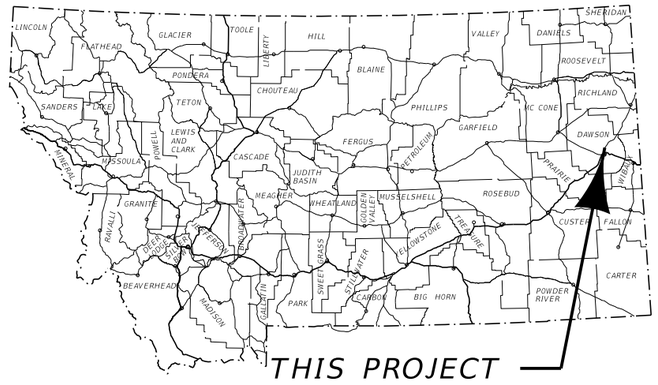
AWARD COPY



MONTANA DEPARTMENT OF TRANSPORTATION

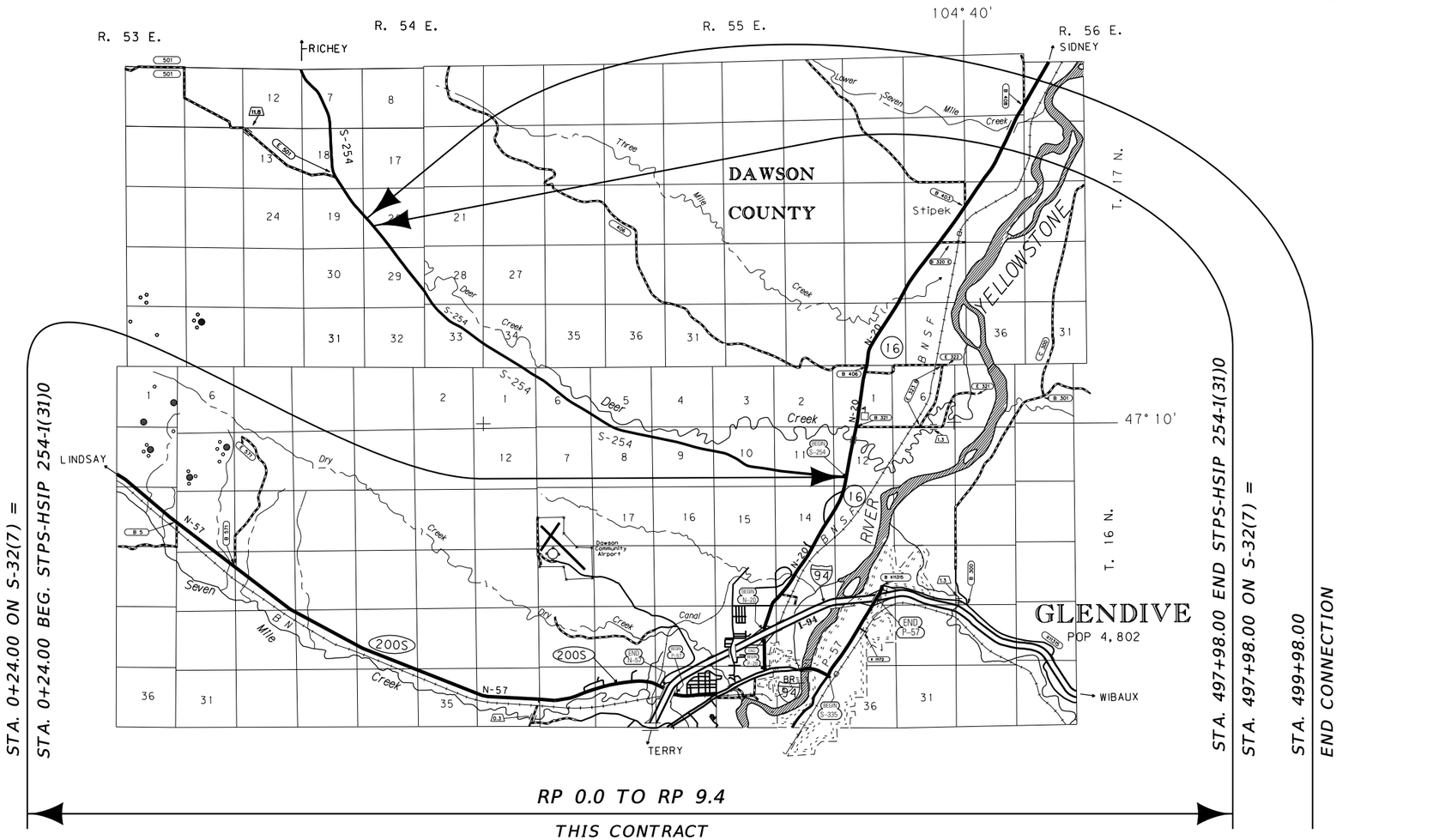
FEDERAL AID PROJECT STPS-HSIP 254-1(31)0
PLANT MIX OVERLAY, SEAL & COVER
JCT MT 16 - NORTHWEST (S-254)
DAWSON COUNTY

PROJECT DESIGN DATA		
PRESENT 2019	A.D.T. =	370
LETTING 2020	A.D.T. =	370
DESIGN 2040	A.D.T. =	450
	D.H.V. =	60 MPH
	TRUCKS =	20.3%
	V. =	50
	18 KIP ESAL'S =	37
	GROWTH RATE =	1.0%

LETTING DATE - _____

LENGTH 9.4 MILES

SURFACING SOURCES - CONTRACTOR FURNISHED



3	MDT	MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9561000rdtl001.dgn	DESIGNED BY M. Nichols	5/7/2019	ROAD PLANS
2			1/29/2020	REVIEWED BY		UPN 9561000
			8:00:46 AM CPS - U511	CHECKED BY		

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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. (PROJECT SPECIFIC)
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)
EMULSIFIED ASPHALT - TACK (CONCRETE SURFACES)	= 0.10 GAL. PER SQ.YARD (UNDILUTED)
SEAL	= 0.42 GAL. PER SQ.YARD
COVER	= 25 LBS. PER SQ.YARD
LEVELING	= 75 TONS PER MILE

APPROACHES

PROVIDE THE FOLLOWING SURFACING:
0.20' PLANT MIX BITUMINOUS SURF.

QUANTITIES FOR ONE PRIVATE APPROACH:

AVERAGE LENGTH	= 12 linear feet
PLANT MIX BITUMINOUS SURF.	= 8.1 tons
ASPHALT CEMENT	= 0.44 tons
EMULSIFIED ASPHALT-TACK	= 3.0 gals.

QUANTITIES FOR ONE FARM FIELD APPROACH:

AVERAGE LENGTH	= 3 linear feet
PLANT MIX BITUMINOUS SURF.	= 2.3 tons
ASPHALT CEMENT	= 0.12 tons
EMULSIFIED ASPHALT-TACK	= 1.0 gals.

MAILBOX TURNOUTS

QUANTITIES FOR ONE MAILBOX TURNOUT WITH APPROACH: (14 TURNOUTS)

PLANT MIX BITUMINOUS SURF.	= 23.8 tons
ASPHALT CEMENT	= 1.29 tons
EMULSIFIED ASPHALT-TACK	= 9.0 gals.

QUANTITIES FOR ONE MAILBOX TURNOUT WITHOUT APPROACH: (3 TURNOUTS)

PLANT MIX BITUMINOUS SURF.	= 17.7 tons
ASPHALT CEMENT	= 0.96 tons
EMULSIFIED ASPHALT-TACK	= 7.0 gals.

ASBUILTS

FOR HORIZONTAL ALIGNMENT AND STATIONING. REFER TO THE FOLLOWING "AS-BUILTS PROJECTECT(S):

S-32(7)	- RECONSTRUCT
SR 254-1(1)0	- RESURFACING & DRAINAGE
STPS 254-1(23)0	- OVERLAY

UTILITIES

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

WETLANDS

WETLANDS MAY EXIST ADJACENT TO THE ROADWAY AND BEYOND THE PROJECT LIMITS. A WETLAND DELINEATION HAS NOT BEEN COMPLETED FOR THIS PROJECT. IMPACTS TO WETLANDS AREAS ARE NOT ANTIPATED 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.

LEVELING

LEVELING AREAS TO BE DETERMINED BY THE ENGINEERING PROJECT MANAGER AND THE CONTRACTOR.

LINEAR DATA

LENGTH OF ROADWAY	2 LANE RURAL	49,720.30 ft
TOTAL LENGTH OF STPS-HSIP 254-1(31)0	2 LANE RURAL	49,720.30 ft

AWARD COPY

TYPICAL SECTION NO. 1

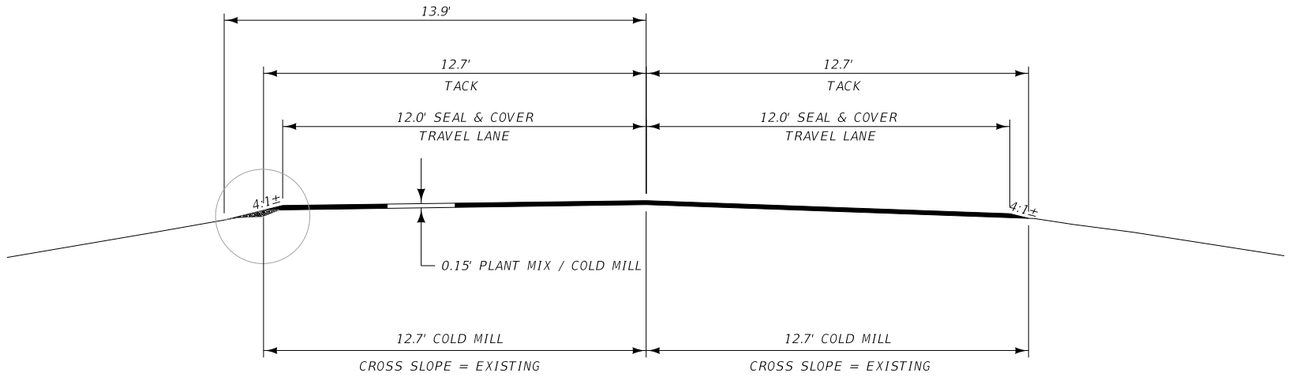
MAINLINE

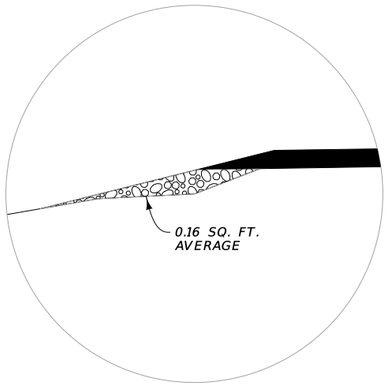
0+24.00	TO	2+24.00	TYP. NO. 1 THEN TO TYP. NO. 2
497+98.00	TO	499+98.00	CONNECTION

LEGEND:

PLANT MIX

℄





QUANTITIES								
UNIT	AGGREGATE			UNIT	BITUMINOUS MATERIAL			
	COVER	PLANT MIX	SHOULDER GRAVEL		ASPHALT CEMENT	SEAL	EMULSIFIED ASPHALT TACK *
AREA square feet		3.71	0.16	square yards PER STATION		267	282
cubic yards PER STATION		13.7	0.6	tons PER STATION	1.43	0.48	
tons PER STATION		26.4		gals. PER STATION			14
square yards PER STATION	267						

* BASED ON ONE APPLICATION

TYPICAL SECTION NO. 2

MAINLINE

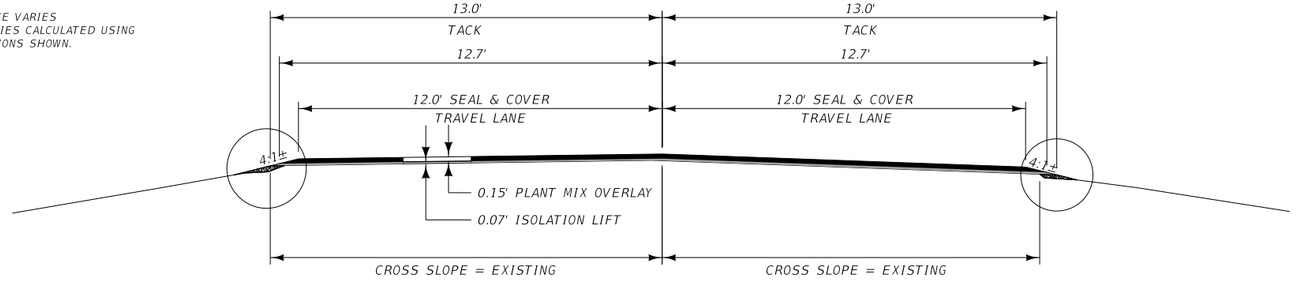
2+24.00				
118+86.10	BK TO	118+76.30	AH	EQUATION
138+50.00	BK TO	139+00.00	AH	EQUATION
223+62.30	BK TO	223+41.30	AH	EQUATION
289+00.40	BK TO	289+13.50	AH	EQUATION
412+03.50	BK TO	412+24.90	AH	EQUATION
		497+98.00		THEN TO TYP. NO. 1

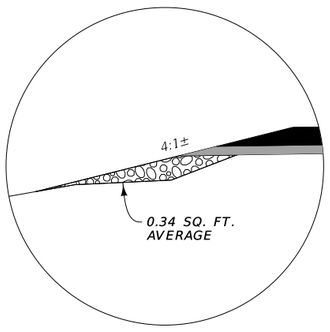
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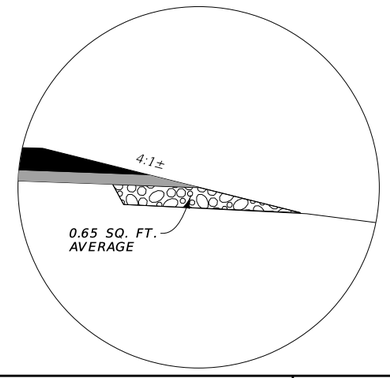
PLANT MIX

ISO. LIFT

DISTANCE VARIES
QUANTITIES CALCULATED USING
DIMENSIONS SHOWN.







QUANTITIES									
UNIT	AGGREGATE				UNIT	BITUMINOUS MATERIAL			
	COVER	PLANT MIX	PLANT MIX ISO. LIFT	SHOULDER GRAVEL		ASPHALT CEMENT	ASPHALT CEMENT ISO. LIFT	SEAL	EMULSIFIED ASPHALT TACK *
AREA square feet		3.71	1.80	0.99	square yards PER STATION			267	578
cubic yards PER STATION		13.7	6.7	3.7	tons PER STATION	1.43	0.70	0.48	
tons PER STATION		26.4	12.9		gals. PER STATION				29
square yards PER STATION	267								

* BASED ON TWO APPLICATIONS

3	MDT	MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9561000rdtyp001.dgn	DESIGNED BY M.Nichols	5/7/2019	ROAD PLANS	JCT MT 16 - NORTHWEST (S-254) / STPS-HSIP 254-1(31)0
2			1/29/2020	REVIEWED BY			
			8:01:01 AM CPS - U511	CHECKED BY		DAWSON COUNTY	UPN 9561000 / 3

SUMMARY

SURFACING

STATION		linear feet				FOR	tons	AGGREGATE					BITUMINOUS MATERIAL				REMARKS
								sq. yards	tons			cu. yards	tons			gallons	
FROM	TO	GROSS	NET	+	-		HYDRATED LIME	COVER TYPE 1	PLANT MIX BIT. SURF. GR. S - 3/4"	PLANT MIX BIT. SURF. GR. S - 3/4" ISO. LIFT	PLANT MIX BIT. SURF. GR. S - MISC	SHOULDER GRAVEL	ASPHALT CEMENT PG 70-28	ASPHALT CEMENT PG 70-28 ISO. LIFT	SEAL CRS-2P	EMULSIFIED ASPHALT TACK	
0+24.00	2+24.00	200.00	200.00					534	53			1	2.9		1.0	28	TYPICAL NO. 1
2+24.00																	
118+86.10 BK	118+76.30 AH			9.80		EQUATION											
138+50.00 BK	139+00.00 AH				50.00	EQUATION											
223+62.30 BK	223+41.30 AH			21.00		EQUATION											
289+00.40 BK	289+13.50 AH				13.10	EQUATION											
412+03.50 BK	412+24.90 AH				21.40	EQUATION											
	497+98.00	49,574.00	49,520.30					132,219	13,073	6,388		1,832	708.1	346.6	237.7	14,361	TYPICAL NO. 2
						ADDITIONAL SURFACING		653	816		767	1	72.8	~	1.2	370	
SUBTOTAL									13,942	6,388			783.8	346.6			
TOTAL		49,774.00	49,720.30	30.80	84.50		295	133,406	20,330		767	1,834	1,130.4		239.9	14,759	

ADDITIONAL SURFACING (INCLUDED IN SURFACING FRAME)

STATION		linear feet				FOR	tons	AGGREGATE					BITUMINOUS MATERIAL				REMARKS
								sq. yards	tons			cu. yards	tons			gallons	
FROM	TO	GROSS	NET	+	-		HYDRATED LIME	COVER TYPE 1	PLANT MIX BIT. SURF. GR. S - 3/4"	PLANT MIX BIT. SURF. GR. S - 3/4" ISO. LIFT	PLANT MIX BIT. SURF. GR. S - MISC	SHOULDER GRAVEL	ASPHALT CEMENT PG 70-28	ASPHALT CEMENT PG 70-28 ISO. LIFT	SEAL CRS-2P	EMULSIFIED ASPHALT TACK	
						50' RADII (BEG. OF PROJECT)		119	12				0.6		0.2	6	
						27 PRIVATE APPROACHES					219		11.9			81	
						20 FARM FIELD APPROACHES			46				2.4			20	
						17 MAILBOX TURNOUTS					386		20.9			147	
						SLOPE & DT. PAVING					162		8.7			88	RT.
						# LEVELING			705				25.4				
497+98.00	499+98.00	200.00	200.00					534	53			1	2.9		1.0	28	TYPICAL NO. 1
TOTAL							~	653	816	~	767	1	72.8	~	1.2	370	

LEVELING - 75 tons/mile

SUMMARY

PAVEMENT MARKINGS

ITEM	UNIT	INTERIM APPLICATION #	FINAL APPLICATION	TOTAL
STRIPING - WHITE PAINT	gallon	688		688
STRIPING - YELLOW PAINT	gallon	296		296
STRIPING - WHITE EPOXY	gallon		459	459
STRIPING - YELLOW EPOXY	gallon		197	197
TEMPORARY STRIPING	linear foot			86,400
FINAL SWEEP AND BROOM	cr mile			9.4

BASED ON 2 APPLICATIONS.

EQUIPMENT

STATION		hours	REMARKS
		MOTOR GRADER	
FROM	TO		
0+24.00	499+98.00	19	CLEAR VEGETATION FROM SURFACING IN-SLOPES AS NEEDED
460+50.00	467+00.00	3	CLEAR VEGETATION FROM PAVED DITCH/SLOPES
TOTAL		22	

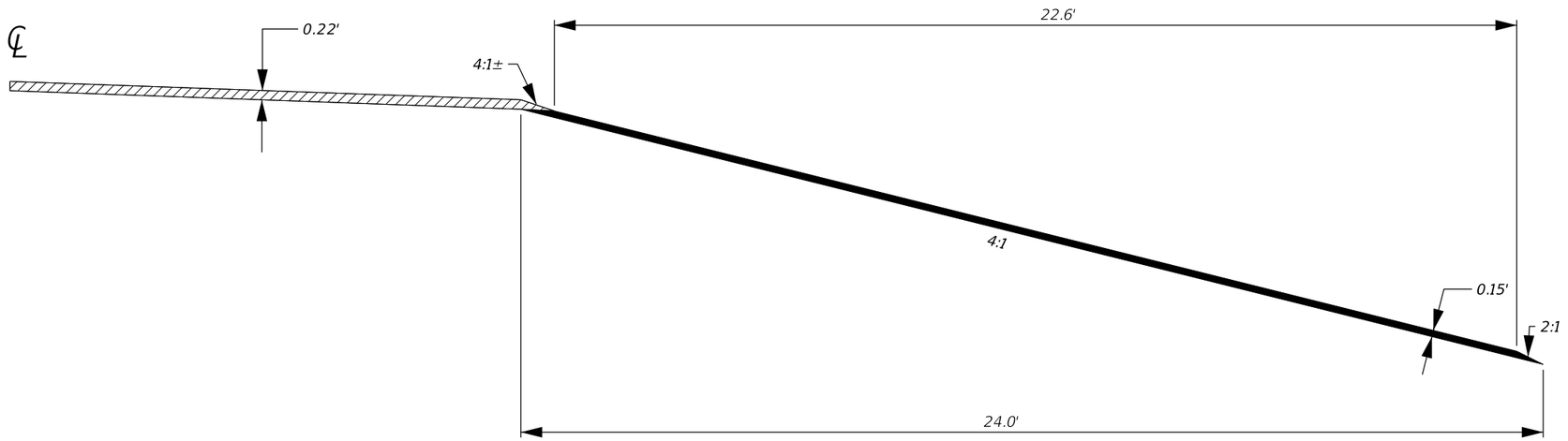
COLD MILLING

STATION		sq. yards	REMARKS
		COLD MILLING	
FROM	TO	VARIES	
0+24.00	2+24.00	564	MILLING VARIES FROM 0.00' TO 0.15'
497+98.00	499+98.00	564	MILLING VARIES FROM 0.00' TO 0.15'
SUBTOTAL		1,128	

SEE DETAILS

AWARD COPY

DETAIL



APPROX. LOCATION:
STA. 460+50.00 TO STA. 467+00.00

NOTES:
BLADE DEBRIS AND VEGETATION OFF THE EXISTING PAVEMENT PRIOR TO PLACING NEW PLANT MIX. DO NOT DISTURB EXISTING PLANT MIX.

LEGEND:

MAIN LINE QUANTITY
IN SURFACING SUMMARY

SLOPE & DITCH QUANTITY
162 TONS PLANT MIX
8.7 TONS ASPHALT CEMENT

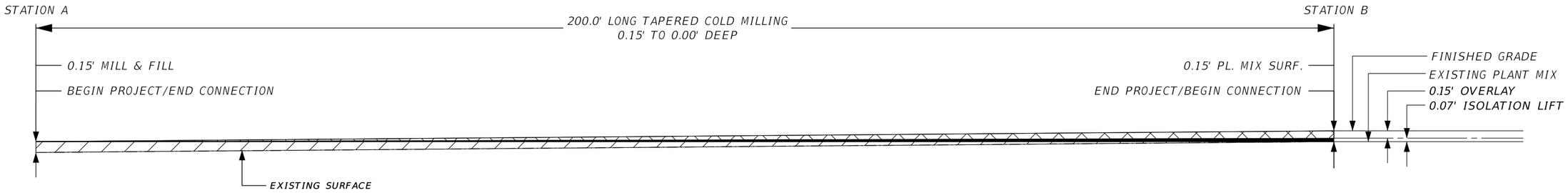
SLOPE & DITCH PAVING

NO SCALE

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9561000rddet001.dgn	DESIGNED BY	M. Nichols	5/24/2019	ROAD PLANS	JCT MT 16 - NORTHWEST (S-254)	STPS-HSIP 254-1(31)0
		1/29/2020	REVIEWED BY					
1		8:01:32 AM CPS - U511	CHECKED BY			DAWSON COUNTY	UPN 9561000	6

AWARD COPY

COLD MILLING



LEGEND:

- OVERLAY
- MILL & FILL
- ISO. LIFT

STATION A	STATION B
0+24.00	2+24.00
499+98.00	497+98.00

COLD MILLING

NO SCALE

2	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9561000rddet001.dgn	DESIGNED BY	M. Nichols	5/24/2019	ROAD PLANS	JCT MT 16 - NORTHWEST (S-254) / STPS-HSIP 254-1(31)0
1		1/29/2020 8:01:37 AM CPS - U511	REVIEWED BY / CHECKED BY			DAWSON COUNTY	UPN 9561000 / 7

Morrison Maierle

SUMMARY
SIGNING & DELINEATION QUANTITIES

MATERIAL	TOTAL	UNIT
SIGNS-SHEET ALUMINUM-REFLECTIVE SHEETING(IV)	23.4	SQ. FOOT
SIGNS-SHEET ALUMINUM-REFLECTIVE SHEETING(XI)	45.6	SQ. FOOT
SIGNS-ALUMINUM SHEET INCREMENT SHEETING (IV)	63.5	SQ. FOOT
SIGNS-ALUMINUM SHEET INCREMENT SHEETING (XI)	21.0	SQ. FOOT
OVERLAY-SHEET ALUMINUM		SQ. FOOT
POSTS-STEEL "U"	162	POUNDS
POLES-TREATED WOOD-4" DIA.	86	LINEAR FT.
POLES-TREATED WOOD-5" DIA.	28	LINEAR FT.
POLES-TREATED TIMBER-CLASS 4		LINEAR FT.
POLES-TREATED TIMBER-CLASS 3		LINEAR FT.
POSTS-TUBULAR STEEL (ROUND)		POUNDS
POSTS-TUBULAR STEEL (SQUARE PERFORATED)		POUNDS
POSTS-STRUCTURAL STEEL		POUNDS
OVERHEAD STRUCTURE-METAL-CANTILEVER		EACH
OVERHEAD STRUCTURE-METAL-BRIDGE		EACH
HIGHWAY TRAFFIC STRIPING-WHITE		GAL.(S)
HIGHWAY TRAFFIC STRIPING-YELLOW		GAL.(S)
WORDS & SYMBOLS		GAL.(S)
DELINEATOR-DESIGN A	284	EACH
DELINEATOR-DESIGN B		EACH
DELINEATOR-DESIGN C		EACH
DELINEATOR-DESIGN D	4	EACH
DELINEATOR-DESIGN E		EACH
DELINEATOR-DESIGN F		EACH
DELINEATOR-DESIGN G		EACH
DELINEATOR-DESIGN H		EACH
REMOVE SIGNS	16	EACH
REMOVE SIGNS-GUIDE	3	EACH
RESET SIGNS		EACH
RESET SIGNS-GUIDE		EACH
FRANGIBLE SIGN POST BREAKAWAY DEVICE-		EACH
FRANGIBLE SIGN POST BREAKAWAY DEVICE-		EACH
SQUARE TUBULAR SLIPBASE BREAKAWAY DEVICE-3"		EACH

AWARD COPY

SIGN LOCATION AND SPECIFICATIONS

Morrison Maierle

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	REMOVE	RESET	REMARKS
RP 0.000		(6)W1-8 W1-7a	REMOVE 72x42	XI	-	15-0	3-8	5" DIA POLE	x=14-0 y=14-0			5-0	3-6		21.0(XI)			28					X		1			
RP 0.000		M1-5 M6-4	24x24 21x15	XI XI	- -	10-0		4" DIA POLE	14-3			5-0	3-0	4.0(XI) 2.2(XI)			16						1					MONTANA 16 M1-5 = 16
RP 0.010 LT		R1-1	30x30	XI	XI	6-0		4" DIA POLE	11-9			5-0	3-0	5.2(XI)			12						1					STOP
RP 0.036 RT		M3-1 M1-12	24x12 24x24	XI XI	- -	10-0		4" DIA POLE	13-0			5-0	3-0	2.0(XI) 4.0(XI)			14						1					NORTH 254 M1-12 = 254
RP 0.051 RT		G254-0	126x36	IV	IV			REPLACE SIGN FACE ONLY				7-0			31.5(IV)									1			G254-0 = JCT MT 200 43 RSFO RICHEY 44
RP 0.052 RT		POST	USE AS IS																								
RP 0.101 RT		R2-1 R2-3a	24x30 24x18	XI XI	- -	10-0		4" DIA POLE	13-0			5-7	3-0	5.0(XI) 3.0(XI)			14						1					SPEED LIMIT 70 65 R2-1 = 70 R2-3a = 65
RP 0.122 LT		G254-0a	96x48	IV	IV			REPLACE SIGN FACE ONLY				7-0			32.0(IV)									1			G254-0a = ← SIDNEY RSFO GLENDIVE →
RP 0.151 LT		M2-1 M1-5	21x15 24x24	XI XI	- -	10-0		4" DIA POLE	14-3			5-0	3-0	2.2(XI) 4.0(XI)			16						1					JCT MONTANA 16 M1-5 = 16
RP 0.171 RT		R2-6	24x30	XI	-	10-0		4" DIA POLE	12-6			5-0	3-0	5.0(XI)			14						1					TRUCK SPEED LIMIT 65 R2-6 = 65
RP 0.216 LT		W3-1	36x36	XI	-			REPLACE SIGN FACE ONLY				7-8		9.0(XI)									1					MOUNT SIGN ON FLASHING BEACON
RP 1.000 RT		(2)D10-1	10x18	IV	IV	4-0		2 LBS STEEL U	9-0			4-0	3-0	2.6(IV)								18		1				D10-1 = MILE 1 2 SIGNS MOUNTED BACK TO BACK
RP 2.000 RT		(2)D10-1	10x18	IV	IV	4-0		2 LBS STEEL U	9-0			4-0	3-0	2.6(IV)								18		1				D10-1 = MILE 2 2 SIGNS MOUNTED BACK TO BACK
RP 3.000 RT		(2)D10-1	10x18	IV	IV	4-0		2 LBS STEEL U	9-0			4-0	3-0	2.6(IV)								18		1				D10-1 = MILE 3 2 SIGNS MOUNTED BACK TO BACK
RP 4.000 RT		(2)D10-1	10x18	IV	IV	4-0		2 LBS STEEL U	9-0			4-0	3-0	2.6(IV)								18		1				D10-1 = MILE 4 2 SIGNS MOUNTED BACK TO BACK
RP 5.000 RT		(2)D10-1	10x18	IV	IV	4-0		2 LBS STEEL U	9-0			4-0	3-0	2.6(IV)								18		1				D10-1 = MILE 5 2 SIGNS MOUNTED BACK TO BACK
RP 6.000 RT		(2)D10-1	10x18	IV	IV	4-0		2 LBS STEEL U	9-0			4-0	3-0	2.6(IV)								18		1				D10-1 = MILE 6 2 SIGNS MOUNTED BACK TO BACK
RP 7.000 RT		(2)D10-1	10x18	IV	IV	4-0		2 LBS STEEL U	9-0			4-0	3-0	2.6(IV)								18		1				D10-1 = MILE 7 2 SIGNS MOUNTED BACK TO BACK
RP 8.000 RT		(2)D10-1	10x18	IV	IV	4-0		2 LBS STEEL U	9-0			4-0	3-0	2.6(IV)								18		1				D10-1 = MILE 8 2 SIGNS MOUNTED BACK TO BACK
RP 9.000 RT		(2)D10-1	10x18	IV	IV	4-0		2 LBS STEEL U	9-0			4-0	3-0	2.6(IV)								18		1				D10-1 = MILE 9 2 SIGNS MOUNTED BACK TO BACK
TOTALS														23.4(IV) 45.6(XI)	63.5(IV) 21.0(XI)		86	28				162		16		3		

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

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

RSFO = REPLACE SIGN FACE ONLY

DELINEATOR LEGEND		
⊣	DESIGN "A"	284
⊣⊢	DESIGN "B"	
⊢⊣	DESIGN "C"	
⊣⊢	DESIGN "D"	4
⊣⊪	DESIGN "E"	
⊢	DESIGN "F"	
⊣<	DESIGN "G"	
⊣>	DESIGN "H"	
⊣×	DESIGN "J"	