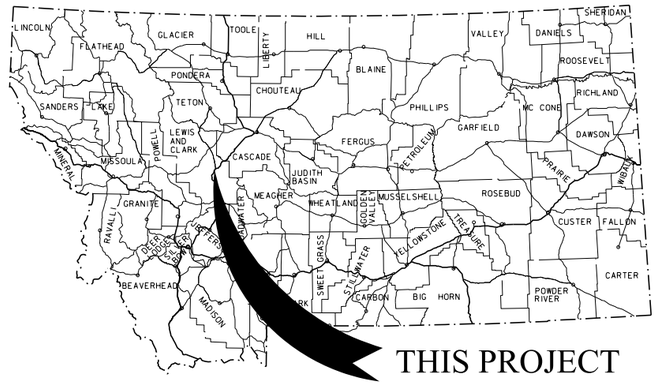
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MONTANA DEPARTMENT OF TRANSPORTATION

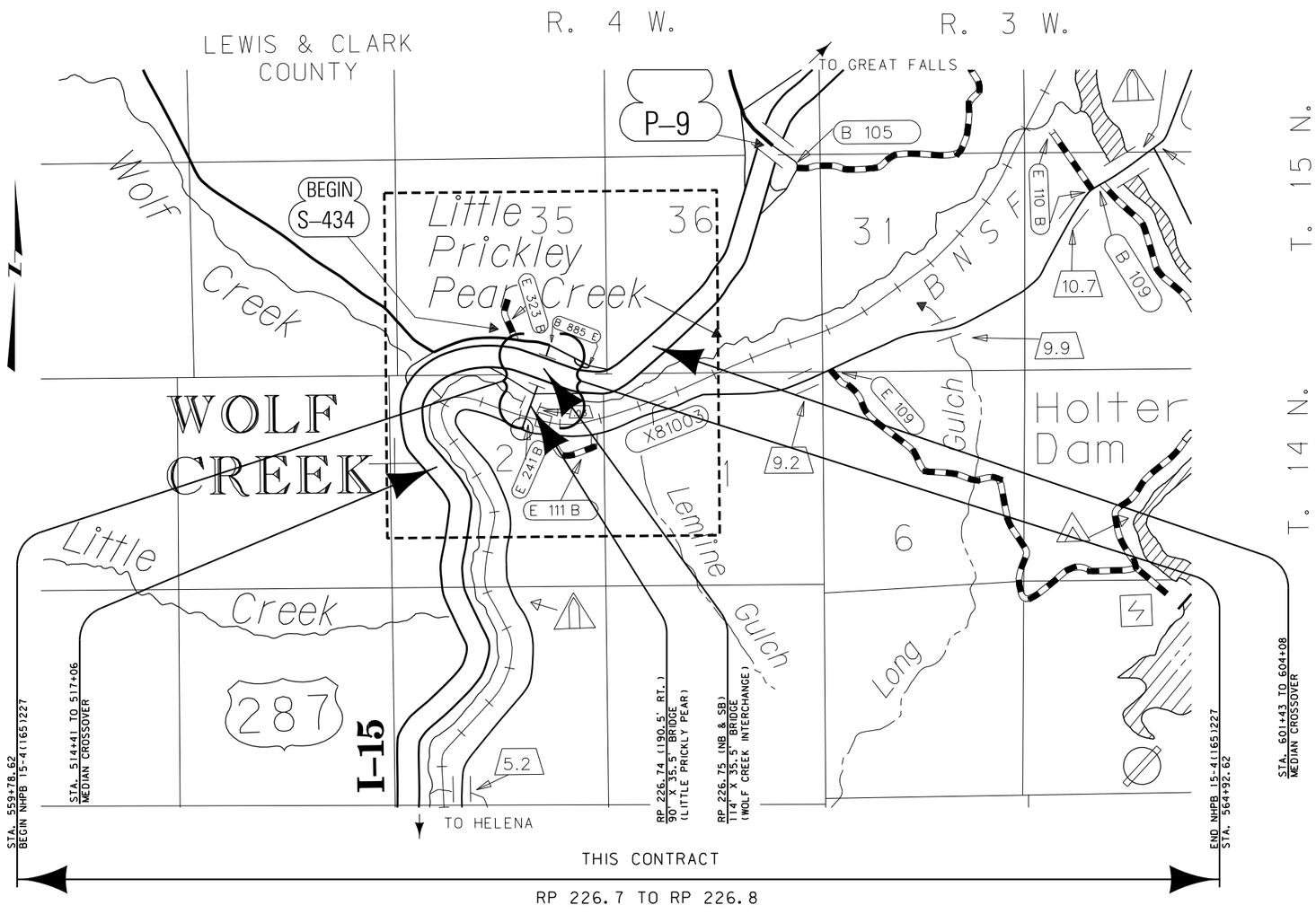
PRESENT	2014	A.D.T. = 4,190
LETTING	2021	A.D.T. = 4,555
DESIGN	2041	A.D.T. = 5,780
		D.H.V. = 660
		TRUCKS = 19.2%
		V. = 50 MPH
		18 KIP ESAL'S = 472 DAILY
		GROWTH RATE = 1.2% ANNUALLY

FEDERAL AID PROJECT NHPB 15-4(165)227
I-15 BRIDGES (RP 226.7)
BRIDGE DECK IMPROVEMENTS
BRIDGE PRESERVATION, GF, 2014
LEWIS & CLARK COUNTY

LETTING DATE - 09/09/2021

LENGTH 0.1 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 L F Brandenberger 9/9/2021
D351A85FB36C411...
DATE

ASSOCIATED PROJECT AGREEMENT NUMBERS	
R / W & I.C.	
P. E.	NHPB STWD(206)

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\8085003rdtl003.dgn	DESIGNED BY	R. JOHN KUNDA	5/21/2021	ROAD PLANS
2		7/15/2021	REVIEWED BY			
		5:17:46 PM CPS - U1716	CHECKED BY	TROY JOHNSON	5/21/2021	UPN 8085003

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BRIDGE PLANS

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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 - 1/2" AGG.	= 5.8% 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

UTILITIES

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

FULL ACCESS CONTROL

THIS PROJECT IS A FULL ACCESS CONTROL FACILITY. OBTAIN APPROVAL FROM THE CHIEF OF THE RIGHT-OF-WAY BUREAU PRIOR TO ADDING, DELETING OR RELOCATING ANY APPROACHES.

CLEARING AND GRUBBING

CLEAR AND GRUB TO CONSTRUCTION LIMITS. INCLUDE THE COST OF CLEARING AND GRUBBING IN THE COST OF OTHER ITEMS.

PUBLIC LAND SURVEY MONUMENTS

ALL MONUMENTS TO BE REMOVED AND RELOCATED OR RESET BY STATE FORCES.

GENERAL

STOCKPILE ANY SALVAGE GUARDRAIL AND SIGN MATERIAL AT xxxxxxxxxxxxxx
STOCKPILE THE SALAVAGED CONCRETE BARRIER RAIL SECTIONS xxxxxxxxxxx.

BRIDGE STATIONS AND LENGTHS ARE APPROXIMATE.

PROJECT STATIONING DOES NOT INCLUDE EQUATIONS AND DOES NOT MATCH AS-BUILT STATIONING.

LINEAR AND LEVEL DATA

NORTHBOUND

LENGTH OF ROADWAY	LEWIS & CLARK COUNTY	4-LANE RURAL	400.00 ft
LENGTH OF BRIDGE	LEWIS & CLARK COUNTY	4-LANE RURAL	114.00 ft
TOTAL LENGTH OF	NHPB 15-4(165)227	4-LANE RURAL	514.00 ft

SOUTHBOUND

LENGTH OF ROADWAY	LEWIS & CLARK COUNTY	4-LANE RURAL	400.00 ft
LENGTH OF BRIDGE	LEWIS & CLARK COUNTY	4-LANE RURAL	114.00 ft
TOTAL LENGTH OF	NHPB 15-4(165)227	4-LANE RURAL	514.00 ft

CSF

CSF = 0.99921946 (RP 226.7 TO 226.8)

BEARING SOURCE

GRID -- MONTANA COORDINATE SYSTEM NAD 83-2011

LEVEL DATUM SOURCE

NAVD 88

AWARD COPY

SUMMARY

SURFACING

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	linear feet +	linear feet -	FOR	AGGREGATE sq. yards COVER TYPE 1	AGGREGATE cubic yards CRUSHED AGG. COURSE	AGGREGATE tons COMMERCIAL PLANT MIX PG 70-28	BITUMINOUS MATERIAL tons SEAL CHFRS-2P	BITUMINOUS MATERIAL gals. EMULSIFIED ASPHALT TACK	REMARKS
559+78.62	561+78.62 BE	200.00	200.00				1,511		194	2.7	76	MAINLINE
561+78.62 BE	562+92.62 BE	114.00			114.00	BRIDGE						
562+92.62 BE	564+92.62	200.00	200.00				1,511		194	2.7	76	MAINLINE
						ADDITIONAL SURFACING	509	62	97	0.9	32	
TOTAL		514.00	400.00	~	114.00		3,531	62	485	6.3	184	

*ADDITIONAL SURFACING (INCLUDED IN SURFACING FRAME)

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	linear feet +	linear feet -	FOR	AGGREGATE sq. yards COVER TYPE 1	AGGREGATE cubic yards CRUSHED AGG. COURSE	AGGREGATE tons COMMERCIAL PLANT MIX PG 70-28	BITUMINOUS MATERIAL tons SEAL CHFRS-2P	BITUMINOUS MATERIAL gals. EMULSIFIED ASPHALT TACK	REMARKS
561+79.56	562+89.59						449		61	0.8	22	103.5' RT MILL & FILL (SEE DETAIL)
561+96.63	562+62.21								17		7	125.0' RT LEVELING (SEE DETAIL)
562+21.38	562+52.66						60		8	0.1	3	234.5' RT MILL & FILL (SEE DETAIL)
562+59.90	564+06.36							62	11			85.0' RT-TEMPORARY RAMP WIDENING (SEE DETAIL)
TOTAL		~	~	~	~		509	62	97	0.9	32	

* ALL AREAS MEASURED IN CADD FOR QUANTITES

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 THRIE-BEAM BRIDGE APPROACH SECTION LEFT	each MASH THRIE-BEAM BRIDGE APPROACH SECTION RIGHT	REMARKS
NEW RAIL								
561+13.02	561+78.62	65.6	65.6	28.1	28.1	1	1	METAL GUARDRAIL TO MGS TRANSITION
562+92.62	563+58.22	65.6	65.6	28.1	28.1	1	1	MGS TO METAL GUARDRAIL TRANSITION
SUBTOTAL		131.2	131.2	56.2	56.2	2	2	
TOTAL		262.4		112.4		4		

MEDIAN CROSSOVER *

STATION FROM	STATION TO	each CROSSOVER - MEDIAN BARRIER RAIL	each	REMARKS
514+41	517+06	1		R.P. 225.9
601+43	604+08	1		R.P. 227.5
TOTAL		2		

* SEE DETAIL

CURB

STATION FROM	STATION TO	linear feet CONCRETE CURB AND GUTTER LEFT	linear feet CONCRETE CURB AND GUTTER RIGHT	linear feet # REMOVE CURB AND GUTTER LEFT	linear feet # REMOVE CURB AND GUTTER RIGHT	REMARKS
561+95.73	562+19.69		40.5		10.0	119.9' RT SEE DETAIL
561+96.69	562+19.75		37.4		20.0	75.1' RT SEE DETAIL
562+21.42			10.0		8.0	237.4' RT SEE DETAIL
562+51.44	562+68.75		25.0		25.0	148.1' RT SEE DETAIL
SUBTOTAL			112.9		63.0	
TOTAL		112.9		~		

FOR INFORMATION ONLY - INCLUDE IN THE COST OF CURB AND GUTTER

SIDEWALK

STATION FROM	STATION TO	sq. yards CONCRETE SIDEWALK 4" LEFT	sq. yards CONCRETE SIDEWALK 4" RIGHT	sq. yards CONCRETE SIDEWALK 6" LEFT	sq. yards CONCRETE SIDEWALK 6" RIGHT	sq. yards DETECTABLE WARNING DEVICES TYPE 1 LEFT	sq. yards DETECTABLE WARNING DEVICES TYPE 1 RIGHT	sq. yards REMOVE SIDEWALK # LEFT	sq. yards REMOVE SIDEWALK # RIGHT	linear feet WIDTH	REMARKS
561+95.73	562+19.69				18.5		1.1		8.0	4.0-5.0	
561+96.69	562+19.75				16.5		1.1		7.5	5.0	
562+21.42					5.5		1.1		4.2	4.2	
SUBTOTAL					40.5		3.3		19.7	~	
TOTAL		~		40.5		3.3		~		~	

FOR INFORMATION ONLY - INCLUDE IN THE COST OF NEW SIDEWALK

SUMMARY

CONCRETE BARRIER RAIL

STATION		each			REMARKS
FROM	TO	REMOVE CONCRETE BARRIER RAIL	CONCRETE BARRIER RAIL	RESET CONCRETE BARRIER RAIL	
559+75.00	564+95.00	52	52	104	WOLF CREEK INTERCHANGE
TOTAL		52	52	104	

TEMPORARY BARRIER RAIL

STATION		linear feet		each		REMARKS
FROM	TO	TEMPORARY BARRIER RAIL	RESET TEMPORARY BARRIER RAIL	TEMPORARY IMPACT ATTENUATOR	RESET TEMPORARY IMPACT ATTENUATOR	
562+36.60		120	120	2	2	190.0' RT - LITTLE PRICKLY PEAR CREEK BRIDGE
TOTAL		120	120	2	2	

TRAFFIC CONTROL

STATION		each	miles	REMARKS
FROM	TO	CROSS OVER	TWO-WAY TRAFFIC	
514+41	517+06	2		MEDIAN CROSSOVER @ RP 225.9
601+43	604+08	2		MEDIAN CROSSOVER @ RP 227.5
515+73	602+75		1.6	RP 225.9 TO RP 227.5 - NORTHBOUND
515+73	602+75		1.6	RP 225.9 TO RP 227.5 - SOUTHBOUND
TOTAL		4	3.2	

REVEGETATION

STATION		lump sum	REMARKS
FROM	TO		
562+59.90	564+06.36	1	75.0' RT - NORTHBOUND ON-RAMP

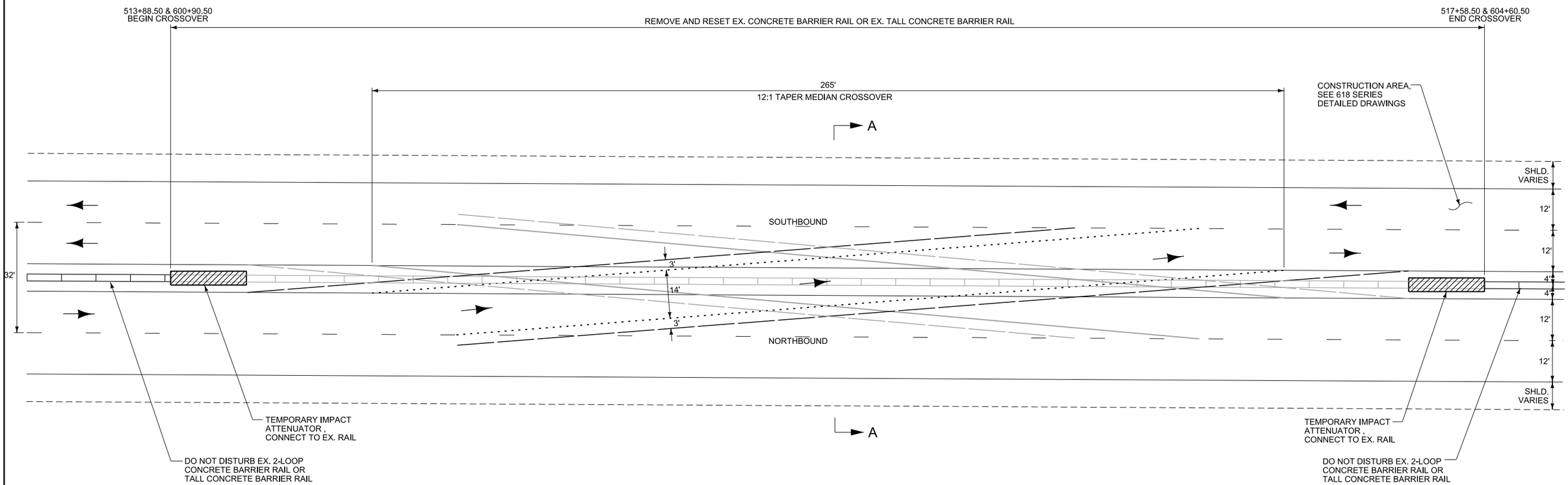
PAVEMENT MARKINGS

ITEM	UNIT	INTERIM APPLICATION #	FINAL APPLICATION	TOTAL
STRIPING - WHITE PAINT	gallon	16		16
STRIPING - YELLOW PAINT	gallon	14		14
STRIPING - WHITE EPOXY	gallon		10	10
STRIPING - YELLOW EPOXY	gallon		9	9
TEMPORARY STRIPING	lnft			987
FINAL SWEEP AND BROOM	course mile			0.5

BASED ON 2 APPLICATIONS.

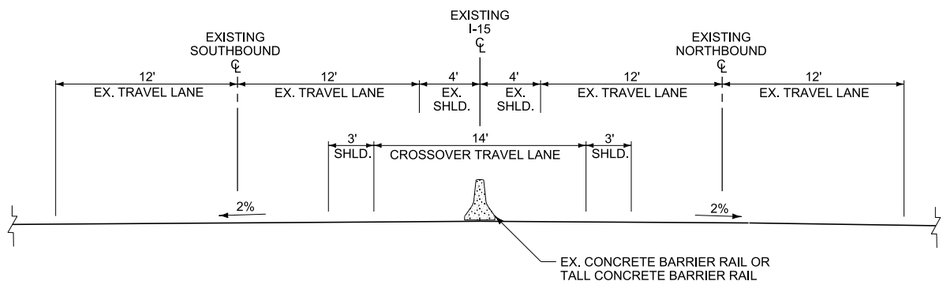
COLD MILLING

STATION		sq. yards	REMARKS
FROM	TO	COLD MILLING	
559+78.62	561+78.62	1,511	INTERCHANGE BRIDGE END
561+79.56	562+89.59	1,511	INTERCHANGE BRIDGE END
562+21.38	562+52.66	303	LITTLE PRICKLY PEAR CREEK BRIDGE END
562+92.62	564+06.36	48	LITTLE PRICKLY PEAR CREEK BRIDGE END
TOTAL		3,373	



PLAN

QUANTITIES FOR ONE CROSSOVER FOR INFORMATION ONLY
REMOVE CONCRETE BARRIER RAIL = 37 each
TEMPORARY IMPACT ATTENUATOR = 2 each
REMOVE TEMPORARY IMPACT ATTENUATOR = 2 each
RESET CONCRETE BARRIER RAIL = 37 each
SEAL CRS-2P = 5.6 tons
COVER TYPE 1 = 3,125 sq. yds.



SECTION A-A

NOTES:

1. ALL ITEMS ARE INCLUDED IN THE UNIT BID PRICE PER EACH OF CROSSOVER - MAINTAIN & CLOSE
2. SEE 618 SERIES DETAILED DRAWINGS FOR ADDITIONAL CROSSOVER REQUIREMENTS.
3. REMOVE TEMPORARY IMPACT ATTENUATORS, RESET CONCRETE BARRIER RAIL, AND PROVIDE SEAL AND COVER WHEN WORK IS COMPLETE.

CROSSOVER DETAILS

NOT TO SCALE

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\8085003rddet001.dgn	DESIGNED BY	R. JOHN KUNDA	5/21/2021	ROAD PLANS	I-15 BRIDGES (RP 226.7)	NHPB 15-4(165)227
2		7/15/2021	REVIEWED BY					
		5:18:26 PM CPS - U1716	CHECKED BY	TROY JOHNSON	5/21/2021	LEWIS & CLARK COUNTY	UPN 8085003	5

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R = 20.0'
N 1015149.6644
E 1327609.7565

DROP INLET IN PLACE
DO NOT DISTURB

UTILITY IN PLACE
DO NOT DISTURB

3,563.58 FS
3,563.74 FS
3,563.88 FS
3,564.02 FS
3,564.10 FS
3,563.76 FS
3,563.83 FS

5.0' TRANSITION PANEL

3,563.54 TBC
3,563.25 FL
3,563.30 FG
N 1015143.4197
E 1327628.7479

3,563.67 TBC
3,563.33 FL
3,563.38 FG

3,563.81 TBC
3,563.39 FL
3,563.44 FG

3,563.95 TBC
3,563.45 FL
3,563.50 FG

3,564.03 TBC
3,563.53 FL
3,563.58 FG

3,563.68 TBC
3,563.62 FL
3,563.67 FG

CONSTRUCTION LIMITS

FLARE
LANDING
RAMP 6.7%
LANDING

5.0' 4.2' 5.0' 6.5' 5.0' 4.2'

WALSH ST.

3,563.64 SURF.FS

3,563.77 SURF.FS
N 1015118.7245
E 1327636.8512

11.5'

NOTES:

DETECTABLE WARNING DEVICES

LEGEND	
FG	= FRONT OF GUTTER ELEV.
FL	= FLOW LINE ELEV.
TBC	= TOP BACK OF CURB ELEV.
FS	= FINISHED SURFACE ELEV.
TRW	= TOP OF RETAINING WALL ELEV.
LPI	= LATERAL PIPE INVERT ELEV.
TG	= TOP OF GRATE ELEV.

COLD MILL TO A DEPTH OF 0.20' BELOW FINISHED SURFACE ELEVATIONS.

IN AREAS WHERE THE EXISTING ELEVATIONS ARE GREATER THAN 0.20' BELOW FINISHED SURFACE ELEVATIONS, LEVEL THE EXISTING SURFACING USING PLANT MIX TO AN ELEVATION OF 0.20' BELOW FINISHED SURFACE ELEVATIONS.

PROVIDE DETECTABLE WARNING DEVICES ON THE BOTTOM 2.0 FEET OF EACH RAMP AS SHOWN. SEE DTL. DWG. NO. 608-40 FOR DETECTABLE WARNING DEVICES DETAILS.

ALL DIMENSIONS AND ELEVATIONS ARE FEET UNLESS OTHERWISE NOTED.

ELEVATIONS SHOWN AT MATCH LINE LOCATIONS ARE APPROXIMATE.

SEE DETAILED DRAWINGS FOR STANDARD SIDEWALK, CURB & GUTTER AND RETAINING WALL DETAILS.

COST OF RETAINING WALL IS INCLUDED IN THE UNIT PRICE BID FOR CONCRETE SIDEWALK.

BACKFILL BEHIND SIDEWALKS TO A 6:1 SLOPE, INCLUDE BACKFILL IN THE COST OF NEW SIDEWALK.

ALL SIDEWALK IS 6" UNLESS SPECIFIED OTHERWISE IN PLANS.

ALL CURB AND GUTTER DIMENSIONS ARE ALONG TBC.

CONTRACTOR VERIFY ELEVATIONS IN THE FIELD PRIOR TO CONSTRUCTION.

MATCH EXISTING ELEVATIONS AT ALL JOINTS BETWEEN NEW AND EXISTING CONCRETE.

14.3' 6.2' 5.0' 27.7' 27.0' 41.5' 35.7' 17.8' 11.9'

12.0'

3,563.74 SURF.FS
3,563.94 SURF.FS
N 1015124.5768
E 1327581.4753
3,564.24 TBC
3,563.74 FL
3,563.79 FG
N 1015132.2011
E 1327599.0457
3,563.75 TBC
3,563.69 FL
3,563.74 FG
N 1015130.2755
E 1327604.8841
3,563.92 SURF.FS
N 1015115.8040
E 1327607.7283
3,564.05 SURF.FS
N 1015107.2430
E 1327633.3475
3,563.54 SURF.FS
3,563.93 SURF.FS
N 1015094.1002
E 1327672.6779
3,563.54 SURF.FS
3,563.95 SURF.FS
N 1015090.3358
E 1327683.9430

CATTLE GUARD

NORTHBOUND OFF-RAMP

COLD MILLING AREA

NORTHBOUND ON-RAMP

CATTLE GUARD

3,564.25 TBC
3,563.75 FL
3,563.79 FG
N 1015106.6250
E 1327592.7905

3,563.80 SURF.FS
3,564.03 SURF.FS
12.0' 4.7' 4.8' 5.0'

3,563.87 TBC
3,563.81 FL
3,563.86 FG

3,563.94 TBC
3,563.88 FL
3,563.93 FG

ASPHALT LEVELING AREA

21.6'

FLARE
LANDING
RAMP 7.5%
LANDING

5.0' 11.6' 4.6' 3.4' 5.0' 10.0' 5.0'

3,563.94 FS
3,564.01 FS
3,564.71 TBC
3,564.21 FL
3,564.26 FG
3,564.79 TBC
3,564.28 FL
3,564.33 FG
3,564.92 TBC
3,564.42 FL
3,564.47 FG
3,564.78 FS
3,564.85 FS
3,564.98 FS
3,565.16 FS
3,565.31 FS
3,565.10 TBC
3,564.60 FL
3,564.65 FG
3,565.23 TBC
3,564.73 FL
3,564.78 FG
N 1015072.3084
E 1327606.1741

BACKFILL 6:1 SLOPE

* NOTE: TRANSITION TOP OF CURB FROM SQUARE EDGE TO RADIUS IN THIS 10.0' OF CURB & GUTTER.

3,564.56 SURF.FS
N 1015086.5546
E 1327627.0314

3,565.03 SURF.FS
N 1015067.4255
E 1327621.1938

20.0'

3,565.23 TBC
3,564.73 FL
3,564.78 FG
N 1015062.6351
E 1327636.2801

3,565.12 TBC
3,564.62 FL
3,564.67 FG

3,564.61 TBC
3,564.11 FL
3,564.16 FG

3,564.78 TBC
3,564.28 FL
3,564.33 FG

3,564.95 TBC
3,564.45 FL
3,564.50 FG

3,564.46 TBC
3,563.96 FL
3,564.01 FG
N 1015079.6858
E 1327652.6061

3,563.88 SURF.FS
3,563.94 SURF.FS
10.0' 10.0' 8.8'
3,563.99 SURF.FS

T 15 N R 4 W
SECT 35

R TBC = 30.95'
N 1015080.4291
E 1327576.3095

EXPANSION JOINT SEAL

LITTLE PRICKLY PEAR BRIDGE END

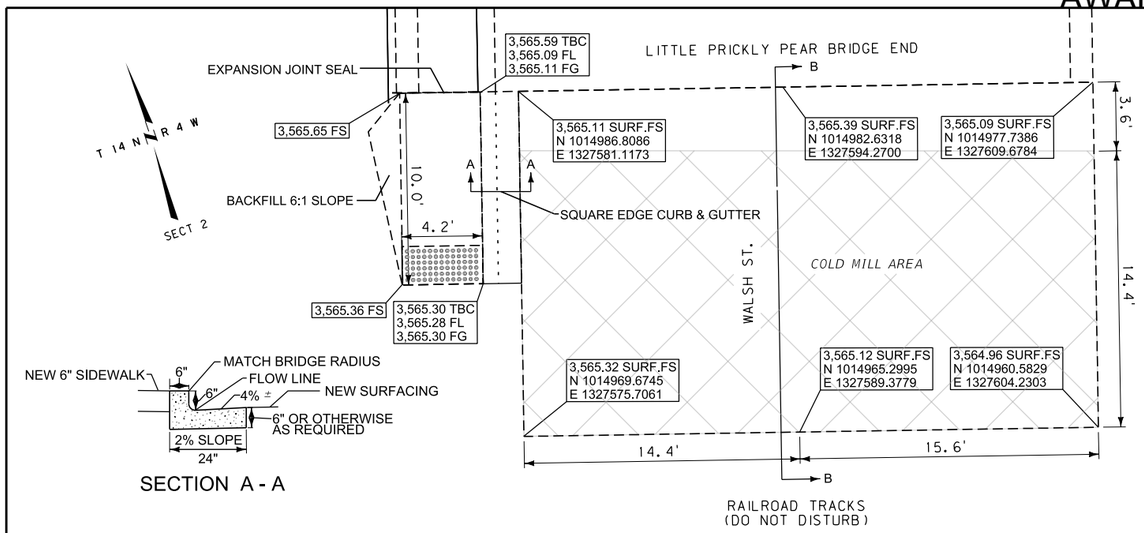
R TBC = 29.2'
N 1015052.6885
E 1327663.7321

RAMP DETAILS, COLD MILLING, & FINISHED SURFACING ELEVATIONS DETAILS

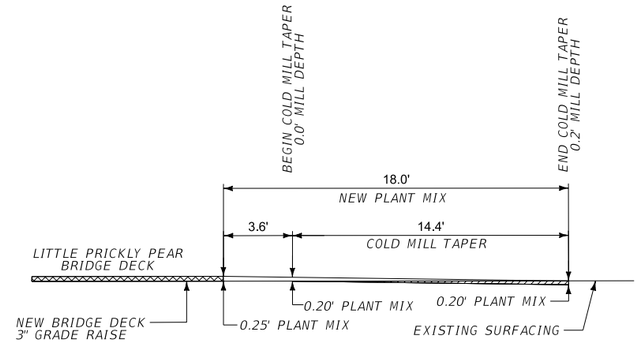
NOT TO SCALE

2 1	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\8085003rddet001.dgn	DESIGNED BY	R. JOHN KUNDA	5/21/2021	ROAD PLANS	I-15 BRIDGES (RP 226.7)	NHPB 15-4(165)227
		7/15/2021	REVIEWED BY					
		5:18:30 PM CPS - U1716	CHECKED BY	TROY JOHNSON	5/21/2021	LEWIS & CLARK COUNTY	UPN 8085003	6

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SECTION A - A



SECTION B - B

LEGEND	
FG	= FRONT OF GUTTER ELEV.
FL	= FLOW LINE ELEV.
TBC	= TOP BACK OF CURB ELEV.
FS	= FINISHED SURFACE ELEV.
TRW	= TOP OF RETAINING WALL ELEV.
LPI	= LATERAL PIPE INVERT ELEV.
TG	= TOP OF GRATE ELEV.

DETECTABLE WARNING DEVICES

NOTES:

PROVIDE DETECTABLE WARNING DEVICES ON THE BOTTOM 2.0 FEET OF EACH RAMP AS SHOWN. SEE DTL. DWG. NO. 608-40 FOR DETECTABLE WARNING DEVICES DETAILS.

ALL DIMENSIONS AND ELEVATIONS ARE FEET UNLESS OTHERWISE NOTED.

ALL SIDEWALK IS 6" UNLESS SPECIFIED OTHERWISE IN PLANS.

ALL CURB AND GUTTER DIMENSIONS ARE ALONG TBC.

CONTRACTOR VERIFY ELEVATIONS IN THE FIELD PRIOR TO CONSTRUCTION.

MATCH EXISTING ELEVATIONS AT ALL JOINTS BETWEEN NEW AND EXISTING CONCRETE.

ELEVATIONS SHOWN AT MATCH LINE LOCATIONS ARE APPROXIMATE.

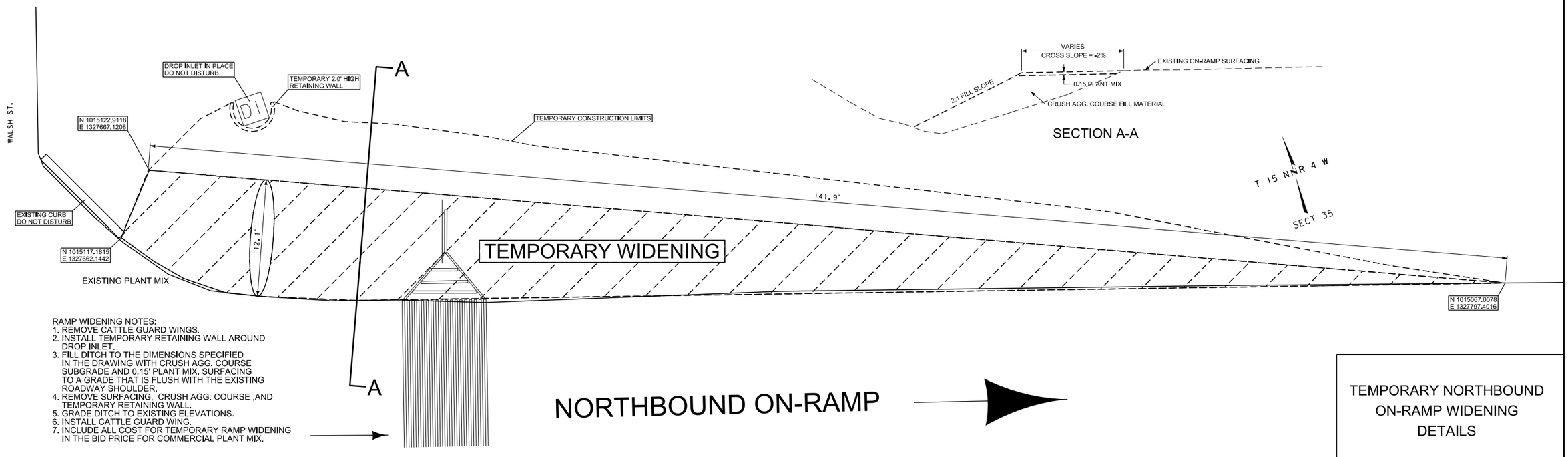
SEE DETAILED DRAWINGS FOR STANDARD SIDEWALK, CURB & GUTTER AND RETAINING WALL DETAILS.

COST OF RETAINING WALL IS INCLUDED IN THE UNIT PRICE BID FOR CONCRETE SIDEWALK

BACKFILL BEHIND SIDEWALKS TO A 6:1 SLOPE, INCLUDE BACKFILL IN THE COST OF NEW SIDEWALK

RAMP DETAILS & FINISH SURFACING ELEVATIONS DETAILS

NOT TO SCALE



RAMP WIDENING NOTES:
1. REMOVE CATTLE GUARD WINGS.
2. INSTALL TEMPORARY RETAINING WALL AROUND DROP INLET.
3. FILL DITCH TO THE DIMENSIONS SPECIFIED IN THE DRAWING WITH CRUSH AGG. COURSE SUBGRADE AND 0.15' PLANT MIX. SURFACING TO A GRADE THAT IS FLUSH WITH THE EXISTING ROADWAY SHOULDER.
4. REMOVE SURFACING, CRUSH AGG. COURSE ,AND TEMPORARY RETAINING WALL.
5. GRADE DITCH TO EXISTING ELEVATIONS.
6. INSTALL CATTLE GUARD WING.
7. INCLUDE ALL COST FOR TEMPORARY RAMP WIDENING IN THE BID PRICE FOR COMMERCIAL PLANT MIX.

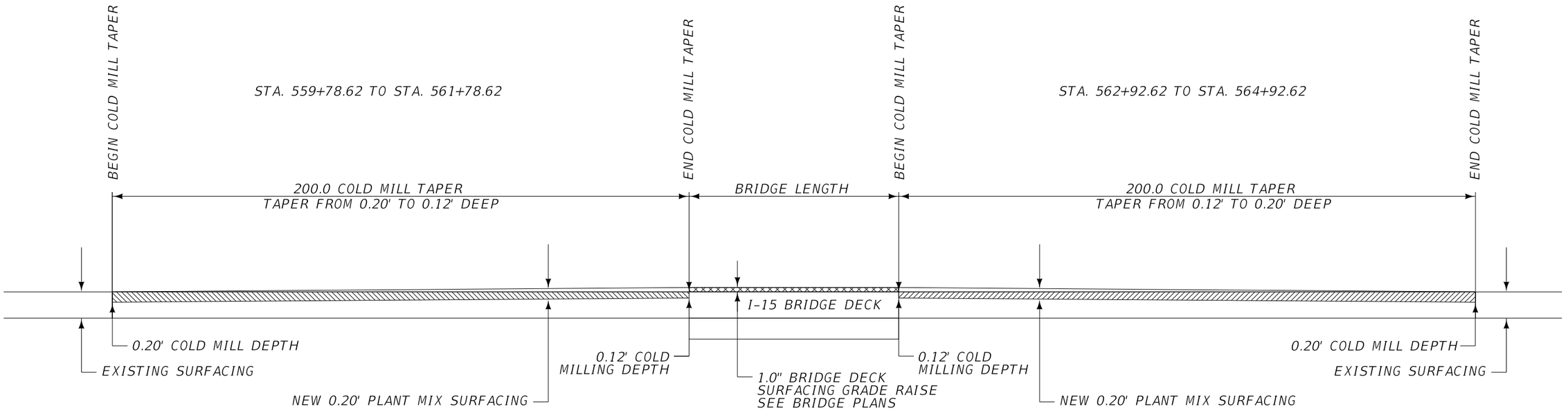
NORTHBOUND ON-RAMP

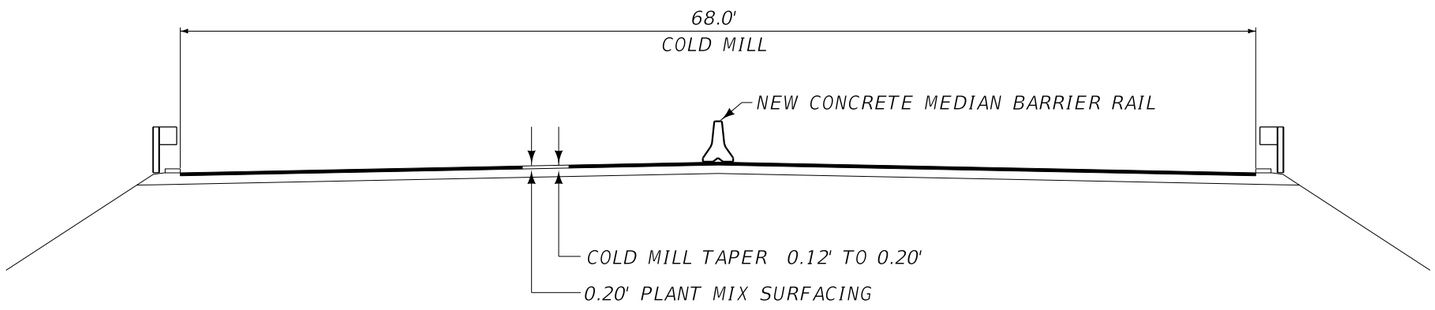
TEMPORARY NORTHBOUND ON-RAMP WIDENING DETAILS

NOT TO SCALE

AWARD COPY

INTERSTATE BRIDGE END COLD MILLING





INTERSTATE BRIDGE
END COLD MILLING

NOT TO SCALE

3	MDT MONTANA DEPARTMENT OF TRANSPORTATION	C:\DGN\8085003rddet002.dgn	DESIGNED BY	R. JOHN KUNDA	5/21/2021	ROAD PLANS		I-15 BRIDGES (RP 226.7)	NHPB 15-4(165)227
2		7/15/2021	REVIEWED BY						
		5:18:43 PM CPS - U1716	CHECKED BY	TROY JOHNSON	5/21/2021	LEWIS & CLARK COUNTY		UPN 8085003	8

AWARD COPY

ASSOCIATED PROJECT AGREEMENT NUMBERS	
P. E.	NHPB STWD (206)

BRIDGE IDENTIFICATION	
MDT STR ID	NBI NUMBER
01203	I00015226+07631
01204	I00015226+07632
03375	L25241000+00301

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS AND QUANTITIES
FEDERAL AID PROJECT NHPB 15-4(165)227
I-15 BRIDGES (RP 226.7)
LEWIS AND CLARK COUNTY

LIST OF DRAWINGS

SHEET NO.	DWG. NO.	TITLE
BRIDGE DRAWINGS		
B1	24531	LIST OF DRAWINGS
B2	24532	ESTIMATED BRIDGE PLAN QUANTITIES AND BRIDGE WORK SUMMARY
B3	24533	GENERAL NOTES, BRIDGE DECK REPAIR & THICK OVERLAY DEFINITION AND GUARD ANGLE REMOVAL DETAILS
B4	24534	EXISTING RAIL & NEW CONCRETE BARRIER, CURB END, JOINT SEAL AND DECK DRAIN DETAILS
B5	24535	CONCRETE BARRIER RETROFIT DETAILS AND BILL OF REINFORCING STEEL
B6	24536	PHASE CONSTRUCTION OF INTERSTATE BRIDGES
B7	24537	DECK REPLACEMENT PHASE I AND PHASE II PLAN VIEWS
B8	24538	DECK REPLACEMENT PHASE III AND COMPLETED PLAN VIEWS
B9	24539	DECK REPLACEMENT PHASE I SECTIONS
B10	24540	DECK REPLACEMENT PHASE II SECTIONS
B11	24541	DECK REPLACEMENT PHASE III AND COMPLETED SECTIONS
B12	24542	BACKWALL REMOVAL & REPLACEMENT PHASE I
B13	24543	BACKWALL REMOVAL & REPLACEMENT PHASE II
B14	24544	BACKWALL REMOVAL
B15	24545	BACKWALL REPLACEMENT
B16	24546	BEARING PAD & SOLE PLATE DETAILS
B17	24547	ERECTION PLAN, GIRDER ELEVATION, SHEAR STUD DETAILS AND DEAD LOAD DEFLECTION TABLE
B18	24548	GIRDER DETAILS, STIFFENER DETAILS AND DIAPHRAGM DETAILS
B19	24549	PHASE CONSTRUCTION - DECK REPLACEMENT TRANSVERSE SECTIONS
B20	24550	PHASE CONSTRUCTION - CLOSURE POUR, SIDEWALK, PARAPET AND DECK DRAIN DETAILS
B21	24551	PHASE CONSTRUCTION - DECK REINFORCING STEEL PLACEMENT PLAN
B22	24552	PHASE CONSTRUCTION - DECK REPLACEMENT BILL OF REINFORCING STEEL

DWG. NO.	TITLE
STANDARD DRAWINGS	
SBR-OR42 (Approved 9-17-19)	STANDARD BRIDGE RAIL TYPE OPEN RAIL 42"
SBR-OR42-PK (Approved 9-17-19)	STANDARD BRIDGE RAIL TYPE OPEN RAIL 42" PICKETS
SBR-OR42-PP (Approved 9-17-19)	STANDARD BRIDGE RAIL TYPE OPEN RAIL 42" PARAPET

DWG. NO.	TITLE
AS-BUILT DRAWINGS	
5459	GENERAL LAYOUT, WOLF CREEK INTERCHANGE
5507	GENERAL LAYOUT, BRIDGE OVER LITTLE PRICKLY PEAR CREEK

SHEET NO. B1

LIST OF DRAWINGS

MONTANA DEPARTMENT OF TRANSPORTATION
BRIDGE BUREAU

REVISED			
REVISED			
REVISED			
REVISED			
CHECKED	D.C.M.		
DRAWN	P.H.Jr.	5-24-21	
DESIGNED	S.L.F.B.	4-3-15	
6/28/2021	12:13:10 PM	C:\DGN\8085003brgsh301.dgn	

UPN NUMBER 8085003

MDT STRUCTURE MULTIPLE

DRAWING NO. 24531

AWARD COPY

ESTIMATED BRIDGE PLAN QUANTITIES

FEATURE CROSSED	GENERAL LAYOUT DRAWING NO.	BRIDGE IDENTIFICATION NO.	CONSTRUCTION PHASE	BRIDGE DECK MILLING (YD^2)	TRANSVERSE DECK GROOVING (YD^2)	CLASS A BRIDGE DECK REPAIR (YD^2)	** CLASS B BRIDGE DECK REPAIR (YD^2)	CONCRETE-CLASS OVERLAY (YD^2)	* OVERLAY CONCRETE VOLUME (YD^3)	JOINT SEALS - SILICONE (LN. FT.)	42 IN. OPEN RAIL-BR-CSC (LN. FT.)	42 IN. OPEN RAIL PICKET-BR (LN. FT.)	42 IN. OPEN RAIL PARAPET-BR-CSC (EACH)	REVISE CONCRETE BARRIER RAIL-BR (LN. FT.)
INTERCHANGE WOLF CREEK N.B.	5459	01203	PHASE I	424.2	390.9	24.5	3.0	424.2	29.5					115.2
INTERCHANGE WOLF CREEK S.B.	5459	01204	PHASE II	437.6	390.9	4.2	2.0	437.6	30.4	114.2				115.2
LITTLE PRICKLY PEAR CREEK	5507	03375	PHASE I		98.1						79.6	79.6	2	
			PHASE II		176.7						79.6		2	
			PHASE III											
STRUCTURE TOTAL					274.8						159.2	79.6	4	
PROJECT TOTAL				861.8	1056.6	28.7	5.0	861.8	59.9	114.2	159.2	79.6	4	230.4

* NOTE: Overlay concrete volume is not a bid item. The volume shown is used to determine the amount of excess overlay concrete eligible for additional payment, if any. See Special Provisions.

** NOTE: Specific Class B Deck Repair areas are not identified in the contract. Class B Deck Repair quantities are provided as a contingency. The Project Manager will identify any Class B Deck Repair areas if they are needed.

ESTIMATED BRIDGE PLAN QUANTITIES - CONTINUED

FEATURE CROSSED	GENERAL LAYOUT DRAWING NO.	BRIDGE IDENTIFICATION NO.	CONSTRUCTION PHASE	STRUCTURAL STEEL - GIRDER (LUMP SUM)	CONCRETE-CLASS STRUCTURE LOW SLUMP (YD^3)	ELASTOMERIC BEARING DEVICES (EACH)	REMOVE DECK (YD^2)	REINFORCING STEEL - EPOXY COATED (LB.)	REMOVE GUARD ANGLE (LN.FT.)	REVISE STRUCTURE (LUMP SUM)
INTERCHANGE WOLF CREEK N.B.	5459	01203	PHASE I						66.9	
INTERCHANGE WOLF CREEK S.B.	5459	01204	PHASE II						69.0	
LITTLE PRICKLY PEAR CREEK	5507	03375	PHASE I	0.9	40.9	2	158.2	12759		0.9
			PHASE II	0.1	51.5		178.0	13435		0.1
			PHASE III		7.5			566		
STRUCTURE TOTAL				1.0	99.9	2	336.2	26760		1.0
PROJECT TOTAL				1.0	99.9	2	336.2	26760	135.9	1.0

BRIDGE WORK SUMMARY

STRUCTURE ID NUMBER	STRUCTURE NAME	GENERAL LAYOUT DWG. NO.	CLASS A DECK REPAIR	** CLASS B BRIDGE DECK REPAIR	BRIDGE DECK MILLING	REVISE BRIDGE RAIL	JOINT SEAL	PHASED CONSTRUCTION	THICK CONCRETE OVERLAY	DECK REPLACEMENT
01203	INTERCHANGE WOLF CREEK N.B.	5459	✓	✓	✓	✓ EXT			✓	
01204	INTERCHANGE WOLF CREEK S.B.	5459	✓	✓	✓	✓ EXT	✓		✓	
03375	BRIDGE OVER LITTLE PRICKLY PEAR CREEK	5507						✓		✓

EXT DENOTES EXTERIOR RAIL ONLY

BRIDGE WORK SUMMARY - CONTINUED

STRUCTURE ID NUMBER	STRUCTURE NAME	GENERAL LAYOUT DWG. NO.	NEW GIRDER AND DIAPHRAGM	EXISTING GIRDER MODIFICATION	NEW BEARING	BACKWALL MODIFICATION	BRIDGE RAIL REPLACEMENT	BRIDGE SIDEWALK REPLACEMENT	REMOVE GUARD ANGLE
01203	INTERCHANGE WOLF CREEK N.B.	5459							✓
01204	INTERCHANGE WOLF CREEK S.B.	5459							✓
03375	BRIDGE OVER LITTLE PRICKLY PEAR CREEK	5507	✓	✓	✓	✓	✓	✓	

SHEET NO. B2

ESTIMATED BRIDGE PLAN QUANTITIES AND BRIDGE WORK SUMMARY

FEDERAL AID PROJECT NO. NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MDT MONTANA DEPARTMENT OF TRANSPORTATION — BRIDGE BUREAU

REVISED	REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED	6/28/2021
				5-24-21	5-24-21	10-2-15	12:13:18 PM
				D.C.M.	P.H.Jr.	S.L.F.B.	C:\DGN\8085003\brreh302.dgn

UPN NUMBER 8085003

MDT STRUCTURE MULTIPLE

DRAWING NO. 24532

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

The design was prepared in accordance with AASHTO LRFD Bridge Design Specifications, Eighth edition 2017, with standard HL-93 loading.

See As-built drawings for design specifications and live loading for existing bridge components.

REINFORCING STEEL: Use new deformed type reinforcing steel meeting the requirements of AASHTO M 31 Grade 60. Include all costs associated with furnishing and placing new reinforcing steel in the unit price bid for Reinforcing Steel or Reinforcing Steel - Epoxy Coated unless otherwise noted.

For the requirements of corrosion resistant reinforcing steel, See Special Provisions.

Replace existing reinforcing steel damaged during construction that is called out to remain in place at no additional cost to the State.

Include cleaning exposed existing reinforcing steel in other items of work.

REINFORCING STEEL SUFFIX:
The suffix E denotes epoxy coated reinforcing steel.
The suffix CR denotes corrosion resistant reinforcing steel.

TRAFFIC CONTROL PLAN AND SEQUENCE OF OPERATION: See Special Provisions.

CLASS A AND B BRIDGE DECK REPAIR: Quantities shown may vary from actual field quantities.

OVERLAY TREATMENT: Use Concrete Class Overlay on bridge decks requiring thick overlays (See Standard Specifications).

STRUCTURAL STEEL: All structural steel will be measured and paid for on the lump sum basis as set forth in the Standard Specifications. Use structural steel meeting the requirements of AASHTO M 270 Grade 36. Estimated amount = 16 200 lb.

TEMPORARY BARRIER: See Road Plans for additional information. Use type 2 or 3 anchors to attach temporary barrier to existing and new bridge deck with less than 2 ft. of clearance to the edge of deck.

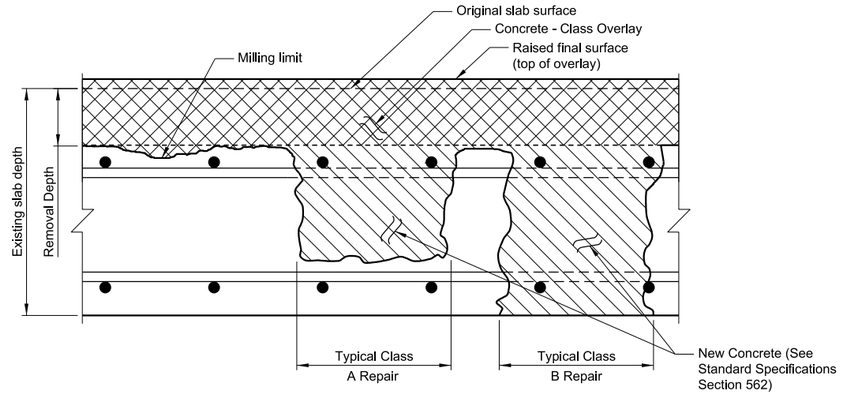
DIMENSIONS: All dimensions are in feet and inches except as noted. Verify all necessary dimensions of the existing structures in the field before ordering materials. Obtain approval of shop plans from the State of Montana, Department of Transportation before beginning fabrication. If the dimensions and 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.

CONTROL SURVEY: Establish a control elevation at each bridge before removing or milling the deck.

REINFORCING STEEL COVER: 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	2½"
Bottom of Abutment Caps	3"
Concrete Barriers & Curbs	1½"

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



NOTE: Reinforcing steel may be located above the milling limit.

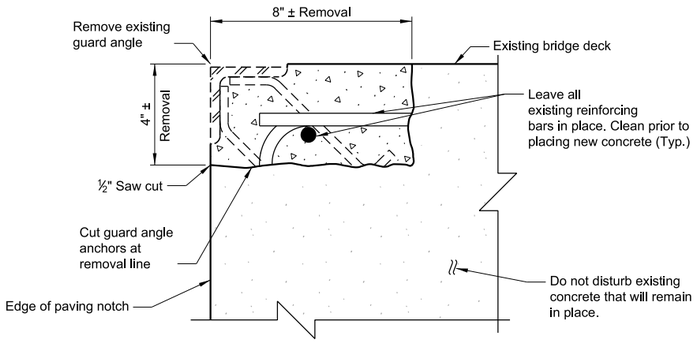
NOTE: For removal & overlay depths, see Table of Removal and Overlay Depths, this sheet.

BRIDGE DECK REPAIR AND THICK OVERLAY DEFINITION

No Scale

NOTE: See details, this sheet, for overlay treatment at guard angles.

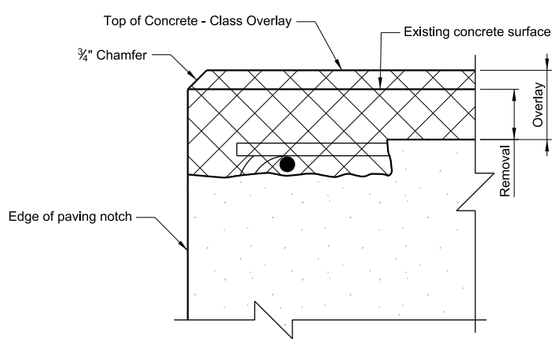
NOTE: See Bridge Work Summary Table, Sheet No. B2 for bridge deck repair and overlay treatment locations.



EXISTING GUARD ANGLE REMOVAL

NO SCALE

NOTE: Include the cost of any approach pavement subgrade removal or formwork required for the guard angle removal and concrete placement in the unit price bid for Remove Guard Angle.



NEW CONCRETE OVERLAY AT GUARD ANGLE REMOVAL

NO SCALE

NOTE: For removal and overlay depths,
See Bridge Deck Repair and Thick Overlay Definition, This sheet.

TABLE OF REMOVAL AND OVERLAY DEPTHS

MDT STRUCTURE ID NUMBER	STRUCTURE NAME	DECK TREATMENT	REMOVAL DEPTH (IN)	OVERLAY THICKNESS (IN)	TOTAL GRADE RAISE (IN)
01203	Interchange Wolf Creek N.B.	Thick Overlay	1 1/2"	2 1/2"	1"
01204	Interchange Wof Creek S.B.	Thick Overlay	1 1/2"	2 1/2"	1"
03375	Little Prickly Pear Creek	Replacement	Full	N/A	Varies

SHEET NO. B3

GENERAL NOTES, BRIDGE DECK REPAIR & THICK OVERLAY DEFINITION AND GUARD ANGLE REMOVAL DETAILS

SCALE: AS NOTED

REFERENCE POINT MULTIPLE

ROUTE MULTIPLE

FEDERAL AID PROJECT NO. NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MDT MONTANA DEPARTMENT OF TRANSPORTATION

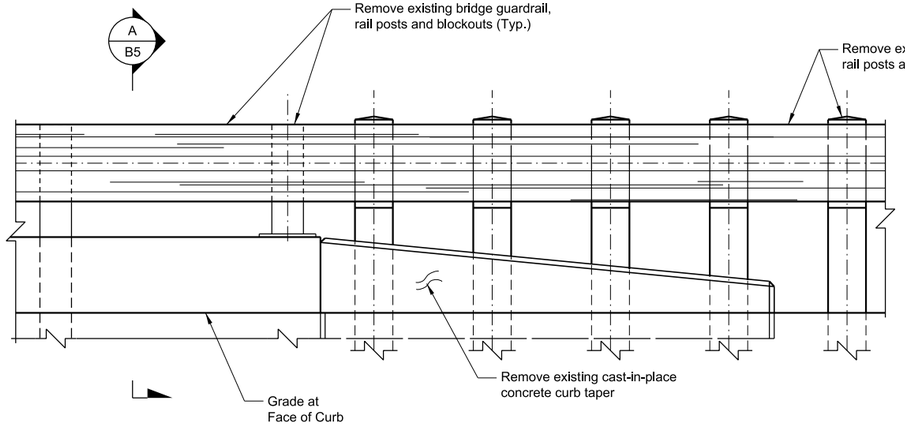
BRIDGE BUREAU

REVISED	REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED	6/28/2021	12:13:34 PM	C:\DGN\8085003brreh301.dgn
				D.C.M.	P.H.Jr.	S.L.F.B.			
				5-24-21	5-24-21	10-2-15			

UPN NUMBER 8085003

MDT STRUCTURE MULTIPLE

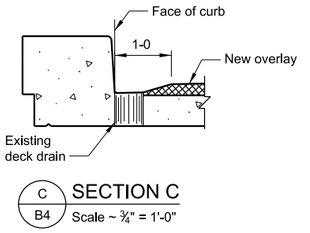
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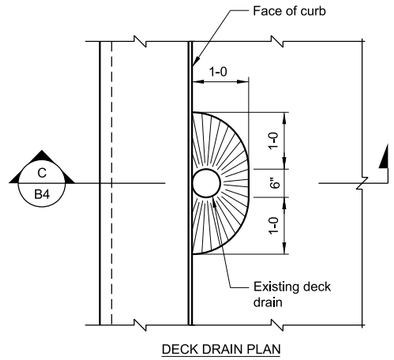


PARTIAL EXISTING ELEVATION VIEW - SBBR RAIL

Scale ~ 1" = 1'-0"

01203: NB Approach end shown. Departure end similar without existing curb taper.
01204: SB Approach end shown. Departure end similar without existing curb taper.

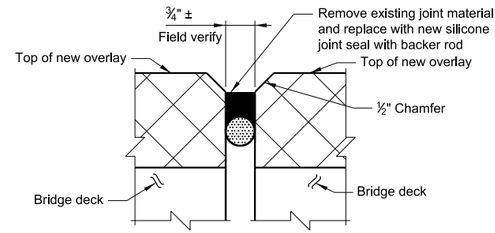




NOTE: ½" Square bars at deck drain inlet not shown.

OVERLAY TREATMENT AT DECK DRAINS

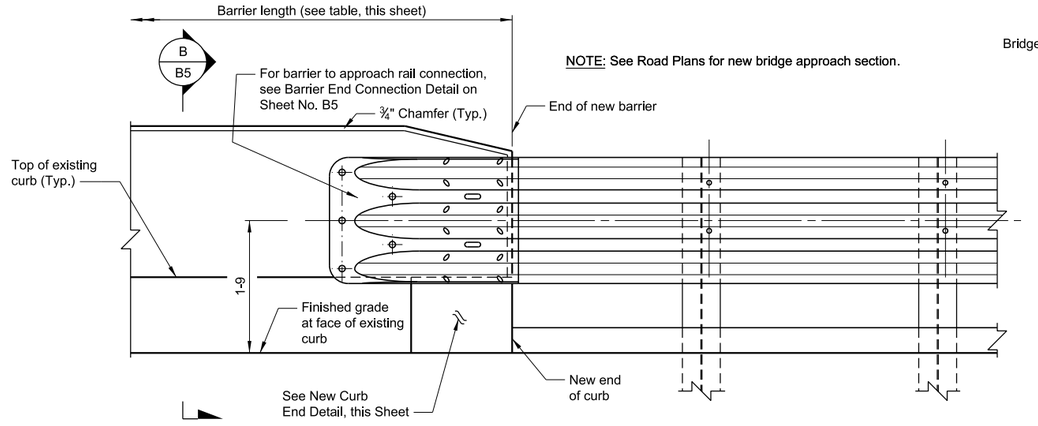
Scale ~ ¾" = 1'-0"



SILICONE JOINT SEAL

Scale ~ 6" = 1'-0"

01203
01204
Longitudinal

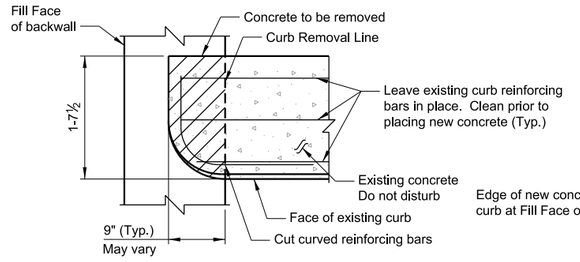


NOTE: See Road Plans for new bridge approach section.

PARTIAL ELEVATION VIEW - NEW CONCRETE BARRIER

Scale ~ 1" = 1'-0"
01203: NB Approach and Departure
01204: SB Approach and Departure

BRIDGE BARRIER LENGTHS				
MDT STRUCTURE ID	FEATURE CROSSED / STRUCTURE NAME	ROADWAY	BARRIER LOCATION	BARRIER LENGTH (ft)
01203	INTERCHANGE WOLF CREEK	NB	Exterior	115.2
01204	INTERCHANGE WOLF CREEK	SB	Exterior	115.2

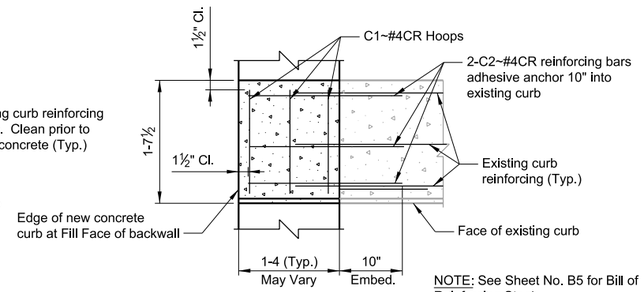


PLAN VIEW

EXISTING CURB END REMOVAL DETAIL

Scale ~ 1" = 1'-0"

NOTE: Existing rail post base plate at approach ends not shown.



NOTE: See Sheet No. B5 for Bill of Reinforcing Steel.

PLAN VIEW

NEW CURB END DETAIL

Scale ~ 1" = 1'-0"

NOTE: Match slope profile of existing curb face at new curb face.

SHEET NO. B4

EXISTING RAIL & NEW CONCRETE BARRIER, CURB END, JOINT SEAL AND DECK DRAIN DETAILS

SCALE: AS NOTED

BRIDGE AT WOLF CREEK INTERCHANGE AT STA. 562+35.00

REFERENCE POINT 226+0.7631-2

ROUTE I-15

FEDERAL AID PROJECT NO. NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE BUREAU

REVISED			D.C.M.	5-24-21
REVISED			P.H.Jr.	5-24-21
REVISED			S.L.F.B.	10-2-15
REVISED			CHECKED	
			DRAWN	
			DESIGNED	

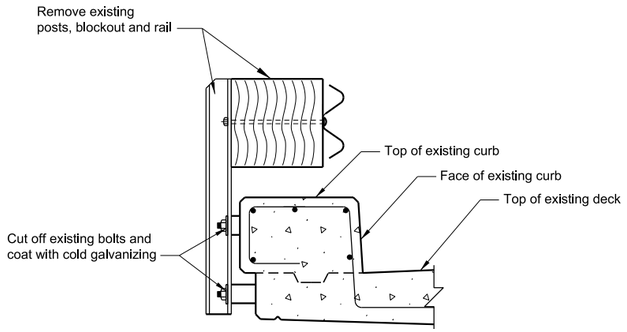
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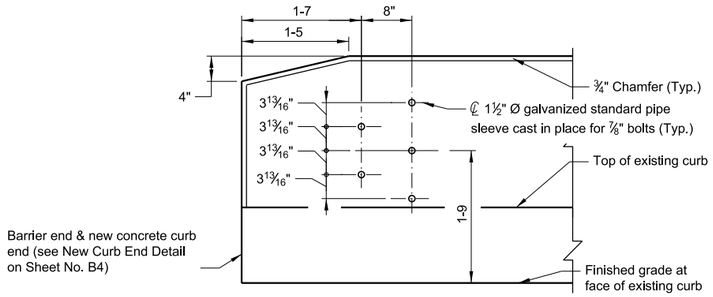
MDT STRUCTURE 01203, 01204

DRAWING NO. 24534

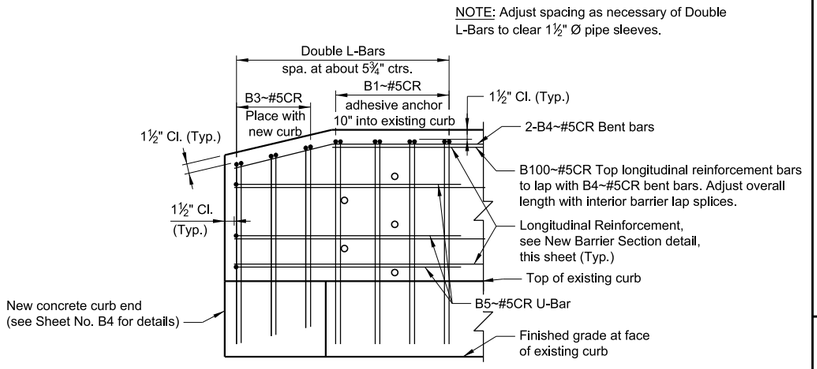
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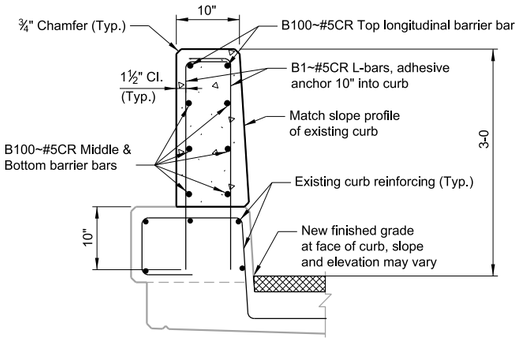
A / B4 EXISTING SBBR RAIL AND CURB SECTION
Scale ~ 1" = 1'-0"



BARRIER END CONNECTION DETAIL
(Typical for approach and departure ends)
Scale ~ 1" = 1'-0"



TYPICAL BARRIER END DETAIL
Scale ~ 1" = 1'-0"

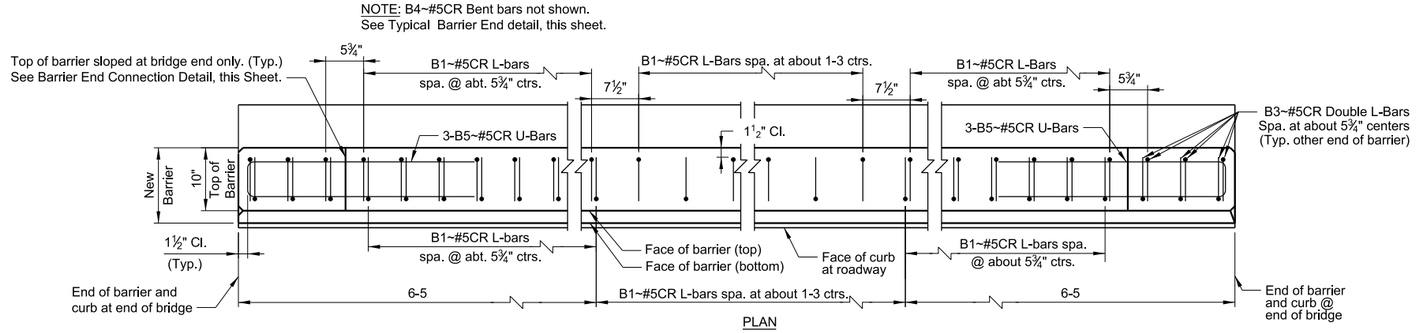


B / B4 NEW BARRIER SECTION
Scale ~ 1" = 1'-0"

NOTE: Include all costs associated with removing and replacing curb ends (including reinforcing steel), removing existing rail, and placing new concrete barrier rail in the unit price bid for Revise Concrete Barrier Rail - Br.

NOTE: Verify all dimensions in the field before ordering materials and fabrication.

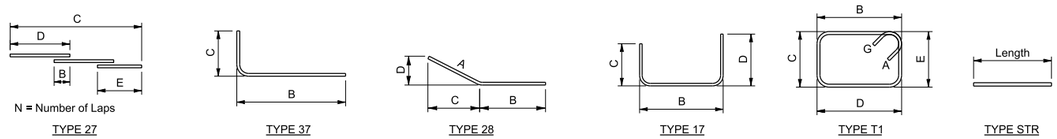
NOTE: Lap #5CR longitudinal bars minimum 2-11. 5-2 Lap has been provided.



BARRIER REINFORCING STEEL PLACEMENT DIAGRAM
Scale ~ 1" = 1'-0"

BILL OF REINFORCING STEEL

FOR TWO SEPARATE BARRIERS AND CURBS
(ALL DIMENSIONS ARE OUT TO OUT)



NOTE: Bill of Reinforcing Steel is for informational purposes only.

01203 - Wolf Creek Interchange - NB Barrier and Curb Reinforcement

Mark	Size	No.	Type	Length	A	B	C	D	E	G	N
B100	#5CR	8	27	120-0		5-2	114-10	60-0	60-0		1
B1	#5CR	207	37	3-4½		2-9½	7"				
B3	#5CR	12	37	3-0		2-5	7"				
B4	#5CR	4	28	4-4	1-4	3-0	1-3½	4"			
B5	#5CR	6	17	6-6		6"	3-0	3-0			
C1	#4CR	6	T1	4-10	4½"	1-3½	9"	1-3½	9"	4½"	
C2	#4CR	12	STR	2-0½							

01204 - Wolf Creek Interchange - SB Barrier and Curb Reinforcement

Mark	Size	No.	Type	Length	A	B	C	D	E	G	N
B100	#5CR	8	27	120-0		5-2	114-10	60-0	60-0		1
B1	#5CR	207	37	3-4½		2-9½	7"				
B3	#5CR	12	37	3-0		2-5	7"				
B4	#5CR	4	28	4-4	1-4	3-0	1-3½	4"			
B5	#5CR	6	17	6-6		6"	3-0	3-0			
C1	#4CR	6	T1	4-10	4½"	1-3½	9"	1-3½	9"	4½"	
C2	#4CR	12	STR	2-0½							

SHEET NO. B5

CONCRETE BARRIER RETROFIT DETAILS AND BILL OF REINFORCING STEEL

SCALE: As Noted

BRIDGE AT WOLF CREEK INTERCHANGE AT STA. 562+35.00

REFERENCE POINT 226+0.7631-2

ROUTE I-15

FEDERAL AID PROJECT NO. NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MONTANA DEPARTMENT OF TRANSPORTATION

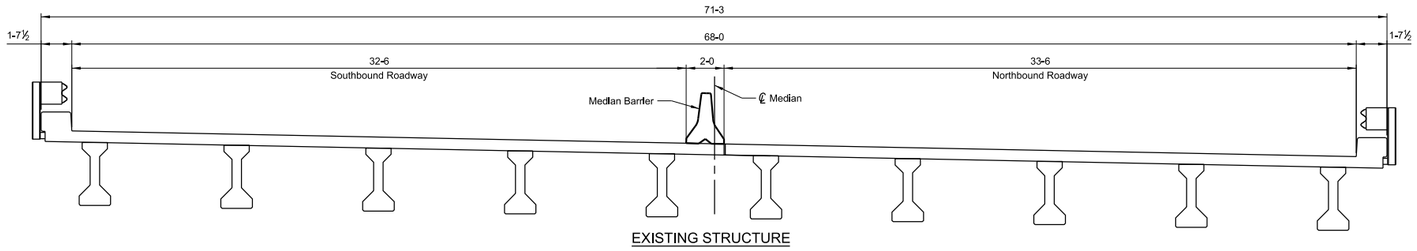
BRIDGE BUREAU

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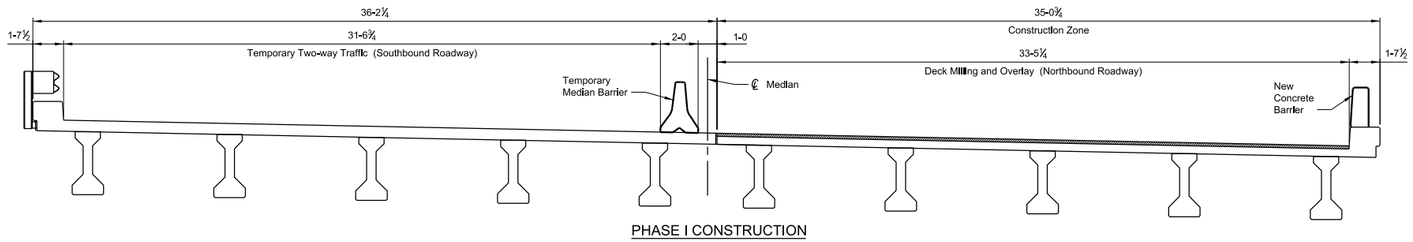
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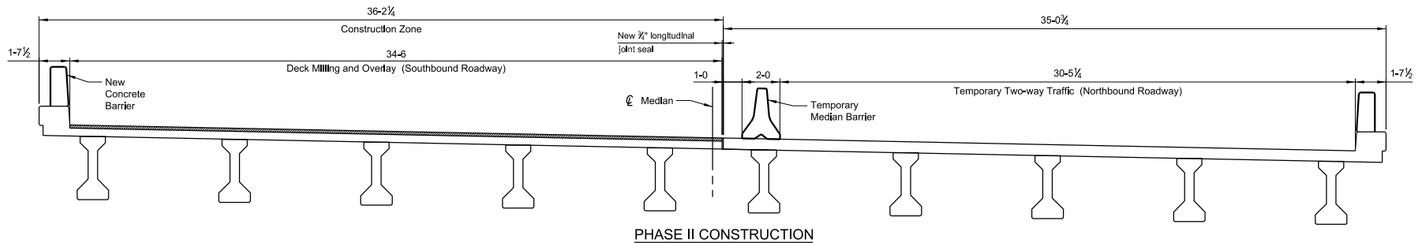
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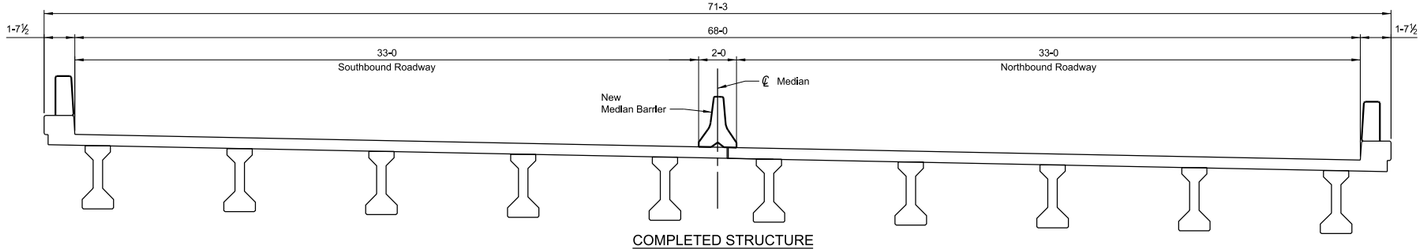
EXISTING STRUCTURE



PHASE I CONSTRUCTION



PHASE II CONSTRUCTION



COMPLETED STRUCTURE

SHEET NO.
B6

PHASE CONSTRUCTION
OF INTERSTATE BRIDGES

SCALE: ¼" = 1'-0"

BRIDGE AT
WOLF CREEK INTERCHANGE
AT STA. 562+35.00

REFERENCE POINT
226+0.7631-2

ROUTE
I-15

FEDERAL AID PROJECT NO.
NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MDT
MONTANA DEPARTMENT
OF TRANSPORTATION

BRIDGE BUREAU

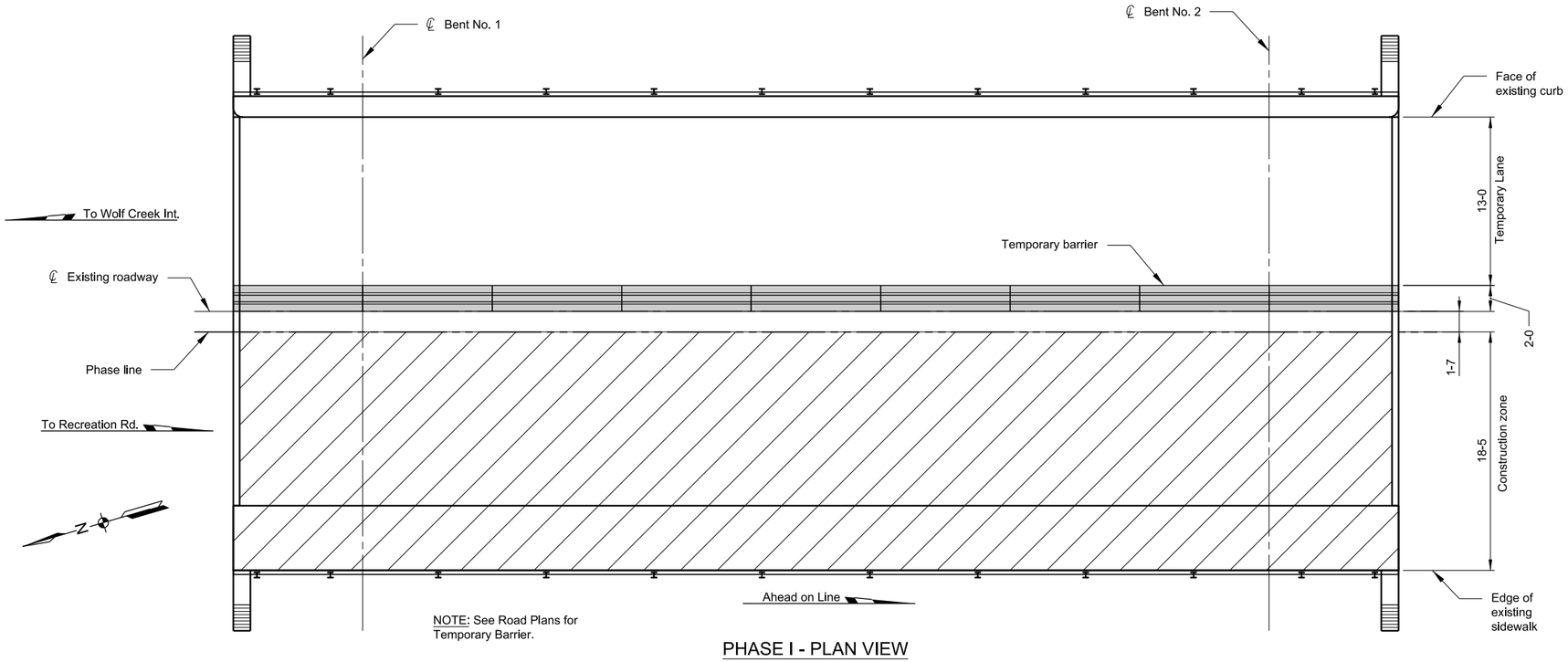
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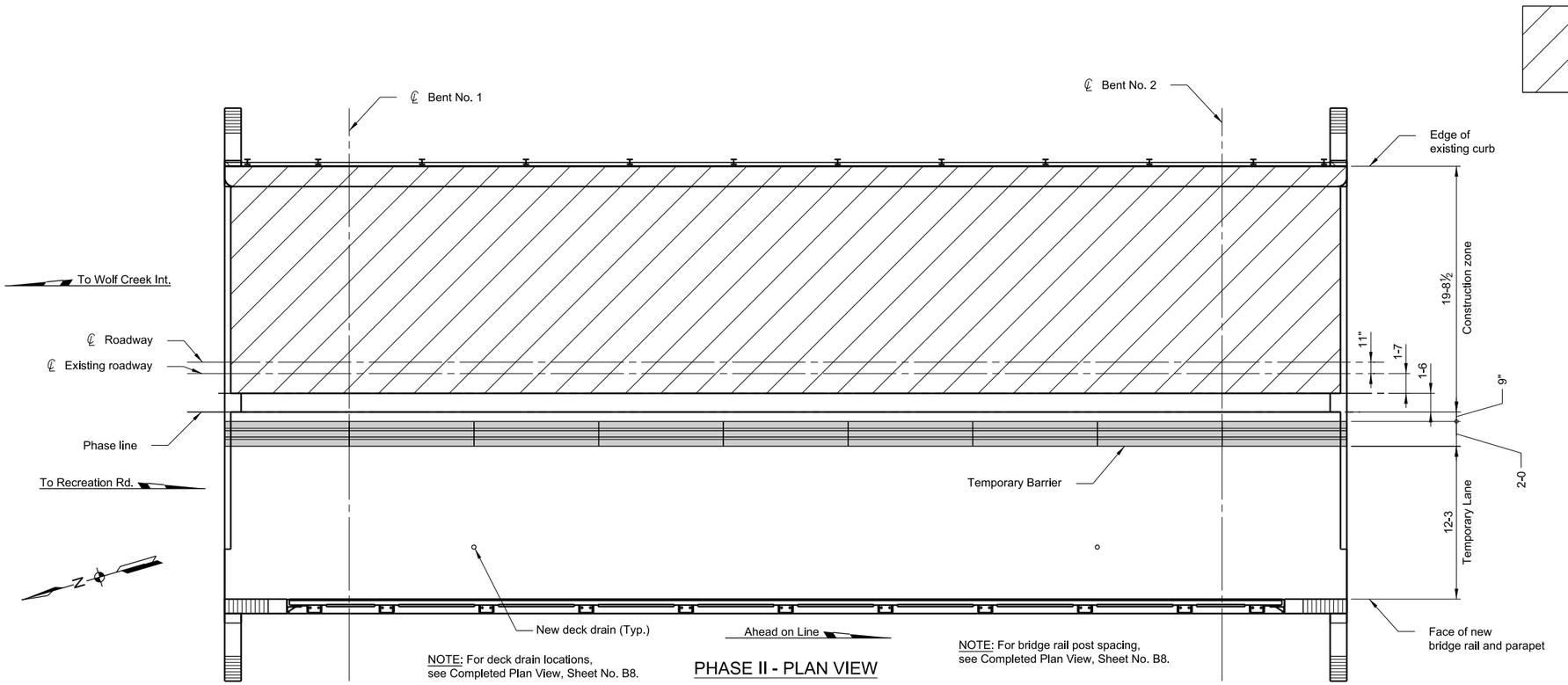
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24536

AWARD COPY



PHASE I - PLAN VIEW



PHASE II - PLAN VIEW

SHEET NO. B7

DECK REPLACEMENT
PHASE I AND PHASE II
PLAN VIEWS

SCALE: 3/16" = 1'-0"

BRIDGE OVER
LITTLE PRICKLY PEAR CREEK

REFERENCE POINT 0+0.031

ROUTE L-25-241

FEDERAL AID PROJECT NO.
NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MDT MONTANA DEPARTMENT OF TRANSPORTATION
BRIDGE BUREAU

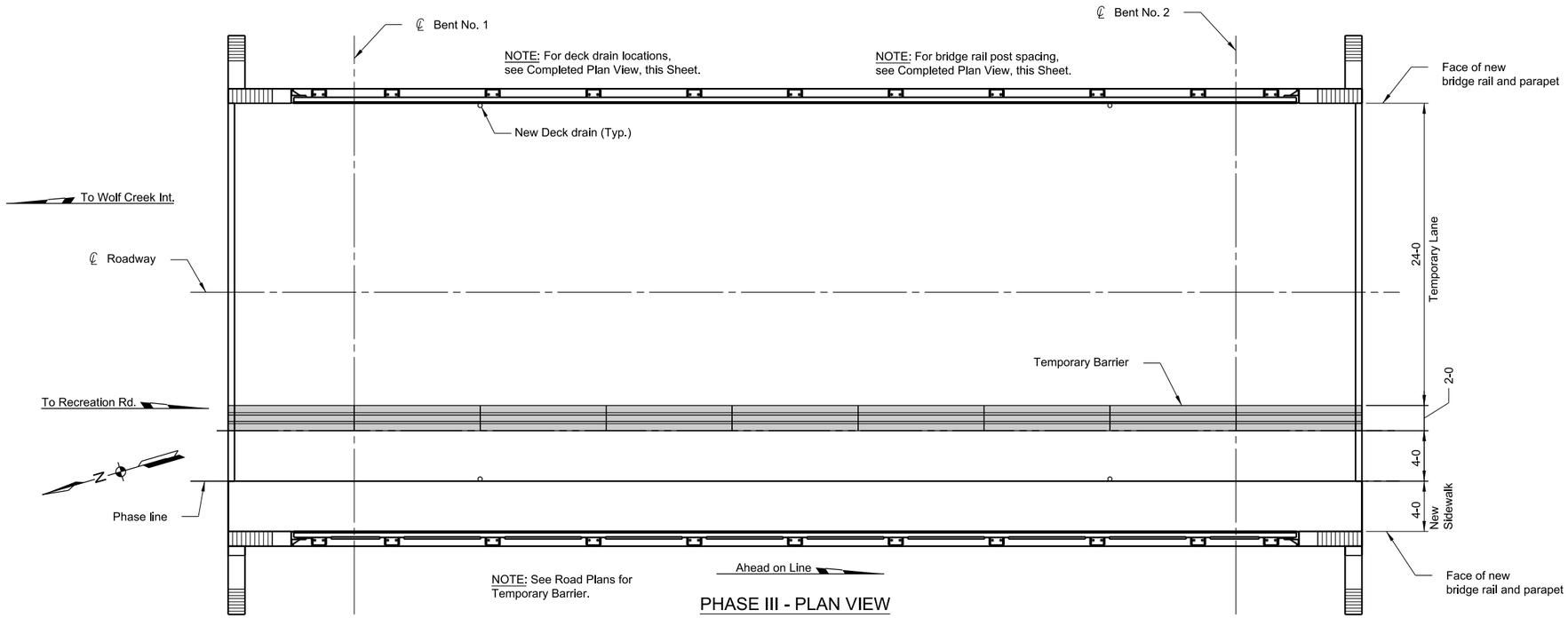
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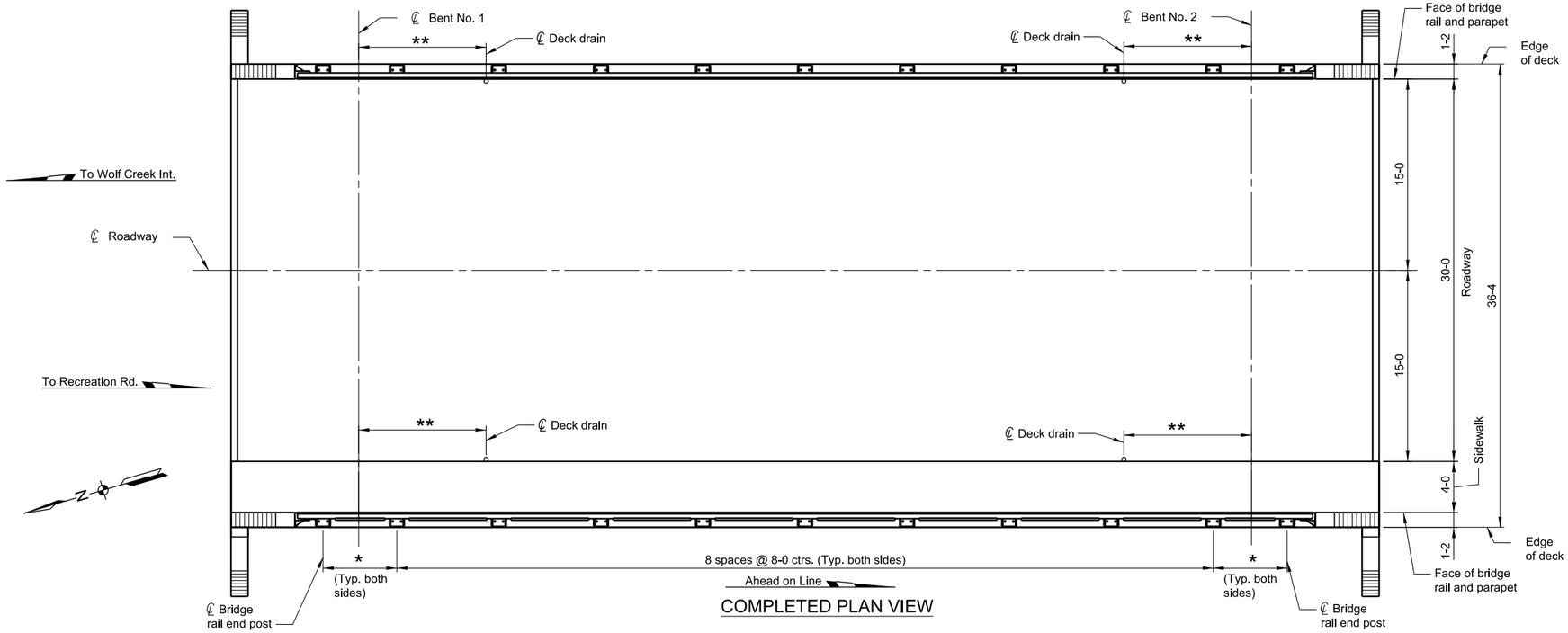
MDT STRUCTURE
03375

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24537

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PHASE III - PLAN VIEW



COMPLETED PLAN VIEW

* NOTE: Field measure the actual longitudinal finished distance between the bridge rail parapets. Use the dimensions on the Standard Bridge Rail Type Open Rail 42" standard drawings to determine the bridge rail end post spacings. The estimated spacing for the bridge end rail posts is 5-9½. Fabricate all hardware to fit the constructed post spacing.

** NOTE: Match existing distance. See Sheet No. B20 for details.

SHEET NO. B8

DECK REPLACEMENT
PHASE III AND COMPLETED
PLAN VIEWS

SCALE: 3/16" = 1'-0"

BRIDGE OVER
LITTLE PRICKLY PEAR CREEK

REFERENCE POINT 0+0.031

ROUTE L-25-241

FEDERAL AID PROJECT NO.
NHPB 15-4(165)227

LEWIS & CLARK COUNTY

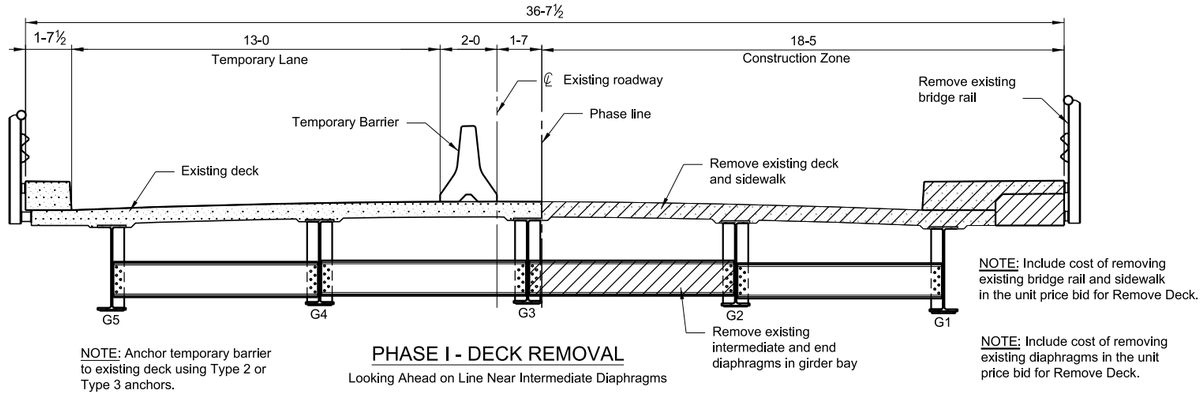
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BRIDGE BUREAU

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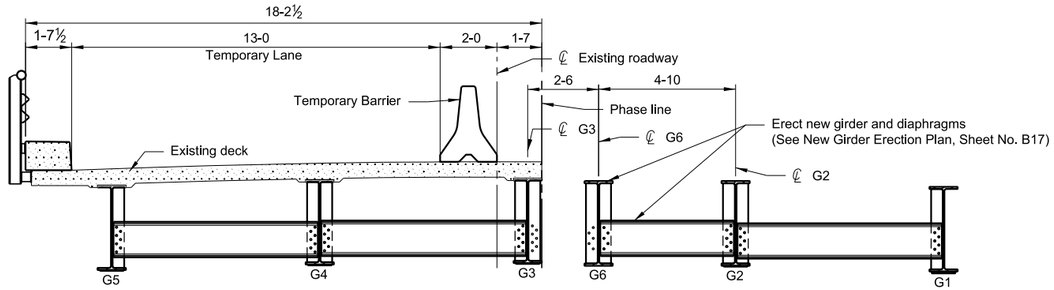
NOTE: Anchor temporary barrier to existing deck using Type 2 or Type 3 anchors.

PHASE I - DECK REMOVAL

Looking Ahead on Line Near Intermediate Diaphragms

NOTE: Include cost of removing existing bridge rail and sidewalk in the unit price bid for Remove Deck.

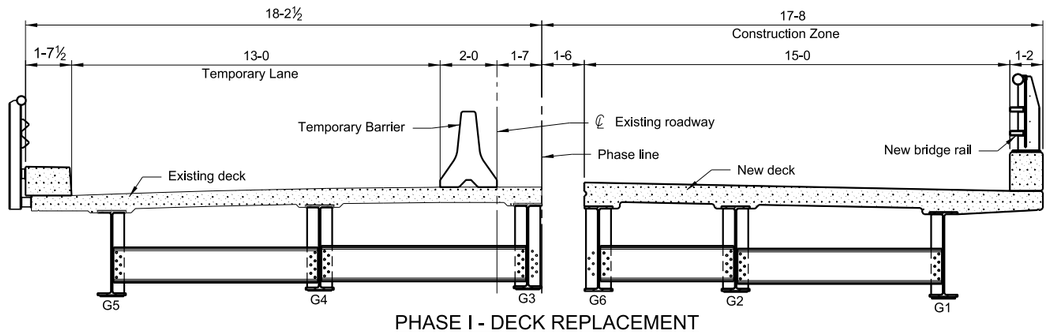
NOTE: Include cost of removing existing diaphragms in the unit price bid for Remove Deck.



PHASE I - ERECT NEW GIRDER

Looking Ahead on Line Near Intermediate Diaphragms

NOTE: Not Shown: Install new bearings for new girder, see Sheet No. B16.
Modify backwalls for new girder end embedment, see Sheet No. B12.



PHASE I - DECK REPLACEMENT

Looking Ahead on Line Near Intermediate Diaphragms

SHEET NO. B9

DECK REPLACEMENT
PHASE I SECTIONS

SCALE: ⅜" = 1'-0"

BRIDGE OVER
LITTLE PRICKLY PEAR CREEK

REFERENCE POINT 0+0.031

ROUTE L-25-241

FEDERAL AID PROJECT NO.
NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MDT MONTANA DEPARTMENT OF TRANSPORTATION
BRIDGE BUREAU

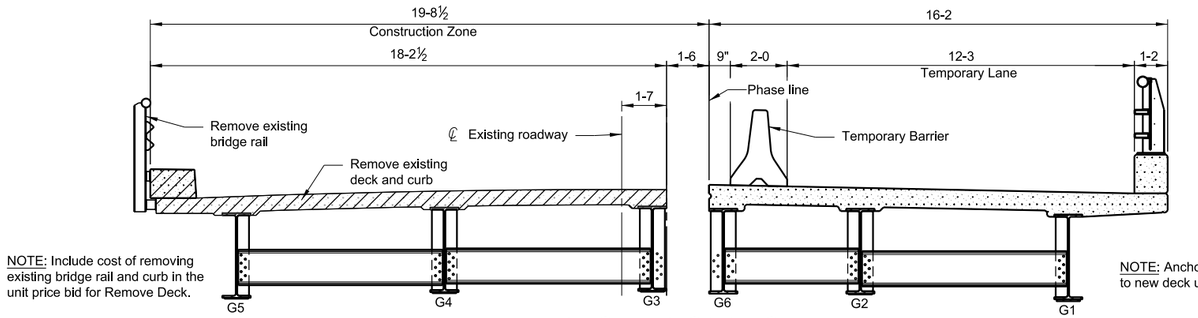
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MDT STRUCTURE
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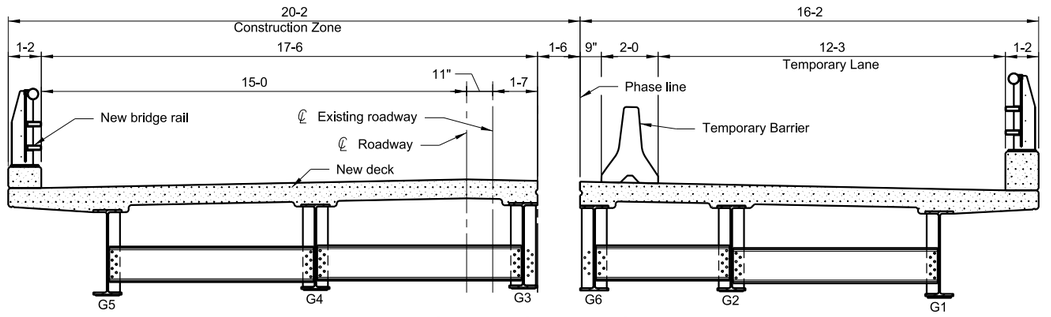


NOTE: Include cost of removing existing bridge rail and curb in the unit price bid for Remove Deck.

NOTE: Anchor temporary barrier to new deck using type 2 or type 3 anchors.

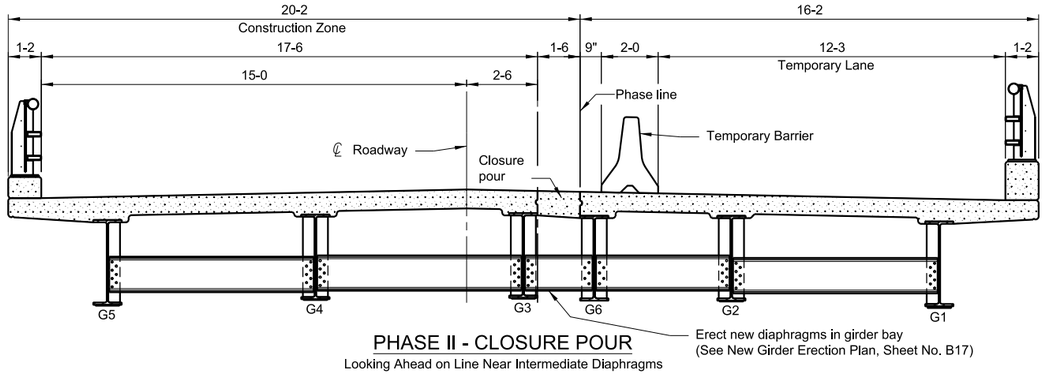
PHASE II - DECK REMOVAL

Looking Ahead on Line Near Intermediate Diaphragms



PHASE II - DECK REPLACEMENT

Looking Ahead on Line Near Intermediate Diaphragms



PHASE II - CLOSURE POUR

Looking Ahead on Line Near Intermediate Diaphragms

SHEET NO. B10

DECK REPLACEMENT
PHASE II SECTIONS

SCALE: ⅜" = 1'-0"

BRIDGE OVER
LITTLE PRICKLY PEAR CREEK

REFERENCE POINT 0+0.031

ROUTE L-25-241

FEDERAL AID PROJECT NO.
NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MDT MONTANA DEPARTMENT OF TRANSPORTATION
BRIDGE BUREAU

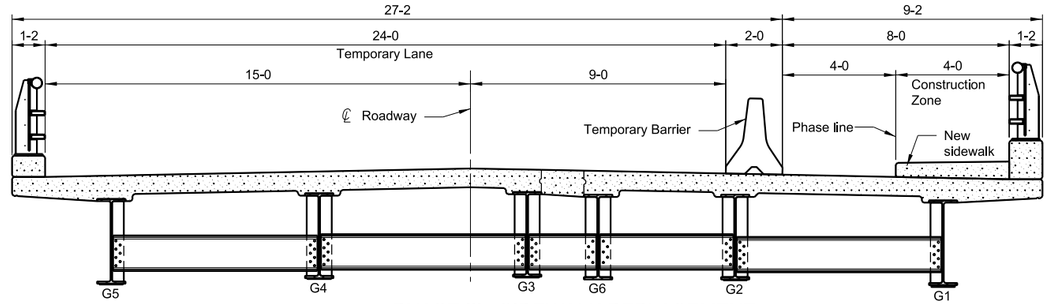
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MDT STRUCTURE
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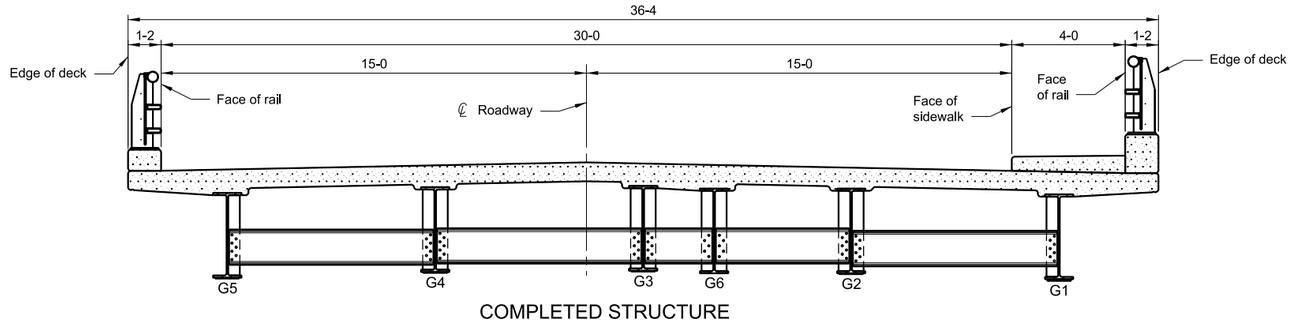
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PHASE III - SIDEWALK REPLACEMENT

Looking Ahead on Line Near Intermediate Diaphragms

NOTE: Do not anchor temporary barrier to bridge deck for Phase III



COMPLETED STRUCTURE

Looking Ahead on Line Near Intermediate Diaphragms

SHEET NO. B11

DECK REPLACEMENT PHASE III AND COMPLETED SECTIONS

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

BRIDGE OVER LITTLE PRICKLY PEAR CREEK

REFERENCE POINT 0+0.031

ROUTE L-25-241

FEDERAL AID PROJECT NO. NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MDT MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE BUREAU

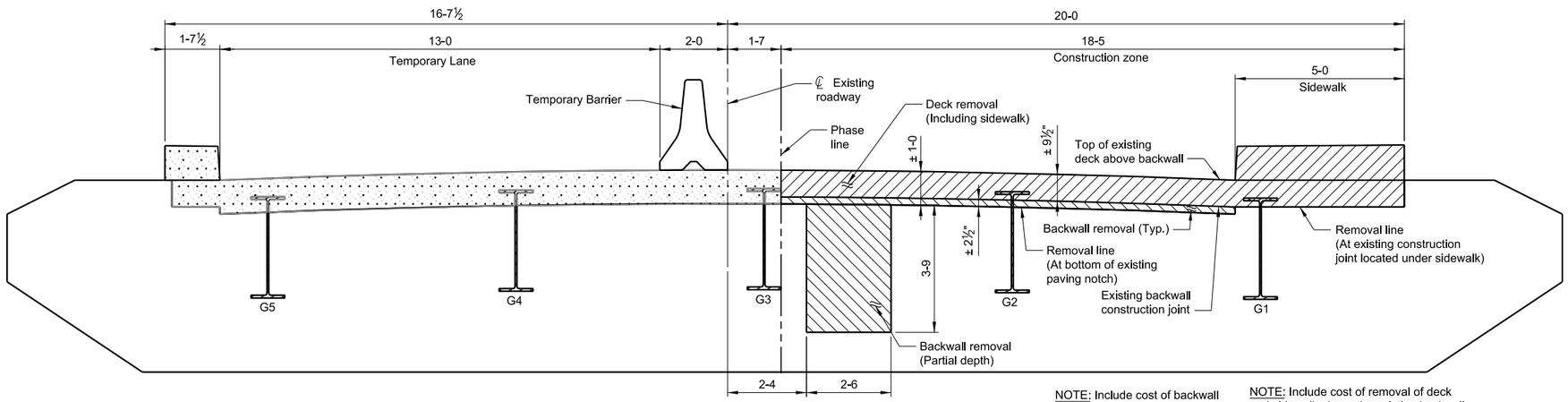
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MDT STRUCTURE 03375

DRAWING NO. 24541

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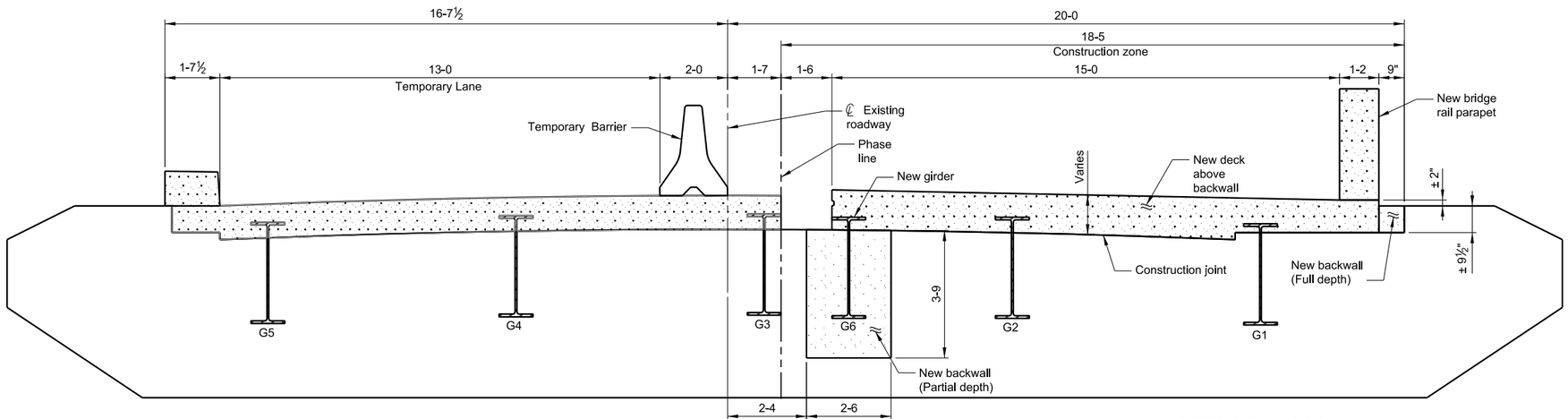


PHASE I - BACKWALL REMOVAL

(Looking ahead on line)
(Backwall near Bent No. 2 near face shown)
(Backwall near Bent No. 1 Looking Back on Line, opposite hand)

NOTE: Include cost of backwall removal in the unit price bid for Revise Structure.

NOTE: Include cost of removal of deck and sidewalk above the existing backwall construction joint the in the unit price bid for Remove Deck.



NOTE: Include cost of new deck concrete above construction joint in the unit price bid for Concrete Class Structure Low Slump.

PHASE I - BACKWALL REPLACEMENT

(Looking ahead on line)
(Backwall near Bent No. 2 near face shown)
(Backwall near Bent No. 1 Looking Back on Line, opposite hand)

NOTE: Include cost of placing new backwall concrete in the unit price bid for Revise Structure.

SHEET NO. B12

BACKWALL REMOVAL & REPLACEMENT PHASE I

SCALE: ½" = 1'-0"

BRIDGE OVER LITTLE PRICKLY PEAR CREEK

REFERENCE POINT 0+0.031

ROUTE L-25-241

FEDERAL AID PROJECT NO. NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MDT MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE BUREAU

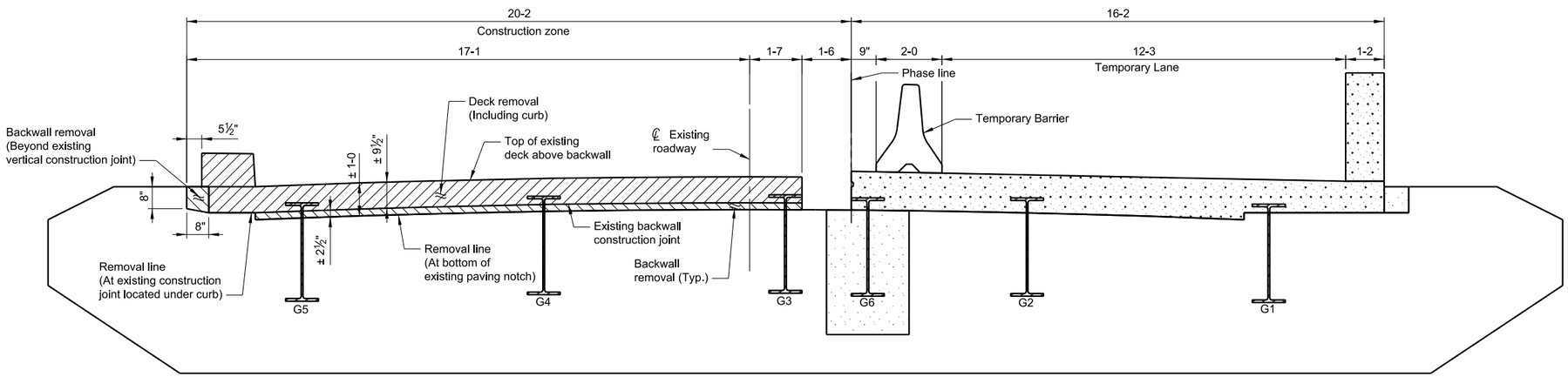
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MDT STRUCTURE 03375

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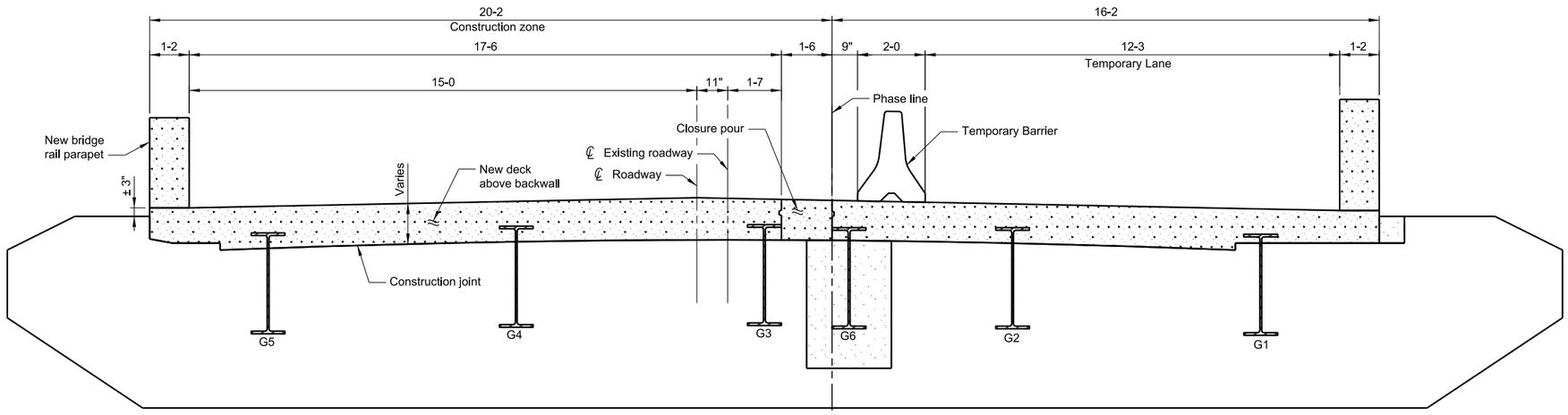


NOTE: Include cost of backwall removal in the unit price bid for Revise Structure.

PHASE II - BACKWALL REMOVAL

(Looking ahead on line)
(Backwall near Bent No. 2 near face shown)
(Backwall near Bent No. 1 Looking Back on Line, opposite hand)

NOTE: Include cost of removal of deck and curb above the existing backwall construction joint the in the unit price bid for Remove Deck.



NOTE: Include cost of new deck concrete above construction joint in the unit price bid for Concrete Class Structure Low Slump.

PHASE II - BACKWALL REPLACEMENT

(Looking ahead on line)
(Backwall near Bent No. 2 near face shown)
(Backwall near Bent No. 1 Looking Back on Line, opposite hand)

SHEET NO.
B13

BACKWALL REMOVAL &
REPLACEMENT PHASE II

SCALE: ½" = 1'-0"

BRIDGE OVER
LITTLE PRICKLY PEAR CREEK

REFERENCE POINT
0+0.031

ROUTE
L-25-241

FEDERAL AID PROJECT NO.
NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MDT
MONTANA DEPARTMENT
OF TRANSPORTATION
BRIDGE BUREAU

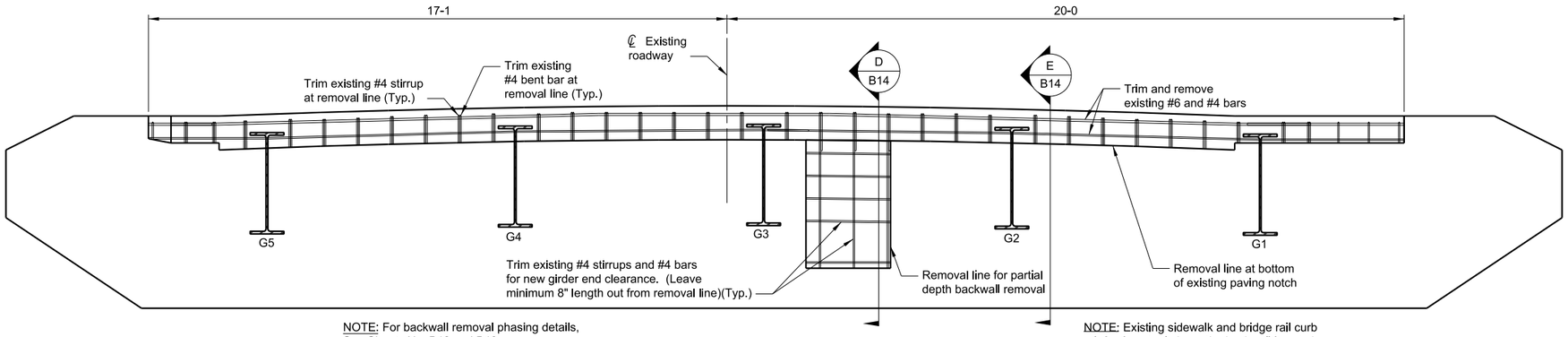
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MDT STRUCTURE
03375

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24543

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NOTE: For backwall removal phasing details, See Sheets No. B12 and B13.

NOTE: Temporarily remove any riprap or fill against the near face of the backwall to gain access to the backwall removal area if needed. Return riprap and fill to original location after backwall work is complete. Include cost in the unit price bid for Revise Structure.

BACKWALL REMOVAL ELEVATION

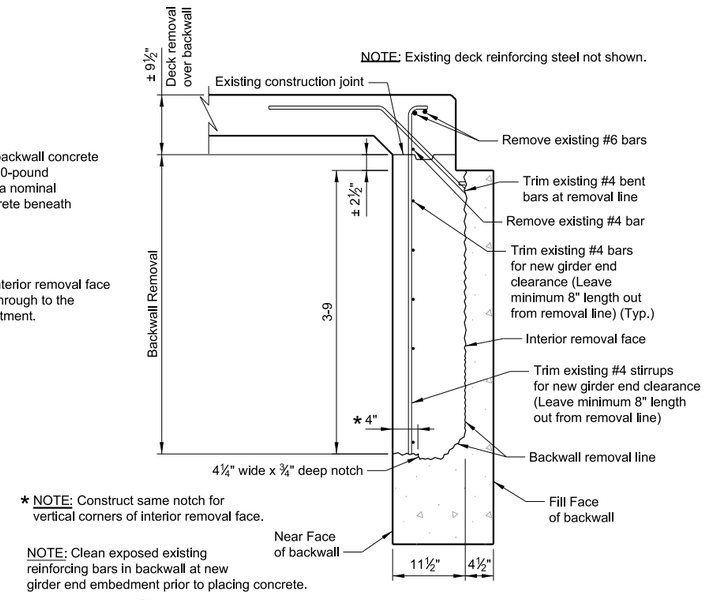
Scale ~ ½" = 1'-0"
(Looking ahead on line)
(Backwall near Bent No. 2 near face shown)
(Backwall near Bent No. 1 Looking Back on Line, opposite hand)

NOTE: Existing sidewalk and bridge rail curb reinforcing steel above the backwall is not shown.

NOTE: Provide ½" deep saw cut along backwall removal lines.

NOTE: Power-driven tools for removal of backwall concrete are limited to jackhammers of a nominal 30-pound class or smaller and chipping hammers in a nominal 15-pound class or smaller to remove concrete beneath reinforcing bars.

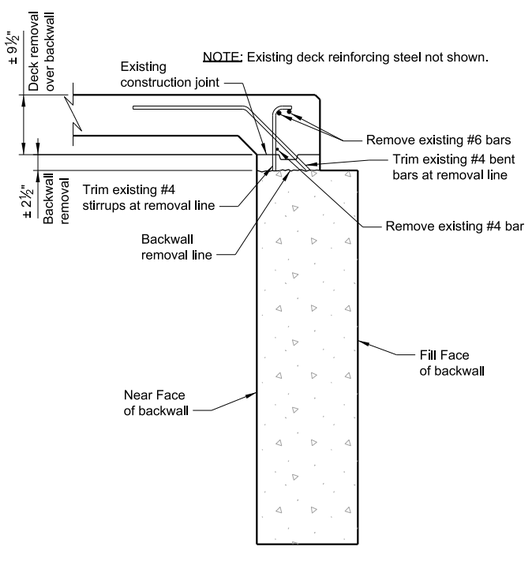
NOTE: Repair any concrete on backwall interior removal face that is broken loose or cracked full depth through to the fill face of backwall at no cost to the Department.



* NOTE: Construct same notch for vertical corners of interior removal face.

NOTE: Clean exposed existing reinforcing bars in backwall at new girder end embedment prior to placing concrete.

D / B14 BACKWALL REMOVAL AT NEW GIRDER EMBEDMENT SECTION
Scale ~ 1" = 1'-0"



E / B14 BACKWALL REMOVAL SECTION
Scale ~ 1" = 1'-0"

SHEET NO. B14

BACKWALL REMOVAL

SCALE: AS NOTED

BRIDGE OVER LITTLE PRICKLY PEAR CREEK

REFERENCE POINT 0+0.031

ROUTE L-25-241

FEDERAL AID PROJECT NO. NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MDT MONTANA DEPARTMENT OF TRANSPORTATION
BRIDGE BUREAU

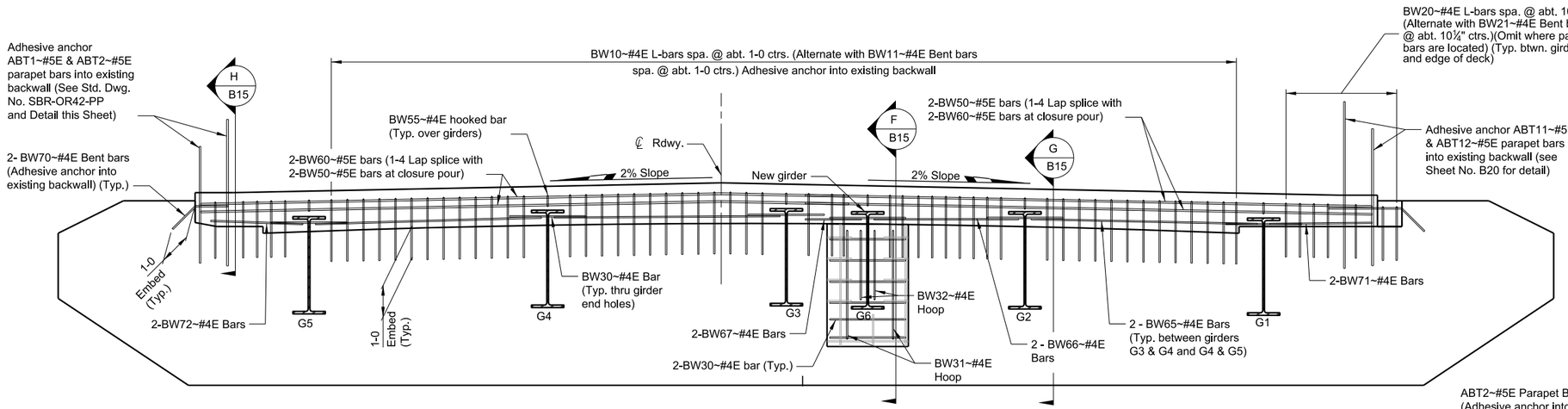
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UPN NUMBER 8085003

MDT STRUCTURE 03375

DRAWING NO. 24544

AWARD COPY



NOTE: Thoroughly coat all existing concrete in contact with new concrete with an epoxy bonding agent (AASHTO M 235 Type V) immediately prior to placing new concrete. Include all costs associated with providing and applying the epoxy bonding agent in the unit price bid for Concrete Class Structure Low Slump.

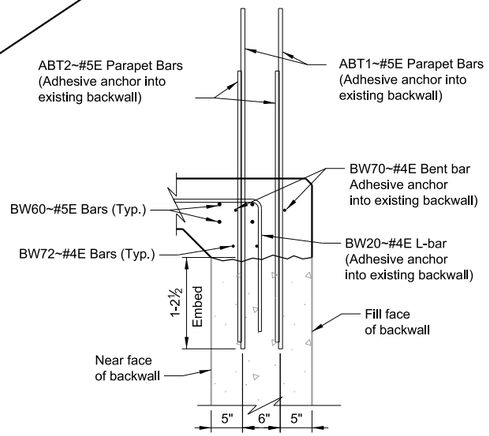
BACKWALL REPLACEMENT ELEVATION

Scale ~ ½" = 1'-0"
(Looking ahead on line)
(Backwall near Bent No. 2 near face shown)
(Backwall near Bent No. 1 Looking Back on Line, opposite hand)

NOTE: Sidewalk and parapet above the backwall is not shown.

NOTE: For backwall replacement phasing details, See Sheets No. B12 and B13.

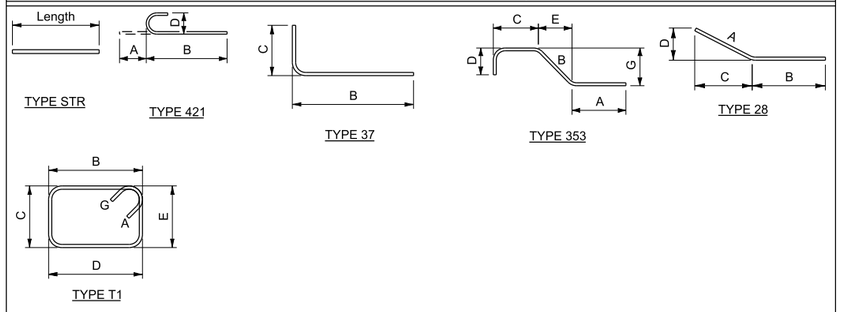
NOTE: Use Class Structure or Class Structure Low Slump Concrete for backwall replacement. Include all costs associated with furnishing and placement of the backwall replacement concrete in the lump sum bid for Revise Structure.



NOTE: Deck reinforcing not shown.
NOTE: Existing reinforcing not shown.

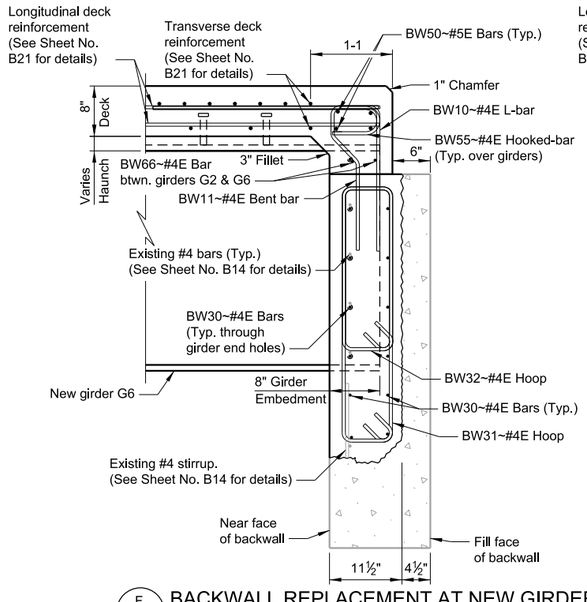
BILL OF REINFORCING STEEL

FOR ONE BACKWALL ONLY
(ALL DIMENSIONS ARE OUT TO OUT)

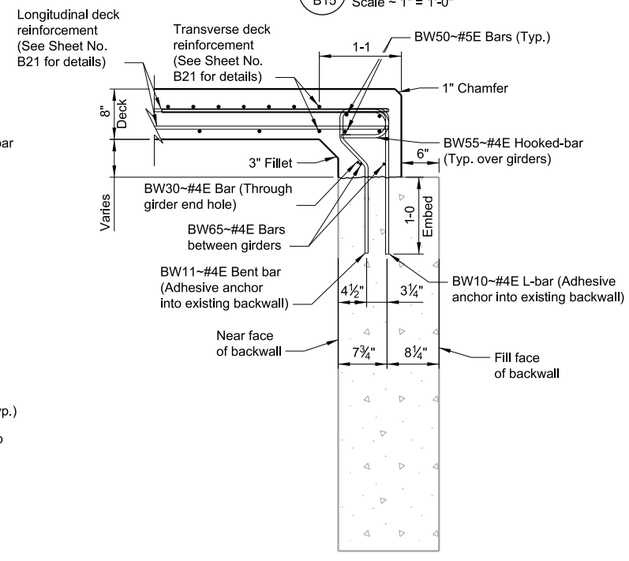


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BW20	4E	4	37	4-8		1-8	3-0				
BW21	4E	3	353	2-5½	11"	6"	5"	7½"	4"	4½"	
BW30	4E	15	STR.	2-4							
BW31	4E	2	T1	8-9	4½"	3-4	8"	3-4	8"	4½"	
BW32	4E	2	T1	6-4	4½"	2-1½	8"	2-1½	8"	4½"	
BW50	5E	4	STR.	17-5							
BW55	4E	3	421	3-10	10"	3-0		4½"			
BW65	4E	2	STR.	6-11							
BW66	4E	2	STR.	4-5½							
BW67	4E	2	STR.	1-9							
BW70	4E	2	28	2-0	1-0	1-0	8½"	8½"			
BW71	4E	2	STR.	3-1							
PHASE II											
BW10	4E	13	37	4-11		1-11	3-0				
BW11	4E	13	353	2-8½	1-2	6"	5"	7½"	4"	4½"	
BW20	4E	3	37	4-8		1-8	3-0				
BW21	4E	2	353	2-5½	11"	6"	5"	7½"	4"	4½"	
BW30	4E	3	STR.	2-4							
BW55	4E	3	421	3-10	10"	3-0		4½"			
BW60	5E	4	STR.	19-11							
BW65	4E	4	STR.	6-11							
BW70	4E	2	28	2-0	1-0	1-0	8½"	8½"			
BW72	4E	2	STR.	2-10							

NOTE: See Bill of Reinforcing Steel on Sheet No. B22 for parapet bars embedded into existing backwall.



F B15 BACKWALL REPLACEMENT AT NEW GIRDER SECTION
Scale ~ 1" = 1'-0"
NOTE: Existing reinforcing other than within girder end embedment area not shown.



G B15 BACKWALL REPLACEMENT SECTION
Scale ~ 1" = 1'-0"
NOTE: Existing reinforcing not shown.

H B15 PARAPET AND BACKWALL REINFORCEMENT
Scale ~ 1" = 1'-0"

SHEET NO. B15

BACKWALL REPLACEMENT

SCALE: AS NOTED

BRIDGE OVER LITTLE PRICKLY PEAR CREEK

REFERENCE POINT 0+0.031

ROUTE L-25-241

FEDERAL AID PROJECT NO. NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MDT MONTANA DEPARTMENT OF TRANSPORTATION — BRIDGE BUREAU

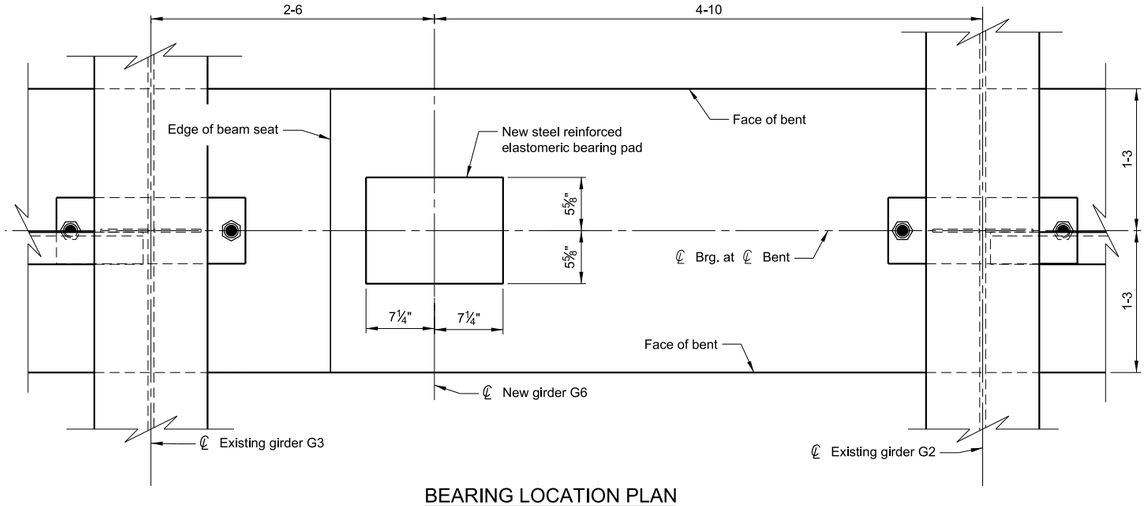
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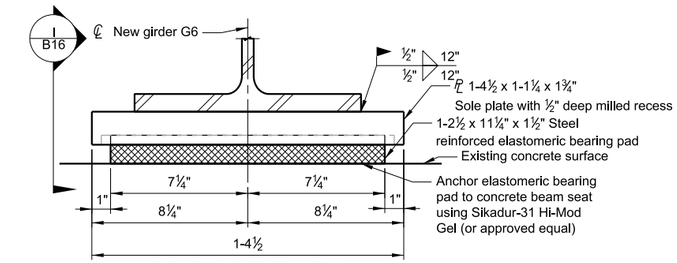
MDT STRUCTURE 03375

DRAWING NO. 24545

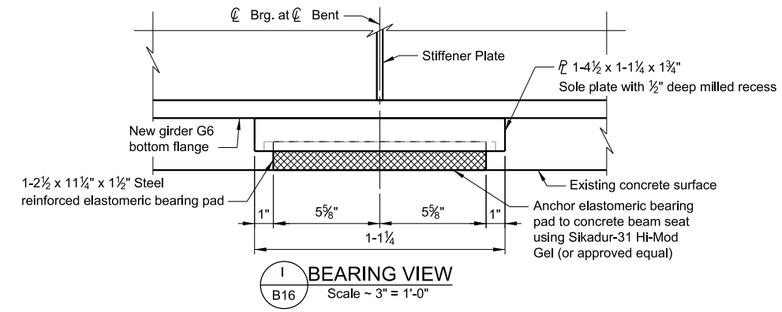
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BEARING LOCATION PLAN
Scale ~ 1½" = 1'-0"

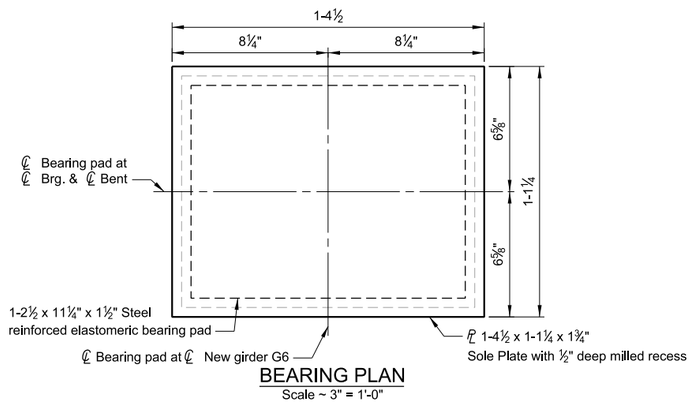


BEARING ELEVATION
Scale ~ 3" = 1'-0"

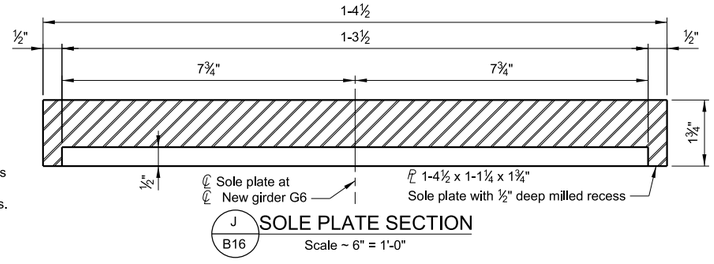


I B16 BEARING VIEW
Scale ~ 3" = 1'-0"

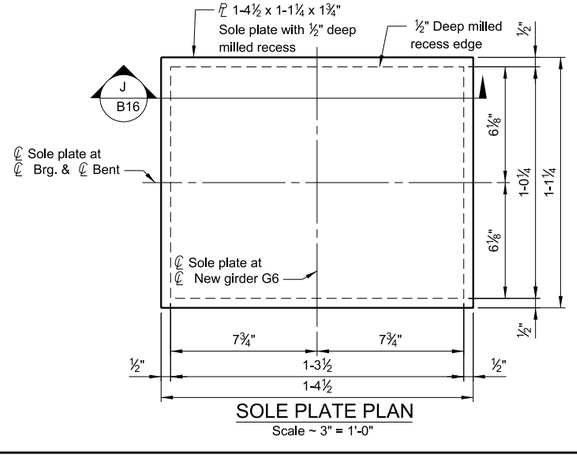
NOTE: Thoroughly clean beam seat concrete surface of dirt, debris, oils and other foreign material prior to anchoring new bearing pads to existing concrete.



BEARING PLAN
Scale ~ 3" = 1'-0"



J B16 SOLE PLATE SECTION
Scale ~ 6" = 1'-0"



SOLE PLATE PLAN
Scale ~ 3" = 1'-0"

NOTES:

Use structural steel meeting the requirements of AASHTO M 270 Grade 36 for sole plates. Paint Sole plates per Standard Specifications.

Bevel top of sole plate 0.85% ahead on line for bearing at Bent No. 2. Do not bevel sole plate for bearing at Bent No. 1.

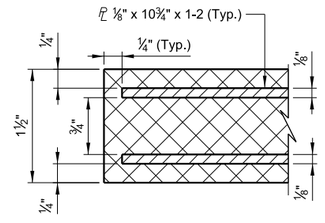
Mark all bearings prior to shipping. Make all marks permanent and visible after the bearing is installed. Include the bearing locations on the bridge and a direction arrow that points ahead on line.

Do not damage bearing assembly during the welding process. Repair damage at no cost to the Department.

Test elastomeric bearing pads according to AASHTO M251. Perform test based on the estimated service design loads shown in the Bearing Design Table.

Include all costs associated with furnishing, fabrication and installing the bearing assemblies including the bearing pad, sole plate, painting and adhesive anchor in the unit price bid for Elastomeric Bearing Devices.

BEARING DESIGN TABLE (SERVICE I LIMIT STATE)	
AASHTO Design Method	Method A
Elastomer Grade	Grade 4
Elastomeric Pad Unloaded Height	1 1/2"
Total Bearing Assembly Unloaded Height	2 3/4"
Shore A Hardness	60 Durometer
Dead Load Reaction	35 Kip
Live Load Reaction (without impact)	57 Kip



BEARING PAD SECTION
Scale ~ 1" = 1"

SHEET NO. B16

BEARING PAD & SOLE PLATE DETAILS

SCALE: AS NOTED

BRIDGE OVER LITTLE PRICKLY PEAR CREEK

REFERENCE POINT 0+0.031

ROUTE L-25-241

FEDERAL AID PROJECT NO. NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MDT MONTANA DEPARTMENT OF TRANSPORTATION — BRIDGE BUREAU

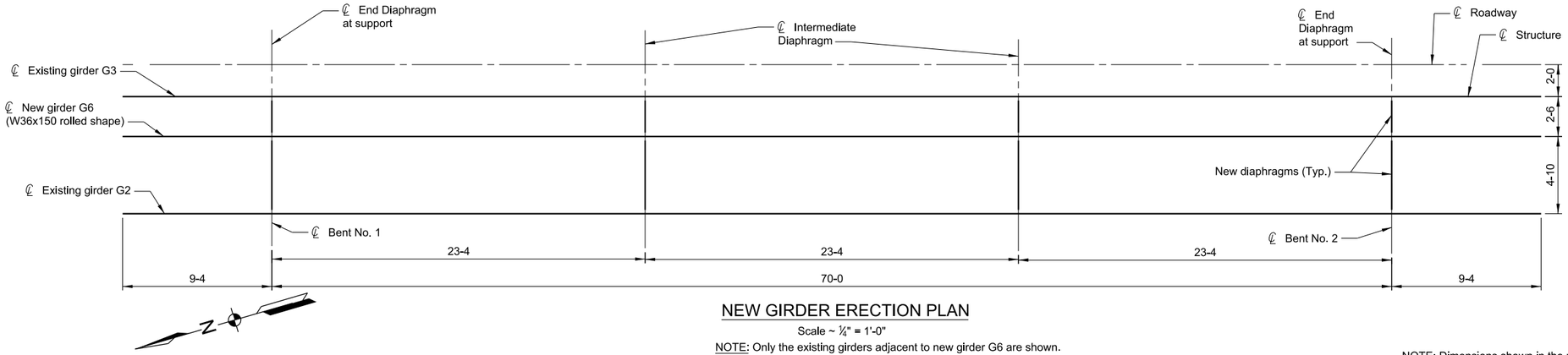
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MDT STRUCTURE 03375

DRAWING NO. 24546

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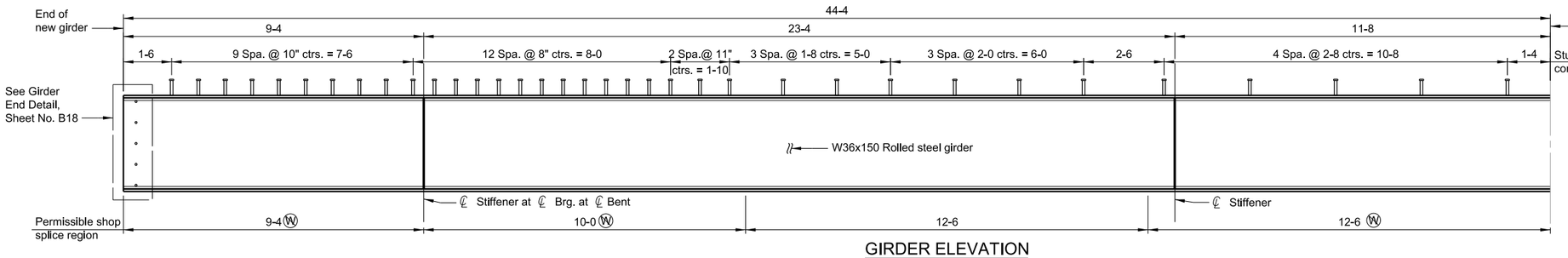
NEW GIRDER ERECTION PLAN

Scale ~ ¼" = 1'-0"

NOTE: Only the existing girders adjacent to new girder G6 are shown.

NOTE: Dimensions shown are horizontal. Account for grade during fabrication.

NOTE: Dimensions shown in the plans are at an ambient temperature of 60˚F. Correct length used in fabrication 1/16" per 80 feet of girder length for every 10˚F difference in temperature.



GIRDER ELEVATION

Scale ~ ½" = 1'-0"

NOTE: Ⓦ Denotes regions where welded shop splices are not allowed. Use as few shop splices as is practical.

NOTE: Fabricate all stiffeners perpendicular to the girder flanges.

NOTE: Paint new structural steel components in accordance with the Standard Specifications.

NOTE: For deck placement requirements, See Special Provisions.

LRFD DESIGN INFORMATION
New Girder G6 Only (service loads)

MAIN SPAN
D.L. Moment = 434 Kip-ft
L.L.+IM Moment = 643 Kip-ft

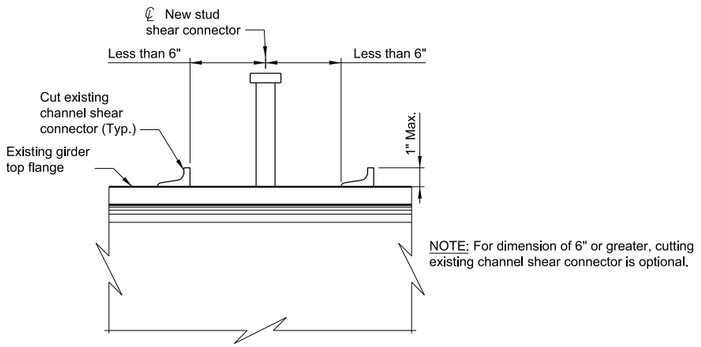
D.L. Deflection = 1⅛"
L.L.+IM Deflection = 1 1/16"

SUPPORT
D.L. Moment = -38 Kip-ft
L.L.+IM Moment = -224 Kip-ft

D.L. Reaction = 35 Kip
L.L.+IM Reaction = 75/-4 Kip

D.L. Shear = 27 Kip
L.L.+IM Shear = 64/-44 Kip

CANTILEVER END
D.L. Deflection = -7/16"
L.L.+IM Deflection = ⅛" / -¼"



NOTE: For dimension of 6" or greater, cutting existing channel shear connector is optional.

SHEAR CONNECTOR MODIFICATION FOR EXISTING GIRDERS

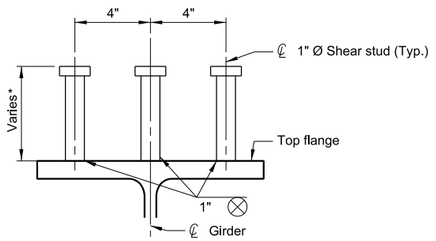
Scale ~ 3" = 1'-0"

NOTE: Locations of the new stud shear connectors for the existing girders are the same as for the new girder.

NOTE: Do not remove existing channel shear connectors with flame-cut.

NOTE: Use shear studs meeting the requirements of AASHTO M 169 Grades 1010-1020 and the mechanical requirements for Type B studs in accordance with AWS D 1.5 Table 7.1.

NOTE: Include cost of removal of existing channel shear connectors and all costs associated with placement of new stud shear connectors on existing girders in the lump sum bid for Structural Steel - Girder.



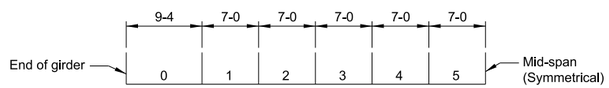
SHEAR STUD CONNECTOR DETAIL

Scale ~ 3" = 1'-0"

* NOTE: See Table of Shear Stud Heights

	GIRDER REGION TABLE					
	0	1	2	3	4	5
G1	4"	6"	6"	6"	6"	6"
G2	4"	4"	4"	4"	6"	6"
G6	6"	6"	6"	6"	6"	6"
G3	4"	4"	6"	6"	6"	6"
G4	4"	4"	6"	6"	6"	6"
G5	4"	6"	6"	6"	6"	6"

TABLE OF SHEAR STUD HEIGHTS



SHEAR STUD GIRDER REGION

No Scale

DEAD LOAD DEFLECTION TABLE			TENTH POINT					
		CANT.	0.0	0.1	0.2	0.3	0.4	0.5
G1	GIRDER, DIAPHRAGM, BACKWALL DEFLECTION	1/16"	0	0	0	0	0	0
	DECK AND COMPOSITE D.L. DEFLECTION	-9/16"	0	7/16"	13/16"	1⅛"	1 5/16"	1⅜"
	TOTAL D.L. DEFLECTION	-½"	0	7/16"	13/16"	1⅛"	1 5/16"	1⅜"
G2	GIRDER, DIAPHRAGM, BACKWALL DEFLECTION	1/16"	0	0	-1/16"	-1/16"	0	0
	DECK AND COMPOSITE D.L. DEFLECTION	-½"	0	⅜"	¾"	1 1/16"	1 3/16"	1¼"
	TOTAL D.L. DEFLECTION	-7/16"	0	⅜"	1 1/16"	1"	1 3/16"	1¼"
G6	GIRDER, DIAPHRAGM, BACKWALL DEFLECTION	-⅛"	0	1/16"	3/16"	¼"	¼"	5/16"
	DECK AND COMPOSITE D.L. DEFLECTION	-5/16"	0	¼"	½"	1 1/16"	1 3/16"	1 3/16"
	TOTAL D.L. DEFLECTION	-7/16"	0	5/16"	1 1/16"	1 5/16"	1 1/16"	1⅛"
G3	GIRDER, DIAPHRAGM, BACKWALL DEFLECTION	1/16"	0	0	0	0	0	0
	DECK AND COMPOSITE D.L. DEFLECTION	-9/16"	0	⅜"	¾"	1 1/16"	1¼"	1 5/16"
	TOTAL D.L. DEFLECTION	-½"	0	⅜"	¾"	1 1/16"	1¼"	1 5/16"
G4	GIRDER, DIAPHRAGM, BACKWALL DEFLECTION	1/16"	0	0	0	0	0	0
	DECK AND COMPOSITE D.L. DEFLECTION	-5/8"	0	7/16"	⅞"	1 3/16"	1 3/8"	1 7/16"
	TOTAL D.L. DEFLECTION	-9/16"	0	7/16"	⅞"	1 3/16"	1 3/8"	1 7/16"
G5	GIRDER, DIAPHRAGM, BACKWALL DEFLECTION	1/16"	0	0	0	0	0	0
	DECK AND COMPOSITE D.L. DEFLECTION	-5/8"	0	½"	15/16"	1¼"	1 1/16"	1 9/16"
	TOTAL D.L. DEFLECTION	-9/16"	0	½"	15/16"	1¼"	1 1/16"	1 9/16"

SYMMETRICAL ABOUT 0.5 POINT
NEGATIVE VALUE IS UPWARD

NOTE: Existing backwall dead load assumed to be entirely supported by existing girders.

NOTE: The values listed in the Dead Load Deflection Table assume the deck is placed in one continuous pour for both Phase I and Phase II.

SHEET NO. B17

ERECTION PLAN, GIRDER ELEVATION, SHEAR STUD DETAILS AND DEAD LOAD DEFLECTION TABLE

SCALE: AS NOTED

BRIDGE OVER LITTLE PRICKLY PEAR CREEK

REFERENCE POINT 0+0.031

ROUTE L-25-241

FEDERAL AID PROJECT NO. NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE BUREAU

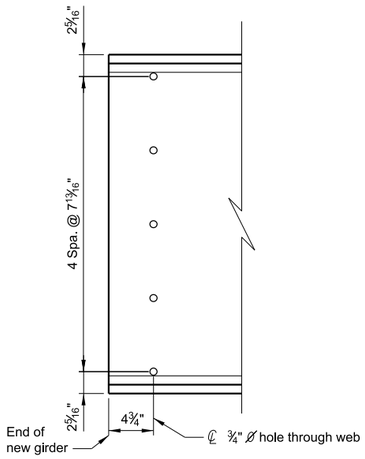
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MDT STRUCTURE 03375

DRAWING NO. 24547

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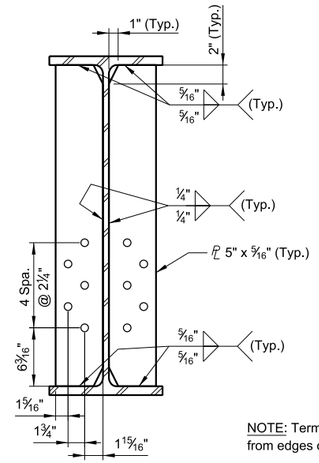


GIRDER END DETAIL

Scale ~ 1½" = 1'-0"

NOTE: Both girder ends are the same.

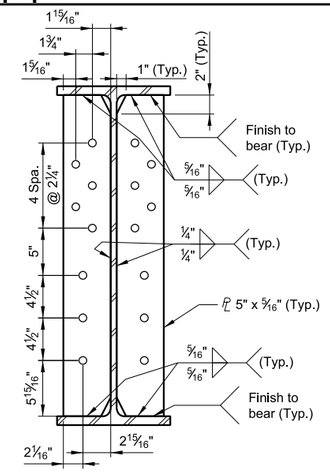
NOTE: See Sheet No. B17 for locations.



INTERMEDIATE DIAPHRAGM STIFFENER DETAIL

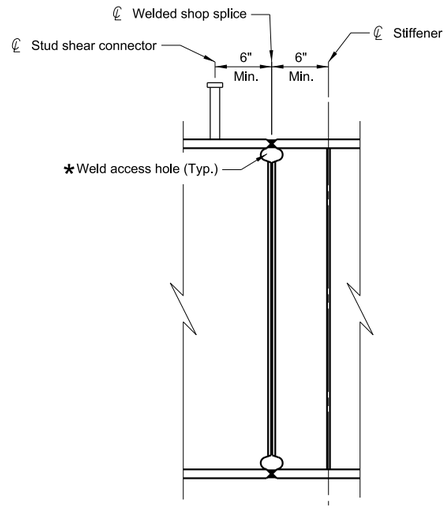
Scale ~ 1½" = 1'-0"

NOTE: Terminate welds ¼" from edges of stiffener plate.



END DIAPHRAGM AT SUPPORT STIFFENER DETAIL

Scale ~ 1½" = 1'-0"

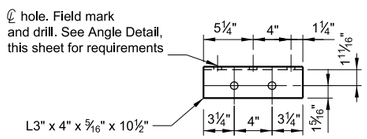


WELDED SHOP SPLICE DETAIL

Scale ~ 1½" = 1'-0"

* NOTE: Intersecting complete-joint-penetration shop splice welds are not permitted. Use access hole meeting the requirements of A.W.S. to perform quality weld.

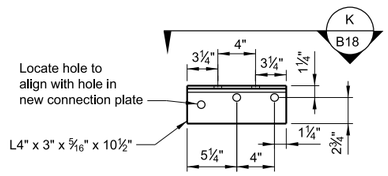
NOTE: Use any type complete-joint-penetration groove weld permitted by A.W.S. for shop splices. Submit shop drawings showing complete details of complete-joint-penetration welds.



K B18 ANGLE VIEW

Scale ~ 1½" = 1'-0"

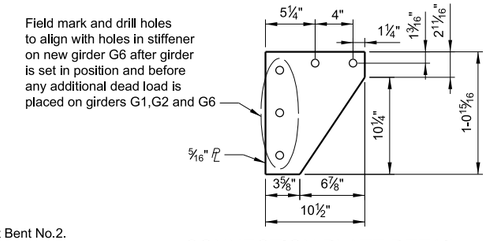
NOTE: Shown for girder G2 side at Bent No.1 and for girder G3 side at Bent No.2. Opposite hand for girder G3 side at Bent No.1 and for girder G2 side at Bent No.2.



ANGLE DETAIL

Scale ~ 1½" = 1'-0"

NOTE: Shown for girder G2 side at Bent No.1 and for girder G3 side at Bent No.2. Opposite hand for girder G3 side at Bent No.1 and for girder G2 side at Bent No.2.

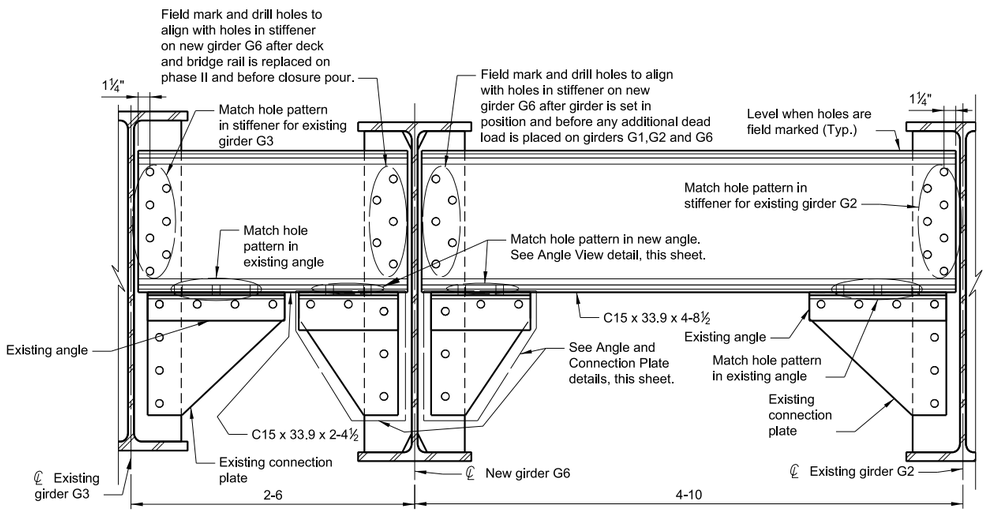


CONNECTION PLATE DETAIL

Scale ~ 1½" = 1'-0"

NOTE: Include all costs associated with furnishing and installing diaphragms in the lump sum bid for Structural Steel - Girder.

NOTE: Shown for girder G2 side at Bent No.1 and for girder G3 side at Bent No.2. Opposite hand for girder G3 side at Bent No.1 and for girder G2 side at Bent No.2.



END DIAPHRAGM AT SUPPORT DETAIL

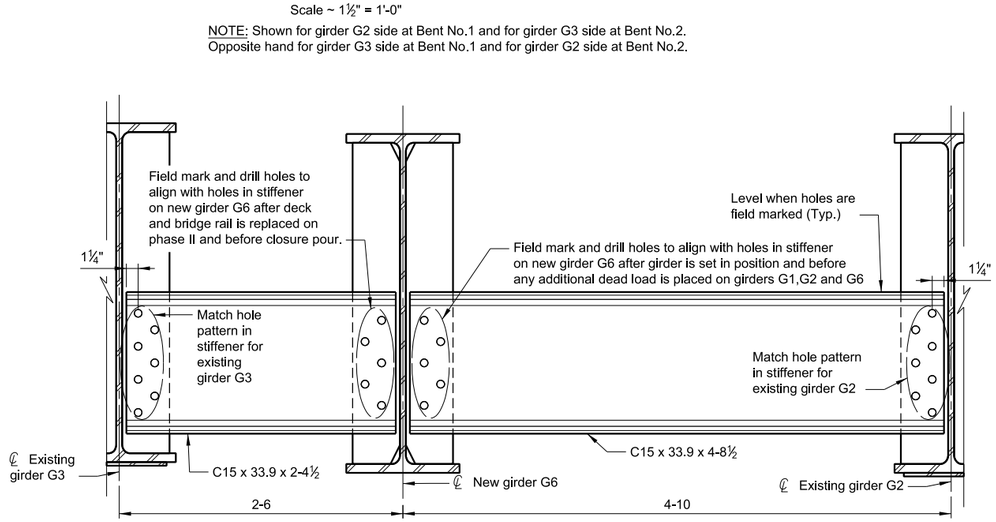
Scale ~ 1½" = 1'-0"

Shown at Bent No.1, Looking Ahead on Line
(Opposite hand at Bent No.2, Looking Back on Line)

NOTE: All bolted connections are designated slip critical.

NOTE: Use ¹³⁄₁₆" Ø hole for ¾" high strength bolt (Typ.)

NOTE: Provide bolts in accordance with ASTM F3125, Grade A325 Type 3. See Standard Specifications for the requirements on nuts, washers and direct tension indicators.



INTERMEDIATE DIAPHRAGM DETAIL

Scale ~ 1½" = 1'-0"

Shown nearest to Bent No.1, Looking Ahead on Line.
(Opposite hand nearest to Bent No.2, Looking Back on Line)

SHEET NO. B18

GIRDER DETAILS, STIFFENER DETAILS AND DIAPHRAGM DETAILS

SCALE: AS NOTED

BRIDGE OVER LITTLE PRICKLY PEAR CREEK

REFERENCE POINT 0+0.031

ROUTE L-25-241

FEDERAL AID PROJECT NO. NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MDT MONTANA DEPARTMENT OF TRANSPORTATION — BRIDGE BUREAU

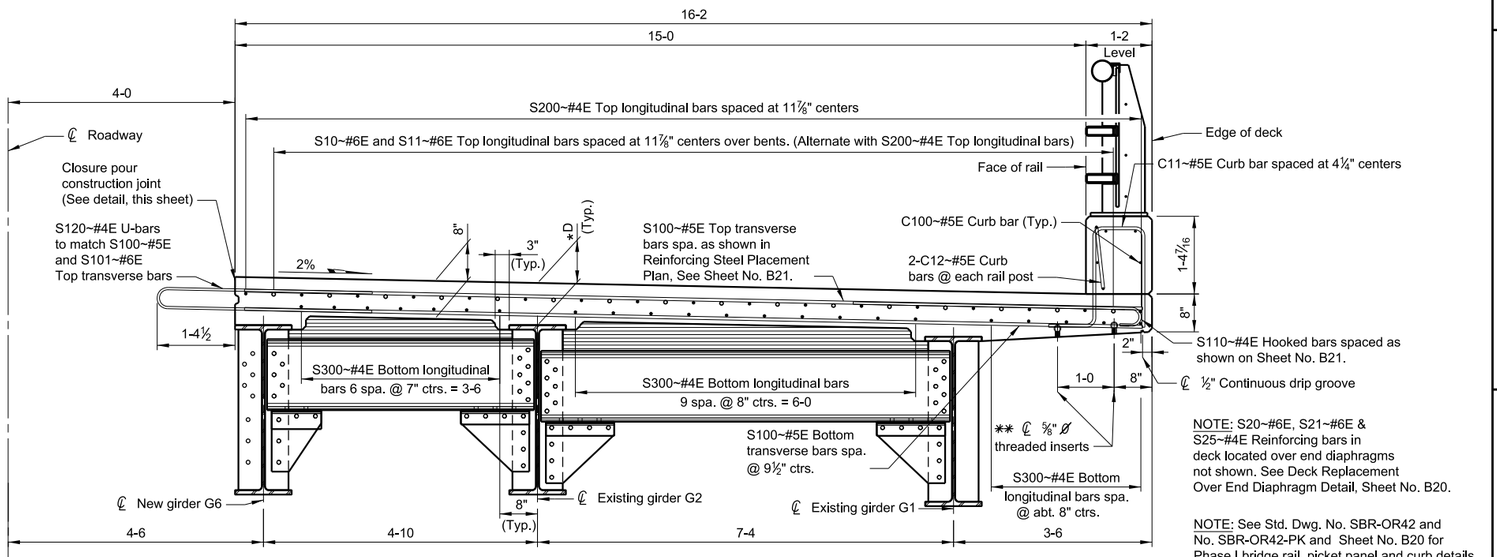
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MDT STRUCTURE 03375

DRAWING NO. 24548

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PHASE I - DECK REPLACEMENT TRANSVERSE SECTION

Shown Near Bents (Similar elsewhere, except as noted)
Looking Ahead on line

*Note: Dimension D varies. See D Depth Table, This Sheet.

NOTE: See Sheet No. B20 for Phase III Sidewalk Replacement Transverse Section.

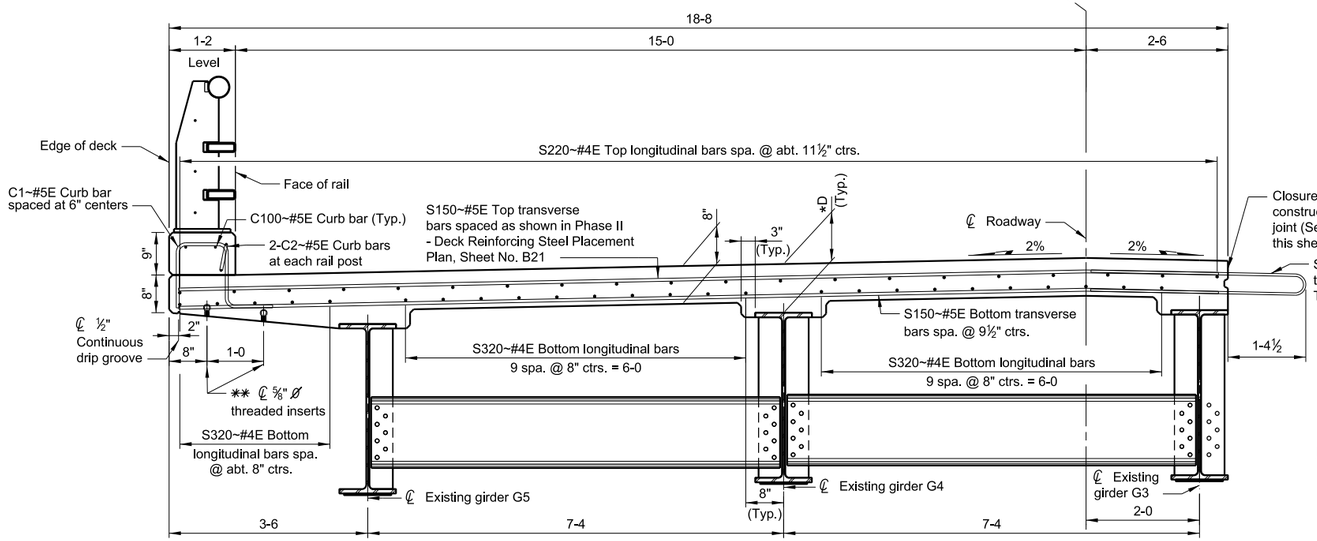
NOTE: S20~#6E, S21~#6E & S25~#4E Reinforcing bars in deck located over end diaphragms not shown. See Deck Replacement Over End Diaphragm Detail, Sheet No. B20.

NOTE: See Std. Dwg. No. SBR-OR42 and No. SBR-OR42-PK and Sheet No. B20 for Phase I bridge rail, picket panel and curb details.

NOTE: See Sheet No. B21 for location and spacing of S101~#6E Top Transverse bars.

** NOTE: Match rail post spacing. Offset insert longitudinally to avoid embedded rail post plate and reinforcing. Minimum safe tension working load (capacity) for inserts is 2000 pounds. Include the cost of the inserts in the unit price bid for Concrete - Class Structure Low Slump.

NOTE: See Std. Dwg. No. SBR-OR42 for Phase II bridge rail and curb details



PHASE II - DECK REPLACEMENT TRANSVERSE SECTION

Shown Near Intermediate Diaphragms (Similar elsewhere, except as noted)
Looking Ahead on line

* Note: Dimension D varies. See D Depth Table, This Sheet.

NOTE: Top longitudinal bars S10~#6E & S11~#6E near bents are not shown in detail. See Sheet No. B21 for location and spacing.

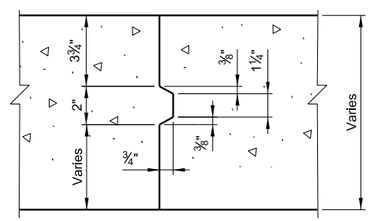
NOTE: See Sheet No. B22 for Bill of Reinforcing Steel.

D DEPTH TABLE							
	TENTH POINT						
	CANT.	0.0	0.1	0.2	0.3	0.4	0.5
G1	9⅛"	9⅝"	10 1/16"	10 7/16"	10¾"	10 15/16"	11"
G2	8½"	8 15/16"	9 1/16"	9⅝"	9 15/16"	10⅛"	10 3/16"
G6	9⅝"	10 1/16"	10⅜"	10¾"	11"	11⅛"	11 3/16"
G3	9"	9½"	9⅞"	10¼"	10 9/16"	10¾"	10 13/16"
G4	8¾"	9 9/16"	9¾"	10 3/16"	10½"	10 11/16"	10¾"
G5	9⅜"	9 15/16"	10 1/16"	10⅜"	11 3/16"	11⅜"	11½"

SYMMETRICAL ABOUT 0.5 POINT

NOTE: The values listed in the D Depth Table assume the deck is placed in one continuous pour for both Phase I and Phase II.

NOTE: See Sheet No. B20 for Phase II Closure Pour Transverse Section.



SLAB CONSTRUCTION JOINT

No Scale

NOTE: Thoroughly coat the slab construction joint with an epoxy resin bonding agent which meets the requirements of AASHTO M 235 (Type V). Apply the bonding agent within 30 minutes prior to placing concrete. Continue slab reinforcing through the joints.

NOTE: Girder top flange at construction joint not shown. See Phase II - Closure Pour Transverse Section, Sheet No. B20.

SHEET NO. B19

PHASE CONSTRUCTION - DECK REPLACEMENT TRANSVERSE SECTIONS

SCALE: ¾" = 1'-0"

BRIDGE OVER LITTLE PRICKLY PEAR CREEK

REFERENCE POINT 0+0.031

ROUTE L-25-241

FEDERAL AID PROJECT NO. NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE BUREAU

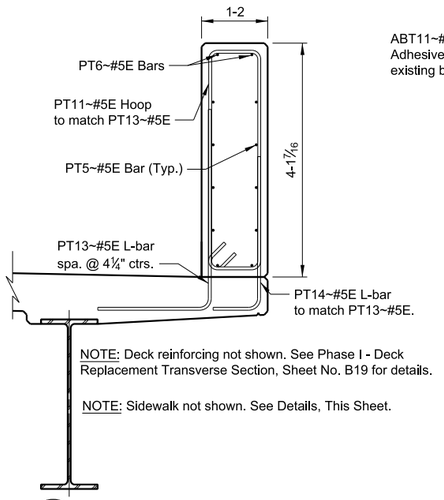
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DESIGNED	D.C.M.	5-24-21		
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UPN NUMBER 8085003

MDT STRUCTURE 03375

DRAWING NO. 24549

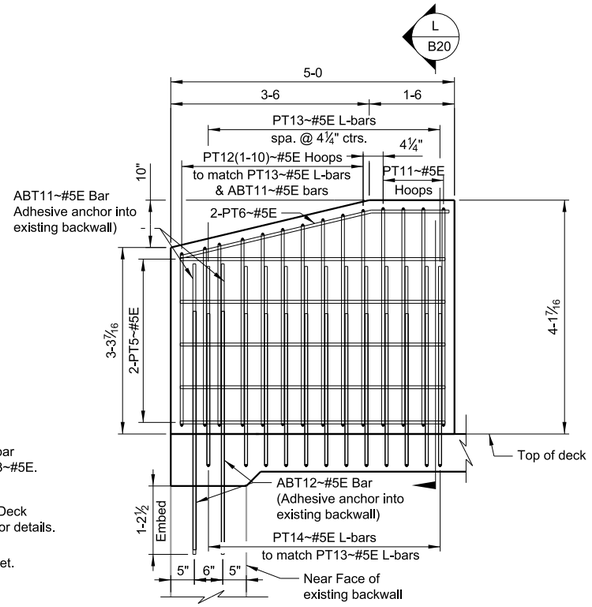
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NOTE: Deck reinforcing not shown. See Phase I - Deck Replacement Transverse Section, Sheet No. B19 for details.

NOTE: Sidewalk not shown. See Details, This Sheet.

L B20 BRIDGE RAIL PARAPET
Scale ~ ¾" = 1'-0"

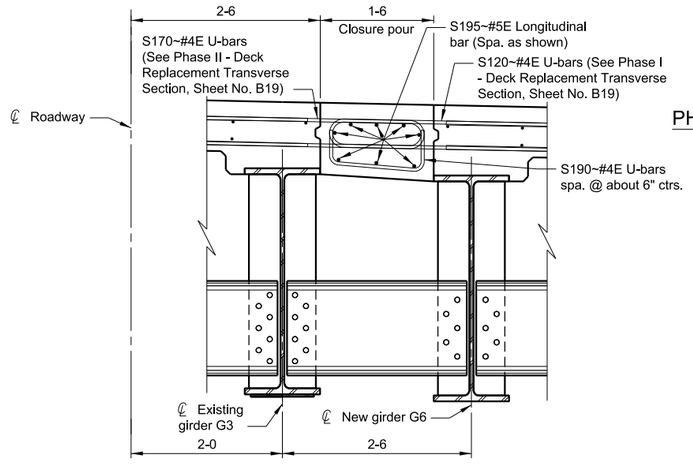


NOTE: Deck and backwall reinforcing not shown.

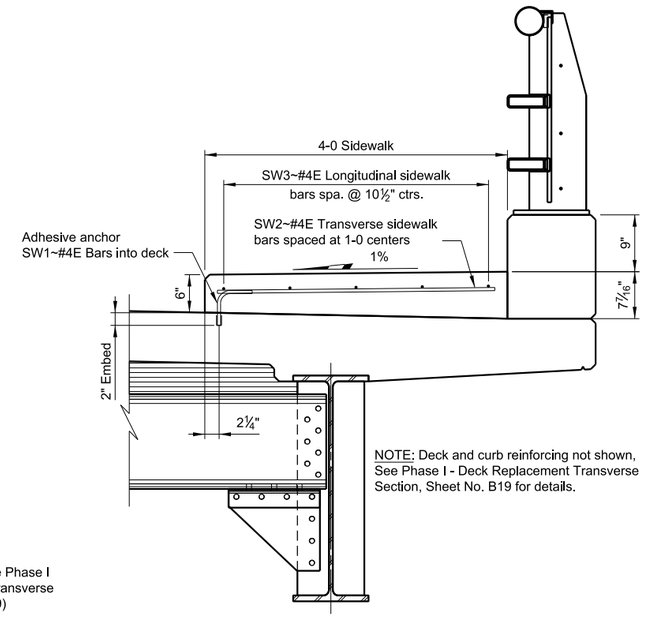
PHASE I - BRIDGE RAIL PARAPET DETAIL
Scale ~ ¾" = 1'-0"

NOTE: For Bill of Reinforcing Steel, see Sheet No. B22.

NOTE: For additional details for ABT11~#5E and ABT12~#5E bars, See Backwall Replacement Elevation, Sheet No. B15.



PHASE II - CLOSURE POUR TRANSVERSE SECTION
Scale ~ 1" = 1'-0"
Shown near intermediate diaphragms (Similar elsewhere, except as noted)
Looking Ahead on line



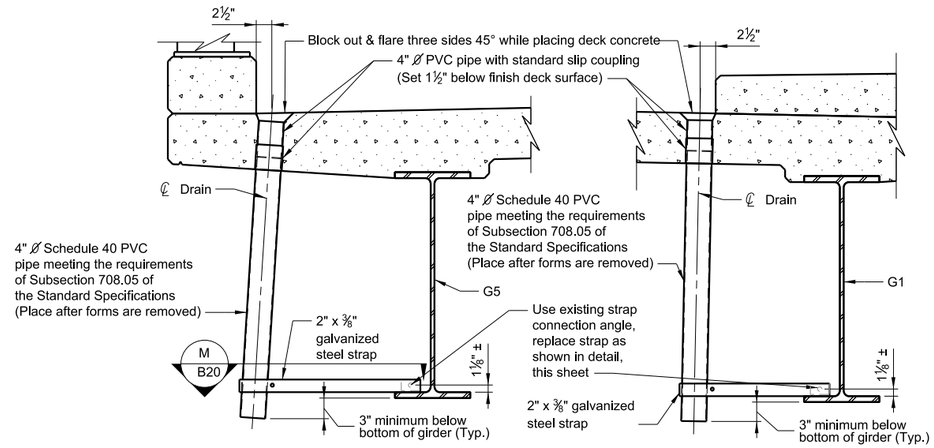
NOTE: Deck and curb reinforcing not shown, See Phase I - Deck Replacement Transverse Section, Sheet No. B19 for details.

PHASE III - SIDEWALK REPLACEMENT TRANSVERSE SECTION
Scale ~ 1" = 1'-0"
Shown Near Bents (Similar elsewhere, except as noted)
Looking Ahead on line

NOTE: Thoroughly clean surface of dirt, debris, oils and other foreign material prior to placing new concrete.

NOTE: Thoroughly coat all existing concrete in contact with new concrete with an epoxy bonding agent (AASHTO M 235 Type V) immediately prior to placing new concrete. Include all costs associated with providing and applying the epoxy bonding agent in the unit price bid for Concrete Class Structure Low Slump.

NOTE: Broom finish top of sidewalk in accordance with standard specifications.



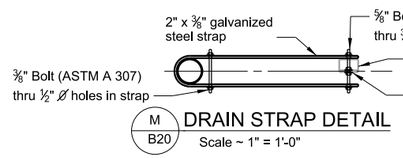
PHASE II - DECK DRAIN DETAIL
Scale ~ 1" = 1'-0"

PHASE I - DECK DRAIN DETAIL
Scale ~ 1" = 1'-0"

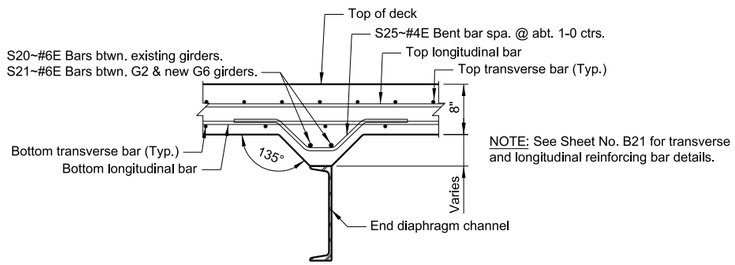
NOTE: Replace all existing deck drains, See Completed Plan View, Sheet No. B8 for locations.

NOTE: Solvent cement all pipe joints.

NOTE: Include all costs for furnishing and installing PVC drains and straps in the unit price bid for Concrete Class Structure Low Slump.



M B20 DRAIN STRAP DETAIL
Scale ~ 1" = 1'-0"



NOTE: See Sheet No. B21 for transverse and longitudinal reinforcing bar details.

DECK REPLACEMENT OVER END DIAPHRAGM DETAIL
Scale ~ 1" = 1'-0"

NOTE:
S25 - 7 Bent bars in the bays between existing girders.
S25 - 4 Bent bars in the bay between girders G2 and G6.

NOTE: Omit bars over end diaphragm in closure pour.

SHEET NO. B20

PHASE CONSTRUCTION - CLOSURE POUR, SIDEWALK, PARAPET AND DECK DRAIN DETAILS

SCALE: AS NOTED

BRIDGE OVER LITTLE PRICKLY PEAR CREEK

REFERENCE POINT 0+0.031

ROUTE L-25-241

FEDERAL AID PROJECT NO. NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MONTANA DEPARTMENT OF TRANSPORTATION
BRIDGE BUREAU

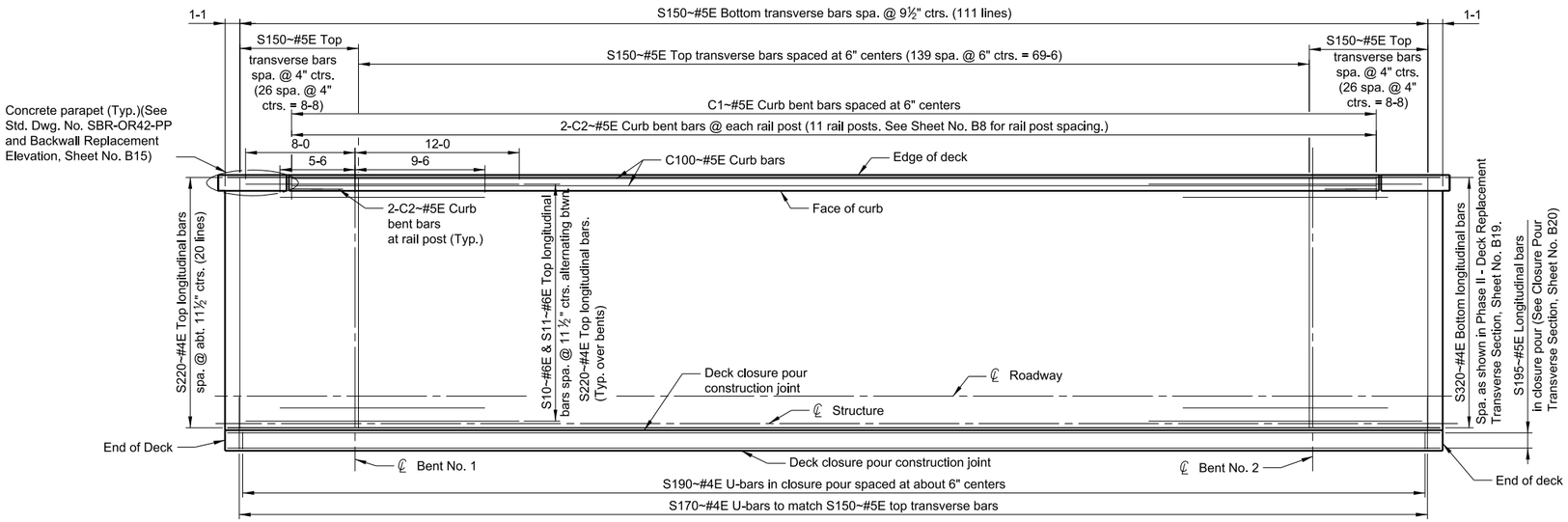
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MDT STRUCTURE 03375

DRAWING NO. 24550

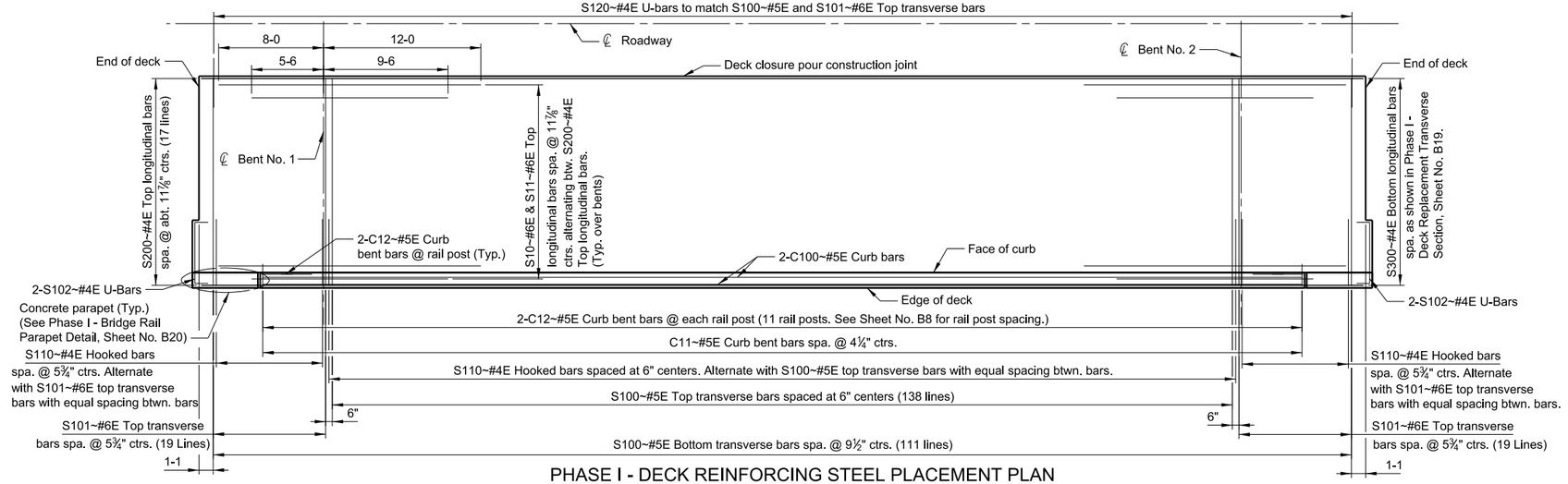
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PHASE II - DECK REINFORCING STEEL PLACEMENT PLAN

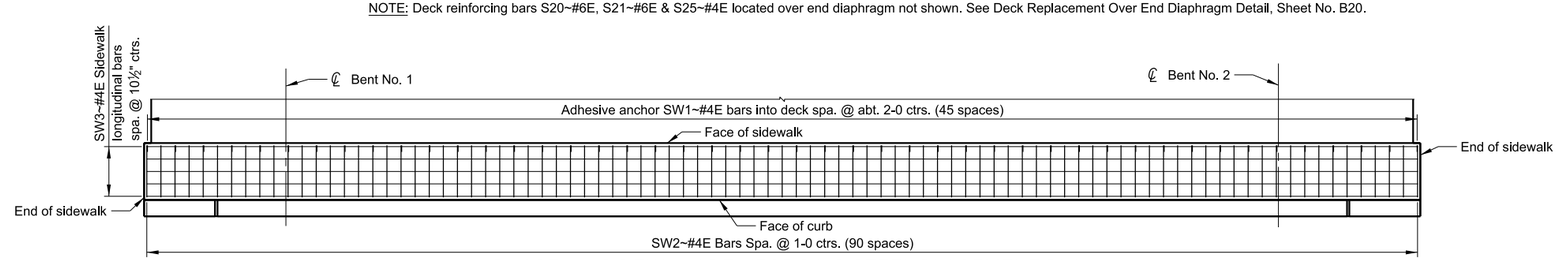
NOTE: Alternate lap splice locations for longitudinal deck reinforcing bars.

NOTE: Deck reinforcing bars S20~#6E & S25~#4E located over end diaphragm not shown. See Deck Replacement Over End Diaphragm Detail, Sheet No. B20.



PHASE I - DECK REINFORCING STEEL PLACEMENT PLAN

NOTE: Deck reinforcing bars S20~#6E, S21~#6E & S25~#4E located over end diaphragm not shown. See Deck Replacement Over End Diaphragm Detail, Sheet No. B20.



PHASE III - SIDEWALK REINFORCING STEEL PLACEMENT PLAN

SHEET NO. B21

PHASE CONSTRUCTION - DECK REINFORCING STEEL PLACEMENT PLAN

SCALE: 3/16" = 1'-0"

BRIDGE OVER LITTLE PRICKLY PEAR CREEK

REFERENCE POINT 0+0.031

ROUTE L-25-241

FEDERAL AID PROJECT NO. NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE BUREAU

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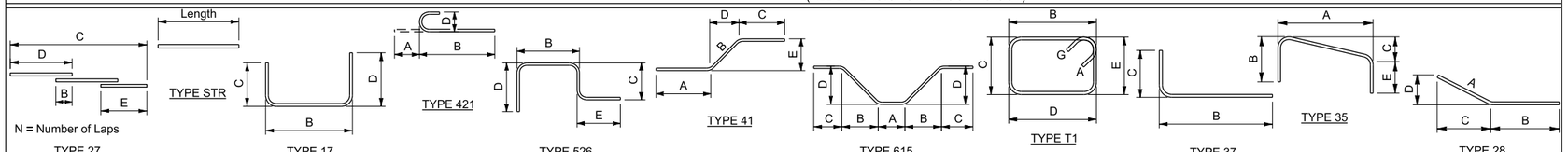
MDT STRUCTURE 03375

DRAWING NO. 24551

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BILL OF REINFORCING STEEL

FOR DECK, SIDEWALK, CURBS AND PARAPETS
(ALL DIMENSIONS ARE OUT TO OUT)



TYPE 27 | TYPE 17 | TYPE 526

Mark	Size	No.	Type	Length	A	B	C	D	E	G	N
PHASE I											
S100	5E	249	STR.	15-10							
S101	6E	38	STR.	15-10							
S102	4E	4	17	6-10		4-10	1-0	1-0			
S110	4E	175	421	5-8	7"	5-1		4"			
S120	4E	176	421	7-9½	4-0	3-9½		4½"			
S200	4E	17	27	93-2		2-3	88-8	26-7	40-0		2
S300	4E	22	27	93-2		2-3	88-8	26-7	40-0		2
S10	6E	16	STR.	20-0							
S11	6E	16	STR.	15-0							
S20	6E	4	STR.	5-11							
S21	6E	4	STR.	3-5							
S25	4E	22	615	2-8	4½"	4½"	7"	5"			
C11	5E	225	526	5-3		11"	1-9	1-9	10"		
C12	5E	22	41	3-4½	11"	1-6½	11"	1-1	1-1		
C100	5E	4	27	82-0		2-8	79-4	60-0	22-0		1
ABT11	5E	4	STR.	5-1½							
ABT12	5E	4	STR.	4-2½							
PT5	5E	20	STR.	4-8							
PT6	5E	4	28	4-10	3-5½	1-4½	3-4½	9¾"			
PT11	5E	8	T1	10-5	5½"	11"	3-10	11"	3-10	5½"	
PT12-1	5E	2	T1	8-10	5½"	11"	3-0½	11"	3-0½	5½"	
PT12-2	5E	2	T1	9-0	5½"	11"	3-1½	11"	3-1½	5½"	
PT12-3	5E	2	T1	9-2	5½"	11"	3-2½	11"	3-2½	5½"	
PT12-4	5E	2	T1	9-4	5½"	11"	3-3½	11"	3-3½	5½"	
PT12-5	5E	2	T1	9-6	5½"	11"	3-4½	11"	3-4½	5½"	
PT12-6	5E	2	T1	9-8	5½"	11"	3-5½	11"	3-5½	5½"	
PT12-7	5E	2	T1	9-10	5½"	11"	3-6½	11"	3-6½	5½"	
PT12-8	5E	2	T1	10-0	5½"	11"	3-7½	11"	3-7½	5½"	
PT12-9	5E	2	T1	10-2	5½"	11"	3-8½	11"	3-8½	5½"	
PT12-10	5E	2	T1	10-4	5½"	11"	3-9½	11"	3-9½	5½"	
PT13	5E	24	37	5-6½		2-0	3-6½				
PT14	5E	24	37	3-6½		10"	2-8½				

TYPE 615 | TYPE 37 | TYPE 28

Mark	Size	No.	Type	Length	A	B	C	D	E	G	N
PHASE II											
S150	5E	303	STR.	18-4							
S170	4E	192	421	7-9½	4-0	3-9½		4½"			
S190	4E	175	35	2-1½	1-3	6½"	2½"		4"		
S195	5E	8	27	91-4		2-8	88-8	60-0	31-4		1
S220	4E	20	27	93-2		2-3	88-8	26-7	40-0		2
S320	4E	25	27	93-2		2-3	88-8	26-7	40-0		2
S10	6E	20	STR.	20-0							
S11	6E	18	STR.	15-0							
S20	6E	8	STR.	5-11							
S25	4E	28	615	2-8	4½"	4½"	7"	5"			
C1	5E	160	526	4-0½		11"	1-1¾	1-1¾	10"		
C2	5E	22	41	2-6¾	11"	8¾"	11"	6¼"	6¼"		
C100	5E	2	27	82-0		2-8	79-4	60-0	22-0		1
ABT1	5E	4	STR.	4-6							
ABT2	5E	4	STR.	3-7							
PT1	5E	6	T1	9-3	5½"	11"	3-3	11"	3-3	5½"	
PT2-1	5E	2	T1	7-8	5½"	11"	2-5½	11"	2-5½	5½"	
PT2-2	5E	2	T1	7-11	5½"	11"	2-7	11"	2-7	5½"	
PT2-3	5E	2	T1	8-2½	5½"	11"	2-8¾	11"	2-8¾	5½"	
PT2-4	5E	2	T1	8-6	5½"	11"	2-10½	11"	2-10½	5½"	
PT2-5	5E	2	T1	8-9	5½"	11"	3-0	11"	3-0	5½"	
PT2-6	5E	2	T1	9-0½	5½"	11"	3-1¾	11"	3-1¾	5½"	
PT3	5E	14	37	4-11		2-0	2-11				
PT4	5E	14	37	2-11		10"	2-1				
PT5	5E	16	STR.	4-8							
PT6	5E	4	28	4-10	3-5½	1-4½	3-4½	9¾"			
PHASE III											
SW1	4E	46	37	11"		5½"	5½"				
SW2	4E	91	STR.	3-8							
SW3	4E	5	27	94-2		2-3	89-8	40-0	14-2		2

NOTE: 4" additional per lap splice has been provided for construction tolerances.
Lap #4E longitudinal bars 1-11 minimum, 2-3 lap provided.
Lap #5E longitudinal bars 2-4 minimum, 2-8 lap provided.

SHEET NO.
B22

PHASE CONSTRUCTION -
DECK REPLACEMENT
BILL OF REINFORCING STEEL

SCALE: NOT TO SCALE

BRIDGE OVER
LITTLE PRICKLY PEAR CREEK

REFERENCE POINT
0+0.031

ROUTE
L-25-241

FEDERAL AID PROJECT NO.
NHPB 15-4(165)227

LEWIS & CLARK COUNTY

MDT
MONTANA DEPARTMENT
OF TRANSPORTATION

BRIDGE BUREAU

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DRAWN	5-24-21	P.H.Jr.					
DESIGNED	8-18-20	D.C.M.					

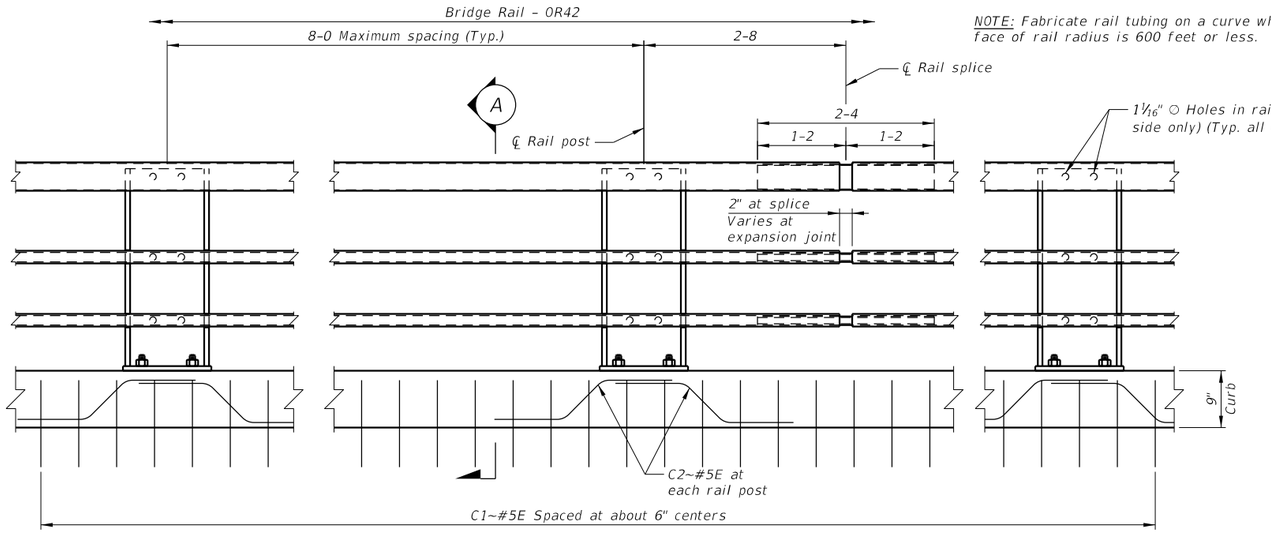
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UPN NUMBER
8085003

MDT STRUCTURE
03375

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NOTE: Fabricate rail tubing on a curve when face of rail radius is 600 feet or less.

NOTE: Locate the splice on either side of post. Tube shop splices are not allowed.

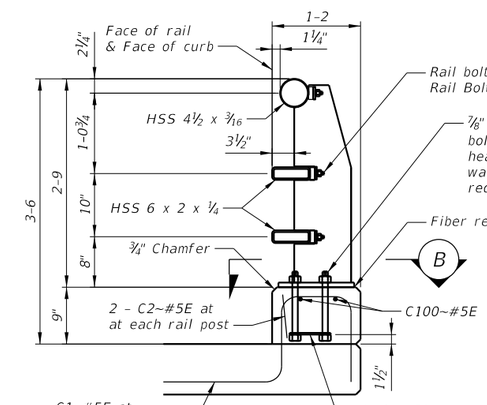
NOTE: Show vent and pickup holes in rails and sleeves on Fabricator's shop drawings. Place vent holes on the underside of the rail members as installed.

NOTE: Attach panel lengths of tube members continuously to a minimum of two posts (except at abutments with expansion joints).

NOTE: Do not provide a tube splice in first panel unless it crosses an expansion joint.

NOTE: Place expansion splice in rail such that it is positioned between the same rail posts as the expansion joint.

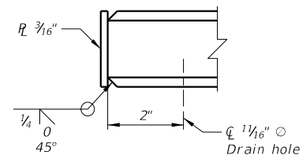
INSIDE ELEVATION OF RAIL



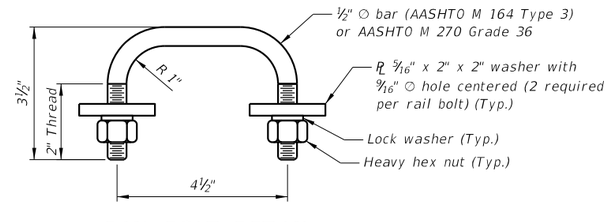
SECTION A

NOTE: Finish the top of slab under each rail post to a smooth and uniform surface to assure a proper alignment of the post and a tight fit between the fiber reinforced pad and concrete. Bush hammering is acceptable only to remove high spots.

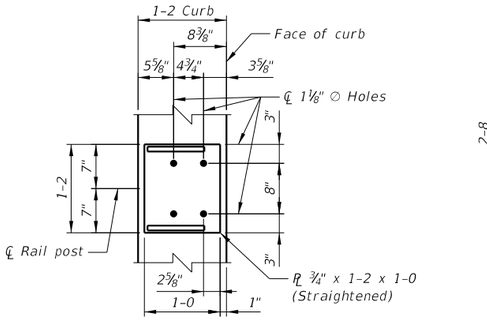
NOTE: Use fiber reinforced pads meeting the requirements of subsection 711.16 of the Standard Specifications. Size and position the pads such that not less than ½" of the pad protrudes on all sides of the base plate. Punch slotted holes in pads to match base plate.



TUBE CAP DETAIL

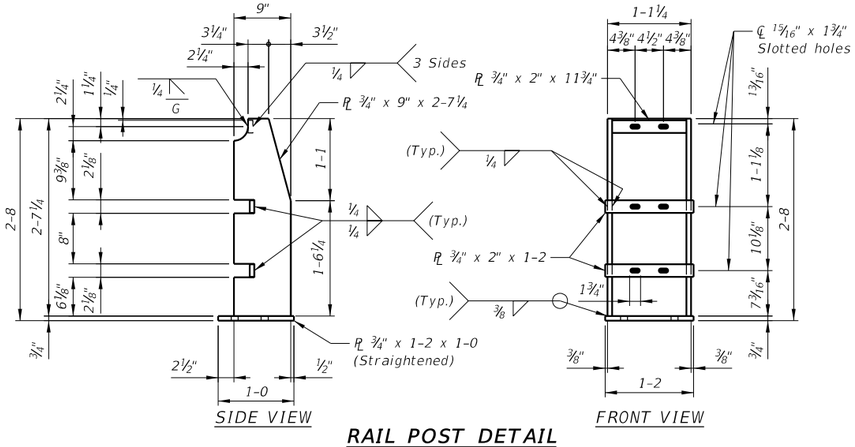


RAIL BOLT DETAIL

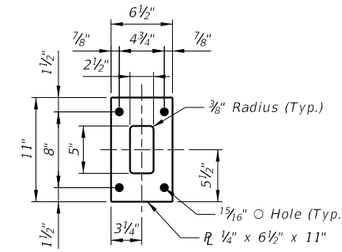


SECTION B

(Anchor bolts not shown)

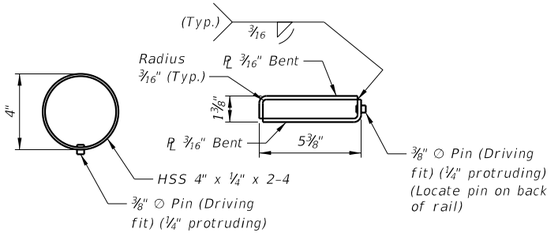


RAIL POST DETAIL



NOTE: Anchor bolts may be tack welded to anchorage (shop or field).

ANCHOR PLATE DETAIL



NOTE: Locate ⅜" ∅ Pin at mid-length of sleeve.

SLEEVE FABRICATION DETAILS

NOTES

PLACEMENT: Do not disturb the deck cure to construct the curb and rail.

CONCRETE STRENGTH: Do not place construction vehicles or equipment on the deck until the concrete has reached 90% of its specified 28-day compressive strength or without approval from the Project Manager.

GALVANIZING: Galvanize all bolts, nuts, washers and pipe sleeves in accordance with ASTM F 2329.

REFLECTORS: Place a white reflector on top of the top tube rail at equal spacing (not to exceed 30 foot spacing) between ends of rail. See Dtl. Dwg. No. 605-00 for reflector detail. Mount the reflector on the tube rail with an approved adhesive. Include the cost of reflector in the unit price bid for 42 IN Open Rail – BR.

PAYMENT: Payment for 42 IN Open Rail – BR per linear foot includes compensation for the cost of Concrete – Class Deck in the curb and for all resources necessary to complete the work. See the General Layout for the number of linear feet for payment of 42 IN Open Rail – BR. Use rail post plates and base plates conforming to AASHTO M 270 Grade 50 T3. Use AASHTO M 270 Grade 50 for all other plates and ASTM A500 Grade B for structural tubing.

ERECTION: Place rail posts as shown in details, perpendicular to adjacent roadway grade and vertical in relation to roadway cross slopes.

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 M 111 will be allowed.

EXCEPTIONS: Use details shown on this drawing only as they apply to the project. Anchorage details may vary. Refer to other drawings for variations in these details.

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.

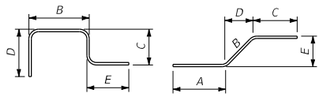
RAIL WEIGHT: For informational purposes only, the rail weight is approximately:
Curb weight = 131.3 lb/ft
Curb volume = 0.875 cu. ft / ft
Rail weight = 52.9 lb/ft

PICKETS: See Std. Dwg. No. SBR-0R42-PK for rail pickets when called for in the Bridge Plans.

CRASH TEST: This rail has been evaluated and approved to be of equal strength to railings with like geometry, which have been crash tested to meet MASH TL-4 criteria.

BILL OF REINFORCING STEEL

FOR ONE CURB ONLY
(ALL DIMENSIONS ARE OUT TO OUT)



NOTE: See Bridge Plans for number of bars required and longitudinal bars.

Mark	Size	Type	Length	A	B	C	D	E	G	N
C1	#5E	526	4-0½		11"	1-1¾	1-1¾	10"		
C2	#5E	41	2-6¾	11"	8¾"	11"	6¼"	6¼"		

STANDARD BRIDGE RAIL
TYPE OPEN RAIL 42"

No Scale

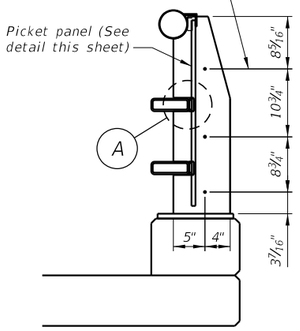
MONTANA DEPARTMENT OF TRANSPORTATION — BRIDGE BUREAU

REVISED				
REVISED				
REVISED				
APPROVED	9-17-19	N.A.H.		
CHECKED	2-7-19	L.M.M.		
DRAWN	3-14-18	T.J.B.	SFILEABBREV$	
$DATES		$TIMES		

DRAWING NO.
SBR-0R42

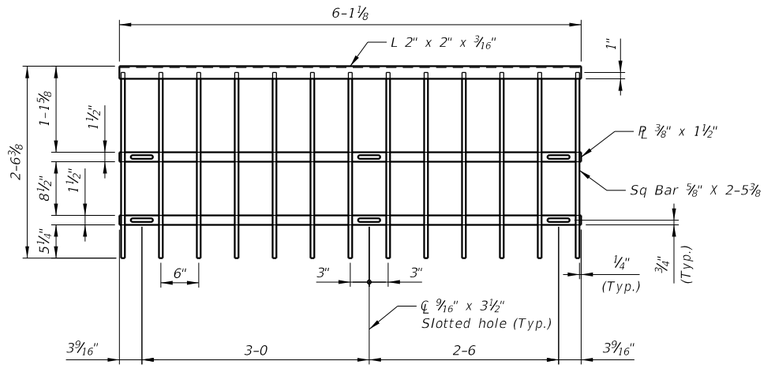
AWARD COPY

℄ ⅜" ∅ Holes in end plate of the end post plate for picket end panel attachement (Typ.)



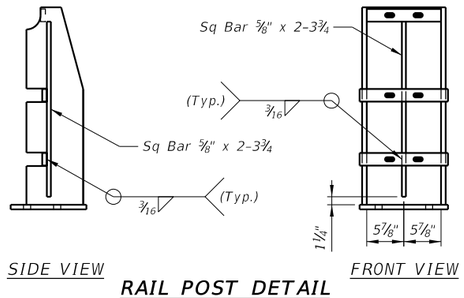
PICKET PANEL RAIL SECTION

NOTE: ℄ Bolt locations for attaching picket panel must always be in next adjacent picket panel bay from end of sleeve members to allow for joint movement, when sleeve members are present.



PICKET PANEL DETAIL

Looking at back of picket panel



SIDE VIEW

RAIL POST DETAIL

FRONT VIEW

NOTES

GENERAL: For additional rail notes and details see Std. Dwg. No. SBR-0R42.

GALVANIZING: Galvanize all bolts, nuts, washers and pipe sleeves in accordance with ASTM F 2329.

PAYMENT: Include all costs associated with furnishing and installing picket panels in the unit price bid 42 IN Open Rail Picket – BR.

Use angles and sq. ars conforming to AASHTO M 270 Grade 36.

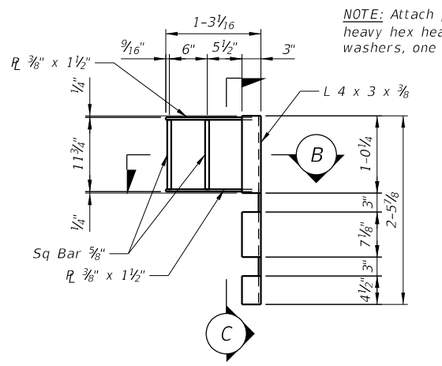
PAINTING: Paint all posts, structural tubing and plates (except as noted) in accordance with the Standard Specifications. Galvanizing the posts, structural tubing and plates in accordance with AASHTO M 111 will be allowed.

EXCEPTIONS: Use details shown on this drawing only as they apply to the project. Refer to other drawings for variations in these details.

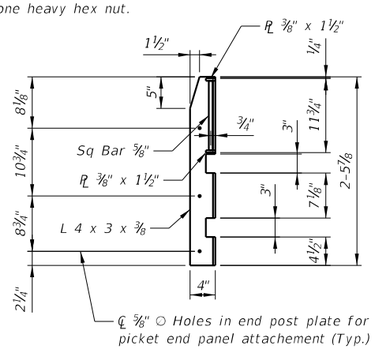
FABRICATION: For the purposes of fabrication, this rail system is considered an ancillary item. The requirements of subsection 1.3.7 of AASHTO/AWS D1.5 apply.

RAIL WEIGHT: For informational purposes only, the rail weight is approximately 10.1 lb/ft for the pickets panel.

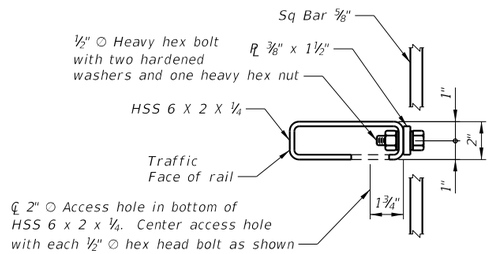
NOTE: Attach picket end panel to post with ½" ∅ heavy hex head bolts, with two hardened steel washers, one lock washer and one heavy hex nut.



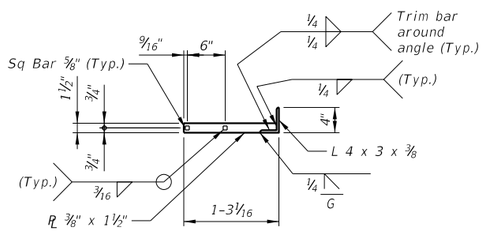
PICKET END PANEL DETAIL



SECTION C



DETAIL A



SECTION B

STANDARD BRIDGE RAIL
TYPE OPEN RAIL 42"
PICKETS

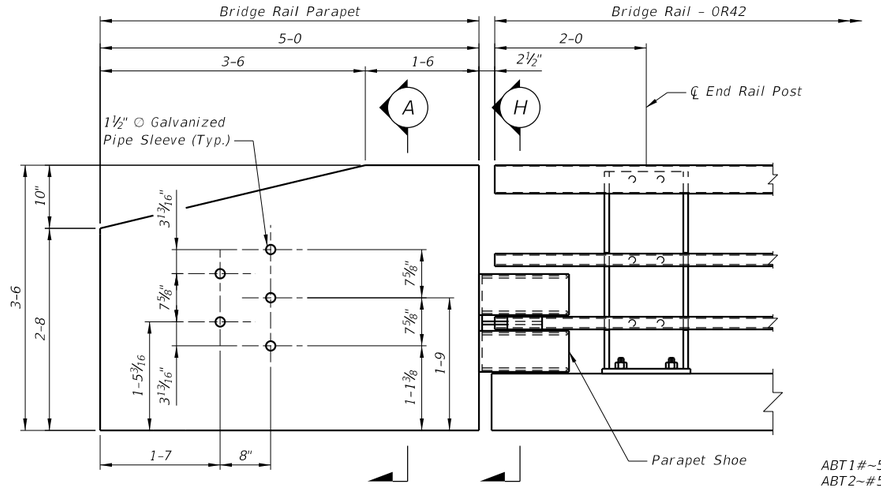
No Scale

MONTANA DEPARTMENT OF TRANSPORTATION
MDT
BRIDGE BUREAU

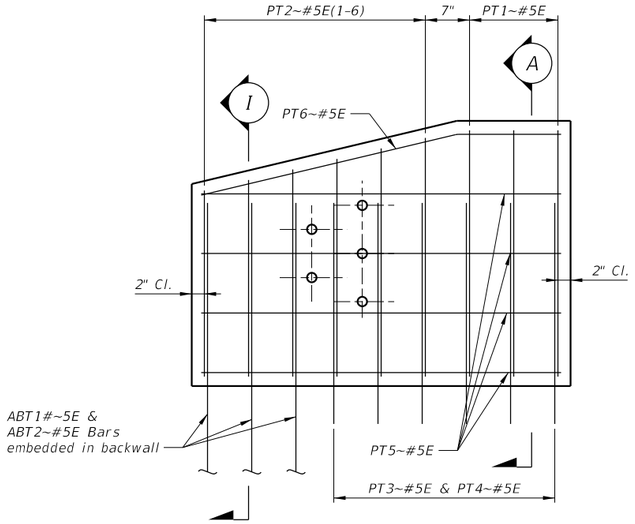
REVISED		
REVISED		
REVISED		
REVISED		
APPROVED	9-17-19	N.A.H.
CHECKED	2-7-19	L.M.M.
DRAWN	3-15-18	T.J.B.
$DATE$	$TIME$	$FILEABBREV$

DRAWING NO.
SBR-0R42-PK

AWARD COPY



INSIDE ELEVATION OF PARAPET

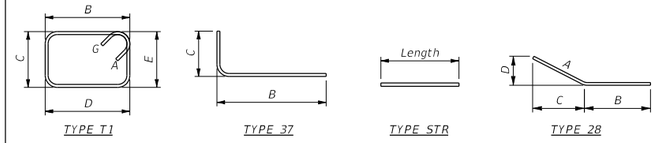


PARAPET REINFORCING ELEVATION

NOTE: Reinforcing steel shown is for a typical stub abutment. For turnback wingwalls substitute ABT1~#5E bars for PT3~#5E and ABT2~#5E bars for PT4~#5E bars shown for the parapet.

BILL OF REINFORCING STEEL

FOR ONE PARAPET ONLY
(ALL DIMENSIONS ARE OUT TO OUT)



Mark	Size	Type	Length	A	B	C	D	E	G	N
PT1	#5E	T1	9–3	5½"	11"	3–3	11"	3–3	5½"	
PT2–1	#5E	T1	7–8	5½"	11"	2–5½	11"	2–5½	5½"	
PT2–2	#5E	T1	7–11	5½"	11"	2–7	11"	2–7	5½"	
PT2–3	#5E	T1	8–2½	5½"	11"	2–8¾	11"	2–8¾	5½"	
PT2–4	#5E	T1	8–6	5½"	11"	2–10½	11"	2–10½	5½"	
PT2–5	#5E	T1	8–9	5½"	11"	3–0	11"	3–0	5½"	
PT2–6	#5E	T1	9–0½	5½"	11"	3–1¾	11"	3–1¾	5½"	
PT3	#5E	37	4–11		2–0	2–11				
PT4	#5E	37	2–11		10"	2–1				
PT5	#5E	STR	4–8							
PT6	#5E	28	4–10	3–5½	1–4½	3–4½	9¾			
ABT1	#5E	STR	4–6							
ABT2	#5E	STR	3–7							

RAIL DESIGN CAPACITY

	Parapet
Rw	86 kips
Lc	6'–2"
Mc	292 kip*in/ft

NOTES

GENERAL: See Std. Dwg. No. SBR–0R42 for additional rail details.

REINFORCING STEEL: All parapet reinforcing steel is epoxy coated.

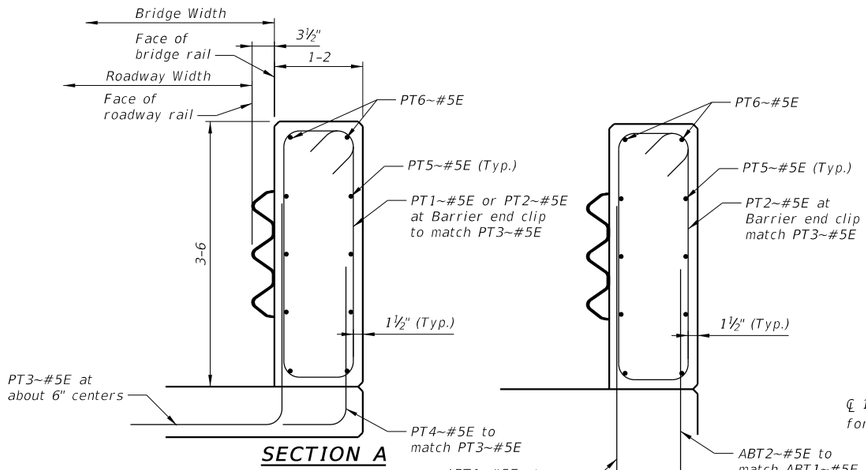
PAYMENT: Include all costs associated with furnishing and placing reinforcing steel in the parapet in the unit price bid for Reinforcing Steel – Epoxy Coated.

Include all costs associated with furnishing and placing Concrete – Class Deck in the parapet in the unit price bid for 42 IN Open Rail Parapet – Br.

Use structural steel for the shoes meeting the requirements of AASHTO M270 Grade 50. Include all costs associated with furnishing and installing parapet shoes in the unit price bid for 42 IN Open Rail Parapet – BR. Estimated weight = 78.7 lb / per shoe

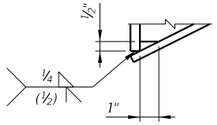
EXCEPTIONS: Use details shown on this drawing only as they apply to the project. Anchorage details may vary. Refer to other drawings for variations in thise details.

RAIL WEIGHT: For informational purposes only.
Parapet Weight = 2807 lb
Parapet Volume = 18.7 cu. ft

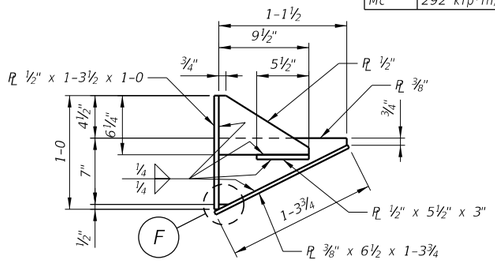


SECTION A

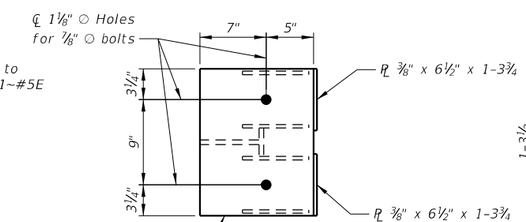
SECTION I



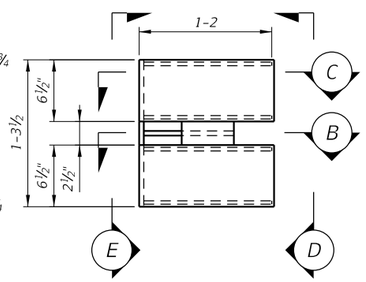
DETAIL F



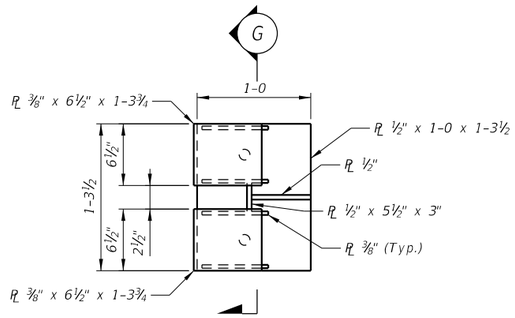
SECTION B



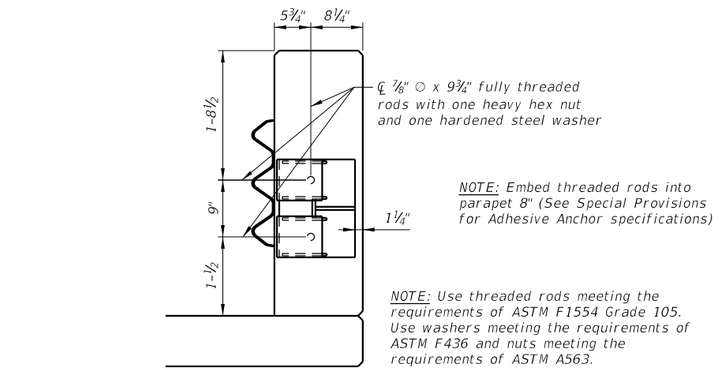
VIEW E



PARAPET SHOE ELEVATION



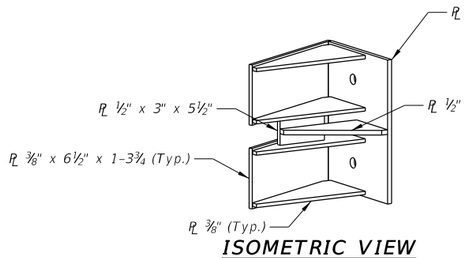
VIEW D



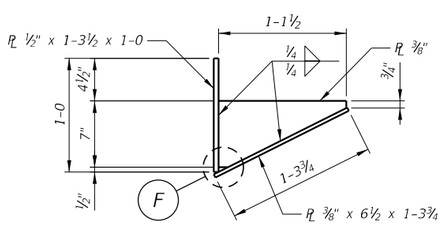
NOTE: Embed threaded rods into parapet 8" (See Special Provisions for Adhesive Anchor specifications)

NOTE: Use threaded rods meeting the requirements of ASTM F1554 Grade 105. Use washers meeting the requirements of ASTM F436 and nuts meeting the requirements of ASTM A563.

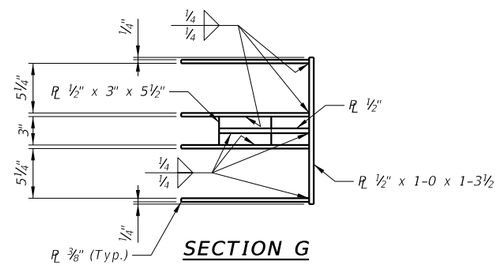
VIEW H



ISOMETRIC VIEW



SECTION C



SECTION G

STANDARD BRIDGE RAIL TYPE OPEN RAIL 42" PARAPET

No Scale

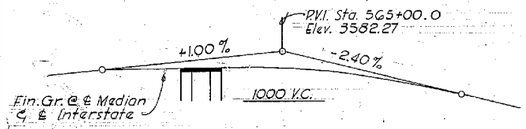
MONTANA DEPARTMENT OF TRANSPORTATION — BRIDGE BUREAU

REVISED				
REVISED				
REVISED				
APPROVED	9-17-19	N.A.H.		
CHECKED	2-7-19	L.M.M.		
DRAWN	3-14-18	T.J.B.		
$DATE$	$TIME$	SFILEABBREV$		

DRAWING NO.
SBR–0R42–PP

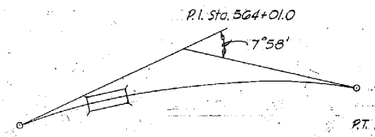
AWARD COPY

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	MONT.	~~I-15-4(25)218~~			
		IR 15-4 (67) 218	813		



VERTICAL CURVE DATA

NOTE: No bridge markers or reflector signals will be required for this structure.

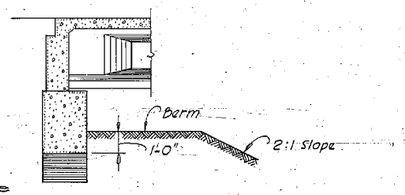


D = 1°00'
R = 5730.0'
Δ = 7°58' Rt.
T = 399.0'
L = 796.7'
S = 0.02

HORIZONTAL CURVE DATA

Note: Only the excavation below natural ground shall be paid for as Structure Excavation.

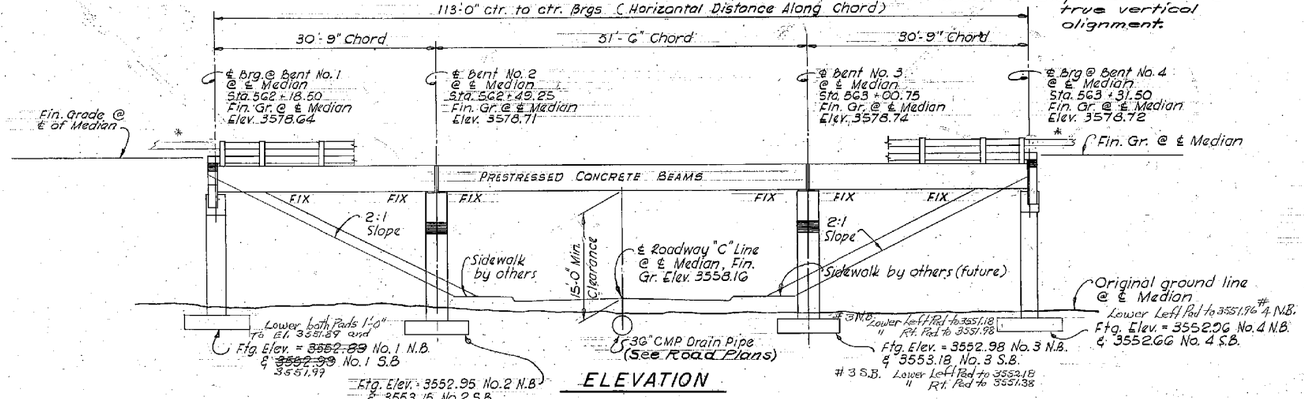
Note: The Contractor shall exercise care during his operation of placing & compacting fill around all bents so that no bent is displaced from its true vertical alignment.



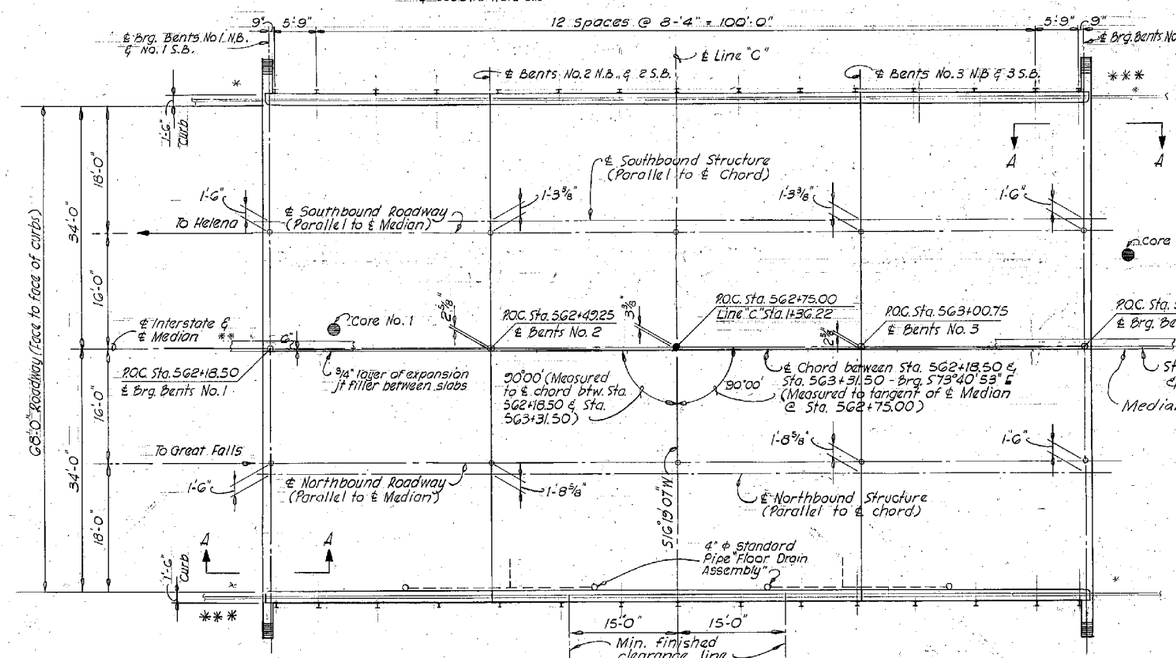
SECTION A-A
Not to scale

REFERENCES

DRAWING NO.	DESCRIPTION
5460	Site Plan
5461	Boring Logs & Foundation Plan
5462	Bent No. 1 Northbound
5463	Bents No. 2 Northbound & No. 3 Northbound
5464	Bent No. 4 Northbound
5465	Bent No. 1 Southbound
5466	Bents No. 2 Southbound & No. 3 Southbound
5467	Bent No. 4 Southbound
5468	Slab & Curb Details
5468 A	Drainage System Details
~~B-A~~	~~Standard Prestressed Concrete Beam - Type A~~
SBBR (Rev. 10-8-62)	Steel Beam Bridge Rail & Details



ELEVATION



PLAN

NOTE: Rail Post spacing is measured horizontally at outer face of curb along the horizontal curve.

NOTE: ℄ Median ℄ face of curb to be constructed on 1° curve. Girders ℄ bents will be on tangent parallel to ℄ chord between ℄ Brg. of Bents 1 & 4. For additional layout information see Dwg's. No. 5461 & 5463.

NOTE: ℄ Bents 1 thru 4 bear S 16°19'07" W (Parallel to Line "C")

*** NOTE: Approach rail to be revised and curb tapers added for details see Dwg. No. 14847

NOTES

SPECIFICATIONS: Montana State Highway Commission Standard Specifications for Road & Bridge Construction, 1962 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.

LIVE LOAD: Standard H 20-S16 or Alternate Loading. Alternate Loading for bridges and floor systems with spans under 40 feet consists of two axles four feet apart with each axle weighing 24,000 lbs.

FINISHED GRADE: Finished plan grade of bridges is same as profile grade shown on Road Plans.

CAST IN PLACE CONCRETE: All cast in place concrete of the superstructure and substructure shall be class "AD" An "Air Entraining Agent" shall be added to all cast in place concrete. Chamfer all exposed edges of concrete ¾" and fillet entrant angles ¾" unless otherwise noted. Quantities of Class "AD" concrete have been computed using pretensioned beams. Quantities of Class "AD" concrete and reinforcing steel will vary slightly using post-tensioned beams.

PRESTRESSED BEAMS: Prestressed Concrete Beams shall be fabricated in accordance with Dwg. No. B-A. Design Stresses are as follows:

		30' Span	50' Span
Beam D.L. Stresses (p.s.i.)	fb	-138	-386
	ft	+170	+476
Total D.L. + L.L. Design Stresses (p.s.i.)	fb	-892	-2051
	ft	+670	+1651
Ultimate Moment (Ft. Kip.)		936.5	2021

REINFORCING STEEL: Bends in reinforcing steel shall be made to a radius of not less than (4) four 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 dia's. Hooks shall conform to the dimensions shown in the following sketches, except as otherwise noted.



STRUCTURAL STEEL: For requirements governing structural steels and their fabrication, see the Standard Specifications. To avoid oversight, these requirements shall be clearly noted on the shop drawings. Structural steel shall recieve 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, on all surfaces not in contact with the concrete, except as noted in the Standard Specifications.

STRUCTURAL STEEL: (Method of Measurement and Payment) The Structural Steel shall be paid for at the unit price bid for reinforcing steel and the weight paid for shall be the computed weight as obtained in accordance with the rules and assumptions specified in the Standard Specifications. The computed weight of each shipping unit shall be shown on the shop drawings. This weight may or may not be checked at the time the drawings are checked.

GUARD ANGLES: Slab guard angles shall be paid for at the unit price bid for reinforcing steel.

OTHER NOTES: For other notes see Drawing No. 5461.

* Note: Rdwy. Guard Rail to be continuous with Guard Rail on bridge, See Dwg. No. 11580.

** Note: Median rail replaced with concrete median barrier, See Std Dwg. No. 84 & No. 12349.

PRESTRESSED BEAM DEADLOAD DEFLECTION TABLE

Span	0.0	0.1	0.2	0.3	0.4	0.5
30'	0"	1/16"	1/16"	1/8"	1/8"	1/8"
50'	0"	3/16"	5/16"	7/16"	1/2"	1/2"

** Note: Median Barrier to be continuous with Median Barrier on bridge. (Typ.) See Dwg. 12349 & Std. Dwg. No. 84.

** Note: Concrete Median Barrier offset 6" on bridge as shown, warp Median Barrier back to ℄ median at ends of structure. See Dwg. No. 12349.

⚠	THIS CONTRACT	For revisions to structure see Dwg. No. 24531 thru 24552
	NHPB 15-4(165)227	

*** ⚠ Revised 11-13-20 P.H.Jr.

REVISED	D.W.C.	12-3-90
DESIGN	M-M	12-10-62
DRAWN	BBS	12-12-62
TRACED	BBS	12-14-62
CHECKED	JHM	1-24-63
APPROVED		
REVISED *	J.C.H.	3-1-76
REVISED **	J.C.H.	1-23-79
M-M NO.	275-05-07.7	

PREPARED BY
WESTERN ENGINEERS & MORRISON-MAIERLE
ENGINEERS & CONSULTANTS
HELENA, MONTANA
FOR
STATE OF MONTANA
STATE HIGHWAY COMMISSION
WOLF CREEK INTERCHANGE
STA. 562 + 75.0
FEDERAL AID PROJECT NO. I 15-4(25) 218
LEWIS & CLARK COUNTY
GENERAL LAYOUT
SCALE: 1" = 10'-0"
APPROVED BY [signature]
BRIDGE ENGINEER
DRAWING NO. 5459

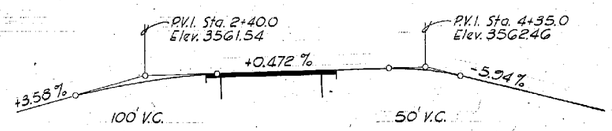
J.R.B.

BR. I.D.: 01203 (I00015226+07631) & 01204 (I00015226+07632)

AWARD COPY

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	MONT.	I-15-4(25)218		1	6

NOTE: No Markers or Reflector Signals Required.



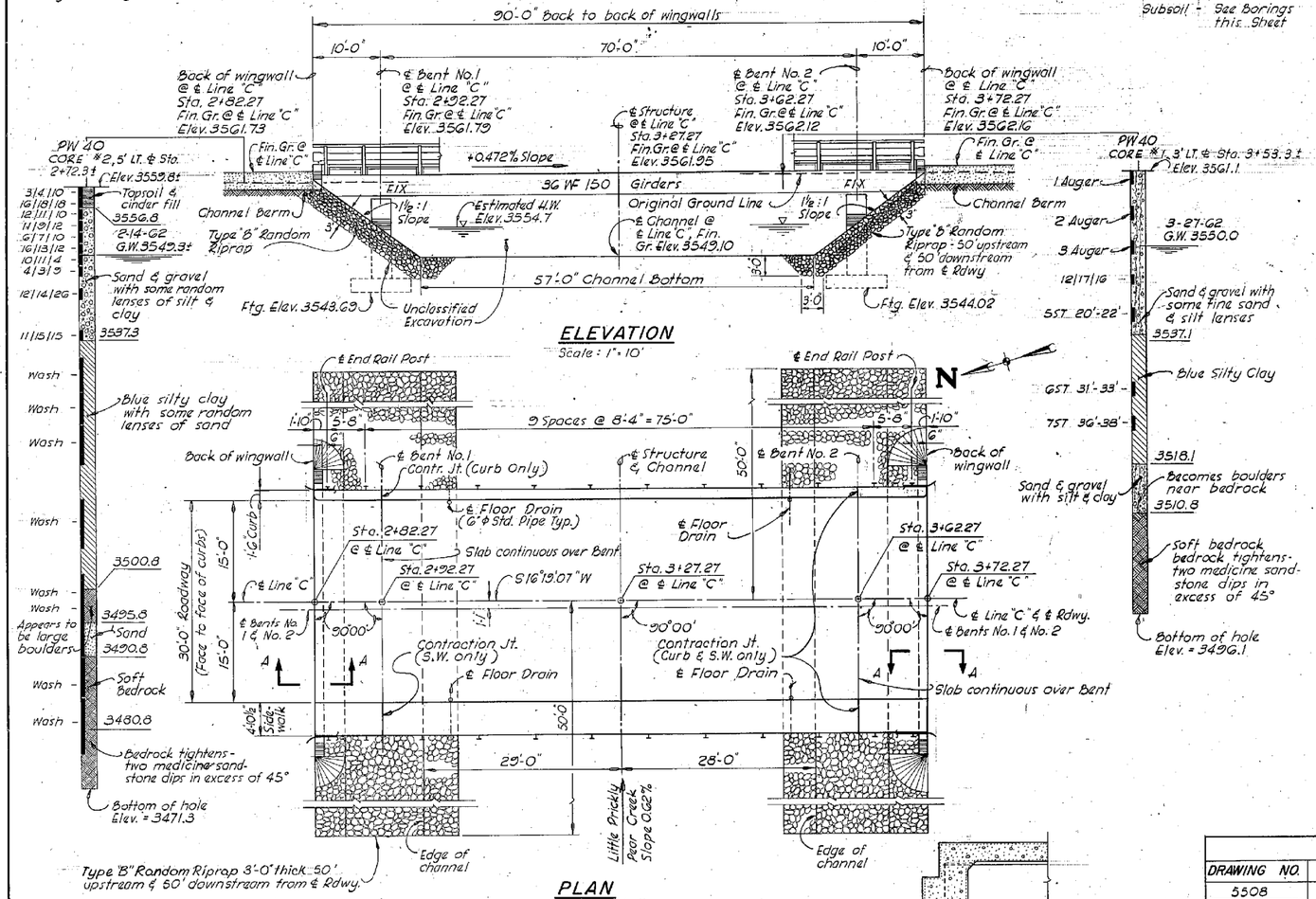
VERTICAL CURVE DATA

NOTE: No work shall be done on Bents No. 1 & No. 2 until after the channel change in the vicinity of the structure has been completed.

NOTE: Only that excavation below the limits of the unclassified excavation shall be paid for as "Structure Excavation" for Bents No. 1 & No. 2.

NOTE: Elevations shown for bottom of footings are approximate only. Final elevations shall be determined by the Engineer.

STREAM DATA
Ice - Light
Drift - Light
Scour - Some
Subsoil - See Borings this Sheet

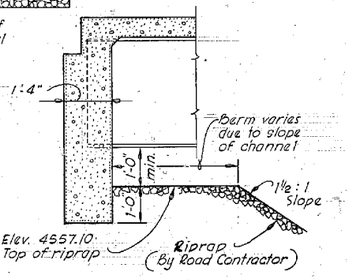


ELEVATION
Scale: 1" = 10'

PLAN
Scale: 1" = 1'-0"

NOTE: Boring Logs - The series of three numbers inscribed on the Boring Logs indicate the number of blows per 6" penetration for each number of the series of a 2" sample tube which has been driven in accordance with the Standard Penetration Test made with a 2" ϕ split tube sampler using a 140# hammer having a 30" drop. ST Indicates a Shelby Tube Sample; the numbers following indicate the depth of the sample from ground surface.

NOTE: See Drawing No. 5460 Wolf Creek Interchange for Site Plan of this structure.



SECTION A-A
Scale: ½" = 1'-0"

THIS CONTRACT	For revisions to structure
NHPB 15-4(165)227	see Dwg. No. 24531 thru 24552

J.C.B.

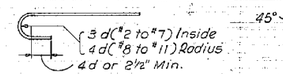
NOTES

SPECIFICATIONS: Montana State Highway Commission Standard Specifications for Road & Bridge Construction, 1962 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.

FINISHED GRADE: Finished plan grade of bridge is same as profile grade shown on Road Plans.

CAST IN PLACE CONCRETE: All cast in place concrete of the superstructure and substructure shall be class "AD". An "Air Entraining Agent" shall be added to all cast in place concrete. Chamfer all exposed edges of concrete ¾" and fillet entrant angles ¾" unless otherwise noted.

REINFORCING STEEL: Bends in reinforcing steel shall be made to a radius of not less than (4) four 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 dias. Hooks shall conform to the dimension shown in the following sketches, except as otherwise noted.



STRUCTURAL STEEL: For requirements governing structural steels and their fabrication, see the Standard Specifications. To avoid oversight, these requirements shall be clearly noted on the shop drawings. Structural steel shall recieve 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, on all surfaces not in contact with the concrete, except as noted in the Standard Specifications.

WELDS: All welds shall be continuous fillet shop welds unless otherwise noted. Welds shall be paid for at the unit price bid for structural steel.

APPROVAL: Shop plans shall be approved by the Montana State Highway Dept. before fabrication is begun.

SOILS AND FOUNDATION MATERIAL: Borings were taken by the Montana State Highway Department at the points shown to obtain information on the subsoil of this bridge site so that a more reasonable conclusion could be reached as to the type and approximate elevation of bottom of foundation that should be used. The State Highway Departments interpretation of the materials encountered from the results of the borings is shown hereon. The State Highway Department does not guarantee that the material which will be encountered in the course of excavation for the structure will be as listed in the log of borings; neither does the State assume any responsibility for any variation or misinterpretation of the classes of materials. No claim or adjustment in the unit price bid for excavation will be made if the materials found do not agree with those shown in the log of borings. Materials shown as sand & gravel may be of varying degrees of compactness or cementation.

LIVE LOAD: Standard H15-S12 Loading

STRUCTURAL STEEL: (Method of Measurement and Payment) All structural steel shall be measured and paid for as set forth on the Special Provisions.

GUARD ANGLES: Slab guard angles shall be paid for at the unit price bid for structural steel.

SETTING OF MASONRY PLATES: Care shall be taken in placing reinforcing steel so as to clear anchor bolts. Contractor shall finish concrete under girder masonry plates slightly high and bush-hammer to exact elevation shown. Masonry plates shall be placed on three (3) layers of canvas thoroughly swabbed with red lead, as called for in the Standard Specifications.

SEQUENCE OF WORK: Bents No. 1 and No. 2 shall be completed and the Type "B" Random Riprap placed, before the steel girders of the superstructure are placed.

EXCAVATION: Excavation quantities have been computed from the bottom of the footing to the bottom of riprap in the channel change.

BACKFILL: The backfill against the North & South wing walls shall not be placed until after the concrete roadway slab has been placed.

REFERENCES

DRAWING NO.	DESCRIPTION
5508	Bents No. 1 & No. 2
5509	Slab, Girder & Drain Details
5510	Wing Wall Details
5511	Girder Details & Shoes
SBR-14 (Rev. 10-8-62)	Standard Steel Bridge Rail Type No. 4
5460	Site Plan (Wolf Creek Interchange)

Revised	11-13-20	P.H.Jr.
DESIGN	M-M	2-6-63
DRAWN	CJA-BMS	4-10-63
TRACED	CJA-BMS	4-10-63
CHECKED	JHM	5-9-63
APPROVED	PHC	8-21-63
REVISED		
REVISED		
M-M NO.	275-05-07.8	

PREPARED BY
WESTERN ENGINEERS & MORRISON-MAIERLE
ENGINEERS & CONSULTANTS
HELENA, MONTANA
FOR
STATE OF MONTANA
STATE HIGHWAY COMMISSION

BRIDGE OVER LITTLE PRICKLY PEAR CREEK
190' RT. STA. 562 + 75
FEDERAL AID PROJECT NO. I-15-4(25)218
LEWIS & CLARK COUNTY

GENERAL LAYOUT

SCALE: AS SHOWN
APPROVED BY _____ BRIDGE ENGINEER
DRAWING NO. 5507

BR. I.D.: 03375 (L25241000+00301)