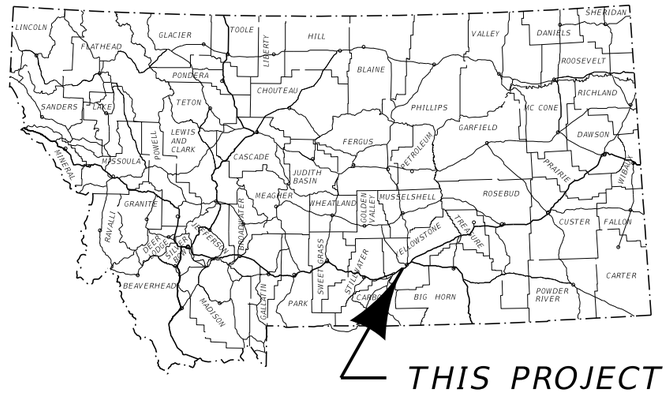
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MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT UPP 6901(5)
SCRUB SEAL,GUARDRAIL & BR. DECK SURF.
1ST AVENUE-LAUREL
YELLOWSTONE COUNTY

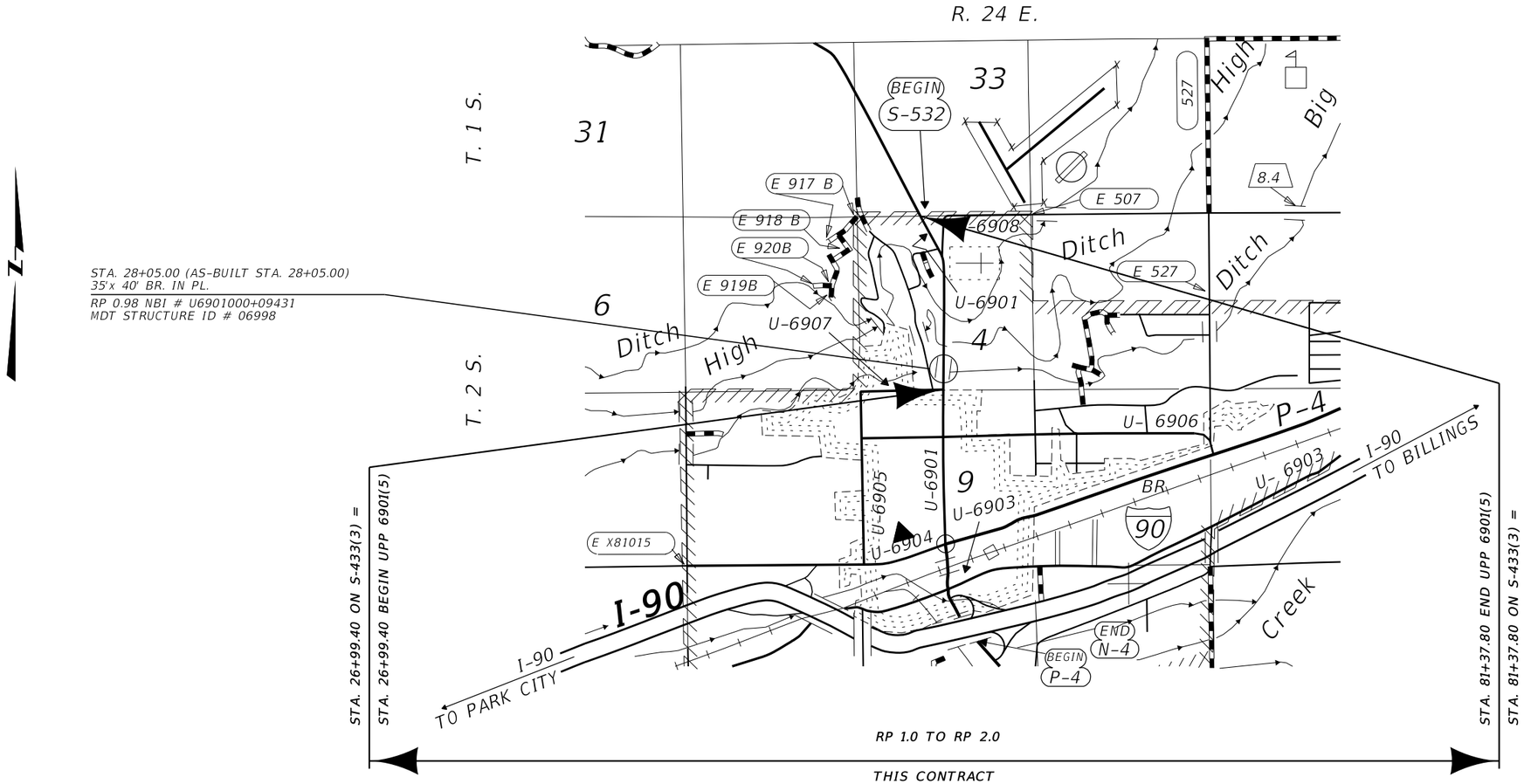
PROJECT DESIGN DATA		
PRESENT 2018	A.D.T. =	2,340
LETTING 2019	A.D.T. =	2,390
DESIGN 2039	A.D.T. =	3,550
	D.H.V. =	380
	TRUCKS =	2.0%
	V. =	
	18 KIP ESAL'S =	29
	GROWTH RATE =	2.0%

LETTING DATE - _____

SURFACING SOURCES -
CONTRACTOR FURNISHED

LENGTH 1.0 MILES

YELLOWSTONE COUNTY



3	MDT	MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9507000rdtl001.dgn	DESIGNED BY	S. TWO CROW	6/11/19	ROAD PLANS
2			2/27/2020	REVIEWED BY	J. BROTZLER	6/11/19	
			1:58:44 PM CPS - U2160	CHECKED BY	J. CORNELL	10/8/19	YELLOWSTONE COUNTY

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NOTES

BASIS OF PLAN QUANTITIES

(QUANTITIES FOR ESTIMATING PURPOSES ONLY)

COMP. AGGREGATE WEIGHT	= 3750 LBS. PER CUBIC YARD
COMP. WEIGHT OF PL. MIX BIT. SURF.	= 4167 LBS. PER CUBIC YARD
ASPHALT CEMENT - GRADE S - 3/4" AGG.	= 5.4% OF PL.MIX BIT.SURF.
ASPHALT CEMENT - GRADE S - 1/2" AGG.	= 5.8% OF PL.MIX BIT.SURF.
SCRUB SEAL EMULSION	= 0.42 GAL. PER SQ. YARD
SEAL	= 0.42 GAL. PER SQ. YARD
COVER	= 25 LBS. PER SQ. YARD
BITUMINOUS MATERIAL	= 8.5 LBS. PER GAL.
EMULSIFIED ASPHALT - TACK (ALL OTHER SURFACES)	= 0.05 GAL. PER SQ.YARD (UNDILUTED)

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.

AS-BUILTS

FOR HORIZONTAL ALIGNMENT AND STATIONING, REFER TO THE FOLLOWING "AS-BUILT" PROJECT(S):
S-433(3) (ORIGINAL CONSTRUCTION-1968)
UPP 6901(1) (OVERLAY-1986)

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.

LINEAR DATA

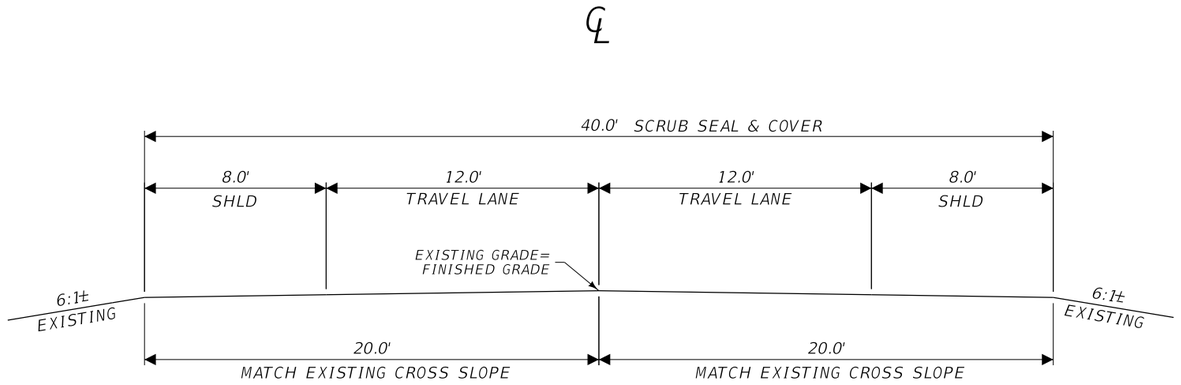
LENGTH OF ROADWAY	YELLOWSTONE COUNTY	2 LANE URBAN	5,403.40 ft
LENGTH OF BRIDGE	YELLOWSTONE COUNTY	2 LANE URBAN	35.00 ft
TOTAL LENGTH OF	UPP 6901(5)	2 LANE URBAN	5,438.40 ft

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TYPICAL SECTION NO. 1

1ST AVENUE

STA. 26+99.40 TO STA. 27+87.50 B.E.
STA. 28+22.50 B.E. TO STA. 65+87.20
STA. 65+87.20 TO STA. 68+87.20 TRANS. FROM TYP. NO. 1 TO TYP. NO. 3

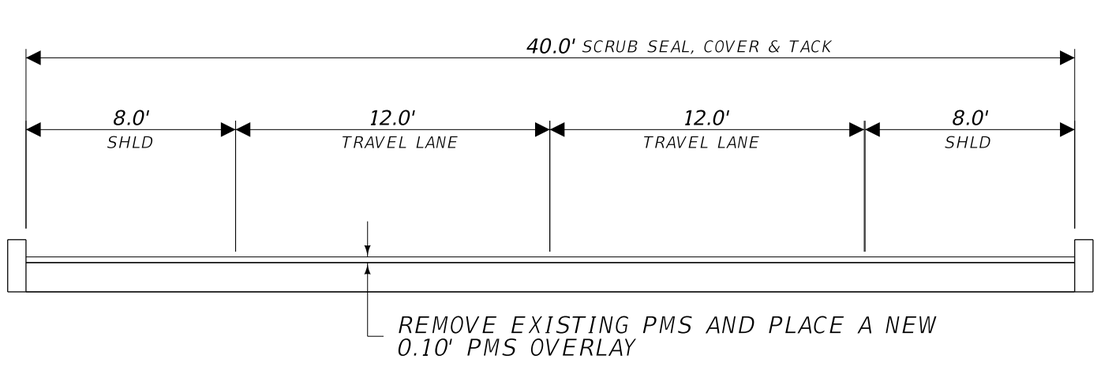


QUANTITIES						
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL		
	COVER				SCRUB SEAL EMULSION	
AREA square feet cubic yards PER STATION tons PER STATION square yards PER STATION	 444		square yards PER STATION tons PER STATION		444 0.79	

TYPICAL SECTION NO. 2

1ST AVENUE

STA. 27+87.50 B.E. TO STA. 28+22.50 B.E.



QUANTITIES						
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL		
	COVER	PLANT MIX			SCRUB SEAL EMULSION	EMULSIFIED ASPHALT TACK *
AREA square feet cubic yards PER STATION tons PER STATION square yards PER STATION	 444	4.00 14.8 30.8	square yards PER STATION tons PER STATION gallons PER STATION		444 0.79	444 22

* BASED ON ONE APPLICATION

3	MDT	MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9507000rdtyp001.dgn	DESIGNED BY	S. TWO CROW	6/11/19	ROAD PLANS
2			2/27/2020	REVIEWED BY	J. BROTZLER	6/11/19	
			1:58:59 PM CPS - U216C	CHECKED BY	J. CORNELL	10/8/19	YELLOWSTONE COUNTY

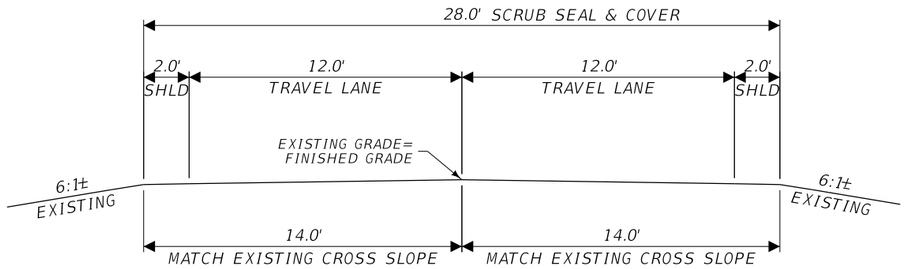
1ST AVENUE–LAUREL	UPP 6901(5)
UPN 9507000	3

AWARD COPY

TYPICAL SECTION NO. 3

1ST AVENUE

STA. 68+87.20 TO STA. 81+37.80



QUANTITIES						
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL		
	COVER				SCRUB SEAL EMULSION	
AREA square feet cubic yards PER STATION tons PER STATION square yards PER STATION	311		square yards PER STATION tons PER STATION		311 0.56	

SUMMARY

SURFACING

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	linear feet +	linear feet -	FOR	AGGREGATE square yards COVER TYPE I	AGGREGATE tons COMMERCIAL PLANT MIX PG 64-28	BITUMINOUS MATERIAL tons SCRUB SEAL EMULSION	BITUMINOUS MATERIAL gallons EMULSIFIED ASPHALT TACK	REMARKS
26+99.40	27+87.50 B.E	88.10	88.10				391		0.7		TYPICAL NO. 1
27+87.50 B.E	28+22.50 B.E	35.00	35.00			BRIDGE OVER BIG DITCH	155	11	0.3	8	TYPICAL NO. 2
28+22.50 B.E	65+87.20	3,764.70	3,764.70				16,715		29.7		TYPICAL NO. 1
65+87.20	68+87.20	300.00	300.00				1,133		2.0		TRANSITION FROM TYP. NO. 1 TO TYP. NO. 3
68+87.20	81+37.80	1,250.60	1,250.60				3,889		7.0		TYPICAL NO. 3
						ADDITIONAL SURFACING		184		69	
SUBTOTAL		5,438.4	5,438.4	~	~		22,283	195	39.7	77	

ADDITIONAL SURFACING (INCLUDED IN SURFACING FRAME)

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	linear feet +	linear feet -	FOR	AGGREGATE square yards COVER TYPE I	AGGREGATE tons COMMERCIAL PLANT MIX PG 64-28	BITUMINOUS MATERIAL tons SCRUB SEAL EMULSION	BITUMINOUS MATERIAL gallons EMULSIFIED ASPHALT TACK	REMARKS
26+99.40	27+87.50 B.E.	88.10	88.10					56		21	BRIDGE END MILLING
28+22.50 B.E.	30+22.50	200.00	200.00					128		48	BRIDGE END MILLING
SUBTOTAL		~	~	~	~		~	184	~	69	

COLD MILLING

STATION FROM	STATION TO	square yards COLD MILLING	REMARKS
		0.20 ft	
26+99.40	27+87.50 B.E.	419	BRIDGE END MILLING
28+22.50 B.E.	30+22.50	952	BRIDGE END MILLING
TOTAL		1,371	

SEE DETAILS

PAVEMENT MARKINGS

ITEM	UNIT	INTERIM APPLICATION	FINAL APPLICATION	TOTAL
STRIPING - WHITE PAINT	gallon	36		36
STRIPING - YELLOW PAINT	gallon	36		36
STRIPING - WHITE EPOXY	gallon		48	48
STRIPING - YELLOW EPOXY	gallon		48	48
TEMPORARY STRIPING	ln. ft.			10,500
FINAL SWEEP AND BROOM	course mile			1.0

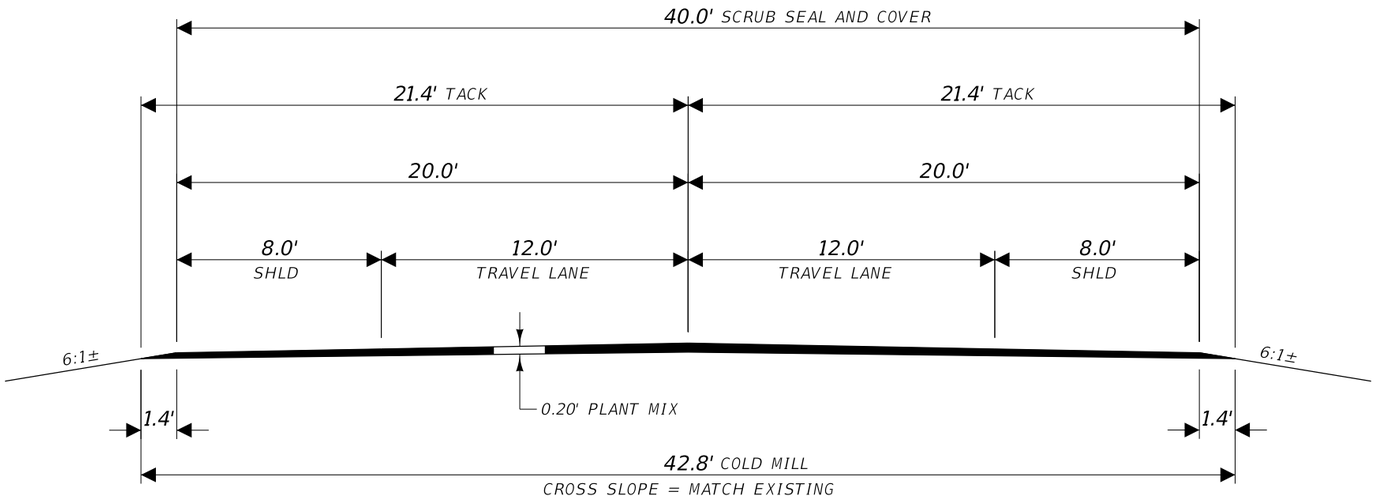
GUARDRAIL

STATION FROM	STATION TO	linear feet REMOVE GUARDRAIL LEFT	linear feet REMOVE GUARDRAIL RIGHT	linear feet MGS GUARDRAIL LEFT	linear feet MGS GUARDRAIL RIGHT	each MASH W-BEAM TERMINAL SECTION # LEFT	each MASH W-BEAM TERMINAL SECTION # RIGHT	each MGS THRIE BEAM BRIDGE APPROACH # LEFT	each MGS THRIE BEAM BRIDGE APPROACH # RIGHT	REMARKS
NEW RAIL										
27+15.63	27+87.50 B.E.					1	1	1	1	BRIDGE OVER BIG DITCH
28+22.50 B.E.	28+94.38					1	1	1	1	BRIDGE OVER BIG DITCH
37+09.38	42+03.13			425.0		2				
37+59.38	40+28.13				200.0		2			
53+09.38	54+90.63			112.5		2				
REMOVE RAIL										
28+22.50 B.E.	28+97.50	75.0								
28+22.50 B.E.	28+97.50		75.0							
37+00.00	42+12.50	512.5								
37+50.00	40+37.50		287.5							
53+00.00	55+00.00	200.0								
SUBTOTAL		787.5	362.5	537.5	200.0	6	4	2	2	
TOTAL		1,150.0		737.5		10		4		

SEE MGS GUARDRAIL TRANSITION DETAIL

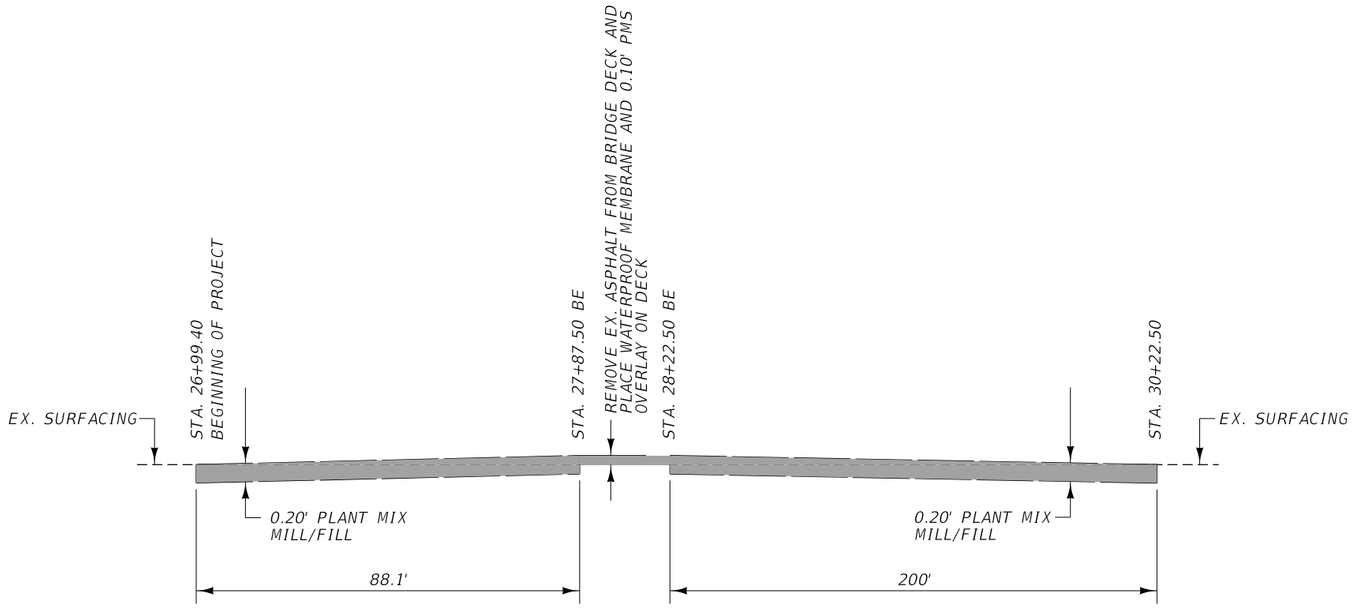
BRIDGE END MILLING

BIG DITCH BRIDGE



QUANTITIES						
UNIT	AGGREGATE		UNIT	BITUMINOUS MATERIAL		
		PLANT MIX			EMULSIFIED ASPHALT TACK *	COLD MILLING
AREA square feet cubic yards PER STATION tons PER STATION square yards PER STATION		8.28 30.7 64.0	square yards PER STATION tons PER STATION gallons PER STATION		476 24	476

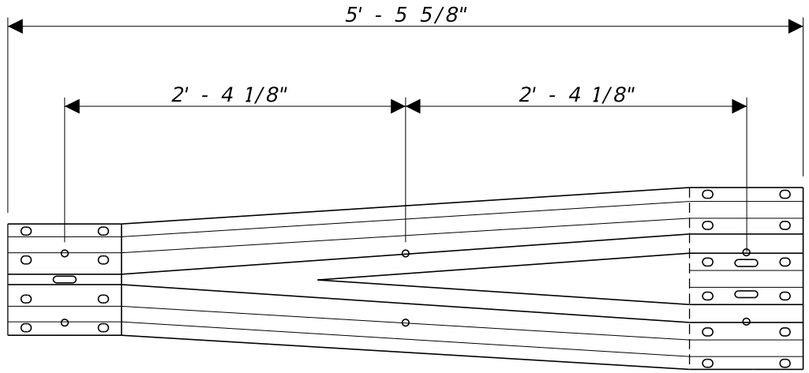
* BASED ON ONE APPLICATION



PLANT MIX. BIT. SURF.

MGS GUARDRAIL TRANSITION

BIG DITCH BRIDGE



THRIE BEAM BRIDGE APPROACH RAIL TO MGS GUARDRAIL TRANSITION SECTION

* USE THIS TRANSITION SECTION IN LIEU OF SECTIONS RWT02A AND RWT02B ON DETAILED DRAWING NO. 606-23A AND 606-23B

\# REVERSE FOR OPPOSITE DIRECTION

BRIDGE END MILLING AND MGS GUARDRAIL TRANSITION DETAILS

NO SCALE

SUMMARY
SIGNING & DELINEATION QUANTITIES

MATERIAL	TOTALS	UNIT
SIGNS-ALUM REFL SHEET IV	**35.8**	SQFT
SIGNS-ALUM REFL SHEET XI	**101.1**	SQFT
REMOVE SIGN	**21**	EACH
POSTS-STEEL U SIGN	**17**	LB
POLES-TREATED WOOD 4 IN	**168**	LNFT
POLES-TREATED WOOD 5 IN	**32**	LNFT
DELINEATOR DES A	**30**	EACH
DELINEATOR DES D	**14**	EACH

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SIGN LOCATION AND SPECIFICATION

LT.	STATION / R.P.	RT.	RAMP NO.	SIGN NO.	PANEL SIZE	REFL SHTG BACK- GRND	REFL SHTG LEGEND	FEET CLEARANCE	FEET SIGN SUPPORT SPACING	TYPE OF SUPPORT	CANTILEVER	FEET SUPPORT LENGTH (ESTIMATED)	FEET SUPPORT LENGTH (INSTALLED)	FEET MOUNTING HEIGHT	FEET FOUNDATION DEPTH	SIGN PANEL (SQ. FT.) SHEET ALUMINUM IV	SIGN PANEL (SQ. FT.) ALUM. SHEET INCREMENT IV	SIGN PANEL (SQ. FT.) SHEET ALUMINUM XI	SIGN PANEL (SQ. FT.) ALUM. SHEET INCREMENT XI	SIGN PANEL (SQ. FT.) ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.) 4" TOP DIA.	TIMBER POLE (LINEAR FT.) 5" TOP DIA.	TIMBER POLE (LINEAR FT.) 6" TOP DIA.	STEEL POST (LBS.) ROUND TUBULAR	STEEL POST (LBS.) SQUARE TUBULAR	STEEL POST (LBS.) STRUCTURAL STEEL	STEEL POST (LBS.) "U" POST	BREAKAWAY	SIGNS REMOVE	SIGNS RESET	GUIDE REMOVE	GUIDE RESET		REMARKS
	0.934			M1-12	REMOVE																								1					532
LT																																	
	0.935			M3-1	REMOVE																								1					NORTH
		RT																															
				M1-12	REMOVE																													532
	0.977																																
		RT		OM3-R	REMOVE																								1					
	0.977			OM3-L	REMOVE																								1					
LT																																	
	0.984			OM3-R	REMOVE																								1					
		RT																															
	0.984			OM3-L	REMOVE																								1					
LT																																	
	1			CITY-1	USE AS IS																													BEGINNING NO SPRAY ZONE
		RT																															YCWD
	1.002			R2-1	24x30	XI		10-0		4" DIA POLE		12-2		5-0	3-0			5.0			14								1					SPEED LIMIT 35
		RT																															
	1.002			R2-1	24x30	XI		10-0		4" DIA POLE		12-2		5-0	3-0			5.0			14								1					SPEED LIMIT 25
LT																																	
	1.005			(2) D10-1	10x18	IV	IV	4-0		2 LB/FT STEEL U		8-6		4-0	3-0	2.6													1					MILE 1
		RT																															
	1.103			(2) D3-1	30x10	IV	IV	6-0		4" DIA POLE		12-5		5-0	3-0	4.2					14								1					E 13TH ST
		RT																															
				R1-1	30x30	XI	XI											5.2																
	1.126			M4-5	24x12	XI		10-0		4" DIA POLE		12-8		5-0	3-0			2.0			14								1					TO
		RT																															NEW
				M1-12	24x24	XI												4.0																532
	1.239			R2-1	24x30	XI		5-0		4" DIA POLE		12-2		5-0	3-0			5.0			14								1					SPEED LIMIT 35
LT																																	
	1.239			R2-1	24x30	XI		10-0		4" DIA POLE		12-6		5-0	3-0			5.0			14								1					SPEED LIMIT 45
		RT																															
	1.268			D99-1	USE AS IS																													PEARL HARBOR VETERANS
		RT																															MEMORIAL HIGHWAY
	1.411			W14-1	30x30	XI		10-0		4" DIA POLE		13-2		5-0	3-0			6.3			14													ON LOIS PLACE
		RT																															NEW
	1.414			(2) D3-1	30x10	IV	IV	6-0		4" DIA POLE		12-5		5-0	3-0	4.2					14								1					LOIS PLACE
		RT																															
				R1-1	30x30	XI	XI											5.2																
				W99-1	REMOVE																													PRIVATE ROAD DEAD END
	1.57			(2) D3-1	42x10	IV	IV	6-0		4" DIA POLE		12-5		5-0	3-0	5.8					14								1					GROSHELLE BLVD
LT																																	
				R1-1	30x30	XI	XI											5.2																
	1.699			(2) D3-1	30x10	IV	IV	6-0		4" DIA POLE		12-5		5-0	3-0	4.2					14								1					PERSO PL
LT																																	
				R1-1	30x30	XI	XI											5.2																
	1.702			R1-1	30x30	XI	XI	6-0		4" DIA POLE		11-6		5-0	3-0			5.2																ON LAURAL AIRPORT RD
		RT																															NEW
	1.772			R2-1	24x30	XI		10-0		4" DIA POLE		12-2		5-0	3-0			5.0			14								1					SPEED LIMIT 55
		RT																															
	1.772			R2-1	24x30	XI		10-0		4" DIA POLE		12-2		5-0	3-0			5.0			14								1					SPEED LIMIT 45
LT																																	

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

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SIGN LOCATION AND SPECIFICATION

LT.	STATION / R.P.	RT.	RAMP NO.	SIGN NO.	PANEL SIZE	REFL SHTG BACK- GRND	REFL SHTG LEGEND	FEET CLEARANCE	FEET SIGN SUPPORT SPACING	TYPE OF SUPPORT	CANTILEVER	FEET SUPPORT LENGTH (ESTIMATED)	FEET SUPPORT LENGTH (INSTALLED)	FEET MOUNTING HEIGHT	FEET FOUNDATION DEPTH	SIGN PANEL (SQ. FT.) SHEET ALUMINUM	SIGN PANEL (SQ. FT.) ALUM. SHEET INCREMENT	SIGN PANEL (SQ. FT.) SHEET ALUMINUM	SIGN PANEL (SQ. FT.) ALUM. SHEET INCREMENT	SIGN PANEL (SQ. FT.) ALUMINUM SHT OVERLAY	TIMBER POLE (LINEAR FT.) 4" TOP DIA.	TIMBER POLE (LINEAR FT.) 5" TOP DIA.	TIMBER POLE (LINEAR FT.) 6" TOP DIA.	STEEL POST (LBS.) ROUND TUBULAR	STEEL POST (LBS.) SQUARE TUBULAR	STEEL POST (LBS.) STRUCTURAL STEEL	STEEL POST (LBS.) "U" POST	BREAKAWAY	SIGNS REMOVE	SIGNS RESET	GUIDE REMOVE	GUIDE RESET		REMARKS
	1.833			R1-1	36x36	XI	XI							5-0				7.5												1					REPLACE SIGN FACE ONLY
		RT														IV	IV	XI	XI		4" TOP DIA.	5" TOP DIA.	6" TOP DIA.	ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST		REMOVE	RESET	REMOVE	RESET		
	1.915			W2-1	36x36	XI		10-0		5" DIA POLE		15-3		5-7	3-6			9.0				16							1					
		RT																																
				W16-8P	24x18	XI												3.0																LAURAL AIRPORT RD
	1.952			D99-1	USE AS IS																												PEARL HARBOR VETERANS
LT																																	MEMORIAL HIGHWAY
	1.988			D3-1	42x10	IV	IV	6-0		5" DIA POLE		14-11		5-0	3-6	5.8						16							X	1				BUFFALO TR
		RT		(2) D3-1	36x18	IV	IV									9.0																		LAURAL AIRPORT RD
				R1-1	48x48	XI	XI											13.3																
															TOTAL	35.8		101.1			168	32					17		21						

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

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

DELINEATOR LEGEND

⊣	DELINEATOR DES "A"	30
⊢⊣	DELINEATOR DES "D"	14

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ASSOCIATED PROJECT AGREEMENT NUMBERS	
P. E.	UPP 6901(4)

SCALES SHOWN ON BRIDGE PLAN SHEETS ARE FOR FULL SIZE (22 X 34) PRINTS REDUCED PRINTS ARE APPROXIMATELY ONE-HALF ORIGINAL SCALE

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS AND QUANTITIES

FEDERAL AID PROJECT UPP 6901(5)

1ST AVENUE – LAUREL

YELLOWSTONE COUNTY

LIST OF DRAWINGS

SHEET NO.	DWG. NO.	TITLE
BRIDGE DRAWINGS		
B1	24071	LIST OF DRAWINGS & ESTIMATED BRIDGE PLAN QUANTITIES
B2	24072	RAIL REVISION DETAILS 1
B3	24073	RAIL REVISION DETAILS 2
DWG. NO.		**TITLE**
AS-BUILT DRAWINGS		
8238		BRIDGE OVER BIG DITCH

ESTIMATED BRIDGE PLAN QUANTITIES

MDT STRUCTURE ID	NBI STRUCTURE NUMBER	FEATURE CROSSED	GENERAL LAYOUT DRAWING NO.	REMOVE ASPHALT FROM DECK (YD^2)	PREPARE DECK (YD^2)	WATERPROOF MEMBRANE (YD^2)	REVISE BRIDGE RAIL THRIE BEAM (LN. FT.)
06998	U06901000+09431	BIG DITCH	8238	159.3	159.3	160.1	69.67
		PROJECT TOTAL		159.3	159.3	160.1	69.67

GENERAL NOTES

GENERAL: 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.

SPECIFICATIONS: Montana Department of Transportation and the Montana Transportation Commission Standard Specifications for Road and Bridge Construction, 2014 edition, and amendments, and special provisions govern unless otherwise noted.

PAYMENT: Include all costs associated with furnishing and installing Thrie Beam Bridge Rail, in the unit price bid for Revise Bridge Rail – Thrie Beam.

Include all costs associated with removing the existing rail in the unit price bid for Revise Bridge Rail – Thrie Beam.

POSTS AND PLATES: Use posts and plates conforming to AASHTO M 270 Grade 36T3. Use metal guardrail conforming to AASHTO M 180 and lap in direction of traffic.

DIMENSIONS: 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.

EXISTING RAIL: Remove the existing guardrail and dispose of per the Standard Specifications.

GALVANIZING: Galvanize all bolts, nuts, and washers in accordance with ASTM F 2329. Galvanize metal guardrail in accordance with ASTM Specifications A 653 or AASHTO M111

REFLECTORS: Place a reflector on each end rail post and at approximately equal spacing (every third post but not to exceed 25 feet) between end rail posts. Mount reflectors with reflectorized face toward oncommong traffic. See Dtl. Dwg. No. 606-05 for reflector detail. Mount reflector to W-Beam post web with an approved adhesive. Include the cost of the reflector in the unit pricve bid for Revise Bridge Rail Thrie Beam.

ERECTION: Set the rail parallel to the roadway grade. Adjust rail to proper rail height using vertical slots in rail post or rail post shims.

PAINTING: Paint all posts, structural tubing and plates (except as noted) in accordance with the Standard Specificications. Galvanizing the posts, structural tubing and plates in accordance with AASHTO M 111 is allowed.

FABRICATION: For the purposes of fabrication, this rail system is considered an ancillary item. The requirements of subsection 1.3.7 of AASHTO/AWS D1.5 apply.

SHEET NO. B1

LIST OF DRAWINGS & ESTIMATED BRIDGE PLAN QUANTITIES

REVISED	REVISED	REVISED	REVISED	CHECKED	5-2-19	M.S.K.
				DRAWN	12-18-18	G.J.N.
				DESIGNED	12-18-18	G.J.N.

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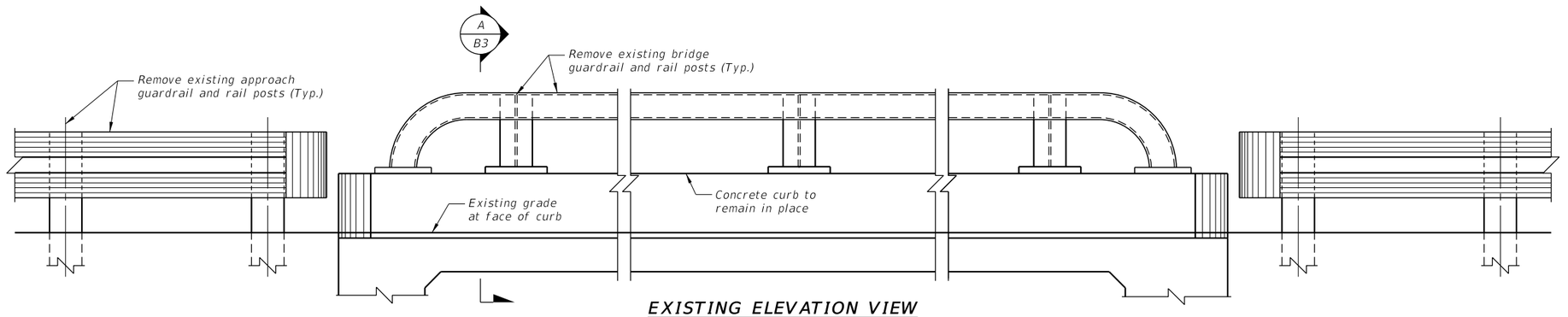
MONTANA MDT DEPARTMENT OF TRANSPORTATION BRIDGE BUREAU

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UPN NUMBER 9507000

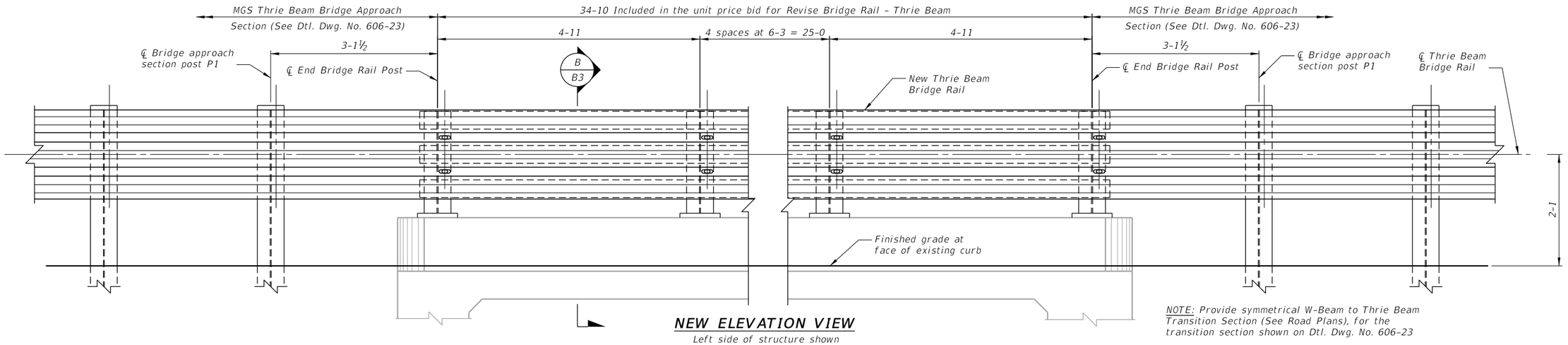
DRAWING NO. 24071

AWARD COPY



EXISTING ELEVATION VIEW

Left side of structure shown
(Right side of structure similar)



NEW ELEVATION VIEW

Left side of structure shown
(Right side of structure similar)

NOTE: Provide symmetrical W-Beam to Thrie Beam Transition Section (See Road Plans), for the transition section shown on Dtl. Dwg. No. 606-23

SHEET NO.
B2

RAIL REVISION DETAILS 1

SCALE: 1" = 1'-0"

PROJECT NAME
1ST AVENUE - LAUREL

MDT STRUCTURE ID
06998

FEDERAL AID PROJECT
UPP 6901(5)

COUNTY
YELLOWSTONE

REVISED						M.S.K.	
REVISED						G.J.N.	
REVISED					5-2-19		
REVISED					12-18-18	G.J.N.	
CHECKED							
DRAWN							
DESIGNED					12-18-18	G.J.N.	

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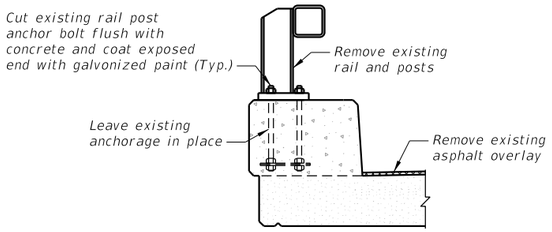
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MONTANA DEPARTMENT OF TRANSPORTATION
BRIDGE BUREAU

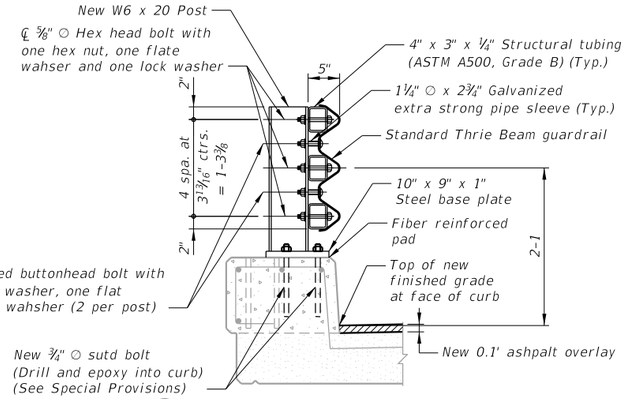
UPN NUMBER
9507000

DRAWING NO.
24072

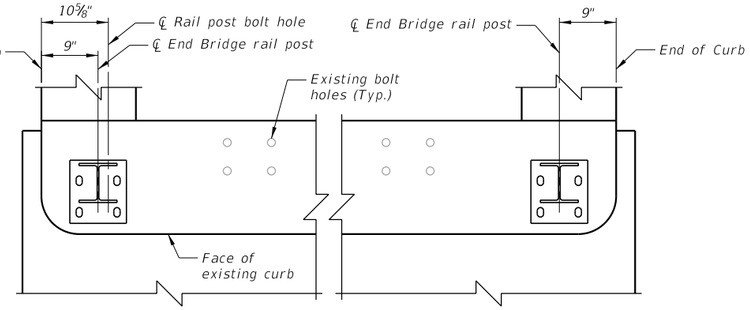
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A / B2 **EXISTING BRIDGE RAIL & CURB SECTION**
Scale ~ 1" = 1'-0"

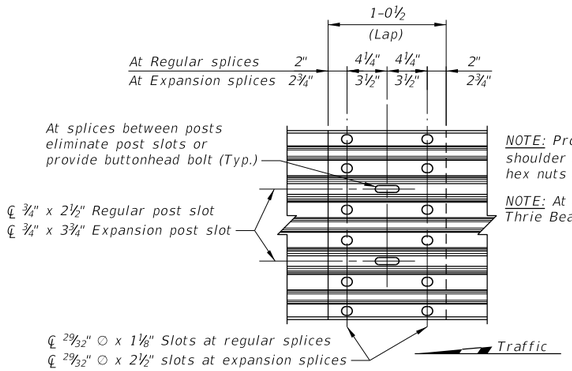


B / B2 **NEW RAIL & POST SECTION**
Scale ~ 1" = 1'-0"

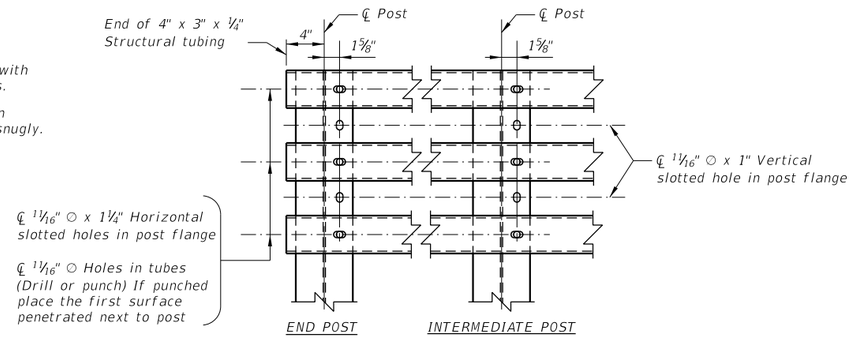


END POST LOCATION DETAIL
Scale ~ 1" = 1'-0"
(Left side of structure shown, Right side of structure similar)

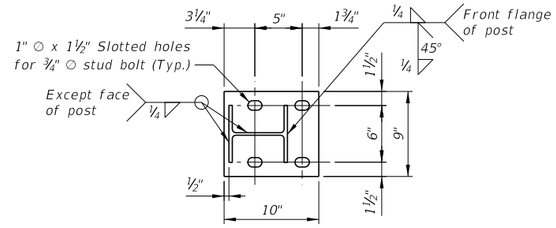
NOTE: Use fiber reinforced pads meeting the requirments of subsection 711.16 of the Standard Specifications. Size and position the pads so that not less that 1/2" of the pad proturdes on all sides of the base plate. Punch slotted holes in pads to match base plate.



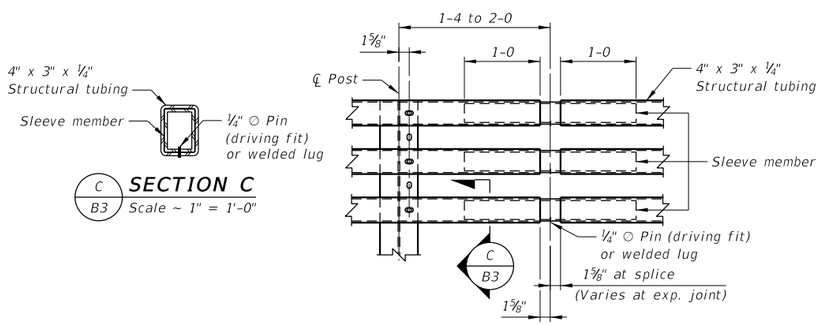
RAIL SPLICE DETAIL
Scale ~ 1 1/2" = 1'-0"



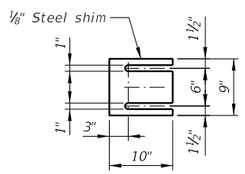
RAIL POST DETAIL
Scale ~ 1 1/2" = 1'-0"



STEEL BASE PLATE DETAIL
Scale ~ 1 1/2" = 1'-0"

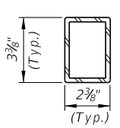


TUBE SPLICE DETAIL
Scale ~ 1" = 1'-0"



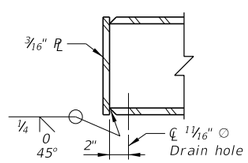
RAIL POST SHIM DETAIL
Scale ~ 1" = 1'-0"

NOTE: Furnish shims as necessary to adjust rail to grade. Place shims between fiber reinforced pads. Place shims with slots toward roadway centerline.



SLEEVE FABRICATION OPTIONS
No Scale

NOTE: Fabricate sleeves using channels, angles, plates, or bent plates meeting the dimensions shown. Weld and grind smooth as required. Fabricate sleeves using no more than four welds. Fabricate sleeves with a minimum wall thickness of 1/4".



TUBE CAP DETAIL
Scale ~ 1" = 1'-0"

SHEET NO. B3

RAIL REVISION DETAILS 2

SCALE: As Noted

PROJECT NAME
1ST AVENUE - LAUREL

MDT STRUCTURE ID
06998

FEDERAL AID PROJECT
UPP 6901(5)

COUNTY
YELLOWSTONE

REVISED		
REVISED		
REVISED		
REVISED	CHECKED	M.S.K. 5-2-19
	DRAWN	G.J.N. 12-18-18
	DESIGNED	G.J.N. 12-18-18

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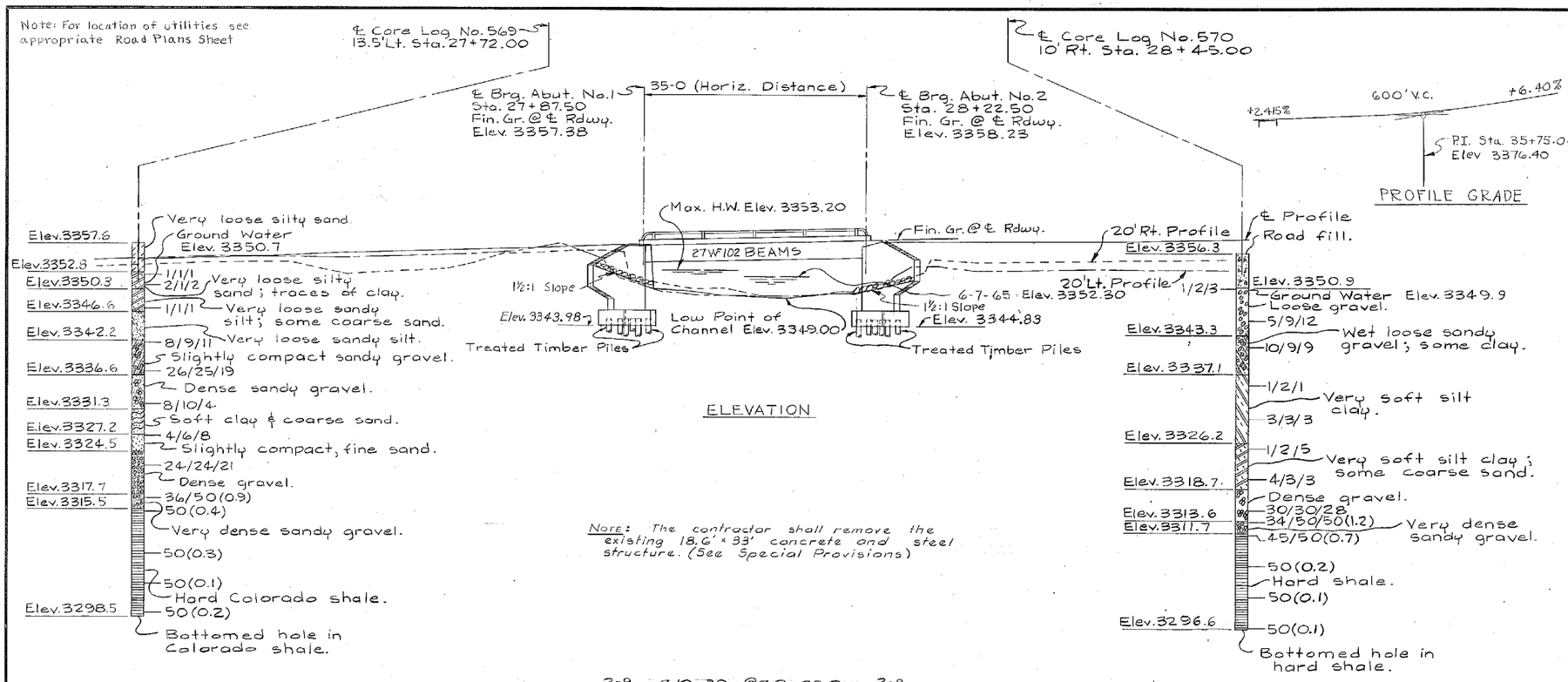
MONTANA DEPARTMENT OF TRANSPORTATION MDT BRIDGE BUREAU

UPN NUMBER
9507000

DRAWING NO.
24073

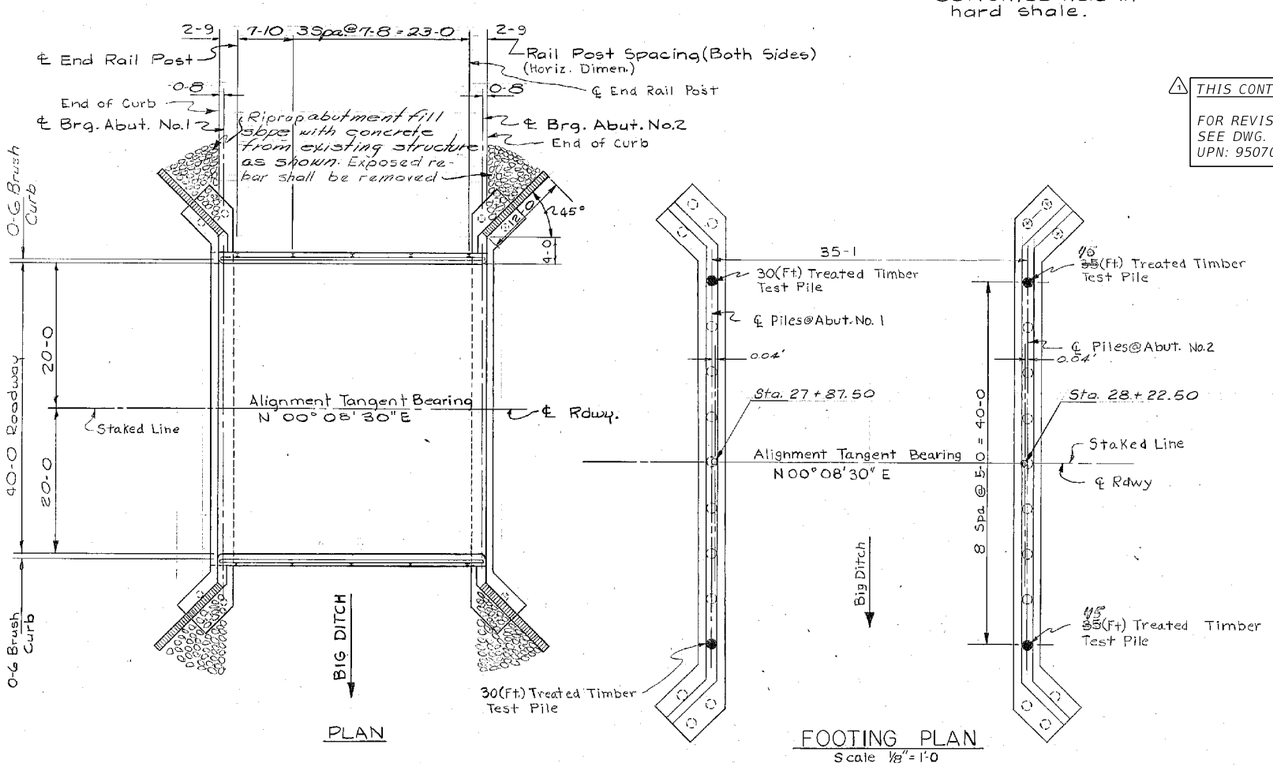
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Note: For location of utilities see appropriate Road Plans Sheet



ELEVATION

Note: The contractor shall remove the existing 18.6' x 33' concrete and steel structure. (See Special Provisions)



FOOTING PLAN
Scale ⅛" = 1'-0

THIS CONTRACT: UPP 6901(5)

FOR REVISED STRUCTURE DETAILS SEE DWG. NO. 24071 - 24073.
UPN: 9507000

REFERENCES

DRAWING NO.	DESCRIPTION
8239	Abutments No. 1 & No. 2
8240	Beam Details
8241	Erection Plan, Diaphram & Slab Details
SBR-T5 (Rev 10-20-64)	Standard Steel Bridge Rail Type No. 5

FED. ROAD DIV. NO.	STATE	FED.-AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	MONT.	S-433(3)	1	14

NOTES

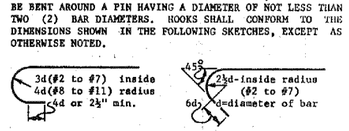
LIVE LOAD: Standard H520-44 loading.

FINISHED GRADE: Finished plan grade of bridge is same as profile grade shown on road plans.

SPECIFICATIONS: MONTANA STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 1966 EDITION, AND ANY AMENDMENTS THERETO, AND SPECIAL PROVISIONS SHALL GOVERN UNLESS OTHERWISE NOTED. DESIGN PREPARED IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATIONS, 1961 EDITION, AND ANY AMENDMENTS THERETO.

CAST IN PLACE CONCRETE: UNLESS OTHERWISE NOTED, ALL CONCRETE IN SUPERSTRUCTURE SHALL BE CLASS "AD" AND ALL CONCRETE IN SUBSTRUCTURE SHALL BE CLASS "AD". AN "AIR ENTRAINING AGENT" SHALL BE ADDED TO ALL CONCRETE EXCEPT CLASS "AS". CHAMFER ALL EXPOSED EDGES OF CONCRETE WITH ENCLOSED ANGLE LESS THAN 120°, 3/4" AND FILLET ENTRANT ANGLES 3/4" UNLESS OTHERWISE NOTED.

REINFORCING STEEL: BENDS IN REINFORCING STEEL SHALL BE MADE TO A RADIUS OF NOT LESS THAN FOUR (4) DIAMETERS OF THE BAR EXCEPT FOR STIRRUPS AND TIE BARS, WHICH SHALL BE BENT AROUND A PIN HAVING A DIAMETER OF NOT LESS THAN TWO (2) BAR DIAMETERS. HOOKS SHALL CONFORM TO THE DIMENSIONS SHOWN IN THE FOLLOWING SKETCHES, EXCEPT AS OTHERWISE NOTED.



APPROVAL: SHOP PLANS SHALL BE APPROVED BY THE MONTANA HIGHWAY DEPARTMENT BEFORE FABRICATION IS BEGUN.

BACKFILL: SUPERSTRUCTURE SHALL BE IN PLACE BEFORE ANY APPROACH FILL IS PLACED AGAINST THE END ABUTMENTS. FILLS AT THE TWO ENDS OF THE STRUCTURE SHALL BE KEPT AT ABOUT THE SAME ELEVATION DURING THE PROCESS OF BACK-FILLING.

FOOTINGS: ELEVATIONS SHOWN FOR BOTTOM OF FOOTINGS ARE APPROXIMATE ONLY. FINAL ELEVATIONS TO BE DETERMINED BY THE ENGINEER.

SOILS AND FOUNDATION MATERIALS: BORINGS WERE TAKEN BY THE MONTANA STATE HIGHWAY DEPARTMENT AT THE POINTS SHOWN ON THE GENERAL LAYOUT OR FOOTING PLAN.

THE SERIES OF NUMBERS SHOWN ON THE LOG OF BORINGS INDICATES THE NUMBER OF BLOWS PER 6" PENETRATION FOR EACH NUMBER OF THE SERIES OF A 2" SAMPLE TUBE WHICH WAS DRIVEN IN ACCORDANCE WITH THE STANDARD PENETRATION TEST MADE WITH A 2" SPLIT TUBE SAMPLER USING A 140# HAMMER HAVING A 30" DROP. THE TOTAL PENETRATION OF THE SAMPLER TUBE IS INDICATED ON THE CORE LOGS AFTER EACH SERIES IF 6" PENETRATION WAS NOT ACHIEVED IN 50 BLOWS.

THE STATE HIGHWAY DEPARTMENT DOES NOT ASSUME ANY RESPONSIBILITY FOR ANY VARIATION OR MISINTERPRETATION OF THE CLASSES OF MATERIALS AND ADJUSTMENT IN BID PRICES WILL NOT BE MADE IF THE MATERIALS FOUND DO NOT AGREE WITH THOSE SHOWN IN THE LOG OF BORINGS.

STRUCTURAL STEEL: ALL STRUCTURAL STEEL SHALL BE MEASURED AND PAID FOR ON THE LUMP SUM BASIS AS SET FORTH IN THE STANDARD SPECIFICATIONS.
ESTIMATED WEIGHT = 28,200 POUNDS.

FOR REQUIREMENTS GOVERNING THE FABRICATION OF "STRUCTURAL STEEL" SEE THE STANDARD SPECIFICATIONS. TO AVOID OVERSIGHT THESE REQUIREMENTS SHALL BE CLEARLY NOTED ON THE SHOP DRAWINGS.

STRUCTURAL STEEL SHALL RECEIVE ONE (1) SHOP COAT OF RED LEAD OR ZINC CHROMATE PRIMER AND TWO (2) FIELD COATS CONSISTING OF FIRST FIELD OR PRIMER COAT AND ONE (1) COAT OF ALUMINUM PAINT AS SPECIFIED IN THE STANDARD SPECIFICATIONS.

SETTING OF MASONRY PLATES: CARE SHALL BE TAKEN IN PLACING REINFORCING STEEL SO AS TO CLEAR ANCHOR BOLTS.

MASONRY PLATES SHALL BE PLACED ON THREE (3) LAYERS OF CANVAS THOROUGHLY SWABBED WITH RED LEAD, AS CALLED FOR IN THE STANDARD SPECIFICATIONS.

ENTIRE SURFACE AREA OF GROUT PADS SHALL RECEIVE TWO (2) COATS OF RED LEAD PAINT.

STATE OF MONTANA
STATE HIGHWAY COMMISSION

BRIDGE OVER BIG DITCH
AT STA. 28+05.00
FED. AID SECONDARY PROJ. NO. S-433(3)
YELLOWSTONE COUNTY
GENERAL LAYOUT
Scale: 1" = 10'-0"

DESIGNED		
DRAWN	W.L.B.	3-2-66
TRACED		
CHECKED	K.C. Rapp	12-19-66
REVISED	G.J.N.	12-18-18
REVISED		

APPROVED BY: [signature]
BRIDGE ENGINEER
DRAWING NO. 8238

DRAWING NOT TO SCALE

FREDERIC POST CO., SEATTLE