

ND DEPARTMENT OF TRANSPORTATION

SHEET NO 1 OF 4

ABSTRACT OF BIDS RECEIVED

PROJECT NO. S01A-5-094(084)023 S01A-5-094(083)901				NO. 29 BIDDER ENGINEERS ESTIMATE		BIDDER PCI ROADS, LLC		BIDDER INDUSTRIAL BUILDERS INC	
COUNTY & DATE BILLINGS (007) FEB 15, 2013 09:30AM LENGTH & TYPE 0.358 I-94, 19 NI W JCT US 85 - EB/WB COMPLETION TIME 06/01/13 STRUCTURE IMP, APPR SLAB REHAB, REPL P				c.c. CHECK RANK 00		c.c. BOND RANK 01		c.c. BOND RANK 02	
SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	BID PRICE	AMOUNT	BID PRICE	AMOUNT	BID PRICE	AMOUNT
103	CONTRACT BOND	L SUM	1000	18000000	1800000	12500000	1250000	16000000	1600000
201	CLEARING & GRUBBING	L SUM	1000	5000000	500000	2500000	250000	8000000	800000
202	REMOVAL OF CONCRETE	L SUM	1000	15000000	1500000	20000000	2000000	25000000	2500000
202	REMOVAL OF CONCRETE	CY	5900	600000	354000	3221000	1900390	5350000	3156500
202	REMOVAL OF CONCRETE PAVEMENT	SY	2920000	20000	5840000	26000	7592000	20000	5840000
202	SAW CONCRETE	LF	1191000	7000	833700	6000	714600	6800	809880
202	REMOVAL OF BITUMINOUS SURFACING	SY	4069000	8000	3255200	9000	3662100	7350	2990715
202	SAW BITUMINOUS SURFACING-FULL DEPTH	LF	1114000	3000	334200	3500	389900	2900	323060
202	REMOVAL OF FINGER TYPE EXPANSION JOINT	EA	4000	2500000	1000000	3600000	1440000	2000000	800000
202	REMOVAL OF SLOPE PROTECTION	SY	3200000	20000	640000	25000	800000	65000	2080000
202	REMOVAL OF OBSTRUCTIONS	L SUM	1000	1000000	100000	2000000	200000	1500000	150000
202	REMOVE EXISTING FENCE	LF	2762000	2000	552400	1050	290010	1250	345250
203	TOPSOIL	CY	935000	8000	748000	19000	1776500	8000	748000
203	COMMON EXCAVATION-WASTE	CY	1770000	10000	1770000	45000	7965000	21500	3805500
203	TOPSOIL-IMPORTED	CY	50000	12000	600000	117500	587500	70000	350000
203	GUARDRAIL EMBANKMENT-TYPE C	EA	3000	4250000	1275000	4800000	1440000	1100000	330000
216	WATER	M GAL	39000	14000	54600	25000	97500	25000	97500
302	SALVAGED BASE COURSE	TON	3414000	14000	4782400	65000	22204000	52500	17934000
408	SUPERPAVE FAA 40	TON	1036000	90000	9324000	161000	16679600	173250	17948700
411	MILLING PAVEMENT SURFACE	SY	3718000	5000	1859000	7000	2026000	5250	1951950
550	6IN NON-REINF CONCRETE PAVEMENT CL AE	SY	974000	90000	8766000	100000	9740000	57000	5551800
550	DOWELED EXPANSION JOINT ASSEMBLY	LF	192000	25000	480000	25000	480000	17000	326400
550	CONCRETE SLOPE PROTECTION JOINT CLEANING & SEALING	LF	2900000	10000	2900000	4800	1392000	3400	986000
570	PCC PAVEMENT GRINDING	SY	3407000	5000	1703500	6500	2214550	5100	1737570
570	DOWELED CONTRACTION JOINT ASSEMBLY	LF	1464000	11000	1610400	15000	2196000	8750	1281000
570	DOWEL BARS	EA	80000	13000	104000	40000	320000	21800	174400
570	11IN CONCRETE PAVEMENT REPAIR-FULL DEPTH-DOWELED	SY	3650000	150000	54750000	135000	49275000	96600	35259000
570	LONGITUDINAL JOINT SILICONE SEAL	LF	2190000	4000	876000	5000	1095000	2350	514650
570	CONTRACTION JOINT SILICONE SEAL	LF	2508000	4000	1003200	5000	1254000	2850	714780
602	CLASS AAE-3 CONCRETE	CY	18300	1000000	1830000	1135600	2078148	1000000	1830000
602	SUPERSTRUCTURE CONCRETE	CY	6100	650000	396500	3869700	2360517	5500000	3355000
602	PENETRATING WATER REPELLENT TREATMENT	SY	513100	5000	256550	3250	166758	5000	256550
602	SPECIAL SURFACE FINISH	SF	2995000	2850	853575	3500	1048250	4000	1198000
612	REINFORCING STEEL-GRADE 60	LBS	2426000	1300	315380	2000	485200	4000	970400
616	STRUCTURAL STEEL M270-GRADE 36	LBS	1544000	5000	772000	8050	1242920	7000	1080800
650	OVERLAY CONCRETE	CY	243600	1200000	29232000	700000	17052000	900000	21924000
650	CLASS 1-H REMOVAL	SY	3070000	28000	8596000	61050	18742350	60000	18420000
650	CLASS 2-H REMOVAL	SY	542000	33000	1788600	50000	2710000	35000	1897000
650	CLASS 3-H REMOVAL	SY	121000	78000	943800	50000	605000	15000	181500
702	MOBILIZATION	L SUM	1000	12000000	12000000	290402000	29040200	455000000	45500000
704	FLAGGING	MHR	700000	30000	2100000	25000	1750000	35000	2450000
704	TRAFFIC CONTROL SIGNS	UNIT	3665000	3000	1099500	2160	791640	10000	3665000
704	LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL	EA	1000	8000000	800000	6960000	696000	10800000	1080000
704	ATTENUATION DEVICE-TYPE B-25	EA	2000	3000000	600000	3150000	630000	3150000	630000
704	ATTENUATION DEVICE-TYPE B-75	EA	2000	2200000	440000	3340000	668000	5250000	1050000
704	TYPE III BARRICADE	EA	11000	100000	110000	90190	99209	157000	172700
704	DELINEATOR DRUMS	EA	190000	30000	570000	25450	483550	32000	608000
ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR:				AWARD TO: PCI ROADS, LLC		WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.			
80				DATE OF AWARD		DEPARTMENT OF TRANSPORTATION DIRECTOR			

ND DEPARTMENT OF TRANSPORTATION

SHEET NO 2 OF 4

ABSTRACT OF BIDS RECEIVED

PROJECT NO. SOIA-5-094(084)023 SOIA-5-094(083)901		NO. 29		BIDDER ENGINEERS ESTIMATE		BIDDER PCI ROADS, LLC		BIDDER INDUSTRIAL BUILDERS INC	
COUNTY & DATE BILLINGS (007) FEB 15, 2013 09:30AM						SAINT MICHAEL, MN		FARGO, ND	
LENGTH & TYPE 0.358 I-94, 19 NI W JCT US 85 - EB/WB						C.C. BOND RANK 01		C.C. BOND RANK 02	
COMPLETION TIME 06/01/13 STRUCTURE IMP, APPR SLAB REHAB, REPL P				C.C. CHECK RANK 00					
SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	BID PRICE	AMOUNT	BID PRICE	AMOUNT	BID PRICE	AMOUNT
704	TUBULAR MARKERS	EA	87000	10000	870000	10430	90741	12500	108750
704	SEQUENCING ARROW PANEL-TYPE C	EA	4000	1200000	4800000	1200000	4800000	945000	3780000
704	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	289000	250000	72250000	165420	4780638	230000	6647000
704	FIELD LABORATORY-TYPE B	EA	1000	8000000	8000000	10000000	10000000	6000000	6000000
708	RIPRAP-LOOSE ROCK	CY	217000	80000	17360000	135000	2929500	125000	2712500
708	FIBER ROLLS 12IN	LF	3475000	3200	1112000	2950	1025125	3100	1077250
708	SEEDING-TYPE B-CL II	ACRE	3500	1200000	420000	1215000	425250	1275000	446250
708	SEEDING-TYPE B-CL IV	ACRE	3500	1000000	350000	60000	21000	63000	22050
708	MULCHING	ACRE	3400	1000000	340000	1207000	410380	1268000	431120
708	TRM TYPE 1	SY	582000	5000	291000	6250	363750	6600	384120
709	GEOTEXTILE FABRIC-TYPE RR	SY	212000	6000	127200	4600	97520	5500	116600
709	GEOTEXTILE FABRIC-TYPE R1	SY	5598000	3000	1679400	4750	2659050	4950	2771010
714	PIPE LINING	SF	3158000	50000	15790000	40000	12632000	45000	14211000
748	CURB & GUTTER-TYPE 1 SPECIAL	LF	80000	45000	360000	45000	360000	80000	640000
752	FENCE BARBED WIRE 4 STRAND-STEEL POST	LF	2685000	7000	1879500	4350	1167975	4550	1221675
752	FENCE TERMINAL-WOOD POSTS	EA	3000	3000000	90000	183000	54900	192000	57600
752	CORNER ASSEMBLY BARBED WIRE-WOOD POST	EA	3000	400000	120000	247000	74100	260000	78000
752	DOUBLE BRACE ASSEMBLY BARBED WIRE-WOOD POST	EA	10000	330000	330000	232000	232000	244000	244000
754	FLAT SHEET FOR SIGNS-TYPE 3A REFL SHEETING	SF	49000	20000	98000	14360	70364	23000	112700
754	RESET DELINEATOR POST-TYPE A	EA	7000	35000	24500	21040	14728	63000	44100
754	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	104000	16000	166400	22950	238680	12600	131040
754	RESET SIGN PANEL	EA	1000	65000	65000	82140	82140	58000	58000
754	RESET MILE POST	EA	2000	1000000	200000	92760	18552	105000	21000
760	RUMBLE STRIPS - CONCRETE SHOULDER	MILE	718	10000000	7180000	9000000	646200	2200000	157960
762	EPOXY PVMT MK 4IN LINE	LF	5940000	3000	1782000	1740	1033560	1830	1087020
762	SHORT TERM 4IN LINE-TYPE R	LF	11642000	2000	2328400	1230	1431960	1160	1350472
762	SHORT TERM 4IN LINE-TYPE NR	LF	660000	500	330000	2110	139260	2210	145860
762	PVMT MK PAINTED 4IN LINE	LF	2200000	200	440000	910	200200	960	211200
762	BLITERATION OF PVMT MK	SF	820000	3000	246000	4250	348500	4470	366540
764	W-BEAM GUARDRAIL	LF	724000	41000	2968400	55000	3982000	57750	4181100
764	W-BEAM GUARDRAIL END TERMINAL	EA	5000	2350000	1175000	2400000	1200000	2520000	1260000
764	REMOVE W-BEAM GUARDRAIL & POSTS	LF	1397000	3250	454025	2750	384175	2900	405130
764	RESET W-BEAM GUARDRAIL	LF	1103000	9500	1047850	12500	1378750	13400	1478020
764	RESET W-BEAM GUARDRAIL END TERMINAL	EA	3000	675000	202500	1070000	321000	1125000	337500
764	REMOVE CONCRETE SAFETY SHAPE TRANSITION	EA	4000	3900000	1560000	500000	200000	4500000	1800000
764	REMOVE END TREATMENT & TRANSITION	EA	8000	185000	148000	125000	100000	130000	104000
930	POLYURETHANE FOAM	LBS	10000000	4500	4500000	5470	5470000	5750	5750000
930	SILICONE SEALANT	LF	1724000	20000	3448000	6000	1034400	3000	517200
930	4IN EXPANSION JOINT STRIP SEAL	LF	64500	150000	967500	157400	1015230	250000	1612500
950	JOINT TREATMENT	LF	111000	35000	388500	41000	455100	155000	1720500
TOTAL					226708180		270952800		272322172
						NO LIMIT		NO LIMIT	
ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR:				AWARD TO: PCI ROADS, LLC				WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.	
81				DATE OF AWARD				DEPARTMENT OF TRANSPORTATION DIRECTOR	

ND DEPARTMENT OF TRANSPORTATION

SHEET NO 3 OF 4

ABSTRACT OF BIDS RECEIVED

PROJECT NO.		NO.		BIDDER		BIDDER	
SOIA-5-094(084)023 SOIA-5-094(083)901		29		CENTURY COMPANIES IN C			
COUNTY & DATE		FEB 15, 2013 09:30AM		LEWISTOWN, MT			
LENGTH & TYPE		0.358		c.c. BOND RANK 03			
COMPLETION TIME		06/01/13 STRUCTURE IMP, APPR SLAB REHAB, REPL P					
SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	BID PRICE	AMOUNT	BID PRICE	AMOUNT
103	CONTRACT BOND	L SUM	1000	15000000	15000000		
201	CLEARING & GRUBBING	L SUM	1000	20000000	20000000		
202	REMOVAL OF CONCRETE	L SUM	1000	27000000	27000000		
202	REMOVAL OF CONCRETE	CY	5900	6000	35400		
202	REMOVAL OF CONCRETE PAVEMENT	SY	2920000	20000	5840000		
202	SAW CONCRETE	LF	1191000	6000	7146000		
202	REMOVAL OF BITUMINOUS SURFACING	SY	4069000	10000	40690000		
202	SAW BITUMINOUS SURFACING-FULL DEPTH	LF	1114000	6000	6684000		
202	REMOVAL OF FINGER TYPE EXPANSION JOINT	EA	4000	370000	1480000		
202	REMOVAL OF SLOPE PROTECTION	SY	320000	72000	2304000		
202	REMOVAL OF OBSTRUCTIONS	L SUM	1000	2000000	2000000		
202	REMOVE EXISTING FENCE	LF	2762000	1150	3176300		
203	TOPSOIL	CY	935000	12000	11220000		
203	COMMON EXCAVATION-WASTE	CY	1770000	23000	40710000		
203	TOPSOIL-IMPORTED	CY	50000	75000	3750000		
203	GUARDRAIL EMBANKMENT-TYPE C	EA	3000	1200000	3600000		
216	WATER	M GAL	39000	95000	3705000		
502	SALVAGED BASE COURSE	TON	3416000	60000	204960000		
408	SUPERPAVE FAA 40	TON	1036000	259000	268324000		
411	MILLING PAVEMENT SURFACE	SY	3718000	5500	20449000		
550	6IN NON-REINF CONCRETE PAVEMENT CL AE	SY	974000	60000	58440000		
550	DOWELED EXPANSION JOINT ASSEMBLY	LF	192000	24000	4608000		
550	CONCRETE SLOPE PROTECTION JOINT CLEANING & SEALING	LF	2900000	4000	11600000		
570	PCC PAVEMENT GRINDING	SY	3407000	8300	28278100		
570	DOWELED CONTRACTION JOINT ASSEMBLY	LF	1464000	26000	38064000		
570	DOWEL BARS	EA	80000	39000	3120000		
570	11IN CONCRETE PAVEMENT REPAIR-FULL DEPTH-DOWELED	SY	3650000	93000	339450000		
570	LONGITUDINAL JOINT SILICONE SEAL	LF	2190000	2500	5475000		
570	CONTRACTION JOINT SILICONE SEAL	LF	2508000	3000	7524000		
602	CLASS AAE-3 CONCRETE	CY	18300	1100000	20130000		
602	SUPERSTRUCTURE CONCRETE	CY	6100	6150000	37515000		
602	PENETRATING WATER REPELLENT TREATMENT	SY	513100	5600	2873360		
602	SPECIAL SURFACE FINISH	SF	2995000	4500	13477500		
612	REINFORCING STEEL-GRADE 60	LBS	2426000	4500	10917000		
616	STRUCTURAL STEEL M270-GRADE 36	LBS	1544000	8000	12352000		
650	OVERLAY CONCRETE	CY	243600	1005000	244818000		
650	CLASS 1-H REMOVAL	SY	3070000	67000	205690000		
650	CLASS 2-H REMOVAL	SY	542000	39000	21138000		
650	CLASS 3-H REMOVAL	SY	121000	17000	2057000		
702	MOBILIZATION	L SUM	1000	368000000	368000000		
704	FLAGGING	MHR	700000	20000	14000000		
704	TRAFFIC CONTROL SIGNS	UNIT	3665000	2500	9162500		
704	LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL	EA	1000	7800000	7800000		
704	ATTENUATION DEVICE-TYPE B-25	EA	2000	3500000	7000000		
704	ATTENUATION DEVICE-TYPE B-75	EA	2000	3700000	7400000		
704	TYPE III BARRICADE	EA	11000	90000	990000		
704	DELINEATOR DRUMS	EA	190000	28500	5415000		

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR:

AWARD TO:

PCI ROADS, LLC

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

82

DATE OF AWARD

DEPARTMENT OF TRANSPORTATION DIRECTOR

ND DEPARTMENT OF TRANSPORTATION				SHEET NO. 4 OF 4		ABSTRACT OF BIDS RECEIVED			
PROJECT NO. SOIA-5-094(084)023 SOIA-5-094(083)901				NO. 29 BIDDER CENTURY COMPANIES IN C		BIDDER		BIDDER	
COUNTY & DATE BILLINGS (007) FEB 15, 2013 09:30AM				LEWISTOWN, MT					
LENGTH & TYPE 0.358 I-94, 19 NI W JCT US 85 - EB/WB				C.C. BOND RANK 03		C.C.		C.C.	
COMPLETION TIME 06/01/13 STRUCTURE IMP, APPR SLAB REHAB, REPL P									
SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	BID PRICE	AMOUNT	BID PRICE	AMOUNT	BID PRICE	AMOUNT
704	TUBULAR MARKERS	EA	87000	12000	1044000				
704	SEQUENCING ARROW PANEL-TYPE C	EA	4000	1340000	536000				
704	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	289000	660000	19074000				
706	FIELD LABORATORY-TYPE B	EA	1000	6710000	671000				
708	RIPRAP-LOOSE ROCK	CY	217000	205000	4448500				
708	FIBER ROLLS 12IN	LF	3475000	3300	1146750				
708	SEEDING-TYPE B-CL II	ACRE	3500	1350000	472500				
708	SEEDING-TYPE B-CL IV	ACRE	3500	67000	23450				
708	MULCHING	ACRE	3400	1350000	459000				
708	TRM TYPE 1	SY	582000	7000	407400				
709	GEOTEXTILE FABRIC-TYPE RR	SY	212000	2300	48760				
709	GEOTEXTILE FABRIC-TYPE R1	SY	5598000	2300	1287540				
714	PIPE LINING	SF	3158000	47000	14842600				
748	CURB & GUTTER-TYPE 1 SPECIAL	LF	80000	90000	720000				
752	FENCE BARBED WIRE 4 STRAND-STEEL POST	EA	2685000	5000	1342500				
752	FENCE TERMINAL-WOOD POSTS	EA	3000	205000	61500				
752	CORNER ASSEMBLY BARBED WIRE-WOOD POST	EA	3000	275000	82500				
752	DOUBLE BRACE ASSEMBLY BARBED WIRE-WOOD POST	EA	10000	260000	260000				
754	FLAT SHEET FOR SIGNS-TYPE 3A REFL SHEETING	SF	49000	14000	78400				
754	RESET DELINEATOR POST-TYPE A	EA	7000	23000	16100				
754	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	104000	25000	260000				
754	RESET SIGN PANEL	EA	1000	92000	9200				
754	RESET MILE POST	EA	2000	105000	21000				
760	RUMBLE STRIPS - CONCRETE SHOULDER	MILE	718	15500000	1112900				
762	EPOXY PVMT MK 4IN LINE	LF	5940000	2000	1188000				
762	SHORT TERM 4IN LINE-TYPE R	LF	11642000	1500	1746300				
762	SHORT TERM 4IN LINE-TYPE NR	LF	660000	2500	165000				
762	PVMT MK PAINTED 4IN LINE	LF	2200000	1000	220000				
762	OBLITERATION OF PVMT MK	SF	820000	5000	410000				
764	W-BEAM GUARDRAIL	LF	724000	61500	4452600				
764	W-BEAM GUARDRAIL END TERMINAL	EA	5000	2685000	1342500				
764	REMOVE W-BEAM GUARDRAIL & POSTS	LF	1397000	3000	419100				
764	RESET W-BEAM GUARDRAIL	LF	1103000	14000	1544200				
764	RESET W-BEAM GUARDRAIL END TERMINAL	EA	3000	1200000	360000				
764	REMOVE CONCRETE SAFETY SHAPE TRANSITION	EA	4000	5000000	2000000				
764	REMOVE END TREATMENT & TRANSITION	EA	8000	140000	112000				
930	POLYURETHANE FOAM	LBS	10000000	6000	6000000				
930	SILICONE SEALANT	LF	1724000	3500	603400				
930	4IN EXPANSION JOINT STRIP SEAL	LF	64500	280000	1806000				
950	JOINT TREATMENT	LF	111000	175000	1942500				
TOTAL					296664016				
				NO LIMIT					
ACTION TAKEN BY: DEPARTMENT OF TRANSPORTATION DIRECTOR:				AWARD TO: PCI ROADS, LLC		WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.			
83				DATE OF AWARD		DEPARTMENT OF TRANSPORTATION DIRECTOR			

DESIGN DATA				
Traffic	Average Daily			Max.Hr.
Current 2010	Pass: 2160	Trucks: 100	Total: 2260	230
Forecast 2030	Pass: 3220	Trucks: 130	Total: 3350	335
Clear Zone Distance:		Design Speed: 25		
Minimum Sight Dist. for Stopping:		Bridges: H15-S12		
Minimum Sight Dist. for Safe Passing:				
Sight Dist. for No Passing Zone:				
Pavement Design Life (years)				

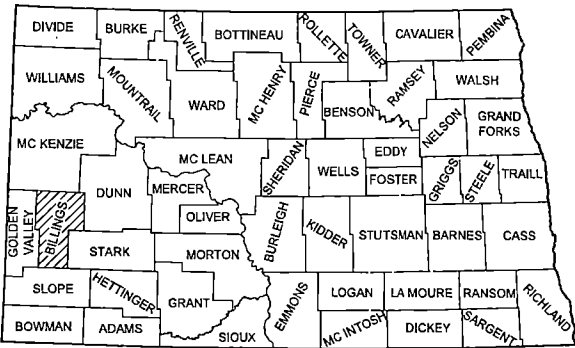
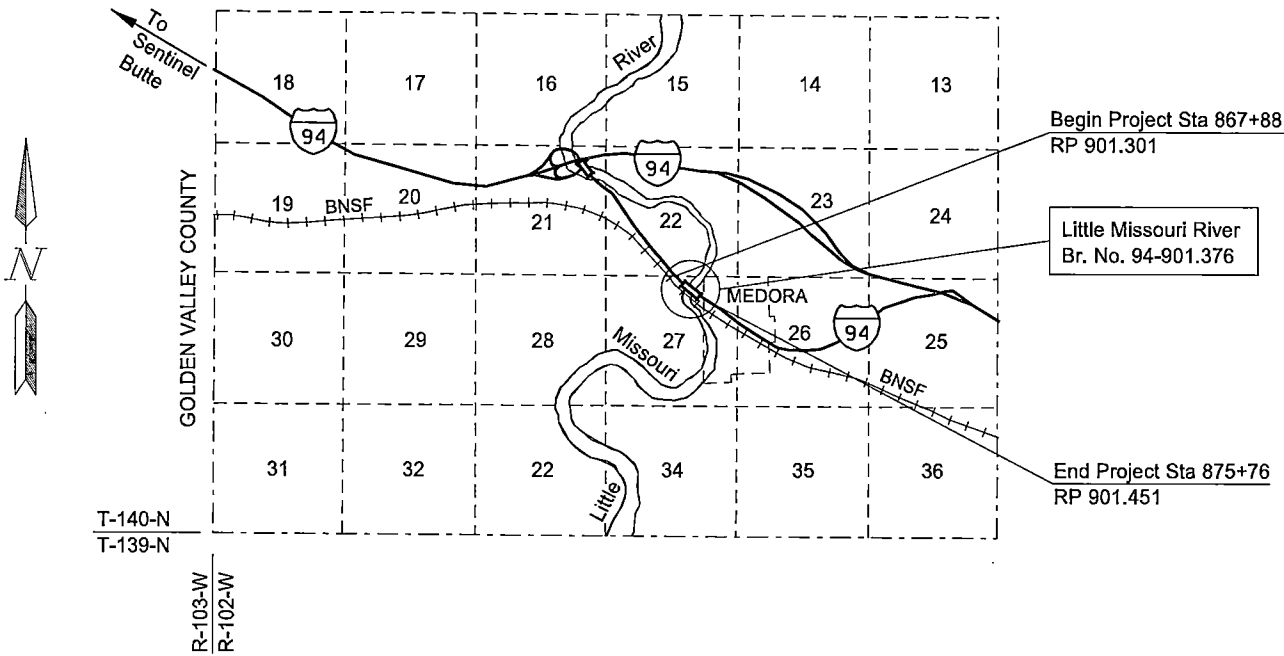
JOB # 29
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SOIA-5-094(083)901
FHWA Limited Involvement
Billings County
Little Missouri River
West of Medora
Bridge Deck Overlay, Remove & Replace Expansion Joints,
Extension of Deck Drains, Special Surface Finish, Approach Guardrail

STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	SOIA-5-094(083)901	18269	1	1

GOVERNING SPECIFICATIONS:
Standard Specifications adopted by the North Dakota
Department of Transportation October 2008; Standard Drawings
currently in effect; and other Contract Provisions submitted herein.

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
SOIA-5-094(083)901	0.149	0.149

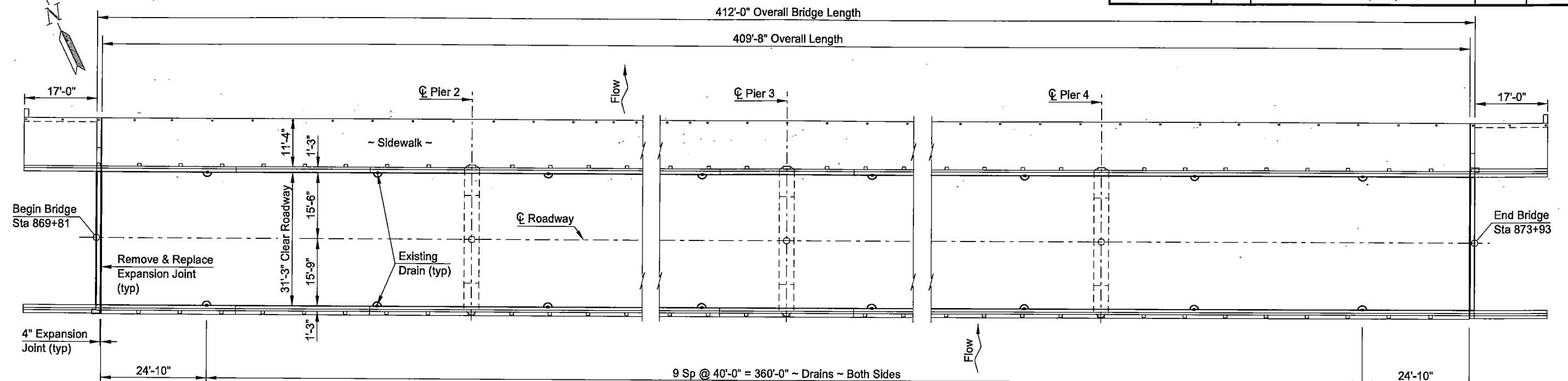


STATE COUNTY MAP

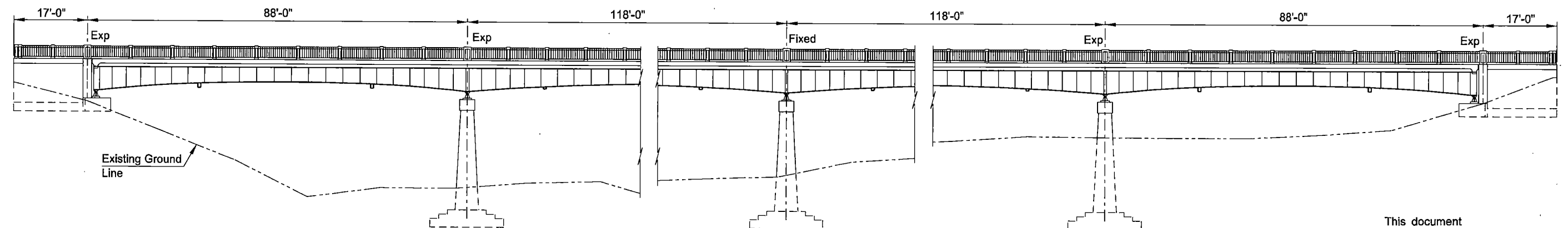
APPROVED DATE 1/7/13
Bobe Fode
OFFICE OF PROJECT DEVELOPMENT
ND DEPARTMENT OF TRANSPORTATION

I hereby certify that the attached plans were prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the state of ND.
APPROVED DATE 1/4/13
Terrence R. Udland
NDDOT DIV-DIST OR CONSULTANT FIRM

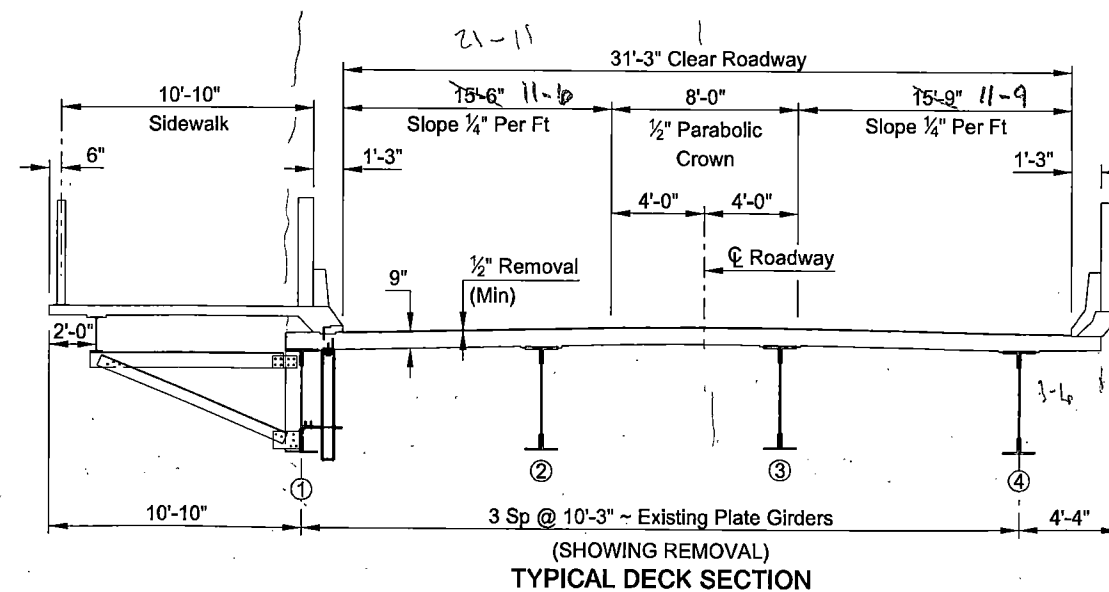
This document was originally issued and sealed by Terrence R. Udland Registration Number PE- 2674, on 1/4/13 and the original document is stored at the North Dakota Department of Transportation



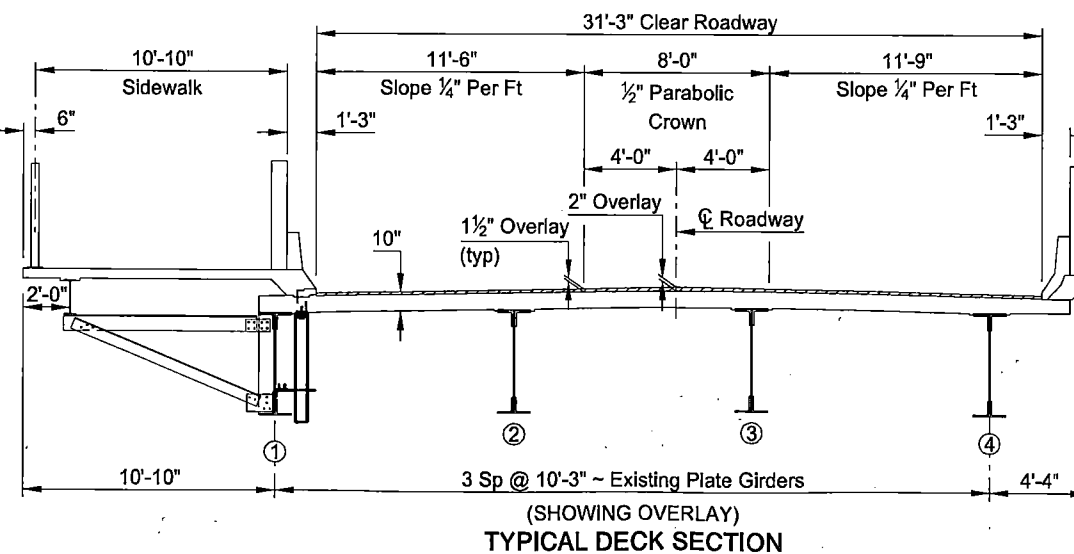
PLAN



ELEVATION



TYPICAL DECK SECTION



TYPICAL DECK SECTION

This document
was originally issued and
sealed by Jason R. Thorenson,
Registration Number PE 5048,
on 12/21/12 and the original
document is stored at the North
Dakota Department of
Transportation

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

LITTLE MISSOURI RIVER BRIDGE LAYOUT

PROJECT: SIM-5-094(083)901
STATION: 871+87
BILLINGS COUNTY

DATE 12/21/12 BRIDGE ENGINEER Terrence R. Udland

NOTES

23 U.S.C. 409
NDDOT Reserves All Objections

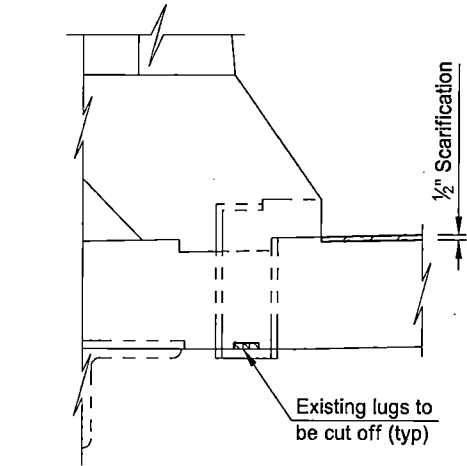
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SIM-5-094(083)901	170	2

- 100 SCOPE OF WORK: Work at this site consists of removing and replacing the existing expansion joints on the driving lanes, a bridge deck overlay, adding downspouts on the north side of the bridge, applying surface finish to the inside and top face of the barriers, and sealing the pedestrian sidewalk.
- 100 GENERAL: The cost of furnishing and placing preformed expansion joint filler, concrete inserts, rebar couplers, and other miscellaneous items shall be included in the price bid for "Overlay Concrete".
- 100 PHASING: The bridge deck overlay shall be completed half at a time and opened to traffic no later than June 1st. The sidewalk/bike path located on the north side of the bridge shall remain open during all phases of the project.
- 202 REMOVAL OF CONCRETE: The Contractor shall remove the existing barrier expansion joints, deck expansion joints, endbeams, and portions of the abutments as shown in the plans. The actual limits of repair shall be determined by the Engineer in the field.
- The Contractor shall remove nesting sites on the existing bridge near the abutment endbeams and on the north side of the bridge near the downspout locations on a weekly basis unless eggs are found to be present. These measures shall be maintained until all associated work items are completed.
- All labor, equipment, and materials for removal of the existing concrete, barrier expansion plates, deck expansion joints, and nesting sites shall be included in the price bid for "Removal of Concrete".
- 602 SUPERSTRUCTURE CONCRETE: Approximately 6.1 CY of Class AAE-3 concrete have been estimated for replacing the endbeams and portions of the barriers and abutments for replacement of the expansion joints. If Low-Slump Concrete is substituted for AAE-3 Concrete it will be paid for at the price bid for AAE-3 Concrete. However, no additional compensation shall be allowed for the substitution. All labor, equipment, and materials required for the completion of this work shall be included in the price bid for "Superstructure Concrete".
- 602 CLASS AAE-3 CONCRETE: Approximately 5.2 CY of Class AAE-3 concrete have been estimated for repairing Class 3H removal areas. If Low-Slump Concrete is substituted for AAE-3 Concrete it will be paid for at the price bid for AAE-3 Concrete. All labor, equipment, and materials required for the completion of this work shall be included in the price bid for "Class AAE-3 Concrete".
- 602 SURFACE FINISH "D": Surface Finish "D" shall be required for the inside and top face of the barriers. Any existing surface finish that is delaminated shall be removed prior to applying the new surface finish. All surfaces shall be thoroughly sandblasted prior to receiving the surface finish. The surface finish color shall match the existing concrete intermediate posts. A color sample shall be submitted to the District for approval. All labor, equipment, and materials required for the completion of this work shall be included in the price bid for "Special Surface Finish."

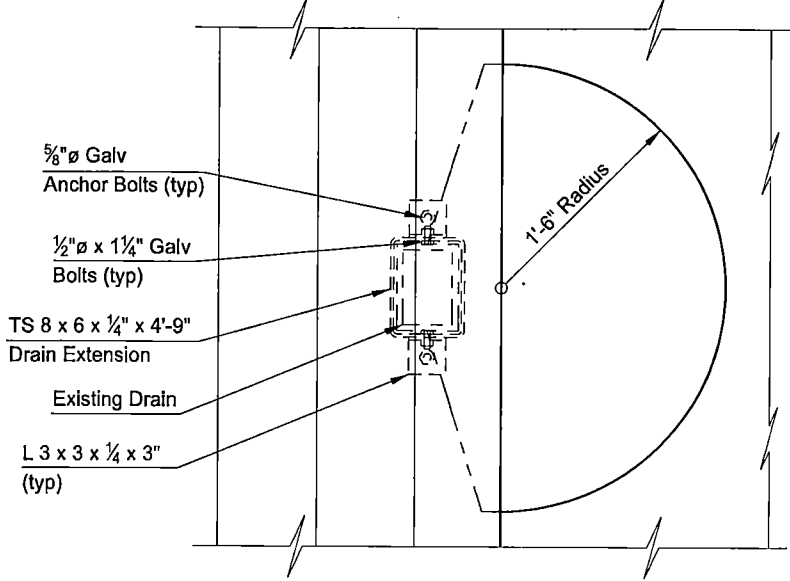
- 602 PENETRATING WATER REPELLENT: Penetrating water repellent shall be applied to the existing sidewalk/ bike path.
- 616 STRUCTURAL STEEL: All structural plates and bars for the deck drain extensions shall be AASHTO M270 Grade 36, except the Charpy V-notch test shall be waived. The deck drain pipe shall be ASTM A500 Grade B. All structural plates, bars, and tubes shall be hot dip galvanized according to AASHTO M111.
- The threaded rods, anchor bolts, and bolts shall meet ASTM A307 and nuts shall meet ASTM A563. Washers shall meet AASTHO M293. Threaded rods, bolts, nuts, and washers shall all be galvanized according to AASHTO M232.
- The anchor bolts shall be installed according to the manufacturer's recommendations with an expansive anchor bolt system capable of developing an allowable tensile load of 3,020 lb in 3,000 psi normal weight concrete.
- Approximately 1,544 lbs of structural steel have been estimated for the deck drain extensions. All labor, equipment, and materials required for removing the existing lugs for the deck drains, installing anchor bolts into the underside of the deck, drilling holes in the girder webs, and all hardware required for extending the deck drains shall be included in the price bid for "Structural Steel".
- 650 EQUIPMENT: Machine finishing of the final surface shall be made with equipment meeting the requirements of 153.09 C. Finishing Machines for Bridge Deck Overlays. Equipment used to transport mortar or concrete across the prepared deck shall be a concrete buggy, weighing not more than 2000 lbs. empty.
- 650 CONTRACTOR OPERATIONS: The Contractor shall contain all runoff during hydrodemolition operations to prevent contamination of local water sources. All labor, equipment, and materials required for this shall be included in the price bid for "Overlay Concrete".
- 930 SILICONE SEALANT: Silicone sealant shall be placed along the gutter line, including 6 inches up the face of the barriers after the overlay work is completed as shown in the plans. A low modulus (Type 5) silicone sealant shall be used. All labor, equipment, and materials required to complete this work shall be included in the price bid for "Silicone Sealant".

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STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SIM-5-094(083)901	170	3



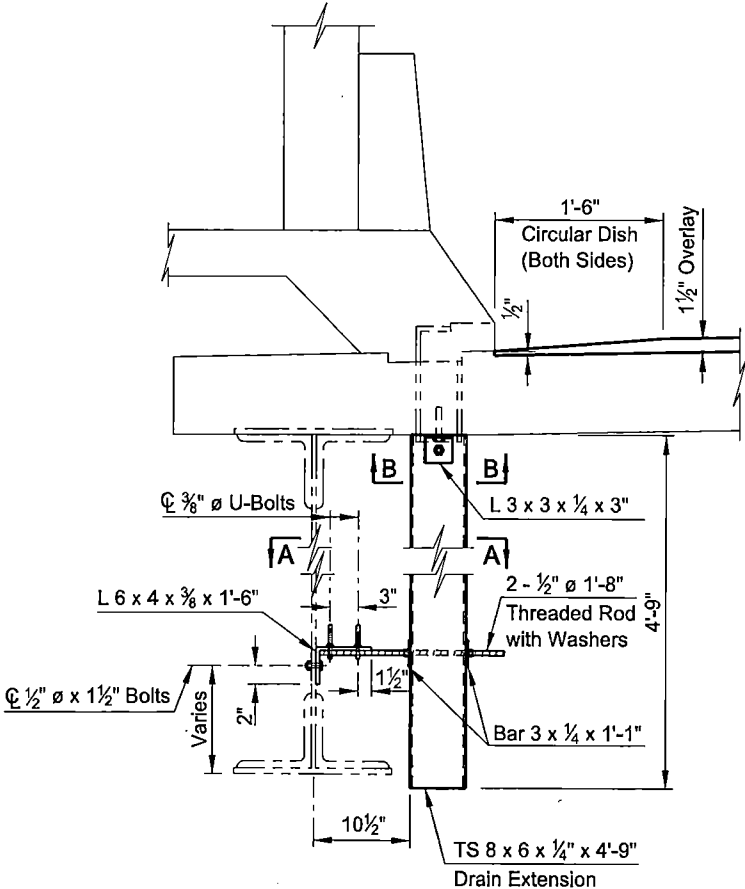
(SHOWING REMOVAL - NORTH SIDE)
EXISTING DECK DRAIN ELEVATION



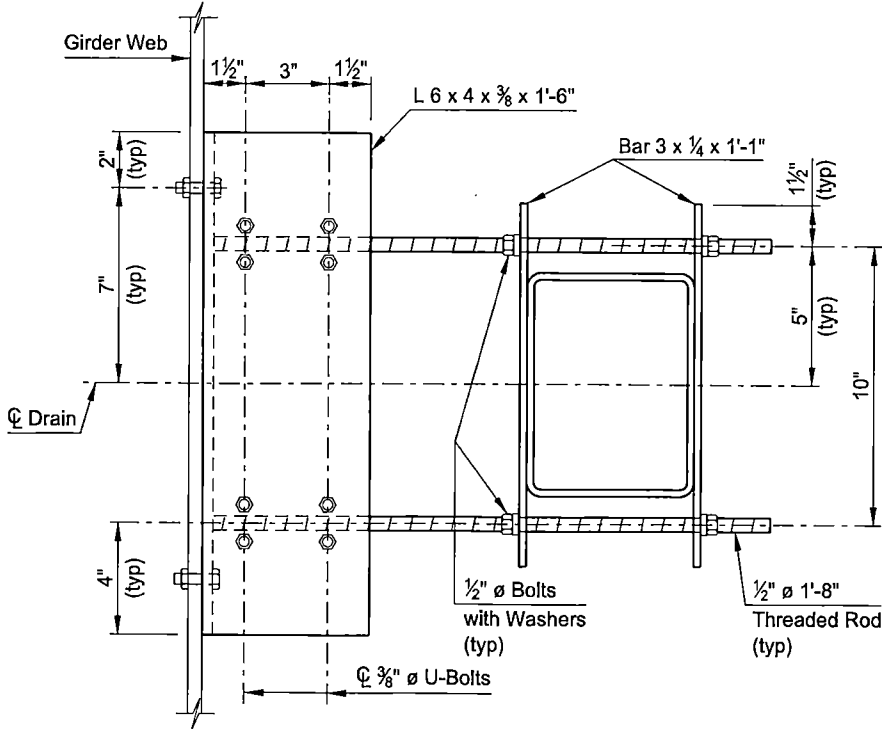
PLAN
DECK DRAIN DETAIL

BRIDGE BID ITEMS

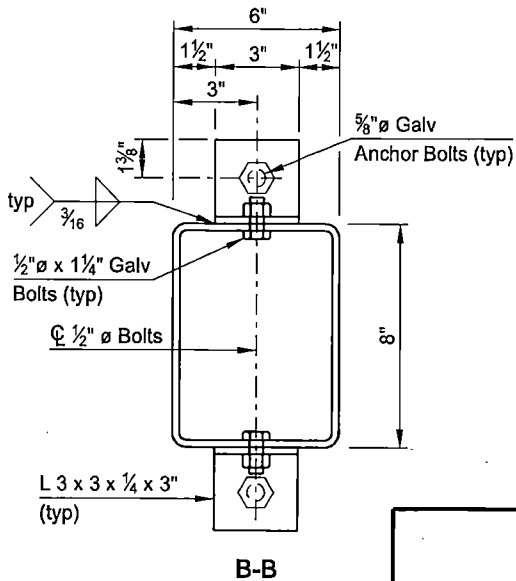
SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0113	REMOVAL OF CONCRETE	CY	5.9
602	0130	CLASS AAE-3 CONCRETE	CY	5.2
602	1120	SUPERSTRUCTURE CONCRETE	CY	6.1
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	513.1
602	7000	SPECIAL SURFACE FINISH	SF	2,995
612	0115	REINFORCING STEEL-GRADE 60	LBS	2,426
616	0364	STRUCTURAL STEEL M270 - GRADE 36	LBS	1,544
650	0704	OVERLAY CONCRETE	CY	108.2
650	0710	CLASS 1-H REMOVAL	SY	1423
650	0711	CLASS 2-H REMOVAL	SY	285
650	0712	CLASS 3-H REMOVAL	SY	72
930	8644	SILICONE SEALANT	LF	822
930	8666	4IN EXPANSION JOINT STRIP SEAL	LF	64.5



(SHOWING OVERLAY - NORTH SIDE)
DECK DRAIN ELEVATION



A-A

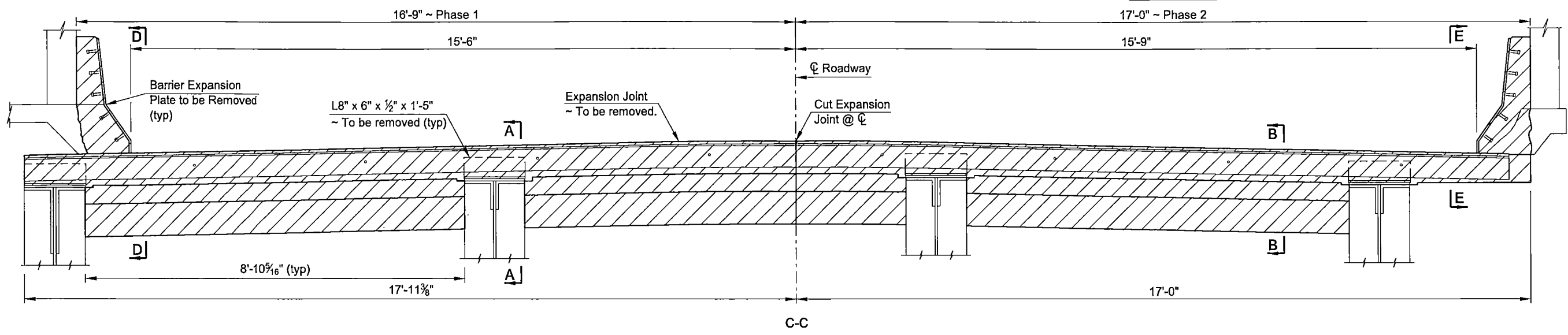


B-B

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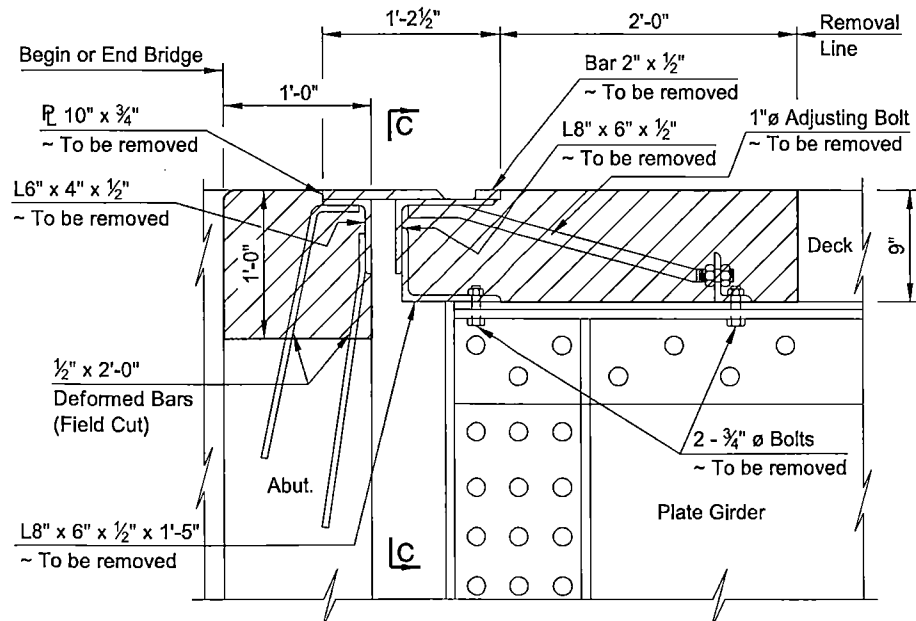
LITTLE MISSOURI RIVER

BID ITEMS & DECK DRAIN DETAILS

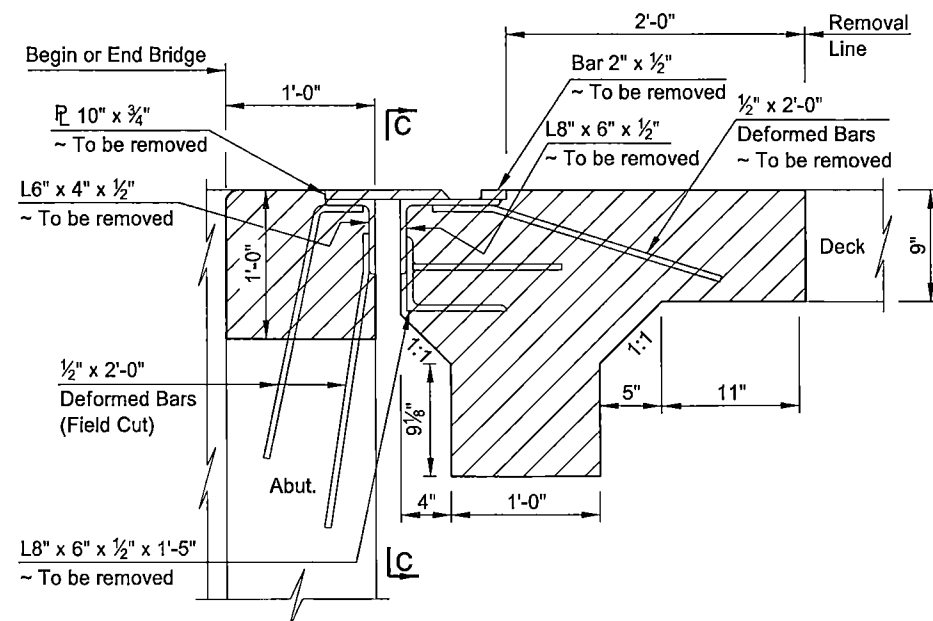


C-C
(Abutment Side Not Shown)
BARRIER & EXPANSION JOINT REMOVAL

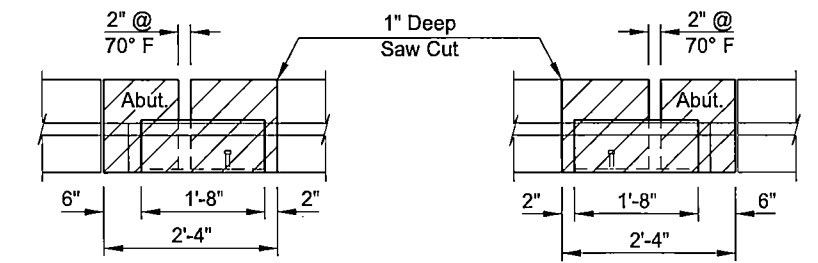
 Hatched area Indicates concrete to be removed. Care shall be taken to ensure no damage is done to reinforcing steel that is to remain in place.



**A-A
ELEVATION
EXISTING EXPANSION JOINT**

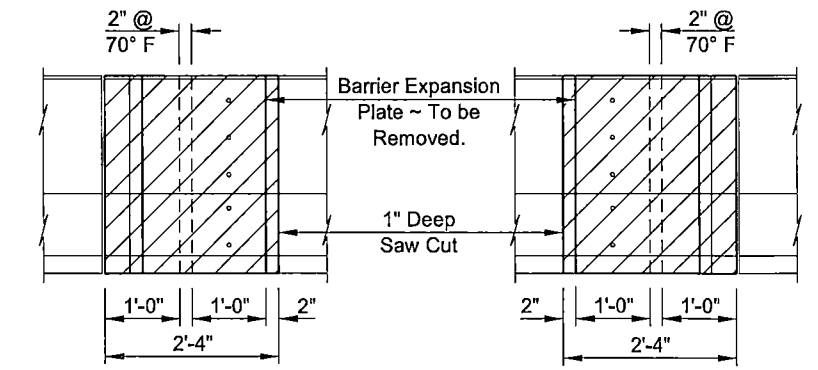


**B-B
ELEVATION
EXISTING EXPANSION JOINT**



**D-D
PLAN**

**E-E
PLAN**



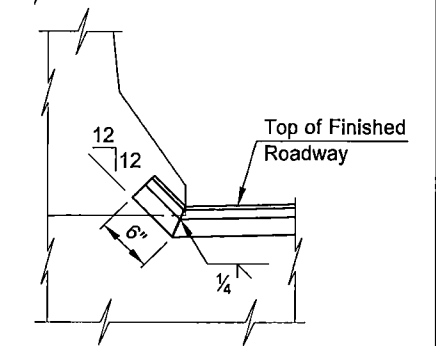
**D-D
ELEVATION**

**E-E
ELEVATION**

BARRIER PLATE REMOVAL DETAILS

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**LITTLE MISSOURI RIVER
BARRIER & EXPANSION JOINT
REMOVAL DETAILS**



1 1/2" Overlay (typ)

Type "M" Steel Extrusion (typ)

Elastomeric Strip Seal

1/2" ø x 6" Anchors (typ)

* 2" @ 70° F
Min Install Width

Diagram illustrating three L-shaped structural members with their dimensions:

- B500:** Vertical leg length is 1'-3", horizontal leg length is 1'-4".
- B501:** Vertical leg length is 1'-6", horizontal leg length is 2'-0".
- N500:** Vertical leg length is 1'-6", horizontal leg length is 8".

2" @ 70° F

Abut.

1'-2" 1'-0" 2'-4"

D-D PLAN

2" @ 70° F

Abut.

1'-2" 1'-0" 2'-4"

E-E PLAN

PLAN

The diagram shows two elevation drawings of a building facade. The left drawing is labeled 'D-D ELEVATION' and the right drawing is labeled 'E-E ELEVATION'. Both drawings show a building with a flat roof and a central entrance. The 'D-D ELEVATION' shows a building with a total width of 2'-4" (1'-0" + 1'-2"). The 'E-E ELEVATION' shows a building with a total width of 2'-4" (1'-2" + 1'-0"). The drawings are labeled 'D-D ELEVATION' and 'E-E ELEVATION' respectively. The 'D-D ELEVATION' shows a building with a total width of 2'-4" (1'-0" + 1'-2"). The 'E-E ELEVATION' shows a building with a total width of 2'-4" (1'-2" + 1'-0").

Begin or End Bridge

1'-0"

3"

3" (typ)

See Joint Detail "A"

6"

2'-8 1/2"

2 Sp @ 8"

1 1/2" Overlay (typ)

6A503 & 6A504

1'-0"

Deck

6A503 & 6A504 (typ)

Ex St in

Existing Reinforcing Steel ~ To remain in place.

2" CI

Abut.

Plate Girder

A-A

Technical drawing of a bridge cross-section showing a central pier and two abutments. The drawing includes dimensions for various components: total width of 2'-8 1/2", pier width of 1'-0", and abutment width of 1'-0". It specifies reinforcement details such as 5B501, 5B500, 5N500, 6A503 & 6A504 (typ), and 8A500, 8A501 & 8A502 (typ). The drawing also indicates the location of existing reinforcing steel to remain in place and shows a 1:1 slope for the abutment. A section line C-C is shown across the top and bottom of the pier.

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ESTIMATED MATERIAL QUANTITIES	
REINFORCING STEEL (LBS)	CONCRETE (CY)
2,426	6.1

12/21/2012 4:09:40 PM jthorens R:\project\50094901.083\bridge\94-901.376\170BR_005_PROPEXP\JT.dgn,dgn

SYMBOLS

STATE & NATIONAL LINES		BUILDINGS	
COUNTY LINE		TELEGRAPH LINES	
TOWNSHIP & RANGE LINES		TELEPHONE LINES	
SECTION LINE		POWER LINES	
QUARTER SECTION LINE		CULVERTS (in Place)	
SECTION CORNER		CULVERTS (Install)	
QUARTER SECTION CORNER		CONCRETE BOX CULVERTS (Install)	
OLD RIGHT OF WAY LINE		BRIDGES (Install)	
NEW RIGHT OF WAY LINE		CONCRETE CURB	
GRADE LINE		CONCRETE CURB AND GUTTER	
CENTERLINE OF CONSTRUCTION		CONCRETE WALK	
RAILROAD RIGHT OF WAY LINE		CATCH BASIN (Existing)	
CITY OR VILLAGE CORPORATE LIMITS		CATCH BASIN (New)	
PROPERTY LINE		MANHOLE (Existing)	
EASEMENT LINE		MANHOLE (New)	
FENCES		CURB INLET (Existing)	
SNOW FENCE		CURB INLET (New)	
DRAINAGE		GROUND MOUNTED SIGNS	
WATERS EDGE		OVERHEAD SIGNS	
MARSH OR SWAMP		HYDRANT	
WRAP		LIGHT STANDARDS	
DRAINAGE DITCH		TRAFFIC SIGNALS (Plan & Profile Sheets)	
APPROACH		HIGH MAST LIGHTING ASSEMBLY	
TRAVELED WAY		GROUND ELEVATION	
RAILROADS		GRADE	
GUARD RAIL		CENTERLINE	
BUDE POSTS		SECTION LINE	
DELINEATORS		DEFLECTION ANGLE (Delta)	
HEDGES AND TREES		500 OR JUTE MESH	
INTERCHANGE		POLES TO BE MOVED	
HIGHWAY GRADE SEPARATION-NO CONNECTION		POLES TO BE LOWERED	
OTHER BRIDGE		CONCRETE FOUNDATION	
SERVICE ROAD		CONDUIT	
TERMINATED CROSS-ROAD		CONDUCTOR	
		CONCRETE PULL BOX	
		FEED POINT	
		250 WATT LIGHT STANDARDS	
		400 WATT LIGHT STANDARDS	
		700 WATT LIGHT STANDARDS	
		1000 WATT LIGHT STANDARDS	
		FLASHING BEACON	
		TRAFFIC SIGNAL - MAST ARM MOUNTED	
		TRAFFIC SIGNAL - POST MOUNTED	
		SIGNAL HEAD	
		PEDESTRIAN PUSHBUTTON POST	
		TRAFFIC SIGNAL CONTROLLER	
		FEED POINT - PAD MOUNTED	

ABBREVIATIONS

Aggr	Aggregate	M.L.	Main Line
Ahd	Ahead	N.R.	North Roadway
All	Alternate	Off Loc.	Office Location
Approx	Approximate or Approximately	O to O	Out to Out
Appr	Approach	P.B.P.	Plan and Profile
Asph. Cem. or A.C.	Asphalt Cement	P.C.	Point of Curvature
Asph. Conc.	Asphaltic Concrete	P.C.C.	Point of Compound Curve
Bit	Bituminous or Bitumen	P.C.C. Pvm	Portland Cement Concrete Pavement
Bk	Back	P.D.	Private Drive
B.M.	Bench Mark	Pen	Penetration
Bldg.	Building	Perf	Perforated
Br.	Bridge	P.I.	Point of Intersection
C.A.E.S.	Corrugated Aluminum End Section	P.O.C.	Point on Curve
C.A.P.	Corrugated Aluminum Pipe	P.O.T.	Point on Tangent
C.B.	Catch Basin	P.P.	Power Pole
C.B.G.	Curb and Gutter	P.R.	Point of Reverse Curvature
Ch Bk	Channel Block	Pref	Preformed
Ch Ch	Channel Change	P.S.D.	Passing Sight Distance
C.I.	Curb Inlet	P.T.	Point of Tangency
C.I.P.	Cast Iron Pipe	P.V.C.	Polyvinyl Chloride Sewer Pipe
Cl	Class	Quant	Quantity or Quantities
C.S.E.S.	Corrugated Steel End Section	R	Radius
C.S.P.	Corrugated Steel Pipe	R or Rge	Range
CMS	Cationic Medium Setting	RC	Rapid Curing
Comp	Compression	R.C.E.S.	Reinforced Concrete End Section
Const	Construction	R.C.P.	Reinforced Concrete Pipe
Conc	Concrete	R.C.P.S.	Reinforced Concrete Pipe Sewer
Cont. Reinf. Conc.	Continuously Reinforced Concrete	Rd	Road
Pvm	Pavement	Rdbd	Roadbed
Contn	Continuation	Rdwy	Roadway
Crn	Crown	Refi	Refrigerated
CRS	Cationic Rapid Setting	R.R.	Railroad
Cree	Course	Rt	Right
C.S.	Curve to Spiral	R/W	Right of Way
C to C.	Center to Center	Salv	Salvage
C.Y.	Cubic Yard	San	Sanitary
D	Degree of Curvature	SC	Spiral to Curve
D-Load	Dead Load	SC	Slow Curing
D.B.	Ditch Block	Sc	Spiral Deflection Angle
Def	Deformed	S.D.	Sight Distance
Del	Deliver	S.E.	Superelevation
D.G.	Ditch Grade	Sec	Section
El or Elev	Elevation	Sec Line Appr	Section Line Approach
Ellipt.	Elliptical	Sep	Separation
Emb	Embankment	Serv	Service
Emul.	Emulsified	Sgr Prep	Subgrade Preparation
Engr.	Engineer	Shdr	Shoulder
Eq	Equation	SP	Special Provision
E.R.	East Roadway	S.P.P.	Structural Plate Pipe
E.S.	End Section	S.P.P.A.	Structural Plate Pipe Arch
Esmt	Easement	S.R.	South Roadway
Exc	Excavation	SS	Slow Setting or Supplement Specification
Exp.	Expansion	S.S.D.	Stopping Sight Distance
F.D.	Field Drive	S.T.	Spiral to Tangent
Found	Foundation	Sta.	Station
F.P.	Fence Post	Std	Standard
Furn	Furnish	Std. Spec.	Standard Specifications
Ga	Gage or Gauge	Struct.	Structure
Gr	Gravel	Surf	Surface or Surfacing
Grd	Graded	Surv	Survey
G.V.	Gate Valve	S.W.	Sidewalk
Hel	Helical	S.Y.	Square Yard
Hyd	Hydrant	T	Tangent Length (circular curve)
Ident	Identification	T or Twp.	Township
Inchg	Interchange	Tel	Telephone
Inst	Install	Temp	Temporary
Inter	Intersection	T.P.	Telephone Pole
Invt	Invert	Tr	Traffic
Jt	Joint	Trans	Transverse or Transition
L	Length of Curve	Trtd	Treated
Lc	Length of Spiral	Ts	Tangent Length (curve with spirals)
Levg	Leveling	T.S.	Tangent to Spiral
L.F.	Linear or Linear Foot	U.S.C. & G.S.	United States Coast and Geodetic Survey
Liq	Liquid	V.C.	Vertical Curve
Long	Longitudinal	V.C.P.	Vitrified Clay Pipe
L.P.	Light Pole	W.M.	Water Main
Lt	Left	W.M.V.	Water Main Valve
"M"	One Thousand	W.R.	West Roadway
Matl	Material	Wring	Wearing
Max	Maximum	W.S.V.	Water Service Valve
MC	Medium Curing	X-sec	Cross Section
M.H.	Manhole	Xc	Spiral Coordinate
Min	Minimum	Yc	Spiral Coordinate

Date: January 16, 1997

Re: Closeout meeting for Medora Projects- SS-5-094(005)900,
TEN-5-088(001)000,
SH-5-094(007)903

Final Plan Changes:

1. Riprap was added to the outlet end of pipe across the bikepath outletting to the Little Missouri River, riprap also added to the outlet of the storm sewer for the pipe that crossed the railroad near the East River Road and the outlet of the storm sewer near the West end of Medora.
2. Border States had problems with their paver electronics causing approx. 4000 feet of Hot Bituminous pavement to be out of tolerance on the West Medora Loop. This pavement was overlaid with an extra inch of pavement to bring the ride into tolerance. The contractor was paid \$6000 for the increased section of pavement.
3. An inlet was added West of the Park Entrance to outlet the water off the street and intersection.
4. Six foot wide sidewalk was added between the South sidewalk and R/W in several locations on the project. The added sidewalk eliminated walking across the hydroseeded areas. Sidewalk was added for viewing the relocated Historical Marker. Sidewalk was also added adjacent to the Little Missouri Saloon. The plans called for sawing the asphalt mix to the R/W and placing the sidewalk. There is approx. a foot between the sidewalk and the building. The owner agreed to place the concrete to the building at his cost.
5. A sidewalk drain was added across the sidewalk near the Little Missouri Saloon and Geno Travel business. The water across the sidewalk would have created a hazard.
6. Sod was shown to be placed near the courthouse and Betty Cornell's house. The sod was deleted and replaced with hydro seeding. The owners and contractor agreed with the change. The hydro seeding started very well the next summer.
7. An inlet was added near the courthouse to catch runoff beyond the R/W. The city also tied a 12" PVC into the inlet to collect surface water near the Community Center and the Badlands Motel. The city also placed a concrete surface slab in the R/W to drain water from the Badlands Motel.
8. Curb and gutter and sidewalk was extended from the end of the project curb and sidewalk to 6th Street.
9. Blended Base was added to fill in the parking area in the Packing House Loop after the paving was placed. This eliminated the steep sloughs.

10. End sections were added to the metal pipe extensions. The end sections finished the slopes nicely.

11. Several street signs and other signs were placed on the street light standards eliminating the crowded street signs.

12. Two park entrance signs were added to the project.

13. Seventeen lineal feet of curb was added to each end of the walkway to hold the Pedestrian Railing horizontal.

14. At the request of the owners and the city two cutouts were placed in the North sidewalk for future use, these were placed near Chateau Nuts.

Other Plan Changes During Construction:

1. The blended base placed in the urban section was not primed. The base was not finished in 1995, then in 1996 the paving followed the finish of the blended base. The base did hold up very well during the winter of 1995.

2. The plans did not show the old footings just North of the Little Missouri Bridge. The old footings were removed by extra work to place the footings for the walkway. The piling was adjusted because of the old footings.

3. The contractor was allowed to obtain borrow from the R/W for the embankment needed on the East Medora Loop. A lot of eroded areas were shaped by the contractor using the borrow for the embankment areas. This shaping increased the acres of hydro seeding. Prior to the seeding on the project some Class III with straw mulching was negotiated for areas that were not as steep.

Problems on the project:

1. The curb and gutter placed late in the fall of 1995 was not properly protected from freezing, also the back of the curb was out of vertical tolerance. This curb and gutter was replaced at their cost in the spring of 1996.

2. Some of the Hot Bituminous Pavement Class 30 placed in the urban section was out of tolerance for ride and was replaced by the contractor at their cost.

3. The surface drainage of the mall is draining across a private lot and across the South sidewalk of the project. The city is supposed to be working with the owner (mayor) of the mall to correct the drainage problem.

4. There is a pending rivet claim on the project. The subcontractor contends that the rivets were difficult to remove because of misalignment of the structural members.

Comments:

The time frame for the completion of the project was very tight as the work in the city needed to be completed between labor day and May 25, 1996. The project provided for the use of a CPM (Critical Path Method) to help keep the project on schedule. The contractor did a very poor job of utilizing the CPM. With good planning the curb and gutter and one lift of Hot Bituminous Pavement should have been placed in the fall of 1995. No extra effort was made to complete this work. Instead of concentrating on the project the contractor did a lot of private work. The out of tolerance pavement and curb and gutter did not help progress. The contractors progress could be summed up as follows, IF YOU FAIL TO PLAN, PLAN TO FAIL.

The weekly meetings with the contractors, city, and other interested parties were very beneficial to everyone. The meetings kept all parties informed of the project activities.

Robert Dvorsky - Project Eng.

NORTH DAKOTA STATE HIGHWAY DEPARTMENT

SHEET NO. 1 OF 3

ABSTRACT OF BIDS RECEIVED

PROJECT NO. SS-5-094(005)900. YES-5-088(001)000 SNH-5-094(007)903.			TYPE TMP	NO.	4 BIDDER ENGINEERS ESTIMATE	BIDDER BORDER STATES PAVING	BIDDER NORTHERN IMPROVEMENT		
COUNTY & DATE BILLINGS COUNTY 007 JUN 16, 1995									
LENGTH & TYPE 3.510 194 MEDORA BUSINESS LOOP						FARGO, ND	FARGO, ND		
COMPLETION TIME 07 28 96 GRAD., SURF., SEW., LGHT., SGN., MR					C.C. CHECK RANK 00	C.C. BOND RANK 01	C.C. BOND RANK 02		
SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	BID PRICE	AMOUNT	BID PRICE	AMOUNT	BID PRICE	AMOUNT
103	CONTRACT BOND	L.SUM	1000	14300000	14300000	10650000	10650000	15000000	15000000
107	RAILWAY PROTECTION INSURANCE	L.SUM	1000	2000000	2000000	1500000	1500000	8200000	8200000
201	CLEARING & GRUBBING	L.SUM	1000	15000000	15000000	7725000	7725000	8250000	8250000
201	REMOVAL OF TREES 4IN	EA	17000	80000	1360000	51500	87500	55000	93500
201	REMOVAL OF TREES - 6 INCHES	EA	13000	90000	1170000	51500	66950	55000	71500
201	REMOVAL OF TREES - 8 INCHES	EA	11000	100000	1100000	51500	56650	55000	60500
201	REMOVAL OF TREES - 10 INCHES	EA	6000	110000	660000	51500	30900	55000	33000
201	REMOVAL OF TREES - 12 INCHES	EA	3000	120000	360000	51500	15450	55000	16500
201	REMOVAL OF TREES - 18 INCHES	EA	1000	200000	200000	51500	5150	55000	5500
201	REMOVAL OF TREES - 30 INCHES	EA	1000	350000	350000	103000	10300	110000	11000
201	REMOVAL OF TREES 49IN	EA	1000	500000	500000	257500	25750	275000	27500
201	STUMP REMOVAL	EA	8000	100000	800000	128750	103000	38500	30800
202	REMOVAL OF CONCRETE	L.SUM	1000	15000000	15000000	30900000	30900000	33000000	33000000
202	REMOVAL OF CONCRETE	SQ YD	452000	8000	361600	5250	237300	4150	187500
202	REMOVE AND SALVAGE BITUMINOUS SURFACING	TON	10928000	7000	7649600	5000	5464000	6050	6611400
202	REMOVAL OF CURB AND GUTTER	L.FT.	3096000	2000	743000	4300	1331200	3600	1114500
202	SAW BITUMINOUS SURFACING (FULL DEPTH)	L.FT.	819000	3750	307125	6000	491400	5250	429975
202	REMOVAL OF INLETS	EA	6000	240000	144000	310000	186000	330000	198000
202	RESTORE HISTORICAL MARKER	EA	1000	1000000	1000000	3090000	3090000	1500000	1500000
203	COMMON EXCAVATION - TYPE A	CU YD	17020000	3400	5786800	1450	2467900	1550	2638100
203	TOPSOIL	C.YD.	4537000	1700	862030	1450	657865	1550	703235
203	BORROW	CU YD	24631000	2200	5418820	4150	10221865	4400	10837600
203	FLATTEN DITCH BLOCK SLOPES	EA.	1000	350000	350000	515000	51500	550000	55000
203	APPROACH INSLOPE RECONSTRUCTION	EA.	18000	300000	540000	360000	648000	385000	693000
203	GUARDRAIL EMBANKMENT- TYPE C.	EA.	6000	1400000	840000	1030000	618000	1100000	660000
210	CLASS I EXCAVATION	L.SUM	1000	1000000	1000000	1030000	1030000	1100000	1100000
210	SELECT BACKFILL	TON	145000	10000	1450000	17000	253750	16500	239250
210	FOUNDATION PREPARATION	EA	1000	1000000	1000000	3090000	3090000	5500000	5500000
210	WATER	M GAL	1275000	8000	1023200	12000	1534800	9000	1151100
302	SALVAGED BASE COURSE	TON	9836000	9500	9442500	7200	7081920	5000	4918000
302	AGGREGATE BASE COURSE CL.3	TON	6601000	9000	5940900	13550	8944355	11500	7591150
302	AGGREGATE BASE COURSE CL.5	TON	5432000	12500	6790000	15100	8202320	11350	6165320
401	670 OR 250 LIQUID ASPHALT	GAL	8945000	1000	894500	780	697710	1250	1118125
401	SS1H OR CSS1H EMULS. ASPH.	GAL	7818000	1000	781800	850	672348	900	703620
408	HOT BITUMINOUS PAVEMENT CLASS 30	TON	19507000	29000	56570300	28300	55204810	28700	55985090
408	220-150 ASPH.CEMENT	TON	1151000	140000	16114000	162000	18646200	120000	13812000
408	CORED SAMPLE (BIT.PVMT.)	EA.	92000	20000	1840000	30000	276000	38500	354200
410	MILLING BITUMINOUS PAVEMENT	TON	3016000	8000	2412800	8400	2533440	15000	4524000
602	CLASS AAE-3 CONCRETE	CU YD	129000	400000	51600000	726000	9365400	418000	5392200
602	CLASS AAE-5 CONCRETE	CU YD	10000	1000000	1000000	1030000	1030000	1100000	1100000
602	CLASS AAE-3 CONCRETE	CU YD	48000	250000	12000000	515000	2472000	456500	2191200
610	REINFORCING STEEL - GRADE 60	LB	24431000	500	1221550	570	1392567	580	1416998
610	REINFORCING STEEL - GRADE 60 (EPOXY COATED)	LB	4243000	600	254580	1050	445515	950	403085
610	STRUCTURAL STEEL	L.SUM	1000	65000000	65000000	43260000	43260000	72350000	72350000
610	RIVET REMOVAL	EA.	570000	5000	285000	7200	1410400	65000	3705000
610	FIELD DRILL HOLE	EA.	100000	5000	500000	15450	154500	65000	650000
622	STEEL PILING HP10X42	L.FT.	320000	25000	8000000	22650	724800	22000	704000
624	PEDESTRIAN RAILING (REMOVE & REPLACE)	L.SUM	1000	35000000	35000000	26750000	26780000	30000000	30000000

ACTION TAKEN BY STATE HIGHWAY COMMISSION:

AWARD TO:

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

NORTH DAKOTA STATE HIGHWAY DEPARTMENT

SHEET NO. 3 OF 3

ABSTRACT OF BIDS RECEIVED

PROJECT NO. 55-5-094(005)900. TES-5-088(001)000. SNH-5-094(007)903.		TYPE IMP	NO.	BIDDER ENGINEERS ESTIMATE	BIDDER BORDER STATES PAVING,	BIDDER NORTHERN IMPROVEMENT			
COUNTY & DATE BILLINGS COUNTY JUN 16, 1995									
LENGTH & TYPE 3.510 I94 MEDORA BUSINESS LOOP									
COMPLETION TIME 07 28 96 GRAD., SURF., SEW., LGHT., SGN., RR				C.C. CHECK RANK 00	FARGO, ND C.C. BOND RANK 01	FARGO, ND C.C. BOND RANK 02			
SPEC NO	ITEM DESCRIPTION	UNIT	QUANTITY	BID PRICE	AMOUNT	BID PRICE	AMOUNT	BID PRICE	AMOUNT
754	HAZARD MARKERS - TYPE III	EA.	2000	70000	140000	103000	206000	110000	220000
754	RESET SIGN PANEL	EA.	7000	50000	350000	51500	360500	55000	385000
754	REMOVE CONCRETE FOUNDATION	EA.	1000	300000	300000	257500	257500	275000	275000
762	PAVEMENT MARKING PAINTED MESSAGE	SQ. FT	224000	1500	336400	1800	403200	1500	336000
762	PLASTIC PVMT MARKING FILM MESSAGE	SQ. FT	76000	7000	532000	10300	782300	8800	668800
762	SHORT TERM 4IN LINE TYPE R	LF	630000	1300	819000	2500	1638000	3300	2079000
762	PVMT MKG PAINTED 4IN LINE	LF	72991000	150	10948650	080	5839280	040	2919640
762	PVMT MKG PAINTED 6IN LINE	LF	1037000	300	311100	110	114070	110	114070
762	PVMT MKG PAINTED 8IN LINE	LF	196000	750	147000	110	215600	300	58800
762	PVMT MKG PAINTED 24IN LINE	LF	200000	1000	200000	2050	410000	1100	220000
762	PVMT MKG PAINTED CURB TOP AND FACE	LF	485000	850	412250	1000	485000	1200	582000
764	THREE CABLE GUARD RAIL	L. FT.	1713000	6500	11134500	6300	10791500	6700	11477100
764	W-BEAM GUARDRAIL	L. FT.	2142000	16500	35343000	15250	32665500	16250	34807500
764	W-BEAM G.R.-FLARED END TREAT. & TRANSITION	EA.	7000	900000	6300000	994000	6958000	1062000	7434000
764	REMOVE W-BEAM GUARD RAIL AND POSTS	LF	563000	1250	703750	1150	647450	1200	676000
764	CONCRETE CL. AE-3 SAFETY SHAPE TRANSITION	EA.	4000	1500000	6000000	2060000	8240000	1650000	6600000
764	REMOVE 2-CABLE GUARD RAIL & POSTS	L. FT.	920000	1100	1012000	1050	966000	1100	1012000
764	REMOVE 4-CABLE GUARD RAIL & POSTS	L. FT.	1080000	1500	1620000	1050	1134000	1100	1188000
764	REMOVE BOX BEAM GUARD RAIL	L. FT.	1496000	1400	2094400	1050	1570800	1100	1645600
764	REMOVE END TREATMENT & TRANSITION	EA.	4000	75000	300000	77000	308000	82500	330000
764	DBL. BOX BEAM RAIL RETROFIT (FREE STANDING)	L. FT.	707000	35000	24745000	32200	22765400	34400	24320800
770	CONCRETE FOUNDATION - HIGHWAY LIGHTING	EA.	32000	250000	8000000	611000	19552000	621500	19888000
770	CONCRETE FOUNDATION - FEED POINT-TYPE B	EA.	1000	300000	300000	378500	378500	385000	385000
770	CABLE TRENCH-TYPE II	L. FT.	4251000	1000	4251000	1300	5526300	1350	5738450
770	2 INCH DIA. RIGID CONDUIT	L. FT.	914000	6000	5484000	2800	2559200	2850	2604900
770	2.5 INCH DIA. RIGID CONDUIT	L. FT.	108000	8000	864000	3650	394200	3750	405000
770	MULTIPLE UNDERGROUND CABLE 2NO4-1NO6 STYLE USE	L. FT.	532000	3500	1862000	3100	1649200	3150	1675800
770	MULTIPLE UNDERGROUND CABLE 3NO2-1NO6 STYLE USE	L. FT.	485000	5000	2425000	4450	2158250	4500	2182500
770	MULTIPLE UNDERGROUND CABLE 3NO4-1NO6 STYLE USE	L. FT.	3295000	3500	11532500	3750	12356250	3800	12521000
770	MULTIPLE UNDERGROUND CABLE 4 NO.6 STYLE USE	L. FT.	1619000	5000	8095000	3200	5180800	3250	5261750
770	FEED POINT - TYPE II- PAD MOUNTED	EA.	1000	1800000	1800000	2130000	2130000	2165000	2165000
770	ORNAMENTAL LIGHT STD - 16 FT. HT. HT.	EA.	32000	700000	2240000	1120000	3584000	1140000	3648000
770	ORNAMENTAL LT FIXTURE - 150 WATT	EA.	32000	650000	2080000	703000	2249600	715000	2288000
770	REMOVE LIGHT STANDARD	EA.	23000	150000	3450000	357000	8211000	360000	8280000
910	FLAP GATE, 30 IN.	EA	1000	1300000	1300000	1240000	1240000	2500000	2500000
930	BRIDGE REPAIR (BEARING)	L. SUM	1000	500000	500000	1030000	1030000	1650000	1650000
930	PIER REPAIR	L. SUM	1000	2000000	2000000	5150000	5150000	5500000	5500000
950	TRAINING	M HP	2000000	800	1600000	800	1600000	800	1600000
990	CRITICAL PATH METHOD SCHEDULE	L. SUM	1000	15000000	15000000	14420000	14420000	15500000	15500000
990	PIPE CLEANOUT	EA	11000	400000	4400000	360000	3960000	550000	6050000
TOTAL					255355385		289176681		301824524
						NO LIMIT		NO LIMIT	

ACTION TAKEN BY STATE HIGHWAY COMMISSION:

AWARD TO:

Border States Paving, Inc.

9

DATE OF AWARD

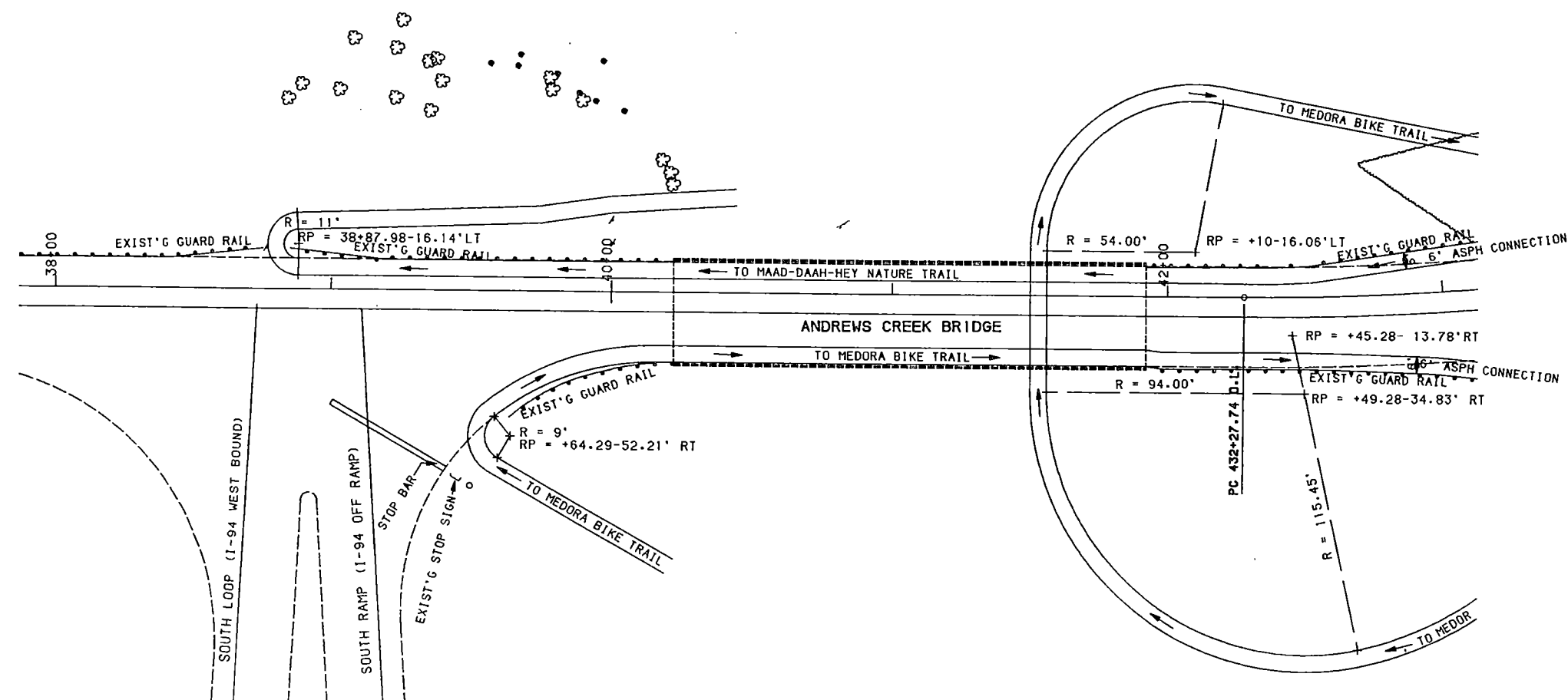
7-13

19

95

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	ND	SS-5-094 (005) 900	41

TES-5-088 (001) 000



NOTE: RADII GIVEN FOR NATURE TRAIL ARE APPROXIMATE ONLY. THE ENGINEER IN THE FIELD SHOULD ADJUST RADII IF NECESSARY. THE CONTRACTOR SHALL MOW AN 8' WIDE PATH TO ACCOMMODATE THE NATURE TRAIL AND IT'S CONNECTION TO THE ASPHALT SURFACED BIKE TRAIL. NOT A PAY ITEM. COST TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS.

[illegible]

BENCH MARKS			
NO.	DESCRIPTION	LOCATION	ELEV.
-	-	-	-
-	-	-	-

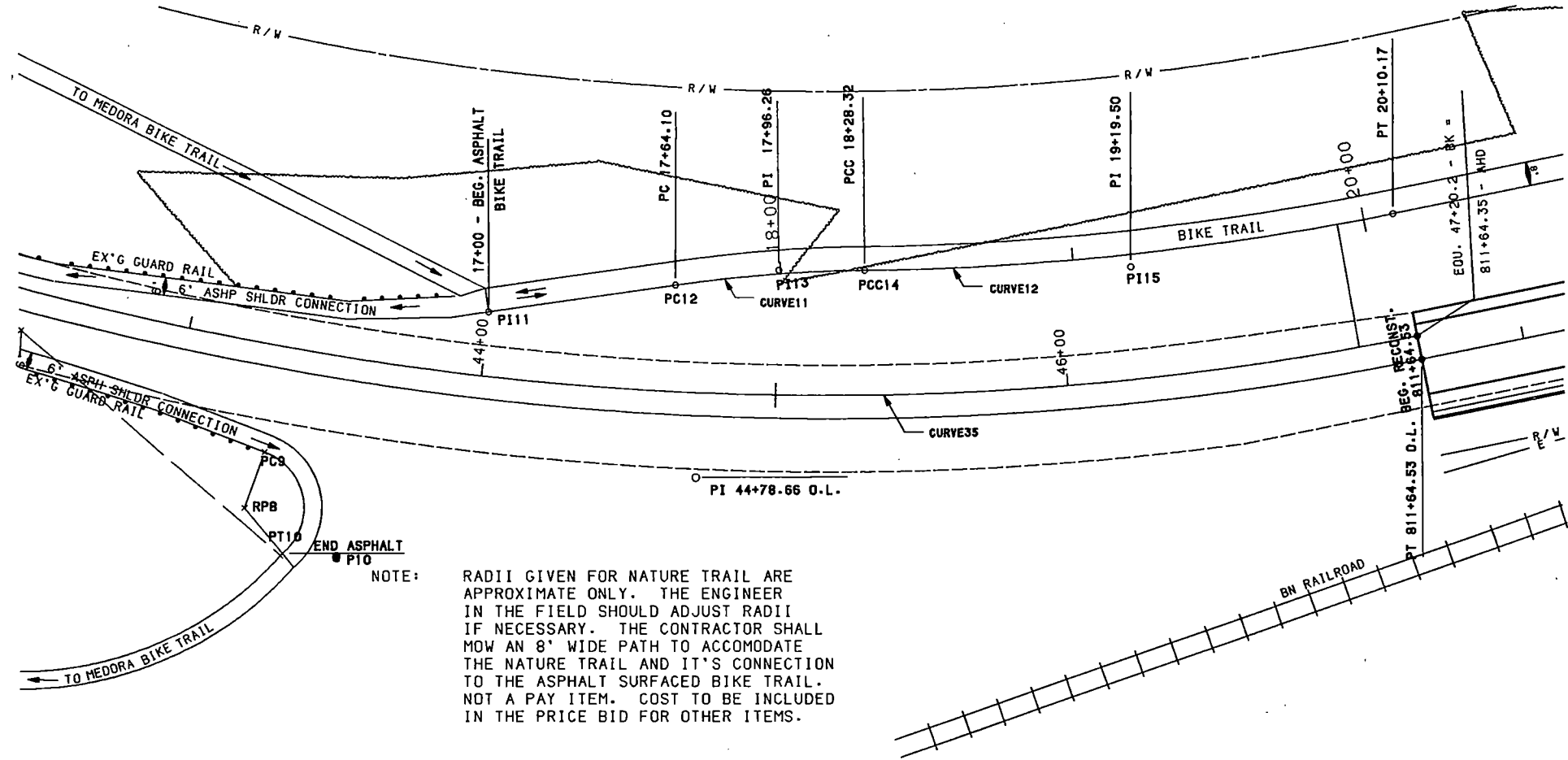
PROJECT LOCATION	
STA. M.L. 38+00 TO 43+00	
FILE:	PPWEST.GRF



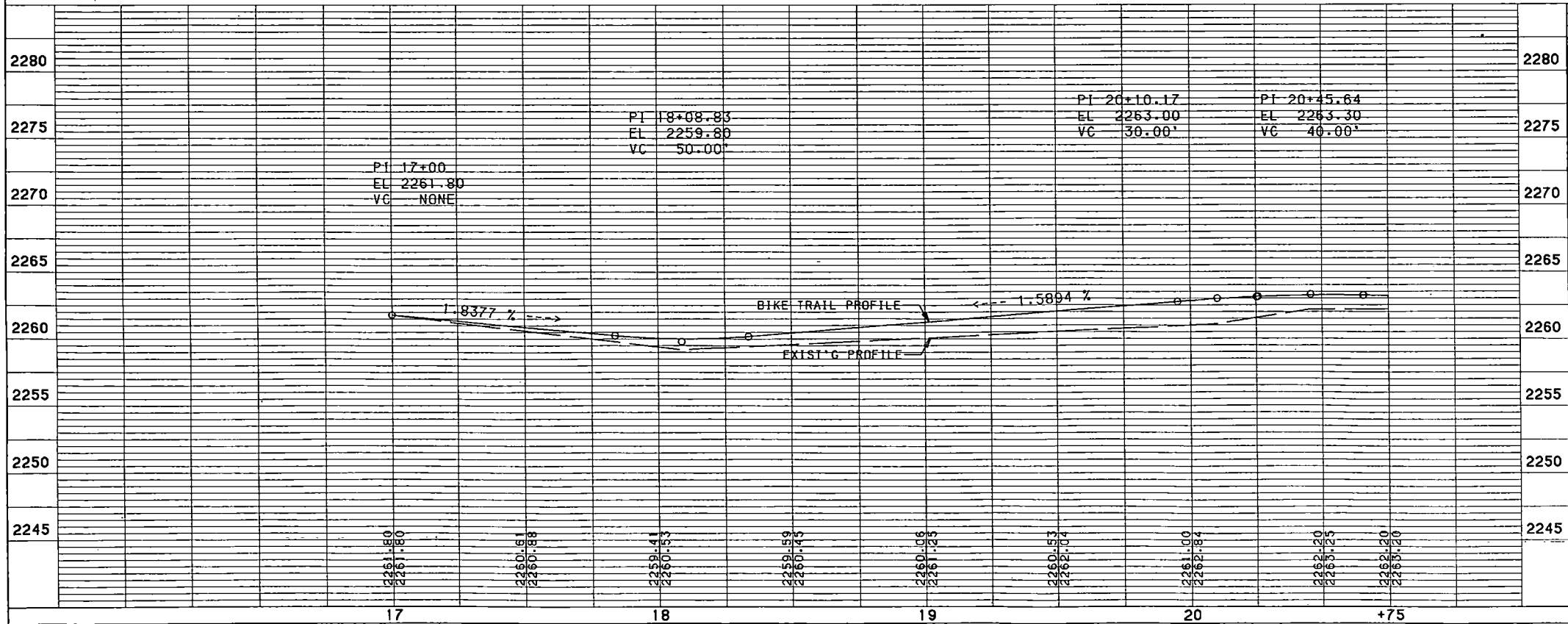
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SCALE IN FEET

TES-5-088 (001) 000



NOTE: RADII GIVEN FOR NATURE TRAIL ARE APPROXIMATE ONLY. THE ENGINEER IN THE FIELD SHOULD ADJUST RADII IF NECESSARY. THE CONTRACTOR SHALL MOW AN 8' WIDE PATH TO ACCOMMODATE THE NATURE TRAIL AND IT'S CONNECTION TO THE ASPHALT SURFACED BIKE TRAIL. NOT A PAY ITEM. COST TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS.



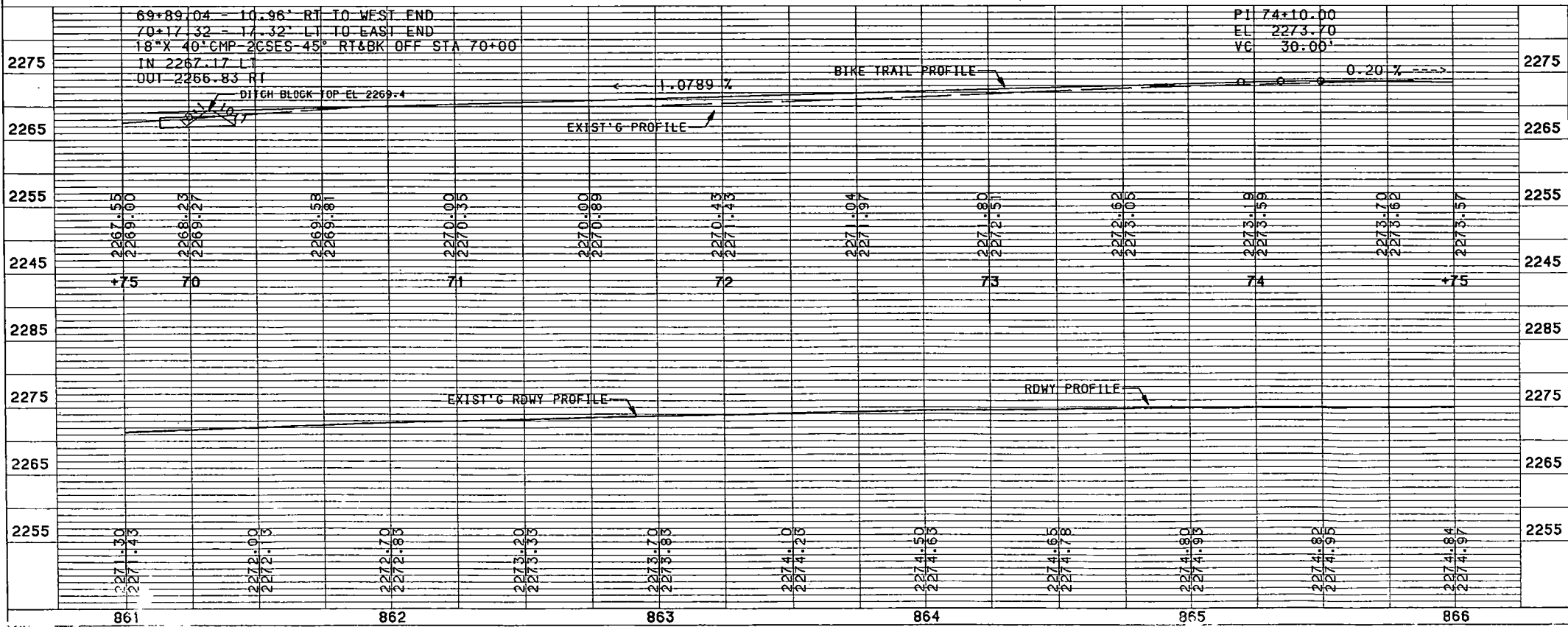
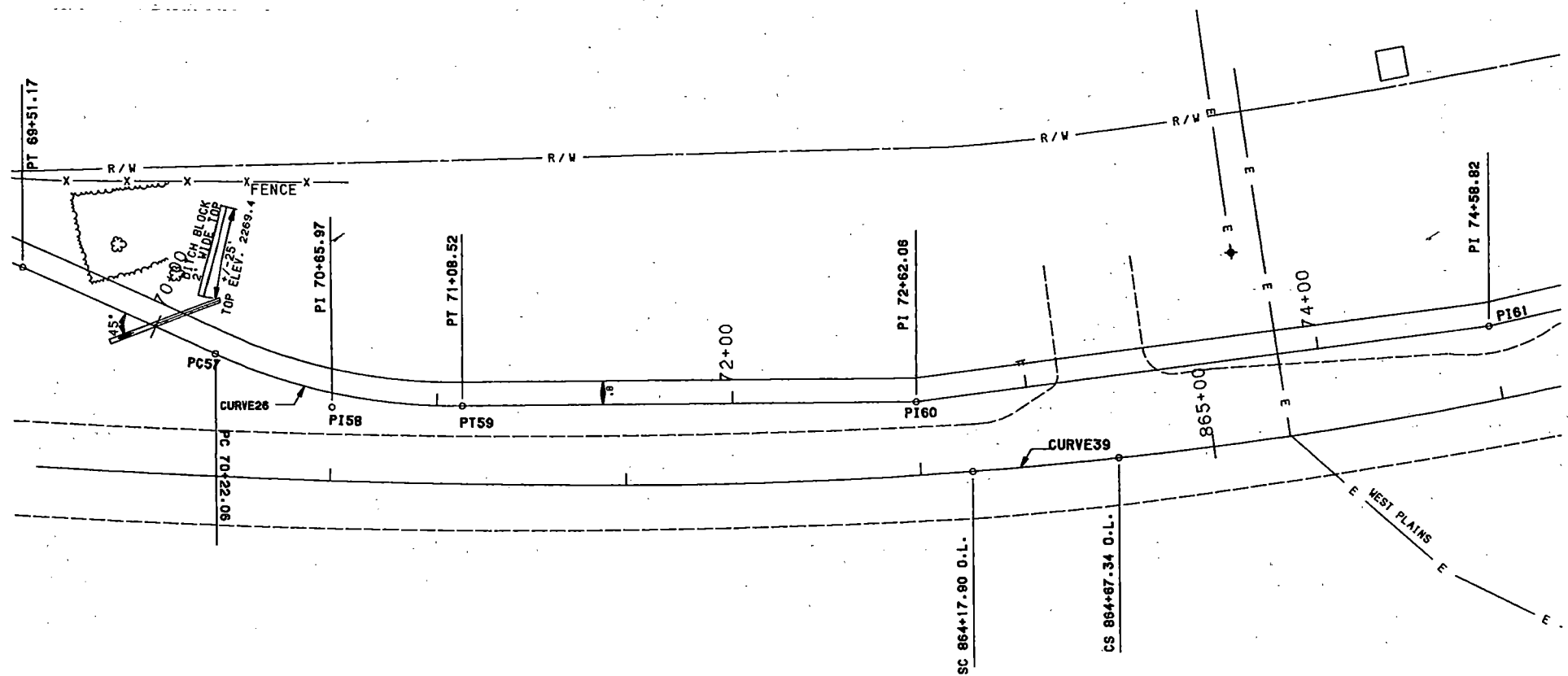
NORTHING		EASTING		CURVE35	
RP8	16612.0944	4057.8271		DEL	27°04'30"
PC9	16621.3016	4075.6687		D	5°29'52.43"
PT10	16592.0231	4055.7667		T	250.92'
DEL	120°26'16.80"			R	1042.14'
R	20.08'			L	492.46'
PI11	16604.2657	4163.8647			
CURVE11					
PC12	16567.8766	4216.6385			
PI13	16547.7712	4245.7968			
PCC14	16528.1315	4267.0245			
RP	16156.2459	3932.8073			
DEL	7°21'32.40"				
D	11°27'32.96"				
T	32.15'				
R	500.00'				
L	64.22'				
CURVE12					
PCC14	16528.1315	4267.0245			
PI15	16467.1797	4334.7870			
PT16	16419.5110	4412.5506			
RP	17272.0068	4935.5523			
DEL	10°25'01.20"				
D	5°43'43.60"				
T	91.17'				
R	1000.14'				
L	181.84'				

BENCH MARKS			
NO.	DESCRIPTION	LOCATION	ELEV.
2	TOP OF CAP BOLD BY BY CONC BY MARKER	86+42-63'RT	2267.47
-	-	-	-
PROJECT LOCATION			
M.L. 43+00 TO 47+20.2BK=811+64.53			
FILE:	PPWEST.GRF		

TES-5-088(001)000

PIPE CORR. STEEL .064 IN. - 18 IN.
70+00 - 45° RT. & BK 40 L.F

END SECT. CORR. STEEL - .064 IN. - 18 IN.
70+00 - 45° SKEW RT & BK 2 EA



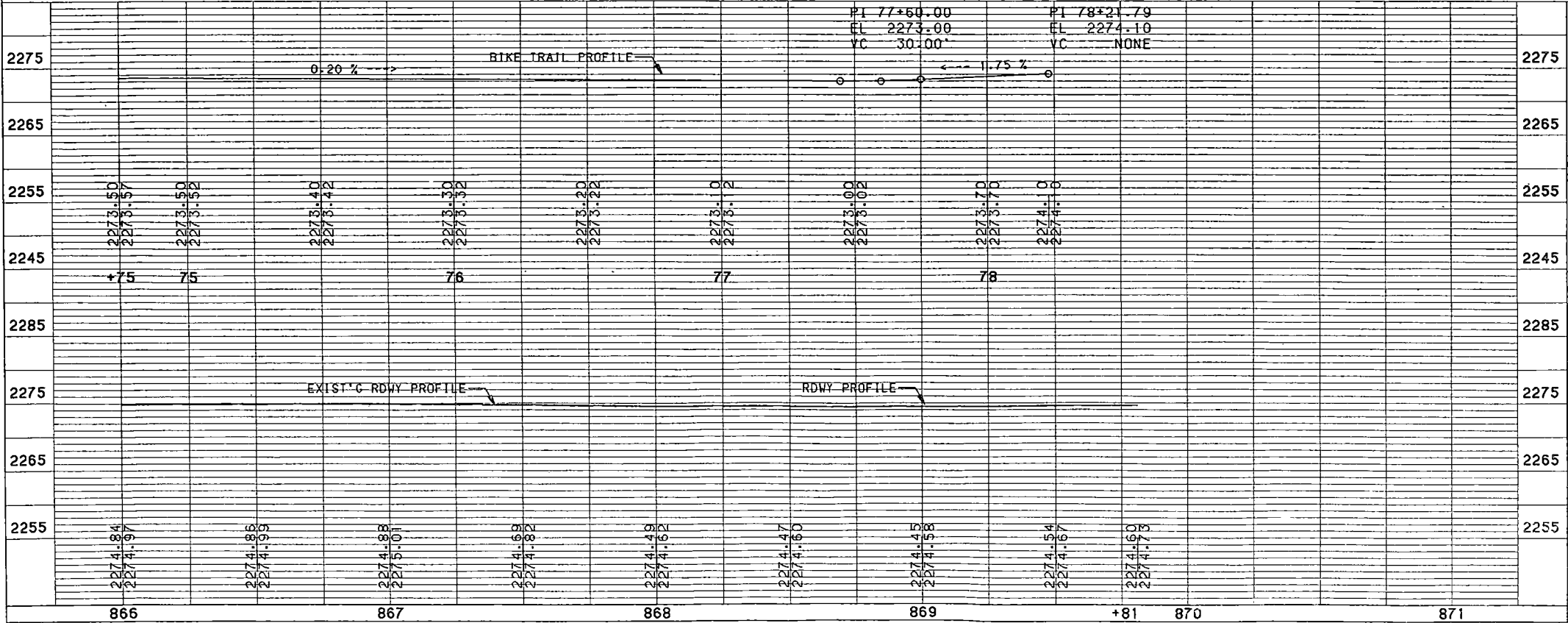
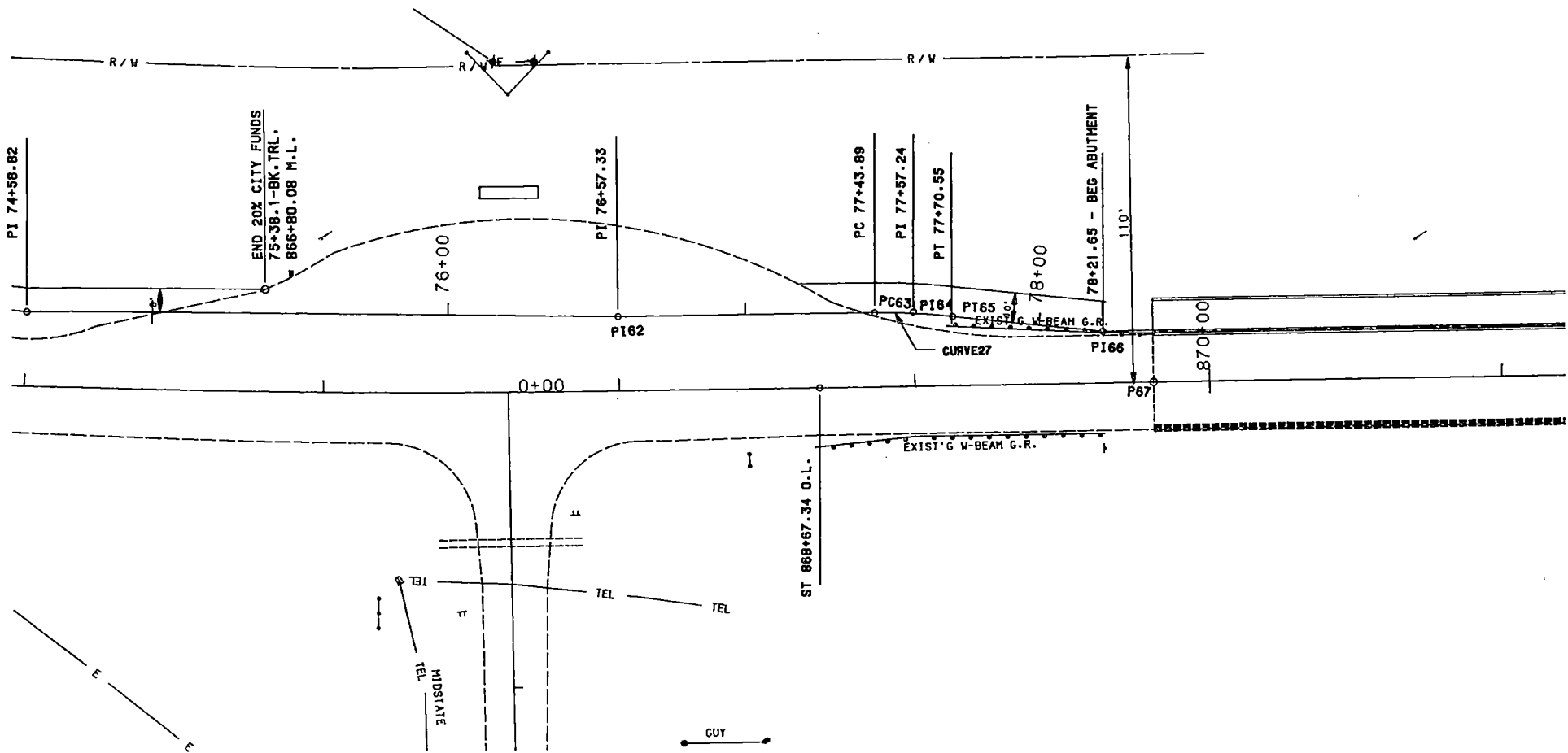
NORTHING		EASTING	
CURVE26		CURVE39	
PC57	12597.9945	7586.3804	DEL 17°59'27.184"
PI58	12556.2072	7599.8800	D 4°00'10.51", 2-400'SPIRALS
PT59	12523.9193	7629.6441	R 1431.35'
RP	12659.4768	7776.6957	SC 7°57'
DEL	24°46'04.80"		Yc 399.57' CALC
D	28°38'52.42"		Xc 18.62' CALC
T	43.91'		Tc 427.19' CALC
R	200.00'		L 49.44'
L	86.46'		
PI60 12411.0263		7733.7131	
PI61 12283.5717		7883.6219	

BENCH MARKS			
NO.	DESCRIPTION	LOCATION	ELEV.
-	-	-	-
-	-	-	-

PROJECT LOCATION	
STA. M.L. 861+00 TO 866+00	
FILE: PPWEST2.GRF	SCALE IN FEET

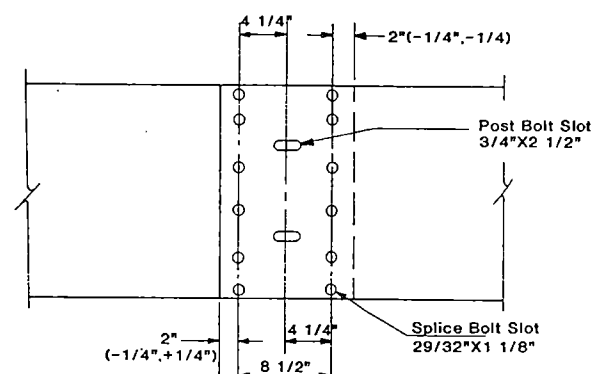
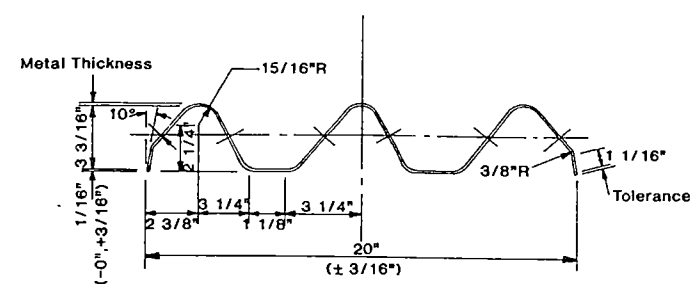
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	ND	SS-5-094 (005) 900	54

TES-5-088 (001) 000

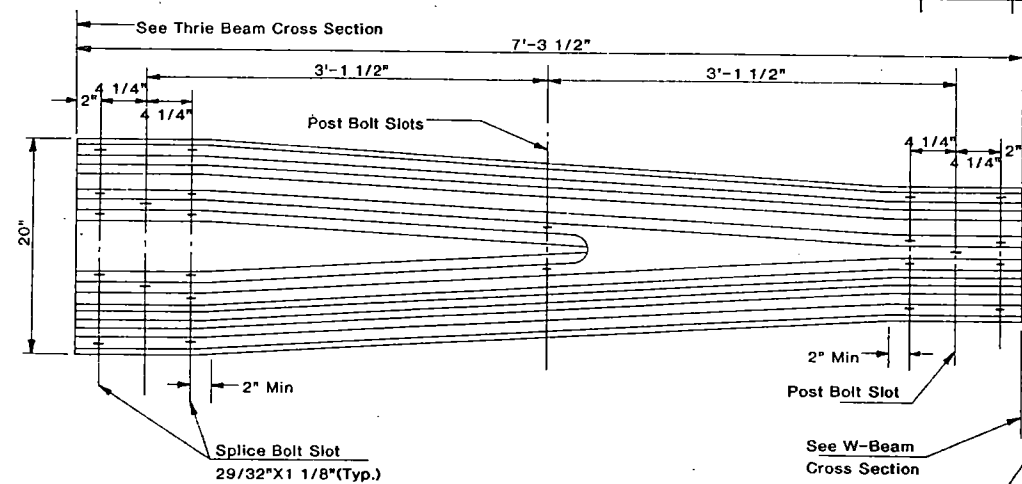
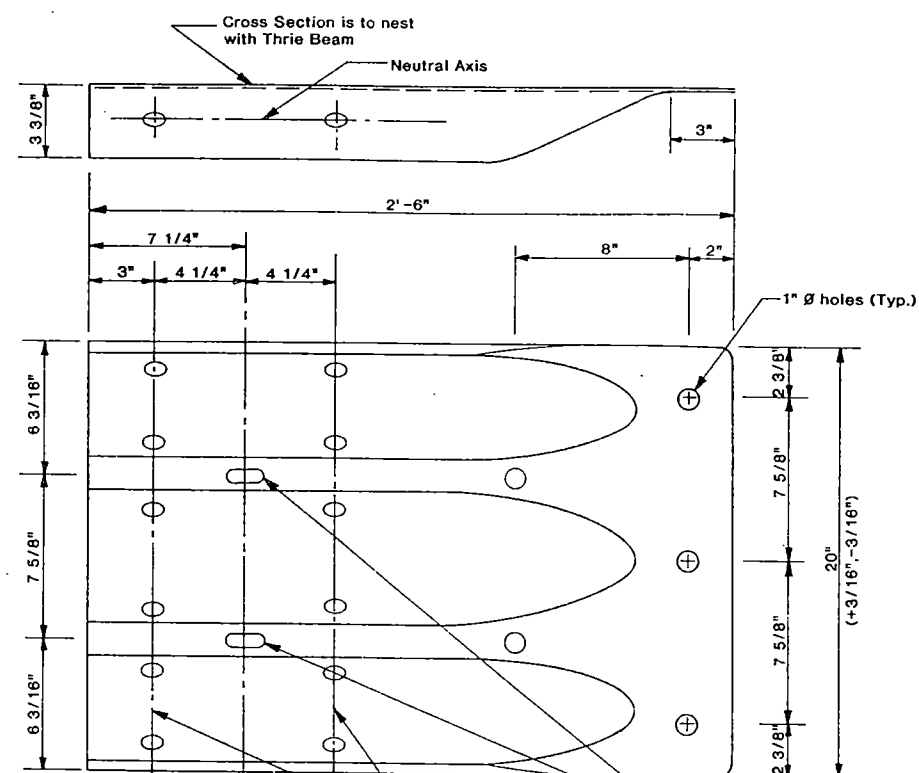


	NORTHING	EASTING
PI62	12169.5746	8046.1357
CURVE 27		
PC63	12121.7617	8118.2814
PI64	12114.3869	8129.4094
PT65	12105.5985	8139.4585
RP	11955.0491	8007.7965
DEL	7°38'16.80"	
D	28°38'52.40"	
T	13.35'	
R	200.00'	
L	26.66'	
PI66	12072.7487	8178.6016
END BK.TR. & BEG. BRIDGE ABUT.		
P67	12048.8492	8183.1756
BEG. BRIDGE STA 869+81 M.L.		

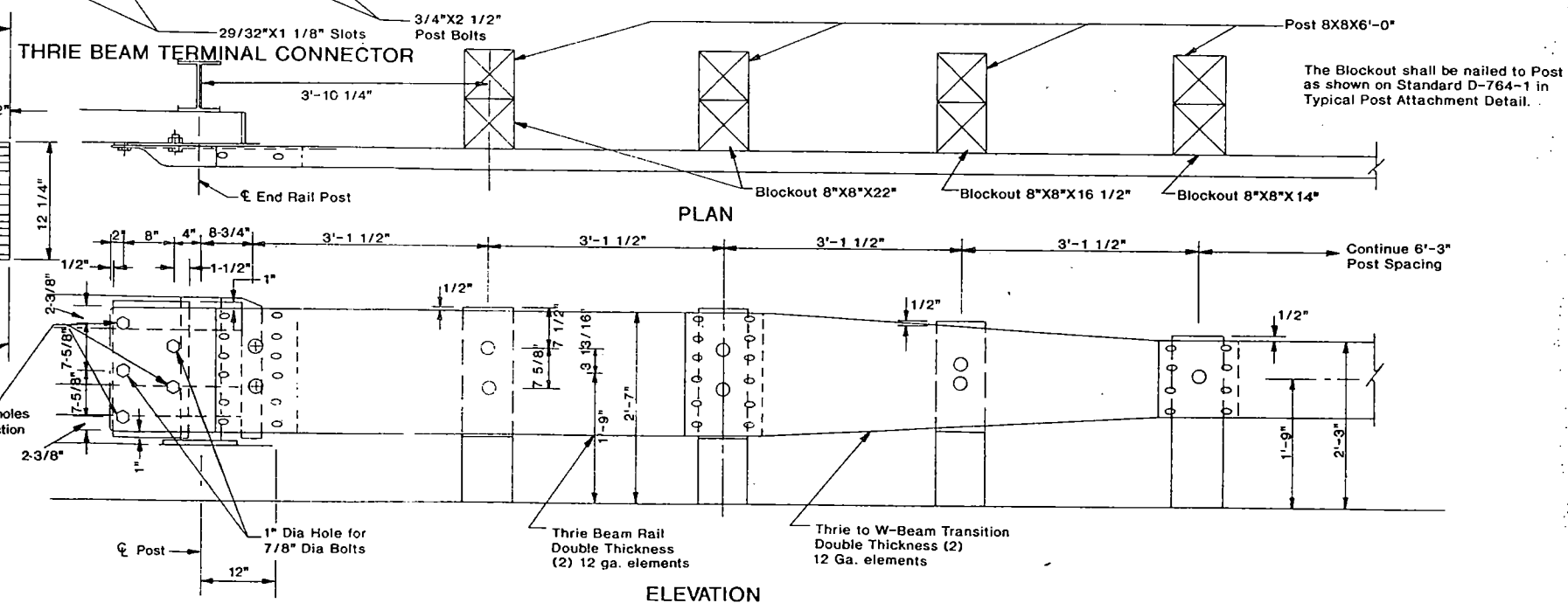
BENCH MARKS			
NO.	DESCRIPTION	LOCATION	ELEV.
-	-	-	-
-	-	-	-
PROJECT LOCATION			
STA. M.L. 866+00 TO 871+00			
FILE:	PPWEST2.GRF		
		SCALE IN FEET	



THRIE BEAM



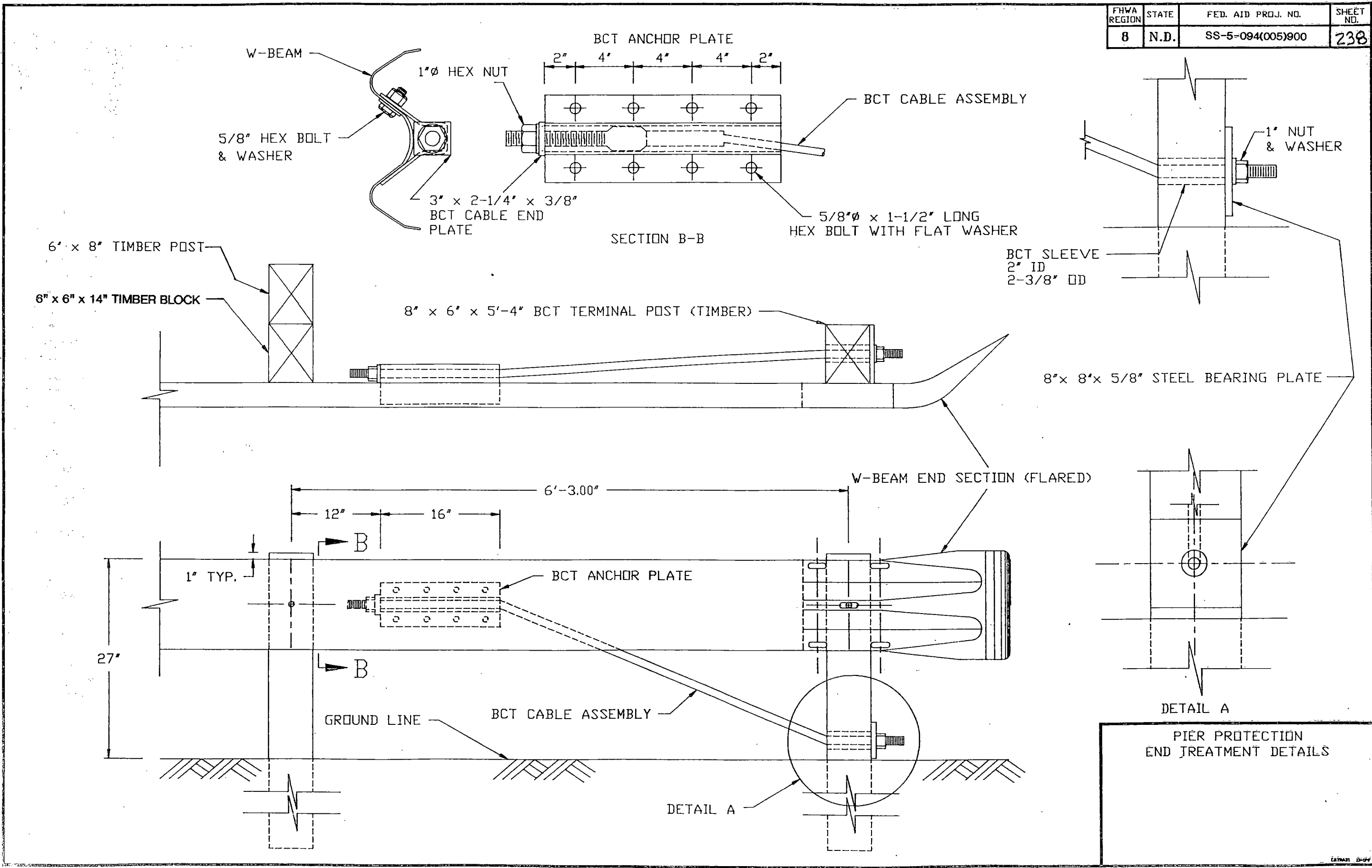
THRIE TO W-BEAM TRANSITION SECTION

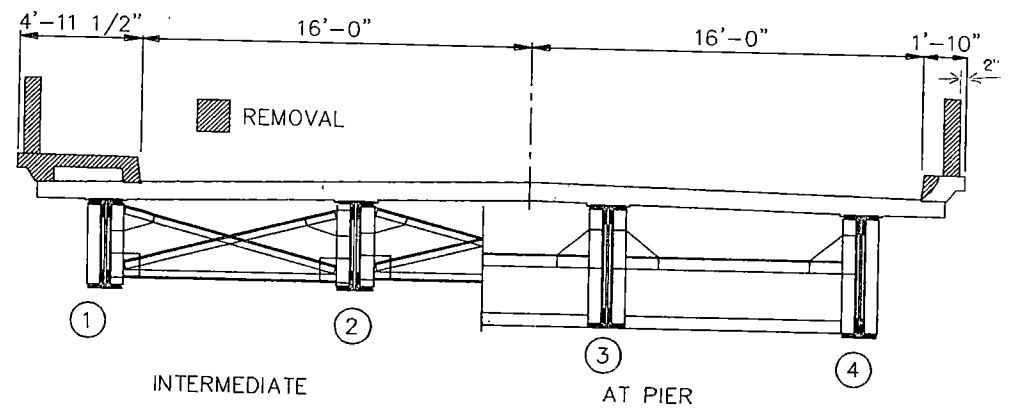
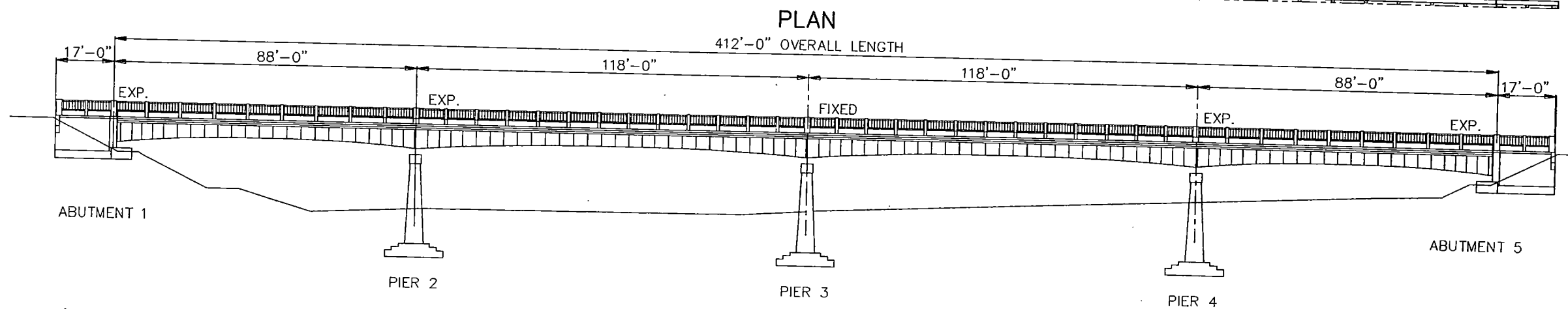
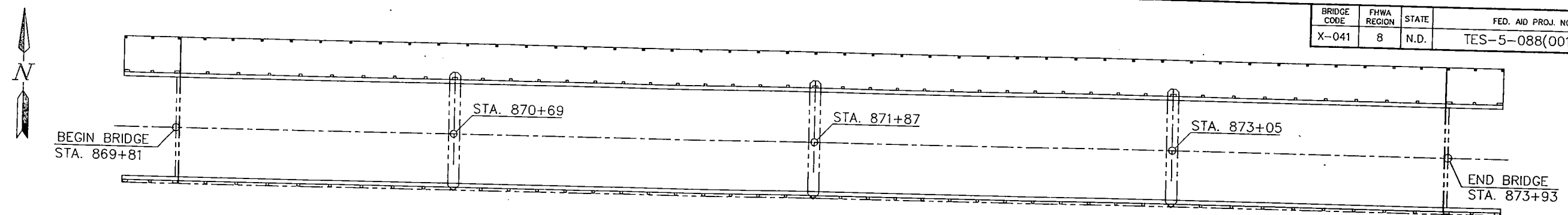


ELEVATION

THREE BEAM TO W-BEAM TRANSITION AND CONNECTION TO DOUBLE BOX BEAM RAIL RETROFIT

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	SS-5-094(005)900	238



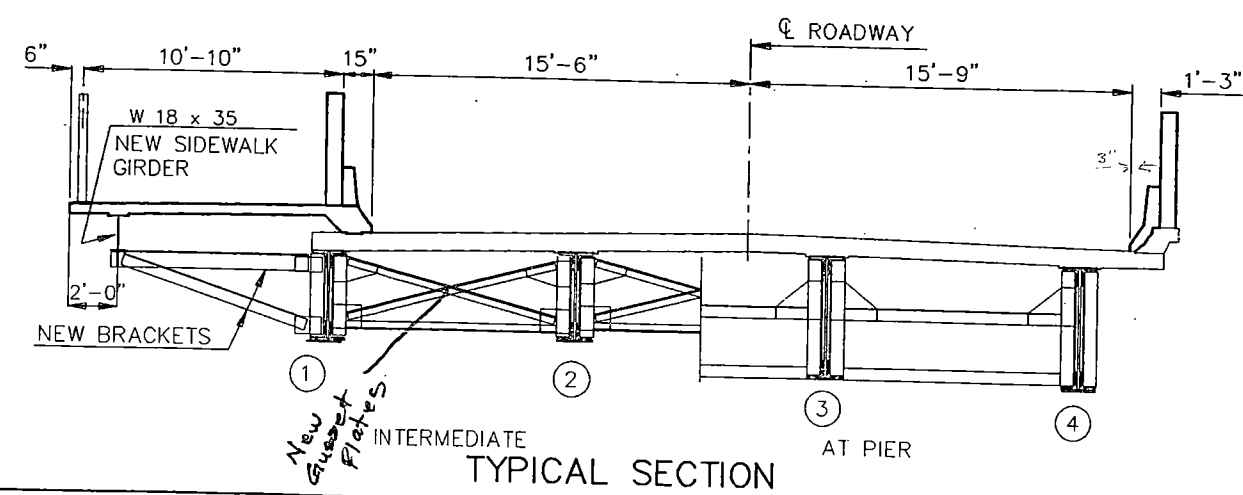


ELEVATION

DESIGN STRENGTHS

$f'_c = 3,000$ PSI ~ CLASS AE-3 CONCRETE
 $f'_c = 4,000$ PSI ~ CLASS AAE-3 CONCRETE
 $f_y = 36,000$ AASHTO M270 GRADE 36 STRUCTURAL STEEL
 $f_y = 50,000$ AASHTO M270 GRADE 50 STRUCTURAL STEEL
 $f_y = 60,000$ PSI ~ REINFORCING STEEL

LOAD FACTOR DESIGN



TYPICAL SECTION FOR EXISTING

TYPICAL SECTION

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	W 0111	REMOVAL OF CONCRETE	L. SUM	1.0
210	W 0101	CLASS 1 EXCAVATION	L. SUM	1.0
210	W 0198	SELECT BACKFILL	TON	145.0
210	W 0201	FOUNDATION PREPARATION	EA.	1.0
602	W 0130	CLASS AAE-3 CONCRETE	CU. YD.	128.5
602	R 0134	CLASS AAE-5 CONCRETE	CU. YD.	9.3
602	W 1130	CLASS AE-3 CONCRETE	CU. YD.	47.4
612	W 0115	REINFORCING STEEL GRADE 60	LBS.	24431.0
612	W 0116	REINFORCING STEEL GRADE 60 EPOXY	LBS.	4,243.0
616	W 5890	STRUCTURAL STEEL (APPR. 34,500 LBS.)	L. SUM	1.0
616	W 6020	RIVET REMOVAL	EA.	570.0
616	W 6030	FIELD DRILL HOLE	EA.	100.0
622	W 0020	STEEL PILING HP 10X42	L. FT.	320.0
624	R 0120	PEDESTRAIN RAILING (REMOVE & REPLACE)	L. SUM	1.0
624	0123	PEDESTRAIN RAILING	L. FT.	445.0
630	G 0100	SANDBLASTING AND PAINTING	L. SUM	1.0
630	G 9000	CONTAINMENT SYSTEM	L. SUM	1.0
930	B 9505	BRIDGE REPAIR (BEARING)	L. SUM	1.0
930	P 9630	PIER REPAIR	L. SUM	1.0

SPECIAL PROVISION	
SP 133(92)	
STANDARD DRAWINGS	
D-622-1, D-900-1	
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
LITTLE MISSOURI RIVER BRIDGE MEDORA, ND	
BRIDGE LAYOUT	
PROJECT: TES-5-088(001)000 STATION 871 + 87	
BILLINGS COUNTY	
APPROVED	DATE
4/4/95	Steve J. Miller
	BRIDGE ENGINEER

LITTLE MISSOURI RIVER BRIDGE
MEDORA, ND

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	TES-5-088(001)000	240

- 100 SCOPE OF WORK: This project consists of removing and resetting the existing rail and providing a new rail at edge of sidewalk. Jersey barriers will be added to the bridge. The existing sidewalk will be removed and replaced with a 10-foot sidewalk. The abutments will be widened to accommodate the new sidewalk. The steel girders will be sandblasted and painted.
- 100 GENERAL: The cost of furnishing and placing preformed expansion joint filler, concrete inserts, tie wire, bar spacers, bar supports, and other miscellaneous items shall be included in the price bid for Class AE-3 and AAE-3 concrete.
- 105 The existing structural steel is painted with lead-based paint. Certain contractor operations could expose employees to hazardous levels of lead. The contractor shall plan accordingly and shall inform employees of the hazards of lead-based paint.
- 202 REMOVAL OF CONCRETE: All concrete removed shall become property of the contractor and shall be disposed of properly off the right of way (approx. 95 cubic yards).
- 210 EXCAVATION: The excavation at the abutments, as shown, shall be included in the lump sum bid item, "Class 1 Excavation" (approx. 150 cubic yards).
- 210 SELECT BACKFILL: Select backfill shall meet the requirements of Section 816.03, Class 3. The backfill shall be placed in layers of not more than 6 inches, moistened or dried as required, and thoroughly compacted with mechanical tamping equipment.
- 602 Sidewalk girder shall be braced to prevent rotation during construction. The strength and spacing of the bracing shall be dependent on the forces induced by the weight of the concrete, forms, equipment, and workers. The sidewalk girder shall be braced to prevent longitudinal movement during construction.
- 602 SURFACE FINISH "D": Surface Finish "D" shall be required for all surfaces of the barrier and concrete posts.
- 602 DECK CONCRETE: Beams and girders have slight variations in the anticipated camber. To build the deck to the designated thickness will require slight adjustments in riser dimensions. These adjustments result in minor concrete quantity discrepancies. The contractor shall consider this quantity discrepancy when he bids the unit price for Class AAE-3 Concrete. The Department will pay plan quantity of Class AAE-3 Concrete.
- 602 Deflection of the deck shoring shall be computed using the total dead load plus the weight of the finishing machine. The forming shall be adjusted properly to accommodate the deflection and thereby maintain the total slab thickness specified in the plans.
- 602 BARRIERS: Barriers shall be constructed according to the provisions of Section 602.03 B.4 except that there shall be no expansion or deflection joints. Make 3/4" V-grooves in all faces of the barriers at each pier and at equal spaces between substructures at approximately 10-foot spacing.
- 602 SIDEWALK BROOMING: The sidewalk on the bridge shall not be tined. The sidewalk shall be transversely broomed to slightly roughen the surface.
- 616 STRUCTURAL STEEL: Structural steel shall be AASHTO M 270, Grade 36T2 except the diaphragm gusset plate shall be Grade 50T2. The requirement for Charpy V-Notch test is waived for the safety shape bearing and alignment bracket, expansion joint and barrier expansion.
- 616 Field connections shall be made with 7/8 inch diameter, AASHTO M 164 high-strength bolts unless otherwise shown.
- 616 Temporary or permanent attachments or devices that are not shown on the plans as part of the structure shall not be welded to the structural steel members during the fabrication and construction process.
- 616 The existing angles that are to be removed are riveted to the existing beams with 7/8" Ø rivets. When removing the angles, only one per span can be removed until the new angle is installed.
- 616 DIAPHRAGM MODIFICATON: The rivet removal and cross-fram gusset plate replacement on the existing diaphragms shall be limited to one diaphragm at a time per span. All work shall be complete before the concrete for the new sidewalk is placed.
- 616 RIVET REMOVAL: The price bid for rivet removal shall include removing the existing rivet, the cost of a new bolt, and the labor to install it.

LITTLE MISSOURI RIVER BRIDGE
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- 622 PILING: Piling shall be driven with a steam, air, or diesel hammer with a rated energy and ram weight not less than 8926 foot-pound-tons, as computed by the formula $W(E-4851)+.368E$, where W is the weight of the ram in tons and E is the rated hammer energy. In no case shall the ram weight be less than 2700 pounds.
- 624 PEDESTRIAN RAILING (REMOVE & REPLACE): The existing rail shall be salvaged and reset as shown. The existing metal rail and attachment bars shall be galvanized according to AASHTO M111. All cap screws shall be replaced. The attachment bars may be reused or replaced. All labor and material to remove the existing rail from the concrete posts and galvanizing the rail and hardware shall be included in the lump sum bid item "Pedestrian Railing (Remove & Replace)." The concrete post removal and replacement shall be paid for by the bid item "Removal of Concrete."
- 630 PAINT AND PAINTING: The structural steel shall be painted according to the specifications. The finish coats shall be brown color no. 20450 and shall meet Federal Standard No. 595B colors.
- 930 BRIDGE REPAIR (BEARINGS): Some of the existing bearings have missing anchor bolts, anchor bolts that are pushing up or loose nuts. Abutment 5 girder 4 has one anchor bolt nut that shall be tightened. There are 6 pier anchor bolts that are pushing up. These bolts shall be removed, the holes cleaned and the bolts reset using grout. There are 2 anchor bolts missing on abutment 1. The replacement bolts shall be $1\frac{1}{2}$ " diameter 1'-6" long with 1 nut. The holes for the new bolts shall be cleaned and the new bolts grouted in place. All labor and materials required shall be included in the price bid for "Bridge Repair (Bearings)."
- 930 PIER REPAIR: Pier No. 2 has spalled concrete at the water line, around the perimeter of the pier. The width of the spalling is approximately 1 ft. (approx. 90 SF). All unsound concrete shall be removed and the pier shall be restored to the original shape with concrete patching material. All labor and material required to restore the pier shall be included in the lump sum bid item "Pier Repair."

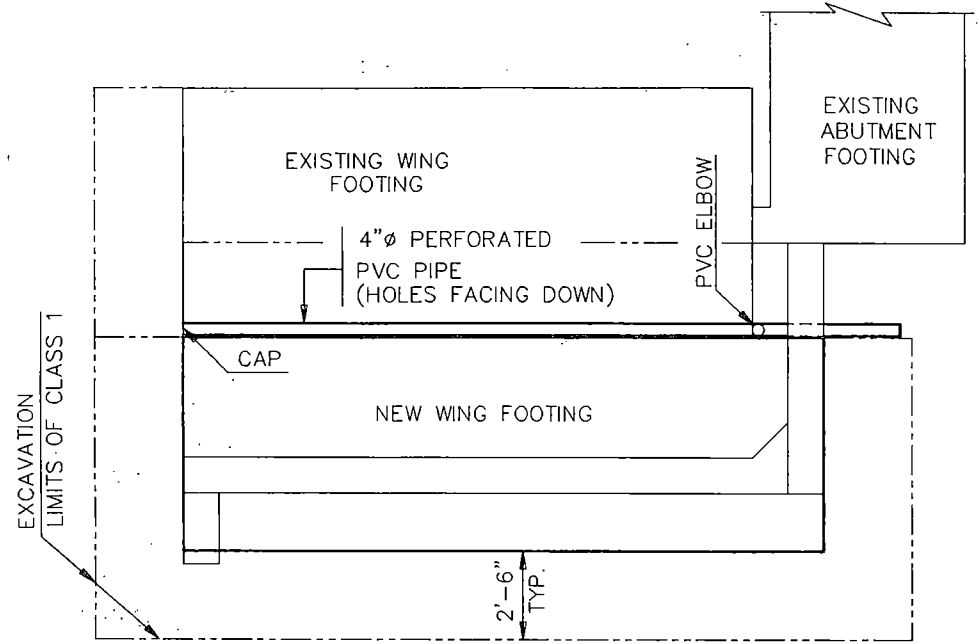
ELEVATION CHECK POINTS: 10 bolts need to be placed on top of the barrier to serve as elevation check points. The cost for this item shall be included in the unit price bid for Class AAE-3 concrete.

SHOP DRAWINGS: CAD-generated shop drawings may be submitted on 11-inch by 17-inch detail sheets. The contractor shall submit the following shop drawings to the Construction office for approval:

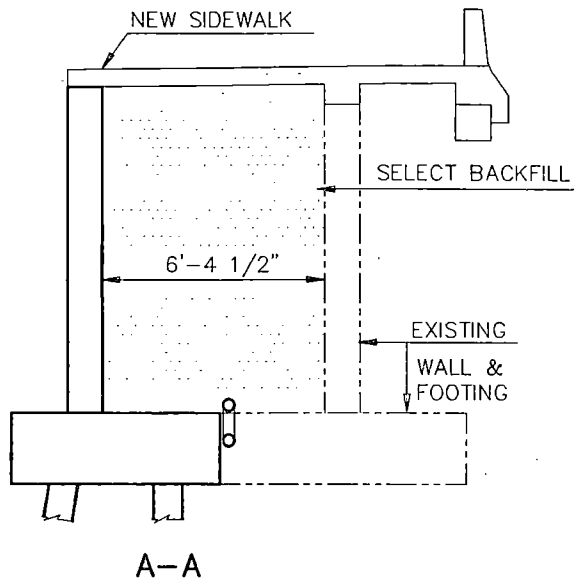
1. Structural steel.
2. Pedestrian railing.

HYDROLOGIC DATA

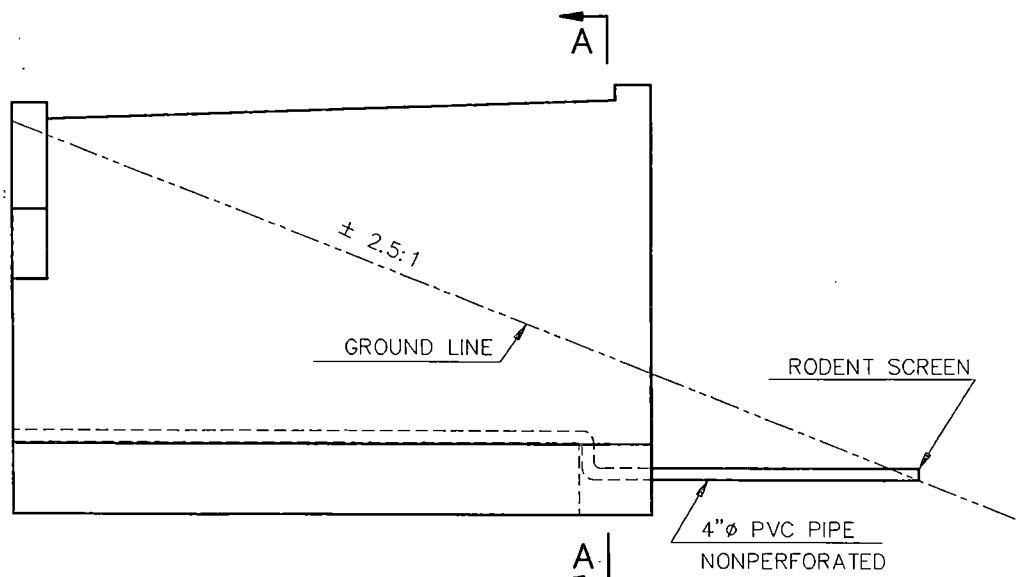
DRAINAGE AREA	6190 SQ. MI.
DESIGN FREQUENCY	50-YEAR
DESIGN DISCHARGE	52,800 CFS
DESIGN STAGE (UPSTREAM)	2266.8 ELEV.
STREAM GRADIENT	0.00061 FT./FT.
WATERWAY PROVIDED BELOW DESIGN STAGE	5380 SQ. FT.
WATERWAY PROVIDED BELOW CLEARANCE ELEVATION	7712 SQ. FT.
AVERAGE VELOCITY OF FLOW IN NATURAL CHANNEL	
DEPTH OF FLOW	20.4 FT.
VELOCITY OF FLOW UNDER BRIDGE	9.8 FT./SEC.
FREEBOARD PROVIDED	5.7 FT.
100-YEAR FREQUENCY DISCHARGE	65,300 CFS
100-YEAR FREQUENCY STAGE	2268.5 ELEV.
OVERTOPPING STAGE	2274.3 ELEV.
OVERTOPPING DISCHARGE	
MINIMUM WATER ELEVATION	2249.0



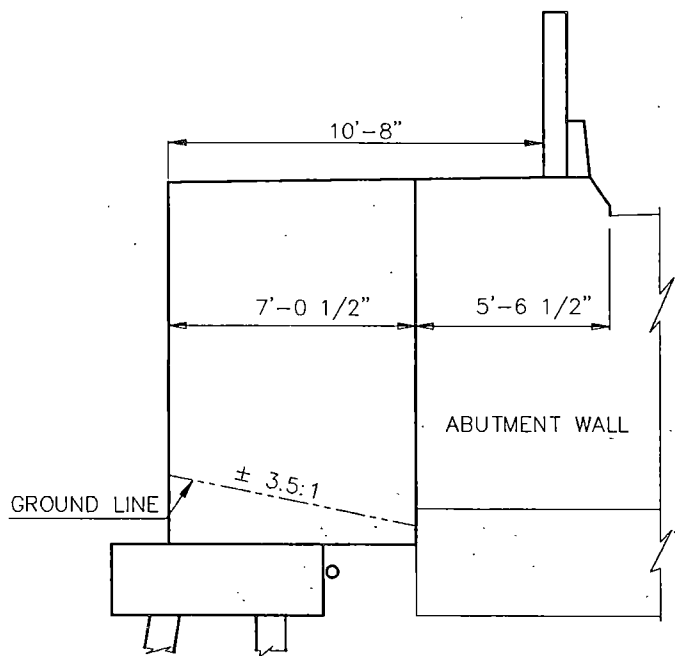
FOOTING PLAN



A-A



ELEVATION



END VIEW

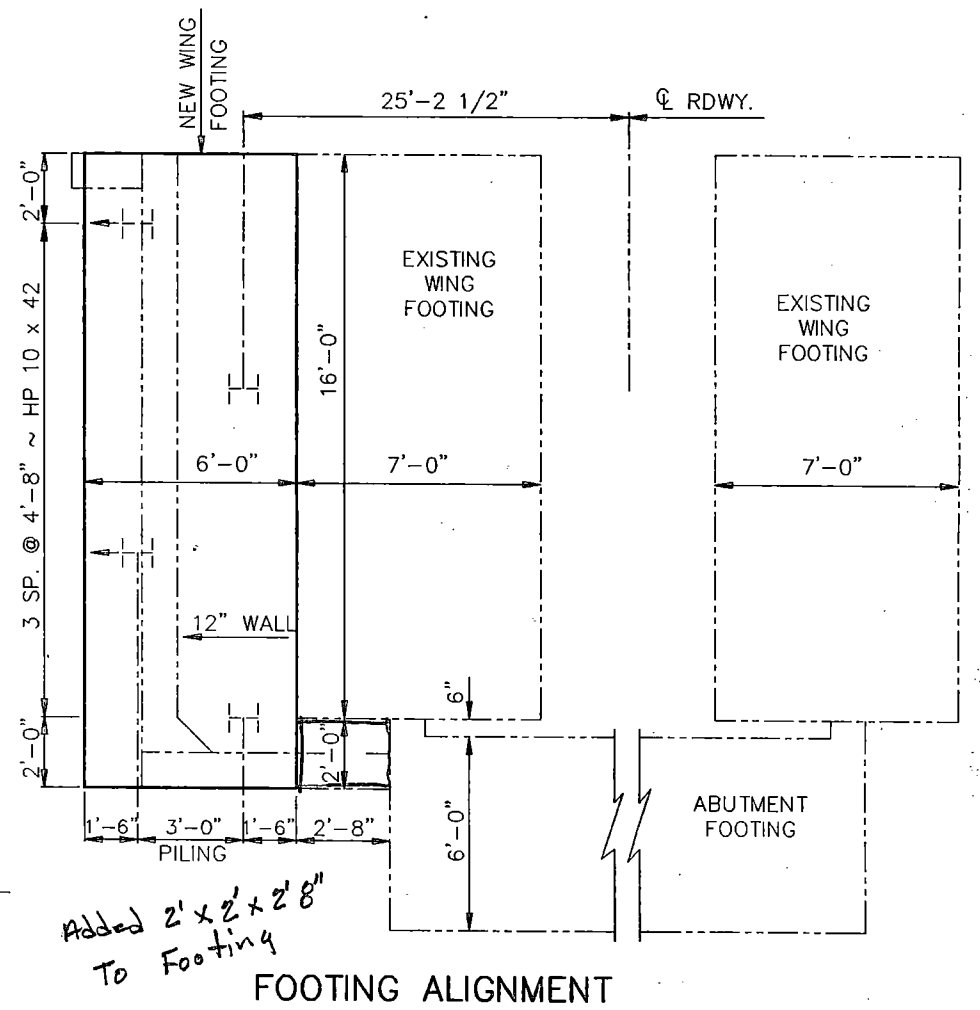
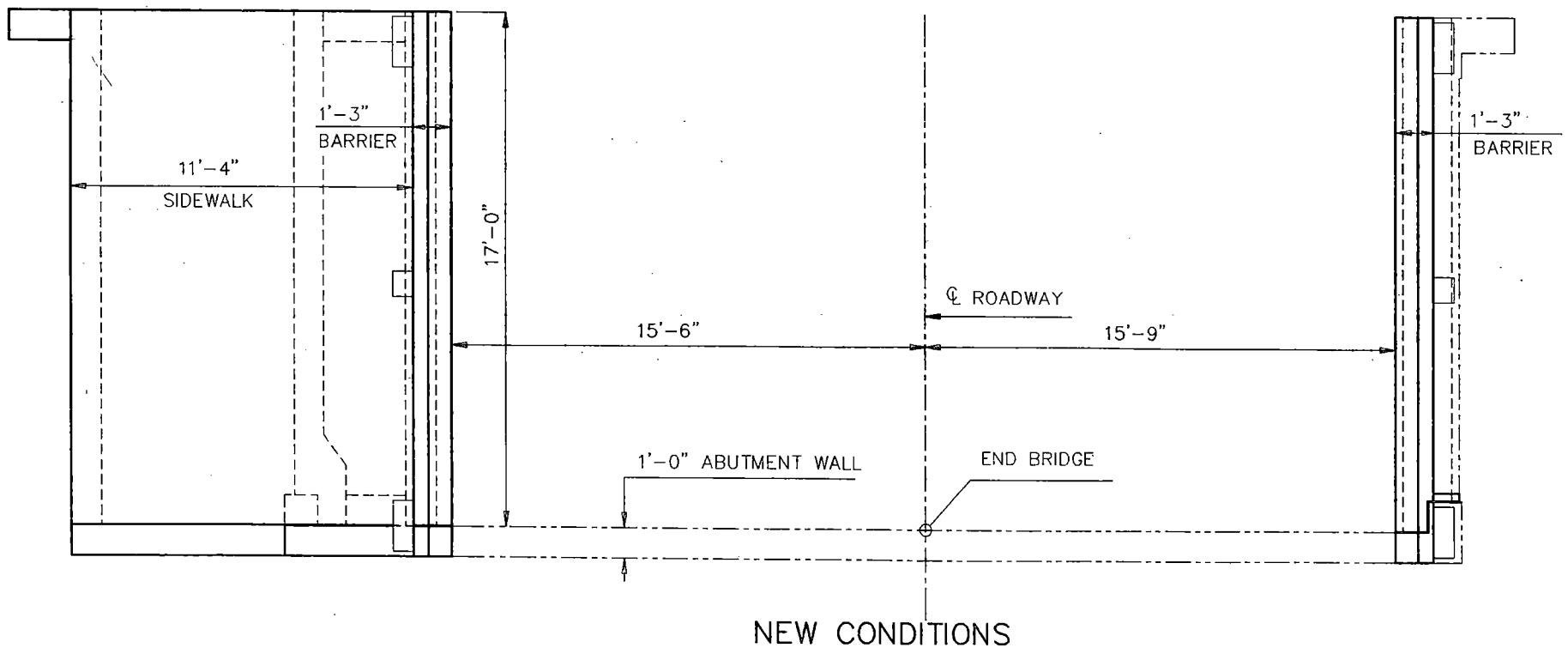
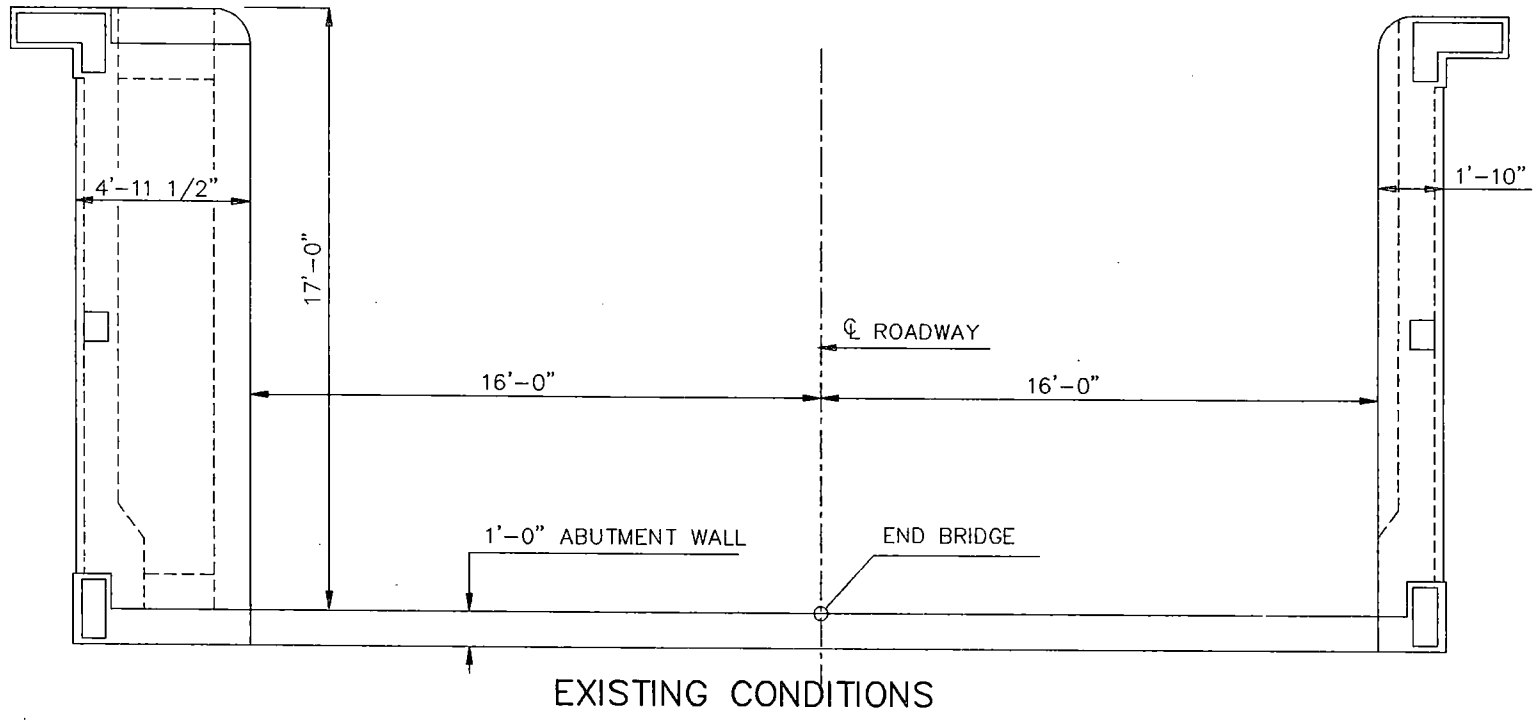
THE COST OF FURNISHING AND PLACING THE PVC PIPE SHALL BE INCLUDED IN THE PRICE BID FOR CLASS AE-3 CONCRETE.

LITTLE MISSOURI RIVER BRIDGE
MEDORA, ND

EXCAVATION
HYDROLOGIC DATA

SIDEWALK SIDE

CURB SIDE



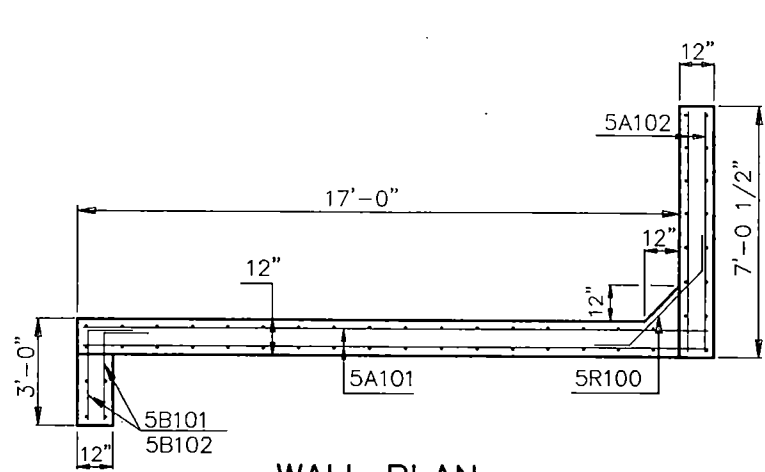
NOTE:
THE DETAILS SHOWN ON DRAWINGS 094-901.376-4 THRU 094-901.376-9 ARE FOR ABUTMENT 5. ABUTMENT 1 WILL ALSO BE REVISED WITH THE SAME BUT OPPOSITE DETAILS. THE QUANTITIES ON DRAWING 094-901.376-9 ARE FOR BOTH ABUTMENTS.

THE 40'-0" HP 10 X 42 PILE SHALL BE DRIVEN TO 35 TONS. OUTSIDE ROW BATTERED @ 2:12

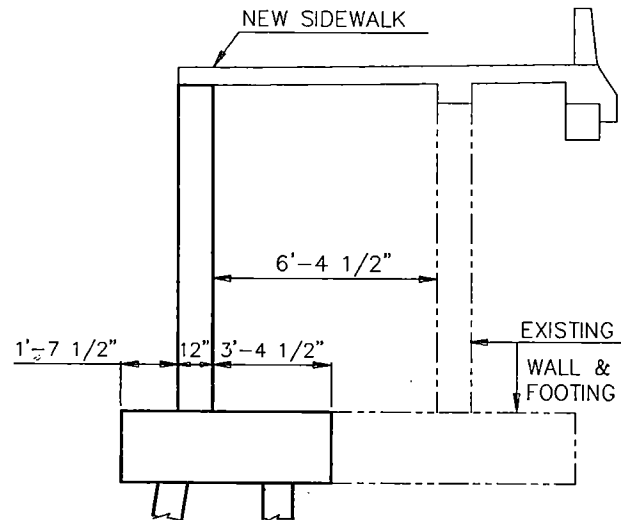
LITTLE MISSOURI RIVER BRIDGE
MEDORA, ND

ABUTMENT LAYOUT

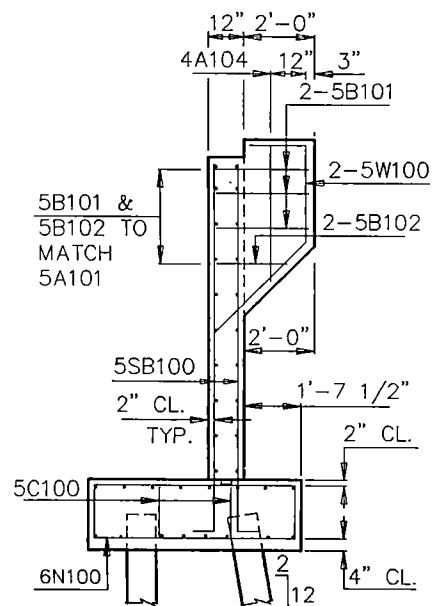
(ABUTMENT #5 SHOWN)



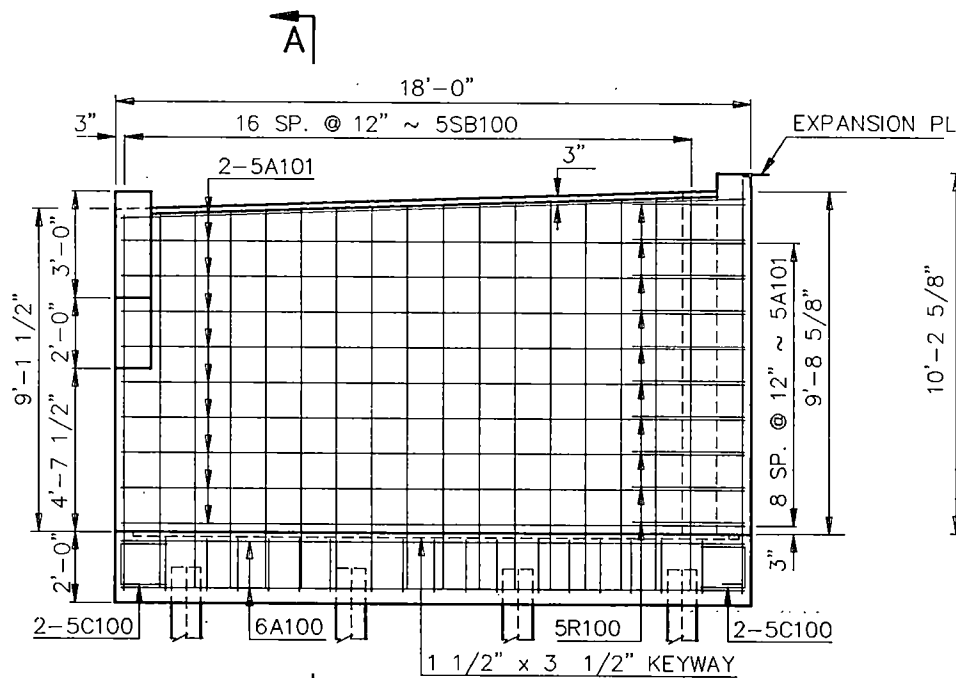
WALL PLAN



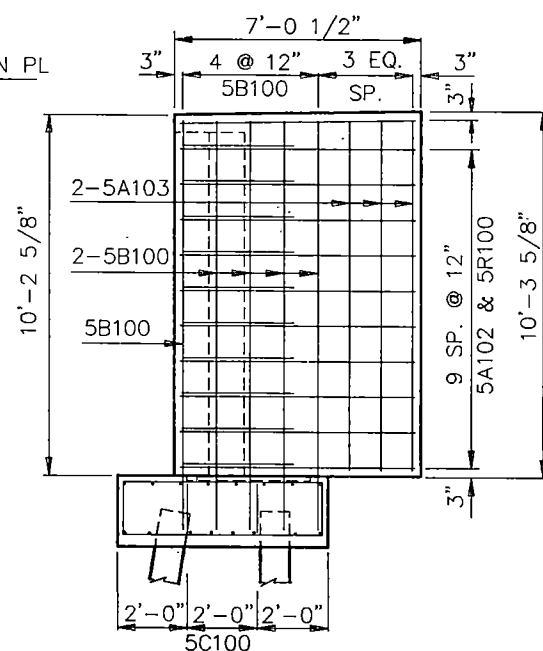
A-A



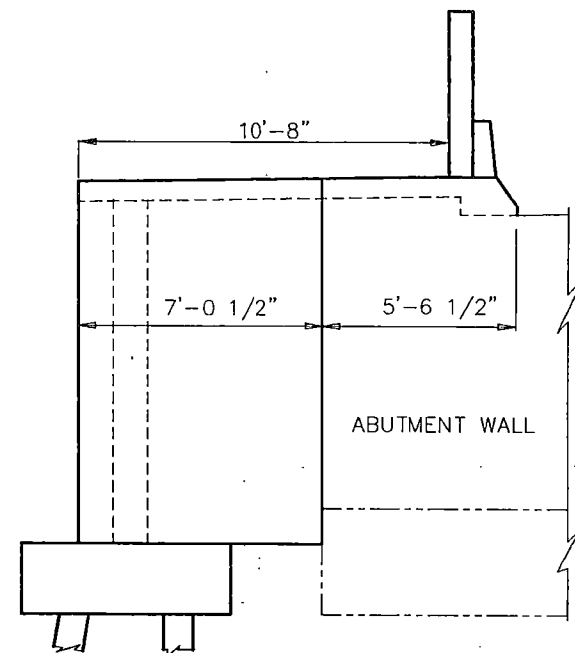
END VIEW



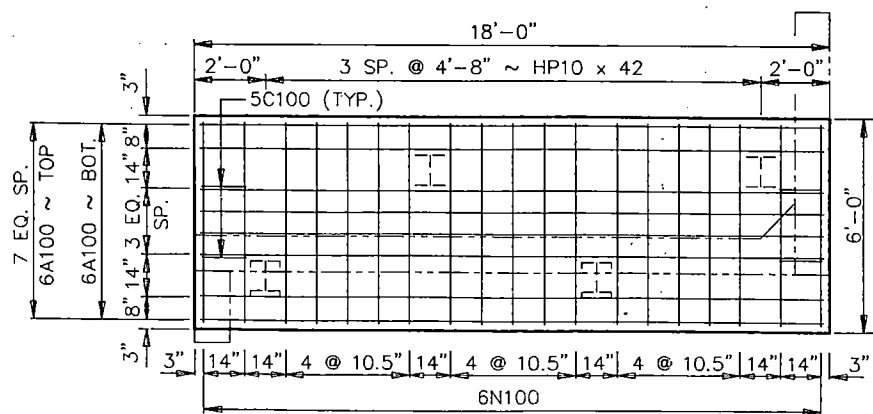
ELEVATION



END VIEW



END VIEW
SHOWING ALIGNMENT



FOOTING PLAN

QUANTITIES

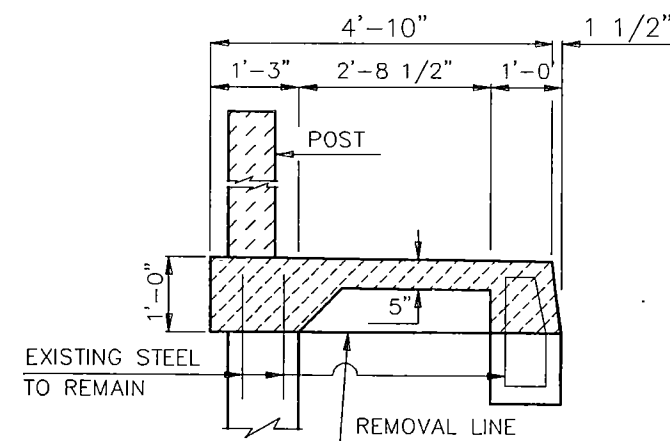
SEE DWG. 094-901.376-9

LITTLE MISSOURI RIVER BRIDGE
MEDORA, ND

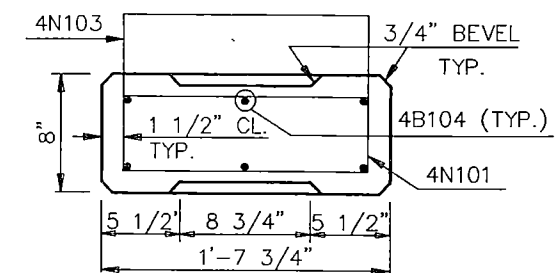
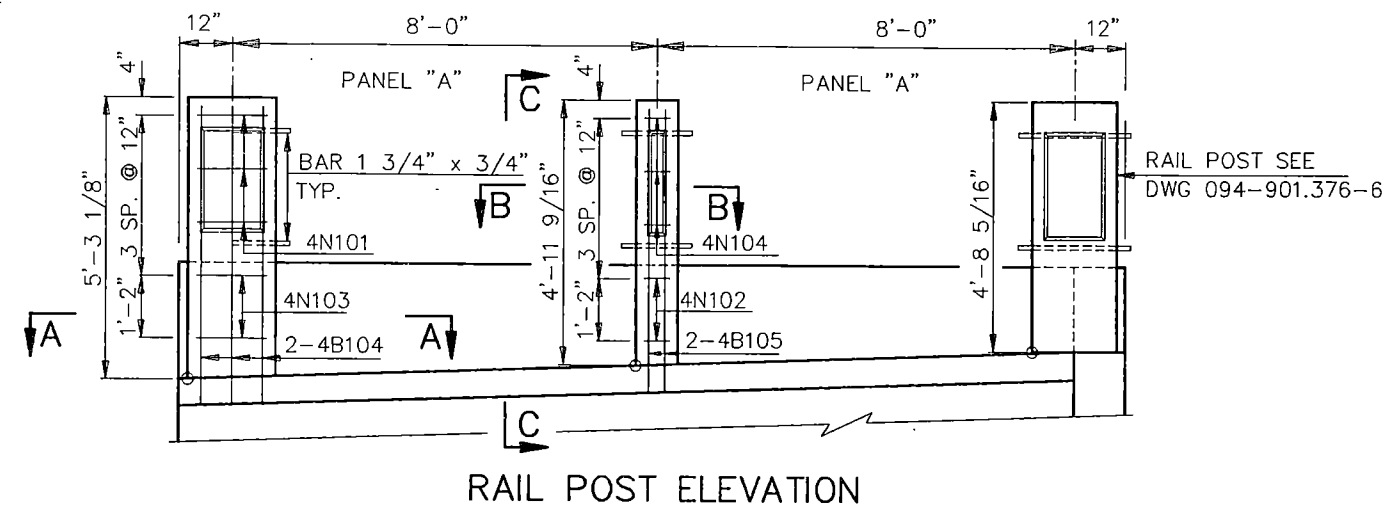
WING WALL
(SIDEWALK SIDE)

(ABUTMENT #5 SHOWN)

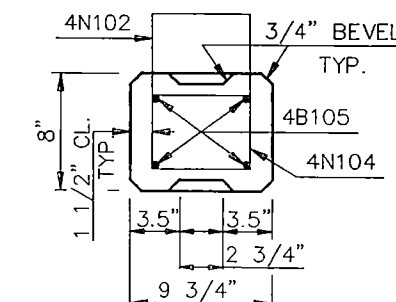
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	TES-5-088(001)000	246



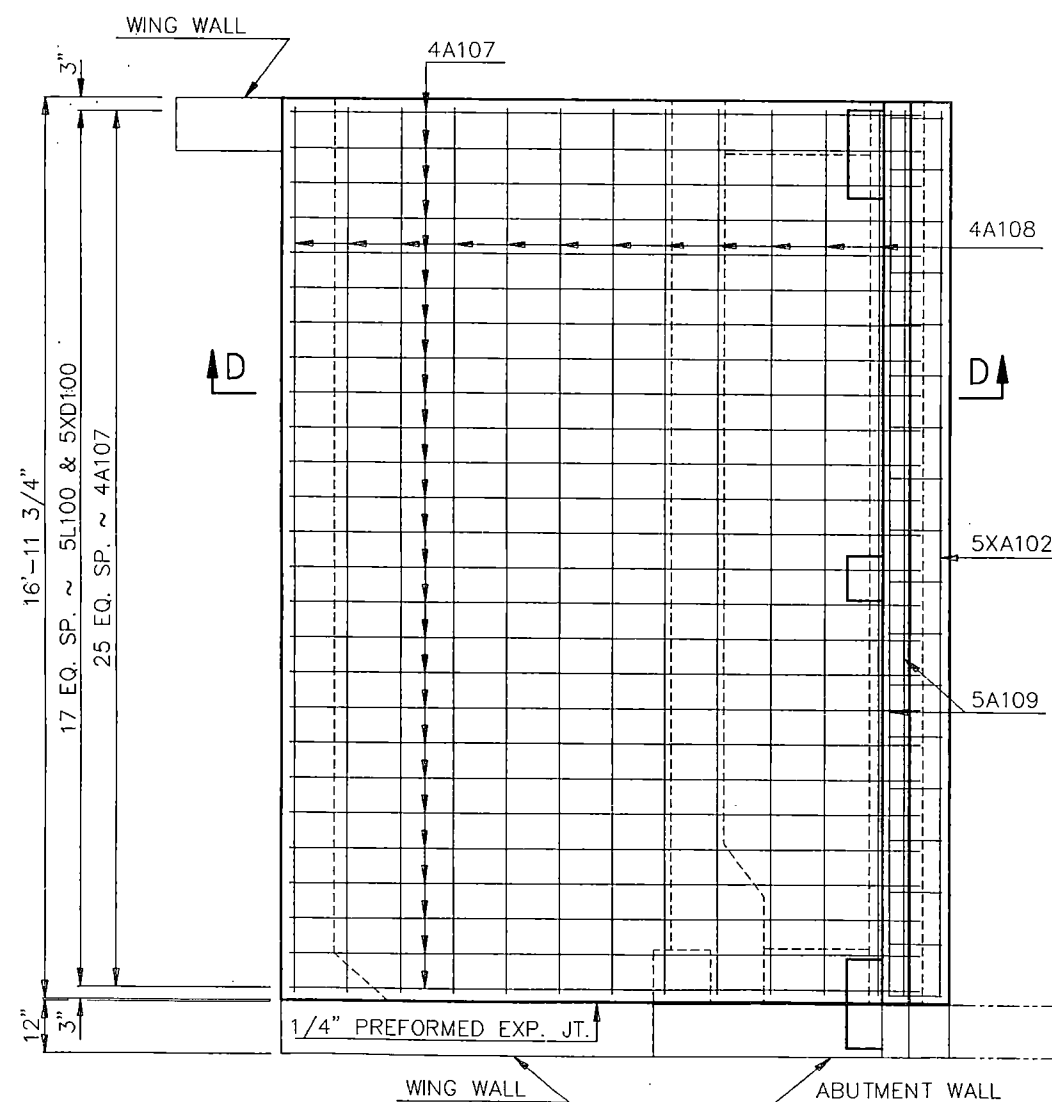
EXISTING SIDEWALK
AREA TO BE REMOVED



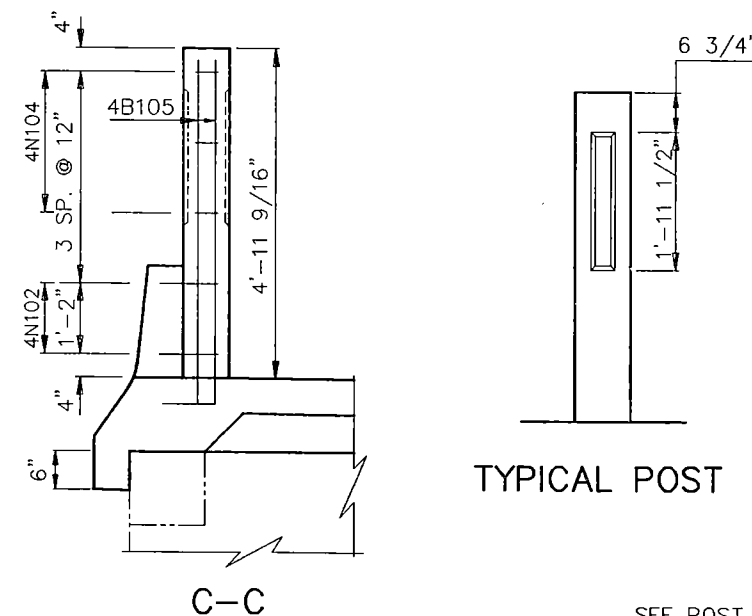
A-A



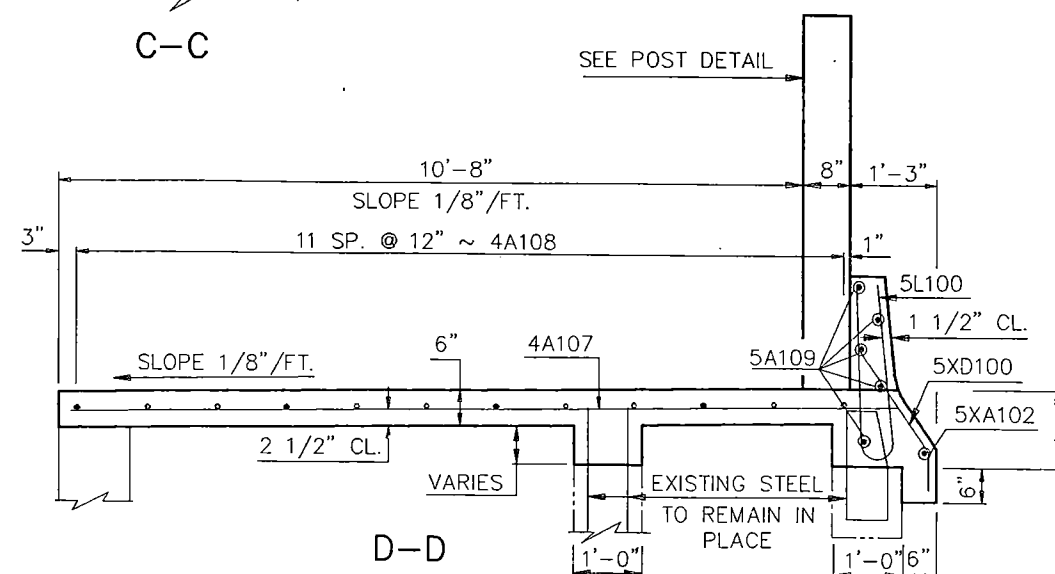
B-B



SIDEWALK PLAN



TYPICAL POST

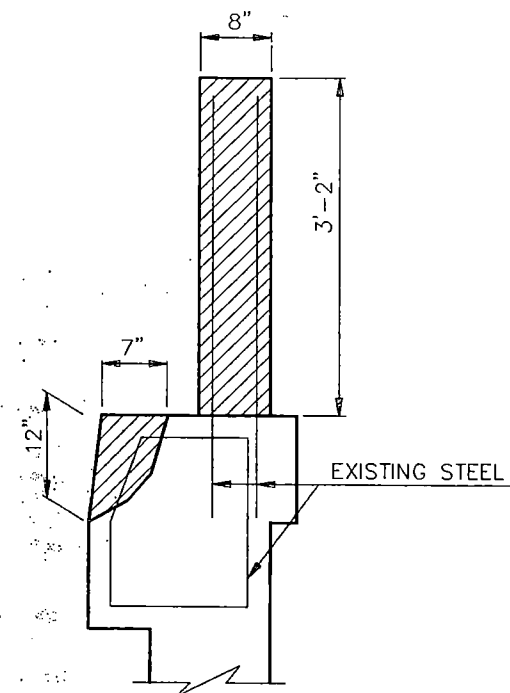


D-D

QUANTITIES

SEE DWG 094-901.376-9

LITTLE MISSOURI RIVER BRIDGE
MEDORA, ND
SIDEWALK DETAILS
@ ABUTMENT WING
(SIDEWALK SIDE)
(ABUTMENT #5 SHOWN)

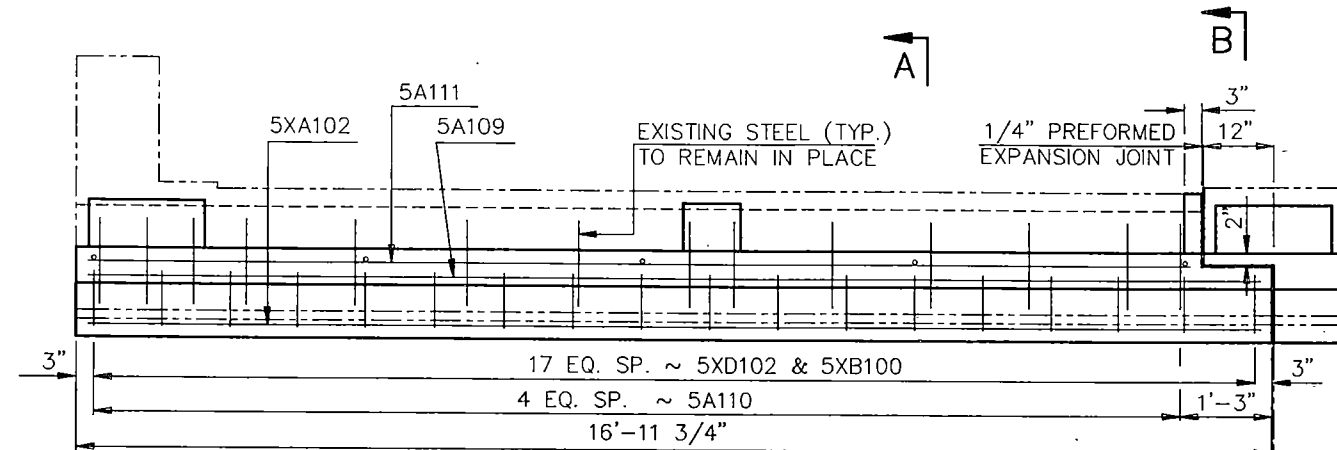


CURB SECTION

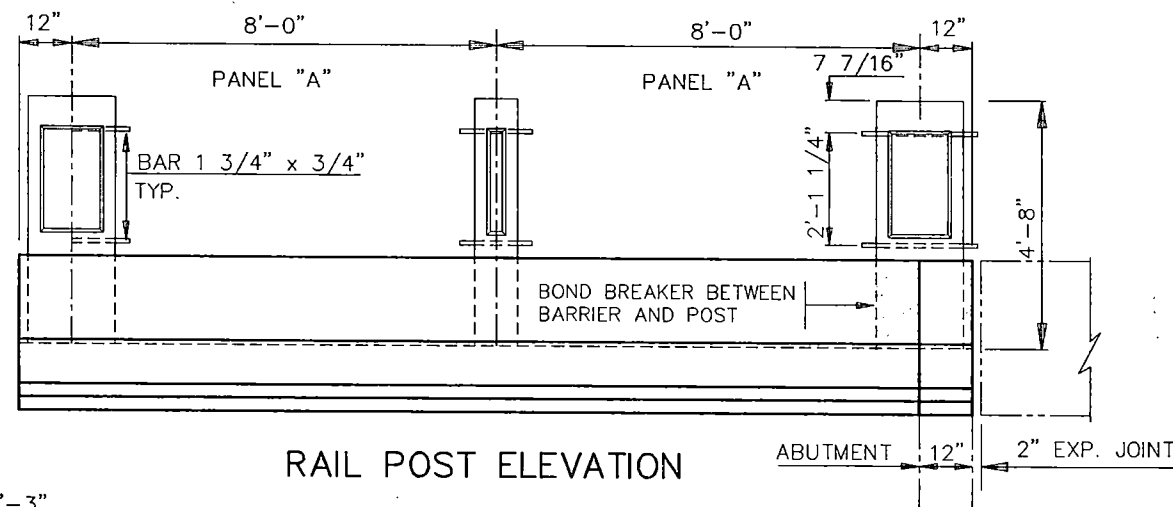
EXISTING AREA SHOWING
CONCRETE TO BE REMOVED



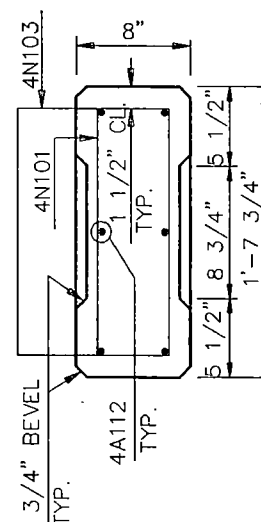
SHOWING AREA TO BE REMOVED



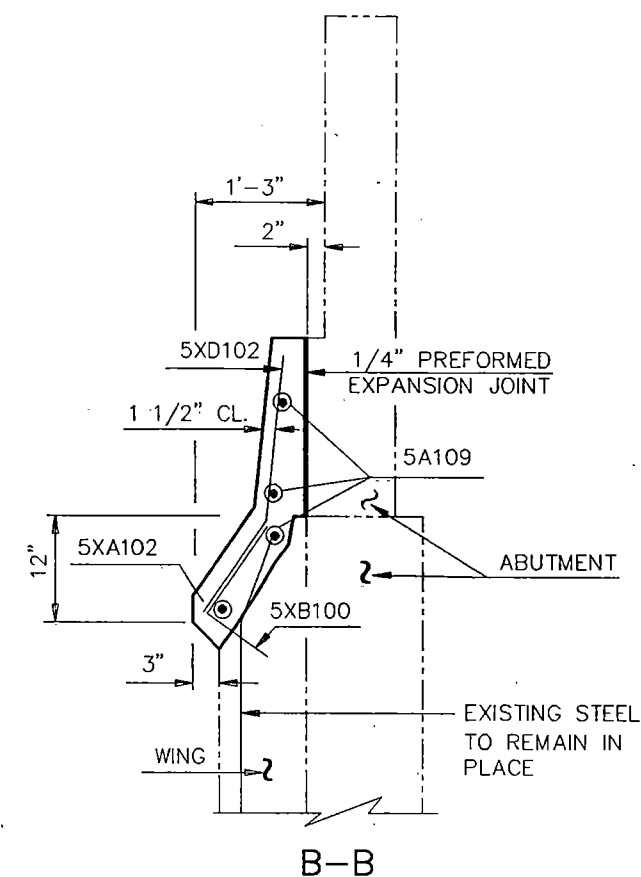
BARRIER PLAN



RAIL POST ELEVATION

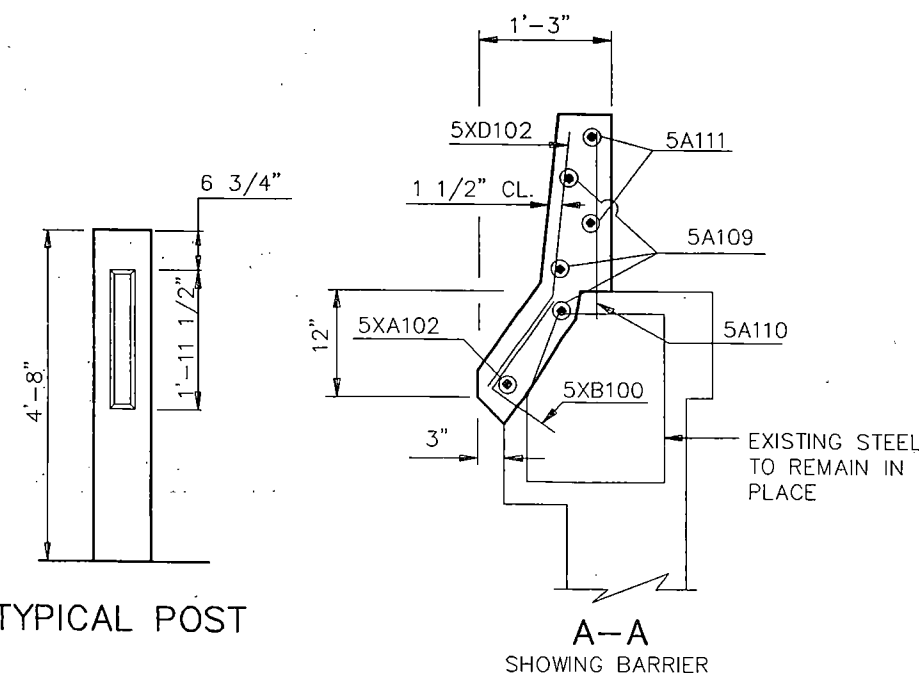


SECTION OF END POST

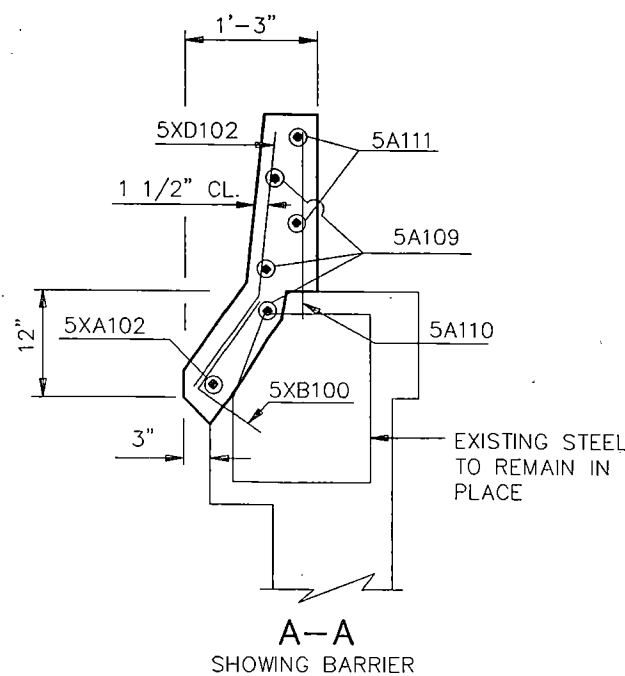


B-B

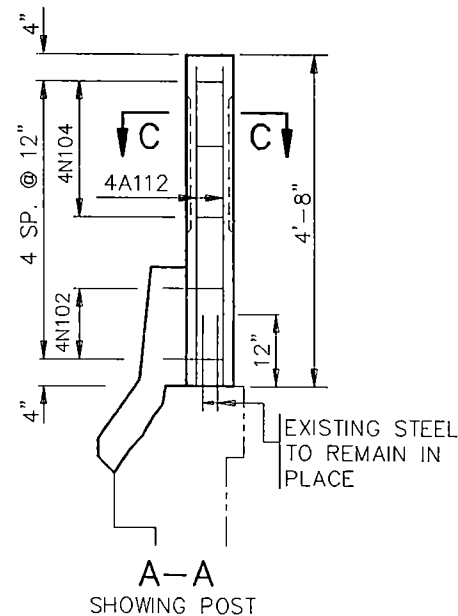
5XB100'S SHALL BE INSTALLED, ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, WITH A HIGH STRENGTH ADHESIVE SPECIFICALLY INTENDED FOR CONCRETE ANCHORAGE, IN ACCORDANCE WITH SEC. 806.02 OF THE NDDOT STANDARD SPECIFICATIONS.



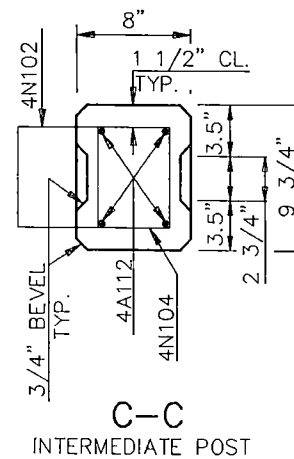
TYPICAL POST



**A-A
SHOWING BARRIER**



**A-A
SHOWING POST**



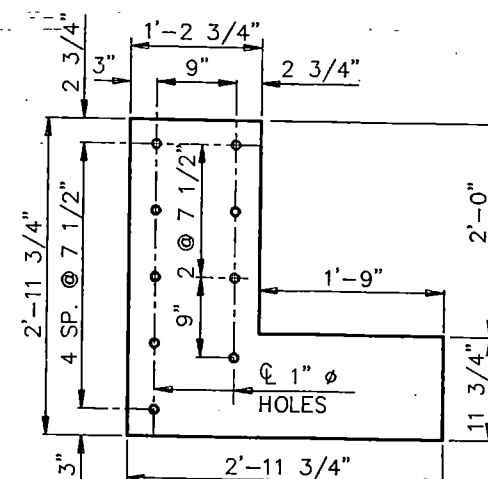
**C-C
INTERMEDIATE POST**

QUANTITIES (BOTH ABUTMENT)		
CLASS AE-3 CONC.	47.4	C.Y.
CLASS AAE-3 CONC.	.9	C.Y.
REINFORCING STEEL	5,904	LBS.
REINF. STEEL (EPOXY)	339.0	LBS.

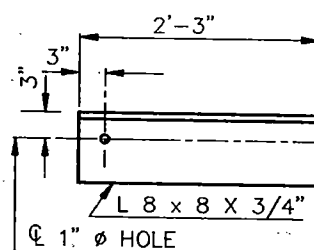
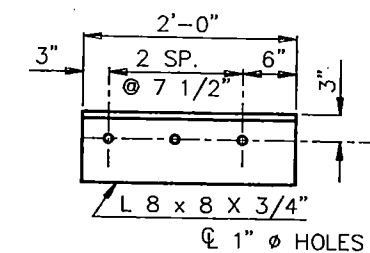
LITTLE MISSOURI RIVER BRIDGE
MEDORA, ND

**BARRIER & POSTS
(CURB SIDE)**

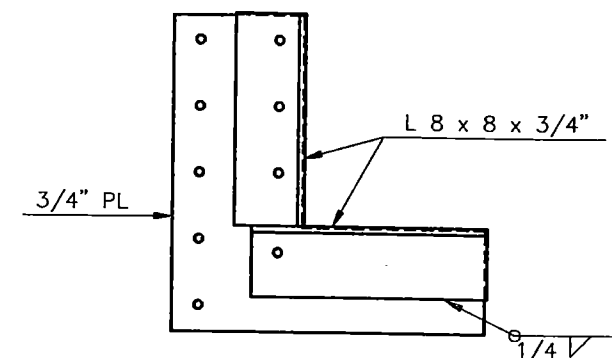
(ABUTMENT #5 SHOWN)



3/4" PLATE

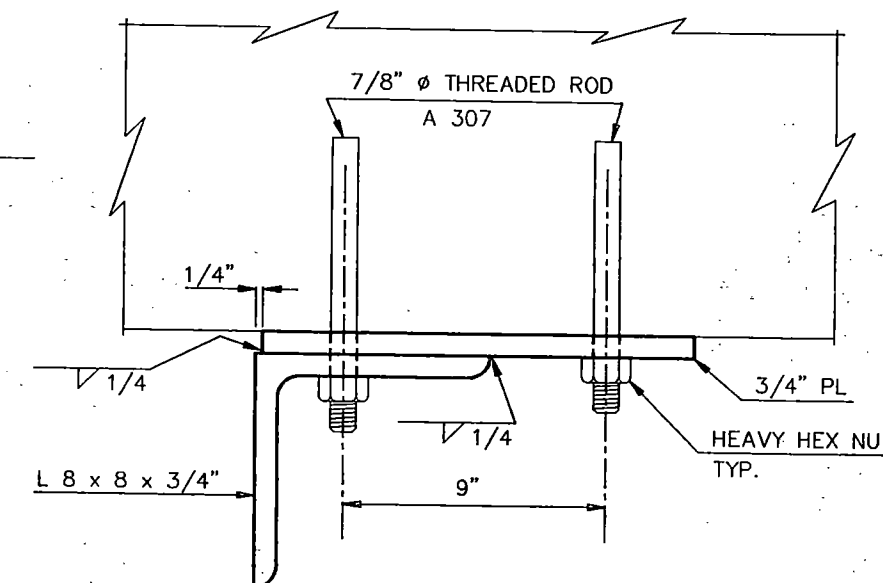


ANGLES



ASSEMBLED UNIT

2 REQUIRED AS SHOWN
2 REQUIRED OPPOSITE

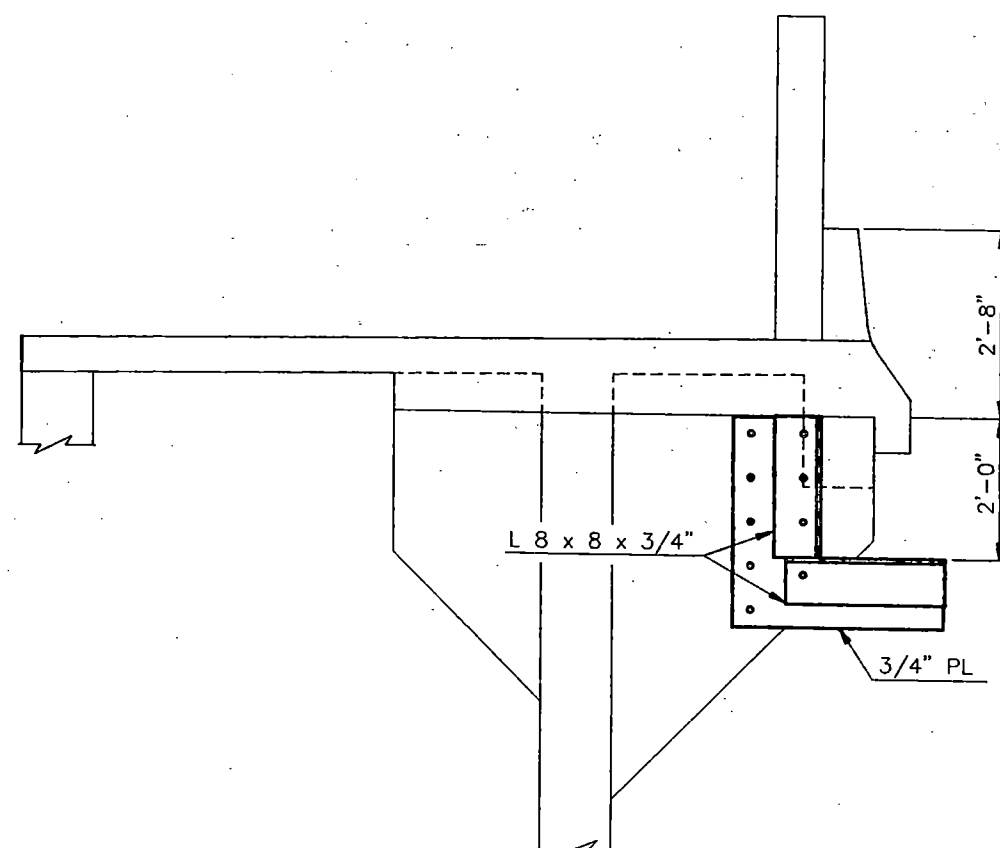


A-A

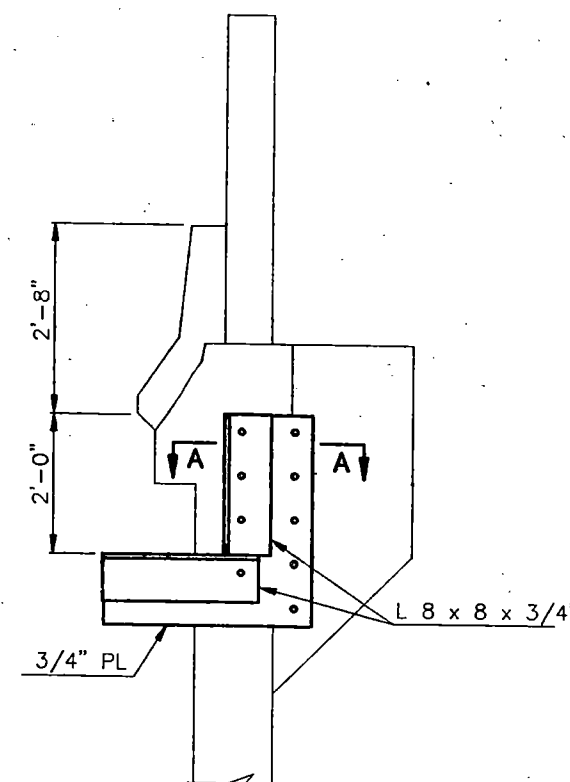
THE SAFETY SHAPE BEARING AND ALIGNMENT BRACKET, THREADED RODS & NUTS SHALL BE GALVANIZED AFTER FABRICATION.

THE THEADED RODS SHALL BE ANCHORED TO THE EXISTING CONCRETE WITH A HIGH STRENGTH ADHESIVE SPECIFICALLY INTENDED FOR CONCRETE ANCHORAGE. THE ADHESIVE SHALL BE ABLE TO DEVELOP A SHEAR CAPACITY OF 5000 LBS.

THE SAFETY SHAPE BEARING & ALIGNMENT BRACKET AND INSTALLATION SHALL BE INCLUDED IN THE PRICE BID FOR STRUCTURAL STEEL.



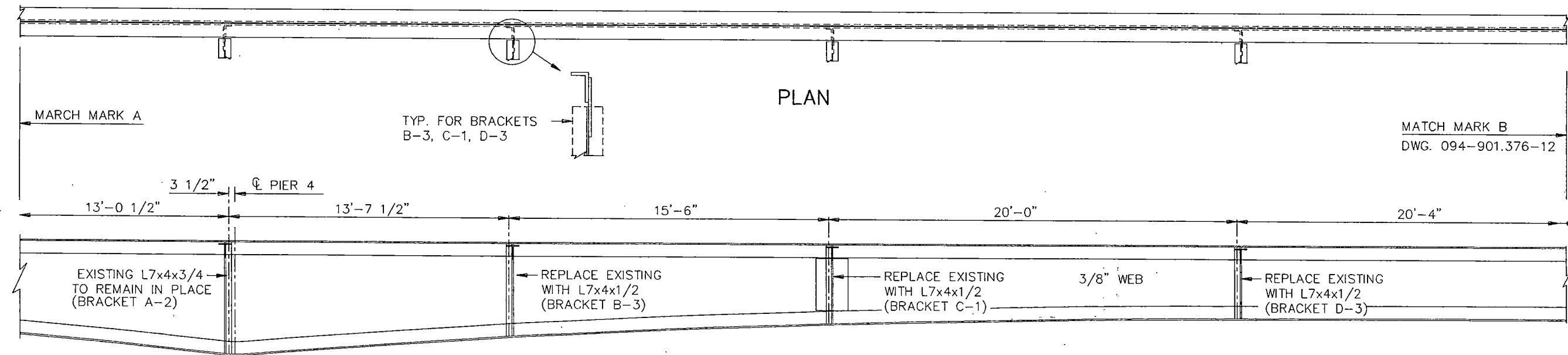
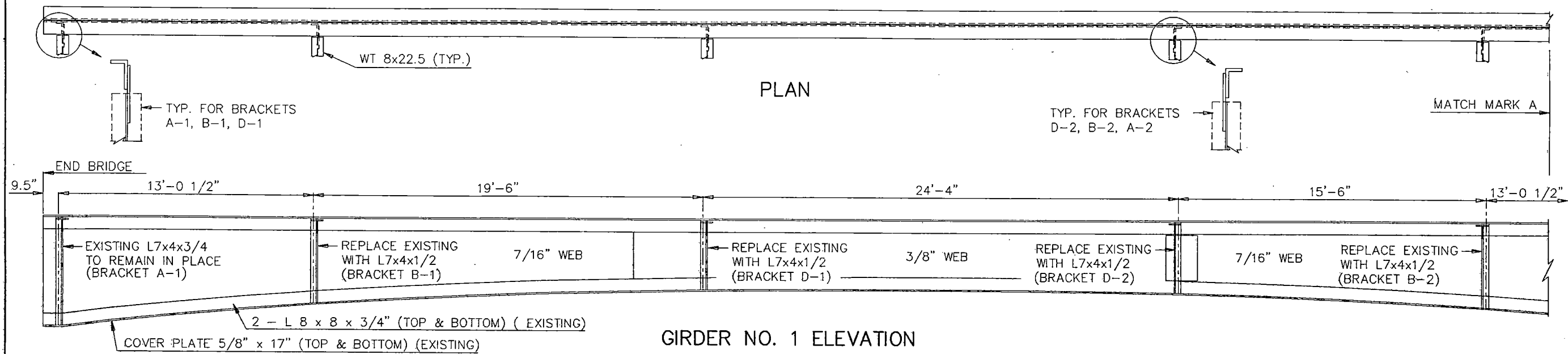
SHOWING ASSEMBLED UNIT
AT SIDEWALK



SHOWING ASSEMBLED UNIT
AT CURB

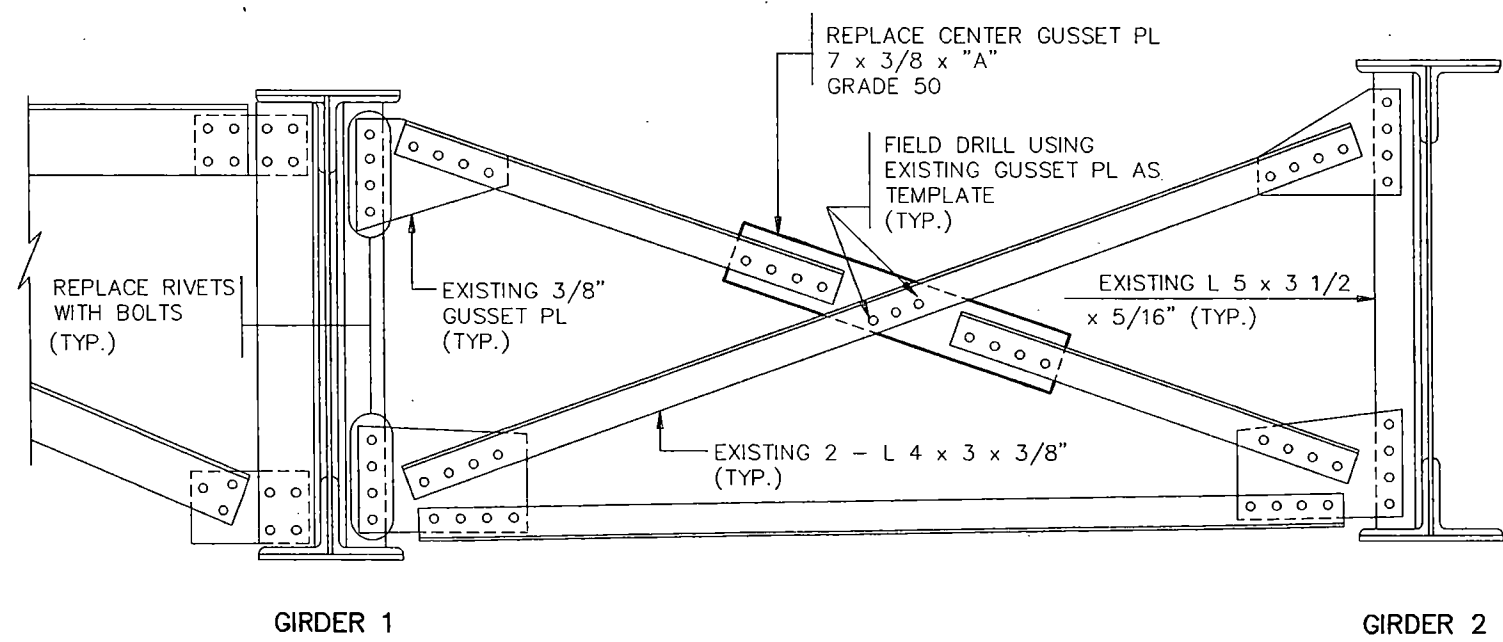
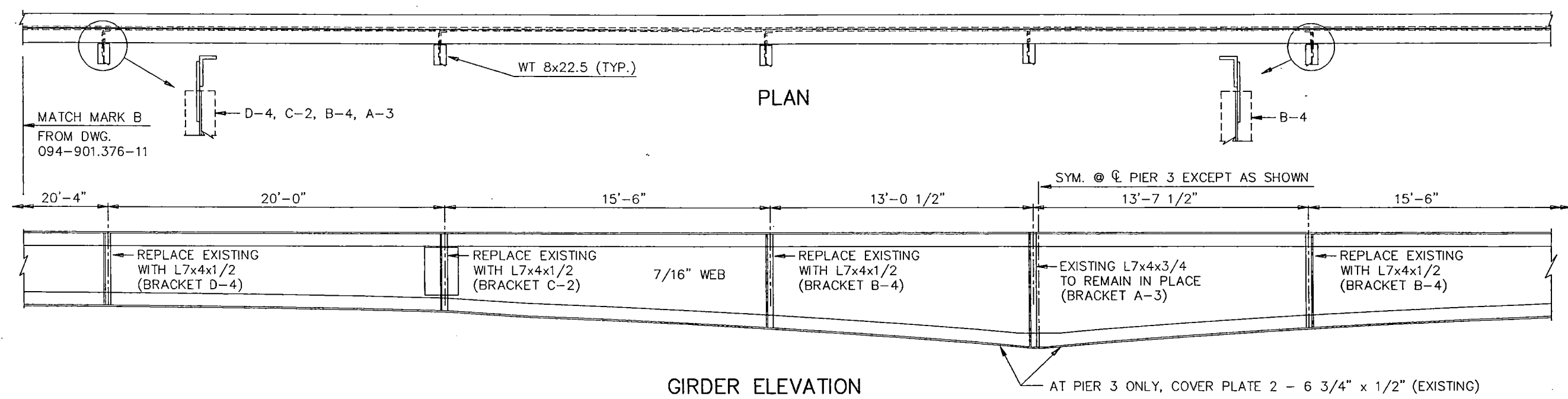
SHOWING ABUTMENT 1 (ABUTMENT 5 REVERSE)

LITTLE MISSOURI RIVER BRIDGE
MEDORA, ND
SAFETY SHAPE BEARING
& ALIGNMENT BRACKET

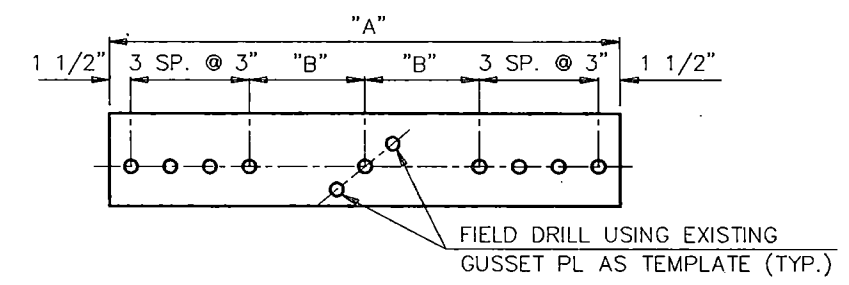


STIFFENER ANGLE'S NOT SHOWN.

LITTLE MISSOURI RIVER BRIDGE
MEDORA, ND
GIRDER ELEVATION

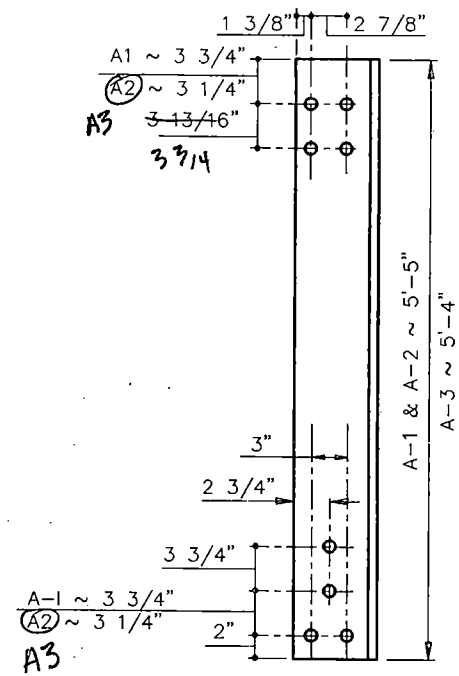


EXISTING DIAPHRAGM AT SIDEWALK BRACKET
BRACKETS B, C & D ONLY

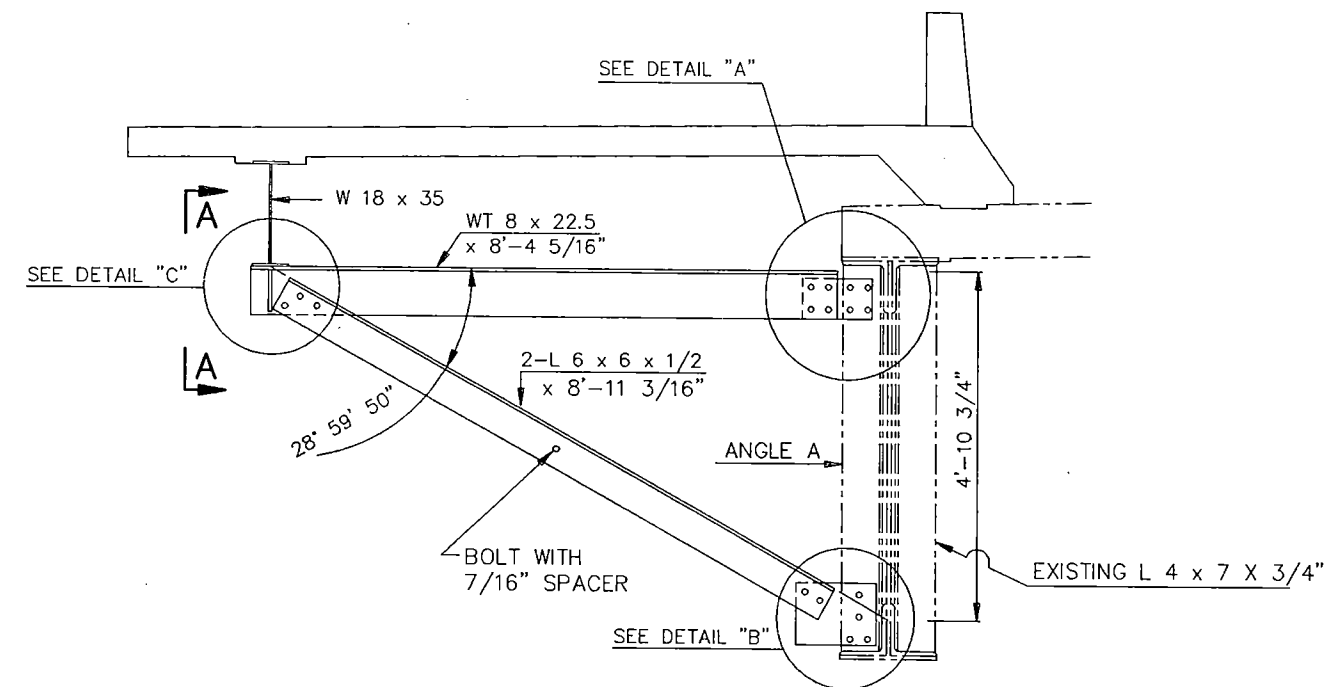


LOCATION	"A"	"B"	# OF GUSSET PL'S REQUIRED
B-1, B-2, B-3, B-4	3'-2 1/2"	8 3/4"	8
C-1, C-2	3'-5"	10"	4
D-1, D-3, D-4	3'-6 1/2"	10 3/4"	6
D-2	3'-7"	11"	2

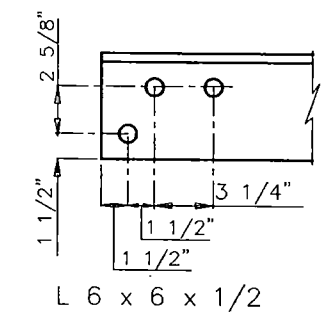
QUANTITIES		
RIVET REMOVAL	380	EA.
FIELD DRILL HOLE	40	EA.
LITTLE MISSOURI RIVER BRIDGE MEDORA, ND		
GIRDER ELEVATION		



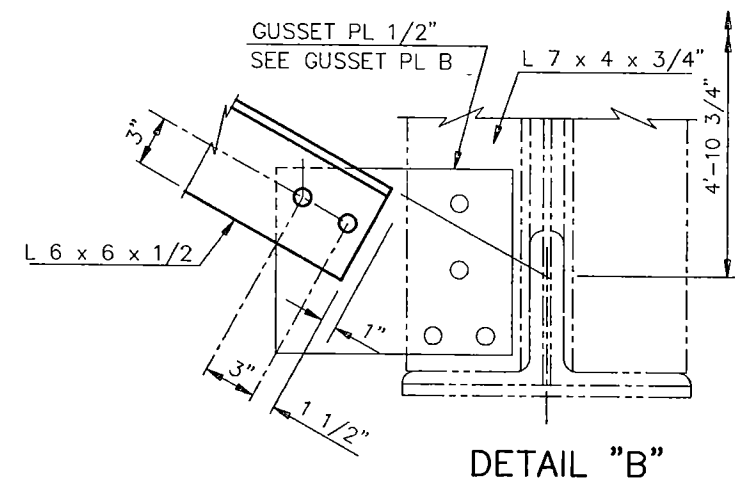
ANGLE A-1, A-2 & A-3
L 7 x 4 x 3/4"
EXISTING TO REMAIN
HOLES FIELD DRILLED



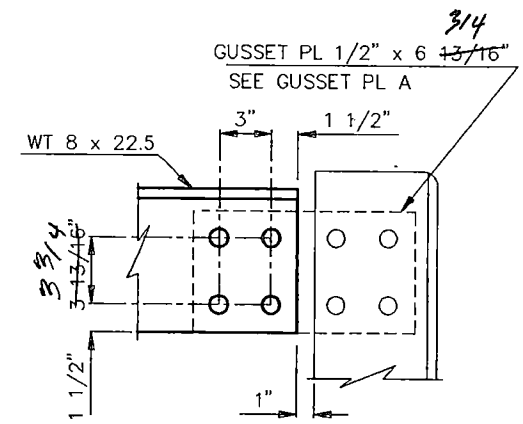
TYPICAL SECTION @ BRACKET A



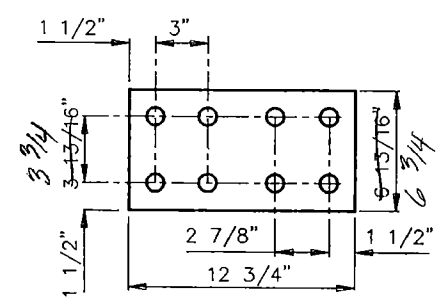
L 6 x 6 x 1/2



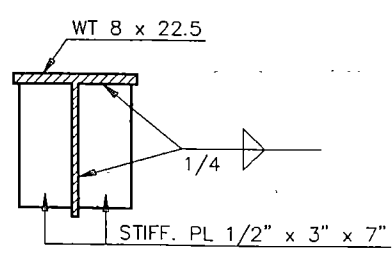
DETAIL "B"



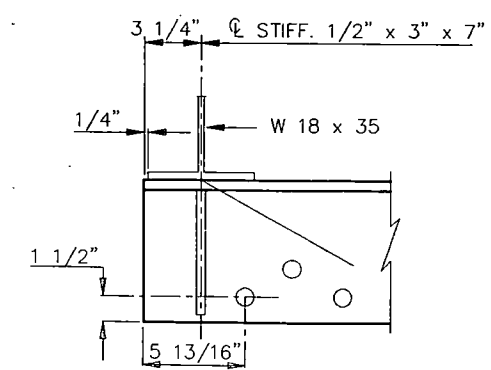
DETAIL "A"



GUSSET PL A

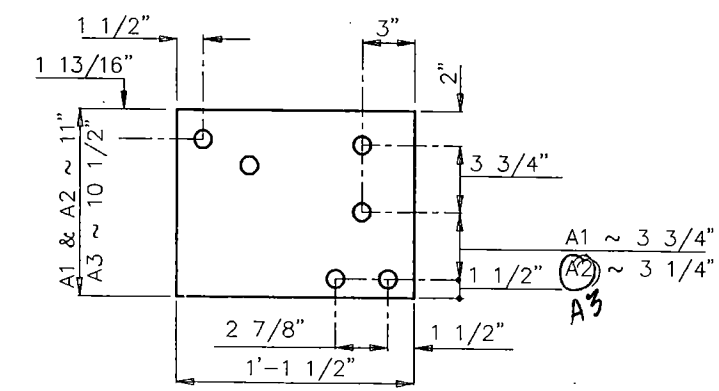


A-A



WT 8 x 22.5
DETAIL "C"

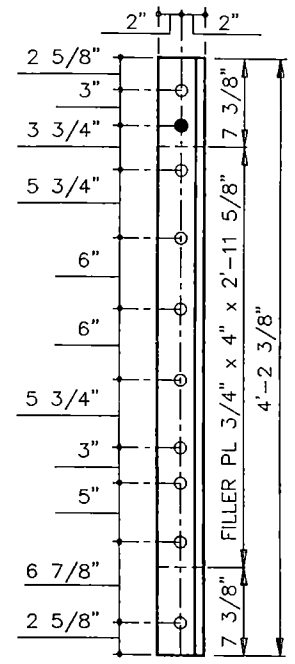
FOR WT 8 x 22.5 TO W 18 x 35
CONNECTION SEE DWG. 094-901.376-18



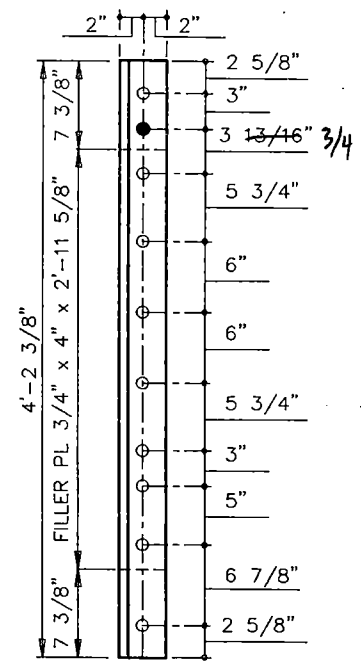
GUSSET PL B

- 2 - A-1 REQUIRED
- 2 - A-2 REQUIRED
- 1 - A-3 REQUIRED

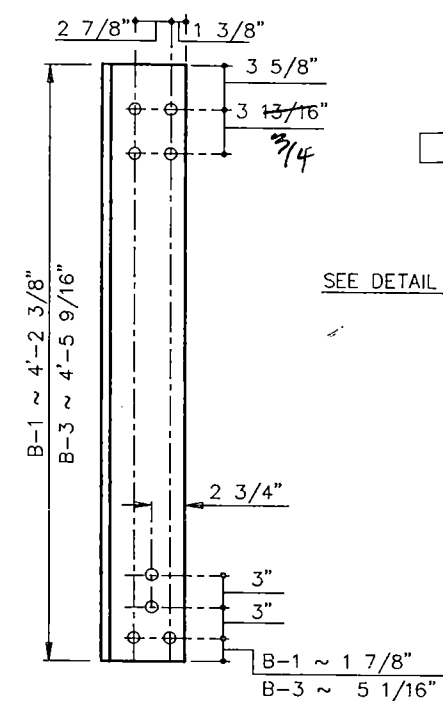
QUANTITIES	
FIELD DRILL HOLE	40 EA.
LITTLE MISSOURI RIVER BRIDGE MEDORA, ND	
BRACKET A DETAILS	



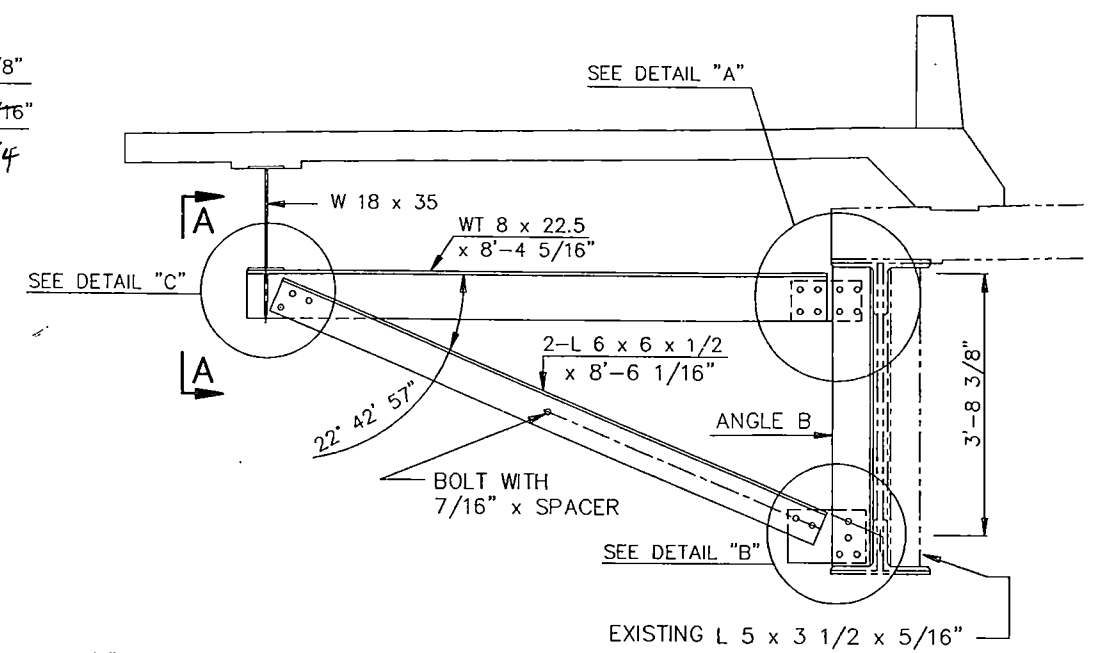
ANGLE B-1
L 7 x 4 x 1/2"



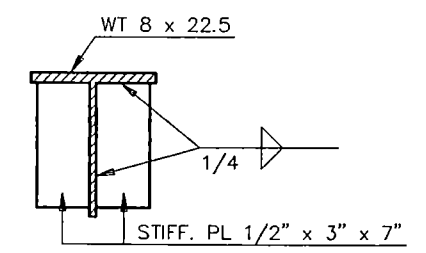
ANGLE B-2
L 7 x 4 x 1/2"



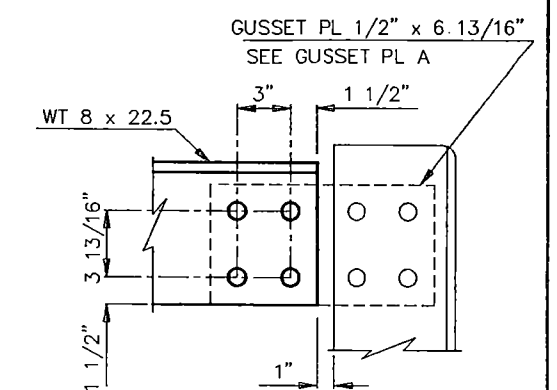
ANGLE B-1 & B-3
L 7 x 4 x 1/2"



TYPICAL SECTION @ BRACKET B

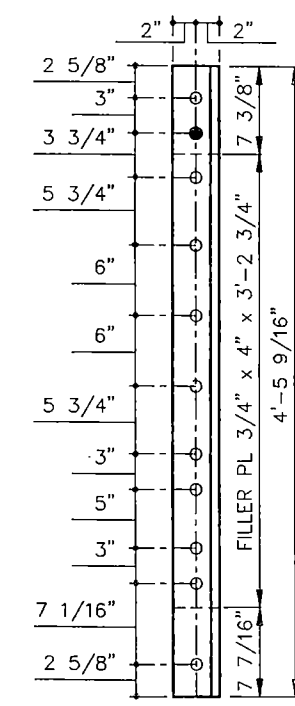


A-A

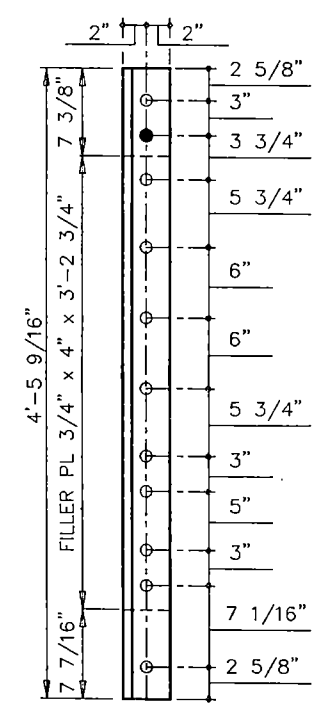


DETAIL "A"

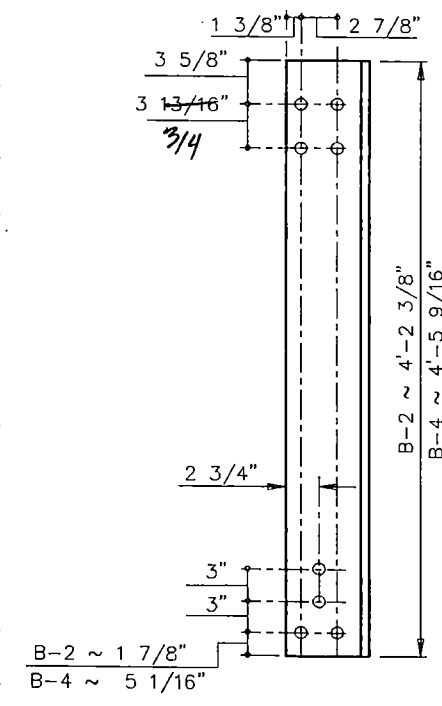
• FIELD DRILL HOLE THROUGH EXISTING GIRDER.



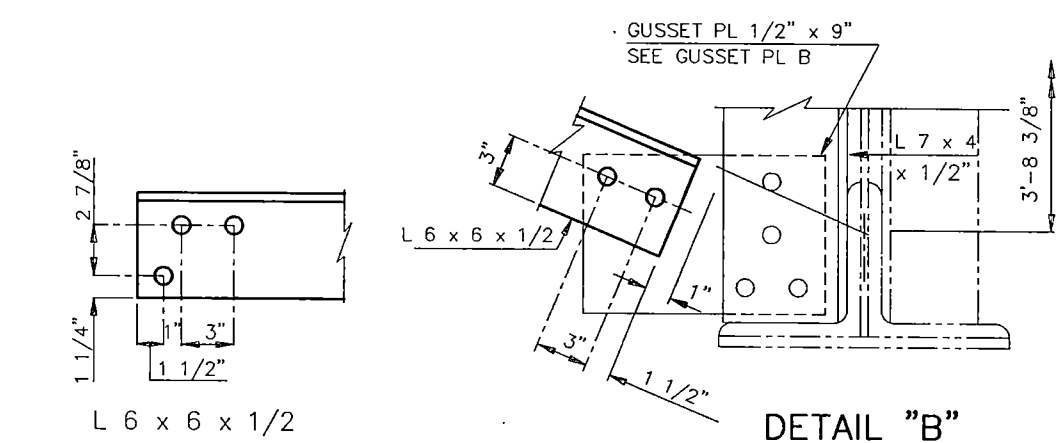
ANGLE B-3
L 7 x 4 x 1/2"



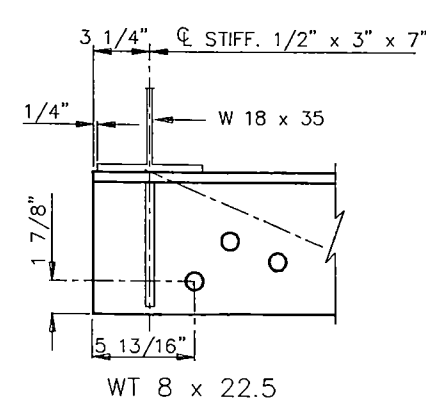
ANGLE B-4
L 7 x 4 x 1/2"



ANGLE B-2 & B-4
L 7 x 4 x 1/2"

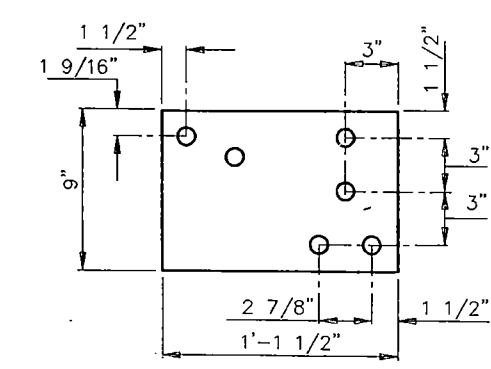


DETAIL "B"

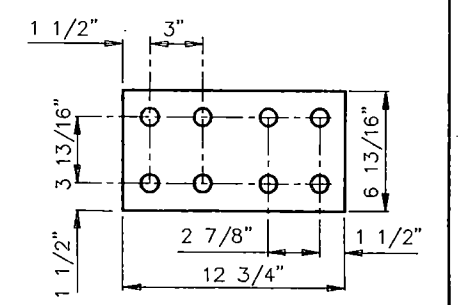


DETAIL "C"

FOR WT 8 x 22.5 TO W 18 x 35
CONNECTION SEE DWG. 094-901.376-18



GUSSET PL B

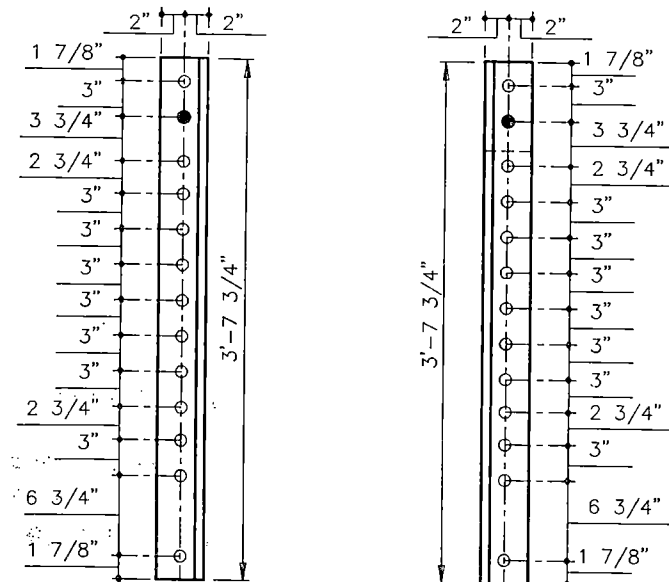


GUSSET PL A

2 - B-1 REQUIRED
2 - B-2 REQUIRED

QUANTITIES		
RIVET REMOVAL	76	EA.
FIELD DRILL HOLE	8	EA.
LITTLE MISSOURI RIVER BRIDGE MEDORA, ND		
BRACKET B DETAILS		

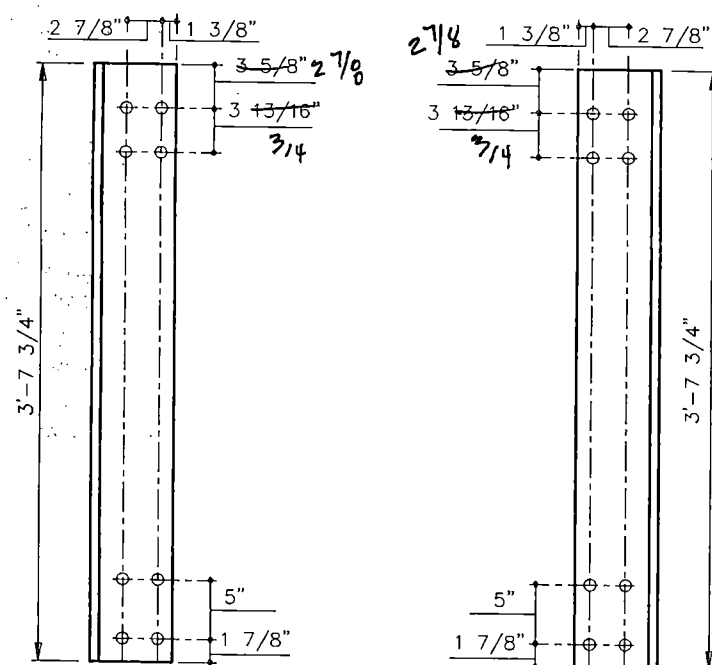
NOTE: ALL NEW ANGLES MUST BE GROUND TO FIT L 8 x 8 x 3/4"



ANGLE C-1
L 7 x 4 x 1/2"

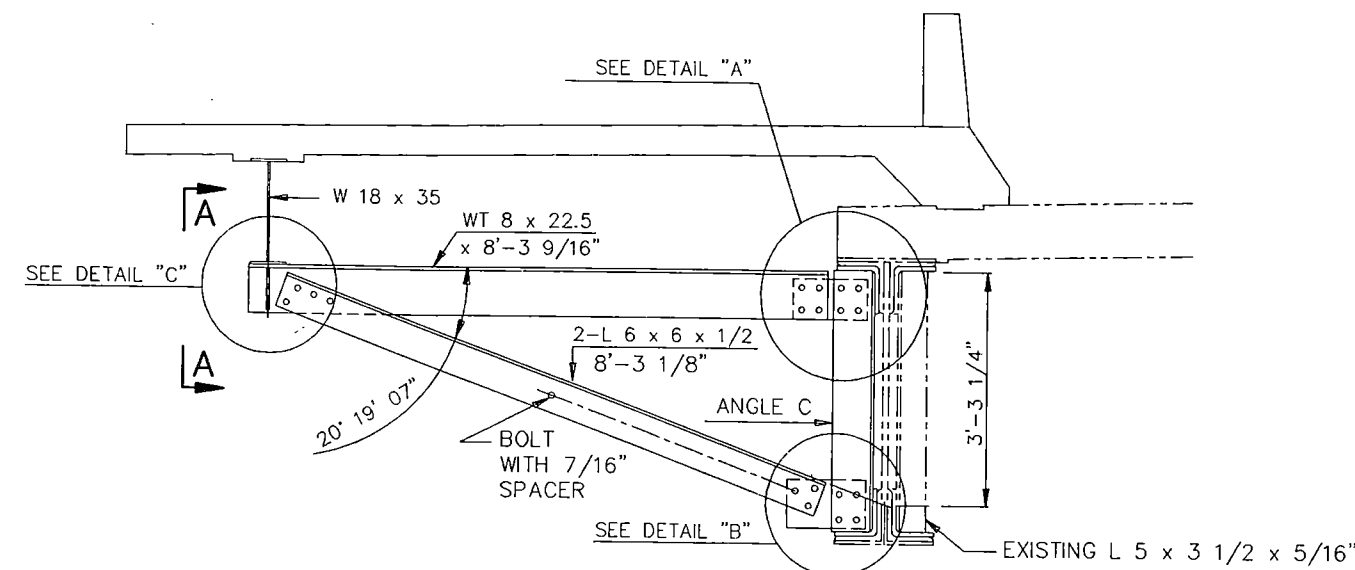
ANGLE C-2
L 7 x 4 x 1/2"

FIELD DRILL HOLE THROUGH EXISTING GIRDER

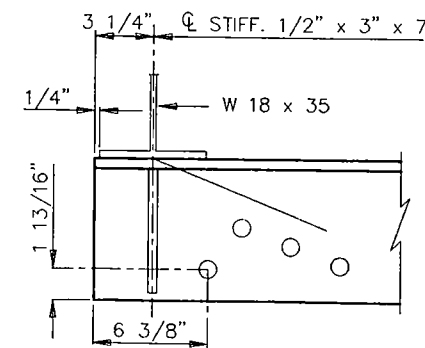
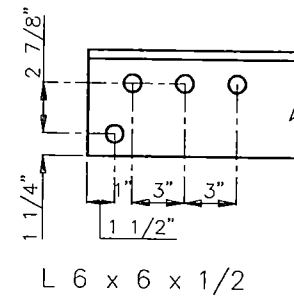


ANGLE C-1
L 7 x 4 x 1/2"

ANGLE C-2
L 7 x 4 x 1/2"

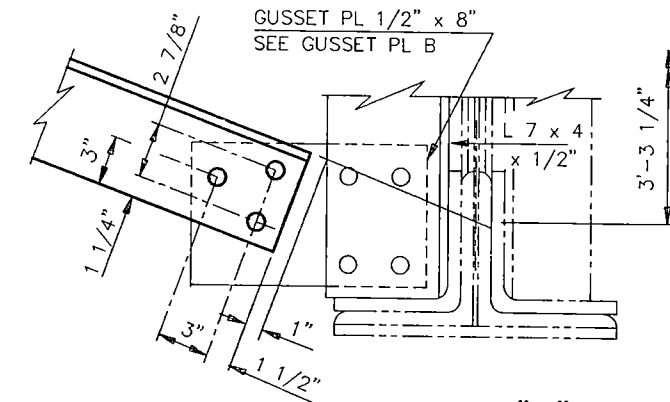


TYPICAL SECTION @ BRACKET C

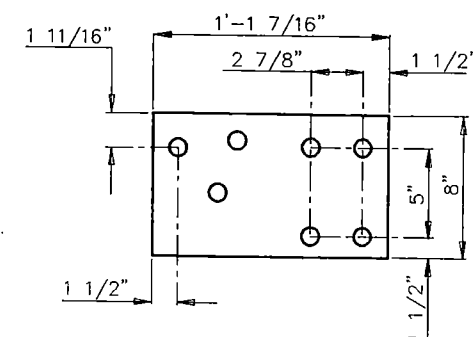


WT 8 x 22.5

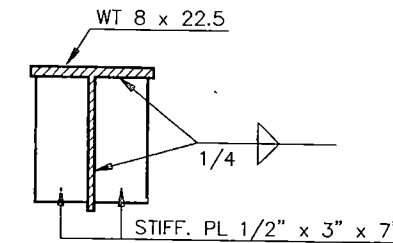
DETAIL "C"



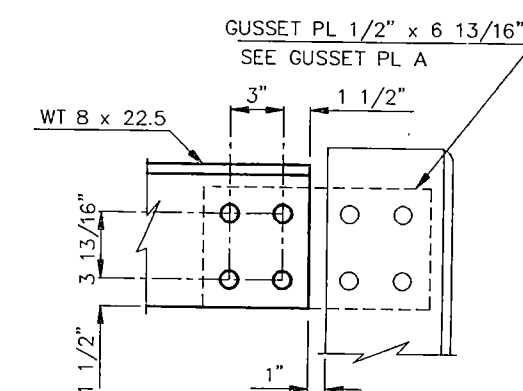
DETAIL "B"



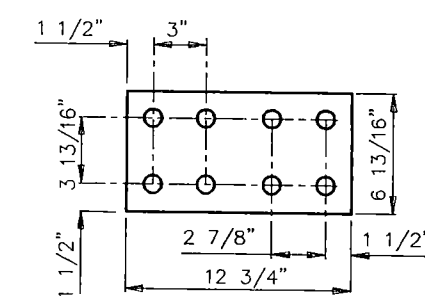
GUSSET PL B



A-A



DETAIL "A"



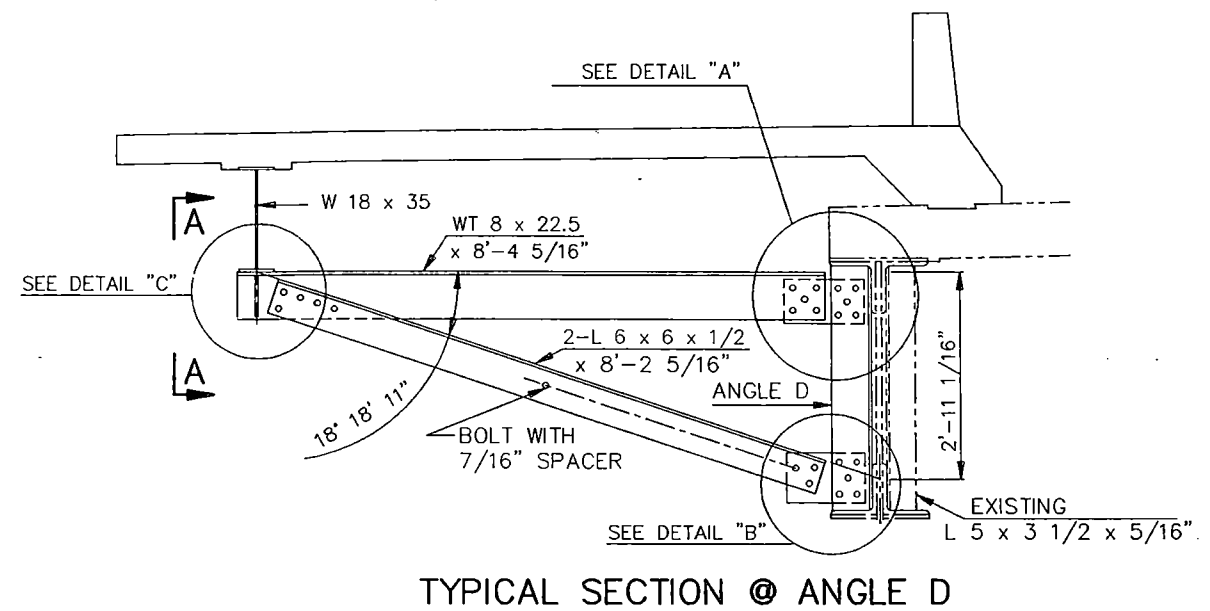
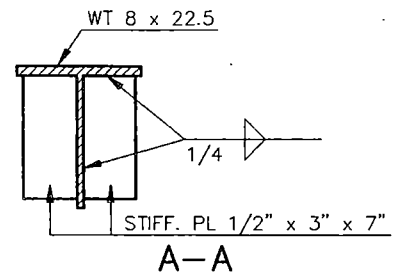
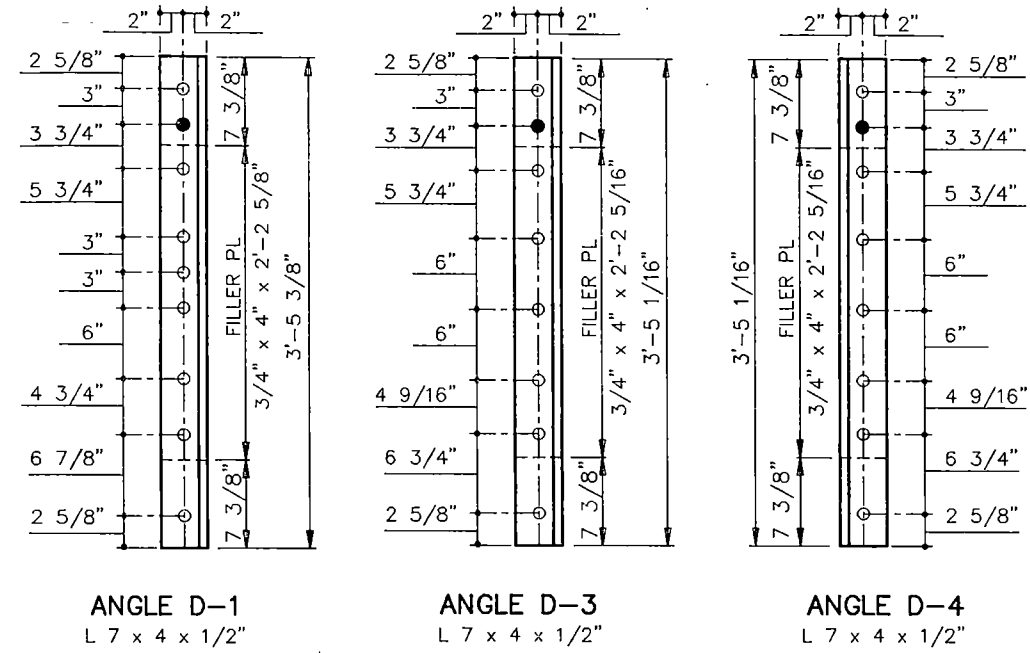
GUSSET PL A

2 - C-1 REQUIRED
2 - C-2 REQUIRED

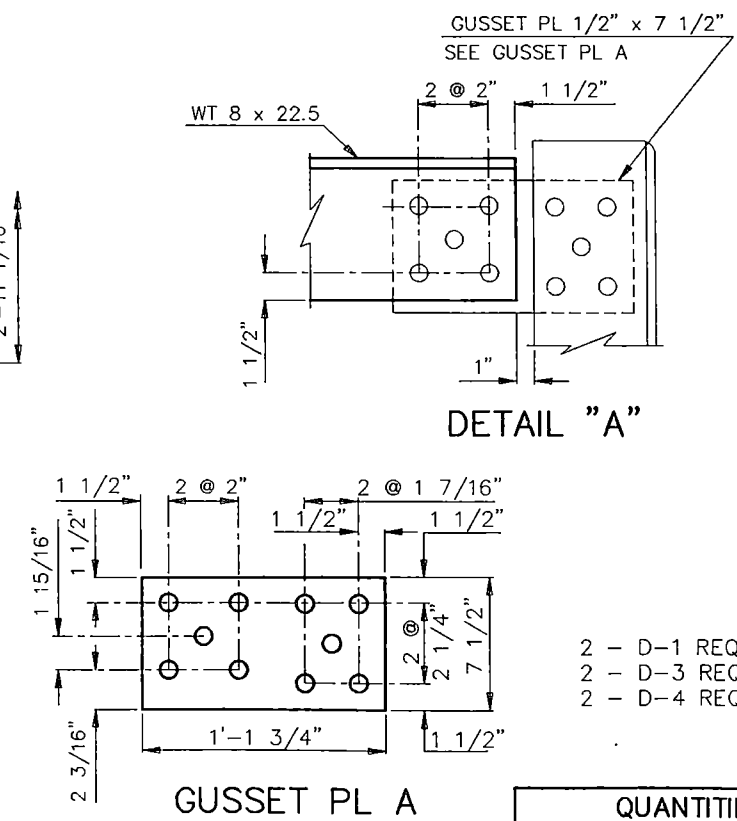
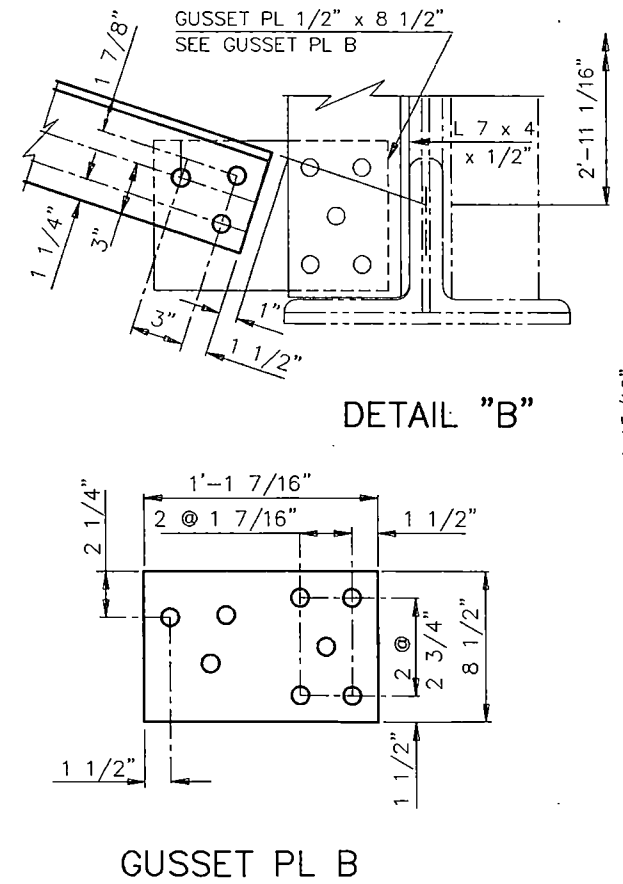
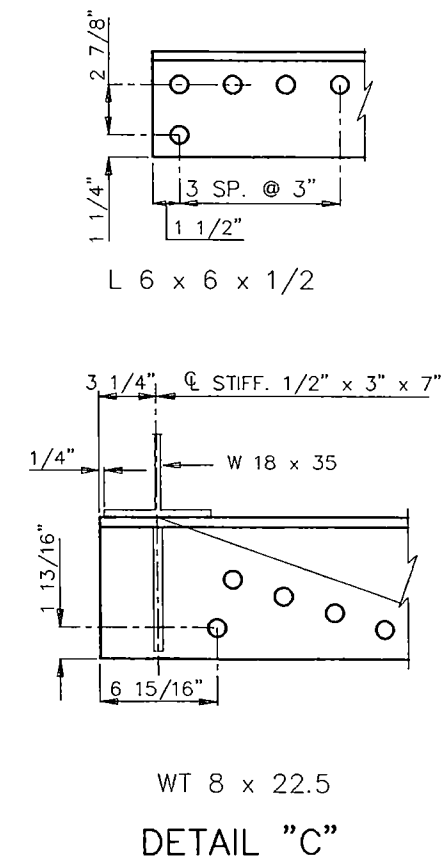
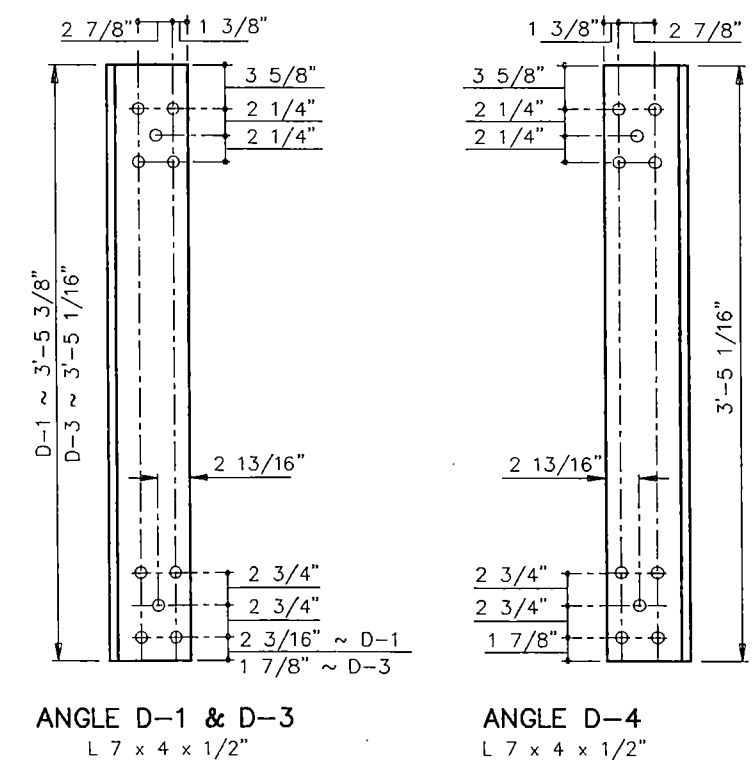
QUANTITIES	
RIVET REMOVAL	48 EA.
FIELD DRILL HOLE	4 EA.
LITTLE MISSOURI RIVER BRIDGE MEDORA, ND	
BRACKET C DETAILS	

NOTE: ALL NEW ANGLES MUST BE GROUND TO FIT L 8 x 8 x 3/4"

FOR WT 8 x 22.5 TO W 18 x 35
CONNECTION SEE DWG. 094-901.376-18

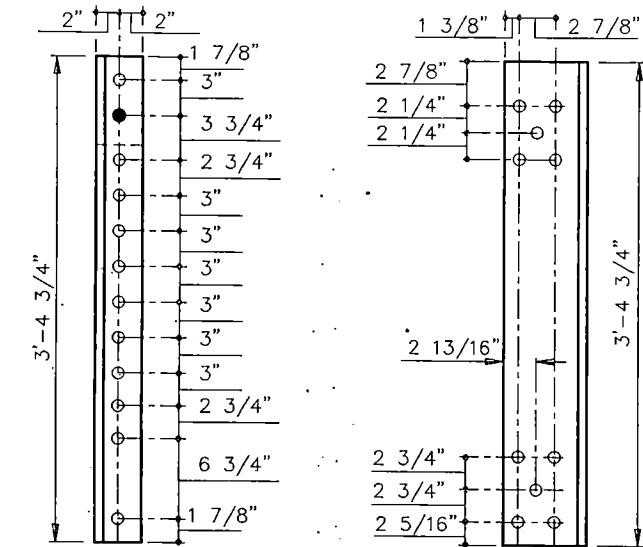


• FIELD DRILL HOLE THROUGH EXISTING GIRDER



- 2 - D-1 REQUIRED
- 2 - D-3 REQUIRED
- 2 - D-4 REQUIRED

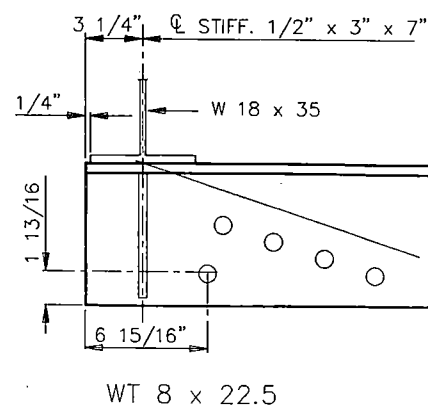
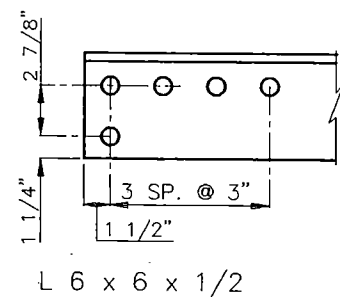
QUANTITIES		
RIVET REMOVAL	44	EA.
FIELD DRILL HOLE	6	EA.
LITTLE MISSOURI RIVER BRIDGE MEDORA, ND		
BRACKET D-1, D-3 & D-4 DETAILS		



ANGLE D-2
L 7 x 4 x 1/2"

ANGLE D-2
L 7 x 4 x 1/2"

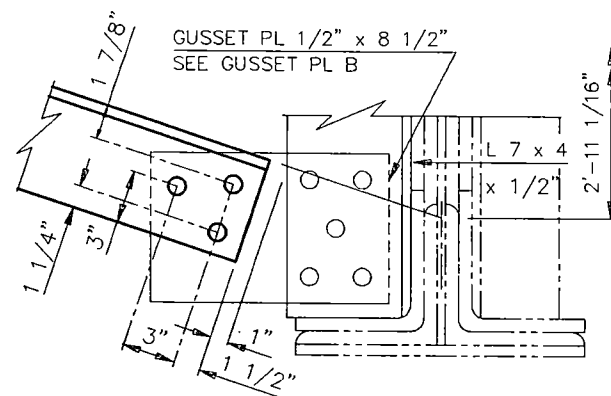
- FIELD DRILL HOLE THROUGH EXISTING GIRDER



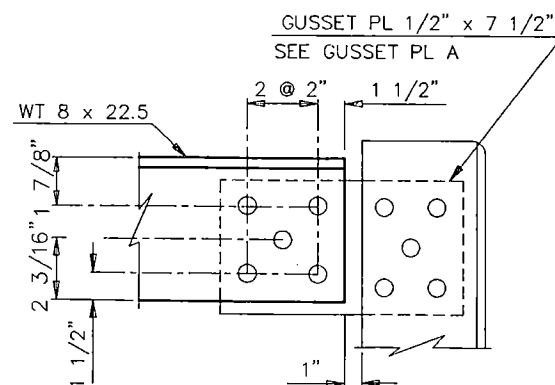
DETAIL "C"

FOR WT 8 x 22.5 TO W 18 x 35
CONNECTION SEE DWG. 094-901.376-18

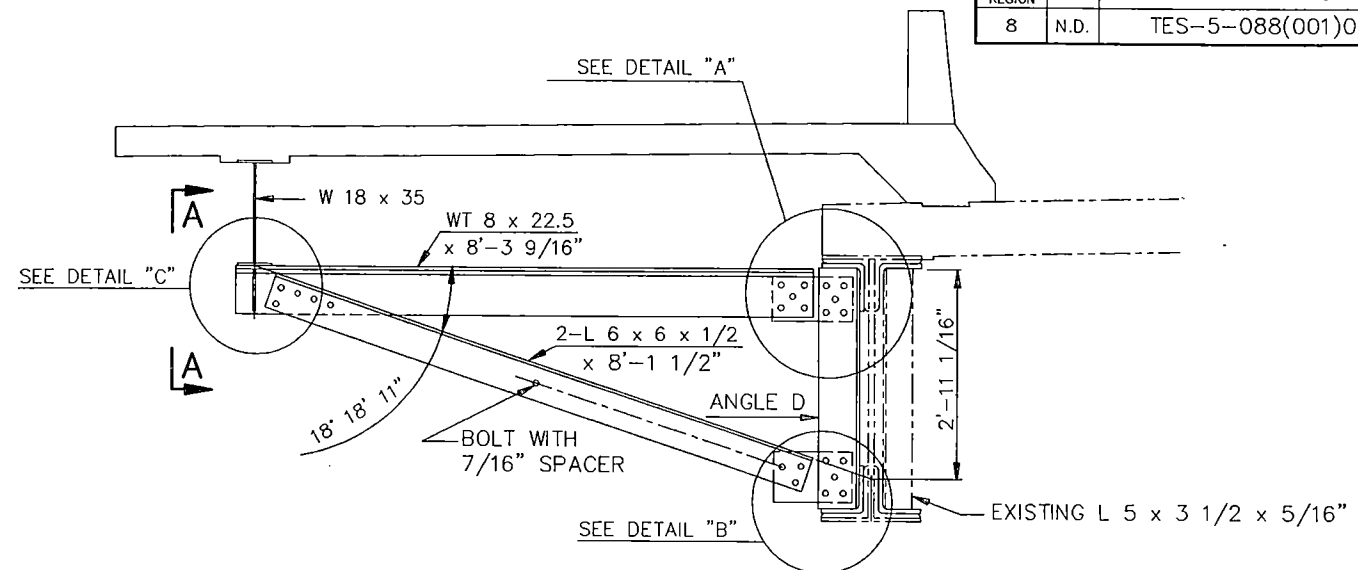
NOTE: ALL NEW ANGLES MUST BE GROUND TO FIT L 8 x 8 x 3/4"



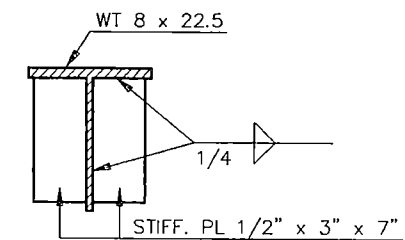
DETAIL "B"



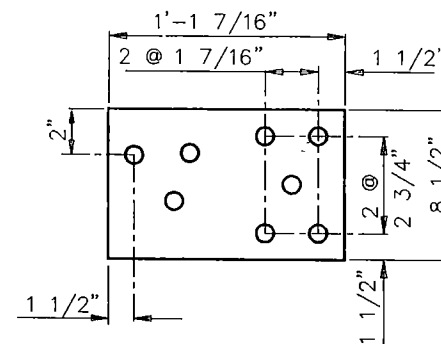
DETAIL "A"



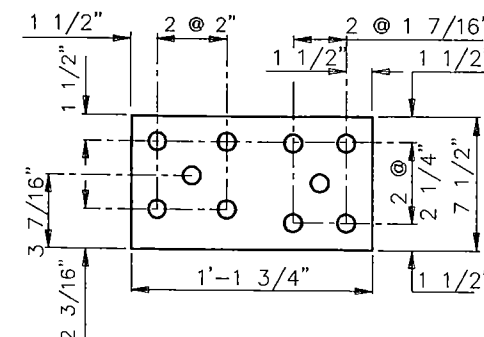
TYPICAL SECTION



A-A



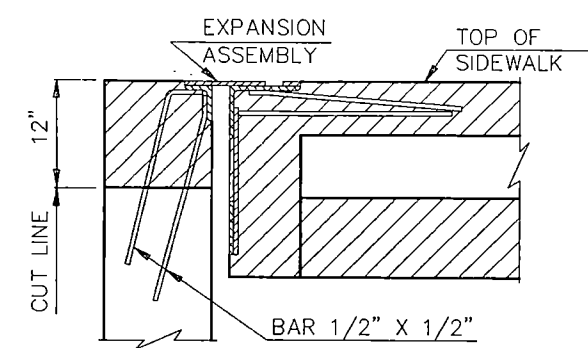
GUSSET PL B



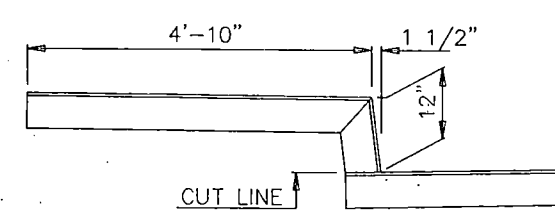
GUSSET PL A

2 - D-2 REQUIRED

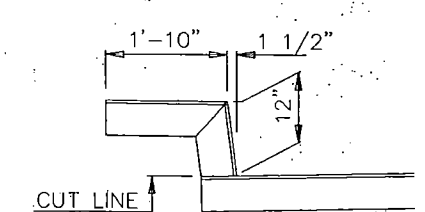
QUANTITIES		
RIVET REMOVAL	22	EA.
FIELD DRILL HOLE	2	EA.
LITTLE MISSOURI RIVER BRIDGE MEDORA, ND		
BRACKET D-2 DETAILS		



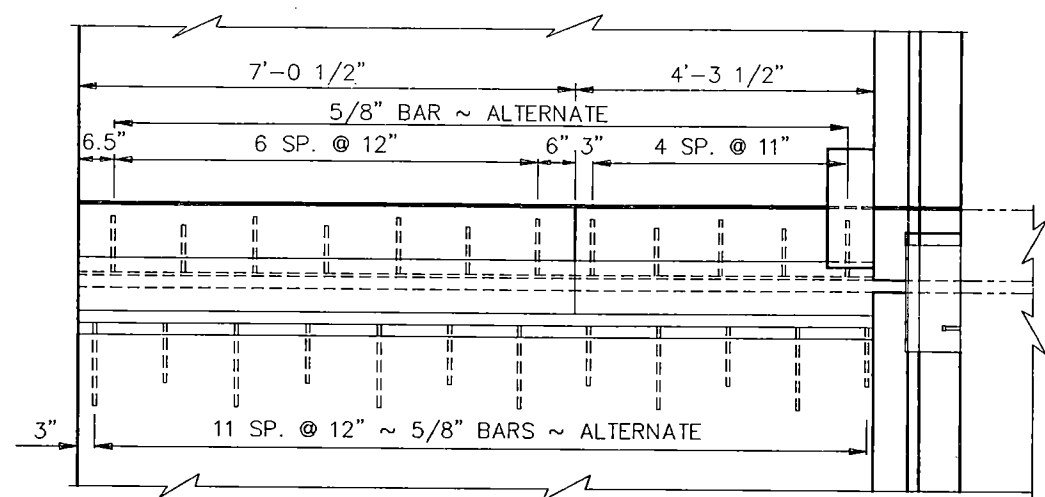
SECTION OF EXISTING SIDEWALK



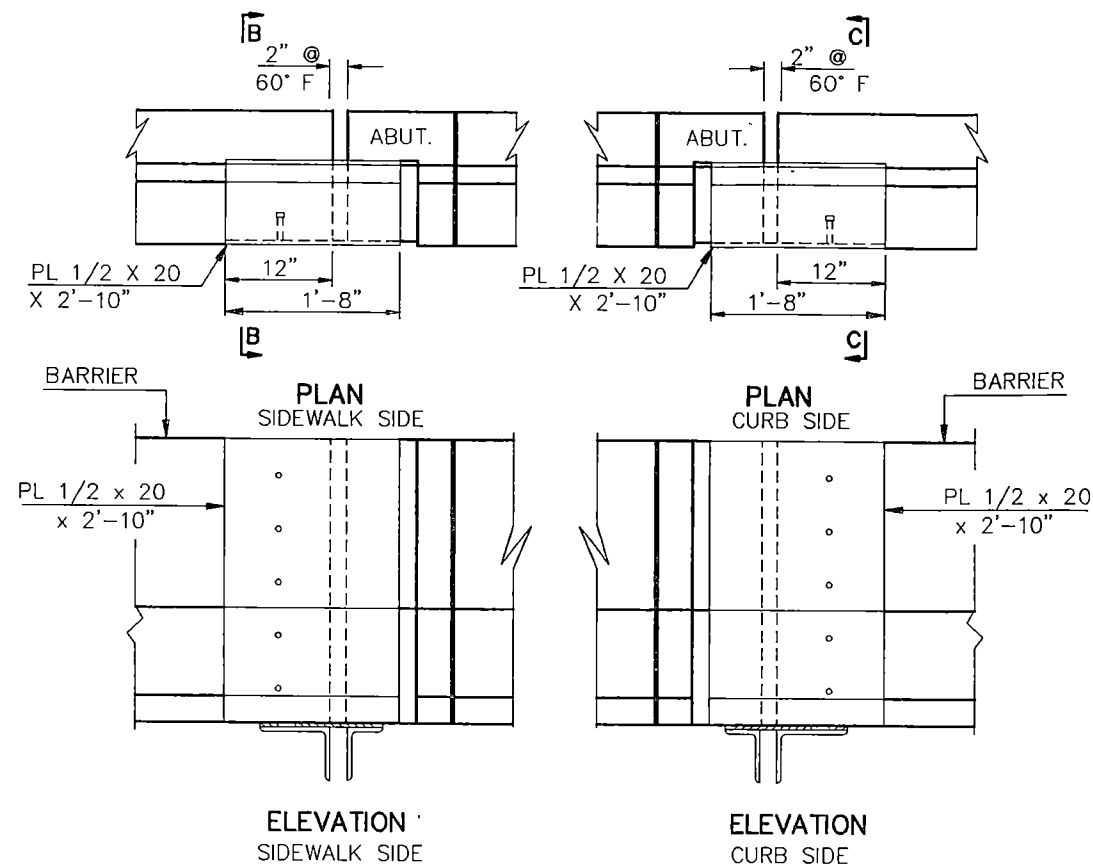
EXPANSION AT SIDEWALK



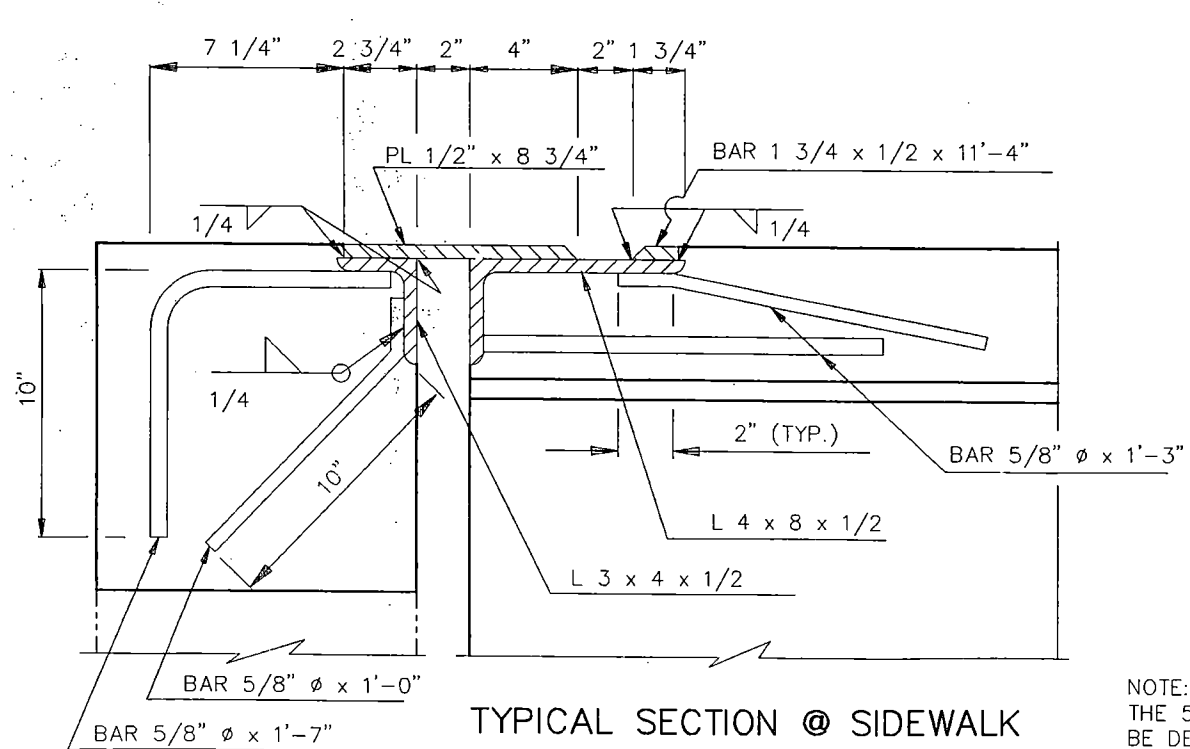
EXPANSION AT CURB



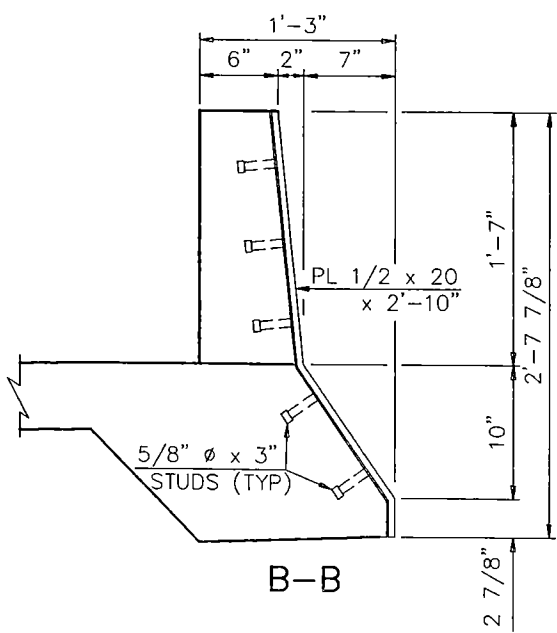
SIDEWALK PLAN



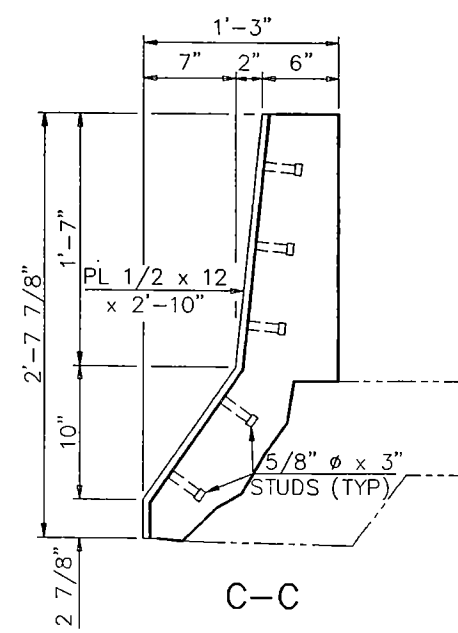
EXPANSION @ BARRIER



TYPICAL SECTION @ SIDEWALK



B-B

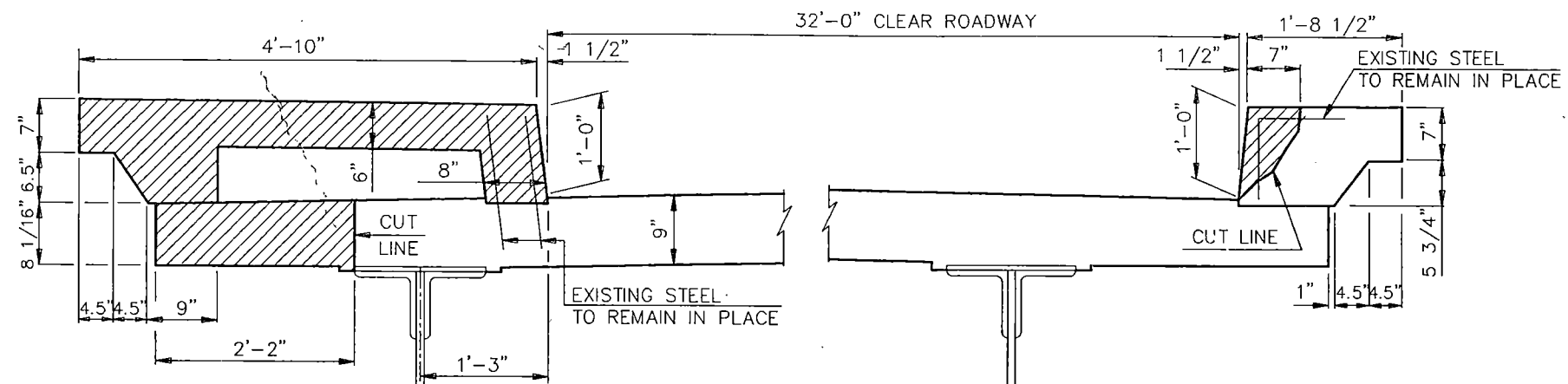


C-C

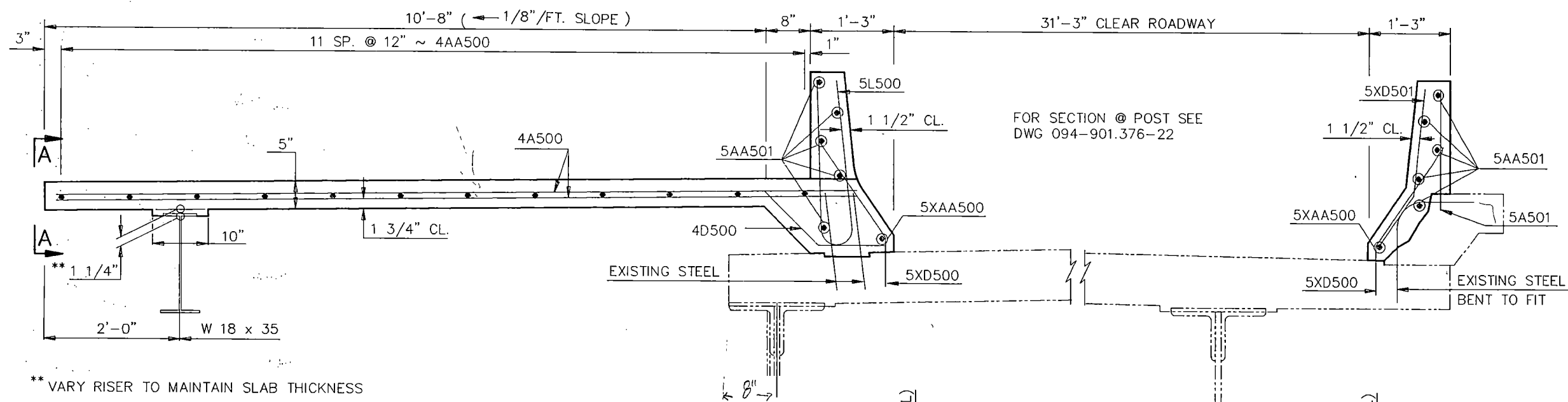
NOTE:
THE 5/8" ϕ BARS SHALL
BE DEFORMED REBAR.

BARRIER EXPANSION NOTE:
ALL BARRIER EXPANSION & EXPANSION JOINT MATERIALS SHALL
BE GALVANIZED IN ACCORDANCE WITH AASHTO M232.

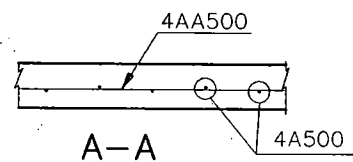
LITTLE MISSOURI RIVER BRIDGE
MEDORA, ND
EXPANSION JOINT
(ABUT. #5 SHOWN)



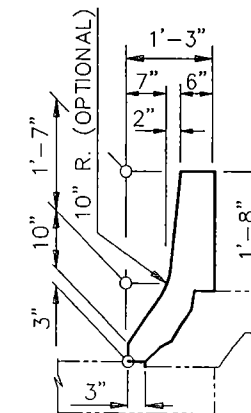
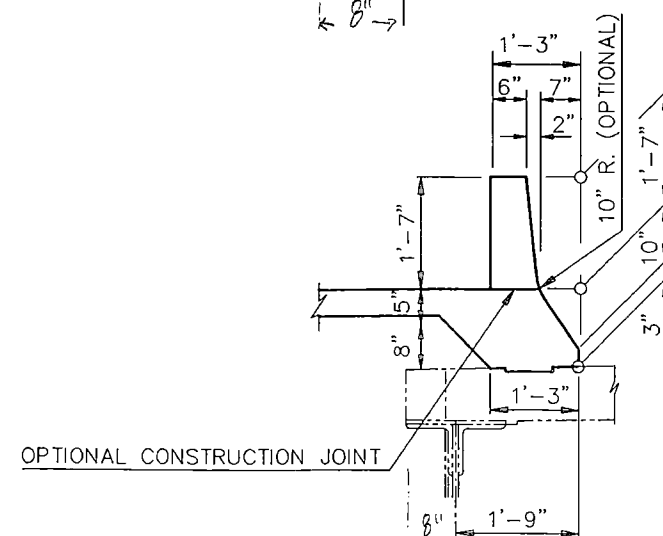
SHOWING AREA
TO BE REMOVED



** VARY RISER TO MAINTAIN SLAB THICKNESS



5XD500'S SHALL BE INSTALLED, ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, WITH A HIGH STRENGTH ADHESIVE SPECIFICALLY INTENDED FOR CONCRETE ANCHORAGE, IN ACCORDANCE WITH SEC. 806.02 OF THE NDDOT STANDARD SPECIFICATIONS.



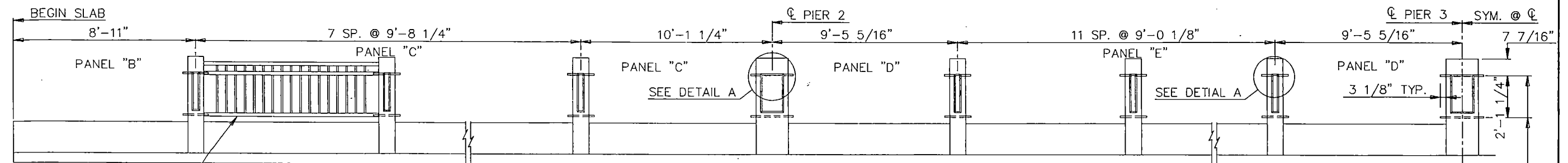
QUANTITIES

SEE DWG. 094-901.376-22

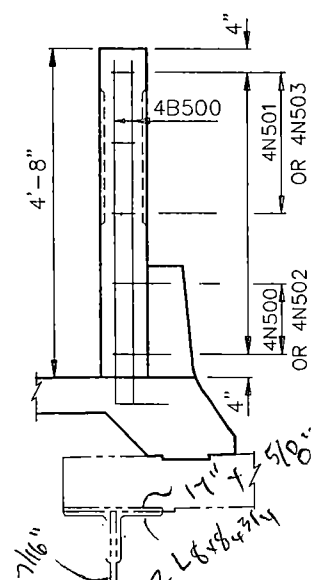
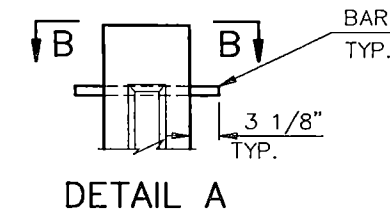
LITTLE MISSOURI RIVER BRIDGE
MEDORA, ND

SIDEWALK SECTIONS

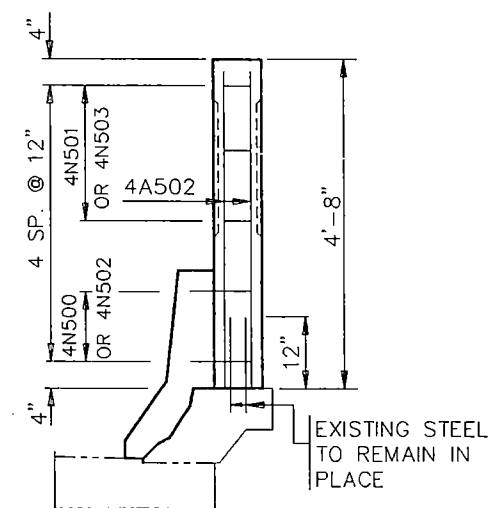
BARRIER DETAILS
SHOWING DIMENSIONS



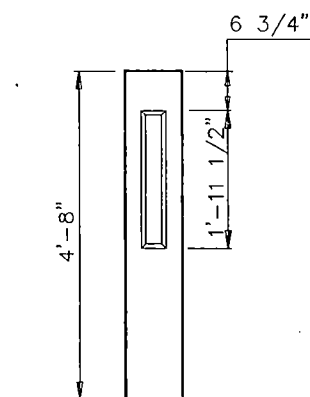
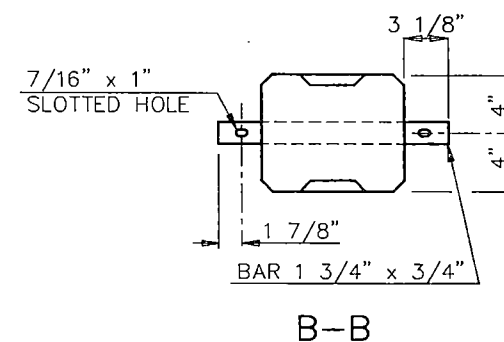
RAIL POST SPACING
(CURB SIDE)
(SIDEWALK SIDE THE SAME)



POST @ SIDEWALK SIDE

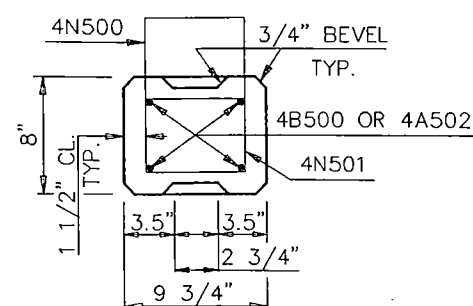


POST @ CURB SIDE

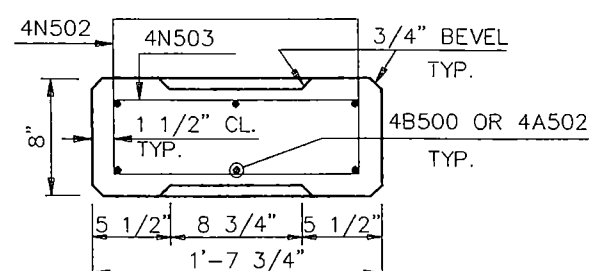


TYPICAL POST
ON BRIDGE

* POST CONCRETE AAE-5



INTERMEDIATE POST
SECTION

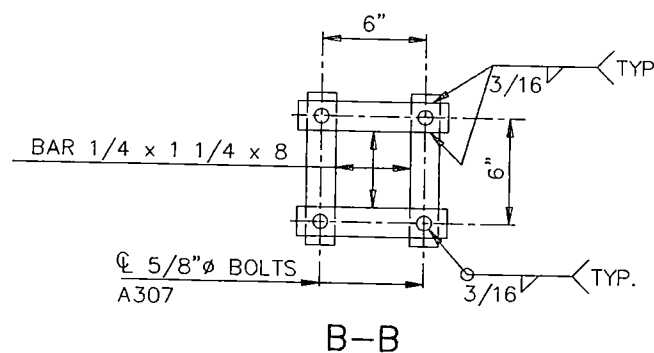
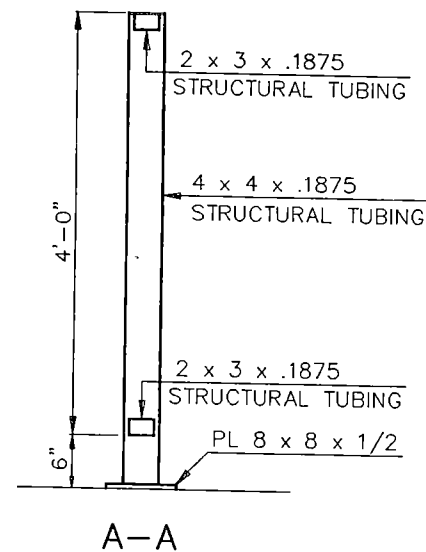
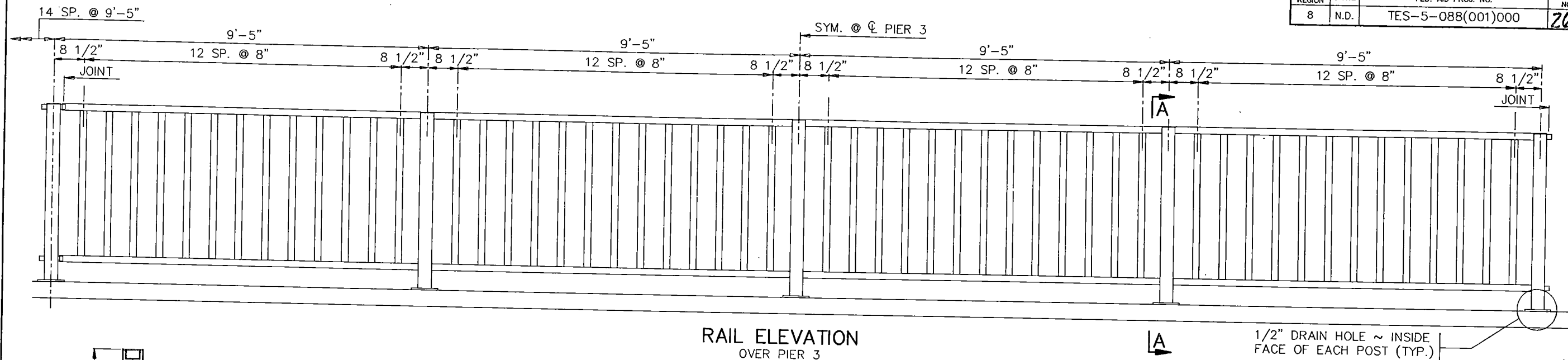


PIER POST
SECTION

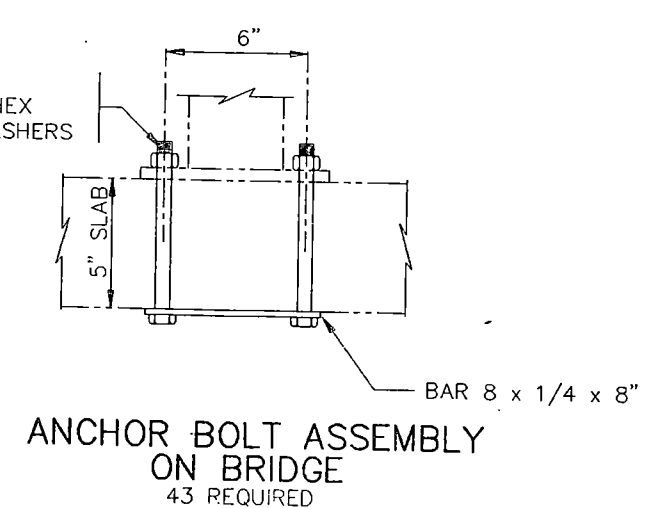
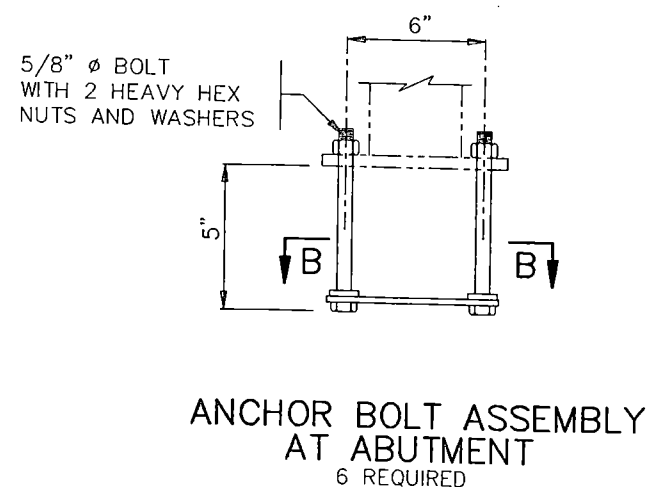
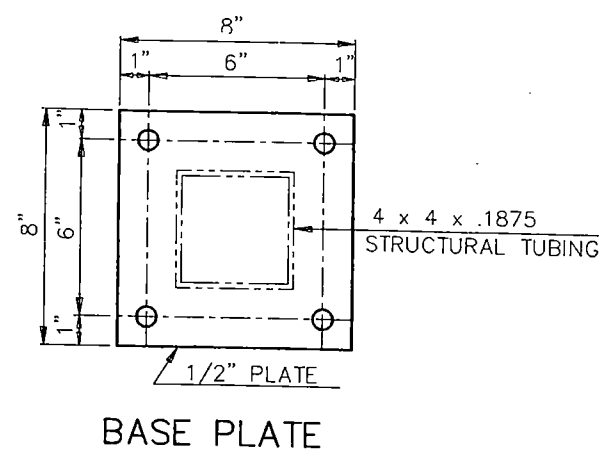
EXISTING RAIL LENGTH	
PANEL	LENGTH
A **	6'-8 3/4"
B	8'-7 5/8"
C	8'-10"
D	8'-2 1/16"
E	8'-1 7/8"

**PANEL A ON ABUTMENTS

QUANTITIES		
CLASS AAE-3 CONC.	128.5	C.Y.
* CLASS AAE-5 CONC.	8.4	C.Y.
REINFORCING STEEL	18,527	LBS.
REINF. STEEL (EPOXY)	3904	LBS.
LITTLE MISSOURI RIVER BRIDGE MEDORA, ND		
PEDESTRAIN RAIL POSTS		



BASE PLATE SHALL BE AASHTO M183 STEEL.
STRUCTURAL TUBE SHALL BE ASTM A500 GRADE B
THE RAIL SHALL BE GALVANIZED AFTER FABRICATION.



QUANTITIES		
PEDESTRAIN RAILING	445	L. FT.
LITTLE MISSOURI RIVER BRIDGE MDEORA, ND		
PEDESTRAIN RAILING		

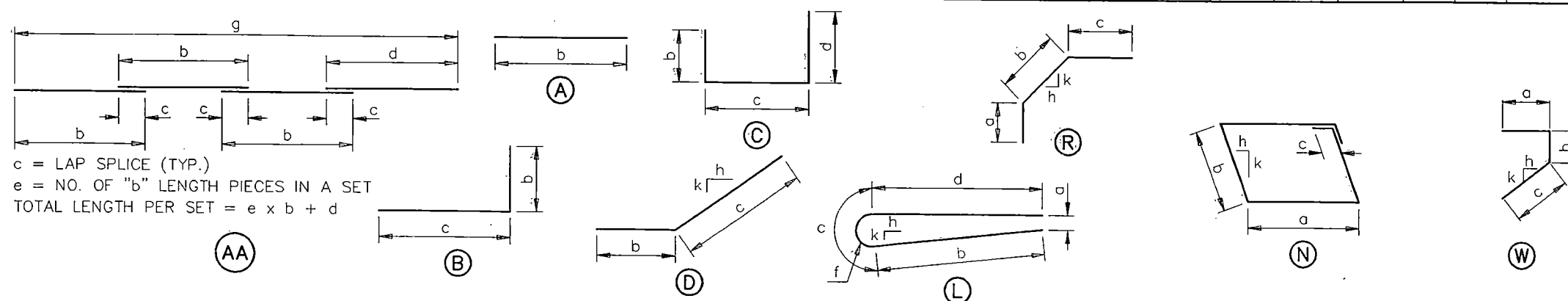
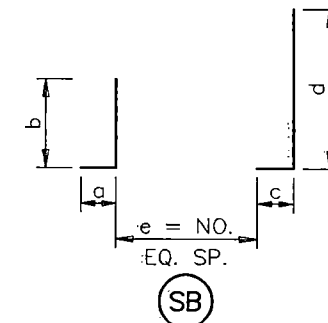
BILL OF REINFORCING STEEL, GRADE 60

LETTER PREFIX OF BAR MARK DENOTES SHAPE ~ SEE BAR DETAILS

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	TES-5-088(001)000	26A

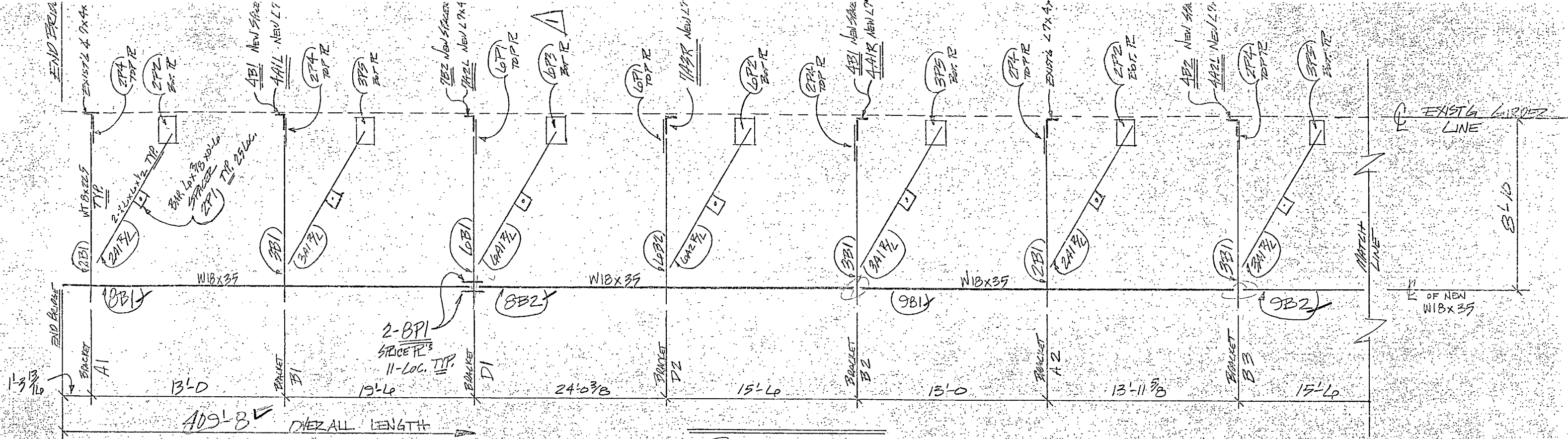
LOCATION		SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS										LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS												
						a	b	c	d	e	f	g	h	k	a						b	c	d	e	f	g	h	k					
ABUTMENT & ABUTMENT WINGS	REGULAR	6	A100	32	17'-8"		17'-8"							ABUTMENT	EPOXY COATED	5	XB100	36	1'-9"		9"	12"											
		5	A101	40	17'-8"		17'-8"																										
		5	A102	44	6'-8"		6'-8"																										
		5	A103	12	9'-11"		9'-11"																								12	8.	
		4	A104	8	3'-10"		3'-10"																								12	8.	
		4	A105	4	5'-2"		5'-2"																								12	6.	
		5	A106	18	8"		8"																										
		4	A107	52	11'-10"		11'-10"																										
		4	A108	24	16'-8"		16'-8"																										
		5	A109	16	16'-8"		16'-8"																										
		5	A110	14	1'-10"		1'-10"																										
		5	A111	4	15'-8"		15'-8"																										
	4	A112	36	4'-4"		4'-4"																											

- NOTES:**
1. FABRICATION AND TOLERANCES SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE.
 2. ALL DIMENSIONS ARE OUT TO OUT OF BARS.
 3. NOMINAL LENGTH OF EACH BENT BAR OR CUT BAR IS THE SUM TOTAL OF THE DETAILING DIMENSIONS FOR THAT BAR, UNLESS OTHERWISE NOTED.
 4. ADJACENT AA BARS SHALL BE TURNED END FOR END SO THAT THE SPLICE LOCATIONS ARE STAGGERED.
 5. THE "r" DIMENSION INDICATES THE RADIUS.
 6. AN "X" PRECEDING A BAR DESIGNATION INDICATES AN EPOXY COATED BAR.

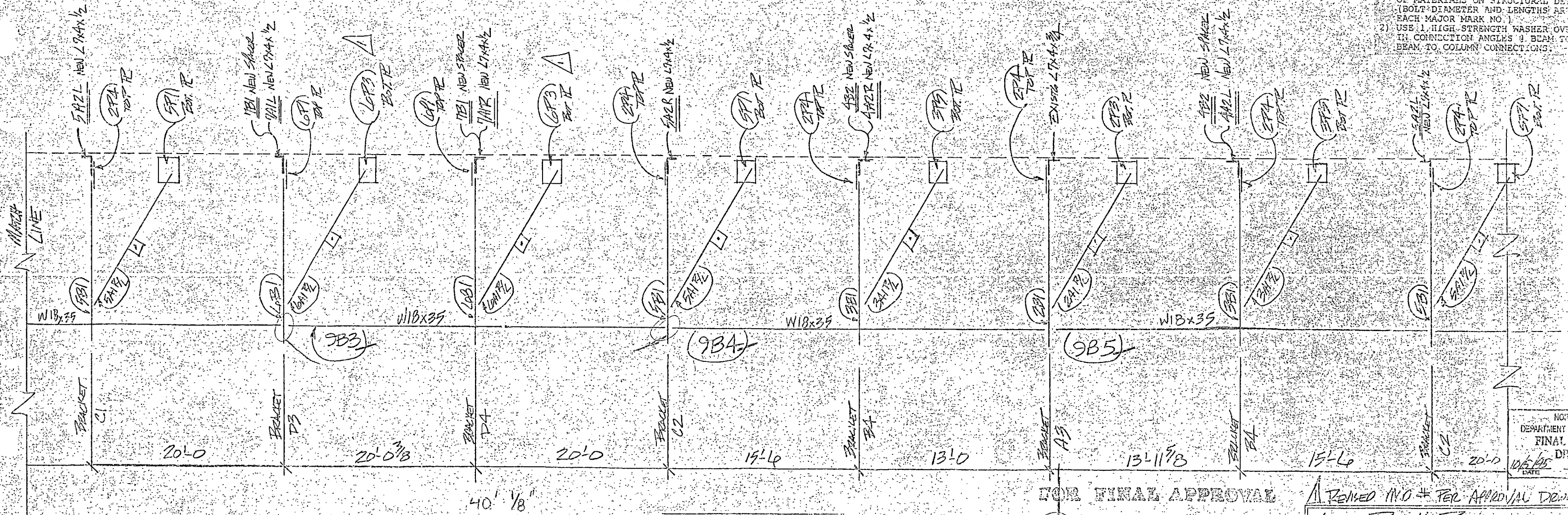


LITTLE MISSOURI RIVER BRIDGE
MEDORA, ND

REINFORCING BAR LIST
& DETAILS



PARTIAL PLAN VIEW



PARTIAL PLAN VIEW

ERECTOR NOTES:
 1) FOR FIELD INSTALLED BOLTS, REE OF MATERIALS ON STRUCTURAL DET (BOLT DIAMETER AND LENGTHS ARE EACH MAJOR MARK NO.)
 2) USE 1/4\"/>

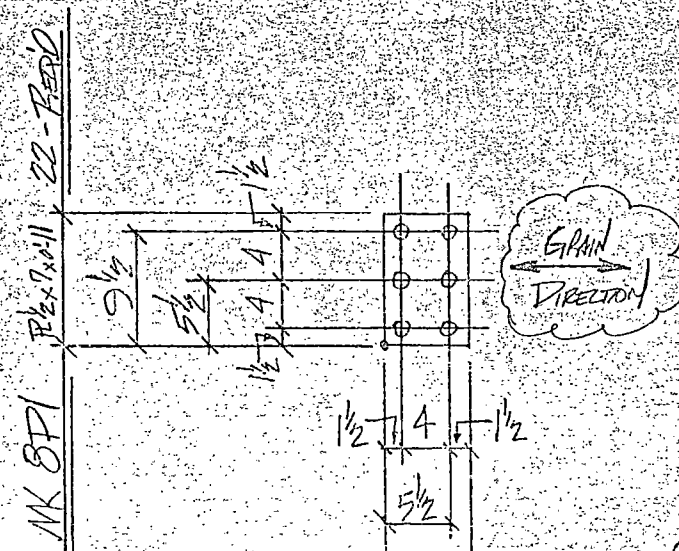
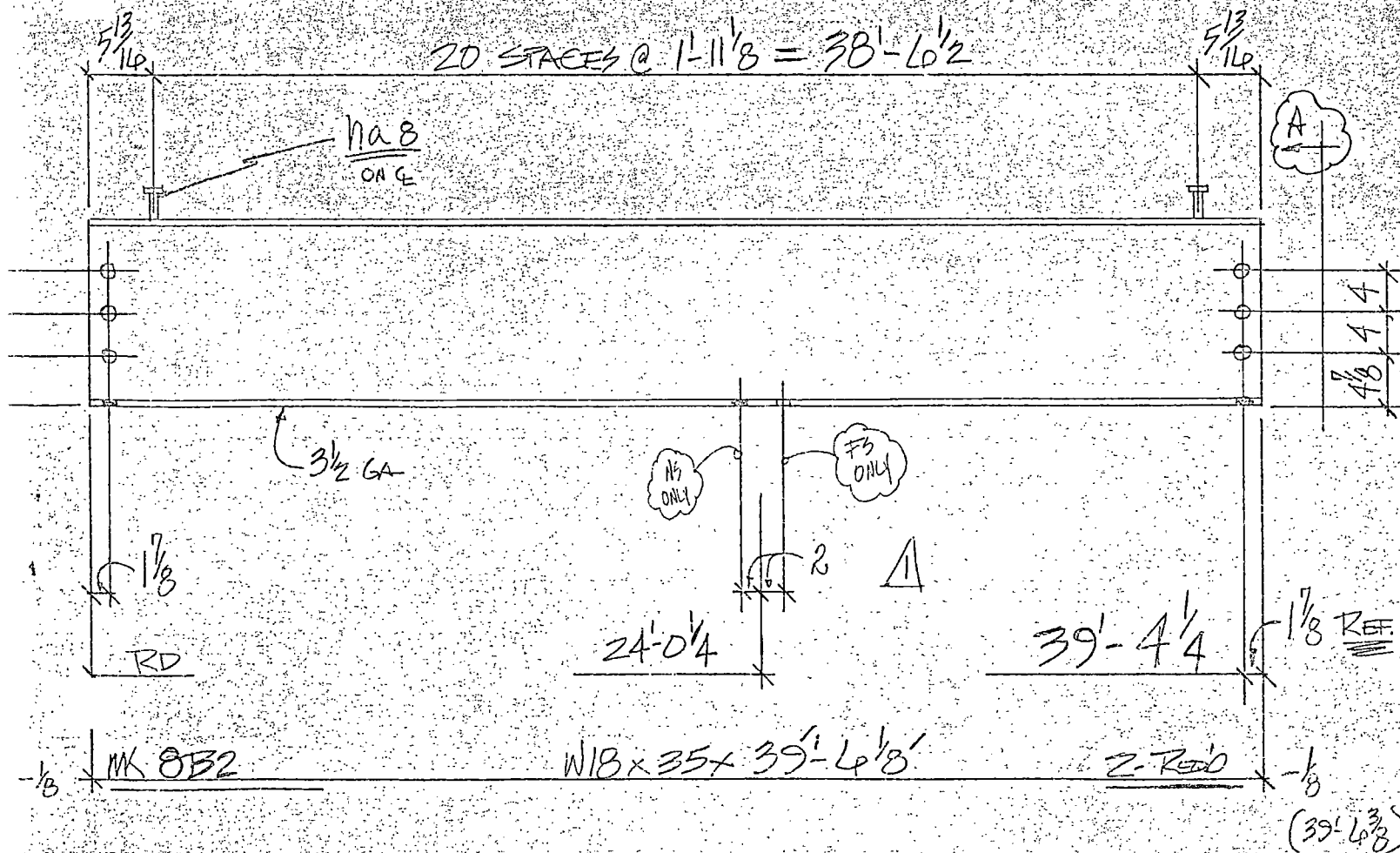
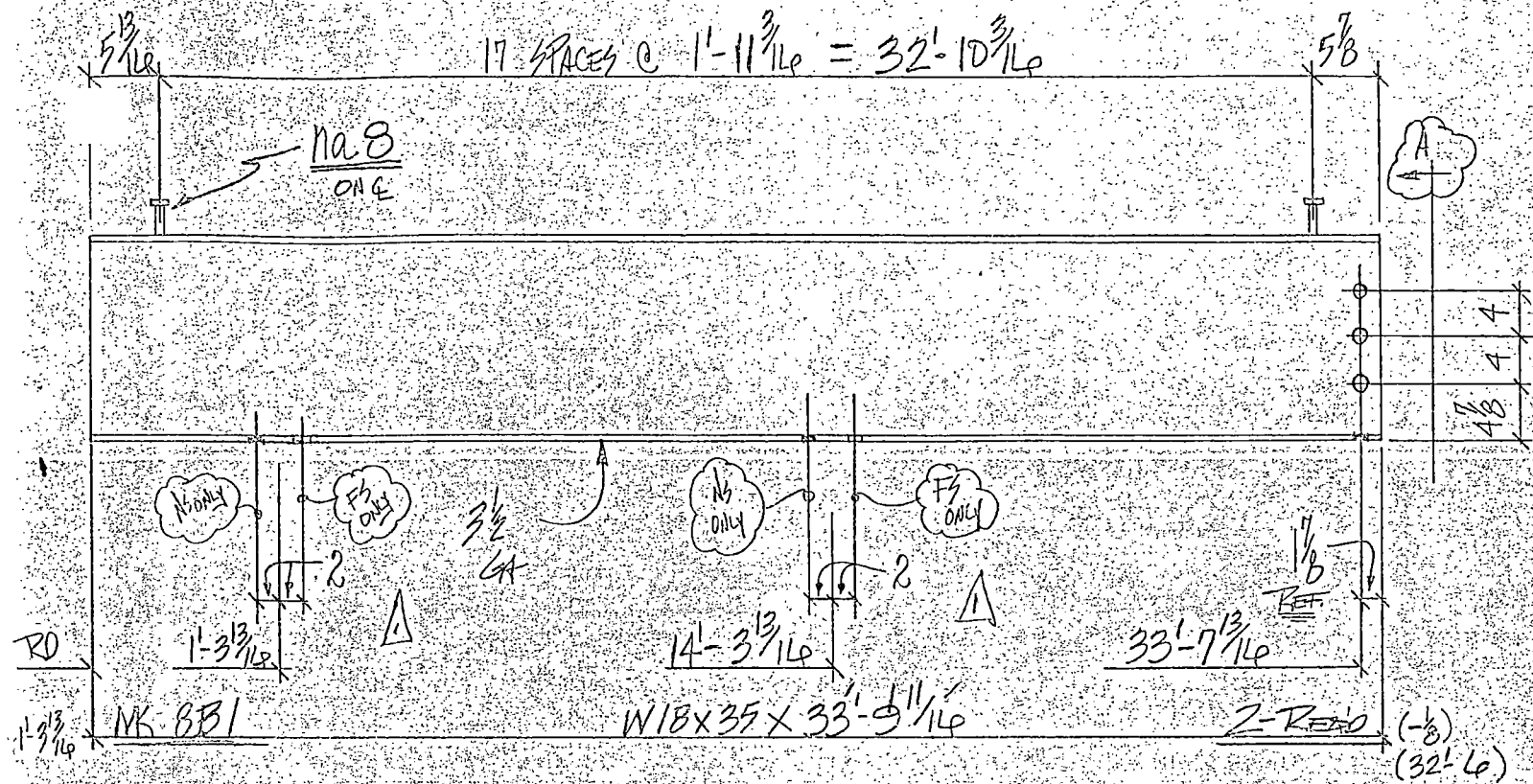
FOR FINAL APPROVAL

SYN. EXCET

L. Missouri R.
 #01-901.376

STEEL TRUSS PLAN
 FOR APPROVAL # TBS-5-022(00)000
 INDUSTRIAL BUILDERS, INC. FIN. CO.

NOV
 DEPARTMENT
 FINAL
 DR
 10/5/05
 DATE



MK	NO.	SHAPE	FT.	IN.	REMARKS
BB1	2	W18x35	33	5 11/16	GR. TUB. BRIDG. 1020
NA 8	30	7/8" x 5/16"	0	2 1/4	W/NEW (ASMT A10B)
FKB	12	7/8" x 5/16"	0	2 1/4	W/NEW C.F.L. HOLES
BB2	2	W18x35	39	6 1/8	
NA 8	42				
FKB	12				C.F.L. HOLES
BP1	22	R 1/2 x 7	0	11	NOTE 5 GRAIN DIRECTION
MB	100	7/8" x 5/16"	0	2 1/4	W/NEW

- SHOP NOTES**
- ALL MATERIAL - A.A.S.H.T.O. M270 GRADE 3672 U.H.O.
 - ALL MATERIAL U.H.O. SHALL MEET CHURCH V-NOTCH TEST FOR 15FT-LBS. @ 40 F.
 - HOLES - 5/16" DIA. HOLE U.H.O.
 - BOLTS - 7/8" DIA. BOLTS A.A.S.H.T.O. M-164 (ASTM A-325) U.H.O.
 - BEAM TO BE FABRICATED W/NATURAL CAMBER UP
 - WELDS - E70XX OR EQUAL
 - SURFACE PREP. SSPC-SP10 (SAFETY CLEAN SURFACE) OR GREASE HAS
 - CONTACTED SURFACES - SSPC-SP13 (SAFETY BLAST TO NEAR WHITE FINISH)
 - PRIMER-CARBOLINE INORGANIC ZINC SILICATE PRIMER CARBOLINE ZINC 12 VOC PLUS P.F.T.
 - PAINT-HOT - FIELD PAINTED PER SECTION 630 OF N.D. D.O.T. STANDARD SPEC. FOR
 - ROAD & BRIDGE CONSTRUCTION 1992 - BY FIELD PAINTING CONTRACTOR
 - NO PAINT AS NOTED

STAMPS

FOR FINAL APPROVAL

REVISED PER APPROVAL DEDUCT 10-2-95

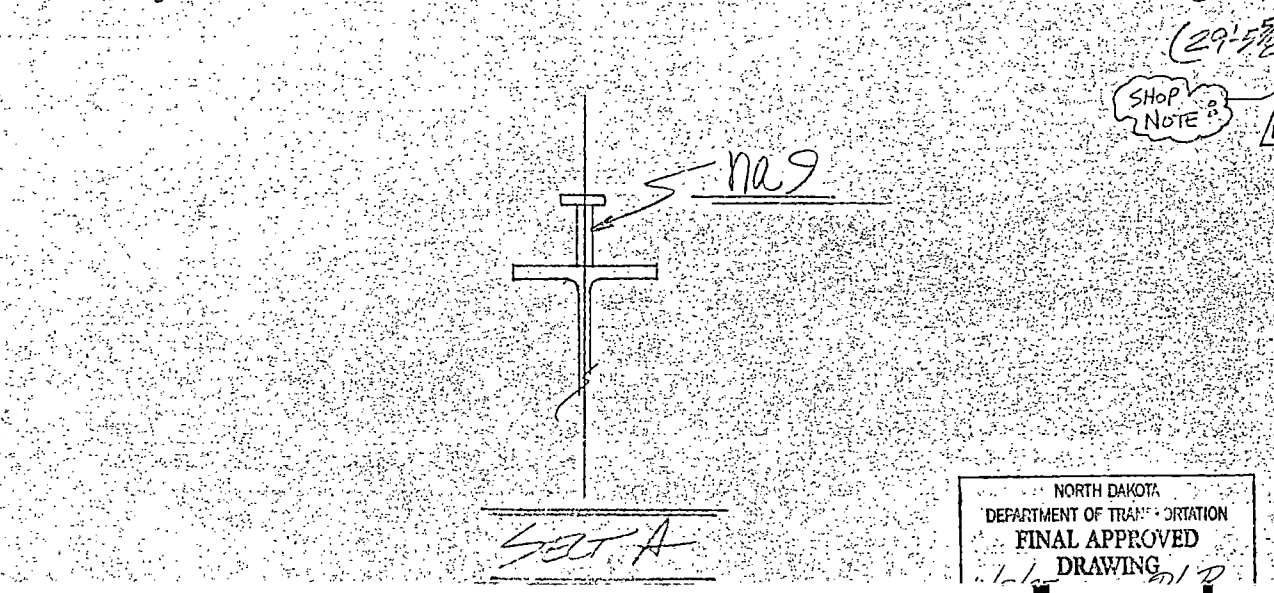
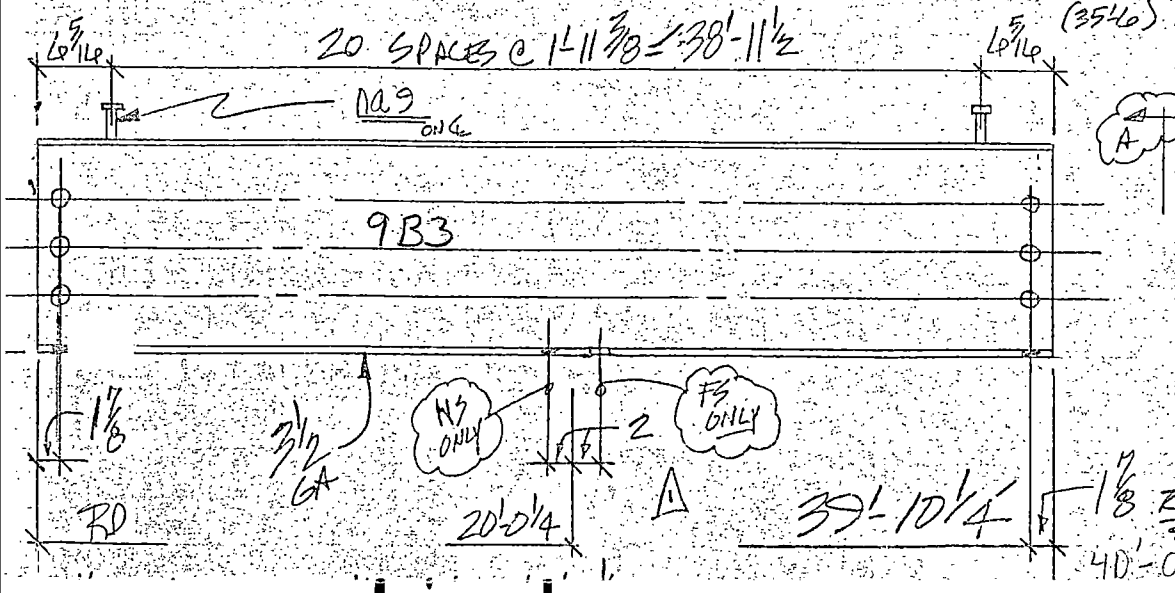
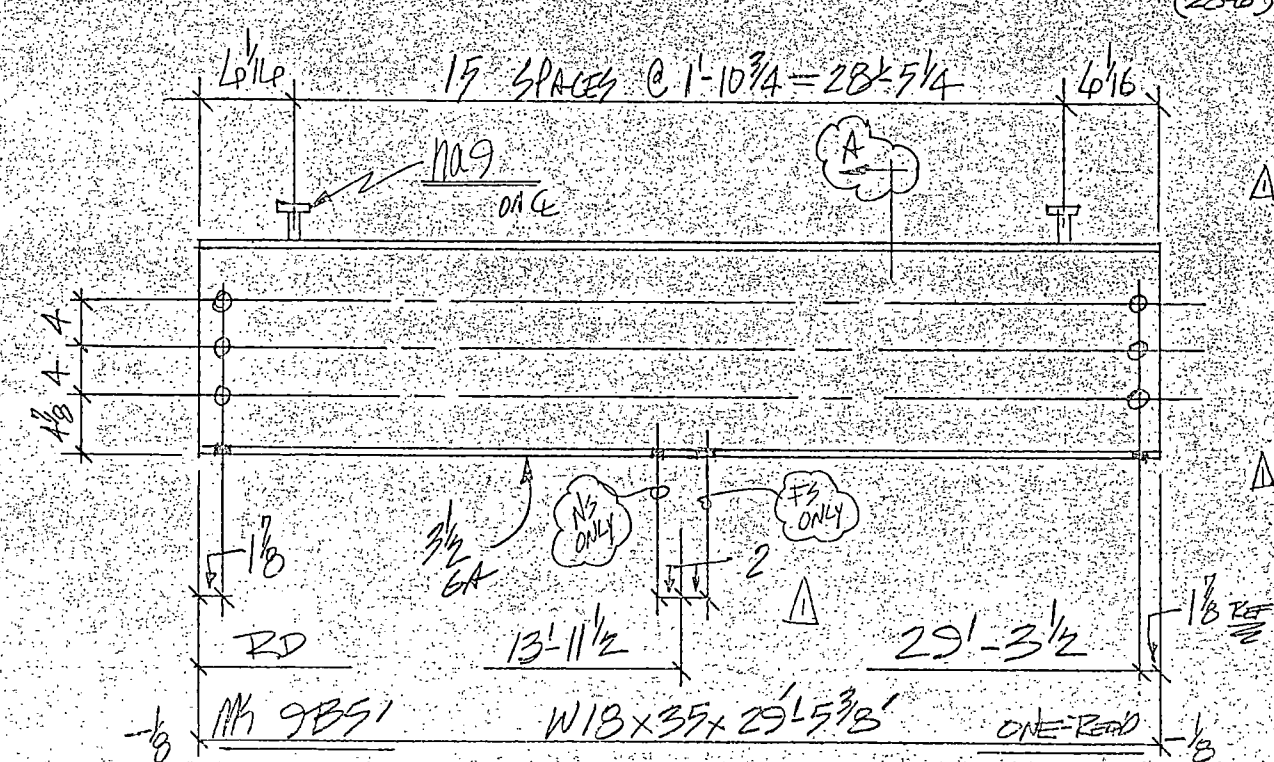
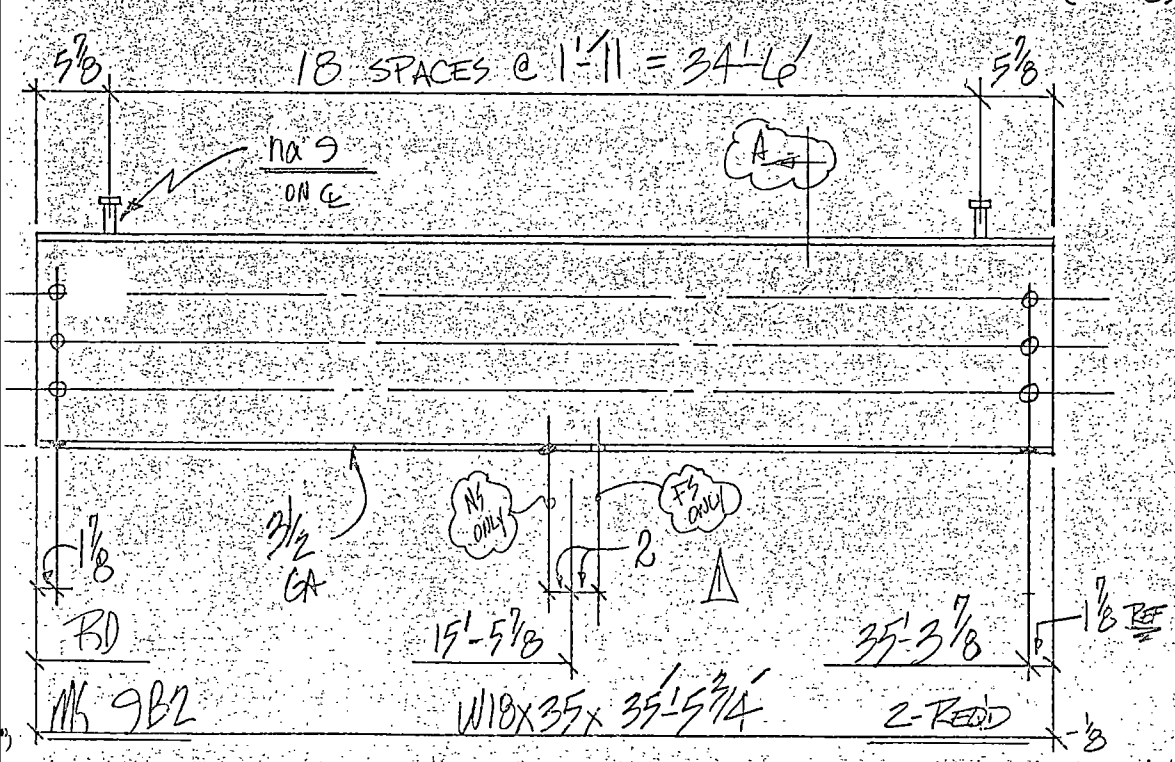
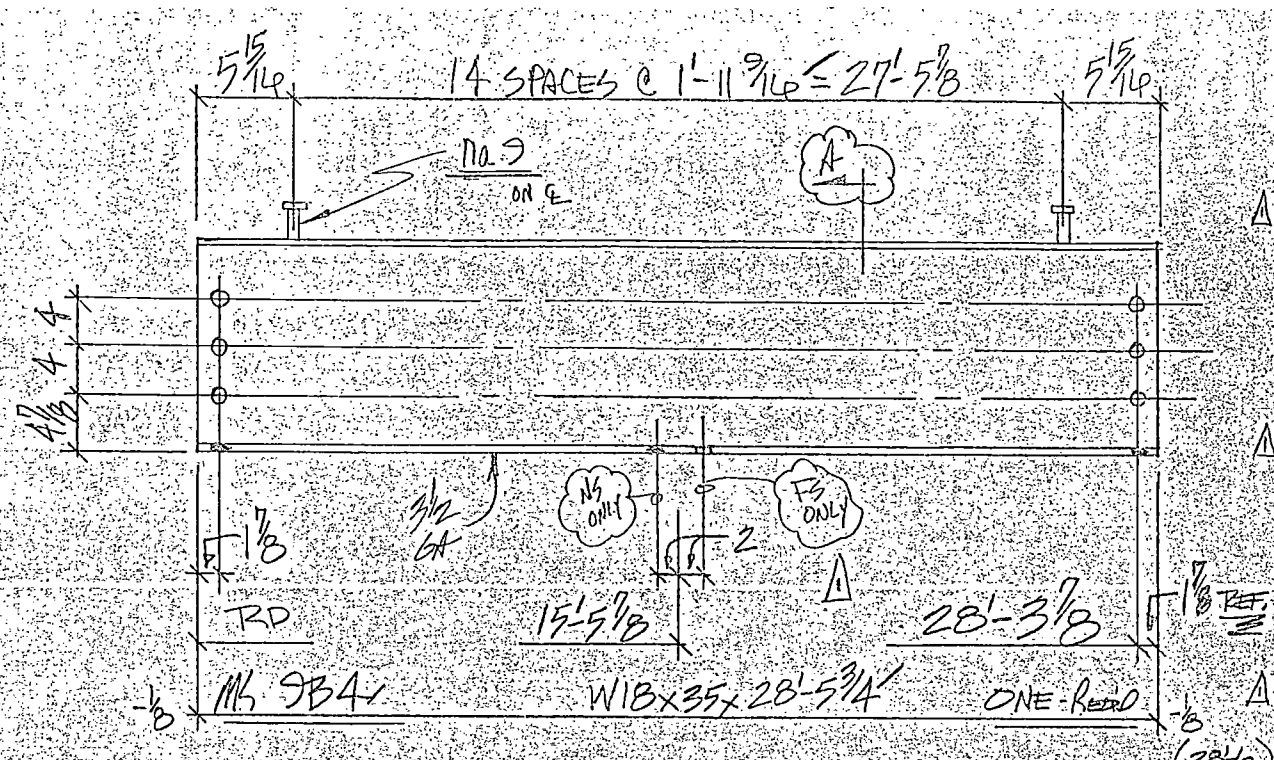
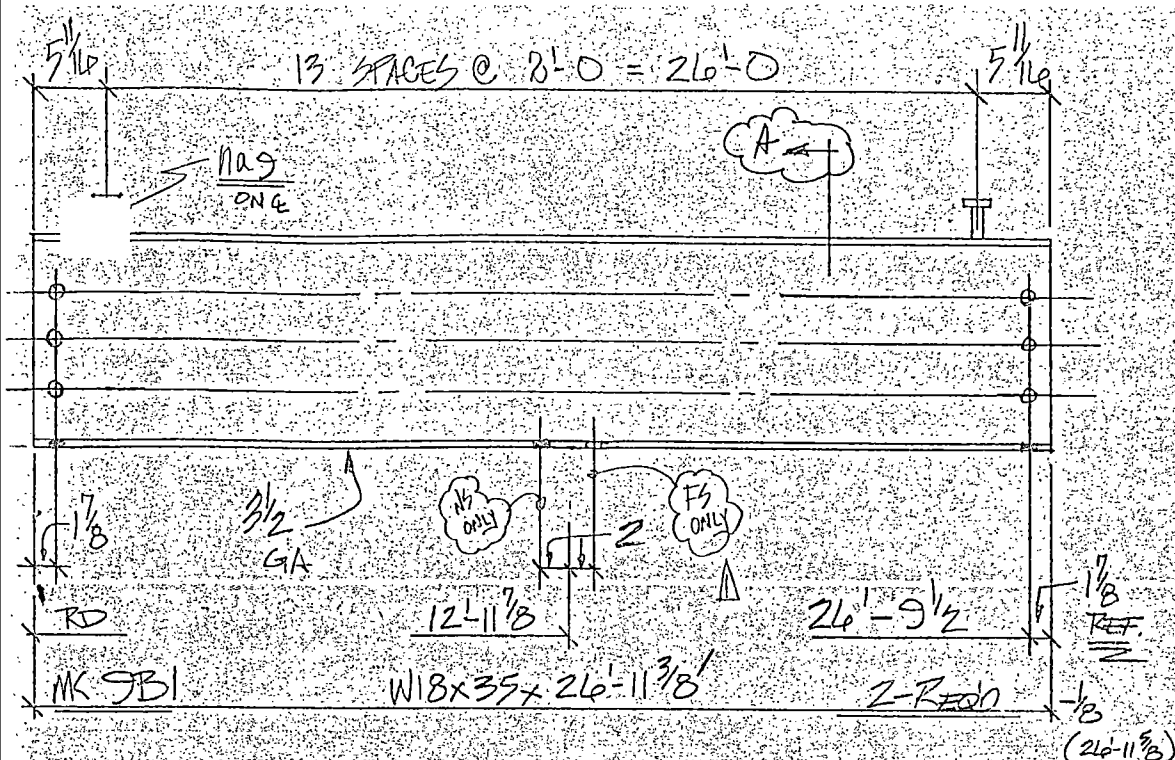
REPRODUCTION OR FABRICATION FROM THIS DRAWING IS NOT PERMITTED WITHOUT WRITTEN PERMISSION FROM FARGO STRUCTURAL STEEL AND SUPPLY COMPANY.

NO BACK CHANGES ACCEPTED WITHOUT WRITTEN APPROVAL FROM FARGO STRUCTURAL STEEL AND SUPPLY COMPANY.

SIDEWALK GRADER EM'S
FED. AID PROJ. # TES-5-006(001)000 BILLING CO., ND
INDUSTRIAL BUILDERS INC., FARGO, ND

9-5-95
SET
DATE
BY

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
FINAL APPROVED
DRAWING
1/15/05



MK.	NO.	SHAPE	FT.	IN.	REMARKS
9B1	2	W18x35	26	11 3/8	
NA 9	28	W18x35	0	3 1/4	ANCHOR MISC. OR 1015 OR 1018 (ASTM A-108)
FK9	12	W18x35	0	2 1/4	W/NEW C-FLG. HOLES
9B2	2	W18x35	34	0 1/8	
NA 9	42				
FK9	12				C-FLG. HOLES
9B3	2	W18x35	40	0 1/8	
NA 9	42				
FK9	12				C-FLG. HOLES
9B4	1	W18x35	28	5 3/4	
NA 9	15				
FK9	16				C-FLG. HOLES
9B5	1	W18x35	29	5 3/8	
NA 9	16				
FK9	16				C-FLG. HOLES

SHOP NOTES

- ALL MATERIAL - A.A.S.H.T.O. 1070 GRADE 3622 U.N.O.
- ALL MATERIAL U.N.O. SHALL MEET CHARPY V-NOTCH TEST FOR 15FT-168" @ 40 F.
- HOLES - 15/16" DIA. HOLES U.N.O.
- HOLES - 7/8" DIA. HOLES A.A.S.H.T.O. N-164 (ASTM A-325) U.N.O.
- BEAM TO BE FABRICATED W/NATURAL CENTER UP
- WELDS - E70XX OR EQUAL
- SURFACE PREP. - SSPC-SP1 (SOLVENT CLEAN SURFACES WHERE OIL OR GREASE HAS CONTACTED SURFACES & SSPC-SP10 (HAND BLAST TO NEAR WHITE FINISH)
- PRIMER-CARBOLOX INORGANIC ZINC SILICATE PRIMER CARBOLOX 12 VOC PLUS D.F.T. 3 MILS
- PAINT-HORS - FIELD WELDED PER SECTION 630-OF N.D. D.O.T. STANDARD SPEC. FOR ROAD & BRIDGE CONSTRUCTION 1992-93 BY FIELD PAINTER'S CONTRACTOR
- NO PAINT AS NOTED

STAMPS

FOR FINAL APPROVAL

REVISED PER APPROVAL DRWG 10-2-95

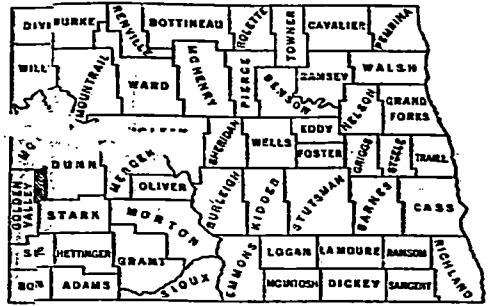
REPRODUCTION OR FABRICATION FROM THIS DRAWING IS NOT PERMITTED WITHOUT WRITTEN PERMISSION FROM FARGO STRUCTURAL STEEL AND SUPPLY COMPANY.

NO BACK CHARGES ACCEPTED WITHOUT WRITTEN APPROVAL FROM FARGO STRUCTURAL STEEL AND SUPPLY COMPANY.

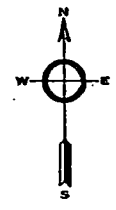
SIDEWALK GIRDER BRG'S
FER AID PROJ. # TES-5-088(001)000 BILLINGS CO., ND
INDUSTRIAL BUILDERS INC., FARGO, ND

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
FINAL APPROVED
DRAWING

35-44
JOB NO.
DATE



SKETCH-MAP OF NORTH DAKOTA
SHOWING COUNTIES



SCALES
LAYOUT SHEET: 1 IN. = 400 FT.
PLAN AND PROFILE DRAWINGS: 1 IN. = 100 FT.
STRUCTURAL DRAWINGS: AS SHOWN
CROSS SECTION SHEETS: 1 IN. = 10 FT.

NORTH DAKOTA STATE HIGHWAY DEPARTMENT

PLANS FOR THE PROPOSED IMPROVEMENT OF A STATE HIGHWAY IN BILLINGS COUNTY FEDERAL AID PROJECT NO. SN-FAP307B(3)

INDEX OF DRAWINGS

SHEET NO. 1	TITLE PAGE
SHEET NO. 2	TYPICAL SECTIONS & SUMMARY OF QUANTITIES
SHEET NO. 3	CULVERT & BRIDGE LIST
SHEET NO. 4	TO 5 INCL. PLAN AND PROFILE DRAWINGS
SHEET NO. 5	TO 10 INCL. STRUCTURAL DRAWINGS
SHEET NO. 6	TO 15 INCL. CROSS SECTIONS

SYSTEM DIST. HWY. AGREEMENT
F-5-10
MILE

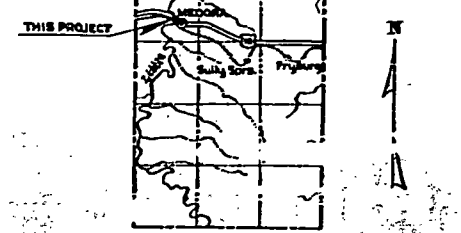
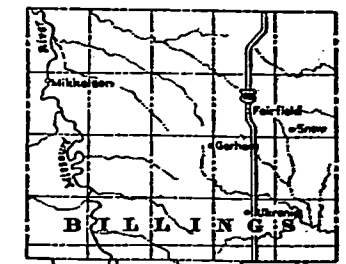
LENGTH OF PROJECT		
SEC.	MILES-GROSS	MILES-NET
307B(3)	0.710	0.710
TOTALS	0.710	0.710
SQ. YDS. OF SURFACING		
SEC.	BASE	SURF.
307B(3)	18586	12290

GOVERNING SPECIFICATIONS: Standard Specifications adopted by the North Dakota State Highway Department Sept. 1939 and approved as standard by the Public Roads Administration Jan. 18, 1940.
Required Special Provisions approved as standard by the Public Roads Administration on Apr. 29, 1941 and those submitted herewith.

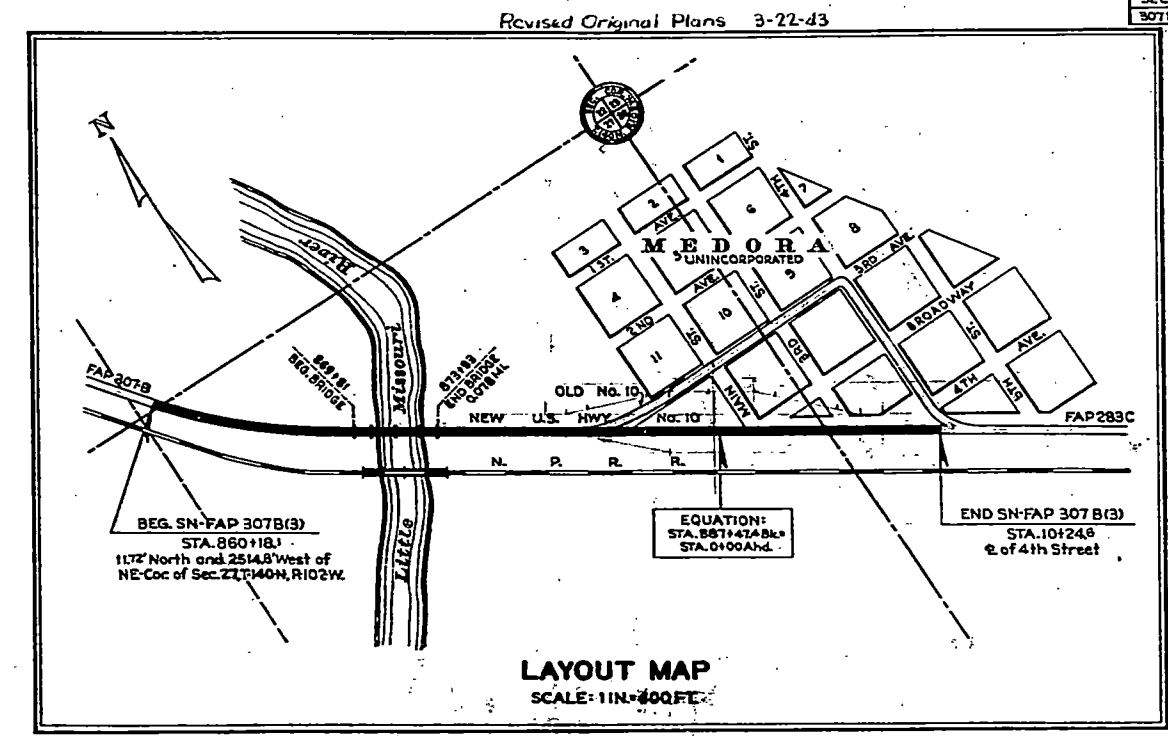
KEY TO CONVENTIONAL SIGNS

- STATE & NATIONAL LINES
- COUNTY LINE
- TOWNSHIP & RANGE LINES
- GRADE LINE
- CENTERLINE OF CONSTRUCTION
- OLD RIGHT OF WAY LINE
- NEW RIGHT OF WAY LINE
- ABANDONED RIGHT OF WAY LINE
- PROPERTY LINE
- STONE WALL
- OTHER FENCES
- POLE LINES
- POWER LINES
- BRIDGE
- GROUND ELEVATION
- GRADE
- TRAVELED WAY
- RAILROADS
- HEDGES AND TREES
- TRAILS
- CITY OR VILLAGE CORPORATE LIMITS
- SECTION CORNER
- QUARTER SECTION CORNER
- BUILDINGS
- OLD CULVERTS
- NEW CULVERTS
- DRAINAGE
- BENCH MARKS
- WATERS EDGE
- MARSH
- WIRE ROPE GUARD RAIL
- SNOW FENCE
- RIPRAP
- GUARD POSTS
- COBBLE GUTTERS
- CONCRETE GUTTERS

DESIGN DATA
TRAFFIC:
PRESENT TRAFFIC 385 PASS-148 TRUCKS-880 TL
TRAFFIC FORECAST (1965) 460 PASS-240 TRUCKS-700 TL
DESIGN SPEED 70 M.P.H.
TRAFFIC CLASSIFICATION M
MINIMUM PASSING SIGHT DISTANCE 3200'
MINIMUM NON-PASSING SIGHT DISTANCE 800'
BRIDGES:
MINIMUM WIDTH 32 FT. DESIGN LOAD HIS-B12



SKETCH MAP OF BILLINGS COUNTY



LAYOUT MAP
SCALE: 1 IN. = 400 FT.

OFFICE CHANGE
MARCH 22, 1943. REVISED TO
CONFORM TO FINAL QUANTITIES
SHEETS EFFECTED, 1 TO 8 INCL.
& SHEETS 11 & 15.

GRAVEL PIT-NW 1/4 S. 27, T. 140N, R. 102W Private. D.H. 0394 ML to 867+52.
CLAY PIT-NW 1/4 S. 21, T. 140N, R. 102W Private. D.H. 1791 ML to 867+52.
FILLER PIT-NE 1/4 S. 21, T. 140N, R. 104W 50 per CY D.H. 14208 ML to 867+52.

PROJECT CONSTRUCTED 1941-1942
BRIDGE - REGRADING - BASE & MAT
CONSTRUCTION - BEGUN - AUG. 19, 1941
CONSTRUCTION COMPLETED SEPT. 19, 1942

APPROVED DATE MAY 10, 1943
STATE HIGHWAY ENGINEER
NORTH DAKOTA STATE
HIGHWAY DEPARTMENT
RECOMMENDED FOR APPROVAL
DISTRICT ENGINEER
FEDERAL WORKS AGENCY
APPROVED
COMMISSIONER
PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY

PROJECT CONSTRUCTED

SN-FAP 307B(3)

SN-FAP 307B(3)

INSTALLED STEEL AND CONCRETE BRIDGE

Sta. 869+81 to 873+93 - Dwg. Nos. 307B-1 to 307B-10 inc.

Dry Excavation (Bridges) 130.0 Cu.Yds. (Waste)
 Wet Excavation (Bridges) 880.2 Cu.Yds. (Waste)
 Treated Timber Piling (25') 1306.75 Lin. Ft.
 Class A-1 Concrete 8.0 Cu.Yds.
 Class A-1 1/2 Concrete 980.6 Cu.Yds.
 Reinforcing Steel 158,708.0 Lbs.
 Structural Steel 787,405.0 Lbs.
 Revetment 263.4 Squares (100' Each)
 Remove Old Structure (Sta. 871+36.5) - Lump Sum

INSTALLED PIPE CULVERTS

3. Sta. 883+60 Lt. 18"x20" R.C.P.

RELAYED PIPE CULVERTS

Sta. 883+80 Lt. 15"x56" R.C.P.
 from 883+56 Lt.

INSTALLED BEAM GUARD RAIL

Sta. 874+13.3 to 877+13.3 Rt. 300 L.F.

INSTALLED CURB INLET

Sta. 883+60 Lt. - 1

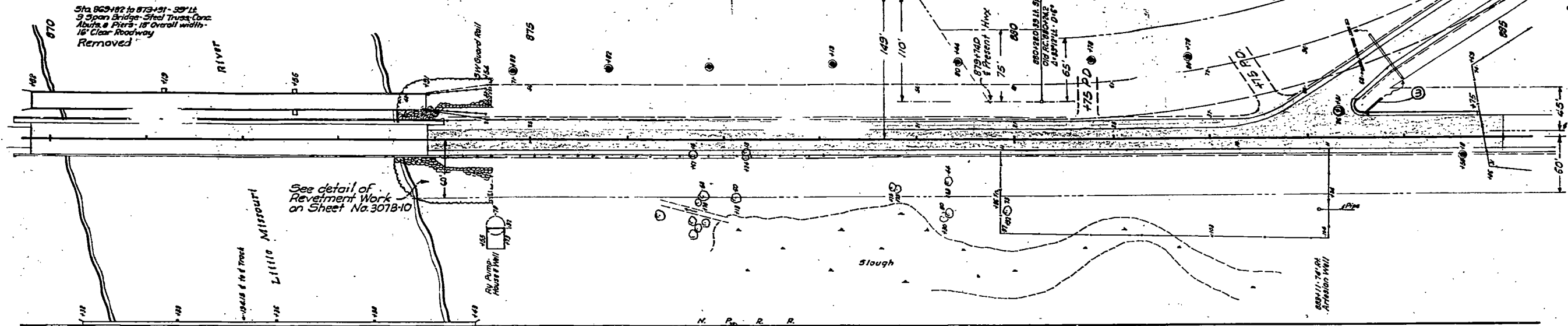
INSTALLED COMBINED CURB & GUTTER

Sta. 883+50.8 to 884+75 Lt. 139.5 L.F.

BENCH MARKS			
NR.	DESCRIPTION	LOCATION	ELEV.
2	Top of Wing SE Cor. Br.	873+93-28' Lt.	2283.03
3	Top of Wing SE Cor. Br.	874+10-180' Rt.	2274.17

REV.	DATE	BY	CHKD.	APP'D.	REVISION
1	30TB	4	23		

Revised March, 22, 1943.



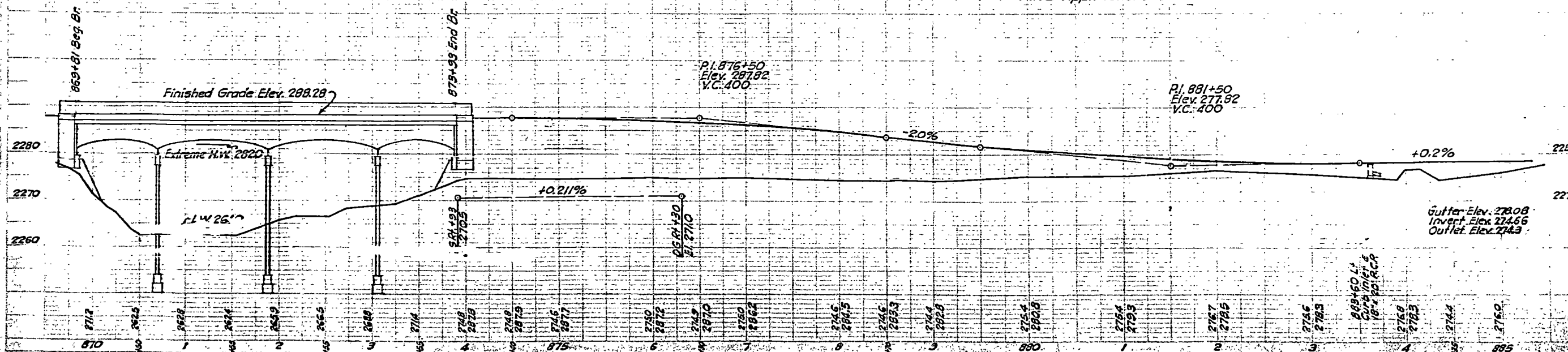
Imported Borrow 15,832 Cu.Yds.
 Excavation 1,121 Cu.Yds.
 Embankment 12,822 Cu.Yds.

Sta. 880+75 Lt.
 10 Cu.Yds. Prov. for
 P.D. Appr. Constr.

Sta. 882+75 Lt.
 P.D. Appr. Constr.

Sta. 882+53.2 Lt.
 Exc. 500 Cu.Yds. obliterating
 present curve. Use constructing
 new street approach from R.T.
 of present curve to new &
 (See Detail on Sheet 2)

Berm Provided
 for Bridge End



FEED NO.	STATE	FEED NO.	FEED YEAR	FEED NO.	TOTAL SHEETS
1	N.D.	307B		6	23

Revised March 22, 1943.

GENERAL NOTES:

Ona-Fly Membrane Waterproofing shall conform to Section 25 of the Standard Specifications except that only one ply of bituminized cotton fabric, with primer coat and two moppings of asphalt shall be furnished and applied. Cost of furnishing and applying membrane waterproofing and asphalt seal shall be included in the contract price for Class A-18 Concrete.

* A cutoff of two feet (2) per pile has been assumed in estimating the pay length (below cutoff) of piling as compared to ordered length.

Removal of the steel superstructure and the concrete substructure shall conform to the requirements of Section 12 of the Standard Specifications in so far as they are applicable.

All members and parts of the steel superstructure shall be marked and all joints match marked and a diagram showing this marking shall be furnished to the Engineer.

The salvagable materials from the old bridge shall be stored in the west half of Block 5 of the Village of Medora.

Paint: See Drawing No. 307B-6.

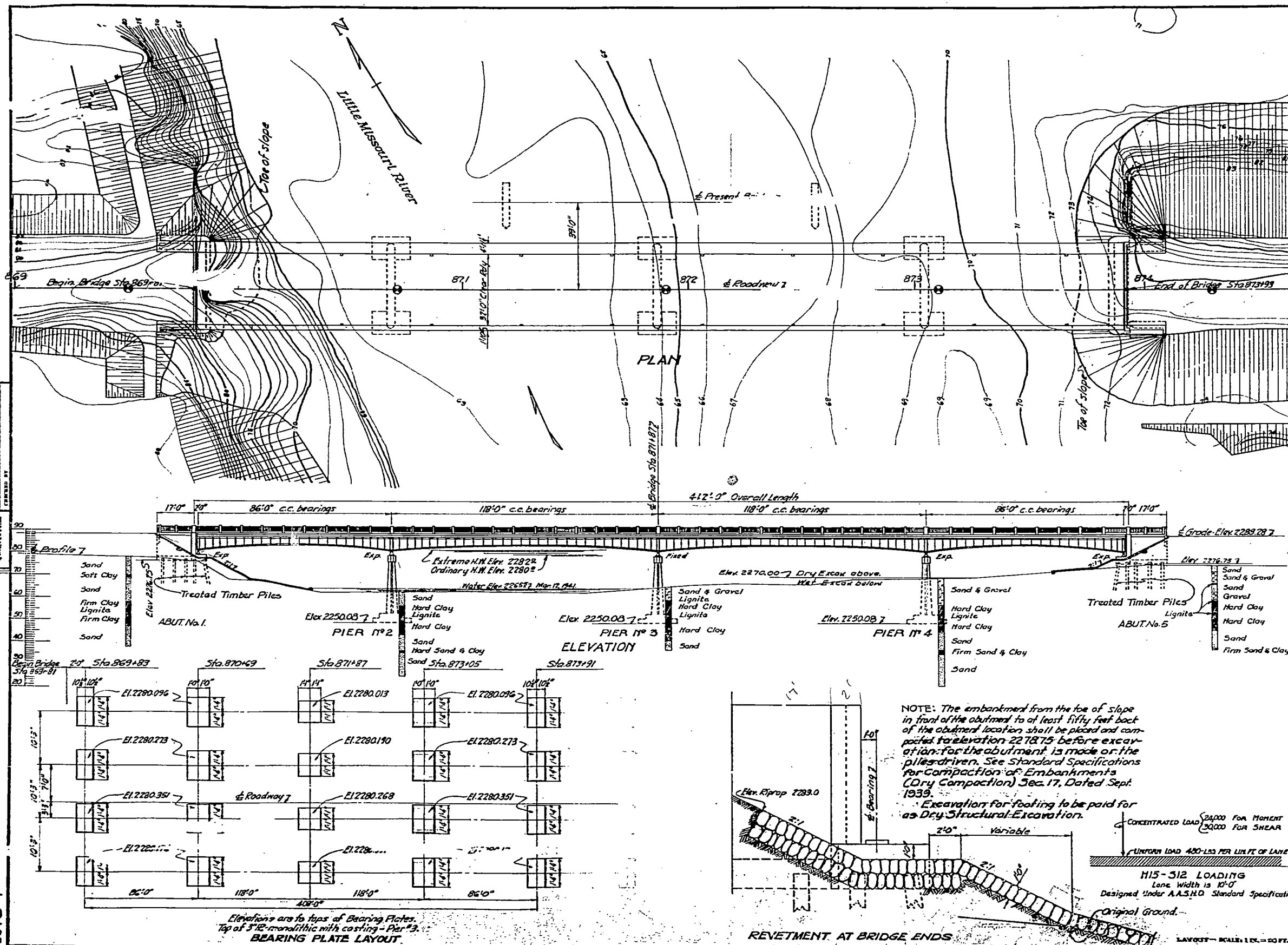
ESTIMATE OF QUANTITIES

TEMPORARY CROSSING AND DETOUR		
REMOVING OLD STRUCTURE	One	Lump Sum
STRUCTURAL EXCAVATION		
UNCLASSIFIED		CU. YD.
DRY	130	CU. YD.
WET	6802	CU. YD.
UNTREATED TIMBER PILING		
FURNISHING AND DELIVERING		LN. FT.
DRIVING		LN. FT.
TREATED TIMBER PILING 5 1/2 x 25 FT. 306 7/8 LN. FT.		
UNTREATED TIMBER		
TREATED TIMBER		M. B. M.
CONCRETE CLASS "A-1"	8.0	CU. YD.
"A-1 1/2"	980.6	CU. YD.
REINFORCING STEEL	158708	LB.
STRUCTURAL STEEL	787405	LB.
REVENUE	263.4	SQUARES 600 MFT.

STRUCTURAL DRAWINGS

GENERAL DRAWING	307B-1 (THIS DRAWING)
STRUCTURE	307B-2-3
REVENUE	307B-10.
SUPERSTRUCTURE	307B-4, 5, 6, 7, 8, 9.
NORTH DAKOTA	
STATE HIGHWAY DEPARTMENT	
LITTLE MISSOURI RIVER	
BRIDGE LAYOUT	
F. A. P. No.	307B STA. 871+87
BILLINGS	COUNTY
APPROVED	5-20 1941 <i>Cliff Johnson</i>

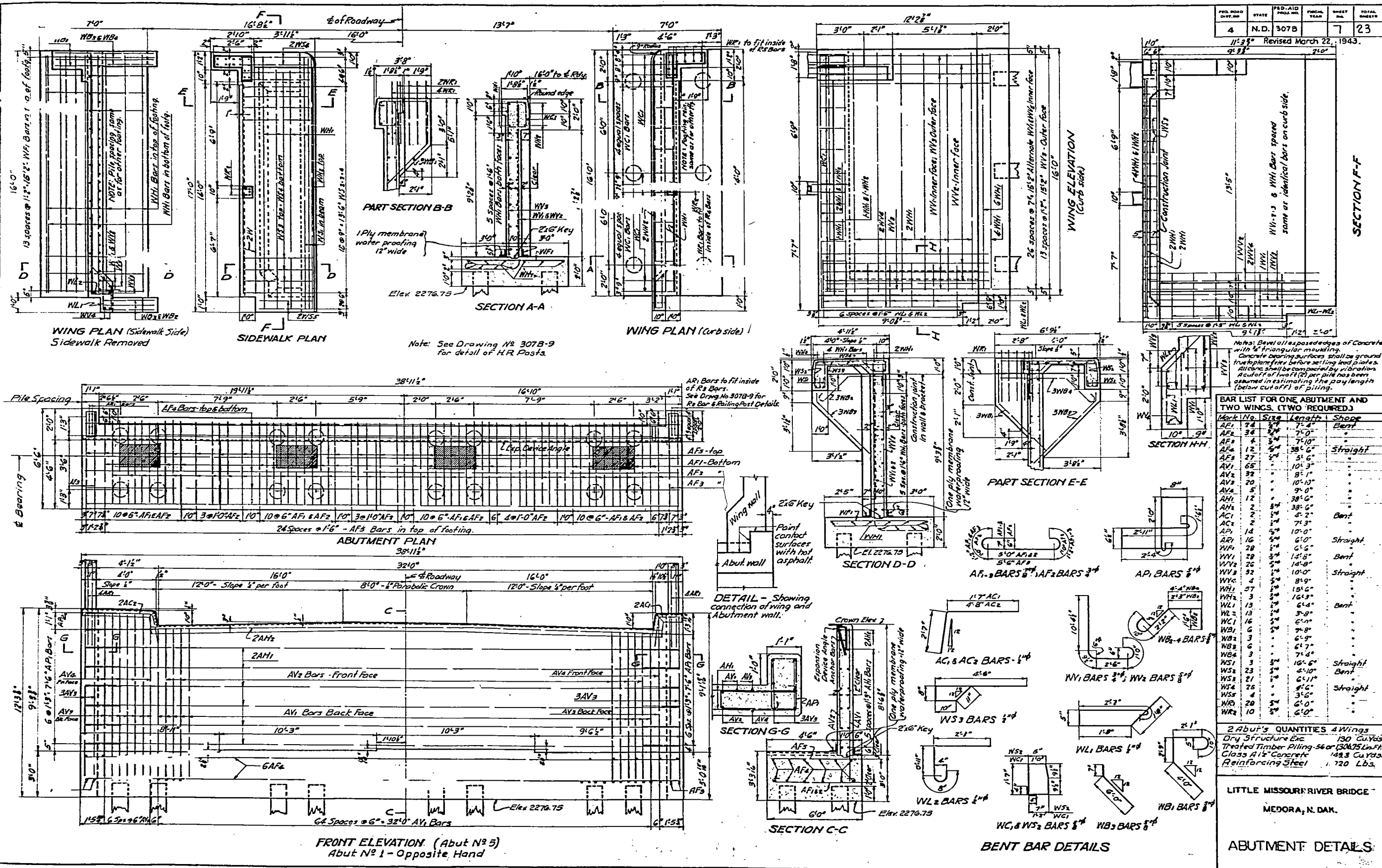
307B-1



TOPOGRAPHY	DESIGNED BY A.J.A.
STRUCTURE	DESIGNED BY C.H.G.
QUANTITIES	DESIGNED BY C.C.J.

307B-1

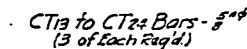
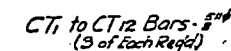
DESIGN	REVISIONS	MADE BY	CHECKED BY	DATE
DESIGNED BY A.J.A.				
CHECKED BY G.H.S.				
DETAILS BY A.J.A.				
TRACING BY A.J.A.				



307B-2

307B-2

307B-3

Revised March 22, 1943

Total Length 174.5

Total Length 182.2

NOTE: Bevel all exposed edges of concrete with 3" triangular mauling.
Concrete bearing surfaces shall be ground true to plane and elevation before bearings are placed in position.
All concrete shall be compacted by vibration.

**ESTIMATE OF QUANTITIES
(THREE PIERS)**

Class A-1 $\frac{1}{2}$ Concrete	326.7 Cu.Yds.
Reinforcing Steel	53,393 Lbs.
Structural Steel (beams)	729 Lbs.
Net Excavation (Bridges & 22 Cu.Yds.	

LITTLE MISSOURI RIVER BRIDGE

MEDORA, NO. DAK.

DETAILS OF

PIERS NO. 2, 3 & 4.

FILE NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	N.D.	307B		9	23

DESIGN	MADE BY	CHECKED BY	DATE
DETAILS	MADE BY	CHECKED BY	
TRACING	MADE BY	CHECKED BY	

M=4000'k
V=400 kM=4000'k
V=400 kM=3000'k
V=300 kM=3000'k
V=300 kM=2000'k
V=200 kM=2000'k
V=200 kM=1000'k
V=100 kM=1000'k
V=100 kM=0
V=0M=0
V=0M=1000'k
V=100 kM=1000'k
V=100 kM=2000'k
V=200 kM=2000'k
V=200 k

ABUTMENT #1.

PIER #2.

PIER #3.

LEGEND
 CM = Calculated Moment.
 RM = Resisting Moment of Regular Section
 without extra Cover Plates.
 S = Shear.

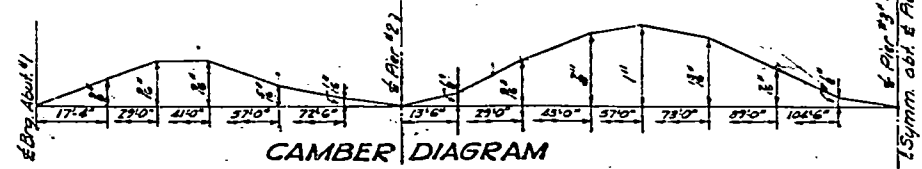
DIAGRAMS
 OF
 MAXIMUM MOMENTS AND SHEARS
 IN PLATE GIRDERS

FAP 307 B

BILLINGS CO.
307B-4.

307B-4

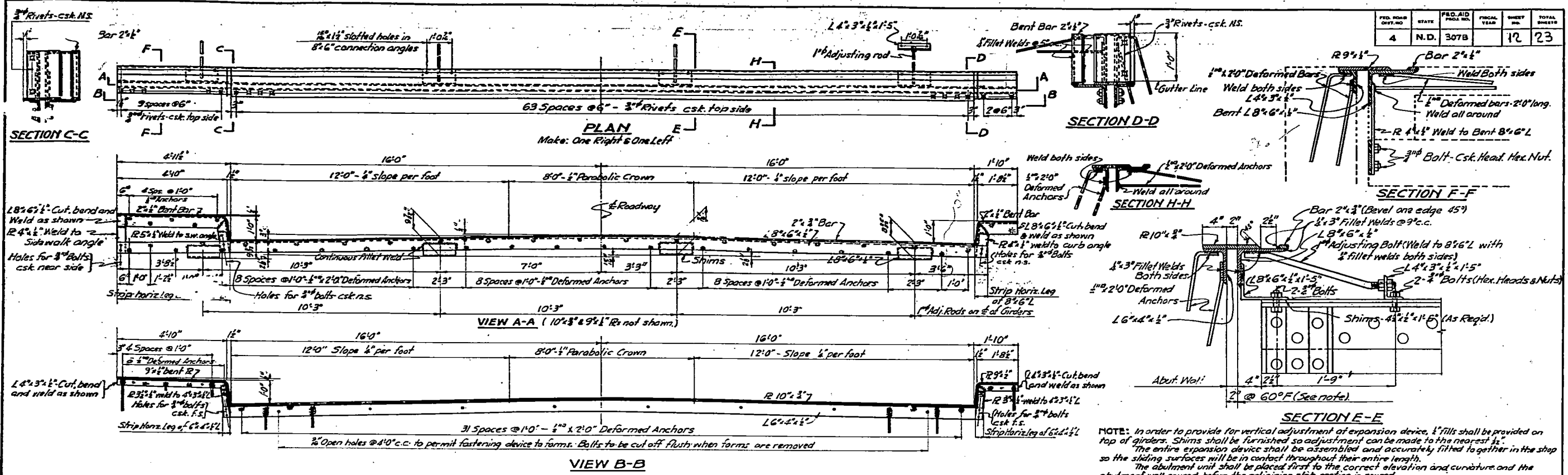
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	N.D.	307B		10	23



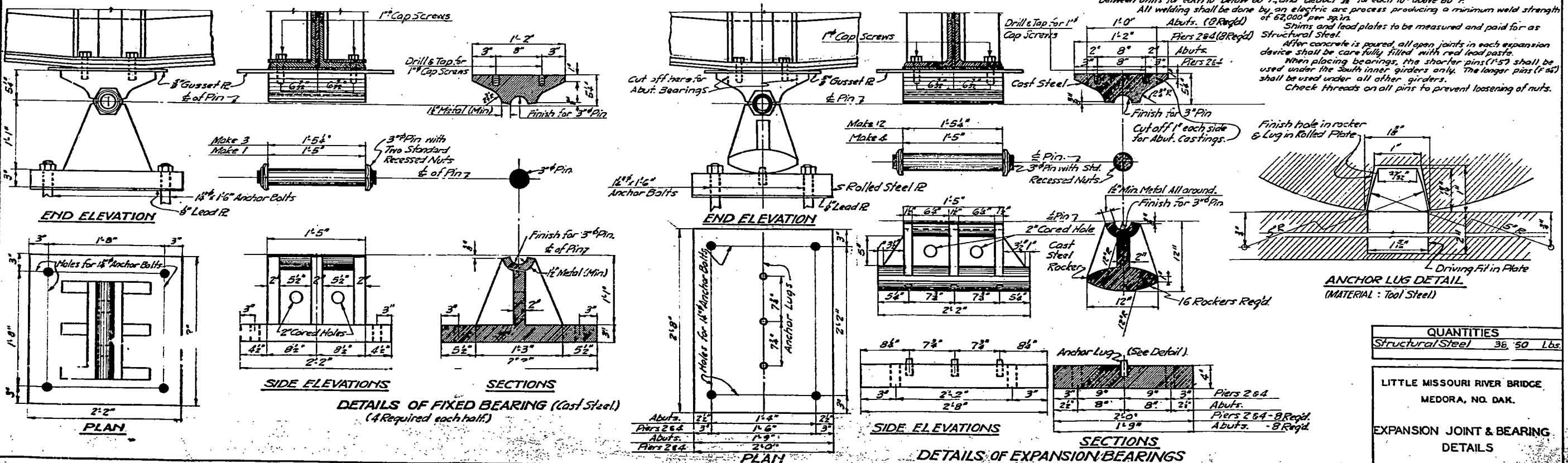
307B-5

REVISION	DATE	BY	CHKD
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PROJ. NO.	STATE	PROJ. AID	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	N.D.	307B		12	23



NOTE: In order to provide for vertical adjustment of expansion device, 1" fills shall be provided on top of girders. Shims shall be furnished so adjustment can be made to the nearest 1/8". The entire expansion device shall be assembled and accurately fitted to the shap so the sliding surfaces will be in contact throughout their entire length. The abutment unit shall be placed first to the correct elevation and curvature and the abutment wall poured before the adjoining slab section is poured. When the floor slab is poured to within 3" of the expansion device, the slab unit shall be checked and adjusted into contact with the abutment unit so that the whole device is properly placed. The dimensions in SECTION E-E are for a temperature of 60°F. Add 1/8" to the dimensions below units for each 10° below 60°F, and deduct 1/8" for each 10° above 60°F. All welding shall be done by an electric arc process producing a minimum weld strength of 62,000 per sq. in. Shims and lead plates to be measured and paid for as Structural Steel. After concrete is poured, all open joints in each expansion device shall be carefully filled with red lead paste. When placing bearings, the shorter pins (1.5") shall be used under the south inner girders only. The longer pins (1.5") shall be used under all other girders. Check threads on all pins to prevent loosening of nuts.



QUANTITIES	
Structural Steel	36.50 Lbs.

LITTLE MISSOURI RIVER BRIDGE
MEDORA, NO. DAK.

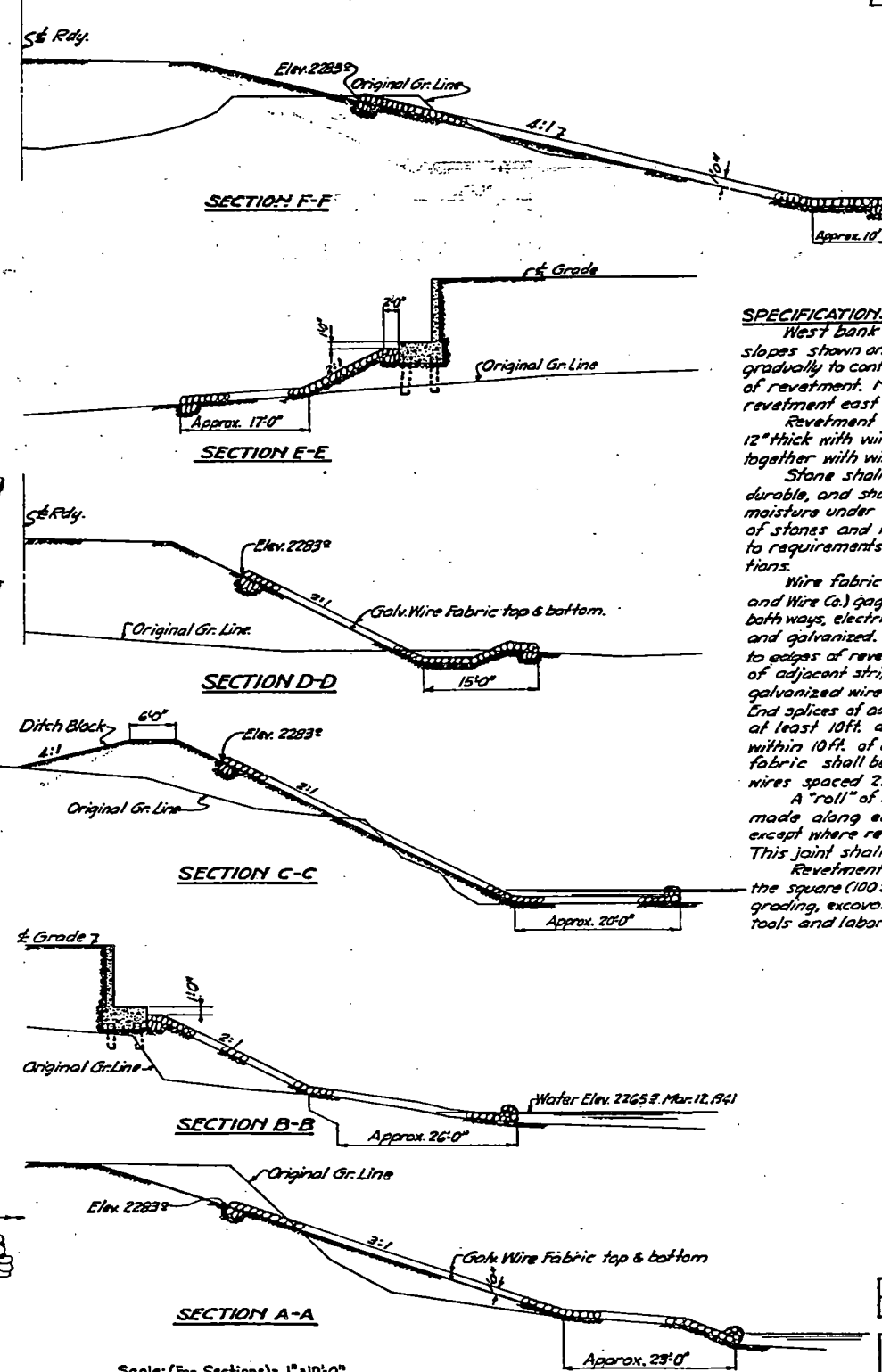
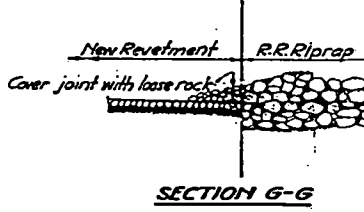
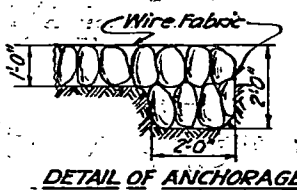
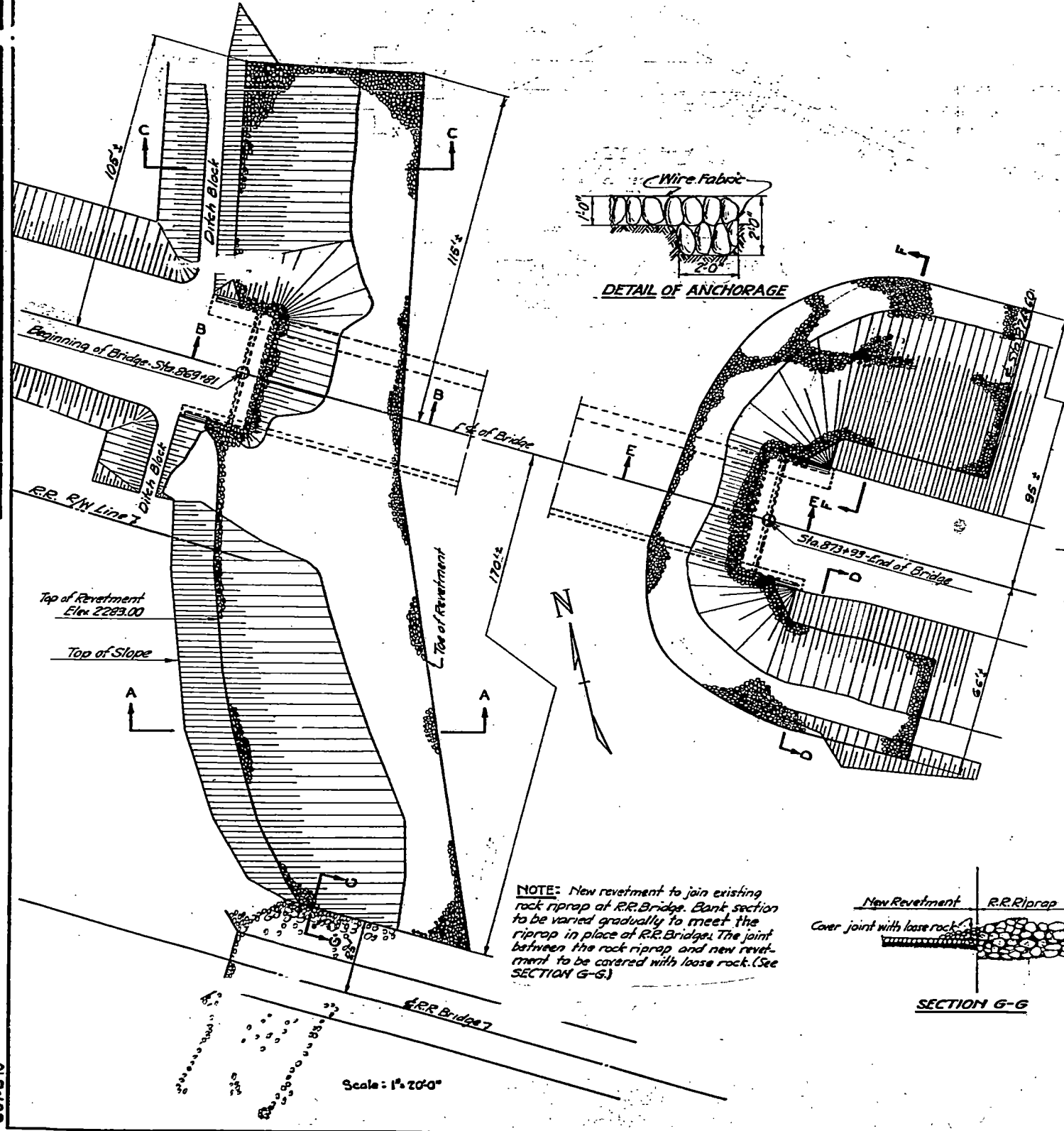
EXPANSION JOINT & BEARING
DETAILS

307B-7

DESIGN	MADE BY	CHECKED BY	DATE
REVISIONS			
MADE BY			
CHECKED BY			
DATE			
DETAILS	MADE BY	CHECKED BY	DATE
TRACING	MADE BY	CHECKED BY	DATE

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	N.D.	307B		15	23

Revised March 22, 1943.



SPECIFICATIONS:
 West bank of river shall be graded to the slopes shown on sections and sections varied gradually to conform to natural slope at each end of revetment. No special grading required for revetment east side of river.
 Revetment shall consist of a layer of stone 12" thick with wire fabric above and below tied together with wire ties.
 Stone shall be of approved quality, hard and durable, and shall not absorb more than 20% moisture under A.A.S.H.O. Test method T-25-35. Size of stones and method of placing shall conform to requirements of Sec. 69 of Standard Specifications.
 Wire fabric shall be made of 10 (American Steel and Wire Co.) gage wires spaced 6" center to center both ways, electrically welded at all intersections, and galvanized. Strips shall be laid perpendicular to edges of revetment. Adjoining edges and ends of adjacent strips shall be tied with a 10 gage galvanized wire at each cross or longitudinal wire. End splices of adjacent strips shall be staggered at least 10 ft. and no end splices shall be made within 10 ft. of either edge of revetment. Lower fabric shall be tied to upper fabric with 10 gage wires spaced 2 1/2 ft. both ways.
 A "roll" of rock, as shown in detail, shall be made along each edge and end of revetment, except where revetment joins Railroad riprap. This joint shall be covered with loose rock.
 Revetment will be measured and paid for by the square (100 Sq. Ft.) complete in place, including grading, excavation, and all materials, equipment, tools and labor.

QUANTITIES
Revetment 2634 Square ft. (100 Sq. Ft.)

LITTLE MISSOURI RIVER BRIDGE
 MEDORA, NO. DAK.

REVTMENT DETAILS