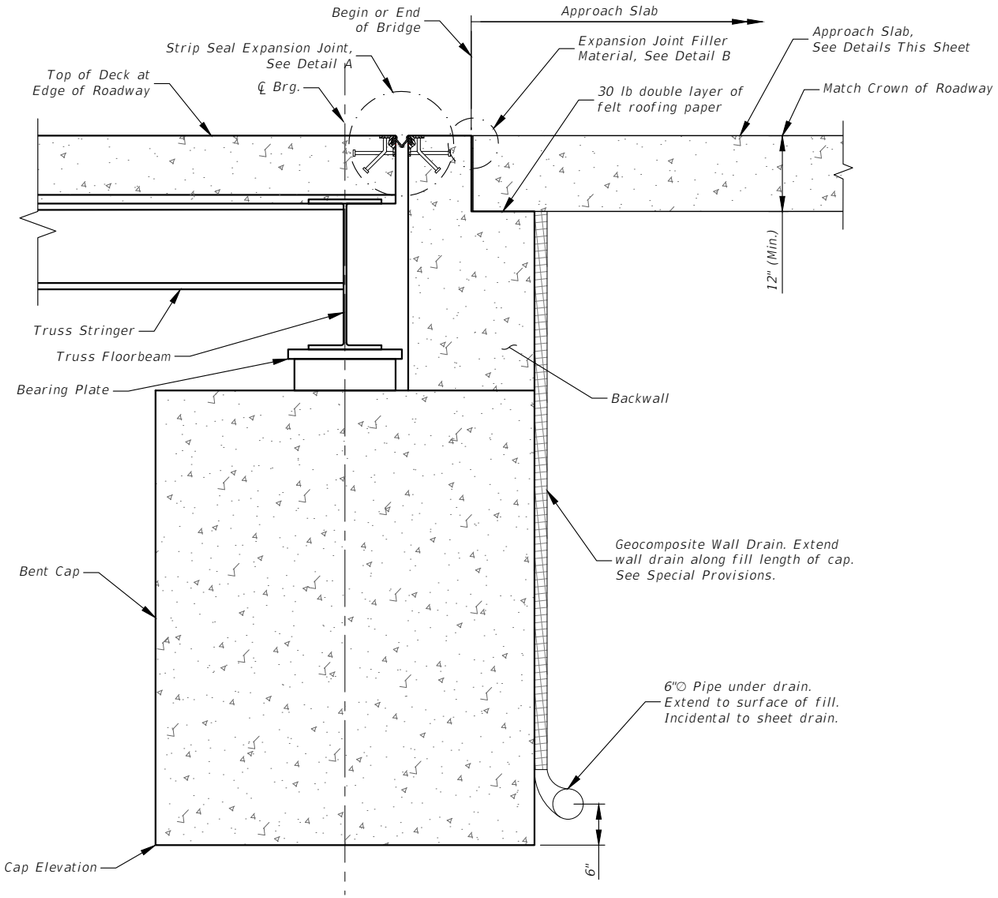
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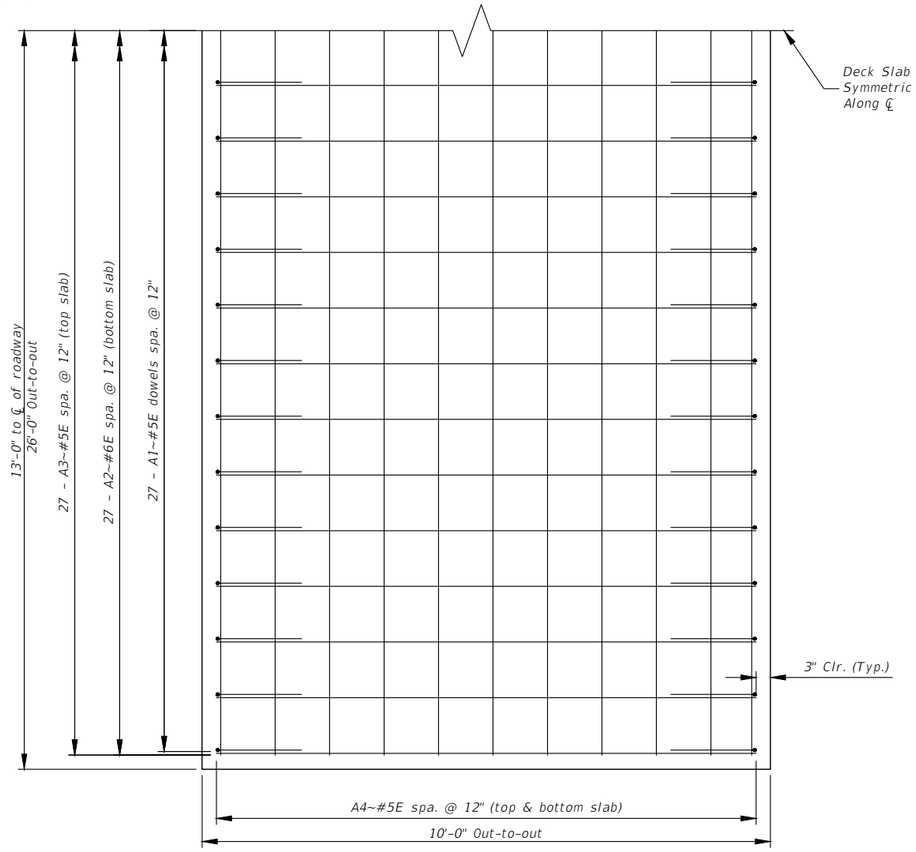
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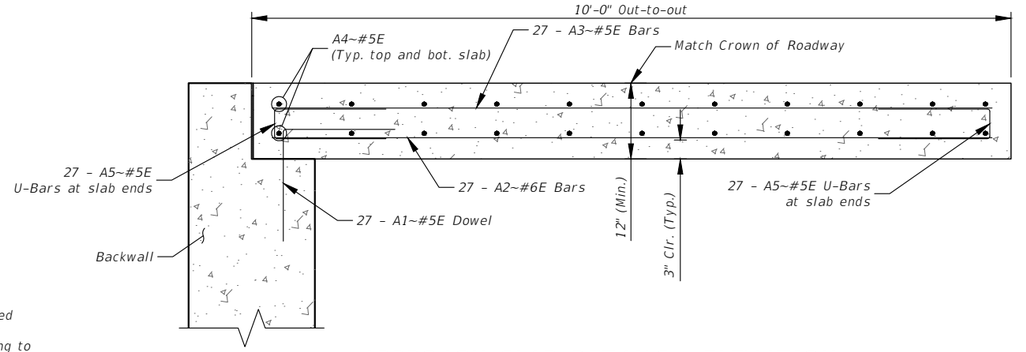
BRIDGE END DETAILS

SCALE: 1" = 1'-0"



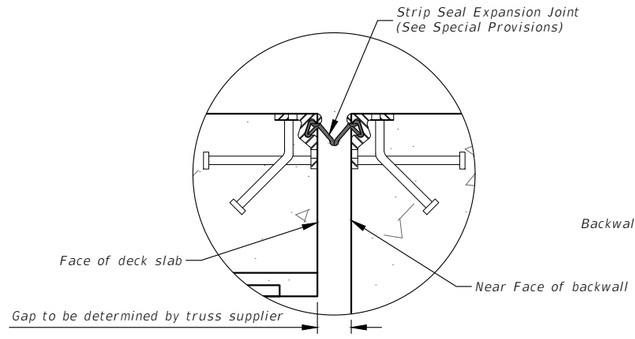
APPROACH SLAB DETAILS - PLAN

SCALE: 3/8" = 1'-0"



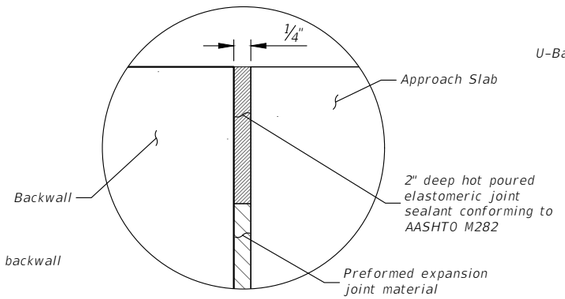
APPROACH SLAB DETAILS - ELEVATION

SCALE: 1" = 1'-0"



A / B8 **STRIP SEAL EXPANSION JOINT**

NOT TO SCALE



B / B8 **EXPANSION JOINT FILLER**

NOT TO SCALE

*Install strip seal joint per manufacturer's instructions. Include all costs associated with furnishing and installing joint seal in the lump sum for bridge superstructure. Extend seal along face and full width of curb.

NOTES:

1. Applies to Bent No. 1 and Bent No. 2.
2. The total deck thickness at the end of the slab extension varies due to the roadway crown.
3. Use Concrete – Class Structure Low Slump for approach slabs.
4. Include the cost of excavation necessary for placing the approach slab, transverse deck grooving, adjoining joint material, equipment, and labor necessary to complete the item in the unit price bid per square yard of Approach Slab – Concrete.
5. Include all costs associated with approach slab reinforing steel in the unit price bid for Reinforcing Steel – Epoxy.

SHEET NO. B8

APPROACH SLAB & JOINT DETAILS

SCALE: As Noted

BRIDGE OVER BLACKFOOT RIVER

AT STA. 25+97.00

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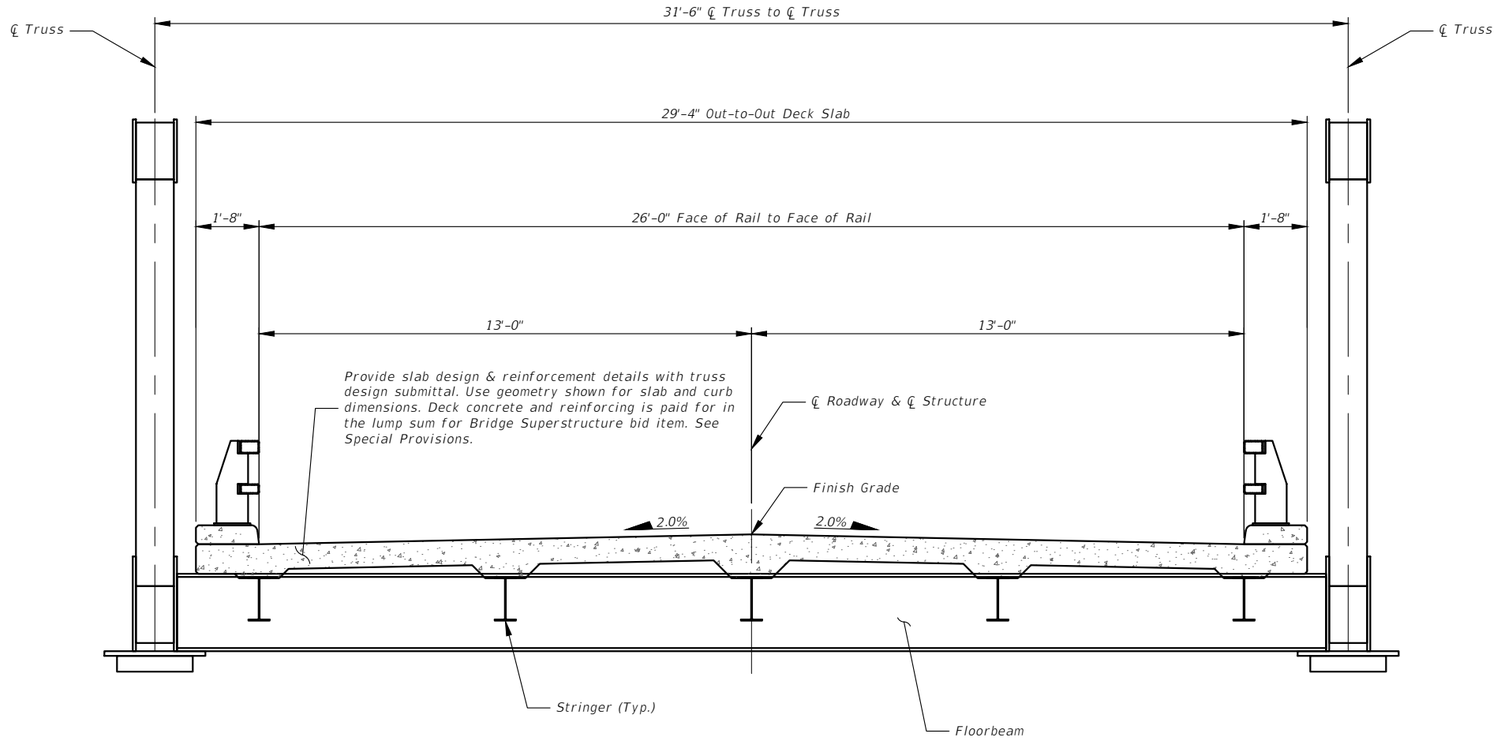
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*Final Truss Geometry Determined by Truss Supplier



TYPICAL TRANSVERSE SECTION

SCALE: 1/2" = 1' - 0"

SHEET NO. B9

TRANSVERSE SECTION

SCALE: 1/2" = 1'-0"

BRIDGE OVER BLACKFOOT RIVER

AT STA. 25+97.00

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CHECKED	12-06-23	K.F.Y.	
DRAWN	12-06-23	B.G.J.	
DESIGNED	12-06-23	G.C.G.	

9776000BRMDEZ09.DWG

12/6/2023 4:32:01 PM

MONTANA DEPARTMENT OF TRANSPORTATION MDT BRIDGE BUREAU

ROUTE 25502

REF POINT REF POINT

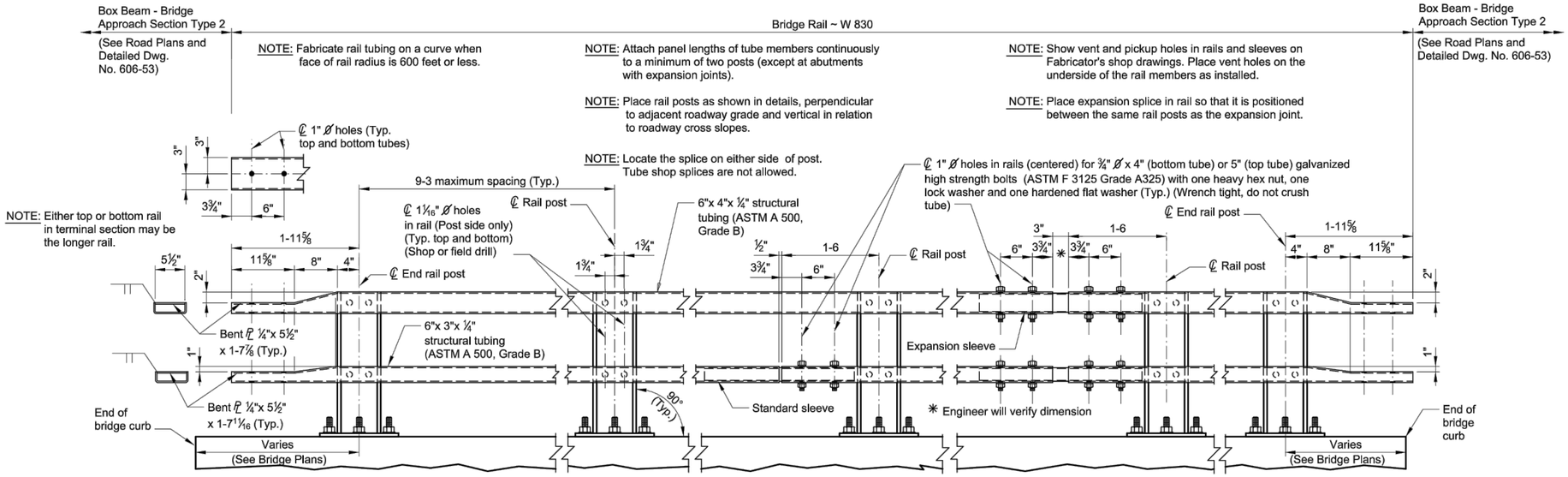
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UPN NUMBER 9776000

DRAWING NO. 28409

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AWARD COPY



ELEVATION AT BOX BEAM GUARDRAIL CONNECTION

NOTE: Do not provide a tube splice in first panel unless it crosses an expansion joint.

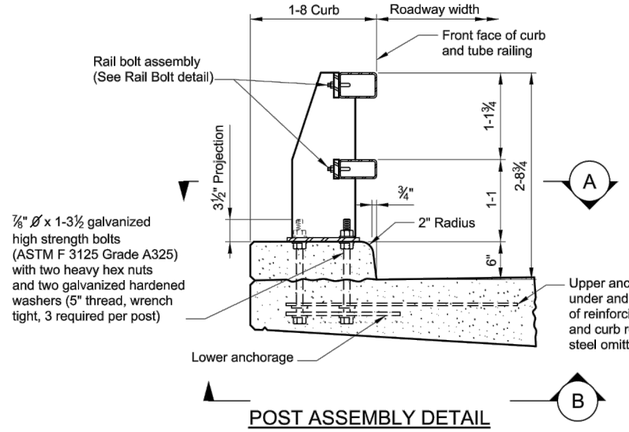
STANDARD SPLICE

(Top or bottom rail)

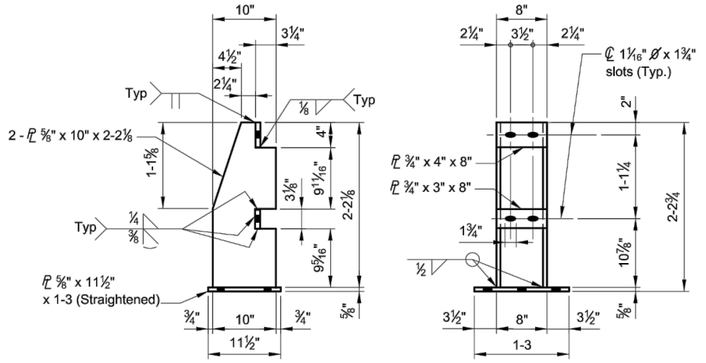
EXPANSION SPLICE

(Top and bottom rail)

INSIDE ELEVATION OF RAIL



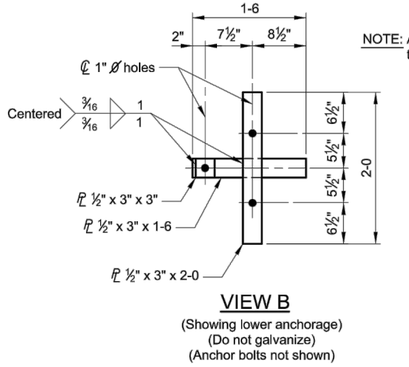
POST ASSEMBLY DETAIL



POST DETAILS

SECTION A

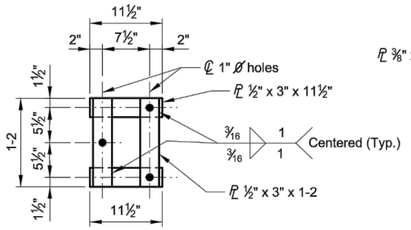
(Anchor bolts not shown)



NOTE: Anchor bolts may be tack welded to anchorage (shop or field).

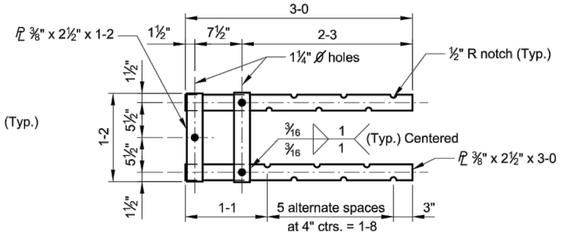
VIEW B

(Showing lower anchorage)
(Do not galvanize)
(Anchor bolts not shown)



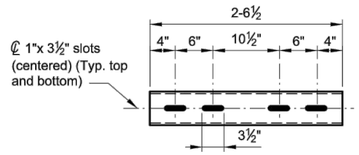
VIEW B (U-TYPE BENT)

(Do not galvanize)
(Anchor bolts not shown)

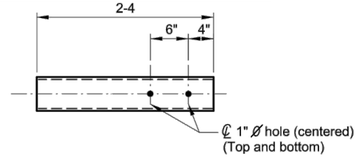


VIEW B

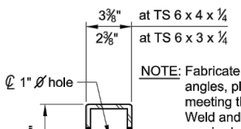
(Showing upper anchorage)
(Do not galvanize)
(Anchor bolts not shown)



EXPANSION SLEEVE DETAIL

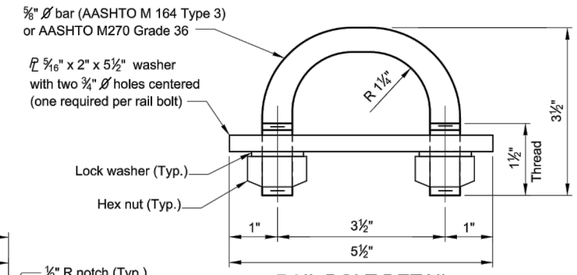


STANDARD SLEEVE DETAIL



NOTE: Fabricate sleeves using channels, angles, plates, or bent plates meeting the dimensions shown. Weld and grind smooth as required. Fabricate sleeves using no more than four welds. Fabricate sleeves with a minimum wall thickness of 3/16".

SLEEVE FABRICATION OPTIONS



RAIL BOLT DETAIL

NOTES

GALVANIZING: Galvanize all bolts, nuts, washers and pipe sleeves in accordance with ASTM F 2329.

REFLECTORS: Place a white reflector on top of the top tube rail at equal spacing (not to exceed 30 foot spacing) between ends of rail. See Dtl. Dwg. No. 605-00 for reflector detail. Mount the reflector on the tube rail with an approved adhesive. Include the cost of reflector in the unit price bid for Bridge Rail ~ W830.

PAYMENT: Payment for Bridge Rail ~ W830 per linear foot includes compensation for the cost of Concrete Class Deck in the curb and for all resources necessary to complete the work. See the General Layout for the number of linear feet for payment of Bridge Rail ~ W830. Use rail post plates and base plates conforming to AASHTO M 270 Grade 36 T3. Use AASHTO M 270 Grade 36 for all other plates.

ERECTION: Place rail posts as shown in details, perpendicular to adjacent roadway grade and vertical in relation to roadway cross slopes. Place posts in proper alignment prior to placement of curb.

PAINTING: Paint all posts, structural tubing and plates (except as noted) in accordance with the Standard Specifications. Galvanizing the posts, structural tubing and plates in accordance with AASHTO M 111 will be allowed.

EXCEPTIONS: Use details shown on this drawing only as they apply to the project. Anchorage details may vary. Refer to other drawings for variations in these details.

FABRICATION: For the purposes of fabrication, this rail system is considered an ancillary item. The requirements of subsection 1.3.7 of AASHTO/AWS D1.5 apply.

RAIL WEIGHT: For informational purposes only, the rail weight is approximately 123.0 lb/ft for the curb and 50.0 lb/ft for the rail.

STANDARD BRIDGE RAIL TYPE W830

No Scale

MDT MONTANA DEPARTMENT OF TRANSPORTATION — BRIDGE BUREAU

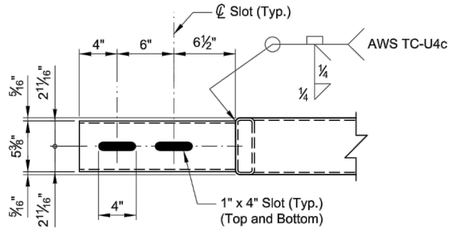
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APPROVED	3-26-08	D.F.J.
CHECKED	3-20-08	D.J.R.
DRAWN	8-2-06	L.M.S.
$DATE$	$TIME$	$FILEABBREV$

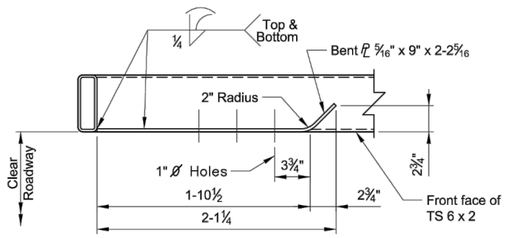
DRAWING NO. SBR-W830

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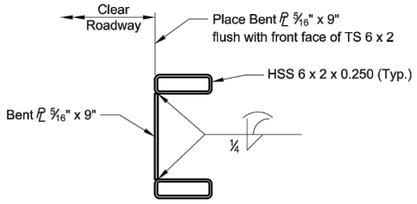
AWARD COPY

W740 TERMINATION DETAILS

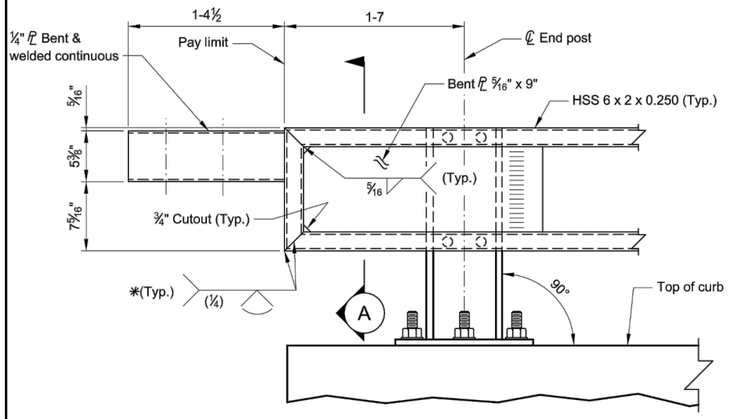




BENT PLATE DETAIL

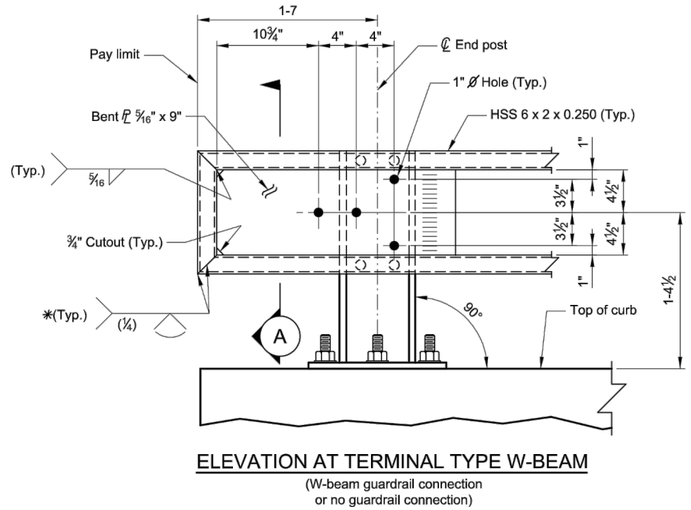


SECTION A



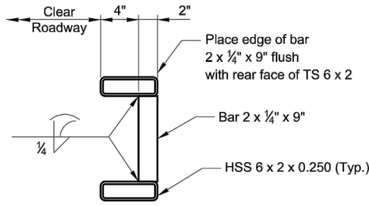
ELEVATION AT TERMINAL TYPE BOX BEAM

(Box Beam guardrail connection, Interstate exit departure end only)



ELEVATION AT TERMINAL TYPE W-BEAM

(W-beam guardrail connection
or no guardrail connection)



BRACE BAR DETAIL

NOTES

Either the top or bottom rail in terminal section may be the longer rail.

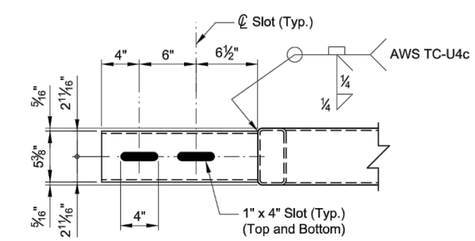
Railing that is part of terminal is continuous if either the top or bottom rail in the terminal is continuous over a minimum of two posts.

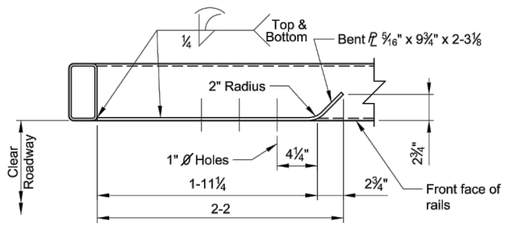
A brace bar is required and shall be placed 2-0 from the splice end of the shorter tube.

*The Fabricator shall prepare a sample of the indicated joint and macroetch it to demonstrate that the required effective throat is achieved.

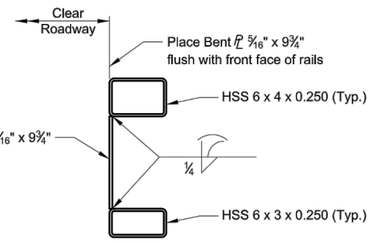
See Dwg. No. SBR-W740 for additional rail details.

W830 TERMINATION DETAILS

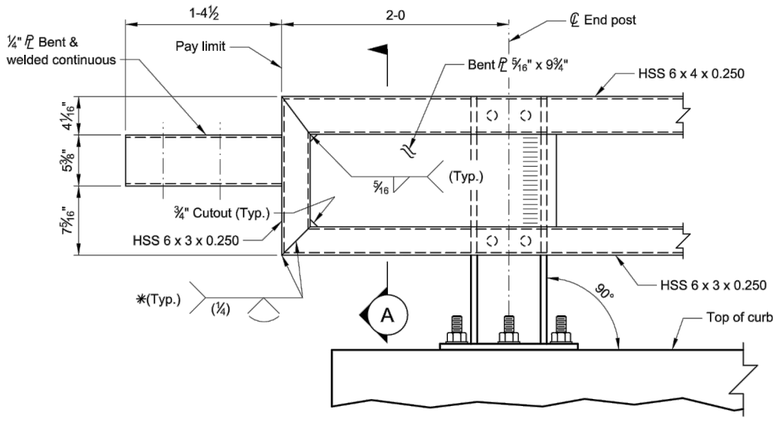




BENT PLATE DETAIL

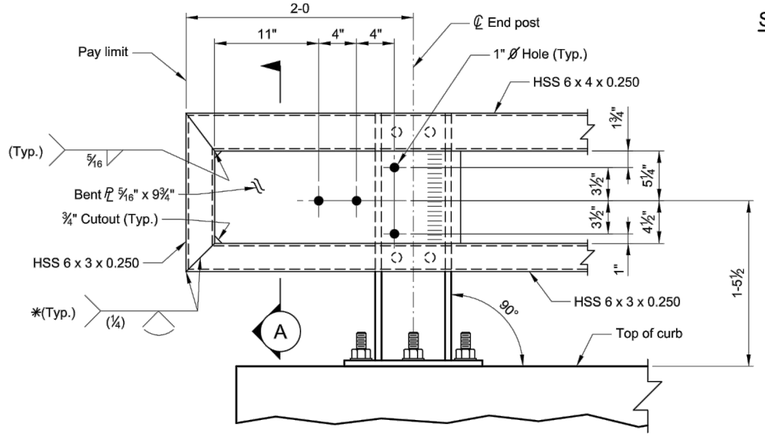


SECTION A



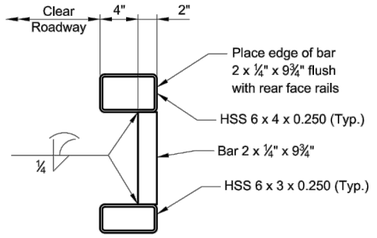
ELEVATION AT TERMINAL TYPE BOX BEAM

(Box Beam guardrail connection, Interstate exit departure end only)



ELEVATION AT TERMINAL TYPE W-BEAM

(W-beam guardrail connection
or no guardrail connection)



BRACE BAR DETAIL

NOTES

Either the top or bottom rail in terminal section may be the longer rail.

Railing that is part of terminal is continuous if either the top or bottom rail in the terminal is continuous over a minimum of two posts.

A brace bar is required and shall be placed 2-0 from the splice end of the shorter tube.

*The Fabricator shall prepare a sample of the indicated joint and macroetch it to demonstrate that the required effective throat is achieved.

See Dwg. No. SBR-W830 for additional rail details.

STANDARD BRIDGE RAIL TYPE W740 & W830 TERMINATION DETAILS

No Scale

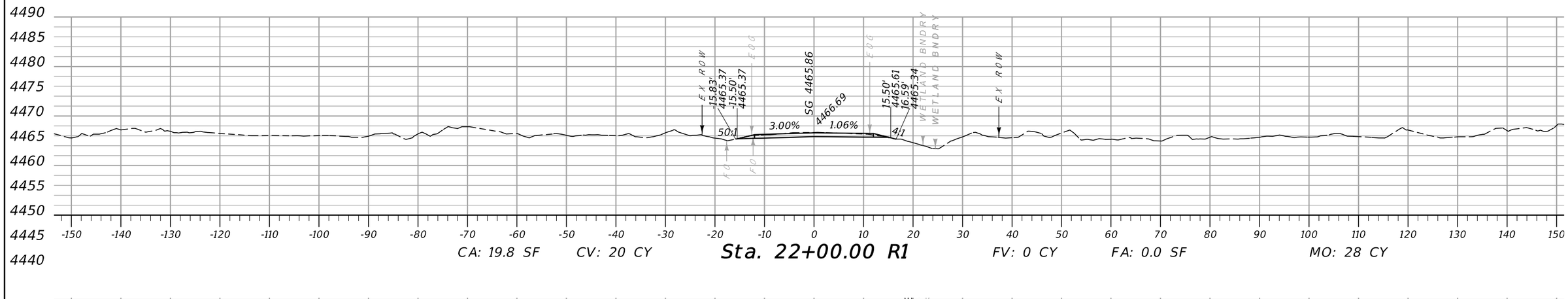
MDT MONTANA DEPARTMENT OF TRANSPORTATION — BRIDGE BUREAU

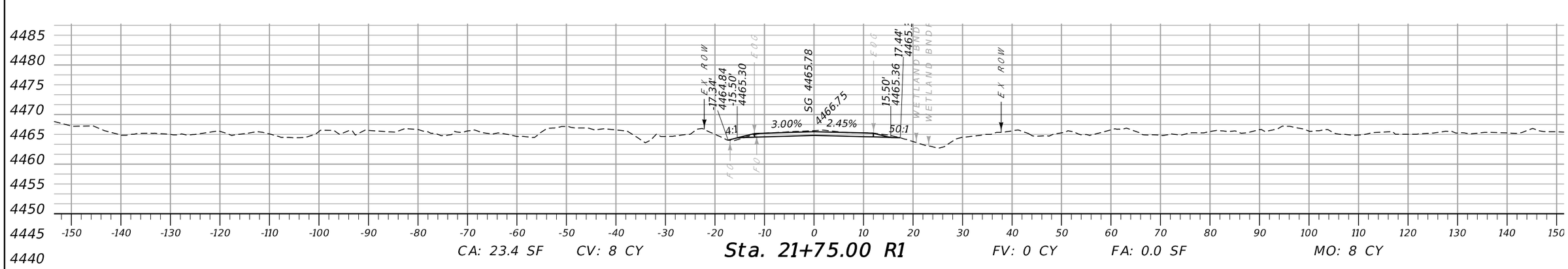
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DRAWN	T.J.B.	10-3-11	
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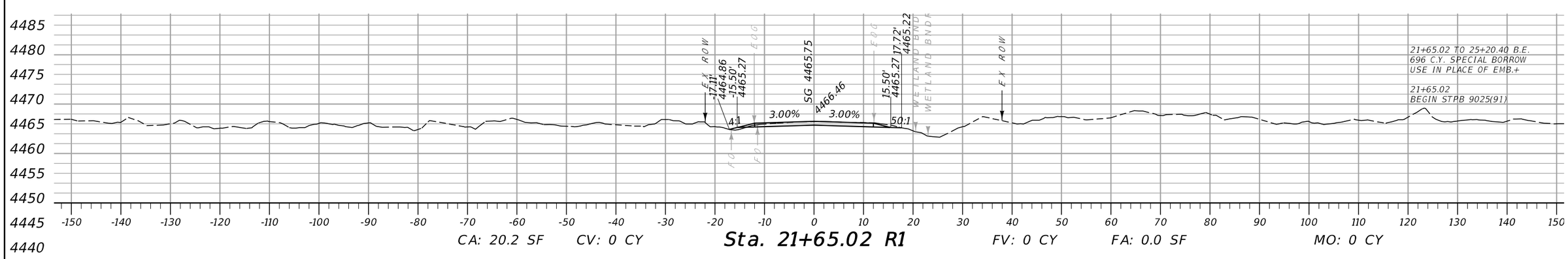
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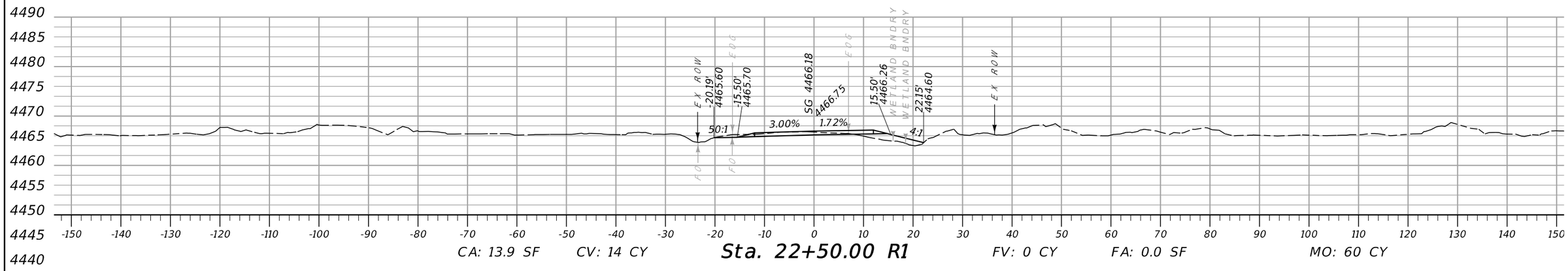




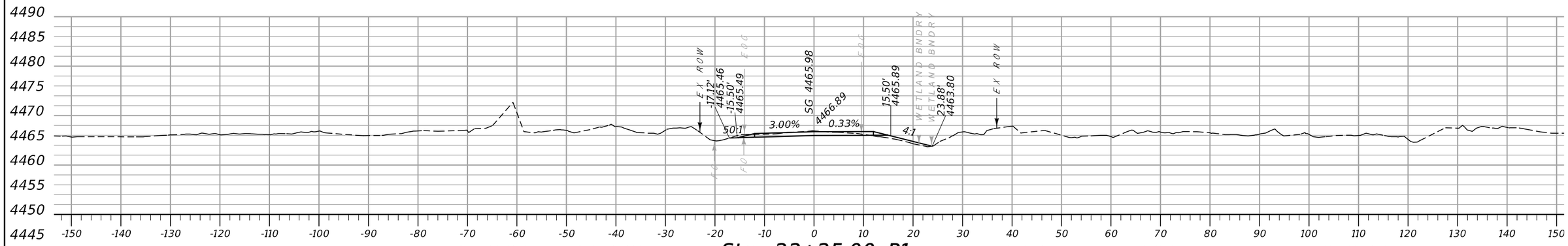
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	12/6/2023	REVIEWED BY	R. HOLM	9/20/2023		
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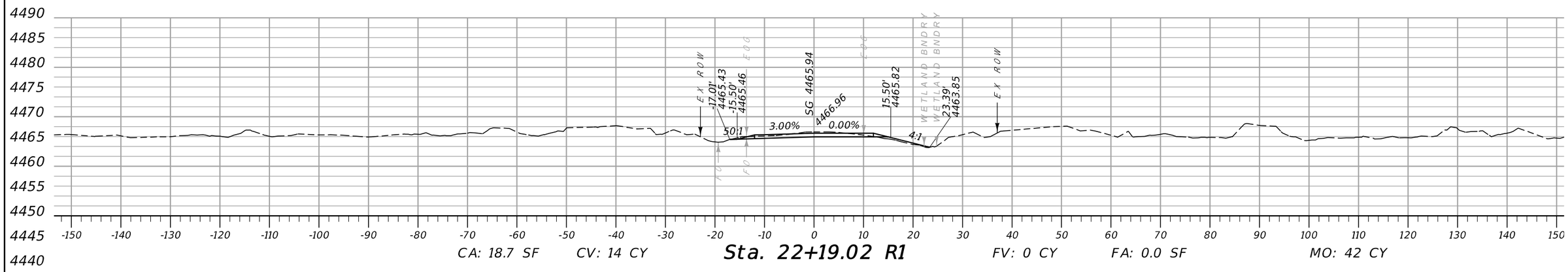
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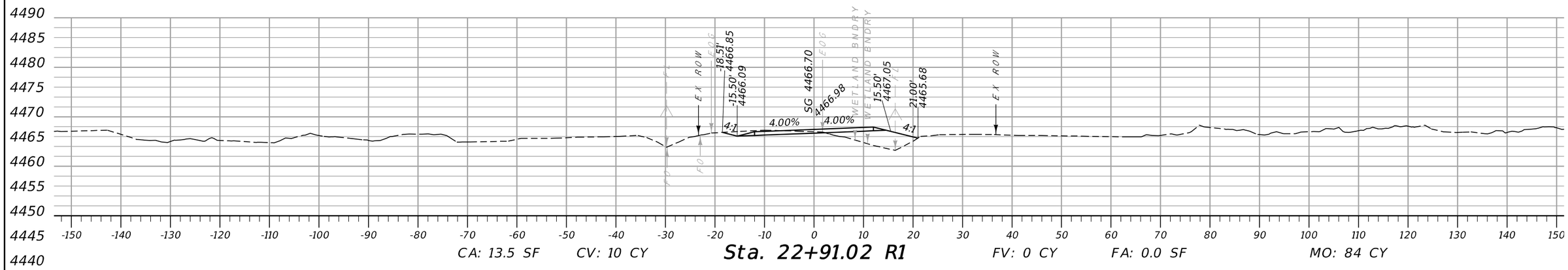
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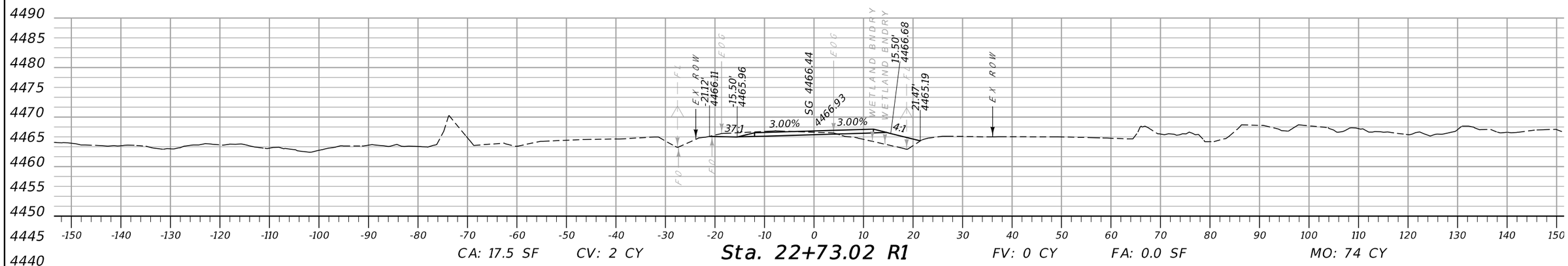
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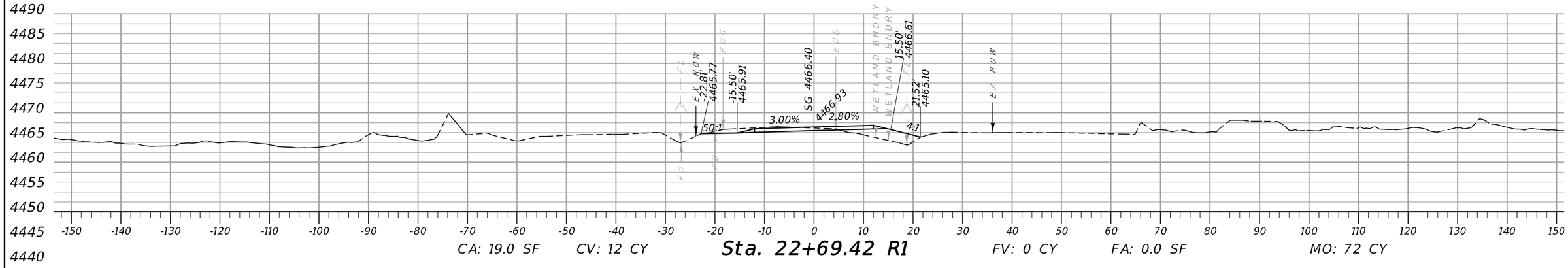
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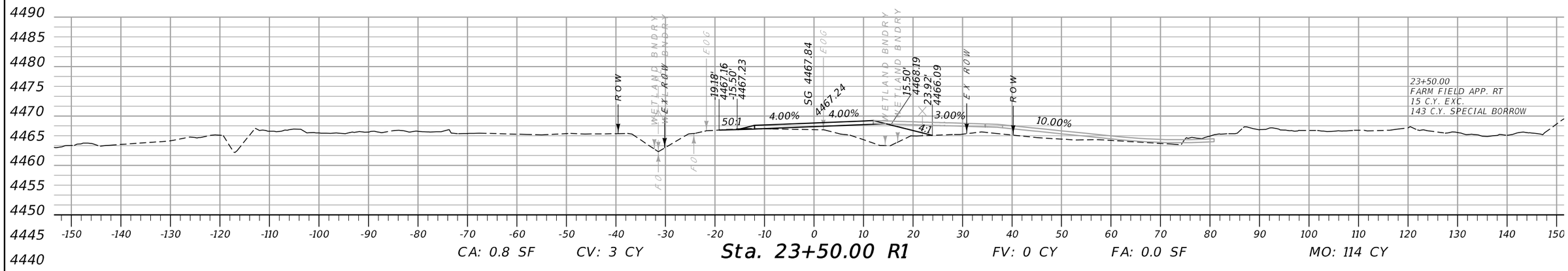


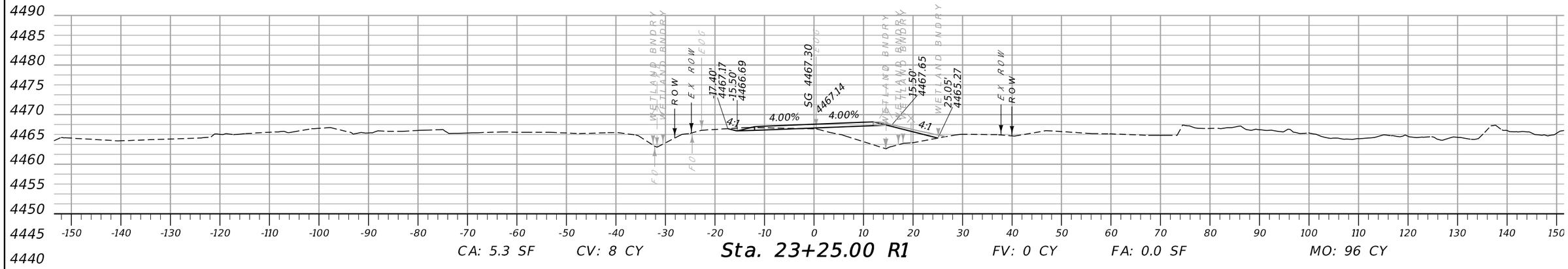
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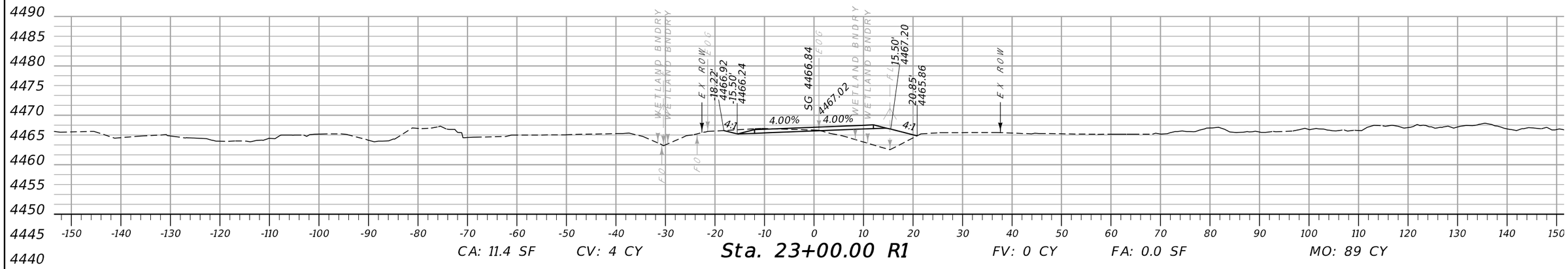
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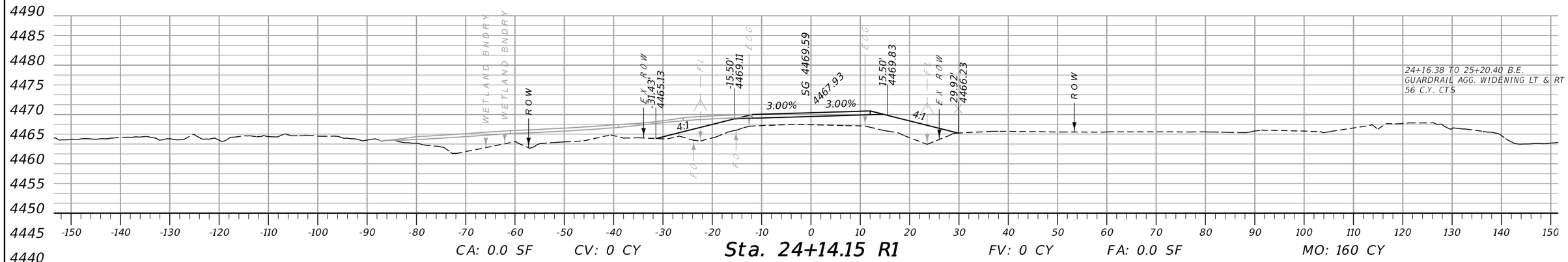


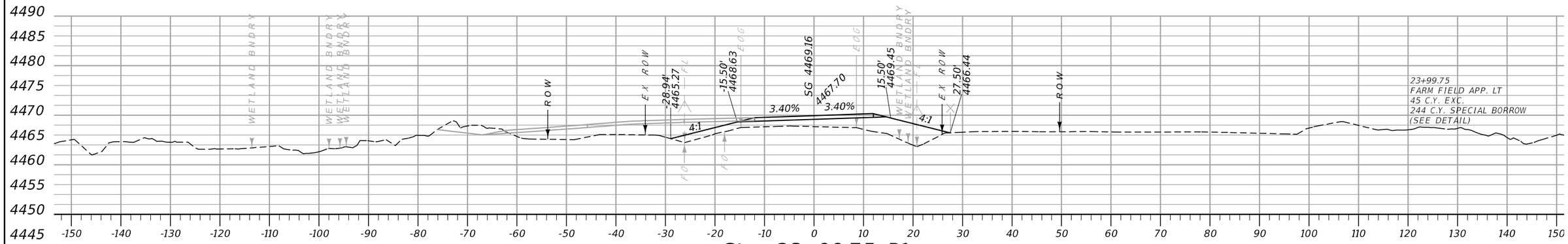


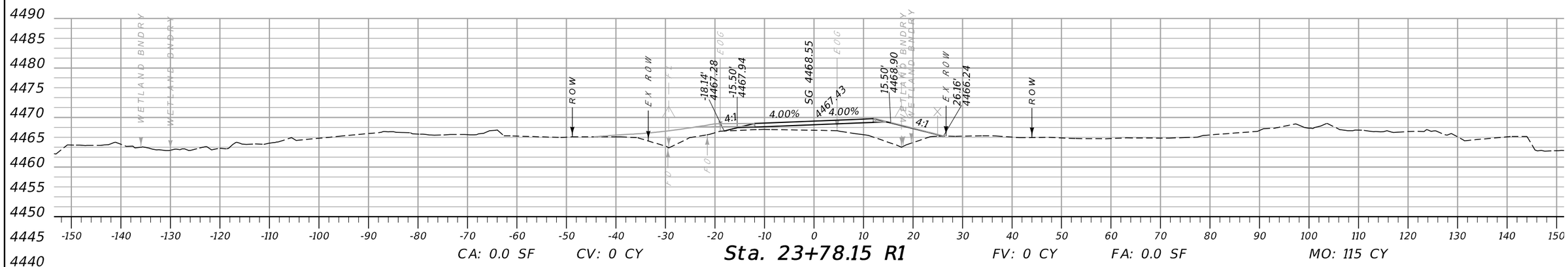
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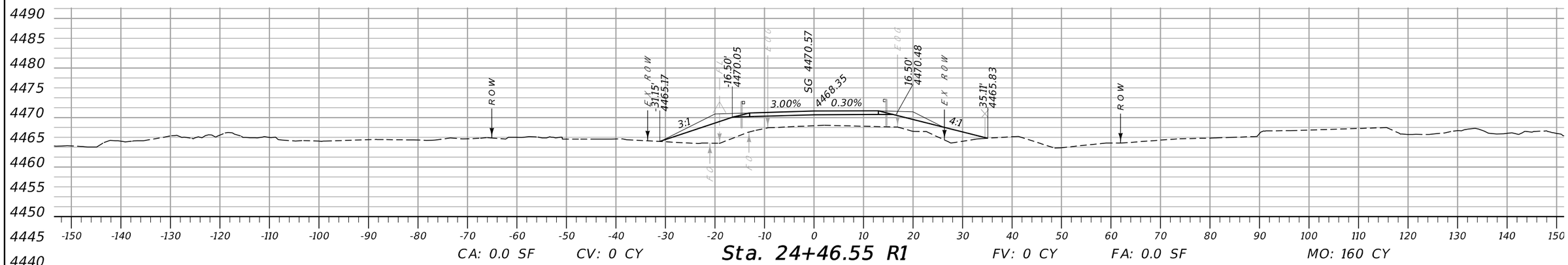


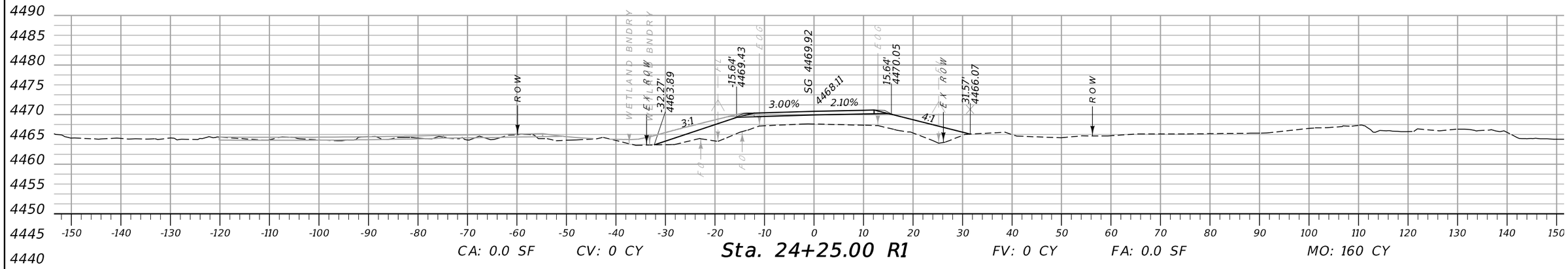


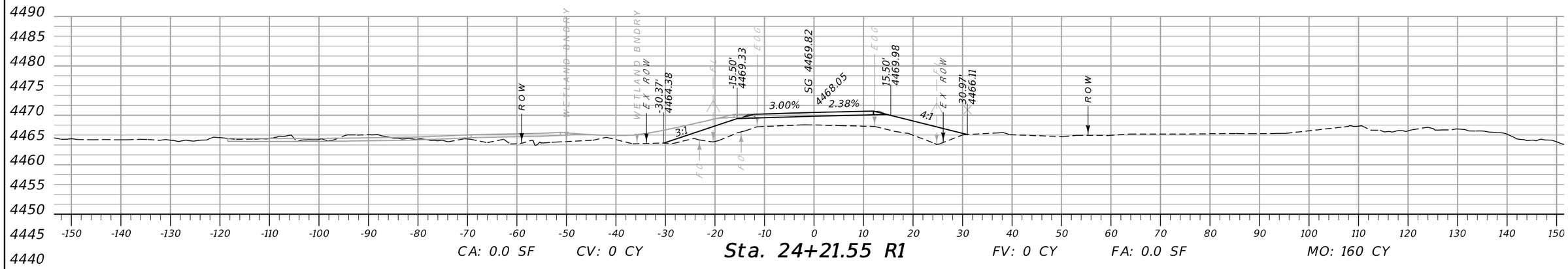
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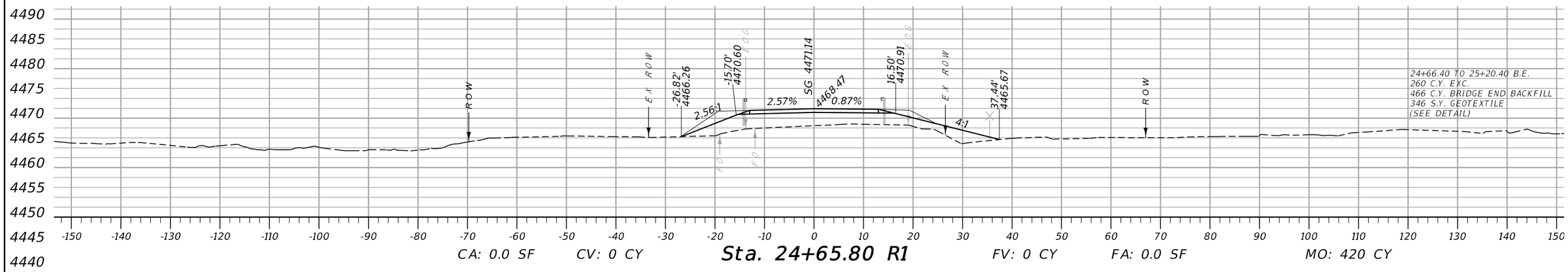


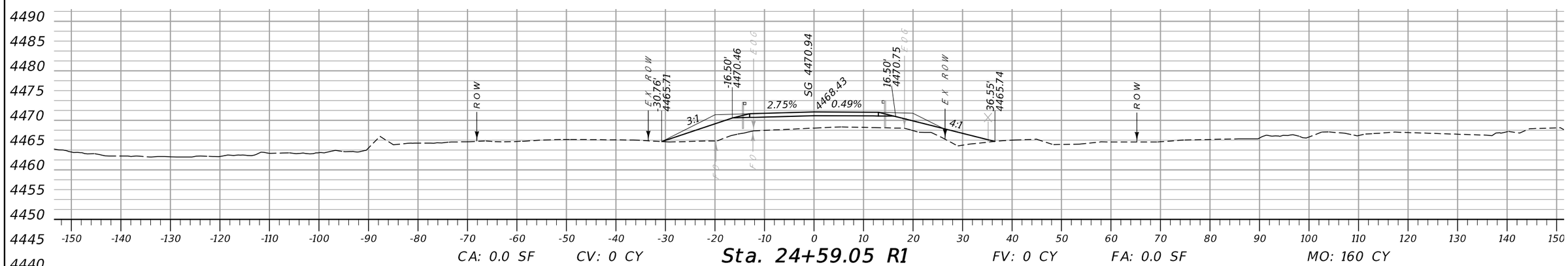


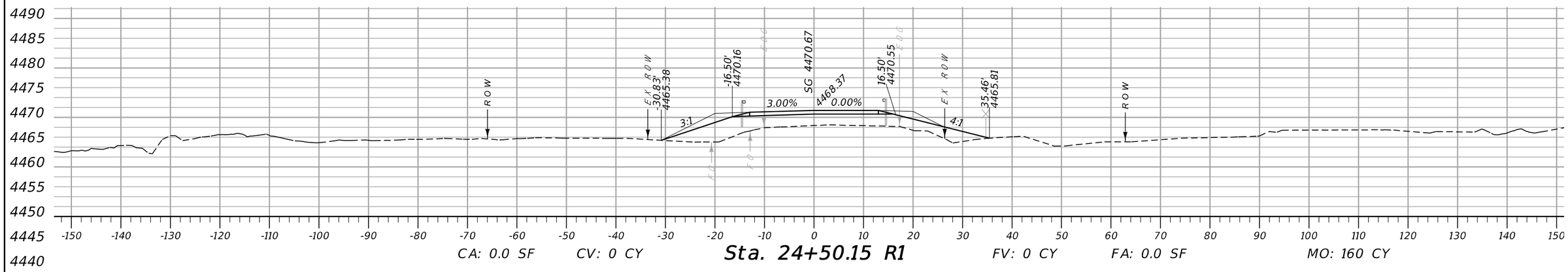
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	12/6/2023	REVIEWED BY	R. HOLM	9/20/2023		
	2:09:49 PM RHolm	CHECKED BY	K. YAKAWICH	9/20/2023	LEWIS AND CLARK COUNTY	UPN 9776000 / SHEET 6

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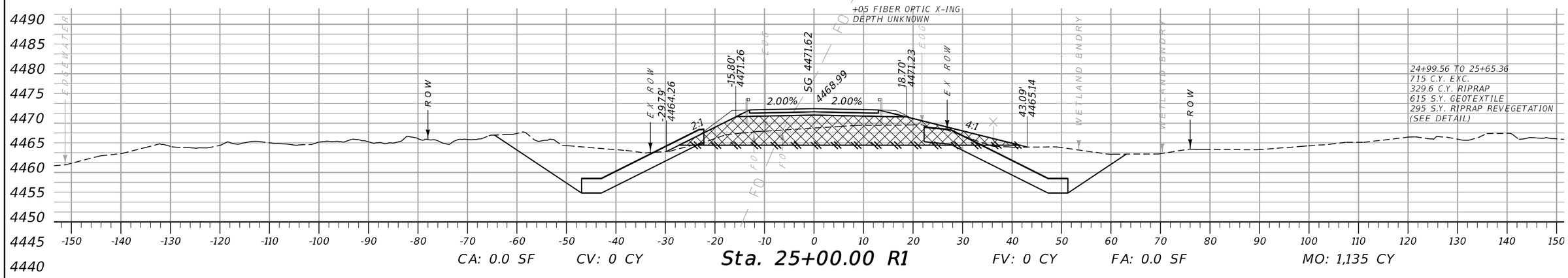


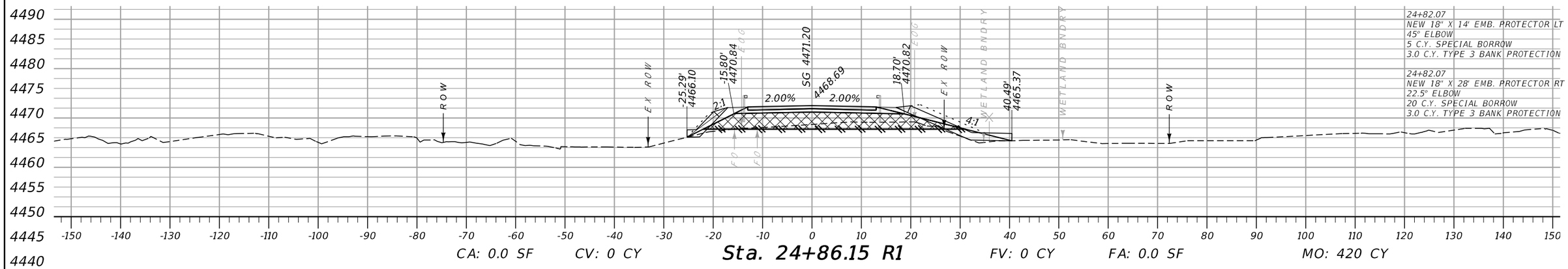


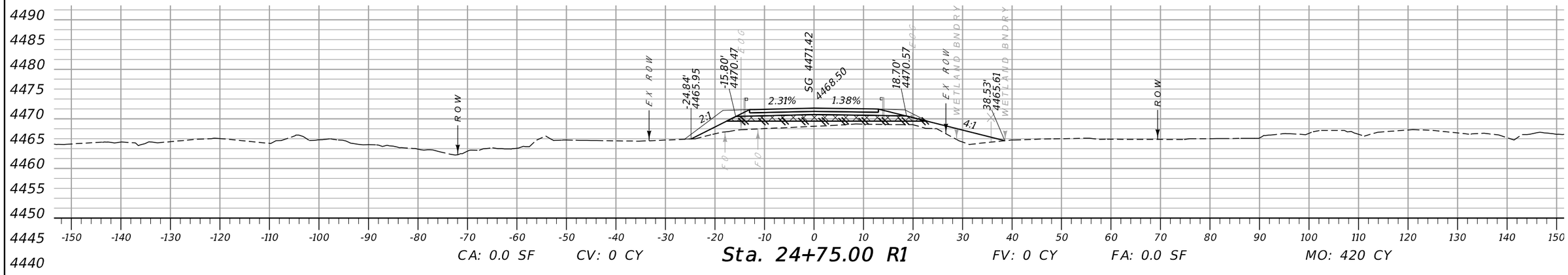
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	12/6/2023	REVIEWED BY	R. HOLM	9/20/2023		
	2:09:49 PM RHolm	CHECKED BY	K. YAKAWICH	9/20/2023	LEWIS AND CLARK COUNTY	UPN 9776000 / SHEET 7

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MONTANA DEPARTMENT OF TRANSPORTATION

...\9776000\RD\9776000rdLAYOUT.dgn	DESIGNED BY	R. HOLM	9/20/2023
12/6/2023	REVIEWED BY	R. HOLM	9/20/2023
2:09:50 PM RHolm	CHECKED BY	K. YAKAWICH	9/20/2023

MAINLINE CROSS SECTIONS

LEWIS AND CLARK COUNTY

BLACKFOOT RIVER - 3M W LINCOLN

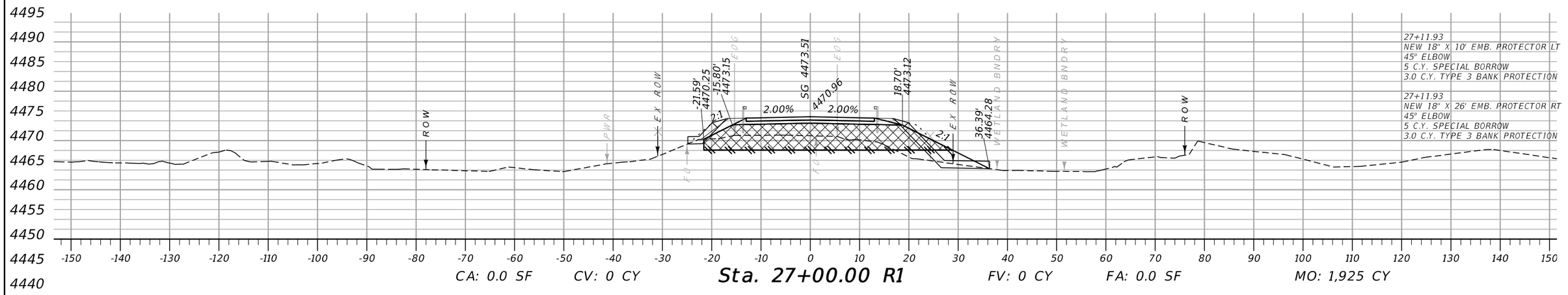
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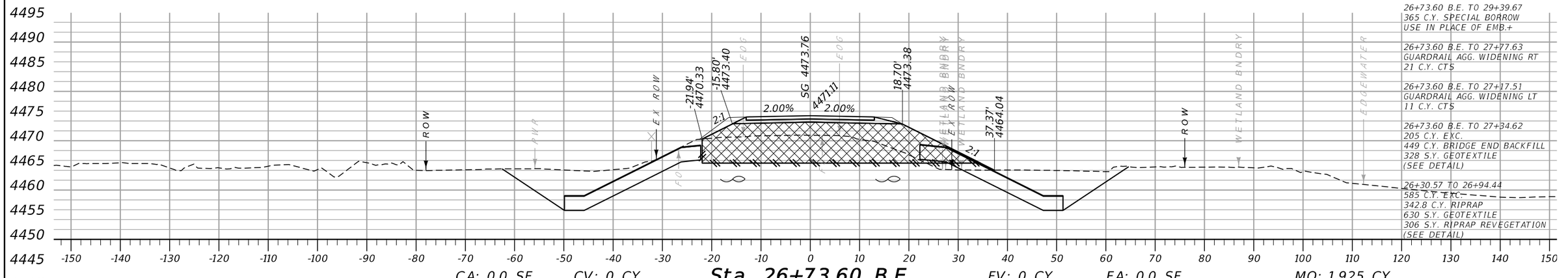
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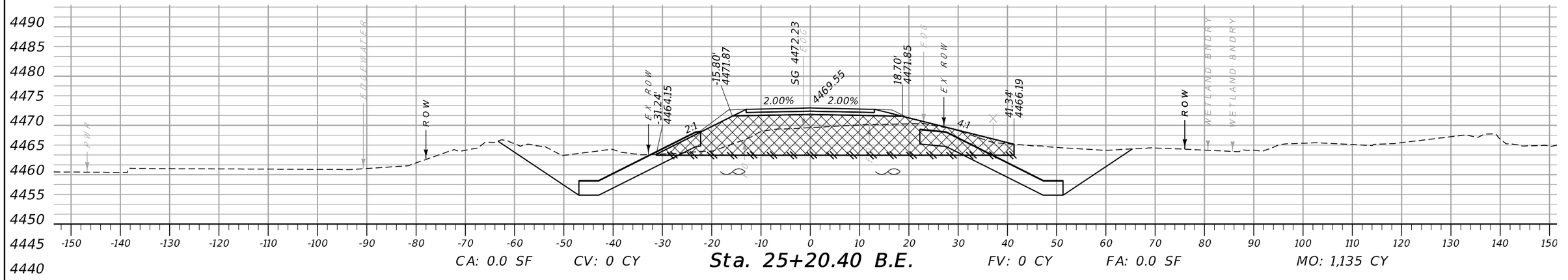
SHEET 8

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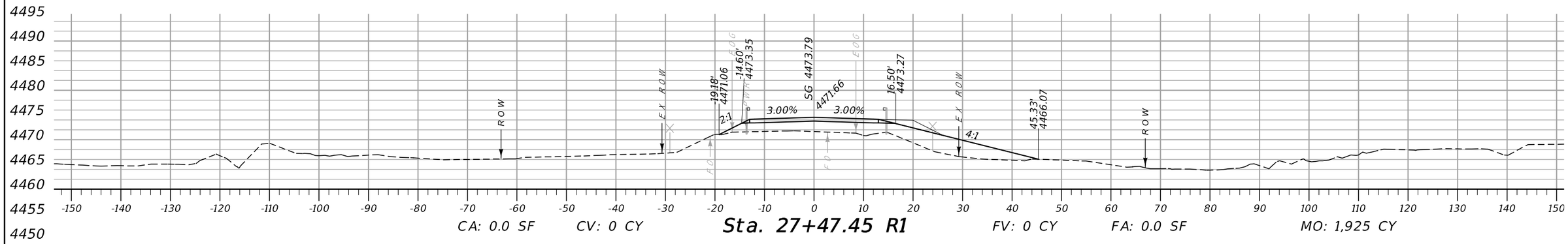


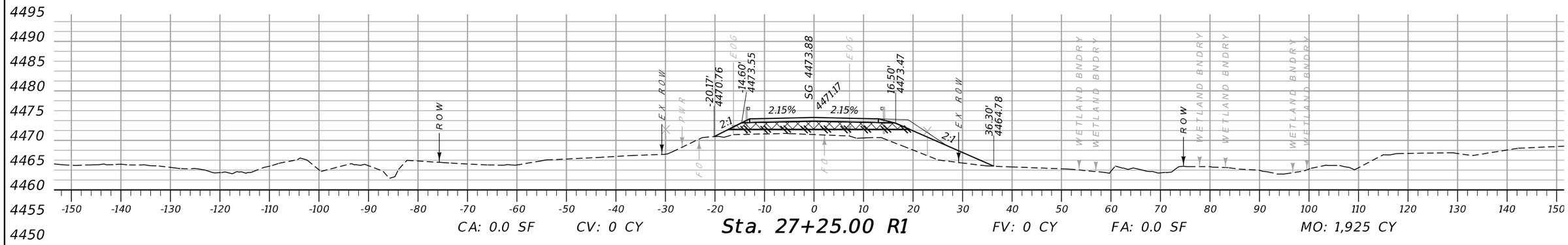


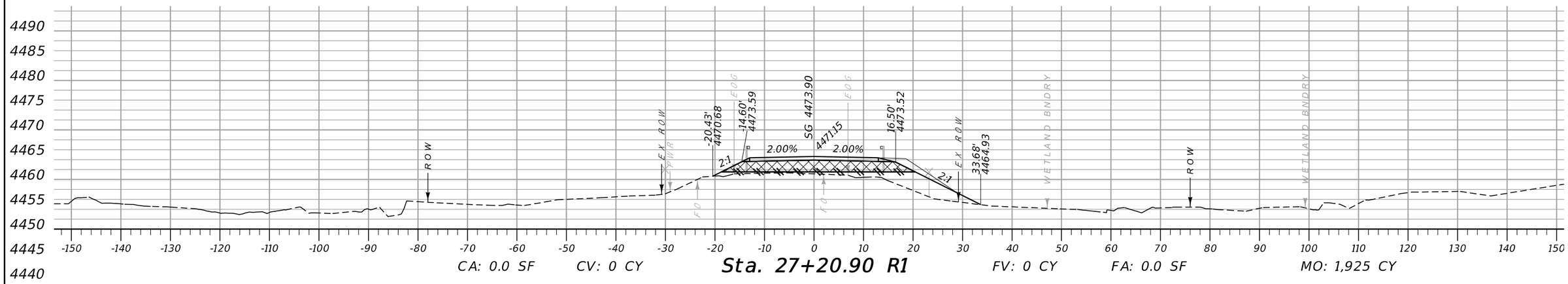
MDT MONTANA DEPARTMENT OF TRANSPORTATION	...\9776000\RD\9776000rdLA05.dgn	DESIGNED BY	R. HOLM	9/20/2023	MAINLINE CROSS SECTIONS	BLACKFOOT RIVER - 3M W LINCOLN / STPB 9025(91)
	12/6/2023	REVIEWED BY	R. HOLM	9/20/2023		
	2:09:51 PM RHolm	CHECKED BY	K. YAKAWICH	9/20/2023	LEWIS AND CLARK COUNTY	UPN 9776000 / SHEET 9

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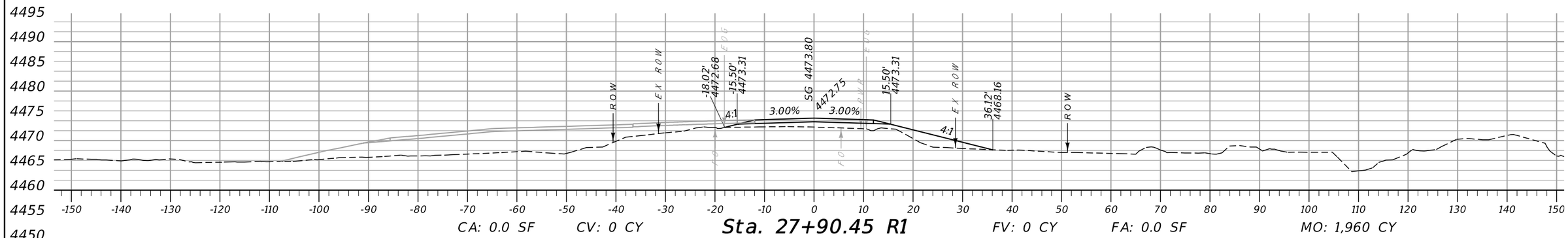


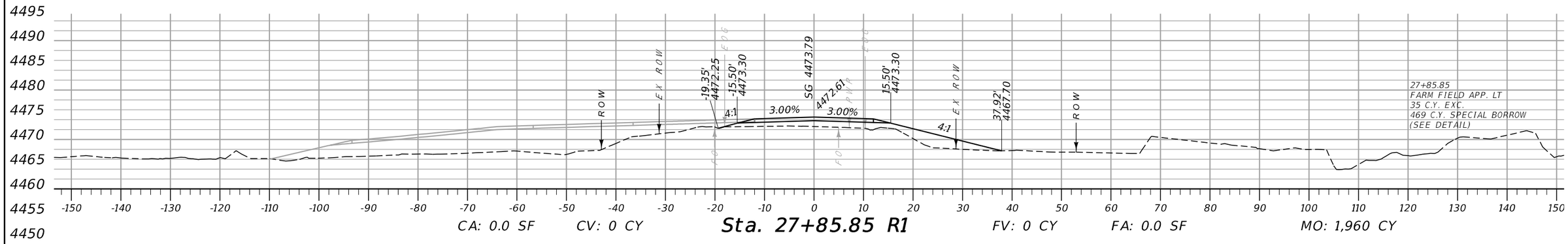


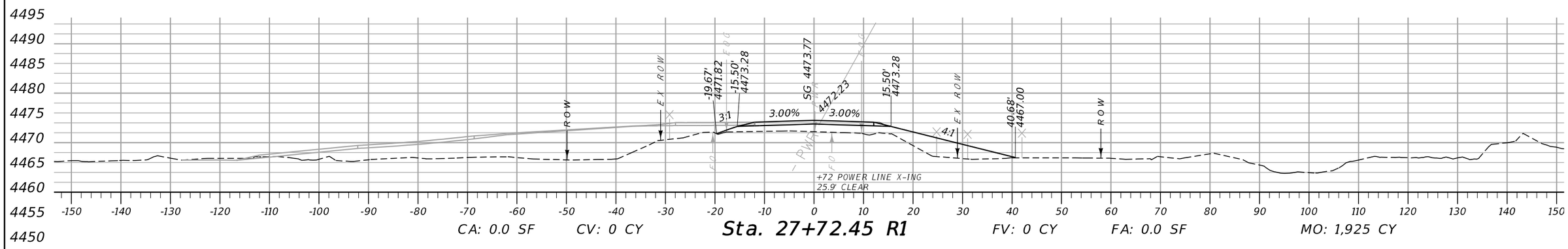
MDT MONTANA DEPARTMENT OF TRANSPORTATION	...\9776000\RD\9776000rdLAY.dgn	DESIGNED BY	R. HOLM	9/20/2023	MAINLINE CROSS SECTIONS	BLACKFOOT RIVER - 3M W LINCOLN / STPB 9025(91)
	12/6/2023	REVIEWED BY	R. HOLM	9/20/2023		
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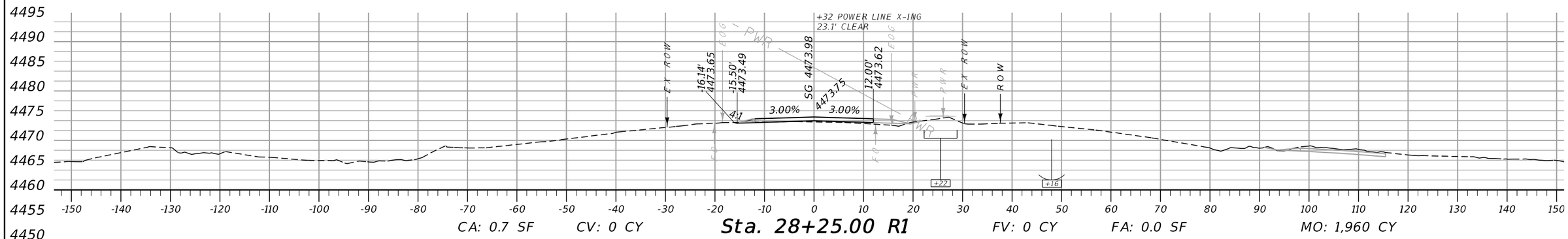




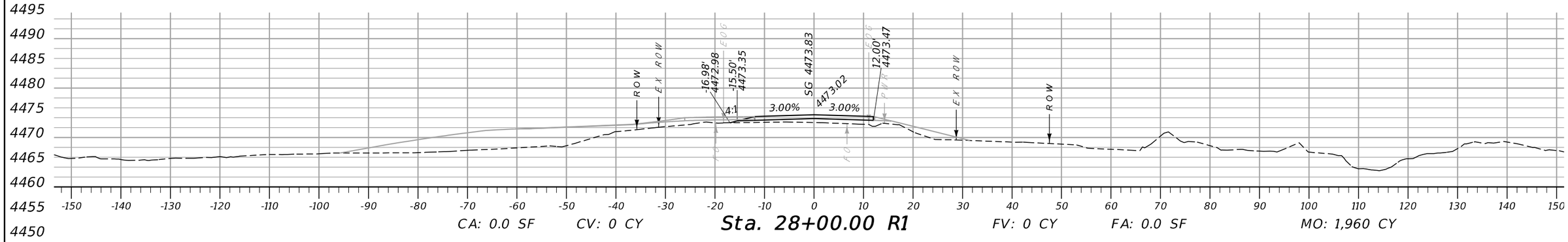


MDT MONTANA DEPARTMENT OF TRANSPORTATION	...\9776000\RD\9776000rdLAYOUT.dgn	DESIGNED BY	R. HOLM	9/20/2023	MAINLINE CROSS SECTIONS	BLACKFOOT RIVER - 3M W LINCOLN / STPB 9025(91)
	12/6/2023	REVIEWED BY	R. HOLM	9/20/2023		
	2:09:52 PM RHolm	CHECKED BY	K. YAKAWICH	9/20/2023	LEWIS AND CLARK COUNTY	UPN 9776000 / SHEET 11

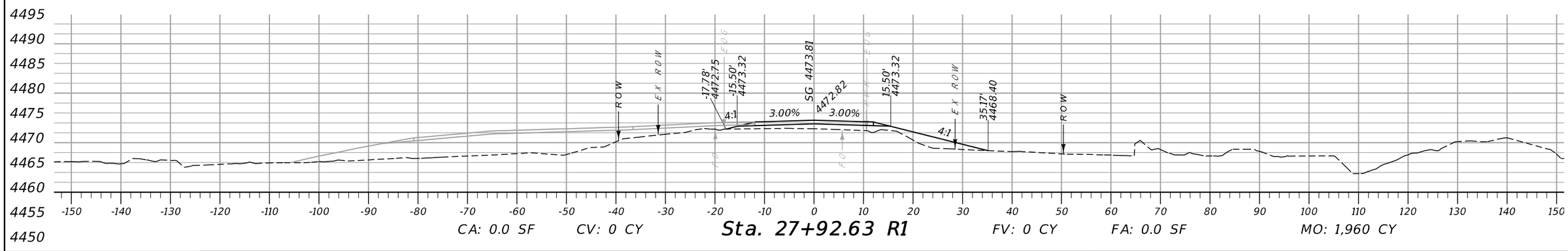
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CA: 0.7 SF CV: 0 CY **Sta. 28+25.00 R1** FV: 0 CY FA: 0.0 SF MO: 1,960 CY



CA: 0.0 SF CV: 0 CY **Sta. 28+00.00 R1** FV: 0 CY FA: 0.0 SF MO: 1,960 CY

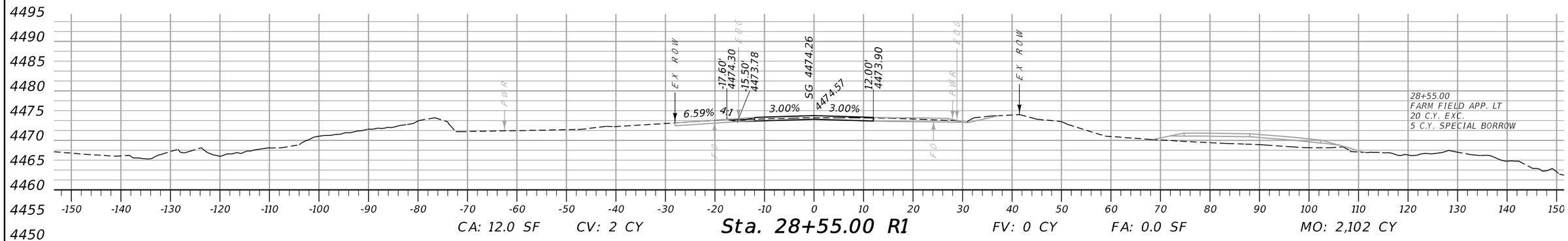


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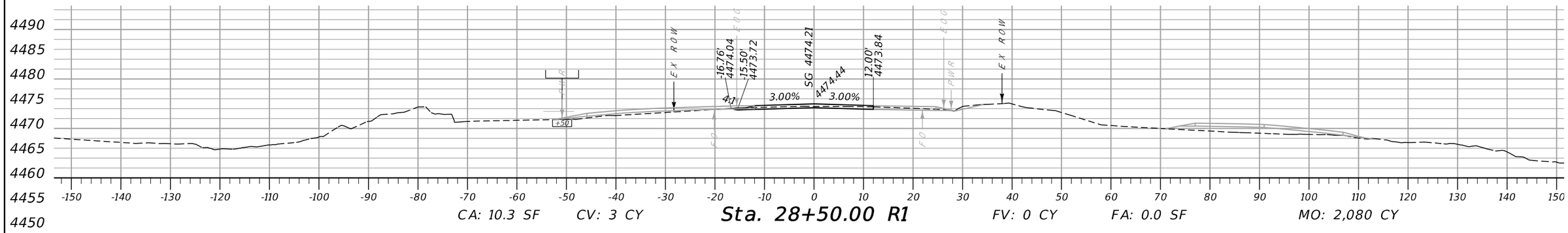
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	12/6/2023	REVIEWED BY	R. HOLM	9/20/2023	
	2:09:53 PM RHolm	CHECKED BY	K. YAKAWICH	9/20/2023	LEWIS AND CLARK COUNTY

BLACKFOOT RIVER - 3M W LINCOLN		STPB 9025(91)
	UPN 9776000	SHEET 12

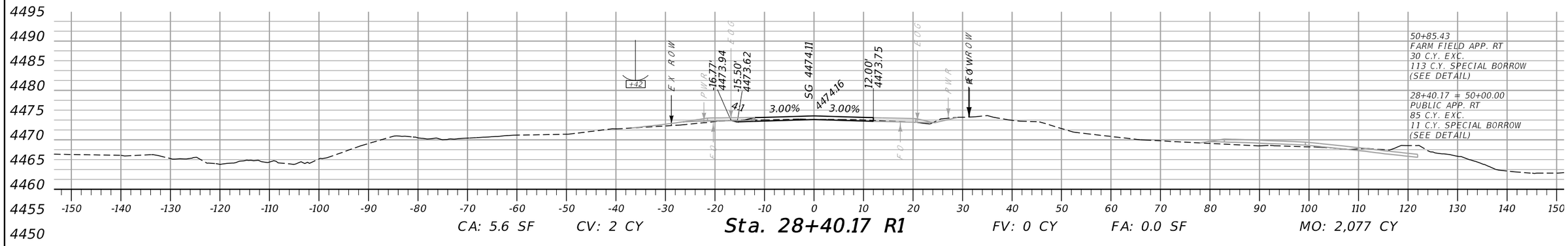
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CA: 12.0 SF CV: 2 CY **Sta. 28+55.00 R1** FV: 0 CY FA: 0.0 SF MO: 2,102 CY



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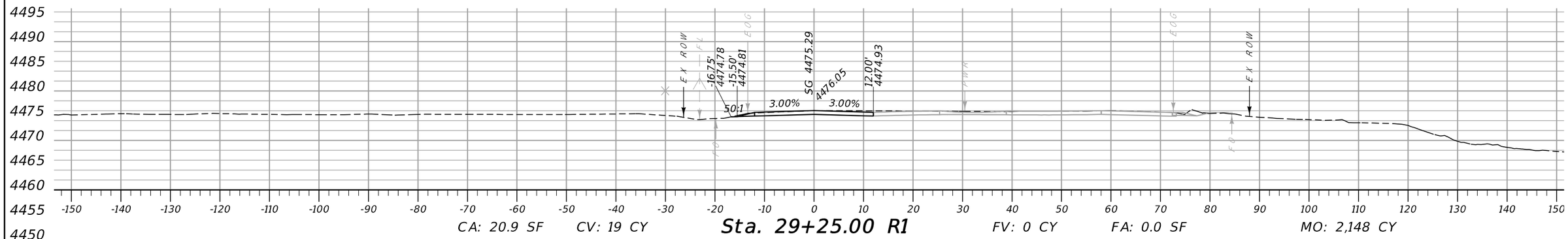


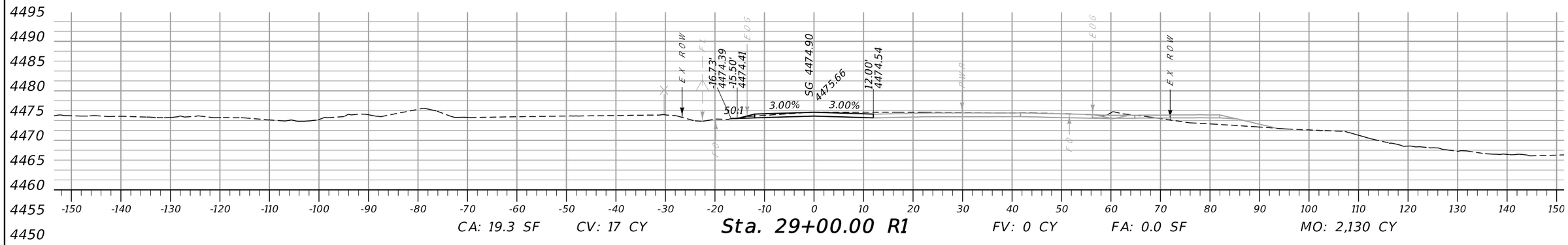
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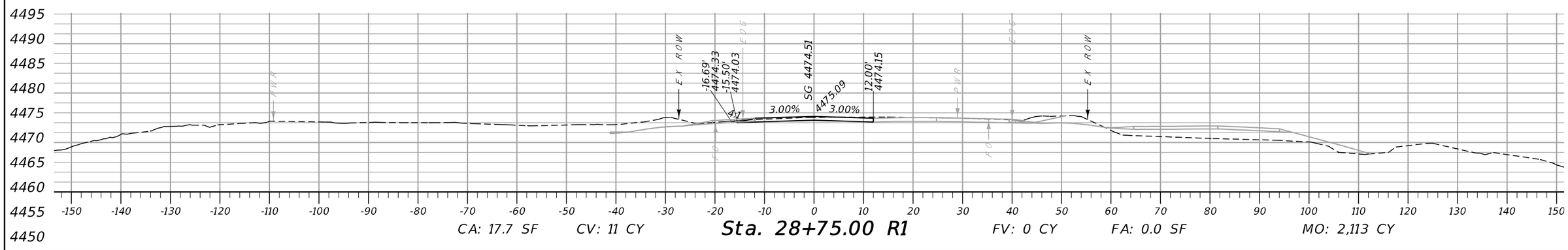
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	12/6/2023	REVIEWED BY	R. HOLM	12/6/2023		
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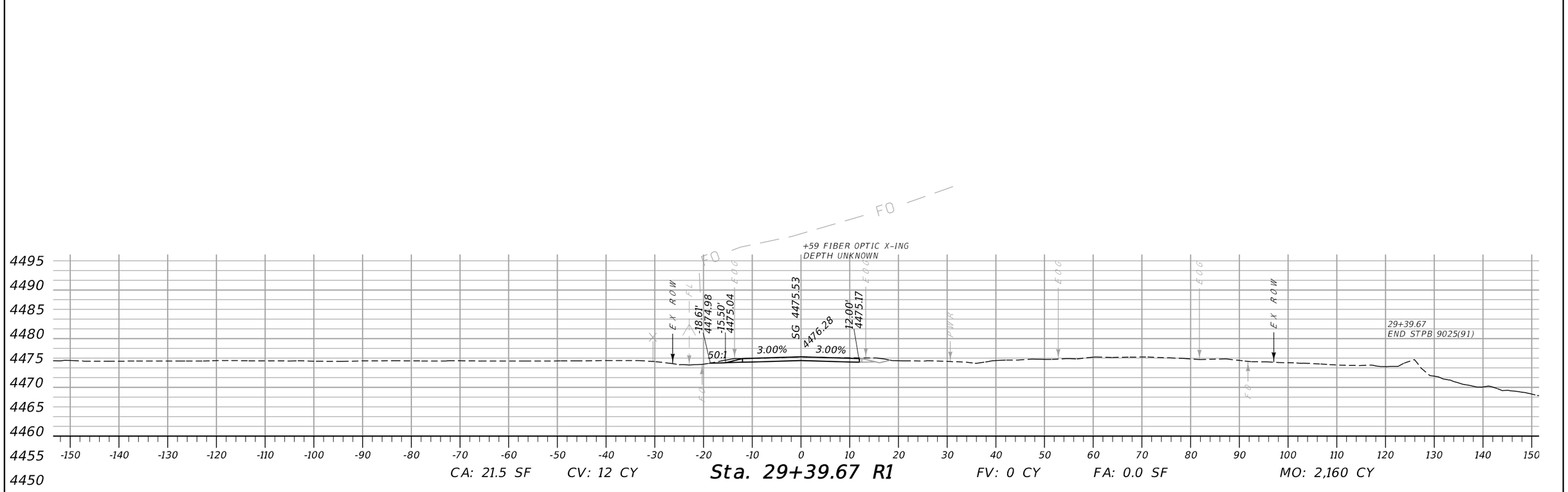






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	12/6/2023	REVIEWED BY	R. HOLM	9/20/2023		
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MDT MONTANA DEPARTMENT OF TRANSPORTATION	...\9776000\RD\9776000rdLAY.dgn	DESIGNED BY	R. HOLM	9/20/2023	MAINLINE CROSS SECTIONS	BLACKFOOT RIVER - 3M W LINCOLN / STPB 9025(91)
	12/6/2023	REVIEWED BY	R. HOLM	9/20/2023		
	2:09:56 PM RHolm	CHECKED BY	K. YAKAWICH	9/20/2023	LEWIS AND CLARK COUNTY	UPN 9776000 / SHEET 15