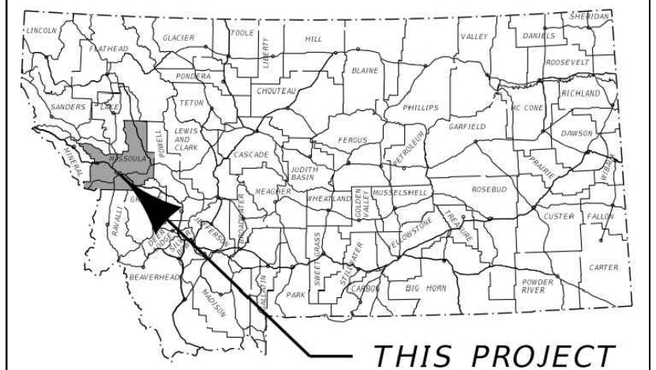
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MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT HSIP 8199(161)
TRAFFIC SIGNALS & LIGHTING
SF199 MARY JANE BROADWAY INTX
(A LIMITED ACCESS CONTROL FACILITY)
MISSOULA COUNTY

LENGTH 0.55 MILES

PROJECT DESIGN DATA

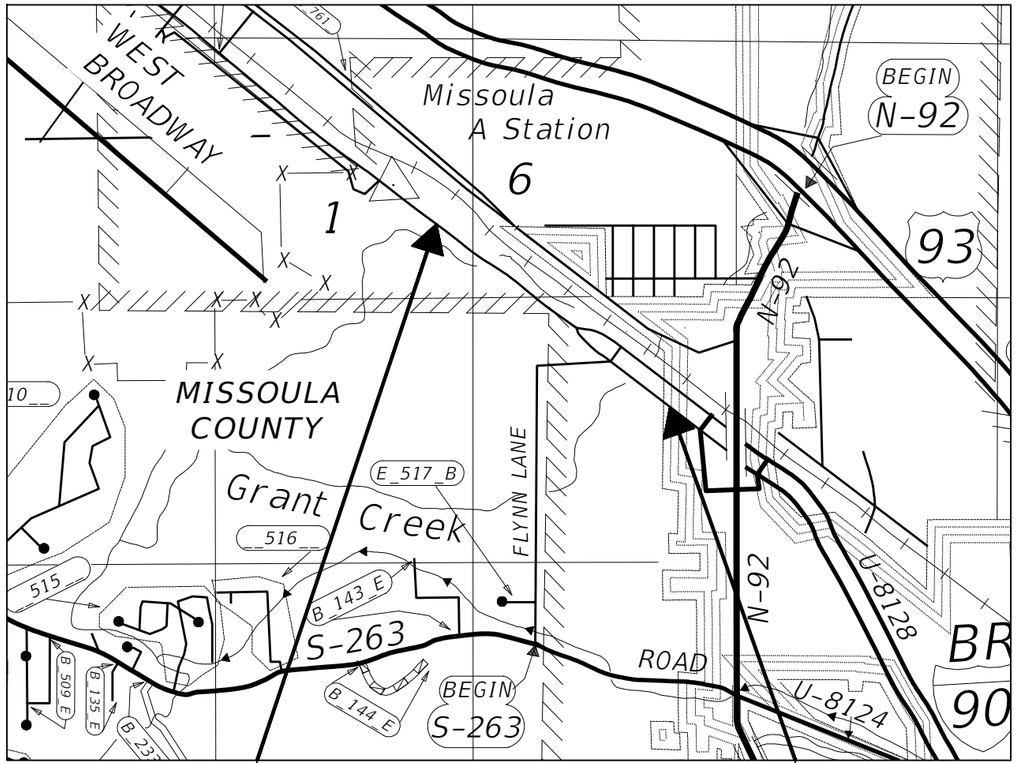
W BROADWAY RIGHT TURN LANE

PRESENT 2021	A.D.T. = 18,064
LETTING 2021	A.D.T. = 18,064
DESIGN 2040	A.D.T. = 28,214
	*D.H.V. = 1,804
	*TRUCKS = 3%
	V = 55 MPH
	*20-YR. ESAL'S = 403,661
	GROWTH RATE = 2.8%

*THESE VALUES ARE FOR THE BROADWAY RIGHT TURN LANE ONLY

SURFACING SOURCES - CONTRACTOR FURNISHED

CSF = 0.99924322



STATION 452+44.40
BEG. HSIP 8199(161)

STATION 481+59.16
END HSIP 8199(161)

RP 4.9 TO 5.5
THIS CONTRACT

N

ENGINEER OF RECORD		APPLICABLE PLAN SHEETS
DONNY PFEIFER, P.E.	MONTANA DONOVAN PFEIFER No. 38471 PE LICENSED PROFESSIONAL ENGINEER 06/16/2022	1 - 18, 21 6/20/2022 S1 - S7 XS.1 - XS.14 DocuSigned by: Donny Pfeifer BEADCE34B4D245D...
LEIF SANDE, P.E.	MONTANA LEIF SANDE No. 49256 PE LICENSED PROFESSIONAL ENGINEER	19 - 20 6/20/2022 DocuSigned by: Leif Sande DDF0A826AD2C4F4...
JASPER DOHRENDORF, P.E.	MONTANA JASPER A. DOHRENDORF #14102PE LICENSED PROFESSIONAL ENGINEER	EL1 - EL6 6/20/2022 DocuSigned by: Jasper Dohrendorf C50D4D85926D4EF...
EVAN REED, P.E.	MONTANA JAMES EVAN REED No. 59141 PE LICENSED PROFESSIONAL ENGINEER	E1 - E9 6/20/2022 DocuSigned by: Evan Reed 1626FF67A22548F...

PLANS PREPARED BY
DJ&A P.C. 2000 MAPLE ST MISSOULA, MT 59808 PHONE: (406) 721-4320 FAX:

ASSOCIATED PROJECT AGREEMENT NUMBERS	
R/W & I.C.	
P. E.	HSIP 8199(160)

DJ&A P.C.

BY _____

DATE _____

ENGINEERS PLANNERS SURVEYORS

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	□0□5 MDT HSIP - I□□□ S□□□□.dwg	DESIGNED BY	BB	□□□□□□□□□□	ROAD PLANS
2		□/1□/2022	REVIEWED BY	DP	□□□□□□□□□□	
1		11:0□12 AM Br□d□□	CHECKED BY	DW	□□□□□□□□□□	UPN 9920000
			□□□□□□□□□□	□□□□□□□□□□□□□□□□□□□□□□□□	□□□□□□□□□□	

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FLYNN LANE	XS.10 – XS.14

NOTES

BASIS OF PLAN QUANTITIES

(QUANTITIES FOR ESTIMATING PURPOSES ONLY)

COMP. AGGREGATE WEIGHT	= 3700 LBS. PER CUBIC YARD
COMP. WEIGHT OF PL. MIX BIT. SURF.	= 3855 LBS. PER CUBIC YARD
ASPHALT CEMENT – GRADE S – 3/8" AGG.	= 6.2% OF PL.MIX BIT.SURF.
BITUMINOUS MATERIAL	= 8.5 LBS. PER GAL.
TACK (ALL OTHER SURFACES)	= 0.05 GAL. PER SQ.YARD
TACK (ASPHALT SURFACES)	= 0.05 GAL. PER SQ.YARD
EMULSIFIED ASPHALT – FOG SEAL (S & C)	= 0.075 GAL. PER SQ.YARD
SEAL	= 0.42 GAL. PER SQ.YARD
COVER	= 25 LBS. PER SQ.YARD

LIMITED ACCESS CONTROL

THIS PROJECT IS A LIMITED ACCESS CONTROL FACILITY.

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

DO NOT DISTURB

WORK TO BE COMPLETED WITHIN THE EXISTING RIGHT-OF-WAY WITH THE EXCEPTION OF THE PARKING LOT APPROACH SOUTH OF FLYNN LANE.

AS-BUILTS

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

STPX 32758(2) (GRADE, GRAVEL, PL.MIX SURF. OVERLAY & WIDENING)

CONSTRUCTION NOTES

DO NOT RESTRICT ACCESS TO ANY PROPERTIES ADJACENT TO THE PROJECT LIMITS WITHOUT PRIOR APPROVAL. NOTIFY CITY OF MISSOULA AND MDT PROJECT MANAGER 30 DAYS PRIOR TO CLOSING ANY APPROACHES AND WHEN THERE ARE ANY CHANGES TO TRAFFIC CONTROL.

SAWCUTTING

WHERE NEW PAVEMENT, CURB AND GUTTER, OR SIDEWALK MEET EXISTING IMPROVEMENTS OR OVERLAY SECTIONS, SAWCUT THE MATCH LINE TO THE FULL DEPTH OF THE EXISTING ASPHALT. IN LOCATIONS WHERE SAWCUTTING FOR UTILITY TRENCHES, SAWCUT ASPHALT 1' OUTSIDE ALL TRENCH LIMITS. COAT EXISTING VERTICAL FACE WITH A DOUBLE SHOT OF TACK PRIOR TO PAVING. PROVIDE A SMOOTH VERTICAL AND NEAT FACE. MATCH NEW IMPROVEMENTS TO EXISTING ELEVATIONS.

EROSION CONTROL

EROSION CONTROL PRACTICES ARE THE CONTRACTORS RESPONSIBILITY. COMPLY WITH ALL STORM WATER POLLUTION, PREVENTION, AND PROTECTION PERMIT REQUIREMENTS.

SOILS INFORMATION

SEE MULLAN BUILD GEOTECHNICAL REPORT FOR INFORMATION ON THE EXISTING SOIL CONDITIONS.

CLEARING AND GRUBBING

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

CENTERLINE COORDINATE TABLE

CENTERLINE COORDINATE TABLE

STATION	DESCRIPTION	NORTHING	EASTING	REMARKS
WEST BROADWAY				
414+98.73		1004342.15	828116.90	BEG. ALIGNMENT
452+44.44	POT	1001954.27	831002.79	BEG. PROJECT
458+17.84	PC	1001588.73	831444.56	
458+67.84	PI	1001556.85	831483.09	
459+17.84	PT	1001524.64	831521.33	
475+46.68	PC	1000475.35	832767.17	
475+96.68	PI	1000443.14	832805.41	
476+46.68	PT	1000411.26	832843.93	
481+59.16		1000084.55	833238.77	END PROJECT/ALIGNMENT
FLYNN LANE				
10+00.00		1000322.96	832499.83	BEG. ALIGNMENT
11+60.00	POT	1000319.43	832659.79	BEG. PROJECT
13+05.82	PC	1000316.22	832805.58	
13+35.28	PI	1000315.52	832837.19	
13+64.73	PT	1000339.88	832857.35	
13+72.67	POT	1000346.00	832862.41	END PROJECT
14+11.16		1000375.66	832886.96	END ALIGNMENT

LINEAR AND LEVEL DATA

BEARING SOURCE

GRID – MONTANA COORDINATE SYSTEM NAVD 83-2011 EPOCH 2010

LEVEL DATUM SOURCE

NAVD83 (GNSS DERIVED ELEVATIONS USING GEOID 18A AND HOLDING CORS STATION MSOL)

COMBINATION SCALE FACTOR

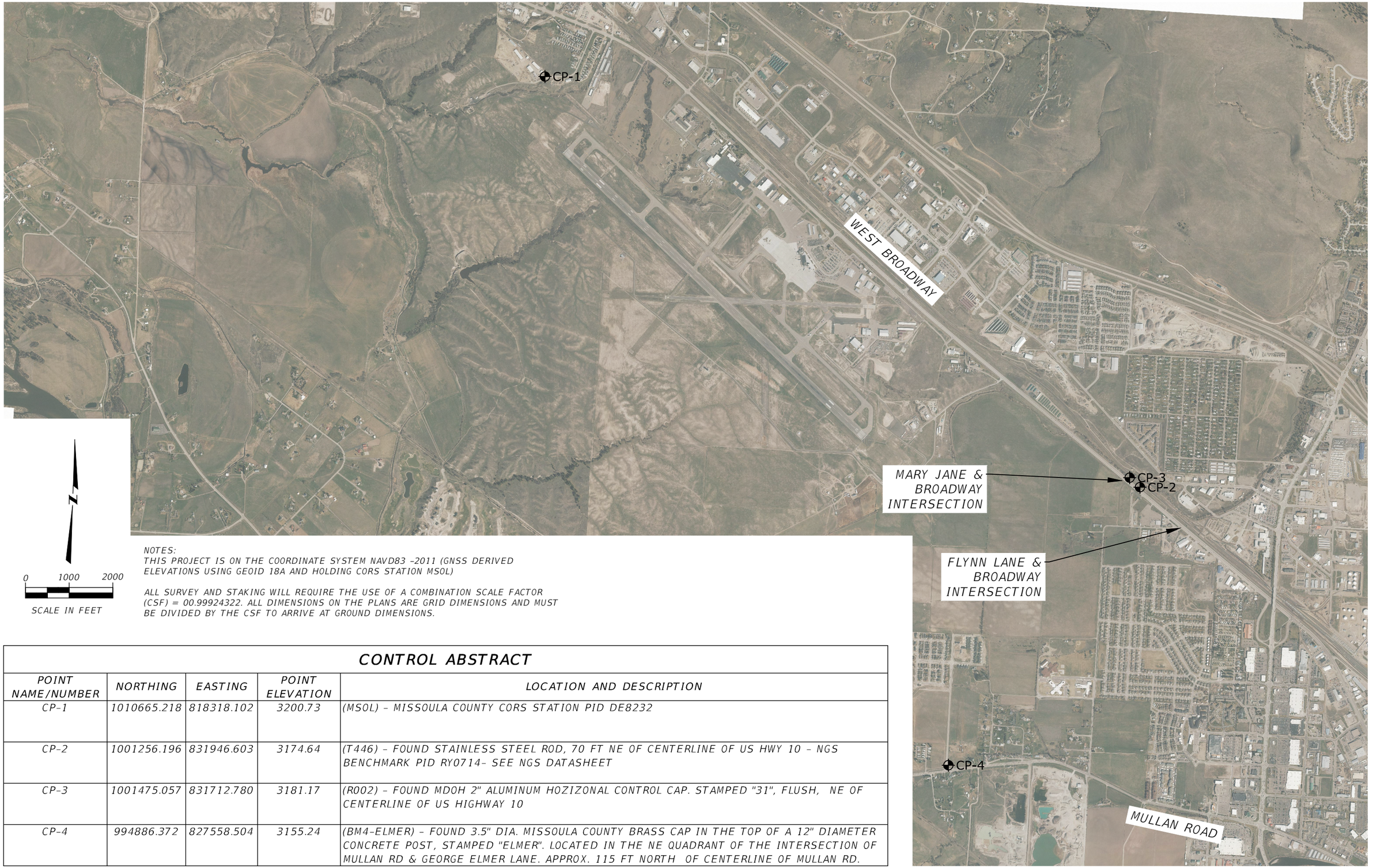
ALL COORDINATES ARE STATE PLANE U.S. CUSTOMARY (SEE CONTROL DIAGRAM) CSF IS 0.99924322

LENGTH OF ROADWAY	**2,914.76 ft**
TOTAL LENGTH OF HSIP 8199(161)	**2,914.76 ft**

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ENGINEERS
PLANNERS
SURVEYORS
DJ&A



N

0 1000 2000

SCALE IN FEET

NOTES:
THIS PROJECT IS ON THE COORDINATE SYSTEM NAVD83 -2011 (GNSS DERIVED ELEVATIONS USING GEOID 18A AND HOLDING CORS STATION MSOL)

ALL SURVEY AND STAKING WILL REQUIRE THE USE OF A COMBINATION SCALE FACTOR (CSF) = 00.99924322. ALL DIMENSIONS ON THE PLANS ARE GRID DIMENSIONS AND MUST BE DIVIDED BY THE CSF TO ARRIVE AT GROUND DIMENSIONS.

CONTROL ABSTRACT

POINT NAME/NUMBER	NORTHING	EASTING	POINT ELEVATION	LOCATION AND DESCRIPTION
CP-1	1010665.218	818318.102	3200.73	(MSOL) - MISSOULA COUNTY CORS STATION PID DE8232
CP-2	1001256.196	831946.603	3174.64	(T446) - FOUND STAINLESS STEEL ROD, 70 FT NE OF CENTERLINE OF US HWY 10 - NGS BENCHMARK PID RY0714- SEE NGS DATASHEET
CP-3	1001475.057	831712.780	3181.17	(R002) - FOUND MDOH 2" ALUMINUM HOZIZONAL CONTROL CAP. STAMPED "31", FLUSH, NE OF CENTERLINE OF US HIGHWAY 10
CP-4	994886.372	827558.504	3155.24	(BM4-ELMER) - FOUND 3.5" DIA. MISSOULA COUNTY BRASS CAP IN THE TOP OF A 12" DIAMETER CONCRETE POST, STAMPED "ELMER". LOCATED IN THE NE QUADRANT OF THE INTERSECTION OF MULLAN RD & GEORGE ELMER LANE. APPROX. 115 FT NORTH OF CENTERLINE OF MULLAN RD.

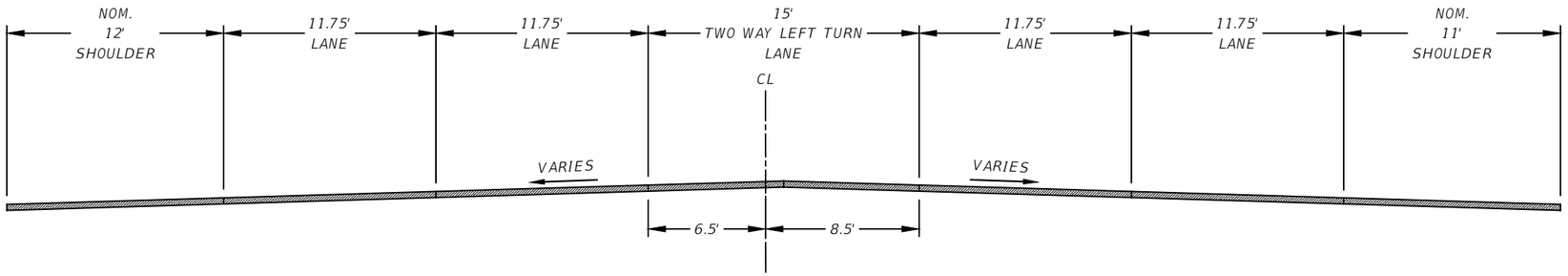
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TYPICAL SECTION NO. 1

WEST BROADWAY ST.

452+44.40 TO 452+62.99

TYP. NO. 1, THEN TYP. NO. 2



NOTES:
1. EXACT STRIPING DIMENSIONS AND TYPES ARE SHOWN ON THE SIGNING AND STRIPING PLANS, SHEETS S1-S7

2. SURFACING QUANTITIES BASED ON PLAN VIEW AREA. SEE PLAN SHEETS FOR LIMITS.

ENGINEERS
PLANNERS
SURVEYORS

DJ&A

TYPICAL SECTION NO. 2

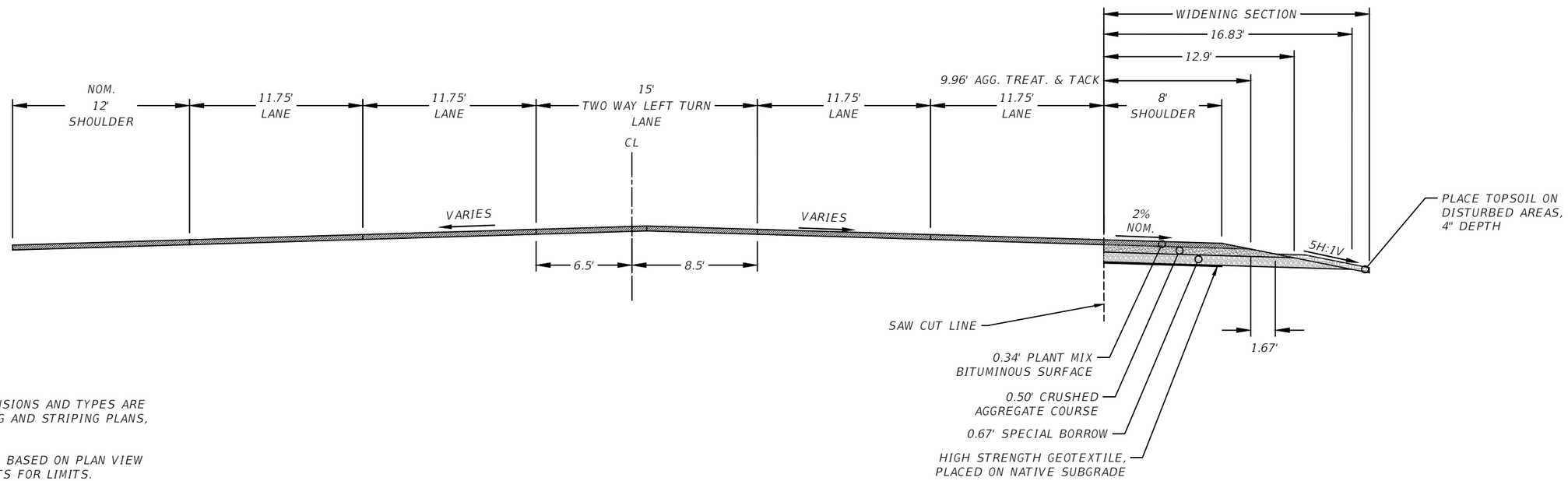
WEST BROADWAY ST.

452+62.99

ONLY, TYP. NO. 2

452+62.99 TO 454+83.76

TRANS. TYP. NO. 2 TO TYP. NO. 3



NOTES:
1. EXACT STRIPING DIMENSIONS AND TYPES ARE SHOWN ON THE SIGNING AND STRIPING PLANS, SHEETS S1-S7

2. SURFACING QUANTITIES BASED ON PLAN VIEW AREA. SEE PLAN SHEETS FOR LIMITS.

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	7065 MDT HSIP - Intro Sheets.dwg	DESIGNED BY	BB		ROAD PLANS	SF199 MARY JANE BROADWAY INTX / UPN 9920000	HSIP 8199(161)
2		4/21/2022	REVIEWED BY	DP		MISSOULA COUNTY		SHEET 4
1		4/21/2022 Braden	CHECKED BY	DW				

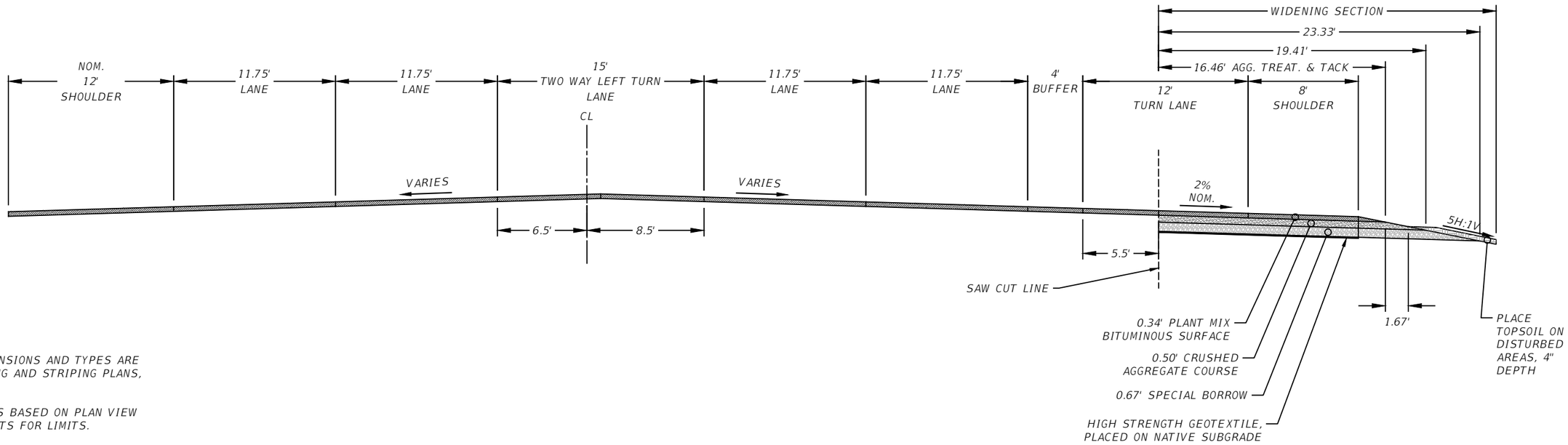
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TYPICAL SECTION NO. 3

454+83.76 TO 455+90.32 — TYP. NO. 3, THEN TYP. NO. 4

WEST BROADWAY ST.



NOTES:
1. EXACT STRIPING DIMENSIONS AND TYPES ARE SHOWN ON THE SIGNING AND STRIPING PLANS, SHEETS S1-S7
2. SURFACING QUANTITIES BASED ON PLAN VIEW AREA. SEE PLAN SHEETS FOR LIMITS.

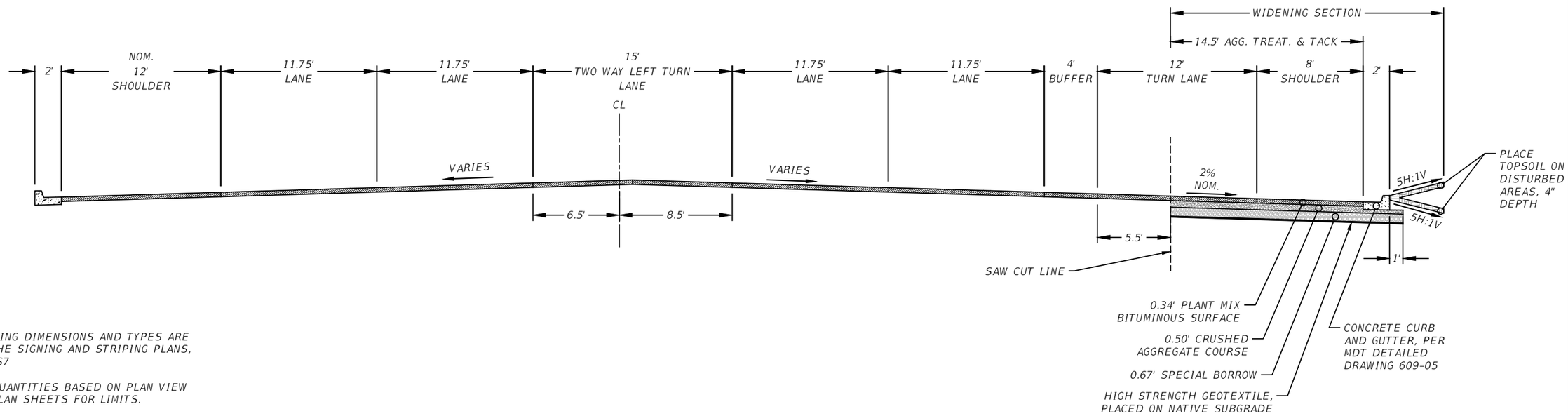
ENGINEERS PLANNERS SURVEYORS DJ&A

TYPICAL SECTION NO. 4

455+90.32 TO 459+99.17 — TYP. NO. 4

459+99.17 TO 461+25.48 — TRANS. TYP. NO. 4 TO TYP. NO. 5

WEST BROADWAY ST.



NOTES:
1. EXACT STRIPING DIMENSIONS AND TYPES ARE SHOWN ON THE SIGNING AND STRIPING PLANS, SHEETS S1-S7
2. SURFACING QUANTITIES BASED ON PLAN VIEW AREA. SEE PLAN SHEETS FOR LIMITS.

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	7065 MDT HSIP - Intro Sheets.dwg	DESIGNED BY	BB	ROAD PLANS	SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2		4/21/2022	REVIEWED BY	DP	MISSOULA COUNTY	UPN 9920000	SHEET 5
1		4/21/2022 Braden	CHECKED BY	DW			

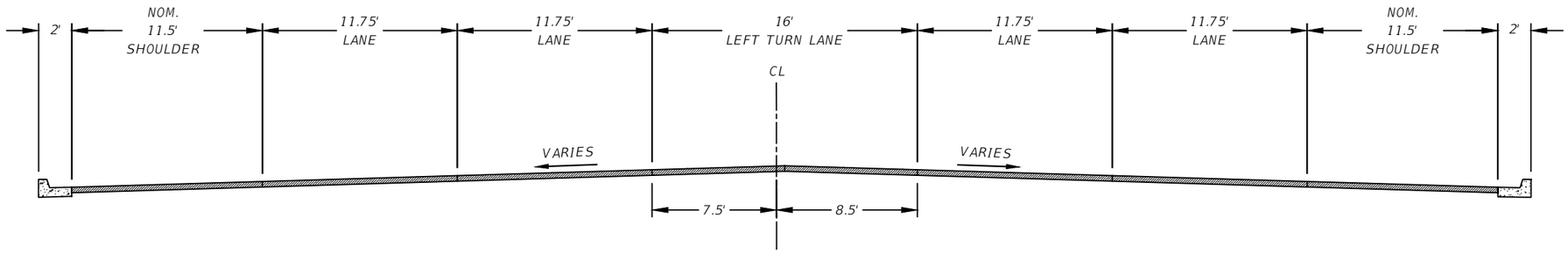
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TYPICAL SECTION NO. 5

WEST BROADWAY ST.

461+25.48	TO	467+90.50	TYP. NO. 5
467+90.50	TO	473+08.40	NOT INCL. THIS PROJECT, THEN TYP. NO. 7



NOTES:
1. EXACT STRIPING DIMENSIONS AND TYPES ARE SHOWN ON THE SIGNING AND STRIPING PLANS, SHEETS S1-S7

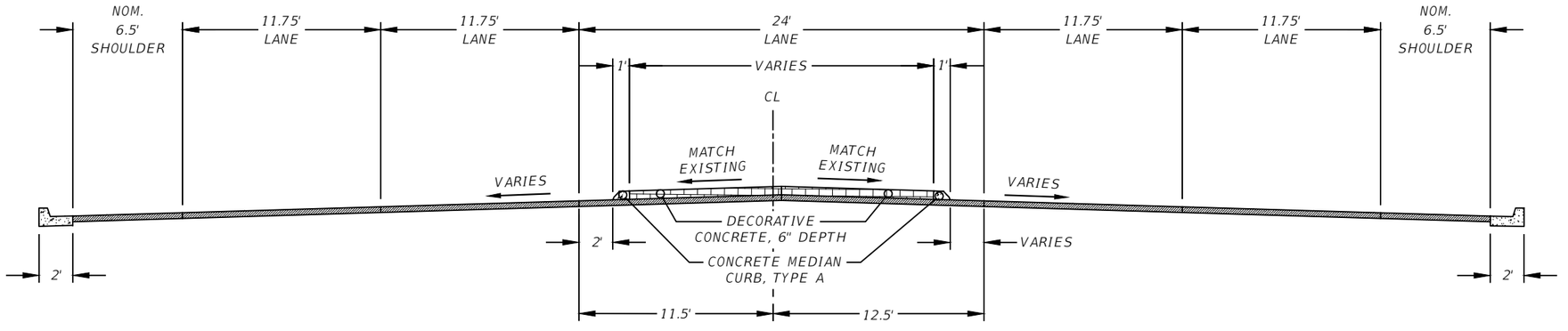
2. SURFACING QUANTITIES BASED ON PLAN VIEW AREA. SEE PLAN SHEETS FOR LIMITS.

ENGINEERS PLANNERS SURVEYORS

TYPICAL SECTION NO. 6

WEST BROADWAY ST.

475+83.38	TO	476+74.37	TYP. NO. 6
476+74.37	TO	477+22.19	TRANS. TYP. NO. 6 TO TYP. NO. 8



NOTES:
1. EXACT STRIPING DIMENSIONS AND TYPES ARE SHOWN ON THE SIGNING AND STRIPING PLANS, SHEETS S1-S7

2. SURFACING QUANTITIES BASED ON PLAN VIEW AREA. SEE PLAN SHEETS FOR LIMITS.

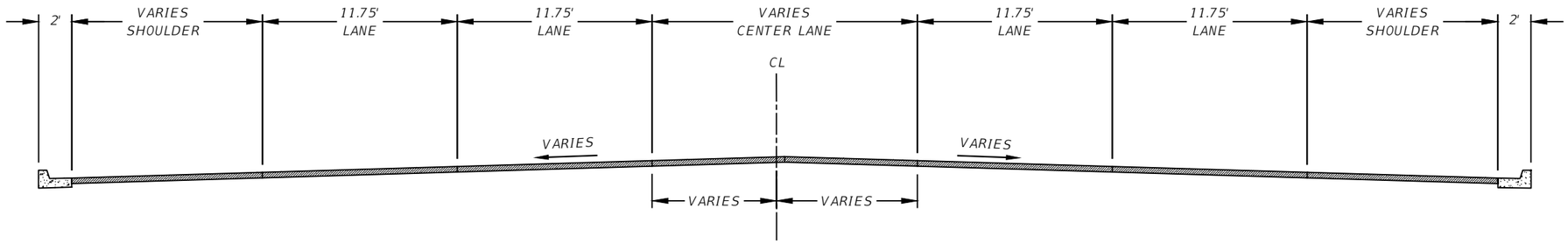
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TYPICAL SECTION NO. 7

WEST BROADWAY ST.

473+08.40 TO 475+83.38 TYP. NO. 7, THEN TYP. NO. 6

479+51.19 TO 481+59.16 TYP. NO. 7



NOTES:
1. EXACT STRIPING DIMENSIONS AND TYPES ARE SHOWN ON THE SIGNING AND STRIPING PLANS, SHEETS S1-S7

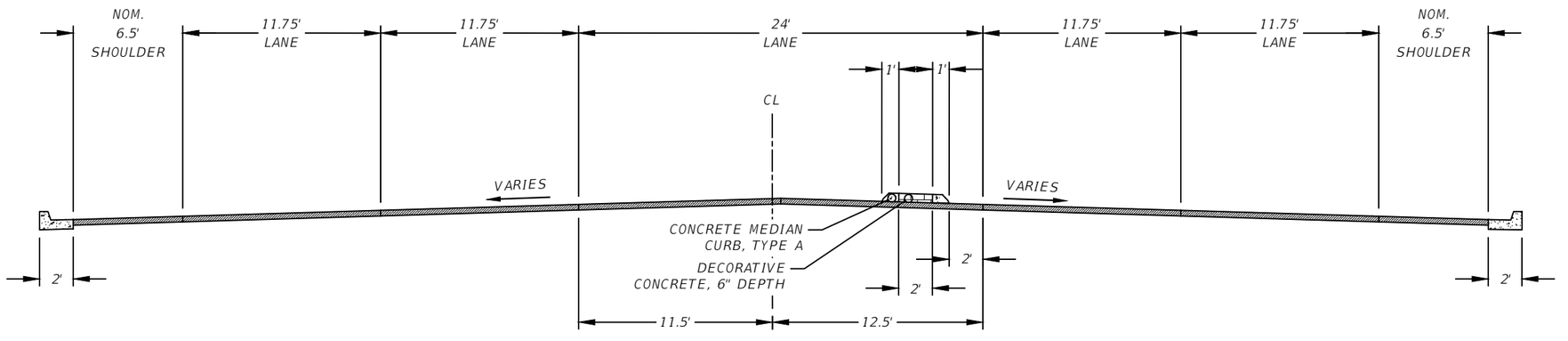
2. SURFACING QUANTITIES BASED ON PLAN VIEW AREA. SEE PLAN SHEETS FOR LIMITS.

ENGINEERS PLANNERS SURVEYORS

TYPICAL SECTION NO. 8

WEST BROADWAY ST.

477+22.19 TO 479+51.19 TYP. NO. 8, THEN TYP. NO. 7



NOTES:
1. EXACT STRIPING DIMENSIONS AND TYPES ARE SHOWN ON THE SIGNING AND STRIPING PLANS, SHEETS S1-S7

2. SURFACING QUANTITIES BASED ON PLAN VIEW AREA. SEE PLAN SHEETS FOR LIMITS.

3	MONTANA DEPARTMENT OF TRANSPORTATION	7065 MDT HSIP - Intro Sheets.dwg	DESIGNED BY	BB	ROAD PLANS	SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2		5/20/2021	REVIEWED BY	DP	MISSOULA COUNTY		UPN 9920000
1		5/20/2021 Braden	CHECKED BY	DW			SHEET 7

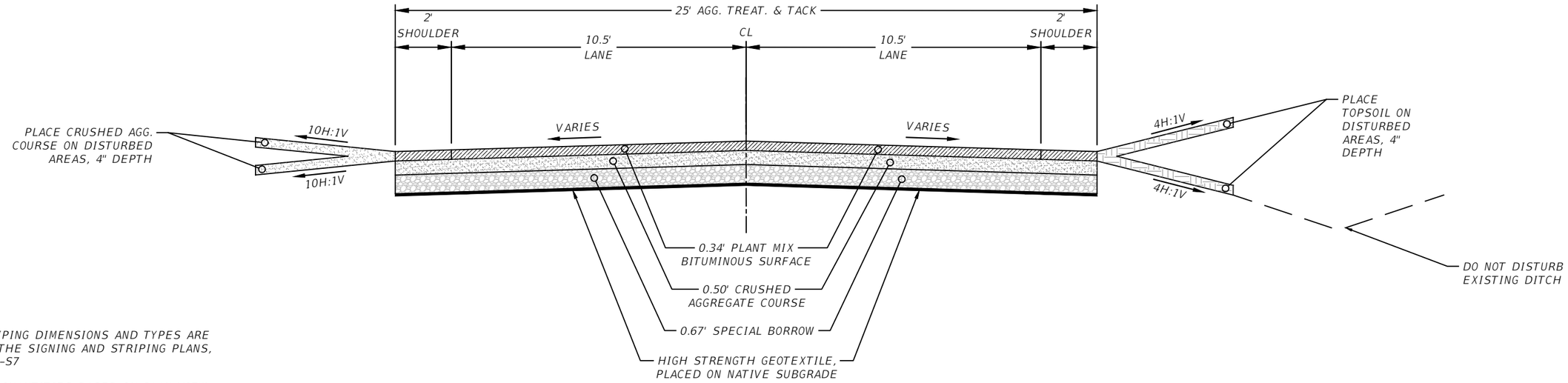
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TYPICAL SECTION NO. 9

11+60.00 TO 12+00.00

TYP. NO. 9, THEN TYP. NO. 10

FLYNN LANE



NOTES:
1. EXACT STRIPING DIMENSIONS AND TYPES ARE SHOWN ON THE SIGNING AND STRIPING PLANS, SHEETS S1-S7

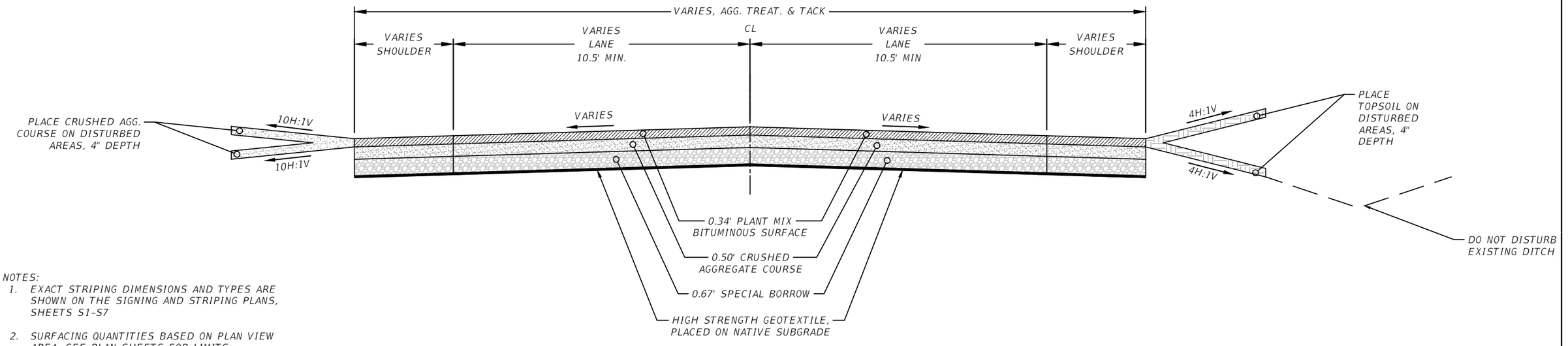
2. SURFACING QUANTITIES BASED ON PLAN VIEW AREA. SEE PLAN SHEETS FOR LIMITS.

TYPICAL SECTION NO. 10

12+00.00 TO 12+76.39

TYP. NO. 10, THEN TYP. NO. 11

FLYNN LANE



NOTES:
1. EXACT STRIPING DIMENSIONS AND TYPES ARE SHOWN ON THE SIGNING AND STRIPING PLANS, SHEETS S1-S7

2. SURFACING QUANTITIES BASED ON PLAN VIEW AREA. SEE PLAN SHEETS FOR LIMITS.

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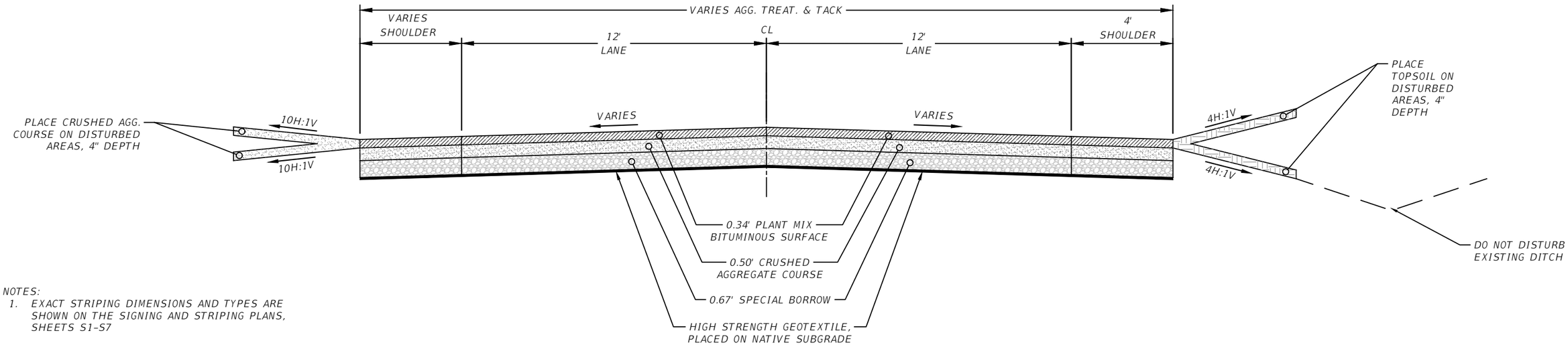
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TYPICAL SECTION NO. 11

12+76.39 TO 13+05.82

TYP. NO. 11, THEN TYP. NO. 12

FLYNN LANE



NOTES:
1. EXACT STRIPING DIMENSIONS AND TYPES ARE SHOWN ON THE SIGNING AND STRIPING PLANS, SHEETS S1-S7
2. SURFACING QUANTITIES BASED ON PLAN VIEW AREA. SEE PLAN SHEETS FOR LIMITS.

ENGINEERS PLANNERS SURVEYORS

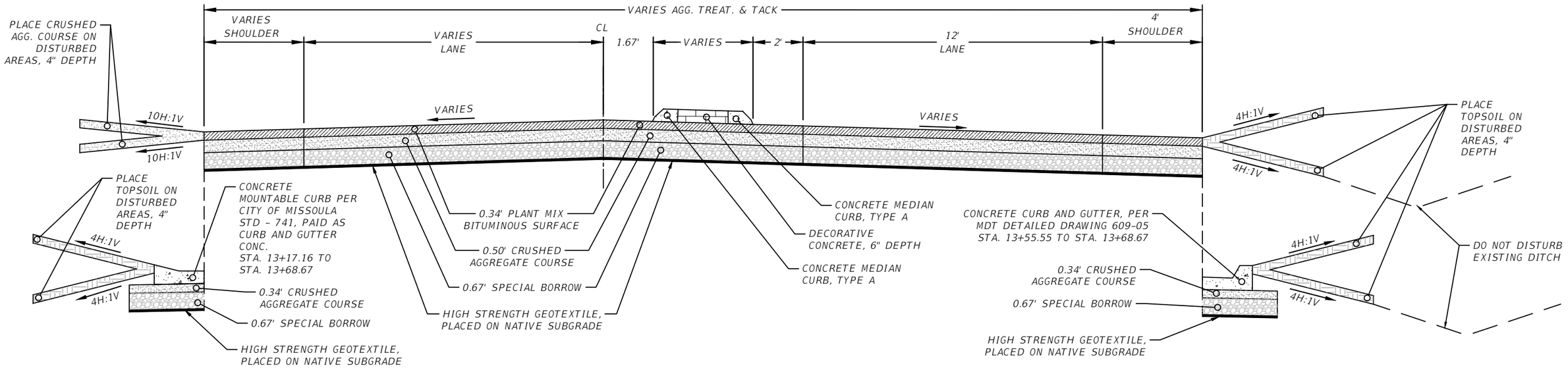
NOTES:
1. EXACT STRIPING DIMENSIONS AND TYPES ARE SHOWN ON THE SIGNING AND STRIPING PLANS, SHEETS S1-S7
2. SURFACING QUANTITIES BASED ON PLAN VIEW AREA. SEE PLAN SHEETS FOR LIMITS.

TYPICAL SECTION NO. 12

13+05.82 TO 13+72.67

TYP. NO. 12

FLYNN LANE



3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	7065 MDT HSIP - Intro Sheets.dwg	DESIGNED BY	BB		ROAD PLANS	SF199 MARY JANE BROADWAY INTX / HSIP 8199(161)
2		4/21/2022	REVIEWED BY	DP		MISSOULA COUNTY	UPN 9920000 / SHEET 9
1		4/21/2022 Braden	CHECKED BY	DW			

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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 3/8 IN-PG 64-28	AGGREGATE cubic yards CRUSHED AGG. COURSE	AGGREGATE cubic yards SPECIAL BORROW	BITUMINOUS MATERIAL gals. EMULSIFIED ASPHALT TACK COAT	BITUMINOUS MATERIAL tons EMULSIFIED ASPHALT CRS-2P	REMARKS
W BROADWAY ST													
452+62.99	454+83.76	220.77	220.77					88	79	122	23		TRANS. TYP. NO. 2 TO TYP. NO. 3
454+83.76	455+90.32	106.56	106.56					39	34	54	10		TYP. NO. 3
455+90.32	459+99.17	408.85	408.85					141	121	176	33		TYP. NO. 4
459+99.17	461+25.48	126.31	126.31					0	26	0	0		TRANS. TYP. NO. 4 TO TYP. NO. 5
461+25.48	467+90.50	665.02	665.02					0	5	4	0		TYP. NO. 5
FLYNN LN.													
11+60.00	12+00.00	40.00	40.00					24	22	25	6		TYP. NO. 9, THEN TYP. NO. 10
12+00.00	13+72.67	172.67	172.67					185	151	190	43		TYP. NOS. 10-12
TOTAL		1740.18	1740.18					478	438	570	115		

GRADING

STATION FROM	STATION TO	cu. yards UNCL. EXC.	cu. yards EMB.+	cu. yards EXCESS EXC.	REMARKS
W BROADWAY ST					
452+44.40	480+80.40	739	439	300	
FLYNN LN.					
11+60.00	13+72.67	506	13	493	
TOTAL		1,245	# 452	# 793	

FOR INFORMATION ONLY

CURB

STATION FROM	STATION TO	linear feet CONCRETE CURB AND GUTTER LEFT	linear feet CONCRETE CURB AND GUTTER RIGHT	linear feet REMOVE CURB AND GUTTER LEFT	linear feet REMOVE CURB AND GUTTER RIGHT	REMARKS
W BROADWAY ST						
455+90.32	459+99.17		408.3		408.5	
459+99.17	461+25.48		46.2		46.2	
461+25.48	467+90.50		42.9			
477+40.19	478+40.19		46.3			
FLYNN LN.						
12+00.00	13+72.67	43.5	58.8	39.9	67.3	INCLUDES STD-741 MOUNTABLE CURB
SUBTOTAL		43.5	602.5	39.9	522.0	
TOTAL		646.0		561.9		

MEDIAN CONCRETE CURB

STATION FROM	STATION TO	linear feet MEDIAN CONCRETE CURB	linear feet REMOVE MEDIAN CURB	sq. yards DECORATIVE CONCRETE	REMARKS
		TYPE A		4"	
W BROADWAY ST					
455+90.32	459+99.17		229.7		REMOVE TYPE A CURB W BROADWAY ST.
459+99.17	467+90.50		74.8		REMOVE TYPE A CURB MARY JANE BLVD.
475+83.38	476+74.37	203.8		166.1	
477+22.19	479+51.19	474.2		48.4	
478+40.19	480+80.40				
FLYNN LN					
13+05.82	13+72.67	79.6		32.1	
TOTAL		757.6	304.5	246.6	

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SUMMARY

SIDEWALK

STATION		sq. yards				linear feet	REMARKS
		CONCRETE SIDEWALK		DETECTABLE WARNING DEVICES		WIDTH	
		4"		TYPE 1			
FROM	TO	LEFT	RIGHT	LEFT	RIGHT		
W BROADWAY ST							
459+99.17	461+25.48		229.9		2.8	VARIES	
SUBTOTAL			229.9		2.8	~	
TOTAL		229.9		2.8		~	

GEOTEXTILE

STATION		sq. yards	REMARKS
		SEPARATION GEOTEXTILE HIGH	
FROM	TO		
W BROADWAY ST			
452+62.99	454+83.76	408	
454+83.76	455+90.32	172	
455+90.32	459+99.17	658	
FLYNN LN.			
11+60.00	12+00.00	109	
12+00.00	13+72.67	901	
TOTAL		2,248	

TOPSOIL & SEEDING

STATION		cu. yards	acres							REMARKS
		TOPSOIL SALVAGING & PLACING	SEED			FERTILIZER		CONDITION SEEDBED	MULCH - COMPOST	
FROM	TO		NO. 1	NO. 2	NO.3	NO. 1	NO. 2			
W BROADWAY ST										
452+44.40	454+83.76	44	0.1			0.1		0.1		
454+83.76	455+90.32	25	0.0			0.0		0.0		
455+90.32	459+99.17	70	0.1			0.1		0.1		
459+99.17	461+25.48	12	0.0			0.0		0.0		
FLYNN LN.										
11+60.00	12+00.00	11	0.0			0.0		0.0		
12+00.00	13+72.67	14	0.1			0.1		0.1		
TOTAL		176	0.3			0.3		0.3		

PAVEMENT MARKINGS

ITEM	UNIT	INTERIM APPLICATION #	FINAL APPLICATION	TOTAL
CURB MARKING-YELLOW EPOXY	gallon		27	27
STRIPING - WHITE PAINT	gallon	76		76
STRIPING - YELLOW PAINT	gallon	67		67
WORDS & SYMBOLS - WHITE PAINT	gallon	11		11
STRIPING - WHITE EPOXY	gallon		49	49
STRIPING - YELLOW EPOXY	gallon		43	43
WORDS & SYMBOLS - WHITE EPOXY	gallon		7	7
WORDS & SYMBOLS - GREEN EPOXY	gallon		16	16
REMOVE PAVEMENT MARKINGS	foot			11,168
FINAL SWEEP AND BROOM	crmi			0.4

BASED ON 2 APPLICATIONS.

WATER VALVE BOXES

STATION	each				REMARKS
	ADJUST WATER VALVE BOX		RESET WATER VALVE BOX		
	LEFT	RIGHT	LEFT	RIGHT	
13+39.71	1				10.93' LT
13+40.63	1				11.18' LT
13+70.76	1				14.42' LT
13+76.57					19.73' LT DISMISS
SUBTOTAL	3	0	0	0	
TOTAL	3		0		

100% STATE COST SHARE

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SUMMARY

STORM DRAIN PIPE #								
PIPE SECTION				ALLOWABLE PIPE MATERIALS		linear feet STORM DRAIN PIPE ##		REMARKS
FROM		TO		PVC	RCP	12"	30"	
455+96.89	57.50' RT	455+96.89	65.50' RT	X		8.0		CB-1 TO S-1
455+96.89	65.50' RT	456+26.89	65.50' RT	X			30.0	S-1 TO S-2
459+42.99	65.50' RT	459+72.99	65.50' RT	X			30.0	S-3 TO S-4
459+72.99	57.50' RT	459+72.99	65.50' RT	X		8.0		CB-2 TO S-4
TOTAL				~	~	16.0	60.0	

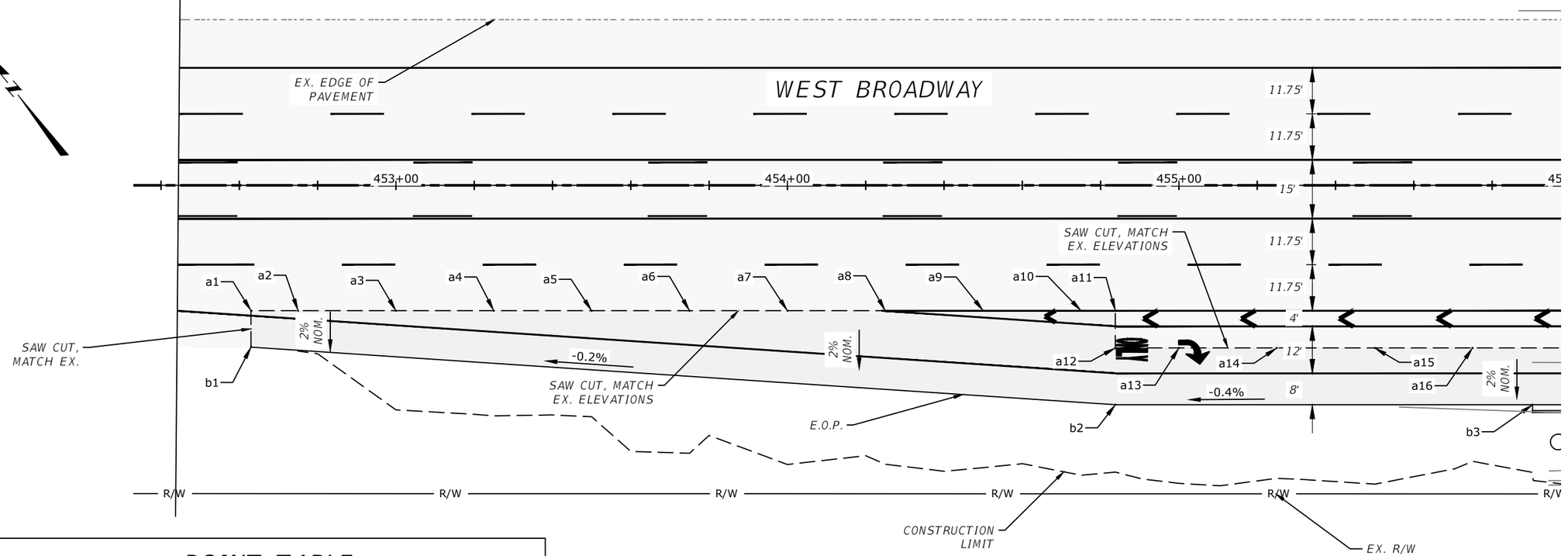
\# FUNDING -
\## GRANULAR BEDDING MATERIAL INCIDENTAL TO STORM DRAIN PIPE, SEE DETAILED DRAWINGS FOR BEDDING QUANTITITES AND DETAILS.

STORM DRAIN STRUCTURE SCHEDULE #											
NAME	STATION	REMOVE DROP INLET	each: STORM DRAIN STRUCTURE ROUND 48"	each: STORM DRAIN STRUCTURE ROUND 60"	each: SUMP TYPE 1 48"	each: TOP IRON MH LID & FRAME	each: TOP IRON TYPE A	each: TOP IRON TYPE B	vertical feet: ADDITIONAL BARREL 48"	vertical feet: EXTRA DEPTH SUMP 48"	REMARKS
CB-1	455+96.89		1					1			57.50' RT
S-1	455+96.89				1	1				4.0	65.50' RT
S-2	456+26.89				1	1				4.0	65.50' RT
S-3	459+42.99				1	1				4.0	65.50' RT
CB-2	459+72.99		1					1			57.50' RT
S-4	459+72.99				1	1				4.0	65.50' RT
TOTAL		~	2	~	4	4	~	2	~	16.0	

ENGINEERS PLANNERS SURVEYORS

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POINT TABLE

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION	DESCRIPTION
a1	452+62.99	32.00'RT	1001917.79	830996.68	3169.93	SAWCUT
a2	452+75.00	32.00'RT	1001910.13	831005.93	3169.89	SAWCUT
a3	453+00.00	32.00'RT	1001894.20	831025.19	3169.94	SAWCUT
a4	453+25.00	32.00'RT	1001878.26	831044.45	3170.04	SAWCUT
a5	453+50.00	32.00'RT	1001862.32	831063.72	3170.14	SAWCUT
a6	453+75.00	32.00'RT	1001846.38	831082.98	3170.17	SAWCUT
a7	454+00.00	32.00'RT	1001830.45	831102.24	3170.24	SAWCUT
a8	454+25.00	32.00'RT	1001814.51	831121.50	3170.38	SAWCUT
a9	454+50.00	32.00'RT	1001798.57	831140.76	3170.44	SAWCUT
a10	454+75.00	32.00'RT	1001782.63	831160.02	3170.60	SAWCUT
a11	454+83.76	32.00'RT	1001777.05	831166.77	3170.63	SAWCUT
a12	454+83.76	41.50'RT	1001769.73	831160.72	3170.28	SAWCUT
a13	455+00.00	41.50'RT	1001759.38	831173.23	3170.41	SAWCUT
a14	455+25.00	41.50'RT	1001743.44	831192.49	3170.54	SAWCUT
a15	455+50.00	41.50'RT	1001727.50	831211.75	3170.68	SAWCUT
a16	455+75.00	41.50'RT	1001711.56	831231.01	3170.75	SAWCUT
b1	452+62.99	41.28'RT	1001910.64	830990.76	3169.62	EOP
b2	454+83.76	56.00'RT	1001758.56	831151.47	3170.09	EOP
b3	455+90.32	56.00'RT	1001690.63	831233.57	3170.53	EOP

GEOMETRIC DETAILS NOTES:

1. ALL CURB CALLOUTS AND RADII ARE AT TOP BACK OF CURB. ADJUST ELEVATIONS AND SPLINE GRADES BETWEEN ELEVATIONS AS NECESSARY TO ENSURE PROPER DRAINAGE.

2. MATCH EXISTING ELEVATIONS AND CROSS SLOPE AT ALL SAW CUT LOCATIONS.

3. CURB SLOPES ARE MEASURED AT THE FLOW LINE.

4. SLOPE ARROWS INDICATE DIRECTION OF FLOW.

5. CURVE RADIUS DATA ARE BASED ON T.B.C. FOR CURBED RADII AND AT E.O.P. FOR UNCURBED RADII.

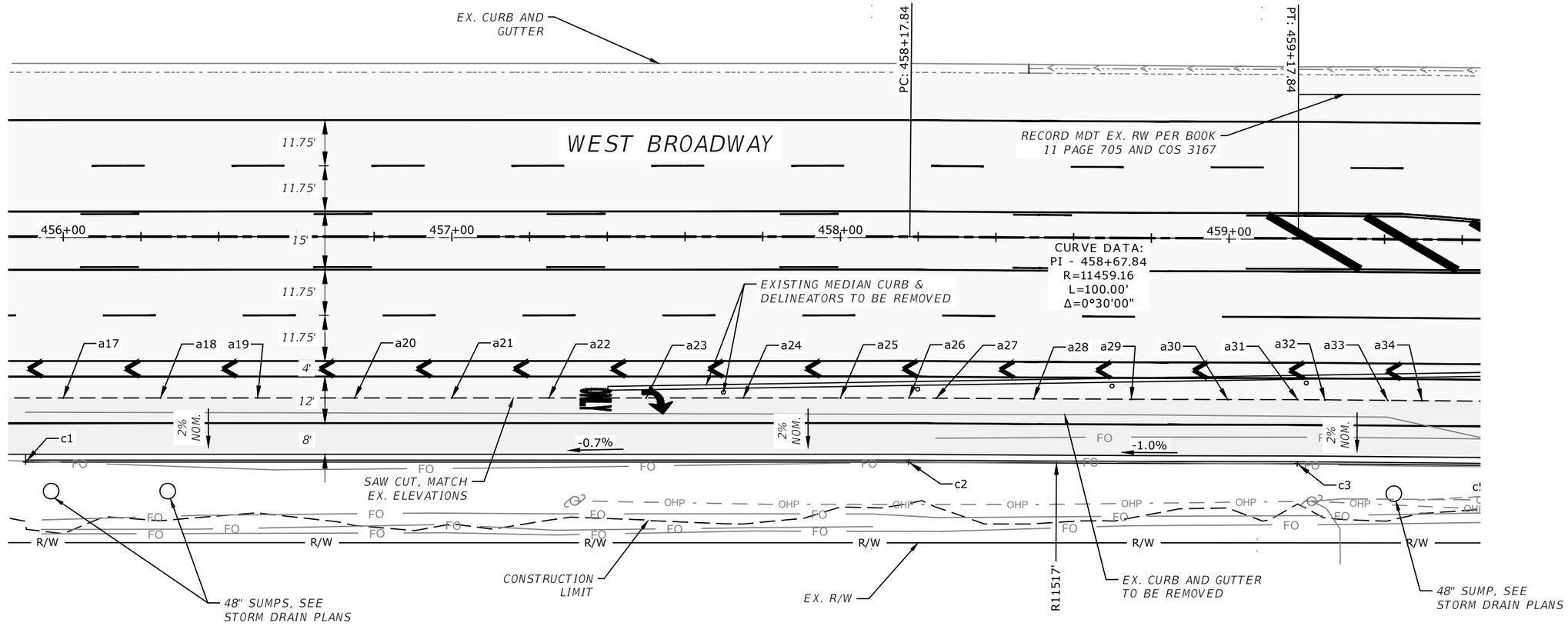
6. ALL STATIONING BASED ON WEST BROADWAY CENTERLINE.

GEOMETRIC DETAILS
MARY JANE BLVD. AND
WEST BROADWAY ST.

SCALE 1"=30'

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POINT TABLE

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION	DESCRIPTION
a17	456+00.00	41.50'RT	1001695.63	831250.27	3170.95	SAWCUT
a18	456+25.00	41.50'RT	1001679.69	831269.53	3171.08	SAWCUT
a19	456+50.00	41.50'RT	1001663.75	831288.80	3171.19	SAWCUT
a20	456+75.00	41.50'RT	1001647.81	831308.06	3171.32	SAWCUT
a21	457+00.00	41.50'RT	1001631.88	831327.32	3171.50	SAWCUT
a22	457+25.00	41.50'RT	1001615.94	831346.58	3171.63	SAWCUT
a23	457+50.00	41.50'RT	1001600.00	831365.84	3171.83	SAWCUT
a24	457+75.00	41.50'RT	1001584.06	831385.10	3172.06	SAWCUT
a25	458+00.00	41.50'RT	1001568.13	831404.36	3172.17	SAWCUT
a26	458+17.66	41.50'RT	1001556.87	831417.97	3172.31	SAWCUT
a27	458+25.00	41.50'RT	1001552.36	831423.33	3172.39	SAWCUT

POINT TABLE

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION	DESCRIPTION
a28	458+50.00	41.50'RT	1001536.23	831442.55	3172.59	SAWCUT
a29	458+75.00	41.50'RT	1001520.14	831461.80	3172.80	SAWCUT
a30	458+99.70	41.50'RT	1001504.28	831480.86	3173.00	SAWCUT
a31	459+17.66	41.50'RT	1001492.78	831494.74	3173.15	SAWCUT
a32	459+25.00	41.50'RT	1001488.29	831500.07	3173.24	SAWCUT
a33	459+41.18	41.50'RT	1001477.87	831512.45	3173.49	SAWCUT
a34	459+50.00	41.50'RT	1001472.18	831519.19	3173.58	SAWCUT
c1	455+90.32	58.00'RT	1001689.09	831232.29	3170.97	TOP-BACK-OF-CURB
c2	458+17.59	58.00'RT	1001544.20	831407.39	3172.45	TOP-BACK-OF-CURB
c3	459+17.59	58.00'RT	1001480.12	831484.16	3173.41	TOP-BACK-OF-CURB

GEOMETRIC DETAILS NOTES:

1. ALL CURB CALLOUTS AND RADII ARE AT TOP BACK OF CURB. ADJUST ELEVATIONS AND SPLINE GRADES BETWEEN ELEVATIONS AS NECESSARY TO ENSURE PROPER DRAINAGE.

2. MATCH EXISTING ELEVATIONS AND CROSS SLOPE AT ALL SAW CUT LOCATIONS.

3. CURB SLOPES ARE MEASURED AT THE FLOW LINE.

4. SLOPE ARROWS INDICATE DIRECTION OF FLOW.

5. CURVE RADIUS DATA ARE BASED ON T.B.C. FOR CURBED RADII AND AT E.O.P. FOR UNCURBED RADII.

6. ALL STATIONING BASED ON WEST BROADWAY CENTERLINE.

GEOMETRIC DETAILS
MARY JANE BLVD. AND
WEST BROADWAY ST.

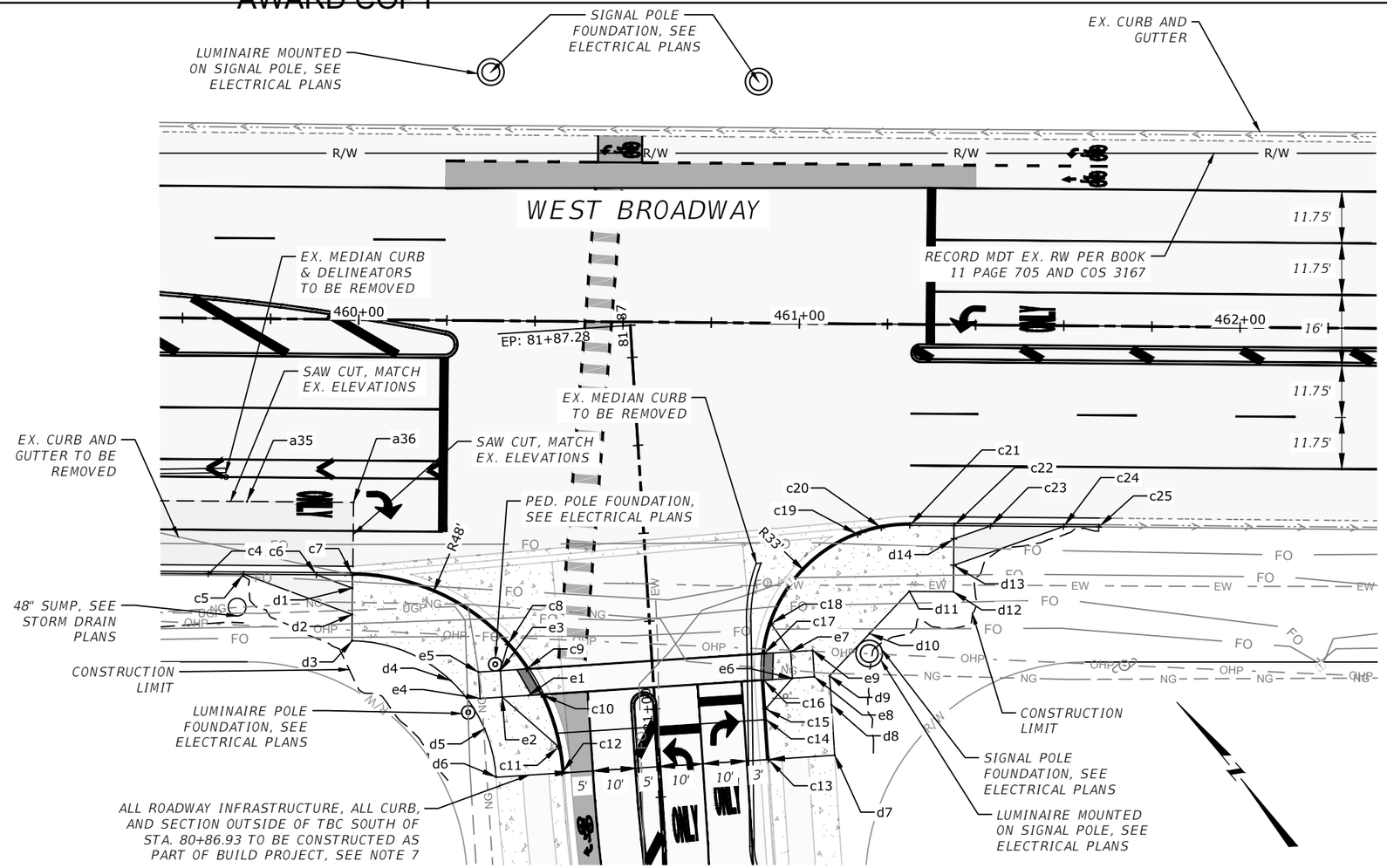
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POINT TABLE

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION	DESCRIPTION
a35	459+75.00	41.50'RT	1001456.08	831538.32	3173.81	SAWCUT
a36	459+99.17	41.50'RT	1001440.51	831556.80	3174.05	SAWCUT
c4	459+66.37	58.00'RT	1001449.02	831521.09	3173.88	TOP-BACK-OF-CURB
c5	459+74.37	58.00'RT	1001443.86	831527.21	3173.51	ADA LAYDOWN
c6	459+90.94	58.00'RT	1001433.19	831539.88	3173.67	ADA LAYDOWN
c7	459+99.07	58.00'RT	1001427.95	831546.10	3174.19	TOP-BACK-OF-CURB
c8	460+34.47	73.48'RT	1001393.31	831563.20	3174.80	TOP-BACK-OF-CURB
c9	460+38.82	78.95'RT	1001386.32	831563.00	3174.41	ADA LAYDOWN
c10	460+42.19	84.72'RT	1001379.73	831561.87	3174.51	ADA LAYDOWN
c11	460+46.23	96.57'RT	1001368.07	831557.32	3174.85	TOP-BACK-OF-CURB
c12	460+47.04	102.48'RT	1001363.03	831554.13	3174.77	TOP-BACK-OF-CURB
c13	460+93.91	99.03'RT	1001335.47	831592.21	3174.68	TOP-BACK-OF-CURB
c14	460+93.25	89.98'RT	1001342.83	831597.53	3175.11	TOP-BACK-OF-CURB
c15	460+93.07	87.55'RT	1001344.80	831598.96	3175.13	TOP-BACK-OF-CURB
c16	460+92.59	81.01'RT	1001350.11	831602.80	3174.67	ADA LAYDOWN
c17	460+92.69	74.99'RT	1001354.65	831606.76	3174.71	ADA LAYDOWN
c18	460+94.19	68.17'RT	1001358.90	831612.30	3175.26	TOP-BACK-OF-CURB
c19	461+13.71	47.77'RT	1001361.93	831640.37	3175.45	TOP-BACK-OF-CURB
c20	461+19.05	46.23'RT	1001359.67	831645.45	3175.49	TOP-BACK-OF-CURB
c21	461+25.48	45.59'RT	1001356.01	831650.78	3175.73	TOP-BACK-OF-CURB
c22	461+35.48	45.59'RT	1001349.57	831658.43	3175.84	TOP-BACK-OF-CURB
c23	461+43.78	45.58'RT	1001344.23	831664.78	3175.49	ADA LAYDOWN
c24	461+60.37	45.58'RT	1001333.55	831677.47	3175.67	ADA LAYDOWN
c25	461+68.37	45.59'RT	1001328.39	831683.58	3176.20	TOP-BACK-OF-CURB
d1	459+99.08	60.94'RT	1001425.70	831544.21	3174.23	SIDEWALK
d2	459+99.09	66.94'RT	1001421.10	831540.35	3174.32	SIDEWALK
d3	459+99.10	72.94'RT	1001416.50	831536.49	3174.41	SIDEWALK
d4	460+21.60	81.75'RT	1001395.27	831548.03	3174.86	SIDEWALK
d5	460+29.34	92.60'RT	1001381.99	831546.96	3175.10	SIDEWALK
d6	460+32.07	103.52'RT	1001371.87	831542.01	3175.02	SIDEWALK
d7	461+08.87	97.93'RT	1001326.68	831604.36	3174.93	SIDEWALK
d8	461+08.03	86.45'RT	1001336.01	831611.11	3175.25	SIDEWALK
d9	461+07.55	79.91'RT	1001341.31	831614.95	3175.28	SIDEWALK
d10	461+16.52	70.25'RT	1001342.92	831628.03	3175.44	SIDEWALK
d11	461+25.49	60.59'RT	1001344.53	831641.12	3175.62	SIDEWALK
d12	461+35.49	60.59'RT	1001338.09	831648.77	3175.91	SIDEWALK
d13	461+35.49	54.59'RT	1001342.68	831652.63	3175.88	SIDEWALK
d14	461+35.48	48.59'RT	1001347.27	831656.50	3175.85	SIDEWALK
e1	460+39.26	84.94'RT	1001381.46	831559.48	3174.52	ADA LANDING



POINT TABLE

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION	DESCRIPTION
e2	460+33.28	85.38'RT	1001384.98	831554.62	3174.84	ADA LANDING
e3	460+32.84	79.39'RT	1001389.84	831558.14	3174.84	ADA LANDING
e4	460+28.29	85.74'RT	1001387.91	831550.57	3174.91	ADA LANDING
e5	460+27.85	79.76'RT	1001392.77	831554.09	3174.84	ADA LANDING
e6	460+99.12	80.53'RT	1001346.27	831608.10	3175.13	ADA LANDING
e7	460+98.68	74.55'RT	1001351.13	831611.62	3175.13	ADA LANDING
e8	461+04.11	80.17'RT	1001343.34	831612.15	3175.20	ADA LANDING
e9	461+03.66	74.18'RT	1001348.20	831615.67	3175.21	ADA LANDING

GEOMETRIC DETAILS NOTES:

1. ALL CURB CALLOUTS AND RADII ARE AT TOP BACK OF CURB. ADJUST ELEVATIONS AND SPLINE GRADES BETWEEN ELEVATIONS AS NECESSARY TO ENSURE PROPER DRAINAGE.

2. SEE DETAILED DRAWINGS FOR CURB RAMP AND LAYDOWN CURB DETAILS.

3. MATCH EXISTING ELEVATIONS AND CROSS SLOPE AT ALL SAW CUT LOCATIONS.

4. CURB SLOPES ARE MEASURED AT THE FLOW LINE.

5. SLOPE ARROWS INDICATE DIRECTION OF FLOW.

6. CURVE RADIUS DATA ARE BASED ON T.B.C. FOR CURBED RADII AND AT E.O.P. FOR UNCURBED RADII.

7. CURB RETURNS, VALLEY GUTTER, AND ROADWAY ARE EXISTING AT THIS INTERSECTION. CONTRACTOR TO RE-CONSTRUCT EXISTING CURB FOR PEDESTRIAN RAMP LAYDOWNS AND CONSTRUCT SECTION OUTSIDE OF THE EXISTING BACK OF CURB.

8. ALL STATIONING BASED ON WEST BROADWAY CENTERLINE.

GEOMETRIC DETAILS
MARY JANE BLVD. AND
WEST BROADWAY ST.

SCALE 1"=30'

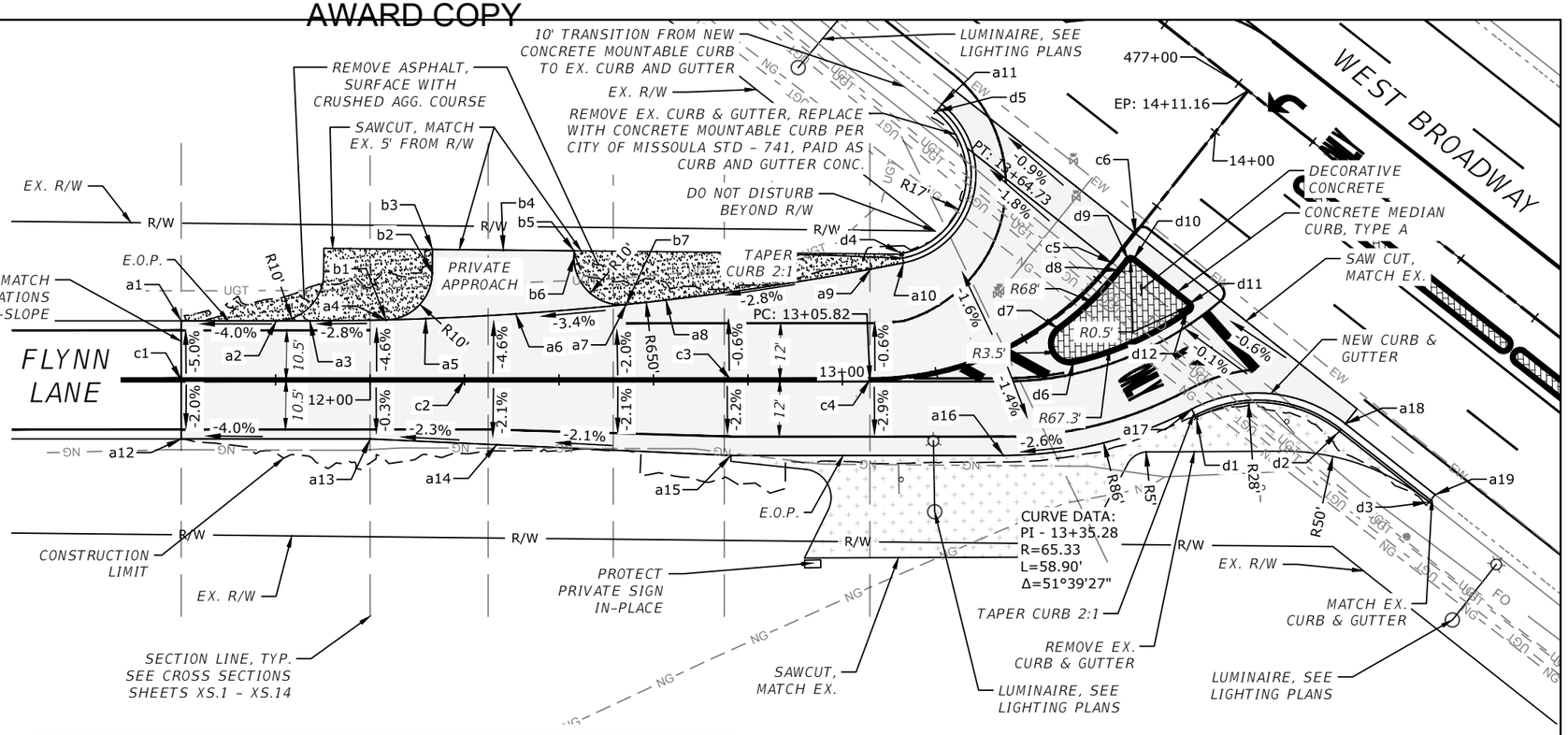
ENGINEERS PLANNERS SURVEYORS

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	Details Mary Jane & Broadway.dwg	DESIGNED BY	BB		ROAD PLANS
2		5/20/2021	REVIEWED BY	DP		MISSOULA COUNTY
1		5/20/2021 Braden	CHECKED BY	DW		

SF199 MARY JANE BROADWAY INTX | HSIP 8199(161)
UPN 9920000 | SHEET 15

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POINT TABLE

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION	DESCRIPTION
a1	11+60.00	12.50' LT	1000331.93	832660.06	3187.00	EOP
a2	11+80.14	12.50' LT	1000331.48	832680.20	3187.80	EOP
a3	11+87.22	12.50' LT	1000331.33	832687.28	3188.08	EOP
a4	12+03.39	12.70' LT	1000331.17	832703.45	3188.53	EOP
a5	12+11.80	12.96' LT	1000331.25	832711.86	3188.76	EOP
a6	12+30.83	13.96' LT	1000331.83	832730.91	3189.41	EOP
a7	12+54.21	15.96' LT	1000333.31	832754.33	3190.21	EOP
a8	12+62.62	16.89' LT	1000334.05	832762.76	3190.50	EOP
a9	13+06.09	23.44' LT	1000339.65	832806.27	3191.72	EOP
a10	13+17.16	24.15' LT	1000340.82	832813.23	3191.96	EOP
a11	13+68.67	49.05' LT	1000374.19	832822.07	3193.32	EOP
a12	11+60.00	12.50' RT	1000306.93	832659.51	3187.37	EOP
a13	12+00.00	12.50' RT	1000306.05	832699.50	3188.98	EOP
a14	12+26.80	13.73' RT	1000304.23	832726.27	3189.59	EOP
a15	12+76.39	16.00' RT	1000300.87	832775.80	3190.63	EOP
a16	13+27.69	20.78' RT	1000299.60	832833.51	3192.12	EOP
a17	13+55.55	33.47' RT	1000308.51	832873.57	3193.18	EOP
a18	13+68.66	59.89' RT	1000304.74	832906.00	3194.06	EOP
a19	13+68.66	84.12' RT	1000289.29	832924.67	3194.45	EOP
b1	12+03.39	12.70' LT	1000331.17	832703.45	3188.53	APPROACH
b2	12+13.14	22.59' LT	1000340.85	832713.42	3188.22	APPROACH
b3	12+13.19	27.63' LT	1000345.88	832713.58	3188.12	APPROACH
b4	12+28.19	27.47' LT	1000345.39	832728.57	3188.50	APPROACH
b5	12+43.19	27.32' LT	1000344.91	832743.56	3189.26	APPROACH

POINT TABLE

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION	DESCRIPTION
b6	12+43.18	26.01' LT	1000343.60	832743.52	3189.33	APPROACH
b7	12+54.21	15.96' LT	1000333.31	832754.33	3190.21	APPROACH
c1	11+60.00	00.00'	1000319.43	832659.79	3187.62	FLYNN CL
c2	12+20.00	00.00'	1000318.11	832719.77	3189.72	FLYNN CL
c3	12+76.39	00.00'	1000316.86	832776.15	3190.98	FLYNN CL
c4	13+05.82	00.00'	1000316.22	832805.58	3191.86	FLYNN CL
c5	13+64.73	00.00'	1000339.88	832857.35	3193.61	FLYNN CL
c6	13+72.67	00.00'	1000346.00	832862.41	3193.84	FLYNN CL
d1	13+55.19	35.39' RT	1000306.71	832874.45	3193.62	TOP-BACK-OF-CURB
d2	13+66.66	59.89' RT	1000303.20	832904.73	3194.50	TOP-BACK-OF-CURB
d3	13+66.66	84.12' RT	1000287.75	832923.40	3194.89	TOP-BACK-OF-CURB
d4	13+17.09	26.15' LT	1000342.80	832812.89	3192.17	TOP-BACK-OF-CURB
d5	13+66.67	49.05' LT	1000372.65	832820.80	3193.53	TOP-BACK-OF-CURB
d6	13+46.04	9.39' RT	1000319.59	832848.80	3193.45	TOP-BACK-OF-CURB
d7	13+47.26	2.67' RT	1000325.88	832846.10	3193.57	TOP-BACK-OF-CURB
d8	13+64.73	2.67' RT	1000338.18	832859.41	3194.12	TOP-BACK-OF-CURB
d9	13+67.17	2.67' RT	1000340.06	832860.96	3194.19	TOP-BACK-OF-CURB
d10	13+67.67	3.17' RT	1000340.13	832861.67	3194.25	TOP-BACK-OF-CURB
d11	13+67.67	18.10' RT	1000330.61	832873.17	3194.37	TOP-BACK-OF-CURB
d12	13+67.02	18.58' RT	1000329.81	832873.13	3194.30	TOP-BACK-OF-CURB

GEOMETRIC DETAILS NOTES:

1. ALL CURB CALLOUTS AND RADII ARE AT TOP BACK OF CURB. ADJUST ELEVATIONS AND SPLINE GRADES BETWEEN ELEVATIONS AS NECESSARY TO ENSURE PROPER DRAINAGE.

2. MATCH EXISTING ELEVATIONS AND CROSS SLOPE AT ALL SAW CUT LOCATIONS.

3. CURB SLOPES ARE MEASURED AT THE FLOW LINE.

4. SLOPE ARROWS INDICATE DIRECTION OF FLOW.

5. CURVE RADIUS DATA ARE BASED ON T.B.C. FOR CURBED RADII AND AT E.O.P. FOR UNCURBED RADII.

6. ALL STATIONING BASED ON PROPOSED FLYNN LANE CENTERLINE.

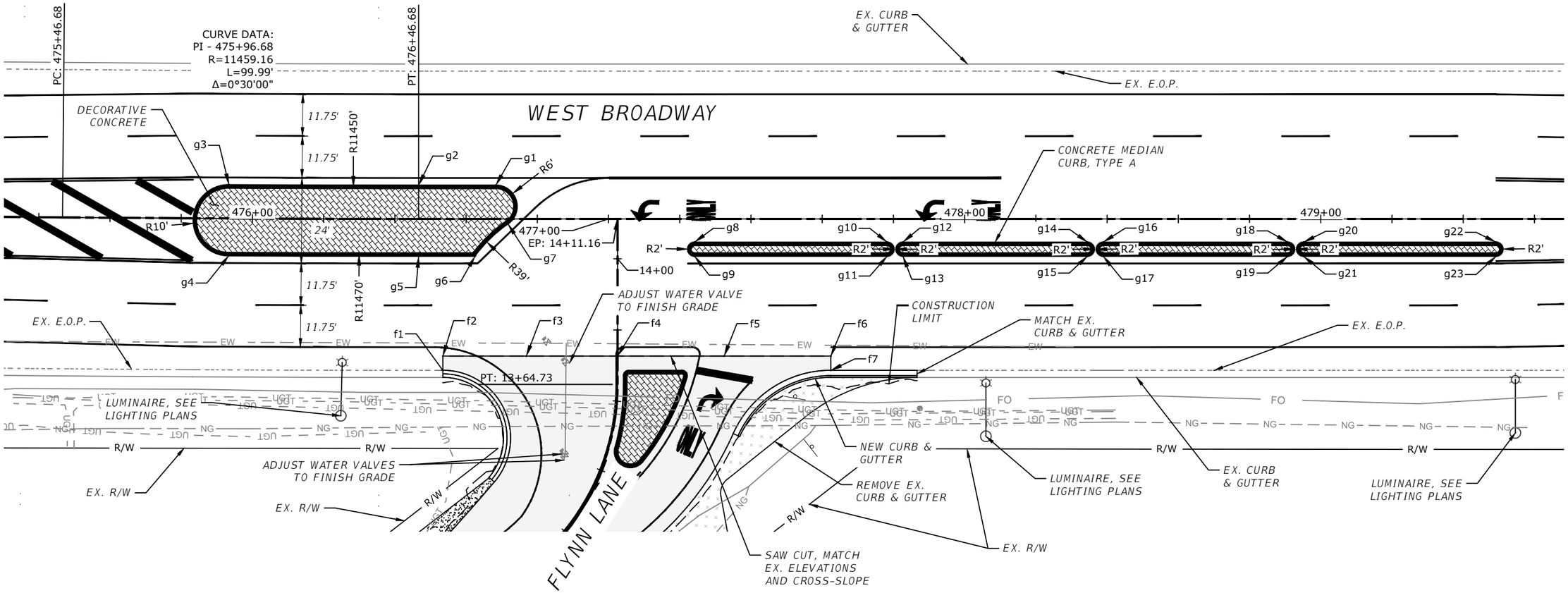
7. EXACT STRIPING DIMENSIONS AND TYPES ARE SHOWN ON THE SIGNING AND STRIPING PLANS, SHEETS S1-S7.

8. ADDITIONAL SITE LAYOUT INFORMATION IS SHOWN ON THE FLYNN LANE PLAN AND PROFILE, SHEET 21.

GEOMETRIC DETAILS
FLYNN LANE AND
WEST BROADWAY ST.

SCALE 1"=30'

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POINT TABLE

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION[6]	DESCRIPTION
f1	13+68.67	49.05' LT	1000374.19	832822.07	3193.32	SAWCUT
f2	13+72.67	49.05' LT	1000377.27	832824.62	3193.42	SAWCUT
f3	13+72.67	25.61' LT	1000362.33	832842.68	3193.55	SAWCUT
f4	13+72.67	00.00'	1000346.00	832862.41	3193.84	SAWCUT
f5	13+72.67	29.94' RT	1000326.91	832885.48	3194.11	SAWCUT
f6	13+72.66	59.89' RT	1000307.82	832908.55	3194.17	SAWCUT
f7	13+68.66	59.89' RT	1000304.74	832906.00	3194.06	SAWCUT
g1	476+68.37	9.50' LT	1000404.75	832866.70	3194.16	MEDIAN CURB
g2	476+46.68	9.50' LT	1000418.58	832849.98	3193.90	MEDIAN CURB
g3	475+93.36	9.50' LT	1000452.64	832809.02	3193.51	MEDIAN CURB
g4	475+93.36	10.50' RT	1000437.29	832796.20	3193.47	MEDIAN CURB
g5	476+46.68	10.50' RT	1000403.18	832837.23	3193.89	MEDIAN CURB
g6	476+62.49	10.50' RT	1000393.09	832849.42	3194.08	MEDIAN CURB
g7	476+71.79	1.43' RT	1000394.15	832862.36	3194.25	MEDIAN CURB
g8	477+24.19	6.50' RT	1000356.84	832899.51	3194.59	MEDIAN CURB
g9	477+24.19	10.50' RT	1000353.76	832896.96	3194.56	MEDIAN CURB

POINT TABLE

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION[6]	DESCRIPTION
g10	477+78.19	6.50' RT	1000322.41	832941.11	3194.89	MEDIAN CURB
g11	477+78.19	10.50' RT	1000319.33	832938.56	3194.94	MEDIAN CURB
g12	477+82.69	6.50' RT	1000319.55	832944.58	3195.07	MEDIAN CURB
g13	477+82.69	10.50' RT	1000316.46	832942.03	3194.96	MEDIAN CURB
g14	478+34.44	6.50' RT	1000286.55	832984.45	3195.45	MEDIAN CURB
g15	478+34.44	10.50' RT	1000283.47	832981.90	3195.37	MEDIAN CURB
g16	478+38.94	6.50' RT	1000283.69	832987.92	3195.46	MEDIAN CURB
g17	478+38.94	10.50' RT	1000280.60	832985.37	3195.34	MEDIAN CURB
g18	478+90.69	6.50' RT	1000250.70	833027.79	3195.93	MEDIAN CURB
g19	478+90.69	10.50' RT	1000247.61	833025.24	3195.86	MEDIAN CURB
g20	478+95.19	6.50' RT	1000247.83	833031.25	3196.01	MEDIAN CURB
g21	478+95.19	10.50' RT	1000244.75	833028.70	3195.91	MEDIAN CURB
g22	479+49.19	6.50' RT	1000213.40	833072.86	3196.21	MEDIAN CURB
g23	479+49.19	10.50' RT	1000210.32	833070.31	3196.07	MEDIAN CURB

GEOMETRIC DETAILS NOTES:

1. ALL MEDIAN CURB CALLOUTS AND RADII ARE AT TOE OF CURB. MEDIAN CURB TO BE RETROFITTED ON EXISTING ROADWAY, MATCH EXISTING ELEVATIONS AND SLOPES.

2. MATCH EXISTING ELEVATIONS AND CROSS SLOPE AT ALL SAW CUT LOCATIONS.

3. ALL STATIONING BASED ON WEST BROADWAY CENTERLINE.

4. EXACT STRIPING DIMENSIONS AND TYPES ARE SHOWN ON THE SIGNING AND STRIPING PLANS, SHEETS S1-S7.

5. ADDITIONAL SITE LAYOUT INFORMATION IS SHOWN ON THE FLYNN LANE PLAN AND PROFILE, SHEET 21.

6. ELEVATIONS LISTED ARE APPROXIMATE BASED ON LIDAR DATA WHICH MAY VARY FROM EXISTING ELEVATIONS FOUND IN FIELD. BROADWAY MEDIAN CURB TO BE PLACED AT EXISTING BROADWAY ELEVATIONS.

GEOMETRIC DETAILS
FLYNN LANE AND
WEST BROADWAY ST.

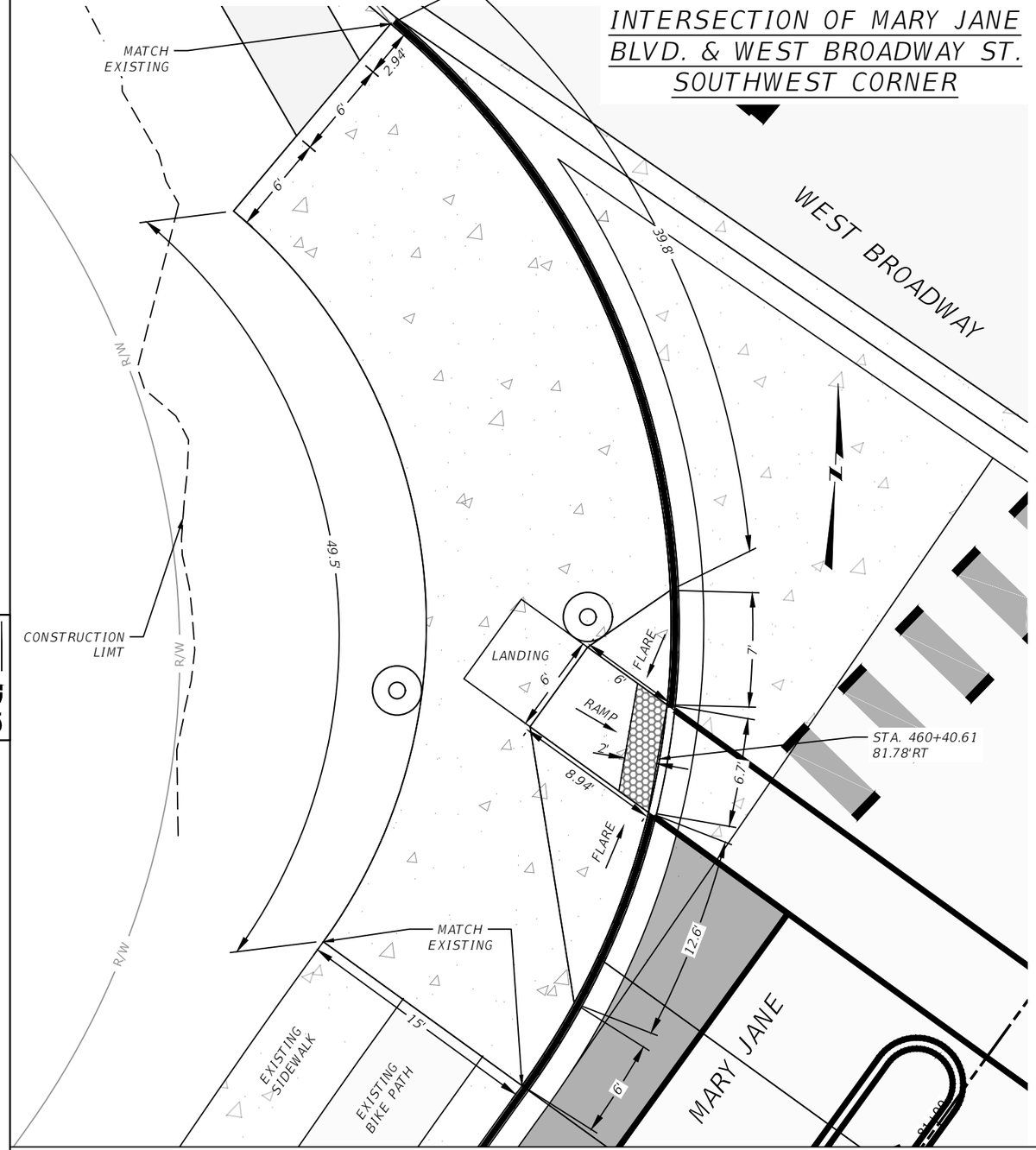
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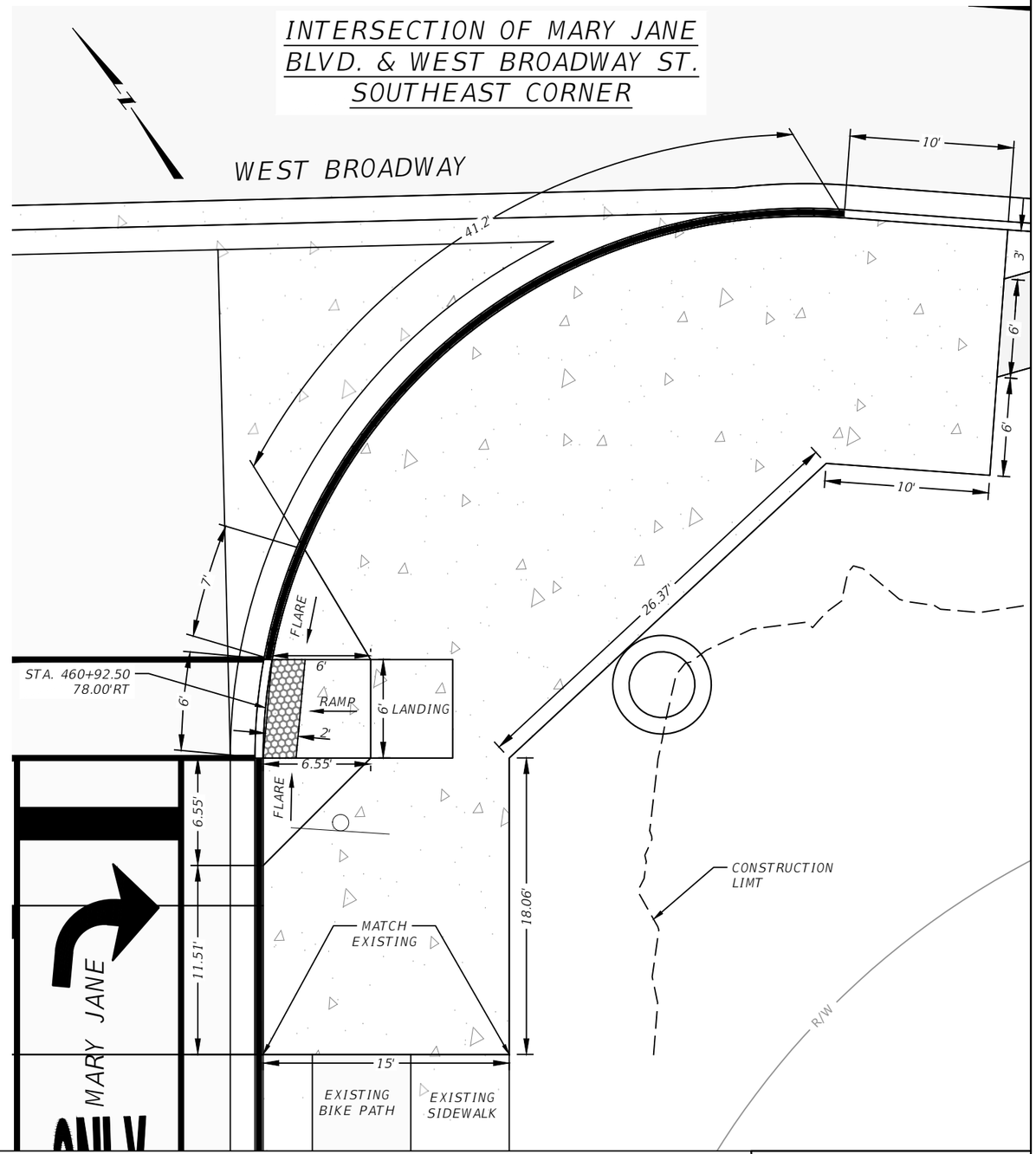
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ENGINEERS
PLANNERS
SURVEYORS
DJ&A

INTERSECTION OF MARY JANE BLVD. & WEST BROADWAY ST. SOUTHWEST CORNER



INTERSECTION OF MARY JANE BLVD. & WEST BROADWAY ST. SOUTHEAST CORNER



DETECTABLE WARNING DEVICE SHALL BE 5' X 2' UNLESS OTHERWISE NOTED

NOTES:

PROVIDE DETECTABLE WARNING DEVICES ON THE BOTTOM 2.0 FEET OF EACH RAMP OR LANDING AS SHOWN.

SEE DETAIL DRAWING NO. 608-40 FOR DETECTABLE WARNING DEVICES DETAILS

ALL DIMENSIONS ARE FEET UNLESS OTHERWISE NOTED.

ALL CURB AND GUTTER DIMENSIONS ARE ALONG TBC.

CONTRACTOR TO VERIFY LOCATIONS, DIMENSIONS, AND SLOPES IN THE FIELD PRIOR TO CONSTRUCTION.

SEE DETAILED DRAWINGS FOR STANDARD SIDEWALK AND CURB & GUTTER.

UNLESS OTHERWISE NOTED, MATCH EXISTING TBC RADIUS

MATCH EXISTING ELEVATIONS AT ALL JOINTS BETWEEN NEW AND EXISTING CONCRETE

ALL FLARES SHALL HAVE A MAXIMUM SLOPE OF 10% UNLESS OTHERWISE NOTED. ALL LANDINGS SHALL BE A MINIMUM OF 4' X 4' AND SHALL HAVE A MAXIMUM SLOPE OF 2.0% IN ANY DIRECTION.

RAMPS SHALL BE A MINIMUM OF 4' WIDE WITH MINIMUM 5.0% AND MAXIMUM 8.3% SLOPE IN THE DIRECTION OF TRAVEL. THE MAXIMUM CROSS SLOPE SHALL BE 2.0%.

TRANSITION PANELS SHALL HAVE A MAX SLOPE OF 5% IN THE DIRECTION OF TRAVEL. CROSS SLOPE SHALL TRANSITION BETWEEN A 2.0% (MAX) AT THE LANDING AND THE EXISTING CROSS SLOPE AT THE SAWCUT LINE.

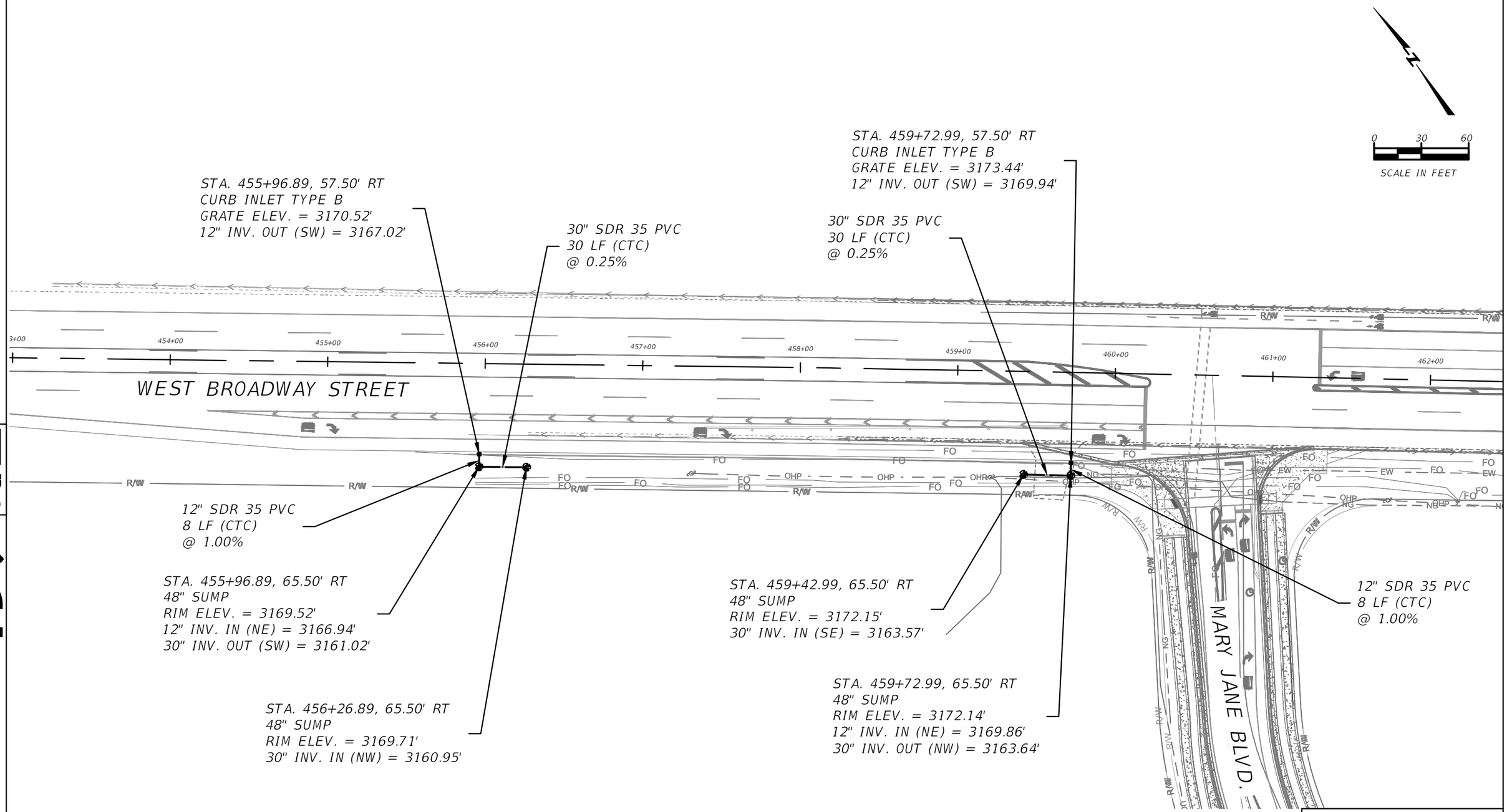
CURB RAMP DETAILS

SCALE 1"=8'

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2		5/20/2021	REVIEWED BY	DP		MISSOULA COUNTY	UPN 9920000 / SHEET 18
1		5/20/2021 Braden	CHECKED BY	DW			

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Plan

MARY JANE BOULEVARD
AND WEST BROADWAY
STREET INTERSECTION
STORM DRAIN PLANS

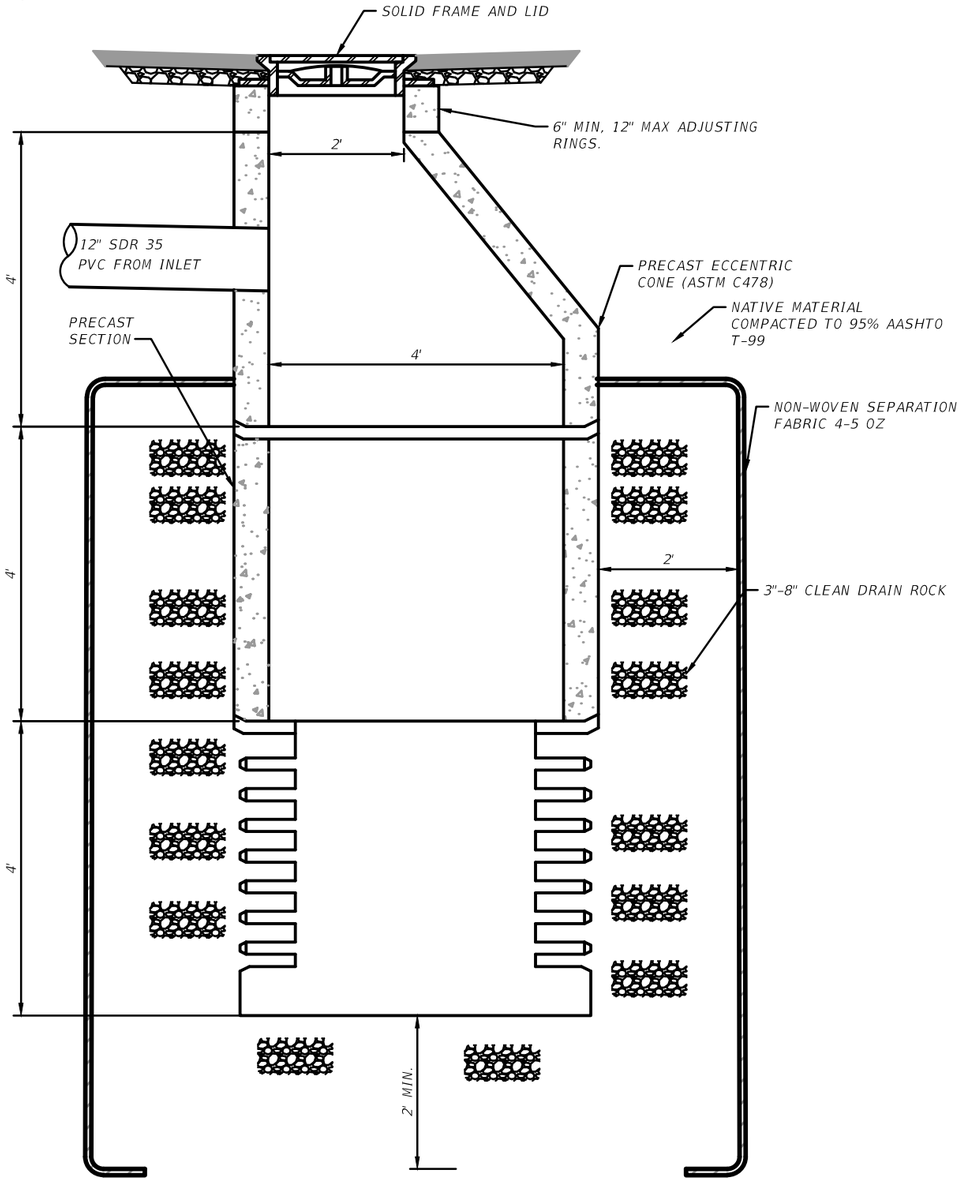
SCALE 1"=60'

ENGINEERS
PLANNERS
SURVEYORS

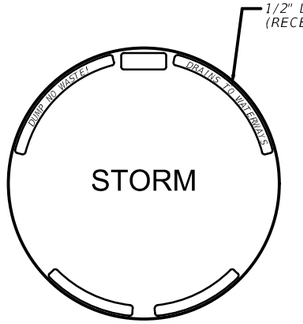
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2		5/3/2021	REVIEWED BY					
1		5/3/2021 CCOLLINS	CHECKED BY			MISSOULA COUNTY	UPN 9920000	SHEET 19

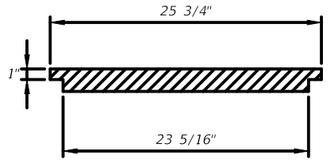
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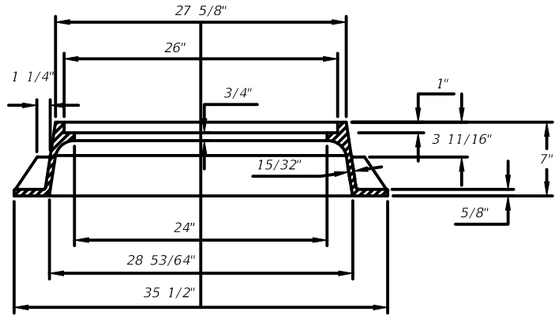


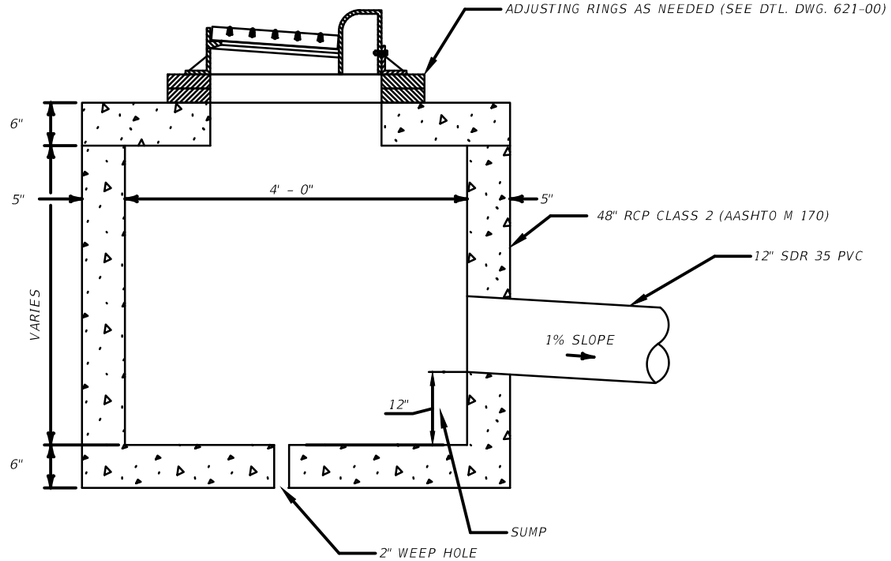
SUMP DETAIL
NO SCALE





SOLID FRAME AND LID
NO SCALE





TYPE B CURB INLET
NO SCALE

SUMP DETAIL NOTES:

1. OVER-EXCAVATE WHERE REQUIRED TO ENSURE BOTTOM OF EXCAVATION IS A MIN. 2-FT INTO GRAVELLY SOIL.
2. NO GRADE RING TO BE OFFSET MORE THAN 2" AND TOTAL OFFSET NOT TO EXCEED WALL THICKNESS OF CONE.
3. GRADE RINGS SHALL BE 2" THICKNESS MINIMUM.
4. NO WEDGES ALLOWED BETWEEN GRADE RINGS AND FRAME MUST BE SET FLUSH WITH TOP GRADE RING.

STORM DRAIN DETAILS

NOT TO SCALE

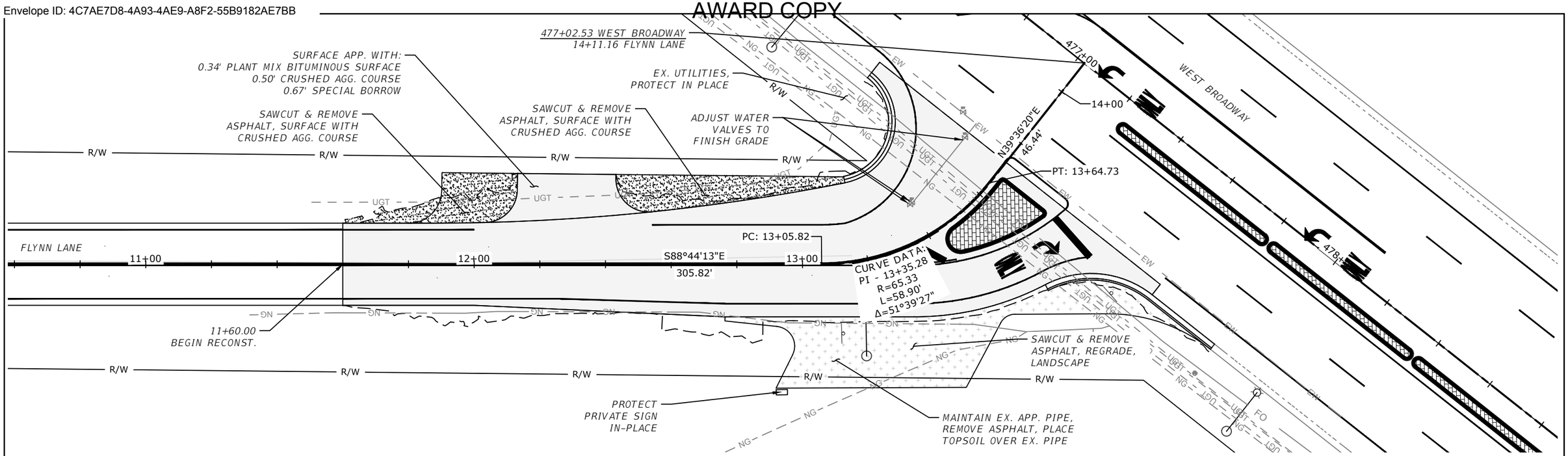
ENGINEERS PLANNERS SURVEYORS

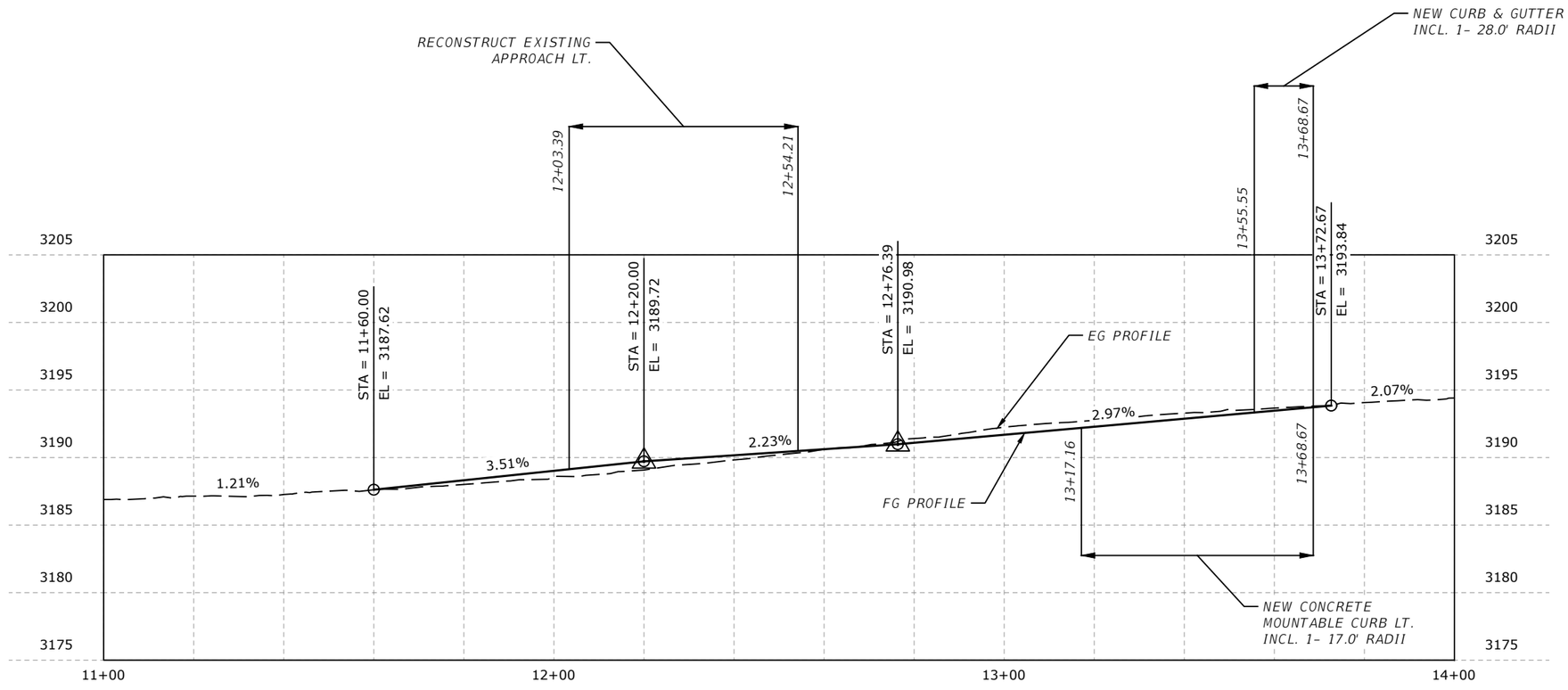
HDR

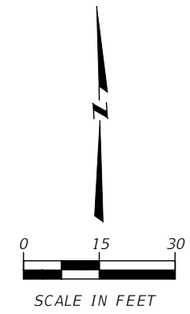
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2		5/20/2021	REVIEWED BY					
1		5/20/2021 ccollins	CHECKED BY			MISSOULA COUNTY		UPN 9920000 / SHEET 20

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Alignment – Proposed Flynn Lane

ENGINEERS PLANNERS SURVEYORS

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	...HSIP - Flynn Plan & Profile.dwg	DESIGNED BY	BB		ROAD PLANS	SF199 MARY JANE BROADWAY INTX / HSIP 8199(161)
2		5/20/2021	REVIEWED BY	DP		MISSOULA COUNTY	UPN 9920000 / SHEET 21
1		5/20/2021 Braden	CHECKED BY	DW			

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SUMMARY
SIGNING & DELINEATION QUANTITIES

MATERIAL	W BROADWAY ST	MARY JANE BLVD	FLYNN LN	TOTALS	UNIT
SIGNS-ALUM SHEET INCR (I)					SQFT
SIGNS-SHEET ALUM SHT INCR XI					SQFT
SIGNS-ALUM REFL SHEET IV	15.0		3.5	18.5	SQFT
SIGNS-ALUM REFL SHEET XI	22.5	9.3	14.5	46.3	SQFT
RESET SIGNS					EACH
REMOVE SIGN		1	1	2	EACH
REMOVE SIGN-GUIDE					EACH
POSTS-TUBULAR STEEL		168	118	286	LB
POSTS-STEEL U SIGN					LB
POSTS-STEEL STRUCTURAL SIGN					LB
POSTS-TUBULAR STEEL-SQ-PERF					LB
POLES-TREATED WOOD 4 IN					LNFT
POLES-TREATED WOOD 5 IN					LNFT
POLES-TREATED WOOD 6 IN					LNFT
SQ TUBLR SLIP BASE BKWY-3 IN		3	3	6	EACH
DELINEATOR DES A					EACH
DELINEATOR DES B					EACH
DELINEATOR DES C					EACH
DELINEATOR DES D					EACH
DELINEATOR DES F					EACH
DELINEATOR DES G					EACH
DELINEATOR DES H					EACH
DELINEATOR DES BJ					EACH
DELINEATOR-FLEX SURF MTD YLW	4			4	EACH

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SIGN LOCATION AND SPECIFICATION

Lt.	STATION / M.P.	Rt.	RAMP NO.	SIGN NO.	PANEL SIZE	REFL SHTG BACK- GRND	REFL SHTG LEGEND	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	SIGN PANEL (SQ. FT.) ALUM. SHEET INCREMENT	SIGN PANEL (SQ. FT.) SHEET ALUMINUM	SIGN PANEL (SQ. FT.) ALUM. SHEET INCREMENT	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
MARY JANE BLVD																																
	79+20									2 1/2"		11-0																				
		RT		R3-8	30 X 30	XI	XI	2-0		SQ TUBE				7-0	3-0			6.3							58			▲				MDT DETAILED DRAWINGS 619-00, 14 LEFT ONLY, RIGHT ONLY
	79+60									2 1/2"								1.5							55							
LT		RT		R7-3 (2)	12 X 18	XI	XI	2-0		SQ TUBE		10-0		7-0	3-0			1.5							55			▲				
	81+00																															
		RT		R1-1	REMOVE																								1				INTERIM DESIGN STOP SIGN
W BROADWAY ST																																
	460+30															5.0																
LT				OH D3	60 X 12	IV	XI	MOUNT	ON	MASTARM																						"MARY JANE BLVD"
				OH R3-5L	30 X 36	XI	XI											7.5														ONLY
	460+90																															
LT				OH R3-5L	30 X 36	XI	XI	MOUNT	ON	MASTARM								7.5														ONLY
				OH R3-5R	30 X 36	XI	XI											7.5														ONLY
				OH D3	60 X 12	IV	XI									5.0																"W BROADWAY ST"
	461+17																															
		RT		OH R3-1																												LED ILLUMINATED, SEE SECTION "E"
				OH D3	60 X 12	IV	XI									5.0																"MARY JANE BLVD"
FLYNN LN																																
	12+91			PROPERTY SIGN																												
		RT																														PROTECT SIGN IN PLACE
	13+07									2 1/2"		11-6																				
		RT		R3-5R	30 X 36	XI	XI	2-0		SQ TUBE				7-0	3-0			7.5							59			▲				MDT DETAILED DRAWINGS 619-00
	13+55																															
		RT		D3																												
				R1-1	REMOVE																								1				
	13+63																															
		RT		D3	42 X 12	IV	IV									3.5																"FLYNN LN"
				R1-1	36 X 36	XI	XI	6-0		2 1/2" SQ TUBE		11-7		7-0	3-0			7.0							59			▲				MDT DETAILED DRAWINGS 619-00, 14
													TOTALS			18.5		46.3						286				2			

▲ SINGLE SQUARE TUBE REQUIRED. MOUNTED IN HEAVY DUTY STUB

STANDARD BREAKAWAY DEVICE:
SEE MDT DETAILED DRAWING 619-14

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

SQUARE TUBE SUPPORT		
TUBE SIZE	WEIGHT	WALL THICKNESS
2"	2.42 lb/ft	0.105"
2 1/4"	2.77 lb/ft	0.105"
2 1/2"	3.14 lb/ft	0.105"

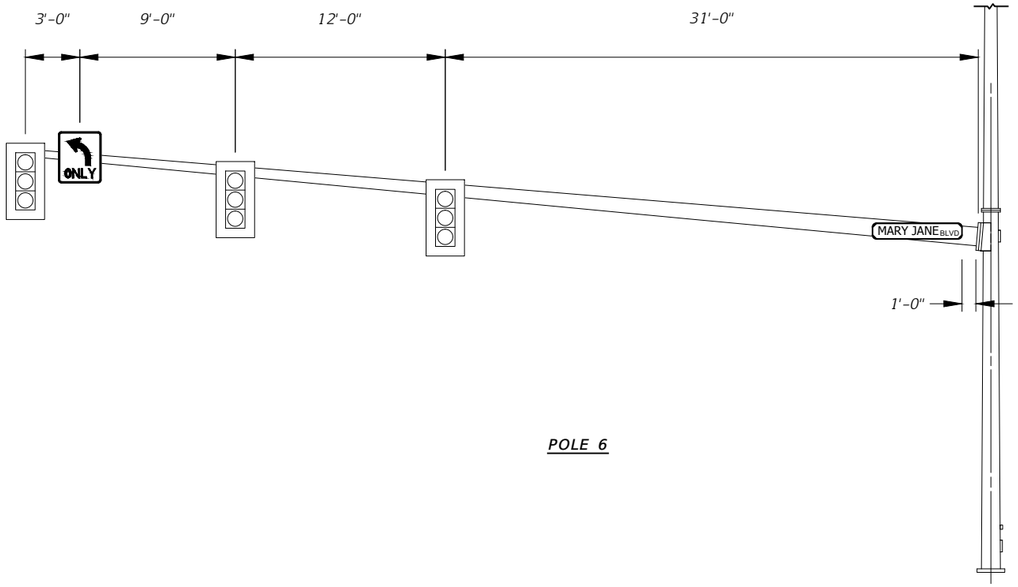
SQUARE TUBE ANCHOR		
TUBE SIZE	WEIGHT	WALL THICKNESS
2 1/2"	18.36 lbs ea.	0.135"
3"	22.98 lbs ea.	0.188"

DELINEATION TABLE		
⬠	FLEX DRIVE-WHITE	
△	FLEX DRIVE-YELLOW	
⬟	FLEX SURF MTD-WHITE	
▲	FLEX SURF MTD-YELLOW	4
	REMOVE DELINEATORS	

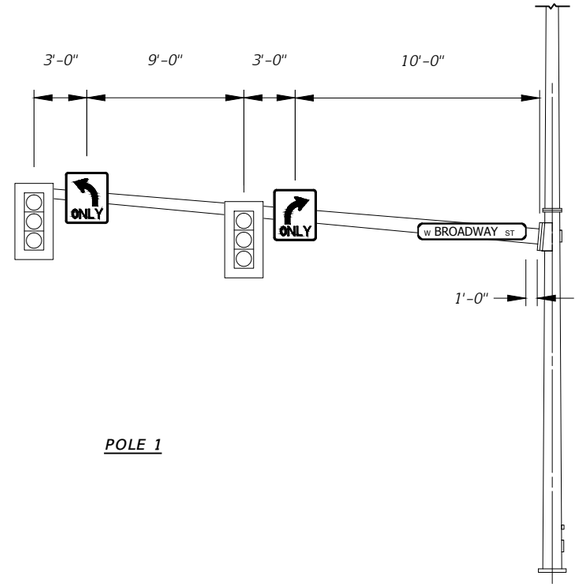
ENGINEERS PLANNERS SURVEYORS

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	...MDT HSIP Striping & Signing.dwg	DESIGNED BY DW		SIGNING PLANS	SF199 MARY JANE BROADWAY INTX / HSIP 8199(161)
2		5/20/2021	REVIEWED BY DP		MISSOULA COUNTY	UPN 9920000 / SHEET S2
1		5/20/2021	CHECKED BY BB			

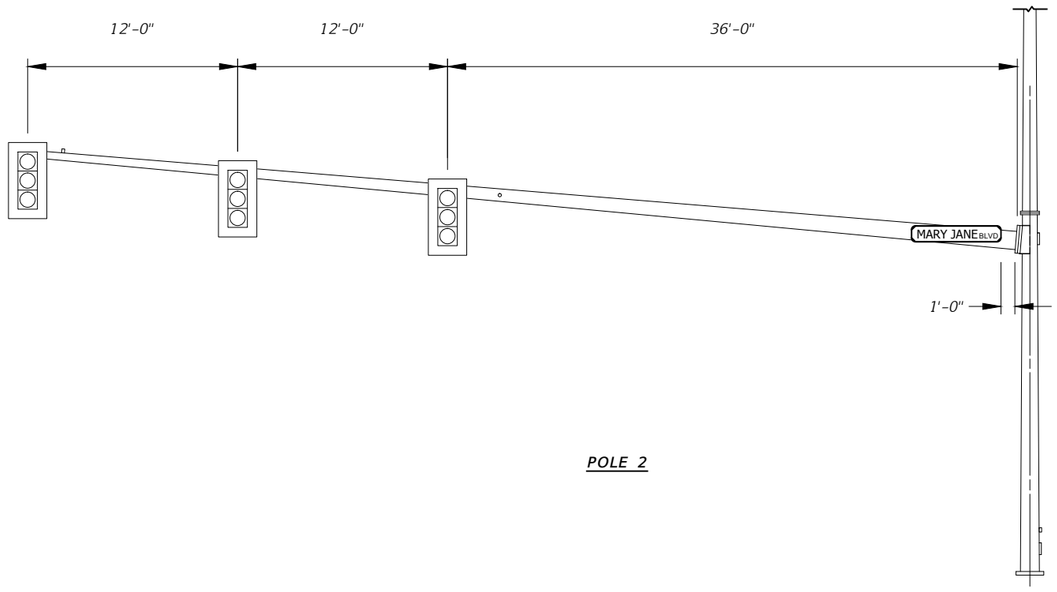
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POLE 6



POLE 1



POLE 2

NOTES
1. POLE LOCATIONS SHOWN IN SECTION "E"
2. SEE SECTION "E" FOR ADDITIONAL SIGNS SHOWN ON POLE 2.

SIGNAL MAST ARM LAYOUT

ENGINEERS PLANNERS SURVEYORS

3	MONTANA DEPARTMENT OF TRANSPORTATION	...MDT HSIP Striping & Signing.dwg	DESIGNED BY	DW	SIGNING PLANS	SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2		5/20/2021	REVIEWED BY	DP			
1		5/20/2021	CHECKED BY	BB	MISSOULA COUNTY	UPN 9920000	SHEET S3

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ENGINEERS
PLANNERS
SURVEYORS

DJ&A

NOTES
1. USE EPOXY FOR ALL PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED.
2. ALL PAVEMENT MARKINGS AND SIGNINGS ARE TO CONFORM TO THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND STANDARD HIGHWAY SIGNS PUBLICATIONS, FROM THE FEDERAL HIGHWAY ADMINISTRATION.
3. EXISTING PAVEMENT MARKINGS TO BE REMOVED PRIOR TO INSTALLATION OF NEW MARKINGS. NEW OR TEMPORARY PAVEMENT MARKINGS ARE TO BE INSTALLED DURING THE SAME SHIFT AS STRIPE REMOVAL OCCURS AND/OR PRIOR TO REMOVING TEMPORARY TRAFFIC CONTROL DEVICES.

W BROADWAY ST

4" WHITE
MATCH EXISTING STA 452+44.4
4" WHITE SKIP (10':30')
4" YELLOW
4" YELLOW SKIP (10':30')
4" WHITE SKIP (10':30')
4" WHITE 17:1 TAPER
453+00
454+00
455+00
456+00
11.75'
11.75'
15'
11.75'
11.75'
4.0'
12'
ONLY MARKING PER MDT DETAILED DRAWINGS 620-10 STA 454+91 42.0' RT
WHITE TURN ARROW PER MDT DETAILED DRAWINGS 620-15 STA 455+07 42.0' RT
25'
12" WHITE
STA 454+24.1
STA 454+84.1
8" WHITE
60°

ONLY
MARY JANE BLVD
ONLY
ONLY
W BROADWAY ST

NEW OHR3-5L OHD3
NEW OHR3-5L OHR3-5R OHD3

PC: 458+17.8
PT: 459+17.84

BEGIN 4" WHITE SKIP (3':9')
STA 460+19.5
GREEN EPOXY
STA 460+60.1
6'
6'
R/W
10'
STA 461+39.7
8" WHITE
R/W
STA 461+29.5
24" WHITE

STA 459+04.4
BEGIN 4" DBL YELLOW
STA 459+44.5
R564'
24" YELLOW
STA 460+19.8 2.5' RT
STA 460+22.5 5.7' RT
EP: 81+87.28
WHITE TURN ARROW PER MDT DETAILED DRAWINGS 620-15 STA 461+38 1.5' LT

W BROADWAY ST
457+00
458+00
459+00
460+00
461+00
6.5'
8.5'
30°
R3'
T8
R2'
STA 459+05.6
25'
4" DBL YELLOW
STA 460+19.5
STA 461+25.5
6" WHITE OUTSIDE GREEN EPOXY INSIDE 2':5'
4" WHITE SKIP (10':30')
4" WHITE
24" WHITE
6'
MARY JANE BLVD

WHITE TURN ARROW PER MDT DETAILED DRAWINGS 620-15 STA 457+56 42.0' RT
8" WHITE STA 458+98.3
WHITE TURN ARROW PER MDT DETAILED DRAWINGS 620-15 STA 460+05 42.0' RT

ONLY MARKING PER MDT DETAILED DRAWINGS 620-10 STA 457+40 42.0' RT
ONLY MARKING PER MDT DETAILED DRAWINGS 620-10 STA 459+89 42.0' RT

NEW OHR3-1 (SEE SECTION "E") OHD3
MARY JANE BLVD

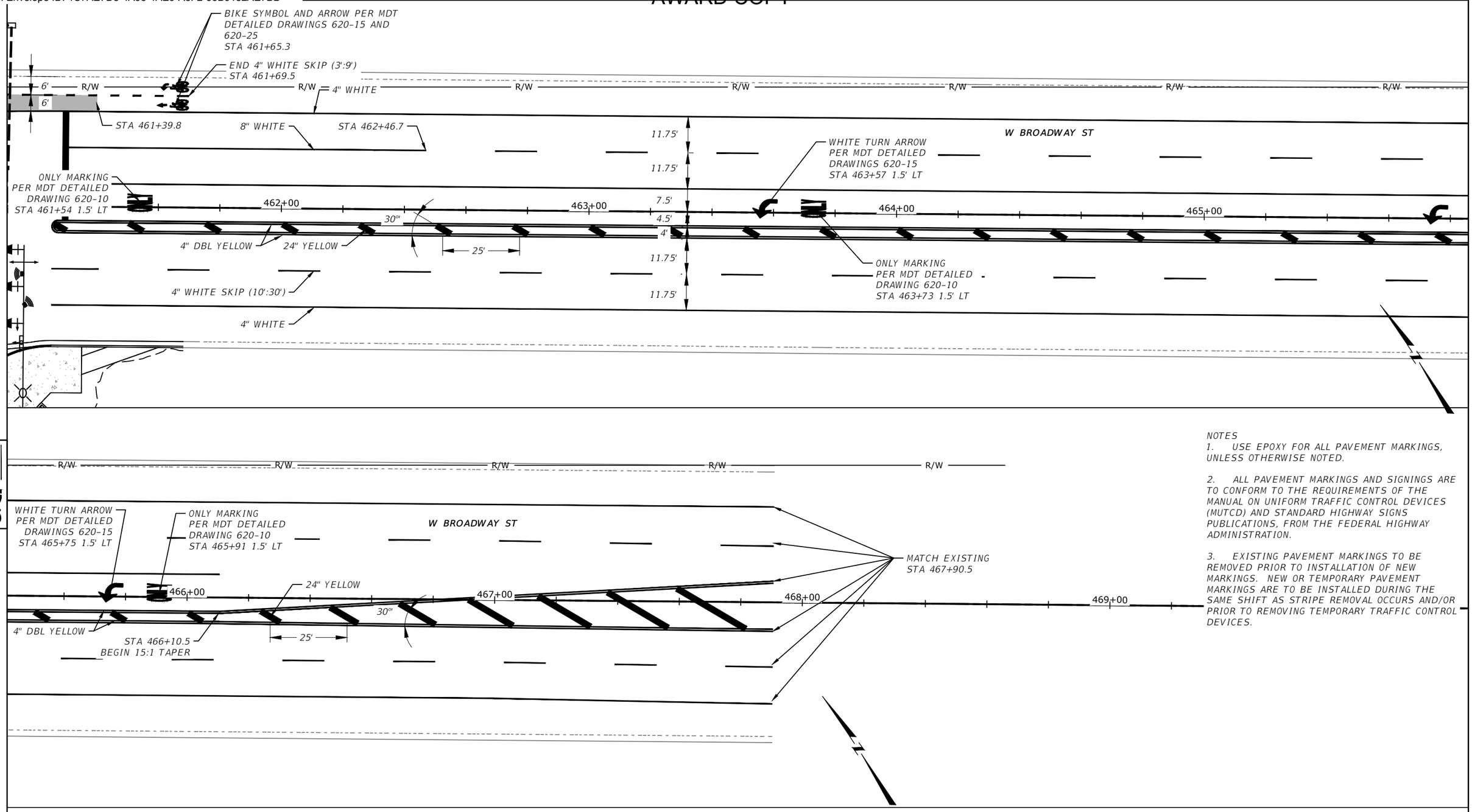
W BROADWAY ST
STA. 452+40 TO 461+40

SCALE 1"=30'

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	...MDT HSIP Striping & Signing.dwg	DESIGNED BY	DW	SIGNING PLANS	SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2		5/20/2021	REVIEWED BY	DP	MISSOULA COUNTY	UPN 9920000	SHEET S4
1		5/20/2021	CHECKED BY	BB			

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NOTES

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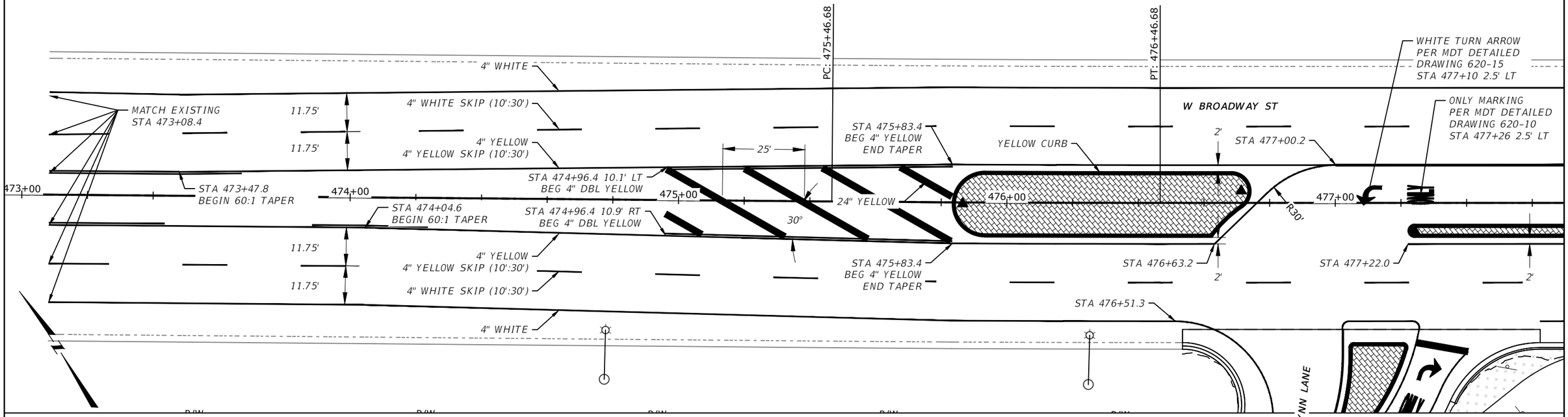
W BROADWAY ST
STA. 461+40 TO 470+00

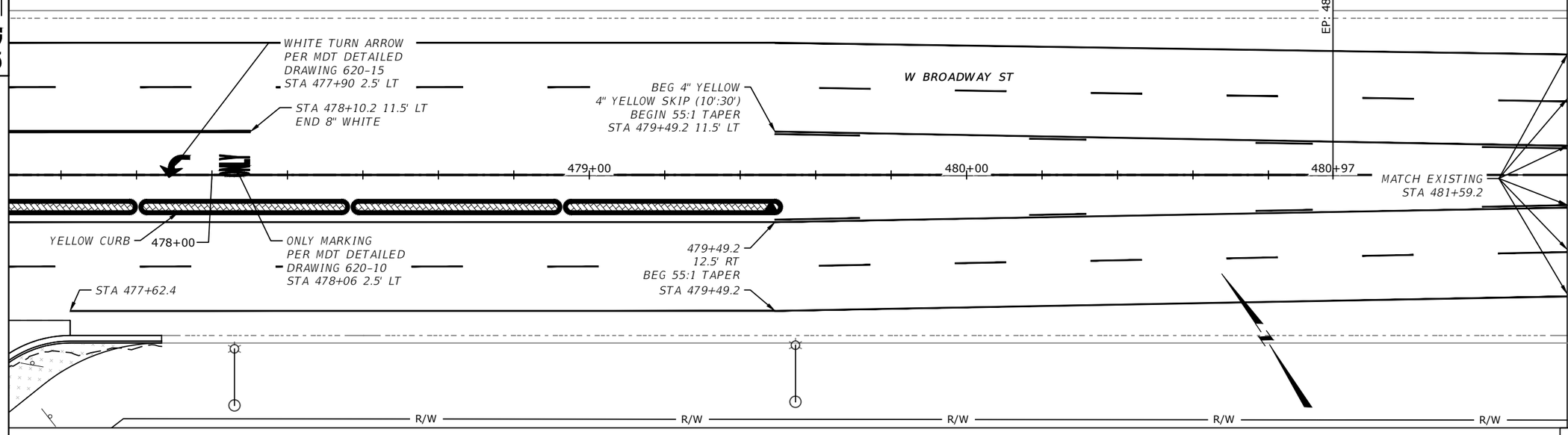
SCALE 1"=30'

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	...MDT HSIP Striping & Signing.dwg	DESIGNED BY	DW	SIGNING PLANS	SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2		5/20/2021	REVIEWED BY	DP			
1		5/20/2021	CHECKED BY	BB	MISSOULA COUNTY	UPN 9920000	SHEET S5

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▲ = **DELINEATOR-FLEX SURF MTD YLW**

W BROADWAY ST
STA. 473+00 TO 481+59.2

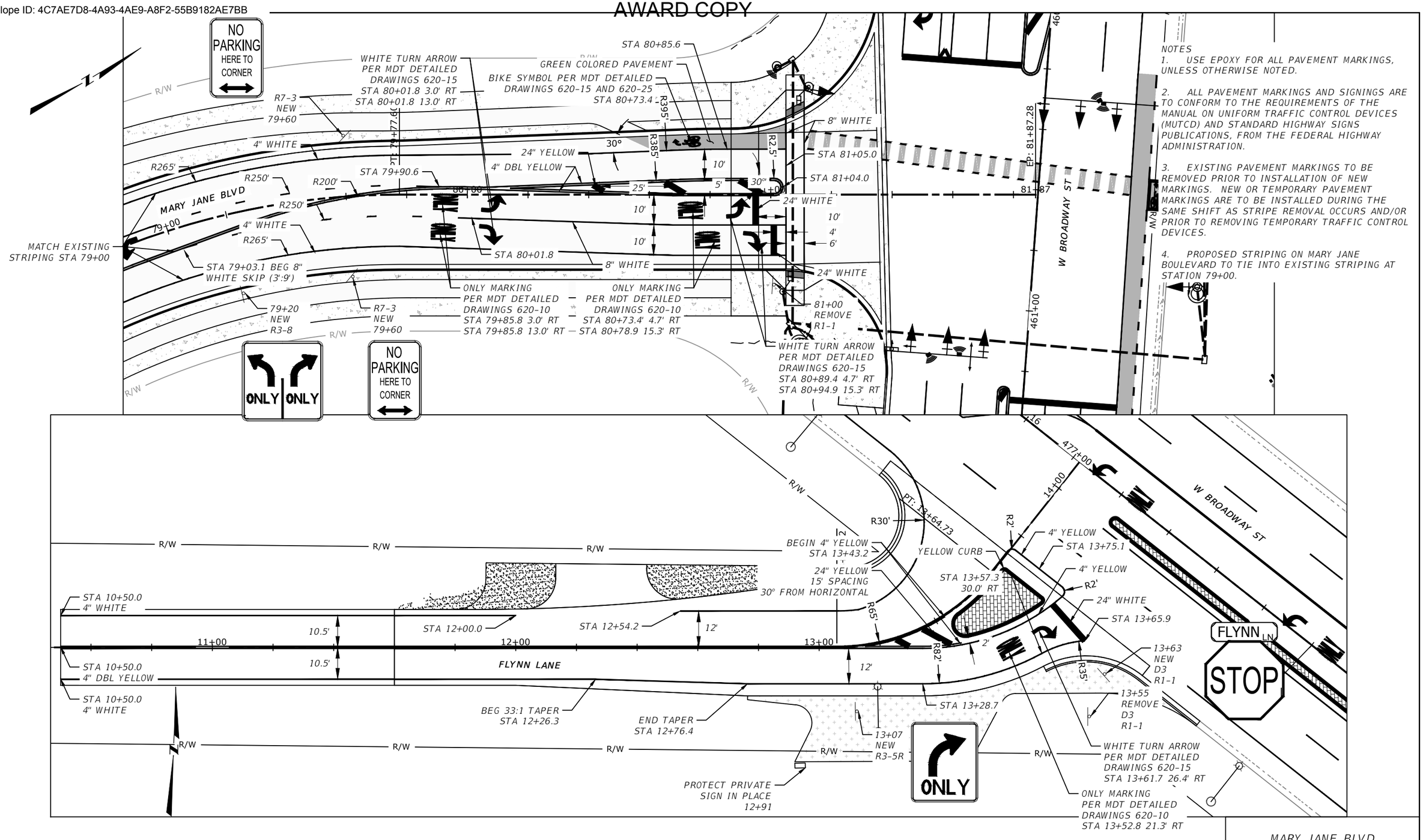
SCALE 1"=30'

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	...MDT HSIP Striping & Signing.dwg	DESIGNED BY	DW		SIGNING PLANS	SF199 MARY JANE BROADWAY INTX / HSIP 8199(161)
2		5/20/2021	REVIEWED BY	DP		MISSOULA COUNTY	UPN 9920000 / SHEET S6
1		5/20/2021	CHECKED BY	BB			

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ENGINEERS
PLANNERS
SURVEYORS
DJ&A



NOTES

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4. PROPOSED STRIPING ON MARY JANE BOULEVARD TO TIE INTO EXISTING STRIPING AT STATION 79+00.

MARY JANE BLVD
STA. 79+00 TO 81+87

FLYNN LN
STA. 10+50 TO 14+08

SCALE 1"=30'

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	...MDT HSIP Striping & Signing.dwg	DESIGNED BY	DW	SIGNING PLANS	SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2		5/20/2021	REVIEWED BY	DP	MISSOULA COUNTY		UPN 9920000
1		5/20/2021	CHECKED BY	BB			SHEET S7

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SIGNAL AND LIGHTING - ELECTRICAL QUANTITY SUMMARY

	ITEM NO.	MATERIAL	TOTAL	UNIT
	616 343 914	CONDUIT - PLASTIC 1 1/2 IN	70	LNFT
	616 343 920	CONDUIT - PLASTIC 2 IN	1281	LNFT
	616 343 924	CONDUIT - PLASTIC 2-1/2 IN	205	LNFT
	616 343 930	CONDUIT - PLASTIC 3 IN	323	LNFT
	616 783 006	PULL BOX - COMPOSITE TYPE 1	1	EACH
	616 783 007	PULL BOX - COMPOSITE TYPE 2	8	EACH
	616 783 008	PULL BOX - COMPOSITE TYPE 3	2	EACH
	617 000 000	FOUNDATION - CONCRETE	25.13	CUYD
	617 033 212	CABLE - COPPER 3AWG12 - 600V	185	LNFT
	**	CABLE - COPPER 3AWG12 - 600V	400	LNFT
	617 033 414	CABLE - COPPER 7AWG14 - 600V	140	LNFT
	617 033 614	CABLE - COPPER 12AWG14 - 600V	530	LNFT
	617 763 601	DETECTOR LOOP SHLD CABLE	220	LNFT
	617 123 106	CONDUCTOR - COPPER AWG6 - 600V	3,500	LNFT
	617 123 108	CONDUCTOR - COPPER AWG8 - 600V	1,700	LNFT
	617 123 110	CONDUCTOR - COPPER AWG10 - 600V	566	LNFT
	***	CONDUCTOR - COPPER AWG10 - 600V	950	LNFT
*	617 183 056	STANDARD-STL TYPE 10-A-500-6	1	EACH
	617 183 057	STANDARD-STL TYPE 10-A-500-7	5	EACH
	617 233 030	CONTROLLER-CAB PEDESTAL TYPE P	1	EACH
	617 303 300	HIGH EFFICACY LUMINAIRE LED	8	EACH
	617 333 100	SERVICE ASSEMBLY	2	EACH
	617 503 130	SIG - TRAF 3 COL - 1 WAY 12-12-12	7	EACH
	617 513 125	SIG - TRAF 4 COL - 1 WAY 12-12-12-12	5	EACH
	617 553 020	SIG - PEDESTRIAN TYPE 2	2	EACH
	617 573 080	LED EMBEDDED SIGN	1	EACH
*	617 609 040	CONTLR/TRAF - ACTUATOR (SF)	1	EACH

	ITEM NO.	MATERIAL	TOTAL	UNIT
	617 673 100	SIGNAL STANDARD TYPE 1-100	1	EACH
	617 673 140	SIGNAL STANDARD TYPE 1-140	1	EACH
*	617 699 503	SIGNAL STANDARD TYPE 2-A-500-3 (SF)	1	EACH
*	617 719 099	SIGNAL STANDARD TYPE 3-A-900-9 (SF)	1	EACH
*	617 719 100	SIGNAL STANDARD TYPE 3-A-900-0 (SF)	1	EACH
	617 763 101	DETECTOR LOOP	1	EACH
	617 763 500	DETECTOR-RADAR/PRESENCE	3	EACH
	617 763 510	DETECTOR-RADAR/ADVANCE	2	EACH
	617 903 250	PUSHBUTTON/PEDESTRIAN	2	EACH
*	617 903 502	EMER PRE-EMPTION DET CABLE	205	LNFT
*	104 030 025	BROADBAND RADIO #	1	LS

* - INDICATES STATE FURNISHED MATERIAL

** - FOR REFERENCE ONLY, INCIDENTAL TO COST OF SERVICE ASSEMBLY

*** - FOR REFERENCE ONLY, INCIDENTAL TO COST OF LUMINAIRE POLE

\# - PAID FOR AS MISCELLANEOUS ITEMS-INSTALL

ELECTRICAL MATERIAL QUANTITIES

ENGINEERS PLANNERS SURVEYORS

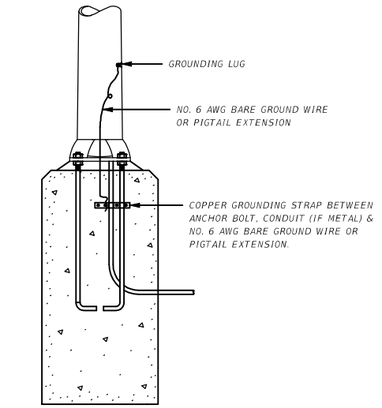
DJ&A

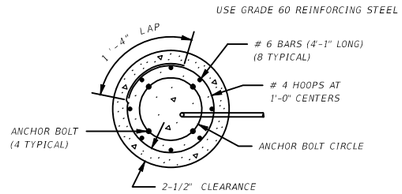
HDR

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	HSIP ELECTRICAL DETAIL SHEETS BID	DESIGNED BY	TJH		SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2		3/3/2022	REVIEWED BY	JAD	MISSOULA COUNTY		
1		3/3/2022 THOCHHAL	CHECKED BY	JAD		UPN 9920000	SHEET EL1 OF EL6

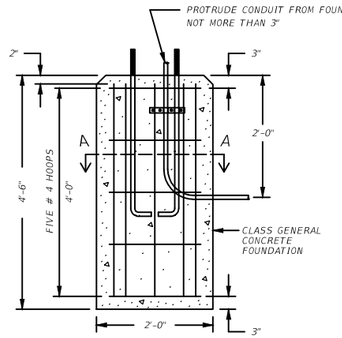
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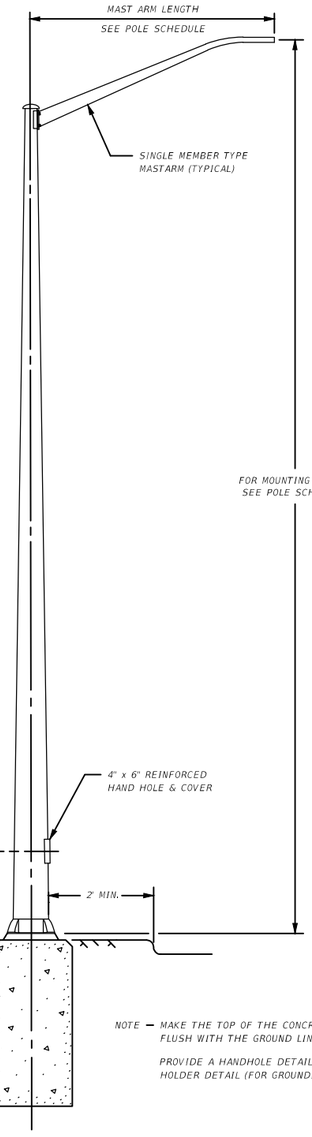




SECTION A-A



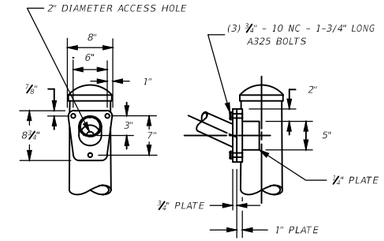
TYPICAL OF ALL FOUNDATIONS



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

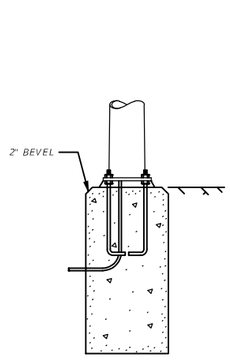
PROVIDE A HANDHOLE DETAIL AND A ½" NUT HOLDER DETAIL (FOR GROUNDING).

TYPE 10-A POLE

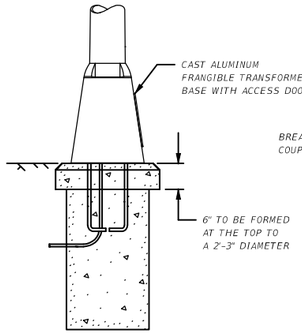


LUMINAIRE ARM CONNECTION

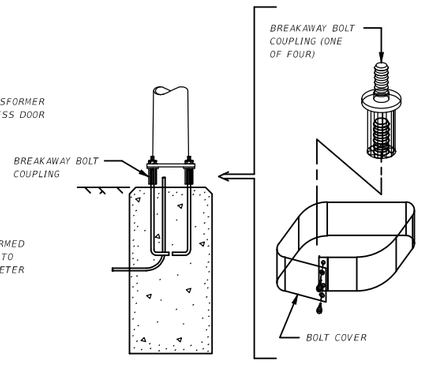
4' THROUGH 12' LUMINAIRE ARMS



ANCHOR



TRANSFORMER (BREAKAWAY TYPE)



BOLT COUPLING (BREAKAWAY TYPE)

BASE TYPES FOR LUMINAIRE STANDARDS

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

NO SCALE

LUMINAIRE, POLE BASES & FOUNDATION DETAILS

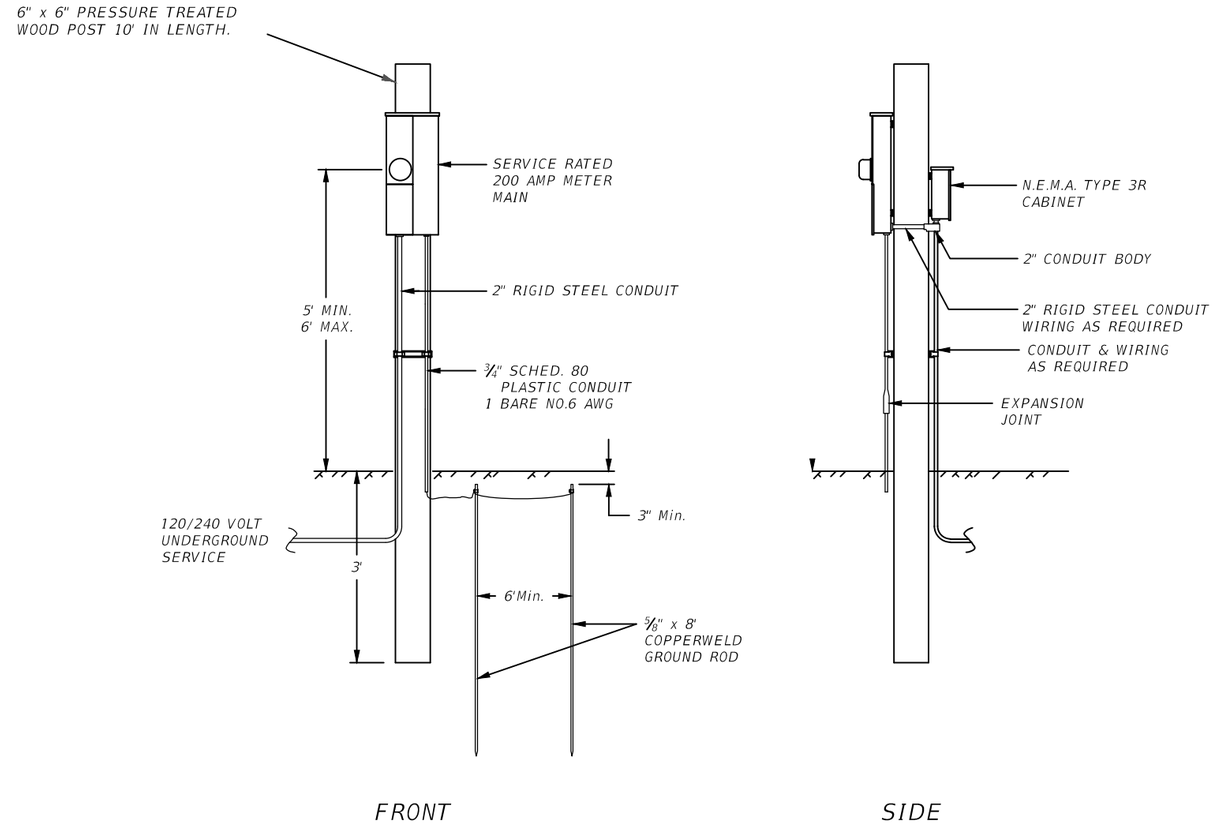
3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	HSIP ELECTRICAL DETAIL SHEETS 2018	DESIGNED BY	TJH		ELECTRICAL PLANS	SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2		5/1/2021	REVIEWED BY	JAD		MISSOULA COUNTY	UPN 9920000	SHEET EL2 OF EL6
1		5/1/2021 THOCHHAL	CHECKED BY	JAD				

ENGINEERS PLANNERS SURVEYORS

HDR

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UNDERGROUND SERVICE ASSEMBLY DETAIL (TYPICAL)

SERVICE
ASSEMBLY
DETAILS

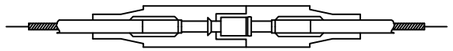
3	MONTANA DEPARTMENT OF TRANSPORTATION	HSIP ELECTRICAL DETAIL SHEETS	DESIGNED BY	TJH		ELECTRICAL PLANS	SF199 MARY JANE BROADWAY INT X
2		5/1/2021	REVIEWED BY	JAD			HSIP 8199(161)
1		5/1/2021 THOCHHAL	CHECKED BY	JAD		MISSOULA COUNTY	UPN 9920000 SHEET EL3 OF EL6

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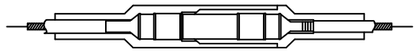
WATERTIGHT CONNECTORS

TYPES 1, 6, 11 & 16



NON-FUSED BREAKAWAY

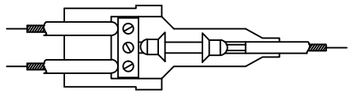
TYPES 2, 7, 12 & 17



FUSED BREAKAWAY

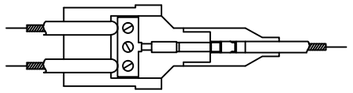
IDENTITY NO.	DESCRIPTIVE SYMBOL & WIRE SIZES
1	8 — 8
2	8 — 10
3	8 — 10 (8)
4	8 — 8 (8)
5	8 — 8 (8)
6	6 — 6
7	6 — 10
8	6 — 10 (6)
9	6 — 6 (6)
10	6 — 6 (6)
11	4 — 4
12	4 — 10
13	4 — 10 (4)
14	4 — 4 (4)
15	4 — 4 (4)
16	10 — 10
17	10 — 10
18	10 — 10 (10)
19	10 — 10 (10)
20	10 — 10 (10)
21	VARIES — VARIES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

TYPES 3, 8, 13 & 18



FUSED BREAKAWAY

TYPES 4, 9, 14 & 19



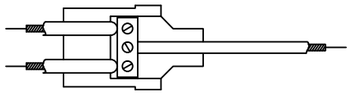
NON-FUSED BREAKAWAY

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.

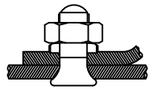
PROVIDE FUSED CONNECTOR KITS CONTAINING A PAIR OF SPRING LOADED 90% CONDUCTIVITY CONTACTS FOR GRIPPING A STANDARD MIDGET FERRULE TYPE FUSE. THE CONTACTS MUST BE FULLY ANNEALED AND ADAPTED TO BE CRIMPED TO THE CABLE.

TYPES 5, 10, 15 & 20



NON-FUSED NON-BREAKAWAY

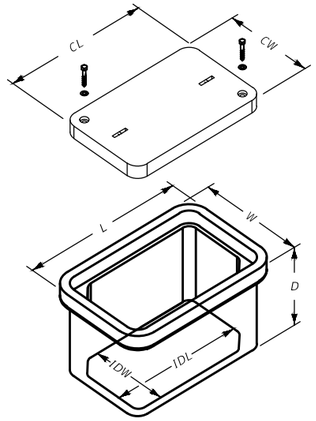
TYPE 21



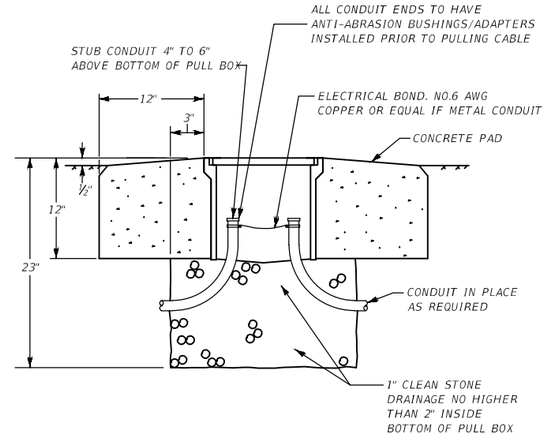
COPPER SPLIT BOLT - MAKE WATERTIGHT USING SELF ADHERING MASTIC

WATERTIGHT CONNECTORS

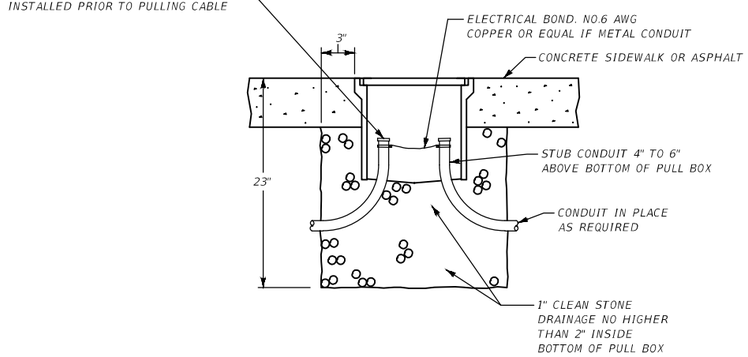
NO SCALE



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

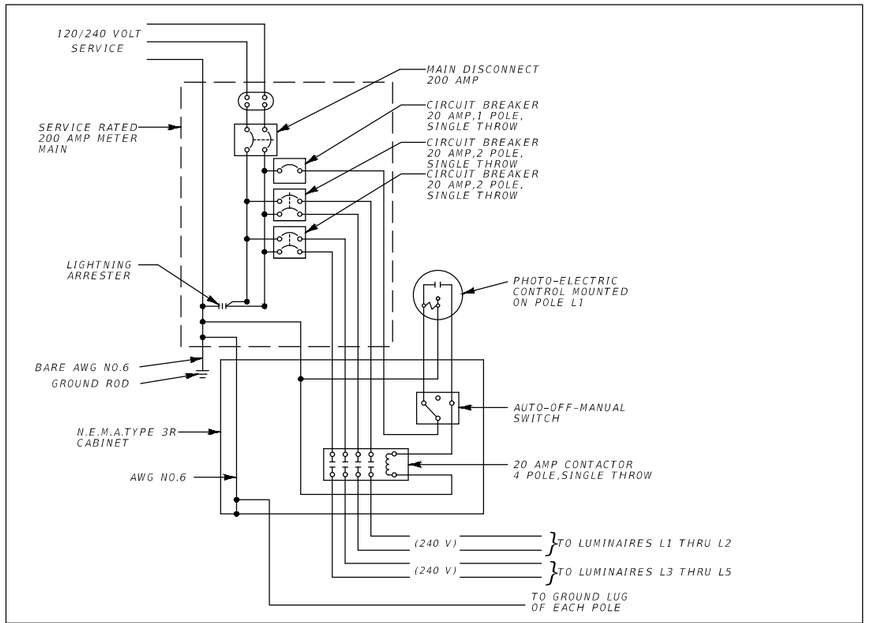
CONNECTORS AND PULL BOX DETAILS

ENGINEERS PLANNERS SURVEYORS

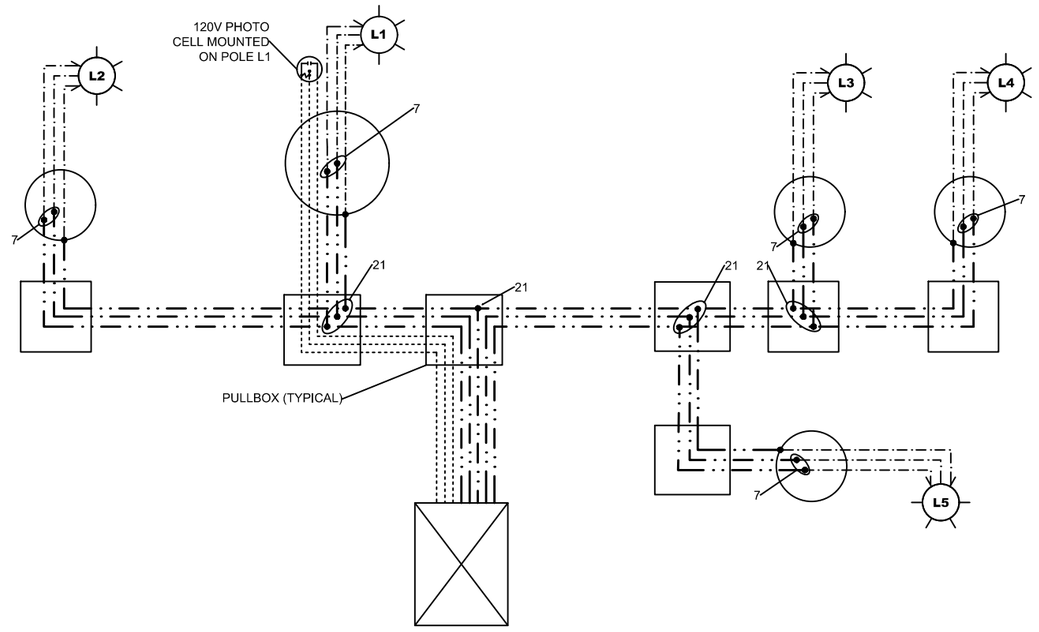
3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	HSIP ELECTRICAL DETAIL SHEETS	DESIGNED BY	TJH		ELECTRICAL PLANS	SF199 MARY JANE BROADWAY INTX / HSIP 8199(161)
2		5/1/2021	REVIEWED BY	JAD		MISSOULA COUNTY	UPN 9920000 / SHEET EL4 OF EL6
1		5/1/2021 THOCHHAL	CHECKED BY	JAD			

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LUMINAIRE SERVICE WIRING DIAGRAM (S-1)



SERVICE (S-1)
BROADWAY ST. & FLYNN LN.

LEGEND

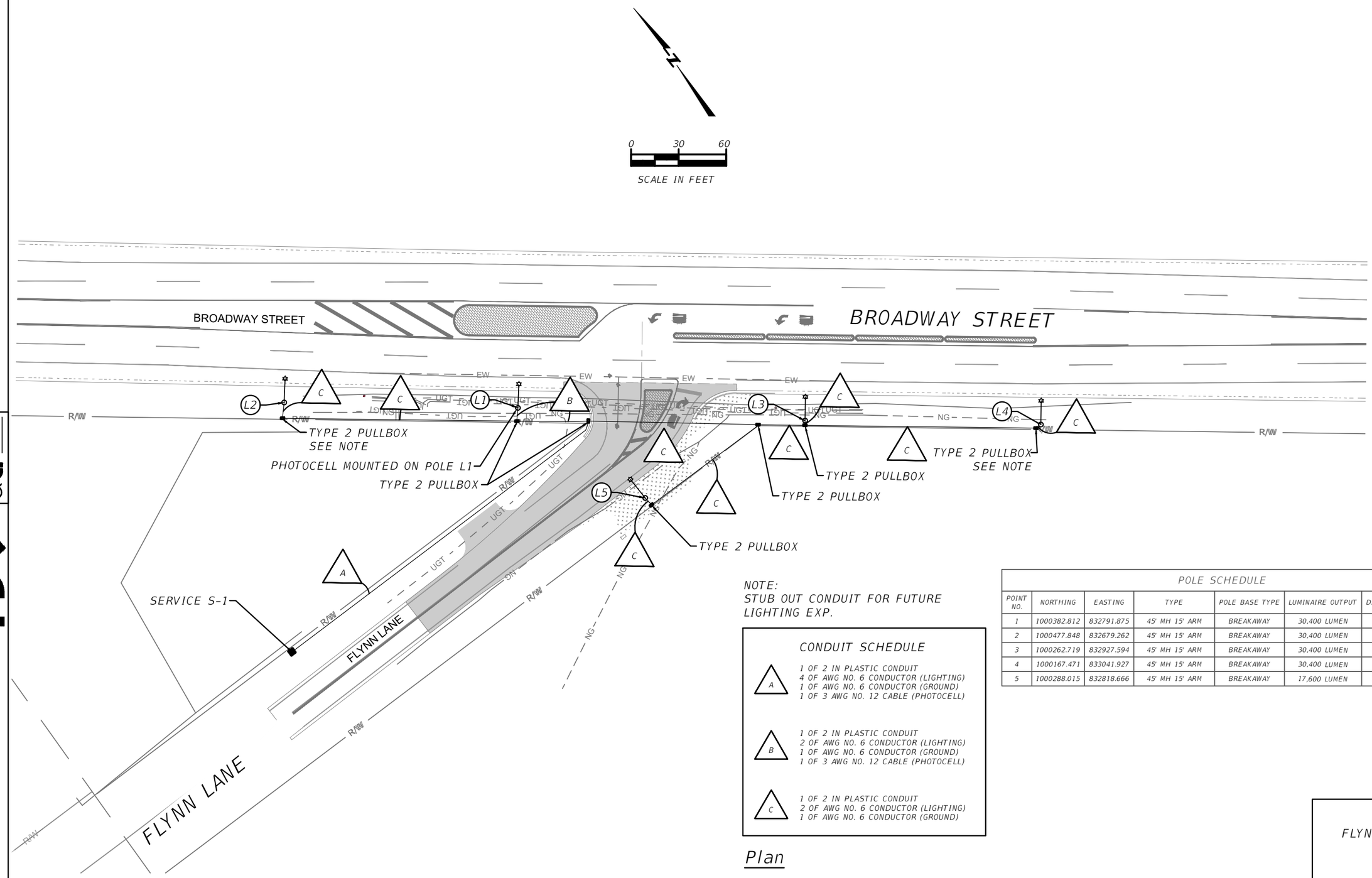
---------- AWG NO. 12
-·-·-·- AWG NO. 10
— · · — AWG NO. 6

DESIGN CRITERIA
-MAXIMUM CONDUIT FILL - 25%
-MAXIMUM VOLTAGE DROP - 3% OF NOMINAL VOLTAGE RATING
-STREET LIGHTING SYSTEM – 240V SINGLE-PHASE
-MINIMUM #8 CONDUCTOR FOR BREAK AWAY STRUCTURES
-LUMINAIRE MOUNTING HEIGHT - 45 FEET
-LUMINAIRE ARM LENGTH - 15 FEET
-REQUIRED MINIMUM AVERAGE ILLUMINATION - 1.2 FC
-REQUIRED AVERAGE/MINIMUM RATIO - 3:1

FLYNN AND BROADWAY

3	MONTANA DEPARTMENT OF TRANSPORTATION	HSIP ELECTRICAL DETAIL SHEETS	DESIGNED BY	TJH		ELECTRICAL PLANS	SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2		5/1/2021	REVIEWED BY	JAD		MISSOULA COUNTY	UPN 9920000	SHEET EL5 OF EL6
1		5/1/2021 THOCHHAL	CHECKED BY	JAD				

ENGINEERS PLANNERS SURVEYORS



NOTE:
STUB OUT CONDUIT FOR FUTURE LIGHTING EXP.

CONDUIT SCHEDULE

A — 1 OF 2 IN PLASTIC CONDUIT
4 OF AWG NO. 6 CONDUCTOR (LIGHTING)
1 OF AWG NO. 6 CONDUCTOR (GROUND)
1 OF 3 AWG NO. 12 CABLE (PHOTOCELL)

B — 1 OF 2 IN PLASTIC CONDUIT
2 OF AWG NO. 6 CONDUCTOR (LIGHTING)
1 OF AWG NO. 6 CONDUCTOR (GROUND)
1 OF 3 AWG NO. 12 CABLE (PHOTOCELL)

C — 1 OF 2 IN PLASTIC CONDUIT
2 OF AWG NO. 6 CONDUCTOR (LIGHTING)
1 OF AWG NO. 6 CONDUCTOR (GROUND)

POLE SCHEDULE

POINT NO.	NORTHING	EASTING	TYPE	POLE BASE TYPE	LUMINAIRE OUTPUT	DISTRIBUTION TYPE
1	1000382.812	832791.875	45' MH 15' ARM	BREAKAWAY	30,400 LUMEN	TYPE 3
2	1000477.848	832679.262	45' MH 15' ARM	BREAKAWAY	30,400 LUMEN	TYPE 3
3	1000262.719	832927.594	45' MH 15' ARM	BREAKAWAY	30,400 LUMEN	TYPE 3
4	1000167.471	833041.927	45' MH 15' ARM	BREAKAWAY	30,400 LUMEN	TYPE 3
5	1000288.015	832818.666	45' MH 15' ARM	BREAKAWAY	17,600 LUMEN	TYPE 2

Plan

FLYNN AND BROADWAY

SCALE 1"=60'

ENGINEERS PLANNERS SURVEYORS

HDR

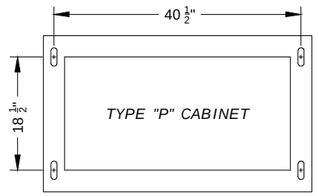
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2		5/20/2021	REVIEWED BY	JAD	MISSOULA COUNTY	UPN 9920000	SHEET EL6 OF EL6
1		5/20/2021 THOCHHAL	CHECKED BY	JAD			

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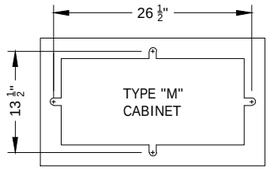
AWARD COPY

KITTELSON & ASSOCIATES

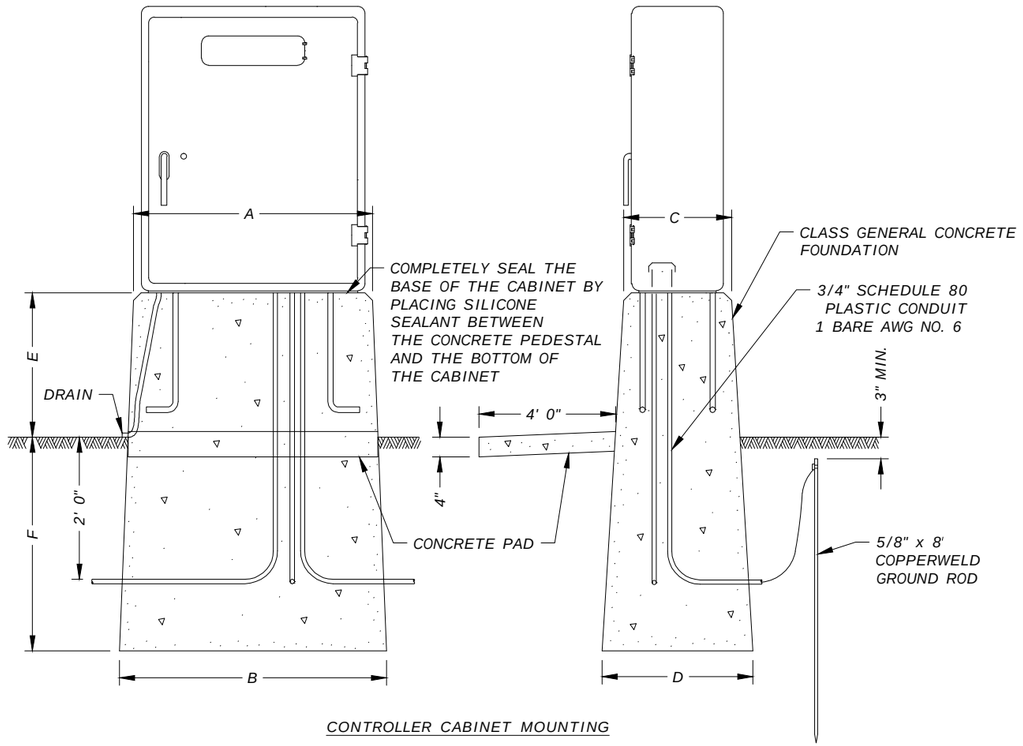
ANCHOR BOLT PATTERN
(VERIFY BEFORE PLACING ANCHOR BOLTS)



NOTE:
LOCATE CONDUITS NEAR THE CENTER OF THE PEDESTAL - BETWEEN 6" AND 10" FROM THE FRONT OF THE CABINET.
EXTEND CONDUIT 2" TO 4" ABOVE THE CONCRETE PEDESTAL.



NOTE:
LOCATE CONDUITS NEAR THE CENTER OF THE PEDESTAL - BETWEEN 4" AND 8" FROM THE FRONT OF THE CABINET.
EXTEND CONDUIT 2" TO 4" ABOVE THE CONCRETE PEDESTAL.



CONTROLLER CABINET MOUNTING

CONCRETE PEDESTAL DIMENSIONS						
	A	B	C	D	E	F
TYPE M	2' 10"	3' 2"	1' 7"	2' 0"	2' 0"	3' 0"
TYPE P	4' 0"	4' 4"	2' 4"	2' 9"	2' 0"	3' 0"

TYPICAL CABINET DIMENSIONS			
	WIDTH	HEIGHT	DEPTH
TYPE M	2' 6"	4' 2"	1' 5"
TYPE P	3' 8"	4' 6"	2' 2"

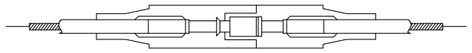
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PEDESTAL MOUNTING FOR TYPE "M" AND TYPE "P" CONTROLLER CABINETS

NO SCALE

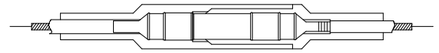
WATERTIGHT CONNECTORS

TYPES 1, 6, 11 & 16



NON-FUSED BREAKAWAY

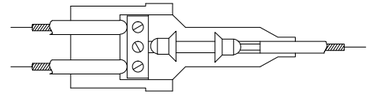
TYPES 2, 7, 12 & 17



FUSED BREAKAWAY

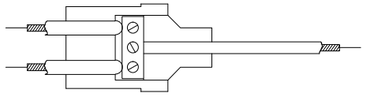
IDENTITY NO.	DESCRIPTIVE SYMBOL & WIRE SIZES
1	8 — 8
2	8 — 10
3	8, 8 — 10
4	8, 8 — 8
5	8, 8 — 8
6	6 — 6
7	6 — 10
8	6, 6 — 10
9	6, 6 — 6
10	6, 6 — 6
11	4 — 4
12	4 — 10
13	4, 4 — 10
14	4, 4 — 4
15	4, 4 — 4
16	10 — 10
17	10 — 10
18	10, 10 — 10
19	10, 10 — 10
20	10, 10 — 10
21	VARIES — VARIES

TYPES 3, 8, 13 & 18



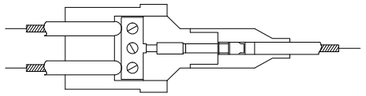
FUSED BREAKAWAY

TYPES 5, 10, 15 & 20



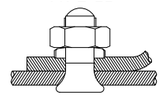
NON-FUSED NON-BREAKAWAY

TYPES 4, 9, 14 & 19



NON-FUSED 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.

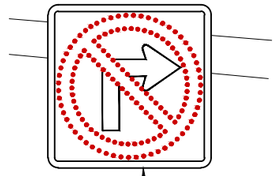
WATERTIGHT CONNECTORS

NO SCALE

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	DESIGNED BY	ELECTRICAL PLANS	SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2		REVIEWED BY			
1		CHECKED BY	MISSOULA COUNTY	UPN 9920000	SHEET E1 OF E9

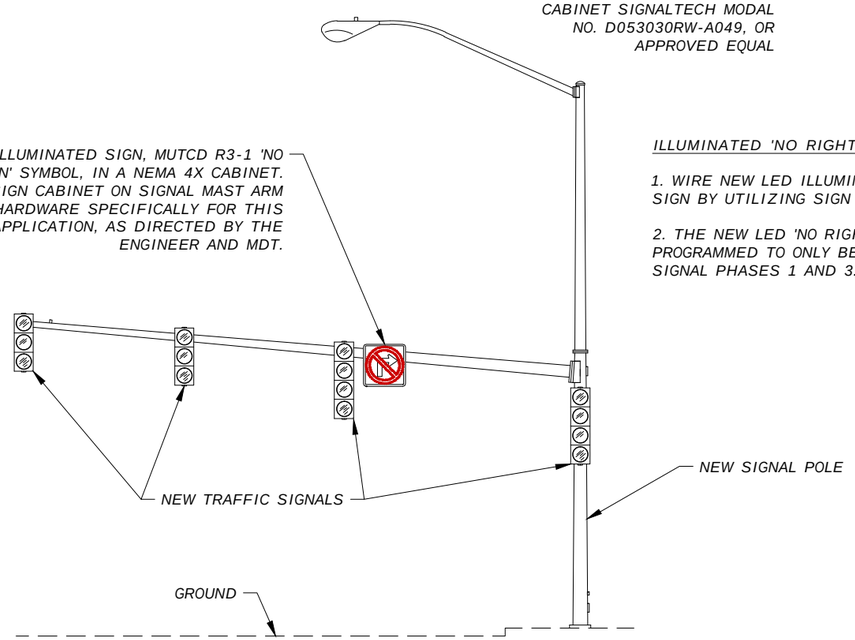
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LED ILLUMINATED SIGN, MUTCD R3-1 'NO RIGHT TURN' SYMBOL IN A NEMA 4X CABINET SIGNALTECH MODAL NO. D053030RW-A049, OR APPROVED EQUAL

NEW LED ILLUMINATED SIGN, MUTCD R3-1 'NO RIGHT TURN' SYMBOL, IN A NEMA 4X CABINET. INSTALL SIGN CABINET ON SIGNAL MAST ARM USING HARDWARE SPECIFICALLY FOR THIS APPLICATION, AS DIRECTED BY THE ENGINEER AND MDT.



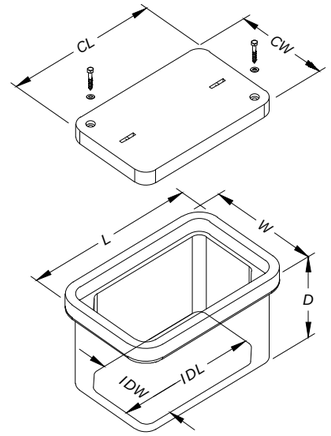
ILLUMINATED 'NO RIGHT TURN' NOTES:

1. WIRE NEW LED ILLUMINATED 'NO RIGHT TURN' SIGN BY UTILIZING SIGN CONDUCTORS.

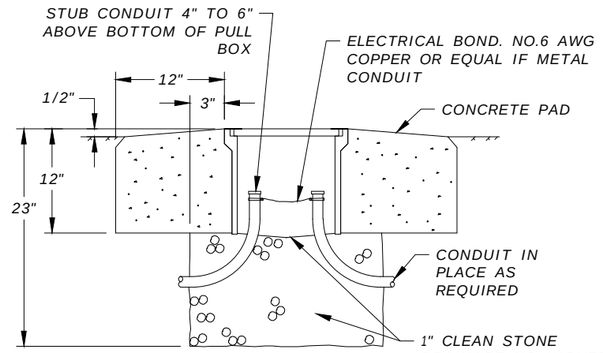
2. THE NEW LED 'NO RIGHT TURN' SIGN SHALL BE PROGRAMMED TO ONLY BE ILLUMINATED DURING SIGNAL PHASES 1 AND 3.

ILLUMINATED 'NO RIGHT TURN' SIGN

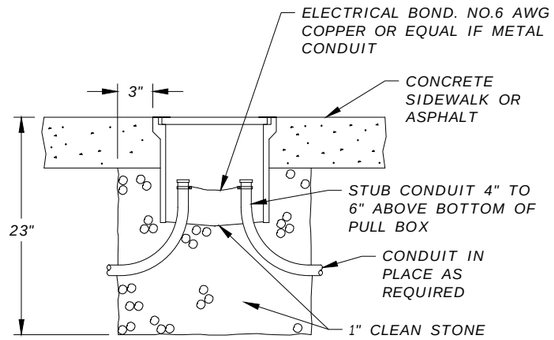
NO SCALE



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

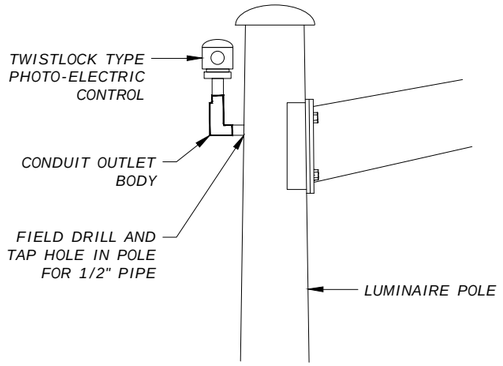
KITTELSON & ASSOCIATES

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	DESIGNED BY			ELECTRICAL PLANS	SF199 MARY JANE BROADWAY INTX / UPN 9920000 / HSIP 8199(161)
2		REVIEWED BY				
1		CHECKED BY			MISSOULA COUNTY	SHEET E2 OF E9

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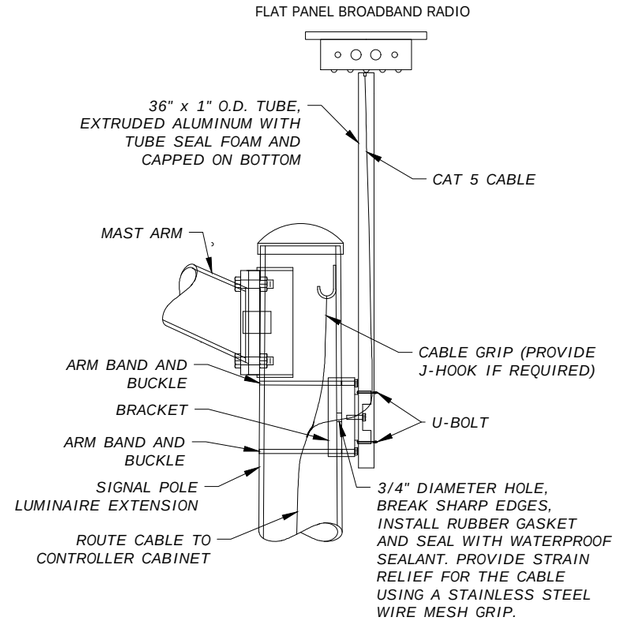
AWARD COPY

KITTELSON & ASSOCIATES



INSTALLATION DETAIL FOR PHOTO-ELECTRIC CONTROL

NO SCALE



INTERCONNECT ANTENNA MOUNTING
TYPE 3-A SIGNAL POLE

PHOTO-ELECTRIC CONTROL MOUNTING

NO SCALE

RADIO MOUNTING

NO SCALE

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION		DESIGNED BY			ELECTRICAL PLANS	SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2			REVIEWED BY			MISSOULA COUNTY	UPN 9920000	SHEET E3 OF E9
1			CHECKED BY					

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TABLE 1		POLE SHAFT						SIGNAL ARM					FOUNDATION			
	Ⓐ	Ⓑ	Ⓒ	Ⓓ	MIN. BASE DIA.	MIN. WALL THICK.	ANCHOR BOLTS	Ⓔ	Ⓕ	Ⓖ	Ⓗ	Ⓙ	Ⓚ	Ⓛ	Ⓜ	Ⓝ
TYPE (A) LOWER SHAFT	15', 20', 25', 30', 35', 40'	19" SQ.	19"	2"	13½"	5/16"	1¾" x 48"	22" SQ.	23"	1½" - 6 UNC - 6" A325	2"	2"	12	12' 0"	11' 6"	3' 0"
TYPE (B) LOWER SHAFT	45', 50', 55', 60'	21" SQ.	21"	2"	15"	5/16"	2" x 48"	24" SQ.	25"	1½" - 6 UNC - 6" A325	2"	2"	12	12' 0"	11' 6"	4' 0"

TABLE 2	MOUNTING POINTS							
	*1 SIGNAL	*2 EMERG. VEHICLE DETECTOR	*3 - *3C SIGN PANEL	*1A - *1C SIGNAL	*7 LUMINAIRE	*8 SIGNALS	*9 PED. SIGNAL	*10 CONTROLLER CAB.
DESIGN AREA	12.0 SQ.FT.	NIL	8.0 SQ.FT.	9.0 SQ.FT.	3.3 SQ.FT.	9.0 SQ.FT.	3.0 SQ.FT.	4.72 SQ.FT.
DESIGN WEIGHT	135 LB.	NIL	100 LB.	105 LB.	77LB.	210 LB.	80 LB.	200 LB.

TABLE 3	Ⓐ			
	15'	20' & 25'	30', 35', 40' & 45'	50', 55' & 60'
MTG.PTS.	*1, *2 & *3	*1, *1A, *2, *3, & *3A	*1, *1A, *1B, *2, *3, *3A, & *3B	*1, *1A, *1B, *1C, *2, *3, *3A, *3B, & *3C

NOTES

DESIGN STANDARDS IN ACCORDANCE WITH THE 2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (AND ANY AMENDMENTS THERETO).

DESIGN PARAMETERS

DESIGN WIND VELOCITY 700 YEAR MRI BASIC WIND SPEED

FATIGUE CATEGORY 2

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

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

NO ICE LOADS OR GALLOPING

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

DESIGN WEIGHT = DEAD LOAD.

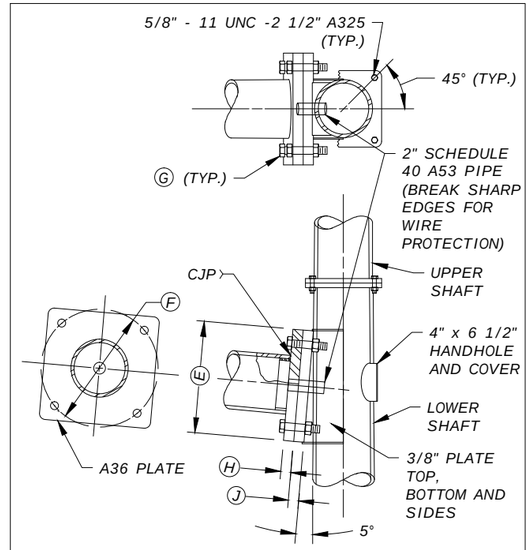
DESIGN ALL TYPE (A) LOWER SHAFTS FOR Ⓐ = 40' AND A MOUNTING HEIGHT OF 45'.

DESIGN ALL TYPE (B) LOWER SHAFTS FOR Ⓐ = 60' AND A MOUNTING HEIGHT OF 45'.

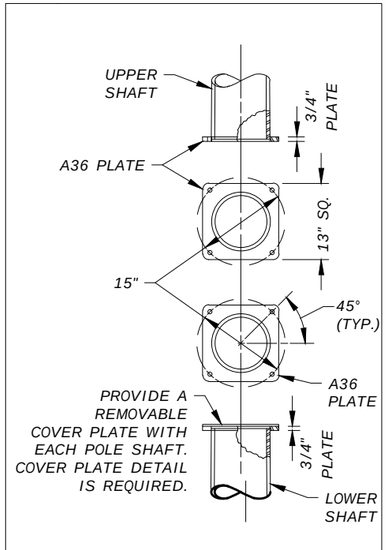
PROVIDE ANCHOR BOLTS CONFORMING TO ASTM F1554 OR EQUAL. GALVANIZE AND THREAD THE TOP END (12" MIN.).

CALL OUT WELDING PROCEDURES, SYMBOLS, BASE METAL SPECIFICATIONS AND GRADES PRIOR TO FABRICATION OR APPROVAL.

GALVANIZE POLE SHAFTS, ARMS, AND ACCESSORIES PER ASTM A123. GALVANIZE HARDWARE PER ASTM F2329.

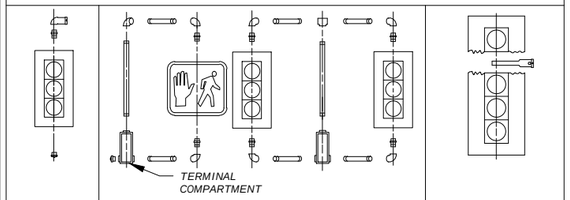


DETAIL 1 — SIGNAL ARM CONNECTION



DETAIL 2 — SHAFT TO SHAFT

TYPICAL SIGNAL MOUNTINGS

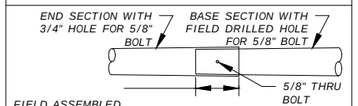


STANDARD MAST ARM MOUNTING

USE PIPE BRACKETS TO MOUNT TRAFFIC AND PEDESTRIAN SIGNALS TO THE POLE SHAFT UNLESS OTHERWISE SHOWN ON THE PLANS.

ELEVATOR PLUMBIZER MAST ARM MOUNTING

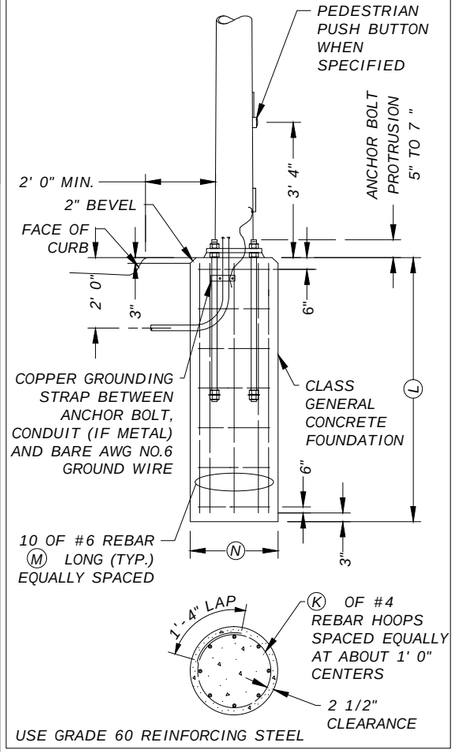
SIGNAL ARM SLIP JOINT



FIELD ASSEMBLED TO ACHIEVE A SNUG TIGHT JOINT (MIN. OVERLAP NOT LESS THAN 2.5 FT).

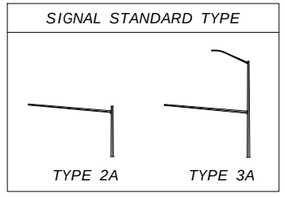
SPAN	BASE SECTION LENGTH	END SECTION LENGTH
55'	12.60'	45.00'
60'	12.60'	50.00'

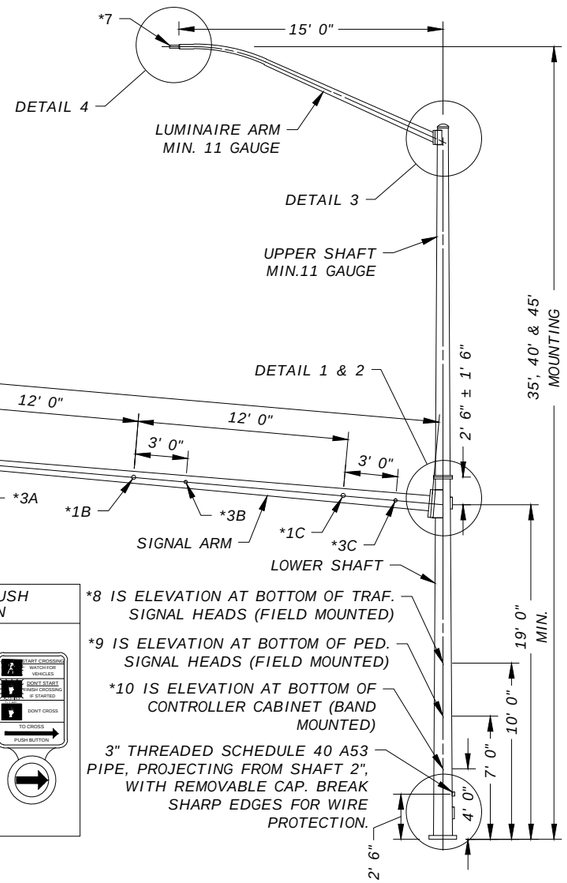
TYPICAL FOUNDATION



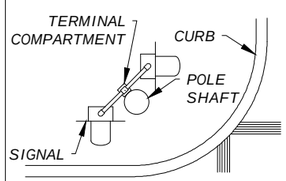
USE GRADE 60 REINFORCING STEEL

SIGNAL STANDARD TYPE





TYPICAL ORIENTATION FOR PIPE BRACKET MOUNTED SIGNALS

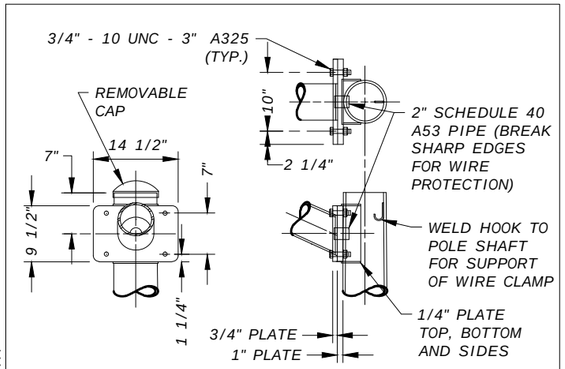


PEDESTRIAN PUSH BUTTON SIGN

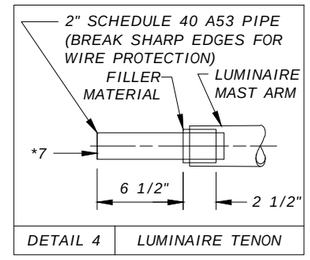
ARROW TO BE LEFT OR RIGHT, OR BOTH AS REQUIRED.

5" x 7 3/4" ALUMINUM SIGN, BLACK LETTERS ON WHITE BACKGROUND.

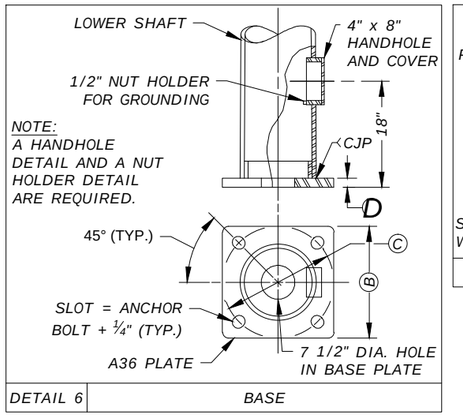
BACK OF CASTING SHAPED TO FIT CURVATURE OF POLE.



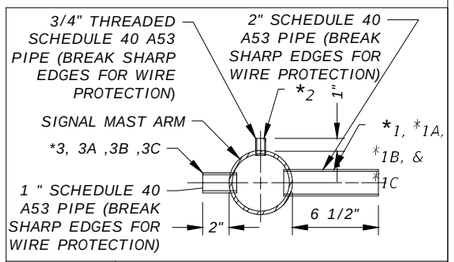
DETAIL 3 — LUMINAIRE ARM CONNECTION



DETAIL 4 — LUMINAIRE TENON



DETAIL 6 — BASE



DETAIL 5 — ARM TENONS

2015 LRFD TYPE 2A & 3A SIGNAL STANDARDS, FOUNDATION DETAILS, AND TYPICAL SIGNAL MOUNTINGS

NO SCALE

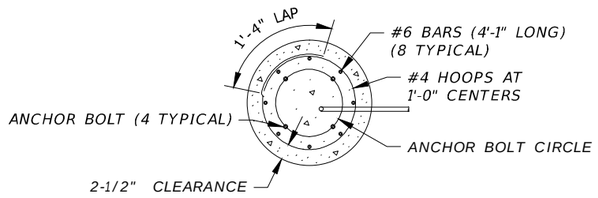
KITTELSON & ASSOCIATES

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	DESIGNED BY		ELECTRICAL PLANS	SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2		REVIEWED BY				
1		CHECKED BY		MISSOULA COUNTY	UPN 9920000	SHEET E4 OF E9

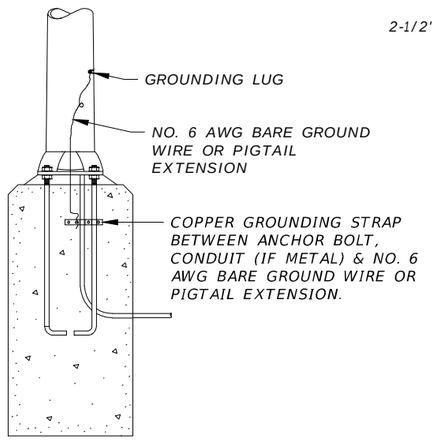
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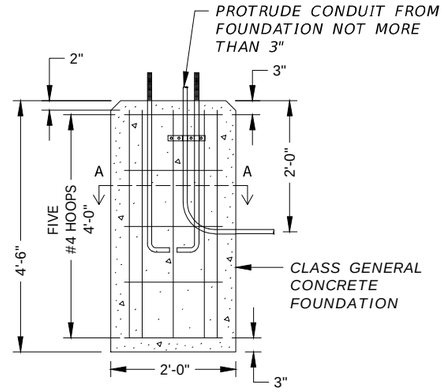
AWARD COPY

USE GRADE 60 REINFORCING STEEL

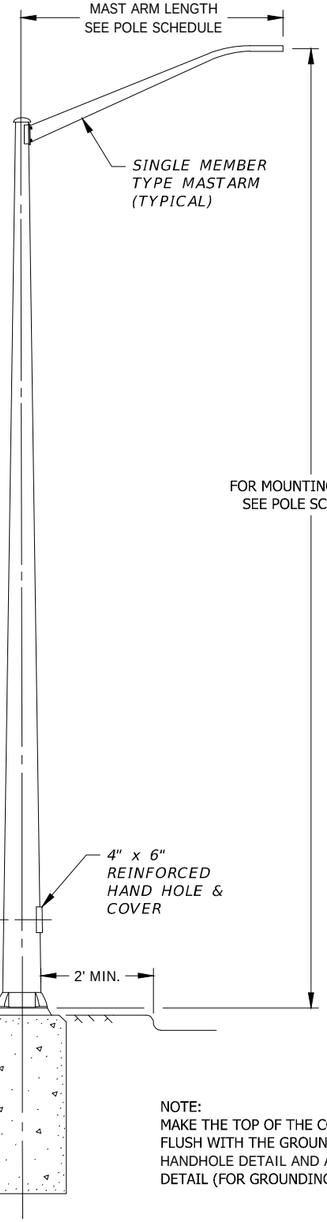


SECTION A-A



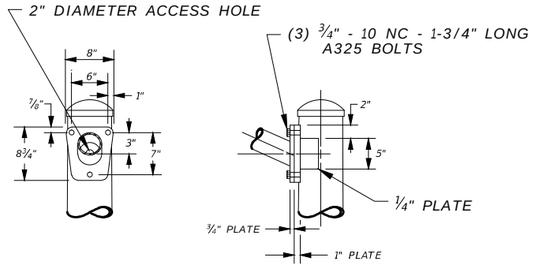


TYPICAL OF ALL FOUNDATIONS



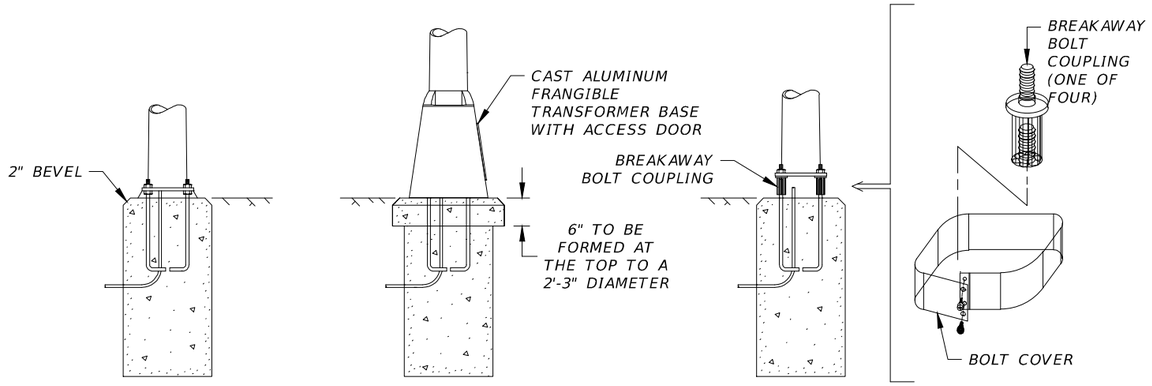
TYPE I0-A POLE

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) .



LUMINAIRE ARM CONNECTION

4' THROUGH 12' LUMINAIRE ARMS



ANCHOR

TRANSFORMER (BREAKAWAY TYPE)

BOLT COUPLING (BREAKAWAY TYPE)

BASE TYPES FOR LUMINAIRE STANDARDS

LUMINAIRE, POLE BASES & FOUNDATION DETAILS

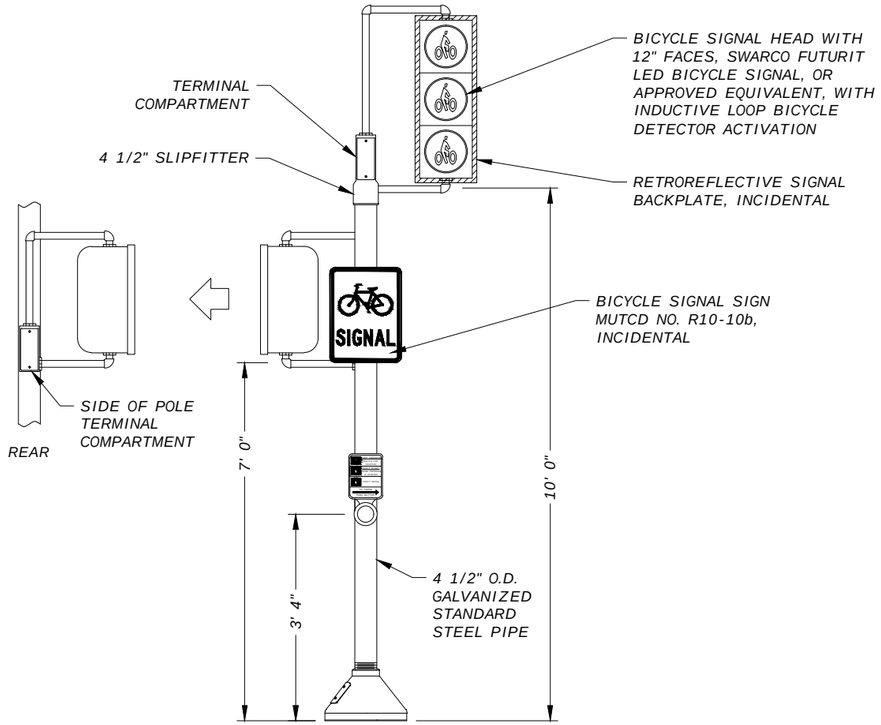
NO SCALE

KITTELSON & ASSOCIATES

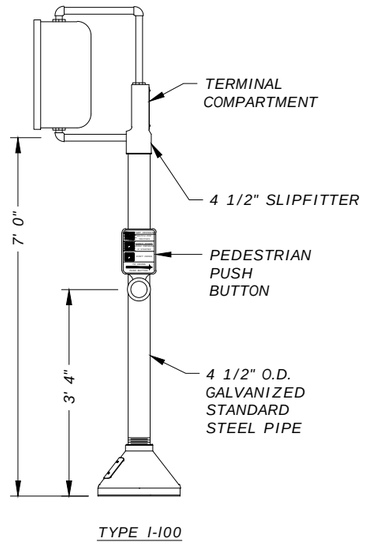
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2			REVIEWED BY			*MISSOULA COUNTY*	*UPN 9920000* / *SHEET E5 OF E9*
1			CHECKED BY				

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TYPE I-I40
(MODIFIED)

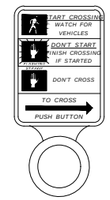


TYPE I-I00

ARROW TO BE LEFT OR RIGHT, OR BOTH AS REQUIRED.

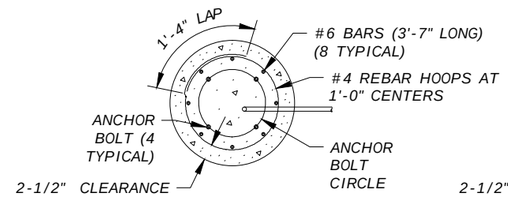
5" x 7 3/4" ALUMINUM SIGN, BLACK LETTERS ON WHITE BACKGROUND.

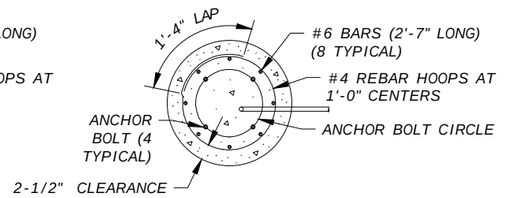
BACK OF CASTING SHAPED TO FIT CURVATURE OF POST. FOR MOUNTING ON PEDESTRIAN PUSH BUTTON POST, FORM CASTING TO FIT TOP OF POST.

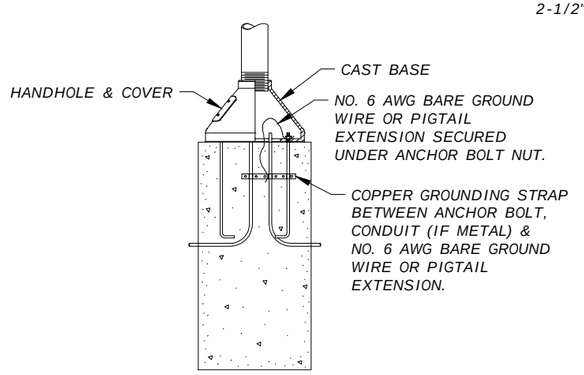


PEDESTRIAN PUSH BUTTON

USE GRADE 60 REINFORCING STEEL

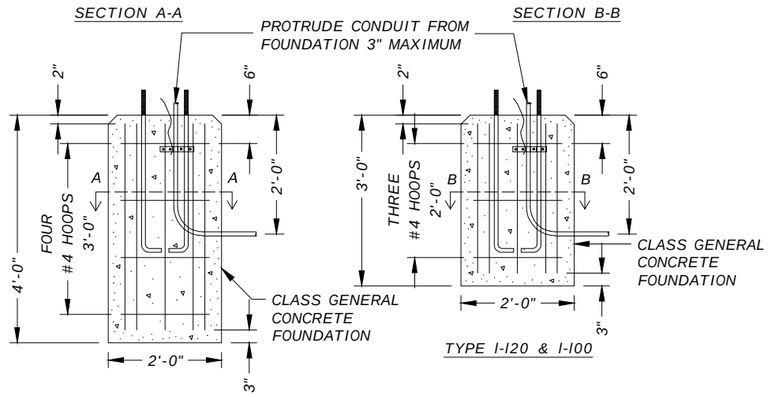






SECTION A-A

SECTION B-B



TYPE I-I60 & I-I40

TYPE I-I20 & I-I00

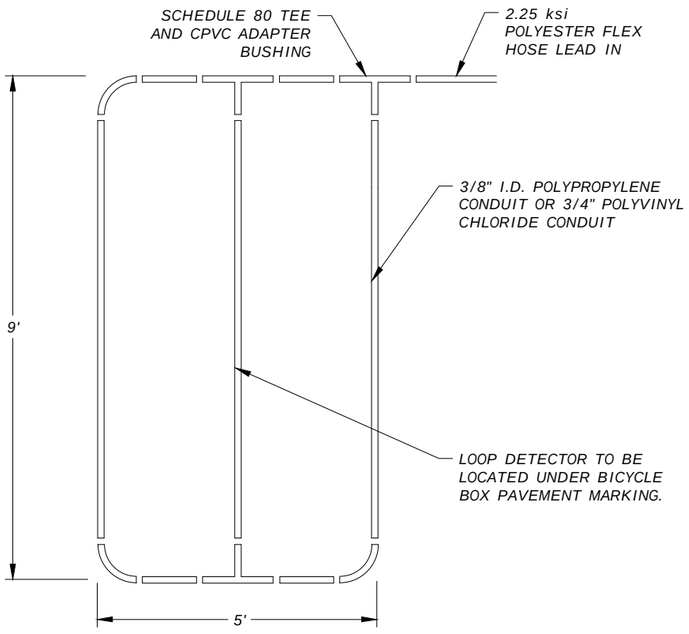
TYPICAL OF FOUNDATIONS

TYPE 1 SIGNAL STANDARDS, FOUNDATION DETAILS & PEDESTRIAN PUSH BUTTONS

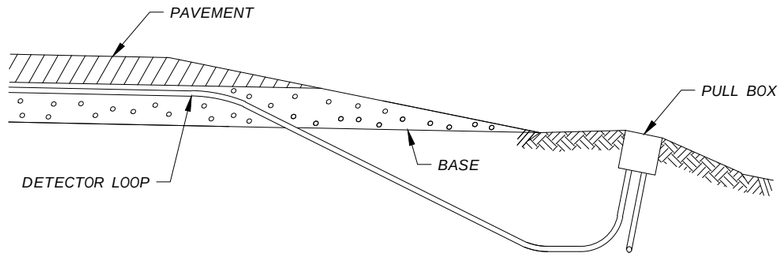
NO SCALE

KITTELSON & ASSOCIATES

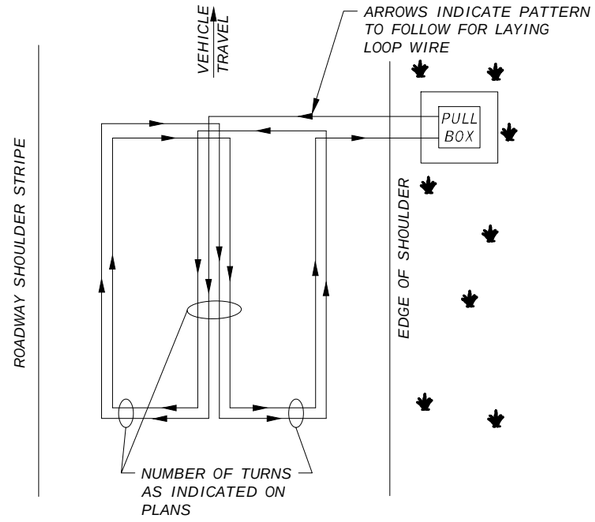
3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	DESIGNED BY		ELECTRICAL PLANS	SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2		REVIEWED BY		MISSOULA COUNTY	UPN 9920000	SHEET E6 OF E9
1		CHECKED BY				



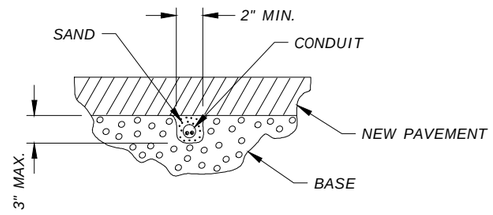
CONDUIT DETAIL



PULL BOX & DETECTOR LOOP LOCATIONS



QUADRUPOLE LOOP



CROSS SECTION (FOR NEW PAVEMENT)

NOTES

EMBED CONDUIT AND LEAD IN HOSE IN SAND. AFTER THE DETECTOR LOOP IS IN PLACE BACKFILL THE SLOT WITH SAND TO A DEPTH OF 1" ABOVE THE CONDUIT AND LEAD IN HOSE.

CHECK RESISTANCE OF THE WIRE LOOP TO GROUND BEFORE AND AFTER THE LOOP IS SEALED IN THE SLOT. A RESISTANCE OF LESS THAN 100 MEGOHMS INDICATES A FAULTY SPLICE OR WIRE INSTALLATION, AND MUST BE CORRECTED.

USE STRANDED AWG NO. 14 TFFN CONDUCTOR IN 1/2" CONDUIT OR STRANDED AWG NO. 12 XHHW CONDUCTOR IN 3/4" CONDUIT FOR THE DETECTOR LOOP WIRE. TERMINATE THE LOOP WIRE IN A PULL BOX AT THE SIDE OF THE TRAIL AND CONNECT TO DETECTOR LOOP SHIELDED CABLE WITH A SOLDERED, WATERPROOF SPLICE FOR THE LEAD IN RUN TO THE CONTROLLER.

INDUCTIVE LOOPS SHALL BE SPECIFICALLY DESIGNED AND CALIBRATED TO DETECT BICYCLES.

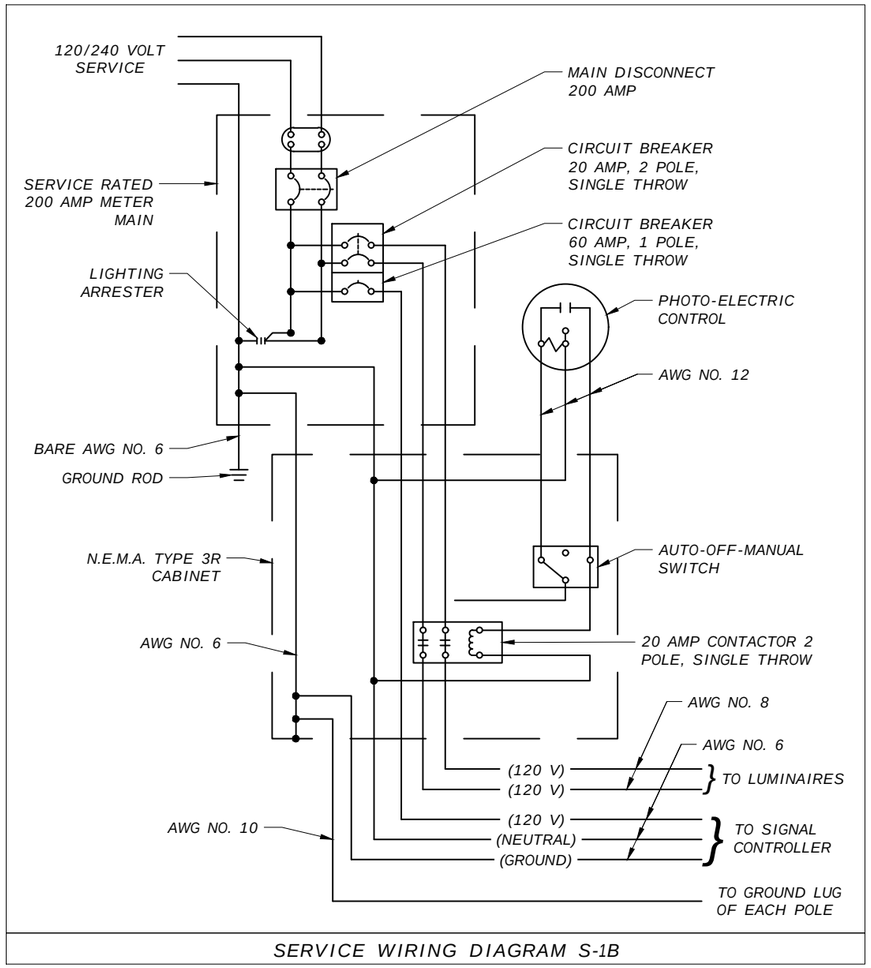
BIKE DETECTOR LOOP INSTALLATION

NO SCALE

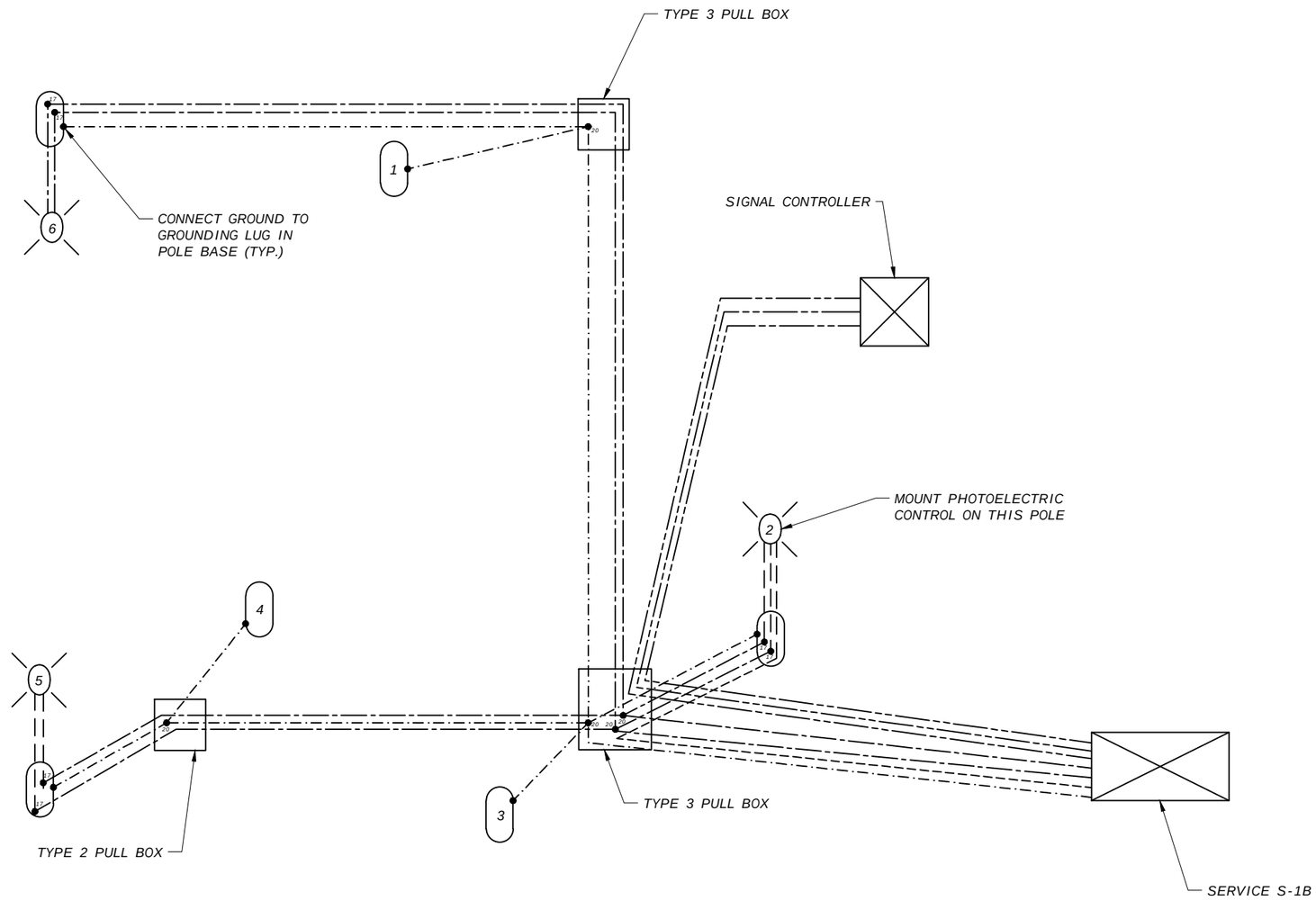
KITTELSON & ASSOCIATES

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION		DESIGNED BY			ELECTRICAL PLANS	
2			REVIEWED BY			MISSOULA COUNTY	
1			CHECKED BY				

SF199 MARY JANE BROADWAY INTX		HSIP 8199(161)
	UPN 9920000	SHEET E7 OF E9



SERVICE WIRING DIAGRAM S-1B



LEGEND

- AWG NO. 12
- AWG NO. 10
- AWG NO. 8
- AWG NO. 6

INDICATES WATERTIGHT CONNECTORS PER ELECTRICAL DETAIL DRAWINGS ON SHEET NO. E1

WIRING DIAGRAMS

NO SCALE

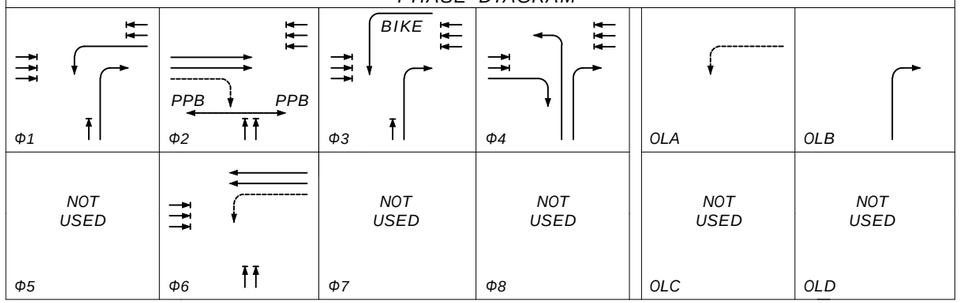
KITTELSON & ASSOCIATES

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION		DESIGNED BY			ELECTRICAL PLANS	SF199 MARY JANE BROADWAY INTX / HSIP 8199(161)
2			REVIEWED BY			MISSOULA COUNTY	UPN 9920000 / SHEET E8 OF E9
1			CHECKED BY				

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PHASE DIAGRAM



POLE SCHEDULE

POLE NO.	ITEM NO.	TYPE	LINE	STATION	OFFSET (CL POLE)	TYPE POLE BASE	FOUNDATION DIA. X DEPTH	PEDESTRIAN PUSH BUTTON LEFT ARROW	PEDESTRIAN PUSH BUTTON RIGHT ARROW	SIGNAL MASTARM	LUMINAIRE HEIGHT	LUMINAIRE	LED LUMENS
1	617 699 503	2-A-500-3	BROADWAY ST	460+88.08	54.60' LT	ANCHOR	3'0" x 12'0"	-	-	25'	-	-	-
2	617 719 100	3-A-900-0		461+16.50	73.65' RT	ANCHOR	4'0" x 12'0"	-	-	60'	40'	LED	-
3	617 673 100	1-100		460+99.60	81.51' RT	BREAKAWAY	2'0" x 3'0"	-	1	-	-	-	-
4	617 673 140	1-140		460+32.26	78.68' RT	BREAKAWAY	2'0" x 3'0"	1	-	-	-	-	-
5	617 183 056	10-A-500-6		460+35.18	88.65' RT	BREAKAWAY	2'0" x 4'6"	-	-	15'	40'	LED	30400
6	617 719 099	3-A-900-9		460+26.09	55.28' LT	ANCHOR	4'0" x 12'0"	-	-	55'	40'	LED	-

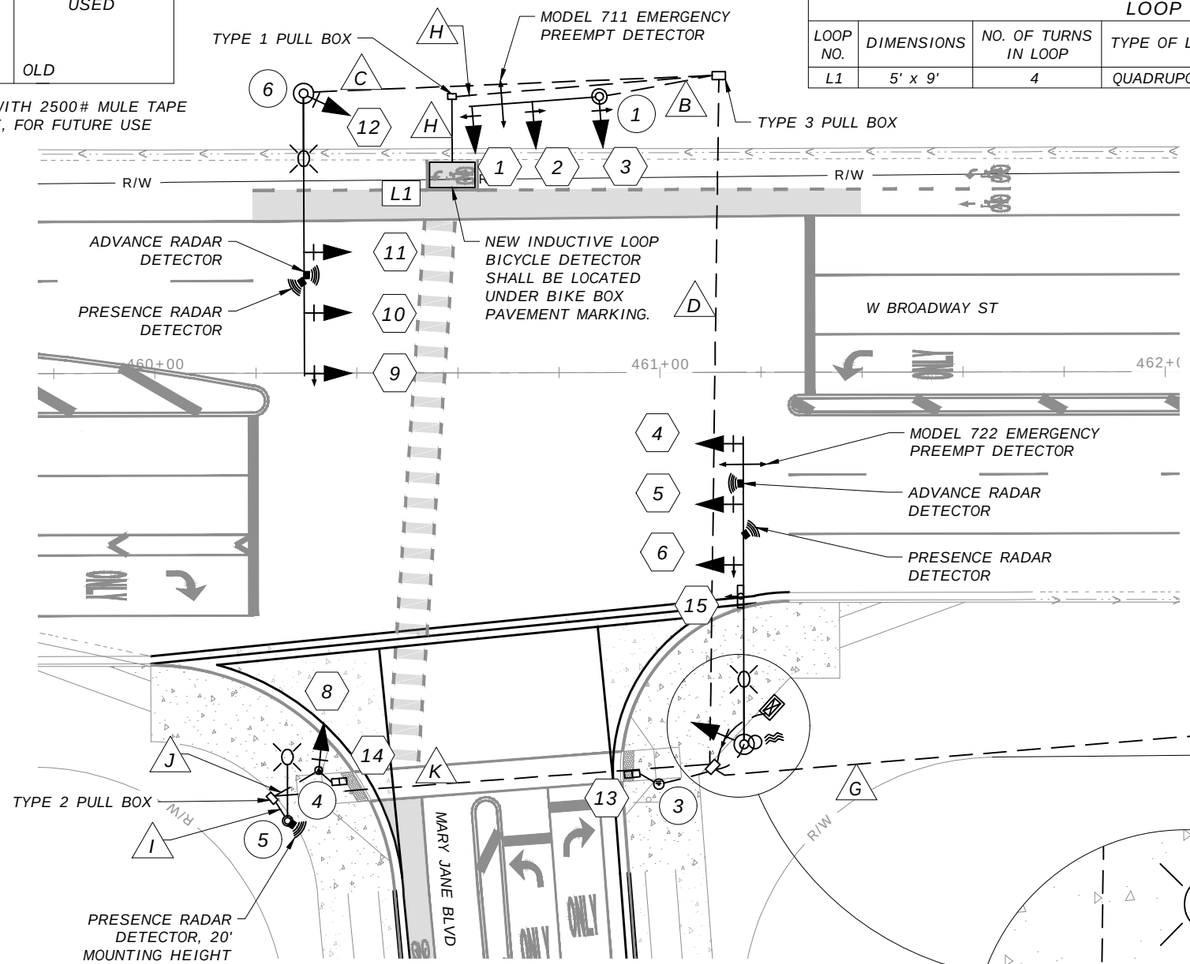
LOOP DETECTORS

LOOP NO.	DIMENSIONS	NO. OF TURNS IN LOOP	TYPE OF LOOP	LOOP CONNECTIONS AT PULL BOX	LOOP CONNECTIONS AT CONTROLLER	ASSOCIATED VEH. PHASE
L1	5' x 9'	4	QUADRUPOLE	TO AMPLIFIER		03

CONDUIT AND WIRE SCHEDULE

A	NEW 1 OF 2" PLASTIC CONDUIT NEW 1 OF 7 AWG NO. 14 SIGNAL CABLE (PED SIGNAL) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)
B	NEW 1 OF 2 1/2" PLASTIC CONDUIT NEW 1 OF 12 AWG NO. 14 SIGNAL CABLE NEW 1 OF EMERGENCY PREEMPT CABLE NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)
C	NEW 1 OF 2 1/2" PLASTIC CONDUIT NEW 1 OF 12 AWG NO. 14 SIGNAL CABLE NEW 2 OF RADAR DETECTION CABLE NEW 2 OF AWG NO. 8 CONDUCTOR (LIGHTING) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)
* D	NEW 2 OF 3" PLASTIC CONDUIT NEW 2 OF 12 AWG NO. 14 SIGNAL CABLE NEW 1 OF EMERGENCY PREEMPT CABLE NEW 2 OF RADAR DETECTION CABLE NEW 2 OF AWG NO. 8 CONDUCTOR (LIGHTING) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND) NEW 1 OF DETECTOR LOOP CABLE
E	NEW 1 OF 3" PLASTIC CONDUIT NEW 1 OF 12 AWG NO. 14 SIGNAL CABLE NEW 1 OF 12 AWG NO. 14 CABLE (ILLUMINATED SIGN) NEW 1 OF 3 AWG NO. 12 CABLE (PHOTOCELL) NEW 1 OF EMERGENCY PREEMPT CABLE NEW 2 OF RADAR DETECTION CABLE NEW 1 OF RADIO CABLE (ITS COMMUNICATION) NEW 2 OF AWG NO. 8 CONDUCTOR (LIGHTING) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)
* F	NEW 3 OF 3" PLASTIC CONDUIT NEW 4 OF 12 AWG NO. 14 SIGNAL CABLE NEW 1 OF 12 AWG NO. 14 CABLE (ILLUMINATED SIGN) NEW 2 OF 7 AWG NO. 14 CABLE (PED SIGNAL) NEW 2 OF EMERGENCY PREEMPT CABLE NEW 5 OF RADAR DETECTION CABLE NEW 1 OF RADIO CABLE (ITS COMMUNICATION) NEW 3 OF AWG NO. 6 CONDUCTOR (CONTROLLER) NEW 1 OF DETECTOR LOOP CABLE
G	1 OF 2" PLASTIC CONDUIT 1 OF 3 AWG NO. 12 CABLE (PHOTOCELL) 6 OF AWG NO. 8 CONDUCTOR (LIGHTING) 1 OF AWG NO. 10 CONDUCTOR (GROUND) 1 OF 3 AWG NO. 6 CONDUCTOR (CONTROLLER)
* H	NEW 1 OF 1 1/2" PLASTIC CONDUIT NEW 1 OF DETECTOR LOOP CABLE
I	NEW 1 OF 1 1/2" PLASTIC CONDUIT NEW 1 OF RADAR DETECTION CABLE NEW 2 OF AWG NO. 8 CONDUCTOR (LIGHTING) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)
J	NEW 1 OF 2 1/2" PLASTIC CONDUIT NEW 1 OF 12 AWG NO. 14 SIGNAL CABLE NEW 1 OF 7 AWG NO. 14 CABLE (PED SIGNAL) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)
K	NEW 1 OF 2 1/2" PLASTIC CONDUIT NEW 1 OF 12 AWG NO. 14 SIGNAL CABLE NEW 1 OF 7 AWG NO. 14 CABLE (PED SIGNAL) NEW 1 OF RADAR DETECTION CABLE NEW 2 OF AWG NO. 8 CONDUCTOR (LIGHTING) NEW 1 OF AWG NO. 10 CONDUCTOR (GROUND)

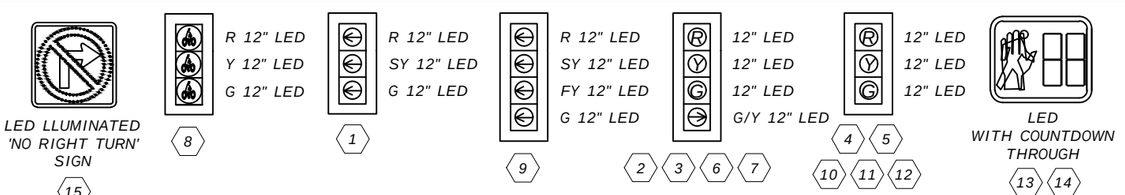
* INCLUDE 2" SPARE CONDUIT WITH 2500# MULE TAPE AND AWG NO 10 GROUND WIRE, FOR FUTURE USE

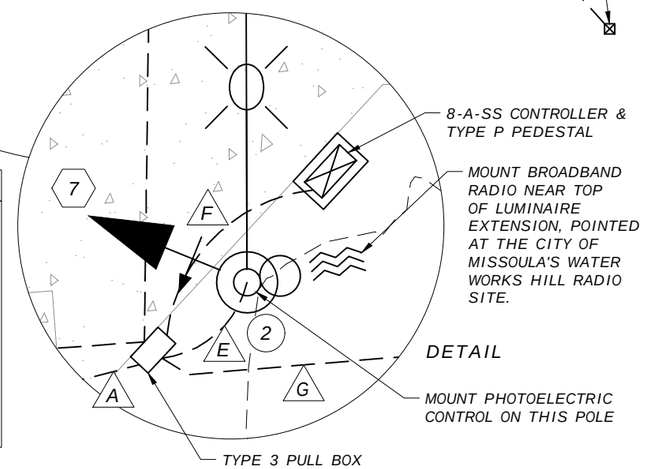


SYMBOLS

- NEW SIGNAL POLE
- NEW PEDESTRIAN POLE WITH PUSH BUTTON
- NEW LUMINAIRE
- NEW TRAFFIC SIGNAL
- NEW TRAFFIC SIGNAL W/ TURN ARROW
- FUTURE PEDESTRIAN SIGNAL
- NEW RADAR DETECTOR
- NEW EMERGENCY PREEMPT DETECTOR
- NEW CONTROLLER
- NEW SERVICE
- NEW PULL BOX
- NEW INTERCONNECT ANTENNA

SIGNAL INDICATIONS





KITTELSON & ASSOCIATES

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	DESIGNED BY	ELECTRICAL PLANS	SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2		REVIEWED BY			
1		CHECKED BY	MISSOULA COUNTY	UPN 9920000	SHEET E9 OF E9

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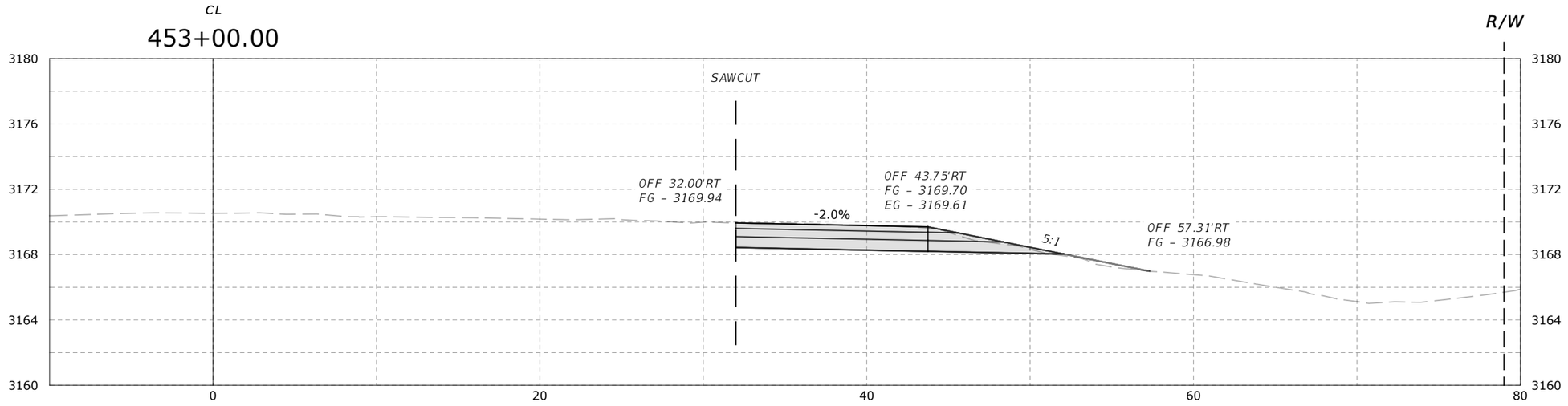
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BROADWAY CROSS SECTIONS

GRADING AREAS:

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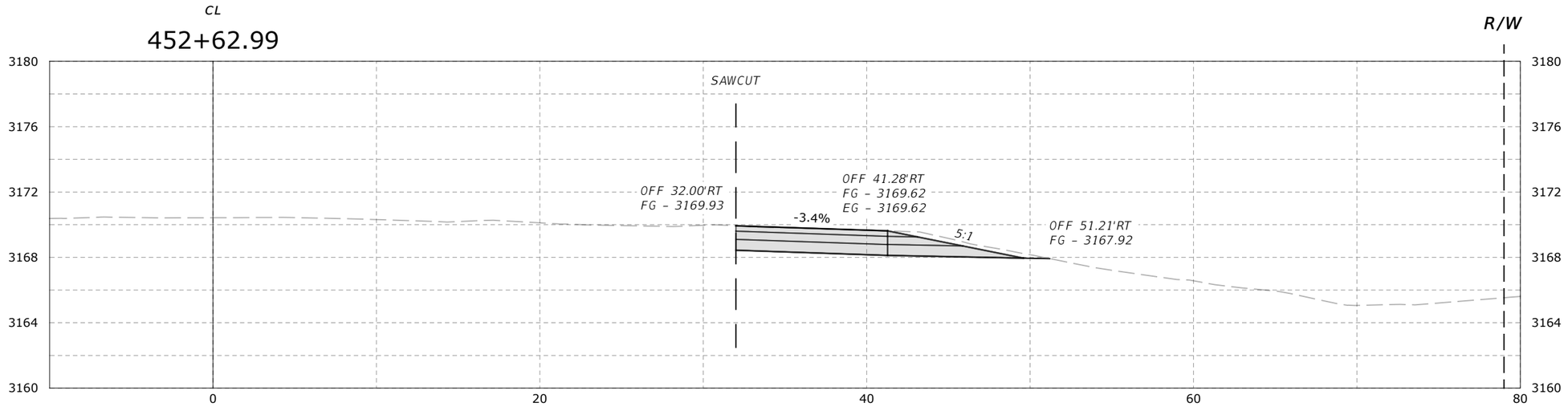
FILL = 0.72 SQ. FT



GRADING AREAS:

CUT = 22.11 SQ. FT

FILL = 0.00 SQ. FT



ENGINEERS PLANNERS SURVEYORS

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	...Design - HSIP - Sections.dwg	DESIGNED BY	BB	ROAD PLANS	SF199 MARY JANE BROADWAY INTX	HSIP 8199(161)
2		5/20/2021	REVIEWED BY	DP			
1		5/20/2021 Braden	CHECKED BY	DW	MISSOULA COUNTY	UPN 9920000	SHEET XS.1

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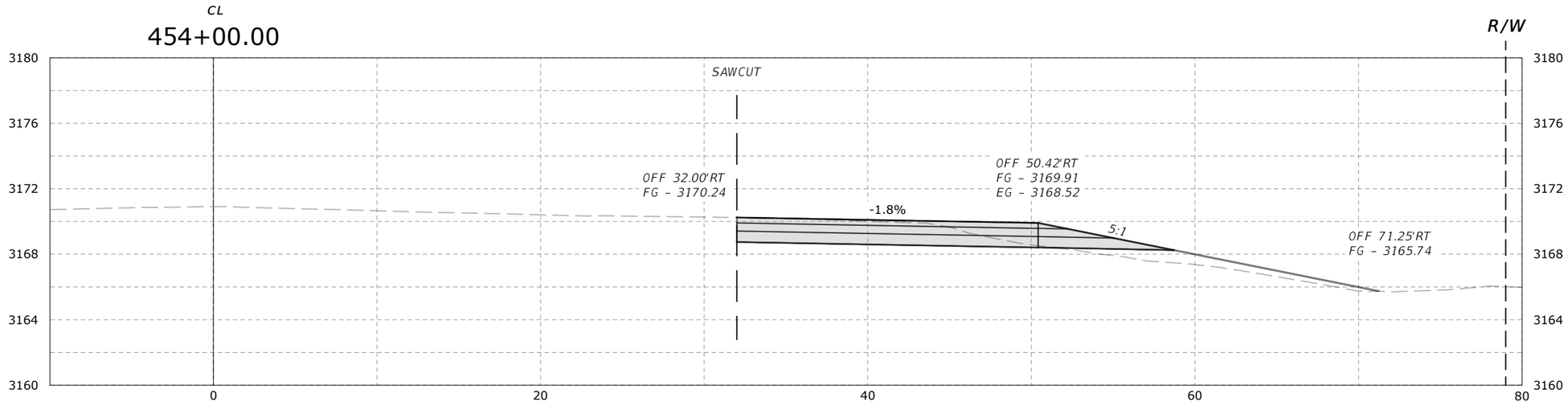
AWARD COPY

BROADWAY CROSS SECTIONS

GRADING AREAS:

CUT = 21.59 SQ. FT

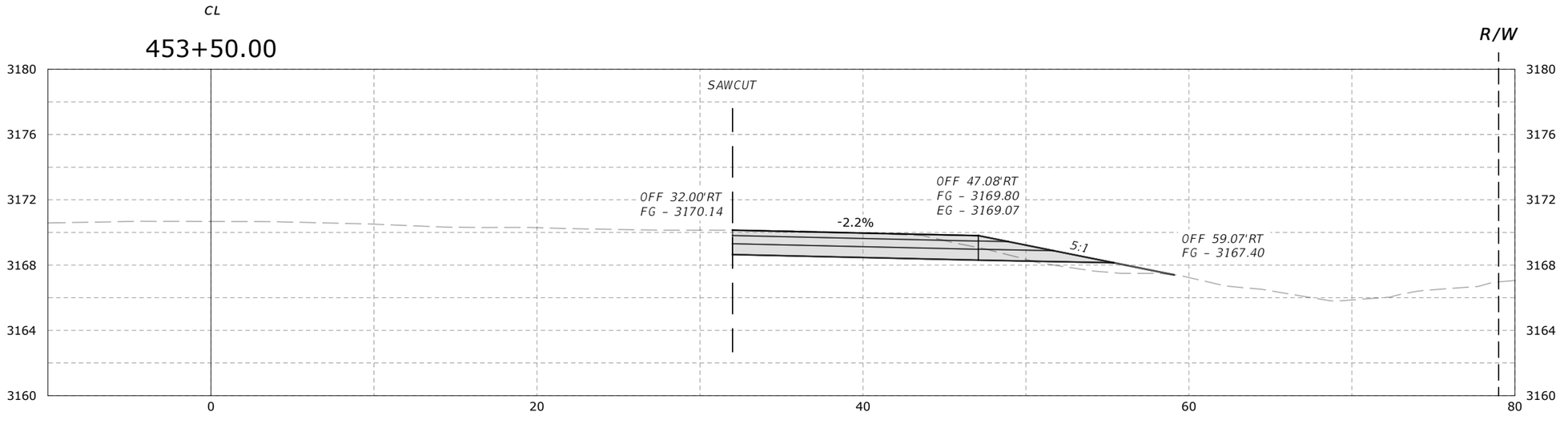
FILL = 7.88 SQ. FT



GRADING AREAS:

CUT = 22.60 SQ. FT

FILL = 2.84 SQ. FT



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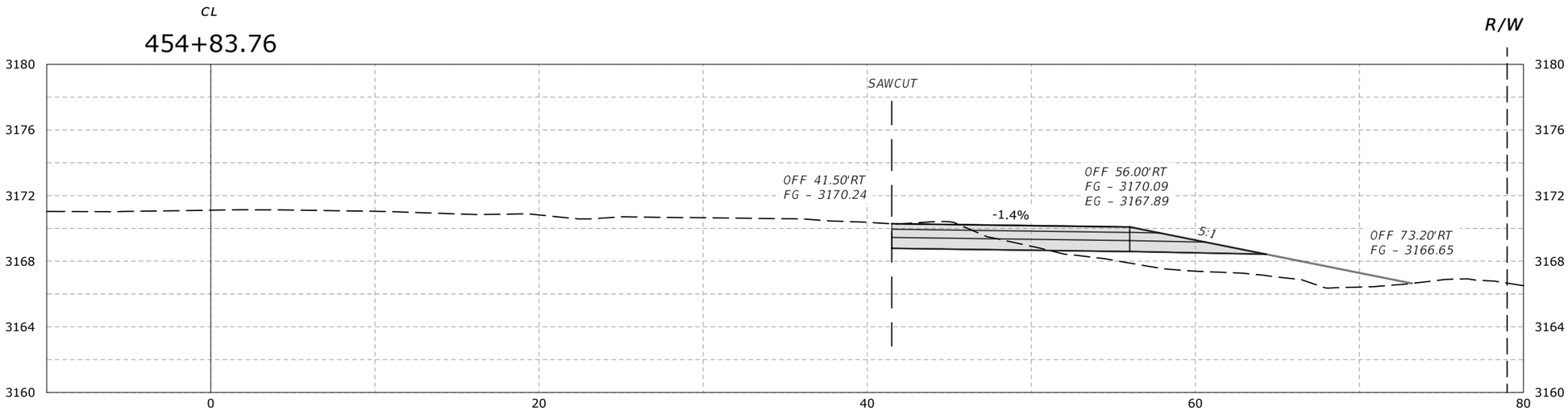
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GRADING AREAS:

CUT = 10.04 SQ. FT

FILL = 18.83 SQ. FT

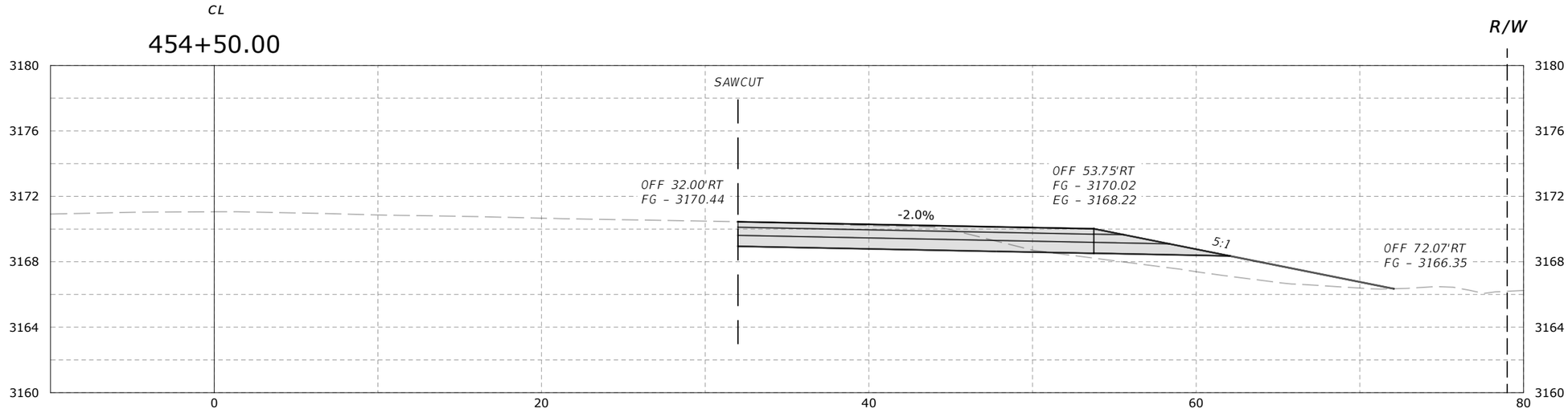
BROADWAY CROSS SECTIONS



GRADING AREAS:

CUT = 21.90 SQ. FT

FILL = 14.07 SQ. FT



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HSIP 8199(161)

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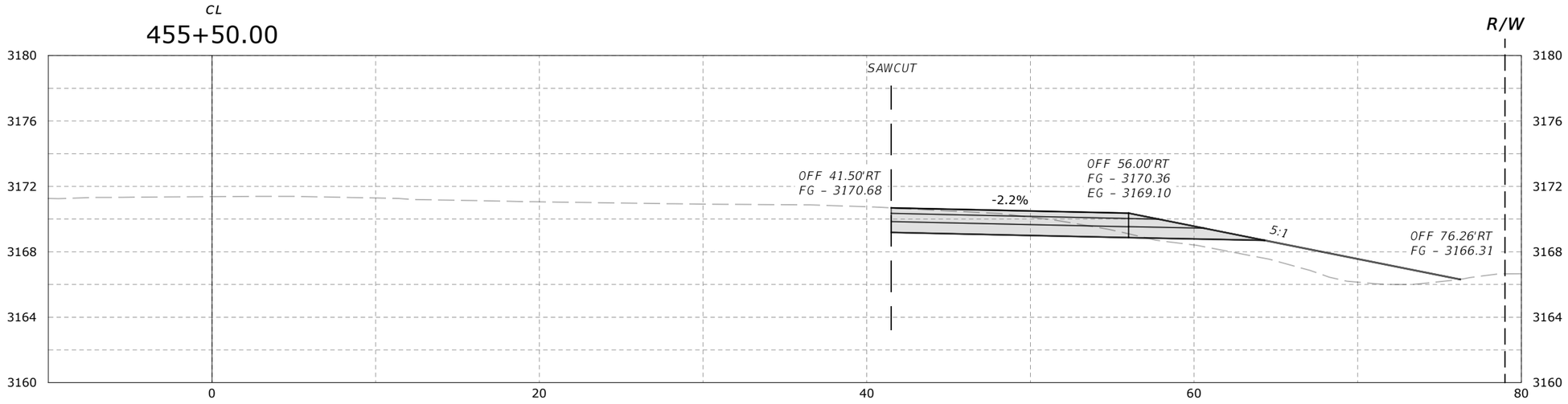
AWARD COPY

GRADING AREAS:

CUT = 16.08 SQ. FT

FILL = 16.55 SQ. FT

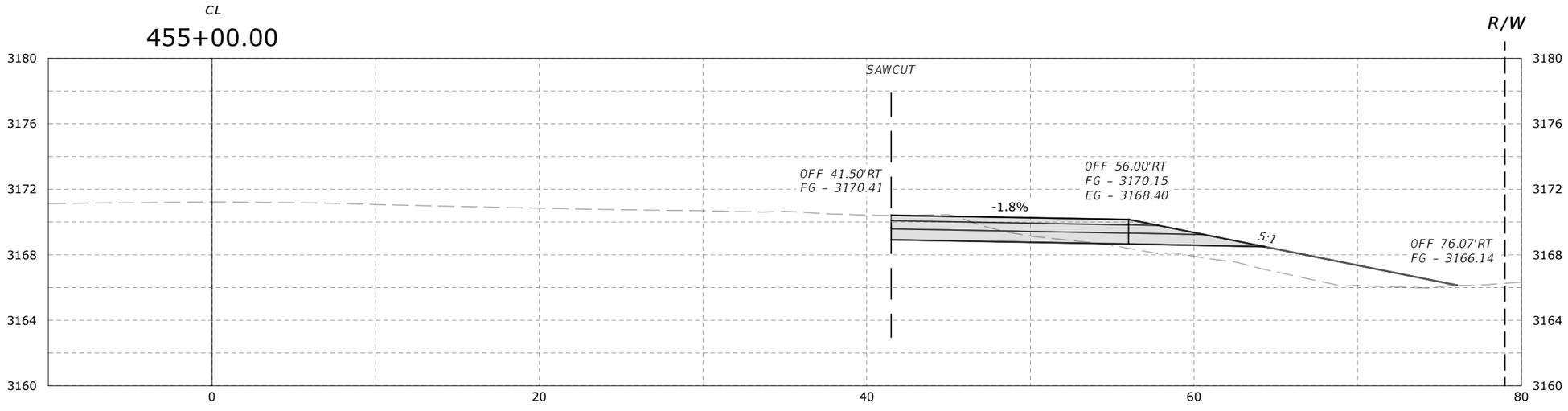
BROADWAY CROSS SECTIONS



GRADING AREAS:

CUT = 10.77 SQ. FT

FILL = 18.57 SQ. FT



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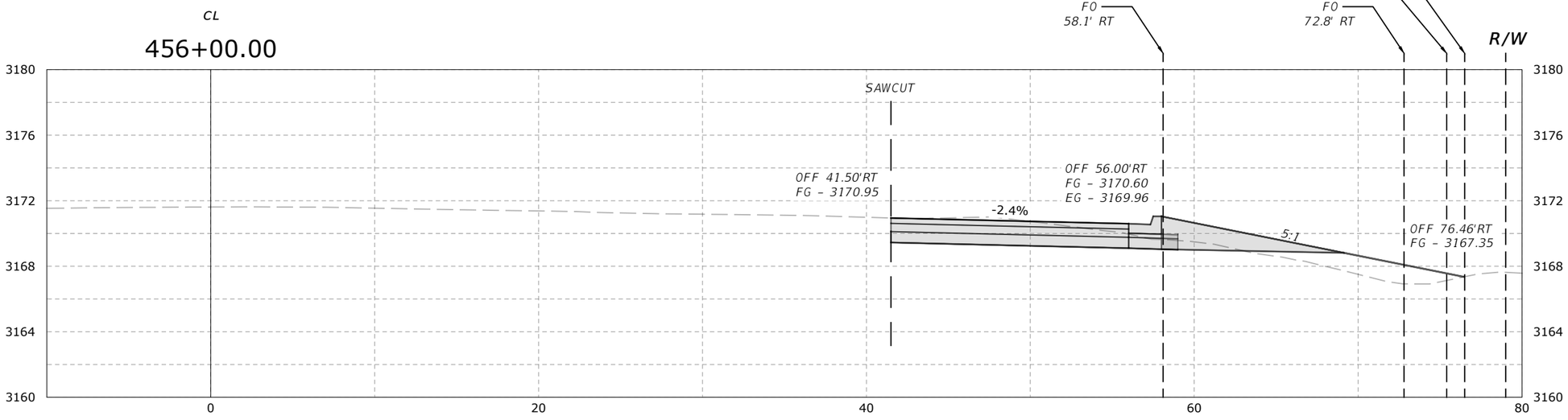
AWARD COPY

BROADWAY CROSS SECTIONS

GRADING AREAS:

CUT = 23.95 SQ. FT

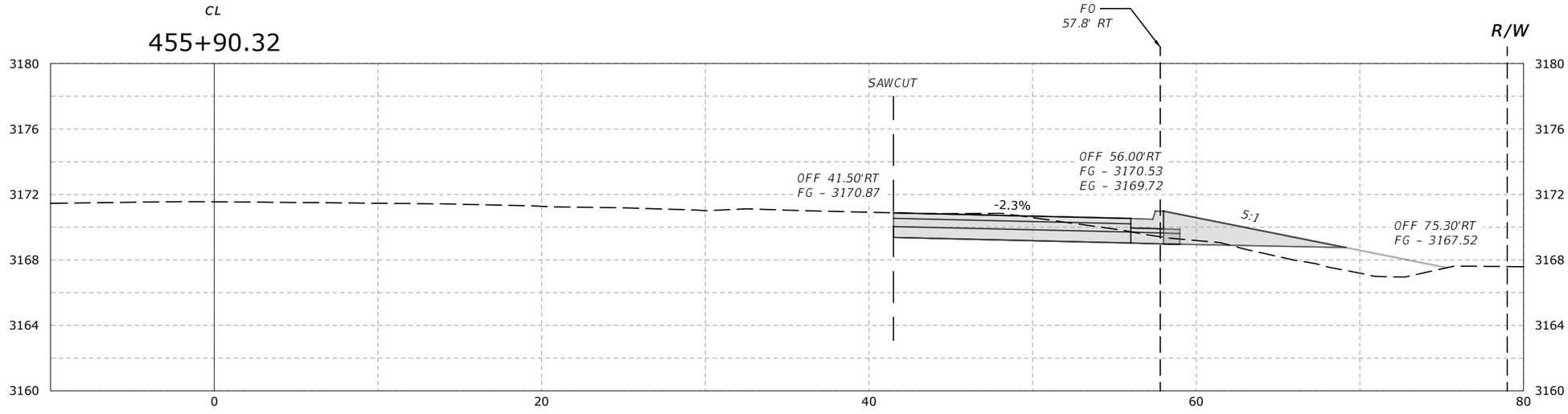
FILL = 28.76 SQ. FT



GRADING AREAS:

CUT = 21.46 SQ. FT

FILL = 20.91 SQ. FT



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1		5/20/2021 Braden	CHECKED BY	DW			SHEET XS.5

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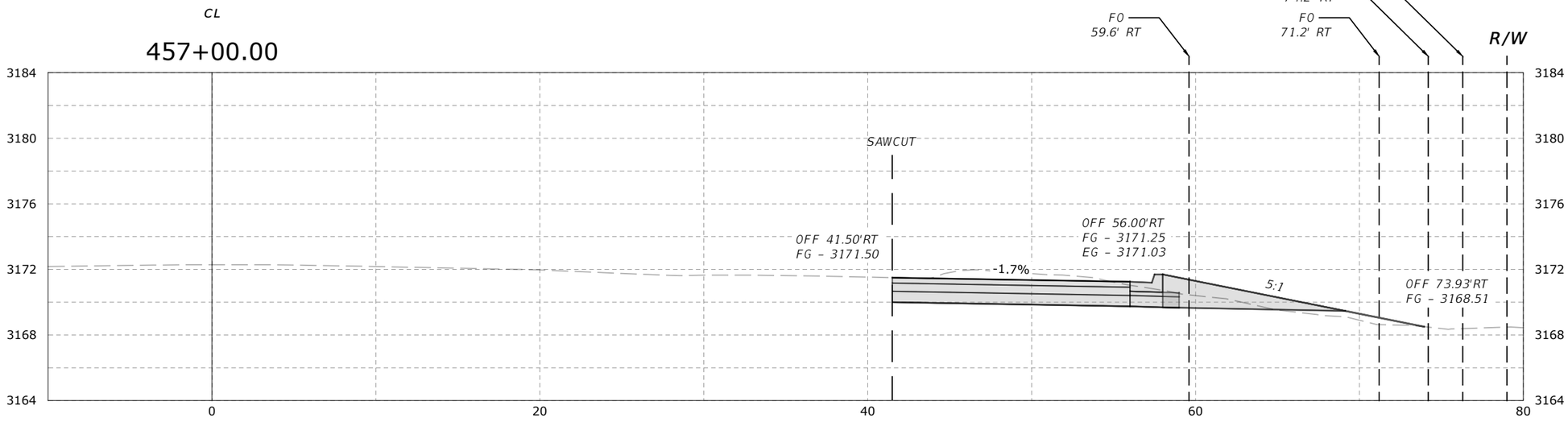
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BROADWAY CROSS SECTIONS

GRADING AREAS:

CUT = 31.76 SQ. FT

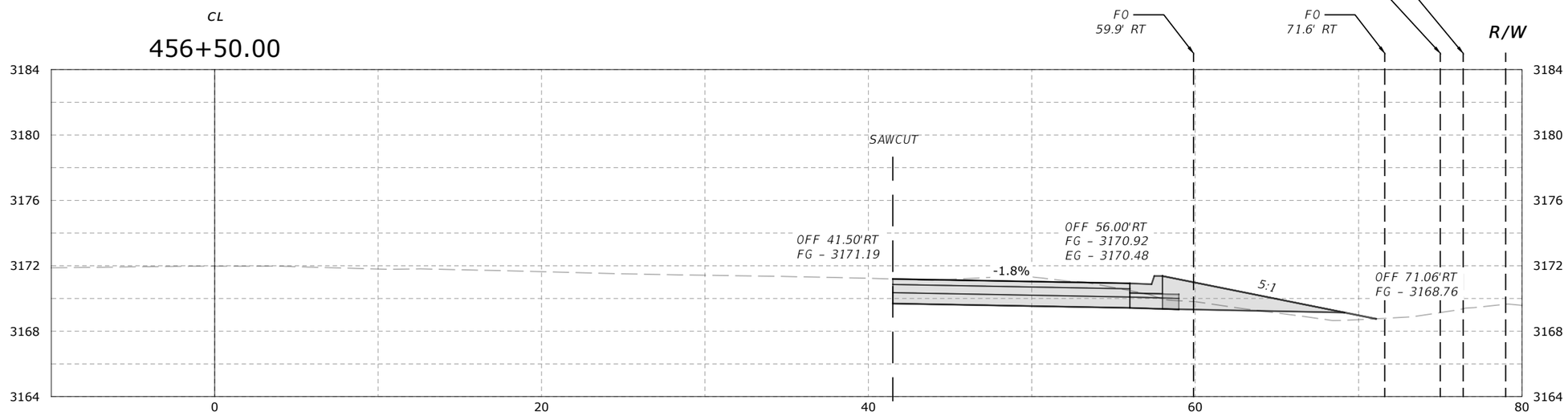
FILL = 9.54 SQ. FT



GRADING AREAS:

CUT = 26.34 SQ. FT

FILL = 10.72 SQ. FT



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1		5/20/2021 Braden	CHECKED BY	DW			

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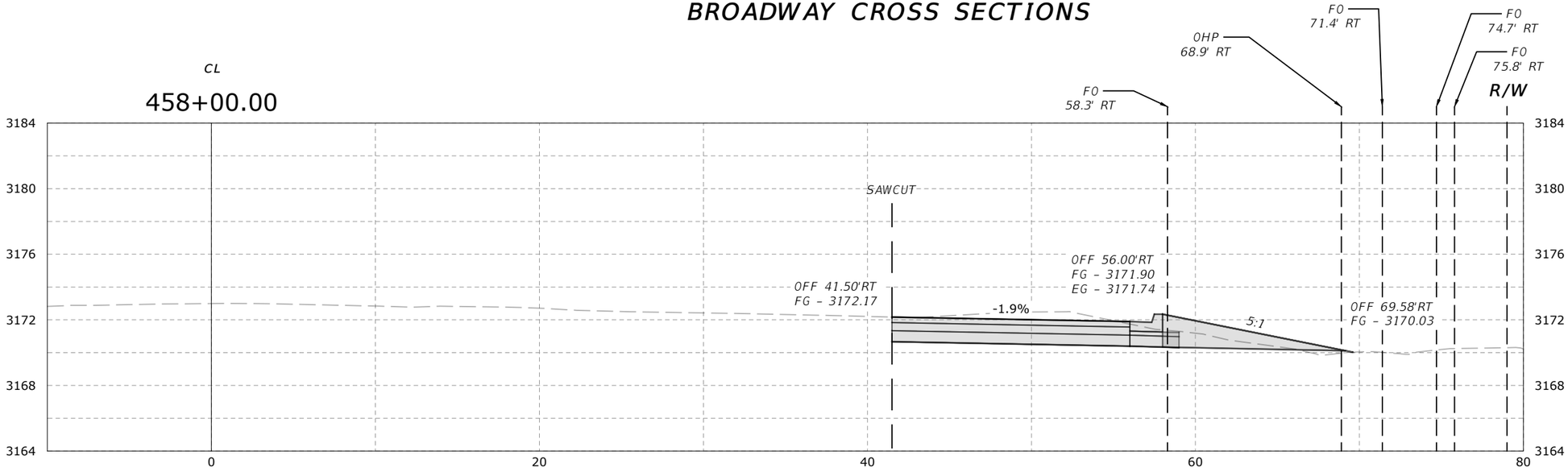
AWARD COPY

BROADWAY CROSS SECTIONS

GRADING AREAS:

CUT = 32.26 SQ. FT

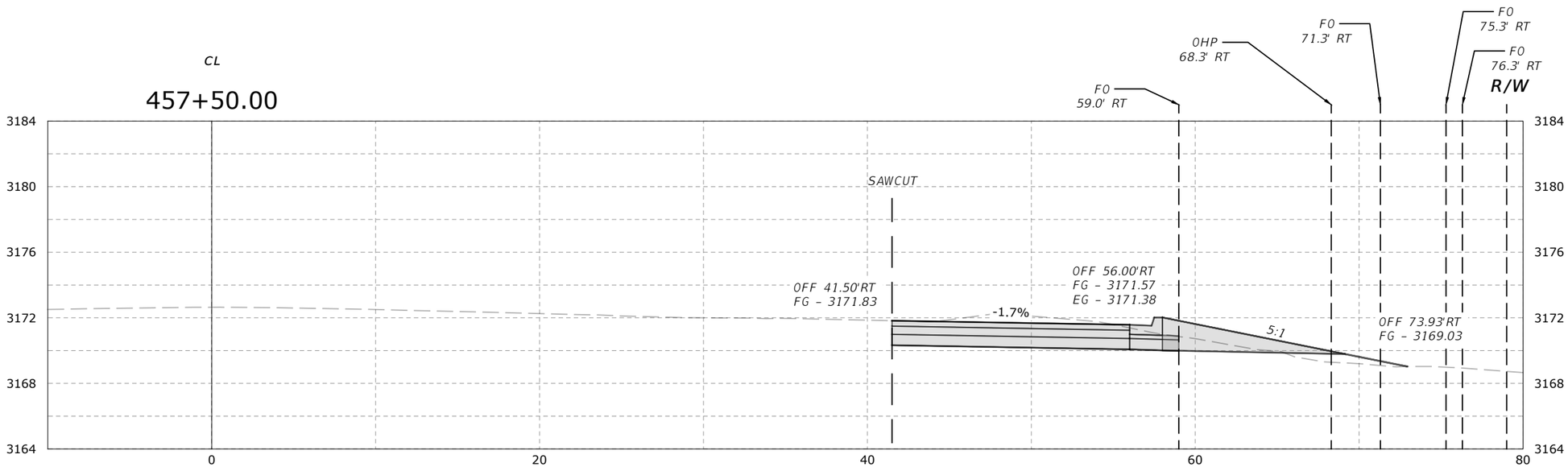
FILL = 7.24 SQ. FT



GRADING AREAS:

CUT = 30.86 SQ. FT

FILL = 9.97 SQ. FT



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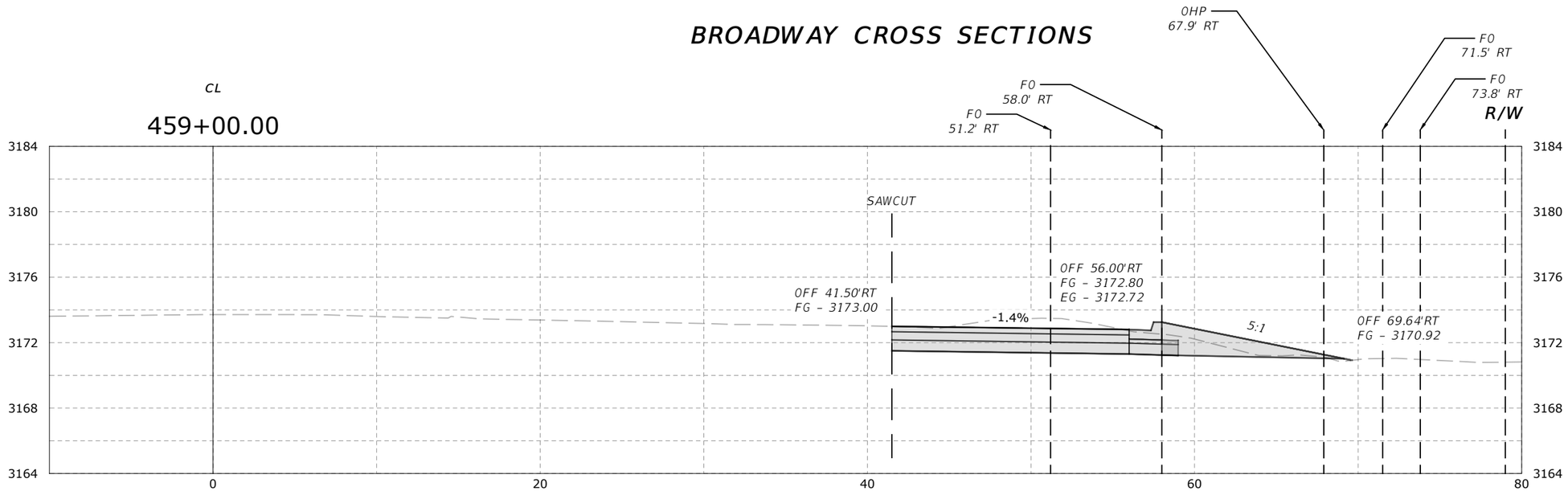
AWARD COPY

BROADWAY CROSS SECTIONS

GRADING AREAS:

CUT = 33.51 SQ. FT

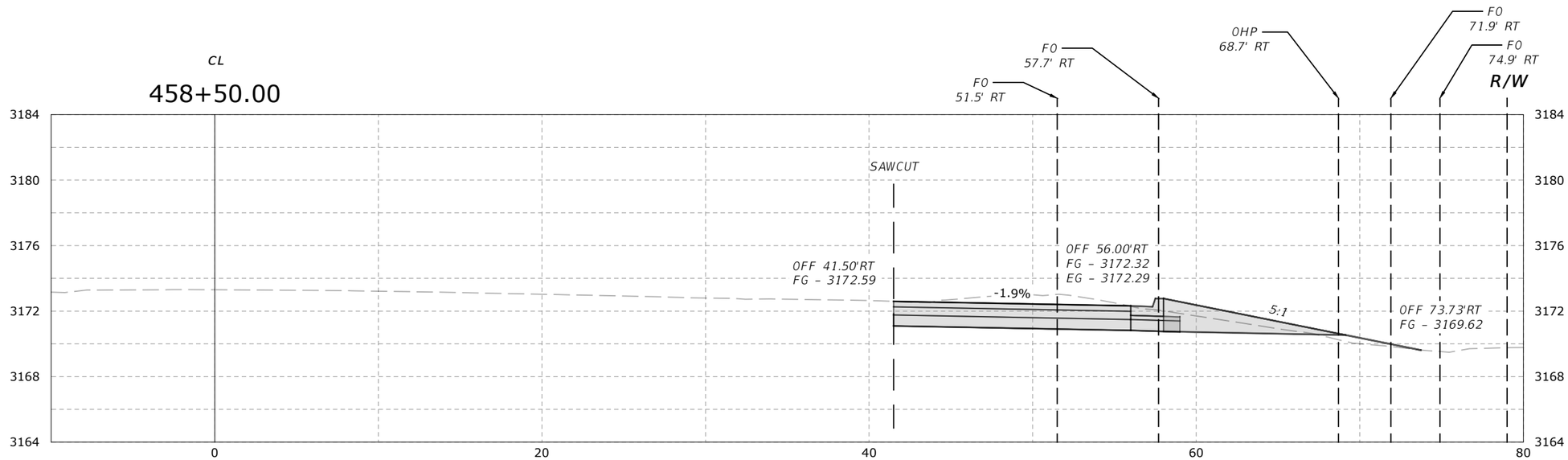
FILL = 6.31 SQ. FT



GRADING AREAS:

CUT = 34.86 SQ. FT

FILL = 6.60 SQ. FT



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BROADWAY CROSS SECTIONS

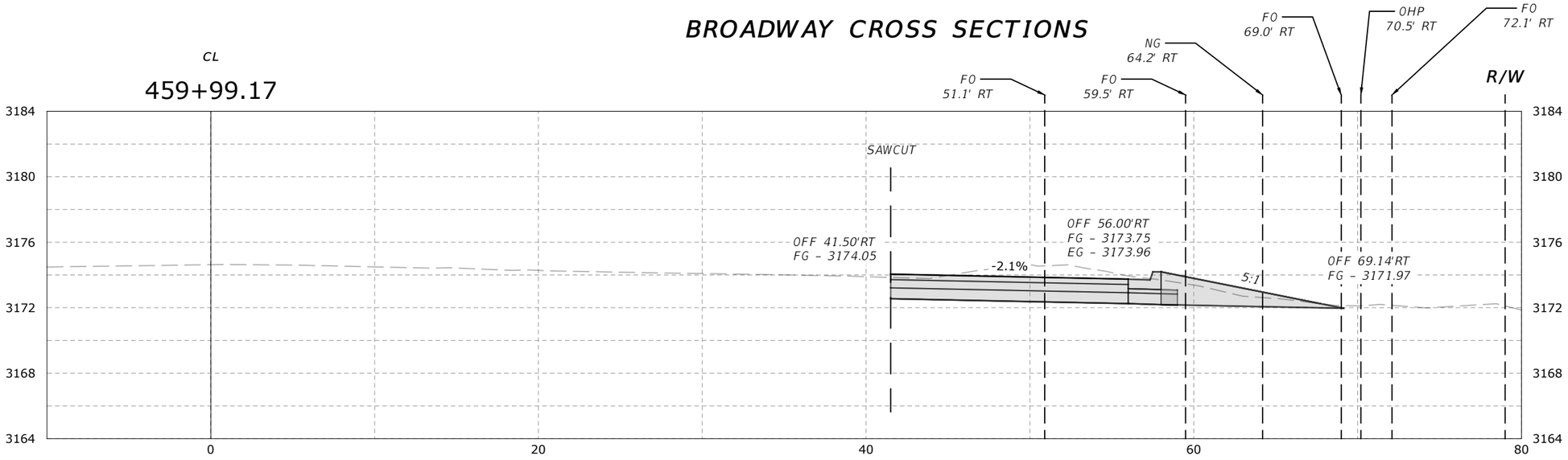
GRADING AREAS:

CUT = 37.89 SQ. FT

FILL = 3.41 SQ. FT

CL

459+99.17



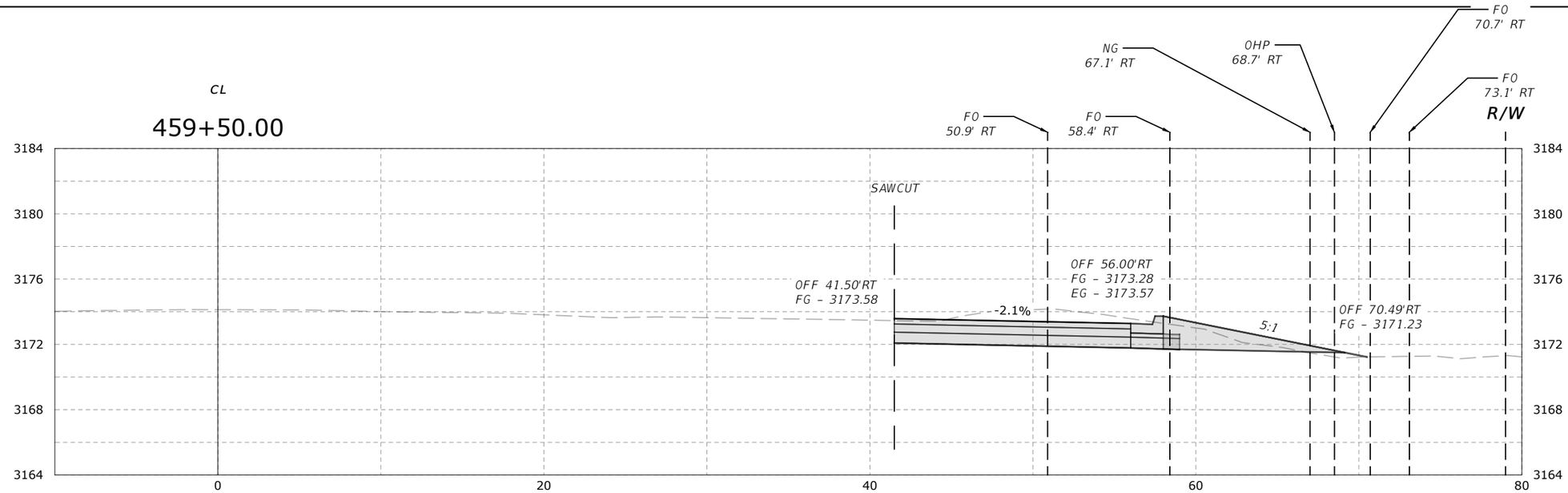
GRADING AREAS:

CUT = 37.54 SQ. FT

FILL = 5.19 SQ. FT

CL

459+50.00



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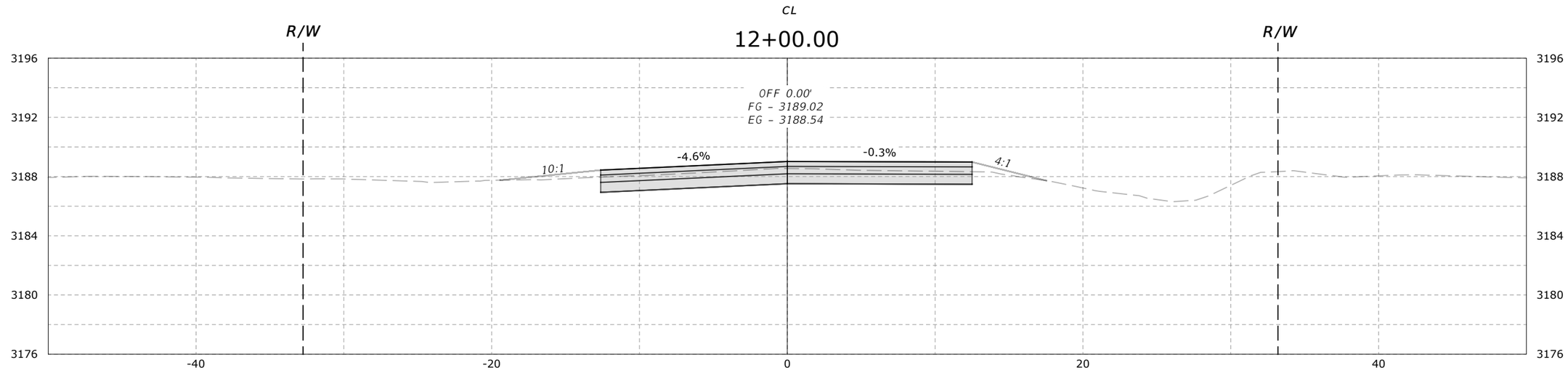
AWARD COPY

GRADING AREAS:

CUT = 24.44 SQ. FT

FILL = 3.17 SQ. FT

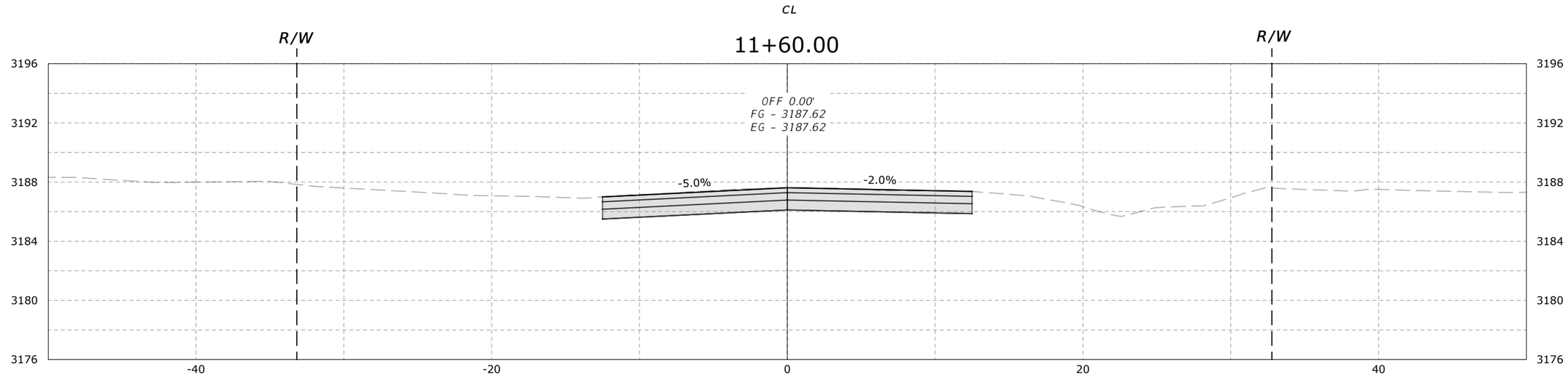
FLYNN CROSS SECTIONS



GRADING AREAS:

CUT = 37.93 SQ. FT

FILL = 0.00 SQ. FT



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2		5/20/2021	REVIEWED BY	DP	MISSOULA COUNTY		UPN 9920000
1		5/20/2021 Braden	CHECKED BY	DW			SHEET XS.10

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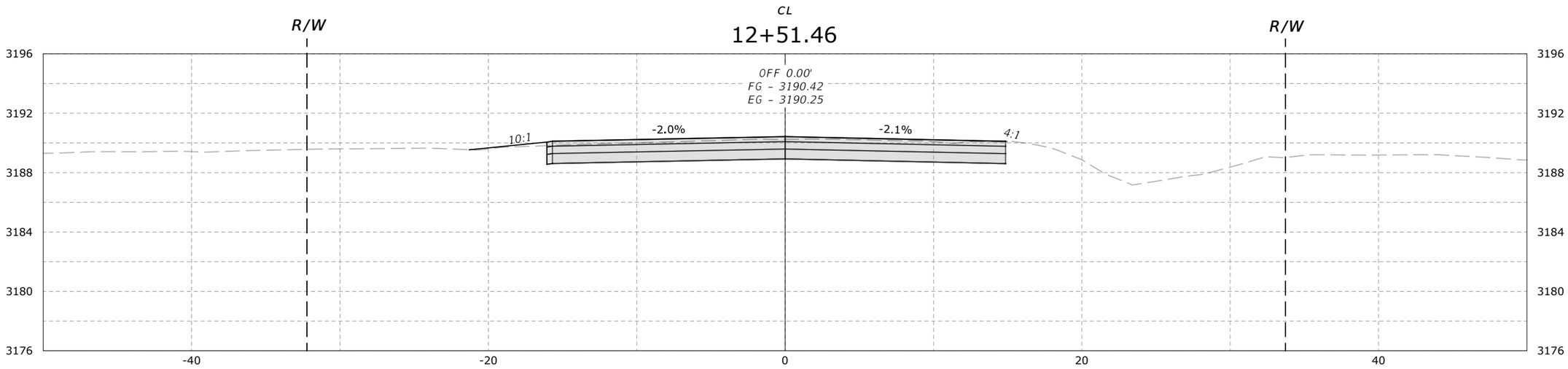
AWARD COPY

GRADING AREAS:

CUT = 41.58 SQ. FT

FILL = 0.58 SQ. FT

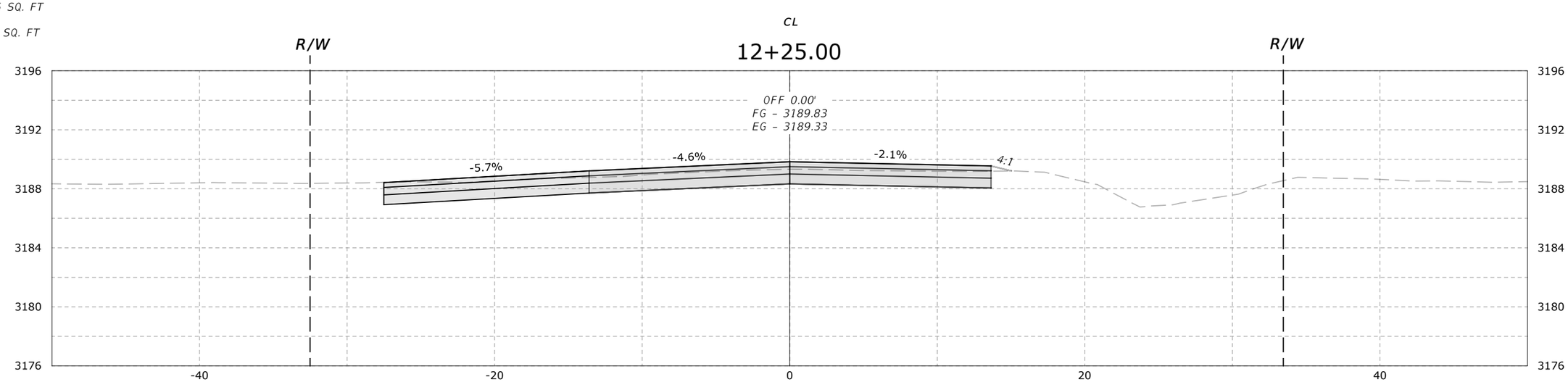
FLYNN CROSS SECTIONS



GRADING AREAS:

CUT = 45.85 SQ. FT

FILL = 0.25 SQ. FT



3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	...Design - HSIP - Sections.dwg	DESIGNED BY	BB	ROAD PLANS	SF199 MARY JANE BROADWAY INT X	HSIP 8199(161)
2		5/20/2021	REVIEWED BY	DP	MISSOULA COUNTY		UPN 9920000
1		5/20/2021 Braden	CHECKED BY	DW			SHEET XS.11

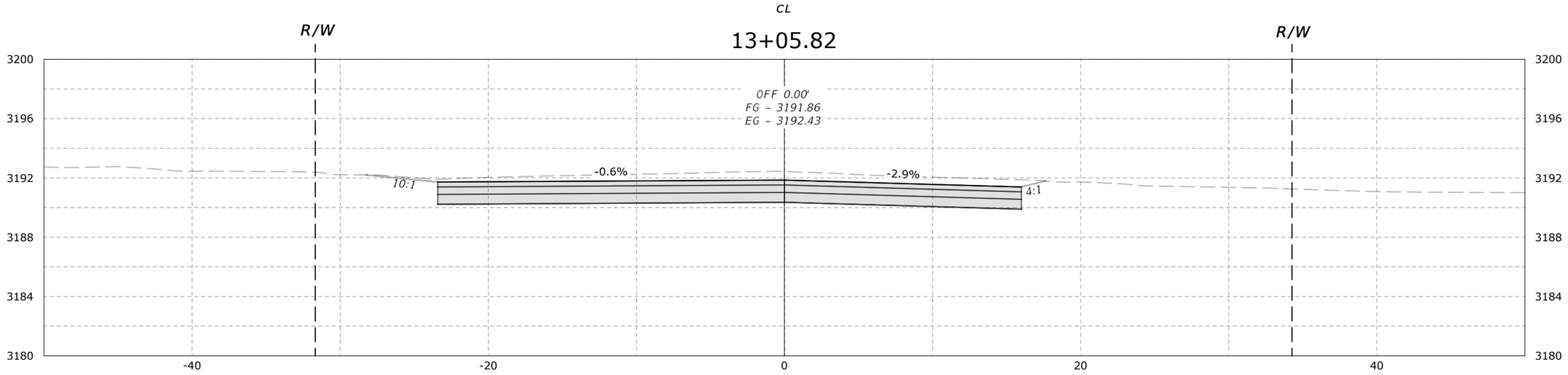
DocuSign Envelope ID: 4C7AE7D8-4A93-4AE9-A8F2-55B9182AE7BB

GRADING AREAS:

CUT = 78.10 SQ. FT

FILL = 0.00 SQ. FT

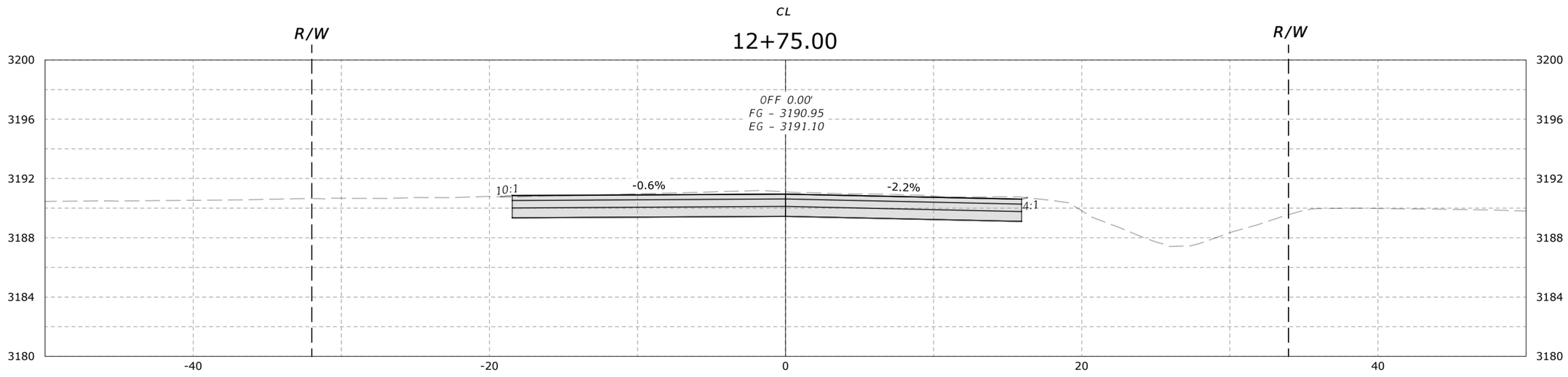
FLYNN CROSS SECTIONS



GRADING AREAS:

CUT = 54.99 SQ. FT

FILL = 0.03 SQ. FT



3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	...Design - HSIP - Sections.dwg	DESIGNED BY	BB	ROAD PLANS	SF199 MARY JANE BROADWAY INT X	HSIP 8199(161)
2		5/20/2021	REVIEWED BY	DP	MISSOULA COUNTY		UPN 9920000
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GRADING AREAS:

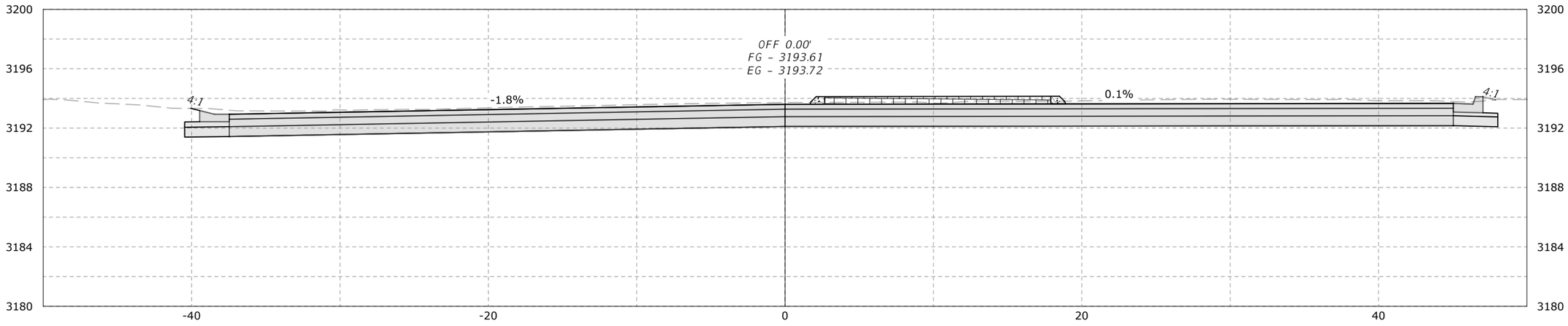
CUT = 147.02 SQ. FT

FILL = 0.30 SQ. FT

FLYNN CROSS SECTIONS

CL

13+64.73



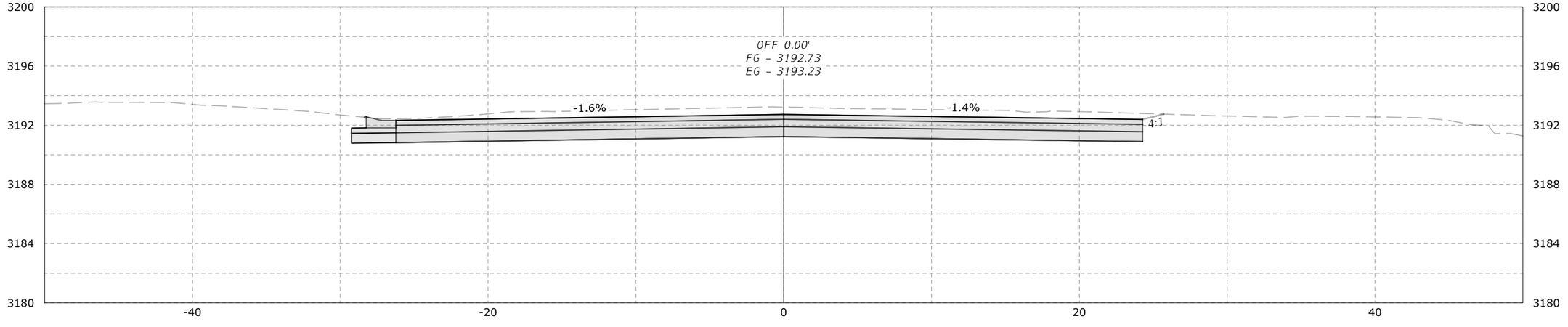
GRADING AREAS:

CUT = 102.26 SQ. FT

FILL = 0.01 SQ. FT

CL

13+35.28



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1		5/20/2021 Braden	CHECKED BY	DW	MISSOULA COUNTY	UPN 9920000	SHEET XS.13

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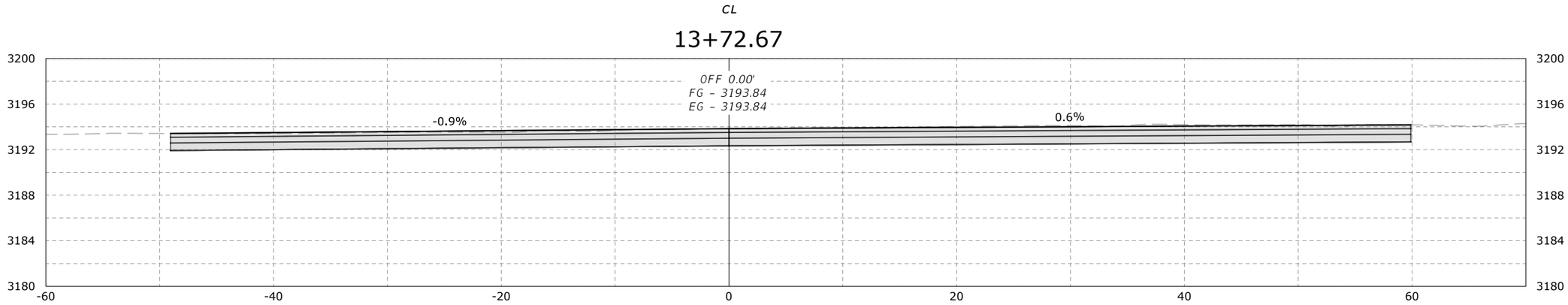
AWARD COPY

FLYNN CROSS SECTIONS

GRADING AREAS:

CUT = 164.49 SQ. FT

FILL = 0.00 SQ. FT



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2		5/20/2021	REVIEWED BY	DP					
1		5/20/2021 Braden	CHECKED BY	DW		MISSOULA COUNTY			SHEET XS.14