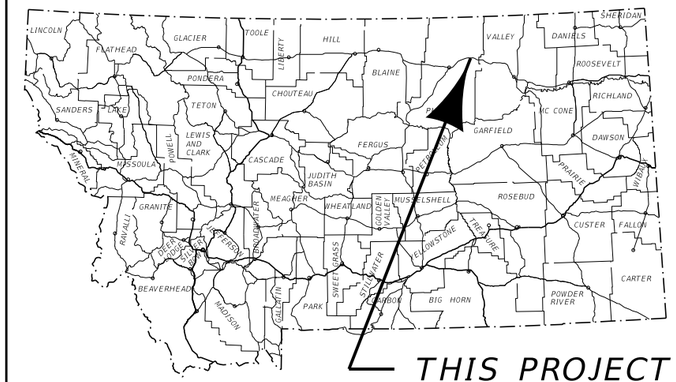
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MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT STPS 243-1(12)15
PLANT MIX SURFACING, SEAL & COVER
SACO - NORTH
PHILLIPS COUNTY

PROJECT DESIGN DATA		
PRESENT	2020	A.D.T. = 180
LETTING	2022	A.D.T. = 180
DESIGN	2042	A.D.T. = 220
		D.H.V. = 40
		TRUCKS = 17.2%
		V. = 60
		18 KIP ESAL'S = 17
		GROWTH RATE = 1.0%

LENGTH 6.6 MILES

STA. 306+40.00
24' X 250' BR. IN PL.
MILK RIVER
NBI S00243016+00001
MDT # 06458
RP - 15.53
(THIS CONTRACT)

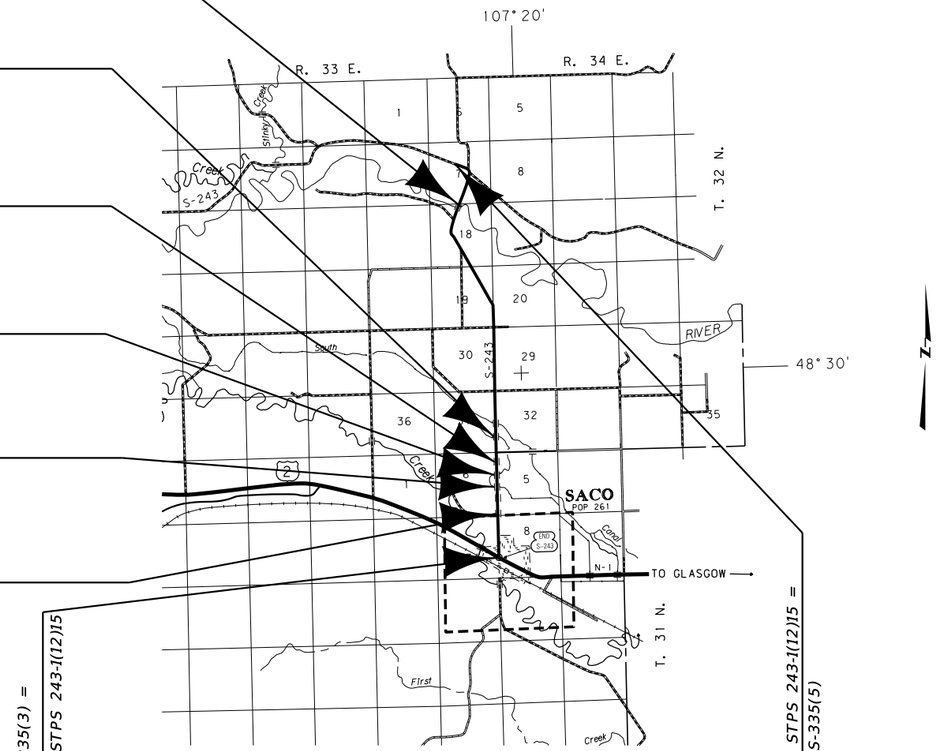
STA. 92+60.00
21'-2"' X 114' BR. IN PL.
DRAINAGE
NBI S00243020+00001
MDT # 06459
RP - 19.56
(THIS CONTRACT)

STA. 82+90.00
21'-2" X 38' BR. IN PL.
DRAINAGE
NBI S00243020+02001
MDT # 06460
RP - 19.75
(THIS CONTRACT)

STA. 63+09.84
27'-7" X 146" BR. IN PL.
DRAINAGE
NBI S00243020+06001
MDT # 06463
RP - 20.12
(THIS CONTRACT)

STA. 55+17.52
27'-7" X 146" BR. IN PL.
DRAINAGE
NBI S00243020+07001
MDT # 06464
RP - 20.27
(THIS CONTRACT)

STA. 37+96.72
27'-7" X 146" BR. IN PL.
BEAVER CREEK OVERFLOW
NBI S00243020+08001
MDT # 06465
RP - 20.60
(THIS CONTRACT)



SURFACING SOURCES -
CONTRACTOR FURNISHED

MONTANA
DEPARTMENT OF TRANSPORTATION

MALCOLM "MACK" LONG
DIRECTOR OF TRANSPORTATION

APPROVED BY:

HIGHWAYS
ENGINEER

DAMIAN KRINGS 12113PE
MONTANA LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Damian Krings
1C71361CE866454...

5/3/2022
DATE

ASSOCIATED PROJECT AGREEMENT NUMBERS	
R / W	
I.C.	STPS 243-1(13)15
P. E.	STPS 243-1(11)15

3	MONTANA Department of Transportation	C:\DGN\9854000rdtl001.dgn	DESIGNED BY	A. BORSCHEL	9/15/2021	ROAD PLANS
2		2/24/2022	REVIEWED BY			
		4:10:00 PM CPS - U3829	CHECKED BY	J. FLEMING	1/12/2022	UPN 9854000

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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 - 3/4" AGG.	= 5.4% OF PL.MIX BIT.SURF.
HYDRATED LIME	= 1.4% OF PL.MIX BIT.SURF.
BITUMINOUS MATERIAL	= 8.5 LBS. PER GAL.
EMULSIFIED ASPHALT - TACK (ALL OTHER SURFACES)	= 0.05 GAL. PER SQ.YARD (UNDILUTED)
SEAL	= 0.42 GAL. PER SQ.YARD
COVER	= 25 LBS. PER SQ.YARD
LEVELING	= 100 TONS PER MILE

APPROACHES

PROVIDE THE FOLLOWING SURFACING:
0.22" PLANT MIX BITUMINOUS SURF.

PLANT MIX SURFACE ALL PUBLIC APPROACHES TO R/W.
PLANT MIX SURFACE ALL PRIVATE APPROACHES TO R/W.
FEATHER PAVING ON ALL FARM FIELD APPROACHES WITH A 12' WIDE PLANT MIX STRIP ADJACENT AND PARALLEL TO THE ROADWAY.

APPROACHES (FOR INFORMATION ONLY)

STATION	TYPE	linear feet: WIDTH	linear feet: RADIUS LEFT	linear feet: RADIUS RIGHT	linear feet: LENGTH	PROPOSED SURFACE	tons: PLANT MIX BIT. SURF. GR. S - MISC.	gallons: EMULS. ASPHALT TACK	REMARKS
18+84	FARM FIELD	15	N/A	N/A	12	12.0' PMS STRIP	3	1.0	RT
35+40	FARM FIELD	16	N/A	N/A	12	12.0' PMS STRIP	3	1.0	RT
45+50	FARM FIELD	27	N/A	N/A	12	12.0' PMS STRIP	5	2.0	LT
70+50	FARM FIELD	26	N/A	N/A	12	12.0' PMS STRIP	5	2.0	LT
70+50	FARM FIELD	32	N/A	N/A	12	12.0' PMS STRIP	6	2.0	RT
109+00	FARM FIELD	11	N/A	N/A	12	12.0' PMS STRIP	2	1.0	RT
133+05	FARM FIELD	12	N/A	N/A	12	12.0' PMS STRIP	2	1.0	RT
167+75	FARM FIELD	15	N/A	N/A	12	12.0' PMS STRIP	3	1.0	LT
194+40	FARM FIELD	10	N/A	N/A	12	12.0' PMS STRIP	2	1.0	RT
224+50	FARM FIELD	15	N/A	N/A	12	12.0' PMS STRIP	3	1.0	LT
224+50	FARM FIELD	15	N/A	N/A	12	12.0' PMS STRIP	3	1.0	RT
233+50	FARM FIELD	20	N/A	N/A	12	12.0' PMS STRIP	4	1.0	RT
233+50	FARM FIELD	20	N/A	N/A	12	12.0' PMS STRIP	4	1.0	LT
278+55	FARM FIELD	15	N/A	N/A	12	12.0' PMS STRIP	3	1.0	LT
296+70	FARM FIELD	16	N/A	N/A	12	12.0' PMS STRIP	3	1.0	RT
309+87	FARM FIELD	13	N/A	N/A	12	12.0' PMS STRIP	2	1.0	LT
329+43	FARM FIELD	15	N/A	N/A	12	12.0' PMS STRIP	3	1.0	LT
329+80	FARM FIELD	15	N/A	N/A	12	12.0' PMS STRIP	3	1.0	RT
SUBTOTAL	FARM FIELD						58	21.0	
35+40	PRIVATE	16	50	30	50	PAVE TO R/W	24	8.0	LT
109+00	PRIVATE	16	15	20	24	PAVE TO R/W	8	3.0	LT
117+00	PRIVATE	12	20	20	22	PAVE TO R/W	7	2.0	LT
138+78	PRIVATE	19	12	12	22	PAVE TO R/W	8	3.0	LT
149+08	PRIVATE	12	15	25	44	PAVE TO R/W	11	4.0	RT
257+00	PRIVATE	12	15	20	35	PAVE TO R/W	9	3.0	RT
287+00	PRIVATE	21	40	30	44	PAVE TO R/W	23	8.0	RT
296+70	PRIVATE	20	15	20	55	PAVE TO R/W	19	7.0	LT
309+87	PRIVATE	14	30	30	45	PAVE TO R/W	16	6.0	RT
334+50	PRIVATE	14	20	25	32	PAVE TO R/W	10	4.0	LT
SUBTOTAL	PRIVATE						135	48.0	
87+97	PUBLIC	22	40	40	100	PAVE TO R/W	45	16.0	RT
141+00	PUBLIC	22	45	35	50	PAVE TO R/W	28	10.0	LT
141+00	PUBLIC	22	40	40	45	PAVE TO R/W	26	9.0	RT
193+80	PUBLIC	28	50	35	50	PAVE TO R/W	35	12.0	LT
193+80	PUBLIC	26	30	30	50	PAVE TO R/W	26	9.0	RT
266+00	PUBLIC	30	25	50	50	PAVE TO R/W	34	12.0	LT
334+50 ##	PUBLIC	~	~	~	~		~	~	RT
343+00	PUBLIC	22	0	0	150	PAVE TO R/W	52	18.0	RT
SUBTOTAL	PUBLIC						246	86.0	

ALL RADII MEASURED TO FRONT OF GUTTER OR EDGE OF SHOULDER
* DIMENSIONS MEASURED FROM DIGITAL IMAGERY. FIELD VERIFY AND MATCH EXISTING.
SEE INTERSECTION DETAIL

LINEAR DATA

LENGTH OF ROADWAY	IN PHILLIPS COUNTY	2 LANE RURAL	33,839.36 ft
LENGTH OF BRIDGE	IN PHILLIPS COUNTY	2 LANE RURAL	839.84 ft
TOTAL LENGTH OF	STPS 243-1(12)15	2 LANE RURAL	34,679.20 ft

AS-BUILTS

FOR HORIZONTAL ALIGNMENT AND STATIONING, REFER TO THE FOLLOWING "AS-BUILT" PROJECT(S):
BR 243-1 (7) 20 - (2004)
S-335(5) - (1954)
S-335(3) - RECONSTRUCTION (1949)
WPMS-335A - (1937)

STATIONING - REFERENCE POSTS

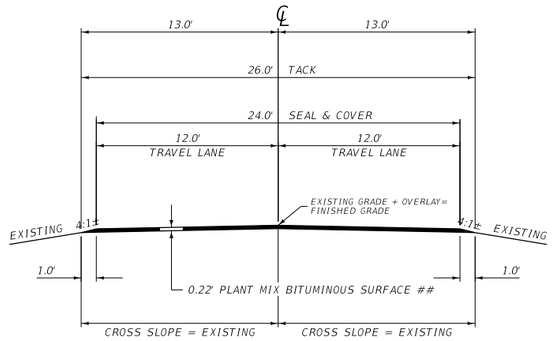
STATIONING ON THIS PROJECT INCREASES FROM SOUTH TO NORTH. REFERENCE POSTS INCREASE FROM NORTH TO SOUTH.

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TYPICAL SECTION NO. 1

MAINLINE



INCLUDES 0.07' ISOLATION LIFT

STA. 0+11.20	TO	STA. 37+23.75	TYP. NO. 1		
STA. 37+23.75 B.E.	TO	STA. 38+69.70 B.E.			
STA. 38+69.70	TO	STA. 54+44.55	TYP. NO. 1		
STA. 54+44.55 B.E.	TO	STA. 55+90.50 B.E.			
STA. 55+90.50	TO	STA. 62+36.88	TYP. NO. 1		
STA. 62+36.88 B.E.	TO	STA. 63+82.82 B.E.			
STA. 63+82.82	TO	STA. 82+71.00	TYP. NO. 1		
STA. 82+71.00 B.E.	TO	STA. 83+09.00 B.E.	SEAL & COVER ONLY		
STA. 83+09.00	TO	STA. 92+03.00	TYP. NO. 1		
STA. 92+03.00 B.E.	TO	STA. 93+17.00 B.E.	SEAL & COVER ONLY		
STA. 93+17.00	TO	STA. 305+15.00	TYP. NO. 1		
STA. 305+15.00 B.E.	TO	STA. 307+65.00 B.E.			
STA. 307+65.00	TO	STA. 346+90.40	TYP. NO. 1		

QUANTITIES

UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL		
	COVER	PLANT MIX		ASPHALT CEMENT	SEAL	EMULSIFIED ASPHALT TACK*
AREA square feet		5.50	square yards PER STATION		267	578
cubic yards PER STATION		20.4	tons PER STATION	2.12	0.48	
tons PER STATION		39.3	gals. PER STATION			29.0
square yards PER STATION	267					

*BASED ON 2 APPLICATIONS

3	MONTANA Department of Transportation	C:\DGN\9854000rdtyp001.dgn	DESIGNED BY	A. BORSCHEL	9/8/2021	ROAD PLANS	SACO - NORTH / STPS 243-1(12)15
2		2/24/2022	REVIEWED BY				
		4:10:18 PM CPS - U3829	CHECKED BY			PHILLIPS COUNTY	UPN 9854000 / 3

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SUMMARY

SURFACING

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	linear feet +	linear feet -	FOR	tons HYDRATED LIME	AGGREGATE sq. yards COVER TYPE 1	AGGREGATE tons PLANT MIX BIT. SURF. GR. S - 3/4"	AGGREGATE cu. yards PLANT MIX BIT. SURF. GR. S - MISC	AGGREGATE cu. yards SHOULDER GRAVEL #	BITUMINOUS MATERIAL tons ASPHALT CEMENT PG 64-28	BITUMINOUS MATERIAL tons EMULSIFIED ASPHALT CHFRS-2P	BITUMINOUS MATERIAL gals. EMULSIFIED ASPHALT TACK	REMARKS
+11.20															TYP. NO. 1
37+23.75 B.E.	38+69.70 B.E.				145.95	BRIDGE									
	38+69.70	3858.50	3712.55					9,913	1,459			78.7	17.8	1,077	TYP. NO. 1
38+69.70															
54+44.55 B.E.	55+90.50 B.E.				145.95	BRIDGE									
	55+90.50	1720.80	1574.85					4,205	619			33.4	7.6	457	TYP. NO. 1
55+90.50															
62+36.88 B.E.	63+82.82 B.E.				145.94	BRIDGE									
	65+82.82	992.32	846.38					2,260	333			17.9	4.1	245	TYP. NO. 1
65+82.82															
82+71.00 B.E.	83+09.00 B.E.				38.00	BRIDGE (24.0' WIDTH)									SEAL & COVER ONLY
	85+09.00	1,926.18	1,888.18					5,041	742			40.0	9.1	548	TYP. NO. 1
85+09.00															
92+03.00 B.E.	93+17.00 B.E.				114.00	BRIDGE (24.0' WIDTH)									SEAL & COVER ONLY
	95+17.00	1,008.00	894.00					2,387	351			19.0	4.3	259	TYP. NO. 1
95+17.00	303+15.00	20,798.00	20,798.00					55,531	8,174			440.9	99.8	6,031	TYP. NO. 1
303+15.00															
305+15.00 B.E.	307+65.00 B.E.				250.00	BRIDGE									
	346+90.40	4,375.40	4,125.40					11,015	1,621			87.5	19.8	1,196	TYP. NO. 1
						ADDITIONAL SURFACING		406	978	426	30	75.9	0.7	223	
TOTAL		34,679.20	33,839.36	~	839.84		206	90,757	14,277	426	30	793.3	163.2	10,036	

FOR INFORMATION ONLY. MILLINGS CAN BE USED AS SHOULDER GRAVEL. INCLUDED IN RESET W-BEAM GUARDRAIL & BOX BEAM TERMINAL SECTION - MBEAT BID ITEMS.

WATER VALVE BOXES #*

STATION	each ADJUST VALVE BOX LEFT	each ADJUST VALVE BOX RIGHT	REMARKS
4+88.3		1	10.3 RT
4+93.1		1	10.5 RT
SUBTOTAL	0	2	
TOTAL	2		

FUNDING - 100% STATE COST SHARE
* USE CONCRETE APRON PER DETAILED DRAWING 621-05

MANHOLES IN PLACE #*

STATION	each ADJUST MANHOLE LEFT	each ADJUST MANHOLE RIGHT	REMARKS
+71.5	1		1.8' LT. SANITARY SEWER
2+75.4	1		2.3' LT. SANITARY SEWER
5+83.9	1		4.1' LT. SANITARY SEWER
9+22.7	1		5.1' LT. SANITARY SEWER
11+47.7		1	4.7' RT. SANITARY SEWER
SUBTOTAL	4	1	
TOTAL	5		

FUNDING - 100% STATE COST SHARE
* USE CONCRETE APRON PER DETAILED DRAWING 621-05

PAVEMENT MARKINGS

ITEM	UNIT	INTERIM APPLICATION #	FINAL APPLICATION	TOTAL
STRIPING - WHITE PAINT	gallon	78		78
STRIPING - YELLOW PAINT	gallon	238		238
STRIPING - WHITE EPOXY	gallon		104	104
STRIPING - YELLOW EPOXY	gallon		317	317
TEMPORARY STRIPING	linear feet		22,853	22,853
FINAL SWEEP AND BROOM	course mile		6.6	6.6

BASED ON 2 APPLICATIONS.

MAILBOXES

STATION	each MAILBOXES	REMARKS
117+00	1	LT
193+80	1	RT
266+00	1	LT
287+00	2	LT
TOTAL	5	

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SUMMARY

COLD MILLING *

STATION		sq. yards	REMARKS
		COLD MILLING	
FROM	TO	0.22 ft	
+11.20	2+11.20	578	TAPER MILL
35+23.75	37+23.75 D.E.	578	TAPER MILL
38+69.70 B.E.	40+69.70	578	TAPER MILL
52+44.55	54+44.55 B.E.	578	TAPER MILL
55+90.50 B.E.	57+90.50	578	TAPER MILL
60+36.88	62+36.88 B.E.	578	TAPER MILL
63+82.82 B.E.	65+82.82	578	TAPER MILL
80+71.00	82+71.00 B.E.	578	TAPER MILL
83+09.00 B.E.	85+09.00	578	TAPER MILL
90+03.00	92+03.00 B.E.	578	TAPER MILL
93+17.00 B.E.	95+17.00	578	TAPER MILL
303+15.00	305+15.00 B.E.	578	TAPER MILL
307+65.00 B.E.	309+65.00	578	TAPER MILL
344+90.40	346+90.40	578	TAPER MILL
~	~	391	TAPER MILL. FARM FIELD APPROACHES
~	~	170	TAPER MILL. PRIVATE APPROACH (1)
SUBTOTAL		8,650	
TOTAL		8,650	

* SEE DETAILS

GUARDRAIL

STATION		linear feet				each				REMARKS
		RESET W-BEAM GUARDRAIL #		BOX BEAM GUARDRAIL		BOX BEAM TERMINAL SECTION - MBEAT #		BOX BEAM BRIDGE APPROACH SECTION TYPE 1		
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	
36+48.26	37+23.26	75.0	75.0							REMOVE PAVEMENT BEHIND GUARDRAIL
38+70.18	39+45.18	75.0	75.0							REMOVE PAVEMENT BEHIND GUARDRAIL
53+69.06	54+44.06	75.0	75.0							REMOVE PAVEMENT BEHIND GUARDRAIL
55+90.98	56+65.98	75.0	75.0							REMOVE PAVEMENT BEHIND GUARDRAIL
61+61.38	62+36.38	75.0	75.0							REMOVE PAVEMENT BEHIND GUARDRAIL
63+83.30	64+58.30	75.0	75.0							REMOVE PAVEMENT BEHIND GUARDRAIL
82+04.98	82+71.00 B.E.			18.0	18.0	1	1	1	1	
82+71.00 B.E.	83+09.00 B.E.									
83+79.00 B.E.	84+45.02			18.0	18.0	1	1	1	1	
91+36.98	92+03.00 B.E.			18.0	18.0	1	1	1	1	
92+03.00 B.E.	93+17.00 B.E.									
93+17.00 B.E.	93+83.02			18.0	18.0	1	1	1	1	
304+40.00	305+15.00 B.E.	75.0	75.0							REMOVE PAVEMENT BEHIND GUARDRAIL
307+65.00 B.E.	308+40.00	75.0	75.0							REMOVE PAVEMENT BEHIND GUARDRAIL
SUBTOTAL		600.0	600.0	72.0	72.0	4	4	4	4	
TOTAL		1,200.0		144.0		8		8		

= PAVEMENT REMOVAL BEHIND GUARDRAIL INCLUDED IN THE BID ITEM RESET W-BEAM GUARDRAIL.
SHOULDER GRAVEL INCLUDED IN THE BID TIEMS RESET W-BEAM GUARDRAIL & BOX BEAM TERMINAL SECTION - MBEAT.

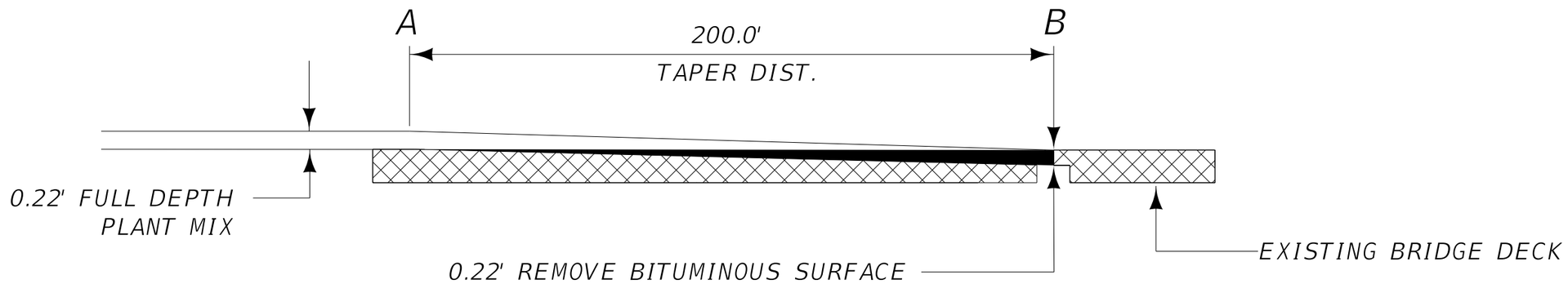
ADDITIONAL SURFACING (INCLUDED IN SURFACING FRAME)

STATION		linear feet				FOR	tons	AGGREGATE				BITUMINOUS MATERIAL			REMARKS
								sq. yards	tons		cu. yards	tons		gals.	
FROM	TO	GROSS	NET	+	-		HYDRATED LIME	COVER TYPE 1	PLANT MIX BIT. SURF. GR. S - 3/4"	PLANT MIX BIT. SURF. GR. S - MISC	SHOULDER GRAVEL #	ASPHALT CEMENT PG 64-28	EMULSIFIED ASPHALT CHFRS-2P	EMULSIFIED ASPHALT TACK	
						LEVELING			644			34.8			INCLUDES BRIDGES #06459 & #06460
						GUARDRAIL					30				
						PRIVATE APPROACH(10)			135			7.3		48	
						PUBLIC APPROACH(7)				246		13.3		86	
						FARM FIELD APPROACH(18)				58		3.1		21	
						INTERSECTION(1)			118			6.4		44	MILK RIVER RD & FRENCHMAN DAM RD
						PRIVATE APPROACH IN SACO(9)				122		6.6		14.0	12' PMS STRIP
						PUBLIC APPROACH IN SACO(6)			81			4.4		10.0	12' PMS STRIP
82+71.00 B.E.	83+09.00 B.E.	38.00	38.00			BRIDGE (24.0' WIDTH)		101					0.2		SEAL & COVER ONLY
92+03.00 B.E.	93+17.00 B.E.	114.00	114.00			BRIDGE (24.0' WIDTH)		304					0.5		SEAL & COVER ONLY
SUBTOTAL		~	~	~	~		~	406	978	426	30	75.9	0.7	223	

FOR INFORMATION ONLY. MILLINGS CAN BE USED AS SHOULDER GRAVEL. INCLUDED IN RESET W-BEAM GUARDRAIL & BOX BEAM TERMINAL SECTION - MBEAT BID ITEMS.

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CONNECTION TO BRIDGE ENDS



BRIDGE 1	
A	B
35+23.75	37+23.75
40+69.70	38+69.70

BRIDGE 2	
A	B
52+44.55	54+44.55
57+90.50	55+90.50

BRIDGE 3	
A	B
60+36.88	62+36.88
65+82.82	63+82.82

BRIDGE 4	
A	B
80+71.00	82+71.00
85+09.00	83+09.00

BRIDGE 5	
A	B
90+03.00	92+03.00
95+17.00	93+17.00

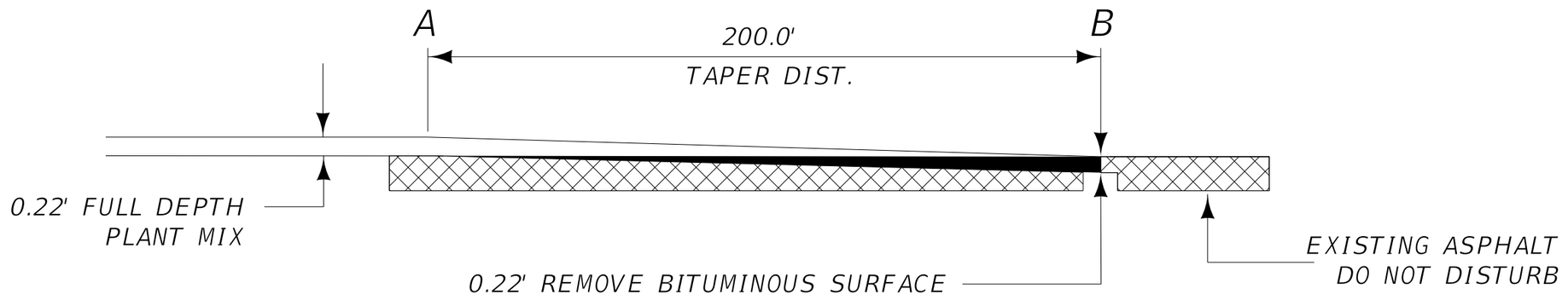
BRIDGE 6	
A	B
303+15.00	305+15.00
309+65.00	307+65.00

DETAIL
BRIDGE END
TAPER MILLING

NO SCALE

DocuSign Envelope ID: F52D337A-0691-4348-B32B-F122111F86B3

CONNECTION TO PTW



STATIONS	
A	B
2+11.20	0+11.20
344+90.40	346+90.40

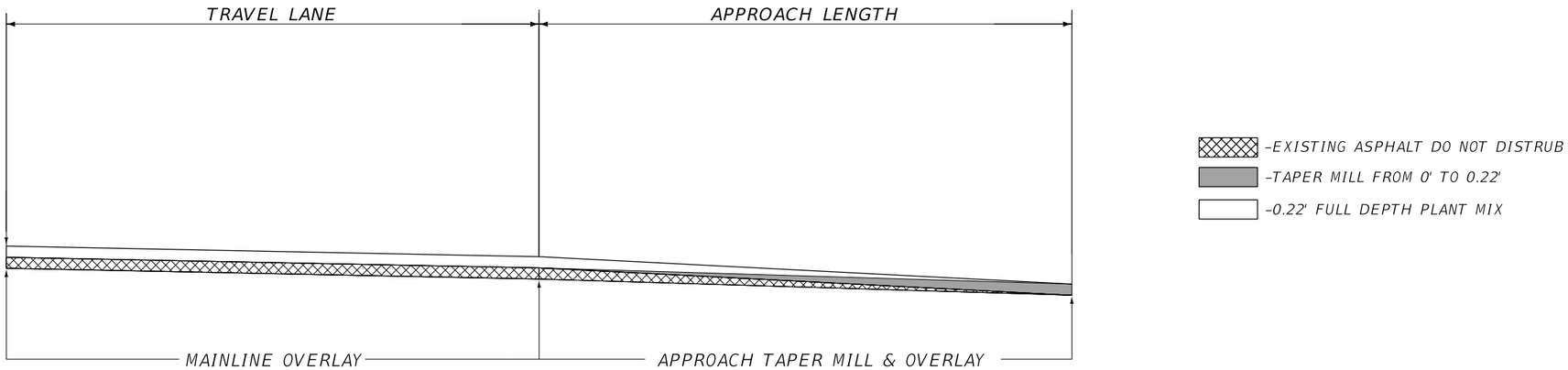
DETAIL
PTW
TAPER MILLING

NO SCALE

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AWARD COPY

DETAIL



-EXISTING ASPHALT DO NOT DISTRUB

-TAPER MILL FROM 0' TO 0.22'

-0.22' FULL DEPTH PLANT MIX

APPROACH MILLING DETAIL

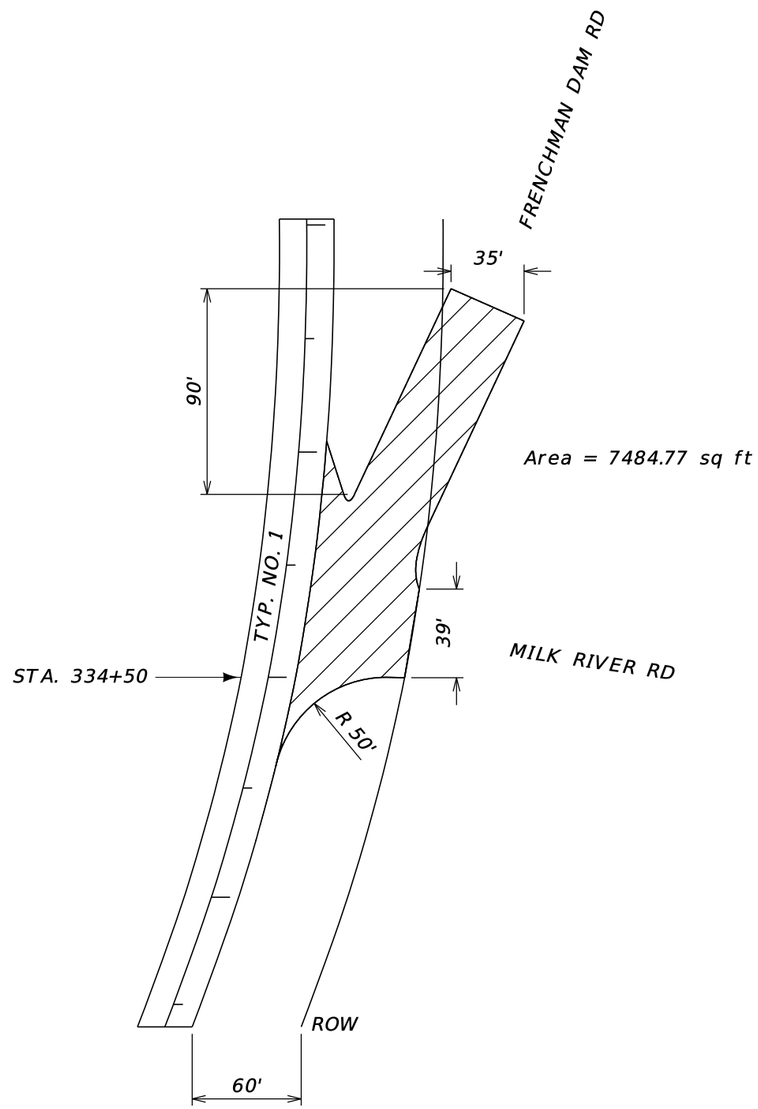
DETAIL

APPROACH TAPER MILLING

NO SCALE

3	MONTANA Department of Transportation	C:\DGN\9854000rddet004.dgn	DESIGNED BY	A BORSCHEL	1/13/2022	ROAD PLANS	SACO - NORTH	STPS 243-1(12)15
2		2/24/2022	REVIEWED BY					
		4:11:15 PM CPS - U3829	CHECKED BY			PHILLIPS COUNTY	UPN 9854000	8

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PAVE INTERSECTION
NORTH TO YIELD SIGN
AND EAST TO ROW

DETAIL

INTERSECTION DETAIL

NO SCALE

3	MONTANA Department of Transportation	C:\DGN\9854000rddet002.dgn	DESIGNED BY	A. BORSCHEL	9/8/2021	ROAD PLANS	SACO - NORTH	STPS 243-1(12)15
2		2/24/2022	REVIEWED BY					
		4:11:26 PM CPS - U3829	CHECKED BY			PHILLIPS COUNTY	UPN 9854000	9

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SUMMARY
SIGNING & DELINEATION QUANTITIES

MATERIAL	TOTAL	UNIT
SIGNS-ALUM REFL SHEET IV	85.4	SQ. FOOT
SIGNS-ALUM REFL SHEET XI	195.4	SQ. FOOT
SIGNS-ALUM SHEET INCR IV		SQ. FOOT
SIGNS-ALUM SHEET INCR XI		SQ. FOOT
OVERLAY-SHEET ALUMINUM		SQ. FOOT
POSTS-STEEL U SIGN	140	POUNDS
POLES-TREATED WOOD 4 IN	498	LINEAR FT.
POLES-TREATED WOOD 5 IN		LINEAR FT.
POLES-TREATED TIMBER-CLASS 4		LINEAR FT.
POLES-TREATED TIMBER-CLASS 3		LINEAR FT.
POSTS-TUBULAR STEEL		POUNDS
POSTS-TUBULAR STEEL-SQ-PERF		POUNDS
POSTS-STEEL STRUCTURAL SIGN		POUNDS
OVERHEAD STR/METAL-CANTILEVER		EACH
OVERHEAD STR/METAL-BRIDGE		EACH
HIGHWAY TRAFFIC STRIPING-WHITE		GAL.(S)
HIGHWAY TRAFFIC STRIPING-YELLOW		GAL.(S)
WORDS & SYMBOLS		GAL.(S)
DELINEATOR DES A	200	EACH
DELINEATOR DES B		EACH
DELINEATOR DES C		EACH
DELINEATOR DES D	12	EACH
DELINEATOR DES E		EACH
DELINEATOR DES F	17	EACH
DELINEATOR DES G		EACH
DELINEATOR DES H		EACH
REMOVE SIGNS	51	EACH
REMOVE SIGNS-GUIDE		EACH
RESET SIGNS		EACH
RESET SIGNS-GUIDE		EACH
FRANG SIGN POST BKWY-		EACH
FRANG SIGN POST BKWY-		EACH
SQ TUBLR SLIP BASE BKWY-3 IN		EACH

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AWARD COPY

SIGN LOCATION AND SPECIFICATIONS

REF. POST		SIGN NO.	PANEL SIZE	REFL SHTG TYPE: BACK-GROUND	REFL SHTG TYPE: 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.): ALUMINUM SHEET INCREMENT	SIGN PANEL (SQ. FT.): ALUMINUM SHEET OVERLAY	TIMBER POLE (LINEAR FT.): 4" TOP DIA.	TIMBER POLE (LINEAR FT.): 5" 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
21.296 RT		R1-1	36X36	XI	XI	6-0		4" DIA POLE		12-3		5-0	3-0	7.5 XI										1					R1-1
21.291 RT		M1-4(2) M6-4	24X24 21X15	XI XI		5-0		4" DIA POLE		13-4		7-0	3-0	4.0 XI 2.2 XI										1					US-2 ROUTE SHIELD *REPLACE IN EXISTING LOCATION
21.286 LT		R2-1	24X30	XI		*5-0		4" DIA POLE		12-6		7-0	3-0	5.0 XI										1					REPLACE SPEED LIMIT 25 *REPLACE IN EXISTING LOCATION
21.286 RT		D3 D3	REMOVE REMOVE																					1					ELM ST/HWY 243 REMOVE FROM POWER POLE
21.284 RT		D3 D3	30X10 30X10	IV IV	IV IV	6-0		4" DIA POLE		14-4		7-0	3-0	2.1 IV 2.1 IV										1					D3 = ELM ST
		D3 D3	30X10 30X10	IV IV	IV IV									2.1 IV 2.1 IV															D3 = HWY 243
		R1-1 -	30X30 -	XI -	XI -									5.2 XI -															R1-1
21.280 LT		CITY-1	BY OTHERS																										NEIGHBORHOOD WATCH
21.266 LT		M3-4 M1-12(243)	24X12 24X24	XI XI		*5-0		4" DIA POLE		12-9		7-0	3-0	2.0 XI 4.0 XI										1					REPLACE WEST / 243
21.266 RT		M2-1 M1-4(2)	21X15 24X24	XI XI		*5-0		4" DIA POLE		13-0		7-0	3-0	2.2 XI 4.0 XI										1					JUNCTION US-2
21.229 LT		D3 D3	30X10 30X10	IV IV	IV IV	6-0		4" DIA POLE		14-4		7-0	3-0	2.1 IV 2.1 IV										1					D3 = VAGG ST
		D3 D3	30X10 30X10	IV IV	IV IV									2.1 IV 2.1 IV															D3 = HWY 243
		R1-1 -	30X30 -	XI -	XI -									5.2 XI -															R1-1
21.227 LT		D3	REMOVE																					1					REMOVE D3 = MAPLE ST
21.215 RT		D3 D3	30X10 30X10	IV IV	IV IV	6-0		4" DIA POLE		14-4		7-0	3-0	2.1 IV 2.1 IV										1					D3 = MAPLE ST
		D3 D3	30X10 30X10	IV IV	IV IV									2.1 IV 2.1 IV															D3 = HWY 243
		R1-1 -	30X30 -	XI -	XI -									5.2 XI -															R1-1
21.196 LT		R2-1(15)	**											**															INSTALL 50' NORTH OF MAPLE
21.171 LT		D3 D3	REMOVE REMOVE																					1					FIRST AVE / HWY 243 REMOVE FROM POWER POLE
21.171 LT		D3 D3	30X10 30X10	IV IV	IV IV	6-0		4" DIA POLE		14-4		7-0	3-0	2.1 IV 2.1 IV										1					D3 = FIRST AVE
		D3 D3	30X10 30X10	IV IV	IV IV									2.1 IV 2.1 IV															D3 = HWY 243
		R1-1 -	30X30 -	XI -	XI -									5.2 XI -															R1-1
21.145 RT		D3 D3	36X10 36X10	IV IV	IV IV	6-0		4" DIA POLE		14-4		7-0	3-0	2.5 IV 2.5 IV										1					D3 = CHERRY ST
		D3 D3	30X10 30X10	IV IV	IV IV									2.1 IV 2.1 IV															D3 = HWY 243
		R1-1 -	30X30 -	XI -	XI -									5.2 XI -															R1-1

STOP 2 SPEED LIMIT 25 — ELM ST — HWY 243 — STOP — WEST 243 JCT 2 — VAGG ST — HWY 243 — STOP — MAPLE ST — MAPLE ST — HWY 243 — STOP — SPEED LIMIT 15 — FIRST AVE — HWY 243 — STOP — CHERRY ST — HWY 243 — STOP

SIGNS NOT LISTED ON SPECIFICATION SHEET TO REMAIN USE AS IS

* = INSTALL NEXT TO SIDEWALK

** = PAID FOR BY TRAFFIC INVESTIGATIONS

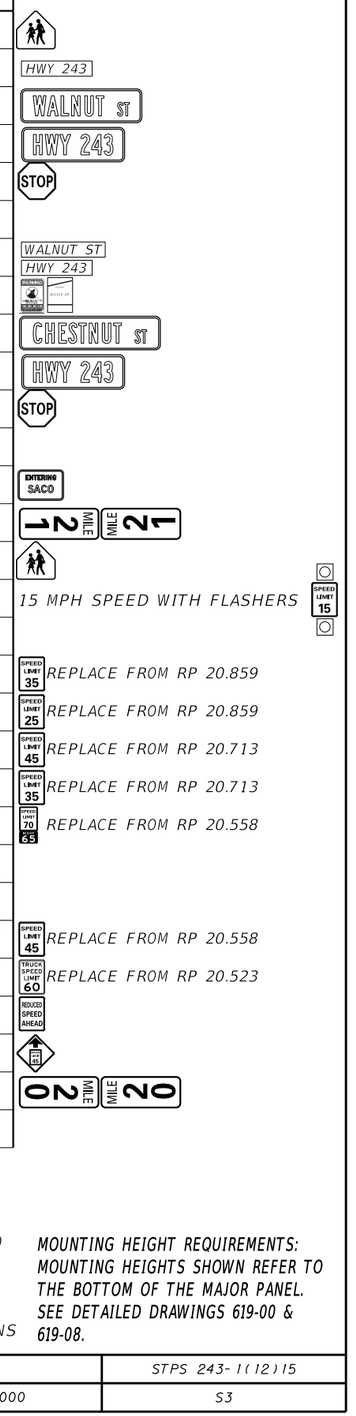
MOUNTING HEIGHT REQUIREMENTS: MOUNTING HEIGHTS SHOWN REFER TO THE BOTTOM OF THE MAJOR PANEL. SEE DETAILED DRAWINGS 619-00 & 619-08.

3 2 1	MONTANA Department of Transportation	C:\DGN\9854000sisum001.dgn 2/24/2022 4:10:48 PM CPS - U3829	NATHAN STYREN ERIC MATYE	SIGNING PLANS PHILLIPS COUNTY		SACO-NORTH UPN #9854000	STPS 243-1(12)15 S2

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SIGN LOCATION AND SPECIFICATIONS

REF. POST	RAMP NO.	SIGN NO.	PANEL SIZE	REFL SHTG TYPE: BACK-GROUND	REFL SHTG TYPE: LEGEND	FEET: CLEARANCE	FEET: SIGN SUPPORT SPACING	TYPE OF SUPPORT	FEET: 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.): ALUMINUM SHEET INCREMENT	SIGN PANEL (SQ. FT.): ALUMINUM SHEET OVERLAY	SIGN PANEL (SQ. FT.): 4" TOP DIA.	TIMBER POLE (LINEAR FT.): 5" TOP DIA.	STEEL POST(LBS.): ROUND TUBULAR	STEEL POST(LBS.): SQUARE TUBULAR	STEEL POST(LBS.): STRUCTURAL STEEL	STEEL POST(LBS.): "U" POST	BREAK AWAY	SIGNS/GUIDE: REMOVE	SIGNS/GUIDE: RESET	SIGNS/GUIDE: REMOVE	SIGNS/GUIDE: RESET	REMARKS
21.140 LT		S1-1	36X36	XI	XI	*5-0		4" DIA POLE		13-6		7-0	3-0	6.8 XI			14							1				FYG	REMOVE FROM POWER POLE AND PLACE ON NEW 4" POLE
21.135 RT		D3	REMOVE																					1					D3 = HWY 243
21.100 LT		D3 D3	36X10 36X10	IV IV	IV IV	6-0		4" DIA POLE		14-4		7-0	3-0	2.5 IV 2.5 IV			16							1					D3 = WALNUT ST
		D3 D3	30X10 30X10	IV IV	IV IV									2.1 IV 2.1 IV															D3 = HWY 243
		R1-1 –	30X30 –	XI –	XI –									5.2 XI –															R1-1
21.098 LT		D3	REMOVE																					1					D3 = WALNUT ST D3 = HWY 243
21.098 LT		CITY-1 CITY-2	BY OTHERS BY OTHERS																										NEIGHBORHOOD WATCH BUCKLE UP
21.025 LT		D3 D3	36X10 36X10	IV IV	IV IV	6-0		4" DIA POLE		14-4		7-0	3-0	2.5 IV 2.5 IV			16							1					D3 = CHESTNUT ST
		D3 D3	30X10 30X10	IV IV	IV IV									2.1 IV 2.1 IV															D3 = HWY 243
		R1-1 –	30X30 –	XI –	XI –									5.2 XI –															R1-1
21.020 RT		N6-1	36X24	IV	IV	10-0		4" DIA POLE		13-8		5-0	3-0	6.0 IV			14							1					ENTERING SACO
21.000 RT		D10-2 D10-2	10X27 10X27	IV IV	IV IV	4-0		2# STL U POST		9-6		4-0	3-0	1.3 IV 1.3 IV								20		1					D10-2 = 21
20.995 RT		S1-1	36X36	XI	XI	10-0		4" DIA POLE		13-6		5-0	3-0	6.8 XI			14							1				FYG	SCHOOL
20.803 RT		R2-1(15)	**											**															INSTALL 620' NORTH OF CHESTNUT STREET
20.766 LT		R2-1	24X30	XI		10-0		4" DIA POLE		12-4		7-0	3-0	5.0 XI			14							1					INSTALL 200' NORTH OF 15 MPH RT FLASHER ASSLY
20.766 RT		R2-1	24X30	XI		10-0		4" DIA POLE		12-4		5-0	3-0	5.0 XI			14							1					INSTALL 200' NORTH OF 15 MPH RT FLASHER ASSLY
20.646 LT		R2-1	24X30	XI		10-0		4" DIA POLE		12-4		5-0	3-0	5.0 XI			14							1					INSTALL 1420' NORTH OF CHESTNUT STREET
20.646 RT		R2-1	24X30	XI		10-0		4" DIA POLE		12-4		5-0	3-0	5.0 XI			14							1					INSTALL 1420' NORTH OF CHESTNUT STREET
20.515 LT		R2-1 R2-3A	24X30 24X18	XI	XI –	10-0		4" DIA POLE		12-4		5-0	3-0	5.0 XI 3.0 XI			14							1					INSTALL 90' SOUTH OF BRIDGE 06465 (S00243020+08001)
20.515 RT		R2-1	24X30	XI		10-0		4" DIA POLE		12-4		5-0	3-0	5.0 XI			14							1					INSTALL 90' SOUTH OF BRIDGE 06465 (S00243020+08001)
20.468 LT		R2-6A	24X30	XI		10-0		4" DIA POLE		12-4		5-0	3-0	5.0 XI			14							1					INSTALL 250' NORTH OF R2-1(70) LT
20.418 RT		R2-5A	REMOVE																					1					REDUCED SPEED AHEAD
20.411 RT		W3-5(45)	36X36	XI		10-0		4" DIA POLE		14-7		5-0	3-0	9.0 XI			16												W3-5 = 45 MPH NEW INSTALLATION
20.000 RT		D10-2 D10-2	10X27 10X27	IV IV	IV IV	4-0		2# STL U POST		9-6		4-0	3-0	1.3 IV 1.3 IV								20		1					D10-2 = 20



TYPE XI

FYG = FLUORESCENT YELLOW-GREEN SHEETING REQUIRED.

SIGNS NOT LISTED ON SPECIFICATION SHEET TO REMAIN USE AS IS

* = INSTALL NEXT TO SIDEWALK

** = PAID FOR BY TRAFFIC INVESTIGATIONS

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

DocuSign Envelope ID: F52D337A-0691-4348-B32B-F122111F86B3

SIGN LOCATION AND SPECIFICATIONS

REF. POST		SIGN NO.	PANEL SIZE	REFL SHTG TYPE: BACK-GROUND	REFL SHTG TYPE: LEGEND	FEET: CLEARANCE	FEET: SIGN SUPPORT SPACING	TYPE OF SUPPORT		FEET: 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.): ALUMINUM SHEET INCREMENT	SIGN PANEL (SQ. FT.): ALUMINUM SHEET OVERLAY	TIMBER POLE (LINEAR FT.): 4" TOP DIA.	TIMBER POLE (LINEAR FT.): 5" TOP DIA.	STEEL POST(LBS.): ROUND TUBULAR	STEEL POST(LBS.): SQUARE TUBULAR	STEEL POST(LBS.): STRUCTURAL STEEL	STEEL POST(LBS.): "U" POST	BREAKAWAY	SIGNS/GUIDE: REMOVE	SIGNS/GUIDE: RESET	SIGNS/GUIDE: REMOVE	SIGNS/GUIDE: RESET	REMARKS
19.746 LT		OM3-R	REMOVE																					1					REMOVE OM3
19.746 RT		OM3-L	REMOVE																										REMOVE OM3
19.737 LT		OM3-L	REMOVE																										REMOVE OM3
19.737 RT		OM3-R	REMOVE																										REMOVE OM3
19.646 RT		R1-1	30X30	XI	XI	6-0		4" DIA POLE		11-6			5-0	3-0	5.2 XI			12						1					R1-1
19.571 LT		OM3-R	REMOVE																					1					REMOVE OM3
19.571 RT		OM3-L	REMOVE																										REMOVE OM3
19.848 LT		OM3-L	REMOVE																										REMOVE OM3
19.848 RT		OM3-R	REMOVE																										REMOVE OM3
19.000 RT		D10-2 D10-2	10X27 10X27	IV IV	IV IV	4-0		2# STL U POST		9-6			4-0	3-0	1.3 IV 1.3 IV								20	1					D10-2 = 19
18.772 LT		W2-1	30X30	XI		10-0		4" DIA POLE		13-4			5-0	3-0	6.3 XI			14						1					CROSSROAD
18.641 RT		R1-1	30X30	XI	XI	6-0		4" DIA POLE		11-6			5-0	3-0	5.2 XI			12						1					R1-1
18.627 LT		R1-1	30X30	XI	XI	6-0		4" DIA POLE		11-6			5-0	3-0	5.2 XI			12						1					R1-1
18.000 RT		D10-2 D10-2	10X27 10X27	IV IV	IV IV	4-0		2# STL U POST		9-6			4-0	3-0	1.3 IV 1.3 IV								20	1					D10-2 = 18
17.662 RT		R1-1	30X30	XI	XI	6-0		4" DIA POLE		11-6			5-0	3-0	5.2 XI			12						1					R1-1
17.000 RT		D10-2 D10-2	10X27 10X27	IV IV	IV IV	4-0		2# STL U POST		9-6			4-0	3-0	1.3 IV 1.3 IV								20	1					D10-2 = 17
16.286 RT		R1-1	30X30	XI	XI	6-0		4" DIA POLE		11-6			5-0	3-0	5.2 XI			12						1					R1-1
16.000 RT		D10-2 D10-2	10X27 10X27	IV IV	IV IV	4-0		2# STL U POST		9-6			4-0	3-0	1.3 IV 1.3 IV								20	1					D10-2 = 16
15.175 LT		W1-2L	REMOVE																					1					LEFT CURVE
15.080 LT		W1-10LB	36X36	XI		10-0		4" DIA POLE		14-7			5-0	3-0	9.0 XI			16						1				FY	LEFT CURVE WITH INTERSECTING ROAD
15.079 RT		R2-6A	24X30	XI		10-0		4" DIA POLE		12-4			5-0	3-0	5.0 XI			14						1					REPLACE
14.913 LT		R2-1 R2-3A	24X30 24X18	XI	XI -	10-0		4" DIA POLE		12-4			5-0	3-0	5.0 XI			14						1					INSTALL 90' SOUTH OF BRIDGE 06465 (S00243020+08001)
14.898 RT		M3-2 M1-12	24X12 24X24	XI XI		10-0		4" DIA POLE		12-9			7-0	3-0	2.0 XI 4.0 XI			14						1					REPLACE EAST / 243
15.000 RT		D10-2 D10-2	10X27 10X27	IV IV	IV IV	4-0		2# STL U POST		9-6			4-0	3-0	1.3 IV 1.3 IV								20	1					D10-2 = 15
14.838 LT		R1-2	36X36X36	XI	XI	6-0		4" DIA POLE		11-6			5-0	3-0	3.9 XI			14						1					YIELD
14.833 LT		FWP-1	BY OTHERS																										COLE PONDS FISHING ACCESS
14.833 LT		W8-3	30 X 30	XI		10-0		4" DIA POLE		13-4			5-0	3-0	6.3 XI			14						1					PAVEMENT ENDS
TOTALS															85.4 IV 195.4 XI			498					140	51					

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

SIGNS NOT LISTED ON SPECIFICATION SHEET TO REMAIN USE AS IS

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.

DELINEATION TABLE		
	DESIGN "A"	200
	DESIGN "B"	___
	DESIGN "C"	___
	DESIGN "D"	12
	DESIGN "E"	___
	DESIGN "F"	17
	DESIGN "G"	___
	DESIGN "H"	___
	DESIGN "J"	___
	DESIGN "BJ"	___
	DESIGN "GJ"	___
		___

3	MONTANA Department of Transportation	C:\DGN\9854000sisum002.dgn	NATHAN STYREN	SIGNING PLANS		SACO-NORTH	STPS 243-1(12)15
2		2/24/2022	ERIC MATYE	PHILLIPS COUNTY		UPN 9854000	S4
1		4:11:03 PM CPS - U3829					

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ASSOCIATED PROJECT AGREEMENT NUMBERS	
P.E.	STPS 243-1(11)15

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS AND QUANTITIES

FEDERAL AID PROJECT STPS 243-1(12)15

SACO - NORTH

PHILLIPS COUNTY

BY _____

DATE _____

SCALES SHOWN ON BRIDGE PLANS SHEETS ARE FOR HALF SIZE (11X17) PRINTS FULL SIZE PRINTS ARE APPROXIMATELY TWICE ORIGINAL SCALE

SHEET NO. B1

LIST OF DRAWINGS AND ESTIMATED BRIDGE PLAN QUANTITIES

LIST OF DRAWINGS

SHEET NO.	DWG. NO.	TITLE
B1	24710	LIST OF DRAWINGS AND ESTIMATED BRIDGE PLAN QUANTITIES
B2	24711	NOTES, SPECIFICATIONS AND DECK REPAIR DETAIL
B3	24712	TIMBER RAIL REVISION DETAILS
B4	24713	TIMBER RAIL REVISION DETAILS

BRIDGE INFORMATION

MDT STRUCTURE NUMBER	NBI NUMBER	FEATURE CROSSED	ROUTE	REFERENCE POINT	ROADWAY	GENERAL LAYOUT DRAWING NO.
06458	S00243016+00001	MILK RIVER	S-243	15+0.523	EB/WB	3354
06459	S00243020+00001	DRAINAGE	S-243	19+0.745	EB/WB	1484
06460	S00243020+02001	DRAINAGE	S-243	20+0.145	EB/WB	1484
06463	S00243020+06001	DRAINAGE	S-243	20+0.120	EB/WB	18080
06464	S00243020+07001	DRAINAGE	S-243	20+0.286	EB/WB	18075
06465	S00243020+08001	BEAVER CREEK OVERFLOW	S-243	20+0.611	EB/WB	18070

REHABILITATION WORK SUMMARY

MDT STRUCTURE NUMBER	BRIDGE DECK CRACK SEAL	REVISE BRIDGE RAIL	**SEAL AND COVER	CLASS A BRIDGE DECK REPAIR	CLASS B BRIDGE DECK REPAIR
06458	✓			✓	✓
06459		✓	✓		
06460		✓	✓		
06463	✓			✓	✓
06464	✓			✓	✓
06465	✓			✓	✓

**See Road Plans.

ESTIMATED BRIDGE PLAN QUANTITIES

MDT STRUCTURE NUMBER	BRIDGE DECK CRACK SEAL (YD^2)	#REVISE TIMBER BRIDGE RAIL – BOX BEAM (LN. FT.)	*CLASS A BRIDGE DECK REPAIR (YD^2)	*CLASS B BRIDGE DECK REPAIR (YD^2)
06458	671.3		5.0	1.0
06459		228.0		
06460		76.0		
06463	450.6		2.0	1.0
06464	450.6		6.0	1.0
06465	450.6		4.0	1.0
TOTAL	2023.1	304.0	17.0	4.0

* Class A Bridge Deck Repair and Class B Bridge Deck Repair quantities are provided for contingency. The Project Manager will identify any Class A Bridge Deck Repair and Class B Bridge Deck Repair areas if they are needed.

\# For Information only – 3 cubic yards of plant mix surfacing is estimated to replace the removed material necessary to access the top of the existing bridge deck. The cost of the removal and replacement of the plant mix to be included unit price bid for Revise Timber Bridge Rail – Box Beam.

REVISED	REVISED	REVISED	REVISED		CHECKED	S.A.W.	12-21-21		
					DRAWN	L.D.C.	11-05-21		
					DESIGNED	L.D.C.	11-05-21		

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MDT BRIDGE BUREAU

UPN NUMBER 9854000

DRAWING NO. 24710

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AWARD COPY

GENERAL NOTES

SPECIFICATIONS:
Plans were prepared from original drawings and as-built drawings. No additional survey information was procured for this project. Existing structure dimensions may vary from those shown on the drawings. Verify all dimensions necessary to complete the work.

The current version of the Standard and Supplemental Specifications for Road and Bridge Construction, adopted by the Montana Department of Transportation, applies.

See Standard Specifications and Special Provisions for Traffic Control and Sequence of Operations.

All dimensions are in feet and inches except as noted. Verify all necessary dimensions of the existing structures in the field before ordering materials. Obtain approval of shop plans from the State of Montana, Department of Transportation before beginning fabrication. If the dimensions and details of the existing structure are not as shown on the plans, vary construction as necessary to best suit existing conditions and the nature of the intended work.

BRIDGE DECK REPAIR:
See the bridge deck repair section of the Standard Specifications for allowable repair concrete options.

Do not allow traffic onto the repaired deck until the repair concrete has reached 3500-psi compressive strength minimum.

Right and Left side of the structure are referenced to increasing stationing.

Submit for approval any substitution of rapid setting Portland cement concrete. Traffic will no be permitted on concrete repairs until the specified strength is attained.

See details for overlay treatment at guard angles.

See Bridge Work Summary for overlay treatment at a specific location.

BRIDGE RAIL NOTES

GALVANIZING:
Galvanize all bolts, nuts, washers and pipe sleeves in accordance with ASTM F 2329. Galvanize metal guardrail in accordance with ASTM Specification A653 or AASHTO M111.

REFLECTORS:
Place a reflector on each end rail post and at approximately equal spacing (every third rail post but not to exceed 25 feet) between end rail posts. Mount reflectors with reflectorized face toward oncoming traffic. See Dtl. Dwg. No. 606-50 for reflector detail. Mount reflector to beam post with an approved adhesive. Include the cost of the reflector in the unit price bid for Revise Timber Bridge Rail - Box Beam.

PAYMENT:
Revise Timber Bridge Rail - Box Beam is paid for by the linear foot which is full compensation for all resources necessary to complete the item. Use posts and plates conforming to AASHTO M270 Grade 36T3.

ERECTION:
Set the rail parallel to the roadway grade. Set rail posts perpendicular to adjacent roadway grade and vertical in relation to roadway cross slopes. Adjust rail to proper rail height using vertical slots in rail posts.

PAINTING:
Paint all posts, structural tubing and plates (except as noted) in accordance with the Standard Specifications. Galvanizing the posts, structural tubing and plates in accordance with AASHTO M111 is allowed.

SELECT STRUCTURAL TIMBER FOR SOLID BRIDGING:
Use standard sawn inter-mountain Douglas Fir, Western Larch or Pacific Coast Douglas Fir conforming to AASHTO M168 meeting the requirements for numerical stress values shown on the table below for Dense No. 1 timber for solid bridging. Clearly note the grade of timber on the shop plans to avoid oversight. AASHTO classification for solid bridging is Beams and Stringers. Use treated timber meeting the requirements of Standard Specifications Section 706.

DESCRIPTION	EXTREME FIBER IN BENDING Fb & TENSION PARALLEL TO GRAIN Ft		HORIZ. SHEAR Fv	COMPRESSION		MODULUS OF ELASTICITY E
				PERPENDICULAR TO GRAIN Fc ⊥	PARALLEL TO GRAIN Fc	
Solid Bridging	Fb	Ft	85	730	1100	1,700,000
	1550	775				

DIMENSIONS:
Details shown apply to both sides for the entire length of the structure.

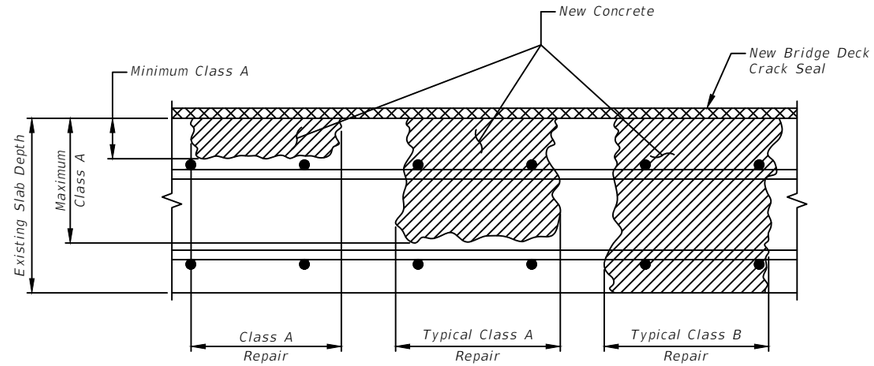
Remove existing rails, rail posts, curb and hardware as shown. All removed items remain the property of the State. Set aside for pickup by State Forces. Removal costs are included in the unit price bid for Revise Timber Bridge Rail - Box Beam.

Replace any timber which is to be incorporated in the rehabilitated structure that is damaged during construction at no additional cost to the State.

Plug open holes exposed by revisions with treated dowles. Thoroughly coat all new holes, cuts and chamfers as per Standard Specifications.

See Standard Specifications Section 711 for hardware material properties, unless otherwise noted.

FABRICATION:
For the purposes of fabrication, this rail system is considered an ancillary item. The requirements of subsection 1.3.6 of AASHTO/AWS D1.5 apply.



BRIDGE DECK REPAIR AND THIN OVERLAY DEFINITION
No Scale

SHEET NO.
B2

NOTES, SPECIFICATIONS AND DECK REPAIR DETAIL

SCALE: No Scale

PROJECT NAME
SACO - NORTH

MDT STRUCTURE ID
MULTIPLE

FEDERAL AID PROJECT
STPS 243-1(12)15

COUNTY
PHILLIPS

REVISED	REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED
				S.A.W.	L.D.C.	L.D.C.
				12-21-21	11-05-21	11-05-21

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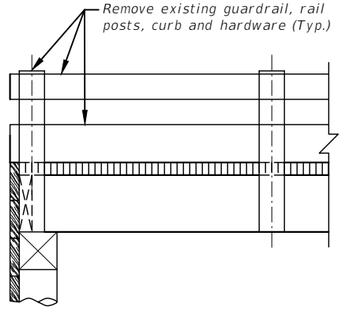
MONTANA DEPARTMENT OF TRANSPORTATION
BRIDGE BUREAU

UPN NUMBER
9854000

DRAWING NO.
24711

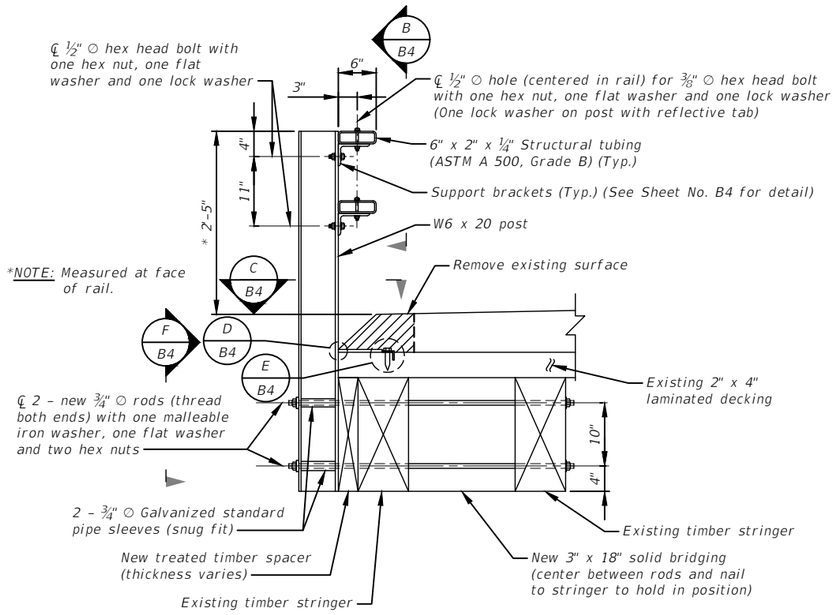
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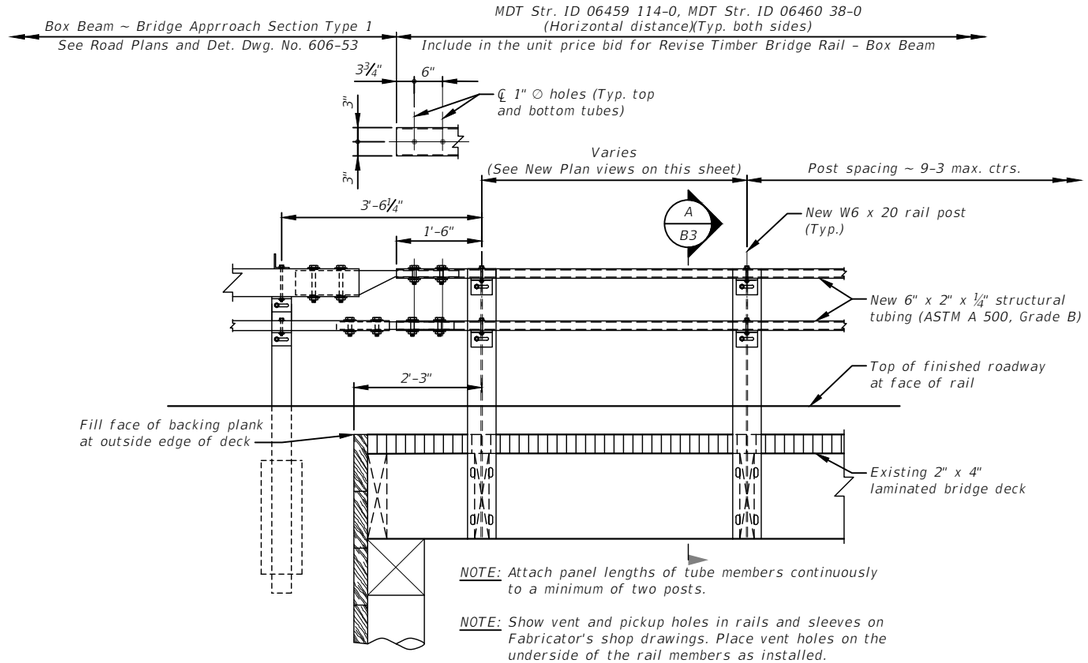
PARTIAL EXISTING ELEVATION VIEW

Scale ~ 1/4"=1'-0"



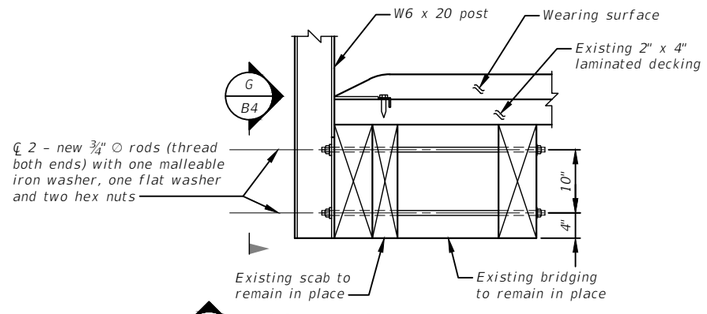
A B3 **POSTS BETWEEN BENTS**

Scale ~ ½"=1'-0"



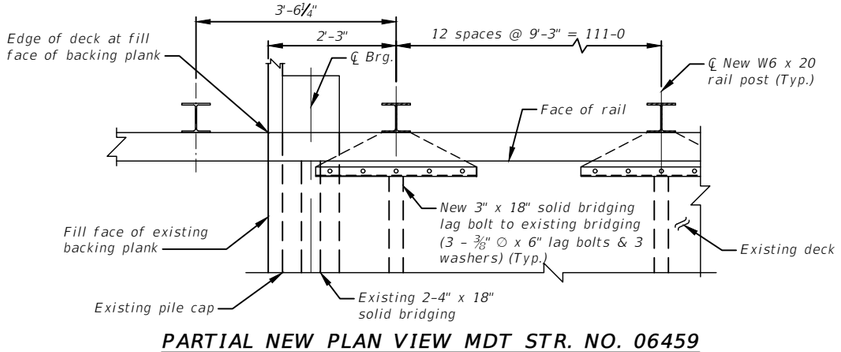
PARTIAL NEW ELEVATION VIEW

Scale ~ ⅜"=1'-0"



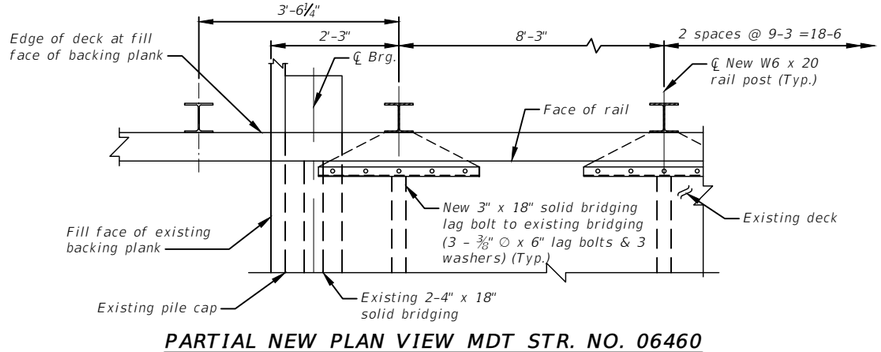
A B3 **POST AT ℄ INTERMEDIATE BENT**

No Scale



PARTIAL NEW PLAN VIEW MDT STR. NO. 06459

Scale ~ ⅜"=1'-0"



PARTIAL NEW PLAN VIEW MDT STR. NO. 06460

Scale ~ ⅜"=1'-0"

SHEET NO. B3

TIMBER RAIL REVISION DETAILS

SCALE: As Noted

PROJECT NAME SACO - NORTH

MDT STRUCTURE ID 06459, 06460

FEDERAL AID PROJECT STPS 243-1(12)15

COUNTY PHILLIPS

REVISED				CHECKED	S.A.W.	12-21-21
REVISED				DRAWN	L.D.C.	11-05-21
REVISED				DESIGNED	L.D.C.	11-05-21
REVISED						

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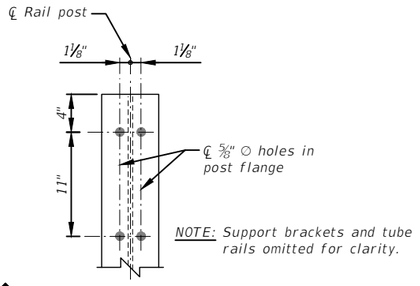
MONTANA DEPARTMENT OF TRANSPORTATION BRIDGE BUREAU

UPN NUMBER 9854000

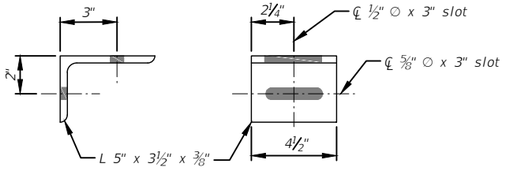
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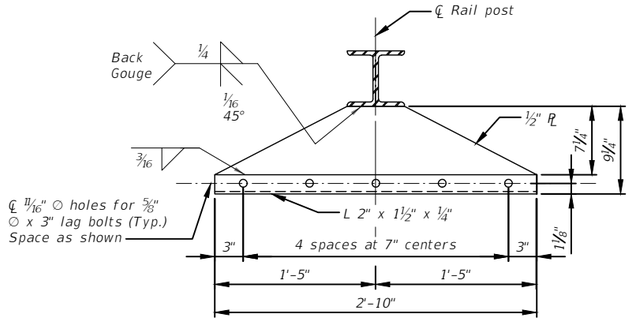
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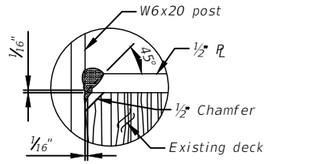
B / B4 **RAIL SUPPORT BRACKET MOUNTING**
Scale ~ ¾"=1'-0"



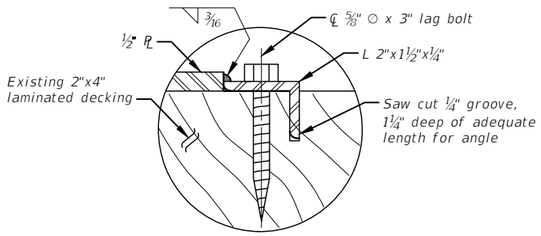
SUPPORT BRACKET DETAIL
Scale ~ 1 ½"=1'-0"



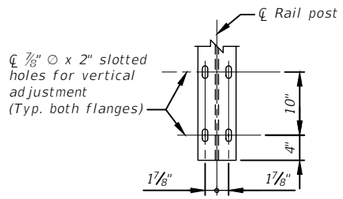
C / B4 **POST ANCHORAGE**
Scale ~ ¾"=1'-0"



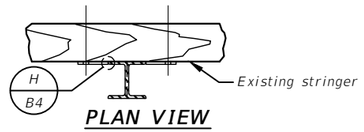
D / B4 **POST ANCHORAGE DETAIL**
Scale ~ 3"=1'-0"



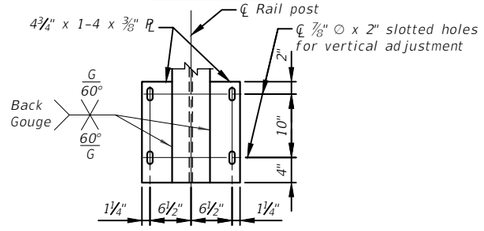
E / B4 **POST ANCHORAGE DETAIL**
Scale ~ 3"=1'-0"



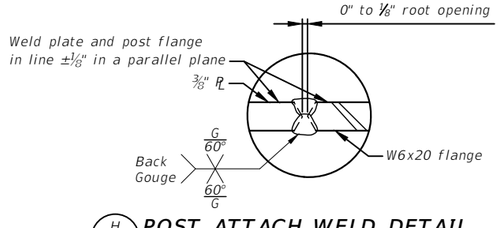
F / B4 **POST ATTACHMENT BETWEEN BENTS**
Scale ~ ½"=1'-0"



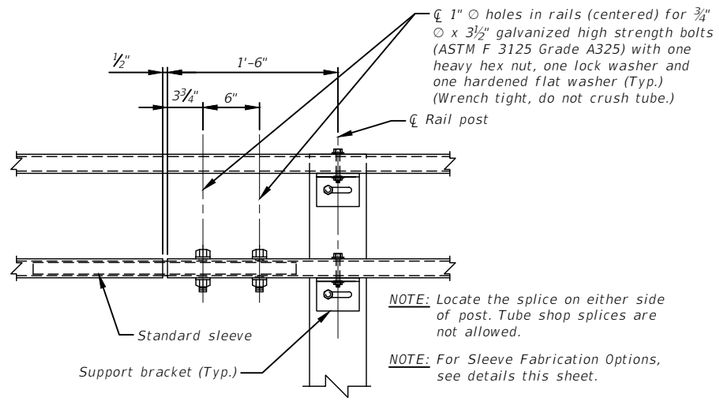
H / B4 **PLAN VIEW**



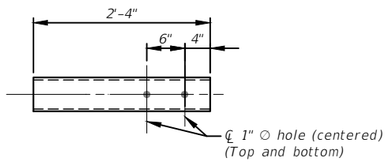
G / B4 **POST ATTACH AT INTERMEDIATE BENT**
Scale ~ ½"=1'-0"



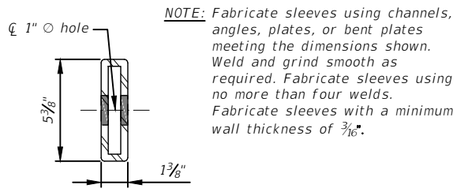
H / B4 **POST ATTACH WELD DETAIL**
Scale ~ 6"=1'-0"



TUBE SPLICE DETAIL
Scale ~ ¾"=1'-0"



STANDARD SLEEVE DETAIL
Scale ~ ½"=1'-0"



SLEEVE FABRICATION OPTIONS
Scale ~ 1 ½"=1'-0"

SHEET NO. B4

TIMBER RAIL REVISION DETAILS

SCALE: As Noted

PROJECT NAME
SACO - NORTH

MDT STRUCTURE ID
06459, 06460

FEDERAL AID PROJECT
STPS 243-1(12)15

COUNTY
PHILLIPS

REVISED				
REVISED				
REVISED				
REVISED				
CHECKED	S.A.W.	12-21-21		
DRAWN	T.D.C.	11-05-21		
DESIGNED	T.D.C.	11-05-21		

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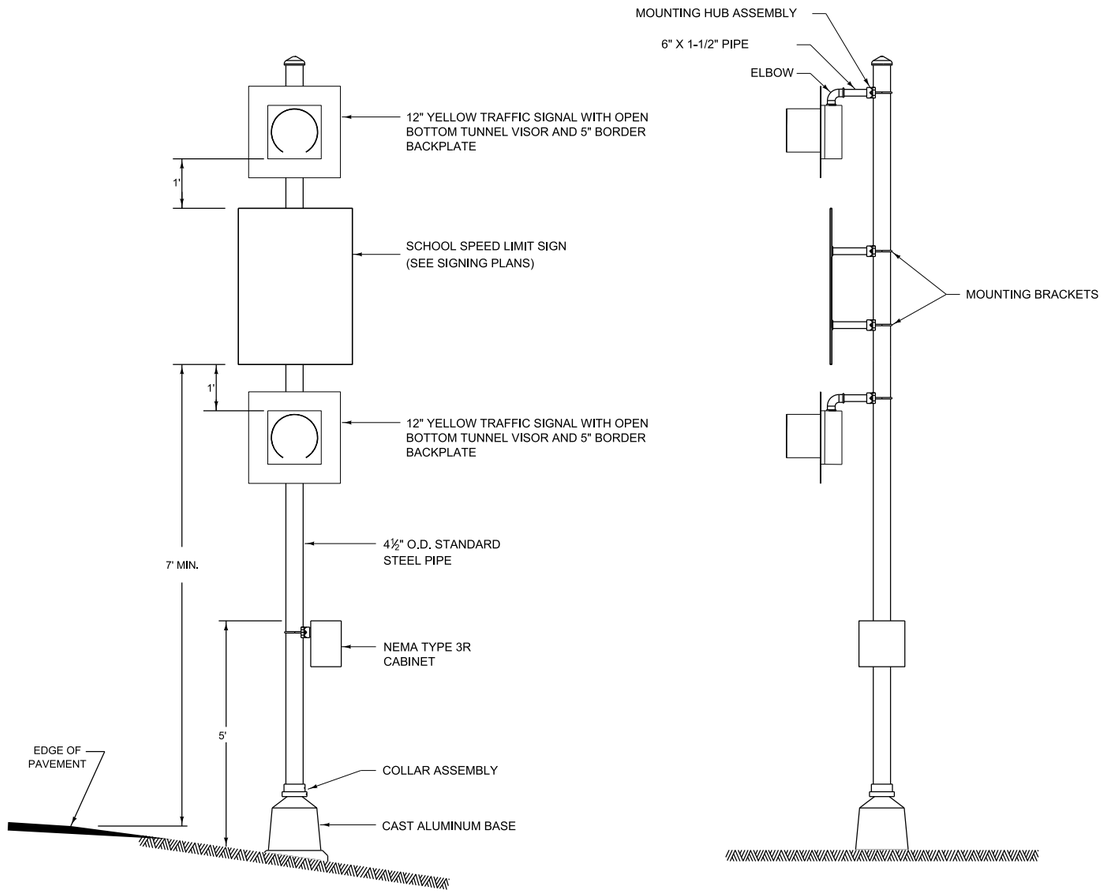
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MONTANA DEPARTMENT OF TRANSPORTATION BRIDGE BUREAU

UPN NUMBER
9854000

DRAWING NO.
24713

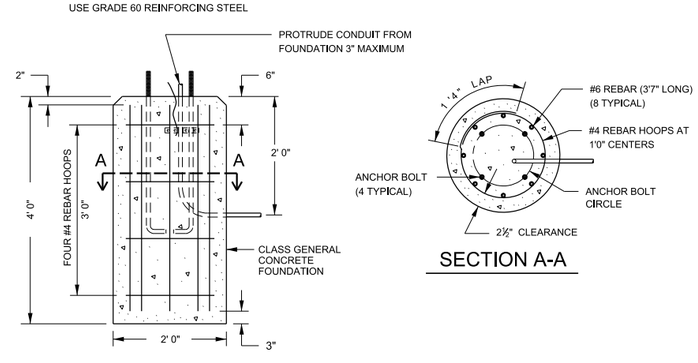
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FOR SIGN CLEARANCE FROM EDGE OF ROADWAY, REFER TO SIGNING PLANS.

TRIM TOP OF PIPE TO MEET BEACON MOUNTING REQUIREMENTS.

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



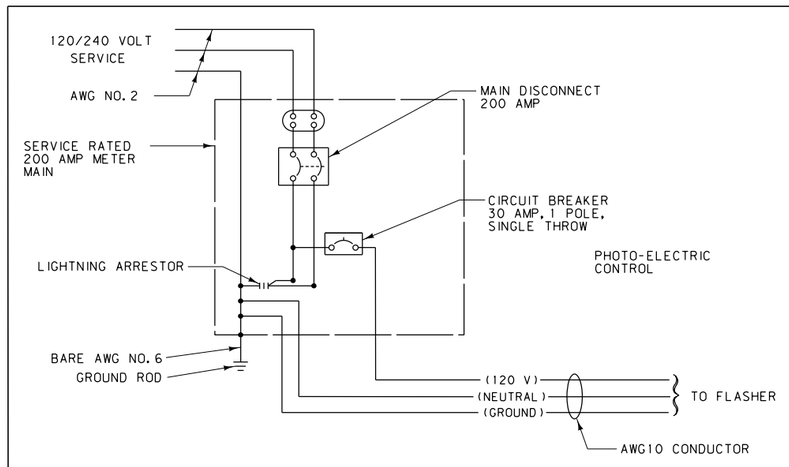
SECTION A-A

NO SCALE

ELECTRICAL QUANTITY SUMMARY

		MATERIAL	2-LANE RURAL	2-LANE URBAN	TOTAL RURAL	TOTAL	UNIT
	616 343 920	CONDUIT-PLASTIC 2 IN		200		200	LNFT
	616 783 006	PULL BOX-COMPOSITE TYPE 1		1		1	EACH
	617 000 000	FOUNDATION-CONCRETE		1		1	CUYD
	617 123 110	CONDUCTOR-COPPER AWG10-600V		600		600	LNFT
	617 333 100	SERV ASSEMBLY		2		2	EACH
*	104 030 025	MISCELLANEOUS ITEMS-INSTALL		2		2	EACH

* STATE FURNISHED ITEM

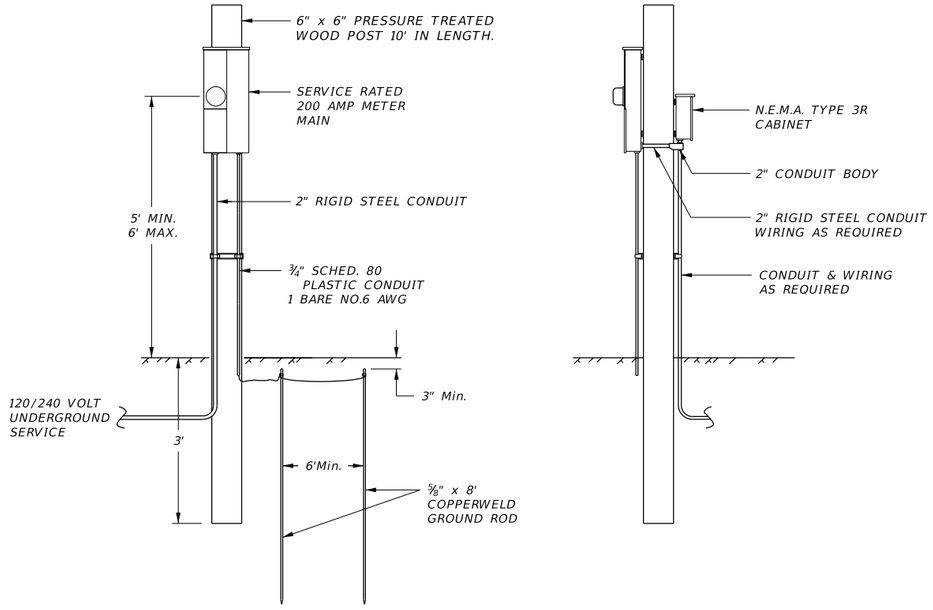


SERVICE WIRING DIAGRAM

3	MONTANA Department of Transportation	C:\DGN\9854000eldet001.dgn	DESIGNED BY	DC	1/2022	ELECTRICAL PLANS		SACO - NORTH / STPS 243-1(12)15
2		2/25/2022	REVIEWED BY					UPN 9854000 / E1
1		12:53:18 PM CPS - U2593	CHECKED BY			PHILLIPS COUNTY		

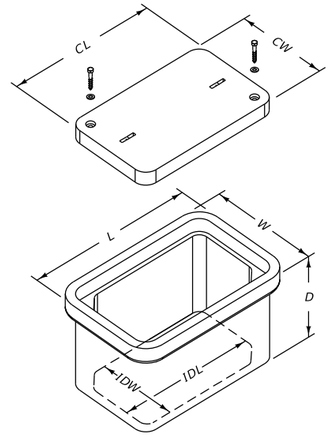
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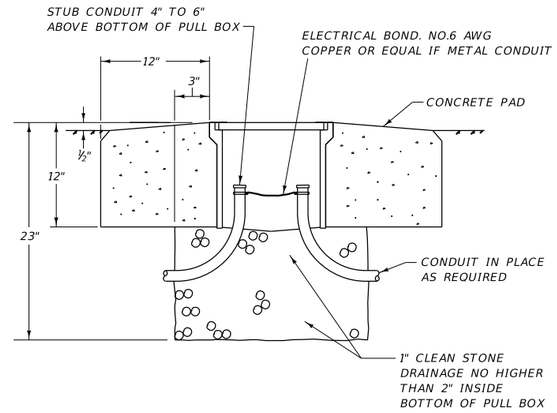


UNDERGROUND SERVICE ASSEMBLY DETAIL

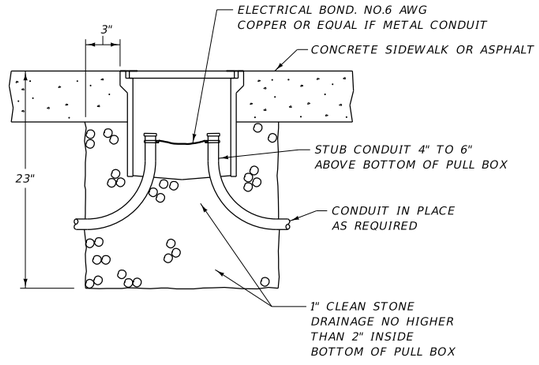
UNDERGROUND SERVICE
ASSEMBLY DETAIL
NO SCALE



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

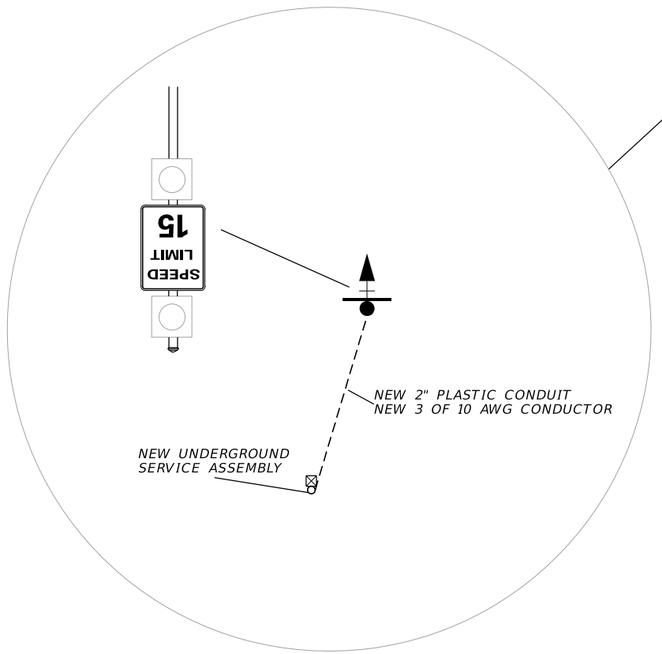
PB2

REVISED: 15-APR-2014

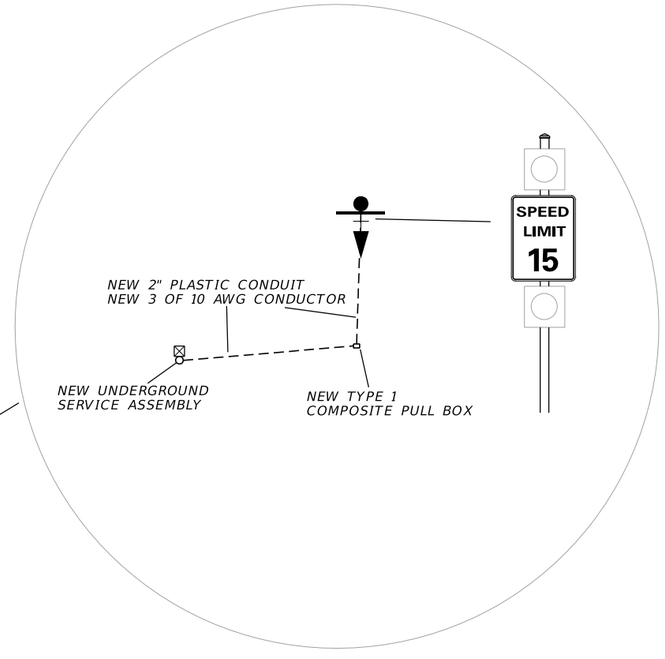
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2		2/25/2022	REVIEWED BY						
1		12:53:22 PM CPS - U2593	CHECKED BY			PHILLIPS COUNTY		UPN 9854000	E2

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NOTE:
COORDINATE WITH NORTHWESTERN ENERGY
FOR SERVICE ASSEMBLY LOCATIONS







3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9854000elpln001.dgn	DESIGNED BY	Dan Cunningham	1/2022	ELECTRICAL PLANS	SACO - NORTH	STPS 243-1(12)15
2		2/25/2022	REVIEWED BY					
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