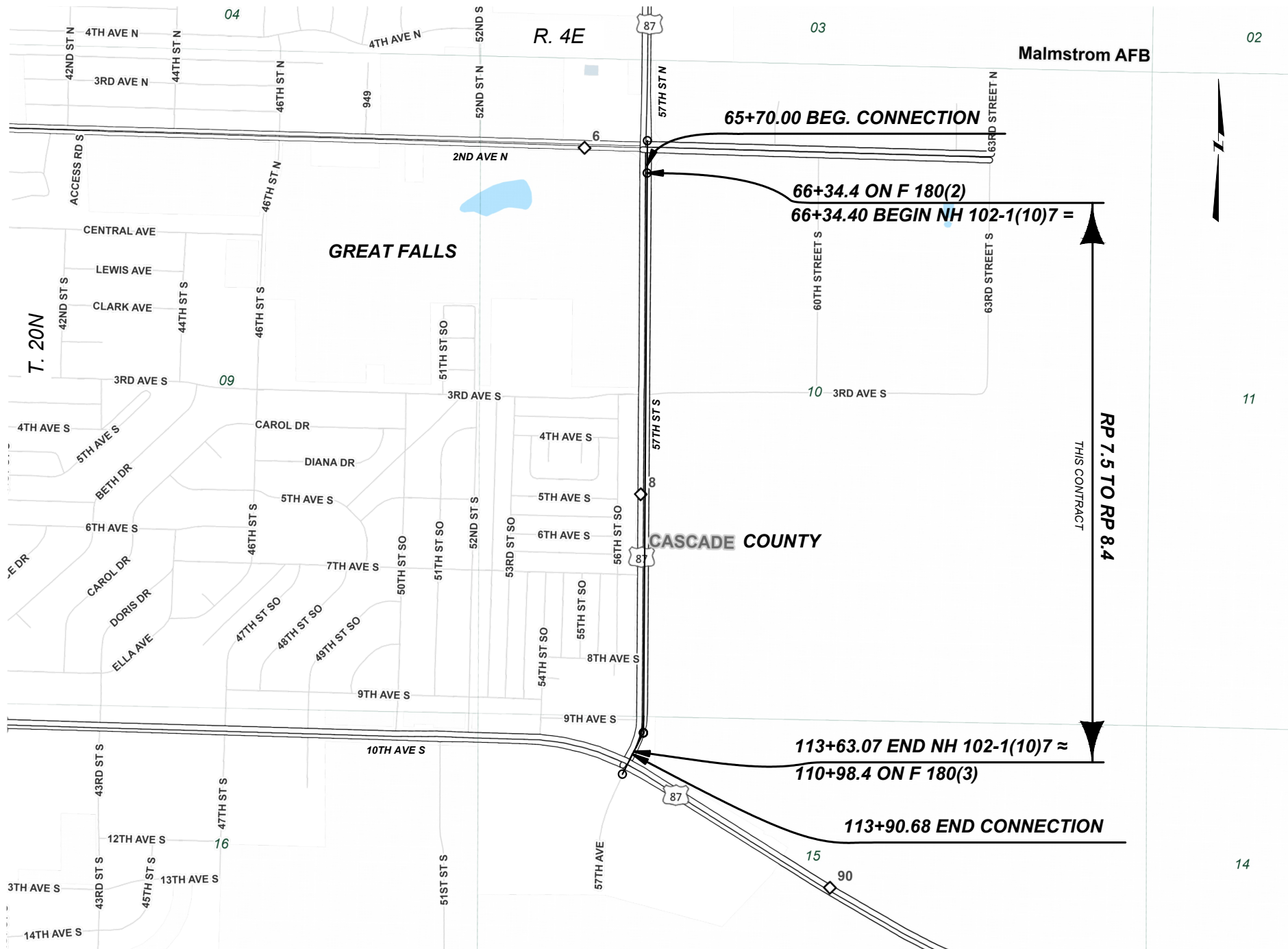


MONTANA DEPARTMENT OF TRANSPORTATION

***FEDERAL AID PROJECT NH 102-1(10)7
COLD MILL, PMBS, LIGHTING, & MEDIAN CURB
57TH STREET-GREAT FALLS
CASCADE COUNTY***

LENGTH 0.9 MILES



PROJECT DESIGN DATA

PRESENT	2026	A.A.D.T. =	10,890
LETTING	2026	A.A.D.T. =	10,890
DESIGN	2046	A.A.D.T. =	13,290
		D.H.V. =	1410
		TRUCKS =	4.6%
		V. =	40 MPH
		18 KIP ESAL'S =	206 DAILY
		ANNUAL GROWTH RATE =	1.0%

ASSOCIATED PROJECT
AGREEMENT NUMBERS

<i>R/W</i>	
<i>I.C.</i>	
<i>P.E.</i>	NH 102-1(9)7

RELATED PROJECTS

NH 102-1(14)3

**SURFACING SOURCES -
CONTRACTOR FURNISHED**

MONTANA DEPARTMENT OF TRANSPORTATION	
APPROVED BY: HIGHWAYS ENGINEER	 20186PE
_____	DATE

PROJECT NAME **57TH STREET-GREAT FALLS**

COUNTY **CASCADE**

CASCADE

NH 102-1(10)7

10241000

D ZIESKE	09/2025
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C. WARD	05/2026
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CHECKED BY	T. JOHNSON	05/2026

10241000RD TTL001.DWG



MONTANA
Department of Transportation

ROAD PLANS

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ROAD PLANS

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SIGNING PLANS

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ELECTRICAL PLANS

SUMMARY	E1
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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 BINDER - GRADE S - 3/4" AGG. = 5.0% OF PL.MIX BIT.SURF.
HYDRATED LIME = 1.4% OF PL.MIX BIT.SURF.
ASPHALT BINDER = 3.0% OF RECYCLED PL.MIX (50% RAP)
HYDRATED LIME = 1.4% OF RECYCLED PL.MIX BIT.SURF.
BITUMINOUS MATERIAL = 8.5 LBS. PER GAL.
EMULSIFIED ASPHALT - TACK (ALL OTHER SURFACES) = 0.05 GAL. PER SQ.YARD (UNDILUTED)
EMULSIFIED ASPHALT - TACK (CONCRETE SURFACES) = 0.10 GAL. PER SQ.YARD (UNDILUTED)
EMULSIFIED ASPHALT - SEAL = 0.42 GAL. PER SQ.YARD
COVER = 25 LBS. PER SQ.YARD

UTILITIES

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

WETLANDS

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

LUMINAIRE WIDENING

CONSTRUCT LUMINAIRE WIDENING AS SHOWN TO ENSURE CONSISTENT MOUNTING HEIGHT ABOVE FINISHED SHOULDER.

APPROACHES (FOR INFORMATION ONLY, M.O.C.)											
STATION	TYPE	EXISTING SURFACING	feet	PROPOSED SURFACE	sq. yards		tons	tons		gallons	REMARKS
			PMS THK.		COVER TYPE II	COLD MILLING	PLANT MIX BIT. SURF. 3/4"	ASPHALT BINDER PG 58V-34	EMULS. ASPHALT CHFRS-2P	EMULS. ASPHALT TACK	
69+77	FARM FIELD	GRAVEL	0.2	3' ASPHALT STRIP			1	0.1		1	RT-ACCESS TO GRASS FIELD
SUBTOTAL	FARM FIELD				~	~	1	0.1	~	1	
66+93	PRIVATE	PAVED	0.2	3' ASPHALT STRIP		34	4	0.2		2	LT
70+50	PRIVATE	PAVED	0.2	3' ASPHALT STRIP		16	2	0.1		1	LT
73+91	PRIVATE	GRAVEL	0.2	3' ASPHALT STRIP		23	3	0.2		1	LT
75+33	PRIVATE	PAVED	0.2	3' ASPHALT STRIP		21	3	0.2		1	LT
75+57	PRIVATE	GRAVEL	0.2	3' ASPHALT STRIP		26	3	0.2		1	RT
77+25	PRIVATE	GRAVEL	0.2	3' ASPHALT STRIP		21	3	0.2		1	LT
85+88	PRIVATE	PAVED	0.2	3' ASPHALT STRIP		34	4	0.2		2	RT
97+80	PRIVATE	PAVED	0.2	3' ASPHALT STRIP		58	7	0.4		3	RT-WHOLE FRONTAGE PAVED
100+41	PRIVATE	PAVED	0.2	3' ASPHALT STRIP		74	10	0.5		4	RT-WHOLE FRONTAGE PAVED
109+27	PRIVATE	PAVED	0.2	3' ASPHALT STRIP		16	2	0.1		1	RT
SUBTOTAL	PRIVATE				~	323	41	2.3	~	17	
84+38	PUBLIC	PAVED	0.2	3' ASPHALT STRIP	29	29	4	0.2	0.05	1	LT-3RD AVE S
84+65	PUBLIC	PAVED	0.2	3' ASPHALT STRIP	31	31	4	0.2	0.06	2	RT-3RD AVE S
99+18	PUBLIC	PAVED	0.2	3' ASPHALT STRIP	18	18	2	0.1	0.03	1	RT-7TH AVE S
106+15	PUBLIC	PAVED	0.2	3' ASPHALT STRIP	25	25	3	0.2	0.04	1	RT-8TH AVE S
110+96	PUBLIC	PAVED	0.2	3' ASPHALT STRIP	26	26	3	0.2	0.05	1	RT-9TH AVE S
SUBTOTAL	PUBLIC				129	129	16	0.9	0.2	6	

M.O.C. - MEASURED ON CAD

CENTERLINE COORDINATE TABLE - 10241000_RD_PA_MAINLINE				
STATION	DESCRIPTION	NORTHING OR Y COORDINATE	EASTING OR X COORDINATE	REMARKS
63+71.36	BOA	1,192,113.541	1,544,785.867	NOT SHOWN ON PLANS
110+61.72	PC	1,187,423.290	1,544,754.805	
113+26.99	PT	1,187,167.795	1,544,692.795	
115+70.14	EOA	1,186,950.970	1,544,582.769	

CONTROL DIAGRAM

SCALE: N/A

NOTE:

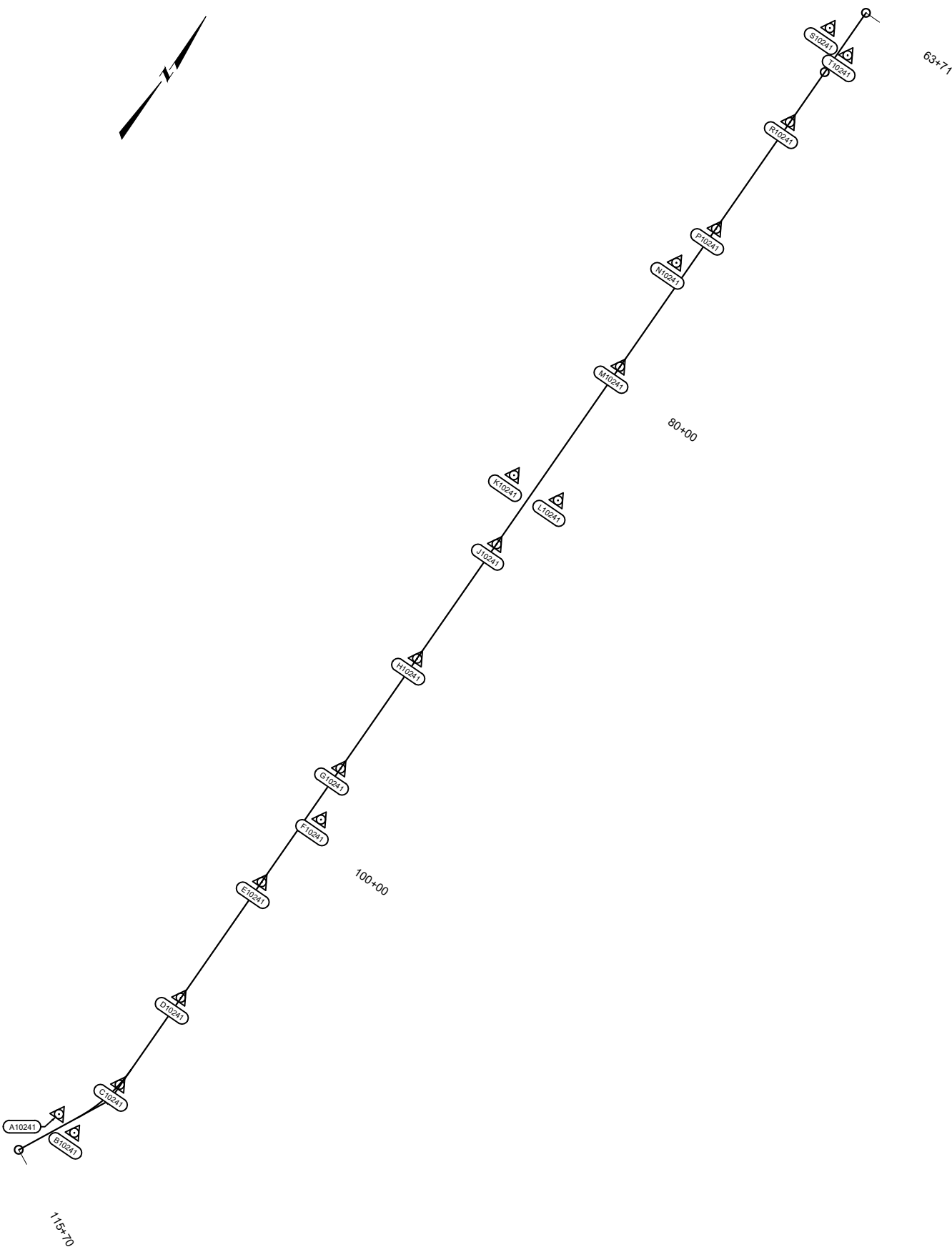
THIS PROJECT IS ON THE MONTANA COORDINATE SYSTEM NAD83-2011
NORTHING AND EASTING COORDINATES ARE EXPRESSED IN UNITS OF
INTERNATIONAL FEET AND ELEVATIONS ARE IN UNITS OF U.S. SURVEY FEET.
DIMENSIONS SHOWN ON THE PLANS ARE GRID. ALL SURVEY AND STAKING
REQUIRE THE USE OF A COMBINATION SCALE FACTOR (CSF) TO CONVERT GRID
DIMENSIONS TO GROUND DIMENSIONS (GRID DISTANCE / CSF = GROUND
DISTANCE). THE CSF FOR THIS PROJECT IS 0.99928157

BEARING SOURCE

GRID -- MONTANA COORDINATE SYSTEM NAD 83-2011

LEVEL DATUM SOURCE

NAVD 88 (GNSS DERIVED ELEVATIONS USING GEOID18



CONTROL ABSTRACT

POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION
A10241	1,187,141.130	1,544,629.970	3498.23
B10241	1,187,116.550	1,544,714.480	3498.15
C10241	1,187,354.420	1,544,751.920	3496.08
D10241	1,187,741.690	1,544,756.180	3495.05
E10241	1,188,255.910	1,544,761.280	3494.55
F10241	1,188,565.930	1,544,810.410	3492.28
G10241	1,188,760.180	1,544,763.910	3492.07
H10241	1,189,248.060	1,544,767.890	3488.74
J10241	1,189,755.820	1,544,770.540	3485.39
K10241	1,189,998.810	1,544,680.830	3481.24
L10241	1,190,013.830	1,544,864.740	3481.34
M10241	1,190,543.290	1,544,775.820	3480.15
N10241	1,190,971.720	1,544,731.160	3475.15
P10241	1,191,155.670	1,544,780.700	3474.40
R10241	1,191,628.530	1,544,782.560	3464.07
S10241	1,191,993.640	1,544,708.710	3453.44
T10241	1,191,948.150	1,544,818.310	3455.46

SHEET NO.

3

CONTROL DIAGRAM

PROJECT NAME
57TH STREET-GREAT FALLS

COUNTY
CASCAD

PROJECT ID
NH 102-1(10)7

UPN
10241000

DESIGNED BY
D ZIESKE
09/2025

REVIEWED BY
C. WARD
05/2026

CHECKED BY
T. JOHNSON
05/2026

10241000RDBS001.DWG



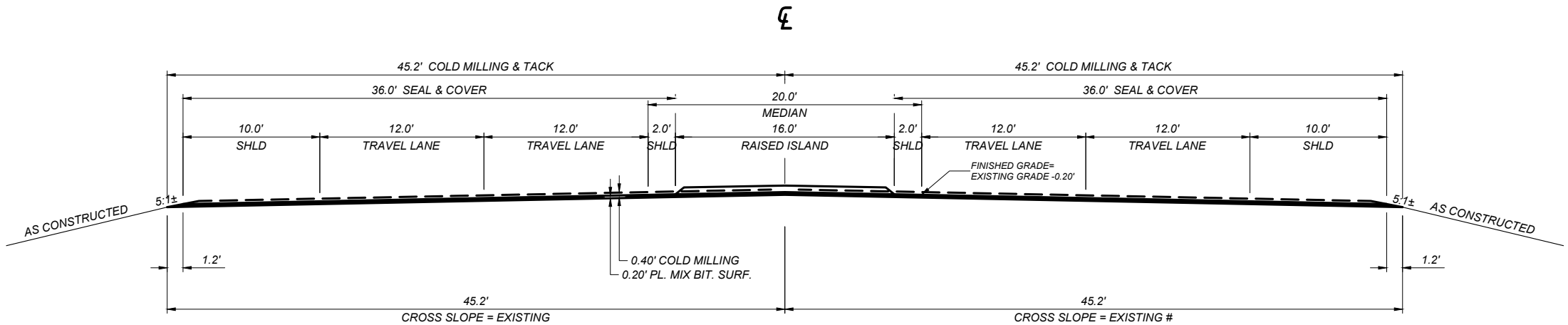
ROAD PLANS

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TYPICAL SECTION NO. 1

MAINLINE

66+34.40 TO 111+46.99
111+46.99 TO 113+26.99 TRANS. TYP. 1 TO TYP. 2



110+75 TO 111+46.99 MILL 2% CROSS SLOPE RT

QUANTITIES							
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL			COLD MILLING
	COVER	PLANT MIX		ASPHALT BINDER	EMULSIFIED ASPHALT SEAL	EMULSIFIED ASPHALT TACK*	
AREA square feet		17.84	square yards PER STATION		800	1004	1004
cubic yards PER STATION		66.1	tons PER STATION	6.37	1.43		
tons PER STATION		127.4	gals. PER STATION		50		
square yards PER STATION	800						

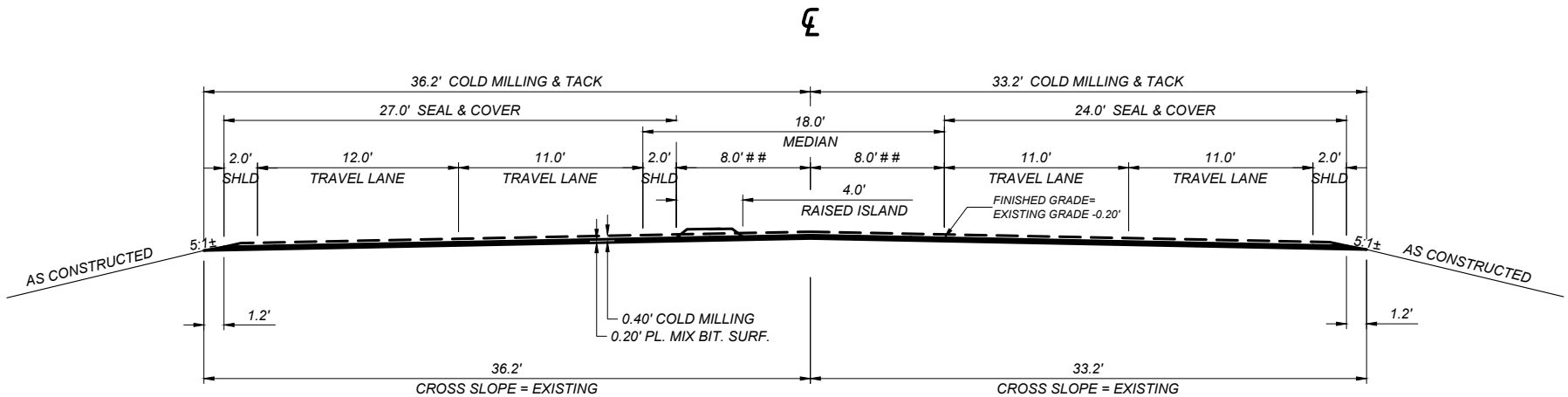
* BASED ON 1 APPLICATION

NOTE: SEE GEOMETRIC DETAILS FOR STRIPING LAYOUT

TYPICAL SECTION NO. 2

MAINLINE

113+26.99 TO 113+63.07



SEAL & COVER QUANTITY FOR MEDIAN AND INTERSECTIONS CALCULATED SEPARATELY FROM TYPICAL SECTION

QUANTITIES							
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL			COLD MILLING
	COVER	PLANT MIX		ASPHALT BINDER	EMULSIFIED ASPHALT SEAL	EMULSIFIED ASPHALT TACK*	
AREA square feet		13.64	square yards PER STATION		567	771	771
cubic yards PER STATION		50.5	tons PER STATION	4.87	1.01		
tons PER STATION		97.3	gals. PER STATION		39		
square yards PER STATION	567						

* BASED ON 1 APPLICATION

SHEET NO.

4

TYPICAL SECTIONS

PROJECT NAME
57TH STREET-GREAT FALLS

COUNTY
CASCADE

PROJECT ID
NH 102-1(10)7

UPN
10241000

DESIGNED BY
D ZIESKE

REVIEWED BY
C. WARD

CHECKED BY
T. JOHNSON

10241000RDTYP001.DWG



ROAD PLANS

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SUMMARY

SUMMARY

SURFACING															
STATION		linear feet				FOR	tons	AGGREGATE			BITUMINOUS MATERIAL			sq. yards	REMARKS
		GROSS	NET	+	-		HYDRATED LIME	sq. yards	tons	cu. yards	tons		gals.		
								COVER TYPE 2	PLANT MIX BIT. SURF. 3/4"	SHOULDER GRAVEL	ASPHALT BINDER PG 58V-34	EMULSIFIED ASPHALT CHFRS-2P	EMULSIFIED ASPHALT TACK	COLD MILLING (0.4)	
FROM	TO														
66+34.40	111+46.99	4,512.59	4,512.59					36,101	5,749		287.5	64.5	2,256	45,306	TYP. SEC. NO. 1
111+46.99	113+26.99	180.00	180.00					1,230	202		10.1	2.2	80	1,598	TRANS. TYP. SEC. NO. 1 TO TYP. SEC. NO. 2
113+26.99	113+63.07	36.08	36.08					205	35		1.8	0.4	14	278	TYP. SEC. NO. 2
						ADDITIONAL SURFACING		4,522	420	575	21.4	8.0	306	452	
TOTAL		4,728.67	4,728.67	~	~		90	42,058	6,406	575	320.8	75.1	2,656	47,634	

ADDITIONAL SURFACING (INCLUDED IN SURFACING FRAME)															
STATION		linear feet				FOR	tons	AGGREGATE			BITUMINOUS MATERIAL			sq. yards	REMARKS
		GROSS	NET	+	-		HYDRATED LIME	sq. yards	tons	cu. yards	tons		gals.		
								COVER TYPE 2	PLANT MIX BIT. SURF. 3/4"	SHOULDER GRAVEL	ASPHALT BINDER PG 58V-34	EMULSIFIED ASPHALT CHFRS-2P	EMULSIFIED ASPHALT TACK	COLD MILLING (0.2')	
FROM	TO														
66+34.40	113+90.68					MEDIAN SURFACE PREPARATION			362		18.1		282		0.1' ASSUMED DEPRESSION DEPTH
66+34.40	113+90.68					MEDIAN SEAL & COVER		4,202				7.5			16' MEDIAN (SEE TYPICAL SECTIONS)
113+63.07	113+90.68					END CONNECTION		191				0.3			
						LUMINAIRE WIDENING				575					SEE DETAIL
						APPROACH APRONS (16)		129	58		3.3	0.2	24	452	3' PMBS STRIP
SUBTOTAL		~	~	~	~		~	4,522	420	575	21.4	8.0	306	452	

MEDIAN CONCRETE CURB						
STATION		linear feet		sq. yards	cu. yards	REMARKS
		MEDIAN CONCRETE CURB	REMOVE MEDIAN CURB #	DECORATIVE CONCRETE	CRUSHED AGG. COURSE Δ	
FROM	TO	TYPE A		3"		
65+70.00	66+34.40	128.7	128.7	42.9	3.6	BEG. CONN. TIE INTO EXISTING MEDIAN
66+34.40	70+11.02	762.7	761.0	331.9	27.7	
70+88.73	74+90.93		810.8			
71+07.80	74+91.00	773.7		290.4	24.2	
75+73.47	83+96.00		1,649.2			
75+93.00	83+95.95	1,611.7		516.5	43.0	
84+77.38	98+77.93		2,805.8			
84+99.00	98+70.17	2,749.6		1,909.2	159.1	
85+08.00	85+66.00	58.0	58.0			RT
99+58.97	113+63.07	2,821.5		1,156.2	96.4	
99+59.21	105+46.65		1,179.7			
106+38.07	113+88.17		1,506.5			
113+63.07	113+88.17	52.2		10.8	0.9	END CONN.
TOTAL		8,958	8,899.7	4,257.9	354.9	

INCLUDES REMOVAL OF GRAVEL MEDIAN FILL
Δ FOR INFORMATION ONLY. INCLUDE IN UNIT PRICE FOR DECORATIVE CONCRETE

DESIGNED BY

D ZIESKE

REVIEWED BY

C. WARD

CHECKED BY

T. JOHNSON

PROJECT NAME

57TH STREET-GREAT FALLS

COUNTY

CASCADE

PROJECT ID

NH 102-1(10)7

UPN

10241000

MONTANA

Department of Transportation

ROAD PLANS

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SUMMARY

SUMMARY

PAVEMENT MARKINGS				
ITEM	UNIT	INTERIM APPLICA- TION #	FINAL APPLICA- TION	TOTAL
STRIPING - WHITE PAINT	gallon	134		134
STRIPING - YELLOW PAINT	gallon	40		40
STRIPING - WHITE EPOXY	gallon		90	90
STRIPING - YELLOW EPOXY	gallon		26	26
WORDS & SYMBOLS - WHITE EPOXY	gallon		12	12
CURB MARKING-YELLOW EPOXY	gallon		57	57
STRIPE GROOVING	linear feet		25,541	25,541
STRIPE GROOVING	square feet		508	508
TEMPORARY STRIPING	linear feet			11,738
FINAL SWEEP AND BROOM	course mile			1.8

BASED ON 2 APPLICATIONS.

REVEGETATION					
STATION		lump sum	cu. yards	acre	
		REVEGE- TATION	TOPSOIL SALVAGING & PLACING	SEED	CONDITION SEEDBED
FROM	TO				
66+34	113+63	1	200	0.40	0.40
TOTAL		1	# 200	# 0.4	# 0.4

FOR INFORMATION ONLY

EXPLORATORY EXCAVATION			
STATION		hours	REMARKS
		EXPLORATORY EXCAVATION	
FROM	TO		
68+00		10	LUMINAIRE LT
70+00		10	LUMINAIRE LT
TOTAL		20	

DESIGNED BY

D ZIESKE

REVIEWED BY

C. WARD

CHECKED BY

T. JOHNSON

10241000RDSUM001.DWG

PROJECT NAME

57TH STREET-GREAT FALLS

COUNTY

CASCADE

PROJECT ID

NH 102-1(10)7

UPN

10241000

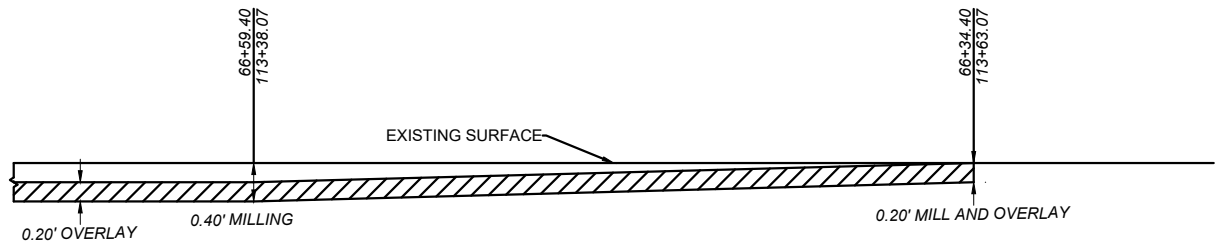
MONTANA

Department of Transportation

ROAD PLANS

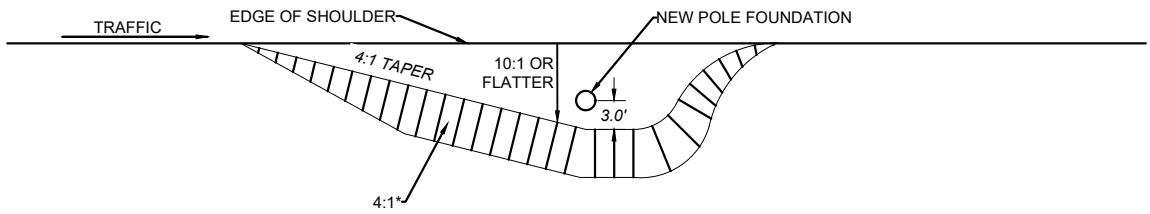
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MILLING DEPTH TRANSITION

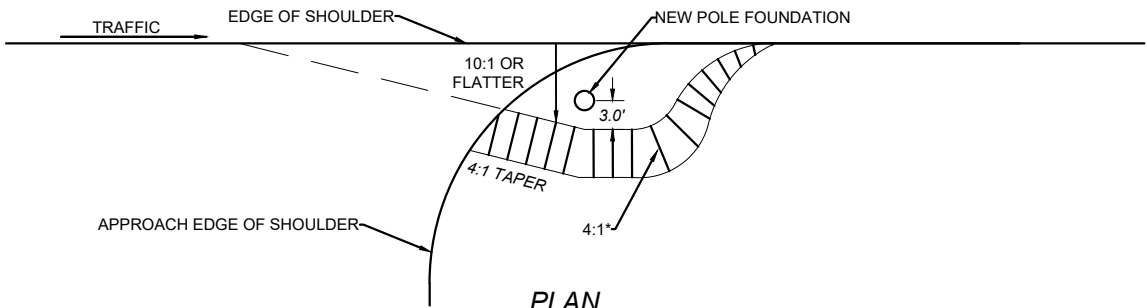


LUMINAIRE WIDENING

41 LOCATIONS - SEE ROAD AND ELECTRICAL PLAN SHEETS



PLAN



PLAN



SECTION

*3:1 SLOPE FOR PADS AT 78+08 RT, 103+57 RT, AND 108+22 RT.

SHEET NO.

7

MILLING DEPTH
TRANSITION &
LUMINAIRE WIDENING
DETAILS

PROJECT NAME
57TH STREET-GREAT FALLS

COUNTY
CASCADE

PROJECT ID
NH 102-1(10)7

UPN
10241000

DESIGNED BY
D ZIESKE
09/2025

REVIEWED BY
C. WARD
05/2026

CHECKED BY
T. JOHNSON
05/2026

10241000RDEET001.DWG



ROAD PLANS

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3

CURB AND GUTTER TAPER MILL DETAIL

CASCADE

10241000

09/2025	
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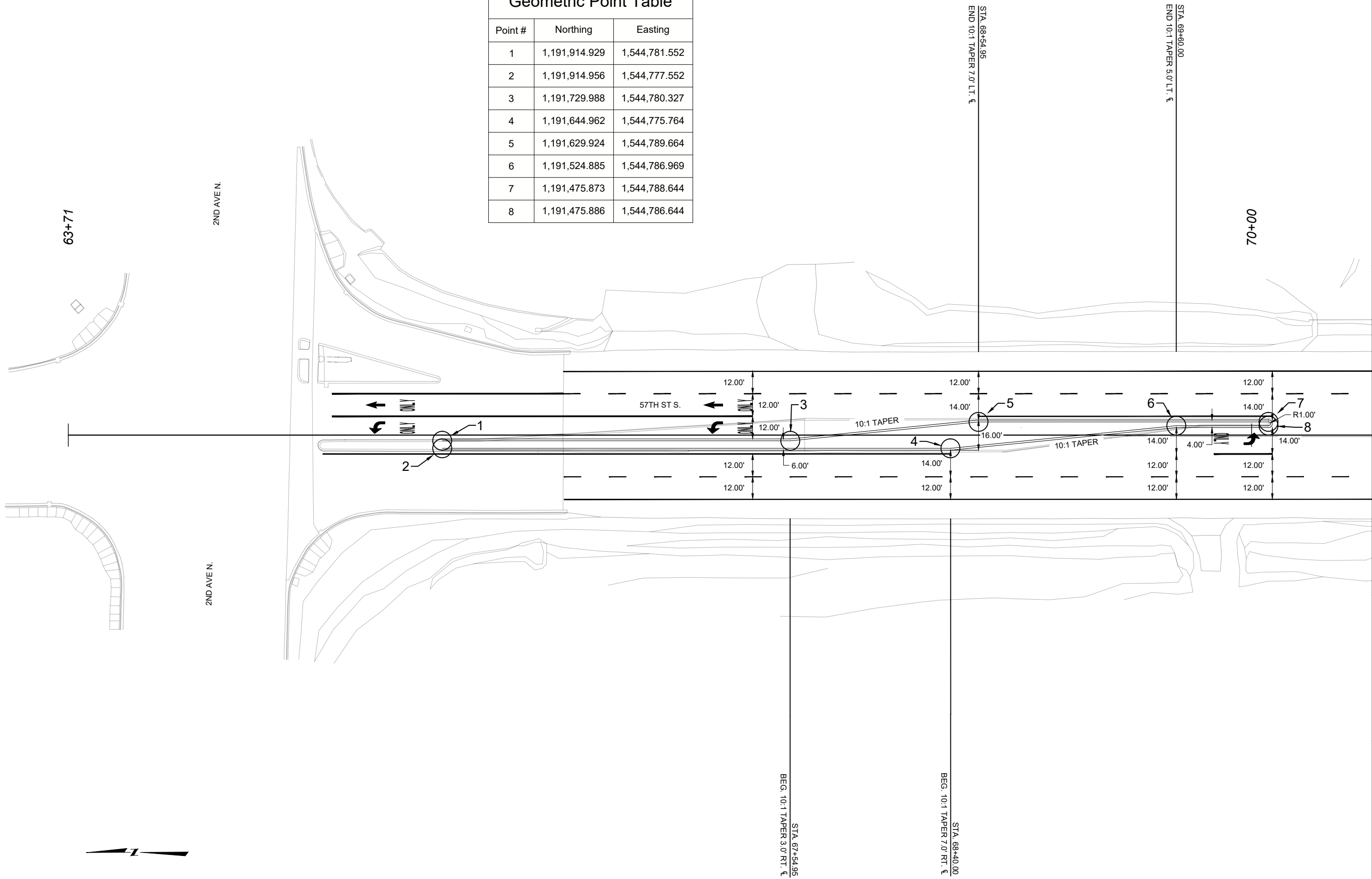
MONTANA
Department of Transportation

ROAD PLANS

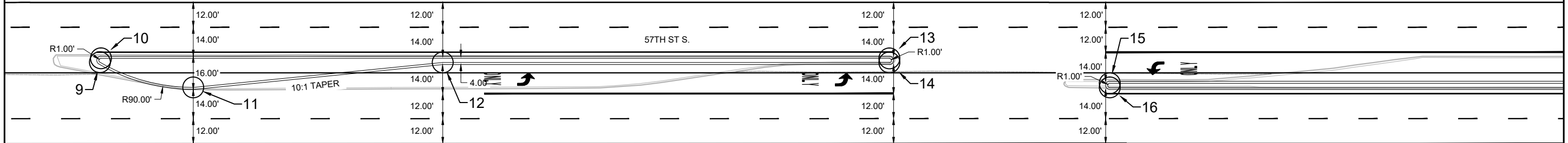
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Geometric Point Table		
Point #	Northing	Easting
1	1,191,914.929	1,544,781.552
2	1,191,914.956	1,544,777.552
3	1,191,729.988	1,544,780.327
4	1,191,644.962	1,544,775.764
5	1,191,629.924	1,544,789.664
6	1,191,524.885	1,544,786.969
7	1,191,475.873	1,544,788.644
8	1,191,475.886	1,544,786.644



Geometric Point Table		
Point #	Northing	Easting
9	1,191,375.589	1,544,786.116
10	1,191,375.072	1,544,787.976
11	1,191,330.804	1,544,773.683
12	1,191,210.727	1,544,784.888
13	1,190,995.883	1,544,785.465
14	1,190,995.896	1,544,783.465
15	1,190,889.965	1,544,772.764
16	1,190,889.978	1,544,770.764



STA. 71+54.16
BEG. 10:1 TAPER 7.0' RT. 4



SHEET NO.

0

DETAIL
GEOMETRIC DETAIL
1" = 50'
SHEET 2 OF 7

57TH STREET-GREAT FALLS

CASCADE

NH 102-1(10)7

10241000

DESIGNED BY	
L. SHOQUIST	06/26
DESIGNED BY	

06/26

REVIEWED BY

07/00

CHECKED BY

10241000GEDET001.DWG

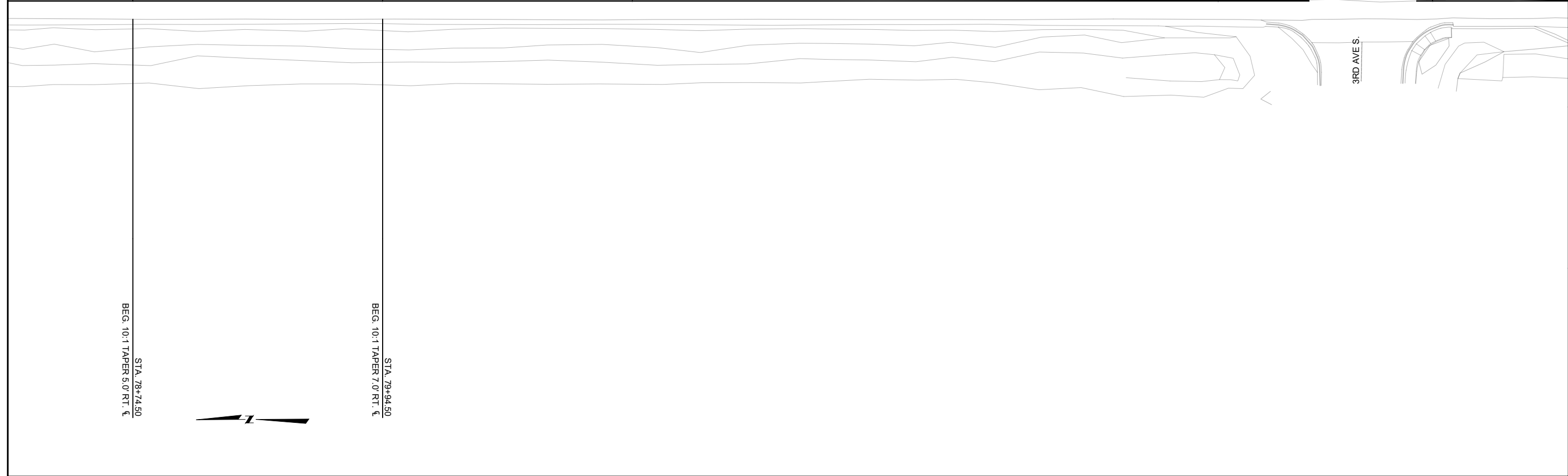
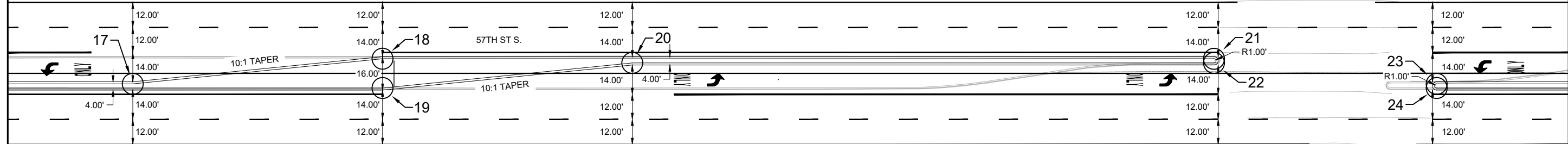


MONTANA
Department of Transportation

ROAD PLANS

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Geometric Point Table		
Point #	Northing	Easting
17	1,190,610.471	1,544,770.913
18	1,190,490.394	1,544,782.118
19	1,190,490.487	1,544,768.118
20	1,190,370.410	1,544,779.323
21	1,190,090.916	1,544,779.472
22	1,190,090.916	1,544,777.472
23	1,189,983.985	1,544,766.764
24	1,189,983.998	1,544,764.764



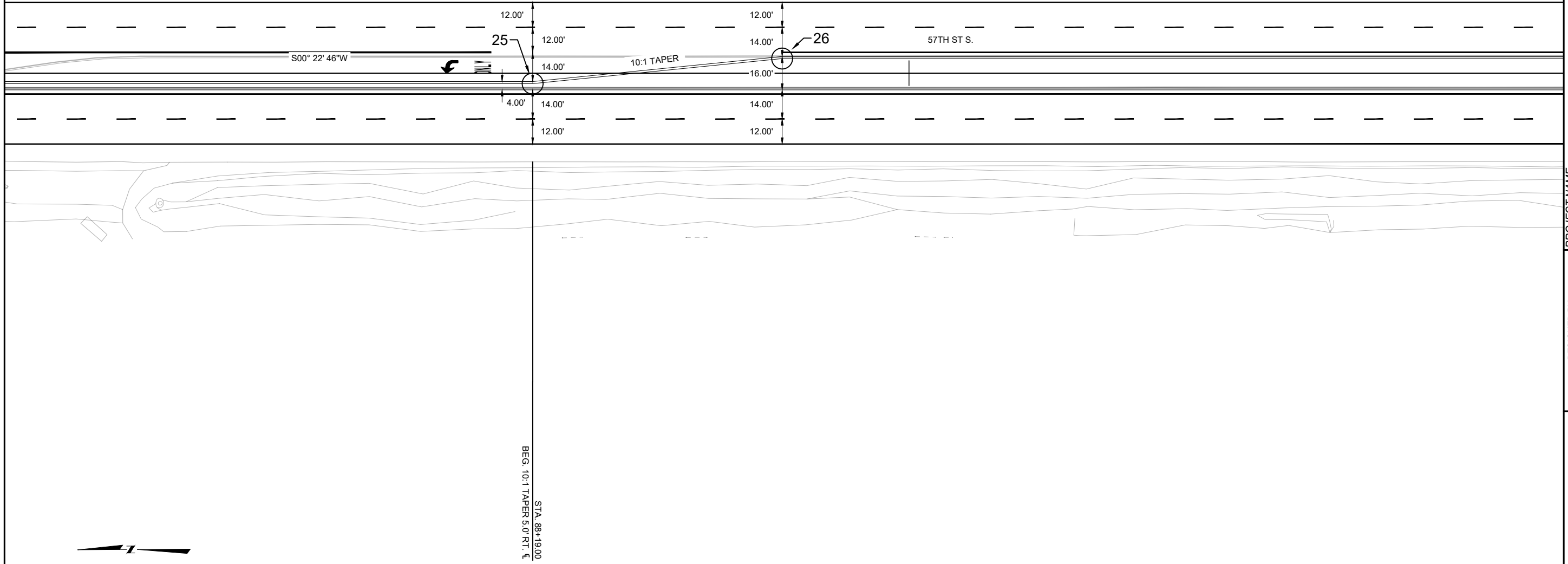
 MONTANA Department of Transportation	DESIGNED BY		PROJECT NAME		
	L. SHOQUIST		57TH STREET-GREAT FALLS		
	REVIEWED BY		COUNTY		
	T. PIERCE		CASCADE		
ROAD PLANS	CHECKED BY		PROJECT ID		
	T. JOHNSON		NH 102-1(10)7		
	05/2026		UFN		
8/17/2026 1:24 PM		10241000GEDET001.DWG		DETAIL GEOMETRIC DETAIL 1" = 50' SHEET 3 OF 7	
					SHEET NO. 11

SHEET NO.

12

DETAIL
GEOMETRIC DETAIL
1" = 50'
SHEET 4 OF 7

Geometric Point Table		
Point #	Northing	Easting
25	1,189,665.992	1,544,764.658
26	1,189,545.915	1,544,775.863



PROJECT NAME	57TH STREET-GREAT FALLS
COUNTY	

CASCADE

NH 102-1(10)7

10241000

DESIGNED BY	
L. SHOQUIST	06/26
DESIGNED BY	

REVIEWED BY	
T. PIERCE	06/26

CHECKED BY	
T. JOHNSON	05/2026

10241000GEDET001.DWG

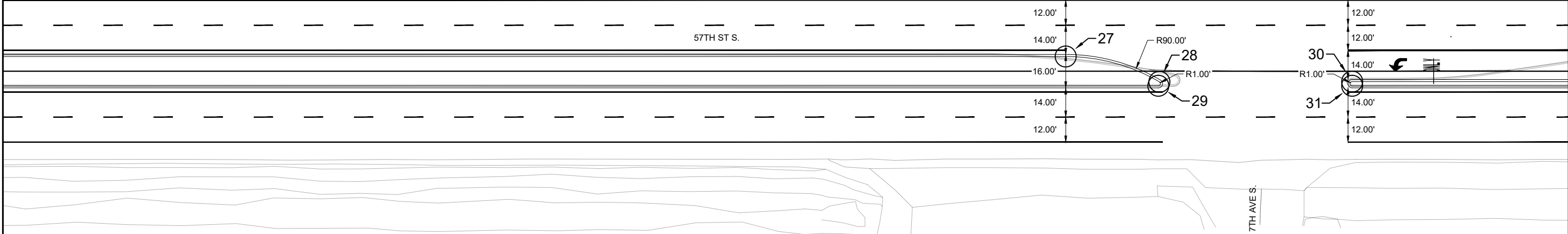


ROAD PLANS

17/2026 1:24 PM

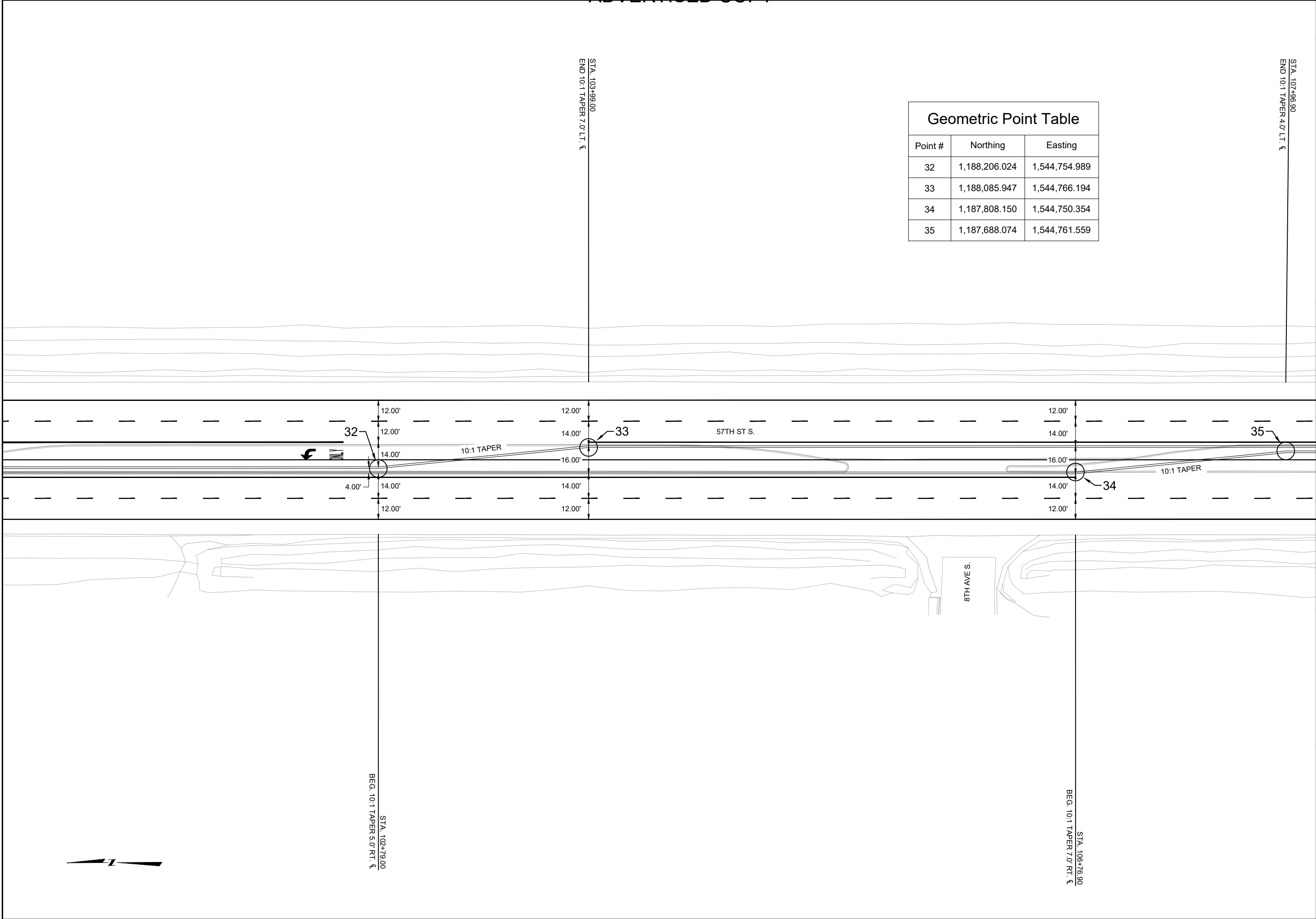
Geometric Point Table		
Point #	Northing	Easting
27	1,188,661.133	1,544,770.003
28	1,188,616.348	1,544,757.570
29	1,188,616.864	1,544,755.710
30	1,188,524.017	1,544,757.095
31	1,188,524.030	1,544,755.095

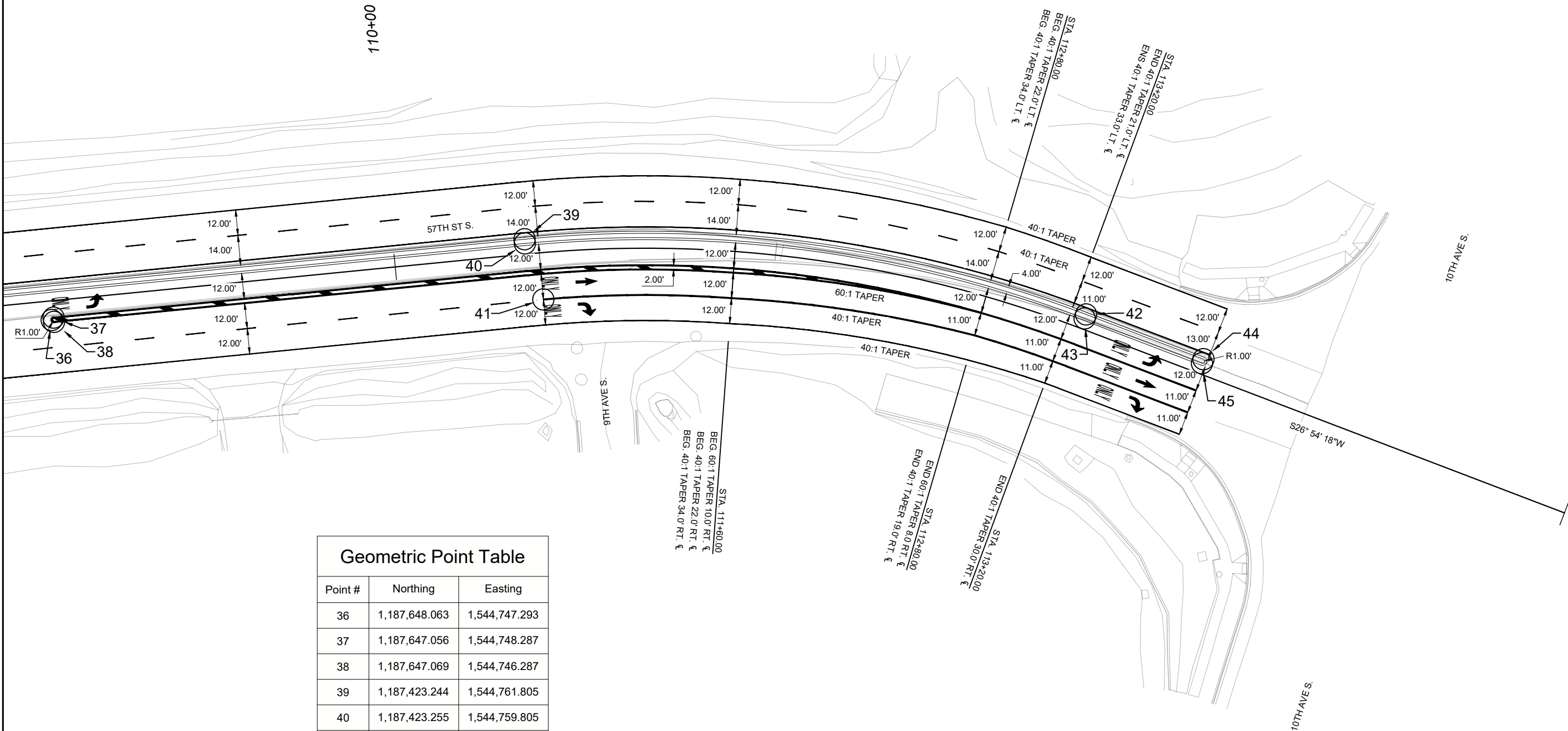
100+00



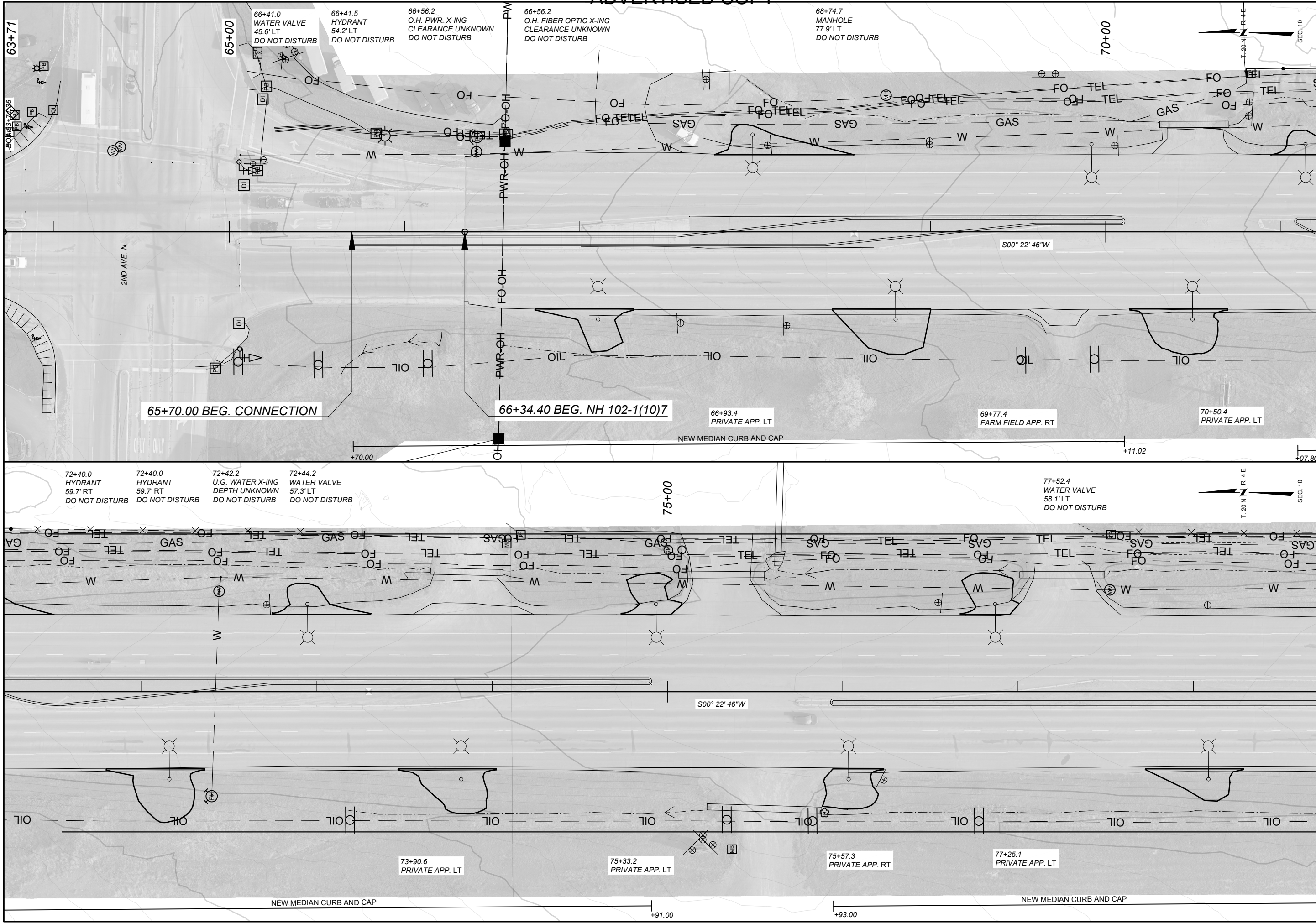
 MONTANA Department of Transportation	DESIGNED BY		PROJECT NAME	
	L. SHOQUIST	06/26	57TH STREET-GREAT FALLS	
	REVIEWED BY		COUNTY	CASCADE
	T. PIERCE	06/26	PROJECT ID	NH 102-1(10)7
CHECKED BY		05/2026	UPN	10241000
T. JOHNSON		10241000GEDET001.DWG		
ROAD PLANS		8/17/2026 1:24 PM		

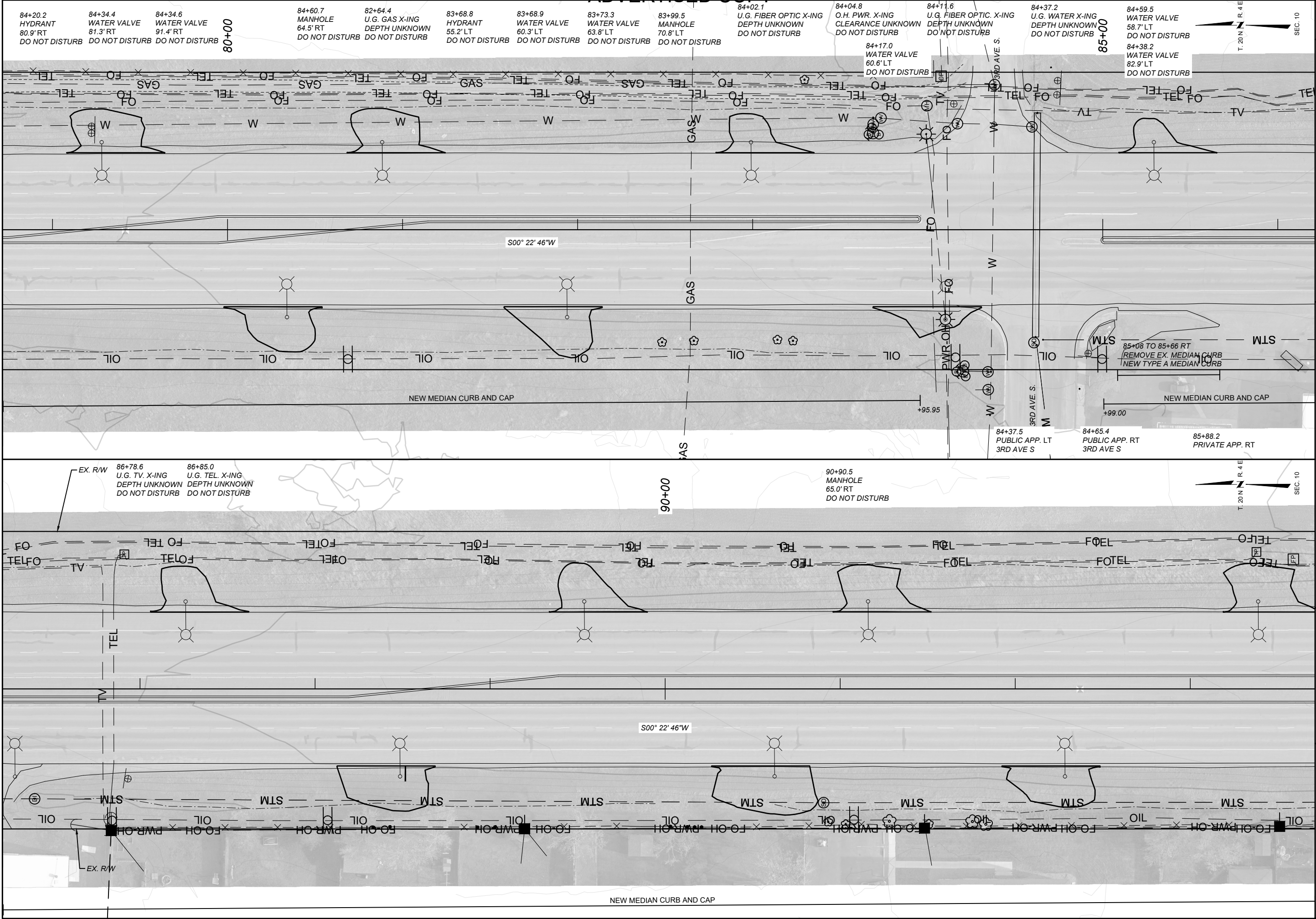
Geometric Point Table		
Point #	Northing	Easting
32	1,188,206.024	1,544,754.989
33	1,188,085.947	1,544,766.194
34	1,187,808.150	1,544,750.354
35	1,187,688.074	1,544,761.559



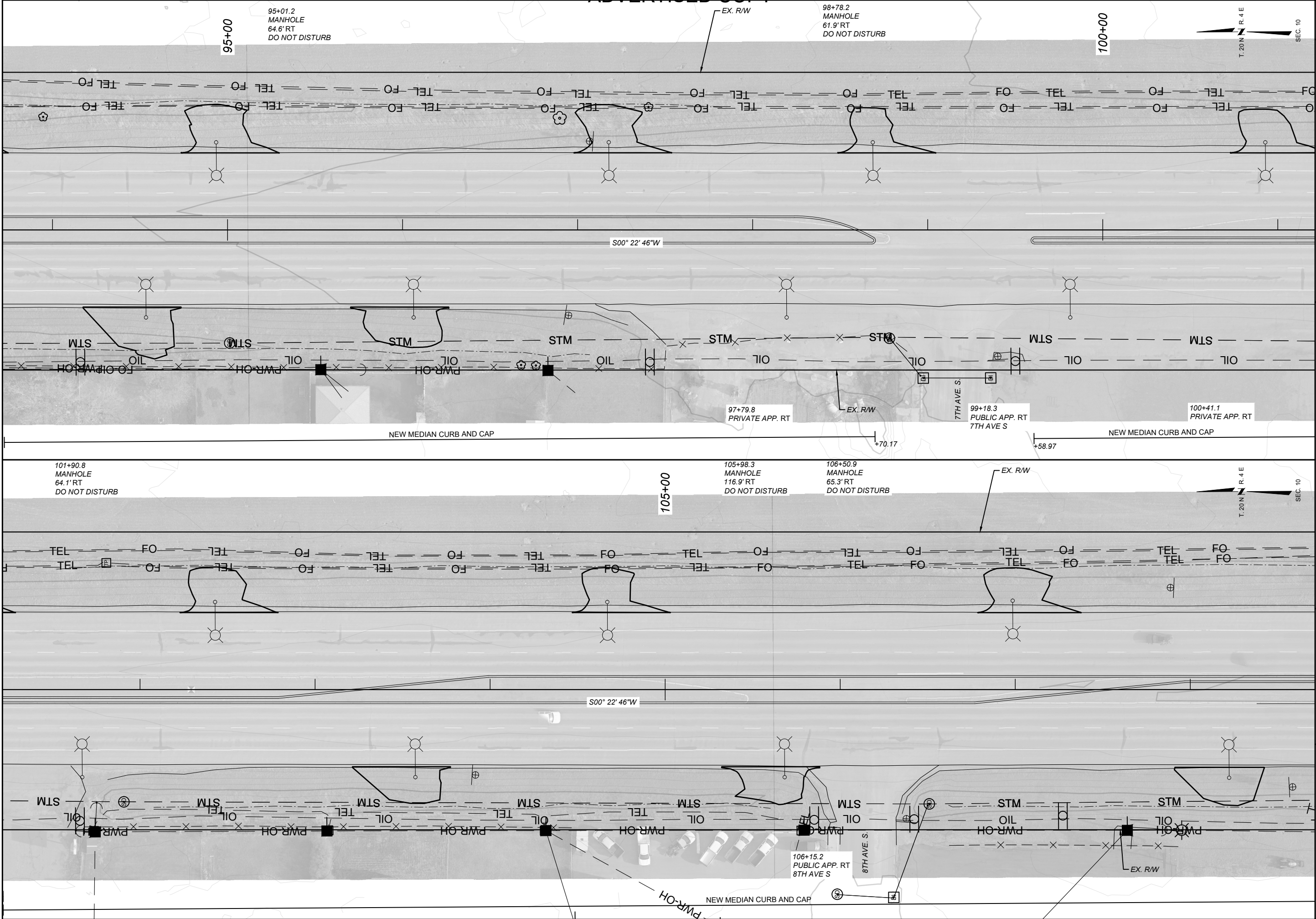


Geometric Point Table		
Point #	Northing	Easting
36	1,187,648.063	1,544,747.293
37	1,187,647.056	1,544,748.287
38	1,187,647.069	1,544,746.287
39	1,187,423.244	1,544,761.805
40	1,187,423.255	1,544,759.805
41	1,187,417.395	1,544,732.732
42	1,187,164.627	1,544,699.037
43	1,187,165.533	1,544,697.254
44	1,187,112.008	1,544,672.336
45	1,187,112.913	1,544,670.552

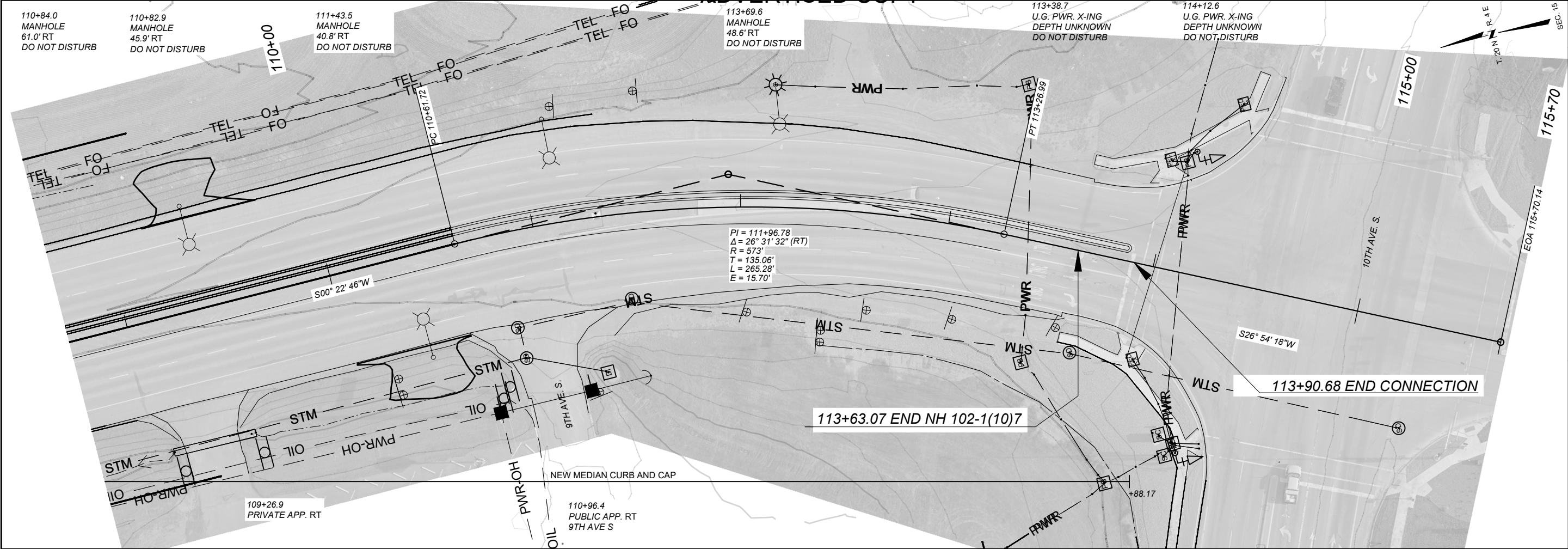




SHEET NO.	
17	
PLAN/PLAN	
57TH STREET-GREAT FALLS	
COUNTY	
CASCADE	
PROJECT ID	
NH 102-1(10)7	
UPN	
10241000	
DESIGNED BY	09/2025
D ZIESKE	
REVIEWED BY	05/2026
C. WARD	
CHECKED BY	05/2026
T. JOHNSON	
10241000RDPLN001.DWG	
MONTANA Department of Transportation	
ROAD PLANS	
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SHEET NO.		18	
PLAN/PLAN		57TH STREET-GREAT FALLS	
ROAD PLANS		CASCAD	
MONTANA Department of Transportation		PROJECT ID	
8/17/2026 1:26 PM		UPN	
DESIGNED BY		COUNTY	
D ZIESKE		NH 102-1(10)7	
REVIEWED BY		10241000RDPLN001.DWG	
C. WARD		T. JOHNSON	
CHECKED BY		05/2026	
T. JOHNSON		05/2026	



SHEET NO.		19	
PLAN/PLAN		10241000	
 ROAD PLANS	PROJECT NAME	57TH STREET-GREAT FALLS	
	COUNTY	CASCADE	
	PROJECT ID	NH 102-1(10)7	
	UPN	10241000RDLN001.DWG	
DESIGNED BY	09/2025	REVIEWED BY	05/2026
D ZIESKE		C. WARD	
CHECKED BY	05/2026	8/17/2026 1:26 PM	
T. JOHNSON			

NOTES AND ABBREVIATIONS:

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

SEE LOCATION AND SPECIFICATION SHEETS FOR PORTIONS OF PROJECT NOT INCLUDED WITHIN SIGNING PLAN SHEETS.

SIGN POSTS SYMBOLS SHOWN ARE FOR REFERENCE ONLY TO SHOW EXISTING SIGNS THAT REQUIRE NO ACTION.

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

ADOPT A HIGHWAY: IF SIGNS N7-1/N7-1P EXIST, CONTRACTOR WILL CONFIRM THAT THE GROUP NAME ON THE SIGN(S) EXISTING AT THE TIME OF CONSTRUCTION CORRESPONDS TO THE GROUP NAME ON THE SIGN(S) SHOWN IN PLANS. IF NAME IS DIFFERENT, PROJECT MANAGER WILL CONTACT TRAFFIC & SAFETY BUREAU SIGNING SECTION WITH THE CORRECT NAME AND A NEW SIGN DESIGN WILL BE PROVIDED.

BBR = BACKBRACING REQUIRED:

- FOR WOOD POLE SEE DET. DWG 619-22
- FOR STEEL POST 2" X 2" X 1/4" REQUIRED. SEE DET. DWG 619-16
- FOR STRUCTURAL STEEL POST 2 3/4" X 2 3/8" EXTRUDED "T" SECTION BACKBRACE REQUIRED. SEE DET. DWG 619-19
- FOR CANTILEVER POST, SEE DET. DWG 619-18
- FOR GUIDE SIGN PANELS, USE EXTRUDED "T" SECTION BACKBRACE. SEE DET. DWG 619-04

USE HARDWARE MEETING REQUIREMENTS OF SECTION 704

RSFO = REPLACE SIGN FACE ONLY

FY = FLUORESCENT YELLOW SHEETING REQUIRED

FYG = FLUORESCENT YELLOW-GREEN SHEETING REQUIRED

1 AIR = 1 OR 2 ANGLE IRONS REQUIRED
2 AIR = 2 1/2" x 2 1/2" x 3/8" x 6'-4" (37 lbs.EACH) IF Y POST DOES NOT REACH TOP 6" OF PANEL, 2 ANGLE IRONS REQUIRED.

MBB = MOUNT BACK TO BACK

CAM = CHEVRON ANGLE MOUNT (SEE DET. DWG 619-24)

CBR = CONCRETE BARRIER RAIL

✕ = STANDARD BREAKAWAY DEVICE:

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

▲ = SINGLE SQUARE TUBE REQUIRED. MOUNTED IN HEAVY DUTY STUB.

★ = TELESKOPEDED SQUARE TUBES (2-1/4" & 2-1/2") WITH SLIP BASE BREAKAWAY REQUIRED. MOUNTED IN HEAVY DUTY STUB.

■ = FRANGIBLE SIGN POST. BREAKAWAY DEVICE REQUIRED.

BGR = BEHIND GUARDRAIL

SUMMARY SIGNING & DELINEATION QUANTITIES		
MATERIAL	TOTAL	UNIT
SIGNS-ALUM REFL SHEET XI	375.5	SQFT
SIGNS-ALUM SHEET INCR XI	225.7	SQFT
REMOVE SIGN	23	EACH
REMOVE SIGN-GUIDE	2	EACH
POSTS-STEEL STRUCTURAL SIGN	1,203	LB
POSTS-TUBULAR STEEL-SQ-PERF	583	LB
FRANG SIGN POST BKWY-S4 X 7.7 (S100X11)	2	EACH
FRANG SIGN POST BKWY-S5 X 10 (S130X15)	2	EACH
FRANG SIGN POST BKWY-W8 X 24(W200X34)	2	EACH
SQ TUBLR SLIP BASE BKWY-3 IN (76MM)	5	EACH
DELINEATOR TYPE 1	32	EACH
DELINEATOR-FLEX SURF MTD YLW	13	EACH

DELINEATION SPECIFICATIONS		
SYMBOL	DESIGN	TOTAL
	A	22
	D	10
	Yellow FLEX SURF MTD	13

PROJECT NAME
57TH STREET-GREAT FALLS

COUNTY
CASCADE

PROJECT ID
NH 102-1(10)7

UPN
10241000

DESIGNED BY
H HOELSTAD

REVIEWED BY

CHECKED BY
N STYREN

05/2026

05/2026

05/2026

MONTANA
Department of Transportation

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SIGN LOCATION			PANEL SPECIFICATIONS					SIGN ASSEMBLY SPECIFICATIONS										SIGN ASSEMBLY QUANTITIES												ADDITIONAL INFORMATION		SHEET NO.		
STATION / R.P.	LFT / MDN / RGT / OH	ACTION	SIGN NO. (MUTCD / MT)	PANEL SIZE (INCHES)			FY OR FYG	BACKBRACING REQ'D / 1 OR 2 ANGLE IRONS REQ'D / MOUNT BACK TO BACK / CHEVRON ANGLE MOUNT	FEET	TYPE OF SUPPORT	SUPPORT SPACING	FEET				CANTILEVER	BREAKAWAY TYPE	BEHIND GUARDRAIL	PANEL (SQ. FT.)		WOOD POLE (LNR. FT.)		STEEL POST (LBS.)				# OF BREAKAWAYS	REMOVE		RESET		SIGN IMAGE	REMARKS	
												MOUNTING HEIGHT	FOUNDATION DEPTH	SUPPORT LENGTH (ESTIMATED)					SHEET ALUMINUM	SHEET ALUMINUM INCREMENT	4" TOP DIA.	5" TOP DIA.	ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST		SIGN	GUIDE	SIGN	GUIDE			
				X	Y	Z																												
63+84.00	OH	RSFO	D3-1 (2AveNOH)	66	X	24				SIGNAL MAST ARM		OH							11.0														2nd Ave N	
63+96.00	OH	RSFO	D3-1 (57OH)	66	X	24				SIGNAL MAST ARM		OH							11.0														57th St N	
65+00.00	OH	RSFO	D3-1 (57OH)	66	X	24				SIGNAL MAST ARM		OH							11.0														57th St N	
65+05.50	OH	RSFO	D3-1 (2AveNOH)	66	X	24				SIGNAL MAST ARM		OH							11.0														2nd Ave N	
65+20.00	M	NEW	W8-2	36		36		2.0		2.5" Tubular Stl-Square		7.0	3.0	11.3		▲			9.0					59										
66+29.50	OH	RSFO	R3-5R	30	X	36				OH MAST ARM		OH							7.5														Install 1 Wind Dampener - See Detail S8	
		RSFO	R3-5a	30	X	36													7.5															
		RSFO	R3-5L	30	X	36													7.5															
67+10.50	R	REPLACE	N7-1	36	X	48		10.0		NEW LUMINAIRE		5.1							12.0								1							
67+99.00	L	REPLACE	M4-2P (WHT)	24	X	12		10.0		NEW LUMINAIRE		5.0							2.0									1						
			M1-4 (87)	24	X	24													4.0															
			M6-3P (WHT)	21	X	15													2.2															

PROJECT NAME57TH STREET-GREAT FALLS

COUNTYCASCADE

PROJECT IDNH 102-1(10)7

UPN10241000

DESIGNED BYH HOELSTAD

REVIEWED BY

CHECKED BYN STYREN

05/2026

10241000SISUM001.DWG

MONTANA
Department of Transportation

10241000SIPLN001

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DESIGNED BY

H HOELSTAD

REVIEWED BY

CHECKED BY

N STYREN

05/2026

05/2026

05/2026

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PROJECT NAME57TH STREET-GREAT FALLS

COUNTYCASCADE

PROJECT IDNH 102-1(10)7

UPN10241000

SIGN LOCATION			PANEL SPECIFICATIONS					SIGN ASSEMBLY SPECIFICATIONS										SIGN ASSEMBLY QUANTITIES													ADDITIONAL INFORMATION		SHEET NO.	
STATION / R.P.	LFT / MDN / RGT / OH	ACTION	SIGN NO. (MUTCD / MT)	PANEL SIZE (INCHES)			FY OR FYG	BACKBRACING REQ'D / 1 OR 2 ANGLE IRONS REQ'D MOUNT BACK TO BACK / CHEVRON ANGLE MOUNT	FEET (SHOULDER TO EDGE OF SIGN)	TYPE OF SUPPORT	SUPPORT SPACING	MOUNTING HEIGHT	FOUNDATION DEPTH	FEET			CANTILEVER	BREAKAWAY TYPE	BEHIND GUARDRAIL	PANEL (SQ. FT.)		WOOD POLE (LNR. FT.)		STEEL POST (LBS.)				# OF BREAKAWAYS	REMOVE		RESET		SIGN IMAGE	REMARKS
				W	X	H								SUPPORT LENGTH (ESTIMATED)	SHEET ALUMINUM	SHEET ALUMINUM INCREMENT				4" TOP DIA.	5" TOP DIA.	ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST	SIGN	GUIDE		SIGN	GUIDE				
																															X	Y		
68+80.00	R	REPLACE	M3-3P (WHT)	24	X	12		10.0	NEW LUMINAIRE		5.0								2.0									1						
			M4-2P (WHT)	24	X	24													4.0															
			M1-4 (87)	21	X	15													2.2															
69+00.00	L	USE AS IS	CITY OF GREAT FALLS																															
69+92.00	L	REPLACE	R3-7R	36	X	36		10.0	NEW LUMINAIRE		5.0								9.0									1						
70+82.50	L	USE AS IS	BY OTHERS USAF																															
72+72.00	L	REMOVE SIGN	W3-3																									1						
72+95.00	L	NEW	R3-8b	48	X	30		10.0	NEW LUMINAIRE		5.0								10.0															
76+04.00	R	REPLACE	R2-1 (45)	30	X	36		10.0	NEW LUMINAIRE		5.0								7.5									1						
76+87.00	L	REPLACE	R2-1 (45)	30	X	36		10.0	NEW LUMINAIRE		5.0								7.5									1						
78+10.00	L	REMOVE SIGN	MTVM_EX																									1						

SHEET NO.
S3

SIGN LOCATIONS & SPECIFICATIONS

PROJECT NAME
57TH STREET-GREAT FALLS

COUNTY
CASCADE

PROJECT ID
NH 102-1(10)7

UPN
10241000

DESIGNED BY
H HOELSTAD

REVIEWED BY

CHECKED BY

N STYREN

05/2026

05/2026

05/2026

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MONTANA
Department of Transportation

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SIGN LOCATION			PANEL SPECIFICATIONS					SIGN ASSEMBLY SPECIFICATIONS										SIGN ASSEMBLY QUANTITIES														ADDITIONAL INFORMATION		SHEET NO.				
STATION / R.P.	LFT / MDN / RGT / OH	ACTION	SIGN NO. (MUTCD / MT)	PANEL SIZE (INCHES)			FY OR FYG	BACKBRACING REQ'D / 1 OR 2 ANGLE IRONS REQ'D / MOUNT BACK TO BACK / CHEVRON ANGLE MOUNT	FEET CLEARANCE / OFFSET (SHOULDER TO EDGE OF SIGN)	TYPE OF SUPPORT	SUPPORT SPACING	FEET				CANTILEVER	BREAKAWAY TYPE	BEHIND GUARDRAIL	PANEL (SQ. FT.)		WOOD POLE (LNR. FT.)		STEEL POST (LBS.)				# OF BREAKAWAYS	REMOVE		RESET		SIGN IMAGE	REMARKS	SIGN LOCATIONS & SPECIFICATIONS				
				W	X	H						MOUNTING HEIGHT	FOUNDATION DEPTH	SUPPORT LENGTH (ESTIMATED)					SHEET ALUMINUM	SHEET ALUMINUM INCREMENT	4" TOP DIA.	5" TOP DIA.	ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST		SIGN	GUIDE	SIGN	GUIDE							
														X	Y																							Z
79+23.00	L	REMOVE GUIDE	RD1-2(ICSP)_EX																								1											
84+15.00	L	REPLACE	D3-1 (3rd)	48	X	12			2.25" 2.5" Tubular Stl-Square				12.3			★			8.0							73		1	1									
			D3-1 (57th)	48	X	12												8.0																				
			R1-1	36	X	36					5.0							7.5																				
84+91.75	R	REPLACE	D3-1 (3rd)	48	X	12			2.25" 2.5" Tubular Stl-Square				12.3			★			8.0							73		1	1									
			D3-1 (57th)	48	X	12												8.0																				
			R1-1	36	X	36					5.0							7.5																				
86+29.00	R	REPLACE	R2-1 (45)	30	X	36		10.0	NEW LUMINAIRE									7.5									1											
96+06.50	R	REPLACE	M3-3P (WHT)	24	X	12		10.0	NEW LUMINAIRE		5.0							2.0									1											
			M4-2P (WHT)	24	X	24												4.0																				
			M1-4 (87)	21	X	15												2.2																				
97+18.00	L	REPLACE	M3-1P (WHT)	24	X	12		10.0	NEW LUMINAIRE		5.0							2.0									1											
			M4-2P (WHT)	24	X	24												4.0																				
			M1-4 (87)	21	X	15												2.2																				



DESIGNED BY

H HOELSTAD

REVIEWED BY

CHECKED BY

N STYREN

05/2026

05/2026

05/2026

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PROJECT NAME

57TH STREET-GREAT FALLS

COUNTY

CASCADE

PROJECT ID

NH 102-1(10)7

UPN

10241000

SIGN LOCATION			PANEL SPECIFICATIONS				SIGN ASSEMBLY SPECIFICATIONS										SIGN ASSEMBLY QUANTITIES												ADDITIONAL INFORMATION		SHEET NO.							
STATION / R.P.	LFT / MDN / RGT / OH	ACTION	SIGN NO. (MUTCD / MT)	PANEL SIZE (INCHES)			FY OR FYG	BACKBRACING REQ'D / 1 OR 2 ANGLE IRONS REQ'D	MOUNT BACK TO BACK / CHEVRON ANGLE MOUNT	FEET CLEARANCE / OFFSET (SHOULDER TO EDGE OF SIGN)	TYPE OF SUPPORT	SUPPORT SPACING	FEET				CANTILEVER	BREAKAWAY TYPE	BEHIND GUARDRAIL	PANEL (SQ. FT.)		WOOD POLE (LNR. FT.)			STEEL POST (LBS.)				# OF BREAKAWAYS	REMOVE		RESET		SIGN IMAGE	REMARKS			
				W	X	H							SUPPORT SPACING	MOUNTING HEIGHT	FOUNDATION DEPTH	SUPPORT LENGTH (ESTIMATED)				SHEET ALUMINUM	SHEET ALUMINUM INCREMENT	4" TOP DIA.	5" TOP DIA.	6" TOP DIA.	ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST		# OF BREAKAWAYS	SIGN	GUIDE	SIGN			GUIDE		
																X																					Y	Z
99+40.00	R	REPLACE	D3-1 (7th)	48	X	12			MBB	10.0	2.25" 2.5" Tubular Stl-Square		5.0	3.0	12.3			★		8.0						73			1	1								
			D3-1 (57th)	48	X	12			MBB										8.0																			
			R1-1	36	X	36													7.5																			
103+60.00	L	NEW	RD1-2(opt 3)	180	X	60				10.0	W8x24 Structural Steel	9.0	7.0	7.0	14.1	15.6		■		75.0						718		2										
103+92.00	R	REMOVE SIGN	R3-7R																										1									
104+45.00	R	NEW	D1-1d (87S)	84	X	72				10.0	S4x7.7 Structural Steel	3.0	7.0	3.5	13.3	13.8		■		42.0						209		2										
106+38.00	R	REPLACE	D3-1 (8th)	48	X	12			MBB	10.0	2.25" 2.5" Tubular Stl-Square		5.0	3.0	12.3			★		8.0						73			1	1								
			D3-1 (57th)	48	X	12			MBB										8.0																			
			R1-1	36	X	36													7.5																			
106+10.50	M	NEW	R3-5R	30	X	36				5.0	2.5" Tubular Stl-Square		5.0	3.0	9.5			▲		7.5						53												
106+99.00	L	REPLACE	R2-1	30	X	36					NEW LUMINAIRE		5.0						7.5										1									

PROJECT NAME

57TH STREET-GREAT FALLS

COUNTY

CASCADE

PROJECT ID

NH 102-1(10)7

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CHECKED BY

N STYREN

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05/2026

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MONTANA

Department of Transportation

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SIGN LOCATION			PANEL SPECIFICATIONS					SIGN ASSEMBLY SPECIFICATIONS										SIGN ASSEMBLY QUANTITIES												ADDITIONAL INFORMATION		SHEET NO.			
STATION / R.P.	LFT / MDN / RGT / OH	ACTION	SIGN NO. (MUTCD / MT)	PANEL SIZE (INCHES)			FY OR FYG	BACKBRACING REQ'D / 1 OR 2 ANGLE IRONS REQ'D / MOUNT BACK TO BACK / CHEVRON ANGLE MOUNT	FEET (SHOULDER TO EDGE OF SIGN)	TYPE OF SUPPORT	SUPPORT SPACING	FEET				CANTILEVER	BREAKAWAY TYPE	BEHIND GUARDRAIL	PANEL (SQ. FT.)		WOOD POLE (LNR. FT.)		STEEL POST (LBS.)				# OF BREAKAWAYS	REMOVE		RESET		SIGN IMAGE	REMARKS		
				W	X	H						SUPPORT LENGTH (ESTIMATED)	SHEET ALUMINUM INCREMENT	4" TOP DIA.	5" TOP DIA.				ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST	SIGN	GUIDE	SIGN	GUIDE									
																												X	Y	Z					
108+59.00	R	REPLACE	M2-1 (WHT)	21	X	15		BBR	10.0	NEW LUMINAIRE		5.0						2.2									1								
			M1-4 (87)	24	X	24												4.0																	
			M1-4 (89)	24	X	24												4.0																	
			M1-5 (3)	24	X	24												4.0																	
			M1-5 (200)	30	X	24												5.0																	
110+21.00	R	RSFO	D1-1 (10SLWSTN)	172	X	42					5.0							50.2													REPLACES 				
111+20.00	R	REPLACE	D3-1 (9th)	48	X	12		MBB		2.25" 2.5" Tubular Stl-Square	5.0	3.0	12.3		★			8.0								1	1								
			D3-1 (57th)	48	X	12		MBB										8.0																	
			R1-1	36	X	36												7.5																	
111+12.50	L	REPLACE	N7-1	36	X	48			10.0	NEW LUMINAIRE		5.1						12.0								1									
112+03.00	R	RSFO	R3-7R	30	X	30			10.0			5.0						6.3																	
SIGN LOCATIONS & SPECIFICATIONS																														PROJECT NAME 57TH STREET-GREAT FALLS		COUNTY COUNTY	PROJECT ID CASCADE	UPN NH 102-1(10)7	10241000
DESIGNED BY H HOELSTAD																														REVIEWED BY ---		CHECKED BY N STYREN		10241000SIPLN001.DWG	
MONTANA Department of Transportation																														10241000SIPLN001		8/17/2026 4:12 PM			

SIGN LOCATION			PANEL SPECIFICATIONS					SIGN ASSEMBLY SPECIFICATIONS										SIGN ASSEMBLY QUANTITIES												ADDITIONAL INFORMATION					
STATION / R.P.	LFT / MDN / RGT / OH	ACTION	SIGN NO. (MUTCD / MT)	PANEL SIZE (INCHES)			FY OR FYG	BACKBRACING REQ'D / 1 OR 2 ANGLE IRONS REQ'D	MOUNT BACK TO BACK / CHEVRON ANGLE MOUNT	FEET CLEARANCE / OFFSET (SHOULDER TO EDGE OF SIGN)	TYPE OF SUPPORT	FEET				CANTILEVER	BREAKAWAY TYPE	BEHIND GUARDRAIL	PANEL (SQ. FT.)		WOOD POLE (LNR. FT.)		STEEL POST (LBS.)				# OF BREAKAWAYS	REMOVE		RESET		SIGN IMAGE	REMARKS		
				W	X	H						SUPPORT SPACING	MOUNTING HEIGHT	FOUNDATION DEPTH	SUPPORT LENGTH (ESTIMATED)				SHEET ALUMINUM	SHEET ALUMINUM INCREMENT	4" TOP DIA.	5" TOP DIA.	ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST		SIGN	GUIDE	SIGN	GUIDE				
															X																			Y	Z
112+16.00	L	REPLACE	M1-4 (87)	24	X	12				10.0	NEW LUMINAIRE		5.0						2.0									1							
		M1-4 (87)	M4-2P (WHT)	24	X	24												4.0																	
			M1-4 (87)	21	X	15												2.2																	
112+42.50	R	REMOVE GUIDE	D1-1 (Lwstn)																									1							
112+65.00	R	RSFO	M1-4 (87)	24	X	24							5.0					4.0																	
			M1-4 (89)	24	X	24												4.0																	
			M6-4P (WHT)	21	X	15												2.2																	
			M1-5 (3)	24	X	24												4.0																	
			M1-5 (200)	30	X	24												5.0																	
113+10.00	R	REPLACE	R3-8b	48	X	30				10.0	2.5" Tubular Stl-Square		5.0		9.5			▲		10.0				53				1							
113+60.50	R	REPLACE	R3-7R	30	X	30				10.0	2.5" Tubular Stl-Square		5.0		9.3			▲		6.3				53				1							
114+21.72	L	NEW	D1-1 (Hvr)	108	X	78				10.0	S5x10 Structural Steel	5.4	7.0	3.5	13.7	13.8		■		58.5				276		2									
										PROJECT TOTALS										375.5	225.7				583	1203		11	23	2					

SHEET NO.
S7

SIGN LOCATIONS & SPECIFICATIONS

PROJECT NAME
57TH STREET-GREAT FALLS

COUNTY
CASCADE

PROJECT ID
NH 102-1(10)7

UPN
10241000

DESIGNED BY
H HOELSTAD
05/2026

REVIEWED BY
05/2026

CHECKED BY
N STYREN
05/2026

10241000SUN001.DWG

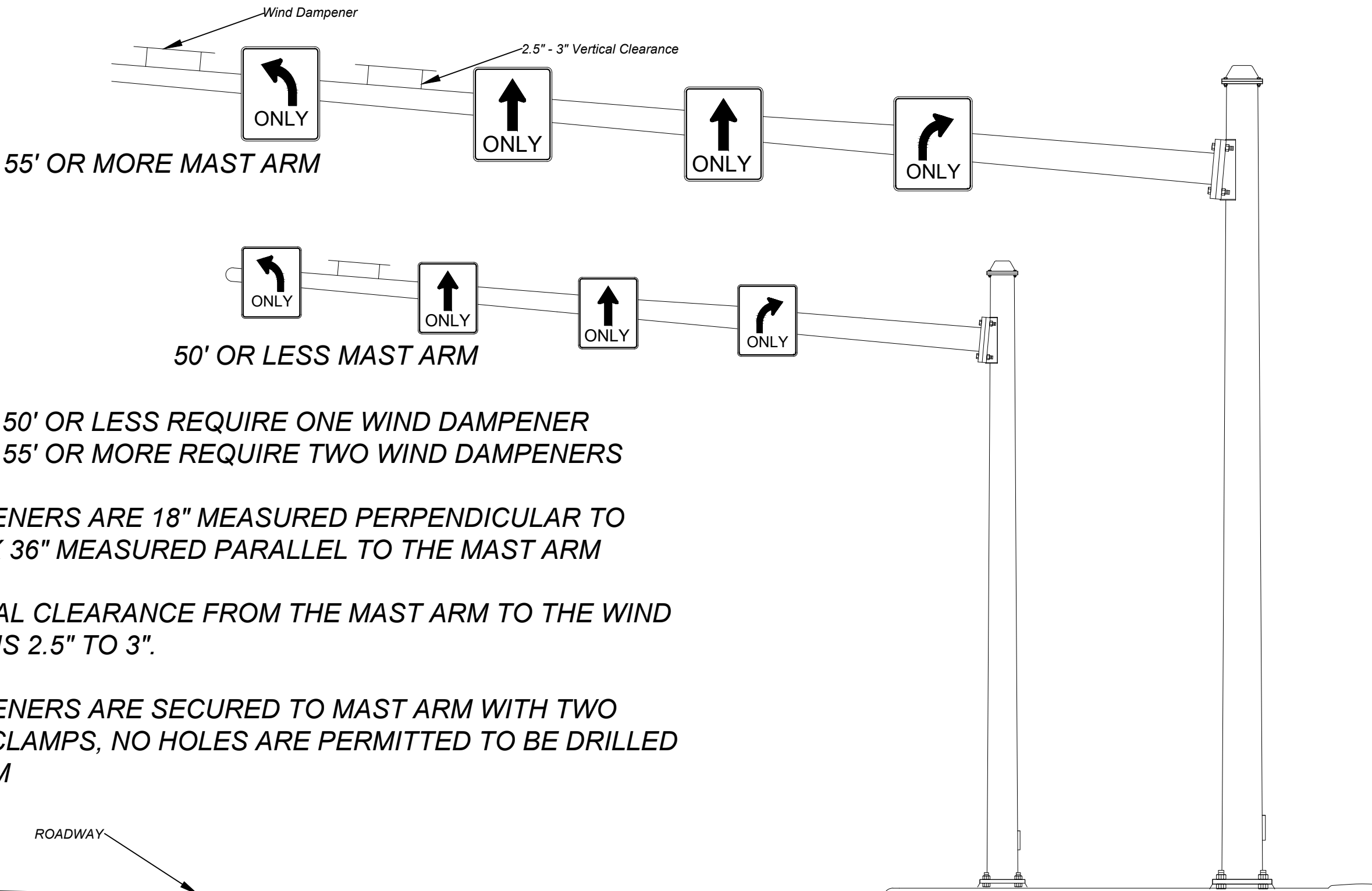
MONTANA
Department of Transportation

10241000SIPLN001

8/17/2026 4:12 PM

MAST ARM WIND DAMPENER DETAIL

NO SCALE



NOTES:

MAST ARMS 50' OR LESS REQUIRE ONE WIND DAMPENER
MAST ARMS 55' OR MORE REQUIRE TWO WIND DAMPENERS

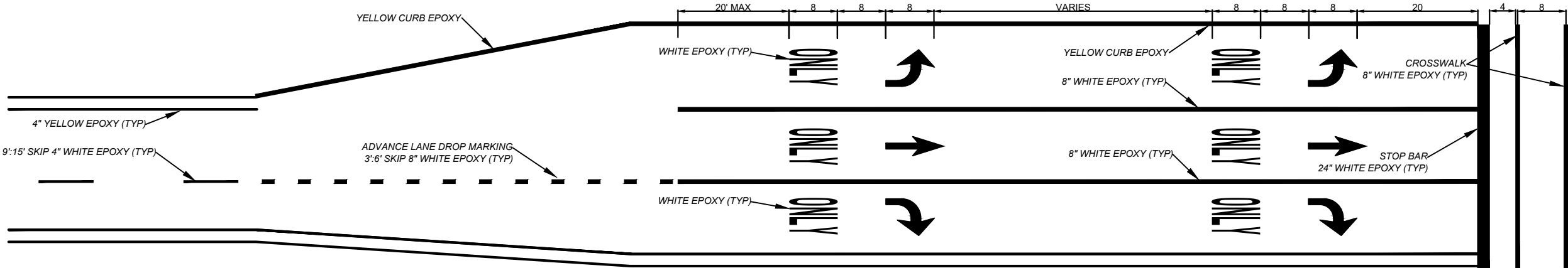
WIND DAMPENERS ARE 18" MEASURED PERPENDICULAR TO
MAST ARM X 36" MEASURED PARALLEL TO THE MAST ARM

THE VERTICAL CLEARANCE FROM THE MAST ARM TO THE WIND
DAMPENER IS 2.5" TO 3".

WIND DAMPENERS ARE SECURED TO MAST ARM WITH TWO
ALUMINUM CLAMPS, NO HOLES ARE PERMITTED TO BE DRILLED
IN MAST ARM

SHEET NO.		S8		DETAIL DRAWING	
 MONTANA Department of Transportation 10241000SIPLN001		PROJECT NAME		57TH STREET-GREAT FALLS	
		DESIGNED BY		H HOELSTAD	
		REVIEWED BY			
		PROJECT ID		CASCADE	
		UPN		NH 102-1(10)7	
8/17/2026 4:12 PM		N STYREN		10241000	
		05/2026		10241000SIPLN001.DWG	

PAVEMENT MARKINGS, TURN LANE
WORDS & SYMBOLS DETAIL



MONTANA Department of Transportation 10241000SIPLN001 8/17/2026 4:12 PM				DESIGNED BY		PROJECT NAME	
				H HOELSTAD 05/2026		57TH STREET-GREAT FALLS	
				REVIEWED BY		COUNTY	
				-----		CASCADE	
				CHECKED BY		PROJECT ID	
N STYREN 05/2026		NH 102-1(10)7					
10241000SISUN001.DWG		UPN					
		10241000					
				SHEET NO.			
				S9			
				DETAIL DRAWING			

PLAN SHEET

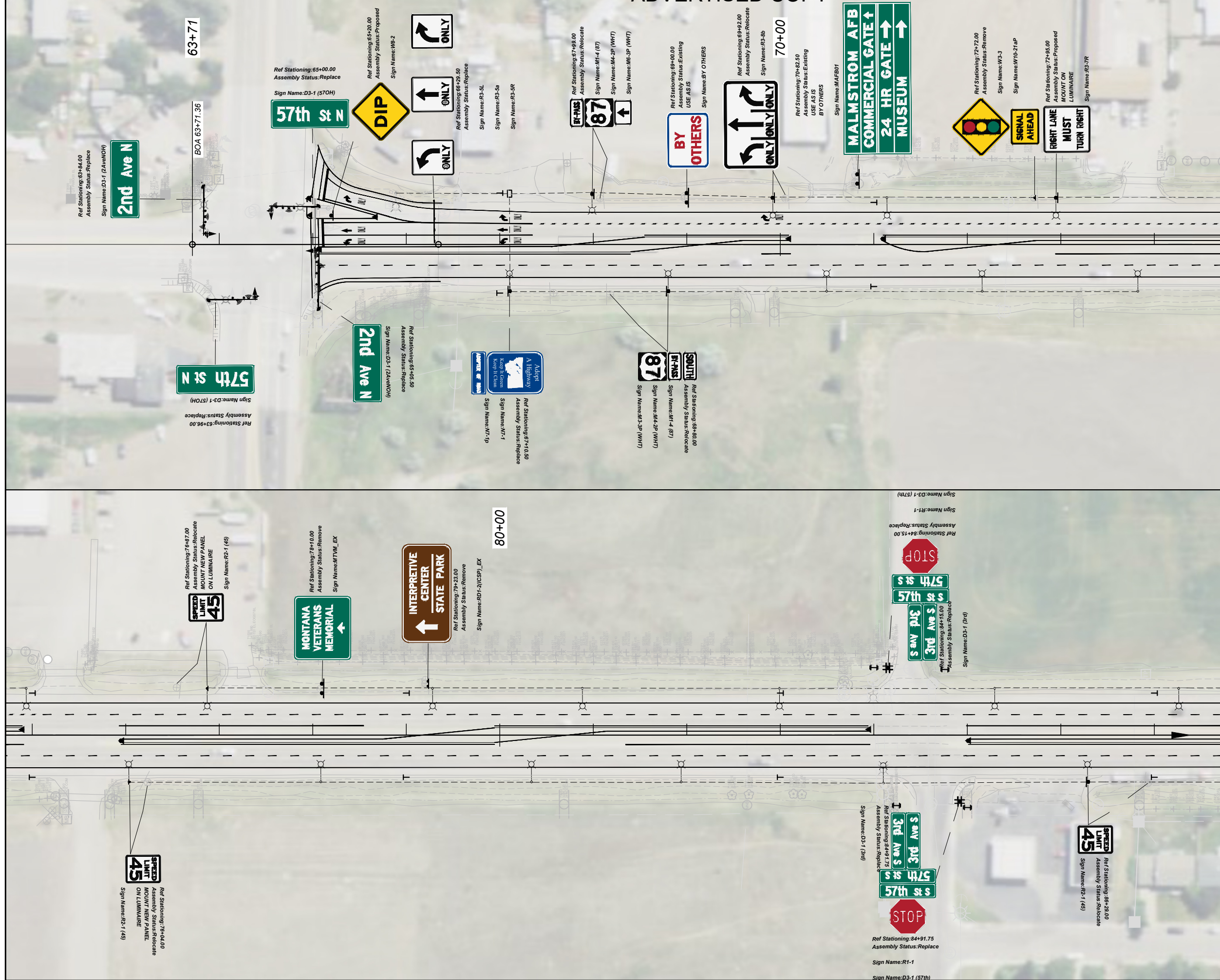
PROJECT NAME
57TH STREET-GREAT FALLS

CASCADE

NH 102-1(10)7

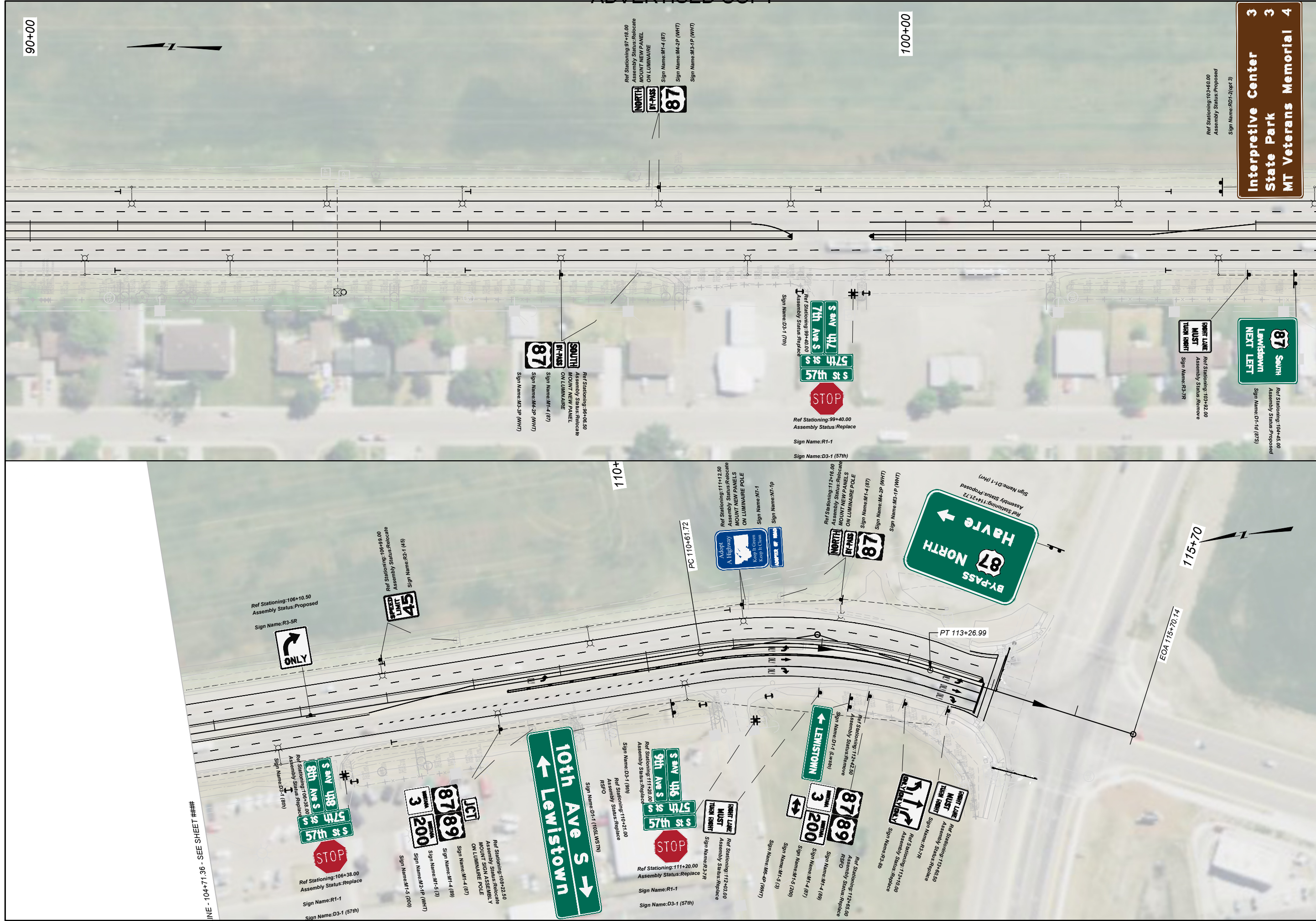
10241000

 MONTANA Department of Transportation	10241000SIPLN001		DESIGNED BY	H HOELSTAD	05/2026
			REVIEWED BY		
			CHECKED BY		
			N STYREN		05/2026
			10241000SIPLN001.DWG		



MATCH LINE - 74+71.36 - SEE SHEET #####



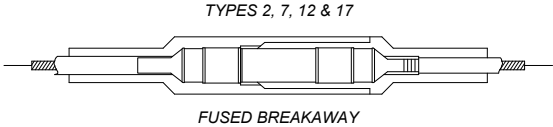
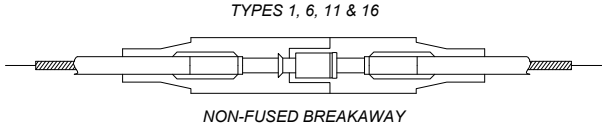


ELECTRICAL QUANTITIES			
ITEM NO.	MATERIAL	UNIT	TOTAL
616 343 914	CONDUIT-PLASTIC 1 1/2 IN	LNFT	8,800
616 343 920	CONDUIT-PLASTIC 2 IN	LNFT	110
616 343 930	CONDUIT-PLASTIC 3 IN	LNFT	110
616 783 008	PULL BOX COMPOSITE TYPE 3	EACH	3
617 000 000	FOUNDATION-CONCRETE	CUYD	28
617 123 106	CONDUCTOR-COPPER AWG6-600V	LNFT	7,340
617 123 108	CONDUCTOR-COPPER AWG8-600V	LNFT	11,620
617 123 110	CONDUCTOR-COPPER AWG10-600V	LNFT	9,020
617 183 056	STANDARD-STL TYPE 10-A-500-6	EACH	47
617 303 300	HIGH EFFICACY LUMINAIRE LED	EACH	47
617 333 100	SERV ASSEMBLY	EACH	1
617 513 125	SIG TRAF 4 COL 1 W 12-12-12-12	EACH	4
617 553 000	SIG-TRAF-BACKPLATE-REFLECTIVE	EACH	13
617 553 020	SIG PEDESTRIAN TYPE 2	EACH	10
617 605 040	INSTALL CONTRL/TRAF-ACTUATOR	EACH	1
617 763 500	DETECTOR-RADAR/PRESENCE	EACH	4
617 763 510	DETECTOR-RADAR/ADVANCE	EACH	4
617 781 000	REMOVE AND SALVAGE MISC ELECTRICAL	LS	1
617 903 255	PUSH BUTTON-PEDESTRIAN-TACTILE	EACH	10

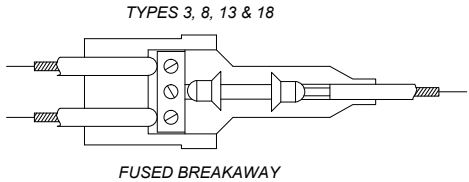
 MONTANA Department of Transportation	DESIGNED BY		PROJECT NAME	
	J. DEGROAT		57TH STREET - GREAT FALLS	
	REVIEWED BY		COUNTY	
	D. CUNNINGHAM		CASCADE	
	CHECKED BY		PROJECT ID	
			NH 102-1(10)7	
ELECTRICAL			UPN	
			10241000	
7/21/2026 2:22 PM		10241000ELMAP001.DWG		

7/21/2026 2:22 PM

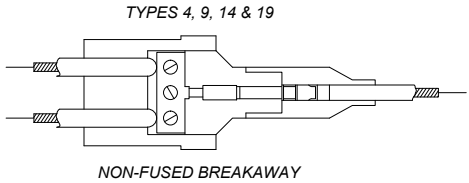
WATERTIGHT CONNECTORS



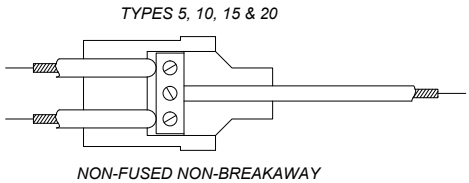
IDENTITY NO.	DESCRIPTIVE SYMBOL & WIRE SIZES
1	8 8
2	8 10
3	8 10
4	8 8
5	8 8
6	6 6
7	6 10
8	6 10
9	6 6
10	6 6
11	4 4
12	4 10
13	4 10
14	4 4
15	4 4
16	10 10
17	10 10
18	10 10
19	10 10
20	10 10
21	VARIES VARIES



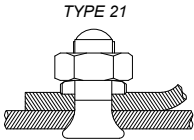
PROVIDE A PLUG AND RECEPTACLE HOUSED IN WATER-RESISTANT, SYNTHETIC RUBBER CAPABLE OF BURIAL IN THE GROUND OR INSTALLATION IN SUNLIGHT. THE HOUSING, CONSISTING OF 2 SECTIONS, PROVIDES A WATERTIGHT SEAL AROUND THE CABLE AND A WATERTIGHT SEAL BETWEEN THE TWO SECTIONS AT THE POINT OF DISCONNECTION. SUPPLY 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.

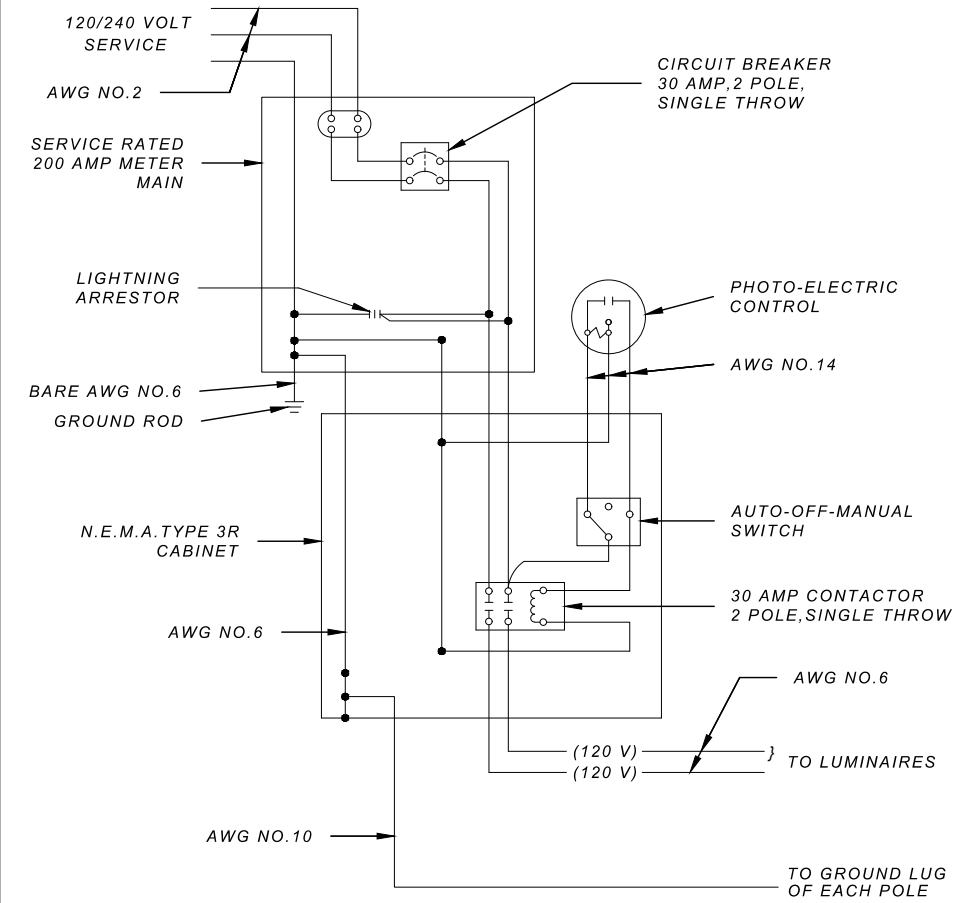


COPPER SPLIT BOLT - MAKE WATERTIGHT USING SELF ADHERING MASTIC

WATERTIGHT CONNECTORS

NO SCALE

OHXNG
REVISED 31-MAR-2014



LUM SERVICE WIRING DIAGRAM S-1

SHEET NO.

E03

ELECTRICAL DETAIL

PROJECT NAME
57TH STREET - GREAT FALLS

COUNTY

CASCADE

PROJECT ID

NH 102-1(10)7

UPN

10241000

DESIGNED BY
J. DEGROAT

10/2025

REVIEWED BY
D. CUNNINGHAM

3/2026

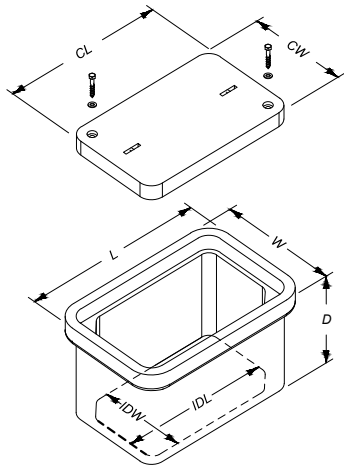
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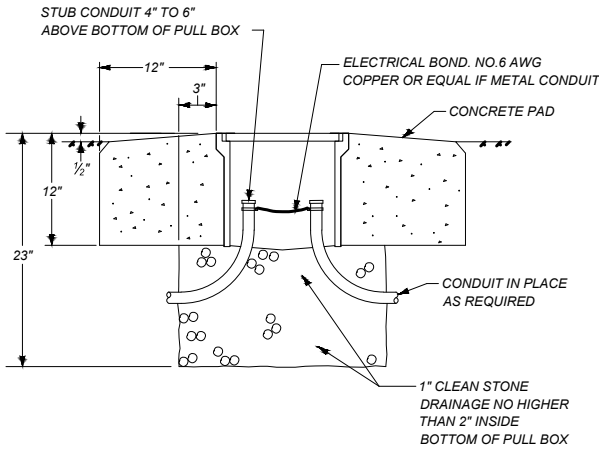


ELECTRICAL

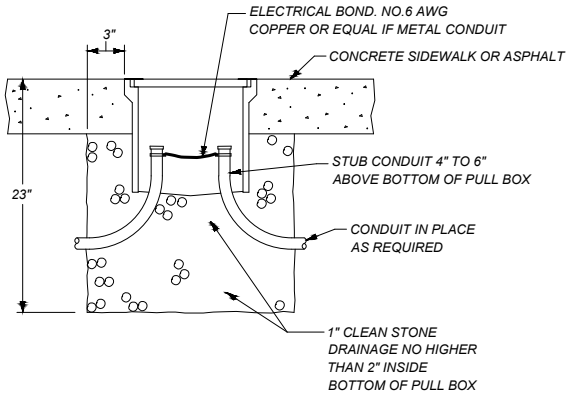
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PULL BOX - COMPOSITE MINIMUM DIMENSIONS		
TYPE 1	TYPE 2	TYPE 3
L = 20"	L = 25"	L = 32"
W = 13"	W = 15"	W = 19"
D = 12"	D = 12"	D = 12"
IDL = 17"	IDL = 21"	IDL = 28"
IDW = 10"	IDW = 11"	IDW = 15"
CL = 18"	CL = 23"	CL = 30"
CW = 11"	CW = 13"	CW = 17"



PULL BOX INSTALLED IN DIRT

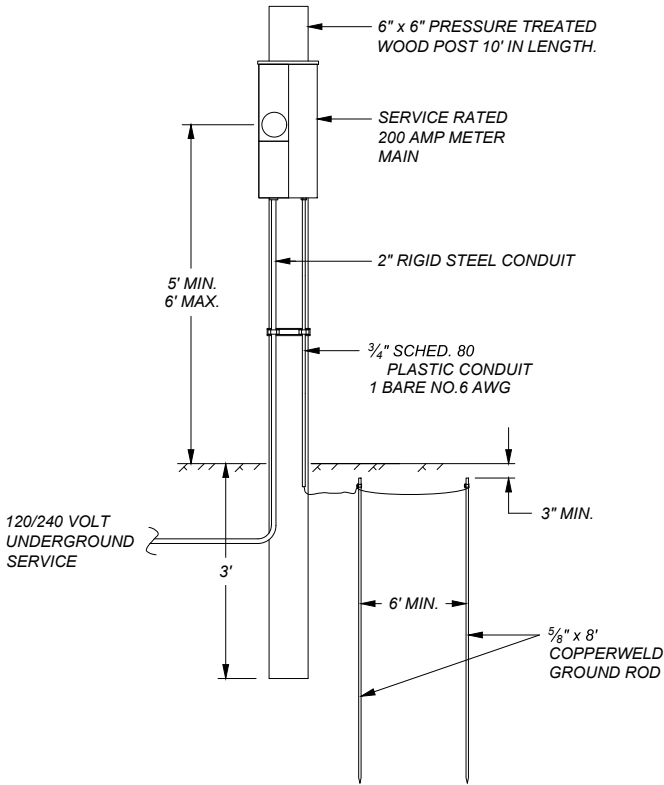


PULL BOX INSTALLED IN A SIDEWALK OR ASPHALT

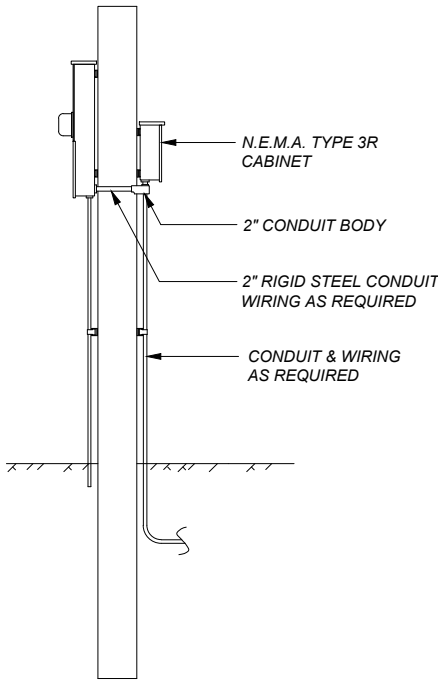
PULL BOX-COMPOSITE

TYPE 1,2 & 3
NO SCALE

PB2
REVISED: 15-APR-2014



FRONT



SIDE

UNDERGROUND SERVICE ASSEMBLY DETAIL

UNDERGROUND SERVICE

ASSEMBLY DETAIL

NO SCALE

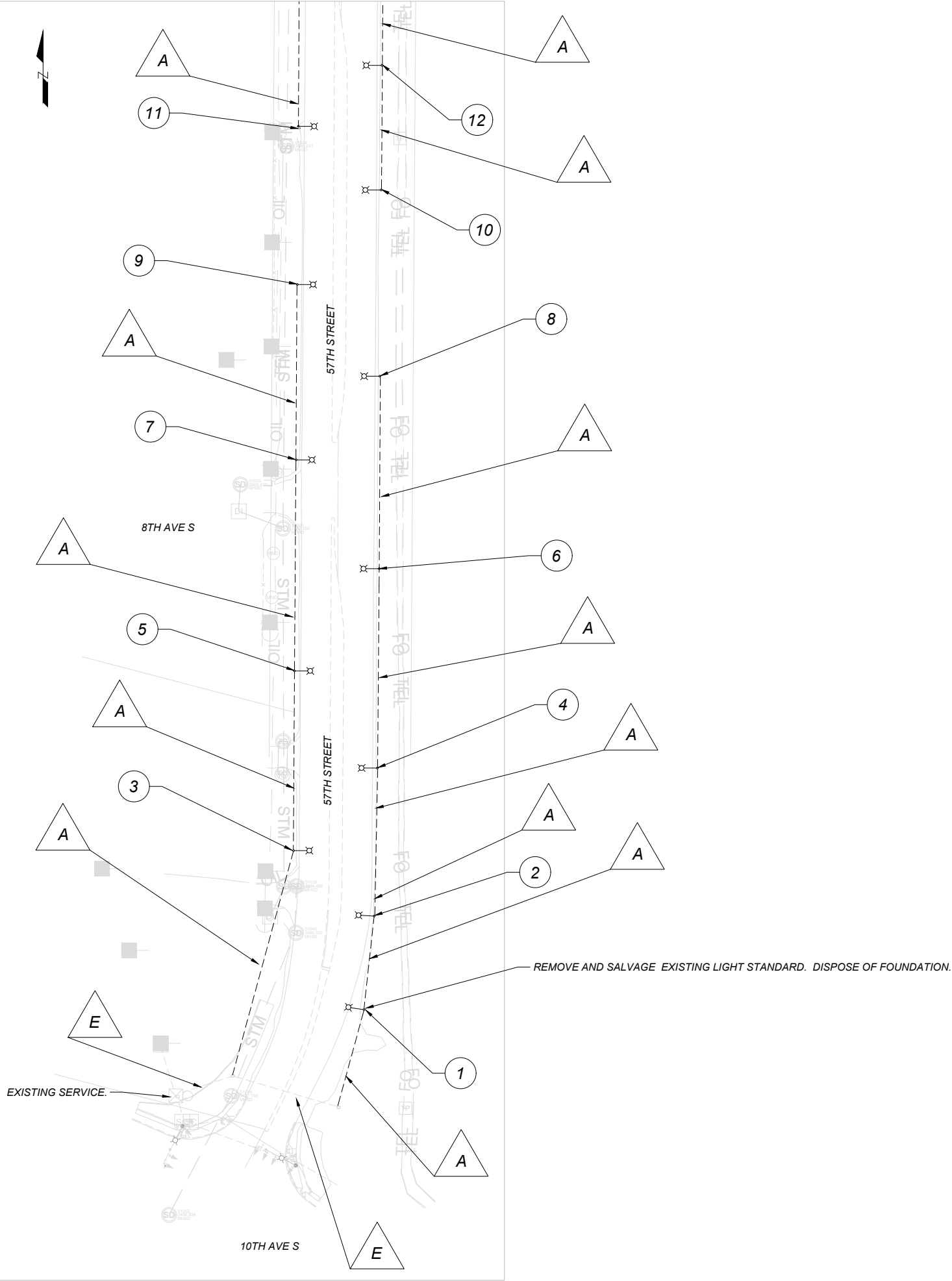
POLE SCHEDULE									
POLE NO.	ITEM NO.	TYPE	TYPE POLE BASE	FOUNDATION DIA X DEPTH	LUMINAIRE MAST ARM	LUMINAIRE HEIGHT	LUMINAIRE TYPE	NORY COORDINATE	EORX COORDINATE
1	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,187,255.51	1,544,789.62
2	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,187,368.08	1,544,802.02
3	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,187,446.92	1,544,704.95
4	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,187,546.28	1,544,805.62
5	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,187,663.12	1,544,706.03
6	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,187,786.13	1,544,808.00
7	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,187,917.02	1,544,708.07
8	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,188,017.71	1,544,808.74
9	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,188,128.00	1,544,709.46
10	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,188,241.79	1,544,810.23
11	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,188,318.31	1,544,710.73
12	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,188,391.76	1,544,811.22
13	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,188,503.84	1,544,711.96
14	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,188,616.01	1,544,812.70
15	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,188,665.87	1,544,713.03
16	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,188,766.85	1,544,813.72
17	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,188,878.96	1,544,714.44
18	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,188,991.12	1,544,815.20
19	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,189,031.87	1,544,715.45
20	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,189,145.84	1,544,816.21
21	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,189,256.87	1,544,716.93
22	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,189,368.70	1,544,817.70
23	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,189,422.75	1,544,718.05
24	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,189,530.82	1,544,818.75
25	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,189,636.70	1,544,719.45
26	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,189,758.57	1,544,820.21
27	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,189,856.69	1,544,720.79
28	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,189,955.41	1,544,821.58
29	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,190,075.14	1,544,721.06
30	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,190,185.56	1,544,823.10
31	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,190,291.28	1,544,723.80
32	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,190,396.27	1,544,824.50
33	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,190,451.32	1,544,724.85
34	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,190,556.50	1,544,825.56
35	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,190,676.58	1,544,726.35
36	617183056	10-A-500-5	BREAKAWAY	2' X 5'	15'	40'	LED	1,190,797.60	1,544,827.15</

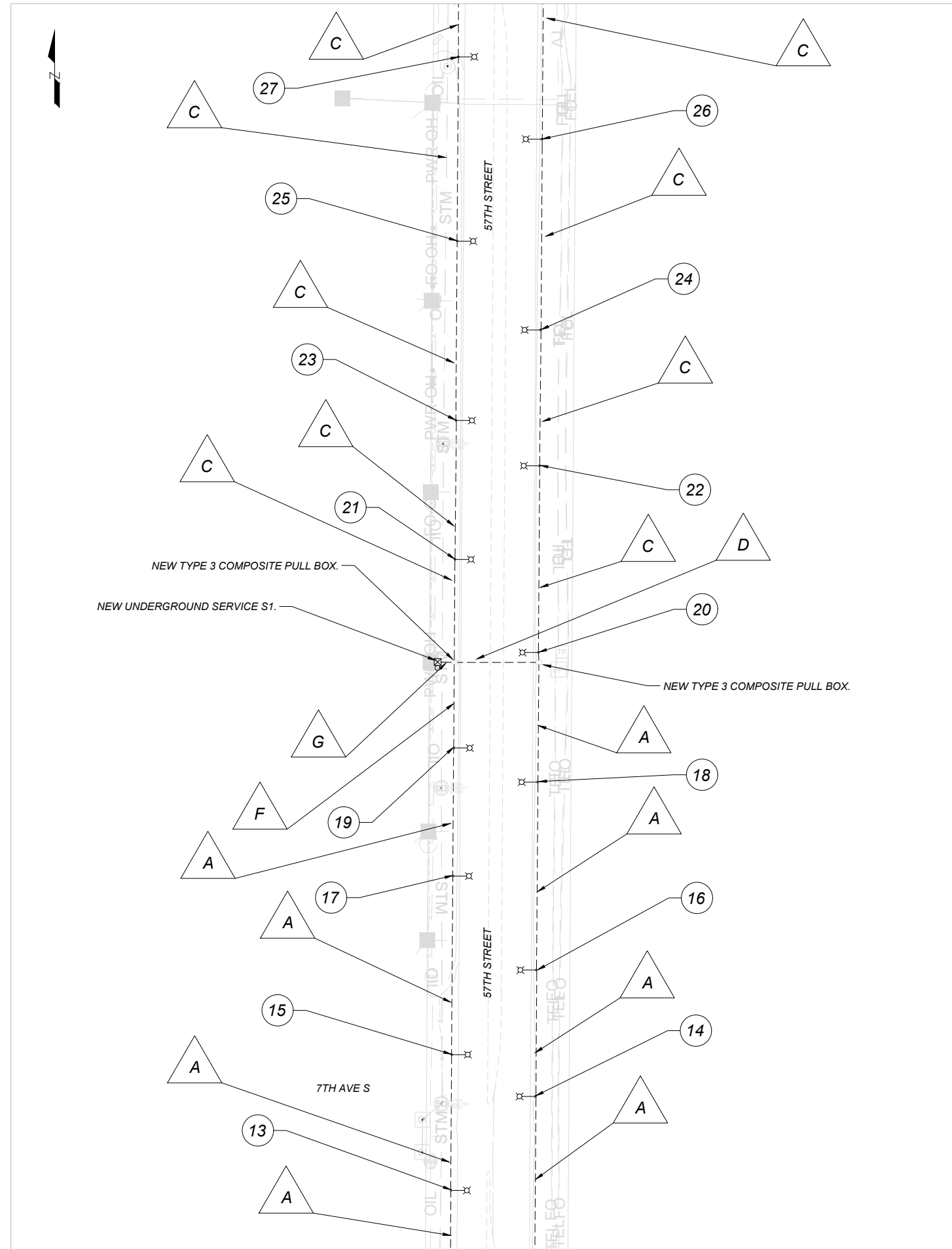
CONDUIT AND WIRE SCHEDULE	
A	NEW 1 OF 1 1/2" PLASTIC CONDUIT NEW 2 OF AWG NO. 8 CONDUCTOR (LIGHTING) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)
B	NEW 1 OF 2" PLASTIC CONDUIT NEW 2 OF AWG NO. 8 CONDUCTOR (LIGHTING) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)
C	NEW 1 OF 1 1/2" PLASTIC CONDUIT NEW 2 OF AWG NO. 6 CONDCUTOR (LIGHTING) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)
D	NEW 1 OF 3" PLASTIC CONDUIT NEW 2 OF AWG NO. 6 CONDUCTOR (LIGHTING) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)
E	EXISTING CONDUIT NEW 3AWG14 (PHOTOCELL) EXISTING CONDUCTORS
F	NEW 1 OF 1 1/2" PLASTIC CONDUIT NEW 3AWG14 (PHOTOCELL) NEW 2 OF AWG NO. 8 CONDUCTOR (LIGHTING) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)
G	NEW 1 OF 3 " PLASTIC CONDUIT NEW 3AWG14 (PHOTOCELL) NEW 2 OF AWG NO. 6 CONDUCTOR (LIGHTING) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)

CONDUIT AND WIRE SCHEDULE

A NEW 1 OF 1 1/2' PLASTIC CONDUIT
NEW 2 OF AWG NO. 8 CONDUCTOR (LIGHTING)
NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)

E EXISTING CONDUIT
EXISTING CONDUCTORS





CONDUIT AND WIRE SCHEDULE

- A NEW 1 OF 1 1/2" PLASTIC CONDUIT
NEW 2 OF AWG NO. 8 CONDUCTOR (LIGHTING)
NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)

- C NEW 1 OF 1 1/2" PLASTIC CONDUIT
NEW 2 OF AWG NO. 6 CONDUCTOR (LIGHTING)
NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)

- D NEW 1 OF 3" PLASTIC CONDUIT
NEW 2 OF AWG NO. 6 CONDUCTOR (LIGHTING)
NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)

- NEW 1 OF 1 1/2" PLASTIC CONDUIT*
F NEW 2 OF AWG NO. 8 CONDUCTOR (LIGHTING)
NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)
NEW 3AWG14 CABLE (PHOTOCELL)

- G NEW 1 OF 3" PLASTIC CONDUIT
NEW 2 OF AWG NO. 6 CONDUCTOR (LIGHTING)
NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)
NEW 3AWG14 CABLE(PHOTOCELL)

SHEET NO.

E07

ELECTRICAL PLAN

PROJECT NAME
57TH STREET - GREAT FALLS

COUNTY

COUNTY

CASCADE

NH 102-1(10)7

10241000

DESIGNED BY	
J. DEGROAT	10/2025

J. DEGROAT	10/2025
------------	---------

REVIEWED BY	
D. CUNNINGHAM	3/2026

CHECKED BY	

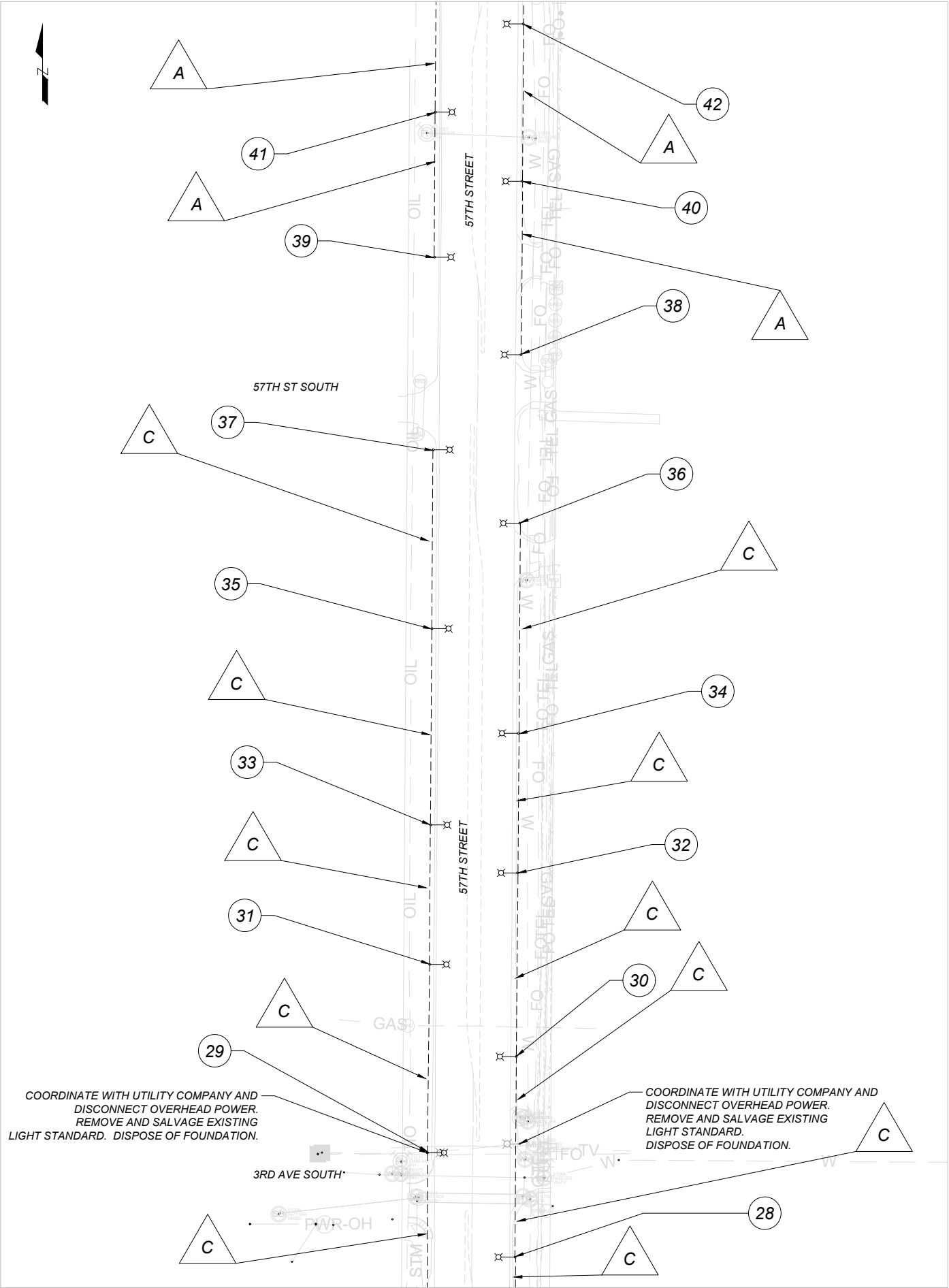
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MONTANA
Department of Transportation

ELECTRICAL

ELECTRICAL

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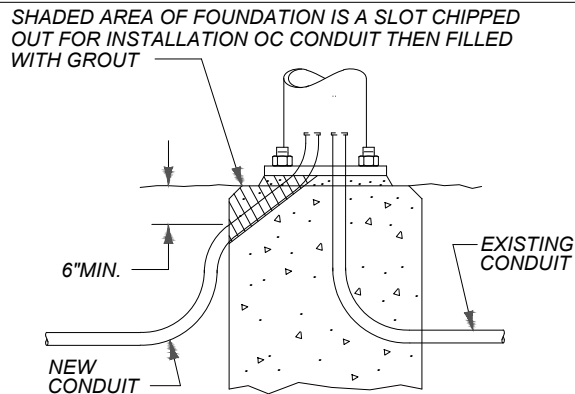
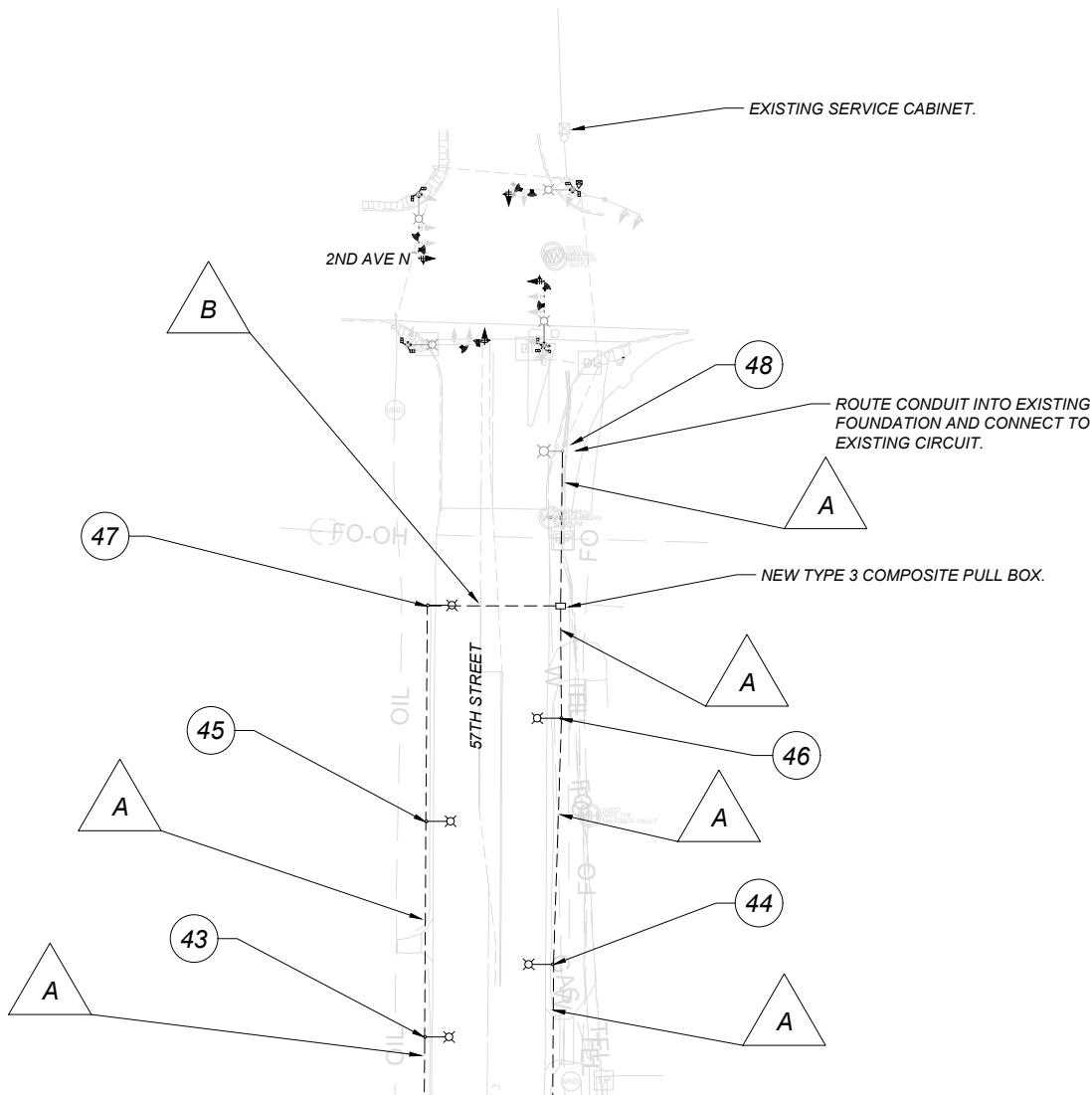
CONDUIT AND WIRE SCHEDULE	
A	NEW 1 OF 1 1/2" PLASTIC CONDUIT NEW 2 OF AWG NO. 8 CONDUCTOR (LIGHTING) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)
C	NEW 1 OF 1 1/2" PLASTIC CONDUIT NEW 2 OF AWG NO. 6 CONDUCTOR (LIGHTING) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)

SHEET NO. E08	
ELECTRICAL PLAN	
PROJECT NAME 57TH STREET - GREAT FALLS	
DESIGNED BY J. DEGROAT	COUNTY CASCADE
REVIEWED BY D. CUNNINGHAM	PROJECT ID NH 102-1(10)7
CHECKED BY	UPN 10241000
MONTANA Department of Transportation	
ELECTRICAL	
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CONDUIT AND WIRE SCHEDULE

A NEW 1 OF 1 1/2" PLASTIC CONDUIT
NEW 2 OF AWG NO. 8 CONDUCTOR (LIGHTING)
NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)

B NEW 1 OF 2" PLASTIC CONDUIT
NEW 2 OF AWG NO. 8 CONDUCTOR (LIGHTING)
NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)



INSTALLATION OF CONDUIT INTO EXISTING POLE BASE

PROJECT NAME 57TH STREET - GREAT FALLS

COUNTY

CASCADE

PROJECT ID

NH 102-1(10)7

UPN

10241000

DESIGNED BY J. DEGROAT

10/2025

REVIEWED BY D. CUNNINGHAM

3/2026

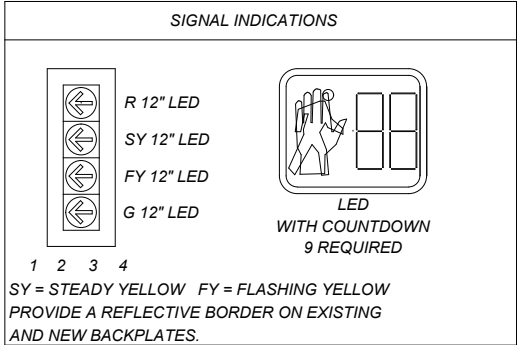
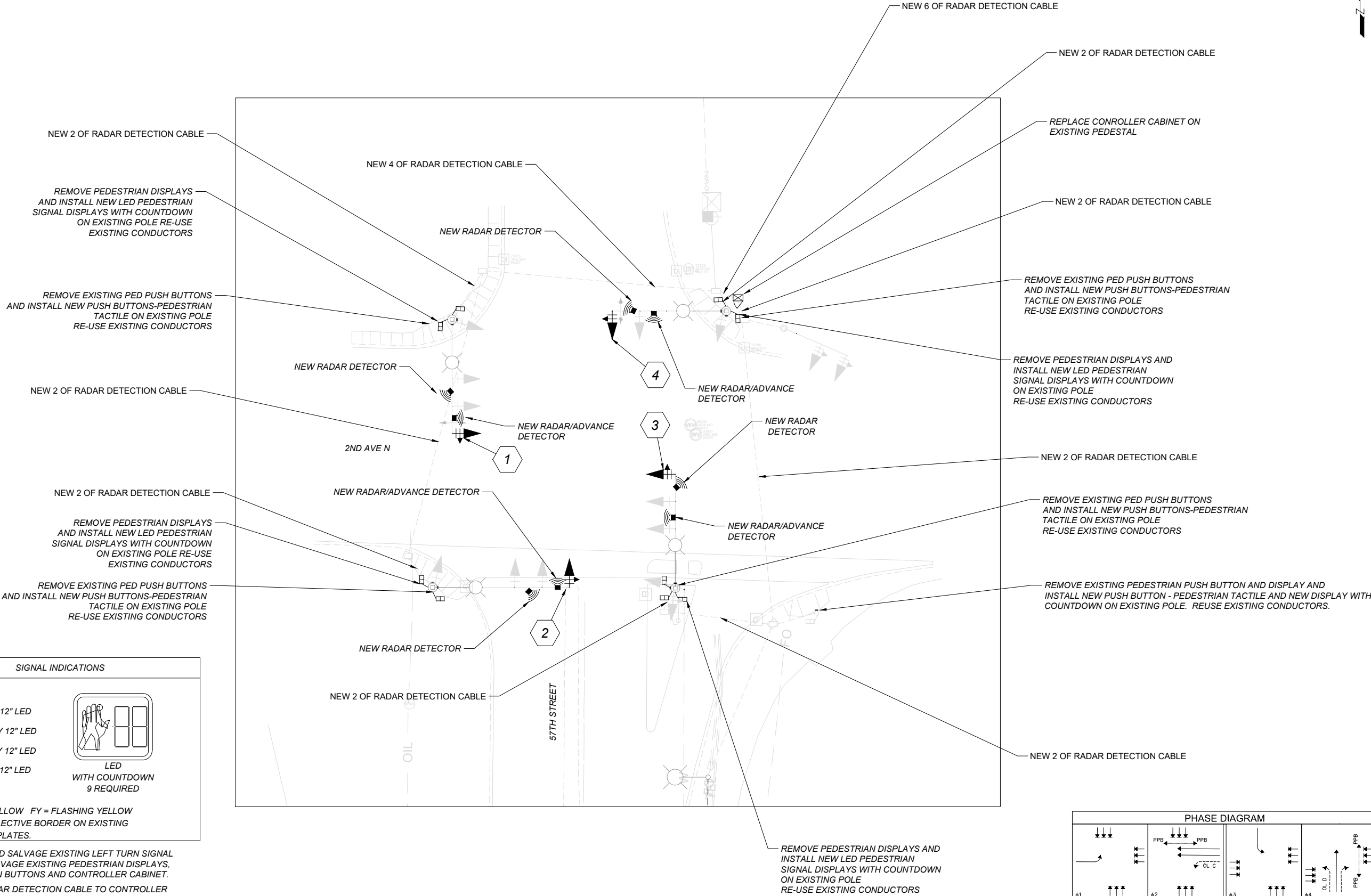
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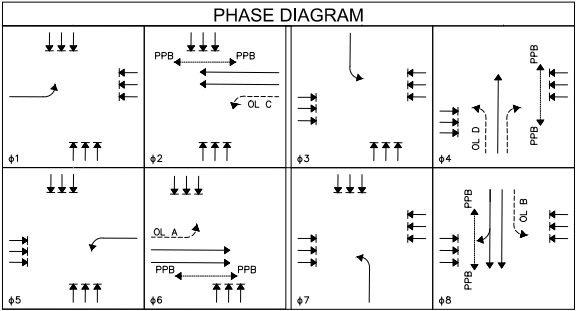


REMOVE AND SALVAGE EXISTING LEFT TURN SIGNAL HEADS. SALVAGE EXISTING PEDESTRIAN DISPLAYS, PEDESTRIAN BUTTONS AND CONTROLLER CABINET.

ROUTE RADAR DETECTION CABLE TO CONTROLLER CABINET THROUGH EXISTING CONDUIT..

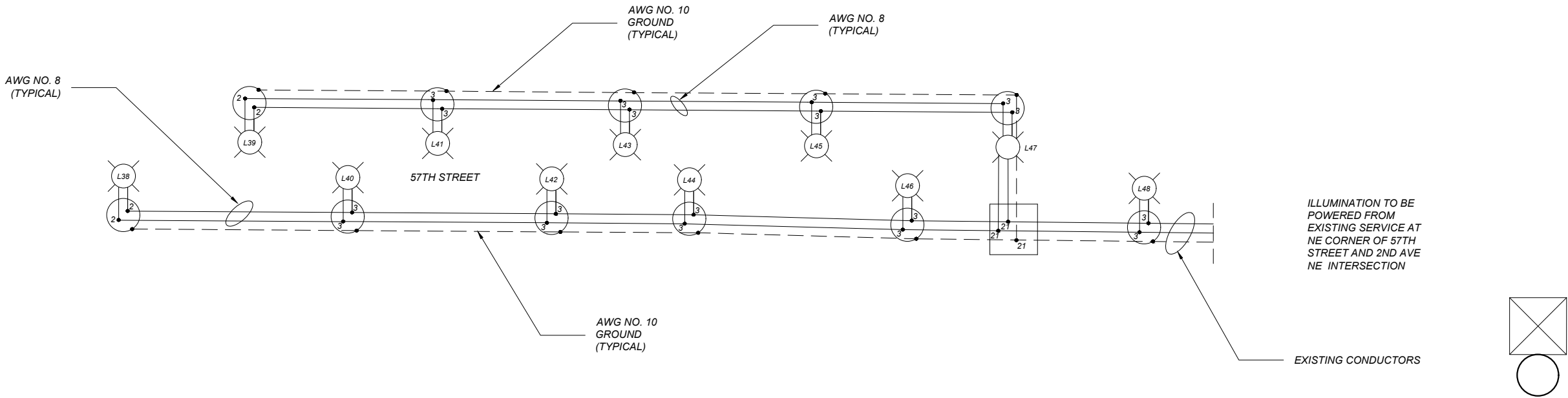
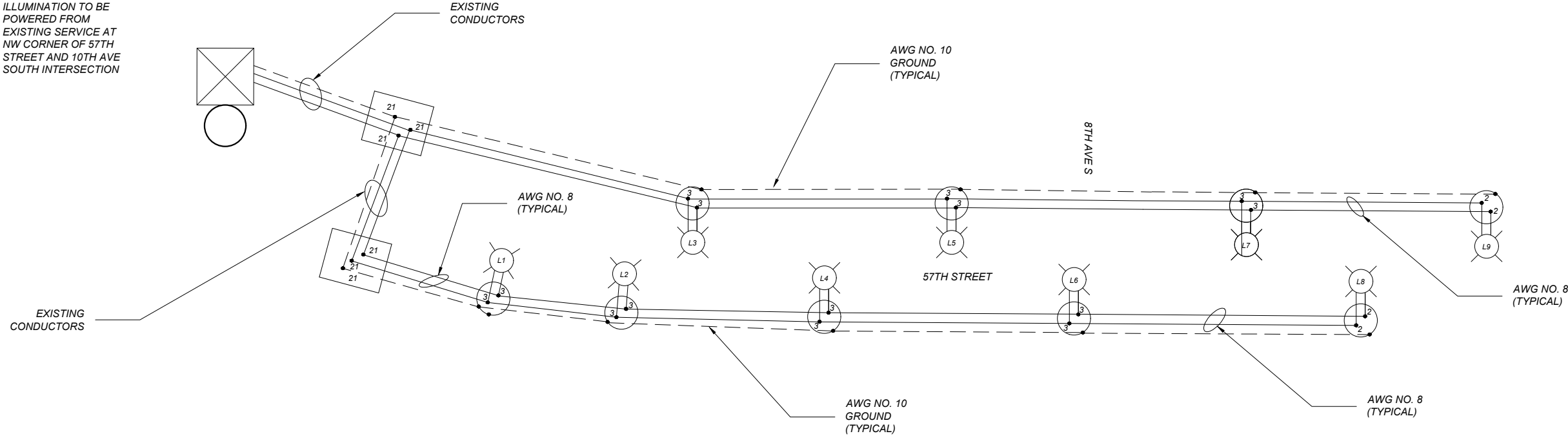
REMOVE ALL LOOP DETECTOR WIRING FROM EXISTING CONDUIT. ABANDON EXISTING TRAFFIC LOOPS.

INSTALL RETRO-REFLECTIVE TAPE ON ALL SIGNAL HEAD BACK-PLATES.



ELECTRICAL PLAN

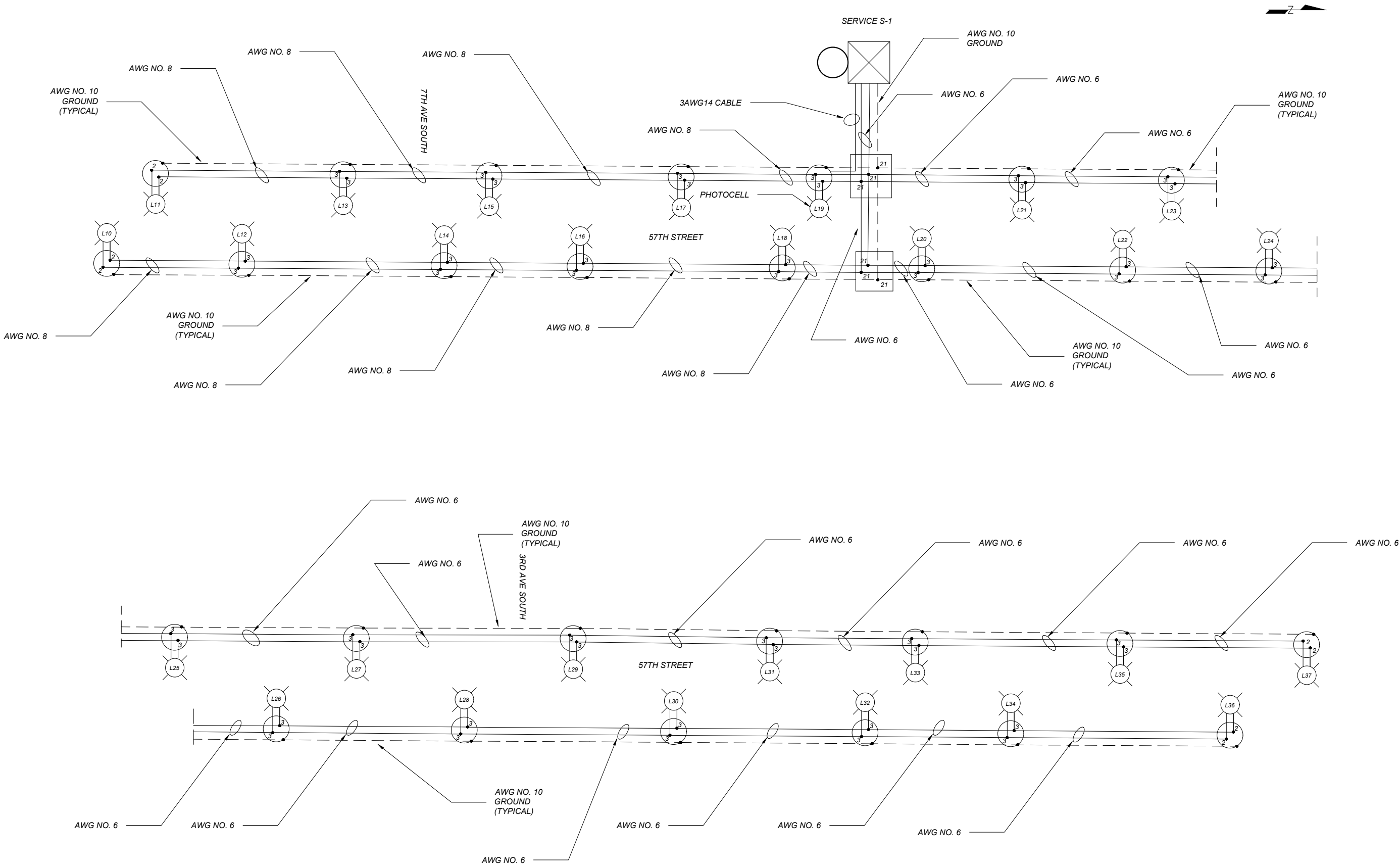
ILLUMINATION TO BE
POWERED FROM
EXISTING SERVICE AT
NW CORNER OF 57TH
STREET AND 10TH AVE
SOUTH INTERSECTION



ILLUMINATION TO BE
POWERED FROM
EXISTING SERVICE AT
NE CORNER OF 57TH
STREET AND 2ND AVE
NE INTERSECTION

 MONTANA Department of Transportation	DESIGNED BY		PROJECT NAME	
	J. DEGROAT		57TH STREET - GREAT FALLS	
	REVIEWED BY		COUNTY	
	D. CUNNINGHAM		CASCADE	
ELECTRICAL	CHECKED BY		PROJECT ID	
			NH 102-1(10)7	
			UPN	
			10241000	
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ELECTRICAL PLAN



PROJECT NAME
57TH STREET - GREAT FALLS

COUNTY
CASCAD

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