

FOR INDEX OF SHEETS, STANDARDS AND SIGNATURES, SEE SHEET NO. 2  
 FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 4

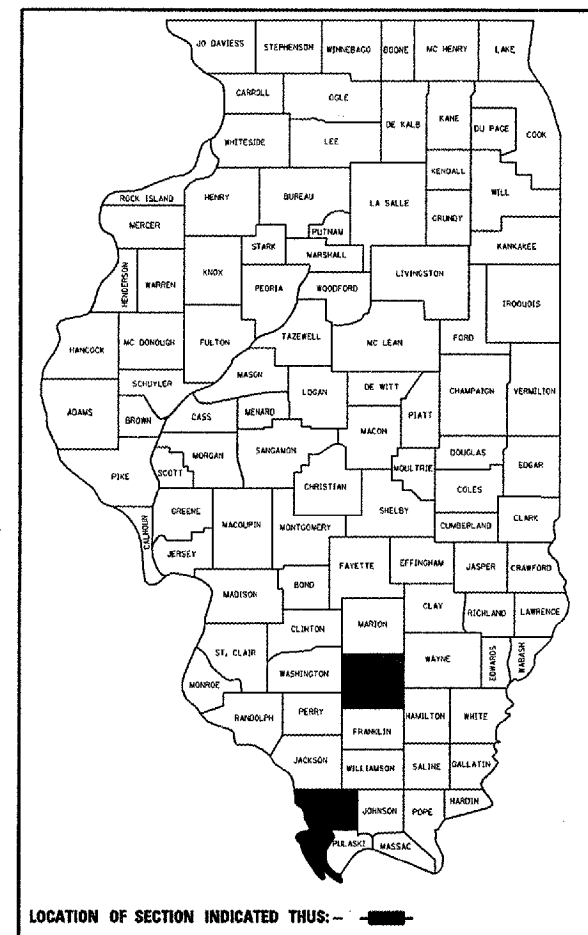
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIOUS	*	VARIOUS	31	1
FED. ROAD DIST. NO. 7		ILLINOIS		

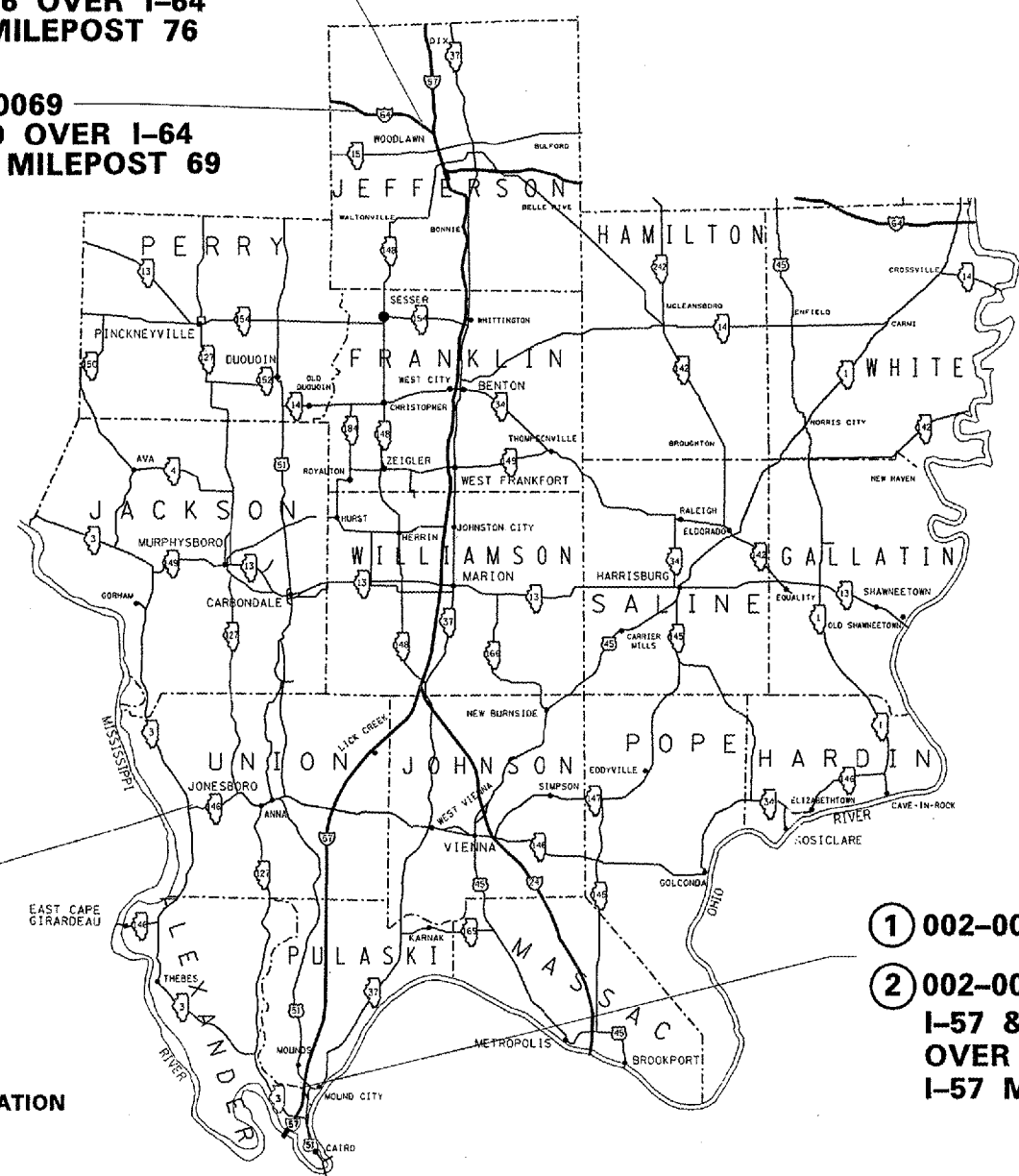
\* D9 BRIDGE PAINTING 2007-1

# PROPOSED HIGHWAY PLANS

VARIOUS ROUTES  
 SECTION D9 BRIDGE PAINTING 2007-1  
 VARIOUS COUNTIES  
 C-99-004-07



- ④ 041-0080  
 TR 206 OVER I-64  
 I-64 MILEPOST 76
- ③ 041-0069  
 CH-9 OVER I-64  
 I-64 MILEPOST 69



- ⑤ 091-0060  
 IL 146 OVER  
 CLEAR CREEK

- ① 002-0003 NB  
 I-57 & US 51  
 OVER CACHE RIVER  
 I-57 MILEPOST 3.19
- ② 002-0004 SB  
 I-57 & US 51  
 OVER CACHE RIVER  
 I-57 MILEPOST 3.19



PROJECT ENGINEER: CASEY TECKENBROCK PHONE: (618) 549-2171  
 SQUAD LEADER: RITA GAUTNEY CENTREX: 782-4554

JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
 J.U.L.I.E. 1-800-892-0123

CONTRACT NO. 98989

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

SUBMITTED Aug 31, 20 06  
May C. Lane  
 DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

October 13, 20 06  
Mike Dine  
 ENGINEER OF DESIGN AND ENVIRONMENT

October 13, 20 06  
Milton R. Sero P.E.  
 DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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 OF THE STATE OF ILLINOIS

Rev.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIOUS	*	VARIOUS	31	2
FED. ROAD DIST. NO. 7		ILLINOIS		

\* D9 BRIDGE PAINTING 2007-1

# INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	INDEX OF SHEETS, STANDARDS, SIGNATURES
3	GENERAL NOTES
4	SUMMARY OF QUANTITIES
5	PAINT DETAILS
6	ALEXANDER COUNTY LOCATION MAP
7-15	BRIDGES No. 1 & 2 (002-0003, 002-0004)
16	JEFFERSON COUNTY LOCATION MAP
17-21	BRIDGE No. 3 (041-0069)
22-25	BRIDGE No. 4 (041-0080)
26	UNION COUNTY LOCATION MAP
27-31	BRIDGE No. 5 (091-0060)

## STANDARDS

- 701006-02
- 701101-01
- 701201-02
- 701400-02
- 701406-04
- 702001-06

Prepared By:	<i>Kevin Grammer</i> DISTRICT OPERATIONS ENGINEER
Examined By:	<i>Sammy Denton</i> ASSISTANT REGIONAL ENGINEER
Examined By:	<i>James Travis Emery</i> DISTRICT LAND ACQUISITION ENGINEER
Examined By:	<i>Conni Nelson</i> DISTRICT PROGRAM DEVELOPMENT ENGINEER
Examined By:	<i>Joe Blankiewicz</i> DISTRICT STUDIES & PLANS ENGINEER
Examined By:	<i>Joseph Linn</i> DISTRICT CONSTRUCTION ENGINEER
Examined By:	<i>Bruce Williams</i> DISTRICT MATERIALS ENGINEER
Examined By:	<i>Jim Swathwaite</i> DISTRICT PROJECT IMPLEMENTATION ENGINEER
Approved By:	<i>Mary Kemi</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
DATE	Aug 31 2006

Rev:

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIOUS	*	VARIOUS	31	3
FED. ROAD DIST. NO. 7		ILLINOIS		

\* D9 BRIDGE PAINTING 2007-1

**GENERAL NOTES**

Cleaning and painting shall conform to the requirements of special provision "Cleaning And Painting Existing Steel Structures". Near White Metal Blast Cleaning - SSPC - SP10 and Paint System 1 - OZ / E / U shall be used unless otherwise noted.

SSPC - QP1 and SSPC - QP2 Painting Contractor Certifications are required.

Beam Ends and fascia beams shall be painted on each structure, unless otherwise noted.

The term "Beam End" is used in this document to indicate all structural steel within 5 feet (measured along the beam) of either side of a deck joint, unless otherwise noted. Beam End locations are shown on the general elevation view of each structure.

Beyond the Beam Ends, exterior surfaces of fascia beams including the bottom of bottom flange, shall be cleaned and painted.

The color of the final finish coat for all interior surfaces shall be Gray, Munsell No. 5B 7 /1. The color of the final finish coat for the exterior surfaces of fascia beams, is shown on sheet 5 of 31.

**Bridges No. 1 and 2**

For Structures No. 002-0003 and 002-0004, the definition of Beam End is revised to include all steel within 10 feet a deck joint. The two girders of this structure are painted as fascia beams. All surfaces of the portion of the floorbeam that protrudes past the web of the girder shall be included with the exterior surfaces of the girder.

Galvanized bearings at Beam Ends shall be cleaned by Brush Blasting, touched up with OZ primer, and painted with Epoxy/Urethane according to the requirements of Paint System 1.

**Bridge No. 3**

All structural steel of Structure No. 041-0069 - the entire structure - shall be painted.

A minimum of three (3) air monitors are required at this site. See special provision "Containment and Disposal of Lead Paint Cleaning Residues".

**Bridge No. 4**

At the site of Structure No. 041-0080, a minimum of one (1) air monitor is required. See special provision "Containment and Disposal of Lead Paint Cleaning Residues".

**Bridge No. 5**

At the site of Structure No. 091-0060, a minimum of two (2) air monitors are required. See special provision "Containment and Disposal of Lead Paint Cleaning Residues".

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIOUS	*	VARIOUS	21	4
FED. ROAD DIST. NO. 7		ILLINOIS		

\* D9 BRIDGE PAINTING 2007-1

**SUMMARY OF QUANTITIES**

100% STATE		VARIOUS COUNTIES	
CONSTRUCTION TYPE CODE SFTY-2A		RURAL	
CODE NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
50600600	CLEANING & PAINTING STEEL BRIDGE NO.1	L.SUM	1
50600700	CLEANING & PAINTING STEEL BRIDGE NO.2	L.SUM	1
50600800	CLEANING & PAINTING STEEL BRIDGE NO.3	L.SUM	1
50600900	CLEANING & PAINTING STEEL BRIDGE NO.4	L.SUM	1
50601000	CLEANING & PAINTING STEEL BRIDGE NO.5	L.SUM	1
50606401	CONTAINMENT & DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO.1	L.SUM	1
50606402	CONTAINMENT & DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO.2	L.SUM	1
50606403	CONTAINMENT & DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO.3	L.SUM	1
50606404	CONTAINMENT & DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO.4	L.SUM	1
50606405	CONTAINMENT & DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO.5	L.SUM	1
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL. MO.	3
67100100	MOBILIZATION	L.SUM	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L.SUM	1
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L.SUM	1

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIOUS	*	VARIOUS	31	5
FED. ROAD DIST. NO. 7		ILLINOIS		

\* D9 BRIDGE PAINTING 2007-1

# PAINT DETAILS

Bridge No.	Structure No.	Number of Deck Joints	*Galv. Bearings	Exterior Color	Air Monitor	Estimated Paint Area (Sq. Ft.)
1	002-0003	2	YES	Gray	NO	17600
2	002-0004	2	YES	Gray	NO	17600
3	041-0069	n/a	NO	Green	YES	24000
4	041-0080	2	NO	Green	YES	3400
5	091-0060	2	NO	Green	YES	5700

\*Galvanized bearings at Beam Ends shall be cleaned by Brush Blasting, touched up with OZ primer, and painted with Epoxy / Urethane according to the requirements of Paint System 1.

**COLORS**

Green: Interstate Green, Munsell No. 7.5G 4 / 8

Gray: Gray, Munsell No. 5B 7/1

**NOTE:**

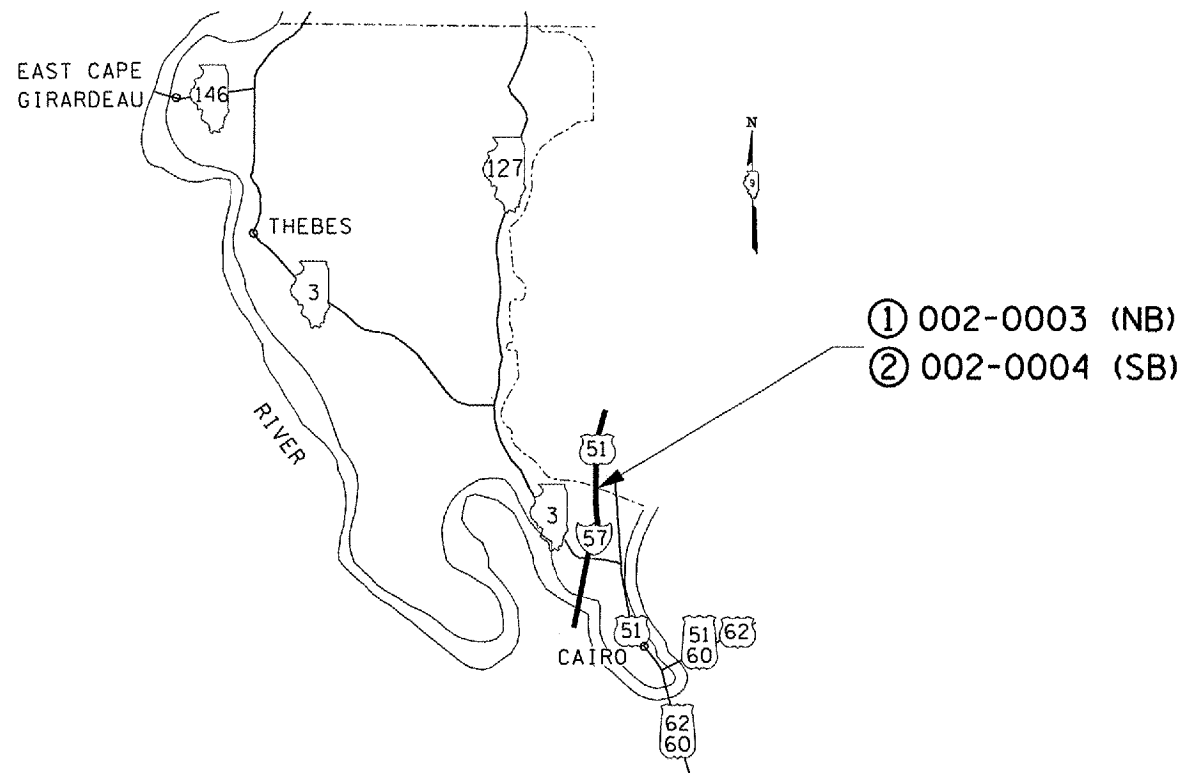
~~PAINT QUANTITIES ARE ONLY ESTIMATES FOR GENERAL REFERENCE AND SHOULD NOT BE USED FOR BIDDING PURPOSES. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF QUANTITIES BEFORE SUBMITTING A BID FOR LUMP SUM ITEMS. ADDITIONAL STRUCTURE CONSTRUCTION PLANS WILL BE MADE AVAILABLE AT THE CONTRACTOR'S REQUEST.~~

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIOUS	*	VARIOUS	31	6

FED. ROAD DIST. NO. 7 ILLINOIS

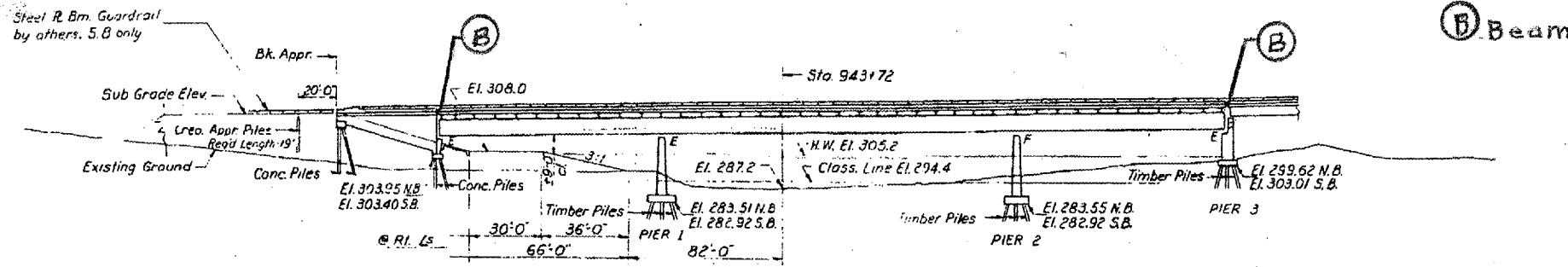
\* D9 BRIDGE PAINTING 2007-1



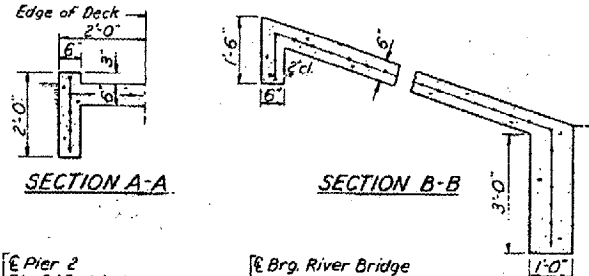
ALEXANDER CO.

<p>① 002-0003 ② 002-0004</p>	<p>PULASKI COUNTY LINE I-57 &amp; US 51 OVER CACHE RIVER LENGTH: 714 FT.      WIDTH: 35.9 FT. ADT: 5250    47% TRUCKS</p>
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Beam End Location

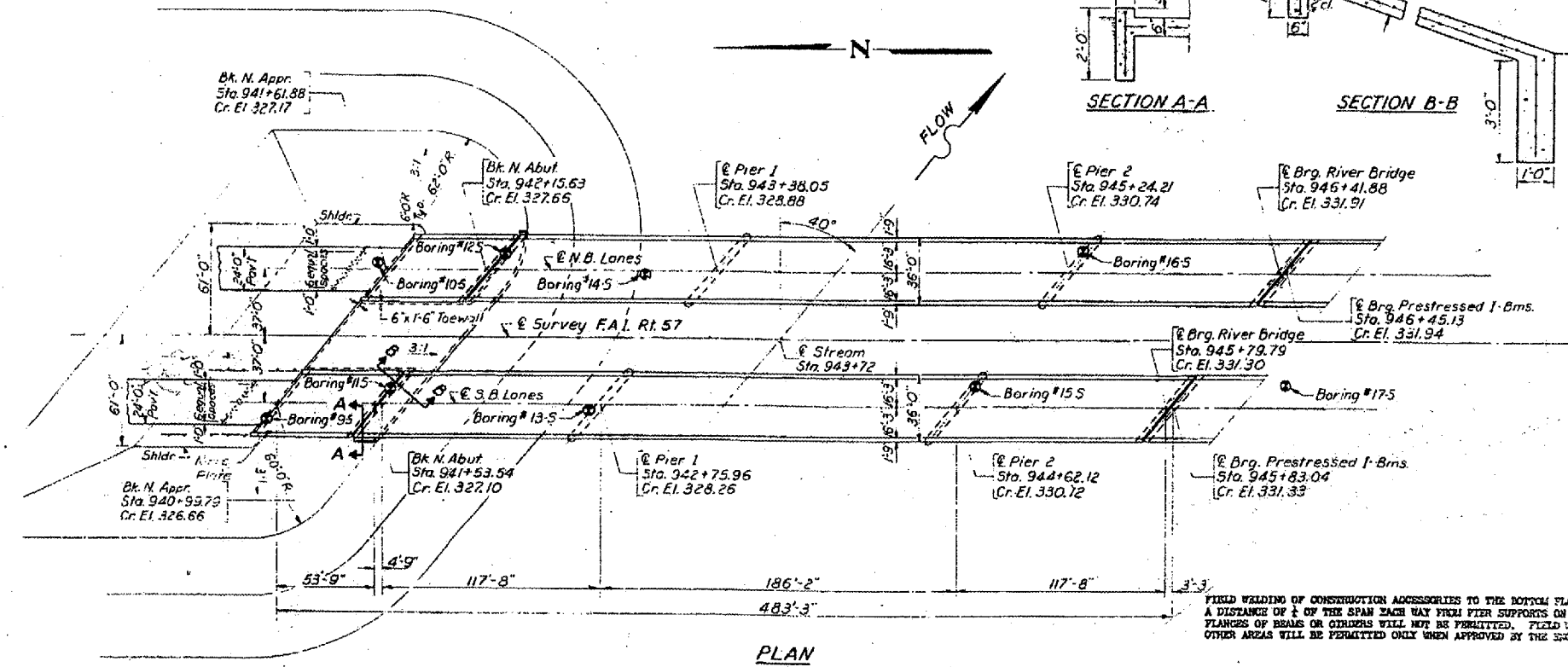


ELEVATION



SECTION A-A

SECTION B-B



PLAN

WATERWAY INFORMATION

Drainage Area	7850 Acres
Character	Level, Wooded & Cultivated
Required Opening (50 Yr.)	432 Sq. Ft.
Present Opening (900' Dnstr.)	480 Sq. Ft.
Proposed Opening	2658 Sq. Ft.
Ordinary Water El.	293.4
Backwater El.	320.3

FIELD WELDING OF CONSTRUCTION ACCESSORIES TO THE BOTTOM FLANGES OR FOR A DISTANCE OF 1/4 OF THE SPAN EACH WAY FROM PIER SUPPORTS ON THE TOP FLANGES OF BEAMS OR GIRDS WILL NOT BE PERMITTED. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.

TOTAL BILL OF MATERIAL

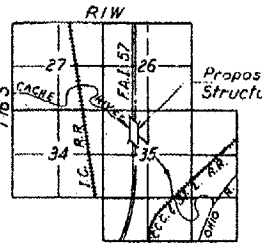
Item	Unit	Super.	Sub.	Total
Class A Excavation for Structures	Cu. Yds.		1080	1060
Class B Excavation for Structures	Cu. Yds.		1530	1530
Precast Prestressed Concrete I-Bms 48	Lin. Ft.	2807		2807
Class A Concrete	Cu. Yds.		908.5	908.5
Class X Concrete	Cu. Yds.	1780.4	1346.2	3126.6
Structural Steel	Lbs.	1,152,460		1,152,460
Aluminum Handrail	Lin. Ft.	2800		2800
Reinforcement Bars	Lbs.	472,840	133,210	606,050
Crested Piles	Lin. Ft.		17,066	17,066
Test Piles (Timber)	Each		10	10
Concrete Piles	Lin. Ft.		5366	5366
Test Piles (Concrete)	Each		3	3
Name Plates	Each	1		1
Sloped Wall (6")	Sq. Yds.		610	610
Bridge Seat Sealant	Lbs.		1	1
Protective Coat	Sq. Yds.	6360		6360

BRIDGES NO. 1 AND NO. 2  
002-0003 002-0004  
FOR INFORMATION ONLY

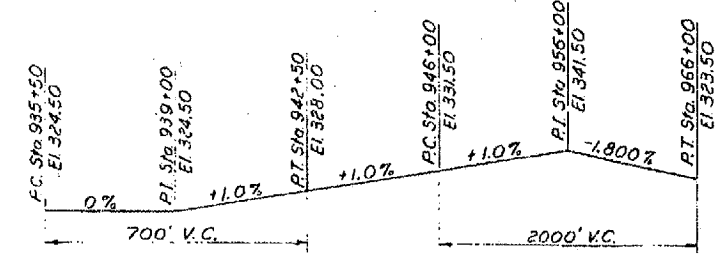
PROJ. 1-57-1 (88)4  
GENERAL PLAN & ELEVATION  
F.A.I. RT. 57 OVER CACHE RIVER  
ALEXANDER COUNTY  
STA. 943+72

DESIGN STRESSES

$f_c = 1400$  psi. (Super & Sub)  
 $f_s = 20,000$  psi. (Reinf.)  
 $f_s = 20,000$  psi. (Struct.)  
 $v_c = 75$  psi.  
 $n = 10$   
Allowable  $\Delta = L/1000$  non-composite  
PRECAST PRESTRESSED BEAMS  
 $f_c = 5000$  psi.  
 $f_{ci} = 4000$  psi.  
 $f_s = 248,000$  psi. (Strands)  
 $f_{si} = 173,600$  psi. (Strands)  
LOADING HS 20-44 & ALT



LOCATION PLAN

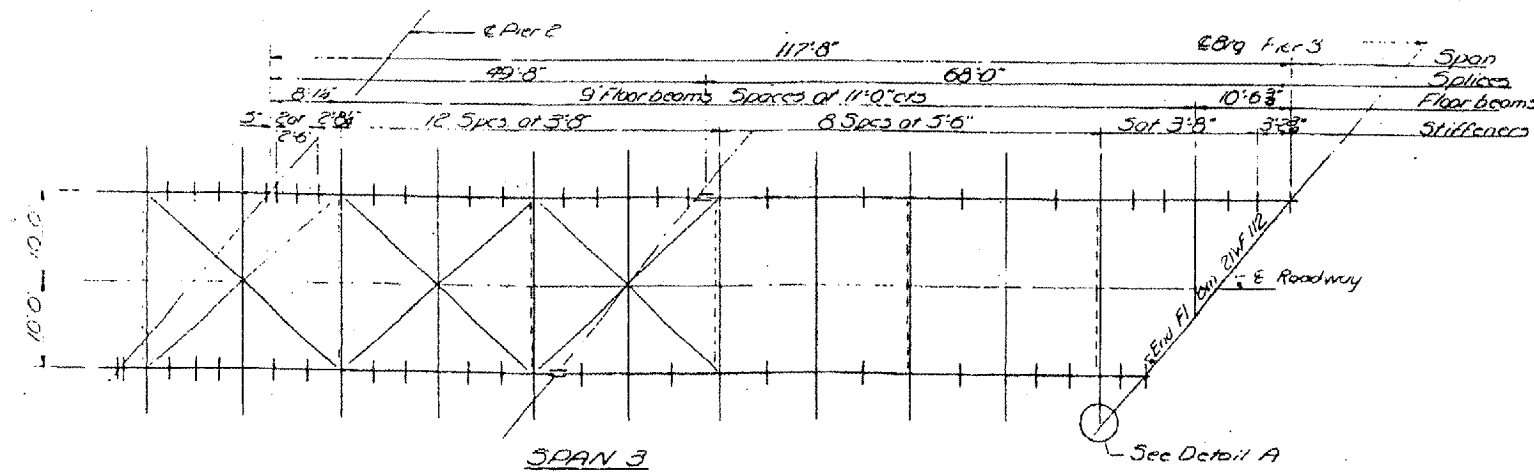
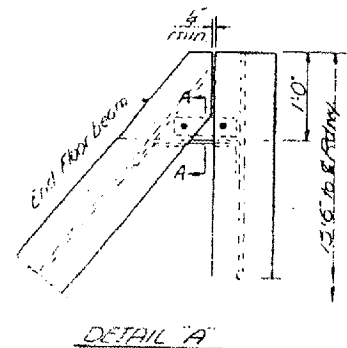
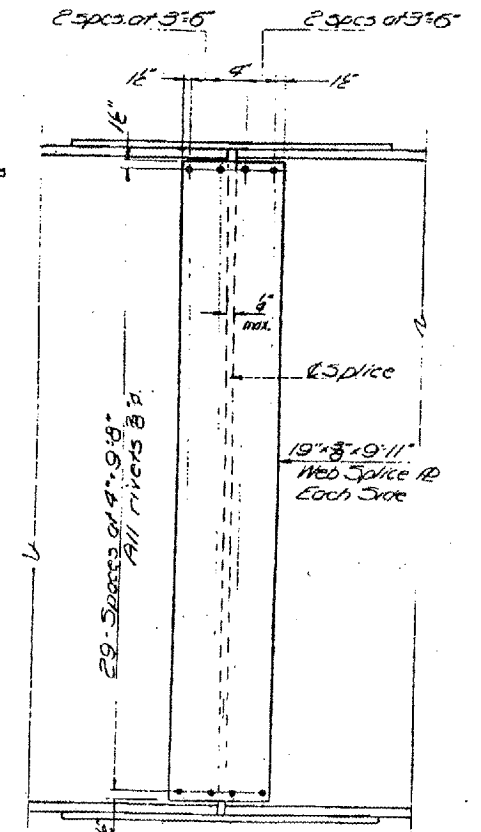
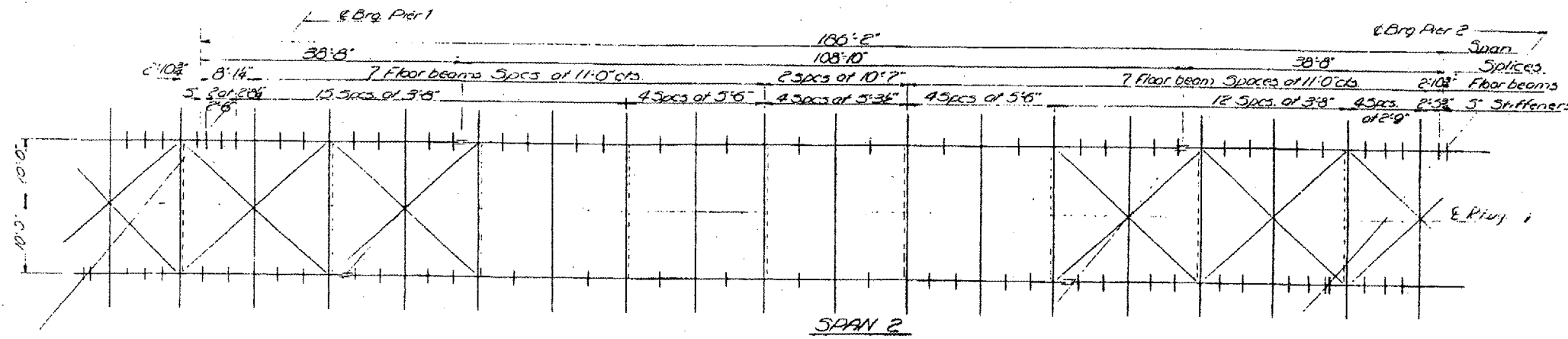
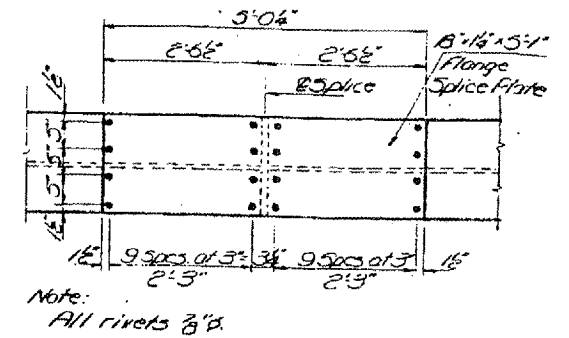
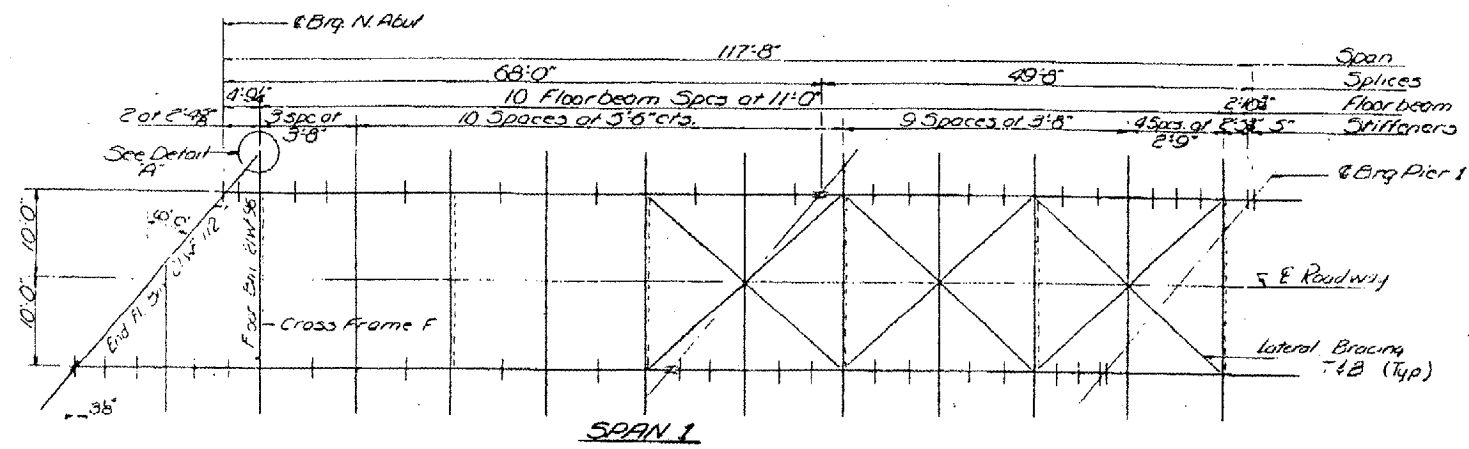
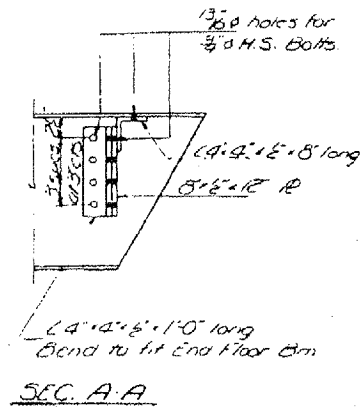


PROFILE F.A.I. RT. 57

EXAMINED  
PASSED  
APPROVED  
Sept. 22 1966  
W.C. [Signature]  
U.S. [Signature]

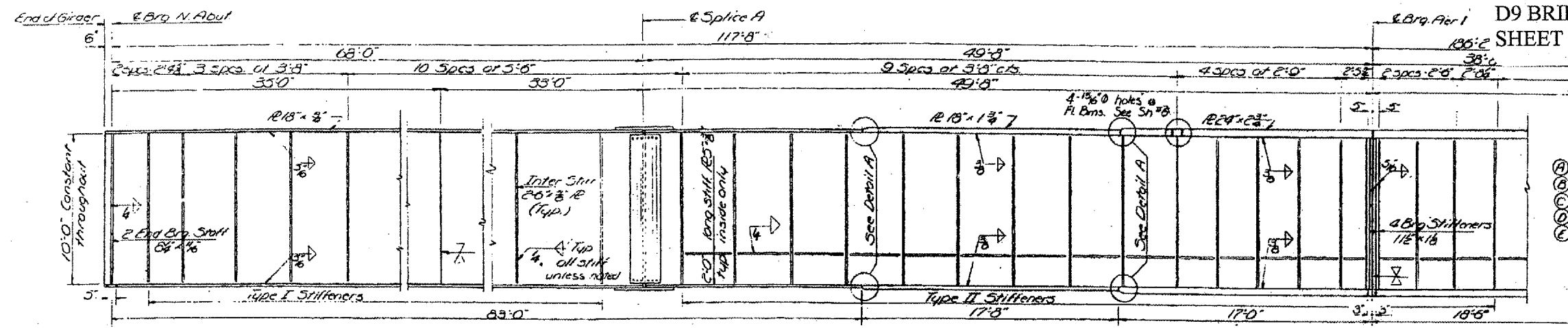




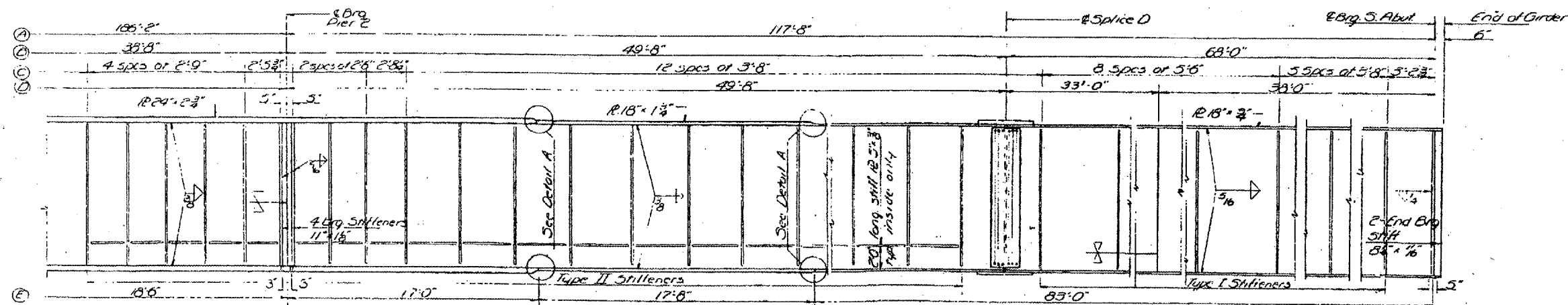
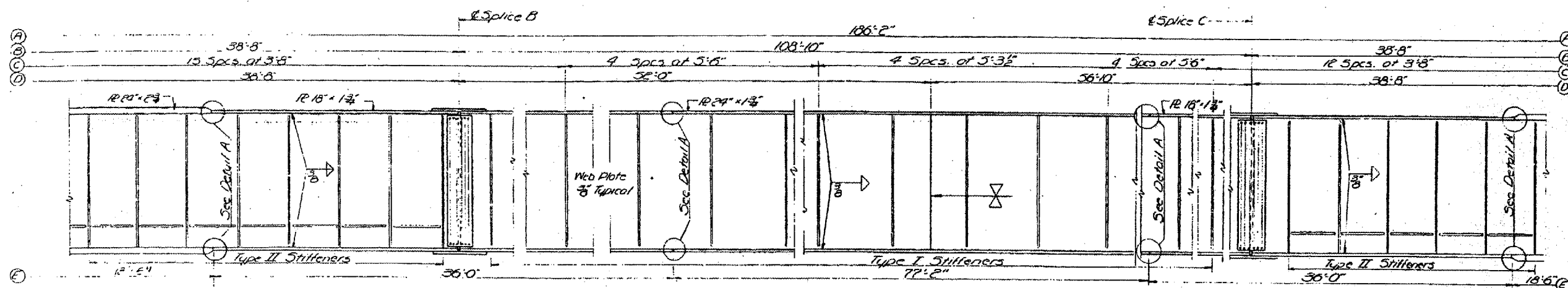


BRIDGES NO. 1 AND NO. 2  
002-0003 002-0004  
FOR INFORMATION ONLY

SPANS 1, 2 & 3  
STRUCTURAL STEEL  
FRAMING PLAN  
NORTH & SOUTH BOUND LANES  
FAT. AT L. 57. SEC. 02-15  
ALEXANDER COUNTY  
STA. 943+72



- (A) C-c Brgs.
- (B) Field Splice Locations
- (C) Stiffener Spacing
- (D) Shop Splice Locations
- (E) Flange Plate Lengths



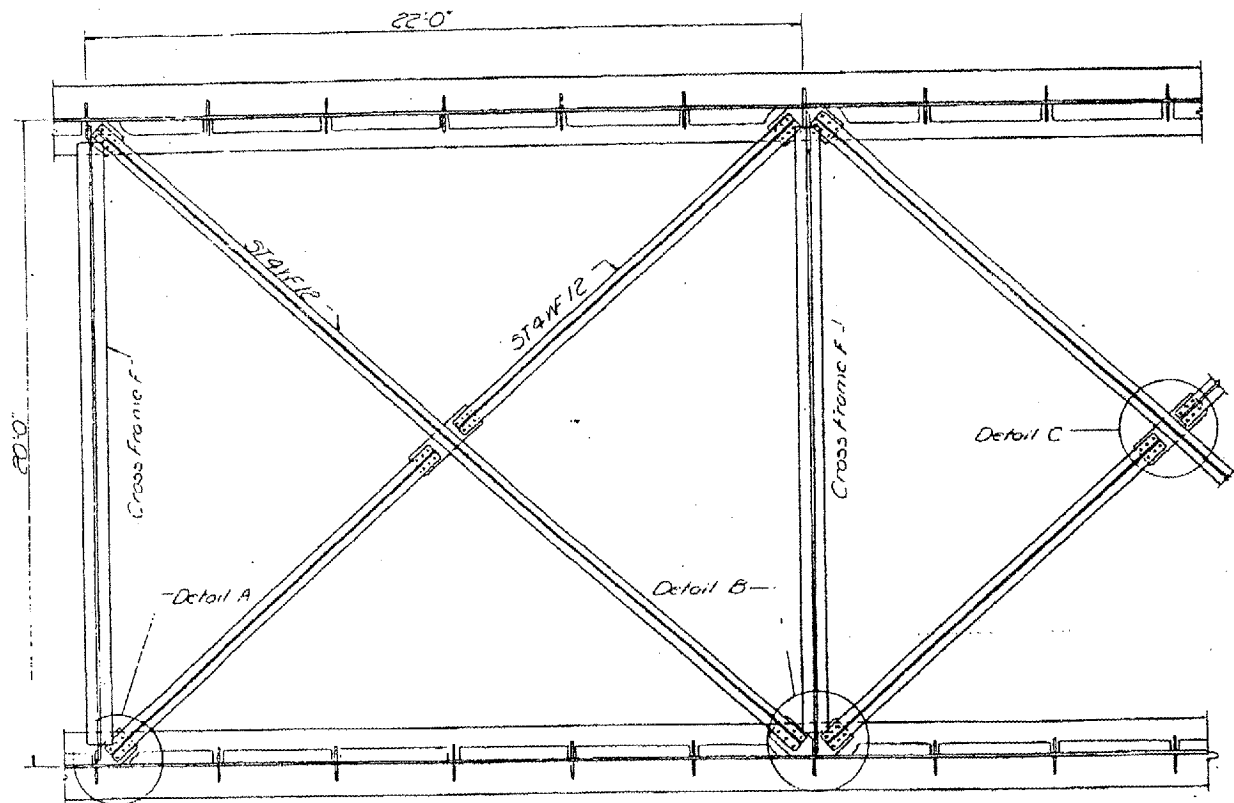
Sept 23 1966  
EXAMINED  
PASSED  
APPROVED  
DETAIL A  
(thickness transition)

**INSIDE ELEVATION GIRDER 1**  
Girder 2 similar by 180° rotation about vertical axis at mid-span 2 except as noted.

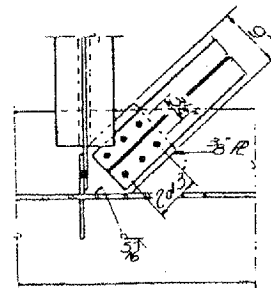
DETAIL A  
(width transition)

BRIDGES NO. 1 AND NO. 2  
002-0003 002-0004  
FOR INFORMATION ONLY

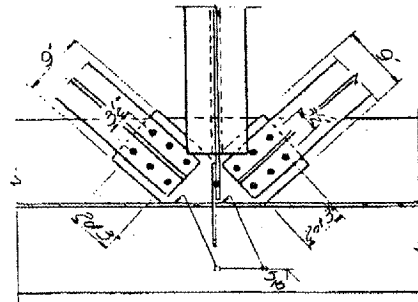
**GIRDER DETAILS**  
NORTH & SOUTH BOUND LANES  
F&A RITE 57 SEC 02-1B  
ALEXANDER COUNTY  
STA. 943+72



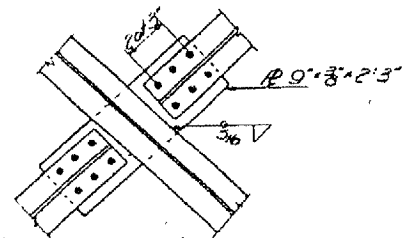
TYP LATERAL BRACE  
Bottom Laterals shown - Top similar



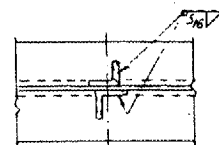
DETAIL 'A'



DETAIL 'B'

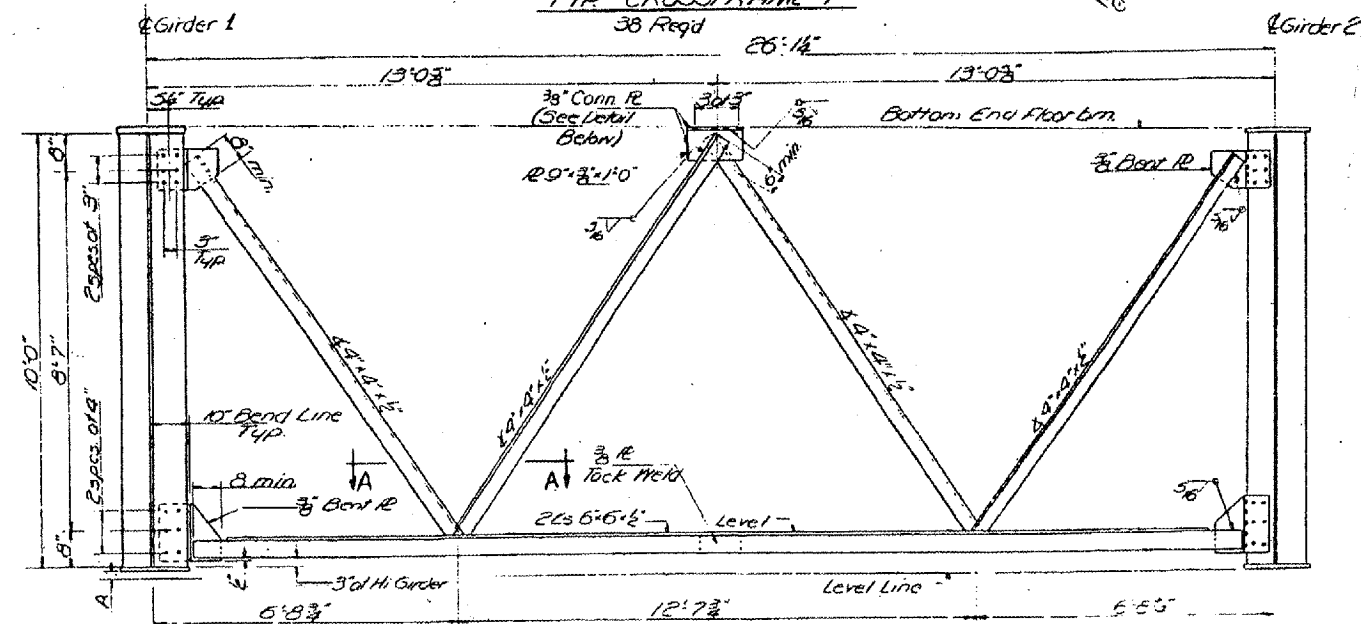
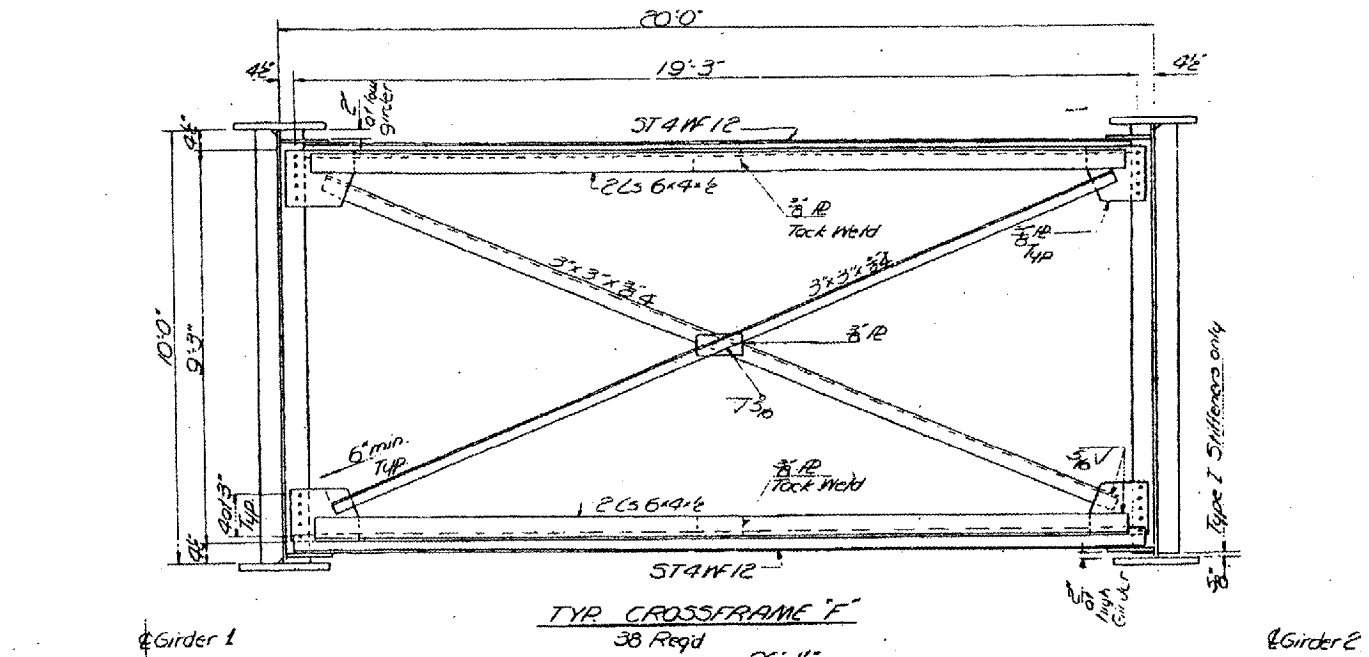


DETAIL 'C'

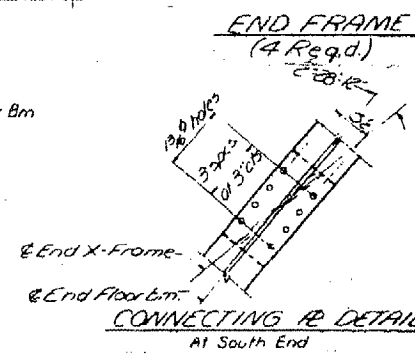


SEC A-A

EXAMINED Sept. 22 1956  
PASSED [Signature]  
APPROVED [Signature]



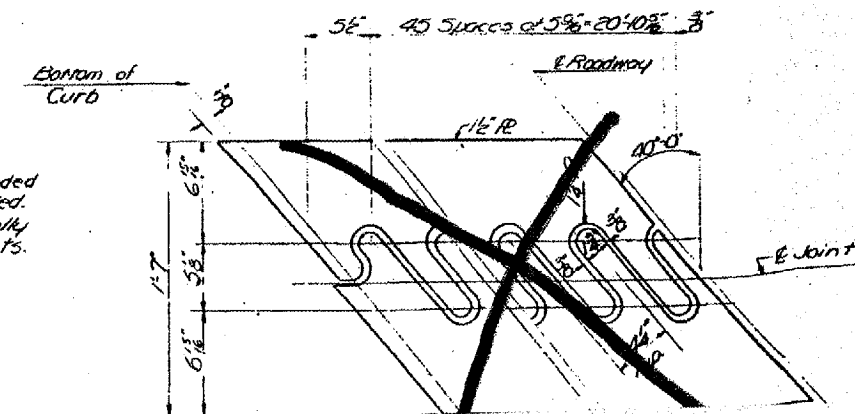
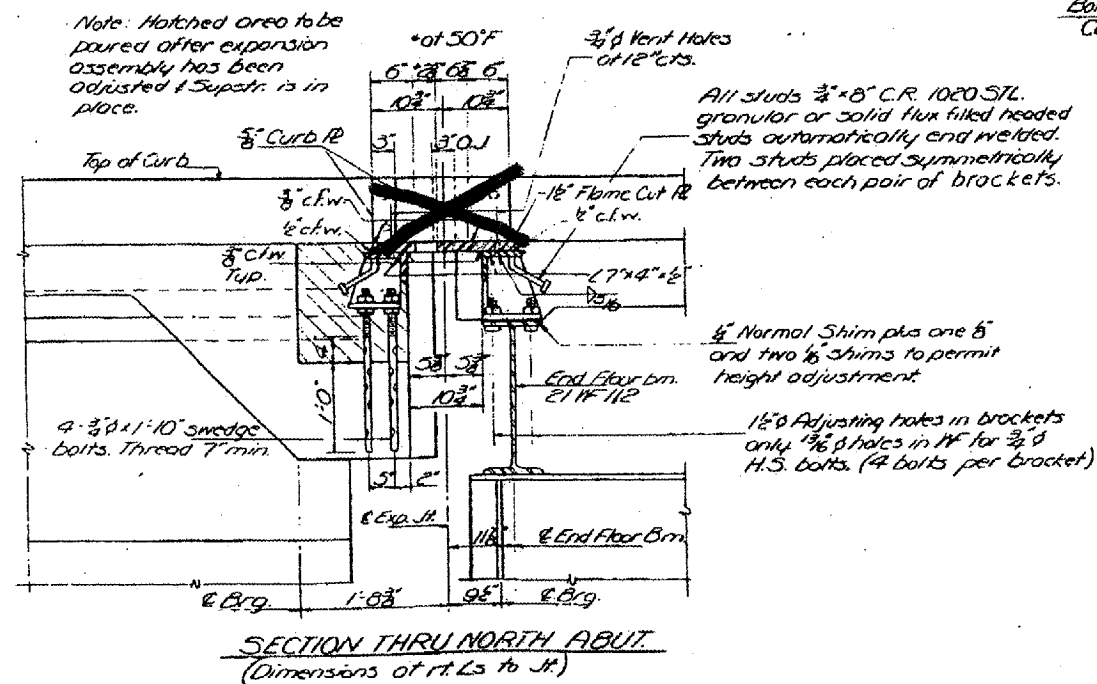
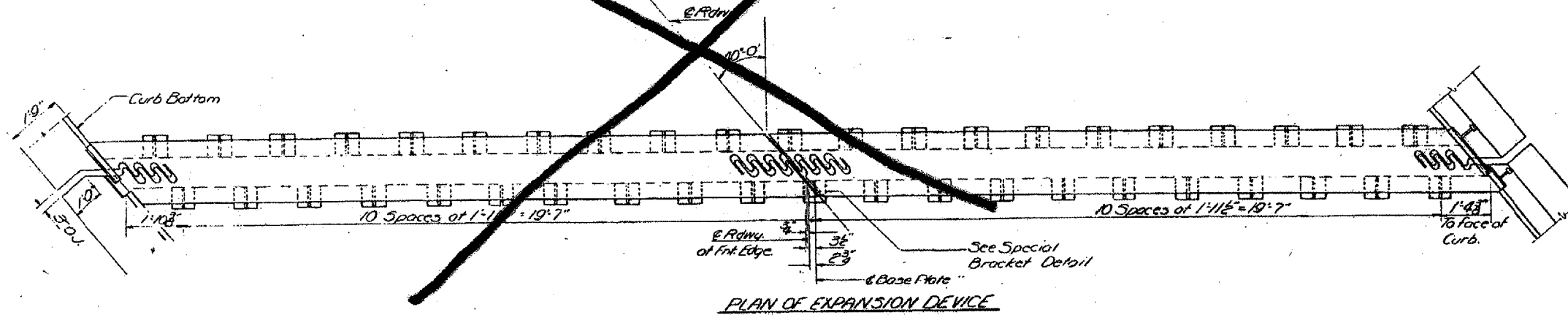
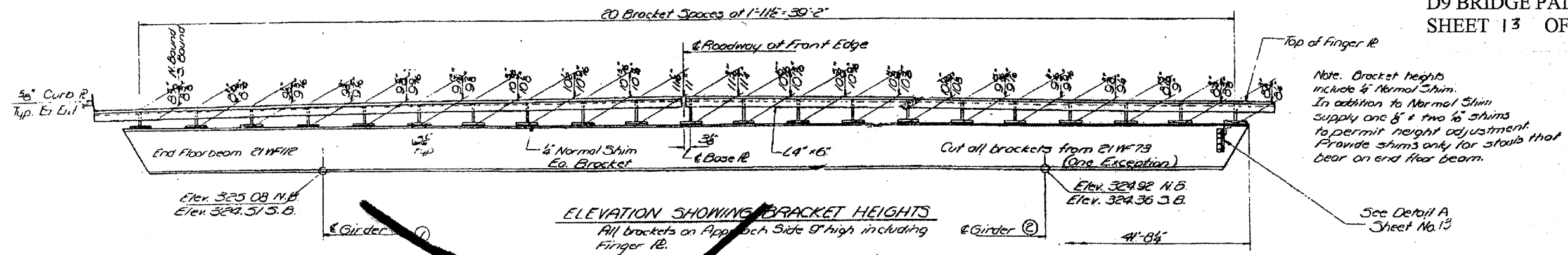
CONNECTING R DETAIL  
At North End



BRIDGES NO. 1 AND NO. 2  
002-0003 002-0004  
FOR INFORMATION ONLY

FRAMING DETAILS  
FAIRIE 57 SEC. 02-1B  
ALEXANDER COUNTY  
STA. 943772





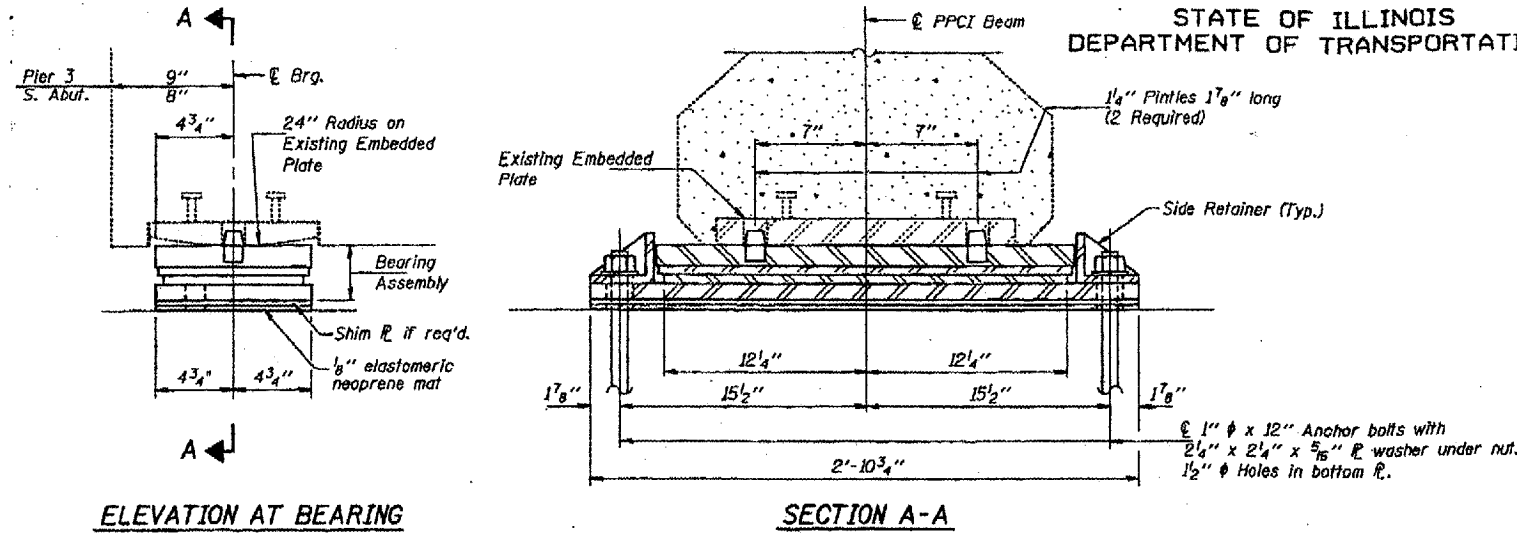
BRIDGES NO. 1 AND NO. 2  
002-0003 002-0004  
FOR INFORMATION ONLY

EXPANSION DEVICE  
FAL RIE 57 SEC. 02-18  
ALEXANDER COUNTY  
STA. 923 + 72

Sept 22 1966  
EXAMINED  
PASSED  
APPROVED

**BEAM REACTIONS**

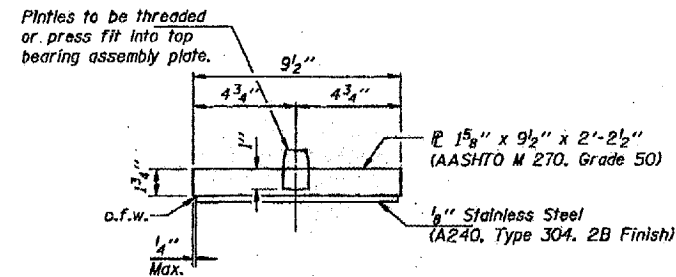
	S. Brg. Pier 3 (Span 4) & S. Abut. (Span 7)
R <sub>2</sub> (k)	45.6
R <sub>4</sub> (k)	39.1
R <sub>IMP</sub> (k)	10.7
R <sub>TOTAL</sub> (k)	95.4



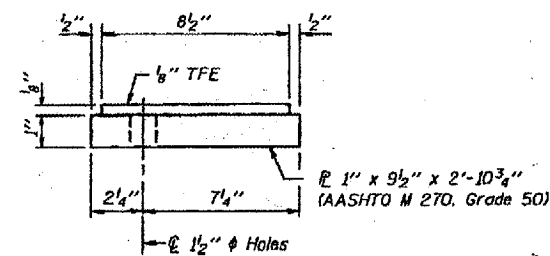
**ELEVATION AT BEARING**

**SECTION A-A**

**EXPANSION BEARING**

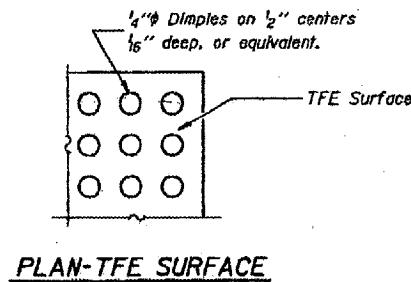


**TOP BEARING ASSEMBLY**

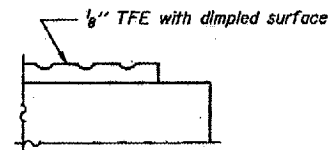


**BOTTOM BEARING ASSEMBLY**

The bottom bearing plate will overhang the edge of the concrete cap at Pier 3. The Contractor shall verify that this does not interfere with any portion of the existing structure or proposed work. If there is any interference the Contractor shall clip the affected corners of the bottom plate as directed by the Engineer. Cost included with "FURNISHING AND ERECTING STRUCTURAL STEEL".

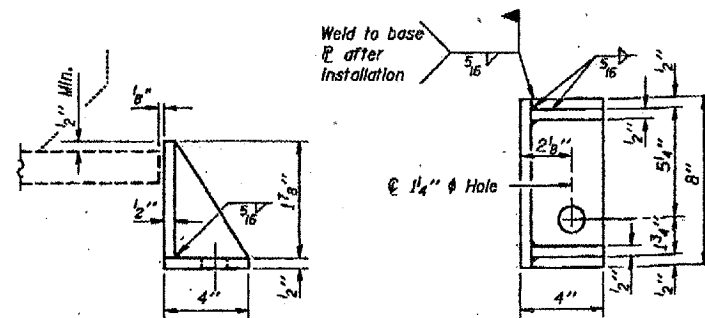


**PLAN-TFE SURFACE**



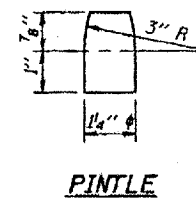
**SECTION THRU TFE**

Note: The 1/8" TFE sheet shall be bonded directly to the bottom steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.



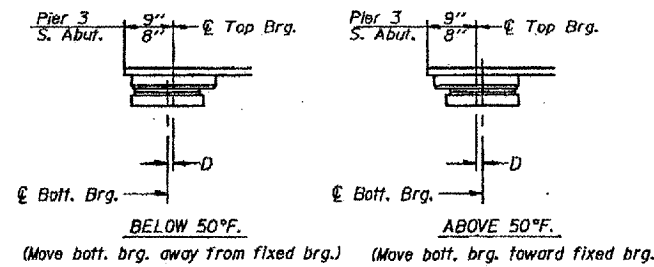
**SIDE RETAINER**

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



**PINTLE**

Notes: All steel plates shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. All hardware shall be hot dip galvanized according to AASHTO M 232 and ASTM A 153. Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. See sheet 9 of 17 for Anchor Bolt installation. New side retainers, shim plates, stainless steel sheet, TFE sheet, anchor bolts and elastomeric neoprene mats are included in "Furnishing and Erecting Structural Steel".



**SETTING ANCHOR BOLTS AT EXP. BRG.**

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

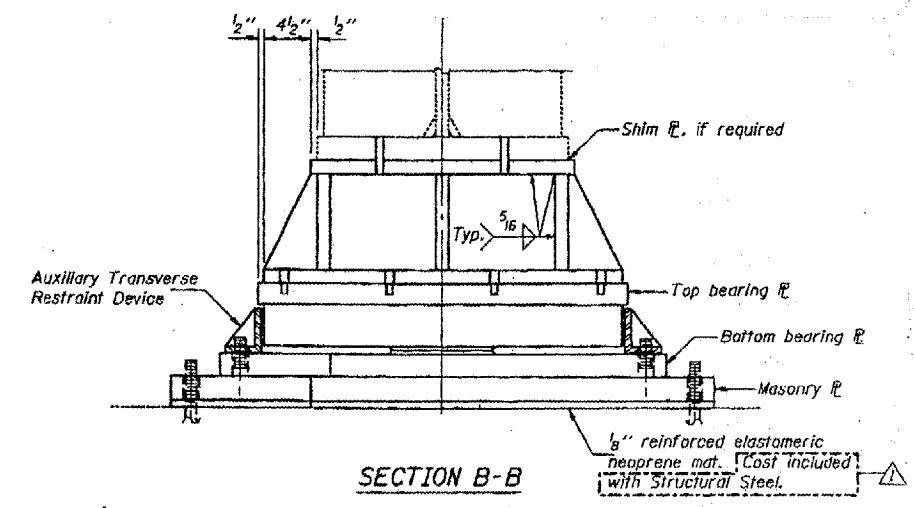
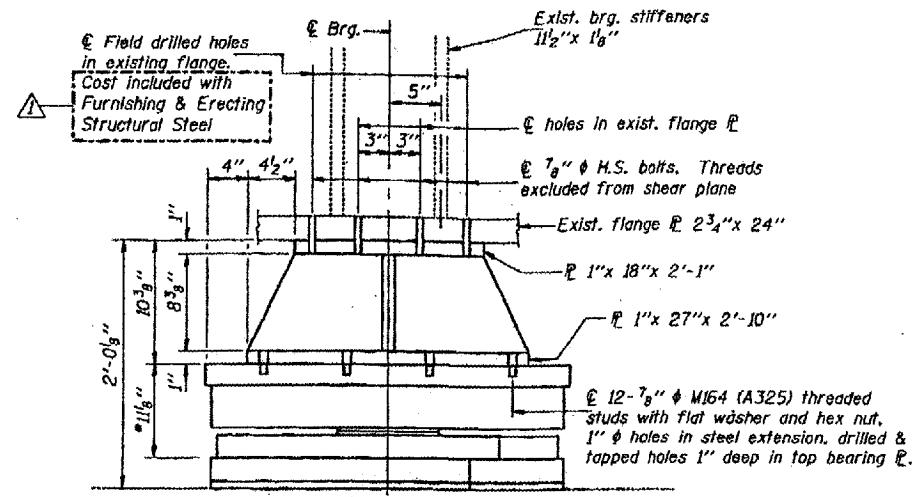
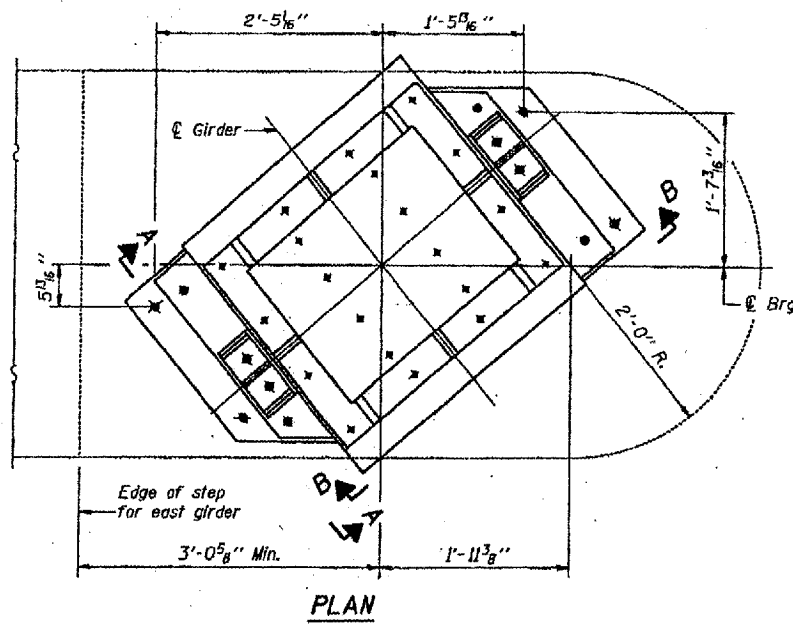
**BILL OF MATERIAL**  
(Total for 2 Structures)

Item	Unit	Total
Jack and Remove Existing Bearings	Each	20
Furnishing and Erecting Structural Steel	Pound	5410

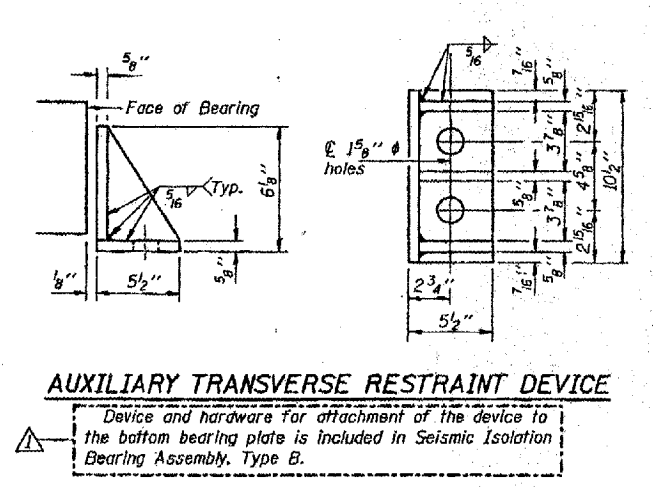
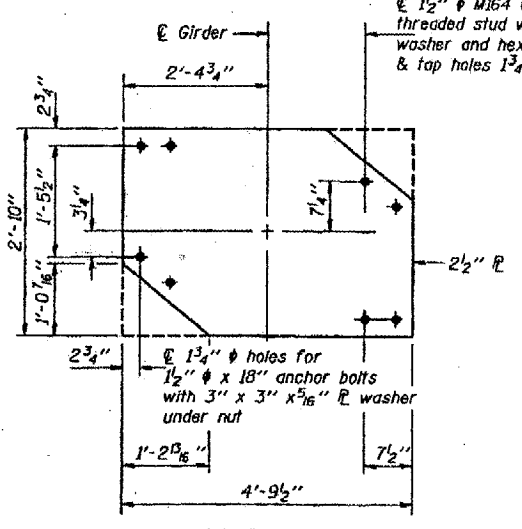
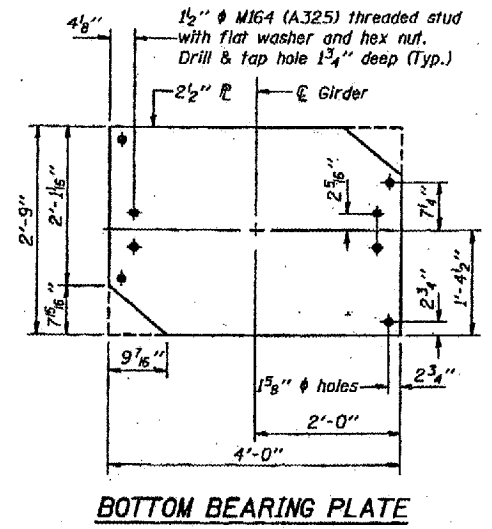
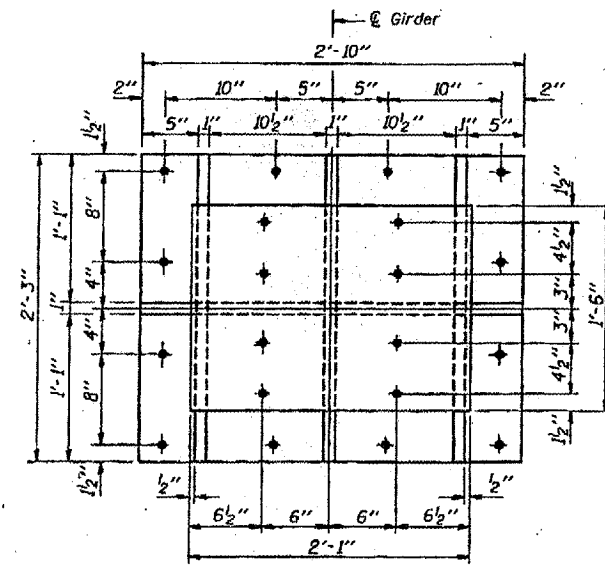
BRIDGES NO. 1 AND NO. 2  
002-0003 002-0004  
FOR INFORMATION ONLY

**EXPANSION BEARING DETAILS**  
**PIER 3 (S.) & SOUTH ABUTMENT**  
**F.A.I. ROUTE 57 - SECTION (02-1B)I**  
**ALEXANDER COUNTY**  
**STATION 943+72.00**

July 5, 2008  
EXAMINED *Thomas J. Demagala*  
DESIGNER OF BRIDGE DESIGN  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES



\* Limit for pay item Seismic Isolation Bearing Assembly. Hardware for the attachment of the Steel Extension to the Top Bearing and for the attachment of the Bottom Bearing Plate to the Masonry Plate is included in Structural Steel.



See sheet 6 of 17 for notes.

VERTICAL REACTIONS  
PER TYPE B BEARING

	Piers 1 & 2
R <sub>DL</sub> (k)	565
R <sub>LL</sub> (k)	222
R <sub>IMP</sub> (k)	40
R <sub>TOTAL</sub> (k)	827

NON-SEISMIC LATERAL EFFECTS  
PER TYPE B BEARING

	Piers 1 & 2	
Thermal Effects	Longitudinal Displ. (in)	1.09
	Longitudinal Force (k)	34.5
AASHTO Group Load Effects	Longitudinal Force (k)	16.8
	Transverse Force (k)	59.8
	Transverse Displ. (in)	1.44

FORCE-DEFLECTION CHARACTERISTICS  
PER TYPE B BEARING

	Piers 1 & 2	
Longitudinal Load Case:		
K <sub>g</sub> (k/in)	10.0	
Δ <sub>max</sub> (in)	2.72	
F <sub>max</sub> (k)	67.2	
K <sub>eff</sub> (k/in)	24.7	
EDC (k-in)	435	
β	0.38	
Transverse Load Case:		
K <sub>g</sub> (k/in)	18.0	
Δ <sub>max</sub> (in)	2.30	
F <sub>max</sub> (k)	81.4	
K <sub>eff</sub> (k/in)	35.4	
EDC (k-in)	368	
β	0.31	

BILL OF MATERIAL  
(Total for 2 Structures)

Item	Unit	Total
Jack and Remove Existing Bearings	Each	8
Seismic Isolation Bearing Assembly, Type B	Each	8
Furnishing and Erecting Structural Steel	Pound	17,190

July 5, 2008  
EXAMINED: Thomas J. Donnell  
PASSED: Robert E. Anderson

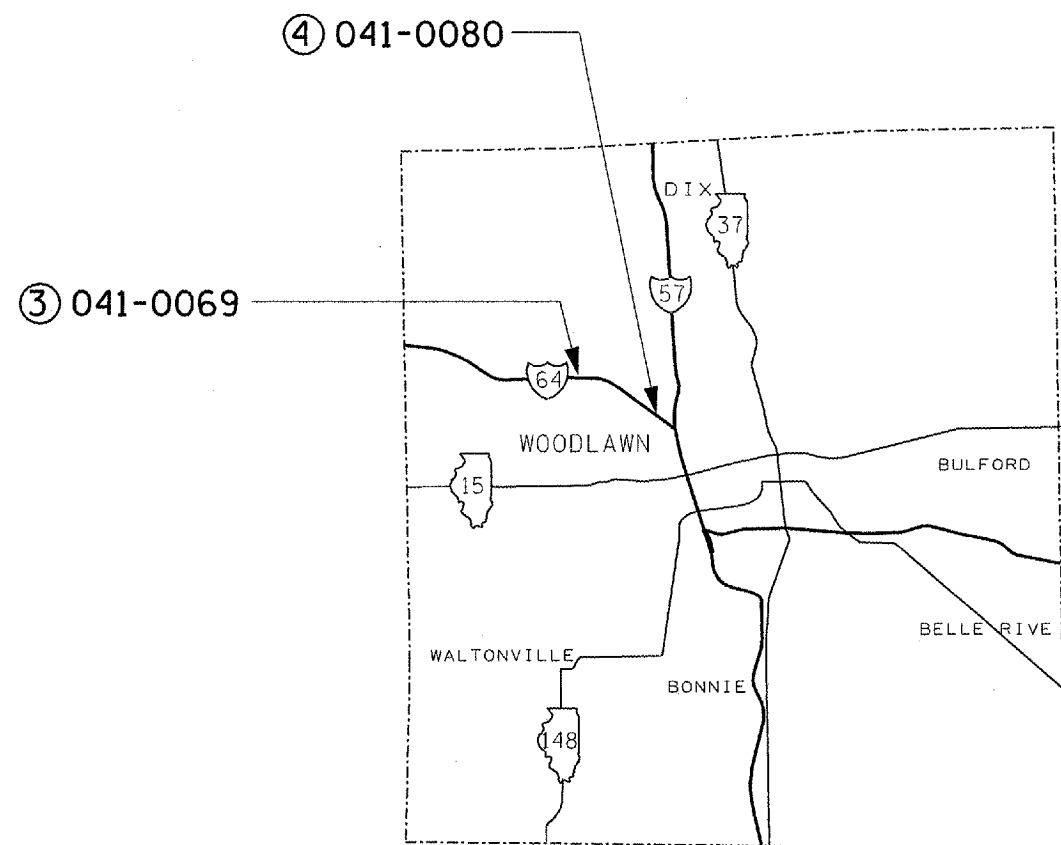
BEARING DETAILS  
PIERS 1 & 2  
F.A.I. RTE. 57 - SEC. (02-1B)  
ALEXANDER COUNTY  
STATION 943+72.00

BRIDGES NO. 1 AND NO. 2  
002-0003 002-0004  
FOR INFORMATION ONLY

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIOUS	•	VARIOUS	31	16
FED. ROAD DIST. NO. 7		ILLINOIS		

• D9 BRIDGE PAINTING 2007-1



J E F F E R S O N C O.

③ 041-0069	WOODLAWN INTERCHANGE CH-9 OVER I-64 LENGTH: 248 FT.      WIDTH: 71.9 FT. ADT: 1350 7% TRUCKS
------------	---

④ 041-0080	3.7 MILES EAST OF WOODLAWN INTERCHANGE TR-206 OVER I-64 LENGTH: 246 FT.      WIDTH: 30 FT. ADT: 1450 4% TRUCKS
------------	---







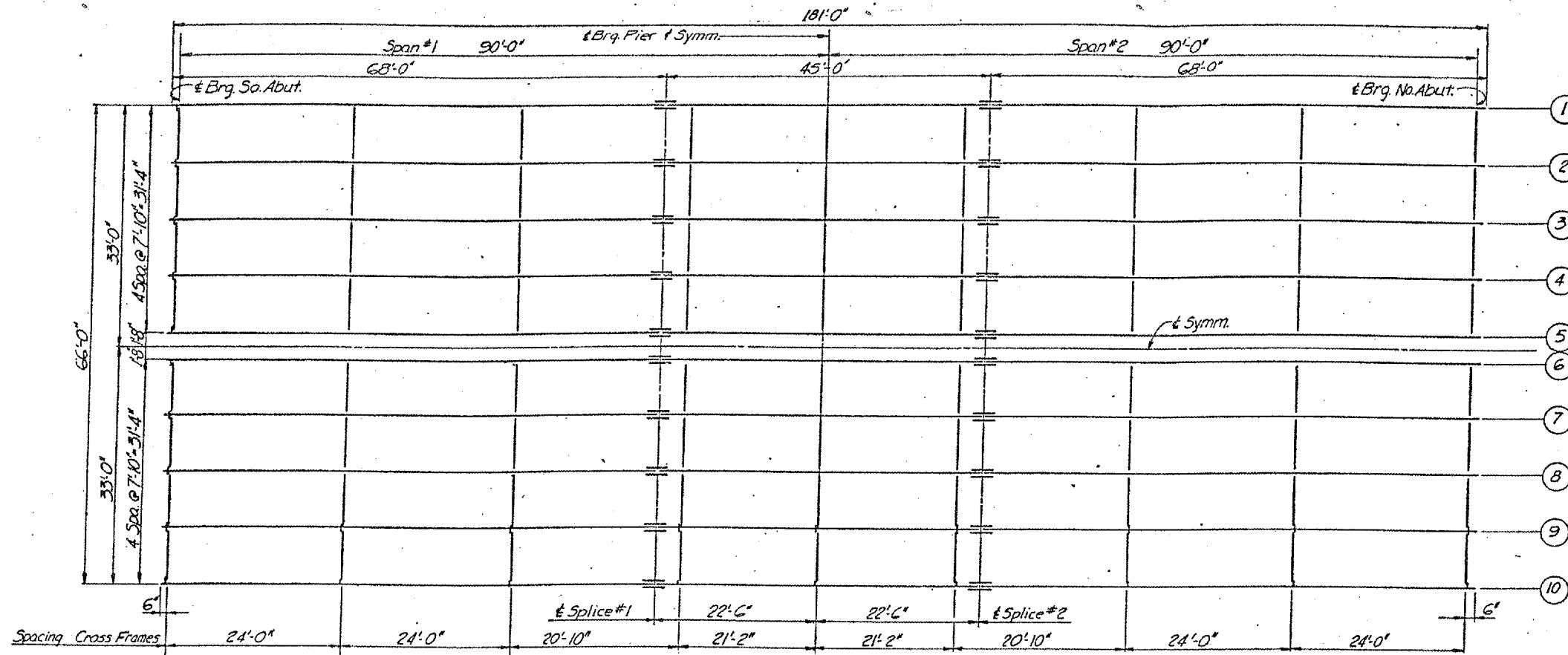


TABLE OF  
INTERIOR BEAMS

	MOMENTS (kip Fts.)		REACTIONS (kips)	
	0.4 Span	Pier	Abut.	Pier
Dead Load	523.00	-1134.90	32.58	116.74
Superimposed Dead Load	281.90	-369.32	15.79	47.98
Live Load	807.41	-560.10	49.80	72.35
Impact	187.50	-130.00	11.61	16.81
TOTALS	1799.81	-2194.32	109.78	253.88

\* ELEVATION TOP OF WEB

Beam No's.	± Brg. S. Abut.	± Splice #1	± Pier	± Splice #2	± Brg. N. Abut.
1 or 10	517.812	518.920	519.232	519.595	520.504
2 or 9	517.936	519.043	519.355	519.718	520.628
3 or 8	518.058	519.165	519.477	519.840	520.750
4 or 7	518.180	519.288	519.600	520.963	520.872
5 or 6	518.302	519.410	519.722	520.085	520.994

\* For fabrication only.

STRUCTURAL STEEL  
BILL OF MATERIALS

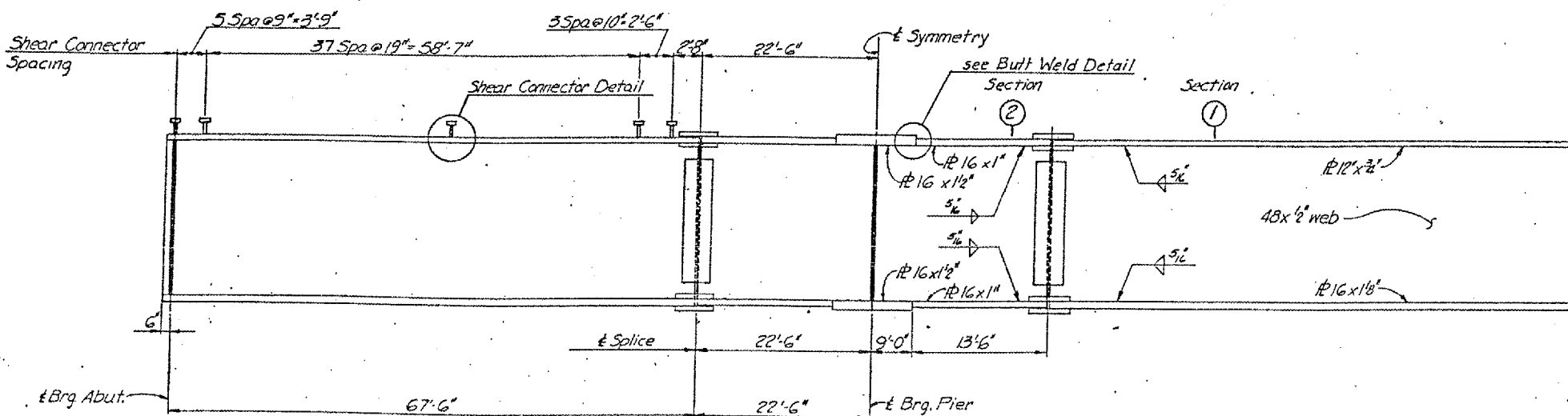
Girders	335,530
Cross Frames & Conn.	21,210
Splices	10,600
Stiffeners	3,300
Expansion Guards	2,880
* Total Structural Steel	385,020

\* Includes 11,500 Lbs. for bearings  
Shear Connectors = 2760 Each

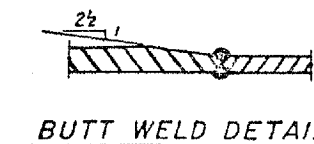
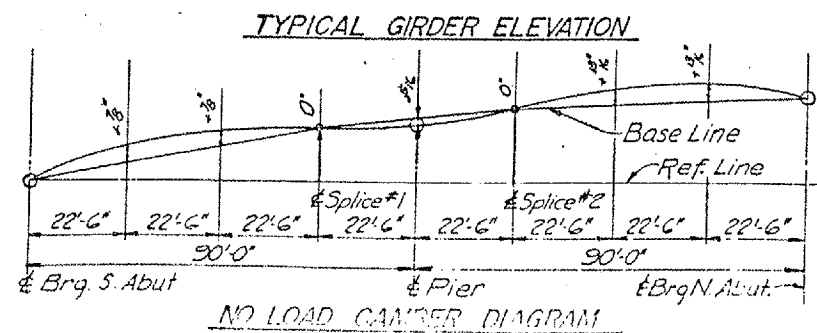
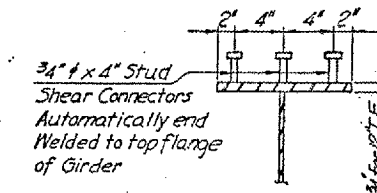
PROPERTIES

STEEL SECTION			
	Section (1)	Section (2)	At Pier
$I_s$ (in <sup>4</sup> )	18,562.67	22,666.67	32,868.00
$S_{Ts}$ (in <sup>3</sup> )	625.02	907.75	1,288.44
$S_{Bs}$ (in <sup>3</sup> )	920.10	907.75	1,288.44
COMPOSITE SECTION			
$I_c$ (in <sup>4</sup> )	49,542.70		
$S_{Tc}$ (in <sup>3</sup> )	5,236.37		
$S_{Bc}$ (in <sup>3</sup> )	1,227.02		

$I_s$  = Moment of inertia, Steel Section  
 $S_{Ts}$  = Sec. Mod. top steel section  
 $S_{Bs}$  = Sec. Mod. bottom steel section  
 $I_c$  = Moment of inertia Composite Section  
 $S_{Tc}$  = Sec. Mod. top comp. section  
 $S_{Bc}$  = Sec. Mod. bottom comp. section



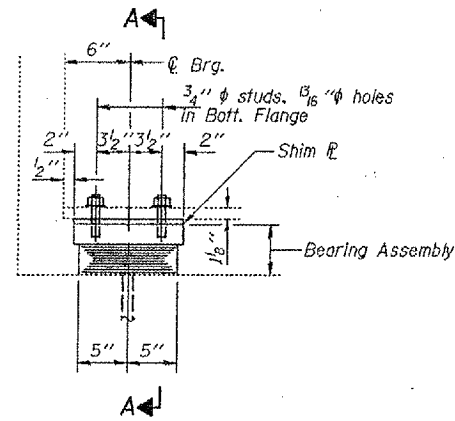
SHEAR CONNECTOR DETAIL



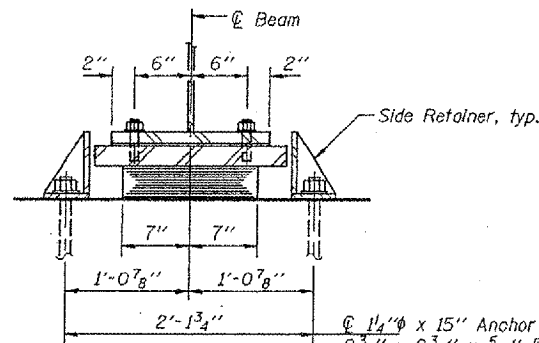
FRAMING PLAN

BRIDGE NO. 3  
041-0069  
FOR INFORMATION ONLY

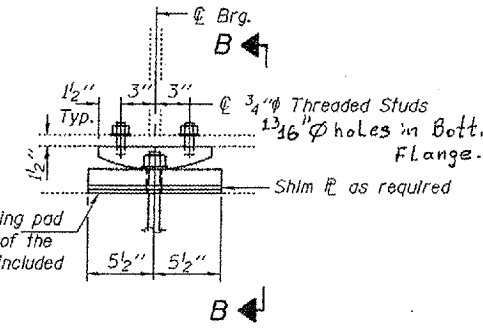




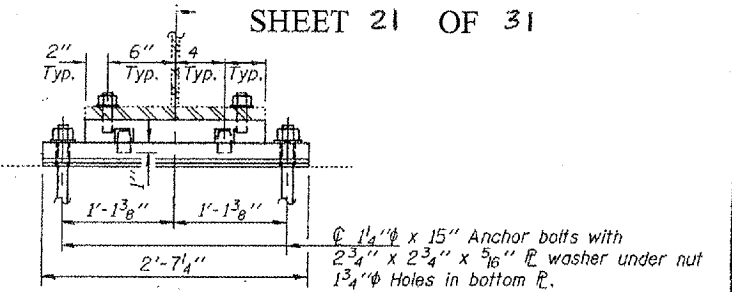
ELEVATION AT ABUT.



SECTION A-A

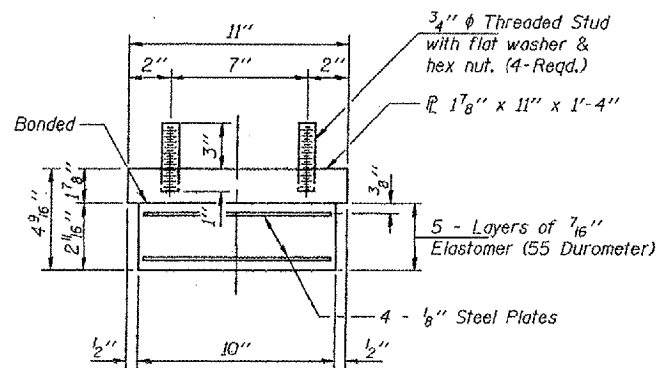


ELEVATION AT PIER



SECTION B-B

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

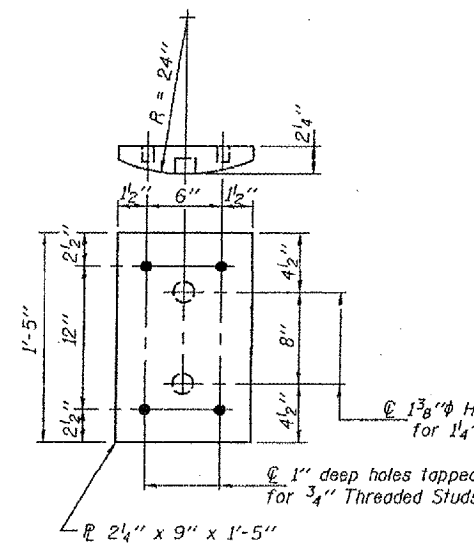
Note:  
Shim plates shall not be placed under Bearing Assembly.

BEAM REACTIONS

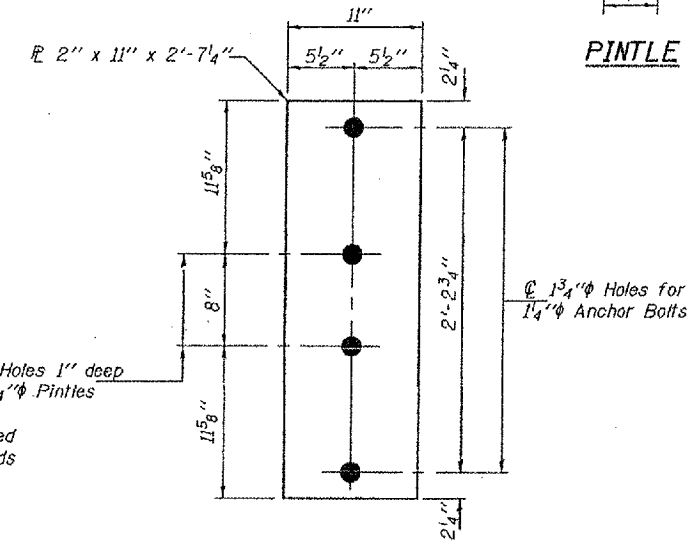
	Abutments	Pier
RF (K)	47.4	164.7
RL (K)	49.8	72.4
Imp. (K)	11.6	16.8
R (Total) (K)	108.8	253.9

Notes:  
Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.  
New side retainers, shim plates, connection bolts, and anchor bolts are included with Furnishing and Erecting Structural Steel.  
See Sheet 3 of 5 for Anchor Bolt installation.  
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.  
Min. jack capacity = 60 Tons at abutments.  
Min. jack capacity = 155 Tons at pier.

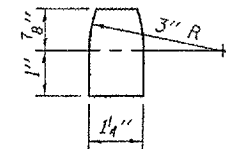
FIXED BEARING



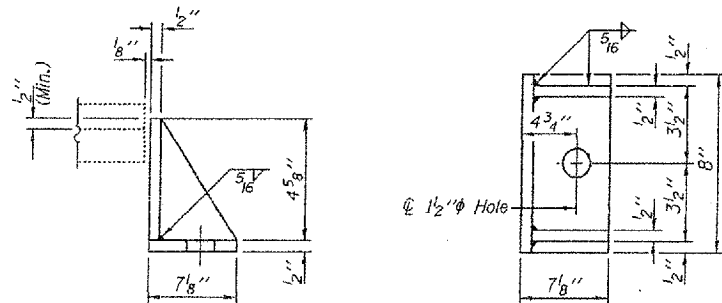
PLAN - TOP PLATE  
FIXED BEARING



PLAN - BOTTOM PLATE  
FIXED BEARING

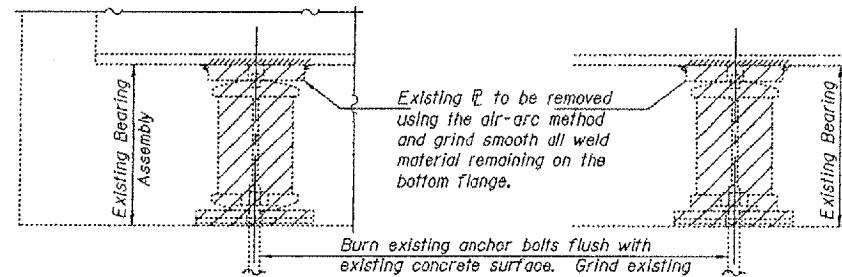


PINTLE



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



ABUTMENTS

PIER

EXISTING BEARING REMOVAL DETAIL

Cost included with Jacking and Cribbing.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	20
Jacking and Cribbing	LS	1
Furnishing and Erecting Structural Steel	Pound	4170

DESIGNED	ATH
CHECKED	VHV
DRAWN	balva
CHECKED	ATH VHV

APRIL 13, 2005  
EXAMINED John A. Morris  
ENGINEER OF STRUCTURAL SERVICES  
PASSED Ralph E. Anderson  
ENGINEER OF BRIDGES AND STRUCTURES

BRIDGE NO. 3  
041-0069  
FOR INFORMATION ONLY

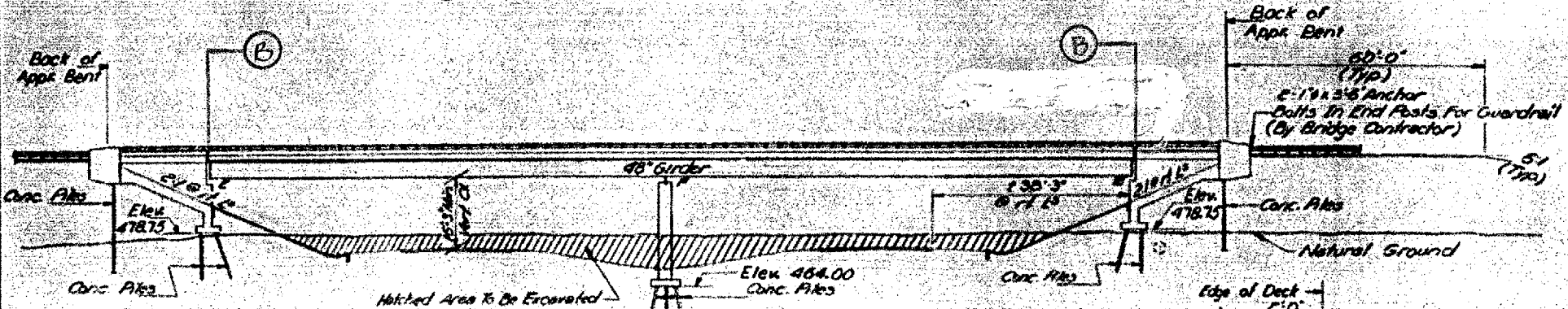
Old RR Spike in power pole 175'-0" left  
 Station 2341+03 & FAI Rte 64 Elev 475.67  
 No Existing Structure

CONTRACT NO. 98989

VARIOUS ROUTES  
 VARIOUS COUNTIES  
 D9 BRIDGE PAINTING 2007-1  
 SHEET 22 OF 31

STATE OF ILLINOIS  
 DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
 DIVISION OF HIGHWAYS

Beam End Locations



All reinforcement... unless otherwise shown.  
 Fasteners shall be high strength bolts, bolts 3/4" Ø, open holes 1/8" Ø, unless noted.

Diaphragm connections may be adopted to shop welding subject to approval by the Engineer.  
 The Basic Lead Silica Chromate paint system shall be used for shop and field painting of Structural Steel.

Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.  
 Anchor bolts shall be set before fastening diaphragms over supports.

Slope wall shall be reinforced with welded wire fabric 6" x 6" mesh, weighing 58# per 100 sq. ft.  
 The Contractor shall drive 1 concrete test pile in a permanent location at the pier as directed by the Engineer.

The concrete rail section above the mandatory construction joint of the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.

The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.

Class A Excavation for structures includes excavation for slope wall.

Concrete piles at appr. berths shall be driven in holes precored through the embankment in accordance with Article 513.09(c) of the Standard Specifications.

Note:  
 See sheet #3 for Stress Table.

STATION 2343+00  
 BUILT 197 BY  
 STATE OF ILLINOIS  
 F.A.I. RTE. 64 SEC. 41NB-3  
 F.A. PROJECT I-64-3(38)  
 LOADING HS15

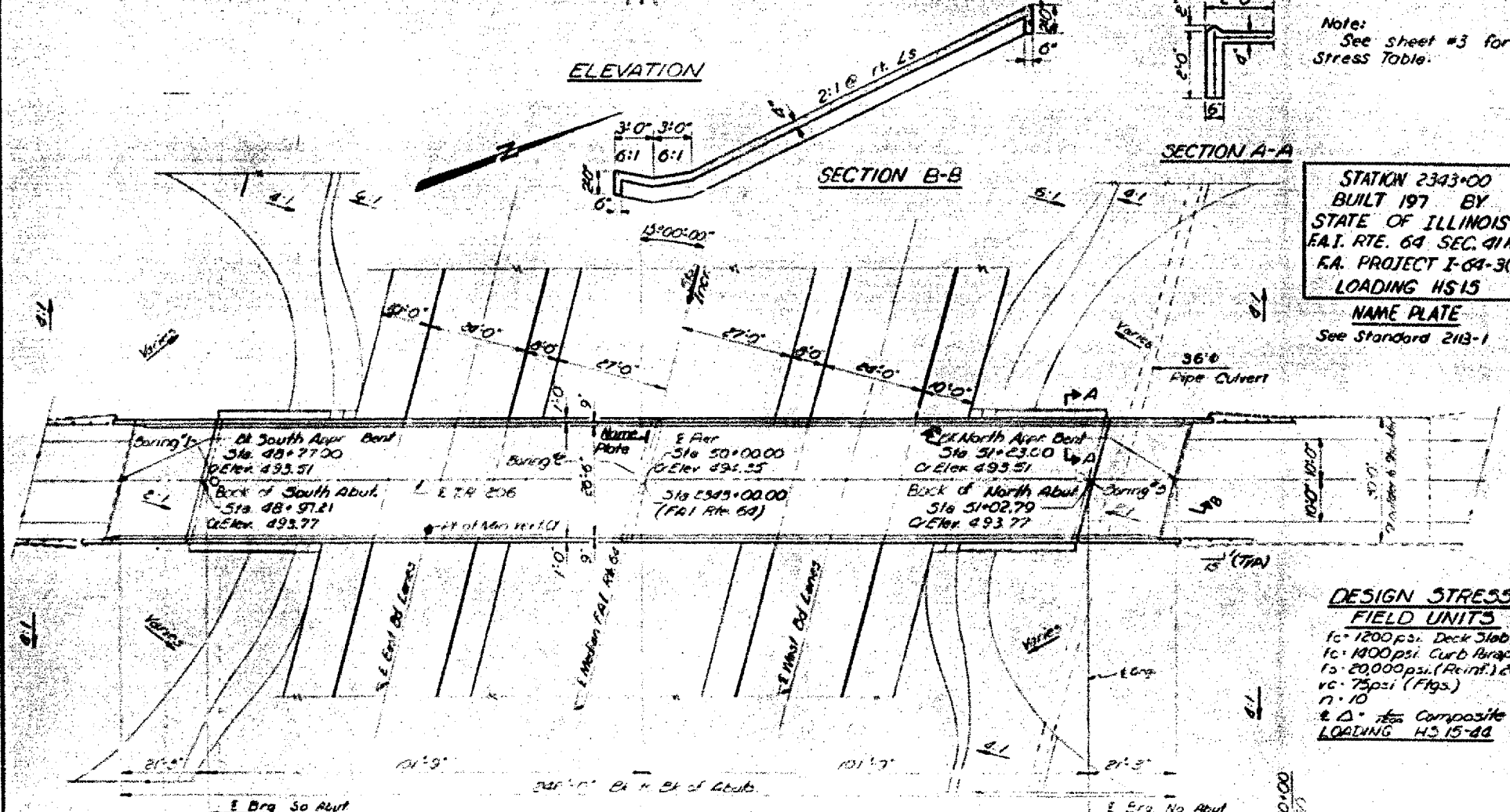
NAME PLATE  
 See Standard 213-1

BILL OF MATERIAL

Item	Unit	Sub	Super	Total
Class A Exc. for Structures	Cu. Yd.	80		80
Protective Coat	Sq. Yd.		918	918
Class X Concrete	Cu. Yd.	161.0	246.6	407.6
Structural Steel	L. Sum	.51		.51
Stud Shear Connectors	Each		1,200	1,200
Aluminum Rolling	Lin. Ft.		482	482
Reinforcement Bars	Lbs.	2,100	36,010	38,110
Concrete Piles	Ln. Ft.	2,021		2,021
Test Pile Concrete	Each	1		1
Name Plates	Each		1	1
Slope Wall 3 Inch	Sq. Yd.	300		300
Preformed Joint Sealer	Lin. Ft.		62	62
Sand Backfill	Cu. Yd.	245		245

DESIGN STRESSES

FIELD UNITS  
 1c = 1200 psi Deck Slab  
 1c = 1400 psi Curb Parapet & Sub.  
 1c = 20,000 psi (Reinf.) 20,000 Struct  
 1c = 75 psi (Figs.)  
 n = 10  
 E = 29,000,000 psi Composite  
 LOADING HS15-88

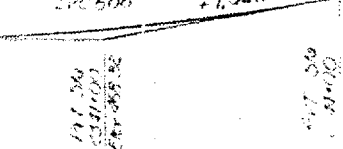


DESIGN STRESSES

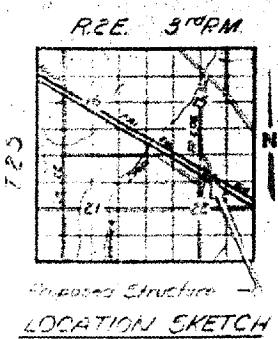
FIELD UNITS  
 1c = 1200 psi Deck Slab  
 1c = 1400 psi Curb Parapet & Sub.  
 1c = 20,000 psi (Reinf.) 20,000 Struct  
 1c = 75 psi (Figs.)  
 n = 10  
 E = 29,000,000 psi Composite  
 LOADING HS15-88

DESIGNED	MAILED
CHECKED	PAID
DRAWN	
CHECKED	

FLAN



PROFILE TR 205



BRIDGE NO. 4  
 041-0080  
 FOR INFORMATION ONLY

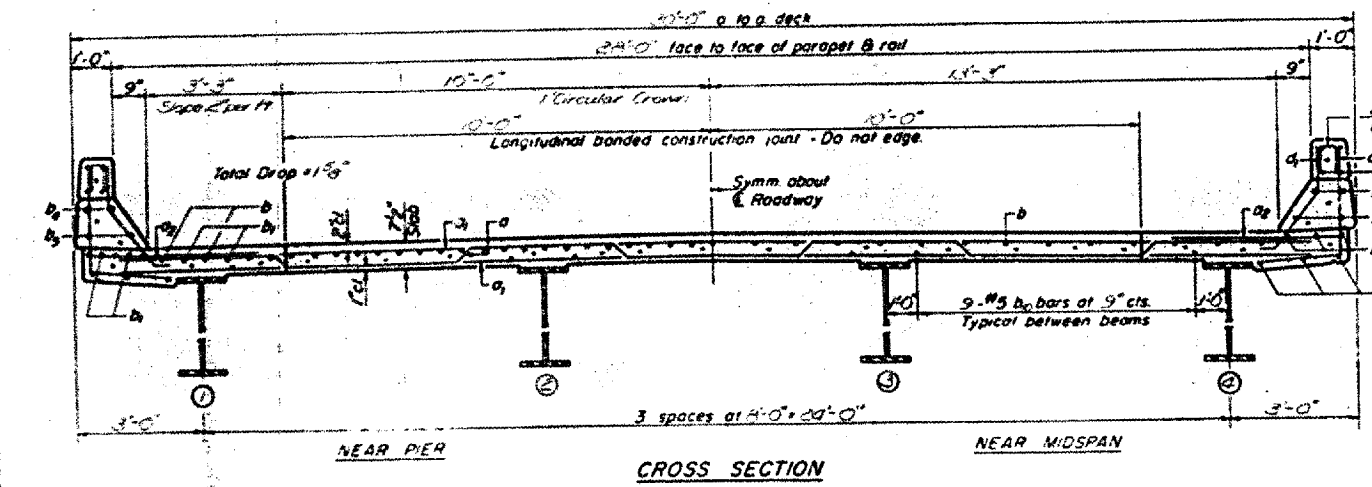
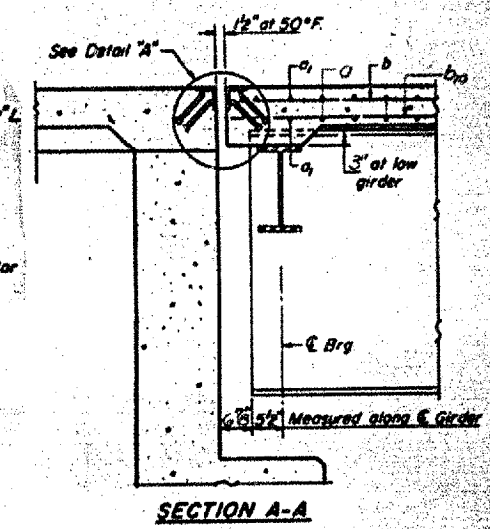
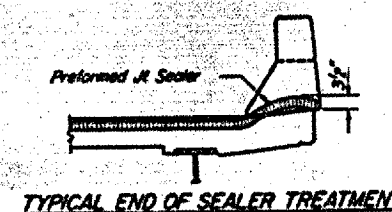
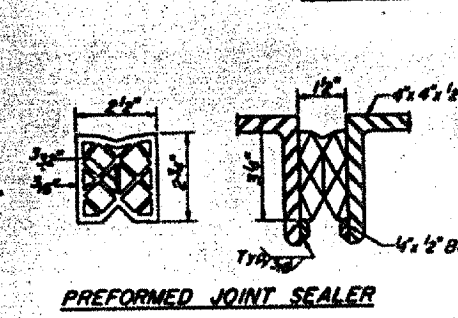
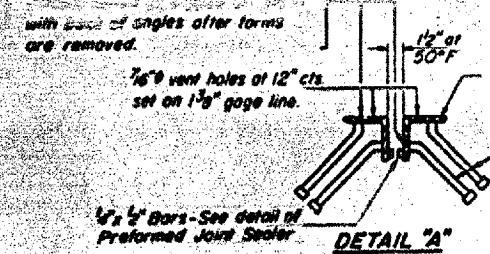
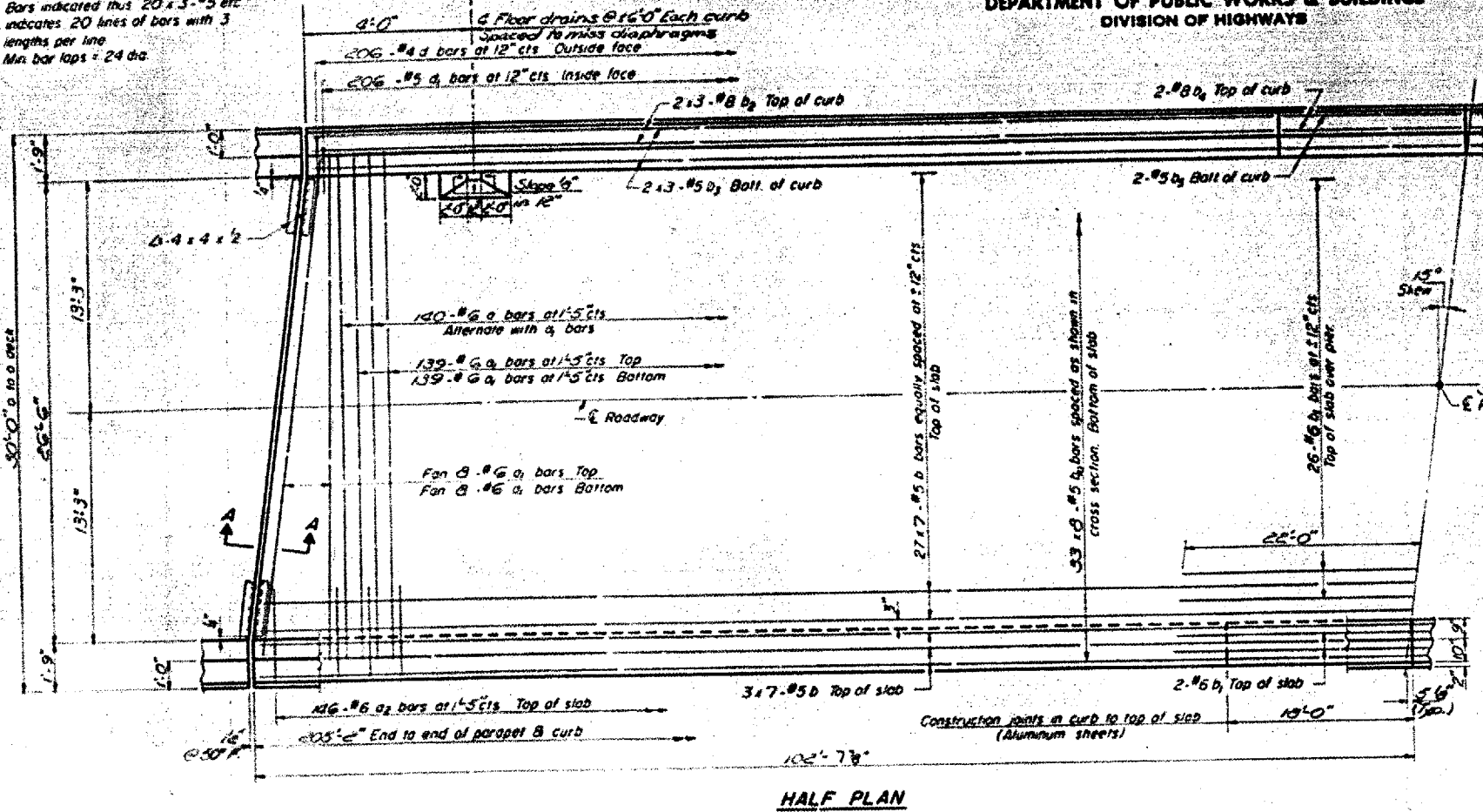
GENERAL PLAN & ELEVATION  
 TR 205 OVER FAI RTE 64  
 PROJ I-64-3(38)66  
 FAI RTE 64 SEC 41-NB-3  
 JEFFERSON COUNTY  
 STA. 2343+00

STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

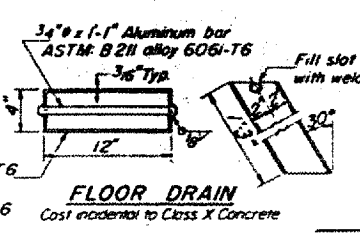
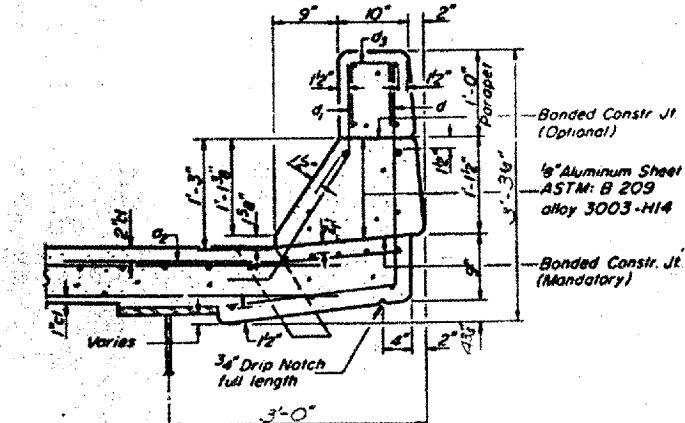
CONTRACT NO. 98989

VARIOUS ROUTES  
VARIOUS COUNTIES  
D9 BRIDGE PAINTING 2007-1  
SHEET 23 OF 31

NOTE:  
Bars indicated thus 20 x 3-#5 etc.  
indicates 20 lines of bars with 3  
lengths per line.  
Min. bar laps = 24 dia.



NOTE: For placement of bars  $a_1$  and  $a_2$ , see sheet #6

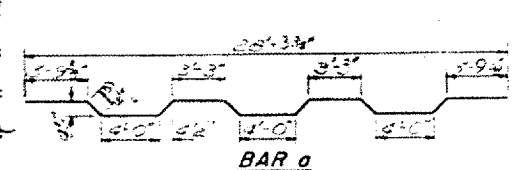


**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
$a_1$	140	#6	29'-3"	—
$a_2$	310	#6	29'-0"	—
$a_3$	292	#6	4'-0"	—
$b$	231	#5	30'-5"	—
$b_1$	30	#6	44'-0"	—
$b_2$	29	#8	29'-0"	—
$b_3$	29	#5	29'-0"	—
$b_4$	8	#8	17'-0"	—
$b_5$	8	#5	17'-0"	—
$b_{10}$	202	#5	26'-9"	—
$d$	412	#4	2'-4"	J
$d_1$	412	#5	3'-3"	J
Reinforcement Bars				Lbs. 43,350
Class X Concrete				Cu. Yds. 182.0
Structural Steel				Lump Sum L.S.

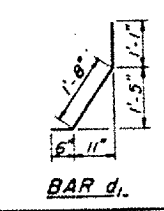
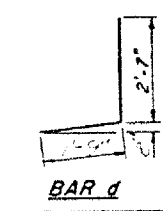
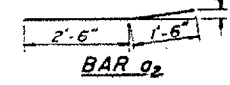
Bearing assemblies with lead plates and anchor bolts are included

DESIGNED: Matthew K. Chandy, M.E.  
CHECKED: James M. Barker  
DRAWN: J. Sutherland, P.E.  
CHECKED: J.E.T.  
EXAMINED: [Signature]  
PASSED: [Signature]  
Richard H. [Signature]



Aluminum Sheets Welded  
ASTM: B209 alloy 6061-T6  
or Aluminum Extrusions  
ASTM: B221 alloy 6061-T6

FLOOR DRAIN  
Cost incidental to Class X Concrete

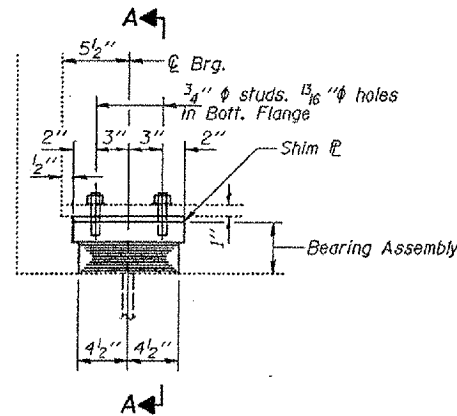


BRIDGE NO. 4  
041-0080  
FOR INFORMATION ONLY

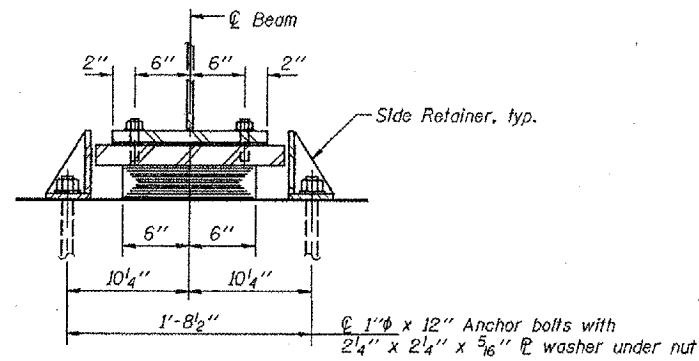
SUPERSTRUCTURE  
F.A.I. RTGD SEC. 41-7HB-3  
JEFFERSON COUNTY  
STATION 2343+00





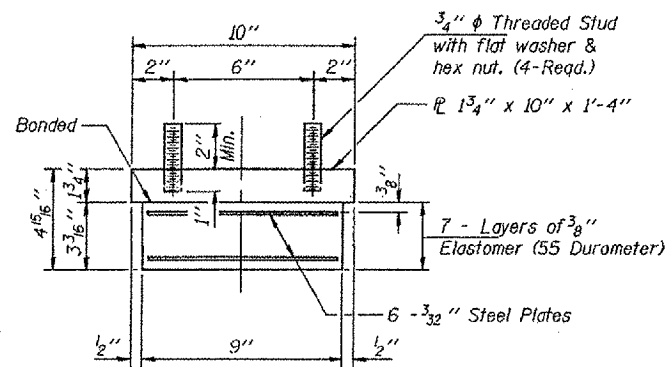


ELEVATION AT ABUT.



SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.



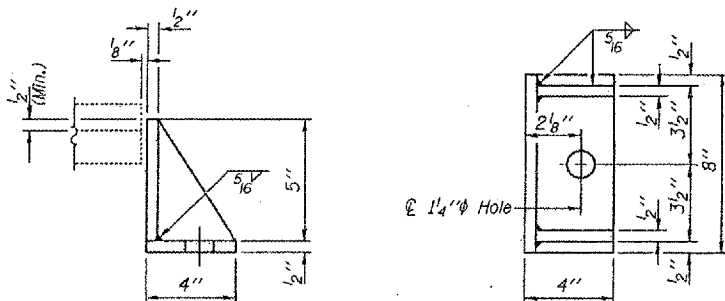
BEARING ASSEMBLY

Note:  
Shim plates shall not be placed under Bearing Assembly.

BEAM REACTIONS

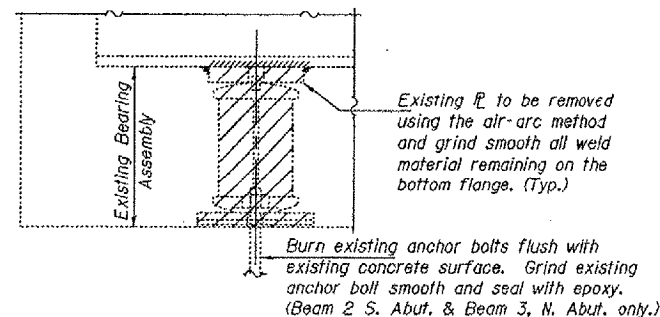
		Abutments
R <sub>D</sub>	(K)	49.1
R <sub>L</sub>	(K)	34.9
Imp.	(K)	7.8
R (Total)	(K)	91.8

Notes:  
Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost Included with Furnishing and Erecting Structural Steel.  
New side retainers, shim plates, connection bolts, and anchor bolts are included with Furnishing and Erecting Structural Steel.  
See Sheet 3 of 4 for Anchor Bolt installation.  
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.  
Min. Jack capacity = 55 Tons.



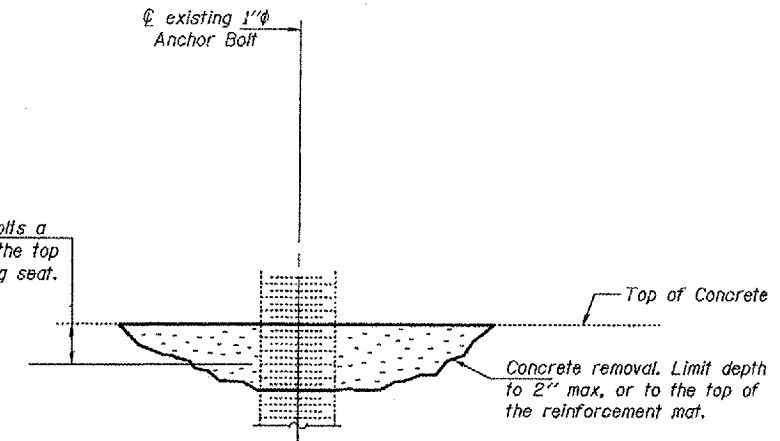
SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



EXISTING BEARING REMOVAL DETAIL

Cost Included with Jacking and Cribbing.



ANCHOR BOLT REMOVAL DETAIL

Typical except as noted.  
Cost Included with Jacking and Cribbing.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	8
Jacking and Cribbing	LS	1

BRIDGE NO. 4  
041-0080  
FOR INFORMATION ONLY

REPAIR DETAILS  
TR 206 OVER FAI 64  
JEFFERSON COUNTY  
SN 041-0080

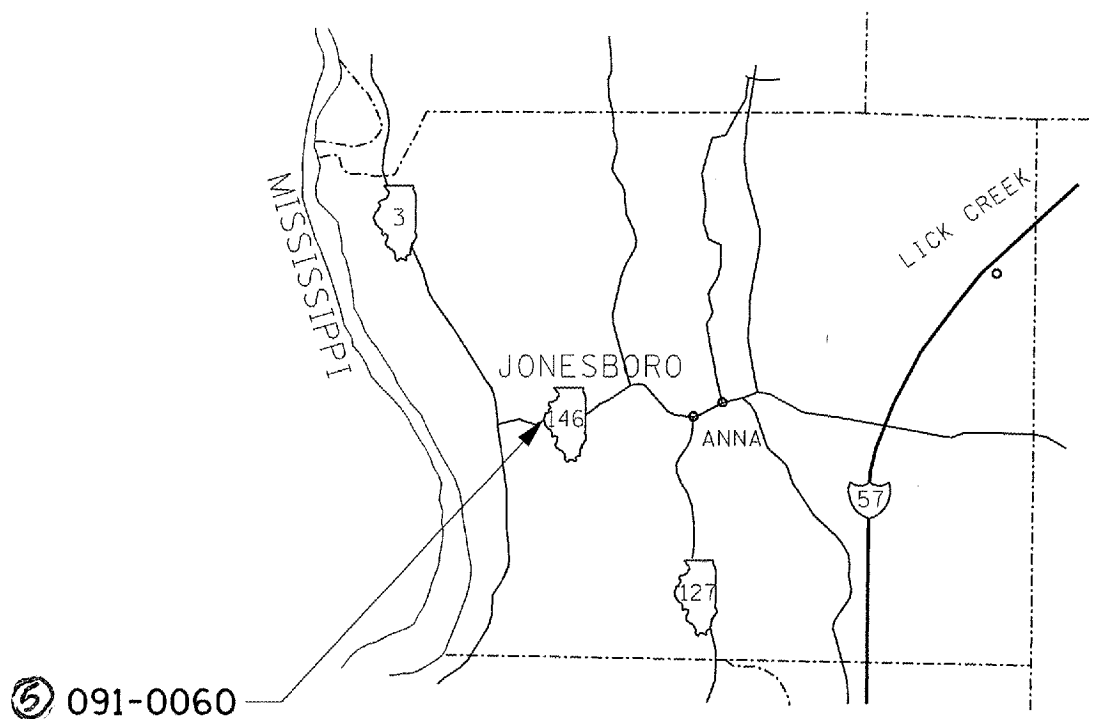
DESIGNED	ATH
CHECKED	VHV
DRAWN	baliva
CHECKED	ATH VHV

APRIL 13, 2005  
EXAMINED *John A. Morris*  
PASSED *Ralph E. Anderson*

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIOUS	•	VARIOUS	31	26
FED. ROAD DIST. NO. 7		ILLINOIS		

• D9 BRIDGE PAINTING 2007-1



U N I O N C O.

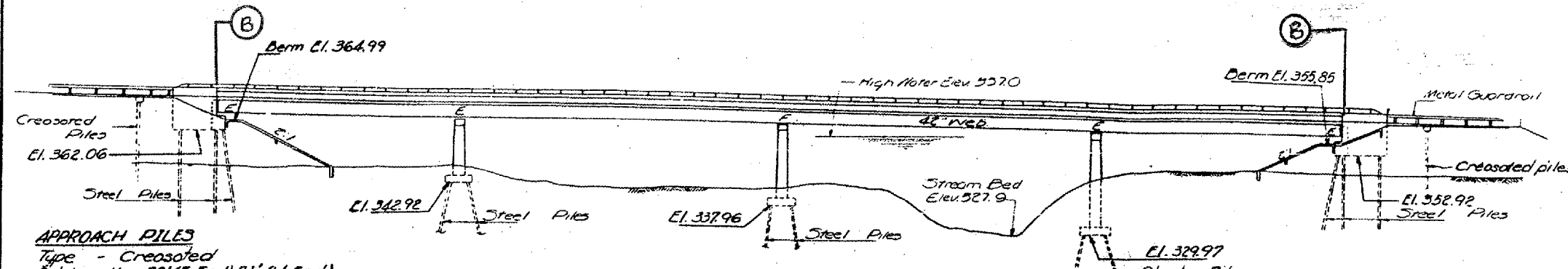
<p>⑤ 091-0060</p>	<p>2 MILES EAST OF IL 3 IL146 OVER CLEAR CREEK LENGTH: 380.0 FT.      WIDTH: 45.5 FT. ADT: 4300 17% TRUCKS</p>
-------------------	--

B.M. U.S.G.S. Brass Cap. Sht. Disc. Stamped 3476 SE. Wing Wall  
Existing Bridge Elev. 356.13  
Existing Structure: Built as SBI 146 Dec 10/42 Sta 333+04  
in 1931. Superstr. is Fern Truss & RC Deck Girder. Open  
Substr. is RC Open. Contractor shall remove existing  
structure after completion of new structure.  
Existing Structure is 344'-0" by 24'-4" o.o.  
No Salvage

(B) Beam End Location

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.  
Fasteners shall be high strength bolts. Bolts 7/8"; open holes 1 1/8" unless otherwise noted.  
Calculated weight of Structural Steel = 474,910#  
The basic lead silico chromate paint system shall be used for shop and field painting of Structural Steel.  
Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports.  
Field welding in other areas will be permitted only when approved by the Engineer.  
Anchor bolts shall be set before bolting diaphragms over supports.  
Layout of slope walls may be varied in the field to suit ground conditions as directed by the Engineer.  
The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.  
The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.  
Protective coat shall not be applied to surface to which Waterproofing Membrane System is applied.  
The Contractor shall drive two steel test piles in permanent locations one at West Abut. and pier 2, as directed by the Engineer before ordering the remainder of piles.  
Bearing seal surfaces shall be constructed or adjusted to the designed elevations within a tolerance of ± 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 6" adjusting shims of the dimensions of the bolt, brg. R, shall be provided for ea. brg. in addition to all other R's or shims. **TOTAL BILL OF MATERIAL**

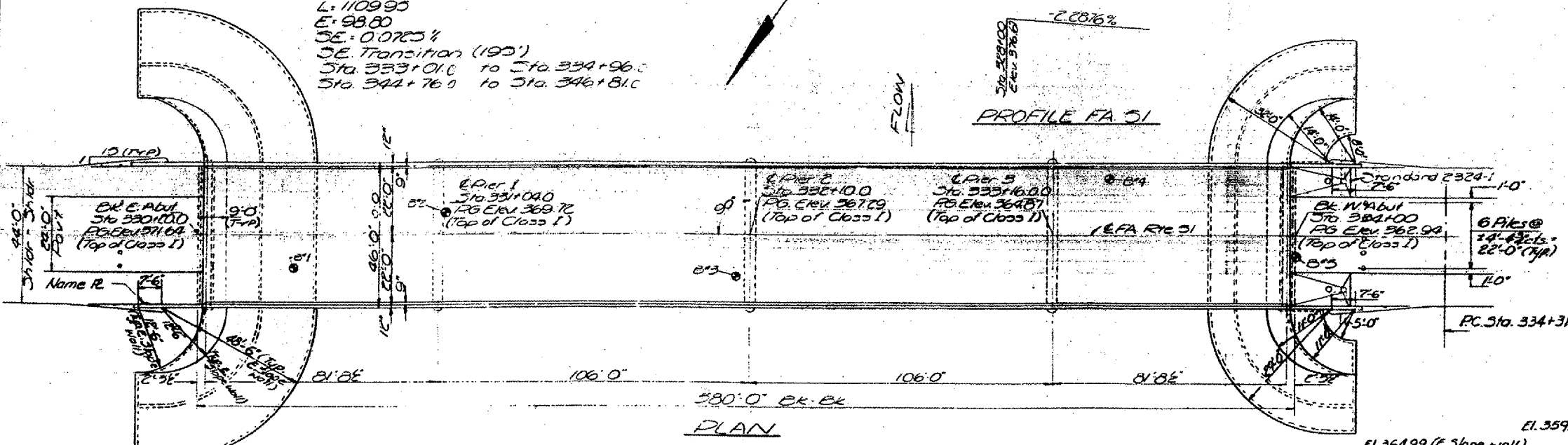


**APPROACH PILES**  
Type - Creosoted  
Est. Length - 32' (E. End) 21' (W. End)  
Capacity - 24 Ton  
No. Req'd. 6 Ea. Appr.

**CURVE DATA, FA 51**  
Δ: 38° 50' 34"  
D: 3° 30'  
R: 1637.02'  
T: 577.06  
L: 1109.93  
E: 98.80  
SE = 0.0725 1/4  
SE Transition (100')  
Sta 333+01.0 to Sta 334+96.0  
Sta 344+76.0 to Sta 346+81.0

ELEVATION

PROFILE FA 51



PLAN

DESIGN STRESSES

f<sub>c</sub>: 1800 psi Deck Slab  
f<sub>c</sub>: 1400 psi Curb, Parapet & Sub  
f<sub>s</sub>: 20000 psi Reinf. & Struct.  
v<sub>c</sub>: 75 psi Fk<sub>5</sub>  
n: 10  
Allow for 25' 15a Ft for Fut IVS  
Design Specifications 1969 AASHTO  
(as applicable)

WATERWAY INFORMATION

Drainage Area: 92.0 Sq. Mi.  
Present Opening: 3750 Sq. Ft.  
Requ'd. Opening: 4295 Sq. Ft.  
Proposed Opening: 4610 Sq. Ft.  
Q<sub>50</sub> = 30000 cfs  
Created Head: 0.3'

Item	Unit	Super	Sub.	Total
Structure Excavation	Cu. Yd.		360	360
Bituminous Concrete	sq. Yd.		150	150
Surface Course, Class I	sq. Yd.	524.0	107.0	631.0
Class X Concrete	Cu. Yd.		343.9	343.9
Class A Concrete	Cu. Yd.		1	1
Structural Steel	Lump Sum		1	1
Stud Shear Connectors	Each	3870		3870
Aluminum Railing	Lin. Ft.	804		804
Reinforcement Bars	Pound	157040	29910	166950
Steel Piles (HP 8x36)	Lin. Ft.		4638	4638
Test Piles Steel (HP 8x36)	Each		2	2
Creosoted Piles (201438)	Lin. Ft.		318	318
Slope Wall (6')	Sq. Yd.		1375	1375
Waterproofing Membrane System	Sq. Yd.	1774		1774
Neoprene Expansion Joint (25')	Lin. Ft.	91		91
Removal of Exist. Structure	Cu.		1	1
Name Plates	Ea.	1		1
Protective Coat	Sq. Yd.	302		302

STATION 332+10.00  
BUILT 197 BY  
STATE OF ILLINOIS  
EA. RT. 51 SEC. 10&B-2  
PROJ. BR-F-161(15)  
LOADING H520

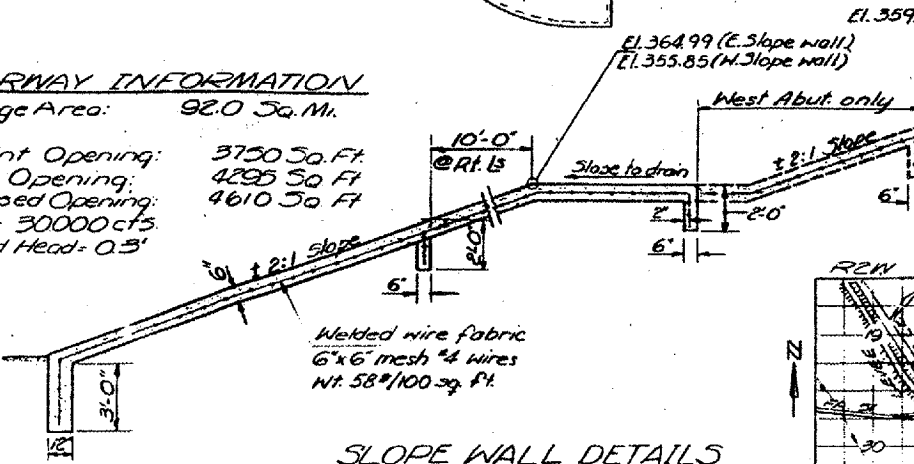
NAME PLATE

See Std. 2113

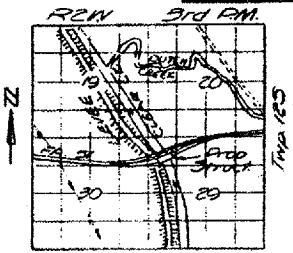
DESIGNED J. J. Edwards  
CHECKED Stanley S. Lee  
DRAWN A. Borfozo  
CHECKED Stanley S. Lee

EXAMINED [Signature]  
PASSED W. E. Bauman  
APPROVED Richard H. Hollerman

LOADING H520-44



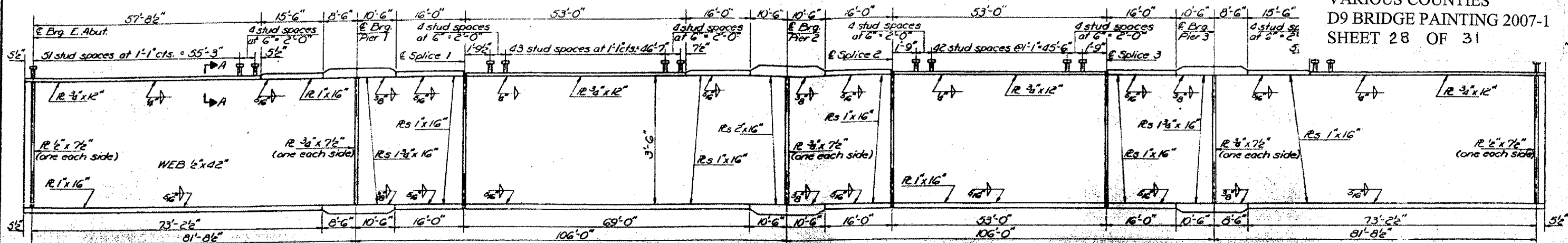
SLOPE WALL DETAILS



LOCATION SKETCH

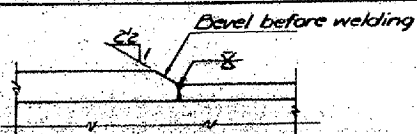
GENERAL PLAN & ELEVATION

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091-0060  
FOR INFORMATION ONLY

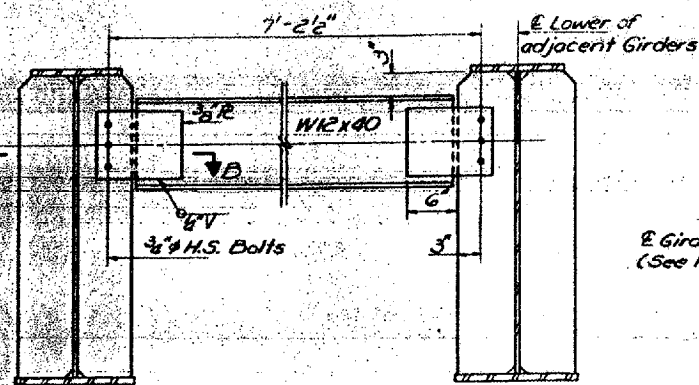


GIRDER ELEVATION

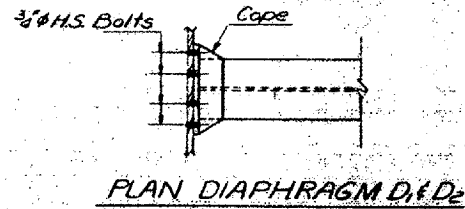
PLAN FOR CHANGING TOP FLANGE WIDTH



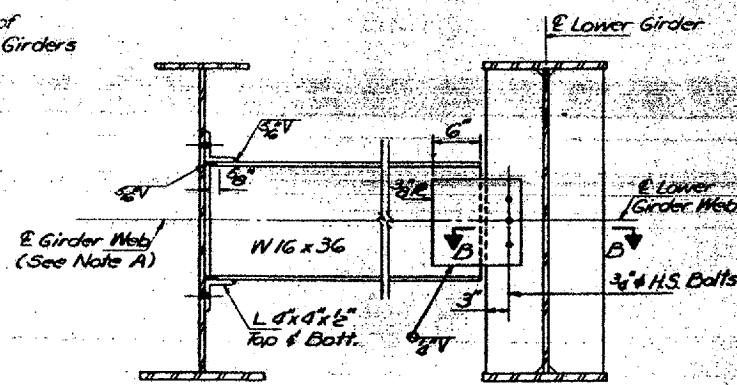
DETAIL OF SHOP FLANGE SPLICE



DIAPHRAGM D  
No. Required: 10

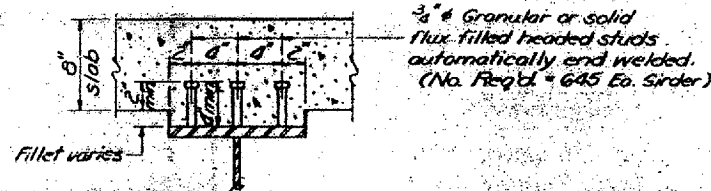


PLAN DIAPHRAGM D1 & D2

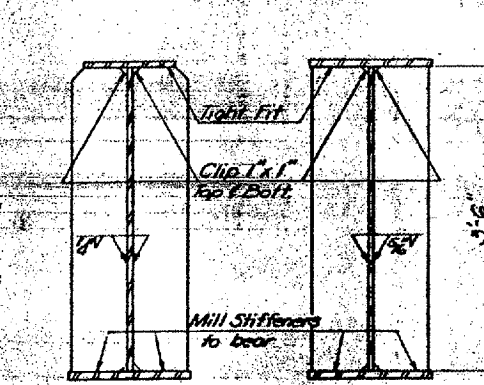
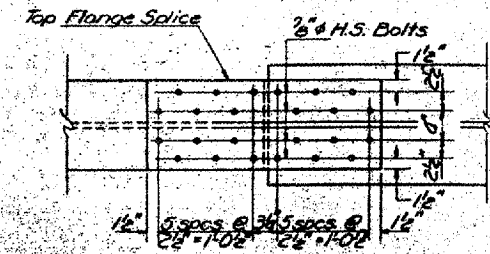


DIAPHRAGM D1 & D2  
No. Required: D1=55 D2=15  
(Use between bearings)  
Note A: For D1 use E of lowest of 6 Girders  
For D2 use E of Girder 4

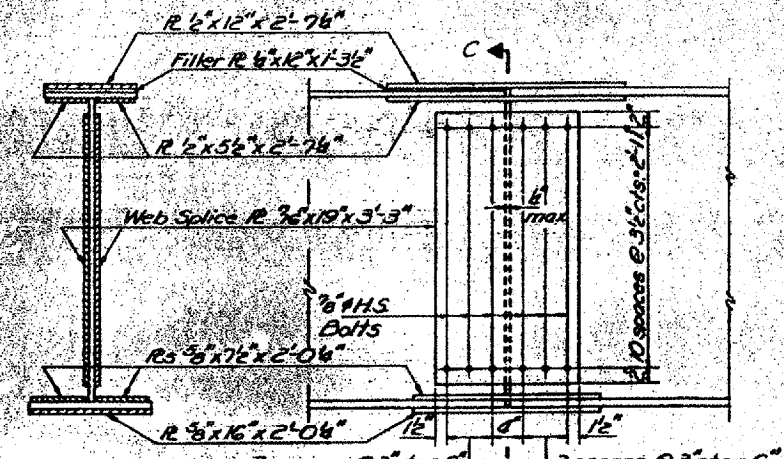
DIAPHRAGM D3  
No. Required: 15  
(Use at Piers only)



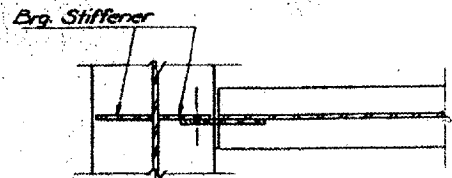
SEC. A-A



SEC. AT ABUTMENTS SEC. AT PIERS



SEC. C-C



SEC. B-B  
Typical for Diaphragms  
of Piers and Abutments

INTERIOR GIRDER MOMENT TABLE

	4Span 1	Pier 1	5Span 2	Pier 2	5Span 3	Pier 3	6Span 4
Is (in <sup>4</sup> )	1097	29898	14097	34084	14097	29898	14097
Ic (in <sup>4</sup> )	40089	-	40089	-	40089	-	40089
Ss (in <sup>3</sup> )	7537	134.2	7537	14819	7537	134.2	7537
Sc (in <sup>3</sup> )	10722	-	10722	-	10722	-	10722
W (K)	998	1128	998	1161	998	1128	998
M <sub>12</sub> (K)	405	1025	388	1111	388	1025	405
f <sub>s</sub> (Ksi)	6.48	9.36	6.16	9.00	6.16	9.36	6.48
S <sub>12</sub> (K)	526	526	526	526	526	526	526
M <sub>14</sub> (K)	254	418	287	486	287	418	254
M <sub>15</sub> (K)	728	627	808	725	808	627	728
M Imp. (K)	176	144	175	157	175	144	176
Total (K)	1156	1189	1270	1368	1270	1189	1156
f <sub>s</sub> S <sub>12</sub> (Ksi)	12.94	10.80	14.14	11.04	14.14	10.80	12.94
f <sub>s</sub> Total (Ksi)	19.42	20.16	20.30	20.04	20.30	20.16	19.42
V/R (K)	50.3	-	53.4	-	53.4	-	50.3

TOP OF WEB ELEVATIONS

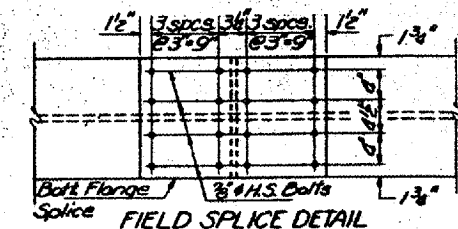
Girder	1	2	3	4	5	6
E. Brq. E. Abut.	370.32	370.09	370.61	370.61	370.49	370.32
E. Brq. Pier 1	368.38	368.55	368.67	368.67	368.55	368.38
E. Splice 1	367.75	367.92	368.04	368.04	367.92	367.75
E. Brq. Pier 2	365.94	366.10	366.23	366.23	366.10	365.94
E. Splice 2	365.34	365.49	365.63	365.63	365.49	365.34
E. Splice 3	364.00	364.21	364.38	364.38	364.32	364.16
E. Brq. Pier 3	363.67	363.78	363.88	363.81	363.65	363.43
E. Brq. W. Abut.	362.64	362.44	362.21	361.92	361.57	361.18

Is and Ss are the moment of inertia and section modulus of the steel section.  
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing f<sub>s</sub>.  
V/R is the maximum V + Impact shear range in span.

The main load carrying member components subject to the Supplemental Requirements for Notch Toughness are the flanges, webs, and splice plates of the steel girders or wide flange beams.

TABLE FOR INTERIOR GIRDER REACTION

	R	U	V	U	(10 Imp)	U	R	U	(10 Imp)	U	R	U
E. Abut.	45.4	45.3	11.0	101.7								
Pier 1	162.1	70.3	16.1	248.5								
Pier 2	168.5	74.2	16.0	258.7								
Pier 3	162.1	70.3	16.1	248.5								
W. Abut.	45.4	45.3	11.0	101.7								

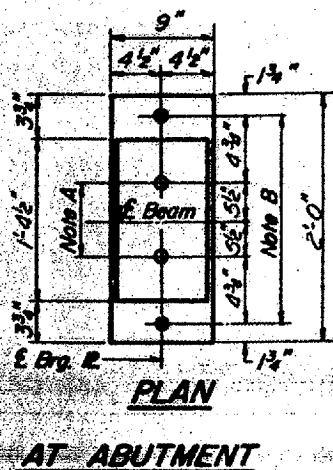
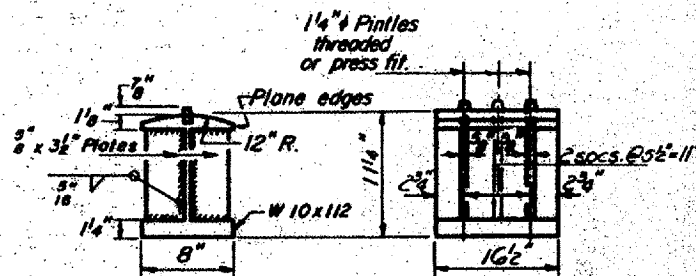
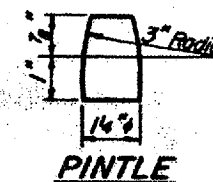
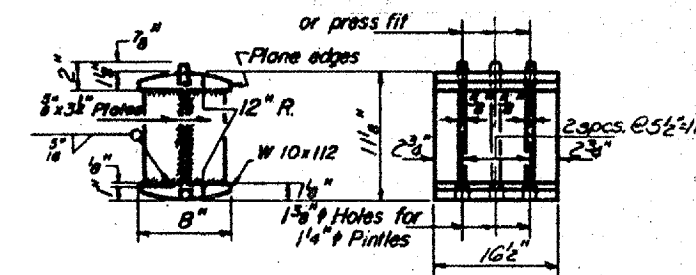
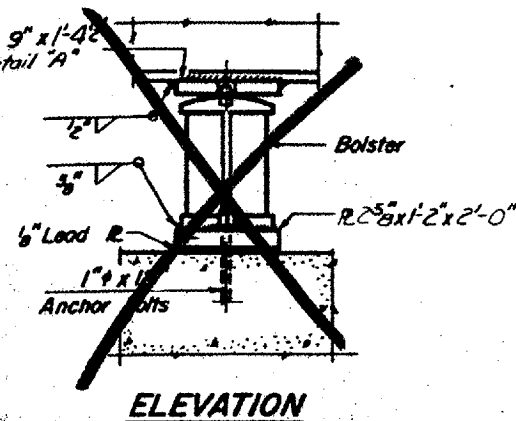
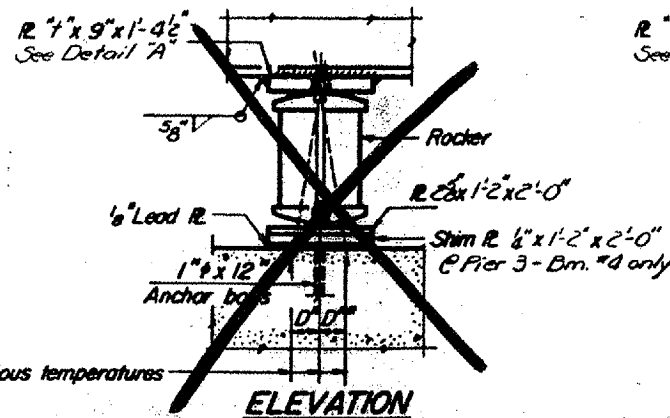
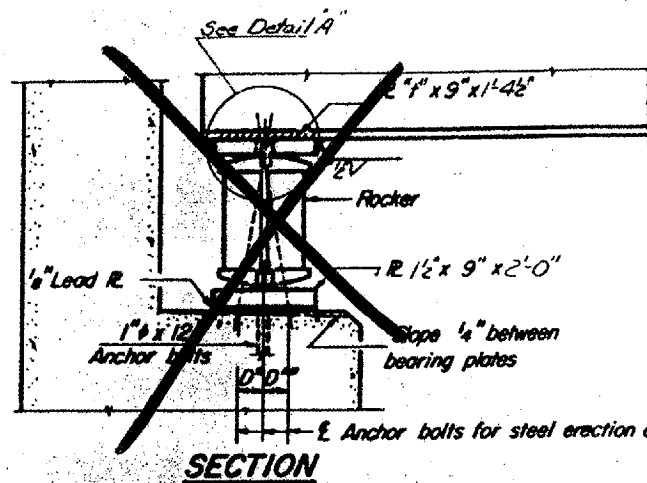


Work this sheet with sheet # 3

DESIGNED Jon J. Edwards  
CHECKED Stanley S. Liu  
DRAWN J. Sutherland  
CHECKED Stanley S. Liu

EXAMINED [Signature]  
PASSED [Signature]  
APPROVED [Signature]

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091-0060  
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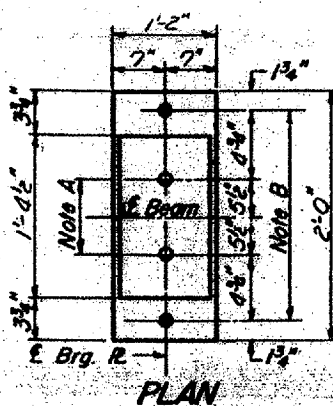


Abuts.	14"
Pier 1	13"
Pier 2	18"

Detail A  
(Looking South)

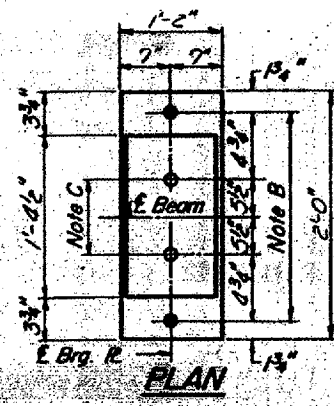
NOTE A

1 1/2" Holes - 1" deep in top R. for pintles. Thread or press fit pintles into bottom R.



NOTE B

1 1/2" Holes for 1" anchor bolts. 1 1/2" x 2 1/2" x 2 1/2" R. Washers under nut.



NOTE C

1 1/2" Holes 1" deep in top R. only for 1 1/4" pintles.

NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRGS.

- a) D\* (Side of brg. away from fixed brg.)  
D\* = 1/8" per each 100' of expansion for every 15° fall below the normal temp. of 50°F.
- D\*\* (Side of brg. toward fixed brg.)  
D\*\* = 1/8" per each 100' of expansion for every 15° rise above the normal temp. of 50°F.
- b) After beams have been erected and dimensions D\* or D\*\* determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

BEARING ASSEMBLY DETAILS

	Exp. Brg. E. Abut.	Exp. Brg. Pier 1				Exp. Splice 1	Exp. Brg. Pier 2				Exp. Splice 2	Exp. Splice 3	Exp. Brg. Pier 3				Exp. Brg. W. Abut.		
	5 1/2" (Typ.)	108'-2 1/2"				26'-6"	106'-0"				26'-6"	53'-0"	108'-2 1/2"				5 1/2" (Typ.)		
①	D	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>2</sub>	D <sub>2</sub>	D <sub>2</sub>	D	
②	D	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>2</sub>	D <sub>2</sub>	D <sub>2</sub>	D	
③	D	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>2</sub>	D <sub>2</sub>	D <sub>2</sub>	D	
④	D	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>2</sub>	D <sub>2</sub>	D <sub>2</sub>	D	
⑤	D	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>1</sub>	D <sub>3</sub>	D <sub>2</sub>	D <sub>2</sub>	D <sub>2</sub>	D	
⑥		20'-5 1/8"	20'-5 1/8"	20'-5 1/8"	20'-5 1/8"	21'-2 1/2"	21'-2 1/2"	21'-2"	21'-2 1/2"	21'-2 1/2"	21'-2 1/2"	21'-2"	21'-2 1/2"	21'-2 1/2"	20'-5 1/8"	20'-5 1/8"	20'-5 1/8"	20'-5 1/8"	
		81'-8 1/2"				106'-0"				106'-0"				81'-8 1/2"					

Work this sheet with sheet #7

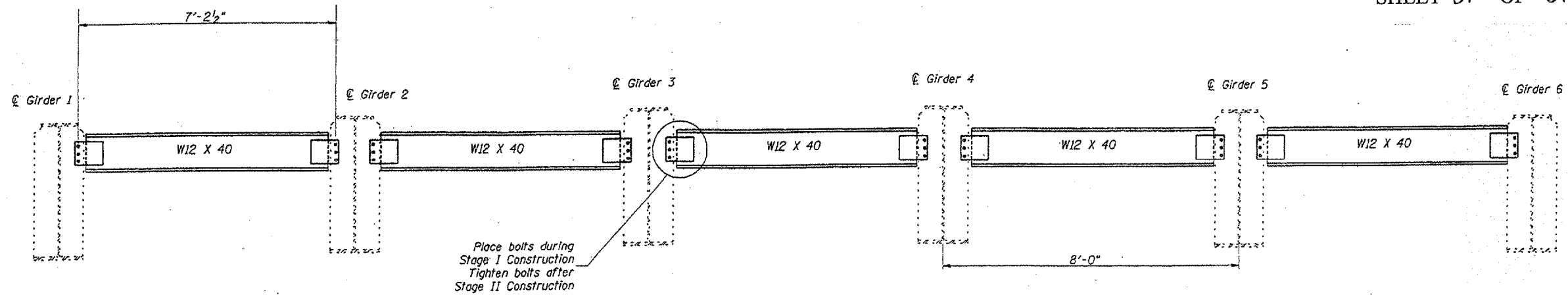
DESIGNED Jon J. Edwards  
CHECKED Stanley S. Lin  
DRAWN P.G. Barnett  
CHECKED Stanley S. Lin

EXAMINED  
PASSED  
APPROVED

FRAMING PLAN

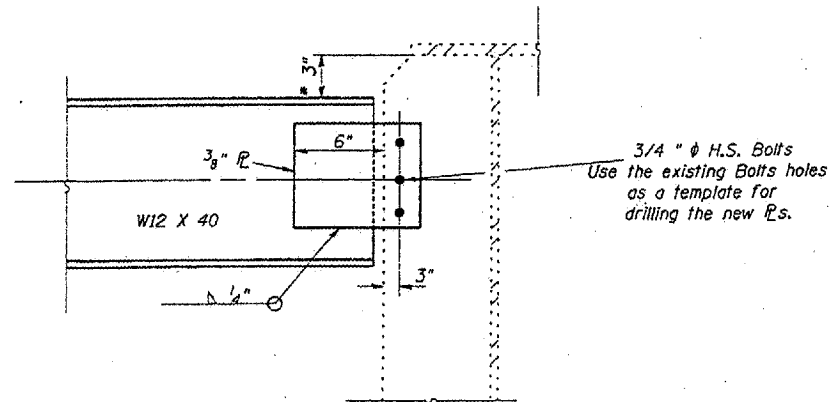
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091-0060  
FOR INFORMATION ONLY





**DIAPHRAGM REPLACEMENT AT ABUTMENTS**

Required: 10 - W12 x 40



**CROSS SECTION  
OF DIAPHRAGM CONNECTIONS**

Located at the Lower  
of the two Girders

Note:  $\frac{15}{16}$ " Holes for new  $\frac{3}{4}$ " H.S. Bolts shall be used for all diaphragm connections. Two hardened washers shall be required at diaphragm connections.

DESIGNED	T. Wayne Halstead
CHECKED	Mike Stephenson
DRAWN	T. Wayne Halstead
CHECKED	TWH MAS CMW

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091-0060  
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