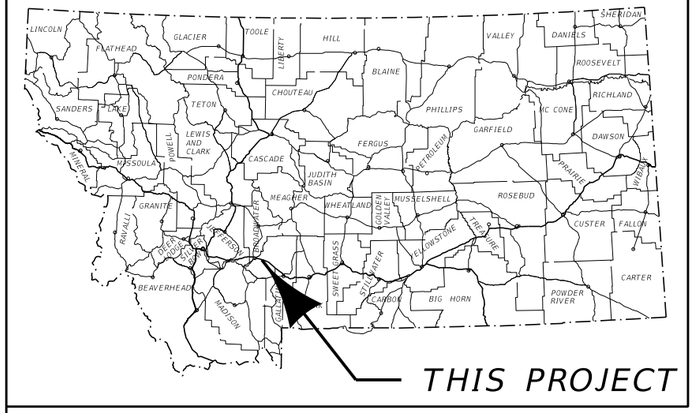
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MONTANA DEPARTMENT OF TRANSPORTATION

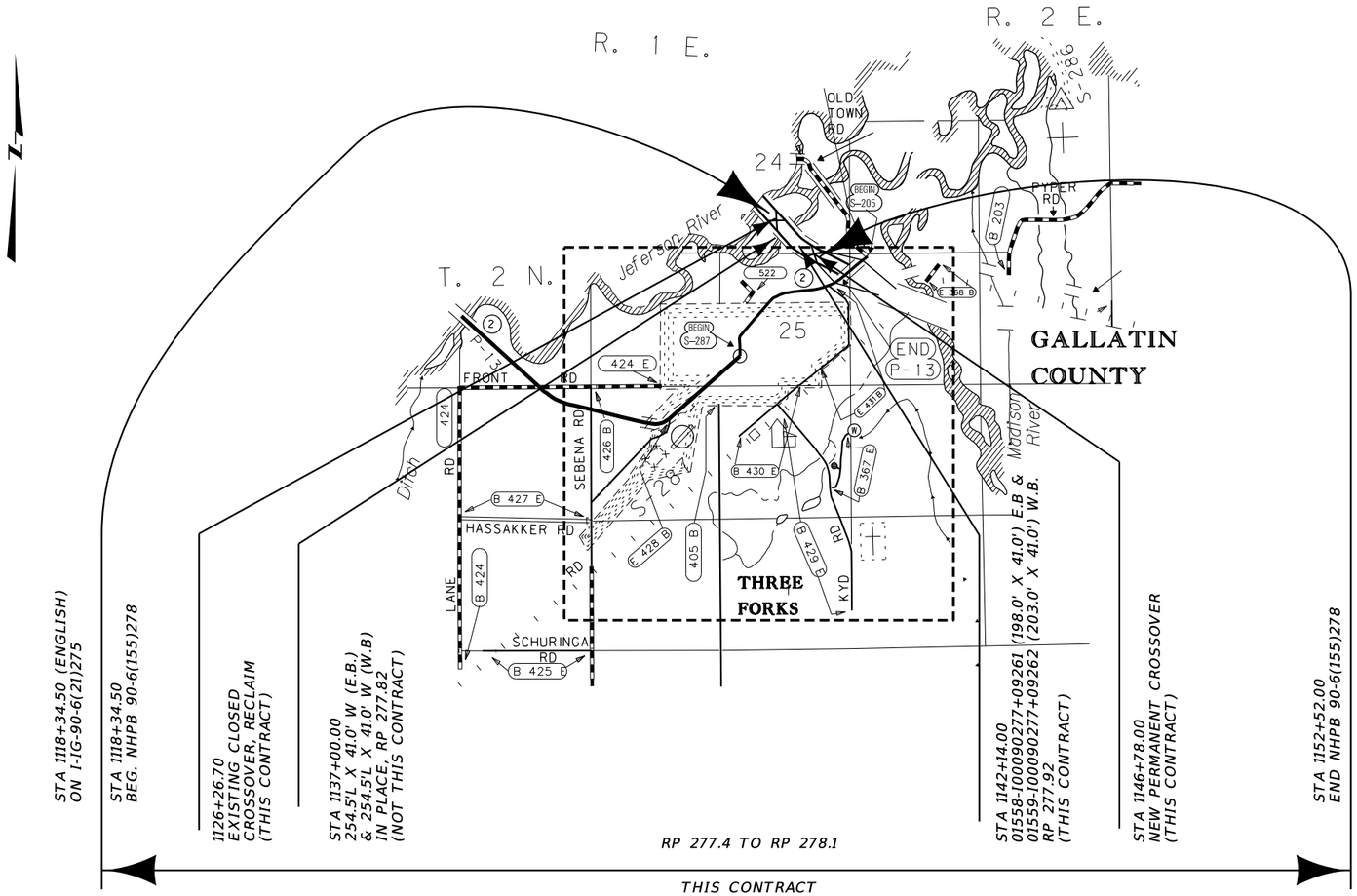
FEDERAL AID PROJECT NHPB 90-6(155)278
BRIDGE REHAB, CROSSOVERS, GUARDRAIL
I-90 STRUCTURES - THREE FORKS
GALLATIN COUNTY

PROJECT DESIGN DATA		
PRESENT 2019	A.D.T. =	14,130
LETTING 2020	A.D.T. =	14,440
DESIGN 2040	A.D.T. =	22,310
	D.H.V. =	2570
	TRUCKS =	21.3%
	V. =	70 MPH
	18 KIP ESAL'S =	1,478
	GROWTH RATE =	2.2%

LETTING DATE - _____

LENGTH 0.3 MILES

SURFACING SOURCES -
CONTRACTOR FURNISHED



MONTANA
DEPARTMENT OF TRANSPORTATION

MALCOLM "MACK" LONG
DIRECTOR OF TRANSPORTATION

APPROVED BY:

BRIDGE
ENGINEER

MONTANA
STEPHANIE L F BRANDENBERGER 13094PE
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Stephanie Brandenberger
D351A85FB36C411...
2/26/2021
DATE

ASSOCIATED PROJECT AGREEMENT NUMBERS	
R / W	
I.C.	
P. E.	NHPB 90-6(154)278

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9830000rdtl001.dgn	DESIGNED BY	P. RUMLEY	10/23/2020	ROAD PLANS
2		2/23/2021	REVIEWED BY			UPN 9830000
		10:56:15 AM CPS - U4503	CHECKED BY			

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BRIDGE PLANS	
BRIDGE PLANS	B1-B3

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 - FOG SEAL	= 0.075 GAL. PER SQ.YARD
EMULSIFIED ASPHALT - TACK	= 0.05 GAL. PER SQ.YARD

AS-BUILTS

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

I-IG 90-6(21)275 U1 & U2 (ORIGINAL CONST. - 1969)
I-90-6(29)275 (SAFETY - 1975)
IR 90-3(58)162 (OVERLAY - 1984)

WETLANDS

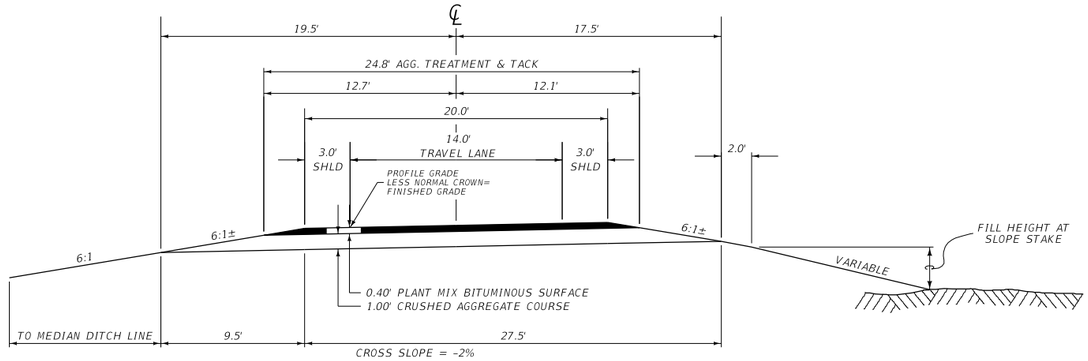
WETLANDS MAY EXIST ADJACENT TO THE ROADWAY AND BEYOND THE PROJECT LIMITS. A WETLAND DELINEATION HAS NOT BEEN COMPLETED FOR THIS PROJECT. IMPACTS TO WETLAND AREAS ARE NOT ANTICIPATED IN ASSOCIATION WITH THE PROPOSED WORK. NO PERMITS HAVE BEEN OBTAINED. ANY ACTION IMPACTING WETLAND AREAS WITHOUT THE APPROPRIATE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

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TYPICAL SECTION NO. 1

1143+72.49 TO 1149+82.79

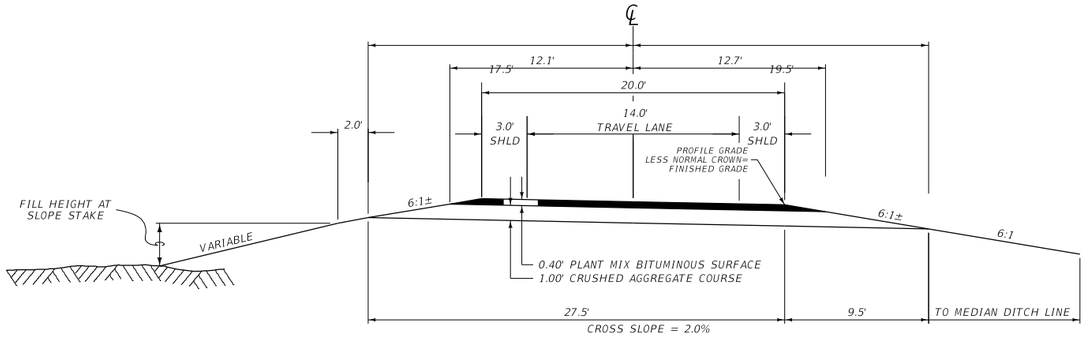
EASTBOUND CROSSOVER



TYPICAL SECTION NO. 2

1143+72.73 TO 1148+45.85

WESTBOUND CROSSOVER



3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9830000rdtyp001.dgn	DESIGNED BY	P. RUMLEY	10/23/2020	ROAD PLANS	I-90 STRUCTURES - THREE FORKS / NHPB 90-6(155)278
2		2/23/2021	REVIEWED BY				
		10:56:31 AM CPS - U4503	CHECKED BY			GALLATIN COUNTY	UPN 9830000 / 3

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SUMMARY

TEMPORARY GUARDRAIL

STATION		each				ln. ft.				each				REMARKS
		BRIDGE APPROACH SECTION		OPTIONAL TERMINAL SECTION		TEMPORARY CONCRETE BARRIER		RESET TEMPORARY CONCRETE BARRIER		TEMPORARY IMPACT ATTENUATOR		RESET TEMPORARY IMPACT ATTENUATOR		
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	
1135+21.93	1135+68.80 B.E.	1		1										W.B. STRUCTURE, 01557 - I00090277+08262
1143+47.90 B.E.	1144+07.90						60				1			PINNED BARRIER
1143+21.40 B.E.	1143+41.40							20				1		PINNED BARRIER
SUBTOTAL		1.0	0.0	1	0	0	60	20	0	0	1	1	0	
TOTAL		1		1		60		20		1		1		

GUARDRAIL

STATION		linear feet						REMARKS
		METAL GUARDRAIL, RESET		NEW HIGH-TENSION CABLE RAIL		REMOVE CABLE GUARDRAIL		
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	
1124+31.54	1127+65.54			334.0		334		EXISTING MEDIAN CROSSOVER
1143+21.40 B.E.	1147+82.54		461.1					W.B., REMOVE AND RESET, MEASURED ON CADD
1145+59.00	1147+82.00			223.0				FOR NEW CROSSOVER
SUBTOTAL		~	461.1	557.0	~	334	~	
TOTAL		461.1		557.0		334		

MEDIAN CROSSOVER *

STATION		each			ln. ft.	REMARKS
		CROSSOVER - CONST., MAINTAIN, CLOSE	CROSSOVER - MAINTAIN, CLOSE	CROSSOVER - RECLAMATION	18" CROSSOVER DRAINAGE CULVERT	
FROM	TO					
1121+46	1131+65		1	1		EX. CROSS OVER, RP 277.6
1143+73	1149+83	1		1		NEW CROSSOVER, RP 277.9
1145+13	1148+28				315	INCL. IN COST OF CROSSOVER CONSTRUCTION, END SECTION = RACETS
TOTAL		1	1	2	~	

* SEE DETAIL

PAVEMENT MARKINGS

ITEM	UNIT	INTERIM APPLICATION #	FINAL APPLICATION	TOTAL
STRIPING - WHITE PAINT	gallon	2		2
STRIPING - YELLOW PAINT	gallon	2		2
STRIPING - WHITE EPOXY	gallon		3	3
STRIPING - YELLOW EPOXY	gallon		2	2

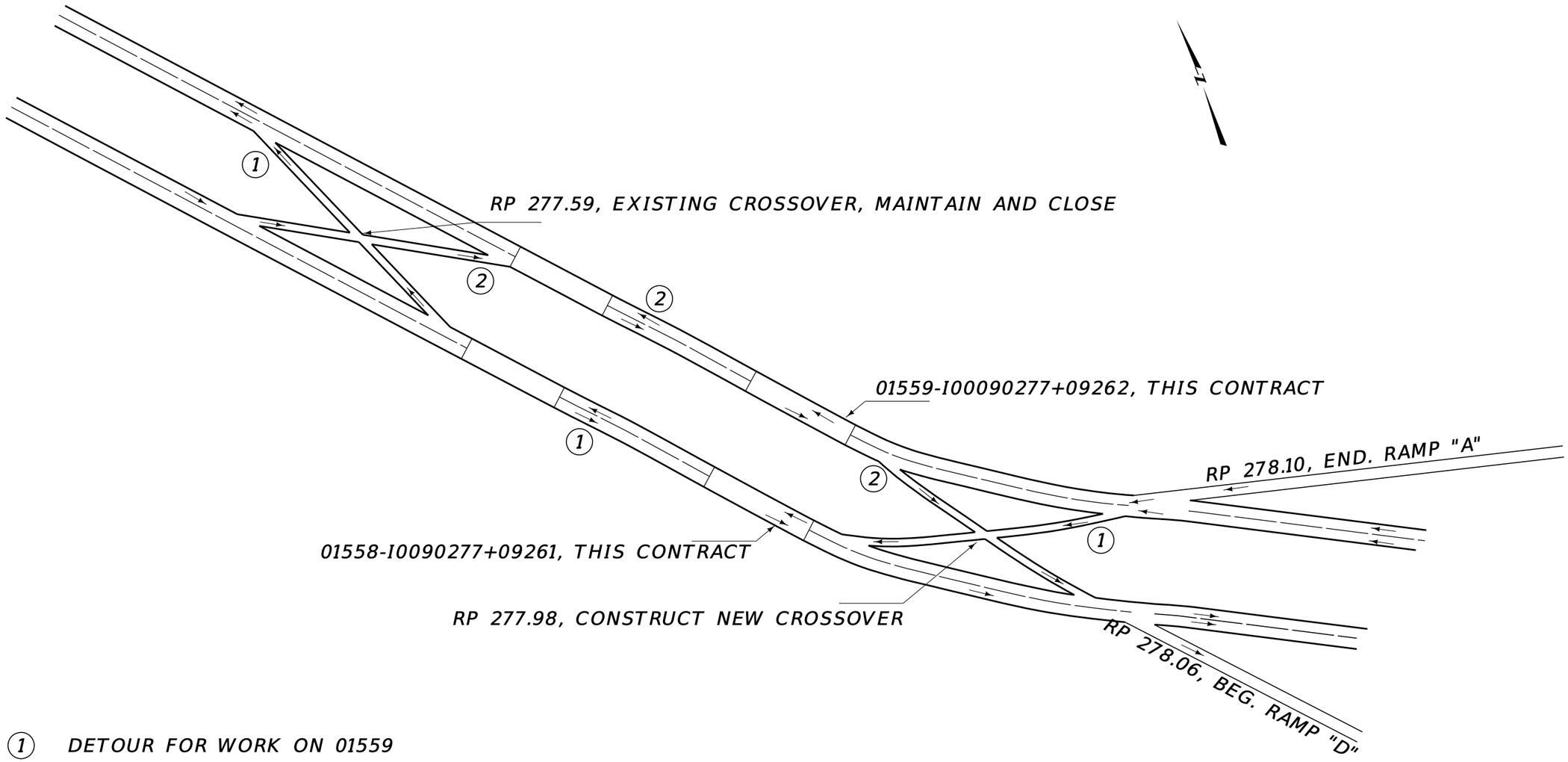
BASED ON 1 APPLICATION

TRAFFIC CONTROL

REFERENCE POST		each	miles	REMARKS
		CROSS OVER	TWO-WAY TRAFFIC	
FROM	TO			
277.59	277.59	1		WESTBOUND CLOSED
277.59	277.59	1		EASTBOUND CLOSED
277.98	277.98	1		WESTBOUND CLOSED
277.98	277.98	1		EASTBOUND CLOSED
277.59	277.98		0.4	WESTBOUND CLOSED
277.59	277.98		0.4	EASTBOUND CLOSED
TOTAL		4	0.8	

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DETAIL



(1) DETOUR FOR WORK ON 01559

(2) DETOUR FOR WORK ON 01558

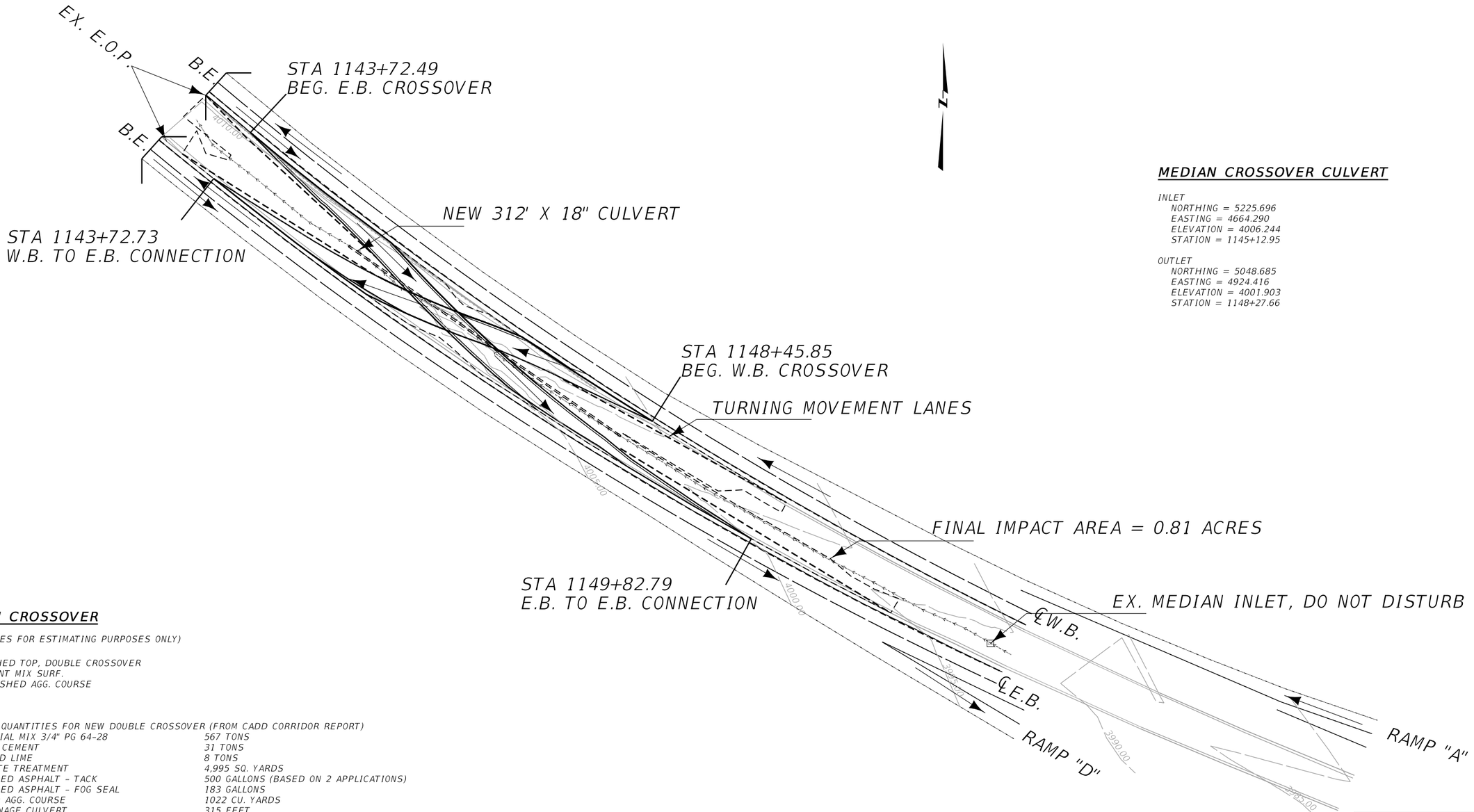
TRAFFIC CONTROL MAP

NO SCALE

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\9830000rddet001.dgn	DESIGNED BY	P. RUMLEY	10/23/2020	ROAD PLANS	I-90 STRUCTURES - THREE FORKS	NHPB 90-6(155)278
2		2/23/2021	REVIEWED BY					
		10:56:57 AM CPS - U4503	CHECKED BY			GALLATIN COUNTY	UPN 9830000	5

DocuSign Envelope ID: 9EFE988F-7855-4DBB-8C71-519C88901784

DETAIL



MEDIAN CROSSOVER CULVERT

INLET
- NORTHING = 5225.696
- EASTING = 4664.290
- ELEVATION = 4006.244
- STATION = 1145+12.95

OUTLET
- NORTHING = 5048.685
- EASTING = 4924.416
- ELEVATION = 4001.903
- STATION = 1148+27.66

MEDIAN CROSSOVER

(QUANTITIES FOR ESTIMATING PURPOSES ONLY)

20.0' FINISHED TOP, DOUBLE CROSSOVER
- 0.40' PLANT MIX SURF.
- 1.00' CRUSHED AGG. COURSE

ESTIMATED QUANTITIES FOR NEW DOUBLE CROSSOVER (FROM CADD CORRIDOR REPORT)

COMMERCIAL MIX 3/4" PG 64-28	567 TONS
ASPHALT CEMENT	31 TONS
HYDRATED LIME	8 TONS
AGGREGATE TREATMENT	4,995 SQ. YARDS
EMULSIFIED ASPHALT - TACK	500 GALLONS (BASED ON 2 APPLICATIONS)
EMULSIFIED ASPHALT - FOG SEAL	183 GALLONS
CRUSHED AGG. COURSE	1022 CU. YARDS
18" DRAINAGE CULVERT	315 FEET

ESTIMATED QUANTITIES FOR CLOSURE OF EX. CROSSOVER, RP 277.6 (BASED ON QTY'S ABOVE)

EMULSIFIED ASPHALT - FOG SEAL	183 GALLONS

FILL REQUIRED FOR CONSTRUCTION OF CROSSOVER
= 519 CU. YD. (UNADJUSTED)

CROSSOVER DETAIL

NO SCALE

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ASSOCIATED PROJECT AGREEMENT NUMBERS	
P.E.	NHPB 90-6(154)278

BRIDGE IDENTIFICATION	
MDT STR ID	NBI NUMBER
01558	I00090277+09261
01559	I00090277+09262

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS AND QUANTITIES

FEDERAL AID PROJECT NHPB 90-6(155)278

I 90 STRUCTURES - THREE FORKS

GALLATIN COUNTY

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

LIST OF DRAWINGS

SHEET NO.	DWG. NO.	TITLE
B1	24302	LIST OF DRAWINGS AND ESTIMATED BRIDGE PLAN QUANTITES
B2	24303	GENERAL NOTES AND DECK REPAIR DETAILS
B3	24304	GIRDER REPAIR

ESTIMATED BRIDGE PLAN QUANTITIES

MDT I.D. STRUCTURE NUMBER	FEATURE CROSSED	REFERENCE POINT	GENERAL LAYOUT DRAWING NO.	BRIDGE DECK CRACK SEAL (SQYD)	JOINT SEALS – POLYURETHANE (LNFT)	REINFORCING STEEL (LB)	* MISCELLANEOUS ITEMS (SQYD)
01558	ABONDONED RAILROAD	277+0.920	8437	840.9	253.4	534.5	31.9
01559	ABONDONED RAILROAD	277+0.920	8437	862.1	278.7	587.5	39.3
			PROJECT TOTAL	1703.0	532.1	1122.0	71.2

* Include all costs associated with the Deck Repairs in the unit price bid for Miscellaneous Items – SQYD.
The Reinforcing steel and polyurethane joint seals detailed in the repair areas will be paid under the specified item of work.

SHEET NO.
B1

LIST OF DRAWINGS AND ESTIMATED BRIDGE PLAN QUANTITES

REVISED	REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED	12-8-20	7-14-20	7-12-20
				J.A.N.	D.G.G.	D.M.P.			

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12/29/2020 9:58:18 AM

BRIDGE BUREAU

UPN NUMBER
9830000

DRAWING NO.
24302

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GENERAL NOTES

Specifications:

Plans were prepared from original drawings and as-built drawings. Existing structure dimensions may vary from those shown on the drawings. Verify all dimensions necessary to complete the work.

See the Special Provisions for 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.

Reinforcing Steel:

Unless specified otherwise on the drawings, Provide 2" minimum concrete cover measured from the face of the concrete to the face of any reinforcing steel, except as noted below:

Bottom of Slab	1"
Top of Slab	2 ½"
Bottom of Abutment Caps	3"
Concrete Barriers and Curbs	1 ½"

Concrete cover to any tie bar is ½" less than what is listed above.

Use new deformed type reinforcing steel meeting the requirements of AASHTO M 31 Grade 60.

All of the existing reinforcing steel to remain in place. Clean prior to placing new repair concrete. Existing reinforcing steel that is damaged during concrete removal will be replaced at no cost to the state. The Project Manager will determine the reinforcing bars that need replacement.

Embed the #4 L-bars into the beam top flange deep enough to meet the minimum requirements specified below:

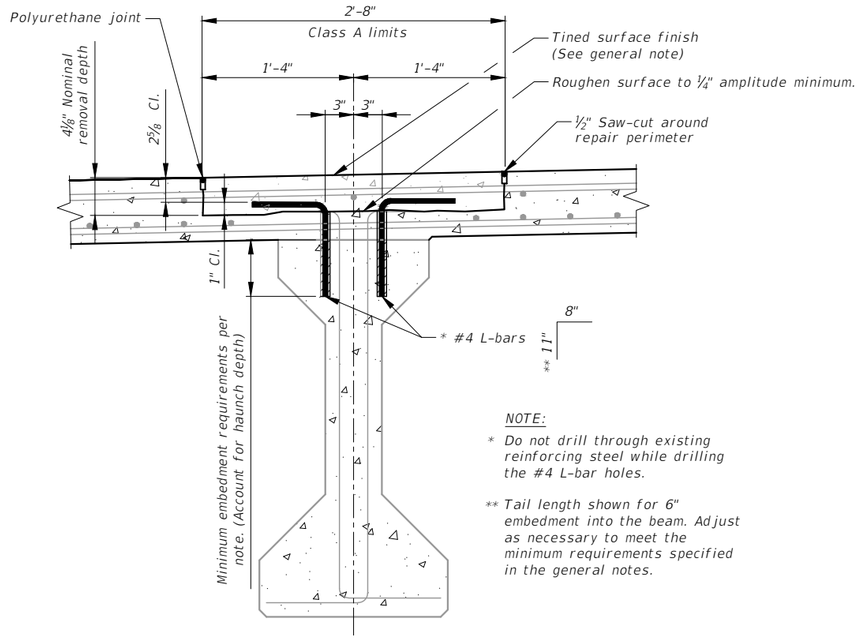
- Unfactored Shear = 1.5-kips
- In no case shall the embedment depth be less than 6.0-in.

Bridge Deck Repair:

See the Bridge Deck Repair section of the Standard Specifications for allowable repair concrete options.

Provide transverse tining on the repair surface prior to initial set of concrete. Provide a metal-tine finish with a groove width of ⅛" and a grove depth of 3/16 inch plus or minus 1/16". Space between individual groves to be ⅝" and 1 ⅝". Do not overlap successive passes of the tining. Include the cost of tining in the unit cost of Miscellaneous Items - SQYD.

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



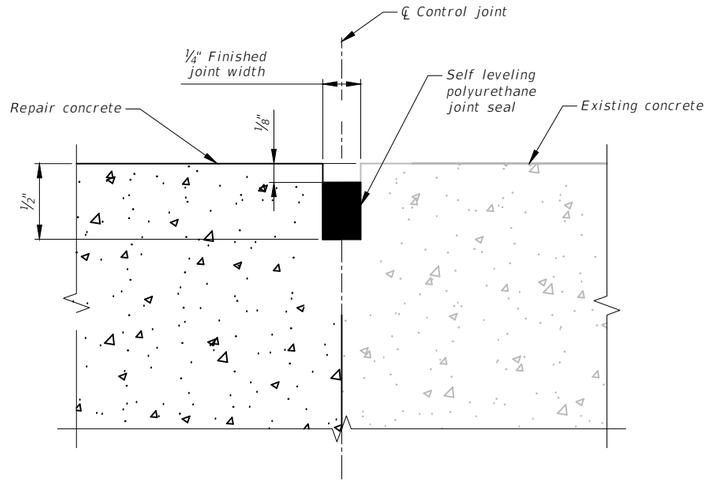
NOTE:

* Do not drill through existing reinforcing steel while drilling the #4 L-bar holes.

** Tail length shown for 6" embedment into the beam. Adjust as necessary to meet the minimum requirements specified in the general notes.

DECK REPAIR

Scale: ¾" = 1'-0"



POLYURETHANE JOINT DETAIL

No Scale

SHEET NO. B2

GENERAL NOTES AND DECK REPAIR DETAILS

SCALE: No Scale

PROJECT NAME
I 90 STRUCTURES - THREE FORKS

MDT STRUCTURE ID
01558, 01559

FEDERAL AID PROJECT
NHPB 90-6(155)278

COUNTY
GALLATIN

DESIGNED	P.M.P.	7-12-20	
DRAWN	D.G.G.	7-14-20	
CHECKED	J.A.N.	12-8-20	
REVISED			
REVISED			
REVISED			
REVISED			

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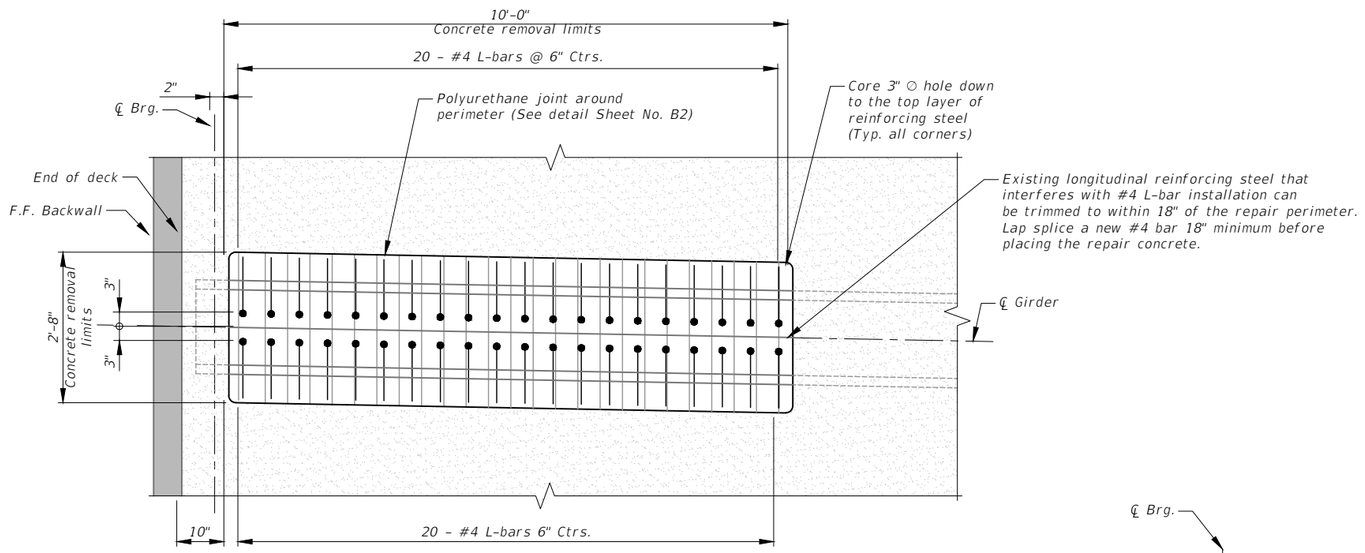
MONTANA DEPARTMENT OF TRANSPORTATION BRIDGE BUREAU

UPN NUMBER
9830000

DRAWING NO.
24303

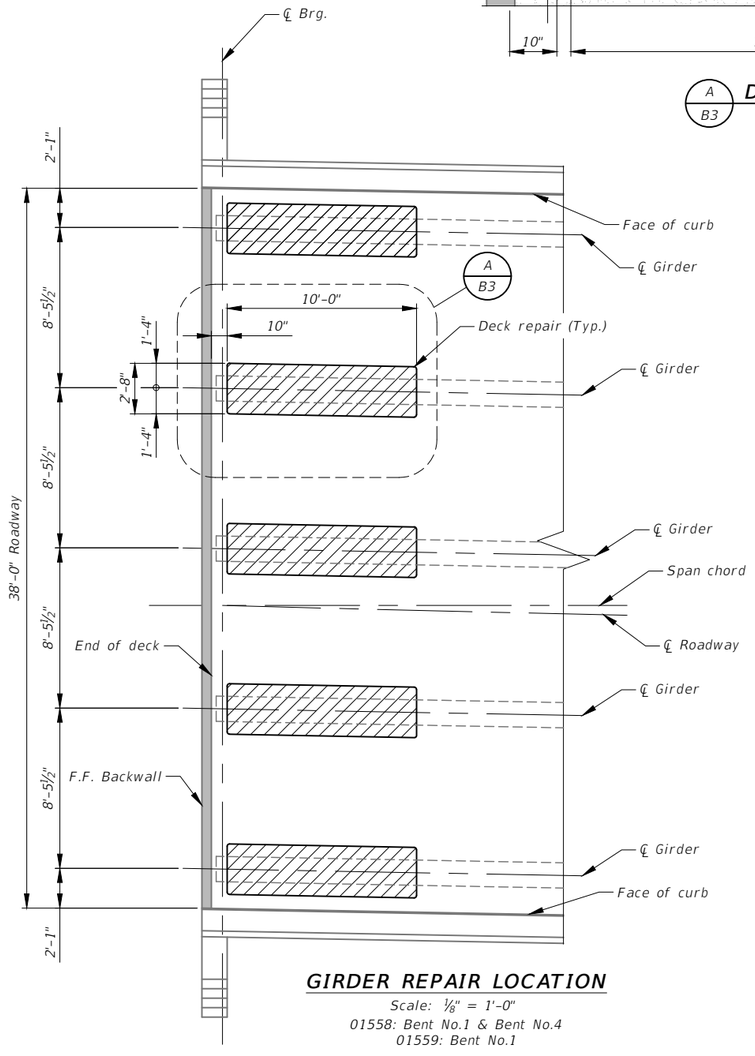
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A/B3 **DETAIL**

Scale: 3/8" = 1'-0"

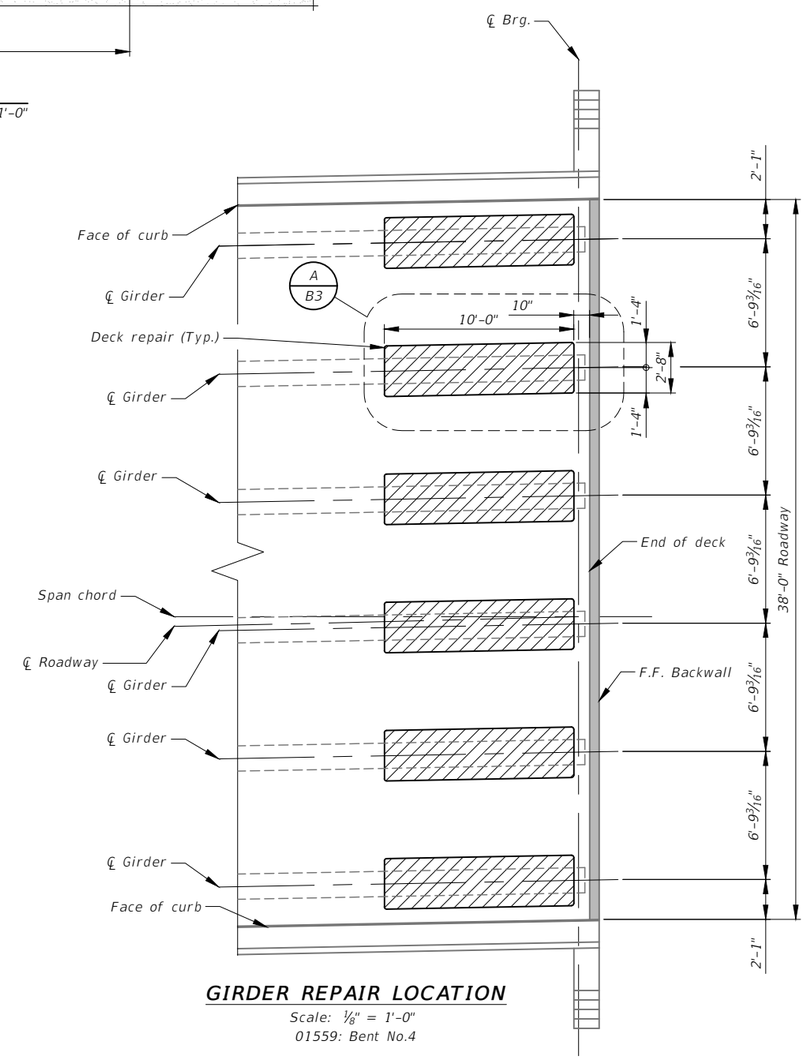


GIRDER REPAIR LOCATION

Scale: ⅛" = 1'-0"

01558: Bent No.1 & Bent No.4

01559: Bent No.1



GIRDER REPAIR LOCATION

Scale: ⅛" = 1'-0"

01559: Bent No.4

SHEET NO. B3

GIRDER REPAIR

SCALE: As Shown

PROJECT NAME
I 90 STRUCTURES - THREE FORKS

MDT STRUCTURE ID
01558, 01559

FEDERAL AID PROJECT
NHPB 90-6(155)278

COUNTY
GALLATIN

REVISED							
REVISED							
REVISED							
REVISED							
CHECKED	J.A.N.	12-8-20					
DRAWN	D.G.G.	7-14-20					
DESIGNED	D.M.P.	7-12-20					

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MONTANA DEPARTMENT OF TRANSPORTATION — BRIDGE BUREAU

UPN NUMBER
9830000

DRAWING NO.
24304