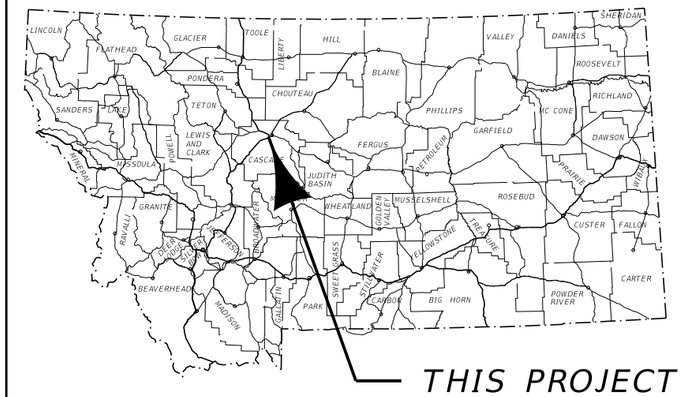
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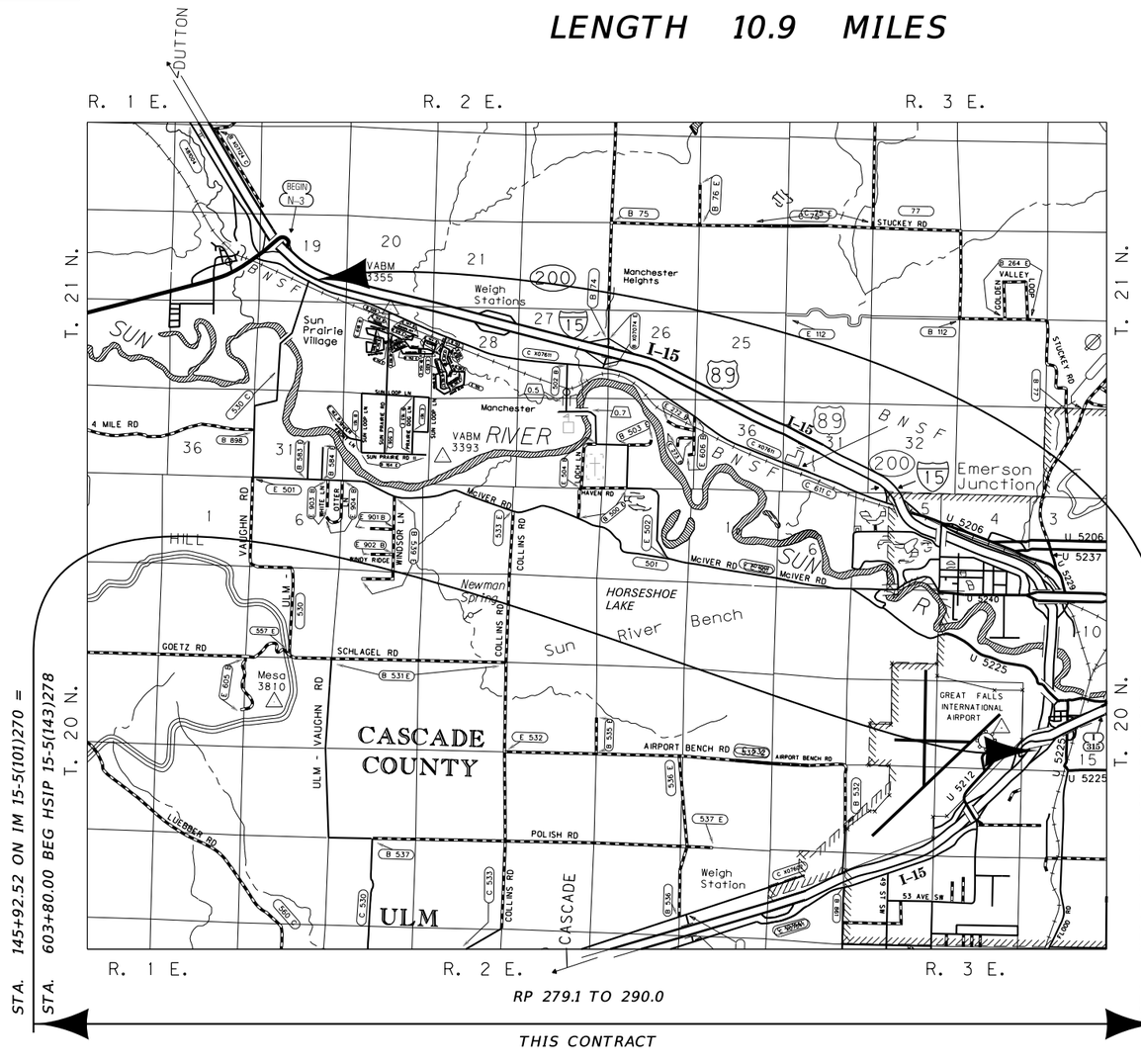


MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT HSIP 15-5(143)278
ROADWAY & ROADSIDE SAFETY IMPROVEMENT
SF 169 I-15 HT CABLE RAIL
CASCADE COUNTY

PROJECT DESIGN DATA		
PRESENT 2017	A.D.T. =	9240
LETTING 2018	A.D.T. =	9380
DESIGN 2038	A.D.T. =	12360
	D.H.V. =	1340
	TRUCKS =	10.7%
	V. =	70 MPH
	18 KIP ESAL'S =	528
	GROWTH RATE =	1.5%

LENGTH 10.9 MILES



ASSOCIATED PROJECT AGREEMENT NUMBERS	
R / W	
I.C.	
P. E.	HSIP-G 15-5(142)278

MONTANA DEPARTMENT OF TRANSPORTATION

MALCOLM "MACK" LONG
DIRECTOR OF TRANSPORTATION

APPROVED BY:

TRAFFIC AND SAFETY ENGINEER

DocuSigned by:
Gabe B. Priebe
4895FFA73587466...

4/4/2022
DATE

MONTANA PROFESSIONAL ENGINEER
GABE B. PRIEBE
13957PE
LICENSED

3	MONTANA Department of Transportation	C:\DGN\9376000sattl001.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	
2		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021	
		7:57:12 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000

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NOTES

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.

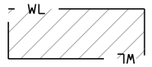
AS-BUILTS

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

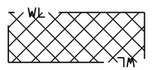
IM 15-5(97)270
IM 15-5(124)282
IM 15-5(122)286
IM 15-5(101)270

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

CENTERLINE ALIGNMENT COORDINATE TABLE

STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
603+80.00	POT	1,184,473.044	1,512,509.641	BEG. OF PROJECT
604+36.79	PI	1,184,240.483	1,512,881.872	
624+94.06	PT	1,186,512.646	1,513,020.419	
674+52.31	PC	1,191,462.176	1,513,314.399	
699+67.26	PI	1,193,966.924	1,513,540.638	
717+44.87	PT	1,194,838.324	1,511,181.483	
778+73.99	PC	1,197,119.449	1,505,492.666	
779+74.02	PI	1,197,155.738	1,505,399.451	
780+73.99	PT	1,197,197.606	1,505,308.605	
780+73.99	PC	1,197,197.606	1,505,308.605	
785+87.46	PI	1,197,417.224	1,504,844.471	
790+69.58	PT	1,197,861.429	1,504,586.915	
790+69.58	PC	1,197,861.429	1,504,586.915	
791+69.61	PI	1,197,948.467	1,504,537.617	
792+69.58	PT	1,198,038.331	1,504,493.681	
802+56.41	PC	1,198,920.449	1,504,051.307	
804+36.52	PI	1,199,082.648	1,503,972.989	
806+16.40	PT	1,199,237.151	1,503,880.409	
806+16.40	PC	1,199,237.151	1,503,880.409	
810+75.44	PI	1,199,627.330	1,503,638.582	
815+18.85	PT	1,199,873.004	1,503,250.814	
815+18.85	PC	1,199,873.004	1,503,250.814	
816+98.97	PI	1,199,967.107	1,503,097.233	
818+78.85	PT	1,200,047.026	1,502,935.817	
956+72.07	PC	1,206,351.884	1,490,667.894	
969+74.06	PI	1,206,947.475	1,489,510.118	
982+64.93	PT	1,207,268.166	1,488,248.241	
1176+11.93	PC	1,212,033.492	1,469,497.301	
1199+97.49	PI	1,212,621.075	1,467,185.236	
1179+54.17	POT	1,212,128.112	1,469,166.856	END OF PROJECT
1221+32.93	PT	1,214,675.821	1,465,973.247	

GPK NAME: J0B376.GPK CHAIN NAME: I-15 PROFILE NAME:

WETLAND DELINEATION TABLE

WETLAND DESIGNATION	STATION FROM	STATION TO	WETLAND AREA (acres) DELINEATED AREA	WETLAND AREA (acres) PERMANENT IMPACTED AREA	REMARKS
WL-1	689+80	690+06	0.006	0.006	MEDIAN
WL-2	691+02	699+23	0.160	0.160	MEDIAN
TOTAL			0.17	0.17	

LEVEL DATA

BEARING SOURCE

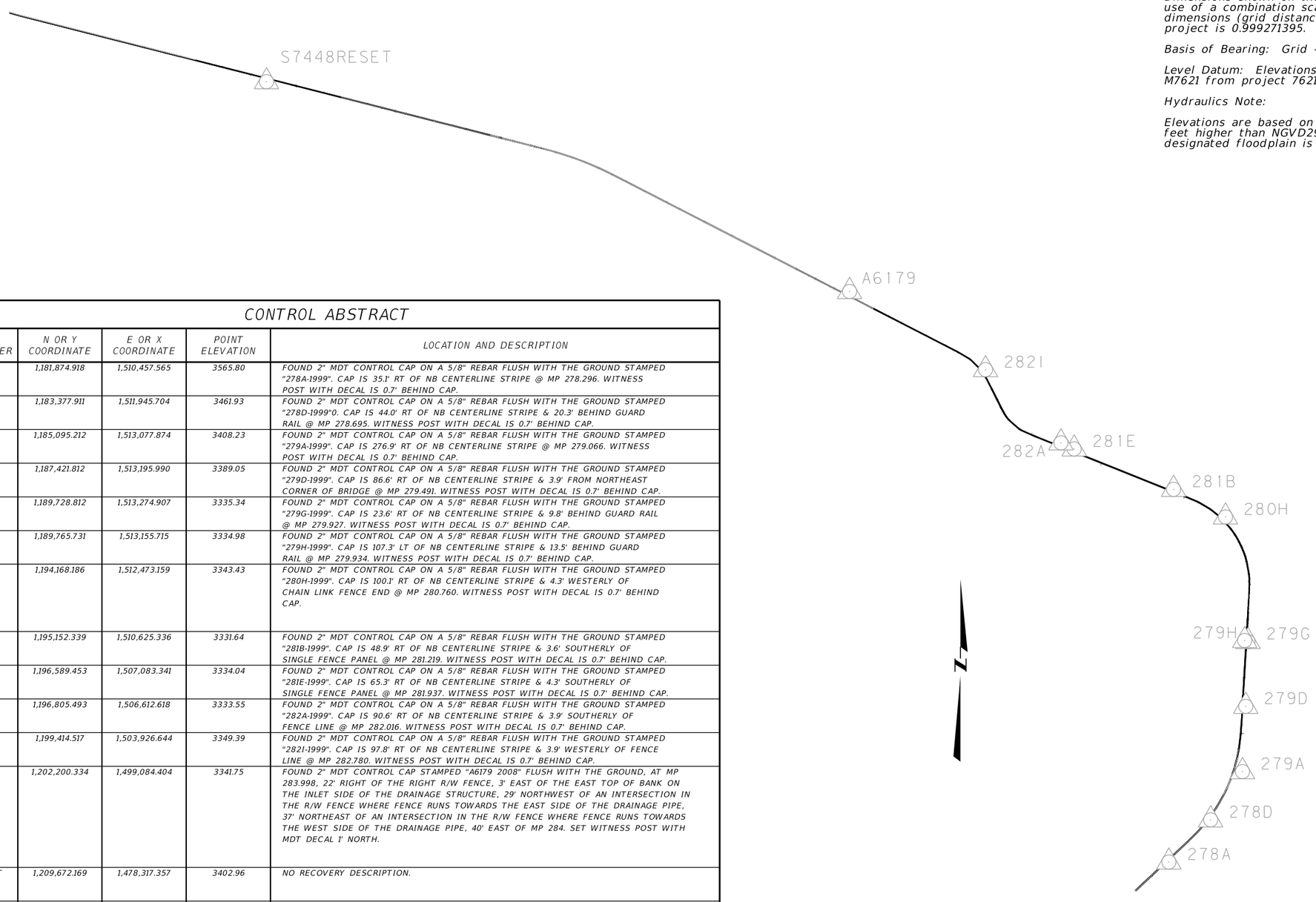
GRID -- MONTANA COORDINATE SYSTEM NAD 83-2011

LEVEL DATUM SOURCE

Level Datum: NAVD88- Note: Final elevations are derived from differenetial levels holding NGS Published elevations at J381 and V381

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CONTROL DIAGRAM



Control Note:

This project is on the Montana coordinate system NAD83-2007. Northing and easting coordinates are expressed in units of international feet and elevations are in units of U.S. survey feet.

Dimensions shown on the plans are grid. All survey and staking require the use of a combination scale factor (CSF) to convert grid dimensions to ground dimensions (grid distance ÷ CSF = ground distance). The CSF for this project is 0.999271395.

Basis of Bearing: Grid - Montana State Plane coordinate system NAD83-2007

Level Datum: Elevations are GPS derived based on control points A7621 & M7621 from project 7621000 and based on NAVD88.

Hydraulics Note:

Elevations are based on NAVD88 datum. The datum is approximately 3.0 feet higher than NGVD29 datum. Hydraulics should be aware of this if a designated floodplain is involved. The geoid was modeled using Geoid09.

CONTROL ABSTRACT

POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
278A	1,181,874.918	1,510,457.565	3565.80	FOUND 2" MDT CONTROL CAP ON A 5/8" REBAR FLUSH WITH THE GROUND STAMPED "278A-1999". CAP IS 35.1' RT OF NB CENTERLINE STRIPE @ MP 278.296. WITNESS POST WITH DECAL IS 0.7' BEHIND CAP.
278D	1,183,377.911	1,511,945.704	3461.93	FOUND 2" MDT CONTROL CAP ON A 5/8" REBAR FLUSH WITH THE GROUND STAMPED "278D-1999"0. CAP IS 44.0' RT OF NB CENTERLINE STRIPE & 20.3' BEHIND GUARD RAIL @ MP 278.695. WITNESS POST WITH DECAL IS 0.7' BEHIND CAP.
279A	1,185,095.212	1,513,077.874	3408.23	FOUND 2" MDT CONTROL CAP ON A 5/8" REBAR FLUSH WITH THE GROUND STAMPED "279A-1999". CAP IS 276.9' RT OF NB CENTERLINE STRIPE @ MP 279.066. WITNESS POST WITH DECAL IS 0.7' BEHIND CAP.
279D	1,187,421.812	1,513,195.990	3389.05	FOUND 2" MDT CONTROL CAP ON A 5/8" REBAR FLUSH WITH THE GROUND STAMPED "279D-1999". CAP IS 86.6' RT OF NB CENTERLINE STRIPE & 3.9' FROM NORTHEAST CORNER OF BRIDGE @ MP 279.491. WITNESS POST WITH DECAL IS 0.7' BEHIND CAP.
279G	1,189,728.812	1,513,274.907	3335.34	FOUND 2" MDT CONTROL CAP ON A 5/8" REBAR FLUSH WITH THE GROUND STAMPED "279G-1999". CAP IS 23.6' RT OF NB CENTERLINE STRIPE & 9.8' BEHIND GUARD RAIL @ MP 279.927. WITNESS POST WITH DECAL IS 0.7' BEHIND CAP.
279H	1,189,765.731	1,513,155.715	3334.98	FOUND 2" MDT CONTROL CAP ON A 5/8" REBAR FLUSH WITH THE GROUND STAMPED "279H-1999". CAP IS 107.3' LT OF NB CENTERLINE STRIPE & 13.5' BEHIND GUARD RAIL @ MP 279.934. WITNESS POST WITH DECAL IS 0.7' BEHIND CAP.
280H	1,194,168.186	1,512,473.159	3343.43	FOUND 2" MDT CONTROL CAP ON A 5/8" REBAR FLUSH WITH THE GROUND STAMPED "280H-1999". CAP IS 100.1' RT OF NB CENTERLINE STRIPE & 4.3' WESTERLY OF CHAIN LINK FENCE END @ MP 280.760. WITNESS POST WITH DECAL IS 0.7' BEHIND CAP.
281B	1,195,152.339	1,510,625.336	3331.64	FOUND 2" MDT CONTROL CAP ON A 5/8" REBAR FLUSH WITH THE GROUND STAMPED "281B-1999". CAP IS 48.9' RT OF NB CENTERLINE STRIPE & 3.6' SOUTHERLY OF SINGLE FENCE PANEL @ MP 281.219. WITNESS POST WITH DECAL IS 0.7' BEHIND CAP.
281E	1,196,589.453	1,507,083.341	3334.04	FOUND 2" MDT CONTROL CAP ON A 5/8" REBAR FLUSH WITH THE GROUND STAMPED "281E-1999". CAP IS 65.3' RT OF NB CENTERLINE STRIPE & 4.3' SOUTHERLY OF SINGLE FENCE PANEL @ MP 281.937. WITNESS POST WITH DECAL IS 0.7' BEHIND CAP.
282A	1,196,805.493	1,506,612.618	3333.55	FOUND 2" MDT CONTROL CAP ON A 5/8" REBAR FLUSH WITH THE GROUND STAMPED "282A-1999". CAP IS 90.6' RT OF NB CENTERLINE STRIPE & 3.9' SOUTHERLY OF FENCE LINE @ MP 282.016. WITNESS POST WITH DECAL IS 0.7' BEHIND CAP.
282I	1,199,414.517	1,503,926.644	3349.39	FOUND 2" MDT CONTROL CAP ON A 5/8" REBAR FLUSH WITH THE GROUND STAMPED "282I-1999". CAP IS 97.8' RT OF NB CENTERLINE STRIPE & 3.9' WESTERLY OF FENCE LINE @ MP 282.780. WITNESS POST WITH DECAL IS 0.7' BEHIND CAP.
A6179	1,202,200.334	1,499,084.404	3341.75	FOUND 2" MDT CONTROL CAP STAMPED "A6179 2008" FLUSH WITH THE GROUND, AT MP 283.998, 22' RIGHT OF THE RIGHT R/W FENCE, 3' EAST OF THE EAST TOP OF BANK ON THE INLET SIDE OF THE DRAINAGE STRUCTURE, 29' NORTHWEST OF AN INTERSECTION IN THE R/W FENCE WHERE FENCE RUNS TOWARDS THE EAST SIDE OF THE DRAINAGE PIPE, 37' NORTHEAST OF AN INTERSECTION IN THE R/W FENCE WHERE FENCE RUNS TOWARDS THE WEST SIDE OF THE DRAINAGE PIPE, 40' EAST OF MP 284. SET WITNESS POST WITH MDT DECAL 1' NORTH.
S7448RESET	1,209,672.169	1,478,317.357	3402.96	NO RECOVERY DESCRIPTION.

AWARD COPY

SUMMARY

MEDIAN INLETS

STATION	each # MEDIAN INLET TYPE 1 $	each # INLET GRATE	REMARKS
615+35.96	1	1	RAISE MEDIAN INLET *
650+34.24	1	1	RAISE MEDIAN INLET *
731+42.71	1	1	RAISE MEDIAN INLET *
741+13.60	1	1	RAISE MEDIAN INLET *
1116+78.76	1	1	RAISE MEDIAN INLET *
TOTAL	~	~	

* ADJUST AS NEEDED IN FIELD
# FOR INFORMATION ONLY
$ INCLUDE CONNECTION IN COST OF PIPE

CULVERTS

STATION	linear feet RCP 24"	END SECTIONS LEFT	END SECTIONS RIGHT	linear feet RELAY PIPE CULVERT	linear feet CLEAN CULVERT PIPE	linear feet REMOVE PIPE CULVERT	CULVERT IN PL. in x ft	REMARKS
719+21.87	10	RACET	~			6.0	24" X 72" RCP	REMOVE 6' FETS, NEW RACET 10' LT. (I-15 SB INLET)
TOTAL	10	~	~	~	~	6.0	~	

* SEE STANDARD SPEC. SEC. 709.04

GUARDRAIL

STATION FROM	STATION TO	linear feet HIGH-TENSION CABLE RAIL LEFT	linear feet HIGH-TENSION CABLE RAIL RIGHT	each MEDIAN CABLE GUARDRAIL TERMINAL SECTION * MEDIAN	REMARKS
NEW RAIL					
606+70.59	624+20.59		1,750	2	
629+77.81	638+67.81		890	2	
643+36.17	654+56.17		1,120	2	
666+74.90	671+74.90		500	2	
680+55.99	704+05.99		2,350	2	
704+65.15	743+95.15		3,930	1	
743+95.15	770+55.15	2,660		1	
775+82.80	789+32.80	1,350		2	
799+91.51	851+71.51		5,180	2	
852+32.50	875+02.50		2,270	2	
875+02.50	915+32.50		3,960	2	
915+82.50	978+72.50		6,290	2	
979+48.76	982+78.76		330	2	
987+51.47	995+41.47		790	2	
1002+32.40	1034+12.40		3,180	2	
1034+78.43	1079+28.43		4,450	1	
1079+28.43	1085+78.43	650		1	
1086+51.93	1144+91.93	5,840		2	
1145+42.93	1175+42.93	3,000		2	
1176+13.97	1179+53.97	340		2	
SUBTOTAL		13,840	36,990	~	
TOTAL		50,830		~	

* FOR INFORMATION ONLY

GRADING

STATION FROM	STATION TO	cu. yards EXC.	cu. yards EMB. IN PLACE	REMARKS
603+80.00	1179+53.96		2,360	
			3,546	TOPSOIL REPLACEMENT
TOTAL		~	5,906	

ADDITIONAL GRADING

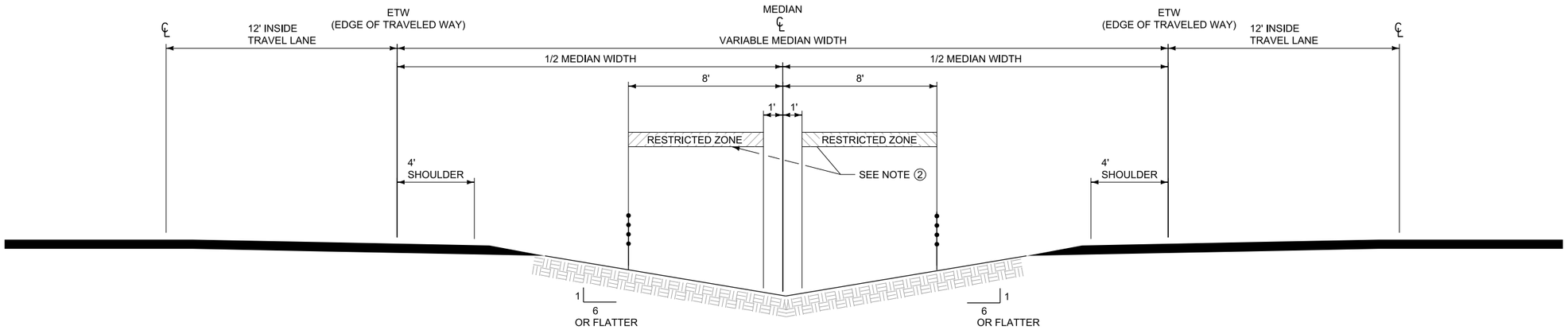
STATION FROM	STATION TO	cu. yards INCL. IN GRADING FRAME EXC.	cu. yards INCL. IN GRADING FRAME EMB. IN PLACE $	cu. yards ADD. EMB. IN PLACE #	REMARKS
603+80.00	1179+53.96		3,546		TOPSOIL REPLACEMENT
SUBTOTAL		~	3,546	~	

EXCAVATION QUANTITIES-MATERIAL UNSUITABLE FOR ROADWAY EMBANKMENTS
$ EMB. IN PLACE QUANTITES MAY VARY TO PROVIDE POSITIVE DRAINAGE TO MEDIAN INLETS

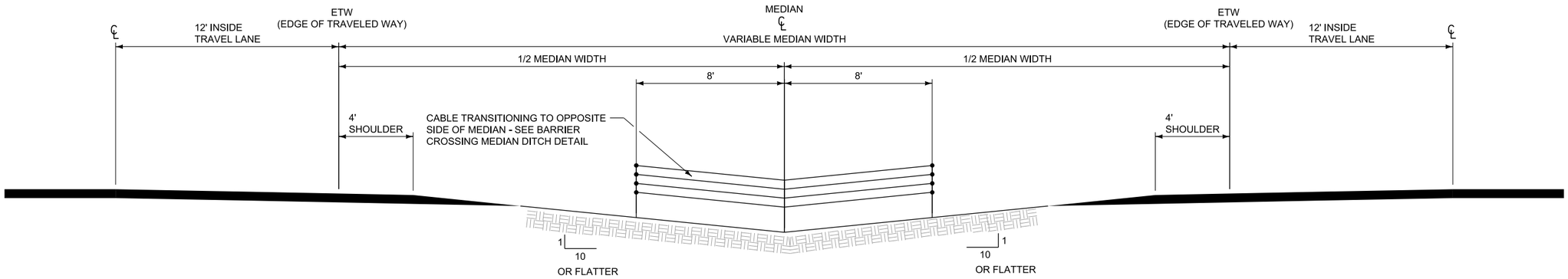
TOPSOIL & SEEDING

STATION FROM	STATION TO	cu. yards TOPSOIL SALVAGING & PLACING	acres SEED NO. 1	SEED NO. 2	SEED NO.3	FERTILIZER NO. 1	FERTILIZER NO. 2	CONDITION SEEDBED	MULCH - COMPOST	REMARKS
603+80.00	1179+54.17	3,546			6.6			6.6		
TOTAL		3,546	~	~	6.6	~	~	6.6	~	

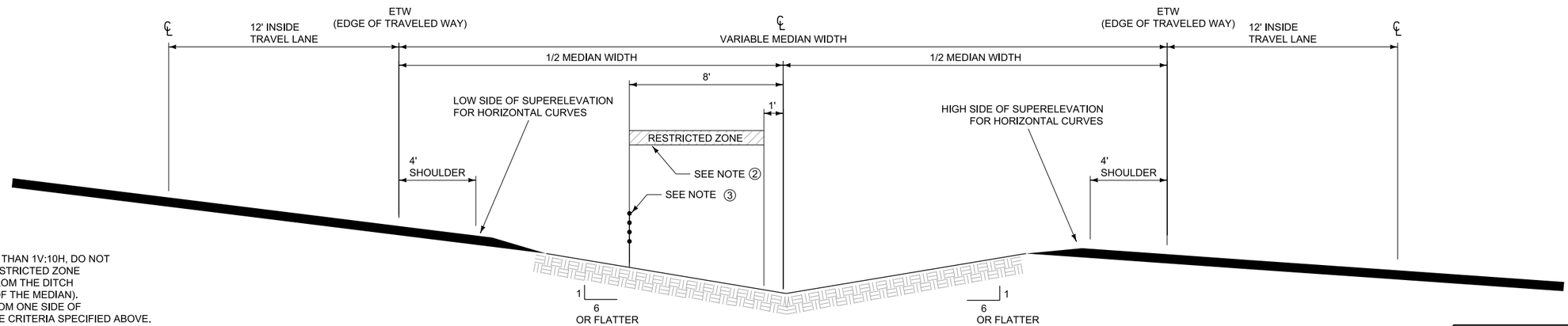
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TYPICAL HIGH - TENSION CABLE GUARDRAIL PLACEMENT



REQUIRED GRADING SLOPES FOR HIGH - TENSION CABLE GUARDRAIL CROSSING MEDIAN DITCH



TYPICAL HIGH - TENSION CABLE GUARDRAIL PLACEMENT IN HORIZONTAL CURVES

NOTES

① FOR MEDIAN SLOPES STEEPER THAN 1V:10H, DO NOT PLACE BARRIER INSIDE THE RESTRICTED ZONE (e.g. BETWEEN 1 FT. TO 8 FT. FROM THE DITCH CENTERLINE ON EITHER SIDE OF THE MEDIAN). FOR CABLE TRANSITIONING FROM ONE SIDE OF MEDIAN TO OPPOSITE SIDE, USE CRITERIA SPECIFIED ABOVE. PREFERABLE 8' OFFSET FROM CENTERLINE. THE *.XML FILE CAN BE PROVIDED AS REQUESTED.

② FOR HORIZONTAL CURVES TO THE RIGHT, PLACE BARRIER ON THE LT SIDE OF MEDIAN CENTERLINE. FOR HORIZONTAL CURVES TO THE LEFT, PLACE BARRIER ON THE RT SIDE OF MEDIAN CENTERLINE. SEE PLANS FOR DEVIATIONS.

DETAIL

CABLE MEDIAN BARRIER

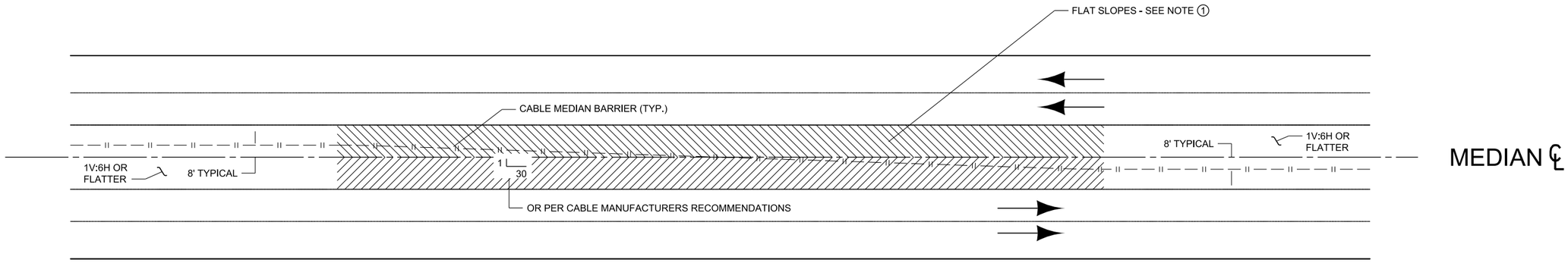
NO SCALE

3	MONTANA Department of Transportation	C:\DGN\9376000sadet001.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021		SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
2		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021			
		7:58:01 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	CASCADE COUNTY	UPN 9376000	05

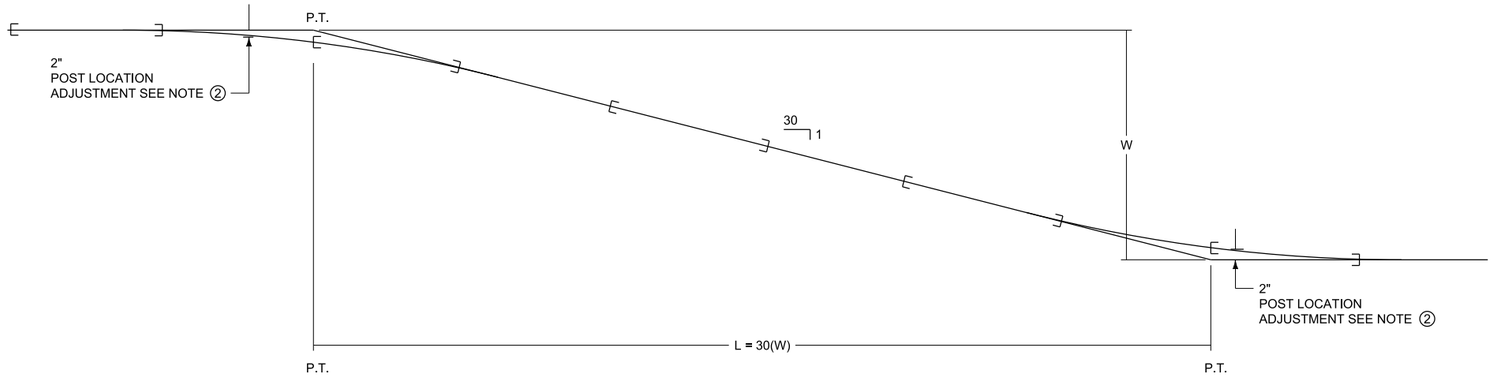
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DETAIL

FROM:	TO:
741+45.00 TO	746+45.00
1076+78.00 TO	1081+78.00



CROSSING MEDIAN



TRANSITION TO 1:30 FLARE

NOTES:

1. 1V:10H OR FLATTER SLOPES WHERE CABLE CROSSES MEDIAN.
2. WHEN LAYING OUT A 1:30 FLARE, LOCATE THE P.T. (POINT OF TANGENCY) POST LOCATIONS, AND ESTABLISH THE LINE FOR THE 1:30 FLARE. THEN SHIFT THE LOCATION OF THE POSTS LOCATED AT THE P.T. BY 2" [50] TO MORE GRADUALLY TRANSITION THE CABLE TO THE FLARE.

DETAIL

BARRIER CROSSING
MEDIAN DITCH

NO SCALE

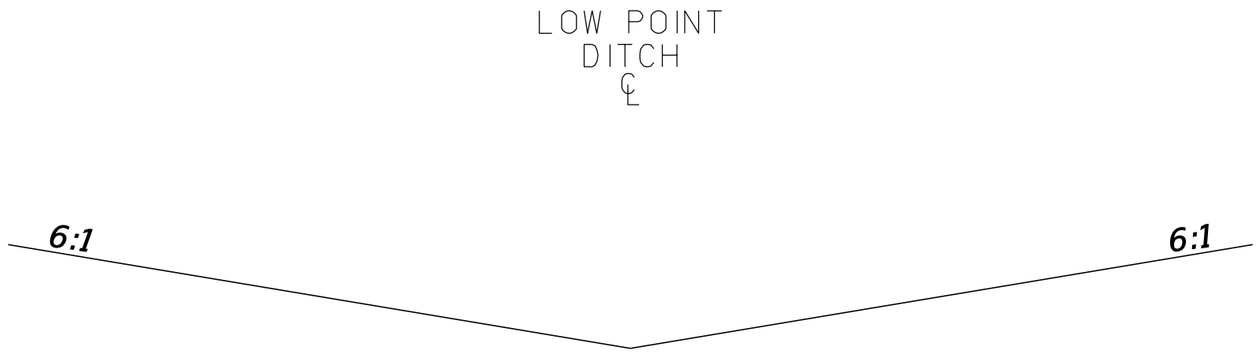
3 / 1	MONTANA Department of Transportation	C:\DGN\9376000sadet001.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		7:58:05 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	06
				CASCADE COUNTY			

AWARD COPY

DETAIL

STATION LOCATIONS ①

FROM:	TO:	FROM:	TO:	FROM:	TO:
609+54.00 TO	610+54.00 RT.	727+32.00 TO	731+50.00 RT.	875+77.00 TO	876+14.00 RT.
609+54.00 TO	610+54.00 LT.	735+59.00 TO	741+45.00 LT.	883+48.00 TO	883+89.00 LT.
613+79.00 TO	615+49.00 RT.	738+05.00 TO	741+45.00 RT.	891+87.00 TO	892+78.00 RT.
613+79.00 TO	615+49.00 LT.	746+45.00 TO	763+96.00 LT.	1115+82.00 TO	1116+88.00 RT.
617+95.00 TO	624+35.00 RT.	767+40.00 TO	769+26.00 RT.	1128+04.00 TO	1129+95.00 LT.
617+95.00 TO	624+40.00 LT.	767+40.00 TO	768+14.00 LT.	1130+01.00 TO	1134+05.00 LT.
629+50.00 TO	633+00.00 RT.	777+31.00 TO	782+06.00 LT.	1173+54.00 TO	1175+55.00 LT.
634+94.00 TO	635+39.00 RT.	782+31.00 TO	785+08.00 LT.	1174+53.00 TO	1175+32.00 RT.
645+97.00 TO	654+13.00 LT.	788+47.00 TO	789+86.00 RT.		
647+89.00 TO	653+13.00 RT.	803+54.00 TO	804+86.00 LT.		
669+99.00 TO	671+59.00 RT.	803+84.00 TO	804+84.00 RT.		
685+25.00 TO	686+46.00 RT.	813+54.00 TO	815+58.00 RT.		
686+05.00 TO	686+46.00 LT.	813+61.00 TO	815+82.00 LT.		
697+03.00 TO	699+78.00 LT.	862+95.00 TO	864+24.00 RT.		
696+51.00 TO	700+34.00 RT.	869+67.00 TO	869+81.00 LT.		



NOTE:

① STATION LOCATIONS FOR INFORMATION ONLY
ACTUAL LOCATIONS MAY VARY

DETAIL

6:1V-DITCH GRADING

NO SCALE

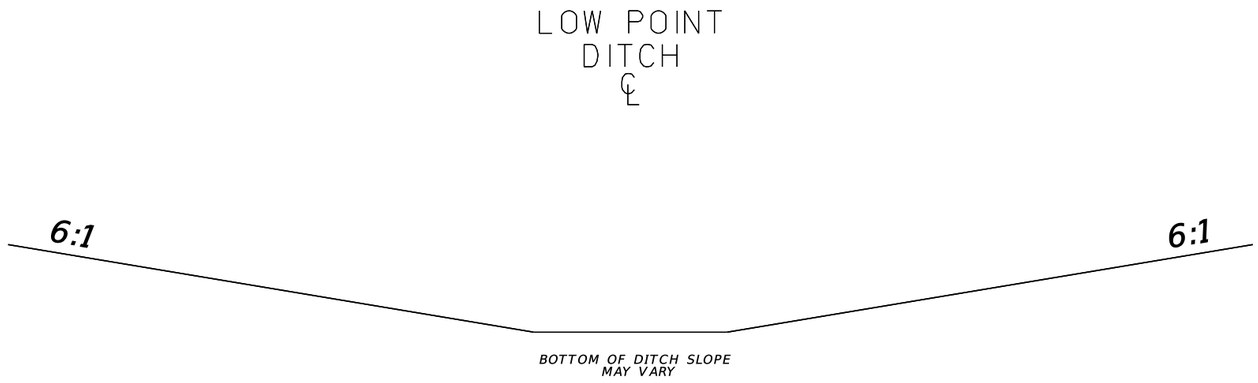
2	MONTANA Department of Transportation	C:\DGN\9376000sadet001.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021		SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021			
1		7:58:09 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	CASCADE COUNTY	UPN 9376000	07

AWARD COPY

DETAIL

STATION LOCATIONS ①

FROM:	TO:	FROM:	TO:
608+05.00 TO	609+54.00 RT.	782+06.00 TO	782+31.00 LT.
610+54.00 TO	613+79.00 RT.	804+84.00 TO	805+00.00 RT.
610+54.00 TO	613+79.00 LT.		
615+49.00 TO	617+95.00 RT.		
616+55.00 TO	617+95.00 LT.		
686+46.00 TO	688+57.00 RT.		
686+46.00 TO	688+53.00 LT.		
692+29.00 TO	695+83.00 RT.		
693+46.00 TO	696+65.00 LT.		
696+11.00 TO	696+51.00 RT.		
716+45.00 TO	731+50.00 LT.		
731+50.00 TO	732+14.00 RT.		
766+44.00 TO	767+40.00 LT.		
768+14.00 TO	769+26.00 RT.		
768+14.00 TO	769+13.00 LT.		



NOTE:

① STATION LOCATIONS FOR INFORMATION ONLY
ACTUAL LOCATIONS MAY VARY

DETAIL

FLAT BOTTOM
DITCH GRADING

NO SCALE

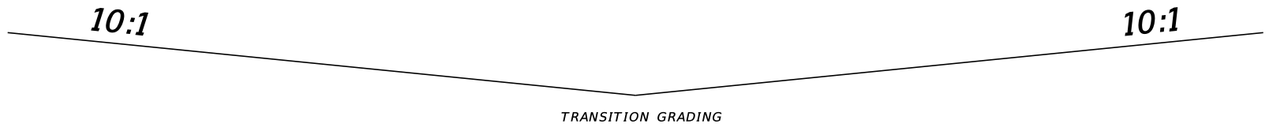
AWARD COPY

DETAIL

STATION LOCATIONS ①

FROM:	TO:
741+45.00 TO	746+45.00 RT.
741+45.00 TO	746+45.00 LT.
1076+78.00 TO	1081+79.00 RT.
1076+78.00 TO	1081+79.00 LT.





NOTE:

① STATION LOCATIONS FOR INFORMATION ONLY
ACTUAL LOCATIONS MAY VARY

DETAIL

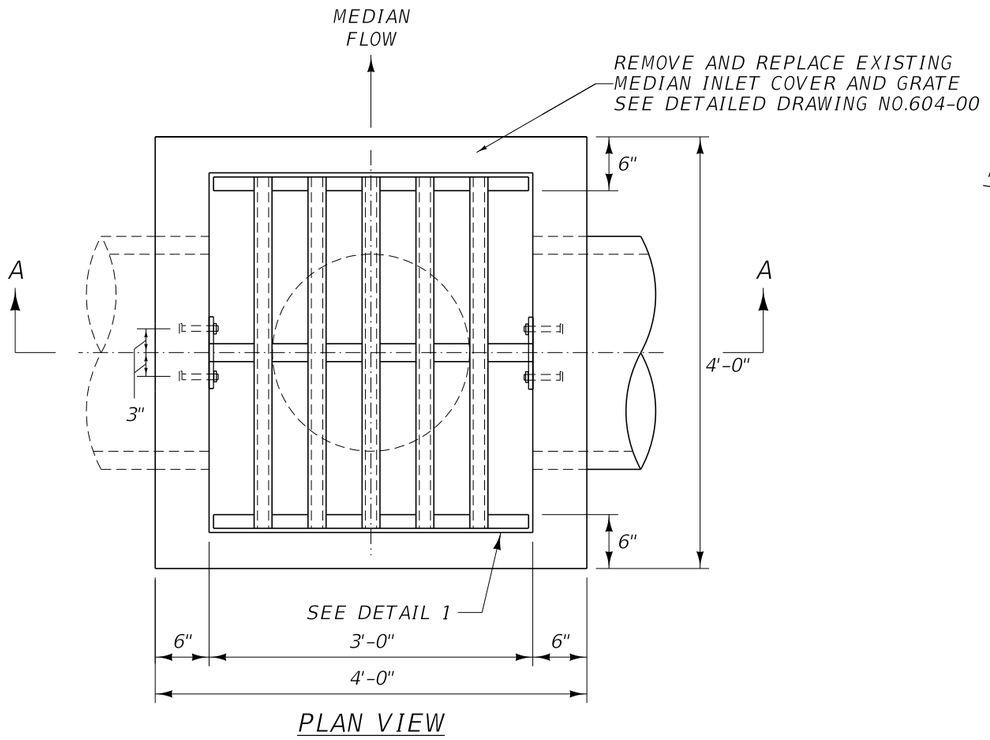
10:1 V-DITCH
GRADING
(CROSSOVER GRADE)

NO SCALE

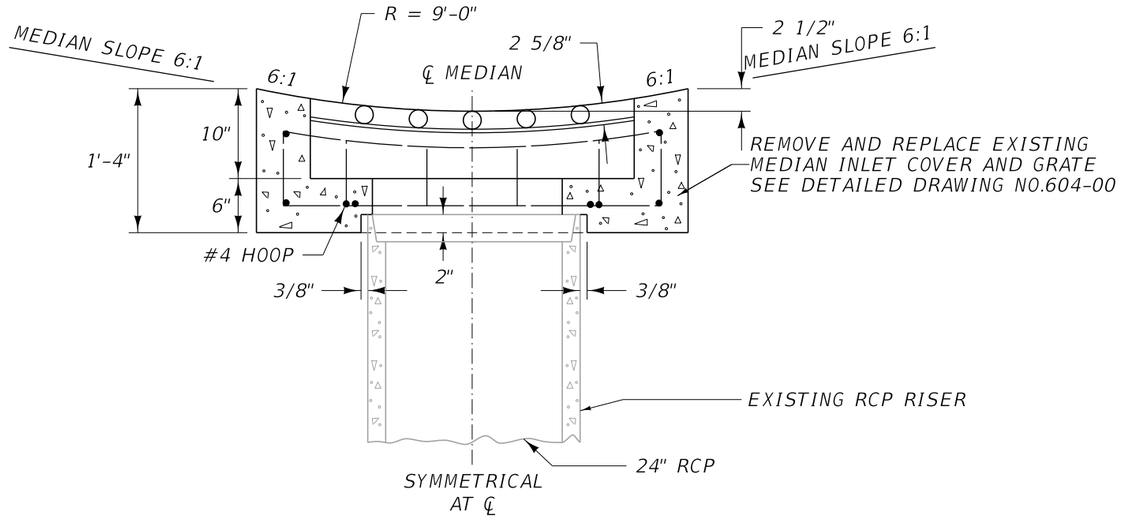
3	MONTANA Department of Transportation	C:\DGN\9376000sadet002.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021		SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021			
1		7:58:27 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	CASCADE COUNTY	UPN 9376000	09

AWARD COPY

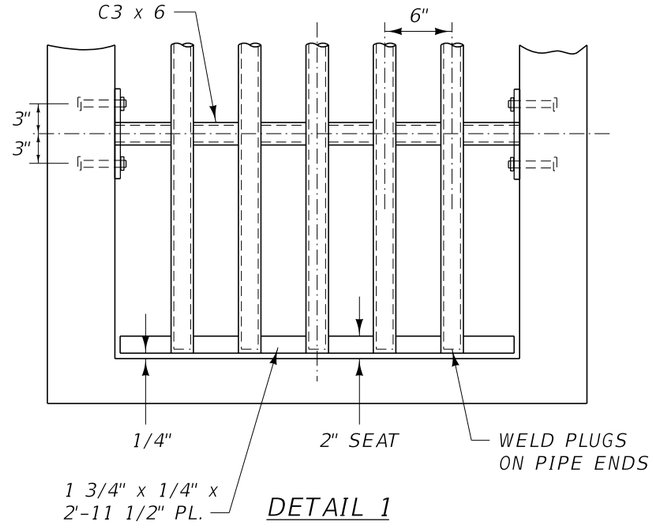
DETAIL



PLAN VIEW



SECTION A-A



DETAIL 1

NOTE:

1. INCLUDE THE COST OF THE REMOVAL AND DISPOSAL OF THE EX. INLET FRAME AND GRATE, SAW CUTTING, INLET CURBING, CONNECTION, ANY MEDIAN ADJUSTMENTS, NEW MEDIAN INLET AND ANY OTHER INCIDENTALS NECESSARY TO COMPLETE THE WORK IN THE COST OF INSTALLING THE TYPE 1 MEDIAN INLET.

2. ORIENT THE NEW INLET GRATE SO CROSS BARS ARE PARALLEL TO FLOW.

3. CONTRACTOR TO VERIFY ELEVATIONS IN THE FIELD PRIOR TO CONSTRUCTION TO PROVIDE POSITIVE SLOPE TO THE GRATE FROM ALL DIRECTIONS.

DETAIL

TYPE 1 MEDIAN INLET

NO SCALE

2	MONTANA Department of Transportation	C:\DGN\9376000sadet002.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021		SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
1		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021			
		7:58:33 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	CASCADE COUNTY	UPN 9376000	10

AWARD COPY

600+00

610+00

603+80.00
BEG. HSIP 15-5(143)278 (English) =
603+80.00
ON IM 15-5(124)282 (English)

612+08
UG TELEPHONE X-ING
612+12
UG TELEPHONE X-ING
612+27
UG GAS LINE X-ING

STA 606+70.59 TO 624+20.59 RT.
NEW MEDIAN CABLE GUARDRAIL

PI =604+36.79
Δ =43° 20' 00" (LT)
R =5,730'
T =2,276.38'
L =4,333.65'
E =435.62'

605+78.56
RAISED MEDIAN INLET
DO NOT DISTURB

620+00

PT 624+94.06

STA 606+70.59 TO 624+20.59 RT.
NEW MEDIAN CABLE GUARDRAIL

615+35.96
ADJUST MEDIAN INLET

624+37.04 RCP/DR IN PL.
DO NOT DISTURB

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln001.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
2		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		7:58:51 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	11
			CASCADE COUNTY				

AWARD COPY

630+00

640+00

STA 629+77.81 TO 638+67.81 RT.
NEW MEDIAN CABLE GUARDRAIL

STA 643+36.17 TO 654+56.17 RT.
NEW MEDIAN CABLE GUARDRAIL

634+35.99 RCP/DR IN PL.
DO NOT DISTURB

638+49.93 CMP/DR IN PL.
DO NOT DISTURB

650+00

STA 643+36.17 TO 654+56.17 RT.
NEW MEDIAN CABLE GUARDRAIL

N 3° 23' 57" E

650+34.24
ADJUST MEDIAN INLET

3 / 1	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln001.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		8:00:53 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	12
				CASCADE COUNTY			

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2	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln001.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
1		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		8:02:48 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	13
			CASCADE COUNTY				

AWARD COPY

690+00

WL-1

WL-2

STA 680+55.99 TO 704+05.99 RT.
NEW MEDIAN CABLE GUARDRAIL

700+00

698+49
UG GAS LINE X-ING

PI =699+67.26
Δ =74° 53' 19" (LT)
R =3,284'
T =2,514.94'
L =4,292.55'
E =852.34'

DELINEATED WETLAND AREAS

PERMANENT WETLAND IMPACTED AREAS

704+04.70 RCPA/DR IN PL.
DO NOT DISTURB

710+00

STA 704+65.15 TO 747+95.15 RT.
NEW MEDIAN CABLE GUARDRAIL

PT 717+44.87

704+74.14 RCPA/DR IN PL.
DO NOT DISTURB

719+21.87 RCP IN PL.
REMOVE 6' FETS LT.
NEW 10' RACET LT.

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln002.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
2		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		8:04:49 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	14
			CASCADE COUNTY				

AWARD COPY



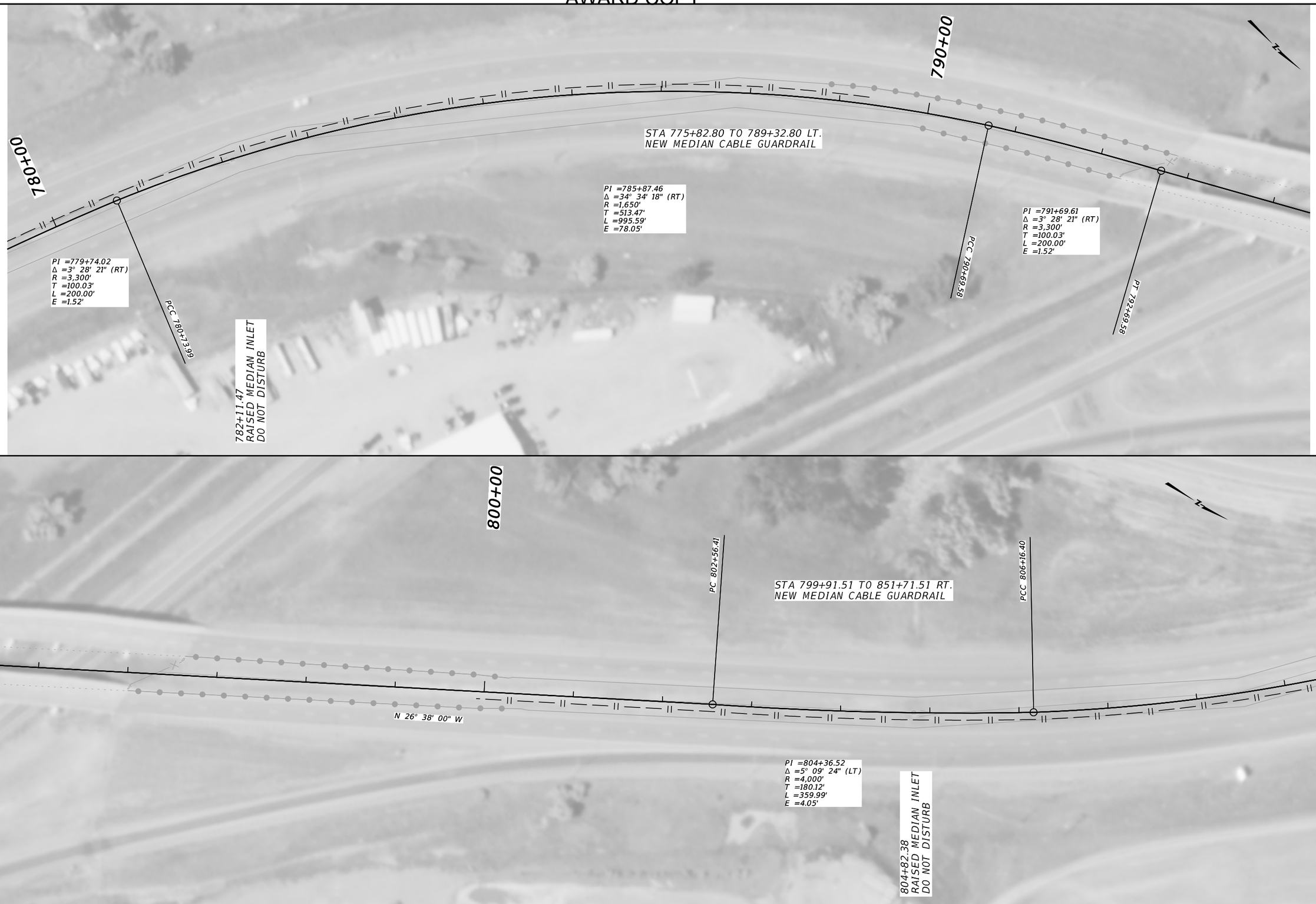
3 1	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln002.dgn 3/3/2022 8:06:45 AM CPS – U6146	DESIGNED BY TRISTAN PIERCE 12/2/2021 REVIEWED BY MICHAEL GROVER 12/2/2021 CHECKED BY JERRY SABOL 12/2/2021	CASCADE COUNTY		SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278 UPN 9376000 15

AWARD COPY



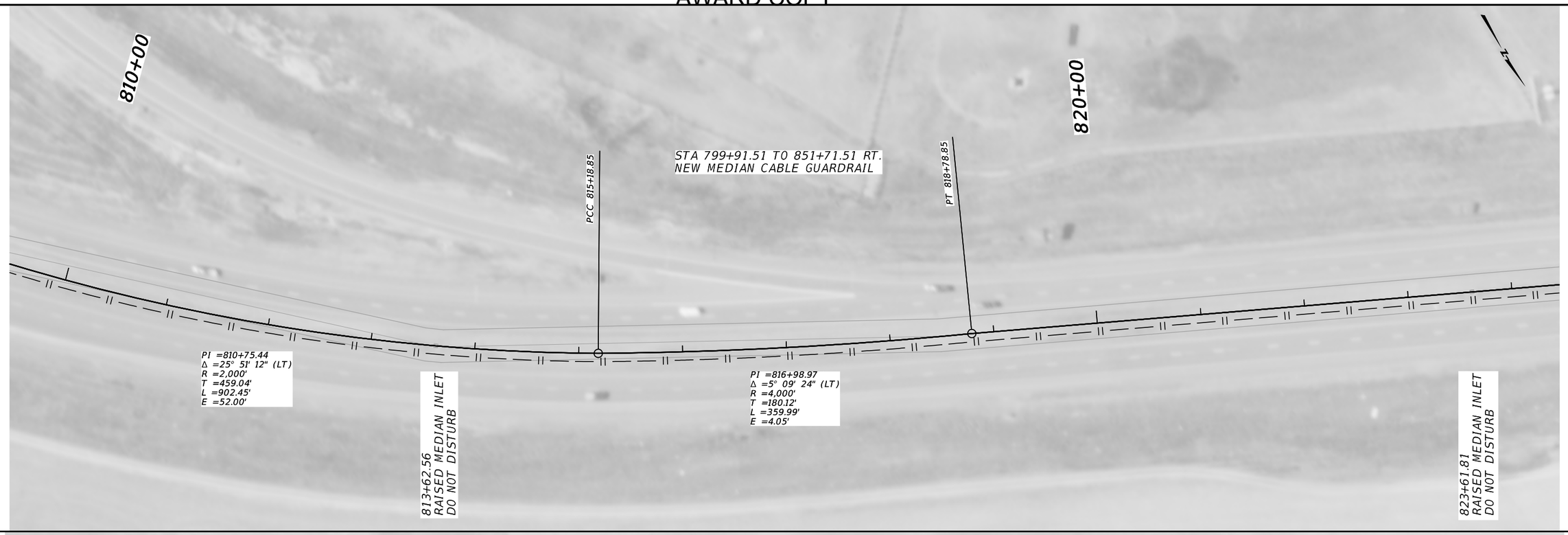
2 / 1	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln002.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		8:08:38 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	16
			CASCADE COUNTY				

AWARD COPY



3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln003.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
2		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		8:10:48 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	17
						CASCADE COUNTY	

AWARD COPY





3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln003.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
1		8:12:49 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	18
				CASCADE COUNTY			

AWARD COPY

840+00

850+00

STA 799+91.51 TO 851+71.51 RT.
NEW MEDIAN CABLE GUARDRAIL

STA 852+32.50 TO 875+02.50 RT.
NEW MEDIAN CABLE GUARDRAIL

852+47.48
RAISED MEDIAN INLET
DO NOT DISTURB

860+00

STA 852+32.50 TO 875+02.50 RT.
NEW MEDIAN CABLE GUARDRAIL

868+41.88
RAISED MEDIAN INLET
DO NOT DISTURB

2	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln003.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
1		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		8:14:41 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	19
				CASCADE COUNTY			

AWARD COPY

870+00

880+00

STA 852+32+50 TO 875+02.50 RT.
NEW MEDIAN CABLE GUARDRAIL

STA 875+72.50 TO 915+32.50 RT.
NEW MEDIAN CABLE GUARDRAIL

875+82.08
ADJUST MEDIAN INLET

883+41.04
RAISED MEDIAN INLET
DO NOT DISTURB

890+00

STA 875+72.50 TO 915+32.50 RT.
NEW MEDIAN CABLE GUARDRAIL

N 62° 48' 00" W

891+90.24
RAISED MEDIAN INLET
DO NOT DISTURB

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln004.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
2		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		8:16:46 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	20
			CASCADE COUNTY				

AWARD COPY

900+00

910+00

STA 875+72.50 TO 915+32.50 RT.
NEW MEDIAN CABLE GUARDRAIL

920+00

STA 875+72.50 TO 915+32.50 RT.
NEW MEDIAN CABLE GUARDRAIL

STA 915+82.50 TO 978+72.50 RT.
NEW MEDIAN CABLE GUARDRAIL

3 / 1	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln004.dgn 3/3/2022 8:18:37 AM CPS – U6146	DESIGNED BY TRISTAN PIERCE 12/2/2021 REVIEWED BY MICHAEL GROVER 12/2/2021 CHECKED BY JERRY SABOL 12/2/2021	CASCADE COUNTY		SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278	
						UPN 9376000	21	

AWARD COPY

930+00

940+00

STA 915+82.50 TO 978+72.50 RT.
NEW MEDIAN CABLE GUARDRAIL

935+36.14
RAISED MEDIAN INLET
DO NOT DISTURB

950+00

STA 915+82.50 TO 978+72.50 RT.
NEW MEDIAN CABLE GUARDRAIL

PC 956+72.07

958+08
UG GAS X-ING
958+09
UG GAS X-ING

949+37.42
RAISED MEDIAN INLET
DO NOT DISTURB

956+84.31
RAISED MEDIAN INLET
DO NOT DISTURB

2	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln004.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
1		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		8:20:30 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	22
				CASCADE COUNTY			

AWARD COPY

960+00

970+00

STA 915+82.50 TO 978+72.50 RT.
NEW MEDIAN CABLE GUARDRAIL

PI =969+74.06
Δ =12° 57' 48" (LT)
R =11,460'
T =1,301.99'
L =2,592.86'
E =73.72'

980+00

STA 915+82.50 TO 978+72.50 RT.
NEW MEDIAN CABLE GUARDRAIL

STA 979+48.76 TO 982+78.76 RT.
NEW MEDIAN CABLE GUARDRAIL

PT 982+64.93

STA 987+51.47 TO 995+41.47 RT.
NEW MEDIAN CABLE GUARDRAIL

979+84.23
RAISED MEDIAN INLET
DO NOT DISTURB

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln005.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
2		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		8:22:42 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	23
				CASCADE COUNTY			

AWARD COPY

990+00

1000+00

STA 987+51.47 TO 995+41.47 RT.
NEW MEDIAN CABLE GUARDRAIL

STA 1002+32.40 TO 1034+12.40 RT.
NEW MEDIAN CABLE GUARDRAIL

998+12.40
RAISED MEDIAN INLET
DO NOT DISTURB

1010+00

STA 1002+32.40 TO 1034+12.40 RT.
NEW MEDIAN CABLE GUARDRAIL

1016+79.49
RAISED MEDIAN INLET
DO NOT DISTURB

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln005.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
1		8:24:40 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	24
			CASCADE COUNTY				

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2	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln005.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021		SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
1		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021			
		8:26:38 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	CASCADE COUNTY	UPN 9376000	25

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3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln006.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
2		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		8:30:58 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	26
			CASCADE COUNTY				

AWARD COPY

1080+00

STA 1076+78.00± TO 1081+78.00±
10:1 MEDIAN GRADING
CABLE CROSSING

STA 1079+28.43 TO 1085+78.43 LT.
NEW MEDIAN CABLE GUARDRAIL

1090+00

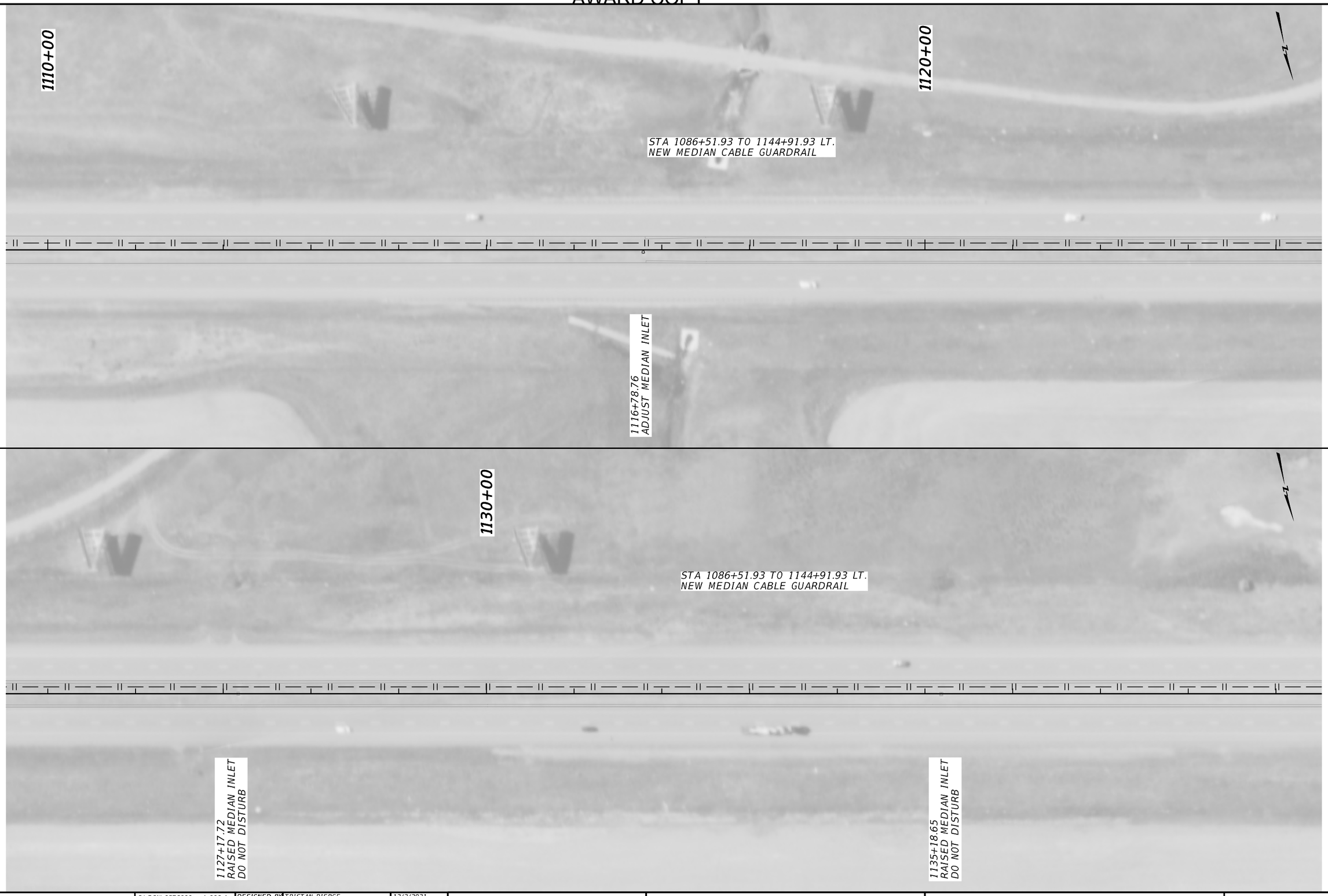
STA 1086+51.93 TO 1144+91.93 LT.
NEW MEDIAN CABLE GUARDRAIL

1100+00

STA 1086+51.93 TO 1144+91.93 LT.
NEW MEDIAN CABLE GUARDRAIL

3 / 1	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln006.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		8:30:53 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	27
				CASCADE COUNTY			

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2	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln006.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
1		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		8:33:00 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	28
				CASCADE COUNTY			

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3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln007.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021	SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
2		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021		
		8:35:15 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	UPN 9376000	29
				CASCADE COUNTY			

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3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9376000sapln007.dgn	DESIGNED BY	TRISTAN PIERCE	12/2/2021		SF 169 I-15 HT CABLE RAIL	HSIP 15-5(143)278
		3/3/2022	REVIEWED BY	MICHAEL GROVER	12/2/2021			
1		8:37:20 AM CPS - U6146	CHECKED BY	JERRY SABOL	12/2/2021	CASCADE COUNTY	UPN 9376000	30