

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

VARIOUS ROUTES  
SECTION D9 BRIDGE PAINT 2015-1  
VARIOUS COUNTIES

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D9 BRIDGE PAINT 2015-1	VARIOUS	23	1
		ILLINOIS	CONTRACT NO. 78428	

FOR INDEX OF SHEETS, SEE SHEET NO. 2

- BRIDGE NO. 1**  
SN. 028-0034  
IL 37 2013 ADT=5350, 5% TRUCKS  
TOWNSHIP-DENNING
- BRIDGE NO. 2**  
SN. 041-0062  
ILL 142 2013 ADT=4500, 5% TRUCKS  
I-64 2013 ADT=10150, 30% TRUCKS  
TOWNSHIP-DOODS
- BRIDGE NO. 3**  
SN. 097-0038  
I-64 EB 2013 ADT=4675, 29% TRUCKS  
TOWNSHIP-GRAY
- BRIDGE NO. 4**  
SN. 097-0039  
I-64 WB 2013 ADT= 4675, 29% TRUCKS  
TOWNSHIP-GRAY
- BRIDGE NO. 5**  
SN. 097-0001  
I-64 EB 2013 ADT=6400, 28% TRUCKS  
IL 1 2013 ADT=5200, 16% TRUCKS  
TOWNSHIP-GRAY
- BRIDGE NO. 6**  
SN. 097-0002  
I-64 WB 2013 ADT=6400, 28% TRUCKS  
IL 1 2013 ADT=5200, 16% TRUCKS  
TOWNSHIP-GRAY
- BRIDGE NO. 7**  
SN. 002-0029  
IL 127 2013 ADT=950, 16% TRUCKS  
TOWNSHIP-COUNTY UNIT ROAD DISTRICT

J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811

PROJECT ENGINEER: JOHN DAHMER  
PROJECT MANAGER: DAVID PICHE (618) 351-5227

CONTRACT NO. 78428

C-99-057-14

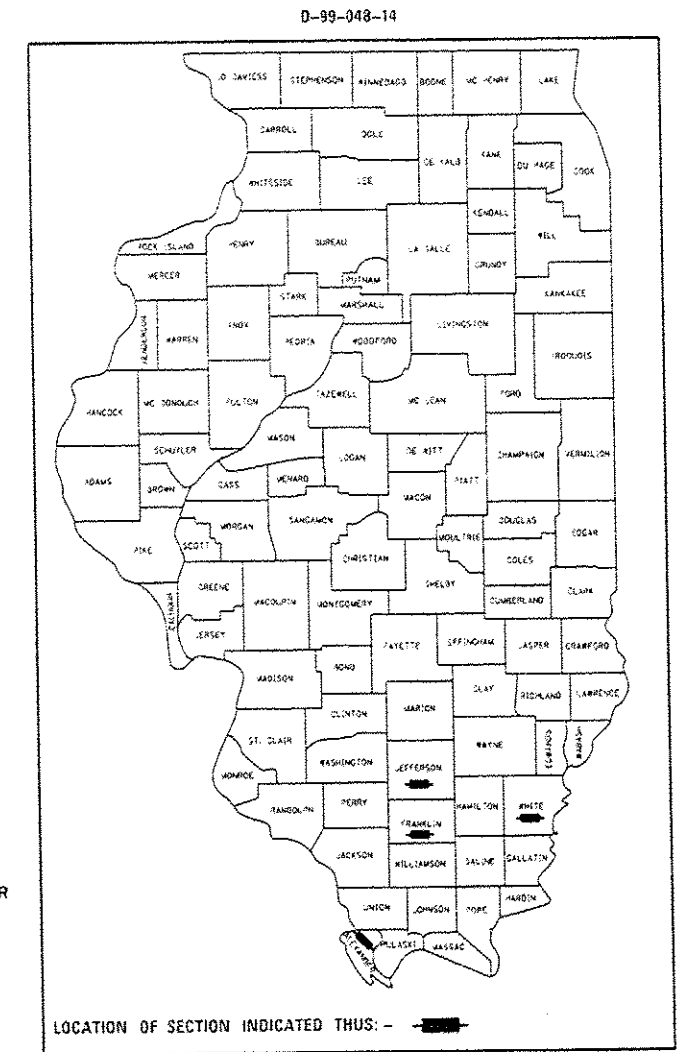
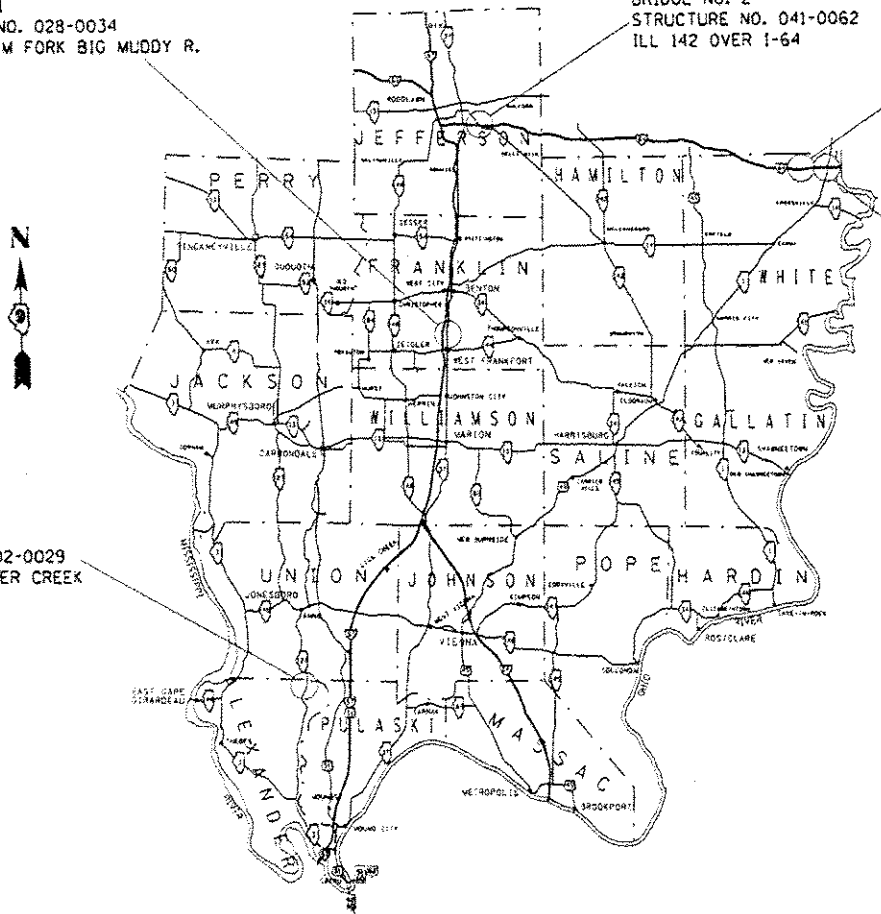
BRIDGE NO. 1  
STRUCTURE NO. 028-0034  
IL 37 OVER M FORK BIG MUDDY R.

BRIDGE NO. 2  
STRUCTURE NO. 041-0062  
ILL 142 OVER I-64

BRIDGE NO. 3&4  
STRUCTURE NO. 097-0038 & 097-0039  
I-64 EB & WB OVER LITTLE WABASH RIVER

BRIDGE NO. 5&6  
STRUCTURE NO. 097-0001 & 097-0002  
I-64 EB & WB OVER IL 1 & PENN. CENT. RR

BRIDGE NO. 7  
STRUCTURE NO. 002-0029  
IL 127 OVER COOPER CREEK



LOCATION OF SECTION INDICATED THUS: - [black rectangle] -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED August 14 20 14

*Jeffrey L. Keenan*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

Oct 17 20 14  
*John D. Baramodi PE*  
ENGINEER OF DESIGN AND ENVIRONMENT

Oct 17 20 14  
*Omer Osman PE*  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS

**GENERAL NOTES**

**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	INDEX OF SHEETS, HIGHWAY STANDARDS, GENERAL NOTES
3, 4	SUMMARY OF QUANTITIES
5	PORTABLE TEMPORARY BARRIER SYSTEM
6-9	SN 028-0034 STRUCTURE INFORMATION
10-12	SN 041-0062 STRUCTURE INFORMATION
13-17	SN 097-0038 & SN 097-0039 STRUCTURE INFORMATION
18-20	SN 097-0001 & SN 097-0002 STRUCTURE INFORMATION
21-23	SN 002-0029 STRUCTURE INFORMATION

ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE REQUIRED TO CHANNEL TRAFFIC AT COMMERCIAL AND/OR PRIVATE ENTRANCE AS DIRECTED BY THE ENGINEER. ALL TRAFFIC CONTROL DEVICES ARE INCLUDED IN THE COST OF THE TRAFFIC CONTROL AND PROTECTION STANDARD USED AT THE SITE, AND WILL NOT BE PAID FOR SEPARATELY.

THE EXISTING STEEL COATINGS CONTAIN LEAD. THE CONTRACTOR SHOULD TAKE APPROPRIATE PRECAUTIONS TO DEAL WITH THE PRESENCE OF LEAD ON THIS PRODUCT.

THE CONTRACTOR IS REQUIRED TO BE SSPC OP1 AND SSPC OP2 CERTIFIED.

PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING PLANS ARE SUBJECT TO ROUTINE VARIATIONS. THE CONTRACTOR SHALL FIELD VERIFY EXISTING DIMENSIONS AND DETAILS AFFECTING NEW CONSTRUCTION AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN SCOPE OF THE WORK. HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

TRAFFIC CONTROL SIGNS SHALL BE PLACED SO THAT THEY DO NOT INTERFERE WITH EXISTING SIGNS OR FLASHING BEACONS. THE DIMENSIONS BETWEEN SIGNS MAY BE MODIFIED SLIGHTLY SO AS TO AVOID CONFLICTS WITH EXISTING SIDE ROADS, COMMERCIAL ENTRANCES, AND PRIVATE ENTRANCES. THE BUREAU OF OPERATIONS SHOULD APPROVE FINAL PLACEMENT OF TRAFFIC CONTROL SIGNING.

IN ADDITION TO THE REQUIREMENTS OF ARTICLE 107.16 THE CONTRACTOR SHALL PROTECT THE SURFACE OF ALL BRIDGE DECKS AND BRIDGE APPROACH PAVEMENTS IN A MANNER SATISFACTORY TO THE ENGINEER BEFORE ANY EQUIPMENT IS ALLOWED TO CROSS THE STRUCTURE. PROTECTION SHALL BE PROVIDED FOR ALL EQUIPMENT AS DEFINED IN ARTICLE 101.16 REGARDLESS IF TRACK MOUNTED OR WHEELED.

THE QUANTITY FOR RELOCATE PORTABLE TEMPORARY BARRIER SYSTEM IS BASED ON RELOCATING THE BARRIER THREE TIMES AT EACH STRUCTURE WHERE THEY ARE NEEDED. ANY PAYMENT FOR ADDITIONAL RELOCATION WILL BE MADE ACCORDING TO ARTICLE 104.02 OF THE STANDARD SPECIFICATION.

FOR STRUCTURES 041-0062, 097-0001, 097-0002, 097-0038, AND 097-0039 CLEANING AND PAINTING OF EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES" AND "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES." ALL BEAMS, BEARINGS, AND OTHER STRUCTURAL STEEL WITHIN 5 FT. (MEASURED ALONG THE BEAM) OF EITHER SIDE OF SPECIFIED DECK JOINTS AND FULL LENGTH EXTERIOR FASCIA AND BOTTOM FLANGE SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING - SSPC-SPI0 AND PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1 - OZ/E/U. THE COLOR OF THE FINAL FINISH COAT FOR THE BEAMS SHALL BE INTERSTATE GREEN, MUNSELL NO. 7.5G 4/8.

FOR STRUCTURES 028-0034 AND 002-0029, CLEANING AND PAINTING OF EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES", "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES", AND "CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES." ALL BEAMS, BEARINGS, AND OTHER STRUCTURAL STEEL WITHIN 5 FT. (MEASURED ALONG THE BEAM) OF EITHER SIDE OF SPECIFIED DECK JOINTS SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING - SSPC-SPI0 AND PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1 - OZ/E/U. THE COLOR OF THE FINAL FINISH COAT FOR SN 028-0034 INTERIOR AND EXTERIOR SURFACES SHALL BE INTERSTATE GREEN, MUNSELL NO. 7.5G 4/8 AND REDDISH BROWN, MUNSELL NO. 2.5YR 3/4 FOR SN 002-0029.

TOTAL, FOUR AIR MONITORS ARE REQUIRED TO MONITOR ABRASIVE BLASTING OPERATIONS AT THREE LOCATIONS, 2 AT BRIDGE NO. 2 (SN 041-0062), 1 AT BRIDGE NO. 5 (SN 097-0001), AND 1 AT BRIDGE NO. 6 (SN 097-0002), ACCORDING TO SPECIAL PROVISION "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES."

**STANDARDS**

- 701101-04 OFF-RD OPERATIONS, MULTILANE, 15' (4.5 m) TO 24" (600mm) FROM PAVEMENT EDGE
- 701106-02 OFF-RD OPERATIONS, MULTILANE, MORE THAN 15' (4.5 m) AWAY
- 701201-04 LANE CLOSURE, 2L, 2W, DAY-ONLY
- 701400-07 APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
- 701402-09 LANE CLOSURE, FREEWAY/EXPRESSWAY, WITH BARRIER
- 701406-08 LANE CLOSURE, FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY
- 701901-03 TRAFFIC CONTROL DEVICES
- 701428 TRAFFIC CONTROL SETUP AND REMOVAL FREEWAY/EXPRESSWAY

Prepared By:	<i>Joe Z. Hufwieser</i> DISTRICT STUDIES & PLANS ENGINEER
Examined By:	<i>Paul J. ...</i> DISTRICT LAND ACQUISITION ENGINEER
Examined By:	<i>Connie ...</i> DISTRICT PROGRAM DEVELOPMENT ENGINEER
Examined By:	<i>Kevin ...</i> DISTRICT OPERATIONS ENGINEER
Examined By:	<i>...</i> DISTRICT PROJECT IMPLEMENTATION ENGINEER
Examined By:	<i>Dan ...</i> DISTRICT CONSTRUCTION ENGINEER
Examined By:	<i>...</i> DISTRICT MATERIALS ENGINEER

# SUMMARY OF QUANTITIES

100% STATE  
0014

2 3 4 5 6 7

CODE NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	100% STATE							
				RURAL		RURAL		RURAL		RURAL	
				FAU 9481 IL 37 BRIDGE NO. 1 SN 028-0034	FAP 849 IL 142 BRIDGE NO. 2 SN 041-0062	FAI 64 I-64 BRIDGE NO. 3 SN-097-0038	FAI 64 I-64 BRIDGE NO. 4 SN 097-0039	FAI 64 I-64 BRIDGE NO. 5 SN 097-0001	FAI 64 I-64 BRIDGE NO. 6 SN 097-0002	FAS 1907 IL 127 BRIDGE NO. 7 SN 002-0029	
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	7	1	1	1	1	1	1	1	
67100100	MOBILIZATION	L SUM	1	0.14	0.14	0.14	0.14	0.14	0.15	0.15	
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	3		1	1	1				
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	0.20	0.20			0.20	0.20	0.20	
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1					0.50	0.50		
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	7	1	1	1	1	1	1	1	
X7010410	SPEED DISPLAY TRAILER	CAL MO	7	1	1	1	1	1	1	1	
20007107	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 7	L SUM	1							1	
20007102	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 2	L SUM	1		1						
20007103	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 3	L SUM	1			1					
20007104	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 4	L SUM	1				1				
20007105	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 5	L SUM	1					1			
20007106	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 6	L SUM	1						1		
20007114	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES	L SUM	1	1							

14

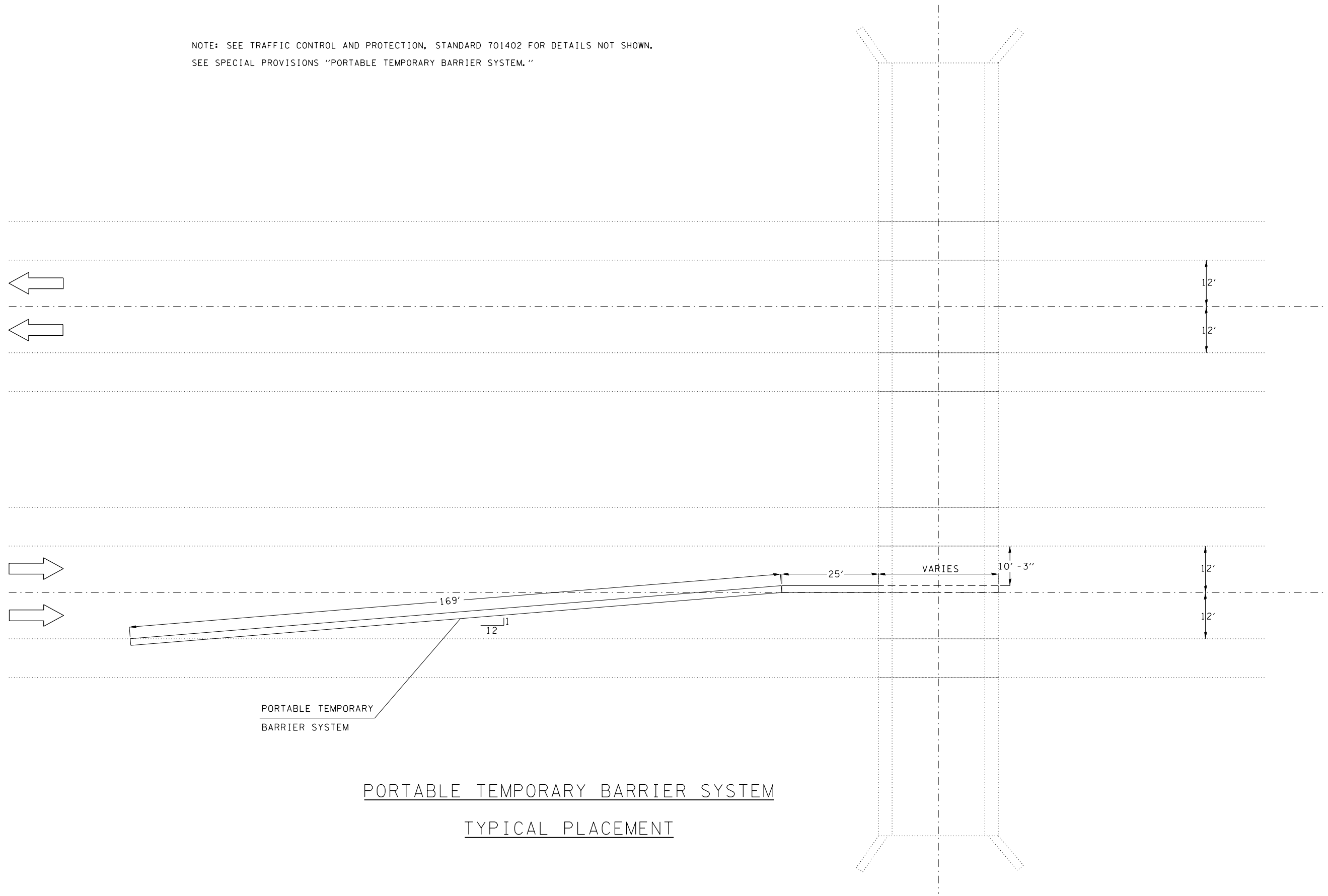
100% STATE  
0014

SUMMARY OF QUANTITIES - CONT

CODE NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	100% STATE							
				RURAL		RURAL		RURAL		RURAL	
				FAU 9481 IL 37	FAP 849 IL 142	FAI 64 I-64	FAI 64 I-64	FAI 64 I-64	FAI 64 I-64	FAS 1907 IL 127	
				BRIDGE NO. 1 SN 028-0034	BRIDGE NO. 2 SN 041-0062	BRIDGE NO. 3 SN-097-0038	BRIDGE NO. 4 SN 097-0039	BRIDGE NO. 5 SN 097-0001	BRIDGE NO. 6 SN 097-0002	BRIDGE NO. 7 SN 002-0029	
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	1							
Z0010502	CLEANING AND PAINTING STEEL BRIDGE NO. 2	L SUM	1		1						
Z0010503	CLEANING AND PAINTING STEEL BRIDGE NO. 3	L SUM	1			1					
Z0010504	CLEANING AND PAINTING STEEL BRIDGE NO. 4	L SUM	1				1				
Z0010505	CLEANING AND PAINTING STEEL BRIDGE NO. 5	L SUM	1					1			
Z0010506	CLEANING AND PAINTING STEEL BRIDGE NO. 6	L SUM	1						1		
Z0010507	CLEANING AND PAINTING STEEL BRIDGE NO. 7	L SUM	1							1	
Z0052396	PORTABLE TEMPORARY BARRIER SYSTEM, TL-3	FOOT	245		245						
Z0052399	RELOCATE PORTABLE TEMPORARY BARRIER SYSTEM	FOOT	735		735						



NOTE: SEE TRAFFIC CONTROL AND PROTECTION, STANDARD 701402 FOR DETAILS NOT SHOWN.  
SEE SPECIAL PROVISIONS "PORTABLE TEMPORARY BARRIER SYSTEM."



PORTABLE TEMPORARY  
BARRIER SYSTEM

PORTABLE TEMPORARY BARRIER SYSTEM  
TYPICAL PLACEMENT

FILE NAME =	USER NAME = Dahmer,ja	DESIGNED -	REVISED -
ct:\pw\work\p\dot\dahmer,ja\0392003\78428-sh-t-plen.dgn		DRAWN -	REVISED -
Default	PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
	PLOT DATE = 8/15/2014	DATE -	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PORTABLE TEMPORARY BARRIER SYSTEM**  
**TYPICAL PLACEMENT**

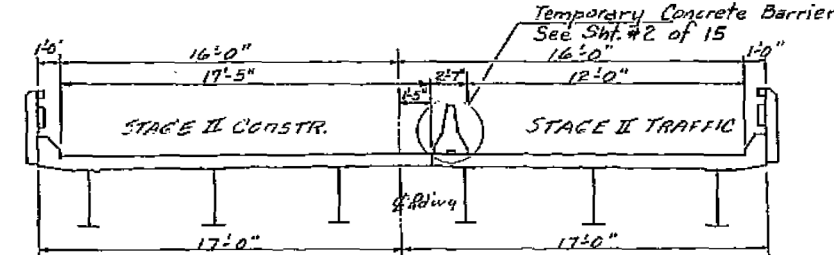
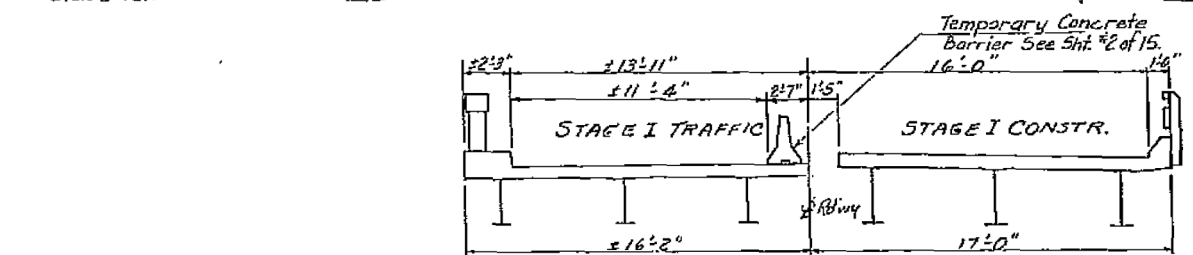
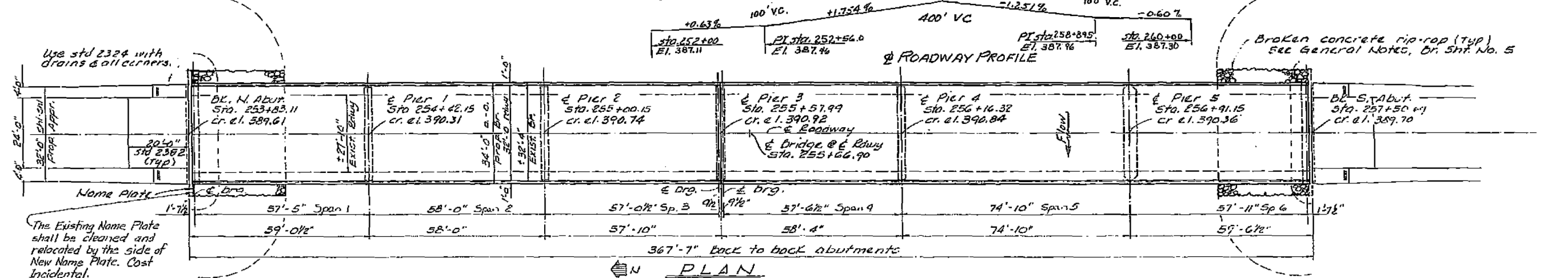
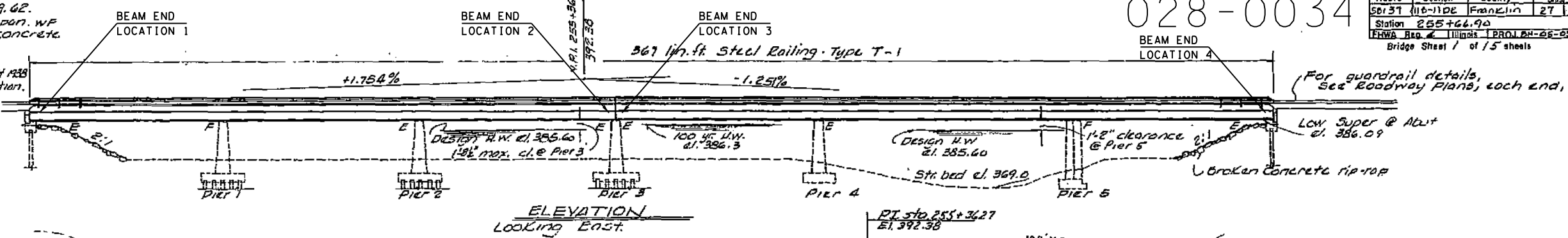
SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D9 BRIDGE PAINT 2015-1	VARIOUS	23	5
			CONTRACT NO. 78428	
ILLINOIS FED. AID PROJECT				

Route	Section	County	Total	Sheet
Sr 37	11B-1DE	Franklin	27	12
Station	255+66.90			
Proj. No.	11B-1-DE			
Proj. Name	PA PROJ. 01-05-055(1)			
Bridge No.	255+66.90			
Bridge Sheet 1 of 15 sheets				

028-0034

3/4" cut in S.W. wingwall of Middle Fork Creek = Elev. 389.62. Exist Bridge = 2 tandem, 3 span. w/ corr. beams w/ R.C. slabs & concrete spandrel rail on closed R.C. piers & spill thru R.C. Abut. Structure No. 028-0034. Built 1983. No salvage. Stage construction. One way traffic to be maintained on bridge during construction.



STA. 255+66.90  
BUILT 1983 BY  
STATE OF ILLINOIS  
SR 37 SEC 11B-1-DE  
PA PROJ. 01-05-055(1)  
LOADING HS-20  
STR. NO. 028-0034

NAME PLATE - Sta 2113  
1 required

Note: The temporary concrete Barrier placed during Stage I Construction shall not be removed until after the concrete Barrier for Stage II traffic is placed and traffic routed thru Stage II Roadway.  
For Quantity of Temporary Concrete Barrier, see Roadway Plans.

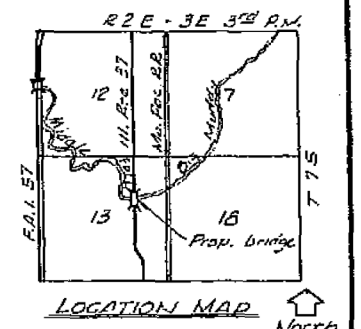
WATERWAY INFORMATION										
Drainage area - 212 sq. mi.		LOW grade elev. 384.27 @ Sta. 266+50								
Flood	Freq. (yrs)	Q (cfs)	Opening (sq. ft.)		Natural H.W. el.		Head (ft.)		Headwater elev.	
			EXIST.	PROP.	EXIST.	PROP.	EXIST.	PROP.	EXIST.	PROP.
DESIGN	50	12,450	3486	3486	385.60	0.52	0.52	386.12	386.12	
BASE	100	14,125	3134	3134	386.30	0.26	0.26	386.56	386.56	
OVERTOPPING	15	9,575	3014	3014	384.27	0.59	0.59	384.86	384.86	
Max. calc.	N.A.	-	-	-	-	-	-	-	-	-

**DESIGN STRESSES**  
Super.  
f<sub>c</sub> 3500 psi  
f<sub>s</sub> (reinf.) 60,000 psi  
f<sub>y</sub> (str. steel) 36,000 psi (M183)

Design Specs: AASHTO 1983 with 1984, thru 1985 interims. 25% ft<sup>2</sup> allowance made for future resurfacing.  
Loading HS 20 - 44  
\* All reinf. in deck shall be epoxy coated.

*James J. Kay*  
REGISTERED STRUCTURAL ENGINEER  
No. 012-000000

TOTAL BILL OF MATERIAL			
Item	Unit	Super.	Sub
Class 2 Concrete	cu. yd.	311.3	27.4
Reinforcement Bars	lb.	2360	2360
Reinforcement Bars (Epoxy Coated)	lb.	83,450	-
Structural Steel	kip sq. ft.	1	1
Removal of Existing Superstructure	each	1	1
Steel Railing - Type T-1	lin. ft.	734	-
Floor Drains	each	50	-
Elastomeric Bearing Assembly - Type I	each	24	-
Elastomeric Bearing Assembly - Type II	each	12	-
Neoprene Expansion Joint (40)	lin. ft.	34	-
Preformed Joint Seal (2 1/2")	lin. ft.	68	-
Stud Shear Connectors	each	2344	-
PROTECTIVE COAT	sq. yd.	1426	-
Broken Concrete Rip-rap	sq. yd.	-	251
Concrete Removal	cu. yd.	-	82
Expansion Bolts 3/4 inch x 9 inch	each	-	102
Expansion Bolts 3/4 inch x 12 inch	each	-	53
Name Plates	each	1	-



**GENERAL PLAN & ELEVATION**  
PROJECT BH-05-055(18)  
RTE. SR 37  
SECTION 11B-1-DE over  
Middle Fork of Big Muddy R.  
COUNTY Franklin  
STATION 255+66.90

Note: For General Notes, see Bridge sheet No. 5.

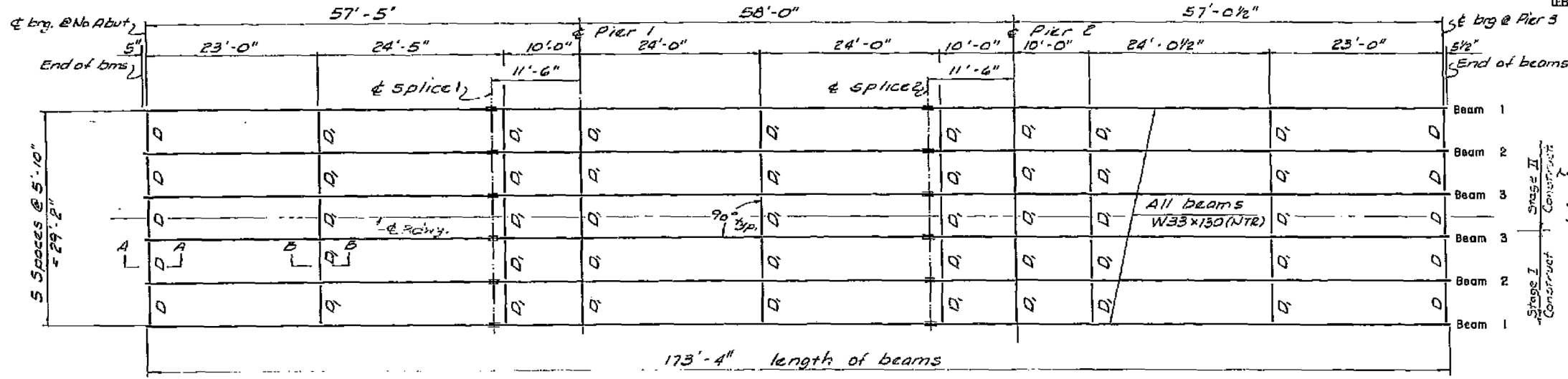
FOR INFORMATION ONLY





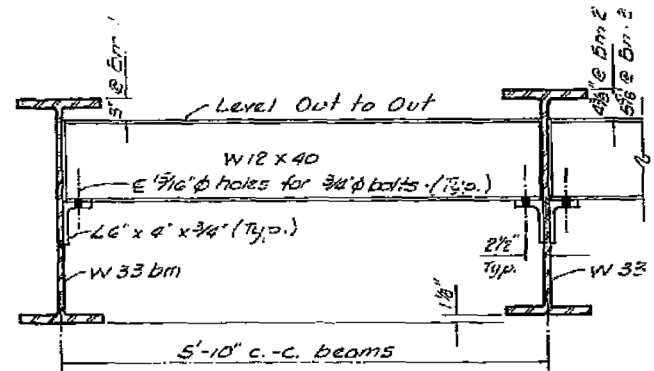
028-0034

Route	Section	County	Total	Sheet
028-01	11B-1 DR	Franklin	27	19
Station 255+66.90				
FHWA Rep. # Illinois PROJ. BY 05-03K01				

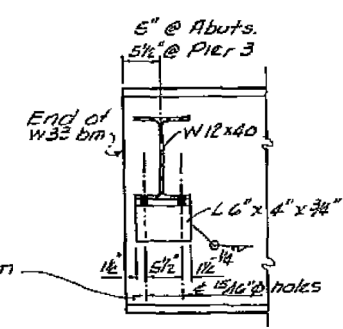


FRAMING PLAN  
North Unit

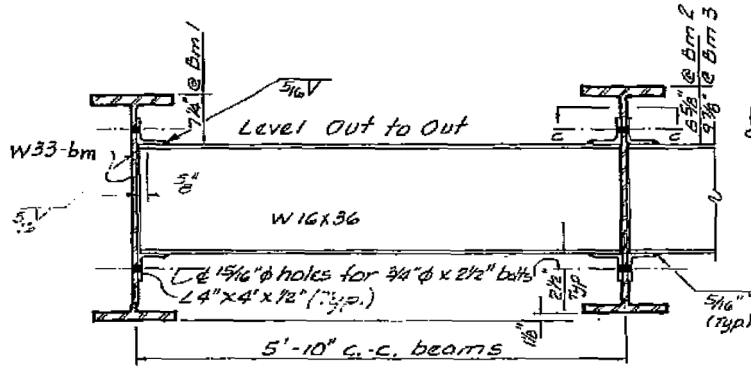
NOTE: Structural shapes and plates designated (NTR) shall meet the supplemental requirements for temperate zone 2.



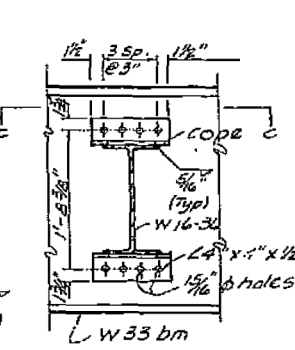
DIAPHRAGM - O  
10 req. No. Unit.  
10 req. 50. Unit.



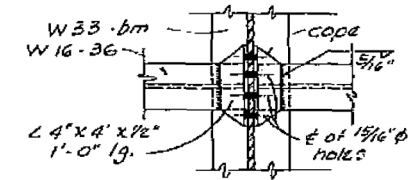
SECTION A-A



DIAPHRAGM - D  
40 req. No. Unit  
45 req. 50. Unit



SECTION B-B

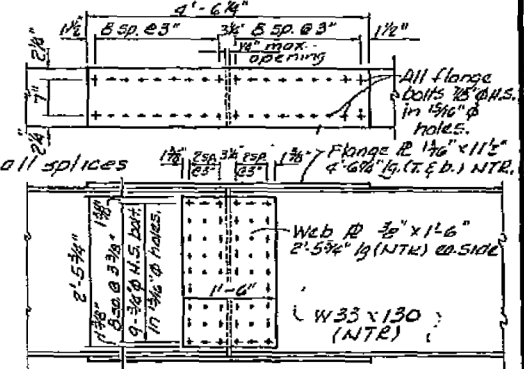


SECTION C-C

DESIGN DATA TABLE - NO. UNIT			
Beam Properties			
	@ 4 pt Sp. 1 or 3	Pt 1 & 2 @ supp.	@ 5 pt Sp. 2
Moment of Inertia (in <sup>4</sup> )	6710	6710	6710
Section Modulus (in <sup>3</sup> )	406	406	406
Plastic Modulus (in <sup>3</sup> )	467	467	467
Interior Beam Moment Table			
Dead Load (K-ft)	0.876	0.876	0.876
Dead Load Moment (K-ft)	237.0	296.2	74.1
4+I Moment (K-ft)	406.5	293.8	325.7
$f_s$ for max design M (Ksi)	35.1	30.2	23.7
$f_s$ allowable for max. des. M (Ksi)	36.0	36.0	36.0
$f_s$ for overload (Ksi)	27.0	23.2	18.2
$f_s$ allowable for overload (Ksi)	28.8	28.0	23.8
Interior Bm. Reaction		NABE Pt. 3	@ Piers 1 & 2
Total Reaction (K)	60.1	106.3	
Reaction for dead load (K)	21.2	60.8	
Reaction for 4+I (K)	30.5	33.7	
Reaction for Impact (K)	8.4	9.8	

	@ & brg. - N. Abut		@ & splice - Sp. 1		@ & brg. - Pier 1		@ & splice - Sp. 2		@ & brg. - Pier 2		@ & brg. - N. Unit - Pier 3	
	elev. Top of slab	elev. Top of beam	elev. Top of slab	elev. Top of beam	elev. Top of slab	elev. Top of beam	elev. Top of slab	elev. Top of beam	elev. Top of slab	elev. Top of beam	elev. Top of slab	elev. Top of beam
@ Beam 1	389.58	388.71	389.94	389.20	390.05	389.30	390.42	389.68	390.48	389.73	390.66	389.99
@ Beam 2	389.49	388.63	390.05	389.32	390.17	389.41	390.53	389.80	390.60	389.85	390.77	390.11
@ Beam 3	389.59	388.93	390.15	389.42	390.27	389.51	390.63	389.90	390.70	389.95	390.87	390.21

\*  $f_s$  max design includes the Load Factors : 1.3(Q + SD +  $5_3$ (L + I))  
 \*\*  $f_s$  overload includes the Load Factors : (Q + SD +  $5_3$ (L + I))



BEAM SPLICE DETAIL

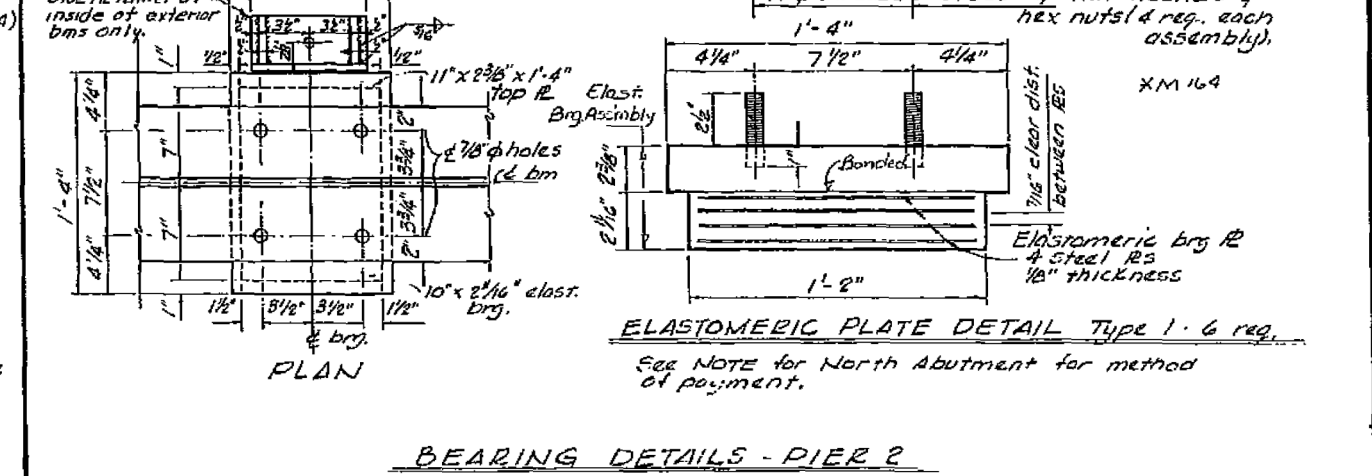
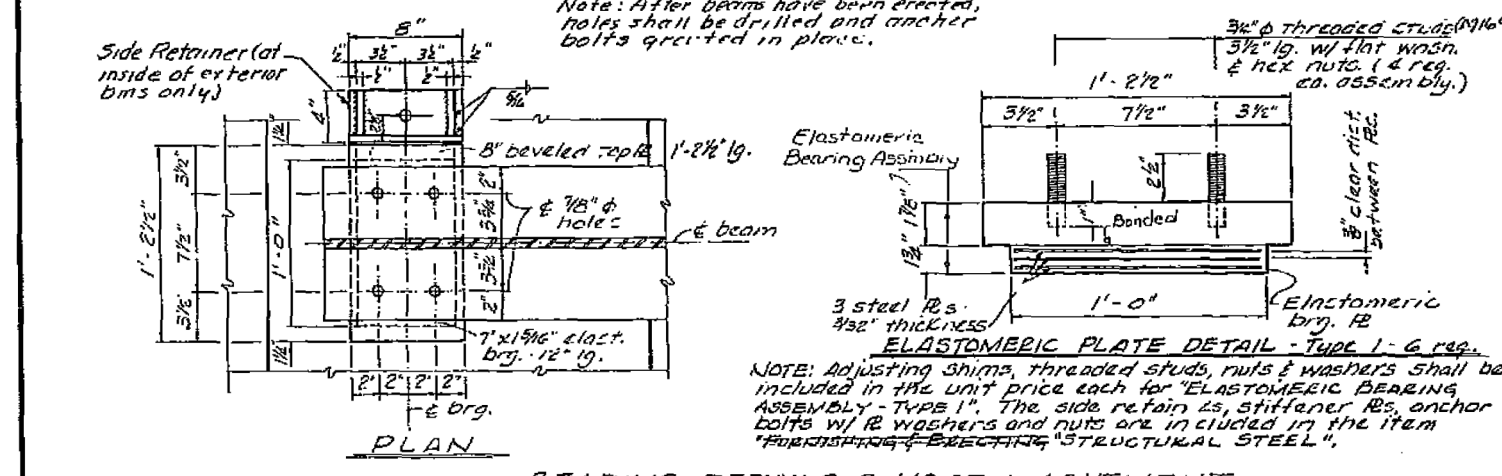
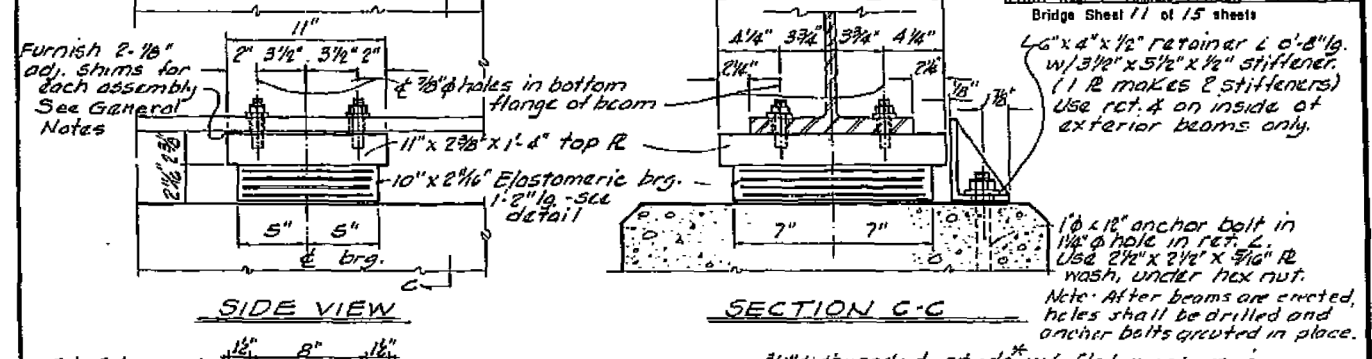
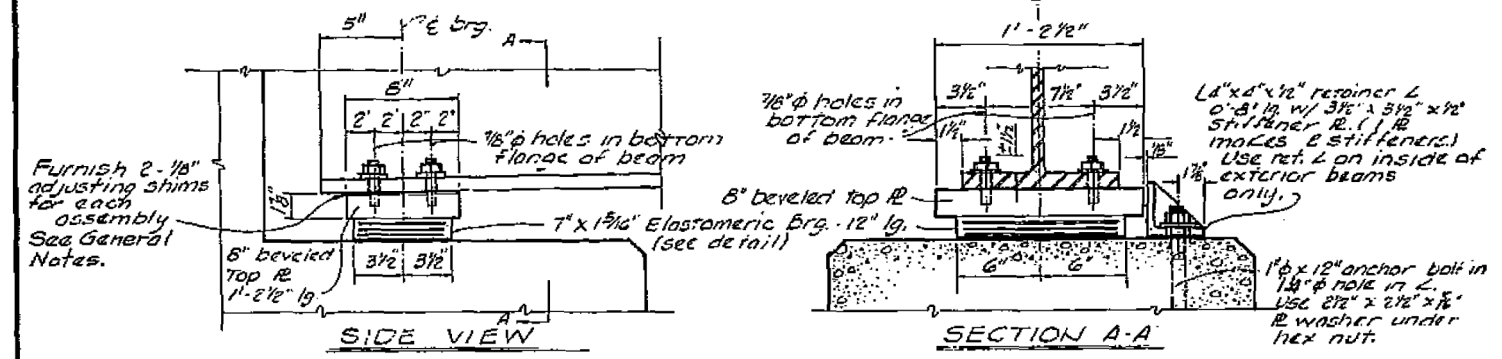
FORGING PLAN - NO. UNIT  
 PROJECT BH-05-055(18)  
 RTE. 581, Rte 37  
 SECTION 11 B - 1 - DR over  
 Middle Fork of Big Muddy R.  
 COUNTY Franklin  
 STATION 255+66.90

FOR INFORMATION ONLY

Route	Section	County	Total	Sheet
SB 37	11B-11DE	Franklin	27	23
Station	255+66.90			
Project	I-55A Res. 4 Illinois BRD 05-053104			
Bridge Sheet 11 of 15 sheets				

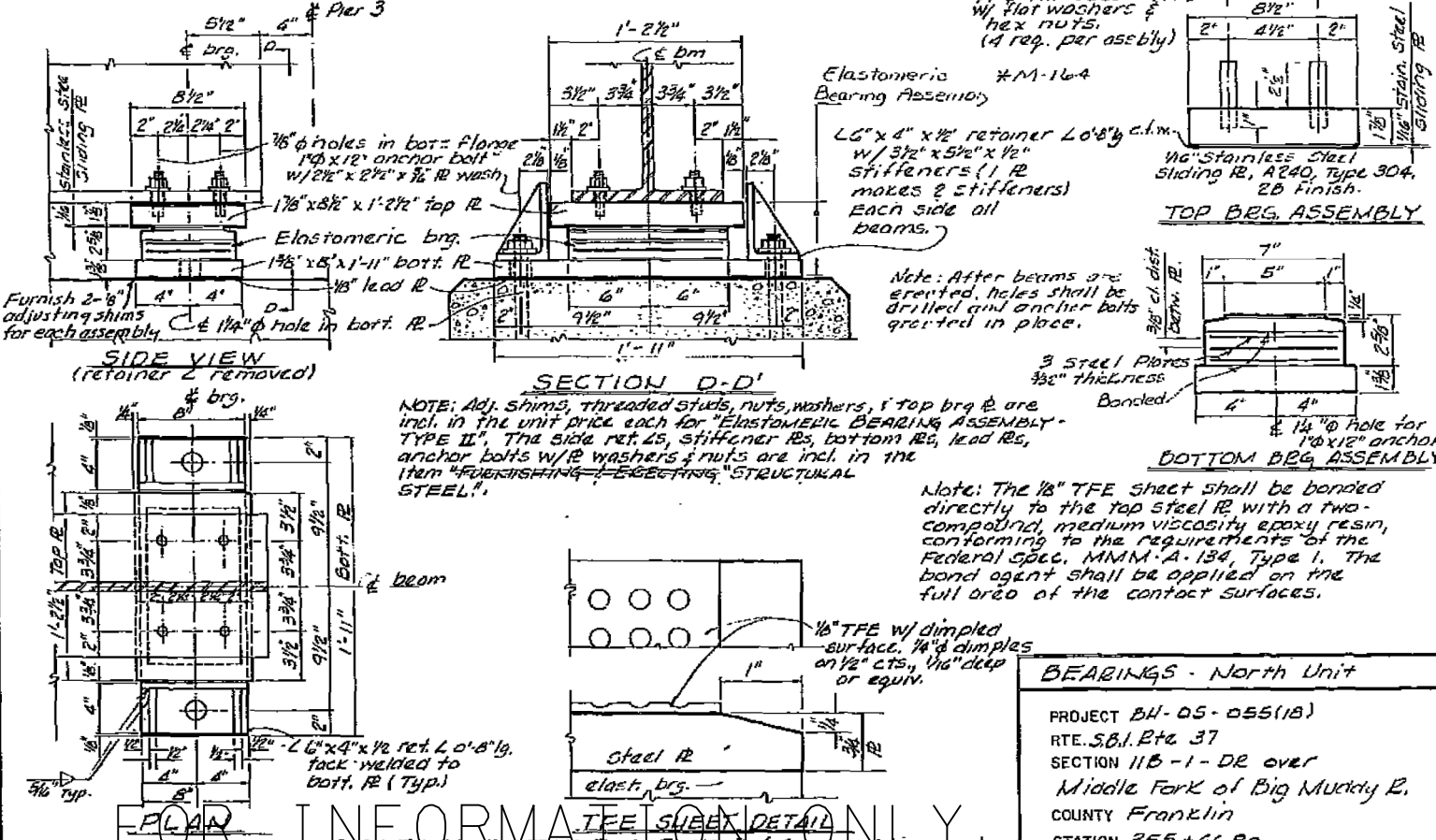
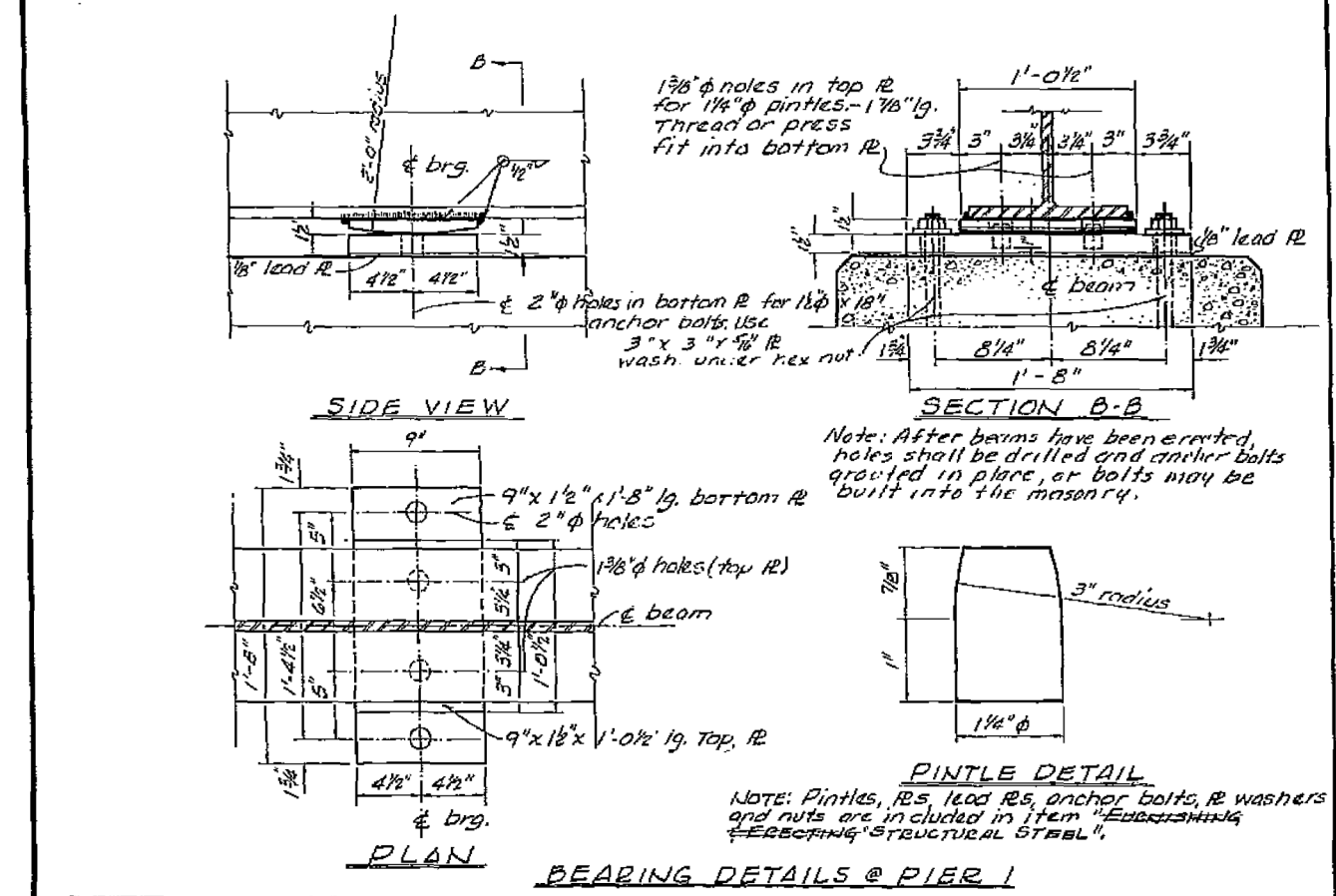
Note: Shimms shall not be placed under Bearing Assembly.

Note: Shimms shall not be placed under Bearing Assembly.



BEARING DETAILS @ NORTH ABUTMENT

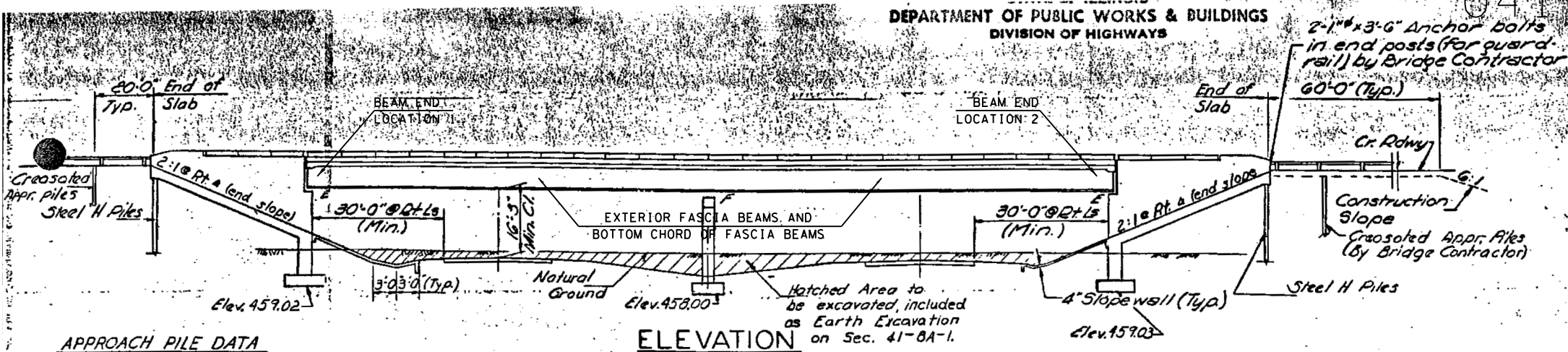
BEARING DETAILS - PIER 2



BEARING DETAILS @ PIER 1

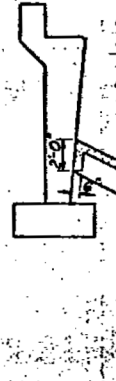
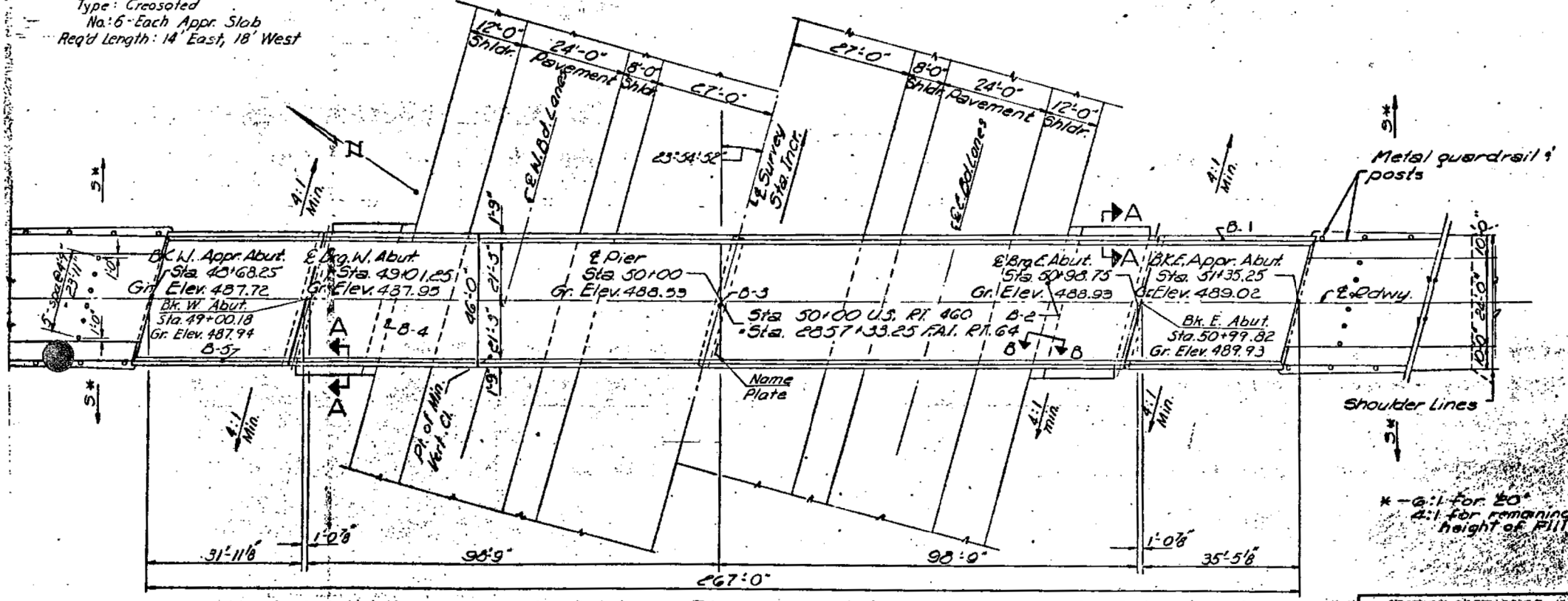
BEARINGS - North Unit  
 PROJECT 04-05-055(18)  
 RTE. SB. Btc 37  
 SECTION 11B-1-DE over  
 Middle Fork of Big Muddy R.  
 COUNTY Franklin  
 STATION 255+66.90





**APPROACH PILE DATA**  
Type: Creosoted  
No. 6 - Each Appr. Slab  
Req'd Length: 14' East, 18' West

**GENERAL NOTES**  
All reinforcement bars shall be lapped 24 diameters unless otherwise shown.  
Field connections shall be bolted using high strength bolts. Bolts 3/8" open holes 1 3/8", unless otherwise noted.  
Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of paint. See Special Provisions for field paint.  
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 riveting diaphragms over supports.  
Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, weighing 58# per 100 sq. ft.  
Class A Excavation for structures includes excavation for slope wall.  
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.  
The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.  
The Contractor shall drive One Steel Test Pile (BBP36) in a permanent location at the West Appr. Abut. as directed by the Engineer before ordering the remainder of piles.  
An alternate strand pattern using Extra High Strength Prestressing strand (270 K.S.I.) is permitted.



**TOTAL BILL OF MATERIAL**

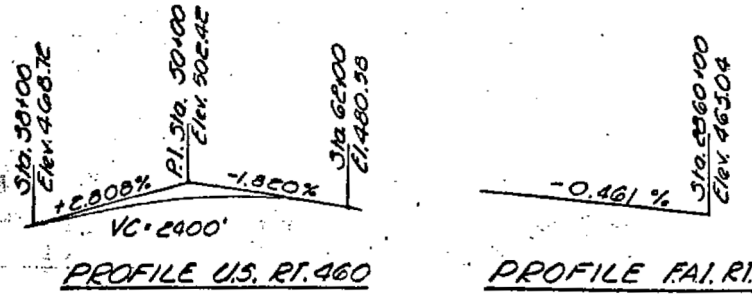
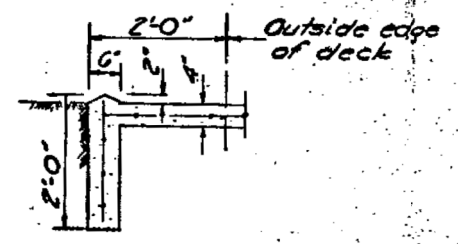
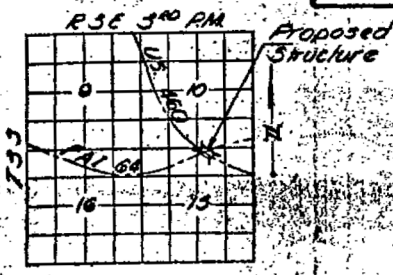
Item	Unit	Super	Sub	Total
Class A Excavation for Structure	Cu. Yds.			562
Protective Coat	Sq. Yds.	1460		1460
Class X Concrete	Cu. Yds.	373.2	347.6	740.8
F & E R.P.C. 1/2" (36")	Lin. Ft.	386		386
Structural Steel	Lbs.	274,580		274,580
Stud Shear Connectors	Each	2052		2052
Aluminum Railing	Lin. Ft.	492		492
Reinforcement Bars	Lbs.	91,690	31,950	123,640
Steel Piles (BBP36)	Lin. Ft.		422	422
Test Piles Steel (BBP36)	Each			1
Name Plates	Each		1	1
Slope Wall (4')	Sq. Yds.			236
Creosoted Piles (up to 20')	Lin. Ft.			192
Preformed Joint Sealer	Lin. Ft.	101		101

STATION 2857+33.25  
BUILT 19 BY  
STATE OF ILLINOIS  
F.A.I. RT. 64 SEC. 41-BHB-3  
PROJ. I-64-3(25)  
LOADING H320

**NAME PLATE**  
(See Std. 2113-1)

**DESIGN STRESSES**

**PRECAST PRESTRESSED UNITS**  
f<sub>c</sub> = 5,000 psi.  
f<sub>t1</sub> = 4,000 psi.  
f<sub>s</sub> = 248,000 psi (Strands 7<sup>th</sup>)  
f<sub>s1</sub> = 173,600 psi (Strands 7<sup>th</sup>)  
Allow. Future, 615, 25<sup>th</sup>/sq. ft.  
**FIELD UNITS**  
f<sub>c</sub> = 1,200 psi (Deck Slab)  
f<sub>c</sub> = 1,400 psi (Curb, Poropet. Sub.)  
f<sub>s</sub> = 20,000 psi (Reinf. Struct.)  
V<sub>c</sub> = 75 psi (Ftgs)  
Allowable & Deflection 4/1000  
LOADING H5 20-44



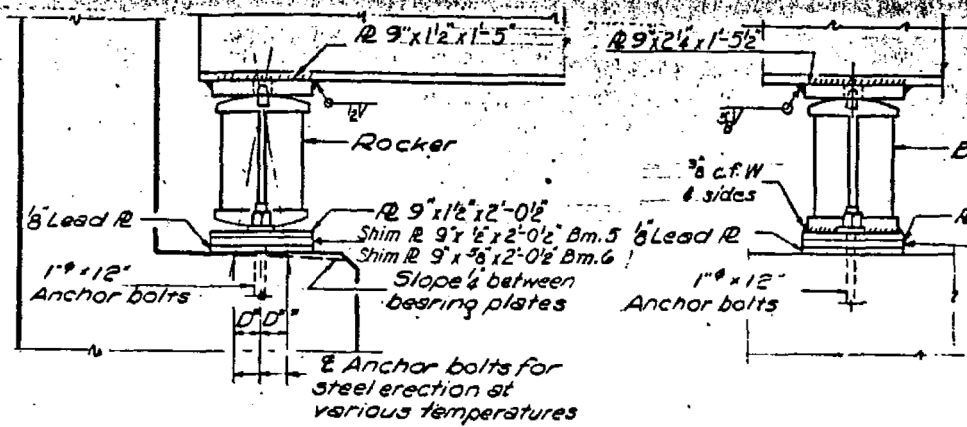
DESIGNED Emb. & Samara  
CHECKED Harbel Simp  
ORR R.P.S.  
CHECKED M.S.  
APPROVED Richard H. Gertman

FOR INFORMATION ONLY

PROJ. I-64-3(25)76  
GENERAL PLAN & ELEVATION  
U.S. RT. 460 (SBI RT 142) OVER F.A.I. RT. 64  
F.A.I. RT. 64 SEC. 41-BHB-3  
JEFFERSON COUNTY  
STATION 2857+33.25

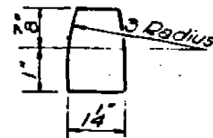




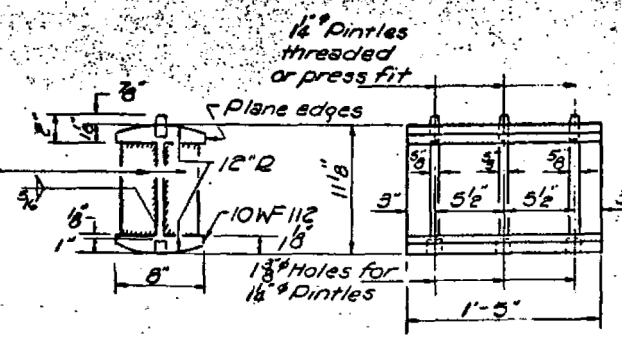


ELEVATION

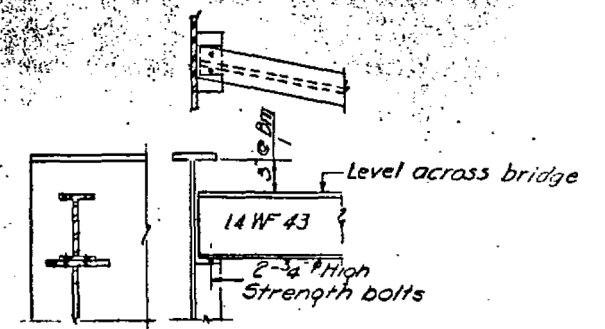
ELEVATION



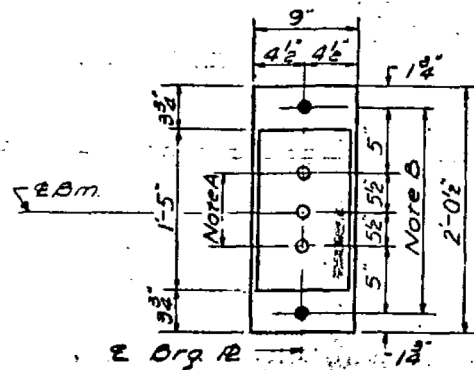
PINTLE



ROCKER

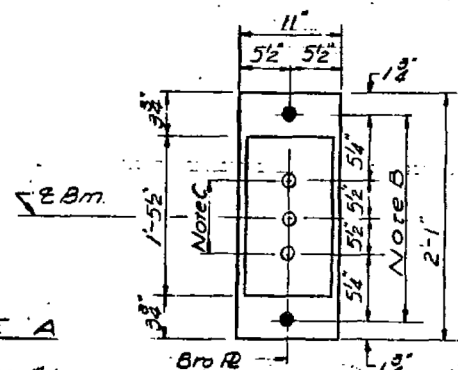


DIAPHRAGM D  
10 Required



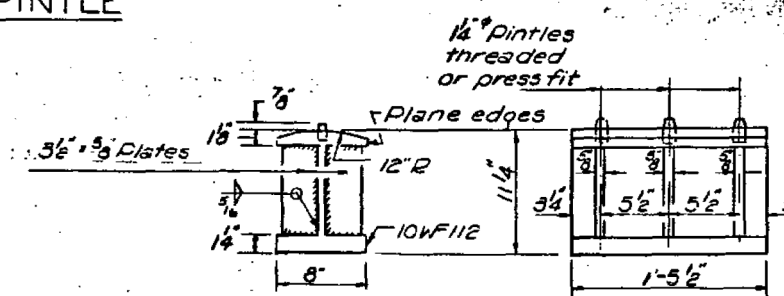
PLAN  
AT ABUTMENTS

NOTE A  
1 1/2' Holes 1' deep in top flange for pintles. Threads or press fit pintles in bottom flange.



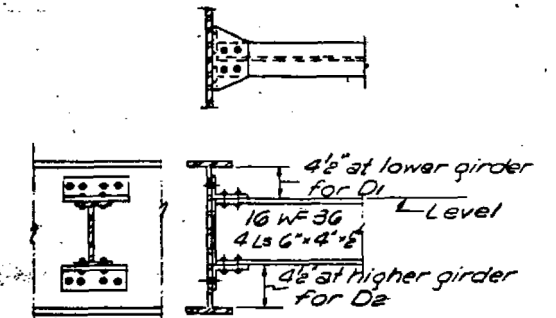
PLAN  
AT PIER

NOTE B  
1 1/2' Holes for 1 1/2' anchor bolts. 2 1/2' x 2 1/2' x 3/8' RL washers under cut.



BOLSTER

NOTE C  
1 1/2' Holes 1' deep in top flange only for 1 1/2' pintles.



DIAPHRAGMS D1 & D2  
D1 - 30 Required  
D2 - 15 Required

NOTES ON SETTING OF ANCHOR BOLTS AT EXPANSION BEARINGS

a) D\* (Side of brg. away from fixed brg)  
D\* = 1/8" per each 100' of expansion for every 15' fall below the normal temperature of 50°F

C\* (Side of brg. toward fixed brg)  
D\*\* = 1/8" per each 100' of expansion for every 15' rise above the normal temperature 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.

TABLE OF MOMENTS SHEARS & REACTIONS - INTERIOR BEAMS					
MOMENTS (Ft-Kip)			REACTIONS (Kips)		
0.4 Span 1		PIER	Abut.		PIER
Steel Section					
D.L.	619	D.L.	1472	36	132
Composite Sec.					
S.D.L.	233	S.D.L.	354	12	39
L.L.	906	L.L.	733	46.5	75
Imp.	207	Imp.	170	10.7	17.
Total	1346	Total	2729	105.2	263.

SHEAR (Kips)				
	Abut	1/4	1/2	3/4
S.D.L.	12.2	4.3	-3.6	-11.5
L.L.	46.0	31.5	-26.0	-39.0
Imp.	10.8	7.2	-5.9	-9.1
Total	69.0	43.0	-35.5	-59.6

PROPERTIES	
STEEL SECTION @ 0.4 I	
I <sub>s</sub>	19,742 in <sup>4</sup>
S <sub>ts</sub>	680 in <sup>3</sup>
S <sub>bs</sub>	955 in <sup>3</sup>
COMPOSITE SECTION	
I <sub>c</sub>	51,418 in <sup>4</sup>
S <sub>tc</sub>	4,950 in <sup>3</sup>
S <sub>bc</sub>	1,300 in <sup>3</sup>

TOP OF WEB ELEVATIONS						
	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6
E Brg. W. Abut.	486.81	486.98	487.12	487.12	487.02	486.86
E Splice 1	487.16	487.34	487.47	487.47	487.37	487.21
E Pier	487.30	487.47	487.61	487.61	487.51	487.35
E Splice 2	487.44	487.61	487.75	487.75	487.65	487.49
E Brg. E. Abut.	487.82	487.99	488.13	488.13	488.03	487.87

(For fabrication only)

DESIGNED: Emil A. Jarama  
CHECKED: Halbold Singh  
DRAWN: C.E. Wilkins  
CHECKED: H.S.

APPROVED: Richard H. Grotzman

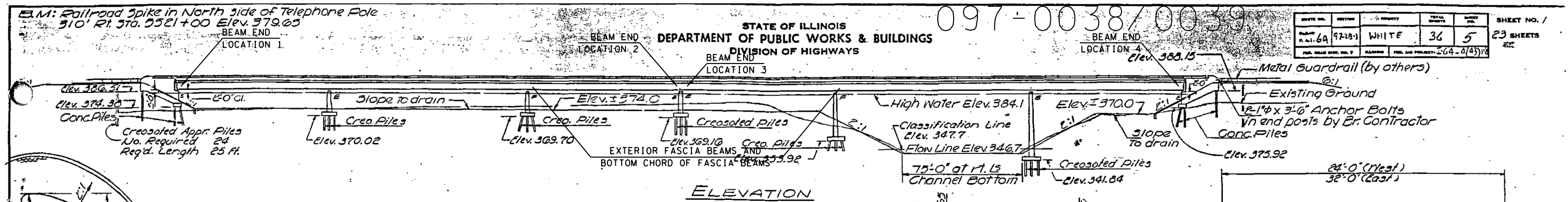
FOR INFORMATION ONLY

BEARING DETAILS  
FAI RT. 64 SEC. 41-81B-3  
JEFFERSON COUNTY  
STA. 2857+33.25

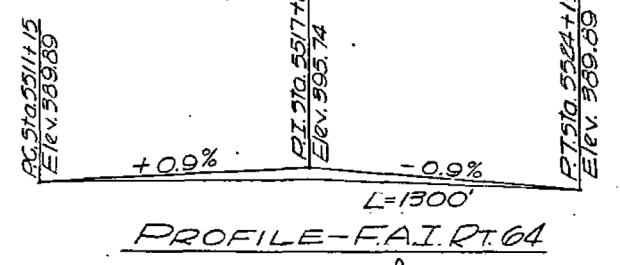
097-0038/0039

DATE	BY	CHECKED	TOTAL SHEETS	SHEET NO.
12-11-64	WHITE	36	5	23 SHEETS

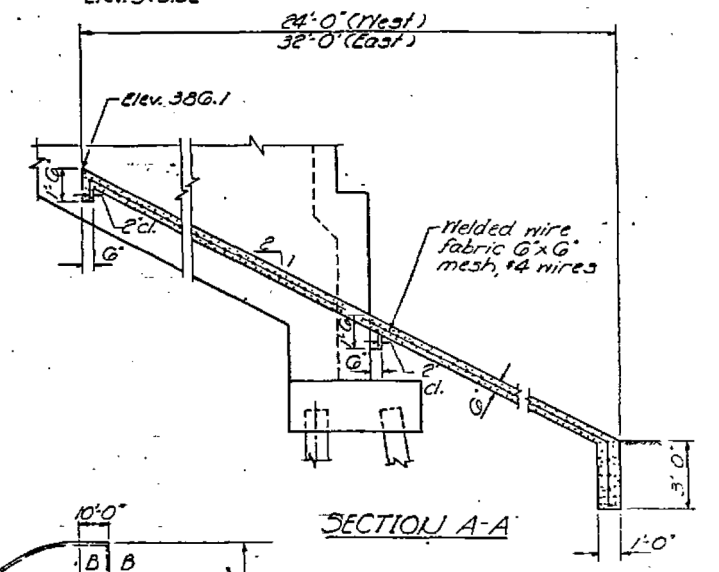
STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS



ELEVATION

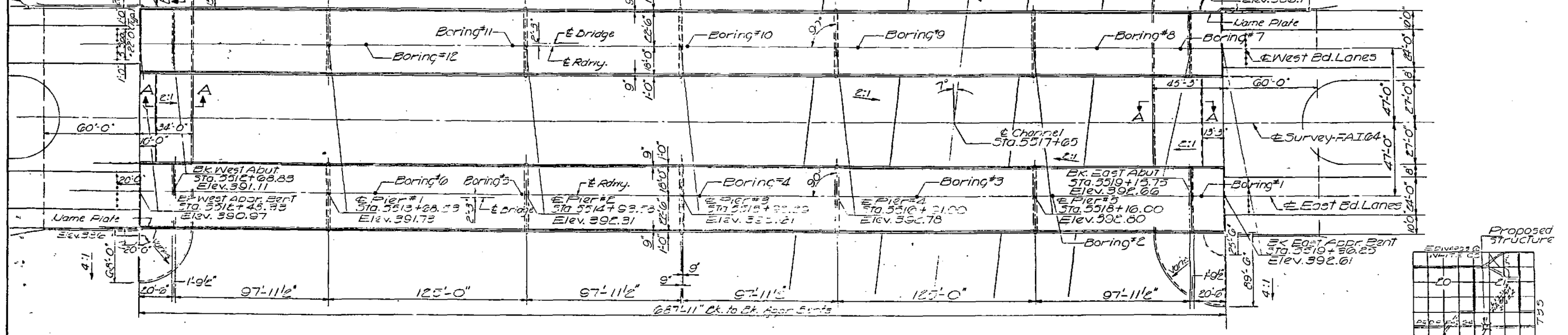
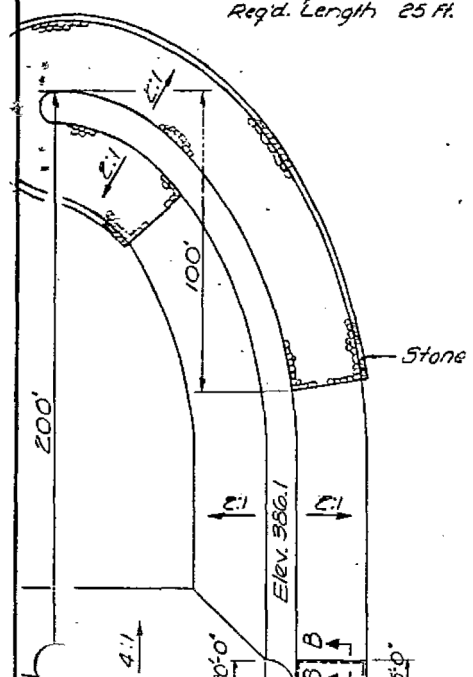


PROFILE-FAI RT. 64

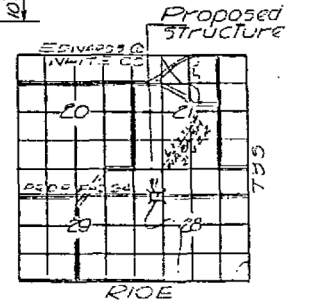


SECTION A-A

**WATERWAY INFORMATION**  
 Drainage Area ----- 1950 Sq. Miles  
 Character ----- Level, Rolling, Wooded, Cultivated  
 Required Opening ----- (50 Year Flood) - 9750 Sq. Ft.  
 Present Opening ----- None  
 Proposed Opening ----- 9750 Sq. Ft.  
 Q = 39,000 cfs.



PLAN



GENERAL PLAN & ELEVATION  
LITTLE WABASH RIVER  
PROJECT 1-64-4(4)118  
FAI RT. 64 SEC. 97-2B-1  
WHITE COUNTY

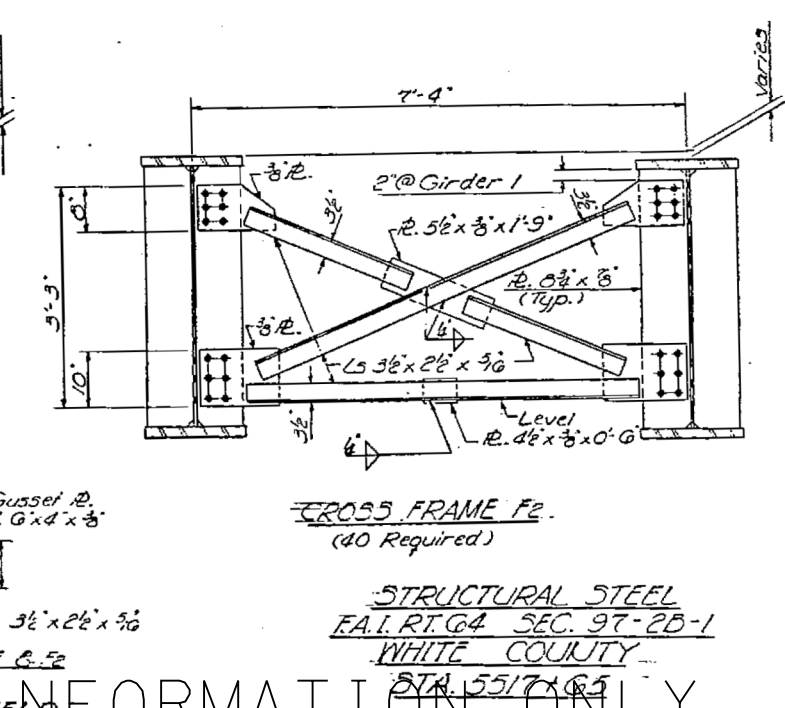
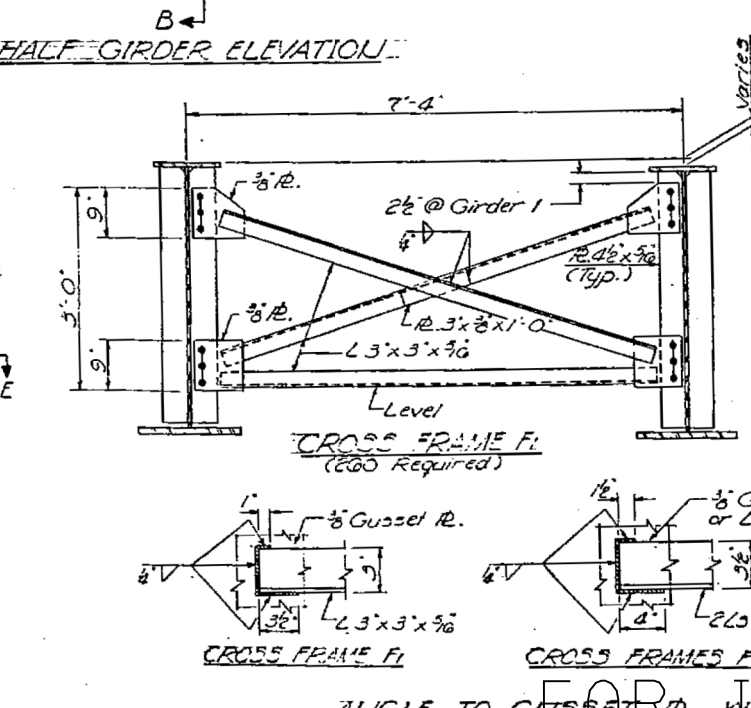
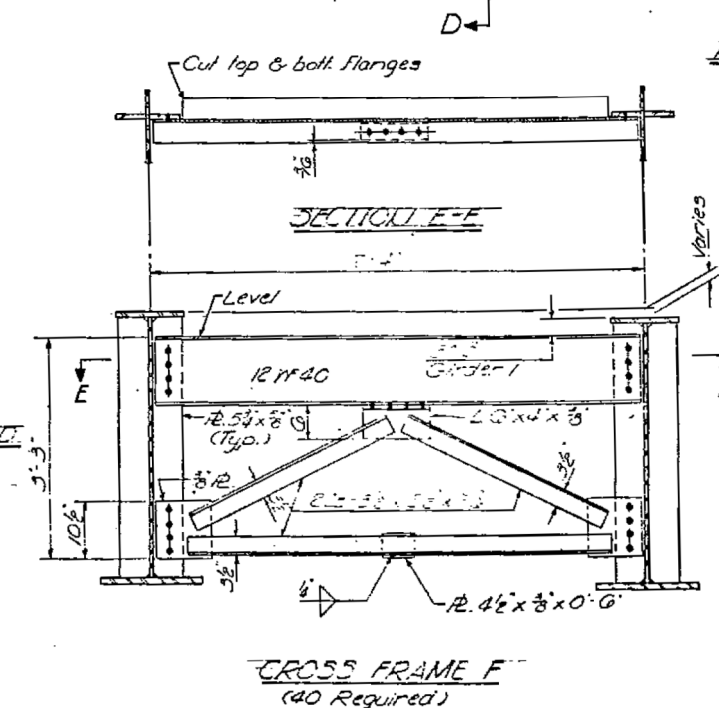
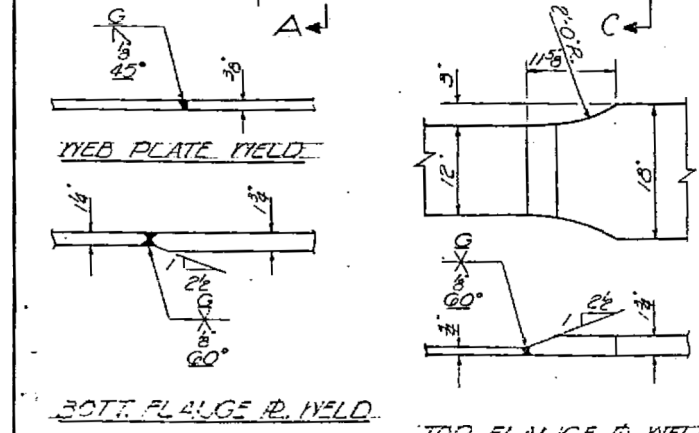
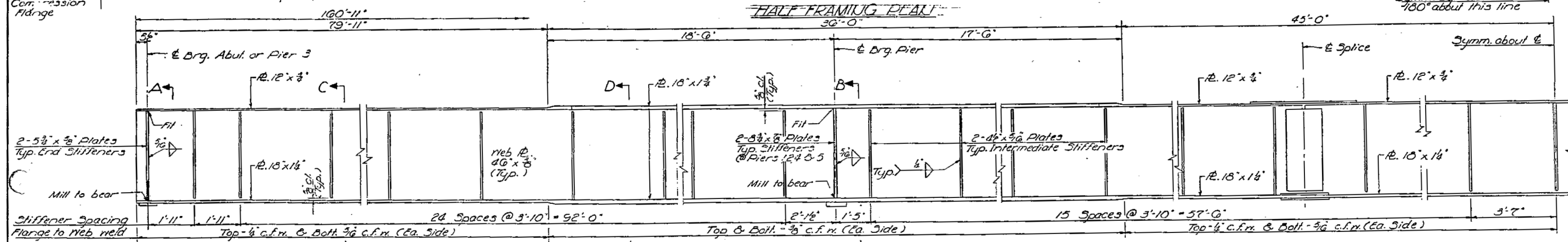
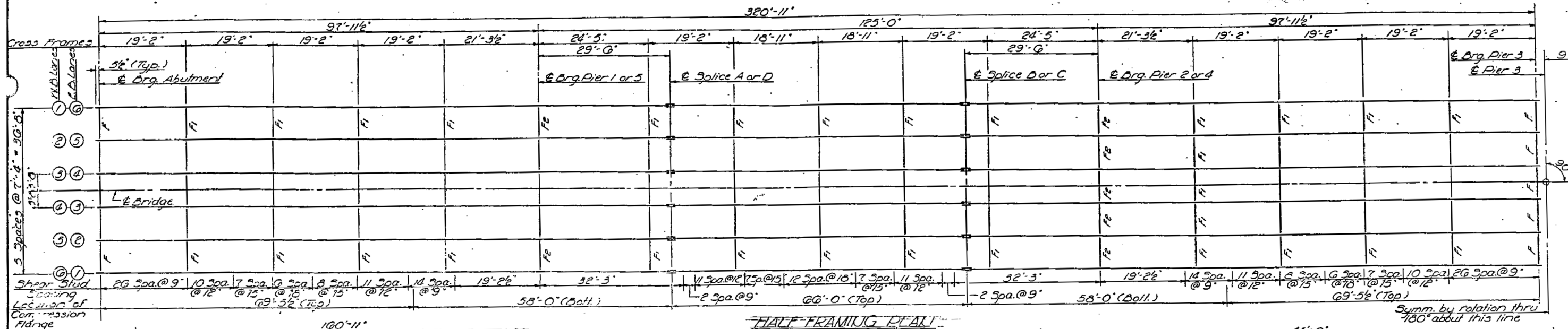
SIGNED: [Signature]  
 EXAMINED: [Signature] December 7 1964  
 CHECKED: [Signature]  
 DRAWN: [Signature]  
 CHECKED: [Signature]  
 PASSED: [Signature]  
 APPROVED: [Signature]

**DESIGN STRESSES**  
 $F_c = 1400 \text{ PSI. (SUELF \& SUP)}$   
 $F_s = 20,000 \text{ PSI. (STEEL)}$   
 $F_s = 20,000 \text{ PSI. (STRUCT)}$   
 $V_c = 75 \text{ PSI. (FIBER)}$   
 $n = 10$

STATION 5517+65  
 BUILT 197 BY  
 STATE OF ILLINOIS  
 FAI RT. 64 SEC. 97-2B-1  
 FA PROJ. 1-64-4(4)

FOR INFORMATION ONLY

FILE NAME: c:\pwwork\pwwork\dahmer\ja\0392003\78428-shr-plan.dgn	USER NAME: Dahmer,ja	DESIGNED: -	REVISED: -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SN 097-0038 & SN 097-0039	F.A. RTE. VAR. D9 BRIDGE PAINT 2015-1	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Default	PLOT SCALE: 100.0000' / in.	DRAWN: -	REVISED: -	SCALE:	SHEET OF SHEETS	ILLINOIS FED. AID PROJECT			23	13
	PLOT DATE: 8/15/2014	CHECKED: -	REVISED: -		STA. TO STA.				CONTRACT NO. 78428	
		DATE: -	REVISED: -							



DESIGNED: P. [Signature]  
 CHECKED: K.P. [Signature]  
 DRAWN: [Signature]  
 CHECKED: K.P.S.  
 EXAMINED: [Signature]  
 PASSED: [Signature]  
 APPROVED: [Signature]

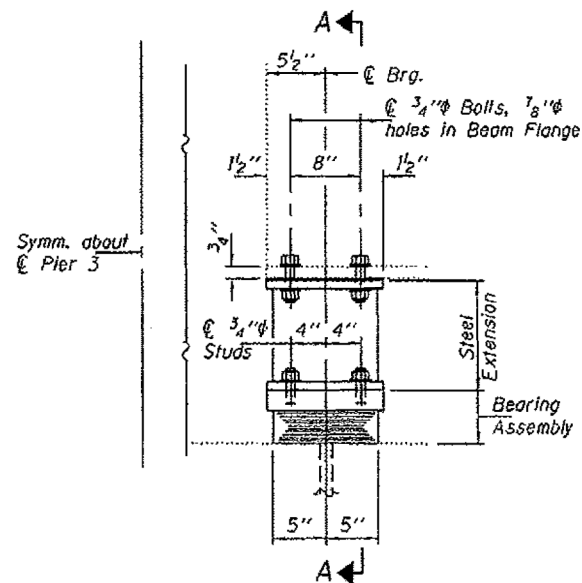
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		DATE: -	REVISED: -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

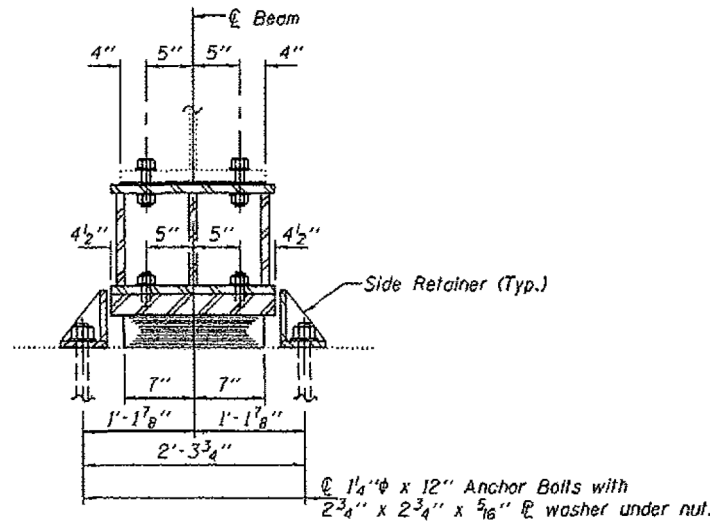
SN 097-0038 & SN 097-0039  
SCALE: SHEET OF SHEETS STA. TO STA.

F.A. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR. D9 BRIDGE PAINT 2015-1		VARIOUS	23	14
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78428	

FOR INFORMATION ONLY

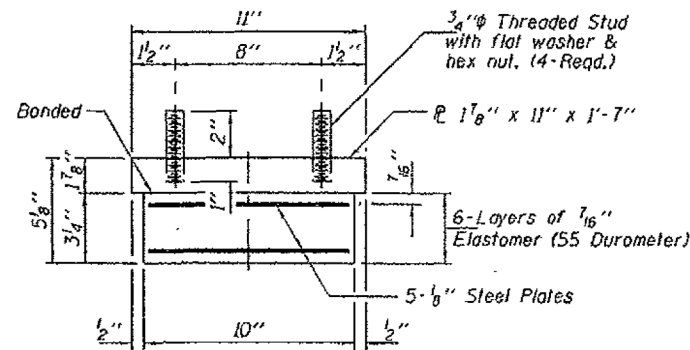


ELEVATION AT PIER 3



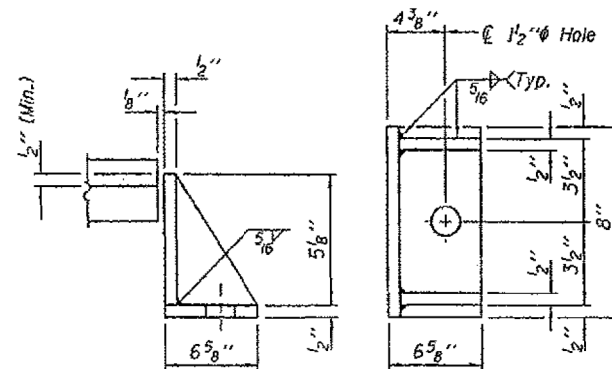
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

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



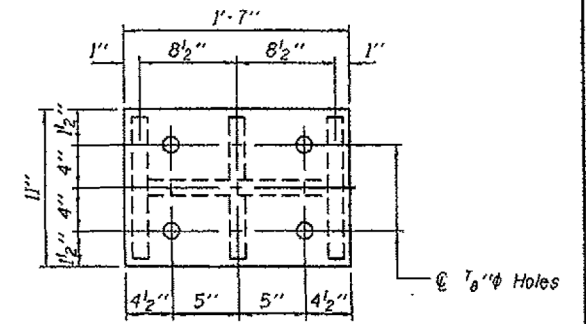
SIDE RETAINER

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

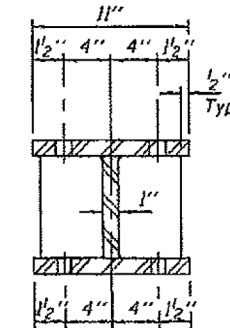
BEAM REACTIONS

RP	(K)	51.7
R <sub>L</sub>	(K)	42.4
Imp.	(K)	9.5
R (Total)	(K)	103.6

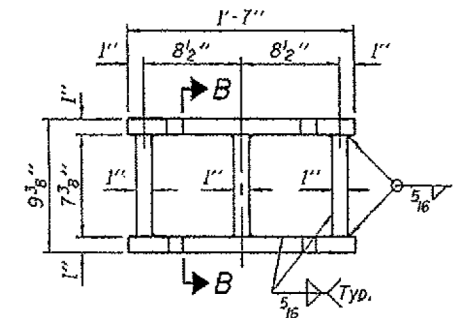
Notes:  
Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.  
New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.  
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Min. jack capacity = 60 Tons.  
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (F<sub>y</sub>=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.  
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
Side retainers shall be included in the cost of Elastomeric Bearing Assembly, Type I.



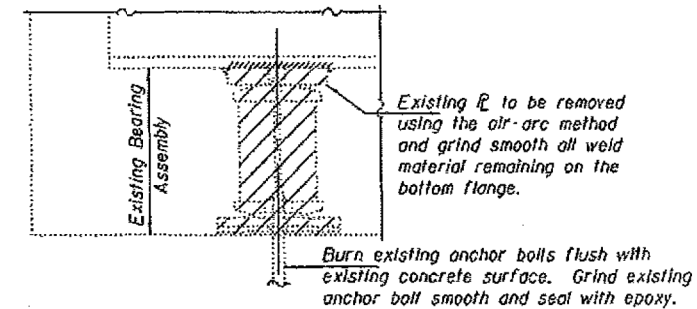
PLAN TOP AND BOTTOM PLATE



SECTION B-B



STEEL EXTENSION DETAIL



EXISTING BEARING REMOVAL DETAIL

Cost Included with Jack and Remove Existing Bearings.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	24
Jack and Remove Existing Bearings	Each	24
Furnishing and Erecting Structural Steel	Pound	5180
Anchor Bolts 1/2"φ	Each	48

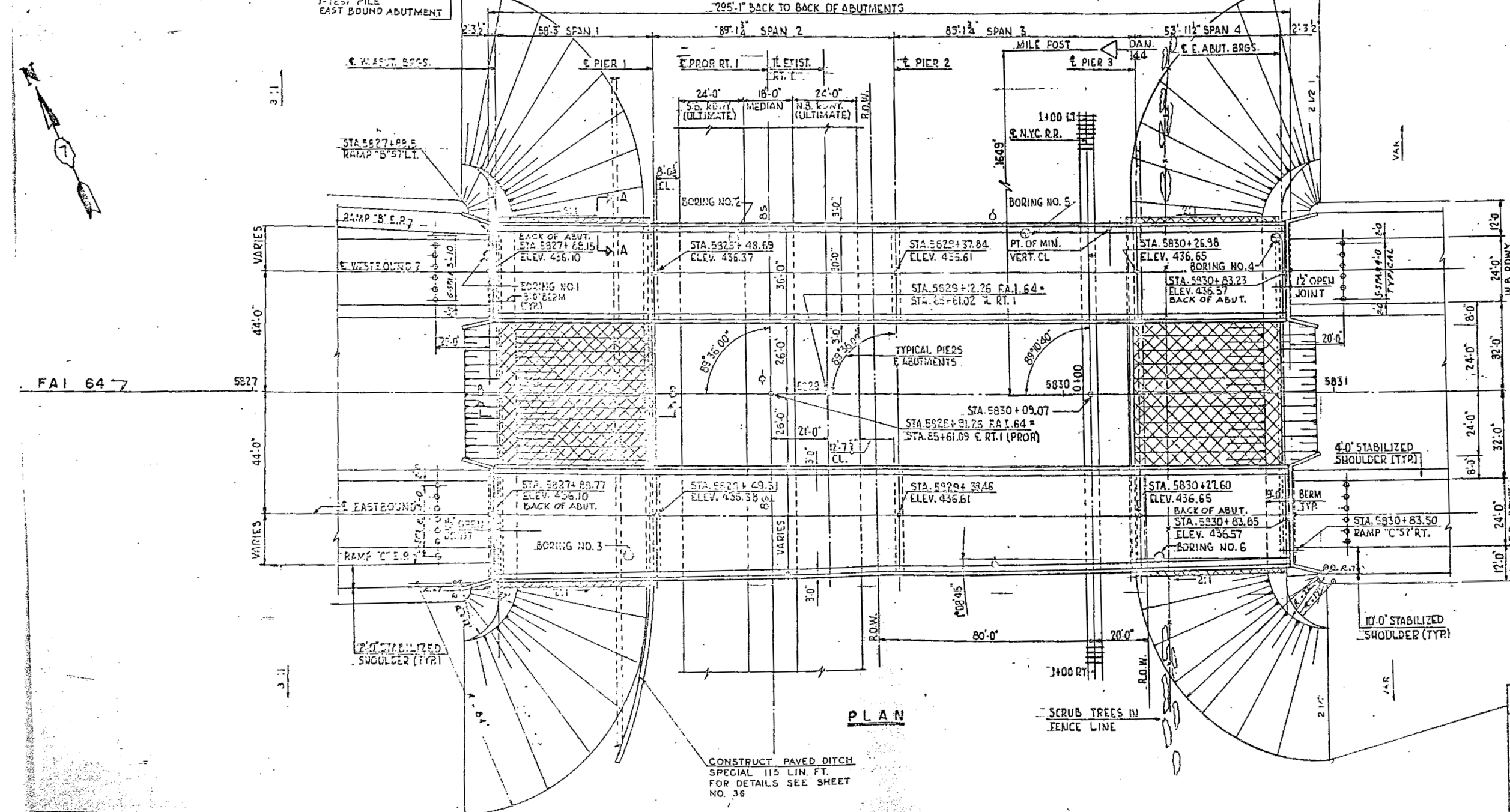
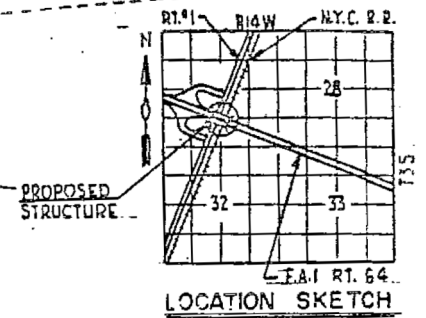
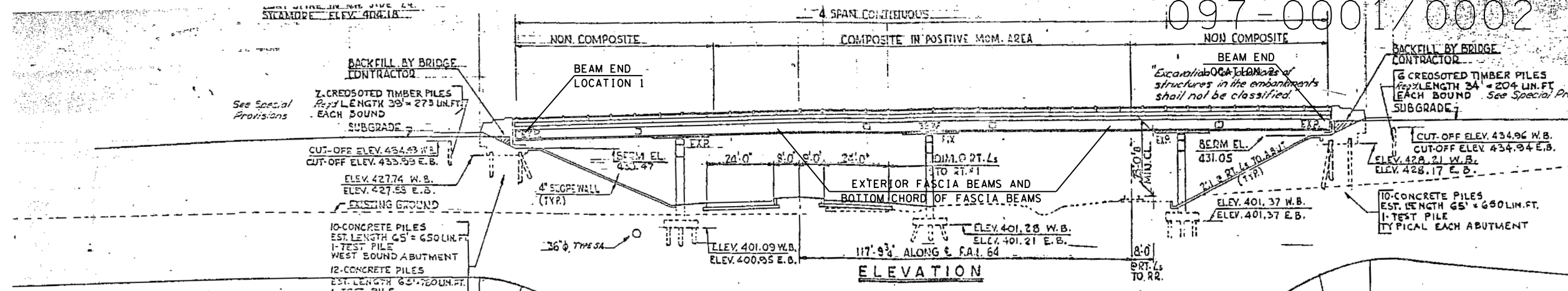
FOR INFORMATION ONLY





097-0001/0002

F.A. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	97-2 HVB	WHITE	150	37
FEDERAL ROAD DISTRICT NO.		ILLINOIS	PROJ. 1-10-14-102	



**APPROVED**  
FOR STRUCTURAL ADEQUACY ONLY

*Paul J. ...*  
Engineer of Bridge & Traffic Structures



CONSOER, TOWNSEND & ASSOCIATES  
CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS  
F.A.I. RT. 64 OVER RT. 1 & N.Y.C. R.R.  
SECTION 97-2 HVB  
WHITE COUNTY STA. 5828 + 91.2 E

**GENERAL PLAN & ELEVATION**

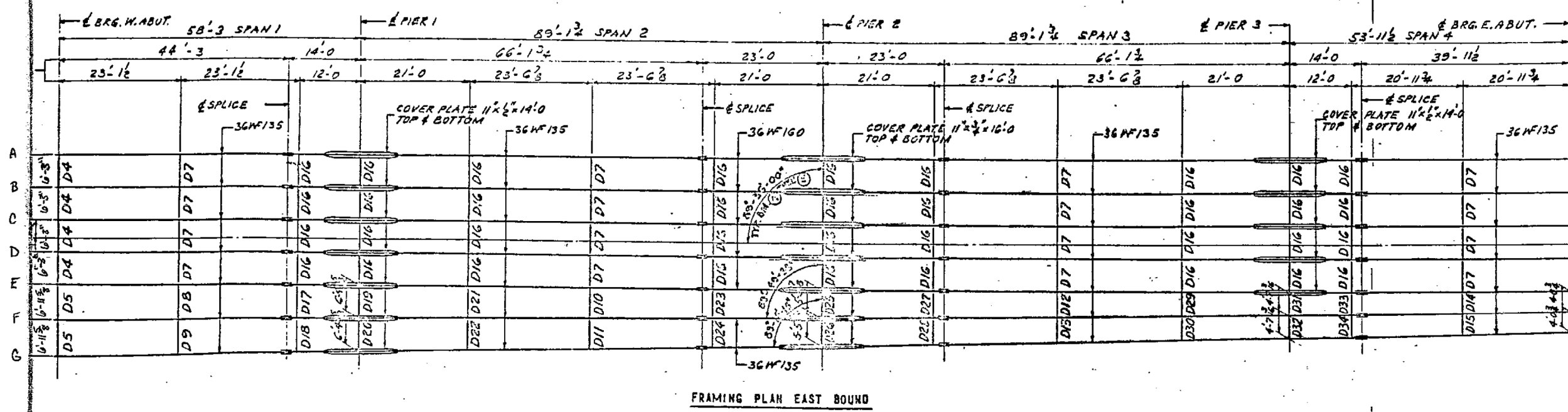
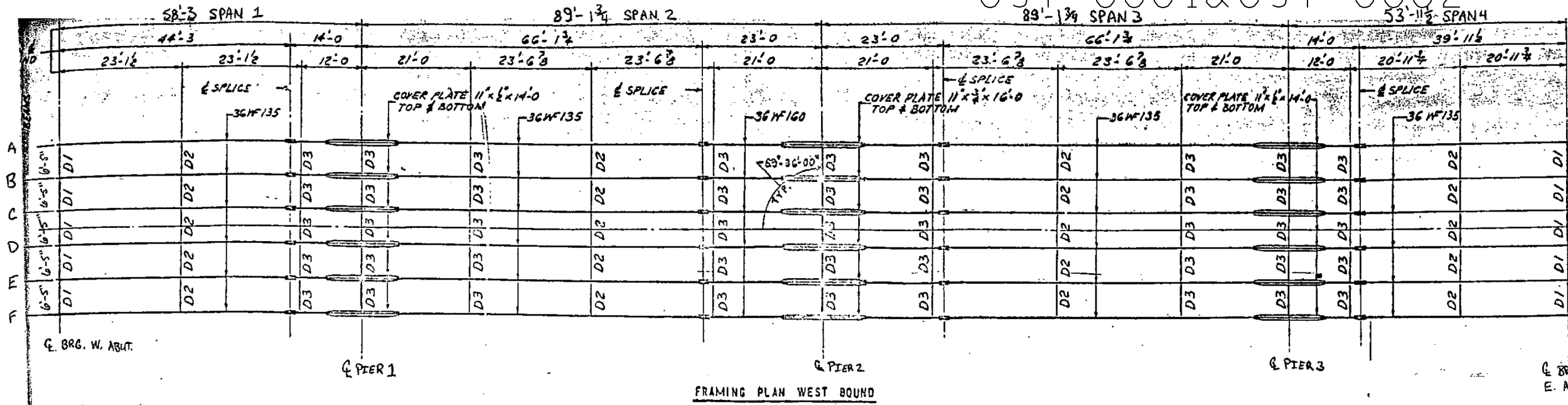
DESIGNED	DRAWN	CHECKED	DATE
L.S.	I.H.	I.H.	L.D.B. C.W.W.

FOR INFORMATION ONLY

FILE NAME =	USER NAME = Dahmer,ja	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SN 097-0001 & SN 097-0002	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Default	Plot Scale = 100.0000' / in.	DRAWN -	REVISED -			VAR. D9 BRIDGE PAINT 2015-1	VARIOUS	23	17	
	PLOT DATE = 8/15/2014	CHECKED -	REVISED -			CONTRACT NO. 78428		ILLINOIS FED. AID PROJECT		
		DATE -	REVISED -			SCALE:	SHEET OF SHEETS	STA. TO STA.		

097-0001 & 097-0002

PAL. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
97-2	HWB	WHITE	150	29
FEDERAL ROAD DISTRICT NO.		ILLINOIS	MOI.	



**SUMMARY OF ELEVATIONS TOP OF STEEL BEAMS (TOP OF FLANGE)**

BEAM	WEST ABUT.		PIER NO. 1		PIER NO. 2		PIER NO. 3		EAST ABUT.	
	BEARING	SPLICE	BEARING	SPLICE	BEARING	SPLICE	BEARING	SPLICE	BEARING	SPLICE
WEST BOUND										
A	435.340	435.626	435.582	435.756	435.799	435.628	435.852	435.610	435.698	
B	435.447	435.633	435.689	435.863	435.906	435.835	435.968	435.833	435.815	
C	435.618	435.705	435.761	435.935	435.978	436.007	436.039	435.934	435.989	
D	435.816	435.705	435.781	435.935	435.978	436.007	436.038	435.934	435.988	
E	435.448	435.834	435.889	435.864	435.906	435.935	435.968	435.962	435.814	
F	435.341	435.827	435.583	435.757	435.799	435.628	435.859	435.855	435.857	
EAST BOUND										
A	435.343	435.628	435.634	435.779	435.830	435.629	435.859	435.855	435.906	
B	435.447	435.833	435.628	435.862	435.904	435.863	435.893	435.899	435.810	
C	435.626	435.706	435.761	435.934	435.977	436.008	436.035	435.931	435.989	
D	435.625	435.710	435.765	435.937	435.981	436.010	436.040	436.038	435.987	
E	435.442	435.847	435.763	435.878	435.918	435.847	435.877	436.013	435.824	
F	435.325	435.818	435.678	435.793	435.819	435.864	435.810	435.847	435.847	
G	435.189	435.822	435.445	435.848	435.697	435.724	435.814	435.789	435.767	

NOTE: THESE ELEVATIONS ARE FOR THE USE OF THE FABRICATOR. THE ELEVATIONS ARE GIVEN TO THE TOP OF WIDE FLANGE AND DO NOT INCLUDE ALLOWANCE FOR DEFLECTION.

FOR INFORMATION ONLY

CONSOER, TOWNSEND & ASSOCIATES  
CONSULTING ENGINEERS CHICAGO, ILL. IN.  
ILLINOIS DIVISION OF HIGHWAY:  
F.A.I. RT. 64 OVER RT. 1 & N.Y.C. R.R.  
SECTION 97-2 HWB  
WHITE COUNTY STA. 5828+91.1  
FRAMING PLAN WEST & EAST BOUND

DESIGNED	D.A.H.	CHECKED	LDB	DATE	8/15/2014
DRAWN	E.M.	DATE	8/15/2014		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR. D9	BRIDGE PAINT 2015-1	VARIOUS	23	18
				CONTRACT NO. 78428

ILLINOIS FED. AID PROJECT

FILE NAME	USER NAME	DESIGNED	REVISED
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PLOT SCALE	CHECKED	REVISED	REVISED
100.0000' / 1"	-	-	-
PLOT DATE	DATE	REVISED	REVISED
8/15/2014	-	-	-

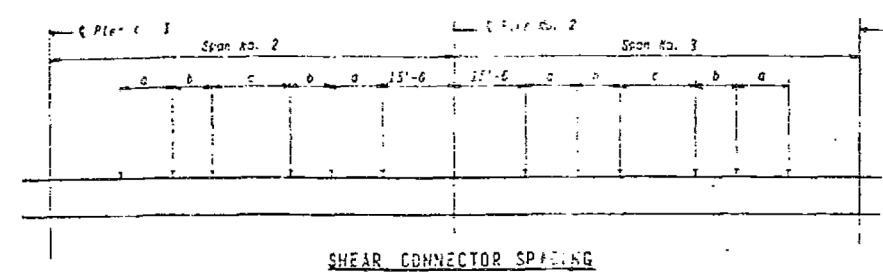
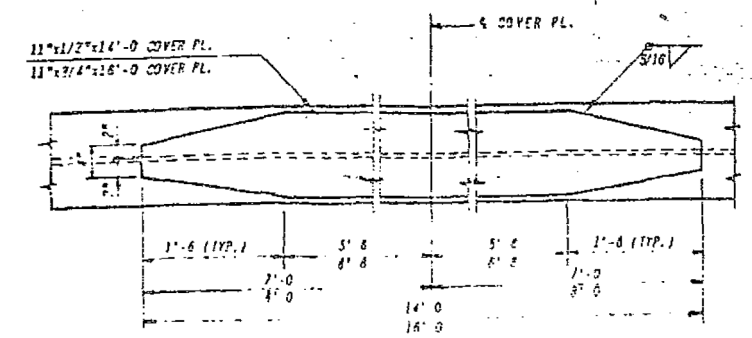
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SN 097-0001 & SN 097-0002

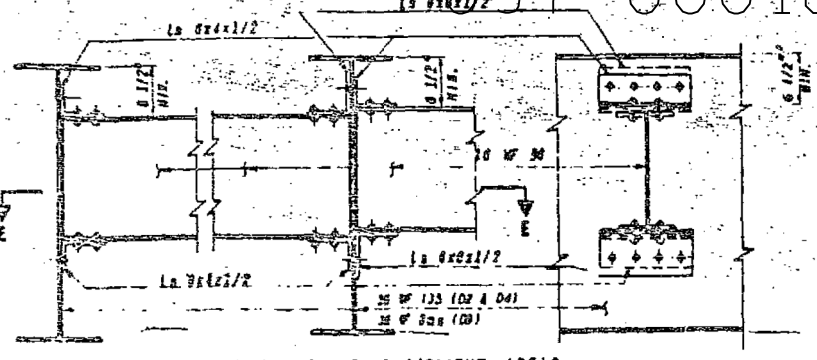
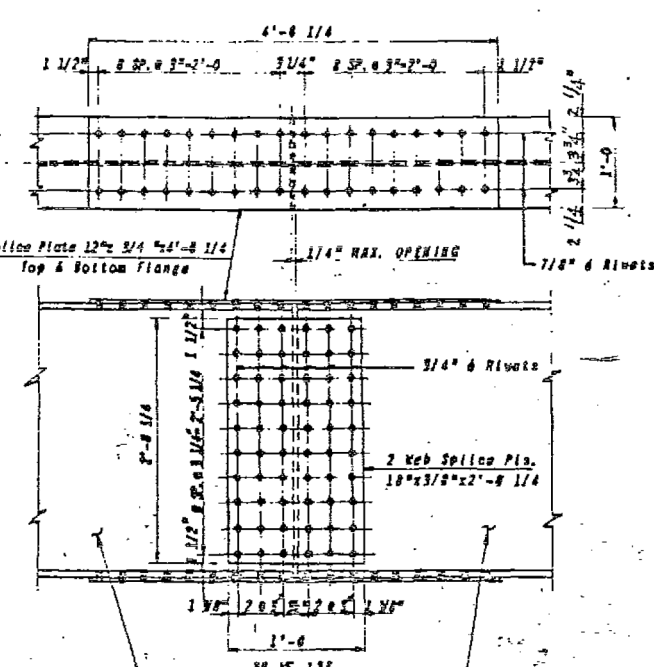
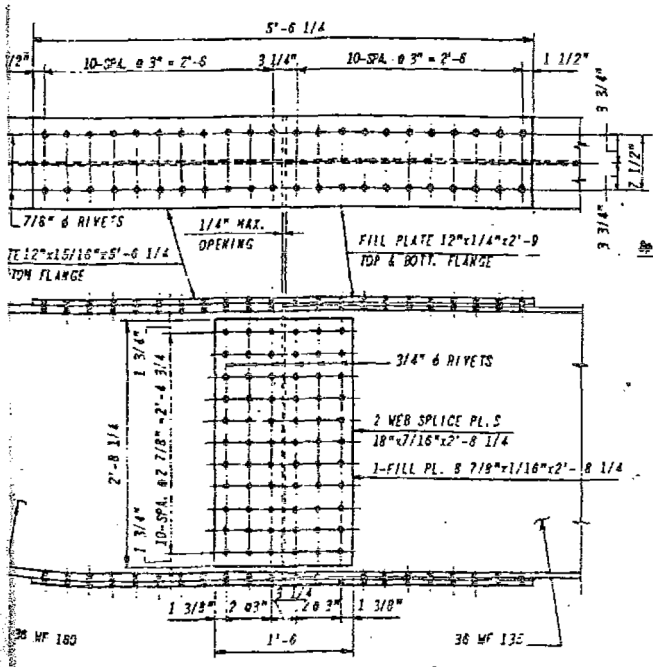
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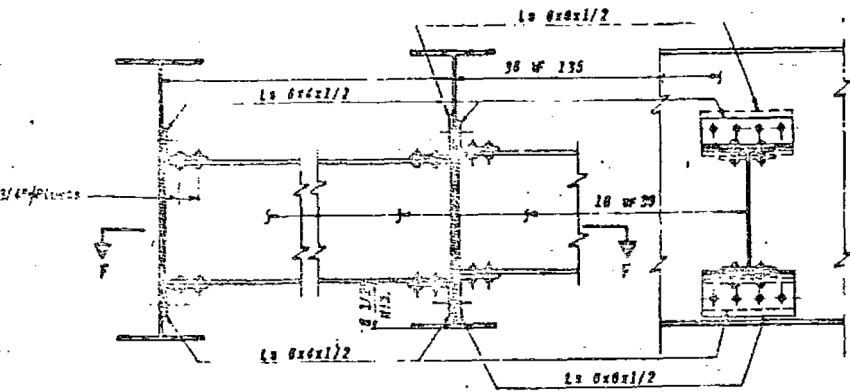
ALL SHEET NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
60	97-2 HYB	WHITE	150	50
FEDERAL ROAD DISTRICT NO.			DESIGNER	DATE



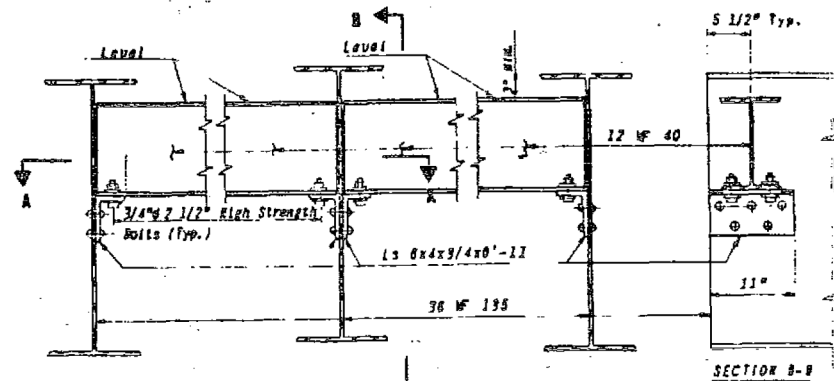
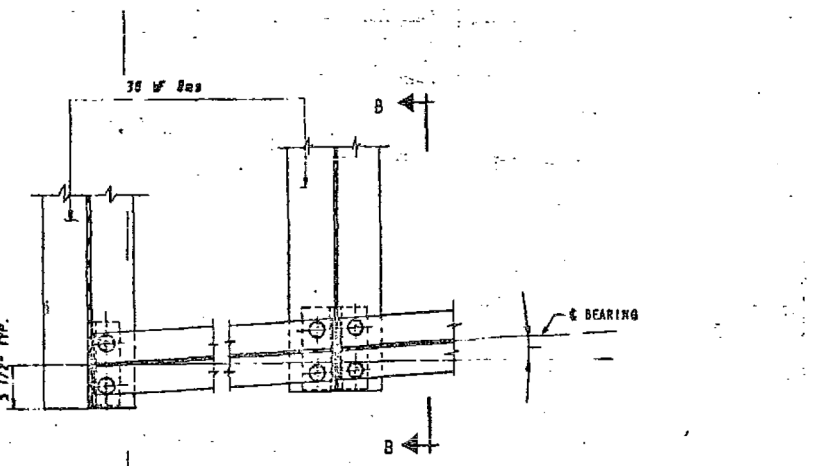
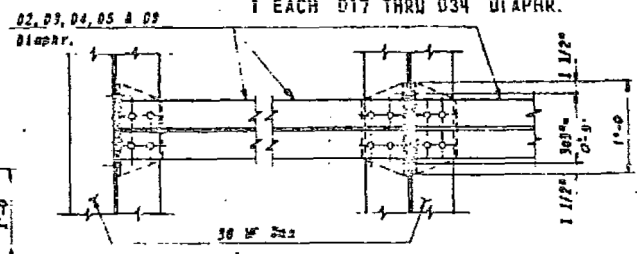
WEST BOUND	EAST BOUND	a	b	c
A & F	A & G	-	-	29 Sp. @ 2'-0 5/8"-0
B thru E	B thru F	15 Sp. @ 3'-11"-3	9 Sp. @ 12'-9"-0	14 Sp. @ 1'-3-17"-4



20 - D2 DIAPHR.  
16 - D7 DIAPHR.  
1 EACH D8 THRU D15 DIAPHR.

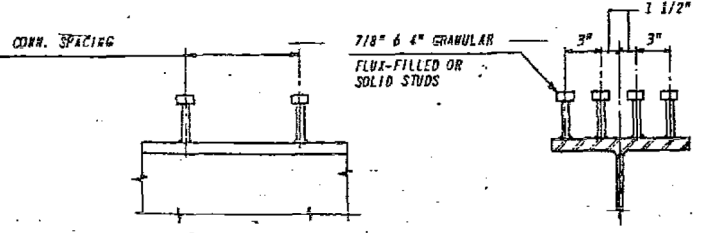


45 - D3 DIAPHR.  
36 - D16 DIAPHR.  
1 EACH D17 THRU D34 DIAPHR.



END DIAPHRAGMS  
10 - D1 DIAPHR.  
8 - D4 DIAPHR.  
2 - D5 DIAPHR.  
2 - D6 DIAPHR.

TOTAL COMPUTED WEIGHT OF FRAMING STRUCTURAL STEEL 647,180 LBS.



NOTE: \* Includes Framing Steel 621,250 Lbs., Bearing Devices 19,430 Lbs., Shear Connectors 6,500 Lbs.

\* Stud shear connectors on the beam flanges shall be placed in the field after the steel has been erected and the deck forms are in place.  
\* Flange shear connectors are included in the quantity of structural steel. Minimum required = 5,970.

FILE NAME =	USER NAME = Dahmer,ja	DESIGNED -	REVISED -
et:\pw\work\p1dot\dahmer,ja\0392003\78428-sh1-plan.dgn		DRAWN -	REVISED -
Default	PLOT SCALE = 100.0000 / in.	CHECKED -	REVISED -
	PLOT DATE = 8/15/2014	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SN 097-0001 & SN 097-0002

SCALE: SHEET OF SHEETS STA. TO STA.

CONSOER, TOWNSEND & ASSOCIATES  
CONSULTING ENGINEERS CHICAGO, ILL.  
ILLINOIS DIVISION OF HIGHWAYS  
F.A.I. RT. 64 OVER RT. 1 & N.Y.C. R.R.  
SECTION 97-2 HYB  
WHITE COUNTY STA. 582B+5  
STRUCTURAL STEEL FRAMING DETAIL

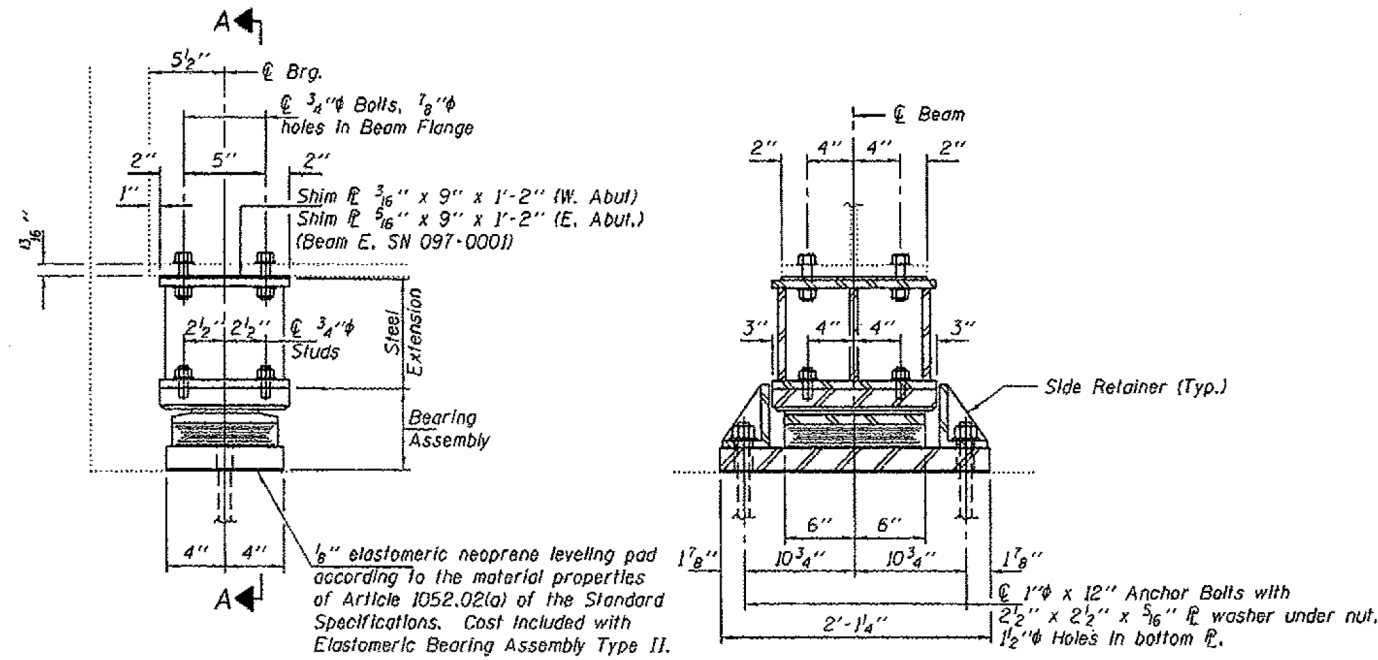
DESIGNED	DATE	APPROVED	DATE
L.S.	E.M.	E.M.	L.D.B.
			C.W.W.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D9 BRIDGE PAINT 2015-1	VARIOUS	23	19
CONTRACT NO. 78428				
ILLINOIS FED. AID PROJECT				

**BEAM REACTIONS**

R <sub>L</sub>	(K)	25.6
R <sub>R</sub>	(K)	34.0
Imp.	(K)	8.7
R (Total)	(K)	68.3

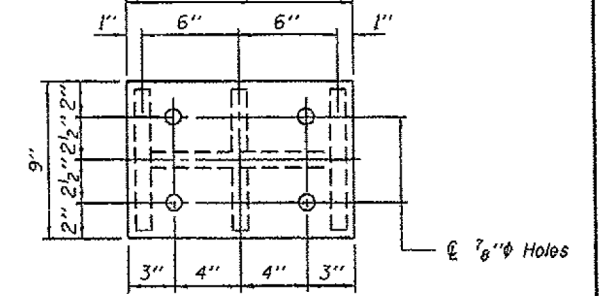
**Notes:**  
 Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.  
 New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.  
 Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Min. jack capacity = 40 Tons.  
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Anchor bolts for Type II bearings shall be placed in holes drilled through the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.  
 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
 Side retainers shall be included in the cost of Elastomeric Bearing Assembly, Type II.  
 The 1/8" PTFE sheet shall be bonded directly to the top 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.  
 Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



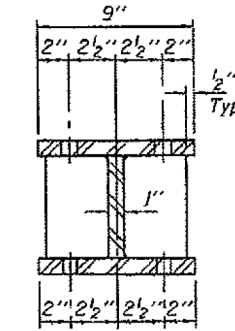
**ELEVATION AT ABUTMENTS**

**SECTION A-A**

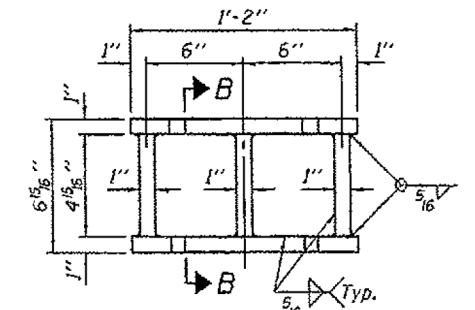
**TYPE II TFE ELASTOMERIC EXP. BRG.**



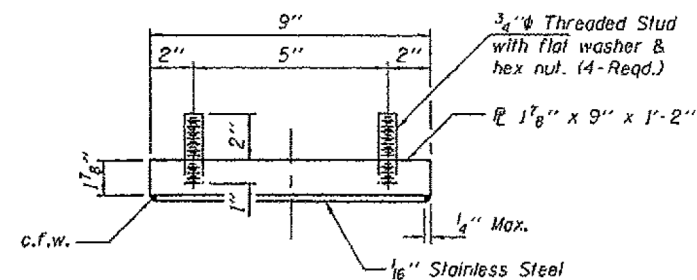
**PLAN TOP AND BOTTOM PLATE**



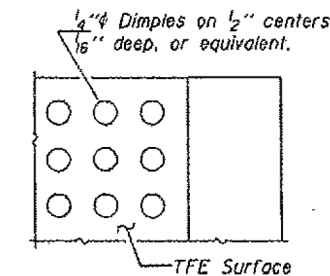
**SECTION B-B**



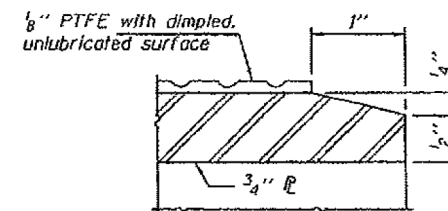
**STEEL EXTENSION DETAIL**



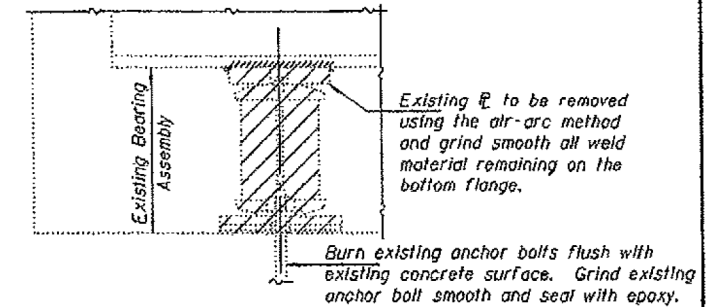
**TOP BEARING ASSEMBLY**



**PLAN-PTFE SURFACE**

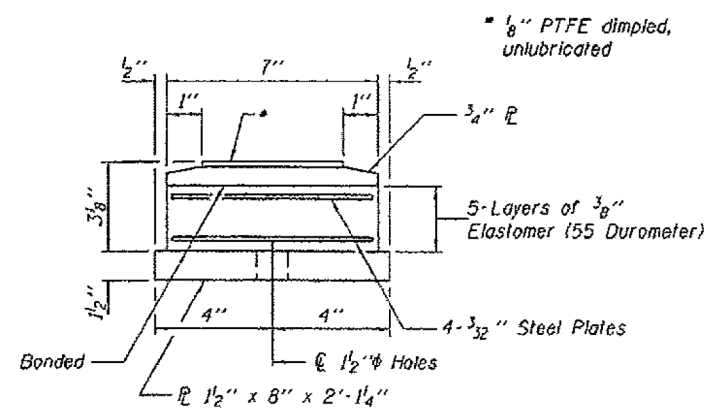


**SECTION THRU PTFE**

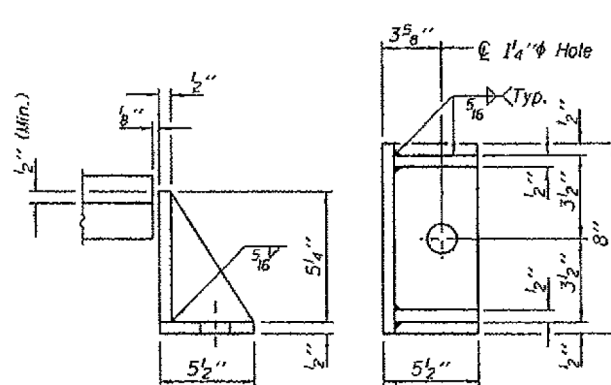


**EXISTING BEARING REMOVAL DETAIL**

Cost Included with Jack and Remove Existing Bearings.

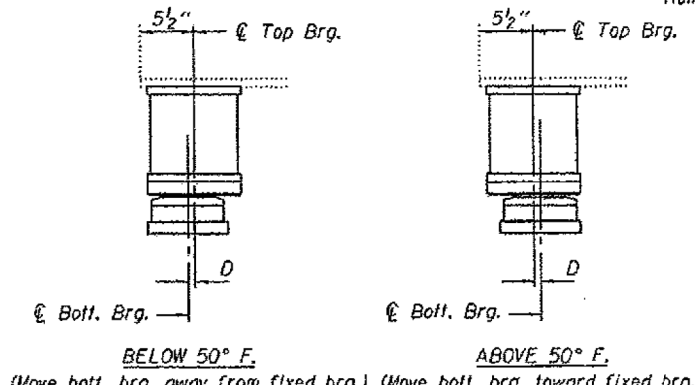


**BOTTOM BEARING ASSEMBLY**



**SIDE RETAINER**

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



**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**

Item	Unit	Total
Elastomeric Bearing Assembly, Type II	Each	26
Jack and Remove Existing Bearings	Each	26
Furnishing and Erecting Structural Steel	Pound	3200
Anchor Bolts 1"φ	Each	52

TYII/REPS 12-03-2008

FILE NAME =	USER NAME = Dahmer.ja	DESIGNED -	REVISED -
ca:\pwwork\pwwork\dahmer.ja\0392003\78428-sh-t-plan.dgn		DRAWN -	REVISED -
Default	PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
	PLOT DATE = 8/15/2014	DATE -	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SN 097-0001 & SN 097-0002

SCALE: SHEET OF SHEETS STA. TO STA.

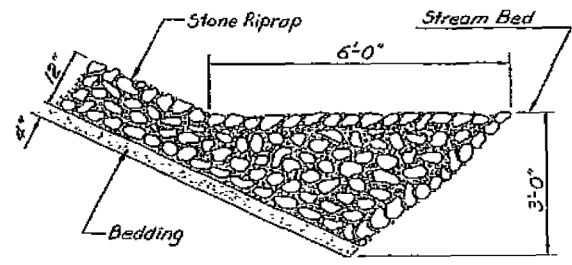
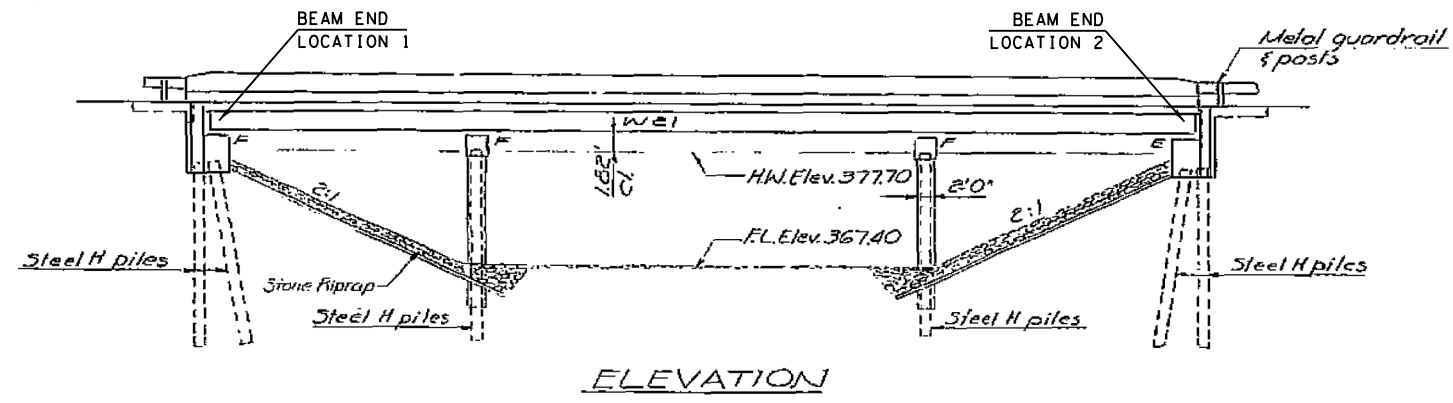
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR. D9 BRIDGE PAINT 2015-1		VARIOUS	23	20
CONTRACT NO. 78428				
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY

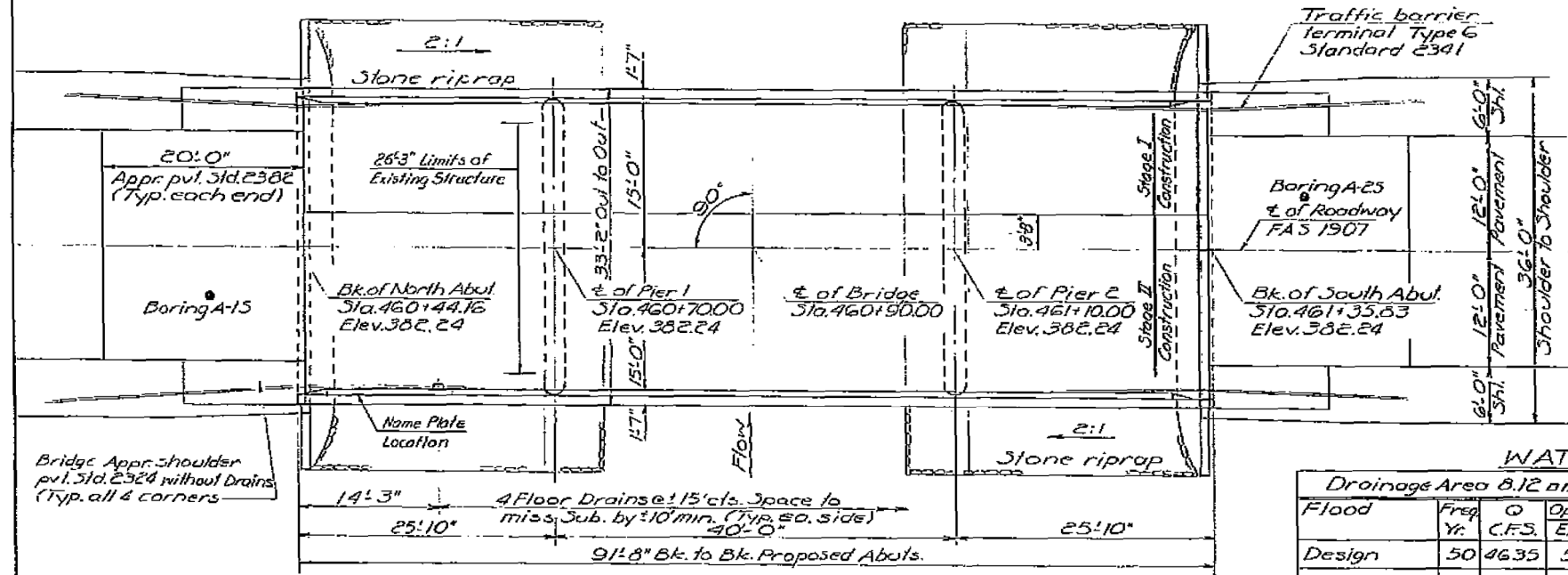
Bench Mark: 6" cul in top of Northeast wingwall 15.3' left of Station 460+45.3, Elev. 382.23  
Existing Structure: # 002-0015. The existing structure built in 1936 as S.A. Route 144, Section 16-B is a 91.10' bk. to bk. three span bridge. The existing superstructure consists of a 6" R.C. slab on 18" w/ steel beams with an out to out of 26'-3". The existing substructure is composed of four pile bents with timber caps. The existing structure shall be removed and replaced with a new bridge. Traffic shall be maintained at all times utilizing stage construction. No salvage.

GENERAL NOTES

- SEE PROPOSAL FOR DURING DATA.
- FASTENERS SHALL BE HIGH STRENGTH BOLTS (AASHTO M 164, TYPE 3). BOLTS 3/4" DIA., OPEN HOLES 13/16" DIA., UNLESS OTHERWISE NOTED.
- CALCULATED WEIGHT OF STRUCTURAL STEEL = 35,920 LBS. M222 AND 1600 LBS. M183.
- THE BASIC LEAD SILICO CHROMATE PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF STRUCTURAL STEEL EXCEPT WHERE OTHERWISE NOTED.
- ALL STRUCTURAL STEEL SHALL BE AASHTO M 222 EXCEPT EXPANSION JOINT ANGLES AND ATTACHED BARS WHICH SHALL BE AASHTO M 183.
- ALL CONTACT SURFACES OF JOINTS FOR THE DIAPHRAGMS SHALL BE FREE OF PAINT OR LACQUER.
- EXPANSION JOINT ANGLES AND ATTACHED BARS SHALL BE SHOP PAINTED WITH TWO COATS OF BASIC LEAD SILICO CHROMATE PAINT.
- AASHTO M 222 STRUCTURAL STEEL SHALL NOT BE PAINTED EXCEPT FOR A DISTANCE OF THREE TIMES THE DEPTH OF THE BEAMS (BUT NOT EXCEEDING 10 FEET) EACH WAY FROM THE JOINTS. THE AASHTO M 222 STRUCTURAL STEEL TO BE PAINTED SHALL BE CLEANED AND GIVEN ONE COAT OF THE BASIC LEAD SILICO CHROMATE PRIMER AND HARDEN FIELD COAT. BOTH COATS SHALL BE APPLIED IN THE SHOP WITH SPOT PAINTING ONLY IN THE FIELD.
- FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF BEAMS 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.
- THE MAIN LOAD CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOUGHNESS ZONE 2. THESE COMPONENTS ARE THE WIDE FLANGE BEAMS AND ALL SPLICE PLATE MATERIAL.
- REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 OR M 53 GRADE 60.
- BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8 INCH. ADJUSTMENT SHALL BE MADE EITHER BY GRINDING THE SURFACE OR BY SHIMMING THE BEARING. TWO 1/8" ADJUSTING SHIMS, OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS.
- THE CONTRACTOR SHALL DRIVE 1-WP10X42 STEEL TEST PILE IN A PERMANENT LOCATION AT PIER 2 AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF THE PILES.



STONE RIPRAP ANCHOR DETAIL  
Note: Layout of stone riprap may be varied in the field to suit ground conditions as directed by the Engineer.



STATION 460+90.00  
COOPER CREEK  
BUILT 19  
EAS. FT. 1907 SEC. 17B-2  
E.A. PROJ. BRS-1907(125)  
LOADING H520  
\*STR. NO.

NAME PLATE  
(See Std. 2113)

\* Structure Number to be supplied by District.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		168	168
Floor Drains	Each	8		8
Protective Coat	Sq. Yd.	385		385
Class X Concrete	Cu. Yd.	91.6	118.5	210.1
Structural Steel	Lump Sum	1		1
Stud Shear Connectors	Each	500		500
Reinforcement Bars	Lbs.		8100	8100
Reinforcement Bars (Epoxy Coated)	Lbs.	23060		23060
Steel Piles HP10x42	Lin. Ft.		2224	2224
Test Pile Steel HP10x42	Each		1	1
Name Plates	Each	1		1
Stone Riprap	Sq. Yd.		304	304
Preformed Joint Seal (2 1/2")	Lin. Ft.	33		33
Temporary Bridge Roll	Lin. Ft.	130		130
Stops Wall Removal	Sq. Yd.		350	350

WATERWAY INFORMATION

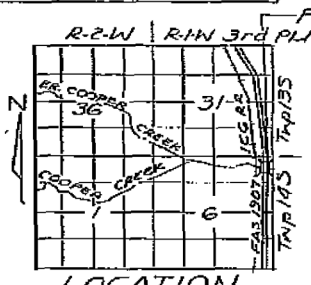
Drainage Area 8.12 ami. Low Grade Elev. 381.5' @ Sta. 469+100

Flood	Freq. Yr.	C.F.S.	Opening Sq. Ft.	Nat. H.N.E.	Head - Ft.	Headwater - Ft.
Design	50	4635	500	604	377.7	3.46
Base	100	5351	524	632	378.0	3.68
Overlapping						
Max. Calc.	500	7062		683	378.5	3.46

DESIGN STRESSES

$f'_c = 3500$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 50,000$  psi (Structural) AASHTO M 222  
 $f_y = 36,000$  psi (Structural) AASHTO M 183

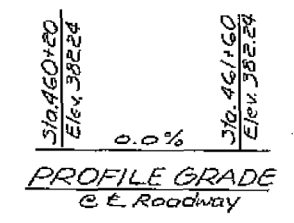
Allow 25#4 for future wearing surf.  
Design Specifications: 1977 AASHTO and 1978, 1979, 1980, 1981 and 1982 interim specs.

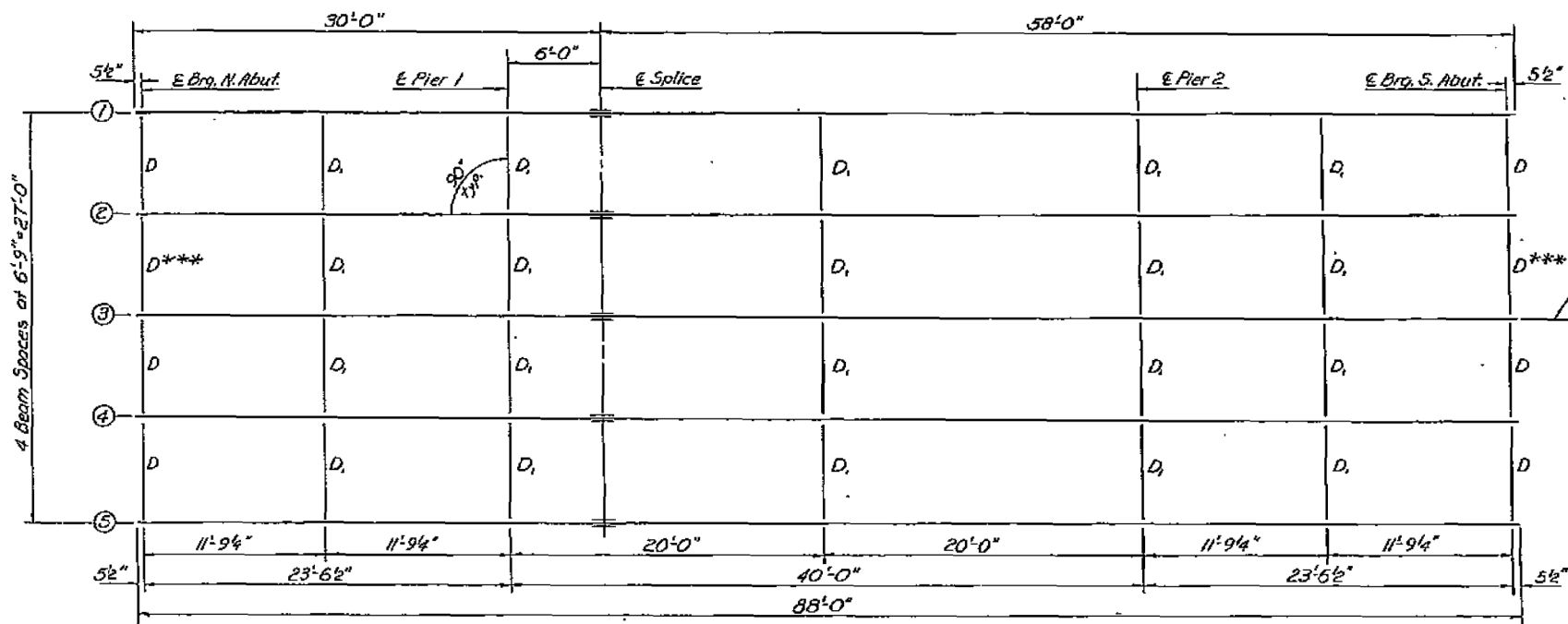


GENERAL PLAN  
ILL. RTE. 127 OVER COOPER CREEK  
EAS. ROUTE 1907  
SECTION 17B-2  
ALEXANDER COUNTY  
STATION 460+90.00

FOR INFORMATION ONLY

DESIGNED Rick Brunette  
CHECKED M. Bloxdorf  
DRAWN Rick Brunette jas  
CHECKED DJR M.B.  
June 24 1983  
EXAMINED [Signature]  
PASSED [Signature]  
APPROVED [Signature]  
DIRECTOR OF HIGHWAYS



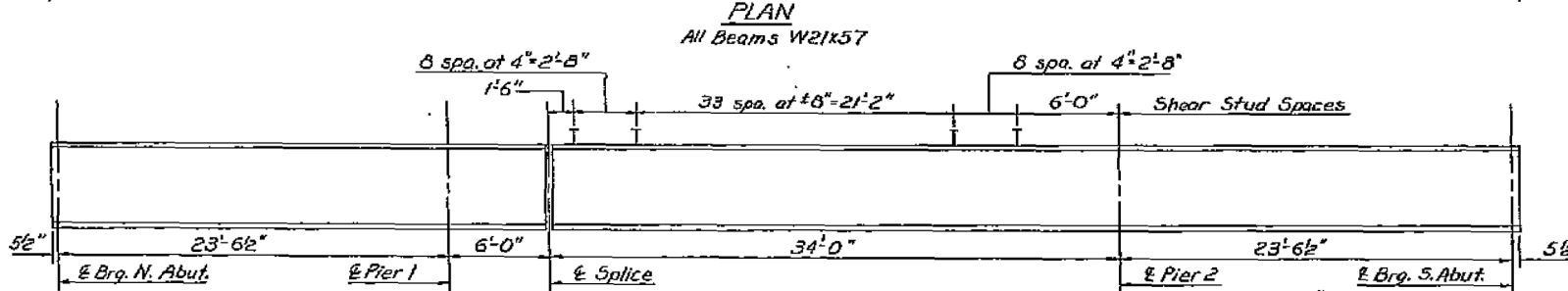


**INTERIOR BEAM MOMENT TABLE**

	0.3 Sp. 1 or 3	Pier 1 or 2	0.5 Sp. 2
$I_s$ (in <sup>4</sup> )	1170	1170	1170
$I_e$ (in <sup>4</sup> )			4214.1
$S_x$ (in <sup>3</sup> )	111	111	111
$S_y$ (in <sup>3</sup> )			191.7
$Z$ (in <sup>3</sup> )			
$\rho$ (%)	.708	.708	.708
$M_E$ (K)	16.7	81.6	60.0
$S_E$ (K)	.374	.374	.374
$M_{SE}$ (K)	12.1	32.2	42.6
$M_E$ (K)	94.6	94.8	205.6
$M_{E+I}$ (K)	28.3	28.4	61.7
$S_3(M_E+I)$ (K)	204.8	205.3	445.5
$M_o$ (K)	303.7	414.8	712.5
* $M_u$ (K)			1173.9
$f_s$ non-comp (ksi)	1.81	8.82	6.49
$f_s$ comp (ksi)			2.67
$f_s$ (E+I) (ksi)	22.14	22.19	27.89
$f_s$ (overload) (ksi)	23.95	31.01	37.03
** $f_s$ (total) (ksi)	31.14	40.31	
VR (K)			36.1

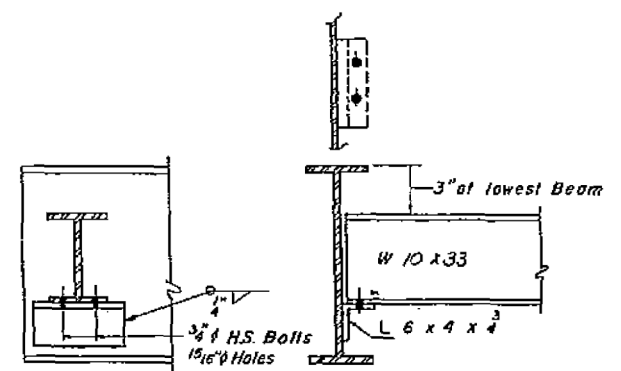
\*\*\* Diaphragms D at Abutments, between Stage I and Stage II Construction, shall be spliced. See Details on sht. #B.

\*  $M_u$  = Full Plastic Moment Capacity for Compact, Braced Section.  
 \*\* Non-compact section  
 $M_o$  (Applied Moment) =  $1.3[M_E + M_{SE} + S_3(M_E + I)]$   
 $I_s$  and  $S_x$  are the moment of inertia and section modulus of the steel section used in computing  $f_s$  (Total and Overload).  
 $I_e$  and  $S_y$  are the moment of inertia and section modulus of the composite section used in computing  $f_s$  (Total and Overload).  
 $Z$  is the plastic section modulus used to determine the Fully Plastic Moments in the non-composite areas.  
 The Fully Plastic Moment capacity ( $M_u$ ) is computed according to AASHTO 1.7.59(A) & 1.7.62(A).  
 $f_s$  (Total) is the sum of the stresses due to  $1.3[M_E + S_3(M_E + I)]$   
 $f_s$  (Overload) is the sum of the stresses due to  $M_E + S_3(M_E + I)$

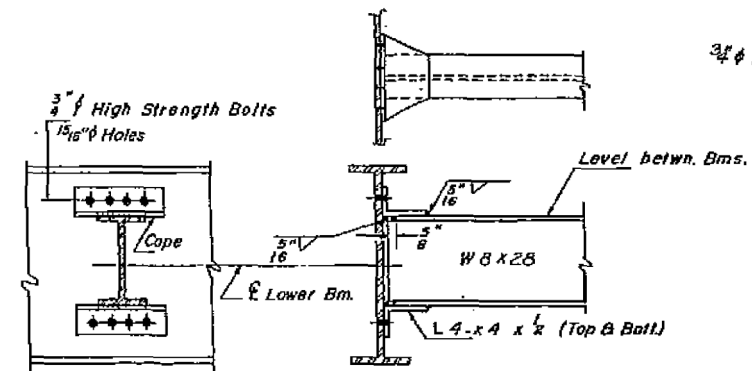


**INTERIOR BEAM REACTION TABLE**

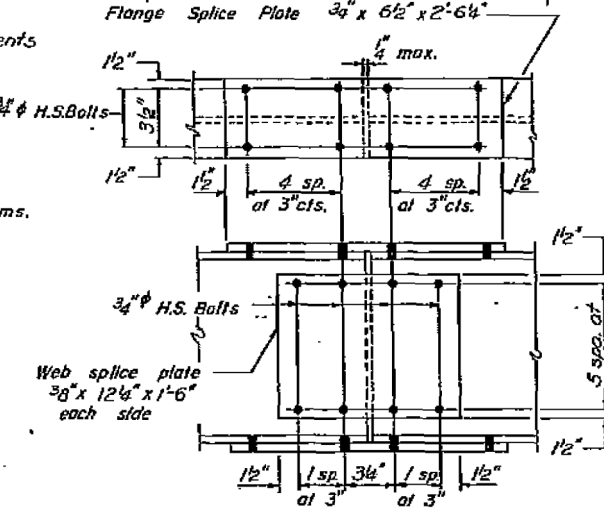
	Abutts.	Piers
$R_D$	7.91	39.21
$R_t$	25.52	37.82
$R_{imp}$	7.66	11.35
$R_{total}$	41.09	88.38



**DIAPHRAGM D**  
(8 Required)



**DIAPHRAGM D1**  
(20 Required)



**SPlice**  
(for W21x57)

**TOP OF FLANGE ELEVATIONS TABLE**  
 \*\*\* (Before any deflection)

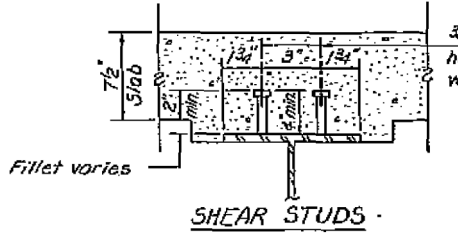
Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5
E Brg. N. Abut.	381.35	381.47	381.57	381.47	381.35
E Brg. Pier 1	381.31	381.43	381.53	381.43	381.31
E Splice	381.30	381.42	381.52	381.42	381.30
E Brg. Pier 2	381.33	381.45	381.55	381.45	381.33
E Brg. S. Abut.	381.35	381.47	381.57	381.47	381.35

\*\*\*\* For fabrication only.

DESIGNED Rick Brunette  
 CHECKED M. Bloxdorf  
 DRAWN Rick Brunette  
 CHECKED M. Bloxdorf

EXAMINED June 24, 1982  
 PASSED  
 APPROVED  
 DIRECTOR OF HIGHWAYS

Note: Two hardened washers shall be required over all 1 1/8" holes. All contact surfaces of joints shall be free of paint or lacquer.

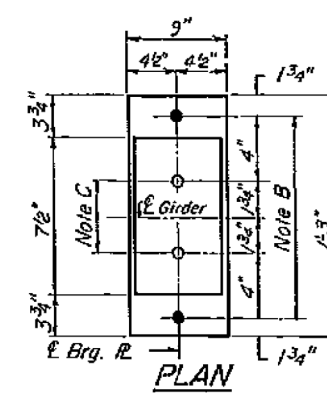
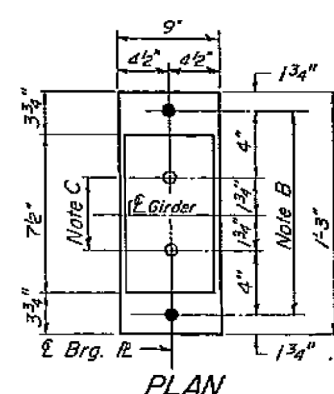
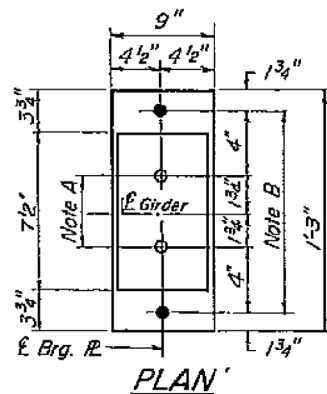
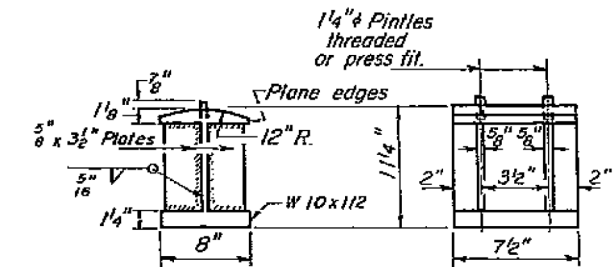
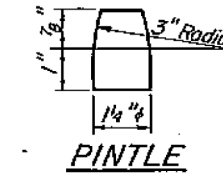
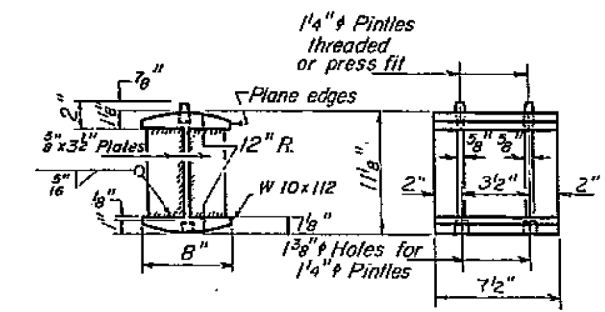
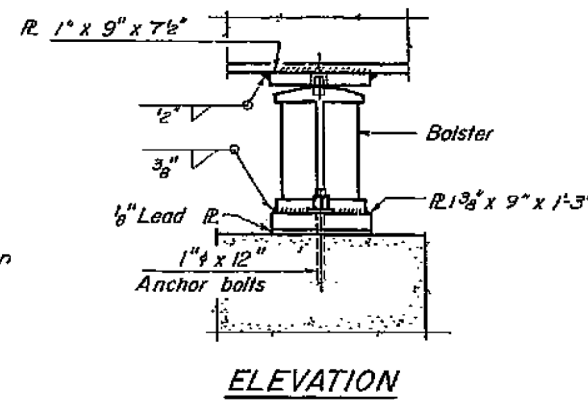
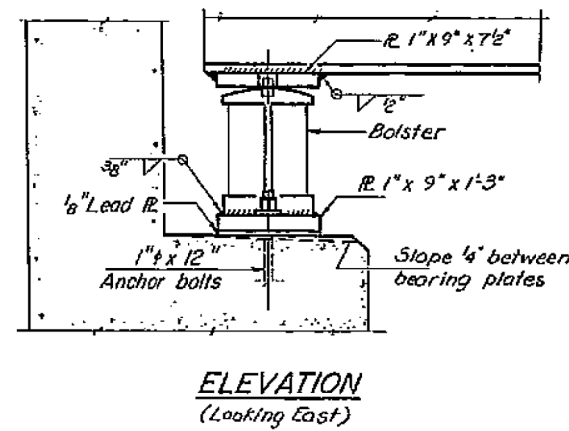
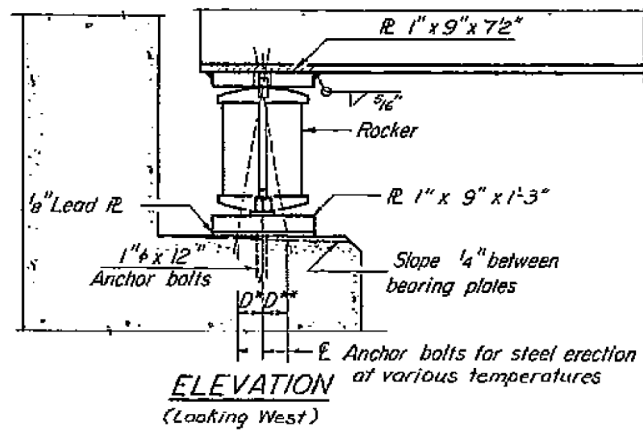


**SHEAR STUDS**

Note: All diaphragms, connecting angles and diaphragm splice plates shall be AASHTO M-222 Steel. All beams and beam splice plates shall be AASHTO M-222 Steel.

FOR INFORMATION ONLY

STRUCTURAL STEEL  
 F.A.S. RT. 1907 SEC. 17B-2  
 ALEXANDER COUNTY  
 STATION 460+90.00



**NOTE A**  
1 3/8" Holes - 1" deep in top R.  
for pintles. Thread or press fit  
pintles into bottom R.

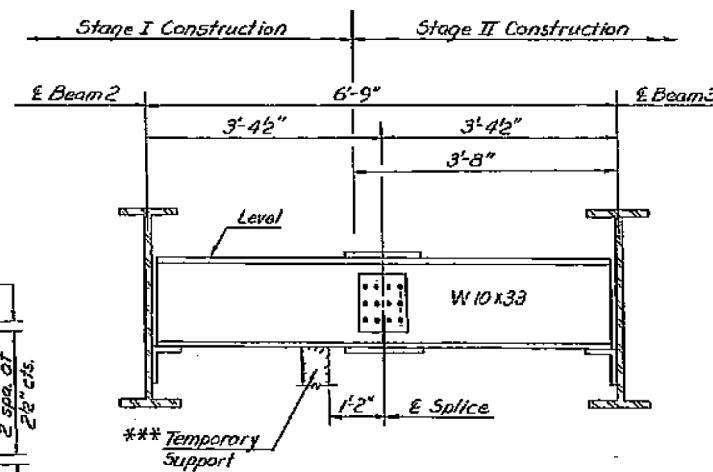
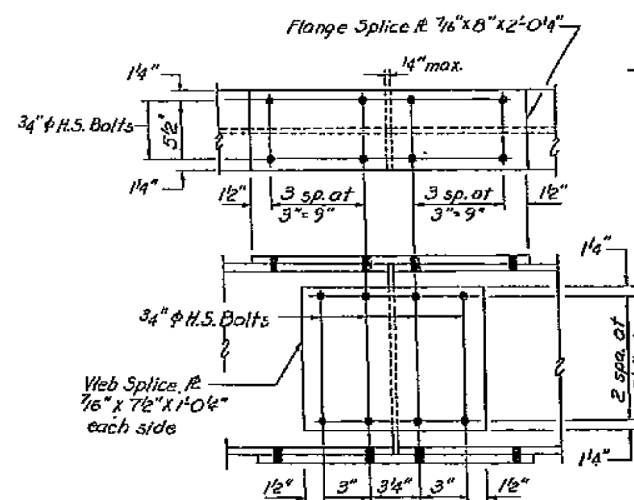
**NOTE B**  
1/2" Holes for 1" anchor bolts.  
5/16" x 2 1/2" x 2 1/2" R. Washers  
under nut.

**NOTE C**  
1 3/8" 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**



**DIAPHRAGM D ERECTION PROCEDURE**  
(between Beams 2 & 3)

- 1) Full length diaphragm shall be cut in half.
- 2) Attach 1/2 of diaphragm to Beam 2 during Stage I Construction and support in place (level).
- 3) The top flange splice plate shall be connected prior to pouring concrete for Stage I Construction.
- 4) The second half of the diaphragm shall be spliced on and connected to Beam 3 (during Stage II Construction) prior to removal of the temporary support.
- 5) Concrete for Stage II Construction can be poured after the diaphragm is fully erected.

Notes: Diaphragms and Diaphragm Splice Plates shall be AASHTO M-222.  
All Bearing materials shall be AASHTO M-222.

DESIGNED	Rick Brunette	EXAMINED	June 20, 1983
CHECKED	M. Bloxdorf	PASSED	
DRAWN	Rick Brunette	APPROVED	
CHECKED	M. Bloxdorf		

I-2-B 6-1-82

STRUCTURAL STEEL DETAILS  
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STATION 460+90.00

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