

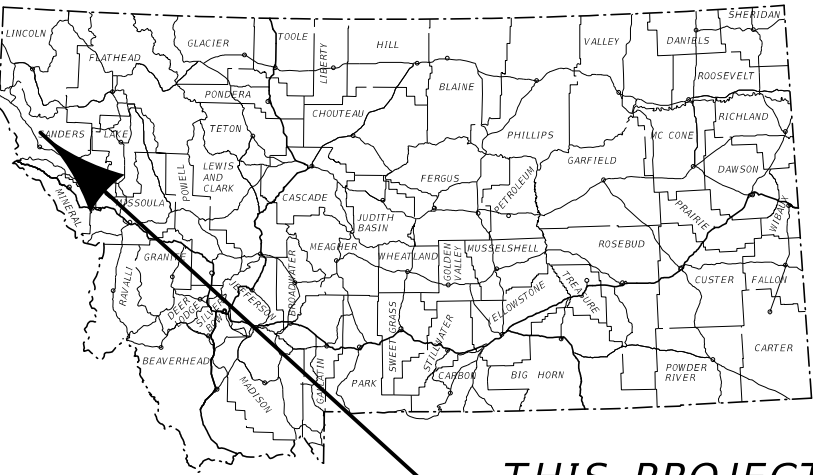
MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT STPB-BH 6-1(142)28
BRIDGE REHAB, PL. MIX SURF, GRADE, GRAVEL
CLARK FORK - 1M NW TROUT CREEK
SANDERS COUNTY

PROJECT DESIGN DATA

PRESENT	2019	A.A.D.T. =	1,940
LETTING	2020	A.A.D.T. =	1,960
DESIGN	2040	A.A.D.T. =	2,390
		D.H.V. =	270
		TRUCKS =	8.4%
		V. =	60
		18 KIP ESAL'S =	80
		GROWTH RATE =	1.000%

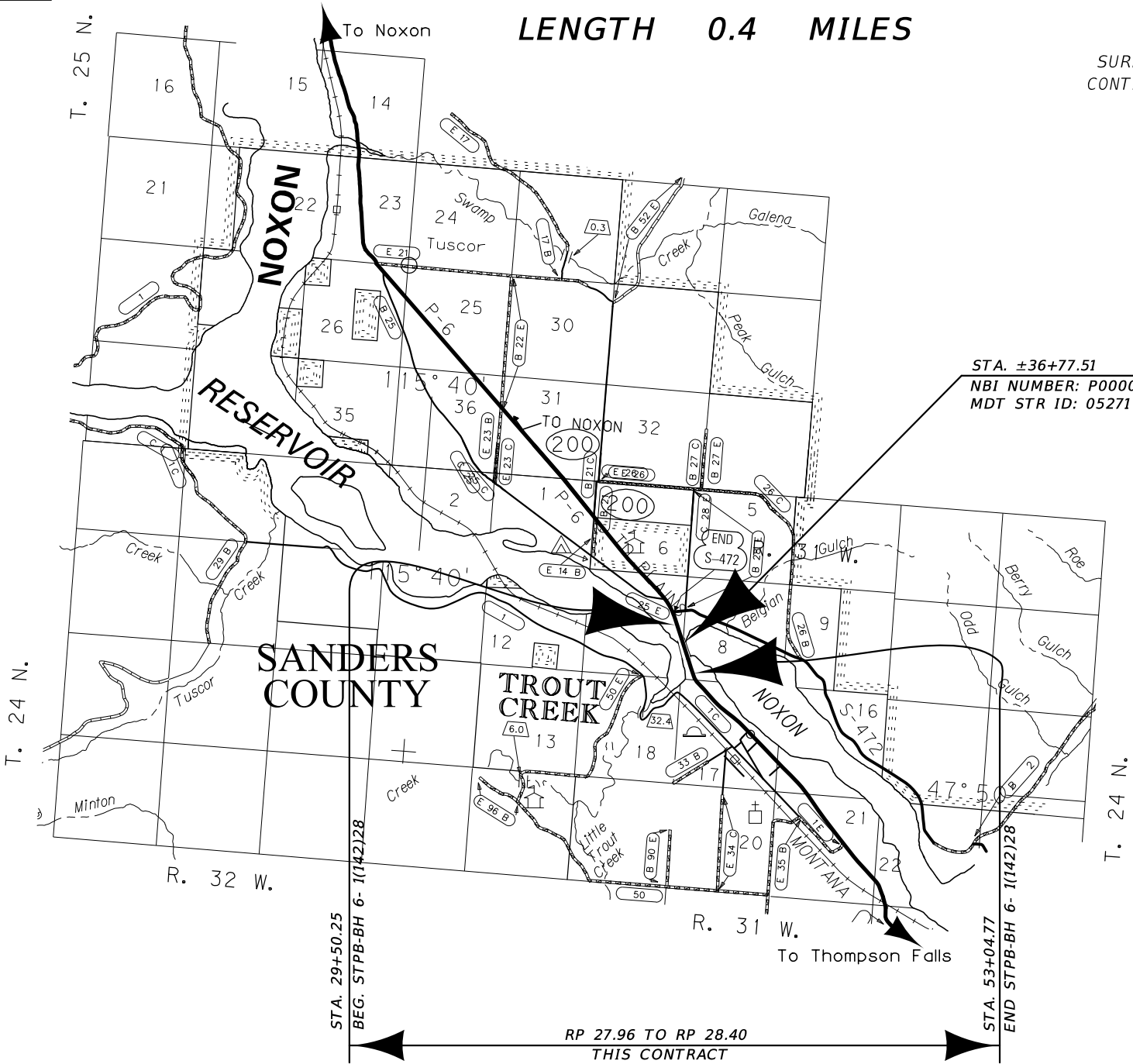
CSF = 0.99939051



THIS PROJECT

LENGTH 0.4 MILES

SURFACING SOURCES -
CONTRACTOR FURNISHED



PLANS PREPARED BY



HDR
1715 SOUTH RESERVE ST
MISSOULA, MT 59801
PHONE (406) 532-2200

RELATED PROJECTS

ASSOCIATED PROJECT
AGREEMENT NUMBERS

R / W	
I.C.	
P. E.	

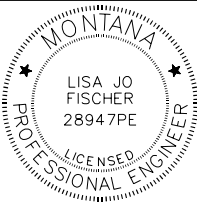


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BY 
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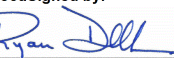
12/17/2019

DATE



MONTANA
DEPARTMENT OF TRANSPORTATION

RECEIVED DocuSigned by:

BY 
CO-688880292A10480ENGINEER

12/17/2019

DATE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED :

DIVISION ADMINISTRATOR

DATE

3	 MONTANA DEPARTMENT OF TRANSPORTATION	...RD\8022000RDTTLZ01.DGN	DESIGNED BY	RCL	11/26/2019	ROAD PLANS
2		11/26/2019	REVIEWED BY	LJF	11/26/2019	
		3:14:00 PM	CHECKED BY	BLM	11/26/2019	UPN 8022000

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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 5 - 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)
EMULSIFIED ASPHALT - FOG SEAL (S & C)	= 0.075 GAL. PER SQ.YARD (UNDILUTED)
SEAL	= 0.42 GAL. PER SQ.YARD
COVER	= 25 LBS. PER SQ.YARD

CLEARING AND GRUBBING

CLEAR AND GRUB TO CONSTRUCTION LIMITS. INCLUDE THE COST OF CLEARING AND GRUBBING IN THE UNIT PRICE BID FOR UNCLASSIFIED EXCAVATION

UTILITIES

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

PUBLIC LAND SURVEY MONUMENTS

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

MISC. TO BE MOVED OR REMOVED BY OTHERS

ALL PRIVATELY OWNED SIGNS TO BE REMOVED BY OWNER.

CONSTRUCTION NOTES

USE EXTREME CAUTION WHEN WORKING AROUND THE 230 kV OVERHEAD TRANSMISSION LINES (STA. 42+92 TO STA. 44+10) AND THE 13.2 kV OVERHEAD DISTRIBUTION LINES (STA. 47+60 TO STA. 47+85).

WETLANDS

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

CONTRACTOR SURVEY AND LAYOUT - CONTRACTOR STAKE

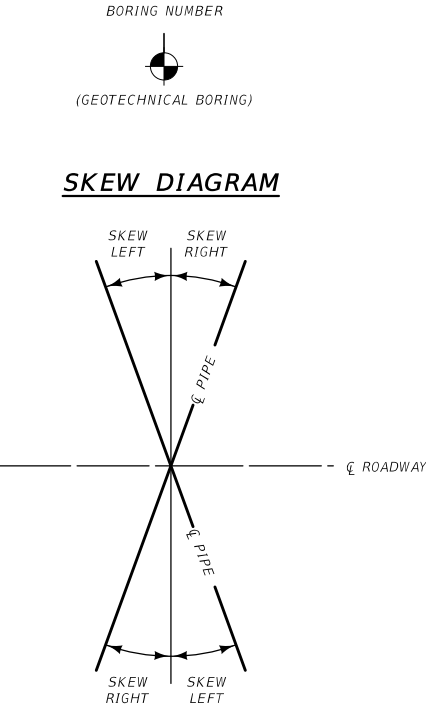
CONTRACTOR TO FURNISH SURVEY, LAYOUT AND STAKING IN ACCORDANCE WITH SUBSECTION 105.08.2.

COMBINATION SCALE FACTOR

DIMENSIONS SHOWN ON THE PLANS ARE GRID. ALL SURVEY AND STAKING REQUIRE THE USE OF A COMBINATION SCALE FACTOR (CSF) TO CONVERT GRID DIMENSIONS TO GROUND DIMENSIONS (GRID DISTANCE % CSF = GROUND DISTANCE). THE CSF FOR THIS PROJECT IS 0.99939051.

SOILS INFORMATION

SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION. THE LOCATION OF GEOTECHNICAL BORINGS IS SHOWN ON THE PLAN VIEW WITH THE FOLLOWING SYMBOL:



LINEAR AND LEVEL DATA

LENGTH OF ROADWAY	2 LANE RURAL	300.00 ft
LENGTH OF BRIDGE	2 LANE RURAL	1,060.77 ft
TOTAL LENGTH OF STPB-BH 6-1(142)28		1,360.77 ft

BEARING SOURCE

GRID -- MONTANA COORDINATE SYSTEM NAD 83-CORS96

LEVEL DATUM SOURCE

NAVD 88 (ELEVATIONS DERIVED FROM DIFFERENTIAL LEVELS HOLDING BMS P521 & 6025077)

CENTERLINE COORDINATE TABLE - HWY 200				
STATION	DESCRIPTION	N OR Y COORDINATE	E OR X COORDINATE	REMARKS
17+67.70	P0B	1373834.184	469341.674	
25+01.62	TS	1373276.366	469818.614	
26+88.62	SC	1373132.214	469937.699	
28+25.70	PI	1373030.044	470029.222	
29+50.25	P0S	1372914.340	470082.157	BEGIN PROJECT
29+60.21	CS	1372905.654	470087.035	
29+97.12	P0S	1372873.258	470104.716	BEGIN SURFACING
31+47.21	ST	1372739.384	470172.563	
43+57.89	P0T	1371653.565	470708.043	END SURFACING
53+04.77	P0T	1370804.339	471126.846	END PROJECT
54+50.14	P0E	1370673.962	471191.142	

OPEN ROADS CHAIN: P_HWY200

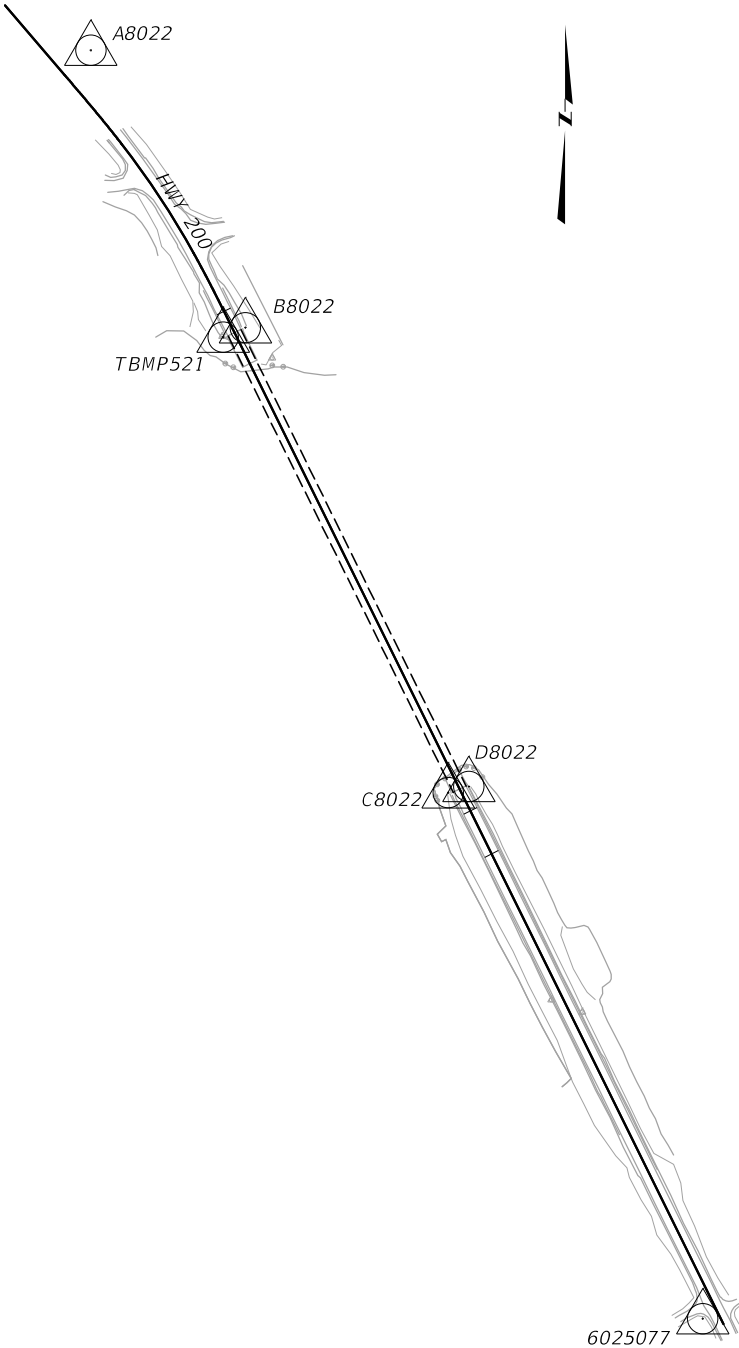
HCH

CONTROL DIAGRAM

SCALE: N/A

NOTE:
THIS PROJECT IS ON THE MONTANA COORDINATE SYSTEM NAD83-CORS96.
NORTHING AND EASTING COORDINATES ARE EXPRESSED IN UNITS OF
INTERNATIONAL FEET AND ELEVATIONS ARE IN UNITS OF U.S. SURVEY FEET (NAVD88).

DIMENSIONS SHOWN ON THE PLANS ARE GRID. ALL SURVEY AND STAKING REQUIRE
THE USE OF A COMBINATION SCALE FACTOR (CSF) TO CONVERT GRID DIMENSIONS
TO GROUND DIMENSIONS (GRID DISTANCE / CSF = GROUND DISTANCE).
THE CSF FOR THIS PROJECT IS 0.99939051.



CONTROL ABSTRACT

POINT NAME/NUMBER	N OR Y COORDINATE	E OR X COORDINATE	POINT ELEVATION	LOCATION AND DESCRIPTION
6025077	1,370,685.130	471,148.169	2342.78	FOUND 2" MDT ALUM CONTROL CAP MARKED 6025077 2005, 33' RIGHT OF MP.28.435, WP.3' SW.
A8022	1,373,328.359	469,872.877	2386.52	SET 2" AC ON 5/8"X30" REBAR MARKED A8022 2013, 83' LEFT OF MP.27.876 ON TOP OF A CUT SECTION,30 SE'LY OF A POWER POLE, SET WP.3' SE.
B8022	1,372,750.244	470,195.001	2365.02	SET 2" AC ON 5/8"X30" REBAR MARKED B8022 2013, 24' LEFT OF MP.28.004, 6' EAST OF NE. BRIDGE CORNER, SET WP.3' SE.
C8022	1,371,781.098	470,617.817	2353.46	SET 2" AC ON 5/8"X30" REBAR MARKED C8022 2013, 24' RIGHT OF MP.28.205 6' WEST OF SW. BRIDGE CORNER, SET WP.3' EAST.
D8022	1,371,794.121	470,660.690	2354.98	SET 2" AC ON 5/8"X30" REBAR MARKED D8022 2013, 20' LEFT OF MP.28.206 4' SOUTHERLY OF SE. BRIDGE CORNER, SET WP.3' SOUTH.
TBMP521	1,372,730.406	470,148.580	2364.28	FOUND 2" MDT ALUM CAP MARKED TBMP521 2005, 26' RIGHT OF MP. 28.004 8' SW'LY OF NW BRIDGE CORNER.

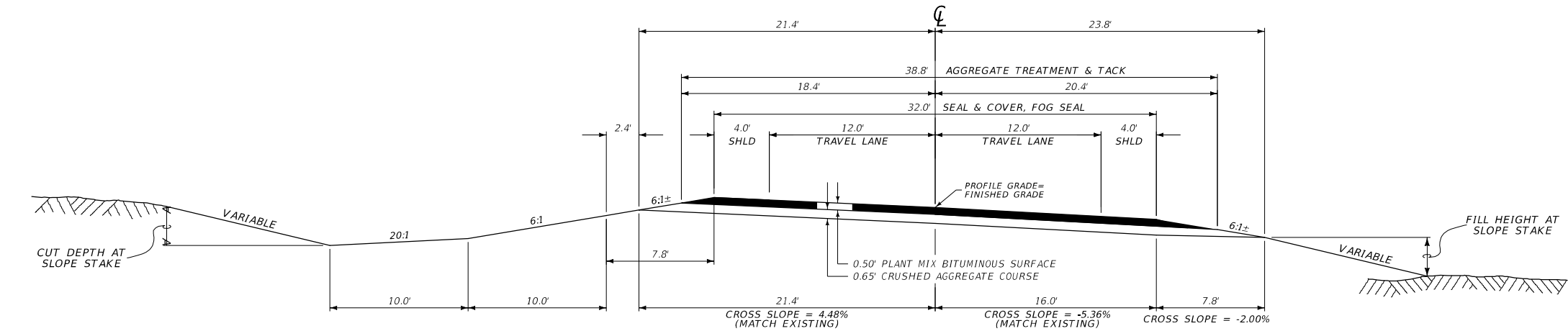
MDT

TYPICAL SECTION NO. 1

HWY 200

29+97.12
29+97.12 TO 30+97.12

ONLY - TIE TO EXISTING
TRANS. TYP. NO. 1 TO TYP. NO. 2



QUANTITIES											
UNIT	AGGREGATE						UNIT	BITUMINOUS MATERIAL			AGG. TREATMENT
	COVER	PLANT MIX	CR. AGG. COURSE	ASPHALT				SEAL	EMULSIFIED ASPHALT TACK*	FOG SEAL (OVER S&C)	
AREA square feet		17.70	27.3				square yards PER STATION	356	862	356	431
cubic yards PER STATION		65.6	101.1				tons PER STATION	0.64			
tons PER STATION		126.4					gals PER STATION		43	27	
square yards PER STATION	356										

*BASED ON TWO APPLICATIONS

SEE BRIDGE END PAVEMENT DETAIL
FOR GEOTEXTILE STATION LIMITS.

* FILL SLOPES		* BACK SLOPES	
0' - 10'	6:1	0' - 5'	5:1
10' - 20'	4:1	5' - 10'	4:1
20' - 30'	3:1	10' - 15'	3:1
OVER 30'	2:1	15' - 20'	2:1
		OVER 20'	1.5:1

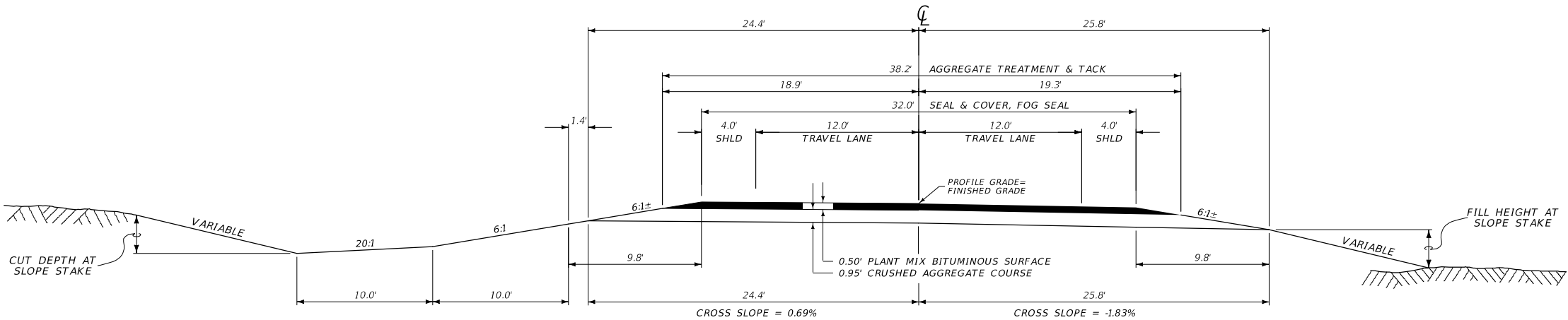
* SEE CROSS SECTIONS FOR DEVIATIONS

TYPICAL SECTION NO. 2

HWY 200

30+97.12
30+97.12 TO 31+47.12 BE

ONLY
TRANS. TYP. NO. 2 TO TYP. NO. 3



QUANTITIES											
UNIT	AGGREGATE						UNIT	BITUMINOUS MATERIAL			AGG. TREATMENT
	COVER	PLANT MIX	CR. AGG. COURSE					SEAL	EMULSIFIED ASPHALT TACK*	FOG SEAL (OVER S&C)	
AREA square feet		17.55	41.99				square yards PER STATION	356	849	356	424
cubic yards PER STATION		65.0	155.5				tons PER STATION	0.64			
tons PER STATION		125.3					gals PER STATION		43	27	
square yards PER STATION	356										

*BASED ON TWO APPLICATIONS

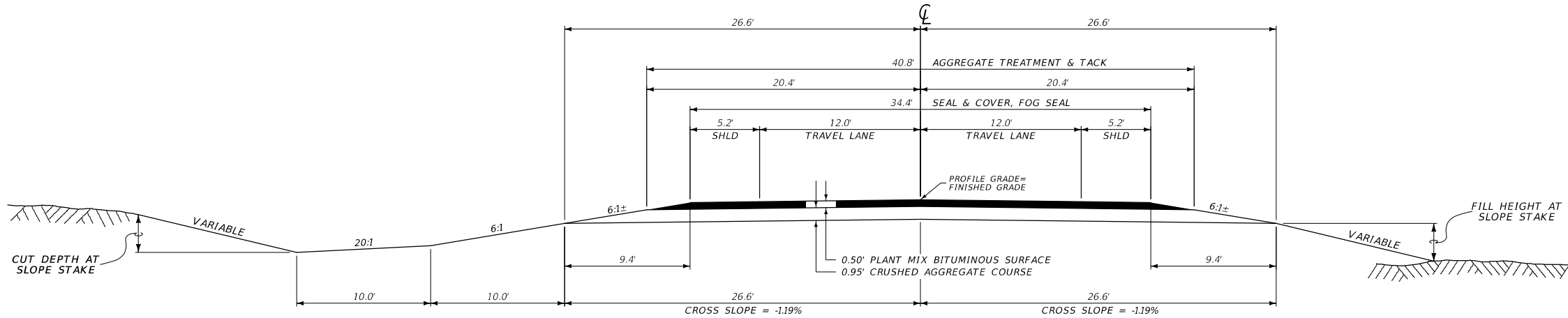
SEE BRIDGE END PAVEMENT DETAIL
FOR GEOTEXTILE STATION LIMITS.

TYPICAL SECTION NO. 3
HWY 200

31+47.12 BE
42+07.89 BE
42+07.89 BE

ONLY, THEN BRIDGE
ONLY
TRANS. TYP. NO. 3 TO TYP. NO. 4

TO 42+57.89



QUANTITIES											
UNIT	AGGREGATE						UNIT	BITUMINOUS MATERIAL			AGG. TREATMENT
	COVER	PLANT MIX	CR. AGG. COURSE	ASPHALT				SEAL	EMULSIFIED ASPHALT TACK*	FOG SEAL (OVER S&C)	
AREA square feet		18.80	44.65				square yards PER STATION	382	907	382	453
cubic yards PER STATION		69.6	165.4				tons PER STATION	0.68			
tons PER STATION		134.2					gals PER STATION	45	29		
square yards PER STATION	382										

*BASED ON TWO APPLICATIONS

SEE BRIDGE END PAVEMENT DETAIL
FOR GEOTEXTILE STATION LIMITS.

* FILL SLOPES		* BACK SLOPES	
0' - 10'	6:1	0' - 5'	5:1
10' - 20'	4:1	5' - 10'	4:1
20' - 30'	3:1	10' - 15'	3:1
OVER 30'	2:1	15' - 20'	2:1
		OVER 20'	1.5:1

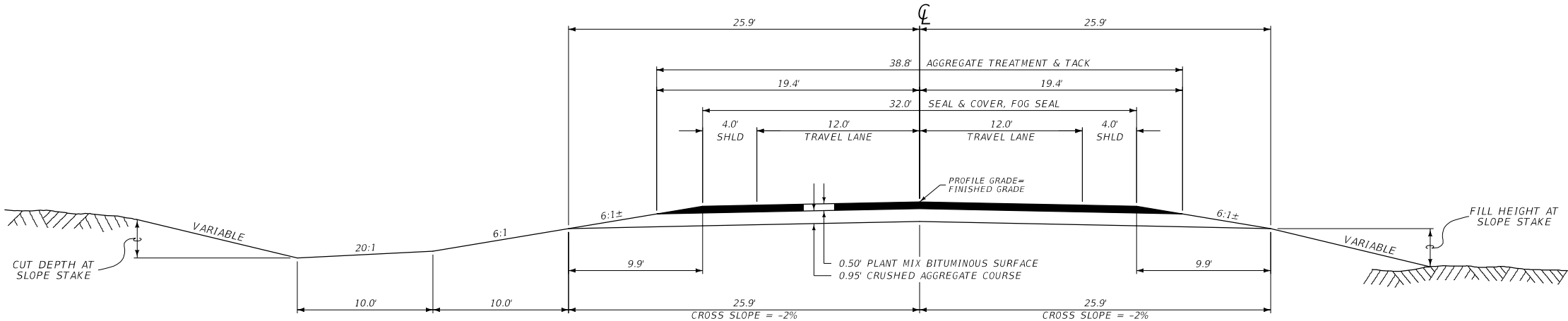
* SEE CROSS SECTIONS FOR DEVIATIONS

TYPICAL SECTION NO. 4
HWY 200

42+57.89
42+57.89

ONLY
TRANS. TYP. NO. 4 TO TYP. NO. 5

TO 43+57.89



QUANTITIES											
UNIT	AGGREGATE						UNIT	BITUMINOUS MATERIAL			AGG. TREATMENT
	COVER	PLANT MIX	CR. AGG. COURSE					SEAL	EMULSIFIED ASPHALT TACK*	FOG SEAL (OVER 5&C)	
AREA square feet		17.70	43.04				square yards PER STATION	356	862	356	431
cubic yards PER STATION		65.6	159.4				tons PER STATION	0.64			
tons PER STATION		126.4					gals PER STATION	43	27		
square yards PER STATION	356										

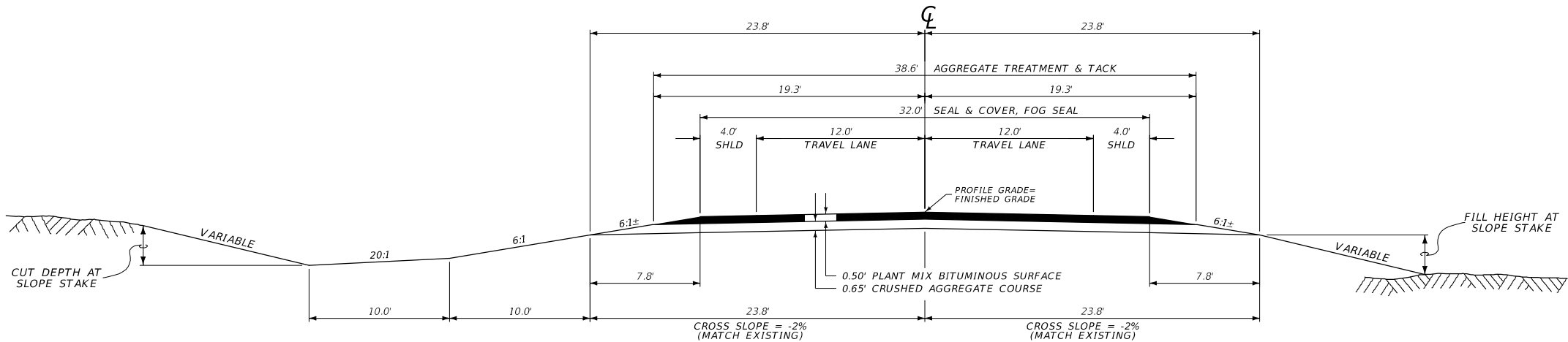
*BASED ON TWO APPLICATIONS

SEE BRIDGE END PAVEMENT DETAIL
FOR GEOTEXTILE STATION LIMITS.

TYPICAL SECTION NO. 5
HWY 200

43+57.89

ONLY - TIE TO EXISTING



QUANTITIES											
UNIT	AGGREGATE						UNIT	BITUMINOUS MATERIAL			AGG. TREATMENT
	COVER	PLANT MIX	CR. AGG. COURSE	ASPHALT				SEAL	EMULSIFIED ASPHALT TACK*	FOG SEAL (OVER S&C)	
AREA square feet		17.65	28.02				square yards PER STATION	356	858	356	429
cubic yards PER STATION		65.4	103.8				tons PER STATION	0.64			
tons PER STATION		126.1					gals PER STATION		43	27	
square yards PER STATION	356										

*BASED ON TWO APPLICATIONS

SEE BRIDGE END PAVEMENT DETAIL
FOR GEOTEXTILE STATION LIMITS.

* FILL SLOPES		* BACK SLOPES	
0' - 10'	6:1	0' - 5'	5:1
10' - 20'	4:1	5' - 10'	4:1
20' - 30'	3:1	10' - 15'	3:1
OVER 30'	2:1	15' - 20'	2:1
		OVER 20'	1.5:1

* SEE CROSS SECTIONS FOR DEVIATIONS

SUMMARY

GRADING				
STATION	cubic yards			REMARKS
	UNCL. EXC.	EXCESS EXC.	EMB.+	
29+97.12 TO 31+47.12	233	228	5	HWY 200 - NORTH OF BRIDGE
42+07.89 TO 43+57.89	221	201	20	HWY 200 - SOUTH OF BRIDGE
ADDITIONAL GRADING	48	48		
TOTAL	502	# 477	# 25	

FOR INFORMATION ONLY

ADDITIONAL GRADING					
STATION		cubic yards		ADD. UNCL. EXC.	REMARKS
		INCL. IN GRADING FRAME			
		UNCL. EXC.	EMB.+		
FROM	TO				
31+37.44	31+47.12 BE	24			BRIDGE END EXCAVATION - NORTH ABUTMENT
42+07.89 BE	42+17.57	24			BRIDGE END EXCAVATION - SOUTH ABUTMENT
TOTAL		48	~		

SURFACING														
STATION		linear feet				FOR	AGGREGATE			BITUMINOUS MATERIAL			square yards	REMARKS
		GROSS	NET	+	-		square yards	tons	cubic yards	tons	gallons		AGGREGATE TREATMENT	
							COVER TYPE 1	COMMERCIAL MIX 1/2" PG 64-28	CRUSHED AGG. COURSE	SEAL CHFRS-2P	EMULSIFIED ASPHALT TACK #	FOG SEAL (OVER S&C)		
FROM	TO													
29+97.12	30+97.12	100.00	100.00				356	126	128	0.6	43	27	428	TRANS. TYP. NO. 1 - TYP. NO. 2
30+97.12	31+47.12 BE	50.00	50.00				184	65	80	0.3	22	14	219	TRANS. TYP. NO. 2 - TYP. NO. 3
31+47.12 BE	42+07.89 BE	1,060.77	0.00		1,060.77	BRIDGE								
42+07.89 BE	42+57.89	50.00	50.00				184	65	81	0.3	22	14	221	TRANS. TYP. NO. 3 - TYP. NO. 4
42+57.89	43+57.89	100.00	100.00				356	126	131	0.6	43	27	430	TRANS. TYP. NO. 4 - TYP. NO. 5
						ADDITIONAL SURFACING			265					
TOTAL		1,360.77	300.00	0.00	1,060.77		1,080	382	685	1.8	130	82	1,298	

BASED ON TWO (2) APPLICATIONS

ADDITIONAL SURFACING (INCLUDED IN SURFACING FRAME)														
STATION		linear feet				FOR	AGGREGATE			BITUMINOUS MATERIAL			square yards	REMARKS
		GROSS	NET	+	-		square yards	tons	cubic yards	tons	gallons		AGGREGATE TREATMENT	
							COVER TYPE 1	COMMERCIAL MIX 1/2" PG 64-28	CRUSHED AGG. COURSE	SEAL CHFRS-2P	EMULSIFIED ASPHALT TACK	FOG SEAL (OVER 5&C)		
FROM	TO													
29+71.48	31+47.12 BE					GUARDRAIL WIDENING			14					GUARDRAIL WIDENING LT - NORTH OF BRIDGE
29+50.25	31+47.12 BE					GUARDRAIL WIDENING			32					GUARDRAIL WIDENING RT - NORTH OF BRIDGE
42+07.89 BE	53+04.77					GUARDRAIL WIDENING			112					GUARDRAIL WIDENING LT - SOUTH OF BRIDGE
42+07.89 BE	52+54.77					GUARDRAIL WIDENING			107					GUARDRAIL WIDENING RT - SOUTH OF BRIDGE
TOTAL		~	~	~	~		~	~	265	~	~	~	~	

2024

SUMMARY

TEMPORARY GUARDRAIL						
STATION		linear feet		each		REMARKS
		TEMPORARY BARRIER RAIL	RESET TEMPORARY BARRIER RAIL	TEMPORARY IMPACT ATTENUATOR	RESET TEMPORARY IMPACT ATTENUATOR	
FROM	TO					
30+87.51	42+67.51	1,180		2		BRIDGE - PHASE I
30+87.51	42+67.51		1,180		2	BRIDGE - PHASE II
TOTAL		1,180	1,180	2	2	

REVEGETATION							
STATION		lump sum	cubic yards #	acres #			REMARKS
		REVEGETATION	TOPSOIL SALVAGING & PLACING	SEED	FERTILIZER	CONDITION SEEDBED	
FROM	TO						
29+97.12	31+47.12 BE	0.5	16	0.1		0.1	HWY 200 - NORTH OF BRIDGE
42+07.89 BE	43+57.89	0.5	23	0.1		0.1	HWY 200 - SOUTH OF BRIDGE
TOTAL		1	40	0.2	~	0.2	

FOR INFORMATION ONLY

GUARDRAIL											
STATION		linear feet								REMARKS	
		REMOVE GUARDRAIL		MGS GUARDRAIL		MGS INTERSECTING RDWAY TERMINAL SECTION		MASH W-BEAM TERMINAL SECTION		MASH THRIE-BEAM BRIDGE APPROACH SECTION	
FROM	TO	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
NEW RAIL											
29+71.48	31+47.12 BE			112.5		75.0				1	
29+50.25	31+47.12 BE				125.0				1		1
42+07.89 BE	53+04.77			1,025.0				1		1	
42+07.89 BE	52+54.77				975.0				1		1
REMOVE RAIL											
30+54.31	31+42.21	87.9									
30+40.40	31+42.21		101.8								
42+12.37	51+01.33	889.0									
42+12.37	50+01.35		789.0								
SUBTOTAL		976.9	890.8	1,137.5	1,100.0	75.0		1	2	2	2
TOTAL		1,867.7		2,237.5		75.0		3		4	

BRIDGE END BACKFILL - CLSM			
STATION		cubic yards	REMARKS
		NON-EXCAVATABLE CLSM	
FROM	TO		
31+37.44	31+47.12 BE	24	BRIDGE END EXCAVATION - NORTH ABUTMENT
42+07.89 BE	42+17.57	24	BRIDGE END EXCAVATION - SOUTH ABUTMENT
TOTAL		48	

TEMPORARY MAILBOXES		
REFERENCE POST	lump sum	REMARKS
	MAILBOX CLUSTERS	
00.00 +/-	0.5	BLUE SLIDE ROAD - WB
23.35 +/-	0.5	BLUE SLIDE ROAD - EB
TOTAL	1	

SEE TEMPORARY MAILBOX SPECIAL PROVISION FOR ADDITIONAL INFORMATION.

BLUE SLIDE TRAFFIC CONTROL #					
REFERENCE POST		MATERIAL	TOTAL	UNIT	REMARKS
BEGIN	END				
10.33	23.35	TEMPORARY STRIPING	137,500	LNFT	CENTERLINE - YELLOW PAINT
10.33	23.35	DELINEATOR DESIGN D	350	EA	TEMPORARY DELINEATORS LT. & RT.
	11.17	CHEVRON SIGN PANEL 24X30	10	EA	
	11.50	CHEVRON SIGN PANEL 24X30	10	EA	
	16.55	CHEVRON SIGN PANEL 24X30	10	EA	
	16.55	GUARDRAIL END SECTION WIDENING	2	EA	
	16.55	MGS GUARDRAIL	500	LNFT	
	16.55	MASH W-BEAM TERMINAL SECTION	2	EA	
	17.45	GUARDRAIL END SECTION WIDENING	2	EA	
	17.45	MGS GUARDRAIL	500	LNFT	
	17.45	MASH W-BEAM TERMINAL SECTION	2	EA	
	18.25	CHEVRON SIGN PANEL 24X30	10	EA	
	19.25	CHEVRON SIGN PANEL 24X30	10	EA	
	19.55	SIGNS - ALUM REFL SHEET XI	16	SQFT	STOP SIGN VERMILLION RIVER ROAD
	19.65	CHEVRON SIGN PANEL 24X30	10	EA	
	19.65	SIGNS - ALUM REFL SHEET XI	32	SQFT	SPEED ADVISORY SIGN
	20.15	CHEVRON SIGN PANEL 24X30	10	EA	
20.35	21.45	GUARDRAIL END SECTION WIDENING	2	EA	
20.35	21.45	MGS GUARDRAIL	5,808	LNFT	
20.35	21.45	MASH W-BEAM TERMINAL SECTION	2	EA	
	21.55	TEMPORARY BARRIER RAIL	200	LNFT	
	21.55	TEMPORARY IMPACT ATTENUATOR	2	EA	
		SINGLE USE SIGNS	100	SQFT	MISC. ADVISORY SIGNS*
		SIGNS - ALUM REFL SHEET XI	352	SQFT	SPEED LIMIT SIGNS
		SIGNS - ALUM REFL SHEET XI	32	SQFT	FALLEN ROCK SIGNS
		POLES - TREATED WOOD 4 IN	735	LNFT	

SEE SPECIAL PROVISION FOR ADDITIONAL INFORMATION.

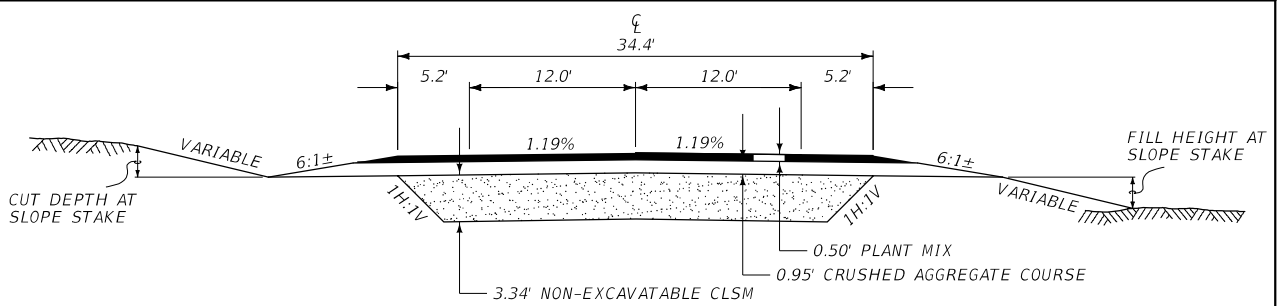
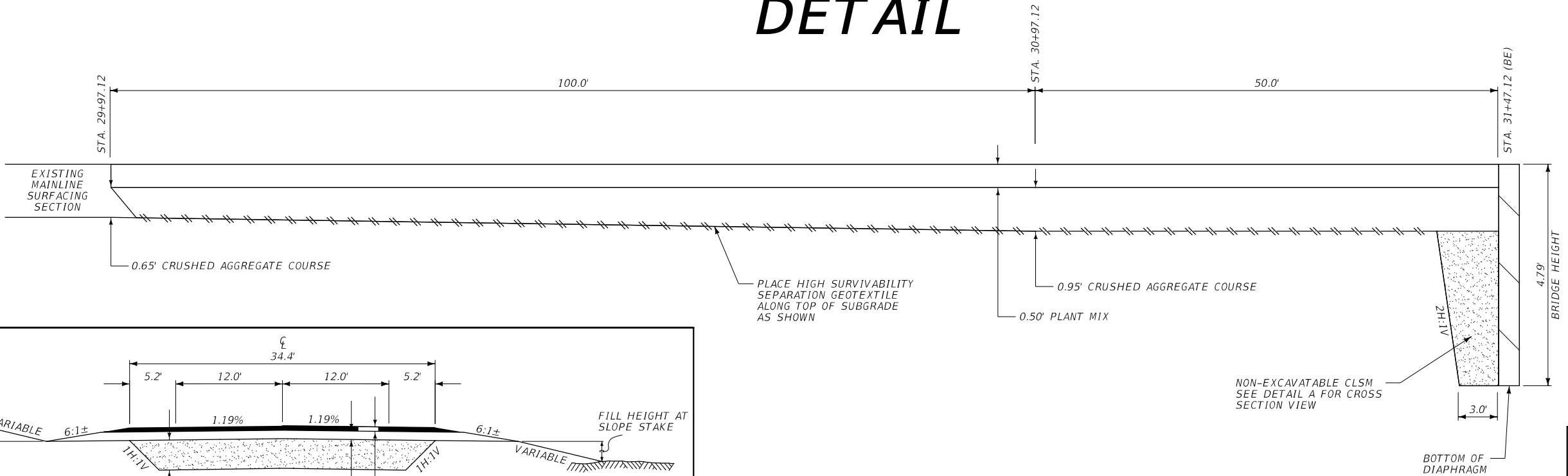
* MISC. ADVISORY SIGNS TO BE USED FOR WIDTH RESTRICTIONS, WEIGHT RESTRICTIONS, OR OTHER APPLICATIONS AS DIRECTED BY THE PROJECT MANAGER.

GEOTEXTILE			
STATION		square yards	REMARKS
		HIGH SURVIVABILITY SEPARATION GEOTEXTILE	
FROM	TO		
29+97.12	30+97.12	530	PLACE UNDER CAC - SEE BRIDGE END PAVEMENT DETAIL
30+97.12	31+37.44	232	PLACE UNDER CAC - SEE BRIDGE END PAVEMENT DETAIL
42+17.57	42+57.89	235	PLACE UNDER CAC - SEE BRIDGE END PAVEMENT DETAIL
42+57.89	43+57.89	552	PLACE UNDER CAC - SEE BRIDGE END PAVEMENT DETAIL
TOTAL		1,549	

PAVEMENT MARKINGS					
ITEM	UNIT	INTERIM APPLICATION #	FINAL APPLICATION	TOTAL	
STRIPING - WHITE PAINT	gallon	19		19	
STRIPING - YELLOW PAINT	gallon	19		19	
WORDS & SYMBOLS - WHITE PAINT	gallon				
STRIPING - WHITE EPOXY	gallon		13	13	
STRIPING - YELLOW EPOXY	gallon		13	13	
CURB MARKING - YELLOW EPOXY	gallon				
WORDS & SYMBOLS - WHITE EPOXY	gallon				

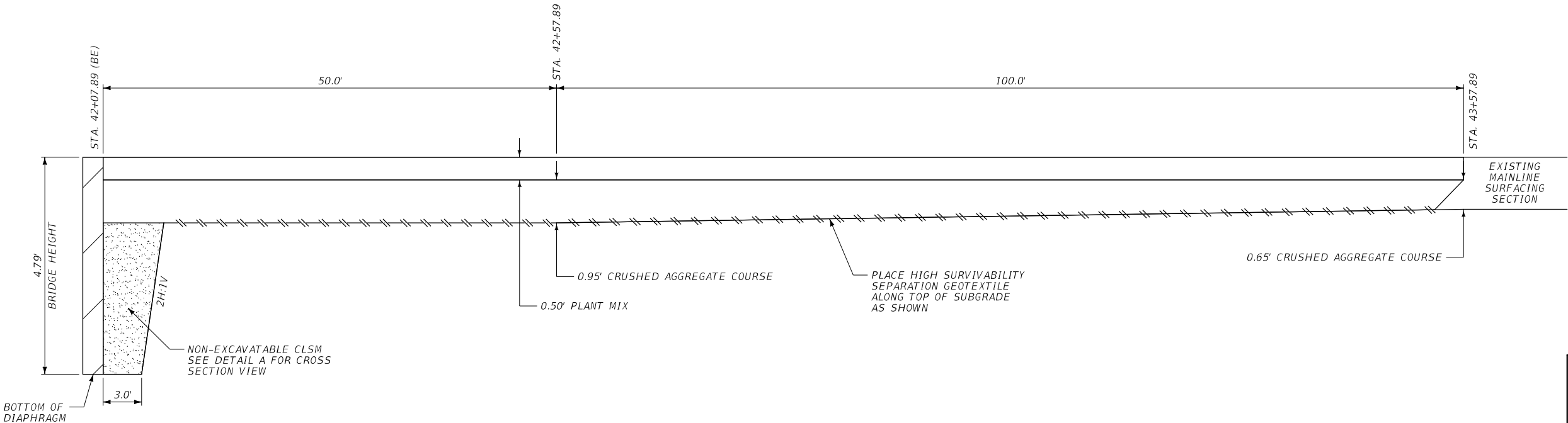
BASED ON 2 APPLICATIONS.

DETAIL



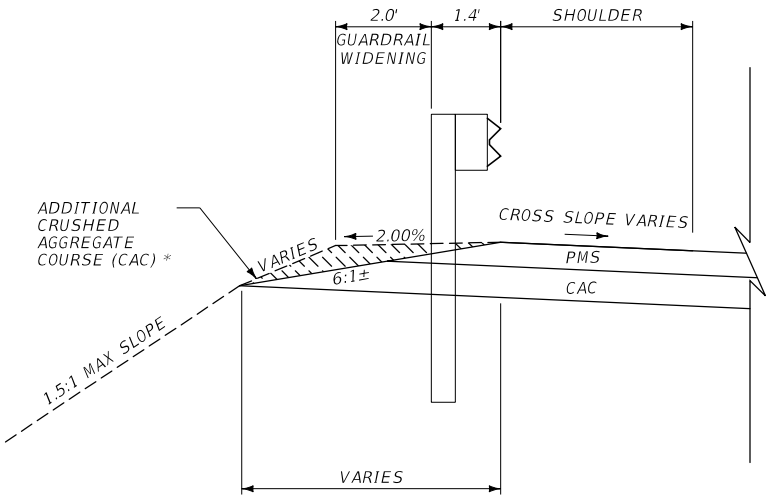
DETAIL A

BRIDGE END
PAVEMENT DETAIL
NORTH ABUTMENT
MT 200
NOT TO SCALE



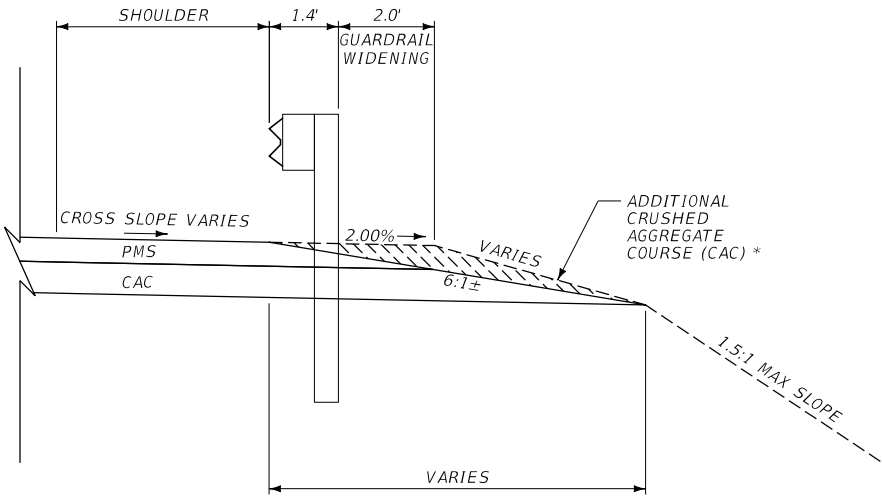
BRIDGE END
PAVEMENT DETAIL
SOUTH ABUTMENT
MT 200
NOT TO SCALE

DETAIL



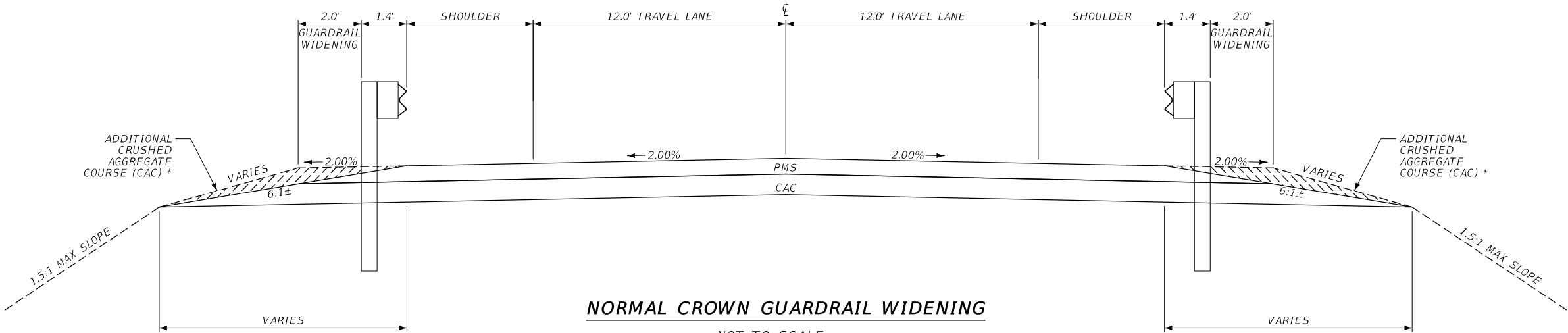
HIGH-SIDE GUARDRAIL WIDENING

NOT TO SCALE
STA. 29+71.48 TO STA. 31+47.12 LT.



LOW-SIDE GUARDRAIL WIDENING

NOT TO SCALE
STA. 29+50.25 TO STA. 31+47.12 RT.



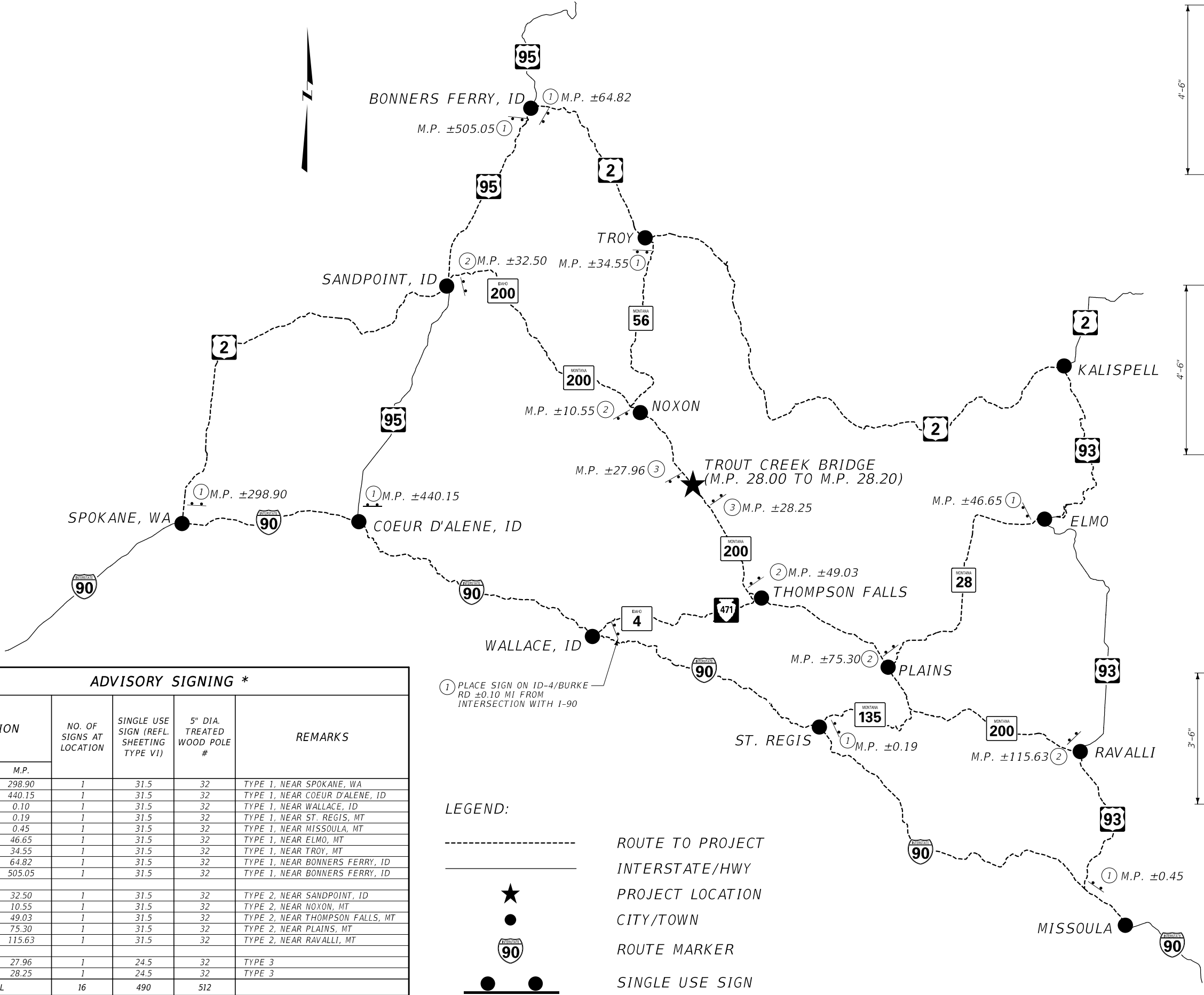
NORMAL CROWN GUARDRAIL WIDENING

NOT TO SCALE
STA. 42+07.89 TO STA. 52+54.77 RT.
STA. 42+07.89 TO STA. 53+04.77 LT.

*SEE ADDITIONAL SURFACING FRAME FOR CAC QUANTITIES.
SEE CROSS SECTIONS FOR SLOPES.

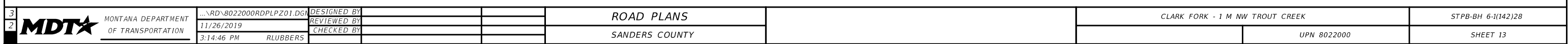
GUARDRAIL WIDENING
DETAILS

MDT



ADVISORY SIGNING *					
LOCATION		NO. OF SIGNS AT LOCATION	SINGLE USE SIGN (REFL. SHEETING TYPE VI)	5" DIA. TREATED WOOD POLE #	REMARKS
ROUTE	M.P.				
US 2	298.90	1	31.5	32	TYPE 1, NEAR SPOKANE, WA
US 95	440.15	1	31.5	32	TYPE 1, NEAR COEUR D'ALENE, ID
ID 4	0.10	1	31.5	32	TYPE 1, NEAR WALLACE, ID
MT 135	0.19	1	31.5	32	TYPE 1, NEAR ST. REGIS, MT
US 93	0.45	1	31.5	32	TYPE 1, NEAR MISSOULA, MT
MT 28	46.65	1	31.5	32	TYPE 1, NEAR ELMO, MT
MT 56	34.55	1	31.5	32	TYPE 1, NEAR TROY, MT
US 2	64.82	1	31.5	32	TYPE 1, NEAR BONNERS FERRY, ID
US 95	505.05	1	31.5	32	TYPE 1, NEAR BONNERS FERRY, ID
ID-200	32.50	1	31.5	32	TYPE 2, NEAR SANDPOINT, ID
MT 200	10.55	1	31.5	32	TYPE 2, NEAR NOXON, MT
MT 200	49.03	1	31.5	32	TYPE 2, NEAR THOMPSON FALLS, MT
MT 200	75.30	1	31.5	32	TYPE 2, NEAR PLAINS, MT
MT 200	115.63	1	31.5	32	TYPE 2, NEAR RAVALLI, MT
MT 200	27.96	1	24.5	32	TYPE 3
MT 200	28.25	1	24.5	32	TYPE 3
TOTAL		16	490	512	

* SEE SPECIAL PROVISION FOR ADDITIONAL INFORMATION.
QUANTITY ASSUMES (2) 16 FT POSTS, VERIFY POST HEIGHT IN FIELD.

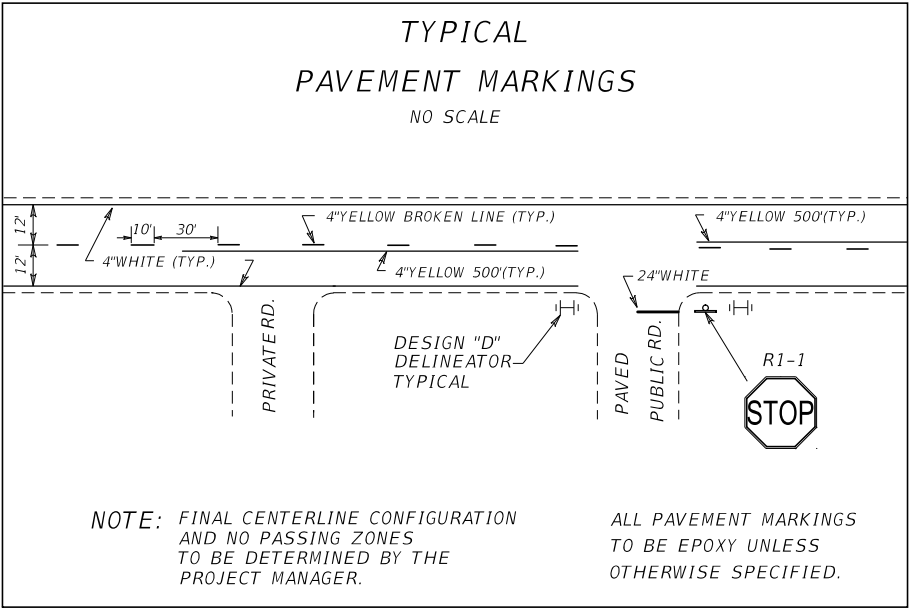


HC1

SUMMARY		
SIGNING & DELINEATION QUANTITIES		
MATERIAL	Total	UNIT
SIGNS - SHEET ALUMINUM - REFLECTIVE SHEETING (IV)	12.8	SQ. FOOT
SIGNS - SHEET ALUMINUM - REFLECTIVE SHEETING (XI)	14.5	SQ. FOOT
SIGNS - ALUMINUM SHEET INCREMENT SHEETING (IV)		SQ. FOOT
SIGNS - ALUMINUM SHEET INCREMENT SHEETING (XI)		SQ. FOOT
OVERLAY - SHEET ALUMINUM		SQ. FOOT
POLES - TREATED WOOD - 4" DIA.	52	LINEAR FT.
POLES - TREATED WOOD - 5" DIA.		LINEAR FT.
POLES - TREATED WOOD - 6" DIA.		LINEAR FT.
POSTS - TUBULAR STEEL (ROUND)		POUNDS
POSTS - TUBULAR STEEL (SQUARE PERFORATED)		POUNDS
POSTS-STRUCTURAL STEEL		POUNDS
POSTS - STEEL "U"	20	POUNDS
REMOVE SIGNS	7	EACH
REMOVE SIGNS - GUIDE	1	EACH
RESET SIGNS		EACH
RESET SIGNS - GUIDE		EACH
DELINEATOR DES D	2	EACH

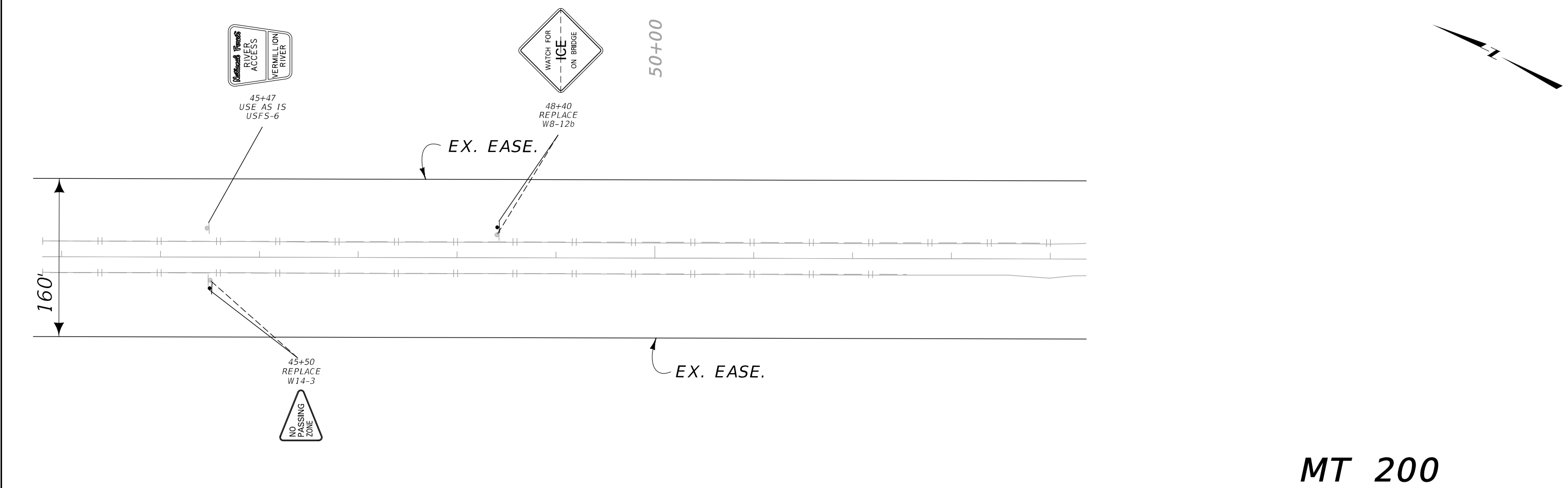
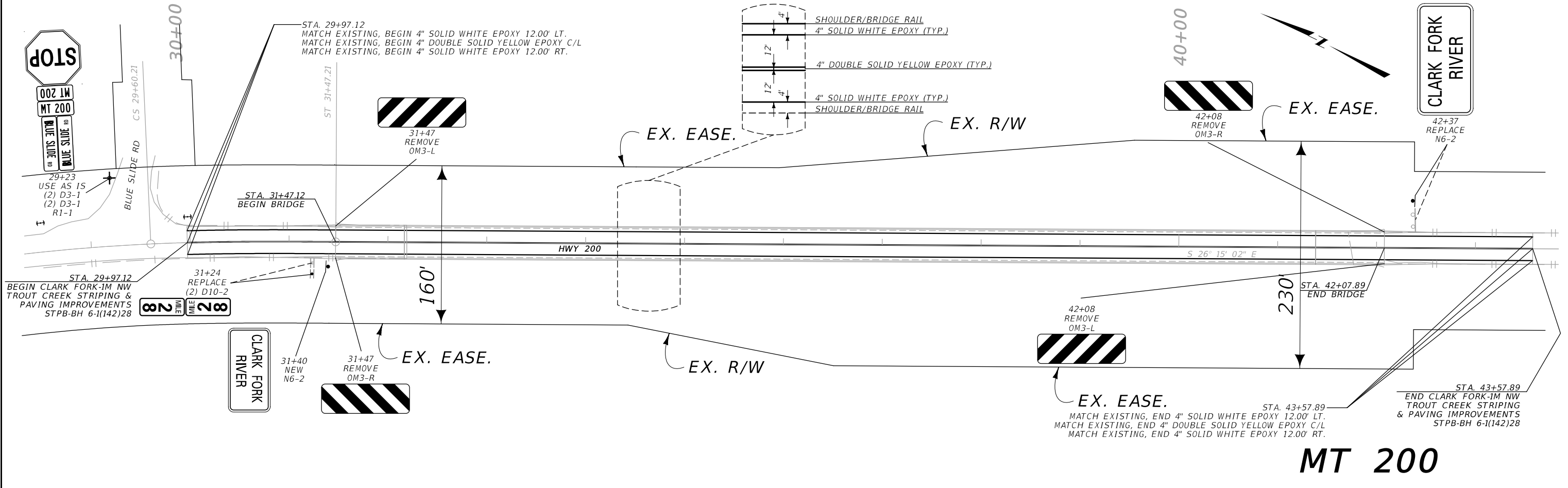
SIGN LOCATION AND SPECIFICATION																																			
Lt.	STATION / M.P.	Rt.	RAMP NO.	SIGN NO.	PANEL SIZE	REFL SHTG		FEET		TYPE OF SUPPORT	CANTILEVER	FEET				SIGN PANEL (SQ. FT.)					TIMBER POLE (LINEAR FT.)			STEEL POST (LBS.)				SIGNS		GUIDE					
						BACKGROUND	LEGEND	CLEARANCE	SIGN SUPPORT SPACING			SUPPORT LENGTH (ESTIMATED)	SUPPORT LENGTH (INSTALLED)	MOUNTING HEIGHT	FOUNDATION DEPTH	SHEET ALUMINUM		ALUMINUM SHEET INCREMENT		ALUMINUM SHT OVERLAY	4" TOP DIA.	5" TOP DIA.	6" TOP DIA.	ROUND TUBULAR	SQUARE TUBULAR	STRUCTURAL STEEL	"U" POST	BREAKAWAY	REMOVE	RESET	REMOVE				RESET
																IV	XI	IV	XI																
	29+23			(2) D3-1	USE AS IS																														REMARKS
LT.				(2) D3-1																														D3-1 = BLUE SLIDE RD	
				R1-1																														D3-1 = MT 200	
																																			USE AS IS
	31+24			D10-2	10X27	IV	IV	2-0		2 LB/FT STL U		10-0		4-0	3-0	1.9																		BGR	REPLACE, D10-2 = 28
		RT.		D10-2	10X27	IV	IV									1.9											20		1						
	31+40			N6-2	36X18	IV	IV	2-0		4" DIA. POLE		11-6		5-0	3-0	4.5						12												BGR	NEW, N6-2 = CLARK FORK RIVER
		RT.																																	
	31+47			OM3-L	REMOVE																									1					REMOVE
LT.																																			
	31+47			OM3-R	REMOVE																														REMOVE
		RT.																																	
	42+08			OM3-R	REMOVE																														REMOVE
LT.																																			
	42+08			OM3-L	REMOVE																														REMOVE
		RT.																																	
	42+37			N6-2	36X18	IV	IV	2-0		4" DIA. POLE		11-0		5-0	3-0	4.5						12										1		BGR	REPLACE, N6-2 = CLARK FORK RIVER
LT.																																			
	45+47			USFS-6	USE AS IS																														USE AS IS, USFS-6 = RIVER ACCESS
LT.																																			
	45+50			W14-3	48X48X36	XI		5-0		4" DIA. POLE		13-6		5-0	3-0		5.5					14								1			FY	BGR	REPLACE
		RT.																																	
	48+40			W8-12b	36X36	XI		5-0		4" DIA. POLE		13-6		5-0	3-0		9					14								1				BGR	REPLACE, HINGED
LT.																																			
TOTALS																12.8	14.5				52						20		7		1				

DELINEATOR LEGEND		
	DESIGN "D"	2



BGR = BEHIND GUARDRAIL

FY = TYPE XI FLUORESCENT YELLOW SHEETING REQUIRED.



ASSOCIATED PROJECT AGREEMENT NUMBERS	
P. E.	STPB-BH 6-1(142)28

BRIDGE IDENTIFICATION	
MDT STR ID	NBI NUMBER
05271	P00006028+01091

MONTANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS AND QUANTITIES

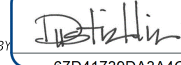
FEDERAL AID PROJECT STPB-BH 6-1(142)28

CLARK FORK - 1M NW TROUT CREEK

SANDERS COUNTY

DocuSigned by:

BY



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12/17/2019

DATE

MONTANA

J. DUSTIN HIROSE

No. 10870PE

REGISTERED PROFESSIONAL ENGINEER

SHEET NO. B1

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

LIST OF DRAWINGS

LIST OF DRAWINGS

SHEET NO.	DWG. NO.	TITLE
BRIDGE DRAWINGS		
B1	24023	LIST OF DRAWINGS
B2	24024	ESTIMATED BRIDGE PLAN QUANTITIES
B3	24025	GENERAL LAYOUT
B4	24026	EXISTING STRUCTURE REMOVAL DETAILS
B5	24027	APPROACH SPAN DETAILS (SHEET 1 OF 2)
B6	24028	APPROACH SPAN DETAILS (SHEET 2 OF 2)
B7	24029	APPROACH SPAN ACCESS DETAILS
B8	24030	JACKING DETAILS
B9	24031	SEAT EXTENSION GEOMETRY & BEARING DESIGN INFORMATION
B10	24032	BENTS NO. 2 & NO. 7 BEARING DETAILS
B11	24033	PIERS NO. 3 & NO. 6 BEARING DETAILS
B12	24034	BENTS NO. 2 & NO. 7 SEAT EXTENSION DETAILS (SHEET 1 OF 2)
B13	24035	BENTS NO. 2 & NO. 7 SEAT EXTENSION DETAILS (SHEET 2 OF 2)
B14	24036	PIERS NO. 3 & NO. 6 SEAT EXTENSION DETAILS
B15	24037	MAIN SPAN DETAILS (SHEET 1 OF 2)
B16	24038	MAIN SPAN DETAILS (SHEET 2 OF 2)
B17	24039	PRECAST DECK PANEL PLACEMENT DETAILS
B18	24040	PRECAST DECK PANEL DETAILS (SHEET 1 OF 3)
B19	24041	PRECAST DECK PANEL DETAILS (SHEET 2 OF 3)
B20	24042	PRECAST DECK PANEL DETAILS (SHEET 3 OF 3)
B21	24043	EXPANSION JOINT DETAILS (SHEET 1 OF 2)
B22	24044	EXPANSION JOINT DETAILS (SHEET 2 OF 2)
B23	24045	DRAINAGE DETAILS

DWG. NO.	TITLE
STANDARD DRAWINGS	
SBR-OR42 (APPROVED 9-17-19)	STANDARD BRIDGE RAIL TYPE OPEN RAIL 42"
SBR-OR42-PP (APPROVED 9-17-19)	STANDARD BRIDGE RAIL TYPE OPEN RAIL 42" PARAPET
AS BUILTS	
4723	GENERAL ARRANGEMENT

REVISD

REVISD

REVISD

CHECKED

DRAWN

DESIGNED

10-18-19

6-17-19

6-17-19

J.D.H.

G.H.S.

G.H.S.

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UPN NUMBER
8022000

DRAWING NO.
24023

PC

ESTIMATED BRIDGE PLAN QUANTITIES												
MDT STRUCTURE NUMBER 05271	BRIDGE DECK MILLING	TRANSVERSE DECK GROOVING	CLASS A BRIDGE DECK REPAIR	CLASS B BRIDGE DECK REPAIR	CONCRETE CLASS				REINFORCING STEEL			PRECAST DECK PANELS
					DECK	STRUCTURE	OVERLAY	JOINT	REGULAR	EPOXY	CORROSION RESISTANT	
LOCATION	(YD²)	(YD²)	(YD²)	(YD²)	(YD³)	(YD³)	(YD³)	(YD³)	(LB)	(LB)	(LB)	(FT²)
Bent No. 1												
Bent No. 2						6.2			947			
Pier No. 3						3.3			566			
Pier No. 4												
Pier No. 5												
Pier No. 6						3.3			566			
Bent No. 7						6.2			947			
Bent No. 8												
Approach Spans	503.1	457.8	85.0	2.0	85.2			5.4		828	7125	
Main Spans		3066.1					135.9	78.3			35879	31158
PROJECT TOTAL	503.1	3523.9	85.0	2.0	85.2	19.0	135.9	83.7	3026	828	43004	31158

ESTIMATED BRIDGE PLAN QUANTITIES												
MDT STRUCTURE NUMBER 05271	STRUCTURAL STEEL - MISC.	PAINT EXISTING STRUCTURAL STEEL	EXPANSION JOINT - MODULAR	ELASTOMERIC BEARING DEVICE - PTFE	42 IN OPEN RAIL - BR	42 IN OPEN RAIL PARAPET - BR	SUPERSTRUCTURE JACKING	REMOVE DECK	REMOVE BRIDGE RAIL	REVISE STRUCTURE	REMOVE GUARD ANGLE	SCUPPER
LOCATION	(LS)	(YD²)	(LF)	(EACH)	(LF)	(EACH)	(LS)	(YD²)	(LF)	(LS)	(LF)	(EA)
Bent No. 1												
Bent No. 2			32.3	2			0.25					
Pier No. 3				2			0.25					
Pier No. 4												
Pier No. 5												
Pier No. 6				2			0.25					
Bent No. 7			32.3	2			0.25					
Bent No. 8												
Approach Spans					262.0	4			282.8	1.0	69.4	2
Main Spans	1.0	1828.0			1840.0			3241.7				34
PROJECT TOTAL	1.0	1828.0	64.6	8	2102.0	4	1.0	3241.7	282.8	1.0	69.4	36

SHEET NO.
B2

ESTIMATED BRIDGE
PLAN QUANTITIES

SCALE: None

PROJECT NAME
CLARK FORK - 1M NW TROUT CREEK

MDT STRUCTURE ID
05271

FEDERAL AID PROJECT
STPB-BH 6-1(142)28

COUNTY
SANDERS

REVISED
REVISED
REVISED
REVISED
CHECKED
DRAWN
DESIGNED

10-18-19
6-17-19
6-17-19

J.C.M.
G.H.S.
C.C.A.

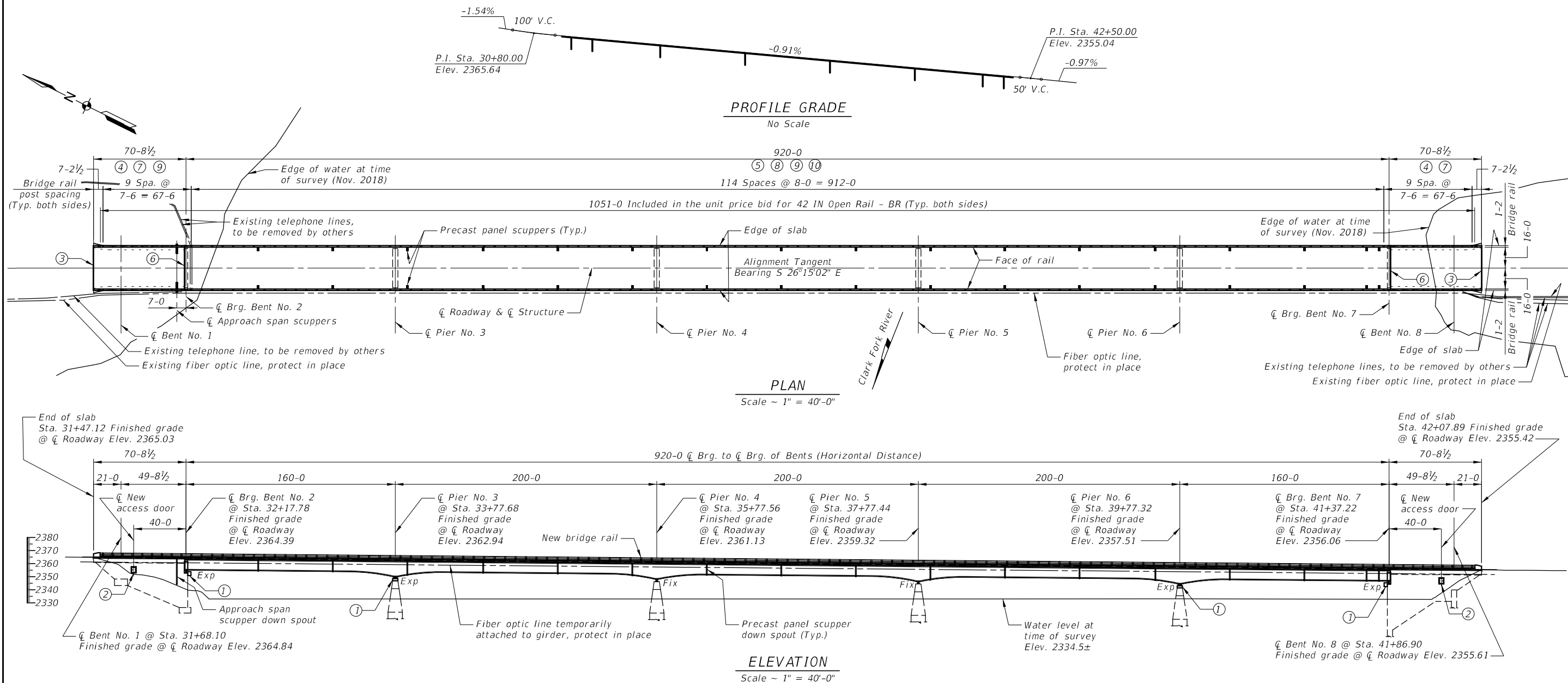
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MDTA
DEPARTMENT OF TRANSPORTATION

BRIDGE BUREAU

UPN NUMBER
8022000

DRAWING NO.
24024



PROPOSED WORK ITEMS:

- ① Jack superstructure, remove existing rocker bearings and replace with new PTFE elastomeric bearings. Remove existing mask walls at Bents. No. 2 & No. 7. Install concrete seat extensions and new mask walls.
- ② Install new access door openings in approach structure wall.
- ③ Remove existing guard angle.
- ④ Bridge deck milling, Class A and Class B bridge deck repair, place new reinforcement, Concrete Class – Deck and Transverse Deck Grooving/Tining.
- ⑤ Remove existing curb, railing and deck, install shear studs on girders, new deck panels, concrete transverse joints and haunch, modified concrete overlay and Transverse Deck Grooving/Tining.
- ⑥ Remove existing toothed joints and replace with new modular joint.
- ⑦ Remove existing curb and rail, remove existing parapets, dowel rebar and install new 42 Inch Open Rail and concrete parapet.
- ⑧ Install new 42 Inch Open Rail.
- ⑨ Install new deck drain downspouts.
- ⑩ Spot paint existing steel 5-0 each side of existing deck joints (16 locations) and approximately 50% of the stringer top flanges.

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.

FINISHED GRADE: Finished grade of bridge at centerline roadway is the same as the Profile Grade shown on Road Plans.

LIVE LOAD: Standard HL-93 loading. (New components only)

SPECIFICATIONS: Montana Department of Transportation and the Montana Transportation Commission Standard Specifications for Road and Bridge Construction, 2014 edition, and amendments, and special provisions govern unless otherwise noted. For new bridge items the design was prepared with AASHTO LRFD Bridge Design Specifications, Eighth Edition - 2017.

REINFORCING STEEL: Use new deformed type reinforcing steel meeting the requirements of AASHTO M31 Grade 60 or ASTM Specification A1035 Type CS Grade 100 as specified. Include all costs associated with furnishing and placing new reinforcing steel in the unit price bid for Reinforcing Steel, Reinforcing Steel - Epoxy or Reinforcing Steel - Corrosion Resistant.

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

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

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

Bottom of Slab	1"
Top of Slab	2½"
Concrete Barriers & Curbs	1½"

Top of slab includes concrete overlay. Concrete cover to any tie bar is 1/2" less than what is listed above.

EPOXY RESIN BONDING AGENT: Excluding concrete overlays where surface treatment is specified elsewhere, 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 relevant concrete class.

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.

HIGH STRENGTH BOLTS: Unless specified otherwise on the drawings, furnish high strength bolts meeting ASTM F3125 Grade A325 Type 1 - galvanized. See the Standard Specifications for the requirements of nuts, washers, and direct tension indicators.

OVERLAY TREATMENT: Use Concrete Class Overlay for the main span deck thick overlay. (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 50. Estimated amount = 12176 lb.

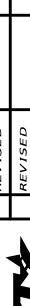
DIMENSIONS: All dimensions are in feet and inches except as noted. Verify all necessary dimensions of the existing structures in the field before ordering materials. Obtain approval of shop plans from the State of Montana, Department of Transportation before beginning fabrication. If the dimensions and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

CAST IN PLACE CONCRETE: Unless otherwise approved or specified, use Concrete Class Joint for main span deck joint concrete, Concrete Class Deck for approach span overlay and rail curb concrete and Concrete Class Structure for all seat extension concrete.

CONCRETE STRENGTH: Use $f'_c = 6000$ p.s.i. for Concrete Class Joint.
Use $f'_c = 4000$ p.s.i. for Concrete Class Deck unless noted otherwise

STATE PLANE COORDINATES: Stations shown on the bridge plans are state plane grid stations based on (NAD83-CORS96). Dimensions shown on the bridge plans are horizontal ground distances and not state plane grid distances. The combination scale factor (CSF) at this location is 0.99939051.

Horizontal ground distance x CSF = Grid Distance
Grid Distance/CSF = Distance to stake.

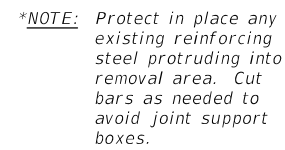
	REVISED		FEDERAL AID PROJECT STPB-BH 6-1(142)28	PROJECT NAME CLARK FORK - 1M NW TROUT CREEK	GENERAL LAYOUT	SHEET NO. B3
	REVISED					
	REVISED					
	REVISED					
	CHECKED	10-18-19	COUNTY SANDERS	MDT STRUCTURE ID 05271	SCALE: As Noted	
	DRAWN	6-17-19				
	DESIGNED	6-17-19				
	J.C.M.					
UPN NUMBER 8022000		DRAWING NO. 24025		11/26/2019 1:03:54 AM ...18022000brcgen201.dgn		



Scale ~ $\frac{1}{2}" = 1'-0"$
(Looking Ahead on Line)



Scale ~ $\frac{1}{2}'' = 1'-0''$
(Looking Ahead on Line)



*Existing
reinforcing
steel to
remain (Typ.)

- Remove all hardware associated with existing finger joint, See As-Built Plans

Ⓢ Bearing

Existing cast in place concrete beam

Existing backwall —

Remove existing concrete,
transverse reinforcing steel and joint

- Remove existing concrete deck
- Existing girder

— Existing girder

EXISTING EXPANSION JOINT REMOVAL DETAIL

Scale $\sim 1\frac{1}{2}'' = 1'-0''$

NOTES

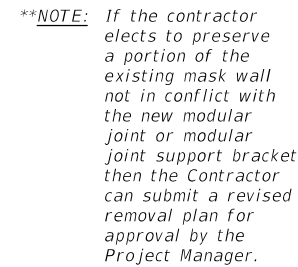
Do not damage existing girder fasteners during deck removal. Replace any damaged fasteners with H.S. bolts of the same diameter at no cost to the State.

Include all costs associated with removing existing joint, reinforcing steel at existing bridge rail, and concrete at existing bridge rail in the unit price bid for Remove Deck.

Include all costs associated with removing the mask wall in the lump sum bid for Revise Structure.

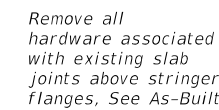
Clean and coat rebar ends not being encased by new concrete per Standard Specifications or other approved alternative.

See Sheet No. B6 for bridge deck milling details.



EXISTING MASK WALL REMOVAL DETAIL

Scale $\sim 1/2'' = 1'-0''$



Top of existing deck

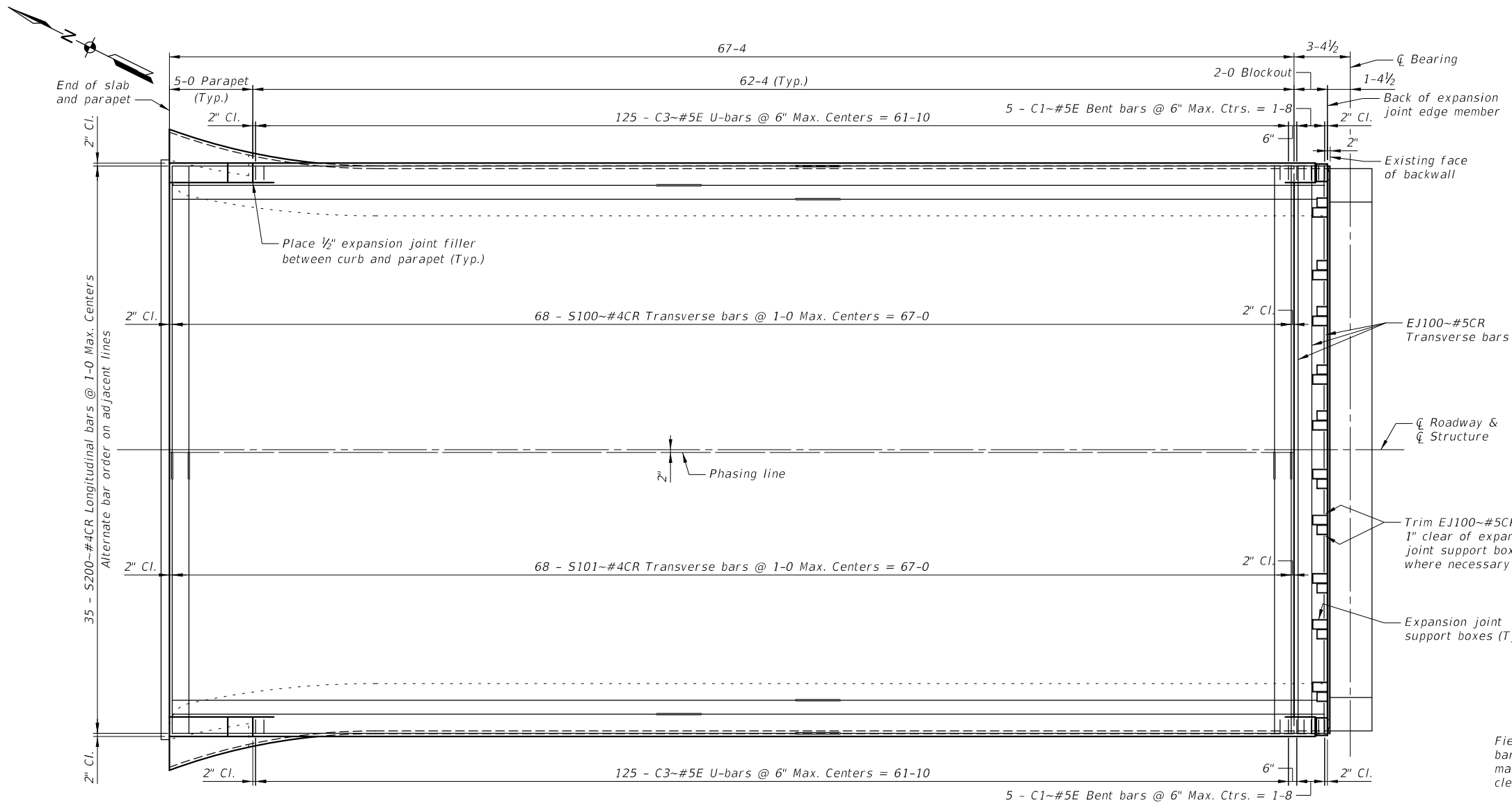
Existing stringers

EXISTING SLAB JOINT REMOVAL

Scale $\sim 1\frac{1}{2}'' = 1'-0''$

 MONTANA MDTA DEPARTMENT OF TRANSPORTATION		FEDERAL AID PROJECT STPB-BH 6-1(142)28		PROJECT NAME CLARK FORK - IM NW TROUT CREEK		EXISTING STRUCTURE REMOVAL DETAILS		SHEET NO. B4	
REVISED REVISED REVISED REVISED REVISED REVISED				MDT STRUCTURE ID 05271					
		COUNTY SANDERS							
CHECKED 10-17-19 C.C.A. DRAWN 8-20-19 G.H.S. DESIGNED 8-20-19 J.C.M.									
UPN NUMBER 8022000									
DRAWING NO. 24026								SCALE: As Noted	
11/25/2019 10:10:37 AM ...8022000bmoes01.dgn									

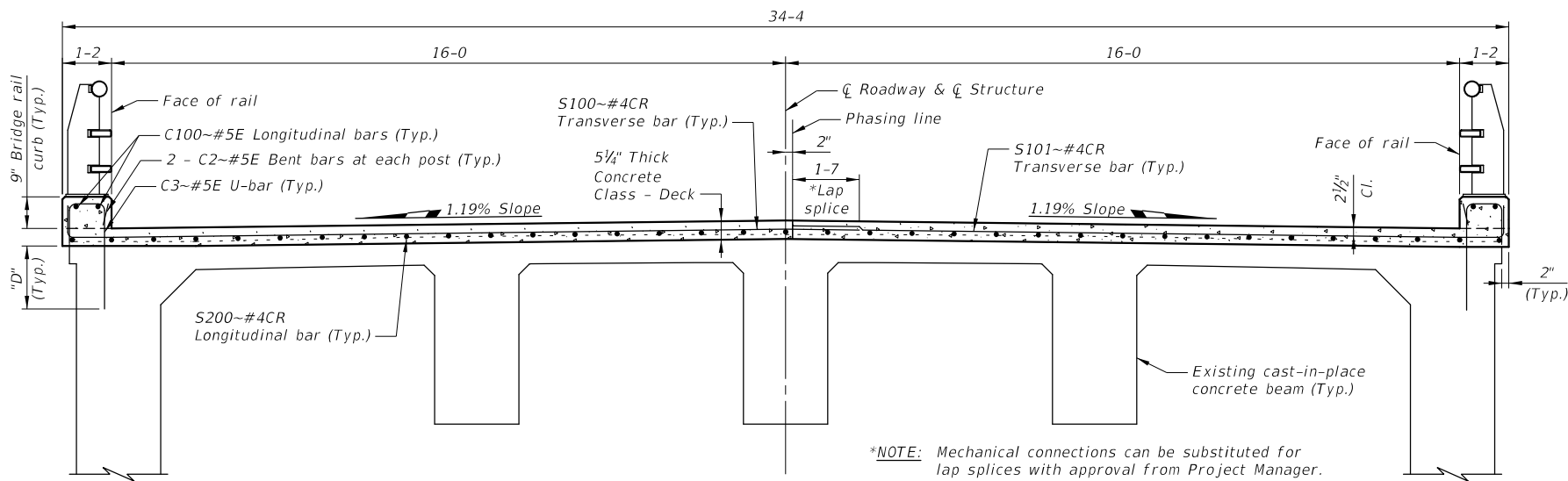
DC1



PROPOSED APPROACH SPAN REINFORCING STEEL PLACEMENT PLAN

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

(Main span deck, girders, stringers, bearings and other related items not shown for clarity)
(Approach Span No. 1 shown, Approach Span No. 7 similar but opposite hand)



PROPOSED APPROACH SPAN TRANSVERSE SECTION

Scale ~ 1/2" = 1'-0"
(Looking Ahead on Line)

*NOTE: Mechanical connections can be substituted for lap splices with approval from Project Manager.

NOTES

Include all costs associated with furnishing and placing concrete and reinforcing steel within the bridge rail curb in the unit price bid for 42 IN Open Rail - BR.

Cut or bend all existing reinforcing steel in the existing curb areas to provide 2" cover to the top of the new overlay.

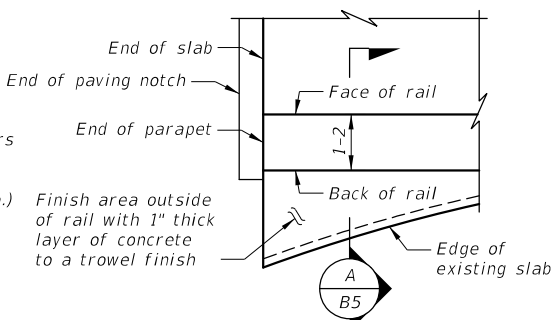
Layout holes for new reinforcing and smooth bars as shown on the plans using a pachometer, ground penetrating radar or other means to accurately locate existing reinforcing steel prior to drilling. Relocate holes in conflict with the existing reinforcing, as approved, to miss the existing reinforcing. Do not damage existing reinforcing steel while drilling holes. Coring holes is not permitted. Clean holes and install adhesive per adhesive manufacturer's recommendations.

See Sheet No. B6 for Bill of Reinforcing Steel.

See Sheet No. B21 for additional blackout information.

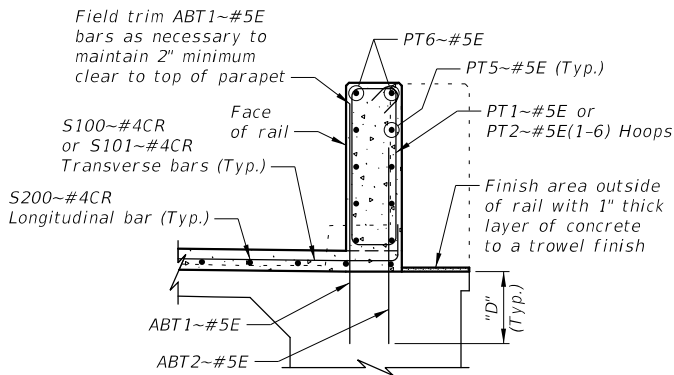
See Std. Dwg. No. SBR-0R42 for additional bridge rail reinforcing.

See Std. Dwg. No. SBR-0R42-PP for additional parapet reinforcing.



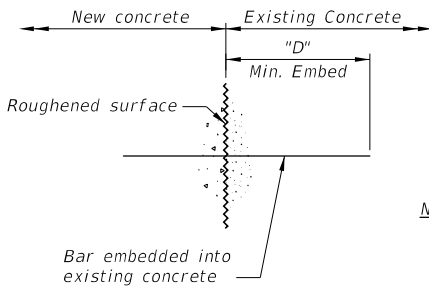
BRIDGE RAIL AND SLAB END DETAIL

Scale ~ 1/2" = 1'-0"



SECTION A

Scale ~ 1/2" = 1'-0"



MIN. EMBED DEPTHS

Bar Size	"D"
#4	6"
#5	1-6

NOTE: Use Hilti-RE 500 V3 epoxy adhesive for anchoring reinforcing steel into the existing concrete or approved equal such that the full yield strength of the bar is developed, but in no case less than the value shown in the table on this sheet.

SHEET NO.
B5

APPROACH SPAN DETAILS
(SHEET 1 OF 2)

SCALE: As Noted

PROJECT NAME
CLARK FORK - 1M NW TROUT CREEK

MDT STRUCTURE ID
05271

FEDERAL AID PROJECT
STPB-BH 6-1(142)28

COUNTY
SANDERS

REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED
			10-17-19	6-18-19	6-18-19
			P.C.J.	G.H.S.	C.C.A.

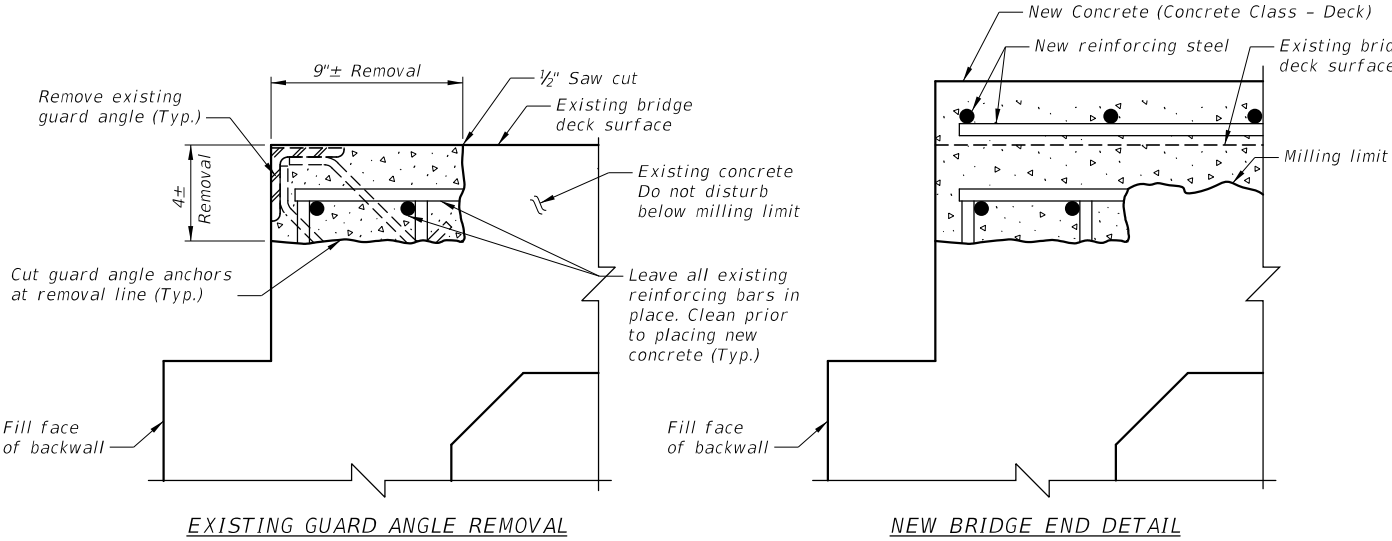
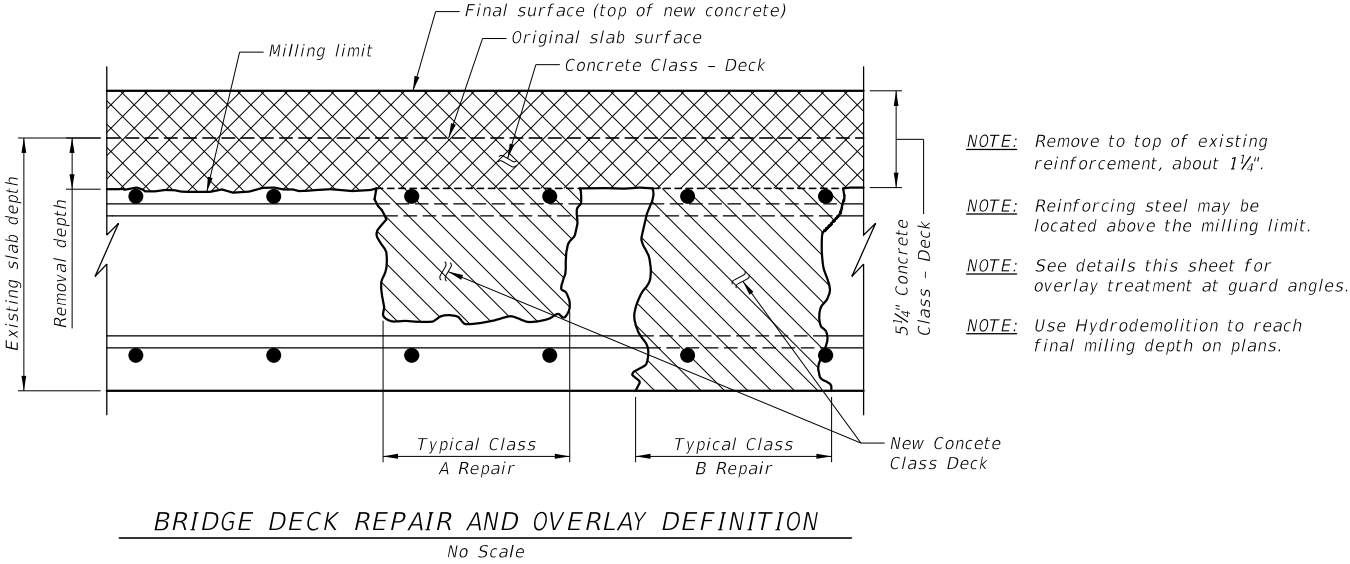


UPN NUMBER
8022000
DRAWING NO.
24027

BILL OF REINFORCING STEEL												
APPROACH SPANS ONLY (ALL DIMENSIONS ARE OUT TO OUT)												
TYPE 27 TYPE 37 TYPE 41 TYPE 17 TYPE 526												
Mark	Size	Span No. 1 No.	Span No. 7 No.	Type	Length	A	B	C	D	E	G	N
S100	#4CR	68	68	37	19-5		18-9	8"				
S101	#4CR	68	68	37	17-5		16-10	8"				
S200	#4CR	35	35	27	71-8		2-8	69-0	40-0	31-8		1
C100	#5E	4	4	27	67-4		3-4	64-0	40-0	27-4		1
C1	#5E	10	10	526	4-0½		11"	1-1¾	1-1¾	10"		
C2	#5E	36	36	41	2-6¾	11"	8¾"	11"	6¼"	6¼"		
*C3	#5E	250	250	17	4-5½		11"	11¾"	2-6¾"			
EJ100	#5CR	6	6	STR	34-0							

*NOTE: Based on minimum embedment detail on Sheet No. B5. Adjust length based on actual embedment.

NOTE: Include cost for C100~#5E, C1~#5E, C2~#5E and C3~#5E bars in the unit price bid for 42 IN Open Rail – BR.



NOTE: Include all costs associated with removing the existing guard angle that are required to complete the work in the unit price bid for Remove Guard Angle.

NOTE: If two transverse reinforcing bars are not present within 3" of the top of the slab, place new #4 transverse bars as necessary so there are two bars within the repair area. Ensure new bars have a minimum 1½" clear cover.

GUARD ANGLE REMOVAL DETAIL

No Scale

NOTES

Estimated amount of Epoxy Coated Reinforcing Steel per parapet = 207 lb.

Include cost for the new concrete in Class A and Class B repairs in the unit price bid for Concrete Class Deck. Average depth of Class A repairs estimated at 4". Volume of additional concrete = 9.8 yd³.

See Std. Dwg. No. SBR-0R42 for additional bridge rail reinforcing.

See Std. Dwg. No. SBR-0R42-PP for additional parapet reinforcing.

SHEET NO.
B6

APPROACH SPAN DETAILS
(SHEET 2 OF 2)

SCALE: As Noted

PROJECT NAME
CLARK FORK – 1M NW TROUT CREEK

MDT STRUCTURE ID
05271

FEDERAL AID PROJECT
STPB-BH 6-1(142)28

COUNTY
SANDERS

REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED
			10-17-19	6-18-19	6-18-19
			P.C.J.	G.H.S.	C.C.A.

MDTA
MISSISSIPPI
DEPARTMENT OF TRANSPORTATION

BRIDGE BUREAU

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UPN NUMBER
8022000

DRAWING NO.
24028

REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED
			11-13-19	11-9-19	11-8-19
			P.C.J.	G.H.S.	C.C.A.
11/25/2019 10:16:15 AM ...18022000brmdsz02.dgn					
MDTA MONTANA DEPARTMENT OF TRANSPORTATION BRIDGE BUREAU					
UPN NUMBER 8022000					
DRAWING NO. 24029					

SCALE: As Noted

NOTES

Submit alternate access door for approval.

Include all costs associated with furnishing new access door in the unit price bid for Revise Structure. Estimated weight of one access door = 860 lbs.

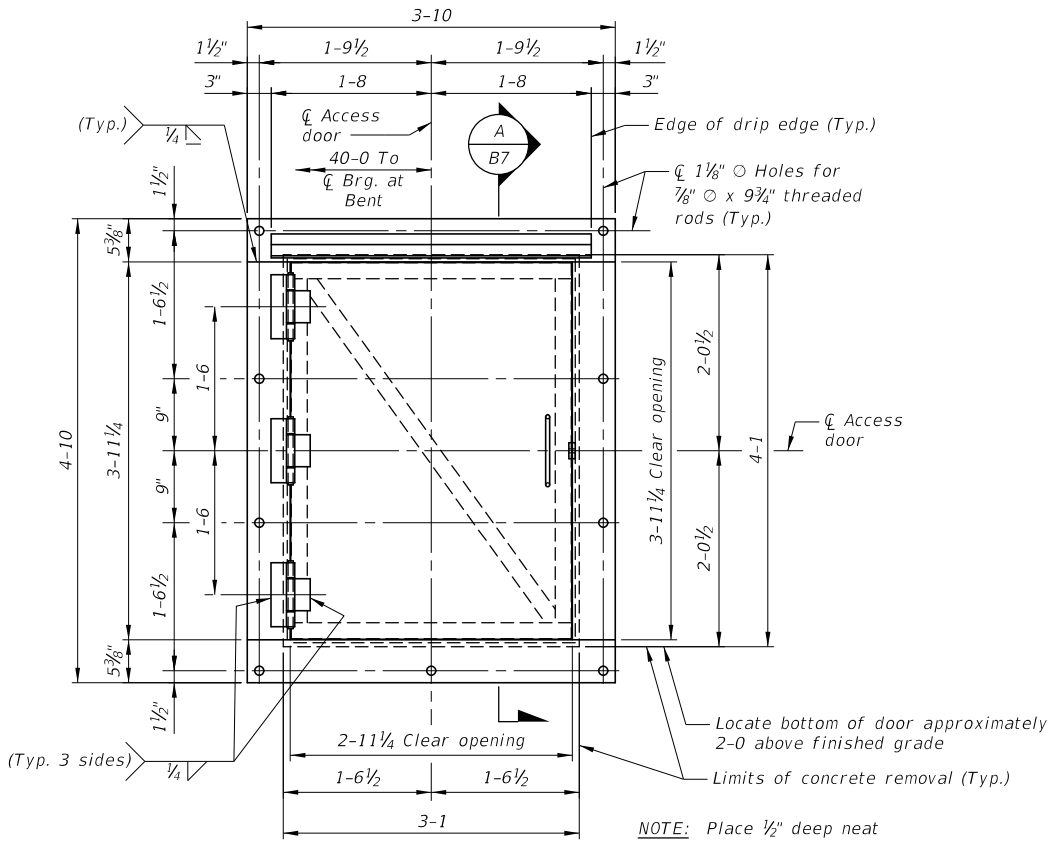
Include all costs associated with removing existing concrete, placing new grout, and installing the access door in the unit price bid for Revise Structure.

Use structural steel meeting the requirements of AASHTO M 270 Grade 36 or Grade 50. Galvanize all structural steel in accordance with AASHTO M 111 after fabrication. Clearly show all welds and fabrication details in submittal.

Secure access panel with heavy duty corrosion resistant padlock. Furnish keys to the Project Manager upon acceptance of the project.

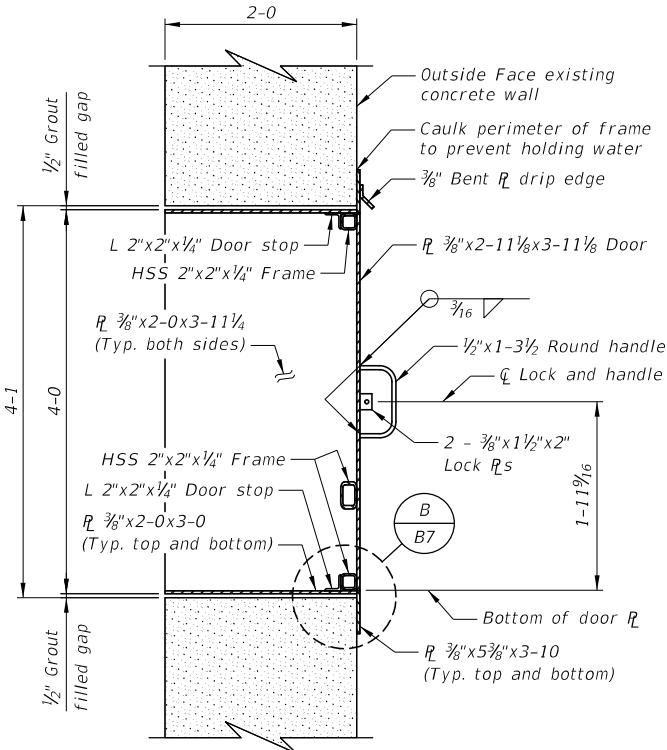
Cut all existing reinforcing steel to provide 1/2" clearance to the door.

Estimated volume of new grout = 1.2 ft³ per door.



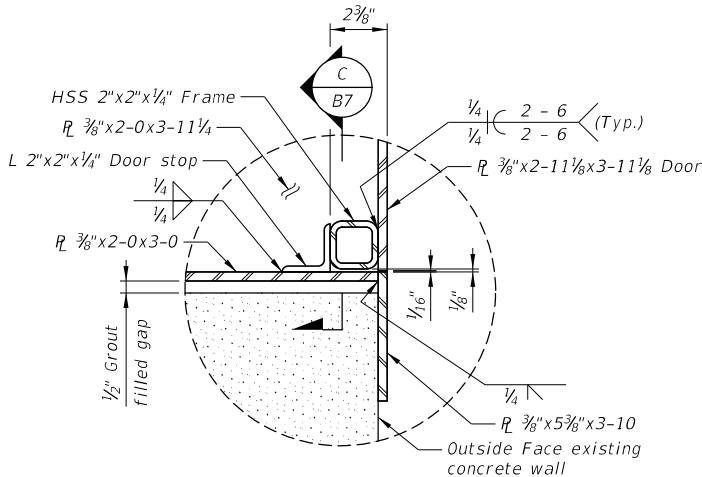
ACCESS DOOR DETAIL

Scale 1" = 1'-0"
(Bent No. 7 shown, Bent No. 1 similar but opposite hand)



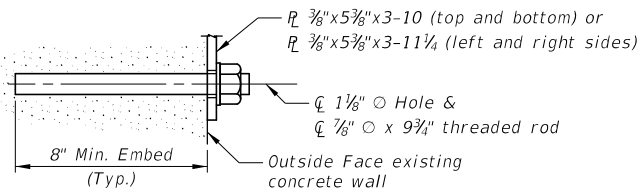
SECTION A

Scale ~ 1" = 1'-0"



DETAIL B

Scale ~ 3" = 1'-0"

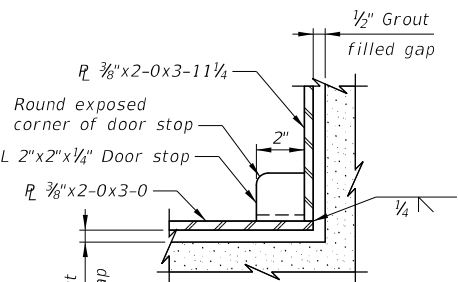


NOTE: See Special Provisions for Adhesive Anchor Specifications.

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.

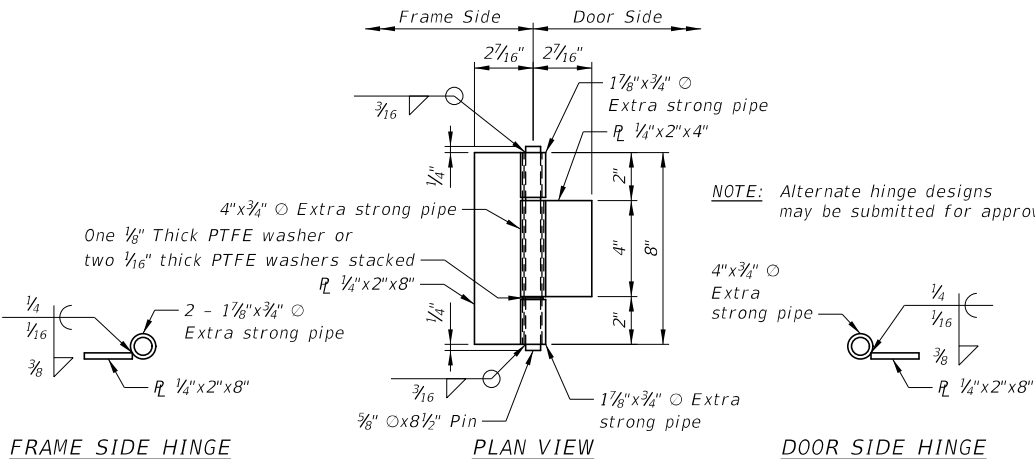
THREADED ROD DETAIL

Scale ~ 3" = 1'-0"



SECTION C

Scale ~ 3" = 1'-0"



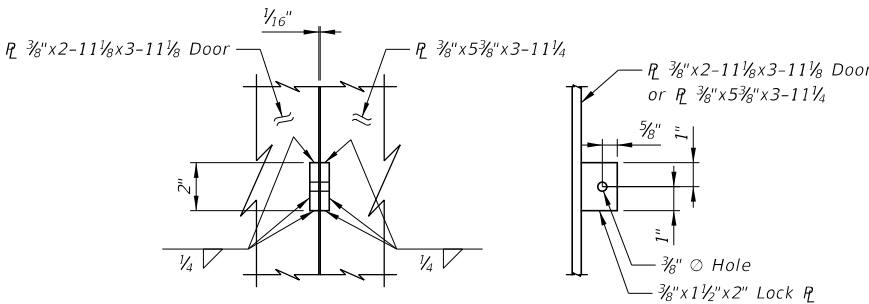
FRAME SIDE HINGE

PLAN VIEW

DOOR SIDE HINGE

HINGE DETAILS

Scale ~ 3" = 1'-0"

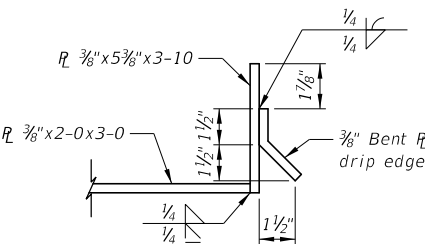


FRONT VIEW

SIDE VIEW

DOOR LOCK DETAILS

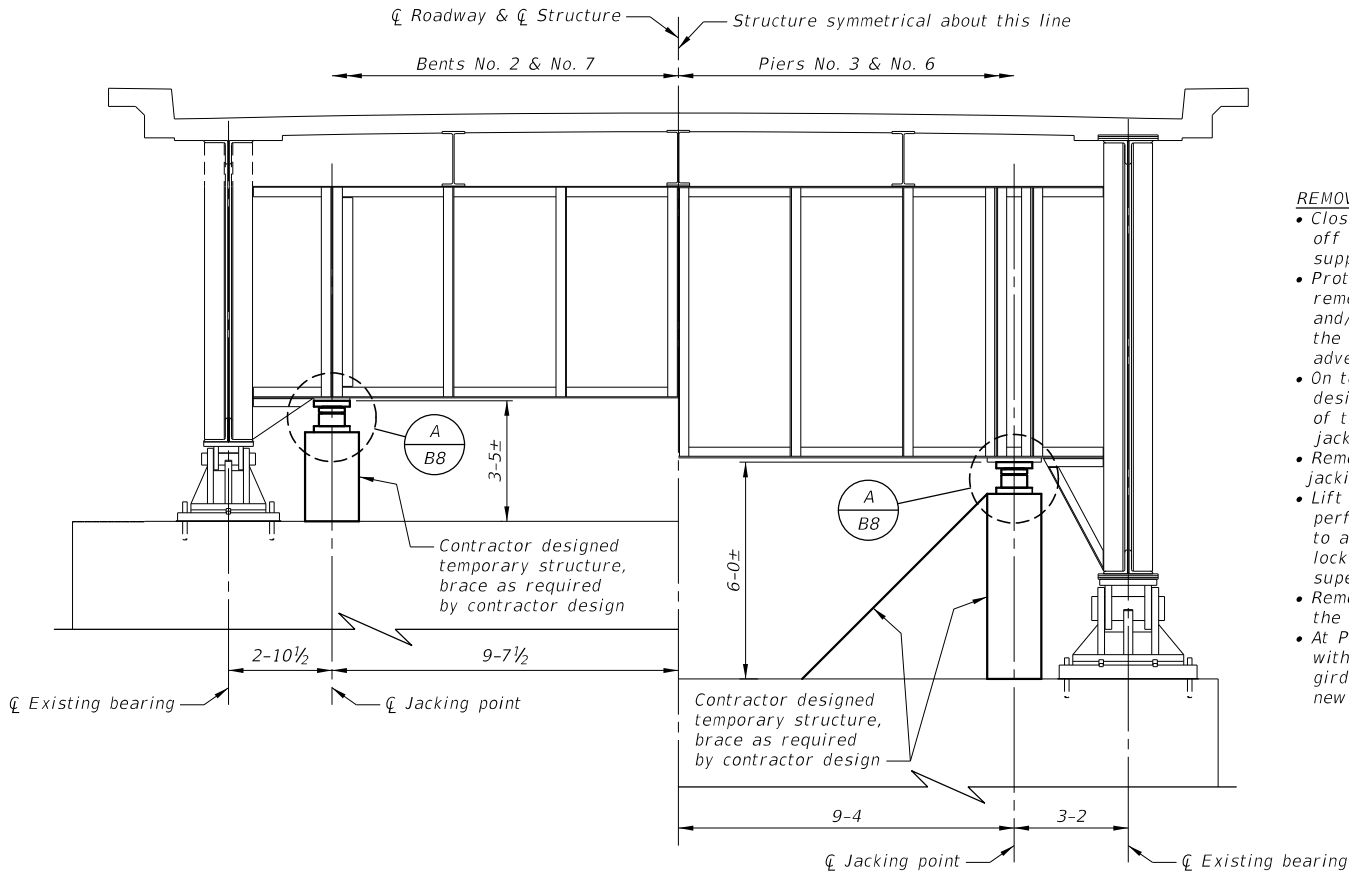
Scale ~ 3" = 1'-0"



DRIP EDGE DETAIL

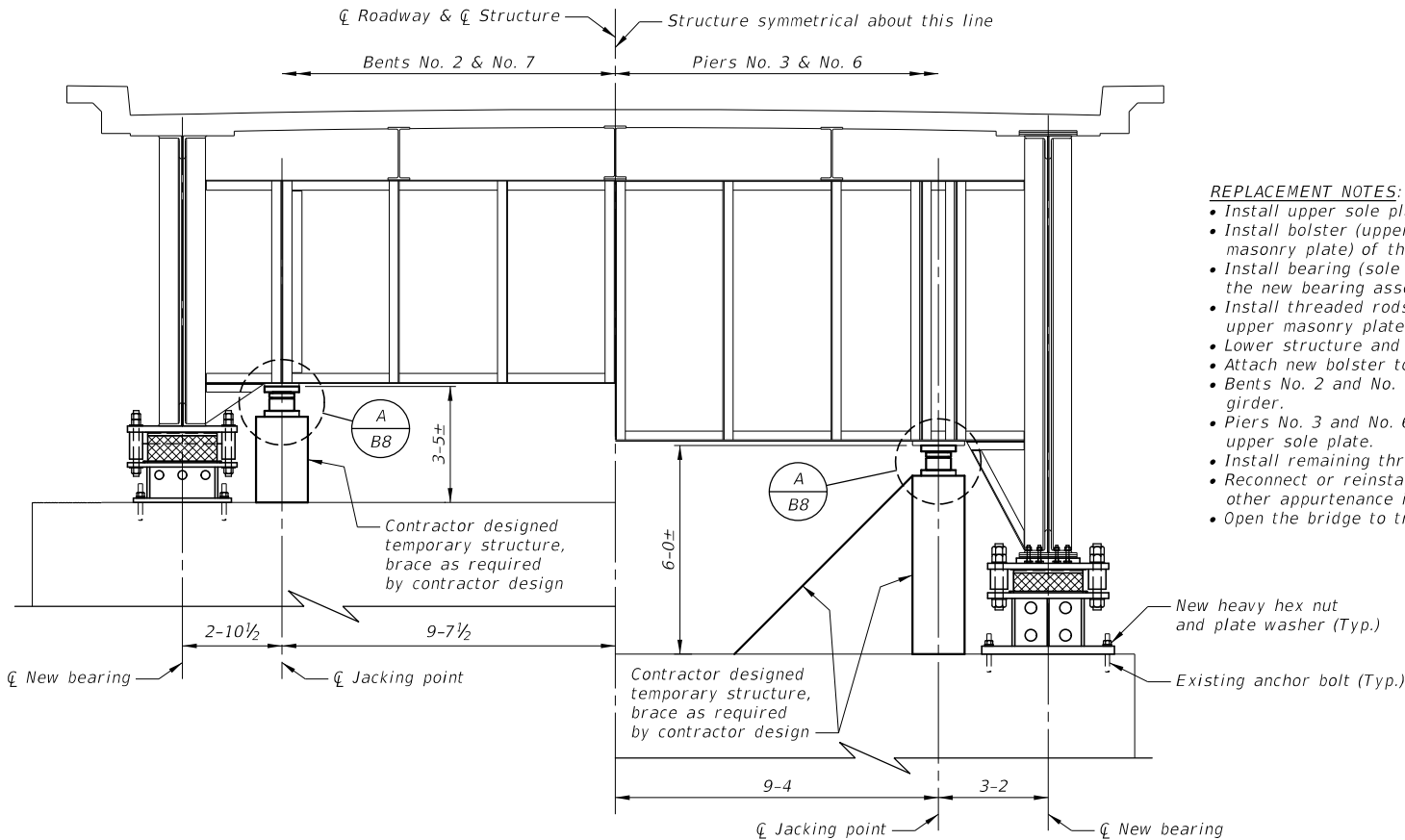
Scale ~ 3" = 1'-0"

2024



BEARING REMOVAL

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



BEARING REPLACEMENT

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

REMOVAL NOTES:

- Close bridge to traffic, and keep all traffic off of the bridge while superstructure is supported at jacking points.
- Protect existing utilities. Disconnect and/or remove deck joint cover plates, bridge rail and/or any other assembly that spans over the bearing that will be jacked and may be adversely affected by the jacking operation.
- On top of the substructure install contractor designed temporary structure to allow jacking of the superstructure from the designated jacking points on the existing floorbeam.
- Remove existing sole plate bolts to allow jacking of the span.
- Lift the superstructure the minimum amount to perform the work, but in no case more than 1" to allow removal of the existing bearings. Use lock nut collars or other means to support the superstructure while replacing bearings.
- Remove existing bearings and protect in place the existing anchor bolts.
- At Piers No. 3 and No. 6 remove existing rivets with standard heads on the bottom face of the girder flange that will be in conflict with the new upper sole plate.

REPLACEMENT NOTES:

- Install upper sole plate (Piers No. 3 & No. 6 only).
- Install bolster (upper masonry plate, riser & lower masonry plate) of the new bearing assembly.
- Install bearing (sole plate & elastomeric pad) of the new bearing assembly.
- Install threaded rods into the nut attached to the upper masonry plate.
- Lower structure and remove jacks.
- Attach new bolster to existing anchor bolts.
- Bents No. 2 and No. 7 weld sole plate to existing girder.
- Piers No. 3 and No. 6 weld lower sole plate to upper sole plate.
- Install remaining threaded rod hardware.
- Reconnect or reinstall any rail, joint, utility or other appurtenance impacted by the jacking.
- Open the bridge to traffic.

NOTES

Jack superstructure from both designated jacking points on the existing floorbeam simultaneously.

Bearing replacement sequence provided for information only. Submit proposed bearing replacement sequence per the Special Provisions.

At Piers No. 3 and No. 6 do not remove existing rivets with countersunk heads on the bottom face of the girder flange.

Remove existing fasteners by drilling, chiseling or other mechanical method approved by the Project Manager. During removal of the existing fasteners do not damage the connected elements that are to remain. Submit for approval a method to repair any existing elements damaged during fastener removal. Repair all damage to existing steel to remain at no cost to the State.

Estimated service steel dead load per bearing:

Bents No. 2 & No. 7 = 41.7 kips

Piers No. 3 & No. 6 = 158.0 kips

Estimated existing service steel, 6¼" concrete deck

and 1" asphalt wearing surface dead load per bearing:

Bents No. 2 & No. 7 = 125.1 kips

Piers No. 3 & No. 6 = 473.0 kips

Estimated proposed service steel, 6½" concrete deck

and 1½" concrete overlay dead load per bearing:

Bents No. 2 & No. 7 = 150.0 kips

Piers No. 3 & No. 6 = 550.7 kips

Do not exceed jack force of:

Bents No. 2 & No. 7 = 225 kips

Piers No. 3 & No. 6 = 730 kips

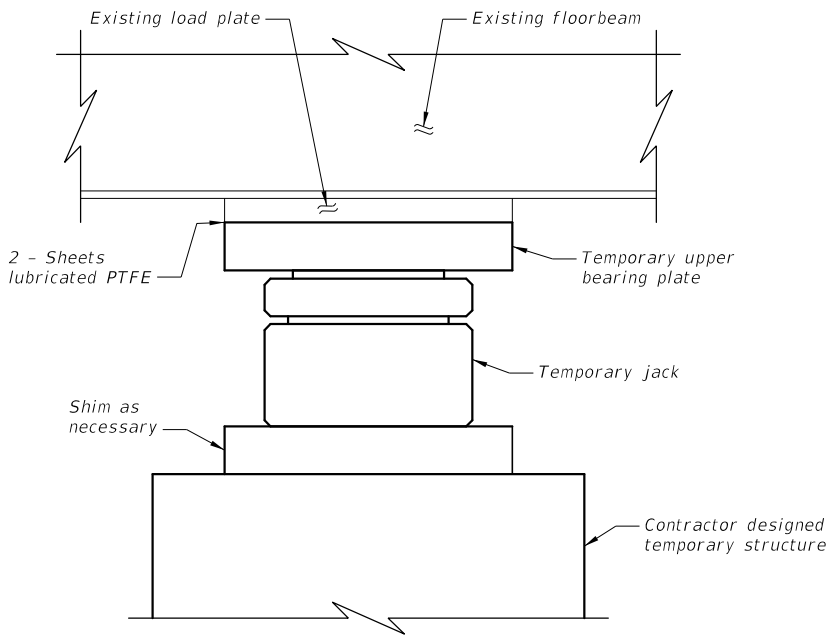
The bridge may be opened to traffic once the new steel bolsters are in place and secured to the existing anchor bolts. Secure the bolster to the existing anchor bolts with heavy hex nuts and ½"x3"x3" plate washer with centered 1⅝" Ø hole. Tighten nut until reaching full contact with the plate washer.

Include all costs associated with jacking and temporary work in the unit bid price for Superstructure Jacking.

See Special Provisions for additional jacking requirements.

See Sheet No. B10 for Bents No. 2 & No. 7 bearing details.

See Sheet No. B11 for Piers No. 3 & No. 6 bearing details.



A

DETAIL A

No Scale

SHEET NO.
B8

JACKING DETAILS

PROJECT NAME
CLARK FORK - 1M NW TROUT CREEK

MDT STRUCTURE ID
05271

FEDERAL AID PROJECT
STPB-BH 6-(142)28

COUNTY
SANDERS

REVISED	REVISED	REVISED	REVISED	11-11-19	P.C.J.
REVISED	REVISED	REVISED	REVISED	8-23-19	G.H.S.
REVISED	REVISED	REVISED	REVISED	8-23-19	B.K.C.
REVISED	REVISED	REVISED	REVISED	8-23-19	B.K.C.



UPN NUMBER
8022000

DRAWING NO.
24030

SCALE: As Noted

NOTES

Reinforcing for seat extensions not shown for clarity. See Sheets No. B12 and No. B14 for reinforcing details.

Attach new bolster to existing anchor bolts. See Sheet No. B8 for additional notes.

The Contractor can increase the upper and/or lower masonry plate thickness provided the overall bolster height does not change, and at no additional cost to the State.

Furnish ASTM F1554 Grade 55 threaded rods meeting supplement S4 for connection testing to connect the upper masonry plate to the beveled sole plate. Furnish heavy hex nuts and hardened washers per the Standard Specifications. Galvanize rods and all hardware that will not be encased in concrete per ASTM F2329.

Mark all bearings prior to shipping. Make all marks permanent and visible after the bearing is installed, include the bearing location on the bridge and a direction arrow that points ahead on line (up-station).

Vulcanize-bond elastomeric bearing pad to backing plate.

Do not damage bearing during welding process.

Paint all steel not in contact with concrete in accordance with the Standard Specifications and a finish color meeting Concrete Gray per Standard Specifications Table 559-1.

Include all costs associated with furnishing and placing the new bearing and bolster including the: lower masonry plate, steel riser, upper masonry plate, keeper bars, elastomeric pad, PTFE, stainless steel plate, beveled sole plate, upper sole plate, threaded rods, and associated hardware in the unit price bid for Elastomeric Bearing Device - PTFE.

See Sheet No. B8 for girder jacking information and suggested installation sequence.

See Standard Specifications for requirements for fiber-reinforced pad under lower masonry plate.

BENTS NO. 2 & NO. 7 BEARINGS
DESIGN TABLE (SERVICE I LIMIT STATE)

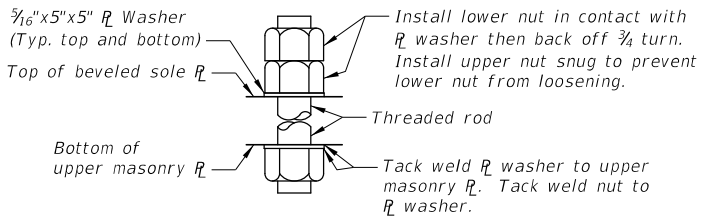
AASHTO design method	Method B
Elastomer grade	Grade 4
Elastomeric pad unloaded height	9.375"
Shear modulus at 73° F	130 psi
Dead load reaction	150.0 kips
Live load reaction (without impact)	159.7 kips

NOTE: Bearing height only includes elastomeric bearing pad.

PIERS NO. 3 & NO. 6 BEARINGS
DESIGN TABLE (SERVICE I LIMIT STATE)

AASHTO design method	Method B
Elastomer grade	Grade 4
Elastomeric pad unloaded height	6.875"
Shear modulus at 73° F	130 psi
Dead load reaction	550.7 kips
Live load reaction (without impact)	352.5 kips

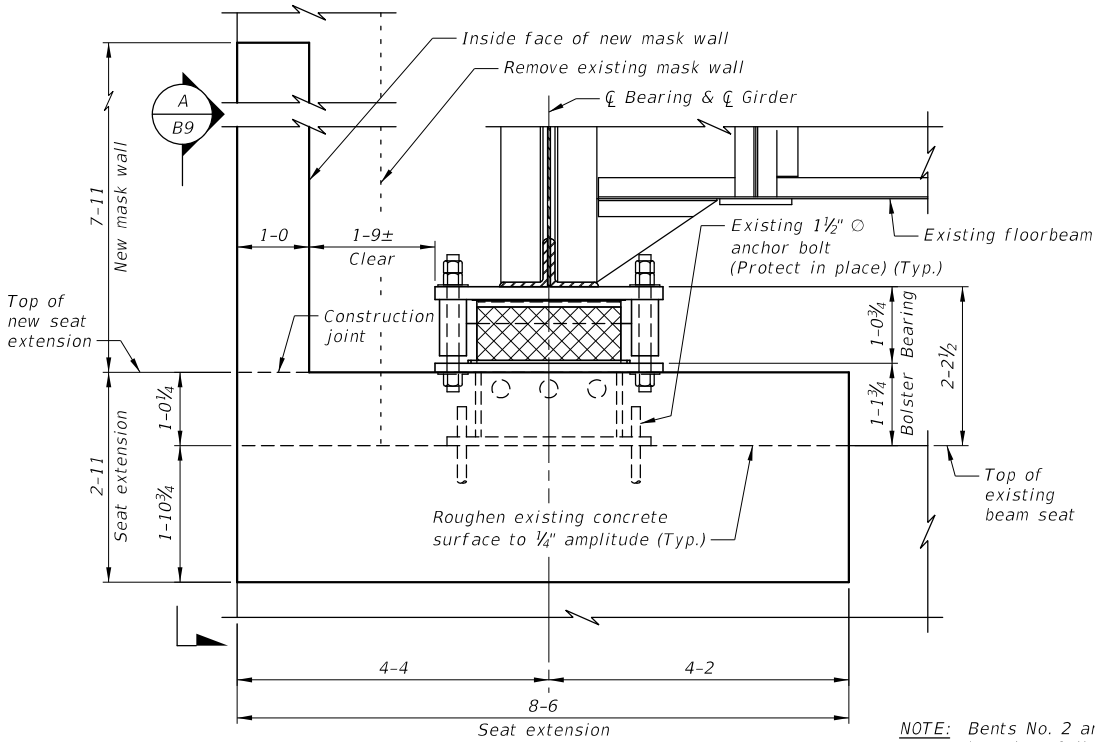
NOTE: Bearing height only includes elastomeric bearing pad.



TYPICAL THREADED ROD DETAIL

No Scale

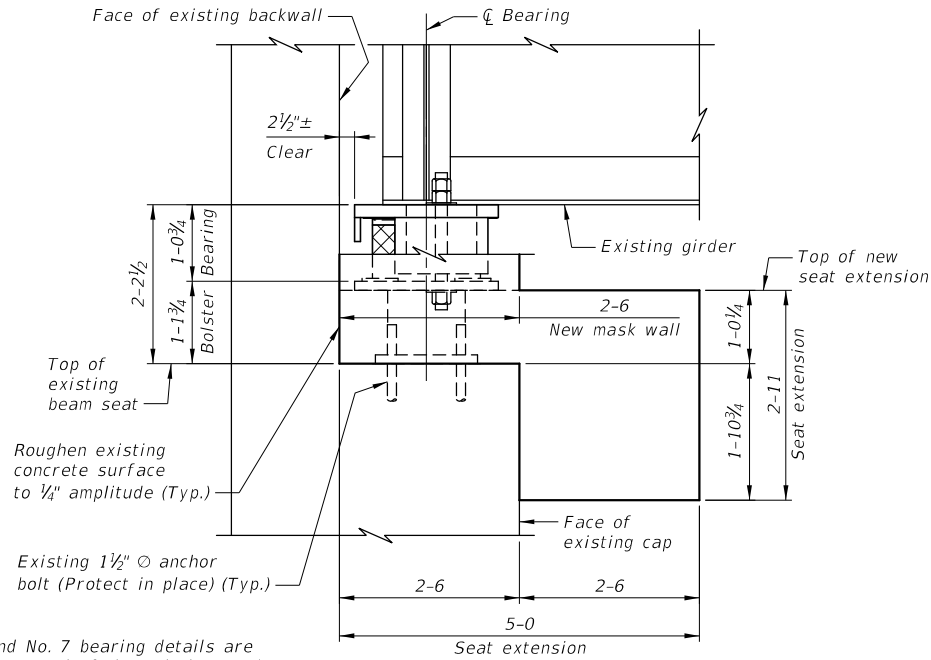
(2 3/4" O Threaded rod shown, 2" O threaded rod similar)



BENTS NO. 2 & NO. 7 BEARINGS

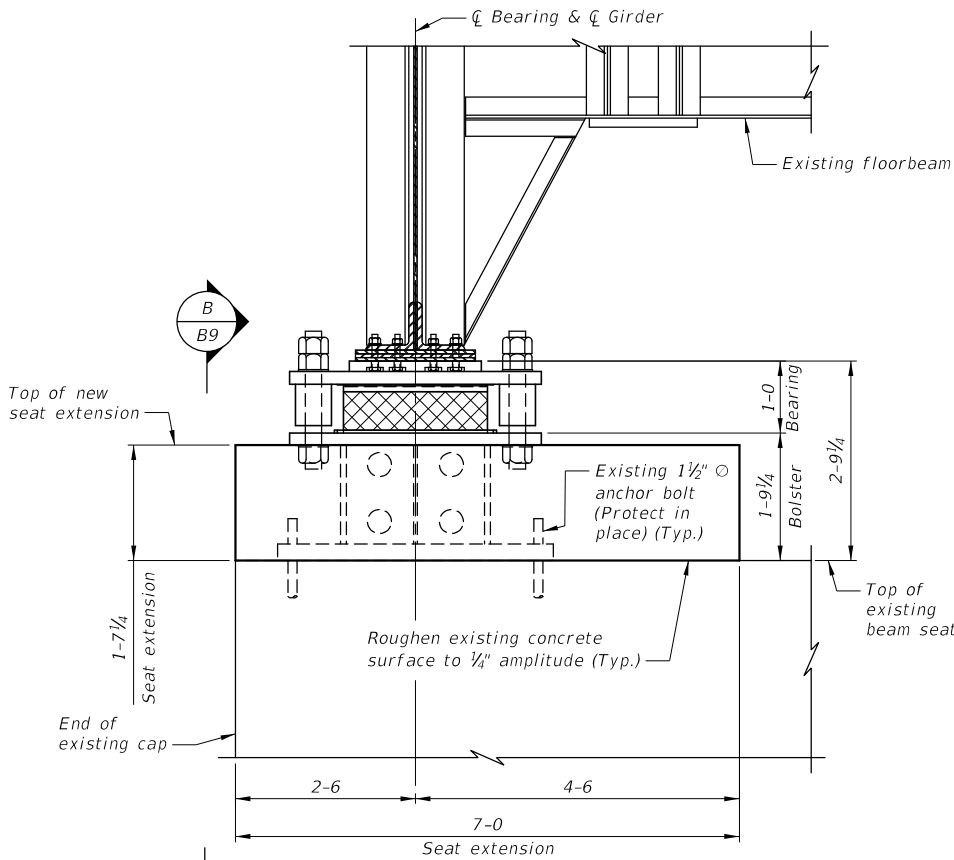
Scale ~ 3/4" = 1'-0"

NOTE: Bents No. 2 and No. 7 bearing details are based on full removal of the existing mask wall. Details may be modified such that the same seat extension area is provided, and as approved by the Project Manager to accommodate leaving the lower portion of the existing mask wall in place.



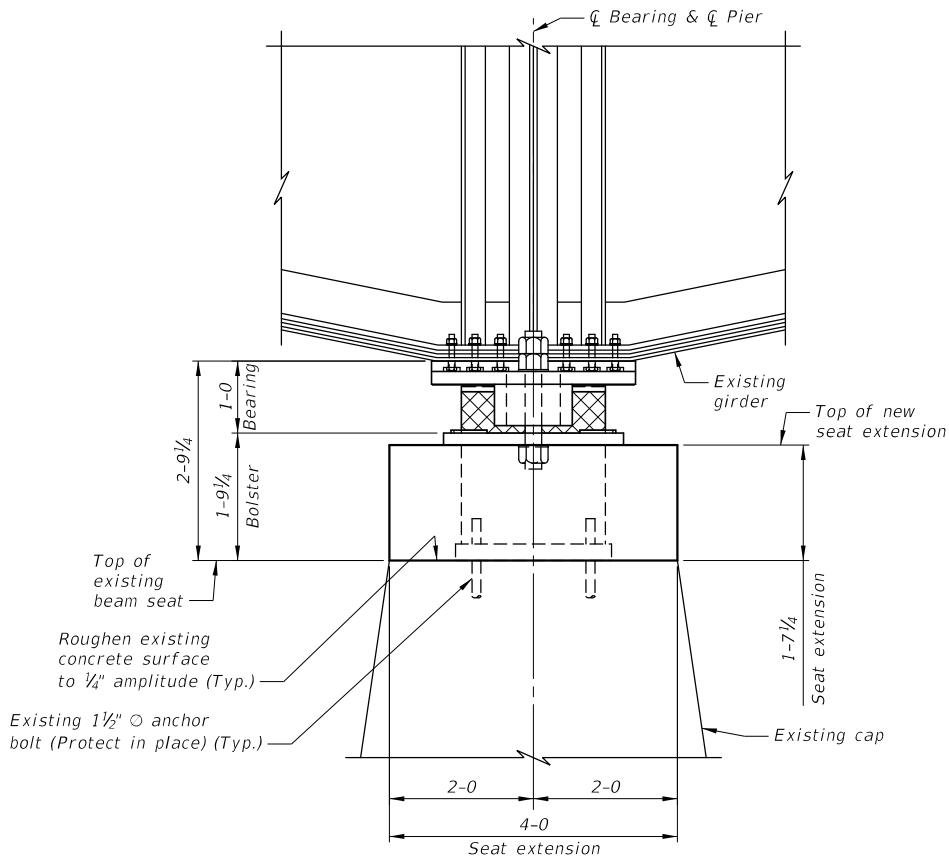
VIEW A

Scale ~ 3/4" = 1'-0"



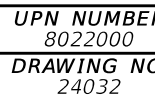
PIERS NO. 3 & NO. 6 BEARINGS

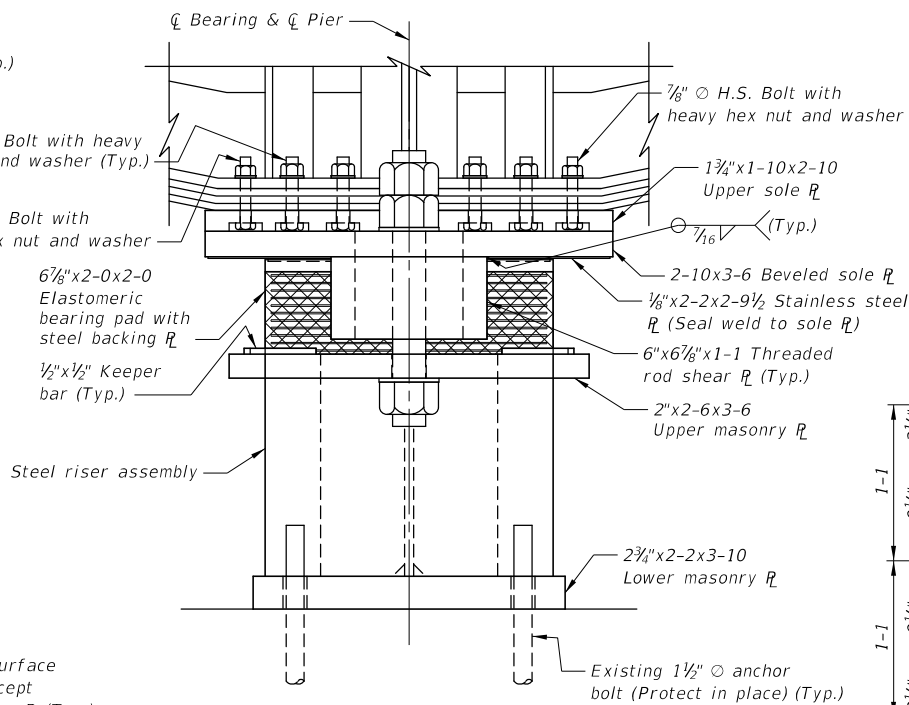
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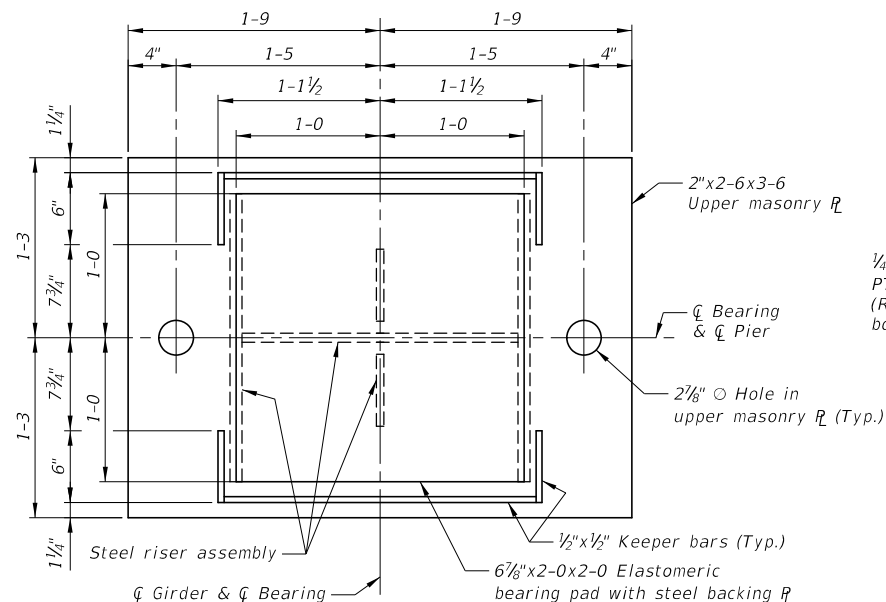
VIEW B

Scale ~ 3/4" = 1'-0"

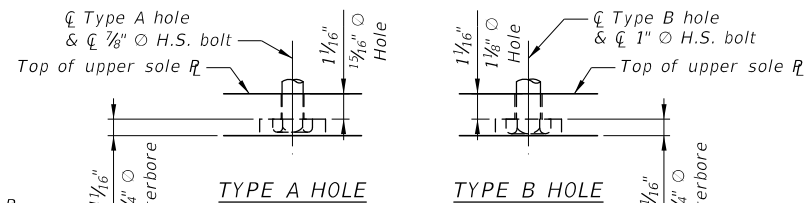




VIEW A
Scale ~ $1\frac{1}{2}'' = 1'-0''$

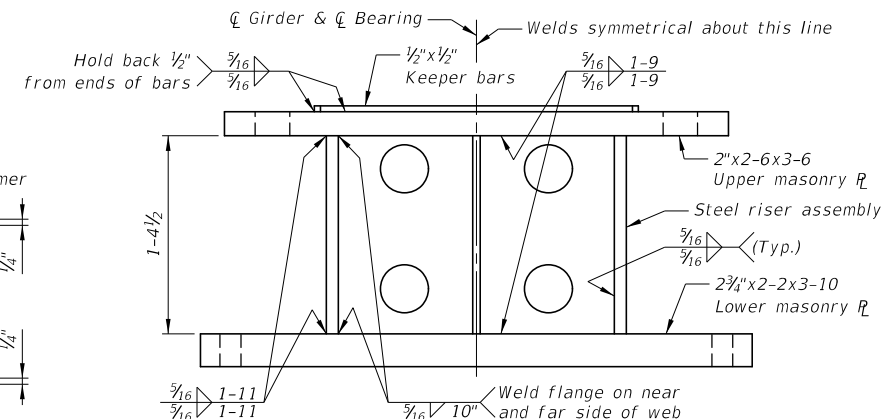


SECTION C
Scale ~ 1½" = 1'-0"



TYPE B HOLE

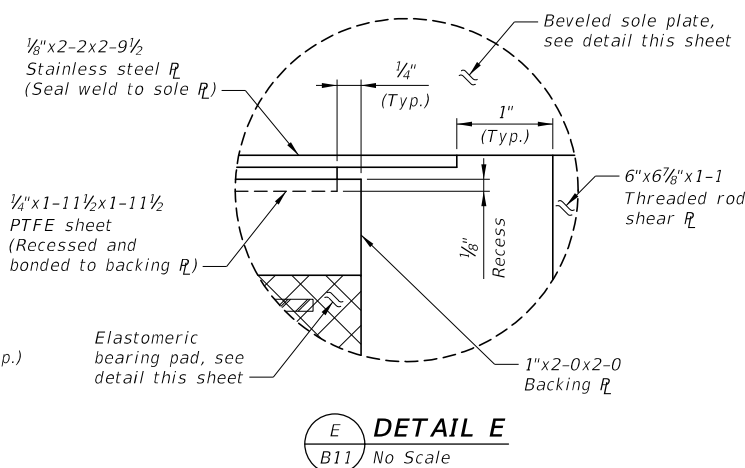
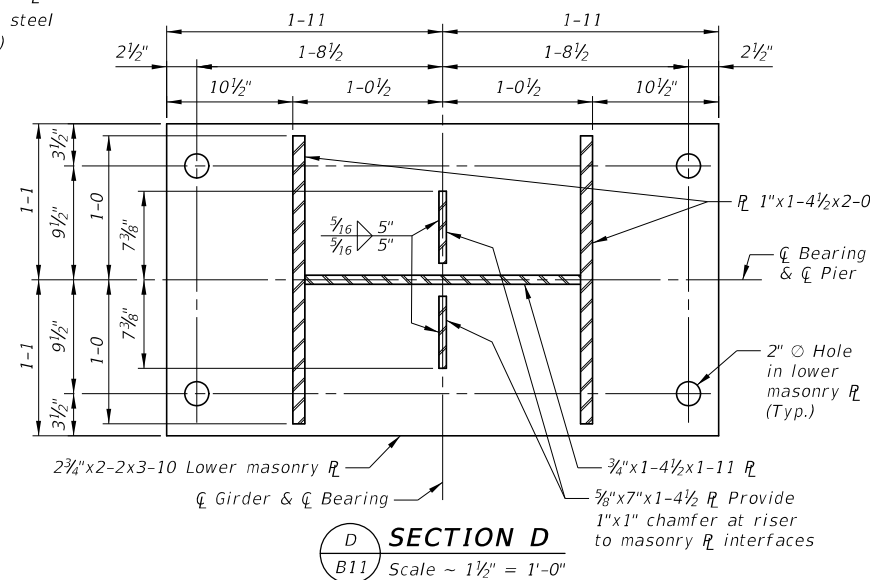
Scale $\sim 3'' = 1'-0''$



Scale $\sim 3'' = 1'-0''$
Backing plate not shown for clarity.

Scale $\sim 1\frac{1}{2}'' = 1'-0''$

See Sheet No. B9 for design information and additional notes.

SCAIF: As NotedMDT STRUCTURE ID
05271

COUNTY SANDERS

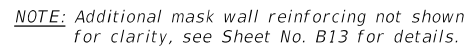
REVISED		
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REVISED		
REVISED		
CHECKED	11-12-19	C.C.A.
DRAWN	8-20-19	G.H.S.
DESIGNED	8-20-19	B.K.C.



DRAWING NO
24033

The contractor may elect to partially remove the existing mask wall so that it clears the new modular joint and the modular joint support bracket. Adjust the location of the proposed seat extension and new reinforcing steel subject to approval by the Project Manager. Submit for approval geometry and any other plan variances. Provide the same seat extension area and amount of new reinforcing steel with any proposed variance.

See Sheet No. B13 for Bill of Reinforcing Steel.



Scale ~ 1" = 1'-0"



SECTION B
Scale ~ 1" = 1'-0"

SCALE: As Noted

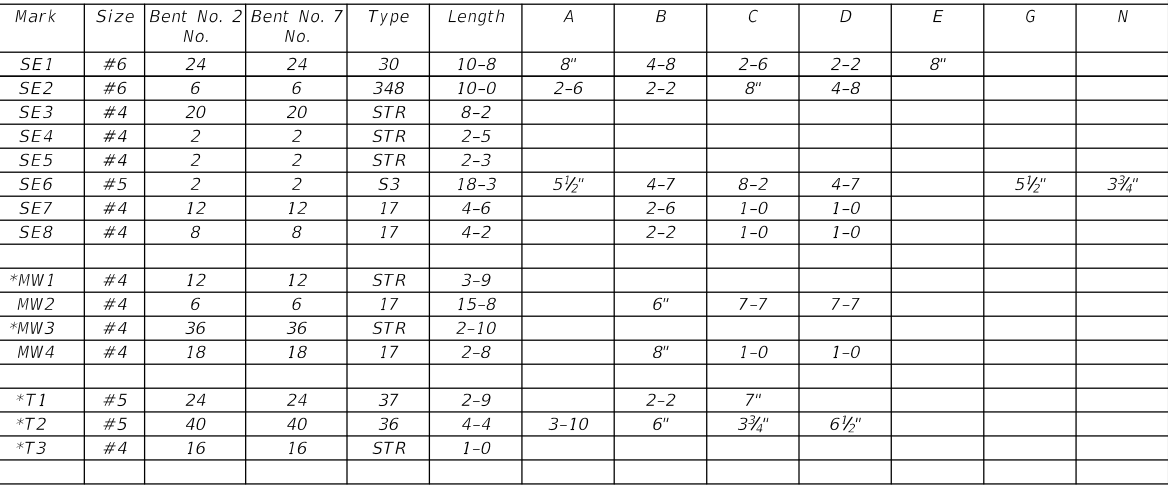
COUNTY
SANDERS




IPN NUMBER
8022000

DRAWING NO.
24034

BENTS NO. 2 & NO. 7 SEAT EXTENSIONS ONLY
(ALL DIMENSIONS ARE OUT TO OUT)



Existing face of backwall

3"

8 Spa @ Abt. 11" = 7-5

MW4~#4 U-bar, place as shown with MW3~#4 bars (Typ.)

2 - MW3~#4 (Typ.)

MW2~#4 U-bars, lap with MW1~#4 bars

SE4~#4

Construction joint

MW1~#4 (2 per row)

SE6~#5 Stirrup

SE7~#4 U-bars

SE3~#4 (Typ.)

SE8~#4 U-bars

SE1~#6 Bent bar

Existing face of cap

Top of existing cap

3"

1-0 1/4"

3"

2 Eq. Spaces

SECTION A
Scale ~ 1" = 1'-0"

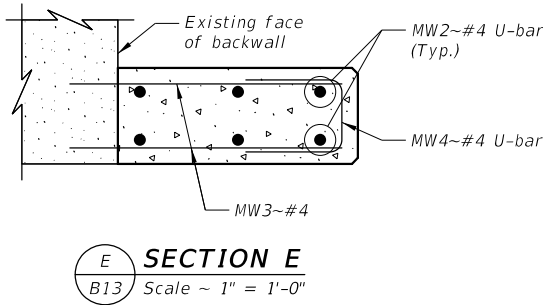
Lap #4 2-0 minimum.

Concrete and reinforcement for the new mask wall is incidental to the
Revise Structure bid item.

See Sheet No. B3 for concrete pay items and additional notes.

See Sheet No. B5 for minimum embedment detail and additional notes

See Sheet No. B12 for additional notes



**BENTS NO. 2 & NO. 7
SEAT EXTENSION DETAILS
(SHEET 2 OF 2)**

SCALE: As Noted

PROJECT NAME

CLARK FORK - 1M NW TROUT CREEK

MDT STRUCTURE ID

FEDERAL AID PROJECT
STPB-BH 6-1(142)28

STPB-BH 6-1(142)28

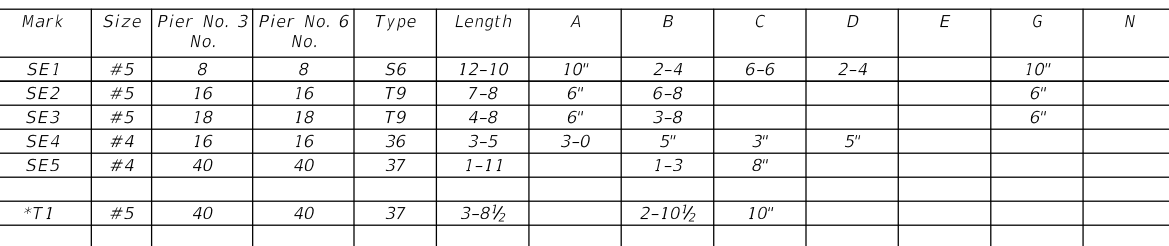
COUNTY SANDERS

REVISED		
REVISED		
REVISED		
REVISED		
CHECKED	11-11-19	P.C.J.
DRAWN	9-20-19	G.H.S.
DESIGNED	9-20-19	B.K.C.

UPN NUMBER
8022000

DRAWING NO
24035

PIERS NO. 3 & NO. 6 SEAT EXTENSIONS ONLY
(ALL DIMENSIONS ARE OUT TO OUT)

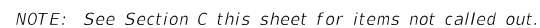
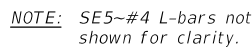
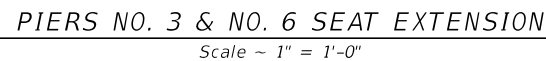


Structural drawing of a rectangular reinforced concrete slab with a central square column. The drawing shows a top-down view with a grid of reinforcement bars. The slab is 11 feet by 11 feet. The central column is 6 feet by 6 feet. Reinforcement includes 6-SE5-#4 L-bars on both sides, 4-SE5-#4 L-bars at both ends, SE4-#4 bent bars, SE2-#5 bent bars, SE3-#5 bent bars, SE1-#5 stirrups, and T1-#5 embedded ties. Dimensions are given in feet and inches. Notes include "2" Cl. (Typ.)" for clear spacing and "Bearing & Pier" for column connections.

4" Bearing & Pier

9" 2" Cl. (Typ.)

1 - Pair SE4-#4 Bent bars (Typ.)

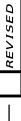


See Sheet No. B11 for bearing details.

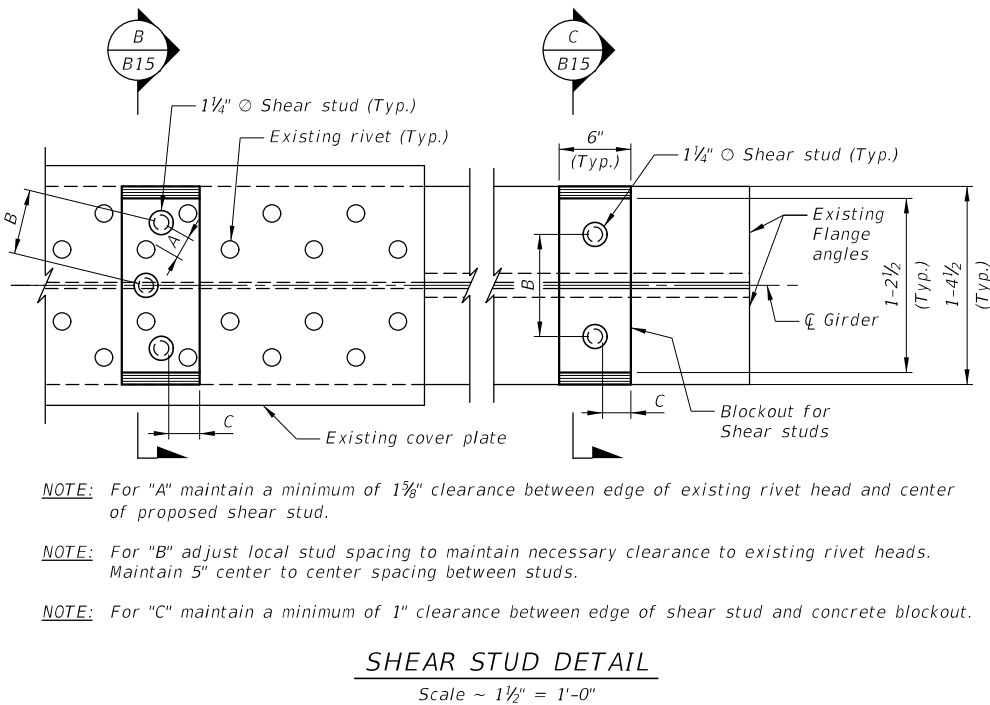
SCALE: As Noted

MDT STRUCTURE ID
05271

COUNTY SANDERS

MONTANA MDTA DEPARTMENT OF TRANSPORTATION		REVISED	
		REVISED	
		REVISED	
		REVISED	
		CHECKED	11-11-19
		DRAWN	10-14-19
		DESIGNED	10-14-19
UPN NUMBER		8022000	
DRAWING NO.		24036	

11/25/2019 10:29:20 AM



***NOTE:** Haunch depth is measured from top of flange to bottom of precast panel at ϕ stringers and top of flange angles to bottom of precast panel at ϕ girders.

***NOTE:** Haunch depth is measured from top of flange to bottom of precast panel at ϕ stringers and top of flange angles to bottom of precast panel at ϕ girders.

Provide stringer flange bracing assemblies at 10'-0" maximum spacing throughout entire length of each stringer.

Use structural steel meeting the requirements of AASHTO M270 Grade 50 for stringer flange bracing assemblies.

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.

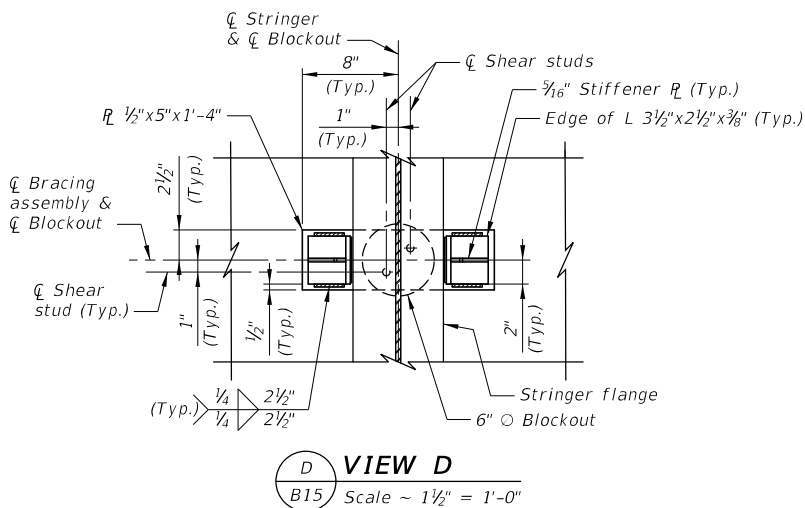
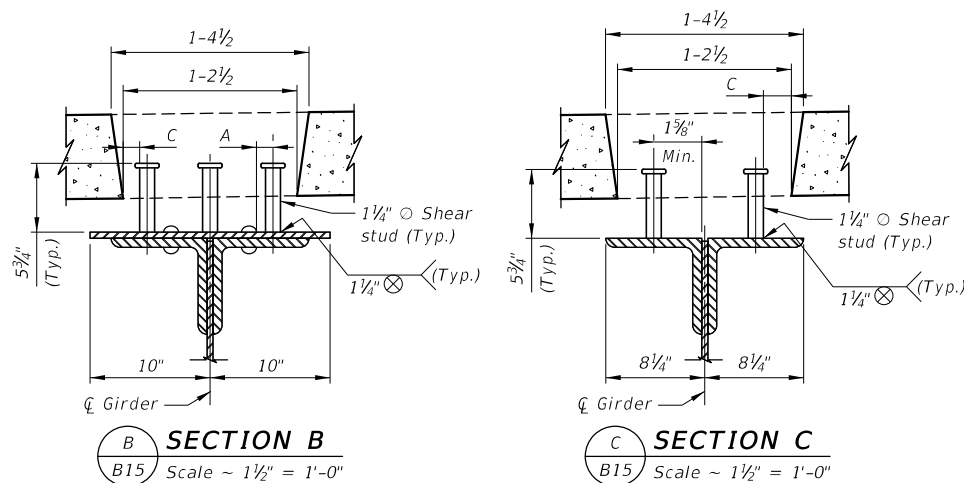
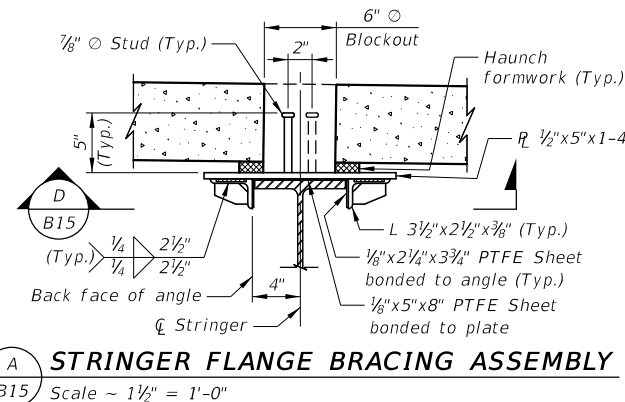
Include all costs associated with furnishing and placing shear studs and stringer flange bracing assemblies in the unit price bid for Structural Steel - Misc.

Include all costs associated with forming and placing the bridge rail curb in the field in unit price bid for 42 IN Open Rail - BR.

PAINT STRUCTURAL STEEL: Provide an overcoat paint system on the existing steel in Spans No. 2 thru No. 6. See Special Provisions for additional information. The Project Manager will identify top flange steel, and other areas if necessary, that require painting in the field upon removal of the existing deck.

See Sheet No. B17 for required quantity and location of shear studs

See Sheet No. B17 for blockout and stringer flange bracing bracket locations.



NOTES

Use 7/8" ⌀ high strength bolts.

Use structural steel meeting the requirements of AASHTO M270 Grade 50 for the support bracket, drip protection plate and stringer repair cover plate.

Paint the support bracket in accordance with the Standard Specifications.

Galvanize drip protection plates per Standard Specifications.

Cut plates for the flanges and webs of support bracket so that the direction of rolling will be parallel to the longitudinal axis of the cantilever bracket. Show the direction of rolling for these plates on the shop drawings.

Remove existing rivets by drilling, chiseling, or other mechanical method approved by the Project Manager. During the removal of existing rivets do not damage the connected elements that are to remain. Submit for approval a method to repair any existing elements damaged during fastener removal. Repair all damage to existing steel at no cost to the State.

Use shear studs meeting the requirements of AASHTO M169 Grades 1010-1020 and the mechanical requirements for Type B studs in accordance with AWS D1.5 Table 7.1.

Include all costs associated with furnishing and placing support bracket and drip protection plates in the unit price bid for Structural Steel - Misc.

SHEET NO.
B16

MAIN SPAN DETAILS
(SHEET 2 OF 2)

SCALE: As Noted

PROJECT NAME
CLARK FORK - 1M NW TROUT CREEK

MDT STRUCTURE ID
05271

FEDERAL AID PROJECT
STPB-BH 6-1(142)28

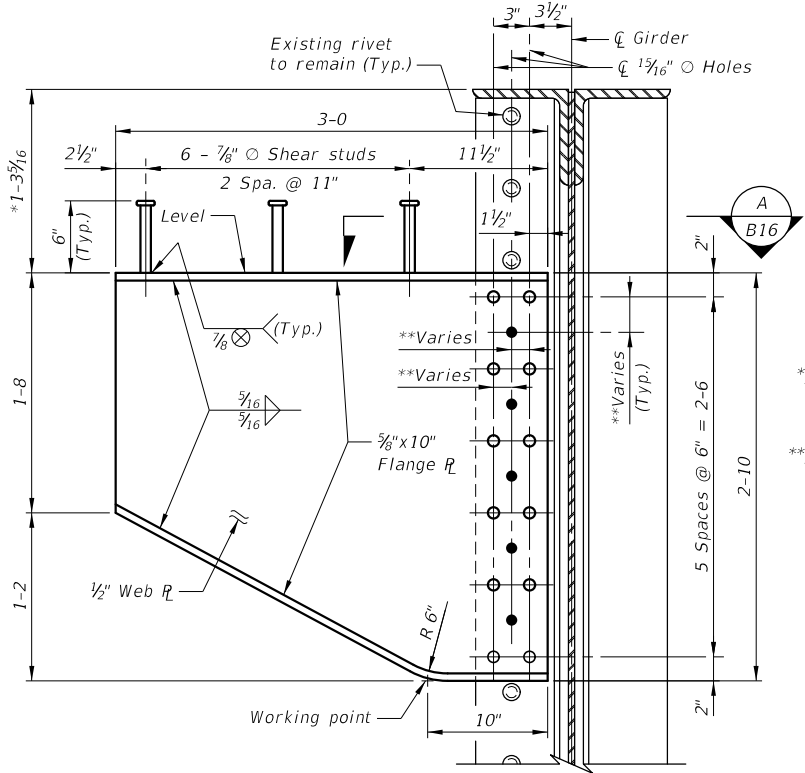
COUNTY
SANDERS

REVISED	REVISED	REVISED	REVISED	10-23-19	C.C.A.
REVISED	REVISED	REVISED	REVISED	6-19-19	G.H.S.
REVISED	REVISED	REVISED	REVISED	6-19-19	P.C.J.



UPN NUMBER
8022000

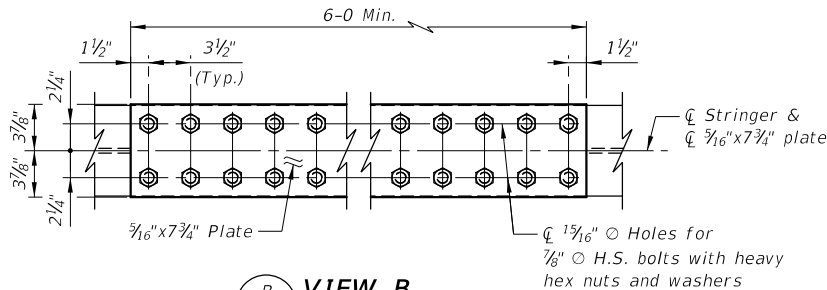
DRAWING NO.
24038



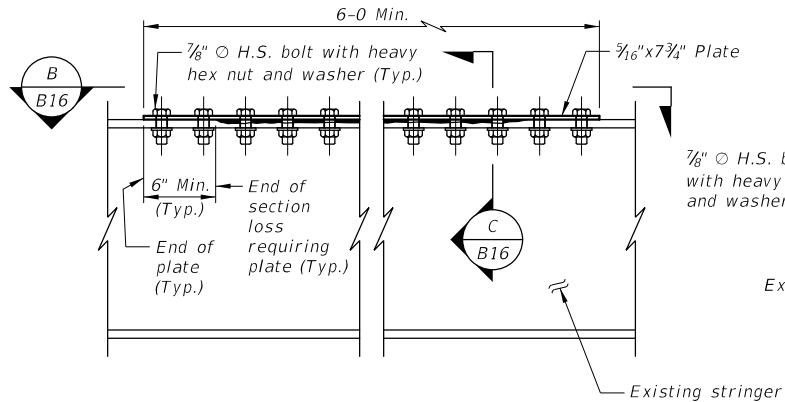
MODULAR JOINT SUPPORT BRACKET

Scale ~ 1 1/2" = 1'-0"

(Looking Back on Line at G2 at ⌀ Brg. Bent No. 2, other locations similar.)
(Deck and floor truss not shown for clarity.)
(4 Required)



VIEW B
B16 Scale ~ 1 1/2" = 1'-0"



STRINGER REPAIR DETAIL

Scale ~ 1 1/2" = 1'-0"

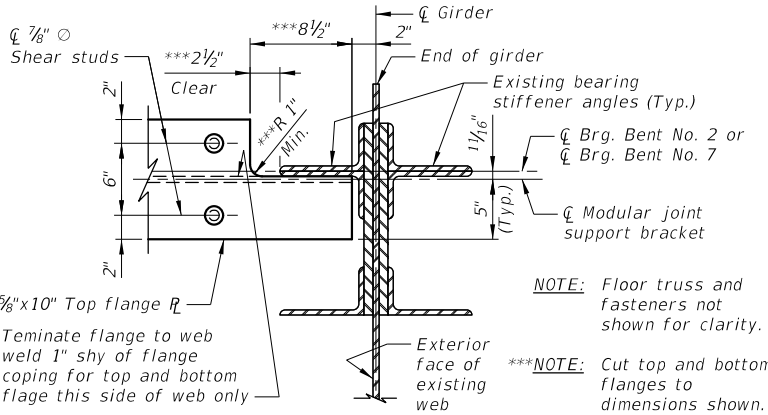
(See Special Provisions for additional information)

LEGEND

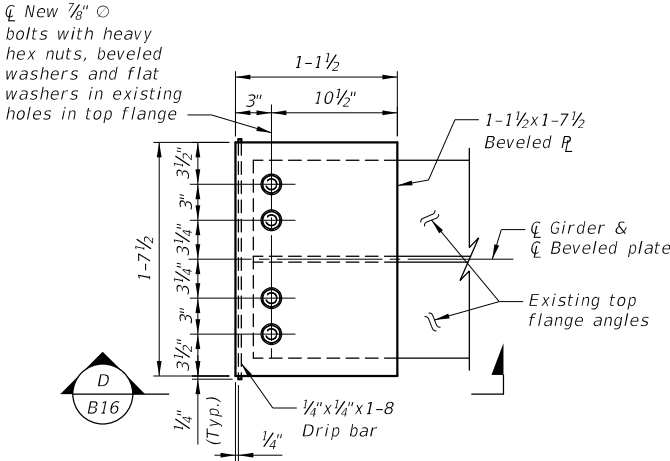
- Existing rivet to be replaced with H.S. bolt
- Shop drilled hole in new support bracket filled with H.S. bolt

*NOTE: Place flush with bottom of end closure pour. Dimension may increase based on field verification.

**NOTE: Field verify existing rivet locations. Shift the bracket down the minimum amount necessary to avoid conflicts but no more than 3". Minimum allowable bolt spacing is 2 3/8". If in its final position the new support bracket is adequately secured to the existing bearing stiffener angles then the new support bracket or the existing bearing stiffener angles may be used as a one time template to field drill holes in the other member. (17 bolts required per bracket).



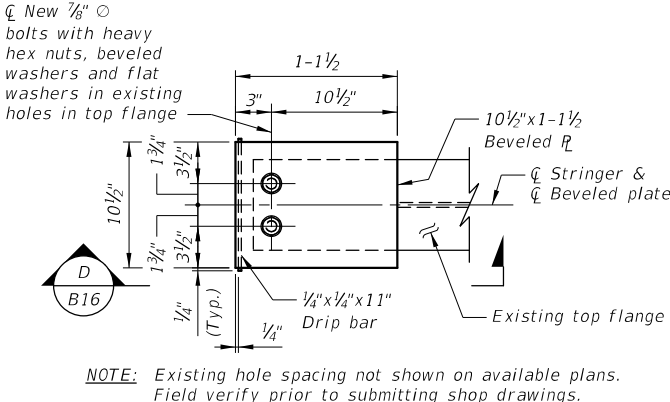
SECTION A
B16 Scale ~ 1 1/2" = 1'-0"



NOTE: Existing hole spacing not shown on available plans. Field verify prior to submitting shop drawings.

GIRDER END DRIP PROTECTION PLATE

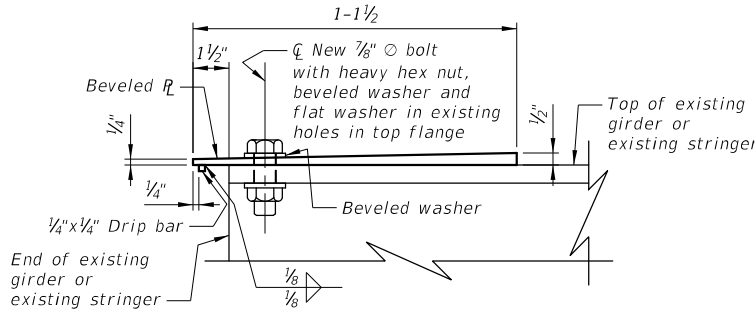
Scale ~ 1 1/2" = 1'-0"
(4 Required)



NOTE: Existing hole spacing not shown on available plans. Field verify prior to submitting shop drawings.

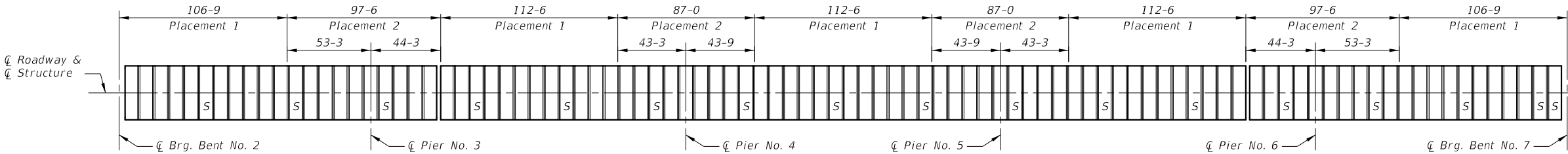
STRINGER END DRIP PROTECTION PLATE

Scale ~ 1 1/2" = 1'-0"
(6 Required)



VIEW D
B16 Scale ~ 3" = 1'-0"

NOTE: Placement 1 locations are positive moment regions and Placement 2 locations are negative moment regions. Complete grout placement for girder haunch and precast panel stud blockouts and concrete placement for transverse panel joints and closure pours on Placement 1 locations prior to completing the same work in adjacent Placement 2 locations. Do not grout or place field joint concrete in Placement 1 locations unless the precast deck panels have been set in the adjacent spans plus ½ of the following span*. Panel grouting, transverse joint concrete and closure pours in Placement 2 locations may be completed after that same work has been completed in adjacent Placement 1 locations. Concrete Class Joint must achieve a minimum of 75% of it's specified 28 day compressive strength prior to placing construction live load on the panels. See Special Provisions for additional requirements.



*For example: Haunch and stud pocket grouting and closure pours in the Placement 1 location between Piers No. 4 & No. 5 may be completed if the new deck panels have been set (not grouted) for 323-9 either side of the Placement 1 boundary.

NOTE: S denotes panel location with scuppers at each curb line (2 total per panel).

PRECAST DECK PANEL LAYOUT AND CLOSURE POUR PLACEMENT SEQUENCE

Scale ~ 1" = 40'-0"

NOTES

Provide leveling bolts at the minimum locations shown to adequately support the panel and set to correct elevation. Alternative leveling methods may be submitted for approval.

Torque each leveling bolt to evenly distribute the weight of the panel. Limit the difference in torque between bolts to no more than 20%.

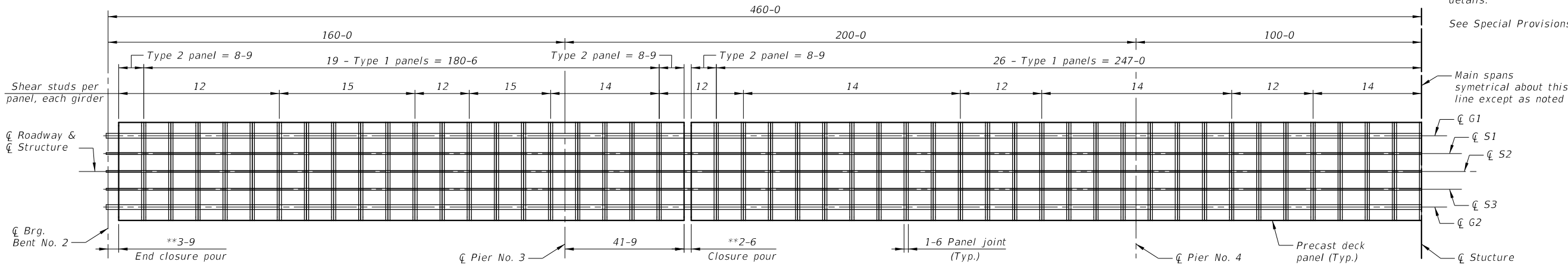
Use Concrete Class Deck with a final design strength f'c = 6000 p.s.i. for the precast deck panels and structural cement grout with a final design strength f'c = 6000 p.s.i. to fill blockouts and girder haunches.

See Sheet No. B15 for shear stud and stringer flange bracing assembly blockout dimensions.

See Sheet No. B18 for precast panel Type 1 details.

See Sheet No. B19 for precast panel Type 2 details.

See Special Provisions for more information.

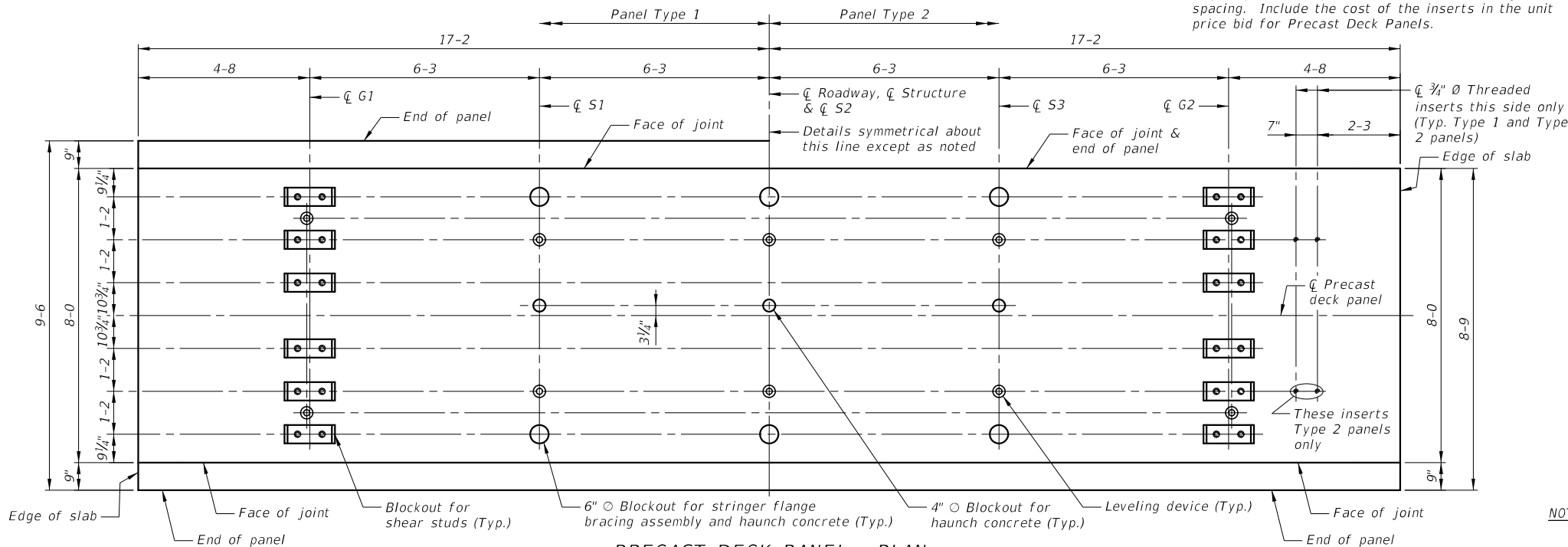


****NOTE:** Closure pour width is estimated and likely will change as a result of as-built geometry and panel fabrication and erection tolerances. See Closure Pour Detail on Sheet No. B19 and End Closure Pour Detail on Sheet No. B20 for additional information.

PRECAST DECK PANEL PLACEMENT PLAN

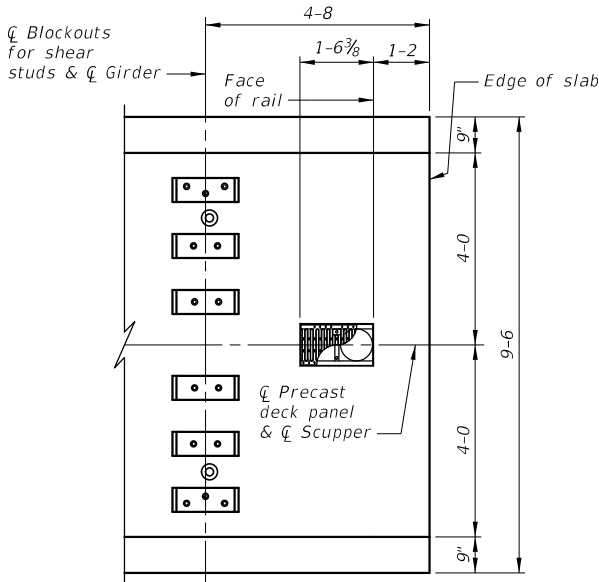
Scale ~ 1" = 20'-0"

NOTE: Threaded insert minimum safe tension working load (capacity) is 2400 pounds. 10'-0 Maximum longitudinal spacing. Include the cost of the inserts in the unit price bid for Precast Deck Panels.



PRECAST DECK PANEL - PLAN

Scale ~ ½" = 1'-0"



NOTE: Type 1 panel shown, Type 2 panel similar. One end of panel shown, other end similar. Total of 2 scuppers per panel where indicated.

PRECAST DECK PANEL SCUPPER LOCATION

Scale ~ ½" = 1'-0"

SHEET NO.
B17

**PRECAST DECK PANEL
PLACEMENT DETAILS**

SCALE: As Noted

PROJECT NAME
CLARK FORK - 1M NW TROUT CREEK

MDT STRUCTURE ID
05271

FEDERAL AID PROJECT
STPB-BH 6-1(142)28

COUNTY
SANDERS

REVISED	REVISED	REVISED	REVISED	REVISED	REVISED	REVISED	REVISED	REVISED	REVISED



UPN NUMBER
8022000

DRAWING NO.
24039

Shift reinforcing steel the minimum amount necessary to clear blockouts.

Reinforcing steel cast in the precast panels is incidental to the unit price bid for Precast Concrete Deck Panel.

Include all costs associated with furnishing and placing concrete and reinforcing steel within the bridge rail curb, excluding C1~#5E bars, in the unit price bid for 42 IN Open Rail - BR.

Include the cost to furnish and install reinforcing steel in the panel joints and closure pours in the unit price bid for Reinforcing Steel.

Use Concrete Class Joint with a final design strength $f'_c = 6000$ p.s.i. for all panel joints.

See Sheets No. B17 and No. B20 for additional details.

See Sheet No. B20 for Bill of Reinforcing Steel.

See Std. Dwg. No. SBR-0R42 for additional bridge rail reinforcing.

SHEET NO.
B18

PRECAST DECK PANEL
DETAILS (SHEET 1 OF 3)

SCALE: As Noted

PROJECT NAME
CLARK FORK - 1M NW TROUT CREEK

MDT STRUCTURE ID
05271

FEDERAL AID PROJECT
STPB-BH 6-1(142)28

COUNTY SANDERS

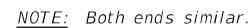
MONTANA MDT★ DEPARTMENT OF TRANSPORTATION  BRIDGE BUREAU		REVISED		
		REVISED		
		REVISED		
		REVISED		
		CHECKED	10-16-19	P.C.J.
		DRAWN	8-6-19	G.H.S.
		DESIGNED	8-6-19	C.C.A.
UPN NUMBER 8022000				
DRAWING NO. 24040				



Scale $\sim \frac{1}{2}'' = 1'-0''$



Scale ~ $\frac{1}{2}" = 1'-0"$
(Looking Ahead on Line)



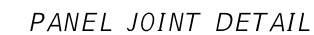
TYPE 1 PANEL END DETAIL

Scale $\sim 1\frac{1}{2}'' = 1'-0''$



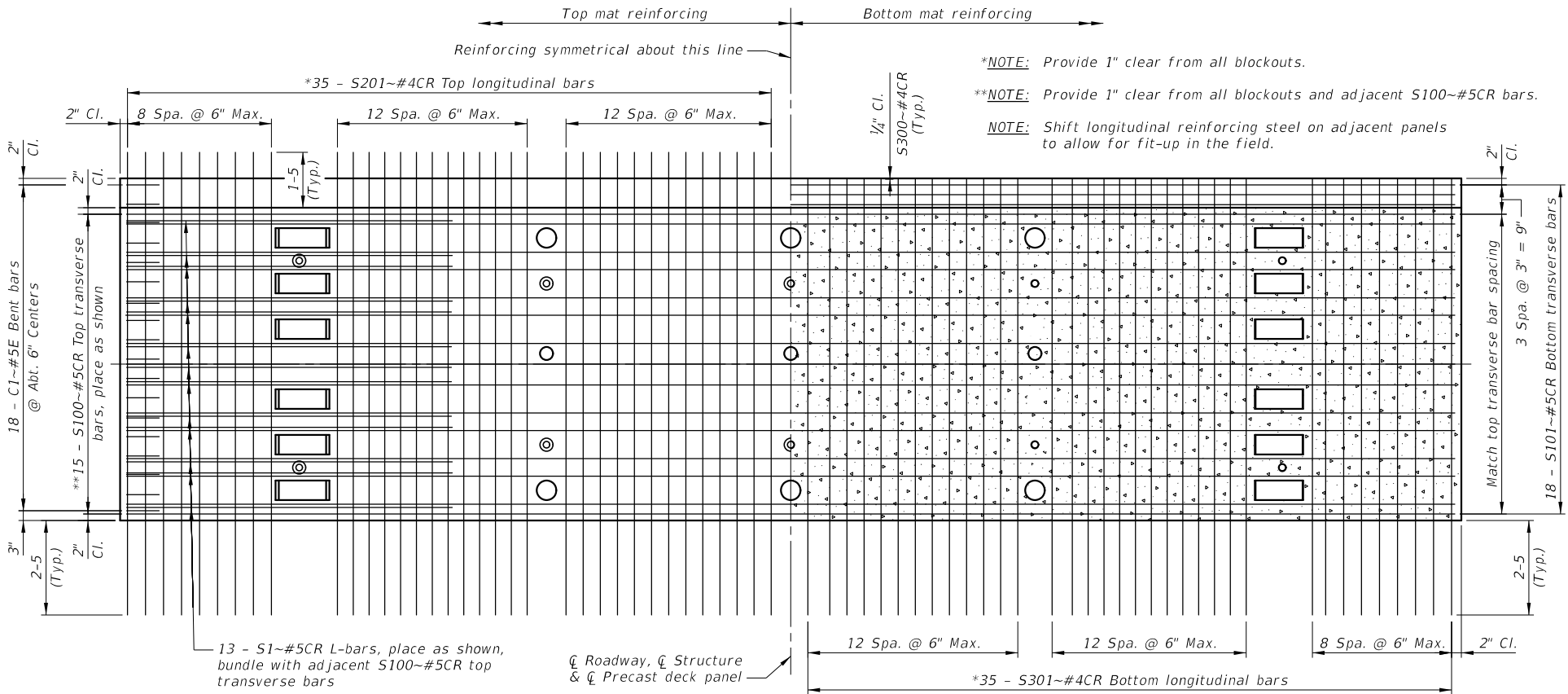
Scale ~ 1½" = 1'-0"

(Additional precast panel reinforcing not shown for clarity.)



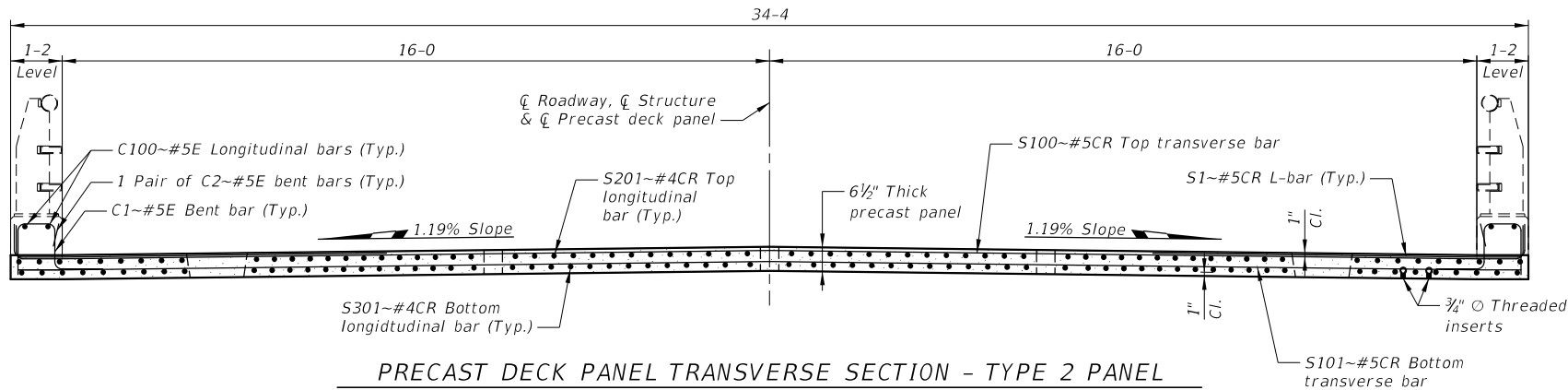
Scale $\sim 1\frac{1}{2}'' = 1'-0''$

PC



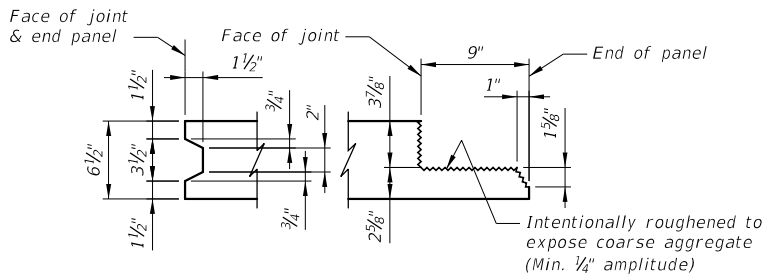
PRECAST DECK PANEL REINFORCING STEEL PLACEMENT PLAN - TYPE 2 PANEL

Scale ~ 1/2" = 1'-0"



PRECAST DECK PANEL TRANSVERSE SECTION - TYPE 2 PANEL

Scale ~ 1/2" = 1'-0"
(Looking Ahead on Line)



TYPE 2 PANEL END DETAIL

Scale ~ 1 1/2" = 1'-0"

NOTES

Shift reinforcing steel the minimum amount necessary to clear blockouts.

Reinforcing steel cast in the precast panels is incidental to the unit price bid for Precast Concrete Deck Panel.

Include all costs associated with furnishing and placing concrete and reinforcing steel within the bridge rail curb, excluding C1~#5E bars, in the unit price bid for 42 IN Open Rail - BR.

Include the cost to furnish and install reinforcing steel in the panel joints and closure pours in the unit price bid for Reinforcing Steel.

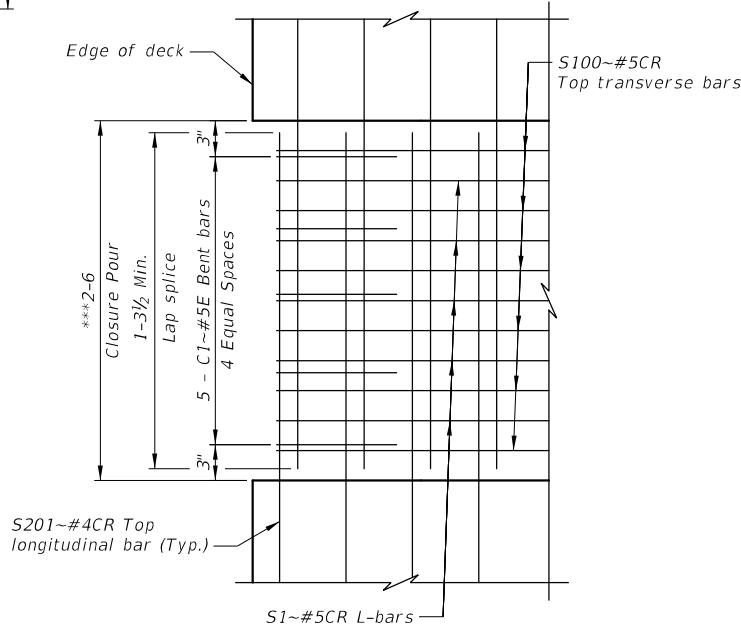
Use Concrete Class Joint with a final design strength f'c = 6000 p.s.i. for all panel joints.

See Sheets No. B17 and No. B20 for additional details.

See Sheet No. B20 for Bill of Reinforcing Steel.

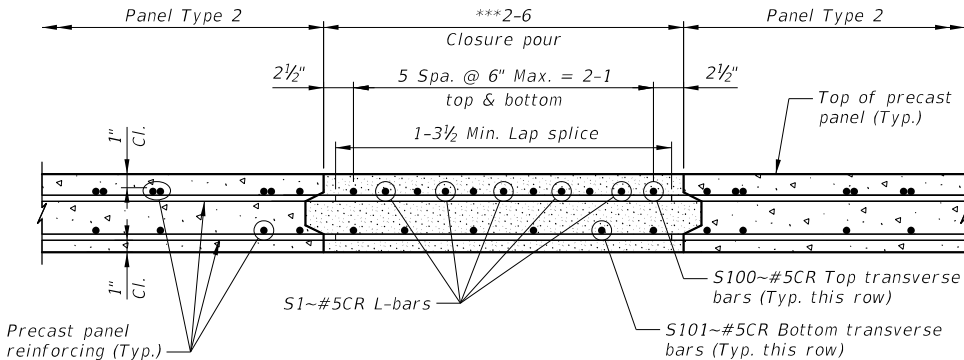
See Std. Dwg. No. SBR-0R42 for additional bridge rail reinforcing.

***NOTE: The 2-6 closure pour width is estimated and likely will change as a result of as-buil geometry and panel fabrication and erection tolerances. Trim S201~#4CR and S301~#4CR longitudinal bars as required to provide 1" minimum clear to adjacent panel. Adjust quantity of S100~#5CR, S101~#5CR, S1~#5CR and C1~#5E bars based on actual closure pour width maintaining a maximum of 6" bar spacing.



CLOSURE POUR PARTIAL PLAN

Scale ~ 1 1/2" = 1'-0"
(Additional precast panel reinforcing not shown for clarity.)



CLOSURE POUR DETAIL

Scale ~ 1 1/2" = 1'-0"

SHEET NO.
B19

PRECAST DECK PANEL
DETAILS (SHEET 2 OF 3)

SCALE: As Noted

PROJECT NAME
CLARK FORK - 1M NW TROUT CREEK

MDT STRUCTURE ID
05271

FEDERAL AID PROJECT
STPB-BH 6-1(142)28

COUNTY
SANDERS

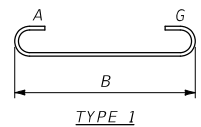
REVISED	REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED
				10-16-19	8-6-19	8-6-19
				P.C.J.	G.H.S.	C.C.A.



UPN NUMBER
8022000
DRAWING NO.
24041

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MAIN SPANS ONLY
(ALL DIMENSIONS ARE OUT TO OUT)



NOTE: SC1~#4CR and SC2~#5CR only present in precast panels with scuppers.



See Sheet No. B16 for modular joint support bracket details.

See Sheet No. B16 for girder end drip protection plate details.

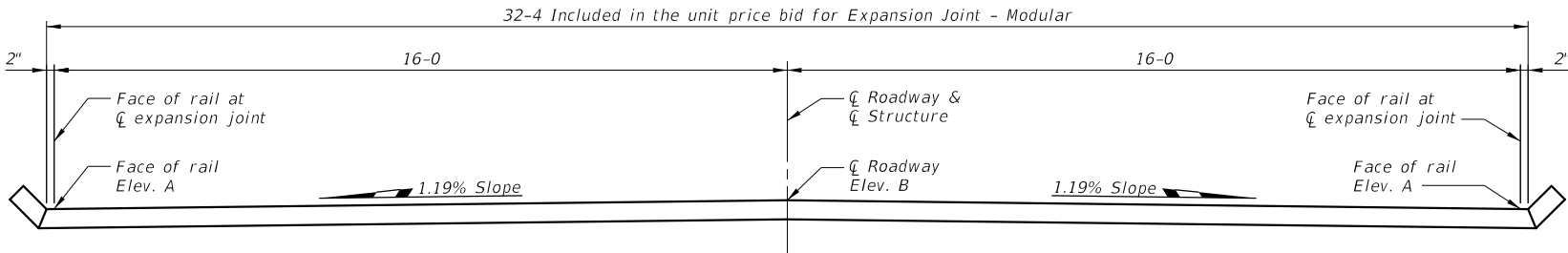
See Sheet No. B16 for stringer end drip protection plate details.

See Sheets No. B17 thru No. B19 for additional details.

See Sheet No. B21 for additional blockout information.

See Std. Dwg. No. SBR-OR42 for additional bridge rail reinforcing.

CDR



MODULAR EXPANSION JOINT ELEVATION

Scale ~ 1/2" = 1'-0"
(Looking Ahead on Line)

EXPANSION JOINT ELEVATIONS

Location	Elev. A	Elev. B
Bent No. 2	2364.21	2364.40
Bent No. 7	2355.86	2356.05

NOTE: Elevations given are finished grade at top of
blockout concrete at approach side of joint.

NOTES

The expansion joint shown is a DS Brown D-240 Steelflex Modular Expansion Joint System. An equivalent continuous modular expansion joint system may be submitted for approval by the Project Manager.

Adjust approach span overlay and closure pour reinforcing steel in blockouts to clear expansion joint anchors and support boxes. Field bending is allowed.

This drawing is a schematic of the expansion joint device. Manufacturer is responsible for the design of the joint device in accordance with AASHTO LRFD Bridge Design Specifications Chapter 14. Design live load is HL-93 with impact.

Provide a joint device capable of maintaining equal distance between all edge beams and center beams. See Special Provisions for additional design and submittal requirements. Submit shop drawings that include expansion devices, method of support during installation, and installation procedures.

Provide continuous rails and seals across the width of the joint, including turn ups. Do not field splice rails or seals unless approved by the Project Manager.

Install expansion joint device such that it conforms to the roadway grades and slope at the joint location and provides a smooth riding surface. Install rails 1/8" below finished grade.

Set the expansion joints to accommodate the expected movements shown in the Table of Expansion Gaps. Adjust joint opening for the structure temperature. The structure temperature is the average member temperature taken at various locations along the structure at the time of setting the final steel edge member and expansion joint. Clearly show joint opening dimensions and corresponding temperatures on shop drawings and installation instructions.

See Sheet No. B5 for minimum embedment detail and additional notes.

See Sheet No. B6 for approach spans Bill of Reinforcing Steel.

See Sheet No. B16 for modular joint support bracket details.

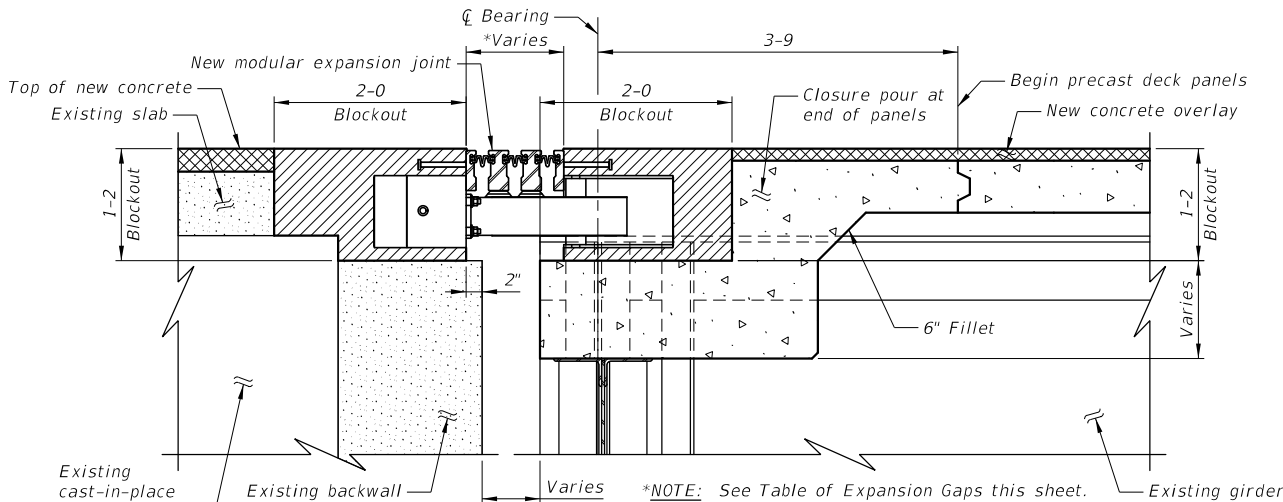
See Sheet No. B16 for girder end drip protection plate details.

See Sheet No. B20 for main spans Bill of Reinforcing Steel.

TABLE OF EXPANSION GAPS

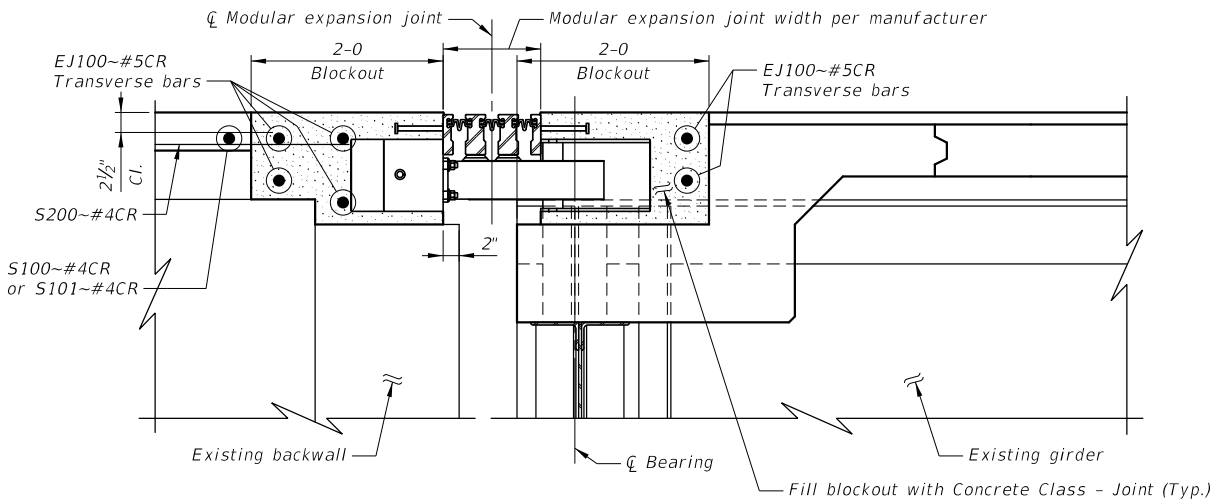
	TEMPERATURE (°F)						Adjustment for 1/8" movement (°F)	Total Movement (In.)
	-40	0	38	60	90	115		
Bents No. 2 & No. 7	15 1/16"	13 3/8"	12 3/4"	11 1/2"	10 3/8"	9 1/2"	3.484	5 9/16"

NOTE: The movements shown are not factored. They are the actual anticipated movements for temperatures shown. The expansion gaps shown are for a DS Brown D-240 Steelflex Modular Expansion Joint. Gaps will need to be revised for alternate modular expansion joint manufacturers.



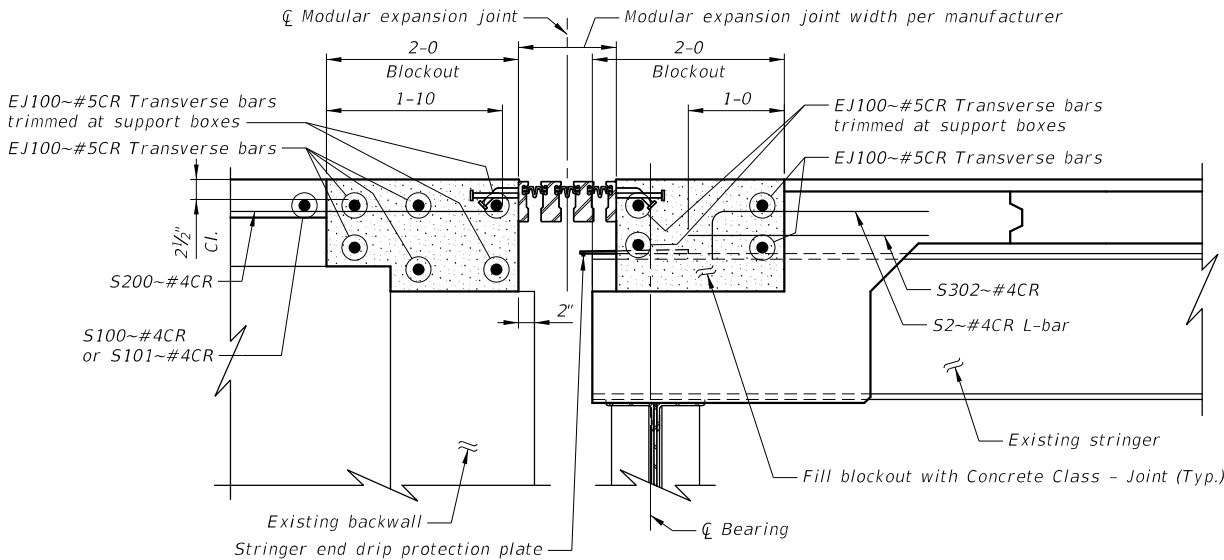
EXPANSION JOINT DETAIL

Scale ~ 1" = 1'-0"
Girder end drip protection plate not shown for clarity.



EXPANSION JOINT AT SUPPORT BOXES

Scale ~ 1" = 1'-0"
Girder end drip protection plate not shown for clarity.



EXPANSION JOINT BETWEEN SUPPORT BOXES

Scale ~ 1" = 1'-0"

SHEET NO.
B21

EXPANSION JOINT DETAILS
(SHEET 1 OF 2)

SCALE: As Noted

PROJECT NAME
CLARK FORK - 1M NW TROUT CREEK

MDT STRUCTURE ID
05271

FEDERAL AID PROJECT
STPB-BH 6-1(142)28

COUNTY
SANDERS

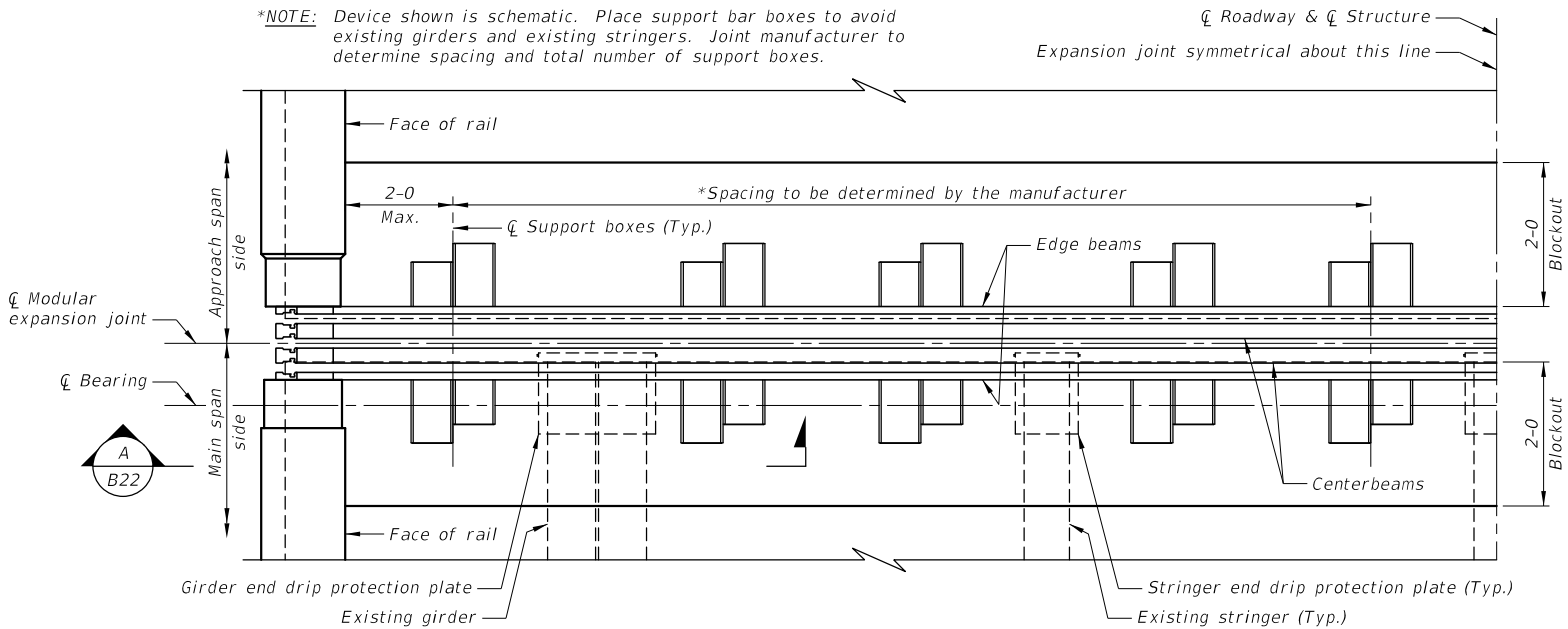
REVISED	REVISED	REVISED	REVISED	CHECKED	DRAWN	DESIGNED
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				P.C.J.	G.H.S.	J.C.M.



UPN NUMBER
8022000

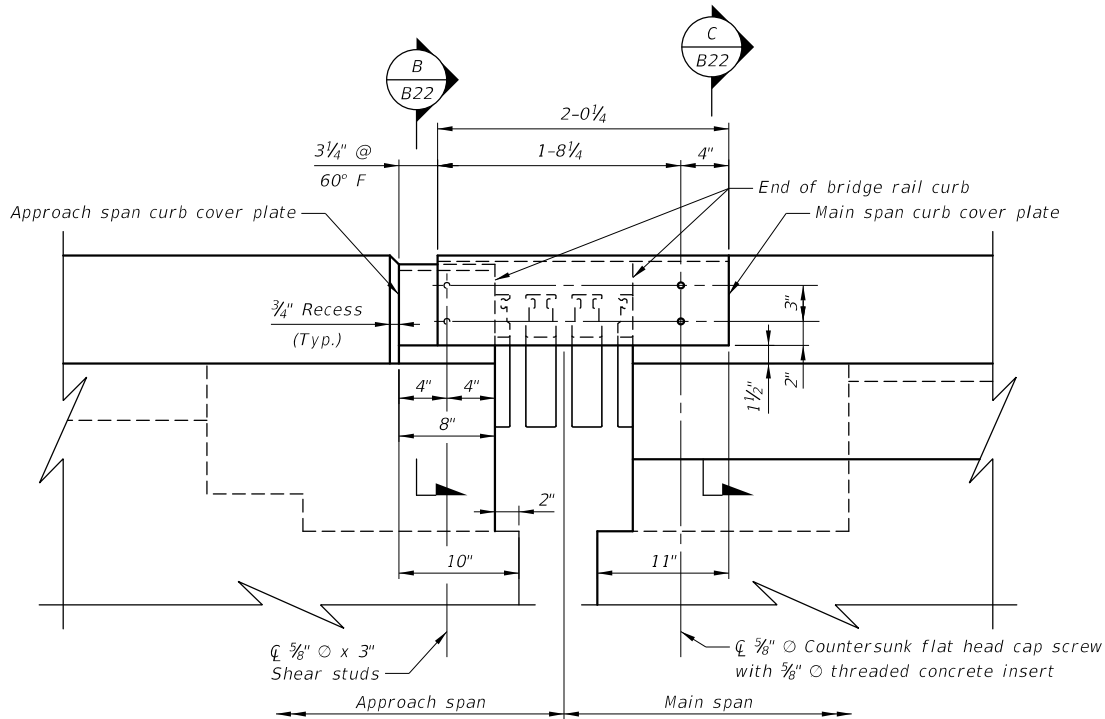
DRAWING NO.
24043

2024



MODULAR EXPANSION JOINT - PARTIAL PLAN

Scale ~ 3/4" = 1'-0"
(Bridge rail curb expansion joint cover and anchor studs not shown for clarity, see details this sheet)



BRIDGE RAIL CURB EXPANSION JOINT COVER

Scale ~ 1 1/2" = 1'-0"

NOTES

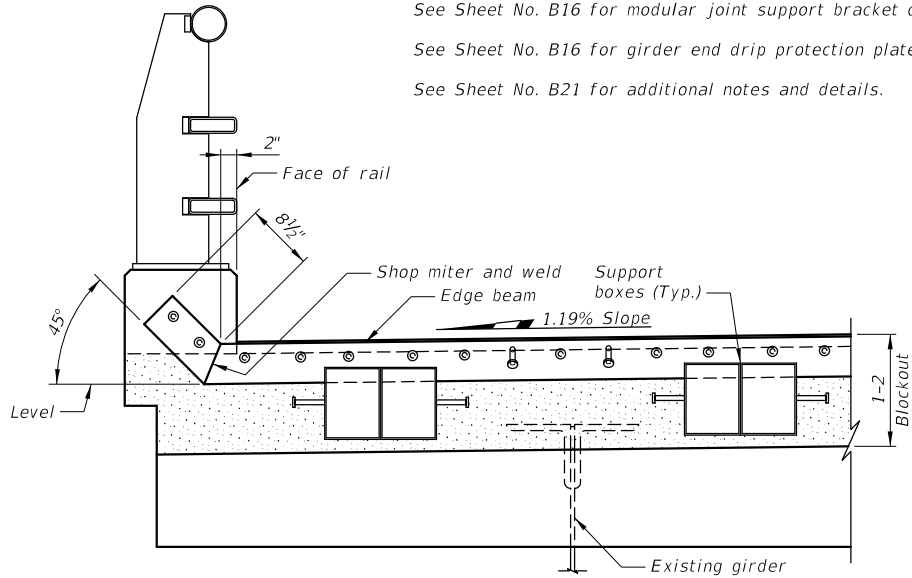
Use steel plates meeting AASHTO M270 Grade 36 or Grade 50.

Galvanize all steel plates in accordance with the Standard Specifications.

See Sheet No. B16 for modular joint support bracket details.

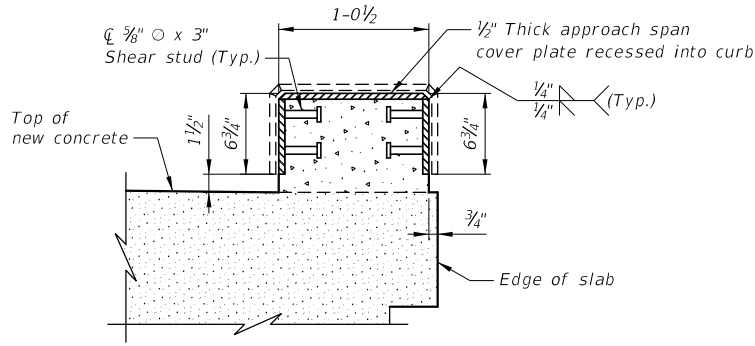
See Sheet No. B16 for girder end drip protection plate details.

See Sheet No. B21 for additional notes and details.



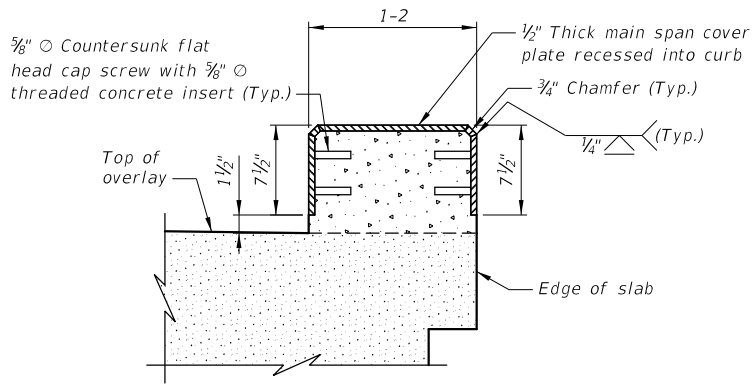
SECTION A

Scale ~ 1" = 1'-0"



SECTION B

Scale ~ 1 1/2" = 1'-0"



SECTION C

Scale ~ 1 1/2" = 1'-0"

SHEET NO.
B22

EXPANSION JOINT DETAILS
(SHEET 2 OF 2)

SCALE: As Noted

PROJECT NAME
CLARK FORK - 1M NW TROUT CREEK

MDT STRUCTURE ID
05271

FEDERAL AID PROJECT
STPB-BH 6-1(142)28

COUNTY
SANDERS

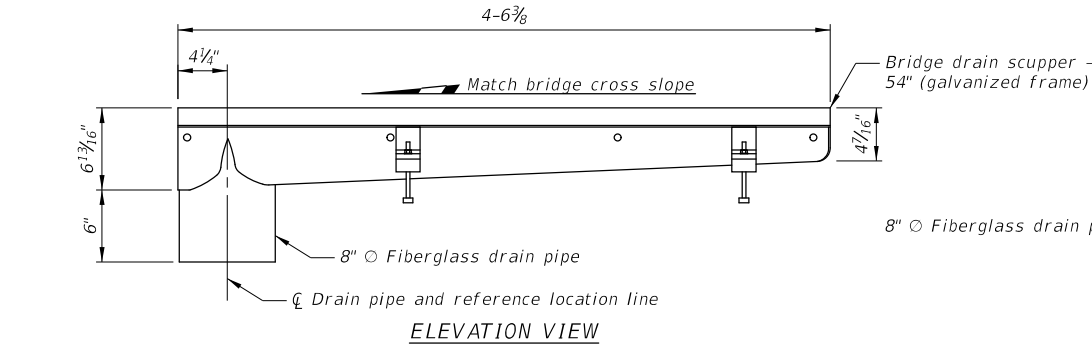
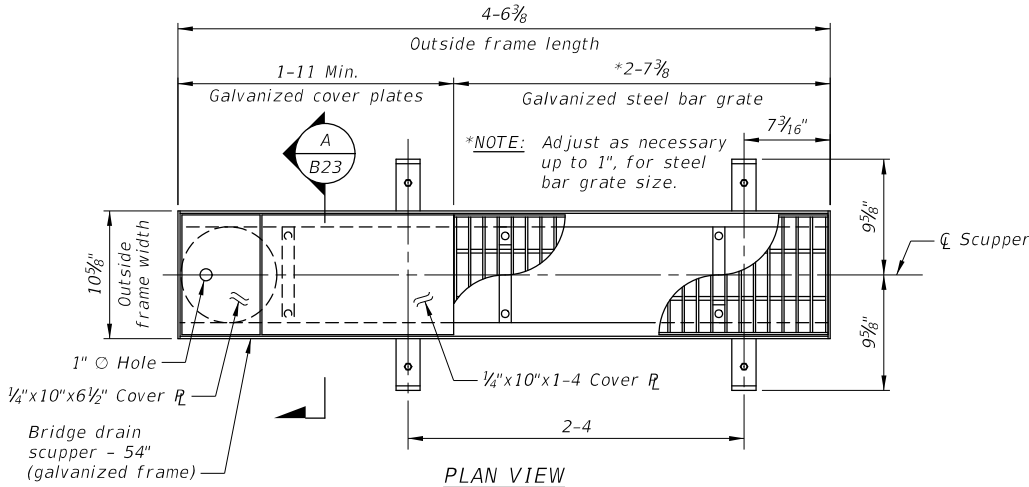
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11-12-19	6-27-19	6-27-19	6-27-19	6-27-19	6-27-19
P.C.J.	G.H.S.	J.C.M.	J.C.M.	J.C.M.	J.C.M.



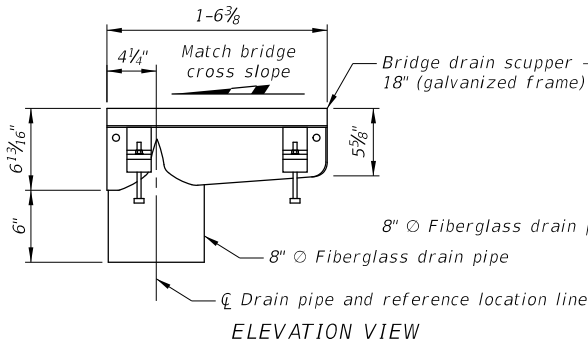
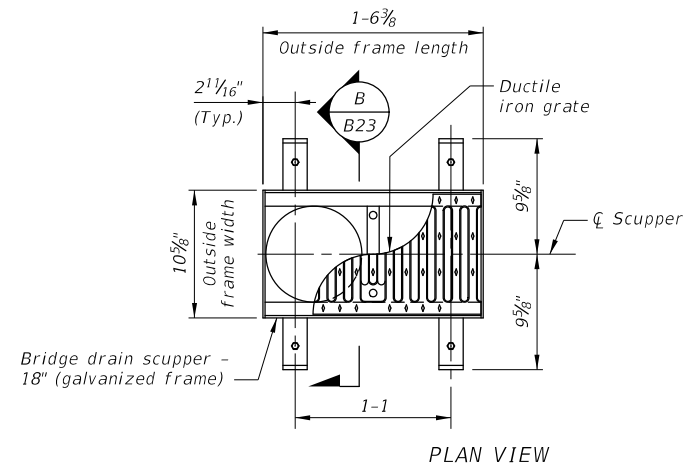
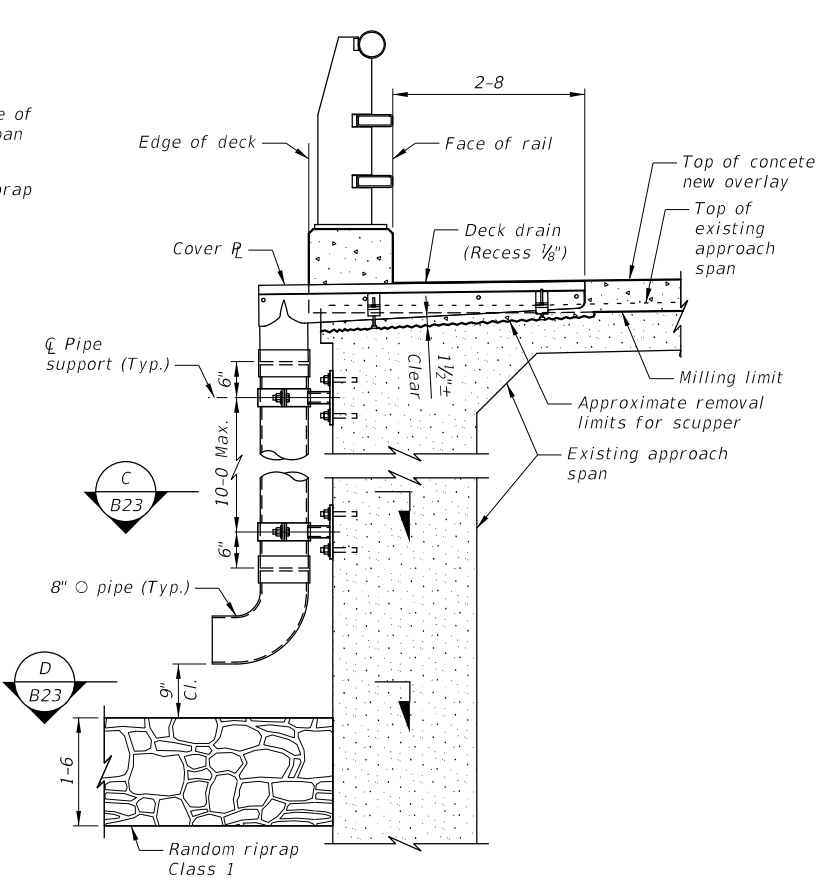
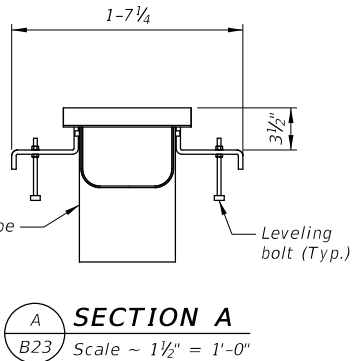
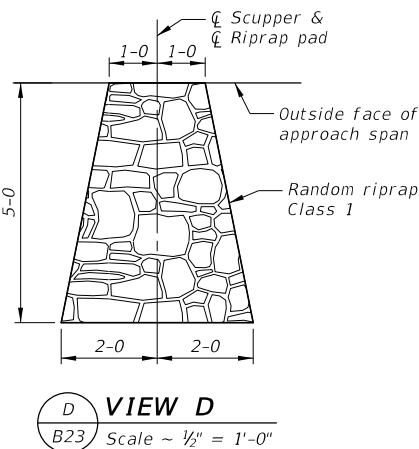
UPN NUMBER
8022000

DRAWING NO.
24044

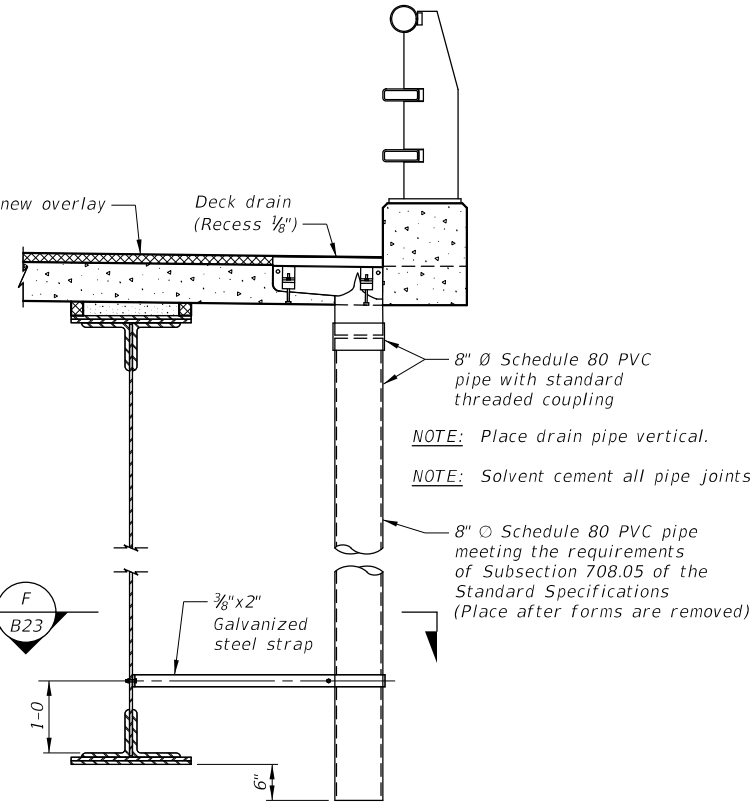
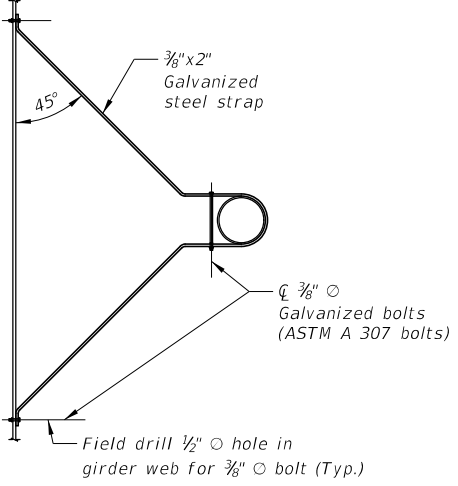
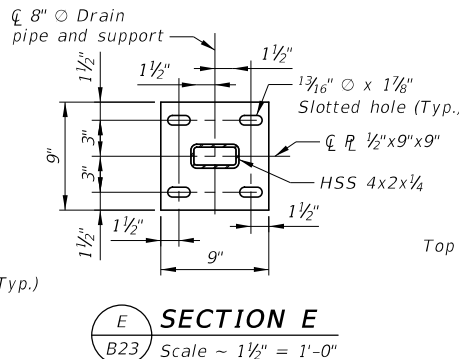
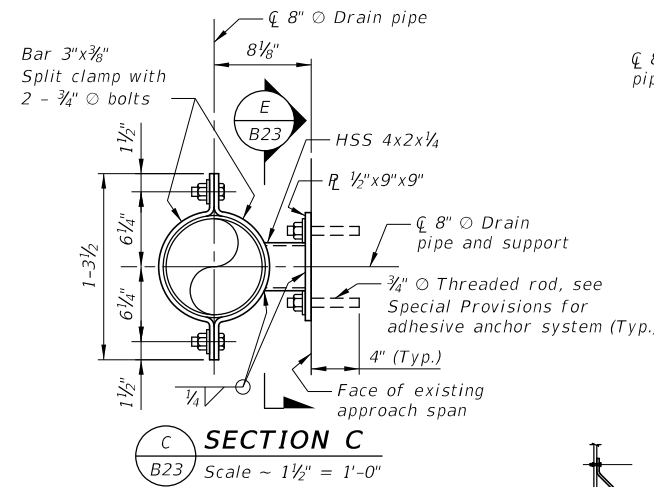
CD



APPROACH SPAN SCUPPER
Scale ~ 1 1/2" = 1'-0"



PRECAST PANEL SCUPPER
Scale ~ 1 1/2" = 1'-0"



NOTES

Use AASHTO M270 Grade 36 or Grade 50 for pipe supports, steel straps and steel cover plates.

Use steel tubing per Standard Specifications.

Use ASTM A307 for all bolts and threaded rods. Use heavy hex nuts and hardened washers per the Standard Specifications.

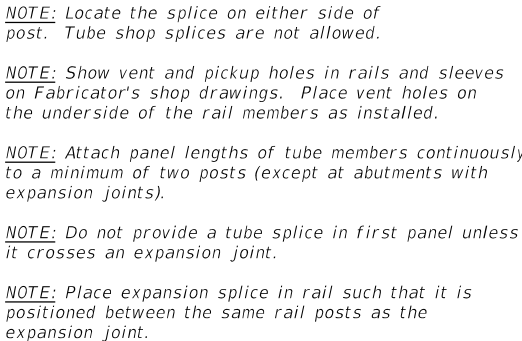
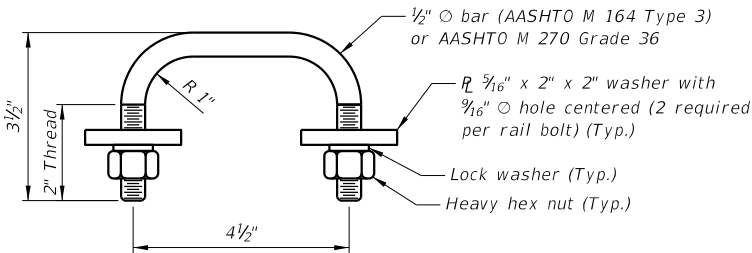
Galvanize cover plates and pipe supports per the Standard Specifications.

ACO Infrastructure 18" and 54" Scuppers with galvanized frames shown. Similar alternate scuppers and grates may be submitted for approval. Match geometry of the scupper and provide a grate with at least 100 in² of intake area for approach span scupper and 58 in² for precast panel scupper.

Include all costs to furnish and install approach span scuppers, precast panel scuppers, PVC pipes, pipe supports and riprap in the unit bid price for Scupper.

Provide steel spacers attached to steel cover plates as necessary to locate top of steel plate flush with top of scupper.

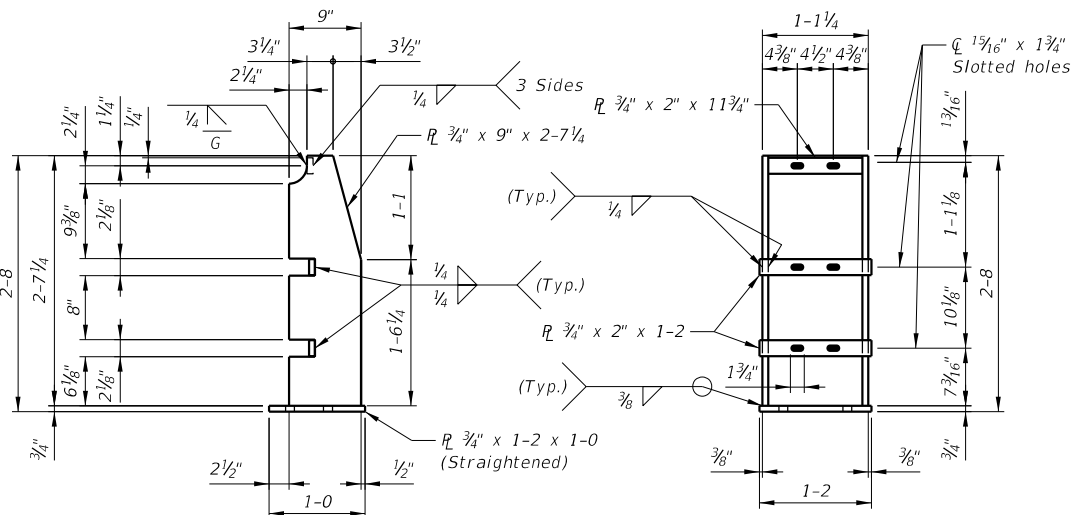
SHEET NO. B23		DRAINAGE DETAILS	
PROJECT NAME CLARK FORK - 1M NW TROUT CREEK		MDT STRUCTURE ID 05271	
FEDERAL AID PROJECT STPB-BH 6-1(142)28		COUNTY SANDERS	
REVISED	REVISED	REVISED	REVISED
REVISED	REVISED	REVISED	REVISED
REVISED	REVISED	REVISED	REVISED
CHECKED	10-18-19	J.C.M.	
DRAWN	8-20-19	G.H.S.	
DESIGNED	8-20-19	C.C.A.	
UPN NUMBER 8022000		DRAWING NO. 24045	

[illegible]

RAIL BOLT DETAIL

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.

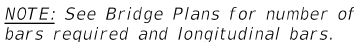
NOTE: Use fiber reinforced pads meeting the requirements of subsection 711.16 of the Standard Specifications. Size and position the pads such that not less than $\frac{1}{2}$ " of the pad protrudes on all sides of the base plate. Punch slotted holes in pads to match base plate.



Technical drawing of a rectangular plate with the following specifications:

- Overall Dimensions:** 6½" wide by 11" high.
- Internal Features:**
 - A central rectangular hole measuring 4¾" wide by 5" high.
 - Four corner holes, each with a diameter of 1⅝" (labeled as "1⅝" O Hole (Typ.)").
 - The distance from the top edge to the center of the corner holes is 7/8".
 - The distance from the bottom edge to the center of the corner holes is 5½".
 - The distance from the left edge to the center of the corner holes is 3⅜".
 - The distance from the right edge to the center of the corner holes is 7/8".
 - The radius of the internal hole is ¾" (labeled as "¾" Radius (Typ.)").
- Material and Finish:** R ¼" x 6½" x 11"

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



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"		

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-OR42-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.

STANDARD BRIDGE RAIL
TYPE OPEN RAIL 42"

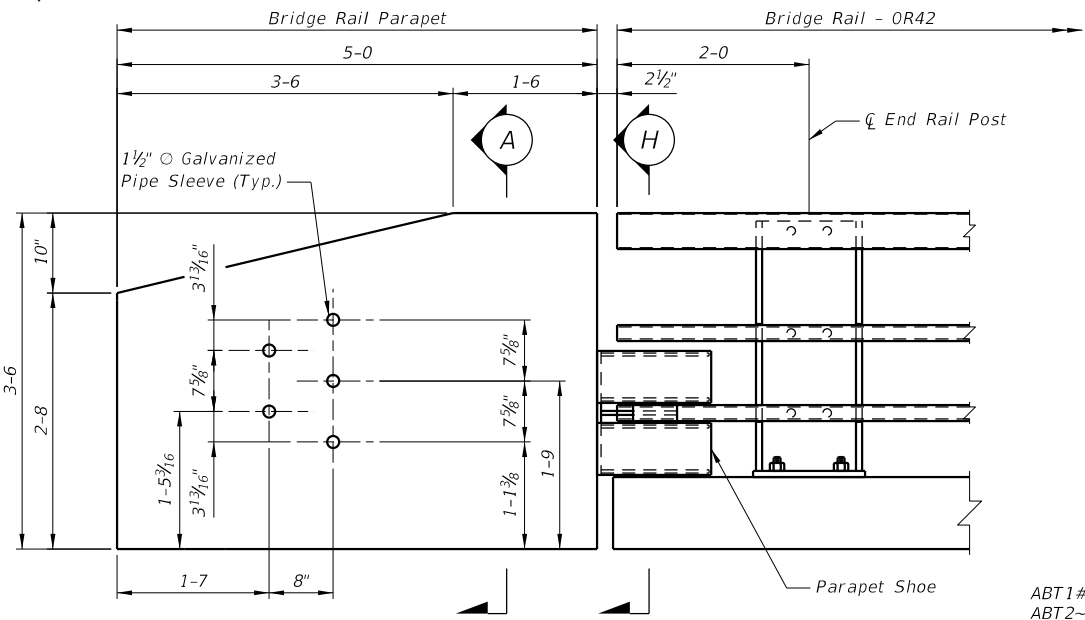
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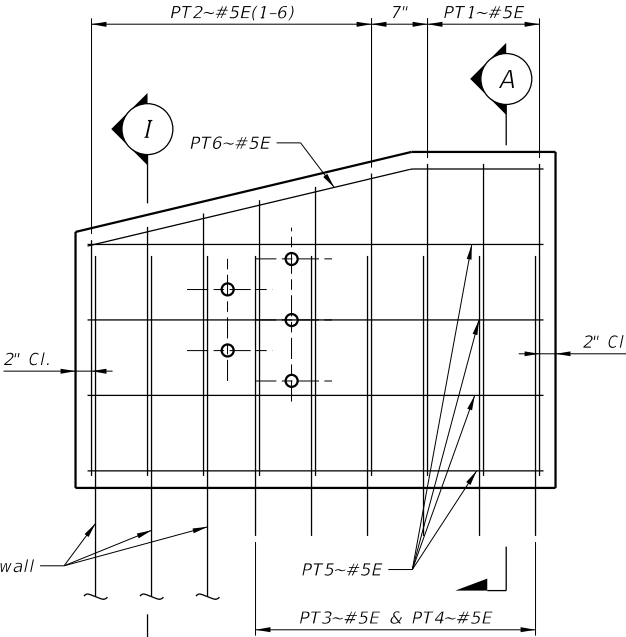
REVISED				
REVISED				
REVISED				
REVISED				
APPROVED	9-17-19	N.A.H.		
CHECKED	2-7-19	L.M.M.		
DRAWN	3-14-18	T.J.B.		
DATES	TIME\$	SELF	FACTOR	

DRAWING NO.
SBR-0R42

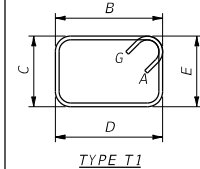
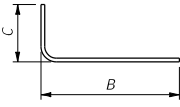
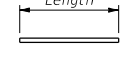
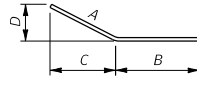
NOTE: Reinforcing steel shown is for a typical stub abutment. For turnback wingwalls substitute ABT1~#5E bars for PT3~#5E and ABT2~#5E bars for PT4~#5E bars shown for the parapet.



INSIDE ELEVATION OF PARAPET



PARAPET REINFORCING ELEVATION

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	5 1/2"	11"	3-3	11"	3-3	5 1/2"	
PT2-1	#5E	T1	7-8	5 1/2"	11"	2-5 1/2	11"	2-5 1/2	5 1/2"	
PT2-2	#5E	T1	7-11	5 1/2"	11"	2-7	11"	2-7	5 1/2"	
PT2-3	#5E	T1	8-2 1/2	5 1/2"	11"	2-8 3/4	11"	2-8 3/4	5 1/2"	
PT2-4	#5E	T1	8-6	5 1/2"	11"	2-10 1/2	11"	2-10 1/2	5 1/2"	
PT2-5	#5E	T1	8-9	5 1/2"	11"	3-0	11"	3-0	5 1/2"	
PT2-6	#5E	T1	9-0 1/2	5 1/2"	11"	3-1 3/4	11"	3-1 3/4	5 1/2"	
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	3-5 1/2	1-4 1/2	3-4 1/2	9 3/4			
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-OR42 for additional rail details.

REINFORCING STEEL: All parapet reinforcing steel is epoxy coated.

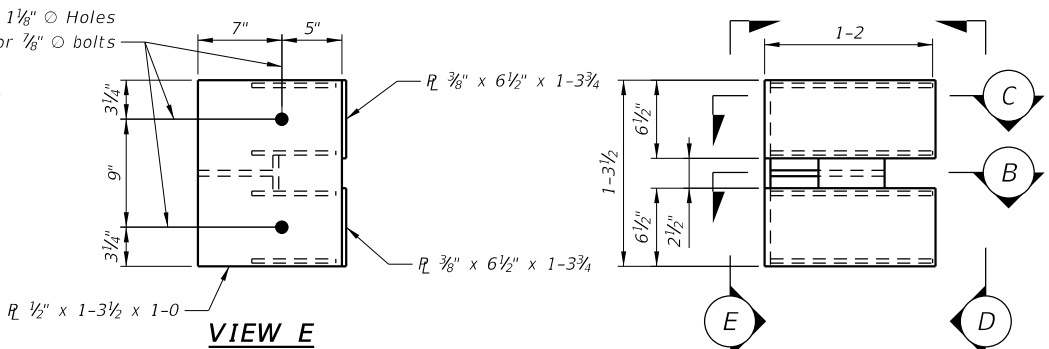
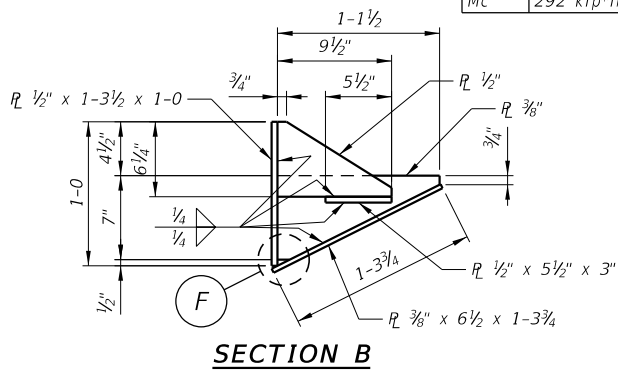
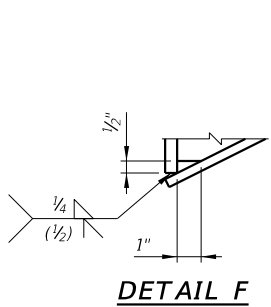
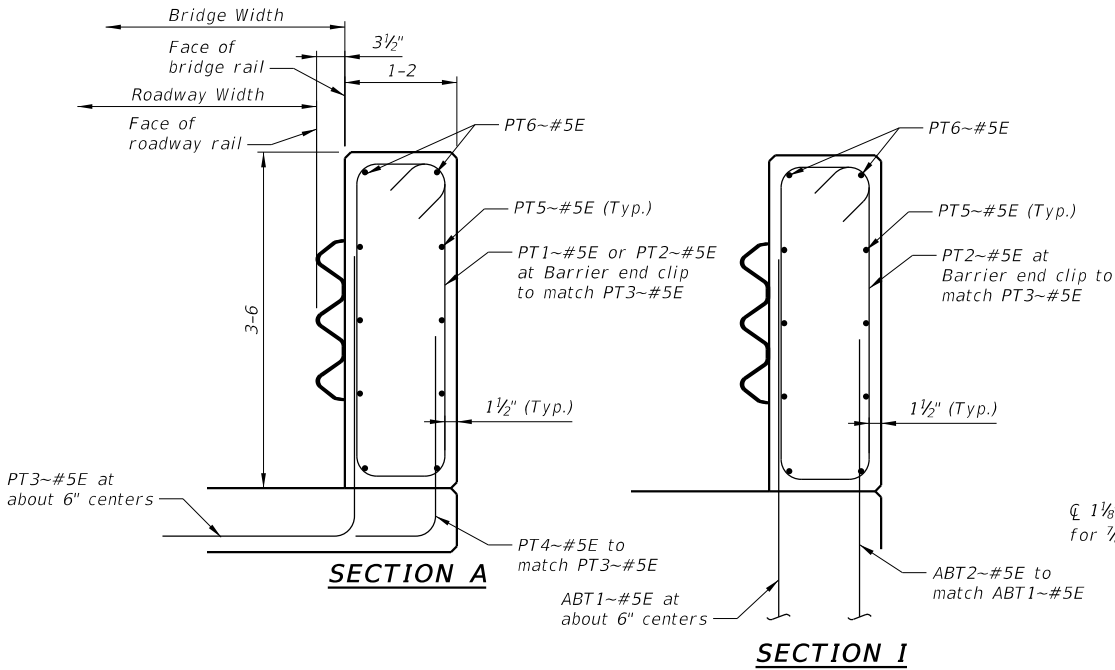
PAYMENT: Include all costs associated with furnishing and placing reinforcing steel in the parapet in the unit price bid for Reinforcing Steel - Epoxy Coated.

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.

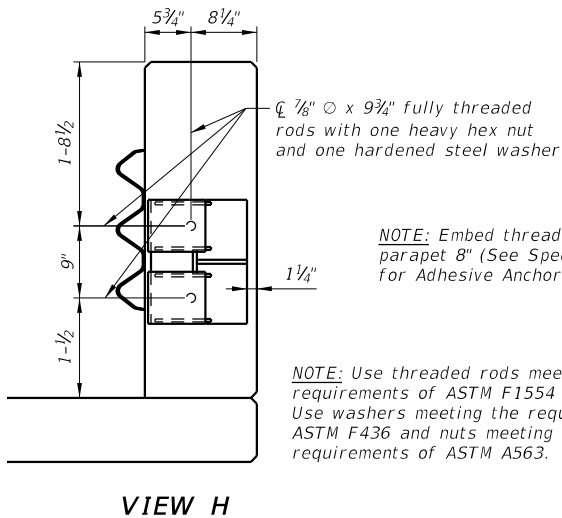
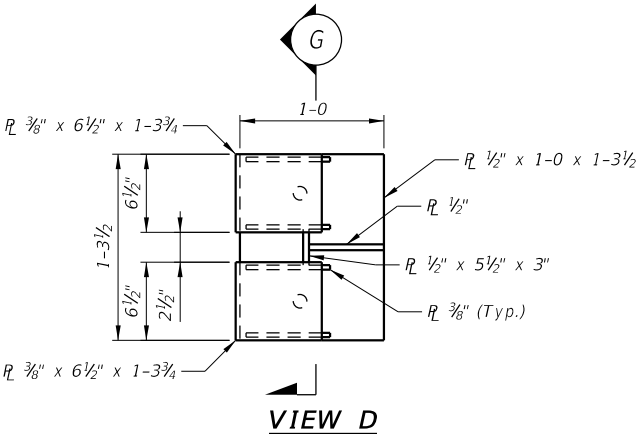
Use structural steel for the shoes meeting the requirements of AASHTO M270 Grade 50. Include all costs associated with furnishing and installing parapet shoes in the unit price bid for 42 IN Open Rail Parapet - BR. Estimated weight = 78.7 lb / per shoe

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 these details.

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

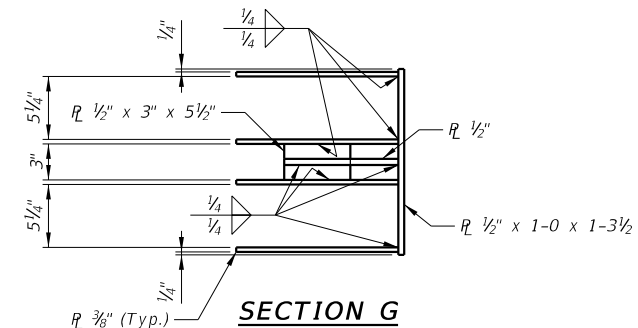
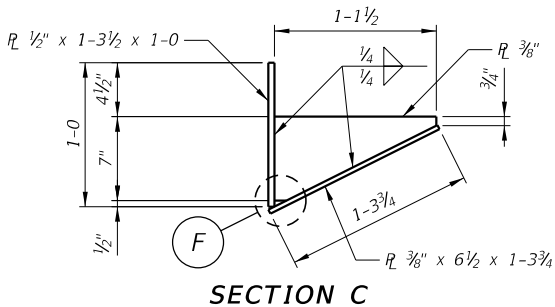
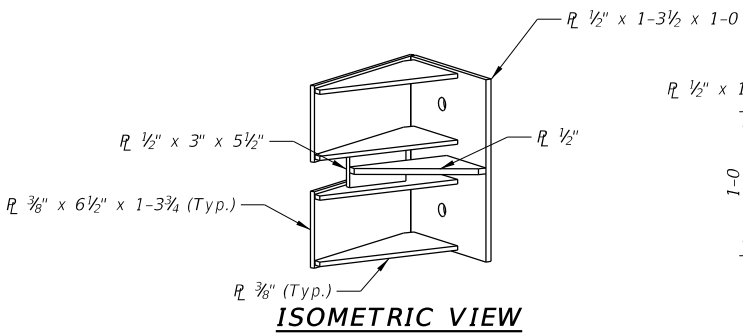


PARAPET SHOE ELEVATION



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.

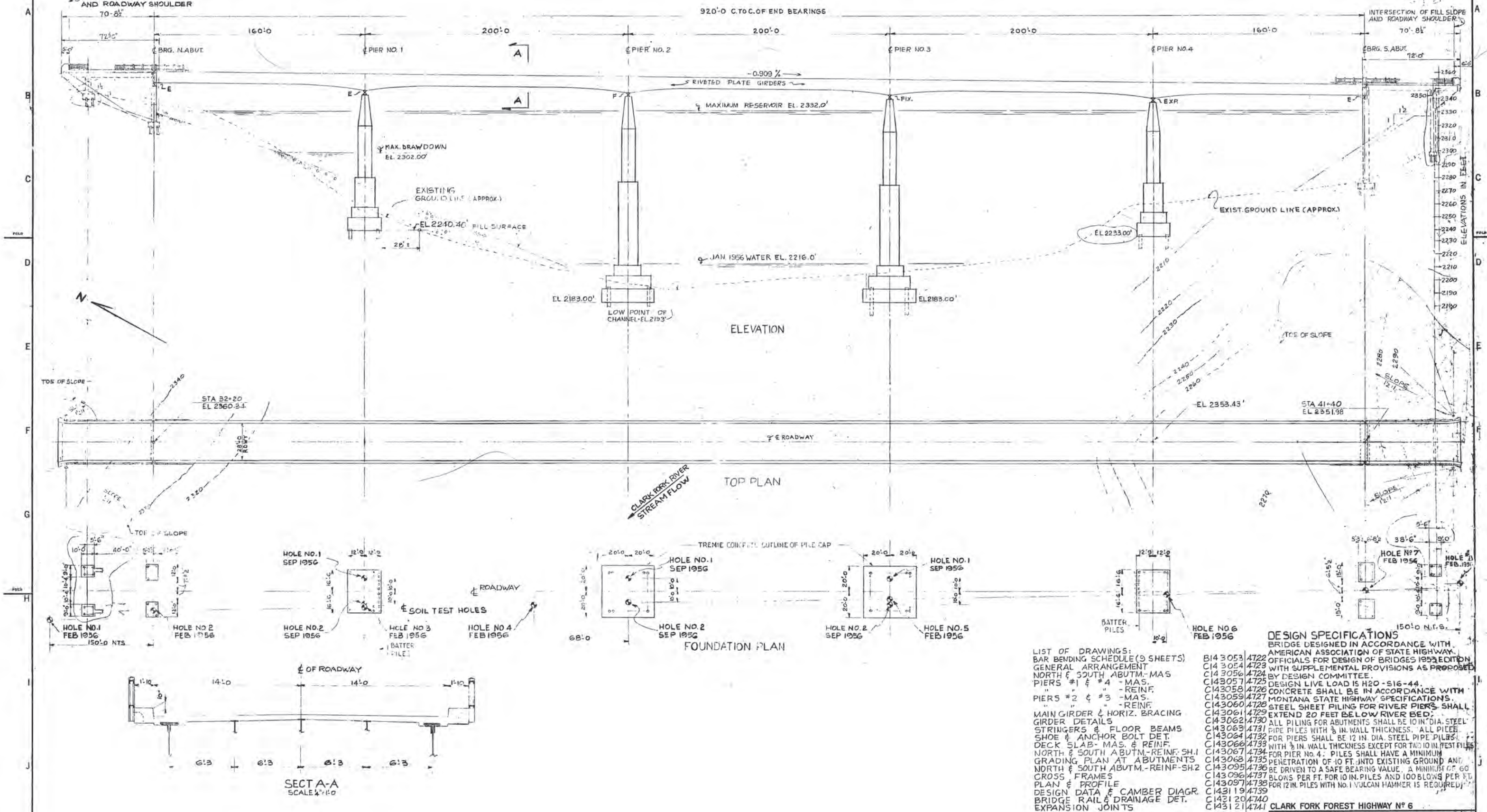


STANDARD BRIDGE RAIL
TYPE OPEN RAIL 42"
PARAPET



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

DRAWING NO.
SBR-OR42-PP



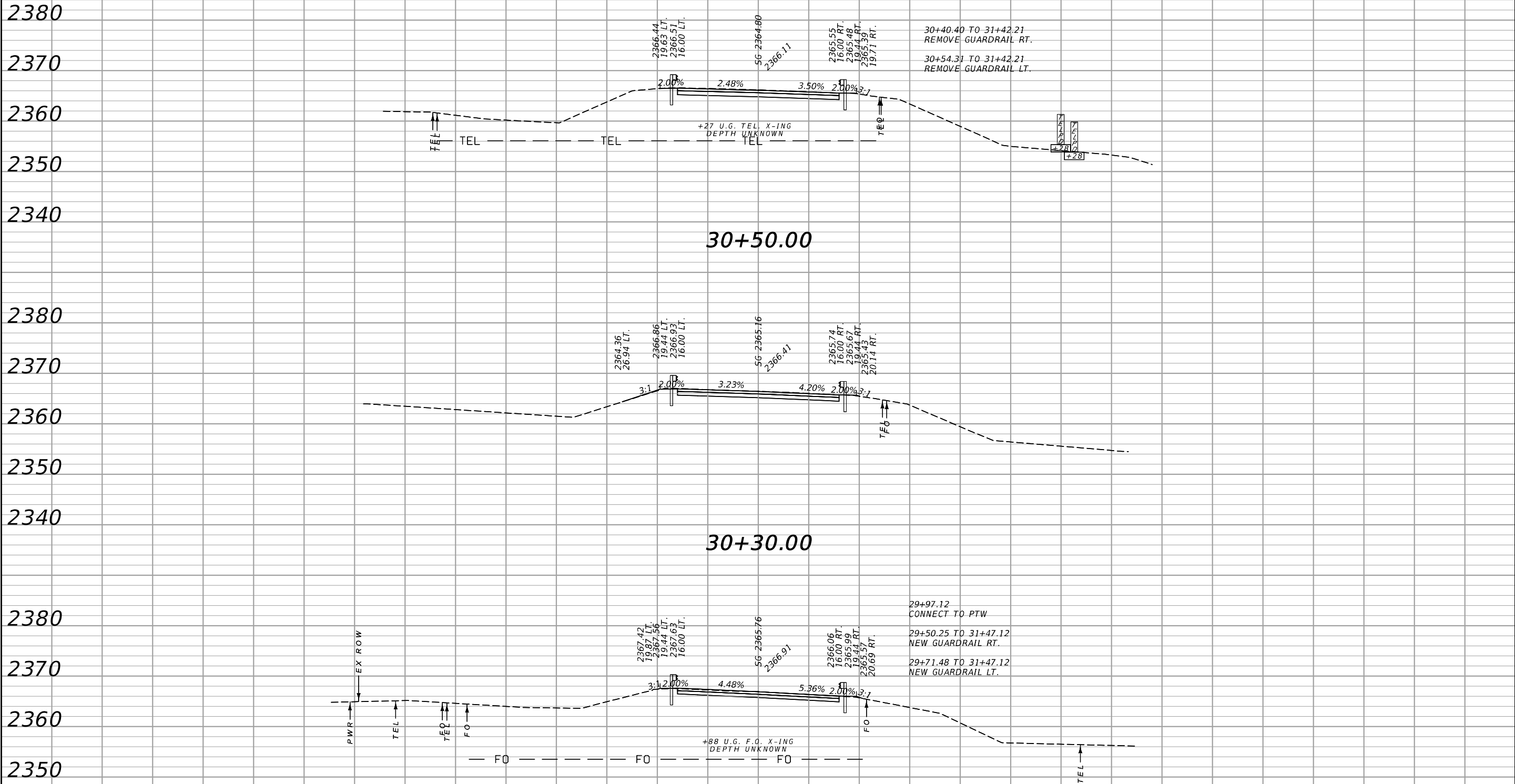
DESIGN SPECIFICATIONS
BRIDGE DESIGNED IN ACCORDANCE WITH AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS FOR DESIGN OF BRIDGES 1955 EDITION WITH SUPPLEMENTAL PROVISIONS AS PROPOSED BY DESIGN COMMITTEE.
DESIGN LIVE LOAD IS H20-S16-44.
CONCRETE SHALL BE IN ACCORDANCE WITH MONTANA STATE HIGHWAY SPECIFICATIONS.
STEEL SHEET PILING FOR RIVER PIERS SHALL EXTEND 20 FEET BELOW RIVER BED.
ALL PILING FOR ABUTMENTS SHALL BE 10 IN. DIA. STEEL PIPE PILES WITH 3/8 IN. WALL THICKNESS. ALL PILES FOR PIERS SHALL BE 12 IN. DIA. STEEL PIPE PILES WITH 3/8 IN. WALL THICKNESS EXCEPT FOR TWO 10 IN. TEST PILES FOR PIER NO. 4. PILES SHALL HAVE A MINIMUM PENETRATION OF 10 FT. INTO EXISTING GROUND AND BE DRIVEN TO A SAFE BEARING VALUE. A MINIMUM OF 60 BLOWS PER FT. FOR 10 IN. PILES AND 100 BLOWS PER FT. FOR 12 IN. PILES WITH NO. 1 VULCAN HAMMER IS REQUIRED.
CLARK FORK FOREST HIGHWAY NO. 6

LIST OF DRAWINGS:
BAR BENDING SCHEDULE (9 SHEETS) B14 3053 4722
GENERAL ARRANGEMENT C14 3054 4723
NORTH & SOUTH ABUTM.-MAS. C14 3056 4724
PIERS #1 & #4 -MAS. C143057 4725
" " -REINF. C143058 4726
PIERS #2 & #3 -MAS. C143059 4727
" " -REINF. C143060 4728
MAIN GIRDER & HORIZ. BRACING C143061 4729
GIRDER DETAILS C143062 4730
STRINGERS & FLOOR BEAMS C143063 4731
SHOE & ANCHOR BOLT DET. C143064 4732
DECK SLAB - MAS. & REINF. C143066 4733
NORTH & SOUTH ABUTM.-REINF. SH.1 C143067 4734
GRADING PLAN AT ABUTMENTS C143068 4735
NORTH & SOUTH ABUTM.-REINF. SH.2 C143095 4736
CROSS FRAMES C143096 4737
PLAN & PROFILE C143097 4738
DESIGN DATA & CAMBER DIAGR. C143119 4739
BRIDGE RAIL & DRAINAGE DET. C143120 4740
EXPANSION JOINTS C143121 4741

NOTE
PIPE PILING SHALL BE CLEANED OUT AFTER DRIVING, INSPECTED AND FILLED WITH CONCRETE CLASS AD

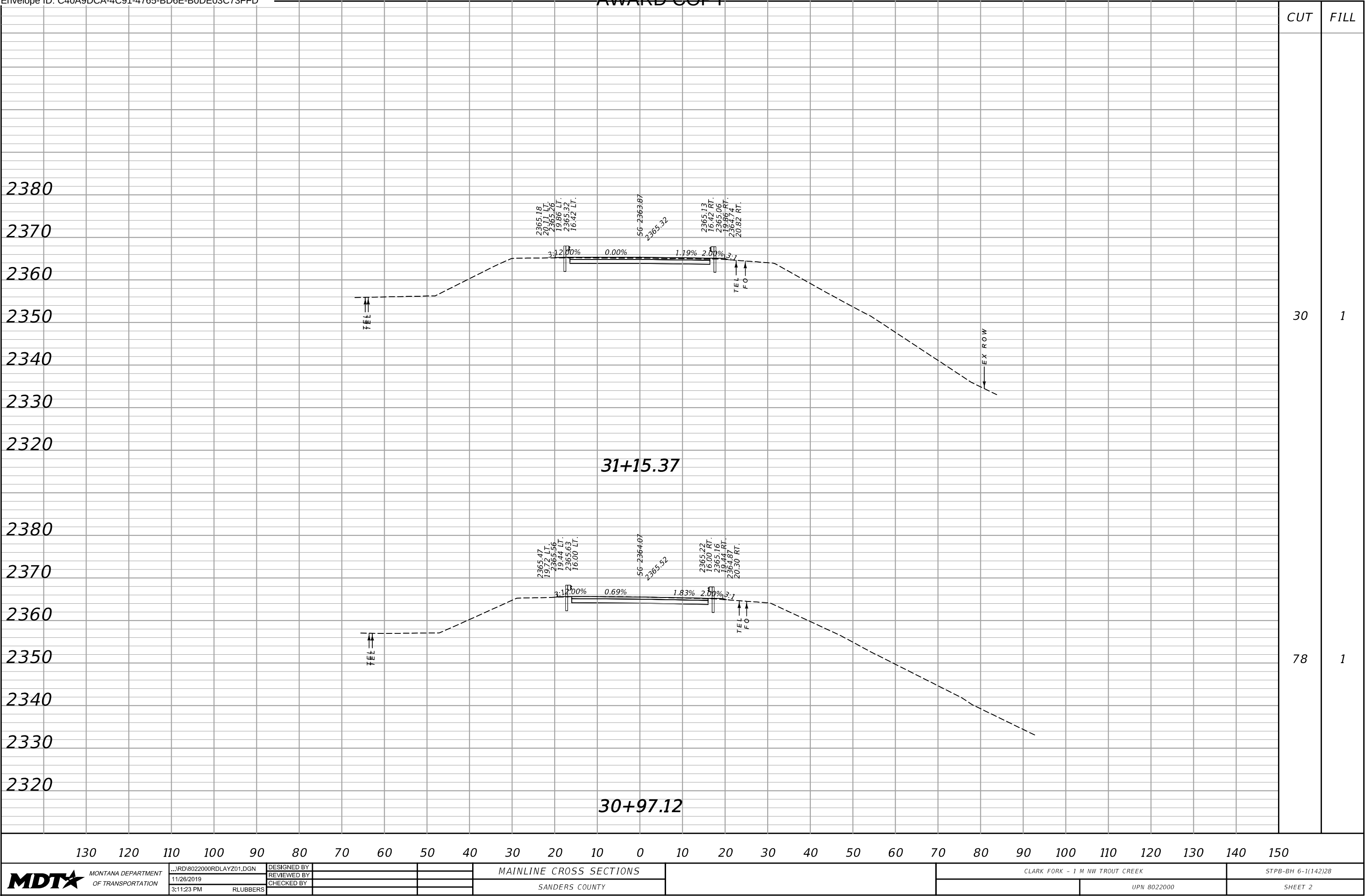
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1-12-59		REVISED FDN. AS FIELD BUILT		G.C. G.C.		S. S.		G.C. G.C.		S. S.		1-11-57		REV. & ADDED NOTES, REV. DIM. AT SOUTH ABUT. FDN. ADDED DIM. AT ABUT.		G.C. M.B.F.		S. S.		S. S.	

202



CUT	FILL
32	0
47	1
0	0

202



22

2370

2360

2350

2340

2330

2320

2380

2370

2360

2350

2340

2330

2320

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CUT

FILL

24

1

22

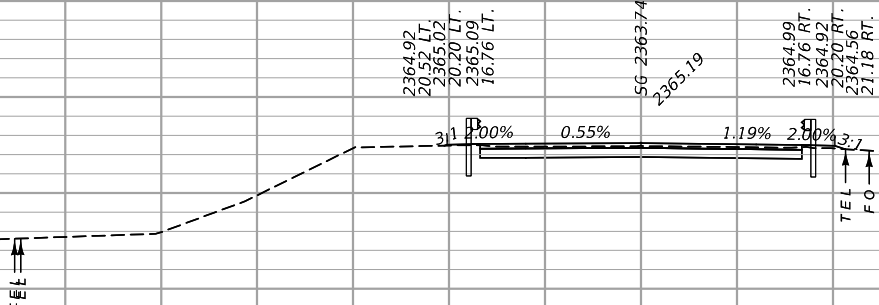
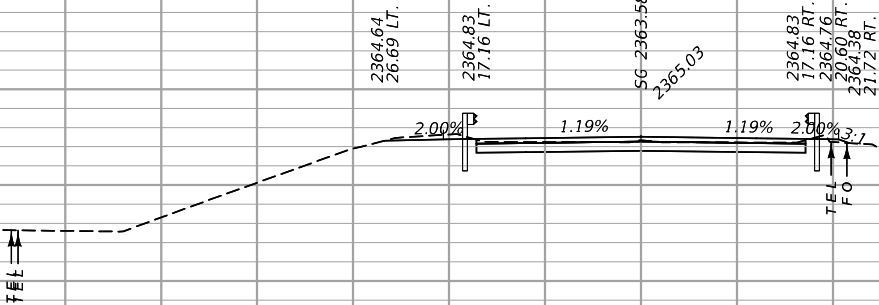
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31+47.12

31+30.00

31+47.12
BEGIN BRIDGE

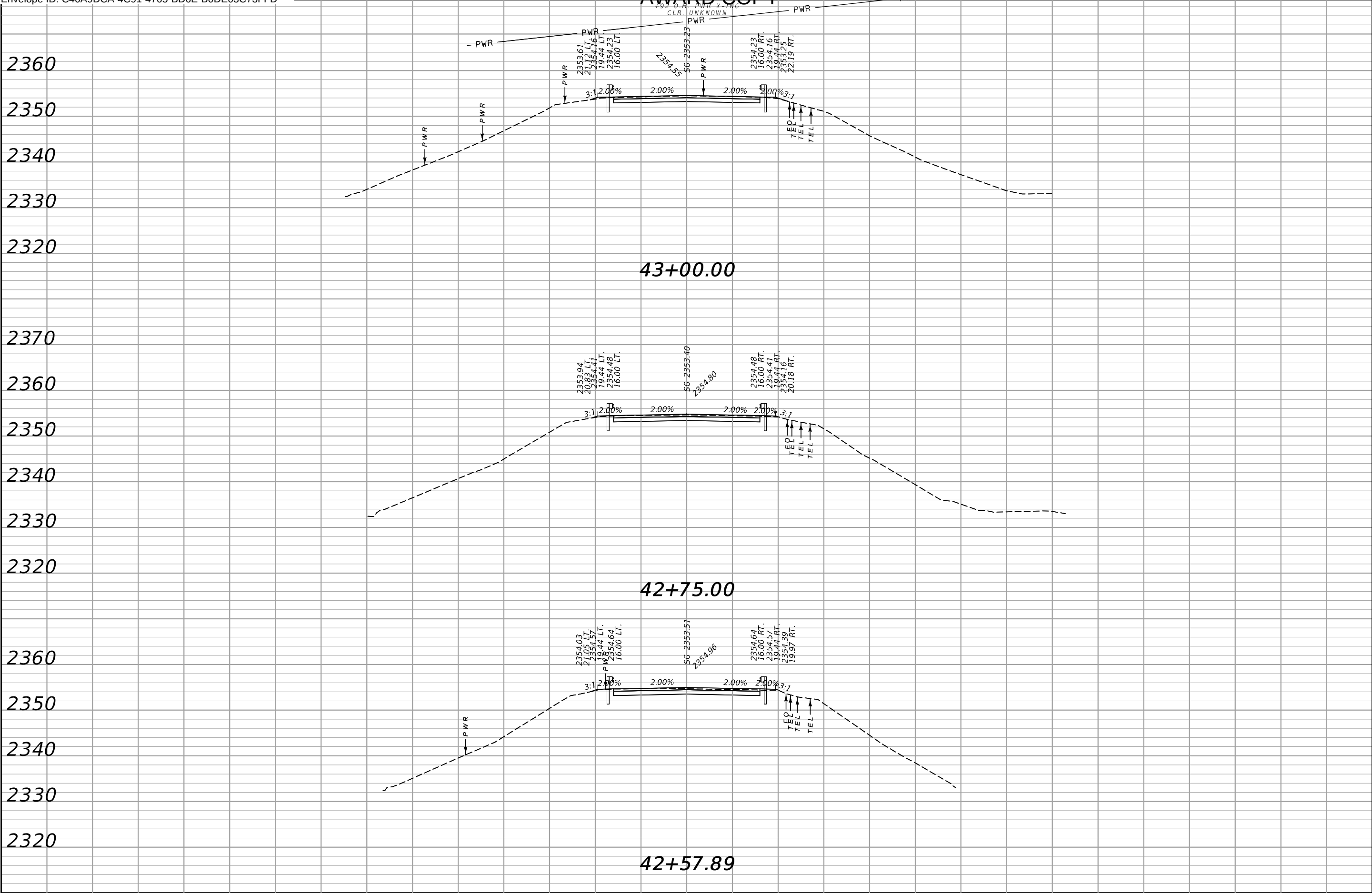
EX ROW





AWARD COPY

2024



CUT	FILL
37	1
26	1
12	1

82	5
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