

ND DEPARTMENT OF TRANSPORTATION

SHEET NO 1 OF 2

ABSTRACT OF BIDS RECEIVED

PROJECT NO.	IM-2-094(178)238	NO.	23011	BIDDER	ENGINEERS ESTIMATE	BIDDER	INDUSTRIAL BUILDERS INC	BIDDER	PCI ROADS LLC
COUNTY & DATE	STUTSMAN (093)	MAY 13, 2022 09:30AM			FARGO, ND		SAINT MICHAEL, MN		
LENGTH & TYPE	0.000	I94, CLEVELAND INT TO JAMESTOWN			c.c. CHECK RANK 00		c.c. BOND RANK 01		c.c. BOND RANK 02
COMPLETION TIME	10/15/22 BRIDGE DECK OVERLAY, APPROACH SLAB REP								

SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	BID PRICE	AMOUNT	BID PRICE	AMOUNT	BID PRICE	AMOUNT
103	CONTRACT BOND	L SUM	1.000	14700000	14700000	12700000	12700000	11914000	11914000
202	REMOVAL OF CONCRETE	L SUM	1.000	25000000	25000000	42500000	42500000	34208750	34208750
202	REMOVAL OF BITUMINOUS SURFACING	SY	527000	12000	632400	21000	1106700	20000	1054000
202	REMOVAL OF INLETS	EA	2000	1800000	3600000	4250000	8500000	3200000	6400000
210	CLASS 1 EXCAVATION	L SUM	1.000	50000000	50000000	228000000	228000000	60687500	60687500
302	AGGREGATE BASE COURSE CL 5	TON	212000	18000	3816000	75000	15900000	70000	14840000
411	MILLING PAVEMENT SURFACE	SY	320000	1250	400000	30000	9600000	38000	12160000
430	COMMERCIAL GRADE HOT MIX ASPHALT	TON	80000	160000	12800000	9750000	78000000	9250000	74000000
602	CLASS AAE-3 CONCRETE	CY	11000	1300000	14300000	13500000	148500000	11359150	124950650
602	CLASS AE-3 CONCRETE	CY	11200	1400000	15680000	39500000	44240000	3844870	43062540
602	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	278900	6000000	167340000	8150000	227303500	6700000	186863000
602	PENETRATING WATER REPELLENT TREATMENT	SY	6353000	6000	38118000	5000	31765000	4050	25729650
602	BRIDGE DECK CRACK SEALING	LF	3764000	11000	41404000	3000	11292000	4860	18293040
612	REINFORCING STEEL-GRADE 60	LBS	1663000	2500	41575000	6000	9978000	2350	3908050
612	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	1029000	2500	25725000	8000	8232000	3500	36015000
624	DOUBLE BOX BEAM RAIL RETROFIT-FREE STANDING	LF	9000	1500000	13500000	1250000	11250000	1100000	9900000
650	OVERLAY CONCRETE	CY	96000	50000000	480000000	38500000	369600000	40483500	388641600
650	DECK CONCRETE	CY	20000	20000000	400000000	20000000	400000000	5000000	100000000
650	CLASS 1-H REMOVAL	SY	1198000	1500000	179700000	115000	137770000	106560	127658880
650	CLASS 2-H REMOVAL	SY	239000	1000000	239000000	55000	131450000	1000000	239000000
650	CLASS 3-H REMOVAL	SY	12000	2500000	30000000	2000000	24000000	9000000	108000000
650	CLASS 1 REMOVAL	SY	506000	38000	19228000	35000	17710000	64310	32540860
650	CLASS 2 REMOVAL	SY	101000	2000000	202000000	150000	151500000	3000000	303000000
650	CLASS 2-A REMOVAL	LF	182000	15000	27300000	14000	25480000	18000	32760000
650	CLASS 3 REMOVAL	SY	25000	2150000	53750000	1750000	43750000	3100000	77500000
650	CLASS 4 REMOVAL	SY	5000	2650000	13250000	1800000	9000000	9000000	45000000
650	DECK SPALL REPAIR	SF	330000	2000000	660000000	1850000	610500000	2100000	693000000
702	MOBILIZATION	L SUM	1.000	350000000	350000000	272300000	272300000	440892780	440892780
704	FLAGGING	MHR	200000	40000	80000000	55000	110000000	65000	130000000
704	TRAFFIC CONTROL SIGNS	UNIT	8812000	1900	167428000	1850	163022000	1760	155091200
704	LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL	EA	2000	100000000	200000000	102500000	205000000	78000000	156000000
704	ATTENUATION DEVICE-TYPE B-35	EA	4000	17000000	68000000	23650000	94600000	22500000	90000000
704	ATTENUATION DEVICE-TYPE B-75	EA	4000	45000000	180000000	26250000	105000000	25000000	100000000
704	TYPE III BARRICADE	EA	31000	1000000	310000000	127000	393700000	120200	372620000
704	DELINEATOR DRUMS	EA	183000	30000	54900000	30300	55449000	28840	527772000
704	SEQUENCING ARROW PANEL-TYPE C	EA	2000	9000000	18000000	10920000	21840000	10400000	208000000
704	OBLITERATION OF PAVEMENT MARKING	SF	481000	2000	9620000	5050	24290500	3800	18278000
704	PORTABLE PRECAST CONCRETE MED BARRIER	LF	1260000	340000	428400000	95000	119700000	80000	100800000
748	CURB & GUTTER-TYPE 1 SPECIAL	LF	60000	800000	48000000	140000	84000000	78000	46800000
762	EPOXY PVMT MK 4IN LINE	LF	14660000	300	43980000	1300	190580000	1200	175920000
762	SHORT TERM 4IN LINE-TYPE R	LF	5885000	1150	67677500	1450	85332500	1350	79447500
762	SHORT TERM 24IN LINE-TYPE R	LF	24000	12250	2940000	13600	32640000	12960	311040000
762	SHORT TERM 4IN LINE-TYPE NR	LF	1630000	150	24450000	2050	334150000	1950	317850000
762	PVMT MK PAINTED 4IN LINE	LF	14660000	100	146600000	500	733000000	460	674360000
764	W-BEAM GUARDRAIL	LF	871000	35000	304850000	61000	531310000	58000	505180000
764	W-BEAM GUARDRAIL END TERMINAL	EA	4000	3500000	14000000	3150000	126000000	3000000	120000000
764	REMOVE & RESET GUARDRAIL	LF	266000	20000	53200000	25200	670320000	24000	638400000

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION
Deputy Director For Engineering:

AWARD TO: INDUSTRIAL BUILDERS INC

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

20

DATE OF AWARD

DEPARTMENT OF TRANSPORTATION Deputy Director For Engineering

ND DEPARTMENT OF TRANSPORTATION

SHEET NO 2 OF 2

ABSTRACT OF BIDS RECEIVED

PROJECT NO. IM-2-094(178)238		NO. 23011		BIDDER ENGINEERS ESTIMATE		BIDDER INDUSTRIAL BUILDERS INC		BIDDER PCI ROADS LLC	
COUNTY & DATE STUTSMAN (093) MAY 13, 2022 09:30AM						FARGO, ND		SAINT MICHAEL, MN	
LENGTH & TYPE 0.000									
COMPLETION TIME 10/15/22 BRIDGE DECK OVERLAY, APPROACH SLAB REP				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
764	REMOVE W-BEAM GUARDRAIL & POSTS	LF	921.000	4000	3684000	6300	5802300	6000	5526000
764	REMOVE CONCRETE SAFETY SHAPE TRANSITION	EA	2000	2500000	5000000	3500000	7000000	2890000	5780000
764	REMOVE END TREATMENT & TRANSITION	EA	4000	250000	1000000	315000	1260000	300000	1200000
930	3IN EXPANSION JOINT STRIP SEAL	LF	38000	222000	8436000	140000	5320000	210000	7980000
930	POLYURETHANE FOAM JOINT SEAL	LF	49000	65000	3185000	125000	6125000	155000	7595000
930	SPALL REPAIR	SF	1120000	200000	224000000	230000	257600000	210000	235200000
930	GIRDER PATCHING	L SUM	1000	15000000	15000000	45000000	45000000	42920000	42920000
TOTAL					238539505		226953830		231946378
						NO LIMIT		NO LIMIT	

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION
Deputy Director For Engineering:

AWARD TO: INDUSTRIAL BUILDERS INC

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	IM-2-094(178)238	23011	1	1

NORTH DAKOTA

DEPARTMENT OF TRANSPORTATION

IM-2-094(178)238

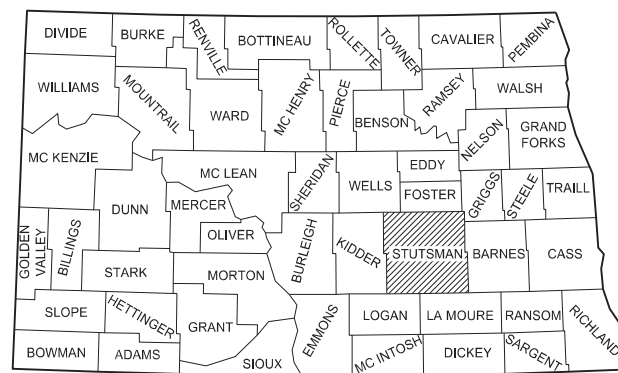
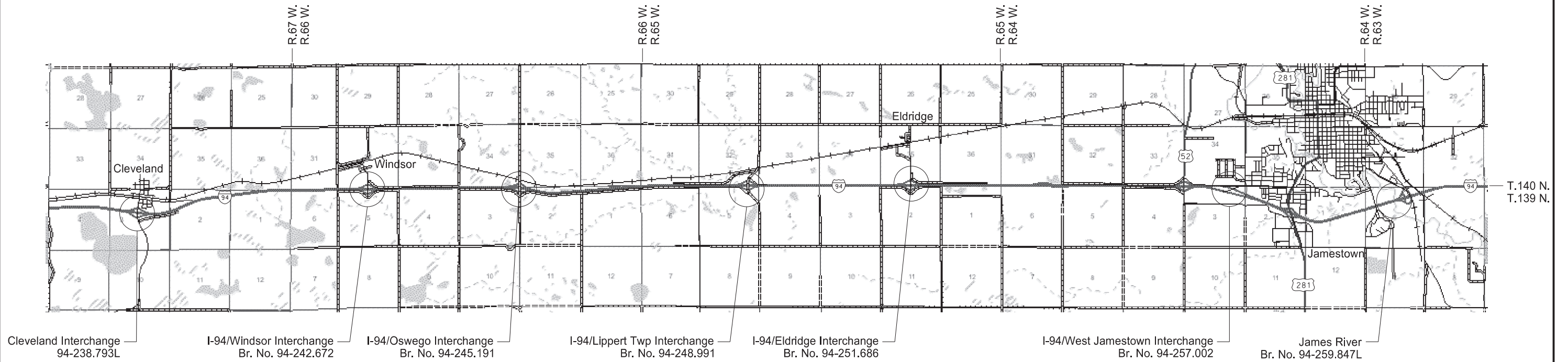
Stutsman County
Cleveland Int - Jamestown Int

Bridge Deck Overlay, Approach Slab Repair,
Spall Repairs, Abutment Repair &
Joint Repair

As-Built - 2022 - KLJ

GOVERNING SPECIFICATIONS	Date Published and Adopted by the North Dakota Department of Transportation
Standard Specifications	10/1/2020
Supplemental Specifications	NONE

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
IM-2-094(178)238	na	na



STATE COUNTY MAP

ND DEPARTMENT OF TRANSPORTATION
OFFICE OF PROJECT DEVELOPMENT

Jonathan Ketterling

Ketterling, Jonathan
03/18/22

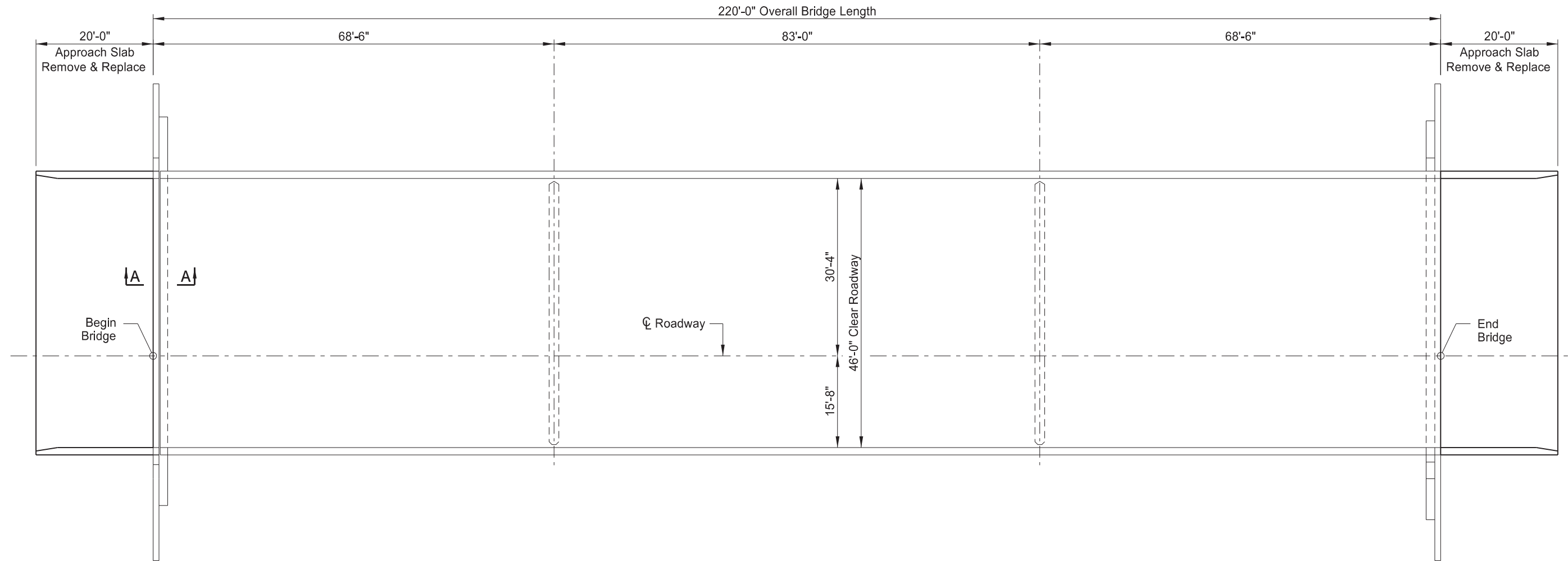
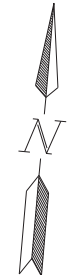
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BRIDGE DIVISION

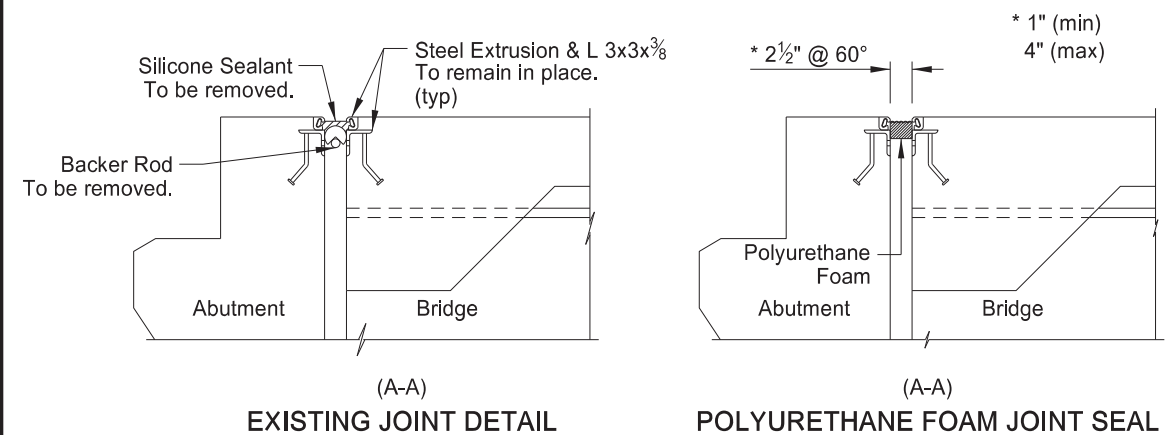
PROFESSIONAL
ENGINEER
PE-4684

Ketterling, Jonathan
03/18/22

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-2-094(178)238	170	29



PLAN



BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
602	1135	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	215.6
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	1,512
602	1260	BRIDGE DECK CRACK SEALING	LF	564
650	0805	DECK SPALL REPAIR	SF	63
930	8850	POLYURETHANE FOAM JOINT SEAL	LF	49
930	9612	SPALL REPAIR	SF	4



JAMES RIVER

BRIDGE LAYOUT

ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION

Ketterling, Jonathan
03/28/22

DocuSign

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-2-094(178)238	170	30

NOTES

- 100 SCOPE OF WORK: Work at this site consists of remove and replace approach slabs, spall repairs to deck and barriers.

- 602 BRIDGE APPROACH SLABS: Mechanically finish approach slabs as specified in Section 602.04 D, "Deck Finishing."

- 602 PENETRATING WATER REPELLENT TREATMENT: Apply penetrating water repellent to the barriers, approach slabs and driving surface of the bridge deck. Do not allow traffic until the solution has completely penetrated and the entire driving surface is dry.

 After the barriers, approach slabs and driving surface have cured for 5 days, silicone sealant is applied to the joint where deck and barriers meet, and the grooving has been completed the penetrating water repellent may be applied.

- 602 CRACK SEALING: After the penetrating water repellent has been applied and is dry, the Engineer will perform a visual inspection of the bridge deck, approach slabs, and barriers to determine the need for crack sealing. Mark and repair all visible cracks appearing on the top surface 0.007" or greater in width at its widest segment or as directed by the Engineer.

 Immediately before applying the sealer, clean the cracks by removing all dust and debris with compressed air. Seal the cracks with a two-part epoxy in accordance with the manufacturer's recommendations. Chase crack with the sealant application to limits of crack, including those portions that are narrower than 0.007" wide. Use Paulco TE-2501 (Viking Paints, Inc.), Dural 50 LM (Euclid Chemical Co.), TK-9000 or TK-2110 (TK Products), or an approved equal epoxy sealer.

 Only pay for the materials and work associated with crack sealing for the deck, barriers and existing approach slab with the bid item "Bridge Deck Crack Sealing."

- 650 DECK SPALL REPAIR: The deck has surface spall areas as shown. Construct the deck spall repair as a Bridge Deck Overlay meeting Section 650 with the exception that a mobile mixer will not be required. The actual limits of the surface spall areas to be repaired will be determined by the Engineer in the field by sounding.

 Saw cut the perimeter of the repair area to a depth of 1". Remove all concrete to a minimum depth of 2" or to sound concrete. Include the saw cutting and all material, labor and equipment required to remove the concrete and repair the approach slab spall areas in the bid item "Deck Spall Repair."

- 930 SPALL REPAIR: Repair the spalled barrier concrete after the deck scarification is complete, but prior to the placement of the overlay concrete.

 Remove all unsound concrete and replace it with new concrete material. Use a 15 pound maximum size chipping hammer on any unsound concrete. Provide sharp, neat lines at least 1 inch deep at the edges of the repair areas. Produce these sharp, neat lines by saw cutting or other means approved by the Engineer.

- Sand blast clean the existing concrete and exposed reinforcing steel. Clean the existing concrete surface by high pressure water blasting. After the surface has dried and just before the patching material is placed, coat the surface with an epoxy bonding agent.

 Use a concrete material that is specifically intended for patching concrete. This patching material may be SikaTop 123 Plus (Sika Corporation), Duraltop Gel (Euclid Chemical Company), ThoRoc HB2 (BASF Corporation), or an approved equal repair mortar. Cure the material as recommended by the manufacturer.

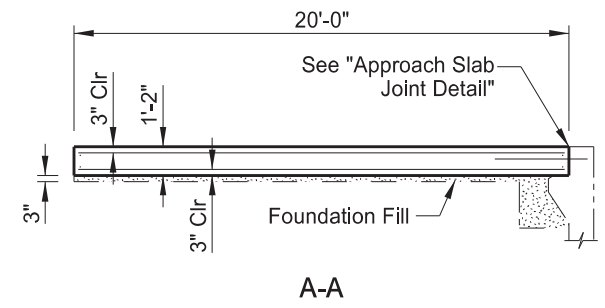
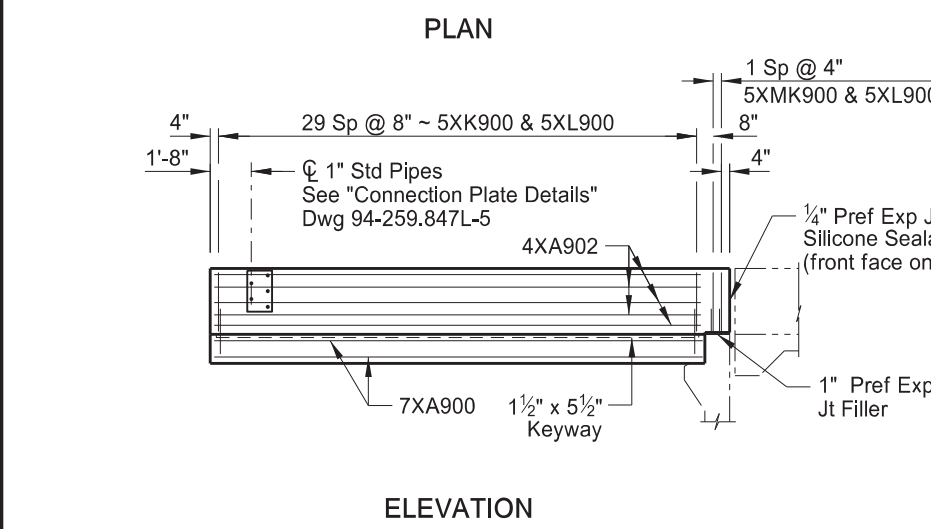
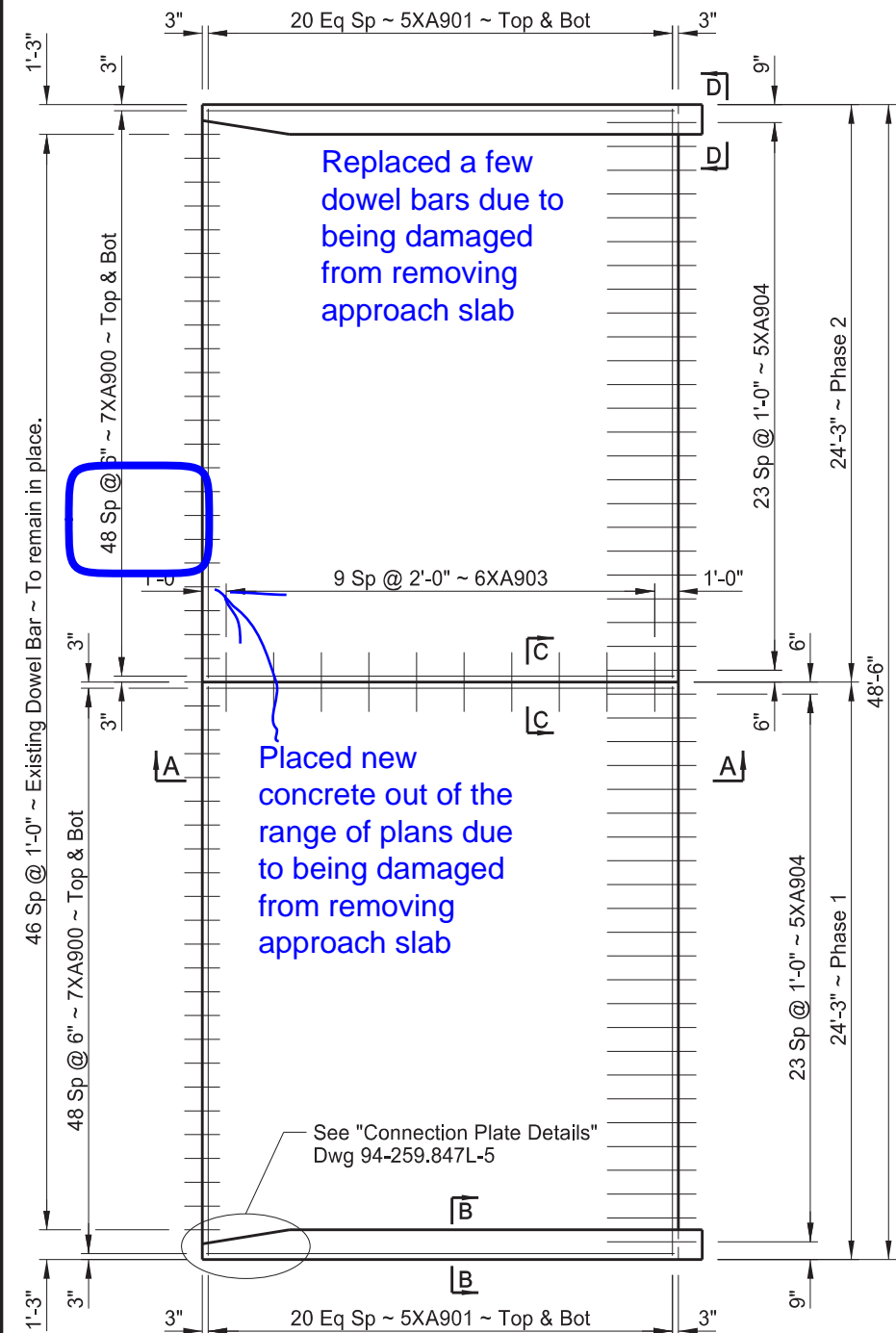
 The extents of repairs shown on the Spall Repair details are approximations. The actual limits and number of repair locations are to be determined by the Engineer in the field. Include all labor, equipment and materials needed to repair one barrier spall area in the per SF bid item "Spall Repair."

- 930 POLYURETHANE FOAM JOINT SEAL: Remove all existing expansion joint and foreign material from the bridge/approach slab joint and sand blast clean. Use a pre-compressed polymer impregnated polyurethane foam expansion joint seal coated with a highway-grade silicone surface providing a permanent weather tight seal. Use a compatible two-component epoxy adhesive on the expansion joint seal for bonding.

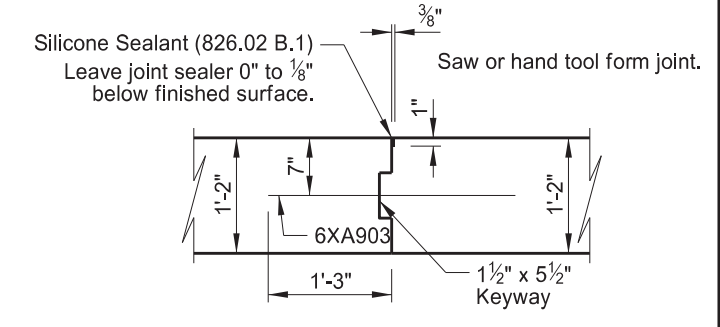
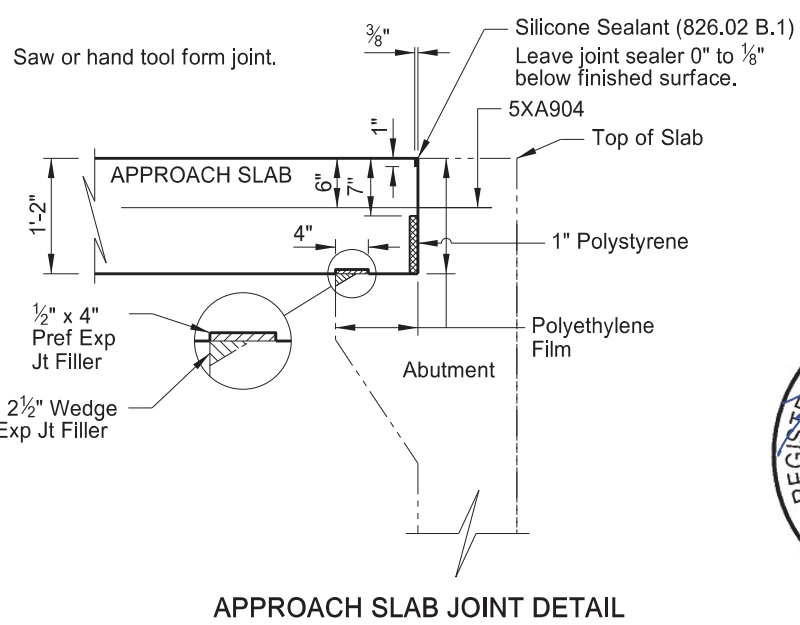
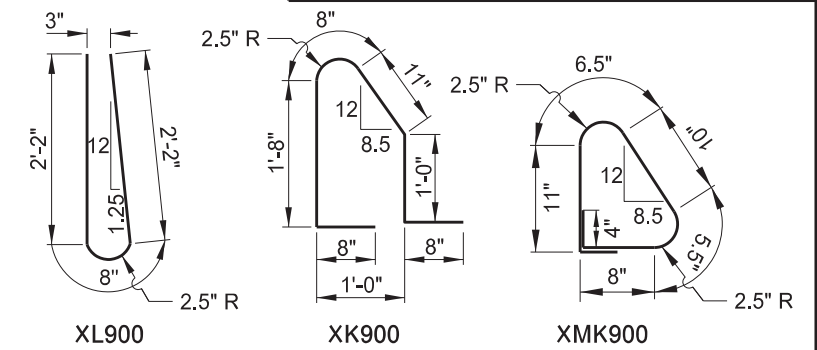
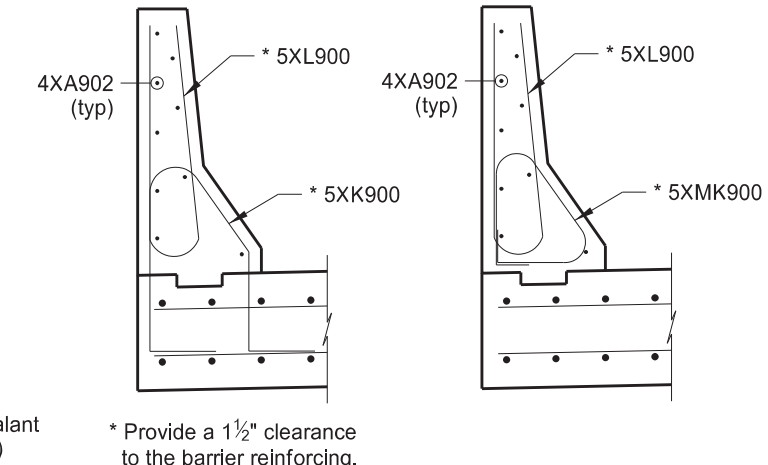
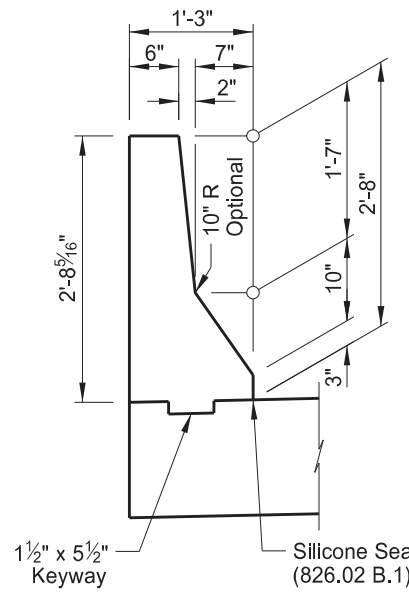
 The joint seal may be Wabo FS Bridge Seal (Watson Bowman Acme); BEJS Bridge Expansion Joint System (Emseal); Iso-Flex Silfast XL (LymTal International), or an approved equal. Prepare existing joint opening and install the joint seal according to the manufacturer's recommendations. The quantity of expansion joint modification includes an additional 6 inches of joint seal at each end to be turned up vertically matching the inside face of the barrier. Include all work and materials associated with the expansion joint seal installation in the bid item "Polyurethane Foam Joint Seal."



STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-2-094(178)238	170	31



** Length may vary depending on manufacturer's recommendations for anchorage. Length based on 9 inch minimum anchorage length.



NOTES:

The estimated material quantities shown are for information purposes only. Include the concrete, reinforcing bars, polyethylene film, preformed joint filler, polystyrene, silicone sealant, foundation fill, connection plates and pipes, and labor required to build the approach slabs and barriers in the pay item "Bridge Approach Slab-Remove & Replace." Use Class AE-3 concrete and Grade 60 reinforcing steel. Provide reinforcing steel that meets the requirements of Section 612. Use polyethylene film that meets the requirements of ASTM C171.

The bar marks beginning with an "X" indicate an epoxy coated bar. The dimensions shown in the "Bent Bar Details" are out to out.

Install 5XA904 bars according to manufacturer's recommendations, with a high strength adhesive specifically intended for concrete anchorage (16k min. ultimate pullout) and that meets the requirements of Section 806.02. Provide a minimum anchorage length of 9 inches.

SKEW ANGLE = 0°

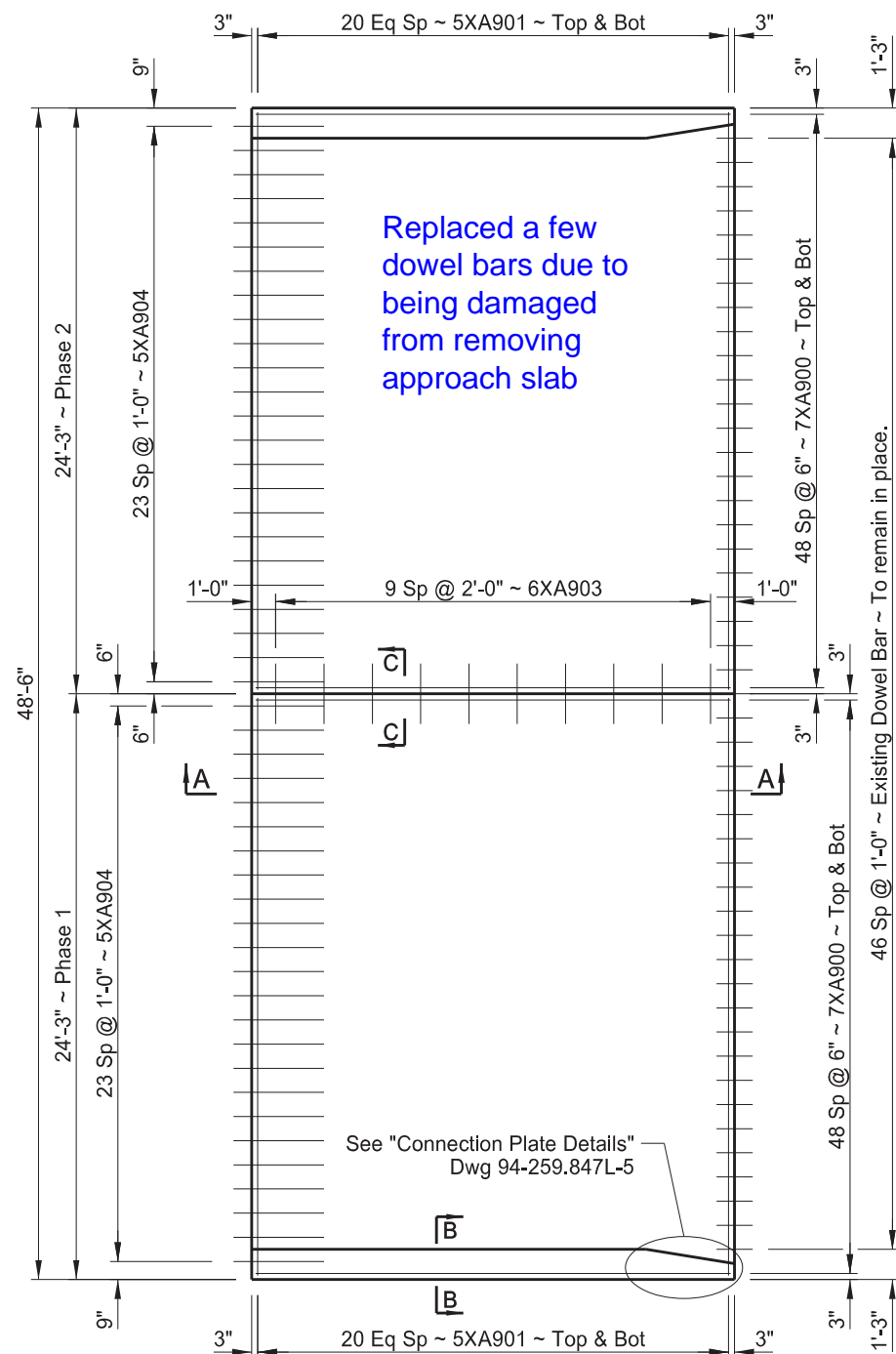
BAR LIST - NORTH SLAB			
SIZE	MARK	NO.	LENGTH
7	XA900	196	19'-8"
5	XA901	84	23'-11"
4	XA902	18	20'-8"
6	XA903	10	2'-6"
5	XA904	48	**3'-9"
5	XK900	60	5'-7"
5	XL900	64	5'-11"
5	XMK900	4	4'-1"

ESTIMATED MATERIAL QUANTITIES	
REINFORCING STEEL (LBS)	CONCRETE (CY)
11,210	45.1

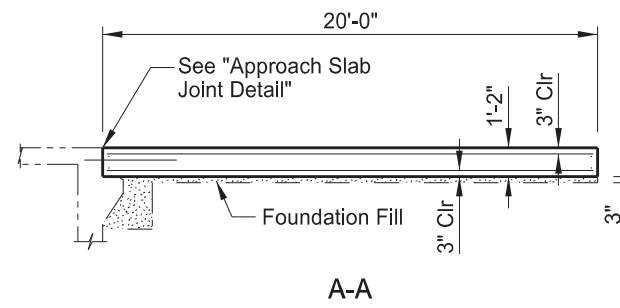
QUANTITIES	(North Slab)
APPROACH SLAB	107.8 SY
JAMES RIVER (WEST END) APPROACH SLAB DETAILS	



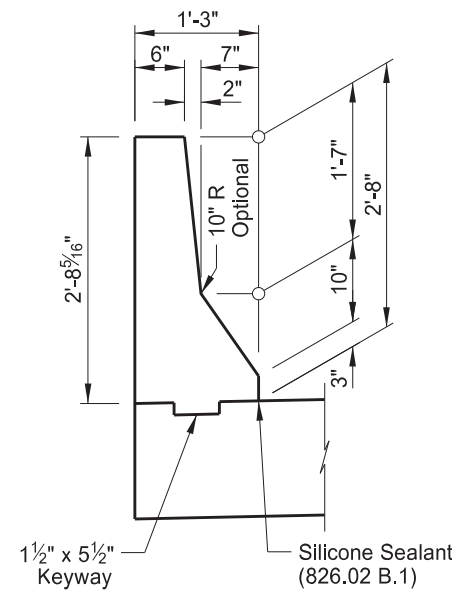
STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-2-094(178)238	170	32



PLAN

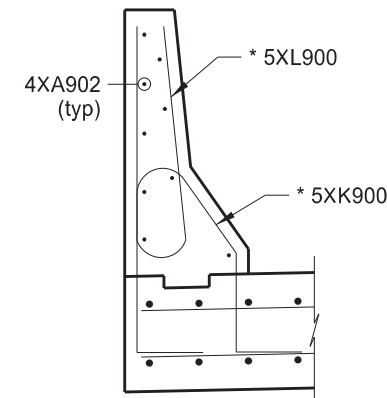


A-A



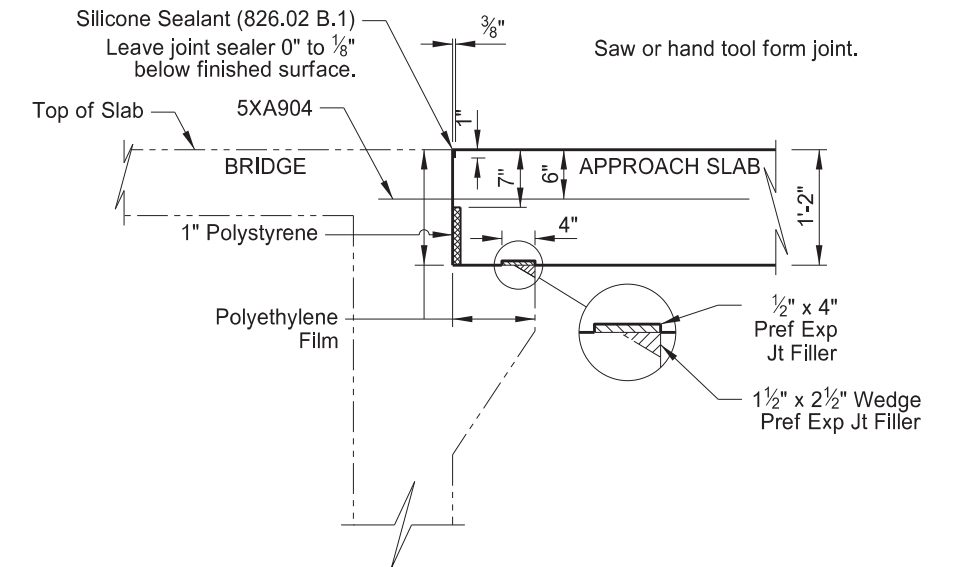
SHOWING DIMENSIONS

B-B

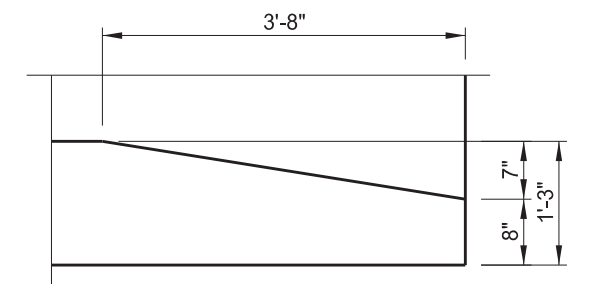


* Provide a 1 1/2" clearance to the barrier reinforcing.

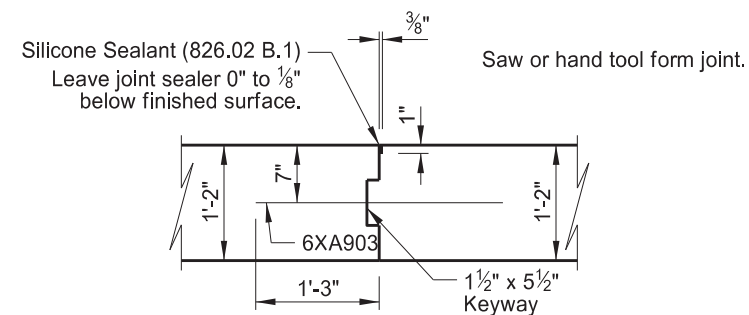
SHOWING REINFORCING



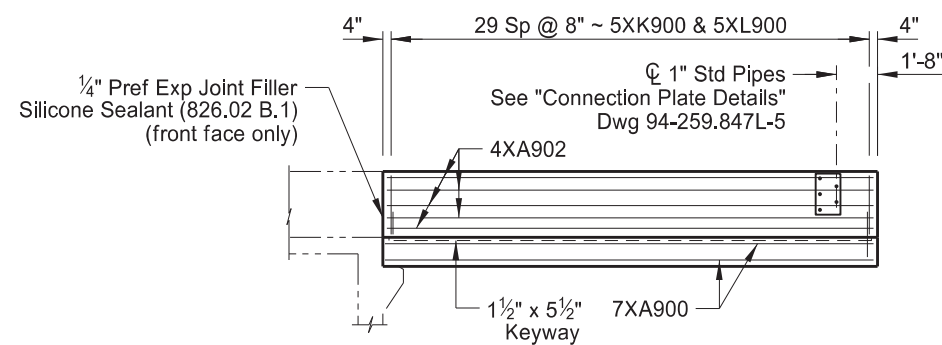
APPROACH SLAB JOINT DETAIL



BARRIER TAPER DETAIL



C-C



ELEVATION



QUANTITIES
SEE DWG 94-259.847L-5
JAMES RIVER (EAST END) APPROACH SLAB DETAILS

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-2-094(178)238	170	33

NOTES:

See dwg 94-259.847L-3 for Section B-B.

NOTES:

The estimated material quantities shown are for information purposes only. Include the concrete, reinforcing bars, polyethylene film, preformed joint filler, polystyrene, silicone sealant, foundation fill, connection plates and pipes, and labor required to build the approach slabs and barriers in the pay item "Bridge Approach Slab-Remove & Replace." Use Class AE-3 concrete and Grade 60 reinforcing steel. Provide reinforcing steel that meets the requirements of Section 612. Use polyethylene film that meets the requirements of ASTM C171.

The bar marks beginning with an "X" indicate an epoxy coated bar. The dimensions shown in the "Bent Bar Details" are out to out.

Install 5XA904 bars according to manufacturer's recommendations, with a high strength adhesive specifically intended for concrete anchorage (16k min. ultimate pullout) and that meets the requirements of Section 806.02. Provide a minimum anchorage length of 9 inches.

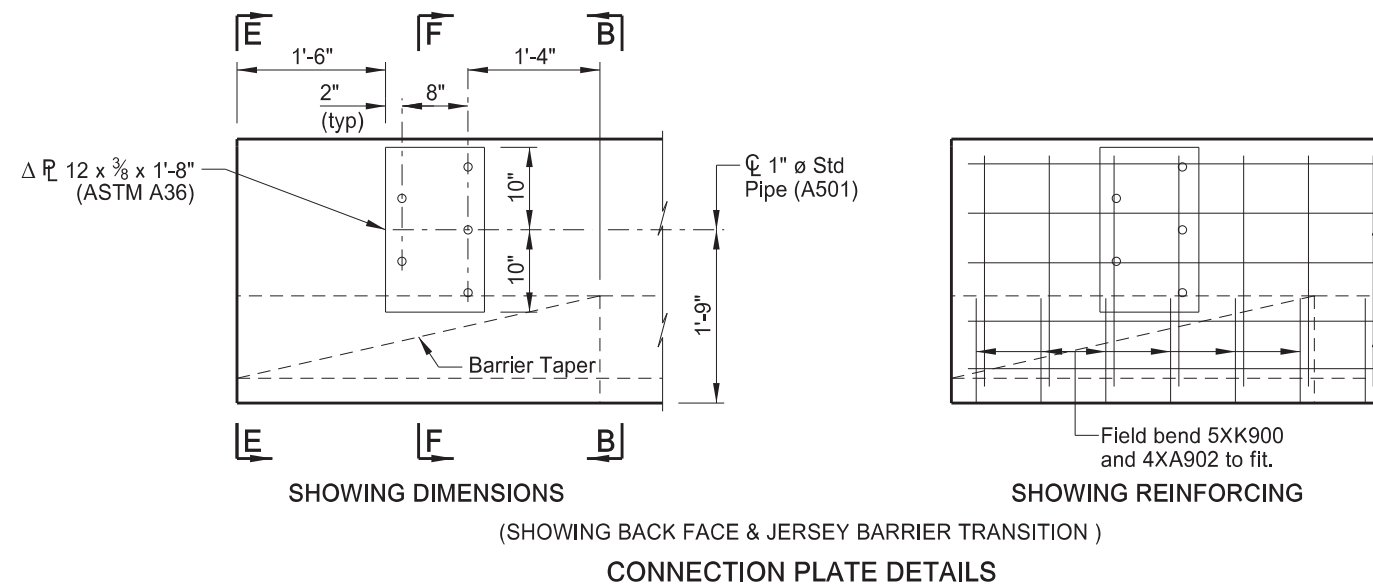
SKEW ANGLE = 0°

BAR LIST - SOUTH SLAB

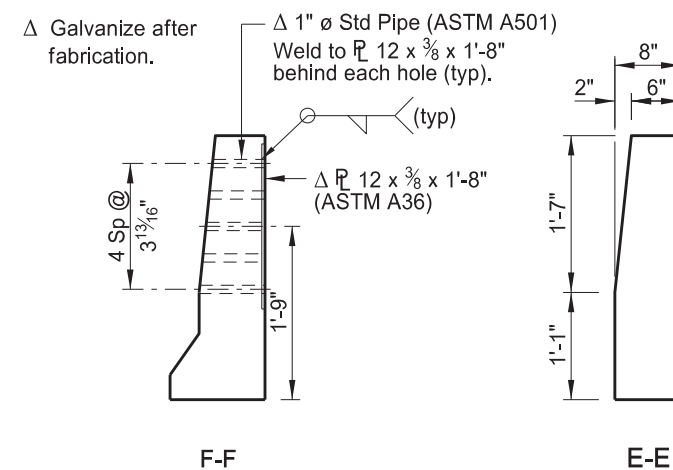
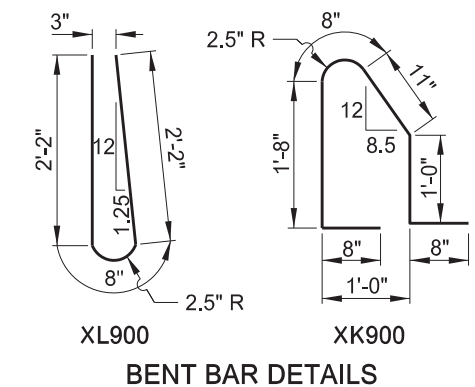
SIZE	MARK	NO.	LENGTH
7	XA900	196	19'-8"
5	XA901	84	23'-11"
4	XA902	18	19'-8"
6	XA903	10	2'-6"
5	XA904	48	**3'-9"
5	XK900	60	5'-7"
5	XL900	60	5'-11"

ESTIMATED MATERIAL QUANTITIES

REINFORCING STEEL (LBS)	CONCRETE (CY)
11,192	45.0



** Length may vary depending on manufacturer's recommendations for anchorage. Length based on 9 inch minimum anchorage length.



QUANTITIES	(SOUTH SLAB)
APPROACH SLAB	107.8 SY

JAMES RIVER
(EAST END)
APPROACH SLAB DETAILS

ND DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 2

ABSTRACT OF BIDS RECEIVED

PROJECT NO. SIM-2-094(103)247 SIM-2-094(102)227		COUNTY & DATE STUTSMAN (093) MAR 18, 2016 09:30AM		BIDDER ENGINEERS ESTIMATE		BIDDER DIAMOND SURFACE INC		BIDDER PCI ROADS LLC	
LENGTH & TYPE W LIPPERT E TO BLOOM INTERCHANGE-WB		COMPLETION TIME 100 DAYS CPR, GRINDING, APPROACH SLAB REPAIR		C.C. CHECK RANK 00		C.C. BOND RANK 01		C.C. BOND RANK 02	
NO.	ITEM DESCRIPTION	UNIT	QUANTITY	BID PRICE	AMOUNT	BID PRICE	AMOUNT	BID PRICE	AMOUNT
703	CONTRACT BOND	L SUM	1000	21000000	21000000	15000000	15000000	12400000	12400000
216	WATER	M GAL	683000	20000	1366000	12500	853750	20000	1366000
420	COVER	TON	200000	40000	8000000	39650	793000	40000	8000000
570	PCC PAVEMENT GRINDING	SY	477048000	2690	128325912	2200	104950560	2380	113557424
570	10 IN CONC PVMT REPAIR-FULL DEPTH-DOWELED	SY	3762000	116660	43887492	147500	552895500	146000	54925200
570	1/2 IN TRANSVERSE PCC JOINT CLEANING & SEALING	LF	2000000	4000	8000000	3500	7000000	5000	10000000
570	LONGITUDINAL PCC JOINT CLEANING & SEALING	LF	2000000	3580	7160000	2520	4640000	5000	10000000
570	RANDOM PCC CRACK CLEANING & SEALING	LF	1813000	3440	6256520	2330	4238270	5000	10000000
570	SPECIAL REPAIR-PARTIAL DEPTH	LF	1433000	45000	64485000	51400	73656200	49000	70217000
502	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	180000	425000	76500000	906250	163125000	550000	99000000
702	MOBILIZATION	L SUM	1000	108810710	108810710	245345000	245345000	246995000	246995000
704	FLAGGING	M HR	1000000	38000	38000000	44690	44690000	40000	40000000
704	TRAFFIC CONTROL SIGNS	UNIT	3713000	2590	962444	2500	9290000	2000	7332000
704	ATTENUATION DEVICE-TYPE B-65	EA	1000	3205000	3205000	4375000	4375000	3500000	3500000
704	TYPE I BARRICADE	EA	8000	42420	339360	18750	150000	15000	120000
704	TYPE III BARRICADE	EA	2000	13200	26400	193750	503750	15000	150000
704	DELINEATOR DRUMS	EA	15000	34500	517500	43750	656250	35000	437500
704	TUBULAR MARKERS	EA	47000	3480	163560	478042	22440000	11000	1100000
704	STACKABLE VERTICAL PANELS	EA	120000	46000	5520000	12500	1500000	10000	1000000
704	SEQUENCING ARROW PAVEMENT MARKING	EA	3000	1748000	5244000	2062500	6187500	1650000	4950000
704	LITERATURE OF PAVEMENT MARKING	EA	97000	2500	243000	2500	243000	2000	194400
762	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	SF	50000	390000	19500000	281250	1406250	650000	3250000
762	SHORT TERM 4 IN LINE-TYPE R	LF	1360000	130	176800	1150	1556850	11500	1556850
762	SHORT TERM 4 IN LINE-TYPE NR	LF	3577000	1070	3828290	4080	14595360	1063	3797591
762	PVMT MK PAINTED 4 IN LINE	LF	29319000	250	7329750	330	73857750	258	73857750
762	PVMT MK PAINTED 8 IN LINE	LF	1062000	4180	4438560	4140	4412520	3510	3742280
764	PREFORMED & RESET GUARDRAIL	LF	3605000	32000	115360000	35000	125360000	28000	11934205
930	SILICONE SEALANT	LF	5000	25000	125000	43750	218750	25000	125000
930	SPECIAL REPAIR	LF	134000	300000	40200000	81250	10887500	75000	1005000
	TOTAL				236427658		243726975		244280439

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AMARD TO: DIAMOND SURFACE INC WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DATE OF AWARD: 49 DEPARTMENT OF TRANSPORTATION DIRECTOR

ND DEPARTMENT OF TRANSPORTATION

ABSTRACT OF BIDS RECEIVED

PROJECT NO.		SHEET NO		OF		2	
COUNTY & DATE		BIDDER		BIDDER		BIDDER	
LENGTH & TYPE		INTERSTATE IMPROVEME		MULTIPLE CONCRETE EN		BIDDER	
COMPLETION TIME		NT INC		TERPRISES INC		TERPRISES INC	
SPEC.		FARIBAULT, MN		OGDEN, UT		OGDEN, UT	
ITEM DESCRIPTION		RANK 03		RANK 04		RANK 04	
NO.	UNIT	QUANTITY	BID PRICE	AMOUNT	BID PRICE	AMOUNT	AMOUNT
7030	CONTRACT BOND						
2160	WATER	1000	105000000	105000000	175000000	175000000	175000000
4200	COVER COAT MATERIAL CL 41	683000	11370	776571	4000	273200	273200
5700	PCC PAVEMENT GRINDING	2000000	23280	465600	69500	1390000	1390000
5701	10 IN CONC PVMT REPAIR-FULL DEPTH-DOWELED	477048000	2350	112106280	2880	1373889824	1373889824
5701	10 IN CONC PVMT REPAIR-FULL DEPTH-DOWELED	3762000	140000	52668000	160000	60192000	60192000
5701	2 IN TRANSVERSE PCC JOINT CLEANING & SEALING	2000000	3000	600000	4500	900000	900000
5701	LONGITUDINAL PCC JOINT CLEANING & SEALING	2000000	3000	600000	4500	900000	900000
5701	RANDOM PCC CRACK CLEANING & SEALING	1830000	3000	549000	6500	1182350	1182350
5702	SPALL REPAIR-PARTIAL DEPTH	1433000	420000	6018600	65000	9314500	9314500
6020	BRIDGE APPROACH SLAB-REMOVE & REPLACE	1000000	725000	725000	553000	553000	553000
7020	MOBILIZATION	1000	300000000	300000000	252200000	252200000	252200000
7040	FLAGGING	3716000	49090	184000000	45000	167220000	167220000
7040	TRAFFIC CONTROL SIGNS	1000000	2000	2000000	2000	2000000	2000000
7040	ATTENUATION DEVICE-TYPE B-65	80000	3500000	2800000	3500000	2800000	2800000
7040	TYPE I BARRICADE	26000	15000	390000	15000	390000	390000
7040	TYPE III BARRICADE	153000	155000	23715000	155000	23715000	23715000
7040	DELINEATOR DRUMS	472000	35000	16520000	35000	16520000	16520000
7040	TUBULAR MARKERS	120000	11000	1320000	11000	1320000	1320000
7040	STACKABLE VERTICAL PANELS	3000	1650000	4950000	1650000	4950000	4950000
7040	SEQUENCING ARROW PAVEMENT TYPE C	972000	2000	1944000	2000	1944000	1944000
7040	OBSTRUCTION OF PAVEMENT MARKING	500000	225000	1125000	60000	300000	300000
7620	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	1360000	1500	2040000	1500	2040000	2040000
7620	SHORT TERM 4 IN LINE-TYPE NR	35779000	400	14311600	550	1252265	1252265
7620	SHORT TERM 4 IN LINE-TYPE NR	293197000	1060	1759182	1060	1867181	1867181
7620	PVMT MK PAINTED 4 IN LINE	10629000	260	276354	260	276354	276354
7620	PVMT MK PAINTED 8 IN LINE	360055000	3310	11934205	3310	274228	274228
7640	REFORMED & RESET GUARDRAIL	24000	28000	672000	28000	672000	672000
9300	SILICONE SEALANT	34000	35000	1190000	35000	1190000	1190000
9300	SPALL REPAIR	134000	65000	8710000	82000	1098800	1098800
	TOTAL			244358852		273807113	

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AMARD TO: 50 DATE OF AMARD: 50

DIAMOND SURFACE INC

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DEPARTMENT OF TRANSPORTATION DIRECTOR

94-259.847 L

DESIGN DATA			
Traffic		Average Daily	
Current 2014	Pass: 3771	Trucks: 1192	Total: 4963
Preventative Maintenance			

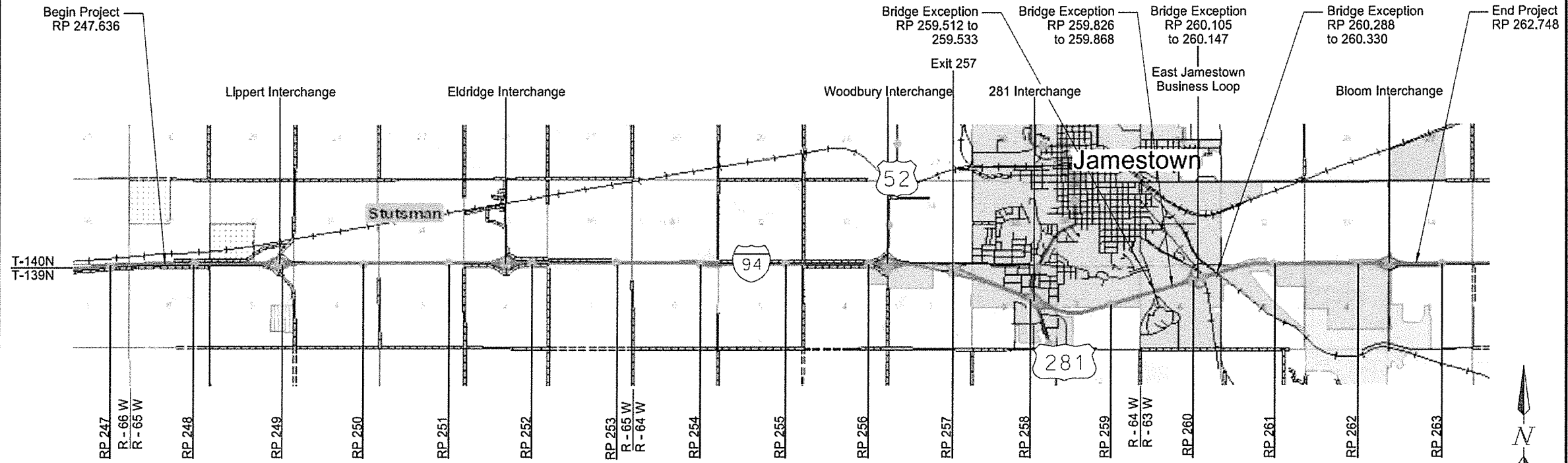
**JOB # 19
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	SIM-2-094(103)247	17739	1	1

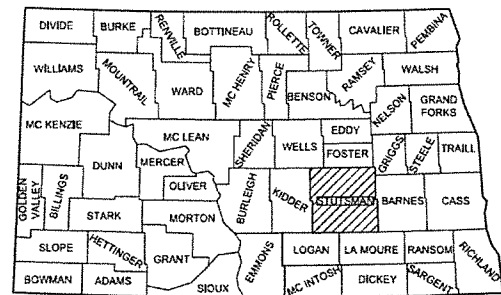
SIM-2-094(103)247
FHWA - PODJ
Stutsman County
W Lippert E to Bloom Interchange - WB
CPR, Grinding, Approach Slab Repair

GOVERNING SPECIFICATIONS:
2014 Standard Specifications adopted by the North Dakota Department of Transportation and the Supplemental Specifications effective on the date the project is advertised.

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
SIM-2-094(103)247	14.965	15.112
Bridge Exception Areas:		
RP 259.512 to RP 259.533 = 0.021 Miles		
RP 259.826 to RP 259.868 = 0.042 Miles		
RP 260.105 to RP 260.147 = 0.042 Miles		
RP 260.288 to RP 260.330 = 0.042 Miles		



Jesse Feldmeyer /s/
Dennis Rowell /s/



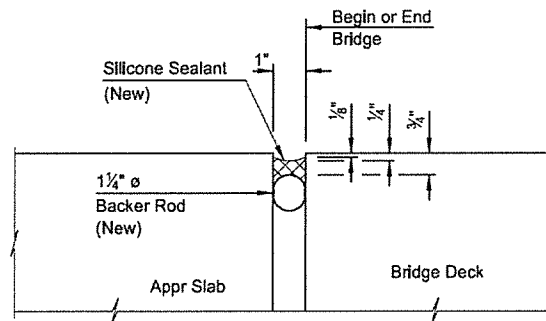
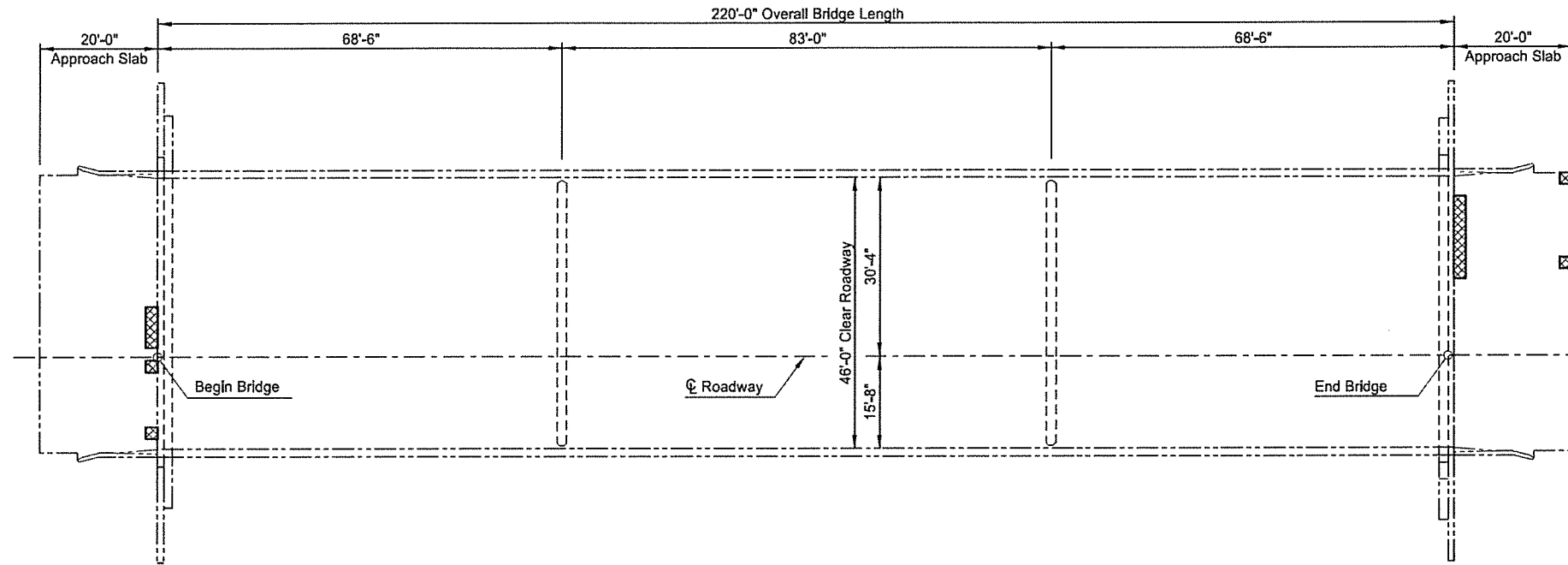
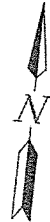
STATE COUNTY MAP

APPROVED DATE 1/5/2016
Jay F. Praska /s/
Valley City District Engineer
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 1/5/2016
Daniel R Viou /s/
NDDOT - Valley City District

This document was originally issued and sealed by Daniel R Viou Registration Number PE- 6329, on 1/5/2016 and the original document is stored at the North Dakota Department of Transportation

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SIM-2-094(103)247	170	4



Indicates spall repair area.

NOTES:

- 100 SCOPE OF WORK: Work at this site consists of approach slab spall repairs, and resealing the joints between the bridge & approach slabs.
- 930 SILICONE SEALANT: After the spall repair work, remove and replace the backer rod and silicone sealant between the approach slab and deck at both ends of the bridge. Clean the joint of all foreign material and sandblast before the new backer rod and silicone sealant is installed. Provide a silicone sealant in accordance with Section 826.02 B.1. Provide a larger backer rod diameter if the existing joint is greater than the 1" as shown. Extend the new silicone sealant and backer rod 6" up the face of the curb. Include all materials, labor and equipment required to remove and replace the backer rod and silicone sealant in the bid item "Silicone Sealant."
- 930 SPALL REPAIR: Both approach slabs have spalling as shown. The Engineer in the field will determine the actual limits of the areas to be repaired. Construct the spall repair as a Bridge Deck Overlay meeting Section 650 of the NDDOT Standard Specifications with the exception that a mobile mixer will not be required and Class AAE-3 concrete can be substituted for low slump concrete. Sawcut the perimeter of the spall areas to a depth of 2 1/2". Remove a minimum depth of 3" of concrete within the repair perimeter. Include the saw cutting and all material, labor and equipment required to remove the concrete and repair the approach slab spall in the bid item "Spall Repair."

JOINT DETAIL

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
930	8644	SILICONE SEALANT	LF	94
930	9612	SPALL REPAIR	SF	58

This document was originally issued and sealed by Dustin Wing, Registration Number PE 7128, on 01/04/16 and the original document is stored at the North Dakota Department of Transportation

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
JAMES RIVER
JUST WEST OF JCT US 52 & I-94

BRIDGE LAYOUT

PROJECT: SIM-2-094(103)247

STUTSMAN COUNTY

DATE: 01/04/16 BY: Terrence R. Udland
BRIDGE ENGINEER

94-259.847 R

DESIGN DATA			
Traffic	Average Daily		
Current 2015	Pass: 3560	Trucks: 1430	Total: 4990
Forecast 2035	Pass: 5305	Trucks: 2135	Total: 7440
Clear Zone Dist. Existing	Design Speed: 75		
Minimum Sight Dist. for Stopping: Existing	Bridges:		
Full Control of Access, No Point of Access Other Than at Interchange Ramps			
Pavement Design Life 20 (years)			
Design Accumulated One-way Rlgld ESALs: N/A			

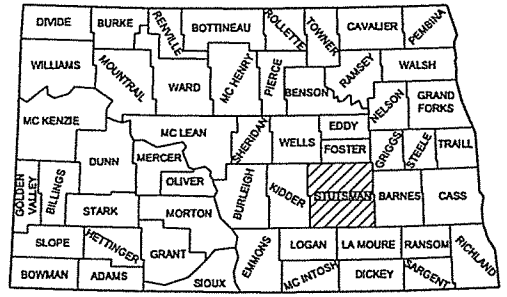
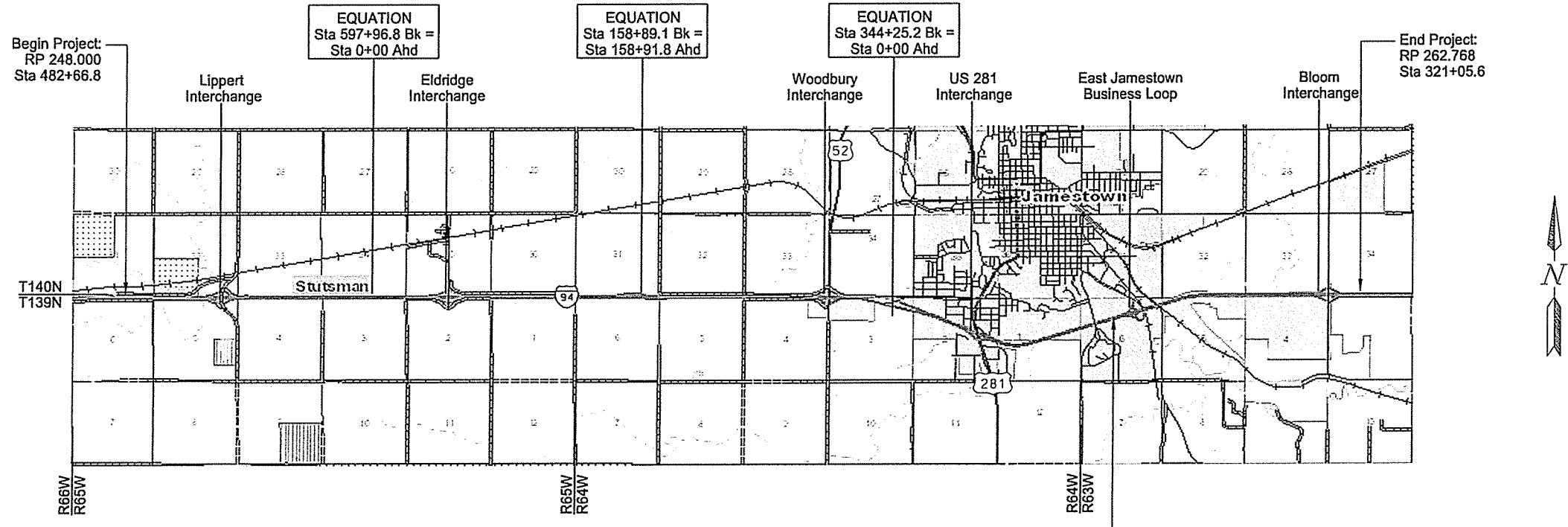
JOB # 20
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	IM-2-094(144)248	21401	1	1

IM-2-094(144)248
 Stutsman County
 W Lippert to E Bloom - Eastbound
 CPR, HMA, Approach Slab Repair, & Guardrail Replacement

GOVERNING SPECIFICATIONS:
 2014 Standard Specifications adopted by the North Dakota Department of Transportation and the Supplemental Specifications effective on the date the project is advertised.

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
IM-2-094(144)248	14.726	14.768
Bridge Exception Areas: RP 259.826 to RP 259.868 =	0.042	



DESIGNERS
Daniel R. Viau /s/
Jesse Feldmeyer /s/

DISTRICT REVIEW
Jay Praska /s/
Valley City District
APPROVED DATE 3/28/16
Roger Weigel /s/
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 3/23/2016

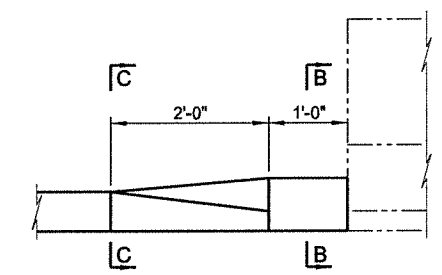
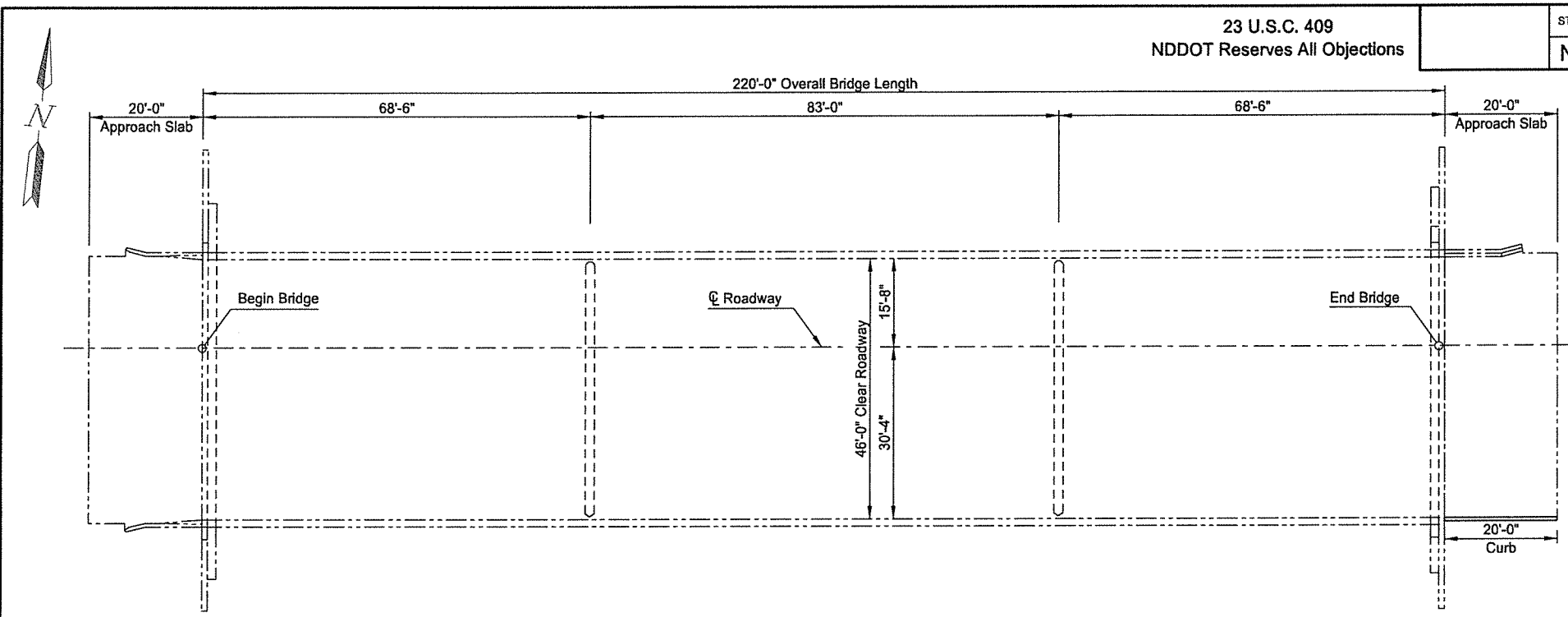
Daniel R. Viau /s/

NDDOT Valley City District

This document was originally issued and sealed by Daniel R. Viau, Registration Number PE- 6329, on 3/21/2016 and the original document is stored at the North Dakota Department of Transportation

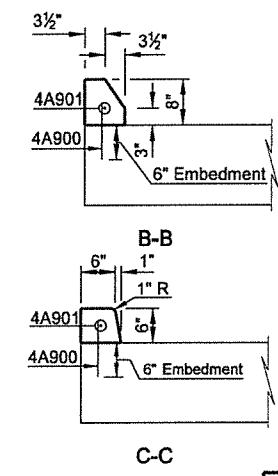
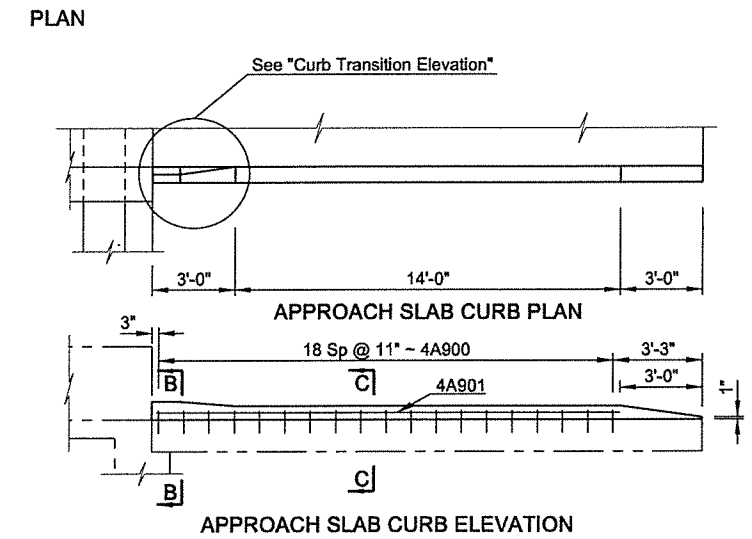
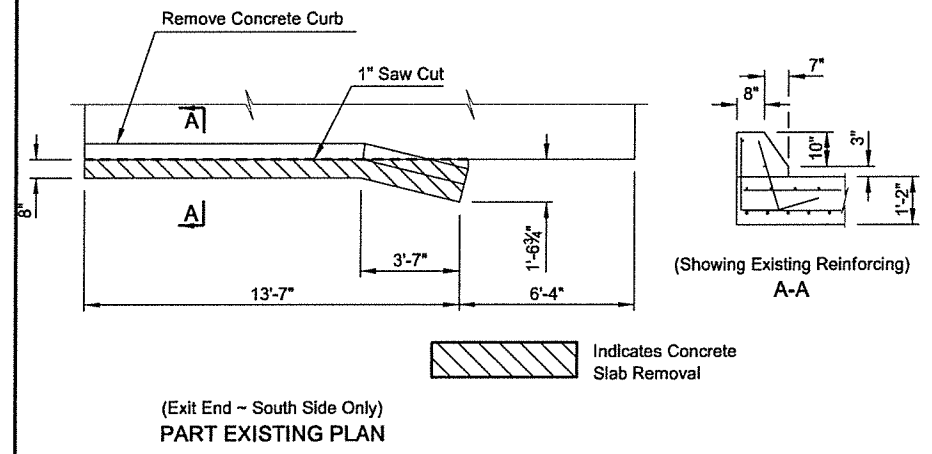
23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-2-094(144)248	170	3



BAR LIST ~ CURB			
SIZE	MARK	NO.	LENGTH
4	4A900	19	10"
4	4A901	1	16'-10"

ESTIMATED MATERIAL QUANTITIES	
REINFORCING STEEL (LBS)	CONCRETE (CY)
21.8	0.2



NOTES:

- 100 SCOPE OF WORK: Work at this site consists of removing the curb and a portion of the approach slab on the south side of the exit end approach slab. New curb will also be placed along the south edge of the exit end approach slab.
- 764 REMOVE CONCRETE SAFETY SHAPE TRANSITION: Cut the existing reinforcing steel flush with the concrete surface and seal with epoxy. Include the sealing of reinforcing, 1" saw cuts, and the removal of the concrete curb and portions of the approach slabs in the price bid for "Remove Concrete Safety Shape Transition."

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
748	0540	CURB	LF	20
764	1990	REMOVE CONCRETE SAFETY SHAPE TRANSITION	EA	1

This document was originally issued and sealed by Dustin Wng, Registration Number PE 7128, on 3/17/2016 and the original document is stored at the North Dakota Department of Transportation

NOTES:

The estimated material quantities shown are for information purposes only.

Install the 4A900 bars according to manufacturer's recommendations with a high strength adhesive specifically intended for concrete anchorage, in accordance with Sec. 806.02.

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
JAMES RIVER
JUST WEST OF JCT US 52 & I-94

BRIDGE LAYOUT

PROJECT: IM-2-094(144)248

STUTSMAN COUNTY

3/17/2016 Terrence R. Udland
DATE BRIDGE ENGINEER

NORTH DAKOTA STATE HIGHWAY DEPARTMENT

SHEET NO. 1 OF 8

ABSTRACT OF BIDS RECEIVED

PROJECT NO. IM-2-094(007)256.

TYPE IMP

NO. 18

BIDDER
ENGINEERS ESTIMATE

BIDDER
NORTHERN IMPROVEMENT

BIDDER
JAMES CAPE & SONS CO.

093
COUNTY & DATE STUTSMAN COUNTY
LENGTH & TYPE 7.135 Bloom

James R. 94-259.847 L
FEB 21, 1997

COMPLETION TIME 10 24 97 RECYCLED PCC PVMT. & INCIDENTA

FARGO, ND
C.C. BOND RANK 00

RACINE, WI
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	33300000	33300000	25000000	25000000	60000000	60000000
107	RAILWAY PROTECTION INSURANCE	L SUM	1000	1758000	1758000	3000000	3000000	8000000	8000000
202	REMOVAL OF STRUCTURE	L SUM	1000	6668000	6668000	45000000	45000000	42000000	42000000
203	COMMON EXCAVATION-TYPE A	CY	56836000	1300	7388680	2250	12788100	2200	12503920
203	COMMON EXCAVATION-SUBCUT	CY	13653000	2840	3877452	2250	3071925	3000	4095900
203	BORROW	CY	71911000	2540	18265394	3600	25887960	3100	22292410
203	FLATTEN DITCH BLOCK SLOPES	EA	1000	512000	512000	1000000	1000000	500000	500000
210	CLASS I EXCAVATION	L SUM	1000	1874000	1874000	2600000	2600000	2500000	2500000
210	SELECT BACKFILL	TON	1673000	12860	2151478	11000	1840300	7150	12000
210	FOUNDATION PREPARATION	EA	1000	5272000	5272000	5200000	5200000	5000000	5000000
218	WATER	M GAL	3616000	7750	2802400	5000	1808000	10000	3616000
230	RESHAPING ROADWAY	MILE	4818	5000000	2409000	11300000	5444340	12400000	5974320
230	SUBGRADE PREPARATION-TYPE B-1RIN	MILE	4818	20380000	9819084	29700000	14309460	27400000	13201320
302	SALVAGED BASE COURSE	TON	109666000	4360	47814376	4000	43866400	3500	38383100
304	PERMEABLE STABILIZED BASE COURSE	SY	121388000	4850	58873180	5000	60694000	3650	44306620
401	MC70 OR 250 LIQUID ASPHALT	GAL	26974000	830	2238842	1050	2832270	1300	3506620
401	SS1H OR CSS1H EMULSIFIED ASPHALT	GAL	62000	2000	12400	3500	21700	3300	20460
401	BLOTTER MATERIAL CL 44	TON	810000	14470	1172070	10000	810000	20000	1620000
405	REMOVE & SALVAGE BITUMINOUS SURFACING	TON	103006000	3700	38112220	4750	48927850	5000	51503000
408	HOT BITUMINOUS PAVEMENT CL 25	SY	500000	17450	872500	33000	1650000	31000	1550000
408	HOT BITUMINOUS PAVEMENT CL 25	TON	1709000	30000	5127000	34000	5810600	31500	5383350
408	120-150 ASPHALT CEMENT	TON	102000	130000	1326000	135000	1377000	129000	13158000
408	PAVEMENT REPAIR ALL DEPTHS	SY	1450000	10000	1450000	22000	3190000	19250	2791250
410	MILLING BITUMINOUS PAVEMENT	TON	22982000	5000	11491000	6250	14363750	5100	11720820
550	CONCRETE BRIDGE APPROACH SLAB	SY	818100	111060	9085818	95000	7771950	90000	7362900
550	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	234500	119070	2792191	200000	4690000	192000	4502400
550	DOWELED CONTRACTION JOINT ASSEMBLY	LF	83268000	3350	27894780	3400	28311120	3400	28311120
550	LONGITUDINAL JOINT SILICONE SEAL	LF	8457000	1680	1420776	1850	1564545	800	676560
550	CONTRACTION JOINT SILICONE SEAL	LF	117520000	1580	18568160	1700	19978400	1680	19743360
550	PORTLAND CEMENT	TON	12811000	96730	123920803	100000	128110000	107000	137077700
550	FLYASH	TON	3015000	39150	11803725	34000	10251000	44000	13266000
560	PREPARE STOCKPILE SITE	L SUM	1000	46508000	46508000	50000000	50000000	75000000	75000000
560	REMOVAL OF CONCRETE PAVEMENT	SY	89790000	3920	35197680	4750	42650250	5000	44895000
560	10IN NON-REINF RECYCLED CONCRETE PAVEMENT	SY	195787000	6500	127261550	8250	161524275	9290	181886123
602	CLASS AAE-3 CONCRETE	CY	265000	276280	7321420	320000	8480000	300000	7950000
602	CLASS AE-3 CONCRETE	CY	224200	263580	5909463	340000	7622800	325000	7286500
602	JERSEY BARRIER FORMED OR SLIP FORMED	LF	197000	65250	1285425	95000	1871500	1290000	1773000
602	PENETRATING WATER REPELLENT TREATMENT	SY	816000	2530	206448	3000	244800	3000	244800
604	PRESTRESSED BOX BEAM-33IN	LF	990000	119970	11877030	125000	12375000	120000	11880000
612	REINFORCING STEEL-GRADE 60	LBS	49845000	500	2492250	600	2990700	550	2741475
612	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	36352000	600	2181120	700	2544640	650	2362880
622	STEEL PILING HP 10 X 42	LF	780000	16570	1292460	22000	1716000	21000	1638000
622	STEEL PILING HP 14 X 73	LF	1170000	26500	3100500	30000	3510000	29000	3393000
638	96IN STR PLATE PIPE .138IN	LF	14000	200000	320000	520000	832000	500000	800000
650	CLASS I OVERLAY	SY	489000	48670	2379963	70000	3423000	67000	3276300
650	CLASS II OVERLAY	SY	98000	41290	404642	80000	784000	75000	735000
650	CLASS III OVERLAY	SY	24000	52690	126456	90000	216000	85000	204000
650	CLASS IIA OVERLAY	LF	176000	4340	76384	15000	264000	14000	246400

ACTION TAKEN BY STATE HIGHWAY COMMISSION:

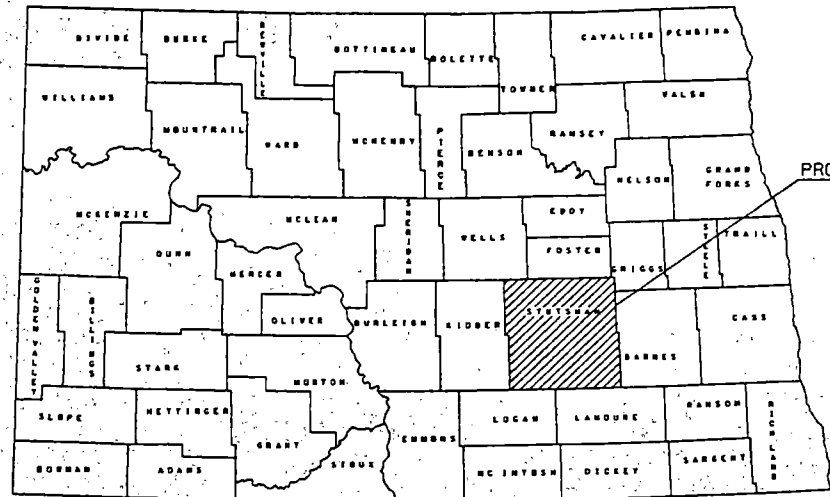
AWARD TO:

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

JOB # 12

FHWA REGION	STATE	PROJECT NO.	SHEET NO.
8	N.D.	SIM-2-999(001)	1



STUTSMAN COUNTY
SIM-2-999(001)

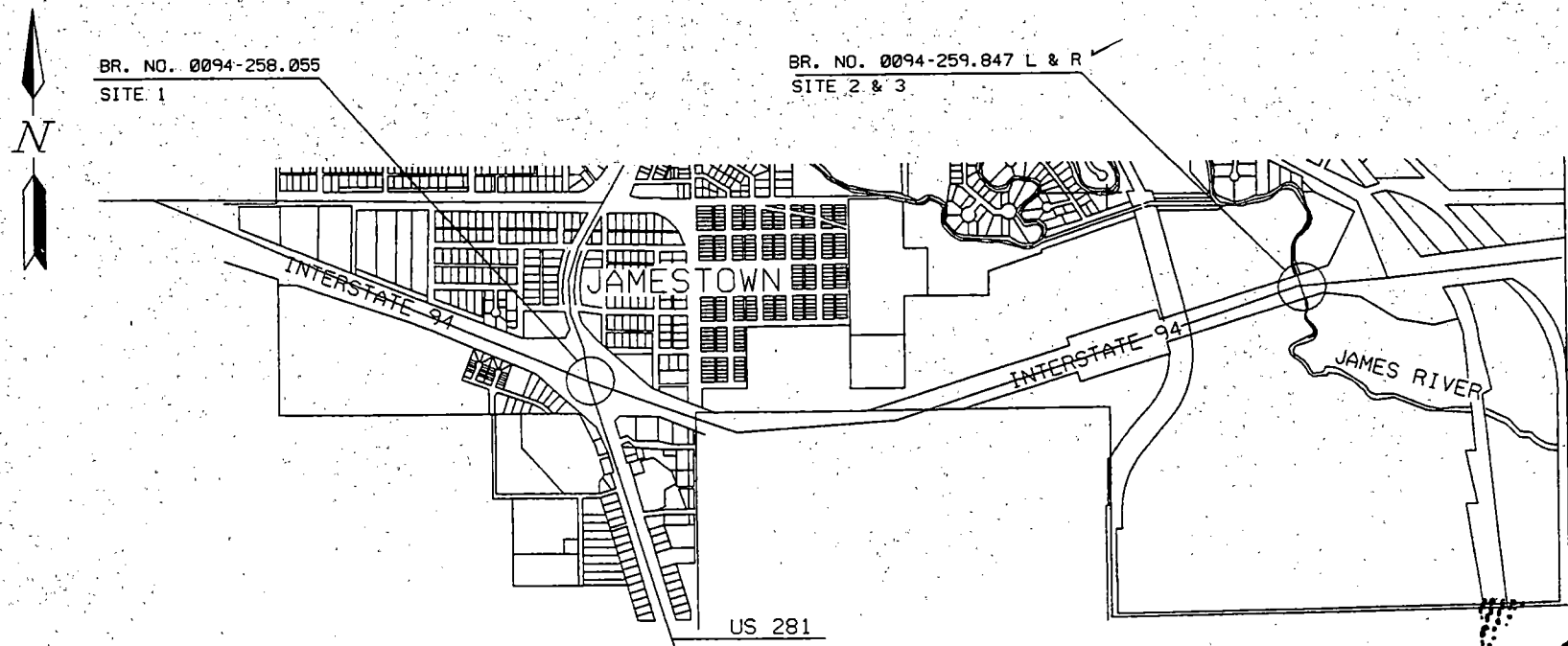
PROJECT SIM-2-999(001) CONSISTS OF REPAIRING
EXPANSION JOINT STRIP SEALS AND MODIFIED JOINT SEALS

GOVERNING SPECIFICATIONS

STANDARD SPECIFICATIONS ADOPTED BY THE NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION OCTOBER 1997, STANDARD
DRAWINGS CURRENTLY IN EFFECT, AND OTHER CONTRACT PROVISIONS
SUBMITTED HEREIN.

INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE OF QUANTITIES
3	NOTES AND SCOPE OF WORK
4	MODIFIED JOINT SEAL MODIFICATION
5	EXPANSION JOINT MODIFICATION DETAILS



STANDARD DRAWINGS

D-704-8	BREAKAWAY SYSTEMS FOR CONSTRUCTION ZONE SIGNS
D-704-9	CONSTRUCTION SIGN DETAIL
D-704-10	CONSTRUCTION SIGN DETAIL
D-704-11	CONSTRUCTION SIGN DETAIL
D-704-12	CONSTRUCTION SIGN DETAIL
D-704-13	CONSTRUCTION SIGN DETAIL
D-704-14	CONSTRUCTION SIGN AND BARRICADE ASSEMBLY DETAIL
D-704-23	CONSTRUCTION SIGN AND BARRICADE LOCATION DETAILS
D-704-35	SIGN LAYOUT FOR ONE LANE CLOSURE INTERSTATE SYSTEM

	APPROVED DATE <u>5-26-99</u> P.E. 1199 <i>David K. Lee</i>
	DIRECTOR OF HIGHWAYS & ENGINEERING NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
DATE <u>5-26-99</u> <i>Lawrence R. Udland</i> BRIDGE ENGINEER	

ESTIMATE OF QUANTITIES

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	SIM-2-999(001)	2

SPEC CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL

103	0100 CONTRACT BOND	L SUM	1	1
702	0100 MOBILIZATION	L SUM	1	1
704	1100 TRAFFIC CONTROL	L SUM	1	1
930	8642 NOSING CONCRETE	CF	26.5	26.5
930	8644 SILICONE SEALANT	LF	95	95
930	8673 EXPANSION JOINT MODIFICATION-STRIP SEAL	LF	111	111

100 SCOPE OF WORK: This project includes structural repair work on three bridges in the Valley City District. The type of repair required, type of traffic control and estimated quantities are listed in the table shown below. The work shall be done on one-half of the roadway at a time.

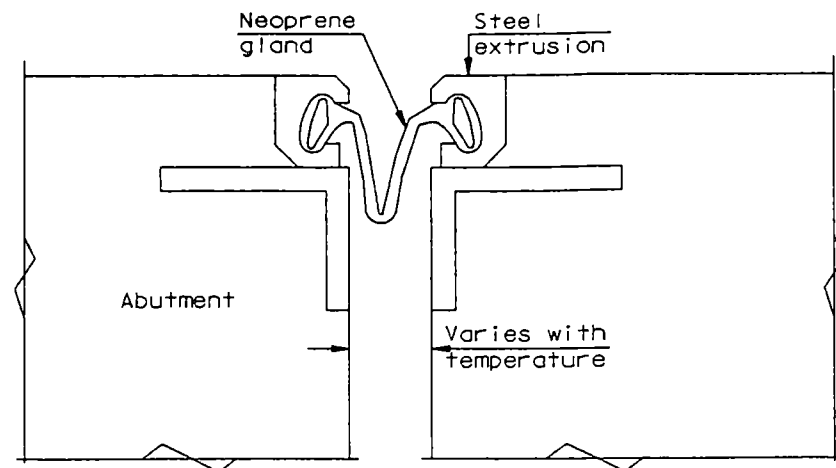
704 TRAFFIC CONTROL: The type of traffic control shall be that shown in the table below. Traffic control for all sites shall be set up only while work is going on at that site during daylight hours. The traffic control shall be removed and normal traffic operations restored at the end of each work day. Bridge No. 94-258.055 will require additional "Road Work Ahead", W21-4-48, signs on the exit ramps. All materials, labor and equipment necessary to set up and take down the traffic control at three sites shall be included in the lump sum bid item "Traffic Control".

930 MODIFIED JOINT SEAL MODIFICATION: See Modified Joint Seal Modification details sheet for expansion joint modification.

930 EXPANSION JOINT MODIFICATION-STRIP SEAL: See Expansion Joint Modification-Strip Seal details sheet for expansion joint modification.

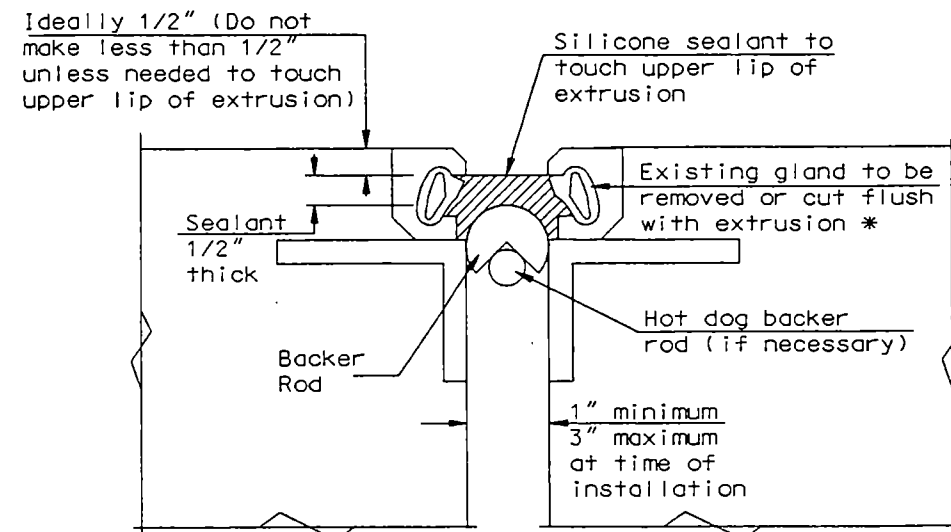
* The Modified Joint Seal Modification is located on the roadway between the curbs and the Expansion Joint Modification-Strip Seal is located on the sidewalk.

SITE	BRIDGE NO.	LOCATION OR BRIDGE NAME	TYPE OF REPAIR	TYPE OF TRAFFIC CONTROL	QUANTITIES			REMARKS
					EXPANSION JOINT MODIFICATION STRIP SEAL (LF)	MODIFIED JOINT SEAL		
						NOSING CONCRETE CU.FT.	SILICONE SEALANT (LF)	
1	94-258.055	281 Interchange	Modified Joint Seal	Type P D-704-23	13	26.5	95	*North Abutment
2	94-259.847 L	James River	Strip Seal	D-704-35	49			All Strip Seals
3	94-259.847 R	James River	Strip Seal	D-704-35	49			All Strip Seals
TOTAL					111	26.5	95	



EXISTING

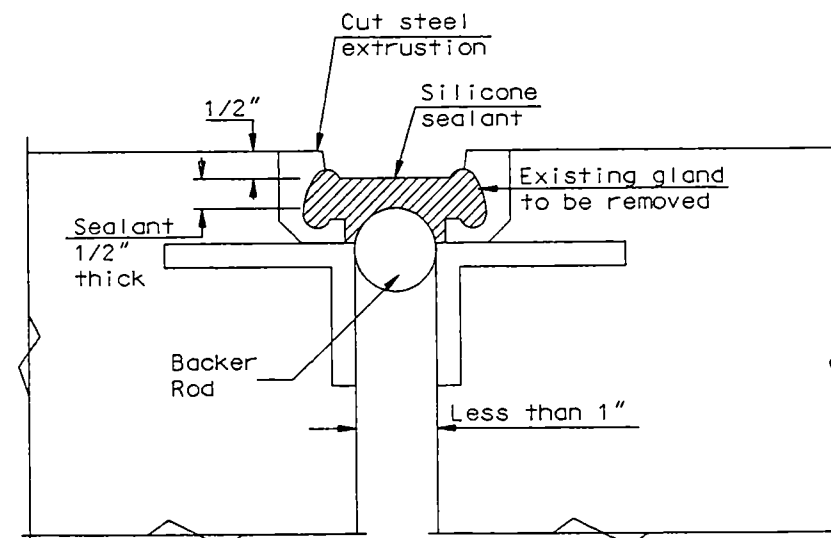
930 EXPANSION JOINT MODIFICATION: The neoprene gland shall be removed or cut flush with the extrusion. If, at the time of installation, the gap is less than 1", the lips of the steel extrusion shall be cut off and the entire gland shall be removed. The surfaces that will come in contact with the silicone sealant will be cleaned by sand blasting. The surfaces will then have a zinc-based primer applied. The Contractor shall use primer for galvanized steel that is recommended by the silicone sealant manufacturer. The backer rod and silicone sealant will be installed according to the manufacturer's recommendation. The silicone sealant shall be a rapid cure, self leveling, cold applied, two component silicone sealant that will bond to and be compatible with the properly prepared steel. All materials, labor and equipment necessary to remove or cut the gland, prepare the surfaces and install the silicone sealant and backer rod shall be included in the bid item "Expansion Joint Modification-Strip Seal".



MODIFIED

STRIP SEAL JOINT MODIFICATION
(If opening is 1" to 3")

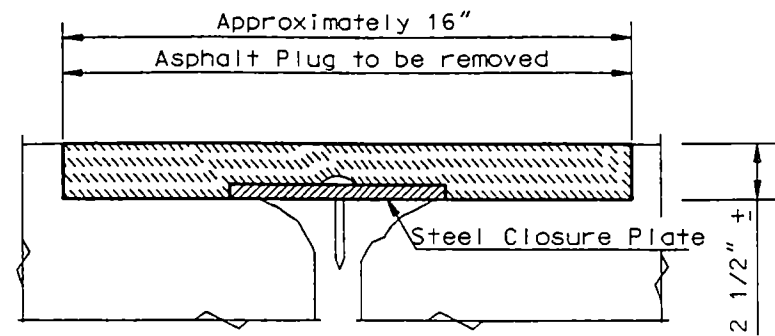
* If gland is removed the channel shall be filled with sealant



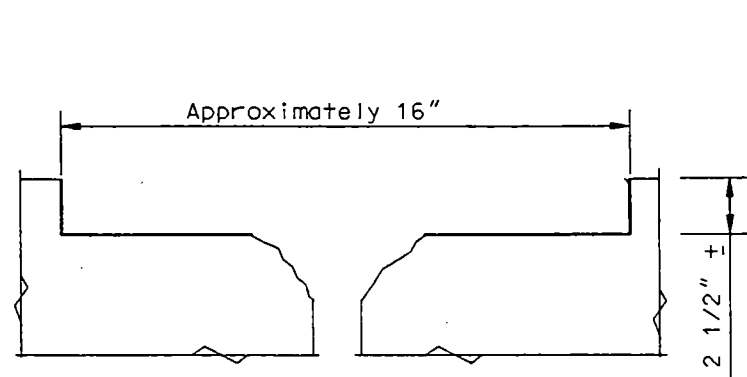
MODIFIED

STRIP SEAL JOINT MODIFICATION
(If opening is less than 1")

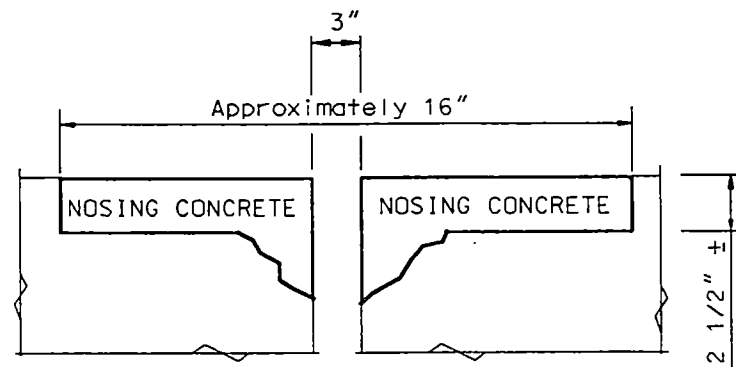
EXPANSION JOINT
MODIFICATION
STRIP SEAL



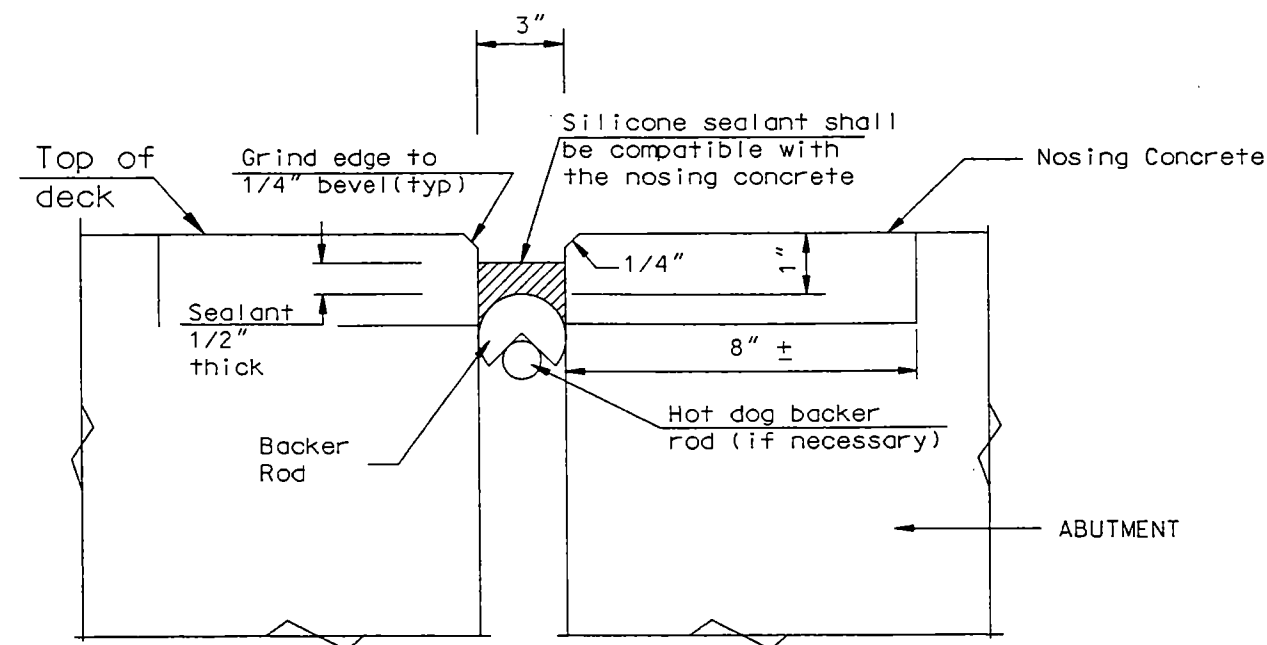
EXISTING



STAGE 1



STAGE 2



MODIFIED JOINT SEAL MODIFICATION

STAGE 3

930 NOSING CONCRETE: The nosing concrete material shall be an elastomeric concrete or a polymeric concrete that will provide a durable edge that can withstand live-load traffic without chipping or spalling. The nosing concrete material shall be SILSPEC 900 PNS, manufactured by Silicone Specialties Inc.; WABOCRETE II, manufactured by Watson Bowman Acme; ELASTOMERIC CONCRETE, manufactured by D.S. Brown Company or an approved equal. The nosing concrete shall be mixed and installed according to the manufacturer's recommendation. All labor and materials required to install the nosing concrete shall be included in the bid item "Nosing Concrete".

930 SILICONE: The silicone sealant shall be a rapid cure, self leveling, cold applied, two component silicone sealant that will bond to and be compatible to the nosing concrete used. The sealant shall be installed according to the manufacturer's recommendations. The silicone sealant and the nosing concrete must be supplied by the same manufacturer as a complete system. The backer rod and any necessary bonding materials shall be included in the bid item "Silicone Sealant".

930 TECHNICAL ASSISTANCE: The Contractor shall acquire technical assistance from the manufacturer of the nosing concrete and the silicone sealant for the surface preparation and installation of the nosing concrete and silicone sealant. A technical representative must be present for the start of surface preparation and installation for at least one day. The Contractor shall contact the manufacturer at least two weeks prior to the installation. The technical assistance shall be provided at no additional cost to the Department.

ABUTMENT - BRIDGE DECK JOINT

STAGE 1:

1. Remove asphalt plug and closure plate at the end of deck and abutment to allow for nosing concrete.

STAGE 2:

2. Place nosing concrete in the blackout areas, allowing for a 3" gap over the joint.

STAGE 3:

3. After the nosing concrete has cured, grind the 1/2" bevel edge. Clean and prepare the joint. Apply any necessary bonding material. Install the backer rod and the silicone sealant.

MODIFIED JOINT SEAL MODIFICATION

DESIGN DATA				
Traffic	Average Daily			Est. Max. Hr.
Current 1995	Pass:2690	Trucks:850	Total:3540	350
Forecast 2015	Pass:4035	Trucks:1275	Total:5310	530
Minimum Sight Dist. for:		Design Speed 70 MPH		
Stopping 600'		Bridges		
Full Control of Access				
No Point of Access Other Than at Interchange Ramps				

JOB# 18

EHWY REGION	STATE	PROJECT NO.	SHEET NO.
8	ND	IM-2-094(007)256	1

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT NO IM-2-094(007)256
IN STUTSMAN COUNTY
Recycled PCC Pavement & Incidentals
(N Roadway)

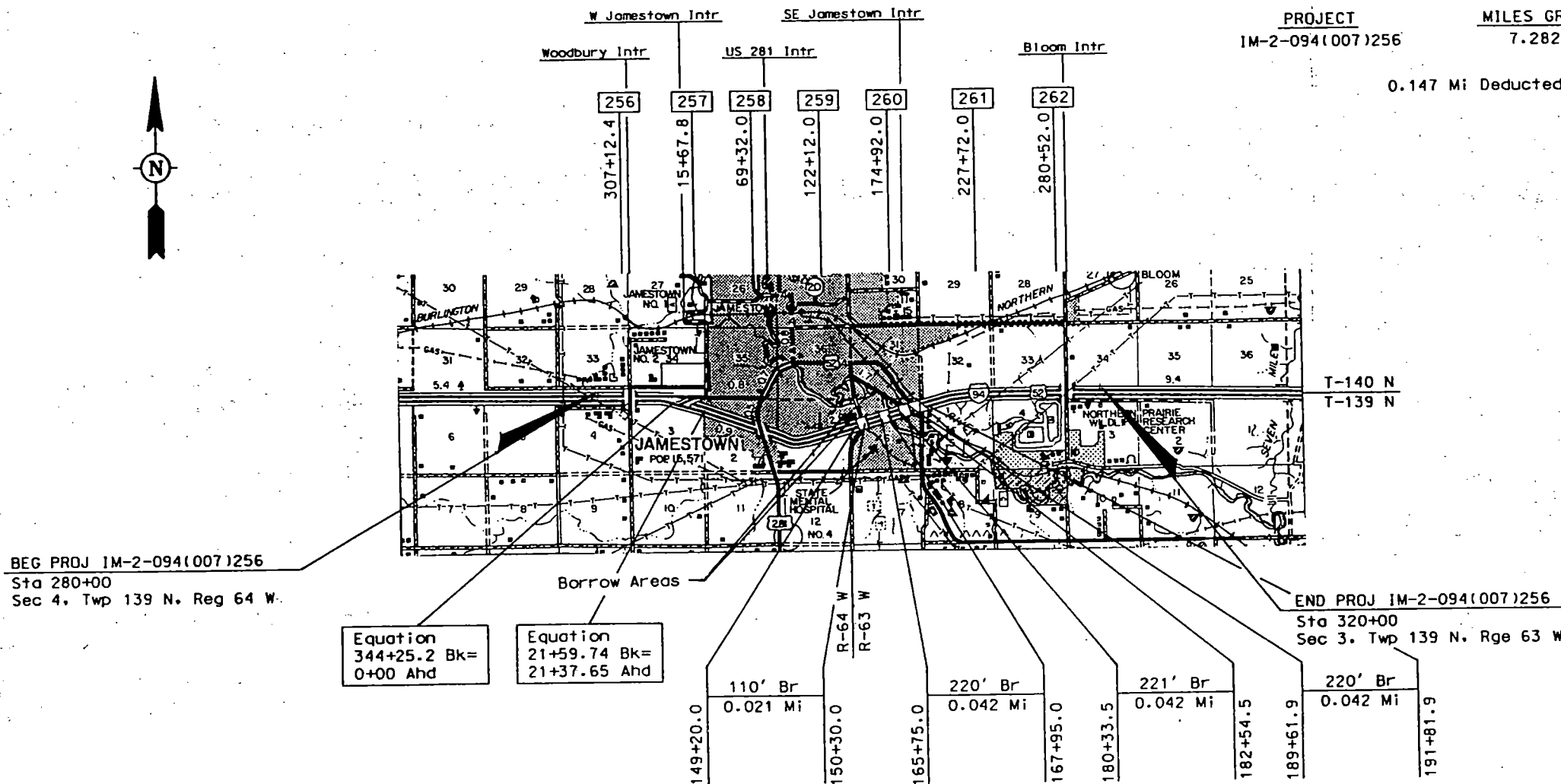
GOVERNING SPECIFICATIONS:

Standard Specifications adopted by the North Dakota Department of Transportation September 1992: Standard Drawings currently in effect; and other Contract Provisions submitted herein.

LENGTH OF PROJECT

PROJECT	MILES GROSS	MILES NET
IM-2-094(007)256	7.282	7.135

0.147 Mi Deducted for Structures



BEG PROJ IM-2-094(007)256
Sta 280+00
Sec 4, Twp 139 N, Rge 64 W

END PROJ IM-2-094(007)256
Sta 320+00
Sec 3, Twp 139 N, Rge 63 W

Equation
344+25.2 Bk=
0+00 Ahd

Equation
21+59.74 Bk=
21+37.65 Ahd

149+20.0
110' Br
0.021 Mi

150+30.0
R-64 W
R-63 W

165+75.0
220' Br
0.042 Mi

167+95.0
180+33.5
221' Br
0.042 Mi

182+54.5
189+61.9
220' Br
0.042 Mi

191+81.9

PAVING SECTION	<i>Brian Pein</i>
URBAN SECTION	
TRAFFIC SECTION	<i>Dave Ellsper</i>
RURAL SECTION	
RECOMMEND APPROVAL	<i>1-10, 1997</i>
DESIGN ENGINEER	<i>Kathleen</i>

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR _____ DATE _____

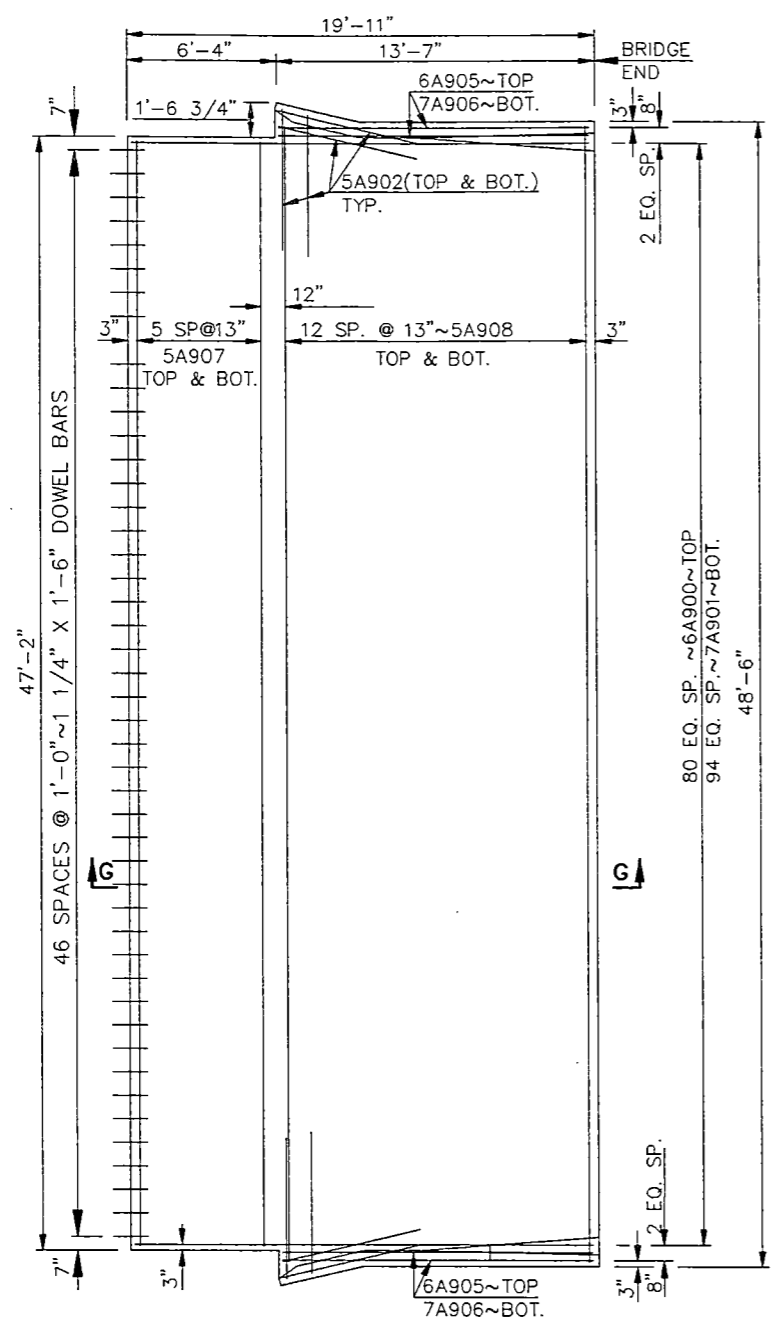
APPROVED DATE *1-10-97*

Ray Zink

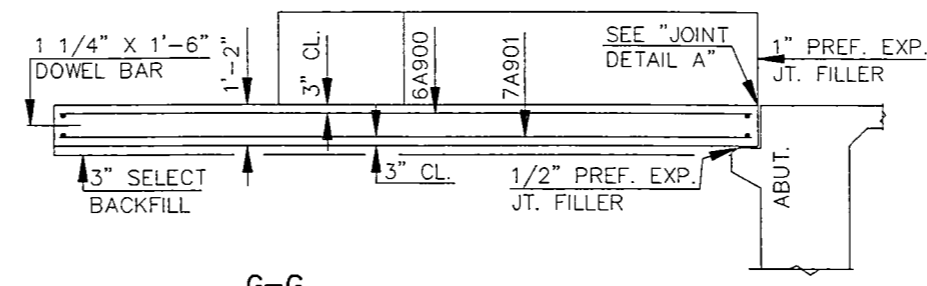
DIRECTOR OF HIGHWAYS
AND ENGINEERING

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION



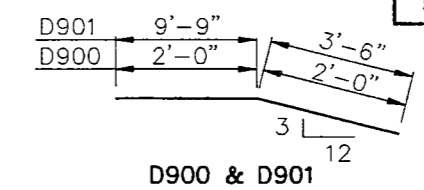


PLAN

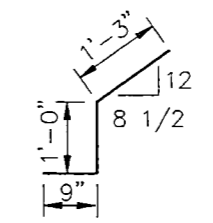


G-G

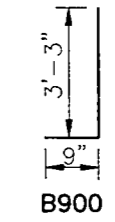
SEE DWG. NO. 94-259.847L-2 FOR "JOINT DETAIL A"



D900 & D901



XT900
FIELD BEND
TO FIT



B900

WIDTH = 46'-0" CLR RDWY
SKEW ANGLE = 0°

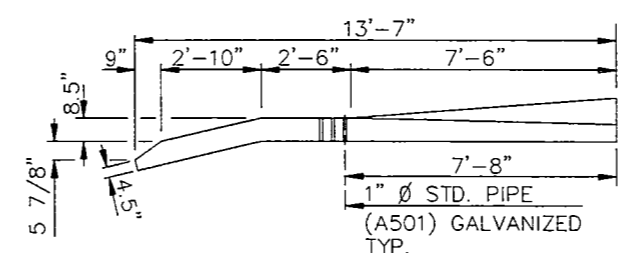
BAR LIST - ONE SLAB

SIZE	MARK	NO.	LENGTH
6	A900	81	19'-7"
7	A901	95	19'-7"
5	A902	16	6'-0"
4	XA903	2	7'-6"
6	A905	4	13'-3"
7	A906	4	13'-3"
5	A907	12	46'-10"
5	A908	26	48'-2"
4	B900	112	4'-0"
4	XT900	18	3'-0"
4	D900	4	4'-0"
4	D901	12	13'-3"

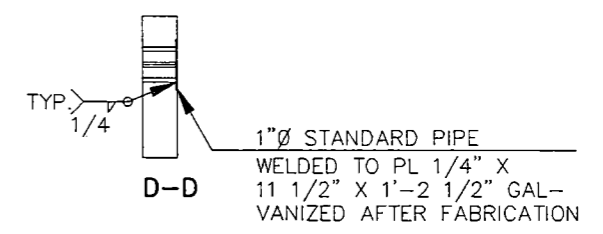
ESTIMATED MATERIAL QUANTITIES

REINFORCING STEEL LB	CONCRETE CY
8,828	43.4

X = EPOXY COATED BAR
SEE DWG. 94-259.847L-2 FOR NOTES.



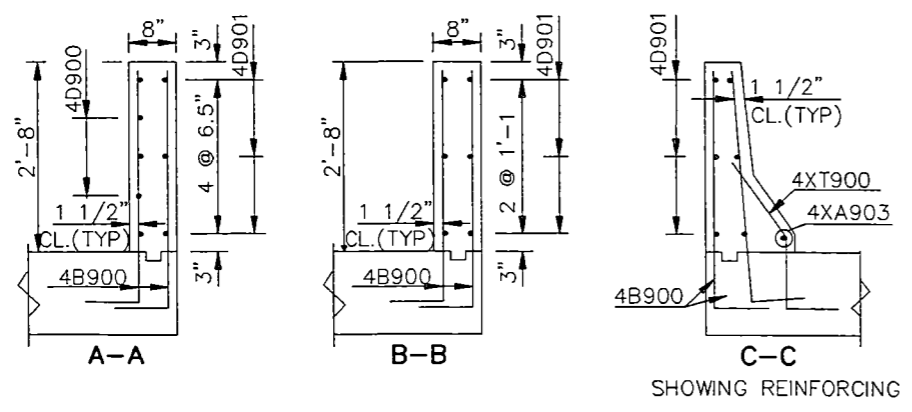
PLAN



D-D

1" Ø STANDARD PIPE
WELDED TO PL 1/4" X
11 1/2" X 1'-2 1/2" GAL-
VANIZED AFTER FABRICATION

CONNECTION PLATE ASSEMBLY

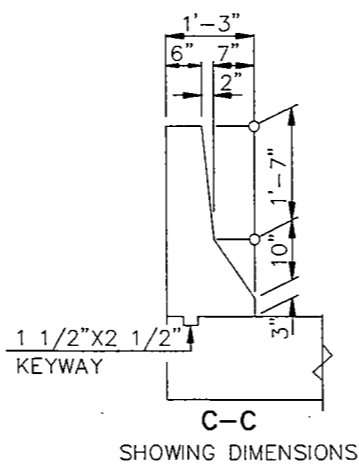


A-A

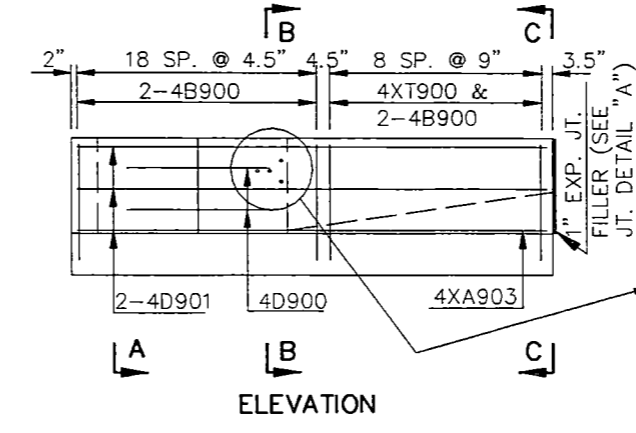
B-B

C-C

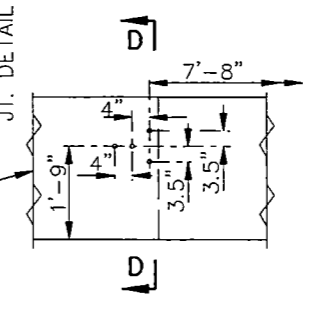
SHOWING REINFORCING



SHOWING DIMENSIONS



ELEVATION



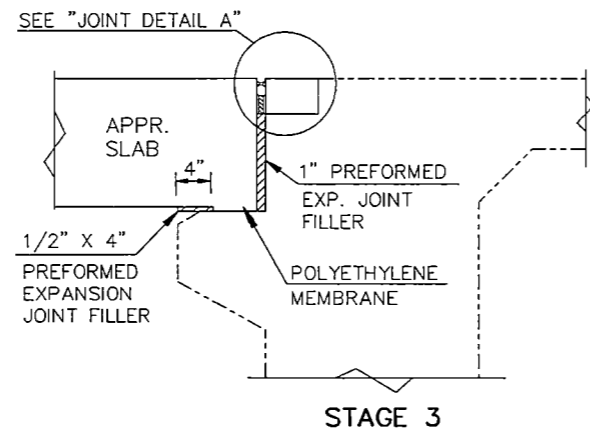
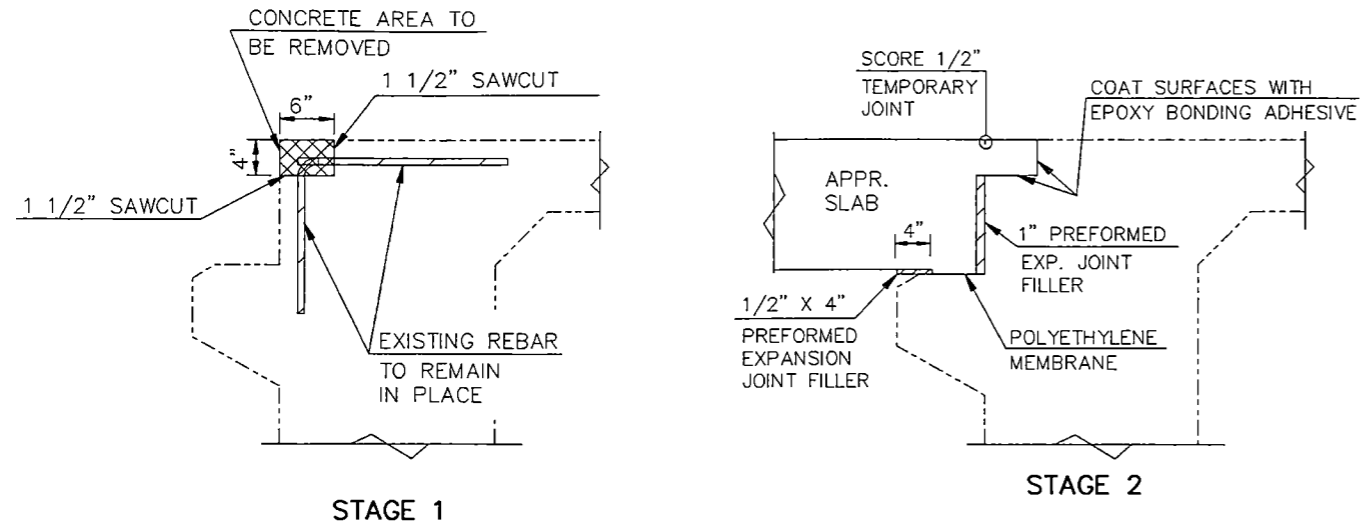
D-D

QUANTITIES (ONE SLAB)

APPROACH SLAB	106.8	SY
SELECT BACKFILL	16.7	TON

JAMES RIVER
EAST APPROACH SLAB
ENTRANCE END

EAST APPROACH SLAB - BRIDGE DECK JOINT



- STAGE 1:**
1. SAW 1 1/2" DEEP CUTS ALONG THE TOTAL WIDTH OF THE DECK OR AS CLOSE TO THE CURB AS POSSIBLE.
 2. REMOVE THE CONCRETE FROM THE DECK APPROXIMATELY 4" DEEP AND 6" ACROSS FROM CURB LINE TO CURB LINE WITHOUT DAMAGING THE REINFORCING STEEL.
- STAGE 2:**
3. AFTER PLACING 1" THICK PREFORMED EXPANSION JOINT FILLER AGAINST THE EDGE OF THE DECK. PLACE THE NEW APPROACH SLAB CONCRETE INCLUDING THE 4" X 6" AREA OF THE DECK. IMMEDIATELY BEFORE PLACING CONCRETE IN THE 4" X 6" AREA, COAT THE SURFACES OF THE DECK WITH A EPOXY BONDING ADHESIVE. THIS ADHESIVE SHALL MEET THE REQUIREMENTS OF AASHTO M-235 TYPE 2, GRADE 2 AND THE APPROPRIATE CLASS DEPENDING ON THE TEMPERATURE OF THE DECK CONCRETE AT THE TIME OF APPLICATION.
- STAGE 3:**
4. AFTER THE CONCRETE HAS SET SAW CUT A 1" WIDE BY 4" DEEP JOINT OUT OF CONCRETE BETWEEN THE APPROACH SLAB AND THE NEW BRIDGE DECK END. THE JOINT SHOULD BE CENTERED OVER THE PREFORMED EXPANSION JOINT FILLER.
 5. CLEAN THE JOINT AND INSTALL THE 2" SPACER, THE BACKER ROD AND THE SILICONE SEALANT ACCORDING TO SECTION 550.04 M.3 OF THE STANDARD SPECS.

GENERAL:
WHEN SAW CUTTING CANNOT EXTEND ALONG THE TOTAL WIDTH OF THE DECK, THE AREA FROM WHERE THE SAW CUT ENDS AND THE SIDE EDGES OF THE DECK SHALL BE FORMED WITH 1" THICK PREFORMED JOINT FILLER AND FINISHED WITH BACKER ROD AND SILICONE SEALANT.

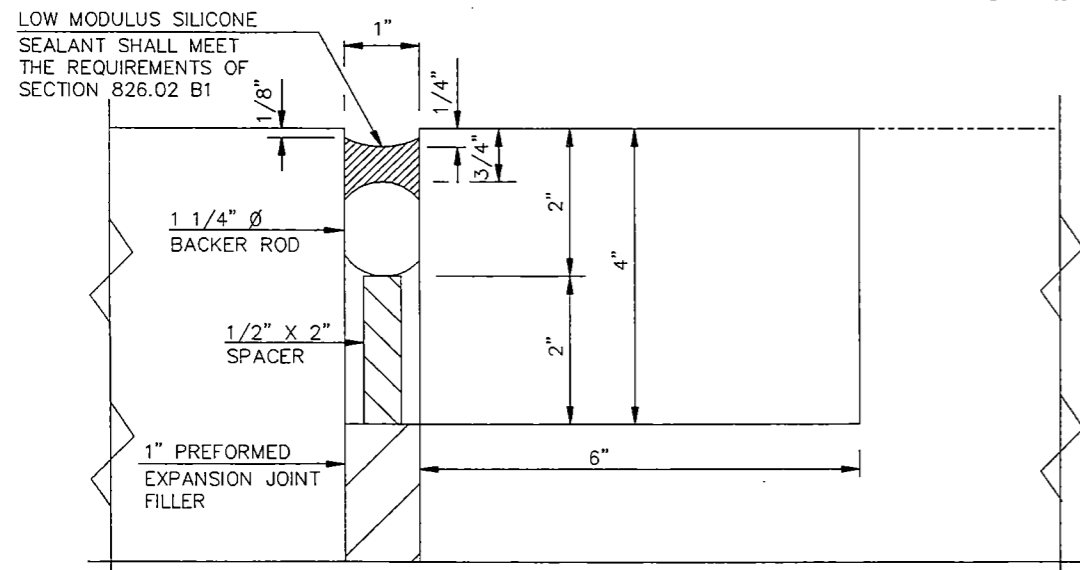
NOTES:
THE ESTIMATED MATERIAL QUANTITIES SHOWN ON DRAWING NO. 94-259.847L-1 ARE FOR INFORMATIONAL PURPOSES ONLY. ALL MATERIALS, INCLUDING CONCRETE, REINFORCING BARS, DOWEL BARS, BACKER ROD, SILICONE SEALANT, POLYETHYLENE MEMBRANE, SAW CUTTING, CONNECTION PLATE ASSEMBLY, PREFORMED JOINT FILLER AND LABOR REQUIRED TO BUILD THE APPROACH SLAB SHALL BE INCIDENTAL TO THE PAY ITEM "CONCRETE BRIDGE APPROACH SLAB (REMOVE & REPLACE)".

THE CONCRETE SHALL BE CLASS AE-3 AND THE REINFORCING STEEL SHALL BE GRADE 60.

THE POLYETHYLENE MEMBRANE SHALL MEET THE REQUIREMENTS OF AASHTO M171.

SURFACE FINISH "D" SHALL BE REQUIRED FOR ALL SURFACES OF THE CURB TRANSITIONS.

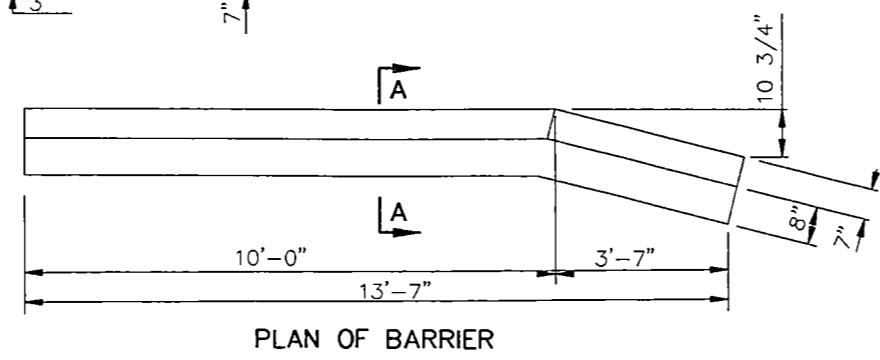
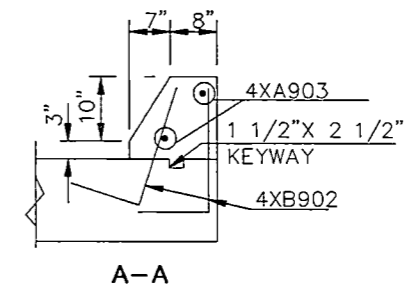
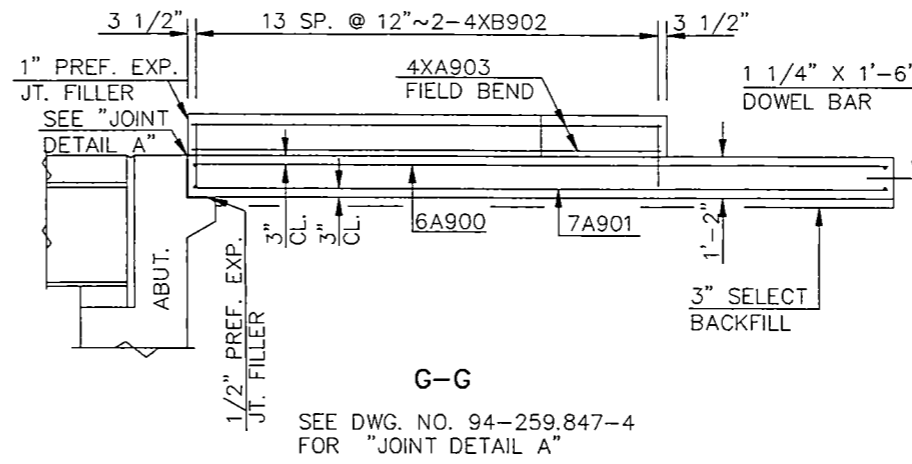
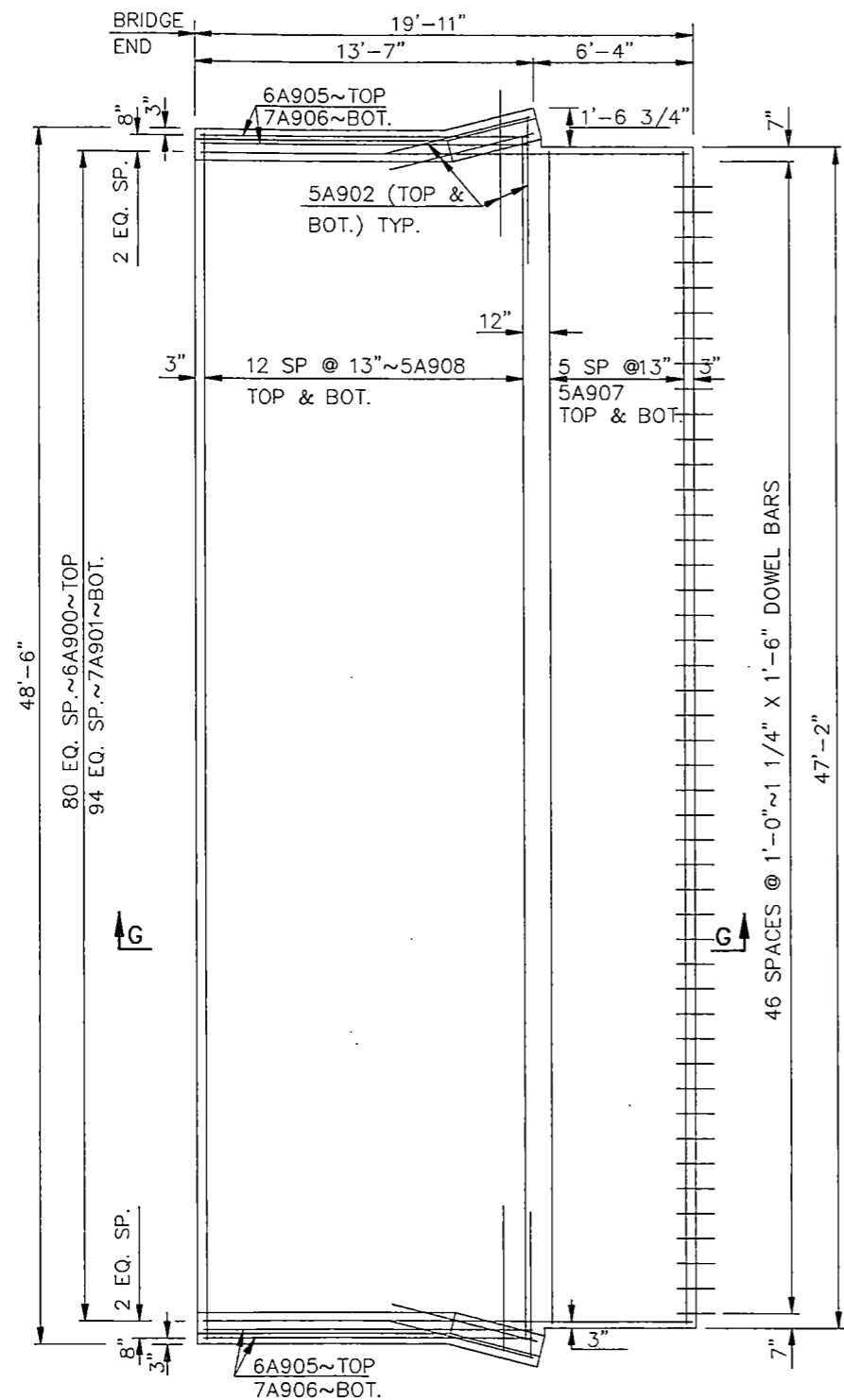
ALL DOWEL BARS SHALL BE EPOXY COATED AND CONFORM TO AASHTO M-254 TYPE B. FREE ENDS OF THE DOWEL BARS SHALL BE GIVEN A THIN UNIFORM COATING OF GREASE. THIS COATING SHALL BE APPLIED WITHIN TWO HOURS BEFORE COVERING WITH CONCRETE.



JOINT DETAIL A

JAMES RIVER

**EAST APPROACH SLAB
JOINT DETAIL**



WIDTH = 46'-0" CLR RDWY
 SKEW ANGLE = 0°

BAR LIST - ONE SLAB

SIZE	MARK	NO.	LENGTH
6	A900	81	19'-7"
7	A901	95	19'-7"
5	A902	16	6'-0"
4	XA903	4	13'-2"
6	A905	4	13'-3"
7	A906	4	13'-3"
5	A907	12	46'-10"
5	A908	26	48'-2"
4	XB902	56	2'-9"

ESTIMATED MATERIAL QUANTITIES

REINFORCING STEEL LB	CONCRETE CY
8,504	42.7

SEE DWG. 94-259.847L-4 FOR NOTES.

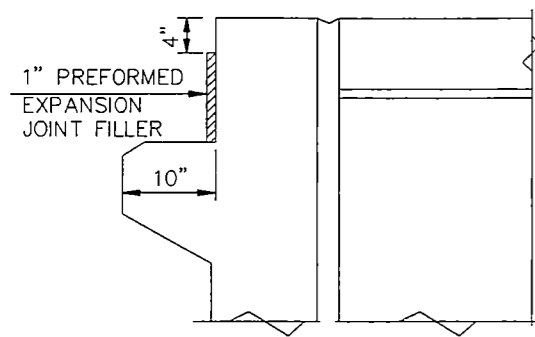
QUANTITIES (ONE SLAB)

ITEM	QUANTITY	UNIT
APPROACH SLAB	106.8	SY
SELECT BACKFILL	16.7	TON

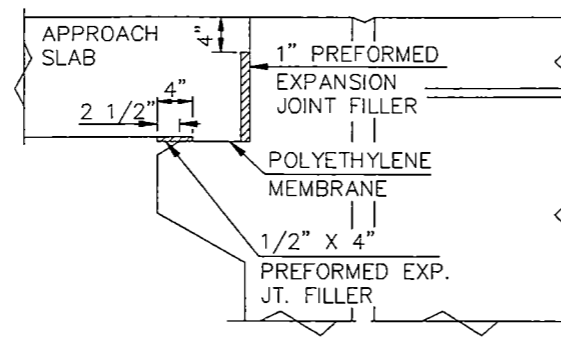
JAMES RIVER
 WEST APPROACH SLAB
 EXIT END

FHWA REGION	STATE	FEDERAL AID PROJECT NUMBER	SHEET NO.
8	ND	IM-2-094(007)256	242

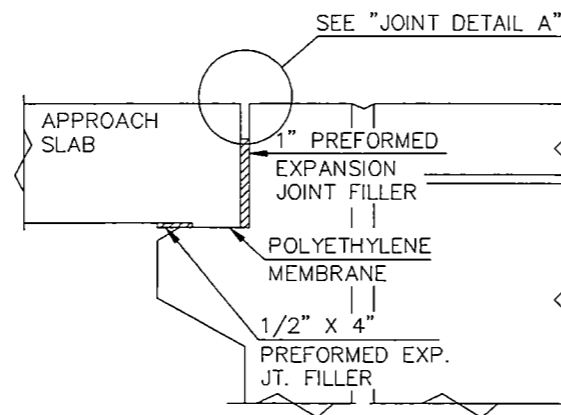
WEST APPROACH SLAB - BRIDGE DECK JOINT



STAGE 1



STAGE 2



STAGE 3

- STAGE 1:
1. 1" THICK PREFORMED EXPANSION JOINT FILLER TO BE INSTALLED PRIOR TO APPROACH SLAB PLACEMENT.
- STAGE 2:
3. AFTER PLACING THE 1/2" X 4" PREFORMED EXPANSION JOINT FILLER AND THE POLYETHYLENE MEMBRANE PLACE THE NEW APPROACH SLAB CONCRETE.
- STAGE 3:
4. AFTER THE CONCRETE HAS SET SAW CUT A 1" WIDE BY 4" DEEP JOINT OUT OF THE CONCRETE BETWEEN THE APPROACH SLAB AND THE ABUTMENT WALL. THE JOINT SHOULD BE CENTERED OVER THE PREFORMED EXPANSION JOINT FILLER.
 5. CLEAN THE JOINT AND INSTALL THE 1/2" X 2" SPACER, THE BACKER ROD AND THE SILICONE SEALANT ACCORDING TO SECTION 550.04 M.3 OF THE STANDARD SPECS.

GENERAL:
 WHEN SAW CUTTING CANNOT EXTEND ALONG THE TOTAL WIDTH OF THE DECK, THE AREA FROM WHERE THE SAW CUT ENDS AND THE SIDE EDGES OF THE DECK SHALL BE FORMED WITH 1" THICK PREFORMED JOINT FILLER AND FINISHED WITH BACKER ROD AND SILICONE SEALANT.

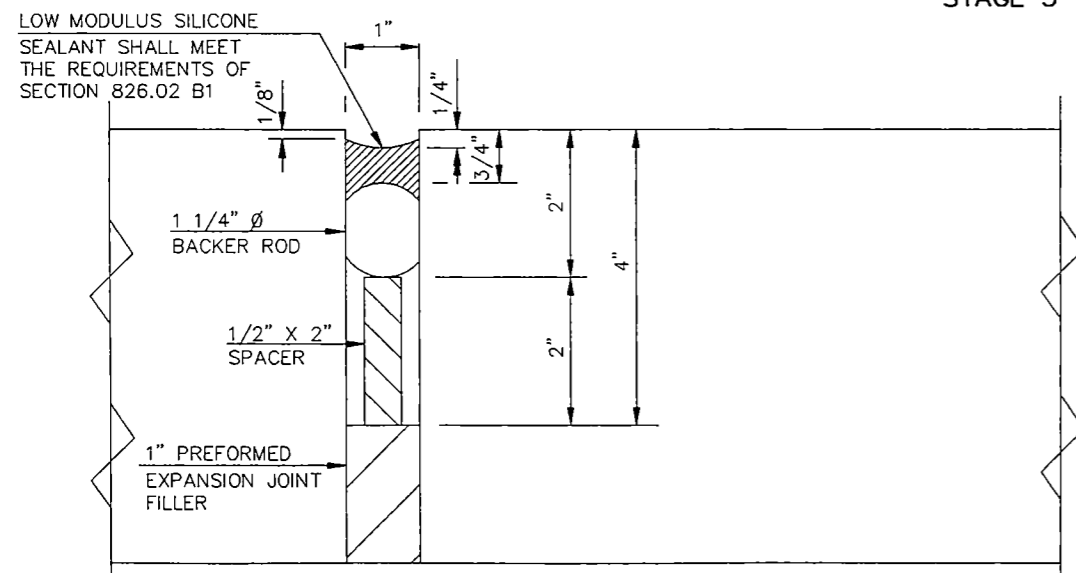
NOTES:
 THE ESTIMATED MATERIAL QUANTITIES SHOWN ON DRAWING NO. 94-295.847L-3 ARE FOR INFORMATIONAL PURPOSES ONLY. ALL MATERIALS, INCLUDING CONCRETE, REINFORCING BARS, DOWEL BARS, BACKER ROD, SILICONE SEALANT, POLYETHYLENE MEMBRANE, SAW CUTTING, PREFORMED JOINT FILLER AND LABOR REQUIRED TO BUILD THE APPROACH SLAB SHALL BE INCIDENTAL TO THE PAY ITEM "CONCRETE BRIDGE APPROACH SLAB (REMOVE & REPLACE)".

THE CONCRETE SHALL BE CLASS AE-3 AND THE REINFORCING STEEL SHALL BE GRADE 60.

THE POLYETHYLENE MEMBRANE SHALL MEET THE REQUIREMENTS OF AASHTO M171.

SURFACE FINISH "D" SHALL BE REQUIRED FOR ALL SURFACES OF THE CURB TRANSITIONS.

ALL DOWEL BARS SHALL BE EPOXY COATED AND CONFORM TO AASHTO M-254 TYPE B. FREE ENDS OF THE DOWEL BARS SHALL BE GIVEN A THIN UNIFORM COATING OF GREASE. THIS COATING SHALL BE APPLIED WITHIN TWO HOURS BEFORE COVERING WITH CONCRETE.



JOINT DETAIL A

JAMES RIVER
 WEST APPROACH SLAB
 JOINT DETAIL

DESIGN DATA

Traffic	Average Daily					Est. 30th
						Max. Hr.
Current (1990)	2250	Pass. 500	Trucks 2750	Total	350	
Forecast (2010)	2850	Pass. 850	Trucks 3700	Total	425	
Design Speed						70 MPH
Traffic Classification						"M"
Minimum Sight Distance (Stopping)						600'

Bridges James River HS20
Burlington Northern HS25

**NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

IN STUTSMAN COUNTY
FEDERAL AID PROJECT IR-94-7(038)259 CONTRACT 2
STRUCTURAL, GRADING, & SURFACING

JOB# 3

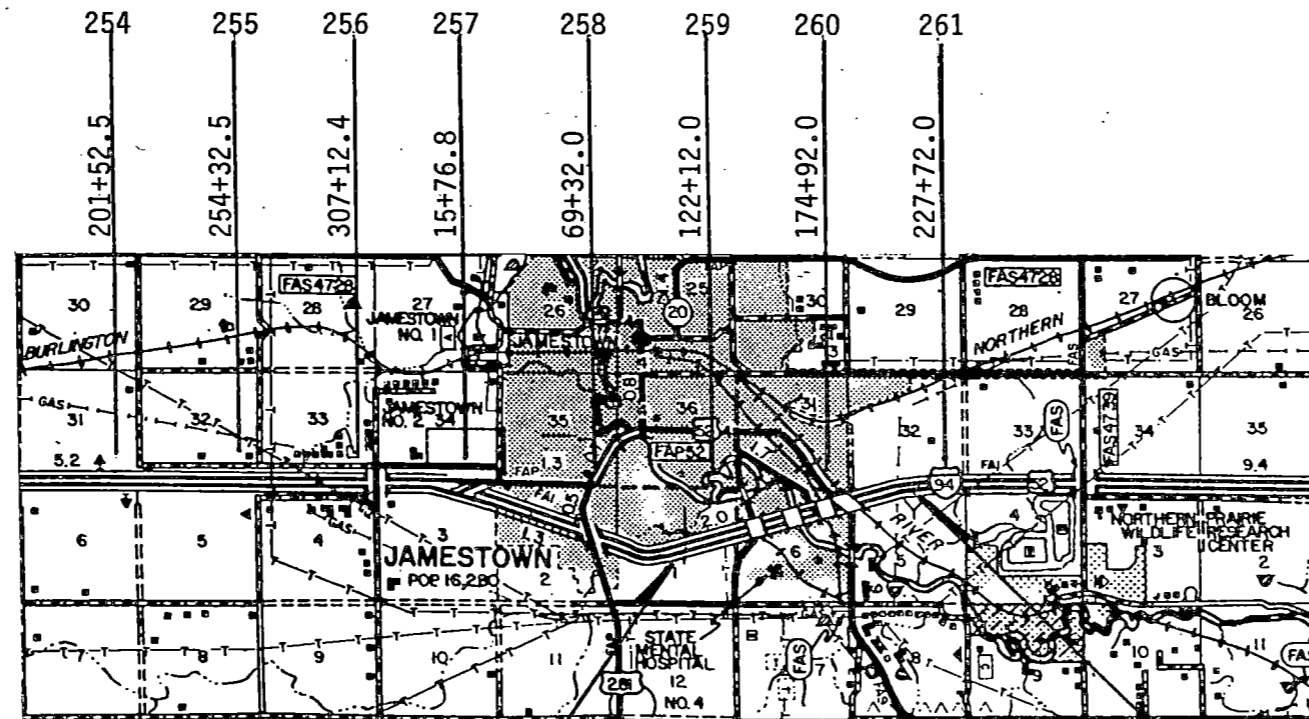
FHWA REGION	STATE	PROJECT	SHEET NO.
8	N.D.	IR-094-7(038)259	1

GOVERNING SPECIFICATIONS:

Standard Specifications for Road and Bridge Construction, adopted by the North Dakota State Highway Department, November 1986, shall apply to all North Dakota Department of Transportation contracts, standard drawings currently in effect, and other contract provisions submitted herein.

LENGTH OF PROJECT

<u>Project</u>	<u>Miles-Gross</u>	<u>Miles-Net</u>
IR-94-7(038)259	1.685	1.685



T-140N
T-139N

BEG. PROJECT IR-94-7(038)259
STA. 116+00

R-64W
R-63W

END PROJECT IR-94-7(038)259
STA. 205+00

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED _____

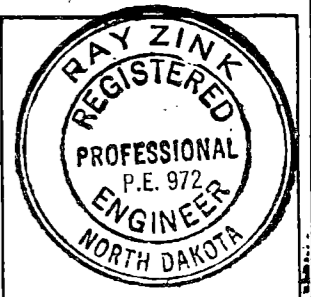
DIVISION ADMINISTRATOR _____ DATE _____

APPROVED DATE 8/31/90

Ray Zink

DIRECTOR OF HIGHWAYS
AND ENGINEERING

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION



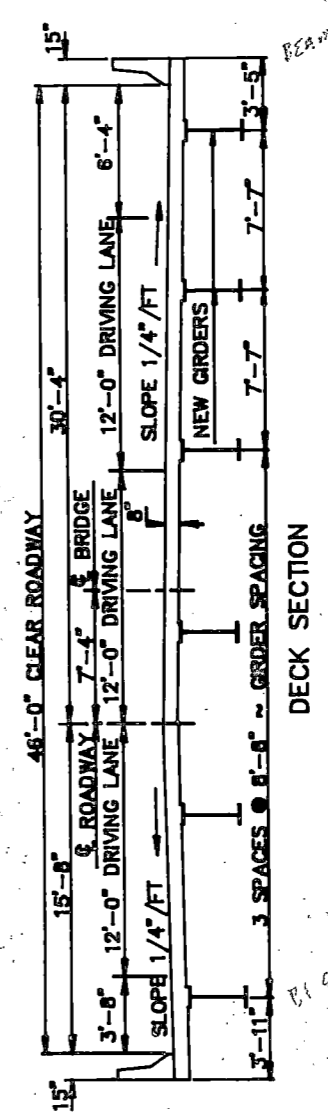
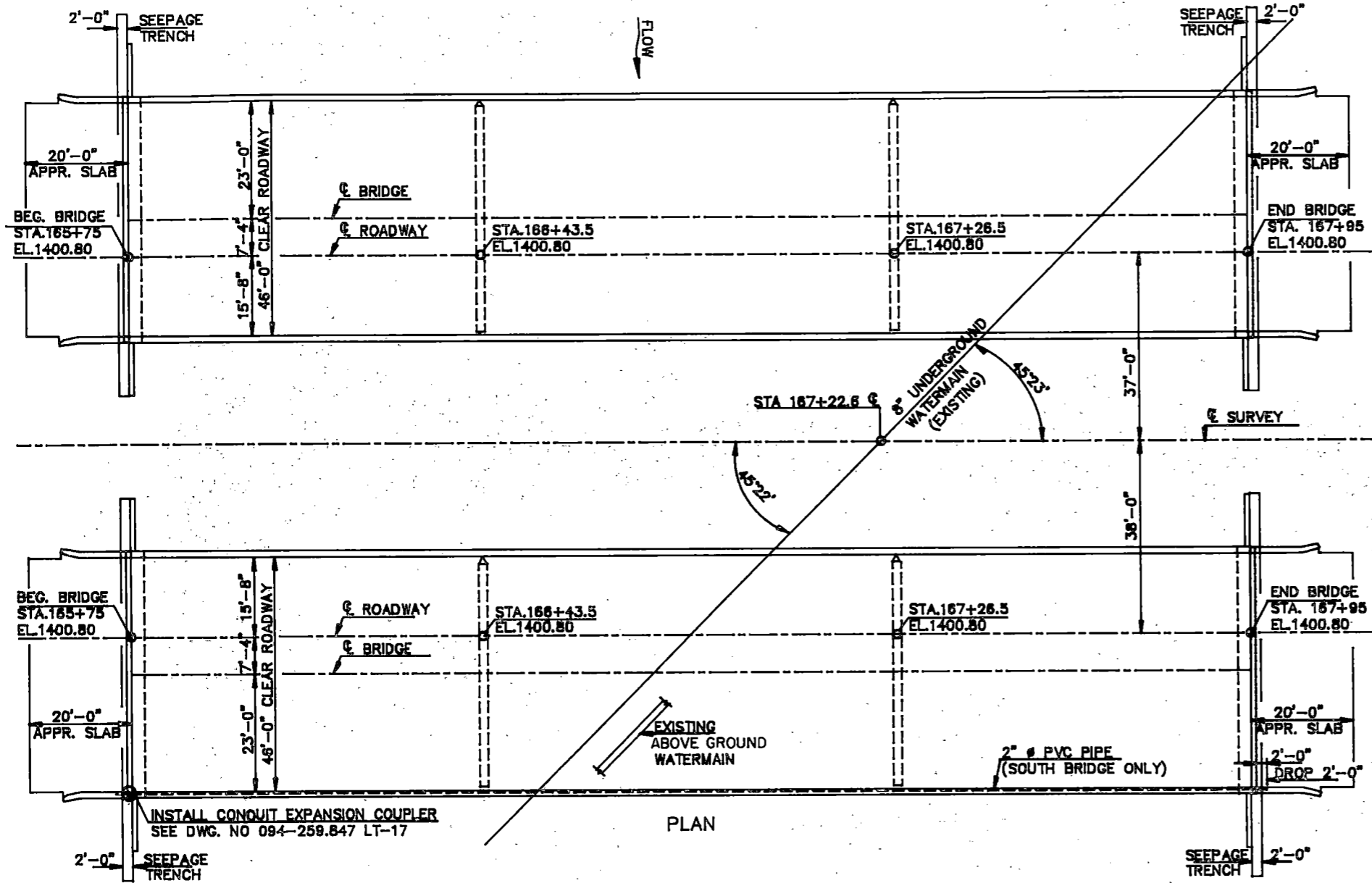
SYMBOLS

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	
WATER'S EDGE		OVERHEAD SIGNS	
MARSH OR SWAMP		HYDRANT	
WRAP		LIGHT STANDARDS	
DRAINAGE DITCH		TRAFFIC SIGNALS (Plan & Profile Sheets)	
APPROACH		HIGH MAST LIGHTING ASSEMBLY	
TRAVELED HWY		GROUND ELEVATION	
RAILROADS		GRADE	
GUARD RAIL		CENTERLINE	
BUDE POSTS		SECTION LINE	
DELINEATORS		DEFLECTION ANGLE (Delta)	
HEDGES AND TREES		50D 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	

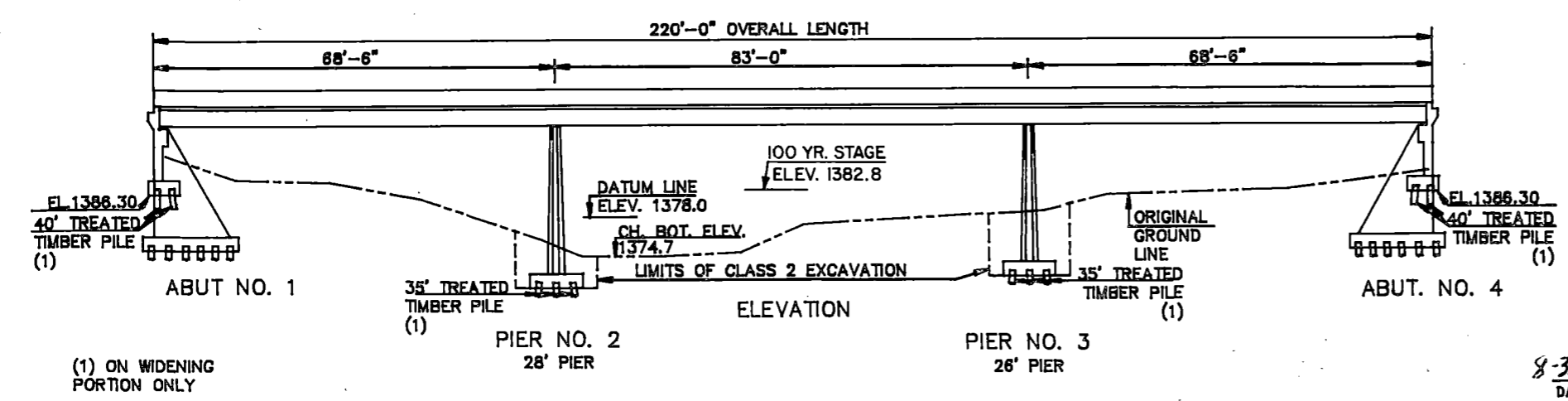
ABBREVIATIONS

Aggr	Aggregate	M L	Main Line
Ahd	Ahead	N R	North Roadway
Alt	Alternate	Off Loc	Office Location
Approx	Approximate or Approximately	O to O	Out to Out
Appr	Approach	P & 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
Bk	Bituminous or Bitumen	P C C Pmt	Portland Cement Concrete Pavement
Bk	Back	P D	Private Drive
B M	Bench Mark	Pen	Penetration
Blgd.	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 C	Point of Reverse Curvature
Ch Bk	Channel Block	Prf	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
C M S	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. Rein Conc	Continuously Reinforced Concrete	Rd	Road
Pmt	Pavement	Rdbd	Reedbed
Contn	Continuation	Rdwy	Roadway
Crn	Crown	Refi	ReflectORIZED
CRS	Cationic Rapid Setting	R R	Railroad
Crse	Course	Rt	Right
C S.	Cure 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	S C	Spiral to Curve
D-Load	Dead Load	SC	Slow Curing
D.B.	Ditch Block	Sd	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	Shldr	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. Specs	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 Tap	Township
Intchg	Interchange	Tel	Telephone
I M	Iron Monument	Temp	Temporary
Inst	Install	T P	Telephone Pole
Inter	Intersection	Tr	Traffic
Invt	Invert	Trans	Transverse or Transition
Jt	Joint	Trtd	Treated
L	Length of Curve	Ts	Tangent Length (curve with spirals)
Lc	Length of Spiral	T S	Tangent to Spiral
Levg	Leveling	U S C & G S	United States Coast and Geodetic Survey
L F	Linear or Lineal Foot	V C	Vertical Curve
Liq	Liquid	V C P	Vitrified Clay Pipe
Long	Longitudinal	W M	Water Main
L P	Light Pole	W M V	Water Main Valve
Lt	Left	W R	West Roadway
"M"	One Thousand	Wring	Wearing
Matl	Material	W S V	Water Service Valve
Max	Maximum	X-Sc	Cross Section
MC	Medium Curing	Xc	Spiral Coordinate
M H	Manhole	Yc	Spiral Coordinate
Min	Minimum		

BRIDGE CODE	FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
X-077	8	N.D.	IR-094-7(038)259	80



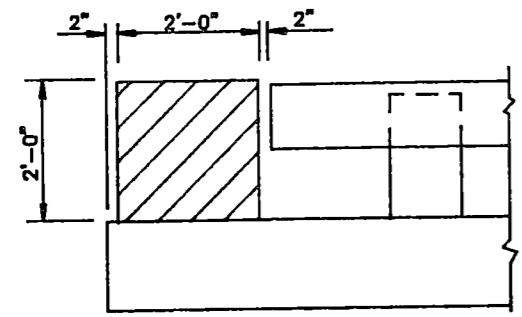
NOTE: THIS PROJECT CONSISTS OF THE STRUCTURES ON BOTH ROADWAYS. BOTH STRUCTURES ARE SHOWN ON THIS LAYOUT DRAWING. ONLY THE WESTBOUND STRUCTURE IS SHOWN IN THE REMAINING PLAN DRAWINGS. THE EASTBOUND STRUCTURE IS SIMILAR TO THE WESTBOUND STRUCTURE ROTATED BY 180°. THE ESTIMATE OF QUANTITIES SHOWN ON DRWG. NO. 094-259.847 LT-4 IS FOR BOTH STRUCTURES.



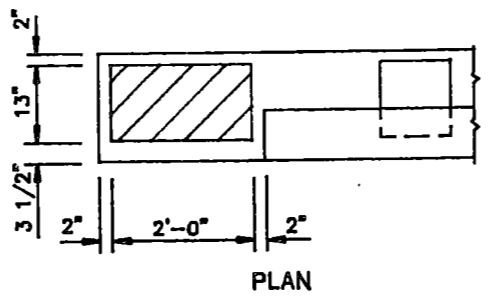
8-30-90 DATE *Forrest D. Dierow* BRIDGE ENGINEER

DESIGN LOADING	F.W.S.
HS20	15 P.S.F.
JAMES RIVER AT JAMESTOWN BRIDGE LAYOUT 46'-0" CLEAR ROADWAY	

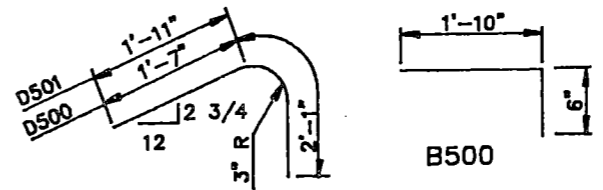
BAR LIST (ONE POST)				
SIZE	MARK	NO.	LENGTH	SHAPE
4	A500	2	1'-10"	STR.
4	B500	2	2'-4"	BENT
4	D500	1	3'-8"	BENT
4	D501	1	4'-0"	BENT



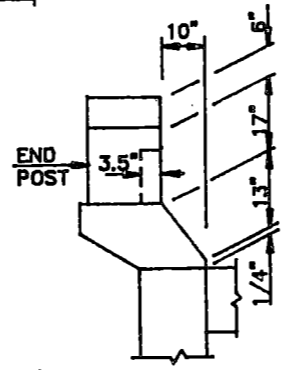
ELEVATION
SHOWING END POST REMOVAL LIMITS



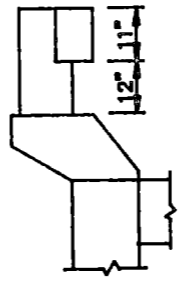
PLAN



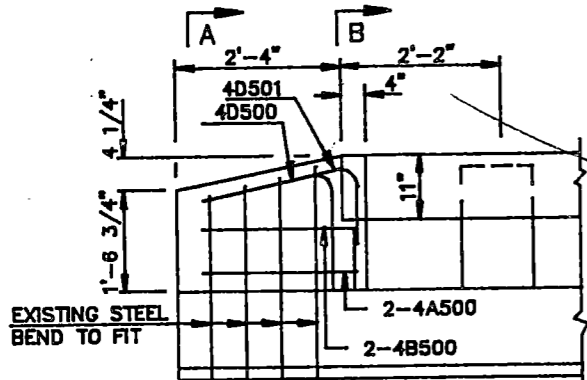
D500 & D501
BENT BAR DETAILS
DIMENSIONS SHOWN ARE OUT TO OUT



A-A

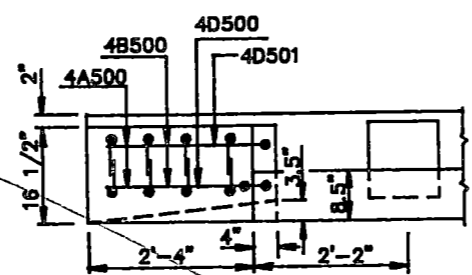


B-B

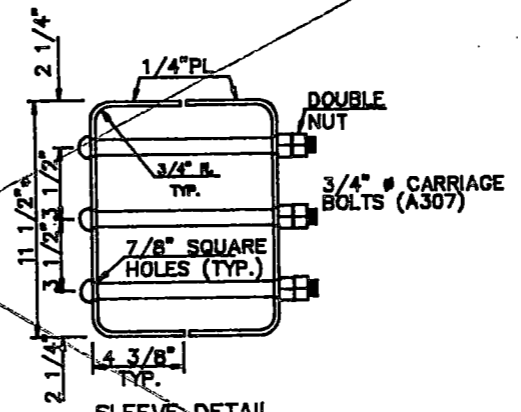


ELEVATION

NEW END POST



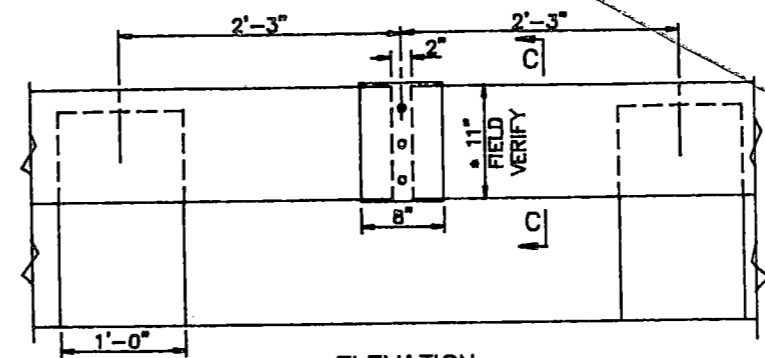
PLAN



SLEEVE DETAIL
C-C

NOTE:
PL'S BOLTS AND NUTS SHALL BE GALVANIZED
IN ACCORDANCE WITH ASTM A-153.
(ALL STEEL ~ M183)

NOTE:
THE CONCRETE SHALL BE CLASS AE-3 AND THE
REINFORCING STEEL SHALL BE GRADE 60.
THE EXISTING END POSTS AT THE TRAFFIC ENTRANCE
END SHALL BE REMOVED AND PROPERLY DISPOSED OF.
THE QUANTITIES SHOWN ARE FOR INFORMATIONAL PUR-
POSES ONLY. ALL MATERIALS, LABOR, AND EQUIPMENT
INCLUDING CONCRETE AND REINFORCING BARS REQUIRED
TO REMOVE AND REPLACE THE END POSTS SHALL BE
INCIDENTAL TO THE PAY ITEM "BRIDGE END POST
MODIFICATION". (1)



ELEVATION

• FABRICATE 1/4" PL ACCORDINGLY TO
FIELD VERIFICATION OF E-RAIL.
SLEEVE REQUIRED AT EACH RAIL JOINT
(6 REQUIRED PER BRIDGE)

QUANTITIES (4 POSTS)	
(1) REMOVAL OF CONCRETE	0.6 C.YD.
(1) CLASS AE-3 CONCRETE	0.8 C.YD.
(1) REINFORCING STEEL	44 LBS.
(1) SLEEVE	12 EA.

S.E. JAMESTOWN /BNRR
INTERCHANGE

END POST DETAILS
RAIL SLEEVES

STRUCTURAL NOTES

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
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- 100 SCOPE OF WORK: This bridge widening project consists of widening the structures on both the west and eastbound roadways of I-94 over the James River. Structural plans for existing structure are available at the Bridge Division of the central office in Bismarck. The existing slab shall be removed and replaced. The existing abutments and piers shall be widened. The existing structural steel shall be sandblasted and painted. Two new girder lines shall be added to the outside of the structures. The final structures shall have a 46 foot clear roadway with 20 foot approach slabs.
- 100 GENERAL: The cost of furnishing and placing preformed expansion joint filler, concrete inserts, tie wire, bar spacers, bar supports, deck drains, conduit, and other miscellaneous items shall be included in the price bid for Class AE-3 and AAE-3 concrete.
- 202 REMOVAL OF CONCRETE: In removing the deck concrete, care shall be taken to minimum damage to the girders. Damage caused by the removal shall be repaired as directed by the engineer at the contractor's expense. Concrete shall be removed from the river to the satisfaction of the engineer. All work to remove and properly dispose of the concrete shall be included in the bid item "Removal of Concrete." "Removal of Concrete" shall be bid lump sum.
- 210 EXCAVATION: The excavation at the abutments as shown on the layout sheet shall be included in the lump sum bid item, "Class 1 Excavation." The excavation at the piers shall be included in the lump sum bid item, "Class 2 Excavation."
- 210 SELECT BACKFILL: Select backfill shall meet the requirements of Section 816.03, Class 5, except maximum size shall be 3".
- 550 BRIDGE APPROACH SLABS: Mechanical finishing of the approach slabs shall be required. A mechanical or hand-held transverse metal tine finish shall be applied. A surface tolerance of 3/16" in 10 feet is also required.
- 602 SURFACE FINISH "D": Surface Finish "D" shall be required for all exposed surfaces of the barrier and the edge of the slab. Select backfill shall be compacted in accordance with Section 203.02F.
- 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 deck elevation and/or 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 only pay for the 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 PENETRATING WATER REPELLENT TREATMENT: Penetrating water repellent shall be applied to the driving surface of the concrete deck.
- 602 DIAPHRAGMS: If the diaphragm concrete is placed before the deck concrete, the concrete shall cure for at least 72 hours before deck placement.
- 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.
- 612 REINFORCING STEEL: Dimensions for bent bars are given out to out and to tangent intersections unless otherwise noted.
- 612 The bar fabricator shall add a prefix to all bar designations to differentiate between the several parts of the structure.
- 612 All reinforcing steel shall be Grade 60.
- 612 ANCHORAGE REINFORCING STEEL: The contractor is required to drill into existing concrete to install concrete anchorage units. The contractor shall have drilling equipment available that is capable of drilling thru any existing reinforcing steel that may be encountered while drilling holes into the existing concrete.
- 616 Shear connector on splice plates shall be moved to clear bolt holes.
- 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 cost of swedge bolts shall be included in the total cost of structural steel.
- 616 STRUCTURAL STEEL: Structural steel shall be AASHTO M 270, Grade 36T2, except the requirement for Charpy V-Notch test is waived for the bearings, ice nose, and expansion joint material.
- 616 STUD SHEAR CONNECTORS: The cost of furnishing and installing studs to the existing girders shall be paid for as "Stud Shear Connector." The flange surface shall be clean and dry before the studs are connected. The air temperature shall be a minimum of 50°F during installation of the studs.
- 630 PAINT AND PAINTING: The structural steel shall be painted according to the supplemental specifications. The finish coat shall be blue color number 25177 of Federal Standard 595B.

STRUCTURAL NOTES

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
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630 Cleaning and painting of the old steel shall be included in the lump sum price bid for "sandblasting and painting." Cleaning and painting of new steel shall be included in lump sum price bid for "Structural Steel."

ELEVATION CHECK POINTS: 16 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: The contractor shall submit the following shop drawings to the Construction office for approval;

1. Structural Steel Items.
2. Elastomeric Bearing Assemblies.

DESIGN STRENGTH: F'C 3,000 PSI C1. AE-3 Concrete
F'C 4,000 PSI C1. AAE-3 Concrete
FY 60,000 PSI GR. 60 Reinforced Steel
FY 36,000 PSI Structural Steel M270 Grade 36
Load Factor Design (HS 20)

ELASTOMERIC BEARING PAD: Elastomeric bearing pad material and fabrication shall be in accordance with AASHTO M251 specifications with additional suffix requirements F17, Z22, and Z31. Bearing acceptance will be by certification in accordance with Section 106 of the Standard Specifications. The elastomeric material shall have a hardness of 60 durometers.

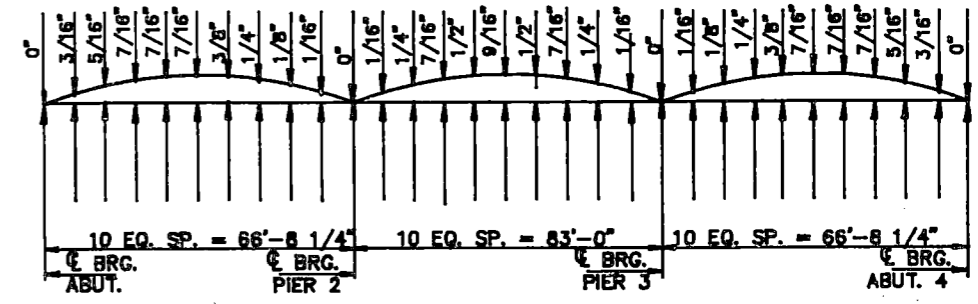
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	83

BENCH MARKS			
NO.	DESCRIPTION	LOCATION	ELEVATION
BM 3	PAINT SPOT ON CURB	150+30-60' RT	1441.07

MEASURED BELOW BOTTOM OF FOOTING

PILE LOADING					
LOCATION	DEAD LOAD	LIVE LOAD	EARTH LOAD	DESIGN LOAD	MINIMUM * PENETRATION
ABUT. 1 & 4	8.2 T	4.2 T	7.6 T	20.0 T	25'
PIER 2 & 3	15.5 T	6.0 T	1.8 T	23.3 T	25'

INDEX OF STRUCTURAL DRAWINGS	
DESCRIPTION	DRAWING NUMBER
LAYOUT	094-259.847 LT & RT
NOTES	094-259.847 LT-1 & 2
MISCELLANEOUS DETAILS	094-259.847 LT-3
PILE LAYOUT & BEARING ELEV	094-259.847 LT-4
ABUTMENT DETAILS	094-259.847 LT-5-8
PIER DETAILS	094-259.847 LT-9-11
GIRDER DETAILS	094-259.847 LT-12-14
SUPERSTRUCTURE DETAILS	094-259.847 LT-15-17
BAR REINFORCEMENT DETAILS	094-259.847 LT-18 & 19
APPROACH SLAB (NORTH ROADWAY)	094-259.847 LT-20 & 21
APPROACH SLAB (SOUTH ROADWAY)	094-259.847 LT-22 & 23

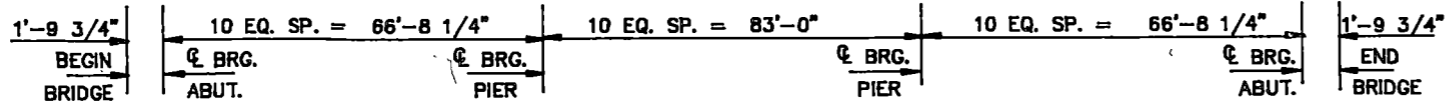


FIELD RISER DIAGRAM
A DIMENSION

1 DEAD LOAD DEFLECTIONS INCLUDED GIRDER NO. 1 IS THE SOUTH GIRDER

SCREED ELEVATIONS ● GIRDER NO. 1 & 4	SCREED ELEVATIONS ● GIRDER NO. 2 & 3	SCREED ELEVATIONS ● GIRDER NO. 5	SCREED ELEVATIONS ● GIRDER NO. 6
1400.529	1400.710	1400.371	1400.213
1400.529	1400.710	1400.371	1400.213
.549	.730	.386	.228
.566	.747	.398	.240
.576	.757	.407	.249
.580	.761	.410	.252
.577	.758	.409	.251
.569	.750	.403	.245
.557	.738	.393	.235
.544	.725	.383	.225
.534	.715	.374	.216
1400.529	1400.710	1400.371	1400.213
.532	.713	.378	.220
.544	.725	.391	.233
.558	.739	.405	.247
.569	.750	.414	.256
.573	.754	.418	.260
.569	.750	.414	.256
.558	.739	.405	.247
.544	.725	.391	.233
.532	.713	.378	.220
1400.529	1400.710	1400.371	1400.213
.534	.715	.374	.216
.544	.725	.383	.225
.557	.738	.393	.235
.569	.750	.403	.245
.577	.758	.409	.251
.580	.761	.410	.252
.576	.757	.407	.249
.568	.747	.398	.240
.549	.730	.386	.228
1400.529	1400.710	1400.371	1400.213
1400.529	1400.710	1400.371	1400.213

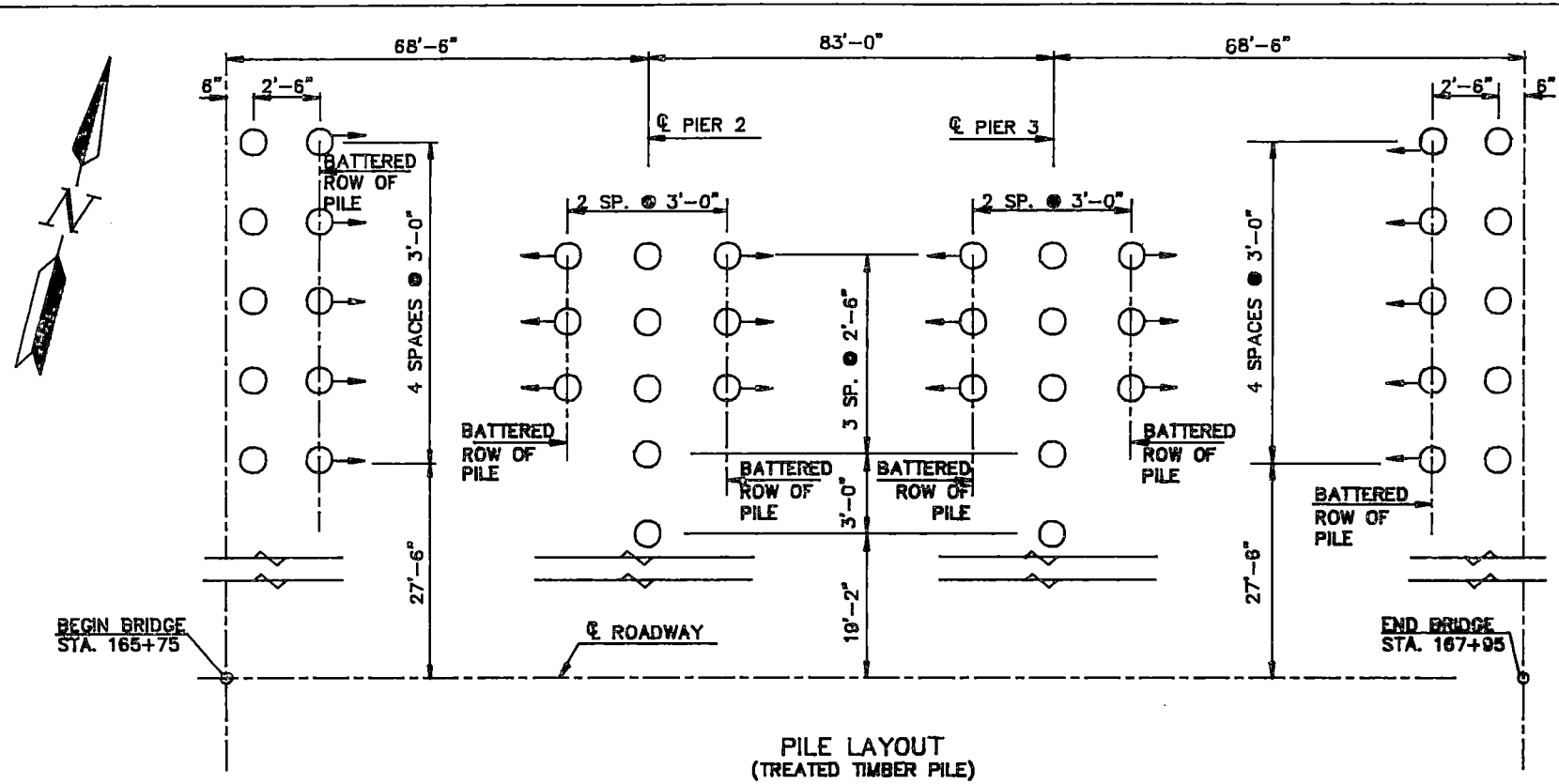
STANDARDS	
D-900-1	BRIDGE BENCH MARKS



SCREED ELEVATIONS
ELEVATIONS ARE TO TOP OF FINISHED ROADWAY

JAMES RIVER AT JAMESTOWN
MISCELLANEOUS
DETAILS

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	84

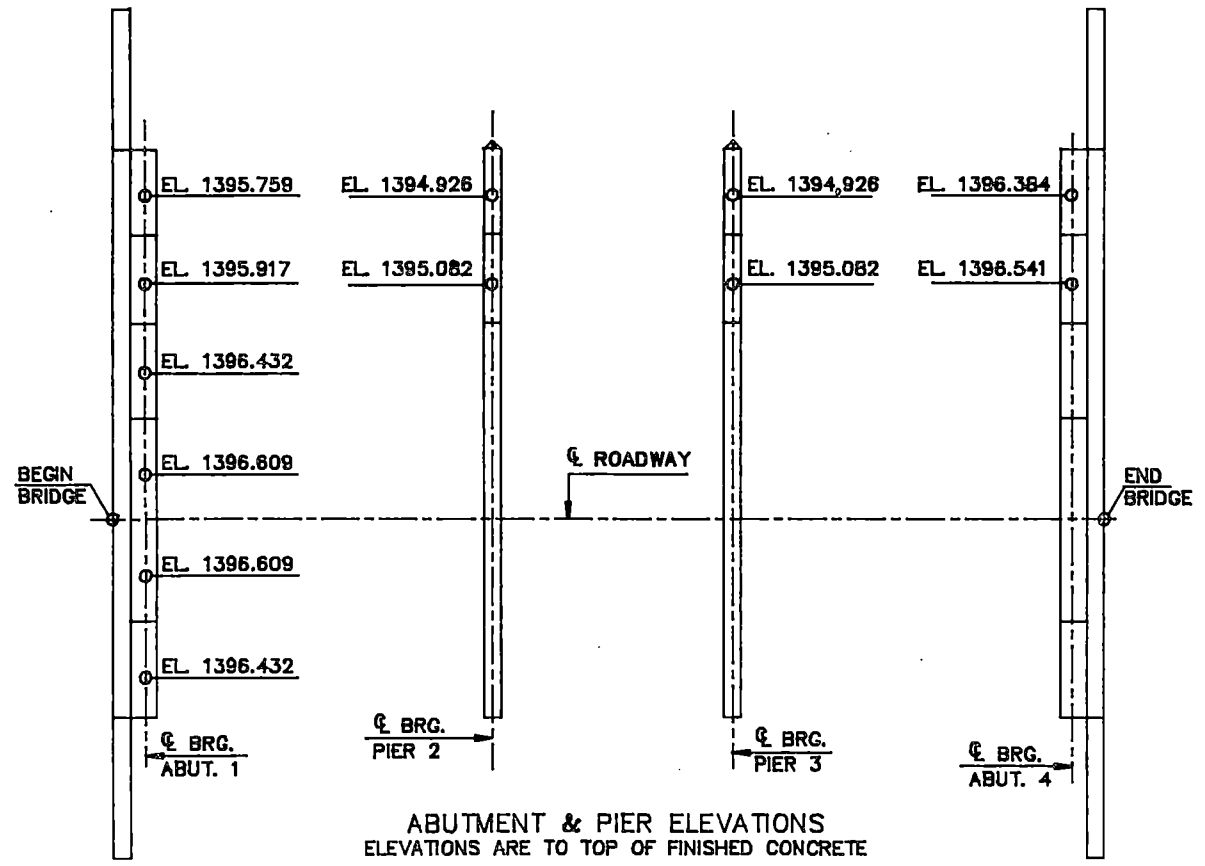


ESTIMATE OF QUANTITIES

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0115	REMOVAL OF CONCRETE-SITE 1	L.SUM	1.0
210	0102	CLASS 1 EXCAVATION-SITE 1	L.SUM	1.0
210	0111	CLASS 2 EXCAVATION	L.SUM	1.0
210	0200	SELECT BACKFILL	CU.YD.	1550.0
210	0202	FOUNDATION PREPARATION-SITE 1	L.SUM	1.0
550	0215	CONCRETE BRIDGE APPROACH SLAB	SQ.YD.	426.8
602	0130	CLASS AAE-3 CONCRETE	CU.YD.	650.2
602	1130	CLASS AE-3 CONCRETE	CU.YD.	286.6
602	1250	PENETRATING WATER REPELLANT TR.	SQ.YD.	2249.0
612	0115	REINFORCING STEEL GRADE 60	LBS.	41400.0
612	0116	REINFORCING STEEL GRADE 60 EPOXY	LBS.	155070.0
*618	5888	STRUCTURAL STEEL-SITE 1	L.SUM	1.0
618	8000	STUD SHEAR CONNECTOR	EA.	480.0
822	4630	TREATED TIMBER PILING	LFT.	3140.0
630	0101	SANDBLASTING & PAINTING-SITE 1	L.SUM	1.0
930	8600	ELASTOMERIC BEARING PAD	SQ.FT.	22.6
930	8680	EXPANSION JOINT STRIP SEAL	LFT.	97.0

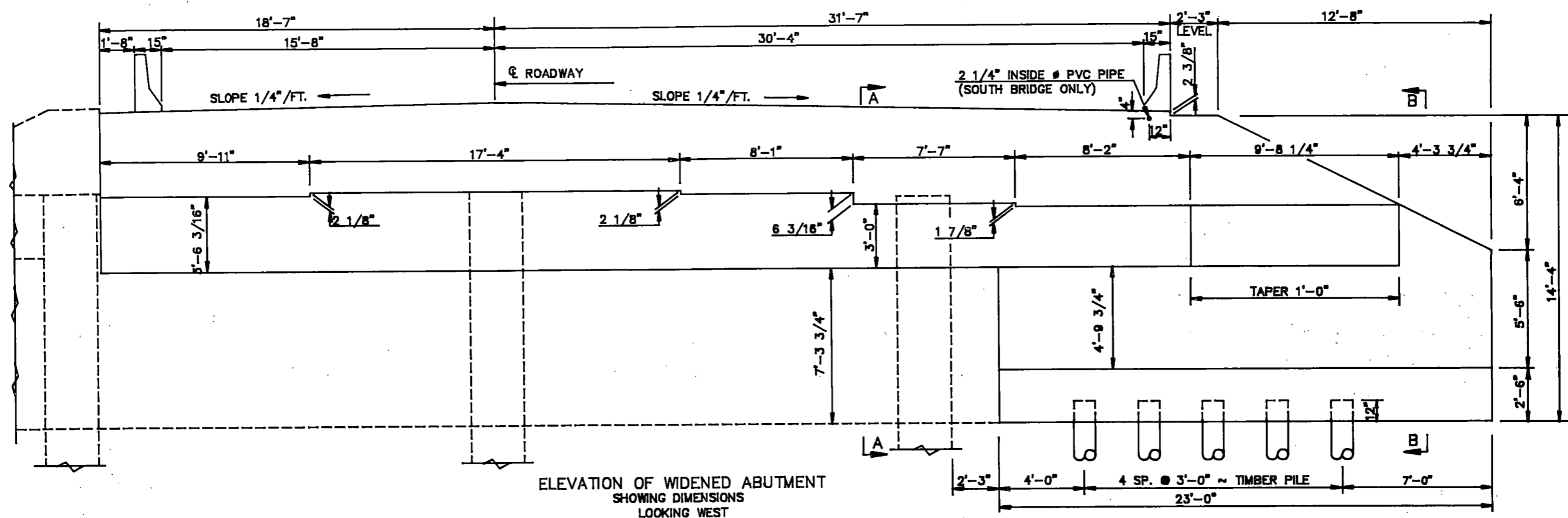
* THE ESTIMATED QUANTITY OF STRUCTURAL STEEL IS 162,670 LBS.

NOTE:
THE ESTIMATE OF QUANTITIES SHOWN ABOVE ARE FOR BOTH ROADWAY STRUCTURES.
THE SITE 1 ITEM DESCRIPTIONS SHOWN ABOVE ARE BID AS ONE (1) LUMP SUM AND INCLUDE ALL WORK REQUIRED ON BOTH ROADWAY STRUCTURES AT SITE 1.

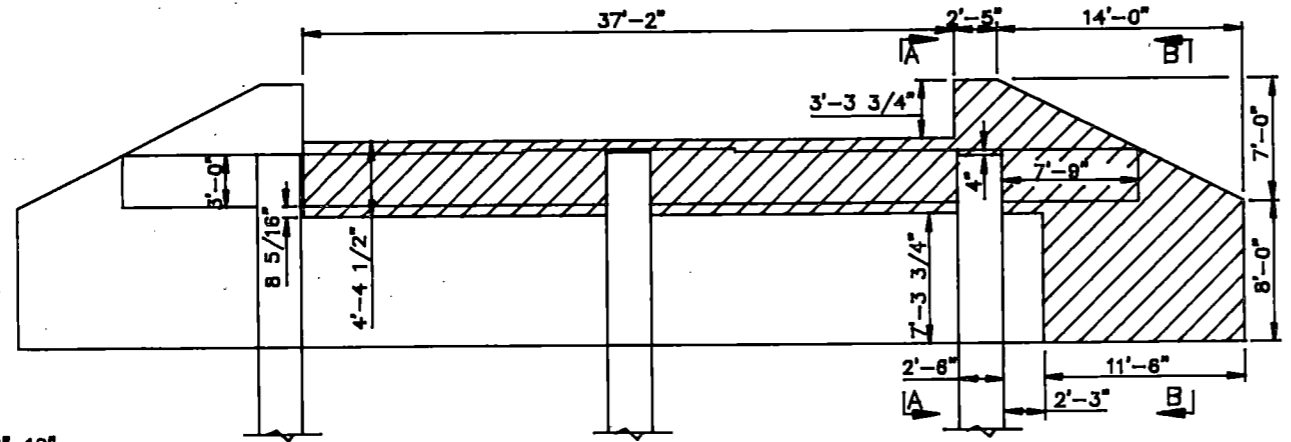


ABUTMENT & PIER ELEVATIONS
ELEVATIONS ARE TO TOP OF FINISHED CONCRETE

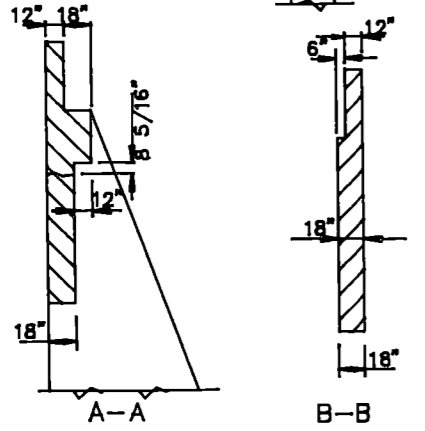
JAMES RIVER AT JAMESTOWN
PILE LAYOUT-ABUTMENT &
PIER CAP ELEVATIONS
& QUANTITIES



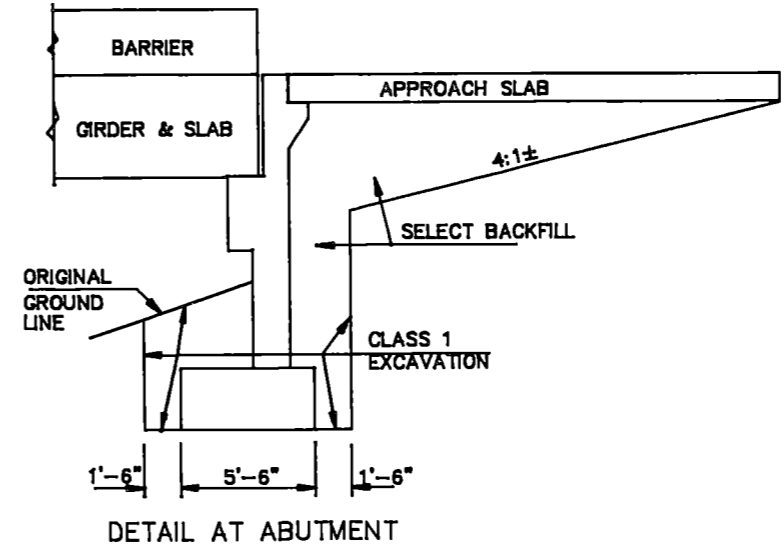
ELEVATION OF WIDENED ABUTMENT
SHOWING DIMENSIONS
LOOKING WEST



ELEVATION OF EXISTING
SHOWING DIMENSIONS FOR REMOVAL
LOOKING WEST

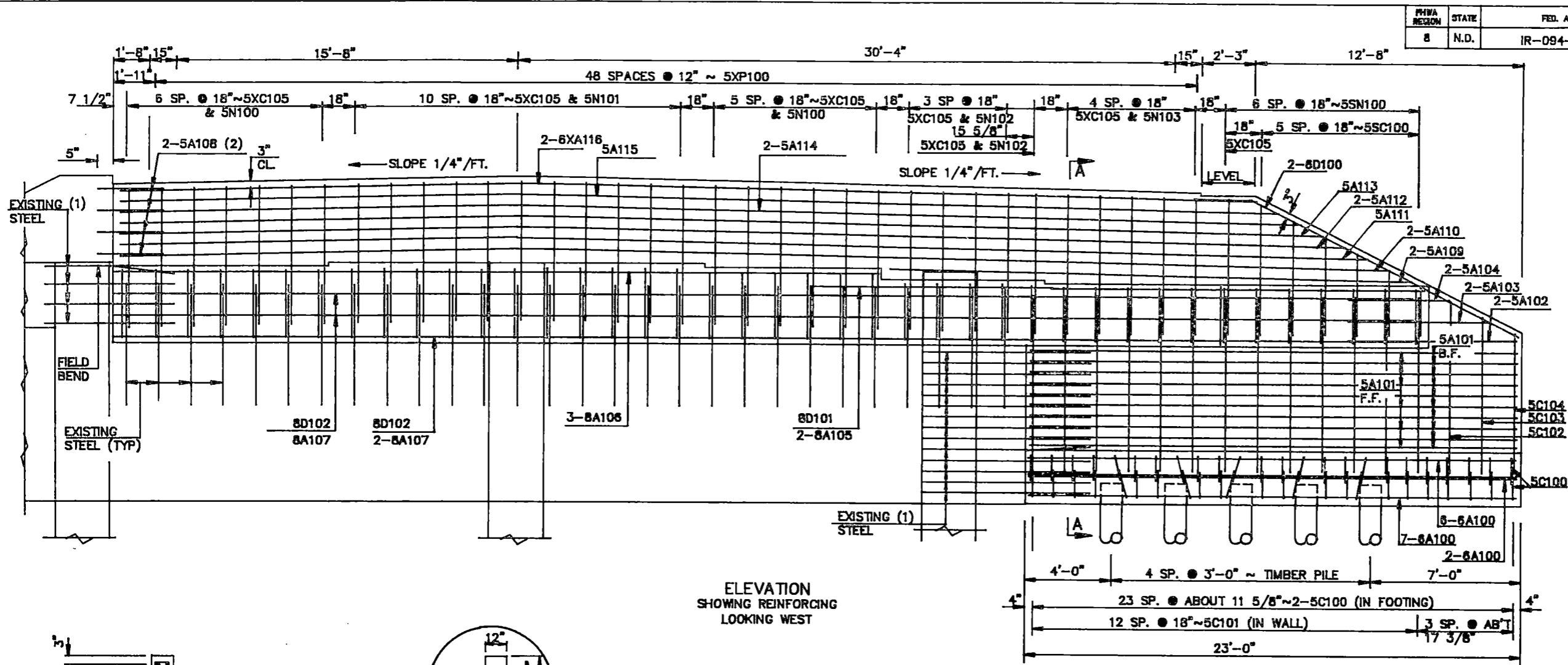


NOTE:
ALL CONCRETE REMOVAL JOINTS SHALL
BE SAW CUT TO PROVIDE A NEAT LINE.

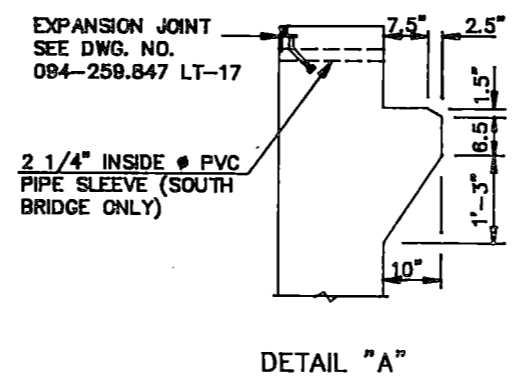
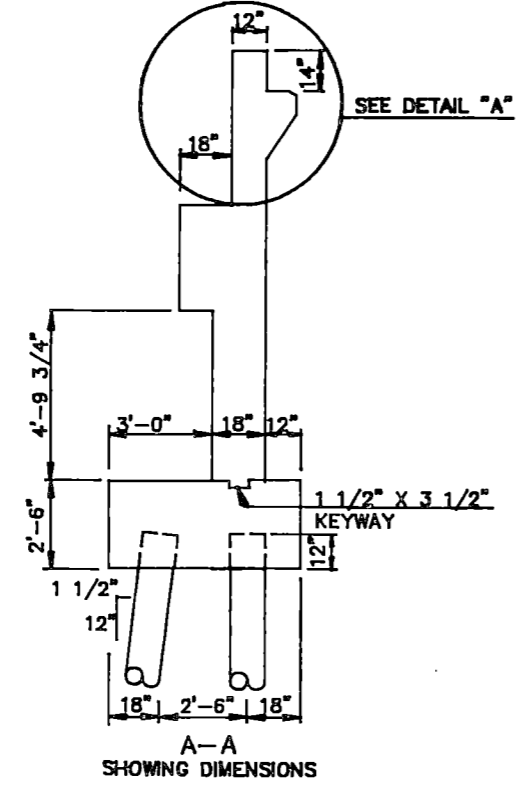
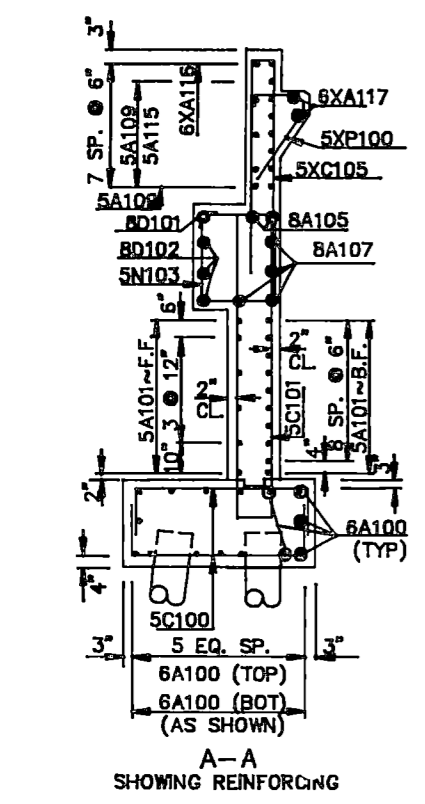


DETAIL AT ABUTMENT

QUANTITIES
SEE DRWG. NO. 94-259.847 LT.-6
JAMES RIVER AT JAMESTOWN
WEST ABUTMENT WIDENING DETAILS

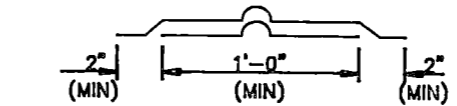
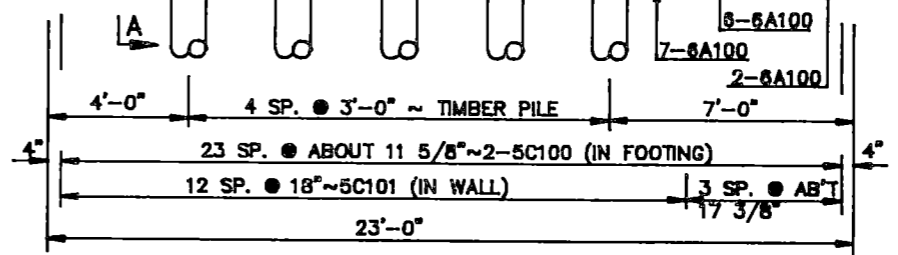


ELEVATION
SHOWING REINFORCING
LOOKING WEST



DETAIL "A"

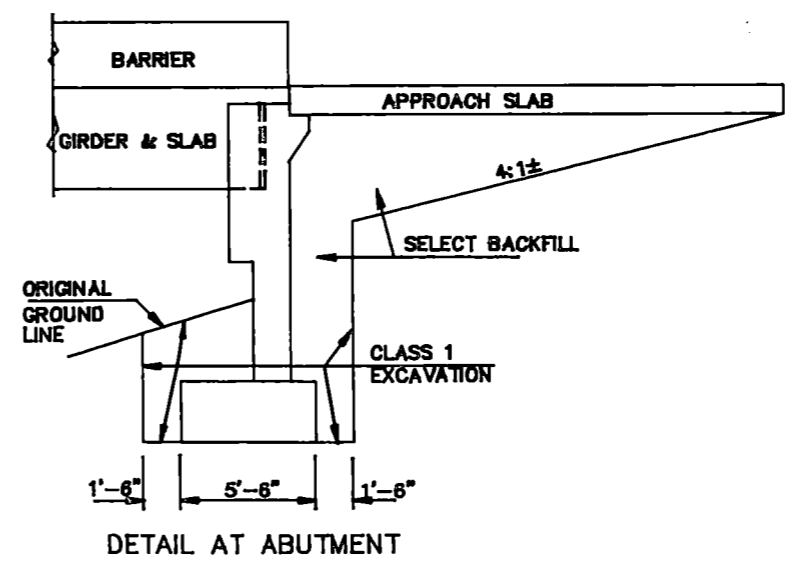
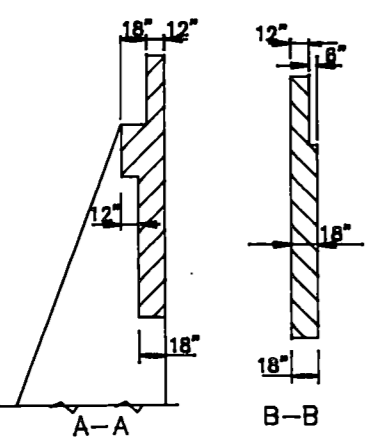
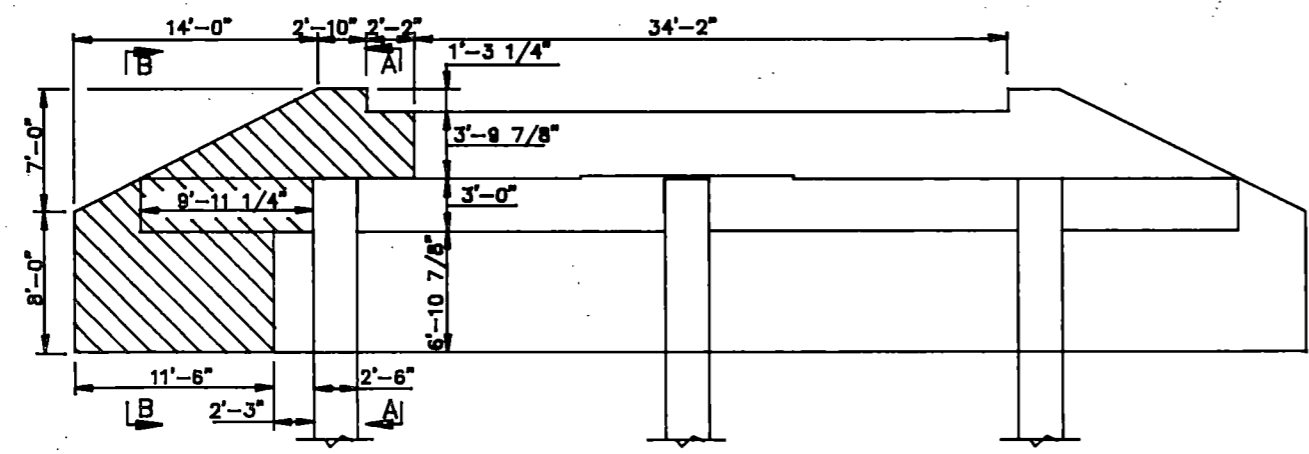
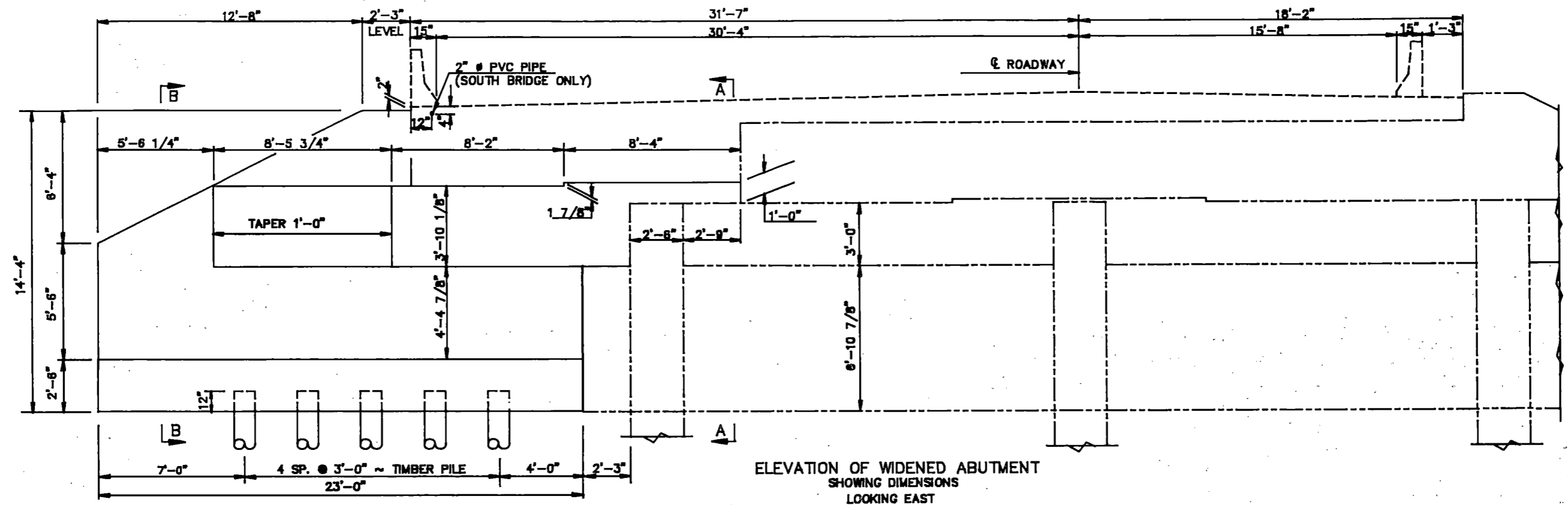
- (1) EXISTING LONGITUDINAL STEEL SHALL BE CUT TO A MINIMUM LENGTH OF 3'-0".
- (2) ALL 5A108 BARS SHALL BE ANCHOR UNITS WITH A HIGH STRENGTH ADHESIVE SPECIFICALLY INTENDED FOR CONCRETE ANCHORAGE. (HILTI HBR OR AN APPROVED EQUAL).



ALL MATERIAL AND WORK SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM "CLASS AE-3 CONCRETE".

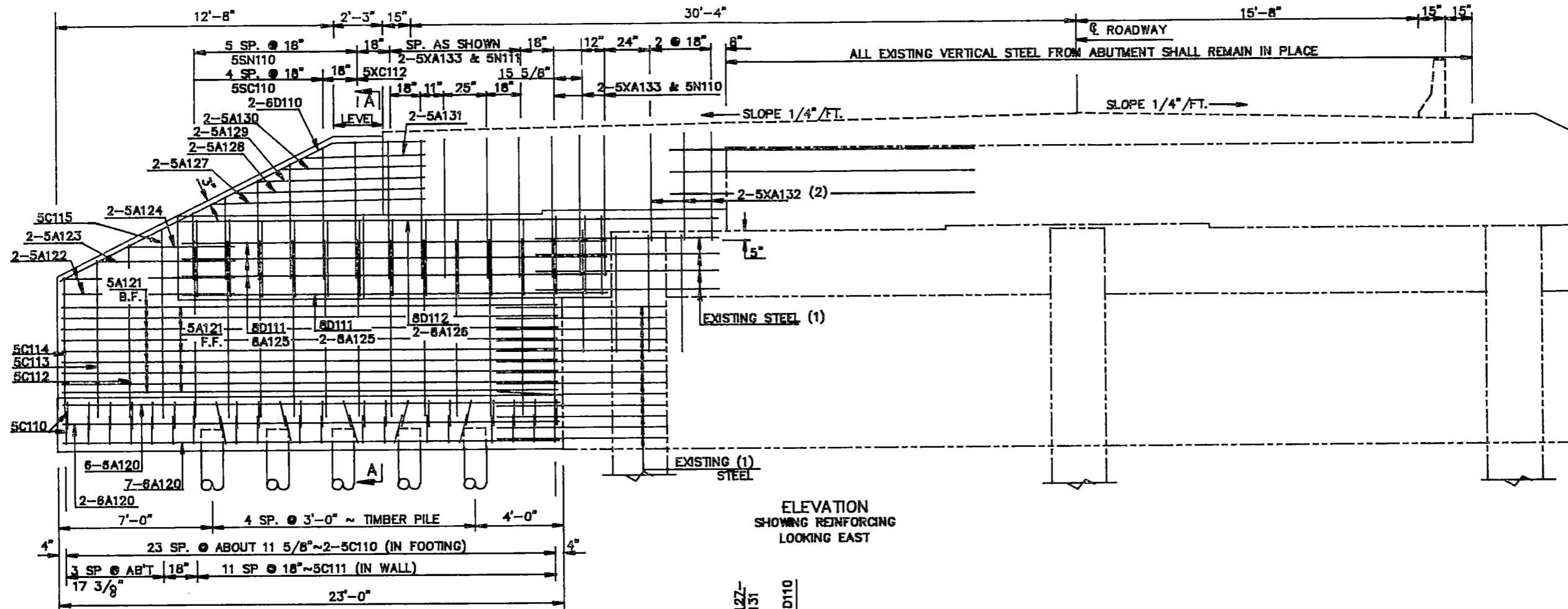
TWO-PLY FABRIC WATERPROOFING TO BE PLACED AT ALL CONSTRUCTION JOINTS

QUANTITIES	(ONE ABUT.)
CONCRETE REMOVAL	23.9 C.YD.
CL. AE-3 CONCRETE	45.3 C.YD.
REINFORCING STEEL	4,418 LBS.
REINFORCING STEEL-EPOXY	1,038 LBS.
JAMES RIVER AT JAMESTOWN	
WEST ABUTMENT WIDENING DETAILS	



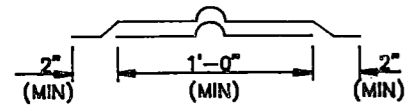
NOTE:
ALL CONCRETE REMOVAL JOINTS SHALL BE SAW CUT TO PROVIDE A NEAT LINE.

QUANTITIES	
SEE DRWG. NO.	94-259.847 LT-8
JAMES RIVER AT JAMESTOWN	
EAST ABUTMENT WIDENING DETAILS	



ELEVATION
SHOWING REINFORCING
LOOKING EAST

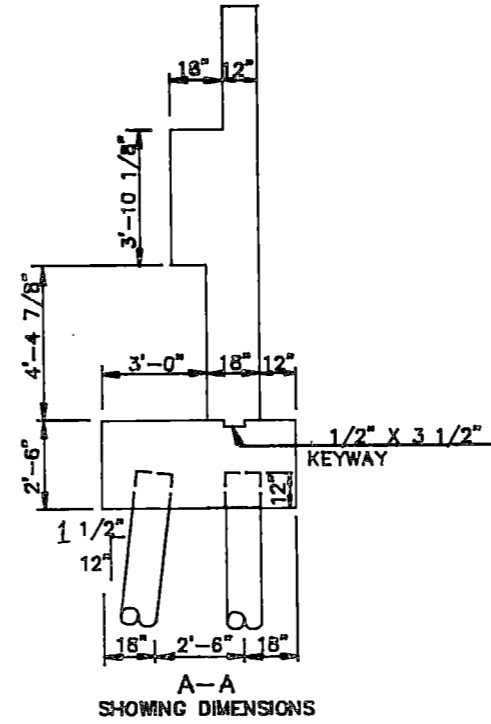
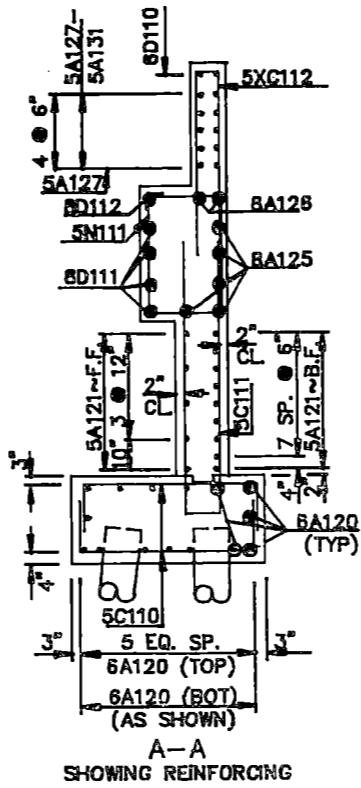
- (1) EXISTING LONGITUDINAL STEEL SHALL BE CUT TO A MINIMUM LENGTH OF 3'-0".
- (2) ALL 5XA132 BARS SHALL BE ANCHOR UNITS WITH A HIGH STRENGTH ADHESIVE SPECIFICALLY INTENDED FOR CONCRETE ANCHORAGE. (HILTI HBR OR AN APPROVED EQUAL).



ALL MATERIAL AND WORK SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM "CLASS AE-3 CONCRETE".

TWO-PLY FABRIC WATERPROOFING

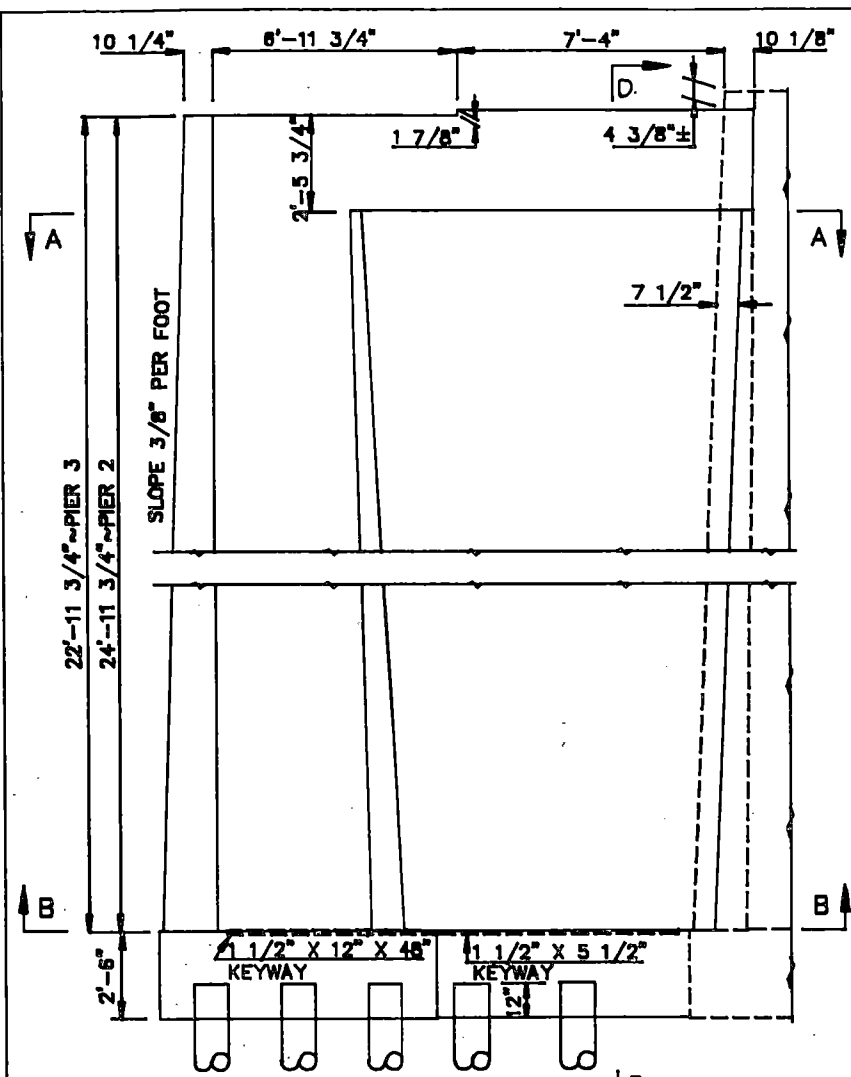
TO BE PLACED AT ALL CONSTRUCTION JOINTS



QUANTITIES	(ONE ABUT.)
CONCRETE REMOVAL	8.7 C.YD.
CL AE-3 CONCRETE	25.8 C.YD.
REINFORCING STEEL	2,611 LBS.
REINFORCING STEEL-EPOXY	150 LBS.

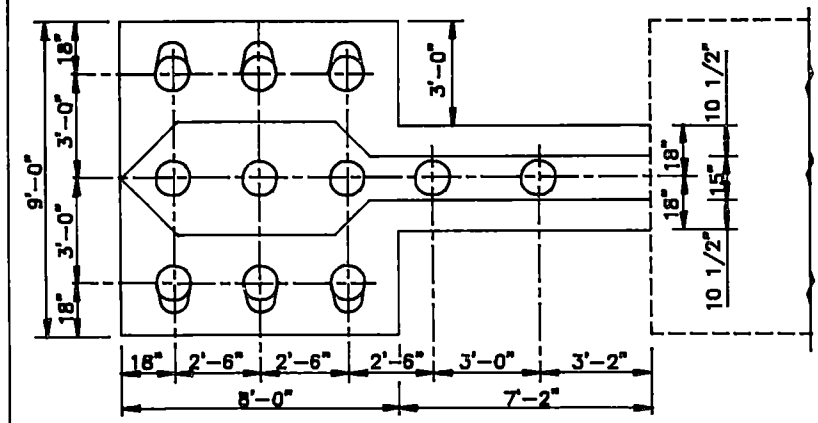
JAMES RIVER AT JAMESTOWN

EAST ABUTMENT WIDENING DETAILS

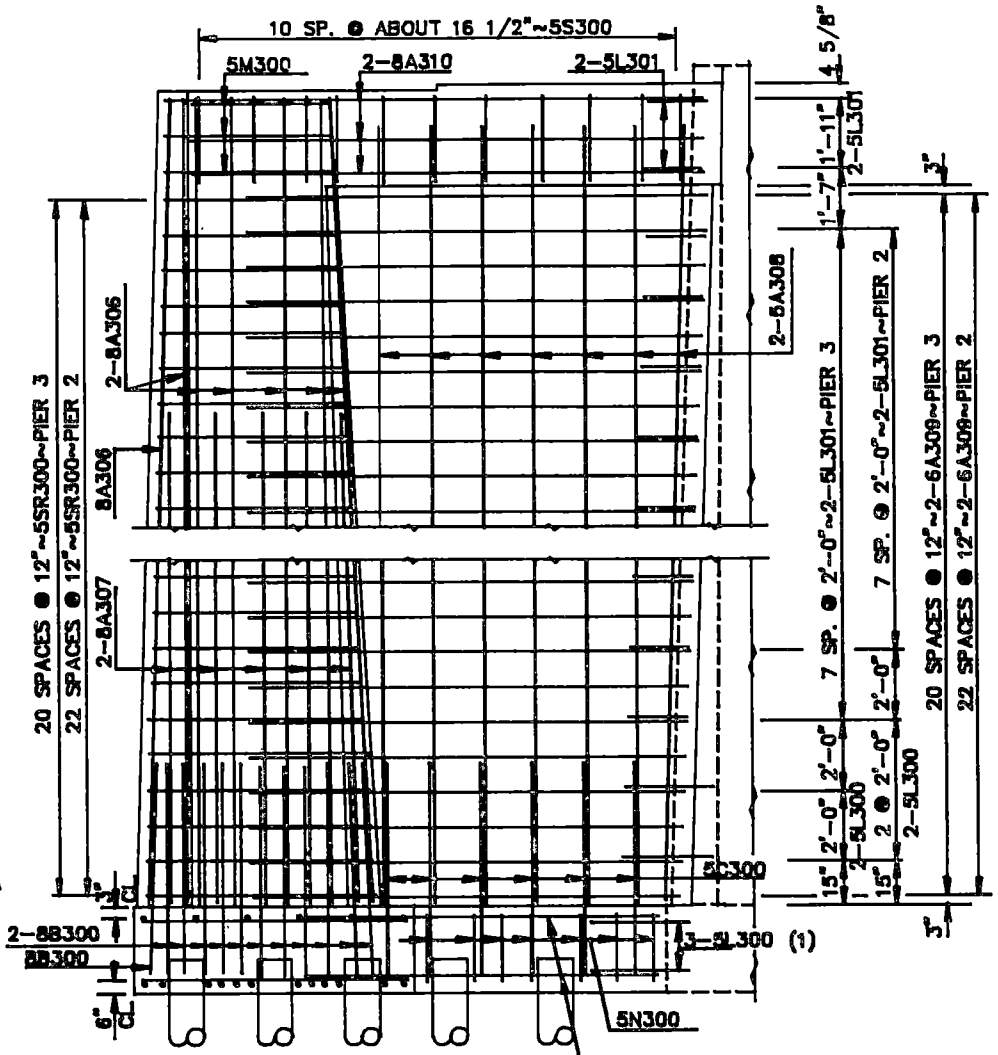


ELEVATION
SHOWING DIMENSIONS
LOOKING EAST

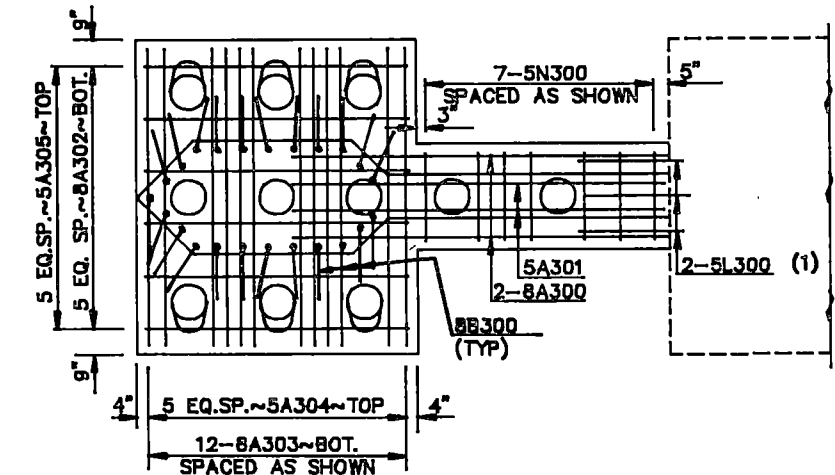
NOTE:
SEE DRAWING NO.
094-259.847 LT-11
FOR D-D



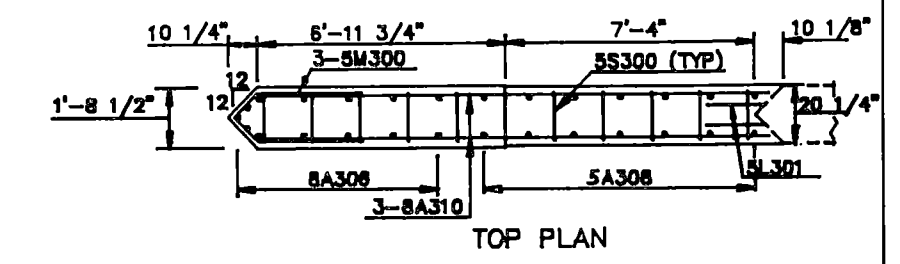
FOOTING PLAN
SHOWING DIMENSIONS



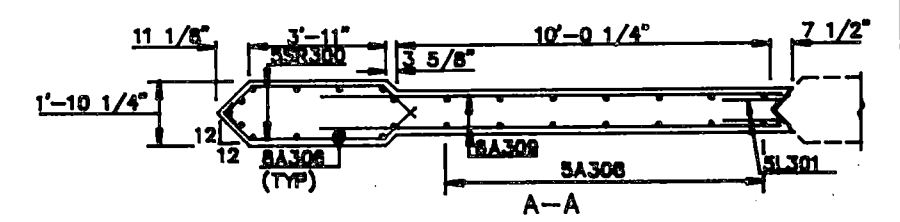
ELEVATION
SHOWING REINFORCING
LOOKING EAST



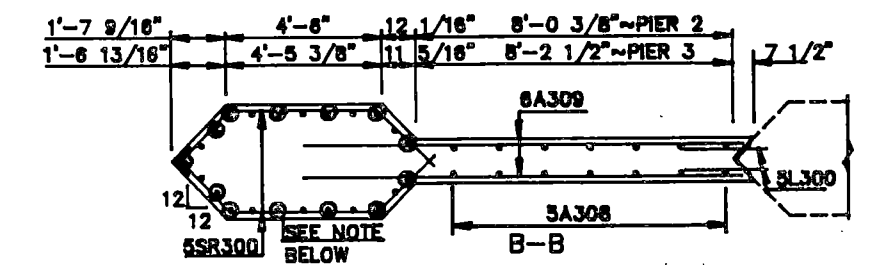
FOOTING PLAN
SHOWING REINFORCING



TOP PLAN

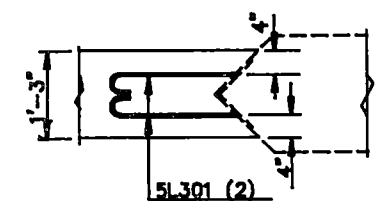


A-A

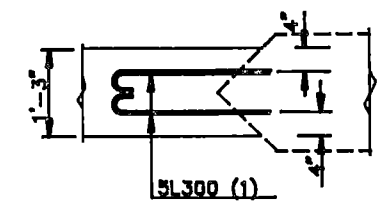


B-B

NOTE:
THE ENCIRCLED REINFORCING STEEL IN THE
ABOVE SECTION ARE DESIGNATED AS 8A306'S.
ALL OTHER REINFORCING STEEL ARE DESIGNATED
AS 8A307'S UNLESS OTHERWISE NOTED.



(2) 5L301'S SHALL BE WELDED ALL AROUND TO
THE ICE NOSE ANGLE AT THE SPACING SHOWN.

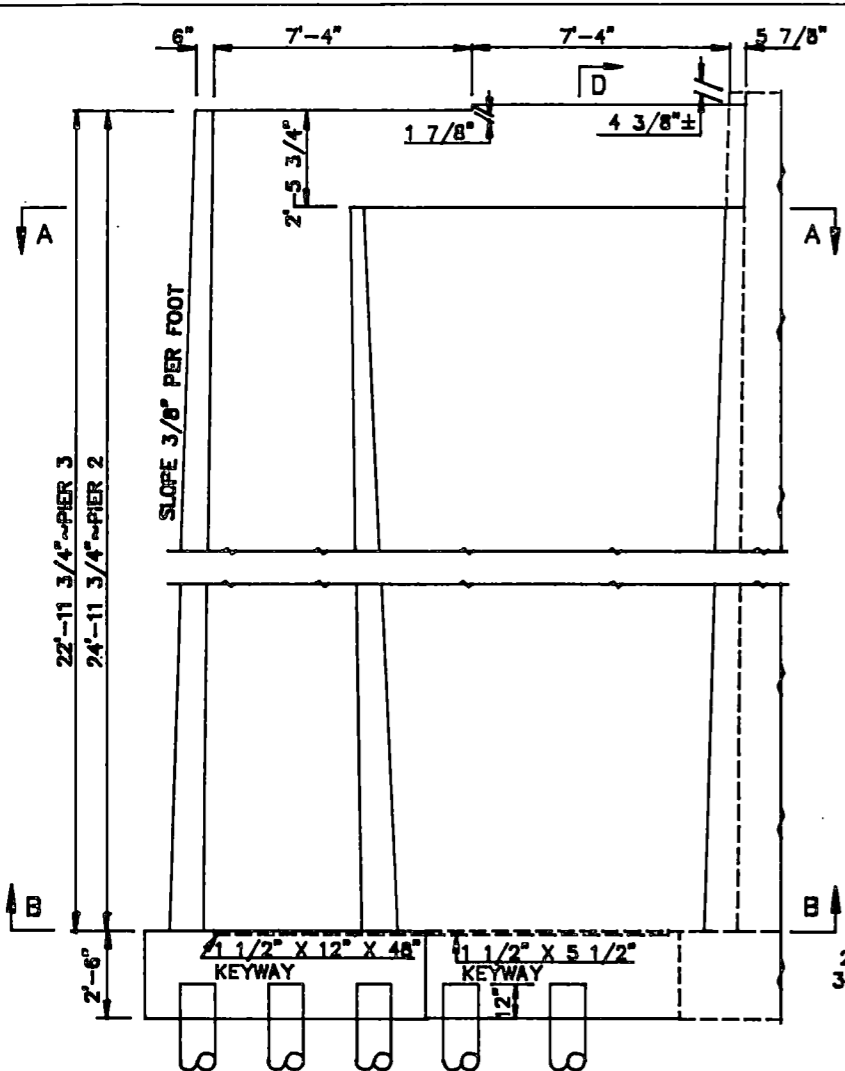


(1) INSTALL 5L300'S WITH A HIGH STRENGTH
ADHESIVE SPECIFICALLY INTENDED FOR CONCRETE
ANCHORAGE. (HILTI HBP OR AN APPROVED
EQUAL).

QUANTITIES (ONE BRIDGE)		
PIER 2	CLASS AE-3 CONCRETE	32.1 C.YD.
	REINFORCING STEEL	4,525 LBS.
PIER 3	CLASS AE-3 CONCRETE	30.0 C.YD.
	REINFORCING STEEL	4,392 LBS.

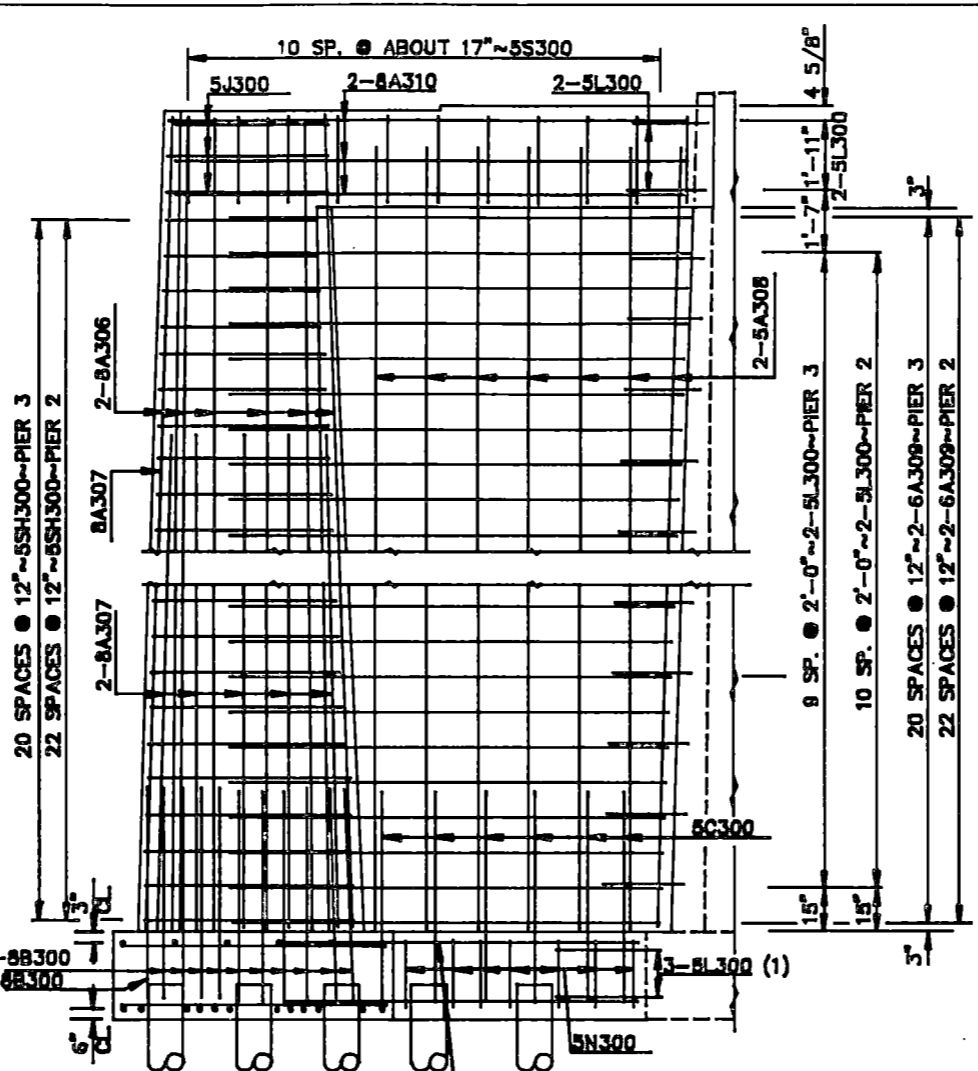
JAMES RIVER AT JAMESTOWN

PIER WIDENING DETAILS
FOR NORTH BRIDGE

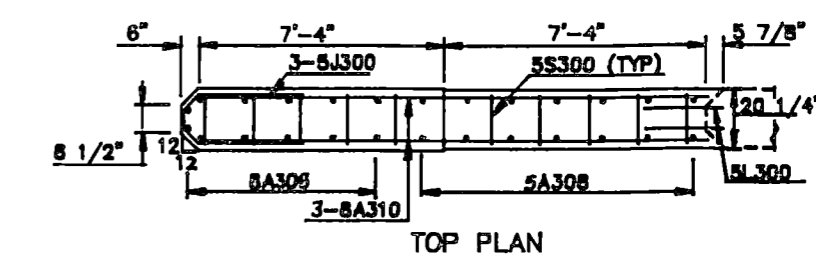


ELEVATION
SHOWING DIMENSIONS
LOOKING WEST

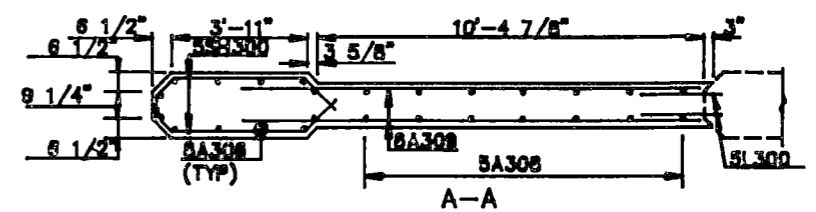
NOTE:
SEE DRAWING NO.
084-259.847 LT-11
FOR D-D



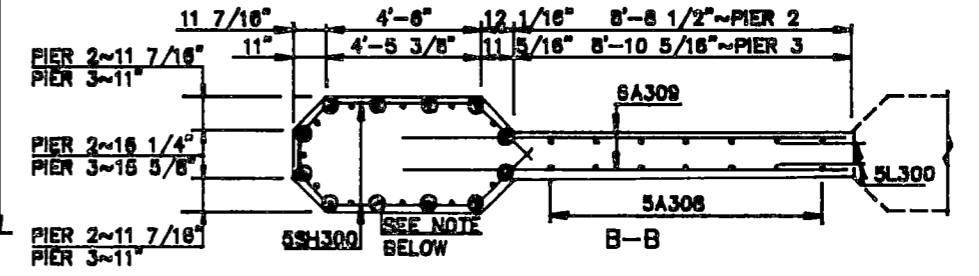
ELEVATION
SHOWING REINFORCING
LOOKING WEST



TOP PLAN

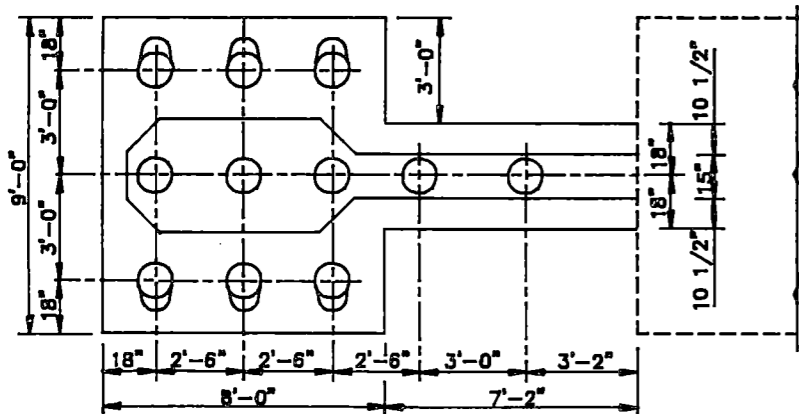


A-A

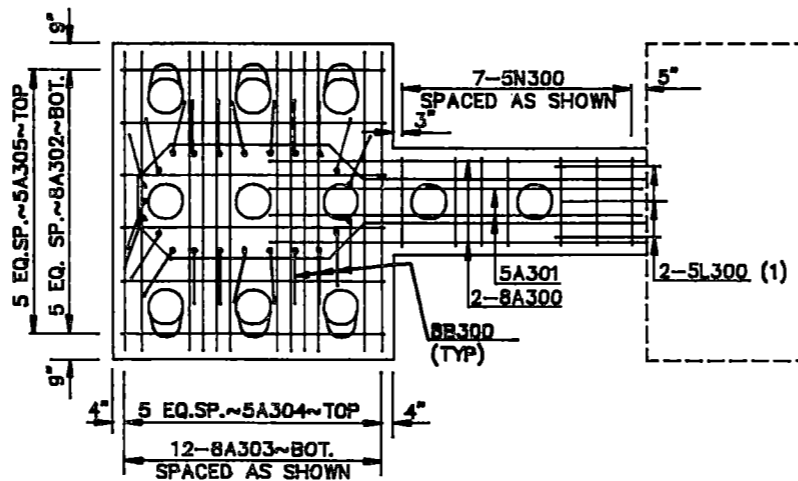


B-B

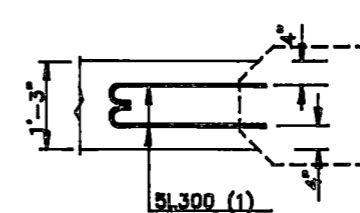
NOTE:
THE ENCIRCLED REINFORCING STEEL IN THE
ABOVE SECTION ARE DESIGNATED AS 8A308'S.
ALL OTHER REINFORCING STEEL ARE DESIGNATED
AS 8A307'S UNLESS OTHERWISE NOTED.



FOOTING PLAN
SHOWING DIMENSIONS



FOOTING PLAN
SHOWING REINFORCING

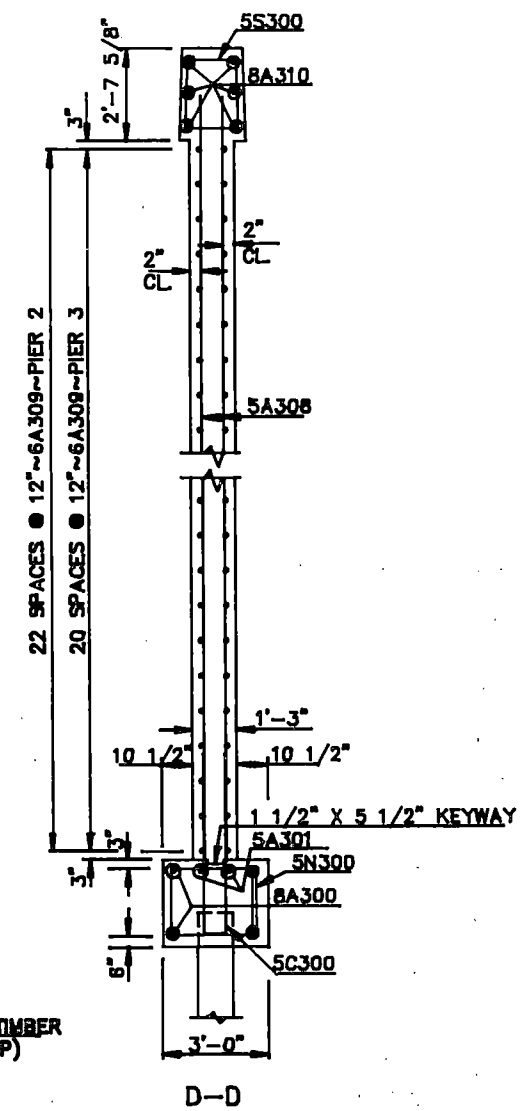
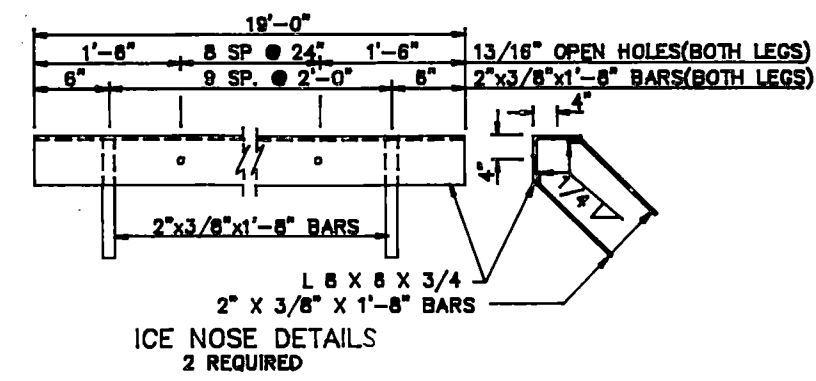
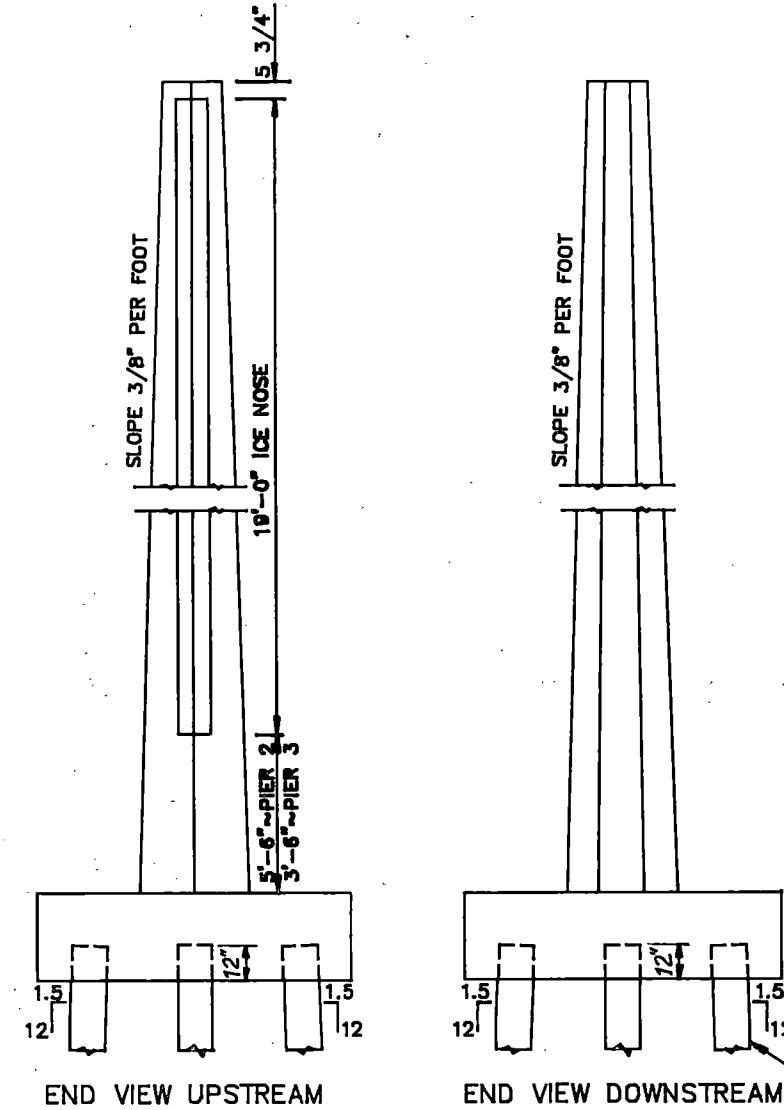


(1) INSTALL 5L300'S WITH A HIGH STRENGTH
ADHESIVE SPECIFICALLY INTENDED FOR CONCRETE
ANCHORAGE. (HILTI HEP OR AN APPROVED
EQUAL).

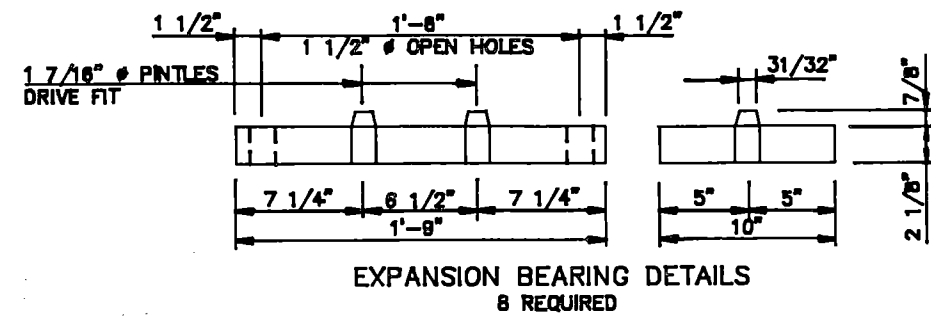
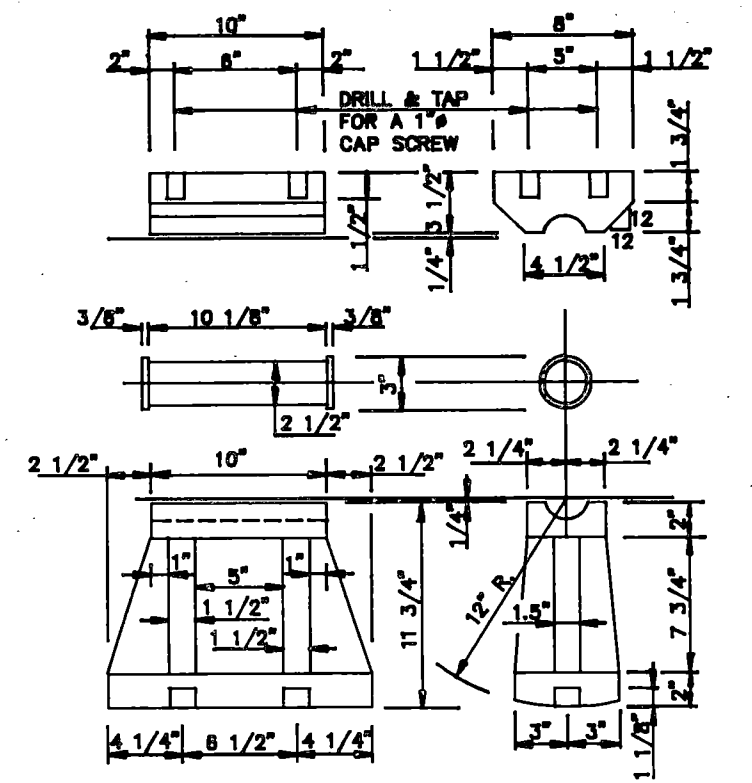
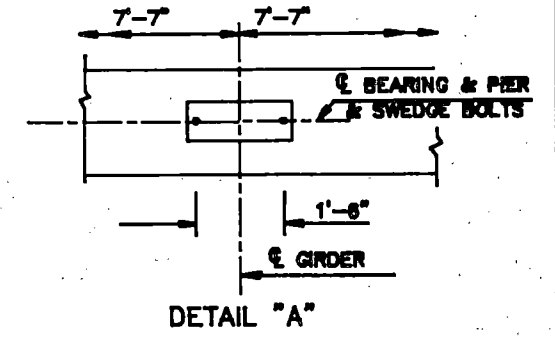
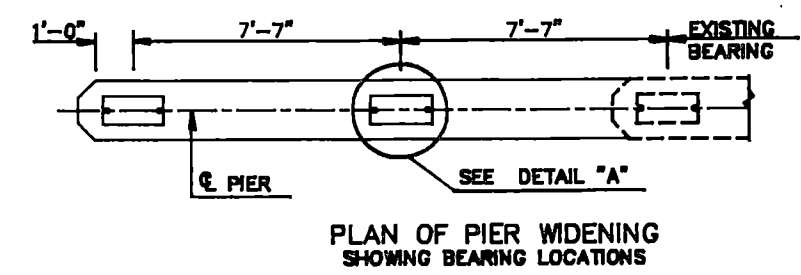
	QUANTITIES (ONE BRIDGE)	
PIER 2	CLASS AE-3 CONCRETE	32.3 C.YD.
	REINFORCING STEEL	4,483 LBS.
PIER 3	CLASS AE-3 CONCRETE	30.2 C.YD.
	REINFORCING STEEL	4,366 LBS.

JAMES RIVER AT JAMESTOWN

PIER WIDENING DETAILS
FOR SOUTH BRIDGE



NOTE:
SEE DRAWINGS NO.
094-259.847 LT-9 & 10



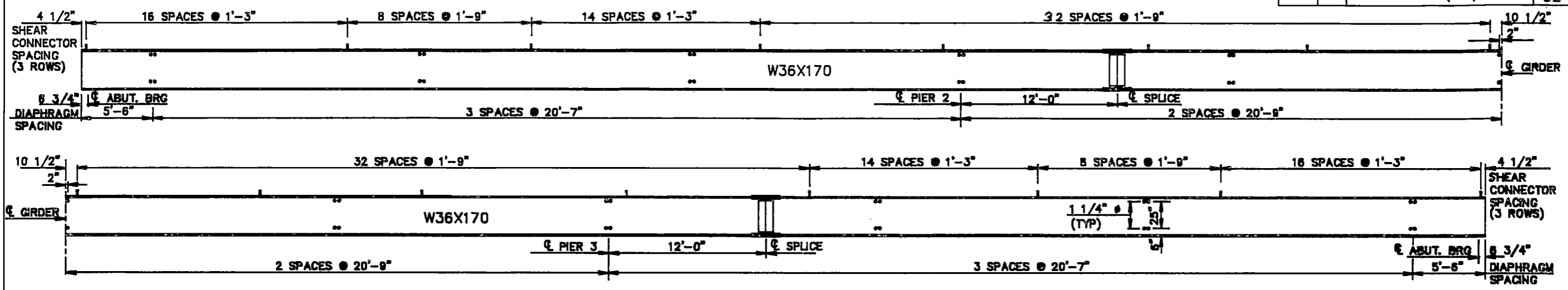
* FOR INFORMATIONAL PURPOSES ONLY

QUANTITIES	(BOTH BRIDGES)
STRUCTURAL STEEL	4,739 LBS.

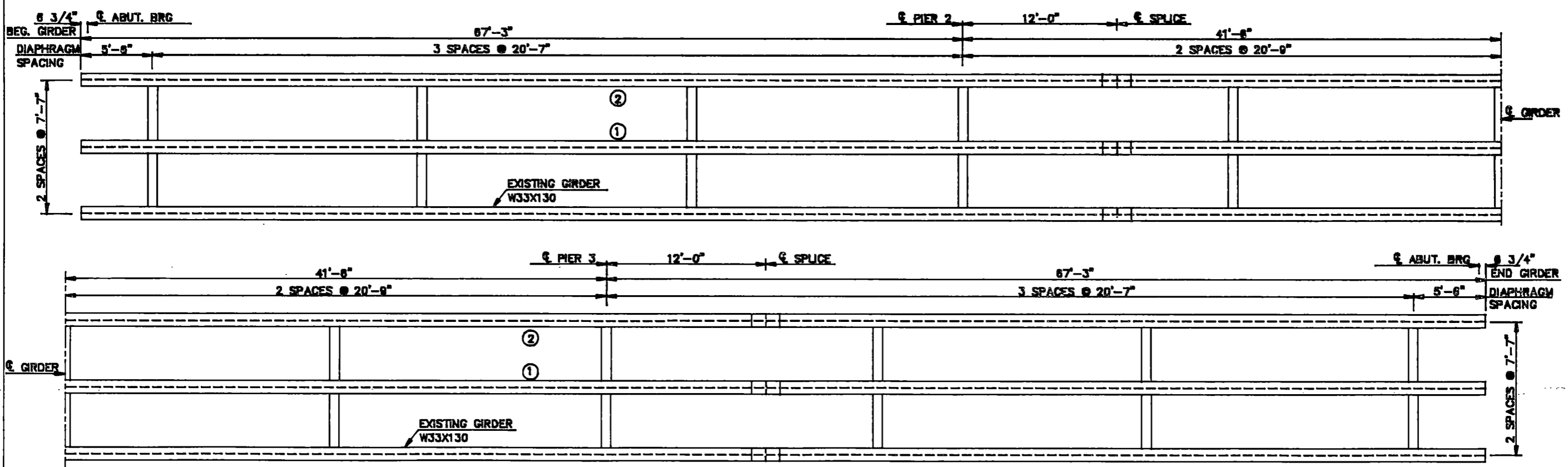
JAMES RIVER AT JAMESTOWN

PIER WIDENING DETAILS

PRWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	92



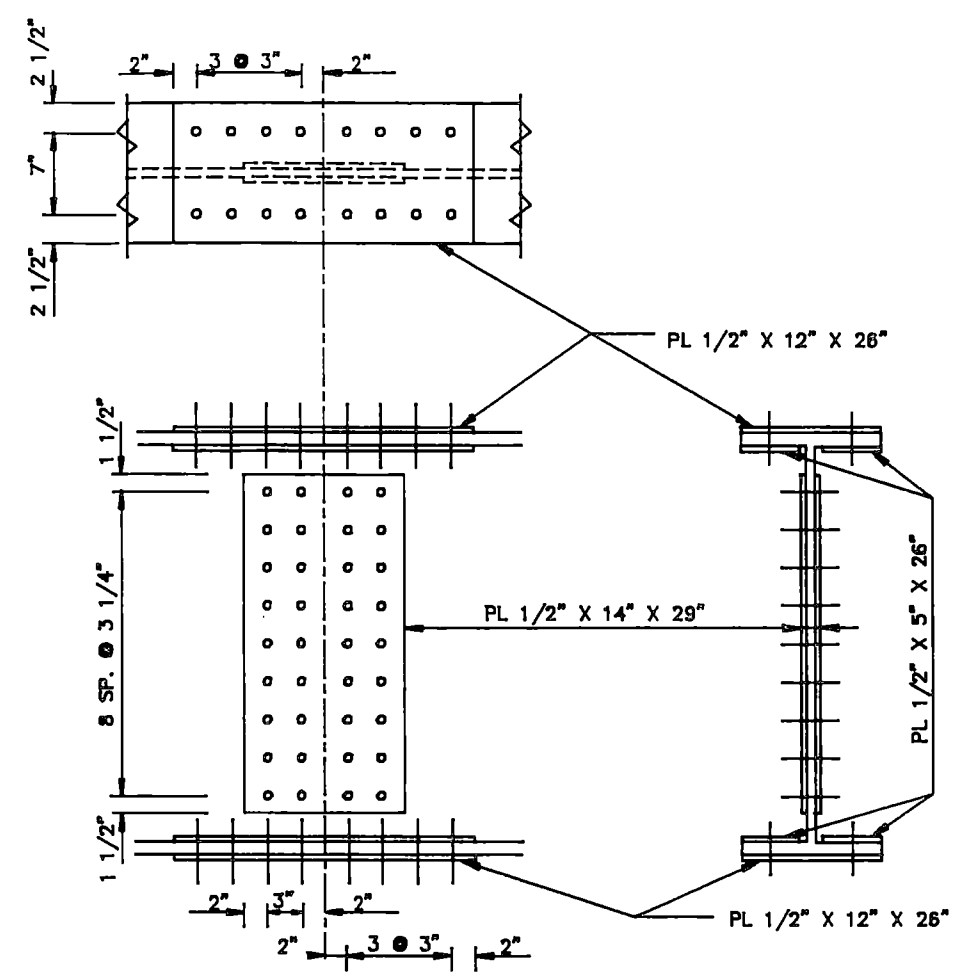
GIRDER ELEVATION



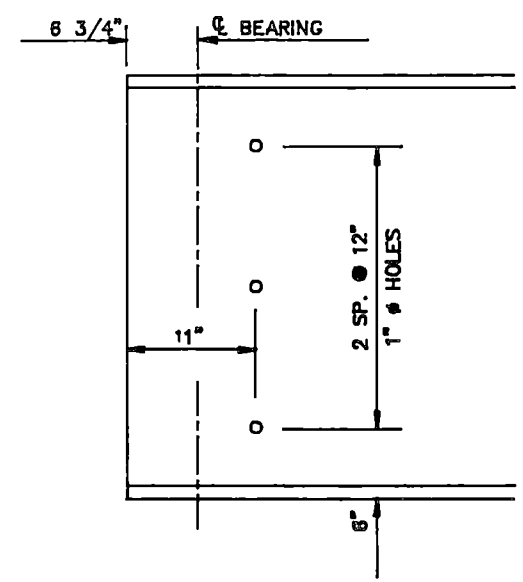
STEEL LAYOUT

NOTE:
 ALL DETAILS SHOWN ON THIS DRAWING
 ARE FOR THE NEW GIRDERS. THE GIRDER
 MATERIAL SUPPLIED SHALL MEET LONG-
 ITUDINAL CHARPY V-NOTCH TEST
 REQUIREMENT FOR ZONE 2.

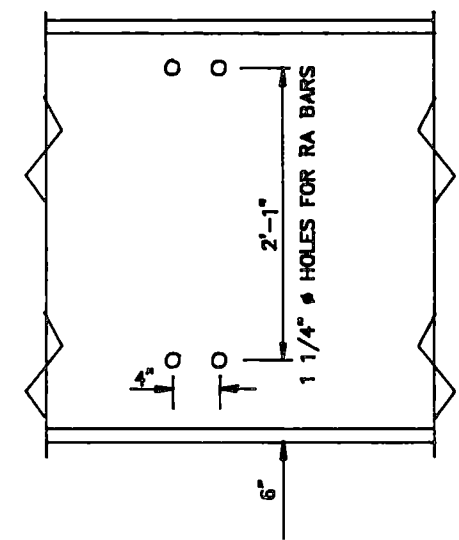
QUANTITIES
SEE DWG. NO. 094-259.847 LT-14
JAMES RIVER AT JAMESTOWN
GIRDER DETAILS (NEW W36X170 GIRDER)



SPLICE DETAIL
 USE M270 GRADE 36 STEEL
 USE 7/8" # M164 BOLTS

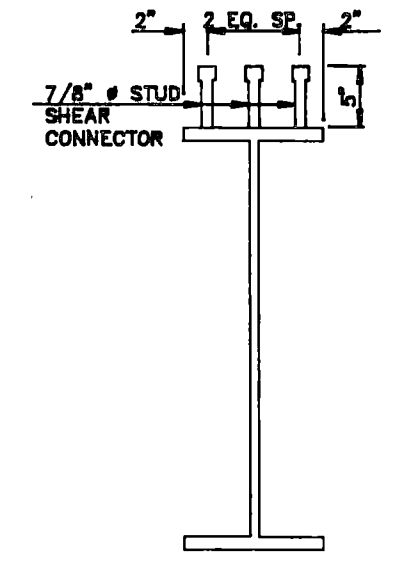


DETAIL OF GIRDER AT ABUT. NO. 4

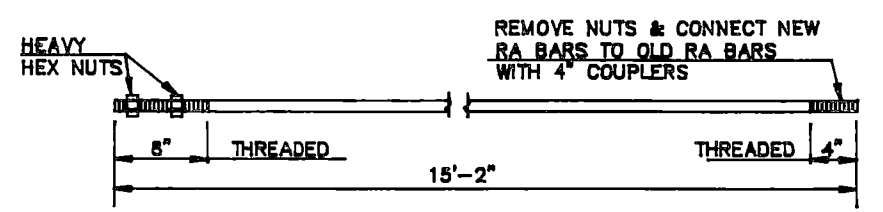


DETAIL OF GIRDER AT DIAPHRAGM

NOTE:
 ALL DETAILS SHOWN ON THIS DRAWING ARE FOR THE NEW GIRDERS.

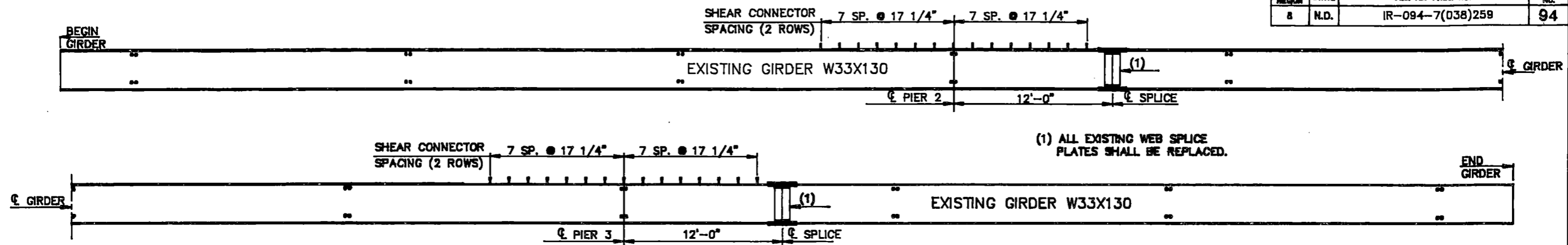


SHEAR DEVICE DETAIL



RA BAR DETAIL
 (44 REQUIRED)
 1" DIAMETER

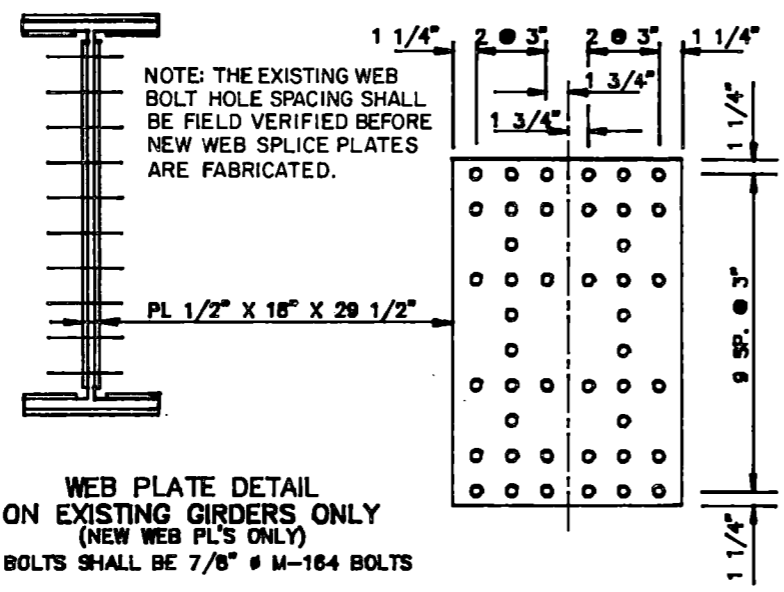
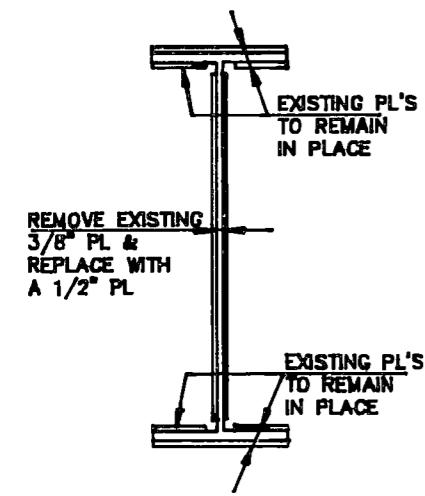
QUANTITIES
SEE DWG. NO. 094-259.847 LT - 14
JAMES RIVER AT JAMESTOWN
GIRDER DETAILS (NEW W36X170 GIRDER)



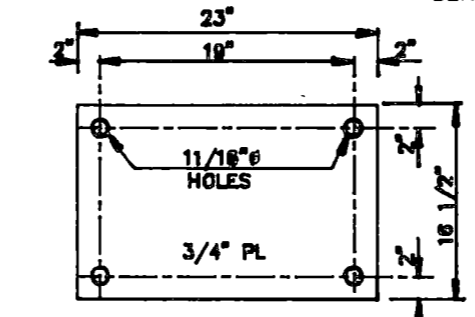
(1) ALL EXISTING WEB SPLICE PLATES SHALL BE REPLACED.

GIRDER ELEVATION
ONE GIRDER SHOWN
(4 GIRDERS EXISTING)

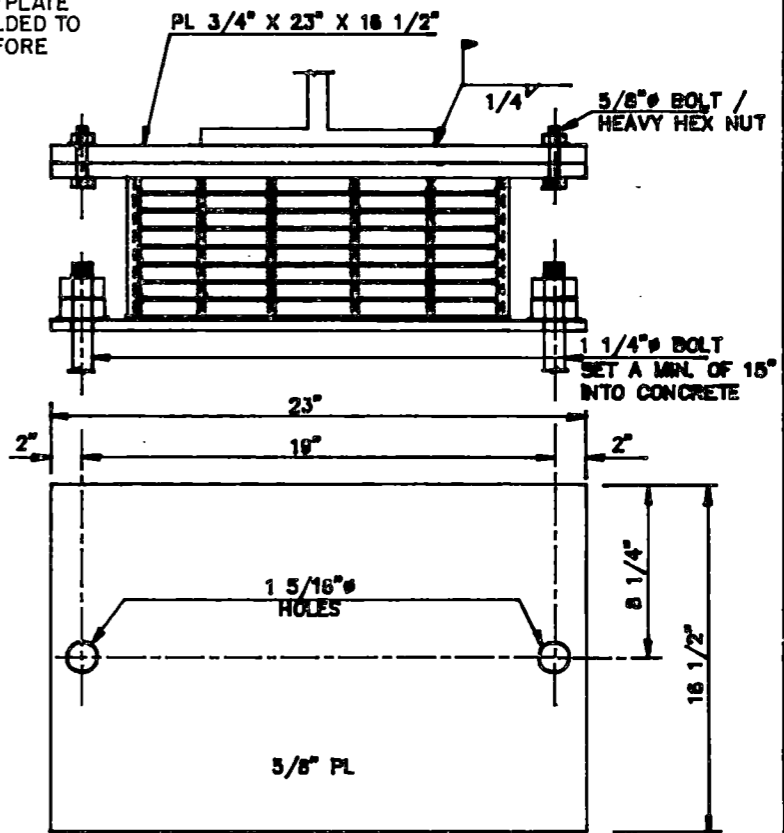
NOTE: THE TOP PLATE SHALL BE WELDED TO THE BEAM BEFORE ATTACHING TO BEARING PAD.



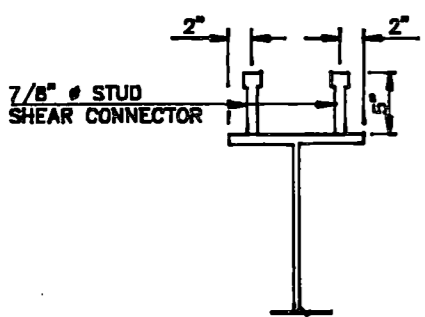
WEB PLATE DETAIL
ON EXISTING GIRDERS ONLY
(NEW WEB PL'S ONLY)
ALL BOLTS SHALL BE 7/8\"/>



HOLE SPACING IN THE TOP 5/8\"/>

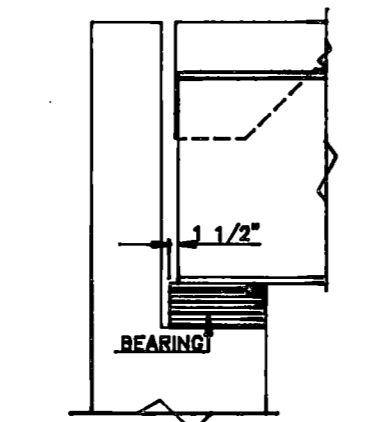


ABUTMENT 1 BEARING DETAILS
(8 REQUIRED PER BRIDGE)
TOP & BOTTOM PLATES SHALL BE FACTORY VULCANIZED TO ELASTOMERIC BEARINGS.



SHEAR DEVICE DETAIL

NOTE: THE STUD SHEAR CONNECTORS SHALL BE FIELD INSTALLED FOR THE EXISTING GIRDERS. THE COST OF FURNISHING AND PLACING THE SHEAR STUDS SHALL BE INCLUDED IN THE PRICE BID FOR "STUD SHEAR CONNECTOR".



SHOWING BEARING AT END OF BEAM AT ABUT. NO. 1

TEMPERATURE ADJUSTMENTS	
TEMP ° F	INCHES
-40	- 1 3/8"
0	- 11/16"
40	0"
80	11/16"
120	1 3/8"

NOTE: THE POSITION OF THE TOP PLATE IN RELATIONSHIP TO THE BOTTOM PLATE SHALL BE ADJUSTED AS SHOWN IN THE "TEMPERATURE ADJUSTMENT" TABLE. A POSITIVE DIMENSION MEANS TOWARD THE ABUTMENT.

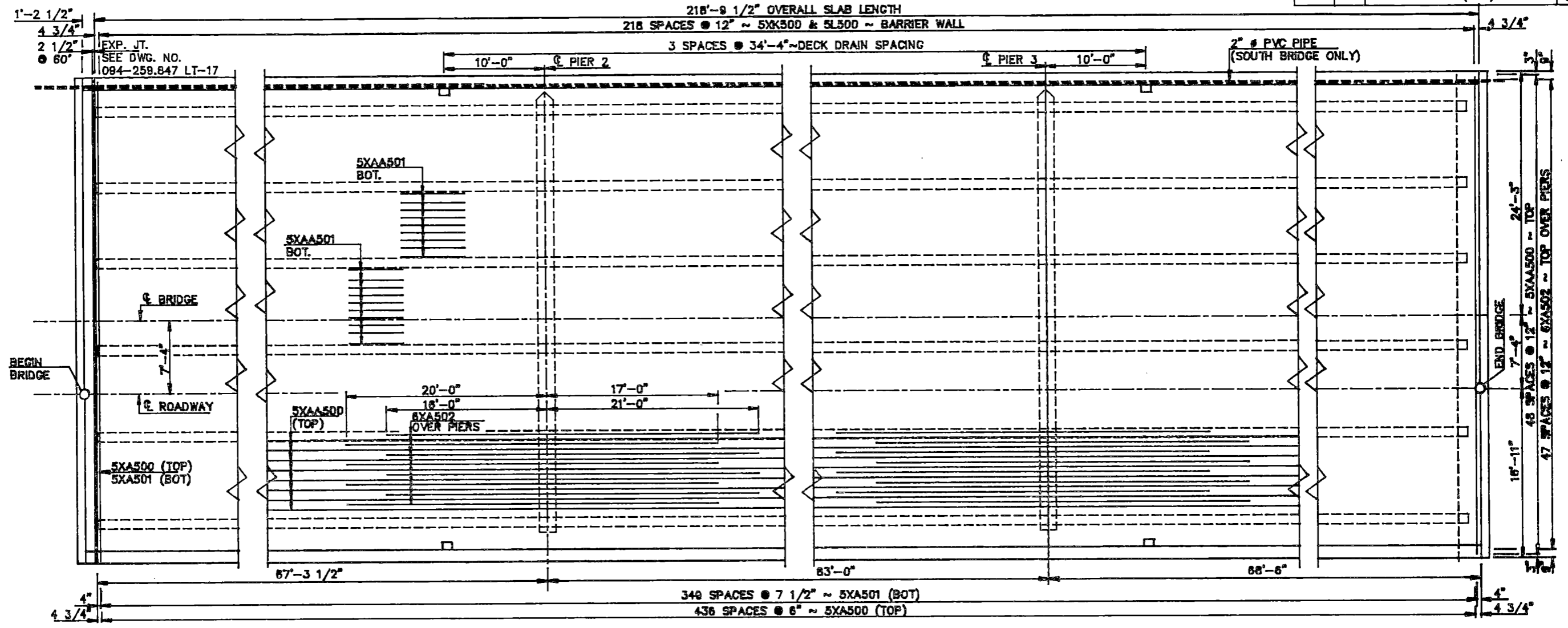
NOTE: ALL DETAILS SHOWN ON THIS DRAWING ARE FOR THE EXISTING GIRDERS EXCEPT FOR THE BEARING DETAILS WHICH ARE FOR ALL THE GIRDERS AT ABUTMENT NO. 1.

♦ FOR INFORMATIONAL PURPOSES ONLY.

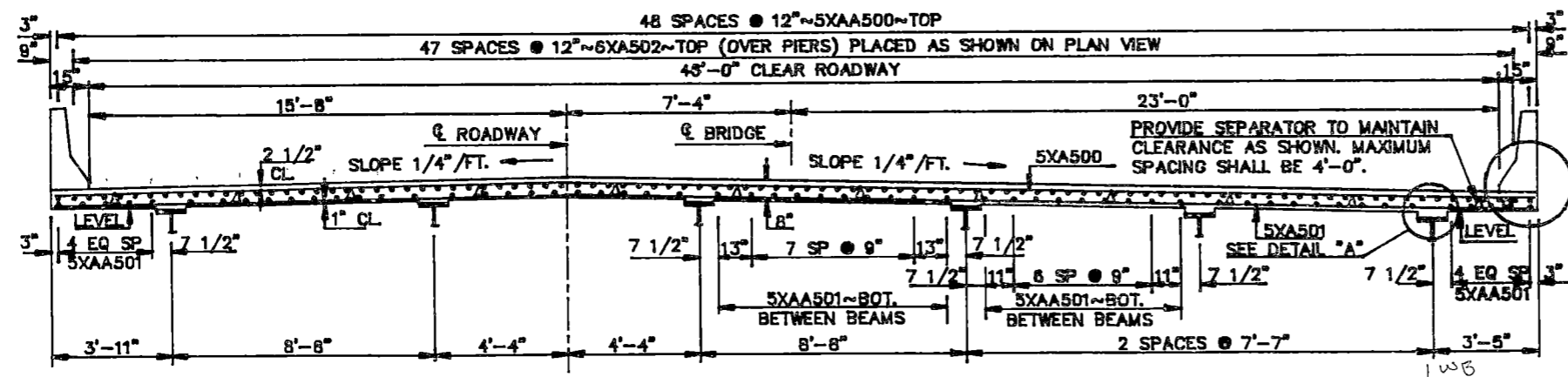
QUANTITIES	(ONE BRIDGE)
STRUCTURAL STEEL	78,915 LBS.
ELASTOMERIC BEARING PAD	11.3 SQ.FT.

JAMES RIVER AT JAMESTOWN

GIRDER DETAILS

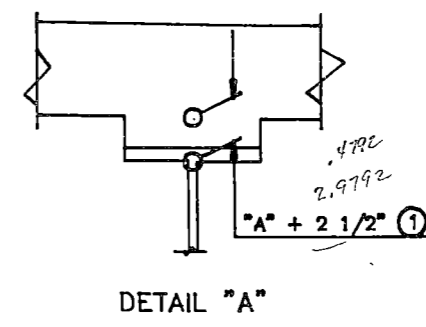
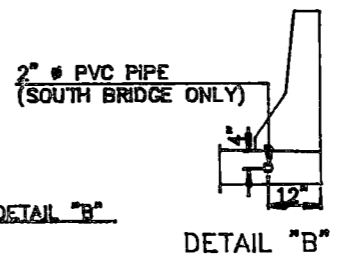


PLAN



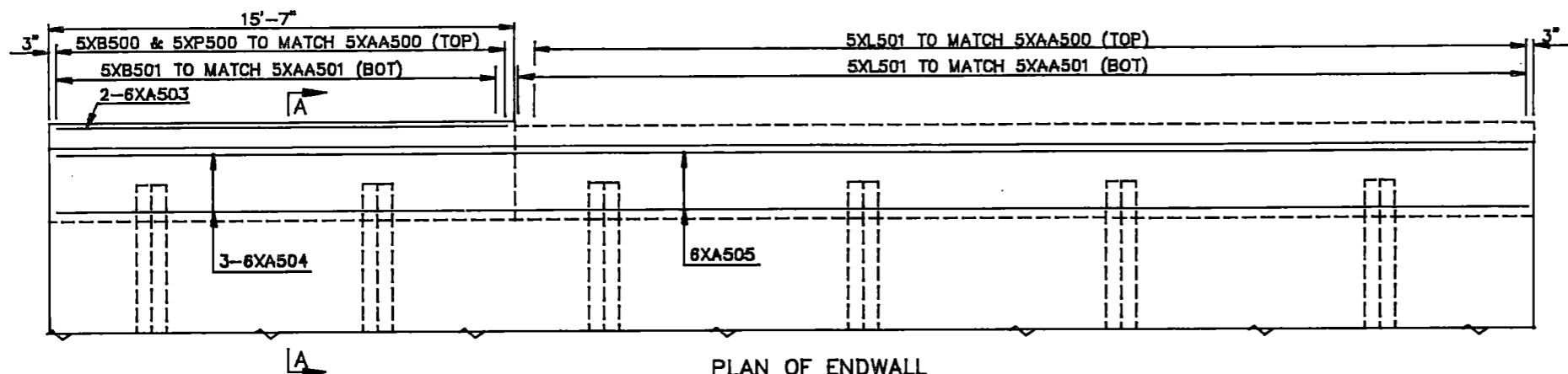
TYPICAL SECTION
 SHOWING DIMENSIONS & REINFORCING

① "A" DIMENSION FOR THE NEW GIRDERS IS SHOWN IN THE FIELD RISER DIAGRAM. SLIGHT ADJUSTMENT MAY BE REQUIRED TO ACCOMODATE GIRDER CAMBER. THE "A" DIMENSION FOR THE EXISTING GIRDERS SHALL BE DETERMINED IN THE FIELD USING GIRDER ELEVATIONS AND SCREED ELEVATIONS.

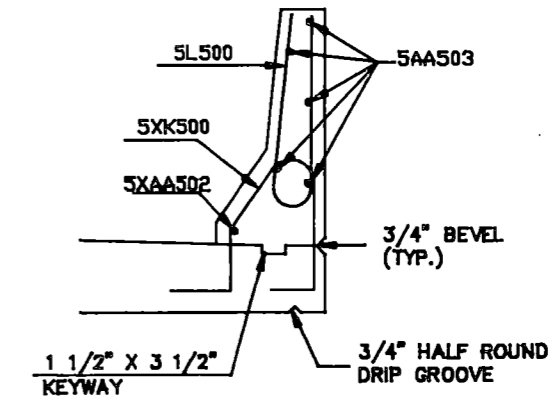


QUANTITIES
SEE DWG. NO. 094-259.847 LT-17
JAMES RIVER AT JAMESTOWN
SUPERSTRUCTURE DETAILS
46'-0" CLEAR ROADWAY

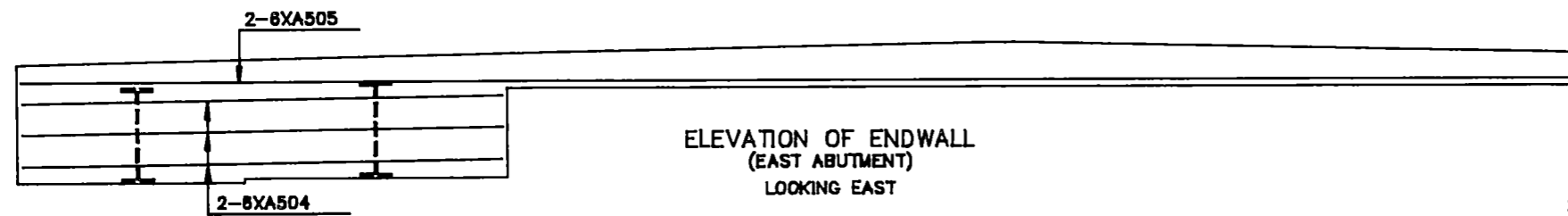
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	96



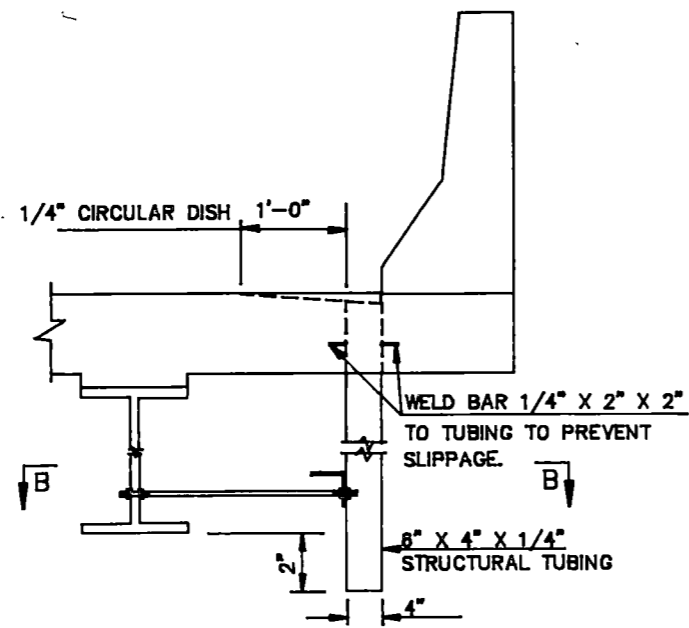
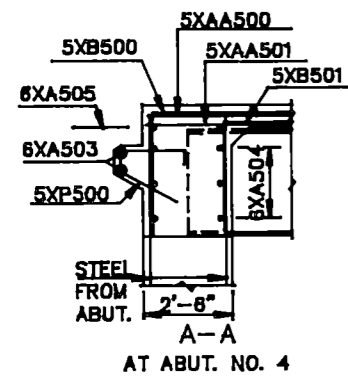
PLAN OF ENDWALL
(EAST ABUTMENT)
LOOKING EAST



SECTION OF BARRIER

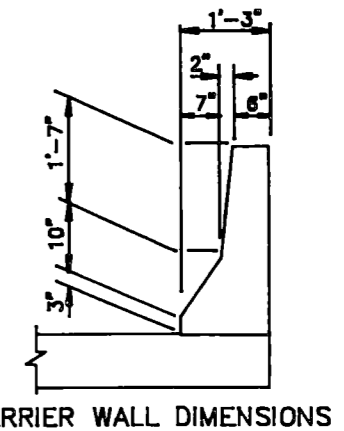
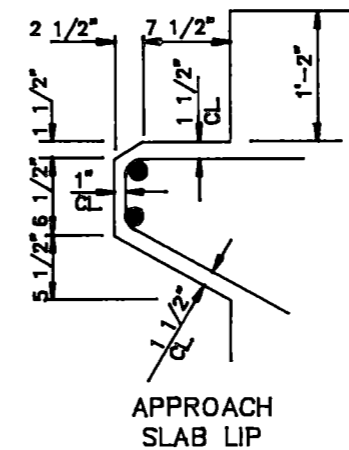


ELEVATION OF ENDWALL
(EAST ABUTMENT)
LOOKING EAST

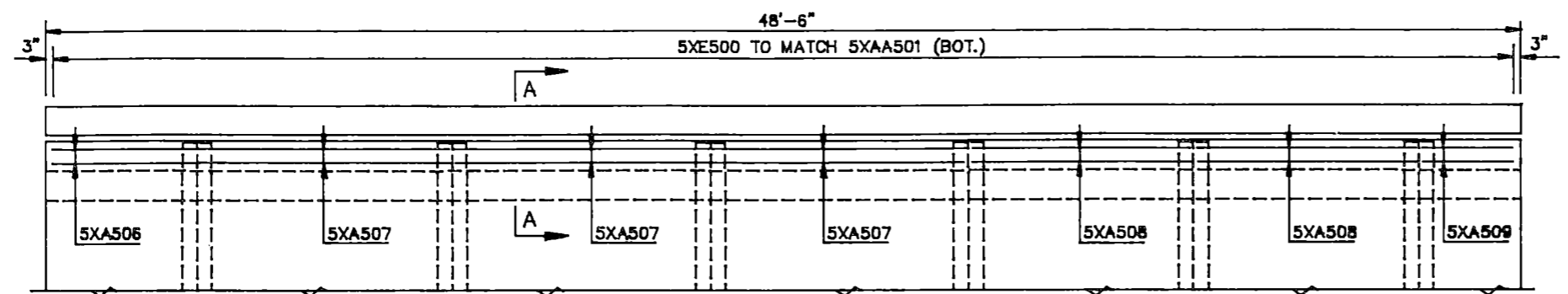


DECK DRAIN DETAIL
(8 REQUIRED)

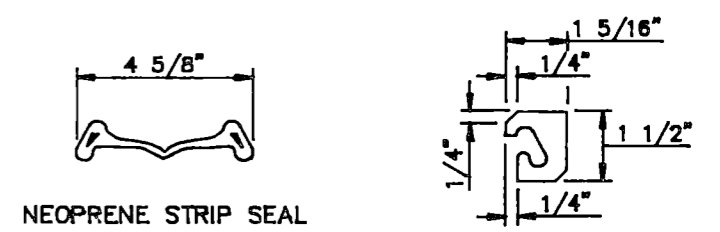
NOTE:
ALL MATERIALS TO BE GALVANIZED AFTER WELDING.
DRAINS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE PRICE BID FOR CLASS AAE-3 CONCRETE.



QUANTITIES
SEE DWG. NO. 094-259.847 LT-17
JAMES RIVER AT JAMESTOWN
SUPERSTRUCTURE DETAILS

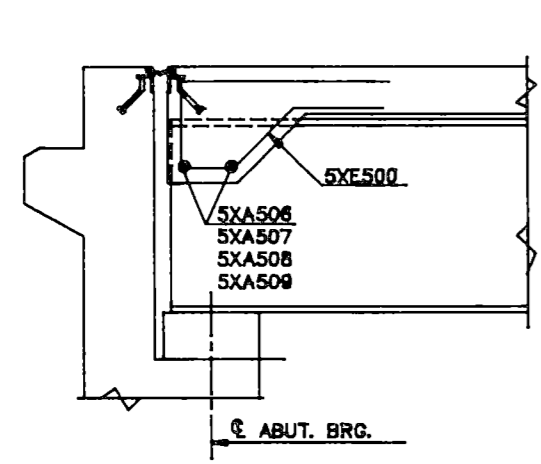


PLAN OF ENDWALL
(WEST ABUTMENT)
LOOKING WEST

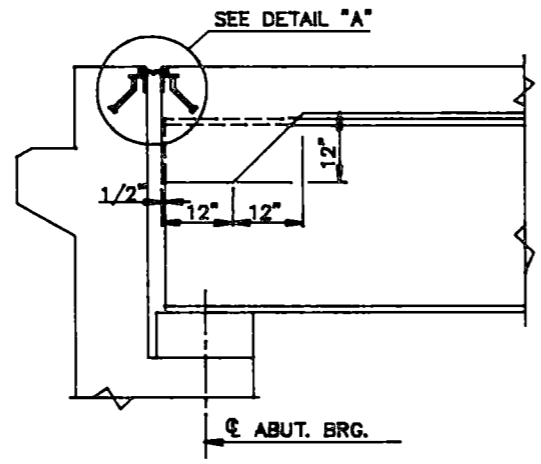


NEOPRENE STRIP SEAL

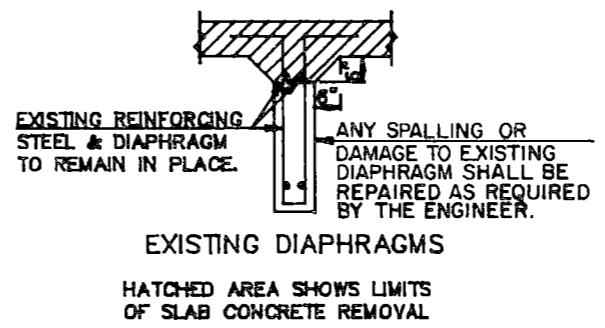
STEEL EXTRUSION



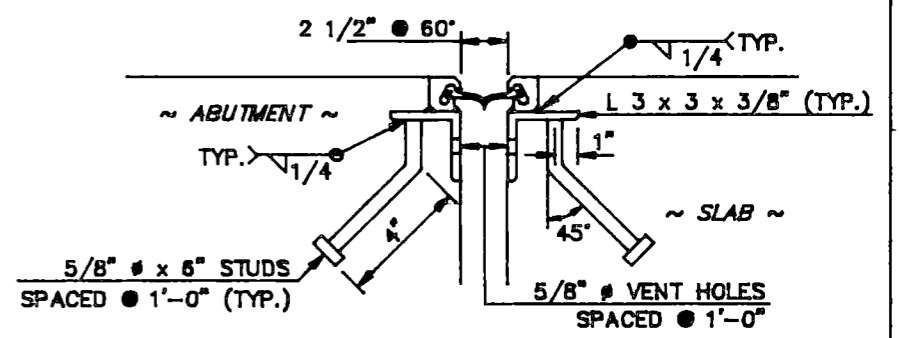
A-A
SHOWING REINFORCING
AT ABUT. NO. 1



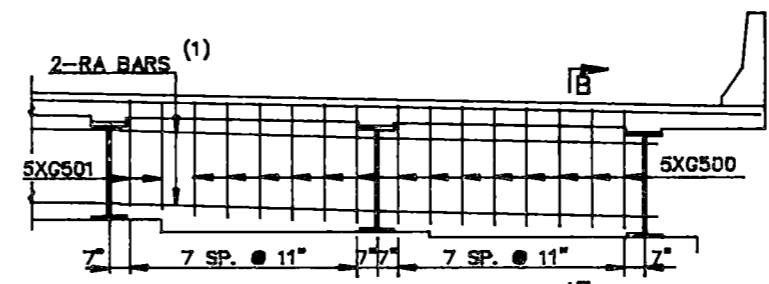
A-A
SHOWING DIMENSIONS
AT ABUT. NO. 1



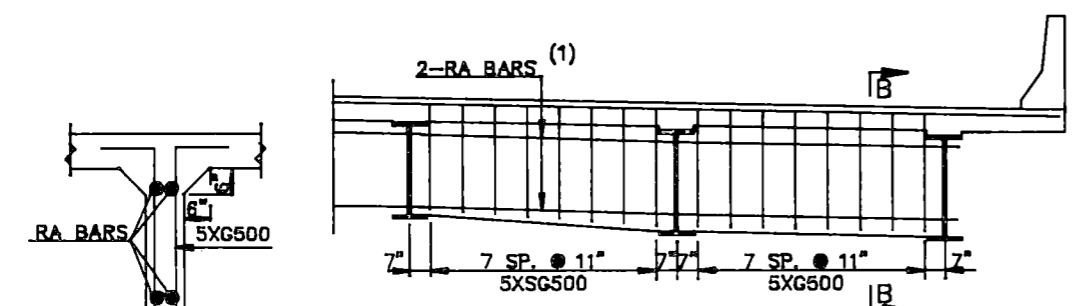
EXISTING DIAPHRAGMS
HATCHED AREA SHOWS LIMITS
OF SLAB CONCRETE REMOVAL



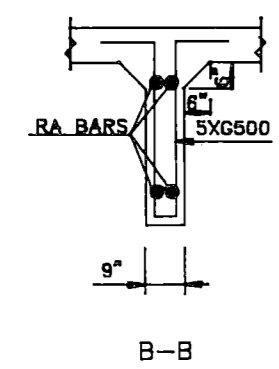
DETAIL "A"
(GALVANIZE AFTER FABRICATION)
EXPANSION JOINT DETAILS



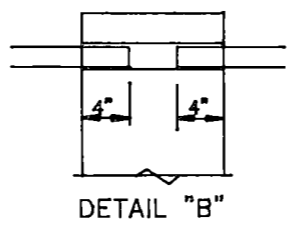
PIER DIAPHRAGM
(1) SEE DRAWING NO. 094-259.847 LT-13
FOR RA BAR DETAIL.



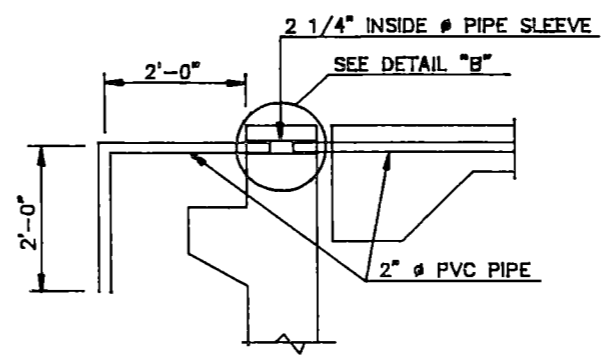
INTERMEDIATE DIAPHRAGM
(1) SEE DRAWING NO. 094-259.847 LT-13
FOR RA BAR DETAIL.



B-B



DETAIL "B"



EXPANSION COUPLER AT WEST
ABUTMENT (SOUTH BRIDGE ONLY)

NOTE:
THE 2" DIAMETER CONDUIT AND THE
EXPANSION COUPLER FOR THE LIGHTING
SYSTEM AND THE INSTALLATION SHALL
NOT BE BID SEPARATELY BUT SHALL BE
INCLUDED IN THE PRICE BID FOR THE
ITEM "CLASS AAE-3 CONCRETE".

* FOR INFORMATION PURPOSES ONLY

QUANTITIES	(ONE BRIDGE)
CONCRETE REMOVAL	219.8 C.Y.
CLASS AAE-3 CONCRETE	325.1 C.Y.
REINFORCING STEEL	4,783 LBS.
REINFORCING STEEL (EPOXY)	78,349 LBS.
EXPANSION JOINT STRIP SEAL	48.5 L.F.

JAMES RIVER AT JAMESTOWN

SUPERSTRUCTURE DETAILS

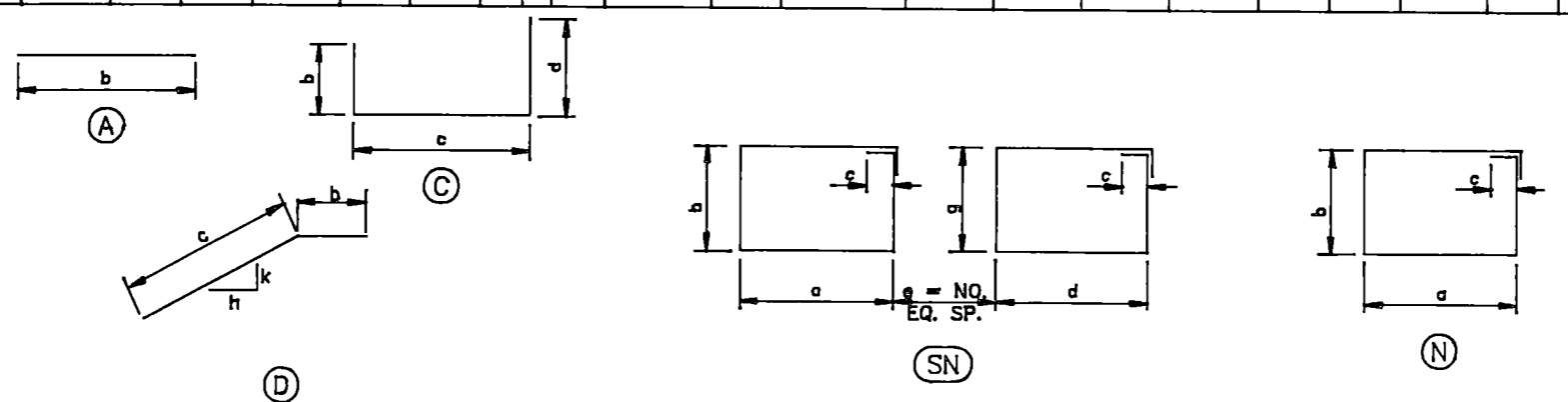
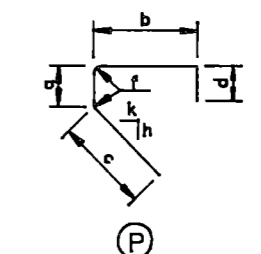
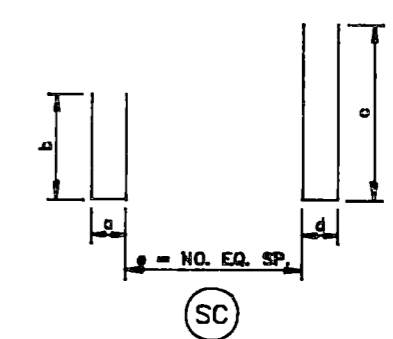
BILL OF REINFORCING STEEL, GRADE 60

LETTER PREFIX OF BAR MARK DENOTES SHAPE ~ SEE BAR DETAILS

FHWA DISTRICT	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	98

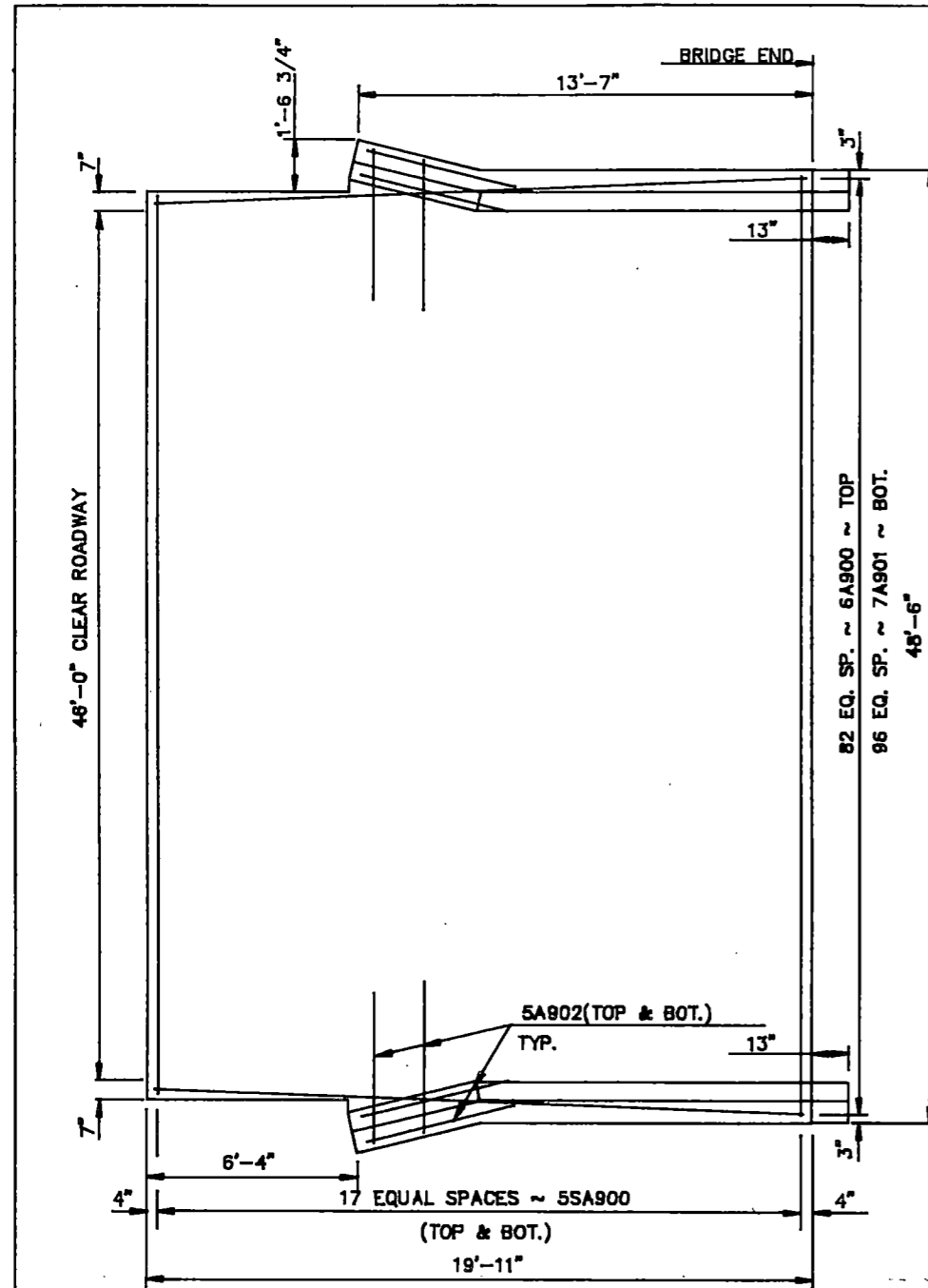
LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS											LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS										
					a	b	c	d	e	f	g	h	k	a	b						c	d	e	f	g	h	k				
ABUTMENT 1 (ONE BRIDGE)	6	A100	15	22'-8"	22'-8"											ABUTMENT 4 (ONE BRIDGE)	6	A120	15	22'-8"	22'-8"										
	5	A101	16	22'-8"	22'-8"												5	A121	14	22'-8"	22'-8"										
	5	A102	2	8'-0"	8'-0"												5	A122	4	7'-10"	7'-10"										
	5	A103	2	7'-0"	7'-0"												5	A123	2	6'-3"	6'-3"										
	5	A104	2	5'-0"	5'-0"												5	A124	2	4'-11"	4'-11"										
	8	A105	2	29'-0"	29'-0"												8	A125	5	19'-4"	19'-4"										
	8	A106	3	35'-0"	35'-0"												8	A126	2	24'-8"	24'-8"										
	8	A107	4	60'-0"	60'-0"												5	A127	2	9'-7"	9'-7"										
	5	A108	8	2'-6"	2'-6"												5	A128	2	8'-7"	8'-7"										
	5	A109	2	24'-6"	24'-6"												5	A129	2	7'-6"	7'-6"										
	5	A110	2	58'-8"	58'-8"												5	A130	2	6'-5"	6'-5"										
	5	A111	1	57'-8"	57'-8"												5	A131	2	5'-5"	5'-5"										
	5	A112	2	58'-7"	58'-7"																										
	5	A113	1	55'-7"	55'-7"																										
	5	A114	2	54'-6"	54'-6"																										
5	A115	1	53'-5"	53'-5"																											
5	C100	48	8'-2"	1'-6"	5'-2"	1'-6"									5	C110	48	8'-2"	1'-6"	5'-2"	1'-6"										
5	C101	13	17'-2"	8'-0"	1'-2"	8'-0"									5	C111	12	17'-2"	8'-0"	1'-2"	8'-0"										
5	C102	1	17'-8"	8'-3"	1'-2"	8'-3"									5	C112	1	17'-8"	8'-3"	1'-2"	8'-3"										
5	C103	1	16'-2"	7'-6"	1'-2"	7'-6"									5	C113	1	16'-2"	7'-6"	1'-2"	7'-6"										
5	C104	1	15'-2"	7'-0"	1'-2"	7'-0"									5	C114	1	15'-2"	7'-0"	1'-2"	7'-0"										
6	D100	2	17'-0"	3'-0"	14'-0"							12	6	6	D110	2	18'-1"	4'-2"	13'-11"							12	6				
8	D101	1	28'-9"	19'-0"	9'-9"							12	1 1/4	8	D111	4	19'-5"	10'-11"	8'-6"							12	1 1/2				
8	D102	3	60'-0"	51'-0"	9'-0"							12	1 1/4	8	D112	1	24'-8"	16'-2"	8'-6"							12	1 1/2				
5	N100	13	11'-0"	2'-2"	3'-0"	4"									5	N110	3	12'-2"	2'-2"	3'-7"	4"										
5	N101	11	11'-4"	2'-2"	3'-2"	4"									5	N111	5	11'-10"	2'-2"	3'-5"	4"										
5	N102	5	10'-4"	2'-2"	2'-8"	4"									5	SC110	1	54'-2"	8"	3'-7"	6'-7"	8"	4								
5	N103	5	10'-0"	2'-2"	2'-6"	4"									5	SN110	1	84'-0"	2'-2"	3'-4"	4"	1'-2"	5							3'-4"	
5	SC100	1	56'-6"	8"	2'-8"	6'-3"	8"	5																							
5	SN100	1	63'-0"	2'-2"	2'-6"	4"	1'-2"	6				2'-6"																			
6	XA116	2	52'-6"	52'-6"											5	XA132	6	4'-11"	4'-11"												
6	XA117	2	48'-2"	48'-2"											5	XA133	16	6'-4"	6'-4"												
5	XC105	35	13'-8"	6'-6"	8"	6'-6"									5	XC112	1	13'-4"	6'-4"	8"	6'-4"										
5	XP100	48	4'-7"	5"	1'-2"	2'-3"	5"		1.5"			12	8																		

- NOTES:
- FABRICATION AND TOLERANCES SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE.
 - ALL DIMENSIONS ARE OUT TO OUT OF BARS.
 - NOMINAL LENGTH OF EACH BENT BAR OR CUT BAR IS THE SUM TOTAL OF THE DETAILING DIMENSIONS FOR THAT BAR, UNLESS OTHERWISE NOTED.
 - THE "r" DIMENSION INDICATES THE RADIUS.
 - AN "X" PRECEDING A BAR DESIGNATION INDICATES AN EPOXY COATED BAR.

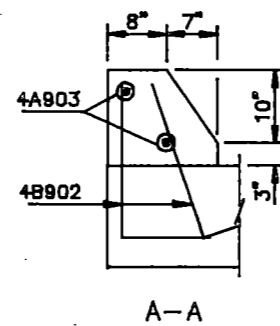


JAMES RIVER AT JAMESTOWN
 ABUTMENT 1 & 4
 REINFORCING BAR LIST
 & DETAILS

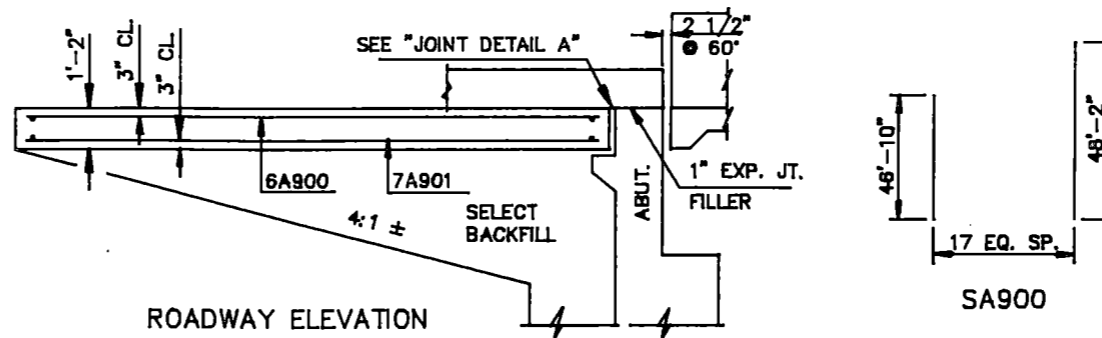
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	100



PLAN

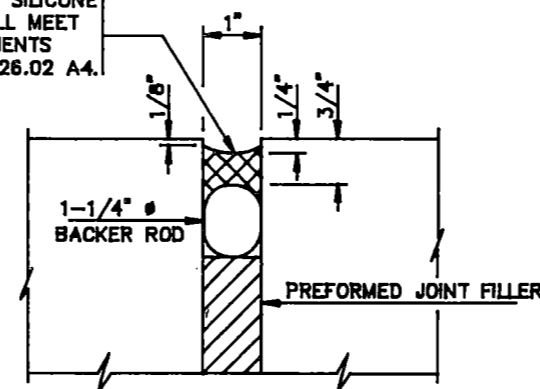


A-A

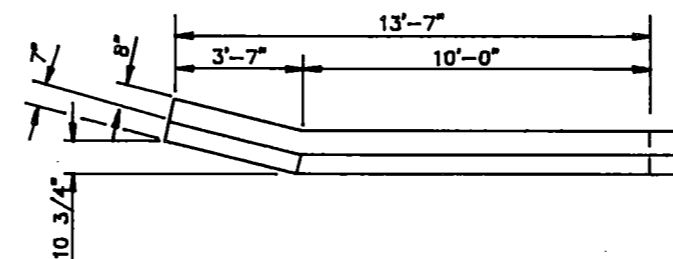


ROADWAY ELEVATION

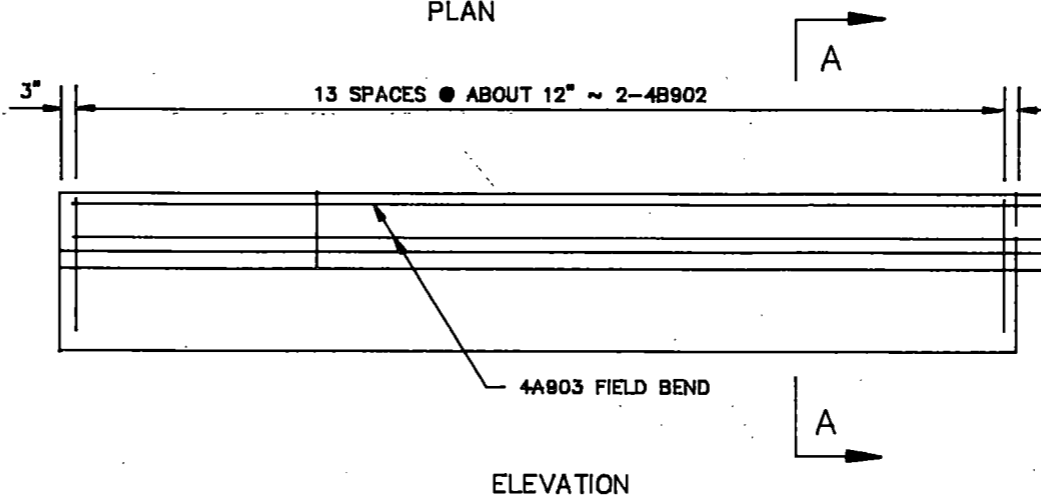
LOW MODULUS SILICONE SEALANT SHALL MEET THE REQUIREMENTS OF SECTION 826.02 A4.



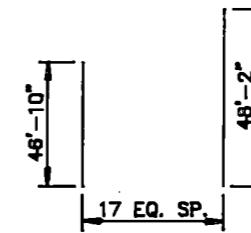
JOINT DETAIL A



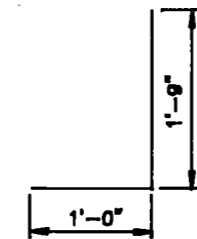
PLAN



ELEVATION



SA900



B902

WIDTH = 46'-0" CL. RDWY.			
SKEW ANGLE = 0°			
BAR LIST - WEST SLAB			
SIZE	MARK	NO.	LENGTH
6	A900	83	19'-7"
7	A901	97	19'-7"
5	A902	16	4'-6"
4	A903	4	14'-3"
5	SA900	2	855'-0"
4	B902	56	2'-8"
ESTIMATED MATERIAL QUANTITIES			
REINFORCING STEEL (LBS.)		CONCRETE (C.Y.)	
8,324		42.7	

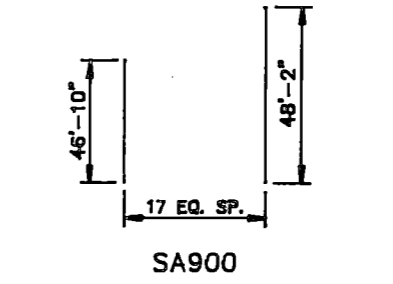
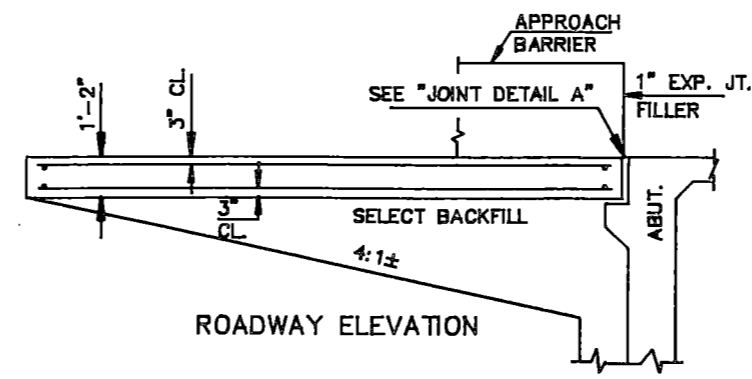
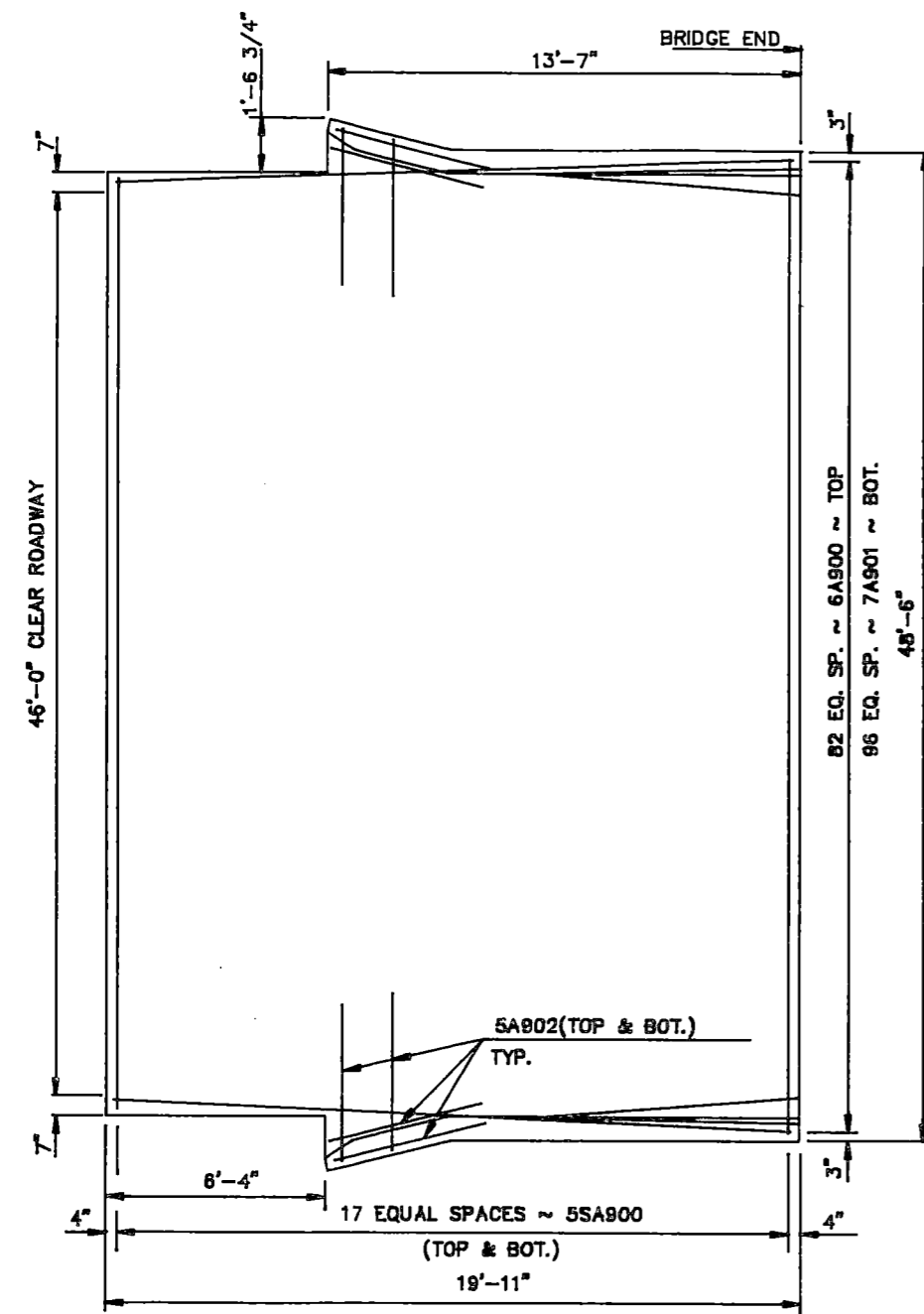
NOTES:

THE ABOVE ESTIMATED MATERIAL QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. ALL MATERIALS INCLUDING CONCRETE, REINFORCING BARS, BACKER ROD, SILICON SEALANT, PREFORMED JOINT FILLER AND LABOR REQUIRED TO BUILD THE APPROACH SLABS AND APPROACH SLAB BARRIERS SHALL BE INCIDENTAL TO THE PAY ITEM "CONCRETE BRIDGE APPROACH SLAB".

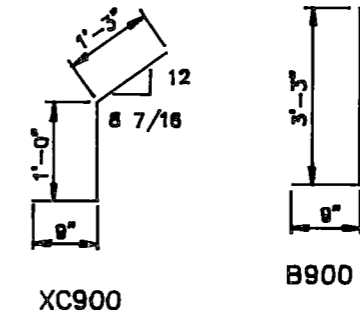
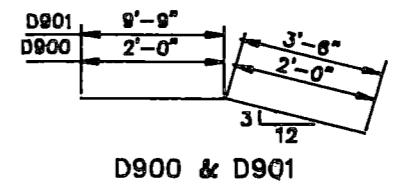
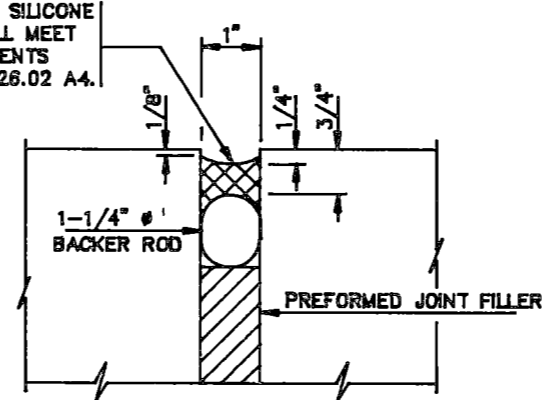
THE CONCRETE SHALL BE CLASS AE-3 AND THE REINFORCING STEEL SHALL BE GRADE 60.

SURFACE FINISH "D" SHALL BE REQUIRED FOR THE INSIDE AND TOP SURFACES OF THE CURB TRANSITION.

QUANTITIES	WEST SLAB
APPROACH SLAB	106.7 S.Y.
JAMES RIVER AT JAMESTOWN	
APPROACH SLAB	
WEST END-NORTH ROADWAY	



LOW MODULUS SILICONE SEALANT SHALL MEET THE REQUIREMENTS OF SECTION 826.02 A4.



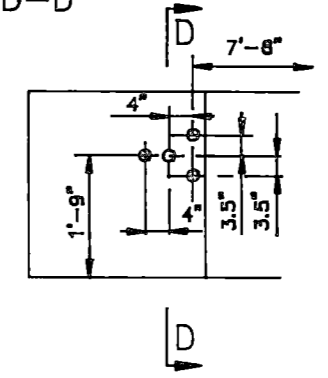
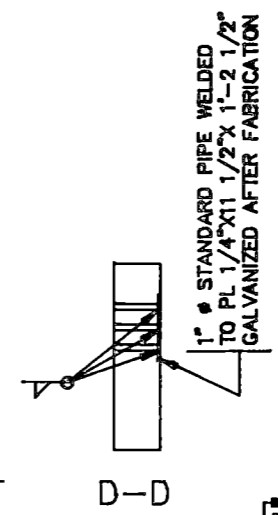
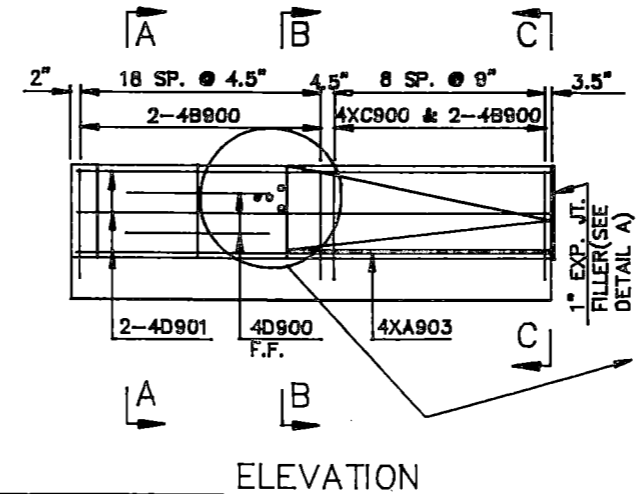
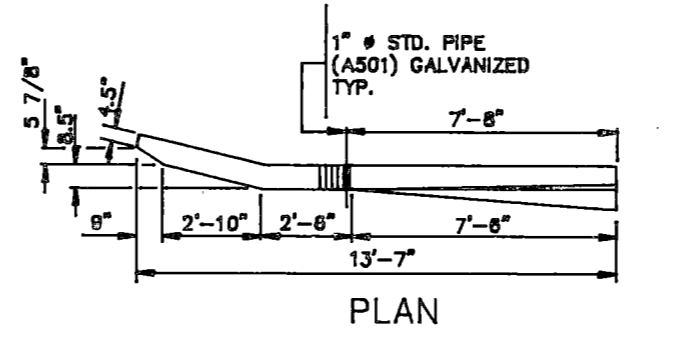
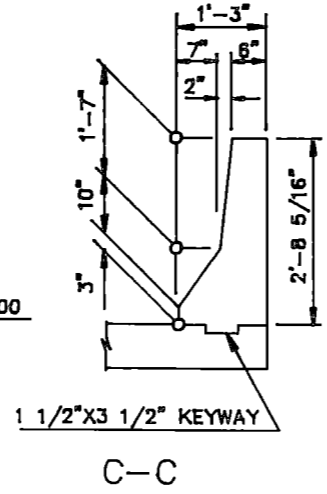
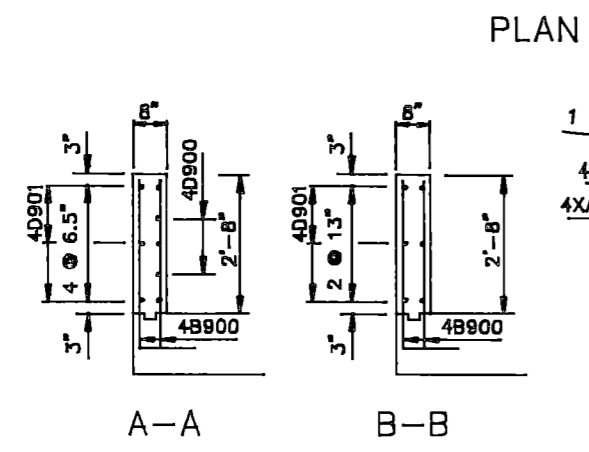
WIDTH = 46'-0" CL. RDWY.
SKEW ANGLE = 0°

BAR LIST - EAST SLAB			
SIZE	MARK	NO.	LENGTH
8	A900	83	19'-7"
7	A901	97	19'-7"
5	A902	18	4'-6"
4	XA903	2	7'-6"
4	B900	112	4'-0"
4	XC900	18	3'-0"
4	D900	4	4'-0"
4	D901	12	13'-3"
5	SA900	2	855'-0"

ESTIMATED MATERIAL QUANTITIES	
REINFORCING STEEL (LBS.)	CONCRETE (C.Y.)
8,645	43.3

NOTES:
THE ABOVE ESTIMATED MATERIAL QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. ALL MATERIALS INCLUDING CONCRETE, REINFORCING BARS, BACKER ROD, SILICON SEALANT, PREFORMED JOINT FILLER AND LABOR REQUIRED TO BUILD THE APPROACH SLABS AND THE APPROACH SLAB BARRIERS SHALL BE INCIDENTAL TO THE PAY ITEM "CONCRETE BRIDGE APPROACH SLAB".
THE CONCRETE SHALL BE CLASS AE-3 AND THE REINFORCING STEEL SHALL BE GRADE 60. THE BAR MARKS BEGINNING WITH AN "X" INDICATES AN EPOXY COATED BAR.

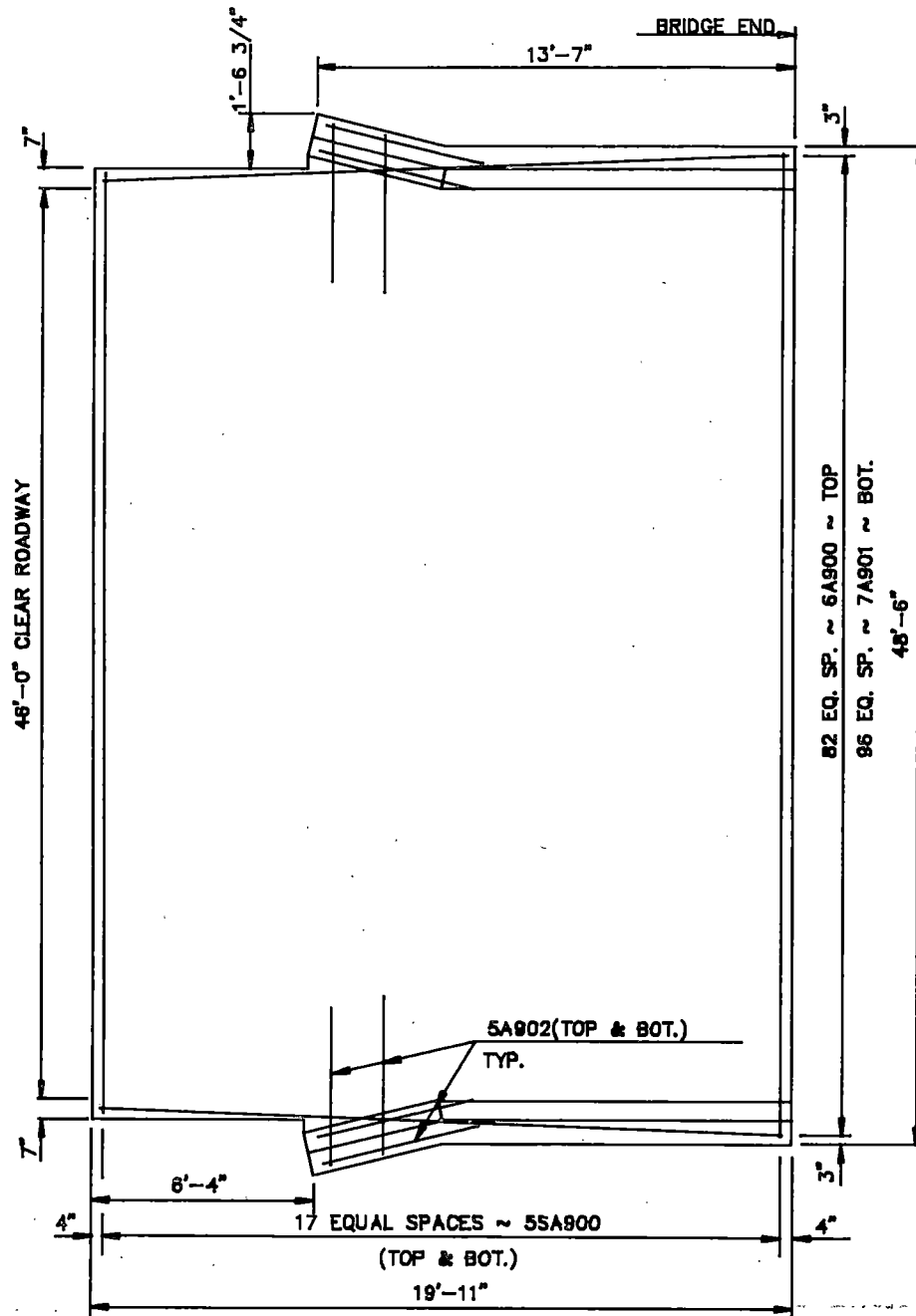
SURFACE FINISH "D" SHALL BE REQUIRED FOR THE INSIDE AND TOP SURFACES OF THE CURB TRANSITIONS.



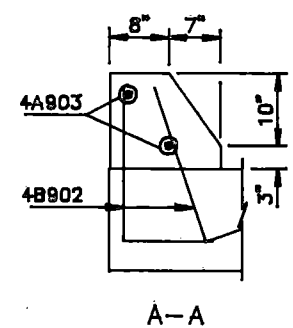
QUANTITIES	EAST SLAB
APPROACH SLAB	108.7 S.Y.

JAMES RIVER AT JAMESTOWN
APPROACH SLAB
EAST END-NORTH ROADWAY

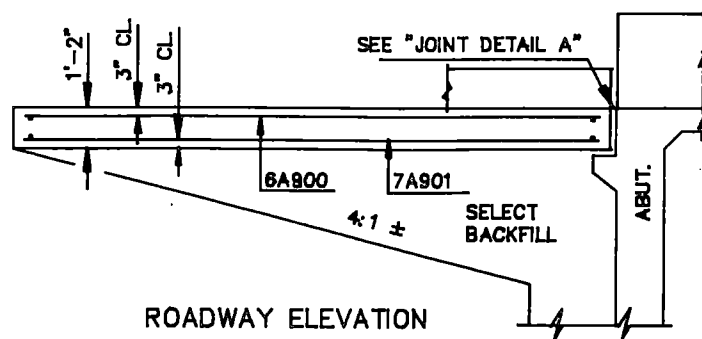
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
6	N.D.	IR-094-7(038)259	102



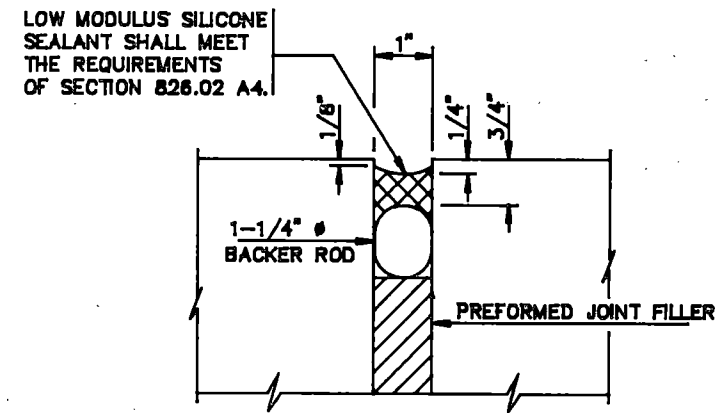
PLAN



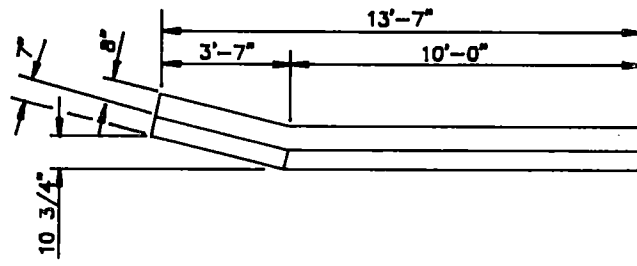
A-A



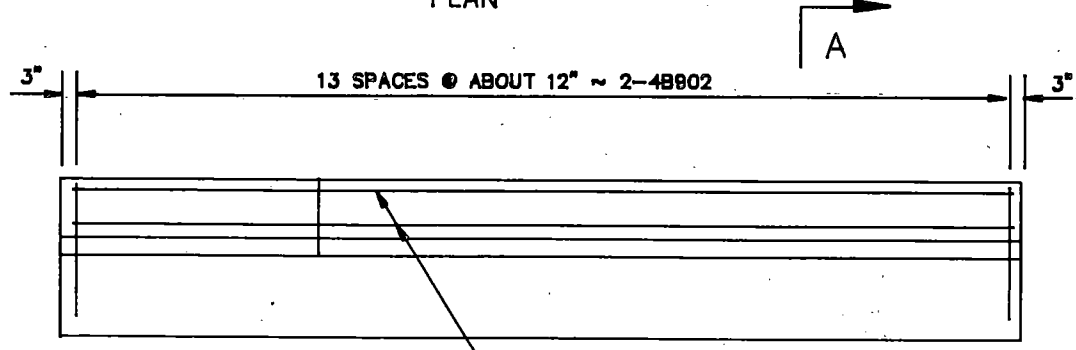
ROADWAY ELEVATION



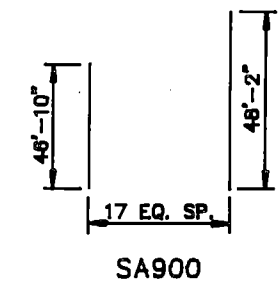
JOINT DETAIL A



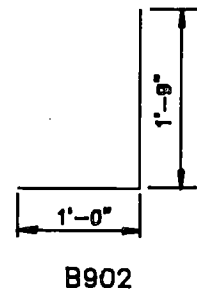
PLAN



ELEVATION



SA900



B902

WIDTH = 46'-0" CL. RDWY.			
SKEW ANGLE = 0°			
BAR LIST - EAST SLAB			
SIZE	MARK	NO.	LENGTH
6	A900	83	19'-7"
7	A901	97	19'-7"
5	A902	16	4'-8"
4	A903	4	13'-3"
5	SA900	2	855'-0"
4	B902	56	2'-9"
ESTIMATED MATERIAL QUANTITIES			
REINFORCING STEEL (LBS.)		CONCRETE (C.Y.)	
8,321		42.6	

NOTES:

THE ABOVE ESTIMATED MATERIAL QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. ALL MATERIALS INCLUDING CONCRETE, REINFORCING BARS, BACKER ROD, SILICON SEALANT, PREFORMED JOINT FILLER AND LABOR REQUIRED TO BUILD THE APPROACH SLABS AND APPROACH SLAB BARRIERS SHALL BE INCIDENTAL TO THE PAY ITEM "CONCRETE BRIDGE APPROACH SLAB".

THE CONCRETE SHALL BE CLASS AE-3 AND THE REINFORCING STEEL SHALL BE GRADE 60.

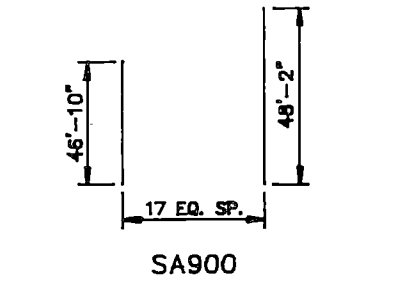
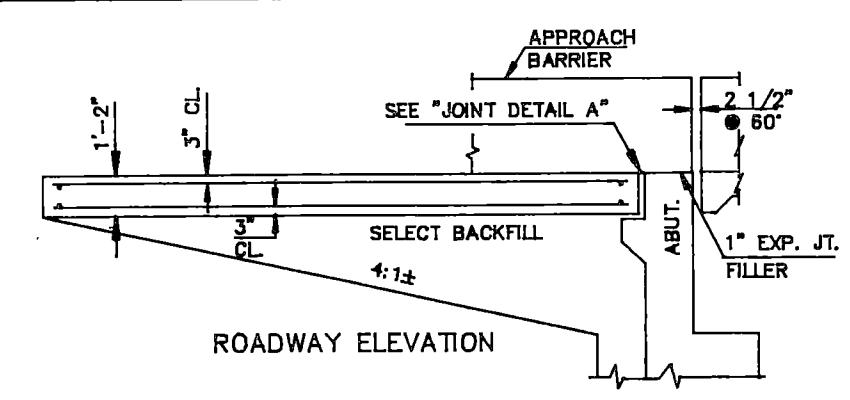
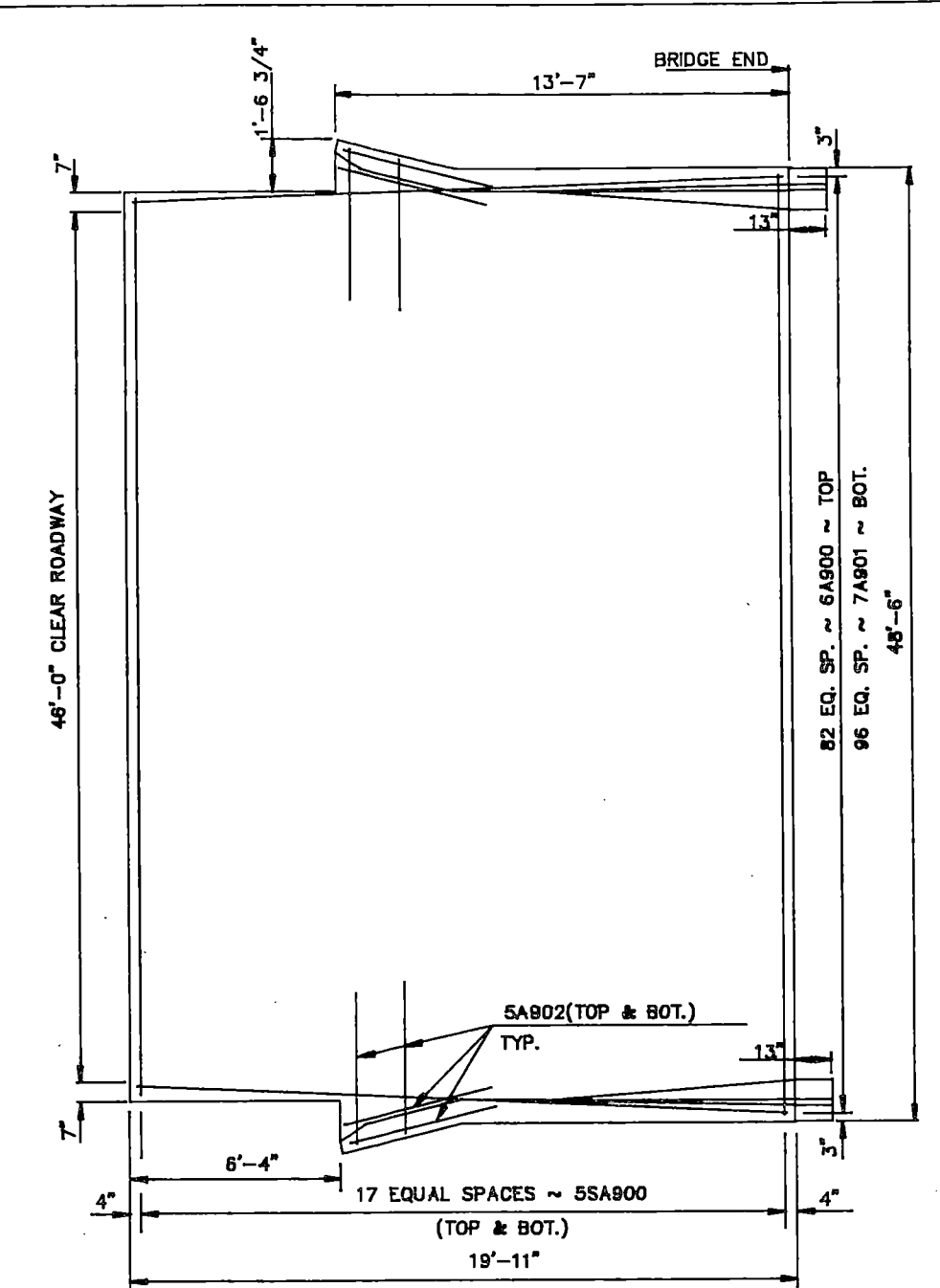
SURFACE FINISH "D" SHALL BE REQUIRED FOR THE INSIDE AND TOP SURFACES OF THE CURB TRANSITION.

QUANTITIES	EAST SLAB
APPROACH SLAB	108.7 S.Y.

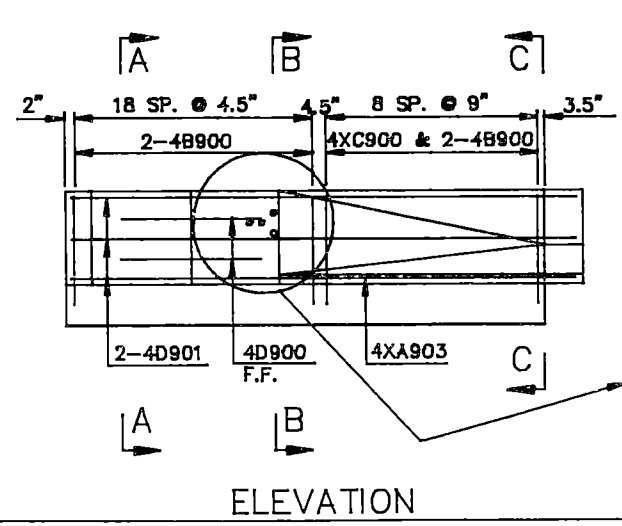
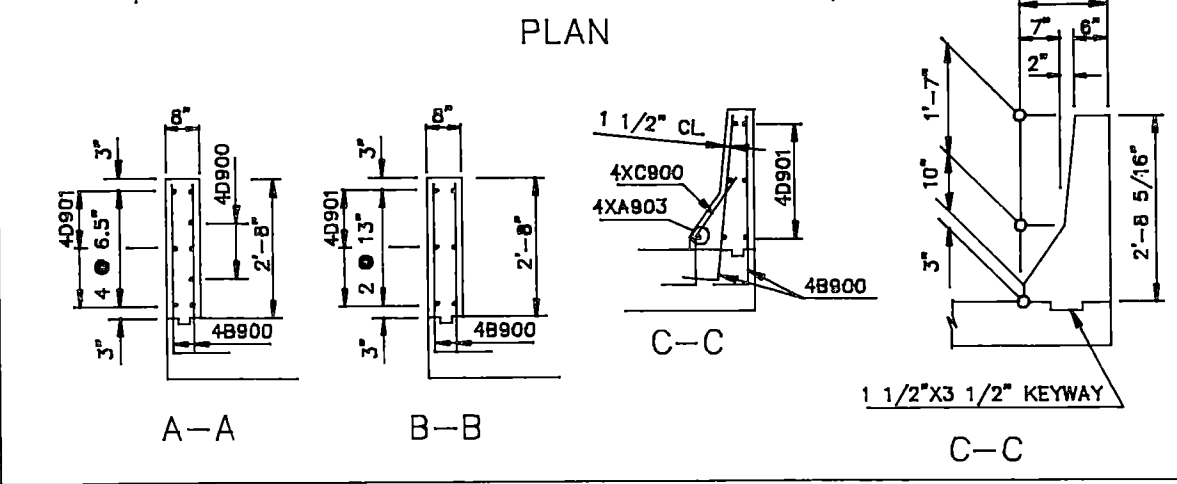
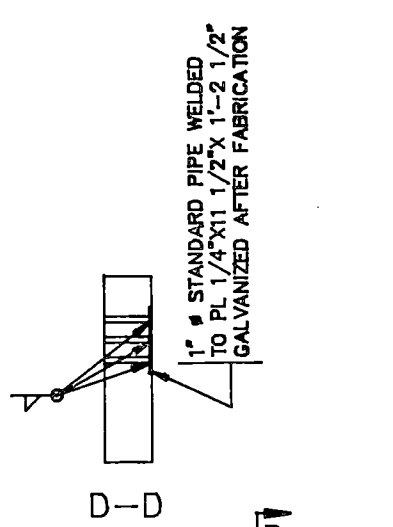
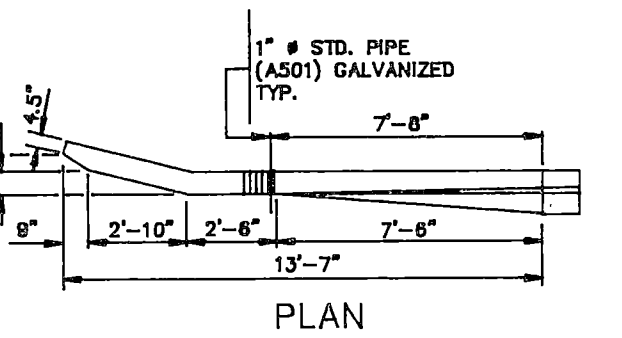
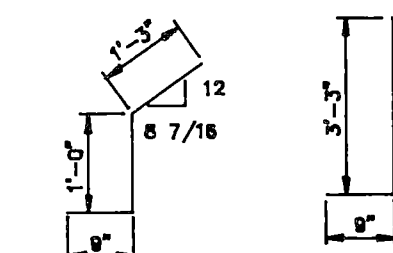
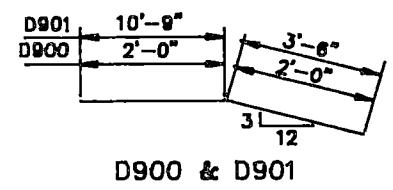
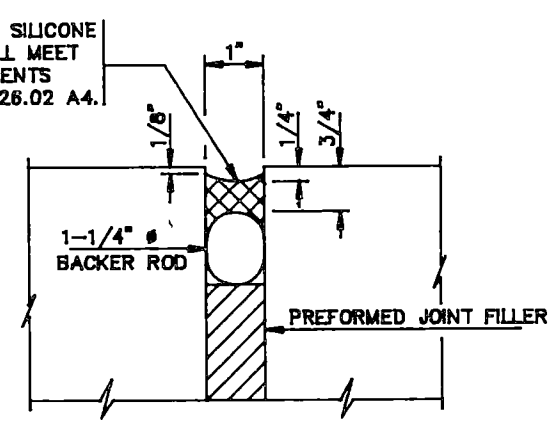
JAMES RIVER AT JAMESTOWN

APPROACH SLAB
EAST END-SOUTH ROADWAY

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	103



LOW MODULUS SILICONE SEALANT SHALL MEET THE REQUIREMENTS OF SECTION 826.02 A4.



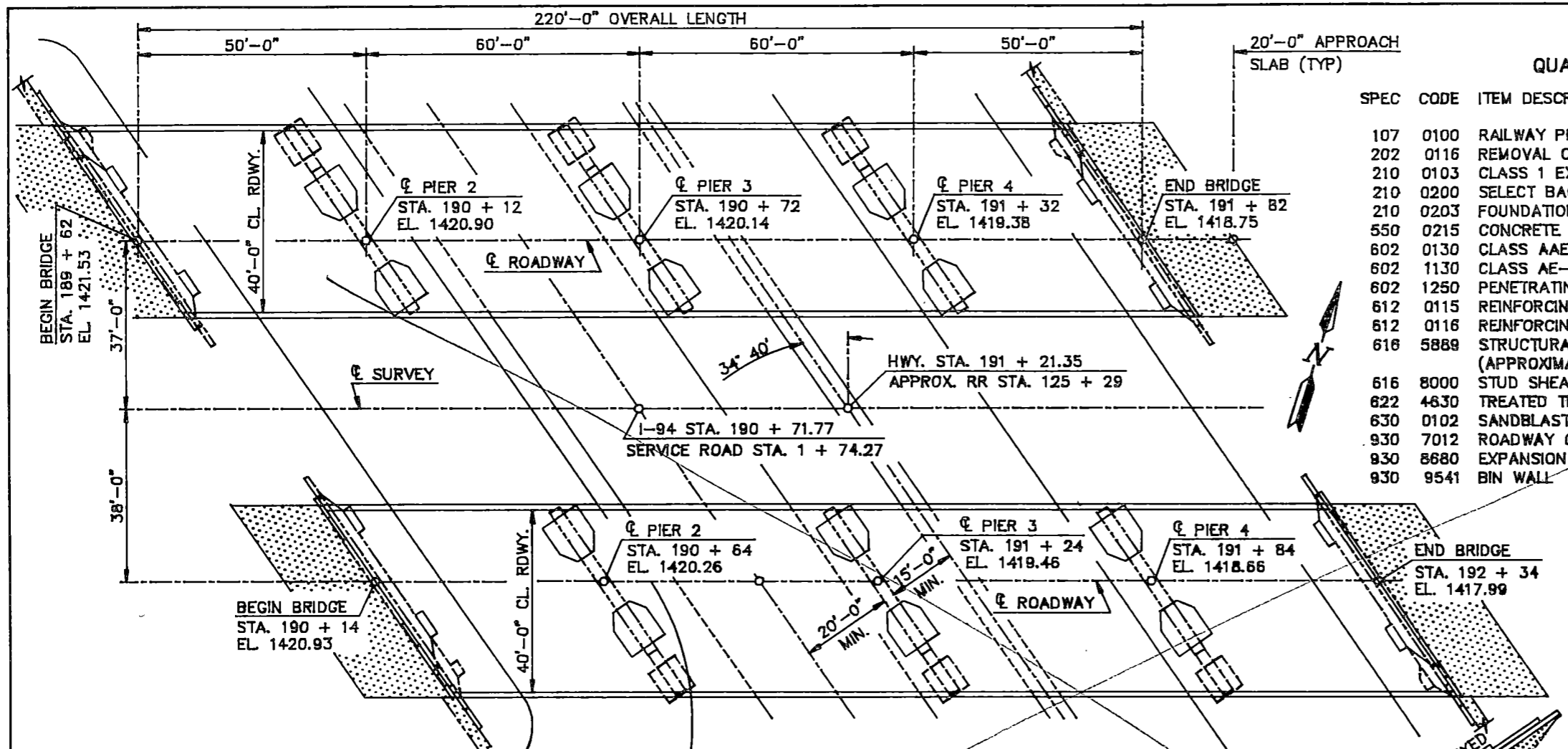
WIDTH = 46'-0" CL. RDWY.
SKEW ANGLE = 0°

BAR LIST - WEST SLAB			
SIZE	MARK	NO.	LENGTH
6	A900	83	19'-7"
7	A901	97	19'-7"
5	A902	16	4'-6"
4	XA903	2	8'-8"
4	B900	112	4'-0"
4	XC900	18	3'-0"
4	D900	4	4'-0"
4	D901	12	14'-3"
5	SA900	2	855'-0"

ESTIMATED MATERIAL QUANTITIES	
REINFORCING STEEL (LBS.)	CONCRETE (C.Y.)
8,654	43.5

NOTES:
THE ABOVE ESTIMATED MATERIAL QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. ALL MATERIALS INCLUDING CONCRETE, REINFORCING BARS, BACKER ROD, SILICON SEALANT, PREFORMED JOINT FILLER AND LABOR REQUIRED TO BUILD THE APPROACH SLABS AND THE APPROACH SLAB BARRIERS SHALL BE INCIDENTAL TO THE PAY ITEM "CONCRETE BRIDGE APPROACH SLAB".
THE CONCRETE SHALL BE CLASS AE-3 AND THE REINFORCING STEEL SHALL BE GRADE 60. THE BAR MARKS BEGINNING WITH AN "X" INDICATES AN EPOXY COATED BAR.
SURFACE FINISH "D" SHALL BE REQUIRED FOR THE INSIDE AND TOP SURFACES OF THE CURB TRANSITIONS.

QUANTITIES	WEST SLAB
APPROACH SLAB	106.7 S.Y.
JAMES RIVER AT JAMESTOWN	
APPROACH SLAB	
WEST END-SOUTH ROADWAY	



BRIDGE CODE	FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
X-571	8	N.D.	IR-094-7(038)259	104

QUANTITIES FOR BOTH BRIDGES

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
107	0100	RAILWAY PROTECTION INSURANCE	L SUM	1
202	0116	REMOVAL OF CONCRETE - SITE 2	L SUM	1
210	0103	CLASS 1 EXCAVATION - SITE 2	L SUM	1
210	0200	SELECT BACKFILL	CU. YD.	190
210	0203	FOUNDATION PREPARATION - SITE 2	L SUM	1
550	0215	CONCRETE BRIDGE APPROACH SLAB	SQ. YD.	369
602	0130	CLASS AAE-3 CONCRETE	CU. YD.	565
602	1130	CLASS AE-3 CONCRETE	CU. YD.	141.7
602	1250	PENETRATING WATER REPELLENT TR.	SQ. YD.	1956
612	0115	REINFORCING STEEL GRADE 60	LBS.	28,134
612	0116	REINFORCING STEEL GRADE 60 EPOXY	LBS.	147,068
618	5888	STRUCTURAL STEEL - SITE 2 (APPROXIMATELY 73,445 LBS.)	L SUM	1
616	8000	STUD SHEAR CONNECTORS	EA.	3672
622	4630	TREATED TIMBER PILING	L FT.	1440
630	0102	SANDBLASTING & PAINTING - SITE 2	L SUM	1
930	7012	ROADWAY CANOPY	L SUM	1
930	8680	EXPANSION JOINT STRIP SEAL	L FT.	104
930	9541	BIN WALL	L SUM	1

SITE #2

THE SITE 2 ITEM DESCRIPTIONS SHOWN ABOVE ARE BID AS ONE (1) LUMP SUM AND INCLUDE ALL WORK REQUIRED ON BOTH ROADWAY STRUCTURES AT SITE 2.

SEEPAGE TRENCH ~ FILL BOT. 2'-0" WITH SELECT BACKFILL (GRANULAR). FILL REMAINDER WITH EXCAVATED MATERIAL (TYP.)

PLAN

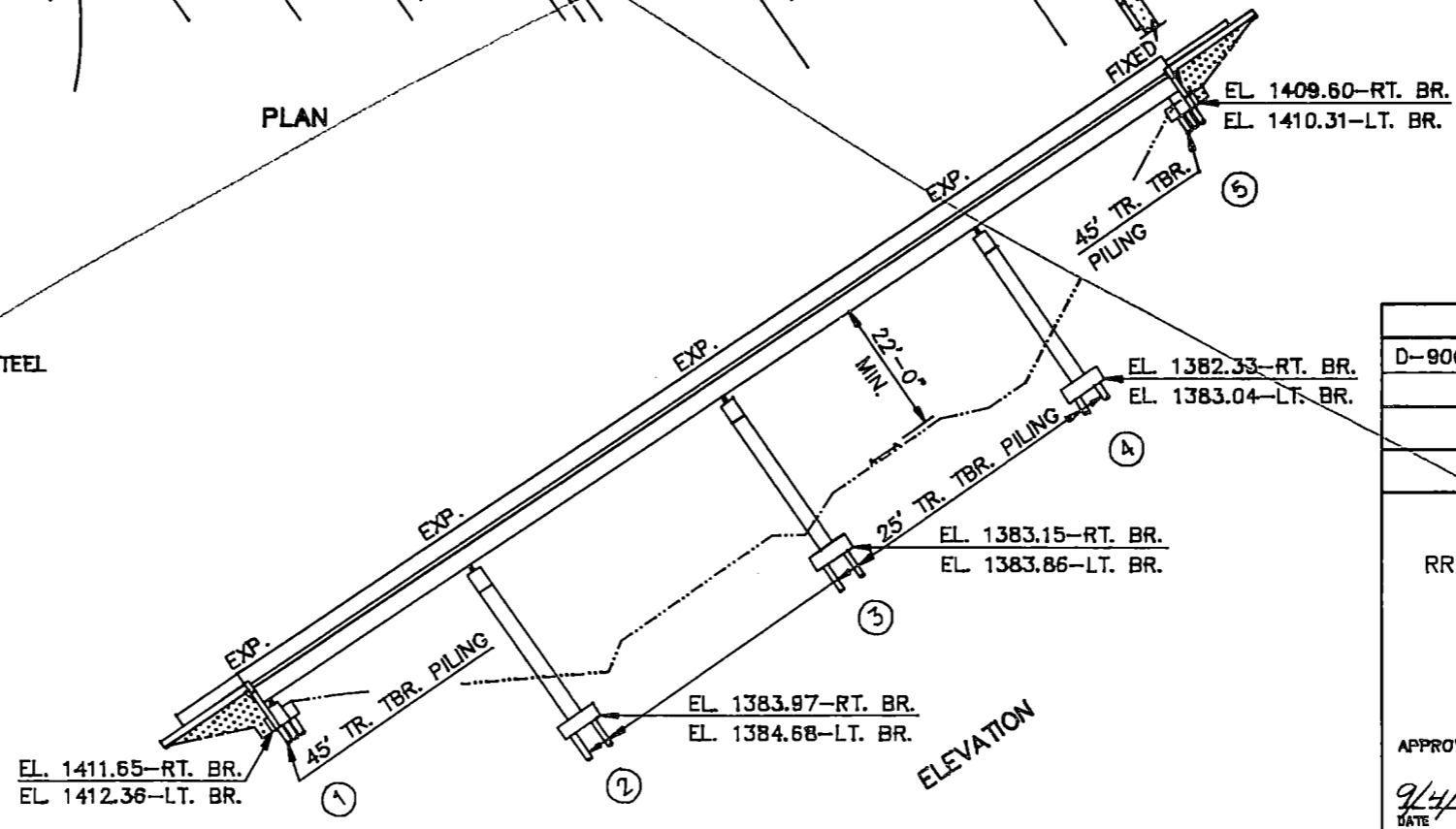
DESIGN STRENGTHS

$f_c = 3,000$ PSI ~ CLASS AE-3 CONCRETE
 $f_c = 4,000$ PSI ~ CLASS AAE-3 CONCRETE
 $f_y = 36,000$ PSI ~ AASHTO M-270 GR. 36 STRUCTURAL STEEL
 $f_y = 60,000$ PSI ~ REINFORCING STEEL

LOAD FACTOR DESIGN

* BELOW BOTTOM OF CONCRETE ELEVATIONS.

PILE LOADING				
LOCATION	DEAD LOAD	LIVE LOAD	* MIN. PEN.	DESIGN LOAD
ABUTMENTS	12.0 T	10.5 T	35'	22.5 T
PIERS	12.2 T	4.9 T	15'	22.4 T



STANDARD DRAWINGS	
D-900-1	
F.W.S. 15 PSF	
HS 25 DESIGN LOADING	
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
RRV & WRR SEPARATION WIDENING JAMESTOWN	
BRIDGE LAYOUT	
PROJECT: IR-094-7(038)259	
STATION 190 + 97.7	
STUTSMAN COUNTY	
APPROVED	
9/4/90	<i>Forest D. Dwyer</i>
DATE	BRIDGE ENGINEER

NORTH DAKOTA STATE HIGHWAY DEPARTMENT

PROJECT NO. 7-094 (22) 258 & TQFI-8-094 (72) 289
 COUNTY & DISTRICT STATSMAN- JUN 16, 1976
 BIDDING DISTRICT 0-0

ABSTRACT OF BIDS RECEIVED

SHEET NO. 1 OF 3

NO.	3	BIDDER	BIDDER	BIDDER
		ENGINEER'S ESTIMATE	WANZKE CONSTR., INC.	ARCUN CONSTRUCTION CO.
			FARGO, NORTH DAKOTA	MORA, MINNESOTA
		C. BOND	C.C. BOND	C.C. BOND
		RANK 00	RANK 01	RANK 02

COMPLETION TIME 00/00/00

ITEM DESCRIPTION	UNIT	QUANTITY	BID PRICE	AMOUNT	BID PRICE	AMOUNT	BID PRICE	AMOUNT
210 WATER	M GAL	1200	32500	390	300000	3600	1000000	12000
302 AGGREGATE BASE COURSE CL-5	TON	186000	30000	55800	60000	111600	102000	189720
550 10 IN. NON-REINF. CONC. PAVEMENT-CLASS AE-3	SQ YD	1512000	390000	5896800	250000	3780000	245700	3714984
705 MOBILIZATION	L SUM	1000	2000000	200000	700000000	700000	153180000	1531800
750 LINSEED OIL TREATMENT	GAL	75000	77500	58125	150000	112500	60000	45000
762 MTC & PROTECTION OF TRAFFIC	L SUM	1000	2000000	200000	130000000	1300000	49000000	490000
900 EXPANSION JOINT MODIFICATION	L FT	64000	500000	320000	500000	320000	476600	305152
900 JOINTS AT END OF BRIDGE	L FT	280000	150000	420000	120000	336000	129500	362600
900 BRIDGE APPROACH SLAB (REMOVE & REPAIR)	SQ YD	624000	750000	4680000	500000	3120000	527700	3292848
900 CLASS I OVERLAY	SQ YD	2845000	250000	7112500	300000	8535000	261500	7439875
900 CLASS II OVERLAY	SQ YD	989000	450000	4450500	250000	2472500	365000	3609850
TOTAL				23394115		20791200		20993629
					LIMIT \$500,000			

ACTION TAKEN BY STATE HIGHWAY COMMISSION:

5

AWARD TO:

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

NORTH DAKOTA STATE HIGHWAY DEPARTMENT

ABSTRACT OF BIDS RECEIVED

PROJECT NO. TOF-7-094(22)25B & TOFI-8-094(72)289
 CONTRACTOR STUTSMAN- JUN 16, 1976
 BIDDING TYPE 0.0

NO.	SHEET NO. 2 OF 3	BIDDER	BIDDER	BIDDER
	3	R. A. KRUEGER, INC.	INDUSTRIAL BUILDERS	WILLIAM COLLINS, INC.
		HOPKINS, MINNESOTA	FARGO, NORTH DAKOTA	FARGO, NORTH DAKOTA
		C.BOND RANK 03	C.C. BOND RANK 04	C.C. BOND RANK 05

COMPLETION TIME 00/00/00

ITEM DESCRIPTION	UNIT	QUANTITY	BIDDER		BIDDER		BIDDER	
			BID PRICE	AMOUNT	BID PRICE	AMOUNT	BID PRICE	AMOUNT
216 WATER	M GAL	1200	800000	96000	100000	1200	250000	3000
302 AGGREGATE BASE COURSE CL.5	TON	186000	250000	465000	100000	186000	60000	111600
550 10 IN. NON-REINF. CONC. PAVEMENT-CLASS AE-3	SQ YD	1512000	150000	2268000	300000	4536000	175000	2646000
705 MOBILIZATION	L SUM	1000	210000000	2100000	200000000	2000000	50000000	500000
750 LINSEED OIL TREATMENT	GAL	75000	80000	60000	100000	75000	60000	45000
762 MICE & PROTECTION OF TRAFFIC	L SUM	1000	90000000	900000	200000000	2000000	50000000	500000
900 EXPANSION JOINT MODIFICATION	L FT	64000	500000	320000	450000	286000	300000	192000
900 JOINTS AT END OF BRIDGE	L FT	280000	150000	420000	140000	392000	97500	273000
900 BRIDGE APPROACH SLAB (REMOVE & REPAIR)	SQ YD	624000	600000	3744000	450000	2808000	500000	3120000
900 CLASS I OVERLAY	SQ YD	2845000	330000	9368500	310000	8819500	420000	11949000
960 CLASS II OVERLAY	SQ YD	989000	250000	2472500	190000	1879100	610000	6032900
TOTAL				22147600		22984800		25372500

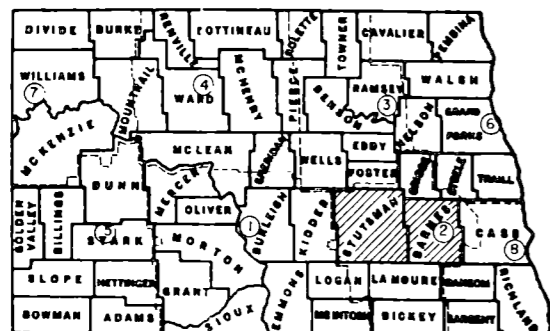
Two overlays plus one job or one overlay plus four jobs.

ACTION TAKEN BY STATE HIGHWAY COMMISSION:

AWARD TO:

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	TQFI-I-094-7(22)258 TQFI-I-094-8(72)289	1



SKETCH-MAP OF NORTH DAKOTA SHOWING COUNTIES



SCALES
 LAYOUT SHEET: 1 IN. = 1 MI.
 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 STUTSMAN & BARNES COUNTIES

LENGTH OF PROJECT		
PROJECT	MILES-GROSS	MILES-NET
TOTALS		

GOVERNING SPECIFICATIONS:
 Standard Specifications adopted by the North Dakota State Highway Department July 1971 and approved as standard by the Federal Highway Administration Sept. 29, 1971 Required Contract Provisions (Form PR-1273) dated Sept. 1975 and others submitted herewith.

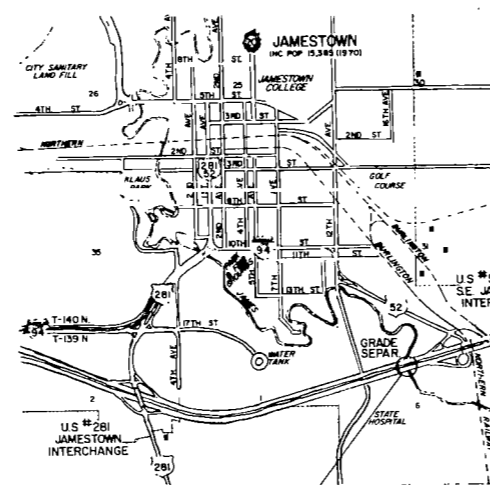
FEDERAL AID PROJ. NO. TQFI-I-094-7(22)258 & TQFI-I-094-8(72)289

REPAIR & OVERLAY OF PORTLAND CEMENT CONCRETE

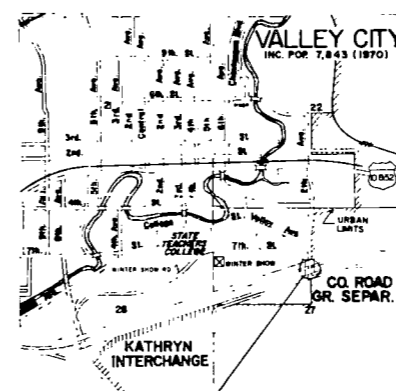
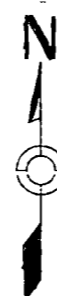
BRIDGE DECKS

DESIGN DATA

TRAFFIC	AVERAGE DAILY	EST. WITH MAX. HR.
CURRENT TRAFFIC (19)	PASS. TRUCKS	TOTAL
TRAFFIC FORECAST (19)	PASS. TRUCKS	TOTAL
DESIGN SPEED	MPH	
TRAFFIC CLASSIFICATION		
MINIMUM SIGHT DISTANCE (STOPPING)		
MINIMUM SIGHT DISTANCE (SAFE PASSING)		
MINIMUM PASSING SIGHT DISTANCE FOR MARKING BRIDGES		



BRIDGE NO. 94-259.86
PROJ. NO. TQFI-I-094-7(22)258

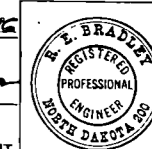


BRIDGE NO. 94-293.25
PROJ. NO. TQFI-I-094-8(72)289

SUMMARY OF QUANTITIES

SPEC. NO.	CODE NO.	DESCRIPTION	QUANTITY	UNIT
705	0100	MOBILIZATION	1	L.S.
762	3299	MAINTENANCE & PROTECTION OF TRAFFIC	1	L.S.
900	9700	CLASS I OVERLAY	2845	S.Y.
900	8673	EXPANSION JOINT MODIFICATION	64	L.F.
750	0100	LINSEED OIL TREATMENT (LOW SLUMP ONLY)	775	Gal.
900	9501	APPROACH SLAB (REMOVE & REPLACE)	624	S.Y.
900	9701	CLASS II OVERLAY	989	S.Y.
900	8674	JOINTS AT ENDS OF BRIDGE	280	L.F.
302	0120	AGGREGATE (CLASS 5)	186	TON
550	0184	10" NON-REINF. CONC. PAVEMENT CLASS AE-3	1512	S.Y.
216	0100	WATER	1.2 M	6AL

APPROVED DATE 4-15-76
R. E. Bradley
 by *[Signature]*
 CHIEF ENGINEER
 NORTH DAKOTA
 STATE HIGHWAY DEPARTMENT



APPROVED DATE 4-13-76
 BRIDGE ENGINEER
 NORTH DAKOTA
 STATE HIGHWAY DEPARTMENT

[Signature]

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 APPROVED
 DIVISION ADMINISTRATOR DATE

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	
RIPRAP		LIGHT STANDARDS	
DRAINAGE DITCH		TRAFFIC SIGNALS (Plan & Profile Sheets)	
APPROACH		HIGH MAST LIGHTING ASSEMBLY	
TRAVELED WAY		GROUND ELEVATION	
RAILROADS		GRADE	
GUARD RAIL		CENTERLINE	
GUIDE POSTS		SECTION LINE	
DELINEATORS		DEFLECTION ANGLE (Delta)	
HEDGES AND TREES		50D 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
Alt.	Alternate	Off. Loc.	Office Location
Approx.	Approximate or Approximately	O. to O.	Out to Out
Appr.	Approach	P. & 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't	Portland Cement Concrete Pavement
Bk.	Block	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. & G.	Curb and Gutter	P. R. C.	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't	Pavement	Rdbd.	Roadbed
Contn.	Continuation	Rdwy.	Roadway
Crn.	Crown	Refi.	Refractored
CRS	Cationic Rapid Setting	R. R.	Railroad
Crse.	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	S.C.	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	Shldr.	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. Specs.	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
I. M.	Iron Monument	Temp.	Temporary
Inst.	Install	T. P.	Telephone Pole
Inter.	Intersection	Tr.	Traffic
Inv.	Invert	Trans.	Transverse or Transition
Jt.	Joint	Trtd.	Treated
L	Length of Curve	Ts	Tangent Length (curve with spirals)
Lc	Length of Spiral	T. S.	Tangent to Spiral
Levg.	Leveling	U.S.C. & G.S.	United States Coast and Geodetic Survey
L. F.	Linear or Lineal Foot	V. C.	Vertical Curve
Liq.	Liquid	V. C. P.	Vitrified Clay Pipe
Long	Longitudinal	W. M.	Water Main
L. P.	Light Pole	W. M. V.	Water Main Valve
Li.	Left	W. R.	West Roadway
"M"	One Thousand	Wrng.	Wearing
Matl.	Material	W. S. V.	Water Service Valve
Max.	Maximum	X-Sec.	Cross Section
MC	Medium Curing	Xc	Spiral Coordinate
M. H.	Manhole	Yc	Spiral Coordinate
Min.	Minimum		

TRAFFIC CONTROL ON BRIDGE DECK OVERLAYS

STANDARD D-754-71-11, TYPE P, WILL BE USED FOR DIVIDED HIGHWAY AREAS. THE FOLLOWING STANDARDS WILL BE NEEDED WITH THE ABOVE STANDARD: D-754-71-1, 2, 2.8, 3, 4 & 5.

THE FOLLOWING IS A LIST OF SIGNS THAT ARE REQUIRED:

SIGN NO.	NAME	QUANTITY
CW-276-48	ROAD CONSTRUCTION 1 MILE	3 EACH
CW-296-48	RIGHT LANE CLOSED 1/2 MILE	3 EACH
CW-296-48	LEFT LANE CLOSED 1/2 MILE	3 EACH
CW-25-48	RIGHT LANE ENDS	3 EACH
CW-25-48	LEFT LANE ENDS	3 EACH
CM-104-60	END CONSTRUCTION	3 EACH
CM-102	ABC CONSTRUCTION CO.	3 EACH
TYPE 11	BARRICADES	20 EACH
	DELINEATOR DRUMS	20 EACH
TYPE B	FLASHERS	10 EACH
TYPE C	FLASHERS	20 EACH
	ORANGE FLAGS	16 EACH
R-4-48	SPEED ZONE AHEAD	3 EACH
R-8-48	SPEED LIMIT	3 EACH
	20" NUMERALS 0 TO 9	6 EACH

NOTES:

THE CONTRACTOR SHALL NOTIFY THE DISTRICT OFFICE OF THE STATE HIGHWAY DEPARTMENT WELL IN ADVANCE OF ANY WORK REQUIRED TO BE DONE BY THE STATE MAINTENANCE SO AS NOT TO INTERFERE WITH THE CONTRACTORS OPERATIONS.

ALL MUDJACKING, PREPARATION AND PLACEMENT OF TAPER ON ASPHALTIC SURFACES SHALL BE DONE BY STATE MAINTENANCE.

ALL PREMOLDED JOINT FILLER, CLEANING AND FILLING MUD-JACK HOLES AND THE CLEANING AND FILLING OF APPROACH SLAB CRACKS UNDER OVERLAY ONLY SHALL BE INCIDENTAL TO CLASS 1 OVERLAY.

STRUCTURAL DETAILS OF SPECIFIC STRUCTURES ARE AVAILABLE AT THE DISTRICT OFFICE OR AT THE BRIDGE DIVISION, CENTRAL OFFICE IN BISMARCK.

LIMITS OF CLASS 2 OVERLAY SHALL BE DETERMINED BY THE ENGINEER AND OUTLINED WITH SOME SUITABLE MARKING. THESE AREAS SHALL NOT BE EXPANDED UNLESS APPROVED BY THE ENGINEER.

ANY DECK REINFORCING REQUIRED SHALL BE PAID FOR IN ACCORDANCE WITH SECTION 109-5 OF THE NORTH DAKOTA STANDARD SPECIFICATION FOR ROADS & BRIDGES.

THE OVERLAY SHALL BE PLACED OVER ONE HALF OF THE BRIDGE FROM THE LONGITUDINAL L TO THE CURB IN ONE CONTINUOUS POUR UNLESS THE AREA IS TO PLACE IN ONE DAY.

IF THIS OCCURS THE ENGINEER SHALL DETERMINE WHERE THE CONSTRUCTION JOINTS SHALL BE LOCATED.

TRAFFIC SHALL BE MAINTAINED ON THE OTHER HALF OF BRIDGE.

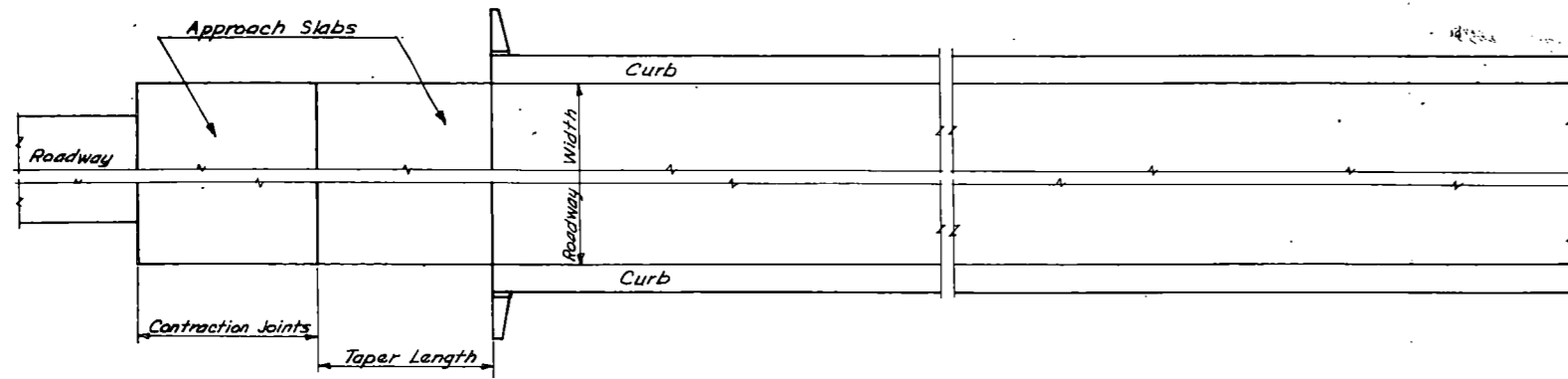
CANOPY

SHOULD THE DEPTH OF CONCRETE REMOVAL MAKE IT POSSIBLE FOR THE CHIPPING HAMMER TO PENETRATE THE FULL DEPTH OF THE SLAB, A MEANS OF PROTECTING THE ROADWAY BENEATH THE STRUCTURE FROM FALLING DEBRIS SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER.

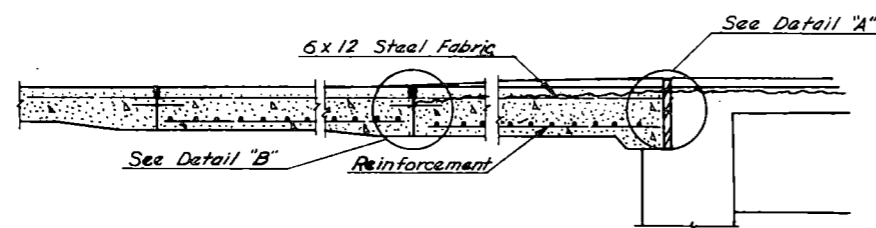
PAYMENT FOR SUCH PROTECTION WILL BE MADE IN ACCORDANCE WITH SECTION 109-5 OF THE NORTH DAKOTA STANDARD SPECIFICATIONS FOR ROADS & BRIDGES.

SPECIAL PROVISIONS

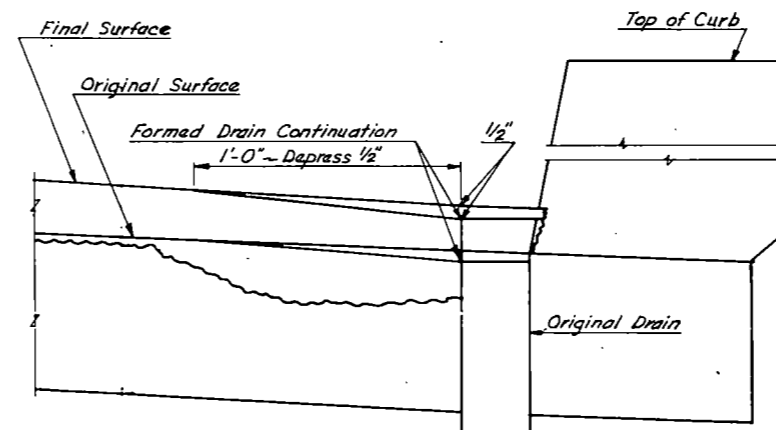
NO.	NAME
	REPAIR & OVERLAY OF PORTLAND CEMENT CONCRETE BRIDGE DECKS
123	LEGAL RELATIONS & RESPONSIBILITY TO PUBLIC
124	MAINTENANCE & PROTECTION OF TRAFFIC
SP	MEASUREMENT & PAYMENT (FREIGHT RATES)



HALF PLAN

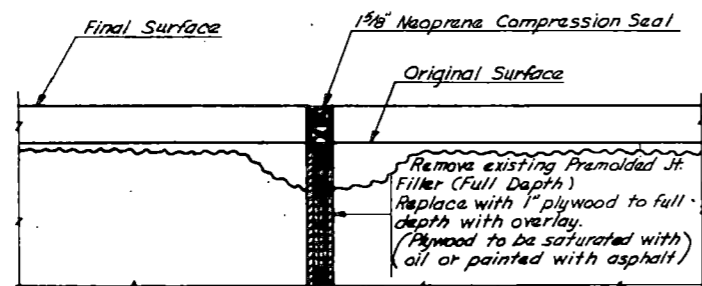


APPROACH SLAB



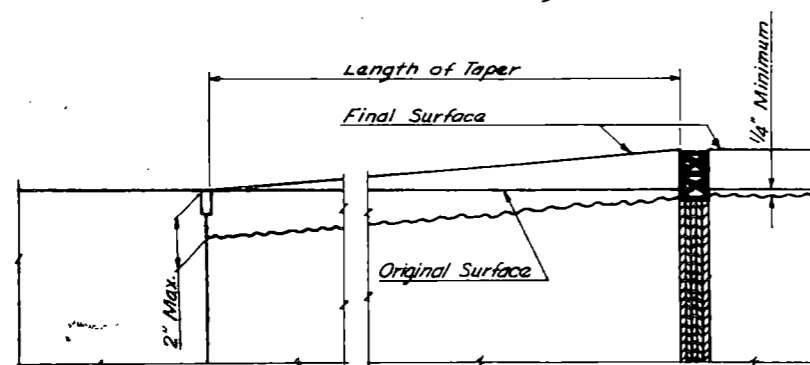
DETAILS AT FLOOR DRAINS

NOTE: After overlay has been placed & cured the top 2 1/2" of plywood shall be routed & the Neoprene Seal installed.

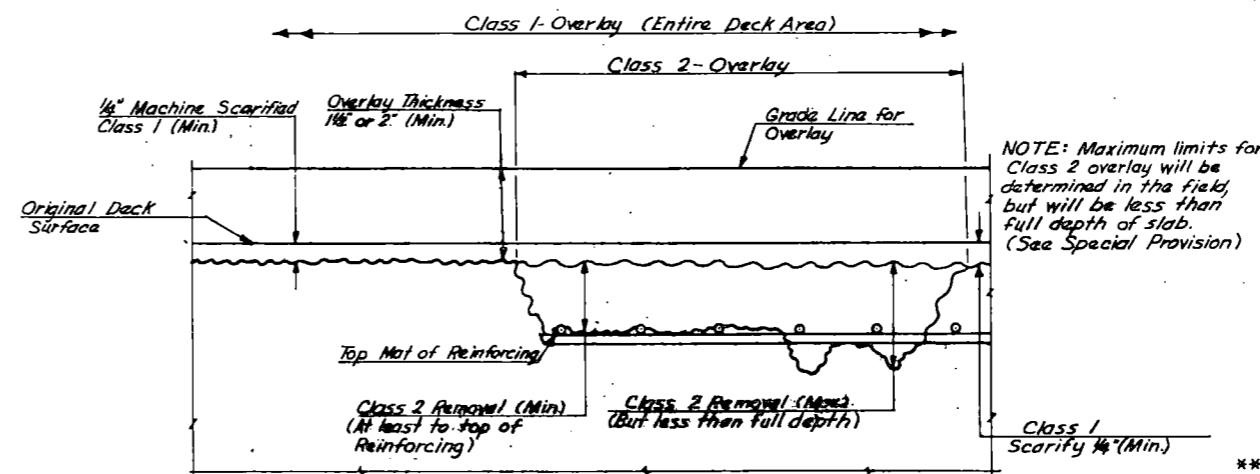


DETAIL "A"

Joints at Ends of Bridge



DETAIL "B"



BRIDGE DECK

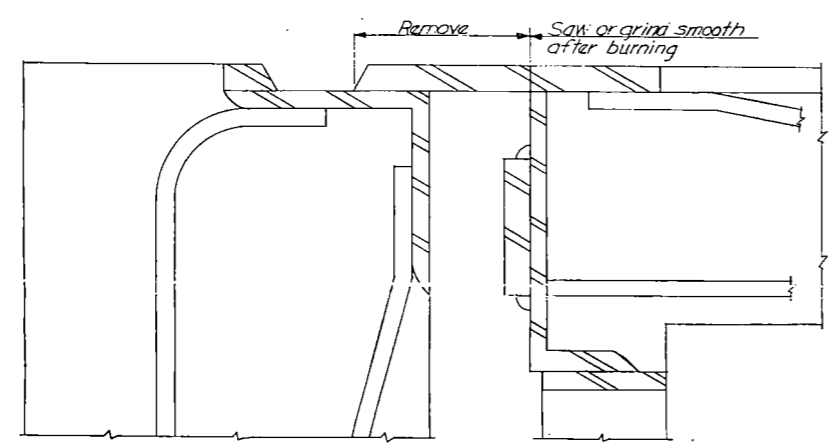
NOTE: Maximum limits for Class 2 overlay will be determined in the field, but will be less than full depth of slab. (See Special Provision)

STRUCTURE NUMBER	LENGTH	WIDTH	APPROACH SLABS	APPROACH SLAB LENGTH	TAPER LENGTH
94-259.86R	220'	30'	2	40'	20'
94-259.86L	220'	30'	2	40'	20'

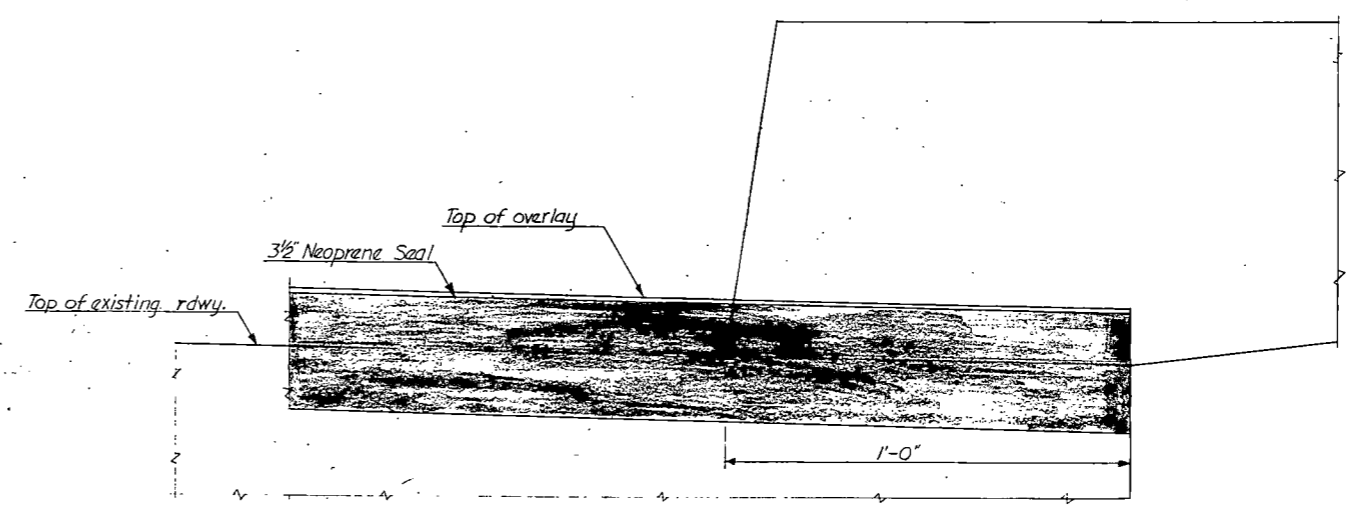
* See Special Details
** Two Alternates, Low Slump Concrete & Latex Concrete

ESTIMATE OF QUANTITIES

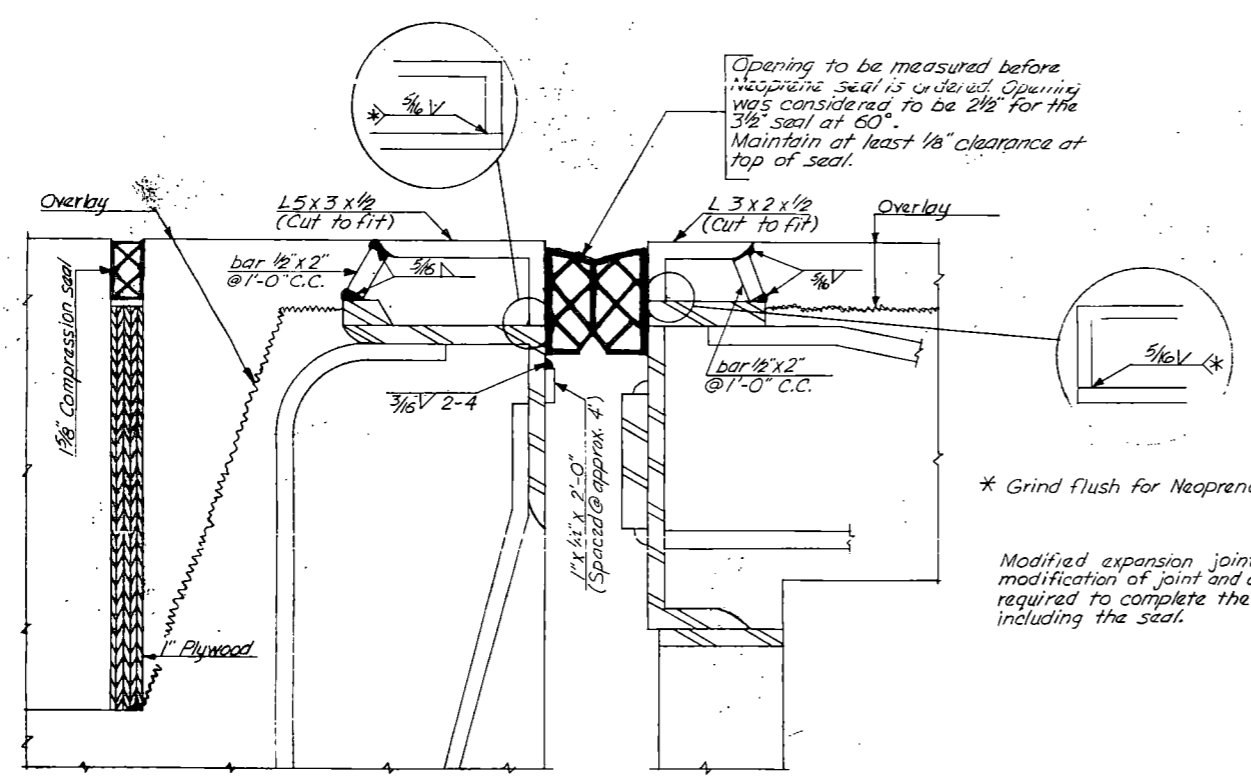
SPEC NO.	CODE NO.	DESCRIPTION	QUANTITY	UNIT
705	0100	MOBILIZATION	1	L.S.
762	3299	MAINTENANCE & PROTECTION OF TRAFFIC	1	L.S.
900	9700	CLASS I OVERLAY	1467	S.Y.
900	9701	CLASS II OVERLAY	660	S.Y.
750	0100	LINSEED OIL TREATMENT (LOW SLUMP ONLY)	54	GAL.
900	9501	APPROACH SLAB (REMOVE & REPLACE)	624	S.Y.
900	8673	EXPANSION JOINT MODIFICATION	64	L.F.
900	8674	JOINTS AT ENDS OF BRIDGE	120	L.F.
302	0120	AGGREGATE (CLASS 5)	186	TON
550	0184	10" NON-REINF. CONC. PAVEMENT CLASS AE-3	1512	S.Y.
216	0100	WATER	1,200	GAL.



EXISTING EXPANSION JOINT



DETAIL OF EXPANSION JOINT UNDER CURB



MODIFIED EXPANSION JOINT

Opening to be measured before Neoprene seal is ordered. Opening was considered to be 2 1/2\"/>

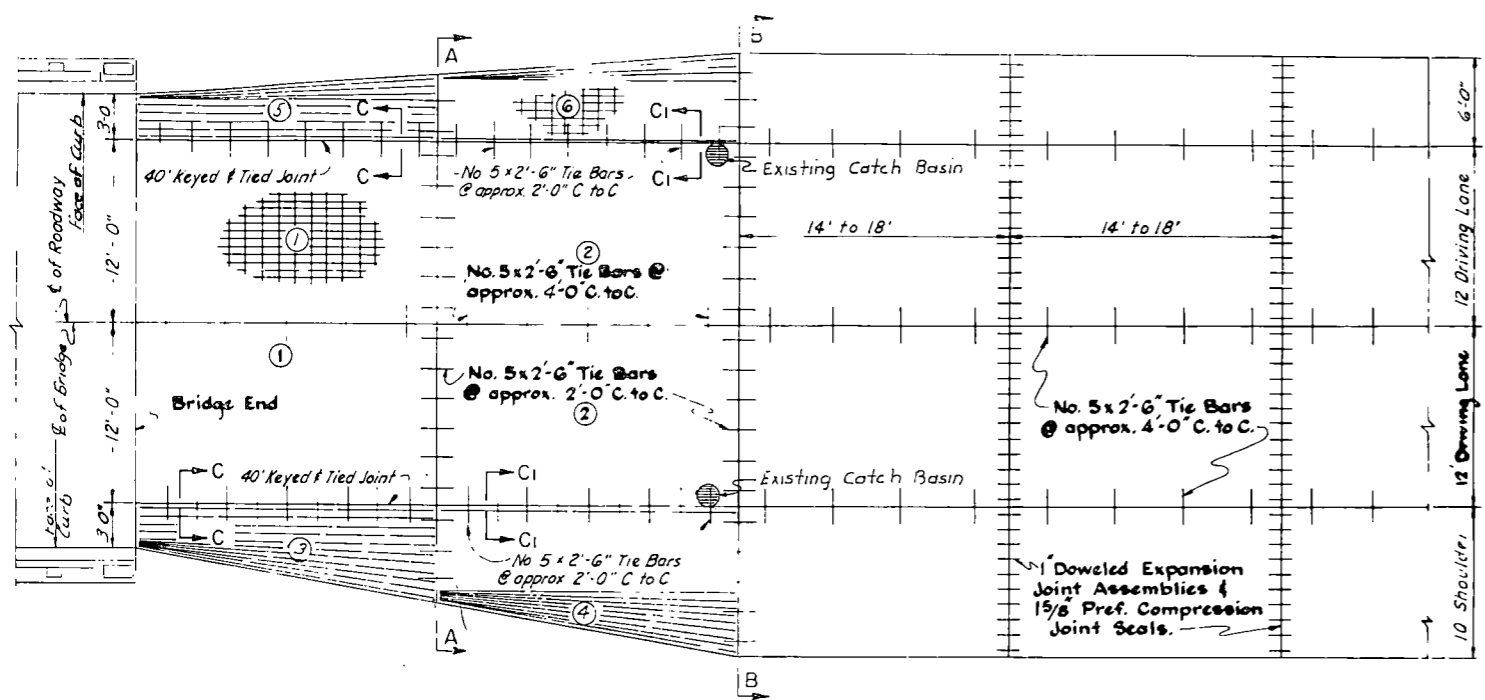
* Grind flush for Neoprene seal.

Modified expansion joint includes modification of joint and all parts required to complete the joint including the seal.

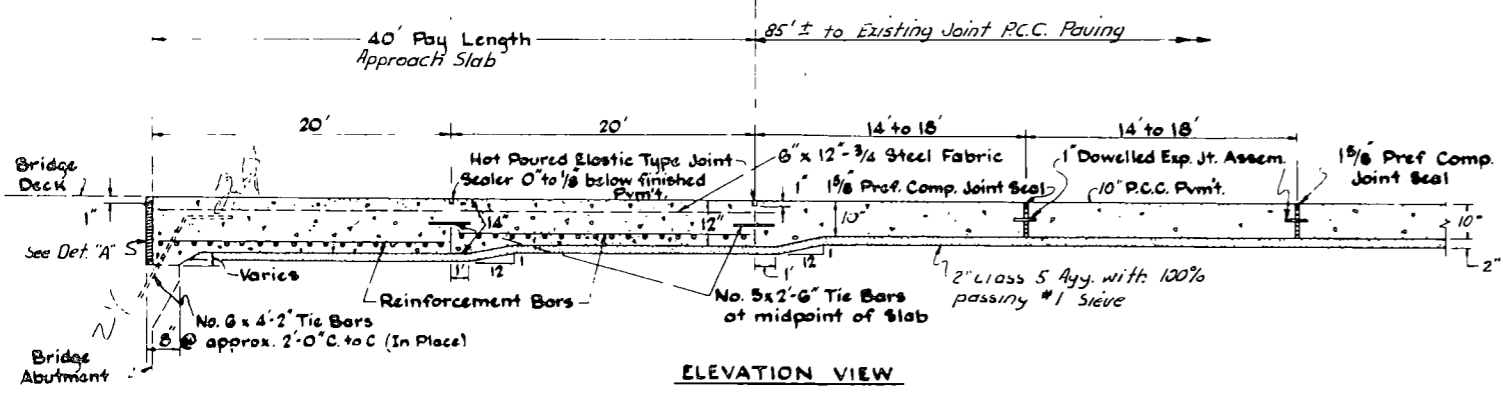
BRIDGE OVERLAY
 JAMES RIVER
 EXPANSION JOINT
 MODIFICATION

**30' BRIDGE APPROACH SLAB
AND 40' P.C.C. PAVING**

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.
8	N. D.	7-11-49	42



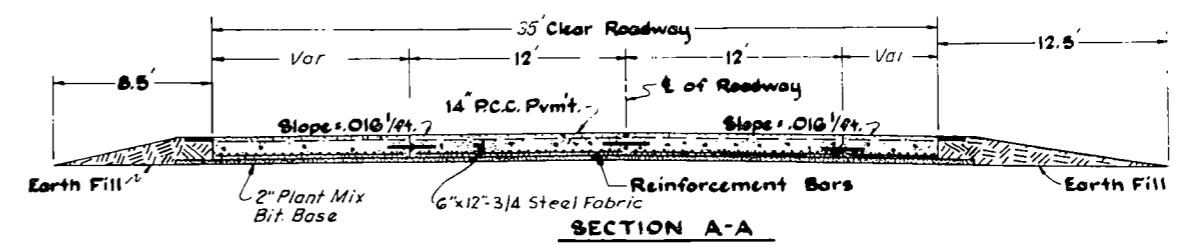
PLAN VIEW



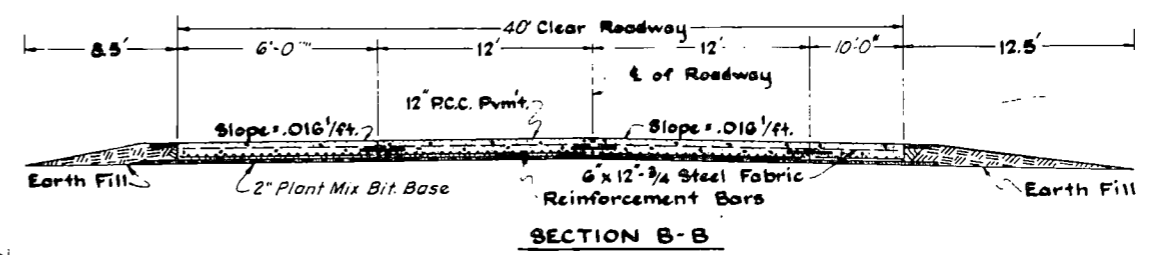
ELEVATION VIEW

REINFORCING BARS									
LONGITUDINAL					TRANSVERSE				
PANEL	EACH	BAR SIZE	LENGTH	LBS.	PANEL	EACH	BAR SIZE	LENGTH	LBS.
1	24	#8	19'-6"	2499	1	18/18	#6	11'-6"	622
2	24	#7	19'-6"	1914	2	18/18	#5	11'-6"	432
3	11	#8	19'-6"	573	3	1 Set	#6	81'-9"	123
4	18	#7	19'-6"	718	4	1 Set	#5	143'-3"	150
5	9	#8	19'-6"	469	5	1 Set	#6	60'-9"	91
6	12	#7	19'-6"	478	6	1 Set	#5	89'-3"	93

NOTE:
 Longitudinal Bars spaced @ approx. 6" C. to C.
 Transverse Bars spaced @ approx. 1'-1 1/2" C. to C.
 Bars shall be placed at a 2" clearance from bottom of slab.
 Panels 1) thru 6) have 6" x 12-3/4" Steel Fabric placed at a 2 1/2" clearance from top of slab.



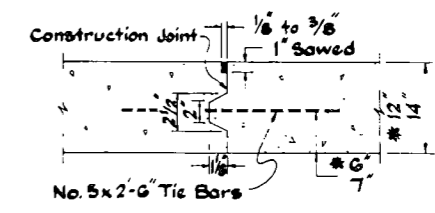
SECTION A-A



SECTION B-B

4'-2"	5'-8"	9'-11"	4'-7"	8'-0"	3'-5"	5'-0"
2'-9"	4'-0"	6'-9"	7'-11"	8'-0"	3'-5"	5'-0"
4'-3"	6'-3"	9'-8"	4'-6"	7'-11"	3'-4"	4'-11"
2'-9"	2'-9"	6'-4"	4'-6"	7'-11"	3'-4"	4'-11"

Re + 1 length
 ③ = 81'-9"
 ④ = 143'-3"
 ⑤ = 60'-9"
 ⑥ = 89'-3"

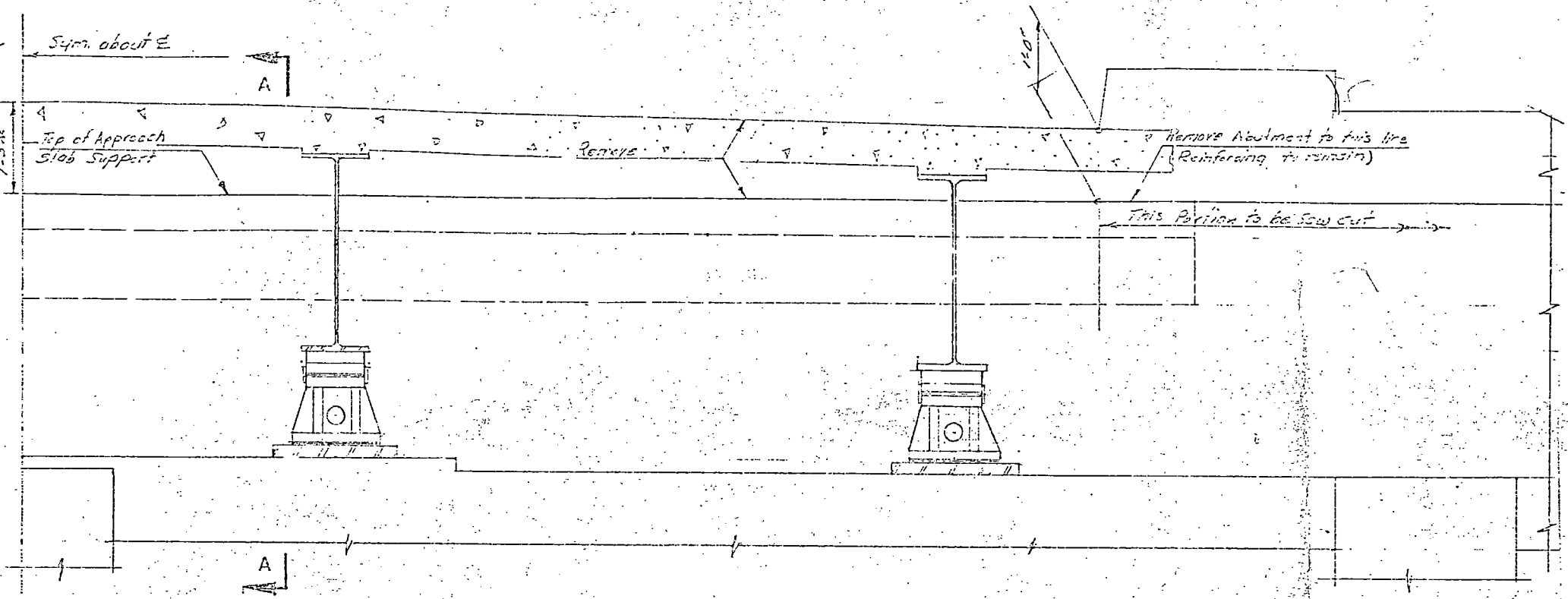


**SECTION C-C (14")
SECTION C-C (12)**

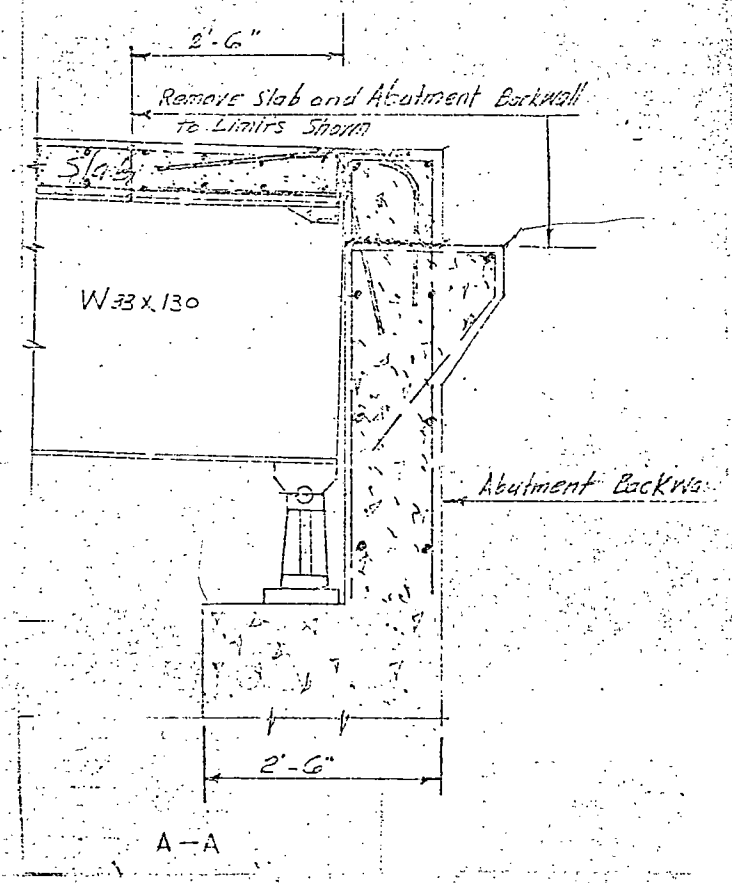
NOTE:
12" P.C.C. P.vmt.

QUANTITIES FOR ONE BRIDGE APPROACH SLAB - See Note		
Item	Unit	Quantity
P.C.C. Pavement	S.Y.	156
Cement	Bbls.	75
Reinforcement Bars	Lbs.	8162
Steel Fabric	S.Y.	156
Sodding	S.Y.	
Seeding	Acre	

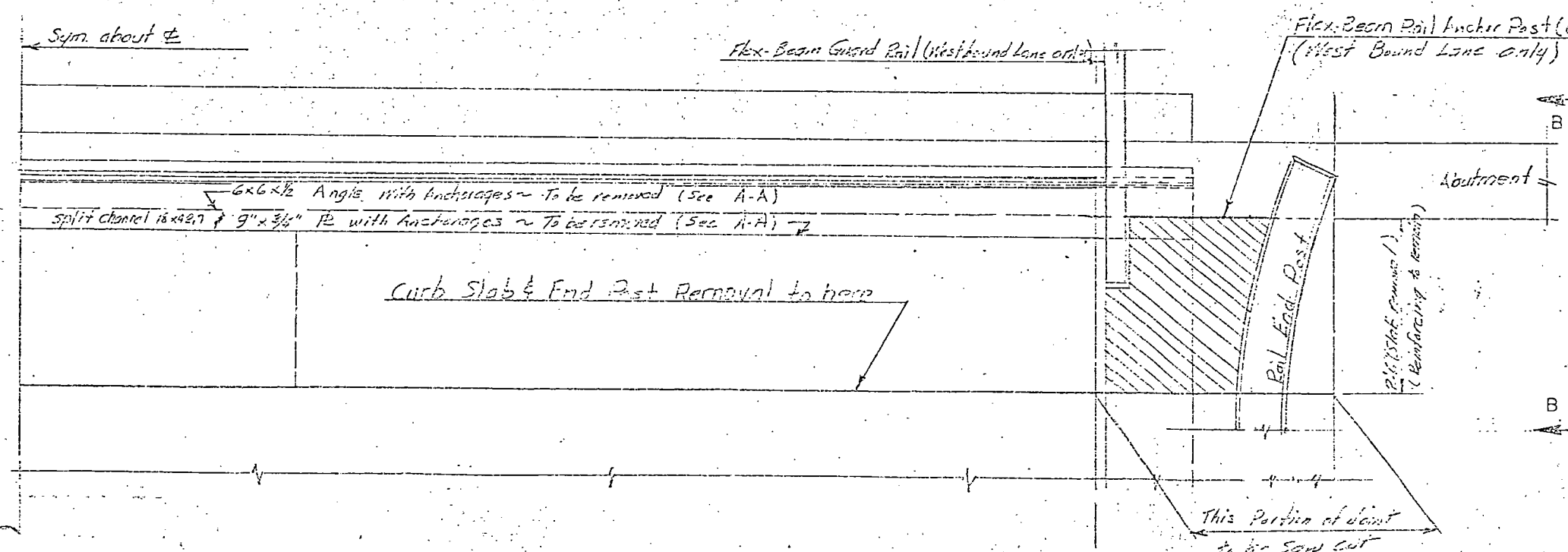
NOTE:
Class 5 Aggregate shall have 100% of aggregate pass the 1" screen.



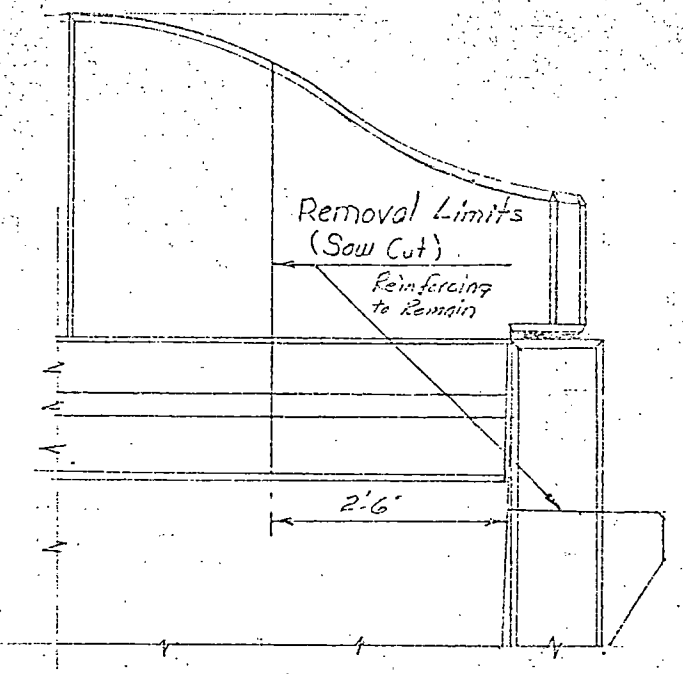
PARTIAL ELEVATION



A-A

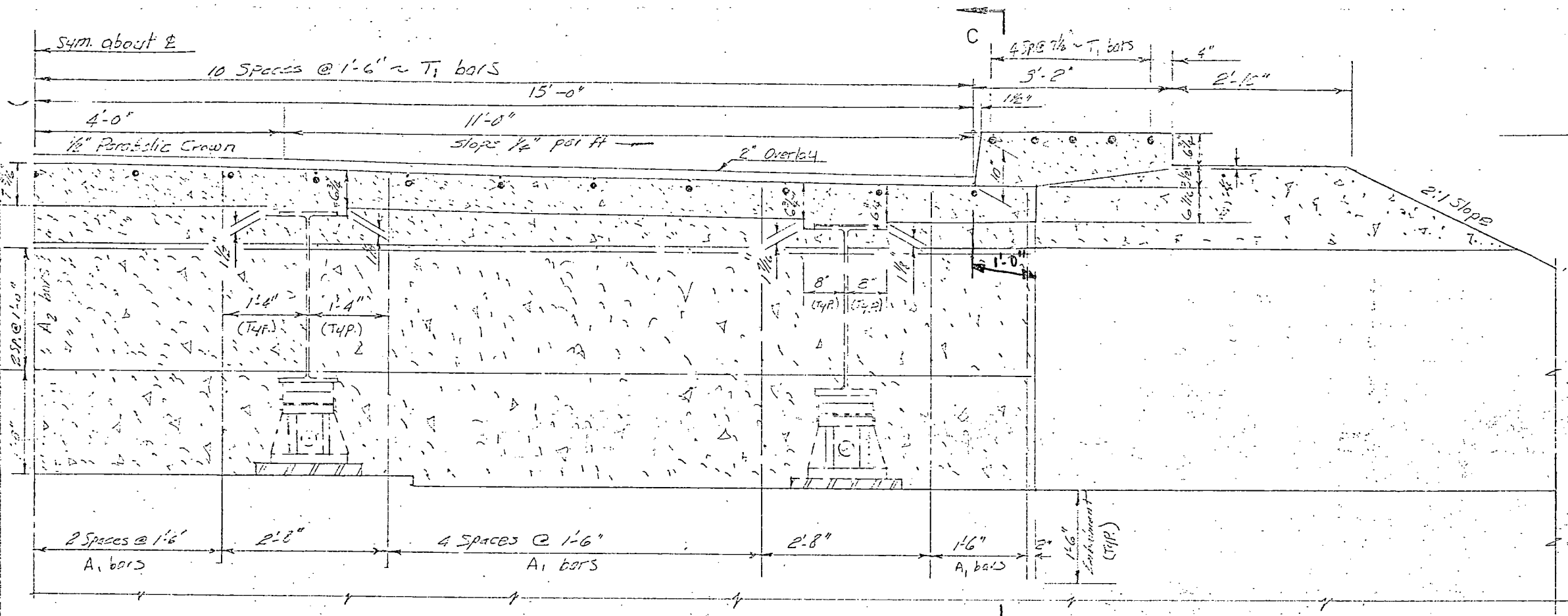


PARTIAL PLAN

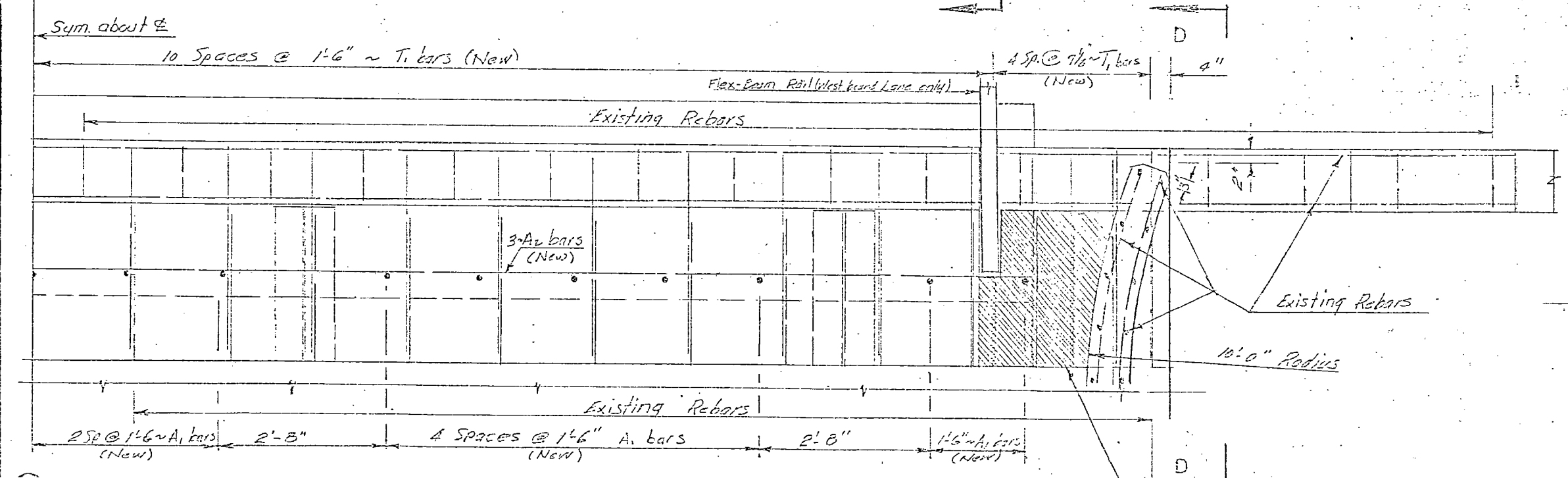


B-B

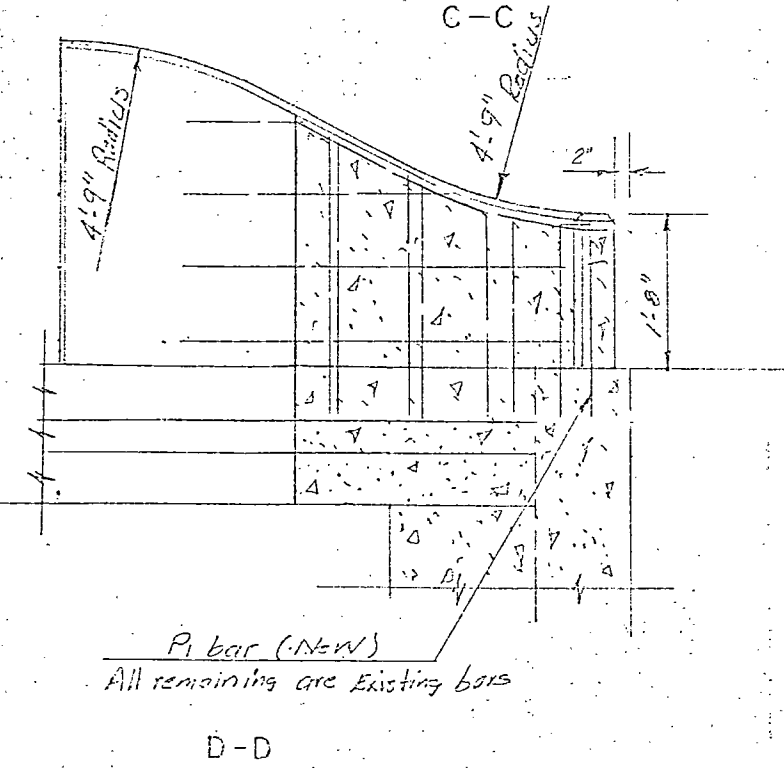
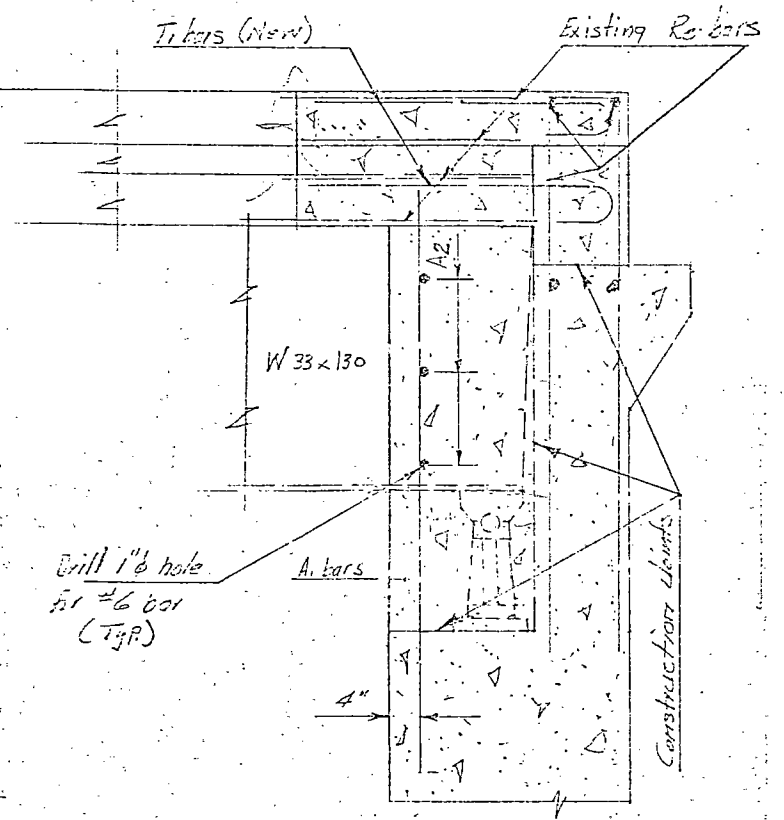
PORTIONS OF EXISTING STRUCTURE TO BE REMOVED
 Abutment (East)



PARTIAL ELEVATION



PARTIAL PLAN



REMODELED BRIDGE END
 P. 151

NOTES:

THE CONTRACTOR SHALL REMOVE PORTIONS OF THE EXISTING STRUCTURES, TAKING CARE NOT TO DAMAGE REINFORCING BARS. ANY REMOVAL THAT WILL BE EXPOSED AFTER REPLACEMENT SHALL BE SAW CUT TO MAKE A NEAT STRAIGHT JOINT BETWEEN OLD AND NEW CONCRETE.

THE SAWED JOINT SHALL BE 1" DEEP AND SHALL BE NORMAL TO THE FACES OF THE UNITS TO BE CUT. IF THE JOINTS ARE NOT SATISFACTORY TO THE ENGINEER THEY SHALL BE RESAWED TO THE ENGINEER'S SATISFACTION.

THE REPLACEMENT OF THE CONCRETE DECK BETWEEN CURBS SHALL BE TO THE BOTTOM OF THE 1" SCARIFICATION ONLY AND THE SURFACE SHALL BE CLEANED OF ALL LAITANCE BEFORE THE PLACEMENT OF THE OVERLAY.

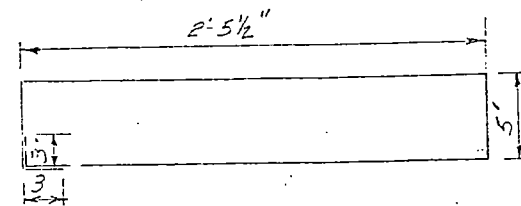
REINFORCING SHALL BE GRADE 40. ALL REPLACEMENT CONCRETE SHALL BE AE-3.

THE FACES OF THE REPLACED CURB AND THE PORTION OF THE END POSTS THAT ARE TO BE REPLACED AND THE EXPOSED FACES OF THE ABUTMENT TO BE REPLACED SHALL BE GIVEN THE RUBBED SURFACE FINISH. ALL OTHER SURFACES SHALL BE GIVEN THE ORDINARY SURFACE FINISH.

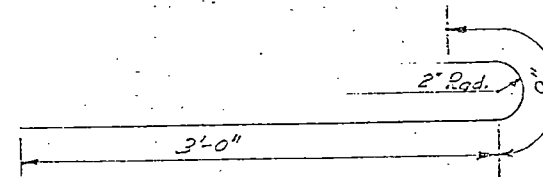
THE REMOVAL AND REPLACEMENT OF CONCRETE SHALL BE DONE FOR ONE HALF OF BRIDGE AT A TIME.

TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.

BAR LIST (ONE BRIDGE)				
MARK	NUMBER	SIZE	LENGTH	SHAPE
A1	19	6	6'-3"	Str
A2	5	6	31'-6"	"
P1	2	5	6'-9"	Bent
T1	3	5	31'-9"	"



P1



T1

BENT BAR DETAILS

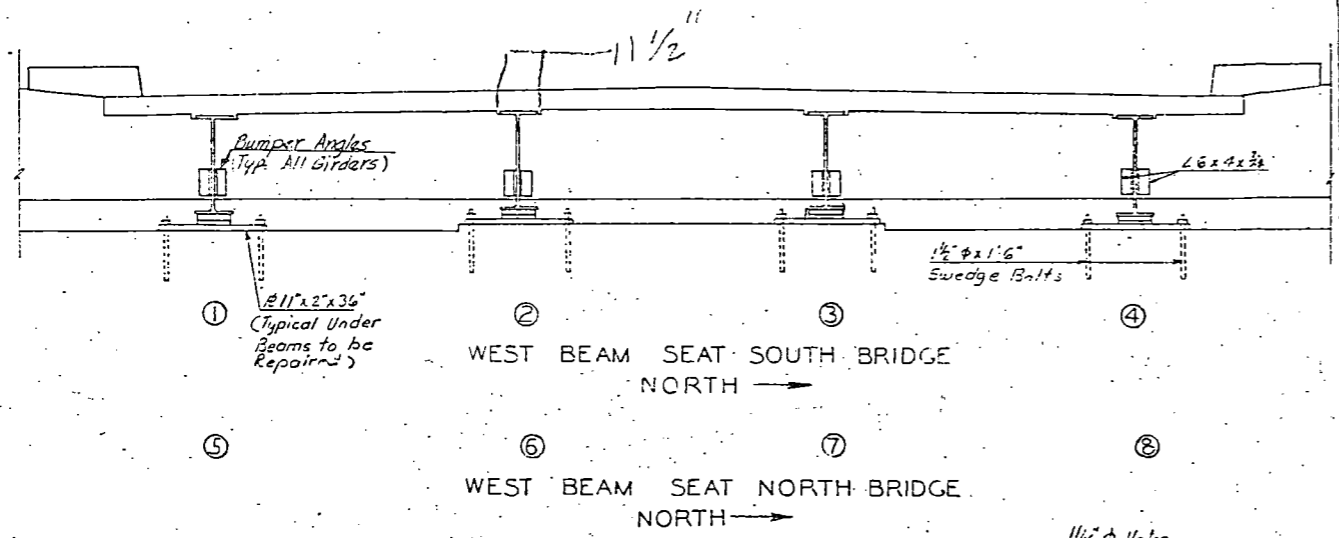
QUANTITIES (ONE BRIDGE)	
Remove Reinforced Concrete	510 cu. yd.
Place Reinforced Concrete	1310 cu. yd.
Reinforcing Steel (Grade 40)	455 lbs.

JAMES RIVER BRIDGE REPAIR

EAST ABUTMENT (TWO BRIDGES)

East End

Revised 11-29-76



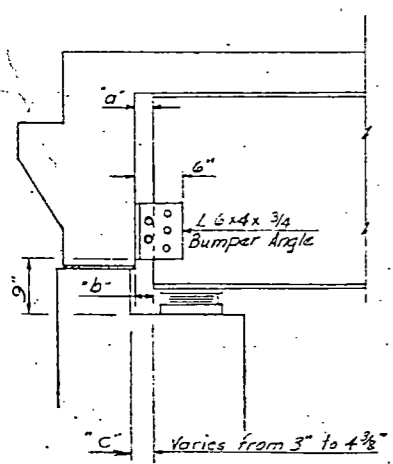
GENERAL NOTES:

THE INITIAL ACTION OF BRIDGE REPAIR SHALL BE THE ATTACHMENT OF THE BUMPER ANGLES TO ALL GIRDERS. THE ANGLES SHALL BE FITTED AND THE GIRDER WEB HOLES MARKED FOR DRILLING IN THE FIELD. THE HOLES IN THE ANGLES MAY BE PREFABRICATED OR DRILLED IN THE FIELD AS SHOWN ON THE ANGLE DETAIL. THE BUMPER ANGLES SHALL BE INSTALLED AND THE BOLTS TIGHTENED TO THEIR FINAL POSITION BEFORE THE REPAIR IS BEGUN. ALL FASTENERS SHALL BE HIGH STRENGTH 5/8" BOLTS.

THE FOLLOWING STEPS FOR THE BEARING REPAIR SHALL BE AS OUTLINED:

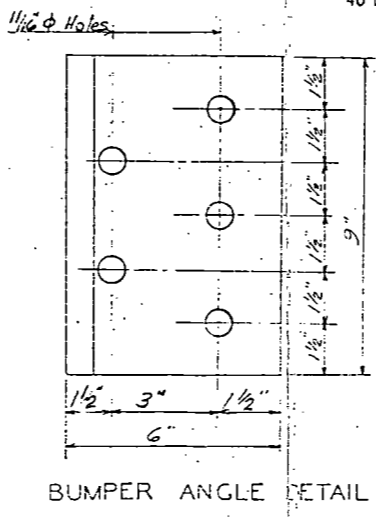
1. THE ANCHOR HOLES IN THE CONCRETE FOR THE NEW MASONRY PLATE FOR ALL GIRDERS SHALL BE DRILLED. THE HOLES FOR THE 1/2" SWEDGE BOLTS SHALL BE 2" IN DIAMETER.
2. WELD EXISTING EDGE PLATE TO GIRDER FLANGE AS SHOWN ON THE DETAIL.
3. REMOVE THE SPALLED CONCRETE AND CUT THE 1/2" SWEDGED ANCHOR BOLT BELOW THE EXISTING MASONRY PLATE.
4. RAISE THE GIRDER APPROXIMATELY 1/4" AND REMOVE THE EXISTING MASONRY PLATE. (JACKING AGAINST THE SLAB WILL NOT BE TOLERATED.)
5. PLACE NEW MASONRY PLATE, FILL THE HOLES IN THE CONCRETE WITH GROUT AND SET NEW SWEDGE BOLTS.
6. REPAIR THE CONCRETE SPALLS WITH SPEED-CRETE RED LINE SPECIFICATIONS. THE GIRDERS SHALL NOT BE LOWERED ONTO MASONRY PLATE UNTIL 3 DAYS OF CURING HAS ELAPSED. 3 or 4 hours. IF AN OTHER TYPE OF CONCRETE PATCHING MATERIAL IS CONSIDERED, THE CONTRACTOR WILL BE REQUIRED TO SUBMIT THE TYPE TO THE BRIDGE DIVISION AT BISMARCK FOR APPROVAL. THE APPLICATION OF AN EPOXY SHALL BE APPLIED TO THE BROKEN SURFACE OF THE CONCRETE AS RECOMMENDED BY THE MANUFACTURER BEFORE THE PATCHING CONCRETE IS APPLIED. THE PATCHING CONCRETE SHALL ALSO BE APPLIED AS RECOMMENDED BY THE MANUFACTURER'S SPECIFICATIONS.
7. THE TEMPERATURE SHALL BE 40 DEGREES F. OR ABOVE AT PLACEMENT OF AND FOR 24 HOURS AFTER PLACEMENT OF THE SPEED CRETE. IF NECESSARY THE AREAS SHALL BE HOUSED AND HEATED TO MAINTAIN THE 40 DEGREE F. TEMPERATURE.

WELD EXISTING EDGE PLATE TO GIRDER FLANGE AS SHOWN ON THE DETAIL.

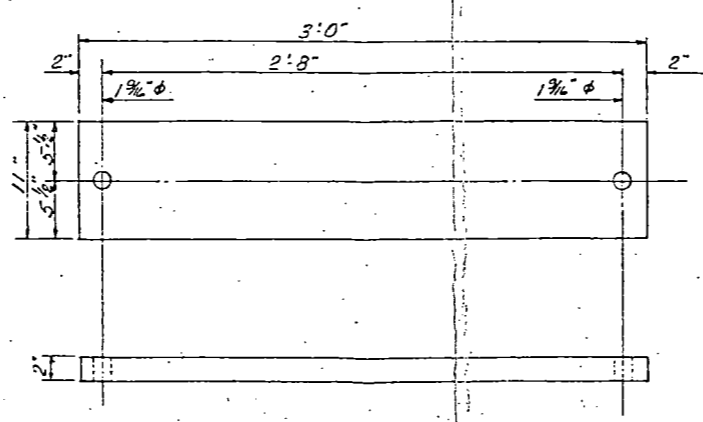


TYPICAL SECTION

Beam No.	Dim. 'a'	Dim. 'b'	Dim. 'c'
1	3 1/8"	2 3/8"	4 5/8"
2	2 1/8"	2 3/4"	3 1/2"
3	2 1/8"	2 3/8"	3 1/2"
4	3 1/8"	2 3/4"	3 3/4"
5	2 1/2"	1 5/8"	3"
6	2 3/4"	2 1/8"	3 1/4"
7	2 3/4"	2 1/4"	3 5/8"
8	2 1/2"	2"	3 1/2"

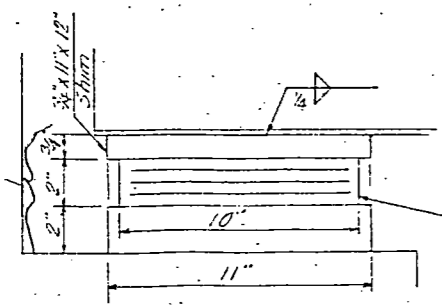


BUMPER ANGLE DETAIL



MASONRY PLATE 11 x 2 x 36"

Should be 5 3/4"



BEARING PAD DETAILS

ADDED CONTRACT ITEMS		
Abutment Repair	L. Sum	1 Ea.
Add. Mobiliz. & De-Mobiliz.	L. Sum	1 Ea.
Flagging	M. Hrs.	889
"J" Bolts	Each	49
Drill Dowel Holes & Re-set Dowels	Each	64
West Beam Seat Repair	L. Sum	1 Ea.
Add. Shim Plates For Beam Seat Repair	L. Sum	1 Ea.
Conduit Repair	L. Sum	1 Ea.
Add. Signs for Flagging	L. Sum	1 Ea.

West Beam Seat Repair

TQFI-I-94-7(22)258

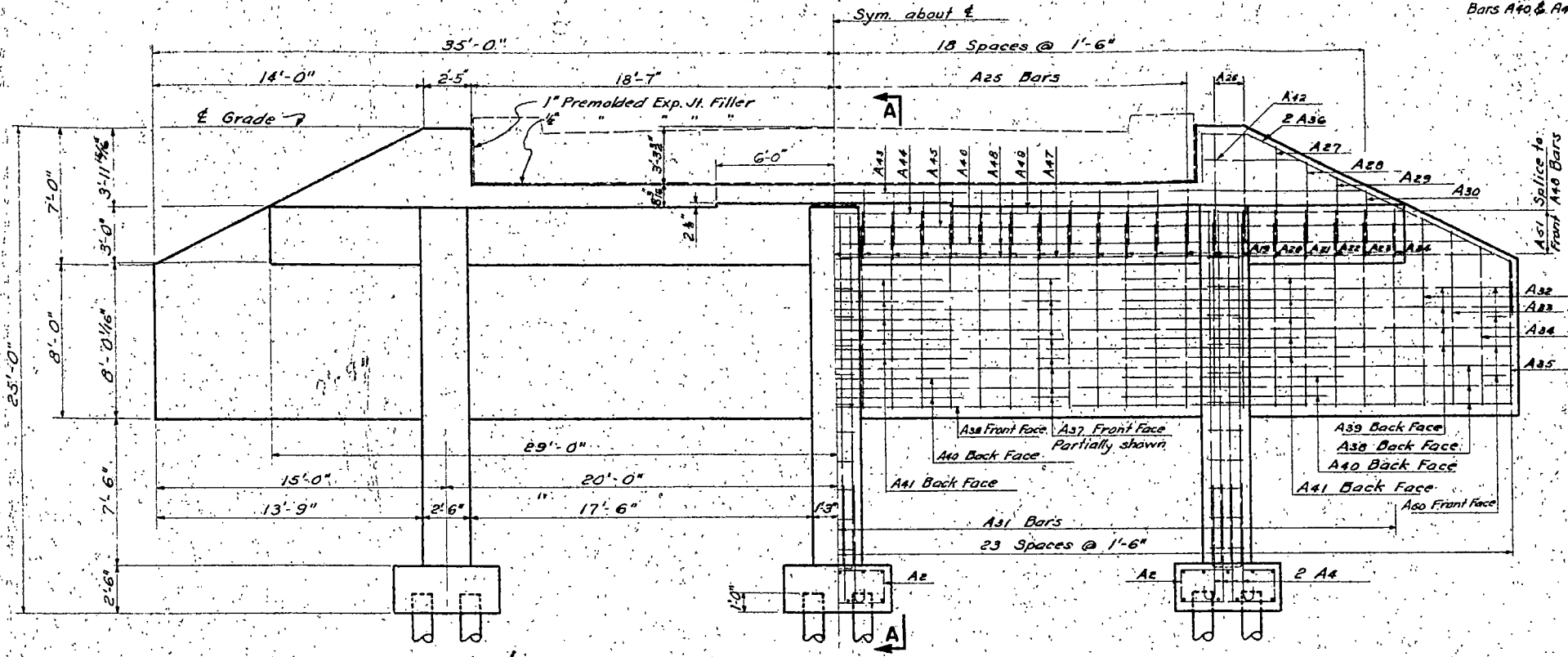
QUANTITIES	
Structural Steel	2464 lbs.
Speed Crete	16 C.F.
Epoxy	46 S.F.

JAMES RIVER
BRIDGE REPAIR
HWY. 1-34

Nov. 26, 1976

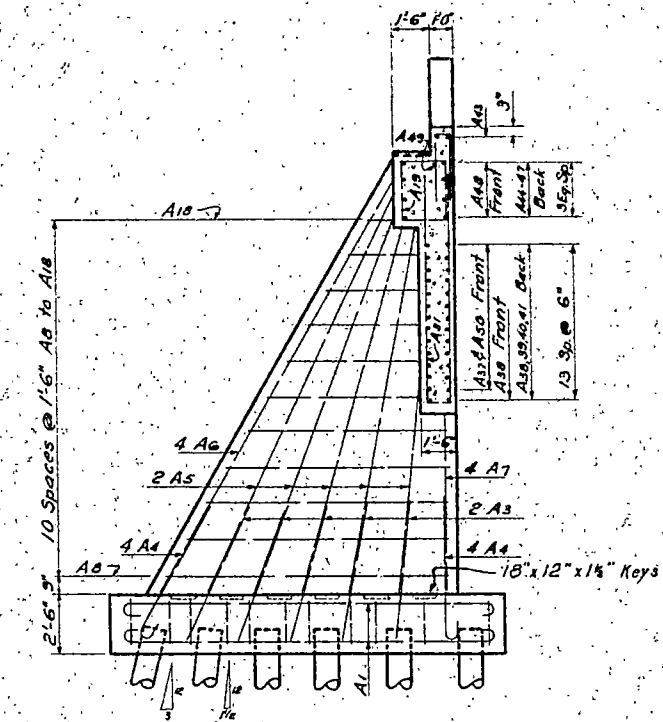
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N.D.				

NOTE:
 Bars A30, A33, A44, A45, A46 & A47 to be spliced between columns.
 Bars A43, A48 & A50 to be spliced at centerline of abutment.
 Bars A37 & A48 to be centered on centerline of abutment.
 Bars A40 & A41 to be centered on columns.

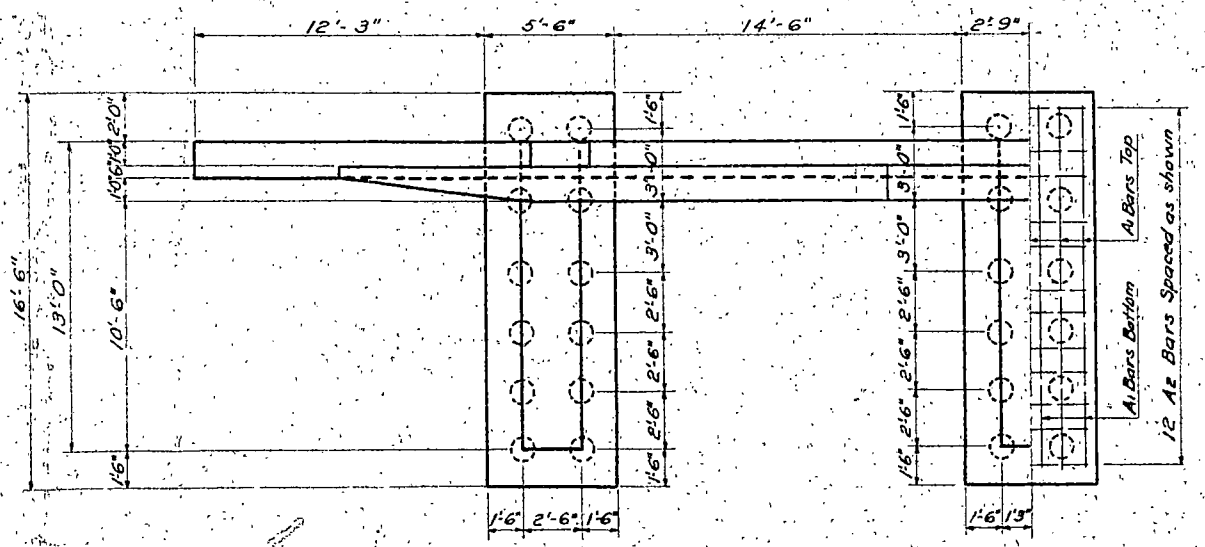


HALF ELEVATION
Showing Dimensions

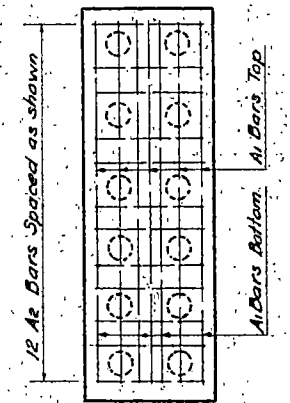
HALF ELEVATION
Showing Reinforcing



SECTION A-A



HALF PLAN



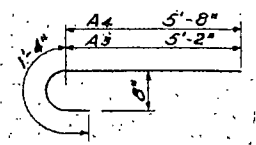
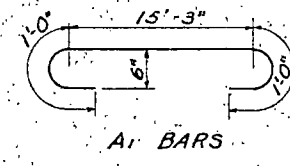
HALF FOOTING PLAN

A2 & A6 to A24 BARS

A24	1'-0 1/2"
A23	1'-3"
A22	1'-5 1/2"
A21	1'-7 1/2"
A20	1'-10"
A19	2'-0"
A18	3'-1"
A17	3'-11"
A16	4'-9 1/2"
A15	5'-7 1/2"
A14	6'-6"
A13	7'-4"
A12	8'-2"
A11	9'-0"
A10	9'-10 1/2"
A9	10'-8 1/2"
A8	11'-7"
A2	4'-10"

A25 to A35 BARS

A35	7'-6"
A34	8'-3"
A33	9'-0"
A32	9'-9"
A31	9'-6"
A30	2'-10"
A29	3'-7"
A28	4'-4"
A27	5'-1"
A26	5'-10"
A25	3'-0"



A2 & A6 to A24 BARS

A25 to A35 BARS

A3 & A4 BARS

BENT BAR DETAILS

*BAR LIST - ONE ABUT.

MARK	NO.	SIZE	LENGTH	SHAPE
A1	27	3/4"	17'-3"	Bent
A2	36	3/4"	14'-0"	"
A3	30	1"	6'-6"	"
A4	24	1"	7'-0"	"
A5	30	3/4"	18'-0"	Str.
A6	12	1"	20'-6"	"
A7	12	1"	17'-0"	"
A8	3	5/8"	28'-0"	Bent
A9	3	5/8"	26'-3"	"
A10	3	5/8"	24'-7"	"
A11	3	5/8"	22'-10"	"
A12	3	5/8"	21'-2"	"
A13	3	5/8"	19'-6"	"
A14	3	5/8"	17'-10"	"
A15	3	5/8"	16'-1"	"
A16	3	5/8"	14'-5"	"
A17	3	5/8"	12'-8"	"
A18	3	5/8"	11'-0"	"
A19	29	1/2"	9'-10"	"
A20	2	1/2"	9'-6"	"
A21	2	1/2"	9'-1"	"
A22	2	1/2"	8'-9"	"
A23	2	1/2"	8'-4"	"
A24	2	1/2"	7'-11"	"
A25	25	1/2"	6'-7"	"
A26	4	1/2"	12'-3"	"
A27	2	1/2"	10'-9"	"
A28	2	1/2"	9'-3"	"
A29	2	1/2"	7'-9"	"
A30	2	1/2"	6'-3"	"
A31	39	3/8"	20'-0"	"
A32	2	3/8"	20'-6"	"
A33	2	3/8"	19'-0"	"
A34	2	3/8"	17'-6"	"
A35	2	3/8"	16'-0"	"
A36	4	3/8"	22'-6"	"
A37	9	3/8"	10'-0"	Str.
A38	12	1"	25'-3"	"
A39	12	1"	25'-3"	"
A40	6	1"	11'-0"	"
A41	15	3/4"	11'-0"	"
A42	4	1/2"	5'-6"	"
A43	4	3/4"	28'-0"	"
A44	3	1"	21'-6"	"
A45	3	1"	22'-6"	"
A46	3	1"	23'-9"	"
A47	3	1"	24'-9"	"
A48	4	1"	40'-0"	"
A49	2	1"	30'-0"	"
A50	8	3/4"	36'-0"	"
A51	8	3/4"	12'-0"	"

*NOTE:
 The fabricator shall add a prefix to each bar designation to differentiate between structures and/or units of a structure on the project.

QUANTITIES

Concrete Class A-1 1/2	109.3 Cu. Yd.
Reinforcing Steel	11,028 Lb.
Piling (See Layout)	
Excavation (See Layout)	

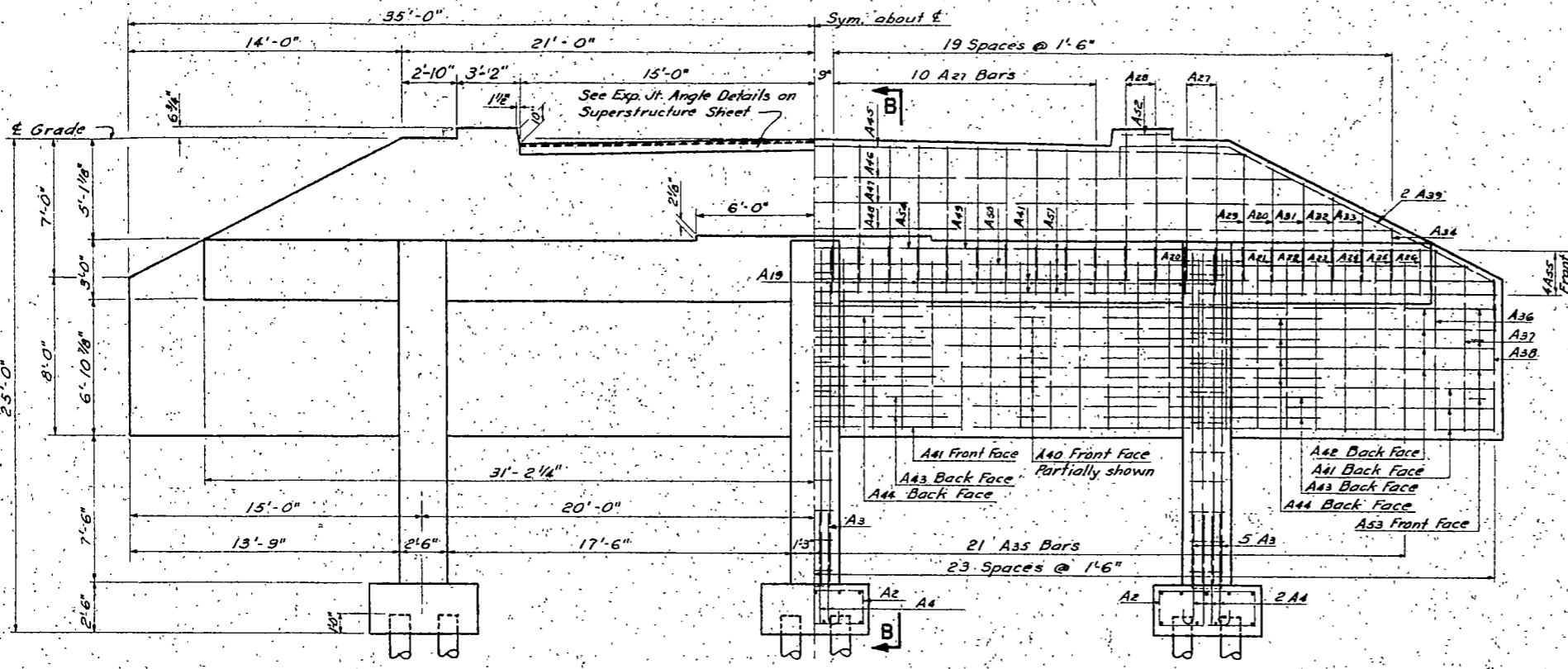
25' ABUTMENT
 DETAILS
 FOR 1-BEAM SPANS
 FIXED END
 30' ROADWAY

EGP
 J.C.
 O.C.A.
 I.C.F.
 E.S.

H-11

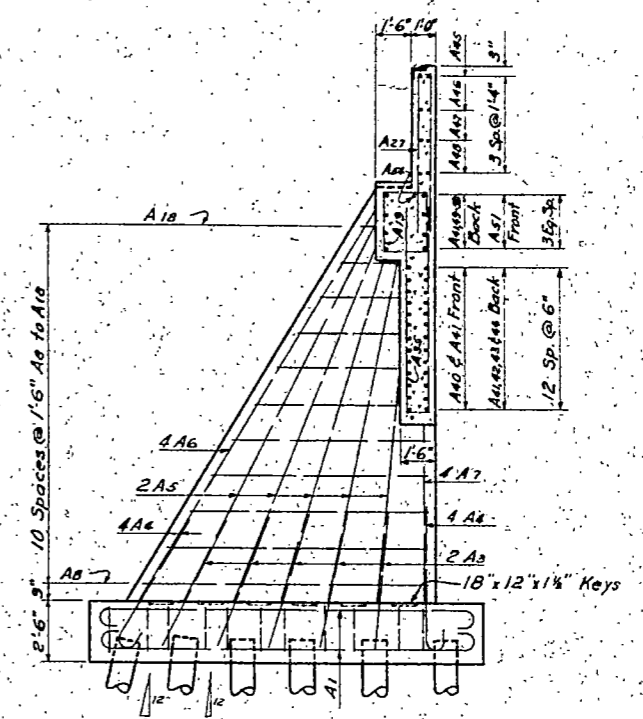
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N.D.				

NOTE:
 Bars A41, A42, A43, & A50 to be spliced between columns.
 Bars A45, A46, A47, A48, A49, A51, A53 & A54 to be spliced at centerline of abutment.
 Bar A40 to be centered on centerline of abutment.
 Bars A43 & A44 to be centered on columns.

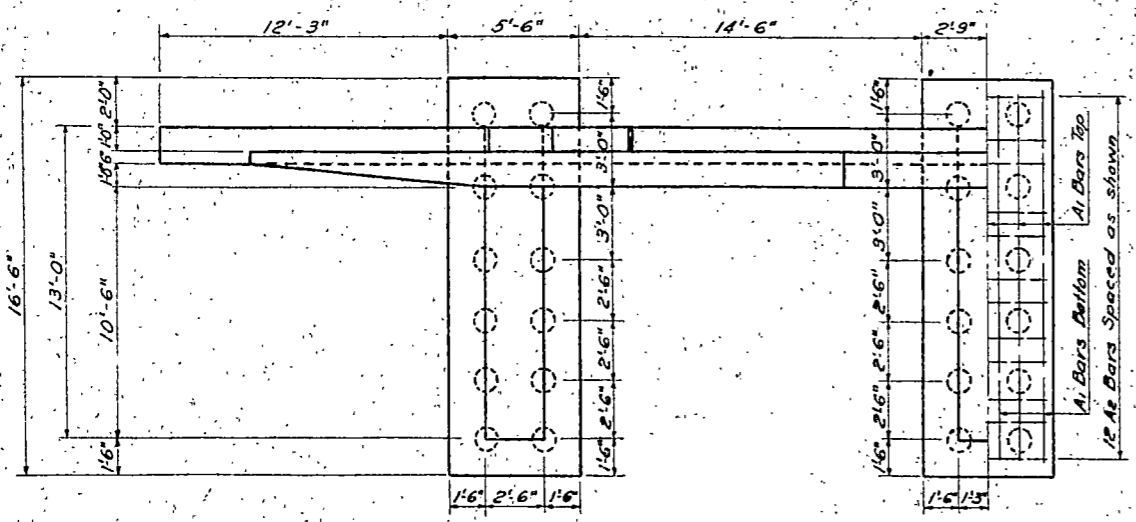


HALF ELEVATION
 Showing Dimensions

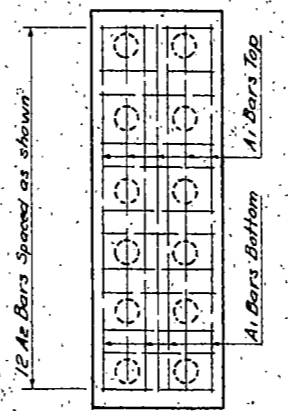
HALF ELEVATION
 Showing Reinforcing



SECTION B-B



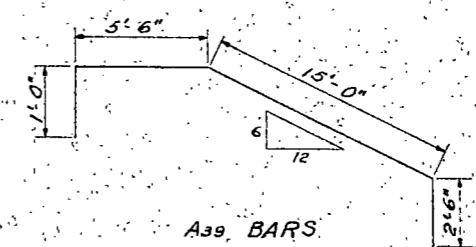
HALF PLAN



HALF FOOTING PLAN

A56	1'-0 1/2"
A55	1'-2 1/2"
A54	1'-4"
A53	1'-6"
A52	1'-7 1/2"
A51	1'-9 1/2"
A50	1'-11"
A49	2'-0"
A48	2'-6"
A47	3'-4 1/2"
A46	4'-3 1/2"
A45	5'-2 1/2"
A44	6'-1 1/2"
A43	7'-0"
A42	7'-11"
A41	8'-10"
A40	9'-9"
A39	10'-7 1/2"
A38	11'-6 1/2"
A37	4'-10"

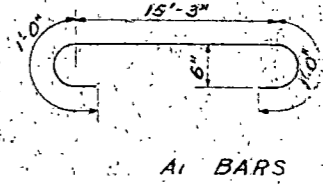
A2 & A6 to A56 BARS



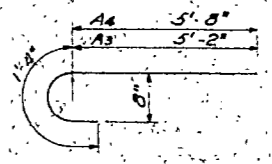
A39 BARS

A38	7'-6"
A37	8'-3"
A36	9'-0"
A35	8'-0"
A34	2'-5"
A33	3'-2"
A32	3'-11"
A31	4'-8"
A30	5'-5"
A29	6'-2"
A28	7'-5"
A27	6'-6"

A27 to A38 BARS



A1 BARS



A3 & A4 BARS

BENT BAR DETAILS

* BAR LIST ONE ABUT.				
MARK NO.	SIZE	LENGTH	SHAPE	
A1	27	34"	17'-3"	Bent
A2	36	34"	14'-0"	"
A3	30	1"	6'-6"	"
A4	24	1"	7'-0"	"
A5	30	3/4"	17'-0"	Str.
A6	12	1"	19'-6"	"
A7	12	1"	16'-0"	"
A8	3	3/4"	27'-11"	Bent
A9	3	3/4"	26'-1"	"
A10	3	3/4"	24'-4"	"
A11	3	3/4"	22'-6"	"
A12	3	3/4"	20'-8"	"
A13	3	3/4"	18'-10"	"
A14	3	3/4"	17'-1"	"
A15	3	3/4"	15'-3"	"
A16	3	3/4"	13'-5"	"
A17	3	3/4"	11'-7"	"
A18	3	3/4"	9'-10"	"
A19	20	1/2"	9'-10"	"
A20	2	1/2"	9'-8"	"
A21	2	1/2"	9'-5"	"
A22	2	1/2"	9'-1"	"
A23	2	1/2"	8'-10"	"
A24	2	1/2"	8'-6"	"
A25	2	1/2"	8'-3"	"
A26	2	1/2"	7'-11"	"
A27	24	1/2"	13'-7"	"
A28	4	1/2"	15'-1"	"
A29	2	1/2"	12'-11"	"
A30	2	1/2"	11'-5"	"
A31	2	1/2"	9'-11"	"
A32	2	1/2"	8'-5"	"
A33	2	1/2"	6'-11"	"
A34	2	1/2"	5'-5"	"
A35	41	3/4"	18'-4"	"
A36	2	3/4"	19'-0"	"
A37	2	3/4"	17'-6"	"
A38	2	3/4"	16'-0"	"
A39	4	3/4"	24'-0"	"
A40	8	3/4"	40'-0"	Str.
A41	18	1"	25'-3"	"
A42	12	1"	25'-3"	"
A43	6	1"	11'-0"	"
A44	12	1"	11'-0"	"
A45	4	1"	23'-0"	"
A46	4	1"	25'-3"	"
A47	4	1"	27'-11"	"
A48	4	1"	30'-7"	"
A49	3	1"	23'-3"	"
A50	3	1"	24'-3"	"
A51	8	1"	21'-9"	"
A52	4	1"	2'-13"	"
A53	8	3/4"	36'-0"	"
A54	2	3/4"	32'-0"	"
A55	8	3/4"	13'-3"	"

NOTE:
 The fabricator shall add a prefix to each bar designation to differentiate between structures and/or units of a structure on the project.

QUANTITIES	
Concrete Class A-76	118.9 Cu. Yd.
Reinforcing Steel	11158 Lb.
Piling (See Layout)	
Excavation (See Layout)	

25' ABUTMENT
 DETAILS
 FOR I-BEAM SPANS
 EXPANSION END
 30' ROADWAY

H-124

H-12

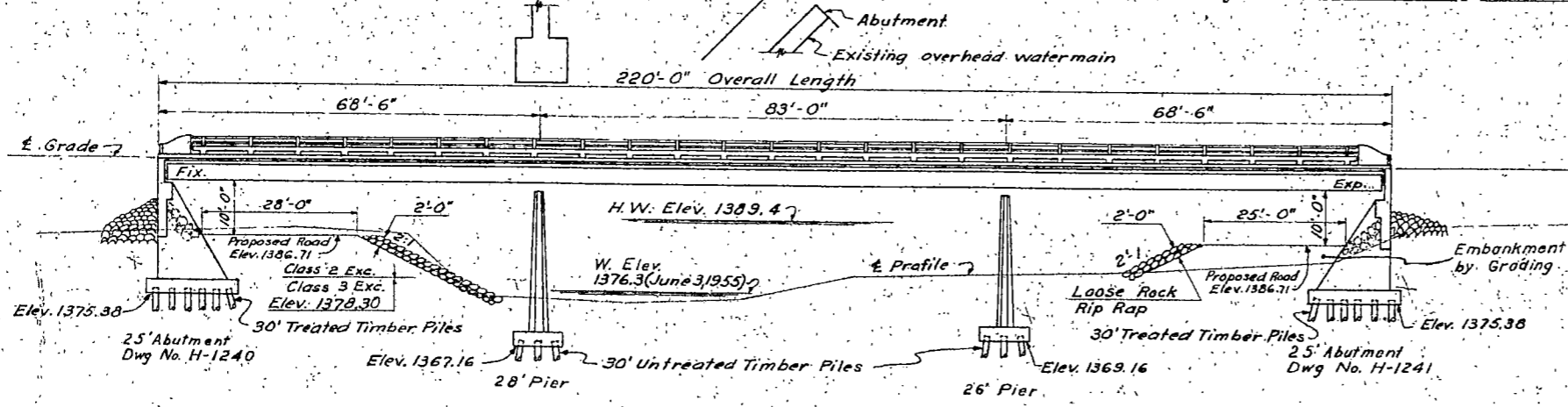
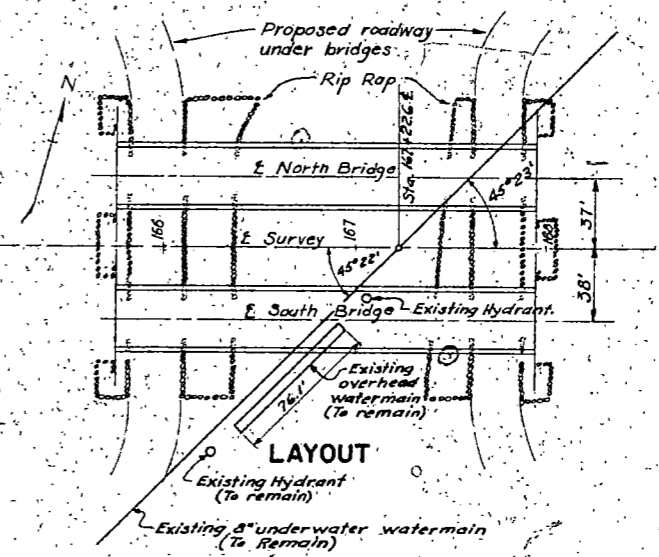
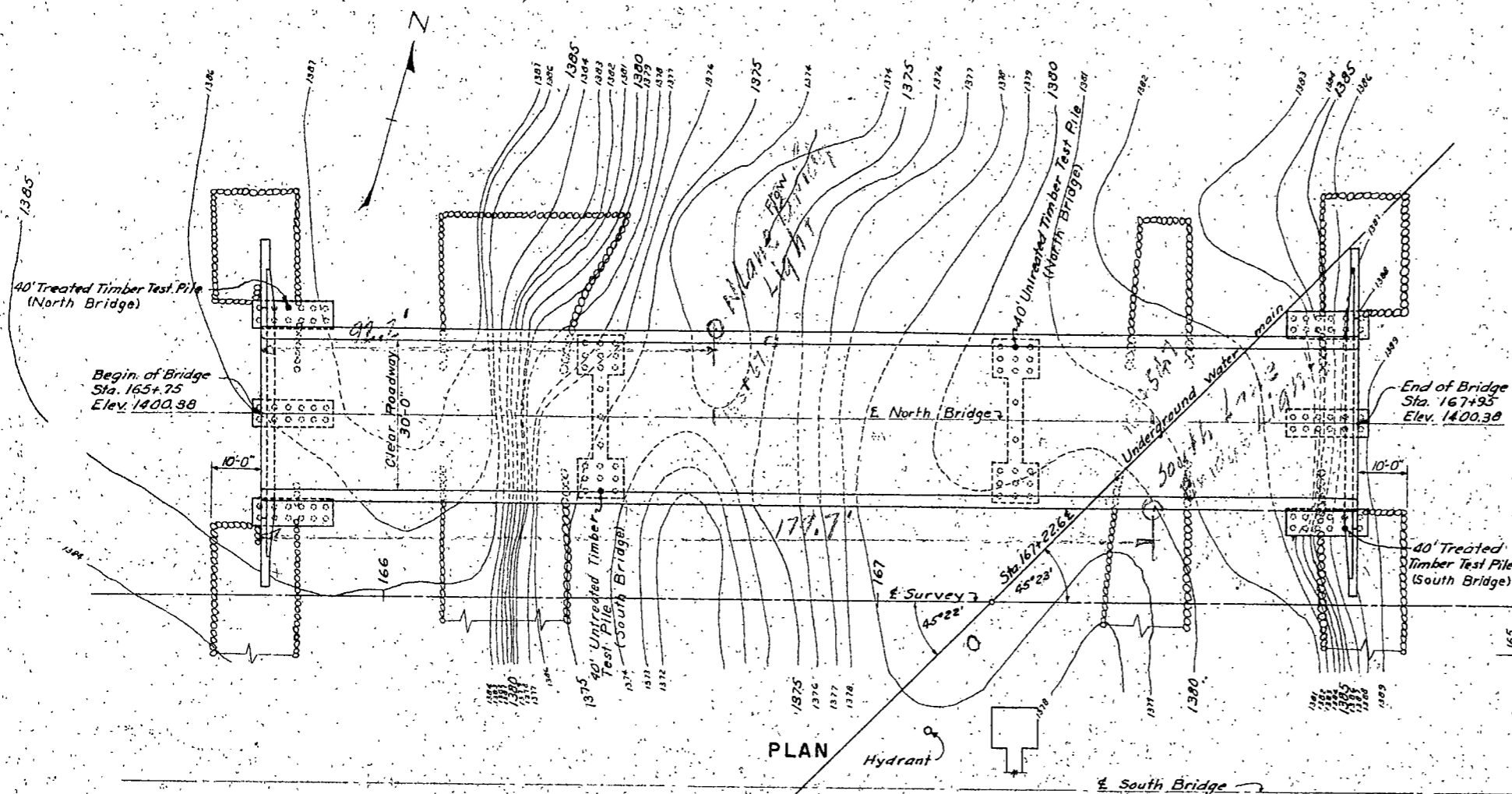
DATE BY EGP
 CHECKED BY J.C.
 DESIGNED BY OCA
 DRAWING BY JCF
 MADE BY JCF
 CHECKED BY RCH

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N. D.	10176		7	29

NOTES

All concrete shall be class A-1½ and shall be compacted by vibration.
 Exposed edges of concrete shall be beveled with a ¾" triangular molding unless otherwise noted.
 A cut-off of two feet has been assumed in estimating the pay length (below cut-off) of piling as compared with the ordered length.
 The cost of furnishing and placing the premolded expansion joint filler, drain pipes, and other incidentals shall be included in the unit price bid for Class A-1½ concrete.
 The surface of railing end posts, curb face, and all exposed vertical faces of the superstructure and substructure above the low water line shall be given the "Rubbed Surface Finish". All other surfaces shall be given the "Ordinary Surface Finish".
 Loose Rock Rip Rap shall be placed by the grading contractor and shall be measured and paid for as "Loose Rock Rip Rap". Any excavation required for placing "Loose Rock Rip Rap" shall be incidental to the item "Loose Rock Rip Rap".
 The bar fabricator shall add a prefix to each bar designation to differentiate between structures and/or units of a structure on the project.

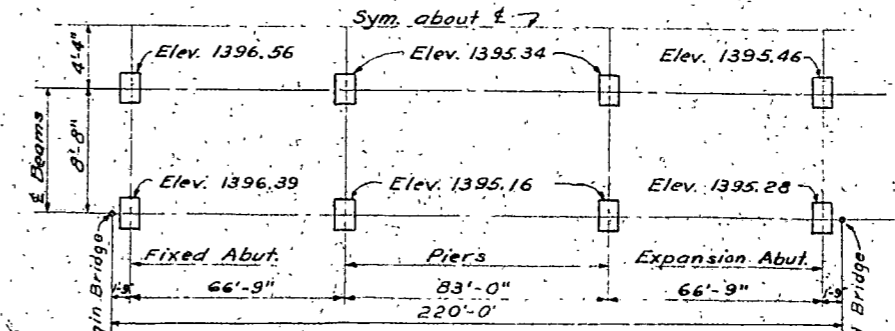
EXISTING WATERMAIN (UNDERGROUND & OVERHEAD)
 The existing underground and overhead river crossing of the 8" watermain to the State Hospital is to remain in place. However the contractor shall determine the location of the existing 8" underground water main within the area of the proposed bridge locations before starting any substructure operations. He will make certain that his coffer-dam and timber piling operations will not damage the existing underground water main. Any damage to the underground and overhead water main resulting from his (Contractor) operations shall be repaired by him at his own expense and to the satisfaction of the North Dakota State Health Department.



ELEVATION

BENCH MARKS		
NO.	DESCRIPTION	ELEV.
24	Iron Man's Hub by Ir. F.P.	1386.79
25	Spot on Bridge Abut.	1387.09
26	Spot on Conc. Step	1388.90

LOCATION	DEAD LOAD	LIVE LOAD	EARTH.	PILE LOADING			LONG. FORCE	ICE	FRICTION	DESIGN LOAD
				50 LB.	WIND 15 LB.	100 LB. LL.				
Abutments										
* Toe	+16.49	+ 4.09	+18.42							18.39 Ton
** Heel	+17.06	+ 4.20	- 2.99							18.35 Ton
Pier No. 2	8.75	4.22	2.62	3.98	1.20	0.84	3.33	2.15	1.91	10.36 Ton
Pier No. 3	8.75	4.44	3.10	3.74	1.12	0.80	3.00	1.63	1.77	10.47 Ton
**	Horizontal Earth Pressure			40#/sq. ft.						
				20#/sq. ft.						



BEARING PLATE LAYOUT

Elevations are to top of concrete (Both Bridges the same)

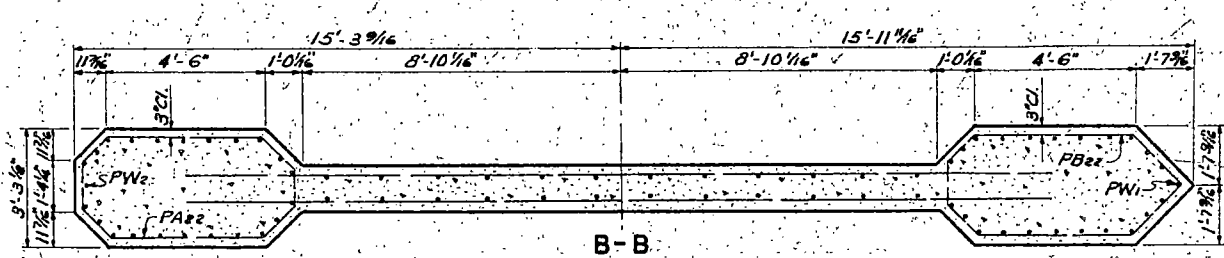
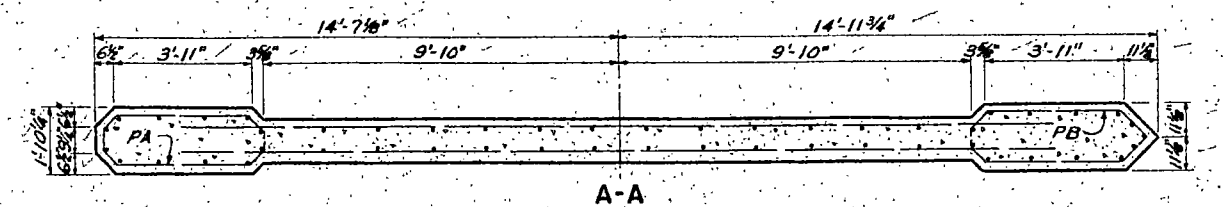
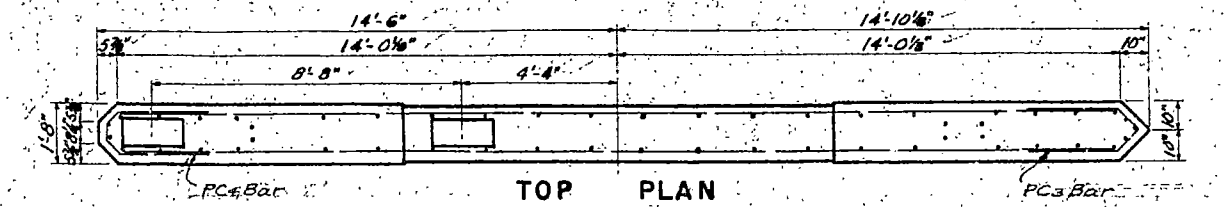
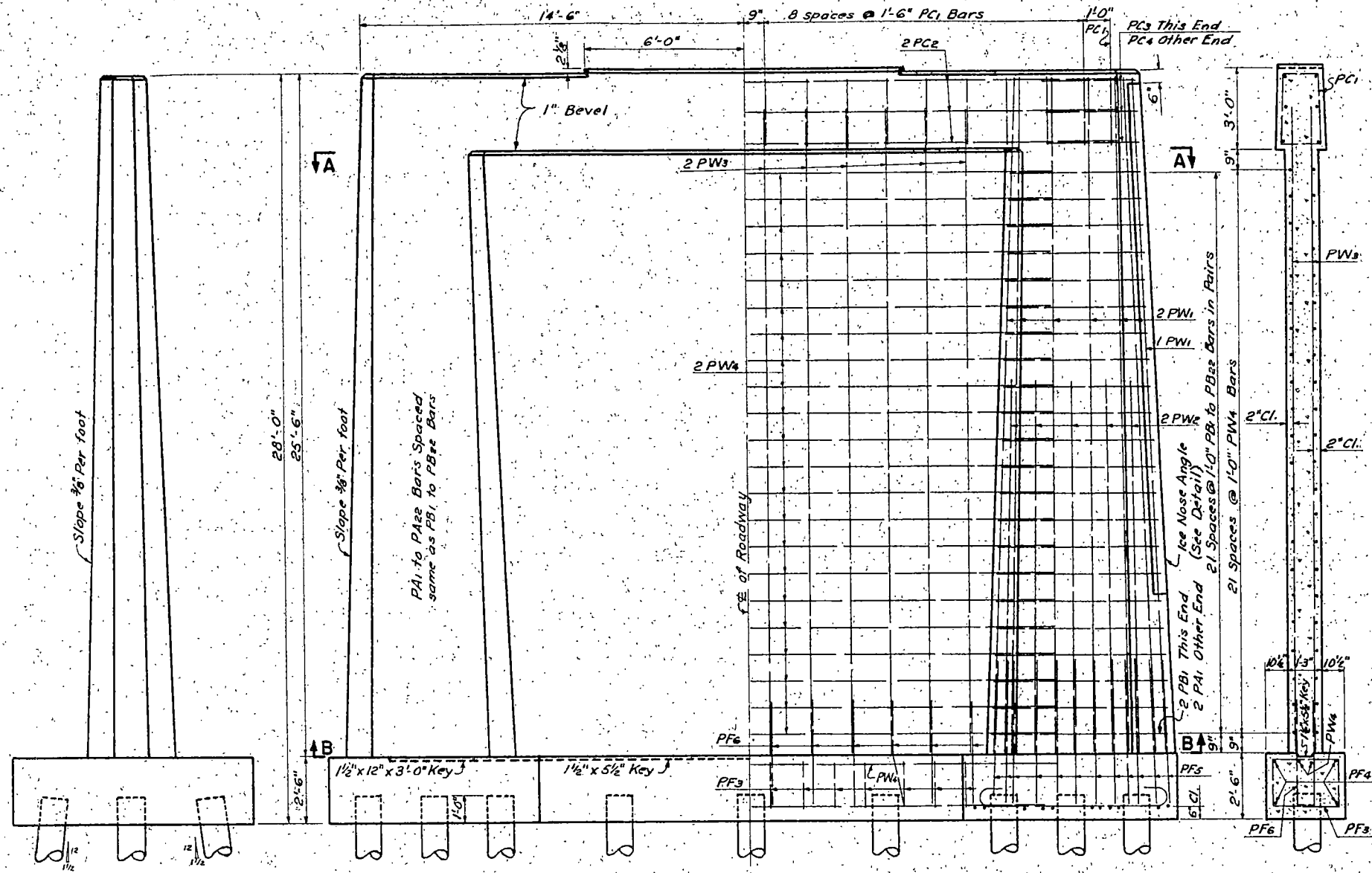
ESTIMATE OF QUANTITIES (TWO BRIDGES)		
SPEC. NO.	BID ITEM	
12	REMOVING EXISTING STRUCTURE AT STA.	
16	EXCAVATION CLASS 1	
	" CLASS 2	550 CU. YD.
	" CLASS 3	660 CU. YD.
60A	CONCRETE CLASS A-1	CU. YD.
	" CLASS A-1½	1167.4 CU. YD.
62A	REINFORCING STEEL	184716 LB.
63	STRUCTURAL STEEL	309794 LB.
64A	UNTREATED TIMBER	M.B.M.
64B	TREATED TIMBER	M.B.M.
65A	UNTREATED TIMBER PILING 80 @ 30 FT.	2240 UN. FT.
65B	TREATED TIMBER PILING 142 @ 30 FT.	3976 UN. FT.
65K	UNTREATED TIMBER TEST PILES 40' Long	2 EXC.
65L	TREATED TIMBER TEST PILES 40' Long	2 EXC.
81	TEMPORARY CROSSING AND DETOUR	
	Ornamental Metal Railing	416 LB.
	Loose Rock Rip-Rap (Grading Item)	935 CU. YD.

STRUCTURAL DRAWINGS
 GENERAL DRAWING (This sheet)
 SUBSTRUCTURE H-1240, H-1241, H-1329, H-1320
 SUPERSTRUCTURE H-1131, H-1132 & H-0101
 DESIGN LOADING Heo S16
 SCALE 1 INCH = 15 FEET

NORTH DAKOTA
 STATE HIGH-WAY DEPARTMENT
JAMES RIVER
 BRIDGE LAYOUT
 PROJECT I-01-7(2) STA. 166+85
 STUTSMAN COUNTY

APPROVED
 Oct. 24, 1956 Joseph R. Kirby
 BRIDGE ENGINEER

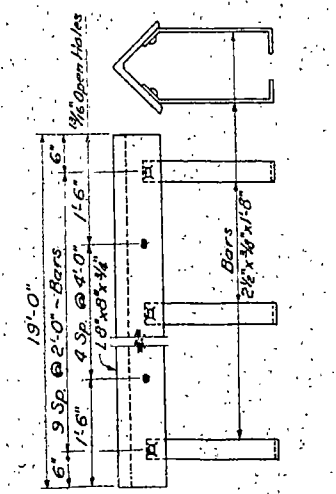
X004



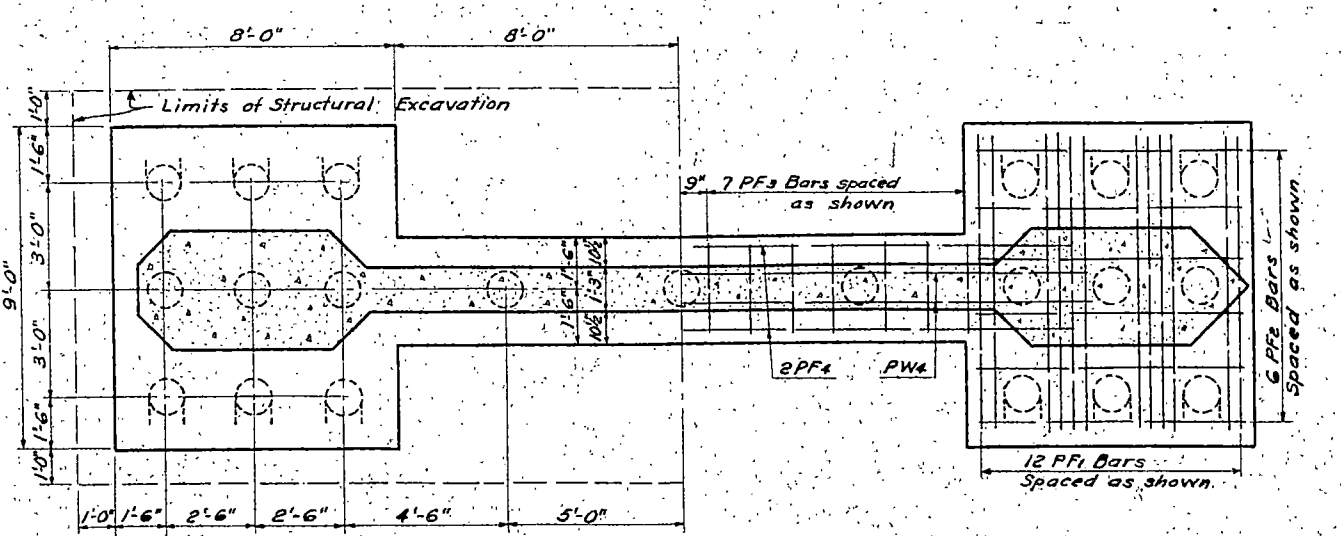
END VIEW

ELEVATION

SECTION ON E



ICE NOSE ANGLE

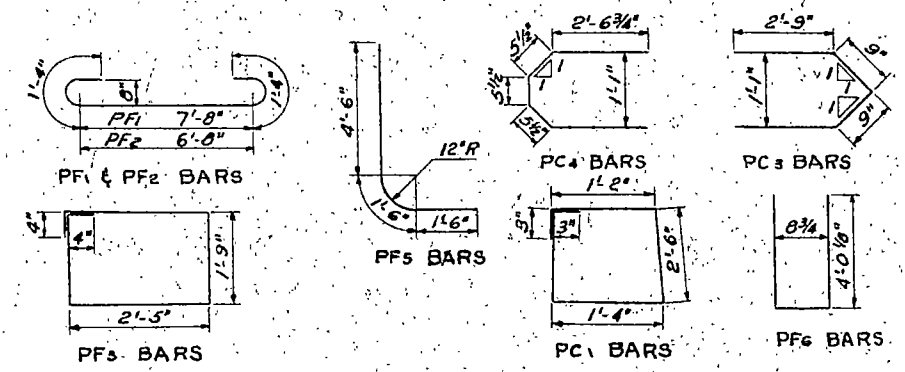


FOOTING PLAN
Dowel Bars not shown

PA BARS					PB BARS					
MARK	A	B	C	LENGTH	MARK	W	X	Y	Z	LENGTH
PA1	1'-1 1/2"	3'-11 1/2"	1'-0 1/4"	8'-3"	PB1	1'-11 1/4"	3'-11 1/4"	1'-1 1/2"	0'-11 1/2"	8'-6"
PA2	1'-1 1/4"	3'-11 1/4"	1'-0 3/8"	8'-3"	PB2	1'-10 1/4"	3'-11 1/4"	1'-1 1/4"	0'-11"	8'-4"
PA3	1'-0 3/8"	3'-10 3/8"	0'-11 1/4"	8'-0"	PB3	1'-10"	3'-10 3/8"	1'-0 3/8"	0'-11 1/4"	8'-3"
PA4	1'-0 1/4"	3'-10 1/4"	1'-0 1/4"	8'-0"	PB4	1'-9 1/4"	3'-10 1/4"	1'-0 3/8"	0'-9 1/4"	8'-0"
PA5	1'-0 1/4"	3'-10 1/4"	0'-9 3/8"	7'-6"	PB5	1'-9"	3'-10 1/4"	1'-0 1/4"	0'-10 1/4"	8'-0"
PA6	1'-0"	3'-10"	0'-10"	7'-6"	PB6	1'-8 1/2"	3'-10"	1'-0"	0'-8 1/2"	7'-9"
PA7	0'-11 1/2"	3'-9 1/2"	0'-10 1/2"	7'-6"	PB7	1'-7 1/2"	3'-9 1/2"	0'-11 1/2"	0'-9 1/2"	7'-9"
PA8	0'-11 1/4"	3'-9 1/4"	0'-9 3/4"	7'-3"	PB8	1'-7 1/4"	3'-9 1/4"	0'-11 1/4"	0'-9 1/4"	7'-8"
PA9	0'-11"	3'-9"	0'-8 1/2"	7'-0"	PB9	1'-6 1/2"	3'-9"	0'-11"	0'-7 1/2"	7'-4"
PA10	0'-10 3/4"	3'-8 3/4"	0'-8 1/2"	7'-0"	PB10	1'-6 1/4"	3'-8 3/4"	0'-10 3/4"	0'-7 1/4"	7'-3"
PA11	0'-10 1/2"	3'-8 1/2"	0'-7 1/2"	6'-9"	PB11	1'-5 1/2"	3'-8 1/2"	0'-10 1/2"	0'-8 1/2"	7'-3"
PA12	0'-10 1/4"	3'-8 1/4"	0'-8 1/4"	6'-9"	PB12	1'-5 1/4"	3'-8 1/4"	0'-10 1/4"	0'-8 1/4"	7'-0"
PA13	0'-9 3/4"	3'-7 3/4"	0'-8 1/4"	6'-9"	PB13	1'-4 3/4"	3'-7 3/4"	0'-9 3/4"	0'-7 3/4"	7'-0"
PA14	0'-9 1/2"	3'-7 1/2"	0'-7 1/2"	6'-6"	PB14	1'-4 1/2"	3'-7 1/2"	0'-9 1/2"	0'-8 1/2"	7'-0"
PA15	0'-9 1/4"	3'-7 1/4"	0'-7 1/4"	6'-4"	PB15	1'-3 3/4"	3'-7 1/4"	0'-9 1/4"	0'-8 1/4"	6'-8"
PA16	0'-8 3/4"	3'-6 3/4"	0'-7 1/4"	6'-3"	PB16	1'-3 1/2"	3'-6 3/4"	0'-8 3/4"	0'-8 1/4"	6'-9"
PA17	0'-8 1/2"	3'-6 1/2"	0'-7 1/4"	6'-3"	PB17	1'-2 1/2"	3'-6 1/2"	0'-8 1/2"	0'-8 1/4"	6'-6"
PA18	0'-8"	3'-6"	0'-6 3/4"	6'-0"	PB18	1'-2"	3'-6"	0'-8"	0'-7 1/4"	6'-6"
PA19	0'-7 1/2"	3'-5 1/2"	0'-7 1/4"	6'-0"	PB19	1'-1 1/2"	3'-5 1/2"	0'-7 1/2"	0'-5 3/4"	6'-3"
PA20	0'-7 1/4"	3'-5 1/4"	0'-6 1/2"	5'-9"	PB20	1'-1 1/4"	3'-5 1/4"	0'-7 1/4"	0'-5 3/4"	6'-3"
PA21	0'-7 1/4"	3'-5 1/4"	0'-6 1/8"	5'-8"	PB21	1'-0 3/4"	3'-5 1/4"	0'-7 1/4"	0'-5 3/4"	6'-0"
PA22	0'-7"	3'-5"	0'-6"	5'-7"	PB22	0'-11 1/8"	3'-5"	0'-7"	0'-6 1/8"	5'-11"

Total length one set 150'-10" Total length one set 157'-11"

BAR LIST				
MARK	NO.	SIZE	LENGTH	SHAPE
PA1 to PA22	2 Sets	5/8"	150'-10"	Bent
PB1 to PB22	2 Sets	5/8"	157'-11"	Bent
PC1	20	5/8"	8'-0"	Bent
PC2	6	1 1/4"	27'-6"	Str.
PC3	3	3/4"	7'-0"	Bent
PC4	3	3/4"	6'-6"	Bent
PFI	24	1"	10'-4"	Bent
PFB	12	1"	9'-4"	Bent
PFF	14	5/8"	9'-0"	Bent
PFW	4	1"	22'-0"	Str.
PFS	46	1 1/4"	7'-6"	Bent
PFE	12	5/8"	8'-9"	Bent
PW1	25	1"	25'-0"	Str.
PW2	21	1"	14'-0"	Str.
PW3	24	5/8"	24'-6"	Str.
PW4	46	5/8"	23'-0"	Str.

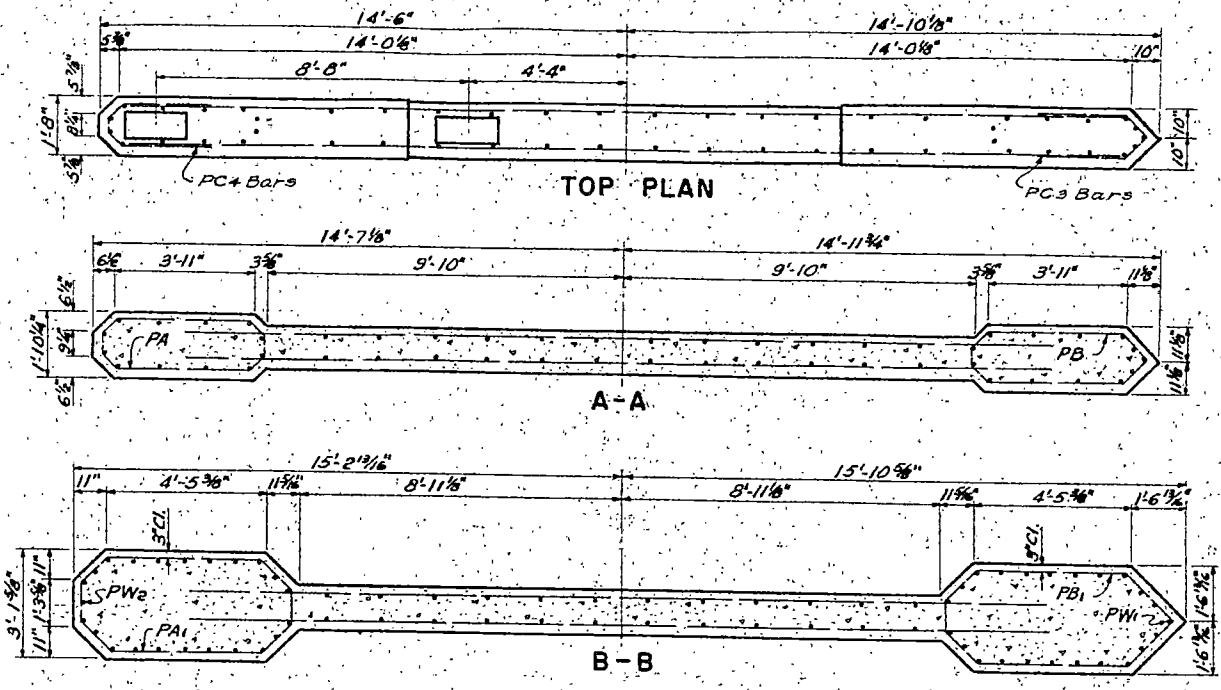
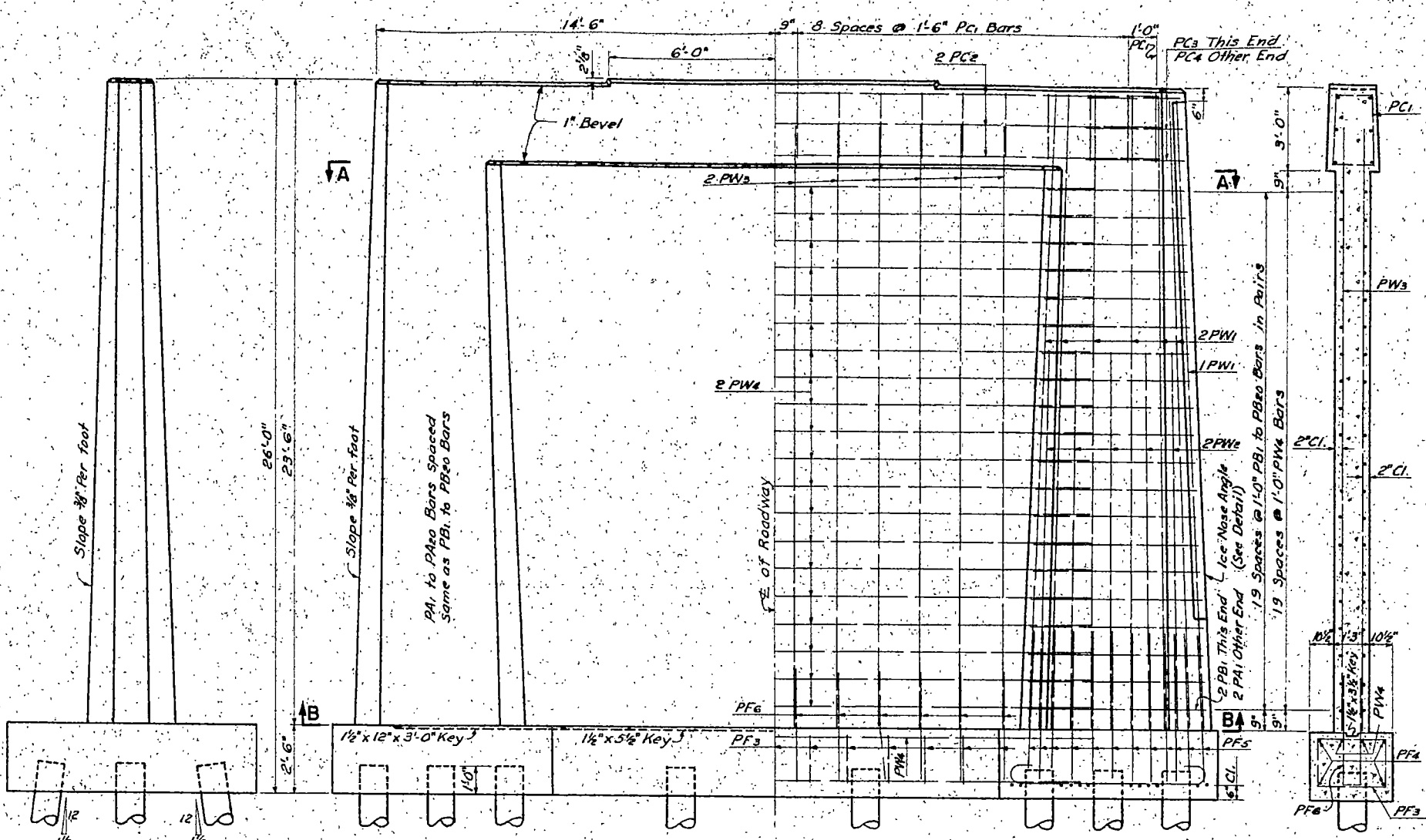


BENT BAR DETAILS

QUANTITIES	
Concrete Class A-1 1/2	65.1 Cu. Yd.
Rainforcing Steel	7892 Lbs.
Structural Steel	865 Lbs.
Piling (See Layout)	
Excavation (See Layout)	

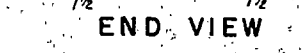
28' PIER
DETAILS
FOR I BEAM SPANS
30' ROADWAY

MADE BY: TCF
 CHECKED BY: EGP
 TRACING: DCA
 MADE BY: TCF
 CHECKED BY: EGP



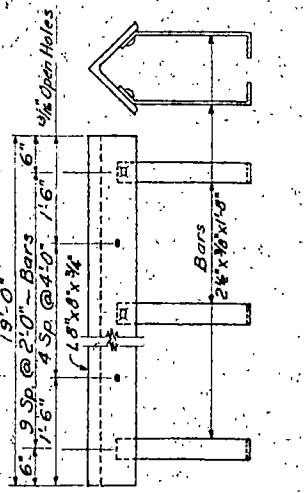
PA BARS				PB BARS							
MARK	A	B	C	LENGTH	MARK	W	X	Y	Z	LENGTH	
PA1	1'-0"	3'-10"	0'-11"	8'-0"	PB1	1'-10"	3'-10"	1'-0"	0'-11"	8'-3"	
PA2	1'-0"	3'-10"	1'-0"	8'-0"	PB2	1'-9"	3'-10"	1'-0"	0'-9"	8'-0"	
PA3	1'-0"	3'-10"	0'-9"	7'-6"	PB3	1'-9"	3'-10"	1'-0"	0'-8"	8'-0"	
PA4	1'-0"	3'-10"	0'-10"	7'-6"	PB4	1'-8"	3'-10"	1'-0"	0'-8"	7'-9"	
PA5	0'-11"	3'-9"	0'-10"	7'-6"	PB5	1'-7"	3'-9"	0'-11"	0'-9"	7'-9"	
PA6	0'-11"	3'-9"	0'-9"	7'-3"	PB6	1'-7"	3'-9"	0'-11"	0'-9"	7'-8"	
PA7	0'-11"	3'-9"	0'-8"	7'-0"	PB7	1'-6"	3'-9"	0'-11"	0'-7"	7'-4"	
PA8	0'-10"	3'-8"	0'-8"	7'-0"	PB8	1'-6"	3'-8"	0'-10"	0'-7"	7'-3"	
PA9	0'-10"	3'-8"	0'-7"	6'-9"	PB9	1'-5"	3'-8"	0'-10"	0'-8"	7'-3"	
PA10	0'-10"	3'-8"	0'-8"	6'-9"	PB10	1'-5"	3'-8"	0'-10"	0'-8"	7'-3"	
PA11	0'-9"	3'-7"	0'-8"	6'-9"	PB11	1'-4"	3'-7"	0'-10"	0'-6"	7'-0"	
PA12	0'-9"	3'-7"	0'-7"	6'-6"	PB12	1'-4"	3'-7"	0'-9"	0'-7"	7'-0"	
PA13	0'-9"	3'-7"	0'-7"	6'-4"	PB13	1'-3"	3'-7"	0'-9"	0'-6"	6'-8"	
PA14	0'-8"	3'-6"	0'-7"	6'-3"	PB14	1'-3"	3'-6"	0'-8"	0'-8"	6'-9"	
PA15	0'-8"	3'-6"	0'-7"	6'-3"	PB15	1'-2"	3'-6"	0'-8"	0'-8"	6'-6"	
PA16	0'-8"	3'-6"	0'-6"	6'-0"	PB16	1'-2"	3'-6"	0'-8"	0'-7"	6'-6"	
PA17	0'-7"	3'-5"	0'-7"	6'-0"	PB17	1'-1"	3'-5"	0'-7"	0'-5"	6'-3"	
PA18	0'-7"	3'-5"	0'-6"	5'-9"	PB18	1'-0"	3'-5"	0'-7"	0'-6"	6'-3"	
PA19	0'-7"	3'-5"	0'-6"	5'-8"	PB19	1'-0"	3'-5"	0'-7"	0'-5"	6'-0"	
PA20	0'-7"	3'-5"	0'-6"	5'-7"	PB20	0'-11"	3'-5"	0'-7"	0'-6"	5'-11"	
Total length one set				134'-4"	Total Length one set				141'-1"		

BAR LIST				
MARK	NO.	SIZE	LENGTH	SHAPE
PA1 to PA6	2 Sets	5/8"	134'-4"	Bent
PB1 to PB6	2 Sets	5/8"	141'-1"	Bent
PC1	20	3/8"	8'-0"	Bent
PC2	6	1"	27'-6"	Str.
PC3	3	3/4"	13'-0"	Bent
PC4	3	3/4"	6'-6"	Bent
PF1	24	1"	10'-4"	Bent
PF2	12	1"	9'-4"	Bent
PF3	13	5/8"	9'-0"	Bent
PF4	4	1"	22'-5"	Str.
PF5	46	1"	7'-6"	Bent
PF6	12	5/8"	8'-9"	Bent
PW1	25	1"	23'-0"	Str.
PW2	21	1"	13'-9"	Str.
PW3	24	5/8"	22'-6"	Str.
PW4	42	5/8"	23'-0"	Str.

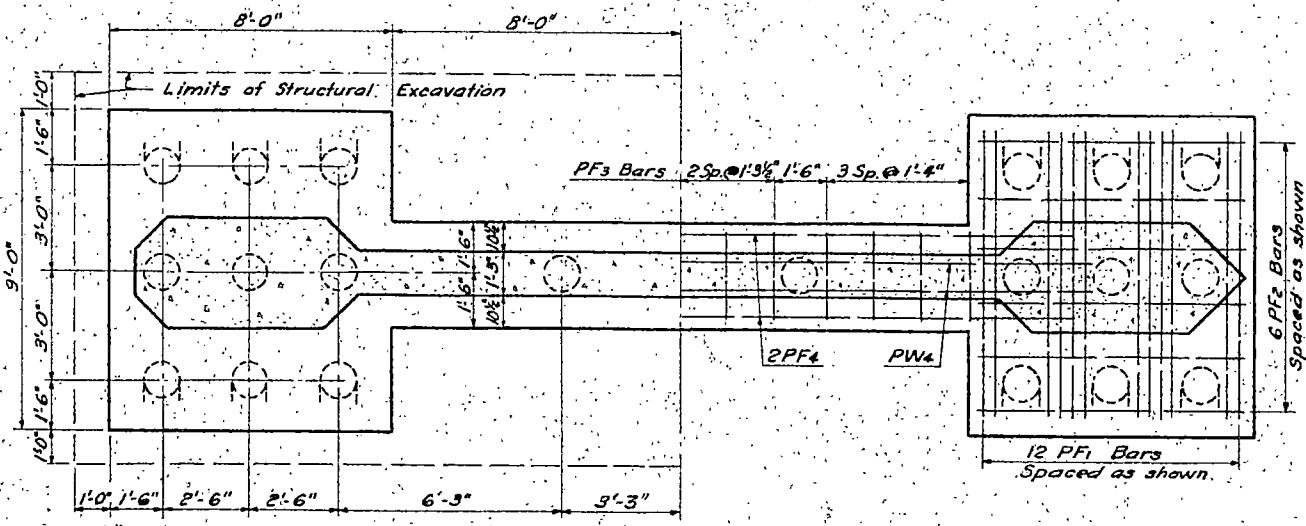


ELEVATION

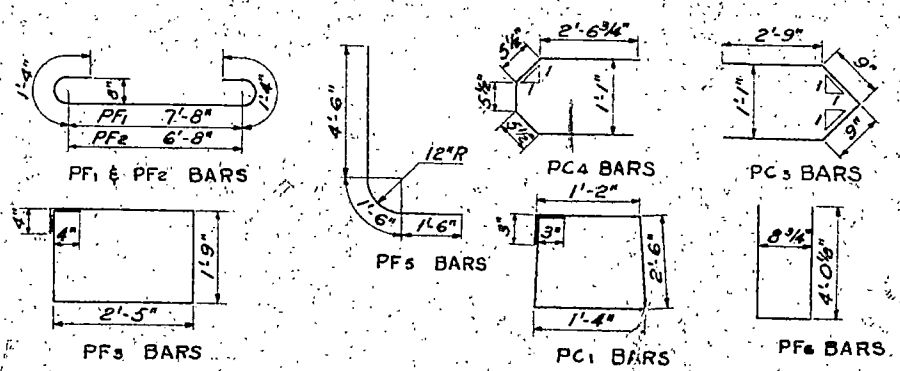
SECTION ON A-A



ICE NOSE ANGLE



FOOTING PLAN
Dowel Bars, not shown



BENT BAR DETAILS

QUANTITIES	
Concrete Class A-1 1/2	60.8 Cu. Yd.
Reinforcing Steel	74.72 Lb.
Structural Steel	865 Lb.
Piling (See Layout)	
Excavation (See Layout)	

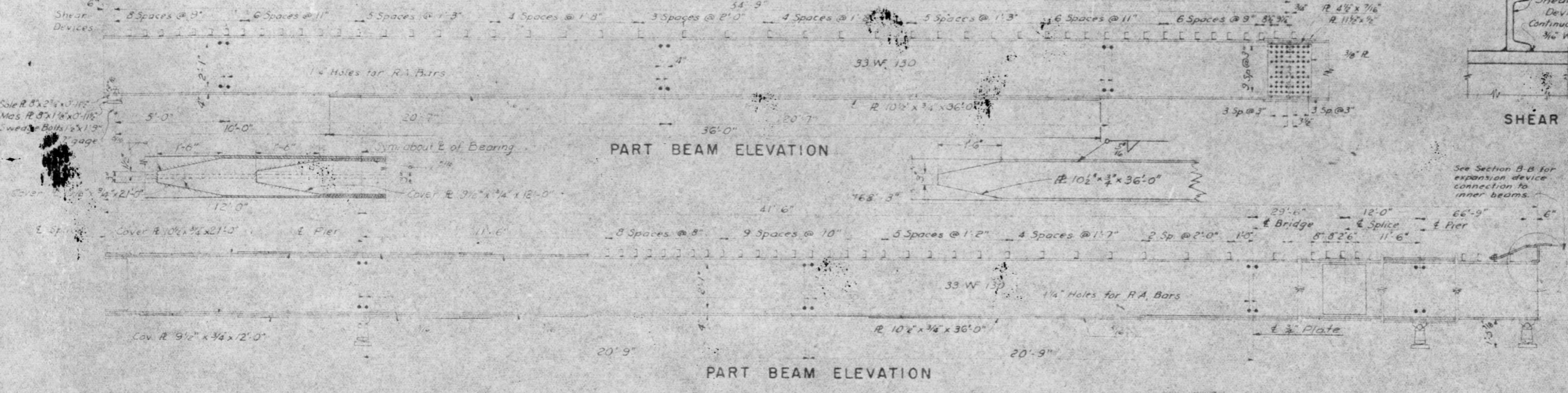
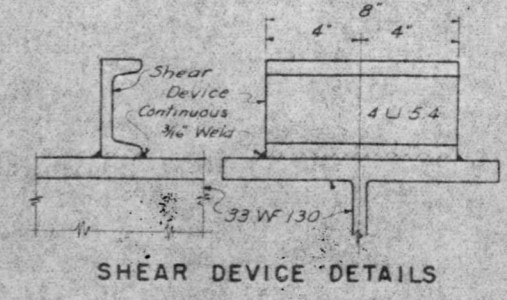
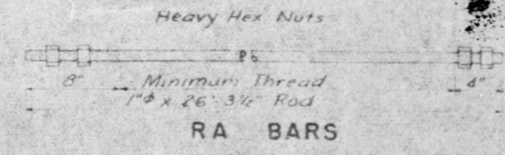
26' PIER
 DETAILS
 FOR I BEAM SPANS
 30' ROADWAY

PRO. ROAD DIST. NO.	STATE	PRO. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N.D.				

10 Equal Spaces 62'-9"
5 Equal Spaces 41'-6"
Sym about E

FIELD RISER DIAGRAM

Showing Dimensions in Feet



NOTES:

STRUCTURAL STEEL: All structural carbon steel shall conform to the latest ASTM A-7 Specifications.

WELDING: The metal-arc process shall be used for all shop and field fabrication. All welding shall conform to the current American Institute of Steel Construction and American Welding Society Specifications for Design, Construction and Repair.

ADJUSTMENT OF EXPANSION JOINT:

SHOP: Assemble each joint complete, fit the two halves together throughout their length and adjust to allow correct elevation and curvature and adjustment will be made before the adjoining slab section is poured. When the floor slab is poured to within 3'-0" of the expansion device, the slab unit shall be checked and adjusted to contact with the abutment unit so that the whole device is properly placed.

To allow vertical adjustment of the expansion device by means of shims, a vertical opening of 1/2" shall be provided between the expansion device and the top of the girder.

GENERAL:

All rivets are to be 5/8".

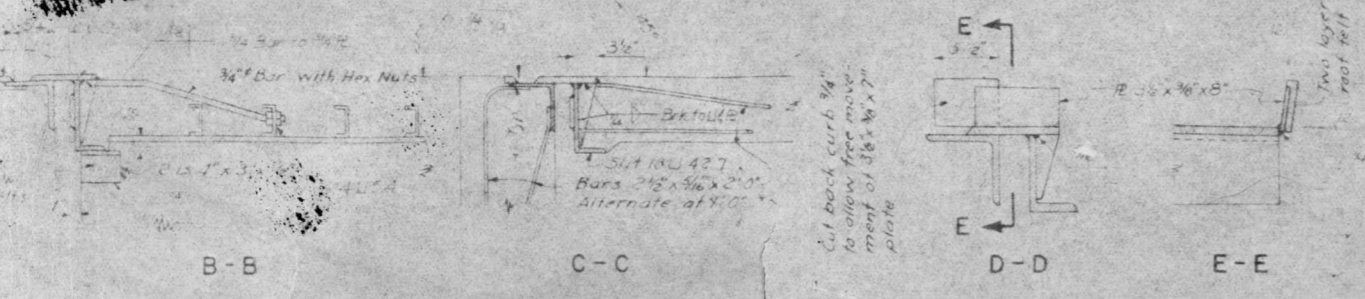
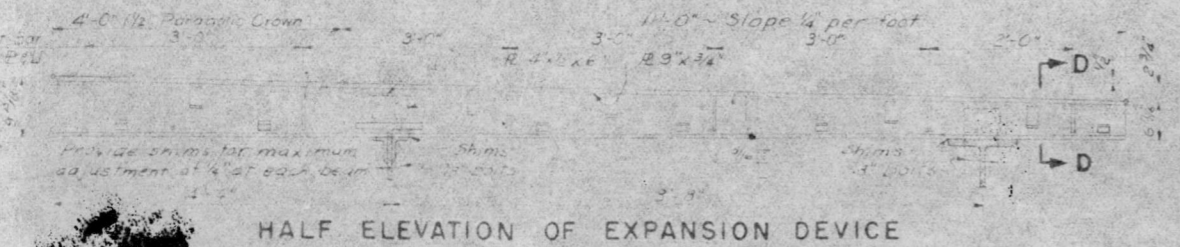
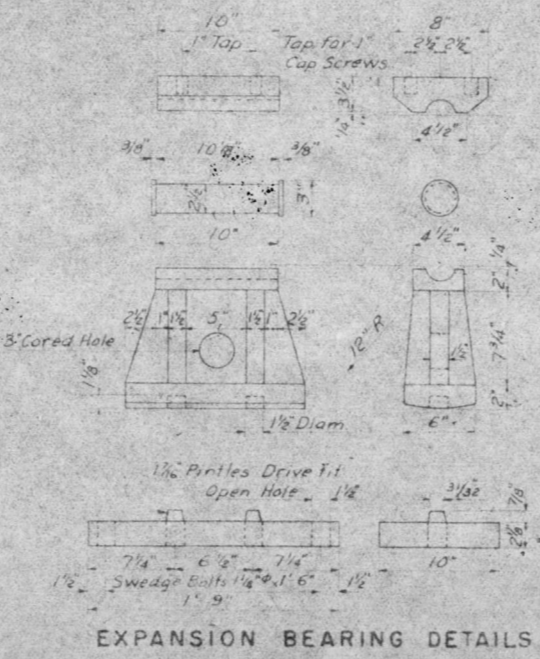
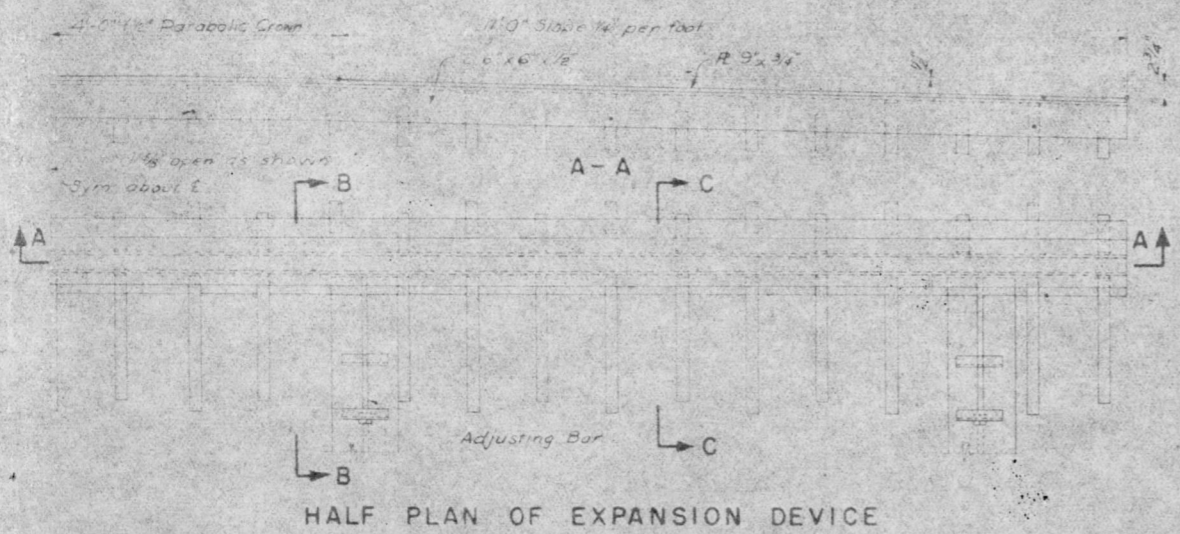
Open holes are to be 1/8" except as noted.

The rockers, as detailed, shall be constructed of structural steel plates welded together on both ends.

The lower beam flange at points of bearing shall be perpendicular to the web.

PAINT: North Dakota Highway Specifications. No paint shop or field on top of beams. All exposed steel surfaces shall be given one shop coat of Red Lead Paint and two field coats preceded by a spot coat of aluminum paint in accordance with Sections 80 and 1312 of the Standard Specifications. The first field coat shall be aluminum paint with prussian blue added for tinting. The second field coat shall be aluminum paint.

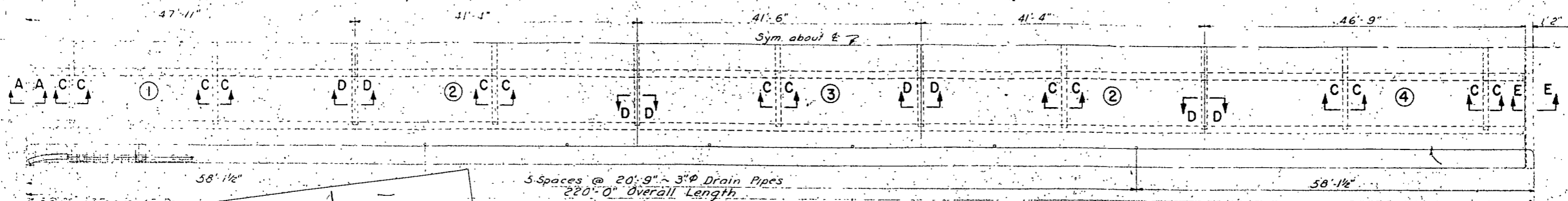
FIELD CONNECTIONS: Either high strength bolts or field rivets may be used for the field connections.



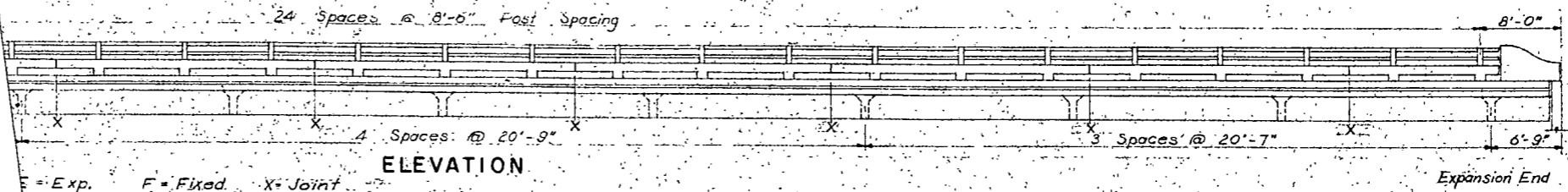
QUANTITIES	
Structural Steel	153167 Lbs.
SUPERSTRUCTURE	
THREE SPAN COMPOSITE	
CONTINUOUS I-BEAM	
OVERALL LENGTH 220'-0"	
H ₂ O S ₁₆ LOADING	
SHEET 1 OF 2	

H-1131

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N.D.				



HALF PLAN



ELEVATION

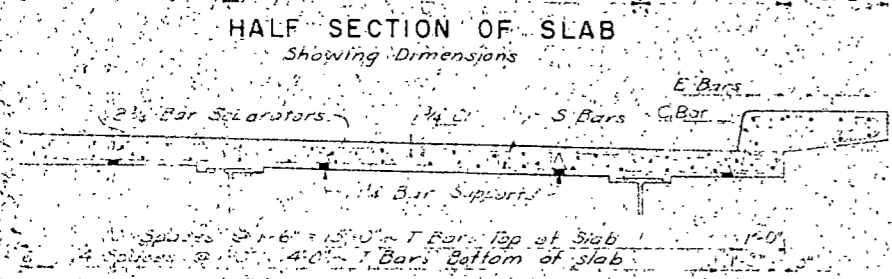
Handwritten notes in a box:
 19,906.3
 1375.38
 1396.7758
 1396.65
 Lou's beam

Slab #1 - 96 S Bars Top, 94 S Bars Bottom (See Sec. A-A) 6" Spacing
 Slab #2 - 83 S Bars @ 6" Spacing - Top & Bottom
 Slab #3 - 83 S Bars @ 6" Spacing - Top & Bottom
 Slab #4 - 94 S Bars @ 6" Spacing - Top & Bottom

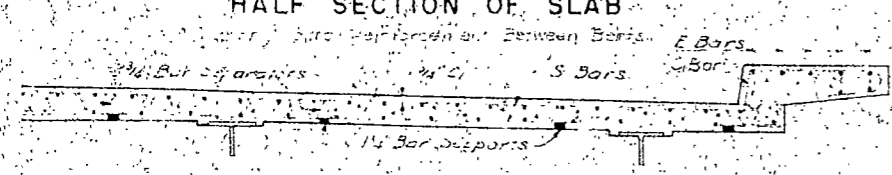
NOTES
 The Slab shall be poured in the following sequence:
 1. Slab Sections 1 & 4.
 2. Slab Section 3.
 3. Slab Sections 2 over the piers.
 Each curb shall be placed in one continuous operation.
 Each railing base shall be placed in one continuous operation.
 Railing base and end posts shall be class A-1 1/2 Concrete.
 Bevel all exposed edges with 3/8" triangular molding except as shown.
 For railing details and R Bars see Drawing H-1132.

BAR LIST FOR ENTIRE FLOOR SLAB & RAILING

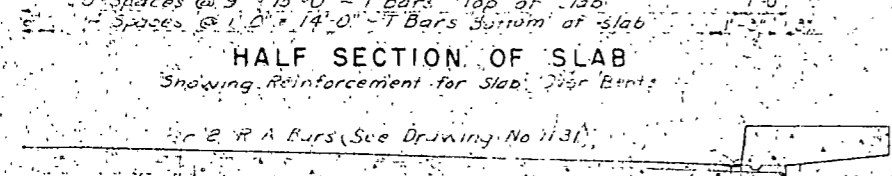
MARK	N°	SIZE	LENGTH	SHAPE
BW1	2	3/4"	36'-6"	Str.
BW6	6	1/2"	36'-6"	
BW3	1	3/8"	33'-6"	
BW4	34	1/2"	4'-0"	Benl.
BW5	28	3/8"	4'-9"	
BW6	24	3/8"	4'-6"	
BW7	24	3/8"	5'-6"	
BW8	12	3/8"	5'-10"	
C1	520	3/8"	6'-9"	Benl.
E	84	3/4"	39'-0"	Str.
R1	150	1/2"	6'-2"	Benl.
R2	392	3/8"	2'-8"	
R3	16	3/8"	14'-3"	Str.
R4	56	3/8"	25'-0"	
RF	264	1/2"	8'-4"	Benl.
S	876	3/8"	31'-8"	Str.
T1	106	1/2"	25'-9"	Str.
T2	292	3/8"	21'-9"	
T3	106	1/2"	23'-6"	
T4	106	1/2"	25'-3"	



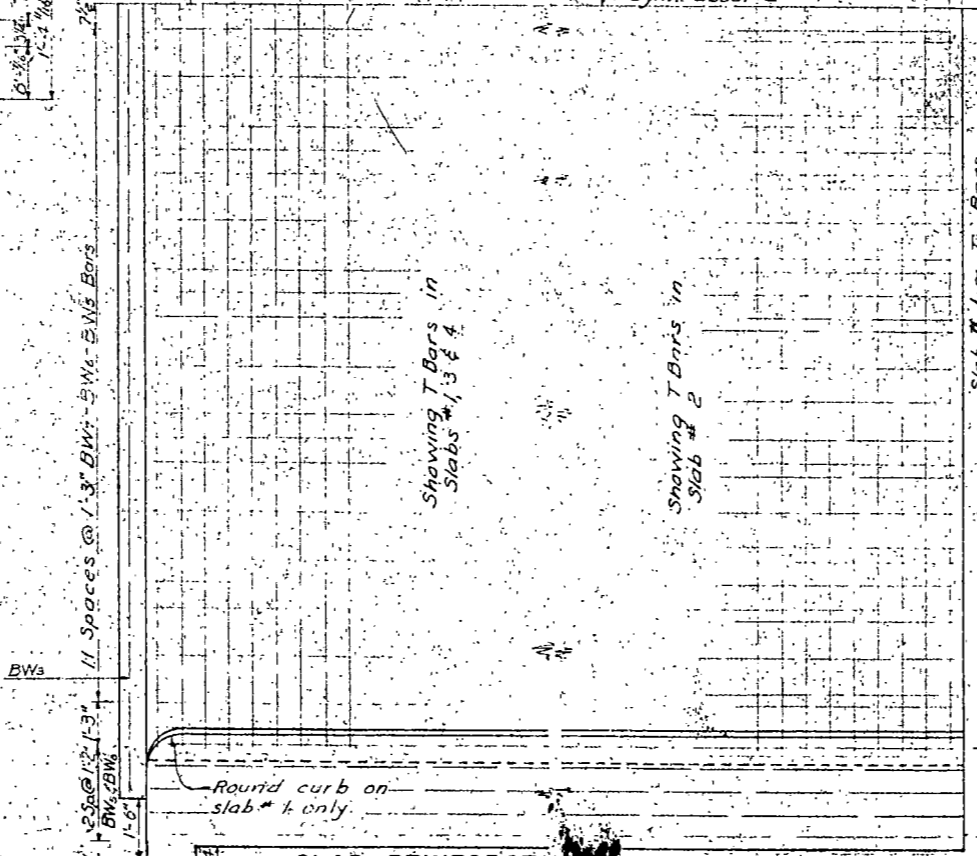
HALF SECTION OF SLAB Showing Dimensions



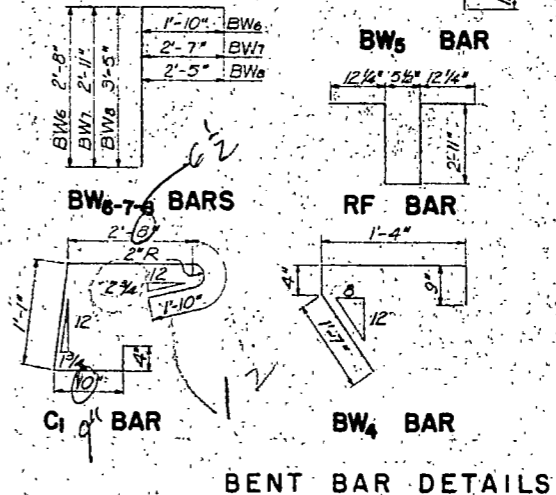
HALF SECTION OF SLAB Showing Reinforcement for Slab



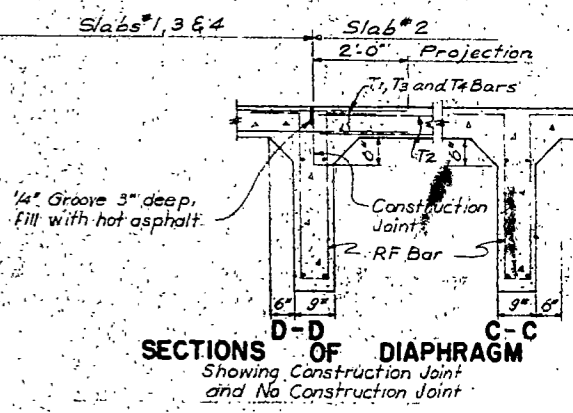
HALF SECTION OF SLAB Showing Diaphragm



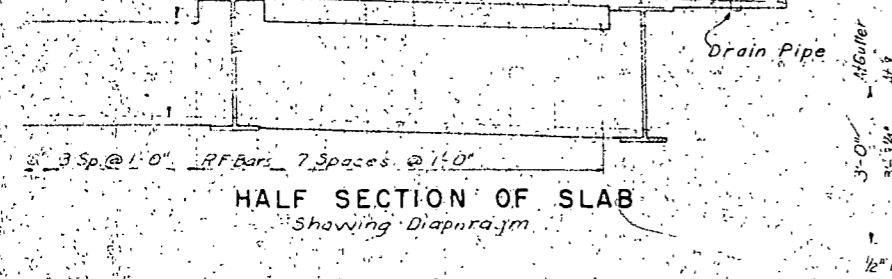
SLAB REINFORCEMENT DETAILS



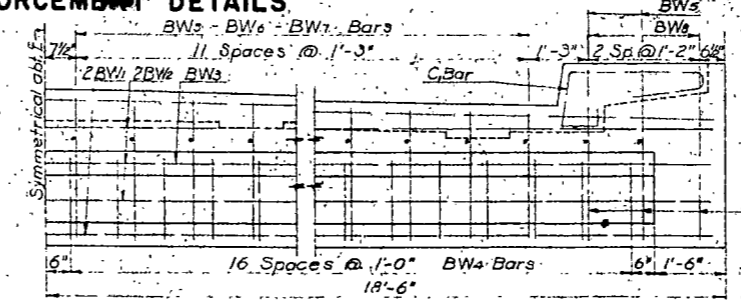
BENT BAR DETAILS



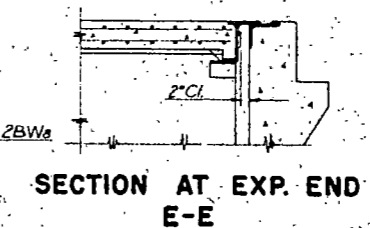
SECTIONS OF DIAPHRAGM Showing Construction Joint and No Construction Joint



SECTION AT FIXED END (A-A)



HALF ELEVATION - FIXED END EDGE BEAM



SECTION AT EXP. END E-E

QUANTITIES

Concrete Class A-1	237.6 C.
Concrete Class A-1 1/2	237.6 C.
Reinforcing Steel	54,858 L
Ornamental Metal Railing	416 L

SUPERSTRUCTURE THREE SPAN COMPOSITE CONTINUOUS I-BEAM

NOTES

Rail posts shall be aluminum alloy sand or permanent mold castings 356-T6, alloy SG70A condition T6. Sand castings shall conform to A.S.T.M. Spec. B 108.

Rail pipe to be aluminum alloy tube 6061-T6 conforming to A.S.T.M. Spec. B 210-55T, alloy GS11A condition T6. Mill finish.

Bolts and screws to be aluminum alloy 2024-T4 with No. 205 alumite finish conforming to A.S.T.M. Spec. B 211-55T alloy GS42A condition T4.

Pins shall conform to A.S.T.M. Spec. B 211-55T, alloy GS11A condition T6.

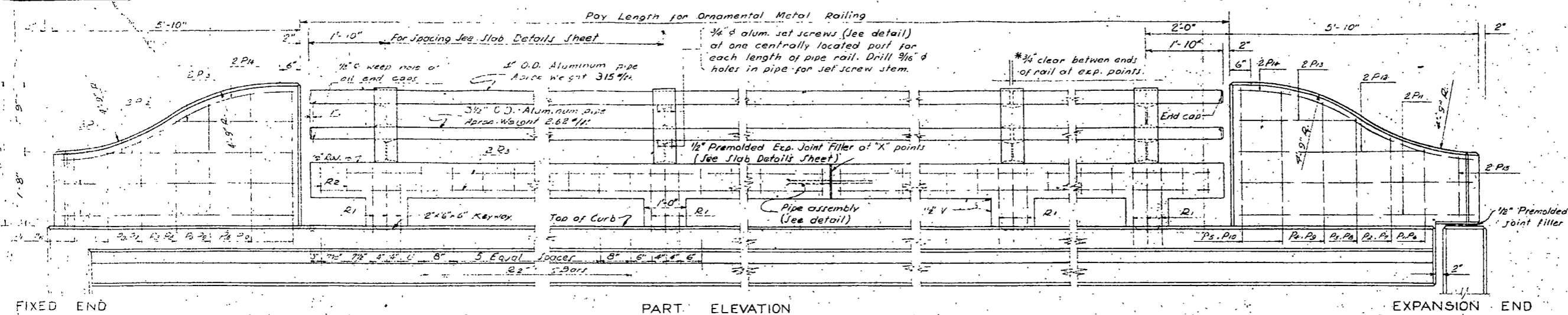
All aluminum castings shall be finished by grinding off the gates and parting lines followed by sand blasting and one coat of clear lacquer.

The bottom of rail posts in contact with concrete shall be coated with "Alumalastic Compound" as manufactured by the Parr Paint and Color Company of Cleveland, Ohio, or approved equal (knife grade). Excess compound shall be neatly removed after the posts are bolted into final position.

All posts shall be set normal to grade.

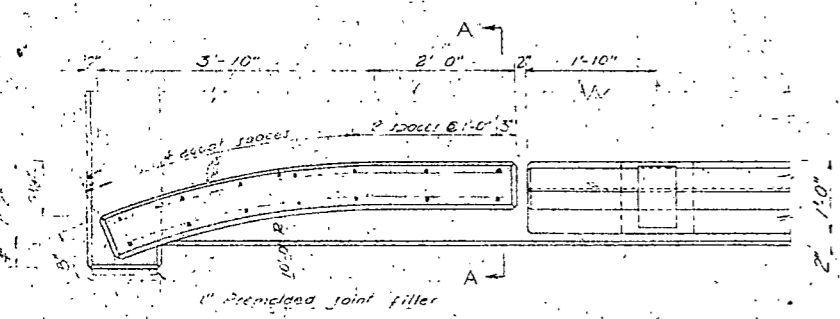
All pipe, rail posts, anchor bolt assemblies, bolts, pipe assemblies with 15/16" x 2'-0" galvanized plain bars, screws, shims, pins, end caps and compound shall be included in the price bid for Ornamental Metal Railing.

All concrete in the railing base and end posts shall be Class A-1.

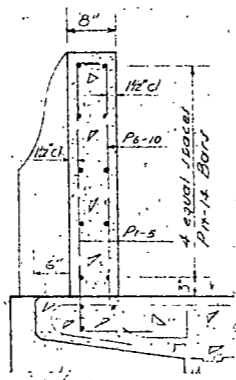


PART ELEVATION

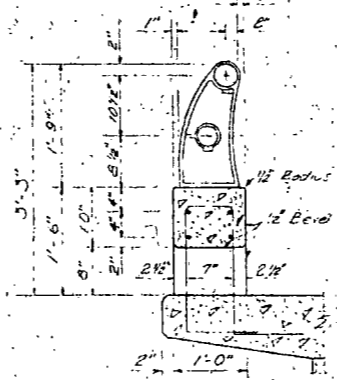
* Each section of pipe rail shall project through, or into, at least three and preferably four posts.



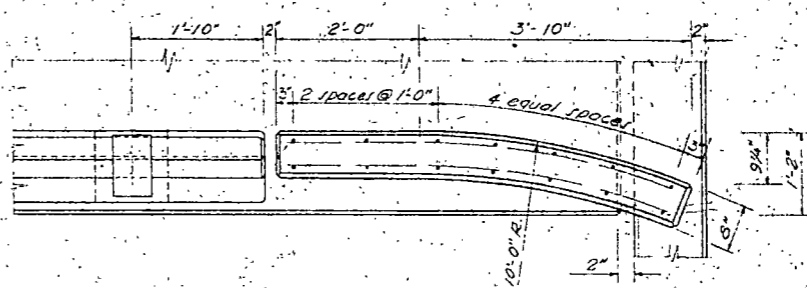
PART PLAN - FIXED END



SECTION A-A



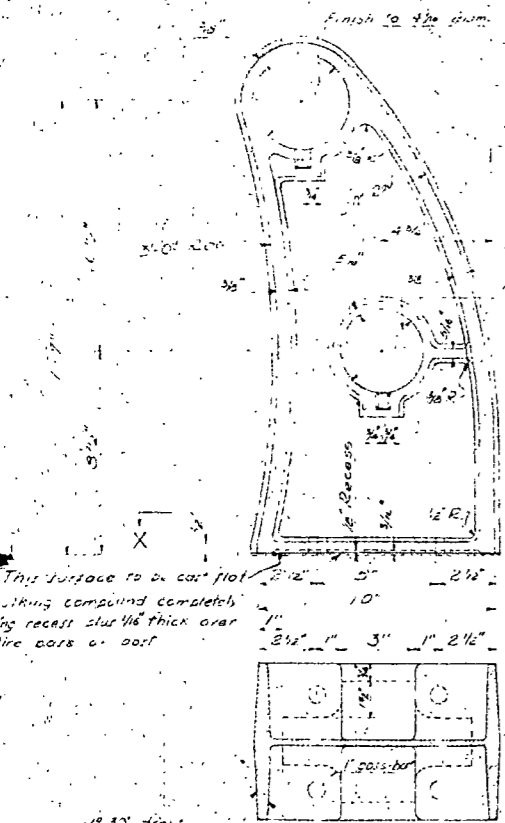
TYPICAL SECTION



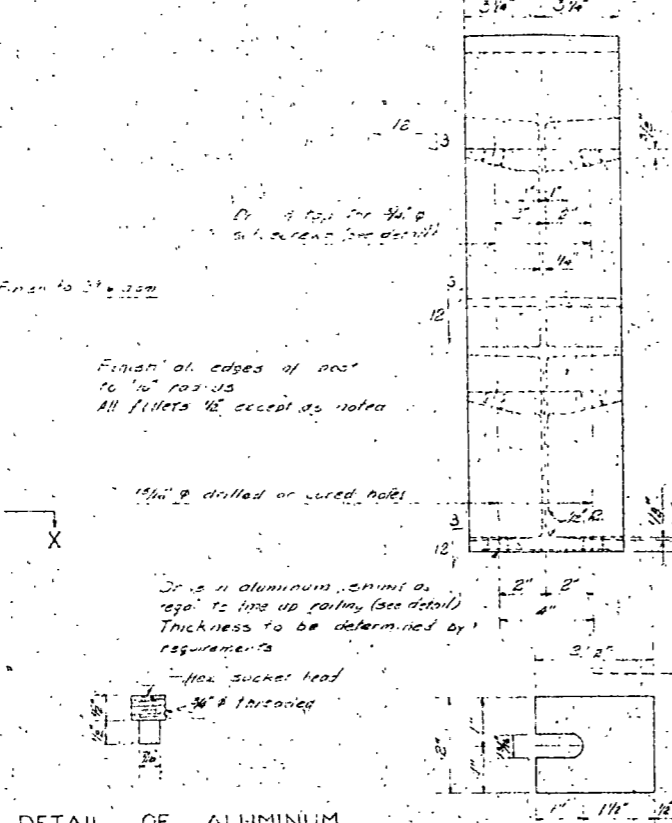
PART PLAN - EXPANSION END

BAR LIST (4 END POSTS)				
MARK	No.	SIZE	LENGTH	SHAPE
P1	6	5/8" #	3'-4"	Bent
P2	4	"	3'-9"	"
P3	4	"	4'-2"	"
P4	4	"	4'-6"	"
P5	8	"	5'-0"	"
P6	6	"	3'-10"	"
P7	4	"	4'-3"	"
P8	4	"	4'-8"	"
P9	4	"	5'-0"	"
P10	8	"	5'-6"	"
P11	16	1/2" #	5'-6"	Field Bent
P12	8	"	4'-3"	"
P13	8	"	2'-9"	"
P14	8	5/8" #	6'-0"	"
P15	4	5/8" #	1'-11"	Bent

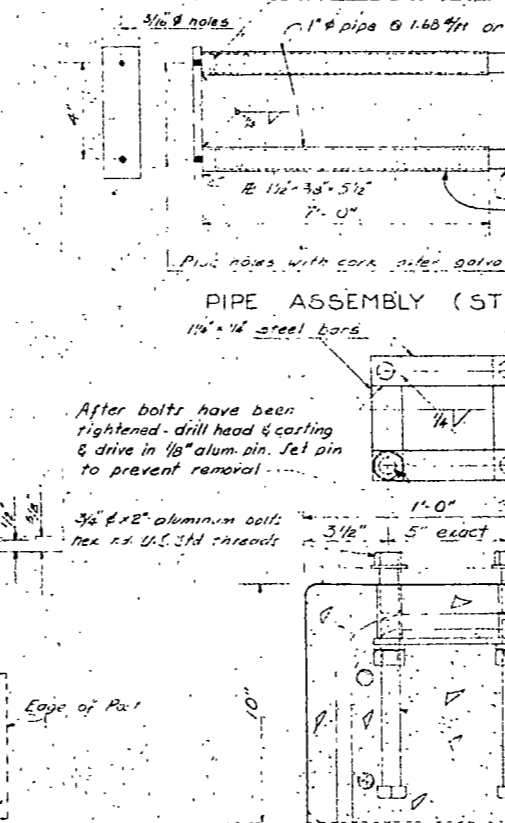
QUANTITIES FOR 4 END POSTS
 Concrete, Class A 1 1/2 CY
 Reinforcing Steel 1970 Lbs



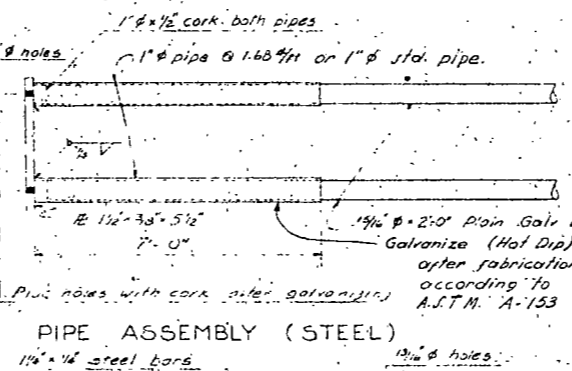
SECTION X-X



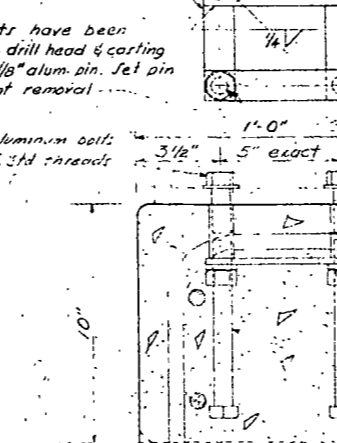
DETAIL OF ALUMINUM SET SCREWS



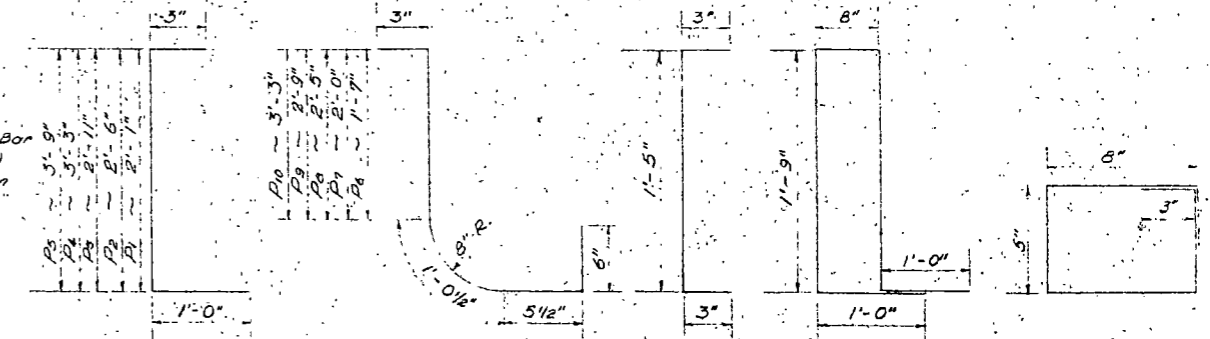
DETAIL OF ALUMINUM SHIMS



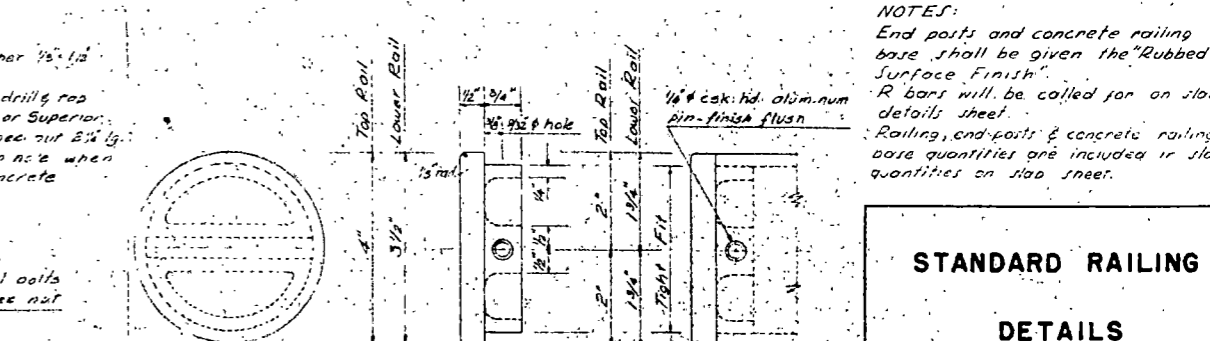
PIPE ASSEMBLY (STEEL)



ANCHOR BOLT ASSEMBLY



P1, P2, P3, P4 & P5 BARS
 P6, P7, P8, P9 & P10 BARS
 P11 BARS
 R1 BARS
 R2 BARS



CAST ALUMINUM END CAP FOR RAIL

NOTES:
 End posts and concrete railing base shall be given the "Rubbed Surface Finish".
 R bars will be called for on slab details sheet.
 Railing, end-posts & concrete railing base quantities are included in slab quantities on slab sheet.

**STANDARD RAILING
 DETAILS**

H-0101