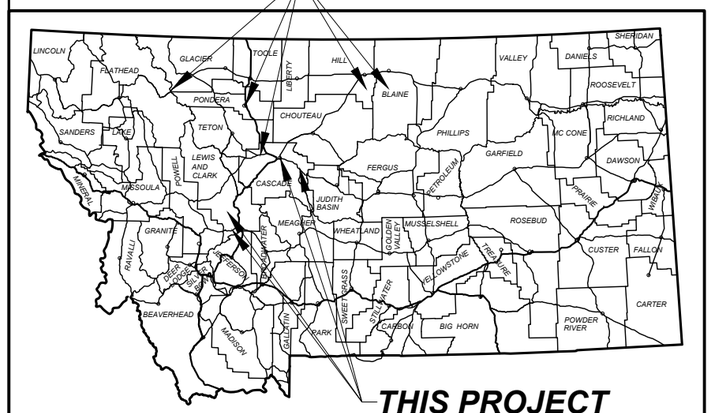
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THIS PROJECT



THIS PROJECT

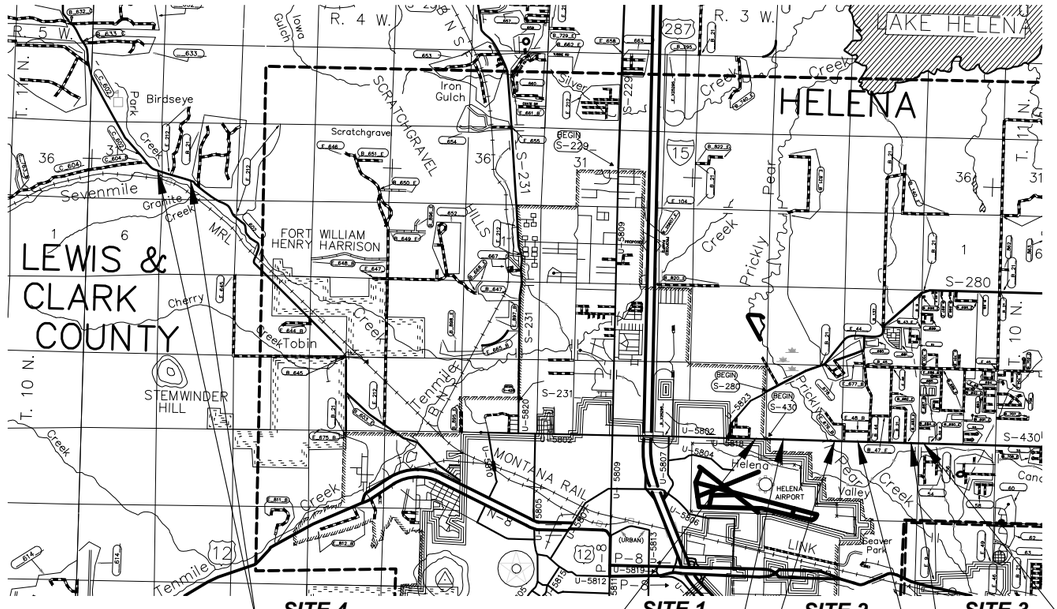
MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT HSIP STWD(927)

SAFETY IMPROVEMENTS

SF 209 GREAT FALLS DIST SIGNS

BLAINE, CASCADE, GLACIER, HILL, LEWIS & CLARK, AND PONDERA COUNTIES

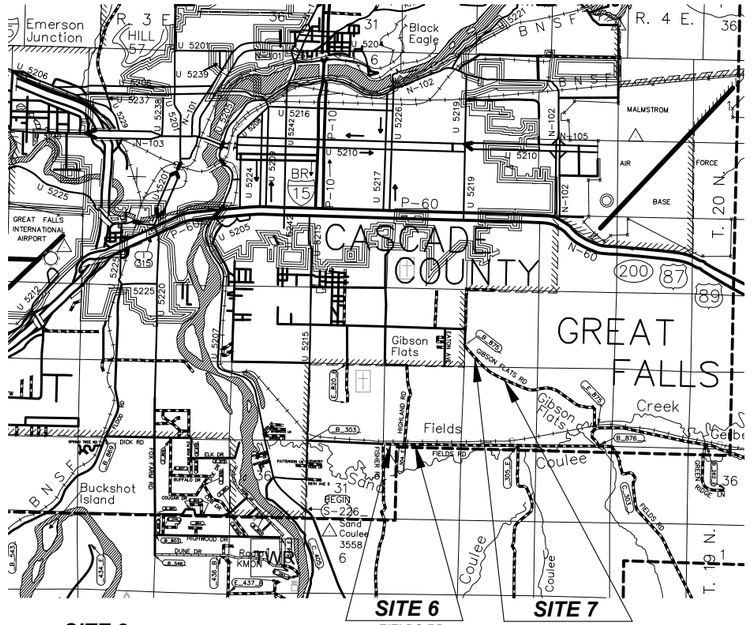


SITE 4
BIRDSEYE RD
(L-25-602)
RP 4.290 TO RP 4.740
V = 50 MPH

SITE 1
CANYON FERRY RD
S-430 (U-5818)
RP 0.434 TO RP 0.656
V = 55 MPH

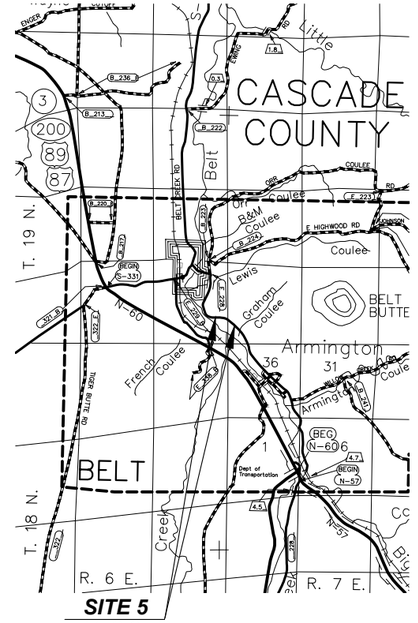
SITE 2
CANYON FERRY RD
S-430 (U-5818)
RP 0.971 TO RP 1.302
V = 55 MPH

SITE 3
CANYON FERRY RD
S-430 (U-5818)
RP 2.560 TO RP 2.594
V = 45 MPH



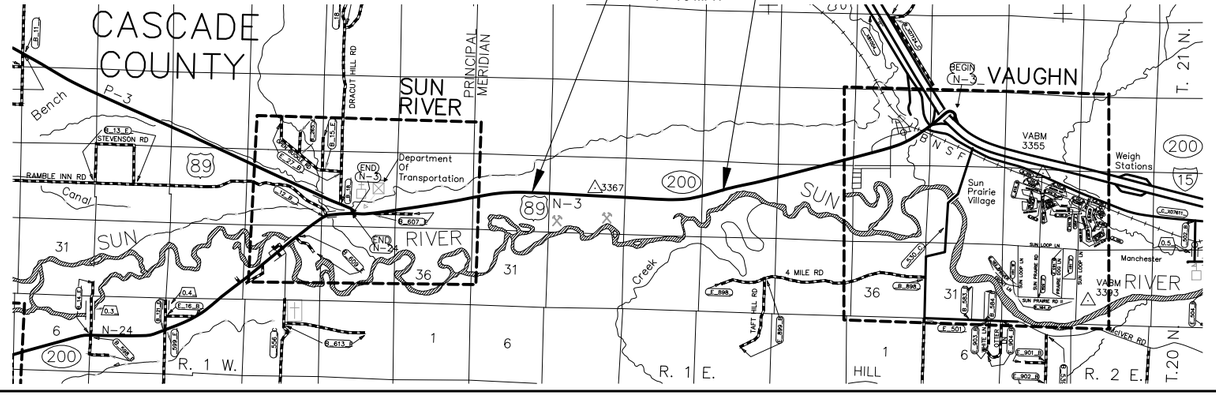
SITE 6
FIELDS RD
(L-7-303A)
RP 1.257 TO RP 1.359
V = 60 MPH

SITE 7
GIBSON FLATS RD
(L-7-875A)
RP 0.800 TO RP 0.900
V = 60 MPH



SITE 5
ARMINGTON RD
(L-7-228)
RP 0.381 TO RP 0.567
V = 40 MPH

SITE 8
MT-200 / US-89 (N-3)
RP 3.539 TO RP 6.100
V = 70 MPH



ASSOCIATED PROJECT AGREEMENT NUMBERS	
R/W	
I.C.	
P.E.	HSIP STWD(926)

APPROVED BY:

ROBERT PECCIA AND ASSOCIATES

Signed by: Staci F. Venner
FE6BFFBA00974C2...
11/15/2024
DATE

STACI F. VENNER PE-16318 LICENSED PROFESSIONAL ENGINEER

MONTANA
DEPARTMENT OF TRANSPORTATION

Signed by: Gabe B. Priebe
43D6FFA1B8074C6...
11/18/2024
TRAFFIC & SAFETY ENGINEER — DATE

ROBERT PECCIA & ASSOCIATES
CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING

MONTANA
Department of Transportation

ROAD PLANS

DESIGNED BY	T. BODLOVIC	AUG. 2024
REVIEWED BY	B. THOMPSON	AUG. 2024
CHECKED BY	S. VENNER	AUG. 2024

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: BLAINE, CASCADE, GLACIER, HILL, LEWIS & CLARK, PONDERA
PROJECT ID: HSIP STWD(927)
UPN: 10301000
10301000SITTLZ01.DWG
8/22/2024 9:33 AM

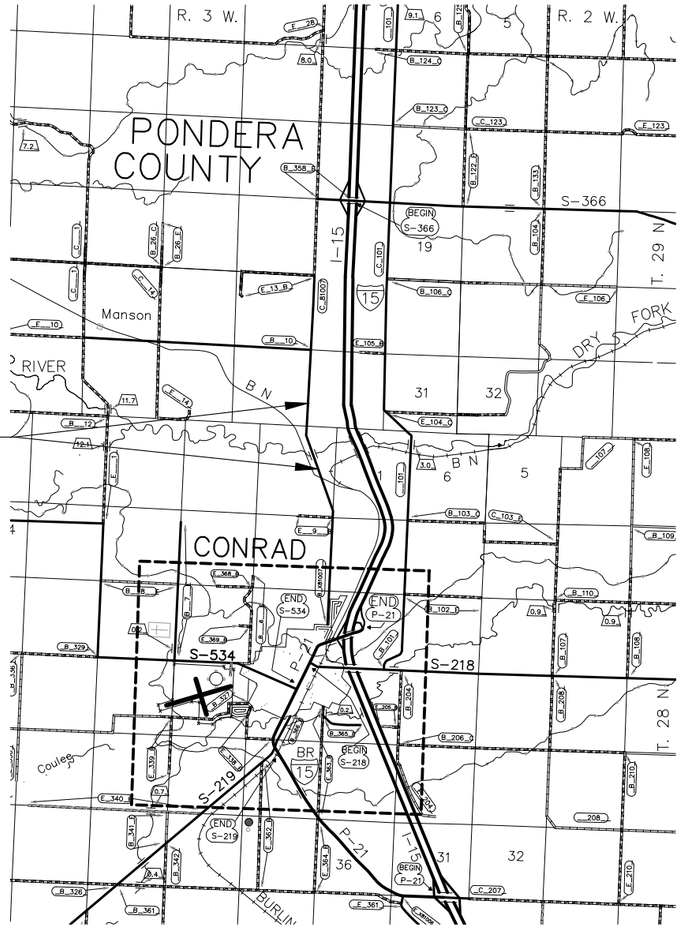
SHEET NO. 1

TITLE SHEET (SHEET 1 OF 2)

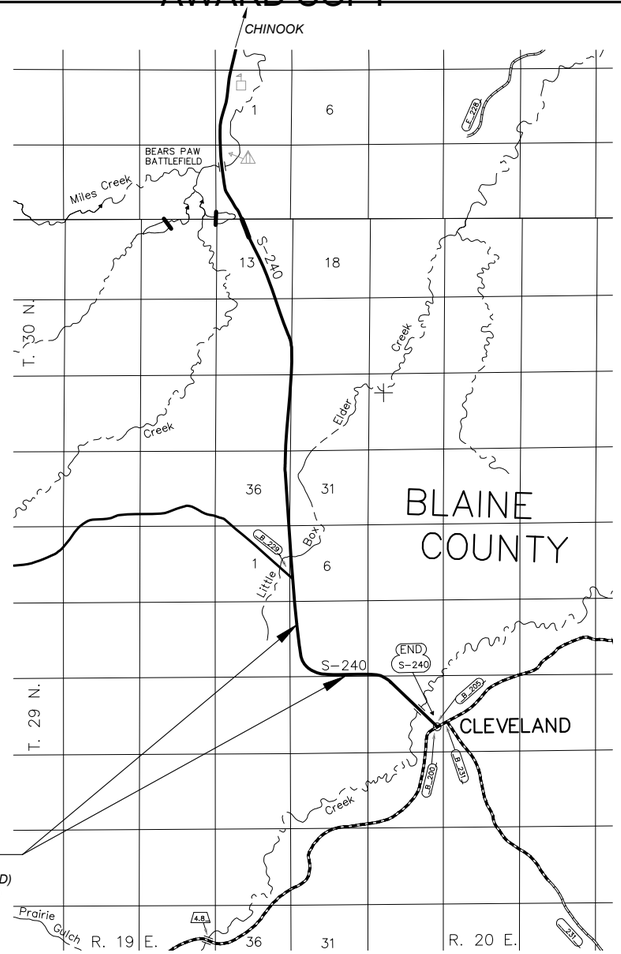
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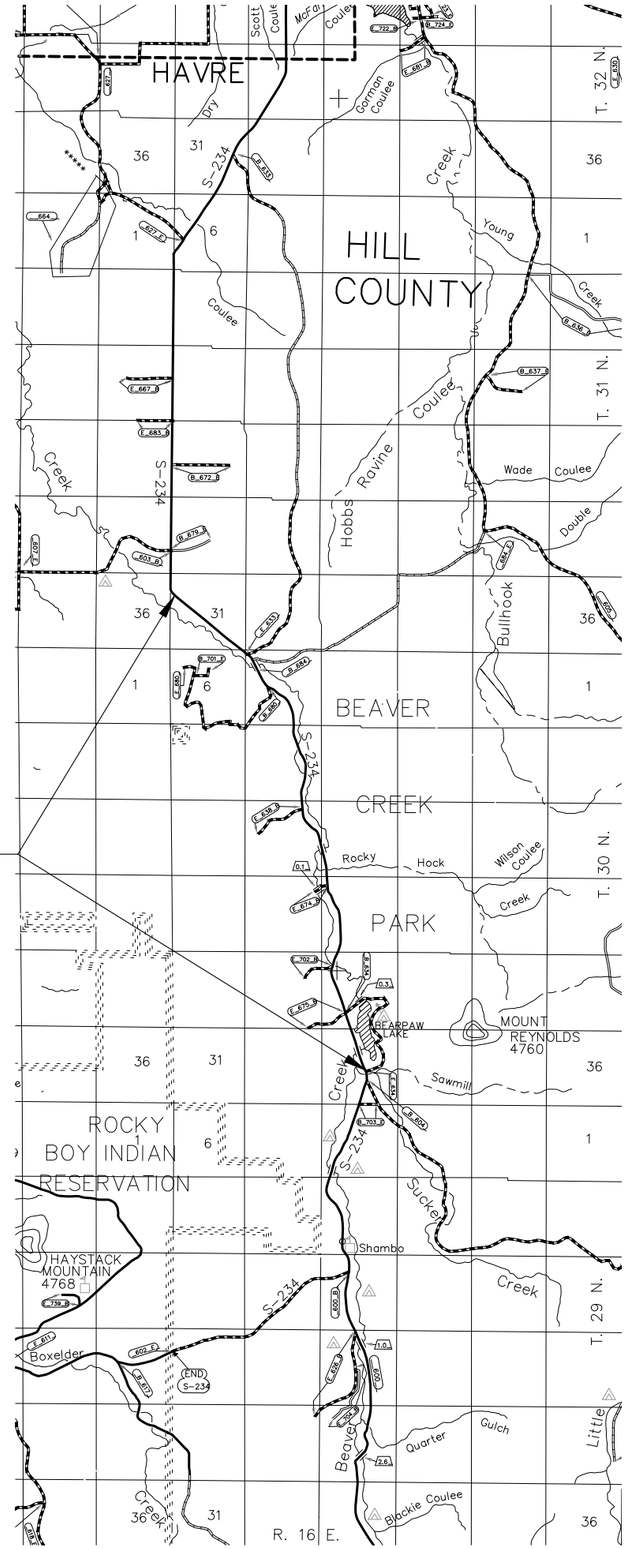
ROBERT PECCIA & ASSOCIATES
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RPA



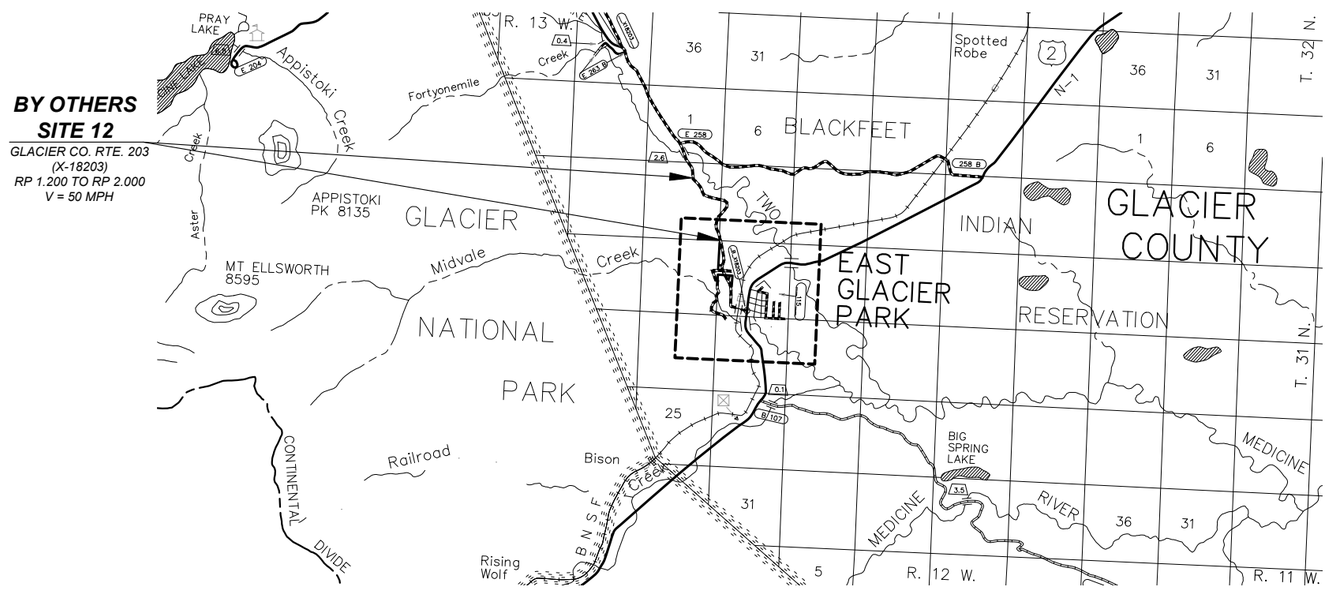
SITE 9
HIGHWAY 91N
RP 2.301 TO
RP 3.000
V = 60 MPH



SITE 10
S-240
(CLEVELAND RD)
RP 23.181 TO
RP 23.918
V = 50 MPH



SITE 11
S-234
RP 10.800 TO
RP 17.700
V = 50 MPH



BY OTHERS
SITE 12
GLACIER CO. RTE. 203
(X-18203)
RP 1.200 TO RP 2.000
V = 50 MPH

SHEET NO.
2

TITLE SHEET
(SHEET 2 OF 2)

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: BLAINE, CASCADE, GLACIER, HILL, LEWIS & CLARK, PONDERA
PROJECT ID: HSIP STWD(927)
UPN: 10301000

DESIGNED BY	MAY 2024
T. BODLOVIC	
REVIEWED BY	MAY 2024
B. THOMPSON	
CHECKED BY	MAY 2024
S. VENNIER	

10301000SITTLZ02.DWG

MONTANA
Department of Transportation

ROAD PLANS

5/16/2024 10:04 AM

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DETAILS	E1-E4
PLANS	E5-E6

NOTES

UTILITIES

CALL THE UTILITIES UNDERGROUND LOCATION CENTER (811) OR OTHER NOTIFICATION SYSTEM FOR THE MARKING AND LOCATION OF ALL LINES AND SERVICES BEFORE EXCAVATING.

WETLANDS

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

SUMMARY

REVEGETATION

STATION		lump sum REVEGE-TATION	REMARKS
FROM	TO		
28+00	29+00	1	AT SITE 1 ELECTRICAL
TOTAL		1	

RPA ROBERT PECCIA & ASSOCIATES
CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING

SHEET NO. 3

TABLE OF CONTENTS, NOTES, SUMMARY

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: BLAINE, CASCADE, GLACIER, HILL, LEWIS & CLARK, PONDERA
PROJECT ID: HSIP STWD(927)
UPN: 10301000

DESIGNED BY: T. BODLOVIC MAY 2024
REVIEWED BY: B. THOMPSON MAY 2024
CHECKED BY: S. VENNER MAY 2024

MONTANA Department of Transportation

ROAD PLANS

5/16/2024 10:38 AM 10301000SITTLZ03.DWG

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SUMMARY
SIGNING & DELINEATION QUANTITIES

MATERIAL	SITE 1	SITE 2	SITE 4	SITE 5	SITE 6	SITE 7	SITE 8	SITE 9	SITE 10	SITE 11	TOTALS	UNIT
SIGNS-SHEET ALUM SHT INCR XI					21.0						21.0	SQFT
SIGNS-ALUM REFL SHEET XI	34.6	15.2	25.2	62.6	46.2	12.6	12.6	12.6	25.2		246.8	SQFT
REMOVE SIGN				3	1				2		6	EACH
POSTS-TUBULAR STEEL	236				78						314	LB
POLES-TREATED WOOD 4 IN		28	56	28	28	28	28	28	56		280	LNFT
POLES-TREATED WOOD 5 IN				60	42						102	LNFT
FRANG SIGN POST BKWY-3 IN RD (76 MM)					1						1	EACH
FRANG SIGN POST BKWY-3.5 IN RD (89MM)	2										2	EACH
DELINEATOR TYPE 1					2			24		401	427	EACH
RETRO-REFL STRIP 4X60					7						7	EACH
												EACH

DELINEATOR LEGEND

		SITE 6	SITE 9	SITE 11	TOTAL
	DELINEATOR DES "A"		24	381	405
	DELINEATOR DES "D"	2		20	22

RETRO-REFLECTIVE STRIP LEGEND

STRIP COLOR	SITE 6	TOTAL
RED	1	1
FLUORESCENT YELLOW	2	2
YELLOW	4	4

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

■ = FRANGIBLE SIGN POST. BREAKAWAY DEVICE REQUIRED.

FY = FLUORESCENT YELLOW SHEETING REQUIRED.

BBR = BACKBRACING REQUIRED:
-FOR WOOD POST
2" X 4 " REQ'D.
- FOR STRUCTURAL STEEL
2" X 2" X 1/4" ANGLE IRON REQ'D.

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

ROBERT PECCIA & ASSOCIATES
CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING

SHEET NO. S1

SIGNING & DELINEATION SUMMARY

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: BLAINE, CASCADE, GLACIER, HILL, LEWIS & CLARK, PONDERA
PROJECT ID: HSIP STWD(927)
UPN: 10301000

DESIGNED BY	REVIEWED BY	CHECKED BY
T. BODLOVIC	B. THOMPSON	S. VENNER
SEPT. 2024	SEPT. 2024	SEPT. 2024

MONTANA Department of Transportation

SIGNING PLANS

9/18/2024 1:55 PM

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Docusign Envelope ID: D648BABC-9101-4DE9-AE34-369EF1803A9A

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SIGN LOCATION				SIGN PANEL SPECIFICATIONS										SIGN ASSEMBLY SPECIFICATIONS												SIGN ASSEMBLY QUANTITIES												ADDITIONAL SIGN INFORMATION	
STATION / R.P.		DIRECTON	RAMP NO.	SIGN NO. (MUTCD)	PANEL SIZE (INCHES)			REFLECTIVE SHEETING TYPE		FY OR FYG	BACK BRACING REQ'D ANGLE IRON REQ'D	DOUBLE FACE SIGN / MOUNT BACK TO BACK	REPLACE SIGN ONLY FACE	FEET		TYPE OF SUPPORT	FEET					CANTILEVER	BREAKAWAY TYPE	BEHIND GUARDRAIL	PANEL (SQ. FT.)		WOOD POLE (LNR. FT.)		STEEL POST (LBS.)				REMV		RESET		SIGN TEXT	REMARKS
LFT	MDN	RGT			W	X	H	BG	LEG					CLEARANCE/OFFSET (SHOULDER TO EDGE OF SIGN)	SLOPE		SIGN SUPPORT SPACING	MOUNTING HEIGHT	SIGN HEIGHT + GAPS	FOUNDATION DEPTH	SUPPORT LENGTH (ESTIMATED) X	Y	Z			SHEET ALUMINUM	SHEET ALUMINUM INCREMENT	4" TOP DIA.	5" TOP DIA.	ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST	SIGN	GUIDE	SIGN	GUIDE		
SITE 1 - S-430																																							
0.434		EB									BBR																												
		X		W2-2R	48	X	48	XI						10.00		3.5" Tubular Stl-Round		5.00		3.0	12.92				■		16.0				118.00								SIDE ROAD-RT	NEW = W2-2R
											BBR																												
				W16-8	24	X	8	XI																		1.3													ADVANCED STREET	NEW = W16-8 (BOMPART LN)
0.466		WB																																					
X				N7-1																																			ADOPT A HIGHWAY	USE AS IS = N7-1
0.536		WB																																					
X				N6-1																																			ENTERING {town}	USE AS IS = N6-1 (HELENA)
0.538		EB																																					
		X		G430-0B																																			EXIST GUIDE SIGN	USE AS IS = G430-0B (CANYON FERRY 15)
0.560		EB																																					
		X		(2) D3-1																																			STREET NAME	USE AS IS = BOMPART LN
				R1-1																																			STOP	USE AS IS = R1-1
0.580		EB																																					
		X		N7-1																																			ADOPT A HIGHWAY	USE AS IS N7-1
				N7-1P																																			SUPP TO N7-1	USE AS IS N7-1P (BOYSCOUT TROUP 211)
0.650		EB																																					
		X		W14-3																																			NO PASSING ZONE	USE AS IS = W14-3
0.656		WB									BBR														■														
X				W2-2L	48	X	48	XI						10.00		3.5" Tubular Stl-Round		5.00		3.0	12.92						16.0				118.00								SIDE ROAD-LT	NEW = W2-2L
											BBR																												
				W16-8	24	X	8	XI																		1.3													ADVANCED STREET	NEW = W16-8 (BOMPART LN)
SITE 2 - S-430																																							
0.971		EB																																					
		X		W2-2L	30	X	30	XI						10.00		4" Treated Wood Pole		5.00		3.0	13.75						6.3		14.00										SIDE ROAD-LT	NEW = W2-2L
				W16-8	24	X	8	XI																		1.3													ADVANCED STREET	NEW = W16-8 (WALTER DR)
0.990		EB																																					
		X		W3-5																																			REDUCED SPEED	USE AS IS = W3-5 (45)
1.000		EB																																					
		X		D10-1																																			MILE MARKER (1)	USE AS IS = D10-1

SHEET NO. S2

SIGN SPECIFICATIONS

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS

COUNTY: BLAINE, CASCADE, GLACIER, HILL, LEWIS & CLARK, PONDERA

PROJECT ID: HSIP STWD(927)

UPN: 10301000

DESIGNED BY	REVIEWED BY	CHECKED BY
T. BODLOVIC	B. THOMPSON	S. VENNER
AUG. 2024	AUG. 2024	AUG. 2024

10301000SISUM201.DWG

MONTANA Department of Transportation

SIGNING PLANS

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ROBERT PECCIA & ASSOCIATES
CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING

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SIGN LOCATION				SIGN PANEL SPECIFICATIONS										SIGN ASSEMBLY SPECIFICATIONS													SIGN ASSEMBLY QUANTITIES										ADDITIONAL SIGN INFORMATION	
STATION / R.P.		DIRECTON	RAMP NO.	SIGN NO. (MUTCD)	PANEL SIZE (INCHES)			REFLECTIVE SHEETING TYPE		FY OR FYG	BACK BRACING REQ'D ANGLE IRON REQ'D	DOUBLE FACE SIGN / MOUNT BACK TO BACK	REPLACE SIGN ONLY	FEET			FEET							CANTILEVER	BREAKAWAY TYPE	BEHIND GUARDRAIL	PANEL (SQ. FT.)		WOOD POLE (LNR. FT.)		STEEL POST (LBS.)				REMV		RESET		SIGN TEXT	REMARKS
LFT	MDN	RGT			W	X	H	BG	LEG				FACE	CLEARANCE/OFFSET (SHOULDER TO EDGE OF SIGN)	SLOPE	TYPE OF SUPPORT	SIGN SUPPORT SPACING	MOUNTING HEIGHT	SIGN HEIGHT + GAPS	FOUNDATION DEPTH	SUPPORT LENGTH (ESTIMATED) X	Y	Z				SHEET ALUMINUM	SHEET ALUMINUM INCREMENT	4" TOP DIA.	5" TOP DIA.	ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST	SIGN	GUIDE	SIGN	GUIDE		
1.073		WB																																			
X				R2-1																																	SPEED LIMIT (60)	USE AS IS = R2-1
1.082		WB																																			
X				(2) D3-1																																	STREET NAME	USE AS IS = WALTER DR
				(2) D3-1																																	STREET NAME	USE AS IS = CYN FERRY RD
				R1-1																																	STOP	USE AS IS = R1-1
1.092		EB																																				
		X		R2-1																																	SPEED LIMIT (45)	USE AS IS = R2-1
1.302		WB																																			
X				W2-2R	30	x	30	XI						10.00		4" Treated Wood Pole		5.00		3.0	13.75						6.3		14.00								SIDE ROAD-RT	NEW = W2-2R
				W16-8	24	x	8	XI																			1.3									ADVANCED STREET	NEW = W16-8 (WALTER DR)

SITE 4 - BIRDSEYE RD

4.290		WB																																			
		X		W1-2L	30	x	30	XI		FY				10.00		4" Treated Wood Pole		5.00		3.0	13.00						6.3		14.00								CURVE ARROW-LEFT	NEW = W1-2L
4.380		EB																																			
X				W1-2R	30	x	30	XI		FY				10.00		4" Treated Wood Pole		5.00		3.0	13.00						6.3		14.00								CURVE ARROW-RIGHT	NEW W1-2R
4.538		WB																																			
		X		D3-1																																	STREET NAME	USE AS IS = HIDDEN VALLEY DR
				R1-1																																	STOP	USE AS IS = R1-1
4.555		WB																																				
		X		W1-2R	30	x	30	XI		FY				10.00		4" Treated Wood Pole		5.00		3.0	13.00						6.3		14.00								CURVE ARROW-RIGHT	NEW = W1-2R
4.740		EB																																			
X				W1-2L	30	x	30	XI		FY				10.00		4" Treated Wood Pole		5.00		3.0	13.00						6.3		14.00								CURVE ARROW-LEFT	NEW = W1-2L

SHEET NO. S3

SIGN SPECIFICATIONS

ROBERT PECCIA & ASSOCIATES
CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING
RPA

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: BLAINE, CASCADE, GLACIER, HILL, LEWIS & CLARK, PONDERA
PROJECT ID: HSIP STWD(927)
UPN: 10301000

DESIGNED BY	REVIEWED BY	CHECKED BY
T. BODLOVIC	B. THOMPSON	S. VENNER
MAY 2024	MAY 2024	MAY 2024

10301000SIGNSUMZ01.DWG

MONTANA Department of Transportation

SIGNING PLANS

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STATION / R.P.		DIRECTON	RAMP NO.	SIGN NO. (MUTCD)	PANEL SIZE (INCHES)			REFLECTIVE SHEETING TYPE		FY OR FYG	BACK BRACING REQ'D ANGLE IRON REQ'D	DOUBLE FACE SIGN / MOUNT BACK TO BACK	REPLACE SIGN ONLY FACE	FEET		TYPE OF SUPPORT	FEET						CANTILEVER	BREAKAWAY TYPE	BEHIND GUARDRAIL	PANEL (SQ. FT.)		WOOD POLE (LNR. FT.)		STEEL POST (LBS.)				REMV		RESET		SIGN TEXT	REMARKS
LFT	MDN	RGT			W	X	H	BG	LEG					CLEARANCE/OFFSET (SHOULDER TO EDGE OF SIGN)	SLOPE		SIGN SUPPORT SPACING	MOUNTING HEIGHT	SIGN HEIGHT + GAPS	FOUNDATION DEPTH	SUPPORT LENGTH (ESTIMATED) X	Y	Z				SHEET ALUMINUM	SHEET ALUMINUM INCREMENT	4" TOP DIA.	5" TOP DIA.	ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST	SIGN	GUIDE	SIGN	GUIDE		
SITE 5 - ARMINGTON RD																																						
0.381		EB																																			CURVE ARROW-RIGHT	NEW = W1-2R
		X		W1-2R	30	x	30	XI		FY				10.00		4" Treated Wood Pole		5.00		3.0	13.00					6.3		14.00									
0.400		WB																																			CHEVRON	REPLACE = W1-8
X				(2) W1-8	24	x	30	XI		FY				10.00		5" Treated Wood Pole		5.00		3.5	12.00			X		10.0			12.00				1				
0.423		WB																																			CHEVRON	REPLACE = W1-8
X				(2) W1-8	24	x	30	XI		FY				10.00		5" Treated Wood Pole		5.00		3.5	12.00			X		10.0			12.00				1				
0.446		WB																																			CHEVRON	REPLACE = W1-8
X				(2) W1-8	24	x	30	XI		FY				10.00		5" Treated Wood Pole		5.00		3.5	12.00			X		10.0			12.00				1				
0.469		WB																																			CHEVRON	NEW = W1-8
X				(2) W1-8	24	x	30	XI		FY				10.00		5" Treated Wood Pole		5.00		3.5	12.00			X		10.0			12.00								
0.492		WB																																			CHEVRON	NEW = W1-8
X				(2) W1-8	24	x	30	XI		FY				10.00		5" Treated Wood Pole		5.00		3.5	12.00			X		10.0			12.00								
0.567		WB																																			CURVE ARROW-LEFT	NEW = W1-2L
X				W1-2L	30	x	30	XI		FY				10.00		4" Treated Wood Pole		5.00		3.0	13.00					6.3		14.00									
SITE 6 - FIELDS RD/HIGHLAND RD																																						
FIELDS RD																																						
1.257		EB																																			RR X-ING AND INTERSECTION	NEW = W10-3L
		X		W10-3L	30	x	30	XI						10.00		4" Treated Wood Pole		5.00		3.0	13.00					6.3		14.00									
1.308		EB																																			DIRECT ARRW (LRG) w/BORDER	SEE DETAIL NEW = W1-7A
		X		W1-7a	42	x	72	XI		FY				10.00		5" Treated Wood Pole	3'-8"	5.00		3.5	13.50	13.50		X			21.00		28.00								
1.359		WB																																			RR X-ING AND INTERSECTION	NEW = W10-3R
X				W10-3R	30	x	30	XI						10.00		4" Treated Wood Pole		5.00		3.0	13.00					6.3		14.00									
HIGHLAND RD																																						
0.005		SB																																			STREET NAME	REPLACE = FIELDS RD
X				(2) D3-1	36	x	10	XI						6.00		3.0" Tubular Stl-Round		5.00		3.0	10.33			■		5.0				78.00			1				
				(2) D3-1	42	x	10	XI																		5.8											STREET NAME	REPLACE = HIGHLAND RD
				R1-2	48	x	48	XI			BBR															6.8											YIELD	REPLACE = R1-2
0.048		SB																																			T INTERSECTION	USE AS IS = W2-4
X				W2-4																																		
0.067		SB									BBR																											YIELD AHEAD (symbol)	NEW = W3-2A
X				W3-2A	48	x	48	XI						10.00		5" Treated Wood Pole		5.00		3.5	12.08			X		16.0			14.00								

SHEET NO. S4

SIGN SPECIFICATIONS

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: BLAINE, CASCADE, GLACIER, HILL, LEWIS & CLARK, PONDERA
PROJECT ID: HSIP STWD(927)
UPN: 10301000

DESIGNED BY	DATE	REVIEWED BY	DATE	CHECKED BY	DATE	
T. BODLOVIC	AUG. 2024	B. THOMPSON	AUG. 2024	S. VENNIER	AUG. 2024	10301000SIGSUMZ01.DWG

MONTANA Department of Transportation

SIGNING PLANS

8/22/2024 9:42 AM

ROBERT PECCIA & ASSOCIATES
CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING
RPA

Docusign Envelope ID: D648BABC-9101-4DE9-AE34-369EF1803A9A

AWARD COPY

SIGN LOCATION				SIGN PANEL SPECIFICATIONS										SIGN ASSEMBLY SPECIFICATIONS												SIGN ASSEMBLY QUANTITIES												ADDITIONAL SIGN INFORMATION	
STATION / R.P.		DIRECTON	RAMP NO.	SIGN NO. (MUTCD)	PANEL SIZE (INCHES)			REFLECTIVE SHEETING TYPE		FY OR FYG	BACK BRACING REQ'D ANGLE IRON REQ'D	DOUBLE FACE SIGN / MOUNT BACK TO BACK	REPLACE SIGN ONLY FACE	FEET			FEET						CANTILEVER	BREAKAWAY TYPE	BEHIND GUARDRAIL	PANEL (SQ. FT.)		WOOD POLE (LNR. FT.)		STEEL POST (LBS.)				REMV		RESET		SIGN TEXT	REMARKS
LFT	MDN	RGT			W	X	H	BG	LEG					CLEARANCE/OFFSET (SHOULDER TO EDGE OF SIGN)	SLOPE	TYPE OF SUPPORT	SIGN SUPPORT SPACING	MOUNTING HEIGHT	SIGN HEIGHT + GAPS	FOUNDATION DEPTH	SUPPORT LENGTH (ESTIMATED) X	Y	Z				SHEET ALUMINUM	SHEET ALUMINUM INCREMENT	4" TOP DIA.	5" TOP DIA.	ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST	SIGN	GUIDE	SIGN	GUIDE		
SITE 7 - GIBSON FLATS RD																																							
0.800		EB																																				CURVE ARROW-LEFT	NEW = W1-2L
		X		W1-2L	30	X	30	XI		FY				10.00		4" Treated Wood Pole		5.00		3.0	13.00					6.3		14.00									
0.900		WB																																				CURVE ARROW-RIGHT	NEW = W1-2R
X				W1-2R	30	X	30	XI		FY				10.00		4" Treated Wood Pole		5.00		3.0	13.00					6.3		14.00									
SITE 8 - MT 200/US-89																																							
3.539		WB																																				WILDLIFE XING	NEW = W11-13
		X		W11-13	30	X	30	XI						10.00		4" Treated Wood Pole		5.00		3.0	13.00					6.3		14.00									
6.000		WB																																				MILE MARKER (6)	USE AS IS = D10-1
		X		D10-1																																			
6.000		EB																																				MILE MARKER (6)	USE AS IS = D10-1
X				D10-1																																			
6.100		EB																																				WILDLIFE XING	NEW = W11-13
X				W11-13	30	X	30	XI						10.00		4" Treated Wood Pole		5.00		3.0	13.00					6.3		14.00									
SITE 9 - HIGHWAY 91 N																																							
2.510		NB																																				CREEK	USE AS IS = DRY FORK MARIAS RIVER
		X		N6-2a																																			
2.514		NB																																				OBJECT MARKER-RT	USE AS IS = OM-3R
		X		OM-3R																																			
2.514		SB																																				OBJECT MARKER-LT	USE AS IS = OM-3L
X				OM-3L																																			
2.537		NB																																				OBJECT MARKER-LT	USE AS IS = OM-3L
		X		OM-3L																																			
2.537		SB																																				OBJECT MARKER-RT	USE AS IS = OM-3R
X				OM-3R																																			
2.547		SB																																				CREEK	USE AS IS = DRY FORK MARIAS RIVER
X				N6-2a																																			
2.760		NB																																				CURVE ARROW-RIGHT	NEW = W1-2R
		X		W1-2R	30	X	30	XI		FY				10.00		4" Treated Wood Pole		5.00		3.0	13.00					6.3		14.00									
2.905		SB																																				CURVE ARROW-LEFT	NEW = W1-2L
X				W1-2L	30	X	30	XI		FY				10.00		4" Treated Wood Pole		5.00		3.0	13.00					6.3		14.00									
3.000		NB																																				MILE MARKER 3	USE AS IS = 3
		X		D10-1																																			

ROBERT PECCIA & ASSOCIATES
CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING

SHEET NO. S5

SIGN SPECIFICATIONS

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: BLAINE, CASCADE, GLACIER, HILL, LEWIS & CLARK, PONDERA
PROJECT ID: HSIP STWD(927)
UPN: 10301000

DESIGNED BY	REVIEWED BY	CHECKED BY
T. BODLOVIC	B. THOMPSON	S. VENNER
MAY 2024	MAY 2024	MAY 2024

10301000SISUMZ01.DWG

MONTANA Department of Transportation

SIGNING PLANS

8/22/2024 9:42 AM

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SIGN LOCATION				SIGN PANEL SPECIFICATIONS										SIGN ASSEMBLY SPECIFICATIONS												SIGN ASSEMBLY QUANTITIES												ADDITIONAL SIGN INFORMATION	
STATION / R.P.		DIRECTON	RAMP NO.	SIGN NO. (MUTCD)	PANEL SIZE (INCHES)			REFLECTIVE SHEETING TYPE		FY OR FYG	BACK BRACING REQ'D ANGLE IRON REQ'D	DOUBLE FACE SIGN / MOUNT BACK TO BACK	REPLACE SIGN ONLY FACE	FEET		TYPE OF SUPPORT	FEET						CANTILEVER	BREAKAWAY TYPE	BEHIND GUARDRAIL	PANEL (SQ. FT.)		WOOD POLE (LNR. FT.)		STEEL POST (LBS.)				REMV		RESET		SIGN TEXT	REMARKS
LFT	MDN	RGT			W	X	H	BG	LEG					CLEARANCE/OFFSET (SHOULDER TO EDGE OF SIGN)	SLOPE		SIGN SUPPORT SPACING	MOUNTING HEIGHT	SIGN HEIGHT + GAPS	FOUNDATION DEPTH	SUPPORT LENGTH (ESTIMATED) X	Y	Z				SHEET ALUMINUM	SHEET ALUMINUM INCREMENT	4" TOP DIA.	5" TOP DIA.	ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST	SIGN	GUIDE	SIGN	GUIDE		
SITE 10 - S-240																																							
23.247		SB																																					
		X		W1-2L	30	X	30	XI		FY				10.00		4" Treated Wood Pole		5.00		3.0	13.00					6.3		14.00					1			CURVE ARROW-LEFT	REPLACE = W1-2L
23.502		NB																																					
X				W1-2R	30	X	30	XI		FY				10.00		4" Treated Wood Pole		5.00		3.0	13.00					6.3		14.00								CURVE ARROW-RIGHT	NEW = W1-2R
23.613		SB																																					
		X		W1-2L	30	X	30	XI		FY				10.00		4" Treated Wood Pole		5.00		3.0	13.00					6.3		14.00								CURVE ARROW-LEFT	NEW = W1-2L
23.762		WB																																					
X				W1-2R	30	X	30	XI		FY				10.00		4" Treated Wood Pole		5.00		3.0	13.00					6.3		14.00					1			CURVE ARROW-RIGHT	REPLACE = W1-2R
																TOTALS										246.8	21.0	280.0	102.0	314.0				6					

SHEET NO.
S6

SIGN SPECIFICATIONS

ROBERT PECCIA & ASSOCIATES
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MONTANA
Department of Transportation

SIGNING PLANS

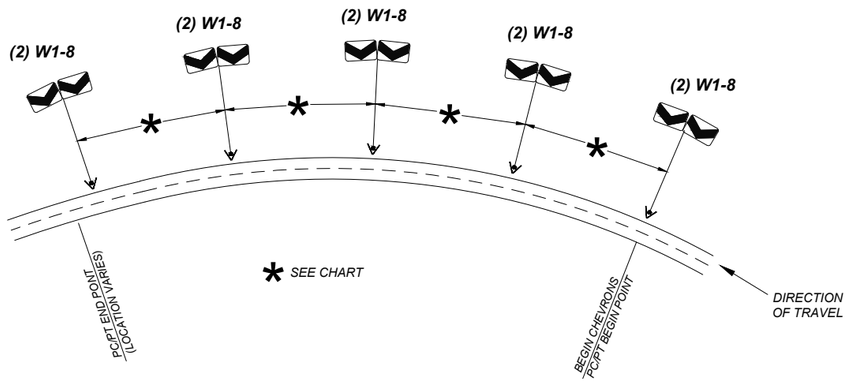
DESIGNED BY	T. BODLOVIC / MAY 2024
REVIEWED BY	B. THOMPSON / MAY 2024
CHECKED BY	S. VENNER / MAY 2024
PROJECT NAME	SF 209 GREAT FALLS DIST SIGNS
COUNTY	BLAINE, CASCADE, GLACIER, HILL, LEWIS & CLARK, PONDERA
PROJECT ID	HSIP STWD(927)
UPN	10301000

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RPA



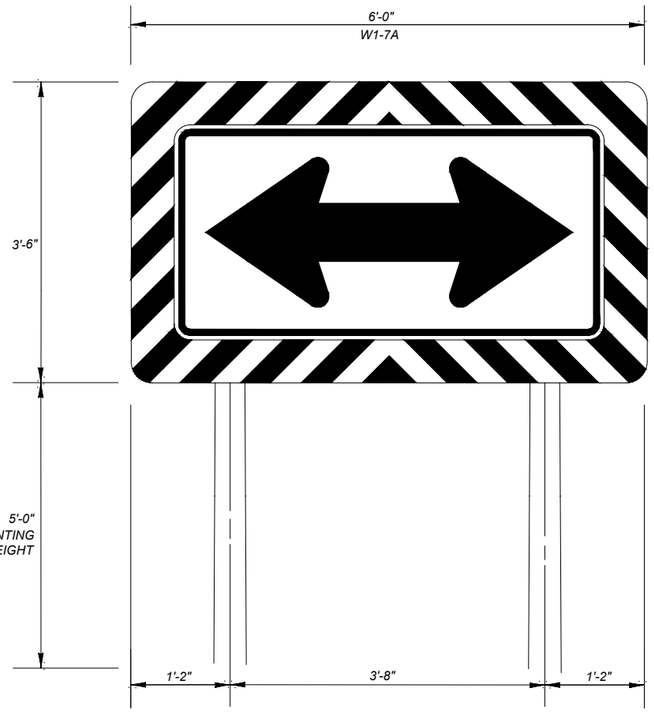
CURVE RADIUS	SIGN SPACING	R.P. CONVERSION
<200'	40'	.008±
200' - 400'	80'	.015±
401' - 700'	120'	.023±
701' - 1250'	160'	.030±
>1250'	200'	.038±

NOTES:

1. SEE SIGNING PLANS FOR CHEVRON PLACEMENT.

2. USE BEGINNING OF CURVE LOCATION AS REFERENCE POINT TO INSTALL CHEVRONS (BEGIN POINT IS ALWAYS ON OUTSIDE OF CURVE IN DIRECTION OF TRAVEL).

CHEVRON PLACEMENT
GUIDANCE ONLY
NOT TO SCALE



NOTES:

1. MOUNT 60" X 30" W1-7a TWO-DIRECTION ARROW DESIGN ON 72" X 42" ALUMINUM INCREMENT WITH 6" WIDE DIAGONAL BORDER AROUND THE PERIMETER. DIAGONAL STRIPES ARE 3" IN WIDTH APPLIED AT A 45 DEGREE ANGLE.

2. DETERMINE SUPPORT LENGTHS IN THE FIELD TO COMPLY WITH MOUNTING HEIGHTS AND EMBEDMENT DEPTHS.

TWO-DIRECTION LARGE ARROW SIGN
SITE 6 - R.P. 1.308 RT.
NOT TO SCALE

SHEET NO.
S7

CHEVRON PLACEMENT & TWO-DIRECTION LARGE ARROW SIGN DETAIL

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: BLAINE, CASCADE, GLACIER, HILL, LEWIS & CLARK, PONDERA
PROJECT ID: HSIP STWD(927)
UPN: 10301000

DESIGNED BY	AUG. 2024	REVIEWED BY	AUG. 2024	CHECKED BY	AUG. 2024
T. BODLOVIC		B. THOMPSON		S. VENNIER	

10301000SIDETZ01.DWG

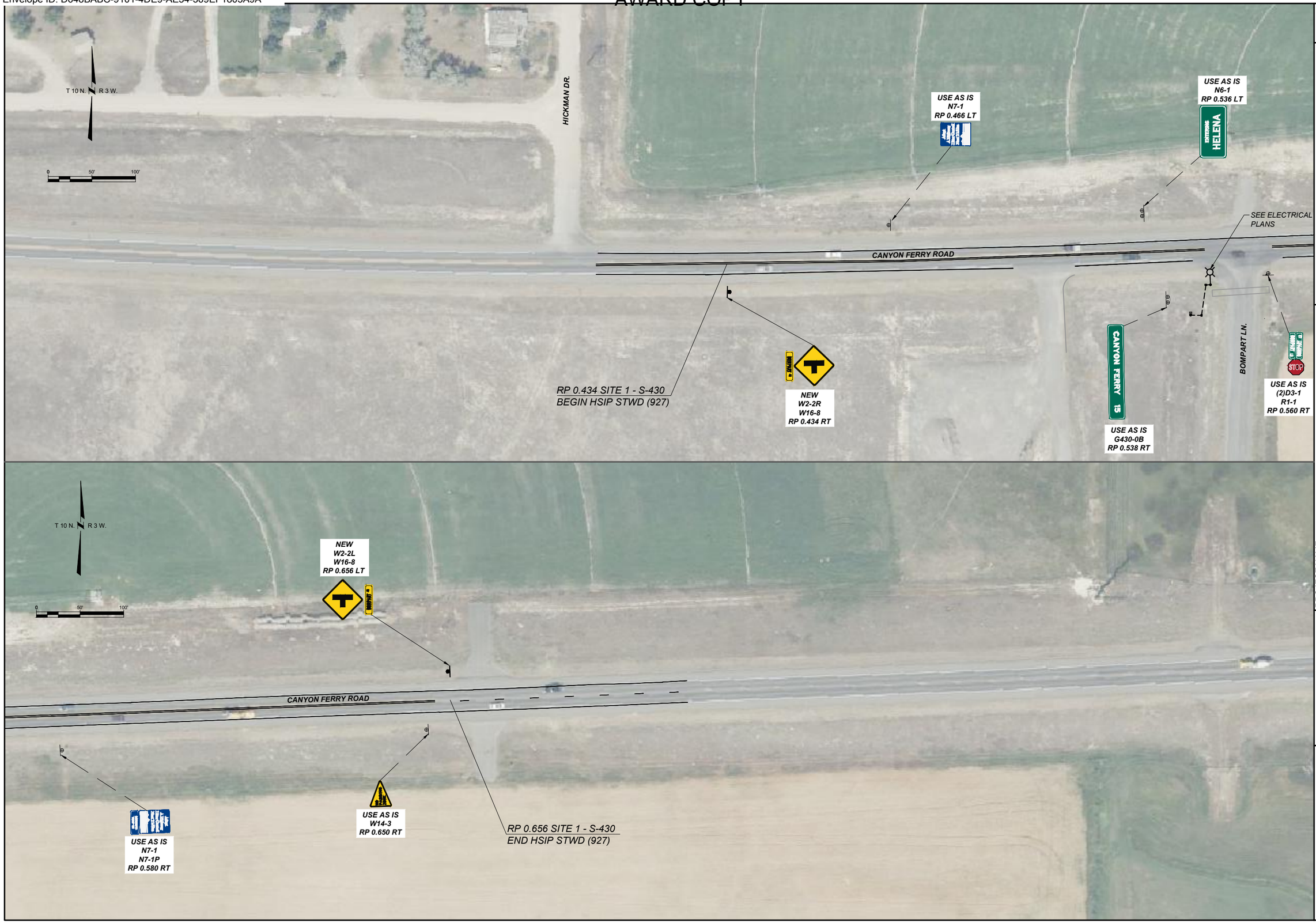
MONTANA
Department of Transportation

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RPA

SHEET NO.
S8

SIGNING PLANS
SITE 1 - S-430

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: LEWIS AND CLARK
PROJECT ID: HSIP STWD(927)
UPN: 10301000

DESIGNED BY		DATE
T.BODLOVIC		MAY 2024
REVIEWED BY		DATE
B.THOMPSON		MAY 2024
CHECKED BY		DATE
S. VENNER		MAY 2024

10301000SIPLNZS1.DWG

MONTANA
Department of Transportation

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5/16/2024 10:12 AM

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T 10 N. R 3 W.

0 50' 100'

RP 0.971 SITE 2 - S-430
BEGIN HSIP STWD (927)

CANYON FERRY ROAD

PRICKLY PEAR CREEK

WALTER DR.

USE AS IS
R2-1
RP 1.073 LT.

SPEED LIMIT 60

USE AS IS
(2) D3-1
(2) D3-1
R1-1
RP 1.082 LT.

STOP

CYN FERRY RD

WALTER DR

NEW
W2-2L
W16-8
RP 0.971 RT.

WALTER DR

USE AS IS
W3-5
RP 0.990 RT.

SPEED LIMIT 45

USE AS IS
D10-1
RP 1.000 RT.

SPEED LIMIT 45

USE AS IS
R2-1
RP 1.092 RT.

NEW
W2-2R
W16-8
RP 1.302 LT.

WALTER DR

T 10 N. R 3 W.

0 50' 100'

CANYON FERRY ROAD

RP 1.302 SITE 2 - S-430
END HSIP STWD (927)

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CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING

SHEET NO.
S9

SIGNING PLANS
SITE 2 - S-430

PROJECT NAME
SF 209 GREAT FALLS DIST SIGNS

COUNTY
LEWIS AND CLARK

PROJECT ID
HSIP STWD(927)

UPN
103010000

DESIGNED BY	MAY 2024
T. BODLOVIC	
REVIEWED BY	MAY 2024
B.THOMPSON	
CHECKED BY	MAY 2024
S. VENNER	

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MONTANA
Department of Transportation

SIGNING PLANS

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CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING

T11N R4W

0 50' 100'

RP 4.290 SITE 4 - BIRDSEYE RD
BEGIN HSIP STWD (927)

PC RP 4.309

BIRDSEYE RD.

NEW
W1-2L
RP 4.290 RT.

T11N R4W

0 50' 100'

NEW
W1-2R
RP 4.380 LT.

PT RP 4.361

BIRDSEYE RD.

PC RP 4.574

USE AS IS
D3-1
RI-1
RP 4.538 RT.

HIDDEN VALLEY DR.

NEW
W1-2R
RP 4.555 RT.

SHEET NO.
S10

SIGNING PLANS
SITE 4 - BIRDSEYE RD
(SHEET 1 OF 2)

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: LEWIS AND CLARK
PROJECT ID: HSIP STWD(927)
UPN: 10301000

DESIGNED BY	T. BODLOVIC	MAY 2024
REVIEWED BY	B. THOMPSON	MAY 2024
CHECKED BY	S. VENNER	MAY 2024

10301000SIPLNZS4.DWG

MONTANA
Department of Transportation

SIGNING PLANS

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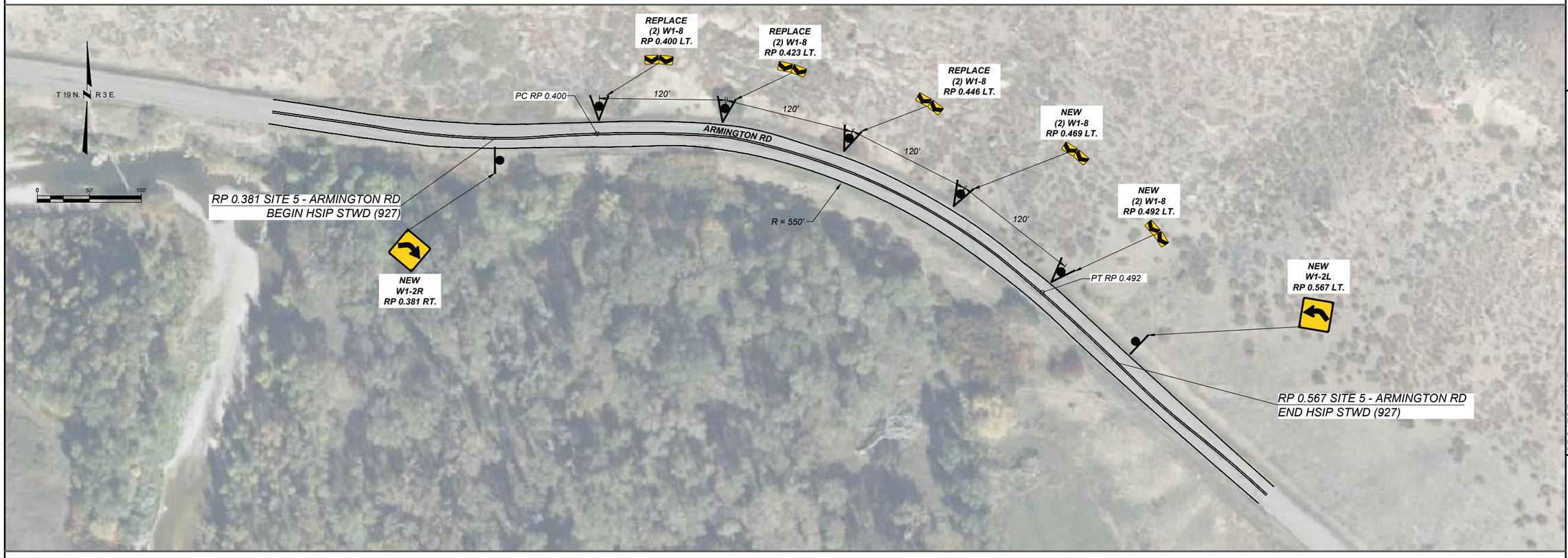
AWARD COPY



MONTANA Department of Transportation	DESIGNED BY	T. BODLOVIC MAY 2024	PROJECT NAME	SF 209 GREAT FALLS DIST SIGNS	SIGNING PLANS SITE 4 - BIRDSEYE RD (SHEET 2 OF 2)
	REVIEWED BY	B.THOMPSON MAY 2024	COUNTY	LEWIS AND CLARK	SHEET NO. S11
SIGNING PLANS	CHECKED BY	S. VENNER MAY 2024	PROJECT ID	HSIP STWD(927)	
5/16/2024 10:52 AM	10301000SIPLNZS4.DWG		UPN	10301000	

Docusign Envelope ID: D648BABC-9101-4DE9-AE34-369EF1803A9A

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CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING
RPA

SHEET NO.
S12

SIGNING PLANS
SITE 5 - ARMINGTON RD

SIGNALLS DIST SIGNS

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: CASCADE
PROJECT ID: HSIP STWD(927)
UPN: 10301000

DESIGNED BY		REVIEWED BY		CHECKED BY	
T. BODLOVIC	MAY 2024	B.THOMPSON	MAY 2024	S. VENNIER	MAY 2024

10301000SIPLNZS5.DWG

MONTANA
Department of Transportation

SIGNING PLANS

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T 20 N. R 4 E.

0 50' 100'

NEW
W3-2A
RP 0.067 LT.
INSTALL YELLOW
RETRO-REFLECTIVE
STRIP TO SIGN POST

USE AS IS
W2-4
RP 0.048 LT.
INSTALL YELLOW
RETRO-REFLECTIVE
STRIP TO SIGN POST

REPLACE
(2) D3-1
(2) D3-1
R1-2
RP 0.005 LT.
INSTALL RED
RETRO-REFLECTIVE
STRIP TO SIGN POST

HIGHLAND RD

RP 0.067 SITE 6 - HIGHLAND RD
END HSIP STWD (927)

NEW
W10-3R
RP 1.359 LT.
INSTALL YELLOW
RETRO-REFLECTIVE
STRIP TO SIGN POST

RP 1.257 SITE 6 - FIELDS RD
BEGIN HSIP STWD (927)

RP 0.000 SITE 6 - HIGHLAND RD
BEGIN HSIP STWD (927)

FIELDS RD

NEW
W10-3L
RP 1.257 RT.
INSTALL YELLOW
RETRO-REFLECTIVE
STRIP TO SIGN POST

RP 1.359 SITE 6 - FIELDS RD
END HSIP STWD (927)

NEW
W1-7A
RP 1.308 RT.
SEE DETAIL INSTALL
FLUORECENT
YELLOW RETRO-
REFLECTIVE STRIP
TO EACH SIGN POST

DELINEATOR D

SHEET NO.
S13

SIGNING PLANS
SITE 6 - FIELDS RD &
HIGHLAND RD

PROJECT NAME
SF 209 GREAT FALLS DIST SIGNS

COUNTY
CASCADE

PROJECT ID
HSIP STWD(927)

UPN
10301000

DESIGNED BY	AUG. 2024	T. BODLOVIC	
REVIEWED BY	AUG. 2024	B. THOMPSON	
CHECKED BY	AUG. 2024	S. VENNER	

10301000SIPLNZS6.DWG

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MONTANA
Department of Transportation

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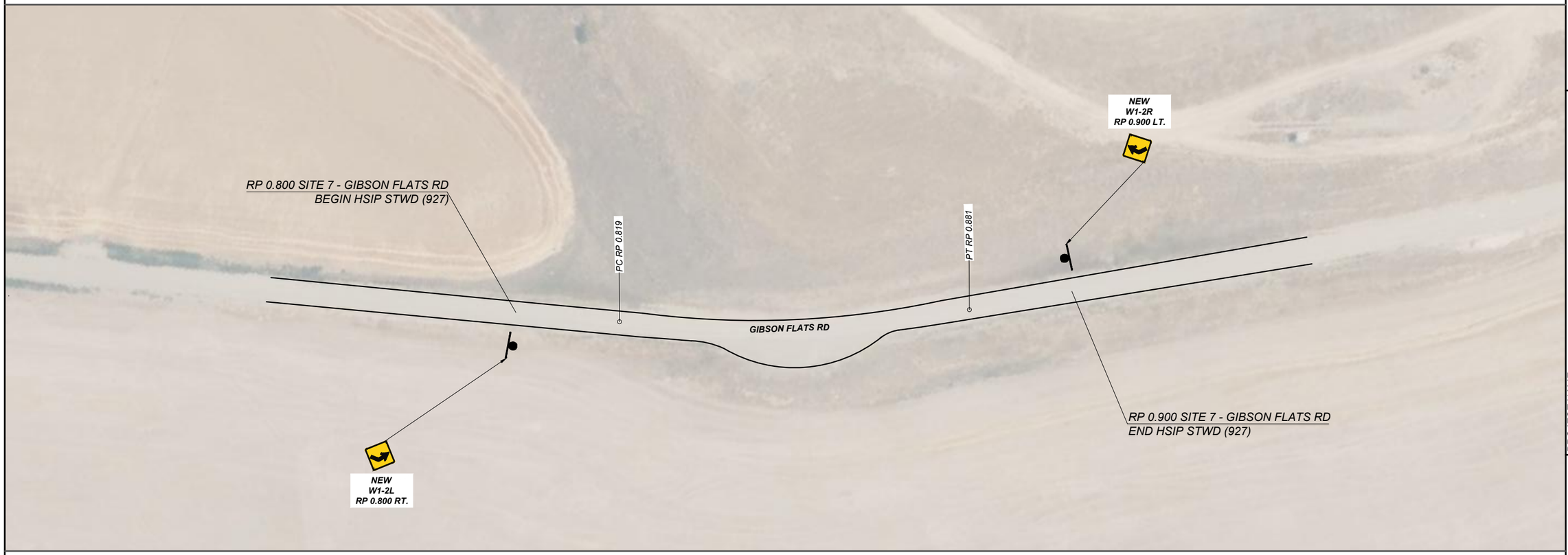
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T 20 N. R 4 E.

0 50' 100'



RPA ROBERT PECCIA & ASSOCIATES
CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING

SHEET NO.
S14

SIGNING PLANS
SITE 7 - GIBSON FLATS RD.

PROJECT NAME
SF 209 GREAT FALLS DIST SIGNS

COUNTY
CASCADE

PROJECT ID
HSIP STWD(927)

UPN
10301000

DESIGNED BY	MAY 2024
T. BODLOVIC	
REVIEWED BY	MAY 2024
B. THOMPSON	
CHECKED BY	MAY 2024
S. VENNER	

MONTANA
Department of Transportation

SIGNING PLANS

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T 21 N R 1 E

0 50' 100'

RP 3.539 SITE 8 - MT-200/US-89
BEGIN HSIP STWD (927)

MT 200 / US 89

WILDLIFE CROSSING

NEW
W11-13
RP 3.539 RT.

T 21 N R 1 E

0 50' 100'

USE AS IS
D10-1
RP 6.000 RT.

MILE 6

MT 200 / US 89

NEW
W11-13
RP 6.100 LT.

WILDLIFE CROSSING

RP 6.100 SITE 8 - MT-200/US-89
END HSIP STWD (927)

MILE 6

USE AS IS
D10-1
RP 6.000 LT.

SHEET NO.
S15

SIGNING PLANS
SITE 8 - MT-200/US-89

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: CASCADE
PROJECT ID: HSIP STWD(927)
UPN: 10301000

DESIGNED BY		REVIEWED BY		CHECKED BY	
T. BODLOVIC	MAY 2024	B. THOMPSON	MAY 2024	S. VENNER	MAY 2024

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MONTANA
Department of Transportation

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T 28 N, R 3 W

0 50' 100'

HIGHWAY 91 N

RP 2.301 SITE 9 - HIGHWAY 91 N
BEGIN HSIP STWD (927)

USE AS IS
OM-3L
RP 2.514 LT.

USE AS IS
OM-3R
RP 2.537 LT.

USE AS IS
N6-2A
RP 2.547 LT.

USE AS IS
N6-2A
RP 2.510 RT.

USE AS IS
OM-3R
RP 2.514 RT.

USE AS IS
OM-3L
RP 2.537 RT.

DELINEATOR A

T 28 N, R 3 W

0 50' 100'

HIGHWAY 91 N

PC RP 2.779

R=1,830'

NEW
W1-2R
RP 2.760 RT.

DELINEATOR A

SHEET NO.
S16

SIGNING PLANS
SITE 9 - HIGHWAY 91 N
(SHEET 1 OF 2)

SF 209 GREAT FALLS DIST SIGNS

PROJECT NAME			
DESIGNED BY	T. BODLOVIC	AUG. 2024	
REVIEWED BY	B. THOMPSON	AUG. 2024	
CHECKED BY	S. VENNER	AUG. 2024	

COUNTY	PONDERA
PROJECT ID	HSIP STWD(927)
UPN	103010000

MONTANA
Department of Transportation

SIGNING PLANS

8/22/2024 9:31 AM

10301000SIPLNZS9.DWG



Docusign Envelope ID: D648BABC-9101-4DE9-AE34-369EF1803A9A

AWARD COPY

MONTANA
Department of Transportation

SIGNING PLANS

DESIGNED BY	T. BODLOVIC	MAY 2024
REVIEWED BY	B. THOMPSON	MAY 2024
CHECKED BY	S. VENNER	MAY 2024

8/22/2024 9:31 AM 10301000SIPLNZS9.DWG

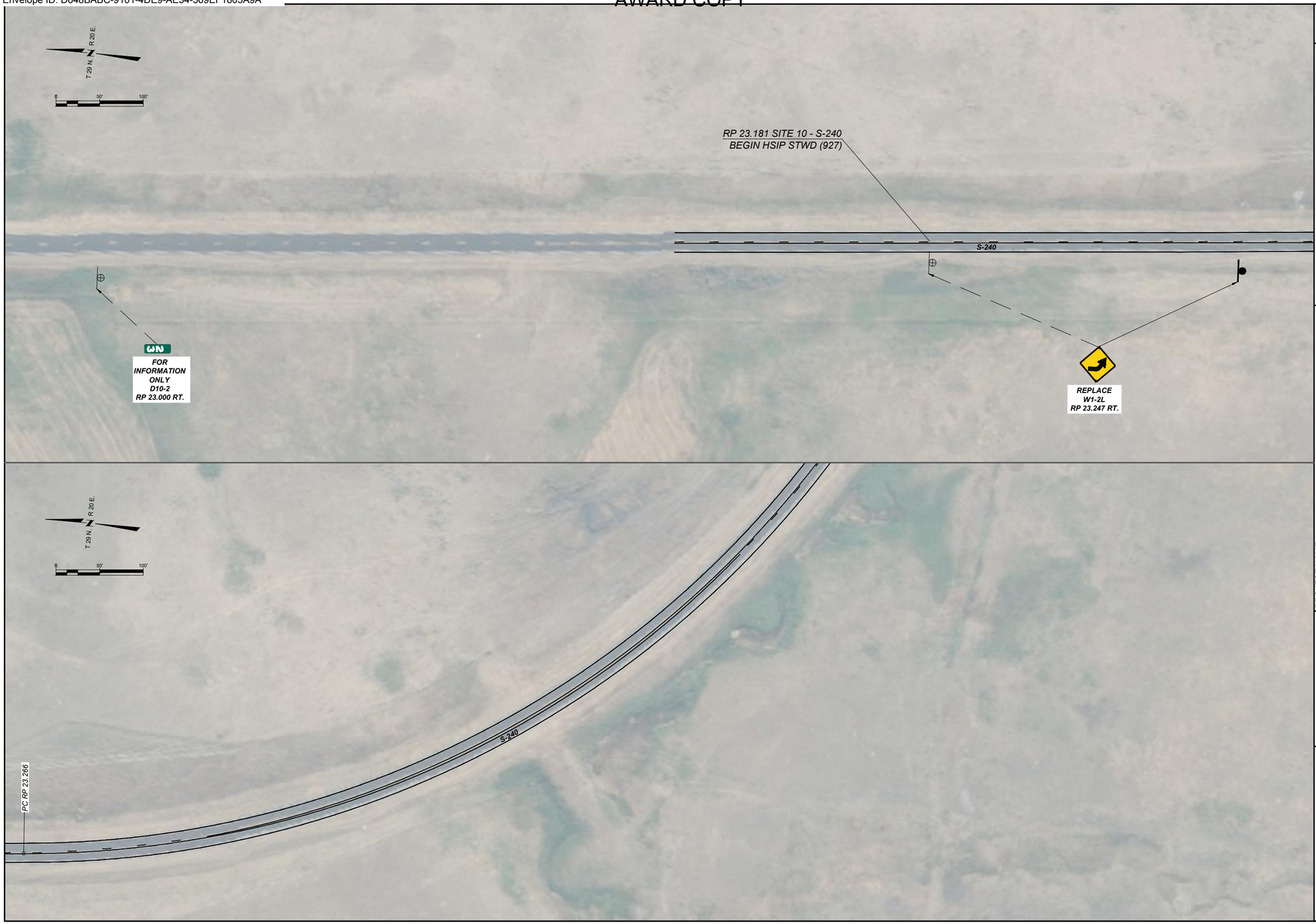
PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: PONDERA
PROJECT ID: HSIP STWD(927)
UPN: 10301000

SIGNING PLANS
SITE 9 - HIGHWAY 91 N
(SHEET 2 OF 2)

SHEET NO. S17

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SHEET NO.
S18

SIGNING PLANS
SITE 10 - S-240
(SHEET 1 OF 2)

PROJECT NAME
SF 209 GREAT FALLS DIST SIGNS

COUNTY
BLAINE

PROJECT ID
HSIP STWD(927)

UPN
10301000

DESIGNED BY		DRAWN BY	
T. BODLOVIC	MAY 2024	T. BODLOVIC	MAY 2024
REVIEWED BY		CHECKED BY	
B. THOMPSON	MAY 2024	S. VENNER	MAY 2024

MONTANA
Department of Transportation

SIGNING PLANS

5/16/2024 10:52 AM

10301000SIPLNZS10.DWG

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RPA

SHEET NO.
S19

SIGNING PLANS
SITE 10 - S-240
(SHEET 2 OF 2)

PROJECT NAME: **SF 209 GREAT FALLS DIST SIGNS**
COUNTY: **BLAINE**
PROJECT ID: **HSIP STWD(927)**
UPN: **10301000**

DESIGNED BY		REVIEWED BY		CHECKED BY	
T. BODLOVIC	MAY 2024	B. THOMPSON	MAY 2024	S. VENNER	MAY 2024

10301000SIPLNZS10.DWG

MONTANA
Department of Transportation

SIGNING PLANS

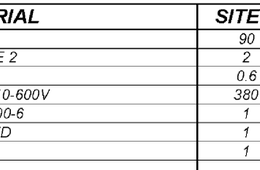
5/16/2024 10:52 AM

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ELECTRICAL SUMMARY

ITEM NO.	MATERIAL	SITE 1	SITE 3	UNIT
616 343 914	CONDUIT - PLASTIC 1 1/2 IN	90		LNFT
616 783 007	PULL BOX - COMPOSITE TYPE 2	2		EACH
617 000 000	FOUNDATION - CONCRETE	0.6		CUYD
617 123 110	CONDUCTOR - COPPER AWG10-600V	380		LNFT
617 183 056	STANDARD - STL TYPE 10-A-500-6	1		EACH
617 303 300	HIGH EFFICACY LUMINAIRE LED	1		EACH
617 333 100	SERVICE ASSEMBLY	1		EACH
617 503 130	SIG TRAF 3 COL 1 W 12-12-12		4	EACH
617 781 000	REMOVE AND SALVAGE MISC ELECTRICAL		1	LS

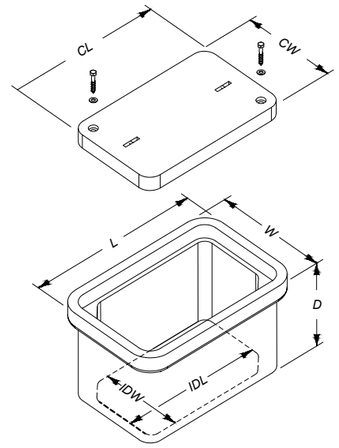


NOTES:

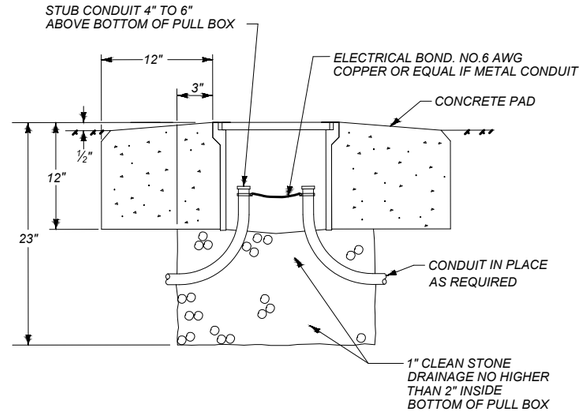
1. FURNISH CLSM MEETING SUBSECTION 551.03.2.F OF THE STANDARD SPECIFICATIONS.
2. OPEN CUTTING ACROSS EXISTING ROADWAYS IS NOT THE PREFERRED METHOD OF INSTALLING CONDUIT. OPEN CUTTING ACROSS EXISTING ROADWAYS WILL BE ALLOWED ONLY AFTER 3 UNSUCCESSFUL ATTEMPTS TO PUSH OR BORE CONDUIT UNDER ROADWAY IN ACCORDANCE TO SUBSECTION 616.03.1.
3. COLD MIXED ASPHALT MAY BE USED FOR A TEMPORARY PATCH IF HOT MIX ASPHALT IS NOT AVAILABLE. USE HOT MIX ASPHALT FOR THE PERMANENT PATCH. MATCH EX. DEPTH. CUT EXISTING ASPHALT 1" BEYOND TRENCH AND APPLY A TACK COAT PRIOR TO INSTALLING THE PERMANENT PATCH.

CONTROLLED LOW STRENGTH MATERIAL FOR TRENCHES

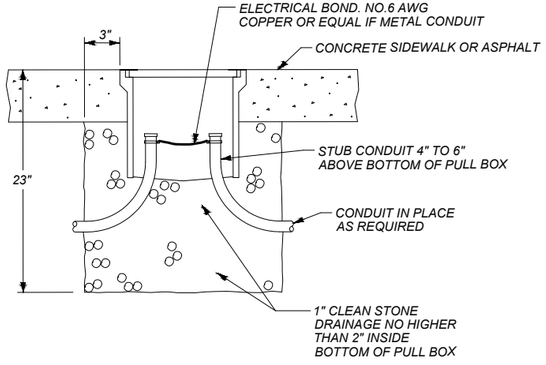
NO SCALE



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"
IDL	=	17"	IDL	=	21"	IDL	=	28"
IDW	=	10"	IDW	=	11"	IDW	=	15"
CL	=	18"	CL	=	23"	CL	=	30"
CW	=	11"	CW	=	13"	CW	=	17"



PULL BOX INSTALLED IN DIRT



PULL BOX INSTALLED IN A SIDEWALK OR ASPHALT

COMPOSITE PULLBOXES

NO SCALE

ROBERT PECCIA & ASSOCIATES
CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING

SHEET NO.
E1

ELECTRICAL SUMMARY, CLSM FOR TRENCHES, COMPOSITE PULL BOXES

PROJECT NAME	SF 209 GREAT FALLS DIST SIGNS		
COUNTY	LEWIS AND CLARK		
PROJECT ID	HSIP STWD(927)		
UPN	10301000		
DESIGNED BY	MN	AUG. 2024	10301000ELDET201.DWG
REVIEWED BY	SV	AUG. 2024	
CHECKED BY	NB	AUG. 2024	

MONTANA Department of Transportation

ELECTRICAL PLANS

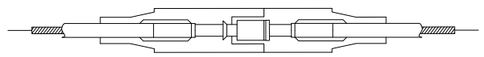
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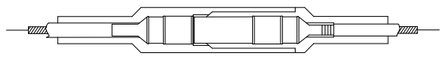
ROBERT PECCIA & ASSOCIATES
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TYPES 1, 6, 11 & 16



NON-FUSED BREAKAWAY

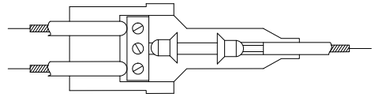
TYPES 2, 7, 12 & 17



FUSED BREAKAWAY

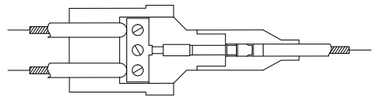
IDENTITY NO.	DESCRIPTIVE SYMBOL & WIRE SIZES
1	8 — 8
2	8 — 10
3	8, 8 — 10
4	8, 8 — 8
5	8, 8 — 8
6	6 — 6
7	6 — 10
8	6, 6 — 10
9	6, 6 — 6
10	6, 6 — 6
11	4 — 4
12	4 — 10
13	4, 4 — 10
14	4, 4 — 4
15	4, 4 — 4
16	10 — 10
17	10 — 10
18	10, 10 — 10
19	10, 10 — 10
20	10, 10 — 10
21	VARIES — VARIES

TYPES 3, 8, 13 & 18



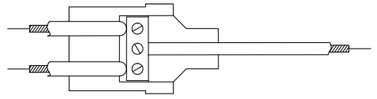
FUSED BREAKAWAY

TYPES 4, 9, 14 & 19



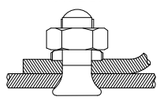
NON-FUSED BREAKAWAY

TYPES 5, 10, 15 & 20



NON-FUSED NON-BREAKAWAY

TYPE 21



COPPER SPLIT BOLT - MAKE WATERTIGHT USING SELF ADHERING MASTIC

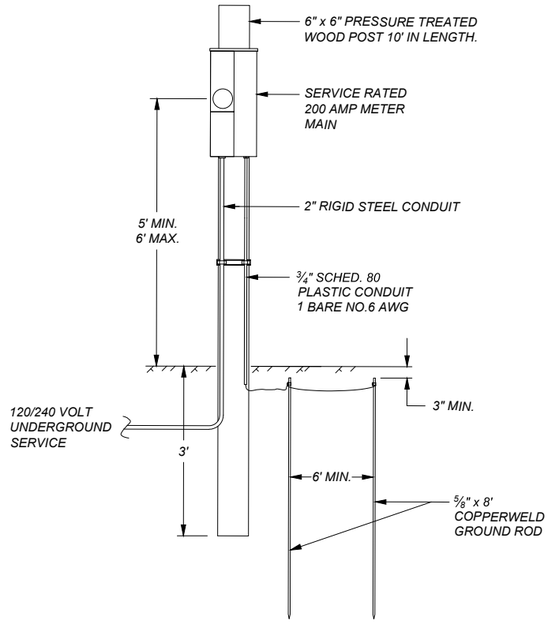
PROVIDE A PLUG AND RECEPTACLE HOUSED IN WATER-RESISTANT, SYNTHETIC RUBBER CAPABLE OF BURIAL IN THE GROUND OR INSTALLATION IN SUNLIGHT. THE HOUSING, CONSISTING OF 2 SECTIONS, PROVIDES A WATERTIGHT SEAL AROUND THE CABLE AND A WATERTIGHT SEAL BETWEEN THE TWO SECTIONS AT THE POINT OF DISCONNECTION. SUPPLY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

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

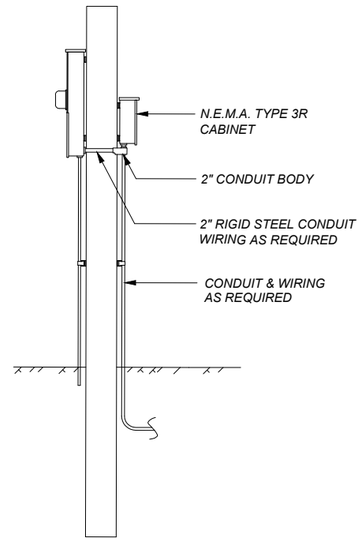
PROVIDE FUSED CONNECTOR KITS CONTAINING A PAIR OF SPRING LOADED 90% CONDUCTIVITY CONTACTS FOR GRIPPING A STANDARD MIDGET FERRULE TYPE FUSE. THE CONTACTS MUST BE FULLY ANNEALED AND ADAPTED TO BE CRIMPED TO THE CABLE.

WATERTIGHT CONNECTORS

NO SCALE



FRONT



SIDE

UNDERGROUND SERVICE ASSEMBLY

NO SCALE, SERVICE S-1

SHEET NO.
E2

WATERTIGHT CONNECTORS & UNDERGROUND SERVICE ASSEMBLY

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: LEWIS AND CLARK
PROJECT ID: HSIP STWD(927)
UPN: 10301000

CHECKED BY	NB	AUG. 2024
REVIEWED BY	SV	AUG. 2024
DESIGNED BY	MN	AUG. 2024

10301000ELDETZ01.DWG

MONTANA Department of Transportation

ELECTRICAL PLANS

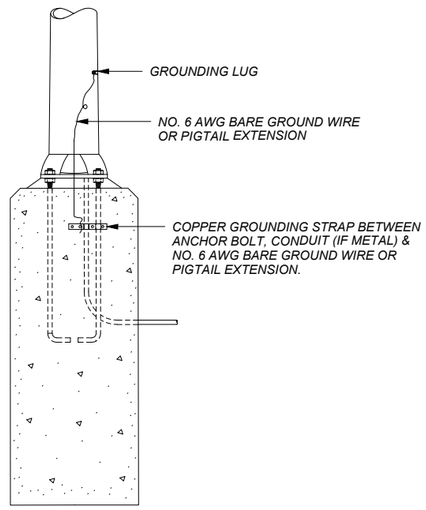
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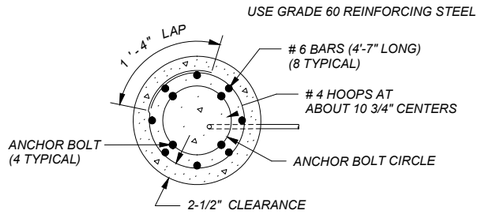
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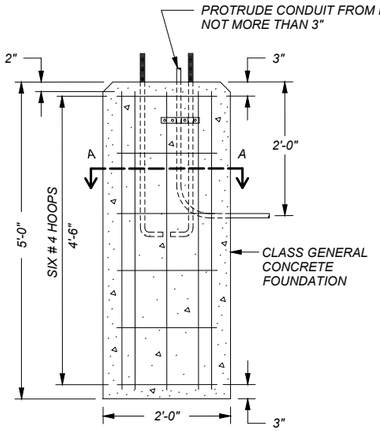
WELDING INSPECTION REQUIREMENTS:
25% OF ALL PARTIAL PENETRATION GROOVE AND FILLET WELDS PER PIECE REQUIRES MAGNETIC-PARTICLE TESTING PER AWS D1.1.

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

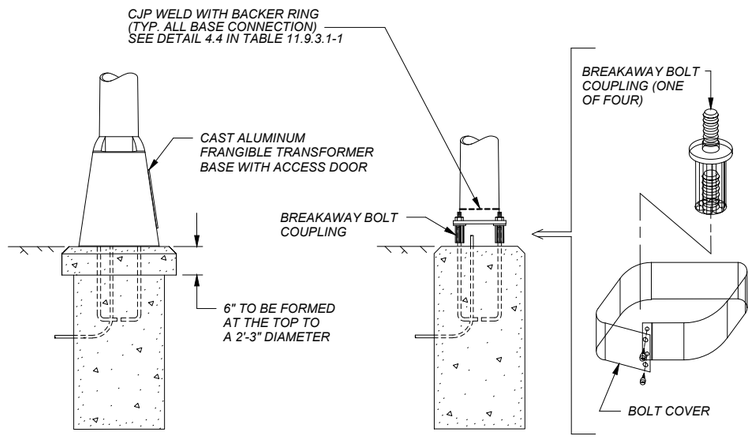




SECTION A-A



STANDARD FOUNDATION



TRANSFORMER (BREAKAWAY TYPE)

BOLT COUPLING (BREAKAWAY TYPE)

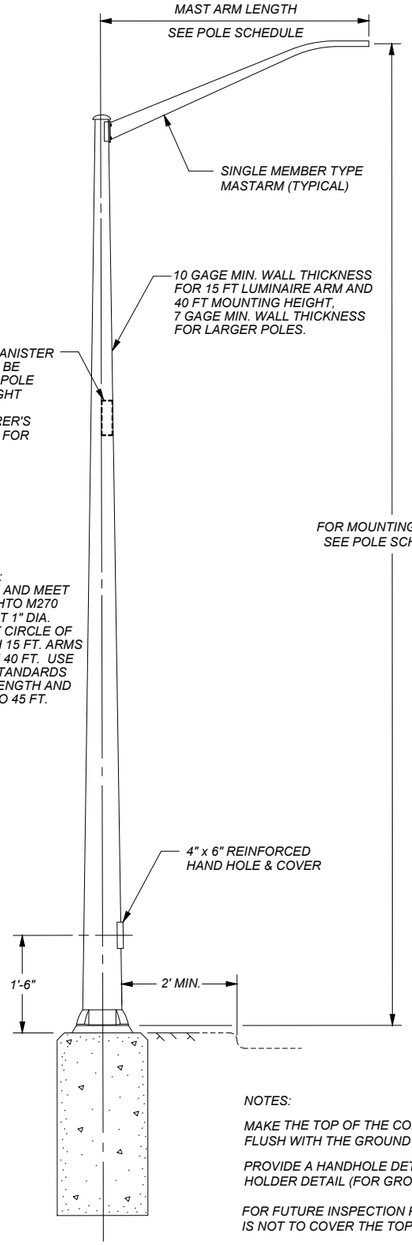
BASE TYPES FOR LUMINAIRE STANDARDS

NOTE:

INSTALL AND PRETENSION ANCHOR BOLTS PER THE STANDARD SPECIFICATIONS

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

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



TYPE I0-A POLE

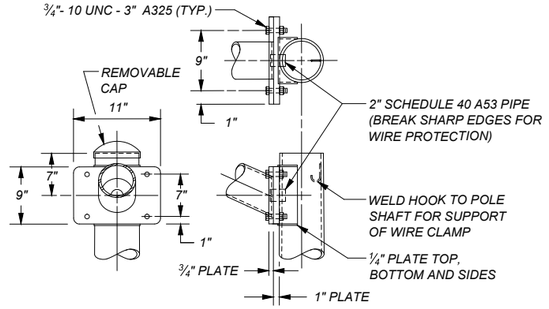
NOTES:

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

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

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

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



NOTE:

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

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

DESIGN PARAMETERS:

DESIGN WEIGHT = DEAD LOAD, ICE.

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

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

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

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

LUMINAIRE STANDARDS, POLE BASES & FOUNDATION DETAIL

NO SCALE

ROBERT PECCIA & ASSOCIATES
CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING

SHEET NO.
E3

LUMINAIRE STANDARDS, POLE BASES & FOUNDATION DETAIL

PROJECT NAME: SF 209 GREAT FALLS DIST SIGNS
COUNTY: LEWIS AND CLARK
PROJECT ID: HSIP STWD(927)
UPN: 10301000

DESIGNED BY	MN	AUG. 2024
REVIEWED BY	SV	AUG. 2024
CHECKED BY	NB	AUG. 2024

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MONTANA Department of Transportation

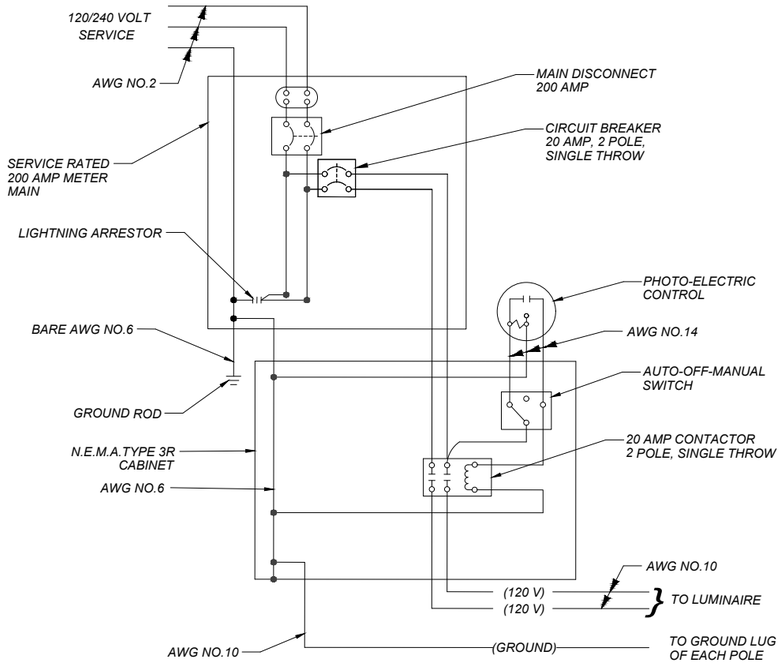
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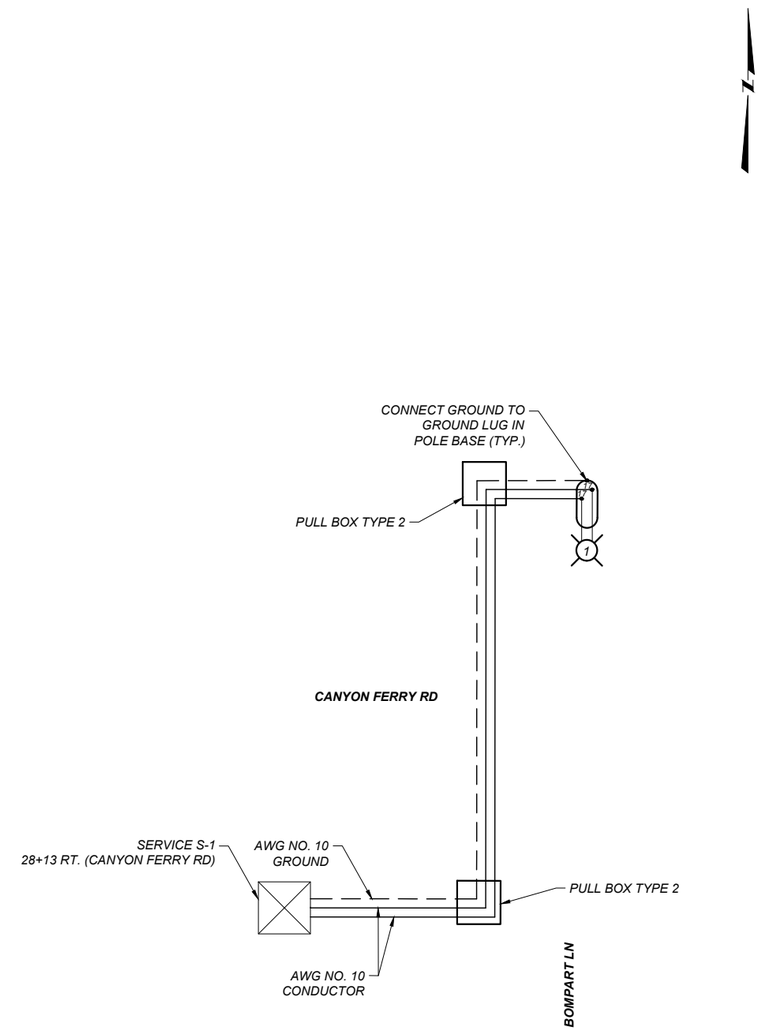
AWARD COPY

ROBERT PECCIA & ASSOCIATES
CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING



SITE 1 SERVICE WIRING DIAGRAM

NO SCALE, SERVICE S-1



SITE 1 LIGHTING WIRING DIAGRAM

NO SCALE

SHEET NO.
E4

SITE 1
WIRING DIAGRAMS

PROJECT NAME
SF 209 GREAT FALLS DIST SIGNS

COUNTY
LEWIS AND CLARK

PROJECT ID
HSIP STWD(927)

UPN
10301000

CHECKED BY	NB	AUG. 2024
REVIEWED BY	BT	AUG. 2024
DESIGNED BY	MN	AUG. 2024

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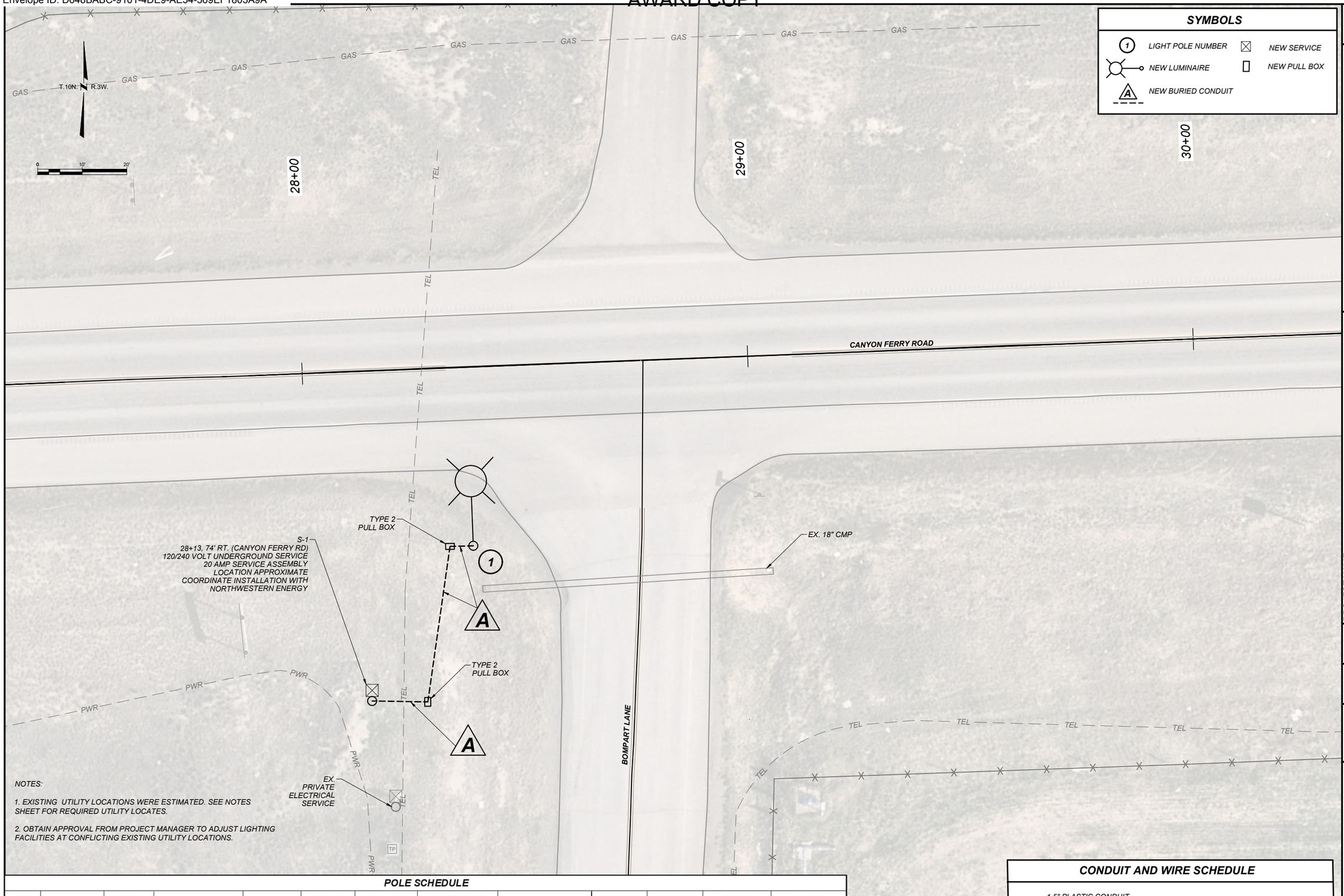
MONTANA
Department of Transportation

ELECTRICAL PLANS

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SYMBOLS

- (1) LIGHT POLE NUMBER
- NEW LUMINAIRE
- (A) NEW BURIED CONDUIT
- NEW SERVICE
- NEW PULL BOX

NOTES:

1. EXISTING UTILITY LOCATIONS WERE ESTIMATED. SEE NOTES SHEET FOR REQUIRED UTILITY LOCATES.

2. OBTAIN APPROVAL FROM PROJECT MANAGER TO ADJUST LIGHTING FACILITIES AT CONFLICTING EXISTING UTILITY LOCATIONS.

POLE SCHEDULE

POLE NO.	ITEM NO.	POLE TYPE	ALIGNMENT	STATION	OFFSET C/L POLE	TYPE POLE BASE	FOUNDATION DIA. x DEPTH	LAMP TYPE	MASTARM LENGTH	LUMINAIRE HEIGHT	N OR Y COORDINATE	E OR X COORDINATE
1	617 183 056	10-A-500-6	CANYON FERRY RD	28+36.85	40.10' RT.	BREAKAWAY	2.0' x 5.0'	LEOTEK GC2-G 130W	15'	40'	872,553.570	1,346,082.532

CONDUIT AND WIRE SCHEDULE

(A) 1.5" PLASTIC CONDUIT
2 OF AWG NO. 10 CONDUCTOR (HIGHWAY LIGHTING)
1 OF AWG NO. 10 CONDUCTOR (GROUND)

ROBERT PECCIA & ASSOCIATES
CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING

SHEET NO. E5

SITE 1
LIGHTING PLAN

PROJECT NAME	SF 209 GREAT FALLS DIST SIGNS		
COUNTY	LEWIS AND CLARK		
PROJECT ID	HSIP STWD(927)		
UPN	10301000		
DESIGNED BY	MN	AUG. 2024	10301000ELPNZ01.DWG
REVIEWED BY	SV	AUG. 2024	
CHECKED BY	NB	AUG. 2024	

MONTANA
Department of Transportation

ELECTRICAL PLANS

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EXISTING CONDUIT AND WIRE SCHEDULE

B
EX. 2" PLASTIC CONDUIT
EX. 1 OF 3 AWG NO. 14 SIGNAL CABLE (PHOTOELECTRIC CONTROL)
EX. 2 OF AWG NO. 10 CONDUCTOR (LIGHTING)
EX. 2 OF AWG NO. 10 CONDUCTOR (GROUND)
EX. 3 OF AWG NO. 6 CONDUCTOR

C
EX. 3 - 2" PLASTIC CONDUIT
EX. 4 OF 16 AWG NO. 14 SIGNAL CABLE
EX. 4 OF COAXIAL CABLE (VIDEO DETECTOR)
EX. 2 OF EMERGENCY PRE-EMPT CABLE
EX. 3 OF AWG NO. 6 CONDUCTOR

D
EX. 2" PLASTIC CONDUIT
EX. 1 OF 16 AWG NO. 14 SIGNAL CABLE
EX. 1 OF COAXIAL CABLE (VIDEO DETECTOR)
EX. 1 OF EMERGENCY PRE-EMPT CABLE
EX. 2 OF AWG NO. 10 CONDUCTOR (LIGHTING)
EX. 1 OF AWG NO. 10 CONDUCTOR (GROUND)

E
EX. 2 - 2" PLASTIC CONDUIT
EX. 1 OF 16 AWG NO. 14 SIGNAL CABLE
EX. 1 OF COAXIAL CABLE (VIDEO DETECTOR)
EX. 2 OF AWG NO. 10 CONDUCTOR (LIGHTING)
EX. 1 OF AWG NO. 10 CONDUCTOR (GROUND)
EX. 3 OF AWG NO. 6 CONDUCTOR

F
EX. 2 - 2" PLASTIC CONDUIT
EX. 2 OF 16 AWG NO. 14 SIGNAL CABLE
EX. 2 OF COAXIAL CABLE (VIDEO DETECTOR)
EX. 1 OF EMERGENCY PRE-EMPT CABLE
EX. 2 OF AWG NO. 10 CONDUCTOR (LIGHTING)
EX. 1 OF AWG NO. 10 CONDUCTOR (GROUND)

G
EX. 2" PLASTIC CONDUIT
EX. 1 OF 16 AWG NO. 14 SIGNAL CABLE
EX. 1 OF COAXIAL CABLE (VIDEO DETECTOR)
EX. 1 OF EMERGENCY PRE-EMPT CABLE
EX. 1 OF AWG NO. 10 CONDUCTOR (GROUND)

H
EX. 2" PLASTIC CONDUIT
EX. 1 OF 16 AWG NO. 14 SIGNAL CABLE
EX. 1 OF COAXIAL CABLE (VIDEO DETECTOR)
EX. 2 OF AWG NO. 10 CONDUCTOR (LIGHTING)
EX. 1 OF AWG NO. 10 CONDUCTOR (GROUND)

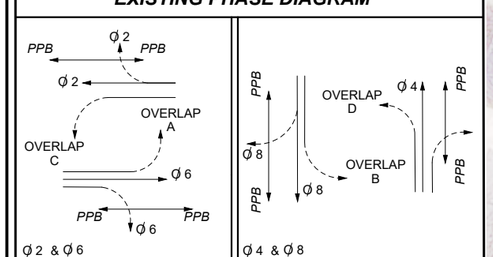
I
EX. 2" PLASTIC CONDUIT
EX. 1 OF COAXIAL CABLE 50 ohm

J
EX. 2" PLASTIC CONDUIT
EX. 1 OF 16 AWG NO. 14 SIGNAL CABLE
EX. 1 OF 3 AWG NO. 14 SIGNAL CABLE (PHOTOELECTRIC CONTROL)
EX. 1 OF COAXIAL CABLE (VIDEO DETECTOR)
EX. 1 OF AWG NO. 10 CONDUCTOR (GROUND)

SYMBOLS

- NEW TRAFFIC SIGNAL
- EX. ANTENNA
- EX. TRAFFIC SIGNAL
- EX. LUMINAIRE
- EX. BURIED CONDUIT (B)
- EX. PULL BOX
- EX. PREEMPTION
- EX. CONTROLLER
- EX. SERVICE
- EX. POWER POLE
- EX. VIDEO DETECTOR

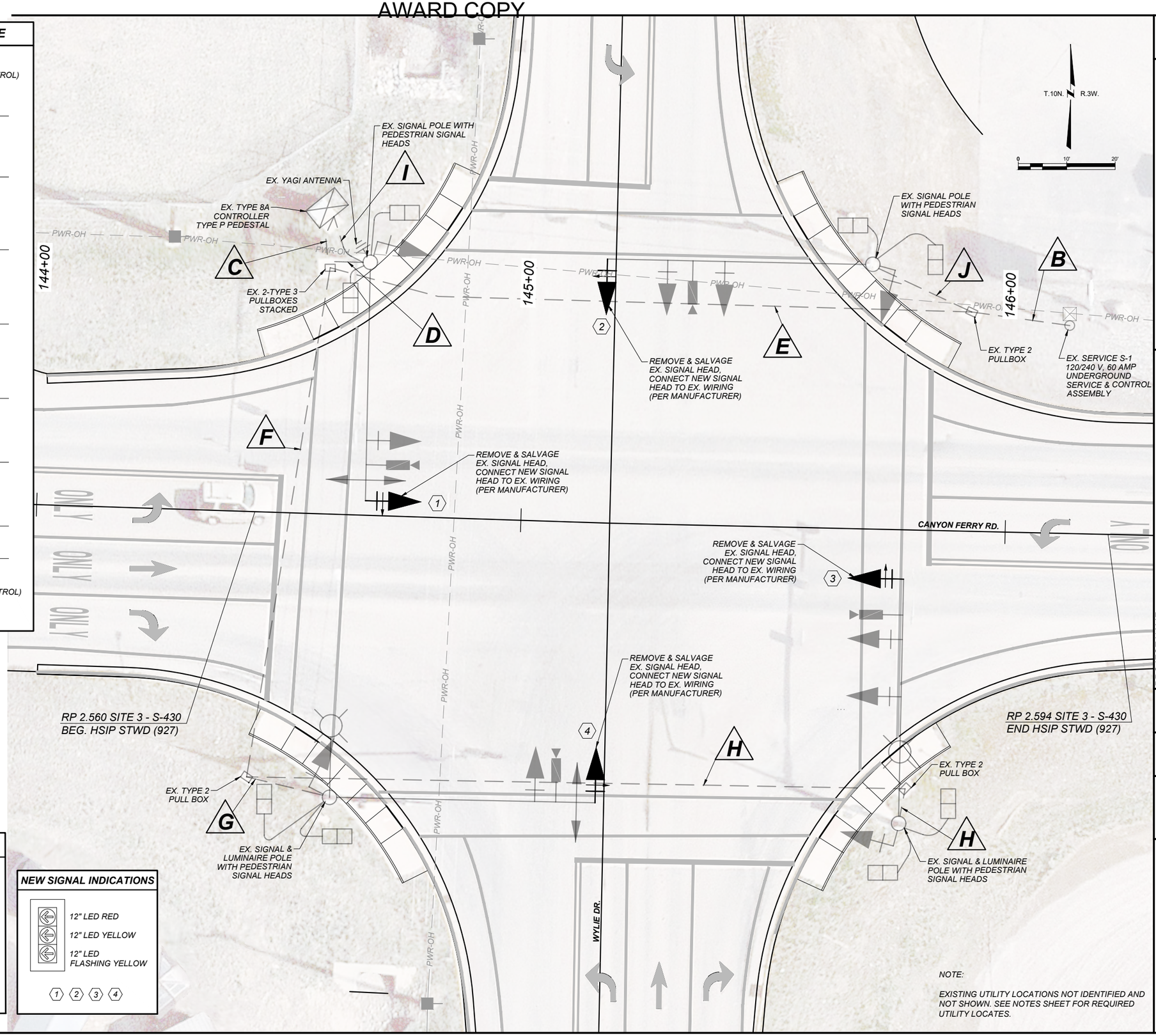
EXISTING PHASE DIAGRAM



NEW SIGNAL INDICATIONS

- 12" LED RED
- 12" LED YELLOW
- 12" LED FLASHING YELLOW

(1) (2) (3) (4)



NOTE:

EXISTING UTILITY LOCATIONS NOT IDENTIFIED AND NOT SHOWN. SEE NOTES SHEET FOR REQUIRED UTILITY LOCATES.

ROBERT PECCIA & ASSOCIATES
CIVIL ENGINEERING | TRANSPORTATION | PLANNING | SURVEYING
RPA

SHEET NO. E6

SITE 3
TRAFFIC SIGNAL UPGRADE PLAN

PROJECT NAME	SF 209 GREAT FALLS DIST SIGNS
COUNTY	LEWIS AND CLARK
PROJECT ID	HSIP STWD(927)
UPN	10301000

CHECKED BY	NB	AUG. 2024
REVIEWED BY	SV	AUG. 2024
DESIGNED BY	MN	AUG. 2024

10301000ELPLN202.DWG

MONTANA
Department of Transportation

ELECTRICAL PLANS

8/21/2024 2:34 PM