94-260, 304 L

DESIGN DATA				
Traffic	Average Daily			
Current 2015	Pass: 3,280	Trucks: 1,280	Total: 4,560	
Forecast 2035	Pass: 4,890	Trucks: 2,100	Total: 6,990	
Clear Zone Dist. 34 FT		Design Speed: 75 mph		
Minimum Sight Dist. for Stopping: 820 FT		Bridges: HL-93 Design Loading		
Full Control of Access, No Point of Access Other Than at Interchange Ramps				
Pavement Design Life (years)				
Design Accumulated One-way ESALs:				

JOB # 15
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

IM-2-094(143)260

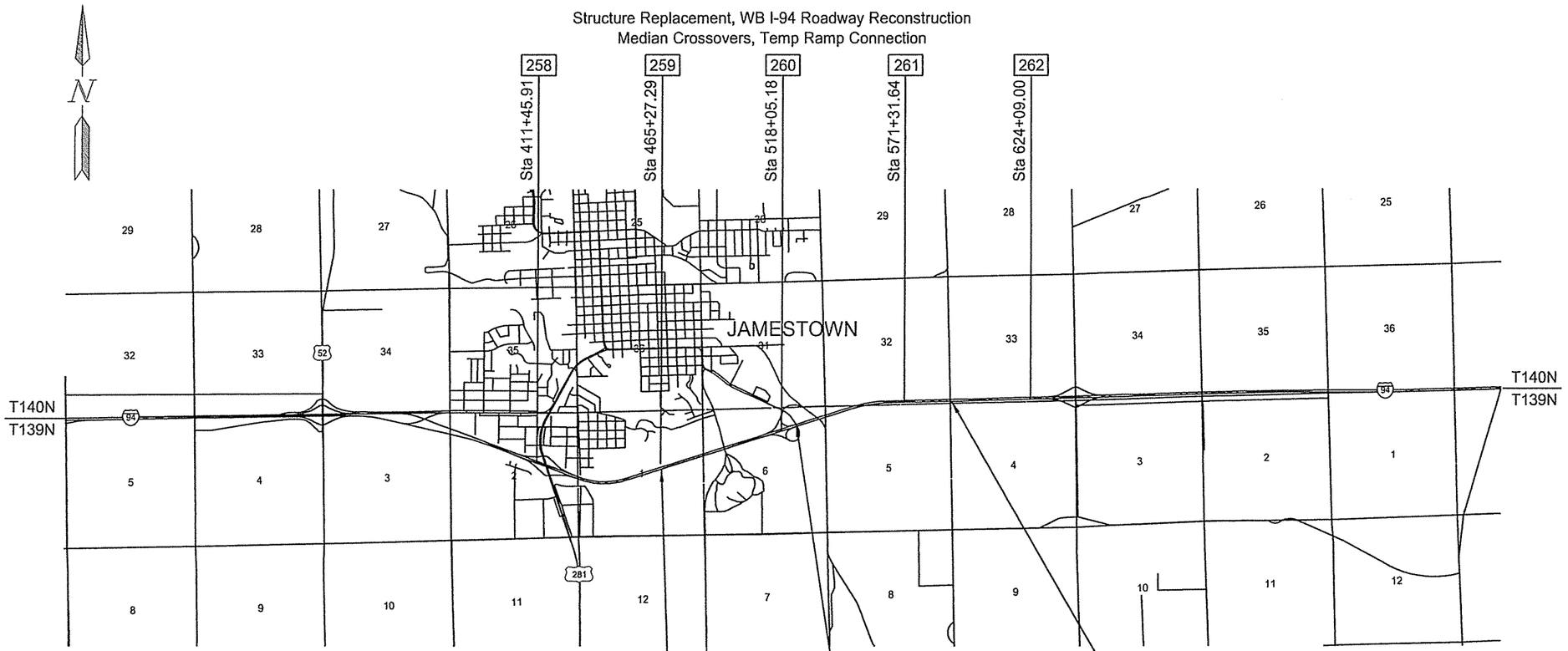
STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	IM-2-094(143)260	21398	1	1

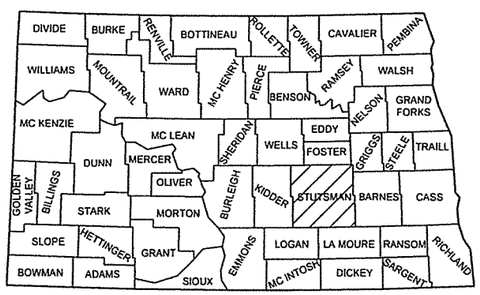
GOVERNING SPECIFICATIONS:
2014 Standard Specifications adopted by the North Dakota Department of Transportation and the Supplemental Specifications effective on the date the project is advertised.

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
IM-2-094(143)260		
East Median Crossover	0.1835	0.1835
I-94 Westbound	0.3161	0.3580
West Median Crossover	0.1835	0.1835

Stutsman County
I-94 Westbound

Structure Replacement, WB I-94 Roadway Reconstruction
Median Crossovers, Temp Ramp Connection





STATE COUNTY MAP

DESIGNERS

Michael Wilz

Douglas A. Schumaker

APPROVED DATE 2-15-17

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 2-15-17

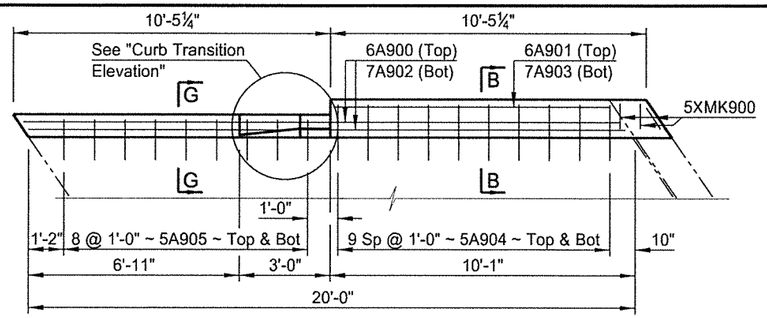
James Douglas Rath /s/
NDDOT DESIGN DIVISION

This document was originally issued and sealed by James Douglas Rath Registration Number PE- 4288, on 2-15-17 and the original document is stored at the North Dakota Department of Transportation

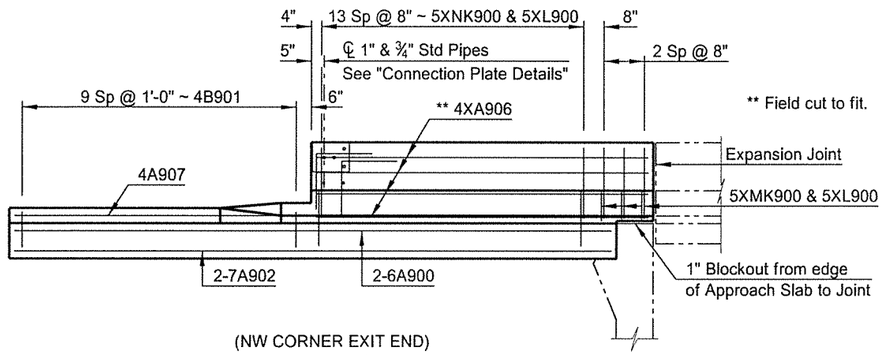
2/17/2017 10:39:58 AM mwilz R:\project\20094260.143\design\Sheets\001TS.dgn

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

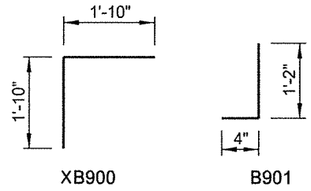
	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	IM-2-094(143)260	170	25



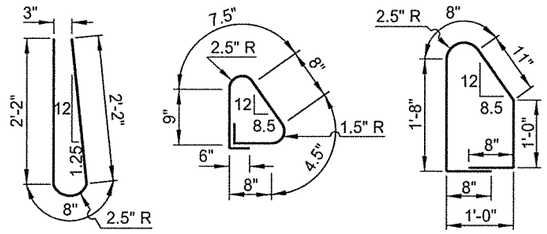
(NW CORNER EXIT END)
PLAN



(NW CORNER EXIT END)
ELEVATION



XB900 B901



XL900 XMK900 XNK900

BENT BAR DETAILS

NOTES:

The estimated material quantities shown are for information purposes only. Include the concrete, reinforcing bars, silicone sealant, connection plates and pipes, and labor required to build the approach slab barrier and curb in the pay item "Barrier End Modification." Use Class AE-3 concrete and Grade 60 reinforcing steel. Construct the concrete approach slab barrier and curb according to the provisions of Section 602 and provide reinforcing steel that meets the requirements of Section 612.

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

Embed the 5A904 and 5A905 bars into the concrete with a chemical adhesive system. The dimension of the 5A904 and 5A905 bars is based on the embedment shown. The actual dimension will be based on the embedment according to the chemical adhesive manufacturer's recommendations.

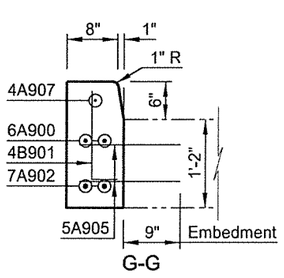
SKEW ANGLE = 34° 40'

BAR LIST

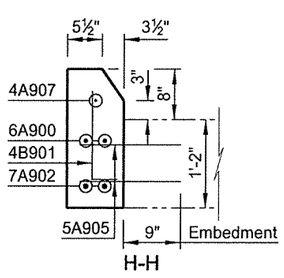
SIZE	MARK	NO.	LENGTH
6	A900	2	19'-8"
6	A901	1	9'-0"
7	A902	2	19'-8"
7	A903	1	9'-0"
5	A904	20	1'-10"
5	A905	18	1'-4"
4	XA906	9	10'-11"
4	A907	1	9'-10"
5	XB900	2	3'-8"
4	B901	10	1'-6"
5	XL900	17	5'-0"
5	XMK900	3	4'-1"
5	XNK900	14	5'-7"

ESTIMATED MATERIAL QUANTITIES

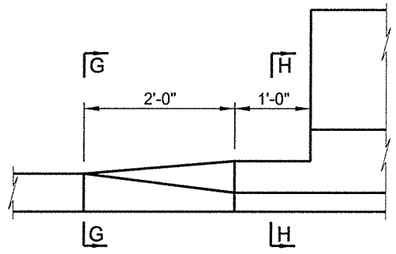
REINFORCING STEEL (LBS)	CONCRETE (CY)
507	1.9



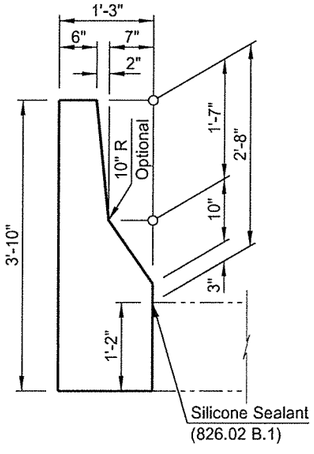
G-G



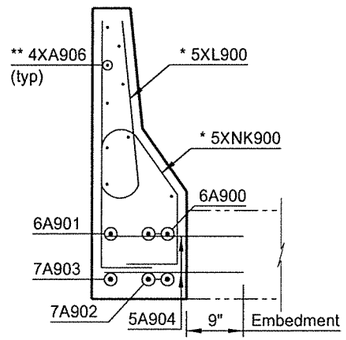
H-H



(SHOWING FRONT FACE)
CURB TRANSITION ELEVATION



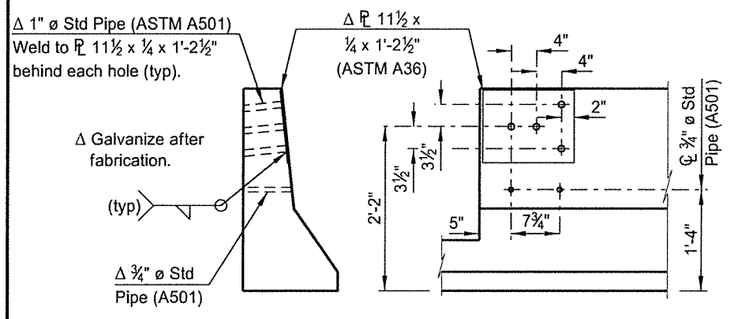
SHOWING DIMENSIONS



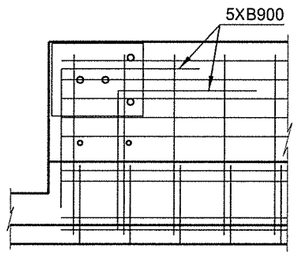
* Provide a 1½" clearance to the barrier reinforcing.

SHOWING REINFORCING

B-B



SHOWING DIMENSIONS



SHOWING REINFORCING

(SHOWING FRONT FACE)
CONNECTION PLATE DETAILS

This document was originally issued and sealed by Brian W. Raschke, Registration Number PE 4361, on 02/16/17 and the original document is stored at the North Dakota Department of Transportation

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
930	9647	BARRIER END MODIFICATION	EA	1

RRVW & MINOR ROAD SEPARATION

(EXIT END NORTH SIDE ONLY)

APPROACH SLAB BARRIER 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

LENGTH & TYPE 27.105

W LIPPERT E TO BLOOM INTERCHANGE-WB

COMPLETION TIME 100 DAYS CPR, GRINDING, APPROACH SLAB REPAIR

NO. 19

SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	BIDDER ENGINEERS ESTIMATE c.c. CHECK RANK 00 BID PRICE	AMOUNT	BIDDER DIAMOND SURFACE INC ROGERS, MN c.c. BOND RANK 01 BID PRICE	AMOUNT	BIDDER PCI ROADS LLC SAINT MICHAEL, MN c.c. BOND RANK 02 BID PRICE	AMOUNT
103	CONTRACT BOND	L SUM	1.000	210000.000	210000.00	150000.000	150000.00	124000.000	124000.00
216	WATER	M GAL	683.000	20.000	13660.00	12.500	8537.50	20.000	13660.00
420	COVER COAT MATERIAL CL 41	TON	200.000	40.000	8000.00	39.650	7930.00	40.000	8000.00
570	PCC PAVEMENT GRINDING	SY	477048.000	2.690	1283259.12	2.200	1049505.60	2.380	1135374.24
570	10IN CONC PVMT REPAIR-FULL DEPTH-DOWELED	SY	3762.000	116.660	438874.92	147.500	554895.00	146.000	549252.00
570	1/2IN TRANSVERSE PCC JOINT CLEAN & SEALING	LF	2000.000	4.000	8000.00	3.500	7000.00	5.000	10000.00
570	LONGITUDINAL PCC JOINT CLEANING & SEALING	LF	2000.000	3.380	6760.00	2.320	4640.00	5.000	10000.00
570	RANDOM PCC CRACK CLEANING & SEALING	LF	1819.000	5.440	9895.36	2.330	4238.27	7.500	13642.50
570	SPALL REPAIR-PARTIAL DEPTH	SF	1433.000	45.000	64485.00	51.400	73656.20	49.000	70217.00
602	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	180.000	425.000	76500.00	906.250	163125.00	550.000	99000.00
702	MOBILIZATION	L SUM	1.000	10881071.710	10881071.71	2453450.000	2453450.00	2469950.000	2469950.00
704	FLAGGING	MHR	1000.000	38.000	38000.00	44.690	44690.00	40.000	40000.00
704	TRAFFIC CONTROL SIGNS	UNIT	3716.000	2.590	9624.44	2.500	9290.00	2.000	7432.00
704	ATTENUATION DEVICE-TYPE B-65	EA	1.000	3205.000	3205.00	4375.000	4375.00	3500.000	3500.00
704	TYPE I BARRICADE	EA	80.000	42.420	3393.60	18.750	1500.00	15.000	1200.00
704	TYPE III BARRICADE	EA	26.000	13.290	345.54	193.750	5037.50	155.000	4030.00
704	DELINEATOR DRUMS	EA	153.000	3.440	526.32	4.375	669.38	3.500	535.50
704	TUBULAR MARKERS	EA	479.000	9.980	4780.42	13.750	6586.25	11.000	5269.00
704	STACKABLE VERTICAL PANELS	EA	120.000	46.000	5520.00	12.500	1500.00	10.000	1200.00
704	SEQUENCING ARROW PANEL-TYPE C	EA	3.000	1748.000	5244.00	2062.500	6187.50	1650.000	4950.00
704	OBLITERATION OF PAVEMENT MARKING	SF	972.000	2.500	2430.00	2.500	2430.00	2.000	1944.00
704	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	50.000	390.000	19500.00	281.250	14062.50	650.000	32500.00
762	SHORT TERM 4IN LINE-TYPE R	LF	1360.000	1.320	1795.20	1.880	2556.80	1.500	2040.00
762	SHORT TERM 4IN LINE-TYPE NR	LF	35779.000	.130	4651.27	.150	5366.85	.290	10375.91
762	PVMT MK PAINTED 4IN LINE	LF	293197.000	.070	20523.79	.080	23455.76	.063	18471.41
762	PVMT MK PAINTED 8IN LINE	LF	10629.000	.250	2657.25	.330	3507.57	.258	2742.28
762	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	36055.000	4.180	150709.90	4.140	149267.70	3.310	119342.05
764	REMOVE & RESET GUARDRAIL	LF	54.000	32.000	1728.00	35.000	1890.00	28.000	1512.00
930	SILICONE SEALANT	LF	94.000	25.000	2350.00	43.750	4112.50	25.000	2350.00
930	SPALL REPAIR	SF	134.000	300.000	40200.00	81.250	10887.50	75.000	10050.00
	TOTAL				23642765.8		24372697.5		24428043.9
						NO LIMIT		NO LIMIT	

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO: DIAMOND SURFACE INC

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DATE OF AWARD

DEPARTMENT OF TRANSPORTATION DIRECTOR

ND DEPARTMENT OF TRANSPORTATION

SHEET NO 2 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

LENGTH & TYPE 27.105
W LIPPERT E TO BLOOM INTERCHANGE-WB

COMPLETION TIME 100 DAYS CPR, GRINDING, APPROACH SLAB REPAIR

SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	NO. 19 BIDDER INTERSTATE IMPROVEMENT INC FARIBAULT, MN c.c. BOND RANK 03 BID PRICE	AMOUNT	BIDDER MULTIPLE CONCRETE ENTERPRISES INC OGDEN, UT c.c. BOND RANK 04 BID PRICE	AMOUNT	BIDDER c.c. BID PRICE	AMOUNT
103	CONTRACT BOND	L SUM	1.000	10500.000	10500.00	17500.000	17500.00		
216	WATER	M GAL	683.000	11.370	7765.71	4.000	2732.00		
420	COVER COAT MATERIAL CL 41	TON	200.000	23.280	4656.00	69.500	13900.00		
570	PCC PAVEMENT GRINDING	SY	477048.000	2.350	1121062.80	2.880	1373898.24		
570	10IN CONC PVMT REPAIR-FULL DEPTH-DOWELED	SY	3762.000	140.000	526680.00	160.000	601920.00		
570	1/2IN TRANSVERSE PCC JOINT CLEAN & SEALING	LF	2000.000	3.000	6000.00	4.500	9000.00		
570	LONGITUDINAL PCC JOINT CLEANING & SEALING	LF	2000.000	3.000	6000.00	4.500	9000.00		
570	RANDOM PCC CRACK CLEANING & SEALING	LF	1819.000	3.000	5457.00	6.500	11823.50		
570	SPALL REPAIR-PARTIAL DEPTH	SF	1433.000	42.000	60186.00	65.000	93145.00		
602	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	180.000	725.000	130500.00	553.000	99540.00		
702	MOBILIZATION	L SUM	1.000	300000.000	300000.00	252200.000	252200.00		
704	FLAGGING	MHR	1000.000	49.090	49090.00	45.000	45000.00		
704	TRAFFIC CONTROL SIGNS	UNIT	3716.000	2.000	7432.00	2.000	7432.00		
704	ATTENUATION DEVICE-TYPE B-65	EA	1.000	3500.000	3500.00	3500.000	3500.00		
704	TYPE I BARRICADE	EA	80.000	15.000	1200.00	15.000	1200.00		
704	TYPE III BARRICADE	EA	26.000	155.000	4030.00	155.000	4030.00		
704	DELINEATOR DRUMS	EA	153.000	35.000	5355.00	35.000	5355.00		
704	TUBULAR MARKERS	EA	479.000	11.000	5269.00	11.000	5269.00		
704	STACKABLE VERTICAL PANELS	EA	120.000	10.000	1200.00	10.000	1200.00		
704	SEQUENCING ARROW PANEL-TYPE C	EA	3.000	165.000	495.00	165.000	495.00		
704	OBLITERATION OF PAVEMENT MARKING	SF	972.000	2.000	1944.00	2.000	1944.00		
704	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	5.000	225.000	1125.00	60.000	300.00		
762	SHORT TERM 4IN LINE-TYPE R	LF	1360.000	1.500	2040.00	1.500	2040.00		
762	SHORT TERM 4IN LINE-TYPE NR	LF	35779.000	.400	14311.60	.350	12522.65		
762	PVMT MK PAINTED 4IN LINE	LF	293197.000	.060	17591.82	.063	18471.41		
762	PVMT MK PAINTED 8IN LINE	LF	10629.000	.260	2763.54	.258	2742.28		
762	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	36055.000	3.310	119342.05	3.310	119342.05		
764	REMOVE & RESET GUARDRAIL	LF	54.000	28.000	1512.00	28.000	1512.00		
930	SILICONE SEALANT	LF	94.000	35.000	3290.00	31.000	2914.00		
930	SPALL REPAIR	SF	134.000	65.000	8710.00	82.000	10988.00		
	TOTAL				2443588.52		2738071.13		
				NO LIMIT		NO LIMIT			

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO: DIAMOND SURFACE INC

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

50

DATE OF AWARD

DEPARTMENT OF TRANSPORTATION DIRECTOR

94-260.304 L

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

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

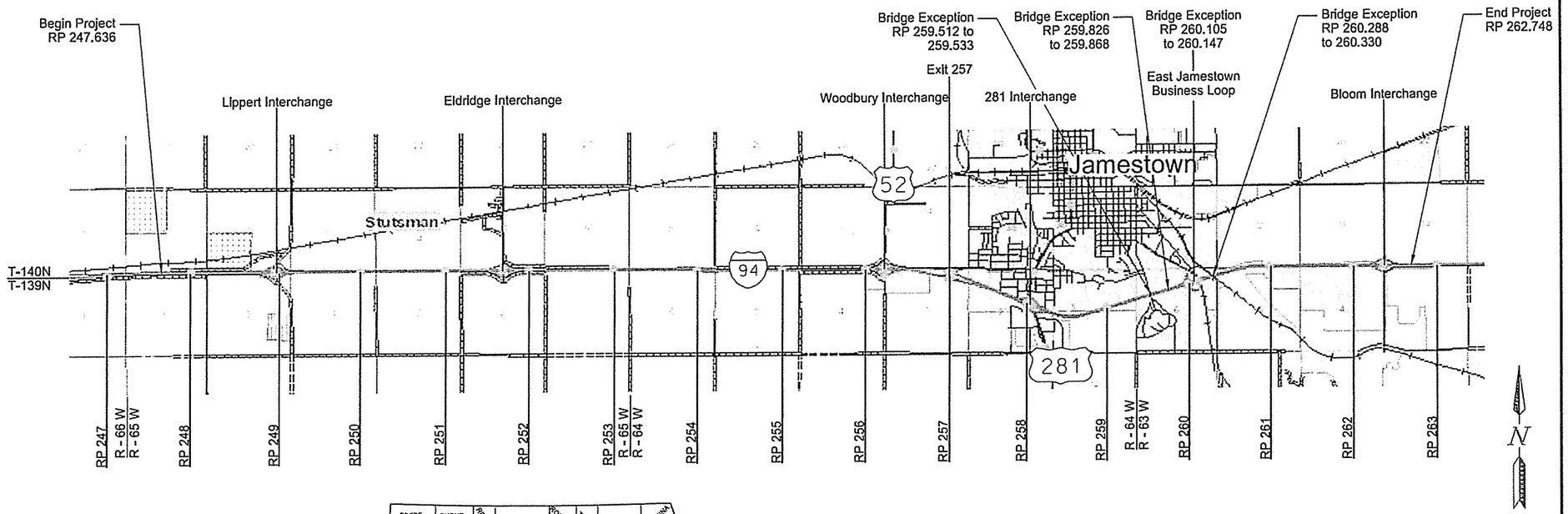
JOB # 19
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

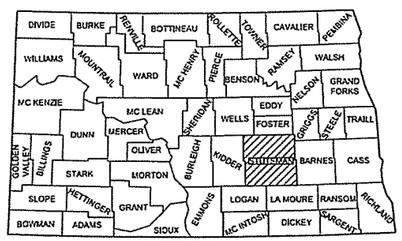
SIM-2-094(103)247
FHWA - PODI
Stutsman County
W Lippert E to Bloom Interchange - WB
CPR, Grinding, Approach Slab Repair

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





STATE COUNTY MAP

Jesse Feldmeyer /s/

Dennis Rowell /s/

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

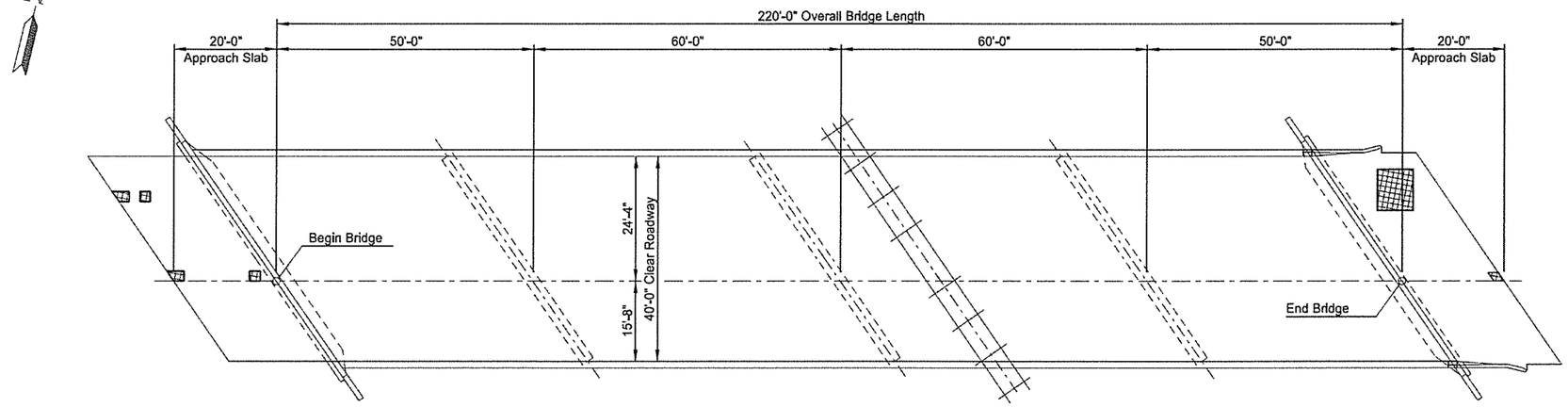
Daniel R Viau /s/
NDDOT - Valley City District

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

1/5/2016 3:06:11 PM jfeldmeyer F:\VC\DESIGNS\CPR\SIM-2-094(103)247\001TS_001_TITLE.dgn

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

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SIM-2-094(103)247	170	5



PLAN

Indicates spall repair area.

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

NOTES:

100 SCOPE OF WORK: Work at this site consists of spall repairs on both approach slabs.

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 2½". 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."

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
930	9612	SPALL REPAIR	SF	76

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
BNRR SEPARATION-MINOR ROAD
JUST EAST OF JCT US 52

BRIDGE LAYOUT

PROJECT: SIM-2-094(103)247

STUTSMAN COUNTY

01/04/16 (DATE) Terrence R. Udland (BRIDGE ENGINEER)

1/4/2016 10:21:27 AM dwing R:\project\20094247.103\bridge\94-260.304L\170BR_005_BRLO.dgn 15ATC103 DWW

94-260.304L-1

94-260.304 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 Rigid ESALs: N A				

JOB # 20

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

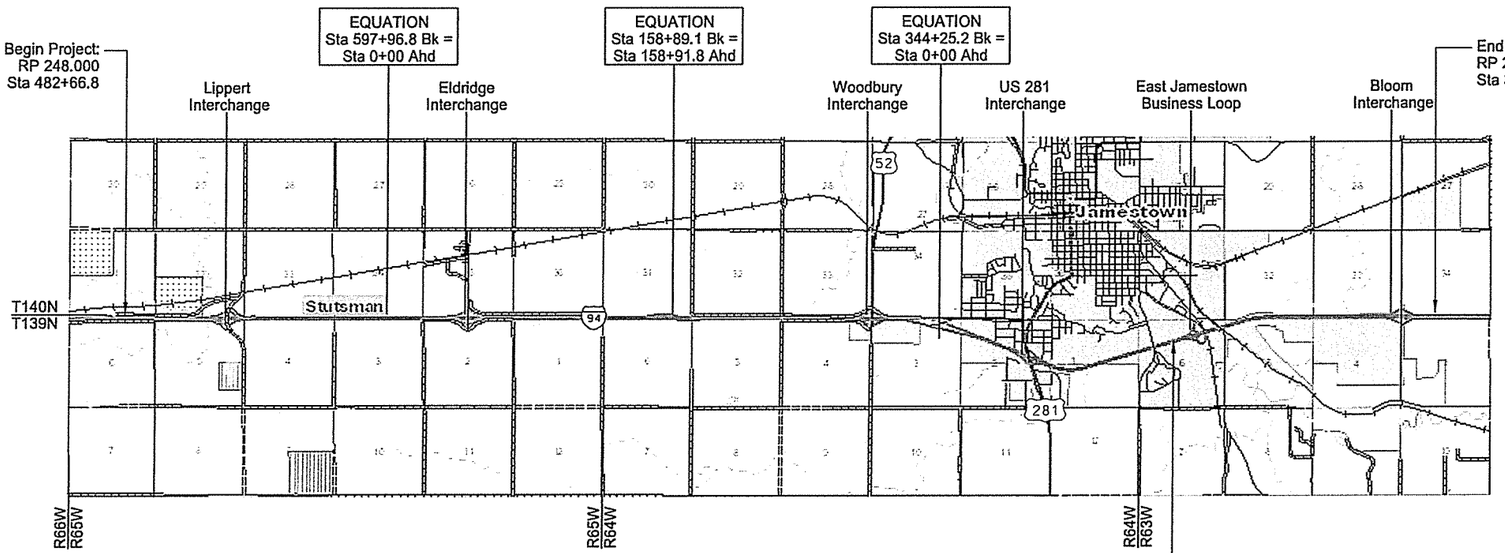
IM-2-094(144)248
Stutsman County
W Lippert to E Bloom - Eastbound
CPR, HMA, Approach Slab Repair, & Guardrail Replacement

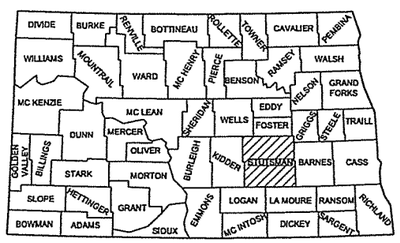
STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	IM-2-094(144)248	21401	1	1

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





STATE COUNTY MAP

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

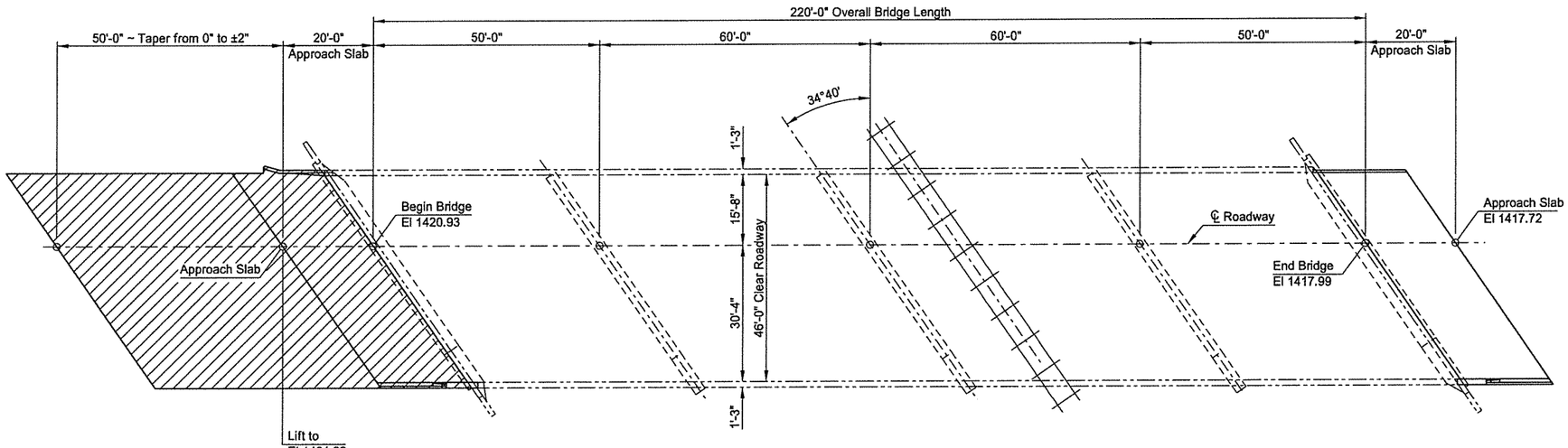
Daniel R. Viau /s/
NDDOT Valley City District

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

3/23/2016 10:46:34 AM jfeldmeyer F:\VC\DESIGNS\CPR\IM-2-094(144)248\001TS_001_title.dgn

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

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-2-094(144)248	170	8



Indicates spall repair area.

NOTE:

Elevations shown are old plan elevations. Lift slabs relative to the actual end of bridge elevations.

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
602	1135	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	106.1
930	3631	POLYURETHANE FOAM	LBS	3,100
930	9639	APPROACH SLAB LIP REPAIR	LF	59.8

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NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
BNRR SEPARATION-MINOR ROAD
JUST EAST OF JCT US 52

BRIDGE LAYOUT

PROJECT: IM-2-094(144)248

STUTSMAN COUNTY

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

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

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-2-094(144)248	170	9

NOTES

100 SCOPE OF WORK: Work at this site consists of lifting and leveling the bridge approach slab and adjacent pavement slabs on the west end of the bridge, and repairing the approach lip and replacing the approach slab on the east end of the bridge. Maintain one lane of traffic at all times.

930 POLYURETHANE FOAM: This work consists of lifting and leveling the existing concrete bridge approach panels by a polyurethane foam system. Lift and level the concrete panels by drilling injection holes and injecting polymer. Verify elevations to control the lift of panel. Cleanup as directed by the Project Engineer.

Provide a water-blown, hydrophobic, closed cell, high-density polyurethane medium to lift and level the approach slabs. Provide material meeting the following physical characteristics and properties:

Density, Lb/Cu Ft (ASTM 1622)	Compressive Strength (ASTM 1621)
3.0	40 psi
3.5	50 psi
4.0	60 psi
6.0	110 psi

Provide a polyurethane foam system with a free-rise density of 3.0 – 3.2 lb/ft^3, and a minimum compressive strength of 40 psi. The expansion of the polyurethane foam under pressure increases the foam density above the original free rise density value.

Provide a high-density formulation that reaches 90% of full compressive strength within 15 minutes of injection, at which time the Contractor may allow traffic on the treated areas, as approved by the Project Engineer.

Submit to the Project Engineer the manufacturer's certification stating that all materials and methods meet requirements. Transfer and submit all warranties and guarantees to the Department upon acceptance by the Project Engineer.

Submit a list of the lifting and undersealing equipment to the Project Engineer for review. The minimum list of equipment required is listed below. This list does not preclude the use of additional equipment.

a. A pneumatic drill and an electric drill capable of drilling 5/8-inch diameter holes to the required depths.

b. A truck-mounted pumping unit capable of injecting the high-density polyurethane formulation between the concrete pavement and the underlying surface. Provide a pumping unit, equipped with a dial gauge in increments of 45 grams (1/10 pound), capable of controlling the rate of flow of the material as well as the rise of the pavement.

c. A laser leveling unit to ensure that the concrete is raised to an even plane and to the required elevations.

Provide equipment which is in excellent condition and keep equipment clean at all times. Seal and protect all stored materials from contamination of dust or any foreign material.

Prior experience using high-density polyurethane to raise and underseal concrete slabs is required.

Drill a series of 5/8 inch holes at the locations required for the proper raising of the surface. Determine the exact locations and spacing required. Calibrate the pumping unit daily, or at the Project Engineer's request, to ensure consistent accuracy of injected material.

The high-density polyurethane formulation is injected under the slab. Control the amount of rise, using the pumping unit, by regulating the rate of injection of the raising/undersealing polymer. When the nozzle is removed from the hole, remove any excessive polyurethane material from the area and seal the hole with a non-expansive cementitious grout. Dispose of all removed material in an environmentally acceptable manner conforming to Federal, State and local regulations. Final elevations are to be within ¼" of the elevations proposed by profile. A tight string line may be used to monitor and verify elevations for slab lengths of 50 feet or less. For longer sections, a laser level will be used to monitor and verify elevations. The Contractor is responsible for any pavement blowouts or excessive pavement lifting which may result from the process, and will repair the damaged area to the satisfaction of the Project Engineer without additional cost.

Do not raise the slab more than ¼" while pumping in any one hole at any one time. Pavement raised above specified tolerances will be brought to grade by grinding. If over jacking is greater than 0.10 feet, full-depth removal and replacement of the affected area is required, at no cost to the Owner.

The price bid for the item "Polyurethane Foam" includes full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals for all work called for in this note. Daily material usage will be verified by the Inspector and the Contractor and reported on a field production report.

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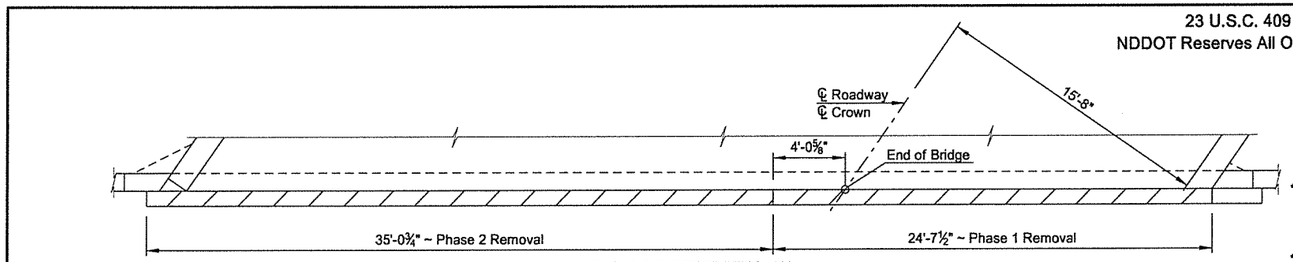
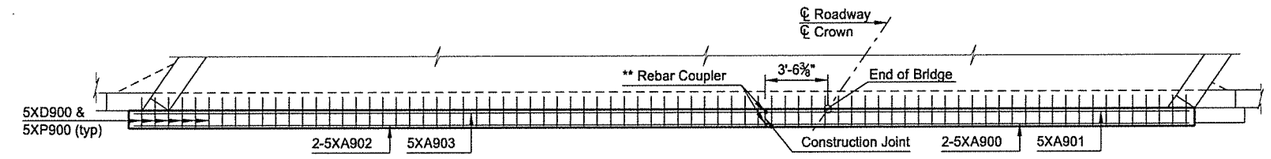
23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-2-094(144)248	170	10

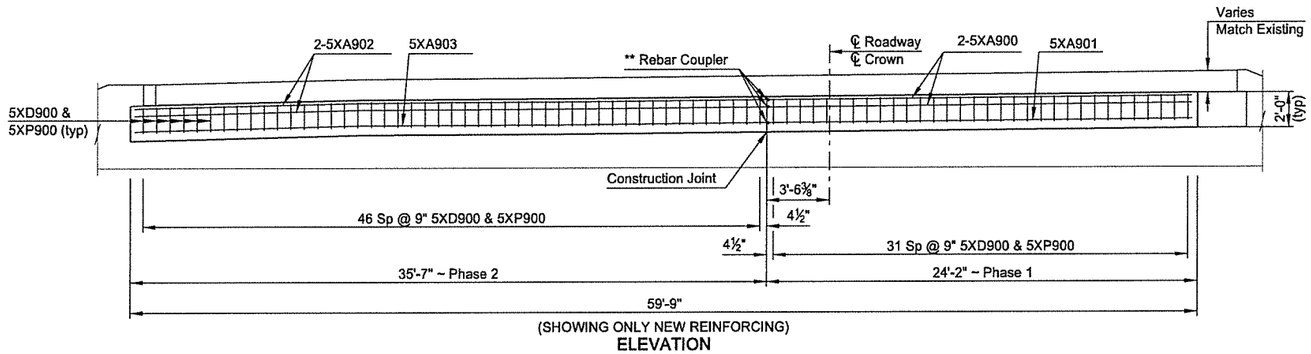


(SHOWING CONCRETE REMOVAL)
PLAN

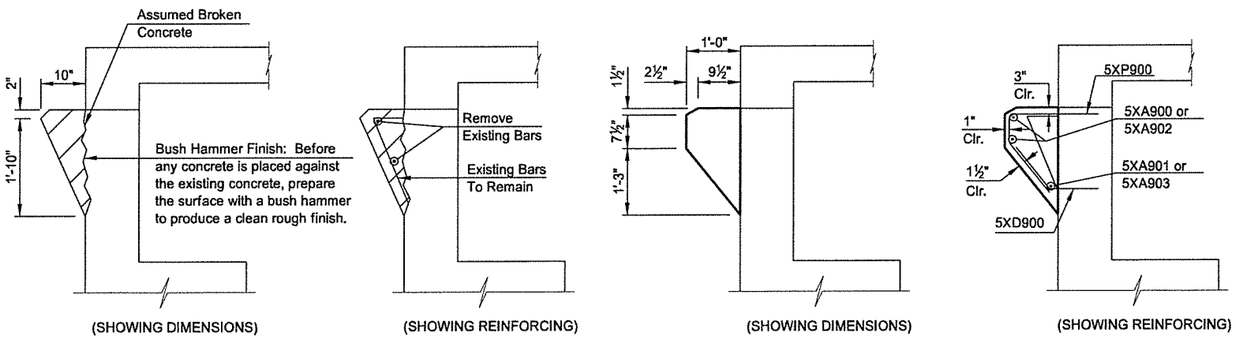
Hatched area indicates concrete to be removed.



PLAN



(SHOWING ONLY NEW REINFORCING)
ELEVATION



(SHOWING DIMENSIONS) (SHOWING REINFORCING) (SHOWING DIMENSIONS) (SHOWING REINFORCING)

EXISTING APPROACH SLAB LIP NEW APPROACH SLAB LIP

* Length may vary depending on manufacturer's recommendations for anchorage. Provide a minimum anchorage length of 9 inches.

** Use approved mechanical connector capable of developing 125% of the specified yield strength of the reinforcing steel.

SKEW ANGLE = 0°			
BAR LIST - ONE SLAB			
SIZE	MARK	NO.	LENGTH
5	XA900	2	23'-11"
5	XA901	1	23'-11"
5	XA902	2	35'-4"
5	XA903	1	35'-4"
5	XD900	79	1'-11"
5	XP900	79	3'-3"

ESTIMATED MATERIAL QUANTITIES

REINFORCING STEEL (LBS)	CONCRETE (CY)
611	3.0

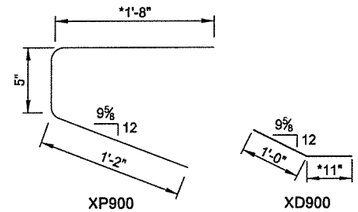
NOTES:

Install the 5XD900 and 5XP900 bars according to the manufacturer's recommendations, with a high strength adhesive specifically intended for concrete anchorage, in accordance with Sec. 806.02. Provide Class AAE-3 concrete that meets Section 802 and Grade 60 reinforcing steel that meets Section 612.

Quantities shown are for informational purposes only.

Include all excavation & backfilling, labor, equipment, and materials required to remove the existing approach lip and to build the new approach lip in the bid item "Approach Slab Lip Repair".

The bar marks beginning with an "X" indicate an epoxy coated bar.



XP900 XD900
(DIMENSIONS SHOWN ARE OUT TO OUT)
BENT BAR DETAILS

QUANTITIES	(ONE LIP REPAIR)
APPROACH SLAB LIP REPAIR	59.8 LF

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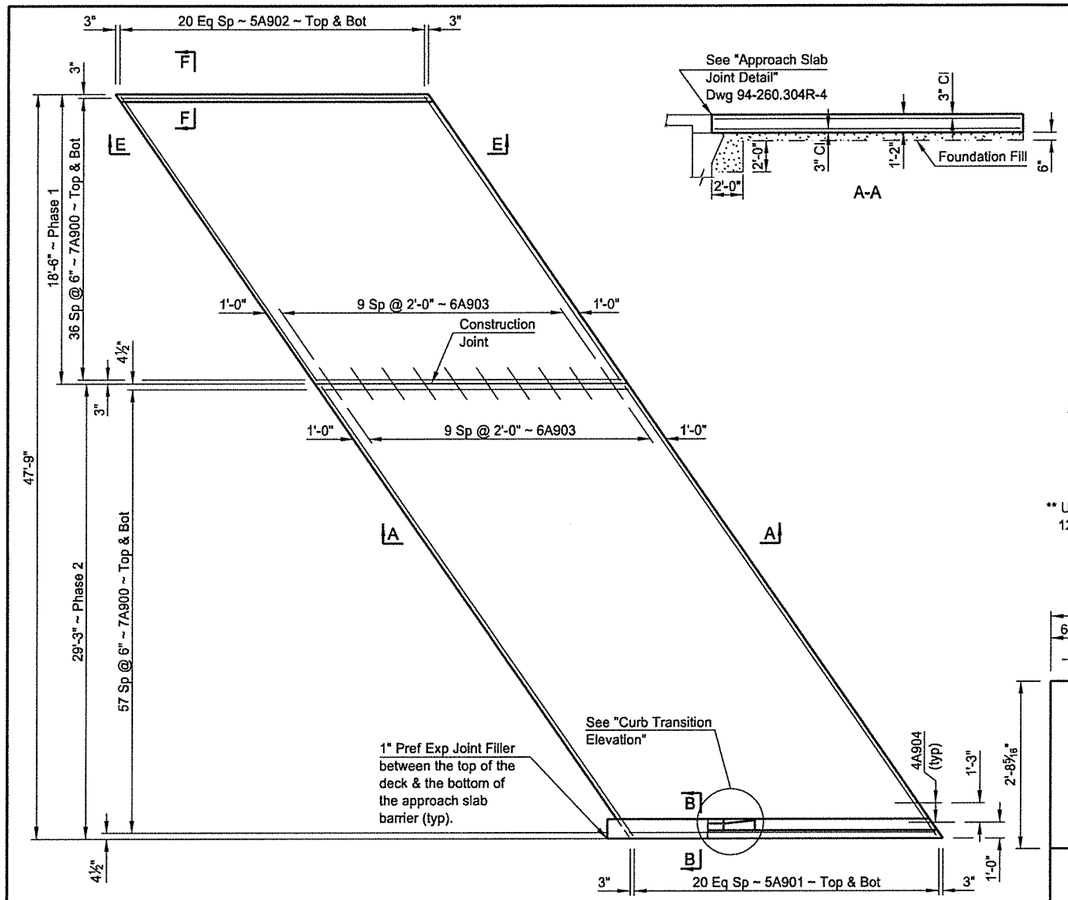
BNRR SEPARATION-MINOR ROAD
JUST EAST OF JCT US 52

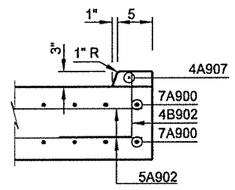
APPROACH SLAB LIP
REPAIR DETAILS

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-2-094(144)248	170	11

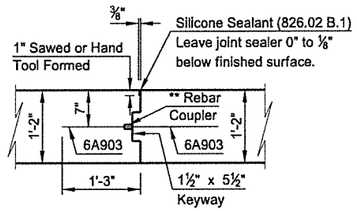


PLAN

A-A

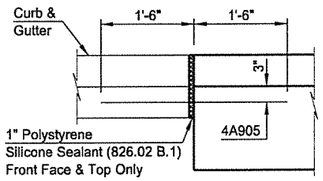


F-F

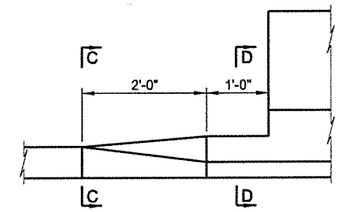


CONSTRUCTION JOINT DETAIL

** Use approved mechanical connector capable of developing 125% of the specified yield strength of the reinforcing steel.

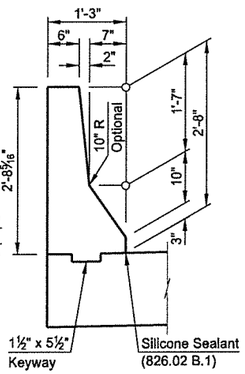


DETAIL "A"

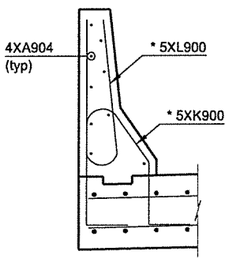


(SHOWING FRONT FACE)

CURB TRANSITION ELEVATION

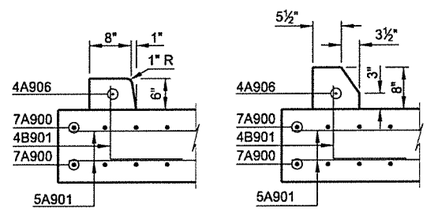


SHOWING DIMENSIONS



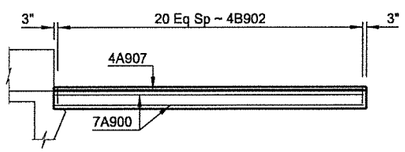
* Barrier reinforcing shall have a 1½" clearance.

SHOWING REINFORCING

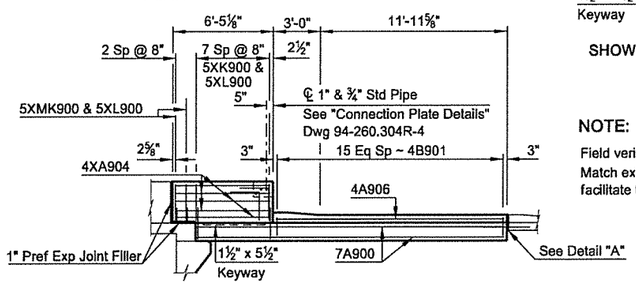


C-C D-D

B-B



E-E



ELEVATION

NOTE:

Field verify 6'-5⅛" approach slab barrier length. Match existing barrier length prior to removals to facilitate the resetting of guardrail.

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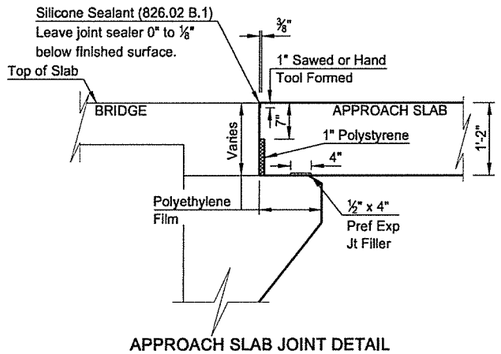
QUANTITIES
SEE DWG 94-260.304R-5

BNRR SEPARATION-MINOR ROAD
JUST EAST OF JCT US-52

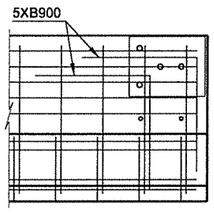
APPROACH SLAB DETAILS

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

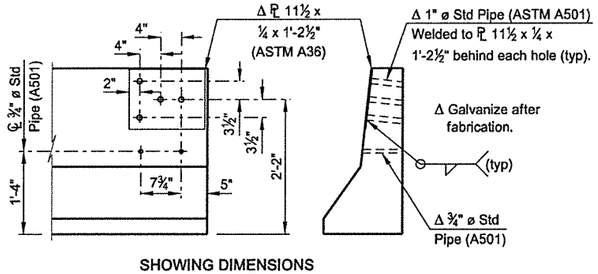
STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	IM-2-094(144)248	170	12



APPROACH SLAB JOINT DETAIL



SHOWING REINFORCING



SHOWING DIMENSIONS

(SHOWING FRONT FACE)
CONNECTION PLATE DETAILS

NOTES:

The estimated material quantities shown are for information purposes only. Include the concrete, reinforcing bars, polyethylene film, preformed joint filler, polystyrene, silicone sealant, excavation, foundation fill, 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 concrete that meets the requirements of Section 802, reinforcing steel that meets the requirements of Section 612 and foundation fill that meets the requirements of Section 210. Use polyethylene film that meets the requirements of ASTM C171 and polystyrene that meets the requirements of ASTM C578.

Apply surface Finish "D" to all exposed surfaces of the approach slab barriers. Match existing color.

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

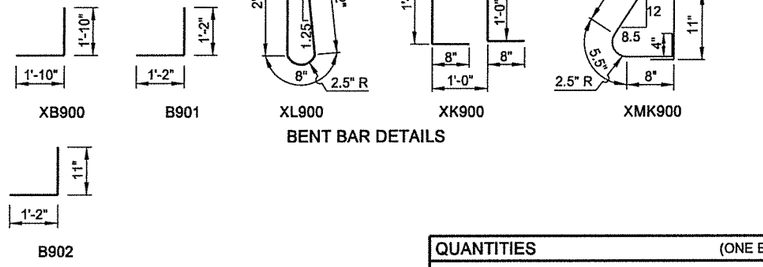
SKEW ANGLE = 34° 40'

BAR LIST - ONE SLAB

SIZE	MARK	NO.	LENGTH
7	A900	190	19'-8"
5	A901	42	35'-1"
5	A902	42	22'-1"
6	A903	20	1'-3"
4	XA904	9	6'-1"
4	A905	2	3'-0"
4	A906	1	14'-7"
4	A907	1	19'-8"
5	XB900	2	3'-8"
4	B901	16	2'-4"
4	B902	21	2'-1"
5	XK900	8	5'-7"
5	XL900	10	5'-0"
5	XMK900	2	4'-1"

ESTIMATED MATERIAL QUANTITIES

REINFORCING STEEL (LBS)	CONCRETE (CY)
10,412	42.0



BENT BAR DETAILS

QUANTITIES	(ONE END)
APPROACH SLAB	106.1 SY

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BNRR SEPARATION-MINOR ROAD
JUST EAST OF JCT US-52

APPROACH SLAB DETAILS

ND DEPARTMENT OF TRANSPORTATION

SHEET NO 1 OF 4

ABSTRACT OF BIDS RECEIVED

PROJECT NO. SHE-SIM-2-094(094)260

COUNTY & DATE STUTSMAN (093) FEB 18, 2011 09:30AM

LENGTH & TYPE 0.333

I-94 EAST JAMESTOWN INTERCHANGE

COMPLETION TIME 09/10/11 ACCELERATION LANE, SIGNING, & BRIDGE W

SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	NO. 12 BIDDER ENGINEERS ESTIMATE c.c. CHECK RANK 00 BID PRICE	AMOUNT	BIDDER WANZEK CONSTRUCTION INC FARGO, ND c.c. BOND RANK 01 BID PRICE	AMOUNT	BIDDER INDUSTRIAL BUILDERS INC FARGO, ND c.c. BOND RANK 02 BID PRICE	AMOUNT
103	CONTRACT BOND	L SUM	1.000	12900.000	12900.00	20000.000	20000.00	15000.000	15000.00
107	RAILWAY PROTECTION INSURANCE-SITE 1	EA	1.000	3500.000	3500.00	6100.000	6100.00	3000.000	3000.00
107	RAILWAY PROTECTION INSURANCE-SITE 2	EA	1.000	3000.000	3000.00	13000.000	13000.00	3000.000	3000.00
201	CLEARING & GRUBBING	L SUM	1.000	6000.000	6000.00	3500.000	3500.00	5000.000	5000.00
202	REMOVAL OF CONCRETE-SITE 1	L SUM	1.000	30000.000	30000.00	20000.000	20000.00	35000.000	35000.00
202	REMOVAL OF CONCRETE-SITE 2	L SUM	1.000	30000.000	30000.00	19000.000	19000.00	35000.000	35000.00
203	COMMON EXCAVATION-TYPE A	CY	1176.000	3.500	4116.00	4.000	4704.00	4.000	4704.00
203	TOPSOIL	CY	2287.000	5.000	11435.00	5.400	12349.80	3.250	7432.75
203	BORROW-EXCAVATION	CY	21575.000	10.000	215750.00	9.400	202805.00	9.000	194175.00
210	CLASS 1 EXCAVATION-SITE 1	L SUM	1.000	20000.000	20000.00	15000.000	15000.00	25000.000	25000.00
210	CLASS 1 EXCAVATION-SITE 2	L SUM	1.000	15000.000	15000.00	7100.000	7100.00	15000.000	15000.00
210	FOUNDATION PREPARATION-SITE 1	L SUM	1.000	10000.000	10000.00	20000.000	20000.00	15000.000	15000.00
210	FOUNDATION PREPARATION-SITE 2	L SUM	1.000	10000.000	10000.00	20000.000	20000.00	15000.000	15000.00
216	WATER	M GAL	255.000	30.000	7650.00	32.000	8160.00	20.000	5100.00
302	SALVAGED BASE COURSE	TON	1361.000	20.000	27220.00	22.000	29942.00	22.000	29942.00
401	MC70 OR 250 LIQUID ASPHALT	GAL	372.000	11.000	4092.00	8.400	3124.80	8.500	3162.00
401	SS1H OR CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	76.000	17.000	1292.00	13.000	988.00	12.500	950.00
408	HOT BITUMINOUS PAVEMENT CL 27	TON	154.000	180.000	27720.00	170.000	26180.00	168.000	25872.00
408	PG 58-28 ASPHALT CEMENT	TON	11.000	590.000	6490.00	550.000	6050.00	540.000	5940.00
550	10IN NON-REINF CONCRETE PAVEMENT CL AE	SY	1000.000	90.000	90000.00	73.000	73000.00	72.000	72000.00
550	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	88.300	300.000	26490.00	300.000	26490.00	370.000	32671.00
570	SPALL REPAIR-PARTIAL DEPTH	SF	168.000	65.000	10920.00	67.000	11256.00	55.000	9240.00
602	CLASS AAE-3 CONCRETE	CY	146.800	1000.000	146800.00	970.000	142396.00	820.000	120376.00
602	CLASS AE-3 CONCRETE	CY	308.900	550.000	169895.00	520.000	160628.00	500.000	154450.00
602	PENETRATING WATER REPELLENT TREATMENT	SY	365.100	3.500	1277.85	4.300	1569.93	1.400	511.14
604	PRESTRESSED I-BEAM-36IN	LF	220.000	215.000	47300.00	240.000	52800.00	215.000	47300.00
612	REINFORCING STEEL-GRADE 60	LBS	46764.000	1.150	53778.60	1.100	51440.40	1.300	60793.20
612	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	26002.000	1.500	39003.00	1.300	33802.60	2.400	62404.80
616	STRUCTURAL STEEL	LBS	1634.000	12.000	19608.00	19.000	31046.00	20.000	32680.00
616	STRUCTURAL STEEL	L SUM	1.000	90000.000	90000.00	120000.000	120000.00	90000.000	90000.00
622	TREATED TIMBER PILING	LF	1800.000	30.000	54000.00	36.000	64800.00	24.000	43200.00
630	CLEANING & PAINTING	L SUM	1.000	10200.000	10200.00	13000.000	13000.00	11000.000	11000.00
702	MOBILIZATION	L SUM	1.000	87029.490	87029.49	58000.000	58000.00	145030.000	145030.00
704	FLAGGING	MHR	240.000	25.000	6000.00	27.000	6480.00	28.500	6840.00
704	TRAFFIC CONTROL SIGNS	UNIT	4227.000	2.000	8454.00	2.200	9299.40	2.900	12258.30
704	ATTENUATION DEVICE-TYPE B-40	EA	1.000	150.000	150.00	140.000	140.00	150.000	150.00
704	ATTENUATION DEVICE-TYPE B-55	EA	4.000	160.000	640.00	210.000	840.00	201.500	806.00
704	TYPE III BARRICADE	EA	30.000	10.000	300.00	8.900	267.00	9.000	270.00
704	DELINEATOR DRUMS	EA	150.000	25.000	3750.00	24.000	3600.00	24.000	3600.00
704	TUBULAR MARKERS	EA	50.000	7.900	395.00	11.000	550.00	11.000	550.00
704	FLEXIBLE DELINEATORS	EA	60.000	35.000	2100.00	41.000	2460.00	40.000	2400.00
704	SEQUENCING ARROW PANEL-TYPE C	EA	2.000	1200.000	2400.00	1100.000	2200.00	1500.000	3000.00
704	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	270.000	200.000	54000.00	200.000	54000.00	160.000	43200.00
704	PORTABLE CHANGEABLE MESSAGE SIGN	EA	1.000	3800.000	3800.00	2900.000	2900.00	3000.000	3000.00
706	FIELD LABORATORY-TYPE C	EA	1.000	3700.000	3700.00	560.000	560.00	1000.000	1000.00
708	FIBER ROLLS 12IN	LF	1915.000	3.500	6702.50	3.000	5745.00	3.100	5936.50
708	SEEDING-TYPE B-CL II	ACRE	3.000	500.000	1500.00	940.000	2820.00	420.000	1260.00

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO: WANZEK CONSTRUCTION INC

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

30

DATE OF AWARD

DEPARTMENT OF TRANSPORTATION DIRECTOR

ND DEPARTMENT OF TRANSPORTATION

SHEET NO 2 OF 4

ABSTRACT OF BIDS RECEIVED

PROJECT NO. SHE-SIM-2-094(094)260

COUNTY & DATE STUTSMAN (093) FEB 18, 2011 09:30AM

LENGTH & TYPE 0.333

I-94 EAST JAMESTOWN INTERCHANGE

COMPLETION TIME 09/10/11 ACCELERATION LANE, SIGNING, & BRIDGE W

SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	NO. 12 BIDDER ENGINEERS ESTIMATE c.c. CHECK RANK 00 BID PRICE	AMOUNT	BIDDER WANZEK CONSTRUCTION INC FARGO, ND c.c. BOND RANK 01 BID PRICE	AMOUNT	BIDDER INDUSTRIAL BUILDERS INC FARGO, ND c.c. BOND RANK 02 BID PRICE	AMOUNT
708	SEEDING-TYPE B-CL IV	ACRE	3000	46000	13800	54000	16200	60000	18000
708	MULCHING	ACRE	3000	330000	99000	860000	258000	315000	94500
708	TRM TYPE 1	SY	455000	3000	136500	4200	191100	4000	182000
714	PIPE CONDUIT 24IN	LF	24000	83000	199200	120000	288000	115000	276000
714	PIPE CONDUIT 30IN	LF	20000	110000	220000	160000	320000	155000	310000
714	PIPE CONDUIT 42IN	LF	16000	170000	272000	240000	384000	235000	376000
748	CURB & GUTTER-TYPE 1 SPECIAL	LF	43000	50000	215000	54000	232200	52000	223600
752	FENCE RESET EXISTING	LF	783000	6000	469800	4600	360180	4500	352350
754	FLAT SHEET FOR SIGNS-TYPE 3A REFL SHEETING	SF	16000	20000	32000	22000	35200	21500	34400
754	DIAMOND GRADE DELINEATORS-TYPE A	EA	1000	35000	3500	38000	3800	40000	4000
754	DIAMOND GRADE DELINEATORS-TYPE B	EA	1000	40000	4000	43000	4300	45000	4500
754	GALV STEEL POST-STANDARD PIPE	LF	62000	40000	248000	40000	248000	40000	248000
754	PANEL FOR SIGNS-TYPE 3A REFLECTIVE SHEETING	SF	62000	22000	136400	26000	161200	25000	155000
754	EXTRU ALUM SIGN PANEL-TYPE 3A REFL SHEETING	SF	166000	25000	415000	25000	415000	25000	415000
754	RESET SIGN PANEL	EA	1000	75000	7500	85000	8500	80000	8000
754	OBJECT MARKERS - TYPE I	EA	1000	125000	12500	140000	14000	140000	14000
754	CLASS AE CONCRETE-SIGN FOUNDATIONS	CY	15200	1300000	1976000	1400000	2128000	1400000	2128000
754	REMOVE SIGN FOUNDATION	EA	7000	300000	2100000	300000	2100000	300000	2100000
754	OVERHEAD SIGN STR 24FT CANTILEVER	EA	1000	40000000	40000000	52000000	52000000	50000000	50000000
762	SHORT TERM 4IN LINE-TYPE R	LF	8400000	1000	840000	1200	1008000	1150	966000
762	PVMT MK PAINTED 4IN LINE	LF	11500000	100	1150000	200	2300000	200	2300000
762	OBLITERATION OF PVMT MK	SF	438000	2000	87600	3000	131400	3000	131400
764	W-BEAM GUARDRAIL	LF	1658000	30000	4974000	23000	3813400	22500	3730500
764	W-BEAM GUARDRAIL END TERMINAL	EA	5000	2100000	10500000	2200000	11000000	2205000	11025000
764	REMOVE W-BEAM GUARDRAIL & POSTS	LF	804000	3000	241200	2100	1688400	2100	1688400
764	RESET W-BEAM GUARDRAIL	LF	500000	10000	5000000	7200	3600000	7000	3500000
764	REMOVE 3-CABLE GUARDRAIL & POSTS	LF	1158000	1100	1273800	1100	1273800	1200	1389600
764	REMOVE END TREATMENT & TRANSITION	EA	6000	15000	90000	8600	51600	9000	54000
770	OVERHEAD SIGN LIGHTING	EA	1000	5000000	5000000	11000000	11000000	10500000	10500000
930	POLYURETHANE FOAM	LBS	8600000	5250	45150000	3300	28380000	3300	28380000
930	ROADWAY CANOPY-SITE 1	L SUM	1000	10000000	10000000	9300000	9300000	10000000	10000000
930	ROADWAY CANOPY-SITE 2	L SUM	1000	10000000	10000000	12000000	12000000	10000000	10000000
930	SHORING	EA	8000	20000000	160000000	21000000	168000000	25000000	200000000
930	SILICONE SEALANT	LF	210000	10000	2100000	9700	2037000	8000	1680000
930	4IN EXPANSION JOINT STRIP SEAL	LF	59000	125000	7375000	130000	7670000	65000	3835000
930	EXPANSION JOINT STRIP SEAL	LF	143000	140000	20020000	110000	15730000	60000	8580000
930	DECK SPALL REPAIR	SF	60000	75000	4500000	40000	2400000	95000	5700000
930	BEAM END REPAIR	EA	12000	800000	9600000	1200000	14400000	1000000	12000000
	TOTAL				1836584664		1826916933		1880169119
						NO LIMIT		NO LIMIT	

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO: WANZEK CONSTRUCTION INC

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DATE OF AWARD

DEPARTMENT OF TRANSPORTATION DIRECTOR

ND DEPARTMENT OF TRANSPORTATION

SHEET NO 3 OF 4

ABSTRACT OF BIDS RECEIVED

PROJECT NO. SHE-SIM-2-094(094)260

COUNTY & DATE STUTSMAN (093) FEB 18, 2011 09:30AM

LENGTH & TYPE 0.333

I-94 EAST JAMESTOWN INTERCHANGE

COMPLETION TIME 09/10/11 ACCELERATION LANE, SIGNING, & BRIDGE W

	NO. 12	BIDDER	BIDDER
		SWINGEN CONSTRUCTION CO	
		GRAND FORKS, ND	
		C.C. BOND RANK 03	C.C.

SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	BID PRICE	AMOUNT	BID PRICE	AMOUNT	BID PRICE	AMOUNT
103	CONTRACT BOND	L SUM	1000	8000000	800000				
107	RAILWAY PROTECTION INSURANCE-SITE 1	EA	1000	1200000	120000				
107	RAILWAY PROTECTION INSURANCE-SITE 2	EA	1000	6500000	650000				
201	CLEARING & GRUBBING	L SUM	1000	4000000	400000				
202	REMOVAL OF CONCRETE-SITE 1	L SUM	1000	41000000	4100000				
202	REMOVAL OF CONCRETE-SITE 2	L SUM	1000	35000000	3500000				
203	COMMON EXCAVATION-TYPE A	CY	1176000	3800	446880				
203	TOPSOIL	CY	2287000	3300	754710				
203	BORROW-EXCAVATION	CY	21575000	9000	1941750				
210	CLASS 1 EXCAVATION-SITE 1	L SUM	1000	15000000	1500000				
210	CLASS 1 EXCAVATION-SITE 2	L SUM	1000	15000000	1500000				
210	FOUNDATION PREPARATION-SITE 1	L SUM	1000	6000000	600000				
210	FOUNDATION PREPARATION-SITE 2	L SUM	1000	6000000	600000				
216	WATER	M GAL	25500	5000	12750				
302	SALVAGED BASE COURSE	TON	136100	21100	2871710				
401	MC70 OR 250 LIQUID ASPHALT	GAL	37200	8200	30540				
401	SS1H OR CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	7600	12300	9348				
408	HOT BITUMINOUS PAVEMENT CL 27	TON	15400	16800	2587200				
408	PG 58-28 ASPHALT CEMENT	TON	1100	53500	58850				
550	10IN NON-REINF CONCRETE PAVEMENT CL AE	SY	100000	71200	7120000				
550	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	8830	41400	3655620				
570	SPALL REPAIR-PARTIAL DEPTH	SF	16800	14200	2385600				
602	CLASS AAE-3 CONCRETE	CY	14680	96300	1413684				
602	CLASS AE-3 CONCRETE	CY	30890	66200	2044918				
602	PENETRATING WATER REPELLENT TREATMENT	SY	36510	4000	146040				
604	PRESTRESSED I-BEAM-36IN	LF	22000	22700	499400				
612	REINFORCING STEEL-GRADE 60	LBS	4676400	1700	794988				
612	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	2600200	2700	702054				
616	STRUCTURAL STEEL	LBS	163400	18300	2990220				
616	STRUCTURAL STEEL	L SUM	1000	9200000	9200000				
622	TREATED TIMBER PILING	LF	180000	35700	6426000				
630	CLEANING & PAINTING	L SUM	1000	39300000	3930000				
702	MOBILIZATION	L SUM	1000	68000000	6800000				
704	FLAGGING	MHR	24000	25000	600000				
704	TRAFFIC CONTROL SIGNS	UNIT	422700	2100	887670				
704	ATTENUATION DEVICE-TYPE B-40	EA	1000	143000	143000				
704	ATTENUATION DEVICE-TYPE B-55	EA	4000	2000000	8000000				
704	TYPE III BARRICADE	EA	3000	87400	262200				
704	DELINEATOR DRUMS	EA	15000	23100	346500				
704	TUBULAR MARKERS	EA	5000	10700	53500				
704	FLEXIBLE DELINEATORS	EA	6000	40000	240000				
704	SEQUENCING ARROW PANEL-TYPE C	EA	2000	1040000	2080000				
704	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	27000	301000	8127000				
704	PORTABLE CHANGEABLE MESSAGE SIGN	EA	1000	2900000	290000				
706	FIELD LABORATORY-TYPE C	EA	1000	551000	55100				
708	FIBER ROLLS 12IN	LF	19150	3100	59365				
708	SEEDING-TYPE B-CL II	ACRE	300	420000	126000				

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO: WANZEK CONSTRUCTION INC WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

DATE OF AWARD

DEPARTMENT OF TRANSPORTATION DIRECTOR

ND DEPARTMENT OF TRANSPORTATION

SHEET NO 4 OF 4

ABSTRACT OF BIDS RECEIVED

PROJECT NO. SHE-SIM-2-094(094)260

COUNTY & DATE STUTSMAN (093) FEB 18, 2011 09:30AM

LENGTH & TYPE 0.333

I-94 EAST JAMESTOWN INTERCHANGE

COMPLETION TIME 09/10/11 ACCELERATION LANE, SIGNING, & BRIDGE W

SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	NO. 12 BIDDER SWINGEN CONSTRUCTION CO GRAND FORKS, ND C.C. BOND RANK 03 BID PRICE	AMOUNT	BIDDER C.C. BID PRICE	AMOUNT	BIDDER C.C. BID PRICE	AMOUNT
708	SEEDING-TYPE B-CL IV	ACRE	3000	63000	189000				
708	MULCHING	ACRE	3000	315000	94500				
708	TRM TYPE 1	SY	455000	4000	182000				
714	PIPE CONDUIT 24IN	LF	24000	114000	273600				
714	PIPE CONDUIT 30IN	LF	20000	153000	306000				
714	PIPE CONDUIT 42IN	LF	16000	235000	376000				
748	CURB & GUTTER-TYPE 1 SPECIAL	LF	43000	52000	223600				
752	FENCE RESET EXISTING	LF	783000	4500	352350				
754	FLAT SHEET FOR SIGNS-TYPE 3A REFL SHEETING	SF	16000	21500	34400				
754	DIAMOND GRADE DELINEATORS-TYPE A	EA	1000	37000	3700				
754	DIAMOND GRADE DELINEATORS-TYPE B	EA	1000	42000	4200				
754	GALV STEEL POST-STANDARD PIPE	LF	62000	39000	241800				
754	PANEL FOR SIGNS-TYPE 3A REFLECTIVE SHEETING	SF	62000	25000	155000				
754	EXTRU ALUM SIGN PANEL-TYPE 3A REFL SHEETING	SF	166000	25000	415000				
754	RESET SIGN PANEL	EA	1000	8360	8360				
754	OBJECT MARKERS - TYPE I	EA	1000	13200	13200				
754	CLASS AE CONCRETE-SIGN FOUNDATIONS	CY	15200	139000	2112800				
754	REMOVE SIGN FOUNDATION	EA	7000	29000	203000				
754	OVERHEAD SIGN STR 24FT CANTILEVER	EA	1000	5080000	5080000				
762	SHORT TERM 4IN LINE-TYPE R	LF	8400000	1130	949200				
762	PVMT MK PAINTED 4IN LINE	LF	11500000	300	345000				
762	OBLITERATION OF PVMT MK	SF	438000	2900	127020				
764	W-BEAM GUARDRAIL	LF	1658000	22600	3747080				
764	W-BEAM GUARDRAIL END TERMINAL	EA	5000	2200000	11000000				
764	REMOVE W-BEAM GUARDRAIL & POSTS	LF	804000	2100	168840				
764	RESET W-BEAM GUARDRAIL	LF	500000	7100	355000				
764	REMOVE 3-CABLE GUARDRAIL & POSTS	LF	1158000	1000	115800				
764	REMOVE END TREATMENT & TRANSITION	EA	6000	84000	50400				
770	OVERHEAD SIGN LIGHTING	EA	1000	10600000	10600000				
930	POLYURETHANE FOAM	LBS	8600000	3200	27520000				
930	ROADWAY CANOPY-SITE 1	L SUM	1000	24400000	24400000				
930	ROADWAY CANOPY-SITE 2	L SUM	1000	25000000	25000000				
930	SHORING	EA	8000	19000000	152000000				
930	SILICONE SEALANT	LF	210000	7200	151200				
930	4IN EXPANSION JOINT STRIP SEAL	LF	59000	87000	5133000				
930	EXPANSION JOINT STRIP SEAL	LF	143000	73000	10439000				
930	DECK SPALL REPAIR	SF	60000	189000	11340000				
930	BEAM END REPAIR	EA	12000	1800000	21600000				
	TOTAL				196910210				
				NO LIMIT					

ACTION TAKEN BY DEPARTMENT OF TRANSPORTATION DIRECTOR: AWARD TO: WANZEK CONSTRUCTION INC WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

33

DATE OF AWARD

DEPARTMENT OF TRANSPORTATION DIRECTOR

Feb 18, 2011

DESIGN DATA				
Traffic	Average Daily			Max.Hr.
Current 2008	Pass: 6,020	Trucks: 2,450	Total: 8,470	850
Forecast 2028	Pass: 8,970	Trucks: 3,655	Total: 12,625	1,265
Clear Zone Distance: 34'		Design Speed: 75		
Minimum Sight Dist. for Stopping: ___		Bridges: HS 43		
Limited Access Control				
Pavement Design Life __ (years)				

STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	17342	1	1

JOB# 12

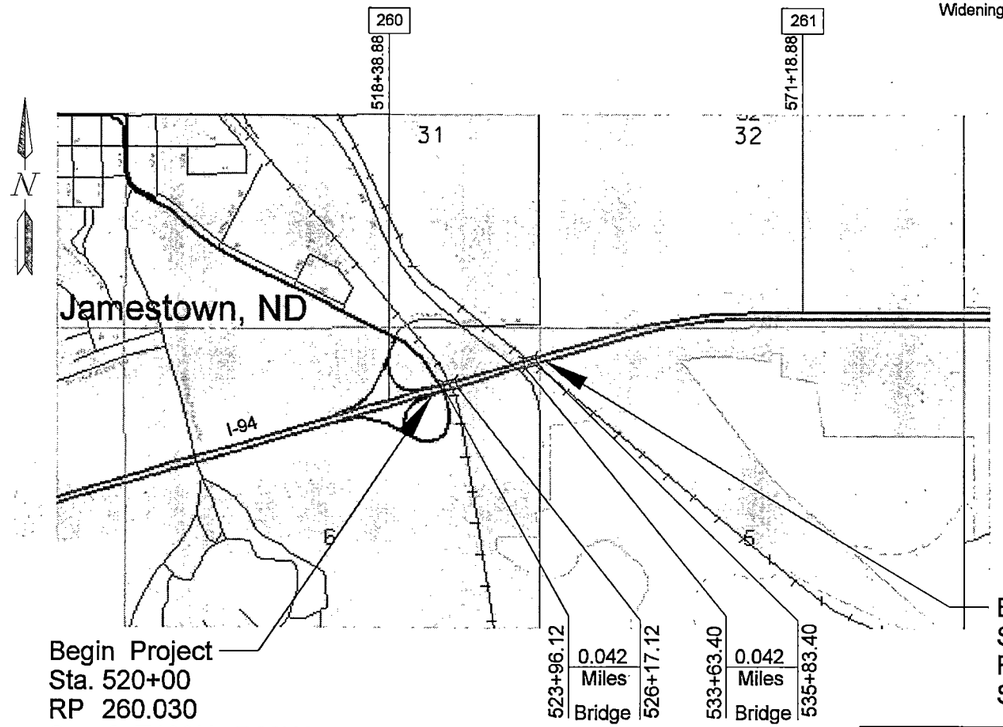
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SHE-SIM-2-094(094)260
Stutsman County
East Jamestown I-94 Interchange
Acceleration Lane, Signing & Bridge Widening

23 USC § 409 Documents
NDDOT Reserves All Objections

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

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
SHE-SIM-2-094(094)260 East Jamestown I-94 Interchange Acceleration Lane, Signing & Bridge Widening	.333 Mi.	.417 Mi.
.084 Miles Deducted for Bridges		



DESIGNERS
Reuben Hauck
Brian Rosin

APPROVED DATE 1/6/11
Roger Weigel
for OFFICE OF PROJECT DEVELOPMENT
ND DEPARTMENT OF TRANSPORTATION

I hereby certify that the attached plans were prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the state of ND.

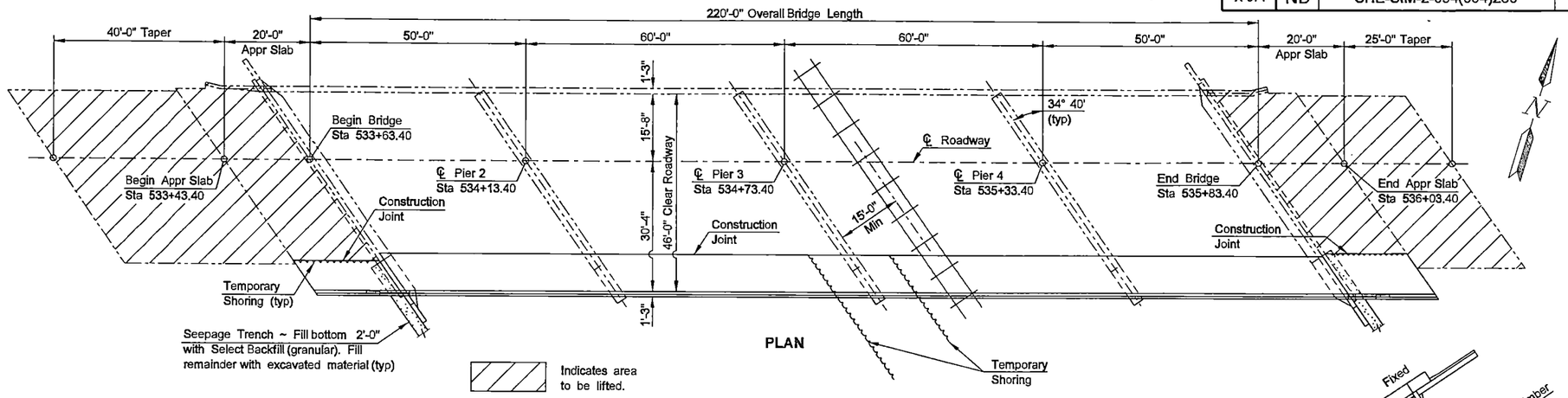
APPROVED DATE 1/6/11
Roger Weigel
NDDOT DESIGN DIVISION

This document was originally issued and sealed by Roger Weigel Registration Number PE-2930 , on 1/6/11 and the original document is stored at the North Dakota Department of Transportation

1/5/2011 1:12:09 PM rhauck R:\project\20094260.094\design\001TS_001_Title Sheet.dgn

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

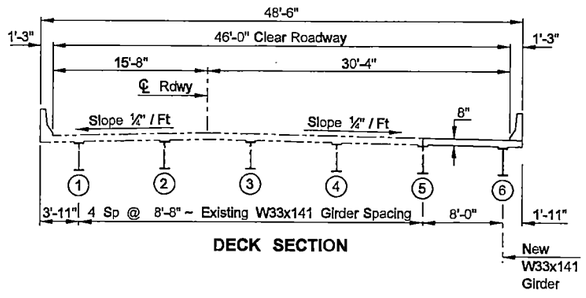
BRIDGE CODE	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
X-571	ND	SHE-SIM-2-094(094)260	170	23



PLAN

Indicates area to be lifted.

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
107	0104	RAILWAY PROTECTION INSURANCE-SITE 2	EA	1
202	0116	REMOVAL OF CONCRETE-SITE 2	L SUM	1
210	0103	CLASS 1 EXCAVATION-SITE 2	L SUM	1
210	0203	FOUNDATION PREPARATION-SITE 2	L SUM	1
550	0217	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	41.7
602	0130	CLASS AAE-3 CONCRETE	CY	81.6
602	1130	CLASS AE-3 CONCRETE	CY	63.9
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	211.9
612	0115	REINFORCING STEEL-GRADE 60	LBS	8,637
612	0116	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	21,251
616	5890	STRUCTURAL STEEL	L SUM	1
622	4630	TREATED TIMBER PILING	LF	600
930	3631	POLYURETHANE FOAM	LBS	3500
930	7014	ROADWAY CANOPY-SITE 2	L SUM	1
930	8230	SHORING	EA	3
930	8644	SILICONE SEALANT	LF	114
930	8666	4IN EXPANSION JOINT STRIP SEAL	LF	59

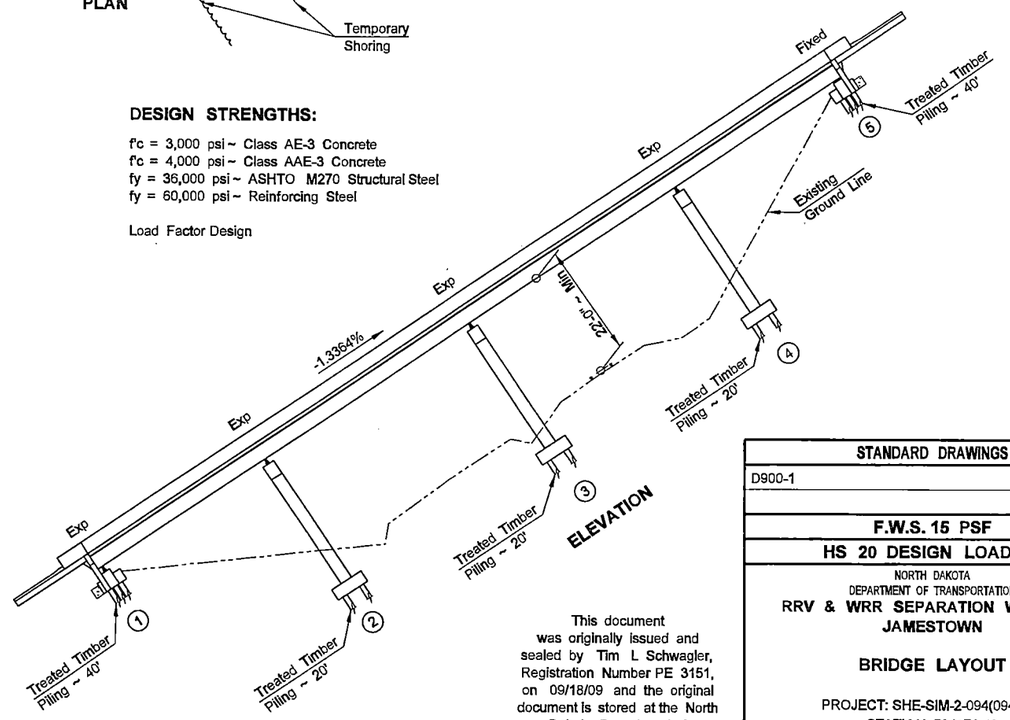


DECK SECTION

DESIGN STRENGTHS:

f'c = 3,000 psi ~ Class AE-3 Concrete
f'c = 4,000 psi ~ Class AAE-3 Concrete
fy = 36,000 psi ~ ASHTO M270 Structural Steel
fy = 60,000 psi ~ Reinforcing Steel

Load Factor Design



ELEVATION

This document was originally issued and sealed by Tim L Schwagler, Registration Number PE 3151, on 09/18/09 and the original document is stored at the North Dakota Department of Transportation

STANDARD DRAWINGS

D900-1

F.W.S. 15 PSF

HS 20 DESIGN LOADING

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
RRV & WRR SEPARATION WIDENING
JAMESTOWN

BRIDGE LAYOUT

PROJECT: SHE-SIM-2-094(094)260
STATION: 534+73.40
STUTSMAN COUNTY

12/02/09 (DATE)
Terrence R. Udland (BRIDGE ENGINEER)

NOTES

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

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	24

100 SCOPE OF WORK: This project consists of widening the existing eastbound bridge to the south by adding one girder line. The clear roadway width will be widened from 40'-0" to 46'-0". The existing approach slabs will be widened and lifted by a polyurethane foam system.

100 GENERAL: The cost of furnishing and placing preformed expansion joint filler, concrete inserts, rebar couplers, silicone sealant at the gutter line, and other miscellaneous items shall be included in the price bid for Class AE-3 and AAE-3 concrete.

107 RAILROAD PROTECTIVE LIABILITY INSURANCE: This project crosses the Red River Valley and Western Railroad Company at RP 260.3189. The type of work that will be performed within the railroad right of way is widening of the existing railroad bridge structure. Inquiries for protective liability insurance should be directed to:

Mr. Dan Zink, Director of Administration
Red River Valley and Western Railroad Company
P.O. Box 608
Wahpeton, ND 58074
701-642-8257

Information on crossing number DOT 103725N may be obtained from the Federal Railroad.

Administration web site:
http://safetydata.fra.dot.gov/Officeofsafety/.

202 REMOVAL OF CONCRETE: The Contractor shall remove the concrete in a manner that prevents any damage to the parts of the structure to remain. A 15 pound maximum size hammer shall be used for the deck removal over the steel girders. The work needed for the superstructure and abutment removal shall be included in the lump sum bid item, "Removal of Concrete-Site 2."

210 EXCAVATION: The excavation required to widen the abutments and piers shall be included in the lump sum bid item, "Class 1 Excavation-Site 2."

602 DIAPHRAGMS AND END BEAMS: The intermediate diaphragm, pier diaphragm and end beam concrete at Abutment 1 shall be placed before the deck concrete. The concrete shall cure for at least 72 hours before deck placement.

602 DECK CONCRETE: Beams 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 bidding the unit price for Class AAE-3 concrete. The Department will pay plan quantity of Class AAE-3 concrete.

602 PENETRATING WATER REPELLENT TREATMENT: Penetrating water repellent shall be applied to the driving surface of the new concrete deck.

602 SURFACE FINISH "D": Surface Finish "D" shall be required on all surfaces of the new barrier and the outside edge of the deck. The surface finish color shall match the existing. This work shall be included in the price bid for Class AAE-3 Concrete.

602 DECK CURING: No work shall be done on the deck while the wet cure is in progress, including forming the barriers. No vehicles or equipment not required in the curing process shall be on the deck.

616 STRUCTURAL STEEL: The structural steel for the main girder and splice plates may be AASHTO M270 Grade 36T2 or 50T2 (30,910 lbs).

The abutment and pier bearings shall be AASHTO M270 Grade 50. Bearing pins shall meet AASHTO M102 Class F. The Charpy V-notch test is waived for the bearings.

Pintles shall meet AASHTO M 223. Swedge bolts shall meet ASTM A 449.

The mechanical properties and installation of the stud shear connectors shall conform to the latest AASHTO/AWS D1.5 Bridge Welding Code, Section 7. The stud shear connectors shall be installed using automatically timed stud welding equipment in the field only after the structural steel is erected, after the deck forms are installed and before the reinforcement steel is placed.

In addition to the stud bend test of Article 7.6.6.1 of the AASHTO/AWS D1.5 Bridge Welding Code, stud bend tests shall be performed at the start of each workday, when welding has been interrupted for an hour or more, when changing grounds, when changing weld settings and when changing cable loop due to arc blow. No more than 500 studs should be welded without the welds being field bend tested according to the specified procedure. The Contractor may leave in the bent position tested studs that show no sign of failure, as determined by the Engineer.

All of the structural steel shall be paid for by the lump sum bid item "Structural Steel." There are approximately 33,000 total pounds of structural steel.

622 PILING: Timber piling shall be driven to 24 tons.

622 PREBORING: The Contractor will be required to bore pilot holes through the existing constructed embankment for the abutments to an elevation of 1395' before driving piling. All pilot holes shall have a diameter of 18 inches. Prior to pile driving, the pilot holes shall be backfilled with polymer free sodium bentonite slurry, designed for sealing wells and bored holes. The bentonite slurry shall be made by thoroughly mixing bentonite with water, according to the manufacturer's recommendations. In no case shall more than 100 gallons of water be used per 80 pounds of bentonite. Slurry materials shall be placed by pumping or other applicable methods which assure that the pilot holes are completely filled. All costs associated with boring pilot holes and backfilling with bentonite slurry shall be included in the price bid for "Treated Timber Piling."

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	25

NOTES

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NDDOT Reserves All Objections

622 PILING: Piling shall be driven with a steam, air, or diesel hammer with a rated energy and ram weight not less than 7,852 foot-pound-tons, as computed by the formula W(E–3,326) + 0.472E, where W is the weight of the ram in tons and E is the rated hammer energy. In no case shall the ram weight be less than 1,770 pounds.

630 PAINT AND PAINTING: The structural steel shall be painted according to the specifications. The finish coats shall be blue, color number 25177, and shall meet Federal Standard No. 595B.

900 ELEVATION CHECK POINTS: Five bolts need to be placed on the 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.

930 ROADWAY CANOPY: The Contractor shall construct a canopy above the railroad and traveled roadway under the existing structure to protect traffic from falling material. The canopy is an added safeguard and does not relieve the Contractor of any responsibility for the safety of the public.

The canopy must be erected before the concrete deck and barrier of the existing structure is removed. The canopy must also be in place before installing forming for the new deck and shall remain in place until after the new deck is complete. The canopy may be supported from the ground or suspended from the beams. The erection of the canopy shall be completed in a minimum amount of time and with the least inconvenience to the public and the railroad.

The canopy shall be of a design and material selected by the Contractor and submitted to the Engineer for review at least one week prior to construction. The minimum vertical clearance shall be 21'-6" above the railroad tracks. The minimum vertical clearance from the traveled roadway to the bottom of the canopy shall be 16'-0". The canopy shall project a minimum distance of 5'-0" beyond the outside edge of deck of the structure. The canopy shall project a minimum distance of 5'-0" beyond the edge of the railroad tracks and driving lanes beneath the structure.

After completion of the structure, the canopy shall be removed and shall remain the property of the Contractor.

The roadway canopy shall be paid for at the contract lump sum unit price for "Roadway Canopy-Site 2." The roadway canopy shall be measured as a lump sum item and shall include construction, maintenance, and removal.

930 SILICONE SEALANT: The silicone sealant and backer rod shall be replaced at the joint between the approach slabs and deck. The new silicone sealant and backer rod shall extend 6 inches up the faces of both barriers. After removing the existing silicone sealant and backer rod, the joint shall be cleaned of all foreign material and sandblasted before the new backer road and silicone sealant are installed. A low modulus (Type 5) silicone sealant shall be used. The backer rod diameter shall be ¼" larger than the joint width. All labor, equipment, and materials required to complete this work shall be included in the price bid for "Silicone Sealant."

930 SHORING: Temporary shoring is required as shown on the plans for construction of both Abutments and Pier 3. The Contractor is responsible to design, construct, maintain, and remove temporary shoring. All labor, equipment and material needed for this work at each substructure unit will be paid for as "Shoring, 1 EA."

930 4IN EXPANSION JOINT STRIP SEAL: The existing extrusion shall be left in place. The new extrusion widening shall run to the edge of the new deck. The existing elastomeric strip seal shall be replaced with a new strip seal that shall run continuously from edge of deck to edge of deck.

All labor, equipment, and materials required to complete this work shall be included in the price bid for "4in Expansion Joint Strip Seal."

930 RAILROAD FLAGGING: The Contractor shall give a minimum of at least thirty (30) working days notice to Cal Gruebele, the Railways Roadmaster, at telephone (218) 643-1532 or (701) 640-0841, in advance of when flagging services will be required to bulletin the flagger's position and shall provide five (5) working days notice to the Roadmaster to abolish the position per union requirements.

930 POLYURETHANE FOAM: This work shall consist of lifting and leveling the existing concrete bridge approach panels by a polyurethane foam system. Lifting and leveling of the concrete panels shall be performed by drilling injection holes, injecting polymer, verifying elevations to control lift of panel and cleanup as approved by the Project Engineer.

The medium used to lift and level the approach slabs shall be a water blown high-density polyurethane. The material shall be hydrophobic. The high density, closed cell, polyurethane system shall exhibit the following physical characteristics and properties:

Density, Lb/Cu Ft (ASTM 1622)	Compressive Strength (ASTM 1621)
3.0	40 psi
3.5	50 psi
4.0	60 psi
6.0	110 psi

The polyurethane foam system will have a free-rise density of 3.0 – 3.2 lb/ft^3, with a minimum compressive strength of 40 psi. The expansion of the polyurethane foam under pressure increases the foam density above the original free rise density value.

The high density formulation shall reach 90% of full compressive strength within 15 minutes of injection, at which time the Contractor may allow traffic on the treated areas, as approved by the Project Engineer.

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NOTES

The Contractor shall submit, to the Project Engineer, manufacturer's certification stating that all materials and methods meet requirements. The Contractor shall also submit all warranties and guarantees, which shall be transferred to the Department upon acceptance by the Project Engineer.

A list of the lifting and undersealing equipment shall be submitted to the Project Engineer for review. The minimum list of equipment required shall be as listed below. This list shall not preclude the use of additional equipment.

a. A pneumatic drill and an electric drill capable of drilling 5/8-inch diameter holes to the required depths.

b. A truck-mounted pumping unit capable of injecting the high-density polyurethane formulation between the concrete pavement and the underlying surface. The pumping unit shall be equipped with a dial gauge in increments of 45 grams (1/10 pound), and shall be capable of controlling the rate of flow of the material as well as of the rise of the pavement.

c. A laser leveling unit it ensure that the concrete is raised to an even plane and to the required elevations.

All equipment provided by the Contractor shall be in excellent condition and kept clean at all times. All stored materials shall be sealed and protected from contamination of dust or any foreign material.

The Contractor shall have prior experience using high-density polyurethane to raise and underseal concrete slabs.

A series of 5/8 inch holes shall be drilled at the locations required for the proper raising of the surface. The exact locations and spacing shall be determined by the Contractor. The pumping unit shall be calibrated daily, or at the Project Engineer's request, to ensure consistent accuracy of injected material.

The high density polyurethane formulation is injected under the slab. The amount of rise shall be controlled, using the pumping unit, by regulating the rate of injection of the raising/undersealing polymer. When the nozzle is removed from the hole, any excessive polyurethane material shall be removed from the area and the hole sealed with a nonexpansive cementitious grout. All removed material shall be disposed of in an environmentally acceptable manner conforming to Federal, State and local regulations. Final elevations shall be within ¼" of the elevations proposed by profile. A tight string line may be used to monitor and verify elevations for slab lengths of 50 foot or less. For longer sections, a laser level will be used to monitor and verify elevations. The Contractor shall be responsible for any pavement blowouts or excessive pavement lifting which may result from the process and shall repair the damaged area to the satisfaction of the Project Engineer without additional cost.

The slab shall not be raised more than ¼ inch while pumping in any one hole at any one time. Cracks emanating radially from the injection holes will be presumed to have been caused by improper injection techniques by the Contractor. For each five feet of crack measured, the pay quantity will be reduced by 10 pounds of polyurethane material. If cracks develop between adjacent injection holes, the Contractor shall repair the cracks by a satisfactory method approved by the Engineer. Pavement raised above specified tolerances shall be brought to grade by grinding. If over jacking is greater than 0.10 foot, satisfactory removal and replacement shall be required, at no cost to the Owner.

The price bid for the item "Polyurethane Foam" shall include full compensation for furnishing all labor, supervision, materials tools, equipment, and incidentals for all work called for in this note. Daily material usage shall be attested by the Inspector and the Contractor and reported on a field production report.

SHOP DRAWINGS: The Contractor shall submit the following shop drawings to the Engineer for review:

1. Structural Steel
2. Joints

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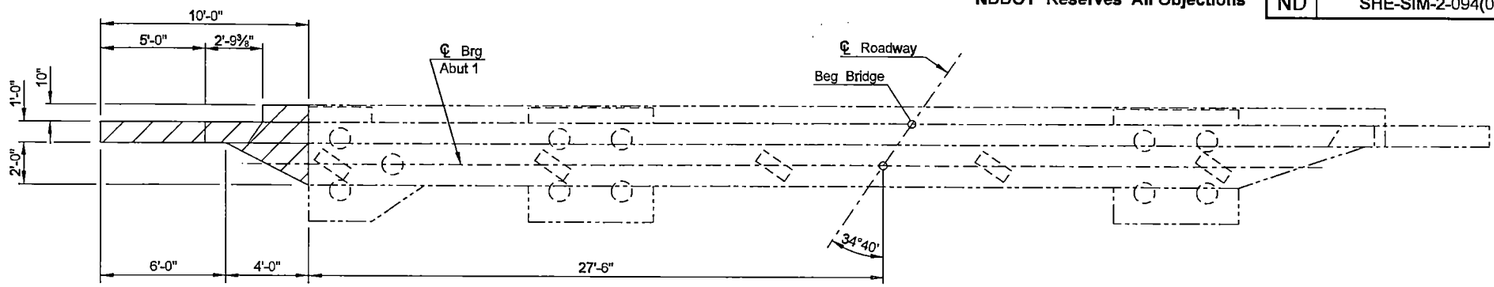
NDDOT Reserves All Objections

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	27



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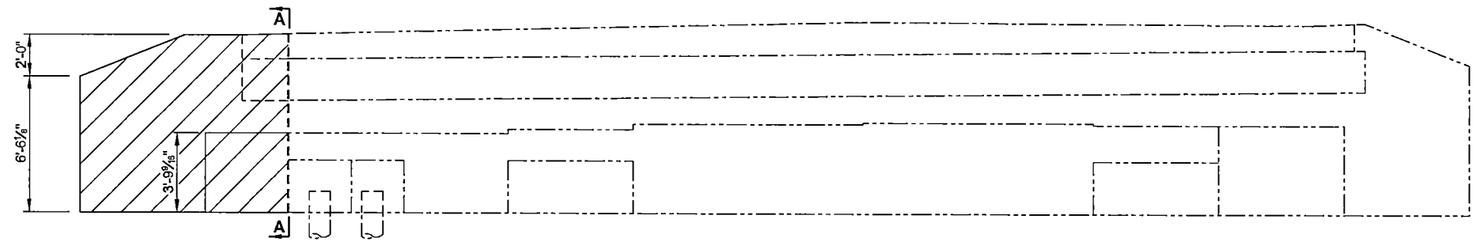

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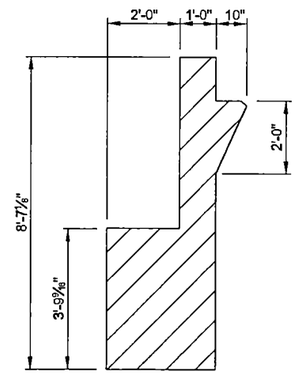

A-A

Hatched area indicates concrete to be removed. The abutment shall be saw cut to a depth of 1" to produce a neat line between the concrete to be removed and the concrete to remain. Care shall be taken to ensure no damage is done to reinforcing steel that is to remain in place. Any rust scale found on the exposed existing reinforcing steel shall be thoroughly sandblast cleaned.

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QUANTITIES

SEE DWG 94-230.304R-7

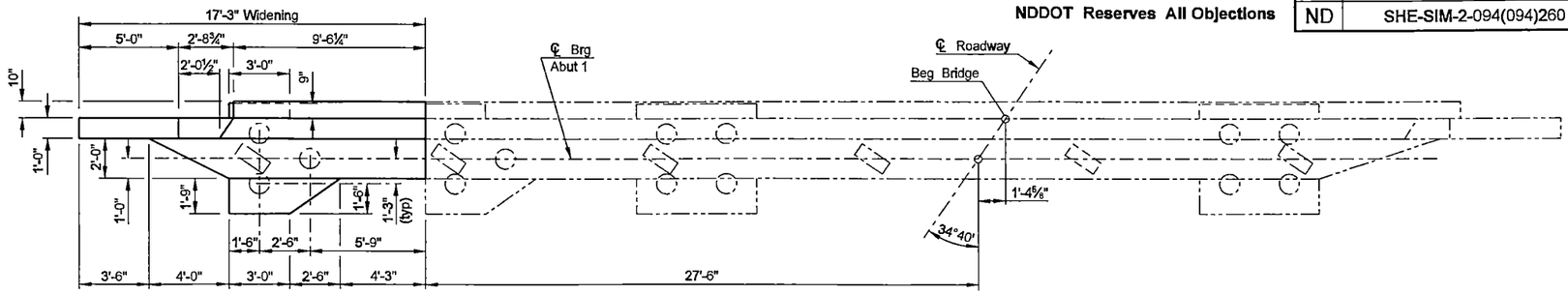
RRV & WRR SEPARATION WIDENING JAMESTOWN

(SHOWING REMOVAL)

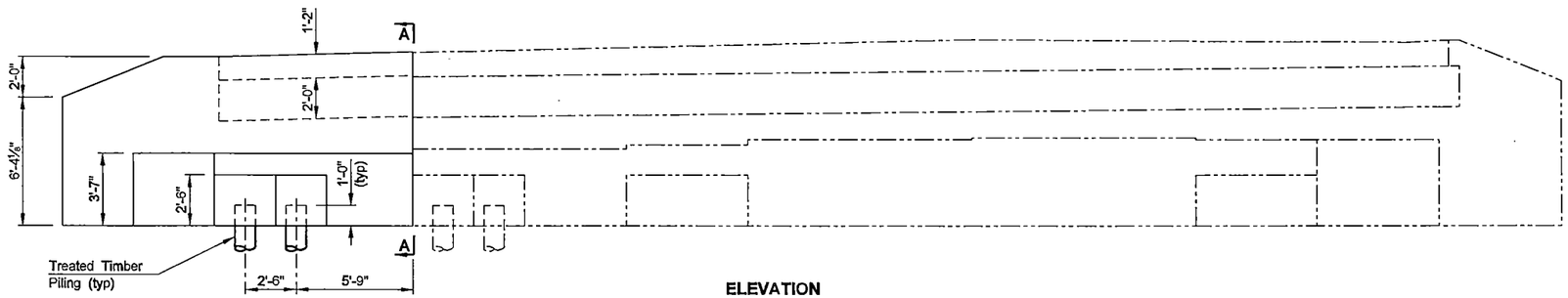
ABUTMENT 1 DETAILS

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

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	28



PLAN



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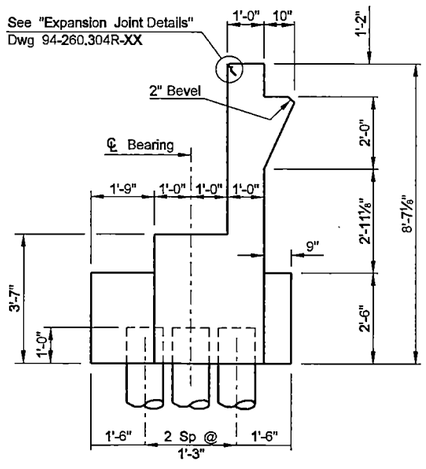

A-A

NOTE:

Dimensions may vary depending on existing field conditions. Adjustments shall be made to achieve the proper elevations.

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QUANTITIES

SEE DWG 94-230.304R-7

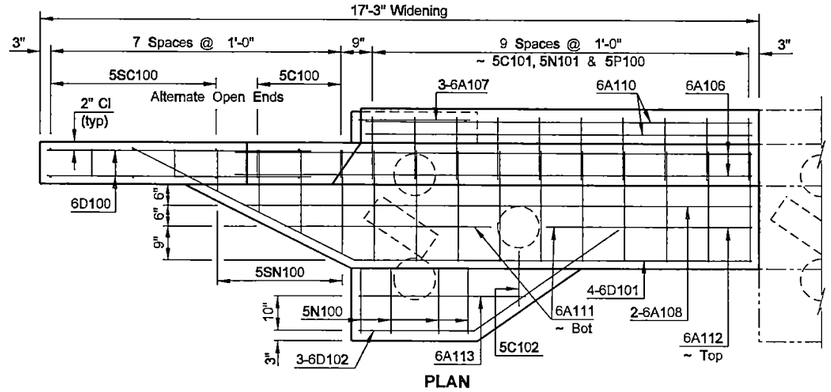
RRV & WRR SEPARATION WIDENING JAMESTOWN

(SHOWING DIMENSIONS)

ABUTMENT 1 DETAILS

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

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	29



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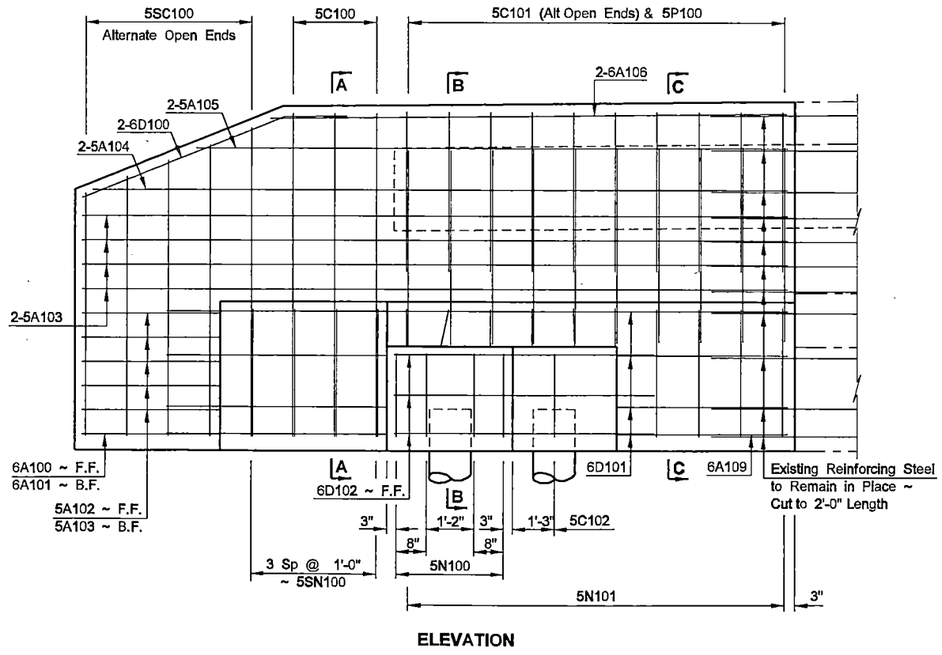

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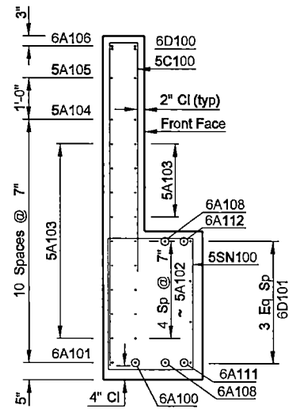

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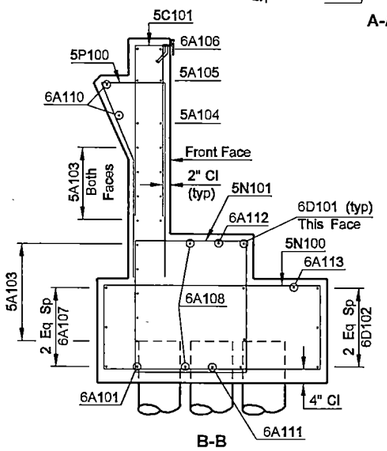

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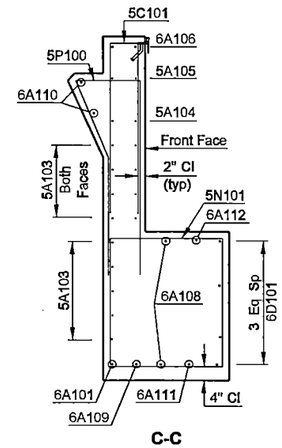

C-C

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QUANTITIES	
CLASS AE-3 CONCRETE	9.5 CY
REINFORCING STEEL	1,201 LBS

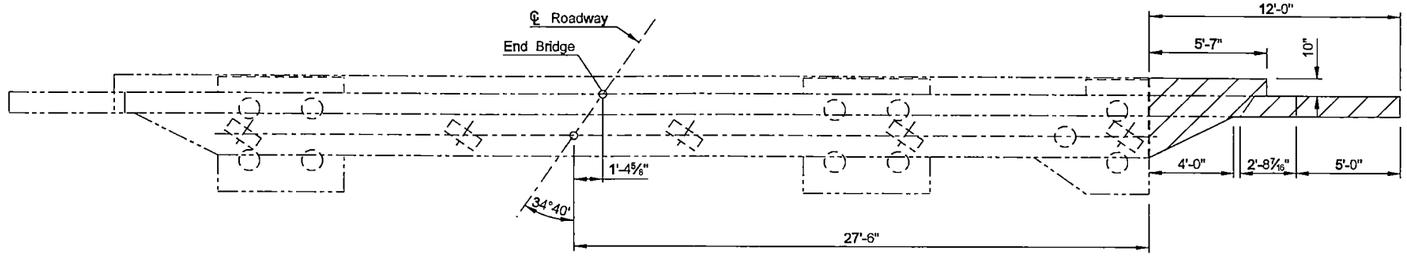
RRV & WRR SEPARATION WIDENING JAMESTOWN

(SHOWING REINFORCING)

ABUTMENT 1 DETAILS

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

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	30



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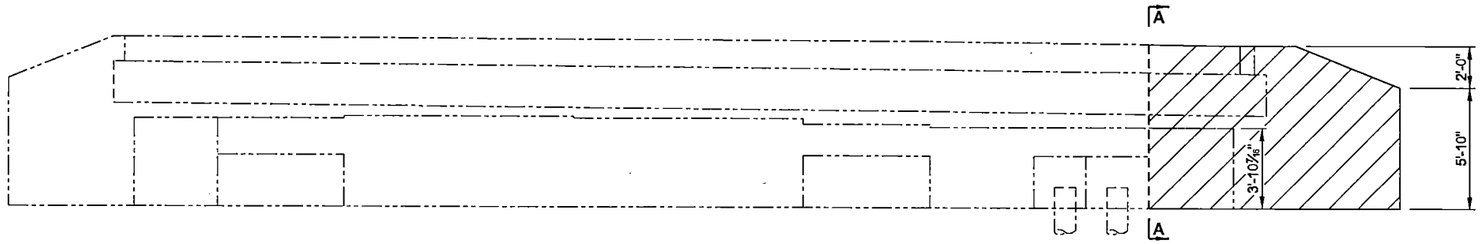

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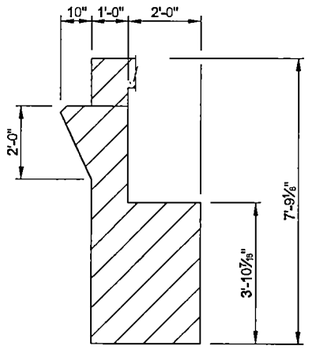

A-A

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QUANTITIES

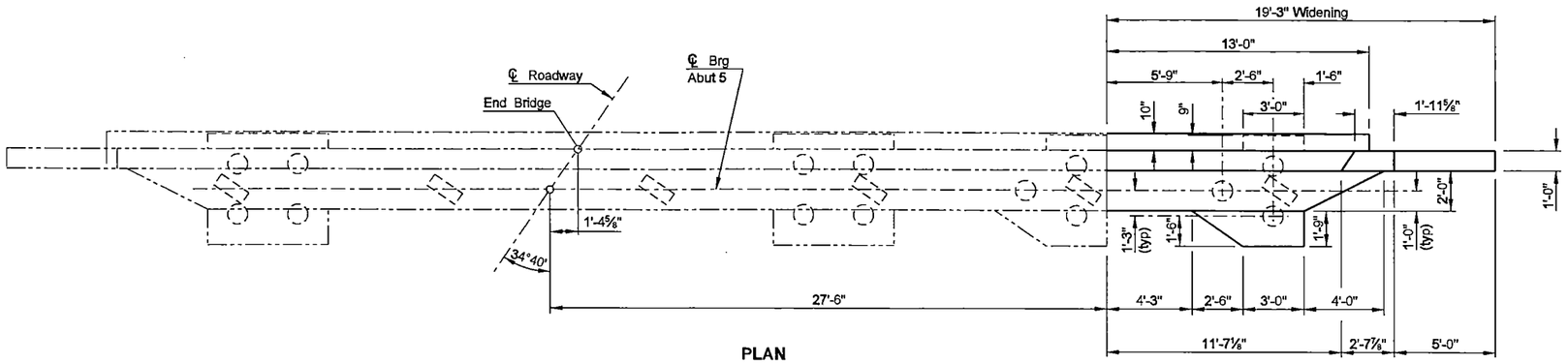
SEE DWG 94-230.304R-10

RRV & WRR SEPARATION WIDENING
JAMESTOWN

(SHOWING REMOVAL)
ABUTMENT 5 DETAILS

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

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	31



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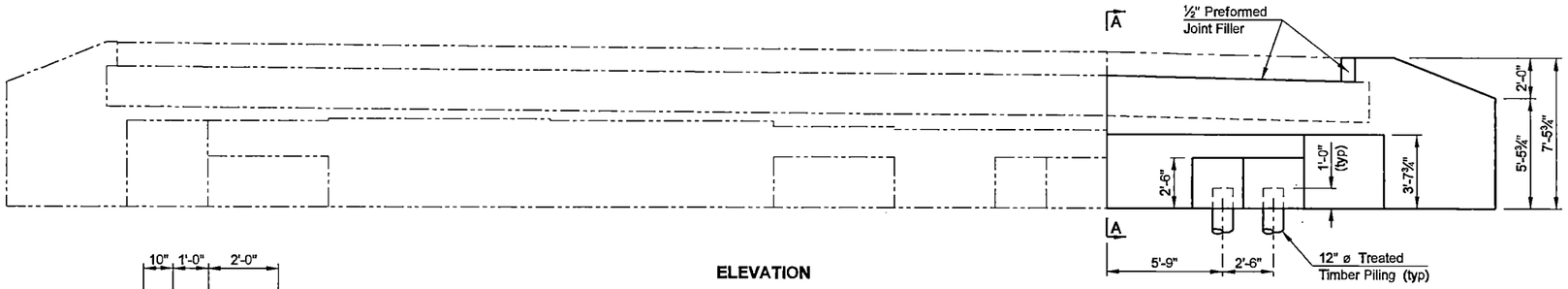

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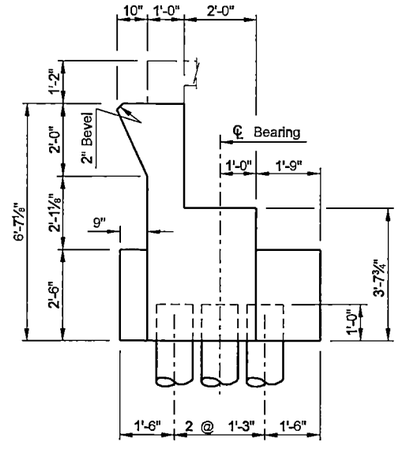

A-A

NOTE:

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QUANTITIES

SEE DWG 94-230.304R-10

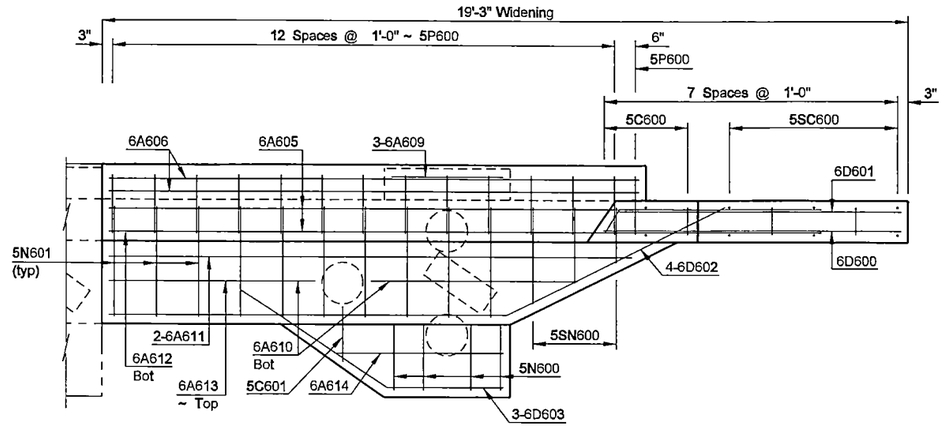
RRV & WRR SEPARATION WIDENING JAMESTOWN

(SHOWING DIMENSIONS)

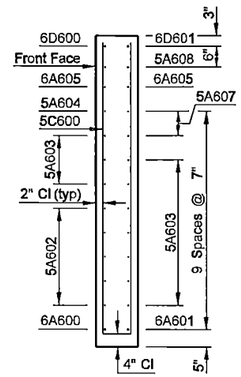
ABUTMENT 5 DETAILS

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

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	32



PLAN



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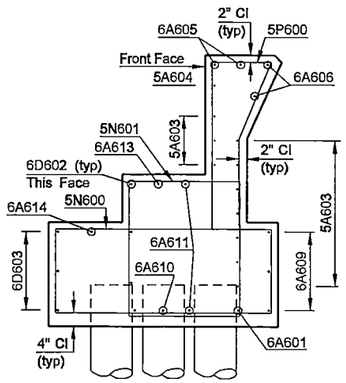

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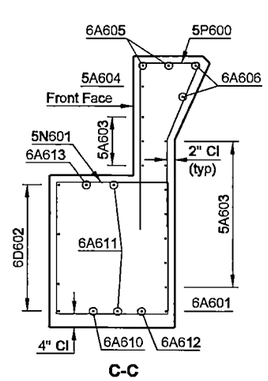

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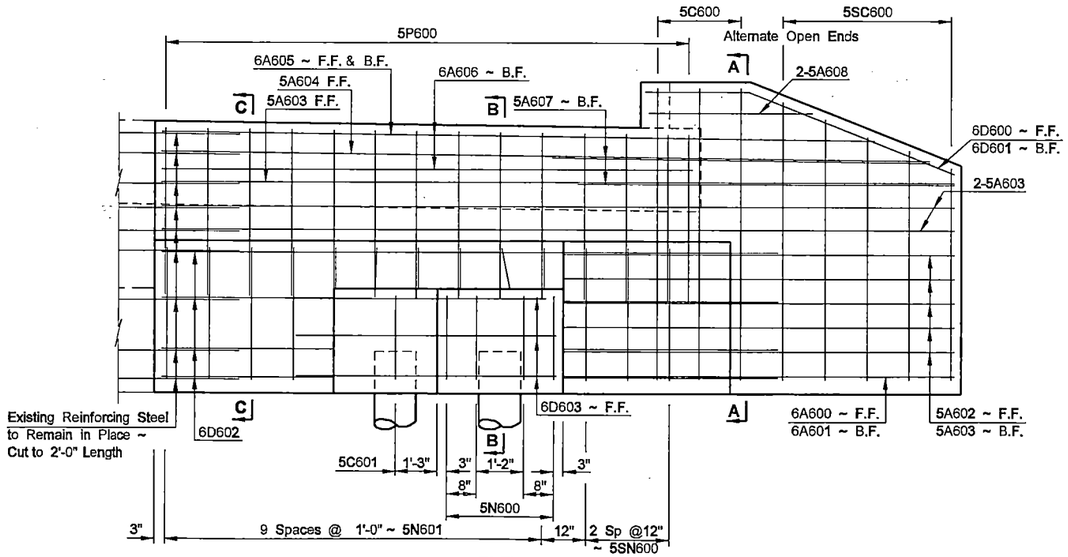

ELEVATION

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QUANTITIES	
CLASS AE-3 CONCRETE	9.7 CY
REINFORCING STEEL	1,142 LBS

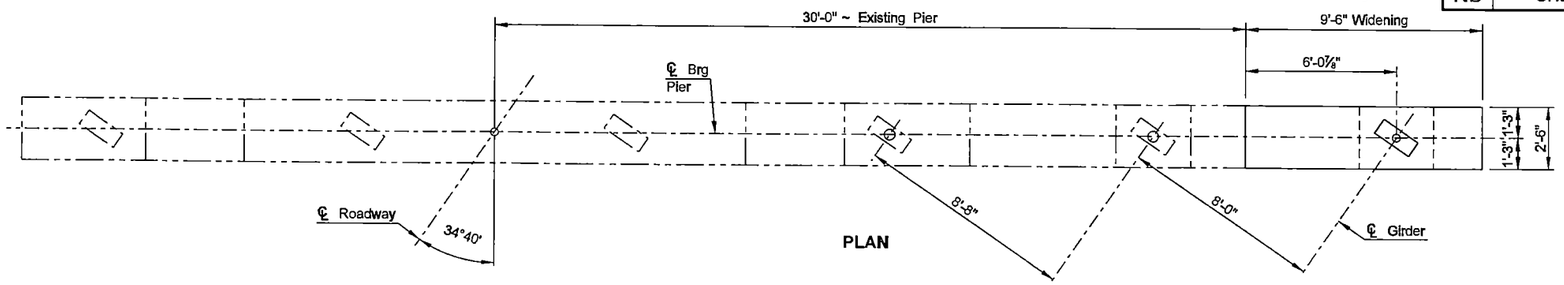
RRV & WRR SEPARATION
JAMESTOWN

(SHOWING REINFORCING)

ABUTMENT 5 DETAILS

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

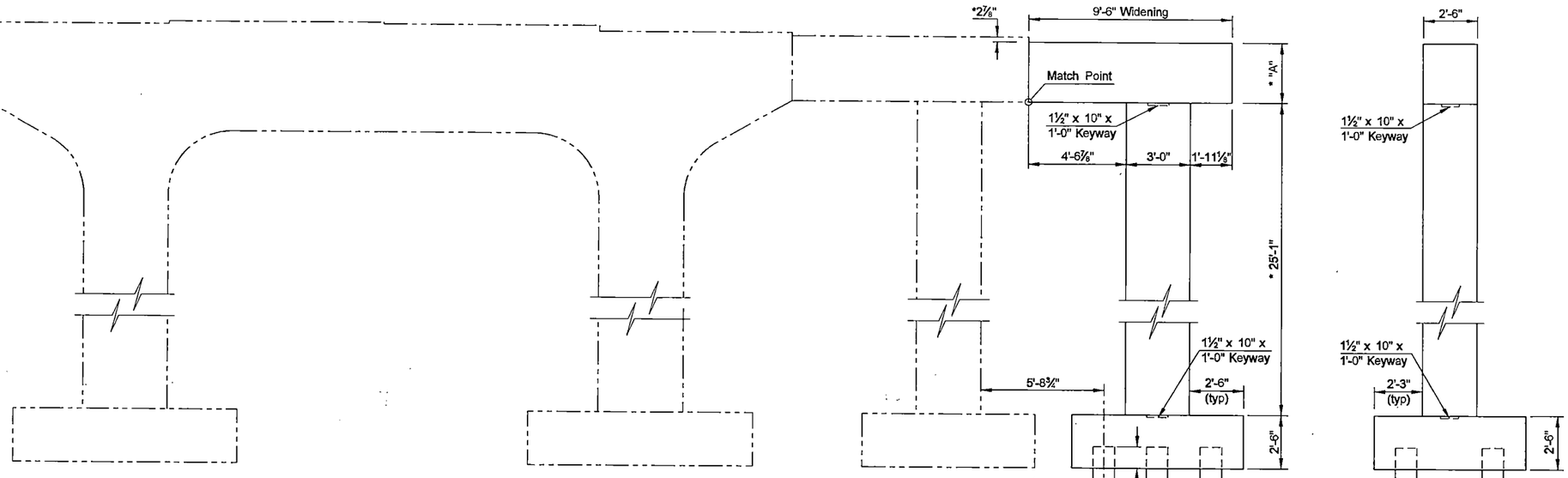
STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	33



PLAN

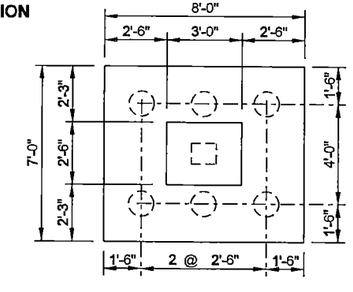
PIER	DIMENSION "A"
2	3'-0½"
3	3'-0⅝"
4	3'-0⅞"

* These dimensions depend on the elevation of the match location and shall be adjusted as necessary.



ELEVATION

END VIEW



FOOTING PLAN

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QUANTITIES

SEE DWG 94-260.304R-12

RRV & WRR SEPARATION WIDENING
JAMESTOWN

(SHOWING DIMENSIONS)

PIER DETAILS

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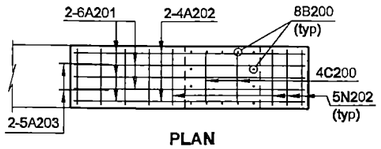
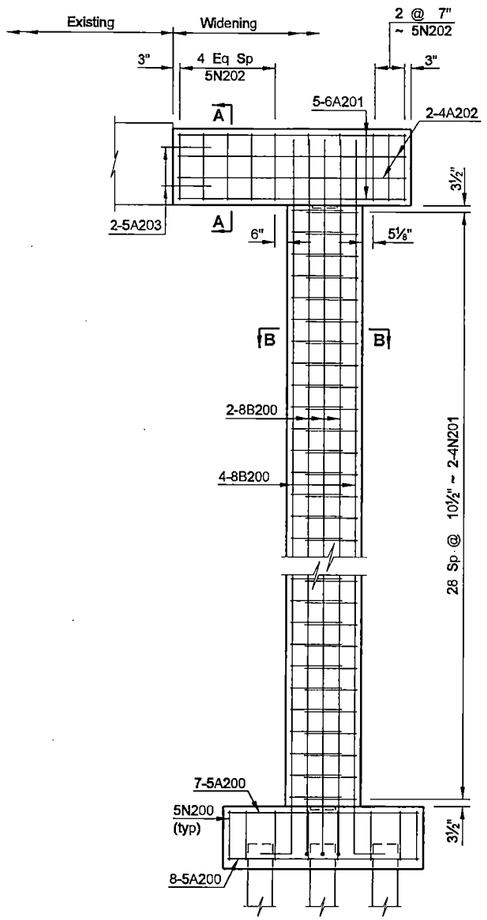
94-260.304R-11

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

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	34



PLAN



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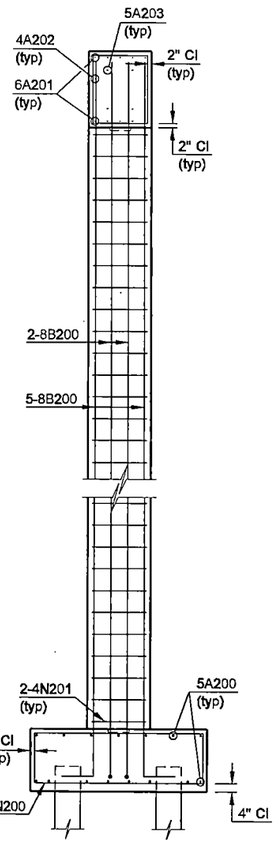

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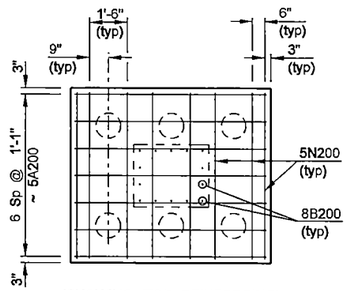
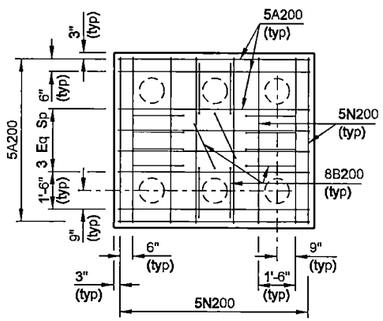
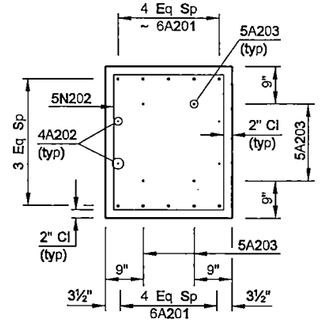


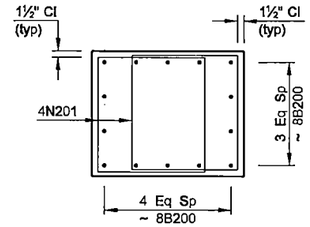
(SHOWING TOP REINFORCING)
FOOTING PLAN



(SHOWING BOTTOM REINFORCING)
FOOTING PLAN



A-A



B-B

NOTES:

The 5A203 bars shall be installed according to the manufacturer's recommendations, with a high strength adhesive specifically intended for concrete anchorage, in accordance with Sec. 806.02 of the NDDOT Standard Specifications. The 5A203 bar length is based on a 6" embedment into the existing concrete. The actual bar length shall be based on embedment according to the adhesive manufacturer's recommendations.

Bush Hammer Finish: Before any concrete is placed against existing concrete, the surface shall be prepared with a bush hammer to produce a clean rough surface with a minimum amplitude of ¼".

QUANTITIES	(ONE PIER)
CLASS AE-3 CONCRETE	14.9 CY
REINFORCING STEEL	2,098 LBS

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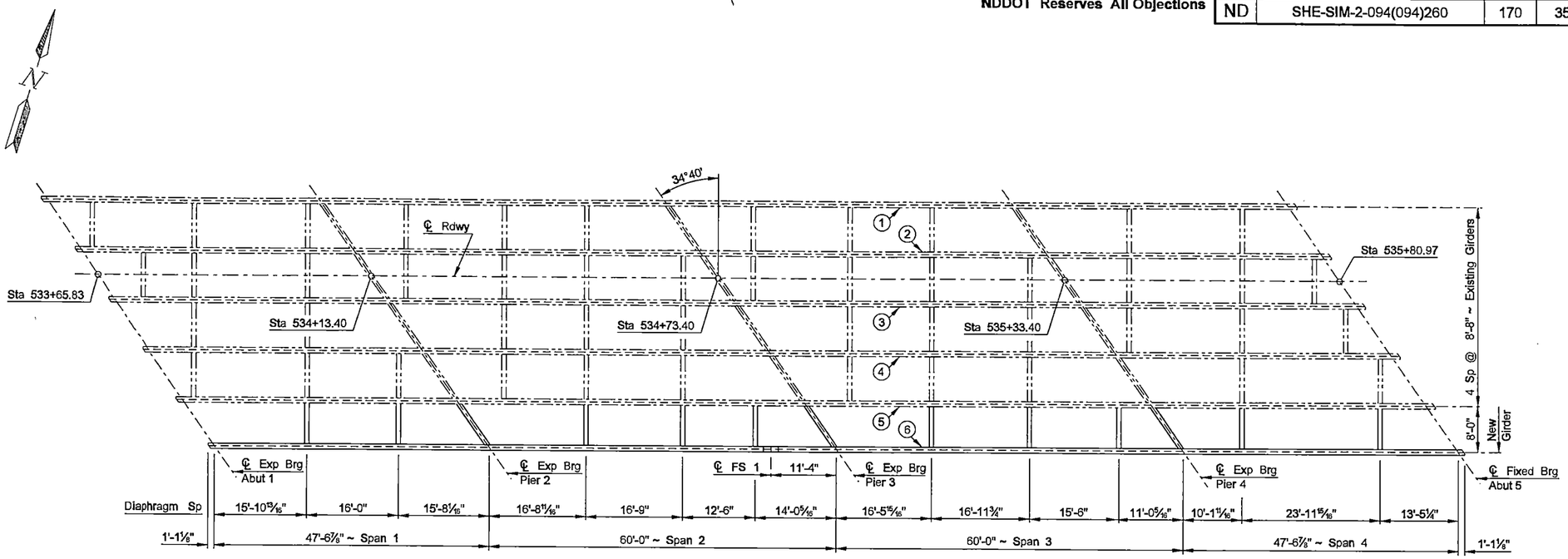
RRV & WRR SEPARATION WIDENING JAMESTOWN

(SHOWING REINFORCING)

PIER DETAILS

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

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	35



PLAN

NOMENCLATURE:

FS = Field Splice

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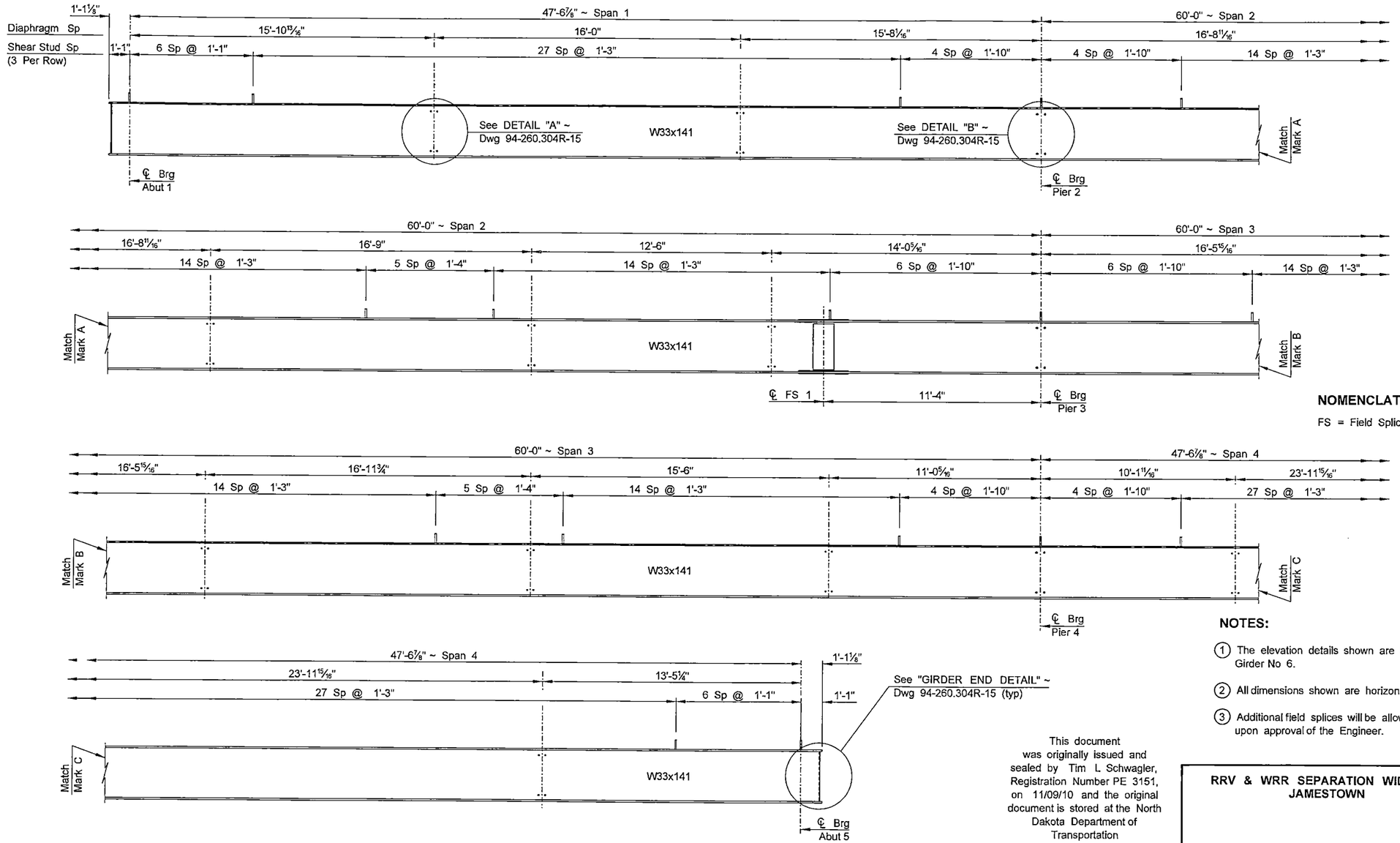
RRV & WRR SEPARATION WIDENING
JAMESTOWN

GIRDER LAYOUT

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

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	36



NOMENCLATURE:

FS = Field Splice

NOTES:

1. The elevation details shown are for Girder No 6.
2. All dimensions shown are horizontal.
3. Additional field splices will be allowed upon approval of the Engineer.

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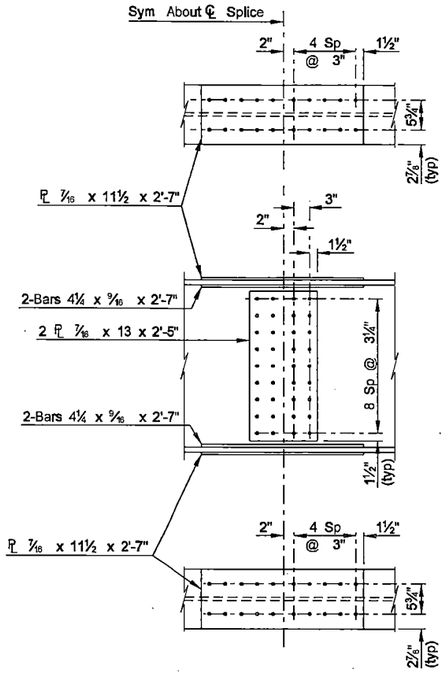
RRV & WRR SEPARATION WIDENING
JAMESTOWN

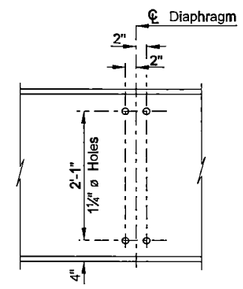
GIRDER ELEVATION

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

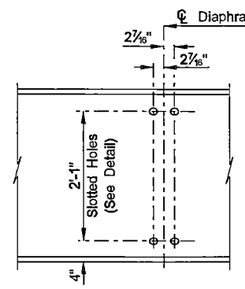
STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	37



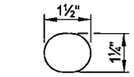
FIELD SPLICE DETAILS



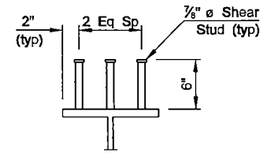
(INTERMEDIATE DIAPHRAGMS)
DETAIL "A"



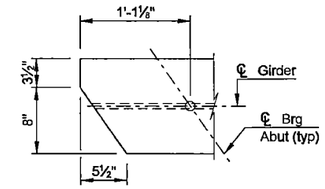
(PIER DIAPHRAGMS)
DETAIL "B"



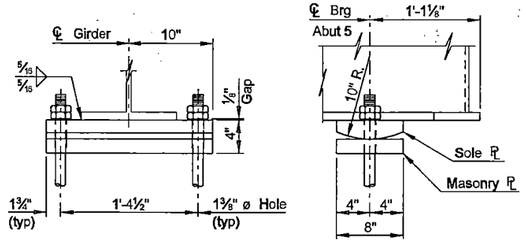
SLOTTED HOLE DETAIL



SHEAR STUD DETAIL

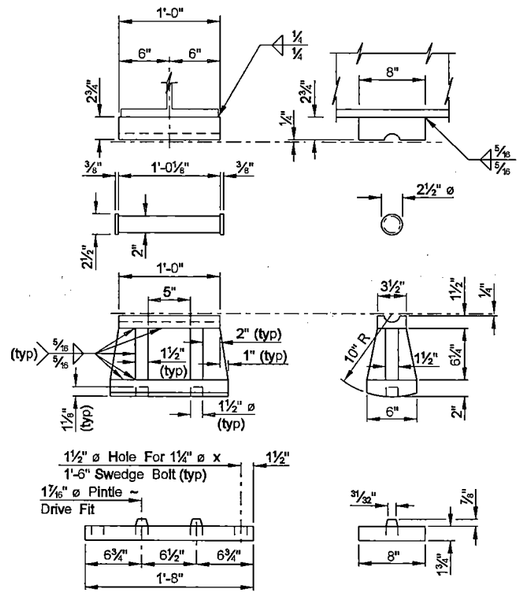


PLAN
GIRDER END DETAIL

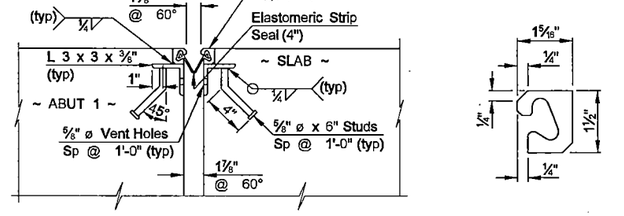


Sole ℙ ~ 8 x 2¼ x 1'-8"
Masonry ℙ ~ 8 x 1¾ x 1'-8"
Swedge Bolts ~ 1¼" x 1'-10"

FIXED BEARING DETAILS



EXPANSION BEARING DETAILS



TYPICAL SECTION

STEEL EXTRUSION

(Galvaize After Fabrication)
EXPANSION JOINT DETAILS

NOTE:

The expansion bearing pin and contact area shall be greased prior to installation. The grease shall be an all purpose lithium based grease. The grease shall be approved by the Engineer.

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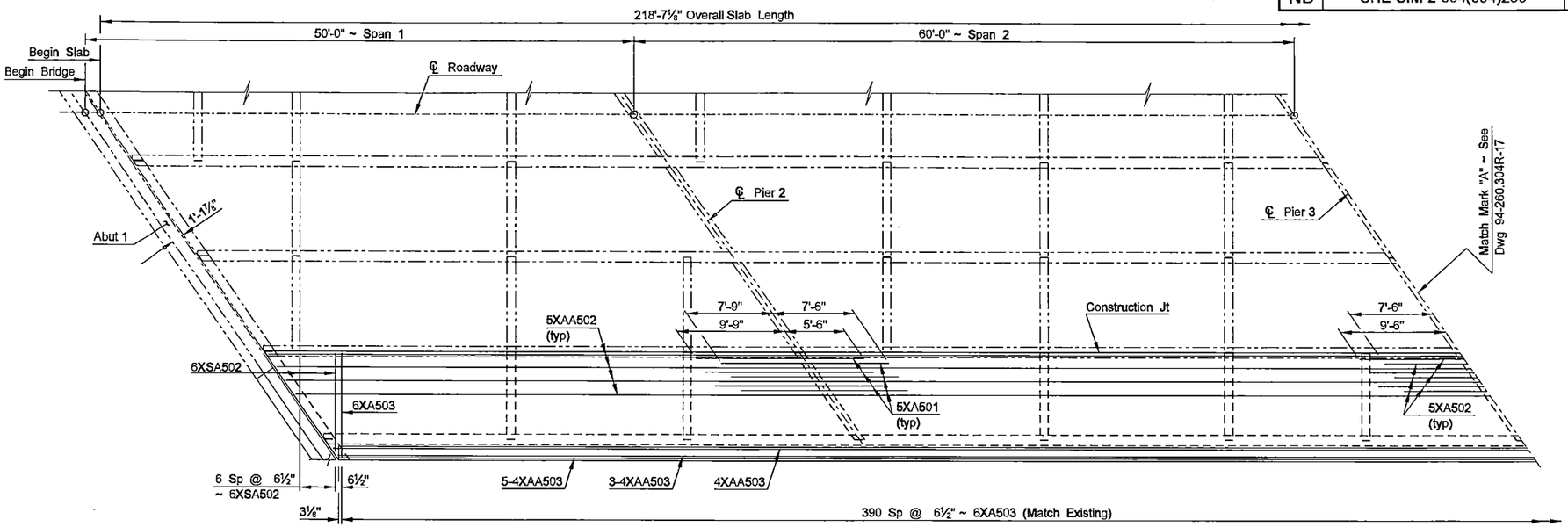
RRV & WRR SEPARATION WIDENING
JAMESTOWN

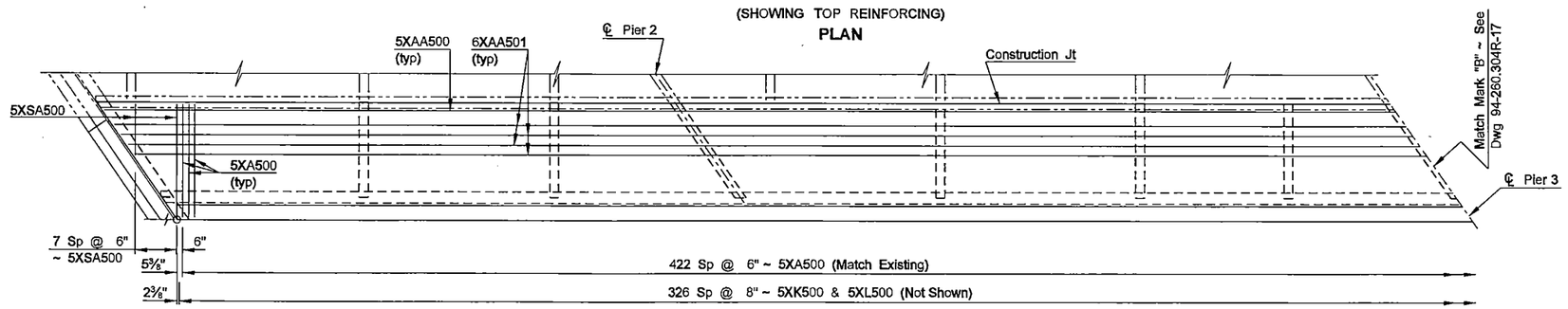
SUPERSTRUCTURE DETAILS

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

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	38



(SHOWING TOP REINFORCING)
PLAN



(SHOWING BOTTOM REINFORCING)
PLAN

NOTES:

① See Dwg 94-260.304R-13 for concrete diaphragm spacing

② The dead load deflections are zero. The screed elevations for Girder 6 should be calculated by taking shots on top of the existing deck at tenth points along ℄ Girder 5 prior to any deck removal. Subtract 0.24' from each tenth point elevation to obtain the tenth point screed elevations along ℄ Girder 6.

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QUANTITIES

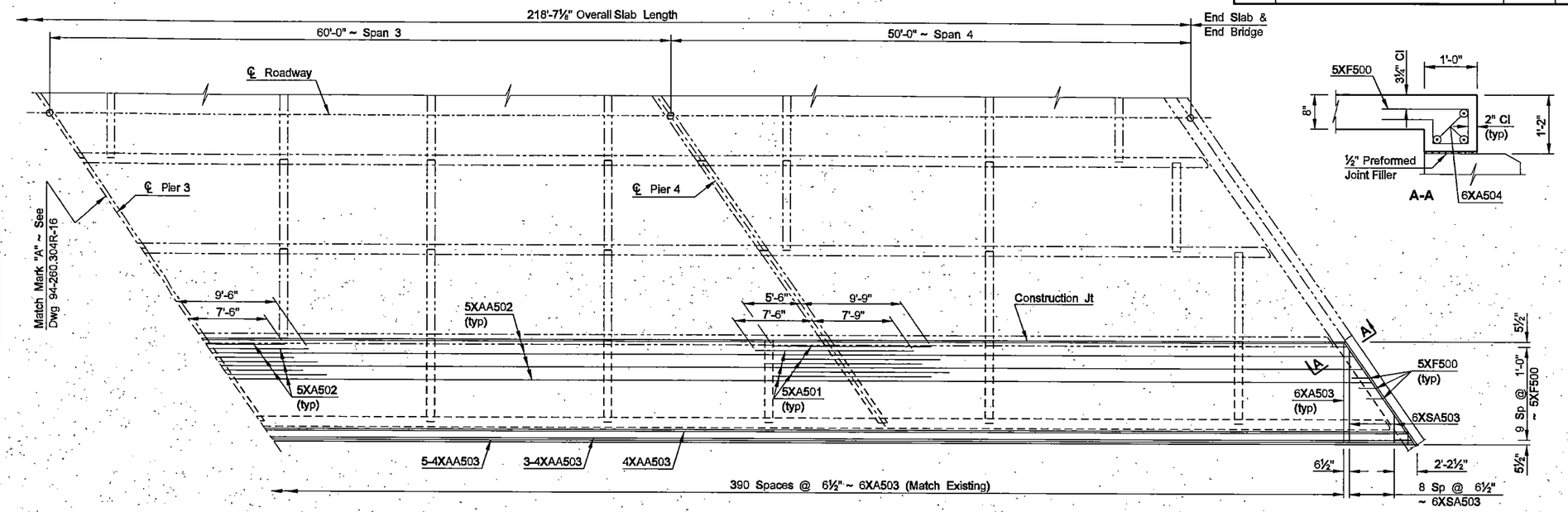
SEE DWG 94-260.304R-19

RRV & WRR SEPARATION WIDENING
JAMESTOWN

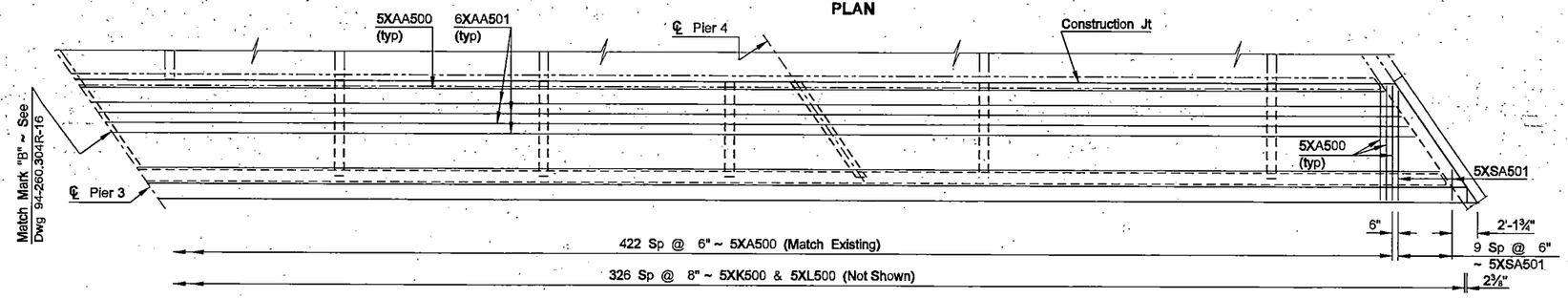
SLAB LAYOUT

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

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	39



(SHOWING TOP REINFORCING)
PLAN



(SHOWING BOTTOM REINFORCING)
PLAN

NOTE:

See Dwg 94-260.304R-13 for concrete diaphragm spacing

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QUANTITIES

SEE DWG 94-260.304R-19

RRV & WRR SEPARATION WIDENING JAMESTOWN

SLAB LAYOUT

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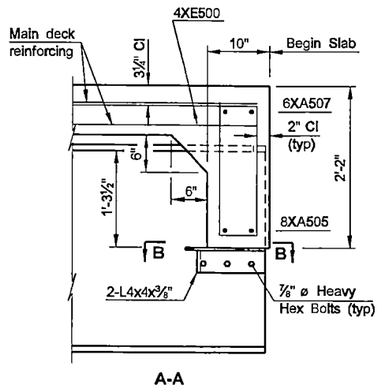
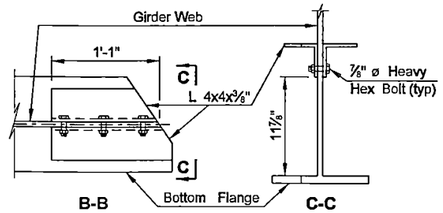
94-260.304R-17

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	40

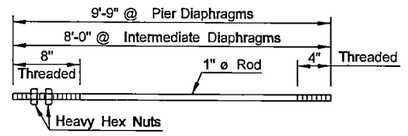
23 U.S.C. 409
NDDOT Reserves All Objections



A-A

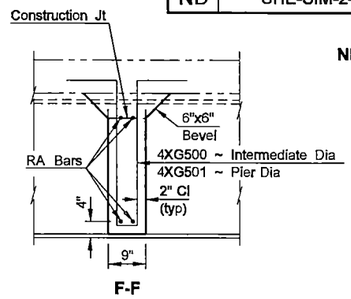


B-B C-C

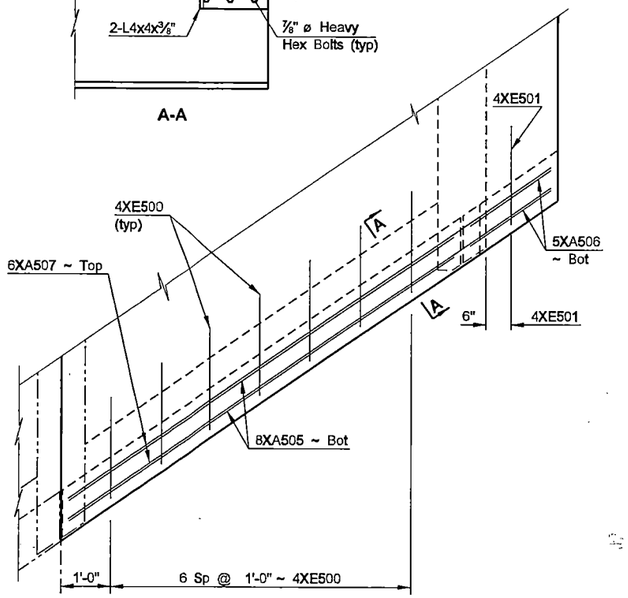


Included in the price bid for AAE-3 Concrete
(40 REQUIRED FOR INTERMEDIATE DIAPHRAGMS)
(12 REQUIRED FOR PIER DIAPHRAGMS)

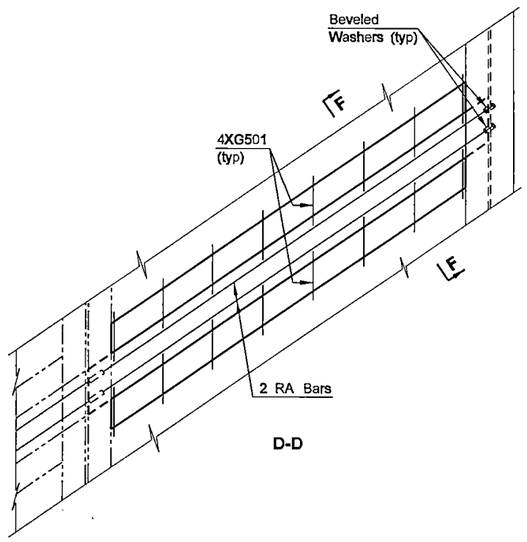
RA BAR DETAIL



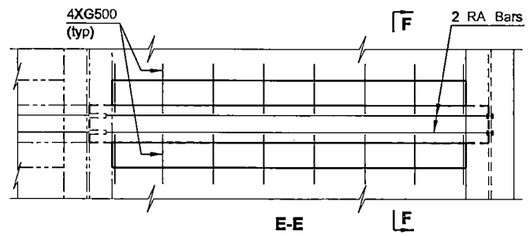
F-F



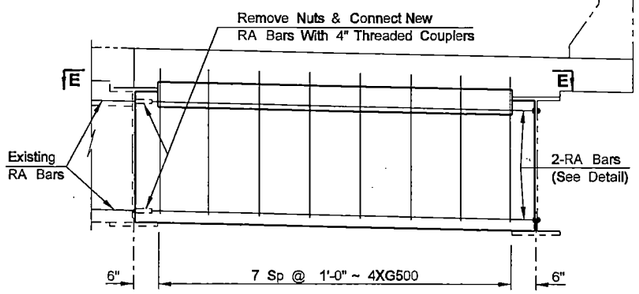
END BEAM PLAN



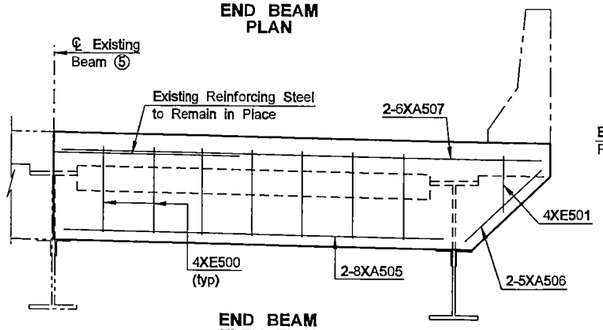
D-D



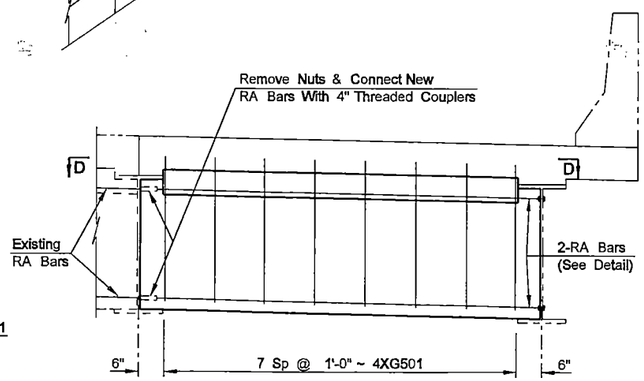
E-E



INTERMEDIATE DIAPHRAGM ELEVATION



END BEAM ELEVATION



PIER DIAPHRAGM ELEVATION

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QUANTITIES

SEE DWG 94-260.304R-19

RRV & WRR SEPARATION WIDENING JAMESTOWN

END BEAM & DIAPHRAGM DETAILS

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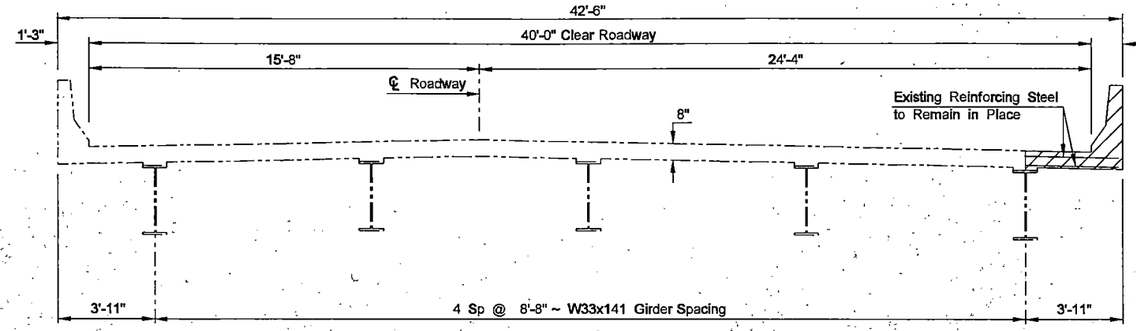
94-260.304R-18

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

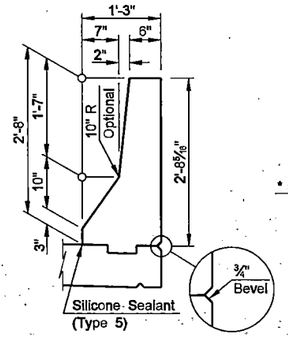
STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	41



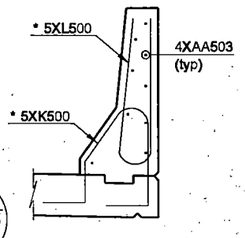
(SHOWING REMOVAL)

EXISTING SLAB SECTION

Hatched area indicates concrete to be removed. The deck shall be saw cut to a depth of 2" to produce a neat line between the concrete to be removed and the concrete to remain. Care shall be taken to ensure no damage is done to reinforcing steel that is to remain in place. Any rust scale found on the exposed existing reinforcing steel shall be thoroughly sandblast cleaned.



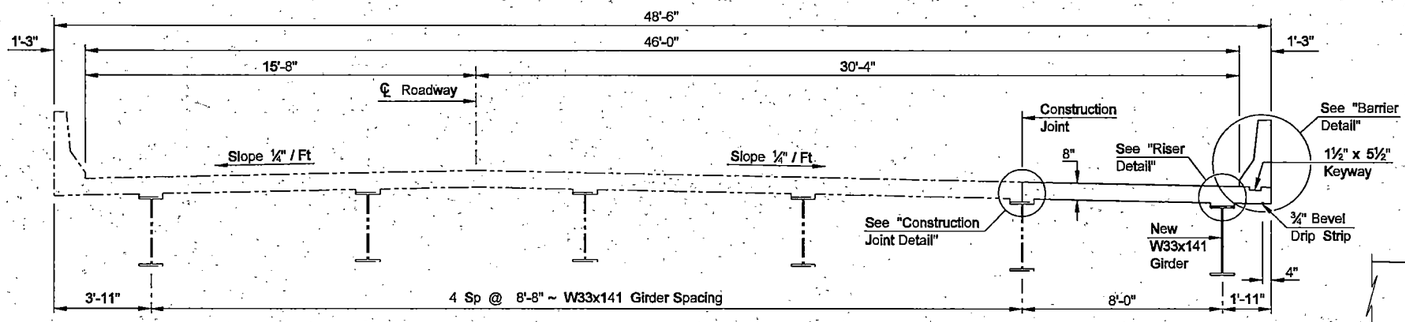
SHOWING DIMENSIONS



* Barrier reinforcing shall have a 1½" clearance.

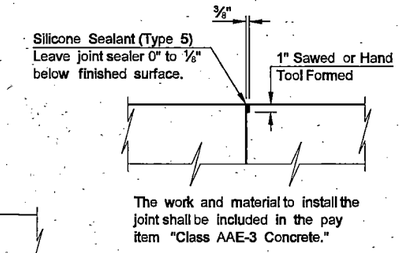
SHOWING REINFORCING

BARRIER DETAIL



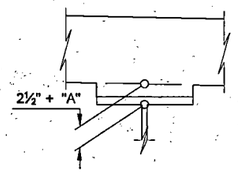
(SHOWING DIMENSIONS)

SLAB SECTION



The work and material to install the joint shall be included in the pay item "Class AAE-3 Concrete."

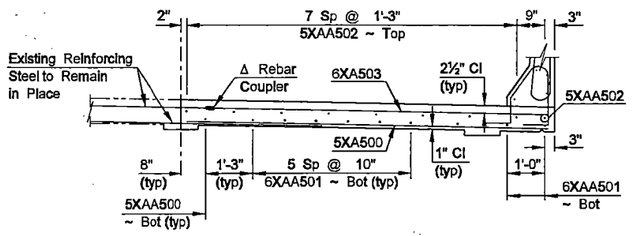
CONSTRUCTION JOINT DETAIL



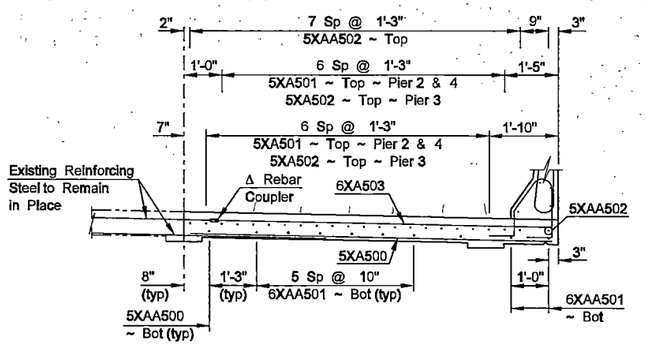
The "A" dimension can be positive or negative due to the beam camber.

RISER DETAIL

Δ The couplers shall be an approved mechanical connection capable of developing 125% of the specified yield strength of the reinforcing steel. The couplers shall be epoxy coated according to AASHTO M284. Damaged epoxy coating on the couplers shall be repaired according to Section 612.03E.



(SHOWING REINFORCING BETWEEN PIERS)



(SHOWING REINFORCING OVER PIERS)

SLAB SECTIONS

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QUANTITIES	
CLASS AAE-3 CONCRETE	81.6 CY
REINFORCING STEEL (EPOXY)	21,251 LBS

RRV & WRR SEPARATION WIDENING
JAMESTOWN

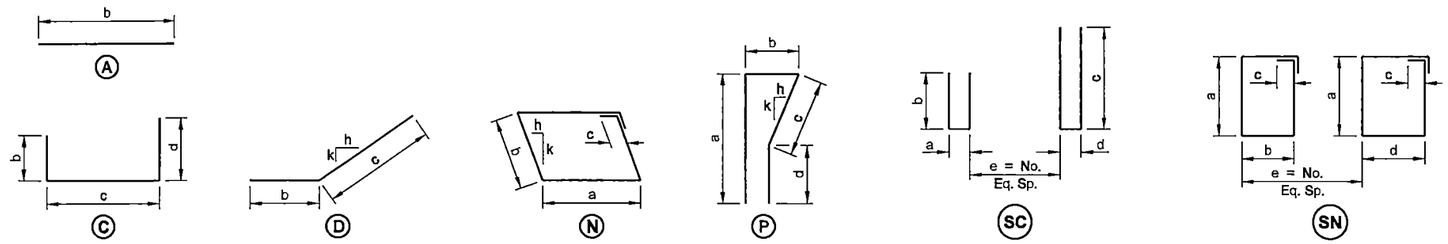
SLAB SECTION

BILL OF REINFORCING STEEL, GRADE 60

LETTER PREFIX OF BAR MARK DENOTES SHAPE ~ SEE BAR DETAILS

LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
ABUTMENT 1	6	A100	1	8'-2"		8'-2"							
	6	A101	1	16'-11"		16'-11"							
	5	A102	5	5'-6"		5'-6"							
	5	A103	13	16'-11"		16'-11"							
	5	A104	2	16'-8"		16'-8"							
	5	A105	2	14'-2"		14'-2"							
	6	A106	2	12'-4"		12'-4"							
	6	A107	3	2'-8"		2'-8"							
	6	A108	2	12'-2"		12'-2"							
	6	A109	1	7'-5"		7'-5"							
	6	A110	2	9'-3"		9'-3"							
	6	A111	2	4'-11"		4'-11"							
	6	A112	1	11'-0"		11'-0"							
	6	A113	1	4'-0"		4'-0"							
	5	C100	3	13'-11"		7'-9"	8"	5'-6"					
	5	C101	10	5'-8"		2'-6"	8"	2'-6"					
	5	C102	1	4'-8"		1'-4"	2'-0"	1'-4"					
	6	D100	2	6'-9"		1'-6"	5'-3"					12	5
	6	D101	4	15'-4"		5'-10"	9'-6"					12	6
	6	D102	3	7'-0"		2'-9"	4'-3"					12	8
	5	N100	4	15'-4"	5'-2"	2'-0"	6"					0	12
	5	N101	10	12'-6"	2'-8"	3'-1"	6"					0	12
	5	P100	10	11'-2"	4'-8"	1'-6"	2'-0"	3'-0"				5	12
	5	SC100	1	69'-7"	8"	5'-10"	7'-5"	8"	4				
	5	SN100	1	42'-8"	3'-1"	1'-0"	6"	2'-6"	3				

LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
ABUTMENT 5	6	A600	1	10'-2"		10'-2"							
	6	A601	1	18'-11"		18'-11"							
	5	A602	5	7'-4"		7'-4"							
	5	A603	10	18'-11"		18'-11"							
	5	A604	1	18'-4"		18'-4"							
	6	A605	2	17'-0"		17'-0"							
	6	A606	2	12'-8"		12'-8"							
	5	A607	2	8'-0"		8'-0"							
	5	A608	2	3'-11"		3'-11"							
	6	A609	3	2'-8"		2'-8"							
	6	A610	2	4'-11"		4'-11"							
	6	A611	2	12'-2"		12'-2"							
	6	A612	1	7'-4"		7'-4"							
	6	A613	1	11'-0"		11'-0"							
	6	A614	1	4'-0"		4'-0"							
	5	C600	3	14'-8"		7'-0"	8"	7'-0"					
	5	C601	1	4'-8"		1'-4"	2'-0"	1'-4"					
	6	D600	1	7'-7"		2'-4"	5'-3"					12	5
	6	D601	1	6'-11"		1'-8"	5'-3"					12	5
	6	D602	4	15'-4"		5'-10"	9'-6"					12	6
	6	D603	3	7'-0"		2'-9"	4'-3"					12	8
	5	N600	4	15'-4"	5'-2"	2'-0"	6"					0	12
	5	N601	10	12'-8"	2'-8"	3'-2"	6"					0	12
	5	P600	14	9'-8"	4'-0"	1'-6"	2'-0"	2'-2"				5	12
	5	SC600	1	62'-1"	8"	5'-1"	6'-8"	8"	4				
	5	SN600	1	33'-0"	3'-2"	1'-4"	6"	2'-4"	2				



STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	42

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

NOTES:

1. Fabrication and tolerances shall be in accordance with the CRSI Manual of Standard Practice.
2. All dimensions are out to out of bars.
3. Nominal length of each bent bar or cut bar is the sum total of the detailing dimensions for that bar, unless otherwise noted.
4. Adjacent "AA" bars shall be turned end for end so that the splice locations are staggered.
5. The "f" dimension indicates the inside radius in inches unless otherwise noted.
6. An "X" preceding a bar designation indicates an epoxy coated bar.
7. All reinforcing steel shall be grade 60.

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RRV & WRR SEPARATION WIDENING
JAMESTOWN

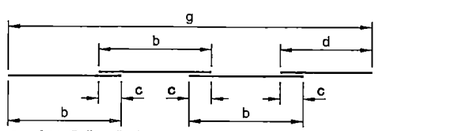
REINFORCING BAR LIST & DETAILS

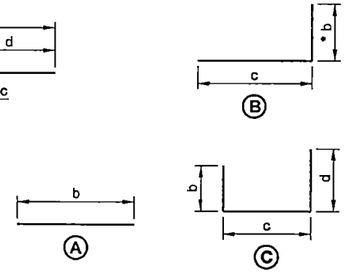
BILL OF REINFORCING STEEL, GRADE 60

LETTER PREFIX OF BAR MARK DENOTES SHAPE ~ SEE BAR DETAILS

LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
PIERS	5	A200	45	7'-8"		7'-8"							
	6	A201	30	9'-2"		9'-2"							
	4	A202	12	9'-2"		9'-2"							
	5	A203	12	2'-0"		2'-0"							
	8	B200	42	31'-9"		2'-0"	29'-9"						
	4	C200	6	3'-2"		6"	2'-2"	6"					
	5	N200	24	18'-4"	6'-8"	2'-0"	6"					0	12
	4	N201	174	9'-8"	2'-1"	2'-3"	6"					0	12
	5	N202	24	10'-8"	2'-2"	2'-8"	6"					0	12

LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
SUPERSTRUCTURE EPOXY	5	XA500	423	9-7"		9'-7"							
	5	XA501	28	15'-3"		15'-3"							
	5	XA502	14	17'-0"		17'-0"							
	6	XA503	391	8'-11"		8'-11"							
	6	XA504	3	11'-8"		11'-8"							
	8	XA505	2	9'-4"		9'-4"							
	5	XA506	2	2'-1"		2'-1"							
	6	XA507	2	11'-8"		11'-8"							
	4	XE500	7	6'-2"	2'-0"	1'-9"	7"	1'-10"					
	4	XE501	1	4'-10"	2'-0"	1'-1"	7"	1'-2"					
	5	XF500	10	5'-2.25"	2'-0"	8"	9.75"	5.5"	1'-3"				
	4	XG500	80	8'-3"	2'-11"	5"	2'-11"	1'-0"				0	12
	4	XG501	24	8'-4"	2'-11"	6"	2'-11"	1'-0"				0	12
	5	XK500	327	4'-11"	1'-4"	8"	11"	8"	1'-0"	2.5"	8"	8.5	12
	5	XL500	327	5'-0"	3"	2'-2"	8"	2'-2"		2.5"		1.25	12
	5	XAA500	2	225'-9"		60'-0"	2'-6"	45'-9"	3		218'-3"		
	6	XAA501	8	227'-3"		60'-0"	3'-0"	47'-3"	3		218'-3"		
	5	XAA502	9	224'-3"		60'-0"	2'-0"	44'-3"	3		218'-3"		
	4	XAA503	9	221'-10"		60'-0"	1'-6"	41'-10"	3		217'-4"		
	5	XSA500	1	55'-0"	4'-4"	9'-5"			7				
	5	XSA501	1	58'-9"	2'-7"	9'-2"			9				
	6	XSA502	1	46'-8"	4'-4"	9'-0"			6				
	6	XSA503	1	52'-6"	2'-8"	9'-0"			8				



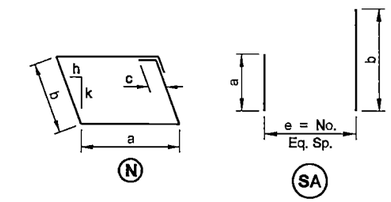


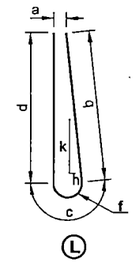
STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	43

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

NOTES:

1. Fabrication and tolerances shall be in accordance with the CRSI Manual of Standard Practice.
2. All dimensions are out to out of bars.
3. Nominal length of each bent bar or cut bar is the sum total of the detailing dimensions for that bar, unless otherwise noted.
4. Adjacent "AA" bars shall be turned end for end so that the splice locations are staggered.
5. The "f" dimension indicates the inside radius in inches unless otherwise noted.
6. An "X" preceding a bar designation indicates an epoxy coated bar.
7. All reinforcing steel shall be grade 60.





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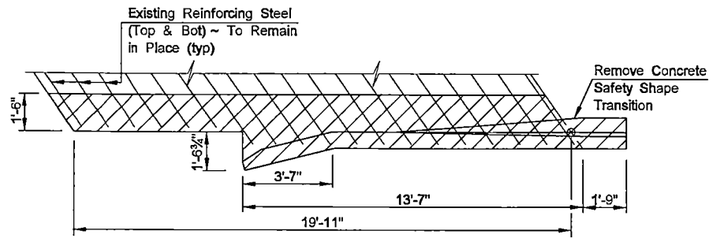
RRV & WRR SEPARATION WIDENING JAMESTOWN

REINFORCING BAR LIST & DETAILS

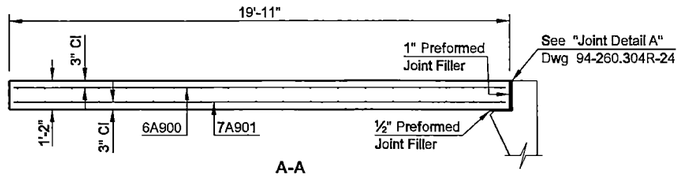
23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	44

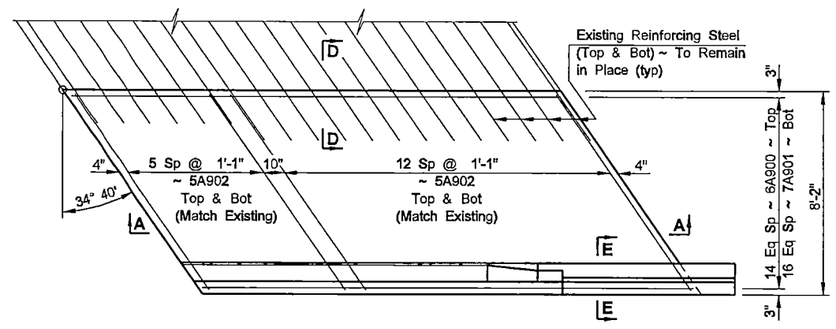
Hatched area indicates concrete to be removed. The approach slab shall be saw cut to a depth of 2" to produce a neat line between the concrete to be removed and the concrete to remain. Care shall be taken to ensure no damage is done to reinforcing steel that is to remain in place.



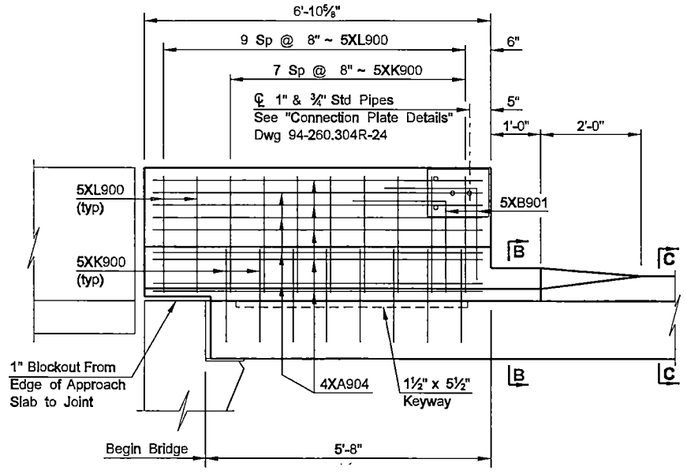
PART EXISTING APPROACH SLAB PLAN



A-A

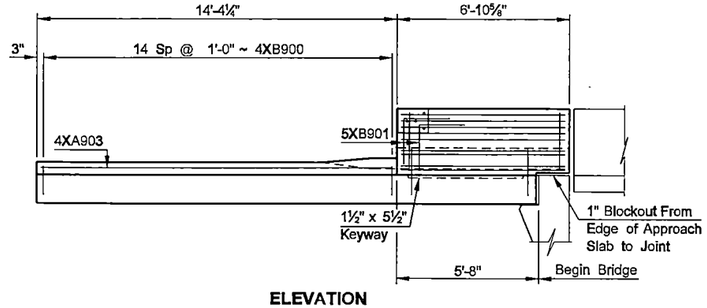


PLAN



(SHOWING FRONT FACE)

BARRIER & CURB TRANSITION ELEVATION



ELEVATION

NOTE:

See Dwg 94-260.304R-24 for notes and Sections B-B, C-C, D-D and E-E.

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QUANTITIES	
APPROACH SLAB	18.1 SY

RRV & WRR SEPARATION WIDENING
JAMESTOWN

AT BEGIN BRIDGE

APPROACH SLAB DETAILS

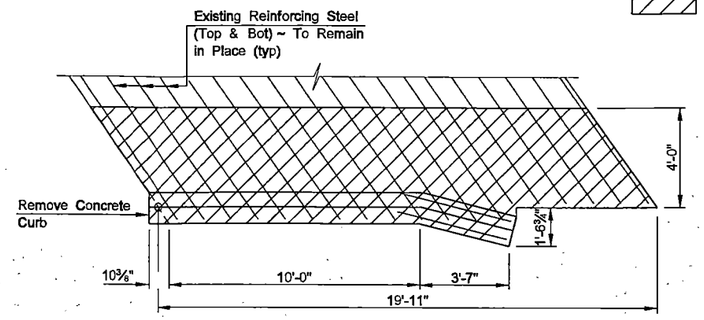
12/22/2009 3:14:12 PM rhauck R:\project\20094260.094\bridge\94-260.304R\170BR_44_APPRSLAB-1.DGN 09MKC055 RAR

94-260.304R-22

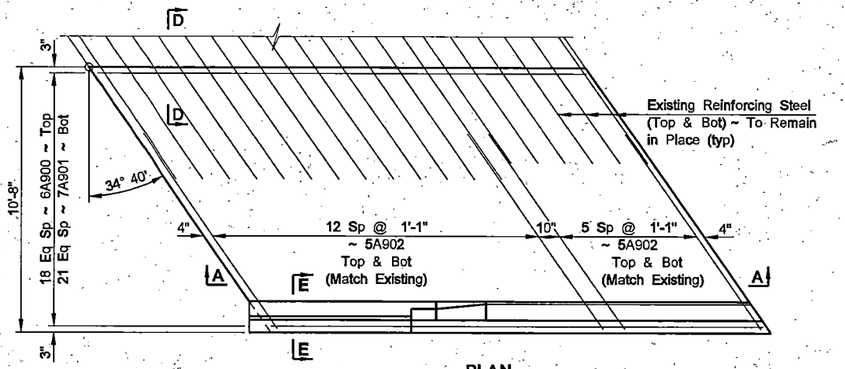
23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	45

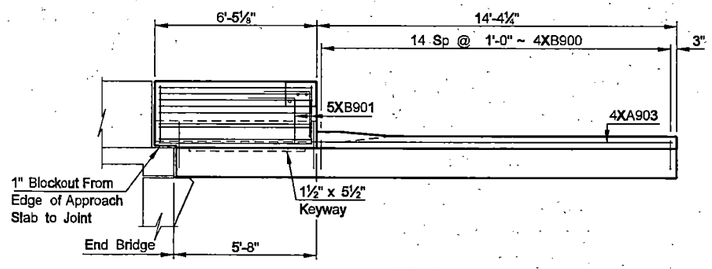
Hatched area indicates concrete to be removed. The approach slab shall be saw cut to a depth of 2" to produce a neat line between the concrete to be removed and the concrete to remain. Care shall be taken to ensure no damage is done to reinforcing steel that is to remain in place.



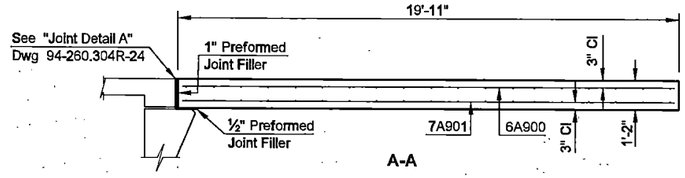
PART EXISTING APPROACH SLAB PLAN



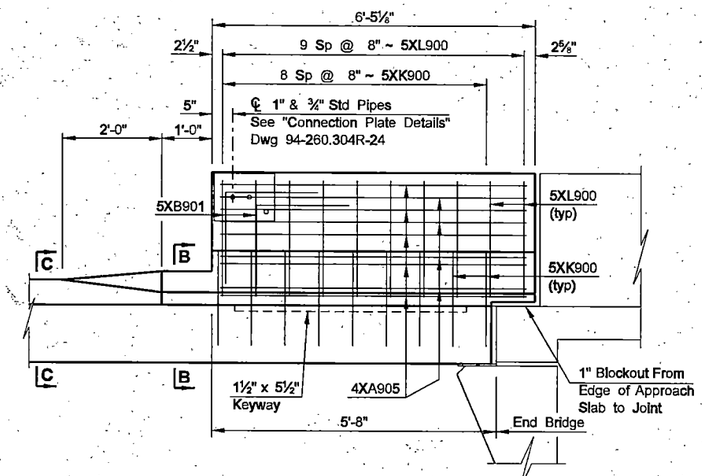
PLAN



ELEVATION



A-A



(SHOWING FRONT FACE)

BARRIER & CURB TRANSITION ELEVATION

NOTE:

See Dwg 94-260.304R-24 for notes and Sections B-B, C-C, D-D and E-E.

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QUANTITIES	
APPROACH SLAB	23.6 SY

RRV & WRR SEPARATION WIDENING
JAMESTOWN

AT END BRIDGE

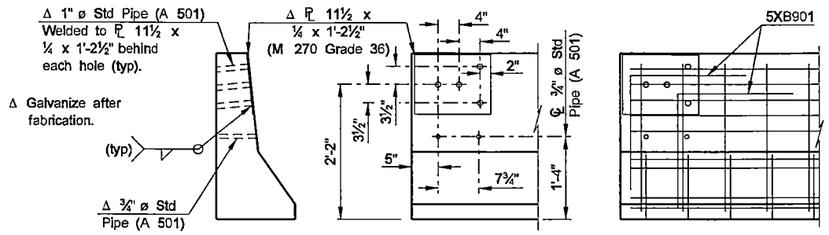
APPROACH SLAB DETAILS

12/22/2009 3:14:20 PM rhauck R:\project\20094260.094\bridge\94-260.304R\170BR_45_APPRSLAB-2.DGN 09MKC056 RAR

94-260.304R-23

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

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SHE-SIM-2-094(094)260	170	46



SHOWING DIMENSIONS **SHOWING REINFORCING**

(SHOWING FRONT FACE)

CONNECTION PLATE DETAILS

NOTES:

The estimated material quantities shown are for information purposes only. All materials including select backfill, concrete, reinforcing bars, preformed joint filler, silicone sealant at the gutter line, connection plates and pipes, and all labor required to remove and build the approach slabs, curbs and barriers shall be included in the pay item "Bridge Approach Slab-Remove & Replace." The concrete shall be Class AE-3 and the reinforcing steel shall be Grade 60.

Surface Finish "D" shall be required on all barrier surfaces.

The bar marks beginning with an "X" indicate an epoxy coated bar. The dimensions shown in the bent bar details are out to out.

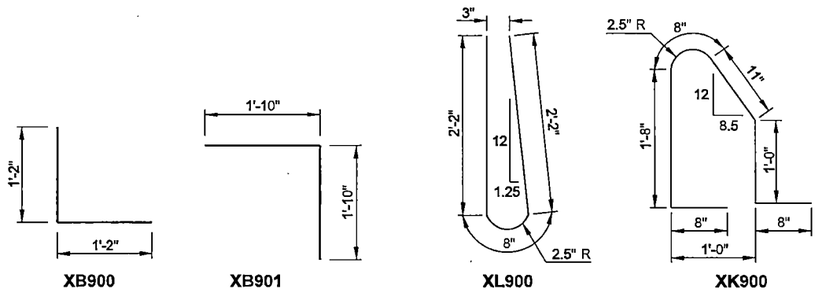
SKEW ANGLE = 34° 40'

BAR LIST - BOTH SLABS

SIZE	MARK	NO.	LENGTH
6	A900	34	19'-7"
7	A901	39	19'-7"
5	A902	76	9'-6"
4	XA903	2	14'-0"
4	XA904	9	6'-6"
4	XA905	9	6'-1"
4	XB900	30	2'-4"
5	XB901	4	3'-8"
5	XK900	17	5'-7"
5	XL900	20	5'-0"

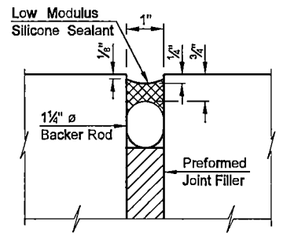
ESTIMATED MATERIAL QUANTITIES

REINFORCING STEEL (LBS)	CONCRETE (CY)
3,674	17.6

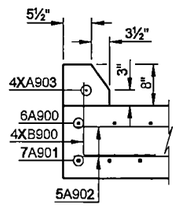


XB900 XB901 XL900 XK900

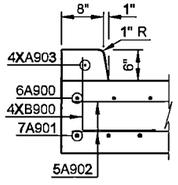
BENT BAR DETAILS



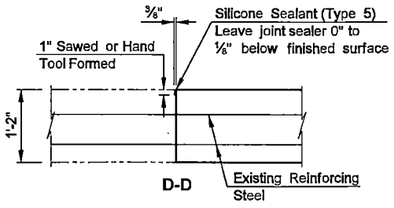
JOINT DETAIL A



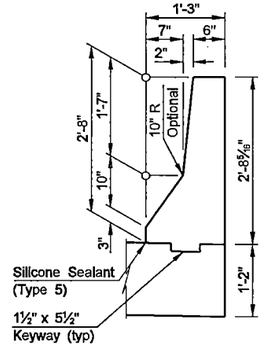
B-B



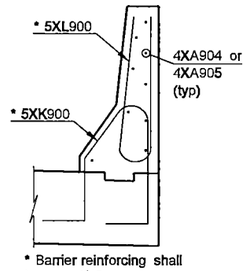
C-C



D-D



SHOWING DIMENSIONS



SHOWING REINFORCING

* Barrier reinforcing shall have a 1½" clearance.

E-E

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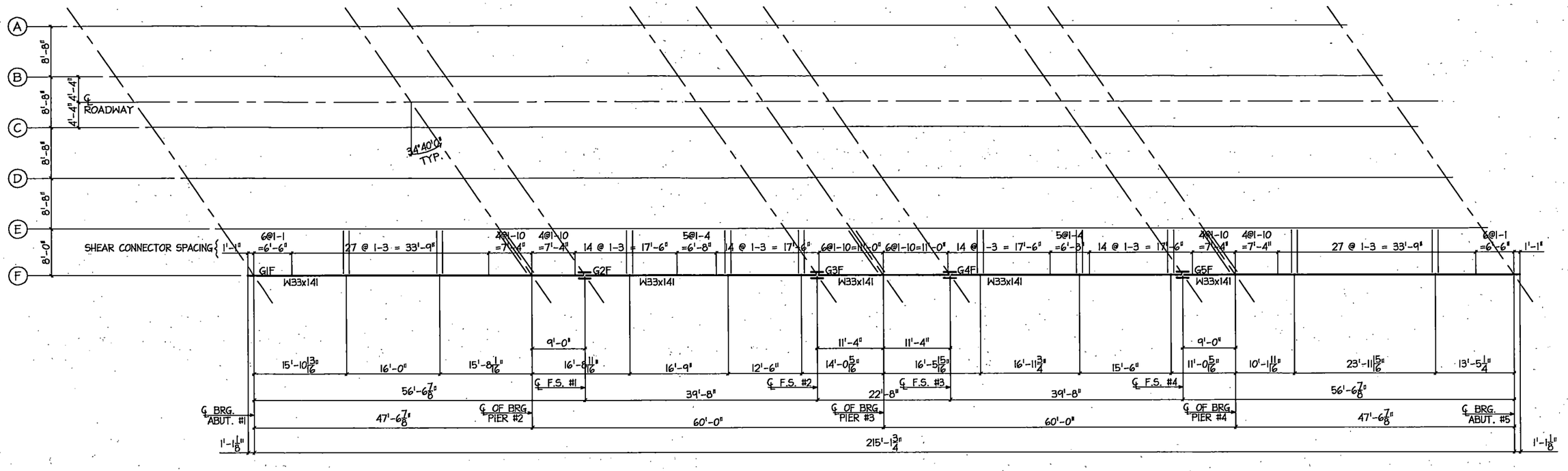
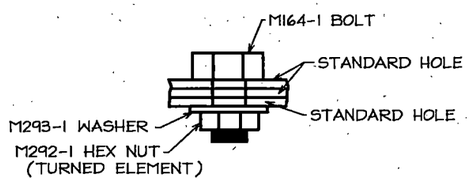
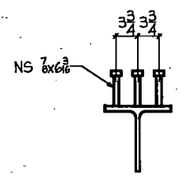
RRV & WRR SEPARATION WIDENING
JAMESTOWN

APPROACH SLAB DETAILS





DETAIL @ FIELD SPLICE
INSTALLATION DETAIL
NOTE: BOLTS TO BE INSTALLED WITH THE NUTS ON THE INTERIOR SIDE OF THE WEB OR THE UPPER SIDES OF FLANGES.



TYPICAL STUD LAYOUT AT GIRDER FIELD APPLIED

ERECTION PLAN
ALL LONGITUDINAL DIMENSIONS SHOWN ON PLAN ARE MEASURED HORIZONTALLY AND INCLUDE NO CORRECTION FOR GRADE.

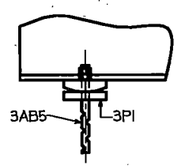
NORTH

NO EXCEPTIONS NOTED

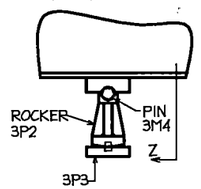
NDDOT Digitally signed by NDDOT DN: cn=NDDOT, o=Dean Stolz, ou=Bridge Division, email=dstolz@nd.gov, c=US Date: 2011.04.07 14:08:57 -05'00'

REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS

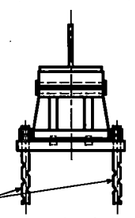
NDDOT



DETAIL @ ABUTMENT #5



TYPICAL DETAIL @ PIERS & ABUTMENT #1



SECTION Z

LENGTH=GRIP+1/8(ROUNDED UP IF REQ'D) LOCATION LIST

# OF PCS.	DIA.	BOLTS LGTH.	BOLTS LOAD IND. WASH.	BOLTS FLAT WASH.	BOLTS TYPE	TOT. GRIP	THICKNESS OF MATERIAL CONNECTED					LOCATION	
80	7/8	3 1/4	NONE	1-EA.	M164-1	1 15/16	7/16	15/16	9/16			TOP FLANGE SPLICE	(20x4=80)
80	7/8	3 1/4	NONE	1-EA.	M164-1	1 15/16	7/16	15/16	9/16			BOTTOM FLANGE SPLICE	(20x4=80)
144	7/8	2 3/4	NONE	1-EA.	M164-1	1 1/2	7/16	5/8	7/16			WEB SPLICE	(36x4=144)

INDEX OF DRAWINGS

SHEET #	DESCRIPTION
E1	ERECTION PLAN
E2	BLOCKING DIAGRAM
GN1	GENERAL NOTES
SU-1	SHOP USE SHEET
S2	SPLICE PLATES
S3	BEARINGS
S4-S8	GIRDERS(G1F-G5F)
WP1	WELD PROCEDURES
B1	FIELD BOLTS

BRIDGE #:94-260.304R

PROJECT #SHE-SIM-2-094(094)260

STATION: 534+73.40

1. SEE GN1 FOR TYPICAL SHOP NOTES.
2. ALL MATERIAL TO BE MADE IN USA.
3. MILL CERTIFICATES REQUIRED ON ALL MATERIAL.
4. ALL WELDERS TO BE CERTIFIED.

HOLES:

PAINT:

MEMBERS TO BE ERECTED USING DIRECTION MARK ON MEMBER.

REVISIONS

LET	DATE	BY
A		
B		
C		

EGGER STEEL COMPANY EST 1946

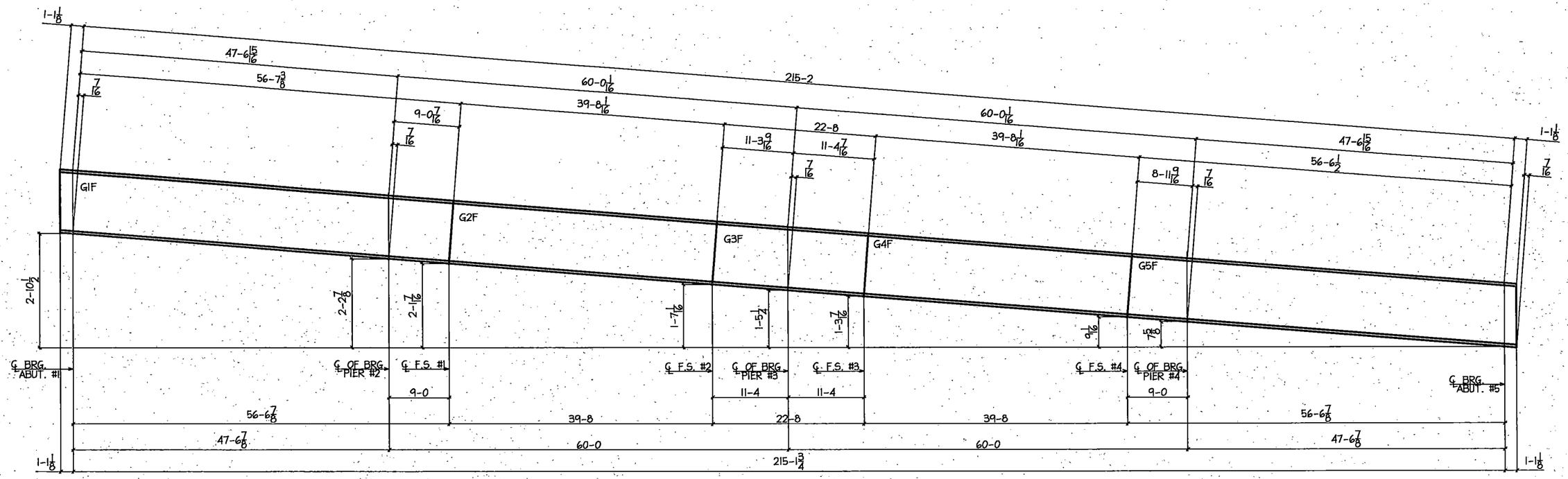
Egger Steel Company
909 South 7th Avenue
Sioux Falls, South Dakota 57104

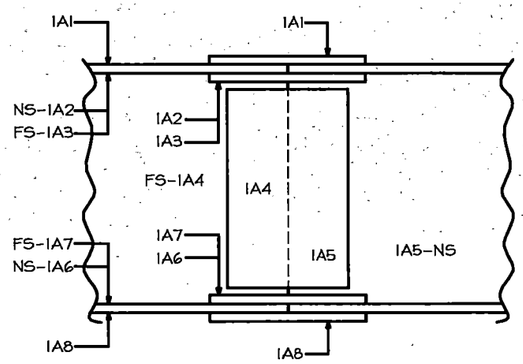
605.336.2490 (Office)
605.336.6816 (Fax)

ERECTION PLAN

RRV & WRR SEPARATION WIDENING
STRUCTURE: 217-3 WFG BRIDGE WIDENING
LOCATION: STUTSMAN CO., ND
CUSTOMER: WANZEK CONSTRUCTION
ARCHITECT: ND/DOT

DRAWN BY	DATE
AH	3/11
CHK'D BY	DATE
BK	
RESP. DET.	WORK TYPE
-	M
JOB NO.	DWG. NO.
11006D	E1



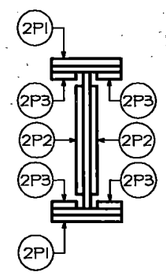


TYPICAL MATCH MARKING FOR SPLICE MATERIAL

THE INTERSECTION OF A GIRDER LINE LETTER & JOINT NUMBER WILL FORM AN IDENTIFICATION MATCH MARK. EXAMPLE: 1A, THIS MARK WILL BE PLACED ON THE ENDS OF GIRDERS AT THE SPLICES. ALL SPLICE MATERIAL WILL BE MARKED WITH A NUMERAL FOR EACH INDIVIDUAL PIECE OF SPLICE MATERIAL. EXAMPLE: 1A2, CORRESPONDING MARKS ALSO WILL BE AFFIXED ON THE GIRDERS. THE MARKS MUST BE POSITIONED TO PREVENT INTERCHANGE OR ROTATION OF THE SPLICE MATERIAL, WITH MARKS OPPOSITE EACH OTHER IN AND OFF-CENTER OF PLATE POSITION AND SHALL BE CLEARLY MADE WITH 1/2" SIZE STEEL NUMBERING DIES.

BLOCKING DIAGRAM

DIMENSIONS SHOWN FOR BLOCKING DIAGRAM ARE MEASURED ALONG CENTER LINE OF GIRDER AT THE BOTTOM OF BOTTOM FLANGE AND ARE DEVELOPED.



SPLICE PLATE DETAIL

No Exceptions Noted
BY: D Stolz
DATE: April 7, 2011
REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS
NDDOT

BRIDGE #:94-260.304R

PROJECT #SHE-SIM-2-094(094)260

STATION: 534+73.40

1. SEE GNI FOR TYPICAL SHOP NOTES.
2. ALL MATERIAL TO BE MADE IN USA.
3. MILL CERTIFICATES REQUIRED ON ALL MATERIAL.
4. ALL WELDERS TO BE CERTIFIED.

HOLES:

PAINT:

MEMBERS TO BE ERECTED USING DIRECTION MARK ON MEMBER.

REVISIONS

LET	DATE	BY
A		
B		
C		

EGGER STEEL COMPANY EST 1946

Egger Steel Company
909 South 7th Avenue
Sioux Falls, South Dakota 57104

605.336.2490 (Office)
605.336.6816 (Fax)

BLOCKING DIAGRAM

STRUCTURE: RRV & WRR SEPARATION WIDENING 217-3 WFG BRIDGE WIDENING
LOCATION: STUTSMAN CO., ND
CUSTOMER: WANZEK CONSTRUCTION
ARCHITECT: ND/DOT

DRAWN BY	DATE
AH	3/11
CHK'D BY	DATE
BK	
RESP. DET.	WORK TYPE
-	M
JOB NO.	DWG. NO.
11006D	E2

GENERAL NOTES

SPECIFICATIONS:
1. WORKMANSHIP AND MATERIAL TO BE IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR HIGHWAY BRIDGES, 17TH EDITION. AND SUPPLEMENTAL SPECIFICATIONS.

2. ALL WELDING REQUIREMENTS, PROCEDURES AND INSPECTIONS SHALL BE IN ACCORDANCE WITH THE BRIDGE WELDING CODE ANSI/AASHTO/AWS D1.5-08

MATERIAL REQUIREMENTS:
1. ALL MATERIAL TYPE, GRADE, ETC. WILL BE SHOWN ON THE DETAILS.

2. MATERIAL NOTED AS "CVN" OR "T2" INDICATES MATERIAL WHICH IS SUBJECT TO ZONE 2 CHARPY V-NOTCH TESTING AS FOLLOWS:
   15 FT/LBS. AT 40°F (H) FREQUENCY FOR THICKNESS LESS THAN OR EQUAL TO 2".

3. BOLTS:
   -HIGH STRENGTH BOLTS SHALL BE AASHTO M164(TYPE 1) WITH AASHTO M291-1 HEAVY HEX NUT AND ONE M293-1 WASHER(UNLESS NOTED).
   -ALL PERMANENT HIGH STRENGTH BOLTS SHALL BE ROTATIONAL CAPACITY TEST PRIOR TO USE. DO NOT MIX NUTS AND BOLTS FROM DIFFERENT LOTS.

4. ALL MATERIAL TO BE "MADE IN USA" AND MILL CERTIFICATIONS ARE REQUIRED.

FABRICATION NOTES:
1. ALL FABRICATION TO CONFORM TO THE 2008 EDITION OF THE ND/DOT STANDARD SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND THE DESIGN DRAWINGS.

2. ALL FINISHED HOLES TO BE ⊠⌀ U.N.(ALL HOLES TO BE DEBURRED).

3. THE WEB OF THE DIRECTION END SHALL HAVE THE PIECE MARK AND WEIGHT APPLIED WITH A LOW-STRESS DIE STAMP. PLACE MARKS ON THE INTERIOR SURFACES OF EXTERIOR GIRDERS.

4. NOT USED

5. ALL MATERIAL SHALL BE IDENTIFIED BY HEAT NUMBERS, COLOR CODES OR ASTM GRADE THROUGHOUT FABRICATION.

6. TOP AND BOTTOM FLANGE PLATES AND SOLE PLATES TO BE 90 DEGREES TO THE WEB.

7. DO NOT PUNCH OR SHEAR CUT ANY MATERIAL OVER 5/8" THICK.

8. NOT USED

9. NOT USED

10. ARROWS ON DETAILS (←——→) INDICATE DIRECTION OF ROLLING FOR STEEL PLATES WHEN REQUIRED.

11. ALL RE-ENTRANT CUTS SHALL HAVE A MINIMUM RADIUS OF 1"(UN).

12. MEMBERS WEIGHING MORE THAN 3 TONS SHALL HAVE THE WEIGHT MARKED THEREON.

13. ALL FLAME CUTTING TO MEET ANSI RATING OF 1000. FLAME CUT SURFACES SHALL HAVE CORNERS ROUNDED TO 1/16" RADIUS AFTER FLAME CUTTING.

14. ALL CORNERS OF OXYGEN CUT OR SHEARED EDGES TO BE PAINTED SHOULD BE ROUNDED ENOUGH TO HOLD PAINT(APP. 1/16" RAD.)

SHOP WELDING:
1. WELDING SHALL BE IN ACCORDANCE WITH ANSI/AASHTO/AWS BRIDGE WELDING CODE D1.5-08 AND THE DESIGN DRAWINGS.

2. ALL WELDERS ON THIS PROJECT TO BE CERTIFIED PER ANSI/AASHTO/AWS BRIDGE WELDING CODE D1.5-08.

3. SEE WP-1 FOR WELD PROCEDURES.

WELD INSPECTIONS:
1. WELD INSPECTION SHALL BE IN ACCORDANCE WITH ANSI/AASHTO/AWS BRIDGE WELDING CODE D1.5-08.

2. NOT USED

3. NOT USED

4. ALL WELDS SHALL BE 100% VISUALLY INSPECTED.

CLEANING AND PAINTING:
1. ALL MATERIAL TO BE BLAST-CLEANED TO A NEAR-WHITE FINISH PER SSPC SP10. PROVIDE A UNIFORM STEEL SURFACE PROFILE OF 1 TO 2.5 MILS (EXCEPT MACHINED SURFACES).

2. PRIME COAT: ALL STRUCTURAL STEEL SURFACES INCLUDING THE SHEAR CONNECTORS, THE TOP OF THE TOP FLANGE AND ALL CONTACT SURFACES SHALL BE PRIMED IN THE SHOP. THE SHOP APPLIED PRIME COAT SHALL BE A 2-COMPONENT SELF CURING INORGANIC ZINC SILICONE PRIMER.

   -THE DRY FILM THICKNESS OF THE PRIME COAT TO BE 2-4 MILS.

   -PRIME COAT TO BE SHERWIN WILLIAMS ZINC CLAD II PLUS.

3. FINISH COAT: ALL STRUCTURAL STEEL, EXCEPT SPLICE PLATES AND FILL PLATES SHALL NOT BE FINISH COATED IN THE SHOP. CONTACT OR FAYING SURFACES OF BOLTED FIELD SPLICES OF THE MAIN MEMBERS, SHEAR CONNECTORS, AND THE TOP SURFACE OF THE TOP FLANGES SHALL BE MASKED DURING THE FINISH COAT APPLICATION. THE SHOP APPLIED FINISH COAT SHALL BE A HIGH BUILD ALIPHATIC POLYURETHANE FINISH COAT(2-COMPONENT).

   -TO PREVENT TOP COAT BUBBLING, A MIST COAT SHALL BE REQUIRED. THE MIST COAT SHALL CONSIST OF A FAST PASS OF THE SPRAY GUN TO SEAL THE SURFACE OF THE PRIMER FOLLOWED IMMEDIATELY BY A FULL WET COAT.

   -THE DRY FILM THICKNESS OF THE FINISH COAT TO BE 3-6 MILS.

   -THE FINISH COAT TO BE BLUE, COLOR #25177 AND SHALL MEET FEDERAL STANDARD. #595B.

   -FINISH COAT TO BE SHERWIN WILLIAMS ACROLON 218 HS

No Exceptions Noted
BY: D Stolz
DATE: April 7, 2011
REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS
NDDOT

BRIDGE #:94-260.304R

PROJECT #SHE-SIM-2-094(094)260

STATION: 534+73.40

2. ALL MATERIAL TO BE MADE IN THE USA.
3. MILL CERTIFICATES REQUIRED ON ALL MATERIAL.
4. ALL WELDERS TO BE CERTIFIED.

MEMBERS TO BE ERECTED USING DIRECTION MARK ON MEMBER.

REVISIONS

LET	DATE	BY
A		
B		
C		

EGGER STEEL COMPANY EST 1946

Egger Steel Company
909 South 7th Avenue
Sioux Falls, South Dakota 57104

605.336.2490 (Office)
605.336.6816 (Fax)

TYPICAL SHOP NOTES

STRUCTURE: RRV & WRR SEPARATION WIDENING 217-3 WFG BRIDGE WIDENING
LOCATION: STUTSMAN CO., ND
CUSTOMER: WANZEK CONSTRUCTION
ARCHITECT: ND/DOT

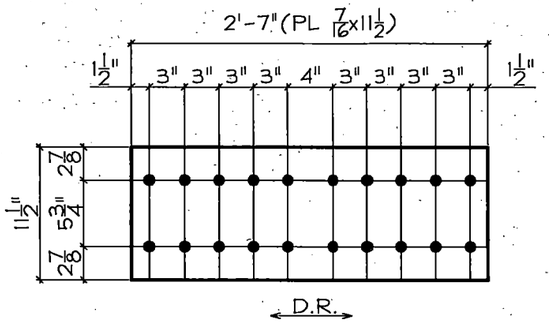
DRAWN BY	DATE
AH	3/11
CHK'D BY	DATE
BK	
RESP. DET.	WORK TYPE
-	M
JOB NO.	DWG. NO.
11006D	GN1

JOB NO: 11006D

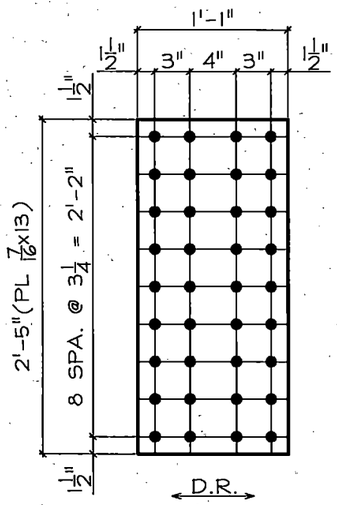
BILL OF MATERIAL

SHEET: S2(0)

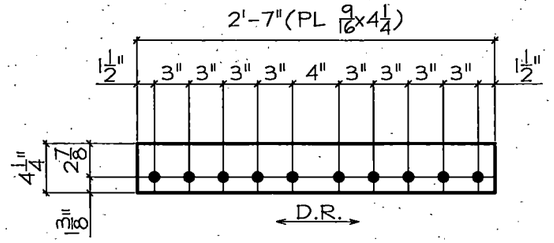
SHIPPING MARK	SHIPPING QUANTITY	MATERIAL DESCRIPTION	LENGTH FT	LENGTH IN	ABM #	ORDER SIZE	P.O. NO.	MAT'L GRADE	REMARKS
2P1	8	PL 7/16x11 1/2	2	7				M270-50T2(H)	NOTE D.R.
2P2	8	PL 7/16x13	2	5				M270-50T2(H)	NOTE D.R.
2P3	16	PL 9/16x4 1/4	2	7				M270-50T2(H)	NOTE D.R.



8-SPLICE PLATES-2P1
PRE-DRILL: 8



8-SPLICE PLATES-2P2
PRE-DRILL: 4



16-SPLICE PLATES-2P3
DRILL IN ASSEMBLY

No Exceptions Noted
BY: D Stolz
DATE: April 7, 2011
REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS
NDDOT

BRIDGE #:94-260.304R

PROJECT #SHE-SIM-2-094(094)260

STATION: 534+73.40

1. SEE GNI FOR TYPICAL SHOP NOTES.
2. MILL CERTIFICATES REQUIRED ON ALL MATERIAL.
3. ALL MATERIAL TO BE MADE IN THE USA.
4. ALL WELDERS TO BE CERTIFIED.

HOLES
15 13/16 ϕ

PAINT
SEE GNI

MEMBERS TO BE ERECTED USING DIRECTION MARK ON MEMBER.

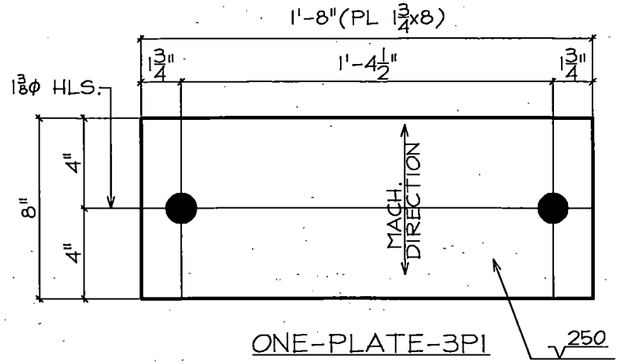
REVISIONS		
LET	DATE	BY
A		
B		
C		

EGGER STEEL COMPANY EST 1946
Egger Steel Company
909 South 7th Avenue
Sioux Falls, South Dakota 57104
605.336.2490 (Office)
605.336.6816 (Fax)

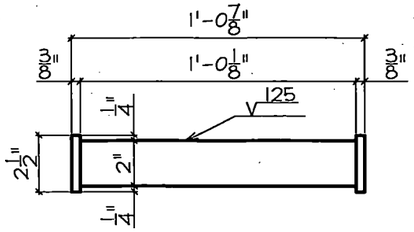
SPLICE PLATES

RRV & WRR SEPARATION WIDENING
STRUCTURE: 217-3 WFG BRIDGE WIDENING
LOCATION: STUTSMAN CO., ND
CUSTOMER: WANZEK CONSTRUCTION
ARCHITECT: ND/DOT

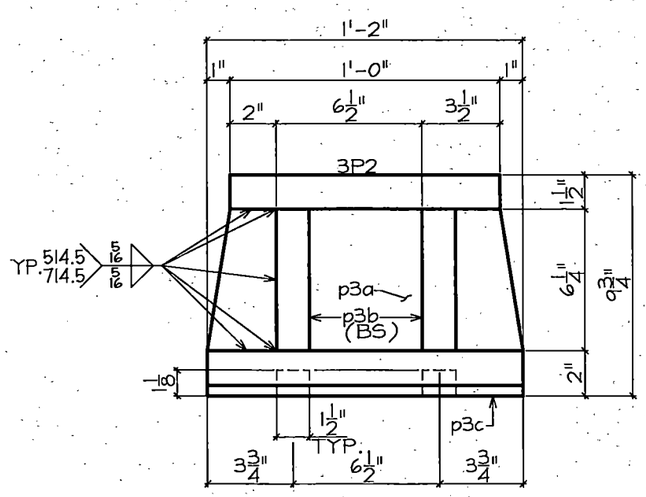
DRAWN BY	DATE
AH	3/11
CHK'D BY	DATE
BK	
RESP. DET.	WORK TYPE
	0
JOB NO.	DWG. NO.
11006D	S2

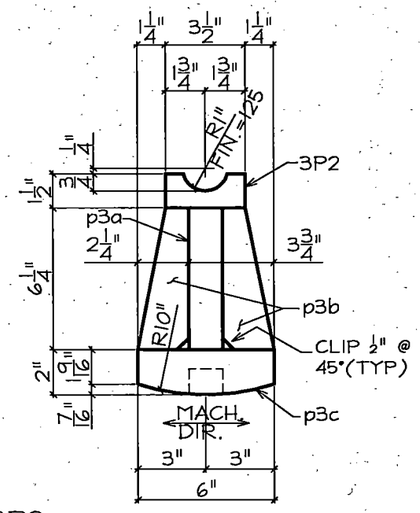


ONE-PLATE-3P1

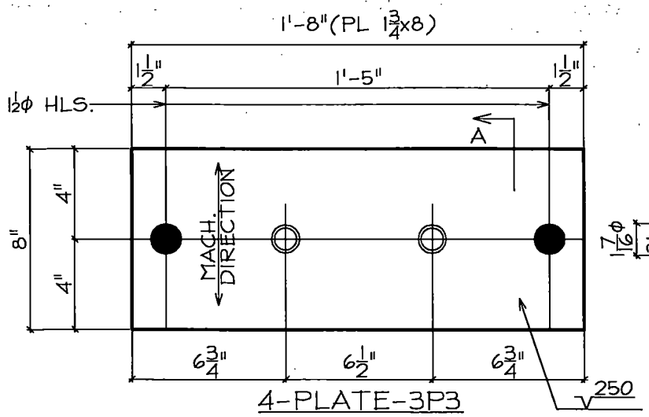


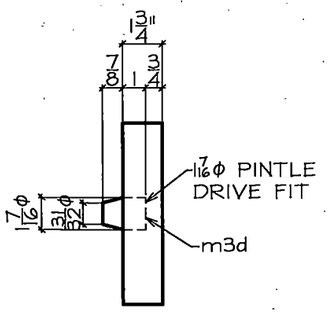
4-THUS-3M4





4-THUS-3P2

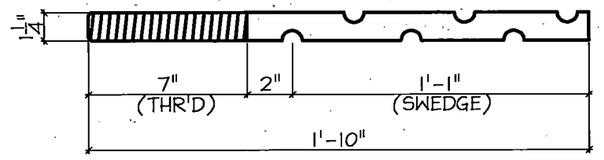




SECT. A

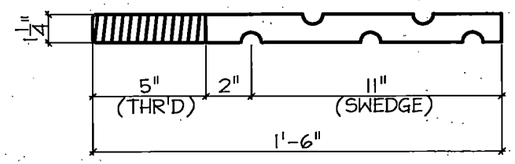
4-PLATE-3P3

JOB NO: 11006D	BILL OF MATERIAL							SHEET: S3(M)
SHIPPING MARK	SHIPPING QUANTITY	MATERIAL DESCRIPTION	LENGTH FT	LENGTH IN	ABM #	ORDER SIZE	P.O. NO.	MAT'L GRADE	REMARKS
3P1	ONE	PL 1¾x8	1	8				M270-50	MACHINE
3P2	4	PL ½x32½	1	0				M270-50	MACHINE
p3a	4	PL ½x6¼	1	2				M270-50	
p3b	16	PL ½x2¼	0	6¼				M270-50	
p3c	4	PL 2x6	1	2				M270-50	MACHINE
3P3	4	PL 1¾x8	1	8				M270-50	MACHINE
m3d	8	RB 1 7/16ϕ	0	1⅞				M223	MACHINE
3M4	4	RB 2½ϕ	1	0⅞				AASHTO M102 CLASS F	MACHINE
3AB5	2	RB 1¼ϕ	1	10				A449	
3AB6	8	RB 1¼ϕ	1	6				A449	



2~SWEDGE BOLTS~3AB5

A MINIMUM OF 20% OF THE EMBEDDED BOLT SURFACE SHALL BE COVERED WITH DEFORMATIONS WHOSE RADIAL DIMENSIONS ARE 15% TO 20% OF THE BOLT DIAMETER.



8~SWEDGE BOLTS~3AB6

A MINIMUM OF 20% OF THE EMBEDDED BOLT SURFACE SHALL BE COVERED WITH DEFORMATIONS WHOSE RADIAL DIMENSIONS ARE 15% TO 20% OF THE BOLT DIAMETER.

No Exceptions Noted

BY: D Stolz

DATE: April 7, 2011

REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS

NDDOT

BRIDGE #:94-260.304R

PROJECT #SHE-SIM-2-094(094)260

STATION: 534+73.40

MEMBERS TO BE ERECTED USING DIRECTION MARK ON MEMBER.

1. SEE GNI FOR TYPICAL SHOP NOTES.
2. MILL CERTIFICATES REQUIRED ON ALL MATERIAL.
3. ALL MATERIAL TO BE MADE IN THE USA.
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HOLES: AS NTD

PAINT: SEE GNI

REVISIONS		
LET	DATE	BY
A		
B		
C		

EGGER STEEL COMPANY EST 1946

Egger Steel Company
909 South 7th Avenue
Sioux Falls, South Dakota 57104

605.336.2490 (Office)
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BEARINGS

STRUCTURE: RRV & WRR SEPARATION WIDENING 217-3 WFG BRIDGE WIDENING
LOCATION: STUTSMAN CO., ND
CUSTOMER: WANZEK CONSTRUCTION
ARCHITECT: ND/DOT

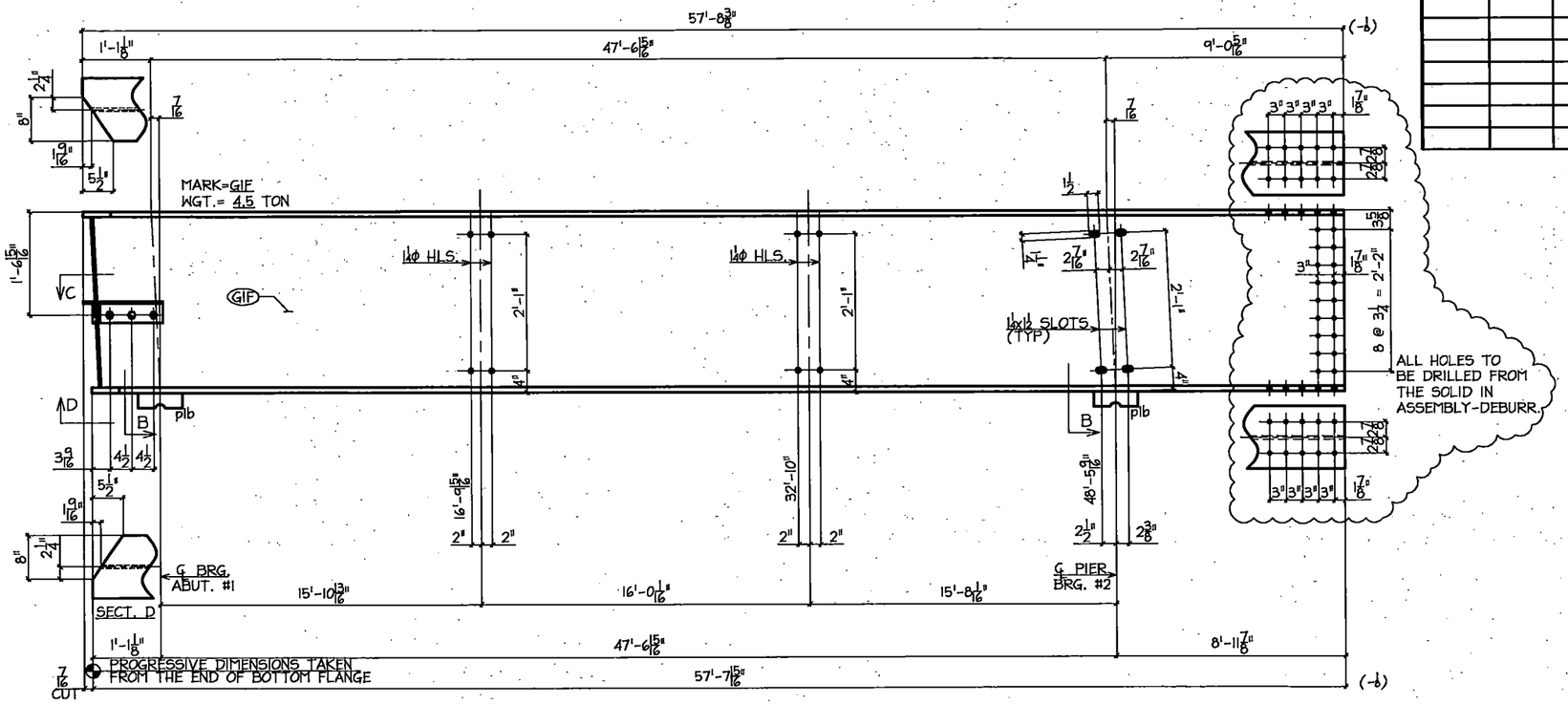
DRAWN BY	DATE
AH	3/11
CHK'D BY	DATE
BK	
RESP. DET.	WORK TYPE
	M
JOB NO.	DWG. NO.
11006D	S3

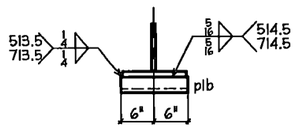
JOB NO: 11006D

BILL OF MATERIAL

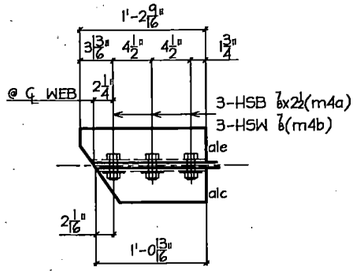
SHEET: S4(G)

SHIPPING MARK	SHIPPING QUANTITY	MATERIAL DESCRIPTION	LENGTH FT	LENGTH IN	ABM #	ORDER SIZE	P.O. NO.	MAT'L GRADE	REMARKS
GIF	ONE	W33x141	57	8 3/8				M270-50T2(H)	
plb	2	PL 2 3/4x8	1	0				M270-50	
alc	ONE	L4x4x3/8	1	0 13/16				M270-50	
ale	ONE	L4x4x3/8	1	2 9/16				M270-50	
m4a	3	HSB 7/8x2 1/2 w/NUTS						M164-1	
m4b	3	HSW 7/8						M293-1	

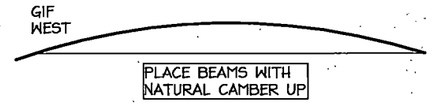




SECTION B



SECTION C



PLACE BEAMS WITH NATURAL CAMBER UP

No Exceptions Noted

BY: D Stolz

DATE: April 7, 2011

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BRIDGE #:94-260.304R

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HOLES
13/16Ø UN

PAINT
SEE GNI

MEMBERS TO BE ERECTED USING DIRECTION MARK ON MEMBER.

REVISIONS

LET	DATE	BY
A		
B		
C		

EGGER STEEL COMPANY EST 1946

Egger Steel Company
909 South 7th Avenue
Sioux Falls, South Dakota 57104
605.336.2490 (Office)
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GIRDER:GIF

STRUCTURE: RVV & WRR SEPARATION WIDENING 217-3 WFG BRIDGE WIDENING
LOCATION: STUTSMAN CO., ND
CUSTOMER: WANZEK CONSTRUCTION
ARCHITECT: ND/DOT

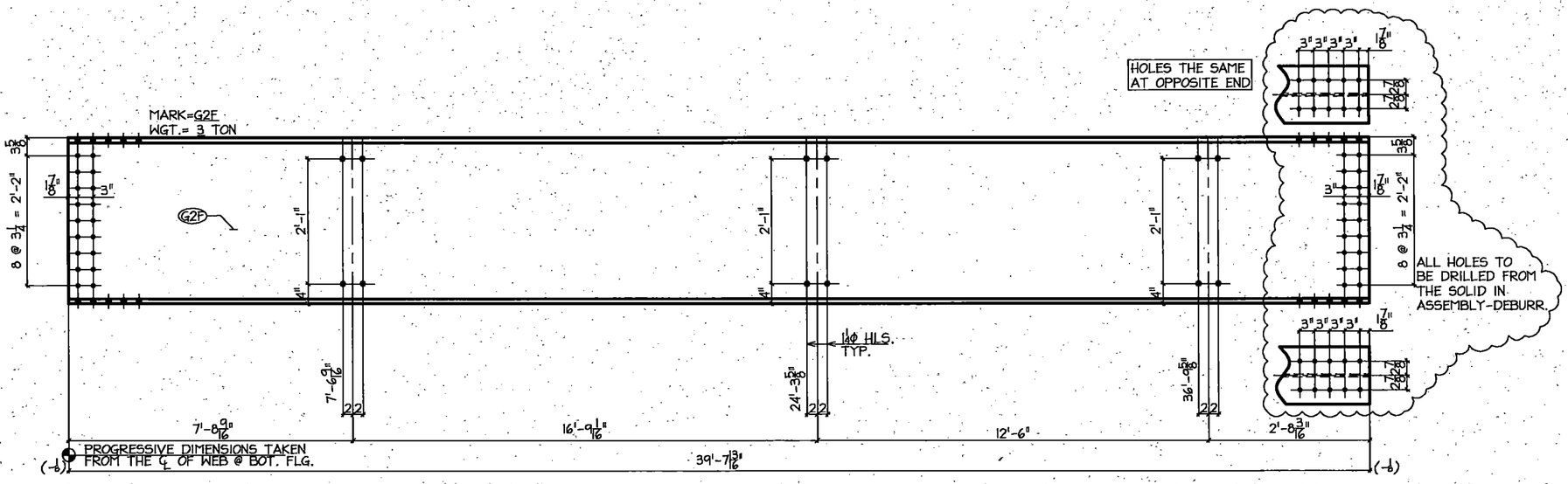
DRAWN BY	DATE
AH	3/11
CHK'D BY	DATE
BK	
RESP. DET.	WORK TYPE
	G
JOB NO.	DWG. NO.
11006D	S4

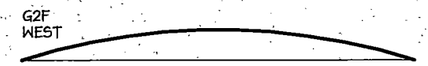
JOB NO: 11006D

BILL OF MATERIAL

SHEET: 55(G)

SHIPPING MARK	SHIPPING QUANTITY	MATERIAL DESCRIPTION	LENGTH FT	LENGTH IN	ABM #	ORDER SIZE	P.O. NO.	MAT'L GRADE	REMARKS
G2F	ONE	W33x141	39	7 13/16				M270-50T2(H)	





PLACE BEAMS WITH NATURAL CAMBER UP

No Exceptions Noted

BY: D Stolz

DATE: April 7, 2011

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HOLES
15/16Φ

PAINT
SEE GNI

MEMBERS TO BE ERECTED USING DIRECTION MARK ON MEMBER.

REVISIONS		
LET	DATE	BY
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EGGER STEEL COMPANY EST 1946

Egger Steel Company
909 South 7th Avenue
Sioux Falls, South Dakota 57104

605.336.2490 (Office)
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GIRDER:G2F

RVV & WRR SEPARATION WIDENING
STRUCTURE: 217-3 WFG BRIDGE WIDENING
LOCATION: STUTSMAN CO., ND
CUSTOMER: WANZEK CONSTRUCTION
ARCHITECT: ND/DOT

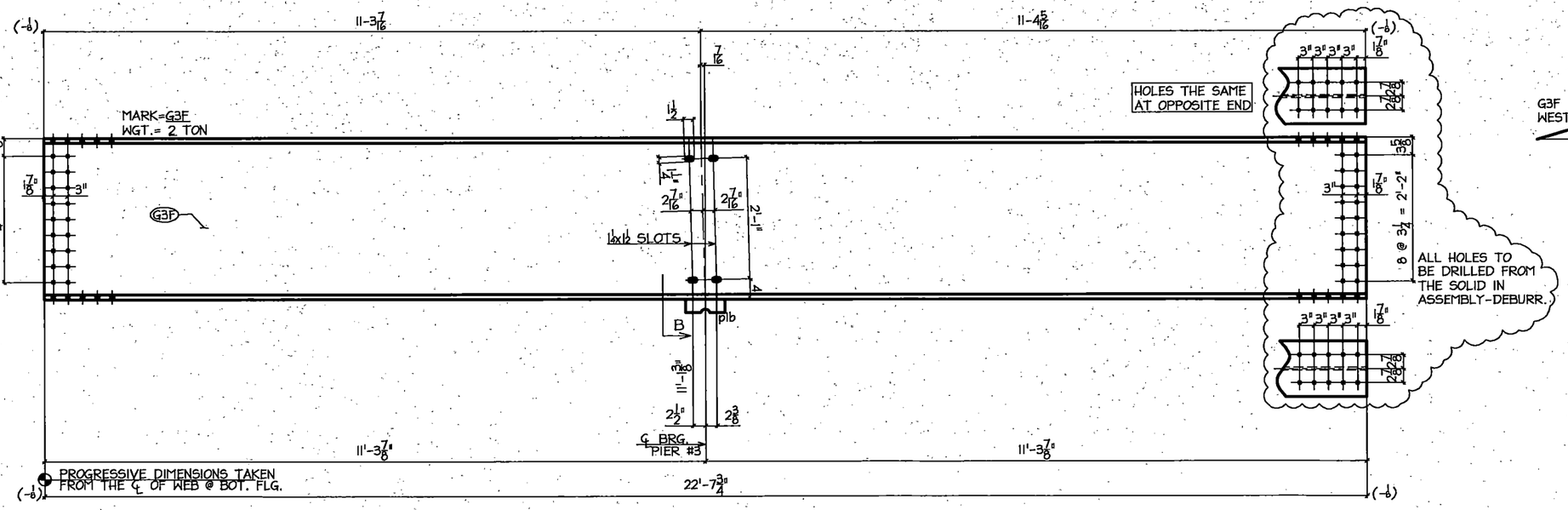
DRAWN BY	DATE
AH	3/11
CHK'D BY	DATE
BK	
RESP. DET.	WORK TYPE
	G
JOB NO.	DWG. NO.
11006D	55

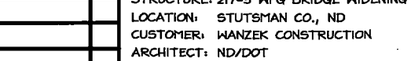
JOB NO: 11006D

BILL OF MATERIAL

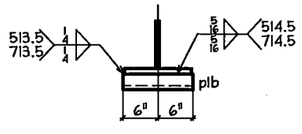
SHEET: S6(G)

SHIPPING MARK	SHIPPING QUANTITY	MATERIAL DESCRIPTION	LENGTH FT	LENGTH IN	ABM #	ORDER SIZE	P.O. NO.	MAT'L GRADE	REMARKS
G3F	ONE	W33x141	22	7 3/4				M270-50T2(H)	
plb	ONE	PL 2 3/4x8	1	0				M270-50	





PLACE BEAMS WITH NATURAL CAMBER UP



SECTION B

No Exceptions Noted

BY: D Stolz

DATE: April 7, 2011

REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS

NDDOT

BRIDGE #:94-260.304R

PROJECT #SHE-SIM-2-094(094)260

STATION: 534+73.40

1. SEE GNI FOR TYPICAL SHOP NOTES.
2. MILL CERTIFICATES REQUIRED ON ALL MATERIAL.
3. ALL MATERIAL TO BE MADE IN THE USA.
4. ALL WELDERS TO BE CERTIFIED.

HOLES
13/16ϕ

PAINT
SEE GNI

MEMBERS TO BE ERECTED USING DIRECTION MARK ON MEMBER.

REVISIONS

LET	DATE	BY
A		
B		
C		

EGGER STEEL COMPANY EST 1946

Egger Steel Company
909 South 7th Avenue
Sioux Falls, South Dakota 57104

605.336.2490 (Office)
605.336.6816 (Fax)

GIRDER:G3F

STRUCTURE: RVV & WRR SEPARATION WIDENING 217-3 WFG BRIDGE WIDENING
LOCATION: STUTSMAN CO., ND
CUSTOMER: WANZEK CONSTRUCTION
ARCHITECT: ND/DOT

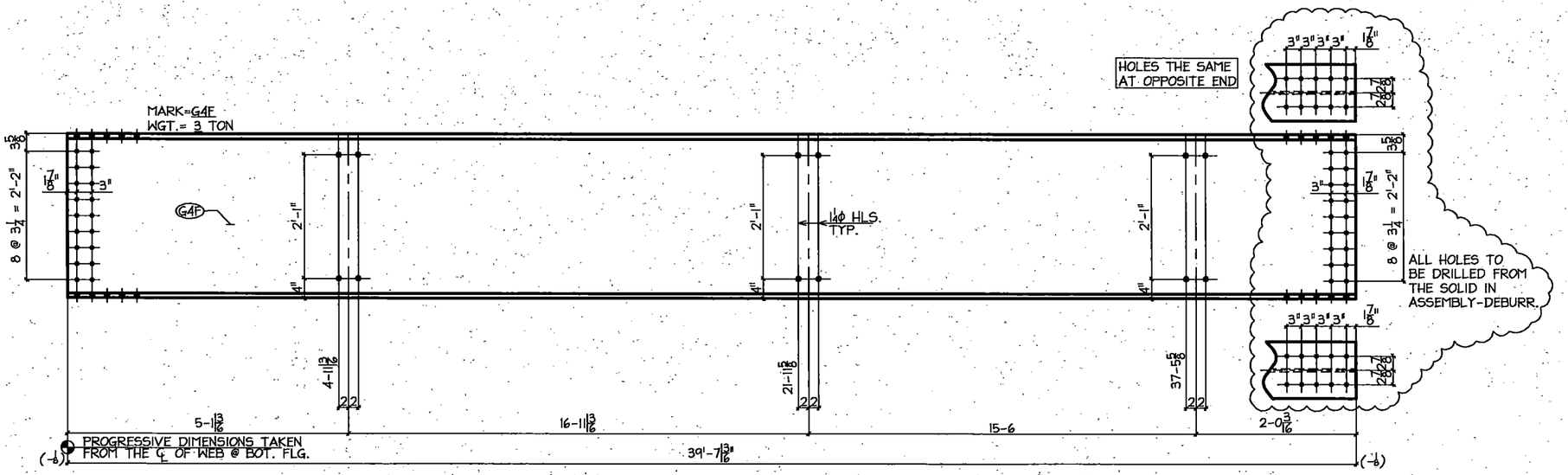
DRAWN BY	DATE
AH	3/11
CHK'D BY	DATE
BK	
RESP. DET.	WORK TYPE
	G
JOB NO.	DWG. NO.
11006D	S6

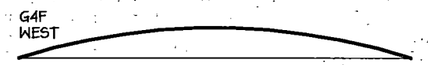
JOB NO: 11006D

BILL OF MATERIAL

SHEET: 57(G)

SHIPPING MARK	SHIPPING QUANTITY	MATERIAL DESCRIPTION	LENGTH FT	LENGTH IN	ABM #	ORDER SIZE	P.O. NO.	MAT'L GRADE	REMARKS
G4F	ONE	W33x141	39	7 3/16				M270-50T2(H)	





PLACE BEAMS WITH NATURAL CAMBER UP

No Exceptions Noted
BY: D Stolz
DATE: April 7, 2011
REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS
NDDOT

BRIDGE #:94-260.304R

PROJECT #SHE-SIM-2-094(094)260

STATION: 534+73.40

MEMBERS TO BE ERECTED USING DIRECTION MARK ON MEMBER.

1. SEE GNI FOR TYPICAL SHOP NOTES.
2. MILL CERTIFICATES REQUIRED ON ALL MATERIAL.
3. ALL MATERIAL TO BE MADE IN THE USA.
4. ALL WELDERS TO BE CERTIFIED.

HOLES
1Φ UN

PAINT
SEE GNI

REVISIONS		
LET	DATE	BY
A		
B		
C		

EGGER STEEL COMPANY EST 1946

Egger Steel Company
909 South 7th Avenue
Sioux Falls, South Dakota 57104

605.336.2490 (Office)
605.336.6816 (Fax)

GIRDER:G4F

STRUCTURE: RVV & WRR SEPARATION WIDENING 217-3 WFG BRIDGE WIDENING
LOCATION: STUTSMAN CO., ND
CUSTOMER: WANZEK CONSTRUCTION
ARCHITECT: ND/DOT

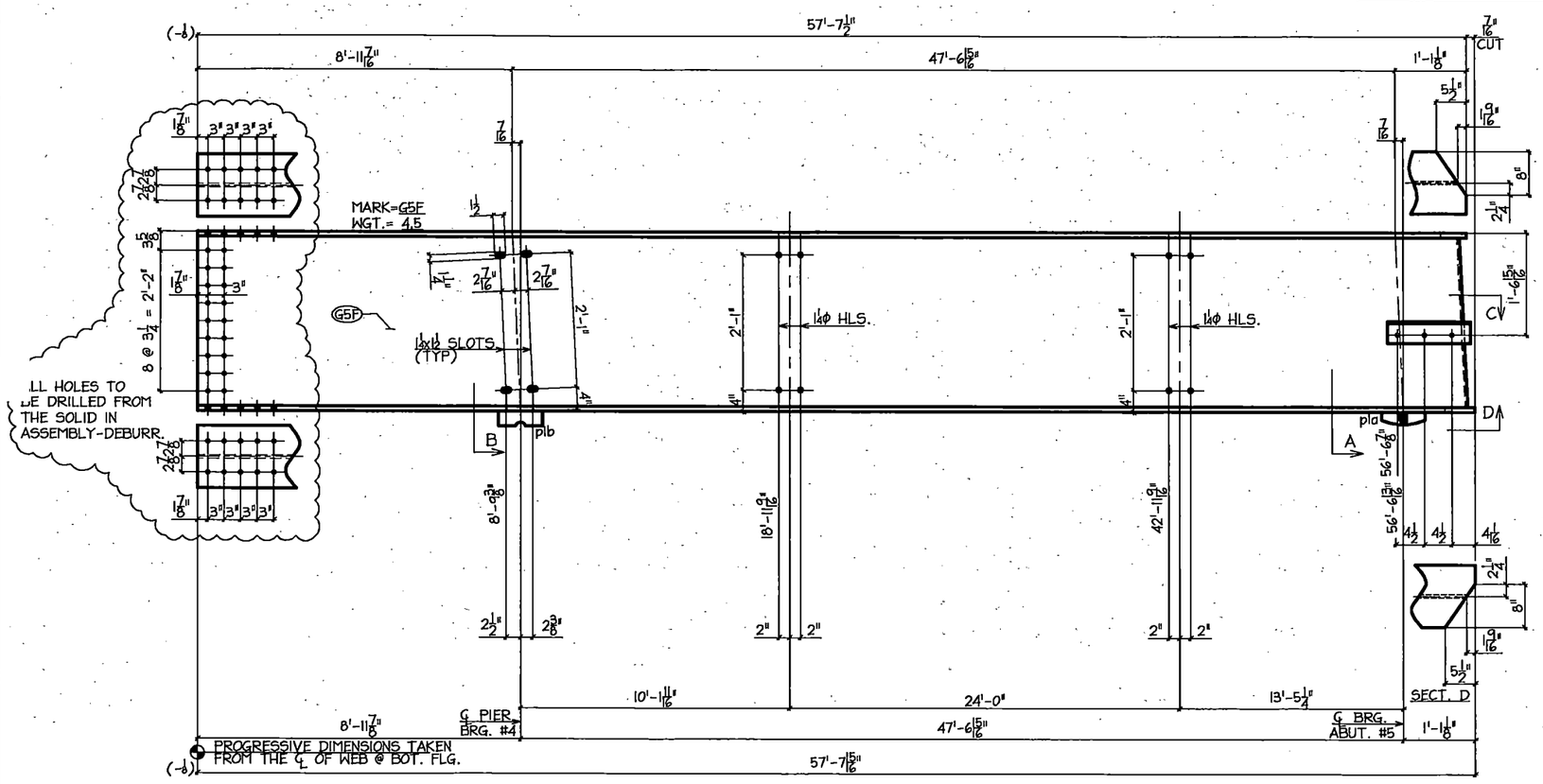
DRAWN BY	DATE
AH	3/11
CHK'D BY	DATE
BK	
RESP. DET.	WORK TYPE
	G
JOB NO.	DWG. NO.
11006D	57

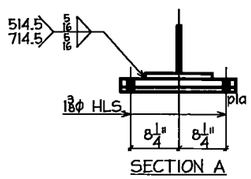
JOB NO: 11006D

BILL OF MATERIAL

SHEET: S8(G)

SHIPPING MARK	SHIPPING QUANTITY	MATERIAL DESCRIPTION	LENGTH FT	LENGTH IN	ABM #	ORDER SIZE	P.O. NO.	MAT'L GRADE	REMARKS
G5F	ONE	W33x141	57	7 15/16				M270-50T2(H)	
p1a	ONE	PL 2 1/2x8	1	8				M270-50	
p1b	ONE	PL 2 3/4x8	1	0				M270-50	
a1d	ONE	L4x4x3/8	1	0 13/16				M270-50	
a1f	ONE	L4x4x3/8	1	2 1/16				M270-50	
m4a	3	HSB 7/8x2 1/2 w/NUTS						M164-1	
m4b	3	HSW 7/8						M293-1	





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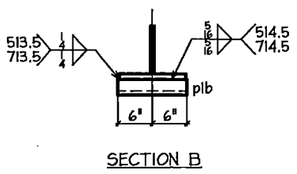
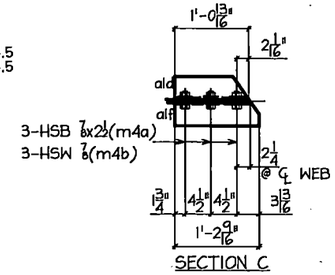


SECTION B



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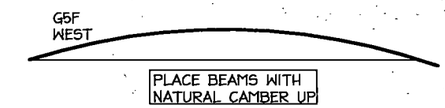


PLACE BEAMS WITH NATURAL CAMBER UP

No Exceptions Noted

BY: D Stolz

DATE: April 7, 2011

REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS

NDDOT

BRIDGE #:94-260.304R

PROJECT #SHE-SIM-2-094(094)260

STATION: 534+73.40

1. SEE GNI FOR TYPICAL SHOP NOTES.
2. MILL CERTIFICATES REQUIRED ON ALL MATERIAL.
3. ALL MATERIAL TO BE MADE IN THE USA.
4. ALL WELDERS TO BE CERTIFIED.

HOLES
15/8φ UN

PAINT
SEE GNI

MEMBERS TO BE ERECTED USING DIRECTION MARK ON MEMBER.

REVISIONS

LET	DATE	BY
A		
B		
C		

EGGER STEEL COMPANY EST 1946

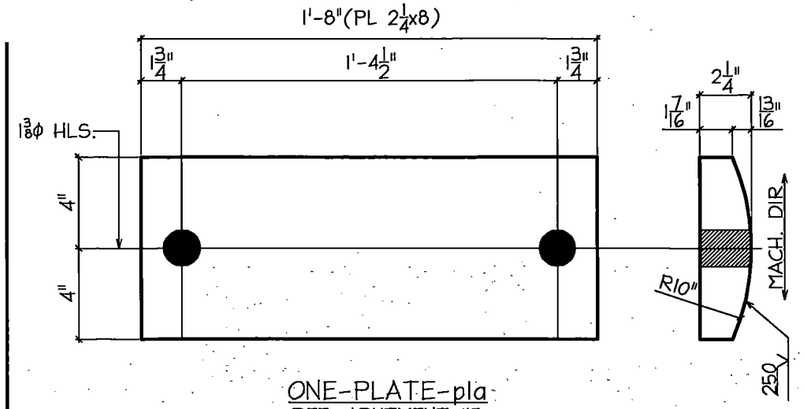
Egger Steel Company
909 South 7th Avenue
Sioux Falls, South Dakota 57104

605.336.2490 (Office)
605.336.6816 (Fax)

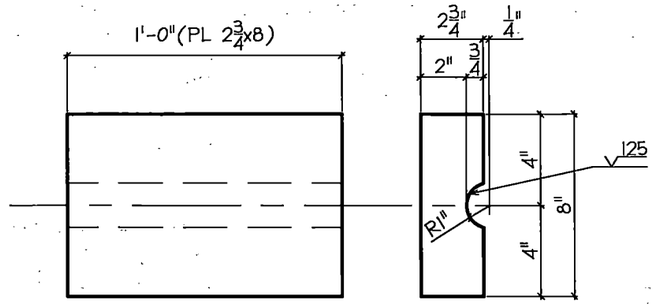
GIRDER:G5F

STRUCTURE: RVV & WRR SEPARATION WIDENING 217-3 WFG BRIDGE WIDENING
LOCATION: STUTSMAN CO., ND
CUSTOMER: WANZEK CONSTRUCTION
ARCHITECT: ND/DOT

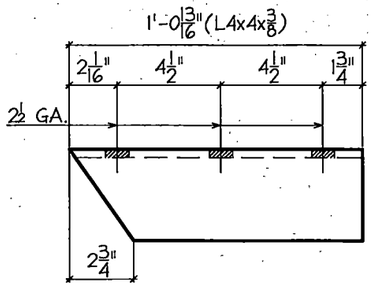
DRAWN BY	DATE
AH	3/11
CHK'D BY	DATE
RESP. DET.	WORK TYPE
	G
JOB NO.	DWG. NO.
11006D	S8



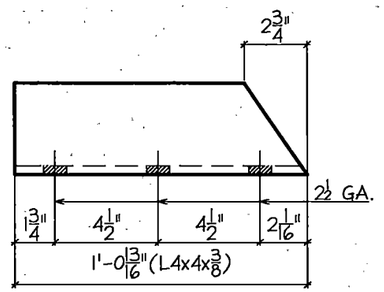
ONE-PLATE-p1a
REF. ABUTMENT #5
M270-50
P.O.#:



ONE-PLATE-p1b
REF. ABUTMENT #1, PIER 2,3,&4
M270-50
P.O.#:

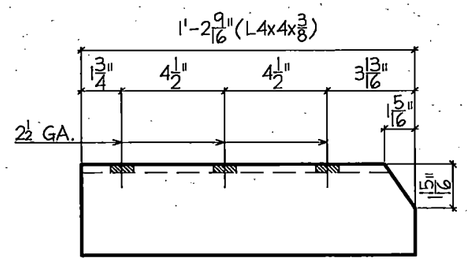


ONE-ANGLE-a1c
M270-50
P.O.#:



ONE-ANGLE-a1d
M270-50
P.O.#:

ONE-ANGLE-a1e
M270-50
P.O.#:



ONE-ANGLE-a1f
M270-50
P.O.#:

No Exceptions Noted
BY: D Stolz
DATE: April 7, 2011
REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS
NDDOT

THIS SHEET FOR SHOP USE ONLY.
DO NOT SHIP FROM THIS SHEET.

BRIDGE #:94-260.304R

PROJECT #SHE-SIM-2-094(094)260

STATION: 534+73.40

1. SEE GNI FOR TYPICAL SHOP NOTES.
2. MILL CERTIFICATES REQUIRED ON ALL MATERIAL.
3. ALL MATERIAL TO BE MADE IN THE USA.
4. ALL WELDERS TO BE CERTIFIED.

HOLES
13/16ϕ UN

PAINT
SEE GNI

MEMBERS TO BE ERECTED USING DIRECTION MARK ON MEMBER.

REVISIONS		
LET	DATE	BY
A		
B		
C		

EGGER STEEL COMPANY EST 1946

Egger Steel Company
409 South 7th Avenue
Sioux Falls, South Dakota 57104

605.336.2490 (Office)
605.336.6816 (Fax)

SHOP USE SHEET

RRV & WRR SEPARATION WIDENING
STRUCTURE: 217-3 WFG BRIDGE WIDENING
LOCATION: STUTSMAN CO., ND
CUSTOMER: WANZEK CONSTRUCTION
ARCHITECT: ND/DOT

DRAWN BY	DATE
AH	3/11
CHK'D BY	DATE
BK	
RESP. DET.	WORK TYPE
	M
JOB NO.	DWG. NO.
11006D	SU1

GENERAL NOTES:

1.0 GENERAL

1.1 THE CONTRACTOR MUST VERIFY ALL DIMENSIONS PRIOR TO FABRICATION TO ENSURE ACCURACY OF THE EXPANSION JOINT.

1.2 IN CASE OF DISCREPANCY, CALCULATED DIMENSIONS GOVERN OVER SCALED DIMENSIONS AND THE FOLLOWING ORDER OF PRECEDENCE APPLIES

SPECIAL PROVISIONS
PLANS
STANDARD SPECIFICATIONS

DETAIL PLANS HOLD OVER STANDARD PLANS

2.0 STANDARD SPECIFICATION CRITERIA

3.0 SPECIAL PROVISION CRITERIA

4.0 MATERIALS

4.1 ALL STRUCTURAL AND PERMANENT MATERIALS SHALL BE OF DOMESTIC ORIGIN, AND MATERIAL CERTIFICATION STATING ALL SUCH MATERIALS ARE "MELTED AND MANUFACTURED" IN THE UNITED STATES OF AMERICA SHALL BE SUBMITTED.

4.2 ALL EXTRUSIONS SHALL CONFORM TO ASTM A 709, GRADE 36 (AASHTO M 270, GRADE 36 INDEPENDENT OF CHARPY V-NOTCH TESTING).

4.3 THE STRIP SEAL GLAND SHALL BE POLYCHLOROPRENE (NEOPRENE) SHALL BE IN ACCORDANCE WITH ASTM D 5973; AS NOTED BELOW:

REQUIRED PHYSICAL PROPERTIES	ASTM PROCEDURE	PHYSICAL REQUIREMENTS
TENSILE STRENGTH, MIN. PSI (MPA)	D-412	2000 (13.8)
ELONGATION @ BREAK, MIN.	D-412	250 %
HARDNESS, TYPE A DUROMETER	D-2240	60 ± 5
OVEN AGING 70 HRS. @ 212°F	D-573	
TENSILE STRENGTH, LOSS, MAX.		20%
ELONGATION, LOSS, MAX.		20%
HARDNESS, TYPE A DURO (POINTS CHANGE)		0 TO 10
OIL SWELL, ASTM #3 OIL, 70 HRS. @ 212°F		
WEIGHT CHANGE, MAX.	D-471	45%
OZONE RESISTANCE, 20% STRAIN 300 PPHM IN AIR 70 HRS. @ 104°F (WIPE WITH TOLUENE TO REMOVE SURFACE CONTAMINANTS	D-1149	NO CRACKS
LOW TEMPERATURE STIFFENING 7 DAYS @ 14°F HARDNESS TYPE A DURO, POINTS CHANGE	D-2240	0 TO +15
COMPRESSION SET, 70 H AT 212°F (100°C), MAX. %	D 395 METHOD B	35

GENERAL NOTES:

4.4 THE STRIP SEAL GLAND SHALL BE ADHERED IN PLACE USING PRIMA-LUB ADHESIVE AND LUBRICANT. PRIMA-LUB IS A ONE-COMPONENT BLEND OF URETHANE AND AROMATIC SOLVENTS FOR USE IN LUBRICATING PREFORMED BRIDGE SEALS FOR INSERTION AND ADHESION TO METAL AND CONCRETE SURFACES. PRIMA-LUB SHALL BE IN ACCORDANCE ASTM D-4070 AND WITH THE FOLLOWING REQUIREMENTS:

REQUIRED PHYSICAL PROPERTIES

RESIN TYPE:	MOISTURE CURE URETHANE
SOLVENT:	AROMATIC NAPHTA
WEIGHT SOLIDS:	72 - 73%
VOLUME SOLIDS:	66 - 68%
WEIGHT/GALLON:	8.4 - 8.6 LBS/GAL
PRACTICAL COVERAGE:	400 - 500 FT./GALLON - SMALL SEALS (STRIP SEALS)
	100 - 200 FT./GALLON - LARGE SEALS (COMPRESSION SEALS)
FLASHPOINT:	106°F (40.5°C)
SHELF LIFE:	ONE YEAR FROM DATE OF MANUFACTURE
MEETS OR EXCEEDS ASTM D-4070	
FILM STRENGTH ASTM D-412	2000 PSI (MIN.)
% ELONGATION (BEFORE BREAK)	350 (MIN.)
WORKABLE TEMPERATURE RANGE	5 - 120°F (-15 - 49°C)

4.5 ALL STUDS SHALL CONFORM TO ASTM A 108 (AASHTO M169), GRADES 1015, 1018 OR 1020.

5.0 INSPECTION REQUIREMENTS

5.1 IN HOUSE SHOP INSPECTION BY A REPRESENTATIVE OF THE NORTH DAKOTA DEPARTMENT OF TRANSPORTATION INDEPENDENT OF WATSON BOWMAN ACME CORP.'S QUALITY CONTROL INSPECTOR IS NOT REQUIRED.

5.2 QUALITY CONTROL INSPECTION

5.2.1 DURING FABRICATION OF THE EXPANSION JOINT, WATSON BOWMAN ACME SHALL PROVIDE FULL TIME QUALITY CONTROL INSPECTION TO INSURE THAT THE MATERIALS AND WORKMANSHIP MEET OR EXCEED THE MINIMUM REQUIREMENTS OF THE CONTRACT.

5.2.2 QUALITY CONTROL INSPECTION SHALL BE THE RESPONSIBILITY OF A QUALITY CONTROL GROUP, WHICH SHALL BE INDEPENDENT OF THE FABRICATION GROUP.

6.0 FABRICATION

6.1 FABRICATION SHALL BE IN ACCORDANCE WITH WATSON BOWMAN ACME'S QUALITY CONTROL MANUAL AND MANUFACTURING TOLERANCES.

6.2 EXPANSION DAM DEVICES SHALL BE WELDED IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY AASHTO/AWS D1.5.

6.3 ALL WELDING SHALL BE EXECUTED USING EITHER GMAW OR FCAW PROCESSES UNLESS A PROCESS IS SPECIFICALLY IDENTIFIED ON THE SHOP DRAWINGS HEREIN.

6.4 THE NEOPRENE SEALS SHALL BE FIELD INSTALLED BY THE CONTRACTOR USING PRIMA-LUB ADHESIVE AND THE SEAL INSTALLATION TOOLS. ADHESIVE SHALL BE APPLIED TO THE FULL PERIMETER OF THE WALLS OF THE STRIP SEAL CAVITY. FACTORY SPLICES SHALL BE PERMITTED. THE SEAL SHALL BE ONE CONTINUOUS PIECE. FIELD SPLICES WILL NOT BE PERMITTED.

6.5 DISTORTED MEMBERS SHALL BE STRAIGHTENED BY MECHANICAL MEANS OR, IF APPROVED BY THE ENGINEER, BY CAREFULLY PLANNED PROCEDURE AND SUPERVISED APPLICATION OF A LIMITED AMOUNT OF LOCALIZED HEAT.

7.0 COATINGS

7.1 THE EXPANSION JOINT ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123.

7.2 REPAIR ANY DAMAGED GALVANIZED AREAS PER A-780.

INSPECTION REQUIRED

NO EXCEPTIONS NOTED

NDDOT Digitally signed by NDDOT DN: cn=NDDOT, o=Dean Stolz, ou=Bridge Division, email=dstolz@nd.gov, c=US Date: 2011.04.05 08:49:43 -05'00'

REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS

NDDOT

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

COUNTY: STUTSMAN
PROJECT NO.: SHE-SIM-2-094(094)260
PCN: 17342
BRIDGE NO.: 94-260.304R
WBA PRODUCT NO.: SSE136803AB
JOINT TYPE: STRIP SEAL

SHEET NUMBER
ITEM DESIGNATION
ITEM NUMBER
2e1
MARK SYSTEM

DRAWING ACTION:

SUBMITTED FOR APPROVAL

DATE: 3/28/11

NO	DESCRIPTION	NAME	DATE
3			
2	BRIDGE NUMBER WAS BRIDGE CODE	SM	3/30/2011
1	ADDED BRIDGE CODE; REMOVED EXPANSION JOINT SSE136803AA	SM	3/29/2011

Watson Bowman Acme Corp.
95 Pineview Drive
Amherst, NY 14228
phone: (716)691-7555
fax: (716)691-8226
www.wbacorp.com

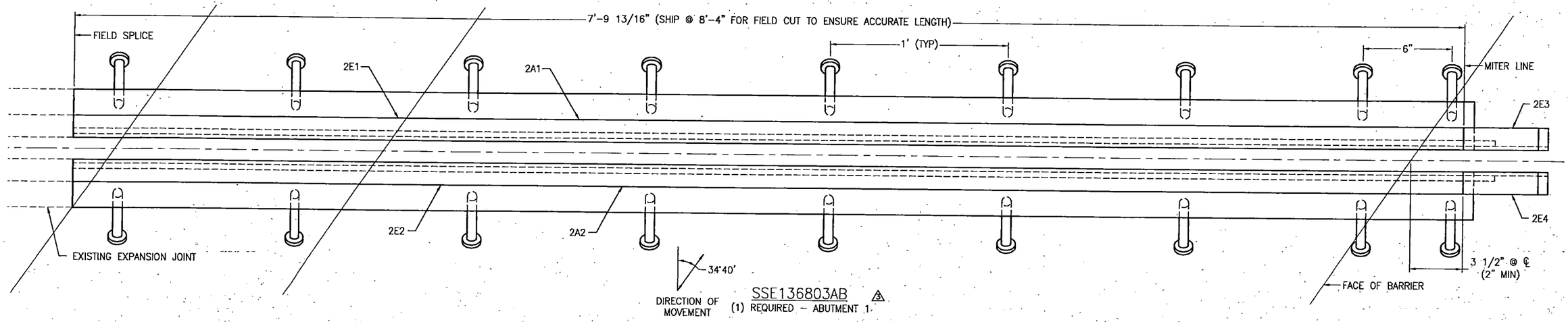
BASF The Chemical Company

PROJECT:
RRV & WRR SEPERATION WIDENING
JAMESTOWN

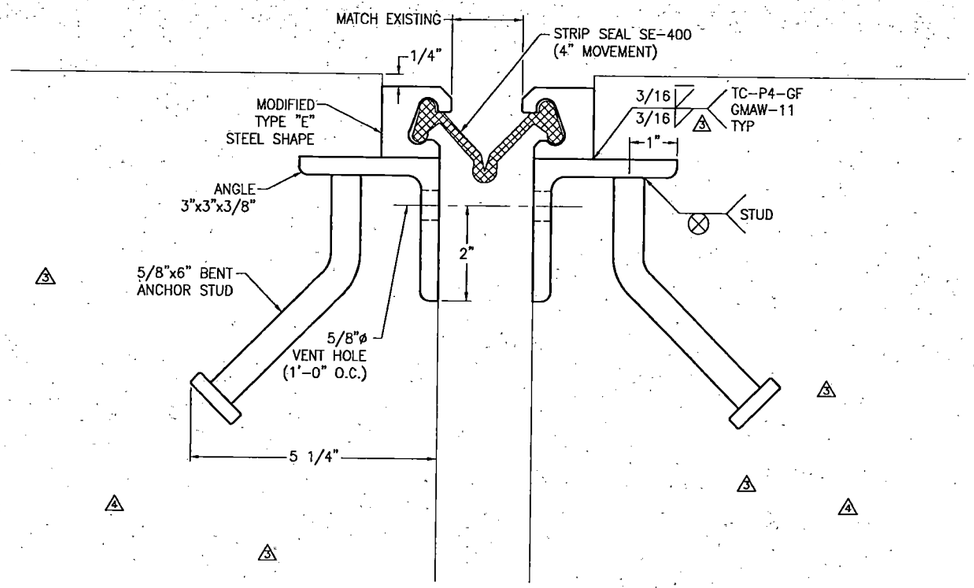
WABO SSE-400 STRIP SEAL EXPANSION JOINT

DETAILED BY: SM	DATE: 3/28/11
CHECKED BY: JFW	DATE: 3/28/11
SCALE: NTS	WBA JOB NO.: 136803
SHEET NO.: 1 OF 4	DRAWING NO.: B-28831

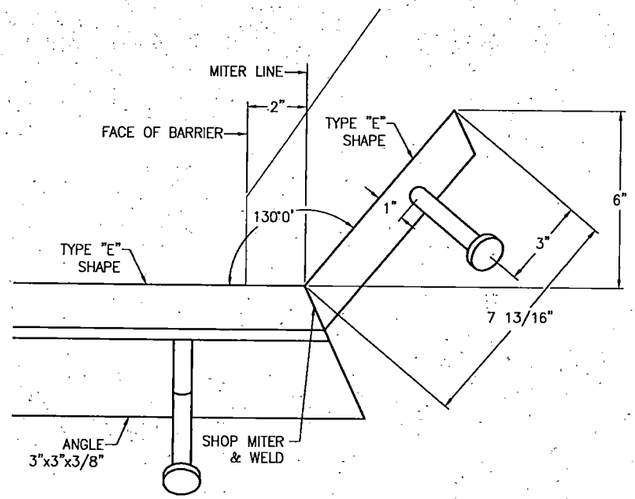
4/5/2011 7:49:09 AM



SSE136803AB ⚠3
(1) REQUIRED – ABUTMENT 1



TYPICAL SECTION



UPTURN DETAIL

No Exceptions Noted
BY: D Stolz
DATE: April 5, 2011
REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS
NDDOT

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

COUNTY: STUTSMAN
PROJECT NO.: SHE-SIM-2-094(094)260
PCN: 17342
BRIDGE NO.: 94-260.304R
WBA PRODUCT NO.: SSE136803AB
JOINT TYPE: STRIP SEAL

INSPECTION REQUIRED

SHEET NUMBER
ITEM DESIGNATION
ITEM NUMBER
2e1
MARK SYSTEM

DRAWING ACTION:
SUBMITTED FOR APPROVAL
DATE: 3/28/11

NO	DESCRIPTION	NAME	DATE
⚠4	REMOVED BLOCKOUT LINES	SM	4/5 2011
⚠3	REMOVED BRIDGE CODE; REMOVED DIMENSIONS; MODIFIED WELD SYMBOL	SM	4/1 2011
⚠2	BRIDGE NUMBER WAS BRIDGE CODE	SM	3/30 2011
⚠1	ADDED BRIDGE CODE; REMOVED EXPANSION JOINT SSE136803AA	SM	3/29 2011

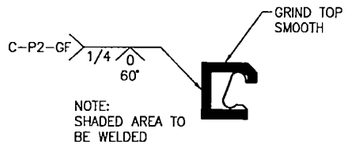
Watson Bowman Acme
Watson Bowman Acme Corp.
95 Pineview Drive
Amherst, NY 14228
phone: (716)691-7686
fax: (716)691-0239
www.wbacorp.com

BASF The Chemical Company

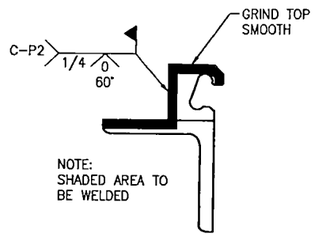
PROJECT:
RRV & WRR SEPERATION WIDENING
JAMESTOWN
WABO SSE-400 STRIP SEAL EXPANSION JOINT

DETAILED BY: SM	DATE: 3/28/11		
CHECKED BY: JFW	DATE: 3/28/11		
SCALE: NTS	WBA JOB NO.: 136803		
SHEET NO.: 2 OF 4	DRAWING NO.: B-28831		

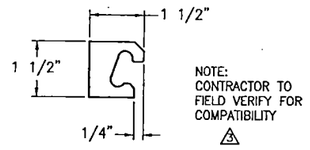
4/5/2011 7:49:10 AM



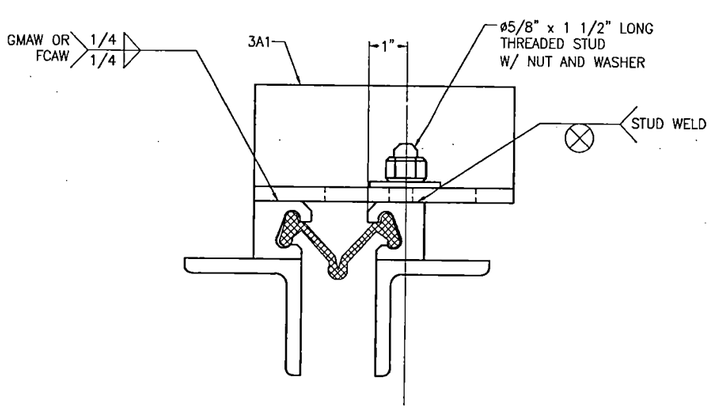
SHOP WELD DETAIL



FIELD WELD DETAIL



MODIFIED
TYPE "E" STEEL EXTRUSION
DETAIL

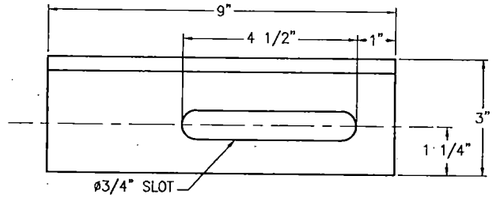


SHIPPING CLAMP ASSEMBLY
(THIS IS A TEMPORARY DEVICE)

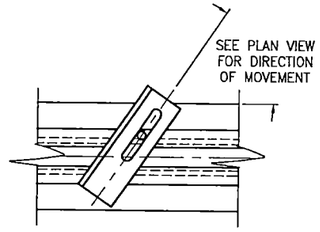
NOTES:
1. SHIPPING CLAMPS SHALL BE SPACED DIRECTLY BETWEEN SUPPORT BOXES AND BETWEEN THE END OF THE JOINT AND LAST BOXES.

2. THE CONTRACTOR IS TO REMOVE THE SHIPPING CLAMPS AND STUDS, WHEN THE JOINT IS SET. WELDS ARE TO BE GROUND SMOOTH AND DAMAGED GALVANIZING IS TO BE TOUCHED UP.

3. EACH SHIPPING CLAMP ASSEMBLY SHALL INCLUDE:
   1 – ANGLE (3A1) – 3" x 3" x 3/8"
   1 – ø5/8" x 1 1/2" LONG THREADED STUD
   1 – ø5/8" WASHER
   1 – ø5/8" NUT



DETAIL ANGLE (3A1)
3" x 3" x 3/8" ANGLE



SHIPPING CLAMP ORIENTATION

INSPECTION REQUIRED

No Exceptions Noted
BY: D Stolz
DATE: April 5, 2011
REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS
NDDOT

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

COUNTY: STUTSMAN
PROJECT NO.: SHE-SIM-2-094(094)260
PCN: 17342
BRIDGE NO.: 94-260.304R
WBA PRODUCT NO.: SSE136803AB
JOINT TYPE: STRIP SEAL

MARK SYSTEM

DRAWING ACTION:

SUBMITTED FOR APPROVAL

DATE: 3/28/11

NO	DESCRIPTION	NAME	DATE
3	ADDED NOTE	SM	4/5 2011
2	BRIDGE NUMBER WAS BRIDGE CODE	SM	3/30 2011
1	ADDED BRIDGE CODE; REMOVED EXPANSION JOINT SSE136803AA	SM	3/28 2011

Watson Bowman Acme Corp.
95 Pineview Drive
Amherst, NY 14228
phone: (716)691-7666
fax: (716)691-9259
www.wbcorp.com

The Chemical Company

PROJECT:
RRV & WRR SEPERATION WIDENING
JAMESTOWN

WABO SSE-400 STRIP SEAL EXPANSION JOINT

DETAILED BY:	DATE:
SM	3/28/11
CHECKED BY:	DATE:
JFW	3/28/11
SCALE:	WBA JOB NO.:
NTS	136803
SHEET NO.:	DRAWING NO.:
3 OF 4	B-28831

4/5/2011 7:49:11 AM

RECOMMENDED SEAL INSTALLATION PROCEDURE

1. PRIOR TO INSTALLING OF THE STRIP SEAL GLAND, INSTALLATION OF THE EXPANSION JOINT HARDWARE AND COMPONENTS (ANCHORS AND EXTRUSIONS) SHALL BE COMPLETED AND SATISFY THE DETAILS AS SHOWN IN THE SHOP DRAWINGS.

2. SEAL INSTALLER SHALL INSURE THAT THE OPENING AT THE EXPANSION JOINT (OPENING EQUALS THE WIDTH BETWEEN TOP OF THE INSIDE EDGES OF THE EXTRUSIONS) HAS BEEN SET TO A WIDTH REQUIRED BY TEMPERATURE AND IS A MINIMUM FIELD INSTALLATION WIDTH OR WIDER.

3. PRIOR TO INSTALLATION OF THE SEAL, THE EXTRUSION CAVITY MUST BE FREE OF ALL RUST, DIRT, OIL OR ANY OTHER FOREIGN MATTER THAT COULD BE DETRIMENTAL TO THE SEALING CAPABILITY OF THE NEOPRENE GLAND AND SHALL BE CLEANED WITH AN APPROVED SOLVENT (TOLUENE OR MEK). DRIED CONCRETE FROM THE DECK POURING OPERATION OR PIECES OF SAND & GRAVEL, IF LEFT IN THE CAVITY, WILL PREVENT THE SEAL FROM LOCKING INTO THE EXTRUSION CAVITY.

4. APPLY THE LUBRICANT/ADHESIVE TO THE INSIDE OF THE EXTRUSION CAVITY AND TO THE EAR LUGS ON BOTH SIDES OF THE EXPANSION JOINT.

NOTE: IT IS RECOMMENDED THAT THE INSTALLER APPLY THE LUBRICANT/ADHESIVE IN APPROXIMATE 5 FOOT INCREMENTS. EXTRA TIME MAY BE REQUIRED TO INSTALL THE SEAL; THEREFORE, THESE SMALL INTERVALS WILL MINIMIZE THE CHANCE OF THE LUBRICANT/ADHESIVE SETTING BEFORE THE SEAL HAS BEEN INSERTED.

5. TO BEGIN INSTALLATION, TAKE HOLD OF THE SEAL AND MANUALLY FOLD SEAL AS INDICATED IN FIGURE 1. CENTER FOLDED SEAL OVER EXPANSION JOINT OPENING.

6. INSERT SEAL INTO OPENING BETWEEN STEEL EXTRUSIONS. IN THIS, CARE SHOULD BE EXERCISED THAT THE SEAL IS NOT INSERTED THROUGH AND PAST THE JOINT OPENING. ONCE PROPERLY INSERTED, THE BOTTOM HALF OF THE GLAND EAR OR THE LOWER EAR LUGS SHOULD BE AUTOMATICALLY EXTENDED OUTWARD AND SEAT THEMSELVES INTO THE BOTTOM PORTION OF THE EXTRUSION CAVITY. SEE FIGURE 2 FOR COMPLETED SETUP OF INSTALLATION AT THIS TIME.

7. THE INSTALLER SHALL NOW PROCEED TO USE THE INSTALLATION TOOL AS SUPPLIED BY THE JOINT MANUFACTURER (PT. # 3020). PLEASE NOTE POSITION OF TOOL AS INDICATED IN FIGURE 3. THE TOOL MAY BE APPLIED TO EITHER SIDE OF THE EXTRUSION. WITH THE WORKING EDGE OF THE TOOL, APPLY FORCE TO THE WORKING POINT OF THE SEAL INDICATED IN FIGURE 3. WORK THE SEAL UPWARD TO ALLOW THE UPPER EAR LUG TO ROTATE TOWARD THE REAR OF THE EXTRUSION CAVITY & LOCK IN UNDER THE UPPER LIP. WORK THE TOOL IN SMALL SEGMENTS ALONG THE LENGTH OF THE JOINT. TO CONTINUE THE INSTALLATION, USE OF ONE TOOL TO HOLD THE UPPER EAR LUG AND A SECOND TOOL TO APPLY THE LEVER ACTION THAT IS RECOMMENDED UNTIL THE UPPER EAR LUG HAS BEEN PROPERLY SEATED AND LOCKED INTO THE UPPER PORTION OF THE EXTRUSION CAVITY.

8. UPON COMPLETING THE SECTION OF THE SEAL, REVERSE THE TOOL AS INDICATED IN FIGURE 4 AND FOLLOW THE SAME PROCEDURE AS OUTLINED IN STEP 7. HERE WE ARE SIMPLY WORKING THE TOOL ALONG THE OPPOSITE SIDE OF THE JOINT.

9. UPON COMPLETING STEP 8, THE INSTALLER SHALL REPEAT 3 THROUGH 8 UNTIL THE TOTAL LENGTH HAS BEEN INSTALLED.

10. IT IS RECOMMENDED THAT THE INSTALLER INSPECT THE OVERALL SEAL INSTALLATION AND ENSURE THAT THE SEAL HAS BEEN PROPERLY INSTALLED AND LOCKED IN THE EXTRUSION CAVITY. ANY PORTION OF THE SEAL NOT LOCKED PROPERLY MUST BE CORRECTED AT ONCE FOLLOWING STEPS 7 AND 8.

11. INSTALLATION IS NOW COMPLETE. ALLOW LUBRICANT/ADHESIVE APPROXIMATELY 24 HOURS TO FULLY CURE.

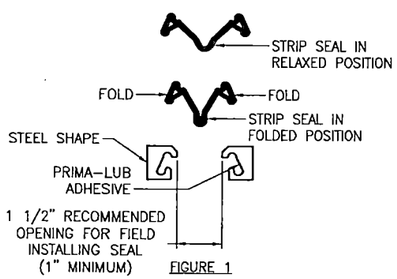


FIGURE 1

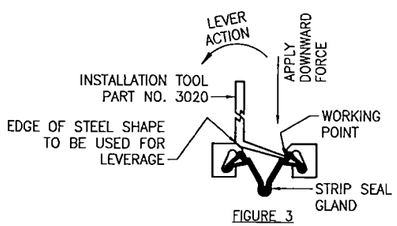


FIGURE 3

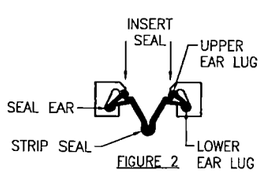


FIGURE 2

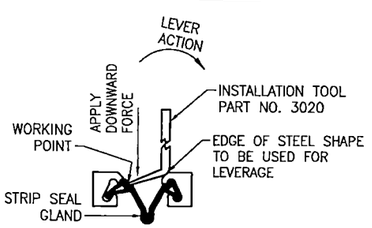


FIGURE 4

SHEET NUMBER
ITEM DESIGNATION
ITEM NUMBER
2e1
MARK SYSTEM

INSTALLATION PROCEDURE

STEP 1. BLOCKOUT – THE BLOCKOUT FOR THE EXPANSION JOINT SHALL BE CONSTRUCTED TO DIMENSIONS SHOWN IN THE TYPICAL SECTION ON SHEET 3 AND AS DIRECTED BY THE FIELD ENGINEER.

STEP 2. PLACE EXPANSION JOINT OVER CENTERLINE OF OPEN JOINT AND ADJUST TO PROPER GRADE AND ELEVATION.

STEP 3. CHECK WIDTH OF OPEN JOINT AND MAKE ADJUSTMENTS IF NECESSARY. (AS DIRECTED BY ENGINEER).

STEP 4. CUT STEEL EXTRUSION TO ACCURATE LENGTH AND MAKE NECESSARY FIELD WELDS (IF NECESSARY).

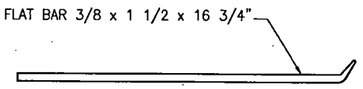
STEP 5. FIELD WELD EXPANSION JOINT INTO PLACE AS SHOWN IN THE TYPICAL SECTION.

STEP 6. APPLY GALVANIZING TOUCH-UP PAINT.

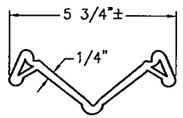
STEP 7. POUR CONCRETE TO BLOCKOUT.

STEP 8. CONTRACTOR SHALL REMOVE SHIPPING CLAMPS AND TOUCH UP ANY DAMAGED GALVANIZED AREAS.

STEP 9. CONTRACTOR SHALL FIELD INSTALL THE NEOPRENE SEAL ACROSS THE ENTIRE ROADWAY.



SEAL INSTALLATION TOOL



MOVEMENT RATING – 4"

SE-400 SEAL

SSE136803AB QTY: 1 REQ'D. **STRUCTURED BILL OF MATERIALS** DWG# B-28831

LV	PART NO.	QTY	UM	DESCRIPTION	MATERIAL	REVISION
0	SSE136803AB	1	EA	ITEM 82; SSE; PL = 59" (W △3	GALVANIZED	
					SHIPPING LENGTH = 10'±	
					APPROX. SHIPPING WEIGHT = 300 lb	
1	7959	2	EA	NUT5/8(A)B69583C50T1 A563/DH-*		
1	7010	2	EA	THD STUD 5/8x1-1/2AW L NP108-*		
1	7549	2	EA	WASHER 5/8(A) B695C50T1 F436-*		
2	4831	20	EA	CON ANC BNT 5/8 x 6 C10596-*(U		
3	1929	20	FT	SS E FM 1.50x1.5 A36 C11866(W		
3	3880	18	FT	ANGLE 3x3x3/8 A36		
2	SSE136803AB01	2	EA	SHIPPING CLAMP (3A1)		
3	3880	0.75	FT	ANGLE 3x3x3/8 A36		

SSE136803S2 QTY: 1 REQ'D. **STRUCTURED BILL OF MATERIALS** DWG#B-28831

LV	PART NO.	QTY	UM	DESCRIPTION	CLASS	MATERIAL	REVISION
0	SSE136803S2	1	EA	SEAL FOR SHIPPING △3			
1	100	60.00	FT	SE STRIP SEAL 400 C1703-3	A		

REFER TO DRAWING B-28837 FOR PARTS FOR SHIPPING

INSPECTION REQUIRED

No Exceptions Noted
BY: D Stolz
DATE: April 5, 2011
REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DEVIATIONS FROM CONTRACT REQUIREMENTS
NDDOT

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

COUNTY: STUTSMAN
PROJECT NO.: SHE-SIM-2-094(094)260
PCN: 17342
BRIDGE NO.: 94-260.304R
WBA PRODUCT NO.: SSE136803AB
JOINT TYPE: STRIP SEAL

DRAWING ACTION: SUBMITTED FOR APPROVAL
DATE: 3/28/11

NO	DESCRIPTION	NAME	DATE
△3	REMOVED BRIDGE CODE	SM	4/1/2011
△2	BRIDGE NUMBER WAS BRIDGE CODE	SM	3/30/2011
△1	ADDED BRIDGE CODE; REMOVED EXPANSION JOINT SSE136803AA	SM	3/29/2011

Watson Bowman Acme
Watson Bowman Acme Corp.
95 Pineview Drive
Amherst, NY 14228
phone: (716)691-7666
fax: (716)691-9239
www.wbacorp.com

BASF The Chemical Company

PROJECT:
RRV & WRR SEPERATION WIDENING
JAMESTOWN

WABO SSE-400 STRIP SEAL EXPANSION JOINT

DETAILED BY: SM	DATE: 3/28/11
CHECKED BY: JFW	DATE: 3/28/11
SCALE: NTS	WBA JOB NO.: 136803
SHEET NO.: 4 OF 4	DRAWING NO.: B-28831

4/5/2011 7:49:12 AM

JOB# 3

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

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

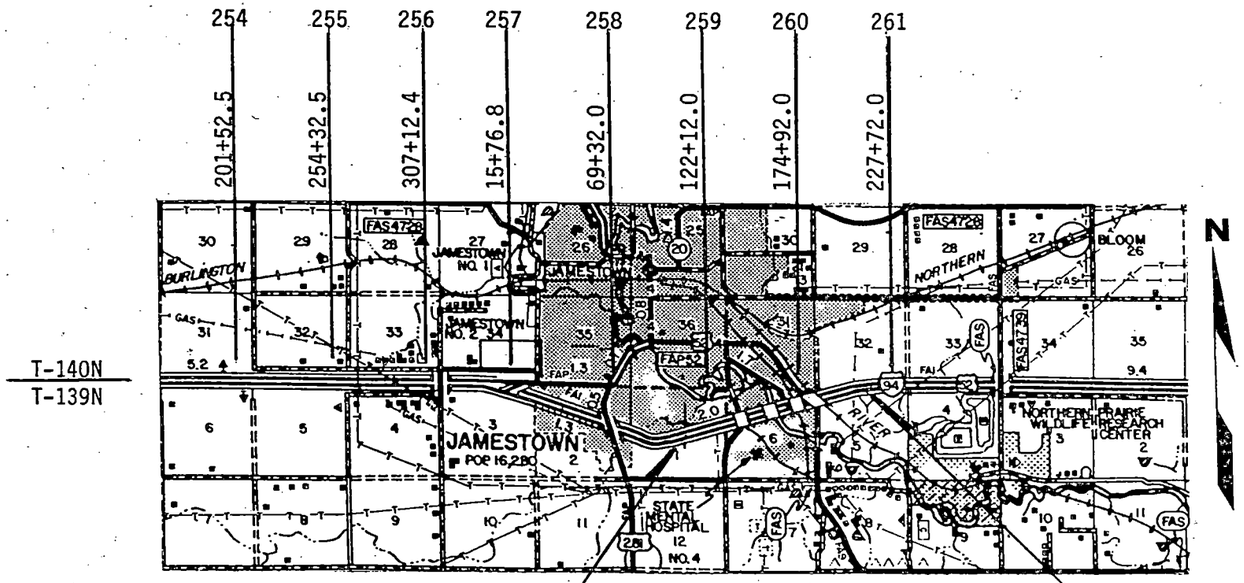
IN STUTSMAN COUNTY
FEDERAL AID PROJECT IR-94-7(038)259 CONTRACT 2
STRUCTURAL, GRADING, & SURFACING

GOVERNING S
Standa
Constructio
Department,
Department c
currently in
submitted herein.

SID 635

LENGTH OF PROJECT

Project	Miles-Gross	Miles-Net
IR-94-7(038)259	1.685	1.685



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

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

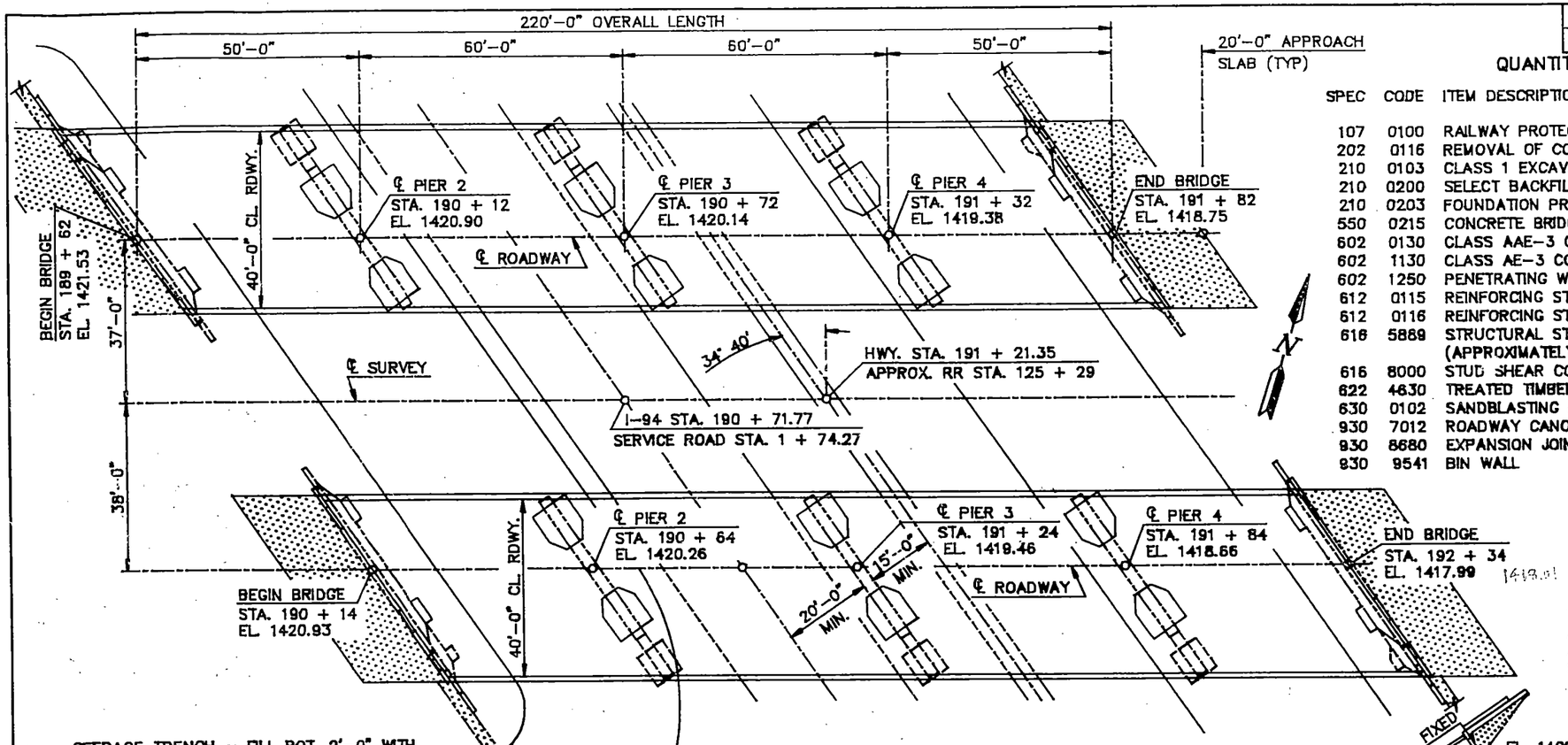
Ray Zink

DIRECTOR OF HIGHWAYS
AND ENGINEERING

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

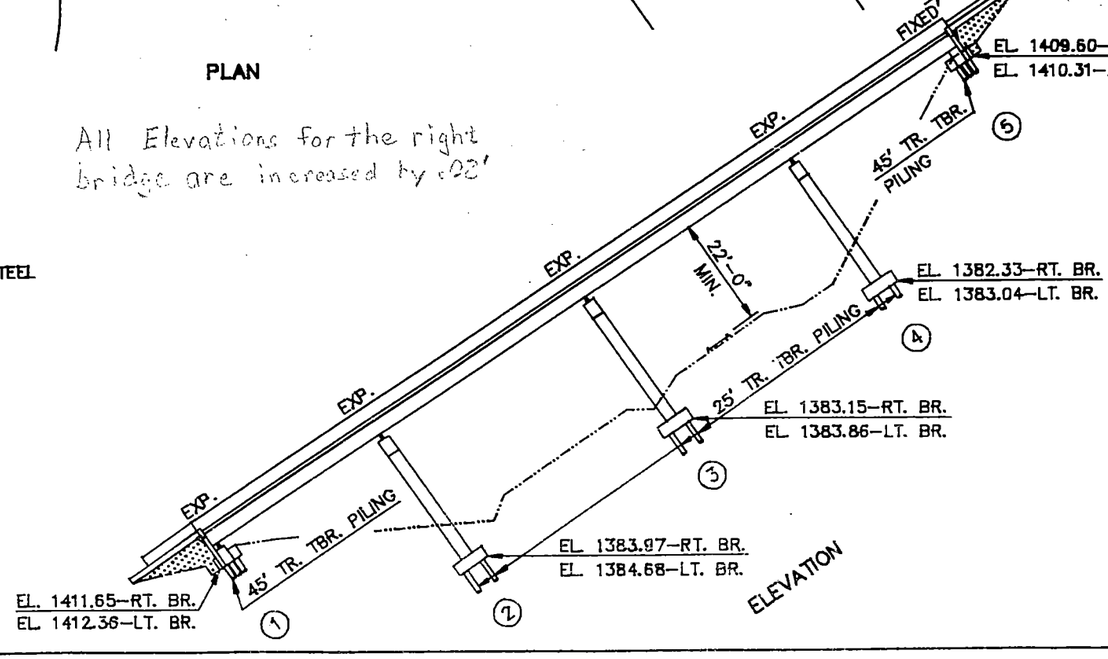
RAY ZINK REGISTERED PROFESSIONAL P.E. 972 ENGINEER NORTH DAKOTA

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



PLAN

All Elevations for the right bridge are increased by .02'



ELEVATION

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
616	5869	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.

DESIGN STRENGTHS

f'c = 3,000 PSI ~ CLASS AE-3 CONCRETE
f'c = 4,000 PSI ~ CLASS AAE-3 CONCRETE
fy = 36,000 PSI ~ AASHTO M-270 GR. 36 STRUCTURAL STEEL
fy = 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 DATE
Forrest D. Dubroy BRIDGE ENGINEER

FORREST D. DUBROY REGISTERED PROFESSIONAL 948 ENGINEER NORTH DAKOTA

90DLS26

94-260.304 L & R

94-260.304 L BN RR SEP
E OF JCT US 52

100 SCOPE OF WORK: This bridge widening project consists of removing the existing deck plus 20 feet of the existing approach slab, remove and replace existing beam web splice plates, install stud shear connectors on existing beams, remove a portion of the abutments, widen the piers, add a new girder line, and place a new roadway deck and approach slabs on both bridges.

100 GENERAL: The cost of furnishing and placing preformed expansion joint filler, concrete inserts, tie wire, bar spacers, bar supports, deck drains, 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 ensure no damage is done to the girders. All work to remove and properly dispose of the concrete shall be included in the bid item "Removal of Concrete."

210 EXCAVATION: The excavation at the abutments and piers as shown on the layout sheet and the excavation required to build the piers shall be included in the lump sum bid item, "Class 1 Excavation."

210 SELECT BACKFILL: Select backfill shall meet the requirements of Section 816.03, Class 5, except maximum size shall be 3". Select backfill shall be compacted in accordance with section 203.02F.

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 surfaces of the barrier and the edge of the slab.

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 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 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's capable of drilling through an existing reinforcing steel that may be encountered while drilling holes into the existing concrete.

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, RA bars, and couplers.

616 STUD SHEAR CONNECTOR: The bid item stud shear connector is for the installation of studs on the existing beams only. The cost of the studs for the new beams shall be included in the bid price for structural steel.

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.

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.

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."

930 BIN WALL: The price bid for bin wall shall include all labor and material required to remove two of the existing sections, replace with two new sections and add to the existing sections as shown on the plans. Armco Type 1 Bin Wall, Design A, shall be used for the new walls and for the addition to the existing walls. All excavation and backfill behind the existing sections required to remove and construct the bin wall shall be included in the price bid for bin wall. The portion of the existing bin wall that is to be removed shall become the property of the contractor.

930 ROADWAY CANOPY: The contractor shall construct a canopy above the railraod and the county road under the structure to protect traffic from falling material. The canopy is an added safeguard and does not relieve the contractor of any responsibility for the safety of the public.

The canopy must be erected before the concrete deck is removed and remain in place until after the new deck is complete. The canopy may be supported from the ground or suspended from the girders. The erection of the canopy and the girder shall be completed in a minimum amount of time and with the least inconvenience to the public and the railroad.

The canopy shall be of a design and material selected by the contractor and approved by the engineer. The minimum vertical clearance from the traveled roadway to the bottom of the canopy shall be 16'6" and shall be 22' above the railroad tracks. The canopy shall project a minimum distance of 5'-0" beyond the outside edge of curb of the proposed structure.

The canopy shall project a minimum distance of 5'-0" beyond the edge of the driving lanes beneath the structure and 5'-0" beyond the edge of the railroad tracks.

After completion of the structure, the canopy shall be removed and shall remain the property of the contractor.

The roadway canopy shall be paid for at the contract lump sum unit price for "Roadway Canopy." The roadway canopy shall be measured as a lump sum item and shall include construction, maintenance, and removal.

The cost of any measures the contractor takes to protect the traffic during setting of the new girders shall be incidental to other items.

RAILROAD: The contractor shall notify Red River Valley and Western Railroad Company 48 hours prior to the start of construction. The contact person is Mary Beth Olerud, (701)642-8257, Wahpeton, North Dakota.

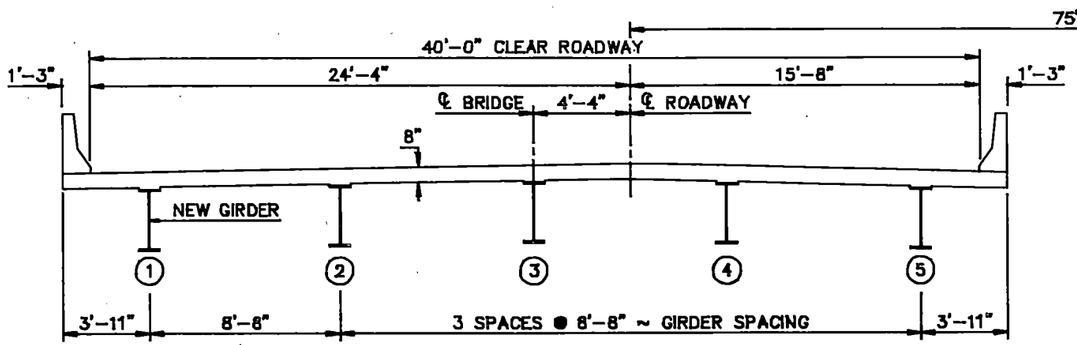
ELEVATION CHECK POINTS: 20 bolts need to be placed on top of the barrier to serve as elevation check points. The cost for this item shall be included in the unit price bid for Class AAE-3 concrete.

SHOP DRAWINGS: The contractor shall submit the following shop drawings to the Construction office for approval;

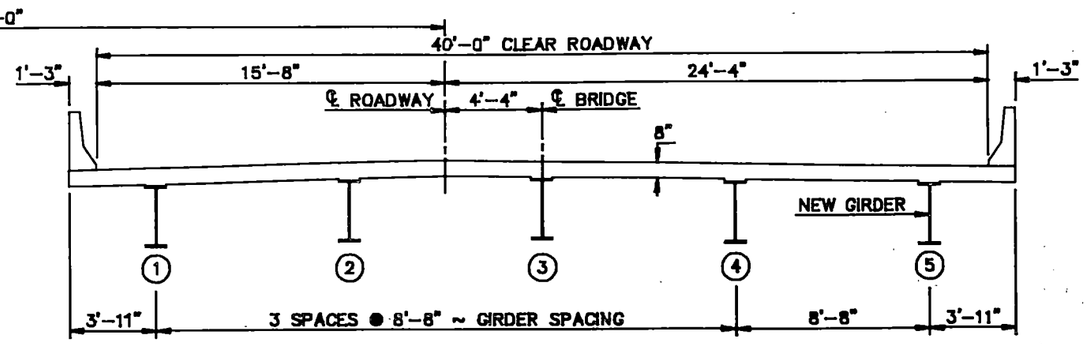
1. Structural Steel

DESIGN STRENGTH:	F'C	3,000 PSI Cl. AE-3 Concrete
	F'C	4,000 PSI Cl. AAE-3 Concrete
	FY	60,000 PSI GR. 60 Reinforced Steel
	FY	36,000 PSI Structural Steel M270 Grade 36

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	107

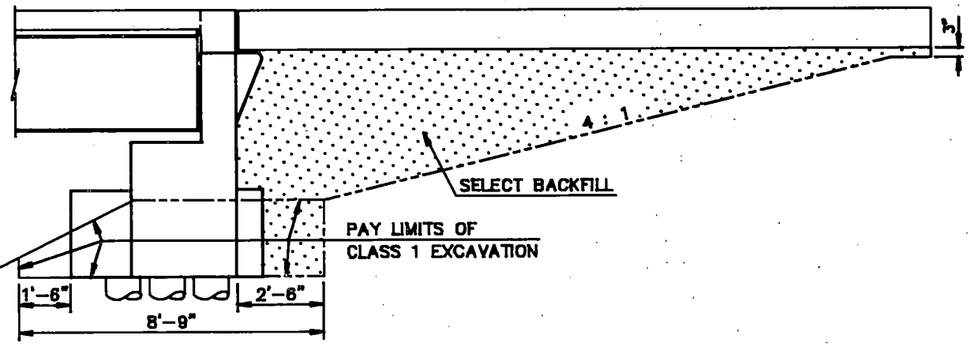


(LEFT ~ WEST BOUND)



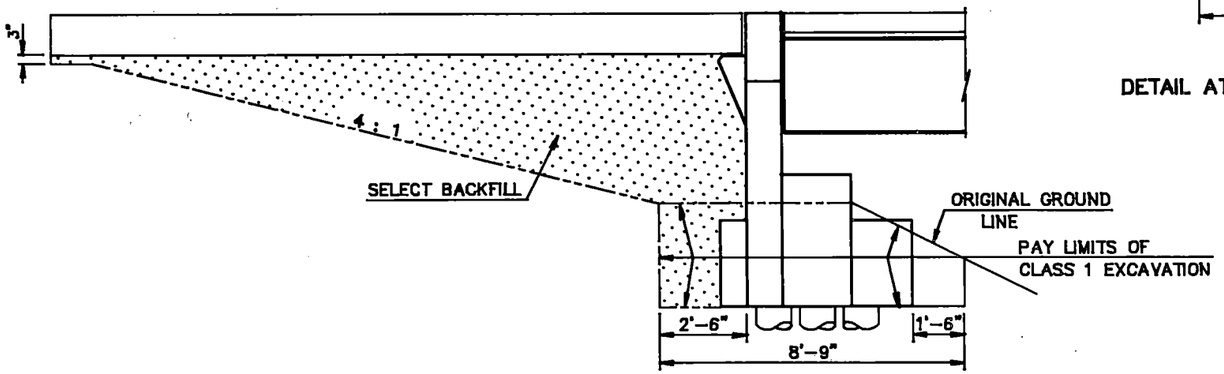
(RIGHT ~ EAST BOUND)

TYPICAL DECK SECTION



(WIDENED AREA ONLY)

DETAIL AT ABUTMENT 5 ~ LEFT & RIGHT



(WIDENED AREA ONLY)

DETAIL AT ABUTMENT 1 ~ LEFT & RIGHT

RRV & WWR SEPARATION WIDENING
JAMESTOWN

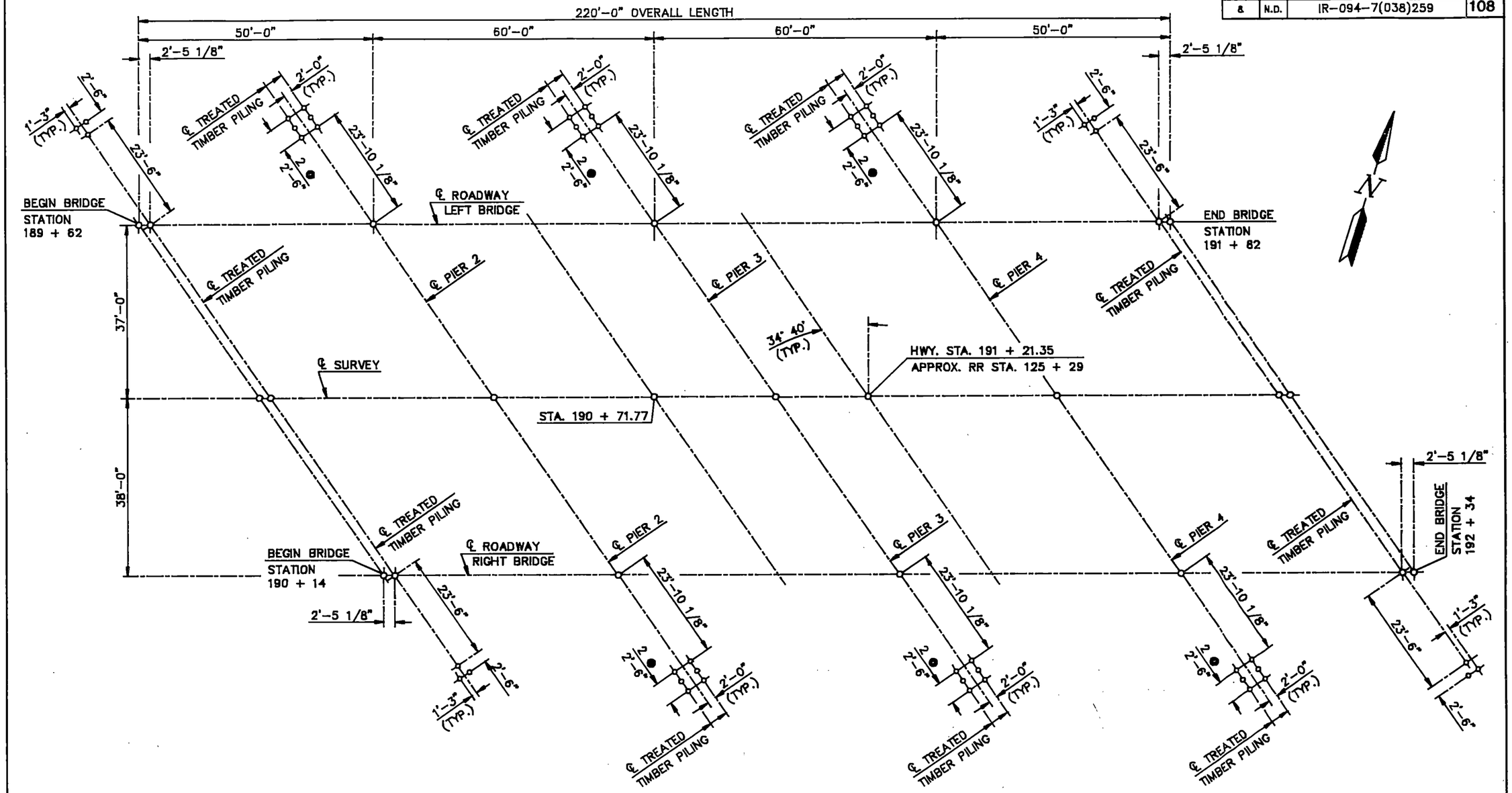
TYPICAL DECK SECTION
& DETAIL AT ABUTMENT

90DLS57

94-260.304L & R-2

102

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	108



BEARING ELEVATIONS		
	LEFT BRIDGE 21'-8" OFFSET	RIGHT BRIDGE 21'-8" OFFSET
ABUTMENT 1	1416.44	1415.45
PIER 2	1415.84 94	1414.81
PIER 3	1415.08 19	1414.01
PIER 4	1414.32 41	1413.21
ABUTMENT 5	1414.62 68	1413.47

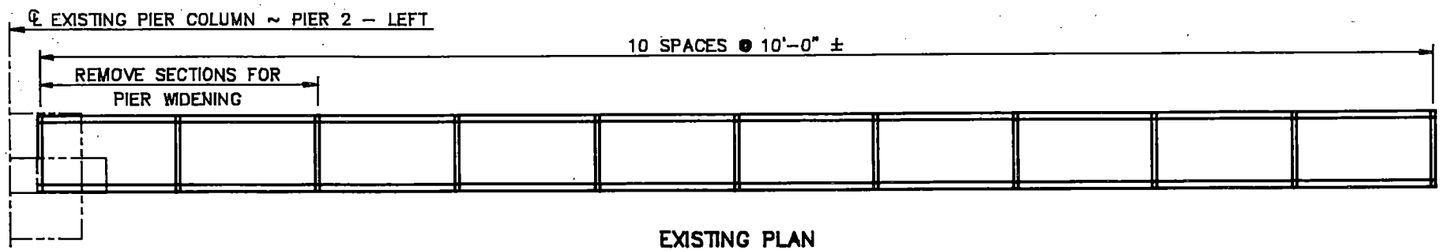
RRV & WRR SEPARATION WIDENING
JAMESTOWN

PILING LAYOUT
& BEARING ELEVATIONS

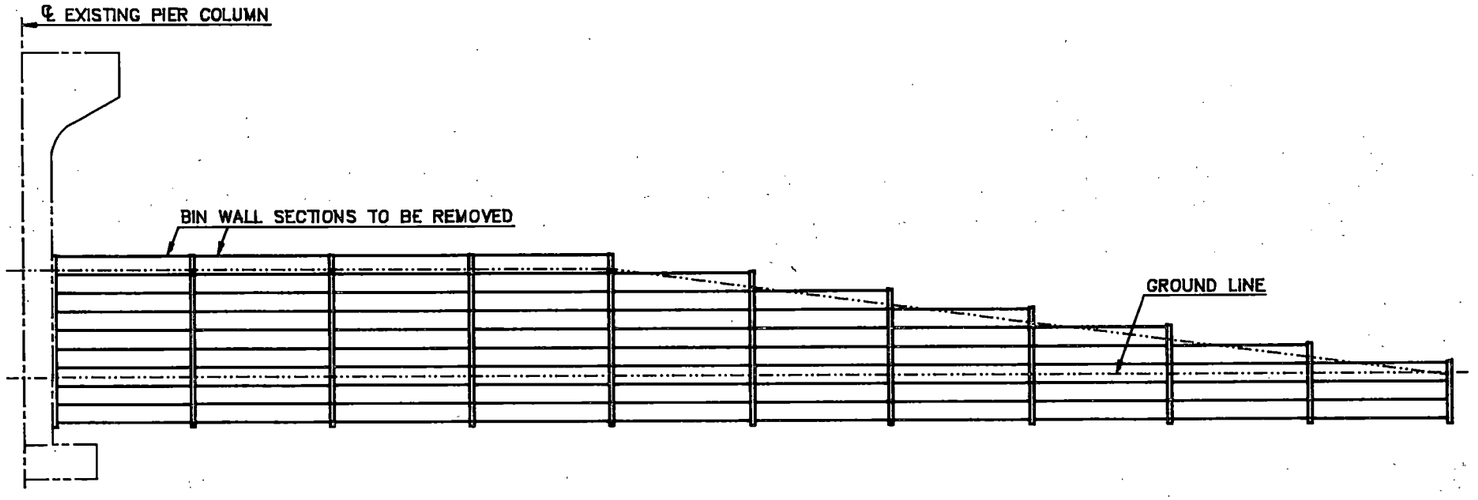
90DLS53

94-260.304L & R-3

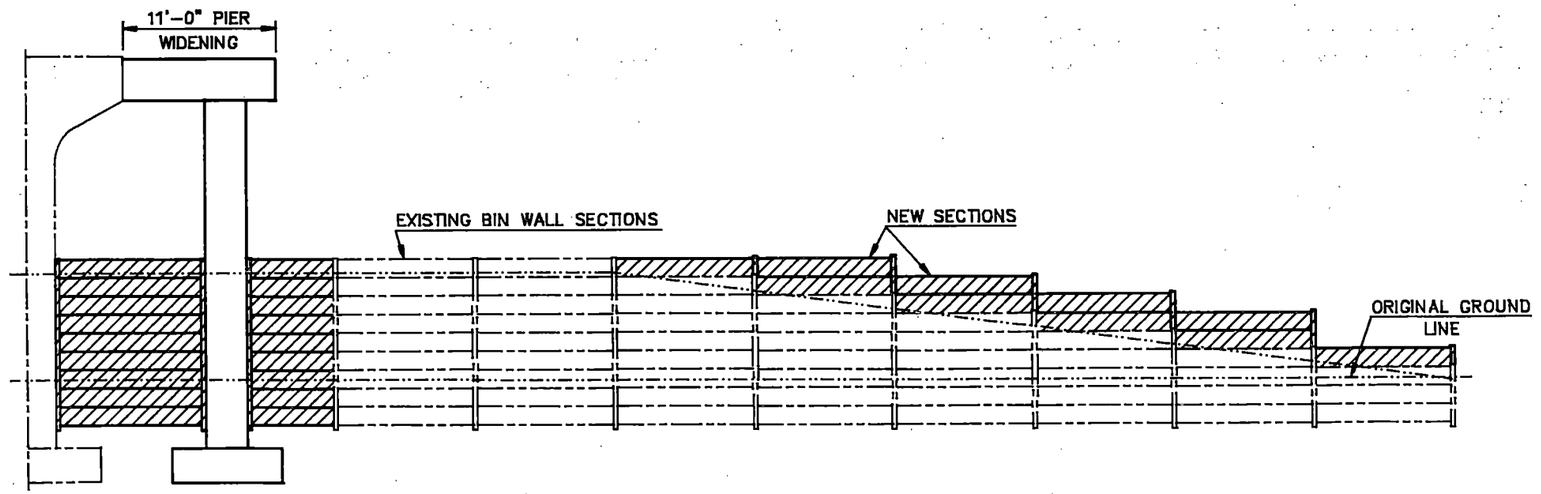
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	109



EXISTING PLAN



EXISTING ELEVATION



EXISTING ELEVATION

THE CROSS-HATCHED SECTIONS INDICATE NEW BIN WALL SECTIONS TO BE ADDED TO THE EXISTING BIN WALL.

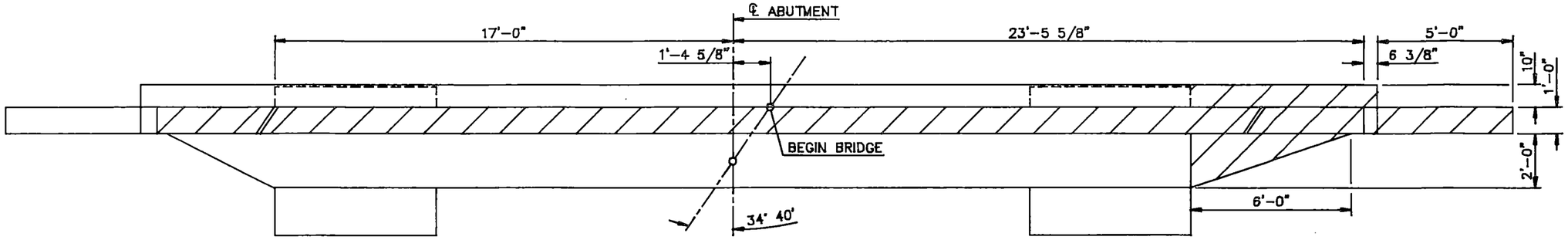
RRV & WRR SEPARATION WIDENING
JAMESTOWN

BIN WALL LAYOUT

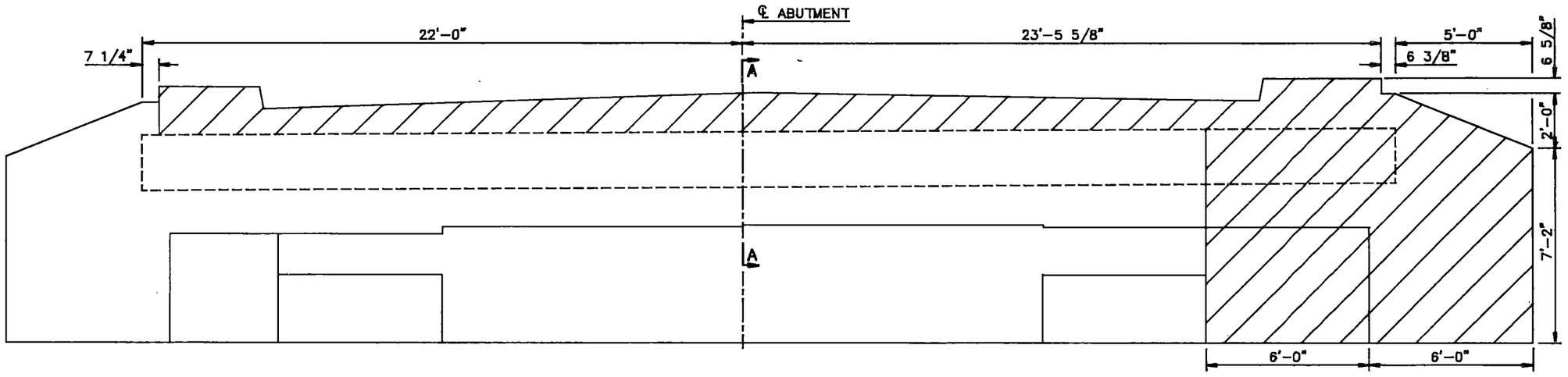
90DLS70

94-260.304L-4

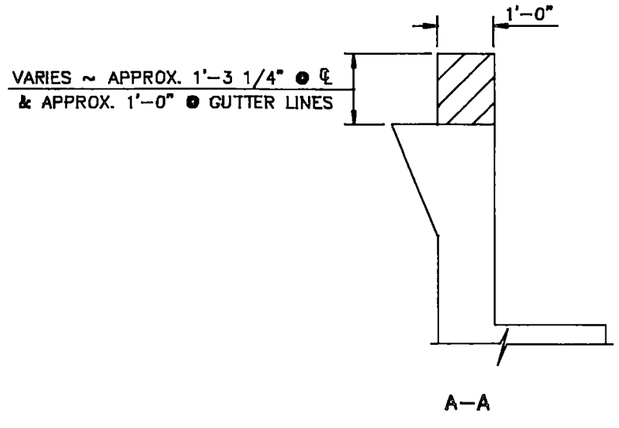
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	110



(SHOWING CONCRETE REMOVAL LIMITS)
EXISTING PLAN



(SHOWING CONCRETE REMOVAL LIMITS)
EXISTING ELEVATION

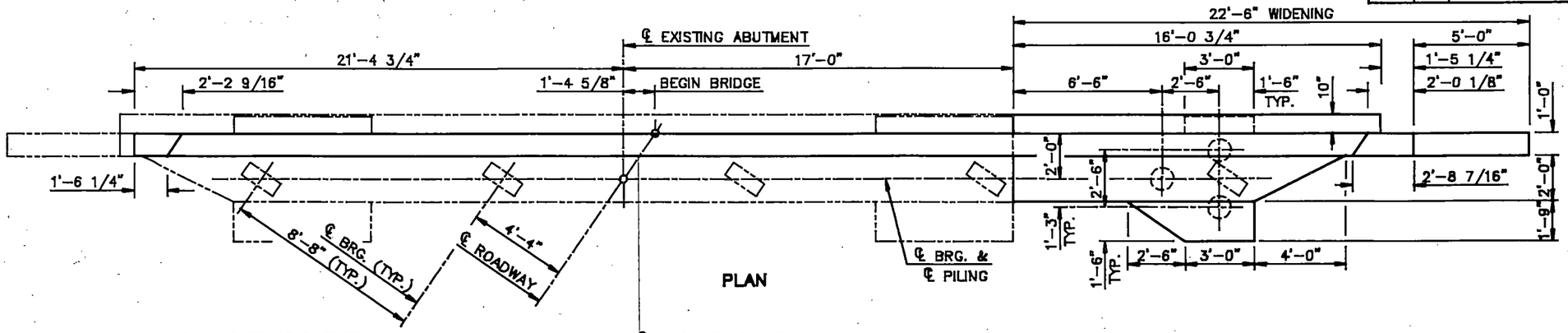


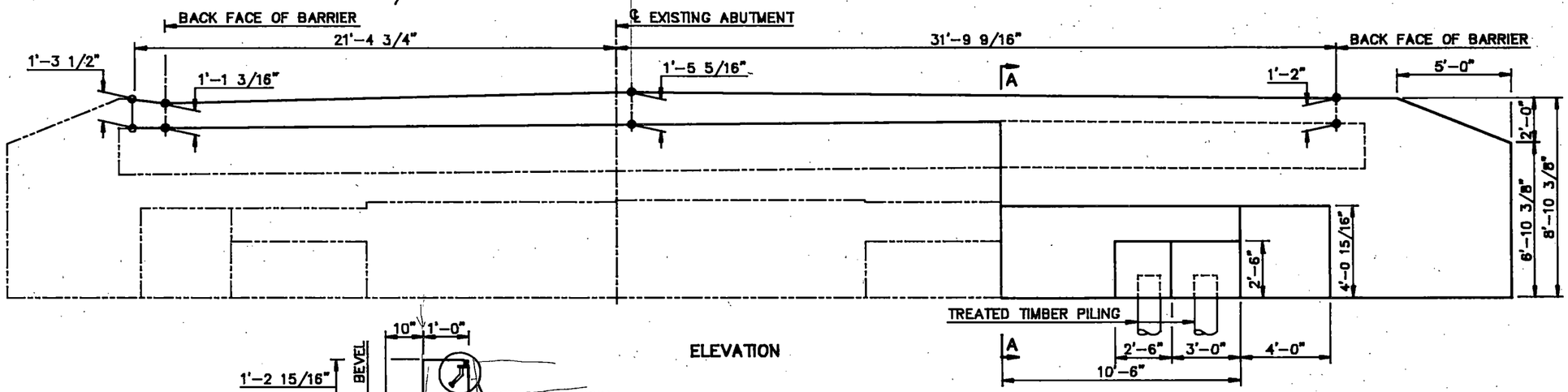
A-A

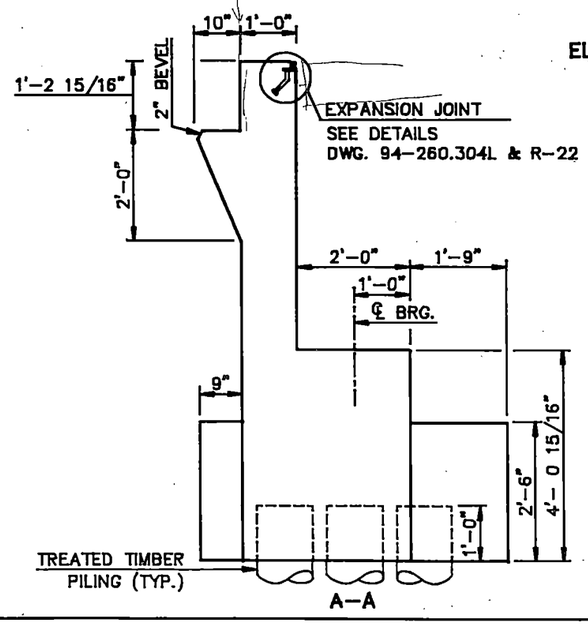
INDICATES THAT AREA OF CONCRETE TO BE REMOVED FROM EXISTING ABUTMENT. CARE SHALL BE TAKEN TO ENSURE NO DAMAGE IS DONE TO REINFORCING STEEL DURING REMOVAL OF CONCRETE THAT IS PROTRUDING FROM THAT PORTION OF EXISTING ABUTMENT THAT IS TO REMAIN IN PLACE.

QUANTITIES
SEE DWG. 94-260.304L-7
RRV & WRR SEPARATION WIDENING JAMESTOWN
CONCRETE REMOVAL DETAILS ABUTMENT 1 ~ LEFT

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	111





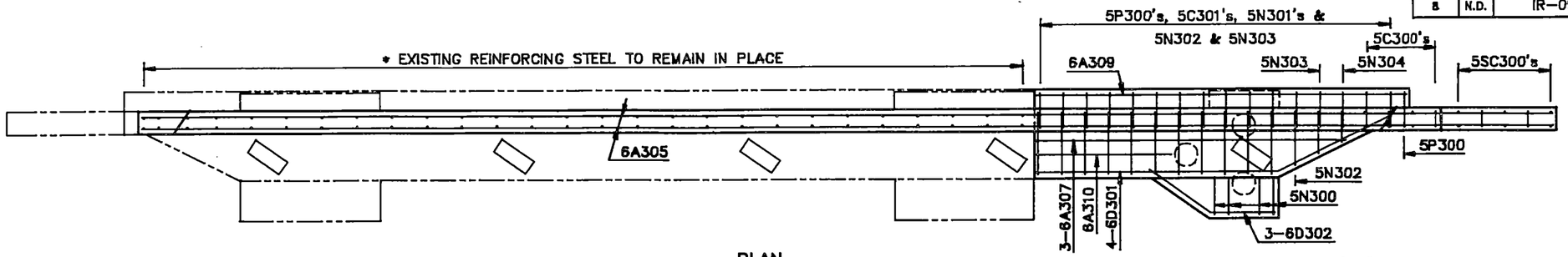


NOTE:
DIMENSIONS MAY VARY DEPENDING ON EXISTING FIELD CONDITIONS.
ADJUSTMENTS SHALL BE MADE TO ACHIEVE THE PROPER ELEVATIONS.

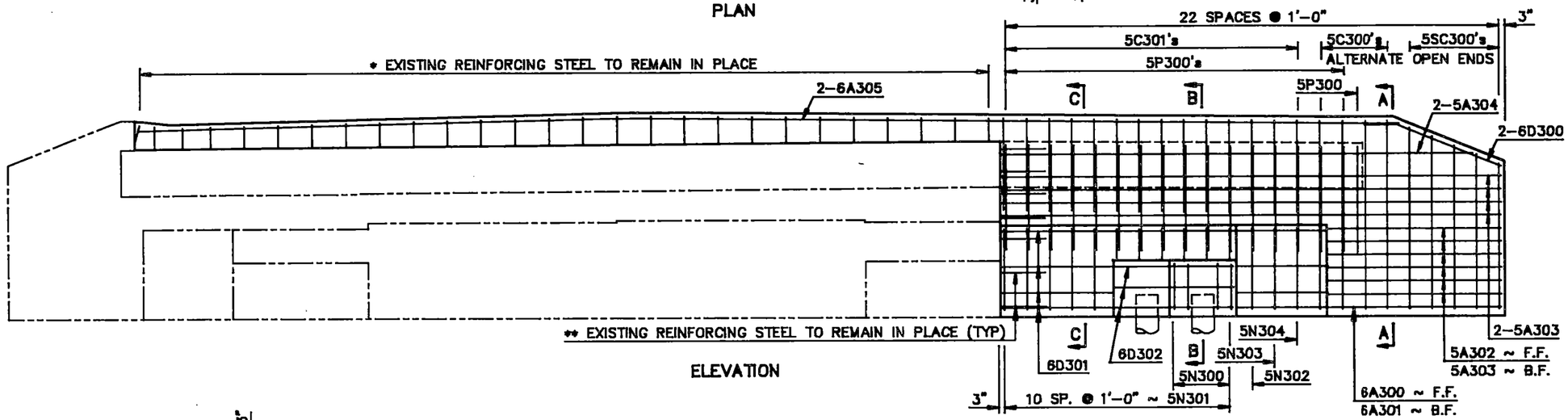
QUANTITIES
SEE DWG. 94-260.304L-7

RRV & WRR SEPARATION WIDENING
JAMESTOWN
(SHOWING DIMENSIONS)
WIDENING DETAILS
ABUTMENT 1 ~ LEFT

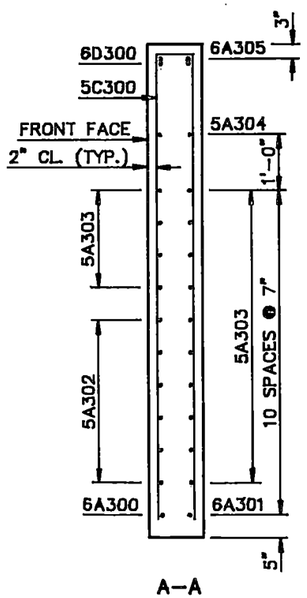
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	112



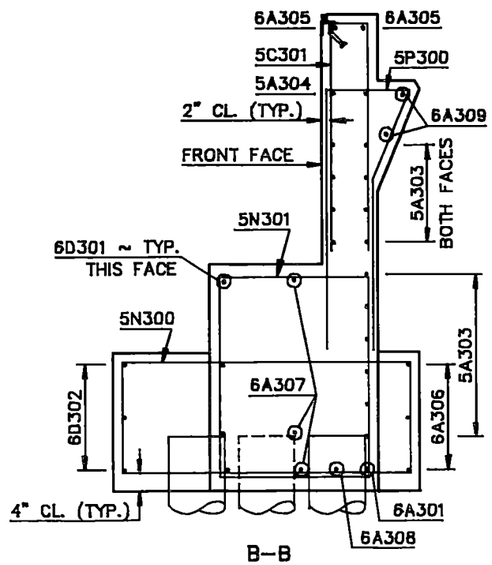
PLAN



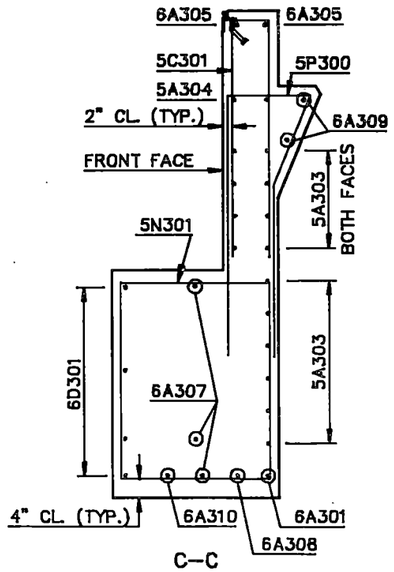
ELEVATION



A-A



B-B



C-C

* THE CONTRACTOR SHALL CUT ANY EXISTING STEEL NECESSARY TO ACHIEVE A 2" END CLEARANCE TO TOP OF NEW ABUTMENT.

** THE EXISTING REINFORCING STEEL PROTRUDING FROM THAT PORTION OF OLD ABUTMENT LEFT IN PLACE SHALL BE CUT LEAVING 2'-0" OF STEEL EXPOSED TO THE WIDENED PORTION OF THE ABUTMENT.

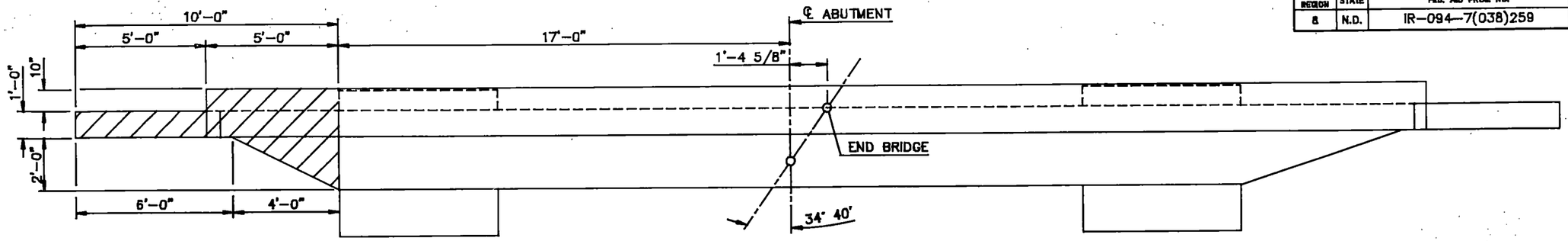
QUANTITIES	
CLASS AE-3 CONCRETE	14.2 C.Y.
REINFORCING STEEL	1655 LBS.
PILING (SEE LAYOUT)	
EXCAVATION (SEE LAYOUT)	

RRV & WRR SEPARATION WIDENING
JAMESTOWN

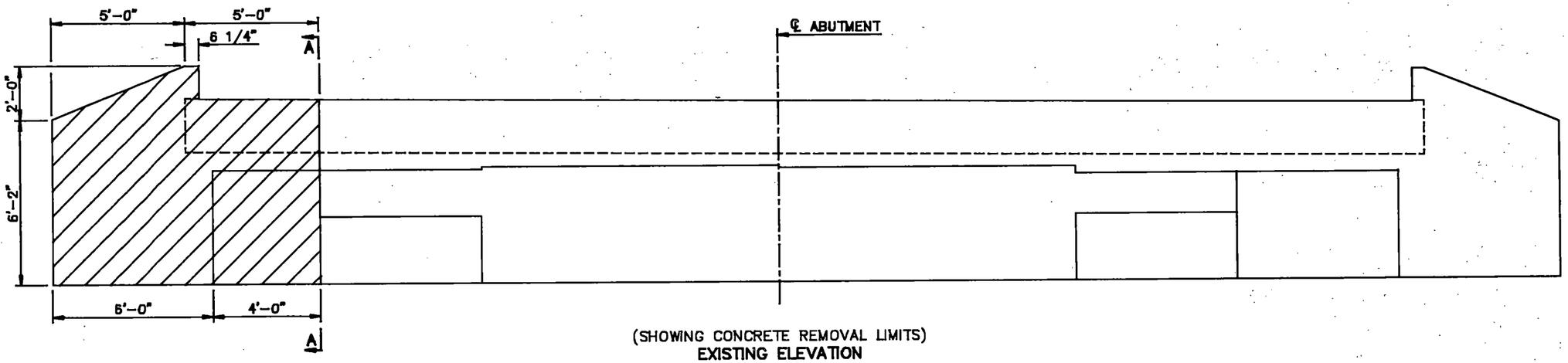
(SHOWING REINFORCING)

WIDENING DETAILS
ABUTMENT 1 ~ LEFT

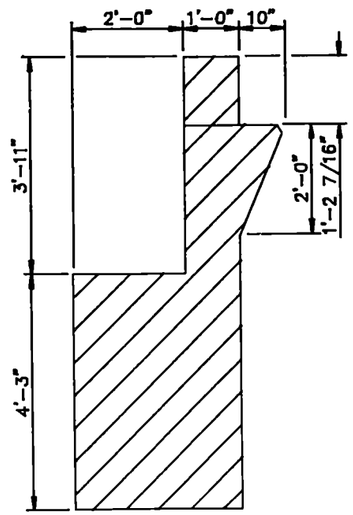
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	113



(SHOWING CONCRETE REMOVAL LIMITS)
EXISTING PLAN



(SHOWING CONCRETE REMOVAL LIMITS)
EXISTING ELEVATION

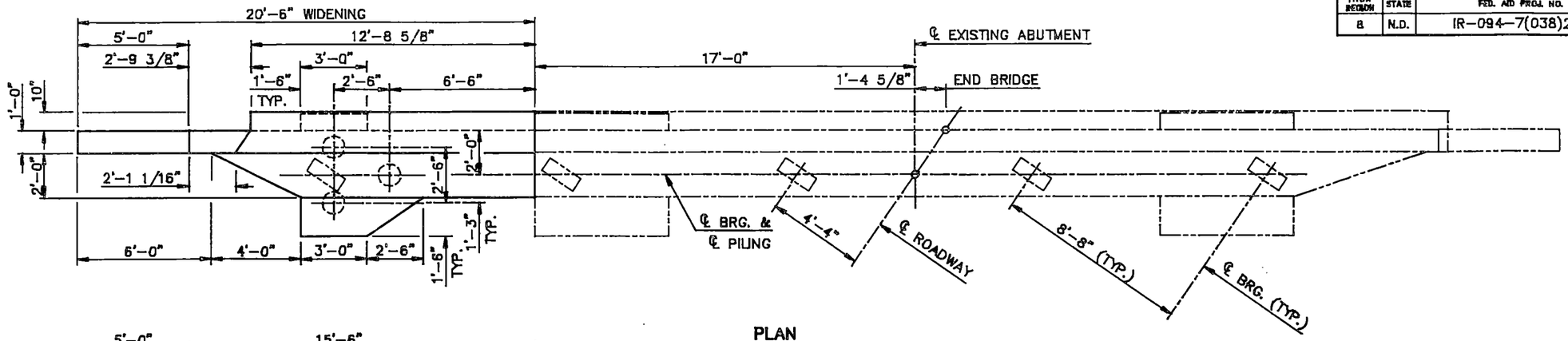


A-A

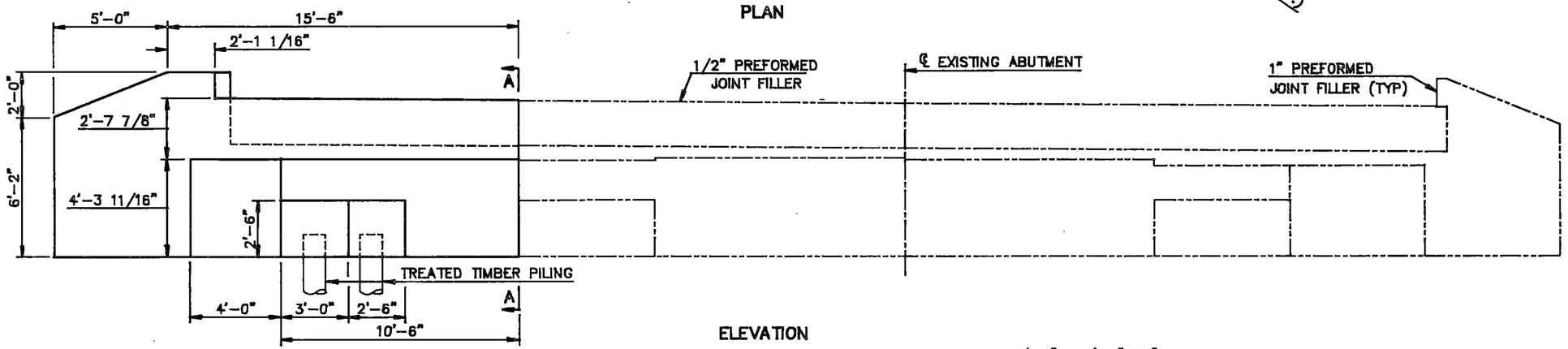
INDICATES THAT AREA OF CONCRETE TO BE REMOVED FROM EXISTING ABUTMENT. CARE SHALL BE TAKEN TO ENSURE NO DAMAGE IS DONE TO REINFORCING STEEL DURING REMOVAL OF CONCRETE THAT IS PROTRUDING FROM THAT PORTION OF EXISTING ABUTMENT THAT IS TO REMAIN IN PLACE.

QUANTITIES
SEE DWG. 94-260.304L-10
RRV & WRR SEPARATION WIDENING JAMESTOWN
CONCRETE REMOVAL DETAILS ABUTMENT 5 ~ LEFT

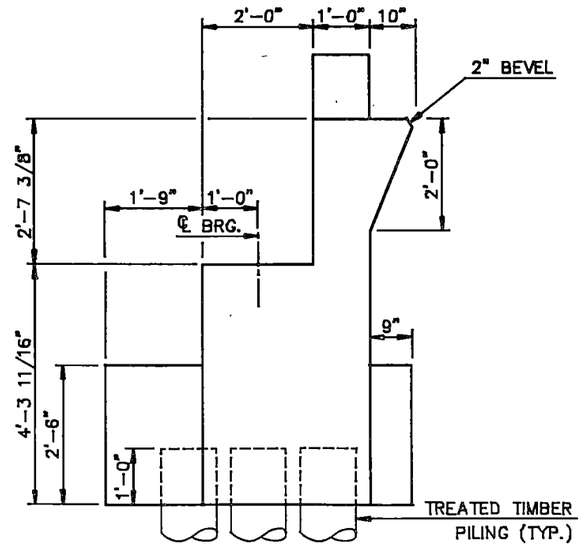
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	114



PLAN



ELEVATION



A-A

NOTE:

DIMENSIONS MAY VARY DEPENDING ON EXISTING FIELD CONDITIONS.
ADJUSTMENTS SHALL BE MADE TO ACHIEVE THE PROPER ELEVATIONS.

QUANTITIES

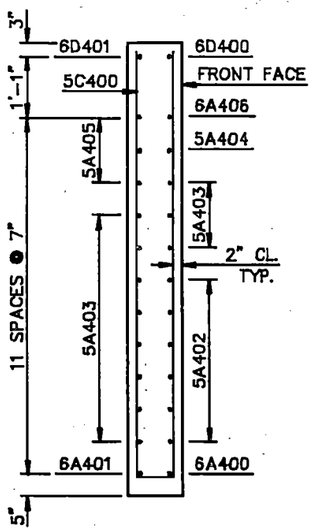
SEE DWG. 94-260.304L-10

RRV & WRR SEPARATION WIDENING
JAMESTOWN

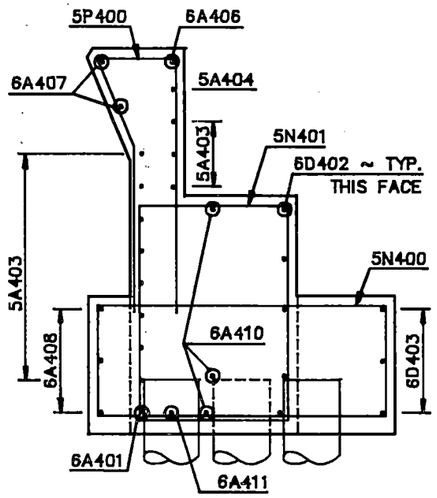
(SHOWING DIMENSIONS)

WIDENING DETAILS
ABUTMENT 5 ~ LEFT

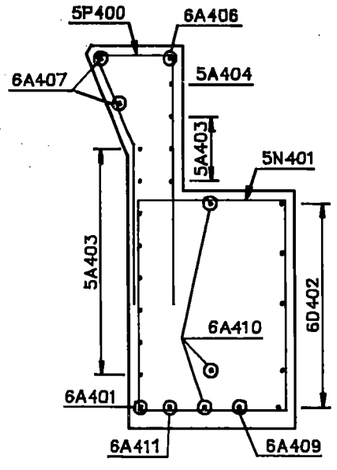
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	115



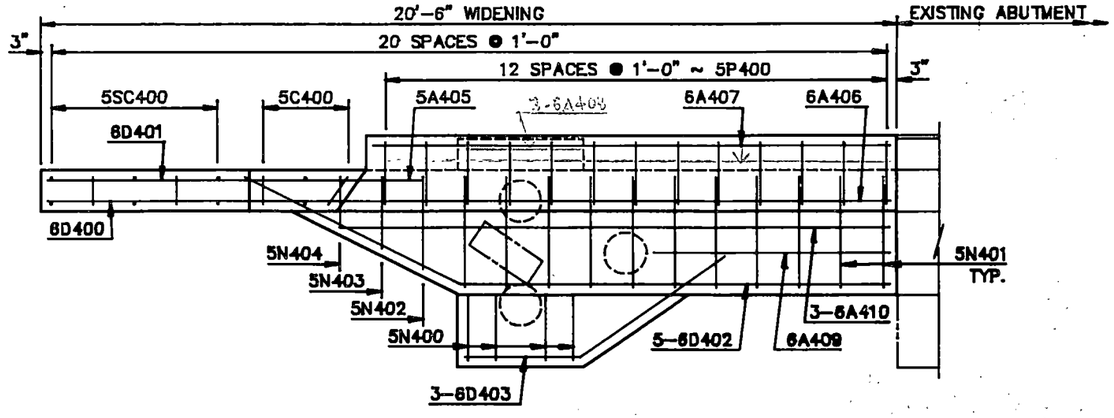
A–A



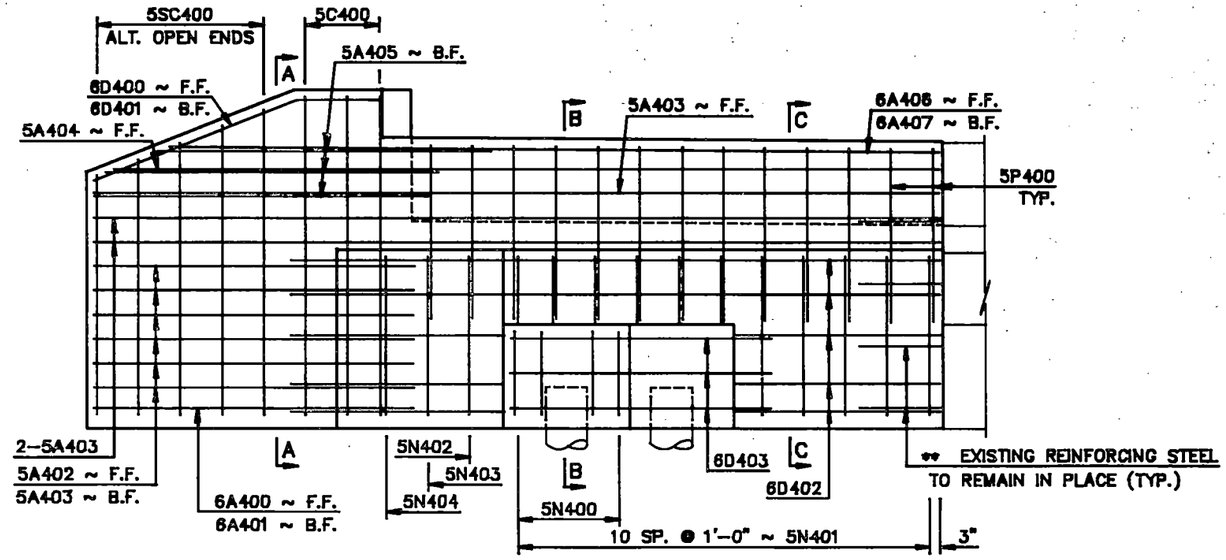
B–B



C–C



PLAN



ELEVATION

** THE EXISTING REINFORCING STEEL PROTRUDING FROM THAT PORTION OF OLD ABUTMENT LEFT IN PLACE SHALL BE CUT LEAVING 2'-0" OF STEEL EXPOSED TO THE WIDENED PORTION OF THE ABUTMENT.

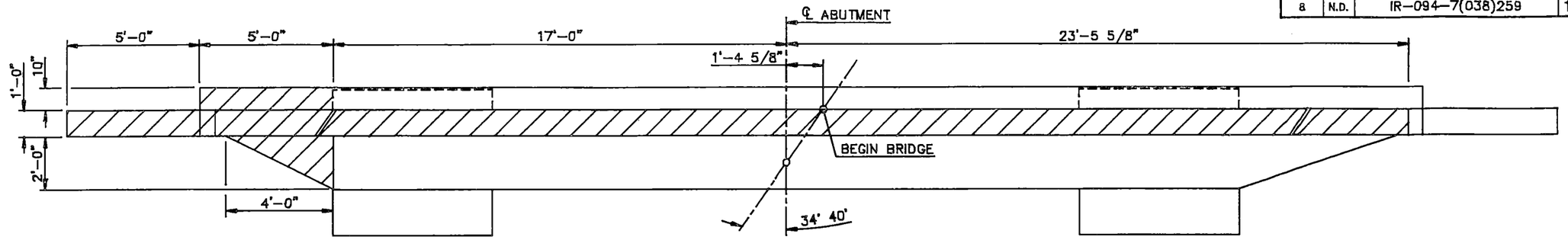
QUANTITIES	
CLASS AE-3 CONCRETE	10.7 C.Y.
REINFORCING STEEL	1220 LBS.
PILING (SEE LAYOUT)	
EXCAVATION (SEE LAYOUT)	

RRV & WRR SEPARATION WIDENING
JAMESTOWN

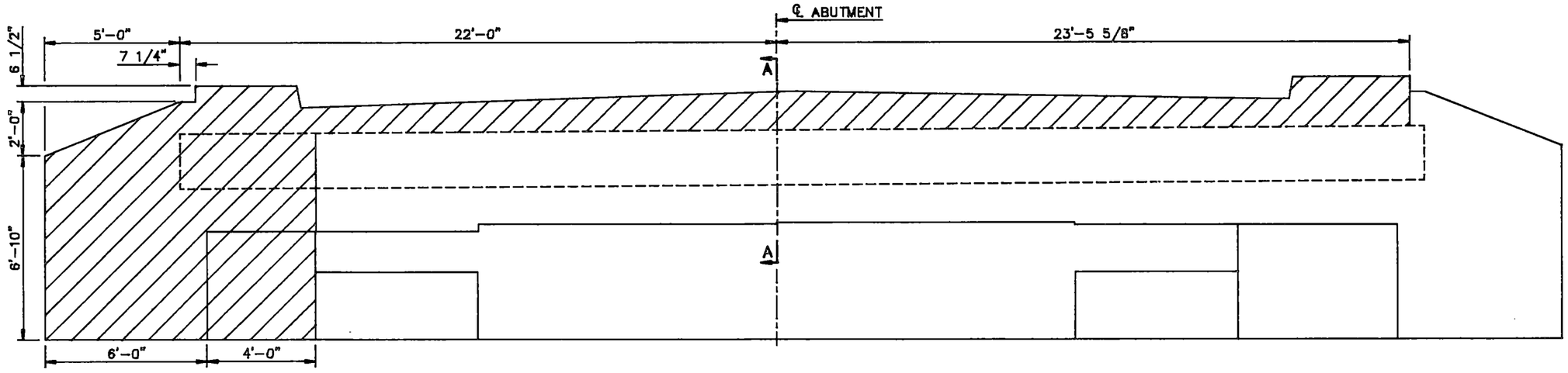
(SHOWING REINFORCING)

WIDENING DETAILS
ABUTMENT 5 ~ LEFT

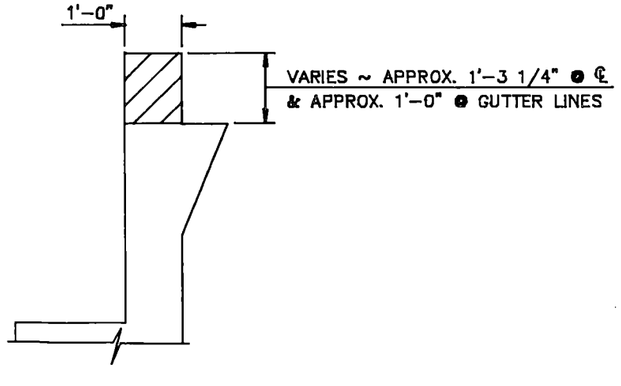
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	116



(SHOWING CONCRETE REMOVAL LIMITS)
EXISTING PLAN



(SHOWING CONCRETE REMOVAL LIMITS)
EXISTING ELEVATION

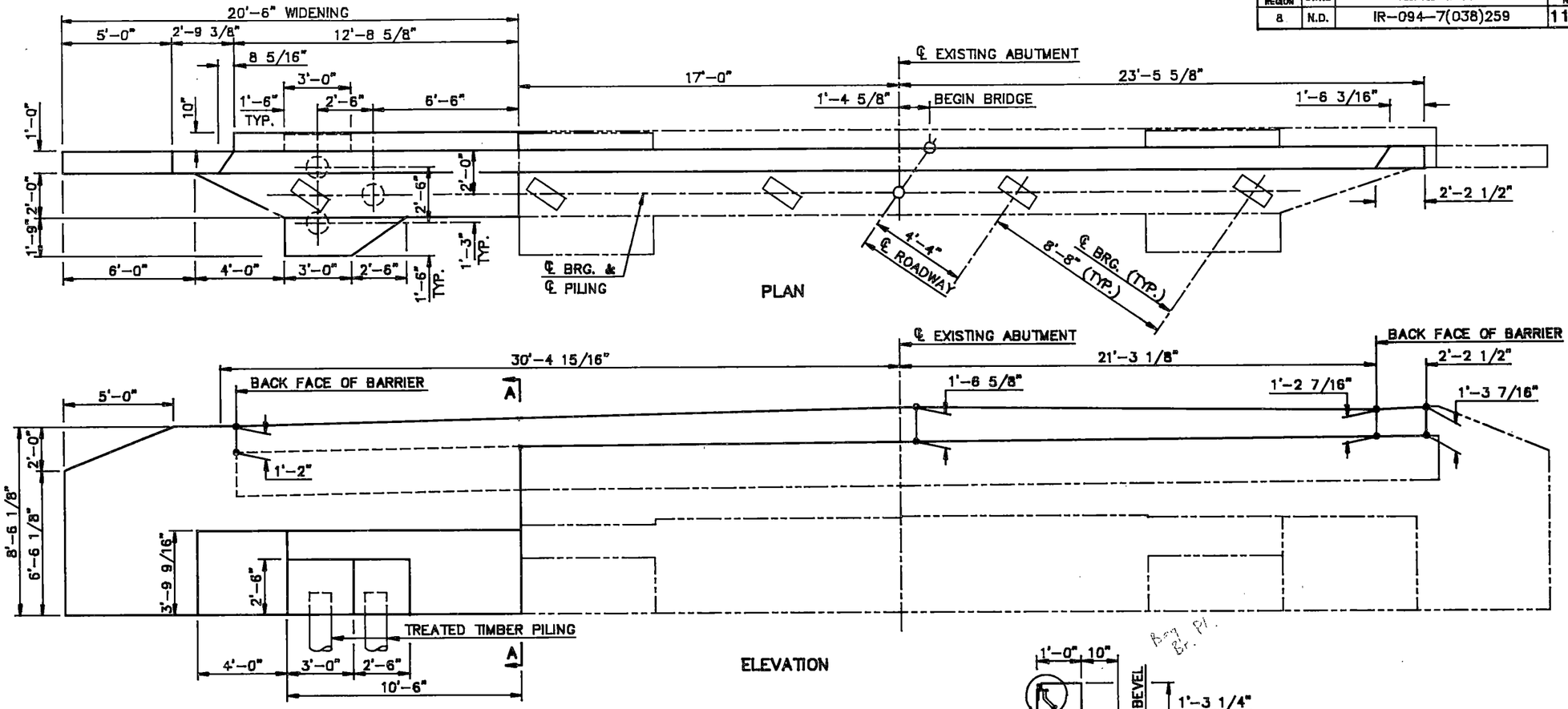


A-A

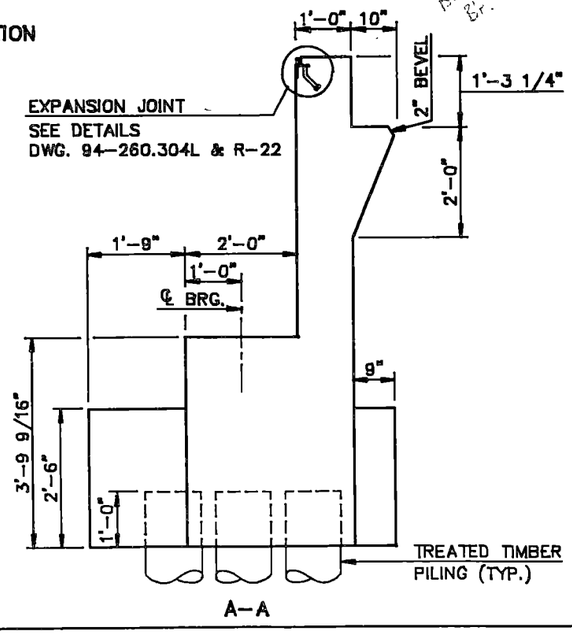
INDICATES THAT AREA OF CONCRETE TO BE REMOVED FROM EXISTING ABUTMENT. CARE SHALL BE TAKEN TO ENSURE NO DAMAGE IS DONE TO REINFORCING STEEL DURING REMOVAL OF CONCRETE THAT IS PROTRUDING FROM THAT PORTION OF EXISTING ABUTMENT THAT IS TO REMAIN IN PLACE.

QUANTITIES
SEE DWG. 94-260.304R-13
RRV & WRR SEPARATION WIDENING JAMESTOWN
CONCRETE REMOVAL DETAILS ABUTMENT 1 ~ RIGHT

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	117



ELEVATION



NOTE:

DIMENSIONS MAY VARY DEPENDING ON EXISTING FIELD CONDITIONS.
ADJUSTMENTS SHALL BE MADE TO ACHIEVE THE PROPER ELEVATIONS.

QUANTITIES

SEE DWG. 94-260.304R-13

RRV & WRR SEPARATION WIDENING
JAMESTOWN

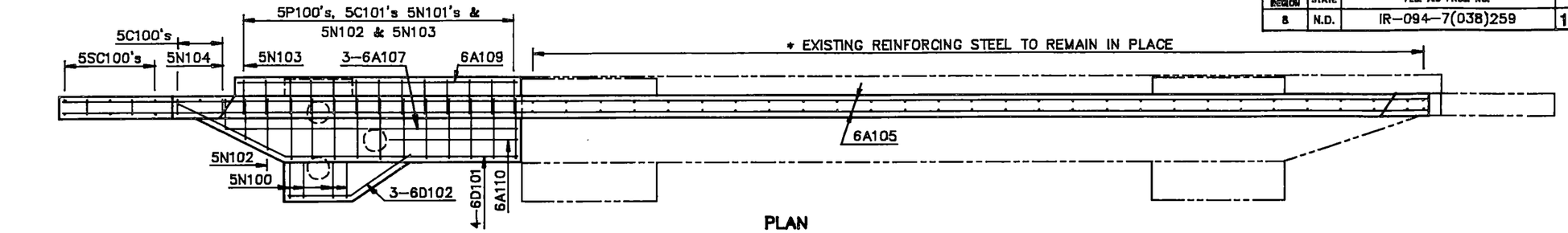
(SHOWING DIMENSIONS)

WIDENING DETAILS
ABUTMENT 1 ~ RIGHT

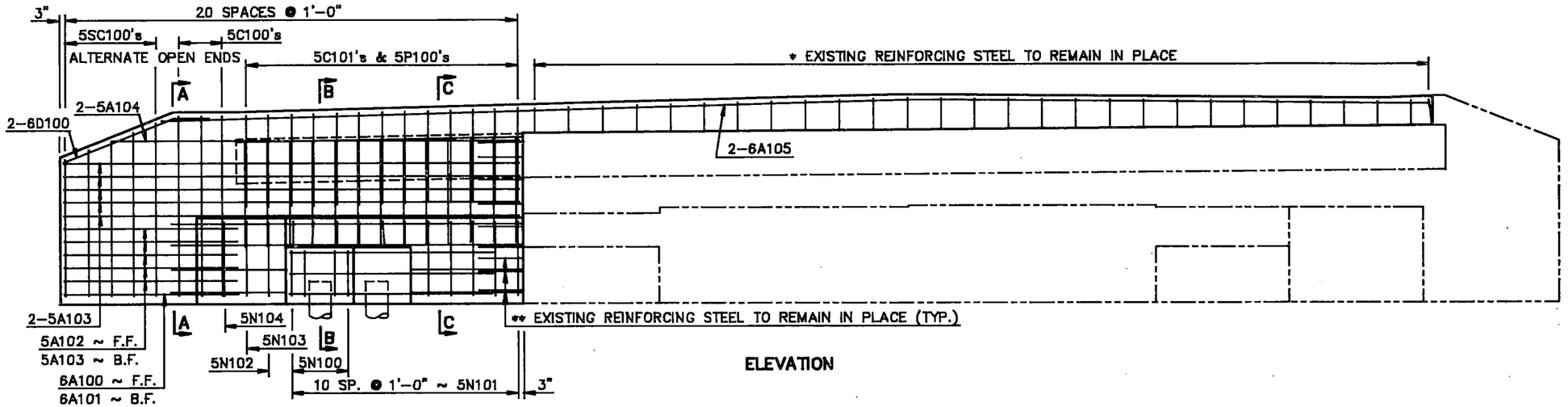
90DLS28

94-260.304R-12

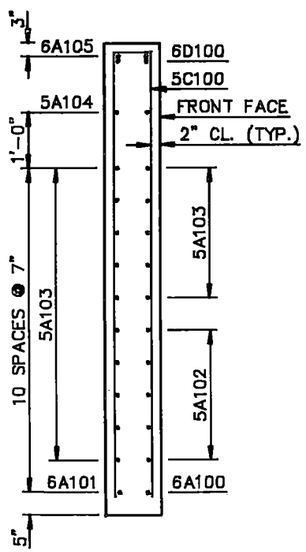
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	118



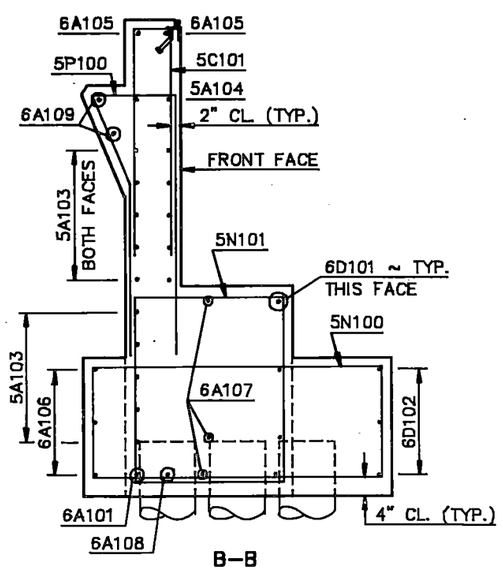
PLAN



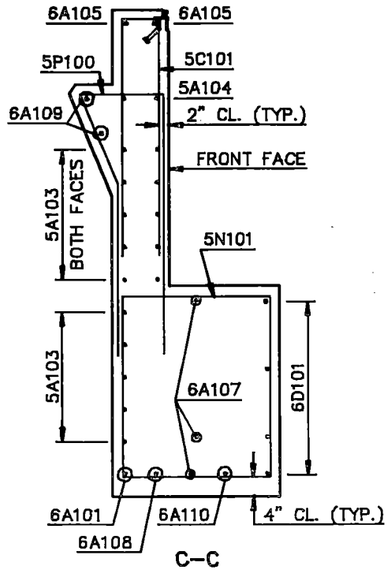
ELEVATION



A-A



B-B



C-C

* THE CONTRACTOR SHALL CUT ANY EXISTING STEEL NECESSARY TO ACHIEVE A 2" END CLEARANCE TO TOP OF NEW ABUTMENT.

** THE EXISTING REINFORCING STEEL PROTRUDING FROM THAT PORTION OF OLD ABUTMENT LEFT IN PLACE SHALL BE CUT LEAVING 2'-0" OF STEEL EXPOSED TO THE WIDENED PORTION OF THE ABUTMENT.

QUANTITIES	
CLASS AE-3 CONCRETE	13.2 C.Y.
REINFORCING STEEL	1526 LBS.
PILING (SEE LAYOUT)	
EXCAVATION (SEE LAYOUT)	

RRV & WRR SEPARATION WIDENING
JAMESTOWN

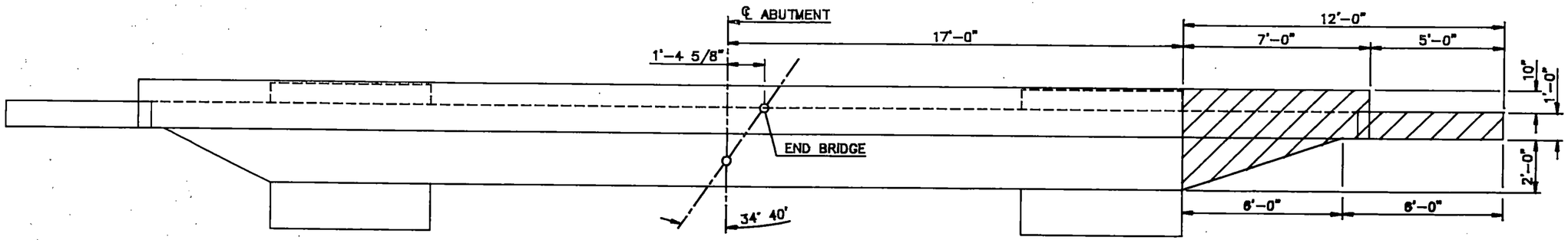
(SHOWING REINFORCING)

WIDENING DETAILS
ABUTMENT 1 ~ RIGHT

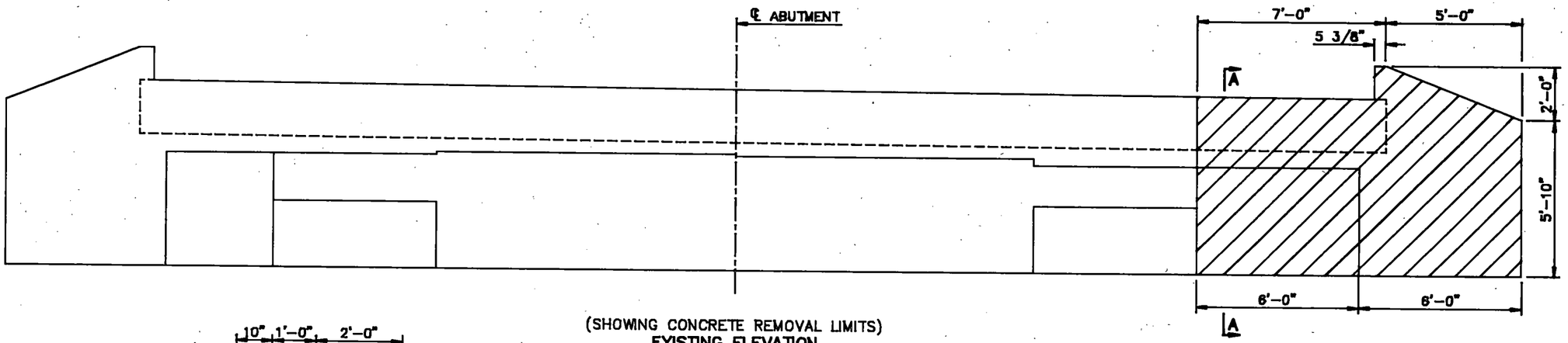
90DLS29

94-260.304R-13

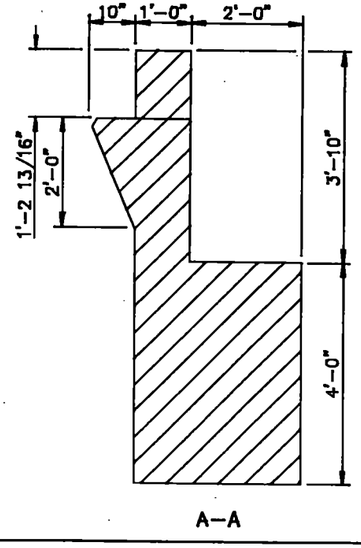
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	119



(SHOWING CONCRETE REMOVAL LIMITS)
EXISTING PLAN



(SHOWING CONCRETE REMOVAL LIMITS)
EXISTING ELEVATION



A–A

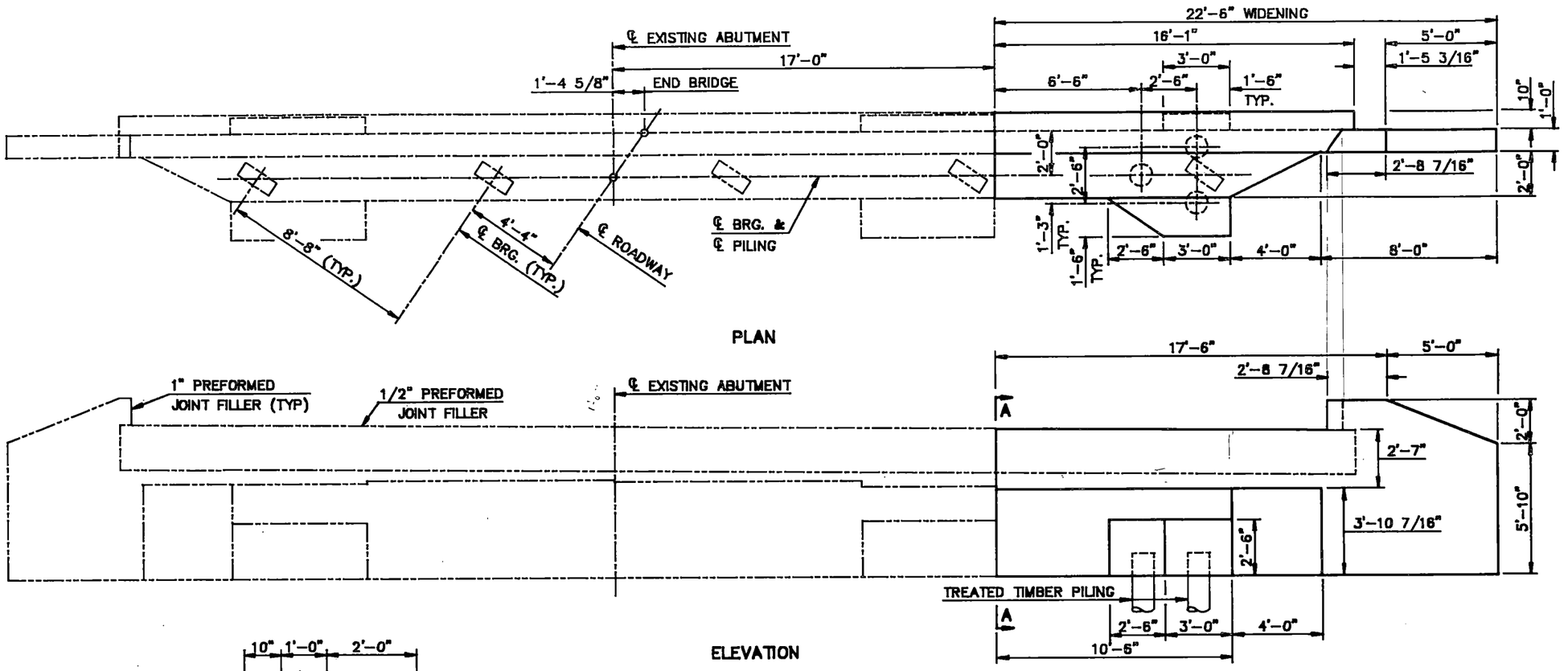
INDICATES THAT AREA OF CONCRETE TO BE REMOVED FROM EXISTING ABUTMENT. CARE SHALL BE TAKEN TO ENSURE NO DAMAGE IS DONE TO REINFORCING STEEL DURING REMOVAL OF CONCRETE THAT IS PROTRUDING FROM THAT PORTION OF EXISTING ABUTMENT THAT IS TO REMAIN IN PLACE.

QUANTITIES
SEE DWG. 94–260.304R–16
RRV & WRR SEPARATION WIDENING JAMESTOWN
CONCRETE REMOVAL DETAILS ABUTMENT 5 ~ RIGHT

90DLS30

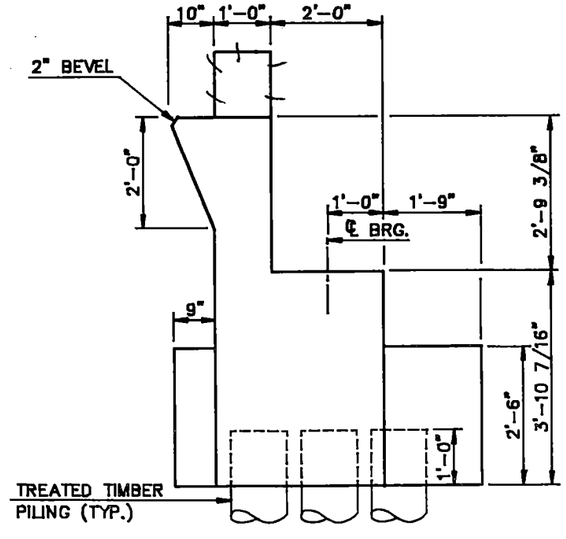
94–260.304R–14

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	120



PLAN

ELEVATION



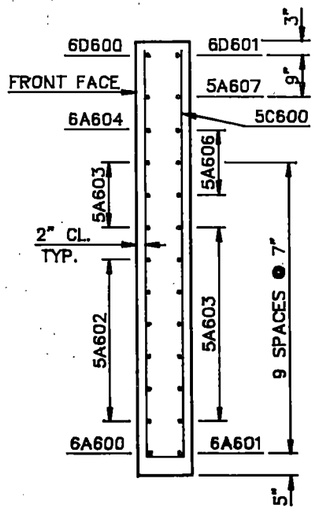
A-A

NOTE:

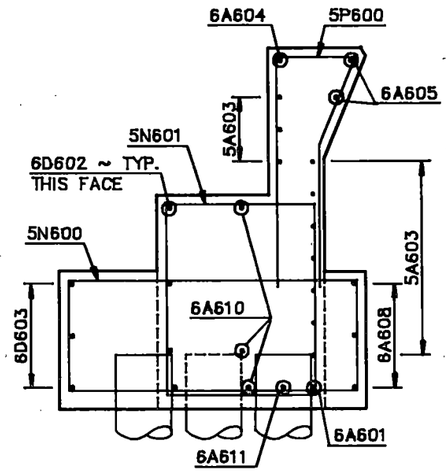
DIMENSIONS MAY VARY DEPENDING ON EXISTING FIELD CONDITIONS.
ADJUSTMENTS SHALL BE MADE TO ACHIEVE THE PROPER ELEVATIONS.

QUANTITIES
SEE DWG. 94-260.304R-16
RRV & WRR SEPARATION WIDENING JAMESTOWN (SHOWING DIMENSIONS) WIDENING DETAILS ABUTMENT 5 ~ RIGHT

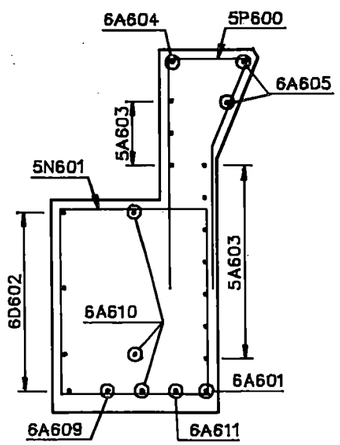
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	121



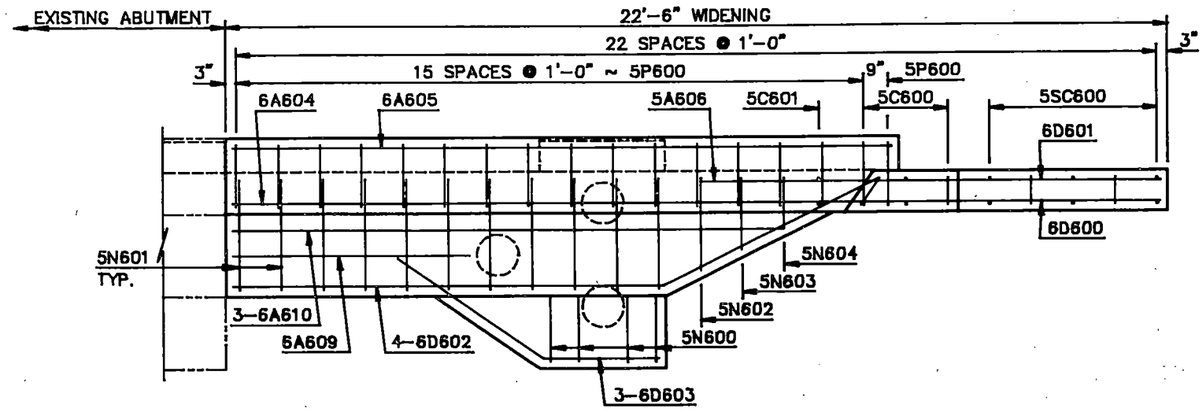
A–A



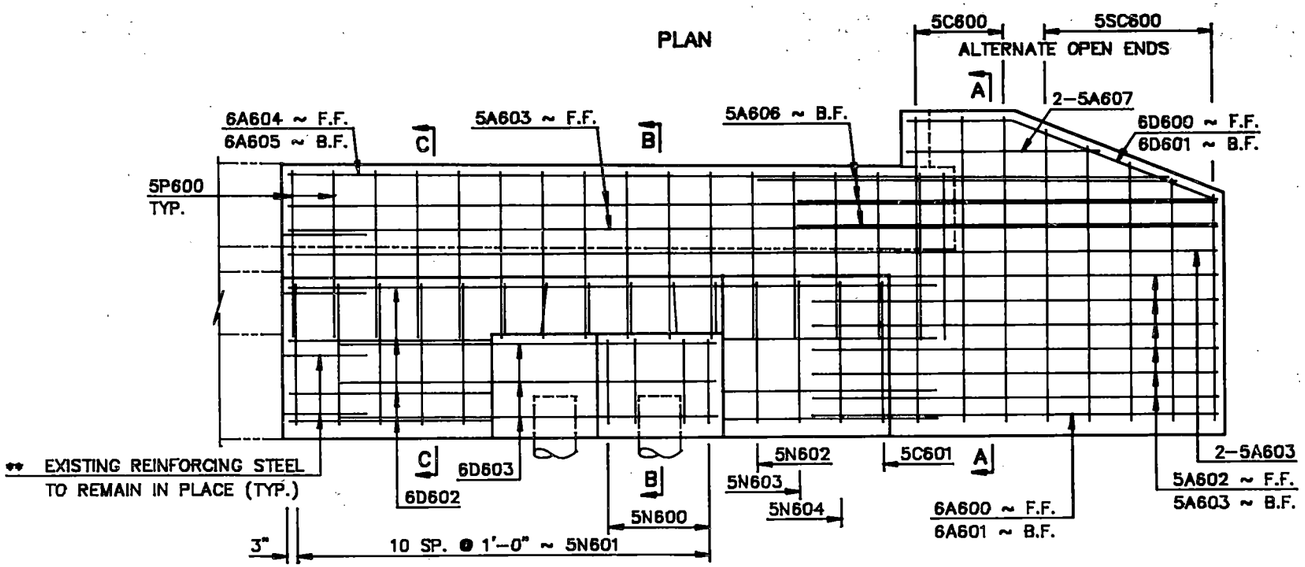
B–B



C–C



PLAN



ELEVATION

** THE EXISTING REINFORCING STEEL PROTRUDING FROM THAT PORTION OF OLD ABUTMENT LEFT IN PLACE SHALL BE CUT LEAVING 2'–0" OF STEEL EXPOSED TO THE WIDENED PORTION OF THE ABUTMENT.

QUANTITIES	
CLASS AE–3 CONCRETE	10.6 C.Y.
REINFORCING STEEL	1203 LBS.
PILING (SEE LAYOUT)	
EXCAVATION (SEE LAYOUT)	

RRV & WRR SEPARATION WIDENING
JAMESTOWN

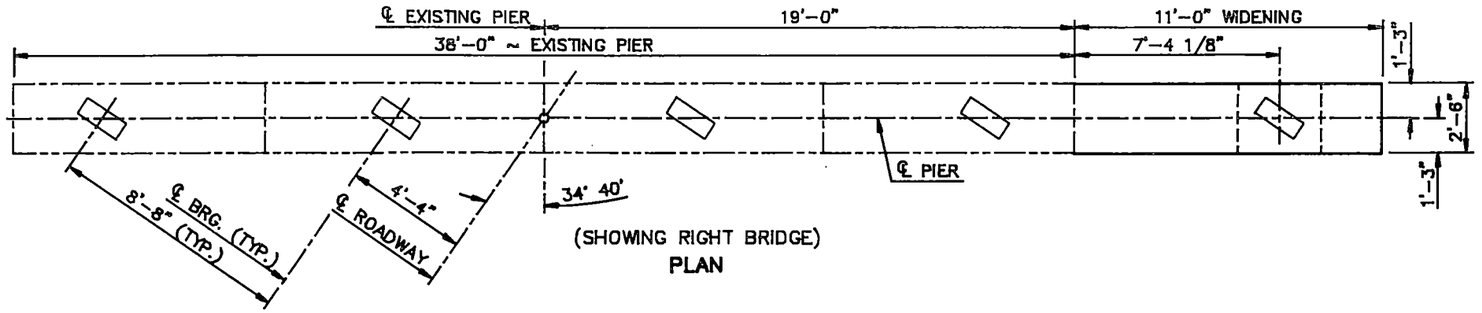
(SHOWING REINFORCING)

WIDENING DETAILS
ABUTMENT 5 ~ RIGHT

90DLS32

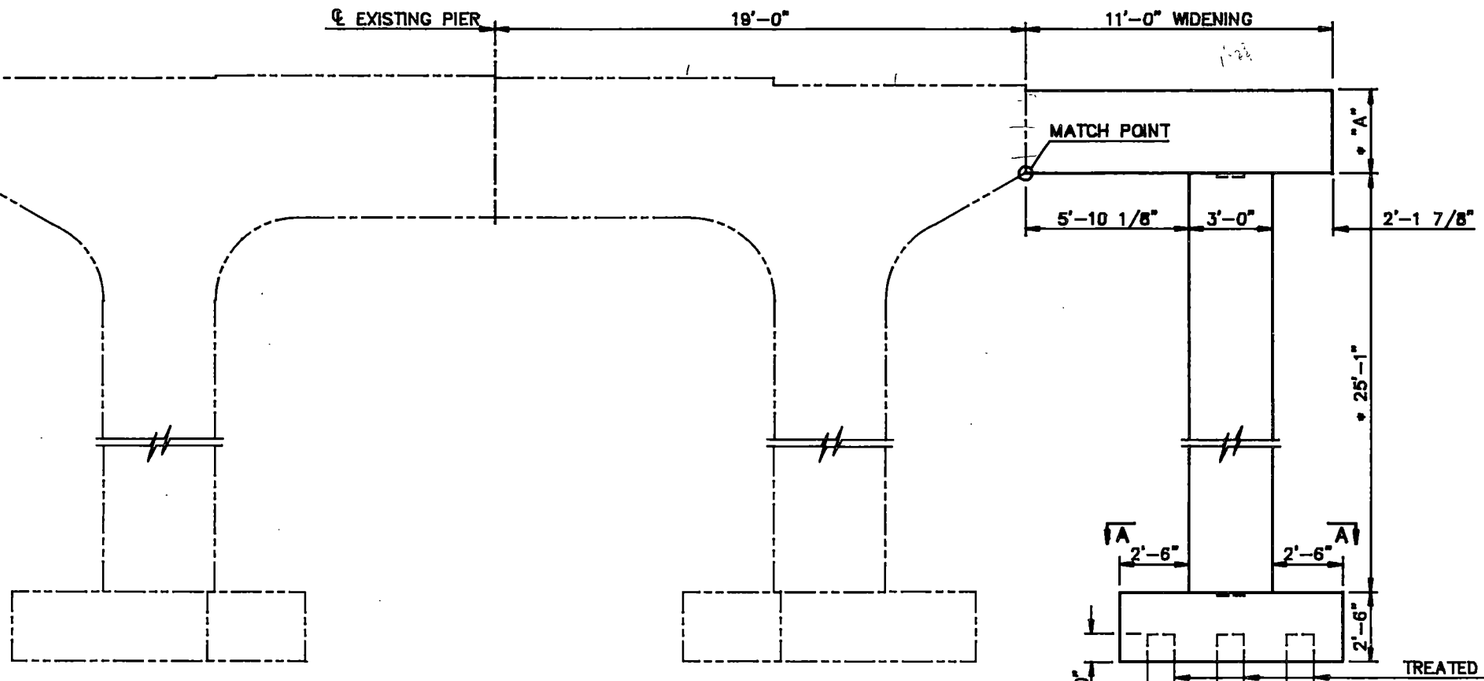
94–260.304R–16

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	122



(SHOWING RIGHT BRIDGE)
PLAN

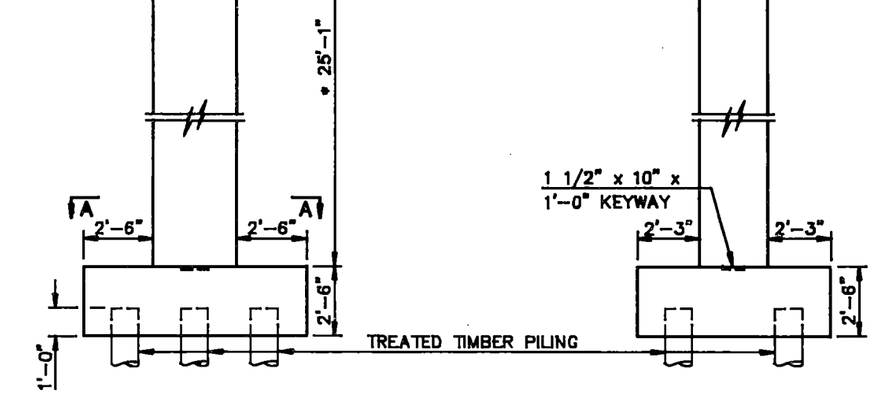
NOTE:
PROVIDE A 1" BEVEL ON ALL OUTSIDE EDGES.



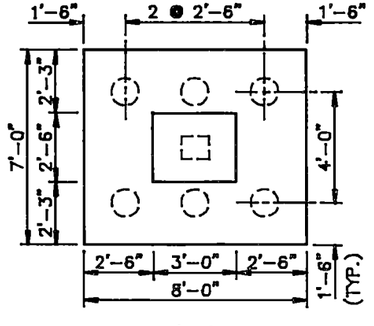
(SHOWING RIGHT BRIDGE)
ELEVATION

DIMENSION "A"		
PIER	RIGHT BRIDGE	LEFT BRIDGE
2	3'-3 1/8"	3'-6 7/8"
3	3'-3 1/4"	3'-7 5/8"
4	3'-3 1/2"	3'-8 3/8"

* THESE DIMENSIONS DEPEND ON THE ELEVATION OF THE MATCH LOCATION, AND SHALL BE ADJUSTED AS NECESSARY.



END VIEW



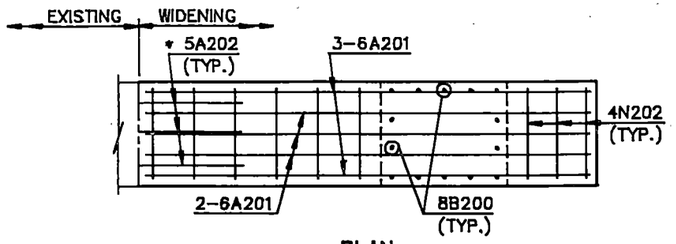
A-A

QUANTITIES
SEE DWG. 94-260.304L & R-18
RRV & WRR SEPARATION WIDENING JAMESTOWN
(SHOWING DIMENSIONS) PIER DETAILS

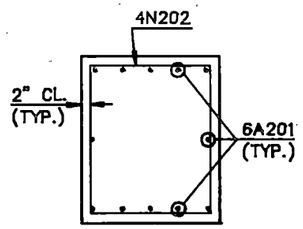
90DLS41

94-260.304L & R-17

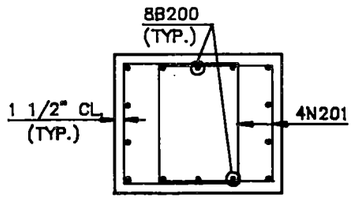
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	123



PLAN



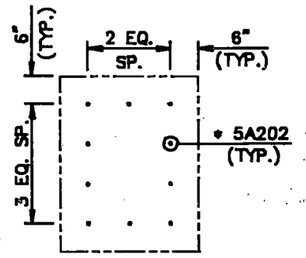
B-B



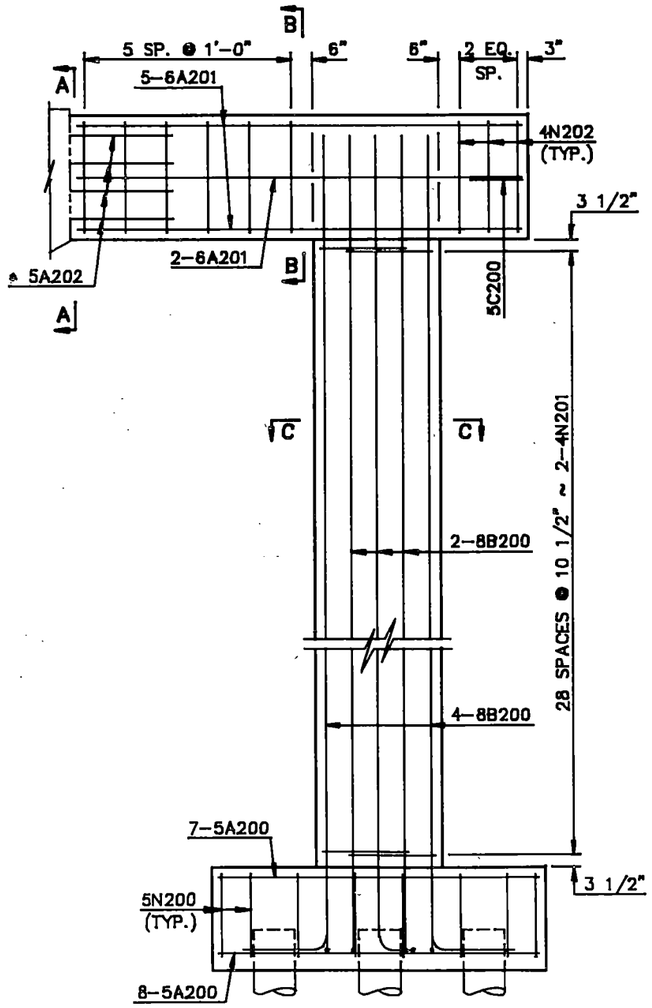
C-C

* 5A202's SHALL BE INSTALLED WITH A HIGH STRENGTH ADHESIVE SPECIFICALLY INTENDED FOR CONCRETE ANCHORAGE (HILTI HBP OR APPROVED EQUAL).

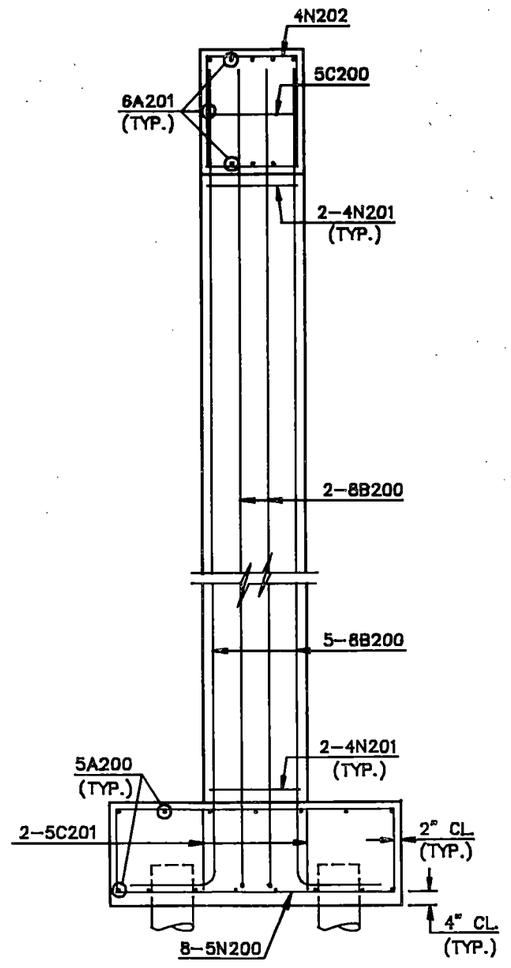
BUSH HAMMER FINISH: BEFORE ANY CONCRETE IS PLACED AGAINST EXISTING CONCRETE, THE SURFACE OF THE EXISTING CONCRETE SHALL BE PREPARED WITH A BUSH HAMMER TO PRODUCE A CLEAN ROUGH SURFACE.



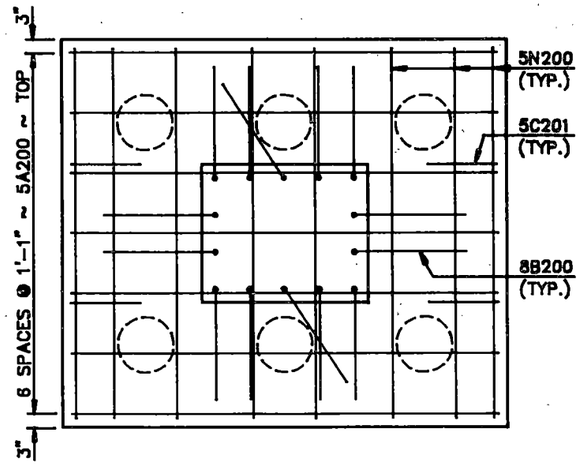
A-A



ELEVATION



END VIEW



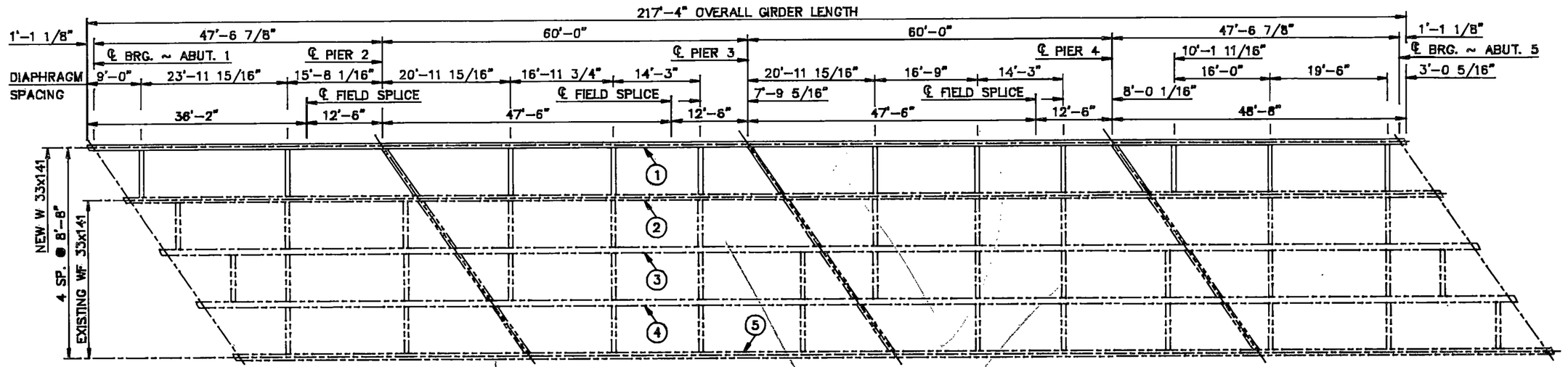
FOOTING PLAN

QUANTITIES	(ONE PIER)
CLASS AE-3 CONCRETE	15.5 C.Y.
REINFORCING STEEL	2143 LBS.
PILING (SEE LAYOUT)	
EXCAVATION (SEE LAYOUT)	

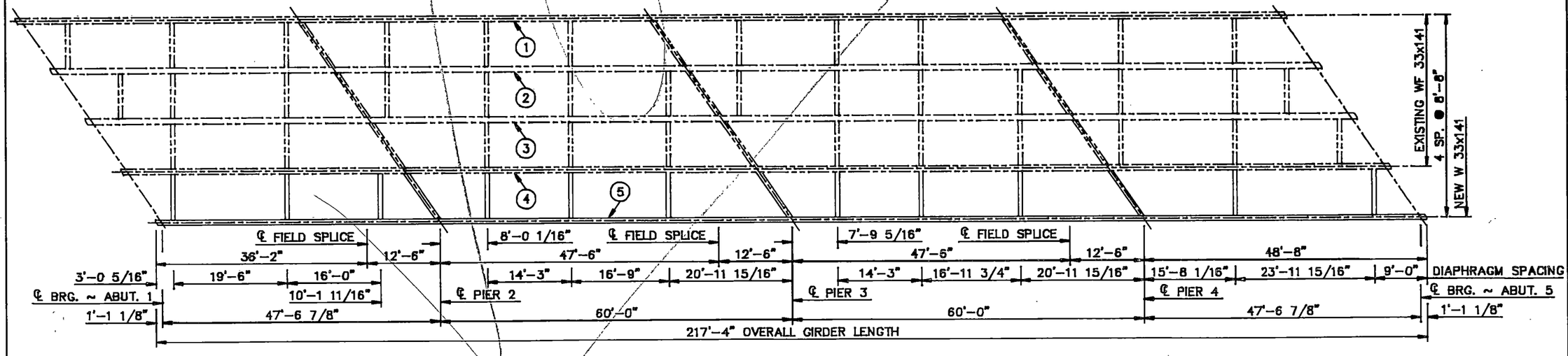
RRV & WRR SEPARATION WIDENING
JAMESTOWN

(SHOWING REINFORCING)
PIER DETAILS

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	124



GIRDER LAYOUT ~ LEFT BRIDGE



GIRDER LAYOUT ~ RIGHT BRIDGE

VOID

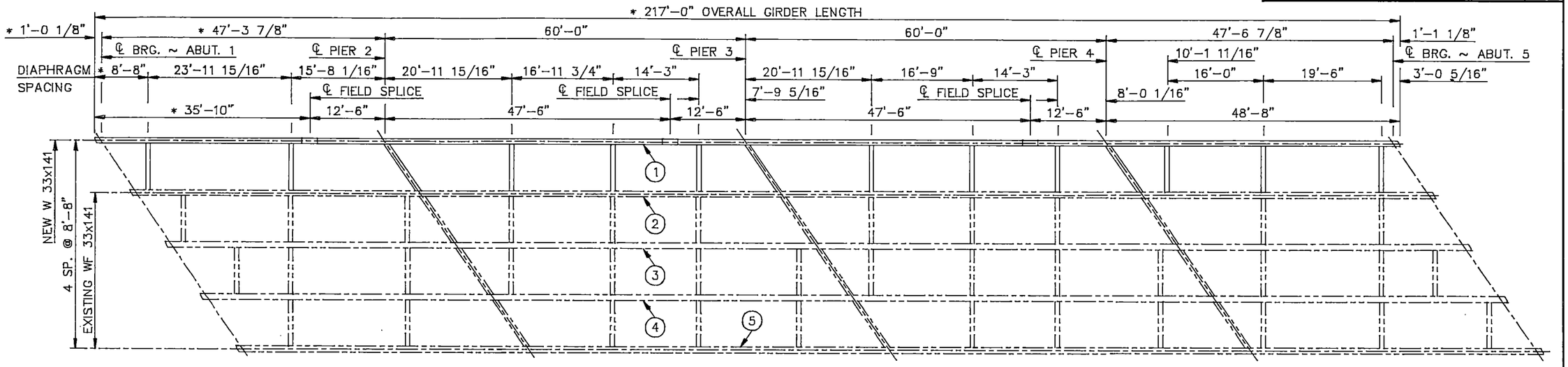
RRV & WRR SEPARATION WIDENING
JAMESTOWN

GIRDER LAYOUT

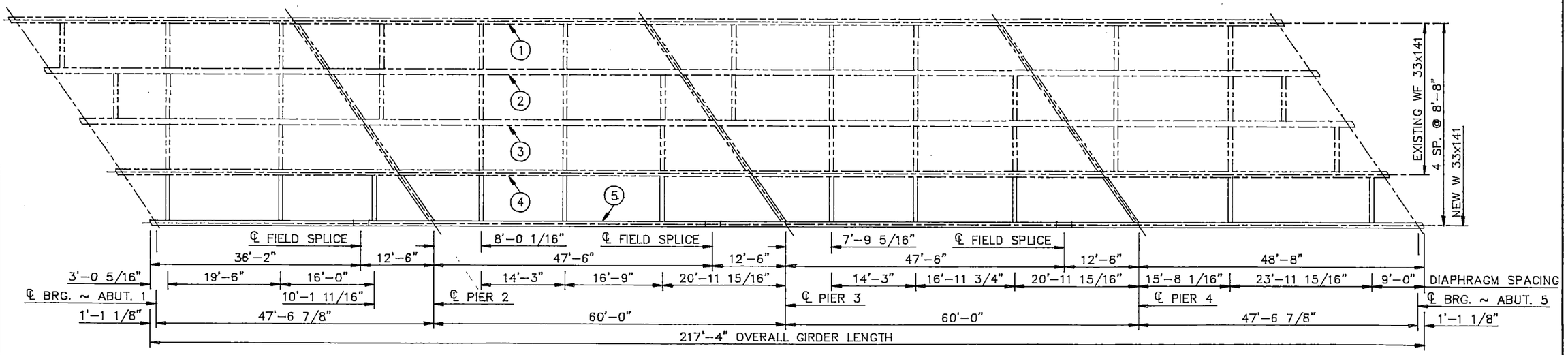
90DLS48

94-260.304L & R-19

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



GIRDER LAYOUT ~ LEFT BRIDGE



GIRDER LAYOUT ~ RIGHT BRIDGE

RRV & WRR SEPARATION WIDENING
JAMESTOWN

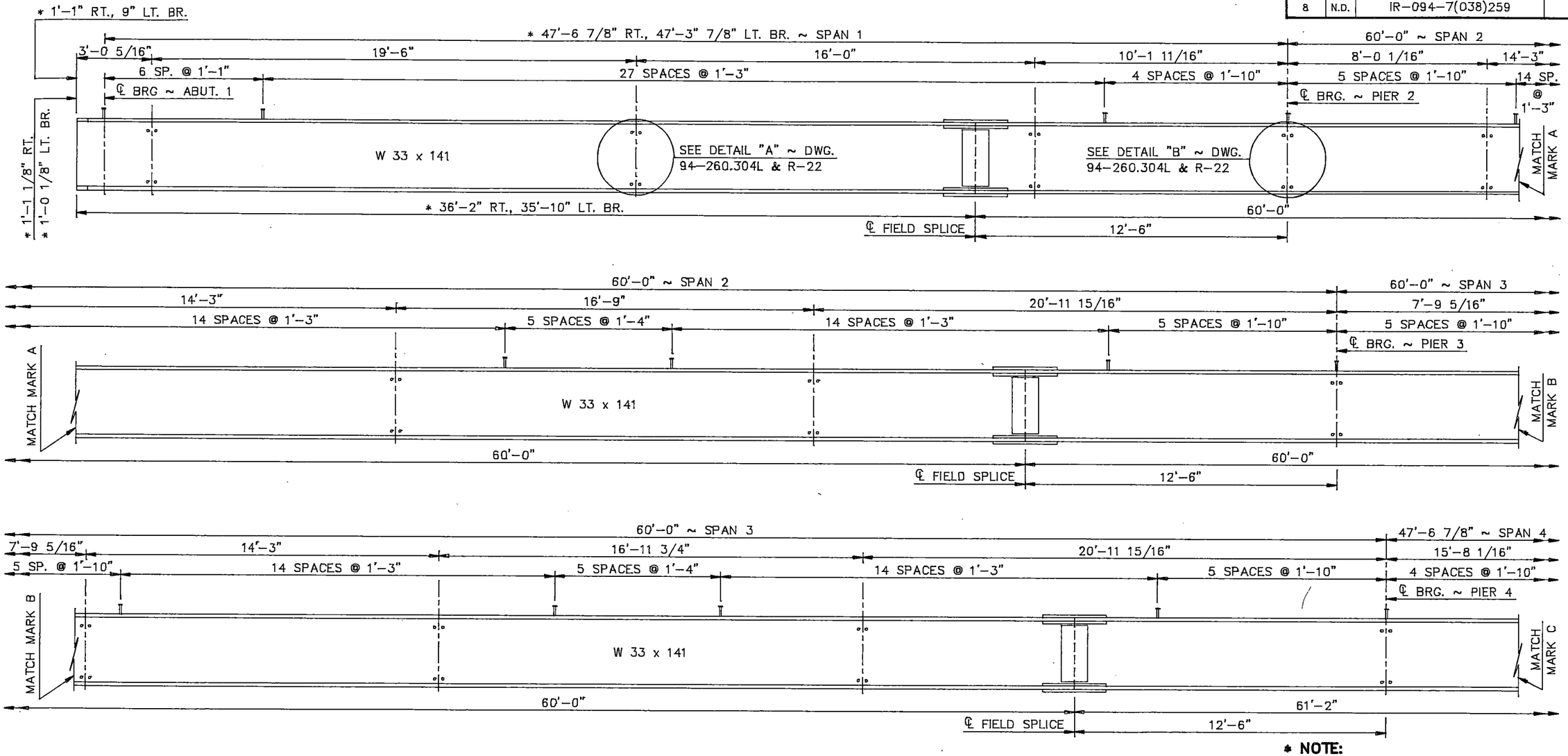
GIRDER LAYOUT

90DLS48

* REVISED 5 JUNE 91

94-260.304L & R-19

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



*** NOTE:**

THE ELEVATION DETAILS SHOWN ARE FOR GIRDER 5, RIGHT BRIDGE. ROTATE DIAP. SP. 180 DEGREES FOR GIRDER 1, LEFT BRIDGE. THE SHEAR CONNECTOR DIMENSIONING SHOWN SHALL HAVE 3 STUDS PER ROW AS SHOWN ON THE "SHEAR CONNECTOR DETAIL" DWG. 94-260.304L & R-22

QUANTITIES

RRV & WRR SEPARATION WIDENING
JAMESTOWN

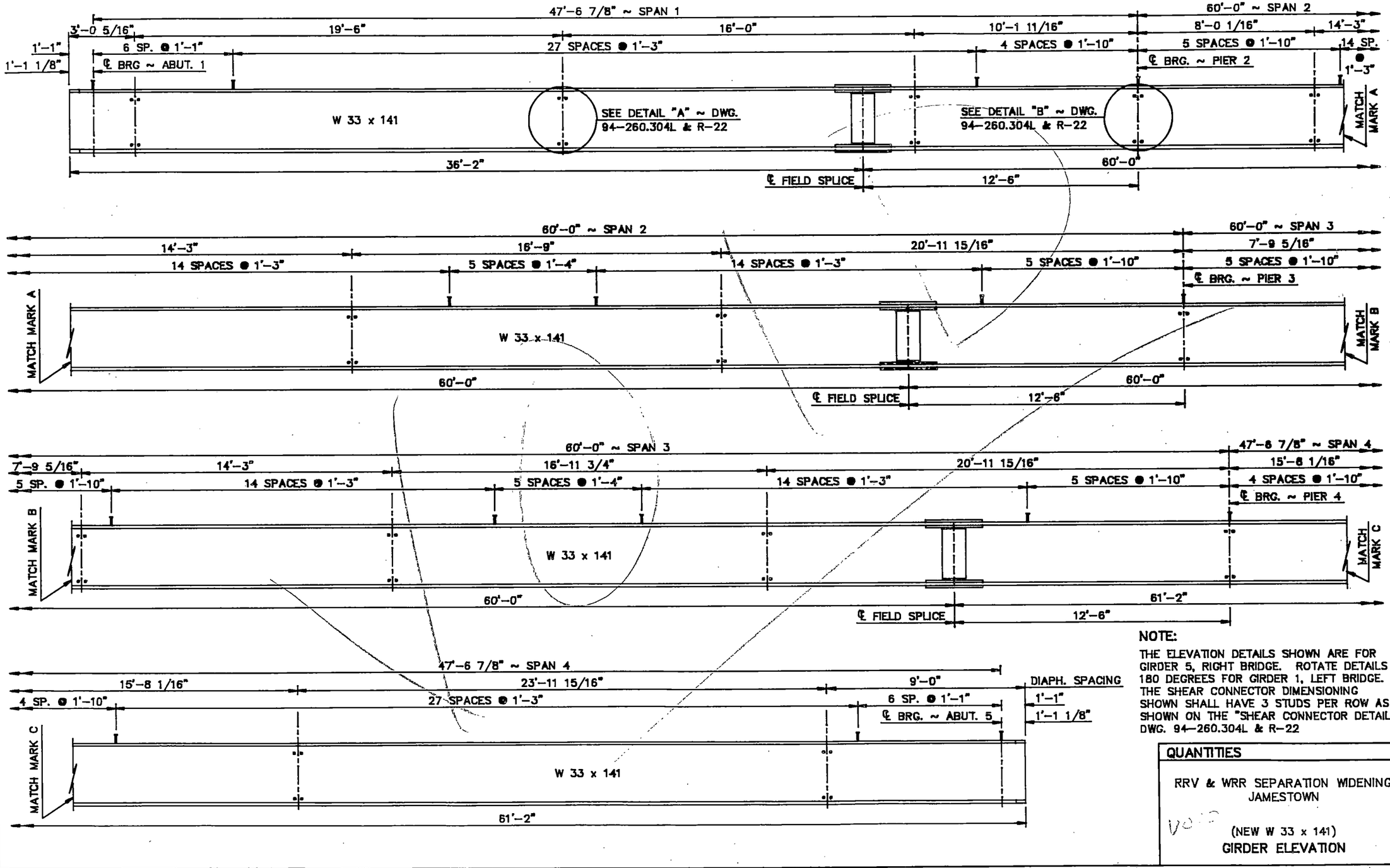
(NEW W 33 x 141)
GIRDER ELEVATION

90DLS49

* REVISED 5 JUNE 91

94-260.304L & R-20

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	125



NOTE:

THE ELEVATION DETAILS SHOWN ARE FOR GIRDER 5, RIGHT BRIDGE. ROTATE DETAILS 180 DEGREES FOR GIRDER 1, LEFT BRIDGE. THE SHEAR CONNECTOR DIMENSIONING SHOWN SHALL HAVE 3 STUDS PER ROW AS SHOWN ON THE "SHEAR CONNECTOR DETAIL" DWG. 94-260.304L & R-22

QUANTITIES

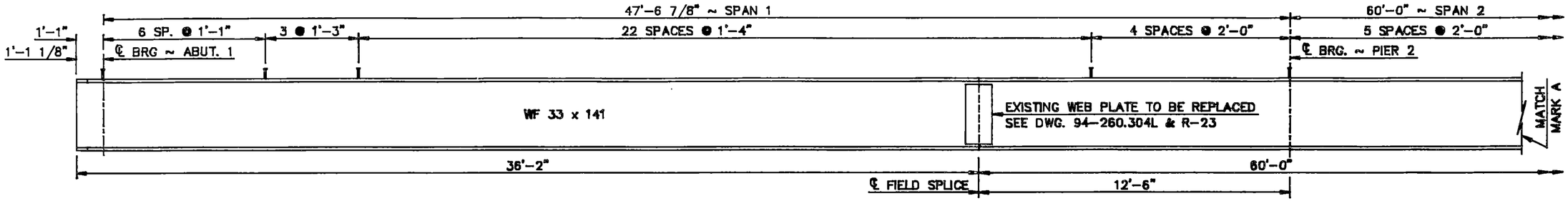
RRV & WRR SEPARATION WIDENING
JAMESTOWN

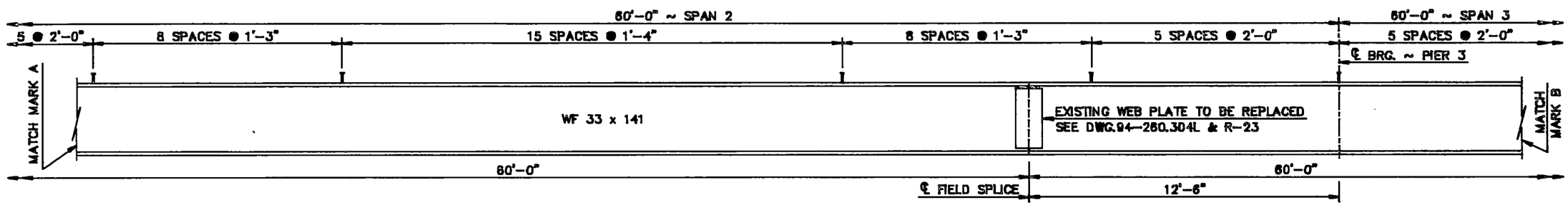
(NEW W 33 x 141)
GIRDER ELEVATION

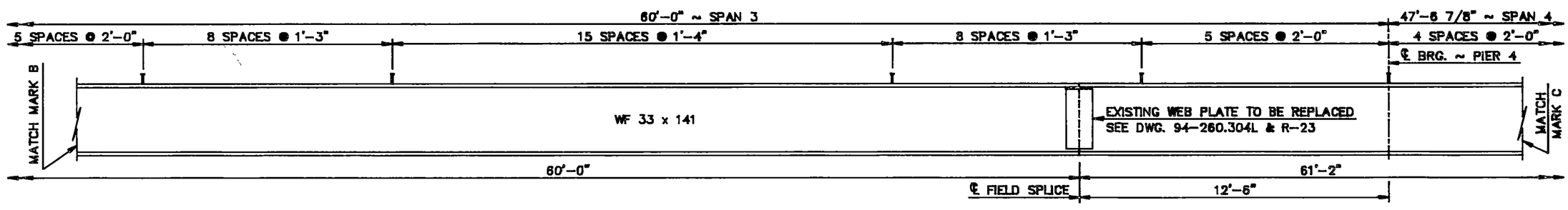
90DLS49

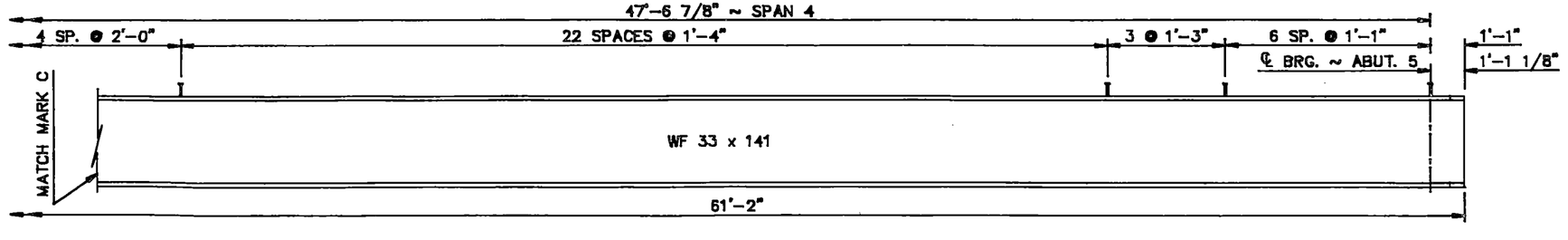
94-260.304L & R-20

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	126









NOTE:

THE ELEVATION DETAILS SHOWN ARE FOR THE EXISTING GIRDERS.

FIELD INSTALL THE SHEAR CONNECTORS USING THE SHOWN DIMENSIONING WITH 3 STUDS PER ROW AS SHOWN ON THE "SHEAR CONNECTOR DETAIL" DWG. 94-260.304L & R-22.

QUANTITIES

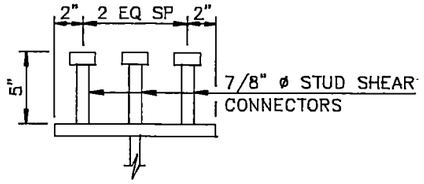
RRV & WRR SEPARATION WIDENING
JAMESTOWN

(EXISTING WF 33 x 141)
GIRDER ELEVATION

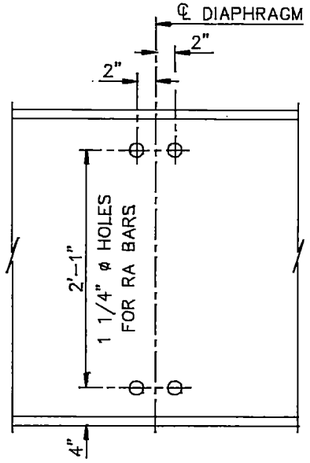
90DLS50

94-260.304L & R-21

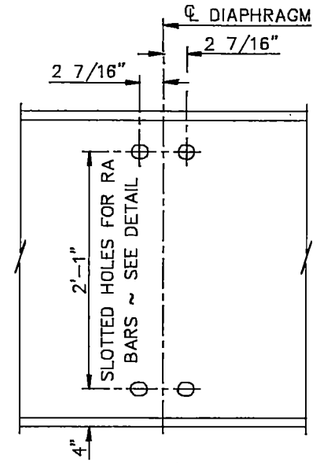
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	



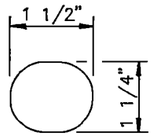
SHEAR CONNECTOR DETAIL
(FOR NEW & EXISTING BEAMS)



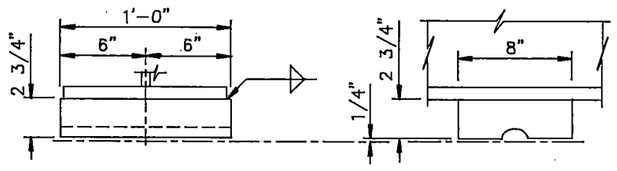
INTERMEDIATE DIAPHRAGM DETAIL
DETAIL "A"

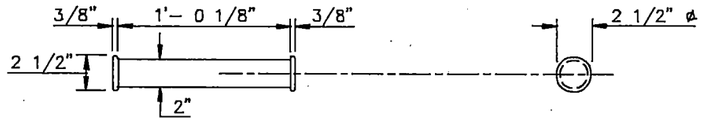


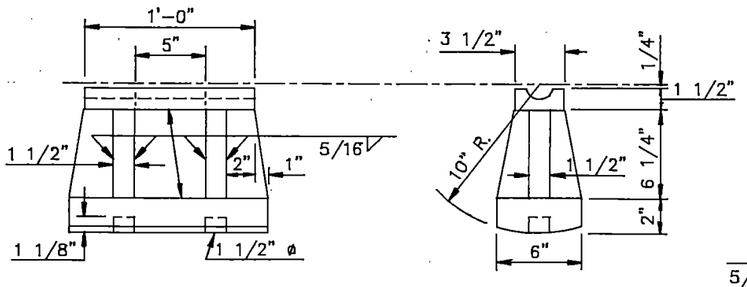
PIER DIAPHRAGM DETAIL
DETAIL "B"

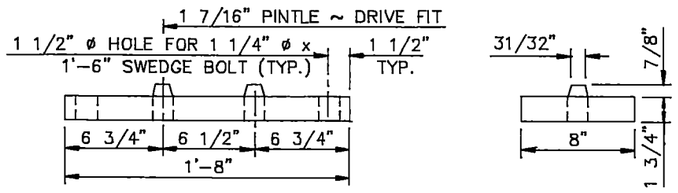


SLOTTED HOLE DETAIL

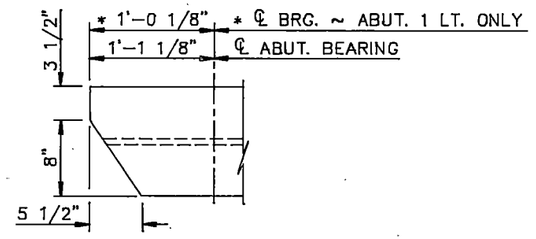








EXPANSION BEARING DETAILS
(4 REQUIRED PER BRIDGE)

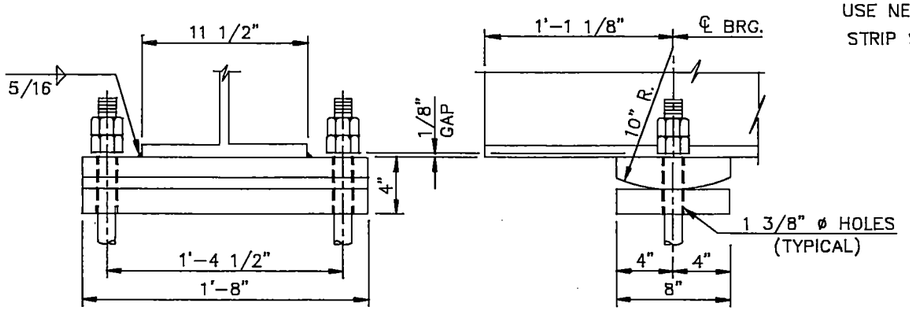


PLAN
GIRDER END DETAIL

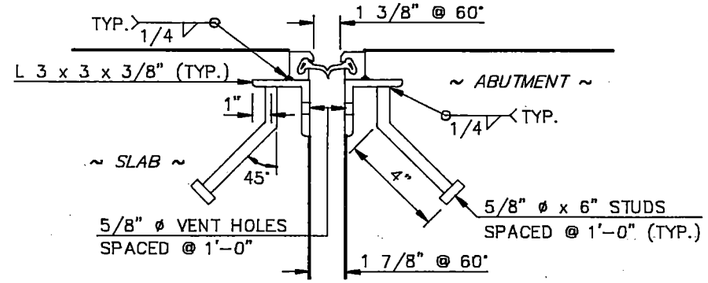
SOLE PL ~ 8 x 2 1/4 x 1'-8"

MASONRY PL ~ 8 x 1 3/4 x 1'-8"

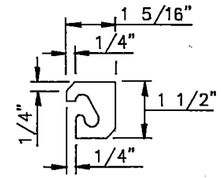
SWEDGE BOLTS ~ 1 1/4" ø x 1'-10"



FIXED BEARING DETAILS
(1 REQUIRED PER BRIDGE)



STEEL EXTRUSION



STEEL EXTRUSION

TYPICAL SECTION

USE NEOPRENE STRIP SEAL CAPABLE OF 4" MOVEMENT.
STRIP SEAL TO RUN EDGE OF SLAB TO EDGE OF SLAB

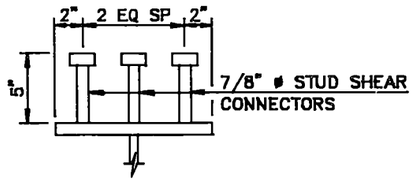
(GALVANIZE AFTER FABRICATION)
EXPANSION JOINT DETAILS

QUANTITIES	(ONE BRIDGE)
EXPANSION JOINT STRIP SEAL	52 L.F.

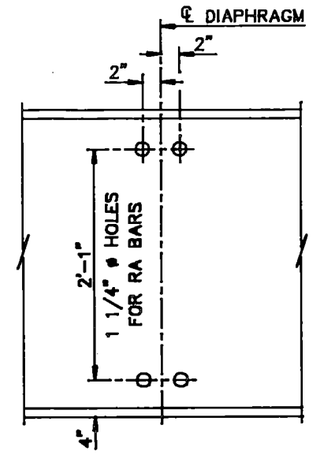
RRV & WRR SEPARATION WIDENING
JAMESTOWN

SUPERSTRUCTURE DETAILS

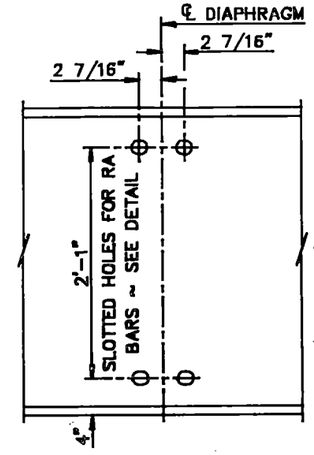
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	127



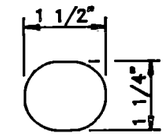
SHEAR CONNECTOR DETAIL
(FOR NEW & EXISTING BEAMS)



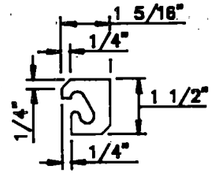
INTERMEDIATE DIAPHRAGM DETAIL
DETAIL "A"



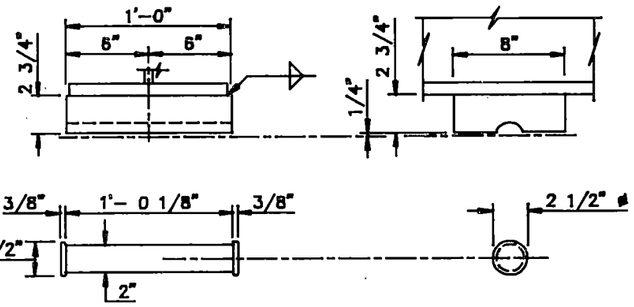
PIER DIAPHRAGM DETAIL
DETAIL "B"



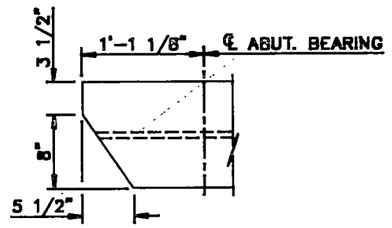
SLOTTED HOLE DETAIL



STEEL EXTRUSION



EXPANSION BEARING DETAILS
(4 REQUIRED PER BRIDGE)

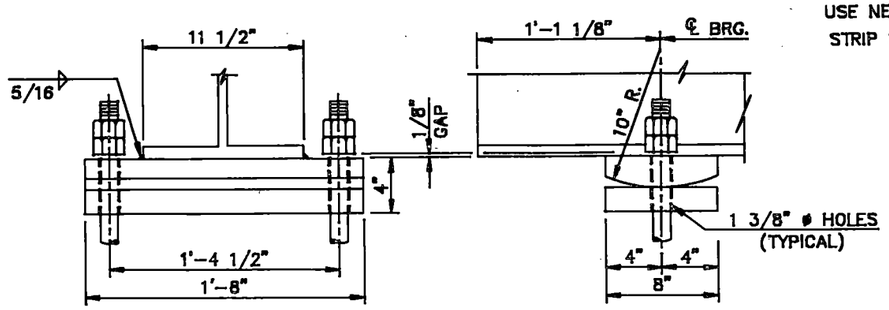


PLAN
GIRDER END DETAIL

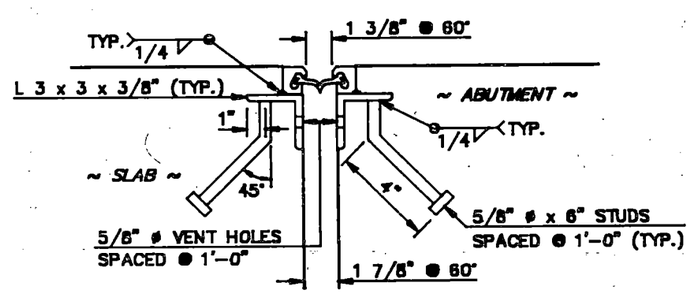
SOLE PL ~ 8 x 2 1/4 x 1'-8"

MASONRY PL ~ 8 x 1 3/4 x 1'-8"

SWEDGE BOLTS ~ 1 1/4" ø x 1'-10"



FIXED BEARING DETAILS
(1 REQUIRED PER BRIDGE)



TYPICAL SECTION

USE NEOPRENE STRIP SEAL CAPABLE OF 4" MOVEMENT.
STRIP SEAL TO RUN EDGE OF SLAB TO EDGE OF SLAB

(GALVANIZE AFTER FABRICATION)
EXPANSION JOINT DETAILS

QUANTITIES	(ONE BRIDGE)
EXPANSION JOINT STRIP SEAL	52 L.F.

RRV & WRR SEPARATION WIDENING
JAMESTOWN

VOID

SUPERSTRUCTURE DETAILS

90DLS51

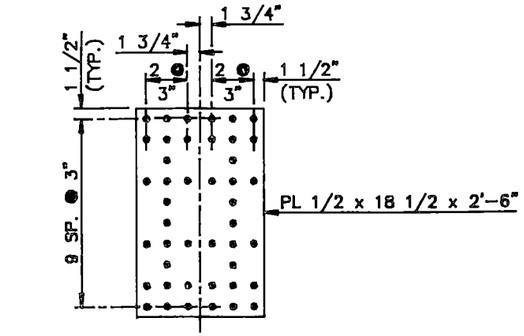
94-260.304L & R-22

PROJ. DESIGN	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	128

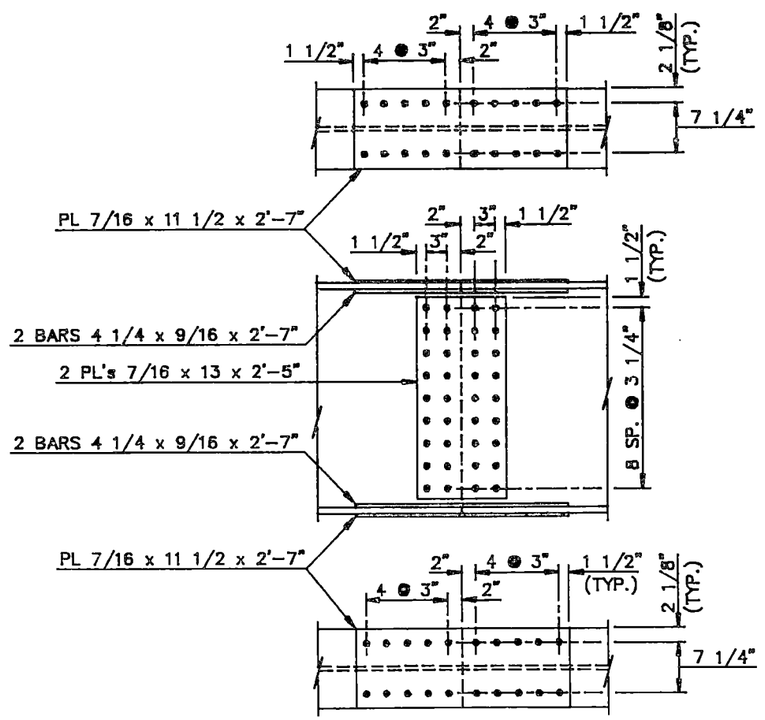
NOTE:

REPLACE ALL EXISTING WEB PLATES.

THE EXISTING WEB BOLT HOLE SPACING SHALL BE FIELD VERIFIED BEFORE FABRICATION.



REPLACEMENT WEB PLATE DETAIL



NEW GIRDER FIELD SPLICE DETAILS

	* ℄ GIRDER 1	℄ GIRDER 2	℄ GIRDER 3	℄ GIRDER 4	℄ GIRDER 5
LEFT BRIDGE	1421.27	1421.37	1421.48	1421.40	1421.15
	1421.24	1421.34	1421.45	1421.37	1421.12
	.18	.29	.39	.32	.06
	.13	.23	.34	.26	1421.01
	.07	.18	.28	.20	1420.95
	1421.01	.12	.22	.15	.89
	1420.95	1421.06	.16	.09	.83
	.89	1420.99	.10	1421.02	.77
	.83	.93	1421.03	1420.96	.70
	.76	.87	1420.97	.89	.64
	.70	.80	.91	.83	.58
	1420.64	1420.74	1420.85	1420.77	1420.51
	.56	.67	.77	.70	.44
	.49	.60	.70	.63	.37
	.42	.53	.63	.55	.30
	.35	.45	.56	.48	.23
	.27	.38	.48	.41	.15
	.20	.30	.41	.33	.08
	.12	.22	.33	.25	1420.00
	1420.04	.14	.25	.17	1419.91
	1419.96	1420.06	.17	.09	.83
	1419.88	1419.98	1420.09	1420.01	1419.76
	.80	.91	1420.01	1419.94	.68
	.73	.84	1419.94	.87	.61
	.66	.77	.87	.80	.54
	.59	.70	.80	.72	.47
	.52	.62	.73	.65	.39
	.44	.54	.65	.57	.32
	.36	.46	.57	.49	.24
	.28	.38	.49	.41	.16
	.20	.30	.41	.33	.08
	1419.12	1419.22	1419.33	1419.25	1419.00
	.06	.17	.27	.19	1418.94
	1419.00	.11	.21	.14	.88
	1418.95	.05	.16	.08	.82
	.89	1419.00	.10	1419.02	.77
	.83	1418.94	1419.04	1418.97	.71
	.77	.88	1418.98	.91	.65
	.71	.82	.92	.85	.59
	.65	.75	.86	.78	.53
	.58	.69	.79	.72	.46
	1418.52	1418.62	1418.73	1418.65	1418.40
	1418.49	1418.59	1418.70	1418.62	1418.37

	* ℄ GIRDER 1	℄ GIRDER 2	℄ GIRDER 3	℄ GIRDER 4	℄ GIRDER 5
RIGHT BRIDGE	1420.78	1420.88	1420.80	1420.54	1420.28
	1420.75	1420.85	1420.77	1420.51	1420.25
	.69	.79	.71	.45	.19
	.63	.73	.65	.39	.13
	.57	.67	.59	.33	.07
	.51	.61	.53	.27	1420.01
	.44	.54	.46	.20	1419.94
	.38	.48	.40	.14	.88
	.31	.41	.33	.07	.81
	.24	.34	.26	1420.00	.74
	.18	.28	.20	1419.94	.68
	1420.11	1420.21	1420.13	1419.87	1419.61
	1420.03	.13	1420.05	.79	.53
	1419.96	1420.06	1419.98	.72	.46
	.88	1419.98	.90	.64	.38
	.81	.91	.83	.57	.31
	.73	.83	.75	.49	.23
	.65	.75	.67	.41	.15
	.56	.66	.58	.32	1419.06
	.48	.58	.50	.24	1418.98
	.39	.49	.41	.15	.89
	1419.31	1419.41	1419.33	1419.07	1418.81
	.23	.33	.25	1418.99	.73
	.16	.26	.18	.92	.65
	.08	.18	.10	.84	.58
	1419.01	1419.03	1419.03	.76	.50
	1418.93	1418.95	1418.95	.69	.43
	.84	.86	.87	.60	.34
	.76	.78	.78	.52	.26
	.68	.78	.70	.44	.17
	.59	.69	.61	.35	.09
	1418.51	1418.61	1418.53	1418.27	1418.01
	.45	.55	.47	.21	1417.94
	.38	.49	.41	.14	.88
	.33	.43	.35	.09	.82
	.26	.37	.29	1418.02	.76
	.20	.30	.22	1417.96	.70
	.14	.24	.16	.90	.64
	.08	.18	.10	.84	.58
	1418.01	.11	1418.03	.77	.51
	1417.94	1418.04	1417.96	.70	.44
	1417.87	1417.97	1417.89	1417.63	1417.37
	1417.84	1417.94	1417.86	1417.60	1417.34

2'-5 1/8" BEGIN BRIDGE

10 EQ. SP. = 47'-6 7/8"
℄ BRG. ABUT. 1

10 EQ. SP. = 60'-0"
℄ BRG. PIER 2

10 EQ. SP. = 60'-0"
℄ BRG. PIER 3

10 EQ. SP. = 60'-0"
℄ BRG. PIER 4

10 EQ. SP. = 47'-6 7/8"
℄ BRG. ABUT. 5

2'-5 1/8" END BRIDGE

* GIRDER NO. 1 IS THE NORTH GIRDER

SCREED ELEVATIONS

VOID

RRV & WRR SEPARATION WIDENING
JAMESTOWN

FIELD SPLICE DETAILS
SCREED ELEVATIONS

90DLS52

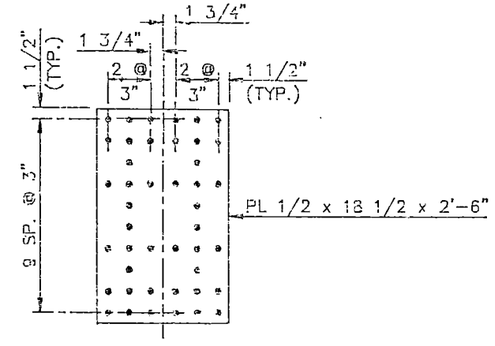
94-260.304L & R-23

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

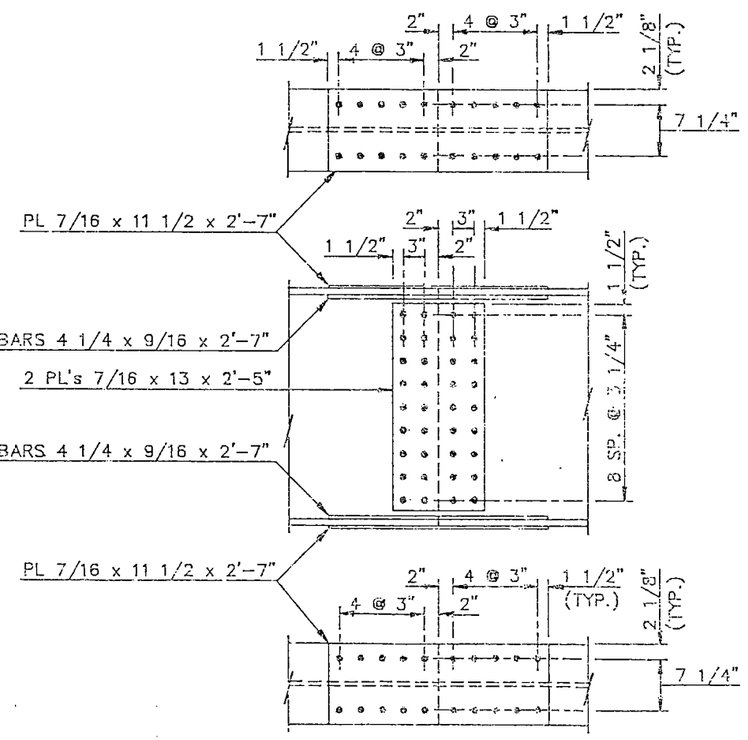
NOTE:

REPLACE ALL EXISTING WEB PLATES.

THE EXISTING WEB BOLT HOLE SPACING SHALL BE FIELD VERIFIED BEFORE FABRICATION.



REPLACEMENT WEB PLATE DETAIL



NEW GIRDER FIELD SPLICE DETAILS

** RIGHT BRIDGE					
* ℄ GIRDER 1	℄ GIRDER 2	℄ GIRDER 3	℄ GIRDER 4	℄ GIRDER 5
1420.80	1420.90	1420.82	1420.56	1420.30
1420.77	1420.87	1420.79	1420.53	1420.27
.71	.81	.73	.47	.21
.65	.75	.67	.41	.15
.59	.69	.61	.35	.09
.53	.63	.55	.29	1420.03
.46	.56	.48	.22	1419.96
.40	.50	.42	.16	.90
.33	.43	.35	.09	.83
.26	.36	.28	1420.02	.76
.20	.30	.22	1419.96	.70
1420.13	1420.23	1420.15	1419.89	1419.63
1420.05	.15	.07	.81	.55
1419.98	.08	1420.00	.74	.46
.90	1420.00	1419.92	.66	.40
.83	1419.93	.85	.59	.33
.75	.85	.77	.51	.25
.67	.77	.69	.43	.17
.58	.68	.60	.34	.08
.50	.60	.52	.26	1419.00
.41	.51	.43	.17	1418.91
1419.33	1419.43	1419.35	1419.09	1418.83
.25	.35	.27	.01	.75
.18	.28	.20	1418.94	.67
.10	.20	.12	.86	.60
1419.03	.13	1419.05	.78	.52
1418.95	1419.05	1418.97	.71	.45
.86	1418.97	.89	.62	.36
.78	.88	.80	.54	.28
.70	.80	.72	.46	.19
.61	.71	.63	.37	.11
1418.53	1418.63	1418.55	1418.29	1418.03
.47	.57	.49	.23	1417.96
.40	.51	.43	.16	.90
.35	.45	.37	.11	.84
.28	.39	.31	1418.04	.78
.22	.32	.24	1417.98	.72
.16	.26	.18	.92	.66
.10	.20	.12	.86	.60
1418.03	.13	1418.05	.73	.53
1417.96	1418.06	1417.98	.72	.46
1417.89	1417.99	1417.91	1417.65	1417.39
1417.86	1417.96	1417.88	1417.62	1417.36

△ LEFT BRIDGE					
* ℄ GIRDER 1	℄ GIRDER 2	℄ GIRDER 3	℄ GIRDER 4	℄ GIRDER 5
1421.27	1421.38	1421.50	1421.44	1421.19
1421.24	1421.35	1421.48	1421.41	1421.17
.20	.31	.43	.37	.12
.15	.27	.39	.32	.08
.10	.22	.34	.27	1421.03
.06	.17	.29	.23	1420.98
1421.00	.12	.24	.18	.93
1420.95	.07	.19	.12	.88
.90	1421.01	.13	.07	.82
.84	1420.96	.08	1421.01	.76
.79	.91	1421.02	1420.96	.70
1420.74	1420.86	1420.97	1420.90	1420.64
.68	.79	.90	.82	.56
.62	.72	.82	.75	.49
.55	.65	.75	.67	.42
.47	.57	.68	.60	.34
.40	.50	.60	.52	.27
.32	.42	.52	.44	.19
.23	.34	.44	.36	.10
.15	.25	.36	.28	1420.02
1420.07	.17	.27	.20	1419.94
1419.99	1420.09	1420.19	1420.12	1419.86
.91	1420.02	.12	1420.04	.78
.84	1419.94	1420.05	1419.97	.71
.77	.87	1419.97	.89	.64
.69	.80	.90	.82	.56
.62	.72	.82	.74	.49
.54	.64	.74	.67	.41
.46	.56	.66	.58	.32
.37	.48	.58	.50	.24
.29	.39	.50	.42	.16
1419.21	1419.31	1419.42	1419.34	1419.08
.15	.25	.35	.28	1419.02
.09	.19	.30	.22	1418.96
1419.03	.14	.24	.16	.90
1418.97	.08	.18	.10	.84
.91	1419.02	.12	1419.04	.78
.85	1418.96	.06	1418.98	.72
.79	.89	1419.00	.92	.66
.73	.83	1418.93	.85	.59
.66	.76	.87	.79	.53
1418.59	1418.69	1418.80	1418.72	1418.46
1418.56	1418.66	1418.77	1418.69	1418.43

2'-5 1/8" BEGIN BRIDGE | 10 EQ. SP. = 47'-6 7/8" | ℄ BRG. ABUT. 1 | 10 EQ. SP. = 60'-0" | ℄ BRG. PIER 2 | ℄ BRG. PIER 3 | 10 EQ. SP. = 60'-0" | ℄ BRG. PIER 4 | 10 EQ. SP. = 47'-6 7/8" | ℄ BRG. ABUT. 5 | 2'-5 1/8" END BRIDGE

* GIRDER NO. 1 IS THE NORTH GIRDER

** SCREED ELEVATIONS

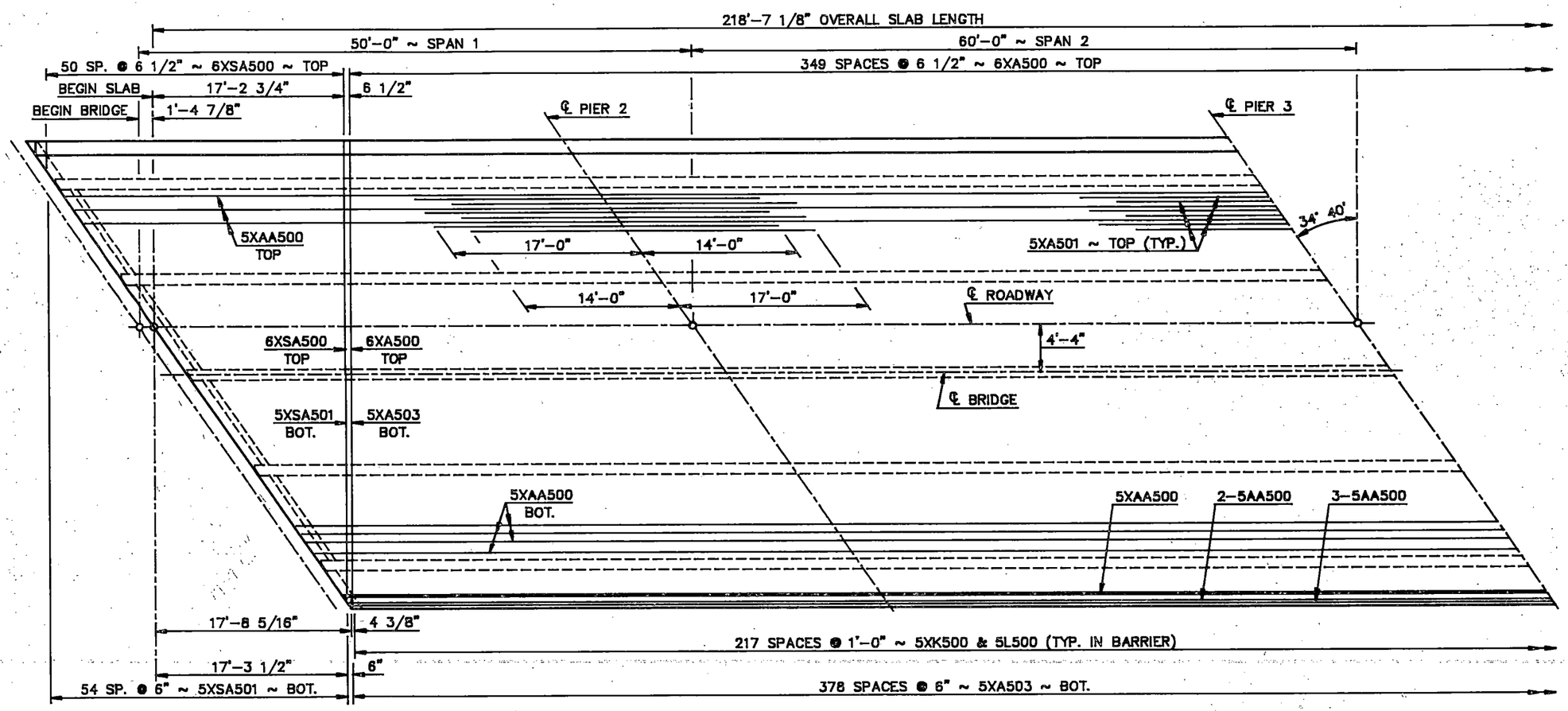
RRV & WRR SEPARATION WIDENING
JAMESTOWN

FIELD SPLICE DETAILS
SCREED ELEVATIONS

90DLS52

△ REVISED 6 JUNE 91 ** REVISED 21 MAY 91 94-260.304L & R-23

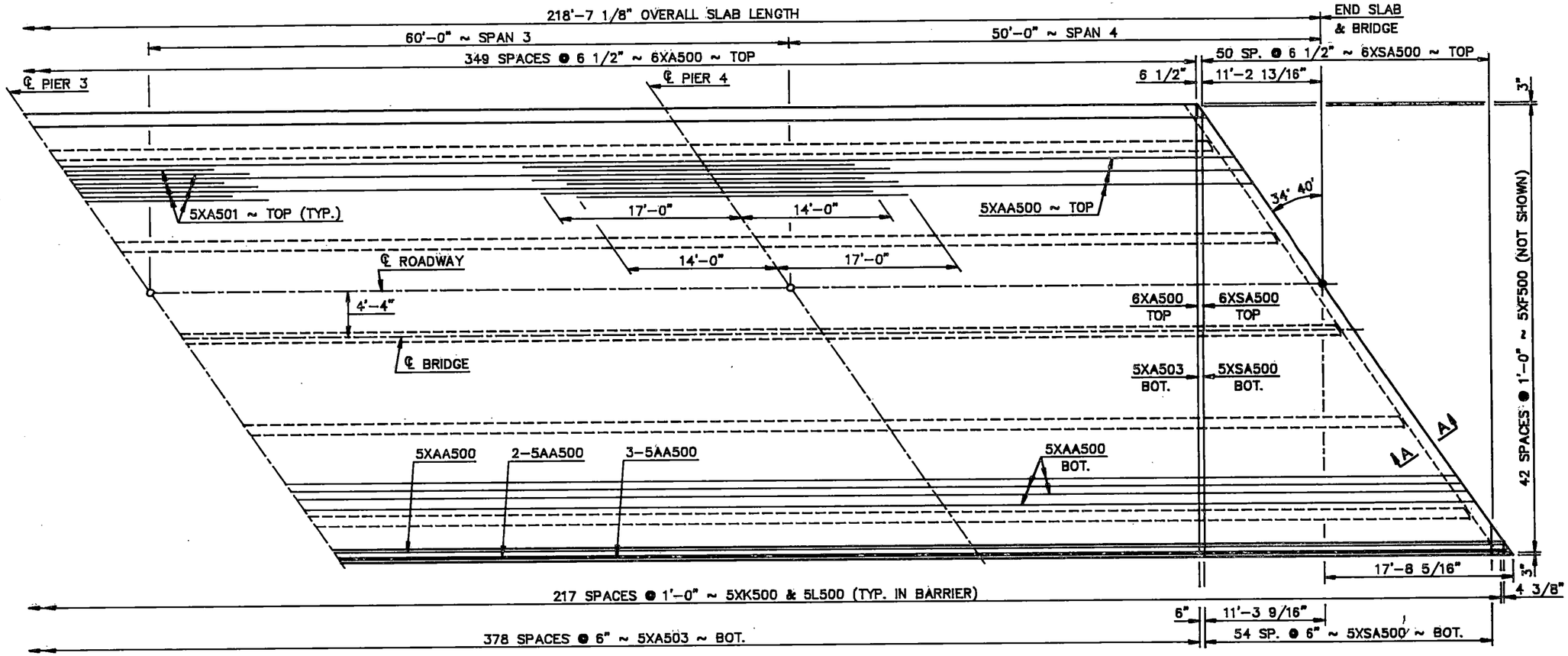
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	129



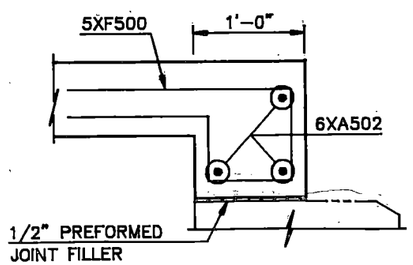
PLAN
(SHOWING RIGHT BRIDGE)

QUANTITIES
SEE DWG. 94-260.304L & R-27
RRV & WRR SEPARATION WIDENING JAMESTOWN (SPANS 1 & 2) SLAB LAYOUT

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	130



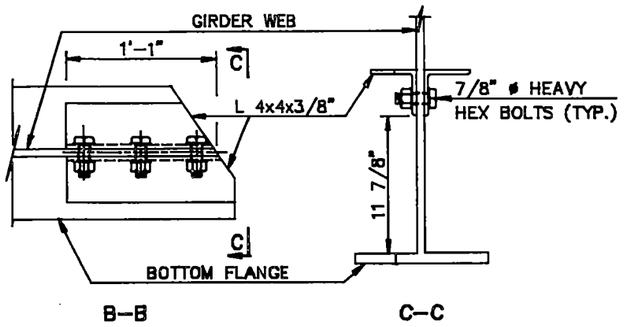
PLAN
(SHOWING RIGHT BRIDGE)



A-A
Abut. 5

QUANTITIES
SEE DWG. 94-260.304L & R-27
RRV & WRR SEPARATION WIDENING JAMESTOWN
(SPANS 3 & 4)
SLAB LAYOUT

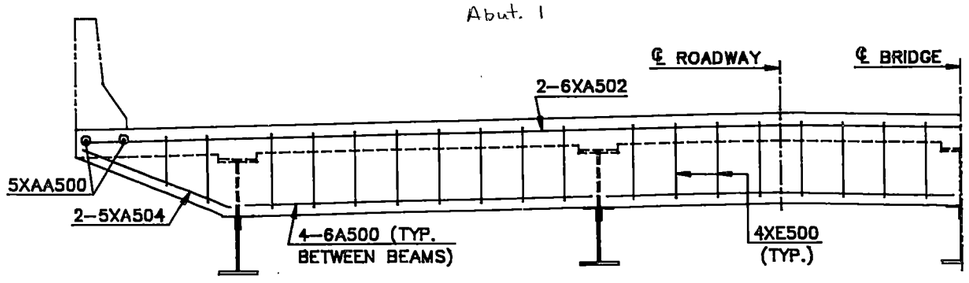
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	131



B-B C-C

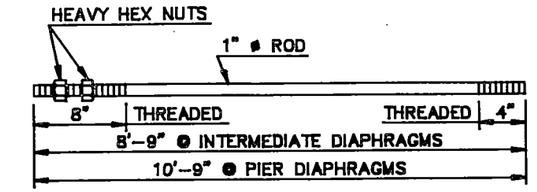
HALF END BEAM PLAN

Abut. 1



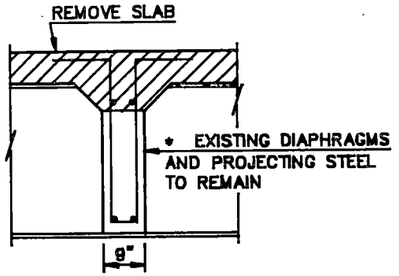
HALF END BEAM ELEVATION

* ANY SPALLING OR DAMAGE TO THE DIAPHRAGMS SHALL BE REPAIRED AS DETERMINED BY THE PROJ. ENGINEER.

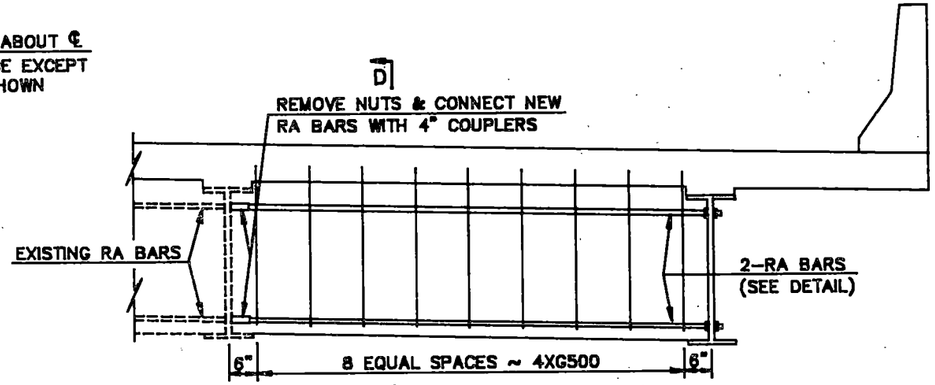


(44 REQUIRED PER BRIDGE FOR INTERMEDIATE DIAPHRAGMS)
(12 REQUIRED PER BRIDGE FOR PIER DIAPHRAGMS)

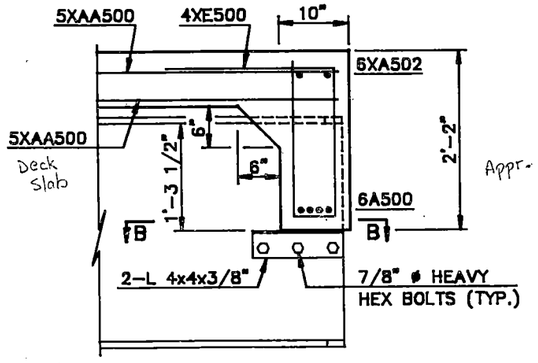
RA BAR DETAIL



EXISTING DIAPHRAGM

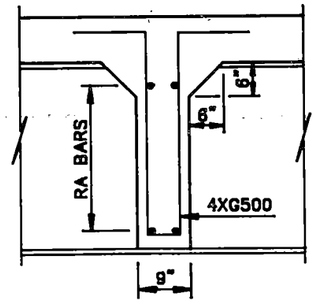


NEW DIAPHRAGM DETAIL



A-A

Abut. 1



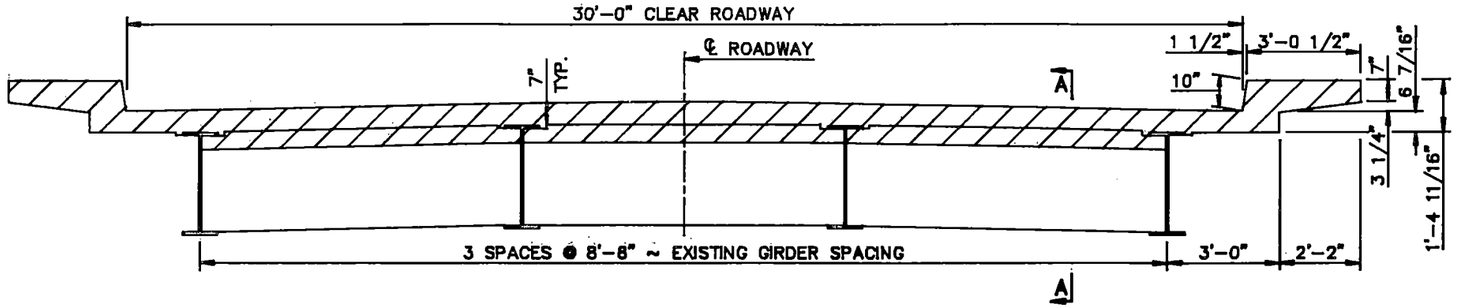
D-D

QUANTITIES

SEE DWG. 94-260.304L & R-27

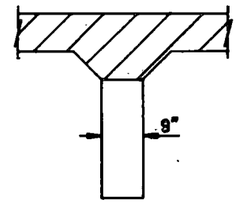
RRV & WRR SEPARATION WIDENING
JAMESTOWN
(SHOWING LEFT BRIDGE)
SLAB END BEAM & DIAPHRAGMS

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	132

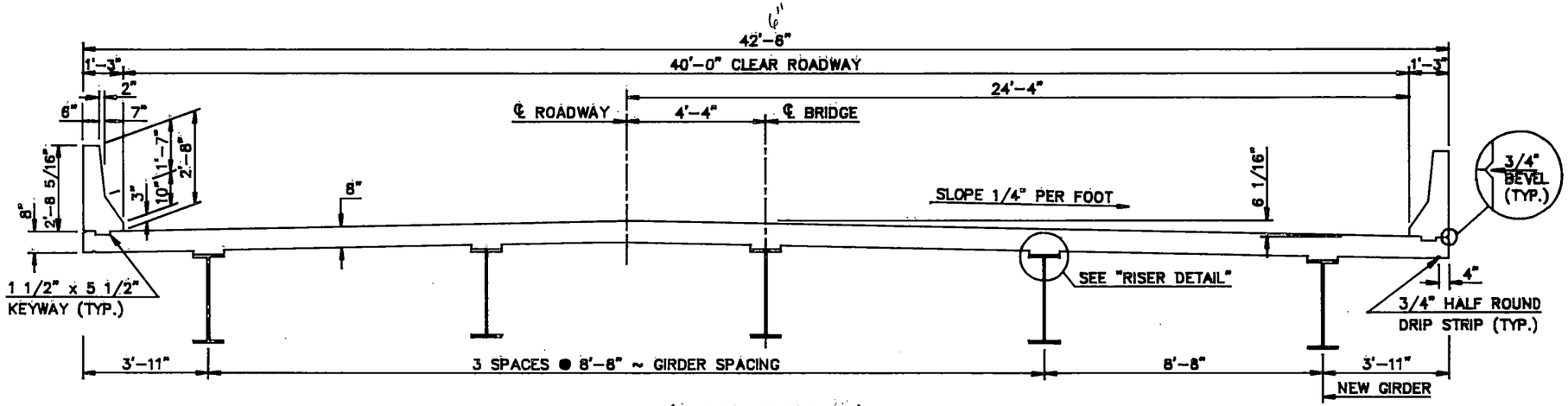


(SHOWING DIAPHRAGMS)
EXISTING SLAB SECTION

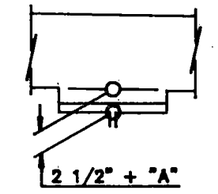
INDICATES CONCRETE TO BE REMOVED.



A-A

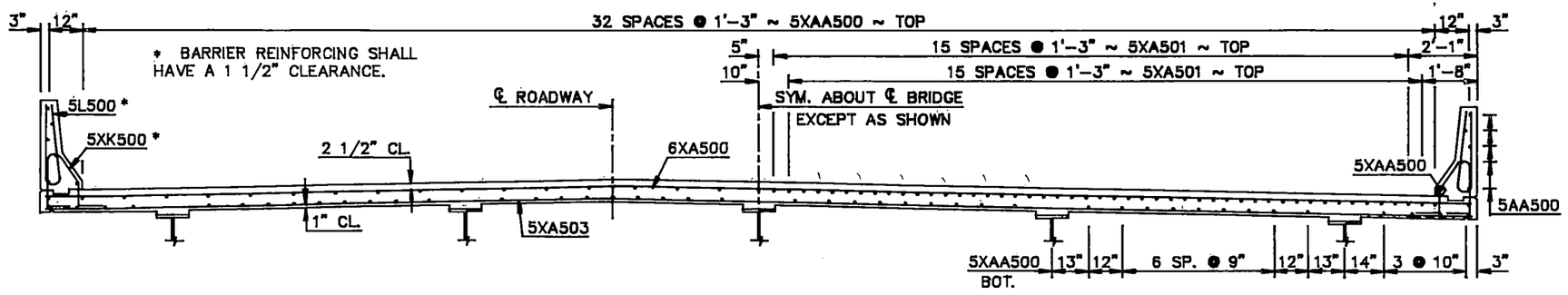


(SHOWING DIMENSIONS)
SLAB SECTION



THE "A" DIMENSION CAN BE POSITIVE OR NEGATIVE DUE TO THE BEAM CAMBER.

RISER DETAIL



(SHOWING REINFORCING BETWEEN PIERS)

(SHOWING REINFORCING OVER PIERS, DIAPHRAGM NOT SHOWN)

SLAB SECTION

QUANTITIES	(ONE SLAB)
CLASS AAE-3 CONCRETE	282.5 C.Y.
REINFORCING STEEL	4836 LBS.
REINFORCING STEEL - EC	73,534 LBS.

RRV & WRR SEPARATION WIDENING
JAMESTOWN

(SHOWING RIGHT BRIDGE)
SLAB SECTIONS

90DLS43

94-260.304L & R-27

BILL OF REINFORCING STEEL, GRADE 60

LETTER PREFIX OF BAR MARK DENOTES SHAPE ~ SEE BAR DETAILS

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	133

ABUTMENT 1 ~ LEFT

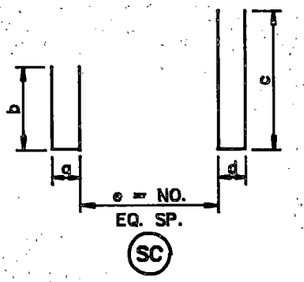
LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
	6	A300	1	9'-8"		9'-8"							
	6	A301	1	22'-2"		22'-2"							
	5	A302	6	9'-8"		9'-8"							
	5	A303	14	22'-2"		22'-2"							
	5	A304	2	21'-0"		21'-0"							
	6	A305	2	55'-8"		55'-8"							
	6	A306	3	2'-8"		2'-8"							
	6	A307	3	13'-0"		13'-0"							
	6	A308	1	8'-2"		8'-2"							
	6	A309	2	15'-9"		15'-9"							
	6	A310	1	5'-9"		5'-9"							
	5	C300	4	17'-4"		8'-4"	8"	8'-4"					
	5	C301	14	8'-10"		4'-1"	8"	4'-1"					
	6	D300	2	6'-9"		1'-6"	5'-3"					12	5
	6	D301	4	15'-8"		5'-4"	10'-4"					12	6
	6	D302	3	7'-0"		2'-9"	4'-3"					12	8
	5	N300	4	15'-4"	5'-2"	2'-0"	6"					0	12
	5	N301	11	13'-6"	2'-8"	3'-7"	6"					0	12
	5	N302	1	12'-8"	2'-3"	3'-7"	6"					0	12
	5	N303	1	11'-8"	1'-9"	3'-7"	6"					0	12
	5	N304	1	10'-8"	1'-3"	3'-7"	6"					0	12
	5	P300	17	10'-10"	4'-8"	1'-4"	2'-0"	2'-10"				12	5
	5	SC300	1	75'-5"	8"	6'-5"	8'-0"	8"	4				

ABUTMENT 5 ~ LEFT

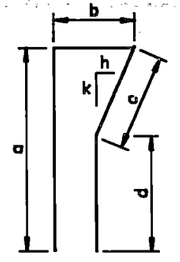
LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
	6	A400	1	8'-6"		8'-6"							
	6	A401	1	20'-2"		20'-2"							
	5	A402	6	8'-6"		8'-6"							
	5	A403	11	20'-2"		20'-2"							
	5	A404	1	19'-9"		19'-9"							
	5	A405	3	10'-0"		10'-0"							
	6	A406	1	18'-5"		18'-5"							
	6	A407	2	12'-5"		12'-5"							
	6	A408	3	2'-8"		2'-8"							
	6	A409	1	5'-9"		5'-9"							
	6	A410	3	13'-0"		13'-0"							
	6	A411	1	8'-2"		8'-2"							
	5	C400	3	16'-0"		7'-8"	8"	7'-8"					
	6	D400	1	7'-2"		1'-11"	5'-3"					12	5
	6	D401	1	7'-10"		2'-7"	5'-3"					12	5
	6	D402	5	15'-8"		5'-4"	10'-4"					12	6
	6	D403	3	7'-0"		2'-9"	4'-3"					12	8
	5	N400	4	15'-4"	5'-2"	2'-0"	6"					0	12
	5	N401	11	14'-0"	2'-8"	3'-10"	6"					0	12
	5	N402	1	13'-2"	2'-3"	3'-10"	6"					0	12
	5	N403	1	12'-2"	1'-9"	3'-10"	6"					0	12
	5	N404	1	11'-2"	1'-3"	3'-10"	6"					0	12
	5	P400	13	9'-5"	4'-0"	1'-3"	2'-0"	2'-1"				5	12
	5	SC400	1	68'-9"	8"	5'-9"	7'-4"	8"	4				

NOTES:

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



(SC)



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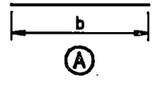

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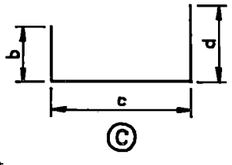

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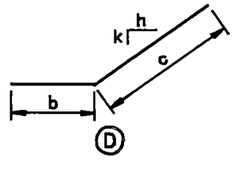

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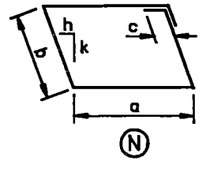


(N)

RRV & WRR SEPARATION WIDENING
JAMESTOWN

ABUTMENTS ~ LEFT
REINFORCING BAR LIST
& DETAILS

BILL OF REINFORCING STEEL, GRADE 60

LETTER PREFIX OF BAR MARK DENOTES SHAPE ~ SEE BAR DETAILS

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	134

ABUTMENT 1 ~ RIGHT

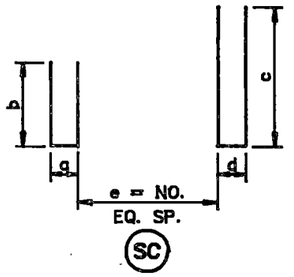
LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
	6	A100	1	8'-6"		8'-6"							
	6	A101	1	20'-2"		20'-2"							
	5	A102	5	8'-6"		8'-6"							
	5	A103	15	20'-2"		20'-2"							
	5	A104	2	18'-0"		18'-0"							
	6	A105	2	56'-0"		56'-0"							
	6	A106	3	2'-8"		2'-8"							
	6	A107	3	13'-0"		13'-0"							
	6	A108	1	8'-2"		8'-2"							
	6	A109	2	12'-5"		12'-5"							
	6	A110	1	5'-9"		5'-9"							
	5	C100	3	16'-8"		8'-0"	8"	8'-0"					
	5	C101	13	8'-10"		4'-1"	8"	4'-1"					
	6	D100	2	6'-9"		1'-6"	5'-3"					12	5
	6	D101	4	15'-8"		5'-4"	10'-4"					12	6
	6	D102	3	7'-0"		2'-9"	4'-3"					12	8
	5	N100	4	15'-4"	5'-2"	2'-0"	6"					0	12
	5	N101	11	13'-0"	2'-8"	3'-4"	6"					0	12
	5	N102	1	12'-2"	2'-3"	3'-4"	6"					0	12
	5	N103	1	11'-2"	1'-9"	3'-4"	6"					0	12
	5	N104	1	10'-2"	1'-3"	3'-4"	6"					0	12
	5	P100	13	10'-10"	4'-8"	1'-4"	2'-0"	2'-10"				12	5
	5	SC100	1	72'-1"	8"	6'-1"	7'-8"	8"	4				

ABUTMENT 5 ~ RIGHT

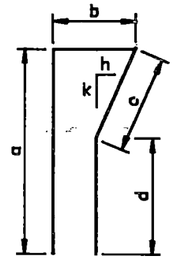
LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
	6	A600	1	9'-8"		9'-8"							
	6	A601	1	22'-2"		22'-2"							
	5	A602	6	9'-8"		9'-8"							
	5	A603	10	22'-2"		22'-2"							
	6	A604	1	21'-0"		21'-0"							
	6	A605	2	15'-9"		15'-9"							
	5	A606	3	10'-0"		10'-0"							
	5	A607	2	4'-3"		4'-3"							
	6	A608	3	2'-8"		2'-8"							
	6	A609	1	5'-9"		5'-9"							
	6	A610	3	13'-0"		13'-0"							
	6	A611	1	8'-2"		8'-2"							
	5	C600	3	15'-4"		7'-4"	8"	7'-4"					
	5	C601	1	7'-6"		3'-5"	8"	3'-5"					
	6	D600	1	7'-9"		2'-6"	5'-3"					12	5
	6	D601	1	6'-6"		1'-3"	5'-3"					12	5
	6	D602	4	15'-8"		5'-4"	10'-4"					12	6
	6	D603	3	7'-0"		2'-9"	4'-3"					12	8
	5	N600	4	15'-4"	5'-2"	2'-0"	6"					0	12
	5	N601	11	13'-0"	2'-8"	3'-4"	6"					0	12
	5	N602	1	12'-2"	2'-3"	3'-4"	6"					0	12
	5	N603	1	11'-2"	1'-9"	3'-4"	6"					0	12
	5	N604	1	10'-2"	1'-3"	3'-4"	6"					0	12
	5	P600	17	9'-5"	4'-0"	1'-4"	2'-0"	2'-1"				5	12
	5	SC600	1	65'-5"	8"	5'-5"	7'-0"	8"	4				

NOTES:

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



(SC)



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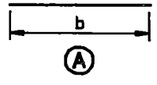
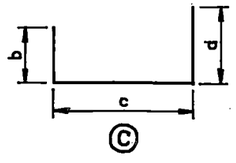


(A)



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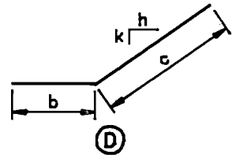

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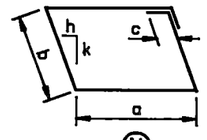


(N)

RRV & WRR SEPARATION WIDENING
JAMESTOWN

ABUTMENTS ~ RIGHT
REINFORCING BAR LIST
& DETAILS

90DLS36

94-260.304R-29

BILL OF REINFORCING STEEL, GRADE 60

LETTER PREFIX OF BAR MARK DENOTES SHAPE ~ SEE BAR DETAILS

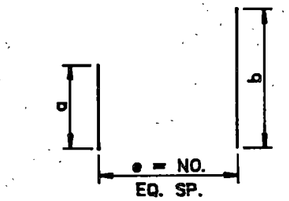
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	135

LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
PIERS	5	A200	90	7'-8"		7'-8"							
	6	A201	72	10'-8"		10'-8"							
	5	A202	60	2'-6"		2'-6"							
	8	B200	84	31'-9"		2'-0"	29'-9"						
	5	C200	6	4'-7"		1'-3"	2'-1"	1'-3"					
	5	C201	24	4'-4"		1'-3"	1'-10"	1'-3"					
	5	N200	48	18'-4"	6'-8"	2'-0"	6"					0	12
	4	N201	348	9'-8"	2'-1"	2'-3"	6"					0	12
	4	N202	54	11'-2"	2'-2"	2'-11"	6"					0	12

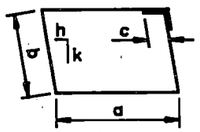
LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
SUPERSTRUCTURES REGULAR	6	A500	32	10'-3"		10'-3"							
	5	L500	872	5'-0"		2'-2"	8"	2'-2"		2.5"		12	1.25
	5	AA500	20	222'-1"		60'-0"	1'-3"	42'-1"	3		218'-4"		
SUPERSTRUCTURES EPOXY COATED	6	XA500	700	42'-2"		42'-2"							
	5	XA501	384	31'-0"		31'-0"							
	6	XA502	10	51'-3"		51'-3"							
	5	XA503	758	42'-2"		42'-2"							
	5	XA504	8	4'-8"		4'-8"							
	4	XE500	64	6'-6"	2'-0"	1'-10"	9"	1'-11"					
	4	XE501	4	6'-0"	2'-0"	1'-7"	9"	1'-8"					
	4	XE502	4	5'-2"	2'-0"	1'-2"	9"	1'-3"					
	5	XF500	86	5'-6"	2'-0"	10"	10"	7"	1'-3"				
	4	XG500	252	8'-5"	2'-11"	7"	2'-11"	1'-0"				0	12
	5	XK500	872	4'-11"	1'-4"	8"	11"	8"	1'-0"	2.5"	8"	8.5	12
	5	XAA500	162	222'-1"		60'-0"	1'-3"	42'-1"	3		218'-4"		
	6	XSA500	4	1113'-6"	2'-3"	41'-5"			50				
	5	XSA501	4	1210'-0"	2'-6"	41'-6"			54				

NOTES:

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



(SA)



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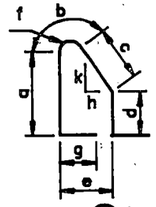

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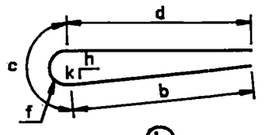
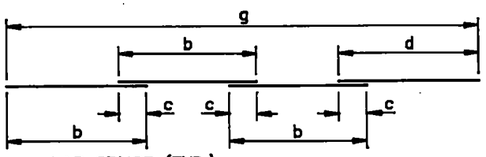
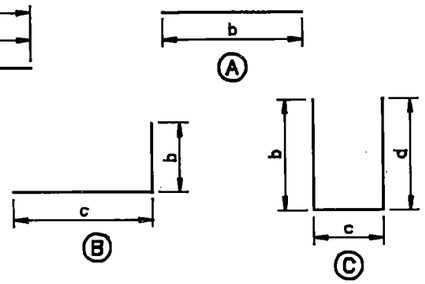


(L)



c = LAP SPLICE (TYP.)
e = NO. OF "b" LENGTH PIECES IN A SET
TOTAL LENGTH PER SET = e x b + d

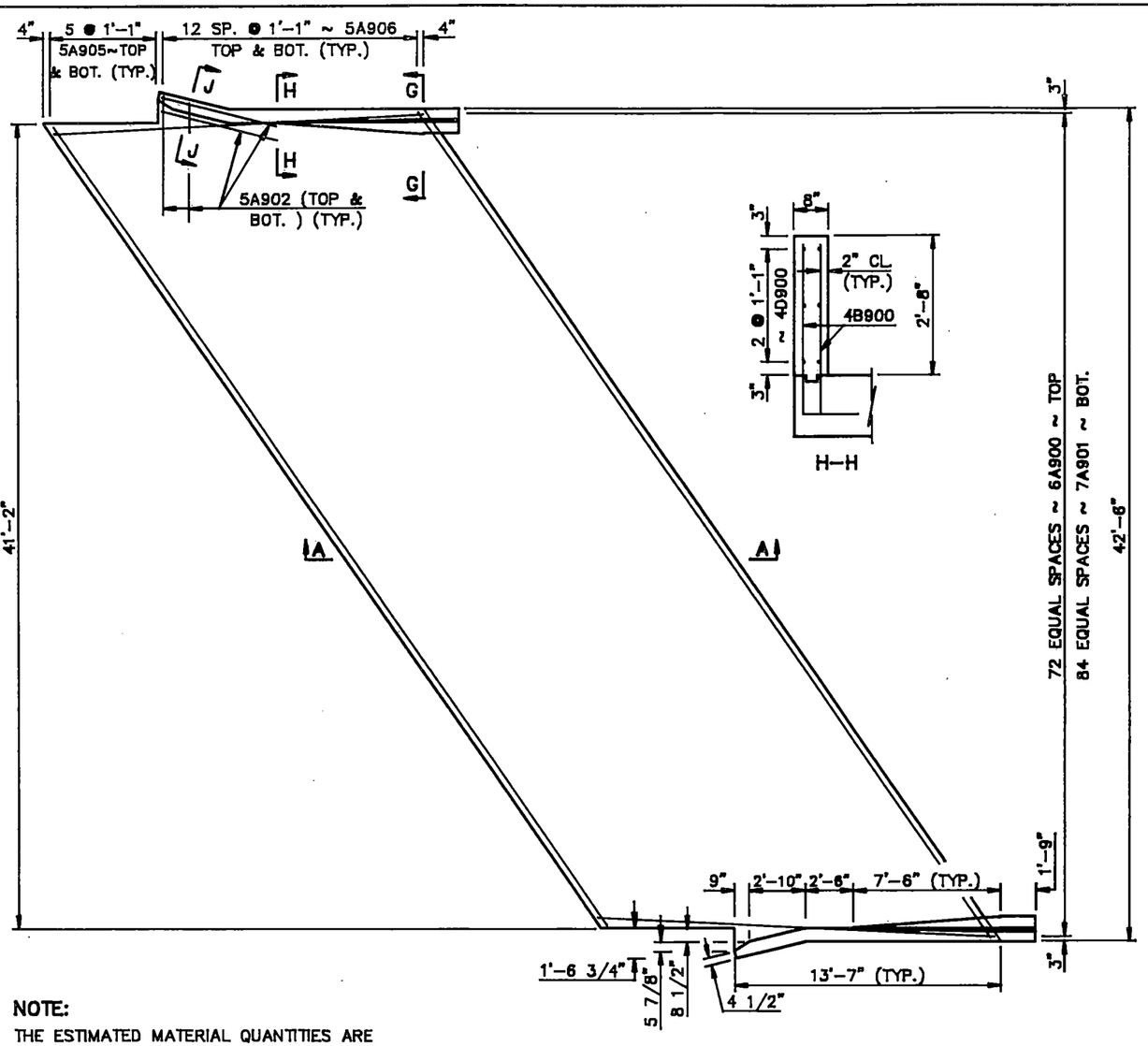
(AA)



RRV & WRR SEPARATION WIDENING
JAMESTOWN

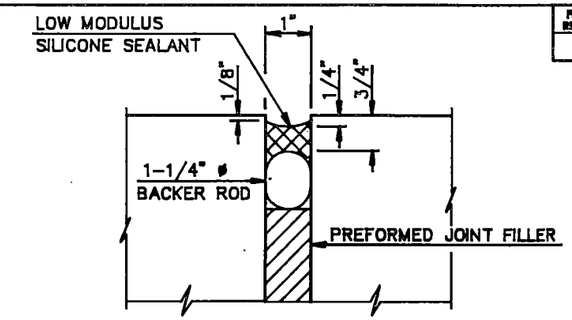
PIERS & SUPERSTRUCTURE REINFORCING BAR LIST & DETAILS

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	136

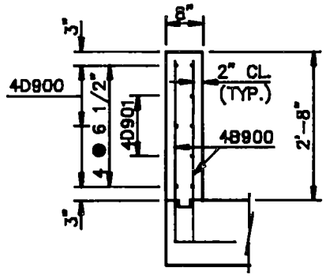


PLAN

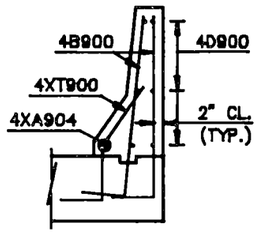
H–H



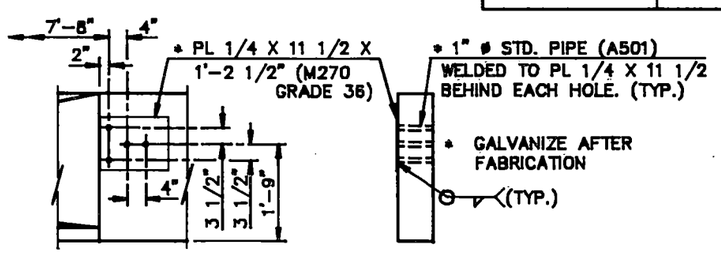
JOINT DETAIL A



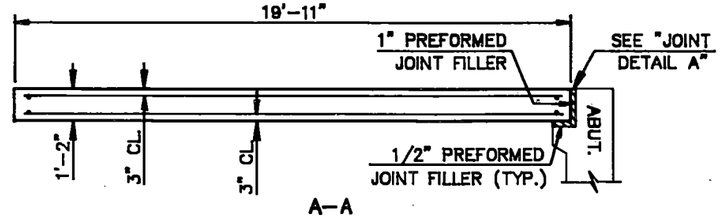
J–J



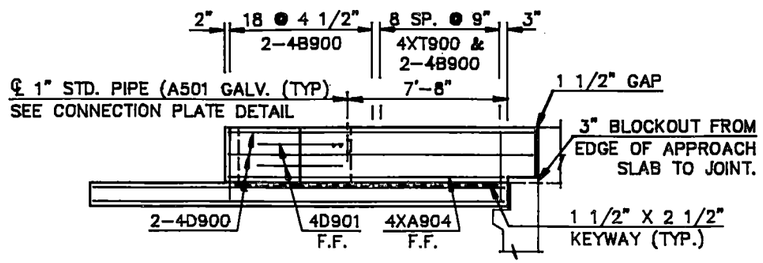
G–G



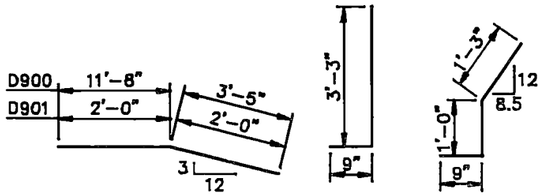
CONNECTION PLATE DETAILS



A–A



ELEVATION



D900 & D901 B900 XT900

NOTE:

THE ESTIMATED MATERIAL QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. ALL MATERIALS INCLUDING CONCRETE, REINFORCING BARS, BACKER ROD, ELASTIC JOINT SEALER, SILICON SEALANT, PREFORMED JOINT FILLER AND LABOR REQUIRED TO BUILD 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 & TOP SURFACES OF THE CURB TRANSITIONS.

SKEW ANGLE = 34° 40'

BAR LIST – ONE SLAB

SIZE	MARK	NO.	LENGTH
6	A900	73	19'-7"
7	A901	85	19'-7"
5	A902	14	6'-1"
4	XA904	2	7'-6"
5	A905	12	49'-8"
5	A906	24	51'-4"
4	B900	112	4'-0"
4	D900	12	15'-1"
4	D901	4	4'-0"
4	XT900	18	3'-0"

ESTIMATED MATERIAL QUANTITIES

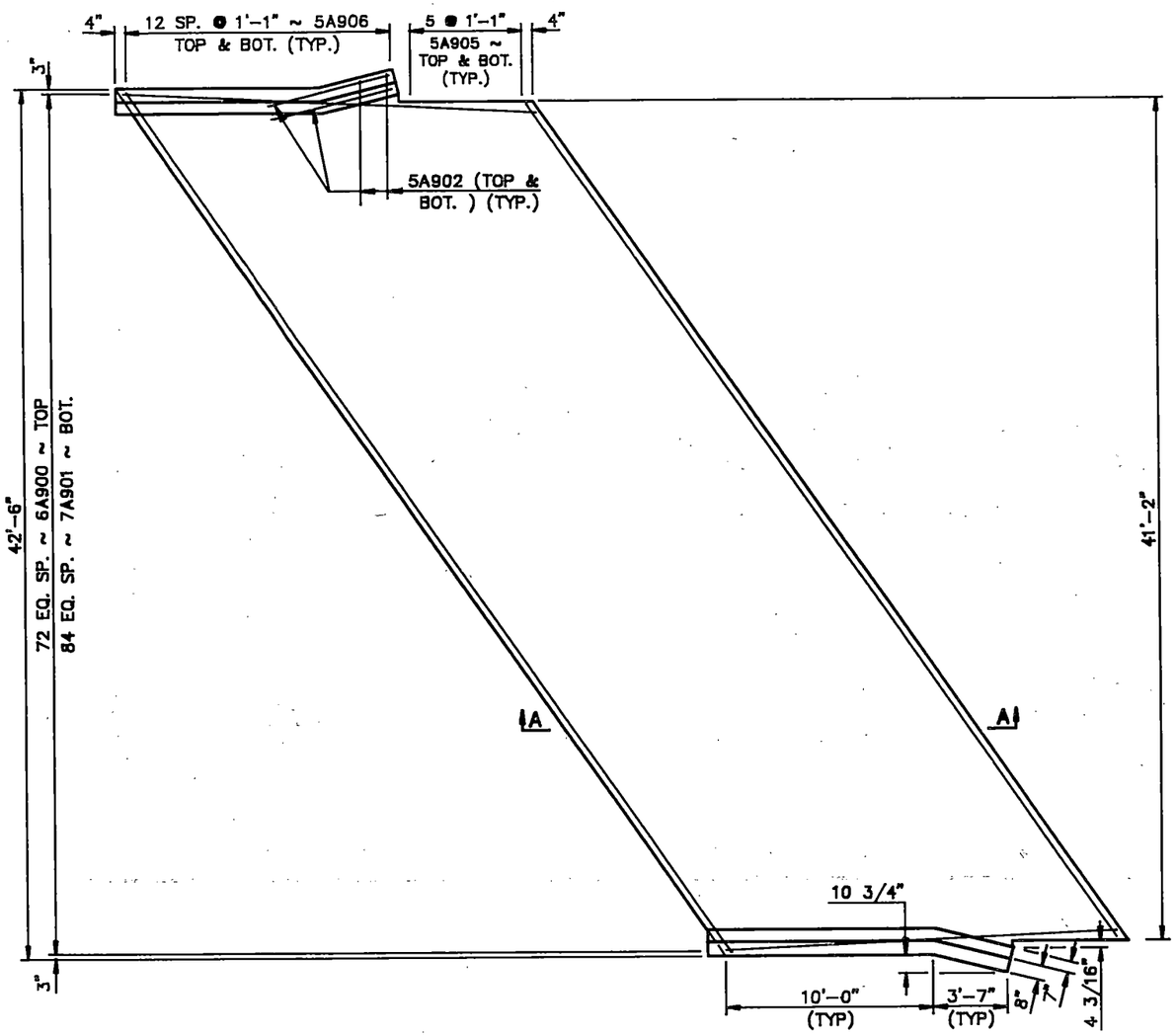
REINFORCING STEEL (LBS.)	CONCRETE (C.Y.)
8022	38.3

QUANTITIES	(ONE SLAB)
APPROACH SLAB	93.5 S.Y.

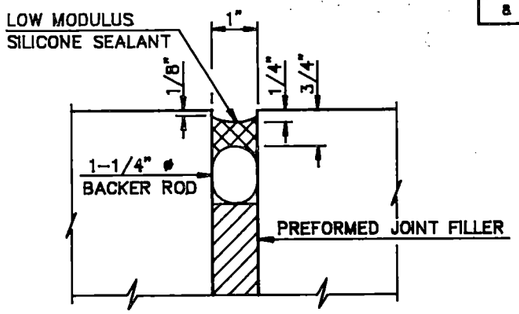
RRV & WRR SEPARATION WIDENING
JAMESTOWN

AT BEGIN RIGHT BRIDGE
APPROACH SLAB

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	137



PLAN



JOINT DETAIL A

B900

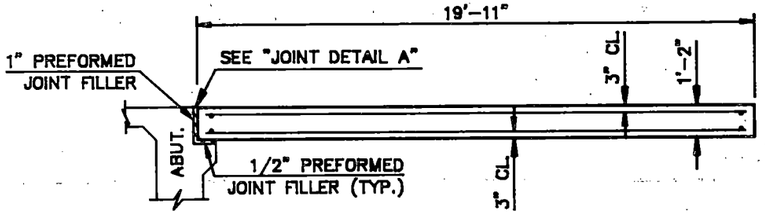
SKEW ANGLE = 34° 40'

BAR LIST - ONE SLAB

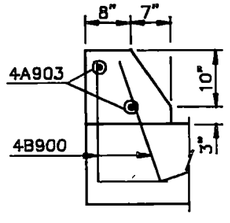
SIZE	MARK	NO.	LENGTH
6	A900	73	19'-7"
7	A901	85	19'-7"
5	A902	16	4'-6"
4	A903	4	14'-1"
5	A905	12	49'-8"
5	A906	24	51'-4"
4	B900	56	2'-9"

ESTIMATED MATERIAL QUANTITIES

REINFORCING STEEL (LBS.)	CONCRETE (C.Y.)
7672	37.5



A-A



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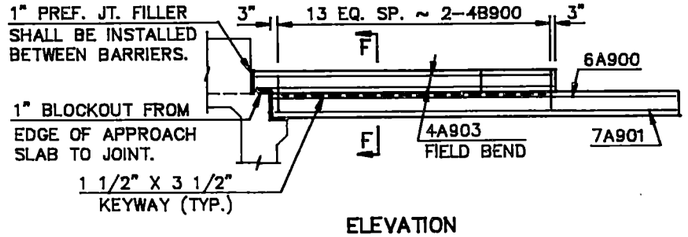


ELEVATION

NOTE:

THE ABOVE ESTIMATED MATERIAL QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. ALL MATERIALS INCLUDING CONCRETE, REINFORCING BARS, BACKER ROD, ELASTIC JOINT SEALER, 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 & TOP SURFACES OF THE CURB TRANSITIONS.

QUANTITIES	(ONE SLAB)
APPROACH SLAB	93.5 S.Y.

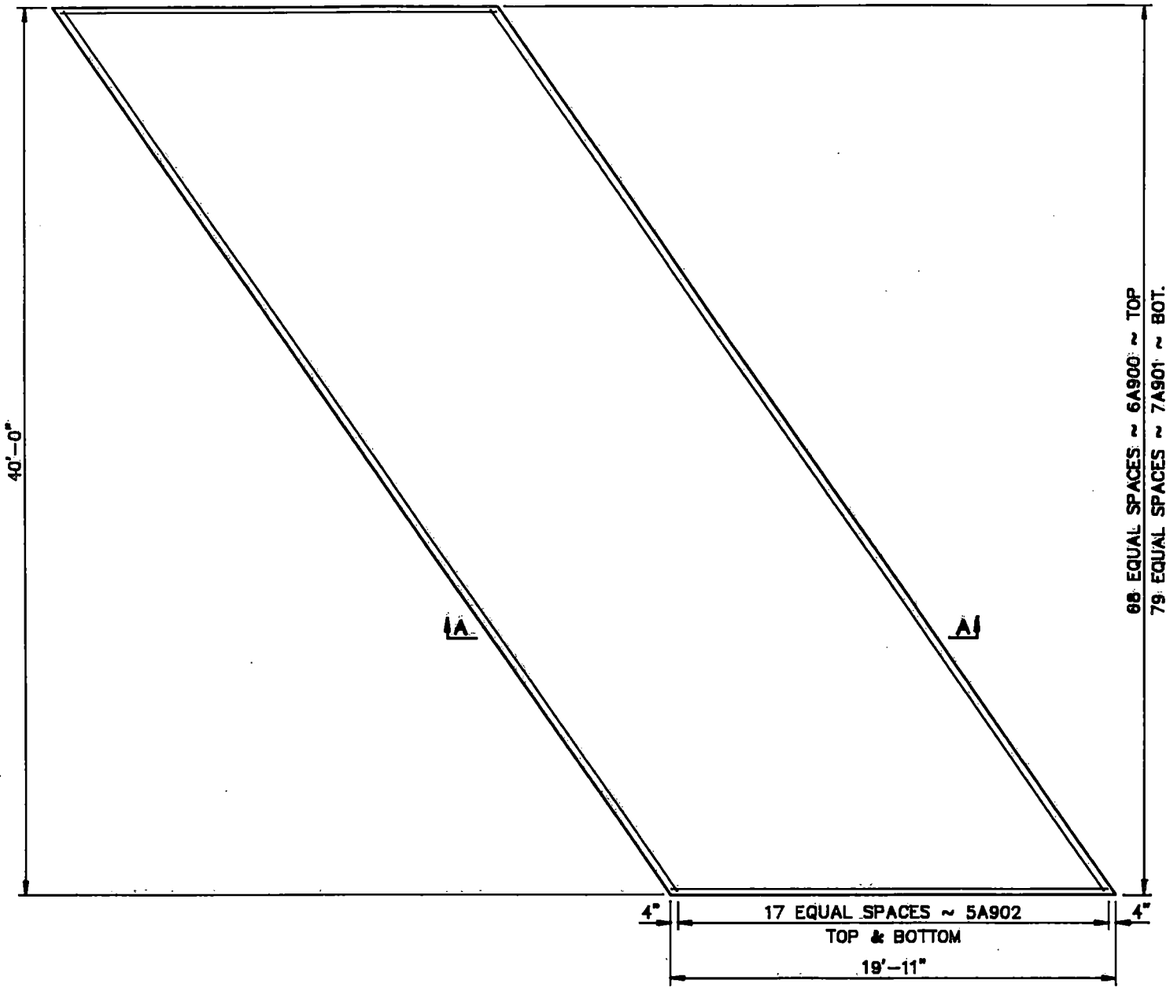
RRV & WRR SEPARATION WIDENING
JAMESTOWN

AT END RIGHT BRIDGE
APPROACH SLAB

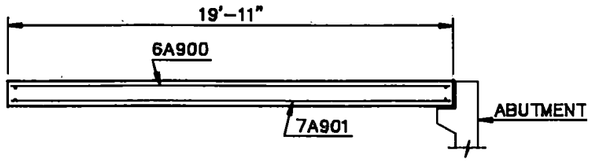
90DLS55

94-260.304R-32

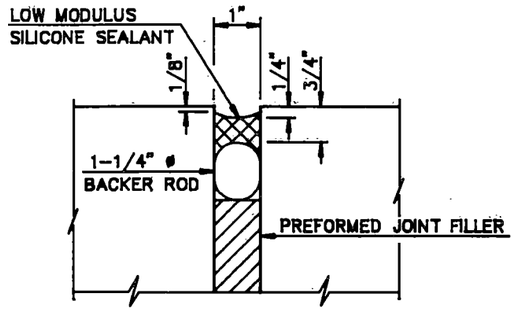
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	138



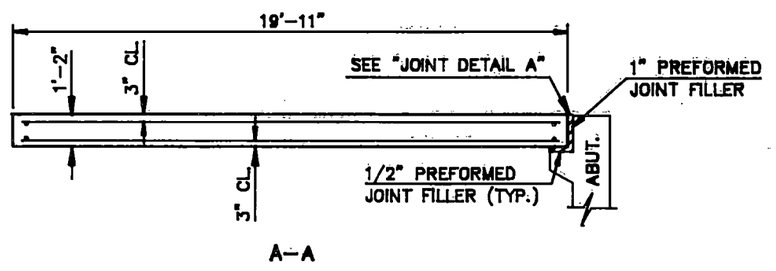
PLAN



ELEVATION



JOINT DETAIL A



A-A

SKEW ANGLE = 34° 40'

BAR LIST - ONE SLAB

SIZE	MARK	NO.	LENGTH
6	A900	69	19'-7"
7	A901	80	19'-7"
5	A902	36	48"-5"

ESTIMATED MATERIAL QUANTITIES

REINFORCING STEEL (LBS.)	CONCRETE (C.Y.)
7050	34.4

NOTE:

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

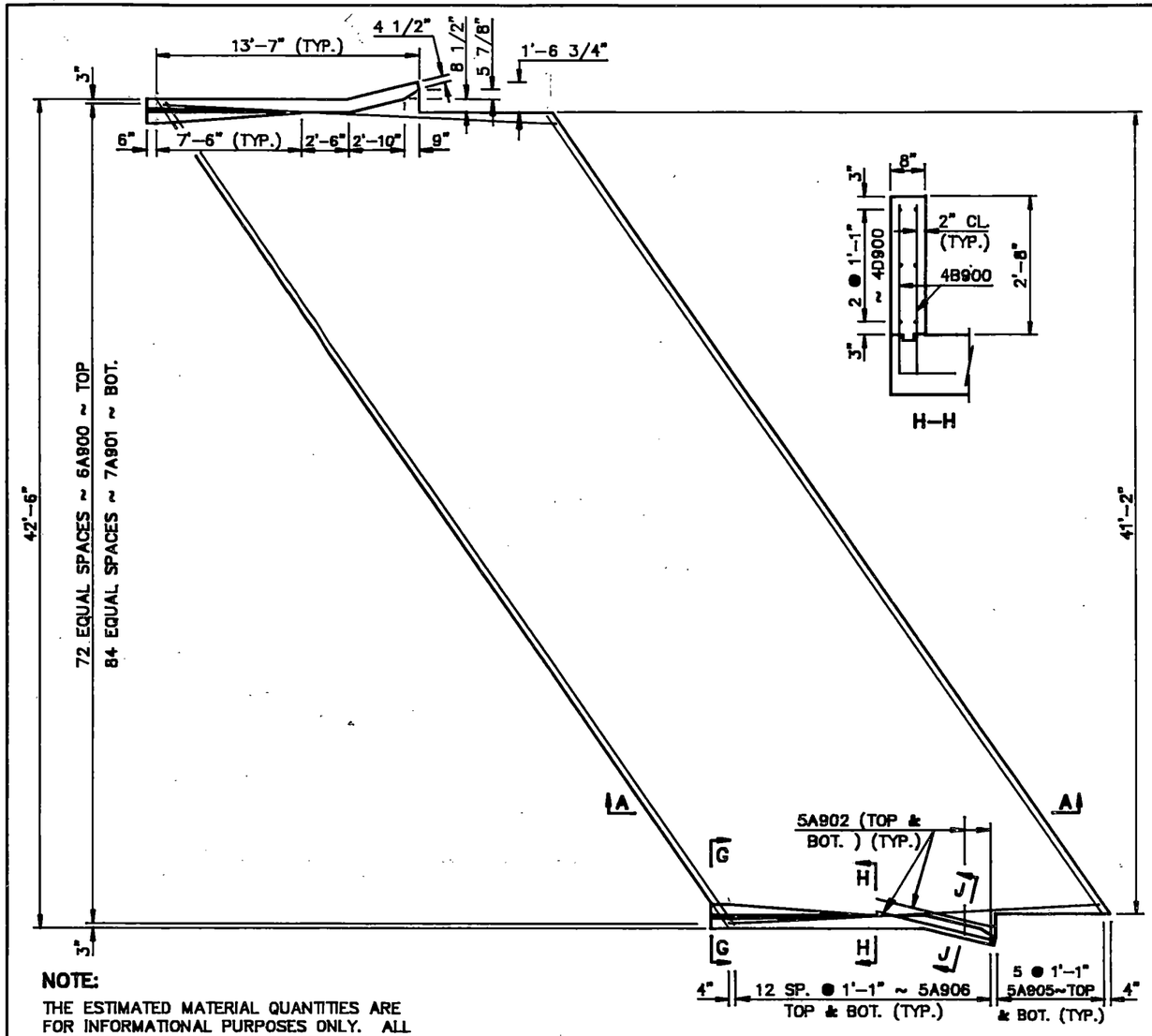
THE CONCRETE SHALL BE CLASS AE-3 AND THE REINFORCING STEEL SHALL BE GRADE 60.

QUANTITIES	(ONE SLAB)
APPROACH SLAB	88.5 S.Y.

RRV & WRR SEPARATION WIDENING
JAMESTOWN

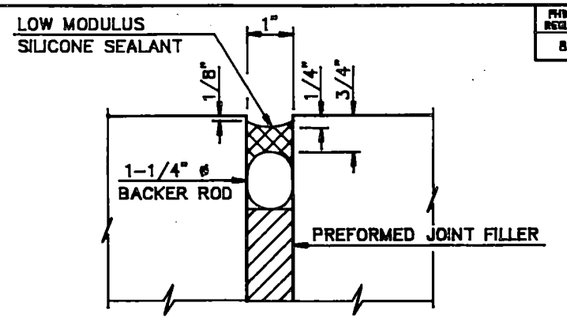
AT BEGIN LEFT BRIDGE
APPROACH SLAB

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-7(038)259	139

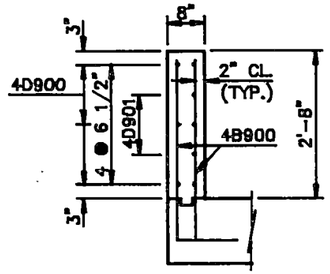


PLAN

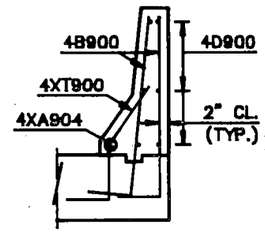
H–H



JOINT DETAIL A

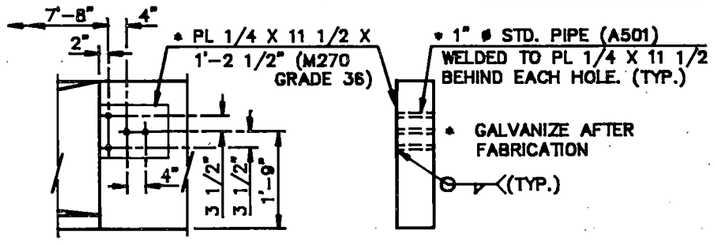


J–J

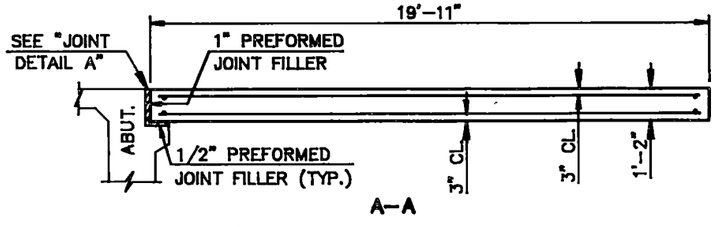


G–G

SKEW ANGLE = 34° 40'			
BAR LIST – ONE SLAB			
SIZE	MARK	NO.	LENGTH
6	A900	73	19'-7"
7	A901	85	19'-7"
5	A902	14	6'-1"
4	XA904	2	7'-6"
5	A905	12	49'-8"
5	A906	24	51'-4"
4	B900	112	4'-0"
4	D900	12	13'-10"
4	D901	4	4'-0"
4	XT900	18	3'-0"
ESTIMATED MATERIAL QUANTITIES			
REINFORCING STEEL (LBS.)		CONCRETE (C.Y.)	
8012		38.3	



CONNECTION PLATE DETAILS



A–A

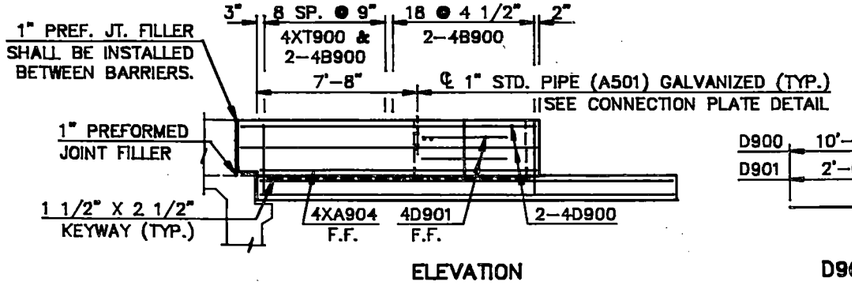
NOTE:

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

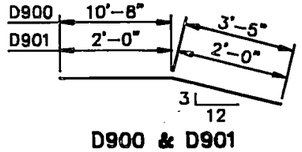
THE CONCRETE SHALL BE CLASS AE-3 AND THE REINFORCING STEEL SHALL BE GRADE 60.

THE BAR MARKS BEGINNING WITH AN "X", INDICATES AN EPOXY COATED BAR.

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

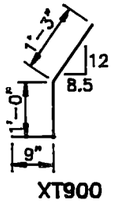


ELEVATION



D900 & D901

B900



XT900

QUANTITIES	(ONE SLAB)
APPROACH SLAB	93.5 S.Y.

RRV & WRR SEPARATION WIDENING
JAMESTOWN

AT END LEFT BRIDGE
APPROACH SLAB

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-710381259	140

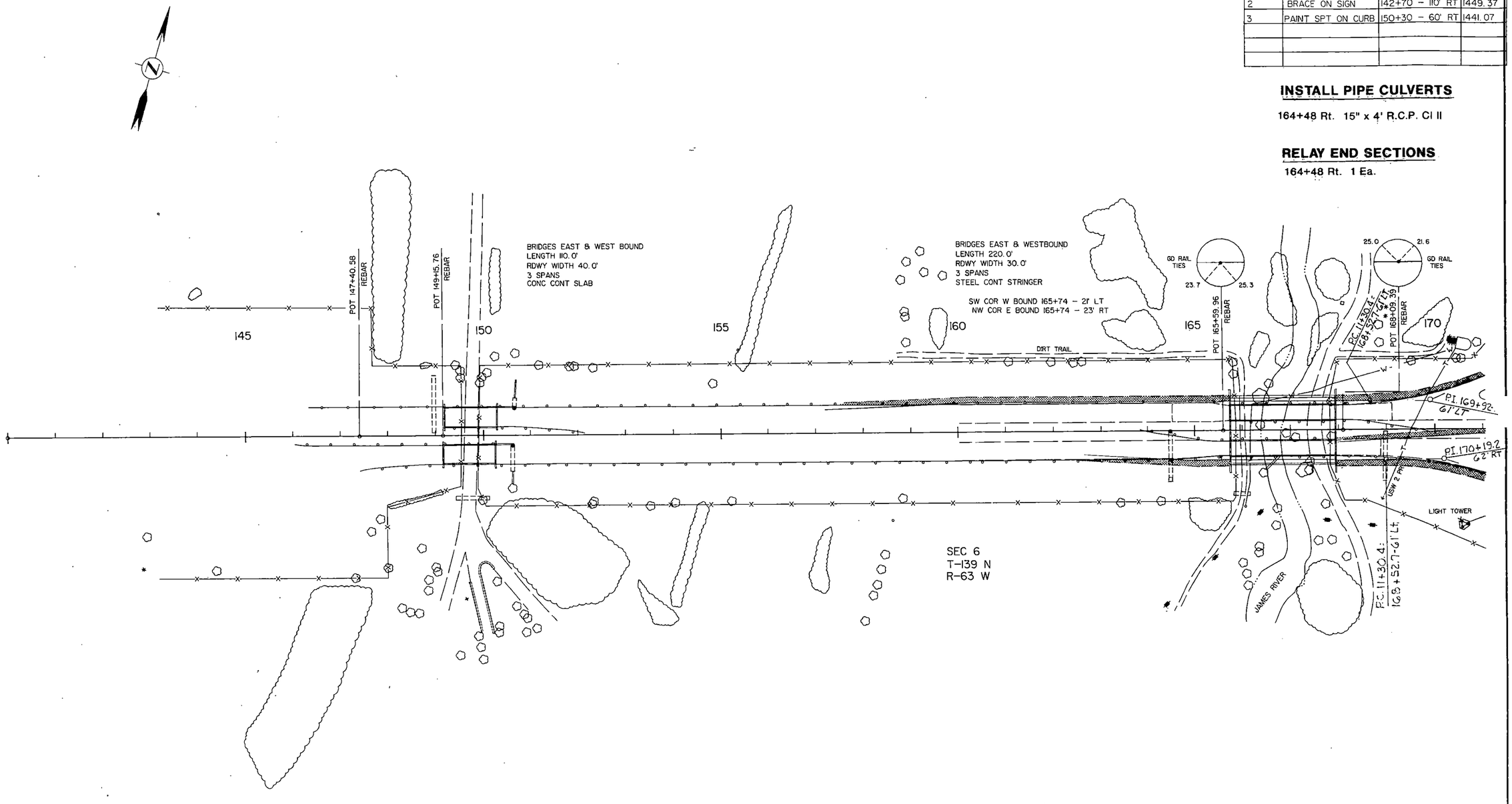
NO.	DESCRIPTION	LOCATION	ELEV.
2	BRACE ON SIGN	142+70 – 110' RT	1449.37
3	PAINT SPT ON CURB	150+30 – 60' RT	1441.07

INSTALL PIPE CULVERTS

164+48 Rt. 15" x 4' R.C.P. Cl II

RELAY END SECTIONS

164+48 Rt. 1 Ea.



149+00 – 6' LT TO S END
15" X 116' RCP
1 RCES
To Remain

149+78 – 132' RT
24" X 66' RCP
2 RCES
To Remain

164+48 – N END ON CL
15" X 94' RCP
1 RCES (S END)
Extend Rt.

168+98 – 3' RT TO N END
18" X 96' RCP
1 RCES
To Remain

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

FHWA 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)

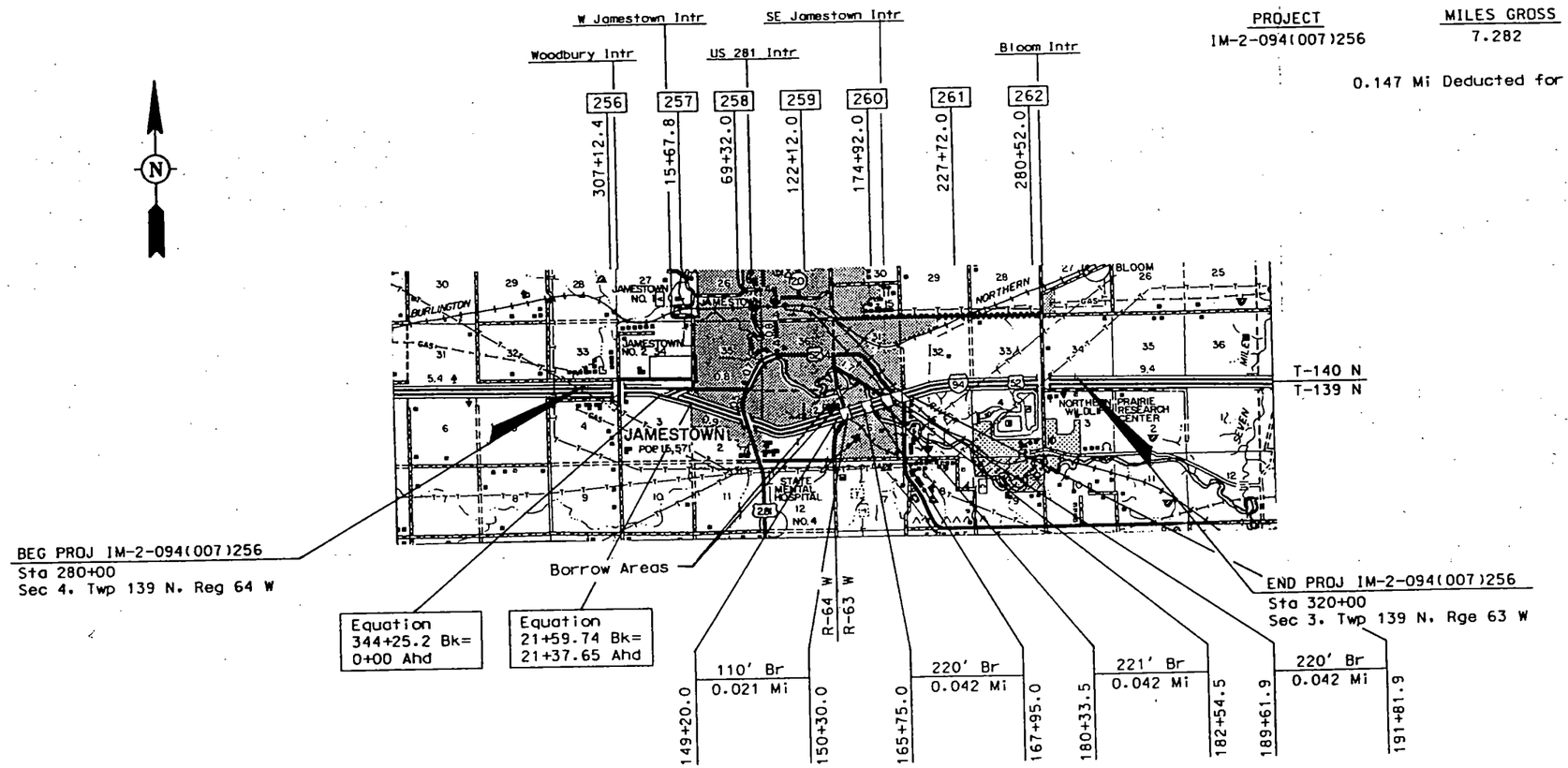
GOVERNING SPECIFICATIONS:

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



256-19

PAVING SECTION Brian Rhein

URBAN SECTION

TRAFFIC SECTION Dave Ellefson

RURAL SECTION

RECOMMEND APPROVAL 1-10, 1997

DESIGN ENGINEER Kenneth Sunt

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR DATE

APPROVED DATE 1-10-97

Ray Zink

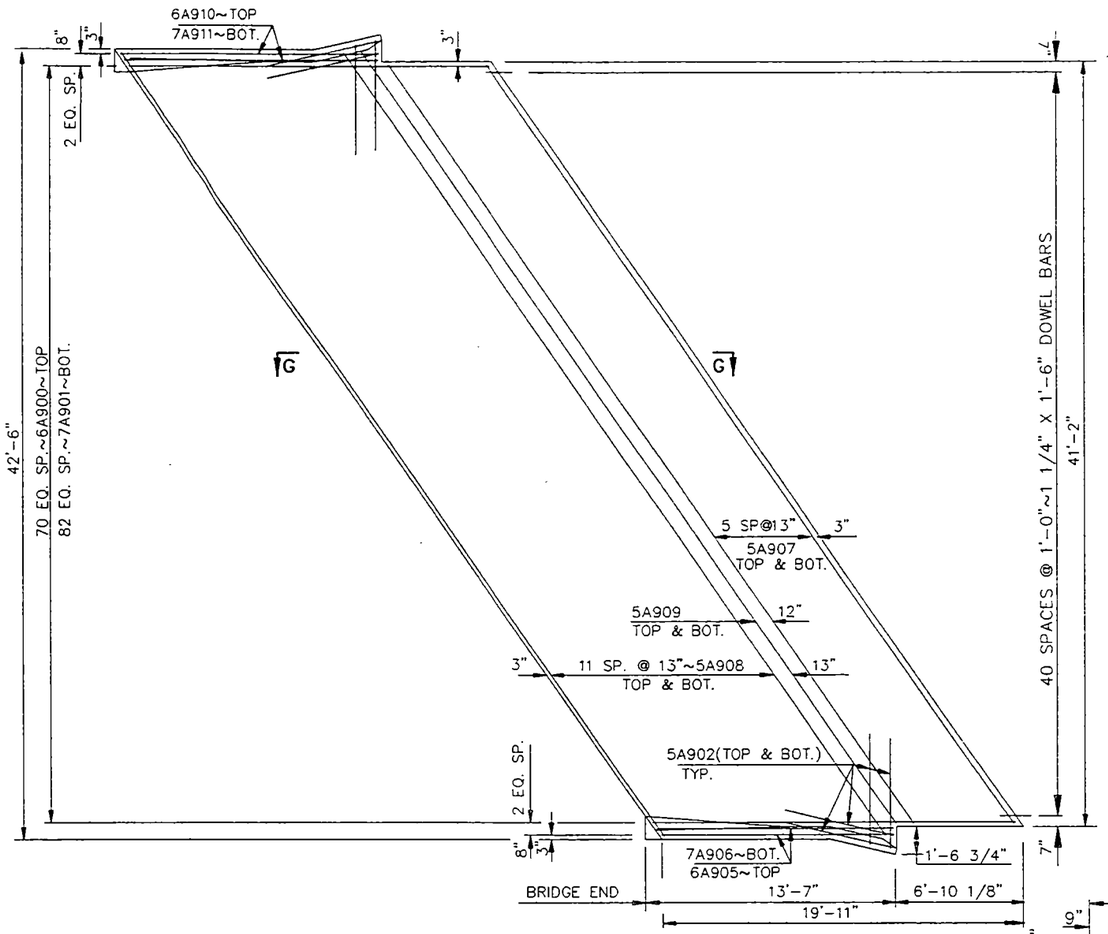
DIRECTOR OF HIGHWAYS AND ENGINEERING

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

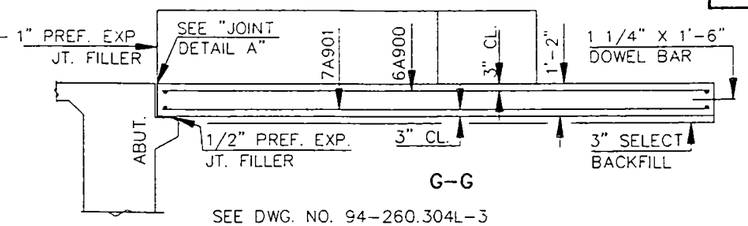
RAY ZINK REGISTERED PROFESSIONAL P.E. 972 ENGINEER

r:\project\20094256.007\d_paving\2 Dec. 27, 1996 10:56:44

FHWA REGION	STATE	FEDERAL AID PROJECT NUMBER	SHEET NO.
8	ND	IM-2-094(007)256	246

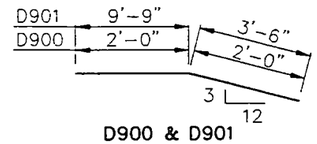


PLAN

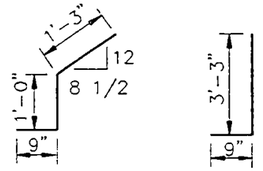


G-G

SEE DWG. NO. 94-260.304L-3
FOR "JOINT DETAIL A"



D900 & D901

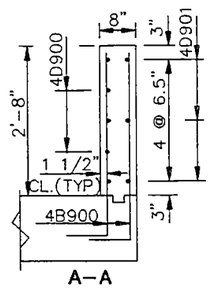


FIELD BEND
TO FIT

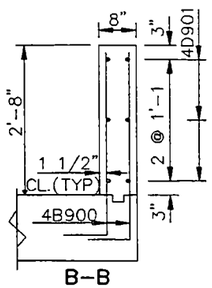
WIDTH = 40'-0" CLR RDWY			
SKEW ANGLE = 34°40'			
BAR LIST - ONE SLAB			
SIZE	MARK	NO.	LENGTH
6	A900	71	19'-7"
7	A901	83	19'-7"
5	A902	16	6'-0"
4	XA903	2	7'-6"
6	A905	2	12'-7"
7	A906	2	12'-7"
5	A907	12	49'-8"
5	A908	24	51'-4"
5	A909	2	50'-6"
6	A910	2	13'-8"
7	A911	2	13'-8"
4	B900	112	4'-0"
4	XT900	18	3'-0"
4	D900	4	4'-0"
4	D901	12	13'-3"

ESTIMATED MATERIAL QUANTITIES	
REINFORCING STEEL LB	CONCRETE CY
8,171	38.3

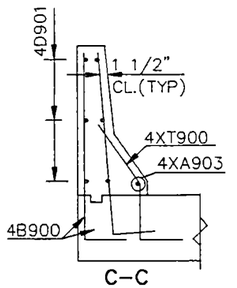
X = EPOXY COATED BAR
SEE DWG. 94-260.304L-3
FOR NOTES.



A-A

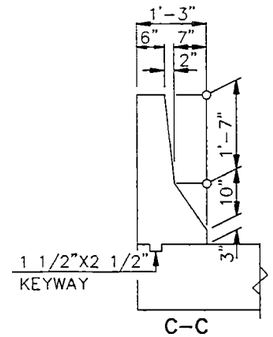


B-B



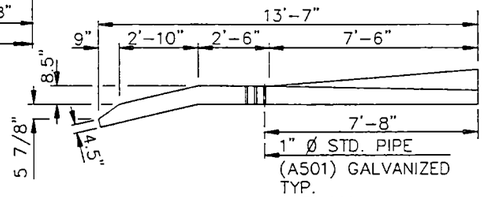
C-C

SHOWING REINFORCING

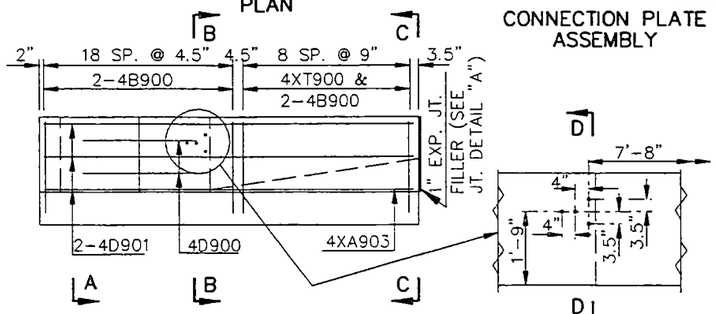


C-C

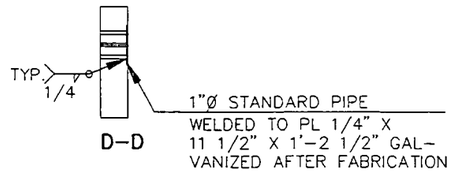
SHOWING DIMENSIONS



PLAN



ELEVATION



D-D

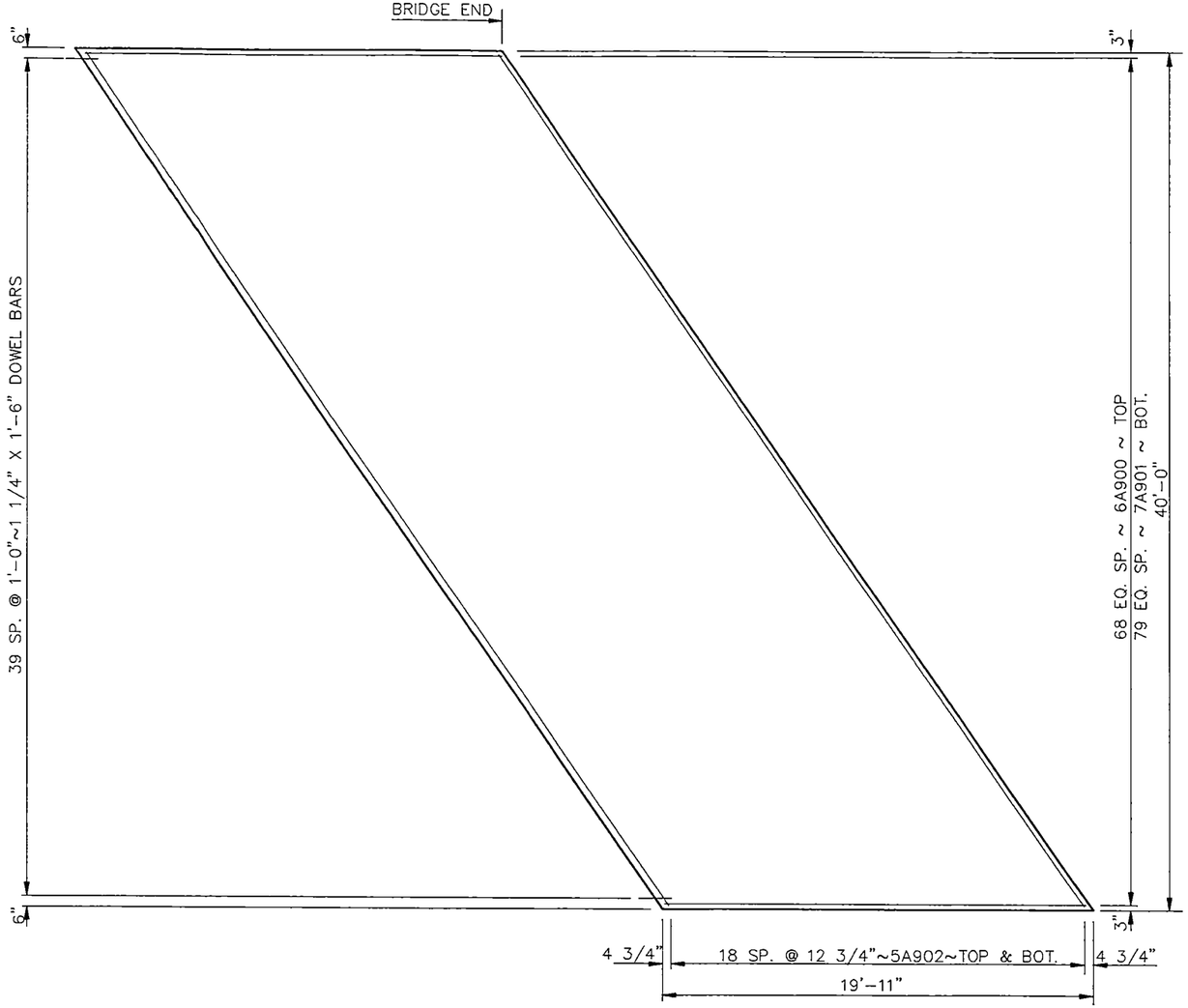
CONNECTION PLATE
ASSEMBLY

QUANTITIES (ONE SLAB)		
APPROACH SLAB	93.5	SY
SELECT BACKFILL	14.6	TON

RRV & WRR SEPARATION

APPROACH SLAB
ENTRANCE END

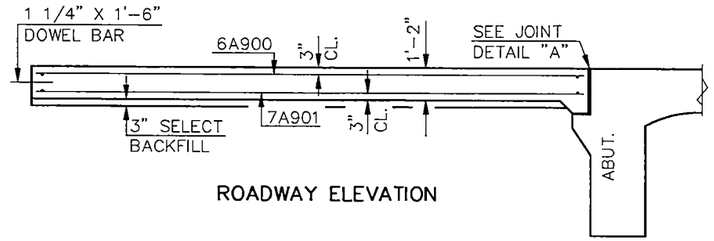
FHWA REGION	STATE	FEDERAL AID PROJECT NUMBER	SHEET NO.
8	ND	IM-2-094(007)256	247



PLAN

WIDTH = 40'-0" CLR RDWY			
SKEW ANGLE = 34°40'			
BAR LIST - ONE SLAB			
SIZE	MARK	NO.	LENGTH
6	A900	69	19'-7"
7	A901	80	19'-7"
5	A902	38	48'-3"

ESTIMATED MATERIAL QUANTITIES	
REINFORCING STEEL LB	CONCRETE CY
7,144	34.5



ROADWAY ELEVATION

QUANTITIES	(ONE SLAB)	
APPROACH SLAB	88.5	SY
SELECT BACKFILL	13.8	TON

RRV & WRR SEPARATION

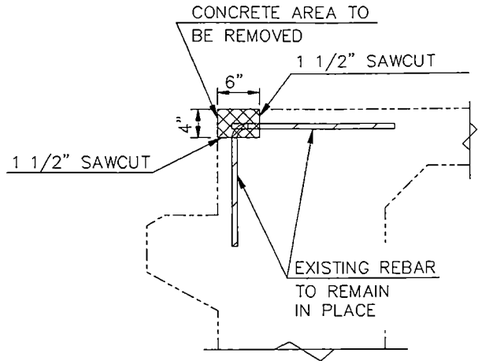
APPROACH SLAB
EXIT END

96LCS047 LLS

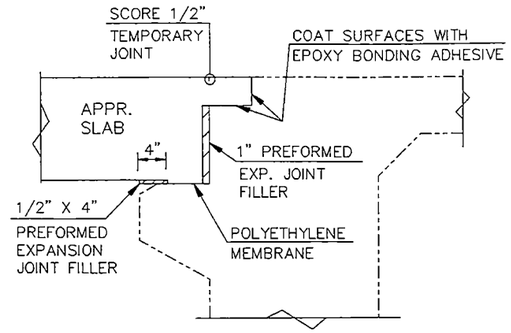
P:\project\20094256.007\bridge\94- Jul. 15, 1996 09:52:03

94-260.304L-2

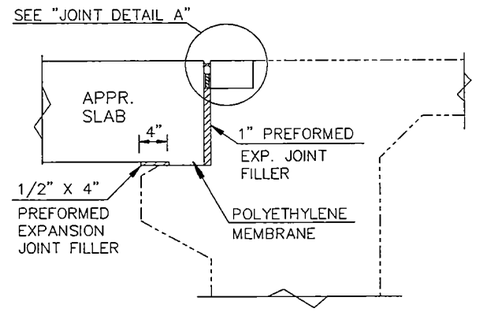
FHWA REGION	STATE	FEDERAL AID PROJECT NUMBER	SHEET NO.
8	ND	IM-2-094(007)256	248



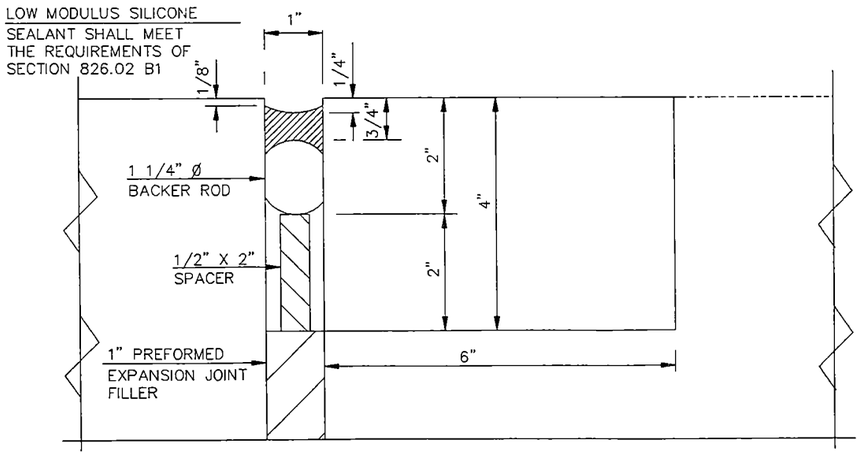
STAGE 1



STAGE 2



STAGE 3



JOINT DETAIL A

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 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. 94-260.304L-1 & 2 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.

RRV & WRR SEPARATION

EAST APPROACH SLAB JOINT DETAIL

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

093 RRV & WRR Sep. 94-260.304L

COUNTY & DATE STUTSMAN COUNTY / FEB 21, 1997

LENGTH & TYPE 7.135 Bloom

I94 FR ~~[illegible]~~ INTERCH) (highlighted in yellow-Fed.

COMPLETION TIME 10 24 97 RECYCLED PCC PVMT. & INCIDENTA

				BIDDER ENGINEERS ESTIMATE		BIDDER NORTHERN IMPROVEMENT FARGO, ND		BIDDER JAMES CAPE & SONS CO. RACINE, WI	
				C.C. CHECK	RANK 00	C.C. BOND	RANK 01	C.C. BOND	RANK 02
SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	BID PRICE	AMOUNT	BID PRICE	AMOUNT	BID PRICE	AMOUNT
103	CONTRACT BOND	L SUM	1000	33300000	3330000	25000000	2500000	60000000	6000000
107	RAILWAY PROTECTION INSURANCE	L SUM	1000	1758000	175800	3000000	300000	8000000	800000
202	REMOVAL OF STRUCTURE	L SUM	1000	6668000	666800	45000000	4500000	42000000	4200000
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	51200	1000000	100000	500000	50000
210	~~CLASS I EXCAVATION~~	L SUM	1000	1874000	187400	2600000	260000	2500000	250000
210	SELECT BACKFILL (Hos. Rd. 284, 27.6, Bloom 650)	TON	1673000	12860	2151478	11000	1840300	7150 12000	2007600
210	~~FOUNDATION PREPARATION~~	EA	1000	5272000	527200	5200000	520000	5000000	500000
216	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-18IN	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	1315800
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~~ 169.2	SY	818100	111060	9085818	95000	7771950	90000	7362900
550	BRIDGE APPROACH SLAB-REMOVE & REPLACE ~~[illegible]~~ (Bloom / Hos Rd. / RRV WRR Sep 182)	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	4650800	50000000	5000000	75000000	7500000
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 198.3	CY	224200	263580	5909463	340000	7622800	67422 325000	7286500
602	out JERSEY BARRIER FORMED OR SLIP FORMED	LF	197000	65250	1285425	95000	1871500	90000	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	16000	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

RRV & WRR

Hospital Rd. Sep. 94-259.523L

ACTION TAKEN BY STATE HIGHWAY COMMISSION: AWARD TO: ______ WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED

16

Form 14-2-1 SFN 14169 DATE OF AWARD ______ 19__ ______ STATE HIGHWAY COMMISSIONER

94-200.304 L&R

NORTH DAKOTA STATE HIGHWAY DEPARTMENT

SHEET NO 1 OF 6

ABSTRACT OF BIDS RECEIVED

PROJECT NO. IR 94-7(038)259. TYPE IMP

093

COUNTY & DATE STUTSMAN COUNTY NOV 09, 1990

LENGTH & TYPE .041

I-94, BNRR OVERHEAD SEP &

COMPLETION TIME 10 18 91 STRUCT.&GRADING & SURF. (CONTR

SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	NO. 3 BIDDER ENGINEERS ESTIMATE C.C. CHECK RANK 00 BID PRICE	AMOUNT	BIDDER INDUSTRIAL BUILDERS, FARGO, ND C.C. BOND RANK 01 BID PRICE	AMOUNT	BIDDER SWINGEN CONSTRUCTION GRAND FORKS, ND C.C. BOND RANK 02 BID PRICE	AMOUNT
103	CONTRACT BOND	L.SUM	1000	10000000	1000000	14000000	1400000	12000000	1200000
107	RAILWAY PROTECTION INSURANCE	L.SUM	1000	6000000	600000	10000000	1000000	9000000	900000
201	CLEARING & GRUBBING	L.SUM	1000	2000000	200000	3000000	300000	2600000	260000
202	REMOVAL OF CONCRETE PAVEMENT	SQ YD	231400	2000	462800	4500	1041300	6400	1480960
202	REMOVAL OF CONCRETE - SITE 1	L.SUM	1000	70500000	7050000	23000000	2300000	49000000	49000000
202	REMOVAL OF CONCRETE - SITE 2	L.SUM	1000	60000000	6000000	22000000	2200000	40000000	40000000
202	REMOVAL OF CURB AND GUTTER	L FT	20000	3000	60000	2000	40000	2400	48000
203	COMMON EXCAVATION - TYPE A	CU YD	253300	1500	379950	2600	658580	2600	658580
203	BORROW	CU YD	960300	2500	2400750	6300	6049890	6300	6049890
203	INVESTIGATIVE EXCAVATION	EA.	1000	750000	75000	300000	30000	150000	15000
210	CLASS 1 EXCAVATION - SITE 1	L.SUM	1000	1500000	150000	1000000	100000	3000000	300000
210	CLASS 1 EXCAVATION SITE 2	L.SUM	1000	1200000	120000	4000000	400000	3000000	300000
210	CLASS 2 EXCAVATION	L.SUM	1000	3500000	350000	1000000	100000	6000000	600000
210	SELECT BACKFILL	CU.YD	174000	12000	2088000	15000	2610000	25000	4350000
210	FOUND.PREP.-SITE 1	L.SUM	1000	10000000	1000000	13000000	1300000	13500000	1350000
210	FOUND.PREP.-SITE-2	L.SUM	1000	5000000	500000	2500000	250000	15000000	1500000
216	WATER	M GAL	16500	7500	123750	10000	165000	10500	173250
302	AGGREGATE BASE COURSE CL.5	TON	223600	6000	1341600	12500	2795000	12600	2817360
401	MC70 OR 250 LIQUID ASPHALT	GAL	166900	1000	166900	1600	267040	1580	263702
401	SS1H OR CSS1H EMULS. ASPH.	GAL	52700	1000	52700	1600	84320	1580	83266
406	HOT BITUMINOUS PAVEMENT CLASS 25	TON	29200	25000	730000	27000	788400	27300	797160
406	HOT BITUMINOUS PAVEMENT CLASS 33	TON	89000	30000	2670000	38000	3382000	37800	3364200
406	120-150 ASPH. CEMENT	TON	7700	160000	1232000	185000	1424500	183750	1414875
550	9IN.NON-REINF.CONC. PVMT.HIGH EARLY STRENGTH	SQ.YD	241700	27000	6525900	29000	7009300	28800	6960960
550	CONCRETE BRIDGE APPROACH SLAB	SQ YD	79600	80000	6368000	95000	7562000	100000	7960000
550	DOWELED EXPANSION JOINT ASSEMBLY	L FT	6700	7000	46900	12000	80400	12000	80400
550	STANDARD ANCHORAGE UNIT-J BOLTS	EA	35900	12000	430800	6800	244120	6800	244120
550	EXPANSION JOINT SILIC ON SEAL	L FT	6700	4000	26800	4000	26800	16500	110550
602	CLASS AAE-3 CONCRETE	CU YD	121500	230000	27945000	225000	27337500	204000	24786000
602	CLASS AE-3 CONCRETE	CU YD	40900	215000	8793500	250000	10225000	219000	8957100
602	BRIDGE END POST MODIFICATION	EA.	4000	90000	360000	350000	1400000	400000	1600000
602	PENETRATING WATER REPELLENT TREATMENT	SQ.YD	42500	2500	1051250	2250	946125	3000	1261500
612	REINFORCING STEEL - GRADE 60	LB	695340	450	3129030	360	2503224	520	3615768
612	REINFORCING STEEL - GRADE 60 (EPOXY COATED)	LB	3021380	600	18128280	460	1389348	600	18128280
616	STRUCTURAL STEEL SITE 1	L.SUM	1000	121900000	12190000	106000000	10600000	160000000	16000000
616	STRUCTURAL STEEL SITE 2	L.SUM	1000	58000000	5800000	50000000	5000000	68000000	6800000
616	STUD SHEAR CONNECTOR	EA.	41520	2750	114180	4000	166080	2800	116256
622	TREATED TIMBER PILING	L FT	45800	12000	549600	9000	412200	10000	458000
630	SAND BLASTING AND PAINTING SITE 1	L.SUM	1000	30000000	3000000	22000000	2200000	22000000	2200000
630	SAND BLASTING AND PAINTING SITE 2	L.SUM	1000	30000000	3000000	22000000	2200000	22000000	2200000
702	MOBILIZATION	L.SUM	1000	40000000	4000000	128000000	12800000	40000000	4000000
704	FLAGGING	M HR	30000	7400	222000	8750	262500	8500	255000
704	OBLITERATION OF PAVEMENT MARKING	L.FT.	954000	750	715500	800	763200	800	763200
704	TRAFFIC CONTROL SIGNS	UNIT	241300	2250	542925	8900	2147570	11000	2654300
704	ATTENUATION DEVICE TYPE A-55	EA.	4000	1800000	720000	1600000	640000	1600000	640000
704	TYPE III BARRICADE	EA.	21000	100000	210000	105000	220500	105000	220500
704	DELINEATOR DRUMS	EA.	60000	50000	300000	52000	312000	52000	312000
704	TUBULAR MARKERS	EA.	120000	20000	240000	16000	192000	16000	192000

ACTION TAKEN BY STATE HIGHWAY COMMISSION: AWARD TO: 9 WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

FORM NO. 14-2-1

DATE OF AWARD _____ 19 ____

STATE HIGHWAY COMMISSIONER

NORTH DAKOTA STATE HIGHWAY DEPARTMENT

SHEET NO 2 OF 6

ABSTRACT OF BIDS RECEIVED

PROJECT NO. IR 94-7(038)259. TYPE IMP

093

COUNTY & DATE STUTSMAN COUNTY NOV 09, 1990

LENGTH & TYPE .041

I-94, BNRR OVERHEAD SEP &

COMPLETION TIME 10 18 91 STRUCT.,GRADING & SURF. (CONTR

	NO.	3		
	BIDDER	ENGINEERS ESTIMATE	INDUSTRIAL BUILDERS,	SWINGEN CONSTRUCTION
			FARGO, ND	GRAND FORKS, ND
	C.C.	CHECK	C.C. BOND	C.C. BOND
	RANK	00	01	02

SPEC. NO.	ITEM DESCRIPTION	UNIT	QUANTITY	BID PRICE	AMOUNT	BID PRICE	AMOUNT	BID PRICE	AMOUNT
704	DELINEATOR	EA.	9000	10000	9000	21000	18900	21000	18900
704	FLEXIBLE DELINEATORS	EA.	220000	30000	660000	16000	352000	15750	346500
704	SEQUENCING ARROW PANEL TYPE C	EA.	2000	1200000	240000	2100000	4200000	2100000	4200000
704	SEQUENCING ARROW PANEL TYPE C-CROSSOVER	EA.	4000	1200000	480000	790000	3160000	785000	3140000
704	PRECAST CONCRETE MED. BARRIER - STATE FURNISHED	EA.	80000	100000	800000	110000	8800000	61000	4880000
706	FIELD LABORATORY-TYPE B	EA	1000	2000000	2000000	1500000	1500000	4000000	4000000
708	SEEDING TYPE B CLASS II	ACRE	7000	250000	1750000	370000	2590000	260000	1820000
708	SEEDING TYPE B CLASS VI	ACRE	7000	70000	490000	65000	455000	68000	476000
708	FIBER GLASS ROVING	SQ YD	200000	1750	350000	3700	740000	10500	2100000
714	PIPE,CONC.REINF.15 IN.CL-II.	L FT	4000	20000	80000	60000	240000	52000	208000
714	PIPE,PVC 8IN.	L.FT.	60000	5000	300000	3700	222000	3700	222000
714	RELAY, END SECT. ALL TYPES AND SIZES	EA	1000	75000	75000	210000	210000	210000	210000
724	WATERMAIN, 10-IN. DUCTILE IRON	L.FT.	50000	20000	1000000	40000	2000000	81000	4050000
754	FUSE JOINTS-ALL SIZES	EA	5000	50000	250000	52000	260000	52000	260000
754	REVISE FUSE JOINTS - ALL SIZES - STEEL	EA.	2000	20000	40000	52000	104000	52000	104000
754	STEEL GALV.POSTS - STANDARD PIPE	LB.	534000	1100	587400	1900	1014600	1900	1014600
754	STUB POST - 3 1/2IN.	EA.	5000	160000	800000	210000	1050000	210000	1050000
754	RESET SIGN PANEL	EA	4000	200000	800000	430000	1720000	430000	1720000
754	RESET SIGN SUPPORT	EA	1000	150000	150000	410000	410000	410000	410000
754	CLASS AE CONCRETE- SIGN FOUNDATIONS	CY	7000	500000	3500000	500000	3500000	500000	3500000
762	RAISED PAVEMENT MARKERS	EACH	10000000	1200	12000000	1300	13000000	1300	13000000
764	THREE CABLE GUARD RAIL	L FT	833000	6500	5414500	7200	5997600	7250	6039250
764	W-BEAM GUARDRAIL	L.FT.	2959000	17000	50303000	12800	37875200	12800	37875200
764	W-BEAM G.R.-FLARED END TREAT.& TRANSITION	EA.	19000	800000	15200000	830000	15770000	830000	15770000
764	REMOVE BEAM GUARD RAIL AND POSTS	L FT	4239000	1200	5086800	1150	4874850	1150	4874850
764	CONCRETE CL.AE3 SAFTEY SHAPE TRANSITION	EA.	4000	1400000	5600000	1600000	6400000	1400000	5600000
764	RESET THREE CABLE GUARD RAIL	L.FT.	1755000	5000	8775000	5150	9038250	5100	8950500
764	RESET W-BEAM GUARD- RAIL	L.FT.	3028000	7000	21196000	5350	16199800	5300	16048400
764	RESET W-BEAM G.RAIL- FLARED END TRET.& TRANS.	EA	1000	60000	60000	420000	420000	420000	420000
764	REMOVE 3-CABLE GUARD RAIL & POSTS	L.FT.	1838000	1200	2205600	1050	1929900	1050	1929900
764	REMOVE 4-CABLE GUARD RAIL & POSTS	L FT	48000	1500	72000	1050	50400	1050	50400
764	REMOVE END TREATMENT & TRANSITION	EA.	2000	250000	500000	115000	2300000	115000	2300000
770	CONCRETE FOUNDATION - HIGHWAY LIGHTING	EA.	2000	250000	500000	260000	5200000	260000	5200000
770	CABLE TRENCH-TYPE II	L.FT.	462000	1250	5775000	1050	4851000	1050	4851000
770	2 INCH DIA. RIGID CONDUIT	L.FT.	189000	3500	6615000	5250	9922500	5250	9922500
770	MULTIPLE UNDERGROUND CABLE 2N04-1N06 STYLE USE	L.FT.	901000	2750	2477750	3700	3333700	3700	3333700
770	TEMPORARY LIGHTING SYSTEM	EA.	1000	20000000	20000000	9200000	9200000	10000000	10000000
770	TEMPORARY LIGHTING SYSTEM REVISION	EA.	1000	2000000	2000000	1100000	1100000	1050000	1050000
770	RELOCATE LIGHT STD.	EA.	2000	250000	500000	210000	4200000	210000	4200000
930	ROADWAY CANOPY	L.SUM	1000	5000000	5000000	6000000	6000000	15000000	15000000
930	ELASTOMERIC BEARING PAD	SQ.FT	23000	300000	6900000	350000	8050000	450000	10350000
930	EXPANSION JOINT STRIP SEAL	L FT	201000	100000	20100000	72000	14472000	110000	22110000
930	BIN WALL	L.SUM	1000	5000000	5000000	22000000	22000000	32000000	32000000
950	TRAINEE	M HR	2000000	800	1600000	800	1600000	800	1600000
	TOTAL				161835140		163409142		175682656

ACTION TAKEN BY STATE HIGHWAY COMMISSION: AWARD TO: Industrial Builders, Inc.

10

DATE OF AWARD Dec. 5 19 90

WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

for Kay Cook

STATE HIGHWAY COMMISSIONER

FORM NO 14-21

FHWA REGION	STATE	PROJECT	SHEET NO.
8	N.D.	IR-94-6(46)257 IR-94-7(25)259	1

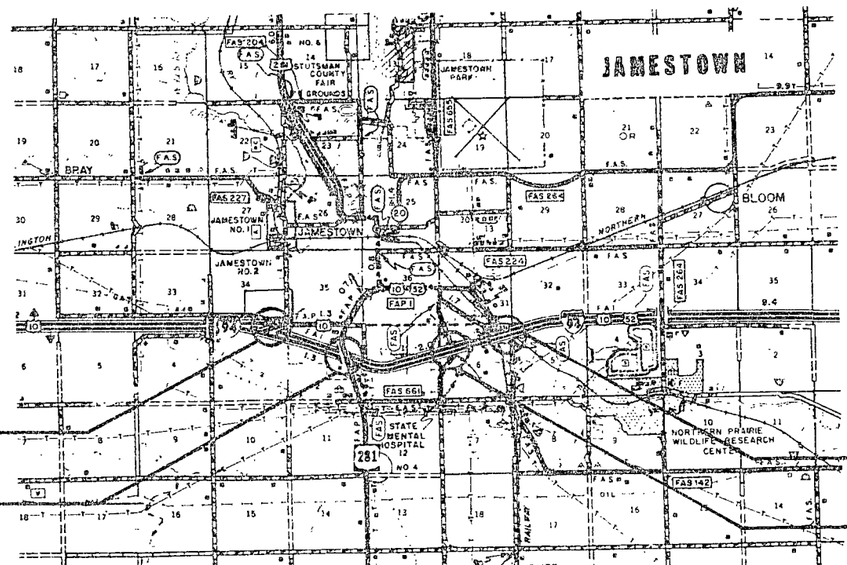
NORTH DAKOTA

STATE HIGHWAY DEPARTMENT

REPAIR & OVERLAY PORTLAND CEMENT CONCRETE BRIDGE
DECKS IN STUTSMAN COUNTY
FEDERAL AID PROJ. NO. IR-94-6(46)257 & IR-94-7(25)259

GOVERNING SPECIFICATIONS:

Standard Specifications adopted by the North Dakota State Highway Department, Oct. 1976, and approved by the Federal Highway Administration on December 17, 1976, and other Contract Provisions submitted herewith.



APPROVED DATE 12-1-78

Stanley Haas

BRIDGE ENGINEER
NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

STANLEY HAAS REGISTERED PROFESSIONAL 494 ENGINEER NORTH DAKOTA

APPROVED DATE 12-8-78

R. E. Bradley

CHIEF ENGINEER
NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

R. E. BRADLEY REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA 2209

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ENGINEER DATE

NOTES & MISCELLANEOUS

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 CONTRACTOR'S OPERATIONS.

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

LIMITS OF CLASS 2 AND 3 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 REINFORCING STEEL WHICH IS REPLACED IN THE DECK OR ABUTMENT SHALL BE PAID FOR IN ACCORDANCE WITH SECTION 109-5 OF THE ND STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES. THE LAP LENGTH SHALL BE A MINIMUM OF 30 DIAMETERS. NO WELDED SPLICES WILL BE ALLOWED.

THE OVERLAY SHALL BE PLACED OVER ONE HALF OF THE BRIDGE FROM THE LONGITUDINAL CENTERLINE TO THE CURB IN ONE CONTINUOUS POUR.

TRAFFIC SHALL BE MAINTAINED ON THE OTHER HALF OF ALL STRUCTURES EXCEPT THE WEST JAMESTOWN CROSSOVER. THIS STRUCTURE SHALL BE CLOSED TO TRAFFIC DURING THE OVERLAY OPERATION.

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 ND STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES.

SHOULDER REAPIR

AREAS OF BITUMINOUS SURFACED SHOULDERS USED TO CARRY TRAFFIC DURING CONSTRUCTION SHALL BE MAINTAINED BY THE CONTRACTOR AND, AFTER COMPLETION OF THE WORK, SHALL BE RESTORED TO SATISFACTORY CONDITION. THE CONTRACTOR WILL BE REIMBURSED AT THE RATE OF $25.00 PER TON FOR HOT MIX USED TO MAINTAIN AND REPAIR THE SHOULDERS. THIS PAYMENT WILL CONSTITUTE FULL REIMBURSEMENT FOR ALL MATERIALS, LABOR, AND EQUIPMENT REQUIRED TO MAINTAIN AND REPAIR THE SHOULDERS. THE QUALITY OF AGGREGATE AND GRADE OF ASPHALT EMENT USED FOR THE NOT MIX SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

SUB-BASE MATERIAL

THE COST OF PLACING ANY REQUIRED AGGREGATE UNDER THE REPLACED APPROACH PANELS AND THE PCC PAVEMENT PANELS, INCLUDING THAT REQUIRED TO BRING THEM TO THE PROPER GRADE, SHALL BE INCIDENTAL TO THE ITEMS REMOVE AND REPLACE APPROACH SLAB AND REMOVE AND REPLACE PCC PAVEMENT.

PAVEL REMOVAL

THE THICKNESS OF THE EXISTING PAY PAVEMENT PANELS AND/OR THE APPROACH SLAB MAY VARY FROM THE ORIGINAL PLACEMENT THICKNESS DUE TO RESURFACING WHICH HAS BEEN DONE BY MAINTENANCE FORCES ON SOME STRUCTURES. THE COST OF ANY EXTRA REMOVAL SHALL BE INCIDENTAL TO THE ITEMS REMOVE AND REPLACE PCC PAVEMENT AND REMOVE AND REPLACE APPROACH SLAB

CONCRETE CURB TRANSITION

THE CONCRETE CURB TRANSITIONS OFF ALL FOUR CORNERS OF THE HWY. 281 STRUCTURE SHALL BE REMOVED PRIOR TO THE PLACEMENT OF THE MOUNTABLE CURBS. THEY SHALL BE DISPOSED OF AS DIRECTED BY THE ENGINEER. THE COST OF THIS REMOVAL SHALL BE INCIDENTAL TO THE ITEM FOR THE PLACEMENT OF THE MOUNTABLE CURB AND GUTTER.

CLASS OF CONCRETE

THE CONCRETE MIX USED IN THE OVERLAYS SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS. ALL OTHER CONCRETE SHALL BE EITHER CLASS AE-1 OR AE-3 AT THE OPTION OF THE CONTRACTOR.

HOT BITUMINOUS PAVEMENT-SPECIAL

THE ASPHALT CEMENT AND THE TACK COAT ARE NOT SEPARATE PAY ITEMS, BUT SHALL BE INCLUDED IN THE PRICE BID FOR "HOT BITUMINOUS PAVEMENT-SPECIAL". THE AGGREGATE USED FOR HOT BITUMINOUS PAVEMENT AND THE TYPE AND GRADE OF LIQUID ASPHALT FOR TACK SHALL BE APPROVED BY THE ENGINEER IN THE FIELD. THE HOT BITUMINOUS PAVEMENT MATERIAL SHALL BE HOT MIXED, BLADE LAID, COMPACTED AND MAY BE OBTAINED FROM A COMMERCIAL SOURCE. IT IS INTENDED THAT THE OPTIMUM AMOUNT OF ASPHALT CEMENT BE USED IN THE MIX, AND THE QUANTITY SHOWN UNDER THE BASIS OF ESTIMATE MAY BE ADJUSTED BY THE ENGINEER IF NECESSARY.

MAINTENANCE AND PROTECTION OF TRAFFIC

THE STOCK OF SIGNS SHOWN ON THE PLANS NEED NOT BE ON THE PROJECT, BUT SHOULD BE AVAILABLE FOR USE WHEN NEEDED. THOSE SIGNS SHOWN ON THE PROJECT LAYOUT SHEET SHALL BE INSTALLED BEFORE WORK IS STARTED.

TWO LANE, TWO-WAY ROADWAYS

THE MAINTENANCE AND PROTECTION OF TRAFFIC FOR TWO LANE, TWO-WAY ROADWAYS PROVIDES FOR FLAGGING THE TRAFFIC AT ALL TIMES, UNTIL ROADWAY IS COMPLETELY OPEN TO TRAFFIC. IN LIEU OF PROVIDING FLAGGING AT ALL TIMES, A TRAFFIC SIGNAL SYSTEM MAY BE PROVIDED. THE TRAFFIC SIGNAL SYSTEM SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE PRE-CONSTRUCTION CONFERENCE.

TABLE OF CONTENTS

LIST OF STANDARDS

D-708-1
D-708-9
D-754-1,2,3,4,&5

SHOP DRAWING REQUIRED
EXPANSION JOINT ASSEMBLY

SUMMARY OF QUANTITIES

ESTIMATE OF QUANTITIES

SPEC. NO.	406	705	708	716	722	746	750	762	900	900	900	900	900	900	900	900	900	900	756
CODE NO.	0230	0100	0410	0100	0150	0100	0100	3299	8673	8674	8676	9499	9501	9582	9692	9700	9701	9702	0100
BRIDGE NO.	HOT BITUMINOUS PAVEMENT-SPECIAL	MOBILIZATION	MOUNTABLE CURB & GUTTER TYPE I	ADJUST CATCH BASIN	REMOVE & RESET GUARD RAIL	FLAGGING	LINSEED OIL TREATMENT	MTC. & PROTECTION OF TRAFFIC	EXP. JOINT MODIFICATION (STRIP SEAL)	JOINTS AT END OF BRIDGE	EXPANSION JOINT CURB ASSEMBLY	10" P.C.C. PAVING (REMOVE & REPLACE)	APPROACH SLAB (REMOVE & REPLACE)	PRESSURE RELIEF JOINT (3' SLEEPER SLAB)	GIRDER REPAIR	CLASS I OVERLAY	CLASS II OVERLAY	CLASS III OVERLAY	FIELD LABORATORY TYPE "A"
	TON	L.S.	L.F.	EACH	L.F.	M.H.	Gal.	L.S.	L.F.	L.F.	EACH	S.Y.	S.Y.	L.F.	EACH	S.Y.	S.Y.	S.Y.	L.S.
W. JAMESTOWN 94-257.002	10.7	1		4	100.0		10.1	1	38.8	39.6	2	55.6	108.9	24.0		505.6	126.4	25.3	1
HWY# 281 INT. 94-258.055	24.0		135.0	4	220.0	38.4	14.0		40.8		2					93.3.3	233.3	46.7	
HOSPITAL SEP. 94-259.523 RT						8.0	7.3			84.0						48.8.9	122.2	24.4	
94-259.523 LT.				2	100.0	12.0	20.5			84.0		506.7	373.3	48.0		48.8.9	122.2	24.4	
BNNR/MINOR RD. SEP 94-260.304 RT						10.0	11.0		38.5	77.0	2				1	73.3.3	183.3	36.7	
94-260.304 LT				2	100.0	12.0	21.6		38.5	77.0	2	421.2	284.4	50.5	1	73.3.3	183.3	36.7	
GRAND TOTAL	35	1	135	12	520	80.4	85	1	157	362	8	984	767	123	2	3883	971	194	1

SPECIAL PROVISIONS

NO.	NAME
SP-107-5	LEGAL RELATIONS & RESPONSIBILITY TO PUBLIC
SP-109-1	MEASUREMENT & PAYMENT
SP-762-2	MAINTENANCE & PROTECTION OF TRAFFIC
SP-762-3	" " "
SP-762-5	" " "
SP-610-3	PORTLAND CEMENT CONCRETE
SP-40	EXPANSION JOINT STRIP SEAL
SP-112	PRESSURE RELIEF JOINT FILLER
SP-184	REPAIR & OVERLAY OF P.C.C. BRIDGE DECK WITH LOW SLUMP CONCRETE
SP-756-1	FIELD LABORATORY

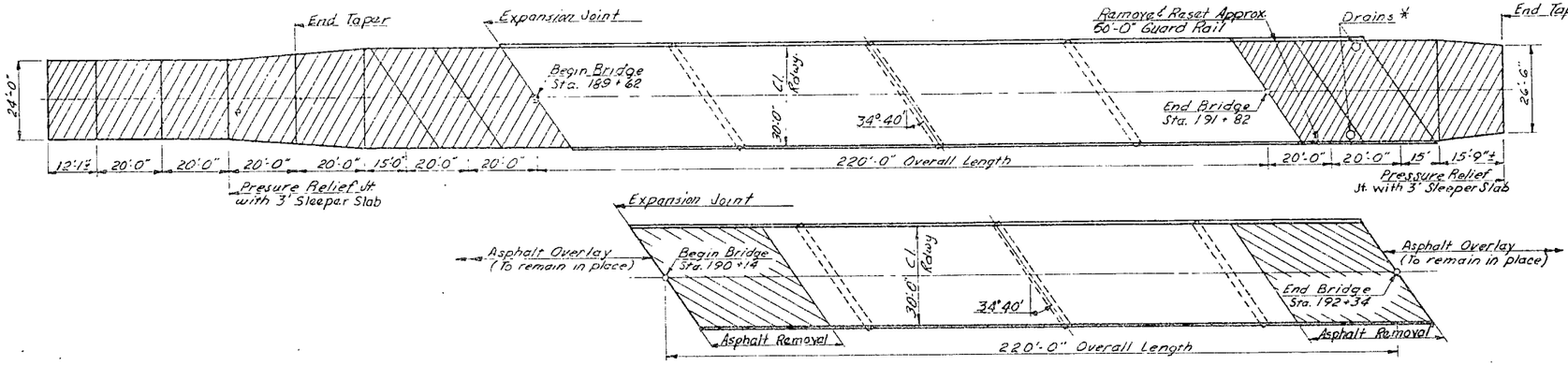
NO. 8 — W.I. 0257 (23 34 1236.59) — SHEET NO. 2

QUANTITIES CHECKED BY

NOTES & QUANTITIES

94-2

			SHEET NO.	TOTAL SHEETS
8	N. D.	IR-94-7251(2)3	8	



* Drains shall be adjusted to meet final roadway grade.

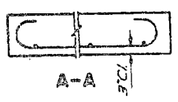
PLAN

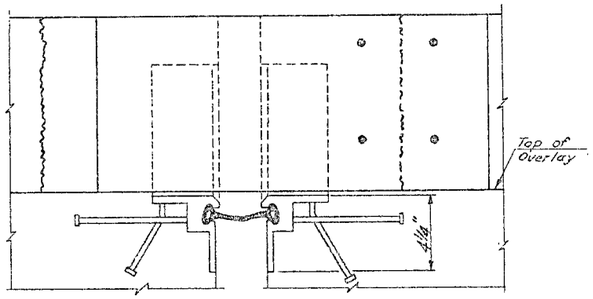
Bridges have 30'-0" Cl. Rdwys.

BAR LIST				
MARK	NO.	SIZE	LENGTH	SHAPE
D1	50	4	3'-6"	Bent
D2	4	4	12'-3"	"
D3	4	4	14'-0"	"
D4	4	4	13'-6"	"
D5	4	4	15'-3"	"
D6	33	4	4'-7"	"
D7	2	7	39'-6"	Str.

FULL DEPTH CONCRETE REMOVAL & REPLACEMENT TO FINAL ROADWAY GRADE

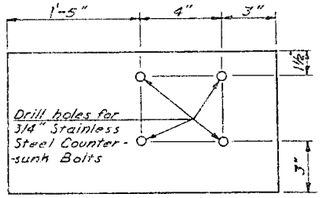
ASPHALT REMOVAL FROM BRIDGE DECK (Incidental to Class I Overlay)



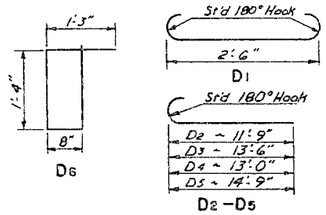


C-C

EXPANSION JOINT CURB ASSEMBLY



3/8" Steel Plate (A588) Steel



BENT BAR DETAILS

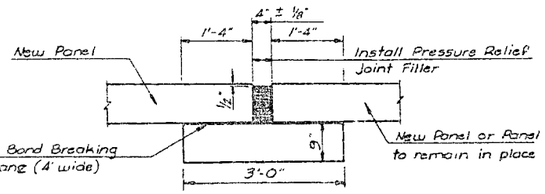
Dimensions shown are out to out

NOTE:

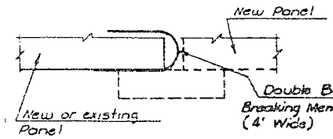
Dowels or any reinforcing steel projecting from Surface of existing panel to be removed or sawed off.

FOAM SPACER

If Joint Filler does not bottom on pavement base, a rigid polystyrene or polyurethane foam spacer shall be placed below filler and must be a material which is easily compressible.

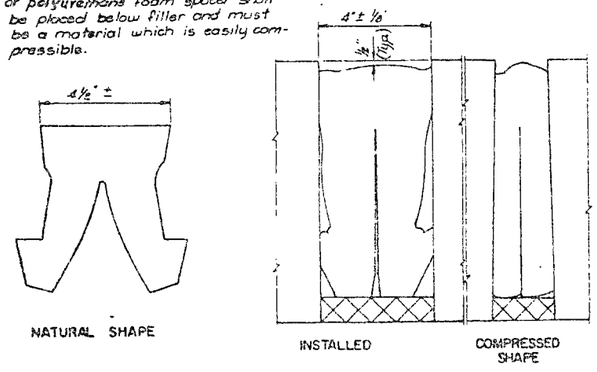


PRESSURE RELIEF JOINT WITH 3' SLEEPER SLAB

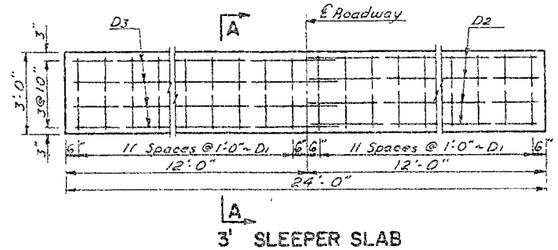


SHOWING PLACEMENT OF BOND BREAKING MEMBRANE

(With Two New Panels or One New & One Existing Panel)

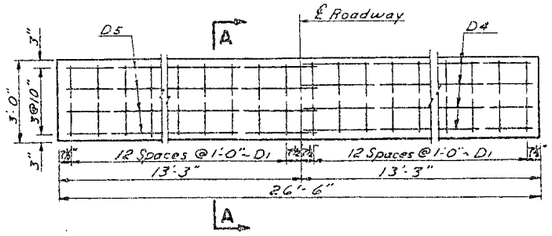


CELLULAR PLASTIC PRESSURE RELIEF JOINT FILLER



3' SLEEPER SLAB

If Required on West End of North Bridge



3' SLEEPER SLAB

If Required East End of North Bridge

QUANTITIES

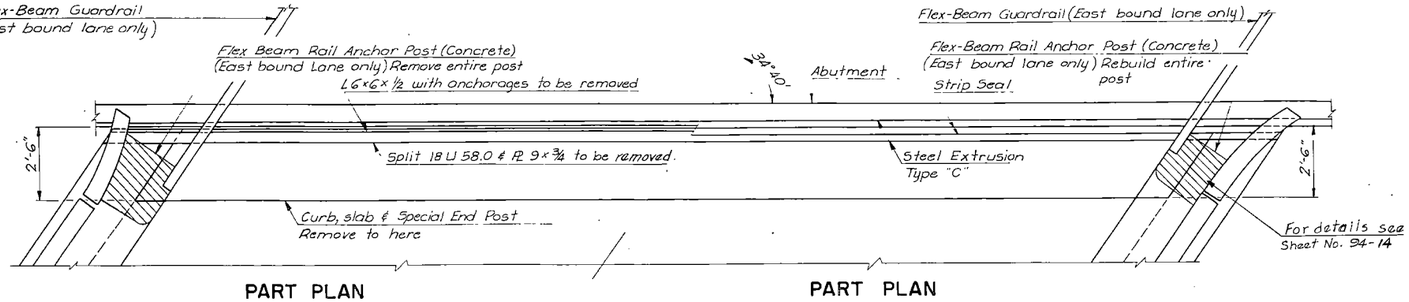
BNRR/MINOR ROAD SEPARATION OVERLAY

LAYOUT & DETAILS

94-260.304-8

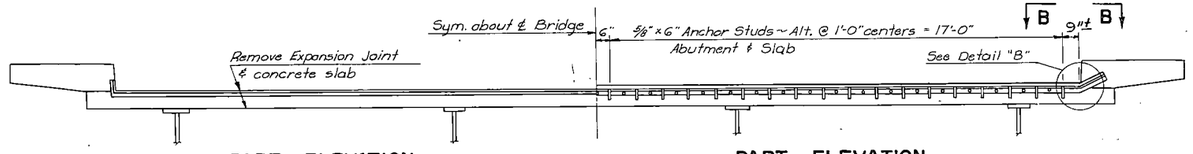
QUANTITIES MADE BY / CHECKED BY

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	IR-94-7(125)259	9	



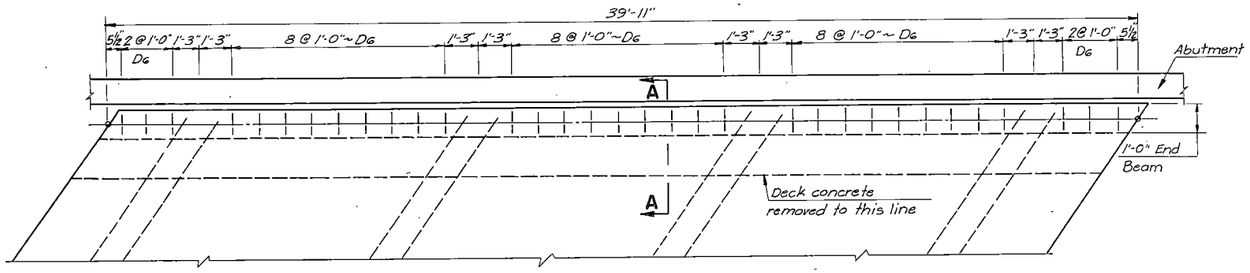
PART PLAN
Showing Portion of Structure to be removed

PART PLAN
Showing Portion of Structure to be rebuilt

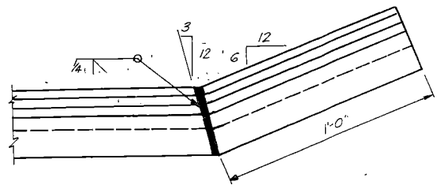


PART ELEVATION
Showing Portion of Structure to be removed

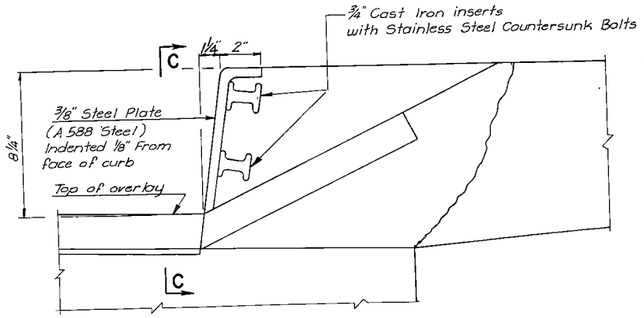
PART ELEVATION
Showing Portion of Structure to be rebuilt



PLAN
Showing Slab Replacement

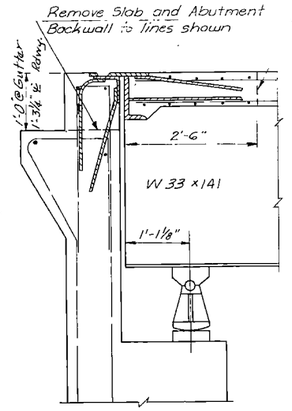


DETAIL "B"

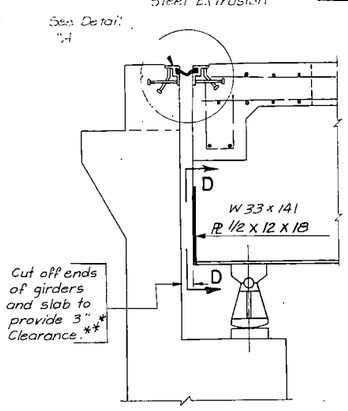


TYPICAL ELEVATION
B-B

NOTE:
The above details, with the exceptions noted, are for the West end of both structures.
Abutment modification to be included in the pay item "Expansion Joint Modification (Strip Seal)."
Slab removal & replacement to be included in the pay item "Girder Repair."

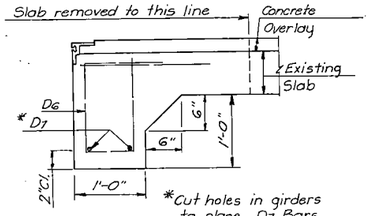


EXISTING



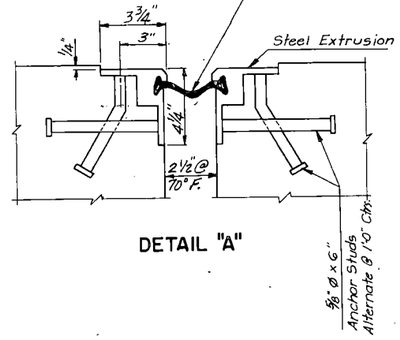
MODIFIED

NOTE:
Replaced portion of slab & abutment to be set at the same elevation as the concrete overlay.

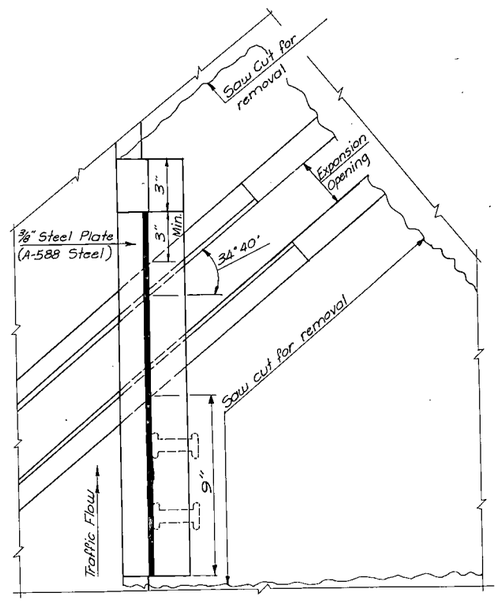


*Cut holes in girders to place D7 Bars

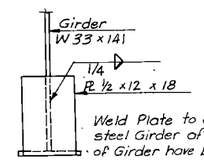
A-A



DETAIL "A"



PLAN
B-B



D-D

*** Included in item "Girder Repair."

QUANTITIES

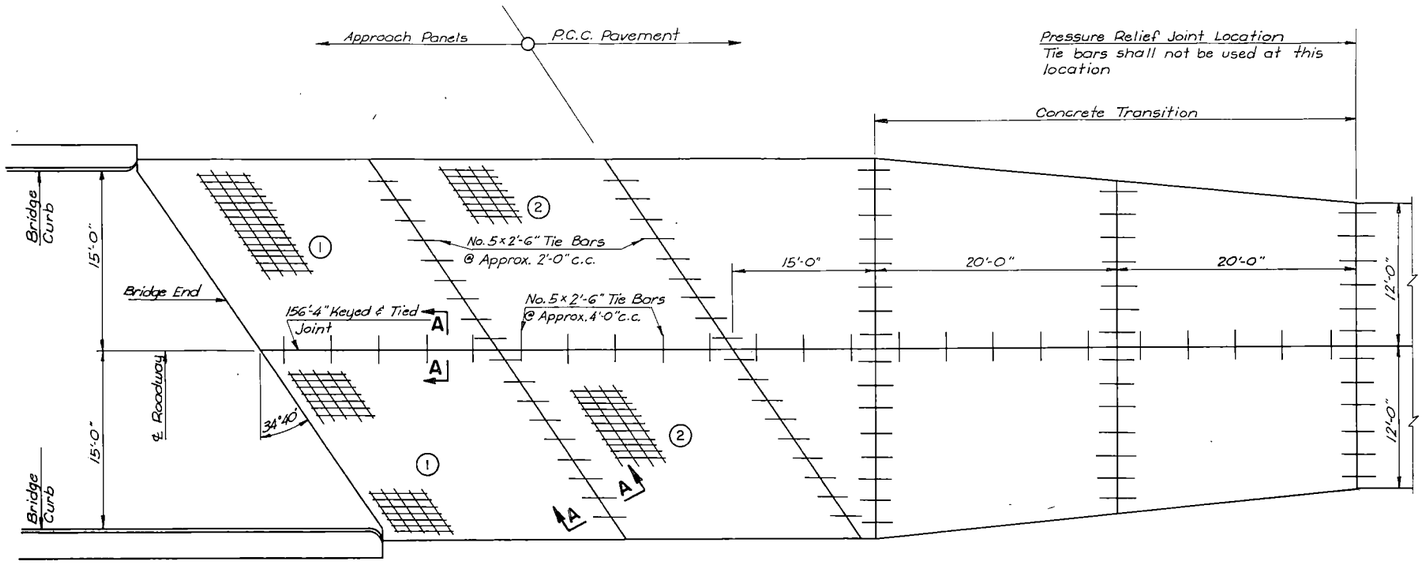
BNRR / MINOR ROAD SEPARATION OVERLAY

LAYOUT & DETAILS

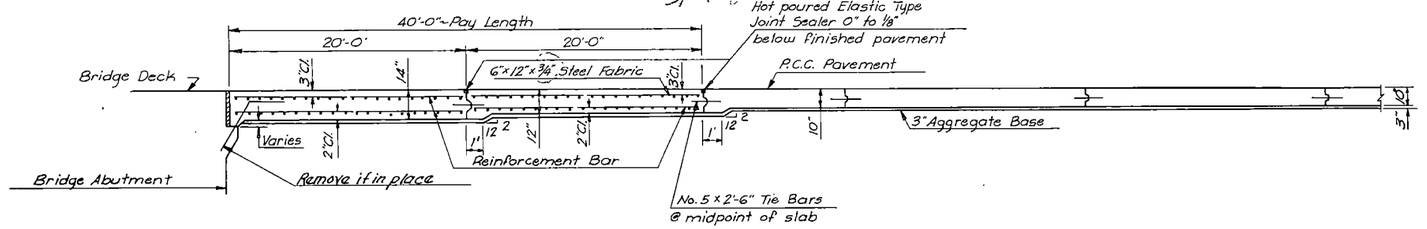
94 - 260.304 - 9

CHECKED BY
MADE BY
QUANTITIES
CHECKED BY

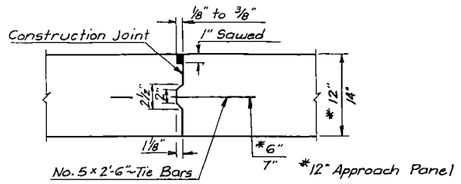
FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	IR-94-1(251)259	10	



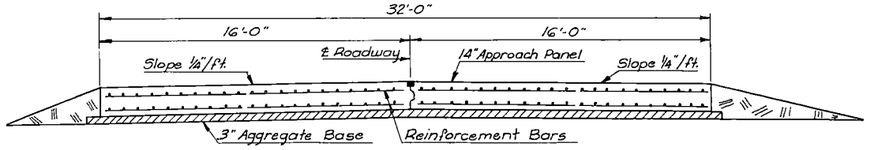
PLAN VEIW
(Not to Scale)



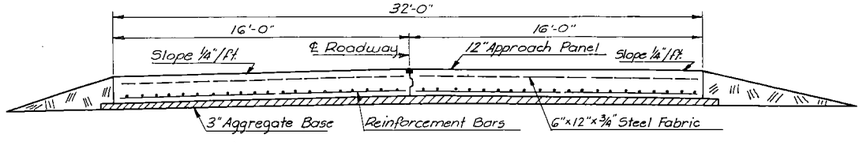
ELEVATION VIEW



A-A



SECTION AT PANELS ①



SECTION AT PANELS ②

REINFORCING BARS

	LONGITUDINAL					TRANSVERSE				
	PANEL	EACH	BAR SIZE	LENGTH	LBS.	PANEL	EACH	BAR SIZE	LENGTH	LBS.
31	1	40	8	19'-6"		1	18	6	18'-6"	
31	2	40	7	19'-6"		2	18	5	18'-6"	
31	1*	40	5	19'-6"		1*	18	4	18'-6"	

* Top Reinforcing Steel

Longitudinal bars spaced @ approx. 6" c.c.
Transverse bars spaced @ approx. 1'-1½" c.c.

2-1-79 ✍
9100# Reinf. Steel
76.1 S.Y. Steel Fabric

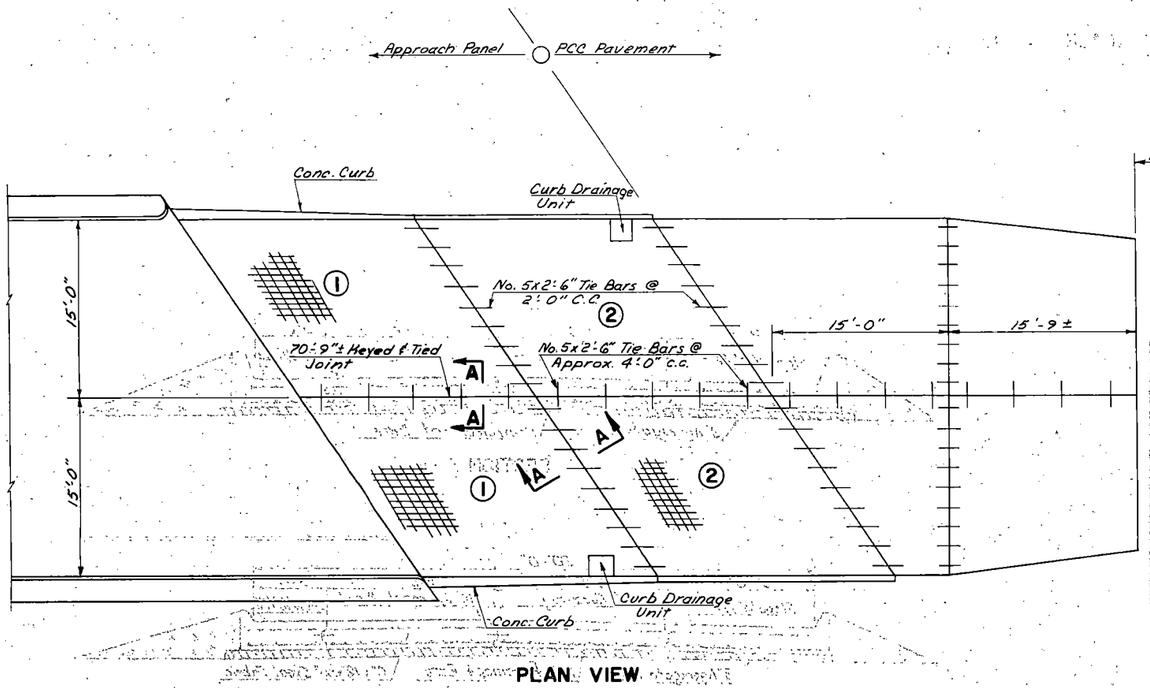
QUANTITIES

BRIDGE APPROACH PANELS
WEST END NORTH
BRIDGE BNRR
SEPARATION

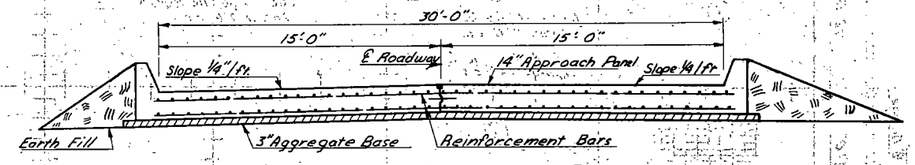
94-260.304-10

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	IR-94-7(25)259	11	

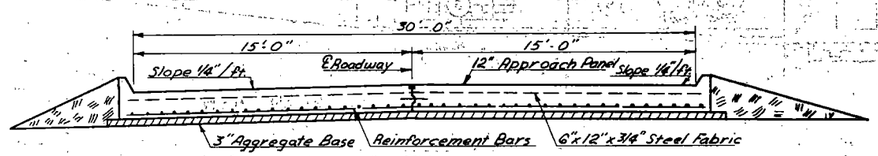
DETAILING - CHECKED BY
MADE BY
QUANTITIES CHECKED BY



PLAN VIEW
(Not to Scale)

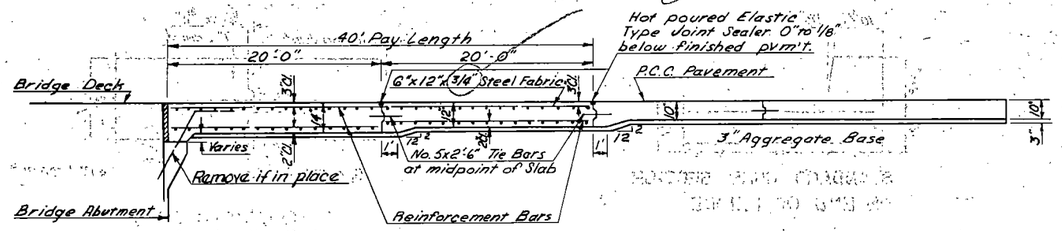


SECTION AT PANELS ①

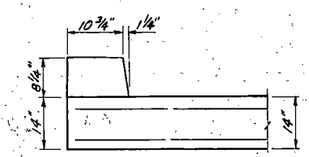


SECTION AT PANELS ②

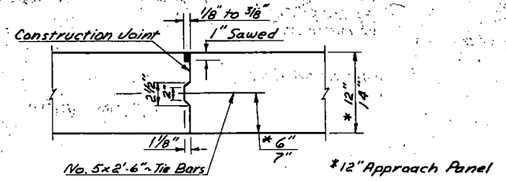
3/4 JAR 2-2-79



ELEVATION VIEW



STANDARD CURB SECTION ON END OF BRIDGE



A–A

2-1-79 ds

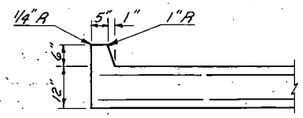
9100# Reinf Steel
71.1 S.Y. Steel Fabric

REINFORCING BARS

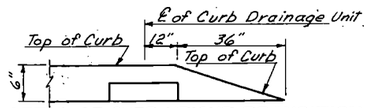
LONGITUDINAL					TRANSVERSE				
PANEL	EACH	BAR SIZE	LENGTH	LBS.	PANEL	EACH	BAR SIZE	LENGTH	LBS.
①	(40)	8	19'-6"		①	18	6	18'-6"	
②	(40)	7	19'-6"		②	18	5	18'-6"	
①*	(40)	5	19'-6"		①*	18	4	18'-6"	

* Top Reinforcing Steel

Longitudinal bars spaced @ approx. 6" c.c.
Transverse bars spaced @ approx. 1'-1½" c.c.



STANDARD CURB SECTION ON PANELS



DETAIL OF CURB HEIGHT TRANSITION AT END OF APPROACH SLAB

NOTE:
Curb sections on panels ① to be transitioned from that existing on the bridge to the standard used on panels ②.

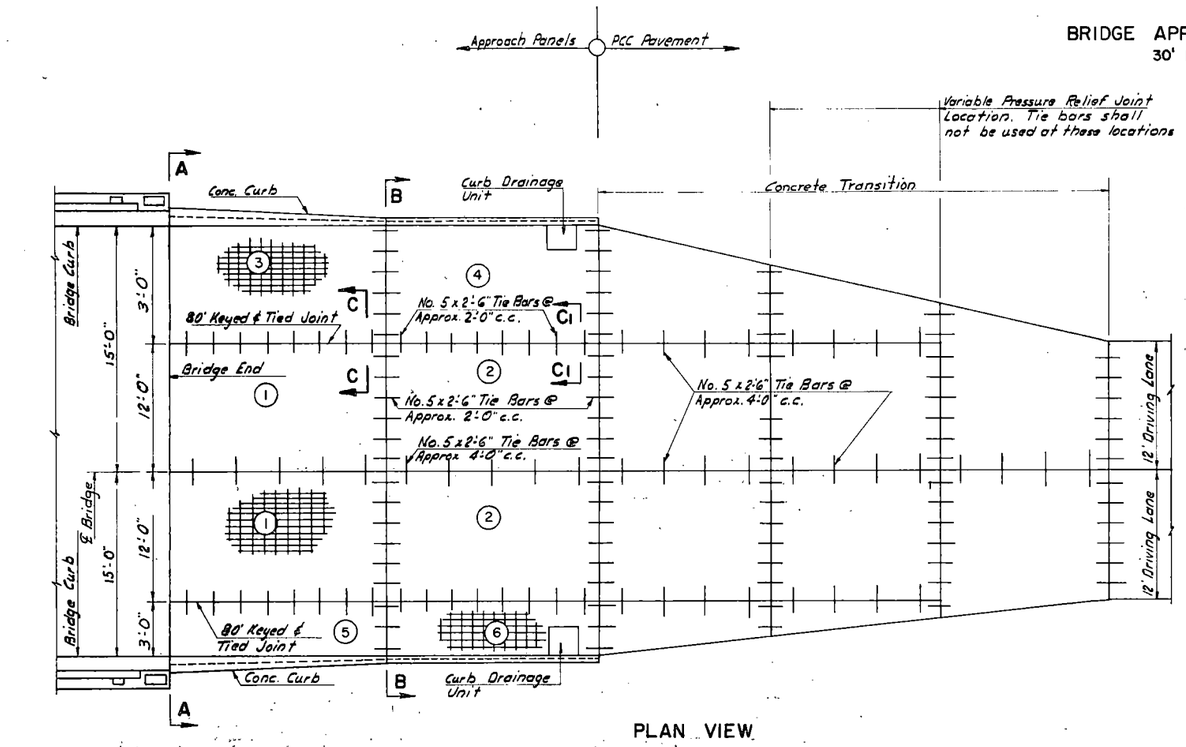
QUANTITIES

BRIDGE APPROACH PANELS
EAST END NORTH
BRIDGE BNRR
SEPARATION

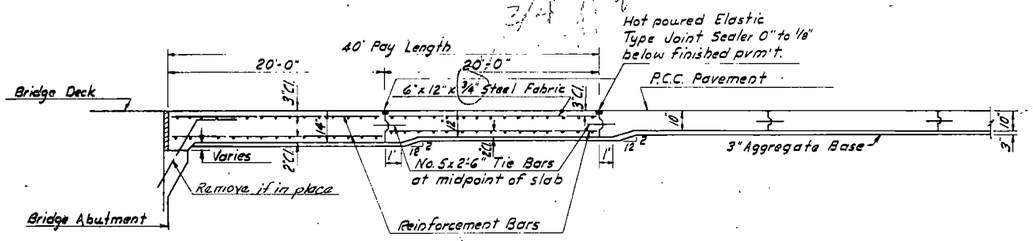
94-260.304-11

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	FR-94-6(46)257 FR-94-7(25)259	12	

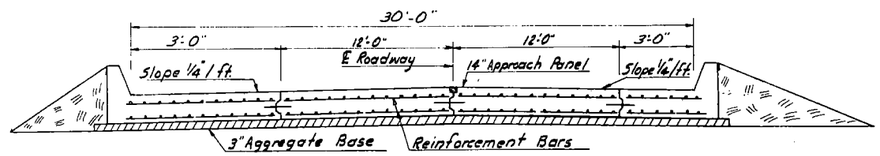
BRIDGE APPROACH PANELS
30' ROADWAY



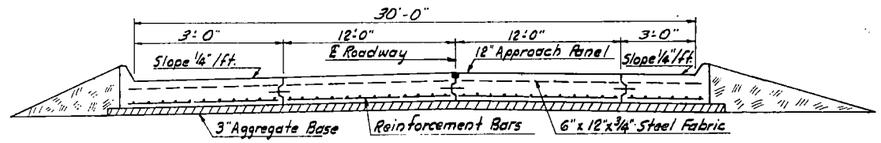
PLAN VIEW



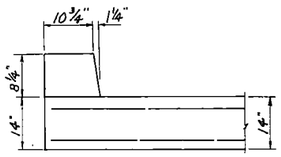
ELEVATION VIEW



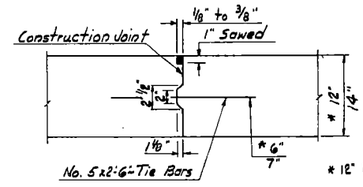
SECTION A-A



SECTION B-B

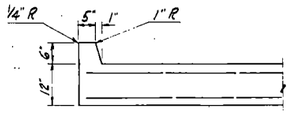


STANDARD CURB SECTION
ON END OF BRIDGE



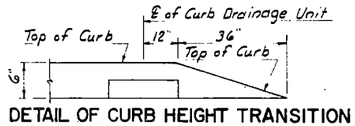
* 12" Approach Panel

SECTION C-C(14")
SECTION C1-C1(12")



STANDARD CURB SECTION
ON PANELS ④ & ⑥

NOTE:
Curb sections on panels ③ & ⑤ to be transitioned from that existing on the bridge to the standard used on panels ④ & ⑥.



DETAIL OF CURB HEIGHT TRANSITION
AT END OF APPROACH SLAB

* Top Reinforcing Steel

REINFORCING BARS									
LONGITUDINAL					TRANSVERSE				
PANEL	EACH	BAR SIZE	LENGTH	L.B.S.	PANEL	EACH	BAR SIZE	LENGTH	L.B.S.
①	23	# 8	19'-6"		①	18	# 6	11'-6"	
②	23	# 7	19'-6"		②	18	# 5	11'-6"	
③	5	# 8	19'-6"		③	18	# 6	2'-6"	
④	5	# 7	19'-6"		④	18	# 5	2'-6"	
⑤	5	# 8	19'-6"		⑤	18	# 6	2'-6"	
⑥	5	# 7	19'-6"		⑥	18	# 5	2'-6"	
① *	23	# 5	19'-6"		① *	18	# 4	2'-6"	
③ *	5	# 5	19'-6"		③ *	18	# 4	2'-6"	
⑤ *	5	# 5	19'-6"		⑤ *	18	# 4	2'-6"	

Longitudinal Bars spaced @ approx. 6" c.c.
Transverse Bars spaced @ approx. 1'-1½" c.c.

3-1-79 ✓
7090

QUANTITIES	
Reinforcing Steel	(4551) lbs.
Steel Fabric	71.1 S.Y.

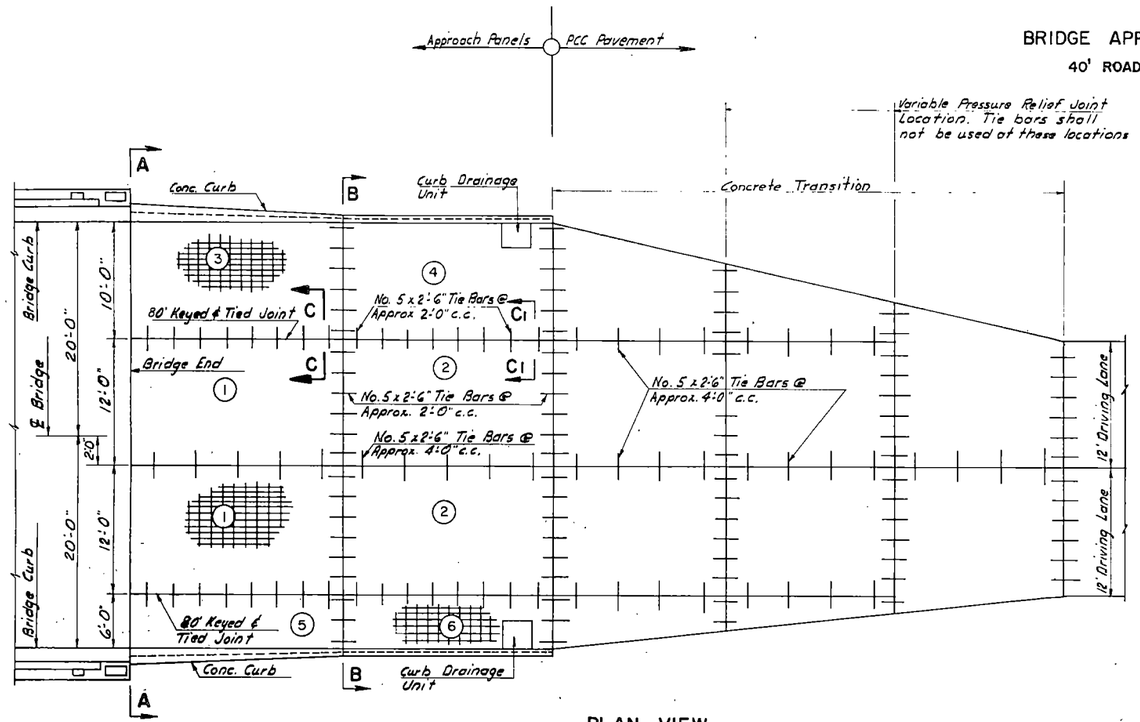
BRIDGE APPROACH PANELS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	IR-94-6(20)257 IR-94-7(25)259	13	

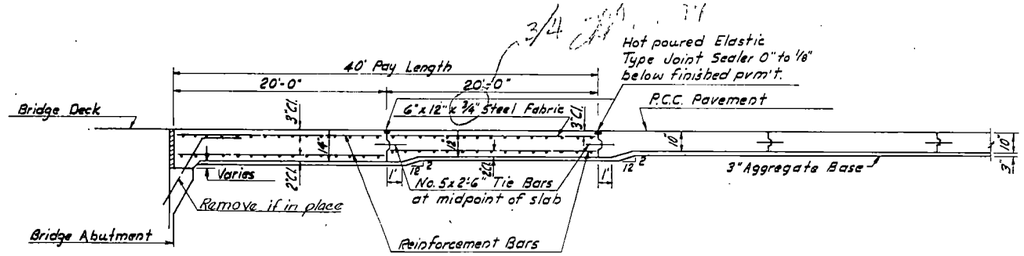
TRACING MADE BY | CHECKED BY
QUANTITIES MADE BY | CHECKED BY

BRIDGE APPROACH PANELS

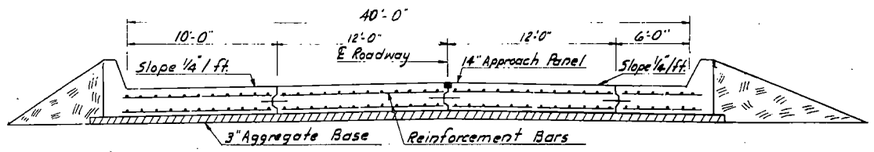
40' ROADWAY



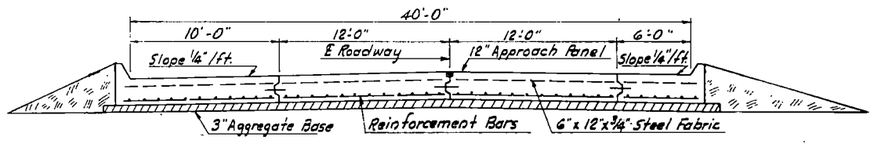
PLAN VIEW



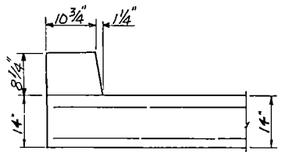
ELEVATION VIEW



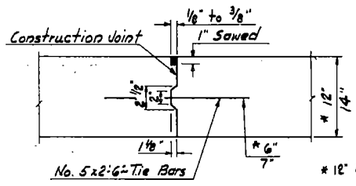
SECTION A-A



SECTION B-B

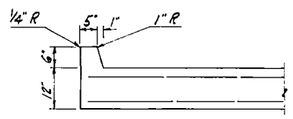


STANDARD CURB SECTION ON END OF BRIDGE

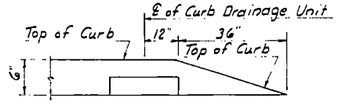


* 12" Approach Panel

SECTION C-C(14")
SECTION C1-C1(12")



STANDARD CURB SECTION ON PANELS ④ & ⑥



DETAIL OF CURB HEIGHT TRANSITION AT END OF APPROACH SLAB

NOTE:
Curb sections on panels ③ & ⑤ to be transitioned from that existing on the bridge to the standard used on panels ④ & ⑥.

*Top Reinforcing Steel

REINFORCING BARS

LONGITUDINAL					TRANSVERSE				
PANEL	EACH	BAR SIZE	LENGTH	L BS.	PANEL	EACH	BAR SIZE	LENGTH	LBS.
①	23	# 8	19'-6"		①	18	# 6	11'-6"	
②	23	# 7	19'-6"		②	18	# 5	11'-6"	
③	20	# 8	19'-6"		③	18	# 6	9'-6"	
④	20	# 7	19'-6"		④	18	# 5	9'-6"	
⑤	12	# 8	19'-6"		⑤	18	# 6	5'-6"	
⑥	12	# 7	19'-6"		⑥	18	# 5	5'-6"	
① *	23	# 5	19'-6"		① *	18	# 4	11'-6"	
③ *	20	# 5	19'-6"		③ *	18	# 4	9'-6"	
⑤ *	12	# 5	19'-6"		⑤ *	18	# 4	5'-6"	

Longitudinal Bars spaced @ approx. 6" c.c.
Transverse Bars spaced @ approx. 1'-1 1/2" c.c.

2-1-79
10,954

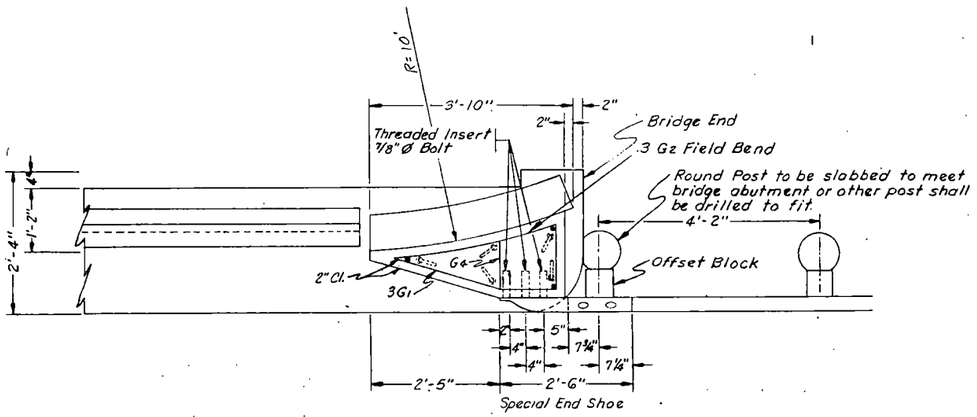
QUANTITIES

Reinforcing Steel	7708 lbs.
Steel Fabric	35.35 S.Y.

BRIDGE APPROACH PANELS

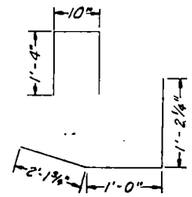
FHWA REGION	STATE	FED. AID PROJ. NO.	
8	N.D.	IR-94-6(48)259 IR-94-7(25)259	14

BRIDGE END POST DETAILS



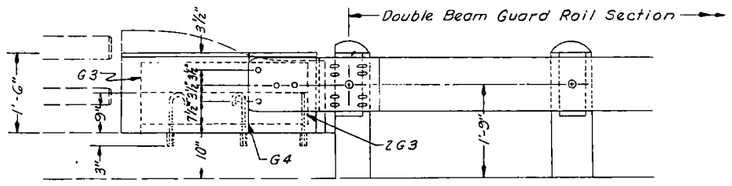
PLAN

BAR LIST (one post)				
MARK	NO.	SIZE	LENGTH	SHAPE
G1	3	4	4'-4"	Bent
G2	3	4	3'-1"	Str.
G3	3	4	1'-4"	Str.
G4	1	4	3'-6"	Bent

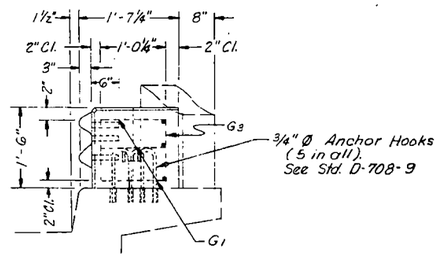


NOTE:
All material and labor necessary to construct Beam Rail Bridge End Posts as indicated on the drawings and specified shall be included in the price bid for Remove & Reset Guardrail.

Existing concrete jointing new concrete shall be wire brushed and cleaned.
The Highway Department shall in form the Contractor as to the type of cement to be used to simulate the color of existing work.
All new exposed concrete shall have a Rubbed Surface Finish.
All exposed edges shall have a beveled edge matching existing work.



ELEVATION

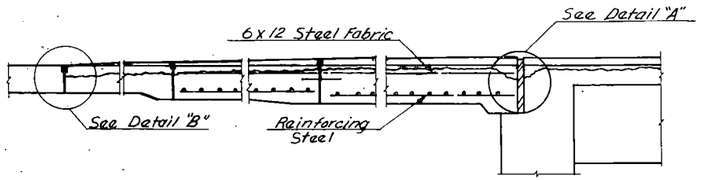


END VIEW

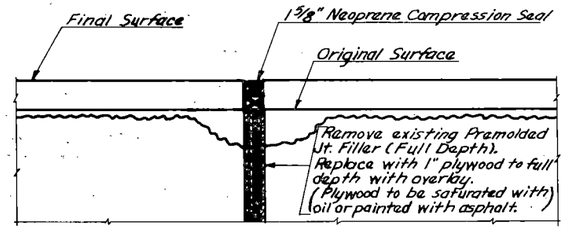
BEAM GUARD RAIL
BRIDGE END POST

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	IR-94-6(26)285 IR-94-7(45)259	15	

LAYOUT BY | TRACING | MADE BY | CHECKED BY | QUANTITIES | MADE BY | CHECKED BY | LC-S

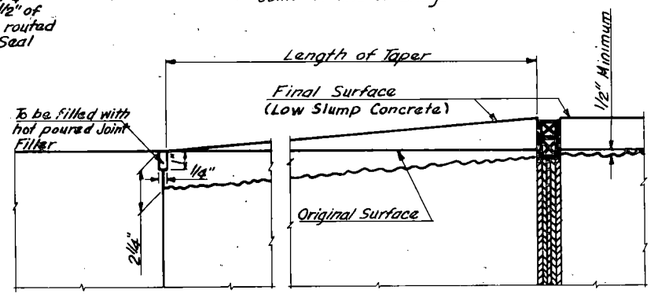


APPROACH SLAB
(Slab overlayed)

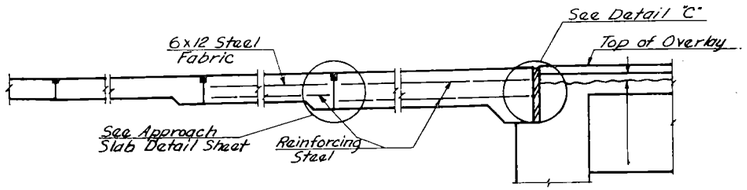


DETAIL "A"
Joint at End of Bridge

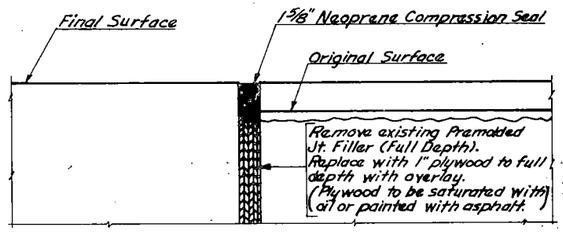
NOTE: After overlay has been placed & cured the top 2½" of plywood shall be routed & the Neoprene Seal installed.



DETAIL "B"

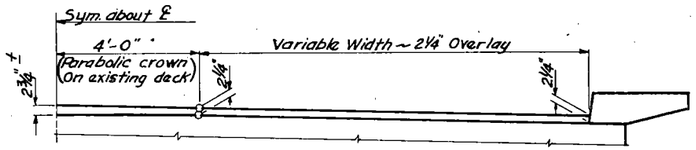


APPROACH SLAB
(Full depth removal & replacement to final surface grade)

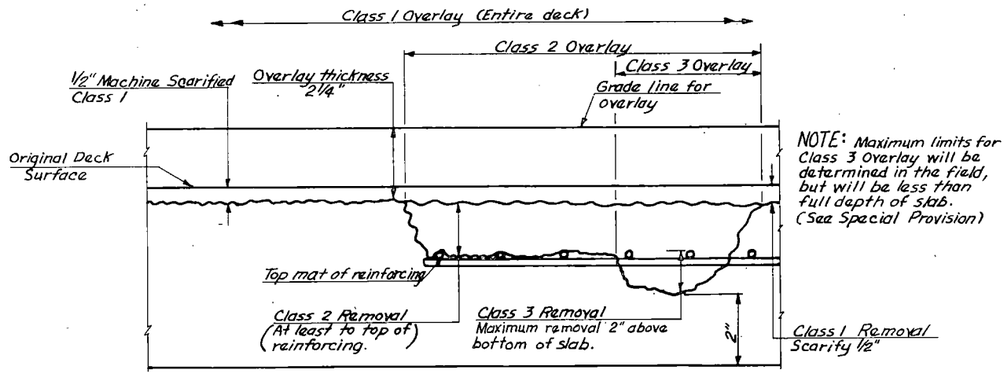


DETAIL "C"
Joint at End of Bridge

NOTE: Where Expansion Joint is installed the extrusion shall be shimmed as needed, to maintain the 1/4 recess in the first 4 feet on either side of roadway ℄ which has a parabolic crown on the existing deck.
Shims shall be welded to the Steel Extrusion & the Base Plate.



ELEVATION



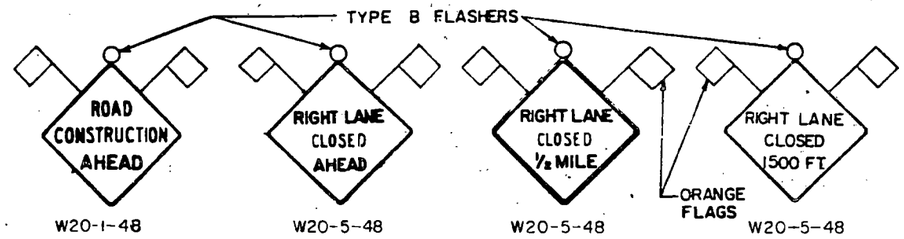
NOTE: Maximum limits for Class 3 Overlay will be determined in the field, but will be less than full depth of slab. (See Special Provision)

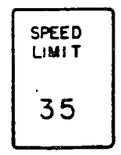
BRIDGE DECK

OVERLAY DETAILS

FHWA REGION	STATE	FED. AID PROJ. NO	SHEET NO.
8	N.D.	IR-94-7(25)259	16

SIGN LAYOUT FOR ONE LANE CLOSURE
INTERSTATE SYSTEM





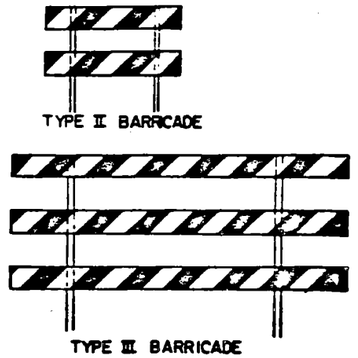
R2-1-48

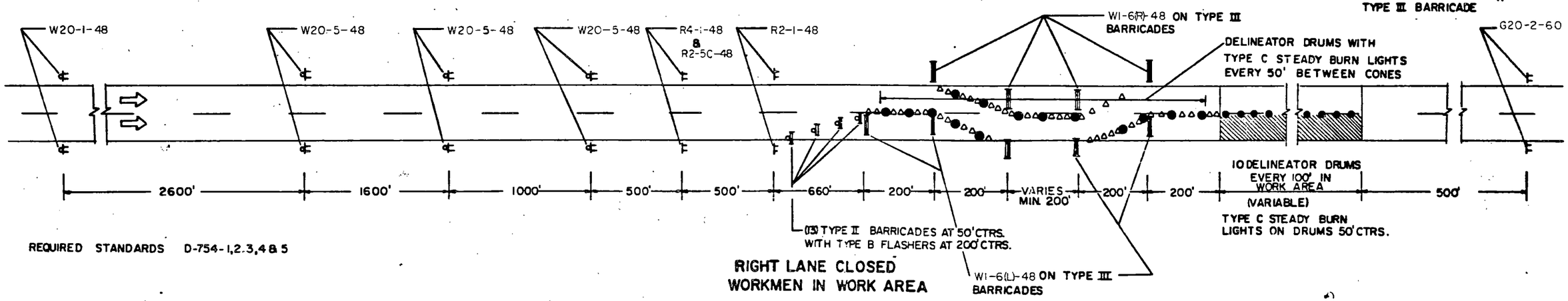
R4-1-48 & R2-5C-48


W1-6(L)-48


W1-6(R)-48

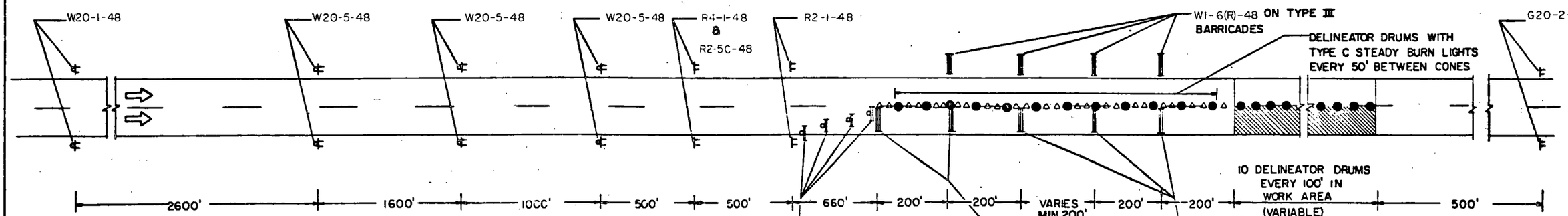
G20-2-60





RIGHT LANE CLOSED
WORKMEN IN WORK AREA

REQUIRED STANDARDS D-754-1,2,3,4 & 5



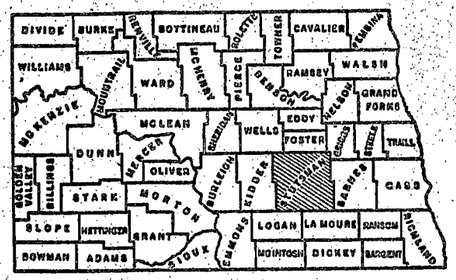
RIGHT LANE CLOSED
NO WORKMEN IN WORK AREA

KEY

- TYPE II BARRICADE
- TYPE III BARRICADE
- CONES
- FLASHER
- DELINEATOR DRUM
- SIGNS
- WORK AREA

SIGN NO.	NAME	QUANTITY
W20-1-48	ROAD CONSTRUCTION AHEAD	2
W20-5-48	RIGHT LANE CLOSED AHEAD	2
W20-5-48	RIGHT LANE CLOSED 1/2 MILE	2
W20-5-48	RIGHT LANE CLOSED 1500 FT.	2
R2-1-48	SPEED LIMIT	2
R4-1-48	DO NOT PASS	2
R2-5c-48	SPEED ZONE AHEAD	2
	TYPE II BARRICADES	15
	TYPE III BARRICADES	10

SIGN NO.	NAME	QUANTITY
G20-2-60	END CONSTRUCTION	2
W1-6(L)-48	ARROWS	4
W1-6(R)-48	ARROWS	4
	DELINEATOR DRUMS	45
	ORANGE FLAGS	16
	CONES (WEIGHTED BOTTOM)	60
	TYPE B FLASHERS	12
	TYPE C STEADY BURN LIGHTS	20
W20-7-48	FLAGMAN 500'	2
R1-12-18	STOP SIGN PADDLE	2
W22-14-18	SLOW SIGN PADDLE	2



SKETCH-MAP OF NORTH DAKOTA
SHOWING COUNTIES

SCALES
- LAYOUT SHEET: 1 IN. = 3000'
- PLAN AND PROFILE DRAWINGS: HOR. 1 IN. = 100 FT., VERT. 1 IN. = 10 FT.
- STRUCTURAL DRAWINGS: AS SHOWN
- CROSS SECTION SHEETS: 1 IN. = 10 FT.

DESIGN DATA

TRAFFIC	AVERAGE DAILY	EST. 30TH MAX. HR.
PRESENT TRAFFIC (1965)	2320 PASS. 930 TRUCKS 2900 TOTAL	435
TRAFFIC FORECAST (1985)	9375 PASS. 1350 TRUCKS 5725 TOTAL	1060

DESIGN SPEED 70 MPH
TRAFFIC CLASSIFICATION "M"
MINIMUM SIGHT DISTANCE (NON PASSING) 600'

NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

PLANS

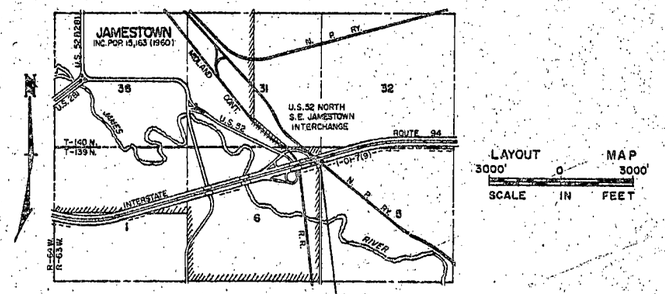
FOR THE PROPOSED IMPROVEMENT OF A

STATE HIGHWAY

IN STUTSMAN COUNTY

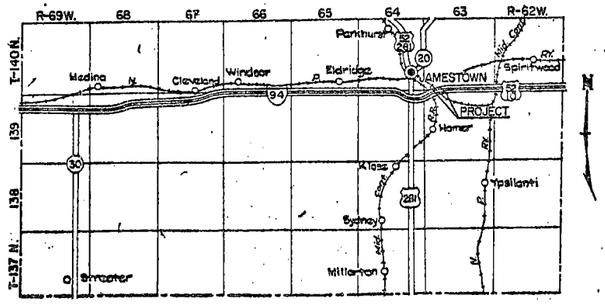
FEDERAL AID PROJECT NO. FI-94-7(14)

BRIDGE REPAIR



PROJ. NO. FI-94-7(14) STA. 190+97.7=
Sta. 190+97.7 on I-01-7(9) A point 273.46' W. and 496.5' So. of the N.E. Cor. of Sec. 6, Twp. 139 N., Rge. 63 W.

INSTALL CONSTRUCTION IDENTIFICATION SIGN
Sta. 194+00 Med. (See Std. No. 14.25)



SKETCH MAP OF PART OF STUTSMAN COUNTY

INDEX OF DRAWINGS

SHEET NO. 1	TITLE PAGE
SHEET NO. 2	BRIDGE LAYOUT & SUMMARY OF QUANTITIES
SHEET NO. 3	BORING LOG
SHEET NO. 4	ABUTMENT TIE BACK DETAILS
SHEET NO. 5	BOLSTER RELOCATION DETAILS
SHEET NO. 6	BRIDGE APPR. SLAB DETAILS
SHEET NO. 7	PREFORMED HOLES IN BRIDGE APPR. SLABS
SHEET NO. 8	PILE SPLICE DETAILS
SHEET NO. 9	TEMPORARY DETOUR LAYOUT

LIST OF STANDARDS
Standard Signs -14.1A-1 &2
Construction Identification Signs -14.25
Bridge Bench Marks -7.6

LENGTH OF PROJECT		
PROJECT	MILES-GROSS	MILES-NET
FI-94-7(14)	0.000	0.000
TOTALS	0.000	0.000

SPECIAL PROVISIONS
Steel Piling

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	FI-94-7(14)	1	9

GOVERNING SPECIFICATIONS:
Standard Specifications adopted by the North Dakota State Highway department January 1965, Required Contract Provisions (Form PR-1274) dated February 1965 and others submitted herewith.

KEY TO CONVENTIONAL SIGNS

- STATE & NATIONAL LINES
- COUNTY LINE
- TOWNSHIP & RANGE LINES
- GRADE LINE
- CENTERLINE OF CONSTRUCTION (600)
- OLD RIGHT OF WAY LINE
- NEW RIGHT OF WAY LINE
- ABANDONED RIGHT OF WAY LINE
- PROPERTY LINE
- STONE WALL
- OTHER FENCES (KIND)
- POLE LINES (KIND)
- POWER LINES (KIND)
- BRIDGE
- GROUND ELEVATION (1650 / 1640 / 240)
- GRADE
- TRAVELED WAY
- RAILROADS (KIND & NAME)
- HEDGES AND TREES (KIND)
- TRAILS
- CITY OR VILLAGE CORPORATE LIMITS
- SECTION CORNER
- QUARTER SECTION CORNER
- BUILDINGS
- OLD CULVERTS
- NEW CULVERTS
- DRAINAGE
- BENCH MARKS
- WATERS EDGE
- MARSH
- WIRE ROPE GUARD RAIL
- SNOW FENCE
- RIPRAP
- GUARD POSTS
- COBBLE GUTTERS
- CONCRETE GUTTERS (CONCRETE GUTTER)

APPROVED DATE 3-16-65

CHIEF ENGINEER
NORTH DAKOTA STATE
HIGHWAY DEPARTMENT

R. S. BRADLEY REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA

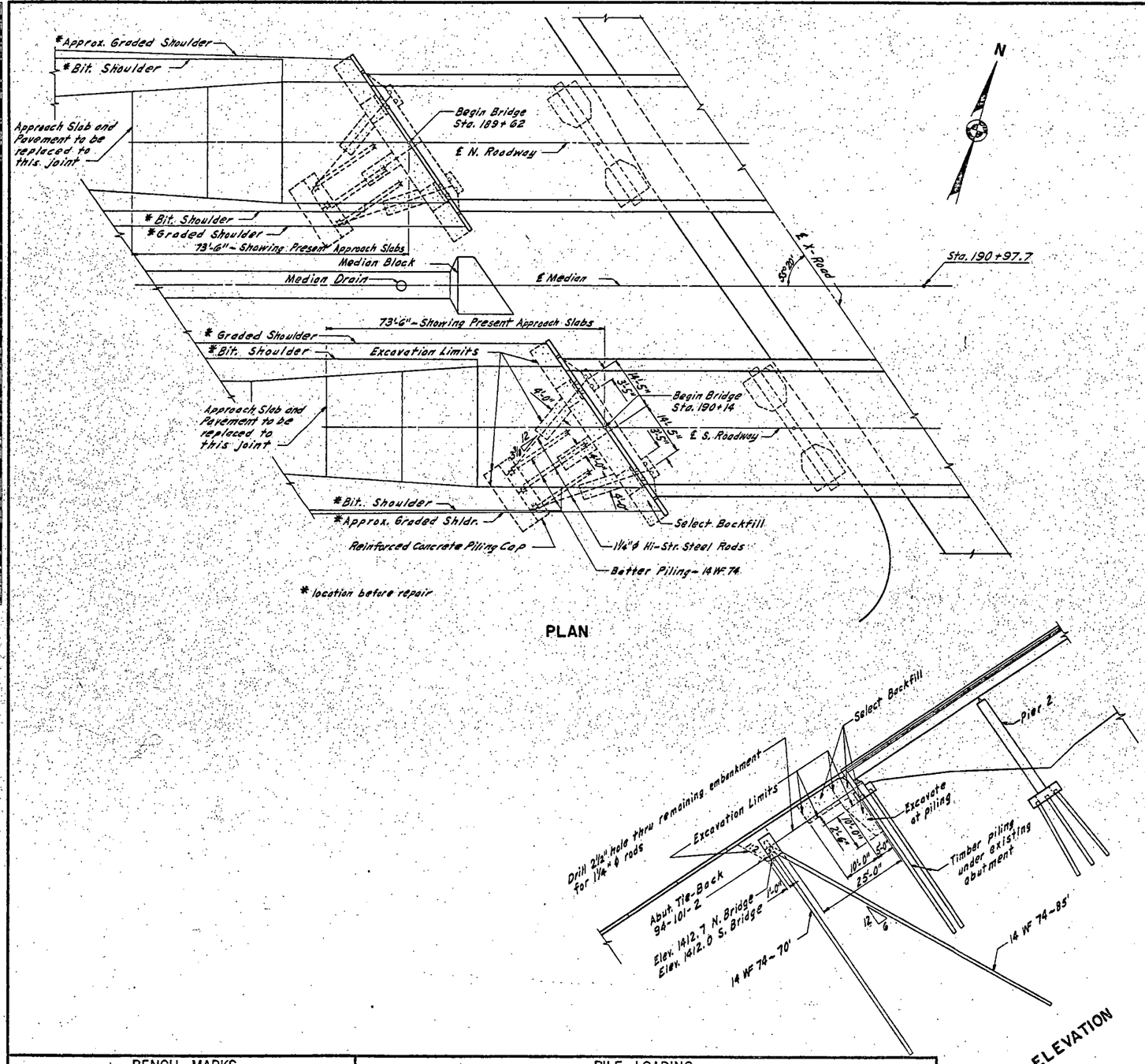
DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED

DIVISION ENGINEER DATE

DATE	REVISIONS	MADE BY	CHECKED

TO	PLOTTED BY	
BY	CHECKED BY	M.E.W.
DETAILS	MADE BY	F.D.D.
	CHECKED BY	M.E.W.
TRACING	MADE BY	F.D.D.
	CHECKED BY	
QUANTITIES	MADE BY	
	CHECKED BY	



PLAN

ELEVATION

BENCH MARKS

NO.	DESCRIPTION	LOCATION	ELEV.
	Top of North Curb of South Bridge	Over ℄ of Center Pier and 3" from gutter line	1419.85

PILE LOADING

LOCATION	DEAD LOAD + EARTH	LIVE LOAD	EARTH O. T. M.	WIND 50 LB.	WIND 15 LB.	WIND 100 LB. L.L.	LONG. FORCE	DESIGN LOAD	MAXIMUM REQUIRED BEARING	*MINIMUM PENETRATION
Vertical								74.0T.	96.0T.	45'
Batter								75.0T.	75.0T.	

*Below Bottom of Pile Cap in Feet

94-101

NOTES:

GENERAL:

THE CONTRACTOR WILL BE REQUIRED TO COMPLETE ALL WORK ON ONE STRUCTURE, NORTH OR SOUTH, BEFORE WORK CAN BE STARTED ON THE OTHER STRUCTURE. A DETOUR SHALL BE PROVIDED AND MAINTAINED TO PERMIT BOTH EAST AND WEST BOUND TRAFFIC TO USE ONE STRUCTURE UNTIL THE OTHER STRUCTURE CAN BE OPENED TO TRAFFIC.

ALL ITEMS SHOWN ON THE PLANS AND NOT SPECIFICALLY LISTED AS A PAY ITEM SHALL BE CONSIDERED AS ITEMS INCIDENTAL TO THE PAY ITEMS AND SHALL NOT BE PAID FOR DIRECTLY.

EXCAVATION:

PAY QUANTITY LIMITS FOR CLASS I EXCAVATION AT THE ABUTMENTS AND ABUTMENT TIE-BACKS SHALL BE AS SHOWN ON THIS SHEET. EXCAVATION BEHIND THE PILING AT THE ABUTMENT WILL BE PAID FOR AS CLASS I EXCAVATION FOR THE ACTUAL VOLUME OF MATERIAL IT IS NECESSARY TO REMOVE TO PERMIT THE ABUTMENT TO BE JACKED INTO POSITION WITHOUT DAMAGE TO THE PILING. EXCAVATION AT THE FRONT FACE AND ENDS OF THE PILING CAP FOR THE ABUTMENT TIE-BACK SHALL BE MADE TO NEAT LINES ALONG THE FACE OF THE CONCRETE AS SHOWN ON THE PLANS AND FORMS OMITTED. PAY QUANTITY LIMIT WILL BE ONE FOOT OUTSIDE OF AND PARALLEL TO THE CONCRETE FACES.

BACKFILL: SECTION 228

BACKFILL AT THE ABUTMENT TIE-BACKS SHALL BE ORDINARY BACKFILL WITH STANDARD COMPACTION. BACKFILL AT THE ABUTMENTS SHALL BE SELECT BACKFILL WITH STANDARD COMPACTION.

PILING:

PREBORING TO ELEVATION 1375.0 WILL BE REQUIRED FOR ALL BATTER PILES. PREBORING FOR VERTICAL PILES WILL NOT BE REQUIRED.

WHEN DRIVING BATTER PILES WITH A GRAVITY HAMMER, THE HEIGHT "H" AS DEFINED IN SECTION 622-3.3 OF THE STANDARD SPECIFICATIONS SHALL BE MEASURED PARALLEL TO THE AXIS OF THE PILE AND THE MEASURED VALUE REDUCED BY 10% BEFORE IT IS USED IN THE APPLICABLE PILE FORMULA.

WHEN DRIVING BATTER PILES WITH A SINGLE ACTING STEAM, AIR OR DIESEL HAMMER, THE EFFECTIVE ENERGY "E" AS DEFINED IN SECTION 622-3.3 OF THE STANDARD SPECIFICATIONS SHALL BE REDUCED BY 10% BEFORE IT IS USED IN THE APPLICABLE PILE FORMULA.

WHEN DRIVING BATTER PILES WITH A DOUBLE ACTING STEAM OR AIR HAMMER, THE EFFECTIVE ENERGY "E" AS DEFINED IN SECTION 622-3.3 OF THE STANDARD SPECIFICATIONS SHALL BE REDUCED BY ONE TENTH (1/10) OF THE PRODUCT OF THE WEIGHT OF THE RAM (/) TIMES THE MANUFACTURERS' SPECIFIED NORMAL STROKE (H) BEFORE IT IS USED IN THE APPLICABLE PILE FORMULA.

THE MINIMUM WEIGHT OF A GRAVITY HAMMER SHALL BE AS GIVEN IN SECTION 622-4.1.18 OF THE STANDARD SPECIFICATIONS.

A MINIMUM RAM WEIGHT OF 4000 LBS AND A MINIMUM ENERGY PER BLOW OF 20,000 FT./LBS. WILL BE REQUIRED FOR ALL TYPES OF HAMMERS EXCEPT GRAVITY HAMMERS.

14 WF 74 PILING MAY BE SPLICED AS SHOWN ON DRAWING H-0401 BY USING WEB SPLICE PLATES FOR 14" PILE AND FLANGE SPLICE PLATES FOR 10" PILE.

APPROACH SLAB:

THE EXISTING BRIDGE APPROACH SLAB AND PAVEMENT WAS PLACED ON A 3" AGGREGATE BASE. AFTER THE EXISTING PAVEMENT HAS BEEN REMOVED TO THE CONSTRUCTION JOINT SHOWN ON THE LAYOUT AND THE BACKFILL COMPLETED AT THE ABUTMENT AND TIE-BACK, ALL BROKEN CONCRETE AND OTHER FOREIGN MATERIAL SHALL BE REMOVED FROM THE AGGREGATE BASE REMAINING IN PLACE. UNSUITABLE SAND AND ALL SOFT AND SPONGY MATERIAL AND OTHER PORTIONS OF THE SUBGRADE WHICH WILL NOT COMPACT READILY SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.

ALL HOLES OR DEPRESSIONS MADE BY THE REMOVAL OF MATERIALS SHALL BE BACKFILLED WITH NEW AGGREGATE BASE MATERIAL AND COMPACTED BY METHODS APPROVED BY THE ENGINEER. ADDITIONAL AGGREGATE BASE MATERIAL WILL THEN BE PLACED TO BRING THE SURFACE OF THE BASE TO THE REQUIRED ELEVATION AFTER FINAL COMPACTION.

THE FINISHED SURFACE OF THE NEW BRIDGE APPROACH SLAB SHALL MEET A STRAIGHT LINE GRADE FROM THE SURFACE OF THE OLD PAVEMENT REMAINING IN PLACE TO THE ROADWAY SURFACE FORMED BY THE TOP OF THE WEST BRIDGE ABUTMENTS.

MISCELLANEOUS:

REPLACEMENT OF COLD MIX BITUMINOUS SHOULDERS WILL BE DONE BY THE NORTH DAKOTA STATE HIGHWAY DEPARTMENT. THE CONTRACTOR WILL CONFINE HIS OPERATIONS SO THAT A MINIMUM AMOUNT OF DAMAGE WILL BE DONE TO THESE ITEMS. THE COST OF REMOVAL OF BITUMINOUS SHOULDERS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN OTHER BID ITEMS.

ALL SCAFFOLDING, LADDERS AND EQUIPMENT USED IN THE BOLSTER RELOCATION ON PIER 3 SHALL BE PLACED ON THE WEST SIDE OF THE PIER.

BOLTS FOR ELEVATION CHECK POINTS SHALL BE GROUTED INTO THE TOP OF THE CURBS ON BOTH BRIDGES AT THE LOCATIONS SHOWN ON THE STANDARD BRIDGE BENCH MARK DETAILS. A NONSHRINKING TYPE OF GROUT SHALL BE USED.

BRIDGE CODE	FED ROAD DIST NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	5	N. D.	F-94-7(4)		2	9

THE METHOD OF PLACING, SPREADING AND FINISHING OF THE CONCRETE PAVING SHALL BE APPROVED BY THE ENGINEER.

ONLY HAND FINISHING EQUIPMENT WILL BE REQUIRED.

AUTOMATIC BATCHING EQUIPMENT FOR CEMENT AND AGGREGATES WILL NOT BE REQUIRED.

SPLITTING OF AGGREGATE INTO TWO SIZES WILL NOT BE REQUIRED.

PAYMENT FOR CEMENT WILL BE INCLUDED IN THE PRICE BID FOR HIGH EARLY STRENGTH REINFORCED CONCRETE PAVEMENT.

ESTIMATE OF QUANTITIES

SPEC. NO.	BID ITEM	
202	REMOVAL OF CONCRETE PAVEMENT	492 SQ.YDS.
206	CLASS I EXCAVATION	334 CU.YDS.
228	SELECT BACKFILL	310 CU.YDS.
230	SUBGRADE PREPARATION TYPE III	512 SQ.YDS.
302	AGGREGATE BASE CLASS I	42 CU.YDS.
550	STEEL FABRIC WELDED WIRE (6"x12"-3/4")	738 SQ.YDS.
550	REINFORCED CONCRETE PAVEMENT (HES)-YE-I	512 SQ.YDS.
610	HIGH EARLY STRENGTH CONCRETE CLASS AE-I	28.0 CU.YDS.
550	REINFORCEMENT BARS	14,368 LBS.
612	REINFORCING STEEL (INTERMEDIATE GRADE)	1032 LBS.
522	STEEL PILING (14 WF 74)*	930 LIN. FT.
	*SEE SPECIAL PROVISION	
	JACKING OF ABUTMENTS	1 LUMP SUM
	RELOCATION OF BOLSTERS	12 EACH
	HIGH TENSILE ALLOY RODS	1 LUMP SUM
724	TEMPORARY CROSSING AND DETOUR	1 LUMP SUM
	BRIDGE BENCH MARKS	1 SET

STRUCTURAL DRAWINGS

GENERAL DRAWING	94-101, 94-101-6
SUBSTRUCTURE	94-101-1, 94-101-2, H-0401
SUPERSTRUCTURE	94-101-3, 94-101-4, 94-101-5, STD. 7.6

DESIGN LOADING

SCALE
1 INCH = 15 FEET

NORTH DAKOTA
STATE HIGHWAY DEPARTMENT
NORTHERN PACIFIC R.R. OVERHEAD
ABUTMENT ALTERATION
BRIDGE LAYOUT

PROJECT F-94-7(14) STA. 190 + 97.7

STUTSMAN COUNTY

APPROVED

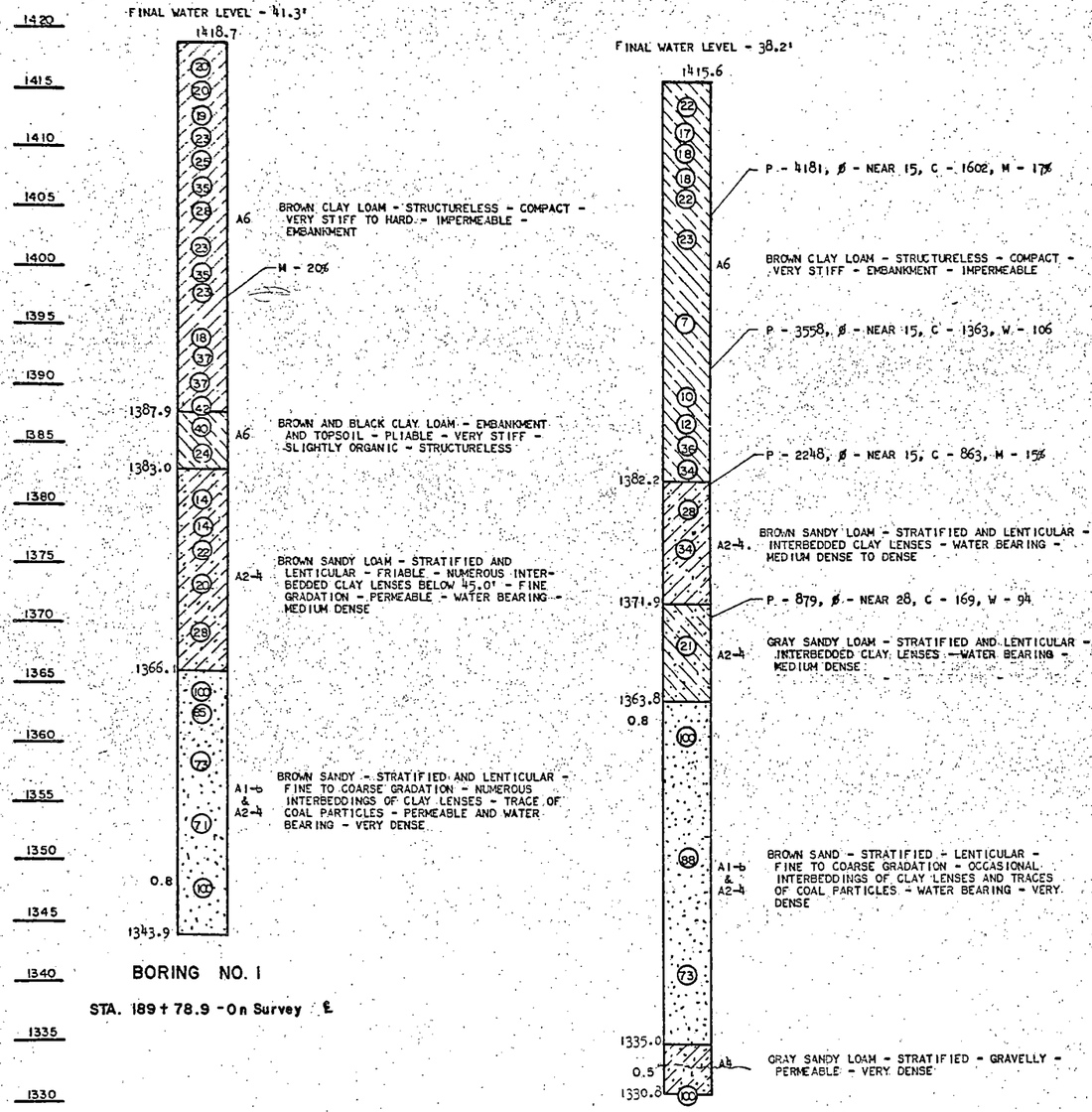
2-5-65
DATE

Allen J. Anderson
STATE HIGHWAY ENGINEER

ALLEN JAMES ANDERSON REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA

Plotted by JLS - 10-9-44

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N.D.	F-94-704		3	9



$\frac{90\sqrt{5}}{2} = \frac{1412}{80} = 13.32$

$\frac{89 \times 2}{\sqrt{5}} = 79.6$

$\sqrt{5} = 2.236$

SYMBOLS:

P - MAXIMUM LOAD (LBS./SQ.FT.)
ø - SHEAR ANGLE (DEGREES)
C - COHESION (LBS./SQ.FT.)
M - MOISTURE (PER CENT)
W - DRY WEIGHT (LBS./CU.FT.)

NOTES:

ENCIRCLED NUMBERS INDICATE THE NUMBER OF BLOWS DELIVERED BY A 140 LB. HAMMER FROM A HEIGHT OF 30" TO DRIVE CORE TUBE 1.0'.

THE BORING LOG DATA SHOWN IS FOR DESIGN PURPOSE ONLY. THE STATE ASSUMES NO RESPONSIBILITY IF SOIL CONDITIONS ENCOUNTERED DURING CONSTRUCTION DIFFER FROM THOSE SHOWN.

BRIDGE NO. 94-101

BORING LOG

F. - 94 - 7(14)

STUTSMAN COUNTY

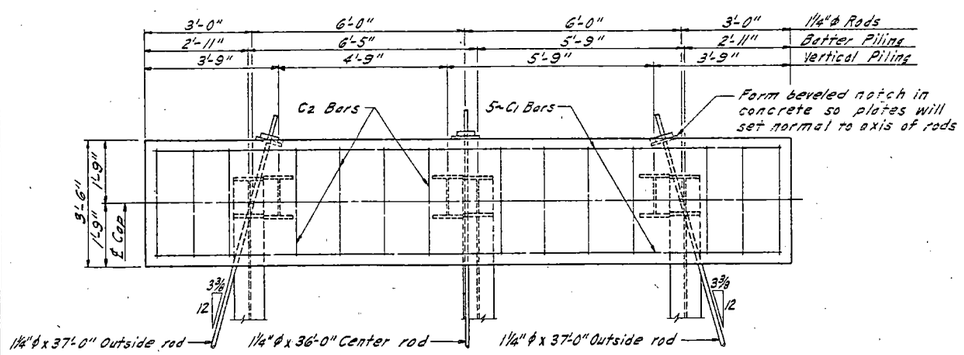
94-101-1

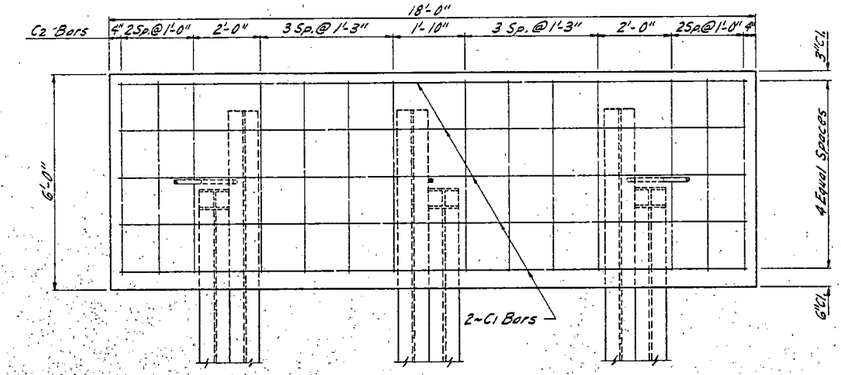
94-101-1

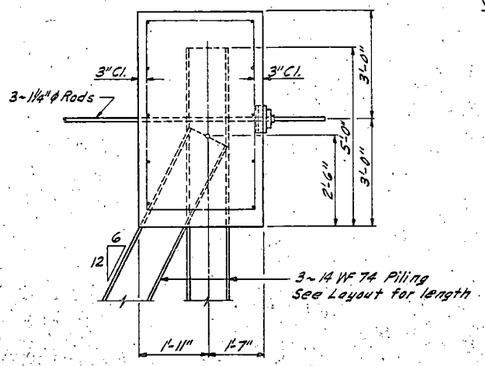
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N.D.	F-94-7(14)		4	5

	DATE	REVISIONS	MADE BY	CH

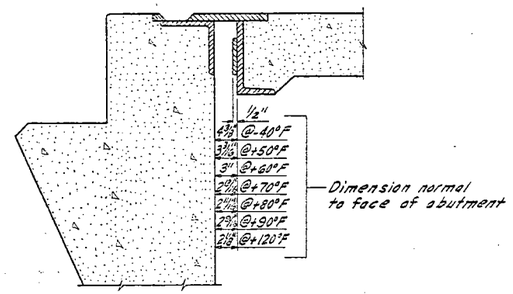
DESI	MADE BY	M.E.W.
	CHECKED BY	F.D.D.
DETAILS	MADE BY	M.E.W.
	CHECKED BY	F.D.D.
TRACING	MADE BY	M.E.W.
	CHECKED BY	M.E.W.
QUANTITIES	MADE BY	M.E.W.
	CHECKED BY	F.D.D.



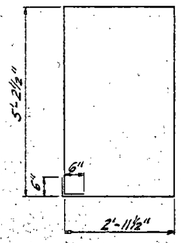




PILING CAP DETAILS



EXPANSION DEVICE OPENING
SECTION NORMAL TO ABUTMENT



C2 BAR

NOTES:

CONCRETE SHALL BE HIGH EARLY STRENGTH CLASS AE-1. THE CONCRETE SHALL BE ALLOWED TO SET AT LEAST 7 DAYS BEFORE JACKING ON 1¼" ø HI-STRENGTH STEEL RODS TO PULL ABUTMENTS INTO POSITION.

THE 1¼" ø RODS SHALL BE FABRICATED FROM STEEL CONFORMING TO THE LATEST ASTM DESIGNATIONS A-322 AND A-29. STEEL SHALL BE COLD STRETCHED TO THE MINIMUM YIELD STRESS AT 0.2% OFFSET AND THEN STRESS RELIEVED. AFTER PROCESSING, THE RODS SHALL HAVE A MINIMUM YIELD STRESS AT 0.2% OFFSET OF 130,000 PSI AND OTHER PHYSICAL PROPERTIES AS SPECIFIED FOR HIGH TENSILE ALLOY BARS UNDER SECTION 642-3.1.1 OF THE STANDARD SPECIFICATIONS. GRADE DESIGNATION UNDER ASTM A-32 SHALL BE SELECTED TO MEET THE SPECIFIED PHYSICAL REQUIREMENTS AND GIVE THE MAXIMUM CORROSION RESISTANCE.

WEDGES AND WEDGE PLATES SHALL DEVELOP THE MINIMUM ALLOWABLE TENSILE STRENGTH OF THE RODS AND SHALL NOT SHOW PERMANENT DISTORTION WHEN ASSEMBLED AND TESTED TO THE ULTIMATE STRENGTH OF THE RODS.

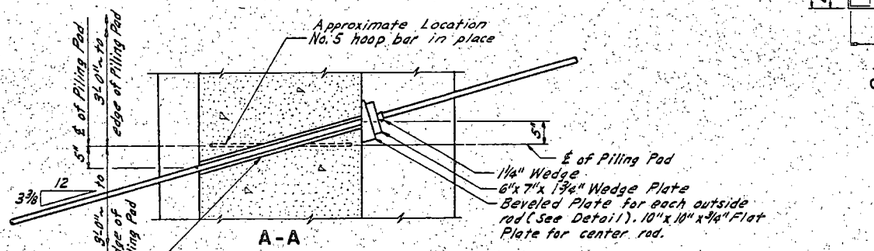
BEARING PLATES BETWEEN WEDGE ASSEMBLIES AND CONCRETE SHALL CONFORM TO ASTM A-36 SPECIFICATIONS.

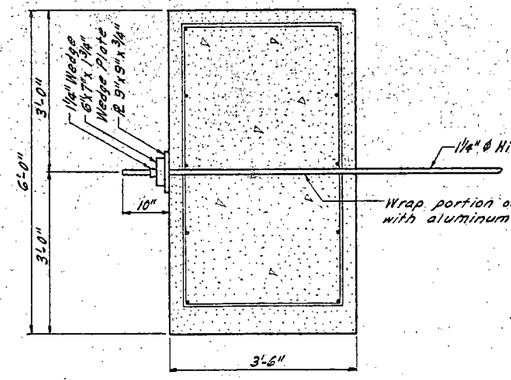
ALL PLATES, WEDGE ANCHORS, AND 1¼" ø RODS WILL BE INCLUDED IN THE BID ITEM "HIGH TENSILE ALLOY RODS".

DRILLING OF HOLES FOR 1¼" ø RODS THRU EXISTING ADUTMENTS AND THRU THE EMBANKMENT OUTSIDE OF THE LIMITS FOR EXCAVATION WILL BE INCIDENTAL TO THE LISTED PAY ITEMS AND WILL NOT BE PAID FOR DIRECTLY.

THE METHOD TO BE USED IN JACKING SHALL BE SUBMITTED FOR THE BRIDGE ENGINEER'S APPROVAL. THE BID ITEM "JACKING OF ABUTMENTS" SHALL INCLUDE ALL MATERIALS ETC. REQUIRED TO MOVE ABUTMENT TO PROPER LOCATION.

THE EXPOSED END OF THE 1¼" ø ROD AND THE PLATES AT THE ABUTMENT SHALL BE GIVEN ONE COAT OF RED LEAD PAINT AND TWO COATS OF ALUMINUM PAINT, IN ACCORDANCE WITH SECTIONS 718, 870-1.3 AND 870-1.8 OF THE STANDARD SPECIFICATIONS, AFTER JACKING IS COMPLETED.

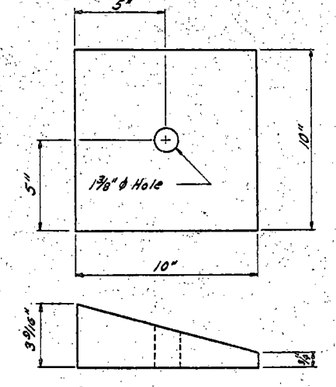




AT NEW PILING CAP
Center rod shown. See Piling Cap Details above for placement of plates for outside rods.

AT EXISTING ABUTMENT
Typical outside rod is shown. Center rod will be placed normal to abutment.

ANCHORAGE DETAILS



BEVELED PLATE
2 required at each abutment.

BAR LIST ~ (ONE ABUT.)

MARK	NO.	SIZE	LENGTH	SHAPE
C1	10	6	17'-6"	Str.
C2	14	5	17'-4"	Bent

QUANTITIES ~ (ONE ABUT.)

High Early Str. Conc. Class AE-1	14.0 C.Y.
Reinforcing Steel	510 Lbs.
Piling (See Layout)	
Excavation (See Layout)	
High Tensile Alloy Rods (See Layout)	

ABUTMENT
TIE-BACK DETAILS
NORTHERN PACIFIC
RAILWAY OVERHEAD
BRIDGE NO. 94-101
STA. 190+97.7

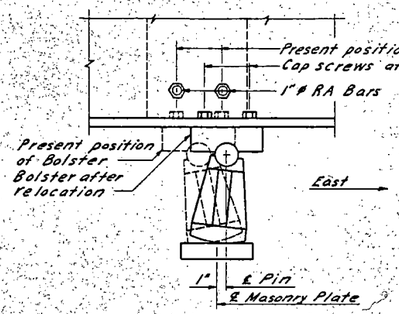
94-101-2

94-101-

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N.D.	F-94-704		5	9

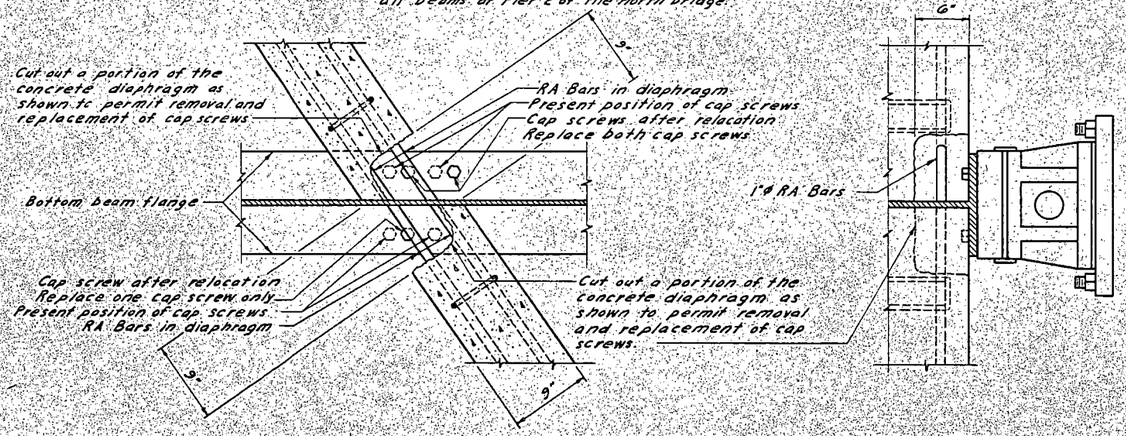
DATE	REVISIONS	MADE BY	C

DESIGN	MADE BY	M.E.W.
	CHECKED BY	F.O.D.
DETAILS	MADE BY	L.E.G.
	CHECKED BY	M.E.W.
TRACING	MADE BY	
	CHECKED BY	
QUANTITIES	MADE BY	
	CHECKED BY	



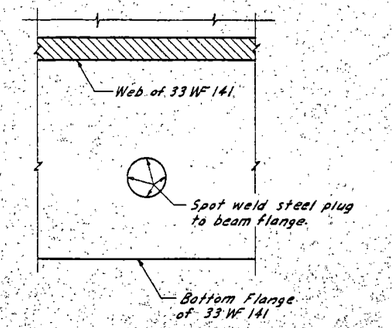
PIER BEARINGS

South exterior bearing shown. All other bearings are similar. Relocate bolsters as shown on all beams at Pier 2 and 3 of the south bridge and on all beams at Pier 2 of the north bridge.



CAP SCREW REMOVAL DETAILS

Typical interior beam shown. Removal of cap screws from inner flange of exterior beams will be similar.



HOLE FILLER DETAILS

NOTES:

The top bolsters for expansion rockers at Piers 2 and 3 of the south bridge and Pier 2 of the north bridge shall be moved to the east as shown.

Steel plugs shall be placed in all 1 1/16" ø holes, thru beam flange and cover plate, from which cap screws have been removed. Spot weld plug into place as shown and grind weld flush with top of flange.

After the bolsters have been relocated and the cap screws tightened, holes cut in the concrete diaphragms shall be patched with sand-cement mortar (two parts sand and one part cement). Unpainted steel that has been exposed by moving the bolsters and any painted area that has been damaged shall be cleaned and repainted in accordance with Section 718 of the Standard Specifications. One spot coat of red lead paint and two coats of aluminum paint to match the existing paint shall be applied.

Relocation of bolster, patching of diaphragm, painting and filling holes in flanges will be paid for at the unit price bid for "Relocation of Bolsters."

QUANTITIES

BOLSTER RELOCATION DETAILS
NORTHERN PACIFIC RAILWAY OVERHEAD
BRIDGE NO. 94-101
STA. 190+97.7

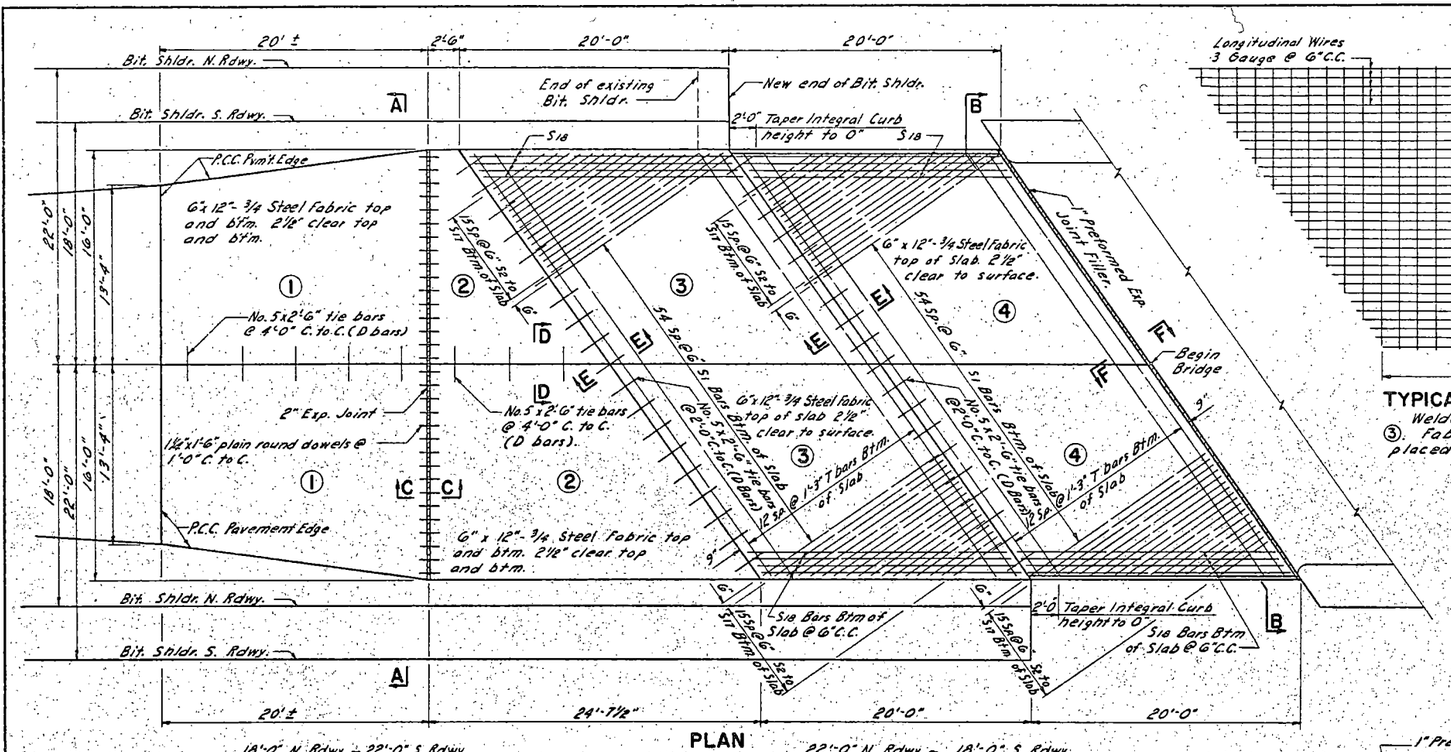
94-101-3

94-101-3

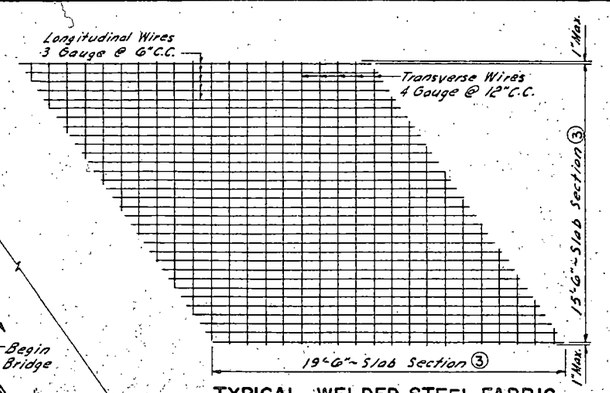
DESIGN	MADE BY		DATE
	CHECKED BY	M.E.W.	
DETAIL	MADE BY	F.D.O.	
	CHECKED BY	L.E.G.	
TRACING	MADE BY	M.E.W.	
	CHECKED BY	M.E.W.	
QUANTITIES	MADE BY	M.E.W.	
	CHECKED BY	F.D.O.	

REVISIONS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N.D.	F-94-7(4)		6	9

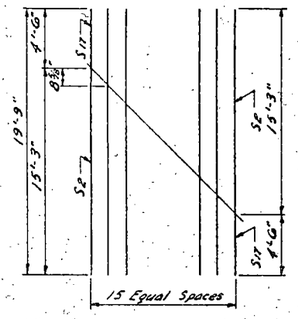


PLAN



TYPICAL WELDED STEEL FABRIC

Welded steel fabric shown for slab section ③. Fabric for other slab sections to be placed similar.



S2 - S17 BARS

2 Sets Shown
4 Sets Required
158'-0" per set

NOTES:

DOWEL BARS ARE LISTED IN THE BAR LIST AND ESTIMATE OF QUANTITIES WITH REINFORCMENT BARS AND WILL BE PAID FOR AT THE UNIT PRICE BID FOR REINFORCEMENT BARS..

DOWEL SUPPORT ASSEMBLY SHALL HAVE SUFFICIENT RIGIDITY TO SECURELY HOLD THE DOWEL BARS AND PREMOLDED JOINT FILLER IN POSITION DURING THE PLACING AND FINISHING OF THE ADJACENT CONCRETE.

PREFORMED EXPANSION JOINT FILLER SHALL CONFORM TO A.A.S.H.O. SPECIFICATION M-153, TYPE III, STANDARD - MODERATELY RESILIENT.

LIQUID MEMBRANE CURING COMPOUND WILL BE PERMITTED WHEN USED AS SPECIFIED IN SECTION 550-4.13.2 OF THE STANDARD SPECIFICATIONS. THE COMPOUND SHALL BE TYPE 2, WHITE PIGMENTED.

ALL CONCRETE SHALL BE HIGH EARLY STRENGTH CLASS "C-H".

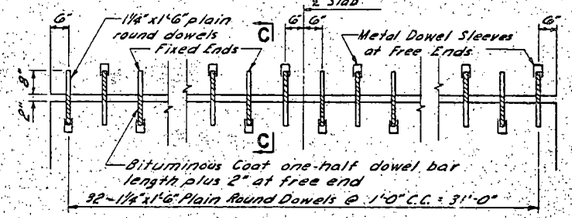
REINFORCEMENT BARS SHALL BE DEFORMED UNLESS NOTED.

LAPS IN STEEL FABRIC REINFORCEMENT SHALL BE AT LEAST 6" AND SHALL BE TIED AT NOT MORE THAN 4' INTERVALS.

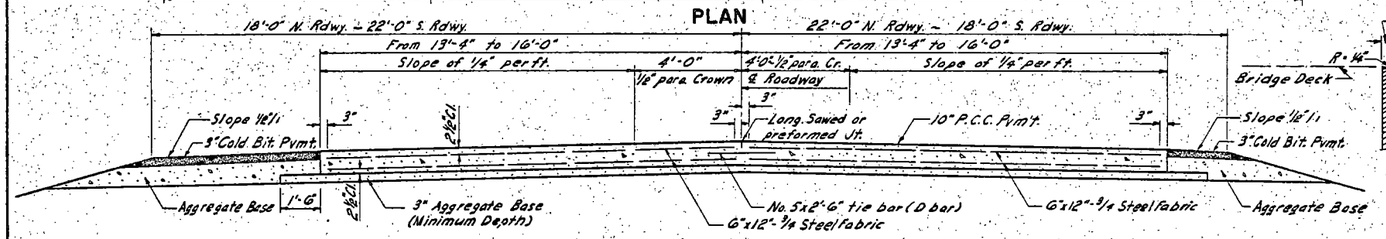
INTEGRAL CURBS SHALL BE INCLUDED IN PRICE BID FOR " REINFORCED CONCRETE PAVEMENT".

ANY WATER REQUIRED FOR COMPACTION WILL BE CONSIDERED INCIDENTAL TO THE PAY ITEM "SUBGRADE PREPARATION".

SEE DRAWING 94-101-5 FOR PREFORMED HOLES IN SLAB SECTIONS 3 AND 4.

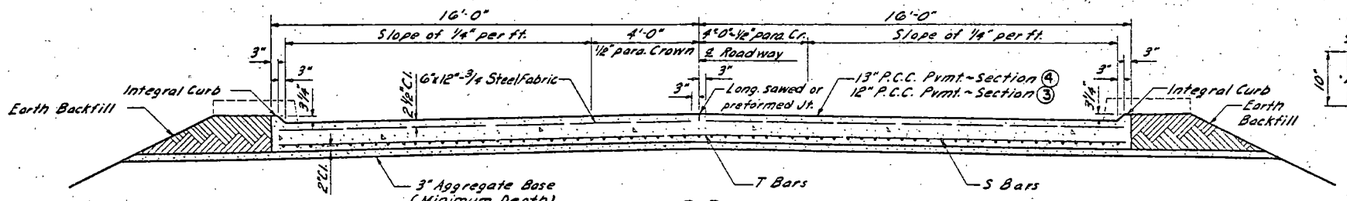


EXPANSION JOINT DOWEL BAR ASSEMBLY



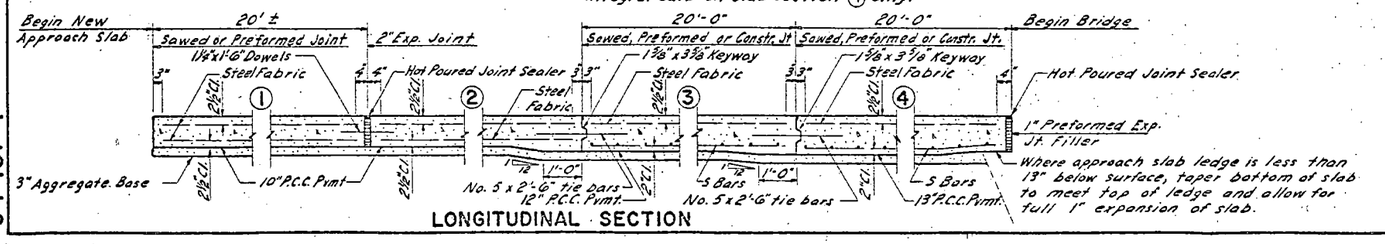
A-A

Typical for Slab Section ① & ② Section ① shall be adjusted to match existing Rdwy.

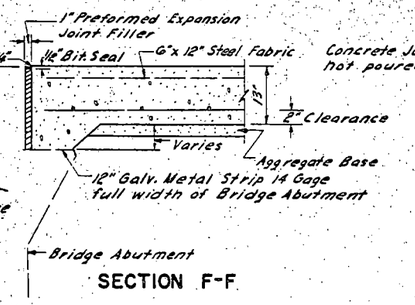


B-B

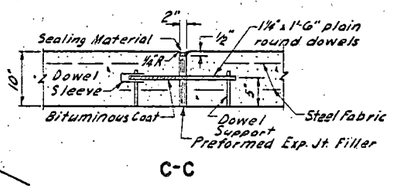
Typical for Slab Sections ③ & ④ Integral Curb on Slab Section ④ only.



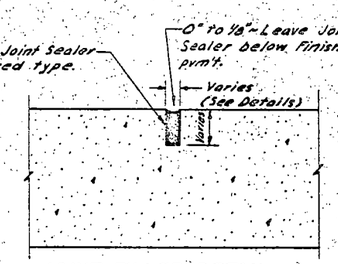
LONGITUDINAL SECTION



SECTION F-F

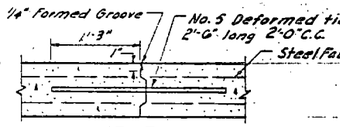


C-C



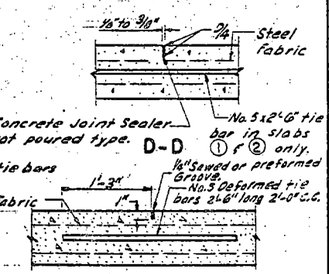
JOINT FILLER DETAIL

Applies to all sawed or preformed Jt.



E - E

With Construction Joint



E - E

With Sawed or Preformed Joint

QUANTITIES - ONE APPROACH SLAB

Concrete Pavement	236 Sq. Yd.
Reinforcement Bars	7,183 Lb.
Steel Fabric	369 Sq. Yd.
Aggregate Base (See Layout)	
Sub-grade Preparation (See Layout)	

STEEL FABRIC - ONE APPROACH SLAB

NO. OF SHEETS	SHEET SIZE	SLAB SECTION
4	13'-0" to 15'-8" x 19'-6"	1
2	15'-8" x 13'-0" to 24'-1"	2
2	15'-8" x 2'-0" to 13'-0"	2
2	15'-8" x 19'-6" (See Detail)	3
2	15'-8" x 19'-6" (See Detail)	4

BAR LIST - ONE APPROACH SLAB

MARK	NO.	SIZE	LENGTH	SHAPE
D	46	5	2'-6"	Str
S1	110	7	16'-0"	-
S2-S17	4 Sets	7	158'-0"	-
S1a	16	6	19'-6"	-
T	26	6	38'-6"	-
Dowel	32	1¼"ø	1'-6"	Plain

BRIDGE APPROACH SLAB DETAILS
NORTHERN PACIFIC RAILWAY OVERHEAD
BRIDGE NO. 94-101
STA. 190 + 97.7

94-101-4

94-101-4

DESIGN	MADE BY	
	CHECKED BY	M.E.W.
DETAIL	MADE BY	
	CHECKED BY	E.A.D.
TRACIN	MADE BY	
	CHECKED BY	L.E.B.
QUANTITIES	MADE BY	
	CHECKED BY	M.E.W.

REVISIONS	MADE BY	CHK'D BY	DATE

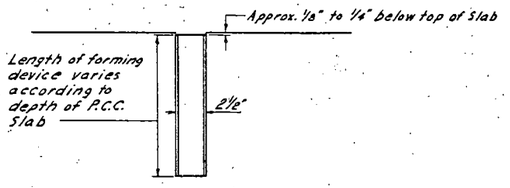
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N.D.	F-94-7(14)		7	9

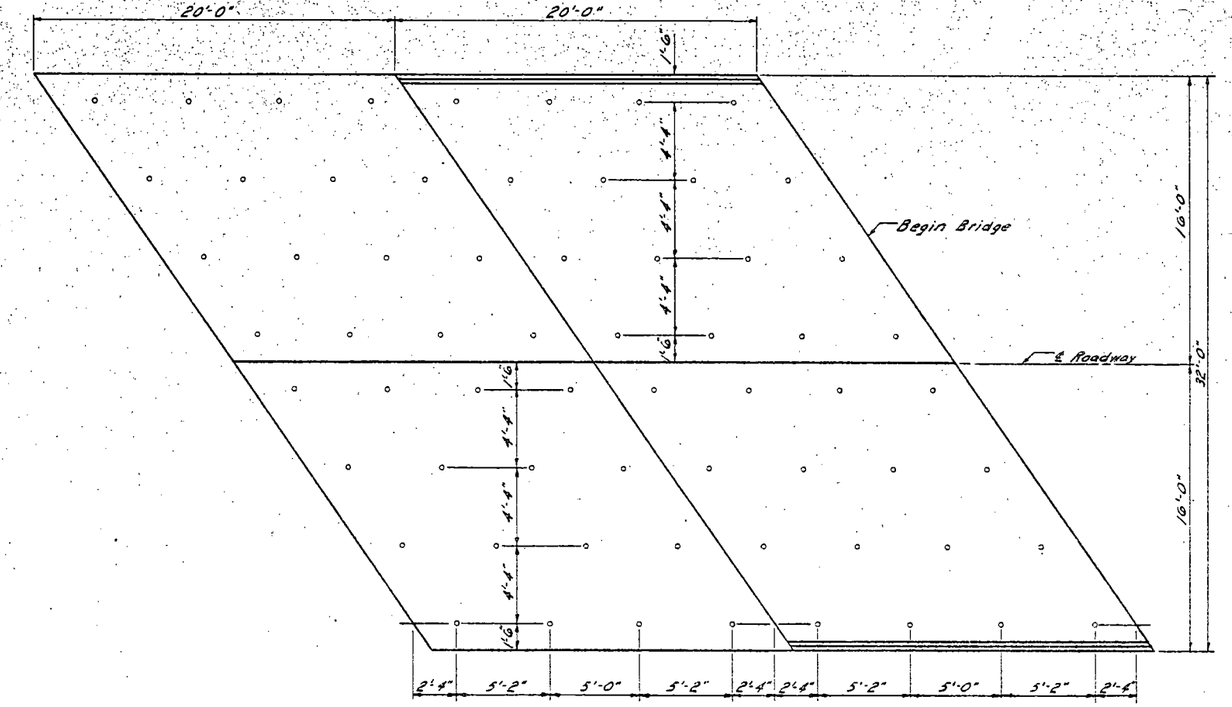
NOTE:

Preformed holes to be formed to the outside diameter shown. The depth of the forming device shall conform to the depth of the slab in which it is installed. The forming device shall be approved by the Engineer before installation. The device shall not be made of wood, and must be either a solid rod or have a cap over the end to prevent entrance of concrete into the hole. The device may be designed for removal after the concrete has set or left in place. If the forming device is to be left in place, it shall have an inside diameter of 2½".

To prevent water or other material from entering the preformed holes, the holes shall be capped and sealed. If the device is removed, the holes can be back filled with Aggregate to a depth of 2" from the top of the slab and the remaining 2" filled with Bituminous Material. Other means may be used to seal the holes subject to the approval of the Engineer.

Cost of forming device, installation and capping or backfilling of the holes shall be included in the price bid for other items.





QUANTITIES

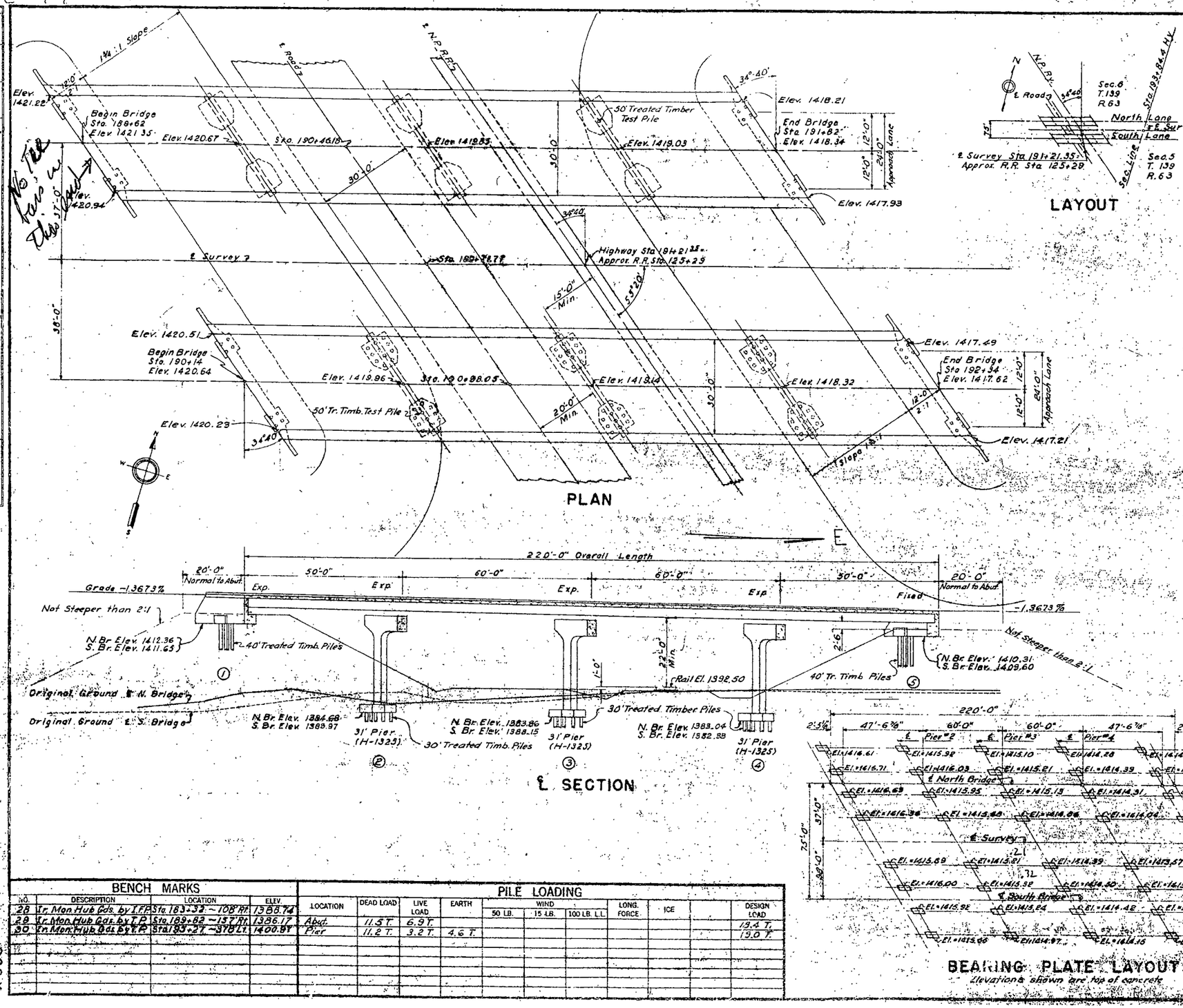
PREFORMED HOLES IN BRIDGE APPROACH SLABS
NORTHERN PACIFIC RAILWAY OVERHEAD
BRIDGE NO. 94-101
STA. 190+97.7

94-101-5

94-260.304 L BN RR SEP.
E OF JCT US 52

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

CODE: X531



LAYOUT

NOTES:

EMBANKMENT

The embankment above the original ground at both ends of the bridge, as shown on the elevation view, and as shown on the grading plans or as staked by the Engineer, shall be placed and compacted according to Sec. 17 of the Standard Specifications before any abutment piles are driven. Fill material shall be obtained within 1800 feet of the structure location. The method of measurement and basis of payment for all excavation and embankment shall be the cubic yard in place in the embankment. The Engineer reserves the right to withdraw this item from structural contract.

PILING

A cutoff of two feet has been assumed in estimating the pay lengths (below cutoff) of all timber piles as compared to the ordered lengths.

All abutment pilling must penetrate at least fifteen feet into the original ground. Pilot holes of sufficient depth to relieve anticipated difficulty of driving through the embankment material will be required if necessary.

REINFORCING STEEL

Bent bar dimensions are given center to center unless noted.

The bar fabricator shall add a prefix to all bar designations to differentiate between structures and parts of structures.

CONCRETE

All exposed edges of concrete shall be beveled with ¾" triangular molding except as shown on the plans.

The "Rubbed Surface Finish" shall be given to the ~~railing~~ posts and to the outside and roadway vertical faces of ~~the~~ All other surfaces shall be given the "Ordinary Surface Finish".

All concrete shall be class A-1½ and shall be compacted by vibration.

The cost of furnishing and placing the premolded expansion joint filler and other incidental items shall be included in the unit price bid for Class A-1½ concrete

ESTIMATE OF QUANTITIES (TWO PRINTS)

SPEC. NO.	BID ITEM	
12	REMOVING EXISTING STRUCTURE AT STA.	
15	EXCAVATION CLASS 1	CU. YD.
	CLASS 2	575 CU. YD.
	CLASS 3	CU. YD.
17 △	EMBANKMENT	28,000 CU. YD.
60A	CONCRETE CLASS A-1	CU. YD.
	CLASS A-1½	889.0 CU. YD.
62A	REINFORCING STEEL	165,848 LB.
63	STRUCTURAL STEEL	29,800 LB.
64A	UNTREATED TIMBER	BD. FT.
64B	TREATED TIMBER	BD. FT.
65A	UNTREATED TIMBER PILING	LIN. FT.
65B	TREATED TIMBER PILING 130 AT 30 FT. 32 AT 40 FT.	5856 LIN. FT.
65E	UNTREATED TIMBER TEST PILES	EACH
65L	TREATED TIMBER TEST PILES AT 30 FT.	2 EACH
81	TEMPORARY CROSSING AND DETOUR	
	ORNAMENTAL METAL RAILING	867 LIN. FT.
	△ SEE NOTES	
	SEE SPECIAL PROVISIONS	

STRUCTURAL DRAWINGS

GENERAL DRAWING	X006 (THIS SHEET)
SUBSTRUCTURE	H-1325, H-1242 & R-1243
SUPERSTRUCTURE	H-1137, H-1138-2.8 H-1138-2.8 & H-0100
DESIGN LOADING	H20 S16 (1953)
SCALE	1 INCH = 15 FEET

NORTH DAKOTA
STATE HIGHWAY DEPARTMENT
OVERHEAD
NORTHERN PACIFIC R.R.
PROJECT I-ING-01-7(11) STA. 190+97.7
STUTSMAN COUNTY

APPROVED Jan. 19 1957 Joseph R. Kirby
DATE BRIDGE ENGINEER

JOSEPH R. KIRBY — REG. ENGINEER — PROFESSIONAL — NORTH DAKOTA

BENCH MARKS

NO.	DESCRIPTION	LOCATION	ELEV.
28	Tr. Mon. Hub Gds. by T.F.P.	Sta 183+32 ~ 108' Rt.	1388.74
29	Tr. Mon. Hub Gds. by T.P.	Sta 189+62 ~ 137' Rt.	1386.17
30	Tr. Mon. Hub Gds. by T.P.	Sta 193+27 ~ 378' Lt.	1400.87

PILE LOADING

LOCATION	DEAD LOAD	LIVE LOAD	EARTH	WIND 50 LB.	WIND 15 LB.	WIND 100 LB. L.L.	LONG. FORCE	ICE		DESIGN LOAD
Abut.	11.5 T.	6.9 T.								19.4 T.
Pier	11.2 T.	3.2 T.	4.6 T.							19.0 T.

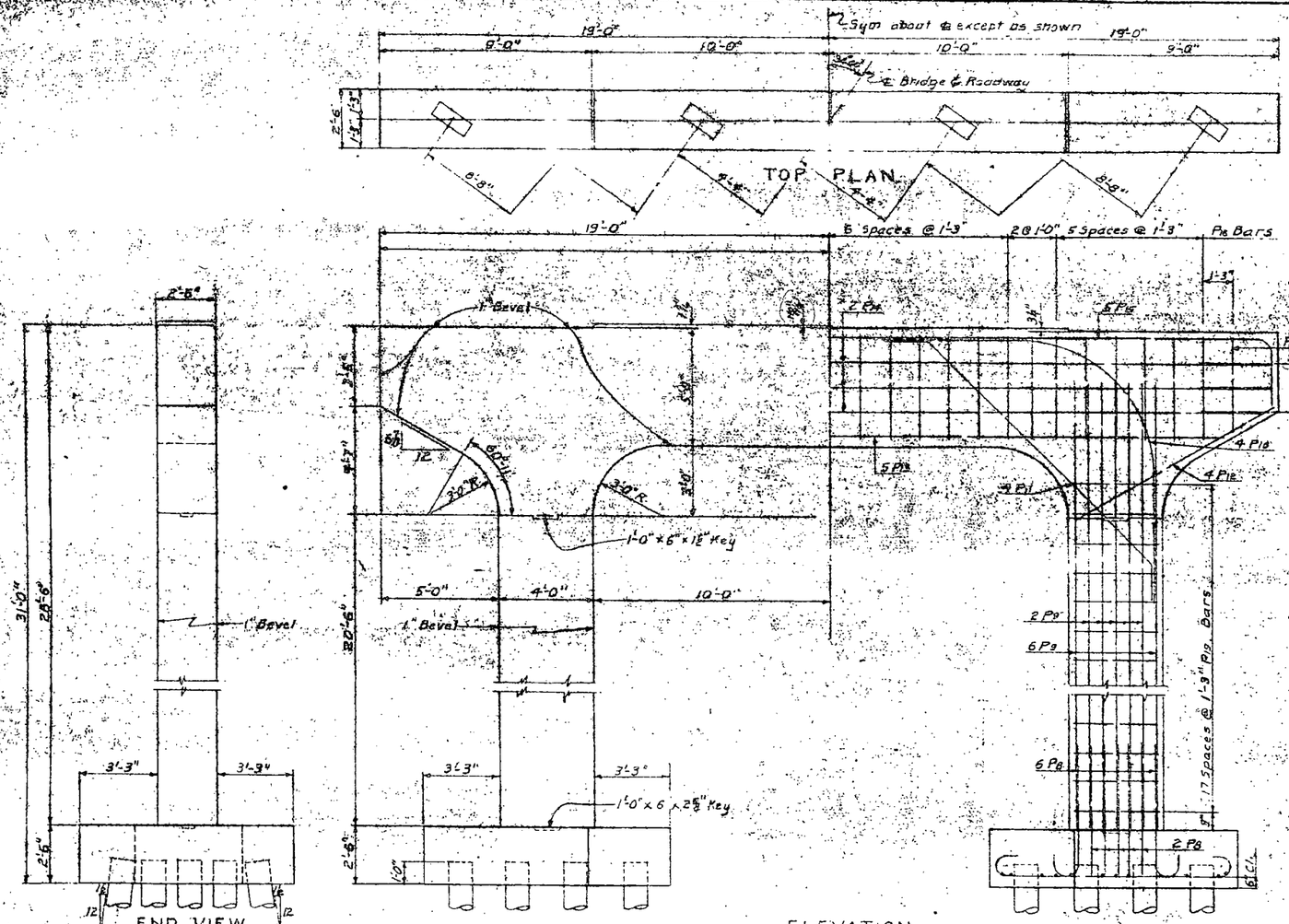
DETAILS — MADE BY CJ
TRACING — MADE BY LMF 2-6-57
QUANTITIES — MADE BY AJA
PLOTTED BY
CHECKED BY
CHECKED BY
CHECKED BY
SHEET NO.
REVISIONS

X 006

94-101 94-106 X 006

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

MARK	NO	SIZE	LENGTH	SHAPE
P1	18	7	10'-0"	Bent
P2	4	4	6'-0"	"
P3	2	8	9'-3"	"
P4	12	4	11'-5"	"
P5	4	4	10'-9"	"
P6	8	4	7'-3"	"
P7	4	4	10'-3"	"
P8	44	9	6'-9"	"
P9	44	8	26'-6"	Str.
P10	8	7	18'-0"	Bent
P11	8	4	15'-6"	"
P12	8	4	9'-9"	"
P13	5	9	33'-3"	"
P14	6	7	37'-6"	"
P15	10	8	25'-0"	"
P16	27	9	14'-0"	"
P17	2	4	12'-9"	"
P18	6	4	6'-0"	"
P19	36	4	12'-0"	"



QUANTITIES

Concrete Class A-1½	50.6 Cu.Yd.
Reinforcing Steel	8138 Lbs.
Piling (See Layout)	
Excavation (See Layout)	

31' PIER
FOR I-BEAM SPANS
30' ROADWAY
34°40' SKEW

H-1325

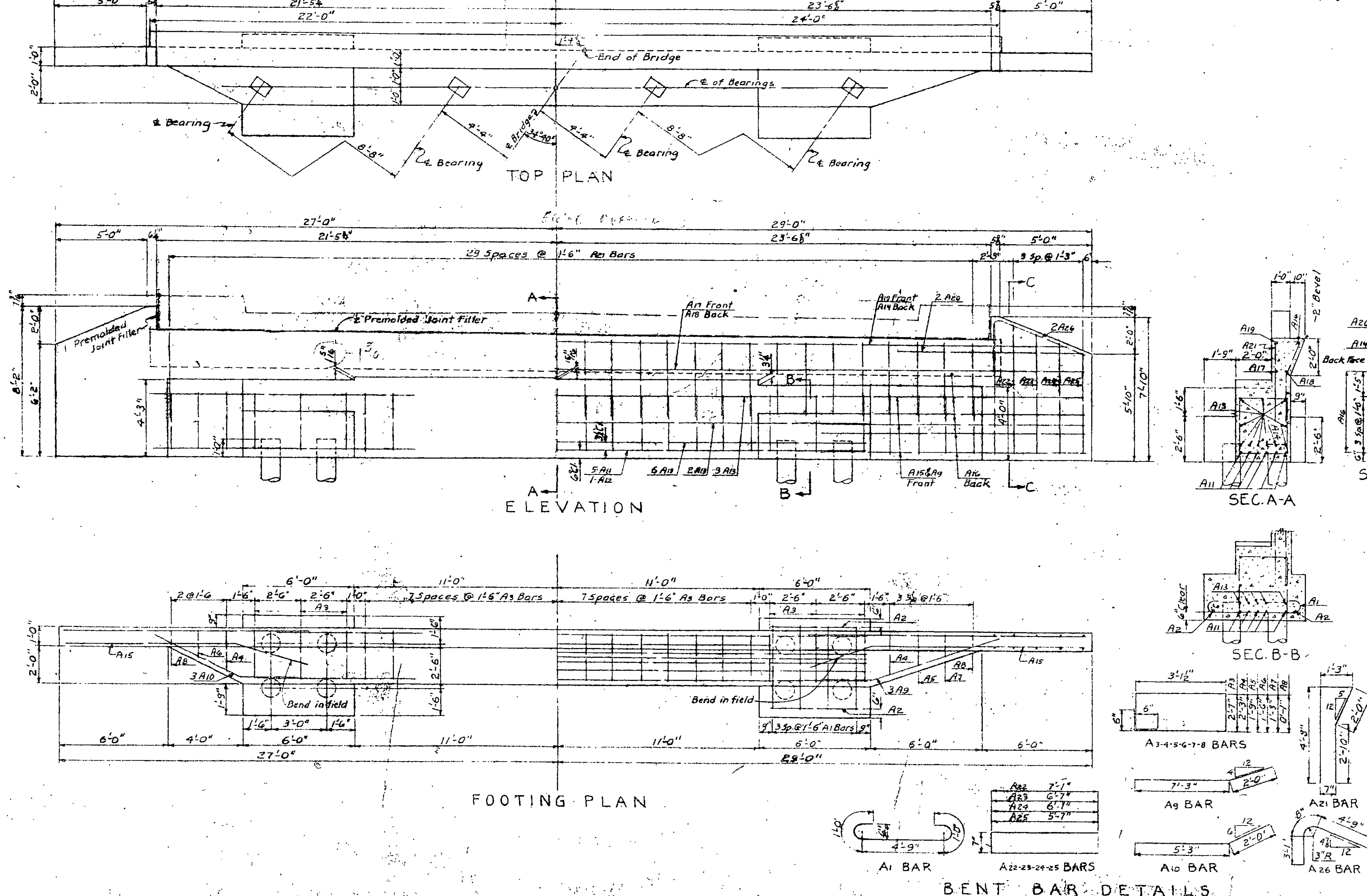
H-1325

5	N.D.				

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

BAR LIST*

MARK	No	SIZE	LENGTH	SHAPE
A1	8	8	6'-9"	Bent
A2	4	4	5'-0"	Str.
A3	21	5	12'-5"	Bent
A4	2	5	11'-9"	"
A5	1	5	10'-9"	"
A6	1	5	10'-3"	"
A7	1	5	9'-9"	"
A8	2	5	8'-5"	"
A9	3	5	9'-3"	"
A10	3	5	7'-3"	"
A11	5	10	33'-0"	Str.
A12	1	10	23'-3"	"
A13	11	8	33'-0"	"
A14	2	6	24'-0"	"
A15	6	4	14'-0"	"
A16	10	6	14'-0"	"
A17	2	4	28'-9"	"
A18	1	4	33'-0"	"
A19	2	6	28'-9"	"
A20	4	6	10'-0"	"
A21	30	4	10'-9"	Bent
A22	4	4	14'-9"	"
A23	2	4	13'-9"	
A24	2	4	12'-[illegible]	
A25	2	4	11'-[illegible]	
A26	4	6	8'-6"	



QUANTITIES	
Concrete Class A-1½	303C.Y.
Reinforcing Steel	3174 Lbs.
Piling	(See Layout)
Excavation	(See Layout)

ABUTMENT 5
FOR I-BEAM SPANS
FIXED END E
30' ROADWAY
34°40' SKEW

MADE BY	KJH
CHECKED BY	AJA
MADE BY	ICF
CHECKED BY	KCB
MADE BY	ICF
CHECKED BY	JC & KCB
MADE BY	KCB
CHECKED BY	DV

TRACING
QUANTITIES
REVISIONS

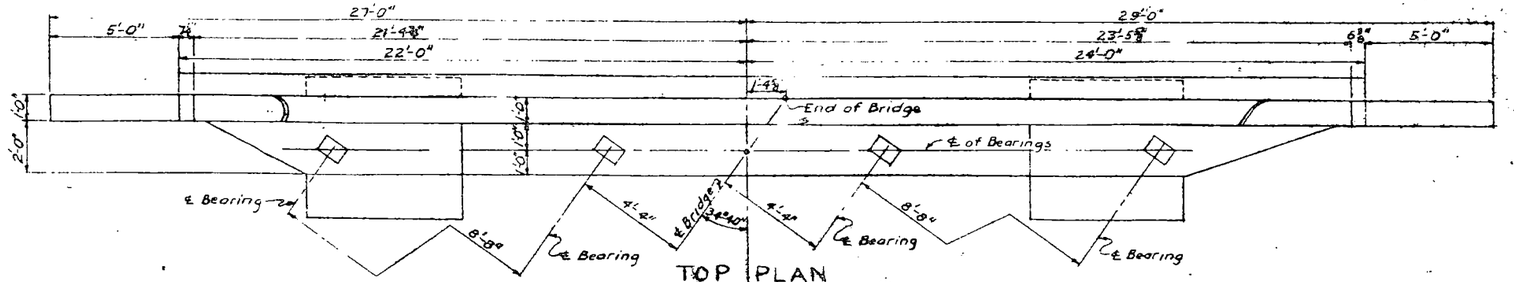
Fixed

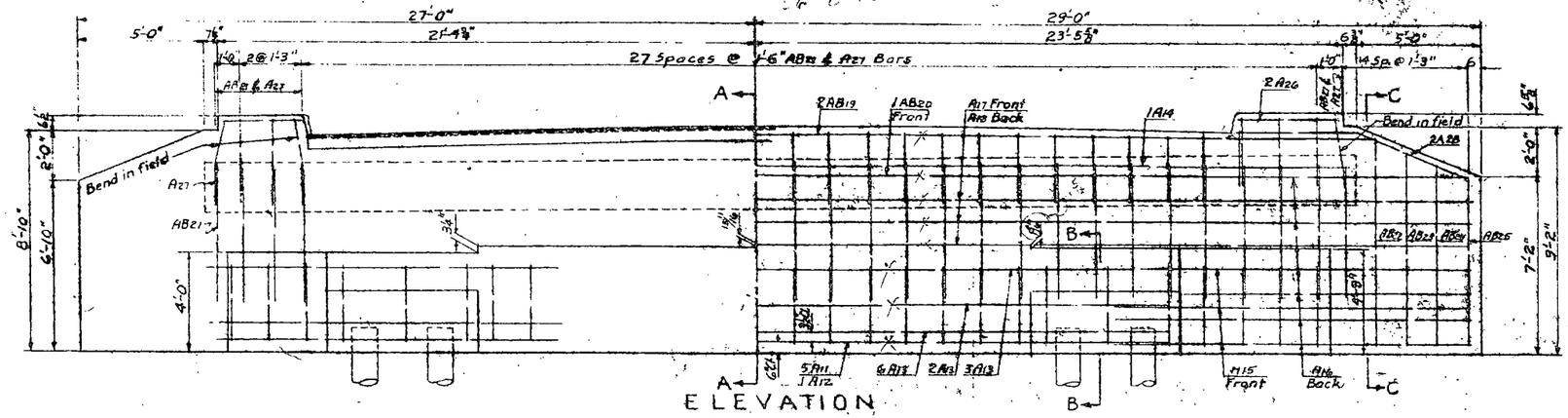
H-1242

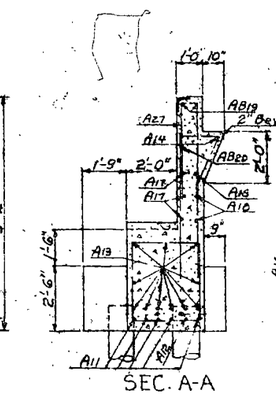
REVISIONS	MADE BY	CHKD BY	DATE

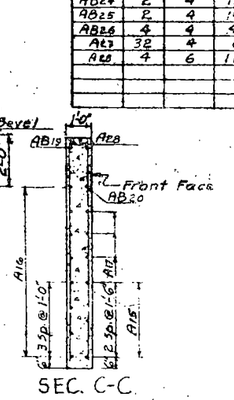
MADE BY	KJH	
CHECKED BY	AJA	
MADE BY	TCT	
CHECKED BY	TCT	
MADE BY	TCT	KCB
CHECKED BY	KCB	DV

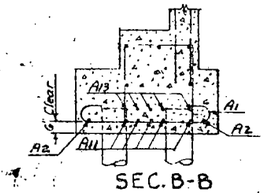
DETAILING	MADE BY	
	CHECKED BY	
TRACING	MADE BY	
	CHECKED BY	
QUANTITIES	MADE BY	
	CHECKED BY	

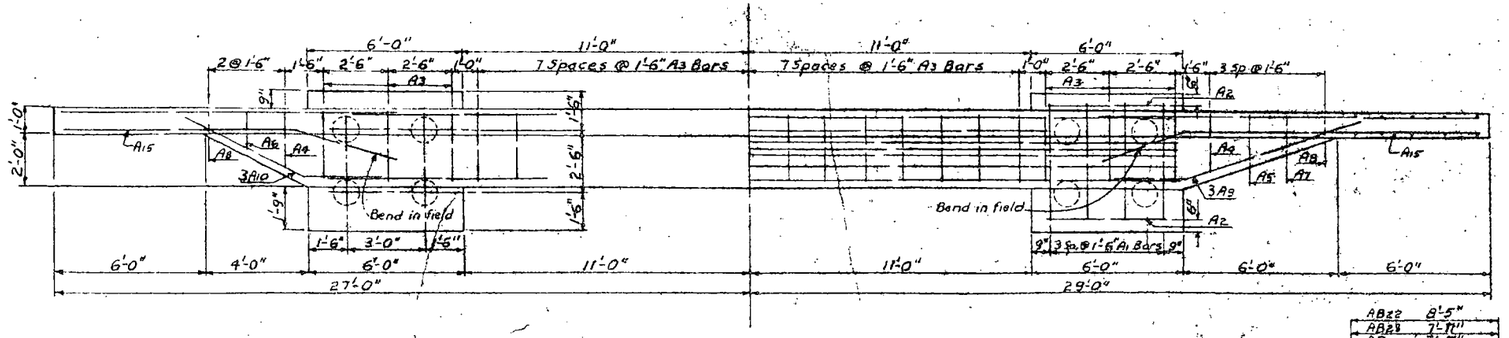


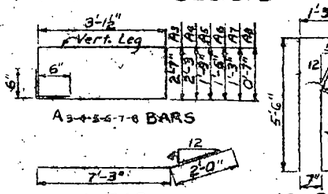


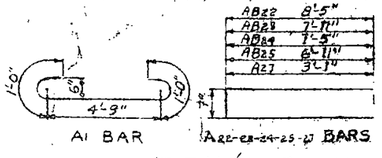












BENT BAR DETAILS

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

BAR LIST*

MARK	Nº	SIZE	LENGTH	SHAPE
A1	8	8	5'-9"	Bent
A2	4	4	5'-0"	Str.
A3	21	6	12'-5"	Bent
A4	2	5	11'-9"	"
A5	1	5	10'-9"	"
A6	1	5	10'-3"	"
A7	1	5	9'-9"	"
A8	2	5	8'-5"	"
A9	3	5	9'-3"	"
A10	3	5	7'-3"	"
A11	5	10	33'-0"	Str.
A12	1	10	23'-3"	"
A13	11	8	33'-0"	"
A14	2	6	24'-0"	"
A15	6	4	14'-0"	"
A16	16	6	14'-0"	"
A17	6	4	28'-9"	"
A18	3	4	33'-0"	"
AB19	4	6	24'-0"	"
AB20	2	4	29'-6"	"
AB21	32	4	12'-8"	Bent
AB22	2	4	11'-5"	"
AB23	2	4	16'-8"	"
AB24	2	4	15'-1"	"
AB25	2	4	13'-7"	"
AB26	4	4	12'-2"	"
A27	32	4	6'-3"	"
A28	4	6	11'-9"	"

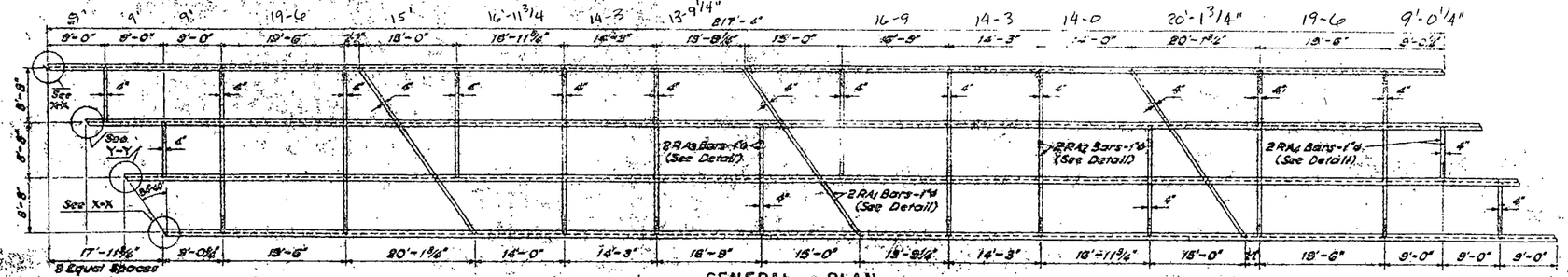
QUANTITIES	
Concrete Class A-1½	344 C.Y.
Reinforcing Steel	36859 LBS.
Piling	(See Layout)
Excavation	(See Layout)

ABUTMENT 1
FOR I-BEAM SPANS
EXPANSION END W
30' ROADWAY
34°40' SKEW

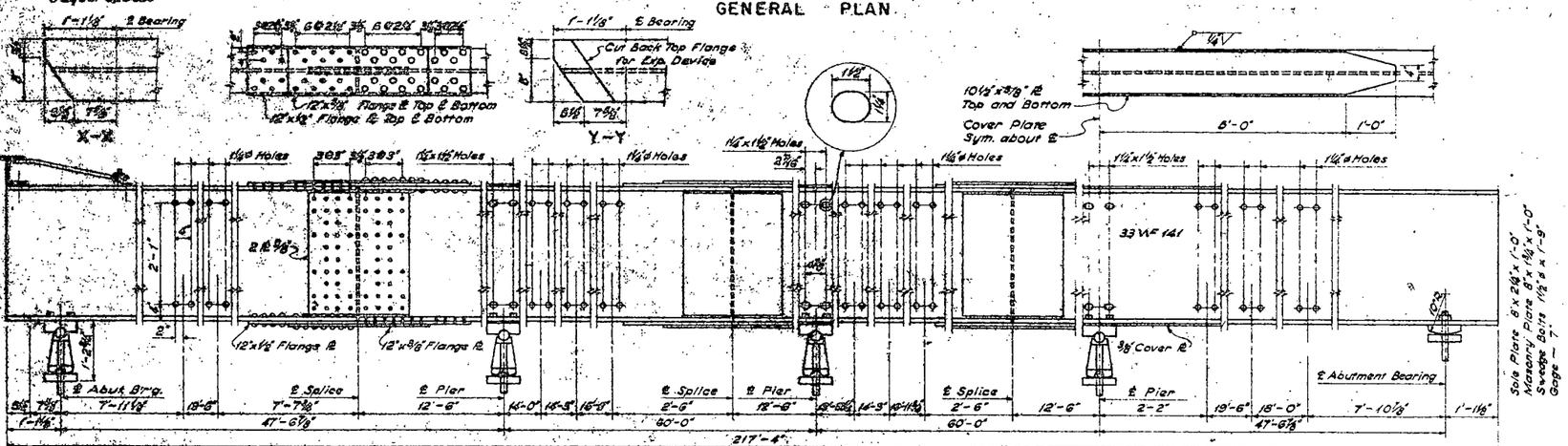
H-1243

H-1243

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



GENERAL PLAN

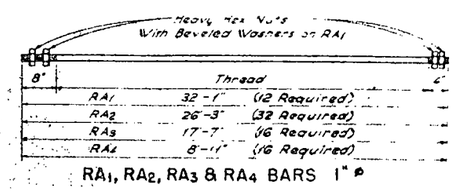


BEAM ELEVATION

OUTER BEAM AS SHOWN - INNER BEAMS SIMILAR
VARY SPACING OF HOLES FOR 7/8" BOLTS AS SHOWN ON GENERAL PLAN

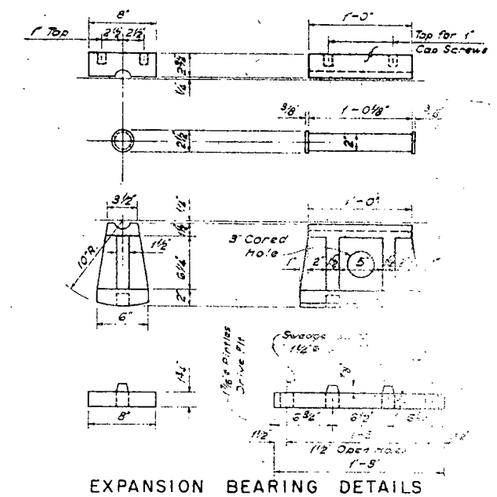
NOTE:

Welding will not be paid for directly, but shall be included in the unit bid price for structural steel.

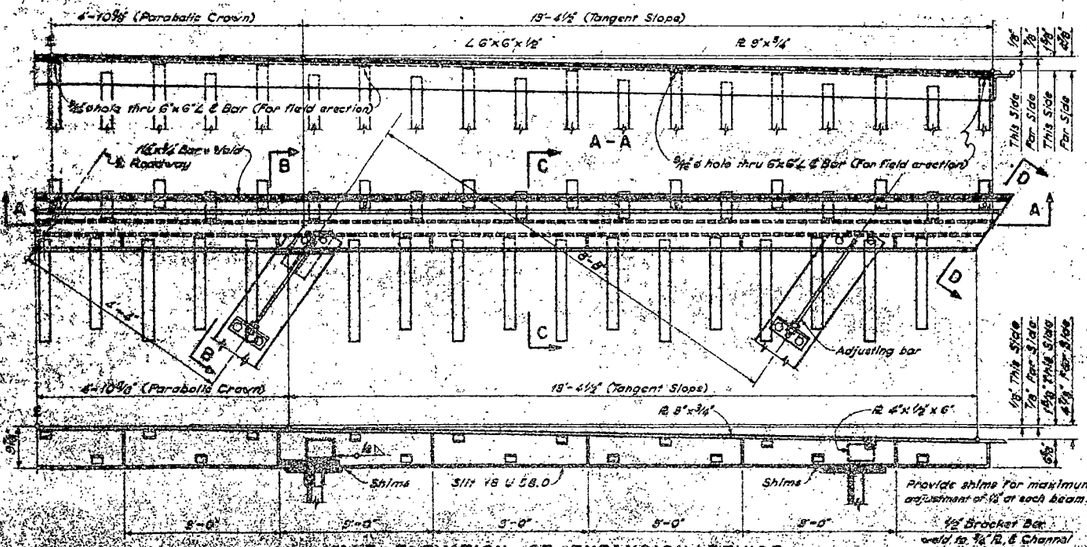


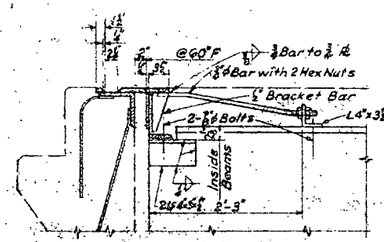
RA1	32'-1"	(12 Required)
RA2	26'-3"	(32 Required)
RA3	17'-7"	(16 Required)
RA4	8'-11"	(16 Required)

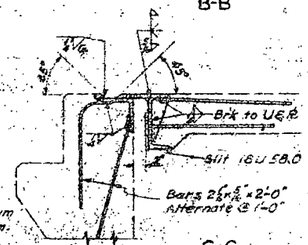
RA1, RA2, RA3 & RA4 BARS 1" ℗

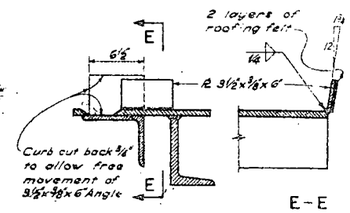


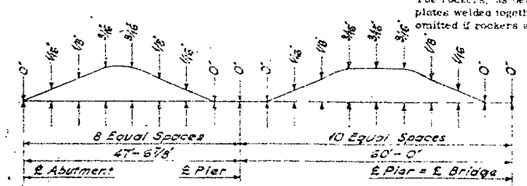
EXPANSION BEARING DETAILS











FIELD RISER DIAGRAM
SHOWING DIMENSION "a"

NOTES

ADJUSTMENT OF EXPANSION JOINTS

SHOP: 1. Place bridge in army and adjust both parts of expansion device to proper elevation and temperature, pour abutment seat to grade.
2. Weld the floor slab reinforcing steel within 3'0" of the expansion device to the slab unit shall be cleaned and free of any material to contact with the abutment unit so that the whole device may be properly placed. To allow vertical adjustment in the expansion joint by means of shims, 1/8" has been cut from the height of the joint.

PAINT: All exposed Steel surfaces shall be given one shop coat of Red Lead Paint and two field coats prepared ready mixed paint in accordance with section 30 and 142, 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.

GENERAL

All rivets are to be 7/8". Open holes are to be 15/16" except as noted. Field connections shall be made with either high tensile strength bolts or rivets.

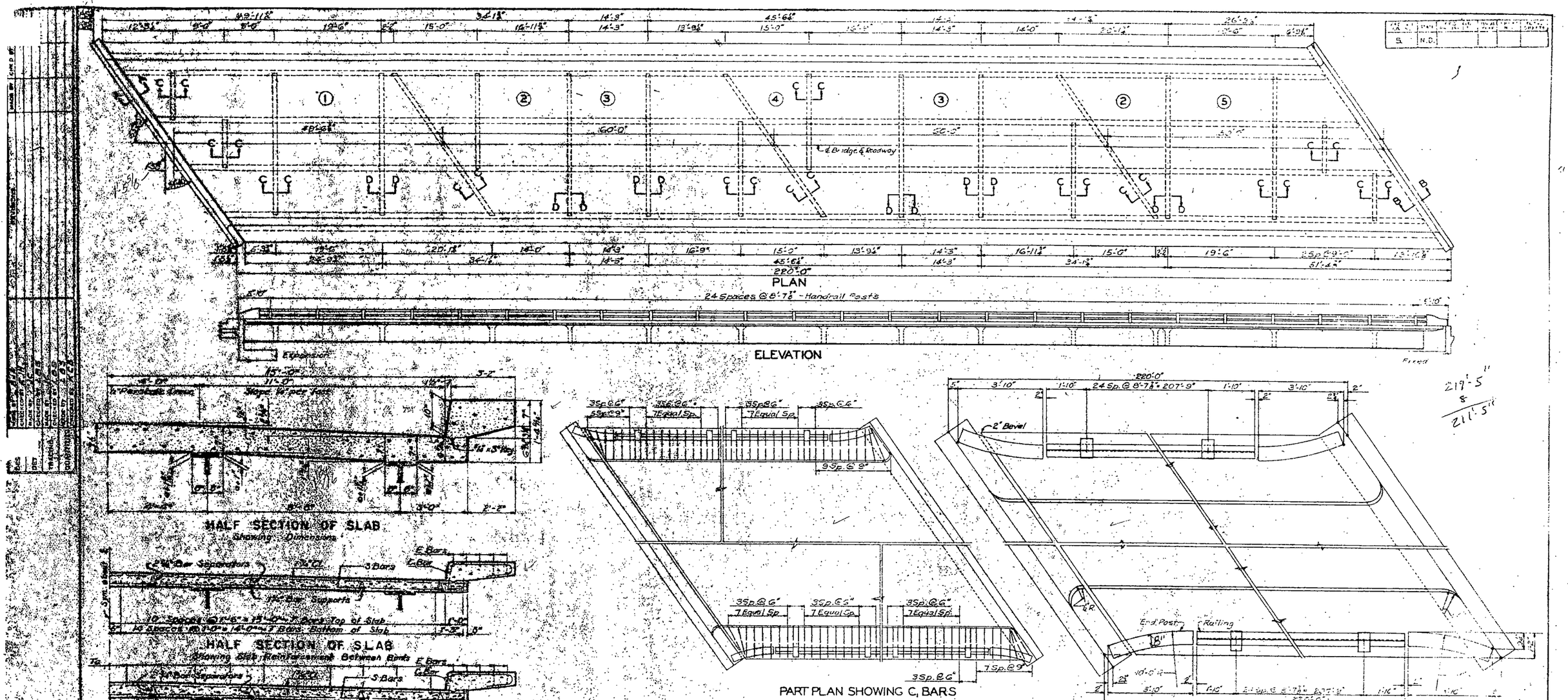
The Field Riser Diagram, shows dimensions from an assumed chord drawn between ends of the beam. Additions or subtractions must be made to the riser dimensions to compensate for the tolerance in the beam and the deflection due to the weight of the beam.

The rockers, as detailed, shall be constructed from structural steel plates welded together or shall be of cast steel. The 3" hole may be omitted if rockers are constructed of welded plates.

QUANTITIES	
Structural Steel	148,000 Lbs.

SUPERSTRUCTURE
FOUR SPAN
CONTINUOUS I-BEAM
OVERALL LENGTH 220'
34° 40' SKEW
H20 S16 LOADING (1953)

H-1137



NOTES

The slab shall be poured in the following sequence:
1. Slab Section 1.
2. Slab Section 5.
3. Slab Sections 3.
4. Slab Sections 2 over Piers.
5. Slab Section 4 over Pier.

Each curb shall be placed in one continuous operation.
Bevel all exposed edges with a triangular molding except as shown.
For railing details, see Drawing H0100.

SUPERSTRUCTURE
FOUR ~~THREE~~ SPAN
CONTINUOUS I-BEAM
OVERALL LENGTH 220'
34°40' SKEW
H20 S16 LOADING (1953)

H-1138-1

S2 to S20 Bars in Pairs, Top & Btm, 6" Sp.

S2 to S20 Bars in Pairs, Top & Btm, 6" Sp. | 53 Sl. Bars @ 6" Sp. Top and Bottom | 69 Sl. Bars at 21°-6" Sp. Top and Bottom | 29 Sl. Bars at about 6" Sp. Top and Bottom | 91 Sl. Bars at about 6" Sp. Top and Bottom | 63 Sl. Bars @ 6" Sp. Top & Btm | 89 Sl. Bars @ 6" Sp. Top & Btm | 36 Sl. Bars @ 6" Sp. (Top and Bottom)

T1 Bars | T2 Bars | T3 Bars | T4 Bars | T5 Bars | T6 Bars | T7 Bars

2 EW Bars | 2 EW Bars | 2 BW Bars | Sec Bars

2" Clear | EW Bars

SEC. A-A

SEC. B-B

SLAB NO. 1 | SLAB NO. 21 (T6 Bars not shown) | SLAB NO. 3 | SLAB NO. 4 (T6 Bars not shown) | SLAB NO. 3 | SLAB NO. 2 (T6 Bars not shown) | SLAB NO. 5

SLABS NO. 2 (T6 Bars) | SLAB NO. 4 (T6 Bars)

℄ of Pier | ℄ R'dway

BAR LIST ENTIRE FLOOR SLAB

MARK	NO.	SIZE	LENGTH	SHAPE
BW	8	#	25'-0"	Str.
BW4	29	5	6'-10"	Bent
BW2&3	9	5	8'-2"	"
BW6	34	6	21'-6"	"
EW	4	4	80'-6"	Str.
C1	5 (C)	5	6'-9"	Bent
E	84	6	38'-6"	Str.
RF	360	4	8'-0"	Bent
S1	792	5	31'-6"	Str.
S2 to S20	8 Sets	5	311'-11"	"
T1	53	5	86'-3"	"
T2	106	5	93'-6"	"
T3	106	4	21'-0"	"
T4	53	5	40'-0"	"
T5	53	4	87'-9"	"
T6	80	5	20'-10"	"
T7 to T26	4 Sets	4	173'-1"	"
T8 to T26	4 Sets	4	156'-3"	"

BW4 BAR

BW2&3 BARS

C1 BAR

RF BAR

See Drawing Hoisted for RBars and Railing Details

S2 TO S20 BARS
TWO SETS SHOWN

T7 TO T27 (ODD NO. BARS)
TWO SETS SHOWN

T8 TO T26 (EVEN NO. BARS)
TWO SETS SHOWN

BENT BAR DETAILS & BAR CUTTING DIAGRAMS

FIXED END EDGE BEAM

28 Spaces @ 1'-3" = 29 BW2 and 28 BW3 Bars

BW3 Bars | BW2 Bars | 1" Joint Filler

QUANTITIES

Concrete Class A1	228.0 CY
Reinforcing Steel	51,665 Lbs

SUPERSTRUCTURE

FOUR ~~THREE~~ SPAN

CONTINUOUS I-BEAM

OVERALL LENGTH: 220'

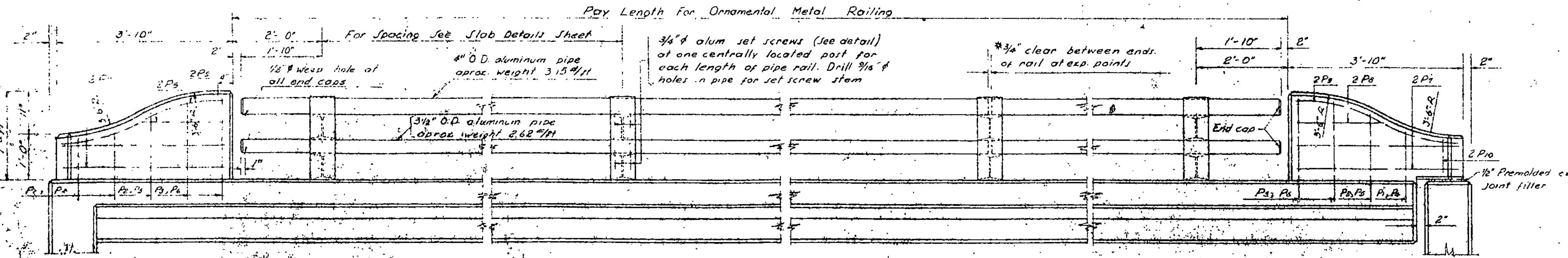
34°-40' SKEW

H20 S16 LOADING (1953)

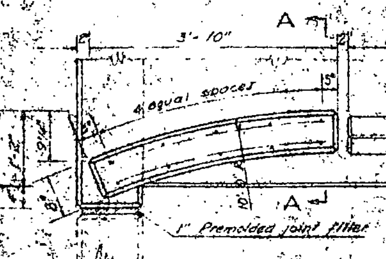
H-1138-2

H-1138-2

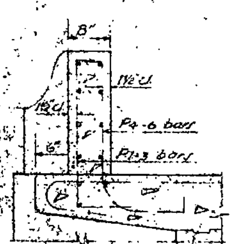
FED. AID DIV. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
S	N.D.				



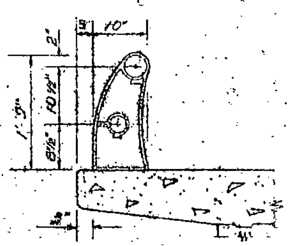
PART ELEVATION



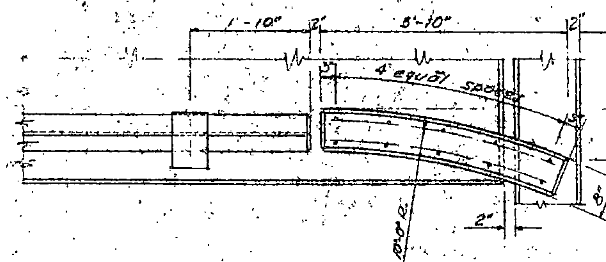
PART PLAN - FIXED END



SECTION A-A



TYPICAL SECTION



PART PLAN - EXPANSION END

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 26

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 alumilite finish conforming to A.S.T.M. Spec B 211-55T alloy CG42A 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 lacquer.

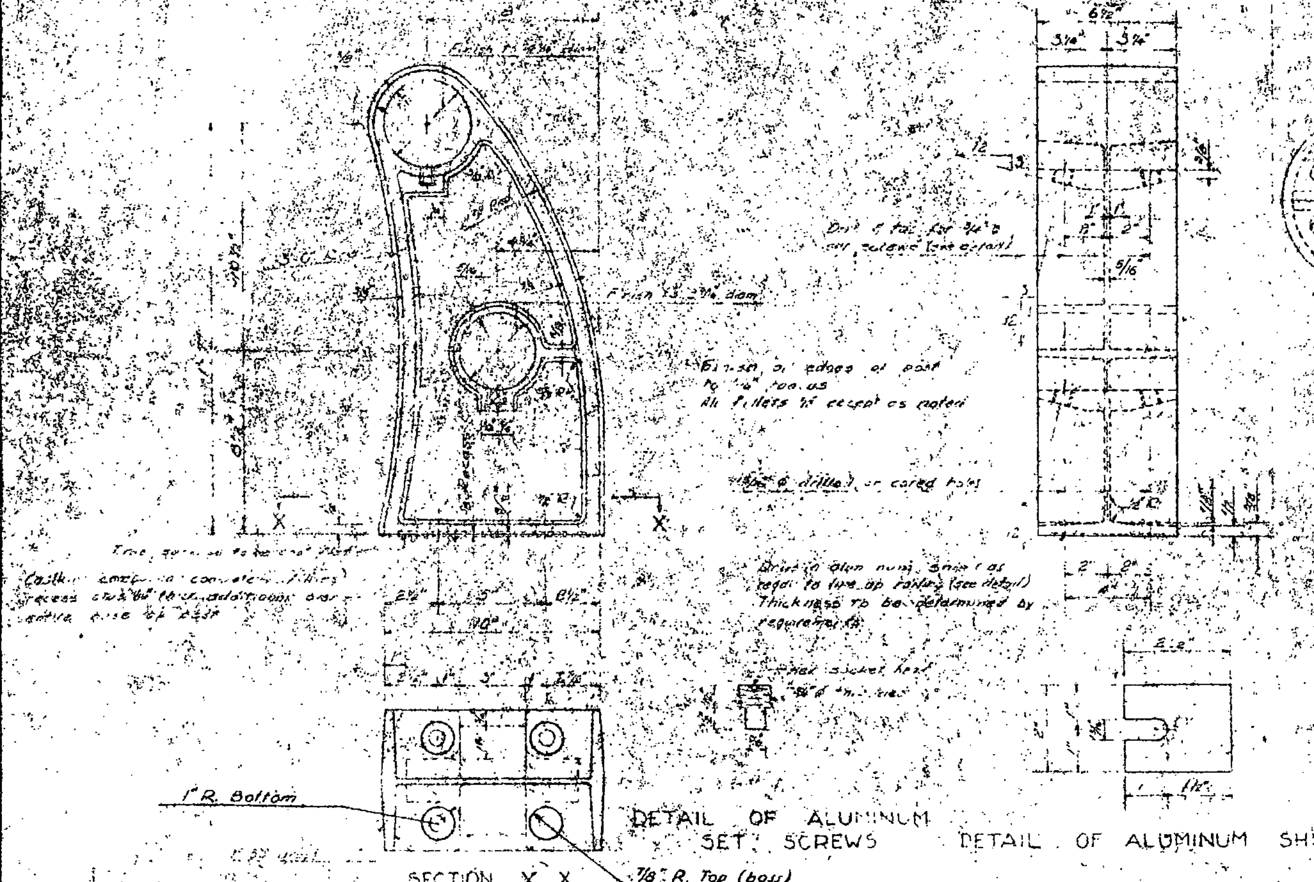
The bottom of rail posts in contact with concrete shall be coated with 'Alumalastic Compound' as manufactured by the Parr Paint and Color Company of Cleveland, Ohio, or approved equal (knife grade). Excess compound shall be neatly removed after the posts are bolted into final position.

All posts shall be set normal to grade.

All pipe, rail posts, anchor bolt assemblies, bolts, screws, shims, pins, end caps and compound shall be included in the price bid for Ornamental Metal Railing.

All concrete in the end posts shall be Class A-[illegible]

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

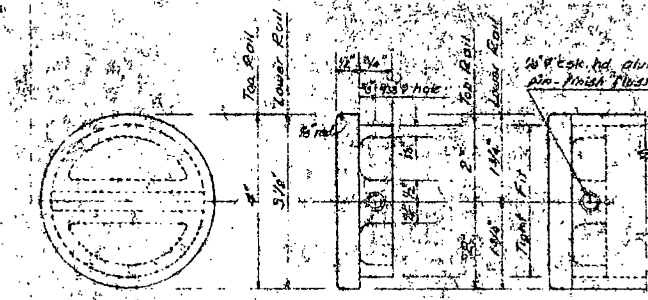


DETAIL OF ALUMINUM SET SCREWS

DETAIL OF ALUMINUM SHIMS

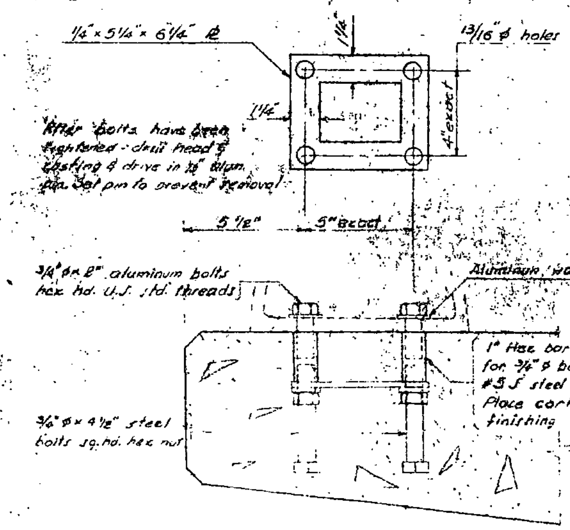
SECTION X-X

RAIL POST DETAILS

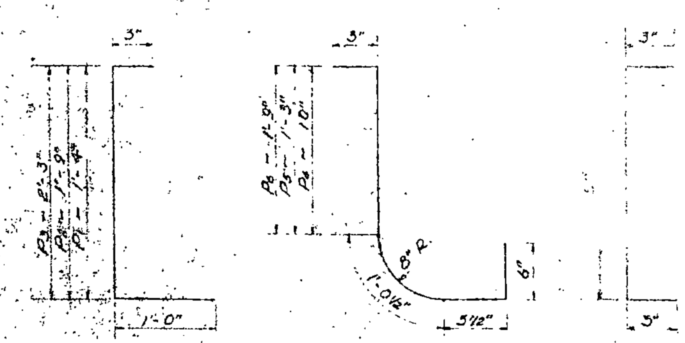


CAST ALUMINUM END CAP FOR RAIL

BAR LIST (4 END POSTS)				
MARK	No.	SIZE	LENGTH	SHAPE
P1	6	5/8" ø	2'-7"	Bent
P2	4	"	3'-0"	"
P3	8	"	3'-6"	"
P4	6	"	3'-1"	"
P5	4	"	3'-6"	"
P6	8	"	4'-0"	"
P7	16	1/2" ø	3'-9"	Field Bent
P8	8	"	2'-0"	"
P9	8	5/8" ø	4'-0"	"
P10	4	5/8" ø	1'-2"	Bent



ANCHOR BOLT ASSEMBLY



BENT BAR DETAILS

NOTES:
End posts shall be given the "Rubbed Surface Finish."
Railing and end posts quantities are included in slab quantities on slab sheet.

STANDARD RAILING DETAILS

H-0100

North Dakota State Highway Department

SHEET NO. 1 OF 1

ABSTRACT OF BIDS RECEIVED

Project No. FI--94-7-14 CONTRACT NO. 7
County & Date STUTSMAN APRIL 23,1965
Length & Type 00 000 MILES BRIDGE REPAIR &
INCIDENTAL ITEMS
Completion Time AUG.1,1965

SPC. NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	APPROXIMATE QUANTITY	Engineer's Estimate BID PRICE	Engineer's Estimate AMOUNT	Industrial Builders, Inc. Fargo, North Dakota BID PRICE	Industrial Builders, Inc. Fargo, North Dakota AMOUNT	Lindberg Constr. Co. Jamestown, North Dakota BID PRICE	Lindberg Constr. Co. Jamestown, North Dakota AMOUNT
		BIDDER			Engineer's Estimate		Industrial Builders, Inc. Fargo, North Dakota		Lindberg Constr. Co. Jamestown, North Dakota	
		C. C.					C. C. Bond		C. C. Bond	
		RANK				VENDOR NO.	RANK 1	VENDOR NO.	RANK 2	VENDOR NO.
202	1	REMOVING PAVEMENT	SQ YD	492.000	1.5000	738.00	2.5000	1,230.00	1.0000	492.00
208	2	CLASS 1 EXCAVATION	CU YD	334.000	5.0000	1,670.00	4.0000	1,336.00	2.0000	668.00
228	3	SELECT BACKFILL	CU YD	310.000	5.0000	1,550.00	5.5000	1,705.00	3.0000	930.00
230	4	SUBGRADE PREPARATION TYPE III	SQ YD	512.000	.1000	51.20	1.0000	512.00	1.0000	512.00
302	5	AGGREGATE BASE COURSE CL.1	CU YD	42.000	3.0000	126.00	5.0000	210.00	3.0000	126.00
560	6	STEEL FABRIC	SQ YD	738.000	.5000	369.00	2.0000	1,476.00	2.0000	1,476.00
550	7	REINFORCED CONC.PAVE.HES	SQ YD	512.000	13.0000	6,656.00	15.0000	7,680.00	10.0000	5,120.00
610	8	HIGH EARLY CONCRETE CLASS AEI	CU YD	28.000	90.0000	2,520.00	100.0000	2,800.00	100.0000	2,800.00
550	9	REINFORCEMENT BARS	LB	14,366.000	.1500	2,154.90	.1800	2,585.88	.1800	2,585.88
612	10	REINFORCING STEEL	LB	1,032.000	.1500	154.80	.2000	206.40	.1800	185.76
622	11	STEEL PILING	L FT	930.000	8.0000	7,440.00	8.5000	7,905.00	9.0000	8,370.00
	12	JACKING OF ABUTMENTS	L SUM	1.000	2,000.0000	2,000.00	1,800.0000	1,800.00	2,000.0000	2,000.00
	13	RELOCATION OF BOLSTERS	NO	12.000	100.0000	1,200.00	90.0000	1,080.00	100.0000	1,200.00
	14	HIGH TENSILE ALLOY RODS	L SUM	1.000	800.0000	800.00	600.0000	600.00	2,000.0000	2,000.00
724	15	TEMPORARY CROSSING&DETOUR	L SUM	1.000	4,000.0000	4,000.00	9,500.0000	9,500.00	15,000.0000	15,000.00
	16	BRIDGE BENCH MARKS	SET	1.000	150.0000	150.00	150.0000	150.00	200.0000	200.00
		TOTAL				31,570.90		40,776.28		43,665.64

Project No. FI--94-7-14 CONTRACT NO. 7
County & Date STUTSMAN APRIL 23,1965
Length & Type 00 000 MILES BRIDGE REPAIR &
INCIDENTAL ITEMS
Completion Time AUG.1,1965

SPC. NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	APPROXIMATE QUANTITY	Swingen Construction Co. Grand Forks, North Dakota BID TIME	Swingen Construction Co. Grand Forks, North Dakota AMOUNT	Northern Improvement Co. Fargo, North Dakota BID PRICE	Northern Improvement Co. Fargo, North Dakota AMOUNT	The Milton Rue Co. Bismarck, North Dakota BID PRICE	The Milton Rue Co. Bismarck, North Dakota AMOUNT
		BIDDER			Swingen Construction Co. Grand Forks, North Dakota		Northern Improvement Co. Fargo, North Dakota		The Milton Rue Co. Bismarck, North Dakota	
		C. C.			Bond		Bond		Bond	
		RANK			3	VENDOR NO.	RANK 4	VENDOR NO.	RANK 5	VENDOR NO.
202	1	REMOVING PAVEMENT	SQ YD	492.000	7.0000	3,444.00	3.0000	1,476.00	10.0000	4,920.00
208	2	CLASS 1 EXCAVATION	CU YD	334.000	4.5000	1,503.00	4.5000	1,503.00	3.7500	1,252.50
228	3	SELECT BACKFILL	CU YD	310.000	4.5000	1,395.00	4.2000	1,302.00	4.0000	1,240.00
230	4	SUBGRADE PREPARATION TYPE III	SQ YD	512.000	3.5000	1,792.00	.7000	358.40	.3500	179.20
302	5	AGGREGATE BASE COURSE CL.1	CU YD	42.000	5.0000	210.00	4.0000	168.00	5.5000	231.00
560	6	STEEL FABRIC	SQ YD	738.000	2.5000	1,845.00	1.0000	738.00	1.0000	738.00
550	7	REINFORCED CONC.PAVE.HES	SQ YD	512.000	10.0000	5,120.00	20.0000	10,240.00	25.0000	12,800.00
610	8	HIGH EARLY CONCRETE CLASS AEI	CU YD	28.000	185.0000	5,180.00	150.0000	4,200.00	150.0000	4,200.00
550	9	REINFORCEMENT BARS	LB	14,366.000	.2200	3,160.52	.1500	2,154.90	.1500	2,154.90
612	10	REINFORCING STEEL	LB	1,032.000	.2200	227.04	.1500	154.80	.1500	154.80
622	11	STEEL PILING	L FT	930.000	12.5000	11,625.00	9.0000	8,370.00	15.0000	13,950.00
	12	JACKING OF ABUTMENTS	L SUM	1.000	2,400.0000	2,400.00	1,300.0000	1,300.00	9,000.0000	9,000.00
	13	RELOCATION OF BOLSTERS	NO	12.000	200.0000	2,400.00	150.0000	1,800.00	120.0000	1,440.00
	14	HIGH TENSILE ALLOY RODS	L SUM	1.000	2,000.0000	2,000.00	500.0000	500.00	1,250.0000	1,250.00
724	15	TEMPORARY CROSSING&DETOUR	L SUM	1.000	2,600.0000	2,600.00	12,000.0000	12,000.00	6,000.0000	6,000.00
	16	BRIDGE BENCH MARKS	SET	1.000	200.0000	200.00	150.0000	150.00	140.0000	140.00
		TOTAL				45,101.56		46,415.10		59,650.40

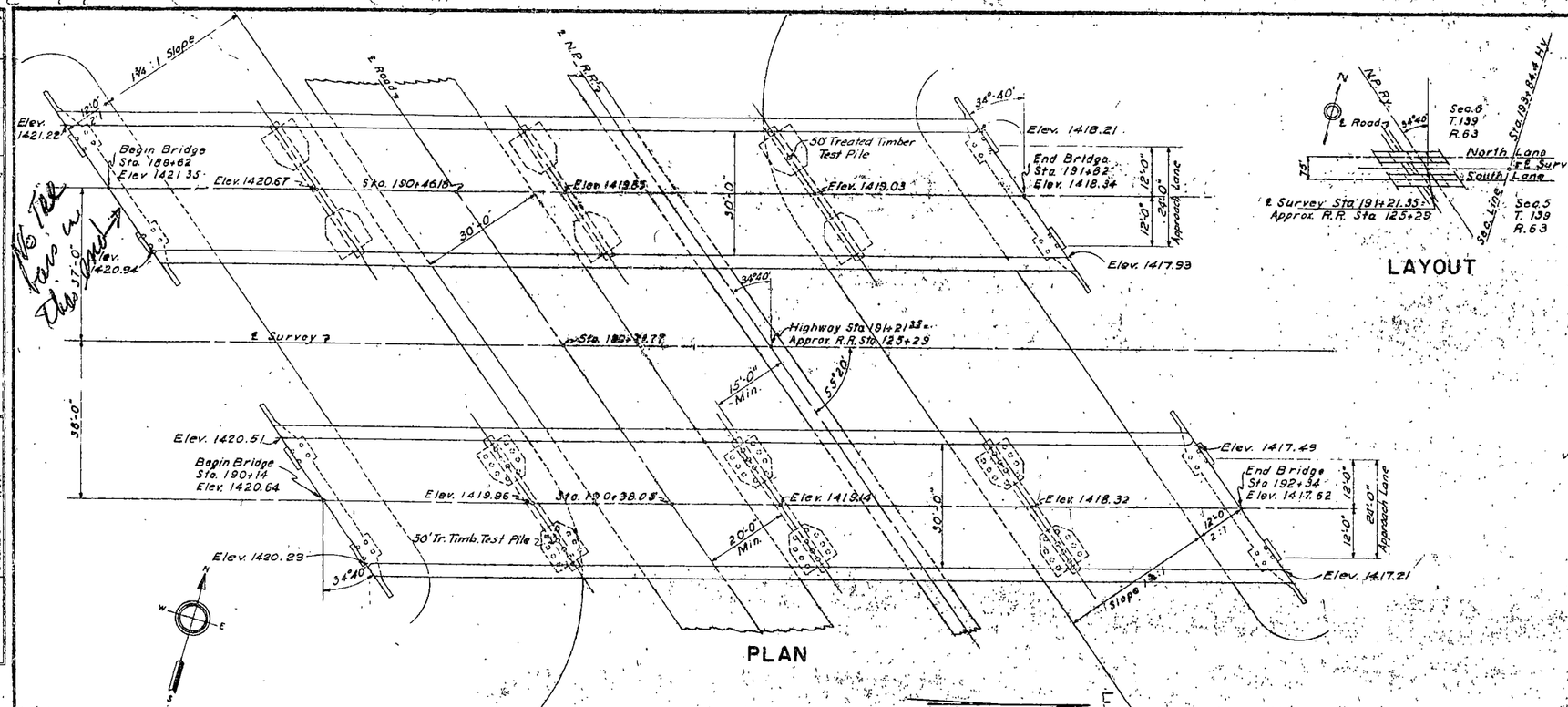
Limitation: one structural interstate project

ACTION TAKEN BY STATE HIGHWAY COMMISSIONER:— AWARD TO _____ WHEN PRELIMINARY ARRANGEMENTS ARE COMPLETED.

FORM 297 S (22)

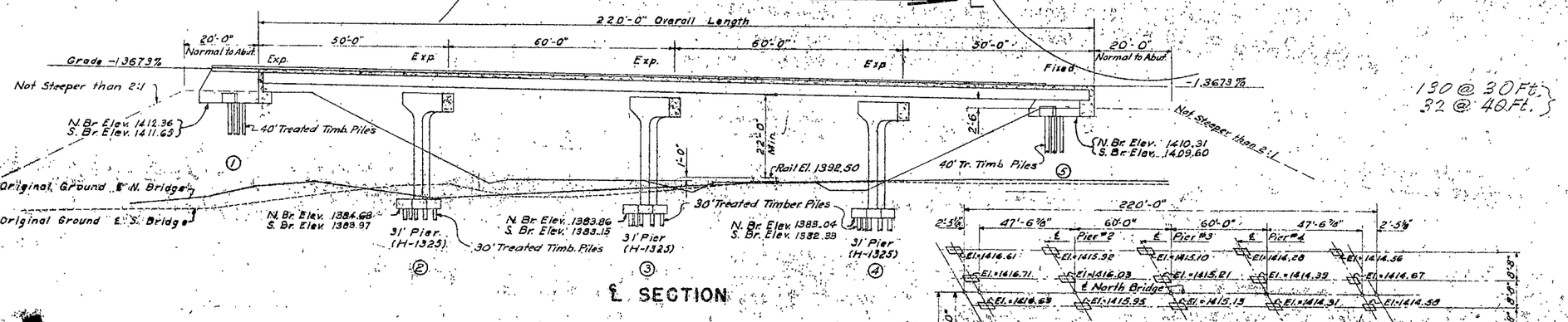
DATE OF AWARD _____ 19__

STATE HIGHWAY COMMISSIONER

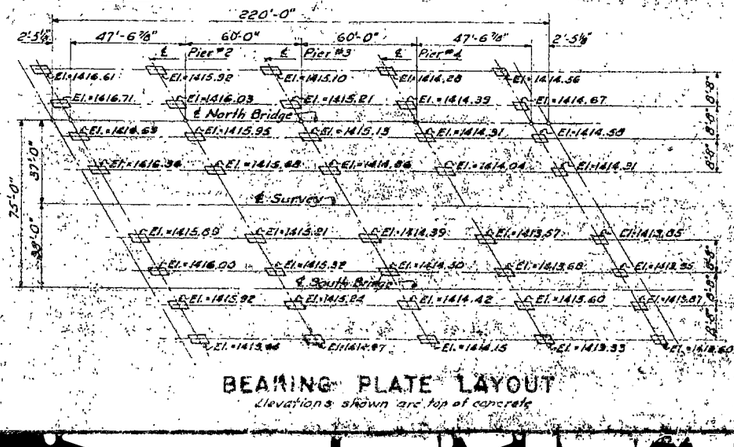


PLAN

LAYOUT



℄ SECTION



BEARING PLATE LAYOUT

Elevations shown are top of concrete

CODE: X531

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

NOTES:

EMBANKMENT

The embankment above the original ground at both ends of the bridge, as shown on the elevation view, and as shown on the grading plans or as staked by the Engineer, shall be placed and compacted according to Sec. 17 of the Standard Specifications before any abutment piles are driven. Fill material shall be obtained within 1800 feet of the structure location. The method of measurement and basis of payment for all excavation and embankment shall be the cubic yard in place in the embankment. The Engineer reserves the right to withdraw this item from structural contract.

PILING

A cutoff of two feet has been assumed in estimating the pay lengths (below cutoff) of all timber piles as compared to the ordered lengths.

All abutment pilings must penetrate at least fifteen feet into the original ground. Pilot holes of sufficient depth to relieve anticipated difficulty of driving through the embankment material will be required if necessary.

REINFORCING STEEL

Bent bar dimensions are given center to center unless noted. The bar fabricator shall add a prefix to all bar designations to differentiate between structures and parts of structures.

CONCRETE

All exposed edges of concrete shall be beveled with ¾" triangular molding except as shown on the plans.

The "Rubbed Surface Finish" shall be given to the [illegible] posts and to the outside and roadway vertical faces of [illegible]

All other surfaces shall be given the "Ordinary Surface Finish".

All concrete shall be class A-1½ and shall be compacted by vibration.

The cost of furnishing and placing the premolded expansion joint filler and other incidental items shall be included in the unit price bid for Class A-1½ concrete

ESTIMATE OF QUANTITIES

SPEC NO	BID ITEM		
12	REMOVING EXISTING STRUCTURE AT STA.		
16	EXCAVATION CLASS 1		CU. YD.
	CLASS 2	525	CU. YD.
	CLASS 3		CU. YD.
17 △	EMBANKMENT	28,000	CU. YD.
60A	CONCRETE CLASS A-1		CU. YD.
	CLASS A-1½	889.0	CU. YD.
62A	REINFORCING STEEL	165,858	LBS.
63	STRUCTURAL STEEL	248,900	LBS.
64A	UNTREATED TIMBER		B.M.
64D	TREATED TIMBER		B.M.
65A	UNTREATED TIMBER PILING		LIN. FT.
65D	TREATED TIMBER PILING	130 @ 30 FT. 32 @ 40 FT.	LIN. FT. 4856 LIN. FT.
65E	UNTREATED TIMBER TEST PILES		EACH
65L	TREATED TIMBER TEST PILES	AT 30 FT.	2 EACH
81	TEMPORARY CROSSING AND DETOUR		
1	ORNAMENTAL METAL RAILING	847	847 LIN. FT.
	△ SEE NOTES		
	SEE SPECIAL PROVISIONS		

13640'
12216'
4856

STRUCTURAL DRAWINGS

GENERAL DRAWING	X006 (THIS SHEET)
SUBSTRUCTURE	H-1325, H-1242 & H-1243
SUPERSTRUCTURE	H-1137, H-1138-1, & H-1138-2, & H-0100
DESIGN LOADING	H20 S16 (1953)
SCALE	1 INCH = 15 FEET

NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

OVERHEAD

NORTHERN PACIFIC R.R.

PROJECT I-ING-01-7(11) STA. 190+97.7

STUTSMAN COUNTY

APPROVED

Jan. 19 1957
DATE

Joseph R. Kirby
BRIDGE ENGINEER

WILSON E. KIRBY — REGISTERED — PROFESSIONAL ENGINEER — NORTH DAKOTA

BENCH MARKS

NO.	DESCRIPTION	LOCATION	ELEV
28	Tr. Mon. Hub Gds. by T.P.	Sta. 183+32 ~ 108 Rt.	1386.74
29	Tr. Mon. Hub Gds. by T.P.	Sta. 189+82 ~ 157 Rt.	1386.17
30	Tr. Mon. Hub Gds. by T.P.	Sta. 195+27 ~ 376 Lt.	1400.91

PILE LOADING

LOCATION	DEAD LOAD	LIVE LOAD	EARTH	WIND 50 LB.	WIND 15 LB.	WIND 100 LB. L.L.	LONG. FORCE	ICE		DESIGN LOAD
Abut.	11.5 T.	6.9 T.								18.4 T.
Pier	11.2 T.	3.2 T.	4.6 T.							19.0 T.

GRAPHY
DETAILS
TRACING
QUANTITIES

PLOTTED BY
CHECKED BY
MADE BY
CHECKED BY
MADE BY
CHECKED BY

REVISIONS

MADE BY

X006

REVISIONS	DATE	MADE BY	CHKD BY

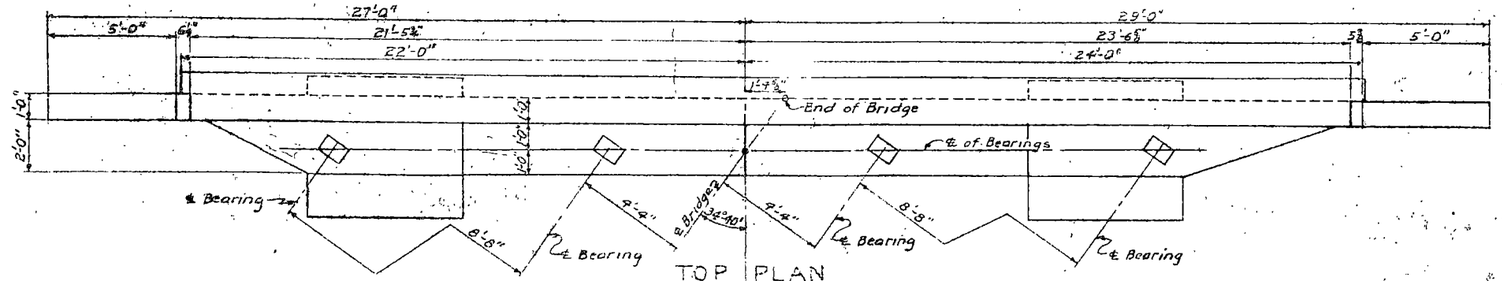
DESIGN	MADE BY	KJH
	CHECKED BY	AJA
DETAILS	MADE BY	ICF
	CHECKED BY	KCB
TRACING	MADE BY	ICF & KCB
	CHECKED BY	KCB
QUANTITIES	MADE BY	DV
	CHECKED BY	

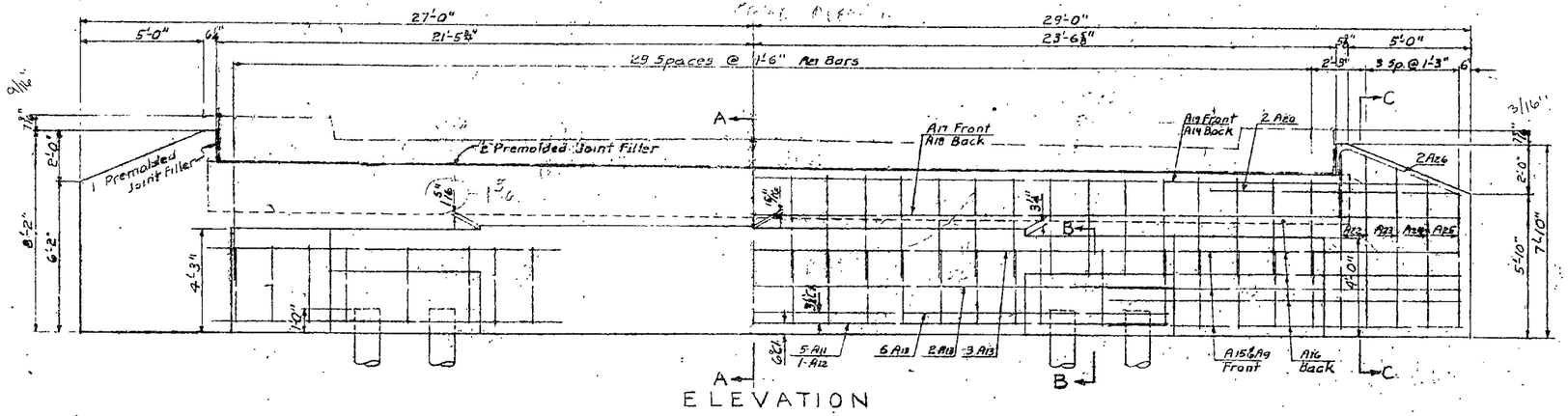
FED. AID PROJECT NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
	N.D.			

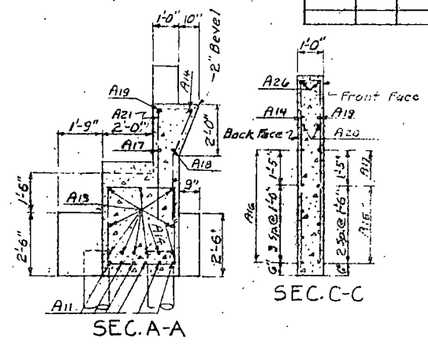
*The fabricator shall add a prefix to each bar designation to differentiate between structures and/or units of a structure on the project.

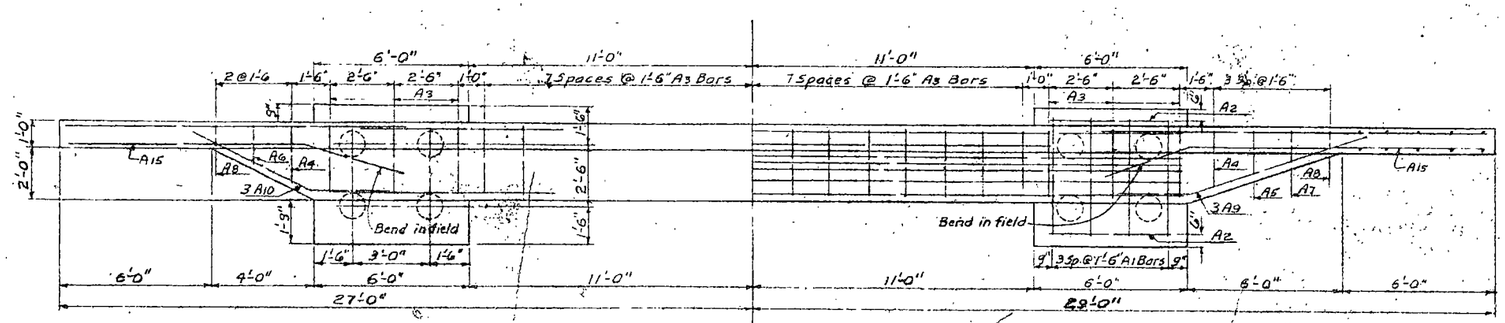
BAR LIST*

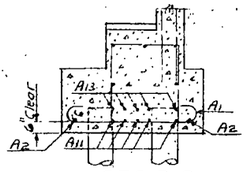
MARK	NO	SIZE	LENGTH	SHAPE
A1	8	8	6'-9"	Bent
A2	4	4	5'-0"	Str.
A3	21	5	12'-5"	Bent
A4	2	5	11'-9"	"
A5	1	5	10'-9"	"
A6	1	5	10'-3"	"
A7	1	5	9'-9"	"
A8	2	5	8'-5"	"
A9	3	5	9'-3"	"
A10	3	5	7'-3"	"
A11	5	10	33'-0"	Str.
A12	1	10	23'-3"	"
A13	11	8	33'-0"	"
A14	2	6	24'-0"	"
A15	6	4	14'-0"	"
A16	10	6	14'-0"	"
A17	2	4	28'-9"	"
A18	1	4	33'-0"	"
A19	2	6	28'-9"	"
A20	4	6	10'-0"	"
A21	30	7	10'-9"	Bent
A22	4	4	14'-9"	"
A23	2	4	13'-9"	"
A24	2	4	12'-9"	"
A25	2	4	11'-9"	"
A26	4	6	8'-9"	"

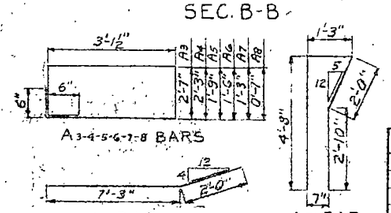


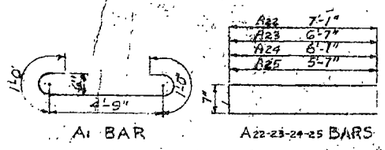












QUANTITIES	
Concrete Class A-1c	303C.Y.
Reinforcing Steel	31741 Lbs.
Piling	(See Layout)
Excavation	(See Layout)

ABUTMENT 5

FOR I-BEAM SPANS

FIXED END E

30' ROADWAY

34°40' SKEW

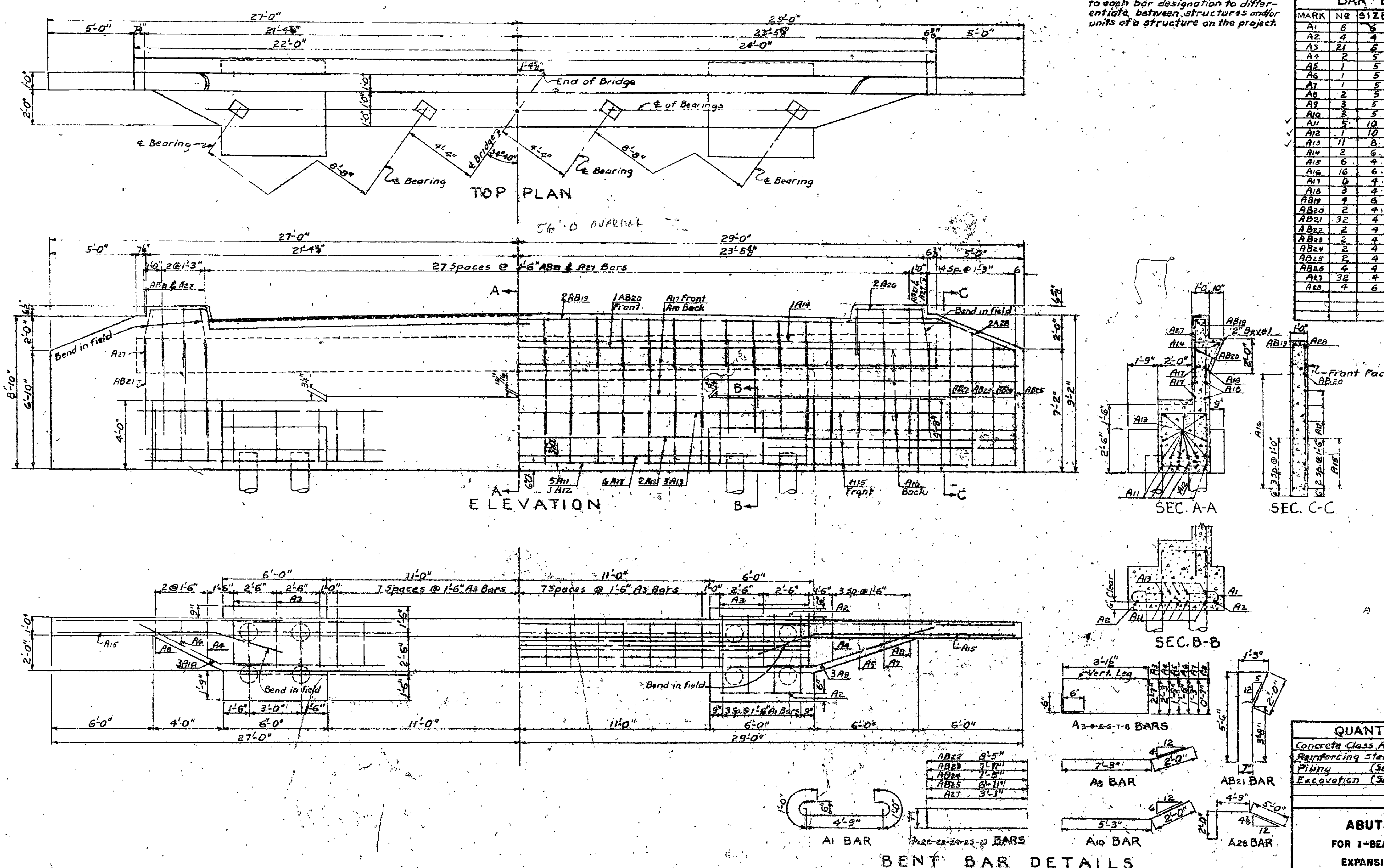
H-1242

Fixed

H-1242

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

BAR LIST*				
MARK	№	SIZE	LENGTH	SHAPE
A1	8	6	6'-9"	Bent
A2	4	4	5'-0"	Str.
A3	21	5	12'-5"	Bent
A4	2	5	11'-9"	"
A5	1	5	10'-9"	"
A6	1	5	10'-3"	"
A7	1	5	9'-9"	"
A8	2	5	8'-5"	"
A9	3	5	9'-3"	"
A10	3	5	7'-3"	"
A11	5	10	33'-0"	Str.
A12	1	10	23'-3"	"
A13	11	8	33'-0"	"
A14	2	6	24'-0"	"
A15	6	4	14'-0"	"
A16	16	6	14'-0"	"
A17	6	4	28'-9"	"
A18	3	4	33'-0"	"
AB19	4	6	26'-0"	"
AB20	2	4	29'-6"	"
AB21	32	4	12'-8"	Bent
AB22	2	4	17'-5"	"
AB23	2	4	16'-5"	"
AB24	2	4	15'-9"	"
AB25	2	4	14'-5"	"
AB26	4	4	4'-0"	"
A27	32	4	6'-9"	"
A28	4	6	11'-9"	"



QUANTITIES	
Concrete Class A-1½	344 C.Y.
Reinforcing Steel	5689 LBS
Piling	(See Layout)
Excavation	(See Layout)

ABUTMENT 1

FOR I-BEAM SPANS

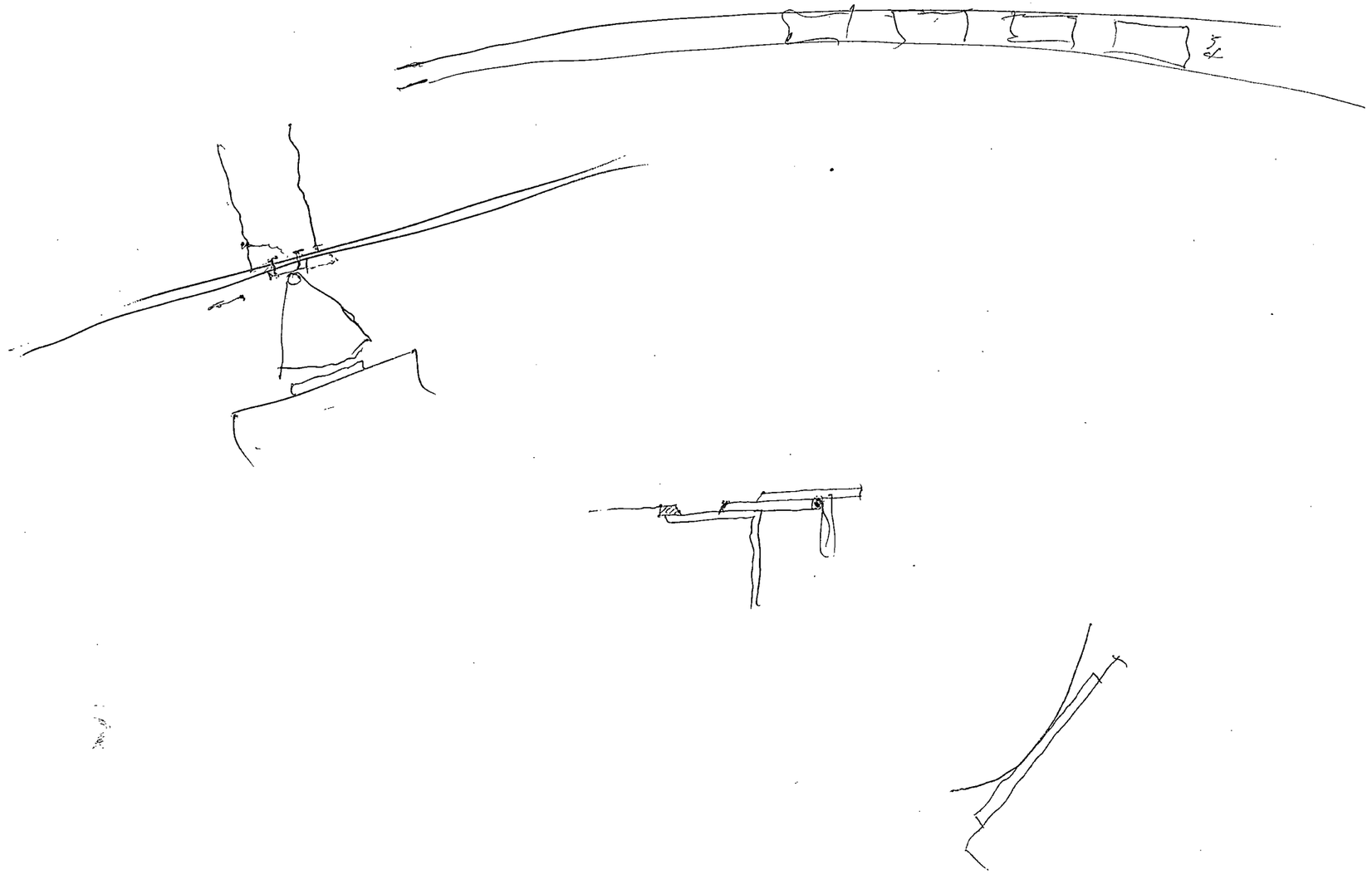
EXPANSION END W

30' ROADWAY

34°40' SKEW

IN	MADE BY	KJH
	CHECKED BY	AJA
DETAILS	MADE BY	TCP
	CHECKED BY	KCB
TRACING	MADE BY	TCP
	CHECKED BY	JC & KCB
QUANTITIES	MADE BY	KCB
	CHECKED BY	DV

REVISIONS



DESIGN	MADE BY	K.V.H.
	CHECKED BY	A.V.A.
DETAILS	MADE BY	J.C.F.
	CHECKED BY	J.C.F.
TRACING	MADE BY	J.C.
	CHECKED BY	T.B.S.
QUANTITIES	MADE BY	
	CHECKED BY	K.C.H.

REVISED

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

TOP PLAN

Skew about ℄ except as shown

ELEVATION
Looking North

END VIEW

SECTION ON ℄

FOOTING PLAN

BENT BAR DETAILS

MARK	NO	SIZE	LENGTH	SHAPE
P1	18	7	10'-0"	Bent
P2	4	"	6'-0"	"
P3	2	"	6'-3"	"
P4	12	"	11'-6"	"
P5	4	"	10'-3"	"
P6	8	"	7'-3"	"
P7	4	"	10'-3"	"
P8	44	9	6'-9"	"
P9	44	8	26'-5"	Str.
P10	8	7	18'-0"	Bent
P11	8	"	15'-6"	"
P12	8	"	3'-9"	"
P13	5	9	33'-3"	
P14	6	7	37'-6"	
P15	10	8	25'-0"	
P16	27	4	14'-0"	
P17	3	"	12'-3"	
P18	6	"	6'-0"	
P19	36	"	12'-0"	"

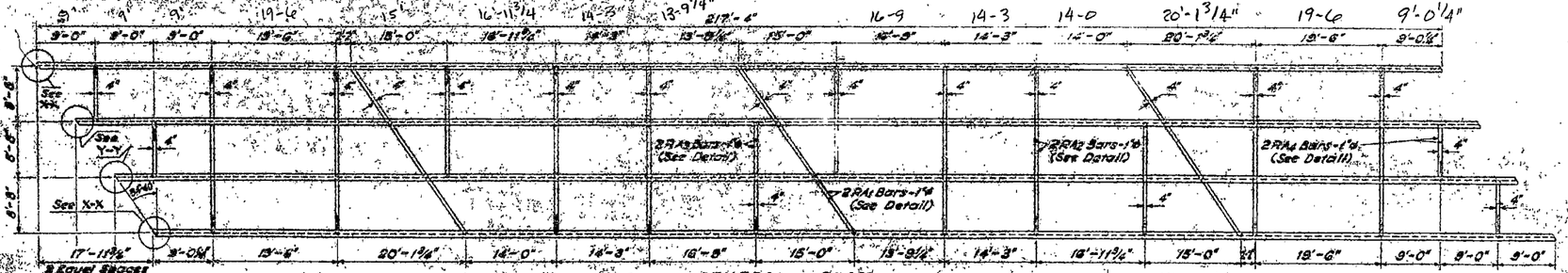
QUANTITIES	
Concrete Class A-1½	50.6 Cu.Yd.
Reinforcing Steel	8138 Lbs.
Piling (See Layout)	
Excavation (See Layout)	

31' PIER
FOR I-BEAM SPANS
30' ROADWAY
34°40' SKEW

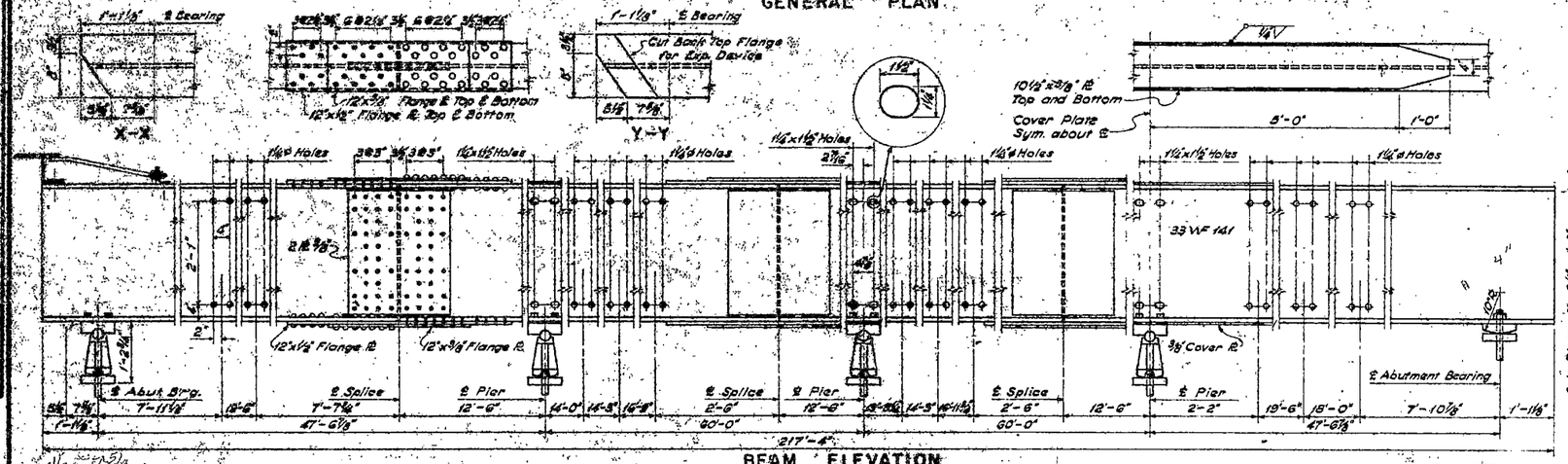
H-1325

H-1325

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

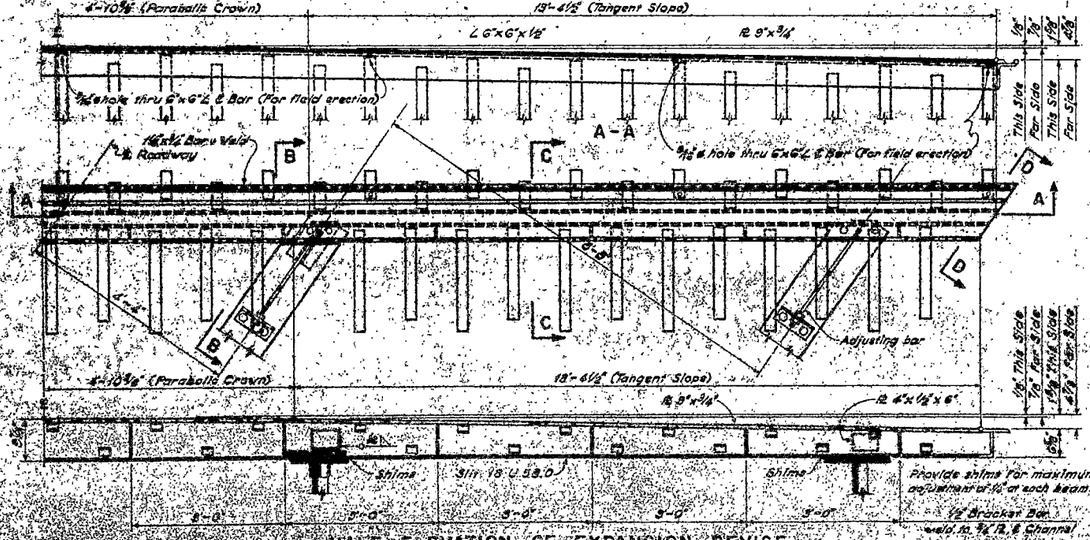


GENERAL PLAN

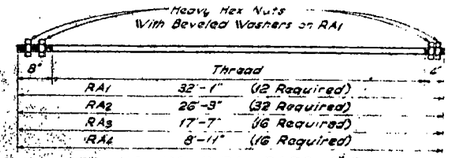


BEAM ELEVATION

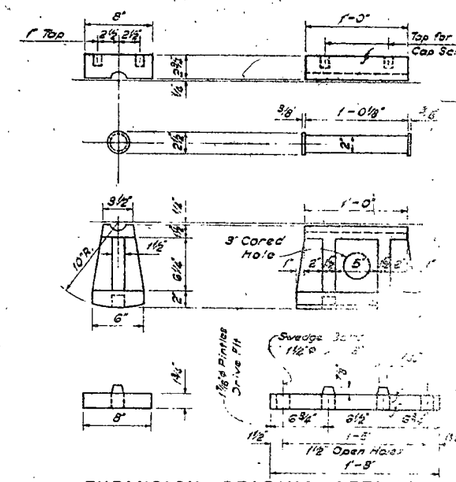
OUTER BEAM AS SHOWN - INNER BEAMS SIMILAR
VARY SPACING OF HOLES FOR FIELD BOLTS AS SHOWN ON GENERAL PLAN



HALF ELEVATION OF EXPANSION DEVICE



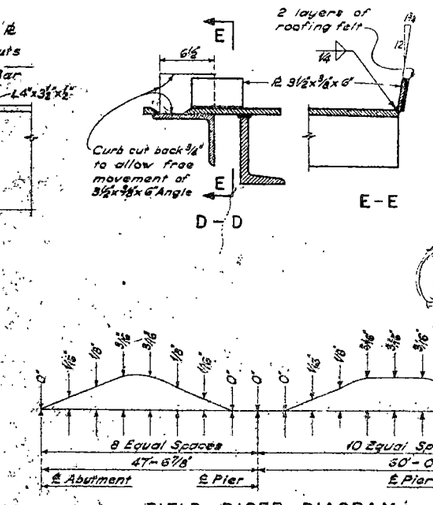
RA1, RA2, RA3 & RA4 BARS 1" ø



EXPANSION BEARING DETAILS

NOTE:

Welding will not be paid for directly, but shall be included in the unit bid price for structural steel.



NOTES

ADJUSTMENT OF EXPANSION JOINTS

SHOP: 1. Place bridge beams and adjust both parts of expansion device to proper elevation and temperature, pour abutment wall to grade.

2. Where the floor slabs poured to within 3'0" of the expansion device, the slab unit shall be checked and finally adjusted to contact with the abutment unit so that the whole expansion is properly placed. To allow vertical adjustment in the expansion joint by means of shims, 1/8" has been cut from the height of the joint.

PAINT: All exposed Steel surfaces shall be given one shop coat of Red Lead Paint and two field coats preceded by a spot coat of red lead paint in accordance with section 80 and 132.17 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.

GENERAL

All rivets are to be 7/8". Open holes are to be 15/16" except as noted. Field connections shall be made with either high tensile strength bolts or rivets.

The Field Riser Diagram shows dimensions from an assumed chord drawn between ends of the beam. Additions or subtractions must be made to the riser dimensions to compensate for the tolerance in the beam and the deflection due to the weight of the beam.

The rockers, as detailed, shall be constructed from structural steel plates welded together or shall be of cast steel. The 3" hole may be omitted if rockers are constructed of welded plates.

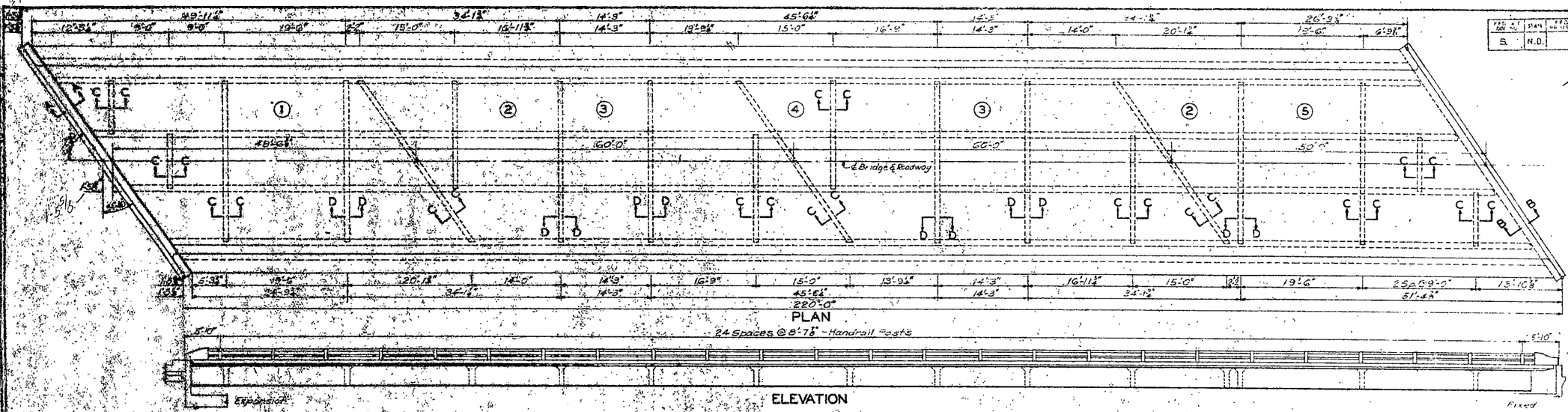
FIELD RISER DIAGRAM
SHOWING DIMENSION "a"

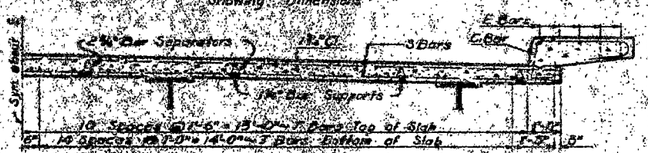
QUANTITIES	
Structural Steel	148,000 Lbs.

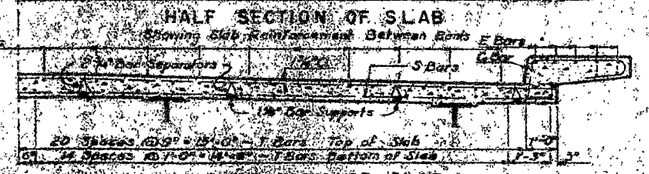
SUPERSTRUCTURE
FOUR SPAN
CONTINUOUS I-BEAM
OVERALL LENGTH 220'
34° 40' SKEW
H_{20} S_{16} LOADING (1953)

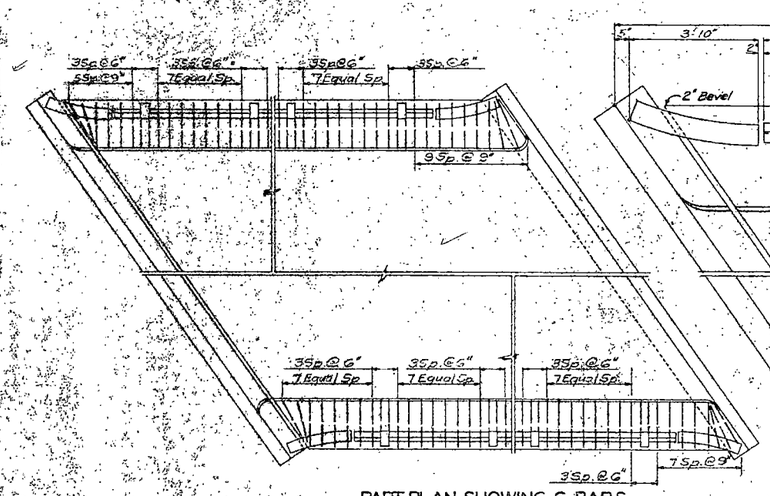
H-1137

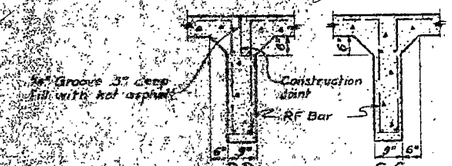
DESIGN — MADE BY AVA — CHECKED BY RJS — DATE 4-25-57
DETAILS — MADE BY RJS — CHECKED BY LJS — DATE 4-25-57
TRACING — MADE BY LJS — CHECKED BY WJS — DATE 4-25-57
QUANTITIES — MADE BY WJS — CHECKED BY AVA — DATE 4-25-57
REVISIONS — MADE BY — CHECKED BY — DATE

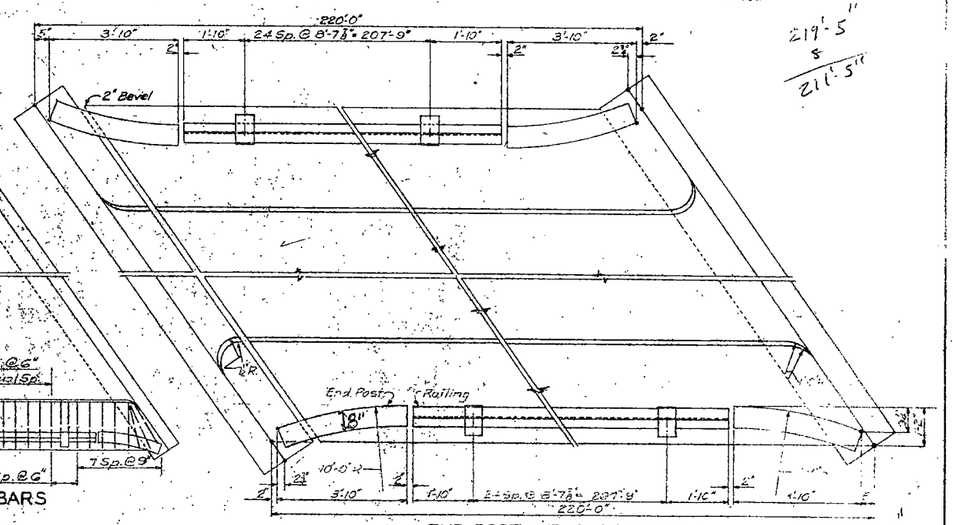












END POST AND CURB DETAILS -
CONSTRUCT END POSTS AND RAILING IN ACCORDANCE WITH THIS DRAWING, ELEV. VIEW THIS SHEET, AND DRAWING H0100.

NOTES

The slab shall be poured in the following sequence :
1. Slab Section 1.
2. Slab Section 5.
3. Slab Sections 3.
4. Slab Sections 2 over Piers.
5. Slab Section 4 over Pier.
Each curb shall be placed in one continuous operation.
Bevel all exposed edges with a ½ triangular molding except as shown.
For railing details, see Drawing H0100.

SUPERSTRUCTURE
Four ~~THREE~~ SPAN
CONTINUOUS I-BEAM
OVERALL LENGTH 220'
34°40' SKEW
H20 S16 LOADING (1953)

H-1138-1

DESIGNED BY	CHECKED BY
DETAILS A.J.H.	K.J.H.
TRACING W.S.F.	V.C.
QUANTITIES L.B.S.	L.B.S.

REVISIONS	DATE

FED. AID PROJ. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	SHEET NO.	TOTAL SHEETS
S	N.D.				

S2 to S20 Bars in Pairs, Top & Btm, 6" Sp.

S21 Bars 6" Sp. Top and Bottom | 69 S1 Bars at 2'-6" Sp. Top and Bottom | 29 S1 Bars at about 6" Sp. Top and Bottom | 91 S1 Bars at about 6" Sp. Top and Bottom | 63 S1 Bars at 6" Sp. Top & Btm | 43 S1 Bars 6" Sp. Top & Btm | 56 S1 Bars 6" Sp. (Top and Bottom)

T1 Bars | T2 Bars | T3 Bars | T4 Bars | T5 Bars | T6 Bars | T7 Bars

2 EW Bars | 2 EW Bars | See Bars

2" Clear | EW Bars

SEC. A-A

SEC. B-B

SLAB NO. 1 | SLAB NO. 2 | SLAB NO. 3 | SLAB NO. 4 | SLAB NO. 3 | SLAB NO. 2 | SLAB NO. 5

T1 to Bars not shown | T2 to Bars not shown | T4 to Bars not shown

SLABS NO. 2
T2 Bars
22'-1"

SLAB NO. 4
T4 Bars
22'-9 3/8"

BAR LIST ENTIRE FLOOR SLAB

MARK	NO.	SIZE	LENGTH	SHAPE
BW1	8	#	25'-0"	Str.
BW2	29	5	6'-10"	Bent
BW3	9	5	8'-2"	"
BW4	3 Sets	6	4'-6"	"
EW	4	4	26'-6"	Str.
C1	5 (C1)	5	6'-9"	Bent
E	84	6	38'-6"	Str.
RF	560	4	8'-0"	Bent
S1	792	6	31'-6"	Str.
S2 to S20	9 Sets	5	311'-11"	"
T1	53	4	20'-3"	"
T2	106	5	33'-6"	"
T3	106	4	21'-0"	"
T4	53	5	40'-0"	"
T5	53	4	27'-9"	"
T6	120	5	20'-3"	"
T1 to T27	2 Sets	4	173'-1"	"
T6 to T26	4 Sets	4	156'-9"	"

BW4 BAR

BW2 & 3 BARS

C1 BAR

RF BAR

See Detailing Method for Bars and Stirrup Details

S2 TO S20 BARS
TWO SETS SHOWN

T7 TO T27 (ODD NO. BARS)
TWO SETS SHOWN

T6 TO T26 (EVEN NO. BARS)
TWO SETS SHOWN

BENT BAR DETAILS & BAR CUTTING DIAGRAMS

FIXED END EDGE BEAM

QUANTITIES	
Concrete Class A1	220.0 C.Y.
Reinforcing Steel	51,665 Lbs.

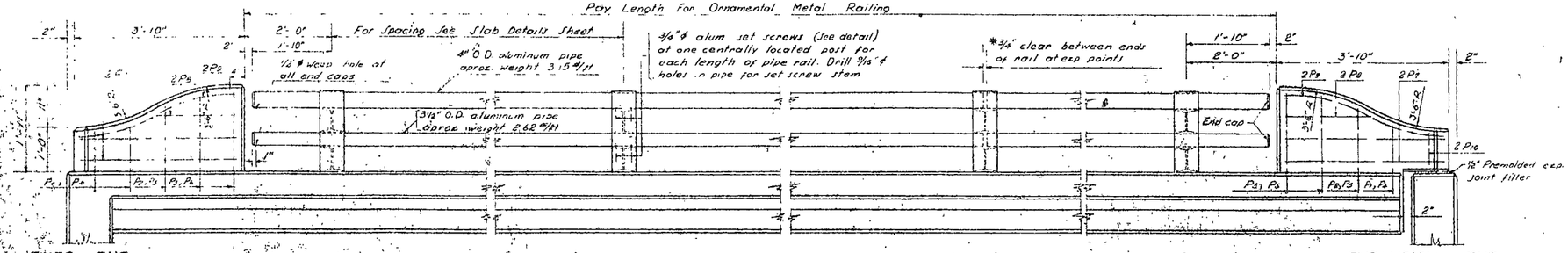
SUPERSTRUCTURE
FOUR THREE-SPAN
CONTINUOUS I-BEAM
OVERALL LENGTH 220'
34°40' SKEW
H20 S16 LOADING (1953)

H-1138-2

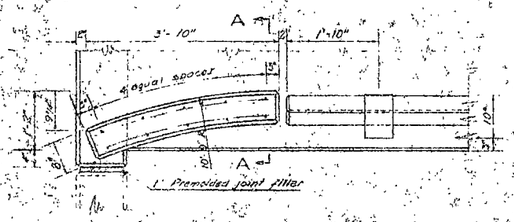
H-1138-2

FED. AID DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	NO. SHEETS
5	N.D.				

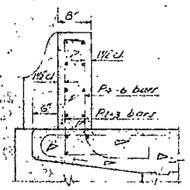
Pay Length For Ornamental Metal Railing



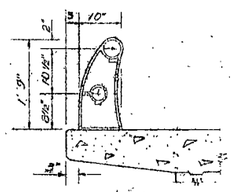
PART ELEVATION



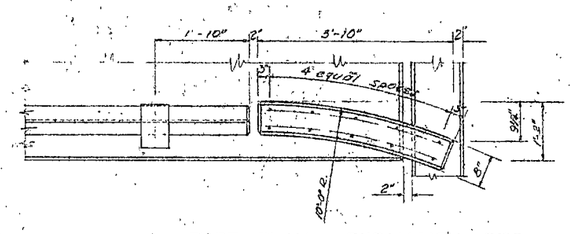
PART PLAN - FIXED END



SECTION A-A



TYPICAL SECTION



PART PLAN - EXPANSION END

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 26.

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. 208 alumilite finish conforming to A.S.T.M. Spec B 211-55T alloy G42A 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 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.

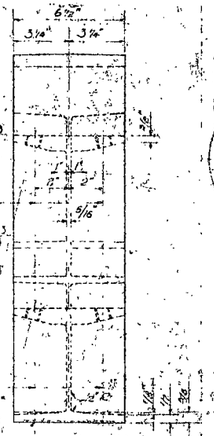
All posts shall be set normal to grade.

All pipe, rail posts, anchor bolt assemblies, screws, shims, pins, end caps and compound shall be included in the price bid for Ornamental Metal Railing.

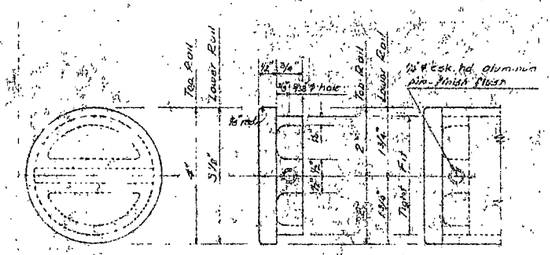
All concrete in the end posts shall be Class A-1.

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

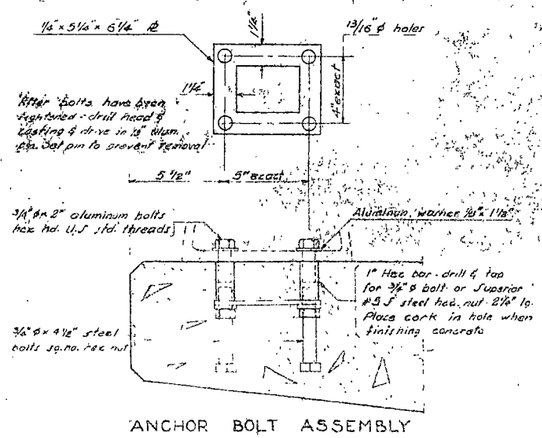
RAIL POST DETAILS



DETAIL OF ALUMINUM SHIMS

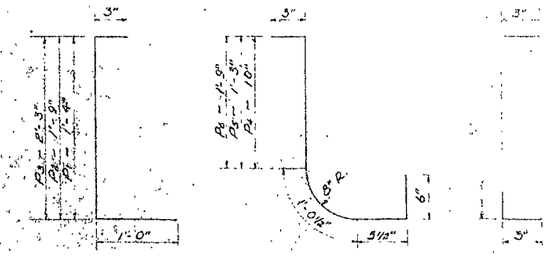


CAST ALUMINUM END CAP FOR RAIL



ANCHOR BOLT ASSEMBLY

BAR LIST (4 END POSTS)				
MARK	No.	SIZE	LENGTH	SHAPE
P1	6	5/16" ϕ	2'-7"	Bent
P2	4	"	3'-0"	"
P3	8	"	3'-6"	"
P4	6	"	3'-1"	"
P5	4	"	3'-6"	"
P6	8	"	4'-0"	"
P7	16	½" ϕ	3'-9"	Field Bent
P8	6	"	2'-0"	"
P9	8	5/8" ϕ	4'-0"	"
P10	4	3/8" ϕ	1'-2"	Bent



P1, P2 & P3 BARS P4, P5 & P6 BARS P10 BARS

BENT BAR DETAILS

NOTES:
End posts shall be given the "Rubbed Surface Finish".
Railing and end posts quantities are included in slab quantities on slab sheet.

STANDARD RAILING DETAILS

H-0100