

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

I-24 & I-57 (FAI 24 & FAI 57)
D9 BRIDGE PAINT 2014-2
BRIDGE PAINTING
VARIOUS COUNTIES

C-99-046-14

FOR INDEX OF SHEETS, SEE SHEET NO. 2

BRIDGE NO. 1
SN. 044-0031
IL 37 2013 ADT=3950, 18% TRUCKS
I-24 2013 ADT=16600, 26% TRUCKS
TOWNSHIP-COUNTY UNIT ROAD DISTRICT

BRIDGE NO. 2
SN. 064-0022
ROSEBUD RD. 2013 ADT=450, 4% TRUCKS
I-24 2013 ADT=15900, 26% TRUCKS
TOWNSHIP-COUNTY UNIT ROAD DISTRICT

BRIDGE NO. 3
SN. 064-0019
BENTON RD. 2010 ADT=75, 0% TRUCKS
I-24 2013 ADT=15900, 26% TRUCKS
TOWNSHIP-COUNTY UNIT ROAD DISTRICT

BRIDGE NO. 4
SN. 064-0016
BIG BAY 2010 ADT=500, 5% TRUCKS
I-24 2013 ADT=15900, 26% TRUCKS
TOWNSHIP-COUNTY UNIT ROAD DISTRICT

BRIDGE NO. 5
SN. 064-0029
US 45 2013 ADT=11400, 7% TRUCKS
I-24 2013 ADT= 25800, 21% TRUCKS
TOWNSHIP-COUNTY UNIT ROAD DISTRICT

BRIDGE NO. 6
SN. 077-0027
FAS 939 2013 ADT=1650, 16% TRUCKS
I-57 2013 ADT=9400, 32% 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. 78419

BRIDGE NO. 1
STRUCTURE NO. 044-0031
IL 37 OVER I-24

BRIDGE NO. 6
STRUCTURE NO. 077-0027
FAS 939 OVER FAI 57 & US 51

BRIDGE NO. 4
STRUCTURE NO. 064-0016
BIG BAY OVER I-24

BRIDGE NO. 3
STRUCTURE NO. 064-0019
BENTON RD. OVER I-24

BRIDGE NO. 2
STRUCTURE NO. 064-0022
ROSEBUD RD. OVER I-24

BRIDGE NO. 5
STRUCTURE NO. 064-0029
US 45 OVER I-24



F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR. D9 BRIDGE PAINT 2014-2			22	1
ILLINOIS			CONTRACT NO. 78419	

* VARIOUS COUNTIES

** 22+1 = 23 TOTAL SHEETS
D-99-039-14



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED March 13, 2014

Jeffrey S. Keenan
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

May 9, 2014
John D. Baranelli P.E.
ENGINEER OF DESIGN AND ENVIRONMENT

May 9, 2014
Orin Ceman P.E.
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 TEMPORAY BARRIER SYSTEM
* 6-8	SN 044-0031 STRUCTURE INFORMATION
9-11	SN 064-0022 STRUCTURE INFORMATION
12-14	SN 064-0019 STRUCTURE INFORMATION
15-17	SN 064-0016 STRUCTURE INFORMATION
18-20	SN 064-0029 STRUCTURE INFORMATION
21, 22	SN 077-0027 STRUCTURE INFORMATION

* INCLUDES SHEET 7A

EXTRA 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. ANY PAYMENT FOR ADDITIONAL RELOCATION WILL BE MADE ACCORDING TO ARTICLE 104.02 OF THE STANDARD SPECIFICATION.

CLEANING AND PAINTING OF ALL 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 ALONG WITH FULL LENGTH EXTERIOR FASCIA BEAMS AND BOTTOM FLANGES OF EXTERIOR BEAMS SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING - SSPC-SP10 AND PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1 - OZ/E/U. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR STEEL SURFACES SHALL BE GRAY, MUNSELL NO. 5B 7/1. THE COLOR OF THE FINAL FINISH COAT FOR THE EXTERIOR SURFACES AND BOTTOM OF THE BOTTOM FLANGE OF THE FASCIA BEAMS SHALL BE INTERSTATE GREEN, MUNSELL NO. 7.5G 4/8.

TWO AIR MONITORS ARE REQUIRED TO MONITOR ABRASIVE BLASTING OPERATIONS AT THE LOCATIONS BRIDGE NO. 2 (SN 064-0022). ACCORDING TO SPECIAL PROVISION "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES."

THE PROTECTION SHIELD MUST BE REMOVE PRIOR TO WORK ON BRIDGE NO. 6 (SN, 077-0027) AND REINSTALLED ONCE THE WORK IS COMPLETED. THIS COST WILL BE INCLUDED IN THE COST FOR "CLEANING AND PAINTING STEEL BRIDGE NO. 6."

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
701901-03	TRAFFIC CONTROL DEVICES

Prepared By:	<i>[Signature]</i> DISTRICT STUDIES & PLANS ENGINEER
Examined By:	<i>[Signature]</i> DISTRICT LAND ACQUISITION ENGINEER
Examined By:	<i>[Signature]</i> DISTRICT PROGRAM DEVELOPMENT ENGINEER
Examined By:	<i>[Signature]</i> DISTRICT OPERATIONS ENGINEER
Examined By:	<i>[Signature]</i> DISTRICT PROJECT IMPLEMENTATION ENGINEER
Examined By:	<i>[Signature]</i> DISTRICT CONSTRUCTION ENGINEER
Examined By:	<i>[Signature]</i> DISTRICT MATERIALS ENGINEER

SUMMARY OF QUANTITIES

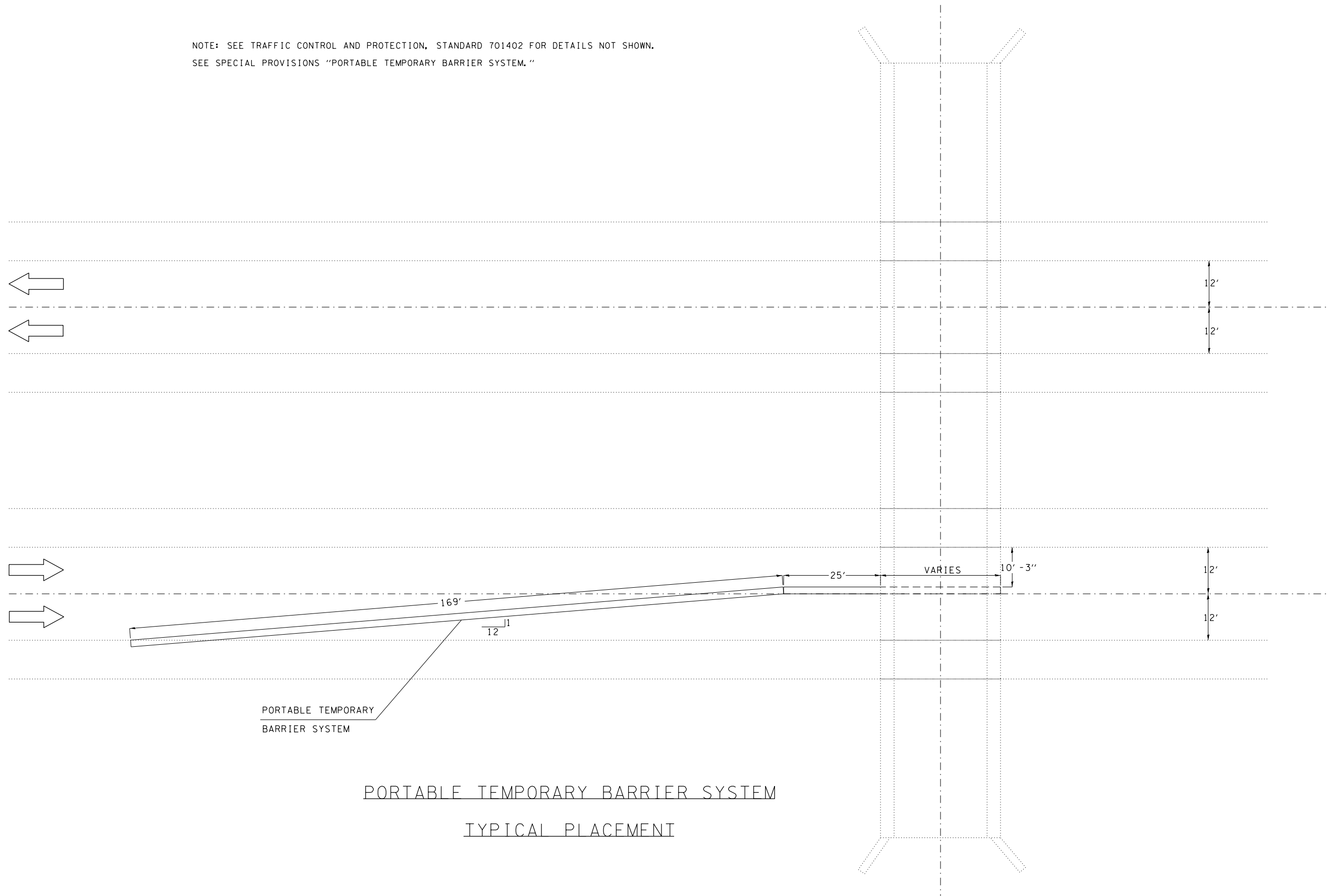
CODE NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	0014 100% STATE					
				FUNDING: LOCATION:					
				RURAL	RURAL	RURAL	RURAL	RURAL	RURAL
			ROUTE:	IL 37	ROSEBUD RD.	BENTON RD.	BIG BAY	US 45	FAS 939
				BRIDGE NO. 1 044-0031	BRIDGE NO. 2 064-0022	BRIDGE NO. 3 064-0019	BRIDGE NO. 4 064-0016	BRIDGE NO. 5 064-0029	BRIDGE NO. 6 077-0027
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	6	1	1	1	1	1	1
67100100	MOBILIZATION	L SUM	1	0.16	0.16	0.17	0.17	0.17	0.17
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	6	1	1	1	1	1	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	0.16	0.16	0.17	0.17	0.17	0.17
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1	0.16	0.16	0.17	0.17	0.17	0.17
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	6	1	1	1	1	1	1
X7010410	SPEED DISPLAY TRAILER	CAL MO	7	1.15	1.15	1.15	1.15	1.15	1.25
Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1	1					
Z0007102	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 2	L SUM	1		1				
Z0007103	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 3	L SUM	1			1			
Z0007104	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 4	L SUM	1				1		
Z0007105	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 5	L SUM	1					1	
Z0007106	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 6	L SUM	1						1
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	1					
Z0010502	CLEANING AND PAINTING STEEL BRIDGE NO. 2	L SUM	1		1				

14

SUMMARY OF QUANTITIES - CONT

CODE NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	0014						
				100% STATE						
				BRIDGE NO. 1 044-0031	BRIDGE NO. 2 064-0022	BRIDGE NO. 3 064-0019	BRIDGE NO. 4 064-0016	BRIDGE NO. 5 064-0029	BRIDGE NO. 6 077-0027	
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	
Z0052396	PORTABLE TEMPORARY BARRIER SYSTEM, TL-3	FOOT	1499.1	245.0	233.3	233.3	233.3	291.7		262.5
Z0052399	RELOCATE PORTABLE TEMPORARY BARRIER SYSTEM	FOOT	4497.3	735.0	699.9	699.9	699.9	875.1		787.5

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



PORTABLE TEMPORARY BARRIER SYSTEM
TYPICAL PLACEMENT

FILE NAME =	USER NAME = Dahmer,ja	DESIGNED -	REVISED -
ct:\pw\work\p1dot\dahmer,ja\0384974\78499-sh1-p1en.dgn		DRAWN -	REVISED -
Default	PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
	PLOT DATE = 3/20/2014	DATE -	REVISED -

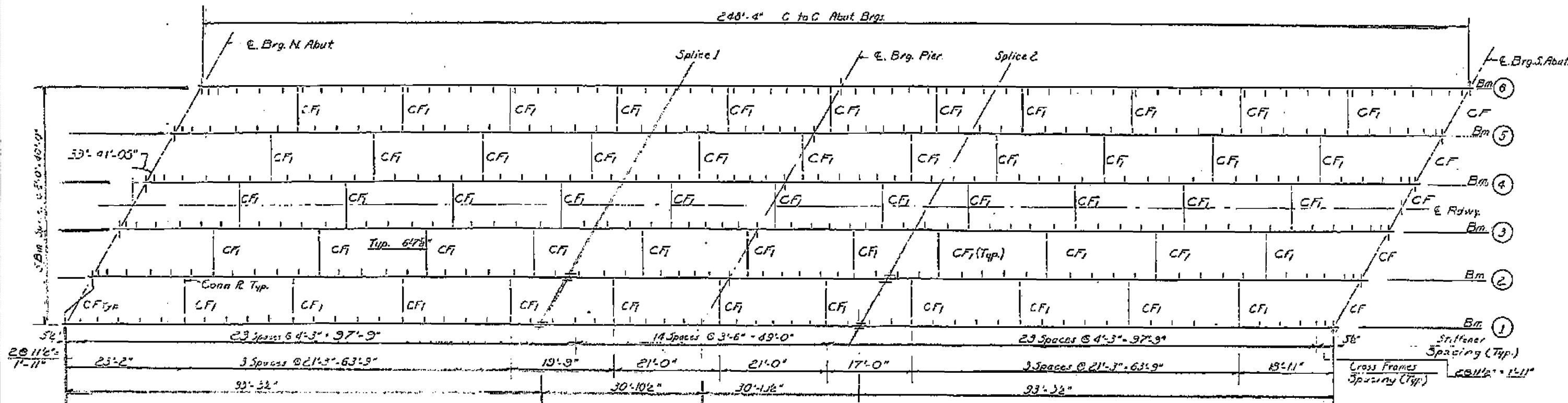
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PORTABLE TEMPORARY BARRIER SYSTEM
TYPICAL PLACEMENT

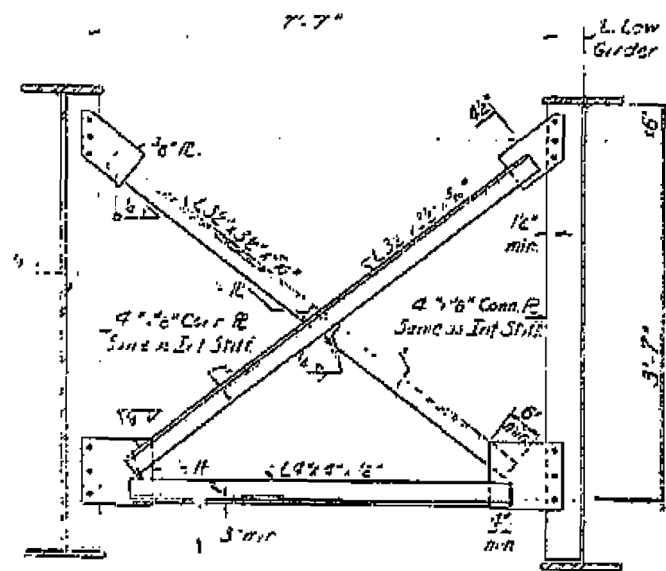
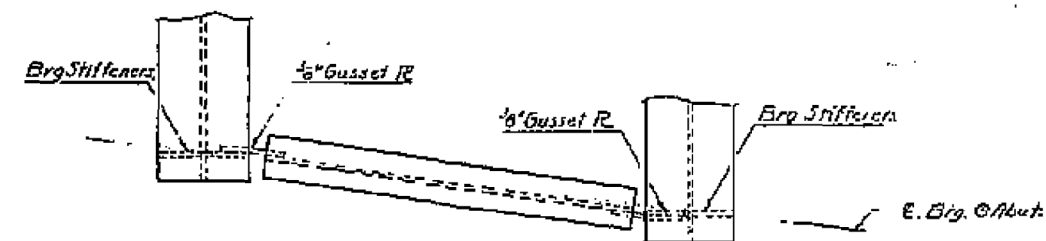
SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D9 BRIDGE PAINT 2014-2	*	22	5
			CONTRACT NO. 78419	
ILLINOIS FED. AID PROJECT				

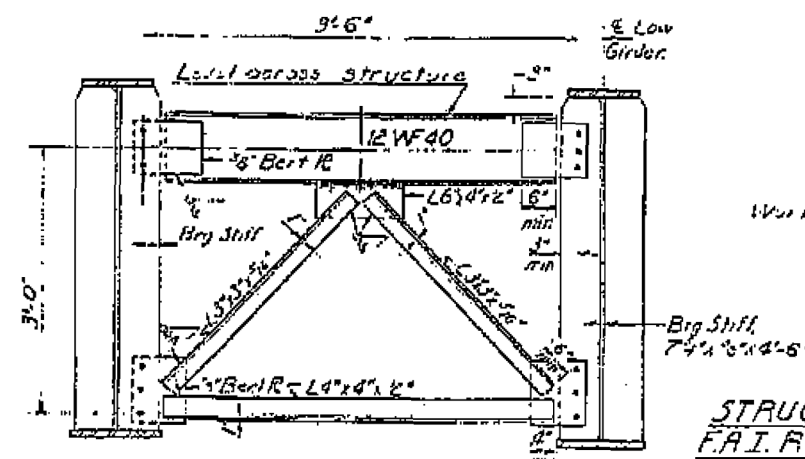
* VARIOUS COUNTIES



FRAMING PLAN



TYPICAL CF CROSS FRAME (SFR)



TYPICAL END CROSS FRAME (CF)

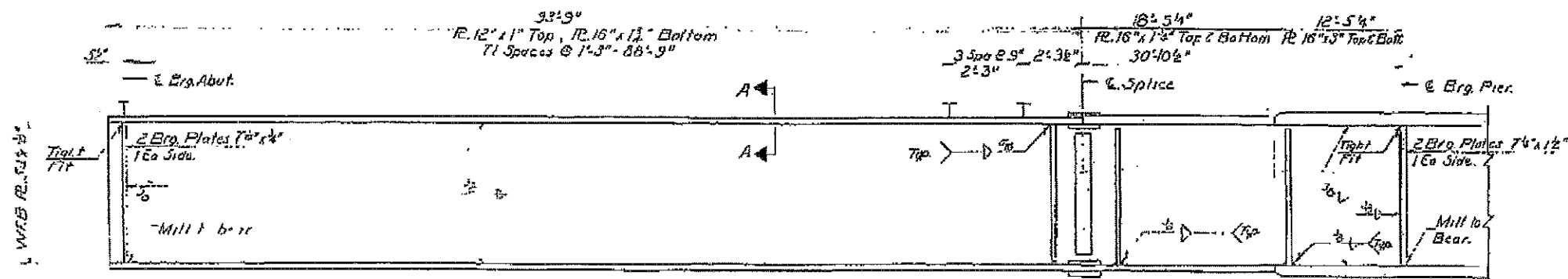
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STRUCTURAL STEEL
F.A.I. RT. 24, SEC. 44-2HB-1
JOHNSON COUNTY
STA. 20.3+80+86

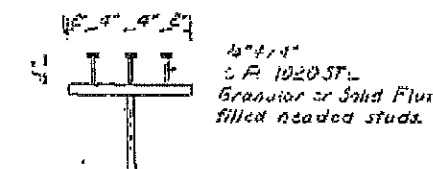
DESIGNED	V. J. Johnson	REVIEWED	R. P. Johnson
CHECKED	S. J. Johnson	PASSED	R. P. Johnson
DRAWN	A. J. Johnson	APPROVED	R. P. Johnson
CHECKED	S. J. Johnson		

DATE: April 24 1970

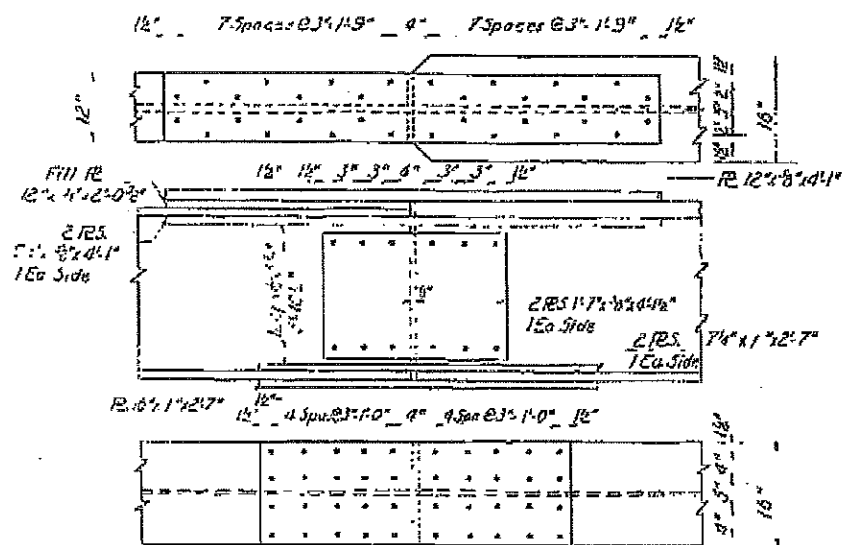
DESIGNER	CHECKED	APPROVED	TITLE	SHEET NO.
				21
PROJECT NO. 044-0031		SHEET NO. 19		



GIRDER HALF ELEVATION



SECTION AA
(1/2" Studs per Girder)



FIELD SPLICE
1/2" x 1/2" x 1/2"

Note: If transition between chord #1 and splice #2 shall be required to bottom chord, it shall be 25' for all steel when using mill scale or 15' for top and bottom chord at all times.
Work this sheet with sheet No. 13

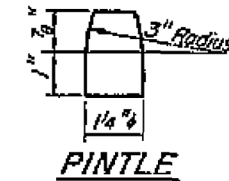
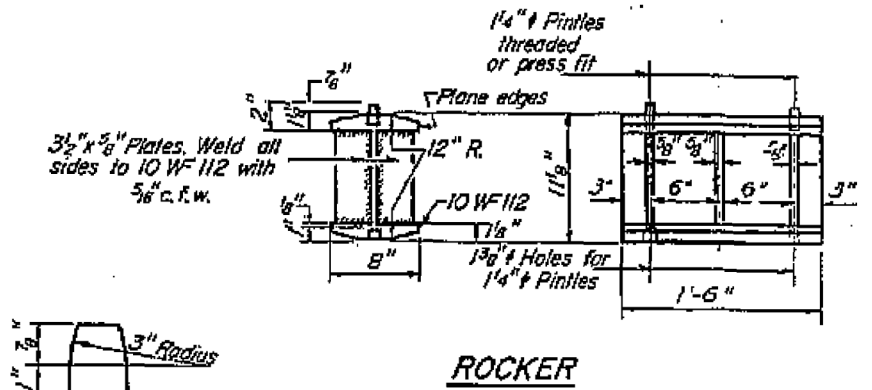
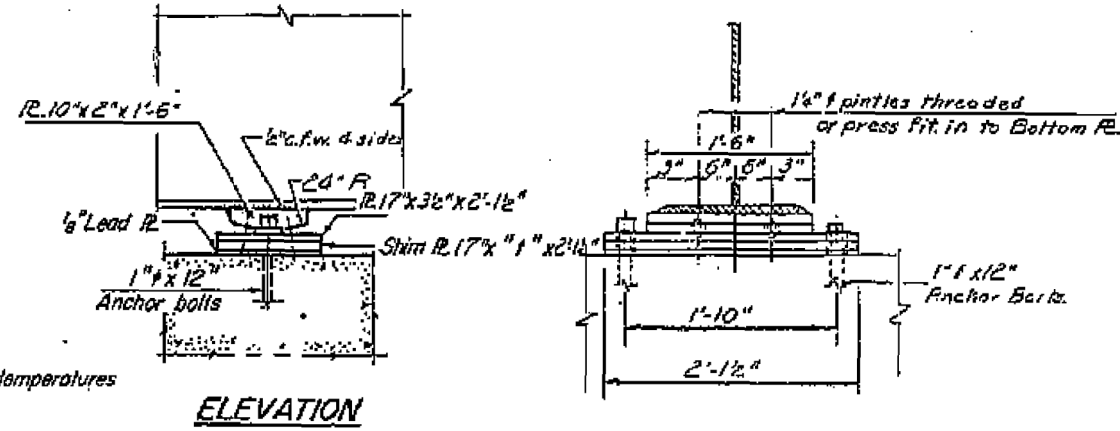
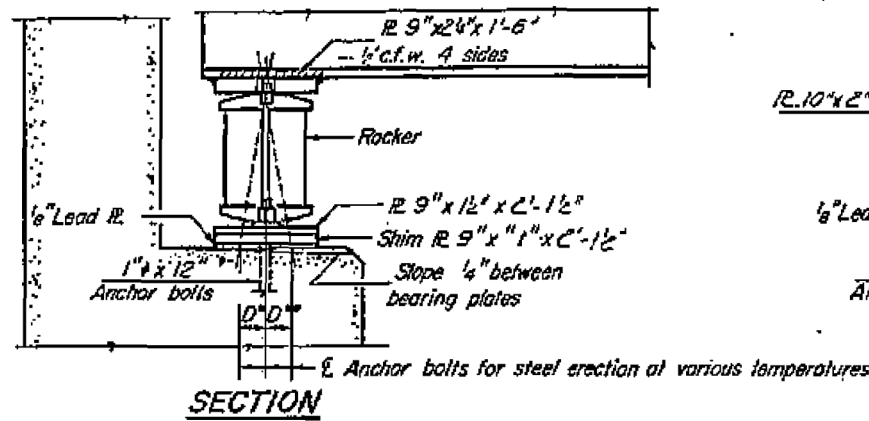
DESIGNED	<i>P. Nathan</i>
CHECKED	<i>S. Smith</i>
DRAWN	<i>F. Coffin</i>
CHECKED	<i>S. Smith</i>

EXAMINED	<i>APR 24 10 10</i>
APPROVED	<i>[Signature]</i>

STRUCTURAL STEEL
F.A.I. PT. 24 SEC. 13-CHB-1
JOHNSON COUNTY
STA. 203 + 80.86

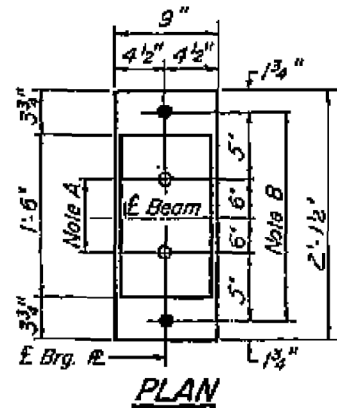
FOR INFORMATION ONLY

FILE NAME	USER NAME	DESIGNED	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	044-0031 IL 37 OVER 1-24	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Default	plandgn	DRAWN	REVISED			VAR.	D9 BRIDGE PAINT 2014-2	*	22	TA
		CHECKED	REVISED		SCALE: SHEET OF SHEETS STA. TO STA.				CONTRACT NO. 78419	
		DATE	REVISED						ILLINOIS FED. AID PROJECT	



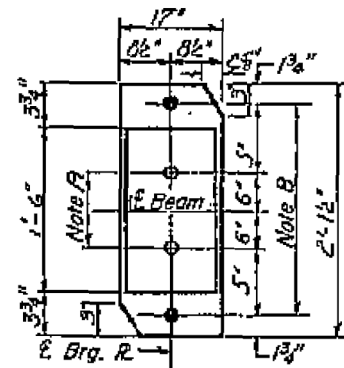
"4" DIMENSIONS

BEAM	1	2	3	4	5	6
Pier	0	0	3/8"	0	0	0
N. Abut.	0	0	1/4"	0	0	0
S. Abut.	0	0	1"	1"	0	0



AT ABUTMENT

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



AT PIER

NOTE B
 1 1/2" Holes for 1" anchor bolts. 2 1/2" x 2 1/2" x 3/16" R. Washers under nut.

BEARING ASSEMBLY DETAILS

NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRGS.

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.

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.

TOP OF WEB ELEVATIONS

BEAM	1	2	3	4	5	6
E. Brg. N. Abut.	650.05	650.99	651.10	651.08	650.94	650.75
E. Splice #1	650.39	650.53	650.62	650.60	650.44	650.25
E. Brg. Pier	650.24	650.37	650.47	650.44	650.28	650.08
E. Splice #2	650.21	650.34	650.43	650.40	650.24	650.03
E. Brg. S. Abut.	649.74	649.86	649.94	649.90	649.73	649.52

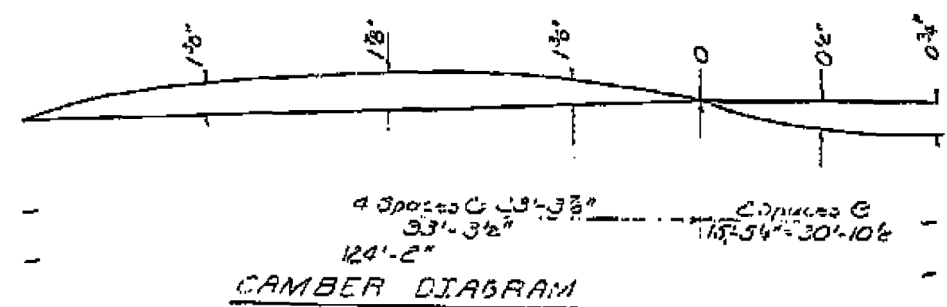
MOMENT TABLE
 (Composite of Positive Moment Areas Only)

INTERIOR GIRDER MOMENT TABLE		
	O. & S. I.	Pier
I _g (in ⁴)	323.92	8296.9
I _c (in ⁴)	8358.5	
S _e (in ³)	1523	2766
S _c (in ³)	1371	
R (in)	1.12	1.429
M _g (in)	991	3270
R _{sg} (in)	7.8	13.9
S _E (in)	0.329	
M _{sg} (in)	368	
M _g (in)	1175	1195
M _{max} (in)	236	237
TOTAL (in)	1779	1375
R _{total} (in)	10.8	6.0
R _{total} (in)	18.8	19.9
V _R (in)	59.0	

REACTION TABLE

INTERIOR GIRDER REACTION TABLE		
	Abut.	Pier
R _g (in)	47	229
R _{sg} (in)	63	91
Imp. (in)	10	18
R _{total} (in)	120	338

I_g and S_e are the moment of inertia and section modulus of the steel section.
 I_c and S_c are the moment of inertia and section modulus of the composite section used in computing I_g.
 V_R is the maximum 4 + Impact shear range.



SIGNED: R. M. Miller
 EXAMINED: [Signature]
 CHECKED: [Signature]
 DRAWN: [Signature]
 PLOTTED: [Signature]
 DATE: APRIL 24 1970

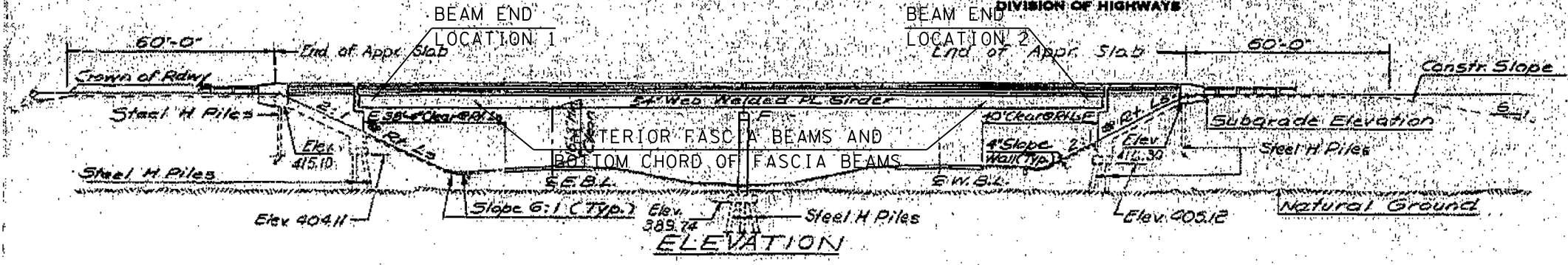
BEARINGS
 F.A.I. RT24, SEC. 44-2HB-1
 JOHNSON COUNTY
 STA. 203 + 80 + 86

FOR INFORMATION ONLY

PROJECT NO.	64-2HB-1	SECTION	MASSAC	105	58
SHEET NO. 1					

B.M. #48 R.R Spike in West side 15" Gurn
250' Lt. FAI. RT. 24 Sta. 417+97 El. 396.90

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



GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

Field connections shall be bolted using high strength bolts. Bolts shall have open holes 1/4" unless otherwise noted.

The basic lead silica chromate paint system shall be used for shop and field painting of Structural Steel.

Calculated Weight of Structural Steel = 229,470 lbs.

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.

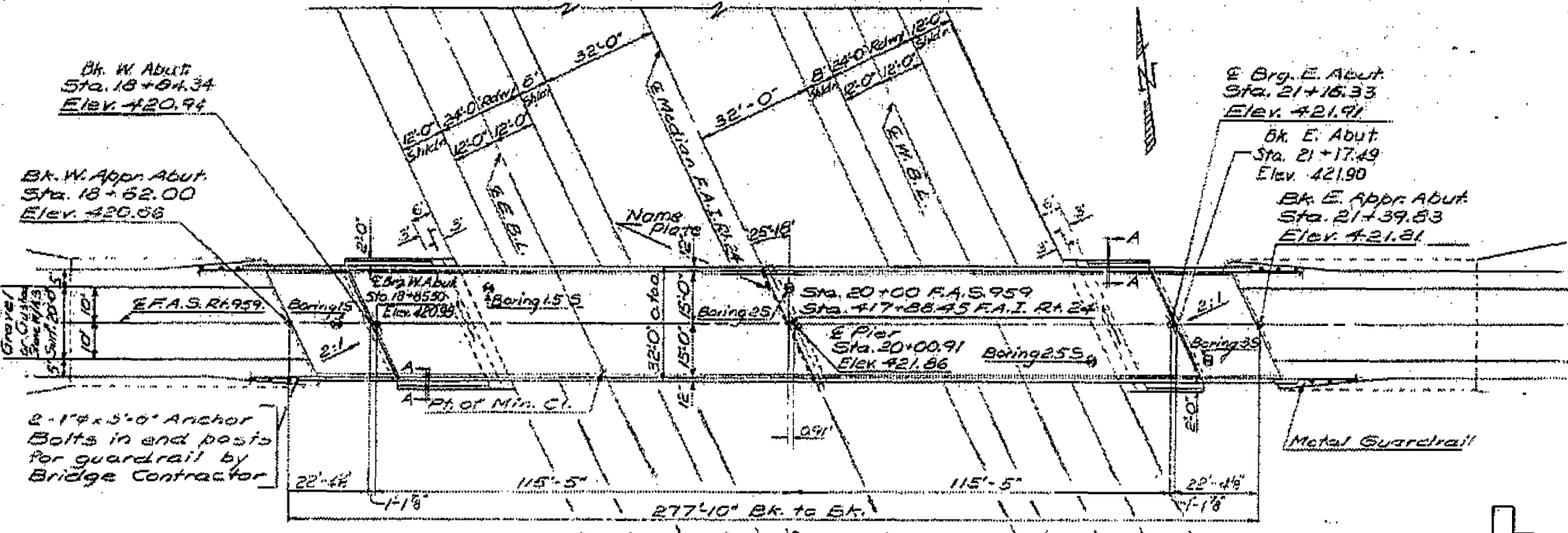
Slope wall shall be reinforced with welded wire fabric 6" x 6" mesh, weighing 55# per 100 sq.ft.

Class A Excavation for structures includes excavation for slope wall.

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 Standard Concrete.

The contractor shall drive two steel (68P36) test piles in permanent location, one at the West Abut. and one at the Pier as directed by the Engineer before ordering the remainder of piles.



TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Class A Excav. for Structures	Cu Yds		83	83
Protective Coat	Sq Yds	925		925
Class X Concrete	Cu Yds	2934	2093	5027
Structural Steel	L.S.	0.5		0.5
Stud Shear Connectors	Each	1350		1350
Aluminum Railing	Lin Ft.	345		345
Reinforcement Bars	Lbs.	61,280	24,430	85,710
Steel Piles (68P36)	Lin Ft.		4303	4303
Test Piles steel (68P36)	Each		2	2
Name Plates	Each		1	1
Slope Wall (4')	Sq Yds			350
Sand Backfill	Cu Yds			255
Bridge Seat Sealant	L.S.	1		1

Station 417+88.45
Built 197 by
State of Illinois
FAI. RT. 24 Sec. 64-2HB-1
FA. Proj. I-24-1(42)
Loading HS 15

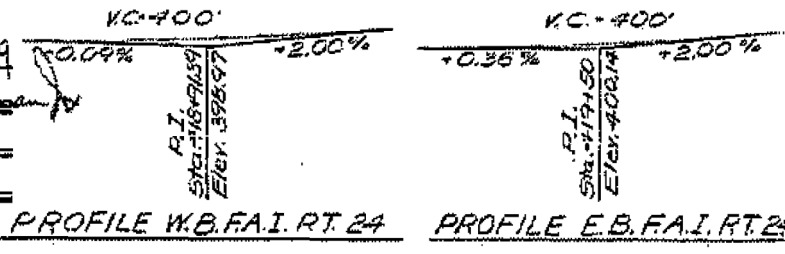
F.A.I.-24 (E.B. LANE) CURVE DATA

P.I. Sta. 405+84.08 L = 2255.44
Δ = 15°-54'-57"(RT) E = 84.00
D = 0°-45'-00" PC Sta. 394+48.09
R = 7639.44 PT Sta. 417+03.53
T = 1135.99 S.E. = 0.021 F/A
Attained Sta. 393+15.09 to Sta. 395+15.09
Removed Sta. 416+36.53 to Sta. 418+36.53
Remove Crown.

NAME PLATE
See Std 2113

Note: Allowable Fut. Wearing
Surl = 25#/ft.
Allowable 4' Defl. L/1200 Comp.

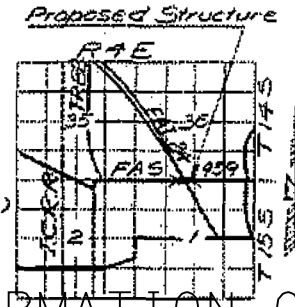
PROFILE FAS 959



DESIGN STRESSES

f_c = 1200 psi (Deck Slab)
f_c = 1400 psi (Curb, Parapet, Sub.)
f_s = 20000 psi (Reinf.)
f_s = 20000 psi (Struct.)
v_c = 75 psi (Frags.)
n = 10
Loading HS 15-44

**SECTION THRU SLOPEWALL
VAULTED ABUTMENTS**

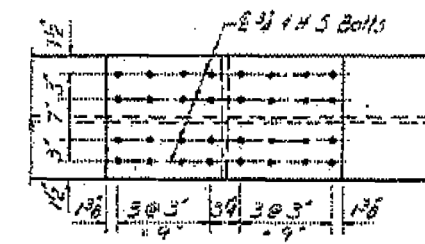
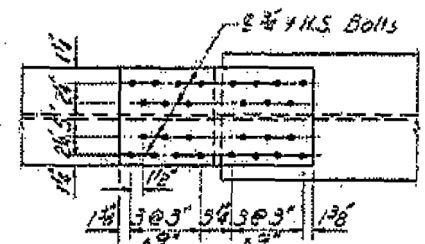
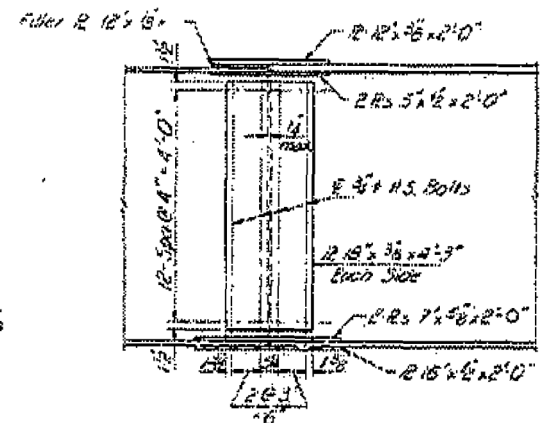
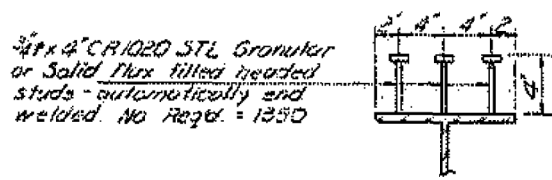
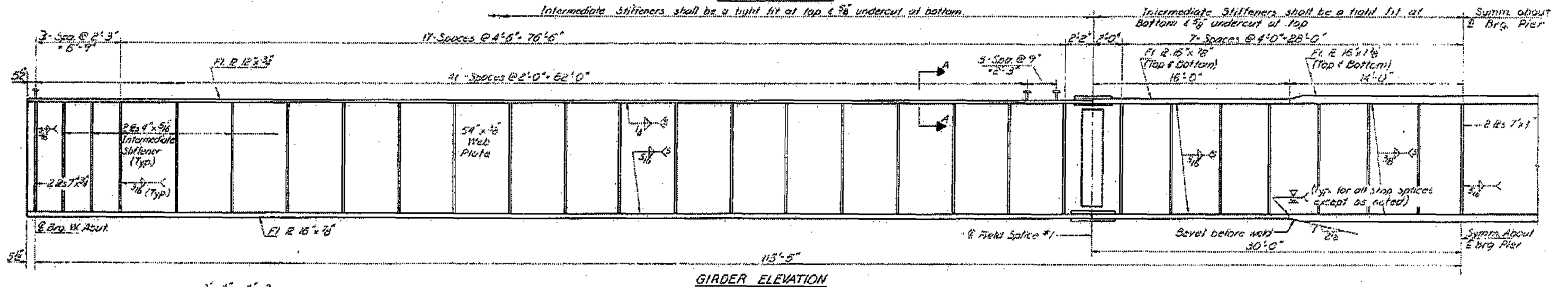
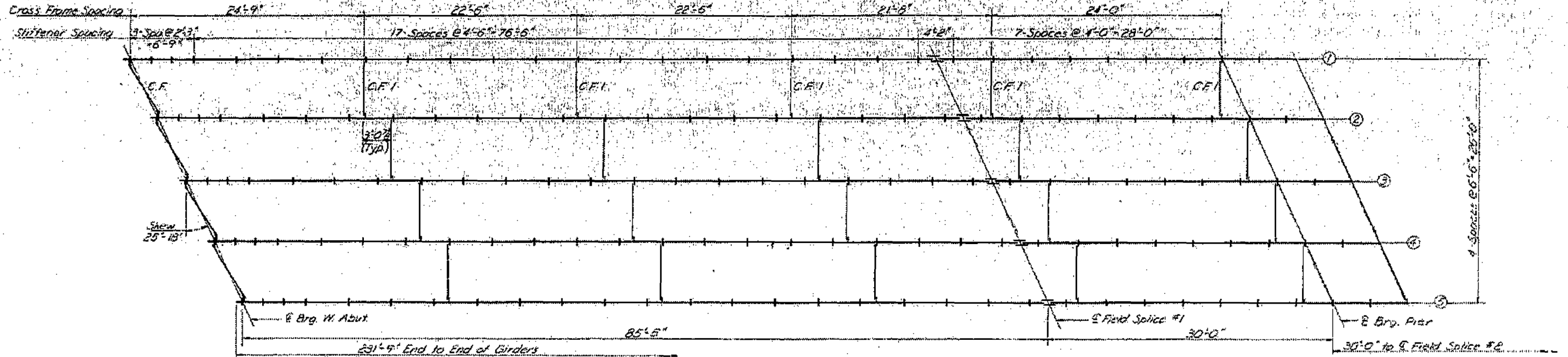


GENERAL PLAN & ELEVATION
PROJECT: I-24-1(42)27
FAS RT. 959 OVER FAI. RT. 24
FAI. RT. 24 SEC. 64-2HB-1
MASSAC COUNTY
STATION 20+00 (F.A.S. 959)
STATION 417+88.45 (FAI. RT. 24)

SECTION A-A

DESIGNED: James Hamilton
CHECKED: E. C. Smith
DRAWN: F. Mercado
CHECKED: E.S.

DESIGNED: James Hamilton
CHECKED: E. C. Smith
DRAWN: F. Mercado
CHECKED: E.S.



DESIGNED: James Hamilton
CHECKED: Emil A. Summer
DRAWN: R. P. Summer
CHECKED: ES

EXAMINED: [Signature]
PAIRED: [Signature]
APPROVED: [Signature]

STRUCTURAL STEEL
FAI RT24 SEC.64-2HB-1
MASSAC COUNTY
STATION 417+88.45

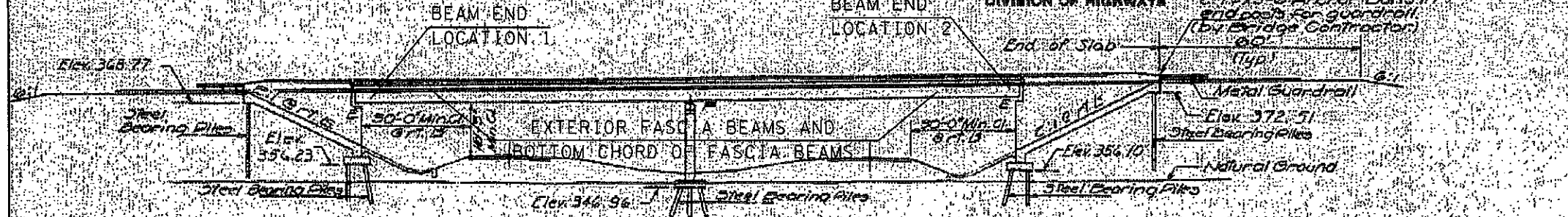
FILE NAME:	USER NAME: Dahmer.ja	DESIGNED: -	REVISED: -
et:\pw\work\p1dot\dahmer.ja\0384974\7809-sht-plen.dgn		DRAWN: -	REVISED: -
Default	PLOT SCALE: 2.7419' / in.	CHECKED: -	REVISED: -
	PLOT DATE: 3/20/2014	DATE: -	REVISED: -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE:	SHEET	OF	SHEETS	STA.	TO	STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
09	BRIDGE PAINT 2014-2	*	22	10
CONTRACT NO. 78419			ILLINOIS FED. AID PROJECT	

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



STA. 298+82
BUILT 197 BY
STATE OF ILLINOIS
FAI RT. 24 SEC. 64-211B
PROJ. I-24-1(02)
LOADING HS15
NAME PLATE
See Std. 211B

GENERAL NOTES

All reinforcement bars shall be lap spliced 24 diameters unless otherwise shown.

Field connections shall be bolted using high strength bolts. Bolts shall be open holes 1/8" unless otherwise noted.

The basic epoxy slotted chromate paint system shall be used for shop and field painting of Structural Steel.

Calculated Weight of Structural Steel = 173,000 lbs.

Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor on 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 cross frames over supports.

Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, weighing 58# per 100 sq ft.

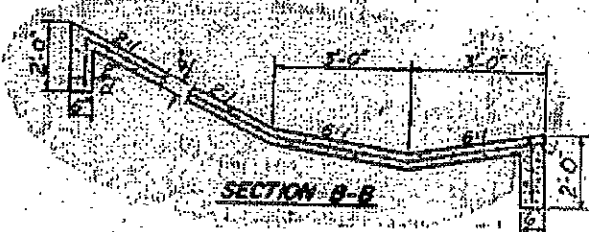
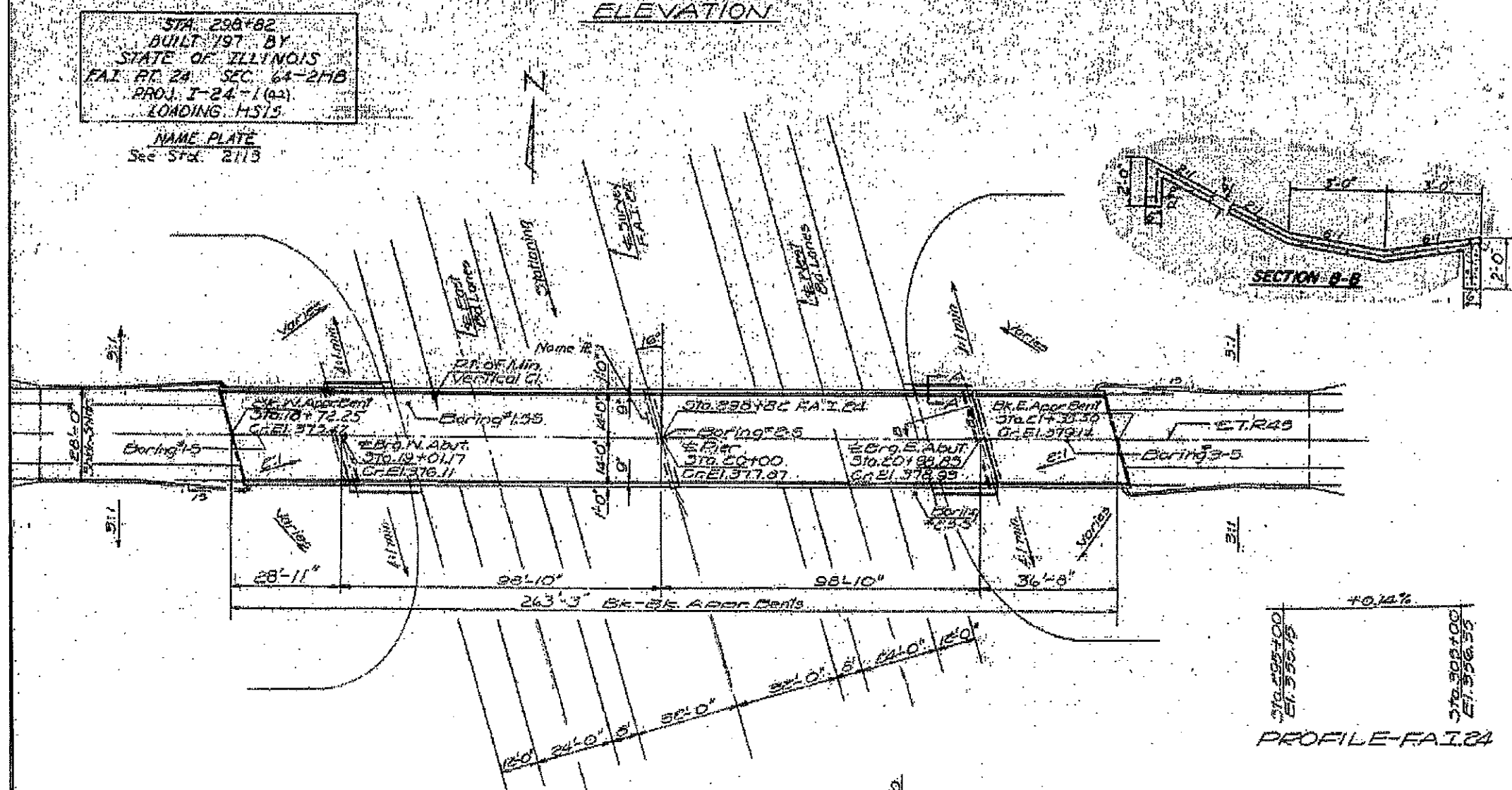
Class A Excavation for structures includes excavation for slope wall.

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

An alternate strand pattern using Extra High Strength Prestressing strand (270 ksi) is permitted.

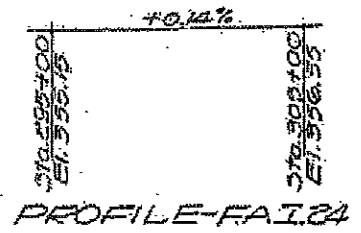
The Contractor shall drive 3 test piles in a permanent location, one at W. Abut, one at Pier, and one at E. Abut as directed by Engineer before ordering the remainder of piles.

The steel piles shall be driven to refusal.



TOTAL BILL OF MATERIAL

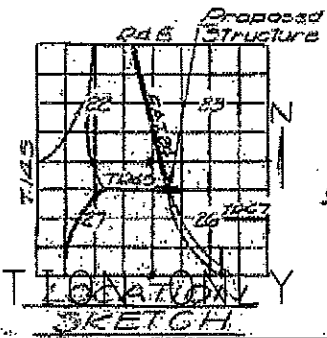
Item	Unit	Super	Sub	Total
C.A. Excav. for Structures	Cu. Yds		10.0	10.0
Protective Coat	Sq. Yds	970		970
Class A Concrete	Cu. Yds	255.9	213.7	469.6
F.F.E. PRC. Form (36)	lin. ft.	245		245
Structural Steel	L.S.	0.5		0.5
Stud Shear Connectors	Each	1224		1224
Aluminum Purling	lin. ft.	484		484
Reinforcement Bars	Lbs.	57080	17200	74280
Steel Piles (BDP36)	lin. ft.		3919	3919
Test Piles Steel (BDP36)	Each		3	3
Name Plates	Each		1	1
Slope Wall A	Sq. Yds		185	185
Preformed H. Sealer	lin. ft.		62	62



DESIGN STRESSES

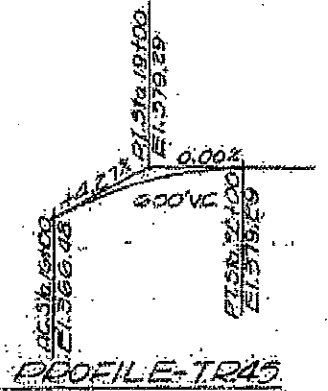
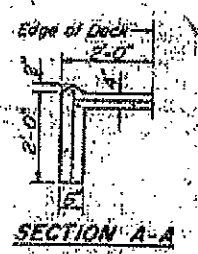
FIELD UNITS
 $f_c = 1200$ psi, Deck Slab
 $f_c = 1400$ psi, Curb, Curapet, Sub.
 $f_s = 20,000$ psi, Reinf.
 $f_s = 20,000$ psi, Struct.
 $f_v = 75$ psi, Flgs.
 $n = 10$

PRECAST PRESTRESSED UNITS
 $f_c = 3000$ psi
 $f_t = 2000$ psi
 $f_s = 248,000$ psi, Strands
 $f_s = 173,000$ psi, Strands
 Allowable Future Stresses
 Allowable L.S. Stress Composite
 LOADING HS15-44



DESIGNED: Max. Col. Swingle
 CHECKED: James Hamilton
 DRAWN: G.E. Wilkins
 CHECKED: J.H.

Dec 10 1968
 APPROVED: A.G. Staff



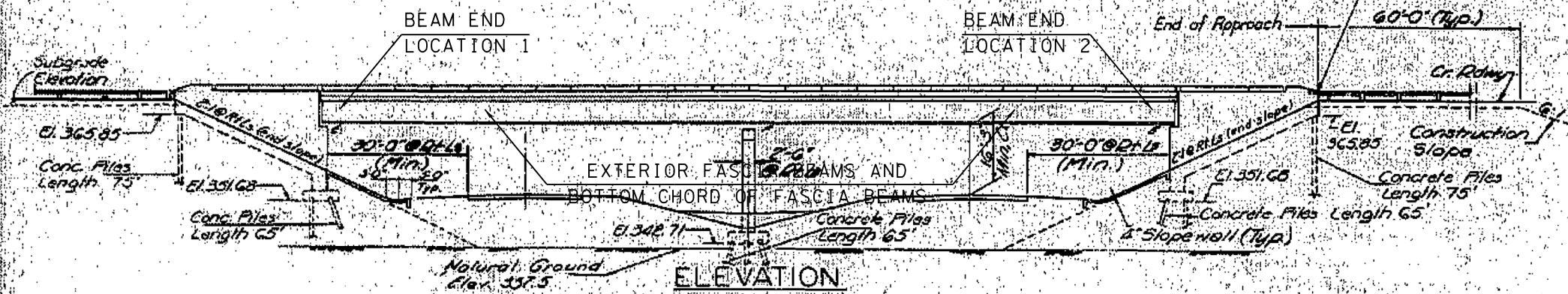
064-0016

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

064-0016

PROJECT NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
24	118	66	10	16

PP Spike in down pole 260' LI
PI. 26 Sta. 199.01 Elev. 341.78



GENERAL NOTES

All reinforcement bars shall be lap spliced 24" diameter unless otherwise shown.

Fasteners shall be high strength bolts. Bolts 1/2" open holes 3/4" unless otherwise noted.

Calculated weight of Structural Steel = 205,140 Lbs.

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 on the bottom flange of 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.

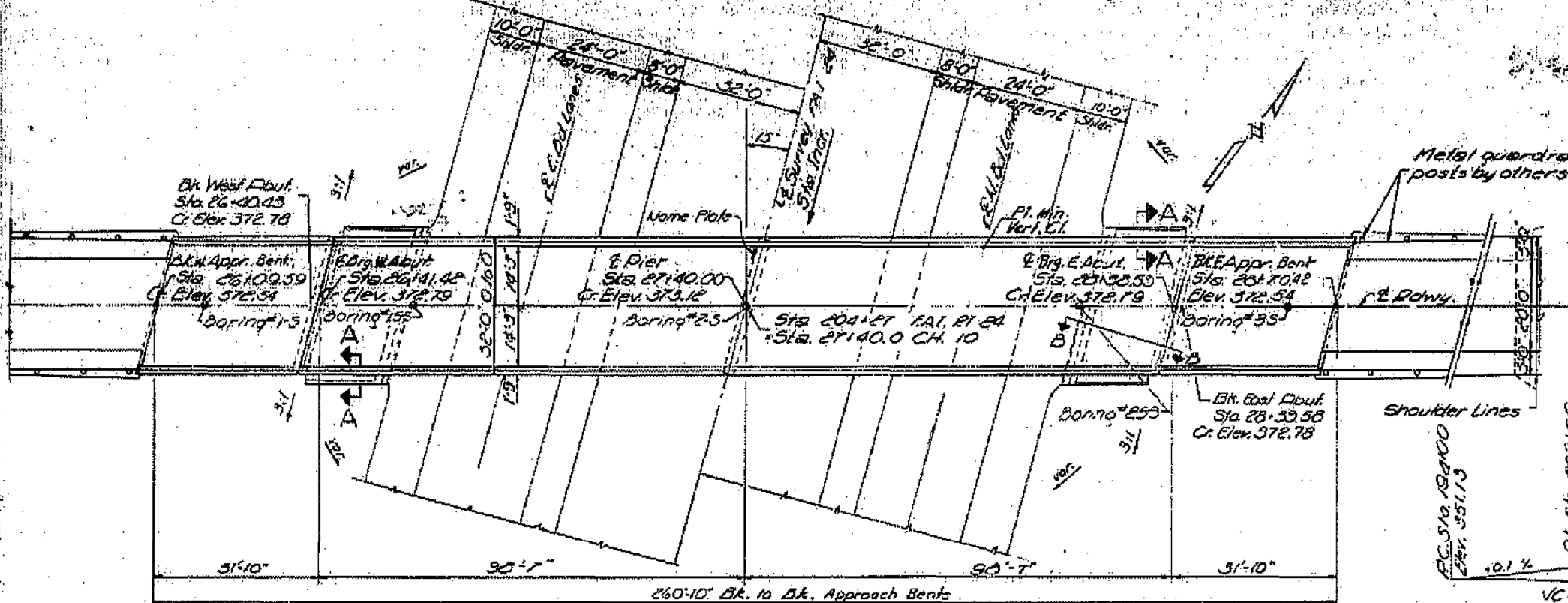
Slope wall shall be reinforced with welded wire fabric 6" x 6" mesh, weighing 59# per 100 sq. ft.

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

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 Standard Concrete.

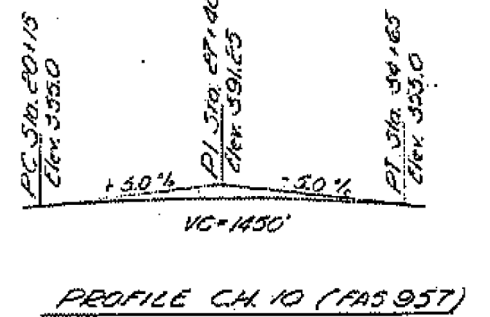
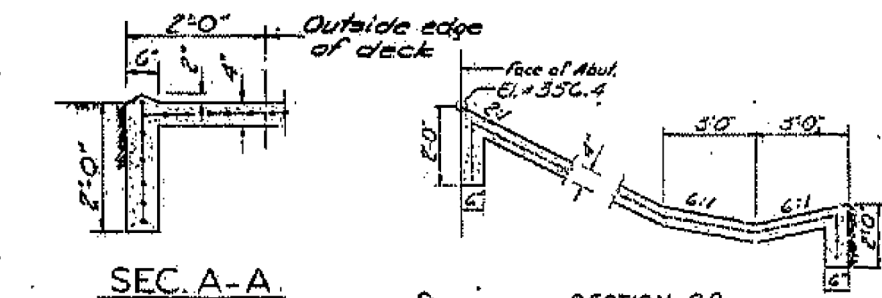
The Contractor shall drive three concrete test piles in permanent locations, One at West Abutment, One at the Pier and One at East Appr. Bent, as directed by the Engineer before ordering the remainder of piles.



STATION 204+27
BUILT BY
STATE OF ILLINOIS
F.A.I. RT. 24 SEC. 64-1HB-1
F.A. PROJ. I-24-1(39)
LOADING HS 15
NAME PLATE
(See Std. 2113)

TOTAL BILL OF MATERIAL

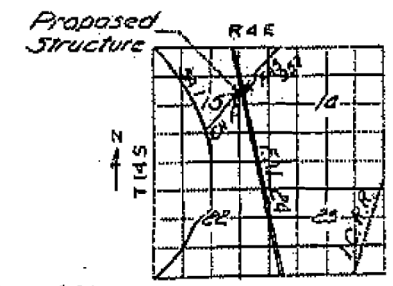
Item	Unit	Super	Sub	Total
Protective Coat	Sq. Yds	1020		1020
Class X Concrete	Cu. Yds	63.1	219.3	282.4
PC I-Beams 36"	Lin. Ft.	237		237
Structural Steel	Lbs.	0.48		0.48
Stud Shear Connectors	Each	1530		1530
Aluminum Foiling	Lin. Ft.	473		473
Reinforcement Bars	Lbs.	34,330	13,110	47,440
Concrete Piles	Lin. Ft.	3880		3880
Test Piles (Concrete)	Each	3		3
Name Plates	Each		1	1
Slope Wall 4"	Sq. Yds		210	210
Prefabricated Joint Sealer	Lin. Ft.	66.0		66.0



DESIGN STRESSES

PRECAST PRESTRESSED UNITS
 $f_c = 5,000$ psi.
 $f_{ci} = 4,000$ psi.
 $f'_s = 248,000$ psi (Strands 7/16)
 $f_{si} = 173,600$ psi (Strands 7/16)

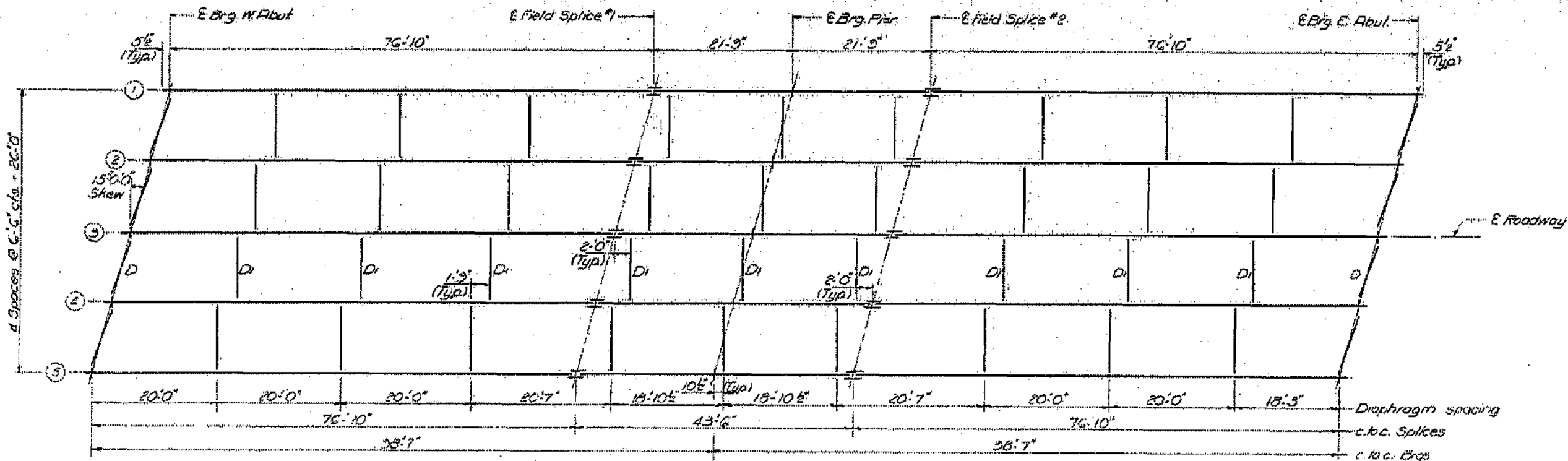
FIELD UNITS
 $f_c = 1,200$ psi. Deck Slab
 $f_c = 1,400$ psi. Sub, Curb, Parapet
 $f_s = 20,000$ psi. Reinf. Struct.
 $V_c = 75$ psi. Ftgs
 $n = 10$ Allowable & Deflection
LOADING HS 15-44



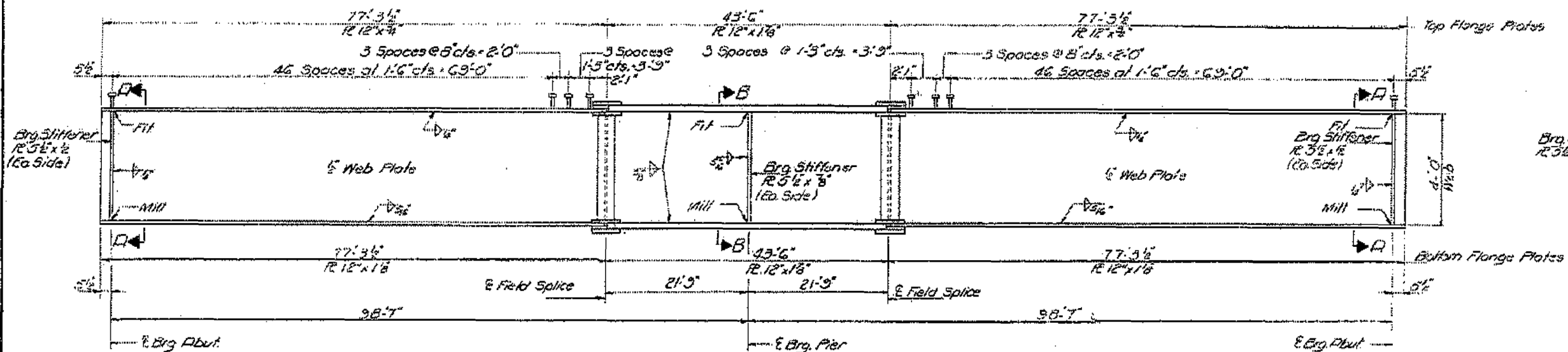
DESIGNED: I. Kapor
 CHECKED: Rao. G. k.
 DRAWN: D.J. Williams Sr.
 APPROVED: Rao. G. k.

APPROVED: [Signature]
 DATE: April 3, 2009
 PROJECT: [Signature]
 DATE: [Signature]

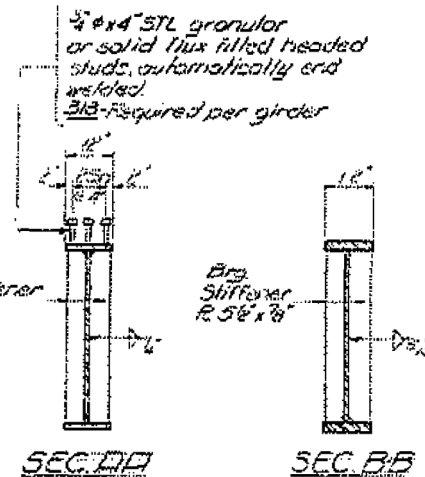
F.A. PROJ. I-24-1(39)25
GENERAL PLAN & ELEVATION
 CH 10 (FAS 957) OVER F.A.I. RT. 24
 F.A.I. RT. 24 SEC. 64-1HB-1
 MASSAC COUNTY
 STATION 204+27



FRAMING PLAN

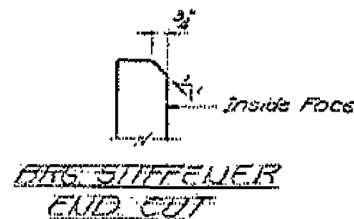


GIRDER ELEVATION
Top & Bottom of girder web shall be cut to camber curve. See Sheet #7.



DESIGNED	I. Kaper
CHECKED	Rao.G.k
DRAWN	J.T. Downing
CHECKED	Rao.G.k

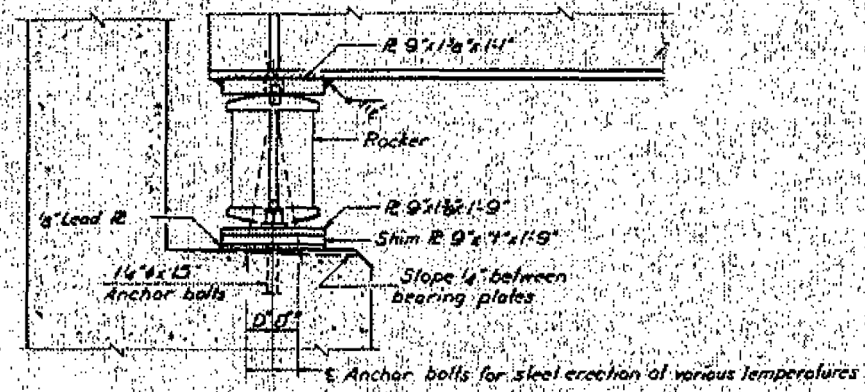
EXAMINER: *Richard H. [Signature]*
 PASSED: *[Signature]*
 APPROVED: *[Signature]*



STRUCTURAL STEEL
 FAB. RT-24 SEC. GA-1184
 MASSAC COUNTY
 STA. 204+27

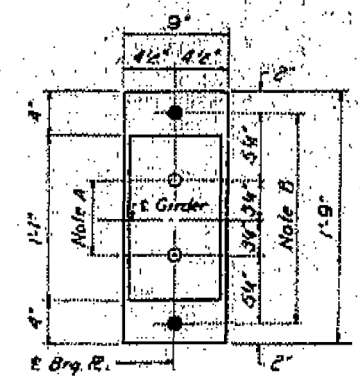
FOR INFORMATION ONLY

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



SECTION

Note: 1 1/2" @ Girder 3 only.

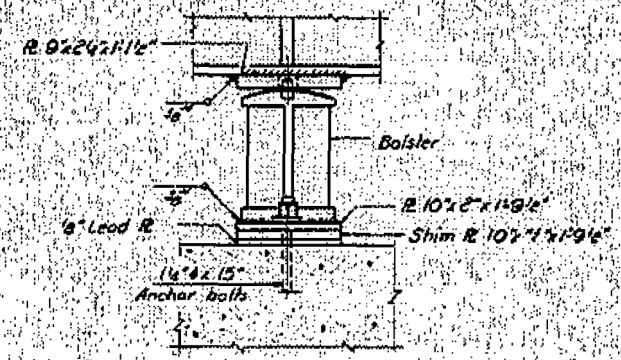


PLAN

AT ABUTMENT

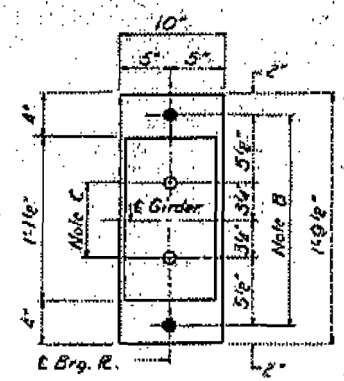
Note A
1 1/2" Holes - 1" deep in top R for pintles, thread or press fit pintles into bottom R.

Note B
1 1/2" Holes for 1 1/2" anchor bolts. 2 1/2" x 3/8" R. Washers under nut.



ELEVATION

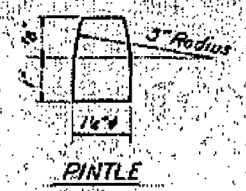
Note: 1 1/2" @ Girder 3 only.



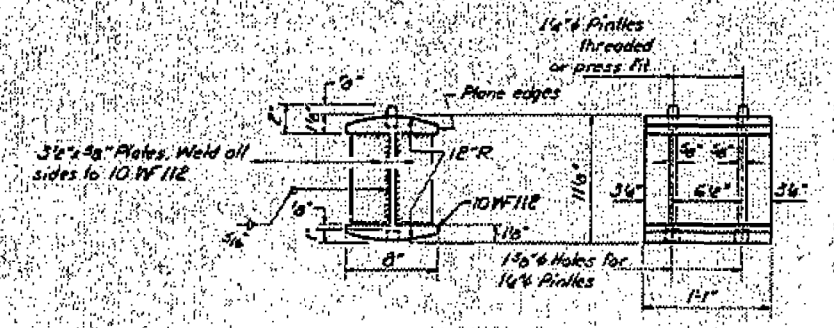
PLAN

AT PIER

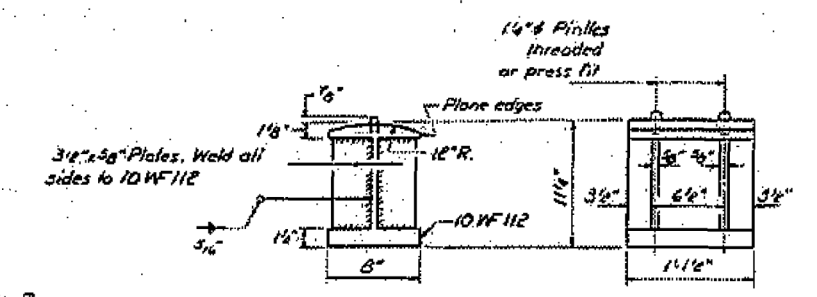
BEARING ASSEMBLY DETAILS



PINTLE



ROCKER



BOLSTER

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

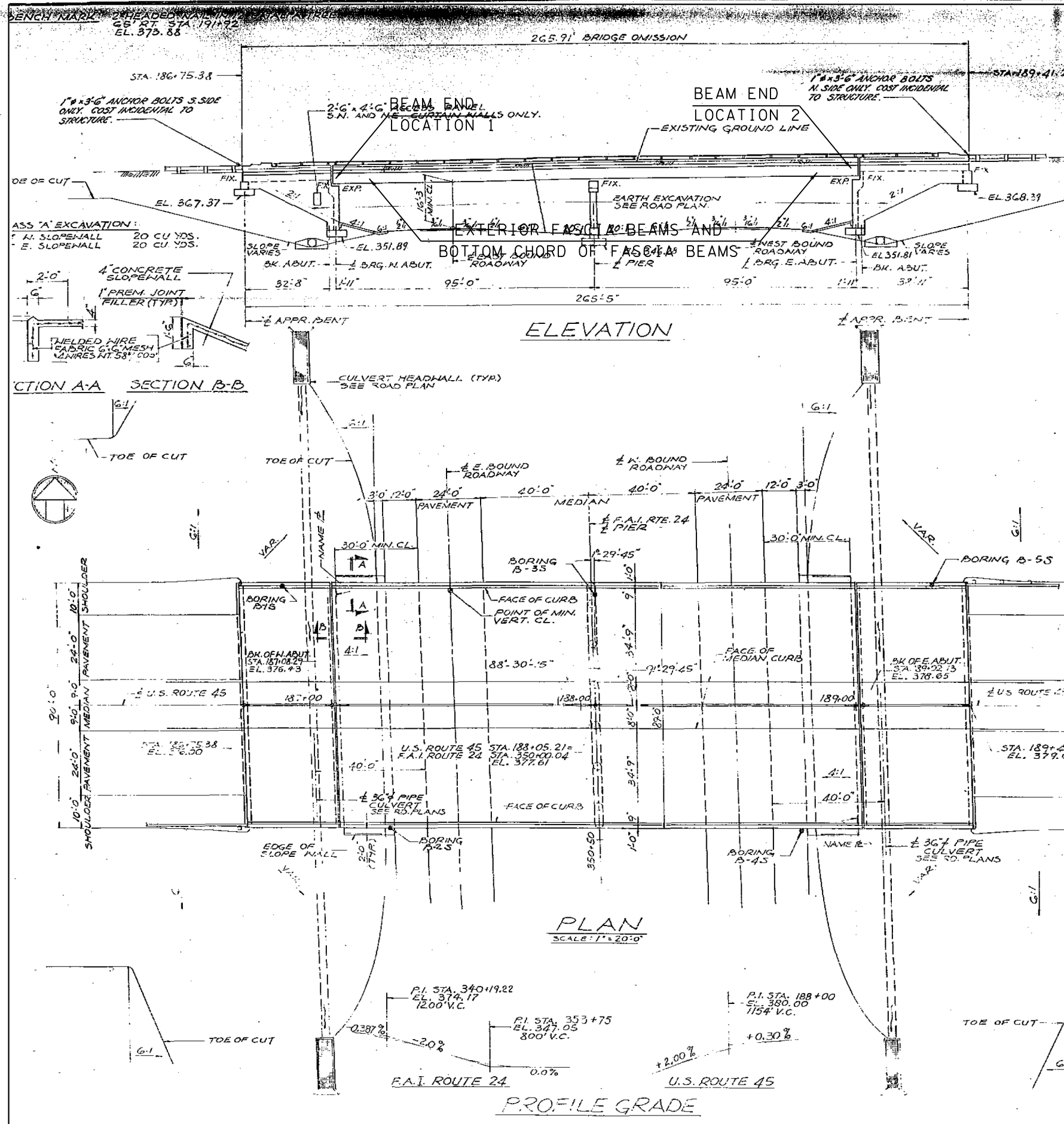
NOTES ON SETTING OF ANCHOR BOLTS AT EXP BRGS.

- 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.
 - 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 girders have been erected and dimensions D'' or D''' determined, holes shall be drilled and anchor bolts shall be grouted in place. All pier anchor bolts shall be built into the masonry.

DESIGNED	I. Kapor
CHECKED	RAO.G.K.
DRAWN	SE. Lindsay
CHECKED	RAO.G.K.

EXAMINED
PASSED
APPROVED

BEARING DETAILS
EAL RT 24 SEC. 64-118-1
MASSAC COUNTY
STA. 204 + 27



064-0029

BRIDGE GENERAL NOTES

CLASS X CONCRETE SHALL BE USED THROUGHOUT EXCEPT AS OTHERWISE NOTED. CONCRETE FOR FLOOR SLABS SHALL BE PLACED IN ONE CONTINUOUS OPERATION BETWEEN CONSTRUCTION JOINTS SHOWN AND SHALL BE FINISHED IN ACCORDANCE WITH ARTICLES 508.16 OF THE STANDARD SPECIFICATIONS. COARSE AGGREGATE TO BE USED IN PARAPET HANDRAILS AND WINGWALLS OF ABUTMENTS MUST BE ABSOLUTELY FREE OF CHERT, FLINT, LIMONITE, LIGNITE AND SOFT SANDSTONE. PERMANENT FORMS WILL NOT BE PERMITTED IN FORMING THE CONCRETE FLOOR. ALL REINFORCEMENT BARS SHALL BE LAPPED 24 DIAMETERS UNLESS OTHERWISE SHOWN. ALL STRUCTURAL STEEL SHALL CONFORM TO A.S.T.M. A36 EXCEPT AS OTHERWISE NOTED. THE SHOP CONNECTIONS FOR STRUCTURAL STEEL SHALL BE WELDED. WELDING SHALL BE IN ACCORDANCE WITH CURRENT SPECIFICATIONS FOR WELDED HIGHWAY AND RAILWAY BRIDGES OF THE AMERICAN WELDING SOCIETY AND AS NOTED ON THE PLANS AND IN THE SPECIAL PROVISIONS. ALL FIELD CONNECTIONS SHALL BE MADE WITH HIGH STRENGTH BOLTS EXCEPT AS OTHERWISE NOTED. ALL BOLTS SHALL BE 3/4" DIAMETER IN 13/16" HOLES EXCEPT IN GIRDER FLANGE SPICES WHICH SHALL BE 7/8" DIAMETER IN 15/16" HOLES. HOLES FOR SPICES IN GIRDERS AND SPICE PLATES SHALL BE PUNCHED 11/16" DIAMETER AND REAMED TO CORRECT SIZE WITH GIRDERS ASSEMBLED FULL LENGTH IN THE SHOP IN PROPER POSITION. ASSEMBLY OF GIRDERS SHALL BE WITH OR WITHOUT CROSSFRAMES. LEAVE ASSEMBLED FOR INSPECTION. ALL ROCKERS, BOLSTERS, PINTLES, BEARING PLATES, LEAD PLATES AND ANCHOR BOLTS SHALL BE FABRICATED AND SET IN ACCORDANCE WITH SECTION 507 OF THE STANDARD SPECIFICATIONS AND ARE INCLUDED IN THE QUANTITY OF STRUCTURAL STEEL. ESTIMATED WEIGHT 13,490 POUNDS. ROADWAY EXPANSION ANGLES SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH SECTION 507 OF THE STANDARD SPECIFICATIONS AND ARE INCLUDED IN THE QUANTITY OF STRUCTURAL STEEL. ESTIMATED WEIGHT 5,310 POUNDS. ANCHOR BOLTS SHALL BE SET BEFORE BOLTING CROSS FRAMES OVER THE PIER AND ABUTMENTS. STRUCTURAL STEEL SHALL RECEIVE ONE SHOP COAT OF RED LEAD PAINT AND TWO FIELD COATS OF PAINT EXCEPT AS OTHERWISE SPECIFIED. ALL PAINT SHALL BE FURNISHED AND APPLIED BY THE CONTRACTOR. SEE SECTION 509 OF THE STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS. THE EXPOSED SURFACES OF THE EXPANSION ANGLES SHALL BE GIVEN TWO SHOP COATS OF RED LEAD PAINT. ANCHOR STUDS SHALL NOT BE PAINTED. SHOP INSPECTION OF STRUCTURAL STEEL AND RADIOGRAPHIC INSPECTION OF WELDS SHALL BE BY ILLINOIS DIVISION OF HIGHWAYS BEFORE PAINTING. 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.

FIELD WELDING OF CONSTRUCTION ACCESSORIES TO THE BOTTOM FLANGES OR FOR A DISTANCE OF 1/4 OF THE SPAN EACH WAY FROM THE PIER ON THE TOP FLANGES OF GIRDERS WILL NOT BE PERMITTED. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED BY THE DEPARTMENT OF PUBLIC WORKS AND BUILDINGS, AUGUST 1, 1988 SHALL APPLY. 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. Class "A" Excavation For Structures includes excavation for slope wall.

STATION 350+00.04
BUILT 196 BY
STATE OF ILLINOIS
F.A.I. RTE. 24 SECT. 64-34B-1
F.A. PROJ. 1-24-1(24)
LOADING HS 20
(SEE STATE OF ILLINOIS STD 213-1)

LETTERING FOR NAME PLATE

TOTAL	SUPER	SUB	UNIT	PAY ITEM
1,135	--	1,135	CU.YD.	CLASS A EXCAVATION FOR STRUCTURES
2,667	2,667	--	SQ.FT.	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)
1,329.4	697.2	632.2	CU.YD.	CLASS X CONCRETE
2,770	2,770	--	SQ.YD.	PROTECTIVE COAT
1	1	--	L. SUM	FURNISHING & ERECTING STRUCTURAL STEEL
235,490	167,820	67,670	LB.	REINFORCEMENT BARS
2	--	2	EACH	NAME PLATES
431	--	431	SQ.YD.	SLOPEWALL 4 INCH
184	184	--	LIN.FT.	PERFORMED JOINT SEALER
485	485	--	LIN.FT.	ALUMINUM RAILING
7,200	7,200	--	EACH	STUD SHEAR CONNECTORS PROPOSED STRUCTURE

* CALCULATED WEIGHT OF STRUCTURAL STEEL = 515,230 Lbs. F.A.I. 24

DESIGN DATA

HIGHWAY CLASSIFICATION	CHV	M.P.H.	DESIGNATION
F.A.I. RTE. 24	2230	70	B1 (1987)
U.S. RTE. 45	870	70	B2 (1987)

DESIGN LOAD
L.L. = HS20-44
FUTURE D.L. = 25 P.S.F.

DESIGN STRESSES

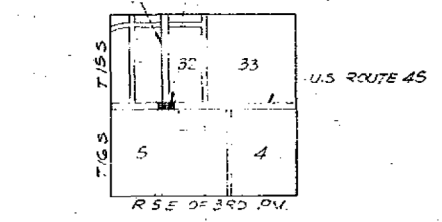
CONCRETE (CAST-IN-PLACE)

$f_c = 3,500$ P.S.I.
 $f_c = 1,200$ P.S.I. (DECK)
 $f_c = 1,400$ P.S.I. (SUBSTRUCTURE)
 $f_c = 1,000$ P.S.I. (WITH EARTH PRESSURE)
 $v = 75$ P.S.I. (FOOTINGS)
 $n = 10$

PRECAST PRESTRESSED UNITS

$f_c = 5,000$ P.S.I.
 $f_{ci} = 4,000$ P.S.I.
 $f_s = 248,000$ P.S.I. (7/16" DIA. STRANDS)
 $f_{ti} = 173,500$ P.S.I. (7/16" DIA. STRANDS)

REINFORCING STEEL
 $f_s = 20,000$ P.S.I.
 STRUCTURAL STEEL
 $f_s = 20,000$ P.S.I. (A36)
 ALLOWABLE SOIL PRESSURE
 ABUTMENTS = 4,000 P.S.F.
 PIERS = 4,200 P.S.F.
 MAX. L.L. DEFLECTION
 1/1250 (COMPOSITE)



LOCATION SKETCH

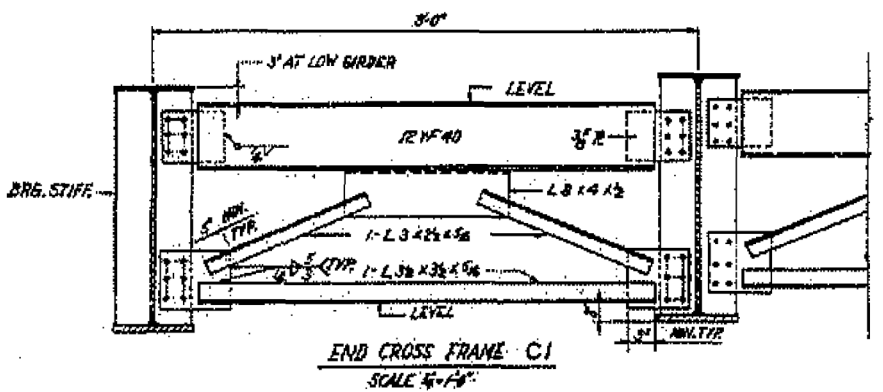
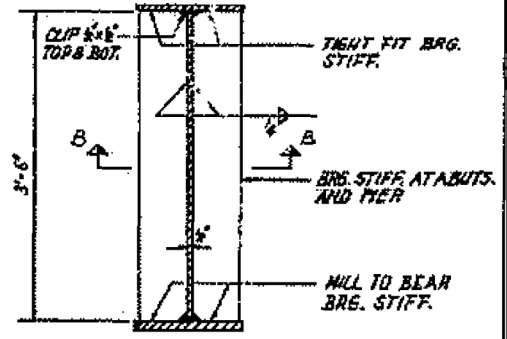
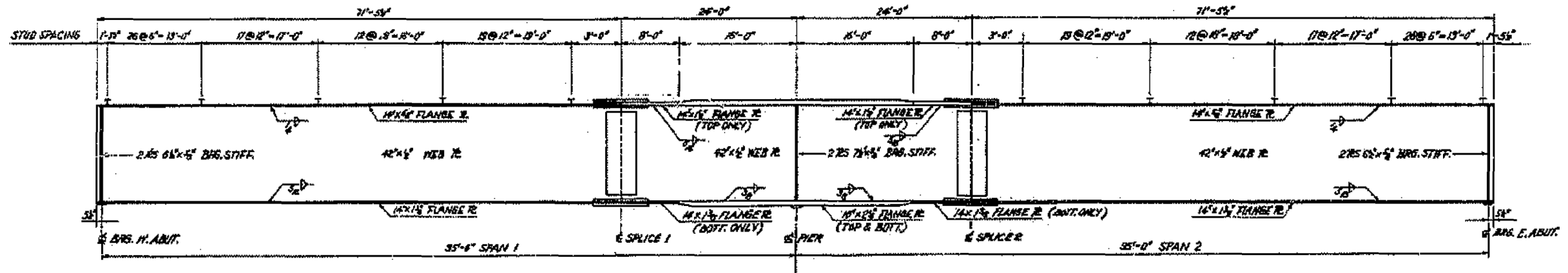
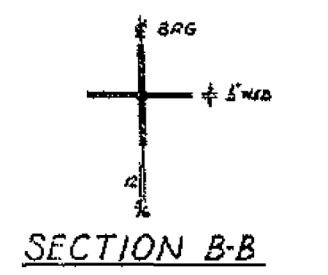
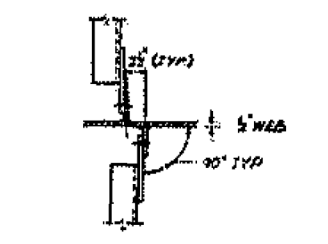
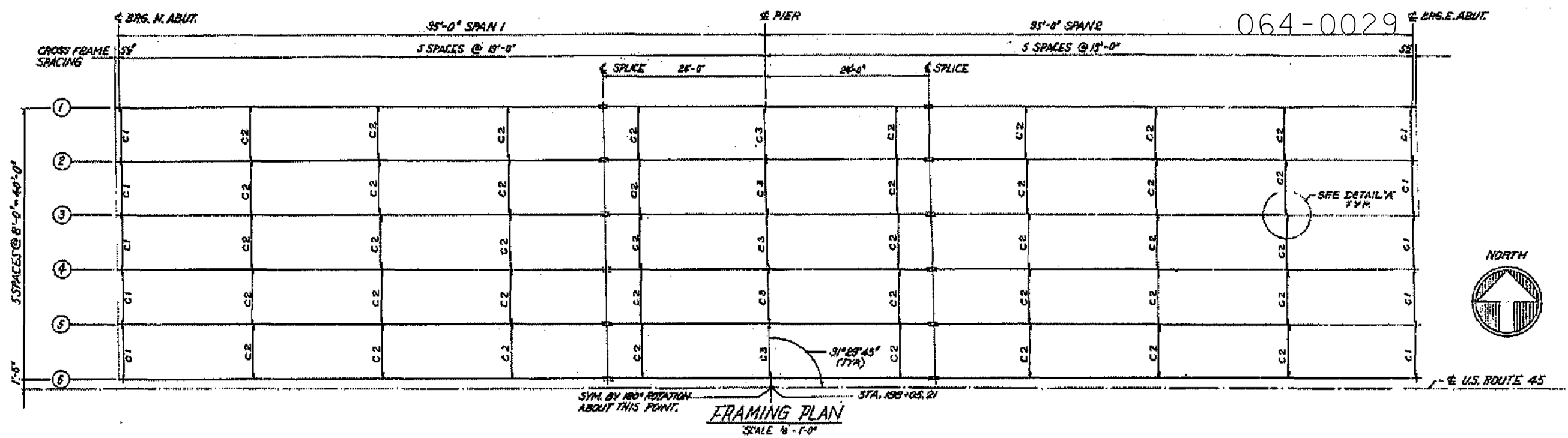
GENERAL PLAN & ELEVATION
GRADE SEPARATION
U.S. ROUTE 45
OVER F.A.I. ROUTE 24
F.A. PROJECT
F.A.I. ROUTE 24 SECTION 64-34B-1
MASSAC COUNTY
STATION 342+00.04

FILE NAME =	USER NAME = Dahmer,ja	DESIGNED -	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

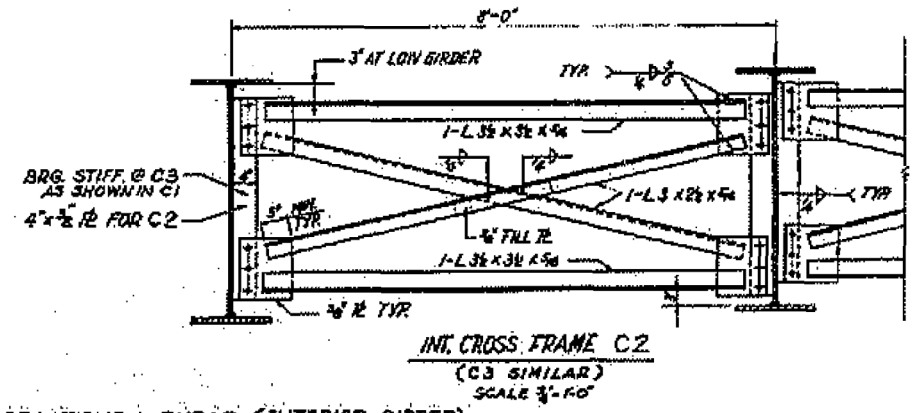
064-0029
US 45 OVER I-24
SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR. D9	BRIDGE PAINT 2014-2	*	22	18
CONTRACT NO. 78419				
ILLINOIS FED. AID PROJECT				



GIRDER PROPERTIES

STEEL SECTION	
I_x	36,214 IN^4
S_{x1}	1,566 IN^3
S_{x2}	1,566 IN^3
COMPOSITE SECTION	
I_c	43,842 IN^4
S_{c1}	5,562 IN^3
S_{c2}	1,213 IN^3



TOP OF WEB ELEVATIONS (FOR FABRICATION ONLY)

LOCATION	GIR. 1	GIR. 2	GIR. 3	GIR. 4	GIR. 5	GIR. 6	GIR. 7	GIR. 8	GIR. 9	GIR. 10	GIR. 11	GIR. 12
BRG. N. ABUT.	374.960	375.088	375.215	375.343	375.471	375.598	375.599	375.477	375.355	375.232	375.110	374.988
SPICE 1	375.834	375.962	376.089	376.217	376.344	376.472	376.473	376.350	376.228	376.105	375.982	375.860
BRG. PIER	376.109	376.237	376.364	376.491	376.619	376.746	376.747	376.624	376.502	376.379	376.256	376.134
SPICE 2	376.383	376.511	376.638	376.765	376.893	377.020	377.021	376.898	376.776	376.653	376.530	376.407
BRG. E. ABUT.	377.133	377.260	377.388	376.513	376.642	376.769	377.170	377.697	377.524	377.401	377.278	377.155

NOTE: TOP OF WEB ELEVATIONS ARE BASED ON A DIMENSION OF 10" SUBTRACTED FROM THEORETICAL GRADE ELEVATIONS.

TABLE OF MOMENTS, REACTIONS & SHEAR (INTERIOR GIRDER)

	MOMENT (FT. KIP)		REACTION (KIP)		SHEAR (KIP)				
	1/4 PT. SPAN	PIER	ABUT.	PIER	ABUT.	1/4 PT. SPAN	1/2 PT. SPAN	3/4 PT. SPAN	PIER
X.L.	346	1493	35	132					
S.D.L.	140	226	8	25	8	3	2	7	12
L.L.	313	733	52	75	52	31	25	39	50
IMP.	71	167	12	17	12	7	6	9	11
TOTAL	1072	2619	107	249	72	41	33	55	73

FRAMING PLAN
GRADE SEPARATION
U.S. ROUTE 45
OVER F.A.I. ROUTE 24
F.A. PROJECT
F.A.I. ROUTE 24 SECTION 64-3HB-1
MASSAC COUNTY
STATION 350+00.04

ALFRED BENECH & COMPANY CONSULTING ENGINEERS
12 NORTH WASHINGTON AVENUE
CHICAGO, ILLINOIS 60602

FILE NAME:	USER NAME: Dahmer,ja	DESIGNED: -	REVISED: -
ca:\pwwork\pwwork\dahmer,ja\0384974\7899-sht-plandgn	9-sht-plandgn	DRAWN: -	REVISED: -
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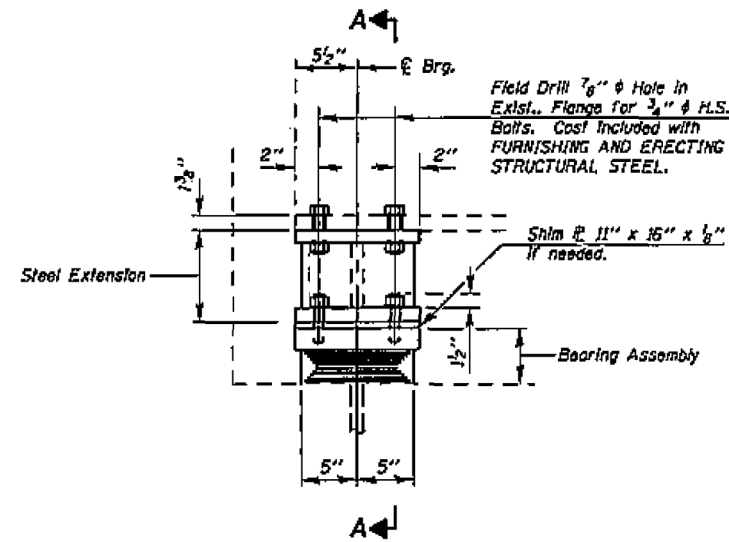
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

064-0029
US 45 OVER I-24
SCALE: SHEET OF SHEETS STA. TO STA.

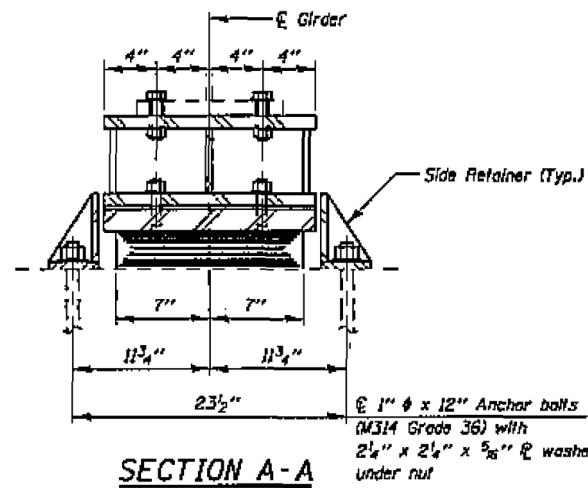
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR. D9 BRIDGE PAINT 2014-2		*	22	19
			CONTRACT NO. 78419	
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY

* VARIOUS COUNTIES



ELEVATION AT ABUT.



SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

Girder Reactions

R DL	35 Kips
R SDL	8 Kips
R LL	52 Kips
R Imp.	12 Kips
R (Total)	107 Kips

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of ASTM A307 anchor bolts may be used in lieu of ASTM F1554.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

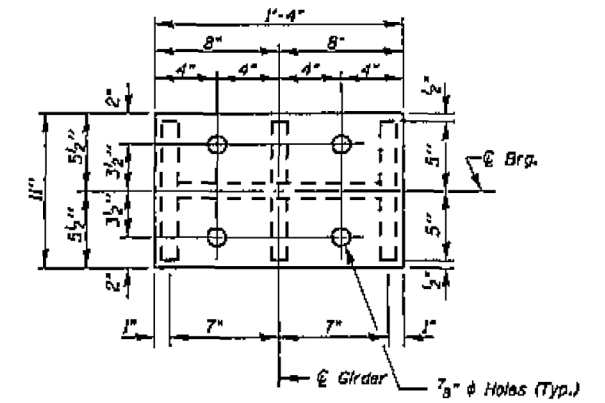
The minimum jack capacity required is 60 Tons.

Existing cross frame removal and reinstallation may be required to facilitate drilling holes. Cost to be included with JACK AND REMOVE EXISTING BEARINGS.

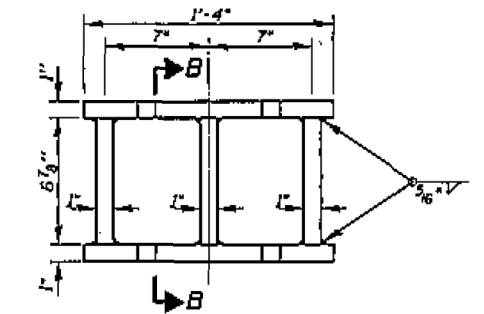
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

Two $\frac{1}{2}$ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

New steel extensions, connection bolts, F.H. ϕ 's and Shim ϕ 's are included in FURNISHING AND ERECTING STRUCTURAL STEEL.



PLAN-TOP & BOTTOM PLATE



STEEL EXTENSION DETAIL

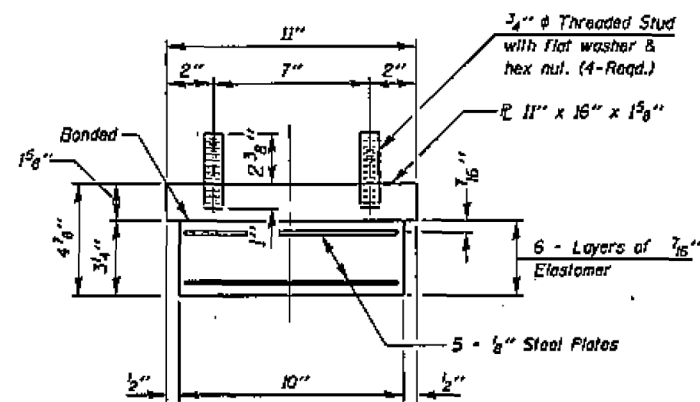
Existing Plate to be removed using the dir-arc method and grind smooth all weld material remaining on the bottom flange.

Burn the existing anchor bolts flush with existing concrete surface. Grind existing anchor bolts smooth and seal with epoxy.

ABUTS

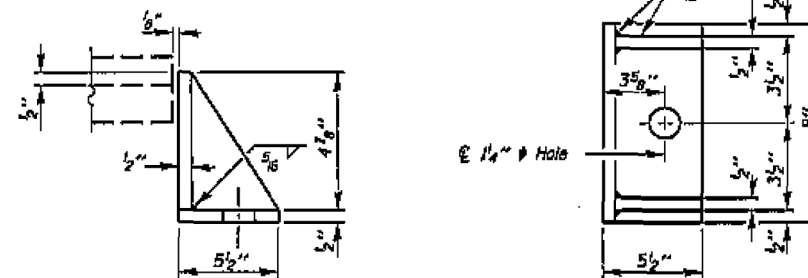
EXISTING BEARING REMOVAL DETAIL

Cost is Included with Jack and Remove Existing Bearings



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.

SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	24
Anchor Bolts, 1"	Each	48
Jack and Remove Existing Bearings	Each	24

BEARING DETAILS
STRUCTURE NO. 064-0029

FOR INFORMATION ONLY

FILE NAME =	USER NAME = Dahmer,ja	DESIGNED -	REVISED -
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	PLOT DATE = 3/20/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

064-0029		US 45 OVER I-24	
SCALE:	SHEET	OF SHEETS	STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR. D9 BRIDGE PAINT 2014-2	*	*	22	20
				CONTRACT NO. 78419
ILLINOIS FED. AID PROJECT				

* VARIOUS COUNTIES

DATE	BY	NO.	REV.	SHEET NO.
11-1	PLASKI	217	63	12 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS
BEAM END
LOCATION 2 E1.362.54

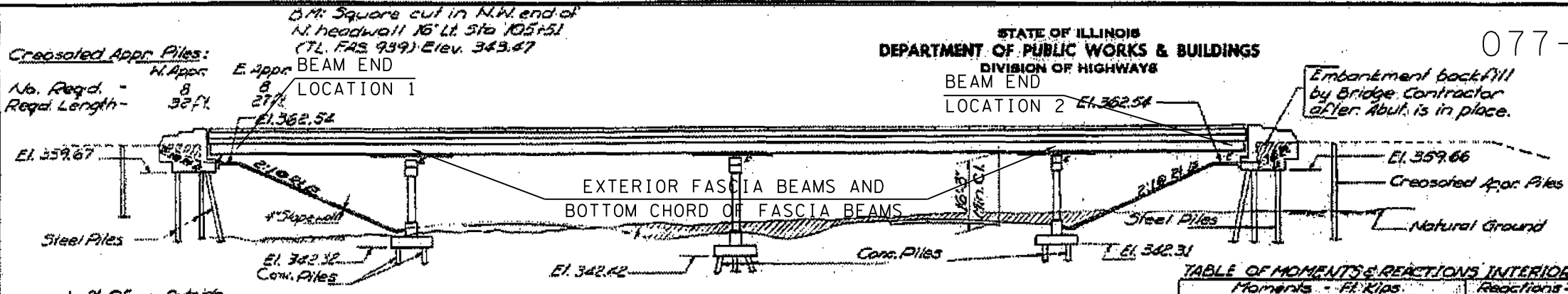
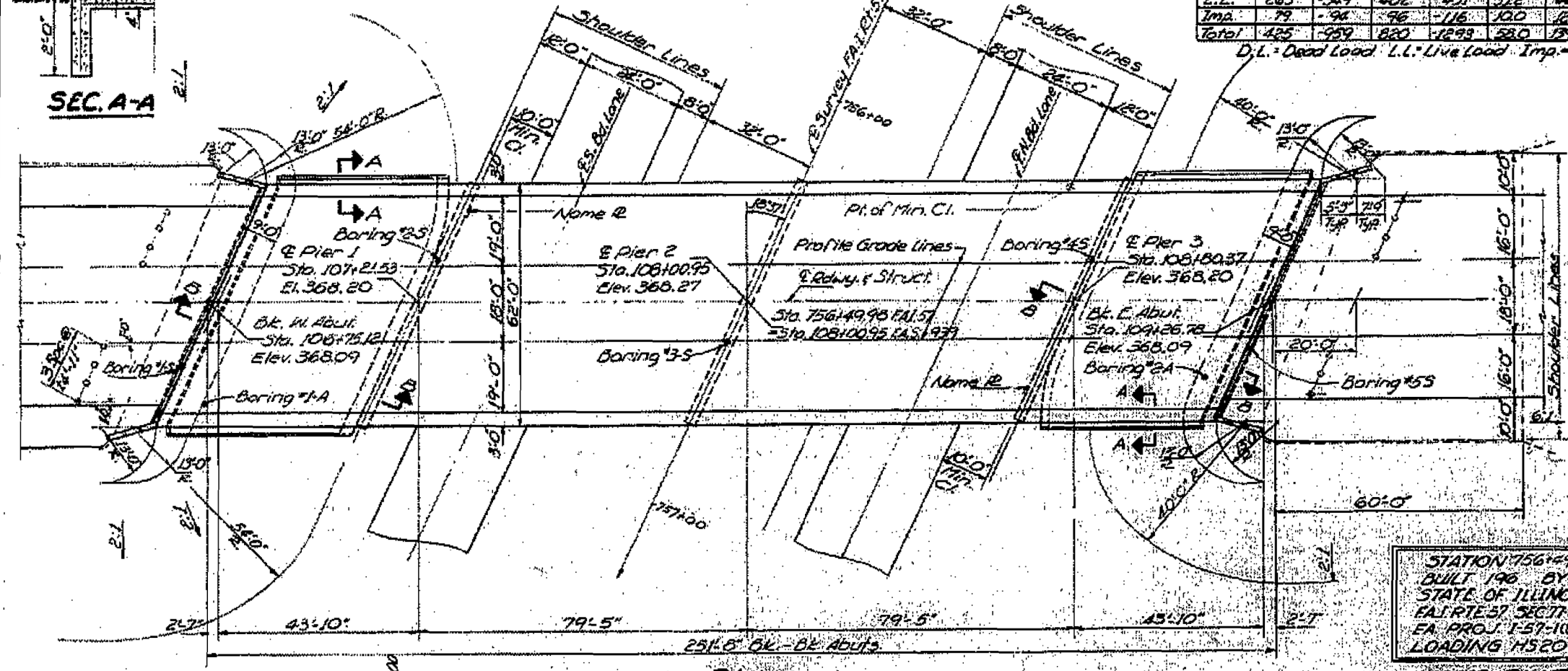
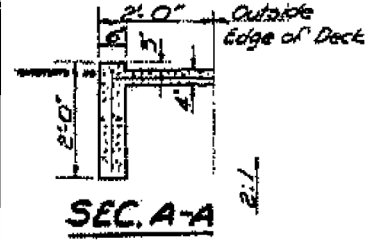


TABLE OF MOMENTS & REACTIONS INTERIOR BEAM

	Moments - Ft. Kips.			Reactions - Kips.		
	4.5span Pier 1	5.5span Pier 2	Abut. Pier 1	Pier 1	Pier 2	Pier 2
D.L.	85	322	746	148	302	449
L.L.	263	349	402	431	312	309
Imp.	79	94	96	116	100	73.8
Total	427	765	1244	695	714	831.8

D.L. = Dead Load L.L. = Live Load Imp. = Impact



STATION 756+49.98
BUILT 196 BY
STATE OF ILLINOIS
FAI RTE 57 SEC 71 4NB-1
EA PROJ. I-57-1185
LOADING H520

NAME PLATE
See Sta. 21137

GENERAL NOTES

Class X Concrete shall be used throughout. Coarse aggregate to be used in parapet handrails and end post must be absolutely free of chert, flint, limonite, lignite and soft sandstone.

The concrete floor slab shall be finished in accordance with Art. 51.19 of the Standard Specifications. Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, #4 wires, weighing 58# per 100 Sq. Ft. All reinforcement bars shall be lapped 20 dia. unless otherwise shown.

Rivets 3/8" Open holes 3/8" unless otherwise noted. Anchor bolts shall be set before riveting diaphragms over supports.

The exposed surfaces of the expansion guards shall be given two shop coats of red lead paint, the contact surfaces shall be given one coat of red lead paint. Anchor studs shall not be painted.

Expansion guards are in the quantity of Struct Steel Est. weight 2430 lbs.

Except as otherwise provided, all struct. steel shall receive one shop coat of red lead paint, and two field coats of aluminum paint.

Permanent forms will not be permitted in forming the concrete floor.

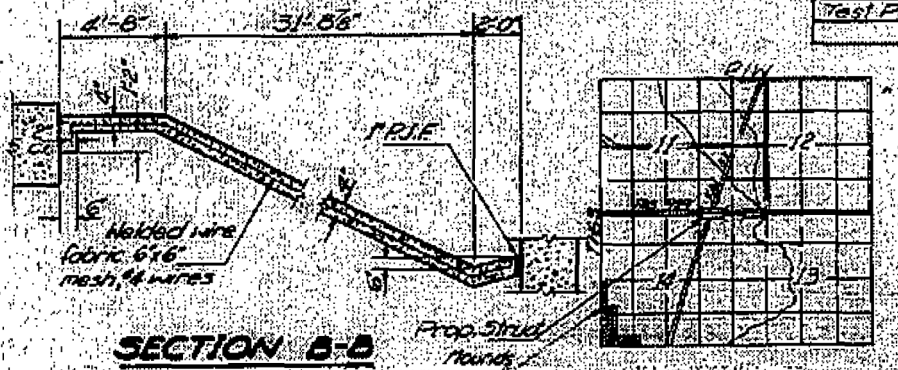
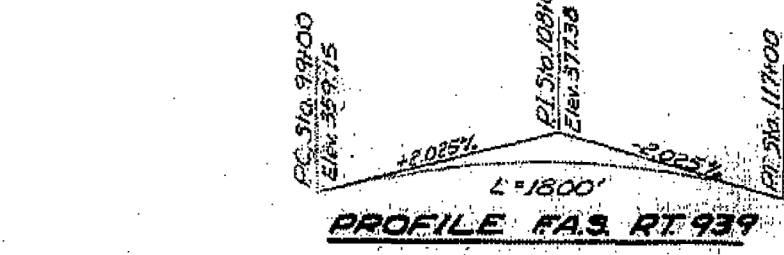
All structural steel shall comply with the specification for structural steel ASTM Designation A-36.

The Contractor shall drive three (3) test piles 1 steel test pile at W. Abut. and 2 concrete test piles, one each at Piers 1 & 3, in a permanent location as directed by the Engr before ordering the remainder of piles.

TOTAL BILL OF MATERIAL

ITEM	Super	Sub	Total
Class X Excavation	Cu Yds		336
Class X Concrete	Cu Yds	4420	8257
Structural Steel	Lbs	424570	424570
Aluminum Handrail	Lbs	497	497
Reinforcement Bars	Lbs	129,050	41,400
Creosoted Piles	Lin. Ft.		472
Concrete Piles	Lin. Ft.		1060
Test Piles (Concrete)	Ft.		2
Name Plates	Ft.		2
Slope Wall (C)	Sq Yds		682
Protective Coat	Sq Yds	1897	1897
Bridge Seal Sealant	Lime Sum		1.5
Steel Piles (103P42)	Lin. Ft.		2255
Test Piles (Steel 108P42)	Ft.		1

* Includes Excavation for slope wall.
** Applied at Abutments.



LOCATION PLAN

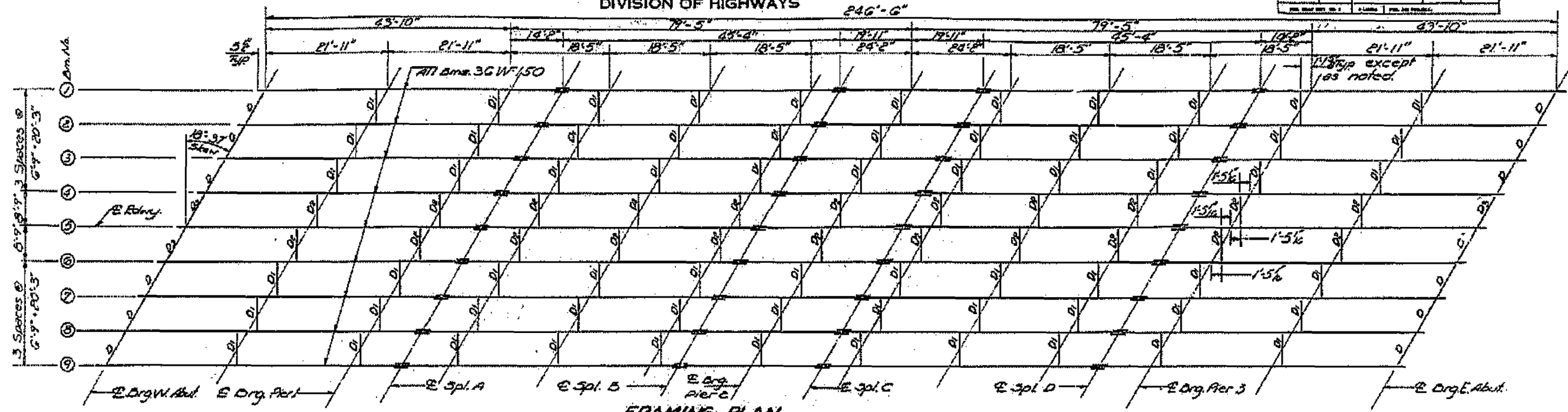
FOR INFORMATION ONLY

GENERAL PLAN & ELEVATION
PROJ. I-57-1185
FAS RT. 939 OVER FAI RTE 57
FAI RTE 57 SEC 71 4NB-1
PULASKI COUNTY
STA. 756+49.98

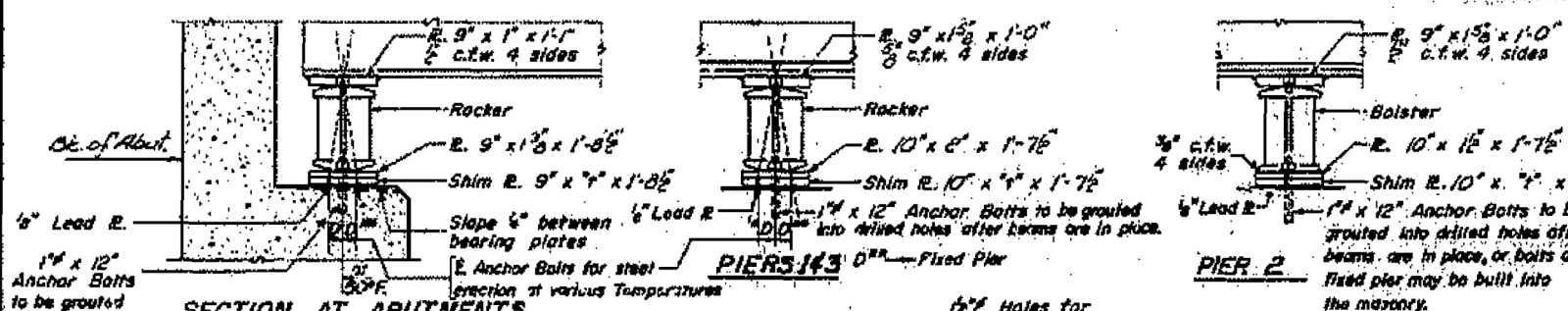
DESIGNED A. Venti-Nieder
CHECKED A. Borrozo
DRAWN
CHECKED

EXAMINED
APPROVED

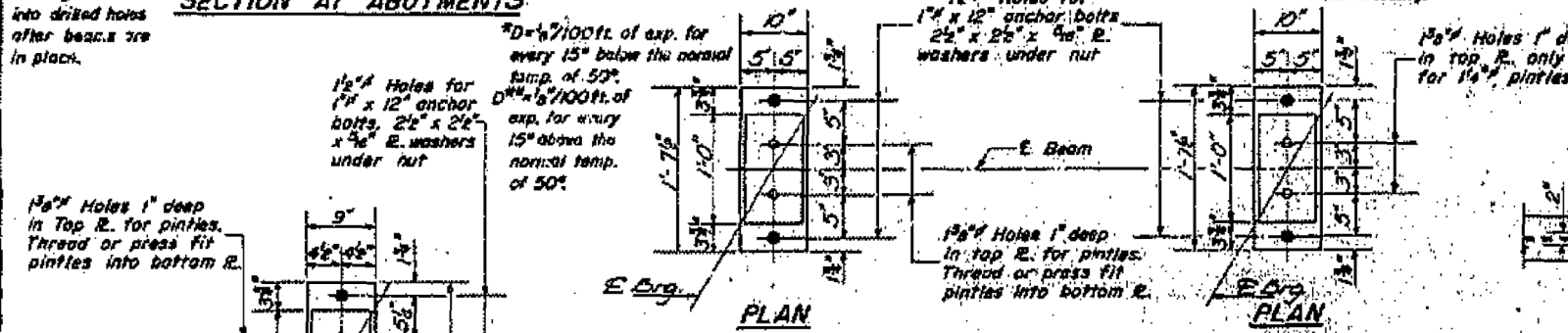
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fc = 1400 psi Super & Sub.
vc = 75 psi Flgs.
fs = 20000 psi Reinf.
fs = 20000 psi Struct.
n = 10
Allowable & Deflection 1/1000
LOADING H520-44



FRAMING PLAN

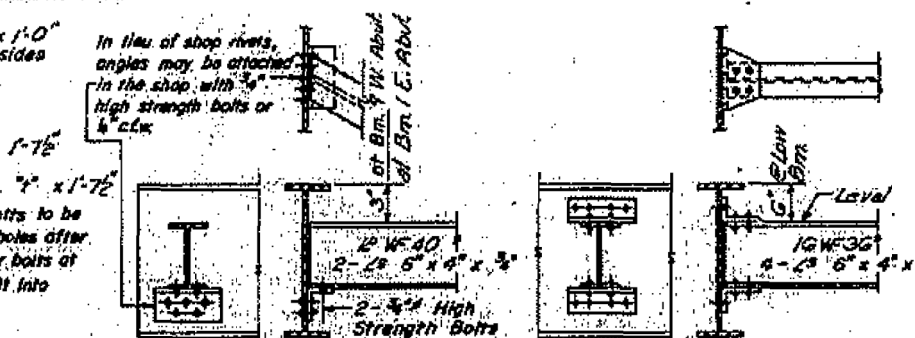


SECTION AT ABUTMENTS



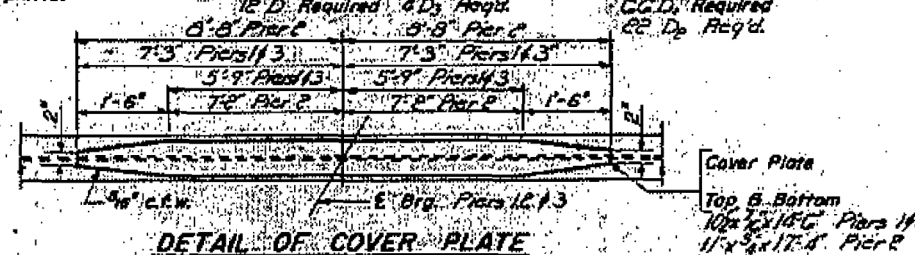
PLAN

PLAN



DIAPHRAGM D1 & D2

DIAPHRAGM D3 & D4



DETAIL OF COVER PLATE

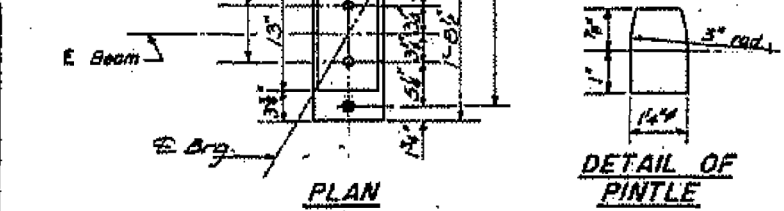
Cover Plate
Top & Bottom
10x12x1-7/8 Piers 1 & 3
11x12x1-7/8 Pier 2

ELEVATION TOP OF 36 WF 150 BMS.

Loc.	E Org. W. Abut.	E Org. Pier 1	E Spl. A	E Spl. B	E Org. Pier 2
1	367345	367388	367408	367484	367489
2	367408	367451	367466	367501	367497
3	367468	367516	367531	367568	367525
4	367529	367579	367594	367639	367633
5	367609	367661	367676	367721	367720
6	367678	367731	367746	367791	367789
7	367749	367801	367816	367861	367853
8	367825	367877	367892	367937	367937
9	367891	367943	367958	368003	367997

SHIM Y-DIMENSIONS

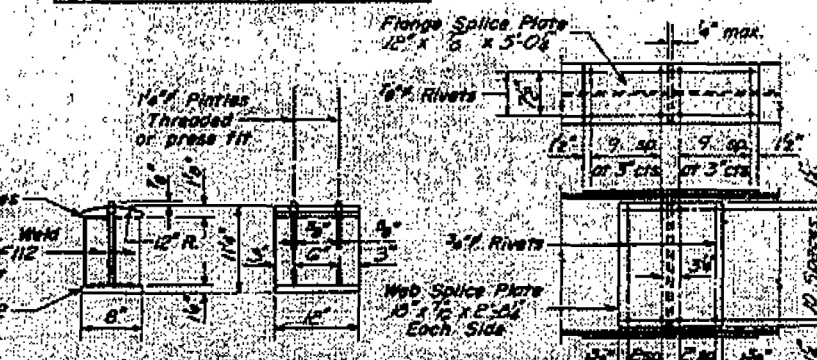
Loc.	West Abut.	Pier 1	Pier 2	Pier 3	East Abut.
1					
2					
3					
4					
5					
6					
7					
8					
9					



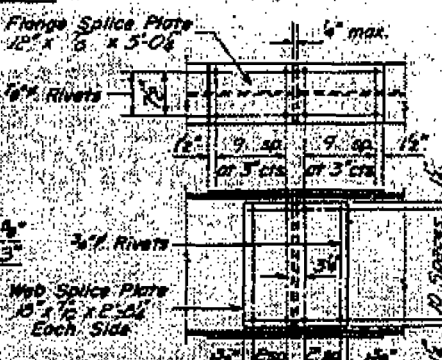
DETAIL OF PINTLE



DETAIL OF ROCKER AT PIERS 1 & 3



DETAIL OF BOLSTER AT PIER 2



DETAIL OF SPLICE

STRUCTURAL STEEL
FAS RT 37 SEC 71-4HB-1
PULASKI COUNTY
STA 756149.78

DESIGNED: J. P. McNeil - mazzoni
CHECKED: R.G. Borman
DRAWN: W.A. Sasseman Jr. J.S.
EXAMINED: S. J. ...
APPROVED: ...

I-2-C 7-2-62 Rev. 11-9-62 Rev. 8-16-63 Rev. 12-10-63