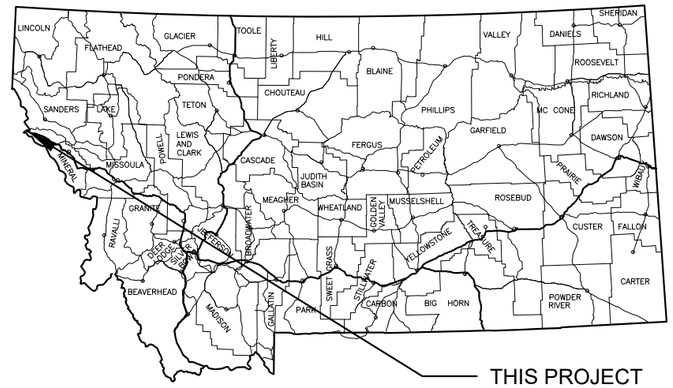
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MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT IM-NHFP 90-1(228)3
GRADING, GRAVEL, PCCP SURF, DRAINAGE
TAFT-WEST
MINERAL COUNTY

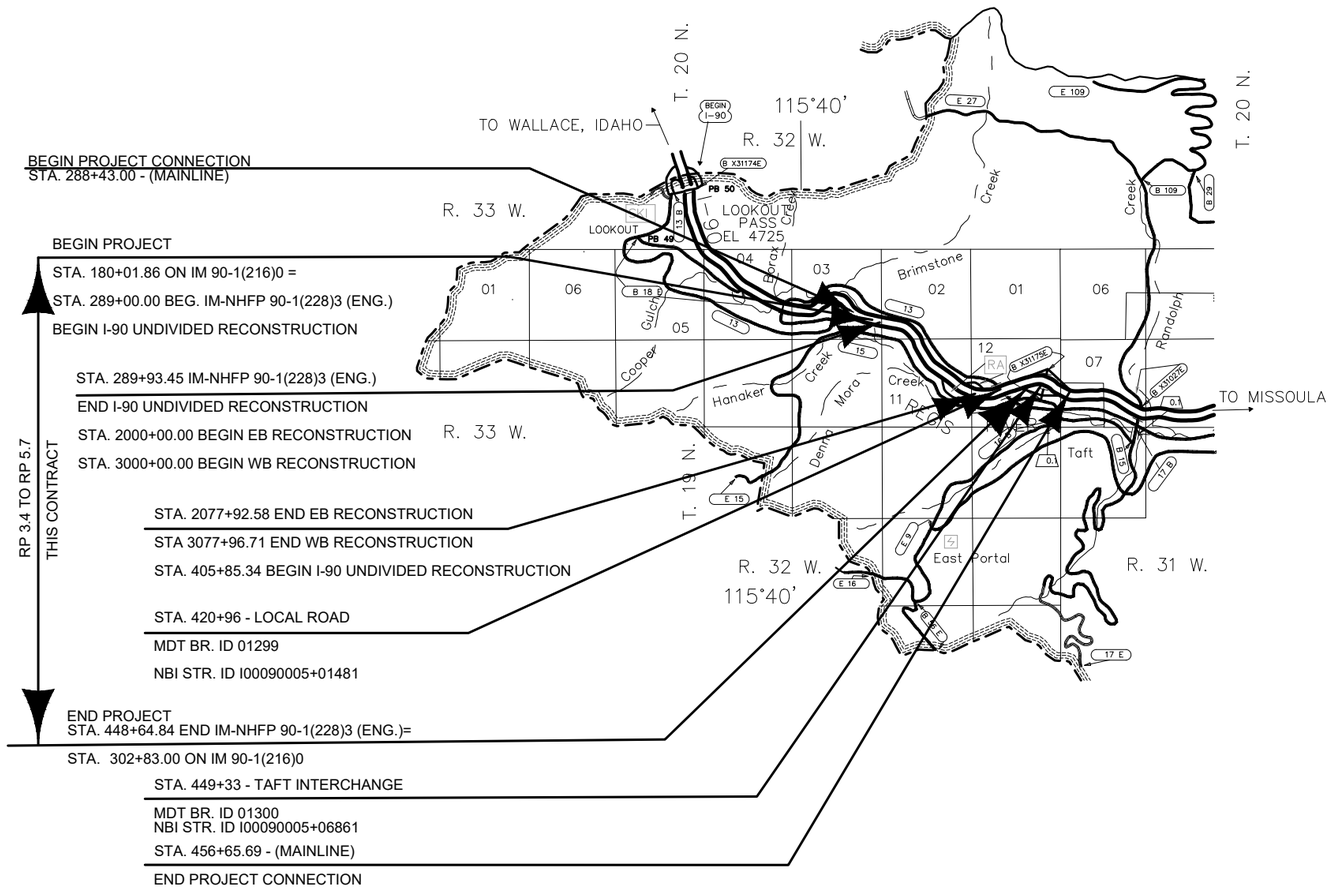
LENGTH 2.3 MILES

SURFACING SOURCES -
CONTRACTOR FURNISHED



PROJECT DESIGN DATA

PRESENT	2020	A.A.D.T. = 7,500
LETTING	2023	A.A.D.T. = 7,770
DESIGN	2043	A.A.D.T. = 9,860
		D.H.V. = 1,620
		TRUCKS = 28.3%
		V. = 50 MPH
		18 KIP ESAL'S = 1,886
		GROWTH RATE = 1.2%



AN ACCESS CONTROL FACILITY

PLANS PREPARED BY
HDR 700 SW HIGGINS AVENUE, SUITE 200, MISSOULA, MT 59803 PHONE (406) 532-2200

ASSOCIATED PROJECT AGREEMENT NUMBERS	
R/W	
I.C.	
P.E.	IM 90-1(227)0

HDR

BY _____

DATE 3/18/2024

MONTANA
LISA JO FISCHER
NO. 28947PE
LICENSED PROFESSIONAL ENGINEER

MONTANA
DEPARTMENT OF TRANSPORTATION

RECIEVED :

BY Kelly M. Williams Digitally signed by Kelly M Williams Date: 2024.03.18 14:50:32 -06'00'

CONSULTANT DESIGN ENGINEER DATE

SHEET NO. RD-1

TITLE SHEET

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
CHECKED BY	LFISCHER	6/29/23	
REVIEWED BY	SMARSHALL	6/29/23	
DESIGNED BY	BJOHNSON	6/29/23	

9487000RDTTLZ01.DWG

MONTANA Department of Transportation

ROAD PLANS

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CLEARING & 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 SERVICE BEFORE EXCAVATING. ALL CLEARANCES OR DEPTHS PROVIDED FOR UTILITIES ARE FROM EXISTING GROUND LINE.

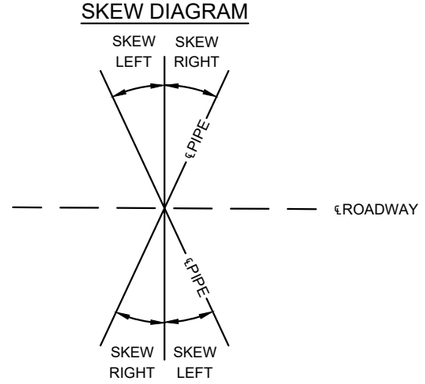
PUBLIC LAND SURVEY MONUMENTS

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

LIMITED ACCESS CONTROL

THIS PROJECT IS A FULL ACCESS CONTROL FACILITY. OBTAIN APPROVAL FROM THE CHIEF OF THE RIGHT-OF-WAY BUREAU PRIOR TO ADDING, DELETING OR RELOCATING ANY APPROACHES.

SKEW DIAGRAM



NOTES

AS-BUILTS

FOR HORIZONTAL ALIGNMENT AND STATIONING, REFER TO THE FOLLOWING "AS-BUILT" PROJECT(S):
UPN 583000 IM 90-1(184)0 TAFT WEST 2012
UPN 876900 IM 90-1(216)0 TAFT WEST 2015

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 - 1/2" AGG.	= 5.8% 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 - TACK (CONCRETE SURFACES)	= 0.10 GAL. PER SQ. YARD (UNDILUTED)
EMULSIFIED ASPHALT - FOG SEAL (S & C)	= 0.075 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

CONCRETE BARRIER RAIL

EXISTING 3-LOOP STANDARD CONCRETE BARRIER SHALL BE REUSED ONSITE IF IN GOOD CONDITION AND AS APPROVED BY THE PROJECT MANAGER. EXISTING CONCRETE BARRIER WILL BE SORTED ONSITE. BARRIER TO BE REUSED WILL BE TRANSPORTED TO LOCATIONS SPECIFIED BY THE PROJECT MANAGER.

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

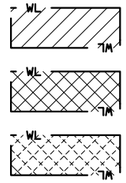
(GEOTECHNICAL BORING)

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

TEMPORARY WETLAND IMPACT AREAS

SHEET NO.
RD-2

TABLE OF CONTENTS & NOTES

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
CHECKED BY	LFISCHER	6/29/23	
REVIEWED BY	SMARSHALL	6/29/23	
DESIGNED BY	BJOHNSON	6/29/23	

MONTANA Department of Transportation

ROAD PLANS

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CENTERLINE COORDINATE TABLE - I-90 UNDIVIDED BEGINNING

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
288+43.00	POT	1219452.461	449462.706	BEGIN PROJECT CONNECTION
289+00.00	POT	1219437.068	449517.588	BEGIN PROJECT, BEGIN UNDIVIDED RECON.
289+93.45	POT	1219411.834	449607.563	END UNDIVIDED RECON., BEG. DIVIDED RECON.

CENTERLINE COORDINATE TABLE - I-90 EASTBOUND

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
2000+00.00	POT	1219395.465	449602.973	BEG. EB RECON., END UNDIVIDED RECON.
2001+84.32	TS	1219345.690	449780.450	
2005+34.32	SC	1219239.289	450113.698	
2011+43.98	PI	1219086.544	450704.457	
2016+45.46	CS	1218520.943	450933.420	
2019+95.46	ST	1218204.543	451082.640	
2030+10.69	TS	1217271.470	451482.722	
2031+60.69	SC	1217134.001	451542.734	
2040+32.95	PI	1216331.934	451885.576	
2049+43.63	PCC	1215736.153	452623.294	
2062+89.82	PI	1214890.351	453670.599	
2076+23.80	PCC	1214309.401	454884.983	
2077+26.20	PI	1214265.211	454977.356	
2077+92.58	POC	1214243.412	455040.266	END EB RECON., BEG. UNDIVIDED RECON.
2078+28.40	PT	1214231.194	455073.940	

CENTERLINE COORDINATE TABLE - I-90 UNDIVIDED END

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
400+00.00	POT	1214526.013	454525.910	
401+25.39	TS	1214463.573	454634.642	
404+75.39	SC	1214300.263	454944.006	
405+85.34	POC	1214259.381	455046.051	END DIVIDED RECON., BEG. UNDIVIDED RECON.
411+31.90	PI	1213962.343	455507.477	
416+62.12	CS	1214239.040	456103.404	
420+12.12	ST	1214368.860	456428.246	
437+71.24	TS	1215079.342	458037.504	
442+71.24	SC	1215247.177	458507.372	
448+02.97	PI	1215496.043	458981.343	
448+64.84	POC	1215211.170	459093.257	END PROJECT, END UNDIVIDED RECON.
451+35.45	CS	1215096.556	459337.704	
456+35.45	ST	1214774.378	459718.684	
456+65.69	POT	1214753.227	459740.294	END PROJECT CONNECTION
461+35.00	POE	1214424.963	460075.689	

CENTERLINE COORDINATE TABLE - I-90 WESTBOUND

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
3000+00.00	POT	1219428.203	449612.153	BEG. WB RECON., END UNDIVIDED RECON.
3004+34.10	TS	1219310.978	450030.127	
3007+84.10	SC	1219204.648	450363.400	
3014+60.67	PI	1219033.763	451018.556	
3020+03.61	CS	1218392.439	451235.658	
3023+53.61	ST	1218067.583	451365.450	
3027+30.29	PC	1217713.062	451492.736	
3041+99.01	PI	1216330.736	451989.042	
3055+72.98	PT	1215494.225	453196.267	
3072+04.48	TS	1214565.007	454537.283	
3075+48.82	PI	1214368.886	454820.318	
3075+54.48	SC	1214376.173	454831.759	
3076+86.70	CS	1214317.708	454950.316	
3077+96.70	ST	1214275.368	455051.834	
3077+96.71	POT	1214275.365	455051.841	END WB RECON., BEG. UNDIVDED RECON.

SHEET NO.
RD-3

COORDINATE TABLES

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	DATE
CHECKED BY: LFISCHER	6/29/23
REVIEWED BY: SMARSHALL	6/29/23
DESIGNED BY: BJOHNSON	6/29/23

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MONTANA Department of Transportation

ROAD PLANS

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CENTERLINE COORDINATE TABLE - TAFT RAMP A

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
1110+00.00	POT	1215328.265	459213.594	
1110+29.21	PC	1215315.268	459239.751	
1110+81.76	POC	1215290.496	459286.089	BEG. MILL/FILL
1112+04.26	PI	1215237.378	459396.514	
1113+74.81	PT	1215105.500	459511.621	
1117+87.30	POT	1214794.734	459782.868	END MILL/FILL

CENTERLINE COORDINATE TABLE - TAFT RAMP B

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
1100+00.00	POT	1214853.537	457453.139	
1108+87.76	POT	1215228.991	458257.580	BEG. RECONST.
1109+00.00	PC	1215234.175	458268.687	
1110+67.75	POC	1215296.069	458424.496	END RECONST., BEG. MILL/FILL
1114+03.15	PI	1215446.973	458724.623	
1117+84.01	POC	1215345.340	459131.603	END MILL/FILL
1118+67.74	PT	1215327.920	459213.486	

CENTERLINE COORDINATE TABLE - TAFT RAMP C

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
1090+00.00	POT	1214866.927	457628.184	
1096+55.10	PC	1215096.580	458241.713	
1097+06.04	POC	1215112.900	458288.701	BEG. RECONST.
1097+96.03	POC	1215136.919	458376.632	END RECONST., BEG. MILL/FILL
1100+47.64	PI	1215234.188	458609.341	
1104+05.90	PT	1215094.986	458976.369	
1104+68.78	POT	1215072.688	459035.161	END MILL/FILL
1105+38.91	POT	1215047.818	459100.735	

CENTERLINE COORDINATE TABLE - TAFT RAMP D

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
1120+00.00	POT	1215046.863	459100.350	
1120+61.89	POT	1215023.758	459157.765	BEGIN MILL/FILL
1122+86.73	PC	1214939.819	459366.347	
1124+82.80	PI	1214866.619	459548.245	
1125+48.45	POC	1214812.798	459594.391	END MILL/FILL
1126+74.34	PT	1214732.301	459691.086	
1131+47.01	POT	1214408.506	460035.427	

CENTERLINE COORDINATE TABLE - TAFT CROSS ROAD

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
1900+00.00	POT	1214973.253	459070.728	
1900+79.35	POT	1215046.863	459100.350	RAMP D ALIGNMENT INTERSECTION
1900+80.38	POT	1215047.818	459100.735	RAMP C ALIGNMENT INTERSECTION
1903+82.32	POT	1215327.927	459213.458	RAMP B ALIGNMENT INTERSECTION
1903+82.68	POT	1215328.265	459213.594	RAMP A ALIGNMENT INTERSECTION

CENTERLINE COORDINATE TABLE - REST AREA WB ON RAMP

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
1061+14.57	PC	1214873.397	454208.324	
1061+18.11	POC	1214874.788	454205.073	BEGIN PAVE RECONSTRUCTION
1061+58.11	POC	1214890.935	454168.477	END PAVE RECONSTRUCTION
1062+89.57	PI	1214942.065	454047.359	

CENTERLINE COORDINATE TABLE - REST AREA WB OFF RAMP

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
1087+57.18	PI	1214219.712	455559.199	
1088+20.68	POC	1214241.270	455497.003	BEGIN PAVE RECONSTRUCTION
1088+90.68	POC	1214256.768	455428.750	END PAVE RECONSTRUCTION
1089+13.19	CS	1214262.661	455407.030	

CENTERLINE COORDINATE TABLE - REST AREA EB ON RAMP

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
1070+00.00	PC	1214503.802	454228.142	
1071+40.49	POC	1214480.900	454366.695	BEGIN PAVE RECONSTRUCTION
1071+80.50	POC	1214471.885	454405.658	END PAVE RECONSTRUCTION
1072+38.87	PI	1214476.549	454465.455	

CENTERLINE COORDINATE TABLE - REST AREA EB OFF RAMP

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
1050+00.00	PT	1215570.552	452806.924	BEGIN EB OFF RAMP
1053+04.32	POT	1215364.982	453031.330	BEGIN PAVE RECONSTRUCTION
1054+14.33	POT	1215290.679	453112.441	END PAVE RECONSTRUCTION
1054+86.35	PC	1215242.029	453165.549	END EB OFF RAMP

SHEET NO.
RD-4

RAMP COORDINATE TABLES

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

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MONTANA Department of Transportation

ROAD PLANS

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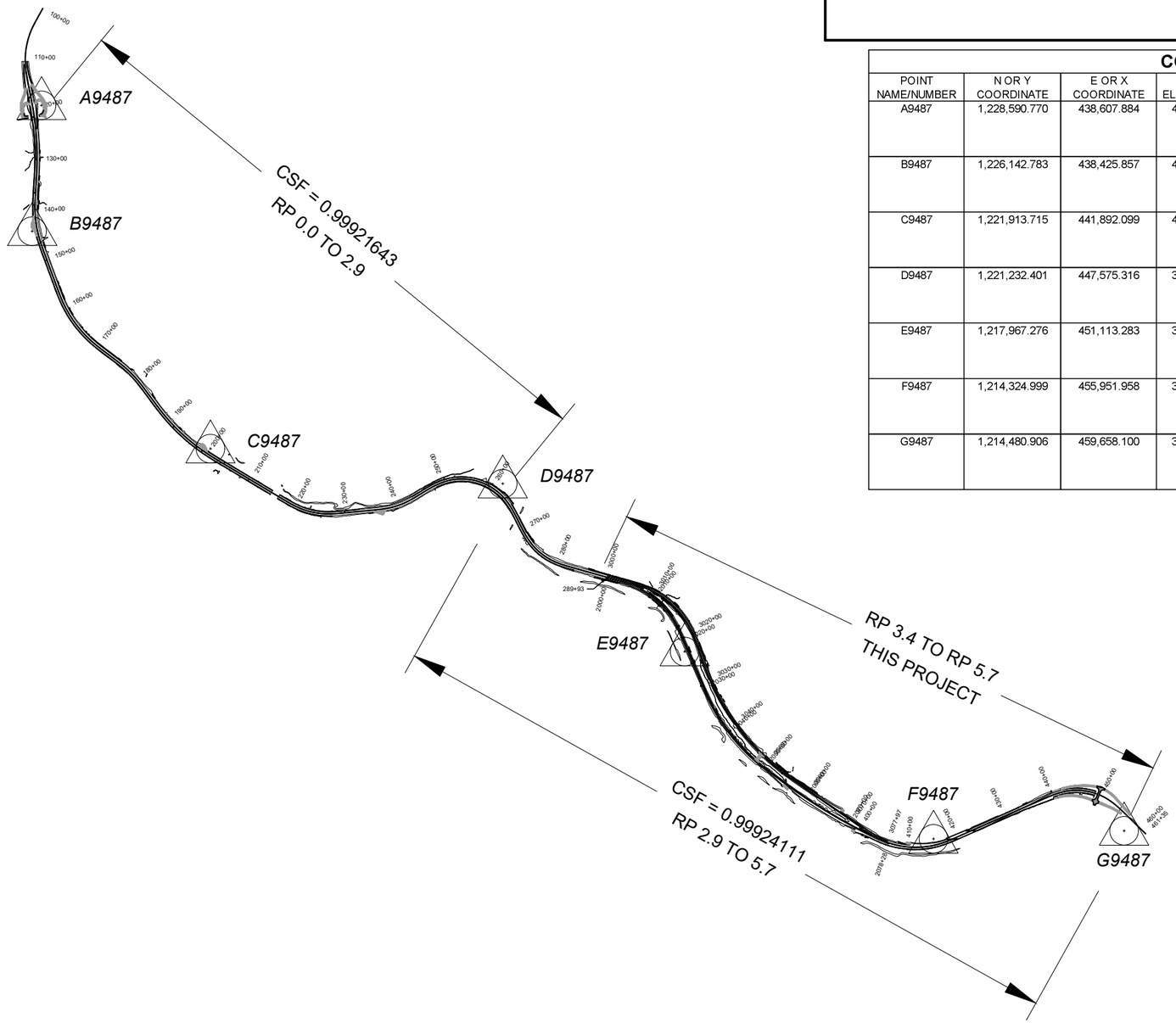
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CONTROL DIAGRAM

SCALE: 1" = 2,500'

NOTE:
HORIZONTAL UNITS ARE NAD83(2011) INTERNATIONAL FEET VALUES
ELEVATION UNITS ARE NAVD88 U.S. SURVEY FEET VALUES

THE PROJECT USES TWO COMBINATION SCALE FACTORS (CSF) OF 0.99921643 BASED ON A MEAN OF THE INDIVIDUAL CSF OF MARKS A9487 THRU D9487 AND 0.99924111 BASED ON A MEAN OF THE INDIVIDUAL CSF OF MARKS D9487 THRU G9487. ELEVATION FOR PROJECT CONTROL ARE BASED ON CLOSED LEVEL LOOPS FROM S351 TO A9487, U351 TO C9487, AND D351 TO G9487. REMAINING ELEVATIONS FOR PROJECT CONTROL ARE GPS DERIVED.



LEVEL DATA

BEARING SOURCE
GRID -- MONTANA COORDINATE SYSTEM NAD 83-2011

LEVEL DATUM SOURCE
NAVD 88 GNSS DERIVED ELEVATIONS USING GEOID B9487, D9487, E9487 AND F9487 AND HOLDING BMS S351, U351 AND D351

CONTROL DIAGRAM POINTS

POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
A9487	1,228,590.770	438,607.884	4,686.35	A9487 SET 3-1/4" MDT ALUMINUM CONTROL CAP STAMPED "A9487 2018" ON A 3/4"x 30" REBAR ENCASED IN A 12"x 48" CONCRETE CYLINDER, AT MP 0.2, 170' EAST OF THE WESTBOUND PTW OF INTERSTATE 90, 150' SOUTHEAST OF A SIGN AND 0.5' WEST OF A WITNESS POST.
B9487	1,226,142.783	438,425.857	4,531.97	B9487 SET 3-1/4" MDT ALUMINUM CONTROL CAP STAMPED "B9487 2018" ON A 3/4"x 30" REBAR ENCASED IN A 12"x 48" CONCRETE CYLINDER, AT MP 0.6, 88' WEST OF THE EASTBOUND PTW OF INTERSTATE 90, 40' WEST OF A JERSEY WALL AND 0.5' EAST OF A WITNESS POST.
C9487	1,221,913.715	441,892.099	4,191.57	C9487 SET 3-1/4" MDT ALUMINUM CONTROL CAP STAMPED "C9487 2018" ON A 3/4"x 30" REBAR ENCASED IN A 12"x 48" CONCRETE CYLINDER, AT MP 1.7, 100' EAST OF THE WESTBOUND PTW OF INTERSTATE 90, 120' NORTH OF A GUARDRAIL AND 0.5' WEST OF A WITNESS POST.
D9487	1,221,232.401	447,575.316	3,955.76	D9487 SET 3-1/4" MDT ALUMINUM CONTROL CAP STAMPED "D9487 2018" ON A 3/4"x 30" REBAR ENCASED IN A 12"x 48" CONCRETE CYLINDER, AT MP 2.9, 160' EAST OF THE WESTBOUND PTW OF INTERSTATE 90, 240' EAST OF A GUARDRAIL AND 0.5' WEST OF A WITNESS POST.
E9487	1,217,967.276	451,113.283	3,790.18	E9487 SET 3-1/4" MDT ALUMINUM CONTROL CAP STAMPED "E9487 2018" ON A 3/4"x 30" REBAR ENCASED IN A 12"x 48" CONCRETE CYLINDER, AT MP 3.8, 70' WEST OF THE EASTBOUND PTW OF INTERSTATE 90, 40' WEST OF A SIGN AND 0.5' EAST OF A WITNESS POST.
F9487	1,214,324.999	455,951.958	3,709.63	F9487 SET 3-1/4" MDT ALUMINUM CONTROL CAP STAMPED "F9487 2018" ON A 3/4"x 30" REBAR ENCASED IN A 12"x 48" CONCRETE CYLINDER, AT MP 5.0, 95' NORTH OF THE WESTBOUND PTW OF INTERSTATE 90, 115' NORTHEAST OF A GUARDRAIL AND 0.5' SOUTH OF A WITNESS POST.
G9487	1,214,480.906	459,658.100	3,646.08	G9487 SET 3-1/4" MDT ALUMINUM CONTROL CAP STAMPED "G9487 2018" ON A 3/4"x 30" REBAR ENCASED IN A 12"x 48" CONCRETE CYLINDER, AT MP 5.8, 250' SOUTH OF THE EASTBOUND PTW OF INTERSTATE 90, 900' SOUTHEAST OF A MDT STORAGE STRUCTURE AND 0.5' NORTH OF A WITNESS POST.

SHEET NO.
RD-5

CONTROL DIAGRAM & LEVEL DATA

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

9487000RDTRVZ01.DWG

MONTANA
Department of Transportation

ROAD PLANS

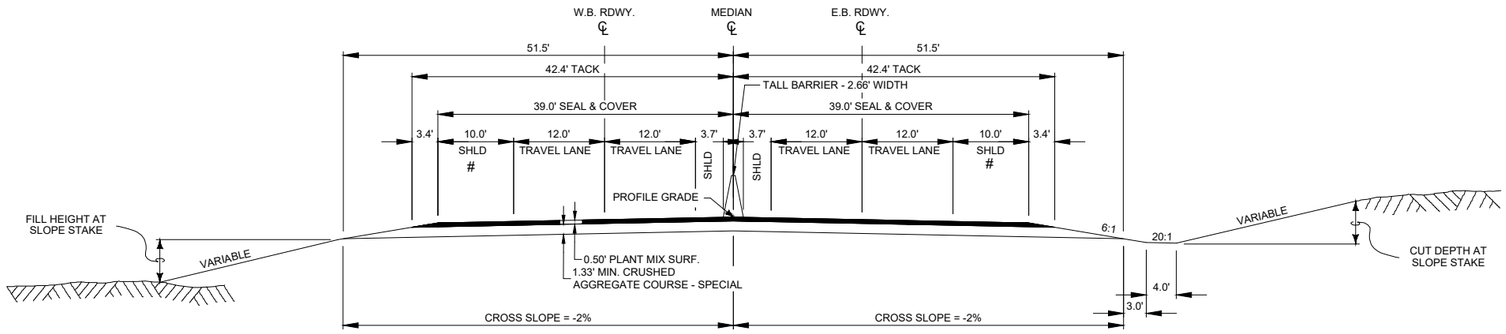
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AWARD COPY

TYPICAL SECTION NO. 1

INTERSTATE 90 - CONNECTION

288+43.00			ONLY - BEG. PROJECT CONNECTION
288+43.00	TO	288+50.00	TYP. NO. 1, THEN TYP. NO. 2



WB QUANTITIES							
UNIT	AGGREGATE				UNIT	BITUMINOUS	
	COVER	PLANT MIX	CR. AGG. COURSE	SHOULDER GRAVEL		SEAL	TACK
AREA square feet		20.35	62.44		square yards PER STATION		1413
cubic yards PER STATION		75.4	231.3		tons PER STATION		
tons PER STATION		145.3			gallons PER STATION	0.77	71
square yards PER STATION	433						

* BASED ON 3 APPLICATIONS

EB QUANTITIES							
UNIT	AGGREGATE				UNIT	BITUMINOUS	
	COVER	PLANT MIX	CR. AGG. COURSE	SHOULDER GRAVEL		SEAL	TACK
AREA square feet		20.35	62.44		square yards PER STATION		1413
cubic yards PER STATION		75.4	231.3		tons PER STATION		
tons PER STATION		145.3			gallons PER STATION	0.77	71
square yards PER STATION	433						

* BASED ON 3 APPLICATIONS

* FILL SLOPES	
0' - 10'	6:1
10' - 20'	4:1
20' - 30'	3:1
OVER 30'	2:1

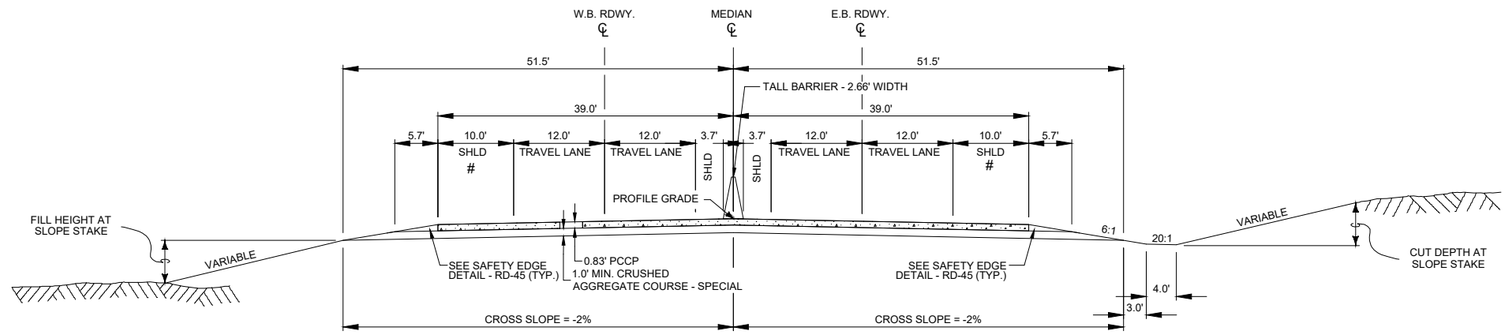
* BACK SLOPES	
0' - 5'	5:1
5' - 10'	4:1
10' - 15'	3:1
15' - 20'	2:1
OVER 20'	2:1

*SEE CROSS SECTIONS FOR DEVIATIONS

TYPICAL SECTION NO. 2

INTERSTATE 90 - UNDIVIDED

288+95.00	TO	288+95.00	TYP. NO. 2 - THEN TYP. 3 & 9
422+47.56 (B.E.)	TO	433+15.16	TYP. NO. 2
433+15.16	TO	433+80.20	TRANS. TYP. NO. 2 TO TYP. NO. 19



WB QUANTITIES				EB QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.	UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'		CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	48.10	1.80		AREA square feet	48.10	1.80	
cubic yards PER STATION	178.1	6.7		cubic yards PER STATION	178.1	6.7	
square yards PER STATION			433.3	square yards PER STATION			433.3

\# WHERE CONCRETE BARRIER IS PROPOSED ON THE SHOULDER, USE CONCRETE BARRIER RAIL PAVEMENT SECTION. SEE SUMMARY FRAMES AND SHEET RD-45 FOR ADDITIONAL INFORMATION.

SEE RD-51 FOR JOINT LOCATIONS

SHEET NO. RD-6

TYPICAL SECTIONS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

9487000RDTYPZ01.DWG

MONTANA Department of Transportation

ROAD PLANS

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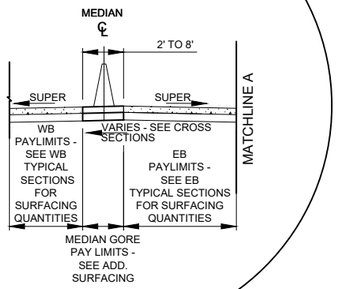
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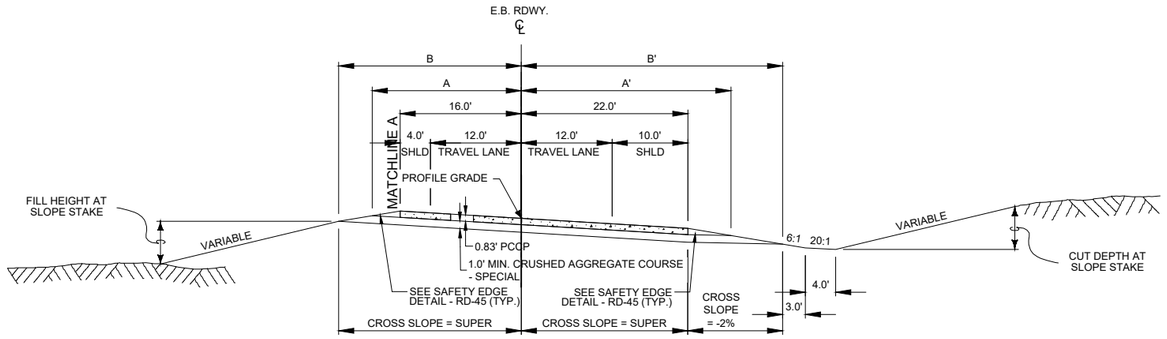
TYPICAL SECTION NO. 3

INTERSTATE 90 - DIVIDED - EASTBOUND

#	2000+00.00	TO	2003+59.32	(2% RT.)
#	2003+59.32	TO	2005+34.32	TRANS. 2% RT. TO 6% RT.
	2005+34.32	TO	2016+45.46	(6% RT.)
	2016+45.46	TO	2019+95.46	TRANS. TYP. NO. 3 TO TYP. NO. 4
	2031+60.69	TO	2049+22.03	(3% LT.)
	2049+22.03	TO	2050+42.03	TRANS. TYP. NO. 3 TO TYP. NO. 4

STA. 2000+00.00 TO 2004+58.00 - TRANSITION FROM UNDIVIDED TO DIVIDED MEDIAN AS SHOWN IN CROSS SECTIONS & MEDIAN GORE DETAILS





FOR QUANTITIES SEE TYPICAL NO. 4
SEE SUPERELEVATION DIAGRAMS FOR ADDITIONAL INFORMATION

SUPER %	WIDTHS (ft)								
	A	B	C	D	A'	B'	C'	D'	E'
2%	48.1	60.3			37.7	43.5			
3%	47.9	59.8			37.7	43.5			
6%	47.4	58.6			37.7	43.5			

REVERSE DIMENSIONS FOR CURVES LT.

SEE RD-51 FOR JOINT LOCATIONS

* FILL SLOPES	
0' - 10'	6:1
10' - 20'	4:1
20' - 30'	3:1
OVER 30'	2:1

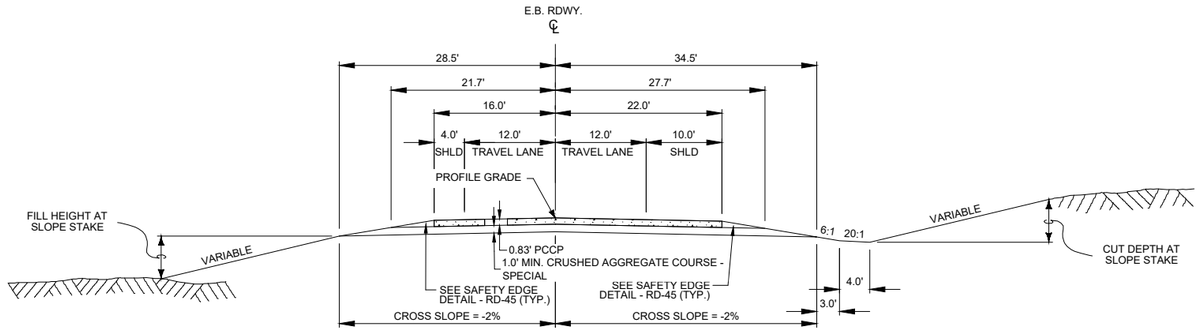
* BACK SLOPES	
0' - 5'	5:1
5' - 10'	4:1
10' - 15'	3:1
15' - 20'	2:1
OVER 20'	2:1

*SEE CROSS SECTIONS FOR DEVIATIONS

TYPICAL SECTION NO. 4

INTERSTATE 90 - DIVIDED - EASTBOUND

2019+95.46	TO	2030+10.69	TYP. NO. 4
2030+10.69	TO	2031+60.69	TRANS. TYP. NO. 4 TO TYP. NO. 3
2050+42.03	TO	2051+90.46	TYP. NO. 4
2051+90.46	TO	2054+92.64	TRANS. TYP. NO. 4 TO TYP. NO. 5
2054+93.01	TO	2056+20.98	TYP. NO. 4
2056+20.98	TO	2059+42.25	TRANS TYP. NO. 4 TO TYP. NO. 6
2071+20.01			ONLY
2071+20.01	TO	2071+24.33	TRANS TYP. NO. 4 TO TYP. NO. 7



QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	56.20	3.60	
cubic yards PER STATION	208.1	13.3	
square yards PER STATION			422.2

SEE RD-51 FOR JOINT LOCATIONS

SHEET NO.
RD-7

TYPICAL SECTIONS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

9487000RDTYPZ01.DWG

MONTANA Department of Transportation

ROAD PLANS

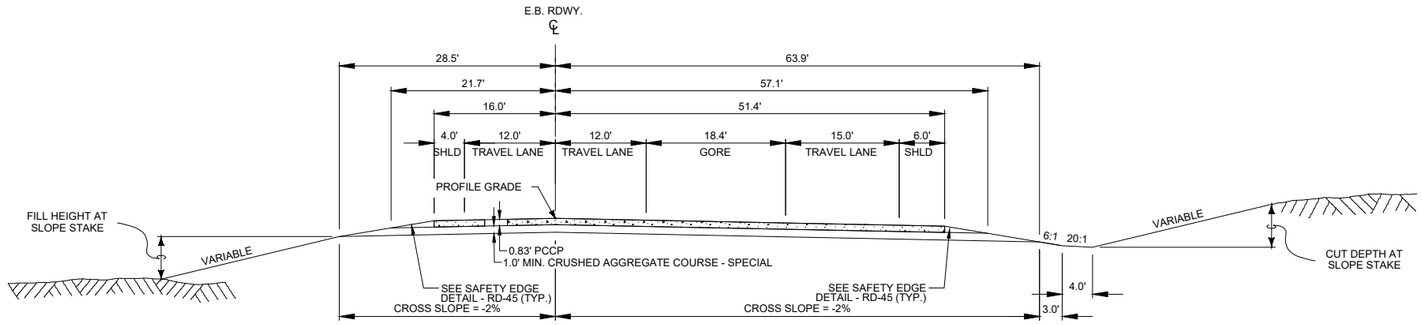
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TYPICAL SECTION NO. 5

INTERSTATE 90 - DIVIDED - EASTBOUND

2054+92.64 ONLY
2054+92.64 TO 2054+93.01 TRANS. TYP. NO. 5 TO TYP. NO. 4



QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	85.60	3.60	
cubic yards PER STATION	317.0	13.3	
square yards PER STATION			748.9

SEE RD-51 FOR JOINT LOCATIONS

* FILL SLOPES	
0' - 10'	6:1
10' - 20'	4:1
20' - 30'	3:1
OVER 30'	2:1

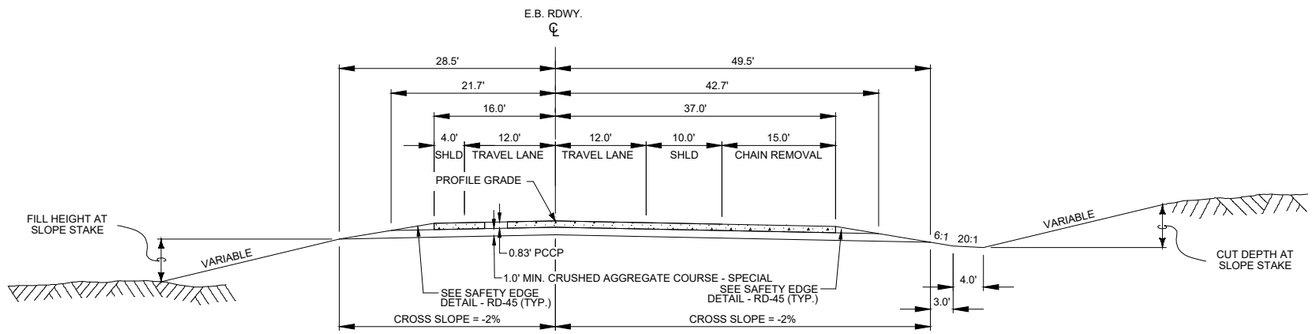
* BACK SLOPES	
0' - 5'	5:1
5' - 10'	4:1
10' - 15'	3:1
15' - 20'	2:1
OVER 20'	2:1

*SEE CROSS SECTIONS FOR DEVIATIONS

TYPICAL SECTION NO. 6

INTERSTATE 90 - DIVIDED - EASTBOUND

2059+42.25 TO 2068+75.59 TYP. NO. 6
2068+75.59 TO 2071+20.01 TRANS. TYP. NO. 6 TO TYP. NO. 4



QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	71.20	3.60	
cubic yards PER STATION	263.7	13.3	
square yards PER STATION			588.9

SEE RD-51 FOR JOINT LOCATIONS

SHEET NO.
RD-8

TYPICAL SECTIONS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER 6/29/23	SMARSHALL 6/29/23	BJOHNSON 6/29/23

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MONTANA Department of Transportation

ROAD PLANS

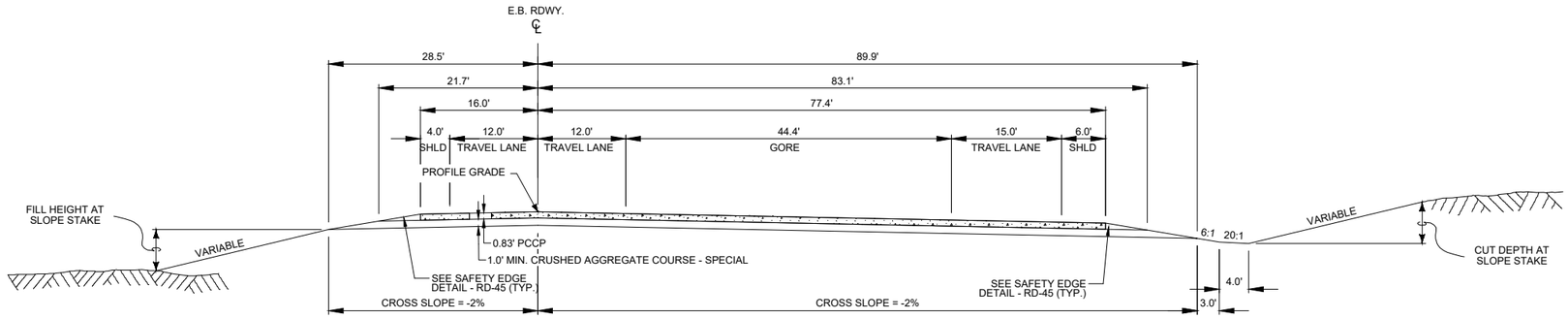
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TYPICAL SECTION NO. 7

INTERSTATE 90 - DIVIDED - EASTBOUND

2071+24.33 ONLY
2071+24.33 TO 2074+75.00 TRANS. TYP. NO. 7 TO TYP. NO. 8



QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	111.60	3.60	
cubic yards PER STATION	413.3	13.3	
square yards PER STATION			1,037.8

* FILL SLOPES	
0' - 10'	6:1
10' - 20'	4:1
20' - 30'	3:1
OVER 30'	2:1

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

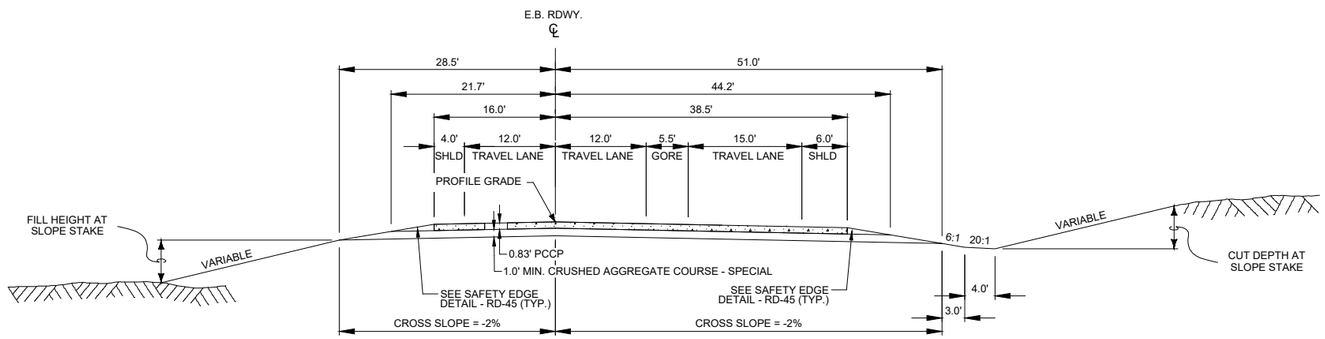
*SEE CROSS SECTIONS FOR DEVIATIONS

SEE RD-51 FOR JOINT LOCATIONS

TYPICAL SECTION NO. 8

INTERSTATE 90 - DIVIDED - EASTBOUND

2074+75.00 ONLY
2074+75.00 TO 2077+92.58 TRANS. TYP. NO. 8 TO TYP. NO. 17



QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	72.70	3.60	
cubic yards PER STATION	269.3	13.3	
square yards PER STATION			605.6

SEE SUPERELEVATION DIAGRAMS FOR TRANSITION FROM 2074+75.00 (NC) TO 2076+67.00 (6% LT).

SEE RD-51 FOR JOINT LOCATIONS

SHEET NO.
RD-9

TYPICAL SECTIONS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER 6/29/23	SMARSHALL 6/29/23	BJOHNSON 6/29/23

9487000RDTYPZ01.DWG

MONTANA Department of Transportation

ROAD PLANS

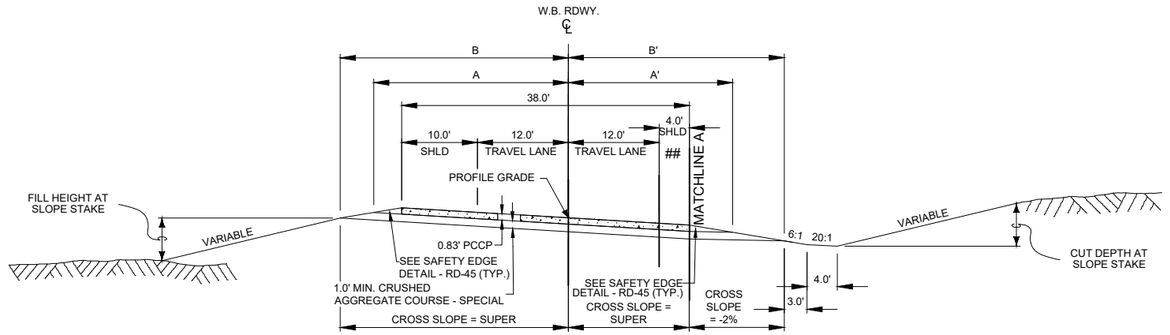
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TYPICAL SECTION NO. 9

INTERSTATE 90 - DIVIDED - WESTBOUND

3000+00.00	TO	3004+34.10	(2% LT.)
3004+34.10	TO	3007+84.10	TRANS. 2% LT. TO 6% RT.
3007+84.10	TO	3008+05.38	(6% RT.)
3008+05.38	TO	3011+65.58	TRANS. TYP. NO. 9 TO TYP. NO. 10
3031+02.19	TO	3055+51.38	(3% LT.)
3055+51.38	TO	3056+71.38	TRANS. TYP. NO. 9 TO TYP. NO. 14
^ 3075+54.48	TO	3076+86.27	(6% LT.)
^ 3076+86.27	TO	3077+96.71	TRANS. TYP. NO. 9 TO TYP. NO. 17 (6% LT.)

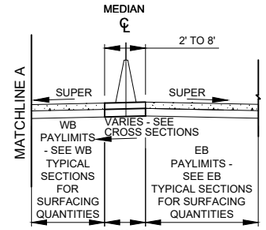


FOR QUANTITIES SEE TYPICAL NO. 14
SEE SUPERELEVATION DIAGRAMS FOR ADDITIONAL INFORMATION

SUPER %	WIDTHS (ft)								
	A	B	C	D	A'	B'	C'	D'	E'
2%	26.4	31.8			21.7	28.5			
3%	26.2	31.3			21.7	28.5			
6%	25.7	30.1			21.7	28.5			

REVERSE DIMENSIONS FOR CURVES LT.

^ STA. 3075+05.00 TO 3077+96.71 - TRANSITION FROM DIVIDED TO UNDIVIDED MEDIAN AS SHOWN IN CROSS SECTIONS



SEE RD-51 FOR JOINT LOCATIONS

WHERE CONCRETE BARRIER IS PROPOSED ON THE SHOULDER, USE CONCRETE BARRIER RAIL PAVEMENT SECTION. SEE SUMMARY FRAMES AND SHEET RD-45 FOR ADDITIONAL INFORMATION.

* FILL SLOPES	
0' - 10'	6:1
10' - 20'	4:1
20' - 30'	3:1
OVER 30'	2:1

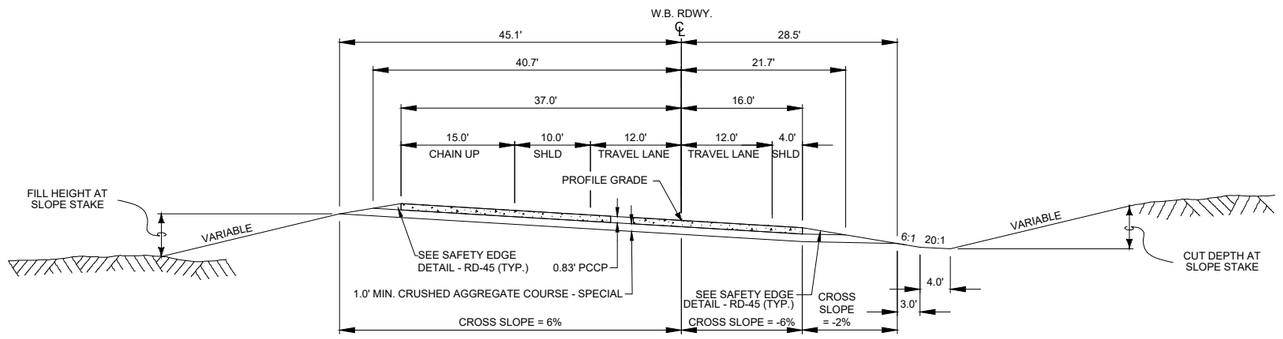
* BACK SLOPES	
0' - 5'	5:1
5' - 10'	4:1
10' - 15'	3:1
15' - 20'	2:1
OVER 20'	2:1

*SEE CROSS SECTIONS FOR DEVIATIONS

TYPICAL SECTION NO. 10

INTERSTATE 90 - DIVIDED - WESTBOUND

3011+65.58	TO	3020+03.61	TYP. NO. 10
3020+03.61	TO	3023+53.61	TRANS. TYP. NO. 10 TO TYP. NO. 11



QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	68.00	2.77	
cubic yards PER STATION	251.9	10.3	
square yards PER STATION			588.9

SEE RD-51 FOR JOINT LOCATIONS

SHEET NO.
RD-10

TYPICAL SECTIONS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	L.FISCHER	6/29/23	
REVIEWED BY	S.MARSHALL	6/29/23	
DESIGNED BY	B.JOHNSON	6/29/23	

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MONTANA
Department of Transportation

ROAD PLANS

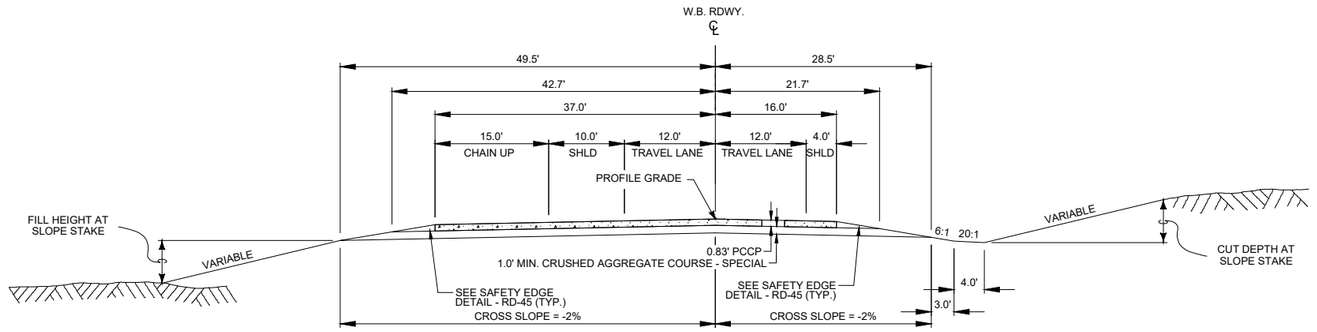
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TYPICAL SECTION NO. 11

INTERSTATE 90 - DIVIDED - WESTBOUND

3023+53.61	TO	3026+31.88	TYP. NO. 11
3026+31.88	TO	3026+95.19	TRANS. TYP. NO. 11 TO TYP. NO. 12



QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	71.20	3.60	
cubic yards PER STATION	263.7	13.3	
square yards PER STATION			588.9

SEE RD-51 FOR JOINT LOCATIONS

* FILL SLOPES	
0' - 10'	6:1
10' - 20'	4:1
20' - 30'	3:1
OVER 30'	2:1

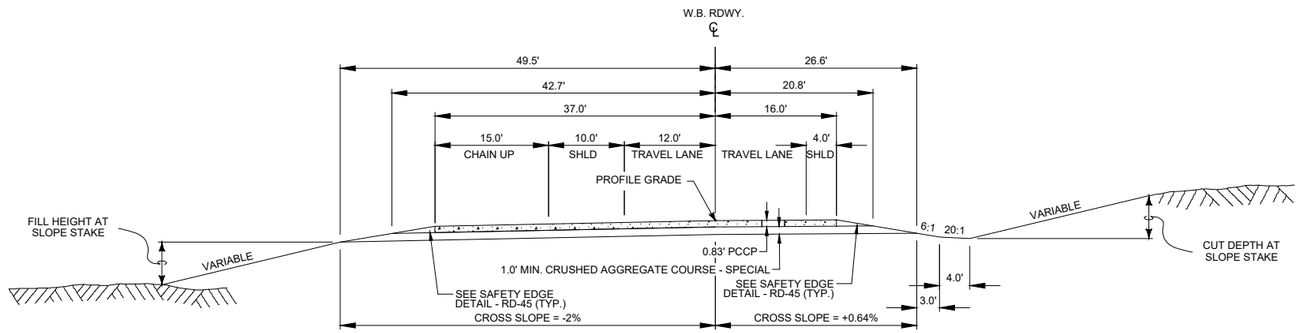
* BACK SLOPES	
0' - 5'	5:1
5' - 10'	4:1
10' - 15'	3:1
15' - 20'	2:1
OVER 20'	2:1

*SEE CROSS SECTIONS FOR DEVIATIONS

TYPICAL SECTION NO. 12

INTERSTATE 90 - DIVIDED - WESTBOUND

3026+95.19			ONLY
3026+95.19	TO	3027+51.88	TRANS. TYP. NO. 12 TO TYP. NO. 13



QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	69.80	3.23	
cubic yards PER STATION	258.5	12.0	
square yards PER STATION			588.9

SEE RD-51 FOR JOINT LOCATIONS

SHEET NO. RD-11

TYPICAL SECTIONS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER 6/29/23	SMARSHALL 6/29/23	BJOHNSON 6/29/23

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MONTANA Department of Transportation

ROAD PLANS

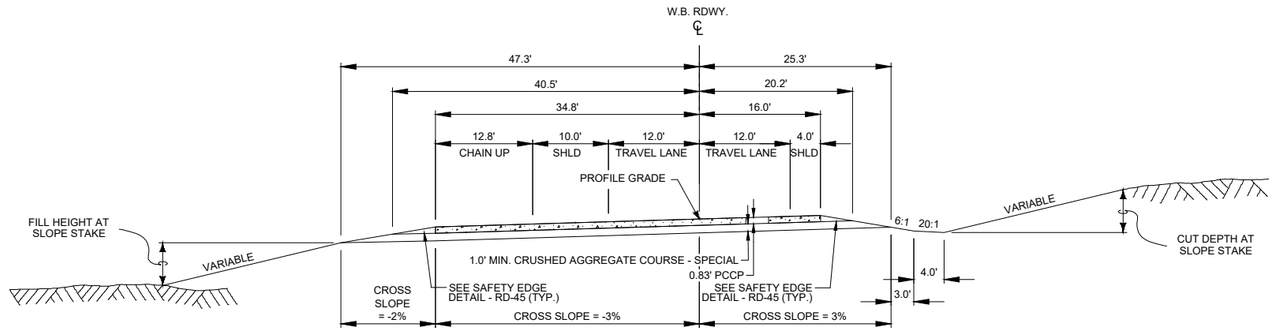
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TYPICAL SECTION NO. 13

INTERSTATE 90 - DIVIDED - WESTBOUND

3027+51.88			ONLY
3027+51.88	TO	3031+02.19	TRANS. TYP. NO. 13 TO TYP. NO. 9



QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	66.65	2.98	
cubic yards PER STATION	246.9	11.0	
square yards PER STATION			564.4

* FILL SLOPES	
0' - 10'	6:1
10' - 20'	4:1
20' - 30'	3:1
OVER 30'	2:1

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

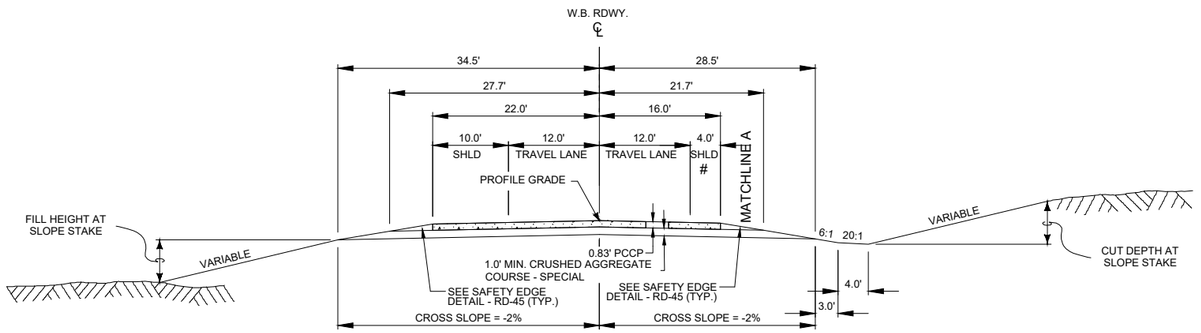
*SEE CROSS SECTIONS FOR DEVIATIONS

SEE RD-51 FOR JOINT LOCATIONS

TYPICAL SECTION NO. 14

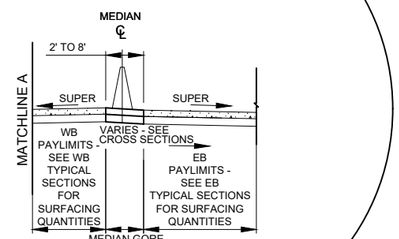
INTERSTATE 90 - DIVIDED - WESTBOUND

3056+71.38	TO	3058+49.07	TYP. NO. 14
3058+49.07	TO	3067+14.19	TRANS. TYP. NO. 14 TO TYP. NO. 15
3067+21.87	TO	3072+04.48	TYP. NO. 14
^ 3072+04.48	TO	3075+54.48	TRANS. TYP. NO. 14 TO TYP. NO. 9



QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	56.20	3.60	
cubic yards PER STATION	208.1	13.3	
square yards PER STATION			422.2

^ STA. 3075+05.00 TO 3077+96.71 - TRANSITION FROM DIVIDED TO UNDIVIDED MEDIAN AS SHOWN IN CROSS SECTIONS



SEE RD-51 FOR JOINT LOCATIONS

# indicates WHERE CONCRETE BARRIER IS PROPOSED ON THE SHOULDER, USE CONCRETE BARRIER RAIL PAVEMENT SECTION. SEE SUMMARY FRAMES AND SHEET RD-45 FOR ADDITIONAL INFORMATION.

SHEET NO. RD-12

TYPICAL SECTIONS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER 6/29/23	SMARSHALL 6/29/23	BJOHNSON 6/29/23

9487000RDTYPZ01.DWG

MONTANA Department of Transportation

ROAD PLANS

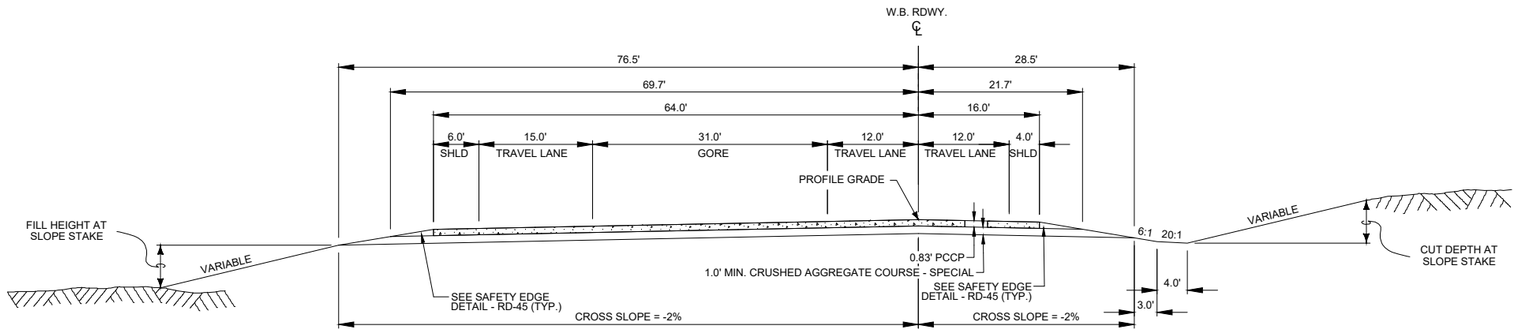
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TYPICAL SECTION NO. 15

INTERSTATE 90 - DIVIDED - WESTBOUND

3067+14.19 ONLY
3067+14.19 TO 3067+21.87 TRANS. TYP. NO. 15 TO TYP. NO. 14



QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	98.20	3.60	
cubic yards PER STATION	363.7	13.3	
square yards PER STATION			888.9

* FILL SLOPES	
0' - 10'	6:1
10' - 20'	4:1
20' - 30'	3:1
OVER 30'	2:1

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

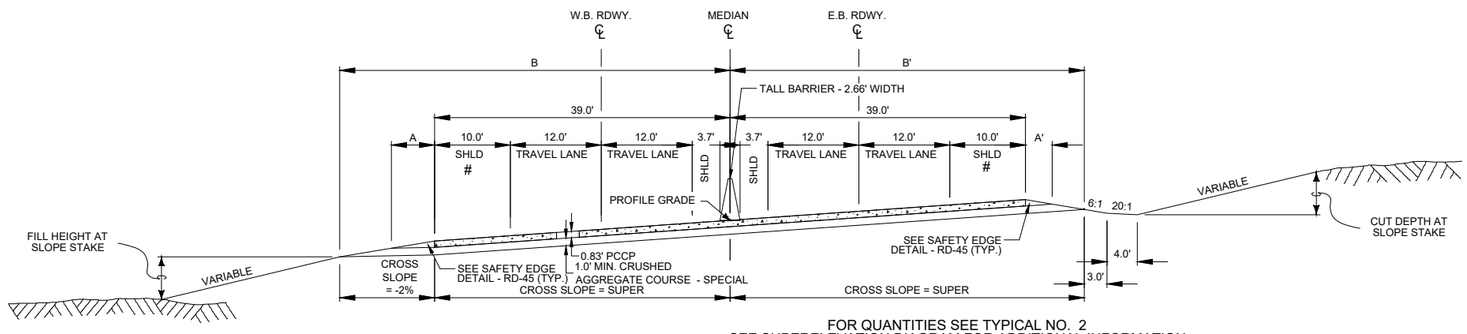
*SEE CROSS SECTIONS FOR DEVIATIONS

SEE RD-51 FOR JOINT LOCATIONS

TYPICAL SECTION NO. 16

INTERSTATE 90 - UNDIVIDED

410+18.05 TO 410+39.26 (6% LT.)
410+39.26 TO 410+42.35 TRANS. TYP. NO. 16 (6% LT.) TO TYP. NO. 18
417+01.57 TO 419+35.26 (B.E.) TRANS. 5.10% LT. TO -2.00% LT SIDE/-.024% RT SIDE. THEN TYP. NO. 2
440+31.32 TO 442+71.24 TRANS. FROM 3.20% RT. TO 8% RT.
442+71.24 TO 448+64.84 (8% RT.)
448+64.84 (B.E.) CONNECT TO PTW - END PROJECT



FOR QUANTITIES SEE TYPICAL NO. 2
SEE SUPERELEVATION DIAGRAM FOR ADDITIONAL INFORMATION

SUPER %	WIDTHS (ft)								
	A	B	C	D	A'	B'	C'	D'	E'
0.97%	5.3	50.7			4.7	49.4			
1.11%	5.3	50.8			4.7	49.3			
2.05%	5.7	51.5			4.4	48.8			
3%	5.7	51.5			4.2	48.3			
5%	5.7	51.5			3.9	47.5			
6%	5.7	51.5			3.7	47.1			
6.51%	5.7	51.5			3.6	46.9			
7%	5.7	51.5			3.5	46.8			
8%	5.7	51.5			3.4	46.4			

REVERSE DIMENSIONS FOR CURVES RT.

\# WHERE CONCRETE BARRIER IS PROPOSED ON THE SHOULDER, USE CONCRETE BARRIER RAIL PAVEMENT SECTION. SEE SUMMARY FRAMES AND SHEET RD-45 FOR ADDITIONAL INFORMATION.

SEE RD-51 FOR JOINT LOCATIONS

SHEET NO. RD-13

TYPICAL SECTIONS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER 6/29/23	SMARSHALL 6/29/23	BJOHNSON 6/29/23

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MONTANA Department of Transportation

ROAD PLANS

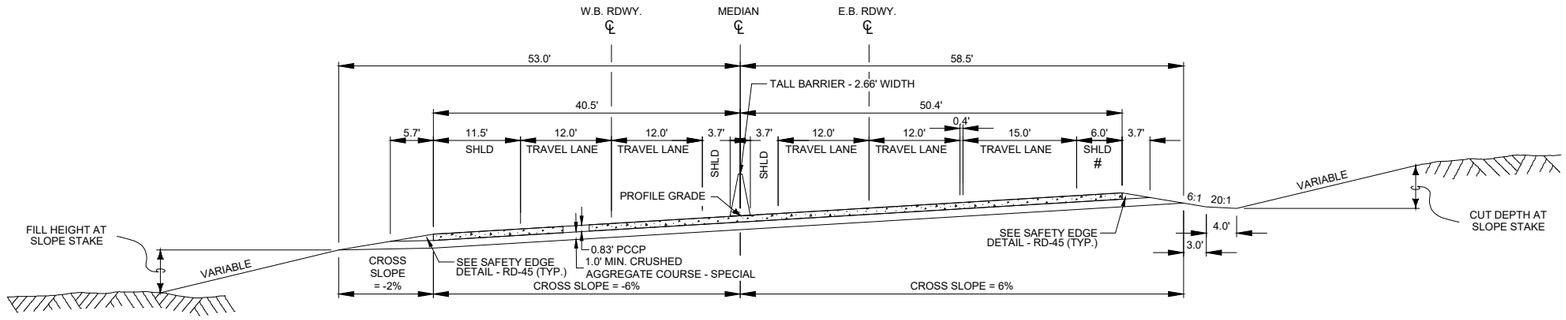
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TYPICAL SECTION NO. 17

INTERSTATE 90 - UNDIVIDED

405+85.34 ONLY
405+85.34 TO 410+18.05 TRANS. TYP. NO. 17 TO TYP. NO. 16



WB QUANTITIES				EB QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.	UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'		CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	49.60	1.80		AREA square feet	56.30	0.97	
cubic yards PER STATION	183.7	6.7		cubic yards PER STATION	208.5	3.6	
square yards PER STATION			450.0	square yards PER STATION			560

\# WHERE CONCRETE BARRIER IS PROPOSED ON THE SHOULDER, USE CONCRETE BARRIER RAIL PAVEMENT SECTION. SEE SUMMARY FRAMES AND SHEET RD-45 FOR ADDITIONAL INFORMATION.

SEE RD-51 FOR JOINT LOCATIONS

* FILL SLOPES	
0' - 10'	6:1
10' - 20'	4:1
20' - 30'	3:1
OVER 30'	2:1

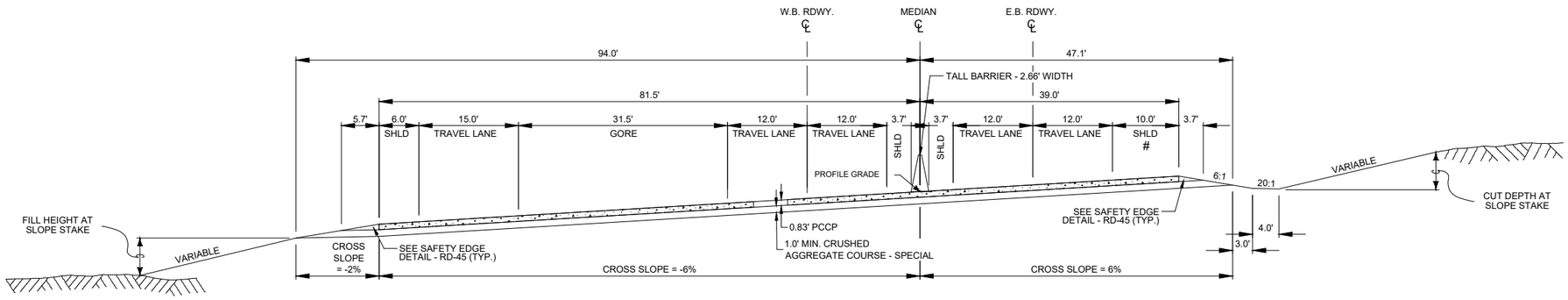
* BACK SLOPES	
0' - 5'	5:1
5' - 10'	4:1
10' - 15'	3:1
15' - 20'	2:1
OVER 20'	2:1

*SEE CROSS SECTIONS FOR DEVIATIONS

TYPICAL SECTION NO. 18

INTERSTATE 90 - UNDIVIDED

410+42.35 ONLY
410+42.35 TO 417+01.57 TRANS. TYP. NO. 18 TO TYP. NO. 16



WB QUANTITIES				EB QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.	UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'		CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	90.60	1.80		AREA square feet	44.90	0.97	
cubic yards PER STATION	335.6	6.7		cubic yards PER STATION	166.3	3.6	
square yards PER STATION			905.6	square yards PER STATION			433.3

\# WHERE CONCRETE BARRIER IS PROPOSED ON THE SHOULDER, USE CONCRETE BARRIER RAIL PAVEMENT SECTION. SEE SUMMARY FRAMES AND SHEET RD-45 FOR ADDITIONAL INFORMATION.

\## SEE SUPERELEVATION DIAGRAMS FOR TRANSITION FROM 416+62.12 (6% LT) TO 417+01.57 (5.10% LT)

SEE RD-51 FOR JOINT LOCATIONS

SHEET NO.
RD-14

TYPICAL SECTIONS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

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MONTANA Department of Transportation

ROAD PLANS

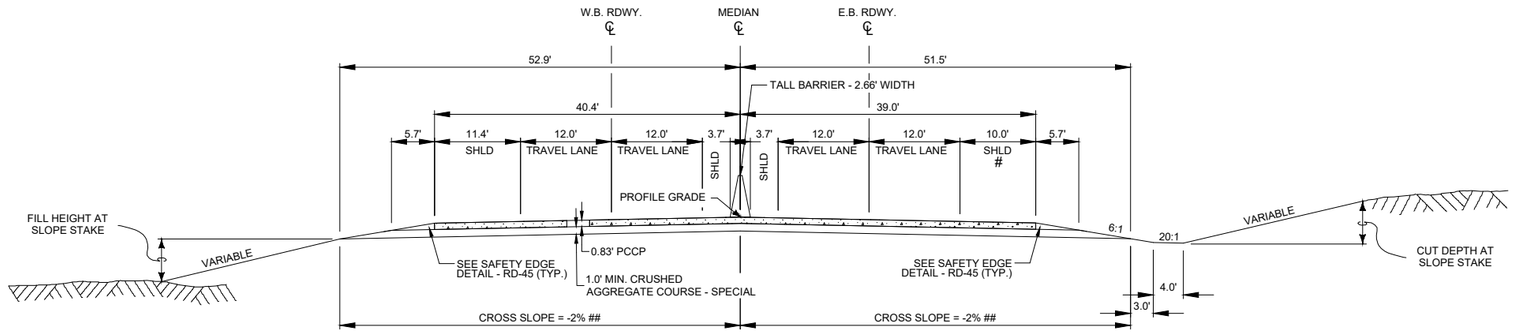
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TYPICAL SECTION NO. 19

INTERSTATE 90 - UNDIVIDED

433+80.20 ONLY
433+80.20 TO 440+18.19 TRANS. TYP. NO. 19 TO TYP. NO. 20



WB QUANTITIES				EB QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.	UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'		CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	49.50	1.80		AREA square feet	48.10	1.80	
cubic yards PER STATION	183.3	6.7		cubic yards PER STATION	178.1	6.7	
square yards PER STATION			448.9	square yards PER STATION			433.3

\# WHERE CONCRETE BARRIER IS PROPOSED ON THE SHOULDER, USE CONCRETE BARRIER RAIL PAVEMENT SECTION. SEE SUMMARY FRAMES AND SHEET RD-45 FOR ADDITIONAL INFORMATION.

SEE SUPERELEVATION DIAGRAMS FOR TRANSITION FROM 437+71.24 (NC) TO 440+18.19 (2.94% RT)

SEE RD-51 FOR JOINT LOCATIONS

* FILL SLOPES	
0' - 10'	6:1
10' - 20'	4:1
20' - 30'	3:1
OVER 30'	2:1

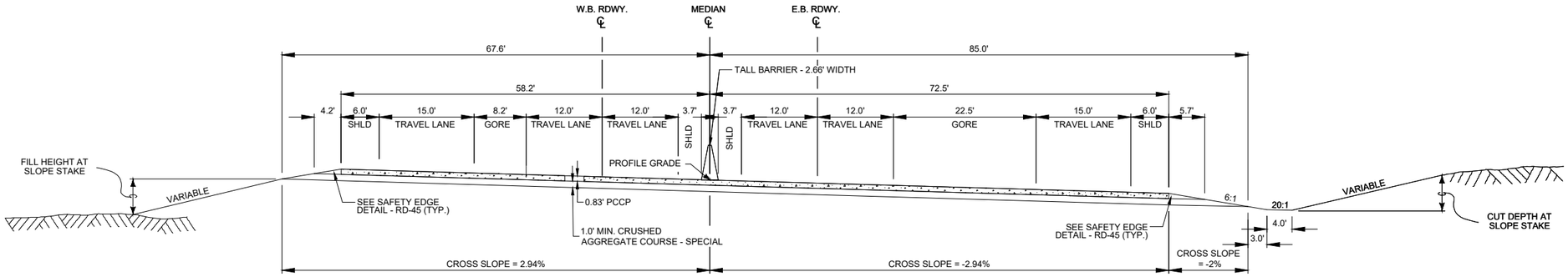
* BACK SLOPES	
0' - 5'	5:1
5' - 10'	4:1
10' - 15'	3:1
15' - 20'	2:1
OVER 20'	2:1

*SEE CROSS SECTIONS FOR DEVIATIONS

TYPICAL SECTION NO. 20

INTERSTATE 90 - UNDIVIDED

440+18.19 ONLY
440+18.19 TO 440+30.01 TRANS. TYP. NO. 20 TO TYP. NO. 21



WB QUANTITIES				EB QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.	UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'		CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	65.00	1.18		AREA square feet	81.60	1.80	
cubic yards PER STATION	240.7	4.4		cubic yards PER STATION	302.2	6.7	
square yards PER STATION			646.7	square yards PER STATION			805.6

SEE RD-51 FOR JOINT LOCATIONS

SHEET NO. RD-15

TYPICAL SECTIONS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

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MONTANA Department of Transportation

ROAD PLANS

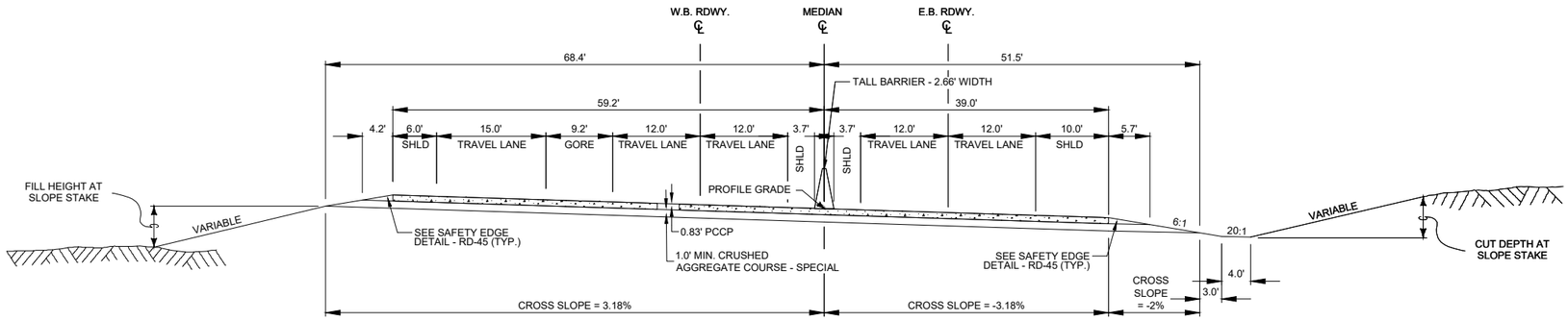
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TYPICAL SECTION NO. 21

INTERSTATE 90 - UNDIVIDED

440+30.01 ONLY
440+30.01 TO 440+31.32 TRANS. TYP. NO. 21 TO TYP. NO. 16



WB QUANTITIES				EB QUANTITIES			
UNIT	AGGREGATE		P.C.C.P.	UNIT	AGGREGATE		P.C.C.P.
	CR. AGG. COURSE	SHOULDER GRAVEL	0.83'		CR. AGG. COURSE	SHOULDER GRAVEL	0.83'
AREA square feet	65.90	1.18		AREA square feet	48.10	1.80	
cubic yards PER STATION	244.1	4.4		cubic yards PER STATION	178.1	6.7	
square yards PER STATION			657.8	square yards PER STATION			433.3

SEE RD-51 FOR JOINT LOCATIONS

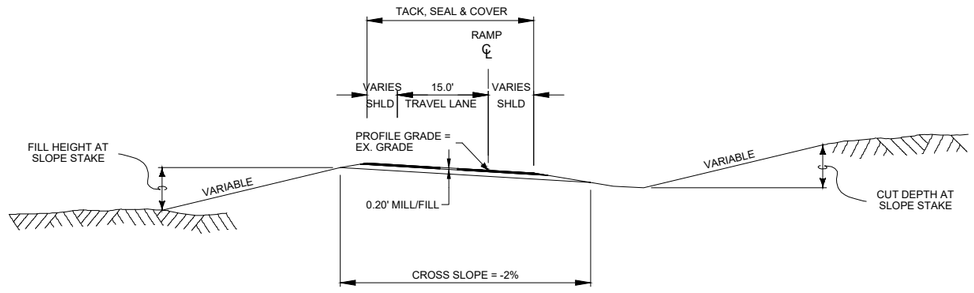
* FILL SLOPES	
0' - 10'	6:1
10' - 20'	4:1
20' - 30'	3:1
OVER 30'	2:1

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

*SEE CROSS SECTIONS FOR DEVIATIONS

TYPICAL SECTION NO. 22

INTERSTATE 90 - RAMPS



QUANTITIES TAKEN FROM PLAN VIEW - SEE RAMP DETAILS

SHEET NO.
RD-16

TYPICAL SECTIONS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

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MONTANA Department of Transportation

ROAD PLANS

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SUMMARY

GRADING

STATION	cu. yards			REMARKS
	UNCL. EXC.	EXCESS EXC.	EMB.+	
288+43.00				
	664	664	0	I-90 UNDIVIDED - BEGIN PROJECT
289+93.45				
2000+00.00				
	20,328	18,078	2,250	I-90 EASTBOUND
2077+92.58				
3000+00.00				
	19,588	18,543	1,045	I-90 WESTBOUND
3077+96.71				
405+85.34				
	18,100	17,917	183	I-90 UNDIVIDED - END PROJECT
448+64.84				
	12	-138	150	ADDITIONAL GRADING
TOTAL	**58,692**	**# 55,064**	**# 3,628**	

FOR INFORMATION ONLY

ADDITIONAL GRADING

STATION		cu. yards			REMARKS
		INCL. IN GRAD. FRAME		ADD. UNCL. EXC.	
FROM	TO	UNCL. EXC.	EMB.+		
2018+05.00			121		DITCH BLOCK LT.
3001+07.00			1		DITCH BLOCK LT.
3009+10.00			2		DITCH BLOCK LT.
3012+20.00			8		DITCH BLOCK LT.
3018+65.00			4		DITCH BLOCK LT.
3026+40.00			11		DITCH BLOCK LT.
3031+10.00			3		DITCH BLOCK LT.
430+00.00	430+30.00	12			DITCH GRADING LT.
TOTAL		**12**	**150**	**0**	

PAVEMENT MARKINGS

ITEM	UNIT	INTERIM APPLICATION #	FINAL APPLICATION	TOTAL
STRIPING - WHITE PAINT	gallon	215		215
STRIPING - YELLOW PAINT	gallon	180		180
WORDS & SYMBOLS - WHITE PAINT	gallon	10		10
STRIPING - WHITE EPOXY	gallon		230	230
STRIPING - YELLOW EPOXY	gallon		175	175
WORDS & SYMBOLS - WHITE EPOXY	gallon		5	5
STRIPING - 6 IN WHITE-HIGH PERF TAPE	linear feet			5,480
STRIPING - 6 IN BLACK-HIGH PERF TAPE	linear feet			5,480
STRIPE GROOVING	linear feet			129,440
TEMPORARY STRIPING	linear feet			15,800
FINAL SWEEP AND BROOM	course mile			0.7

BASED ON 2 APPLICATIONS.

RUMBLE STRIPS

STATION		miles		REMARKS
		RUMBLE STRIPS		
		CONTINUOUS	INTERMITTENT	
FROM	TO			
288+43.00	289+93.45	0.1	0.1	I-90 EASTBOUND
288+43.00	289+93.45	0.1	0.1	I-90 WESTBOUND
2000+00.00	2077+92.58	1.2	1.2	I-90 EASTBOUND
3000+00.00	3077+96.71	1.2	1.2	I-90 WESTBOUND
405+85.34	448+64.84	0.6	0.6	I-90 EASTBOUND
405+85.34	448+64.84	0.6	0.6	I-90 WESTBOUND
SUBTOTAL		**3.8**	**3.8**	
TOTAL		**7.6**		

PAVEMENT REMOVAL

STATION		sq. yards	sq. yards	REMARKS
		REMOVE CONCRETE PAVEMENT	REMOVE BITUMINOUS PAVEMENT	
FROM	TO			
288+43.00	289+93.45	802	1,391	I-90 UNDIVIDED RECONSTRUCTION (EB & WB)
2000+00.00	2077+92.58	20,780	47,714	I-90 EB DIVIDED RECONSTRUCTION
3000+00.00	3077+96.71	20,791	41,206	I-90 WB DIVIDED RECONSTRUCTION
405+85.34	419+35.28 BE	7,200	27,520	I-90 UNDIVIDED RECONSTRUCTION (EB & WB)
422+47.56 BE	448+64.84	13,959	15,684	I-90 UNDIVIDED RECONSTRUCTION (EB & WB)
TOTAL		**63,532**	**133,515**	

NOTE: PAVEMENT REMOVAL QUANTITIES ARE NOT INCLUDED IN GRADING QUANTITIES.

SHEET NO. RD-17

SUMMARY

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

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MONTANA Department of Transportation

ROAD PLANS

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SUMMARY

SURFACING

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	linear feet +	linear feet -	FOR	AGGREGATE sq. yards COVER TYPE 2	AGGREGATE tons COMM. MIX 1/2 IN PG 70-28	AGGREGATE cu. yards CRUSHED AGG. COURSE - SPECIAL *	AGGREGATE cu. yards SHOULDER GRAVEL	CONCRETE sq. yards PCCP 10"	CONCRETE sq. yards CONCRETE 4"	BITUMINOUS MATERIAL tons SEAL CHFRS-2P	BITUMINOUS MATERIAL gals. EMULSIFIED ASPHALT TACK	REMARKS
289+00.00	289+93.45	93.45	93.45			I-90 UNDIVIDED			333	12	810				TYP. NO. 2
2000+00.00	2051+90.46	5,190.46	5,190.46			I-90 EASTBOUND			10,801	690	21,915				TYP. NO. 3 & TYP. NO. 4
2051+90.46	2054+92.64	302.18	302.18			I-90 EASTBOUND			794	40	1,769				TRANS. TYP. NO. 4 TO TYP. NO. 5
2054+92.64	2054+93.01	0.37	0.37			I-90 EASTBOUND			1	0	2				TRANS. TYP. NO. 5 TO TYP. NO. 4
2054+93.01	2056+20.98	127.97	127.97			I-90 EASTBOUND			266	17	540				TYP. NO. 4
2056+20.98	2059+42.25	321.27	321.27			I-90 EASTBOUND			758	43	1,624				TRANS. TYP. NO. 4 TO TYP. NO. 6
2059+42.25	2068+75.59	933.34	933.34			I-90 EASTBOUND			2,461	124	5,496				TYP. NO. 6
2068+75.59	2071+20.01	244.42	244.42			I-90 EASTBOUND			577	33	1,236				TRANS. TYP. NO. 6 TO TYP. NO. 4
2071+20.01	2071+24.33	4.32	4.32			I-90 EASTBOUND			13	1	32				TRANS. TYP. NO. 4 TO TYP. NO. 7
2071+24.33	2074+75.00	350.67	350.67			I-90 EASTBOUND			1,197	47	2,881				TRANS. TYP. NO. 7 TO TYP. NO. 8
2074+75.00	2077+92.58	317.58	317.58			I-90 EASTBOUND			759	27	1,851				TRANS. TYP. NO. 8 TO TYP. NO. 17 - END DIVIDED SECTION
3000+00.00	3008+05.38	805.38	805.38			I-90 WESTBOUND			1,676	107	3,400				TYP. NO. 9
3008+05.38	3011+65.58	360.20	360.20			I-90 WESTBOUND			828	43	1,821				TRANS. TYP. NO. 9 TO TYP. NO. 10
3011+65.58	3020+03.61	838.03	838.03			I-90 WESTBOUND			2,111	86	4,935				TYP. NO. 10
3020+03.61	3023+53.61	350.00	350.00			I-90 WESTBOUND			902	41	2,061				TRANS. TYP. NO. 10 TO TYP. NO. 11
3023+53.61	3026+31.88	278.27	278.27			I-90 WESTBOUND			734	37	1,639				TYP. NO. 11
3026+31.88	3026+95.19	63.31	63.31			I-90 WESTBOUND			165	8	373				TRANS. TYP. NO. 11 TO TYP. NO. 12
3026+95.19	3027+51.88	56.69	56.69			I-90 WESTBOUND			143	7	327				TRANS. TYP. NO. 12 TO TYP. NO. 13
3027+51.88	3031+02.19	350.31	350.31			I-90 WESTBOUND			797	43	1,728				TRANS. TYP. NO. 13 TO TYP. NO. 9
3031+02.19	3058+49.07	2,746.88	2,746.88			I-90 WESTBOUND			5,716	365	11,598				TYP. NO. 9 & TYP. NO. 14
3058+49.07	3067+14.19	865.12	865.12			I-90 WESTBOUND			2,473	115	5,671				TRANS. TYP. NO. 14 TO TYP. NO. 15
3067+14.19	3067+21.87	7.68	7.68			I-90 WESTBOUND			22	1	50				TRANS. TYP. NO. 15 TO TYP. NO. 14
3067+21.87	3076+86.27	964.40	964.40			I-90 WESTBOUND			2,007	128	4,072				TYP. NO. 14 & TYP. NO. 9
3076+86.27	3077+96.71	110.44	110.44			I-90 WESTBOUND			216	11	482				TRANS. TYP. NO. 9 TO TYP. NO. 17 - END DIVIDED SECTION
405+85.34	410+18.05	432.71	432.71			I-90 UNDIVIDED			1,619	51	4,060				TRANS. TYP. NO. 17 TO TYP. NO. 16
410+18.05	410+39.26	21.21	21.21			I-90 UNDIVIDED			76	3	184				TYP. NO. 16
410+39.26	410+42.35	3.09	3.09			I-90 UNDIVIDED			13	0	34				TRANS. TYP. NO. 16 TO TYP. NO. 18
410+42.35	417+01.57	659.22	659.22			I-90 UNDIVIDED			2,829	78	7,270				TRANS. TYP. NO. 18 TO TYP. NO. 16
417+01.57	419+35.26 BE	233.69	233.69			I-90 UNDIVIDED			833	31	2,025				TYP. NO. 16
419+35.26 BE	422+47.56 BE	312.30	0.00		312.30	I-90 BRIDGE									BRIDGE
422+47.56 BE	433+15.16	1,067.60	1,067.60			I-90 UNDIVIDED			3,804	142	9,253				TYP. NO. 2
433+15.16	433+80.20	65.04	65.04			I-90 UNDIVIDED			233	9	569				TRANS. TYP. NO. 2 TO TYP. NO. 19
433+80.20	440+18.19	637.99	637.99			I-90 UNDIVIDED			2,885	78	7,447				TRANS. TYP. NO. 19 TO TYP. NO. 20
440+18.19	440+30.01	11.82	11.82			I-90 UNDIVIDED			57	1	150				TRANS. TYP. NO. 20 TO TYP. NO. 21
440+30.01	440+31.32	1.31	1.31			I-90 UNDIVIDED			5	0	13				TRANS. TYP. NO. 21 TO TYP. NO. 16
440+31.32	448+64.84	833.52	833.52			I-90 UNDIVIDED			2,970	99	7,224				TYP. NO. 16
						ADDITIONAL SURFACING	12,680	2,018	6,944	3,075	560	2,996	22.6	685	
TOTAL		**19,962.24**	**19,649.94**	**0.00**	**312.30**		**12,680**	**2,018**	**58,018**	**5,593**	**115,102**	**2,996**	**22.6**	**685**	

* SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION

SHEET NO.
RD-18

SUMMARY

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER 6/29/23	SMARSHALL 6/29/23	BJOHNSON 6/29/23

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MONTANA Department of Transportation

ROAD PLANS

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SUMMARY

ADDITIONAL SURFACING (INCLUDED IN SURFACING FRAME)

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	linear feet +	linear feet -	FOR	AGGREGATE sq. yards COVER TYPE 2	AGGREGATE tons COMM. MIX 1/2 IN PG 70-28	AGGREGATE cu. yards CRUSHED AGG. COURSE - SPECIAL *	AGGREGATE cu. yards SHOULDER GRAVEL	CONCRETE sq. yards 10" CONCRETE	CONCRETE sq. yards 4" CONCRETE	BITUMINOUS MATERIAL tons SEAL CHRFS-2P	BITUMINOUS MATERIAL gals. EMULSIFIED ASPHALT TACK	REMARKS
288+43.00	288+95.00	52.00	52.00			BEGIN PROJECT CONNECTION	450	151	241				0.8	73	TYP. NO. 1 - SEE PAVEMENT TRANSITION DETAIL
288+95.00	289+00.00	5.00	5.00			BEGIN PROJECT CONNECTION			18	4	61				TYP. NO. 2 - SEE PAVEMENT TRANSITION DETAIL
2000+00.00	2006+75.00	675.00	675.00			MEDIAN GORE TRANSITION			150		305	96			MEDIAN GORE TRANSITION - SEE DETAILS
3072+75.00	3077+96.71	521.71	521.71			MEDIAN GORE TRANSITION			116		194	102			MEDIAN GORE TRANSITION - SEE DETAILS
2047+27.74	2048+51.43	123.69	123.69			EMERGENCY TURNAROUND	804	103					1.4	40	EMERGENCY TURNAROUND - SEE DETAIL
1053+04.32	1054+14.33	110.01	110.01			EB REST AREA OFF-RAMP	334	107	148				0.6	17	PAVEMENT TRANSITION - SEE DETAILS
1071+40.49	1071+80.50	40.01	40.01			EB REST AREA ON-RAMP	117	38	52				0.2	6	PAVEMENT TRANSITION - SEE DETAILS
1061+18.11	1061+58.11	40.00	40.00			WB REST AREA ON-RAMP	110	35	49				0.2	6	PAVEMENT TRANSITION - SEE DETAILS
1088+20.68	1088+90.68	70.00	70.00			WB REST AREA OFF-RAMP	196	63	87				0.3	10	PAVEMENT TRANSITION - SEE DETAILS
1110+81.76	1117+87.30	705.54	705.54			TAFT RAMP A	1,917	246					3.4	96	MILL/FILL - SEE DETAILS
1108+87.76	1110+67.75	179.99	179.99			TAFT RAMP B	508	163	225				0.9	25	PAVEMENT TRANSITION - SEE DETAILS
1110+67.75	1117+84.01	716.26	716.26			TAFT RAMP B	1,978	254					3.5	99	MILL/FILL - SEE DETAILS
1097+06.04	1097+96.03	89.99	89.99			TAFT RAMP C	278	89	123				0.5	14	PAVEMENT TRANSITION - SEE DETAILS
1097+96.03	1104+68.78	672.75	672.75			TAFT RAMP C	1,988	255					3.6	99	MILL/FILL - SEE DETAILS
1120+61.89	1125+48.45	486.56	486.56			TAFT RAMP D	1,427	183					2.6	71	MILL/FILL - SEE DETAILS
1900+13.93	1903+86.85	372.92	372.92			TAFT CROSSROAD	2,573	331					4.6	129	MILL/FILL - SEE DETAILS
						FRONTAGE ROAD SURFACING			48						CULVERT REPLACEMENT
						GUARDRAIL WIDENING			62						
						CONCRETE BARRIER RAIL			5,625	3,071		2,798			CBR RT/LT
SUBTOTAL		~	~	~	~		**12,680**	**2,018**	**6,944**	**3,075**	**560**	**2,996**	**22.6**	**685**	

* SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION

COLD MILLING *

STATION FROM	STATION TO	sq. yards COLD MILLING VARIES	sq. yards COLD MILLING 0.20 ft	REMARKS
2047+27.74	2048+51.43		804	EMERGENCY TURNAROUND
1110+81.76	1117+87.30		2,113	TAFT RAMP A
1110+67.75	1117+84.01		2,177	TAFT RAMP B
1097+96.03	1104+68.78		2,175	TAFT RAMP C
1120+61.89	1125+48.45		1,562	TAFT RAMP D
1900+13.93	1903+86.85		2,642	TAFT INTERCHANGE CROSSROAD
SUBTOTAL		**0**	**11,473**	
TOTAL		**11,473**		

* SEE DETAILS

EDGE DRAIN

STATION FROM	STATION TO	linear feet CORRUGATED POLYETHYLENE DRAINAGE PIPE 6" TYPE SP PERFORATIONS	linear feet CORRUGATED POLYETHYLENE DRAINAGE PIPE 6" TYPE S NON-PERFORATED	square yards SUBSURFACE DRAINAGE GEOTEXTILE FILTER * HIGH SURV. CLASS B	cubic yards DRAINAGE AGGREGATE *	each CONCRETE PIPE APRON *	REMARKS
288+50	289+93	143		127	9		I-90 UNDIVIDED - LT
288+50	289+93	143		127	9		I-90 UNDIVIDED - RT
2000+05	2075+00	6,452	566	5,736	398	12	EB DIVIDED
3000+05	3077+97	7,747	561	6,888	477	14	WB DIVIDED
405+85	448+25	3,279	157	2,916	202	4	I-90 UNDIVIDED - LT
402+95	448+25	3,849	79	3,420	237	2	I-90 UNDIVIDED - RT
SUBTOTAL		**21,613**	**1,363**	**19,214**	**1,332**	**32**	
TOTAL		**22,976**		~	~	~	

* FOR INFORMATION ONLY
# SEE DETAILS

TRAFFIC CONTROL

STATION FROM	STATION TO	each RAMP CROSSOVER	each CLOSED MEDIAN CROSSOVER	miles TWO-WAY TRAFFIC	REMARKS
283+20.00	287+00.00		2		CLOSED MEDIAN CROSSOVER 1
455+00.00	458+80.00		2		CLOSED MEDIAN CROSSOVER 2
430+20.00	440+20.00	1			CLOSED MEDIAN CROSSOVER @ RP 5.7 PHASE 1
455+15.00	465+15.00	1			CLOSED MEDIAN CROSSOVER @ RP 5.9 PHASE 1
430+30.00	440+30.00	1			CLOSED MEDIAN CROSSOVER @ RP 5.7 PHASE 2
456+70.00	466+70.00	1			CLOSED MEDIAN CROSSOVER @ RP 5.9 PHASE 2
287+00.00	455+00.00			2.5	PHASE 1 - CONSTRUCT EB I-90
287+00.00	455+00.00			2.5	PHASE 2 - CONSTRUCT WB I-90
TOTAL		**4**	**4**	**5.0**	

SHEET NO.
RD-19

SUMMARY

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	DESIGNED BY	CHECKED BY	REVIEWED BY	
6/29/23	BJOHNSON	LFISCHER	SMARSHALL	6/29/23

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MONTANA Department of Transportation

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SUMMARY

TEMPORARY BARRIER

STATION		linear feet								REMARKS
		TEMPORARY BARRIER RAIL		RESET TEMPORARY BARRIER RAIL		TEMPORARY IMPACT ATTENUATOR		RESET TEMPORARY IMPACT ATTENUATOR		
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	
288+43.00	289+93.45	150.0								PHASE 1 - I-90 EASTBOUND CONSTRUCTION
288+43.00	289+93.45				150					PHASE 2 - I-90 WESTBOUND CONSTRUCTION
405+85.34	448+64.84	4,300.0								PHASE 1 - I-90 EASTBOUND CONSTRUCTION
405+85.34	448+64.84				4,300					PHASE 2 - I-90 WESTBOUND CONSTRUCTION
						2		2		CLOSED MEDIAN CROSSOVER 1
						2		2		CLOSED MEDIAN CROSSOVER 2
430+20.00	465+15.00					2				CLOSED MEDIAN RAMP CROSSOVER PHASE 1
430+30.00	466+70.00							2		CLOSED MEDIAN RAMP CROSSOVER PHASE 2
SUBTOTAL		4,450.0	0.0	0	4,450	6	0	6	0	
TOTAL		4,450.0		4,450		6		6		

GUARDRAIL

STATION		linear feet						each						REMARKS
		REMOVE GUARDRAIL		MGS GUARDRAIL		MGS INTERSECTING ROADWAY TERMINAL SECTION		MASH W-BEAM TERMINAL SECTION		BRIDGE APPROACH SECTION TYPE 1		MASH THRIE-BEAM BRIDGE APPROACH SECTION		
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	
NEW RAIL														
REMOVE RAIL														
2006+60.00	2007+35.00	75.0												I-90 EASTBOUND
3072+87.00	3073+62.00		75.0											I-90 WESTBOUND
SUBTOTAL		75.0	75.0											
TOTAL		150.0												

REVEGETATION

STATION		lump sum	cu. yards	acres			REMARKS
		REVEGE-TATION	TOPSOIL SALVAGING & PLACING	SEED AREA NO. 2	MULCH	CONDITION SEEDBED	
FROM	TO						
288+43	289+93		18	0.1	0.0		I-90 UNDIVIDED LT & RT
2000+00	2077+93		962	3.6	0.1		I-90 EASTBOUND DIVIDED LT & RT
3000+00	3077+97		962	3.6	0.1		I-90 WESTBOUND DIVIDED LT & RT
405+85	419+35 BE		528	2.0	0.5		I-90 UNDIVIDED LT & RT
422+48 BE	448+65		528	2.0	0.2		I-90 UNDIVIDED LT & RT
TOTAL		~	2,998.0	11.3	0.9	~	

SHEET NO.
RD-20

SUMMARY

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23	
REVIEWED BY	SMARSHALL	6/29/23	
DESIGNED BY	BJOHNSON	6/29/23	

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MONTANA
Department of Transportation

ROAD PLANS

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SUMMARY

MEDIAN & RAMP CROSSOVER *

STATION		each	REMARKS
FROM	TO	CROSSOVER - MEDIAN BARRIER RAIL	
283+20	287+00	2	CROSSOVER 1 - REMOVE AND REPLACE BARRIER (PHASE 1 & 2)
455+00	458+80	2	CROSSOVER 2 - REMOVE AND REPLACE BARRIER (PHASE 1 & 2)
		1	CLOSED MEDIAN RAMP CROSSOVER PHASE 1 @ RP 5.7
		1	CLOSED MEDIAN RAMP CROSSOVER PHASE 1 @ RP 5.9
		1	CLOSED MEDIAN RAMP CROSSOVER PHASE 2 @ RP 5.7
		1	CLOSED MEDIAN RAMP CROSSOVER PHASE 2 @ RP 5.9
TOTAL		8	

* SEE DETAIL

CONCRETE BARRIER RAIL

STATION *		each							REMARKS
FROM	TO	REMOVE CONCRETE BARRIER RAIL	CONCRETE BARRIER RAIL - ANCHORED	TALL CONCRETE BARRIER RAIL - ANCHORED	CONCRETE BARRIER RAIL TRANS. - ANCHORED	ONE-WAY DEPART. CONC. BARRIER SECTION	RESET CONCRETE BARRIER RAIL	IMPACT ATTENUATOR 5 BAY	
288+43.00	2006+60.00 EB	81		81				1	MEDIAN - I-90 EASTBOUND LT. - SEE DIVIDED SECTION
2074+23.00	2077+93.00	37	37					1	I-90 EASTBOUND RT. - SEE UNDIVIDED SECTION
3072+87.00	3077+97.00	51		51				1	MEDIAN - I-90 WESTBOUND RT. - SEE UNDIVIDED SECTION
405+85.00	419+35.00	135		135					MEDIAN - BEGIN UNDIVIDED SECTION - CONNECT TO BRIDGE END
405+85.00	419+85.00	140	140						RT. - CONNECT TO I-90 EASTBOUND & BRIDGE END
415+05.00	417+85.00	28	27			1			LT. - CONNECT TO BRIDGE END
422+05.00	433+25.00	112	112					1	LT. - CONNECT TO BRIDGE END
422+45.00	448+65.00	262		262					MEDIAN - CONNECT TO BRIDGE ENDS
423+90.00	440+20.00	163	163						RT. - CONNECT TO BRIDGE END AND RAMP C BARRIER
440+55.00	448+65.00	81	81					1	RT. - CONNECT TO BRIDGE END
442+25.00	448+65.00	64	63			1			LT. - CONNECT TO BRIDGE END
1097+05.00	1100+05.00						30		RT - TAFT INTERCHANGE RAMP C
TOTAL		1,154	623	529		2	30	5	

NOTE: SEE DETAILED DRAWING NO. 605-05 FOR ANCHOR DETAILS
*ADJUST TIE-IN STATIONS AS NEEDED TO MATCH EXISTING CONDITIONS OR AS DIRECTED BY PROJECT MANAGER.
**SEE DETAILS.
#SEE CONCRETE BARRIER RAIL NOTE ON SHEET 2 FOR ADDITIONAL INFORMATION.

APPROACH PIPE (INCLUDED IN CULVERT SUMMARY RECAP)

STATION	BASIC BID ITEMS					PIPE OPTIONS in		END SECTIONS		linear feet	SKEW ANGLE	CULVERT IN PL. in x ft	REMARKS
	CULVERT PIPE in	linear feet				CONCRETE - CLASS 2	CONCRETE - CLASS 3			HEIGHT OF COVER			
		LENGTH OF PIPE	REMOVE PIPE CULVERT	RELAY PIPE CULVERT	CLEAN CULVERT PIPE			LEFT	RIGHT				
2047+84	30	94	73.9			30		RACET	RACET	5.2	NONE	73.9' UNKNOWN CULVERT	LT., UNKNOWN PIPE SIZE AND MATERIAL
2069+87												24" x 69.0' CMP	RT. PROTECT-IN-PLACE
3068+80												24" x 62.2' CMP	LT. PROTECT-IN-PLACE
TOTAL	~	~	73.9	~	~	~	~	~	~	~	~	~	

SHEET NO.
RD-21

SUMMARY

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

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SUMMARY

CULVERTS (INCLUDED IN CULVERT SUMMARY RECAP)

STATION	linear feet					CLASS OR THK.	END SECTIONS		linear feet	cu. yards		sq. yards	linear feet		SKEW ANGLE	CULVERT IN PL. in x ft	REMARKS
	RCP			RCPA					REMOVE PIPE CULVERT	CONCRETE CLASS GENERAL	RIPRAP (CLASS 1)	GEOTEXT. STAB.	MINIMUM HEIGHT OF COVER	MAXIMUM HEIGHT OF COVER			
	30"	48"	54"	30"	36"		LEFT	RIGHT									
2008+84				76		CL. 3	#SSES	#SSES	104.6				0.9	2.7	9° LT	24" x 104.6' CMP	DRAIN
2011+65	82					CL. 3	FETS	FETS	63.7				2.1	3.5		24" x 63.7' CMP	DRAIN
2017+90	94					CL. 2	FETS	FETS	80.5				3.0	3.9		24" x 80.5' CMP	DRAIN
2040+58									104.6							24" x 104.6' CMP	
2055+34			212			CL. 2	FETS	FETS	201.1	3.6			1.6	4.9	38° LT	54" x 201.1' CMP	DRAIN. CUTOFF WALLS LT. & RT.
2072+87									98.8							24" x 98.8' CMP	
3000+93	178					CL. 3	FETS	FETS	175.6				1.7	4.2		24" x 175.6' CMP	DRAIN, TYPE 3 MEDIAN INLET RT. AT EB STA. 2000+93
3008+92				76		CL. 3	#SSES	#SSES	169.6				1.0	1.6	1° LT	24" x 169.6' CMP	DRAIN
3011+92				88		CL. 3	#SSES	#SSES	73.6				1.0	1.9		24" x 73.6' CMP	DRAIN
3018+40					88	CL. 3	#SSES	#SSES	75.9		26.0	47	1.0	1.8		24" x 75.9' CMP	DRAIN
3026+15	102					CL. 2	FETS	FETS	87.4				2.5	3.4		24" x 87.4' CMP	DRAIN
3030+89	88					CL. 3	FETS	FETS	71.4				1.6	3.9		24" x 71.4' CMP	DRAIN
3040+88	100					CL. 2	FETS	FETS	77.6				3.5	5.3		24" x 77.6' CMP	DRAIN
3054+12		164				CL. 2	FETS	FETS	159.5				5.7	6.6	46° LT	48" x 159.5' CMP	DRAIN
407+16									171.2							24" x 171.2' CMP	
428+71																48" x 194.3' CMP	PROTECT-IN-PLACE
439+19	206					CL. 2	FETS	EMB. PROT.[1]	212.5				7.3	8.6	1° RT	24" x 212.5' CMP	DRAIN
TOTAL	850	164	212	240	88	~	~	~	1,927.6	3.6	26.0	47	~	~	~	~	

* SEE STANDARD SPEC. SEC. 709.04
# SAFETY SLOPED END SECTION (SSES). SEE DETAIL.
[1]TRANSITION FROM CULVERT TO SPILLWAY ASSEMBLY WITH DOWN DRAIN (EMBANKMENT PROTECTOR) - SEE EMBANKMENT PROTECTOR SUMMARY FRAME AND DETAIL SHEET.
SEE SPECIAL PROVISIONS FOR WORK THAT MAY TAKE PLACE OUTSIDE OF RIGHT OF WAY.

CULVERT SUMMARY RECAP

BASIC BID	linear feet				cu. yards					each	sq. yards
	NEW PIPE (TOTAL)	RELAY PIPE CULVERT	CLEAN CULVERT PIPE	REMOVE PIPE CULVERT	FOUNDATION MATERIAL	CONCRETE CLASS GENERAL	GRANULAR BEDDING MATERIAL	RIPRAP CLASS I	FILL & ABANDON PIPE	PLUG ENDS & ABANDON PIPE	GEOTEXT. STAB.
30" RCP	944										
30" EQ. RCPA	240										
36" EQ. RCPA	88										
48" RCP	164										
54" RCP	212					3.6					
TOTAL	~	~	~	2,001.5	~	3.6	~	26.0	~	~	47

SHEET NO.
RD-22

SUMMARY

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	DATE	
CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

MONTANA Department of Transportation

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SUMMARY

STORM DRAIN STRUCTURE SCHEDULE

NAME	STATION	OFFSET	RT./LT.	each								vertical feet		REMARKS
				REMOVE DROP INLET	STORM DRAIN STRUCTURE				DROP INLET FRAME & GRATE *		CONCRETE APRON **	ADDITIONAL BARREL		
					INLET BASE	SPECIAL DESIGN ##	MANHOLE BASE							
					32"		48"	72"	TYPE 1/3	TYPE 5/6		48"	72"	
I-60	3077+02	20.28	RT.		1					1				TYPE VI
I-61	406+66	2.92	RT.		1					1				TYPE VI
I-62	407+16	2.92	RT.					1	1				5	TYPE I
I-63	407+66	2.92	RT.				1			1		2		TYPE V
I-64	409+21	2.92	RT.		1					1				TYPE VI
I-65	413+70	2.92	RT.				1			1				TYPE V
I-66	417+02	36.58	LT.			1								DOUBLE DROP INLET
I-67	418+30	2.92	RT.		1					1				TYPE VI
I-68	418+45	2.92	RT.				1			1				TYPE V
I-69	423+80	36.58	LT.			1								DOUBLE DROP INLET
I-70	424+00	36.58	RT.			1								DOUBLE DROP INLET
I-71	430+58	36.58	LT.			1								DOUBLE DROP INLET
I-72	433+78	36.58	RT.			1								DOUBLE DROP INLET
I-73	442+28	2.92	LT.				1			1				TYPE V
I-74	448+25	2.92	LT.		1					1				TYPE VI
I-75	448+25	36.58	RT.			1								DOUBLE DROP INLET
I-76	2071+78	41.89	LT.				1		1		1			TYPE I
EX.	406+74	4.47	RT.	1										EXISTING DROP INLET
TOTAL				1	5	6	5	1	2	9	1	2	5	

FUNDING - 100% MONTANA DEPARTMENT OF TRANSPORTATION.
DOUBLE DROP INLET, INCLUDES FULL STRUCTURE BARREL HEIGHT AND DOUBLE FRAME AND GRATE - SEE DETAIL SHEETS.
* BOLT ALL DROP INLETS GRATE TO FRAMES DURING INSTALLATION, INCLUDING SPECIAL DESIGN DOUBLE DROP INLETS. FRAMES AND GRATES ARE TO BE CRACK DRILLED AT THE FOUNDARY. BOLT GRATES TO FRAMES USING 1/2"-13 HEX STAINLESS STEEL CAP SCREWS WITH 1/2" STAINLESS STEEL WASHERS. APPLY MARINE GRADE ANTI-SEIZE TO BOLTS DURING INSTALLATION. SEE DETAIL SHEETS.
** SEE STORM DRAIN DETAILS.

SHEET NO.
RD-23

SUMMARY

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

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MONTANA Department of Transportation

ROAD PLANS

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SUMMARY

EMBANKMENT PROTECTORS

STATION		PIPE SECTION ##			linear feet EMBANKMENT PROTECTOR *				REMARKS
					24"		30" **		
FROM	TO	FROM	TO	NAME	LEFT	RIGHT	LEFT	RIGHT	
417+02		PI-66	OT-66	CO-66B	56				INCL. TEE BRANCH, CONNECT TO STORM DRAIN
418+45		PI-68	OT-68	CO-68B		50			INCL. TEE BRANCH, CONNECT TO STORM DRAIN
423+95	423+82	PI-70	OT-70	CO-70B		68			INCL. TEE BRANCH, CONNECT TO STORM DRAIN
433+78		PI-72	OT-72	CO-72B		116			INCL. TEE BRANCH, CONNECT TO STORM DRAIN
439+17	439+16	PI-103	OT-103	CO-103B				85	INCL. TEE BRANCH, CONNECT TO DRAINAGE CULVERT
448+26	448+30	PI-75	OT-75	CO-75B		67			INCL. TEE BRANCH, CONNECT TO STORM DRAIN
SUBTOTAL					56	301	~	85	
TOTAL					357		85 **		

SEE DETAIL SHEETS. NOTED AS "SPILLWAY" AND "SPILLWAY ASSEMBLY WITH DOWN DRAIN" IN THE DETAIL SHEETS.
SEE STORM DRAIN DETAIL SHEETS.
* USE 0.109 INCH THICK GALVANIZED STEEL PIPE WITH AN APPROVED TYPE II ALUMINIZED COATING IN ACCORDANCE WITH STANDARD SPEC. SEC. 709.12 OR 0.105 INCH THICK ALUMINUM PIPE FOR ALL EMBANKMENT PROTECTOR PIPES.
** PAID FOR AS CSP 30 IN.

MEDIAN INLETS

STATION	each		linear feet		REMARKS
	MEDIAN INLET	ADJUST MEDIAN INLET	RCP	REMOVE PIPE CULVERT	
	TYPE 3		CLASS 3 24"		
2000+93	1				45.12' RT. - SEE CULVERT WB STA. 3000+93
TOTAL	1	~	~	~	

SHEET NO. RD-24

SUMMARY

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	DESIGNED BY	CHECKED BY
6/29/23	BJOHNSON	LFISCHER
6/29/23	SMARSHALL	LFISCHER
6/29/23	BJOHNSON	LFISCHER

MONTANA Department of Transportation

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SUMMARY

STORM DRAIN PIPE #												
PIPE SECTION ###			ALLOWABLE PIPE MATERIALS*		linear feet				cu. yards	sq. yards	Linear feet	REMARKS
					STORM DRAIN PIPE ##				RIPRAP (CLASS 1)	GEOTEXTILE PERM. EROS. CNTRL. HIGH SURV. CLASS B	REMOVE STORM DRAIN	
FROM	TO	NAME	RCP	PVC	18"	24"	30"	36"				
I-60	OT-60	CO-60	X		62.0							INCL. RCP FETS
I-61	I-62	CO-61	X		50.1							
IN-62	I-62	CO-62A	X					71.4				INCL. RCP FETS
I-62	OT-62	CO-62B	X					107.1				INCL. RCP FETS
I-63	I-62	CO-63	X		50.1							
I-64	I-63	CO-64	X		155.3							
I-65	OT-65	CO-65	X		98.4				5.9	18		INCL. RCP FETS
I-66	PI-66	CO-66A	X		18.6							TRANSITION TO SPILLWAY ASSEMBLY WITH DOWN DRAIN (EMBANKMENT PROTECTOR)
I-67	I-68	CO-67	X		15.0							
I-68	PI-68	CO-68A	X		56.9							TRANSITION TO SPILLWAY ASSEMBLY WITH DOWN DRAIN (EMBANKMENT PROTECTOR)
I-69	I-70	CO-69	X		75.9							
I-70	PI-70	CO-70A	X		21.2							TRANSITION TO SPILLWAY ASSEMBLY WITH DOWN DRAIN (EMBANKMENT PROTECTOR)
I-71	OT-71	CO-71	X		31.9							INCL. RCP FETS
I-72	PI-72	CO-72A	X		18.8							TRANSITION TO SPILLWAY ASSEMBLY WITH DOWN DRAIN (EMBANKMENT PROTECTOR)
I-73	OT-73	CO-73	X		58.9							INCL. RCP FETS
I-74	I-75	CO-74	X		39.6							
I-75	PI-75	CO-75A	X		15.9							TRANSITION TO SPILLWAY ASSEMBLY WITH DOWN DRAIN (EMBANKMENT PROTECTOR)
I-76	OT-76	CO-76	X			145.1						INCL. RCP FETS
EX. INLET	EX. OUTLET										73.2	EX. 12" CMP, STA. 406+74, 4.47' RT. TO STA. 406+75, 69.80' RT.
UNKNOWN	EX. OUTLET										47.4	EX. 12" CMP, APPROX. STA. 417+97 TO STA. 417+97, 84.73' LT.
TOTAL			~	~	768.6	145.1	~	178.5	5.9	18	120.6	

FUNDING - 100% MONTANA DEPARTMENT OF TRANSPORTATION.
GRANULAR BEDDING MATERIAL INCIDENTAL TO STORM DRAIN PIPE, SEE DETAILED DRAWINGS FOR BEDDING QUANTITIES AND DETAILS.
INLET AND OUTLET FLARED END SECTIONS INCLUDED IN LENGTH OF STORM DRAIN PIPE (IN-## OR OT-##). "PI-XX" SIGNIFIES TRANSITION FROM STORM DRAIN PIPE TO SPILLWAY ASSEMBLY WITH DOWN DRAIN (EMBANKMENT PROTECTOR) - SEE EMBANKMENT PROTECTOR SUMMARY FRAME AND DETAIL SHEETS.
* RCP TO BE CLASS 3 UNLESS OTHERWISE NOTED IN THE REMARKS.

SHEET NO.
RD-25

SUMMARY

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

9487000RDSUMZ01.DWG

MONTANA
Department of Transportation

ROAD PLANS

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HYDRAULIC DATA SUMMARY *

STATION	STREAM NAME (IF NAMED)	DRAINAGE AREA (mi²)	SIZE/TYPE STRUCTURE ① ② ⑤	DESIGN FLOOD MAGNITUDE (cfs)	DESIGN FLOOD FREQUENCY (%)	DESIGN FLOOD H.W. ELEV. (ft)	BASE FLOOD (1%) MAGNITUDE (cfs)	BASE FLOOD (1%) H.W. ELEV. (ft)	OVERTOPPING FLOOD ③ ④ MAGNITUDE (cfs)	OVERTOPPING FLOOD ③ ④ APPROX. FREQUENCY (%)	OVERTOPPING FLOOD ③ ④ H.W. ELEV. (ft)	REMARKS (FLOOD OF RECORD), Qp(max), etc.) ⑥
2017+90		0.240	30" RCP	20	2	3797.31	22	3797.62	24	0.5	3797.75	OT: Ditch Block LT. @ Sta. 2018+05
3026+14		0.082	30" RCP	9	2	3784.23	13	3784.41	34	<0.5	3786.40	Qp (max), OT: Ditch Block LT. @ Sta. 3026+40
3030+89		0.023	30" RCP	4	2	3778.75	5	3778.85	12	<0.5	3779.50	Qp (max), OT: Ditch Block LT. @ Sta. 3031+10
3040+88		0.032	30" RCP	5	2	3762.95	6	3763.07	17	<0.5	3764.00	Qp (max), OT: Basin divide/ditch @ Sta. 3040+93 LT
2047+84		0.161	30" RCP	23	2	3747.86	29	3748.23	57	<0.5	3753.20	Qp (max)
3054+12		0.029	48" RCP	5	2	3736.14	6	3736.24	104	<0.5	3740.70	Qp (max), OT: Basin divide/ditch @ Sta. 3054+82 LT
2055+34		0.190	54" RCP	28	2	3734.94	36	3735.19	116	<0.5	3738.00	Qp (max), OT: Basin divide/ditch @ Sta. 2055+15 LT
3000+93		0.036	30" RCP	5	2	3826.84	7	3826.96	12	<0.5	3827.50	Qp (max), OT: Ditch Block LT. @ Sta. 3001+07
3008+92		0.093	30" RCPA	10	2	3815.73	12	3815.79	54	<0.5	3816.50	Qp (max), OT: Ditch Block LT. @ Sta. 3009+10
2008+84		0.093	30" RCPA	10	2	3812.23	12	3812.29	175	<0.5	3814.00	Qp (max), OT: Basin divide/ditch @ Sta. 189+01 LT
2011+65		0.007	30" RCPA	2	2	3806.32	3	3806.40	52	<0.5	3808.93	Qp (max), OT: Basin divide/ditch @ Sta. 2011+92 LT
3011+92		0.004	30" RCPA	1	2	3810.34	2	3810.38	20	<0.5	3812.00	Qp (max), OT: Ditch Block LT. @ Sta. 3012+20
3018+40		0.236	36" RCPA	19	2	3800.85	22	3801.09	25	0.5	3801.25	OT: Ditch Block LT. @ Sta. 3018+65
428+71	Mephisto Creek	0.538	48" CMP	32	2	3722.53	38	3722.78	191	<0.5	3731.78	Deep Fill Qp (max), OT: Basin divide/ditch @ Sta. 430+52 LT
439+19		0.055	30" RCP	7	2	3707.64	9	3707.76	41	<0.5	3710.78	Qp (max), OT: Basin divide/ditch @ Sta. 440+44 LT

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.)

② BRIDGE LENGTH SHOWN EQUALS THE WATER SURFACE WIDTH IN THE OPENING AT THE DESIGN H.W. ELEVATION MEASURED NORMAL TO FLOW.

③ OVERTOPPING IS DEFINED AS FLOW OVER THE ROAD, FLOW THROUGH A SIGNIFICANT RELIEF STRUCTURE OR FLOW OVER THE BASIN DIVIDE WHICHEVER IS LOWER.

④ FOR THOSE CROSSINGS NOTED BY Qp(max) IN THE REMARKS COLUMN OVERTOPPING DOES NOT OCCUR 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%).

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

⑥ HEADWATER EXCEPTION PROCEDURE SECTION 11.3.1.3.2 IN CHAPTER 11 OF THE HYDRAULICS MANUAL.

EXCEEDANCE PROBABILITIES

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

SHEET NO.
RD-26

HYDRAULIC DATA SUMMARY

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

9487000RDSUMZ02.DWG

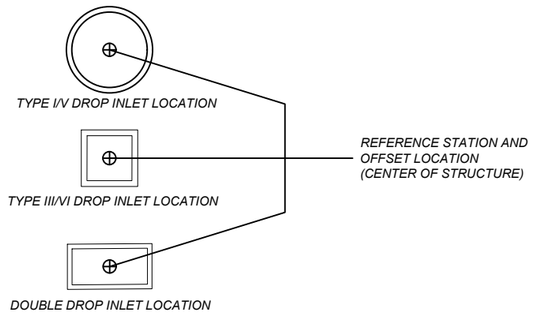
MONTANA Department of Transportation
ROAD PLANS

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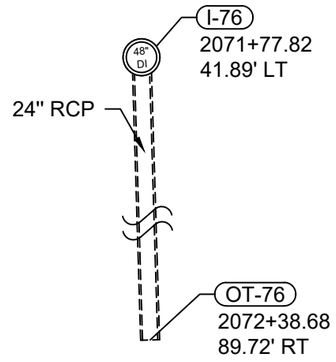
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DETAIL

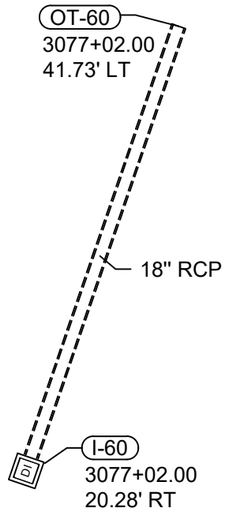
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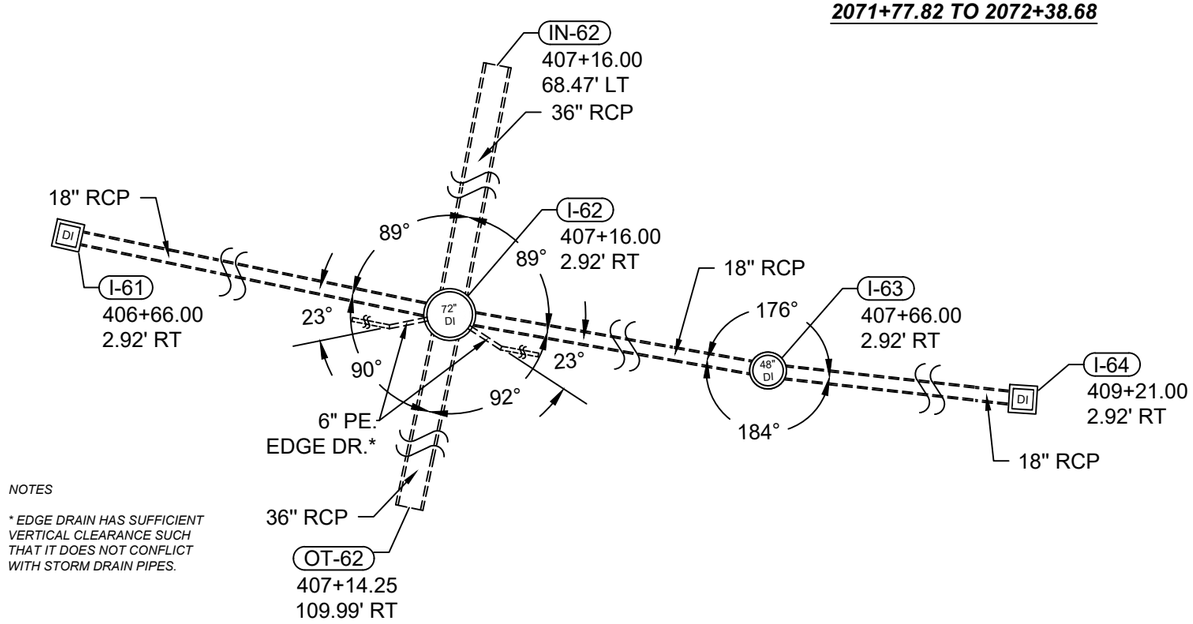
STATION AND OFFSET REFERENCE LOCATION



2071+77.82 TO 2072+38.68



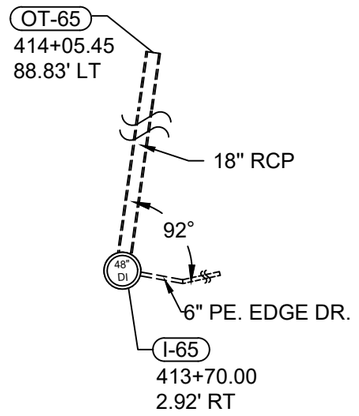
3077+02.00



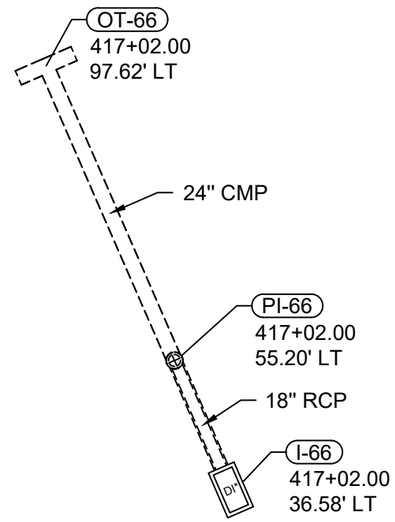
NOTES

** EDGE DRAIN HAS SUFFICIENT VERTICAL CLEARANCE SUCH THAT IT DOES NOT CONFLICT WITH STORM DRAIN PIPES.*

406+66.00 TO 409+21.00



413+70.00 TO 414+05.45



417+02.00

KEY

- 48" DI — *NEW INLET - TYPE I/V, INSIDE DIAMETER NOTED*
- DI — *NEW INLET - TYPE III/VI*
- DI* — *NEW INLET - DOUBLE DROP INLET*
- *NEW STORM DRAIN TO EMBANKMENT PROTECTION TRANSITION*
- I-X — *INLET ID*
- IN-X — *STORM DRAIN PIPE CULVERT INLET ID*
- OT-X — *OUTFALL ID*
- PI-XX — *STORM DRAIN TO EMBANKMENT PROTECTOR TRANSITION ID***

NOTES

***TRANSITION FROM RCP STORM DRAIN TO CMP SPILLWAY ASSEMBLY WITH DOWN DRAIN (EMBANKMENT PROTECTOR) - SEE DETAIL SHEETS.*

SEE STORM DRAIN PLAN/PROFILE SHEETS FOR THE STRUCTURE SIZES, LOCATIONS, AND ELEVATIONS, AND FOR PIPE LENGTHS, LOCATIONS, AND INVERT ELEVATIONS.

WHERE FETS ARE SPECIFIED FOR STORM DRAIN OUTFALLS, OUTFALL STATION AND OFFSET REFERENCE LOCATION (AND INVERT ELEVATION IN THE STORM DRAIN DETAILS) IS AT THE END OF THE FETS.

EDGE DRAIN CONNECTS TO STORM DRAIN STRUCTURES AT A CONSTANT DEPTH RELATIVE TO THE STRUCTURE GRATE AT ALL LOCATIONS - SEE EDGE DRAIN DETAIL SHEETS.

SHEET NO. RD-27

STORM DRAIN OVERVIEW DETAILS

PROJECT NAME	TAFT - WEST
COUNTY	MINERAL COUNTY
PROJECT ID	IM-NHFP 90-1(228)3
UPN	9487000
CHECKED BY	LFISCHER 6/29/23
REVIEWED BY	SMARSHAL 6/29/23
DESIGNED BY	BJOHNSON 6/29/23

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MONTANA Department of Transportation

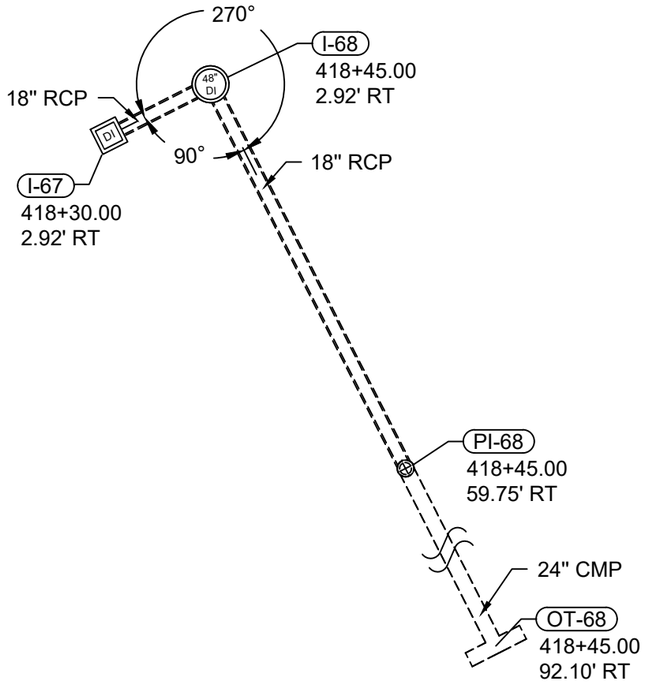
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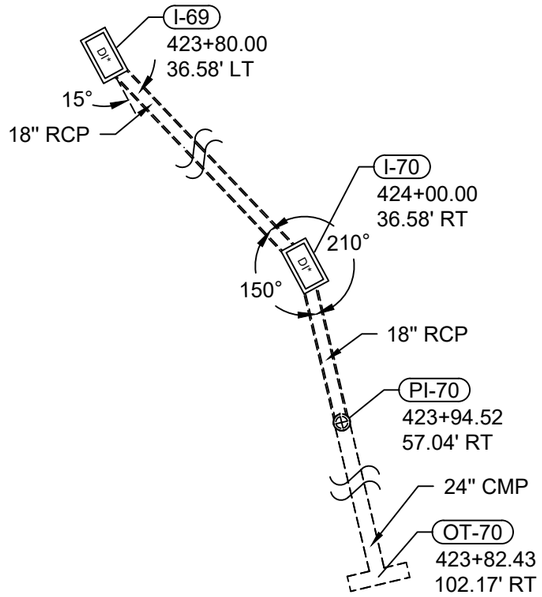
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DETAIL

NO SCALE



418+30.00 TO 418+45.00



423+80.00 TO 423+82.43

KEY

- 48" DI — *NEW INLET - TYPE I/V, INSIDE DIAMETER NOTED*
- DI — *NEW INLET - TYPE III/VI*
- DI* — *NEW INLET - DOUBLE DROP INLET*
- *NEW STORM DRAIN TO EMBANKMENT PROTECTION TRANSITION*
- I-X — *INLET ID*
- IN-X — *STORM DRAIN PIPE CULVERT INLET ID*
- OT-X — *OUTFALL ID*
- PI-XX — *STORM DRAIN TO EMBANKMENT PROTECTOR TRANSITION ID***

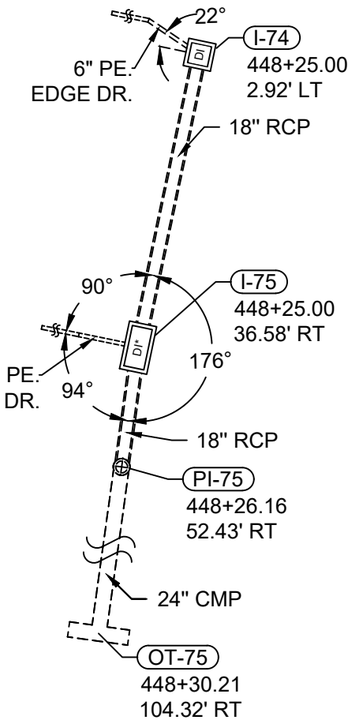
NOTES

***TRANSITION FROM RCP STORM DRAIN TO CMP SPILLWAY ASSEMBLY WITH DOWN DRAIN (EMBANKMENT PROTECTOR) - SEE DETAIL SHEETS.*

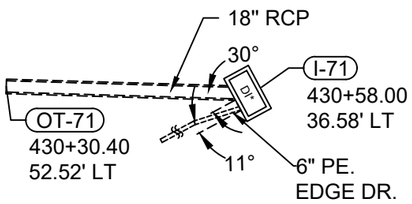
SEE STORM DRAIN PLAN/PROFILE SHEETS FOR THE STRUCTURE SIZES, LOCATIONS, AND ELEVATIONS, AND FOR PIPE LENGTHS, LOCATIONS, AND INVERT ELEVATIONS.

WHERE FETS ARE SPECIFIED FOR STORM DRAIN OUTFALLS, OUTFALL STATION AND OFFSET REFERENCE LOCATION (AND INVERT ELEVATION IN THE STORM DRAIN DETAILS) IS AT THE END OF THE FETS.

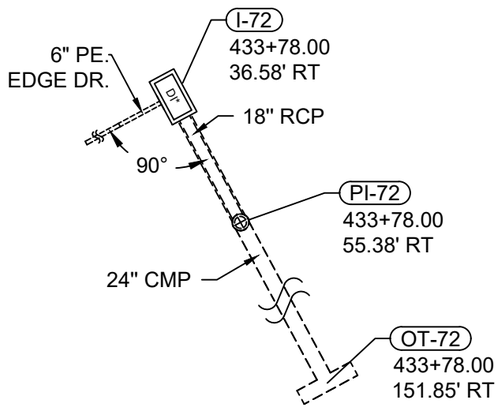
EDGE DRAIN CONNECTS TO STORM DRAIN STRUCTURES AT A CONSTANT DEPTH RELATIVE TO THE STRUCTURE GRATE AT ALL LOCATIONS - SEE EDGE DRAIN DETAIL SHEETS.



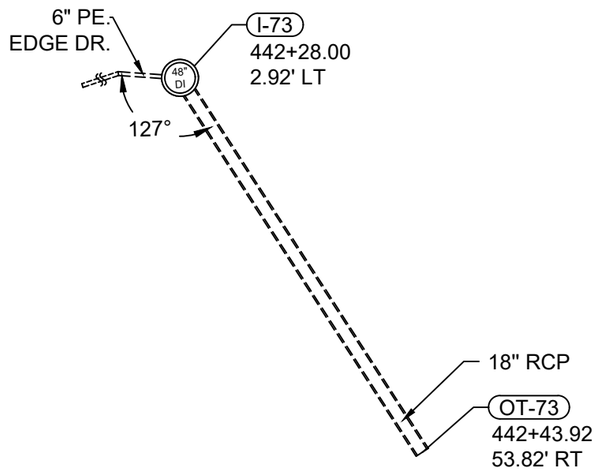
448+25.00 TO 448+30.21



430+30.40 TO 430+58.00



433+78.00



442+28.00 TO 442+43.92

SHEET NO.
RD-28

STORM DRAIN OVERVIEW DETAILS

PROJECT NAME	TAFT - WEST
COUNTY	MINERAL COUNTY
PROJECT ID	IM-NHFP 90-1(228)3
UPN	9487000
CHECKED BY	LFISCHER 6/29/23
REVIEWED BY	SMARSHAL 6/29/23
DESIGNED BY	BJOHNSON 6/29/23

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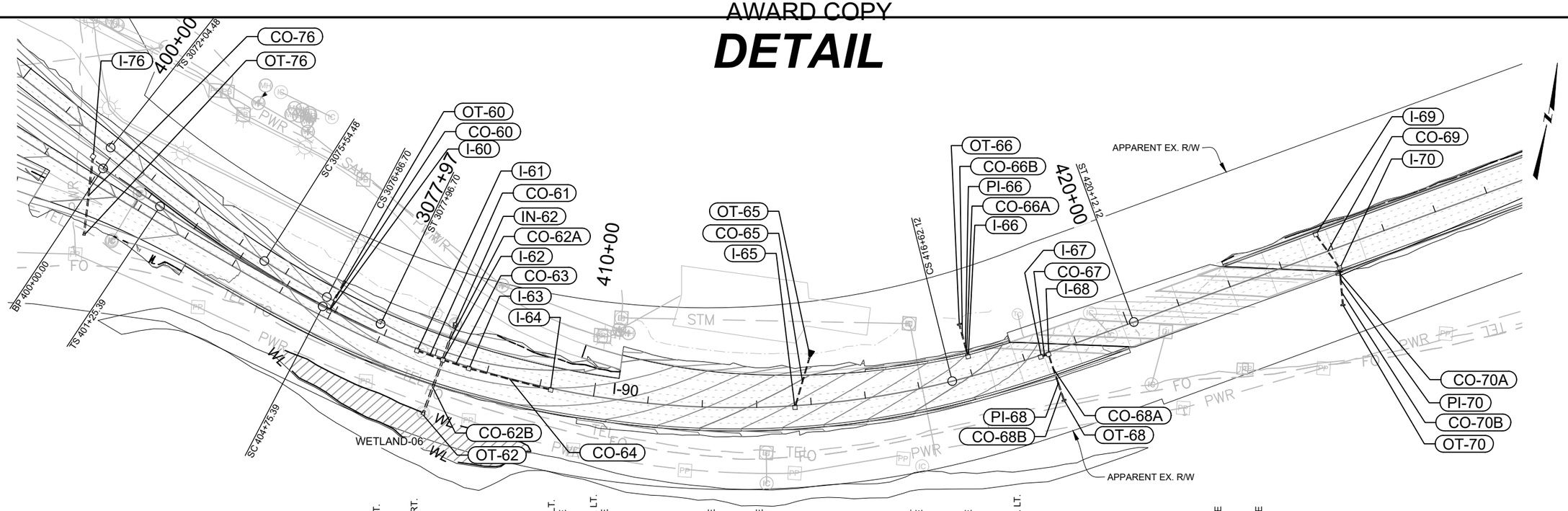
MONTANA Department of Transportation

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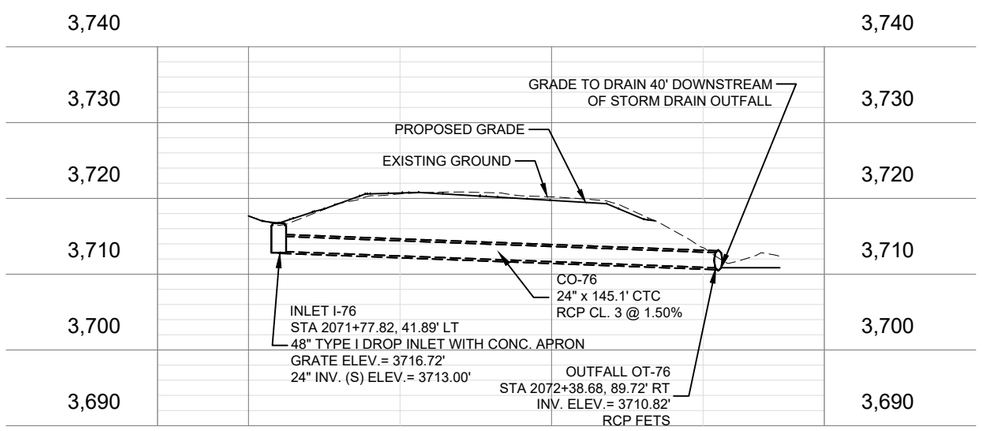
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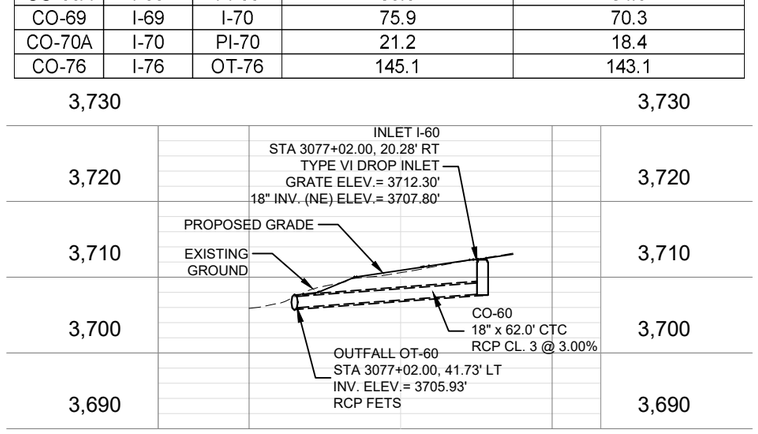
DETAIL



STRUCTURE			CENTER TO CENTER	EDGE TO EDGE (ETE)
NAME	FROM	TO	(CTC) LENGTH (FT)	LENGTH (FT)
CO-60	I-60	OT-60	62.0	60.7
CO-61	I-61	I-62	50.1	45.8
CO-62A	IN-62	I-62	71.4	68.4
CO-62B	I-62	OT-62	107.1	104.1
CO-63	I-63	I-62	50.1	45.1
CO-64	I-64	I-63	155.3	152.0
CO-65	I-65	OT-65	98.4	96.4
CO-66A	I-66	PI-66	18.6	15.9
CO-67	I-67	I-68	15.0	11.7
CO-68A	I-68	PI-68	56.9	54.9
CO-69	I-69	I-70	75.9	70.3
CO-70A	I-70	PI-70	21.2	18.4
CO-76	I-76	OT-76	145.1	143.1



STA 2071+77.82 TO 2072+38.68 STORM DRAIN SYSTEM



STA 3077+02 STORM DRAIN SYSTEM

PROFILE SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 20'

SHEET NO.
RD-29

STORM DRAIN DETAILS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER	SMARSHAL	BJOHNSON
	6/29/23	6/29/23	6/29/23

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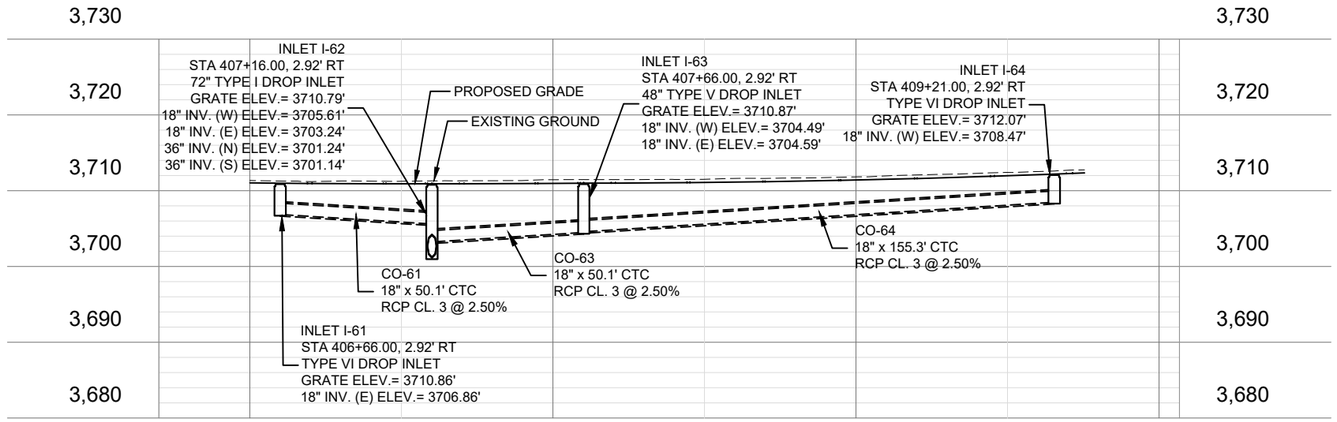
MONTANA
Department of Transportation

ROAD PLANS

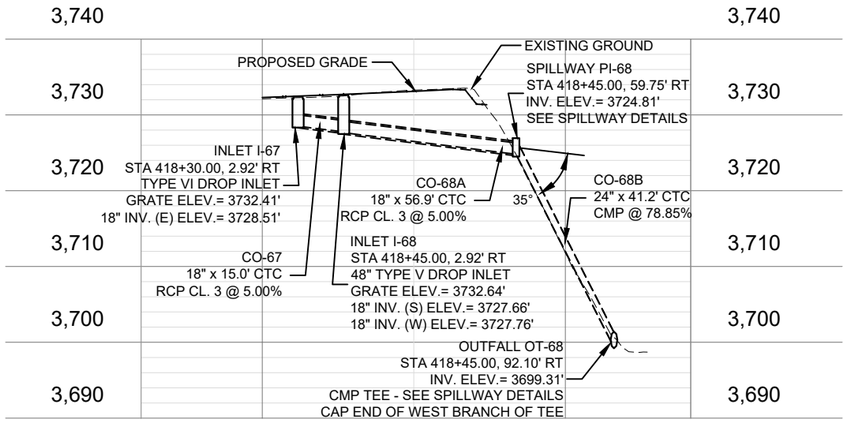
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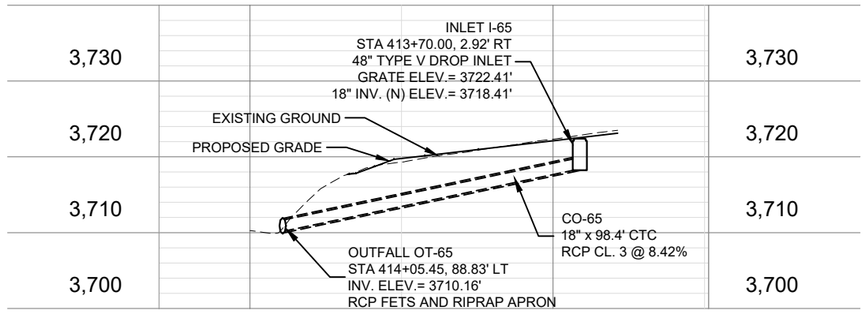
DETAIL



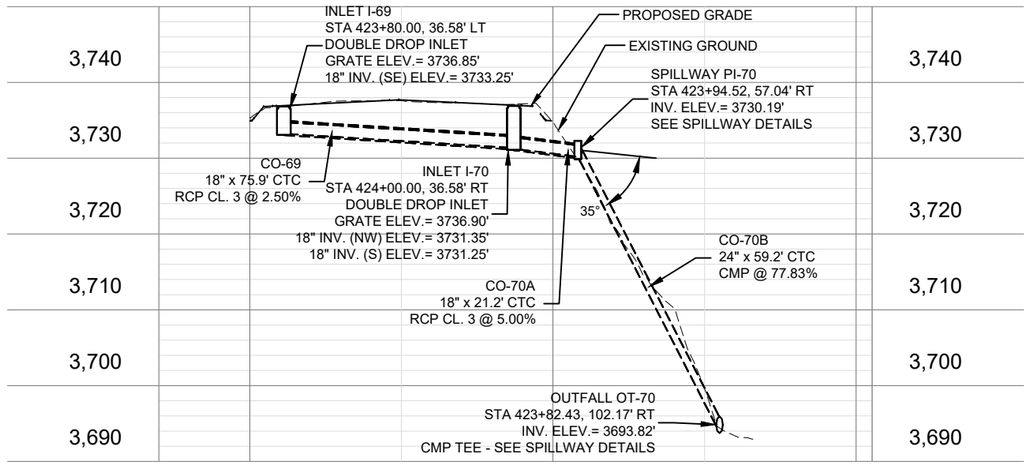
STA 406+66.00 TO 409+21.00 STORM DRAIN SYSTEM



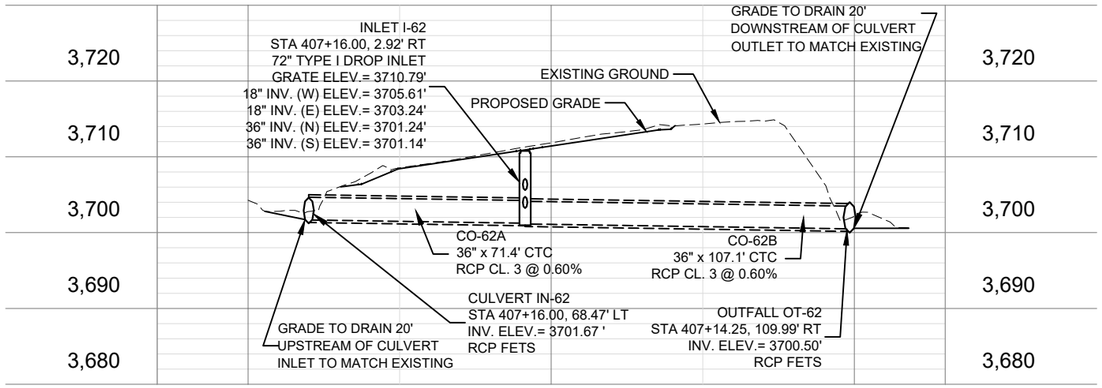
STA 418+30.00 TO 418+45.00 STORM DRAIN SYSTEM



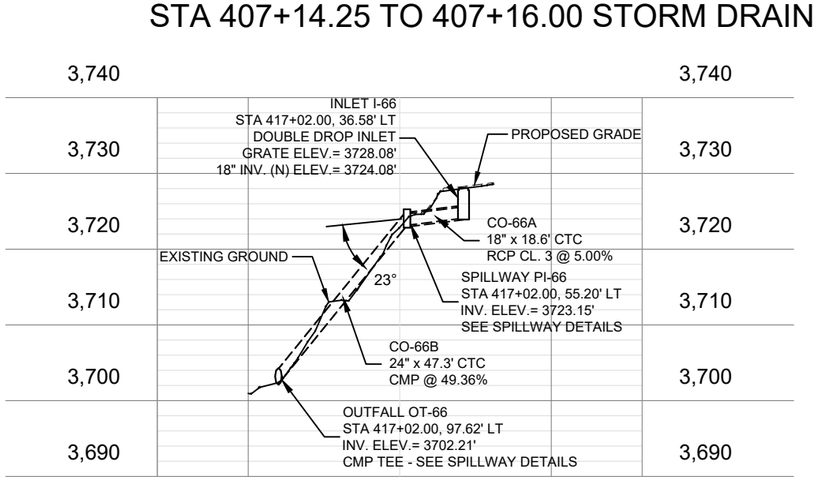
STA 413+70.00 TO 414+05.45 STORM DRAIN SYSTEM



STA 423+80.00 TO 423+82.43 STORM DRAIN SYSTEM



STA 407+14.25 TO 407+16.00 STORM DRAIN SYSTEM



STA 417+02.00 STORM DRAIN SYSTEM

PROFILE SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 20'

SHEET NO.
RD-30

STORM DRAIN DETAILS

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
CHECKED BY	LFISCHER	6/29/23	
REVIEWED BY	SMARSHAL	6/29/23	
DESIGNED BY	BJOHNSON	6/29/23	9487000RDDET207.DWG

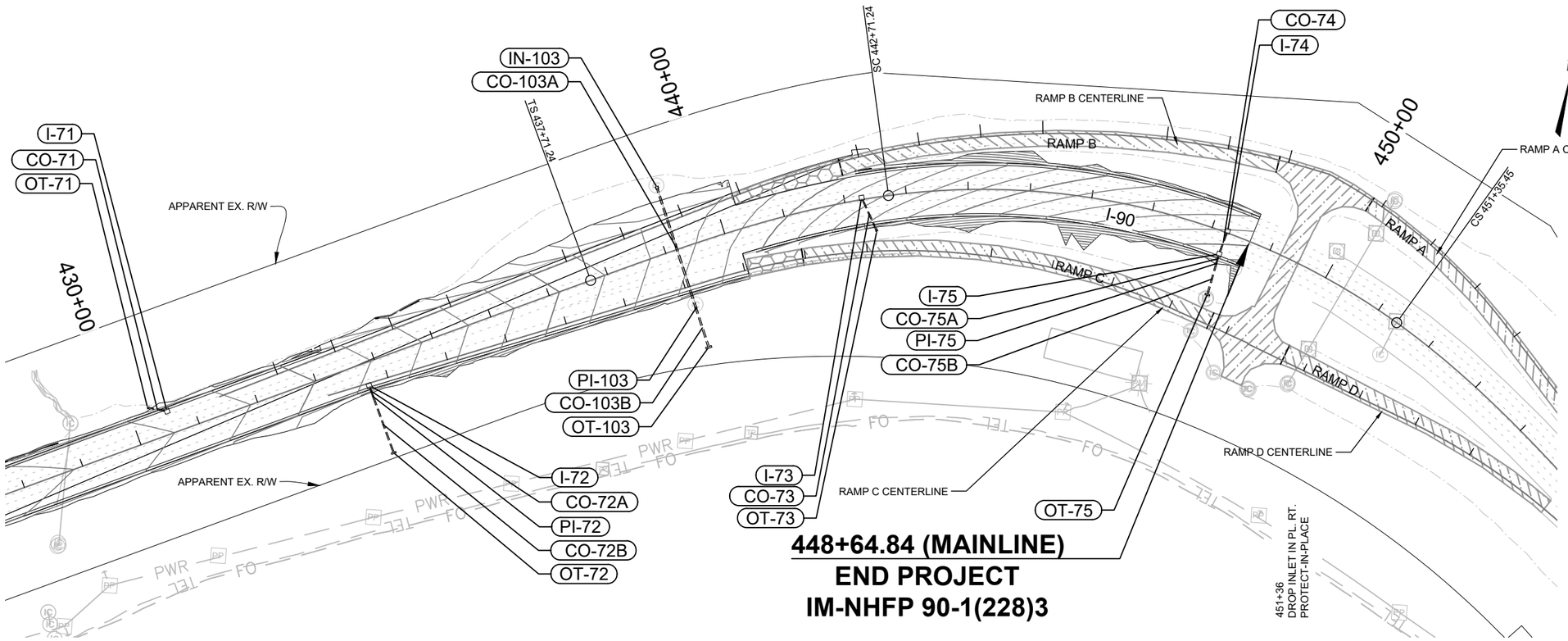
MONTANA
Department of Transportation

ROAD PLANS

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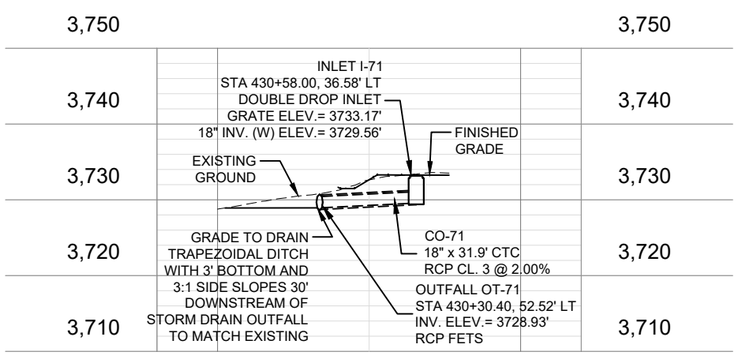
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DETAIL

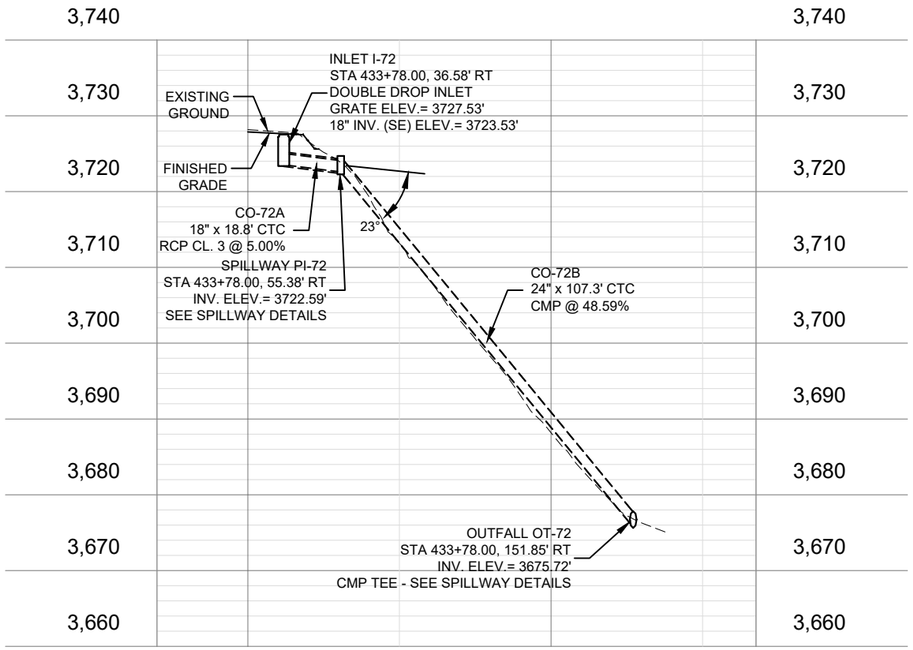


448+64.84 (MAINLINE)
END PROJECT
IM-NHFP 90-1(228)3

STRUCTURE			CENTER TO CENTER (CTC) LENGTH (FT)	EDGE TO EDGE (ETE) LENGTH (FT)
NAME	FROM	TO		
CO-71	I-71	OT-71	31.9	30.3
CO-72A	I-72	PI-72	18.8	16.1
CO-73	I-73	OT-73	58.9	56.9
CO-74	I-74	I-75	39.6	35.6
CO-75A	I-75	PI-75	15.9	13.2



STA 430+30.40 TO 430+58.00 STORM DRAIN SYSTEM



STA 433+78.00 STORM DRAIN SYSTEM

PROFILE SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 20'

SHEET NO.
RD-31

STORM DRAIN DETAILS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHAL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

9487000RDDETZ07.DWG

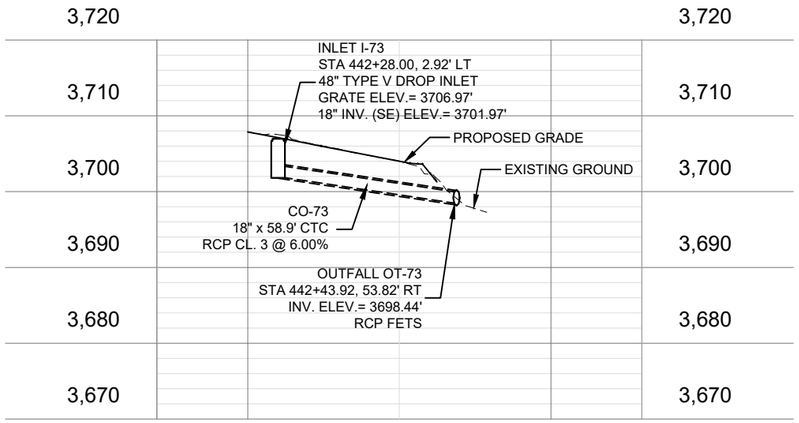
MONTANA
Department of Transportation

ROAD PLANS

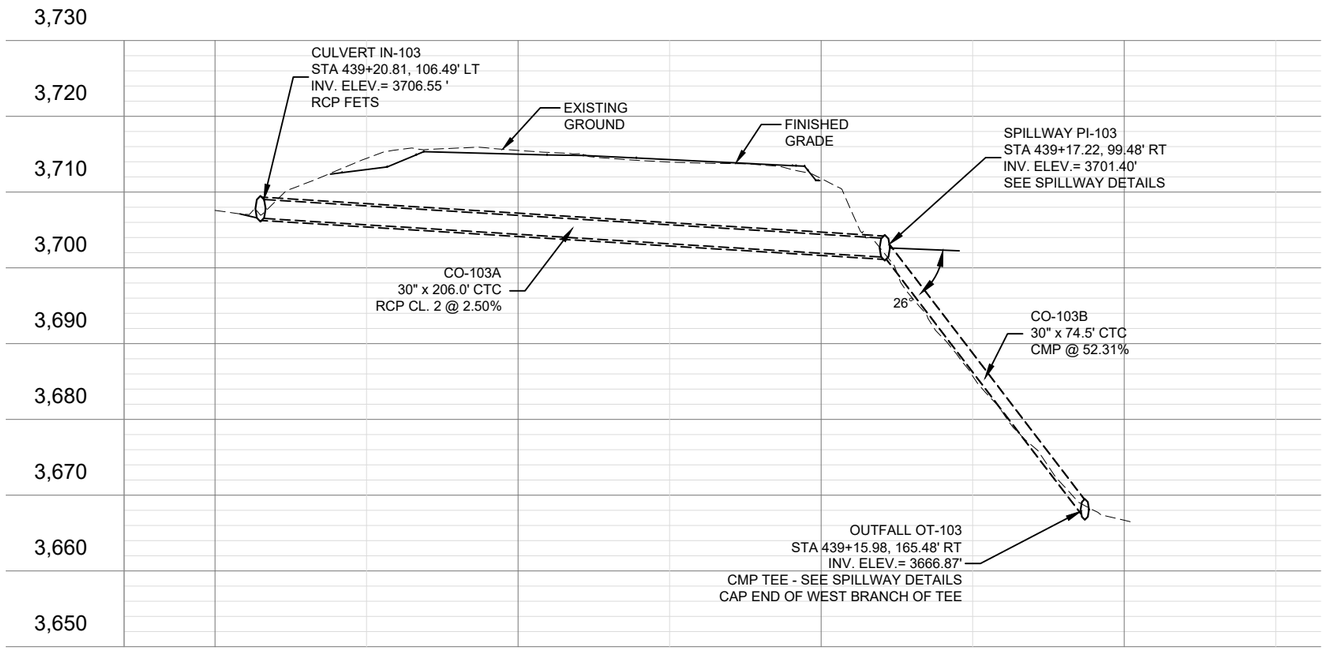
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AWARD COPY

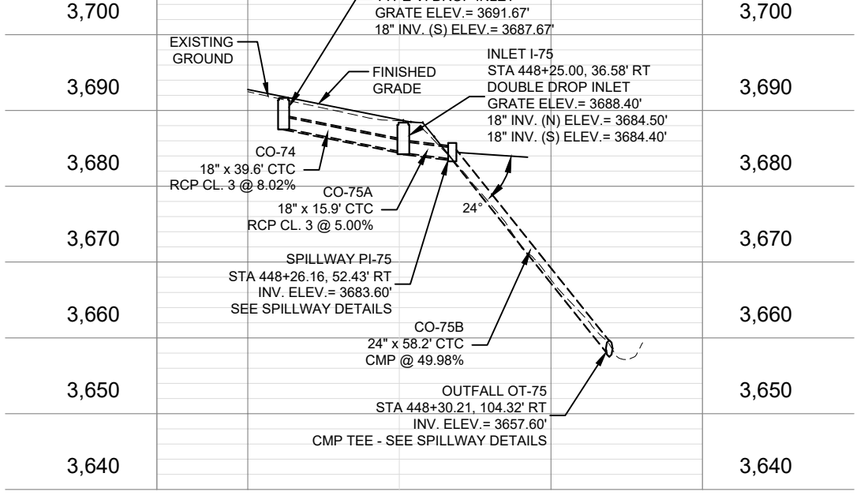
DETAIL



442+28.00 TO 442+43.92 STORM DRAIN SYSTEM



STA 439+15.98 TO 439+20.81 DRAINAGE CULVERT



STA 448+25.00 TO 448+30.21 STORM DRAIN SYSTEM

PROFILE SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 20'

SHEET NO.
RD-32

STORM DRAIN DETAILS

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
		6/29/23	LFISCHER
		6/29/23	SMARSHAL
		6/29/23	BJOHNSON
			9487000RDDET07.DWG

MONTANA
Department of Transportation

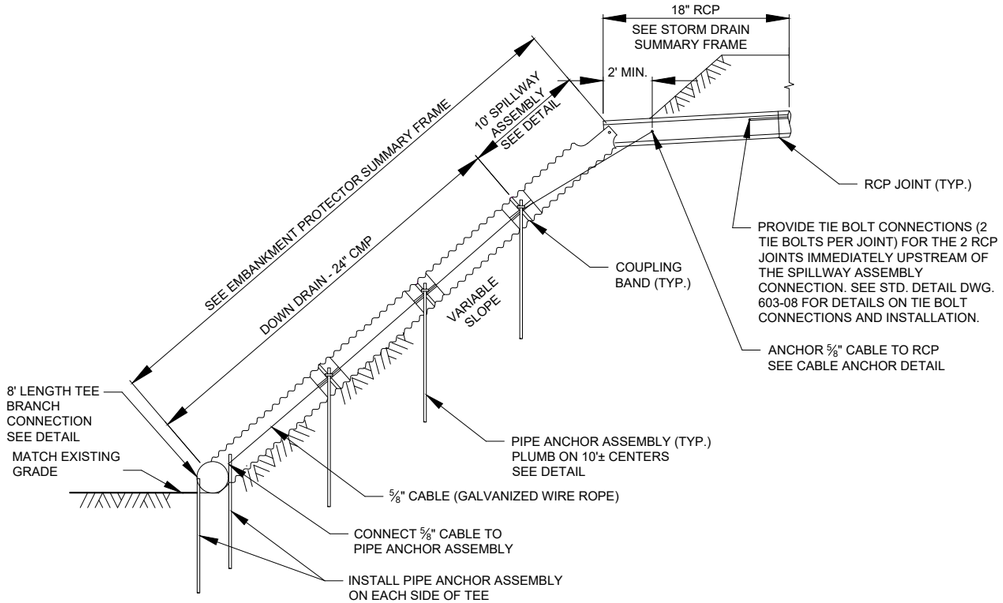
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DETAIL

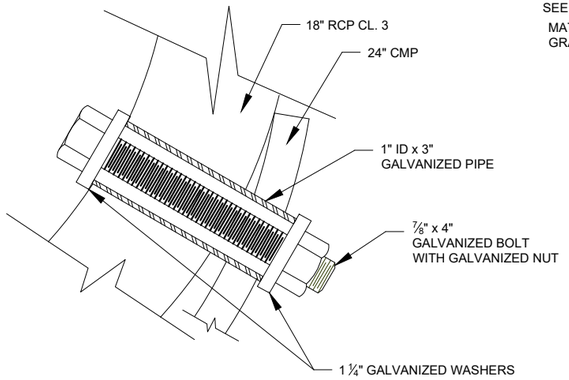
NO SCALE



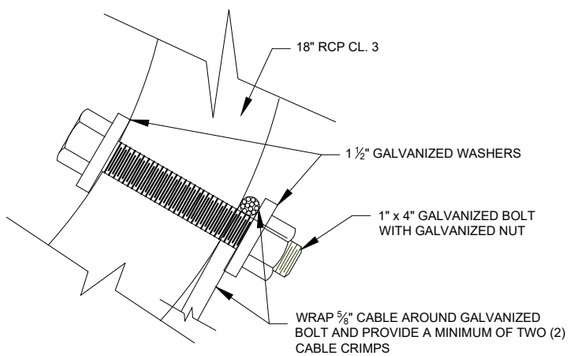
24" SPILLWAY ASSEMBLY WITH DOWN DRAIN AND TEE BRANCH
PROFILE

NOTES:

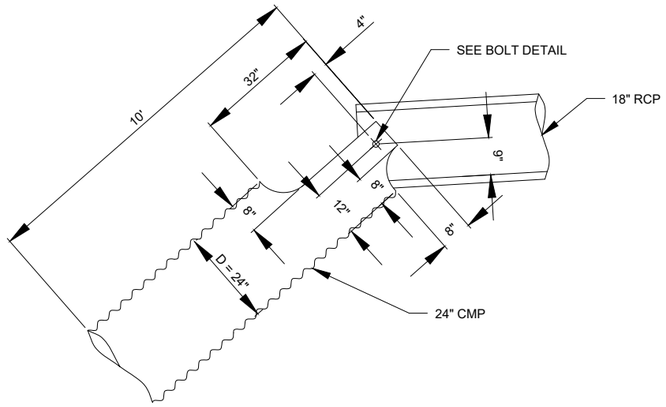
1. FABRICATE SPILLWAY ASSEMBLY FROM ANNULAR CORRUGATED PIPE, OR FROM HELICALLY CORRUGATED PIPE WITH FACTORY ANNULAR OR PREFORMED ENDS. USE 0.109 INCH THICK GALVANIZED STEEL PIPE WITH AN APPROVED TYPE II ALUMINIZED COATING IN ACCORDANCE WITH STANDARD SPEC. SEC. 709.12 OR 0.105 INCH THICK ALUMINUM PIPE FOR ALL EMBANKMENT PROTECTORS.
2. MAKE ALL BANDED CONNECTIONS WATER TIGHT BY PLACING 3/16" BEAD OF APPROVED CAULKING UNDER EACH HALF OF THE BAND BEFORE TIGHTENING.
3. PROVIDE APPROVED PIPE CAP(S) FOR TEE BRANCH CONNECTIONS WHERE SPECIFIED ON THE PLANS.
4. MEASUREMENT AND PAYMENT FOR TEE BRANCH CONNECTION IS INCLUDED IN THE LINEAR MEASUREMENT AND THE UNIT COST BID FOR 24" EMBANKMENT PROTECTOR. MEASURE TEE BRANCH CONNECTIONS ALONG THE INVERT OF THE TEE.
5. APPROVED ALTERNATE DESIGNS MAY BE USED.
6. PAYMENT FOR PIPE ANCHOR ASSEMBLIES AND 5/8" CABLE IS INCLUDED IN THE UNIT COST BID FOR 24" EMBANKMENT PROTECTOR.
7. PAYMENT FOR SPILLWAY ASSEMBLIES IS INCLUDED IN THE LINEAR MEASUREMENT AND THE UNIT COST BID FOR 24" EMBANKMENT PROTECTOR.
8. PAYMENT FOR PIPE CAPS (WHERE SPECIFIED) AND FOR EXCAVATION AND GRADING, TREE, BRUSH, VEGETATION, ROCK AND DEBRIS REMOVAL AS REQUIRED TO FACILITATE CONSTRUCTION ALONG SLOPES, AS WELL AS FOR PROPER DISPOSAL OF ALL DEBRIS AND MATERIALS, IS INCLUDED IN THE UNIT COST BID FOR 24" EMBANKMENT PROTECTOR.
9. PAYMENT FOR TIE BOLT CONNECTIONS IS INCLUDED IN THE UNIT COST BID FOR 18 IN STORM DRAIN PIPE (PAID FOR AS RCP 18 IN).



BOLT DETAIL

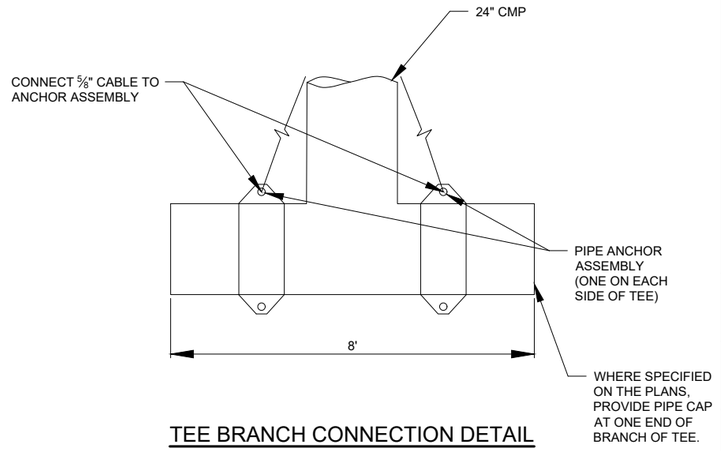


CABLE ANCHOR DETAIL



SPILLWAY ASSEMBLY DETAIL

D = DIAMETER OF CULVERT



TEE BRANCH CONNECTION DETAIL

SHEET NO.
RD-33

STORM DRAIN SPILLWAY DETAIL

PROJECT NAME	TAFT - WEST
COUNTY	MINERAL COUNTY
PROJECT ID	IM-NHFP 90-1(228)3
UPN	9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER	SMARSHAL	BJOHNSON
	6/29/23	6/29/23	6/29/23

9487000RDDETZ03.DWG

MONTANA
Department of Transportation

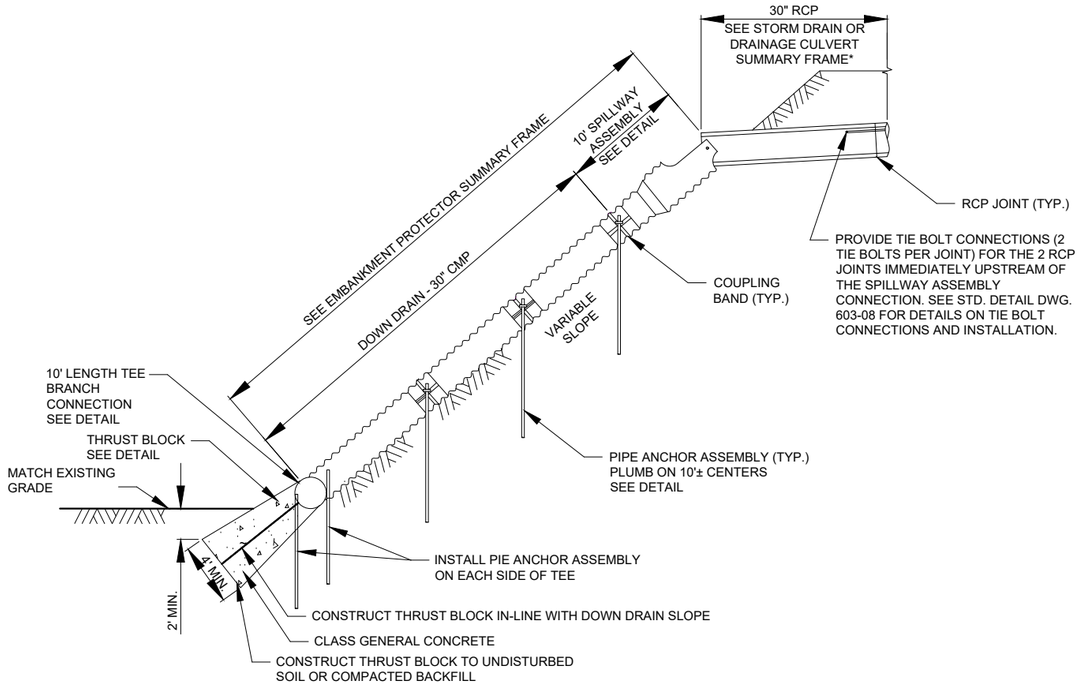
ROAD PLANS

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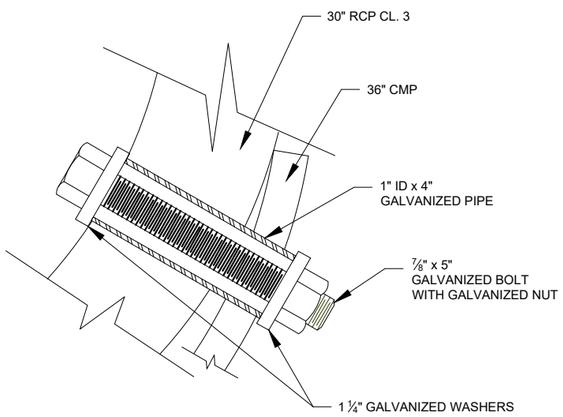
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DETAIL

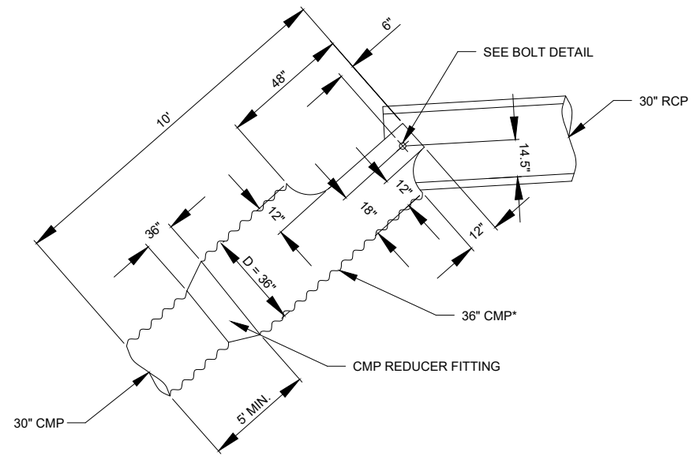
NO SCALE



30" SPILLWAY ASSEMBLY WITH DOWN DRAIN AND TEE BRANCH
PROFILE



BOLT DETAIL



SPILLWAY ASSEMBLY DETAIL

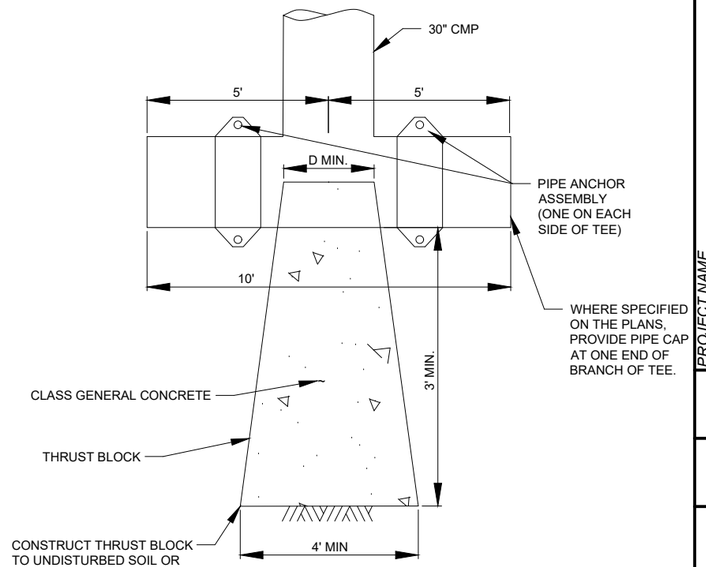
D = DIAMETER OF CULVERT

* PROVIDE 36" CMP FOR 30" CMP DOWN DRAINS. PAYMENT FOR 36" CMP FOR SPILLWAY ASSEMBLIES TO BE PAID FOR AS 30" EMBANKMENT PROTECTOR (PAID FOR AS CSP 30 IN).

NOTES:

* WHERE PIPE IS CONNECTED TO A DROP INLET, SEE STORM DRAIN SUMMARY FRAME, OTHERWISE, SEE DRAINAGE CULVERT SUMMARY FRAME.

1. FABRICATE SPILLWAY ASSEMBLY FROM ANNULAR CORRUGATED PIPE, OR FROM HELICALLY CORRUGATED PIPE WITH FACTORY ANNULAR OR PREFORMED ENDS. USE 0.109 INCH THICK GALVANIZED STEEL PIPE WITH AN APPROVED TYPE II ALUMINIZED COATING IN ACCORDANCE WITH STANDARD SPEC. SEC. 709.12 OR 0.105 INCH THICK ALUMINUM PIPE FOR ALL EMBANKMENT PROTECTORS.
2. MAKE ALL BANDED CONNECTIONS WATER TIGHT BY PLACING 3/16" BEAD OF APPROVED CAULKING UNDER EACH HALF OF THE BAND BEFORE TIGHTENING.
3. PROVIDE APPROVED PIPE CAP(S) FOR TEE BRANCH CONNECTIONS WHERE SPECIFIED ON THE PLANS.
4. MEASUREMENT AND PAYMENT FOR TEE BRANCH CONNECTION IS INCLUDED IN THE LINEAR MEASUREMENT AND THE UNIT COST BID FOR 30" EMBANKMENT PROTECTOR (PAID FOR AS CSP 30 IN). MEASURE TEE BRANCH CONNECTIONS ALONG THE INVERT OF THE TEE.
5. APPROVED ALTERNATE DESIGNS MAY BE USED.
6. PAYMENT FOR SPILLWAY ASSEMBLIES IS INCLUDED IN THE LINEAR MEASUREMENT AND THE UNIT COST BID FOR 30" EMBANKMENT PROTECTOR (PAID FOR AS CSP 30 IN).
7. PAYMENT FOR PIPE ANCHOR ASSEMBLIES AND THRUST BLOCKS, INCLUDING CLASS GENERAL CONCRETE AND EXCAVATION, IS INCLUDED IN THE UNIT COST BID FOR 30" EMBANKMENT PROTECTOR (PAID FOR AS CSP 30 IN).
8. PAYMENT FOR PIPE CAPS (WHERE SPECIFIED) AND FOR EXCAVATION AND GRADING, TREE, BRUSH, VEGETATION, ROCK, AND DEBRIS REMOVAL AS REQUIRED TO FACILITATE CONSTRUCTION ALONG SLOPES, AS WELL AS FOR PROPER DISPOSAL OF ALL DEBRIS AND MATERIALS, IS INCLUDED IN THE UNIT COST BID FOR 30" EMBANKMENT PROTECTOR (PAID FOR AS CSP 30 IN).
9. PAYMENT FOR TIE BOLT CONNECTIONS IS INCLUDED IN THE UNIT COST BID FOR 30 IN STORM DRAIN PIPE (PAID FOR AS RCP 30 IN).



TEE BRANCH CONNECTION AND THRUST
BLOCK DETAIL

SHEET NO.
RD-34

DRAINAGE CULVERT SPILLWAY DETAIL

PROJECT NAME	TAFT - WEST
COUNTY	MINERAL COUNTY
PROJECT ID	IM-NHFP 90-1(228)3
UPN	9487000
CHECKED BY	LFISCHER 6/29/23
REVIEWED BY	SMARSHAL 6/29/23
DESIGNED BY	BJOHNSON 6/29/23
	9487000RDDETZ03.DWG

MONTANA
Department of Transportation

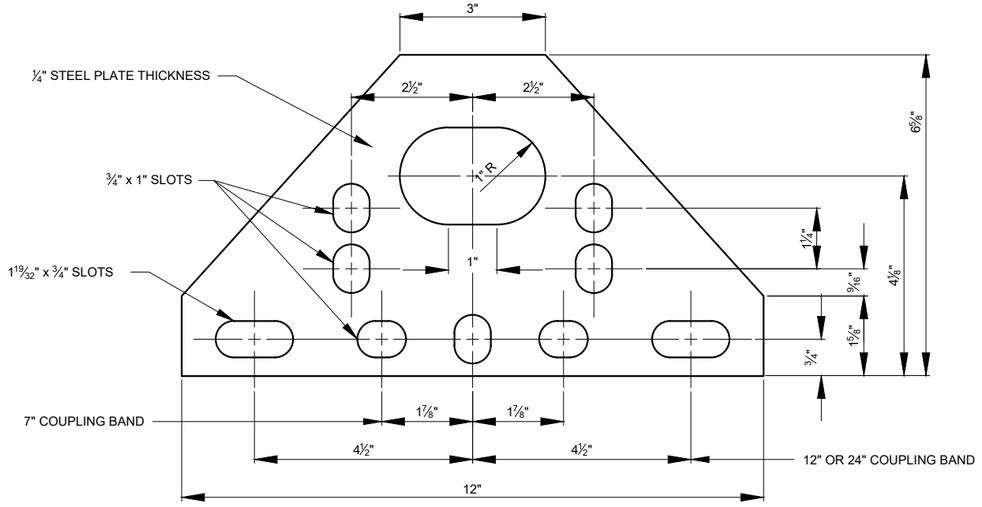
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AWARD COPY

DETAIL

NO SCALE



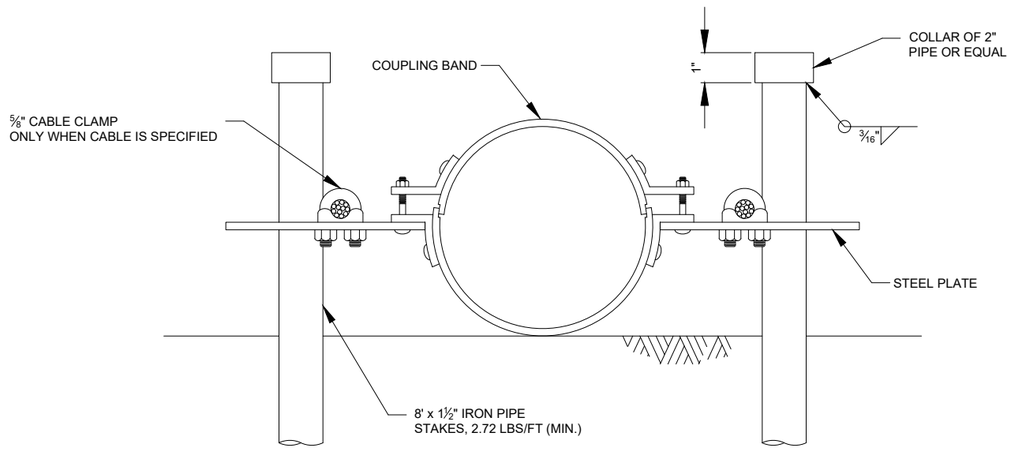
MEASURE LENGTH OF COUPLING BAND PARALLEL
TO THE CENTERLINE OF THE PIPE

STEEL PLATE (FOR PIPE ANCHOR ASSEMBLIES) *

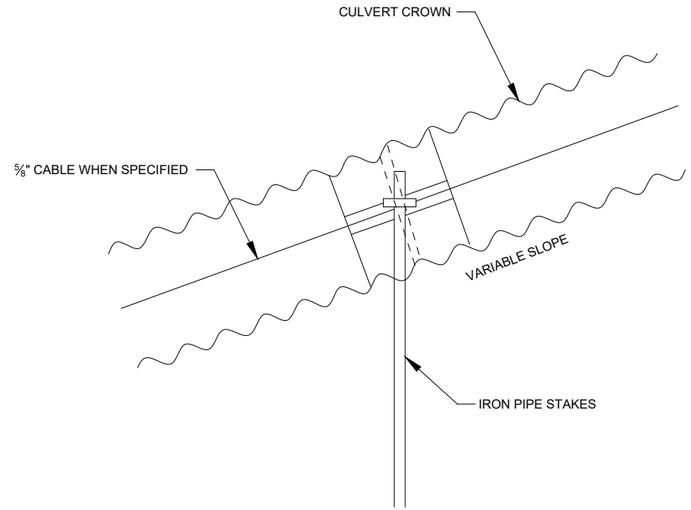
NOTES:

* CONFIRM STEEL PLATE DIMENSIONS ARE COMPATIBLE WITH THE PROPOSED CULVERT COUPLING BANDS PRIOR TO FABRICATION. PROVIDE CULVERT COUPLING BANDS COMPATIBLE WITH THE STEEL PLATE SLOT LAYOUT OR ADJUST DIMENSIONS IF REQUIRED TO MATCH THE PROPOSED CULVERT COUPLING BANDS.

1. ALL PIPE STAKES AND HARDWARE TO BE GALVANIZED AFTER FABRICATION.
2. APPROVED ALTERNATIVE PIPE ANCHOR ASSEMBLIES MAY BE USED.
3. PLATE MATERIAL TO BE ASTM A36. GALVANIZE AFTER FABRICATION.
4. PAYMENT FOR PIPE ANCHOR ASSEMBLIES, INCLUDING ALL MATERIALS AND FABRICATION, AND EQUIPMENT, MATERIALS, AND LABOR REQUIRED FOR INSTALLATION, IS INCLUDED IN THE UNIT COST BID FOR THE CORRESPONDING EMBANKMENT PROTECTOR [24" EMBANKMENT PROTECTOR OR 30" EMBANKMENT PROTECTOR (PAID FOR AS CSP 30 IN)].



PIPE ANCHOR ASSEMBLY



METAL PIPE ASSEMBLY (FOR PIPE ANCHOR ASSEMBLIES)

SHEET NO.
RD-35

SPILLWAY DETAIL

PROJECT NAME	TAFT - WEST
COUNTY	MINERAL COUNTY
PROJECT ID	IM-NHFP 90-1(228)3
UPN	9487000
CHECKED BY	LFISCHER 6/29/23
REVIEWED BY	SMARSHAL 6/29/23
DESIGNED BY	BJOHNSON 6/29/23

MONTANA Department of Transportation

ROAD PLANS

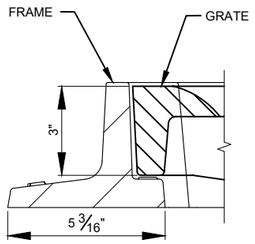
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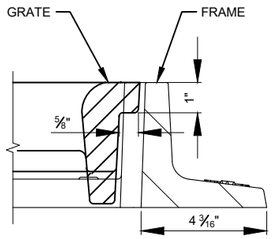
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DETAIL

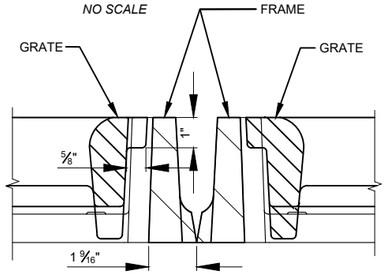
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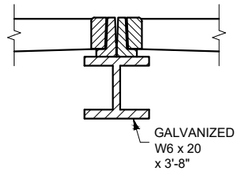
SECTION C-C



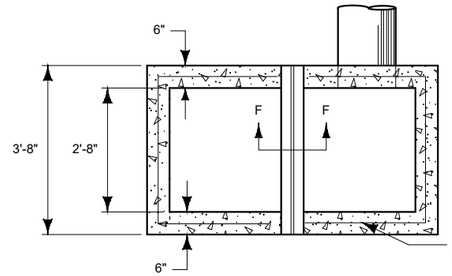
SECTION D-D



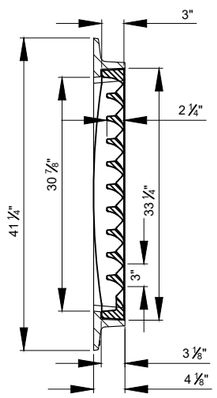
SECTION E-E



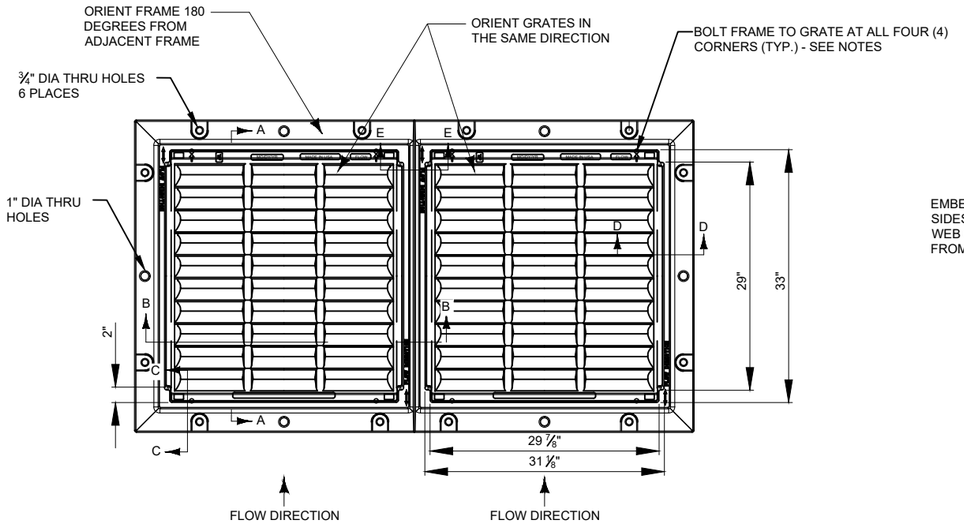
SECTION F-F



DOUBLE DROP INLET STRUCTURE
PLAN VIEW



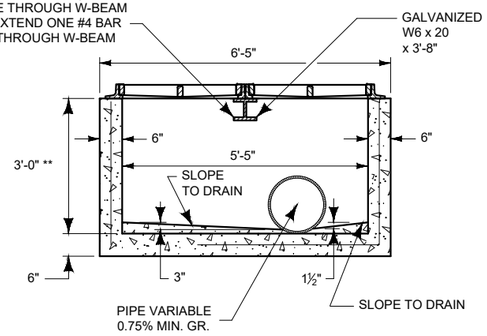
SECTION A-A GRATE



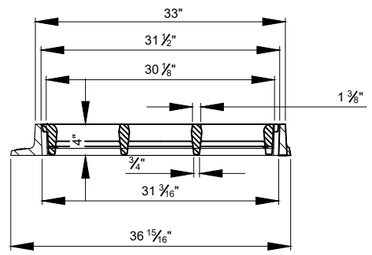
DOUBLE DROP INLET FRAME AND GRATE
PLAN VIEW

NOTE: INSTALL GRATE WITH BARS
PERPENDICULAR TO INTAKE FLOW

EMBED W-BEAM IN STRUCTURE WALLS (BOTH SIDES). PROVIDE ONE HOLE THROUGH W-BEAM WEB ON BOTH ENDS AND EXTEND ONE #4 BAR FROM WALL CONTINUOUS THROUGH W-BEAM



DOUBLE DROP INLET STRUCTURE
PROFILE VIEW



SECTION B-B GRATE

NOTES:

** STANDARD UNLESS OTHERWISE NOTED ON PLANS.

FRAMES ARE EJCO 51416Z FRAME OR APPROVED EQUAL. ROTATE SECOND FRAME 180 DEGREES FROM FIRST FRAME FOR PLACEMENT AND ABUT FRAMES ALONG EDGES WITH NO ANGLES.

GRATES ARE EJCO 5416M3 VANES STYLE GRATES OR APPROVED EQUAL. GRATES ARE TO MEET THE REQUIREMENTS OF AASHTO M306 AND BE MANUFACTURED OF ASTM C35 GRAY CAST IRON. SET GRATES SO THAT VANES FOR BOTH GRATES ARE ORIENTED IN THE SAME DIRECTION AND CORRECT RELATIVE TO THE FLOW DIRECTION.

CRACK DRILL FRAMES AND GRATES AT THE FOUNDARY. BOLT FRAMES TO GRATES USING 1/2"-13 HEX SS CAP SCREWS WITH 1/2" SS WASHERS AT ALL 4 CORNERS OF EACH FRAME AND GRATE ASSEMBLY (8 TOTAL FOR DOUBLE DROP INLETS AND 4 TOTAL FOR STANDARD DROP INLETS). APPLY MARINE GRADE ANTI-SEIZE TO BOLTS DURING INSTALLATION. INCLUDE IN THE COST FOR INLETS.

ALL CONCRETE IS CLASS "STRUCTURE" OR APPROVED EQUAL.

SEE PLANS FOR DETAILS AND QUANTITIES.

SHEET NO.
RD-36

DOUBLE DROP INLET DETAIL

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER	SMARSHAL	BJOHNSON
	6/29/23	6/29/23	6/29/23

9487000RDDETZ03.DWG

MONTANA
Department of Transportation

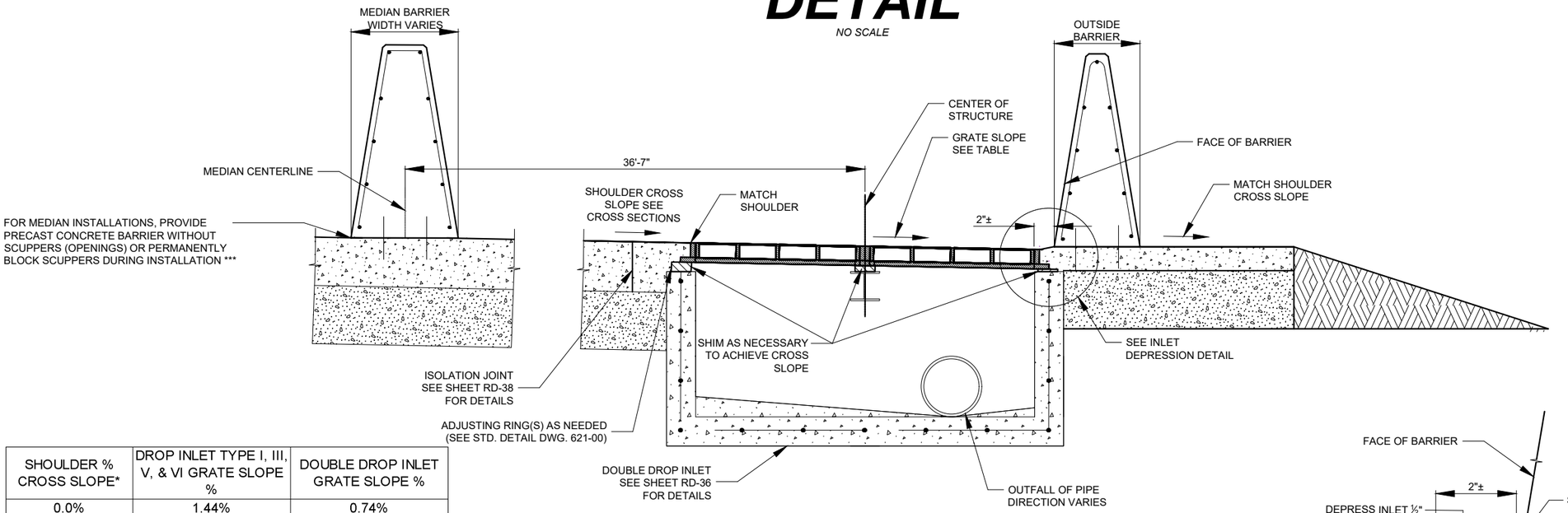
ROAD PLANS

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AWARD COPY

DETAIL

NO SCALE



DOUBLE DROP INLET OUTSIDE SHOULDER BARRIER CONFIGURATION

PROFILE VIEW

SHOULDER % CROSS SLOPE*	DROP INLET TYPE I, III, V, & VI GRATE SLOPE %	DOUBLE DROP INLET GRATE SLOPE %
0.0%	1.44%	0.74%
0.5%	1.94%	1.24%
1.0%	2.44%	1.74%
1.5%	2.94%	2.24%
2.0%	3.44%	2.74%
2.5%	3.94%	3.24%
3.0%	4.44%	3.74%
3.5%	4.94%	4.24%
4.0%	5.44%	4.74%
4.5%	5.94%	5.24%
5.0%	6.44%	5.74%
5.5%	6.94%	6.24%
6.0%	7.44%	6.74%
6.5%	7.94%	7.24%
7.0%	8.44%	7.74%
7.5%	8.94%	8.24%
8.0%	9.44%	8.74%

* SEE CROSS SECTIONS FOR SHOULDER CROSS SLOPES.

NOTES:

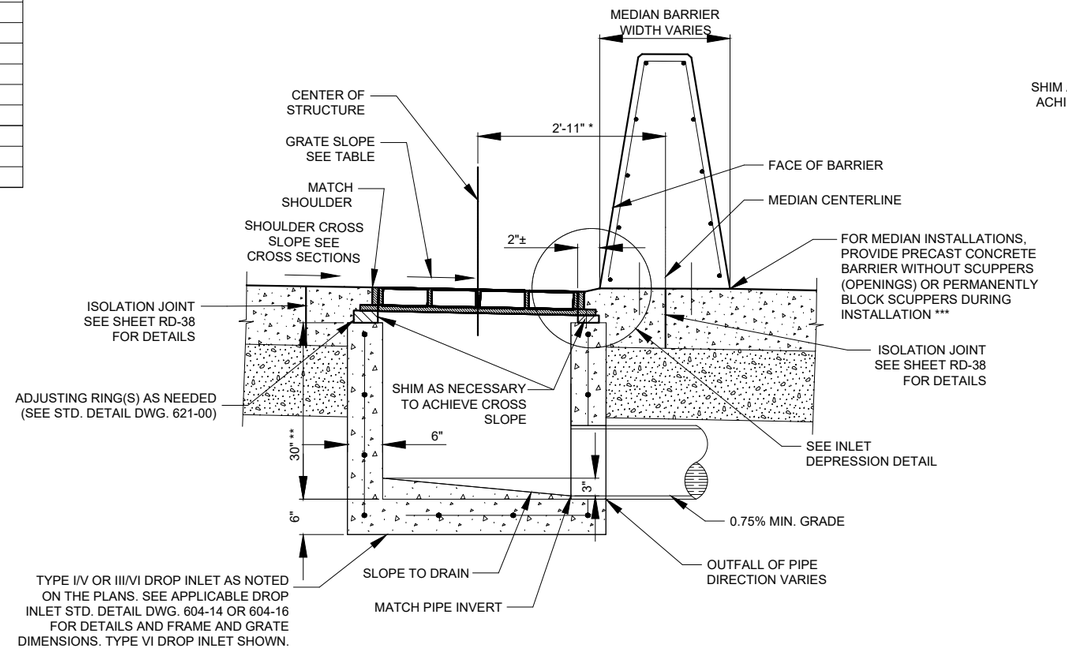
* DIMENSION BASED ON TALL PRECAST CONCRETE BARRIER AND IS THE DISTANCE FROM THE EDGE OF THE INLET GRATE TO THE FACE OF BARRIER. DIMENSION IS 2'-7" FOR LOCATIONS WITH STANDARD PRECAST CONCRETE BARRIER TO MAINTAIN 2"± DISTANCE BETWEEN INLET FRAME AND GRATE AND FACE OF BARRIER.

** STANDARD UNLESS OTHERWISE NOTED ON THE PLANS.

*** IF PRECAST CONCRETE BARRIER IS PROVIDED WITH SCUPPERS (OPENINGS), THE METHOD AND MATERIALS USED TO PERMANENTLY BLOCK SCUPPERS ARE TO BE APPROVED BY THE MDT PROJECT MANAGER.

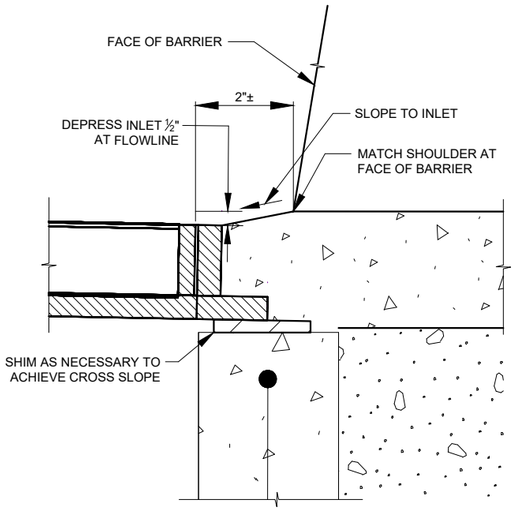
SHIM DROP INLET FRAME TO MATCH PRECAST CONCRETE BARRIER PROFILE (ROADWAY GRADE) AND GRATE APRON SLOPE SHOWN IN THE TABLE. FILL SPACE BETWEEN INLET FRAME AND ADJUSTING RING WITH CLASS GENERAL CONCRETE.

THE REFERENCED STRUCTURE STATIONS AND OFFSETS ARE TO THE CENTER OF THE STRUCTURE. THE REFERENCED STRUCTURE GRATE ELEVATIONS ARE AT THE FLOWLINE OF THE GRATE (OR GRATES FOR DOUBLE DROP INLETS) AND ACCOUNT FOR THE 1/2" FLOWLINE DEPRESSION AT THE INLET.



DROP INLET INSIDE SHOULDER (MEDIAN) BARRIER CONFIGURATION

PROFILE VIEW



INLET DEPRESSION DETAIL

SHEET NO.
RD-37

DROP INLET BARRIER CONFIGURATION DETAIL

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

9487000RDDETZ03.DWG

MONTANA Department of Transportation

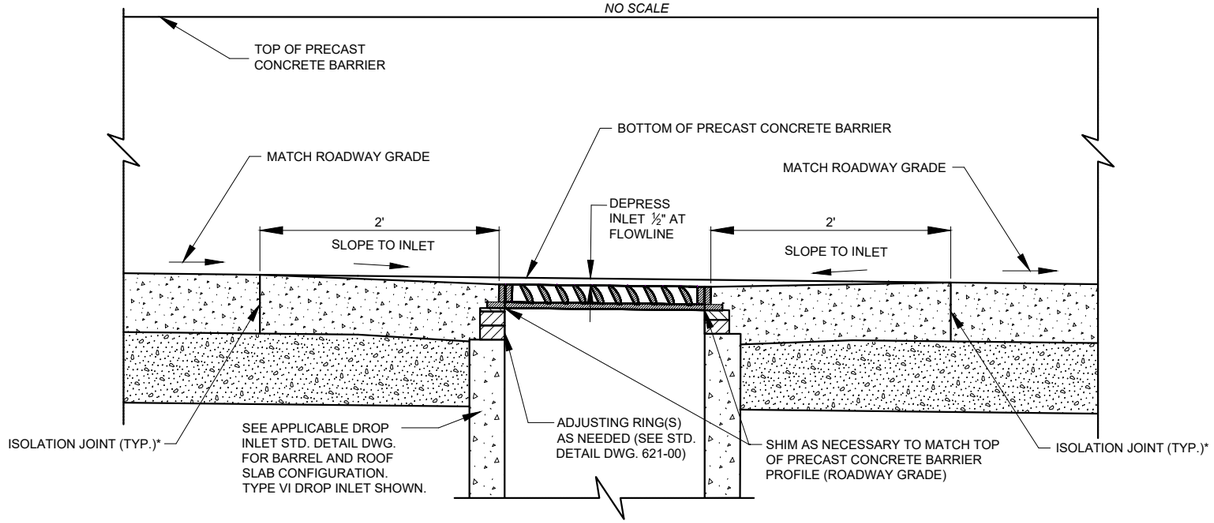
ROAD PLANS

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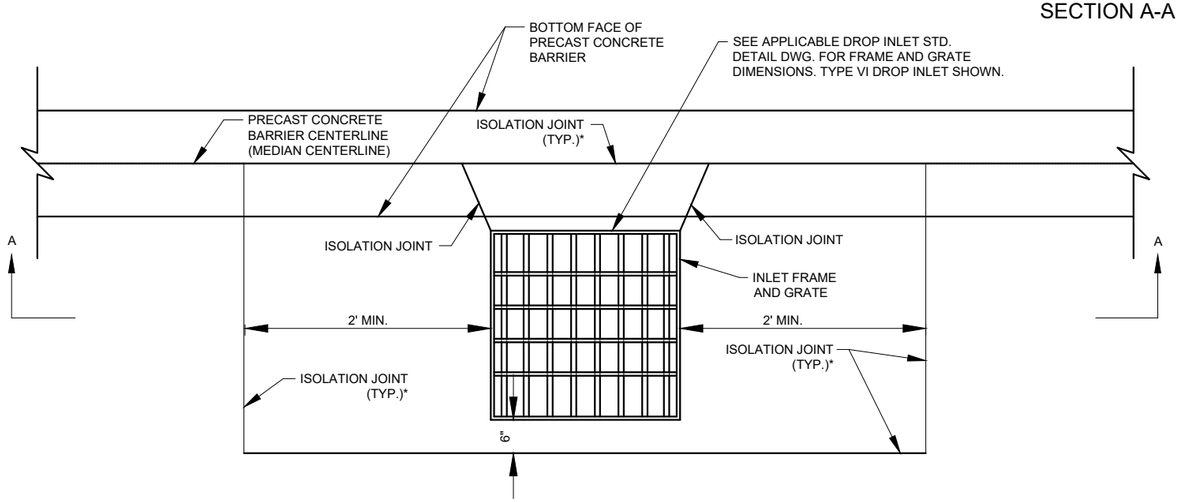
AWARD COPY

DETAIL

NO SCALE

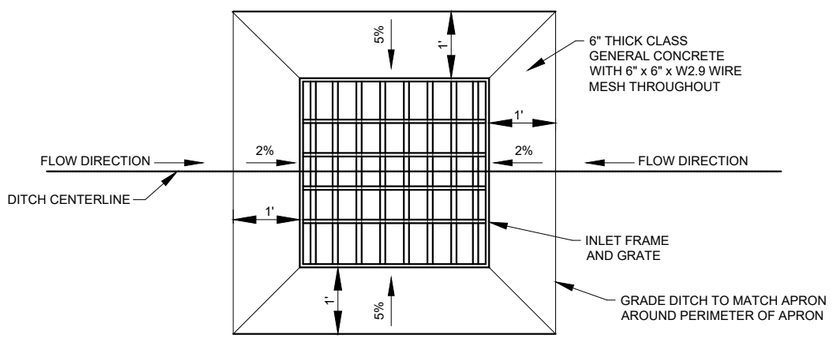


SECTION A-A



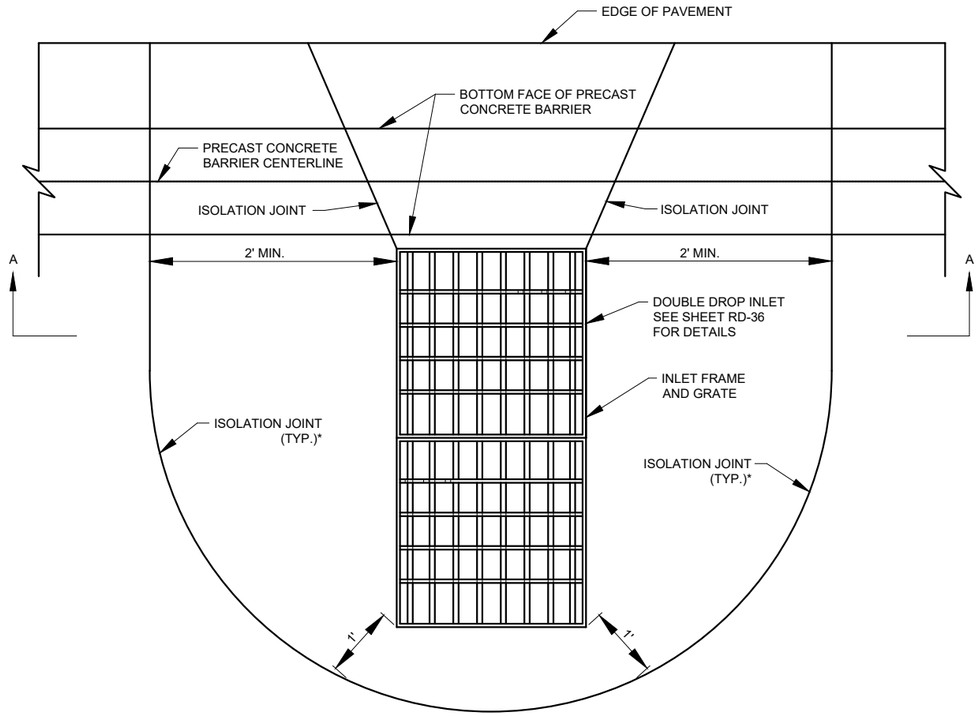
INSIDE SHOULDER (MEDIAN) DROP INLET ISOLATION JOINT

PLAN VIEW



DROP INLET APRON**

PLAN VIEW



OUTSIDE SHOULDER DOUBLE DROP INLET ISOLATION JOINT

PLAN VIEW

NOTES:

* SEE STD. DETAIL DWG. 501-05 AND 501-10 FOR DETAILS ON ISOLATION JOINTS.

** CONSTRUCT CONCRETE APRONS FOR DROP INLETS LOCATED IN DITCH SECTIONS (OUTSIDE OF THE ROADWAY SURFACE) AS NOTED IN THE PLANS. STORM DRAIN INLET CONCRETE APRONS TO BE PAID FOR AS "CONCRETE APRON."

SHIM DROP INLET FRAME TO MATCH PRECAST CONCRETE BARRIER PROFILE (ROADWAY GRADE) AND GRATE APRON SLOPE. FILL SPACE BETWEEN INLET FRAME AND ADJUSTING RING(S) WITH CLASS GENERAL CONCRETE.

SHEET NO.
RD-38

APRON DETAIL

PROJECT NAME	TAFT - WEST	
COUNTY	MINERAL COUNTY	
PROJECT ID	IM-NHFP 90-1(228)3	
UPN	9487000	
CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHAL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

9487000RDDETZ03.DWG

MONTANA Department of Transportation

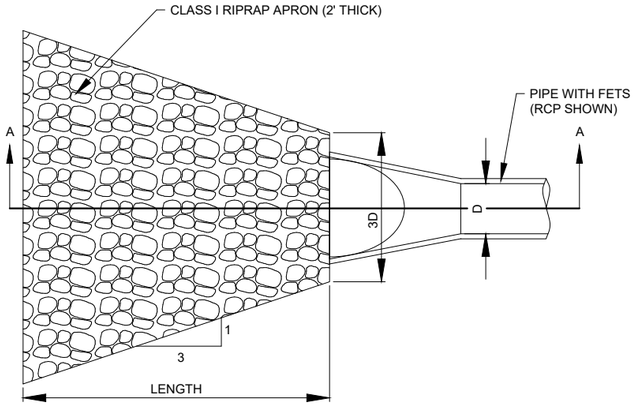
ROAD PLANS

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AWARD COPY

DETAIL

NO SCALE

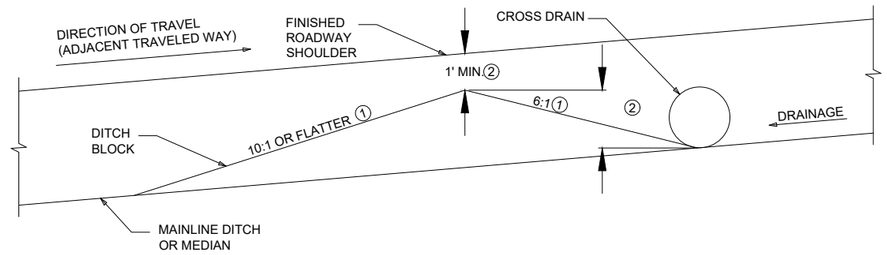


CULVERT OUTLET RIPRAP WITHOUT DITCH

NOTES:

① CONSTRUCT DITCH BLOCKS TO FIT LOCAL CONDITIONS. WHEN CONDITIONS DO NOT ALLOW 10:1 SLOPES, USE 6:1 SLOPES.

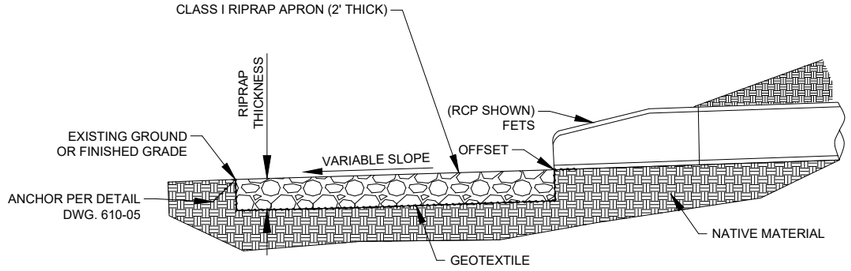
② HEIGHTS SHOWN ARE MINIMUMS. SET HEIGHT OF DITCH BLOCKS BASED ON THE CULVERT DIAMETER OR ON THE ELEVATION SHOWN IN THE PLANS.



DITCH BLOCK DETAIL

TAFT WEST TABLE

STATION	TOP OF DITCH BLOCK ELEVATION (FT)	EMB. + (CY)
2018+05 LT.	3797.75	121
3001+07 LT.	3827.50	1
3009+10 LT.	3816.50	2
3012+20 LT.	3812.00	8
3018+65 LT.	3801.25	4
3026+40 LT.	3786.40	11
3031+10 LT.	3779.50	3



SECTION A-A

STATION	OFFSET	LENGTH (FT)	RIPRAP CLASS	QUANTITIES		NOTES
				RIPRAP (CY)	GEOTEXTILE# (SY)	
3018+40	33.30' RT	11	I	26.0	47	
414+05	88.83' LT.	10	I	5.9	18	STORM DRAIN OT-65

#HIGH SURVIVABILITY CLASS B PERMANENT EROSION CONTROL GEOTEXTILE.

SHEET NO.
RD-39

CULVERT OUTLET RIPRAP & DITCH BLOCK DETAIL

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

9487000RDDETZ03.DWG

MONTANA Department of Transportation

ROAD PLANS

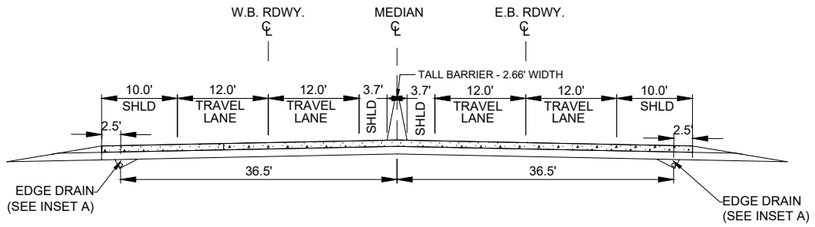
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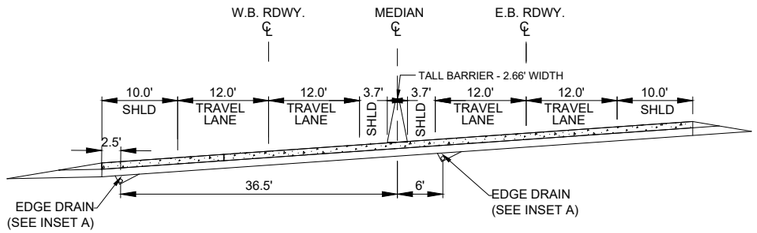
DETAIL

EDGE DRAIN TYPICAL SECTIONS

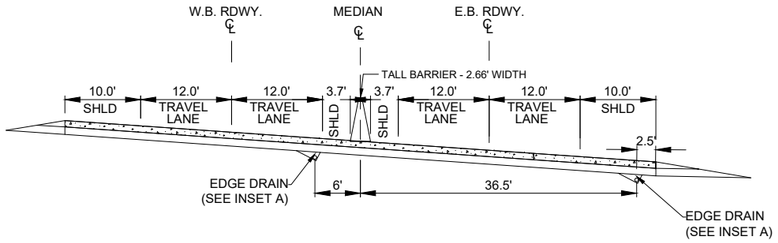
UNDIVIDED - TANGENT



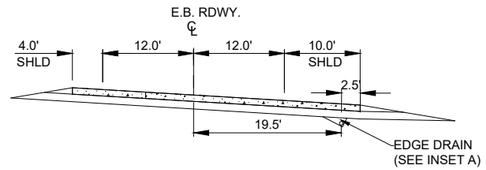
UNDIVIDED - SUPERELEVATION LEFT



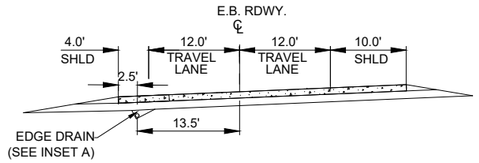
UNDIVIDED - SUPERELEVATION RIGHT



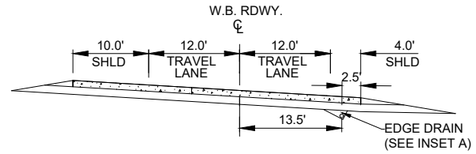
DIVIDED E.B. - SUPERELEVATION RIGHT



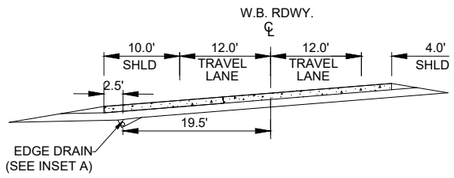
DIVIDED E.B. - SUPERELEVATION LEFT

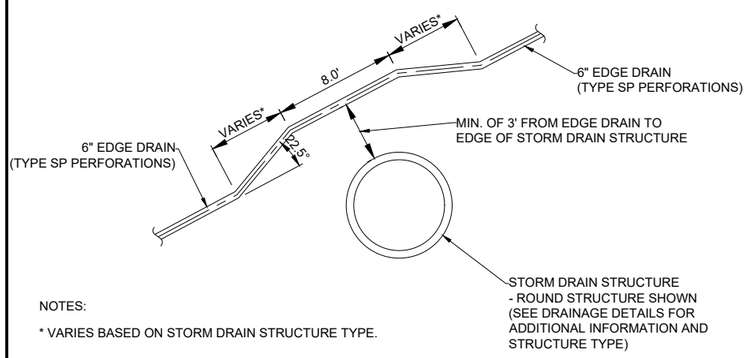


DIVIDED W.B. - SUPERELEVATION RIGHT



DIVIDED W.B. - SUPERELEVATION LEFT



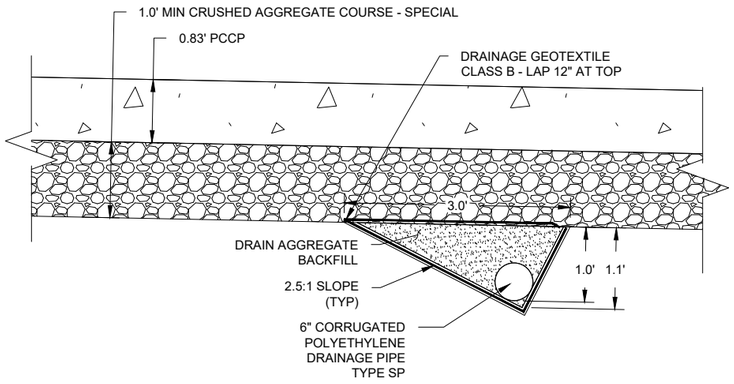


NOTES:

* VARIES BASED ON STORM DRAIN STRUCTURE TYPE.

EDGE DRAIN ROUTING DETAIL
AROUND STORM DRAIN STRUCTURES

PLAN VIEW

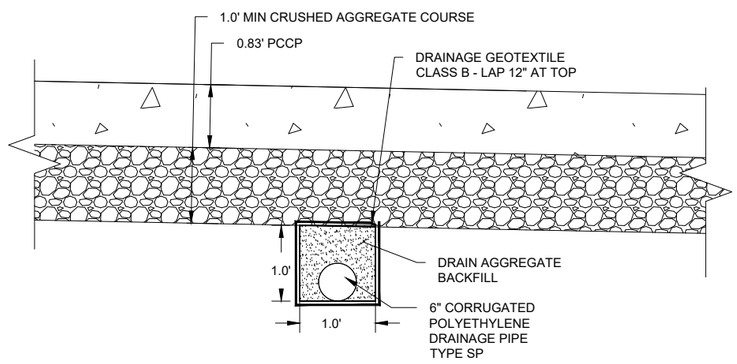


TYPICAL TRENCH DRAIN #

(INSET A)

NOTE:

TRENCH DRAIN QUANTITIES FOR DRAINAGE GEOTEXTILE AND DRAIN AGGREGATE ARE PROVIDED IN THE SUMMARIES FOR INFORMATION ONLY BASED ON THIS TYPICAL SECTION.



ALTERNATIVE TRENCH DRAIN

(FOR INFORMATION ONLY)

SHEET NO.
RD-40

EDGE DRAIN DETAILS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHAL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

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MONTANA Department of Transportation

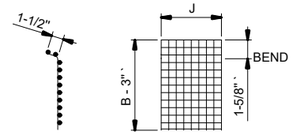
ROAD PLANS

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AWARD COPY

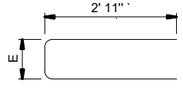
DETAIL

NO SCALE



RODENT SHIELD (1)

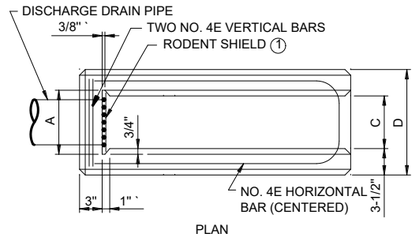
DIMENSIONS ARE APPROXIMATE TO ALLOW FOR BEND AND A SNUG FIT IN SLOT IN HEADWALL.



NO. 4E HORIZONTAL BAR



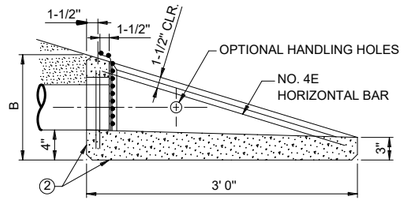
NO. 4E VERTICAL BAR (2 REQUIRED)



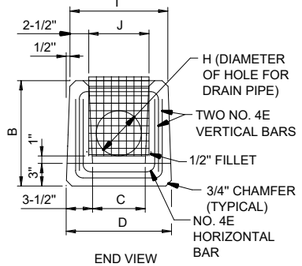
PLAN

DIMENSIONS	6" DIA. PIPE
A	8-1/2"
B	1' 2"
C	7"
D	1' 2"
E	10-1/2"
F	11"
G	11-1/2"
H △	7"
I	1' 1"
J	8"
APPROX. WT.	250 LBS.

△ EXACT DIMENSION DEPENDENT ON COUPLING METHOD.



SECTION



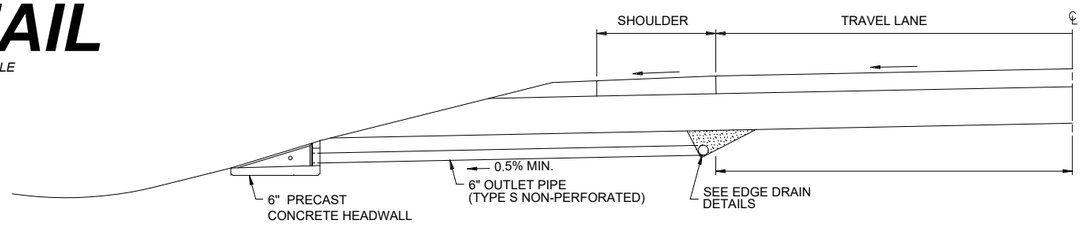
END VIEW

NOTES:

(1) FABRICATE RODENT SHIELD FROM CARBON STEEL FLATTENED EXPANDED METAL, STYLE 1/2" NO. 4F AND HOT DIPPED GALVANIZED AFTER FABRICATION. ADJUST SCREEN DIMENSIONG TO SNUGLY FIT THE PROVIDED SLOT (TAPERED IF NECESSARY), WITH THE SCREEN LIP FITTING FLUSH WITH THE CASTING TOP AND THE BOTTOM FITTING TIGHT TO THE FLOW LINE.

(2) CLEARLY CAST MANUFACTURER'S NAME AND DATE OF PRODUCTION (MONTH AND YEAR) IN EITHER THE BOTTOM OF EACH HEADWALL OR NEAR THE BOTTOM OF THE LARGE END. DO NOT INK STAMP. APPROPRIATELY CODE IF MANUFACTURER HAS MORE THAN ONE PLAN.

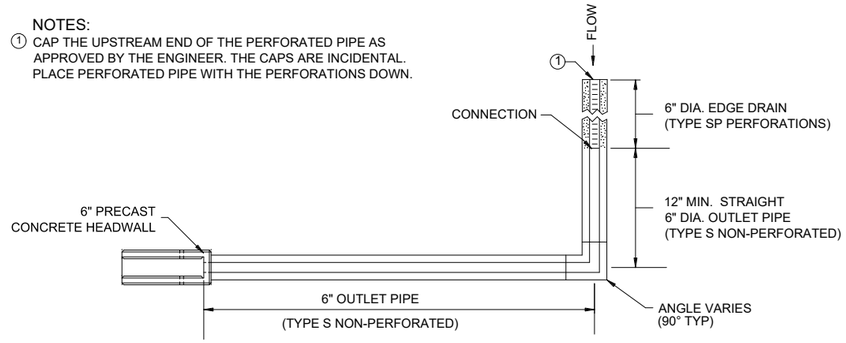
PRECAST CONCRETE HEADWALL



SECTION VIEW

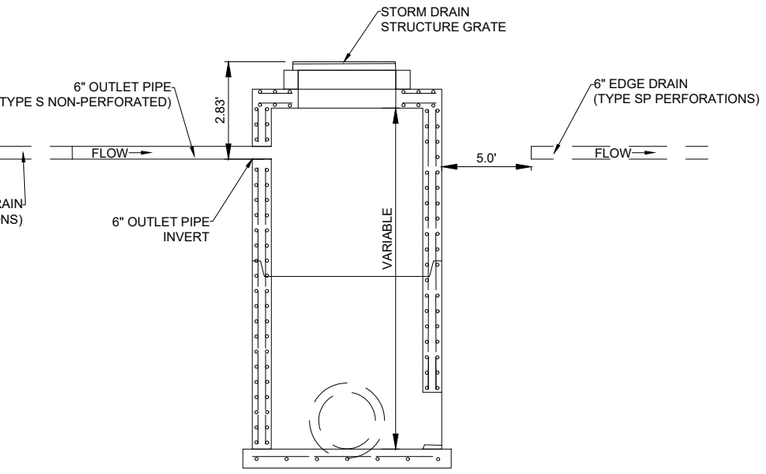
TYPICAL EDGE DRAIN AND DISCHARGE CROSS SECTION
(SEE TABULATION FOR LOCATIONS)

NOTES:
(1) CAP THE UPSTREAM END OF THE PERFORATED PIPE AS APPROVED BY THE ENGINEER. THE CAPS ARE INCIDENTAL. PLACE PERFORATED PIPE WITH THE PERFORATIONS DOWN.

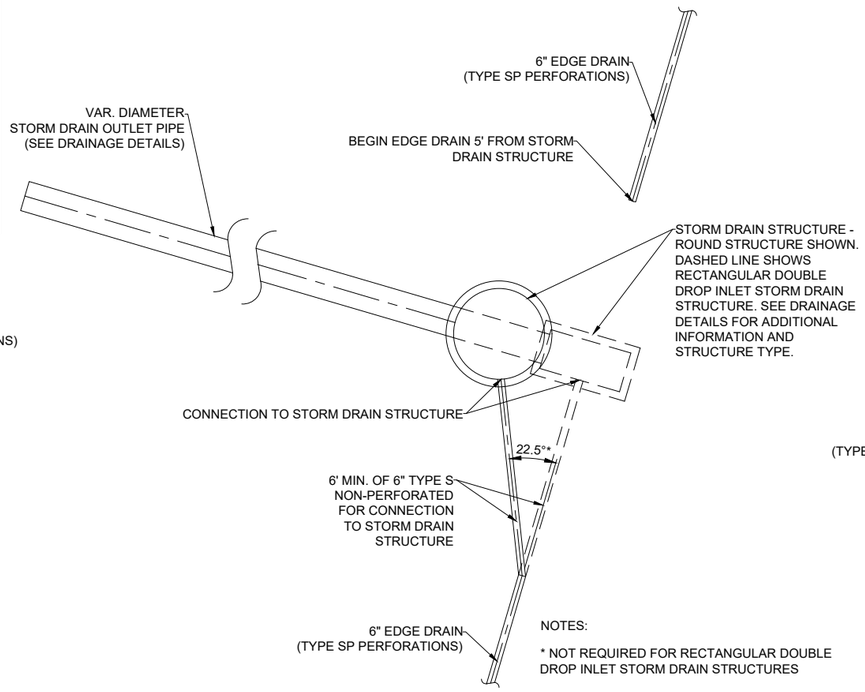


TYPICAL PLAN VIEW (SINGLE DISCHARGE)
(SEE TABULATION FOR LOCATIONS)

EDGE DRAIN OUTLET DETAIL TO SLOPE



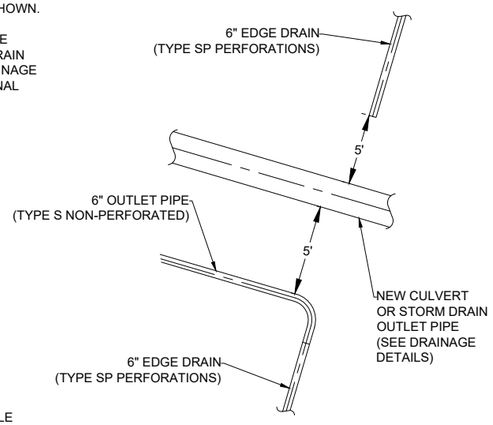
EDGE DRAIN OUTLET DETAIL TO STORM DRAIN STRUCTURE



NOTES:

* NOT REQUIRED FOR RECTANGULAR DOUBLE DROP INLET STORM DRAIN STRUCTURES

EDGE DRAIN OUTLET DETAIL AT STORM DRAIN STRUCTURE



EDGE DRAIN DETAIL AT CULVERTS & OUTLET PIPES

SHEET NO.
RD-41

EDGE DRAIN DETAILS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER	SMARSHALL	BJOHNSON
	6/29/23	6/29/23	6/29/23

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MONTANA
Department of Transportation

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DETAIL

WB EDGE DRAIN LOCATION (LEFT SIDE)

EDGE DRAIN LOCATION - LEFT								
					LINEAR FEET			
STATION	OFFSET	to	STATION	OFFSET	6" EDGE DRAIN (TYPE SP PERFORATIONS)	6" OUTLET PIPE (TYPE S NON-PERFORATED)	OUTLET DETAIL (SEE SPECIFIC NOTES)	NOTES
288+50	36.5 LT	-	289+93	36.5 LT	143			
289+93	36.5 LT	-	3000+82	40.5 LT		88	A	OUTLET TO DITCH LT
3000+05	19.5 LT	-	3005+22	19.5 LT	517			
3005+22	19.5 LT	-	3006+40	36.5 LT		124	A	OUTLET TO DITCH LT
3005+22	13.5 RT	-	3011+65	13.5 RT	643			
3011+65	13.5 RT	-	3011+84	36.1 RT		31	A	OUTLET TO DITCH RT
3011+70	13.5 RT	-	3018+25	13.5 RT	655			
3018+25	13.5 RT	-	3018+33	36.8 RT		25	A	OUTLET TO DITCH RT
3018+25	13.5 RT	-	3022+66	13.5 RT	441			
3022+66	13.5 RT	-	3022+66	43.0 RT		30	A	OUTLET TO DITCH RT
3022+66	34.5 LT	-	3029+00	27.0 LT	634			PLACE 2.5' FROM EDGE OF PAVEMENT
3029+00	27.0 LT	-	3029+00	53.0 LT		27	A	OUTLET TO SLOPE LT
3029+05	26.8 LT	-	3034+00	19.5 LT	495			PLACE 2.5' FROM EDGE OF PAVEMENT
3034+00	19.5 LT	-	3034+32	50.1 LT		46	A	OUTLET TO DITCH LT
3034+05	19.5 LT	-	3040+00	19.5 LT	595			
3040+00	19.5 LT	-	3040+00	43.5 LT		24	A	OUTLET TO SLOPE LT
3040+05	19.5 LT	-	3046+00	19.5 LT	595			
3046+00	19.5 LT	-	3046+00	47.9 LT		29	A	OUTLET TO SLOPE LT
3046+05	19.5 LT	-	3052+00	19.5 LT	595			
3052+00	19.5 LT	-	3052+00	45.4 LT		26	A	OUTLET TO SLOPE LT
3052+05	19.5 LT	-	3058+00	19.5 LT	595			
3058+00	19.5 LT	-	3058+00	48.5 LT		29	A	OUTLET TO SLOPE LT
3058+05	19.5 LT	-	3062+00	26.6 LT	395			
3062+00	26.6 LT	-	3062+00	53.6 LT		27	A	OUTLET TO SLOPE LT
3062+05	26.7 LT	-	3067+12	60.7 LT	507			PLACE 2.5' FROM EDGE OF PAVEMENT
3067+12	60.7 LT	-	3067+12	88.3 LT		29	A	OUTLET TO SLOPE LT
3067+12	19.5 LT	-	3073+00	19.5 LT	588			
3073+00	19.5 LT	-	3073+00	44.3 LT		26	A	OUTLET TO SLOPE LT
3073+05	19.5 LT	-	3077+97	19.5 LT	492			CONTINUES INTO UNDIVIDED END
405+85	36.5 LT	-	407+09	36.5 LT	121			
407+09	36.5 LT	-	407+09	67.5 LT		31	A	OUTLET TO SLOPE LT NEAR 407+15 L.P.
407+24	36.5 LT	-	407+24	67.5 LT		31	A	OUTLET TO SLOPE LT NEAR 407+15 L.P.
407+24	36.5 LT	-	410+42	36.5 LT	318			
410+42	79.0 LT	-	410+42	112.0 LT		33	A	OUTLET TO SLOPE LT
410+42	79.0 LT	-	417+85	36.5 LT	721			PLACE 2.5' FROM EDGE OF PAVEMENT
425+00	36.5 LT	-	430+58	35.0 LT	550	8	B	OUTLET TO I-71
430+67	36.5 LT	-	437+00	44.5 LT	634			PLACE 2.5' FROM EDGE OF PAVEMENT
437+00	44.5 LT	-	437+00	80.0 LT		36	A	OUTLET TO SLOPE LT
438+71	6.0 LT	-	442+28	2.9 LT	351	9	B	OUTLET TO I-73
442+37	6.0 LT	-	448+25	2.9 LT	584	9	B	OULTET TO I-74
ESTIMATED QUANTITIES - LEFT					11169	718		

EB EDGE DRAIN LOCATION (RIGHT SIDE)

EDGE DRAIN LOCATION - RIGHT								
					LINEAR FEET			
STATION	OFFSET	to	STATION	OFFSET	6" EDGE DRAIN (TYPE SP PERFORATIONS)	6" OUTLET PIPE (TYPE S NON-PERFORATED)	OUTLET DETAIL (SEE SPECIFIC NOTES)	NOTES
288+50	36.5 RT	-	289+93	36.5 RT	143			
289+93	36.5 RT	-	2000+66	38.9 RT		72	A	OUTLET TO DITCH RT
2000+05	19.5 RT	-	2006+50	19.5 RT	645			
2006+50	19.5 RT	-	2006+90	41.4 RT		48	A	OUTLET TO DITCH RT
2006+55	19.5 RT	-	2013+00	19.5 RT	645			
2013+00	19.5 RT	-	2013+61	36.9 RT		66	A	OUTLET TO DITCH RT
2013+05	19.5 RT	-	2019+50	19.5 RT	645			
2019+50	19.5 RT	-	2019+50	52.2 RT		33	A	OUTLET TO DITCH RT
2030+71	13.5 LT	-	2037+50	13.5 LT	679			
2037+50	13.5 LT	-	2037+50	58.5 LT		45	A	OUTLET TO DITCH LT
2037+55	13.5 LT	-	2044+25	13.5 LT	670			
2044+25	13.5 LT	-	2044+25	38.5 LT		25	A	OUTLET TO DITCH LT
2044+30	13.5 LT	-	2051+00	13.5 LT	670			
2051+00	13.5 LT	-	2051+00	38.4 LT		25	A	OUTLET TO DITCH LT
2049+94	19.5 RT	-	2051+90	19.5 RT	499			PLACE 2.5' FROM EDGE OF PAVEMENT
2051+90	19.5 RT	-	2054+90	48.8 RT				
2054+90	48.8 RT	-	2054+90	101.5 RT		53	A	OUTLET TO SLOPE RT
2054+97	19.5 RT	-	2056+21	19.5 RT	605			PLACE 2.5' FROM EDGE OF PAVEMENT
2056+21	19.5 RT	-	2059+42	44.5 RT				
2059+42	44.5 RT	-	2061+00	44.5 RT				
2060+99	44.5 RT	-	2060+99	73.5 RT		29	A	OUTLET TO SLOPE RT
2061+05	44.5 RT	-	2067+00	44.5 RT	595			
2067+00	44.5 RT	-	2067+00	70.5 RT		26	A	OUTLET TO SLOPE RT
2067+05	44.5 RT	-	2068+76	44.5 RT	419			PLACE 2.5' FROM EDGE OF PAVEMENT
2068+76	44.5 RT	-	2071+21	19.5 RT				
2071+21	19.5 RT	-	2071+21	100.7 RT		82	A	OUTLET TO SLOPE RT
2071+25	74.6 RT	-	2074+13	36.5 RT	380			PLACE 2.5' FROM EDGE OF PAVEMENT
2074+13	36.5 RT	-	2075+00	36.5 RT				
2075+00	36.5 RT	-	2075+00	98.0 RT		62	A	OUTLET TO SLOPE RT
402+95	6.0 RT	-	407+16	2.9 RT	416	9	B	OUTLET TO I-62
407+16	2.9 RT	-	413+61	6.0 RT	640	9	B	OUTLET TO I-62
413+70	2.9 RT	-	418+85	6.0 RT	510	9	B	OUTLET TO I-65
425+00	36.5 RT	-	433+78	36.5 RT	870	8	B	OUTLET TO I-72
433+87	36.5 RT	-	440+18	70.0 RT	629			PLACE 2.5' FROM EDGE OF PAVEMENT
440+18	70.0 RT	-	440+18	89.0 RT		19	A	OUTLET TO SLOPE RT
440+18	36.5 RT	-	445+00	36.5 RT	482			
445+00	36.5 RT	-	445+00	53.1 RT		17	A	OUTLET TO SLOPE RT
445+05	36.5 RT		448+25	36.5 RT	302	8	B	OUTLET TO I-75
ESTIMATED QUANTITIES - RIGHT					10444	645		

NOTES

A - SEE EDGE DRAIN OUTLET DETAIL TO SLOPE ON SHEET RD-41

B - SEE EDGE DRAIN DETAIL AT STORM DRAIN STRUCTURE ON SHEET RD-41

SHEET NO. RD-42

EDGE DRAIN DETAILS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER	SMARSHALL	BJOHNSON
	6/29/23	6/29/23	6/29/23

9487000RDDETZ04.DWG

MONTANA Department of Transportation

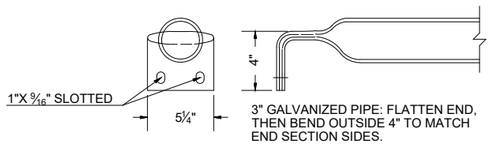
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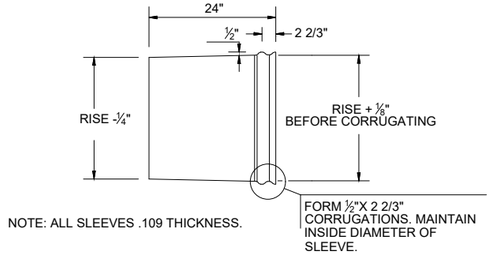
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DETAIL

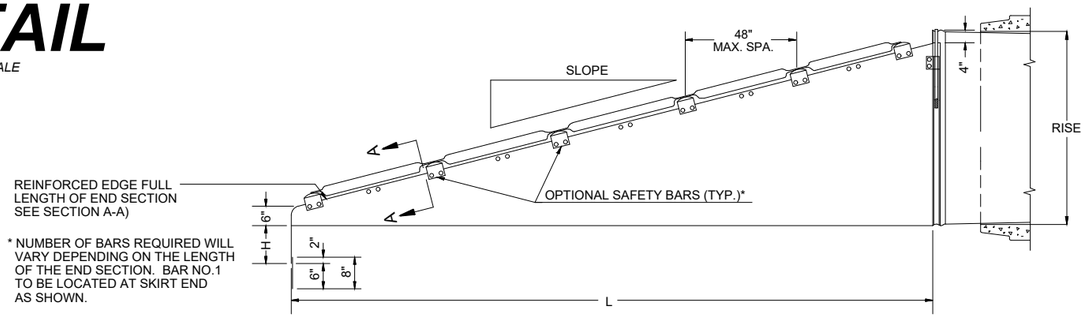
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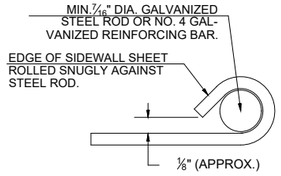
PARALLEL BARS
DETAIL OF SAFETY BARS



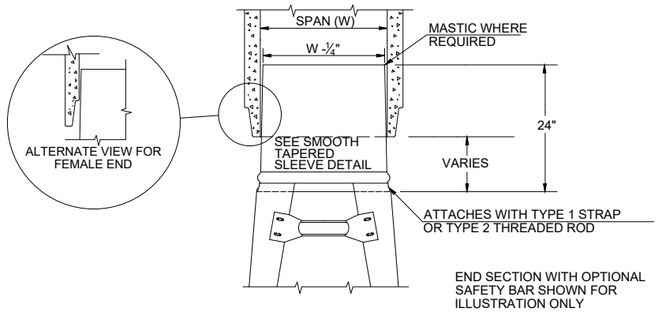
SMOOTH TAPERED SLEEVE DETAIL



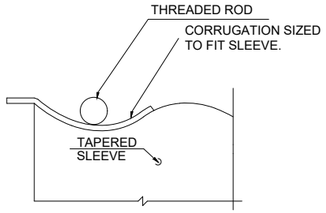
SIDE ELEVATION FOR CROSS DRAINAGE STRUCTURE



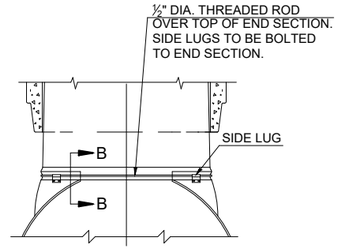
SECTION A-A



TAPERED SLEEVE FOR ATTACHING
STEEL END SECTIONS TO CONCRETE PIPE ARCH



SECTION B-B



TYPE #2 CONNECTOR DETAILS

FOR 30" EQUIVALENT AND LARGER

GENERAL NOTES

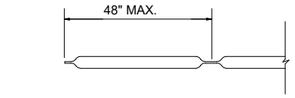
STEEL
GALVANIZED STEEL PER SECTION 711

CONNECTORS
ATTACH WITH TYPE #2 RODS AND LUGS.

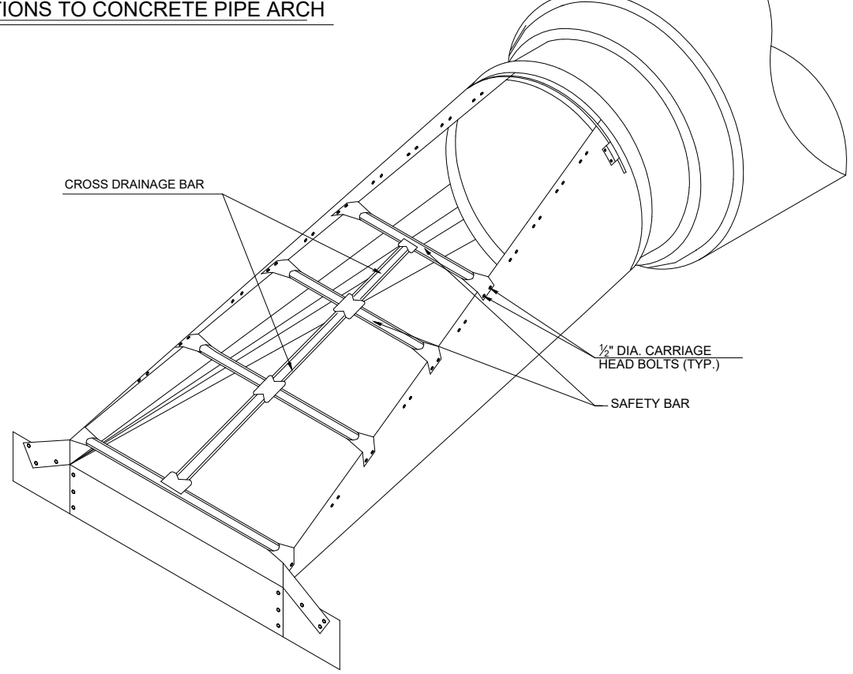
TOE PLATE EXTENSIONS
TOE PLATE EXTENSIONS ARE THE SAME GAGE AS END SECTION. TOE PLATE EXTENSIONS DIMENSIONS ARE OVERALL WIDTH LESS 6 INCHES BY 8 INCHES HIGH.

SAFETY BARS
GALVANIZED STEEL PIPE WITH AN APPROVED TYPE II ALUMINIZED COATING IN ACCORDANCE WITH STANDARD SPEC. 709.12.

MISCELLANEOUS DETAILS
PROVIDE SLOTTED HOLES FOR SAFETY BAR ATTACHMENT FOR ALL END SECTIONS.

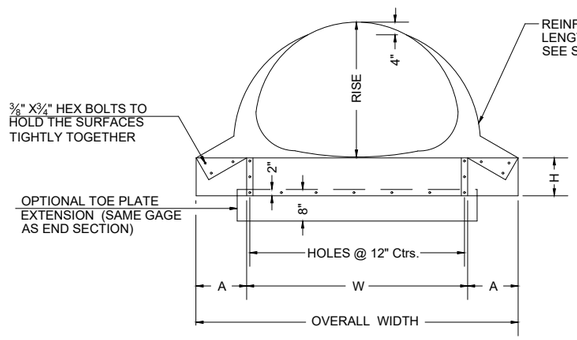


CROSS DRAINAGE BAR
DETAIL OF SAFETY BARS



CROSS DRAINAGE STRUCTURE

METAL END SECTIONS FOR CONCRETE PIPE ARCH										
EQUV. DIA. (IN.)	(INCHES) SPAN	(INCHES) RISE	MIN. THICK. IN. *	MIN. THICK. GAGE *	DIMENSIONS (INCHES) A	H	W	OVERALL WIDTH	L DIMENSIONS SLOPE	L DIMENSIONS LENGTH (IN.)
30	36 1/4"	22 1/2"	.109	12	12	9	41	65	6:1	84
36	43 3/4"	26 5/8"	.109	12	12	9	48	72	6:1	114



FRONT VIEW

SHEET NO.
RD-43

SAFETY SLOPE END SECTION FOR REINFORCED CONCRETE PIPE ARCH

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHPF 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHAL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

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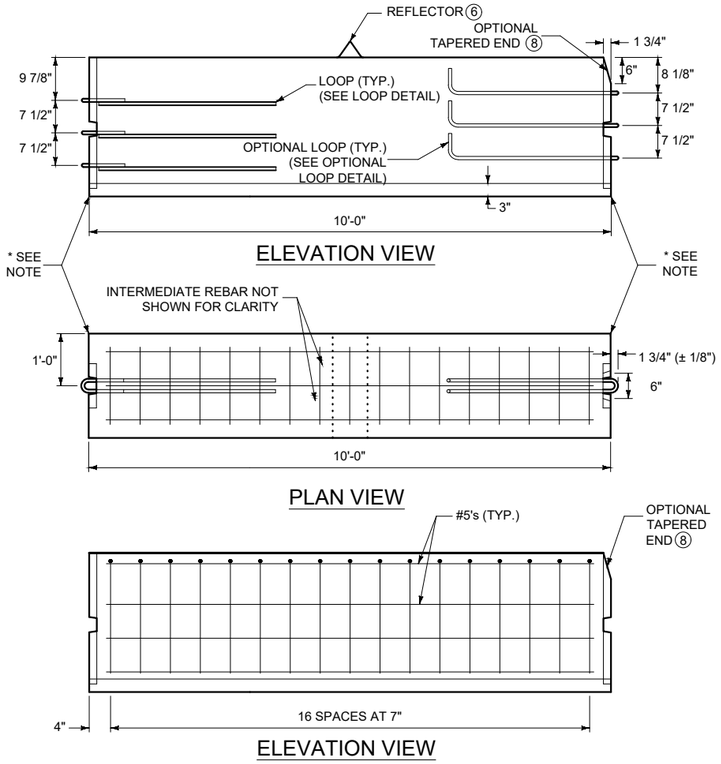
MONTANA
Department of Transportation

ROAD PLANS

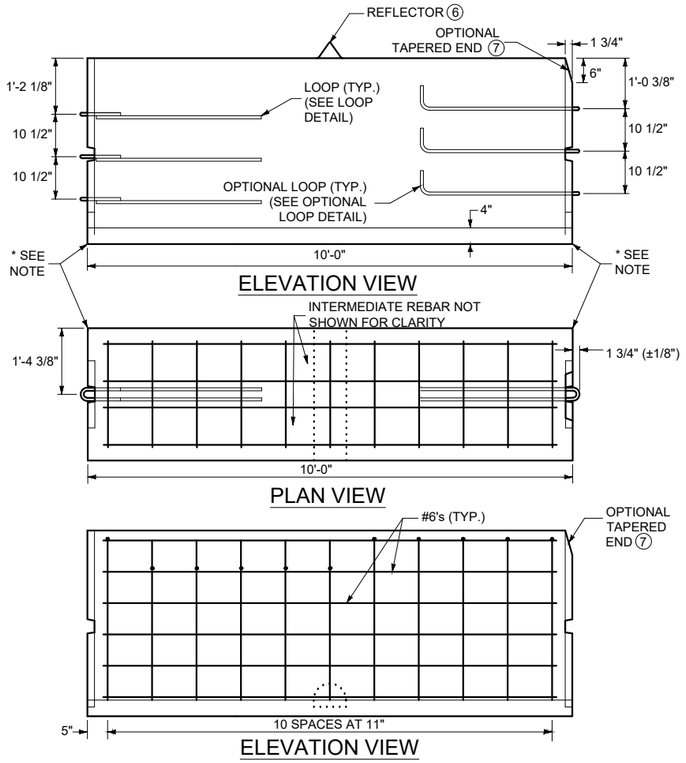
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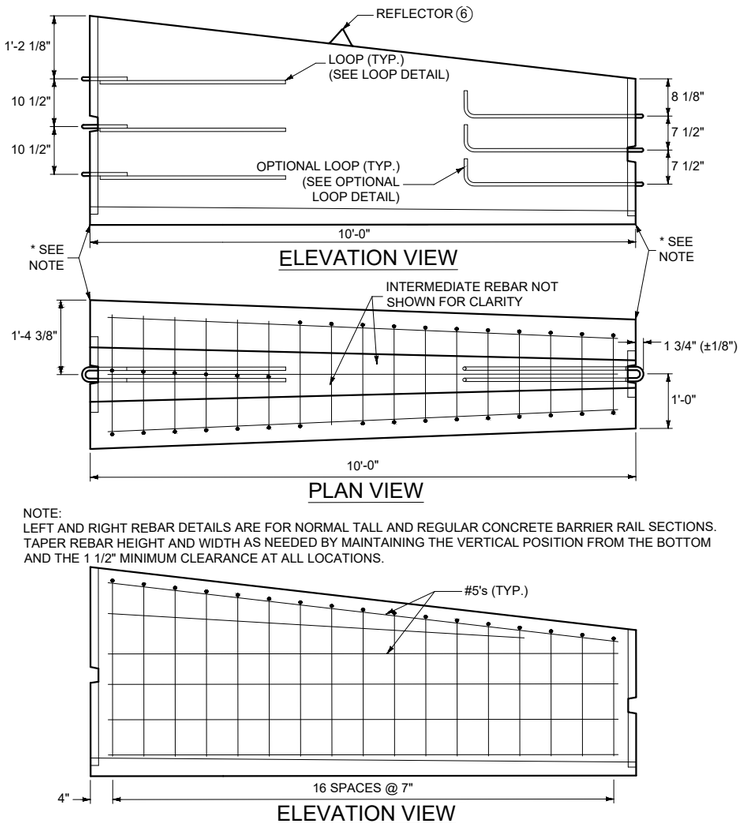
DETAIL



MODIFICATIONS TO DWG. NO. 605-00

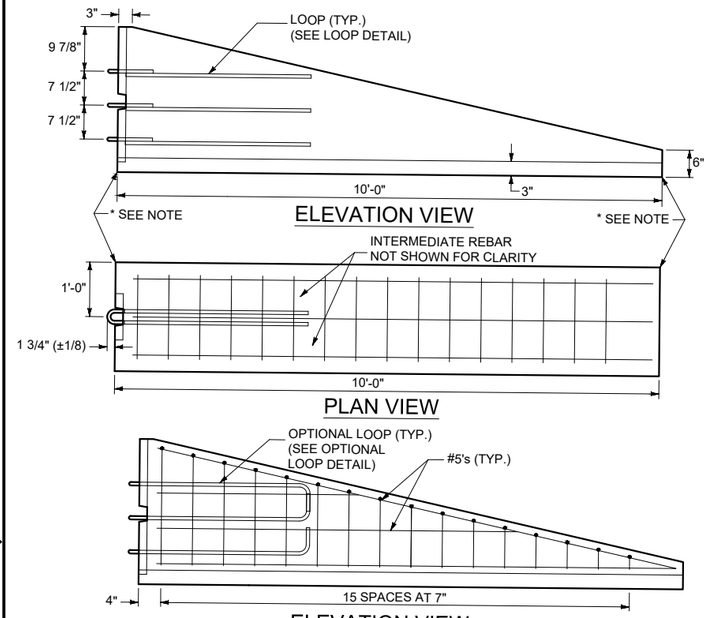


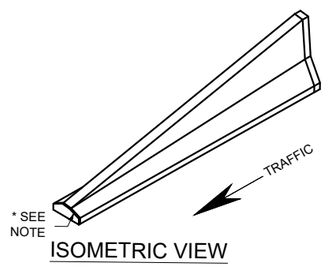
MODIFICATIONS TO DWG. NO. 605-10



MODIFICATIONS TO DWG. NO. 605-15

NOTE:
LEFT AND RIGHT REBAR DETAILS ARE FOR NORMAL TALL AND REGULAR CONCRETE BARRIER RAIL SECTIONS. TAPER REBAR HEIGHT AND WIDTH AS NEEDED BY MAINTAINING THE VERTICAL POSITION FROM THE BOTTOM AND THE 1 1/2" MINIMUM CLEARANCE AT ALL LOCATIONS.





ISOMETRIC VIEW

MODIFICATIONS TO DWG. NO. 605-20

NOTES:

THE PURPOSE OF THIS DETAIL IS TO REMOVE THE SCUPPER FROM THE STANDARD AND TALL CONCRETE BARRIER RAIL AND ANY ADJOINING TRANSITION SECTIONS AND TERMINAL SECTIONS. SEE DWG. NOS. 605-00, 605-05, 605-10, 605-15, 605-20 FOR ALL OTHER CONCRETE BARRIER RAIL REQUIREMENTS.

⑥ ATTACH REFLECTORS TO RAIL EVERY 30'. USE ALUMINUM ALLOY MEETING THE ALUMINUM ASSOCIATION ALLOY AA5052-H32. FOLLOW THE MANUFACTURER'S SPECIFICATIONS FOR ADHESIVE MOUNTING. IN NARROW PAVED (FLUSH) MEDIAN APPLICATIONS. REFLECTORIZE BOTH SIDES.

⑦ THE OPTIONAL TAPERED END SHOWN IS AN ACCEPTABLE ALTERNATE TO THE VERTICAL END FOR ALL CONCRETE BARRIER RAIL ENDS.

⑧ THE OPTIONAL TAPERED END SHOWN IS AN ACCEPTABLE ALTERNATE TO THE VERTICAL END FOR ALL CONCRETE BARRIER RAIL ENDS.

* 3/4" CHAMFER ENTIRE OPENING (OR SUFFICIENTLY ROUNDED SO THAT A SMOOTH EDGE RESULTS.) 1/2" CHAMFER IS ACCEPTABLE.

** USE THE ALTERNATE 8" DIA. HOLE IN THIS RAIL ON A CASE-BY-CASE BASIS AS SPECIFIED IN THE PLANS.

SHEET NO.
RD-44

MODIFIED CONCRETE BARRIER RAIL DETAILS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHAL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

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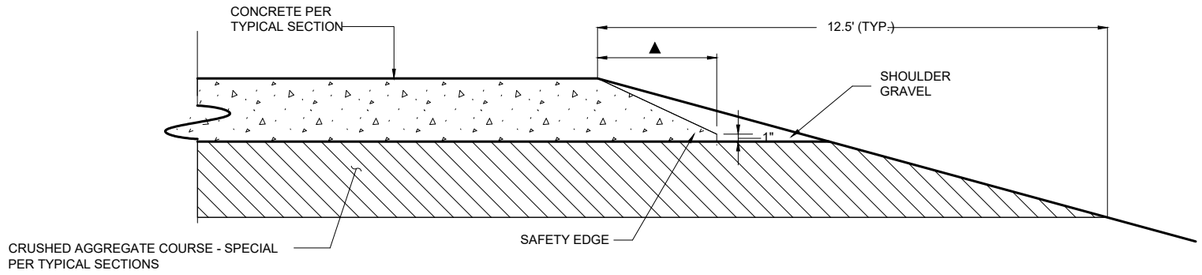
MONTANA
Department of Transportation

ROAD PLANS

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DETAIL



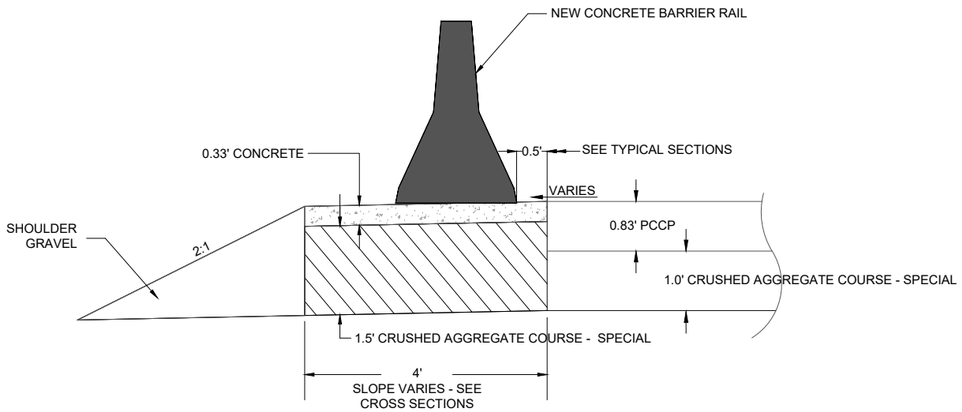
SAFETY EDGE DETAIL

LEGEND

▲ - SAFETY EDGE WITH A 30°-35° SLOPE AND SHOULDER GRAVEL.

NOTES

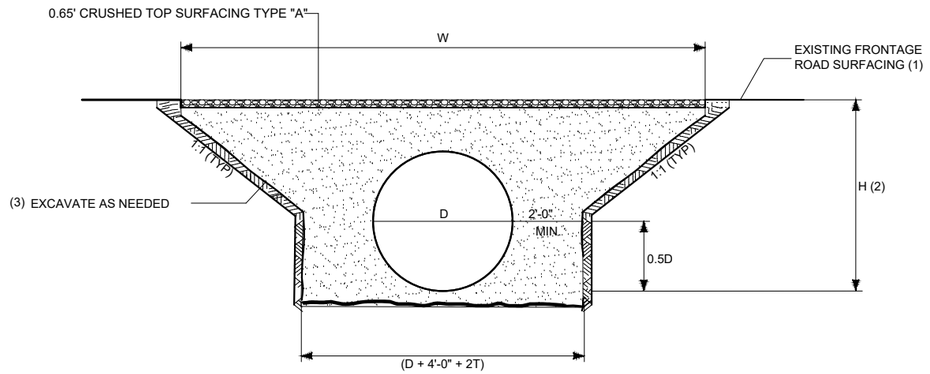
1. CONSTRUCT SAFETY EDGE AS PART OF THE ROADWAY PAVEMENT. ADD SHOULDER WEDGE DEVICE TO THE SCREED OF THE PAVING MACHINE.
2. USE A SHOULDER WEDGE MAKER OR SIMILAR DEVICE THAT PRODUCES THE SAME COMPACTION RESULTS.
3. ALLOW SHORT SECTIONS OF HANDWORK WHEN NECESSARY FOR TRANSITIONS AND TURNOUTS.
4. INCLUDE THE SITE PREPARATION AND ADDITIONAL EARTHWORK REQUIRED TO CONSTRUCT THE SAFETY EDGE IN THE PRICE OF THE ROADWAY PAVEMENT.
5. DO NOT INSTALL SAFETY EDGE ADJACENT TO GUARDRAIL OR CONCRETE BARRIER RAIL.
6. INCLUDE SAFETY EDGE ON BOTH THE MEDIAN AND ROADSIDE SHOULDERS IN DIVIDED SECTIONS OF THE INTERSTATE.



CONCRETE BARRIER END CONDITION

NOTES

1. SEE ADDITIONAL SURFACING SUMMARY FOR QUANTITIES.



FRONTAGE ROAD SURFACING
REPAIR DETAIL

NOTES:
(1) MATCH PROFILE AND CROSS SLOPE OF EXITING FRONTAGE ROAD SURFACING
(2) HEIGHT FROM PROPOSED PIPE INVERT TO EXISTING FRONTAGE ROAD GRADE IS APPROXIMATE.
(3) 1H:1V SLOPES ARE ASSUMED FOR DETERMINING APPROXIMATE QUANTITIES ONLY AND MAY VARY AS NEEDED.

FRONTAGE ROAD SURFACING								
DESCRIPTION	LOCATION	D (IN)	T (IN)	H (FT)	W (FT)	L (FT)*	V (CY)**	MATERIAL
30" RCP	3000+93	30	4.5	7	19	24	11	CRUSHED TOP SURFACING TYPE "A"
54" RCP	2055+34	54	5.5	8	21	33	17	CRUSHED TOP SURFACING TYPE "A"
36" RCP	407+16	36	4	15	35	24	20	CRUSHED TOP SURFACING TYPE "A"

* APPROXIMATE LENGTH OF PIPE CROSSING EXISTING FRONTAGE ROAD

** ESTIMATED QUANTITIES OF SURFACING MATERIAL IS PROVIDED FOR INFORMATION ONLY

SHEET NO.
RD-45

SAFETY EDGE AND CONCRETE BARRIER END CONDITION
FRONTAGE ROAD SURFACING REPAIR

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER	SMARSHAL	BJOHNSON
	6/29/23	6/29/23	6/29/23

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MONTANA
Department of Transportation

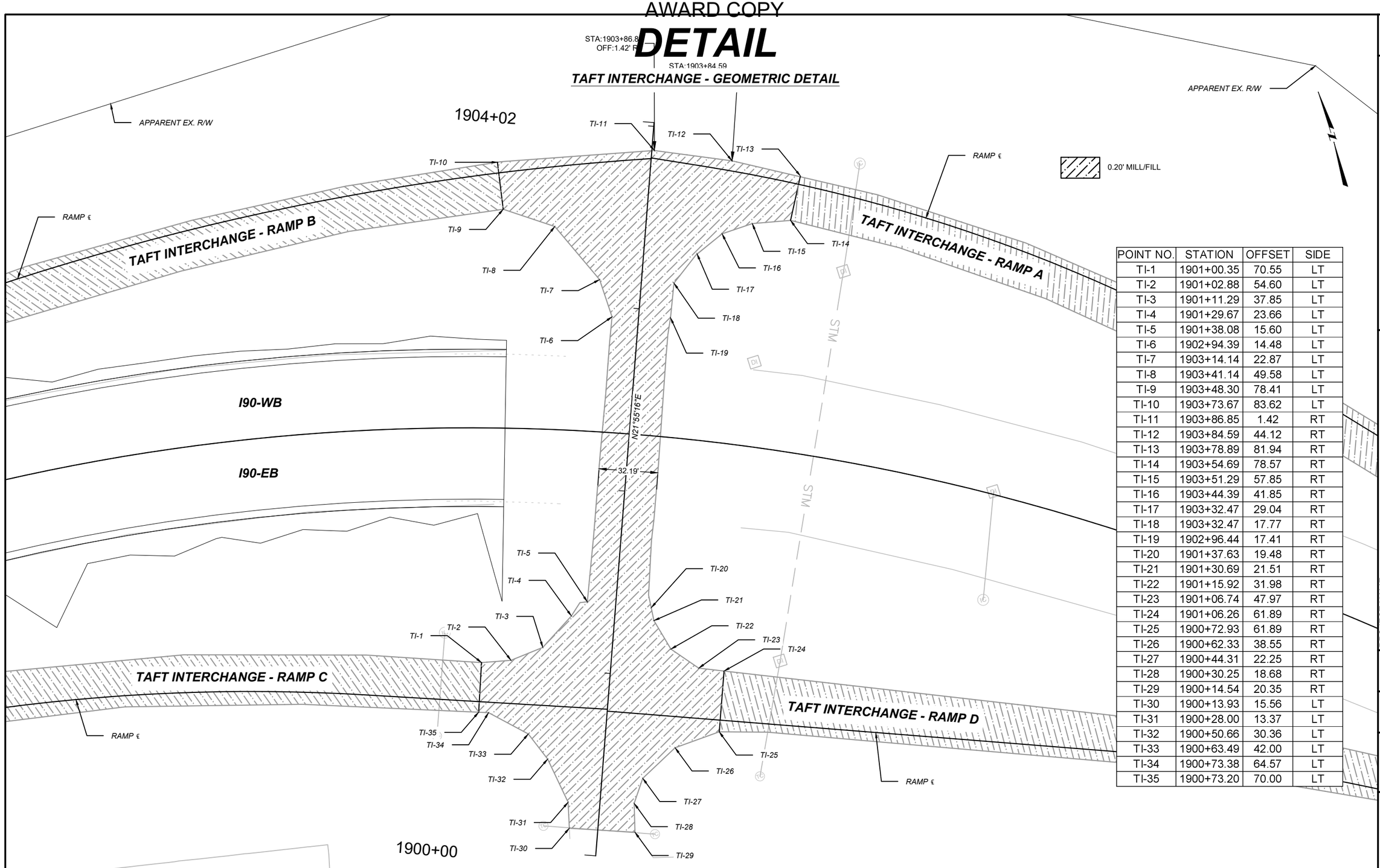
ROAD PLANS

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DETAIL

TAFT INTERCHANGE - GEOMETRIC DETAIL



POINT NO.	STATION	OFFSET	SIDE
TI-1	1901+00.35	70.55	LT
TI-2	1901+02.88	54.60	LT
TI-3	1901+11.29	37.85	LT
TI-4	1901+29.67	23.66	LT
TI-5	1901+38.08	15.60	LT
TI-6	1902+94.39	14.48	LT
TI-7	1903+14.14	22.87	LT
TI-8	1903+41.14	49.58	LT
TI-9	1903+48.30	78.41	LT
TI-10	1903+73.67	83.62	LT
TI-11	1903+86.85	1.42	RT
TI-12	1903+84.59	44.12	RT
TI-13	1903+78.89	81.94	RT
TI-14	1903+54.69	78.57	RT
TI-15	1903+51.29	57.85	RT
TI-16	1903+44.39	41.85	RT
TI-17	1903+32.47	29.04	RT
TI-18	1903+32.47	17.77	RT
TI-19	1902+96.44	17.41	RT
TI-20	1901+37.63	19.48	RT
TI-21	1901+30.69	21.51	RT
TI-22	1901+15.92	31.98	RT
TI-23	1901+06.74	47.97	RT
TI-24	1901+06.26	61.89	RT
TI-25	1900+72.93	61.89	RT
TI-26	1900+62.33	38.55	RT
TI-27	1900+44.31	22.25	RT
TI-28	1900+30.25	18.68	RT
TI-29	1900+14.54	20.35	RT
TI-30	1900+13.93	15.56	LT
TI-31	1900+28.00	13.37	LT
TI-32	1900+50.66	30.36	LT
TI-33	1900+63.49	42.00	LT
TI-34	1900+73.38	64.57	LT
TI-35	1900+73.20	70.00	LT

NOTES:

ALL STATIONING TAKEN FROM TAFT UNDERPASS CENTERLINE. SEE RAMP PLAN AND PROFILE SHEETS FOR ADDITIONAL INFORMATION AND TIE-INS.

SHEET NO.
RD-46

TAFT INTERCHANGE MILL FILL DETAIL

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
DESIGNED BY	L.JOHNSON	6/29/23	
REVIEWED BY	S.MARSHAL	6/29/23	
CHECKED BY	L.FISCHER	6/29/23	

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MONTANA Department of Transportation

ROAD PLANS

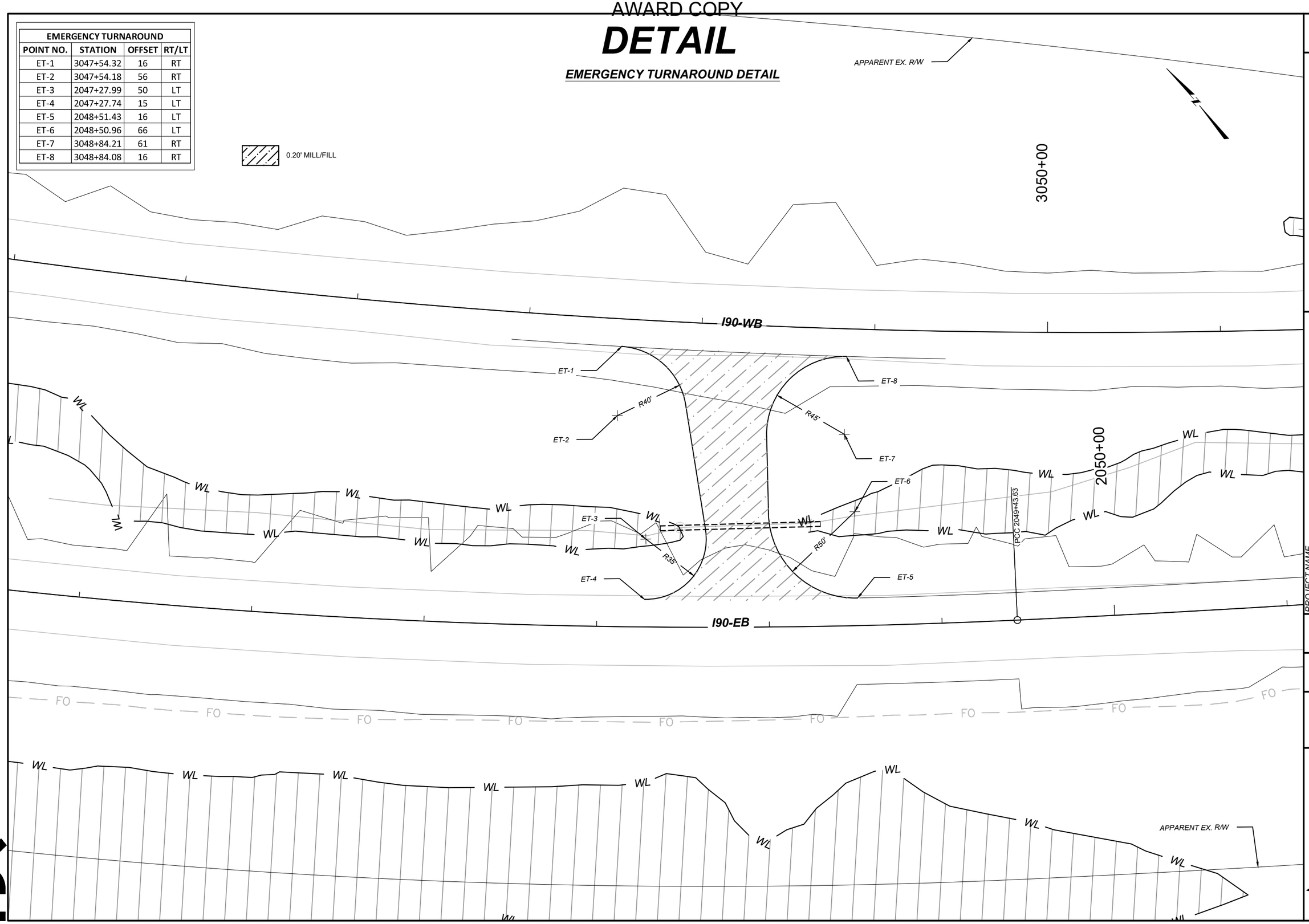
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DETAIL

EMERGENCY TURNAROUND DETAIL

EMERGENCY TURNAROUND			
POINT NO.	STATION	OFFSET	RT/LT
ET-1	3047+54.32	16	RT
ET-2	3047+54.18	56	RT
ET-3	2047+27.99	50	LT
ET-4	2047+27.74	15	LT
ET-5	2048+51.43	16	LT
ET-6	2048+50.96	66	LT
ET-7	3048+84.21	61	RT
ET-8	3048+84.08	16	RT



HDR

MONTANA
Department of Transportation

ROAD PLANS

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DESIGNED BY	BJOHNSON	6/29/23	9487000RDDETZ06.DWG
REVIEWED BY	SMARSHALL	6/29/23	
CHECKED BY	LFISCHER	6/29/23	

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

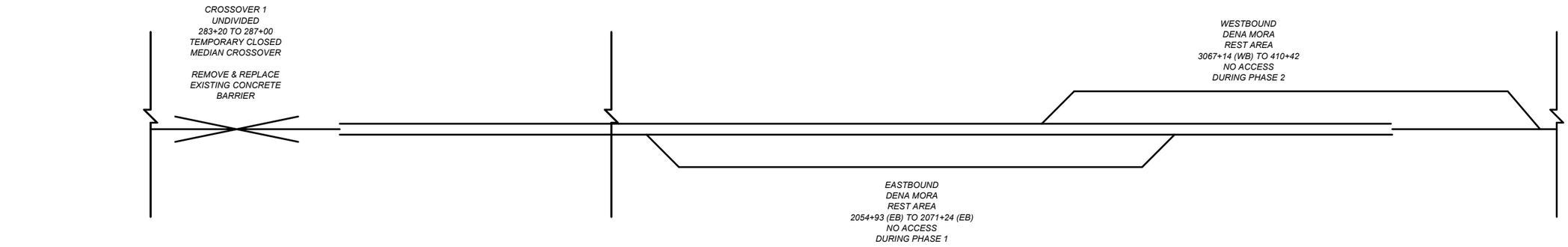
SHEET NO.
RD-47

EMERGENCY TURNAROUND

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DETAIL

TRAFFIC CONTROL DETAIL



NOTES:
1. THE DESIGN SPEED FOR CROSSOVERS AND TAPERS ARE 45 MPH.

2. CONSTRUCT AND SIGN DETOURS FOR SAFE OPERATIONS, TAKING INTO CONSIDERATION HORIZONTAL AND VERTICAL ALIGNMENTS, AS WELL AS TRAFFIC INGRESS AND EGRESS TO AND FROM RAMPS AND CROSS ROADS.

3. LOCATIONS ARE APPROXIMATE. FIELD ADJUST CROSSOVER LOCATION AS NECESSARY.

BRIDGE

SHEET NO.
RD-48

CROSSOVER OVERVIEW DETAIL

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHAL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

MONTANA Department of Transportation

ROAD PLANS

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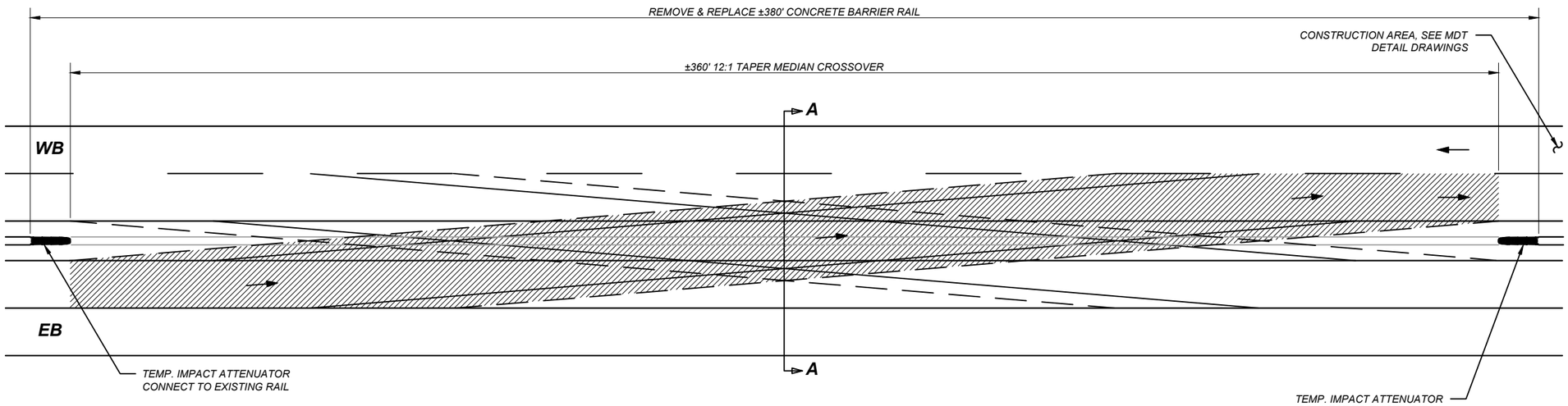
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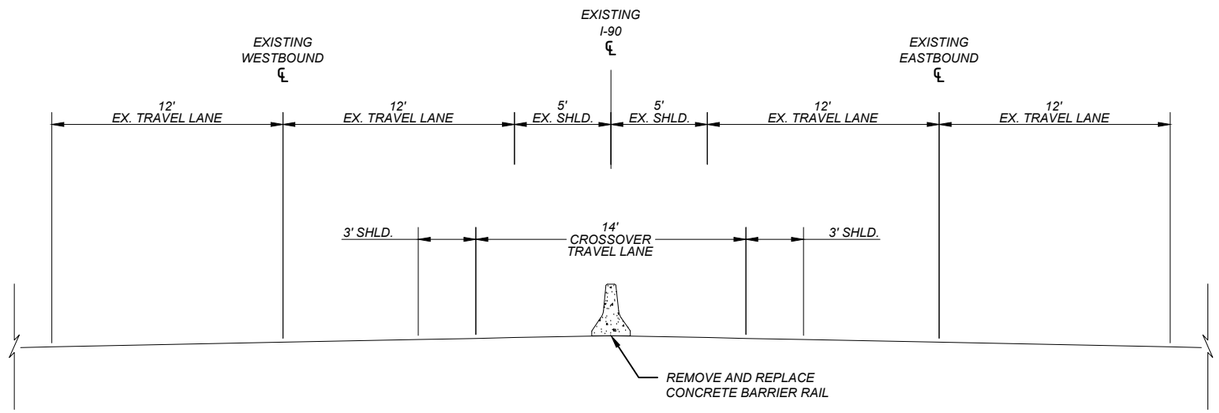
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DETAIL

TYPICAL CROSSOVER



QUANTITIES FOR CLOSED MEDIAN CROSSOVERS* CROSSOVERS 1 & 2
REMOVE CONCRETE BARRIER RAIL = 38 EA
TEMP. IMPACT ATTENUATOR = 2 EA
NEW CONCRETE BARRIER RAIL = 38 EA **



SECTION A-A

* FOR INFORMATION ONLY

** IF EXISTING CONCRETE BARRIER RAIL IS NOT THREE LOOP, REPLACE WITH NEW THREE LOOP CONCRETE BARRIER RAIL.RESET EXISTING THREE LOOP CONCRETE BARRIER. NEW CONCRETE BARRIER RAIL WILL BE PAID FOR AS CONCRETE BARRIER RAIL PER EACH. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION

NOTES:
1. ALL ITEMS ARE INCLUDED IN THE UNIT BID PRICE OF CROSSOVER-MEDIAN BARRIER RAIL

2. SEE MDT DETAIL DRAWINGS SERIES 618 FOR ADDITIONAL CROSSOVER AND TRAFFIC CONTROL REQUIREMENTS

3. REMOVE TEMPORARY IMPACT ATTENUATORS AND RESET CONCRETE BARRIER RAIL WHEN WORK IS COMPLETE

SHEET NO.
RD-49

TYPICAL CROSSOVER

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
CHECKED BY	LFISCHER	6/29/23	
REVIEWED BY	SMARSHAL	6/29/23	
DESIGNED BY	BJOHNSON	6/29/23	

MONTANA Department of Transportation

ROAD PLANS

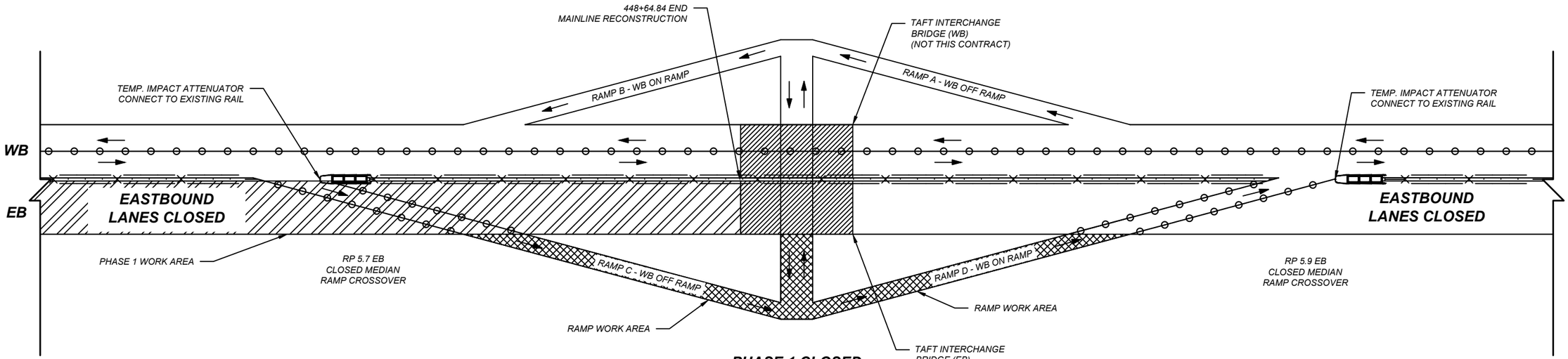
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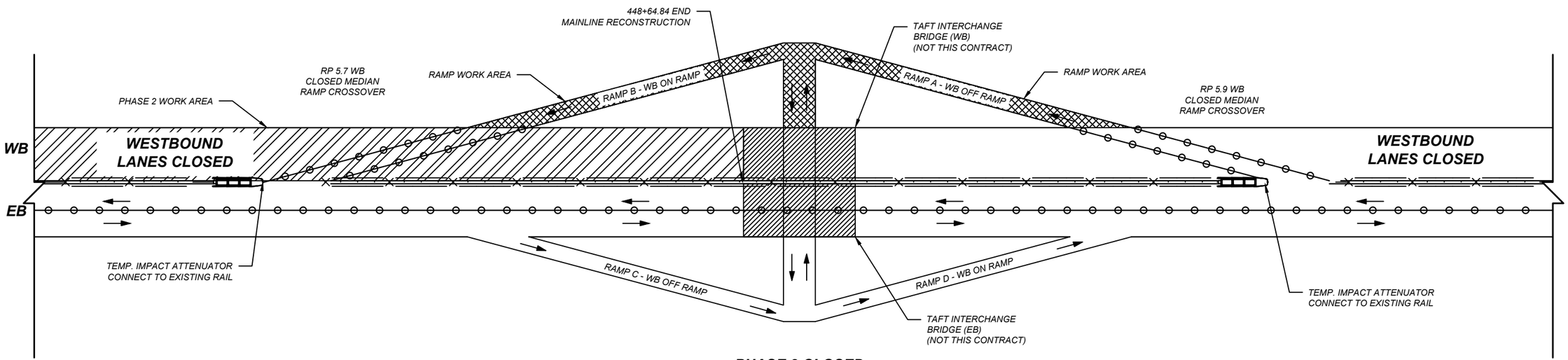
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DETAIL

TAFT INTERCHANGE



PHASE 1 CLOSED MEDIAN RAMP CROSSOVERS



PHASE 2 CLOSED MEDIAN RAMP CROSSOVERS

SHEET NO.
RD-50

TAFT INTERCHANGE
RAMP CROSSOVERS

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
CHECKED BY	LFISCHER	6/29/23	
REVIEWED BY	SMARSHAL	6/29/23	
DESIGNED BY	BJOHNSON	6/29/23	

MONTANA
Department of Transportation

ROAD PLANS

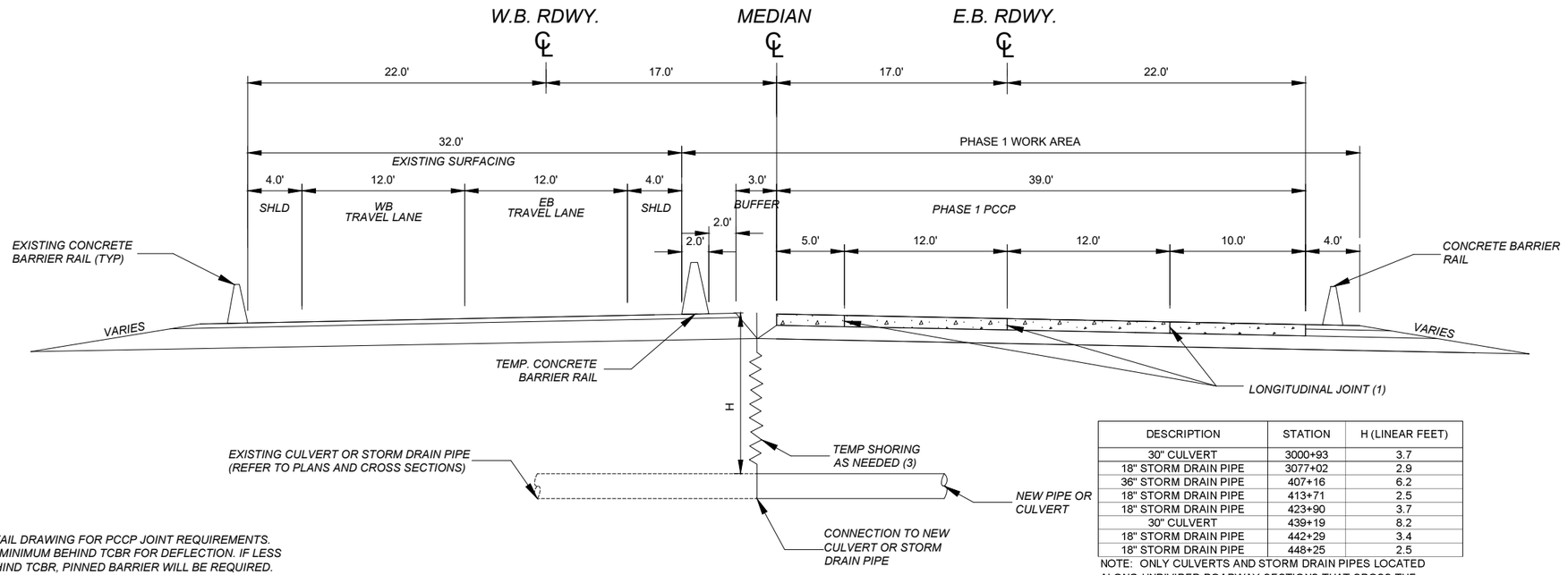
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AWARD COPY

DETAIL

CONSTRUCTION SEQUENCING PHASE 1 - UNDIVIDED



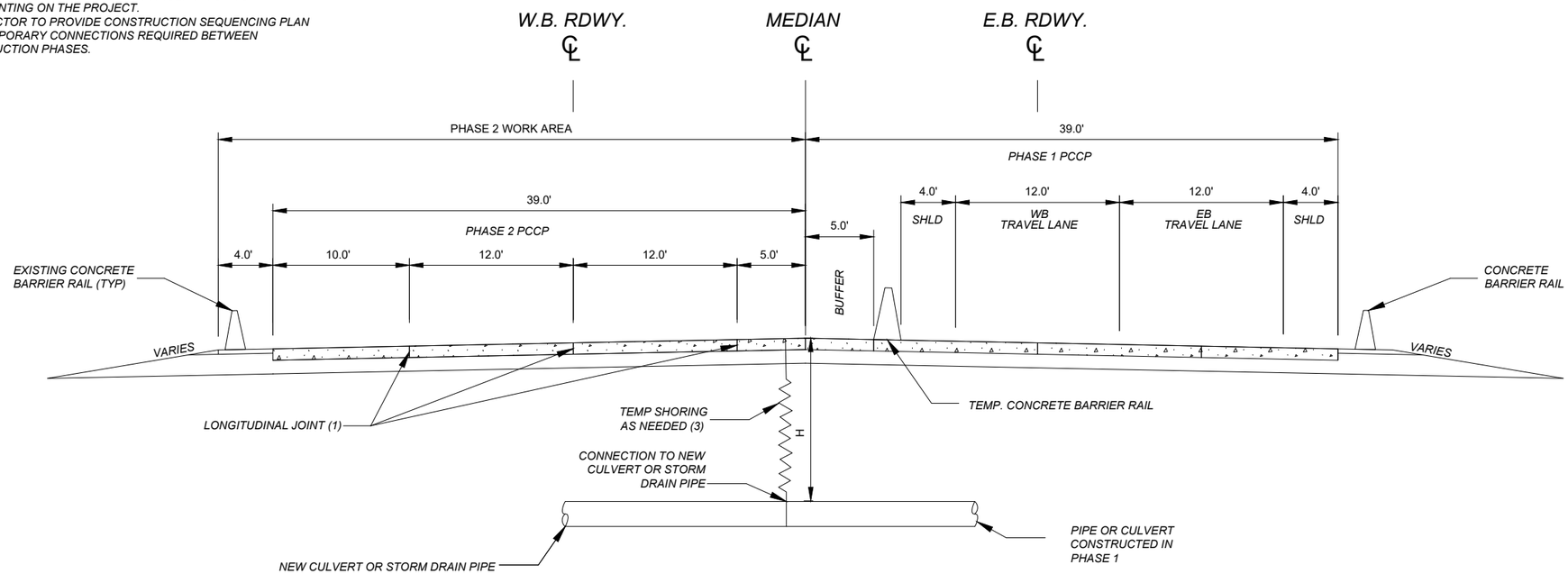
DESCRIPTION	STATION	H (LINEAR FEET)
30" CULVERT	3000+93	3.7
18" STORM DRAIN PIPE	3077+02	2.9
36" STORM DRAIN PIPE	407+16	6.2
18" STORM DRAIN PIPE	413+71	2.5
18" STORM DRAIN PIPE	423+90	3.7
30" CULVERT	439+19	8.2
18" STORM DRAIN PIPE	442+29	3.4
18" STORM DRAIN PIPE	448+25	2.5

NOTE: ONLY CULVERTS AND STORM DRAIN PIPES LOCATED ALONG UNDIVIDED ROADWAY SECTIONS THAT CROSS THE MEDIAN CENTERLINE ARE IDENTIFIED.
SEE THE CROSS SECTIONS FOR ADDITIONAL DETAILS.

NOTES:

(1) SEE MDT DETAIL DRAWING FOR PCCP JOINT REQUIREMENTS.
(2) PROVIDE 2.0' MINIMUM BEHIND TCBR FOR DEFLECTION. IF LESS THAN 2.0; BEHIND TCBR, PINNED BARRIER WILL BE REQUIRED.
(3) SPECIAL MEASURES, INCLUDING SHEET PILING, SHORING, GRAVITY RETAINING BLOCK STRUCTURES, AND/OR OTHER TEMPORARY MEASURES MAY BE REQUIRED TO FACILITATE CONSTRUCTION PHASING AND MAINTENANCE OF TRAFFIC AS NECESSARY TO PERFORM THE WORK. THE COST FOR SPECIAL MEASURES SHOULD BE INCLUDED IN THE BID ITEMS FOR RELATED WORK AS NECESSARY. SPECIAL MEASURES ARE TO BE APPROVED BY THE PROJECT MANAGER PRIOR TO IMPLEMENTING ON THE PROJECT.
(4) CONTRACTOR TO PROVIDE CONSTRUCTION SEQUENCING PLAN FOR TEMPORARY CONNECTIONS REQUIRED BETWEEN CONSTRUCTION PHASES.

CONSTRUCTION SEQUENCING PHASE 2 - UNDIVIDED



SHEET NO.
RD-51

CONSTRUCTION SEQUENCING

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHAL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

9487000RDDETZ06.DWG

MONTANA Department of Transportation

ROAD PLANS

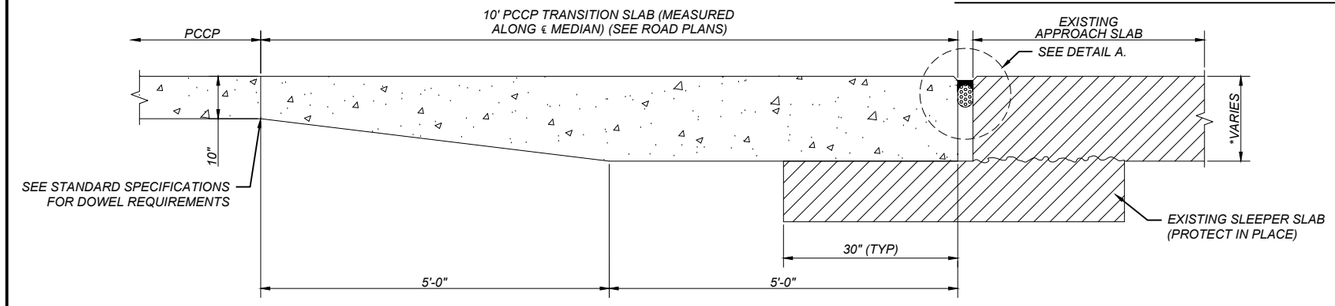
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HDR

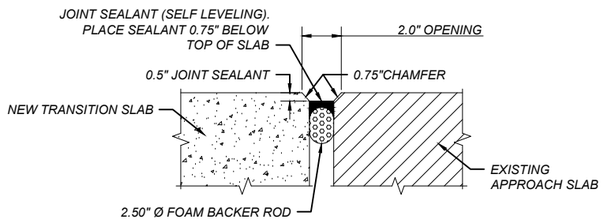
AWARD COPY

DETAIL

PCCP TRANSITION TO BRIDGE APPROACH SLAB



*NOTE: SEE APPROACH SLAB THICKNESS TABLE

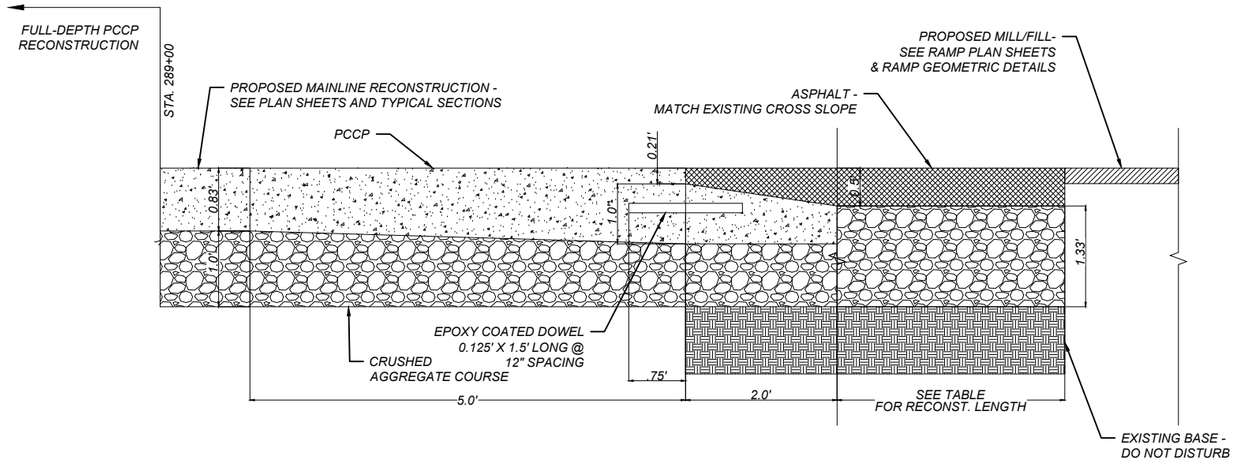


DETAIL A

* EXISTING APPROACH SLAB THICKNESS PER AS-BUILTS		
REFERENCE POINT	STRUCTURE NAME	APPROACH SLAB THICKNESS (IN)
5.148 EB	LOCAL ROAD CROSSING	15.28
5.148 WB	LOCAL ROAD CROSSING	15.75
5.686 EB	TAFT INTERCHANGE	14.10
5.686 WB	TAFT INTERCHANGE	14.96

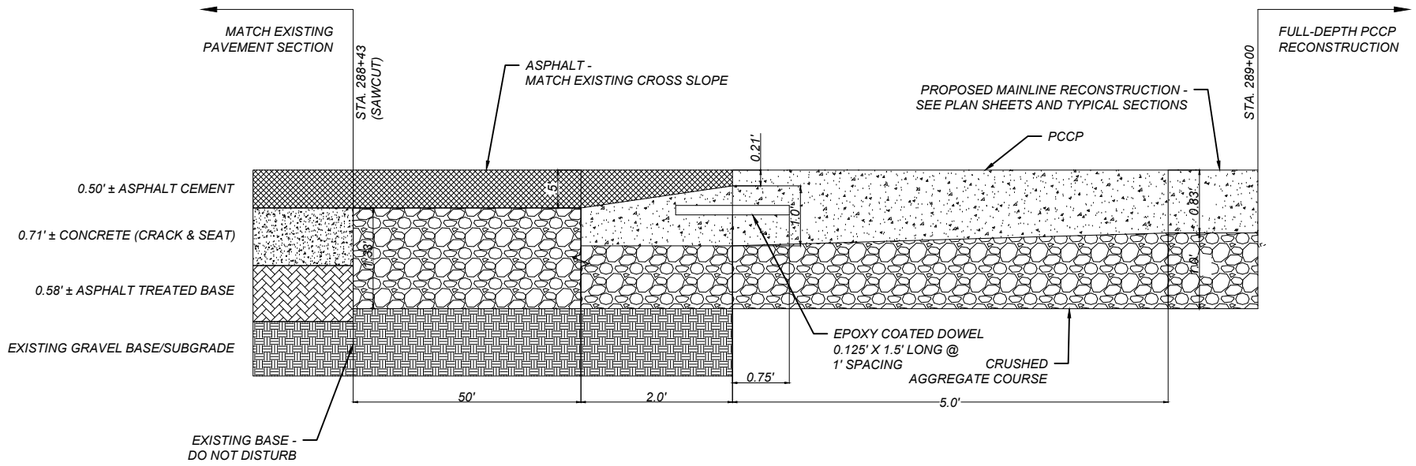
NOTE: APPROACH SLAB THICKNESSES APPLY TO BOTH SLABS AT EACH LOCATION.

PCCP RECONSTRUCTION TRANSITION TO RAMP ASPHALT SURFACE



FULL DEPTH ASPHALT RECONSTRUCTION		
LOCATION	REMARKS	LENGTH (FT)
DENA MORA REST AREA - RAMP A	WESTBOUND OFF RAMP	70
DENA MORA REST AREA - RAMP B	WESTBOUND ON RAMP	40
DENA MORA REST AREA - RAMP C	EASTBOUND OFF RAMP	110
DENA MORA REST AREA - RAMP D	EASTBOUND ON RAMP	40
TAFT INTERCHANGE - RAMP B	WESTBOUND ON RAMP	180
TAFT INTERCHANGE - RAMP C	EASTBOUND OFF RAMP	90

PCCP RECONSTRUCTION TRANSITION TO ASPHALT MAINLINE SURFACE



SHEET NO.
RD-52

PAVEMENT TRANSITION DETAILS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

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MONTANA Department of Transportation

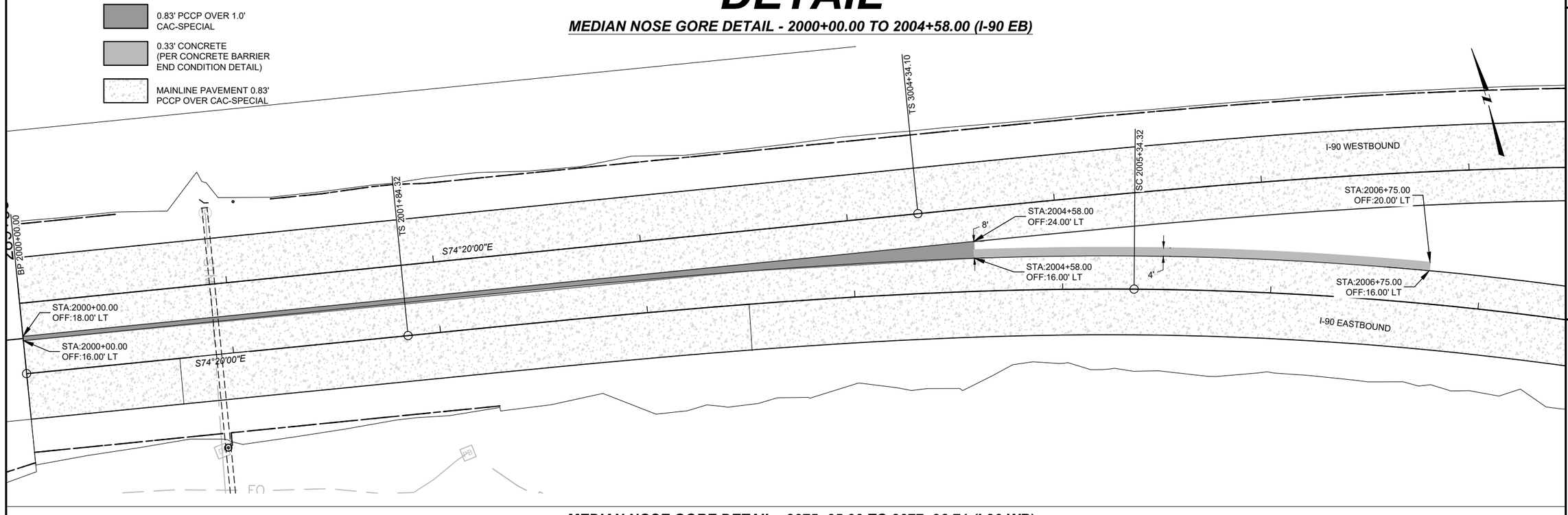
ROAD PLANS

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DETAIL

MEDIAN NOSE GORE DETAIL - 2000+00.00 TO 2004+58.00 (I-90 EB)



MEDIAN NOSE GORE DETAIL - 3075+05.00 TO 3077+96.71 (I-90 WB)

SHEET NO.
RD-53

MEDIAN NOSE GORE DETAILS

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
DESIGNED BY	BJOHNSON	6/29/23	
REVIEWED BY	SMARSHAL	6/29/23	
CHECKED BY	LFISCHER	6/29/23	

MONTANA
Department of Transportation

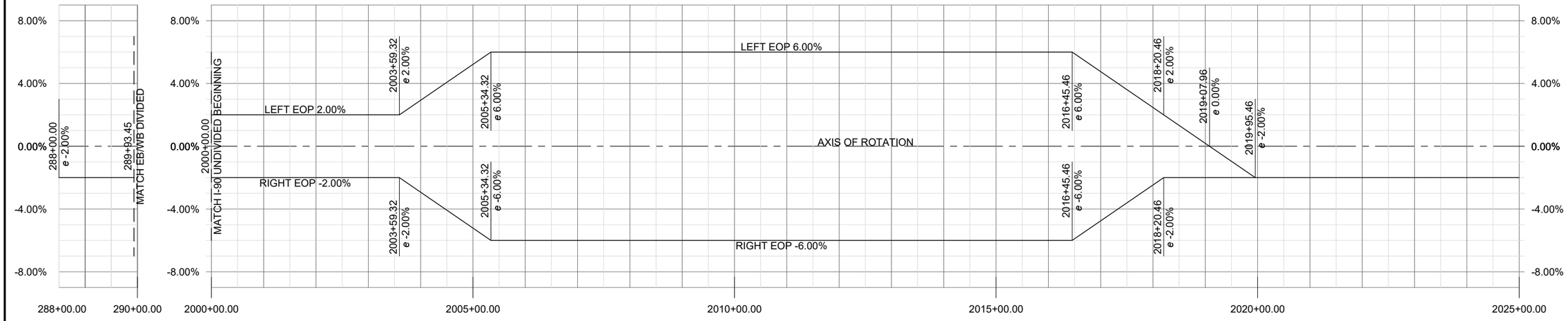
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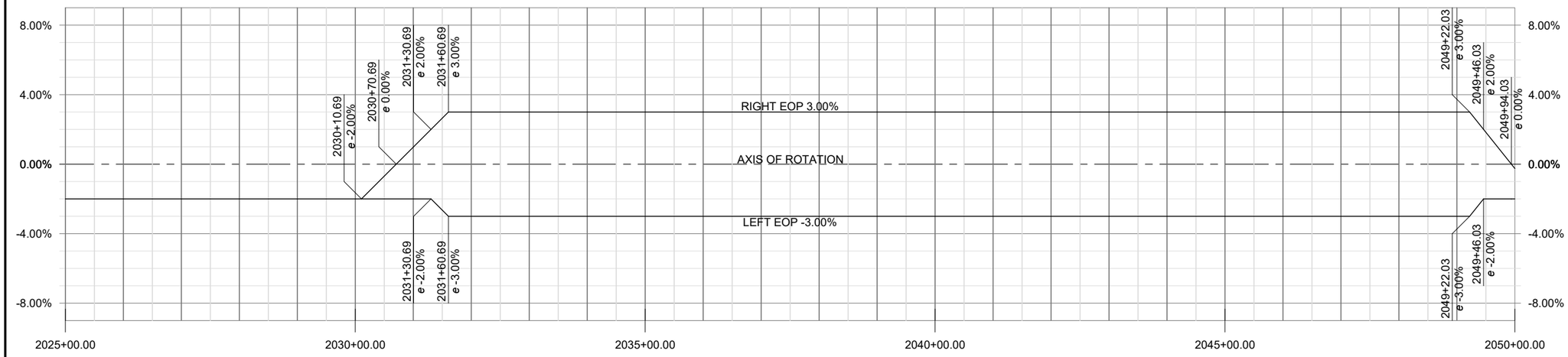
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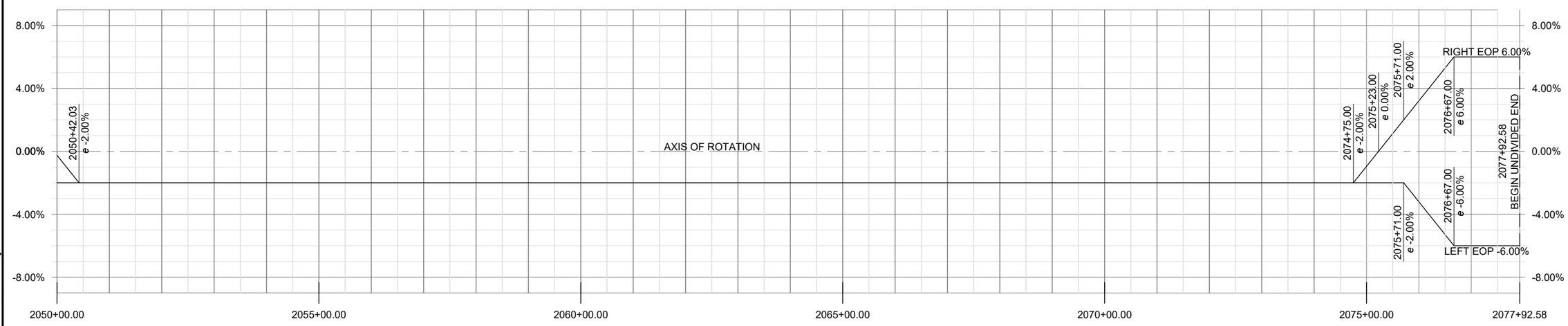
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I-90 EASTBOUND







SHEET NO.
RD-54

SUPERELEVATION DIAGRAMS

PROJECT NAME	TAFT - WEST	
COUNTY	MINERAL COUNTY	
PROJECT ID	IM-NHFP 90-1(228)3	
UPN	9487000	
CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

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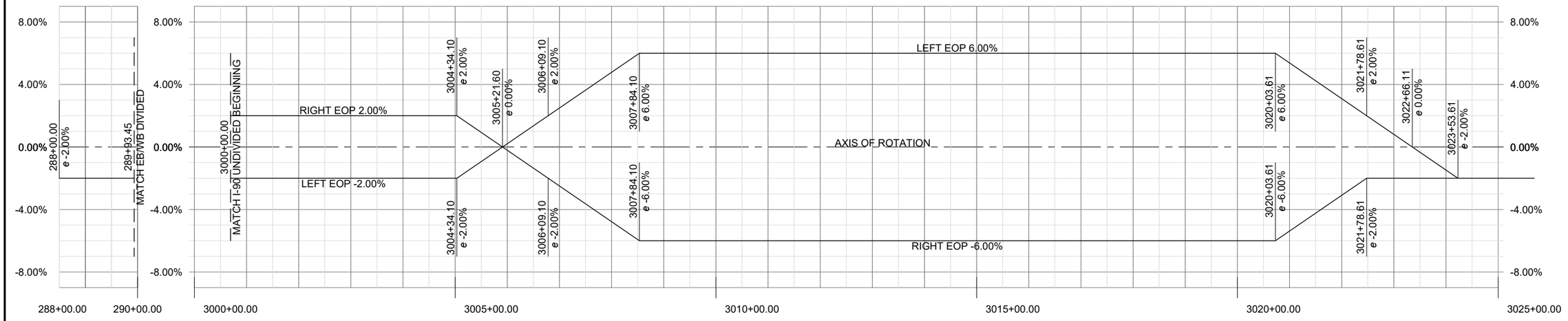
MONTANA
Department of Transportation

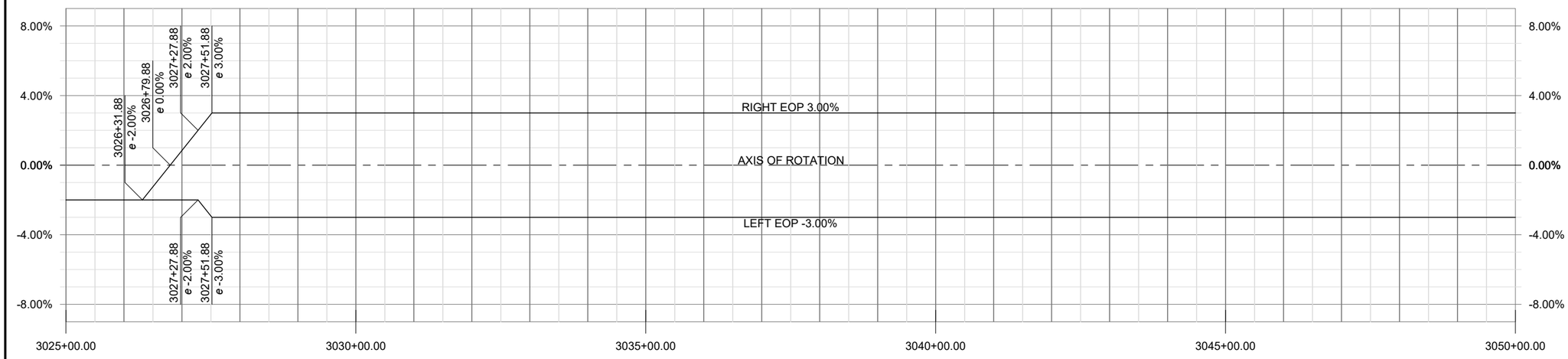
ROAD PLANS

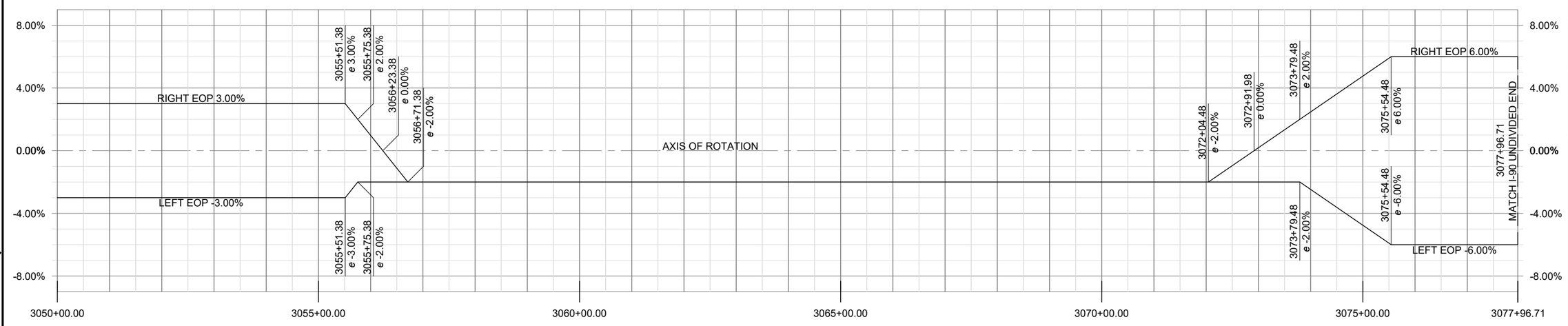
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I-90 WESTBOUND







SHEET NO.
RD-55

SUPERELEVATION DIAGRAMS

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
CHECKED BY	LFISCHER	6/29/23	
REVIEWED BY	SMARSHALL	6/29/23	
DESIGNED BY	BJOHNSON	6/29/23	

MONTANA
Department of Transportation

ROAD PLANS

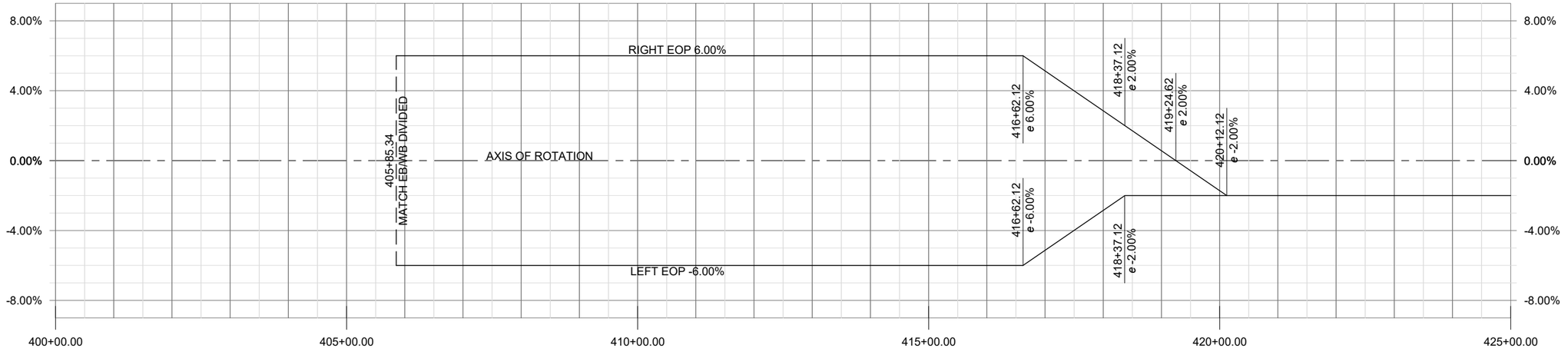
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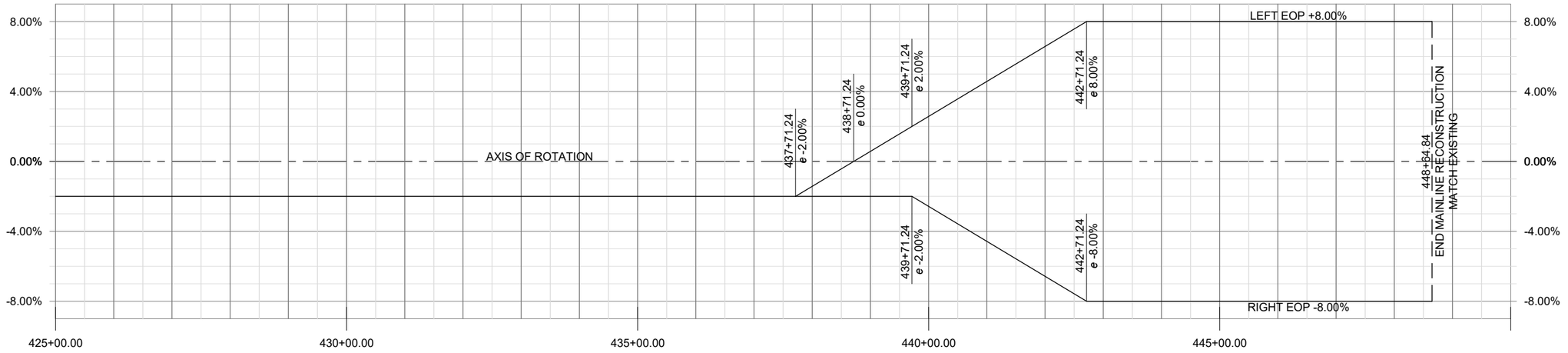
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I-90 UNDIVIDED END





SHEET NO.
RD-56

SUPERELEVATION DIAGRAMS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

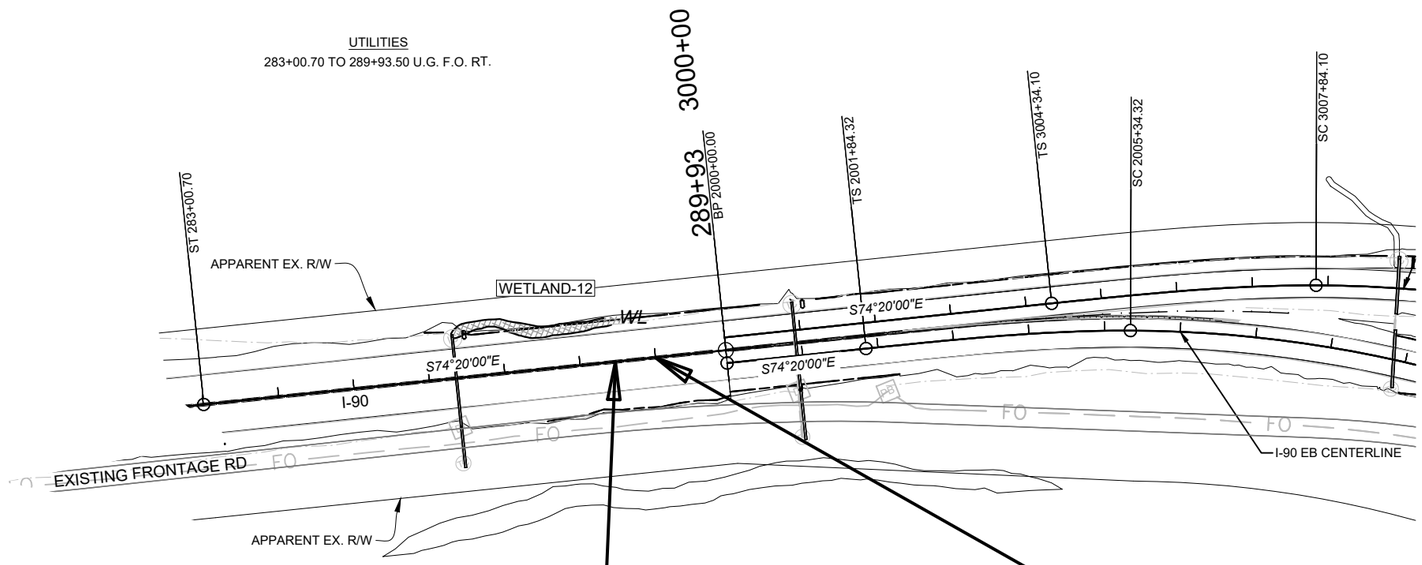
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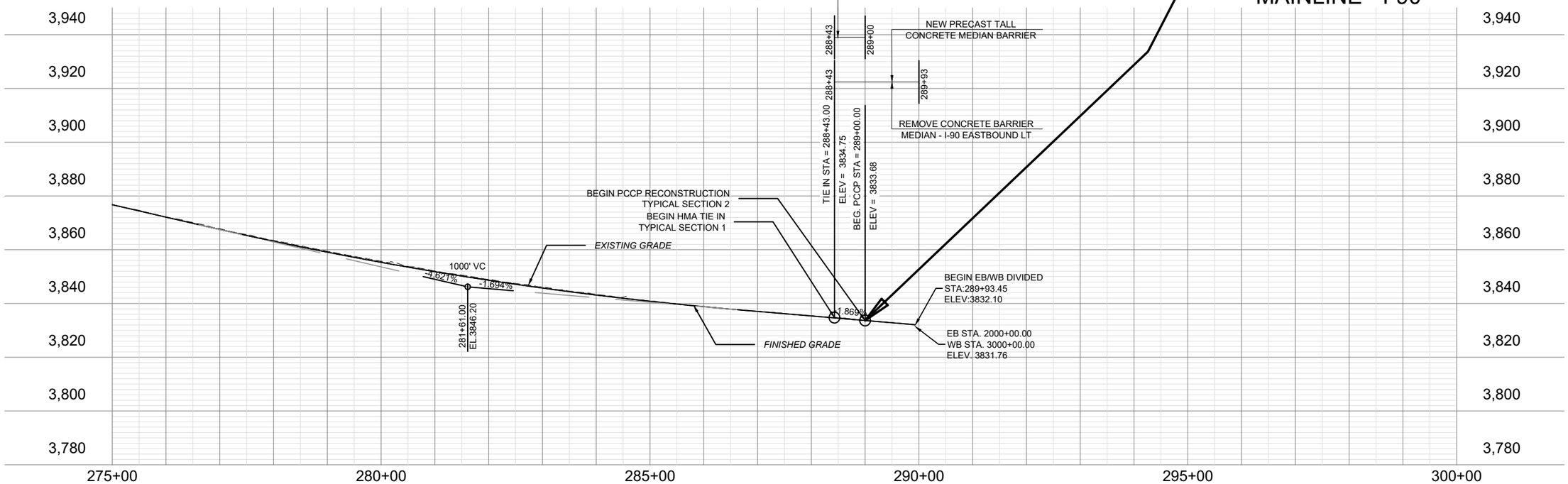


288+43.00 (MAINLINE)
BEGIN PROJECT CONNECTION
IM-NHFP 90-1(228)3

289+00.00 (MAINLINE)
BEGIN PROJECT MAINLINE RECONSTRUCTION
IM-NHFP 90-1(228)3

FOR STORM DRAIN (SD) LABELS,
SEE STORM DRAIN DETAILS

MAINLINE - I-90



SHEET NO.
RD-57

I-90 UNDIVIDED PLAN & PROFILE

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
		6/29/23	LFISCHER
		6/29/23	SMARSHALL
		6/29/23	BJOHNSON
			9487000RDPLPZ02.DWG

MONTANA
Department of Transportation

ROAD PLANS

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UTILITIES
2000+00 TO 2002+07 U.G. F.O. RT.
2002+19 TO 2025+00 U.G. F.O. RT.

UTILITIES
2002+07.1 59.1 RT. F.O. PULL BOX

I-90 UNDIVIDED STA. 289+93.45 =
I-90 EB STA. 2000+00.00, 17.00' LT.
I-90 WB STA. 3000+00.00, 17.00' RT.

END I-90 UNDIVIDED RECONSTRUCTION
BEGIN I-90 EB/WB RECONSTRUCTION

2010+00

2020+00

APPARENT EX. R/W

WETLAND-09

I-90 WESTBOUND

WB-110

CS 2016+45.46

I-90 EASTBOUND

EB-119

ST 2019+05.46

WETLAND-10

WB-100

EXISTING FRONTAGE RD

EB-100

S23°12'31"E

WETLAND-08

APPARENT EX. R/W

SC 2005+34.32

TS 2001+84.32

BP 2000+00.00
289+93

S74°20'00"E

I-90 EB CENTERLINE

PI = 2011+43.98
Δ = 51° 07' 29" (RT)
Rc = 1,638'
Ls1 = 350'
Ls2 = 350'
Θs1 = 6° 07' 24"
Θs2 = 6° 07' 24"
Δc = 38° 52' 42" (RT)
Ts = 959.66'
Lc = 1111.13'
Es = 181.13'
e = 6%

FOR STORM DRAIN (SD) LABELS,
SEE STORM DRAIN DETAILS

2000+93
NEW TYPE 3
MEDIAN INLET RT.
SEE CULVERT
EB STA. 3000+93

2008+84
24" CMP IN PL.
REMOVE
2008+84
NEW 30" EQ. DIA.
RCPA DR.
SKEW 9° LT.

2011+65
24" CMP IN PL.
REMOVE
2011+65
NEW 30" EQ. DIA.
RCPA DR.

2017+90
24" CMP IN PL.
REMOVE
2017+90
NEW 30" RCP DR.

2018+05
DITCH BLOCK LT.
SEE DETAILS

I-90 EASTBOUND

NEW PRECAST TALL
CONCRETE MEDIAN BARRIER LT.
2000+00 — 2006+60

2006+60
MEDIAN IMPACT ATTENUATOR LT

REMOVE CONCRETE BARRIER
MEDIAN - I-90 EASTBOUND LT
2000+00 — 2006+60

REMOVE
GUARDRAIL LT
2006+60 — 2007+35

MAINLINE STA. 289+93.45
ELEV. 3832.10

2000+00.00
ELEV: 3831.76

+93

-1.694%

2003+90.00
EL 3825.15

-2.306%

150' VC

400' VC

-2.306%

-1.561%

2006+85.00
EL 3818.35

+84

+65

+90

FINISHED GRADE

EXISTING GRADE

3,940
3,920
3,900
3,880
3,860
3,840
3,820
3,800
3,780

2000+00
2005+00
2010+00
2015+00
2020+00
2025+00
2026+50

SHEET NO.
RD-58

I-90 EASTBOUND PLAN & PROFILE

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
CHECKED BY	LFISCHER	6/29/23	
REVIEWED BY	SMARSHALL	6/29/23	
DESIGNED BY	BJOHNSON	6/29/23	
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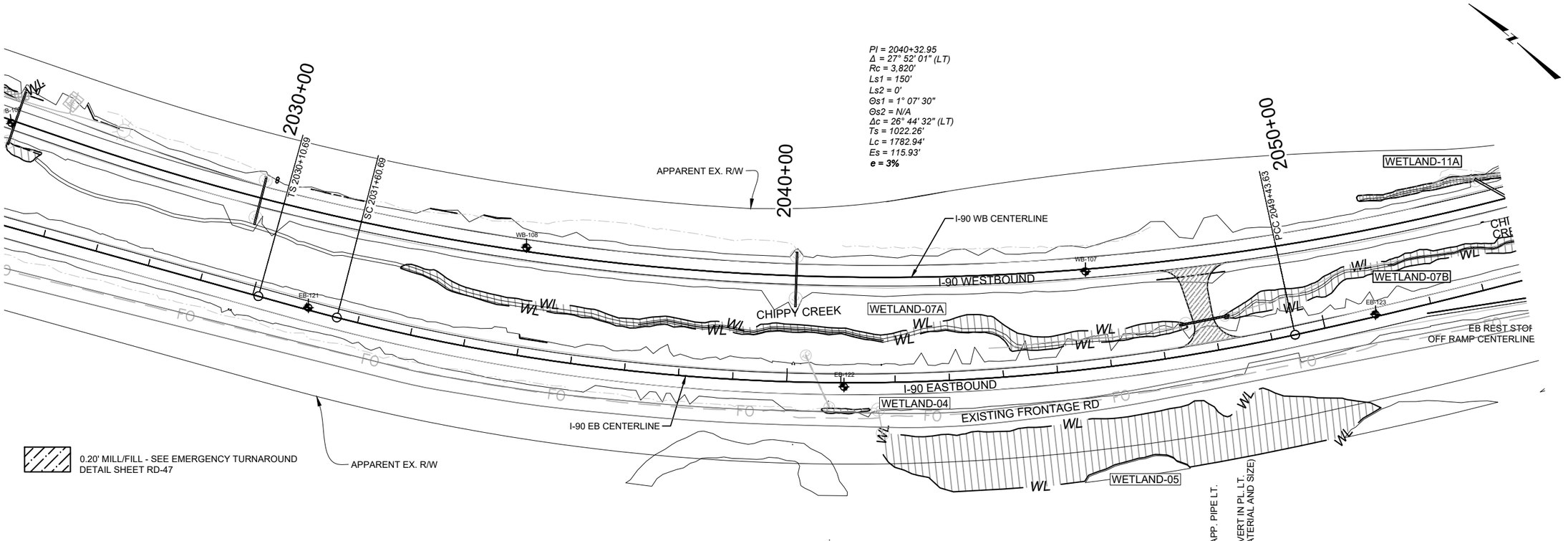
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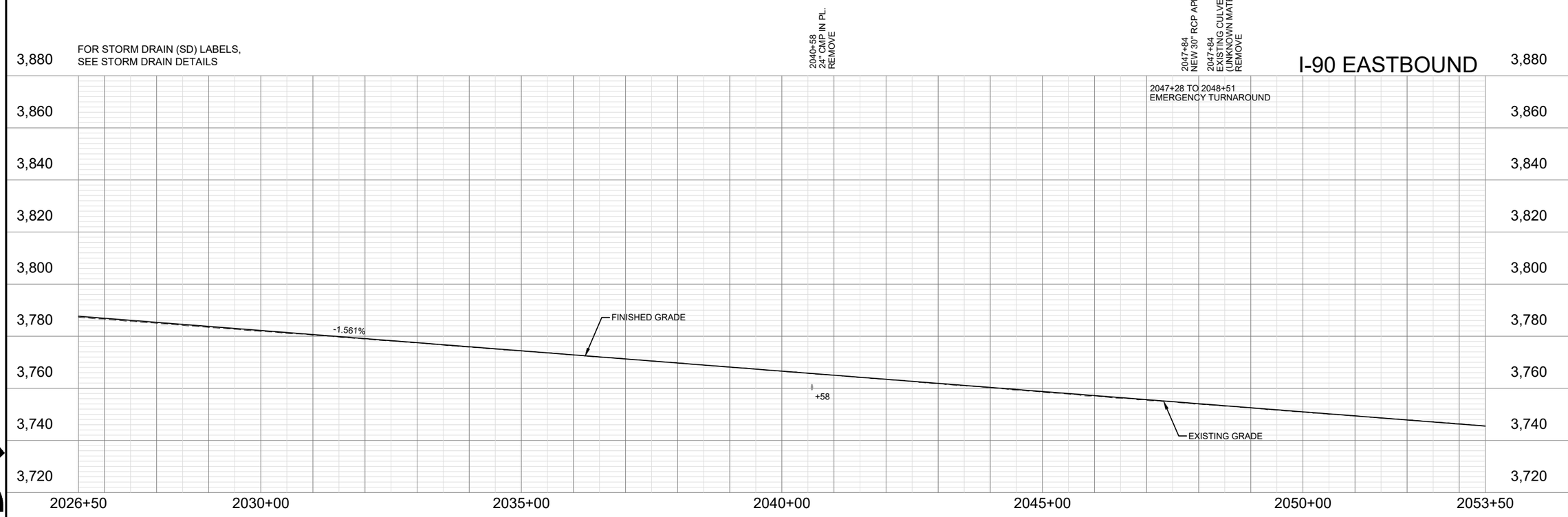
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UTILITIES
2025+00 TO 2052+00 U.G. F.O. RT.





SHEET NO.
RD-59

I-90 EASTBOUND PLAN & PROFILE

PROJECT NAME TAFT - WEST
COUNTY MINERAL COUNTY
PROJECT ID IM-NHFP 90-1(228)3
UPN 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
6/29/23	LFISCHER	SMARSHALL	BJOHNSON

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MONTANA Department of Transportation

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UTILITIES

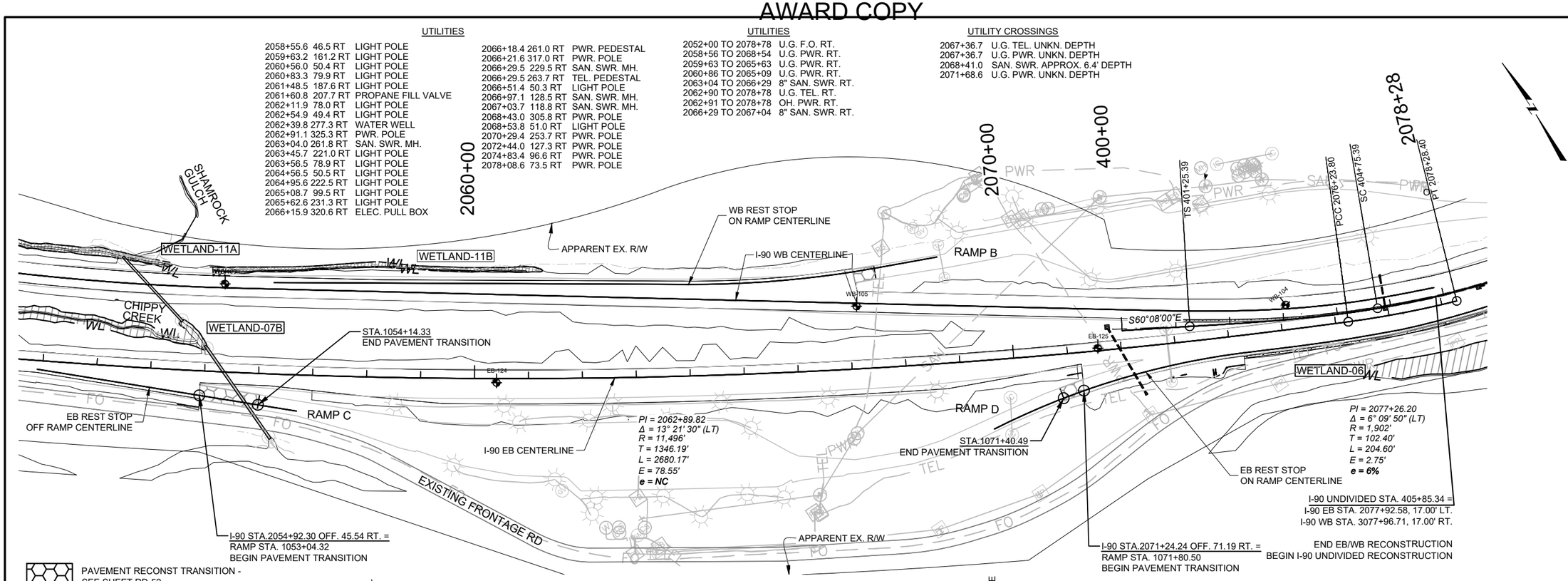
2058+55.6	46.5 RT	LIGHT POLE
2059+63.2	161.2 RT	LIGHT POLE
2060+56.0	50.4 RT	LIGHT POLE
2060+83.3	79.9 RT	LIGHT POLE
2061+48.5	187.6 RT	LIGHT POLE
2061+60.8	207.7 RT	PROPANE FILL VALVE
2062+11.9	78.0 RT	LIGHT POLE
2062+54.9	49.4 RT	LIGHT POLE
2062+39.8	277.3 RT	WATER WELL
2062+91.1	325.3 RT	PWR. POLE
2063+04.0	261.8 RT	SAN. SWR. MH.
2063+45.7	221.0 RT	LIGHT POLE
2063+56.5	78.9 RT	LIGHT POLE
2064+56.5	50.5 RT	LIGHT POLE
2064+95.6	222.5 RT	LIGHT POLE
2065+08.7	99.5 RT	LIGHT POLE
2065+62.6	231.3 RT	LIGHT POLE
2066+15.9	320.6 RT	ELEC. PULL BOX
2066+18.4	261.0 RT	PWR. PEDESTAL
2066+21.6	317.0 RT	PWR. POLE
2066+29.5	229.5 RT	SAN. SWR. MH.
2066+29.5	263.7 RT	TEL. PEDESTAL
2066+51.4	50.3 RT	LIGHT POLE
2066+97.1	128.5 RT	SAN. SWR. MH.
2067+03.7	118.8 RT	SAN. SWR. MH.
2068+43.0	305.8 RT	PWR. POLE
2068+53.8	51.0 RT	LIGHT POLE
2070+29.4	253.7 RT	PWR. POLE
2072+44.0	127.3 RT	PWR. POLE
2074+83.4	96.6 RT	PWR. POLE
2078+08.6	73.5 RT	PWR. POLE

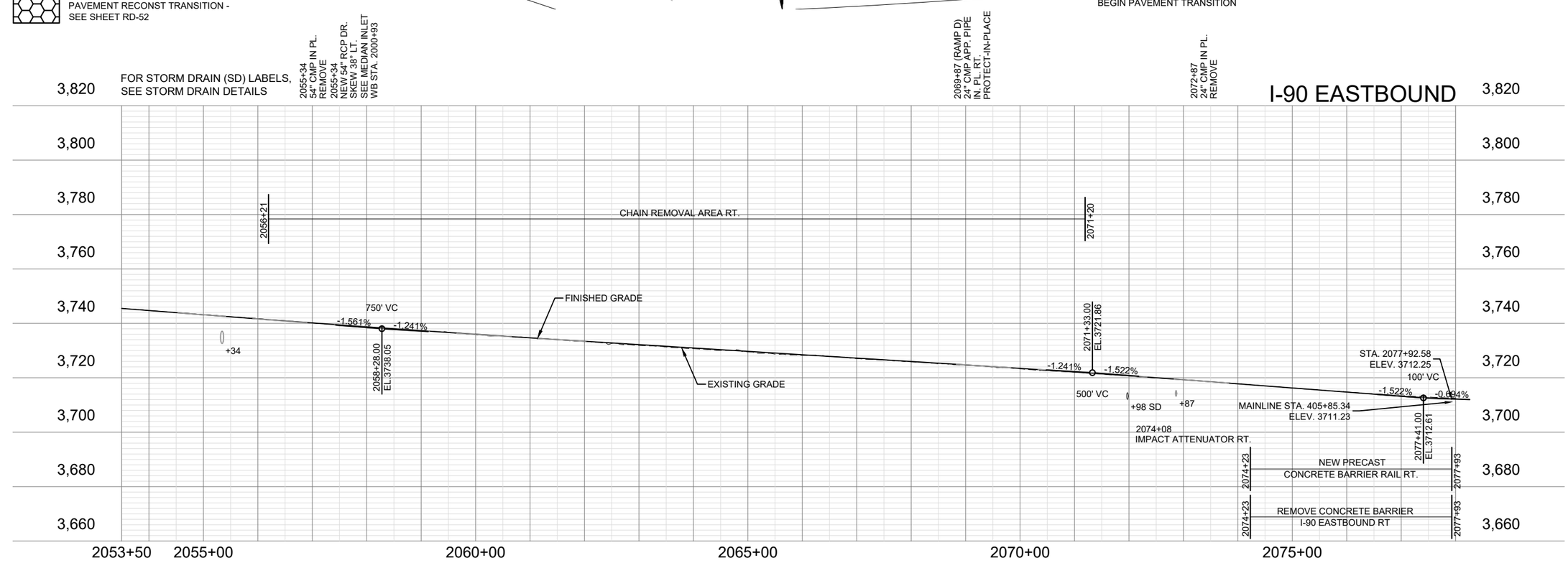
UTILITIES

2052+00 TO 2078+78	U.G. F.O. RT.
2058+56 TO 2068+54	U.G. PWR. RT.
2059+63 TO 2065+63	U.G. PWR. RT.
2060+86 TO 2065+09	U.G. PWR. RT.
2063+04 TO 2066+29	8" SAN. SWR. RT.
2062+90 TO 2078+78	U.G. TEL. RT.
2062+91 TO 2078+78	OH. PWR. RT.
2066+29 TO 2067+04	8" SAN. SWR. RT.

UTILITY CROSSINGS

2067+36.7	U.G. TEL. UNKN. DEPTH
2067+36.7	U.G. PWR. UNKN. DEPTH
2068+41.0	SAN. SWR. APPROX. 6.4' DEPTH
2071+68.6	U.G. PWR. UNKN. DEPTH





SHEET NO.
RD-60

I-90 EASTBOUND PLAN & PROFILE

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
CHECKED BY	LFISCHER	6/29/23	
REVIEWED BY	SMARSHALL	6/29/23	
DESIGNED BY	BJOHNSON	6/29/23	

9487000RDPLPZ02.DWG

MONTANA Department of Transportation

ROAD PLANS

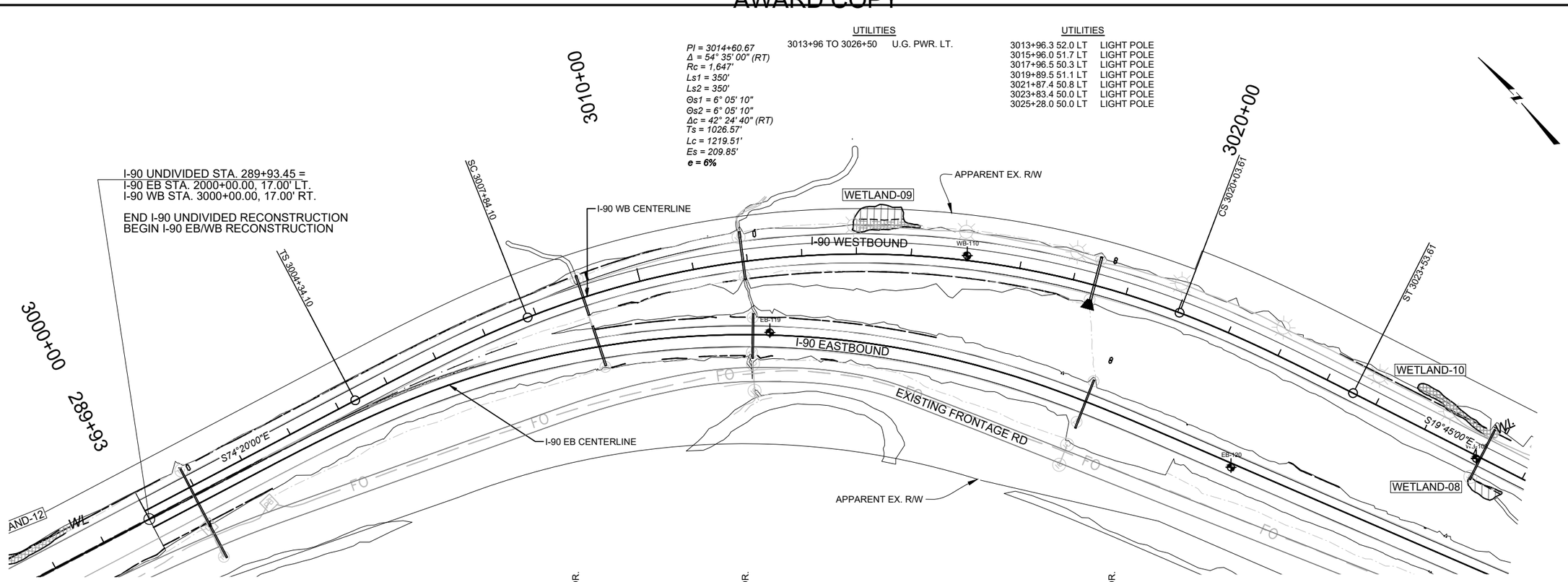
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UTILITIES
3013+96 TO 3026+50 U.G. PWR. LT.

UTILITIES
3013+96.3 52.0 LT LIGHT POLE
3015+96.0 51.7 LT LIGHT POLE
3017+96.5 50.3 LT LIGHT POLE
3019+89.5 51.1 LT LIGHT POLE
3021+87.4 50.8 LT LIGHT POLE
3023+83.4 50.0 LT LIGHT POLE
3025+28.0 50.0 LT LIGHT POLE

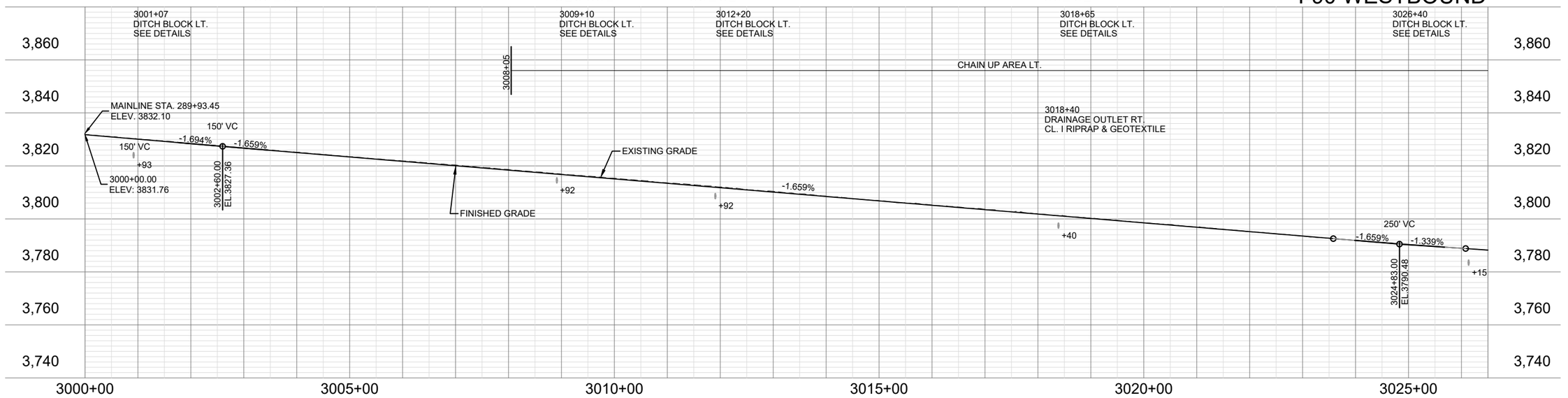
PI = 3014+60.67
Δ = 54° 35' 00" (RT)
Rc = 1,647'
Ls1 = 350'
Ls2 = 350'
Θs1 = 6° 05' 10"
Θs2 = 6° 05' 10"
Δc = 42° 24' 40" (RT)
Ts = 1026.57'
Lc = 1219.51'
Es = 209.85'
e = 6%



FOR STORM DRAIN (SD) LABELS, SEE STORM DRAIN DETAILS

3000+93 24" CMP IN PL. REMOVE
3000+93 NEW 30" RCP DR.
3008+92 NEW 30" EQ. DIA. RCPA DR. SKEW 1° LT.
3008+92 24" CMP IN PL. REMOVE
3011+92 24" CMP IN PL. REMOVE
3011+92 NEW 30" EQ. DIA. RCPA DR.
3018+40 24" CMP IN PL. REMOVE
3018+40 NEW 36" EQ. DIA. RCPA DR.
3026+15 24" CMP IN PL. REMOVE
3026+15 NEW 30" RCP DR.

I-90 WESTBOUND



SHEET NO.
RD-61

I-90 WESTBOUND PLAN & PROFILE

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	DESIGNED BY	CHECKED BY	REVIEWED BY
	BJOHNSON	LFISCHER	SMARSHALL
	6/29/23	6/29/23	6/29/23

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MONTANA Department of Transportation

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UTILITIES
3026+50 TO 3050+00 U.G. PWR. LT.

UTILITIES
3027+01.5 66.5 LT PWR. METER
3028+08.9 47.5 LT LIGHT POLE

3030+00

3040+00

3050+00

PC 3027+30.29

PI = 3041+99.01
Δ = 35° 31' 52" (LT)
R = 4,584'
T = 1468.72'
L = 2842.70'
E = 229.54'
e = 3%

S19°45'00"E

WETLAND-08

APPARENT EX. R/W

I-90 WB CENTERLINE

WB-108

WB-107

I-90 WESTBOUND

EB-121

CHIPPY CREEK

WETLAND-07A

EB-122

I-90 EASTBOUND

WETLAND-04

EXISTING FRONTAGE RD

WETLAND-05

I-90 EB CENTERLINE

APPARENT EX. R/W

0.20' MILL/FILL - SEE EMERGENCY TURNAROUND DETAIL SHEET RD-47

FOR STORM DRAIN (SD) LABELS, SEE STORM DRAIN DETAILS

3030+89
24" CMP IN PL.
REMOVE
3030+89
NEW 30" RCP DR.

3040+88
24" CMP IN PL.
REMOVE
3040+88
NEW 30" RCP DR.

I-90 WESTBOUND

3031+10
DITCH BLOCK LT.
SEE DETAILS

3031+02

CHAIN UP AREA LT.

3047+54 TO 3048+84
EMERGENCY TURNAROUND

FINISHED GRADE

EXISTING GRADE

-1.339%

-1.753%

3039+93.00
EL. 3770.26

250' VC

+89

+88

3,860	3,840	3,820	3,800	3,780	3,760	3,740	3,720	3026+50	3030+00	3035+00	3040+00	3045+00	3050+00

SHEET NO.
RD-62

I-90 WESTBOUND PLAN & PROFILE

PROJECT NAME TAFT - WEST
COUNTY MINERAL COUNTY
PROJECT ID IM-NHFP 90-1(228)3
UPN 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

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MONTANA Department of Transportation

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3050+00 | 3060+00 | 3070+00 | 3077+97

UTILITIES

3067+71.6	168.2 LT	WATER WELL
3068+40.3	134.9 LT	GAS FILL VALVE
3068+70.5	163.8 LT	LIGHT POLE
3069+08.1	135.8 LT	LIGHT POLE
3069+66.9	233.7 LT	PWR. BOX
3070+04.5	162.0 LT	PWR. BOX
3070+35.2	161.9 LT	LIGHT POLE
3071+57.7	54.7 LT	LIGHT POLE
3071+69.9	207.4 LT	SAN. SWR. MH.
3071+67.2	189.8 LT	LIGHT POLE
3073+15.8	74.4 LT	LIGHT POLE
3073+64.7	197.0 LT	LIGHT POLE
3074+86.2	241.5 LT	SAN. SWR. MH.
3075+00.2	215.5 LT	LIGHT POLE
3076+90.2	116.3 LT	LIGHT POLE

UTILITIES

3067+72 TO 3068+25		U.G. WTR. LT.
3069+54 TO 3077+97		6" SAN. SWR LT.
3050+00 TO 3069+67		U.G. PWR. LT.
3069+67 TO 3070+05		U.G. PWR. LT.
3070+05 TO 3077+97		U.G. PWR. LT.

UTILITY CROSSINGS

3067+63	U.G. PWR. UNKN. DEPTH
3067+63	U.G. TEL. UNKN. DEPTH
3069+68	4" SAN. SWR. APPROX. 6.1' DEPTH
3071+33	U.G. PWR. UNKN. DEPTH

PI = 3075+48.82
Δ = 12° 43' 23" (LT)
Rc = 1,631'
Ls1 = 350'
Ls2 = 110'
Θs1 = 6° 08' 49"
Θs2 = 1° 55' 55"
Δc = 4° 38' 40" (LT)
Ts = 344.34'
Lc = 132.23'
Es = 11.88'
e = 6%

PT 3055+72.98

SHAMROCK GULCH

WETLAND-11A

WETLAND-11B

WETLAND-07B

CHIPPY CREEK

I-90 STA.3067+15.70 OFF. -57.85 LT. =
RAMP STA. 1061+58.11
BEGIN PAVEMENT TRANSITION

APPARENT EX. R/W

WB REST STOP
ON RAMP CENTERLINE

I-90 WB CENTERLINE

STA.1061+18.11
END PAVEMENT TRANSITION

RAMP B

TS 3072+04.48

SC 3075+54.48

CS 3076+86.70

OFF

S55°16'52"E

S68°00'15"E

WB-105

WB-104

EB-123

EB-124

EB-125

RAMP C

RAMP D

WETLAND-06

EB REST STOP
OFF RAMP CENTERLINE

I-90 EB CENTERLINE

EXISTING FRONTAGE RD

EB REST STOP
ON RAMP CENTERLINE

I-90 UNDIVIDED STA. 405+85.34 =
I-90 EB STA. 2077+92.58, 17.00' LT.
I-90 WB STA. 3077+96.71, 17.00' RT.

END EB/WB RECONSTRUCTION
BEGIN I-90 UNDIVIDED RECONSTRUCTION

PAVEMENT RECONST. TRANSITION -
SEE SHEET RD-52

FOR STORM DRAIN (SD) LABELS,
SEE STORM DRAIN DETAILS

3054+12
NEW 48" RCP DR.
SKEW 46° LT.

3054+12
48" CMP IN PL.
REMOVE

3068+80
24" CMP APP. PIPE
IN PL, LT.
PROTECT-IN-PLACE

I-90 WESTBOUND

3,800 | 3,780 | 3,760 | 3,740 | 3,720 | 3,700 | 3,680 | 3,660

600' VC
-1.753%
-1.401%
+12
3057+48.00
EL. 3739.50

FINISHED GRADE
EXISTING GRADE
-1.401%

3072+87
3073+62
REMOVE
GUARDRAIL
RT.

3075+33.00
EL.3714.50
-1.401%
-1.918%
-1.918%
-0.802%
110' VC
200' VC
+03 SD

MAINLINE STA. 405+85.34
ELEV. 3711.23
STA. 3077+96.71
ELEV. 3710.22

3077+27.00
EL.3710.78

3072+75
MEDIAN IMPACT ATTENUATOR
NEW PRECAST TALL
CONCRETE MEDIAN BARRIER RT.

3072+87
3077+97

REMOVE CONCRETE BARRIER
MEDIAN, I-90 WESTBOUND RT.

3051+00 | 3055+00 | 3060+00 | 3065+00 | 3070+00 | 3075+00 | 3078+00

SHEET NO.
RD-63

I-90 WESTBOUND PLAN & PROFILE

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHPF 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER	SMARSHALL	BJOHNSON
	6/29/23	6/29/23	6/29/23

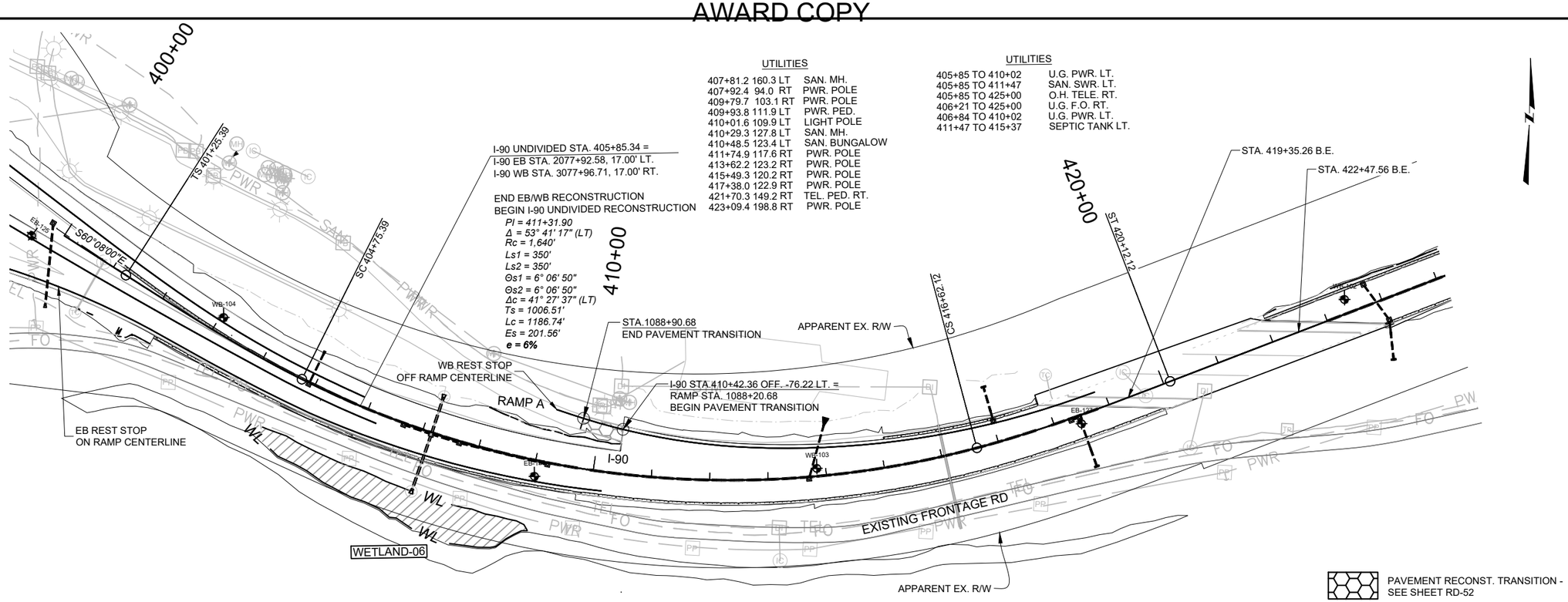
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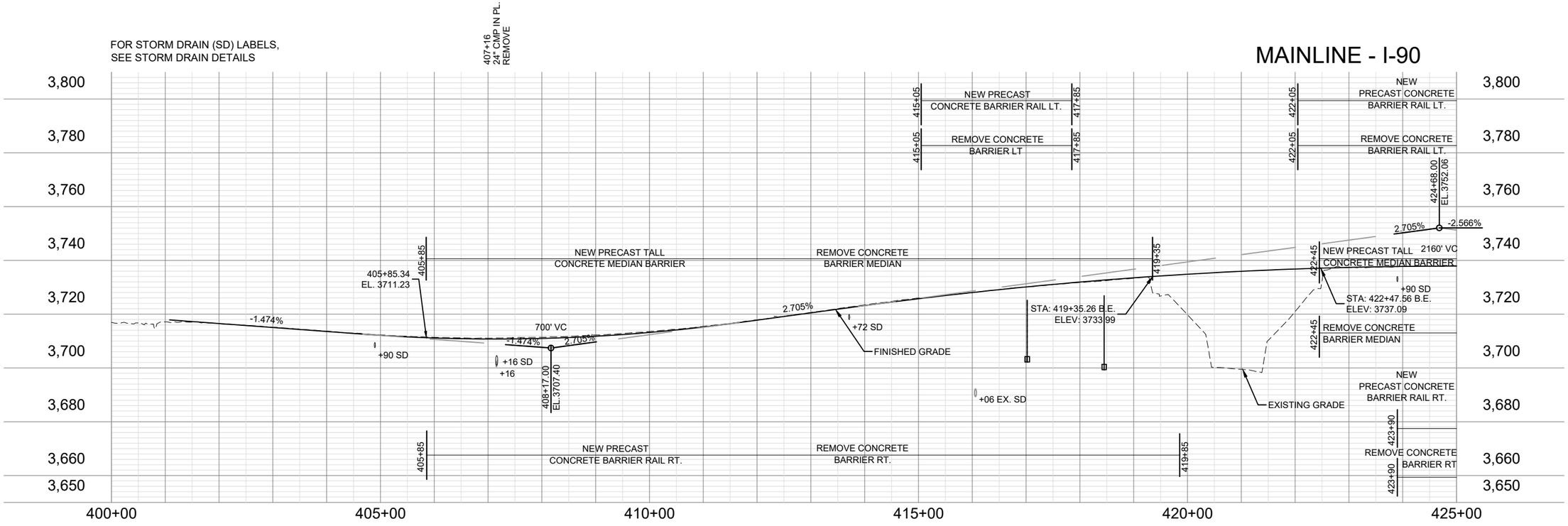
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Department of Transportation

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SHEET NO.
RD-64

I-90 UNDIVIDED PLAN & PROFILE

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER	SMARSHALL	BJOHNSON
	6/29/23	6/29/23	6/29/23

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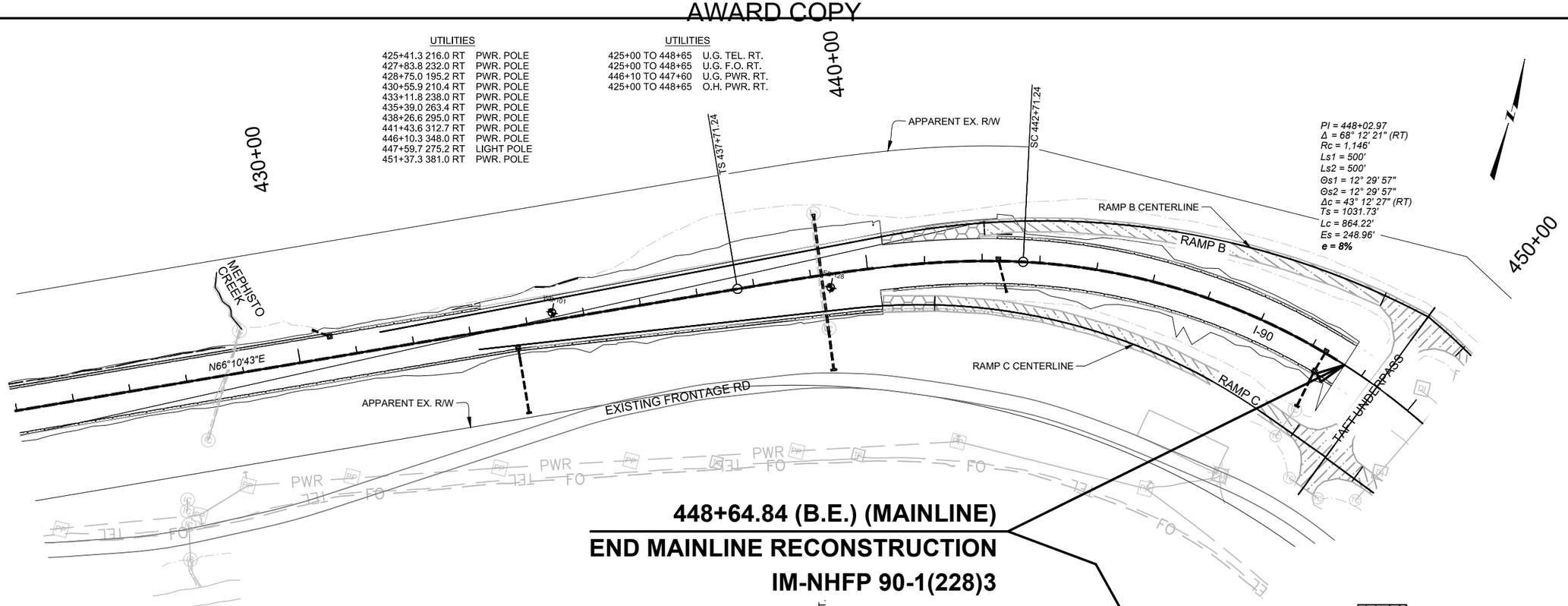
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UTILITIES

425+41.3 216.0 RT	PWR. POLE
427+83.8 232.0 RT	PWR. POLE
428+75.0 195.2 RT	PWR. POLE
430+55.9 210.4 RT	PWR. POLE
433+11.8 238.0 RT	PWR. POLE
435+39.0 263.4 RT	PWR. POLE
438+26.6 295.0 RT	PWR. POLE
441+43.6 312.7 RT	PWR. POLE
446+10.3 348.0 RT	PWR. POLE
447+59.7 275.2 RT	LIGHT POLE
451+37.3 381.0 RT	PWR. POLE

UTILITIES

425+00 TO 448+65	U.G. TEL. RT.
425+00 TO 448+65	U.G. F.O. RT.
446+10 TO 447+60	U.G. PWR. RT.
425+00 TO 448+65	O.H. PWR. RT.



448+64.84 (B.E.) (MAINLINE)

END MAINLINE RECONSTRUCTION

IM-NHFP 90-1(228)3

PAVEMENT RECONST. TRANSITION - SEE SHEET RD-52

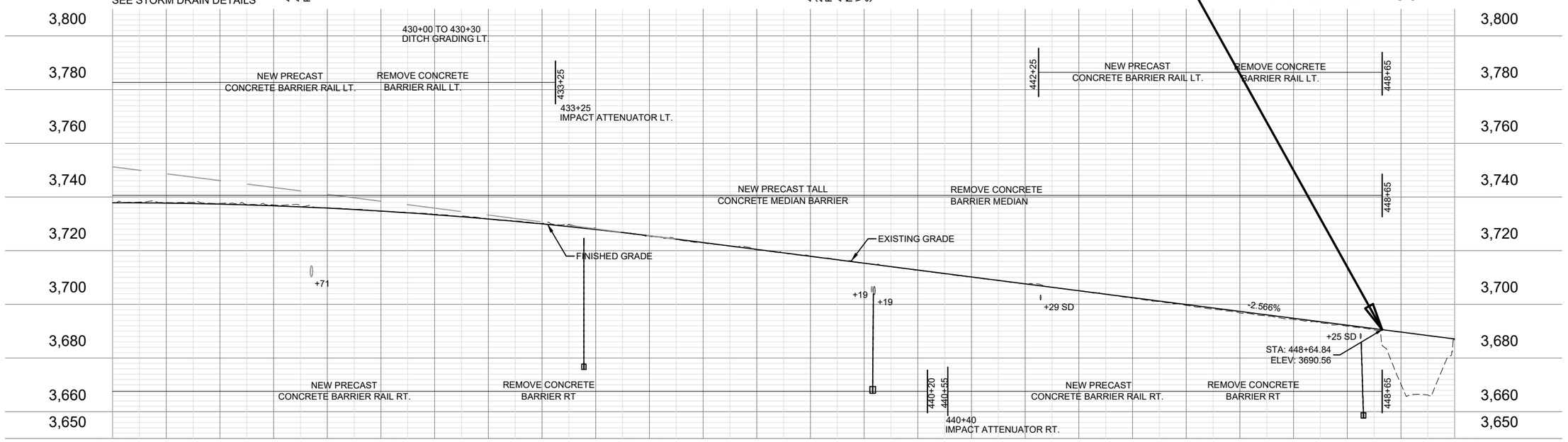
0.20' MILL/FILL

FOR STORM DRAIN (SD) LABELS, SEE STORM DRAIN DETAILS

428+71
48" CMP IN PL.
PROTECT-IN-PLACE

439+19
24" CMP IN PL.
REMOVE
439+19
NEW 30" RCP DR.
W/ 30" CMP EMB. PROT. RT.
SKEW 1° RT.

MAINLINE - I-90



SHEET NO.
RD-65

I-90 UNDIVIDED PLAN & PROFILE

PROJECT NAME	TAFT - WEST
COUNTY	MINERAL COUNTY
PROJECT ID	IM-NHFP 90-1(228)3
UPN	9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

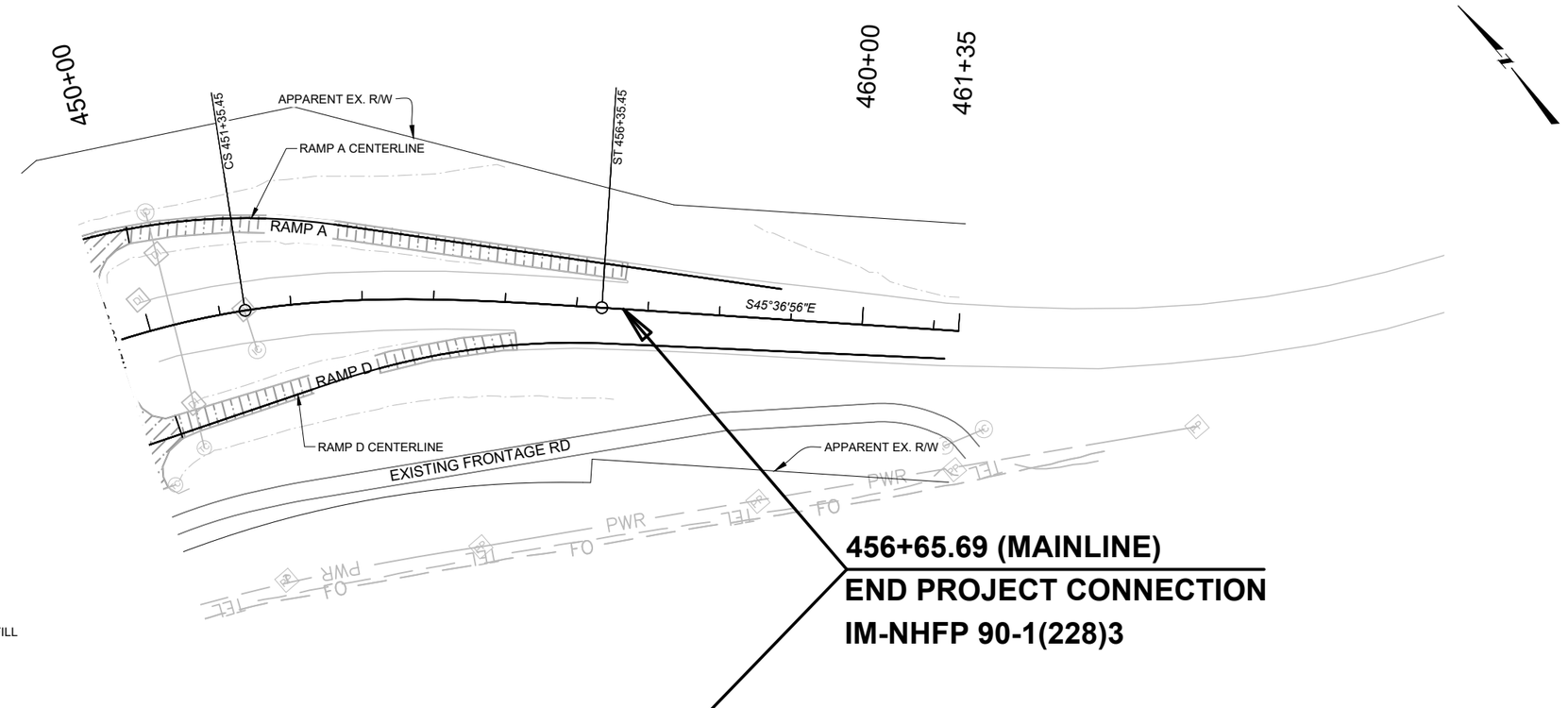
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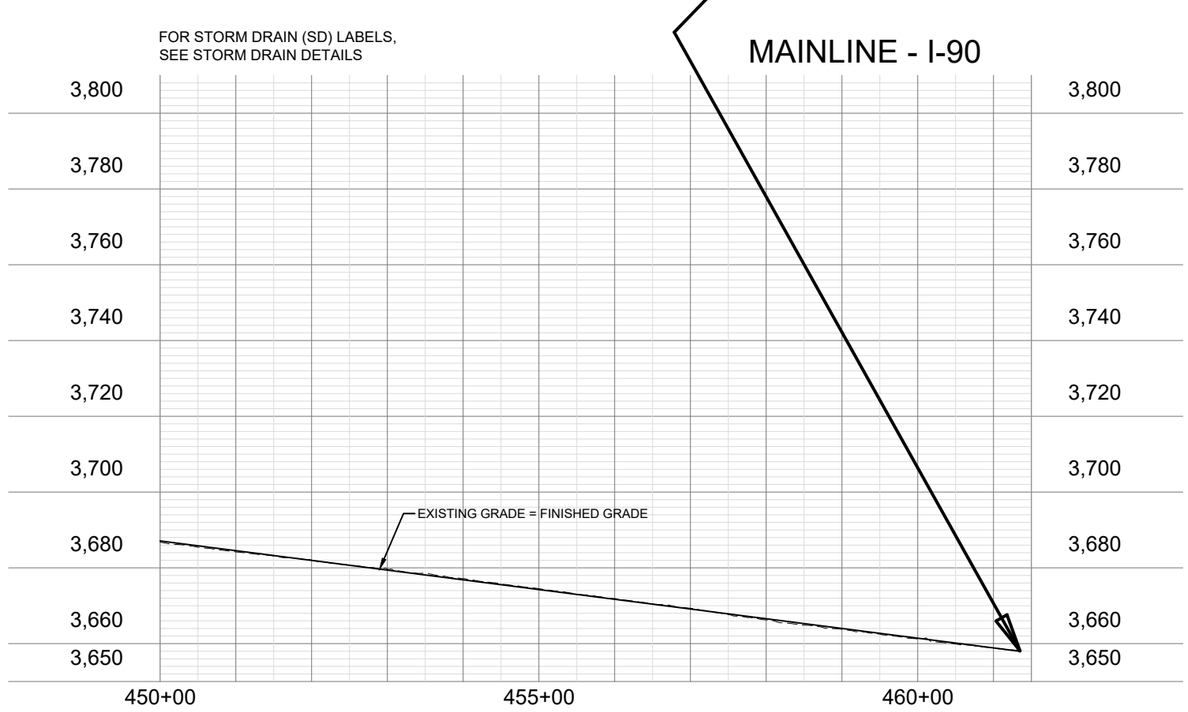
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SHEET NO.
RD-66

I-90 UNDIVIDED PLAN & PROFILE

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
DESIGNED BY	BJOHNSON	6/29/23	
REVIEWED BY	SMARSHALL	6/29/23	
CHECKED BY	LFISCHER	6/29/23	

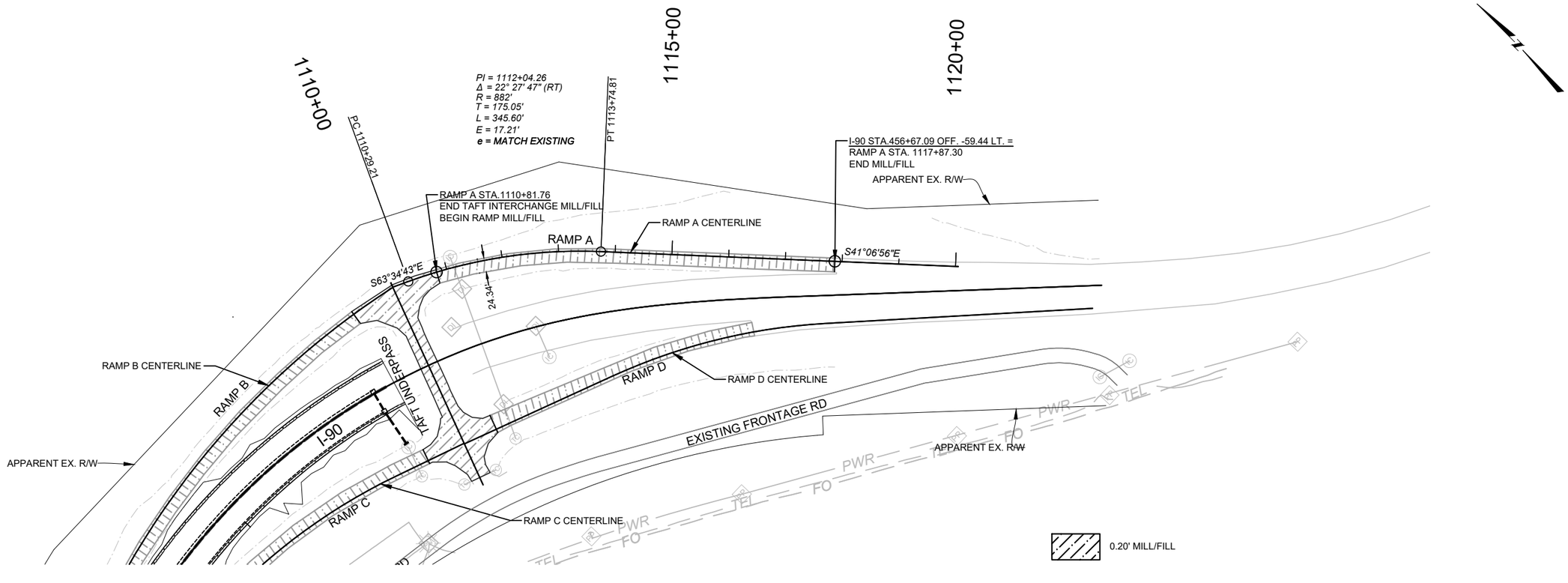
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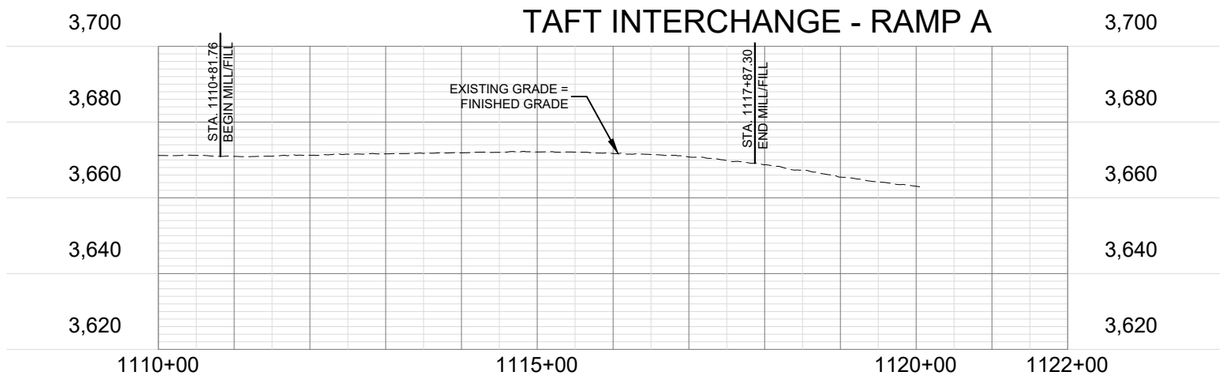
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SHEET NO.
RD-67

TAFT INTERCHANGE -
RAMP A PLAN & PROFILE

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
DESIGNED BY	BJOHNSON	6/29/23	
REVIEWED BY	SMARSHALL	6/29/23	
CHECKED BY	LFISCHER	6/29/23	

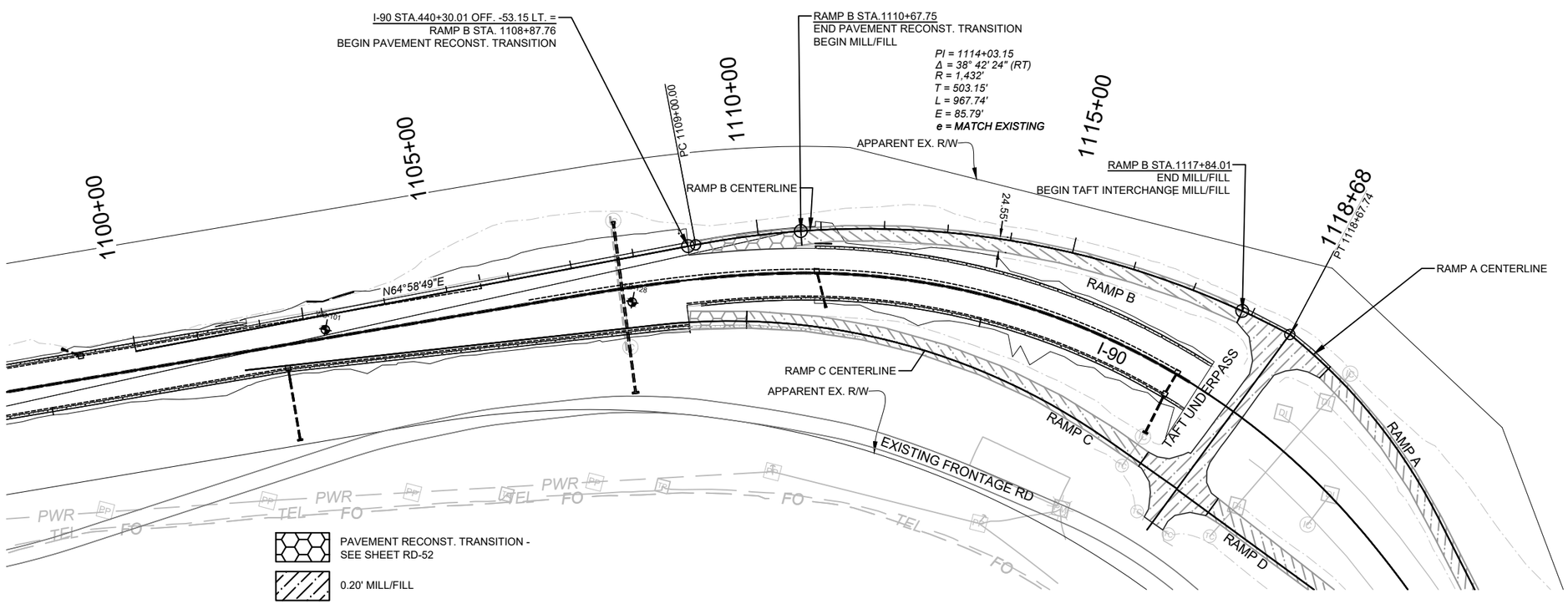
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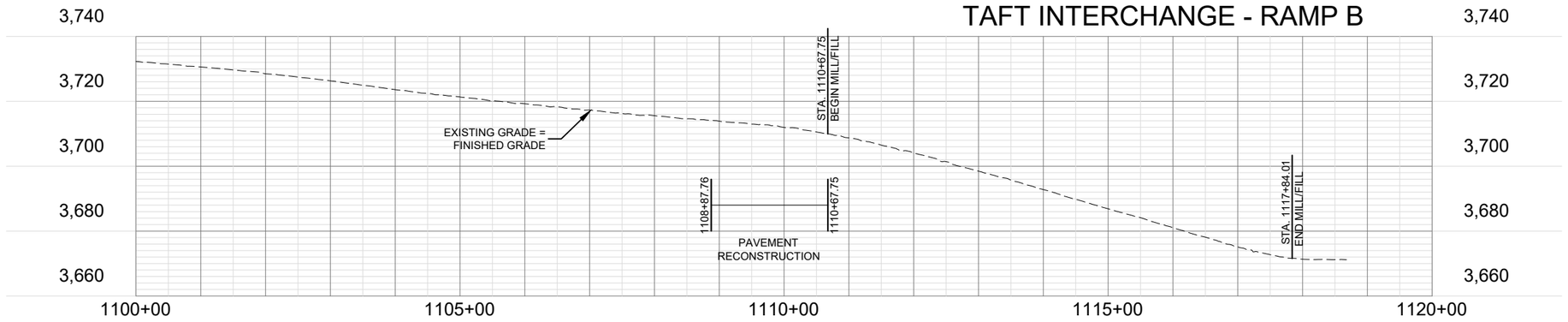
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SHEET NO.
RD-68

TAFT INTERCHANGE - RAMP B PLAN & PROFILE

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
DESIGNED BY	BJOHNSON	6/29/23	
REVIEWED BY	SMARSHALL	6/29/23	
CHECKED BY	LFISCHER	6/29/23	

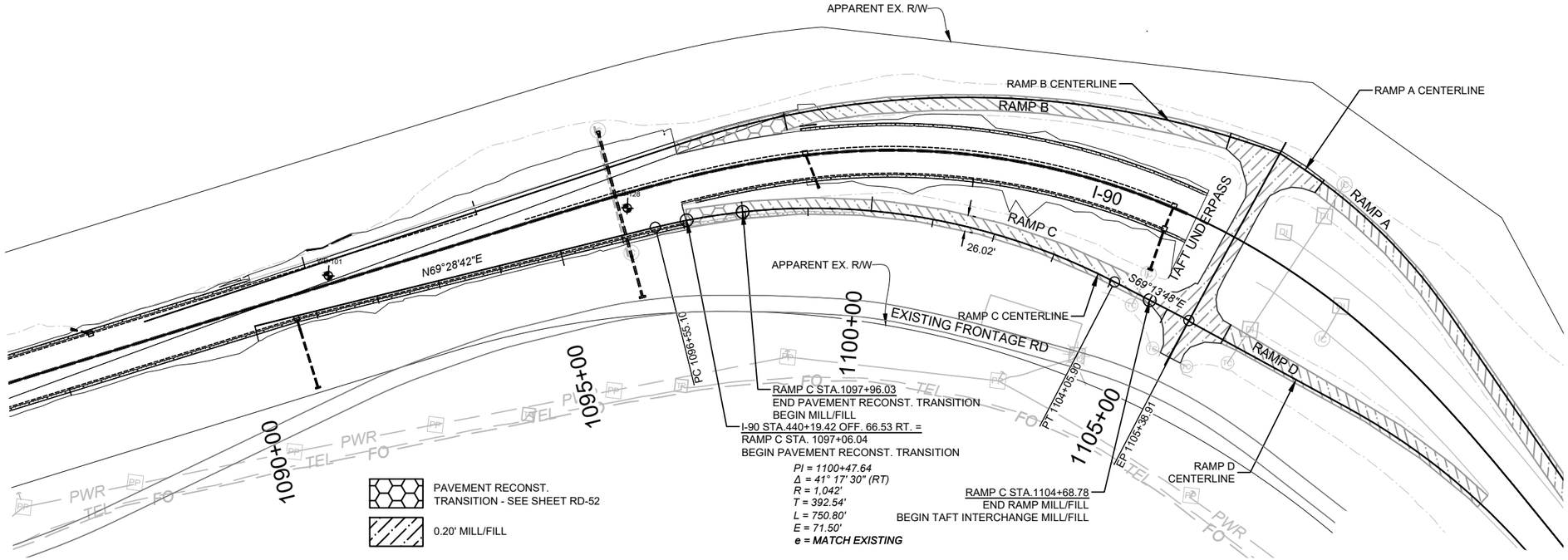
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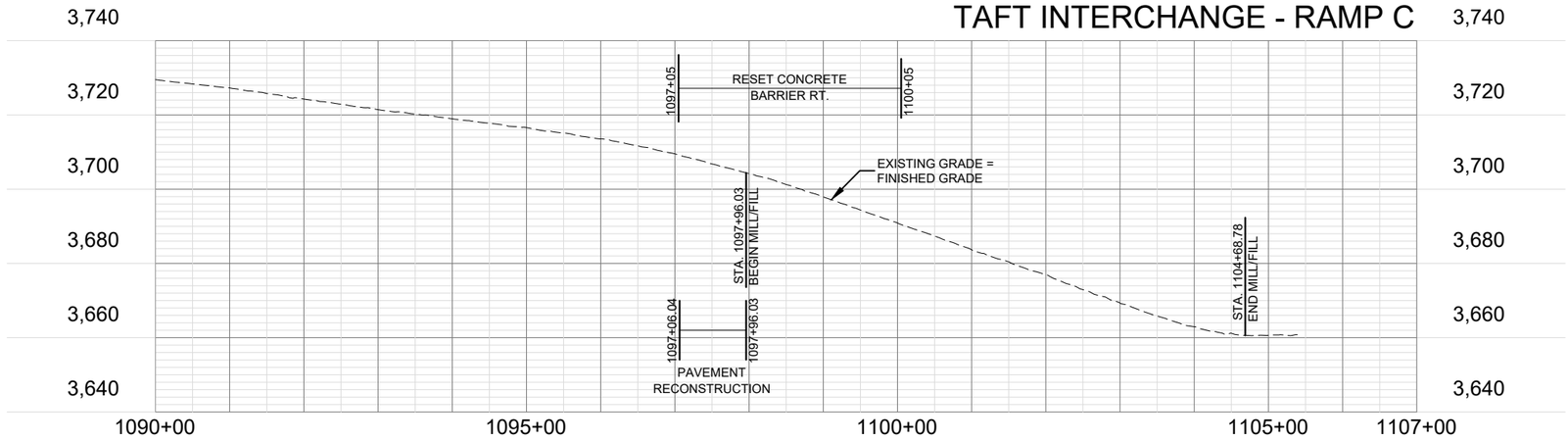
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SHEET NO.
RD-69

TAFT INTERCHANGE -
RAMP C PLAN & PROFILE

PROJECT NAME	TAFT - WEST
COUNTY	MINERAL COUNTY
PROJECT ID	IM-NHFP 90-1(228)3
UPN	9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	SMARSHALL	6/29/23
DESIGNED BY	BJOHNSON	6/29/23

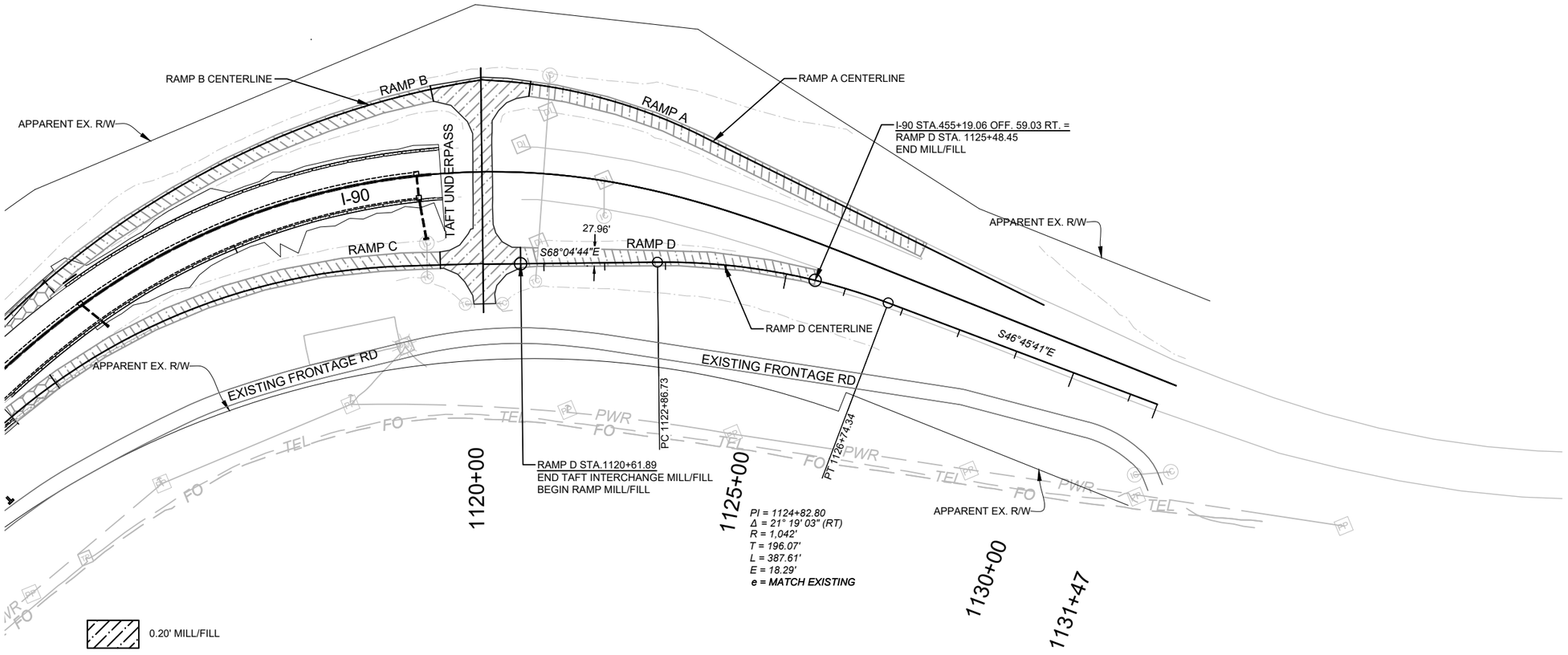
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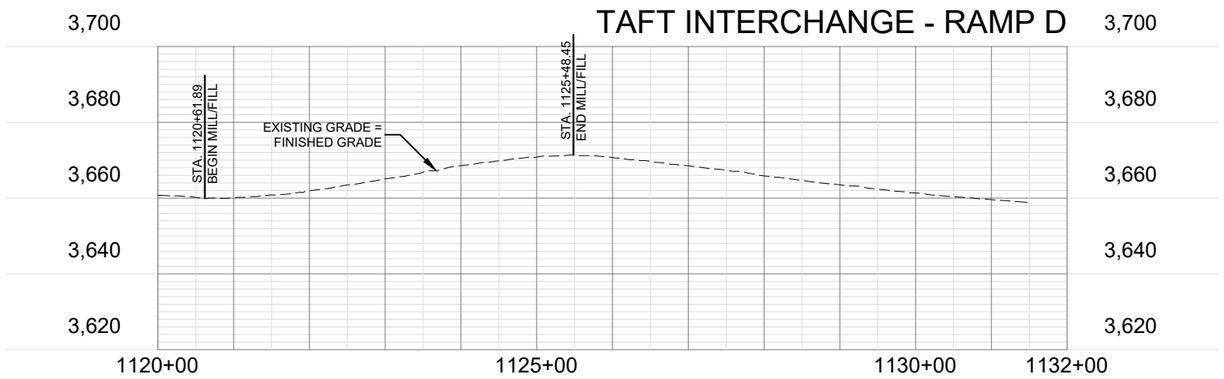
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SHEET NO.
RD-70

TAFT INTERCHANGE -
RAMP D PLAN & PROFILE

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
CHECKED BY	LFISCHER	6/29/23	
REVIEWED BY	SMARSHALL	6/29/23	
DESIGNED BY	BJOHNSON	6/29/23	

MONTANA
Department of Transportation

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HDR

SUMMARY
SIGNING & DELINEATION QUANTITIES

MATERIAL	TOTALS	UNIT
SIGNS - SHEET ALUMINUM - REFLECTIVE SHEETING (XI)	**709.3**	SQ. FOOT
SIGNS - ALUMINUM SHEET INCREMENT SHEETING (XI)	**701.8**	SQ. FOOT
POLES - TREATED WOOD - 4" DIA.	**64**	LINEAR FT.
POLES - TREATED WOOD - 5" DIA.	**230**	LINEAR FT.
POSTS - TUBULAR STEEL (ROUND)	**1381**	POUNDS
POSTS - TUBULAR STEEL (SQUARE PERFORATED)	**27**	POUNDS
POSTS-STRUCTURAL STEEL	**308**	POUNDS
POSTS - STEEL "U"	**218**	POUNDS
REMOVE SIGNS	**66**	EACH
REMOVE SIGNS - GUIDE	**16**	EACH
SNOWPOLE DELINEATOR-DESIGN A	**93**	EACH
SNOWPOLE DELINEATOR-DESIGN B	**20**	EACH
SNOWPOLE DELINEATOR-DESIGN D	**6**	EACH
SNOWPOLE DELINEATOR-DESIGN G	**57**	EACH
SNOWPOLE DELINEATOR-DESIGN H	**68**	EACH
SNOWPOLE DELINEATOR-DESIGN BJ #	**46**	EACH
SNOWPOLE DELINEATOR-DESIGN GJ ##	**20**	EACH
DELINEATION-LINEAR-BARRIER-YELLOW	**398**	EACH
DELINEATION-LINEAR-BARRIER-WHITE	**556**	EACH
FRANGIBLE SIGN POST BKWY - 3" PIPE	**1**	EACH
FRANGIBLE SIGN POST BKWY - 5X10	**3**	EACH
FRANGIBLE SIGN POST BKWY - 4X7.7	**4**	EACH

PAID FOR AS DELINEATOR DES BJ
PAID FOR AS DELINEATOR DES GJ

SHEET NO.
SI-01

SUMMARY FRAMES

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

DESIGNED BY	MORRISSEY	6/29/23
REVIEWED BY	RLUBBERS	6/29/23
CHECKED BY	LFISCHER	6/29/23

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MONTANA
Department of Transportation

SIGNING & STRIPING PLANS

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SIGN LOCATION AND SPECIFICATION

I-90 EASTBOUND

LT.	STATION / M.P.	RT.	RAMP NO.	SIGN NO.	PANEL SIZE	FEET: CLEARANCE	FEET: SIGN SUPPORT SPACING	TYPE OF SUPPORT	CANTILEVER	FEET: SUPPORT LENGTH (ESTIMATED)	FEET: SUPPORT LENGTH (INSTALLED)	FEET: MOUNTING HEIGHT	FEET: FOUNDATION DEPTH	SIGN PANEL (SQ. FT.): SHEET ALUMINUM IV	SHEET ALUMINUM XI	ALUMINUM SHEET INCREMENT IV	ALUMINUM SHEET INCREMENT XI	ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.): 4" TOP DIA.	5" TOP DIA.	6" TOP DIA.	STEEL POST (LBS.): ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST	BREAKAWAY	SIGNS: REMOVE	SIGNS: RESET	GUIDE: REMOVE	GUIDE: RESET	REMARKS
	2027+09	RT.	EB	IS12-9	108X60		R.S.F.O.										45.0											1			REPLACE SIGN FACE IS12-9 = CHAIN REMOVAL AREA 1/2 MILE
	2032+26	RT.	EB	D10-4	12X24	6'-0"		3 LB STL. "U"		10'-6"		4'-0"	3'-0"		2.0										32						NEW D10-4 = MILE 4
	2040+36	RT.	EB	D5-1A IS3-P	120X54 120X24		R.S.F.O.										45.0 20.0											1			REPLACE SIGN FACES D5-1A = REST AREA NEXT RIGHT IS3-P = OPEN/CLOSED
				D9-6	24X24										4.0															D9-6 = WHEEL CHAIR SYMBOL
LT.	2047+39		EB	R4-14	36X24	10'-0"		4" DIA. POLE		15'-6"		7'-0"	3'-0"		6.0				16								1				REPLACE R4-14 = AUTHORIZED VEHICLES ONLY
	2049+52	RT.	EB	IS10-1	108X48		R.S.F.O.										36.0											1			REPLACE SIGN FACE, IS10-1 = CHAIN REMOVAL 1000 FT USE SHOULDER
	2050+33	RT.	EB	D5-2 W13-1	USE AS IS																										USE AS IS D5-2 = REST AREA W13-1 = 50 MPH
	2056+71	RT.	EB	D4-2A R5-15	48X48 24X18		R.S.F.O.								16.0 3.0												1				REPLACE SIGN FACES D4-2A = CAR, CAR/TRAILER, TRUCK R5-15 = NO CAMPING
				R5-1A	42X30										8.8																R5-1A = WRONG WAY
	2056+93	RT.	EB	R5-1A	42X30		R.S.F.O.								8.8												1				REPLACE SIGN FACE R5-1A = WRONG WAY
	2058+76	RT.	EB	R5-1	36X36		R.S.F.O.								9.0												1				REPLACE SIGN FACE R5-1 = DO NOT ENTER
	2058+96	RT.	EB	IS12-12Y	108X42		R.S.F.O.										31.5												1		REPLACE SIGN FACE IS12-12Y = CHAIN REMOVAL AREA
	2061+06	RT.	EB	R6-1L	36X12		R.S.F.O.								3.0												1				REPLACE SIGN FACE R6-1 = ONE WAY LEFT
	2061+76	RT.	EB	D9-13A DX-X3	12X12 12X4		R.S.F.O.								1.0 0.3												1				REPLACE SIGN FACES D9-13A = PET AREA SYMBOL DX-X3 = WATER
	2061+99	RT.	EB	R6-1R	36X12	10'-0"		2" SQUARE TUBULAR		11'-0"		7'-0"	3'-0"		3.0								27				1				REPLACE R6-1 = ONE WAY RIGHT
	2062+86	RT.	EB	D9-13A DX-X3	12X12 12X4		R.S.F.O.								1.0 0.3												1				REPLACE SIGN FACES D9-13A = PET AREA SYMBOL DX-X3 = WATER
				D9-3PR R99-27	12X3 24X12										0.3 2.0																D9-3PR = ARROW RIGHT R99-27 = PETS PROHIBITED ON LAWN AND IN REST AREAS
	2063+00	RT.	EB	D9-6A	12X24		R.S.F.O.								2.0												1				REPLACE SIGN FACE D9-6A = RESERVED PARKING PERMIT REQUIRED $100 FINE

R.S.F.O. = REPLACE SIGN FACE ONLY

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED

BBR = BACKBRACING REQUIRED:
-FOR WOOD POST 2"x4" REQ.
-FOR STRUCTURAL STEEL 2"X2"X¼" ANGLE IRON REQ.

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

■ FRANGIBLE SIGN POST BREAKAWAY DEVICE REQUIRED

BGR = BEHIND GUARDRAIL

* = MOUNT TO CONCRETE BARRIER SEE DETAIL

SHEET NO.
SI-02

SUMMARY FRAMES

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY	DRAWN BY
	LFISCHER	RLUBBERS	MORRISSEY	SUMZ01.DWG
	6/29/23	6/29/23	6/29/23	9487000SI

MONTANA Department of Transportation

SIGNING & STRIPING PLANS

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SIGN LOCATION AND SPECIFICATION

LT.	STATION / M.P.	RT.	RAMP NO.	SIGN NO.	PANEL SIZE	FEET: CLEARANCE	FEET: SIGN SUPPORT SPACING	TYPE OF SUPPORT	CANTILEVER	FEET: SUPPORT LENGTH (ESTIMATED)	FEET: SUPPORT LENGTH (INSTALLED)	FEET: MOUNTING HEIGHT	FEET: FOUNDATION DEPTH	SIGN PANEL (SQ. FT.): SHEET ALUMINUM IV	SHEET ALUMINUM XI	ALUMINUM SHEET INCREMENT IV	ALUMINUM SHEET INCREMENT XI	ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.): 4" TOP DIA.	5" TOP DIA.	6" TOP DIA.	STEEL POST (LBS.): ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST	BREAKAWAY	SIGNS: REMOVE	SIGNS: RESET	GUIDE: REMOVE	GUIDE: RESET				REMARKS
I-90 EASTBOUND (CONT.)																																		
	2063+27	RT.	EB	D9-6A R99-27	12X24 24X12		R.S.F.O.								2.0 2.0												1							REPLACE SIGN FACES D9-6A = RESERVED PARKING PERMIT REQUIRED $100 FINE R99-27 = PETS PROHIBITED ON LAWN AND IN REST AREA
	2064+43	RT.	EB	D9-13A DX-X3	12X12 12X4		R.S.F.O.								1.0 0.3												1							REPLACE SIGN FACES D9-13A = PET AREA SYMBOL DX-X3 = WATER
				D9-3PR R99-27	12X3 24X12										0.3 2.0																			D9-3PR = ARROW RIGHT R99-27 = PETS PROHIBITED ON LAWN AND IN REST AREA
	2065+33	RT.	EB	R6-1L R99-27	36X12 24X12		R.S.F.O.								3.0 2.0												1							REPLACE SIGN FACES R6-1 = ONE WAY LEFT R99-27 = PETS PROHIBITED ON LAWN AND IN REST AREA
	2070+33	RT.	EB	W1-2L W13-1	48X48 24X24	5'-0"		3" DIA. PIPE		18'-2"		7'-0"	3'-0"		16.0 4.0							138				■	1				FY	BGR	BBR	REPLACE W1-2L = LEFT CURVE W13-1 = 60 MPH
	2073+90	MED.	WB	W1-8	24X30			*		6'-10"		7'-0"			5.0							50										FY		NEW W1-8 = CHEVRON RIGHT
	2074+43	RT.	EB	W1-8	36X48	5'-0"		5" DIA. POLE		17'-0"		7'-0"	3'-6"		12.0					18						X	1				BGR	FY		REPLACE FROM 2075+82 W1-8 = CHEVRON LEFT
	2075+93	MED.	WB	W1-8	24X30			*		6'-10"		7'-0"			5.0							50										FY		NEW W1-8 = CHEVRON RIGHT
	2076+44	RT.	EB	W1-8	36X48	5'-0"		5" DIA. POLE		17'-0"		7'-0"	3'-6"		12.0					18						X	1				BGR	FY		REPLACE FROM 2079+50 W1-8 = CHEVRON LEFT
I-90 WESTBOUND																																		
	3029+89	LT.	WB	IS12-12Z	42X42		R.S.F.O.										12.3										1							REPLACE SIGN FACE IS12-12Z = CHAIN UP AREA
	3033+36	LT.	WB	D10-4	12X24	6'-0"		3 LB STL. "U"		10'-6"		4'-0"	3'-0"		2.0										32		1							REPLACE D10-4 = MILE 4
	3038+44	LT.	WB	R17-1	USE AS IS																													USE AS IS R17-1 = WHEN FLASHING CHAINS REQUIRED FOR TOWING UNITS
	3042+24	LT.	WB	IS12-2	114X48		R.S.F.O.										38.0												1					REPLACE SIGN FACE IS12-2 = CHAIN UP AREA 1000 FT USE SHOULDER
	3048+58	RT.	WB	R4-14	36X24	10'-0"		4" DIA. POLE		15'-6"		7'-0"	3'-0"		6.0					16							1							REPLACE R4-14 = AUTHORIZED VEHICLES ONLY
	3069+21	LT.	WB	D9-6A R99-27	12X24 24X12		R.S.F.O.								2.0 2.0												1							REPLACE SIGN FACES D9-6A = RESERVED PARKING PERMIT REQUIRED $100 FINE R99-27 = PETS PROHIBITED ON LAWN AND IN REST AREA
	3069+44	LT.	WB	D9-6A	12X24		R.S.F.O.								2.0												1							REPLACE SIGN FACE D9-6A = RESERVED PARKING PERMIT REQUIRED $100 FINE

R.S.F.O. = REPLACE SIGN FACE ONLY

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED

BBR = BACKBRACING REQUIRED:
-FOR WOOD POST 2"x4" REQ.
-FOR STRUCTURAL STEEL 2"X2"X¼" ANGLE IRON REQ.

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-FOR WOOD POST SEE DETAILED DRAWING 619-20
-FOR STRUCTURAL STEEL SEE DETAILED DRAWING 619-13

■ FRANGIBLE SIGN POST BREAKAWAY DEVICE REQUIRED

BGR = BEHIND GUARDRAIL

* = MOUNT TO CONCRETE BARRIER SEE DETAIL

SHEET NO.
SI-03

SUMMARY FRAMES

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23	
REVIEWED BY	RLUBBERS	6/29/23	
DESIGNED BY	MORRISSEY	6/29/23	9487000SISUMZ01.DWG

MONTANA
Department of Transportation

SIGNING & STRIPING PLANS

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SIGN LOCATION AND SPECIFICATION

LT.	STATION / M.P.	RT.	RAMP NO.	SIGN NO.	PANEL SIZE	FEET: CLEARANCE	FEET: SIGN SUPPORT SPACING	TYPE OF SUPPORT	CANTILEVER	FEET: SUPPORT LENGTH (ESTIMATED)	FEET: SUPPORT LENGTH (INSTALLED)	FEET: MOUNTING HEIGHT	FEET: FOUNDATION DEPTH	SIGN PANEL (SQ. FT.): SHEET ALUMINUM IV	SHEET ALUMINUM XI	ALUMINUM SHEET INCREMENT IV	ALUMINUM SHEET INCREMENT XI	ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.): 4" TOP DIA.	5" TOP DIA.	6" TOP DIA.	STEEL POST (LBS.): ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST	BREAKAWAY	SIGNS: REMOVE	SIGNS: RESET	GUIDE: REMOVE	GUIDE: RESET			REMARKS
I-90 WESTBOUND (CONT.)																																	
LT.	3069+61		WB	D9-13A DX-X3	12X12 12X4		R.S.F.O.								1.0 0.3												1						REPLACE SIGN FACES D9-13A = PET AREA SYMBOL DX-X3 = WATER
				D9-3PL	12X3										0.3																		D9-3PL = ARROW LEFT
LT.	3069+96		WB	R6-1L R99-27	36X12 24X12		R.S.F.O.								3.0 2.0												1						REPLACE SIGN FACES R6-1 = ONE WAY LEFT R99-27 = PETS PROHIBITED ON LAWN AND IN REST AREA
LT.	3071+22		WB	R99-27	24X12	6'-0"		2 LB STL. "U"		9'-0"		4'-0"	3'-0"		2.0										18							NEW R99-27 = PETS PROHIBITED ON LAWN AND IN REST AREA
LT.	3072+04		WB	D9-13A DX-X3	12X12 12X4		R.S.F.O.								1.0 0.3												1						REPLACE SIGN FACES D9-13A = PET AREA SYMBOL DX-X3 = WATER
				D9-3PL	12X3										0.3																		D9-3PL = ARROW LEFT
LT.	3074+33		WB	R6-1L	36X12		R.S.F.O.								3.0												1						REPLACE SIGN FACE R6-1 = ONE WAY LEFT
I-90 MAINLINE																																	
	406+30 MED.		WB	W1-8	24X30			*		6'-10"		7'-0"			5.0							50								FY		NEW W1-8 = CHEVRON RIGHT
LT.	406+40		WB	R6-1R R5-1	36X12 36X36	5'-0"		5" DIA. POLE		16'-6"		7'-0"	3'-6"		3.0 9.0					18						1						REPLACE R6-1 = ONE WAY RIGHT R5-1 = DO NOT ENTER
RT.	406+63		EB	W1-8	36X48	5'-0"		5" DIA. POLE		17'-0"		7'-0"	3'-6"		12.0					18						X	1			FY	BGR	REPLACE FROM 409+80 W1-8 = CHEVRON LEFT
LT.	406+74		WB	R6-1L R5-1	36X12 36X36		R.S.F.O.								3.0 9.0												1						REPLACE SIGN FACES R6-1 = ONE WAY LEFT R5-1 = DO NOT ENTER
LT.	408+16		WB	R5-1A	42X30		R.S.F.O.								8.8												1						REPLACE SIGN FACE R5-1A = WRONG WAY
	408+18 MED.		WB	W1-8	24X30			*		6'-10"		7'-0"			5.0							50					1			FY		REPLACE FROM 403+09 W1-8 = CHEVRON RIGHT
RT.	408+57		EB	W1-8	36X48	5'-0"		5" DIA. POLE		16'-6"		7'-0"	3'-6"		12.0					18						X	1			FY	BGR	REPLACE FROM 411+57 W1-8 = CHEVRON LEFT
	410+19 MED.		WB	W1-8	24X30			*		6'-10'		7'-0"			5.0							50					1			FY		REPLACE FROM 405+28 W1-8 = CHEVRON RIGHT
RT.	410+52		EB	W1-8	36X48	5'-0"		5" DIA. POLE		16'-6"		7'-0"	3'-6"		12.0					18						X	1			FY	BGR	REPLACE FROM 413+77 W1-8 = CHEVRON LEFT
RT.	411+59		EB	W8-12	48X48	5'-0"		S4X7.7		16'-6"		7'-0"	3'-6"		16.0									127		■	1			BBR	BGR	REPLACE, HINGED W8-12 = WATCH FOR ICE ON BRIDGE, HINGED

R.S.F.O. = REPLACE SIGN FACE ONLY

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED

BBR = BACKBRACING REQUIRED:
-FOR WOOD POST 2"x4" REQ.
-FOR STRUCTURAL STEEL 2"X2"X¼" ANGLE IRON REQ.

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

■ FRANGIBLE SIGN POST BREAKAWAY DEVICE REQUIRED

BGR = BEHIND GUARDRAIL

* = MOUNT TO CONCRETE BARRIER SEE DETAIL

SHEET NO.
SI-04

SUMMARY FRAMES

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
6/29/23	LFISCHER	RLUBBERS	MORRISSEY

9487000SISUMZ01.DWG

MONTANA Department of Transportation

SIGNING & STRIPING PLANS

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SIGN LOCATION AND SPECIFICATION

LT.	STATION / M.P.	RT.	RAMP NO.	SIGN NO.	PANEL SIZE	FEET: CLEARANCE	FEET: SIGN SUPPORT SPACING	TYPE OF SUPPORT	CANTILEVER	FEET: SUPPORT LENGTH (ESTIMATED)	FEET: SUPPORT LENGTH (INSTALLED)	FEET: MOUNTING HEIGHT	FEET: FOUNDATION DEPTH	SIGN PANEL (SQ. FT.): SHEET ALUMINUM IV	SHEET ALUMINUM XI	ALUMINUM SHEET INCREMENT IV	ALUMINUM SHEET INCREMENT XI	ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.): 4" TOP DIA.	5" TOP DIA.	6" TOP DIA.	STEEL POST (LBS.): ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST	BREAKAWAY	SIGNS: REMOVE	SIGNS: RESET	GUIDE: REMOVE	GUIDE: RESET				REMARKS
I-90 MAINLINE (CONT.)																																		
	412+21 MED.		WB	W1-8	24X30			*		6'-10"		7'-0"			5.0							50					1						FY	REPLACE FROM 405+30 W1-8 = CHEVRON RIGHT
	412+56	RT.	EB	W1-8	36X48	5'-0"		5" DIA. POLE		16'-6"		7'-0"	3'-6"		12.0					18						X	1					BGR	FY	REPLACE FROM 415+73 W1-8 = CHEVRON LEFT
LT.	412+92		WB	D5-2 W13-1	USE AS IS																													USE AS IS D5-2 = REST AREA W13-1 = 50 MPH
	413+37	RT.	EB	D10-4	12X24	6'-0"		3 LB STL. "U"		10'-6"		4'-0"	3'-0"		2.0										32									NEW D10-4 = MILE 5
LT.	413+42		WB	D10-4	12X24	6'-0"		3 LB STL. "U"		10'-6"		4'-0"	3'-0"		2.0										32									NEW D10-4 = MILE 5
	413+81	RT.	EB	E5-1 G6-1 G30-104	84X30 126X60 84X24		R.S.F.O.										17.5 52.5 14.0											1						REPLACE SIGN FACES E5-1 = EXIT 5 G6-1 = TAFT AREA 1/2 MILE G30-104 = HIAWATHA TR
	414+19 MED.		WB	W1-8	24X30			*		6'-10"		7'-0"			5.0							50					1						FY	REPLACE FROM 403+80 W1-8 = CHEVRON RIGHT
	414+58	RT.	EB	W1-8	36X48	5'-0"		5" DIA. POLE		16'-6"		7'-0"	3'-6"		12.0					18						X	1					BGR	FY	REPLACE FROM 417+75 W1-8 = CHEVRON LEFT
	416+21 MED.		WB	W1-8	24X30			*		6'-10"		7'-0"			5.0							50					1						FY	REPLACE FROM 409+09 W1-8 = CHEVRON RIGHT
	416+62	RT.	EB	W1-8	36X48	5'-0"		5" DIA. POLE		16'-6"		7'-0"	3'-6"		12.0					18						X	1					BGR	FY	REPLACE FROM 419+89 W1-8 = CHEVRON LEFT
LT.	418+17		WB	W13-6	USE AS IS																													USE AS IS W13-6 = RAMP 50 MPH W/ RIGHT CURVE ARROW
	418+21 MED.		WB	W1-8	24X30			*		6'-10"		7'-0"			5.0							50					1						FY	REPLACE FROM 413+28 W1-8 = CHEVRON RIGHT
	420+15 MED.		WB	W1-8	24X30			*		6'-10"		7'-0"			5.0							50					1						FY	REPLACE FROM 416+98 W1-8 = CHEVRON RIGHT
LT.	421+97		WB	W1-2R W13-1	48X48 30X30	5'-0"		S5X10		18'-2"		7'-0"	3'-6"		16.0 6.3										181		■	1				FY	BGR	BBR	REPLACE W1-2R = RIGHT CURVE W13-1 = 60 MPH
LT.	423+44		WB	W11-3 W7-3A	48X48 24X18	SEE ELECTRICAL PLANS									16.0 3.0																		FY	NEW W11-3 = DEER CROSSING SYMBOL W7-3A = NEXT 2 MILES
LT.	424+95		WB	R8-7	48X36	5'-0"		5" DIA. POLE		15'-6"		7'-0"	3'-6"		12.0					16						X						BGR		NEW R8-7 = EMERGENCY STOPPING ONLY

R.S.F.O. = REPLACE SIGN FACE ONLY

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED

BBR = BACKBRACING REQUIRED:
-FOR WOOD POST 2"x4" REQ.
-FOR STRUCTURAL STEEL 2"X2"X$\frac{1}{4}$" ANGLE IRON REQ.

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

■ FRANGIBLE SIGN POST BREAKAWAY DEVICE REQUIRED

BGR = BEHIND GUARDRAIL

* = MOUNT TO CONCRETE BARRIER SEE DETAIL

SHEET NO.
SI-05

SUMMARY FRAMES

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23	
REVIEWED BY	RLUBBERS	6/29/23	
DESIGNED BY	MORRISSEY	6/29/23	9487000SISUMZ01.DWG

MONTANA
Department of Transportation

SIGNING & STRIPING PLANS

12/22/2023 8:36 AM

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SIGN LOCATION AND SPECIFICATION

LT.	STATION / M.P.	RT.	RAMP NO.	SIGN NO.	PANEL SIZE	FEET: CLEARANCE	FEET: SIGN SUPPORT SPACING	TYPE OF SUPPORT	CANTILEVER	FEET: SUPPORT LENGTH (ESTIMATED)	FEET: SUPPORT LENGTH (INSTALLED)	FEET: MOUNTING HEIGHT	FEET: FOUNDATION DEPTH	SIGN PANEL (SQ. FT.): SHEET ALUMINUM IV	SHEET ALUMINUM XI	ALUMINUM SHEET INCREMENT IV	ALUMINUM SHEET INCREMENT XI	ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.): 4" TOP DIA.	5" TOP DIA.	6" TOP DIA.	STEEL POST (LBS.): ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST	BREAKAWAY	SIGNS: REMOVE	SIGNS: RESET	GUIDE: REMOVE	GUIDE: RESET				REMARKS
I-90 MAINLINE (CONT.)																																		
LT.	429+61		WB	D5-1A IS3-P	120X54 120X24		R.S.F.O.										45.0 20.0												1						REPLACE SIGN FACES D5-1A = REST AREA NEXT RIGHT IS3-P = OPEN/CLOSED
LT.	431+24		WB	W8-12	48X48	5'-0"		S4X7.7		16'-6"		7'-0"	3'-6"		16.0							127				■	1				BGR	BBR		REPLACE W8-12 = WATCH FOR ICE ON BRIDGE, HINGED
	432+57	RT.	EB	W1-2R W13-1	48X48 30X30	5'-0"		S5X10		18'-2"		7'-0"	3'-6"		16.0 6.3							181				■				FY	BGR	BBR		NEW W1-2R = RIGHT CURVE W13-1 = 55 MPH
LT.	436+03		WB	IS12-11	108X84		R.S.F.O.										63.0											1						NEW ACTUATED FLASHERS (2), SEE ELECTRICAL PLANS REPLACE SIGN FACE IS12-11 = CHAIN UP AREA 1 1/2 MILES (CHAINS REQUIRED)
LT.	437+98		WB	R8-7	48X36	5'-0"		5" DIA. POLE		15'-6"		7'-0"	3'-6"		12.0					16						X					BGR			NEW R8-7 = EMERGENCY STOPPING ONLY
	440+75	RT.	EB	EG-5 G30-104	72X60 84X24		R.S.F.O.										30.0 14.0											1						REPLACE SIGN FACE EG-5 = EXIT 5 G30-X1 = HIAWATHA TR ➡
	442+19	RT.	EB	W8-12	48X48	5'-0"		S4X7.7		16'-6"		7'-0"	3'-6"		16.0							127				■	1				BGR	BBR		REPLACE W8-12 = WATCH FOR ICE ON BRIDGE, HINGED
LT.	454+66		WB	EG-5 G30-104	72X60 84X24		R.S.F.O.										30.0 14.0											1						REPLACE SIGN FACE EG-5 = EXIT 5 G30-104 = HIAWATHA TR ➡
LT.	459+64		WB	W8-12	48X48	5'-0"		S4X7.7		16'-6"		7'-0"	3'-6"		16.0							127				■	1				BGR	BBR		REPLACE W8-12 = WATCH FOR ICE ON BRIDGE, HINGED
LT.	461+16		WB	W1-2L W13-1	48X48 30X30	5'-0"		S5X10		18'-2"		7'-0"	3'-6"		16.0 6.3							181				■	1			FY	BGR	BBR		REPLACE W1-2L = LEFT CURVE W13-1 = 55 MPH
TAFT INTERCHANGE																																		
	1099+69	RT.	C	W3-1A	36X36		R.S.F.O.								9.0												1						REPLACE SIGN FACE W3-1A = STOP SIGN AHEAD
LT.	1101+74		C	R5-1A	36X24		R.S.F.O.								6.0												1						REPLACE SIGN FACE R5-1A = WRONG WAY
	1101+84	RT.	C	IS8-4 R5-1A	108X24 36X24		R.S.F.O.								6.0		18.0											1						REPLACE SIGN FACES IS8-4 = NO SERVICES R5-1A = WRONG WAY
	1103+73	RT.	C	LA-2	24X12	6'-0"		2 LB STL. "U"		9'-0"		4'-0"	3'-0"		2.0										18		1						REPLACE LA-2 = LEAVING CONTROLLED ACCESS HIGHWAY
	1104+65	RT.	C	R1-1	48X48		R.S.F.O.								13.3												1						REPLACE SIGN FACE R1-1 = STOP
	1104+88	RT.	C	R6-1L R6-1R	36X12 36X12	6'-0"		5" DIA. POLE		17'-6"		7'-0"	3'-6"		3.0 3.0					18								1						REPLACE R6-1 = ONE WAY LEFT R6-1 = ONE WAY RIGHT
				R5-1	36X36										9.0																		R5-1 = DO NOT ENTER

R.S.F.O. = REPLACE SIGN FACE ONLY

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED

BBR = BACKBRACING REQUIRED:
-FOR WOOD POST 2"x4" REQ.
-FOR STRUCTURAL STEEL 2"X2"X$\frac{1}{4}$" ANGLE IRON REQ.

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

■ FRANGIBLE SIGN POST BREAKAWAY DEVICE REQUIRED

BGR = BEHIND GUARDRAIL

✱ = MOUNT TO CONCRETE BARRIER SEE DETAIL

SHEET NO.
SI-06

SUMMARY FRAMES

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER 6/29/23	RLUBBERS 6/29/23	MORRISSEY 6/29/23

9487000SISUMZ01.DWG

MONTANA Department of Transportation

SIGNING & STRIPING PLANS

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SIGN LOCATION AND SPECIFICATION

TAFT INTERCHANGE (CONT.)

LT.	STATION / M.P.	RT.	RAMP NO.	SIGN NO.	PANEL SIZE	FEET: CLEARANCE	FEET: SIGN SUPPORT SPACING	TYPE OF SUPPORT	CANTILEVER	FEET: SUPPORT LENGTH (ESTIMATED)	FEET: SUPPORT LENGTH (INSTALLED)	FEET: MOUNTING HEIGHT	FEET: FOUNDATION DEPTH	SIGN PANEL (SQ. FT.): SHEET ALUMINUM IV	SHEET ALUMINUM XI	ALUMINUM SHEET INCREMENT IV	ALUMINUM SHEET INCREMENT XI	ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.): 4" TOP DIA.	5" TOP DIA.	6" TOP DIA.	STEEL POST (LBS.): ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST	BREAKAWAY	SIGNS: REMOVE	SIGNS: RESET	GUIDE: REMOVE	GUIDE: RESET			REMARKS
	1104+96		C	R6-1L	36X12		R.S.F.O.								3.0												1						REPLACE SIGN FACES R6-1 = ONE WAY LEFT
LT.				R6-1R	36X12										3.0																		R6-1 = ONE WAY RIGHT
				R5-1	36X36										9.0																		R5-1 = DO NOT ENTER
	1105+29		C	G9-3	132X48		R.S.F.O.										44.0												1				REPLACE SIGN FACES G9-3 = RANDOLPH CR RD ,
		RT.		G30-104	84X24												14.0																BULLION RD G30-104 = HIAWATHA TR ⬅
				R7-1	12X18										1.5																		R7-1 = NO PARKING ANY TIME
	1110+43		A	R6-1L	36X12	6'-0"		5" DIA.		16'-6"		7'-0"	3'-6"		3.0					18						1						REPLACE R6-1 = ONE WAY LEFT
LT.				R5-1	36X36			POLE							9.0																		R5-1 = DO NOT ENTER
	1110+44		A	R6-1L	36X12		R.S.F.O.								3.0												1						REPLACE SIGN FACES R6-1 = ONE WAY LEFT
		RT.		R6-1R	36X12										3.0																		R6-1 = ONE WAY RIGHT
				R5-1	36X36										9.0																		R5-1 = DO NOT ENTER
	1110+55		A	R1-1	48X48		R.S.F.O.								13.3												1						REPLACE SIGN FACE
LT.																																	R1-1 = STOP
	1111+19		A	LA-2	24X12	6'-0"		2 LB		9'-0"		4'-0"	3'-0"		2.0										18		1						REPLACE
LT.								STL. "U"																									LA-2 = LEAVING CONTROLLED ACCESS HIGHWAY
	1113+54		A	R5-1A	36X24		R.S.F.O.								6.0												1						REPLACE SIGN FACE
LT.																																	R5-1A = WRONG WAY
	1113+63		A	R5-1A	36X24		R.S.F.O.								6.0												1						REPLACE SIGN FACE
		RT.																															R5-1A = WRONG WAY
	1113+99		A	IS8-4	108X24		R.S.F.O.										18.0												1				REPLACE SIGN FACE
LT.																																	IS8-4 = NO SERVICES
	1115+50		A	W3-1A	36X36		R.S.F.O.								9.0												1						REPLACE SIGN FACE
LT.																																	W3-1A = STOP SIGN AHEAD
	1116+75		B	LA-1	24X12	6'-0"		2 LB		9'-0"		4'-0"	3'-0"		2.0										18								NEW
LT.								STL. "U"																									LA-1 = ENTERING CONTROLLED ACCESS HIGHWAY
	1117+28		B	D13-3	48X30	10'-0"	2'-5"	4" DIA.		X = 15'-0"		7'-0"	3'-0"		10.0					32						1						REPLACE
LT.								POLE		Y = 15'-4"																							D13-3 = FREEWAY ENTRANCE
	1118+65		B	G8-4	132X24		R.S.F.O.										22.0												1				REPLACE SIGN FACE
LT.																																	G8-4 = COEUR D'ALENE ⬅
	1120+55		D	D13-3	48X30		R.S.F.O.								10.0												1						REPLACE SIGN FACE
		RT.																															D13-3 = FREEWAY ENTRANCE
	1121+13		D	LA-1	24X12	6'-0"		2 LB		9'-0"		4'-0"	3'-0"		2.0										18								NEW
		RT.						STL. "U"																									LA-1 = ENTERING CONTROLLED ACCESS HIGHWAY
	1900+07		XR	R1-1	36X36		R.S.F.O.								7.5												1						REPLACE SIGN FACES R1-1 = STOP
LT.				R7-1	12X18										1.5																		R7-1 = NO PARKING ANY TIME

R.S.F.O. = REPLACE SIGN FACE ONLY

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED

BBR = BACKBRACING REQUIRED:
-FOR WOOD POST 2"x4" REQ.
-FOR STRUCTURAL STEEL 2"X2"X¼" ANGLE IRON REQ.

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

■ FRANGIBLE SIGN POST BREAKAWAY DEVICE REQUIRED

BGR = BEHIND GUARDRAIL

SHEET NO.
SI-07

SUMMARY FRAMES

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

DESIGNED BY	MORRISSEY	6/29/23	9487000SISUMZ01.DWG
REVIEWED BY	RLUBBERS	6/29/23	
CHECKED BY	LFISCHER	6/29/23	

MONTANA Department of Transportation

SIGNING & STRIPING PLANS

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SIGN LOCATION AND SPECIFICATION

LT.	STATION / M.P.	RT.	RAMP NO.	SIGN NO.	PANEL SIZE	FEET: CLEARANCE	FEET: SIGN SUPPORT SPACING	TYPE OF SUPPORT	CANTILEVER	FEET: SUPPORT LENGTH (ESTIMATED)	FEET: SUPPORT LENGTH (INSTALLED)	FEET: MOUNTING HEIGHT	FEET: FOUNDATION DEPTH	SIGN PANEL (SQ. FT.): SHEET ALUMINUM IV	SIGN PANEL (SQ. FT.): SHEET ALUMINUM XI	SIGN PANEL (SQ. FT.): ALUMINUM SHEET INCREMENT IV	SIGN PANEL (SQ. FT.): ALUMINUM SHEET INCREMENT XI	SIGN PANEL (SQ. FT.): ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.): 4" TOP DIA.	TIMBER POLE (LINEAR FT.): 5" TOP DIA.	TIMBER POLE (LINEAR FT.): 6" TOP DIA.	STEEL POST (LBS.): ROUND TUBULAR	STEEL POST (LBS.): SQUARE TUBULAR	STEEL POST (LBS.): STRUCTURAL STEEL	STEEL POST (LBS.): "U" POST	BREAKAWAY	SIGNS: REMOVE	SIGNS: RESET	GUIDE: REMOVE	GUIDE: RESET	REMARKS
TAFT INTERCHANGE (CONT.)																															
	1900+09	RT.	XR	G9-2	126X48		R.S.F.O.										42.0												1			REPLACE SIGN FACE G9-2 = COEUR D'ALENE ⬆ MISSOULA ⬅
	1900+38	RT.	XR	R3-2B	36X48		R.S.F.O.								12.0												1				REPLACE SIGN FACE R3-2B = NO LEFT TURN
	1901+40	RT.	XR	M3-4A M3-2A M1-1 M1-1 M6-3A M6-1A M3-2A M1-1 M6-1A	24X12 24X12 24X24 24X24 21X15 21X15 24X12 24X24 21X15		R.S.F.O.								2.0 2.0 3.2 3.2 2.2 2.2 2.0 3.2 2.2											1				REPLACE SIGN FACES M3-4A = WEST M3-2A = EAST M1-1 = INTERSTATE 90 M1-1 = INTERSTATE 90 M6-3A = ARROW AHEAD M6-1A = ARROW RIGHT M3-2A = EAST M1-1 = INTERSTATE 90 M6-1A = ARROW LEFT
LT.	1901+53		XR	R3-1B	36X48		R.S.F.O.								12.0												1				REPLACE SIGN FACE R3-1B = NO RIGHT TURN
LT.	1901+79		XR	G8-5	96X24		R.S.F.O.										16.0												1		REPLACE SIGN FACE G8-5 = MISSOULA ⬅
	1903+00	RT.	XR	R3-1B	36X48		R.S.F.O.								12.0												1				REPLACE SIGN FACE R3-1B = NO RIGHT TURN
													TOTALS		709.3		701.8		64	230		1381	27	308	218		66		16			

R.S.F.O. = REPLACE SIGN FACE ONLY

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED

BBR = BACKBRACING REQUIRED:
-FOR WOOD POST 2"x4" REQ.
-FOR STRUCTURAL STEEL 2"X2"X¼" ANGLE IRON REQ.

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

■ FRANGIBLE SIGN POST BREAKAWAY DEVICE REQUIRED

BGR = BEHIND GUARDRAIL

DELINEATOR LEGEND	
DELINEATOR SNOWPOLE-DES "A"	93
DELINEATOR SNOWPOLE-DES "B"	20
DELINEATOR SNOWPOLE-DES "D"	6
DELINEATOR SNOWPOLE-DES "G"	57
DELINEATOR SNOWPOLE-DES "H"	68
DELINEATOR SNOWPOLE-DES "GJ"	20
DELINEATOR SNOWPOLE-DES "BJ"	46

SHEET NO.
SI-08

SUMMARY FRAMES

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY: LFISCHER 6/29/23
REVIEWED BY: RLUBBERS 6/29/23
DESIGNED BY: MORRISSEY 6/29/23

MONTANA Department of Transportation

SIGNING & STRIPING PLANS

12/22/2023 8:36 AM

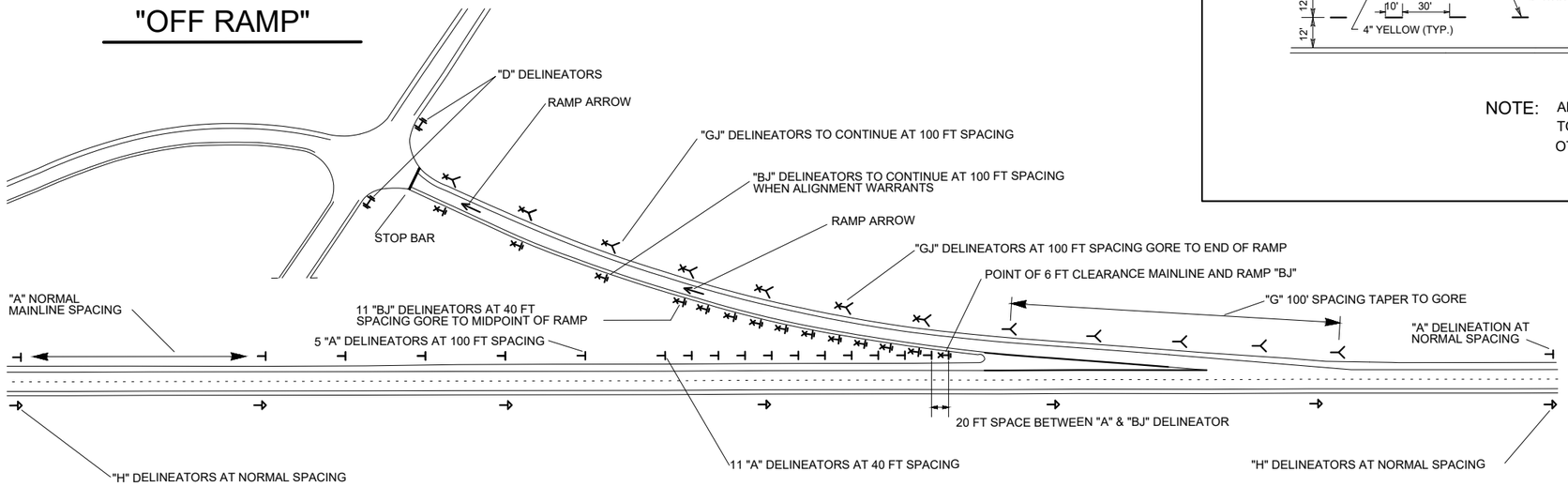
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DETAIL

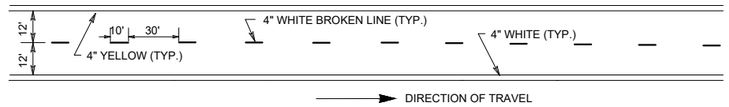
RAMP DELINEATION DETAIL

"OFF RAMP"



TYPICAL PAVEMENT MARKINGS

NO SCALE



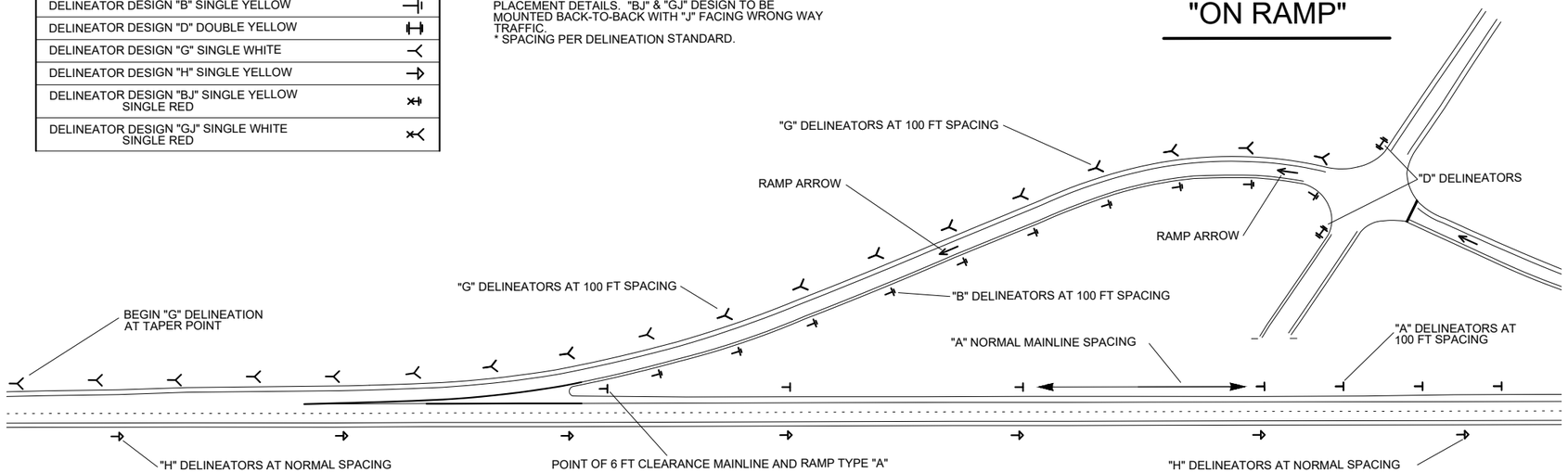
NOTE: ALL PAVEMENT MARKINGS TO BE EPOXY UNLESS OTHERWISE SPECIFIED.

LEGEND

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

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

"ON RAMP"



DELINEATOR SUMMARY

	LOOKOUT INTERCHANGE				REST AREA EB		REST AREA WB		TAFT INTERCHANGE				
TYPE	RAMP A	RAMP B	RAMP C	RAMP D	ON RAMP	OFF RAMP	ON RAMP	OFF RAMP	RAMP A	RAMP B	RAMP C	RAMP D	TOTAL
B	4	-	-	2	6	-	3	-	7	-	-	4	26
D	-	1	1	1	-	-	-	-	1	1	2	2	9
G	11	6	5	14	8	4	13	1	5	19	-	7	93
BJ	-	4	8	-	-	8	-	12	12	-	14	-	58
GJ	-	8	6	-	-	4	-	5	7	-	4	-	34

SHEET NO. SI-09

DETAILS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	RLUBBERS	6/29/23
DESIGNED BY	MORRISSEY	6/29/23

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MONTANA Department of Transportation

SIGNING & STRIPING PLANS

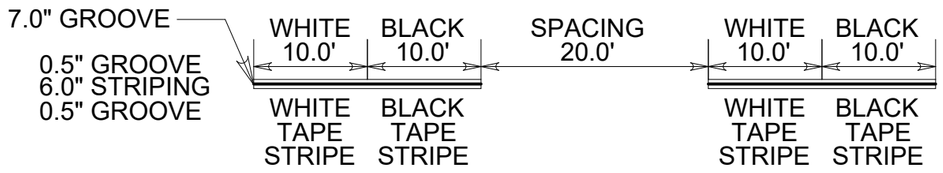
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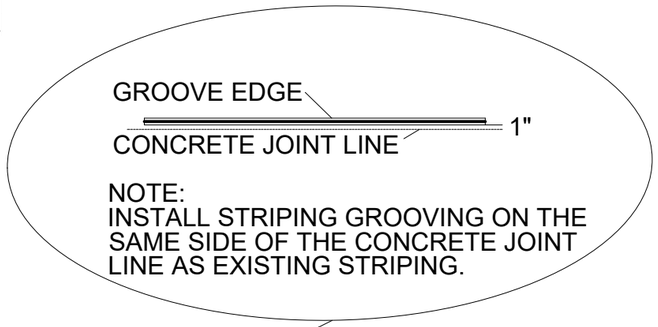
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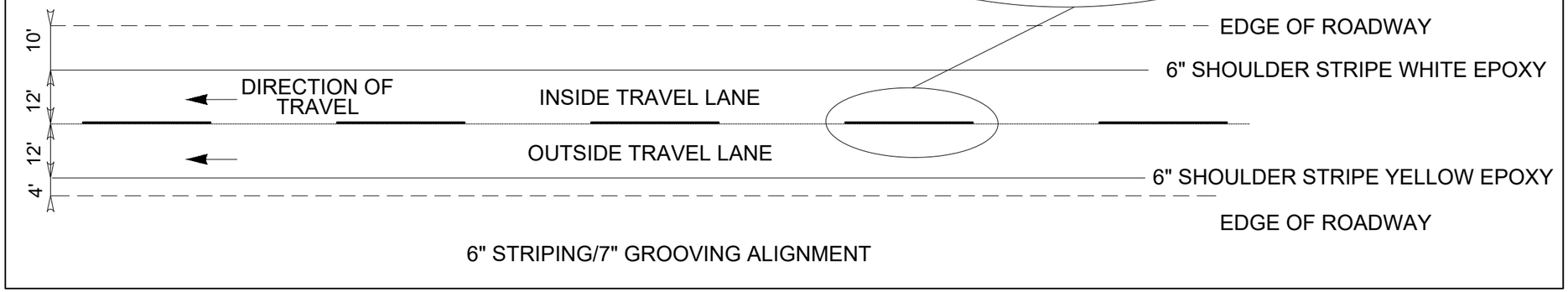
DETAIL

CONTRAST TAPE 6" DETAILS

NO SCALE

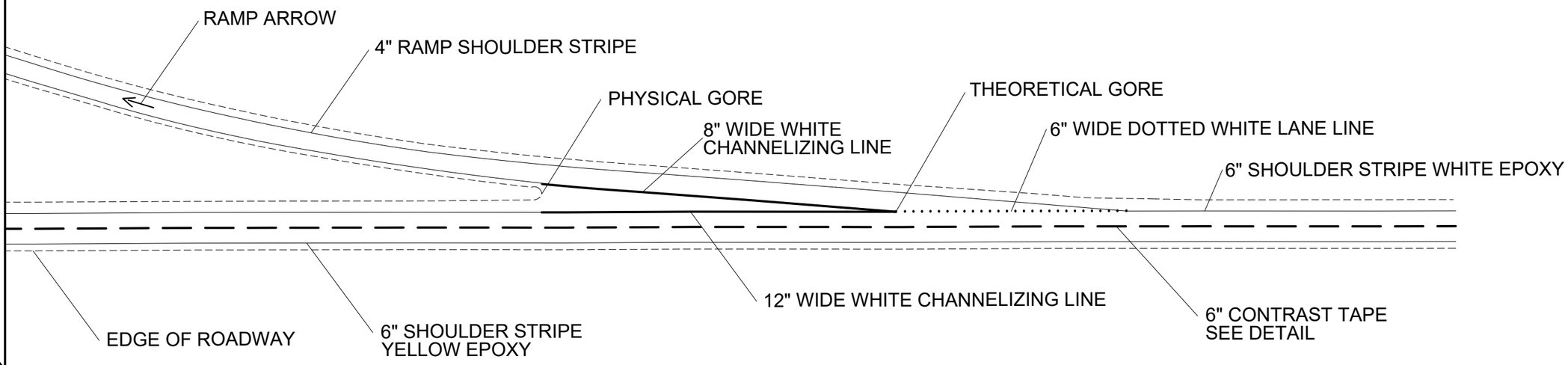






6" STRIPING/7" GROOVING ALIGNMENT

RAMP PAVEMENT MARKINGS DETAIL



HDR

SHEET NO.
SI-09A

DETAILS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

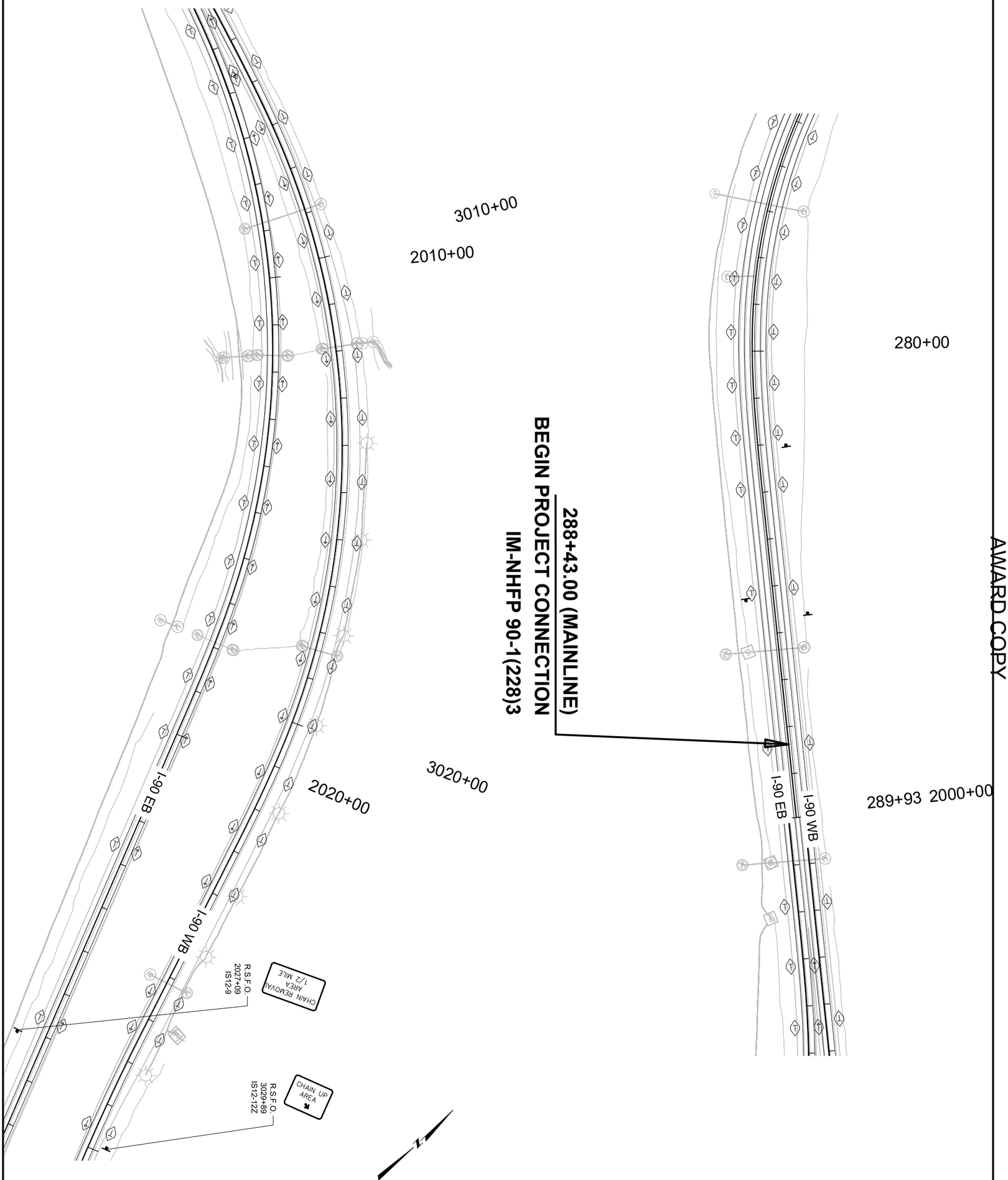
CHECKED BY	LFISCHER	6/29/23
REVIEWED BY	RLUBBERS	6/29/23
DESIGNED BY	MORRISSEY	6/29/23

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MONTANA
Department of Transportation

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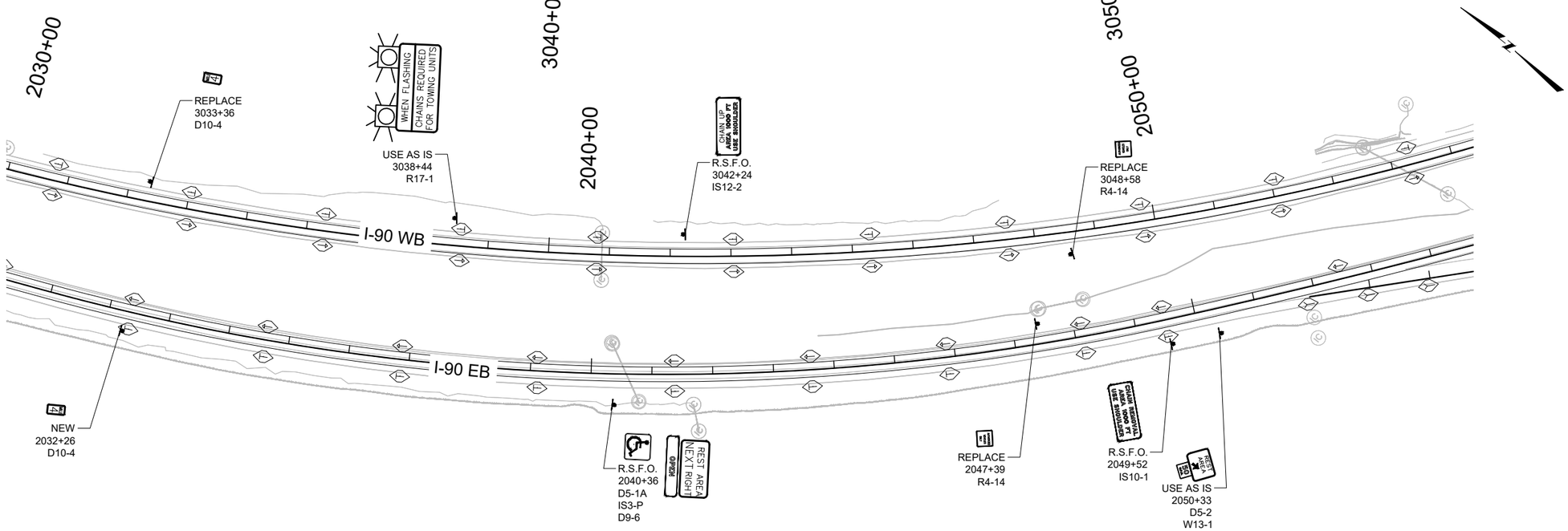
MONTANA Department of Transportation			
	CHECKED BY	LFISCHER	6/29/23
SIGNING & STRIPING PLANS	REVIEWED BY	RLUBBERS	6/29/23
	DESIGNED BY	SMORRISSEY	6/29/23
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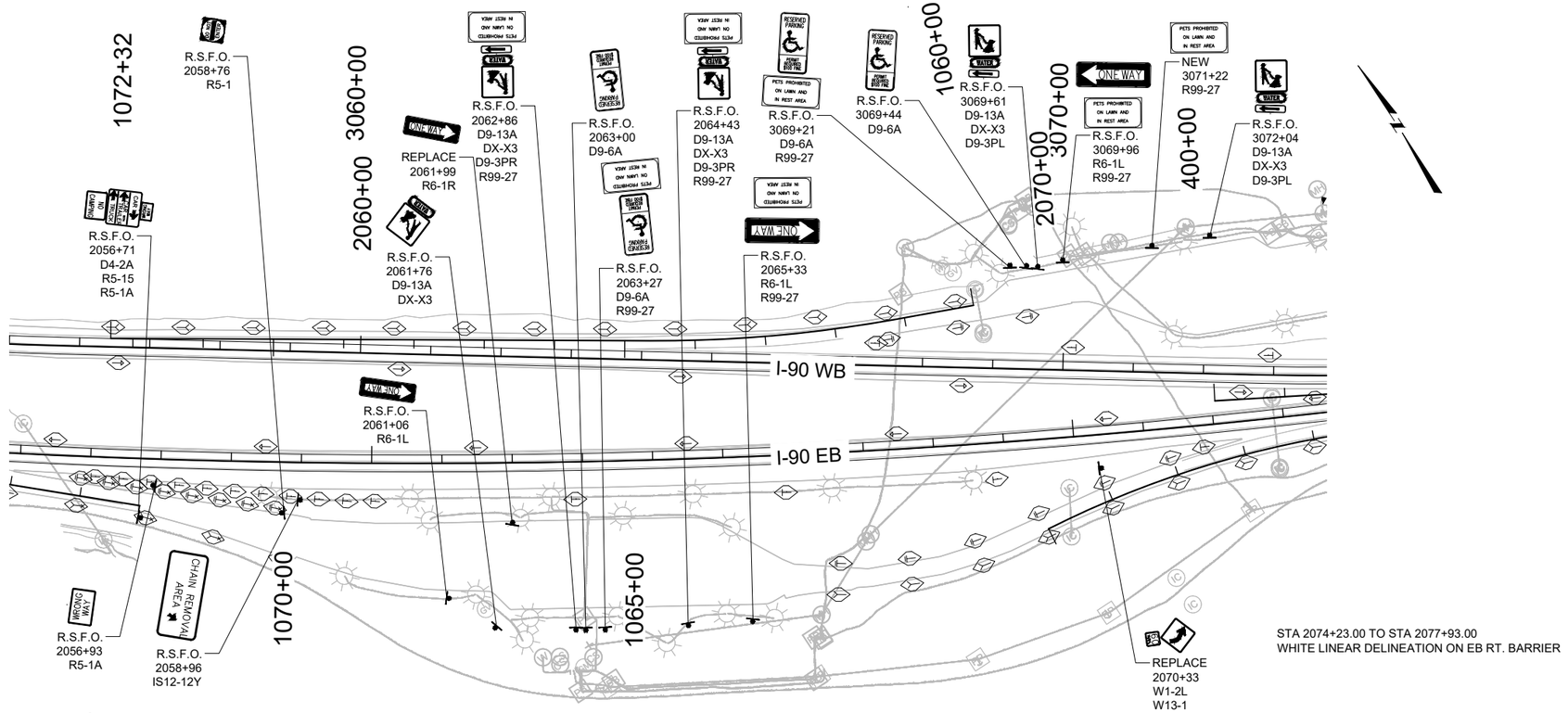
PROJECT NAME	TAFT - WEST
COUNTY	MINERAL COUNTY
PROJECT ID	IM-NHFP 90-1(228)3
UPN	9487000

PLAN

SHEET NO. SI-10

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STA 2074+23.00 TO STA 2077+93.00
WHITE LINEAR DELINEATION ON EB RT. BARRIER

SHEET NO.
SI-11

PLAN

PROJECT NAME	TAFT - WEST
COUNTY	MINERAL COUNTY
PROJECT ID	IM-NHFP 90-1(228)3
UPN	9487000
CHECKED BY	LFISCHER 6/29/23
REVIEWED BY	RLUBBERS 6/29/23
DESIGNED BY	MORRISSEY 6/29/23

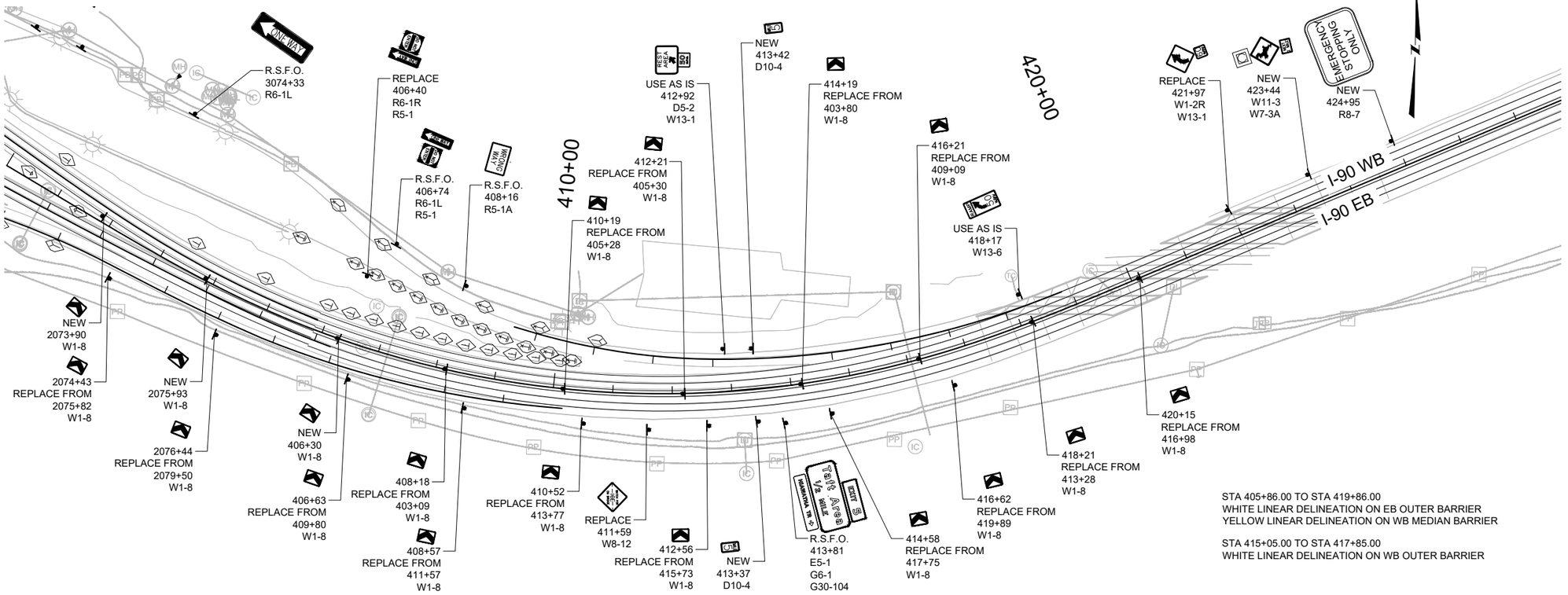
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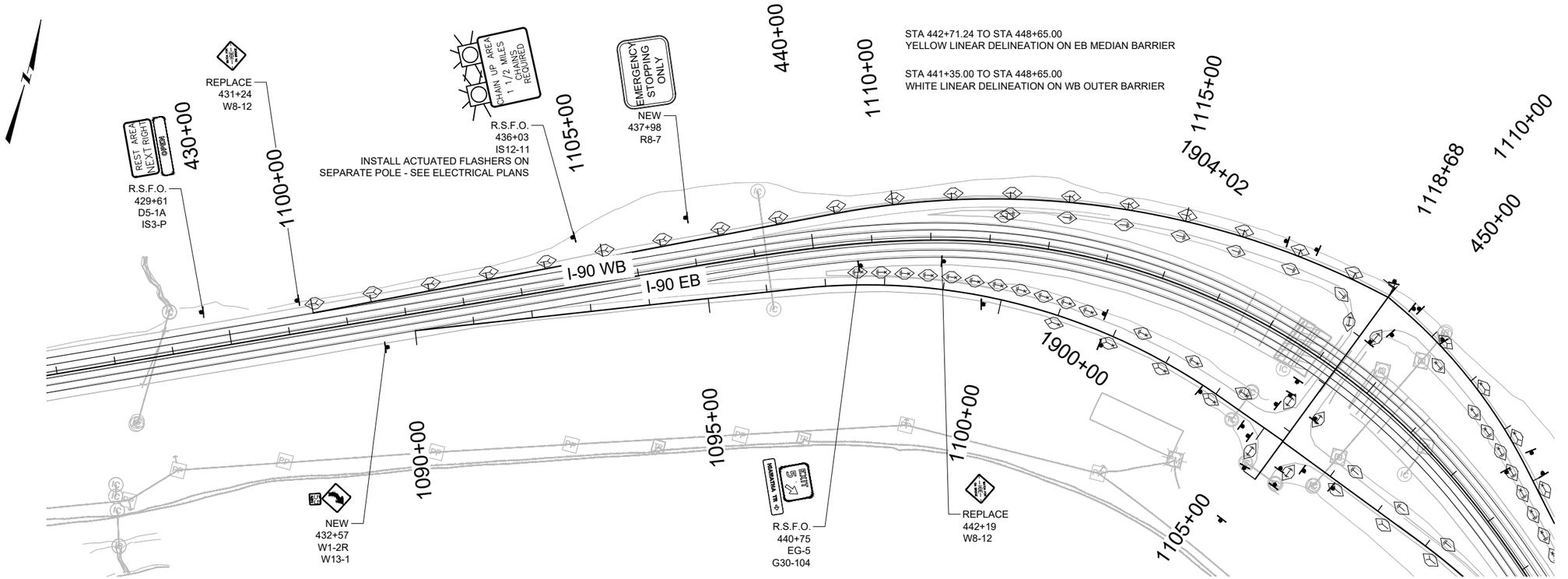
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Department of Transportation

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SHEET NO.
SI-12

PLAN

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER 6/29/23
REVIEWED BY	RLUBBERS 6/29/23
DESIGNED BY	SMORRISSEY 6/29/23

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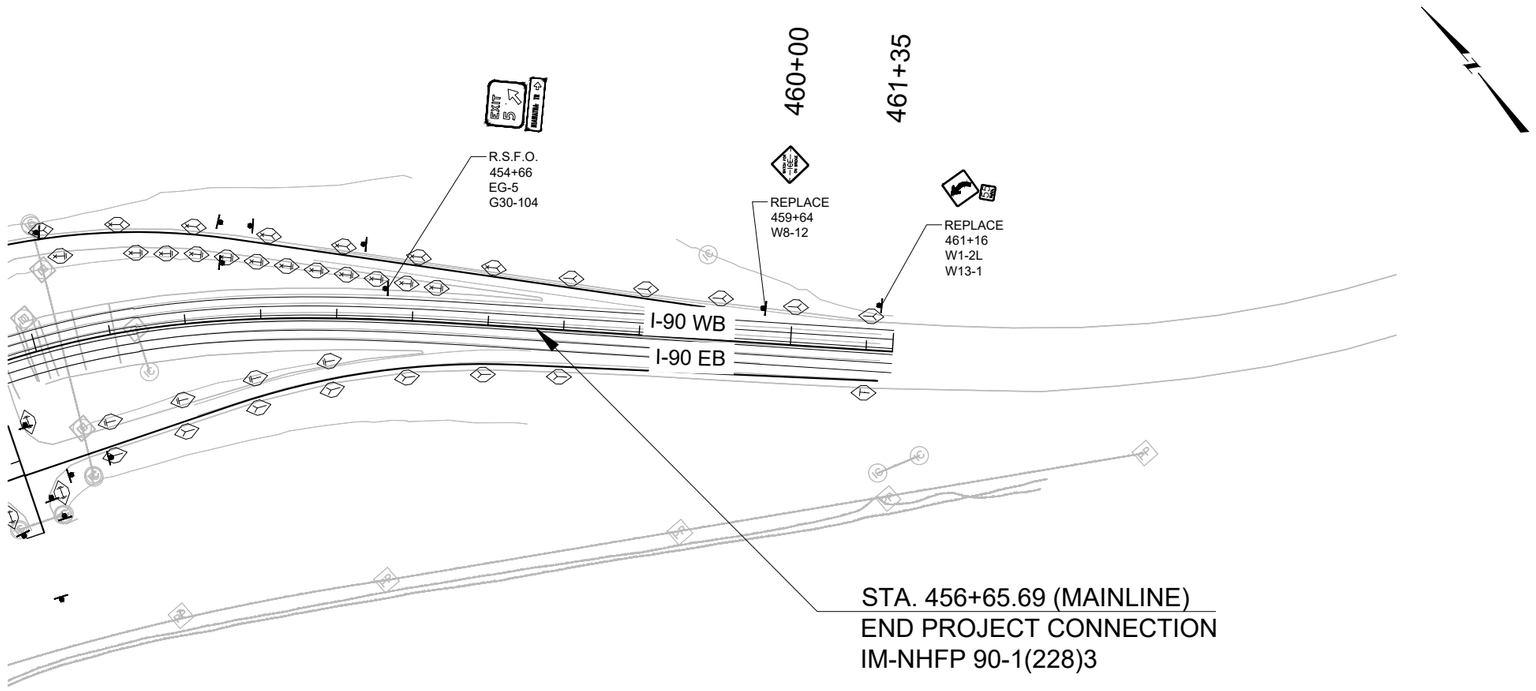
MONTANA
Department of Transportation

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HDR

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SHEET NO.
SI-13

PLAN

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

DESIGNED BY	SMORRISSEY	6/29/23
REVIEWED BY	RLUBBERS	6/29/23
CHECKED BY	LFISCHER	6/29/23

MONTANA
Department of Transportation

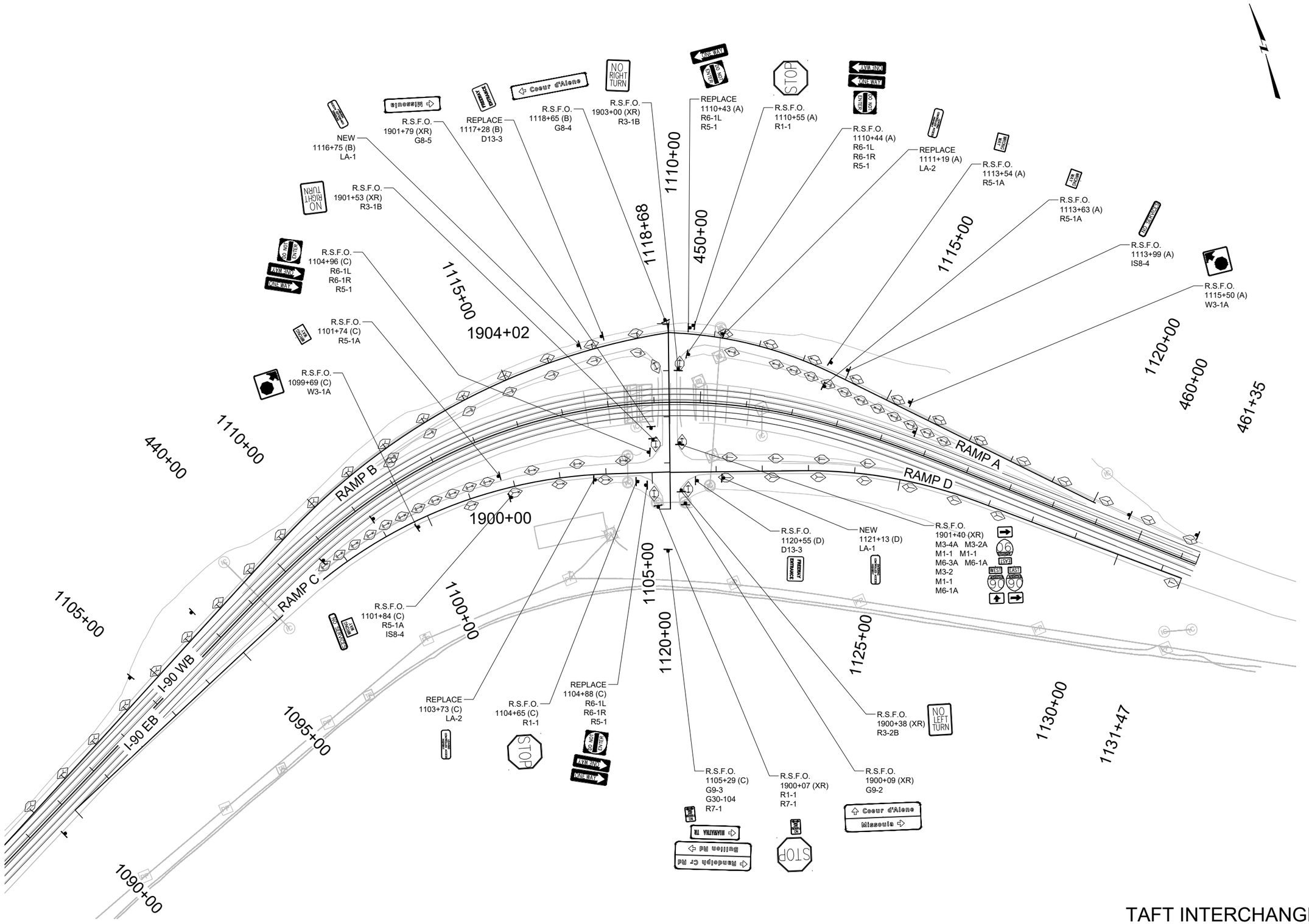
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HDR

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TAFT INTERCHANGE

SHEET NO.
SI-14

PLAN

PROJECT NAME	TAFT - WEST		
COUNTY	MINERAL COUNTY		
PROJECT ID	IM-NHFP 90-1(228)3		
UPN	9487000		
CHECKED BY	LFISCHER	6/29/23	
REVIEWED BY	RLUBBERS	6/29/23	
DESIGNED BY	SMORRISSEY	6/29/23	
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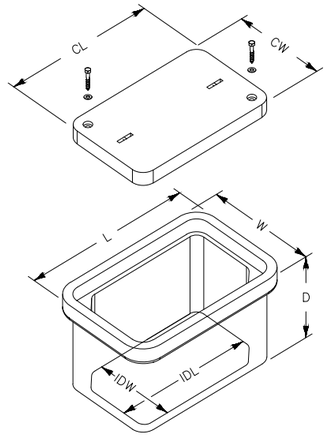
MONTANA
Department of Transportation

SIGNING & STRIPING PLANS

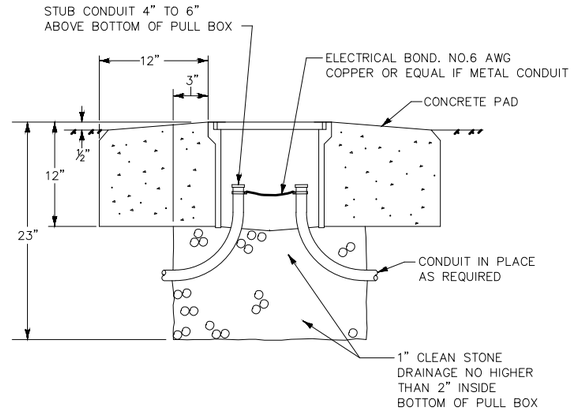
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ELECTRICAL QUANTITY SUMMARY

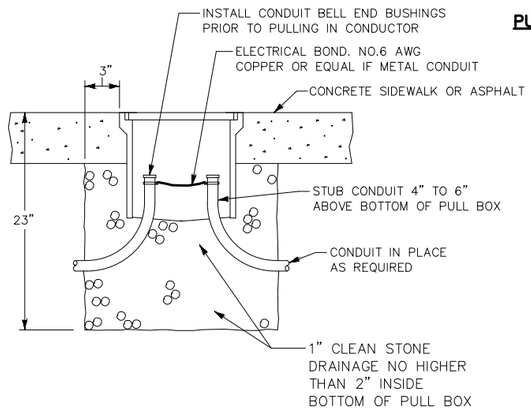
ITEM NO.	MATERIAL	TOTAL	UNIT
616 343 920	CONDUIT – PLASTIC 2 IN	3,470	LNFT
616 783 007	PULL BOX – COMPOSITE TYPE 2	2	EACH
617 000 000	FOUNDATION – CONCRETE	11.9	CUYD
617 033 212	CABLE–COPPER 3AWG12–600V	80	LNFT
617 033 314	CABLE–COPPER 5AWG14–600V	25	LNFT
617 123 106	CONDUCTOR – COPPER 6 AWG – 600V	2,040	LNFT
617 123 108	CONDUCTOR – COPPER 8 AWG – 600V	4,985	LNFT
617 123 110	CONDUCTOR – COPPER 10 AWG – 600V	3,530	LNFT
617 183 056	STANDARD – STL TYPE 10–A–500–6	18	EACH
617 303 300	HIGH EFFICACY LUMINAIRE LED	18	EACH
617 333 100	SERVICE ASSEMBLY – 200 AMP	1	EACH
617 523 010	SOLAR SIG–TRAF 1 COLOR–1 WAY 12	3	EACH
617 673 200	SIG STANDARD TYPE 1–200	3	EACH
617 763 410	RADAR VEHICLE DETECTION	2	EACH
617 781 000	REMOVE AND SALVAGE MISC ELECTRICAL	1	LS



PULL BOX – COMPOSITE MINIMUM DIMENSIONS		
TYPE 1	TYPE 2	TYPE 3
L = 20"	L = 25"	L = 32"
W = 13"	W = 15"	W = 19"
D = 12"	D = 12"	D = 12"
I D L = 17"	I D L = 21"	I D L = 28"
I D W = 10"	I D W = 11"	I D W = 15"
C L = 18"	C L = 23"	C L = 30"
C W = 11"	C W = 13"	C W = 17"



PULL BOX INSTALLED IN DIRT



PULL BOX INSTALLED IN A SIDEWALK OR ASPHALT

PULL BOX–COMPOSITE

TYPE 1,2 & 3

NO SCALE

SHEET NO.
EL-01

SUMMARY & DETAILS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

DESIGNED BY	THOLCH	####
REVIEWED BY	RLUBBERS	####
CHECKED BY	LFISCHER	####

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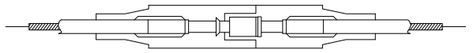
MONTANA Department of Transportation

ELECTRICAL PLANS

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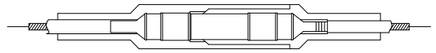
WATERTIGHT CONNECTORS

TYPES 1, 6, 11 & 16



NON–FUSED BREAKAWAY

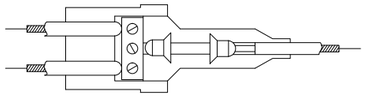
TYPES 2, 7, 12 & 17



FUSED BREAKAWAY

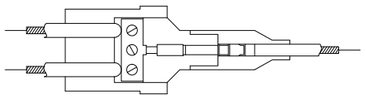
IDENTITY NO.	DESCRIPTIVE SYMBOL & WIRE SIZES
1	8 — 8
2	8 — 10
3	8, 8 — 10
4	8, 8 — 8
5	8, 8 — 8
6	6 — 6
7	6 — 10
8	6, 6 — 10
9	6, 6 — 6
10	6, 6 — 6
11	4 — 4
12	4 — 10
13	6, 8 — 10
14	4, 4 — 4
15	4, 4 — 4
16	10 — 10
17	10 — 10
18	10, 10 — 10
19	10, 10 — 10
20	10, 10 — 10
21	VARIES, VARIES — VARIES

TYPES 3, 8, 13 & 18



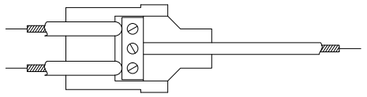
FUSED BREAKAWAY

TYPES 4, 9, 14 & 19



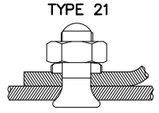
NON–FUSED BREAKAWAY

TYPES 5, 10, 15 & 20



NON–FUSED NON–BREAKAWAY

TYPE 21



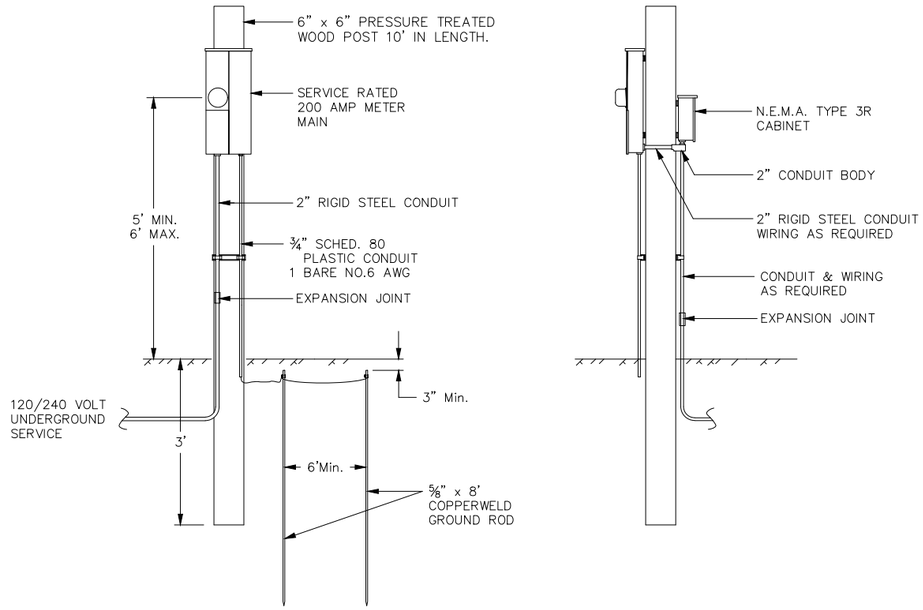
COPPER SPLIT BOLT – MAKE WATERTIGHT USING SELF ADHERING MASTIC

PROVIDE A PLUG AND RECEPTACLE HOUSED IN WATER–RESISTANT, SYNTHETIC RUBBER CAPABLE OF BURIAL IN THE GROUND OR INSTALLATION IN SUNLIGHT. THE HOUSING, CONSISTING OF 2 SECTIONS, PROVIDES A WATERTIGHT SEAL AROUND THE CABLE AND A WATERTIGHT SEAL BETWEEN THE TWO SECTIONS AT THE POINT OF DISCONNECTION. SUPPLY EACH KIT WITH SUFFICIENT SILICONE COMPOUND TO LUBRICATE METAL PARTS AND THE RUBBER HOUSINGS FOR EASY ASSEMBLY.

WHERE INDICATED, CRIMP A COPPER PIN AND A COPPER RECEPTACLE TO THE CABLE. THE RECEPTACLE IS TO ESTABLISH CONTACT PRESSURE WITH THE PIN THROUGH THE USE OF A COPPER BERYLLIUM SPRING AND BE EQUIPPED WITH A DISPOSABLE MOUNTING PIN. THE PIN IS TO BE CONSTRUCTED OF AT LEAST HALF–HARD MATERIAL. THE CRIMPING PORTION IS TO BE FULLY ANNEALED WHILE THE REST OF THE PIN IS MAINTAINED IN ITS ORIGINAL STATE OF HARDNESS. THE RECEPTACLE IS TO BE FULLY ANNEALED. THE PIN AND RECEPTACLE ARE TO LOCK TOGETHER SO THE CONNECTION IS MAINTAINED WHEN A MINIMUM FORCE OF 20 POUNDS TENSION IS APPLIED TO THE ATTACHED CABLES.

PROVIDE FUSED CONNECTOR KITS CONTAINING A PAIR OF SPRING LOADED 90% CONDUCTIVITY CONTACTS FOR GRIPPING A STANDARD MIDGET FERRULE TYPE FUSE. THE CONTACTS MUST BE FULLY ANNEALED AND ADAPTED TO BE CRIMPED TO THE CABLE.

WATERTIGHT CONNECTORS
NO SCALE



UNDERGROUND SERVICE ASSEMBLY DETAIL

UNDERGROUND SERVICE ASSEMBLY DETAIL
NO SCALE

SHEET NO.
EL-02

DETAILS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	####
REVIEWED BY	RLUBBERS	####
DESIGNED BY	THOLCH	####

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MONTANA Department of Transportation

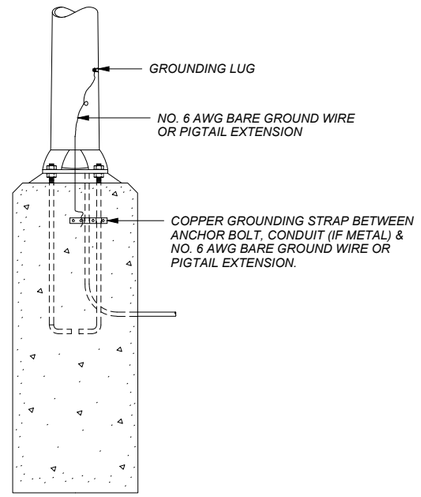
ELECTRICAL PLANS

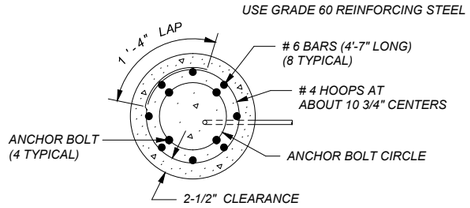
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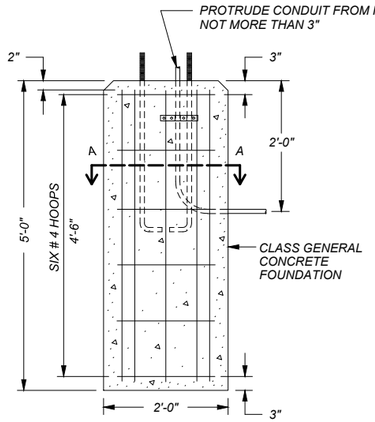
WELDING INSPECTION REQUIREMENTS:
25% OF ALL PARTIAL PENETRATION GROOVE AND FILLET WELDS PER PIECE REQUIRES MAGNETIC-PARTICLE TESTING PER AWS D1.1.

100% OF ALL FULL PENETRATION GROOVE WELDS, INCLUDING BASE CONNECTION WELD REQUIRE MAGNETIC-PARTICLE TESTING PER AWS D1.1.

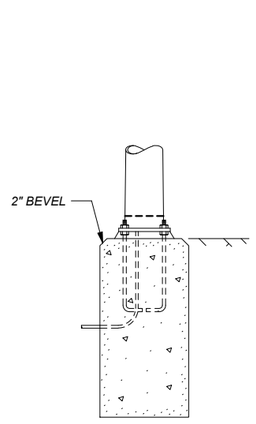




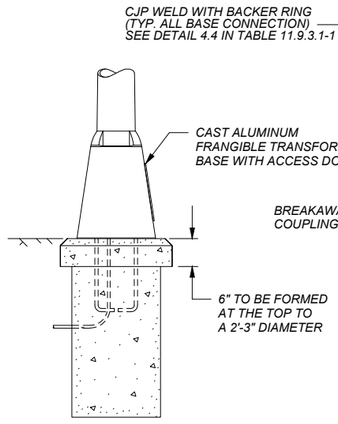
SECTION A-A



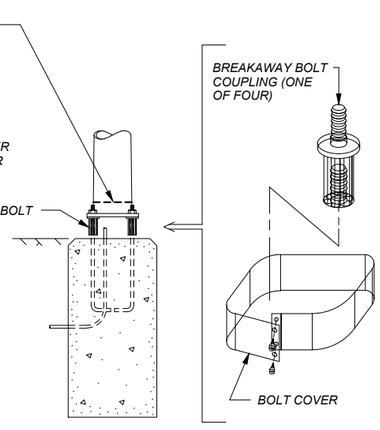
TYPICAL OF ALL FOUNDATIONS



ANCHOR (DOUBLE NUT CONNECTION REQUIRED)



TRANSFORMER (BREAKAWAY TYPE)



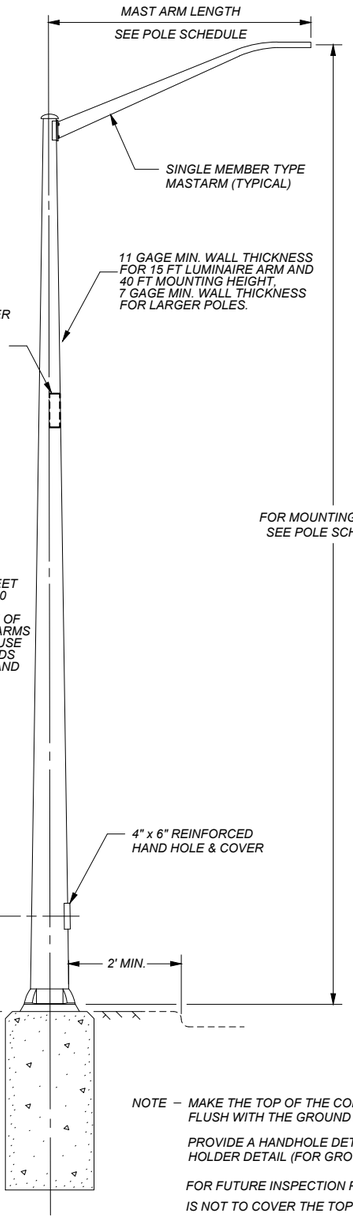
BOLT COUPLING (BREAKAWAY TYPE)

BASE TYPES FOR LUMINAIRE STANDARDS

NOTE – INSTALL AND PRETENSION ABCHOR BOLTS PER 15.6.3 OF THE SPECIFICATIONS

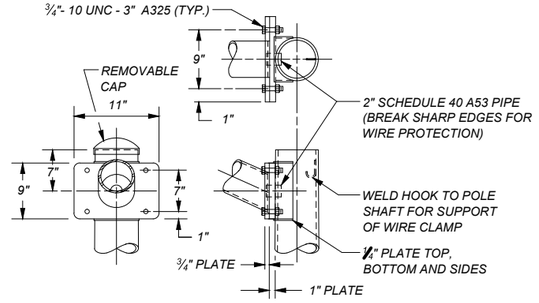
BASE PLATE REQUIREMENTS:
BASE PLATES TO BE 1" THICK AND MEET THE REQUIREMENTS OF AASHTO M270 GRADE 50. HOLES TO ACCEPT 1" DIA. ANCHOR BOLTS WITH A BOLT CIRCLE OF 13 1/2" FOR STANDARDS WITH 15 FT. ARMS AND A MOUNTING HEIGHT OF 40 FT. USE A BOLT CIRCLE OF 15" FOR STANDARDS WITH ARMS UP TO 25 FT. IN LENGTH AND MOUNTING HEIGHTS OF UP TO 45 FT.

FACTORY INSTALLED CANISTER VIBRATION DAMPER TO BE INSTALLED INSIDE THE POLE TWO THIRDS POLE HEIGHT FROM THE BASE. PROVIDE MANUFACTURER'S PRODUCT DATA SHEET FOR MDT APPROVAL.



TYPE I0-A POLE

LUMINAIRE ARM CONNECTION REQUIRES 4 BOLT DESIGN WITH A325 BOLTS, NUTS AND WASHERS (FULLY TENSIONED)
TUBE TO PLATE CONNECTION TO BE SOCKET TYPE CONNECTION WITH TWO FILLET WELDS PER 14.4.4.6 OF THE SPECIFICATIONS.



NOTE – FOR ARMS BETWEEN 16 FT. AND 25 FT. IN LENGTH, USE AN 11" SQUARE PLATE WITH A BOLT SPACING OF 9 IN. VERTICAL AND 9" HORIZONTAL

DESIGN, FABRICATE, ERECT, AND INSPECT STANDARDS IN ACCORDANCE WITH THE CURRENT EDITION AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (AND ANY AMENDMENTS THERETO).

DESIGN PARAMETERS:

DESIGN WEIGHT = DEAD LOAD, ICE.

DESIGN AREA = AREA WITH MAXIMUM WIND LOAD (WIND IS PERPENDICULAR TO STANDARD, AS SHOWN).

DIRECTIONAL FACTOR Kd = 0.95, GUST FACTOR = 1.14 DRAG COEFFICIENTS LFRD TABLE 3.8.7-1

HEIGHT AND EXPOSURE FACTOR Kz
zg = TAKEN AS 900 FEET FOR EXPOSURE C
α= 9.5
z = 16 FEET

DESIGN WIND VELOCITY 700 YEAR MRI BASIC WIND SPEED (115 MPH)

NOTE – MAKE THE TOP OF THE CONCRETE FOUNDATION FLUSH WITH THE GROUND LINE.

PROVIDE A HANDHOLE DETAIL AND A 1/2" NUT HOLDER DETAIL (FOR GROUNDING) .

FOR FUTURE INSPECTION PURPOSES, FILL MATERIAL IS NOT TO COVER THE TOP OF THE FOUNDATIONS

TYPE 10-A LUMINAIRE STANDARDS, POLE BASES & FOUNDATION DETAILS

NO SCALE

SHEET NO.
EL-03

DETAILS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

	CHECKED BY	REVIEWED BY	DESIGNED BY
	LFISCHER	RLUBBERS	THOLCH
	####	####	####

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MONTANA Department of Transportation

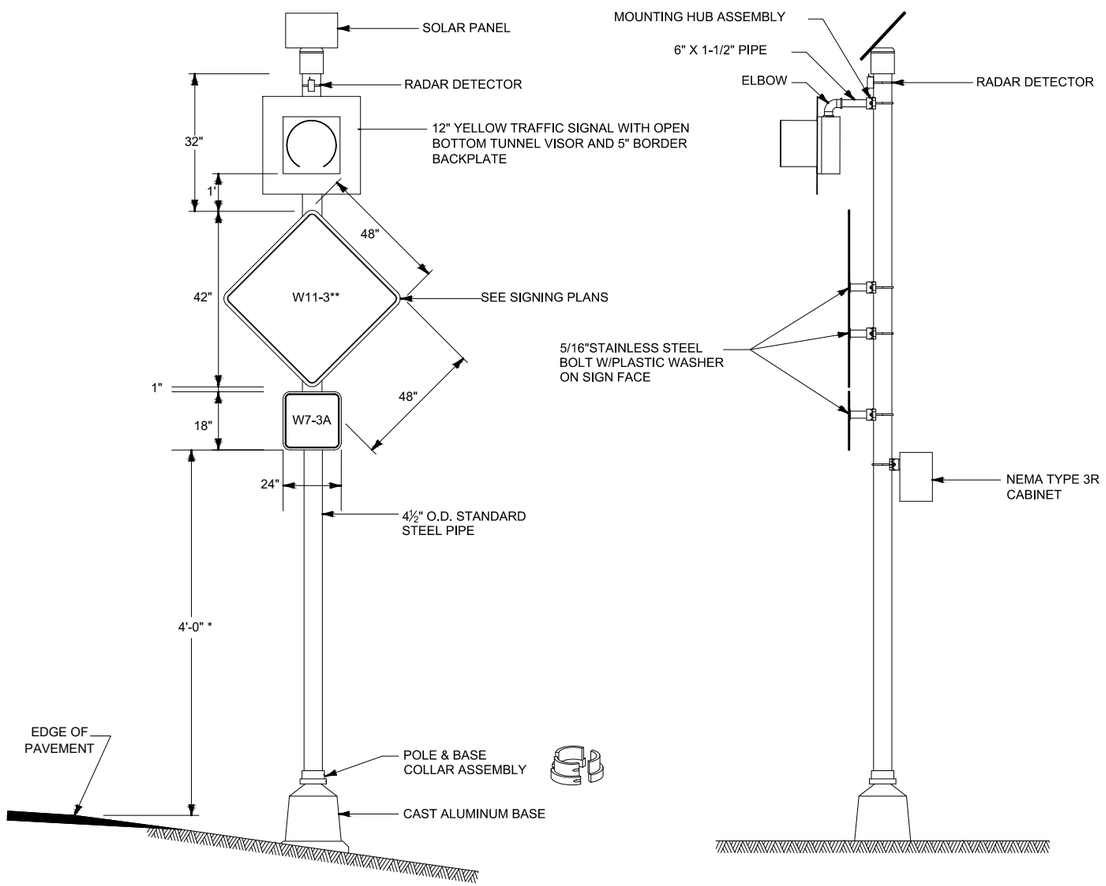
ELECTRICAL PLANS

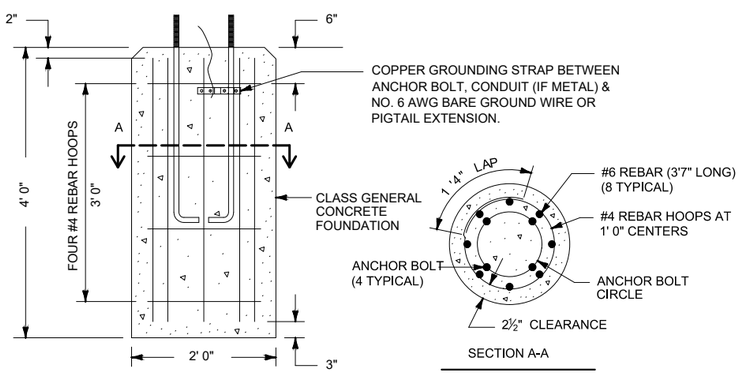
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TYPE I-200 SOLAR POWERED FLASHING BEACON

NO SCALE
STA 423+44 WB





USE GRADE 60 REINFORCING STEEL

SOLAR BATTERY AND CONTROLS MOUNTED TO BACK OF SIGN POST.

PROVIDE 10' MIN. SIGN CLEARANCE FROM EDGE OF PAVEMENT TO CLOSEST SIGN EDGE. DO NOT PLACE FOUNDATION IN TOE AND/OR FLOWLINE OF DITCH.

TRIM TOP OF PIPE TO MEET BEACON MOUNTING REQUIREMENTS.

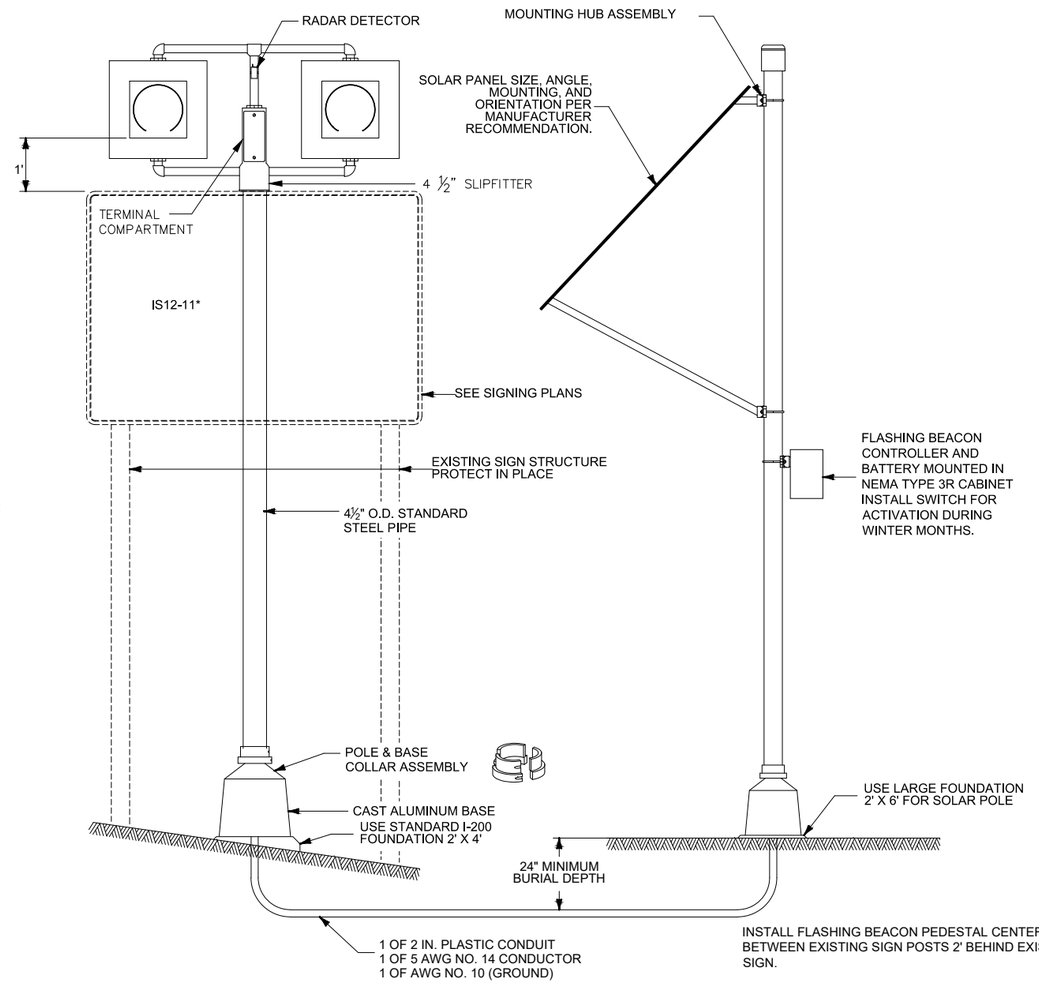
NO PART OF THE FOUNDATION OR ANCHOR BOLTS MAY PROTRUDE MORE THAN 4" ABOVE GROUND AFTER BREAKAWAY.

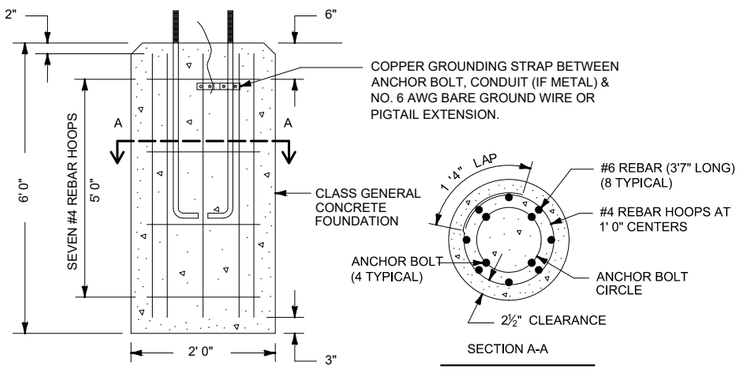
*PROVIDE 4'-0" MOUNTING HEIGHT ABOVE FINISHED ROAD SURFACE. LENGTH OF SUPPORT SYSTEM WILL VARY BASED ON LOCATION AND CROSS-SLOPE OF NEW FINISHED GRADE. CONFIRM LENGTH WITH PROJECT MANAGER PRIOR TO ORDERING. THE ESTIMATED LENGTHS OF STEEL PIPE IS 12'-0".

** SEE SIGN LOCATION AND SPECIFICATION SHEETS FOR MORE INFORMATION

TYPE I-200 SOLAR POWERED DUAL FLASHING BEACON

NO SCALE
STA 436+03 WB





INSTALL FLASHING BEACON PEDESTAL CENTERED BETWEEN EXISTING SIGN POSTS 2' BEHIND EXISTING SIGN.

DETERMINE LENGTH OF POLE IN FIELD PRIOR TO ORDERING.

NO PART OF THE FOUNDATION OR ANCHOR BOLTS MAY PROTRUDE MORE THAN 4" ABOVE GROUND AFTER BREAKAWAY.

* SEE SIGN LOCATION AND SPECIFICATION SHEETS FOR MORE INFORMATION

SOLAR BATTERY AND CONTROLS MOUNTED TO BACK OF SIGN POST.

INSTALL SOLAR PANEL SIZED AND ORIENTED PER MANUFACTURER RECOMMENDATIONS FOR DUAL BEACONS, SOLAR LATITUDE, TOPOGRAPHY, AND CONTINUOUS OPERATION DURING WINTER MONTHS.

PROVIDE 15' MIN. POLE AND SOLAR PANEL CLEARANCE FROM EDGE OF PAVEMENT TO CLOSEST SOLAR PANEL EDGE. DO NOT PLACE FOUNDATION IN TOE AND/OR FLOWLINE OF DITCH.

NO PART OF THE FOUNDATION OR ANCHOR BOLTS MAY PROTRUDE MORE THAN 4" ABOVE GROUND AFTER BREAKAWAY.

SHEET NO.
EL-04

DETAILS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

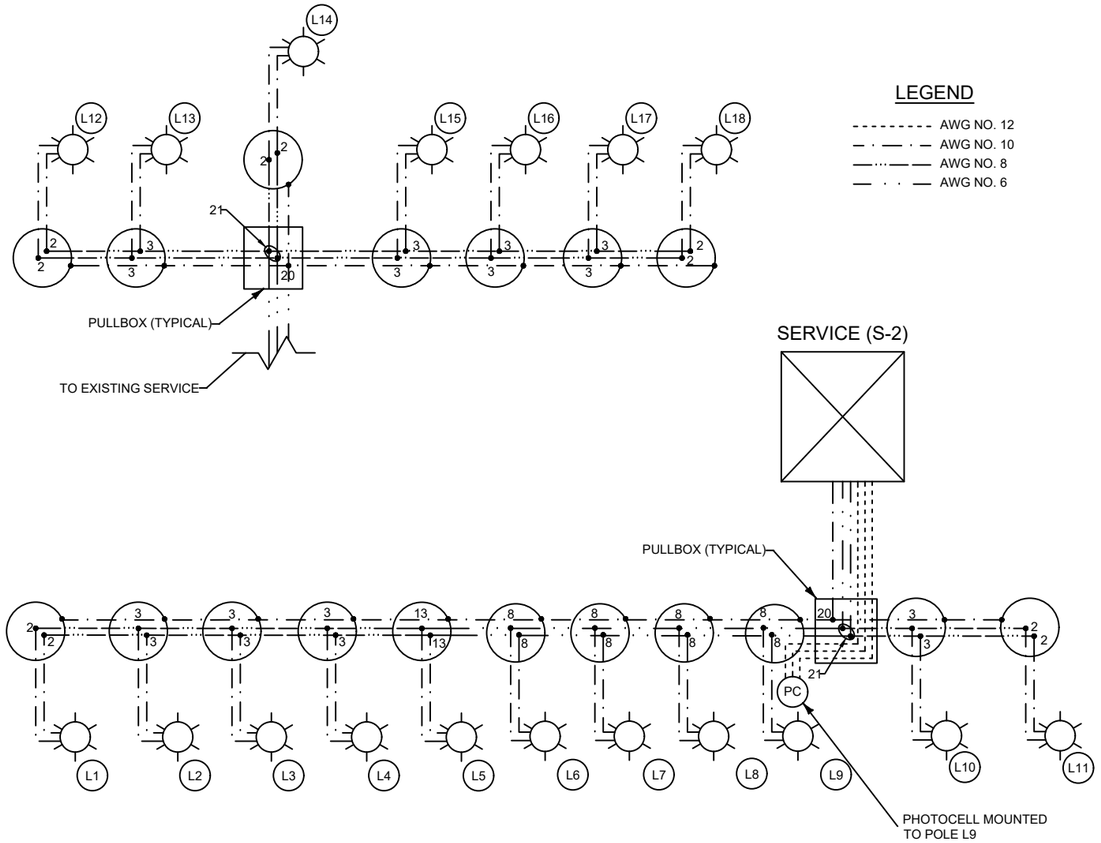
	CHECKED BY	LFISCHER	####
	REVIEWED BY	RLUBBERS	####
	DESIGNED BY	THOLCH	####

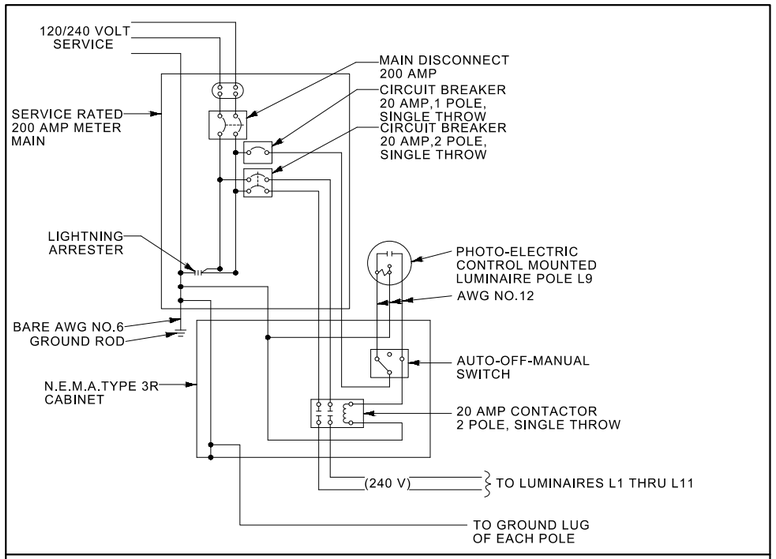
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MONTANA Department of Transportation

ELECTRICAL PLANS

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LUM SERVICE WIRING DIAGRAM (S-2)

SHEET NO.
EL-05

DETAILS

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

DESIGNED BY	THOLCH	####
REVIEWED BY	RLUBBERS	####
CHECKED BY	LFISCHER	####

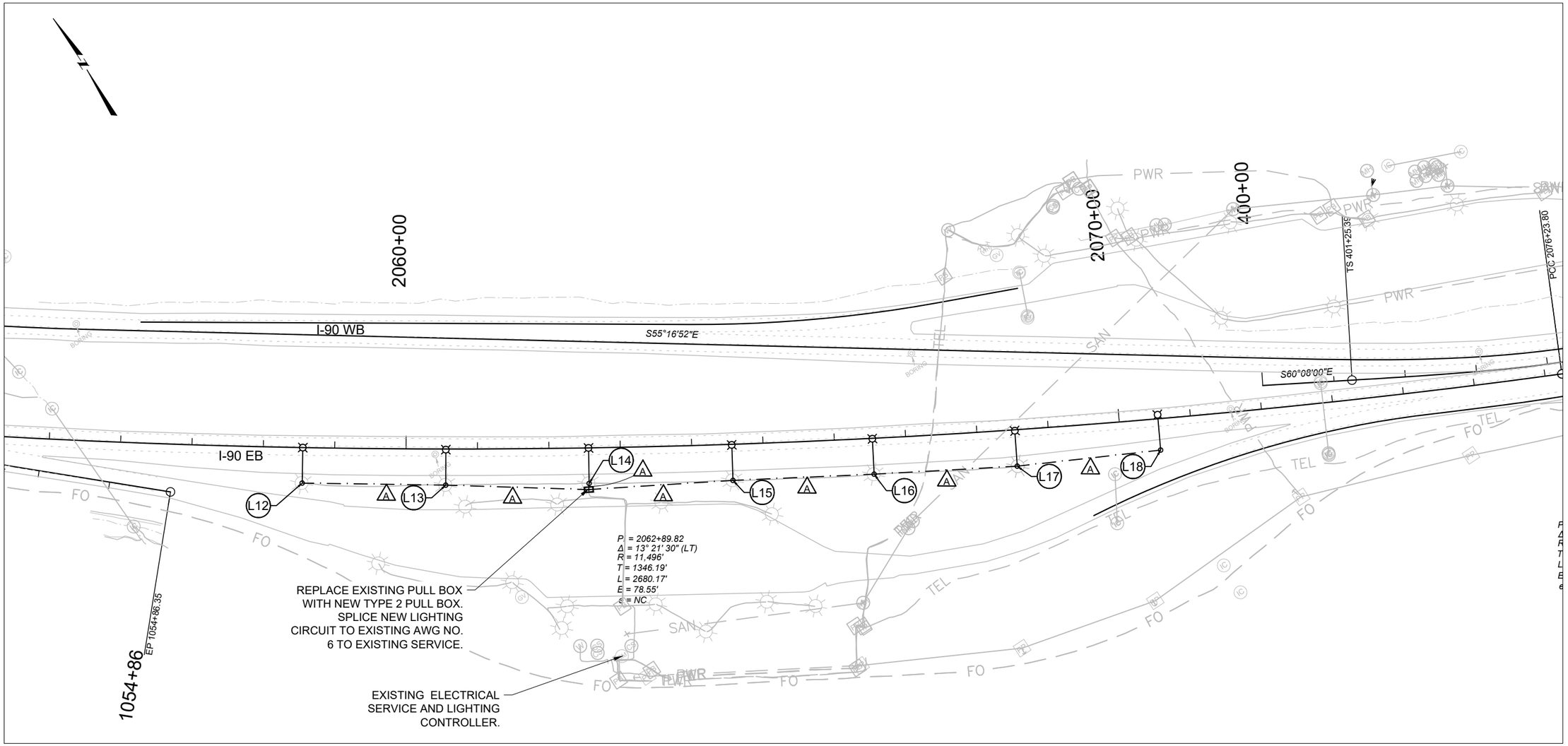
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MONTANA
Department of Transportation

ELECTRICAL PLANS

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LUMINAIRE POLE SCHEDULE								
POLE NUMBER	NORTHING OR Y	EASTING OR X	POLE TYPE	TYPE POLE BASE	FOUNDATION DIA. X DEPTH	LUMINAIRE HEIGHT	MAST ARM LENGTH	LUMINAIRE TYPE
L12	1,215,151.026	453,326.452	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L13	1,215,038.116	453,493.010	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L14	1,214,929.732	453,662.057	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L15	1,214,822.653	453,832.779	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L16	1,214,721.231	454,002.827	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L17	1,214,620.511	454,176.517	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L18	1,214,528.994	454,356.692	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED

CONDUIT & WIRING SCHEDULE

A	1 OF 2 IN PLASTIC CONDUIT 2 OF AWG NO. 8 CONDUCTOR 1 OF AWG NO. 10 CONDUCTOR	(LIGHTING) (GROUND)
B	1 OF 2 IN PLASTIC CONDUIT 2 OF AWG NO. 6 CONDUCTOR 1 OF AWG NO. 10 CONDUCTOR	(LIGHTING) (GROUND)
C	1 OF 2 IN PLASTIC CONDUIT 2 OF AWG NO. 6 CONDUCTOR 1 OF 3 AWG NO. 12 CONDUCTOR 1 OF AWG NO. 10 CONDUCTOR	(LIGHTING) (PHOTOCELL) (GROUND)

SHEET NO.
EL-06

PLN-EB

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	####
REVIEWED BY	RLUBBERS	####
DESIGNED BY	THOLCH	####

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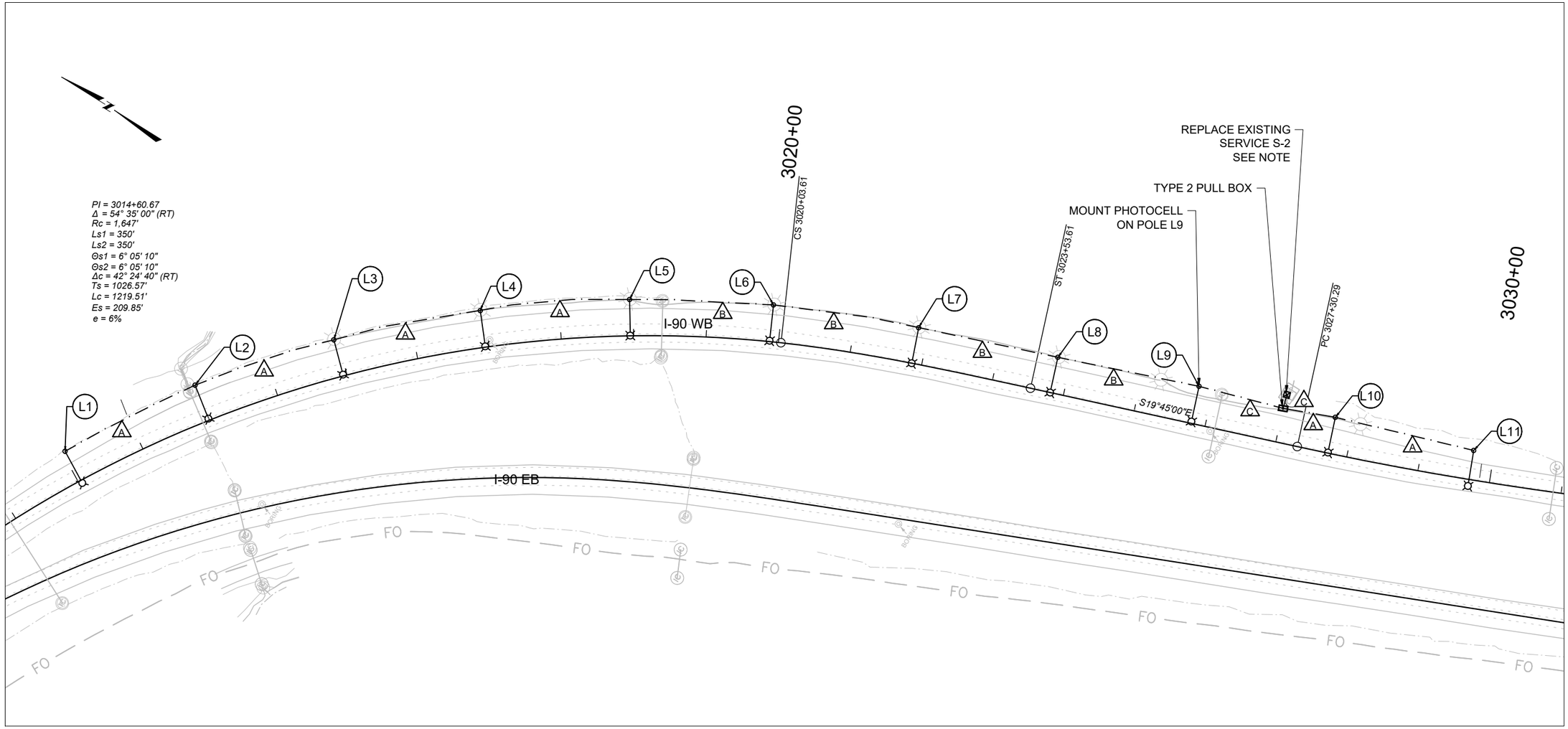
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ELECTRICAL PLANS

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NOTE:
COORDINATE DISCONNECTION AND RECONNECTION OF ELECTRICAL SERVICE WITH NORTHWESTERN ENERGY.

LUMINAIRE POLE SCHEDULE

POLE NUMBER	NORTHING OR Y	EASTING OR X	POLE TYPE	TYPE POLE BASE	FOUNDATION DIA. X DEPTH	LUMINAIRE HEIGHT	MAST ARM LENGTH	LUMINAIRE TYPE
L1	1,219,149.507	450,584.050	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L2	1,219,046.001	450,756.697	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L3	1,218,917.130	450,911.362	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L4	1,218,767.736	451,052.846	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L5	1,218,601.051	451,175.266	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L6	1,218,428.856	451,274.407	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L7	1,218,242.805	451,354.300	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L8	1,218,058.143	451,421.590	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L9	1,217,872.004	451,491.197	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L10	1,217,689.995	451,554.902	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED
L11	1,217,503.986	451,617.603	10-A-500-6	BREAKAWAY	2'0" X 5'0"	40 FT	15 FT	LED

CONDUIT & WIRING SCHEDULE

A	1 OF 2 IN PLASTIC CONDUIT 2 OF AWG NO. 8 CONDUCTOR 1 OF AWG NO. 10 CONDUCTOR	 (LIGHTING) (GROUND)
B	1 OF 2 IN PLASTIC CONDUIT 2 OF AWG NO. 6 CONDUCTOR 1 OF AWG NO. 10 CONDUCTOR	 (LIGHTING) (GROUND)
C	1 OF 2 IN PLASTIC CONDUIT 2 OF AWG NO. 6 CONDUCTOR 1 OF 3 AWG NO. 12 CONDUCTOR 1 OF AWG NO. 10 CONDUCTOR	 (LIGHTING) (PHOTOCELL) (GROUND)

SHEET NO.
EL-07

PLN-WB

PROJECT NAME: TAFT - WEST
COUNTY: MINERAL COUNTY
PROJECT ID: IM-NHFP 90-1(228)3
UPN: 9487000

CHECKED BY	LFISCHER	####
REVIEWED BY	RLUBBERS	####
DESIGNED BY	THOLCH	####

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MONTANA Department of Transportation

ELECTRICAL PLANS

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