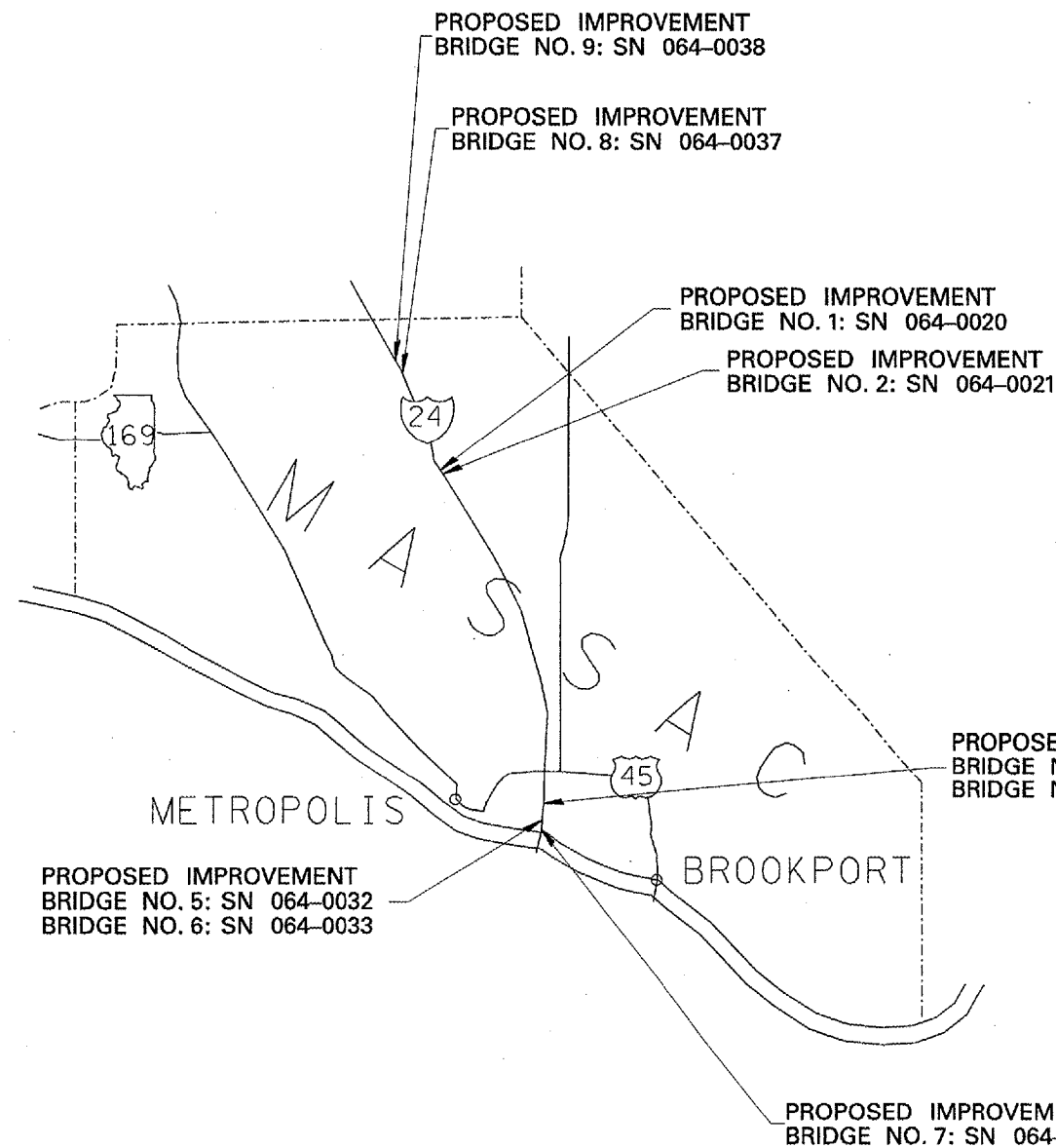
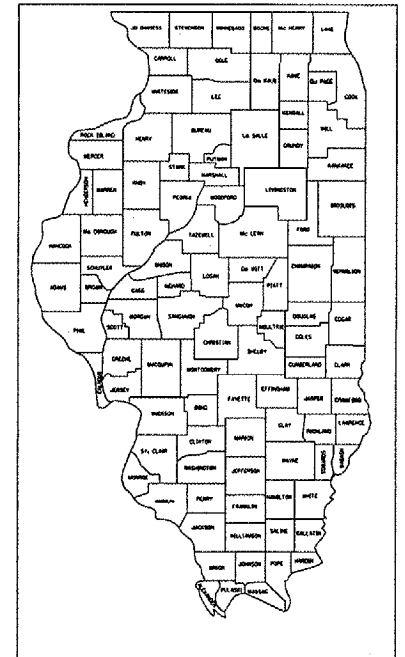


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
**PROPOSED  
HIGHWAY PLANS  
DISTRICT 9**  
FAI ROUTE 24 (INTERSTATE 24)  
SECTION D-9 BRIDGE PAINTING FY 05-2  
MASSAC COUNTY  
C-99-044-04

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	.	MASSAC	48	1
FED. ROAD DIST. NO. 7		ILLINOIS		

\* D-9 BRIDGE PAINTING FY 05-2  
CONTRACT NO. 98882



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED August 16 2004  
*Thomas A. Jensen* DISTRICT ENGINEER

EXAMINED \_\_\_\_\_ 20 \_\_\_\_\_  
ENGINEER OF PLANS AND CONTRACTS

PASSED February 4 2005  
*Mike Hine* ENGINEER OF DESIGN

APPROVED February 4 2005  
*Victor Madariaga* DIRECTOR OF HIGHWAYS

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
JULIE 1-800-892-0123

**CONTRACT NO. 98882**

FOR INDEX OF SHEETS, SEE SHEET NO. 3  
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 5-6

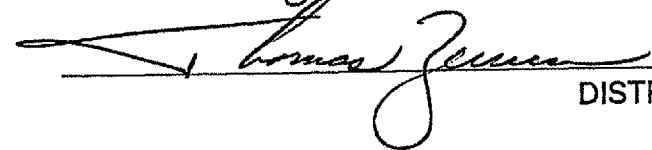
Rev.


PROJECT ENGINEER: LARRY PICHE  
SQUAD LEADER: RITA GAUTNEY  
PHONE: (618) 549-2171  
CENTREX: 782-4854

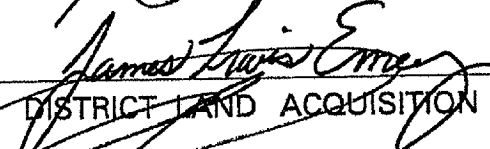
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	.	MASSAC	43	2
FED. ROAD DIST. NO. 7		ILLINOIS		
D-9 BRIDGE PAINTING FY 05-2				
CONTRACT NO. 98882				


**SIGNATURE SHEET**


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

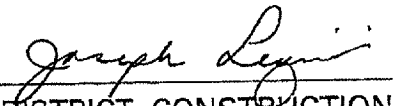
SUBMITTED August 16 2004  
  
 DISTRICT ENGINEER

PREPARED BY:   
 DISTRICT OPERATIONS ENGINEER


EXAMINED BY:   
 DISTRICT LAND ACQUISITION ENGINEER

EXAMINED BY:   
 DISTRICT PROGRAM DEVELOPMENT ENGINEER

EXAMINED BY:   
 DISTRICT STUDIES & PLANS ENGINEER

EXAMINED BY:   
 DISTRICT CONSTRUCTION ENGINEER

EXAMINED BY:   
 DISTRICT MATERIALS ENGINEER

EXAMINED BY:   
 DISTRICT PROJECT IMPLEMENTATION ENGINEER

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	.	MASSAC	43	3
FED. ROAD DIST. NO. 7		ILLINOIS		

•D-9 BRIDGE PAINTING FY 05-2  
CONTRACT NO. 98882

## INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	SIGNATURE SHEET
3	INDEX OF SHEETS, STANDARDS, COMMITMENTS
4	GENERAL NOTES
5-6	SUMMARY OF QUANTITIES
7-9	PAINT DETAILS
10	BRIDGE NO. 1: SN 064-0020 (GENERAL PLAN & ELEVATION)
11	BRIDGE NO. 1: SN 064-0020 (FRAMING PLAN)
12	BRIDGE NO. 1: SN 064-0020 (DIAPHRAGM DETAILS)
13-16	BRIDGE NO. 1: SN 064-0020 (BEARING DETAILS)
17	BRIDGE NO. 2: SN 064-0021 (GENERAL PLAN & ELEVATION)
18	BRIDGE NO. 2: SN 064-0021 (FRAMING PLAN)
19	BRIDGE NO. 2: SN 064-0021 (DIAPHRAGM DETAILS)
20-23	BRIDGE NO. 2: SN 064-0021 (BEARING DETAILS)
24	BRIDGE NO. 3: SN 064-0030 & NO. 4: SN 064-0031 (GENERAL PLAN & ELEVATION)
25	BRIDGE NO. 3: SN 064-0030 & NO. 4: SN 064-0031 (FRAMING PLAN)
26	BRIDGE NO. 3: SN 064-0030 & NO. 4: SN 064-0031 (DIAPHRAGM DETAILS)
27-30	BRIDGE NO. 3: SN 064-0030 & NO. 4: SN 064-0031 (BEARING DETAILS)
31	BRIDGE NO. 5: SN 064-0032 & NO. 6: SN 064-0033 (GENERAL PLAN & ELEVATION)
32	BRIDGE NO. 5: SN 064-0032 & NO. 6: SN 064-0033 (FRAMING PLAN)
33	BRIDGE NO. 5: SN 064-0032 & NO. 6: SN 064-0033 (DIAPHRAGM DETAILS)
34	BRIDGE NO. 5: SN 064-0032 & NO. 6: SN 064-0033 (BEARING DETAILS)
35	BRIDGE NO. 7: SN 064-0034 (GENERAL PLAN & ELEVATION)
36	BRIDGE NO. 7: SN 064-0034 (FRAMING PLAN)
37-39	BRIDGE NO. 7: SN 064-0034 (BEARING DETAILS)
40	BRIDGE NO. 8: SN 064-0037 (GENERAL PLAN & ELEVATION)
41	BRIDGE NO. 8: SN 064-0037 (FRAMING PLAN)
42	BRIDGE NO. 9: SN 064-0038 (GENERAL PLAN & ELEVATION)
43	BRIDGE NO. 9: SN 064-0038 (FRAMING PLAN)

## COMMITMENTS

CANADIAN NATIONAL RAILROAD: TARPS OVER TRACKS TO BE REMOVED DURING NON-WORKING HOURS.

ILLINOIS DEPARTMENT OF NATURAL RESOURCES: ROADWAY AND TRAILS IN FT. MASSAC STATE PARK MAY BE CLOSED FOR NO MORE THAN ONE CALENDAR MONTH. STRUCTURE 064-0034 SHALL BE THE FIRST STRUCTURE TO BE PAINTED ON THIS CONTRACT. ENGINEER SHALL LET PRESS RELEASE 2 WEEKS PRIOR TO ROADWAY CLOSURE.

## STANDARDS

701001-01	701400-02
701006-02	701406-04
701101-01	702001-05
	B.L.R. 21-6

## GENERAL NOTES

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	*	MASSAC	43	4
FED. ROAD DIST. NO. 7		ILLINOIS		

\* D-9 BRIDGE PAINTING FY 05-2  
CONTRACT NO. 98882

Cleaning and painting shall conform to the requirements of special provision "Cleaning And Painting Existing Steel Structures". Paint System 1 - OZ / E / U shall be used for all steel unless otherwise noted.

SSPC - QP1 and SSPC - QP2 Painting Contractor Certifications are not required.

The term "Beam End" is used in this document to indicate all structural steel within 5 feet (measured along the beam) of either side of a deck joint (or any deck configuration which allows significant amounts of moisture to reach the structural steel). The main beam, diaphragm, and bearing shall be painted at each Beam End, unless otherwise noted.

Beam Ends shall be cleaned per Near White Metal Blast Cleaning - SSPC-SP10, except galvanized steel. See Sheet 7 for quantities.

The exterior surfaces of fascia beams shall be cleaned as shown on sheet 8. All bearings on the fascia beams shall be cleaned and painted. The fascia beam painted length shown on Sheet 8 does not include the length of painted Beam Ends located on the fascia beam.

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 of the fascia beams, including the length of the fascias' Beam Ends, shall be Interstate Green, Munsell No. 7.5G 4 / 8.

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

### Bridges No. 1 and No. 2

For Structures 064-0020 and 064-0021, a minimum of 1 air monitor is required at each site to monitor abrasive blasting operations. See special provision "Containment and Disposal of Lead Paint Cleaning Residues".

Railroad liability insurance is required for Structures 064-0020 and 064-0021.

### Commitment:

In addition to the requirements of Art. 107.04 the contractor shall submit for approval all plans and procedures for the containment system to Mr. Dennis Kirk. Mr. Kirk can be contacted at (270)472-4670 or Dennis.Kirk@cn.ca. The contractor shall remove containment at the end of each working day.

### Bridges No. 7, No. 8, and No. 9

All structural steel on Structures. 064-0034, 064-0037, and 064-0038 shall be cleaned and painted. Near White Metal Blast Cleaning - SSPC - SP10 shall be used, except the galvanized steel on 064-0034.

During the work on 064-0034, OR 4 shall be closed to all traffic. Standard BLR 21 shall be used.



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	.	MASSAC	43	6
FED. ROAD DIST. NO. 7		ILLINOIS		

\*D-9 BRIDGE PAINTING FY 05-2  
CONTRACT NO. 98882

**SUMMARY OF QUANTITIES**  
**(SHEET 2 OF 2)**

100% STATE		MASSAC COUNTY	
CONSTRUCTION TYPE CODE SFTY-2A		RURAL	
CODE NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY
50606401	CONTAINMENT & DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L. SUM	1
50606402	CONTAINMENT & DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 2	L. SUM	1
50606403	CONTAINMENT & DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 3	L. SUM	1
50606404	CONTAINMENT & DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 4	L. SUM	1
50606405	CONTAINMENT & DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 5	L. SUM	1
50606406	CONTAINMENT & DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 6	L. SUM	1
50606407	CONTAINMENT & DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 7	L. SUM	1
50606408	CONTAINMENT & DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 8	L. SUM	1
50606409	CONTAINMENT & DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 9	L. SUM	1
70100305	TRAFFIC CONTROL AND PROTECTION, STANDARD 701400	L. SUM	1
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L. SUM	1
70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L. SUM	1
Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	L. SUM	1

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	*	MASSAC	43	7
FED. ROAD DIST. NO. 7		ILLINOIS		


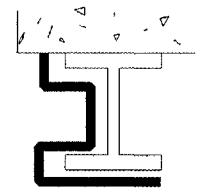
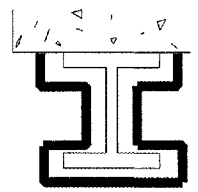
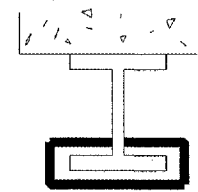
\* D-9 BRIDGE PAINTING FY 05-2  
CONTRACT NO. 98882

BEAM ENDS

Bridge No.	Structure	Number (Each)	Galvanized Diaphragms	Galvanized Bearings at Abutments
1	064-0020	12		+
2	064-0021	12		+
3	064-0030	10	+	+
4	064-0031	10	+	+
5	064-0032	12	+	+
6	064-0033	12	+	+
7	064-0034	*		+
8	064-0037	*		
9	064-0038	*		

\* CLEAN AND PAINT ALL STRUCTURAL STEEL  
ON BRIDGES NO. 7, 8, 9

PAINTED SURFACE LIMITS

Location	Surfaces to be Painted designated thus: 
Fascia Beam (See Sht. 8)	
Beam End	
Bottom Flange At Pier Bearing (See Sht. 9)	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	*	MASSAC	43	8
FED. ROAD DIST. NO. 7		ILLINOIS		

\* D-9 BRIDGE PAINTING FY 05-2  
CONTRACT NO. 98882

FASCIA BEAMS

Bridge No.	Structure	Painted Length (Foot)	Surface Preparation
1	064-0020	328	POWER TOOL CLEANING-COMMERCIAL GRADE
2	064-0021	345	POWER TOOL CLEANING-COMMERCIAL GRADE
3	064-0030	196	NEAR WHITE METAL BLAST CLEANING-SSPC-SP10
4	064-0031	196	NEAR WHITE METAL BLAST CLEANING-SSPC-SP10
5	064-0032	254	NEAR WHITE METAL BLAST CLEANING-SSPC-SP10
6	064-0033	254	NEAR WHITE METAL BLAST CLEANING-SSPC-SP10
7	064-0034	*	NEAR WHITE METAL BLAST CLEANING-SSPC-SP10
8	064-0037	*	NEAR WHITE METAL BLAST CLEANING-SSPC-SP10
9	064-0038	*	NEAR WHITE METAL BLAST CLEANING-SSPC-SP10

\*CLEAN AND PAINT ALL STRUCTURAL STEEL ON BRIDGES NO. 7, 8, and 9



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	*	MASSAC	48	9
FED. ROAD DIST. NO. 7		ILLINOIS		

\* D-9 BRIDGE PAINTING FY 05-2  
CONTRACT NO. 98882

At each pier shown in the table below, the bottom flange at each existing new bearing shall be cleaned on the top, bottom, and side surfaces above the bearing and extending 3" past the bearing. This area shall be cleaned per Modified SP3 and Penetrating Epoxy sealer, Epoxy Mastic spot coat, and Polyurethane final coat shall be applied according to the requirements of Paint System 2.

BOTTOM FLANGE AT PIER BEARINGS

Bridge No.	Structure	Pier
1	064-0020	2
2	064-0021	2
3	064-0030	1
4	064-0031	1
* 7	064-0034	2

\* ALL STRUCTURAL STEEL IS PAINTED ON BRIDGE NO. 7, 064-0034

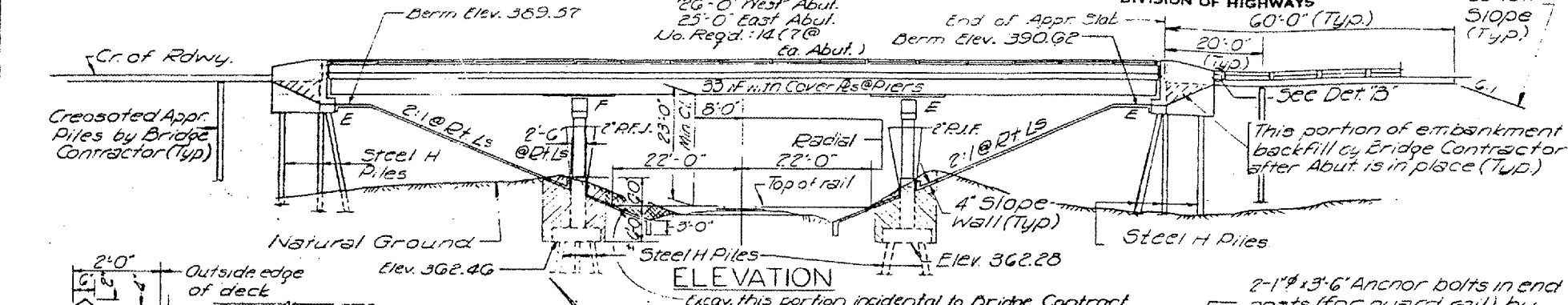
DATE	REVISION	NO.	DESCRIPTION
10-24-68	1	1	ISSUED FOR PERMITS
11-15-68	2	2	ISSUED FOR BIDDING
12-15-68	3	3	ISSUED FOR CONSTRUCTION

B.M. 36A-X in top concrete whistle post  
 110' Lt. W.B. Lane Sta 1327+50 Elev. 370.25

**APPROACH PILE DATA**

Type: Creosoted  
 Required Length:  
 26'-0" West Abut.  
 25'-0" East Abut.  
 No. Req'd: 14 (7 @  
 ea. Abut.)

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

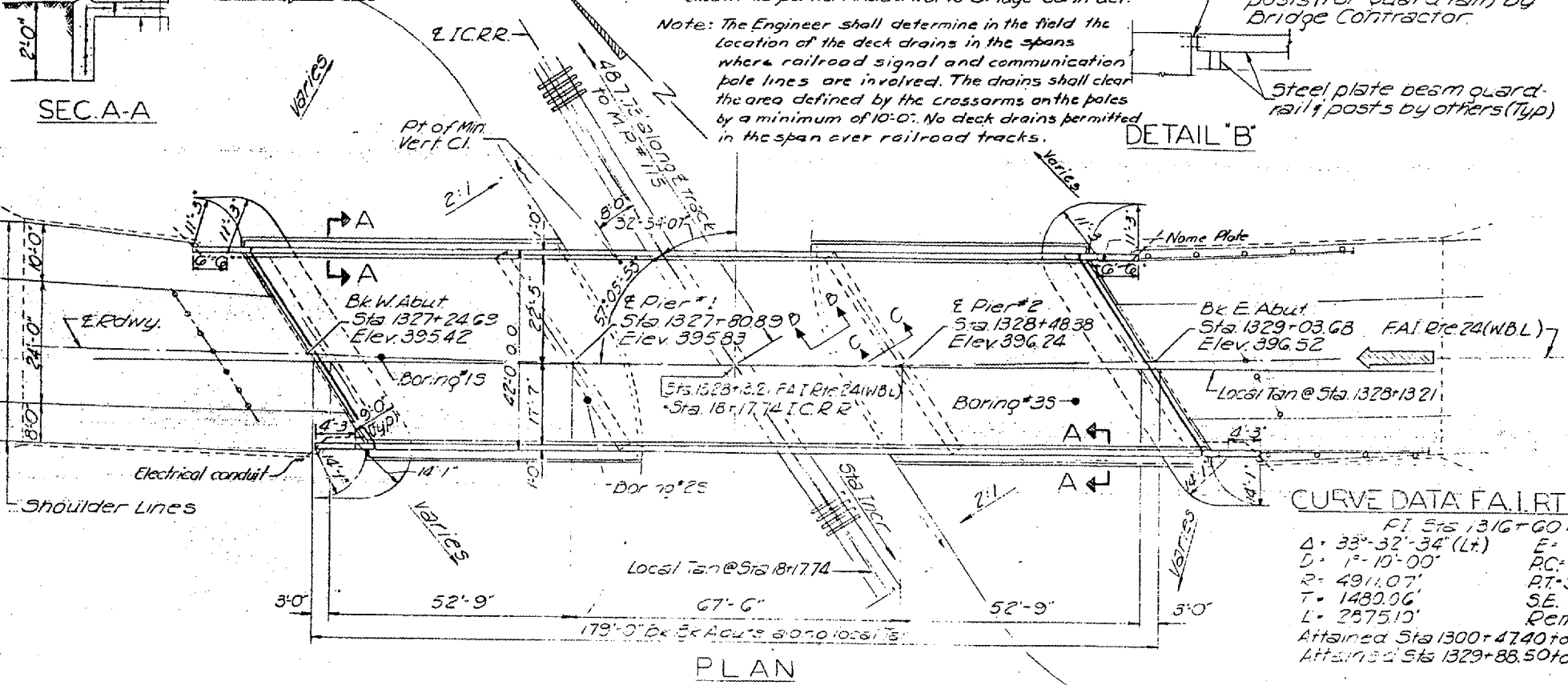


**SEC. A-A**

**SEC. B-B**

**SEC. AT ABUT.**

**SEC. C-C**



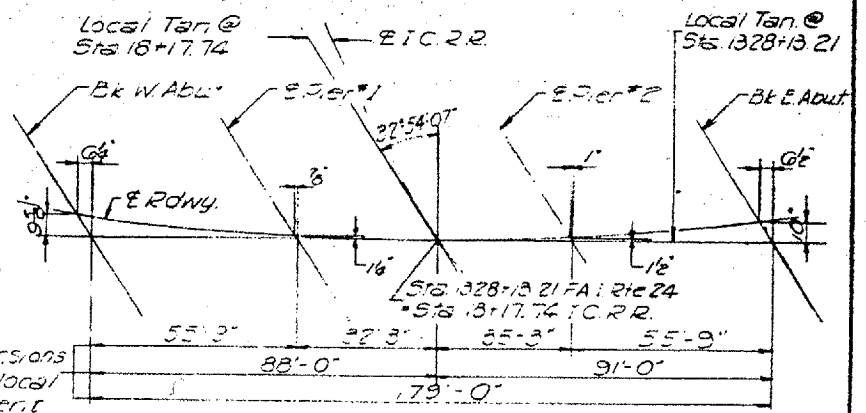
**PLAN**

**CURVE DATA FAI RTE 24(WBL)**

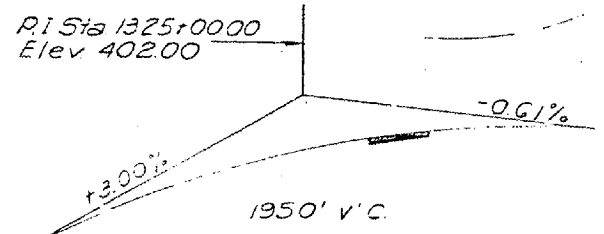
PI Sta 1316+60.46  
 $\Delta = 33^\circ-32'-34"$  (Lt) E = 218.18  
 $D = 1^\circ-10'-00"$  RC = Sta 1301+80.40  
 $R = 4911.07'$  RT = Sta 1330+55.30  
 $T = 1482.06'$  SE = 0.033 P/Ft  
 $L = 2875.10'$  Remove Crown  
 Attained Sta 1300+47.40 to Sta 1302+47.40  
 Attained Sta 1329+88.50 to Sta 1331+88.50

**CURVE DATA I.C.R.R.**

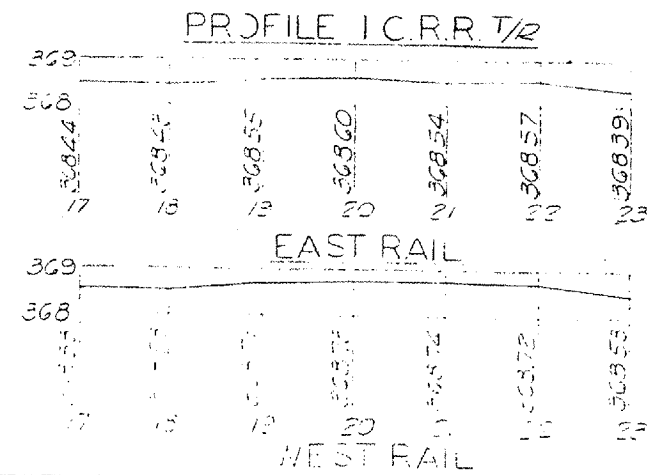
$\Delta = 23^\circ-46'$   
 $D = 0^\circ-40'$



**OFFSET DIAGRAM**

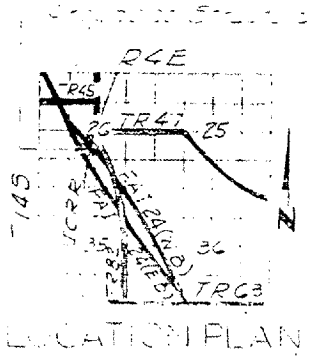


**PROFILE FAI RTE 24 WEST BOUND LANE**



**DESIGN STRESSES**

$f_c = 1470$  psi (5.0 ksi)  
 $f_s = 20,000$  psi (29.0 ksi)  
 $f_e = 20,000$  psi (29.0 ksi)  
 $V_c = 75$  psi (5.25 ksi)  
 $n = 10$   
 Allow 4 Def. 1/200, 1/300, 1/400, 1/500



**LOCATION PLAN**

**GENERAL PLAN ELEVATION FAI RTE 24(WBL) OVER I.C.R.P.**

FOR INFORMATION ONLY:

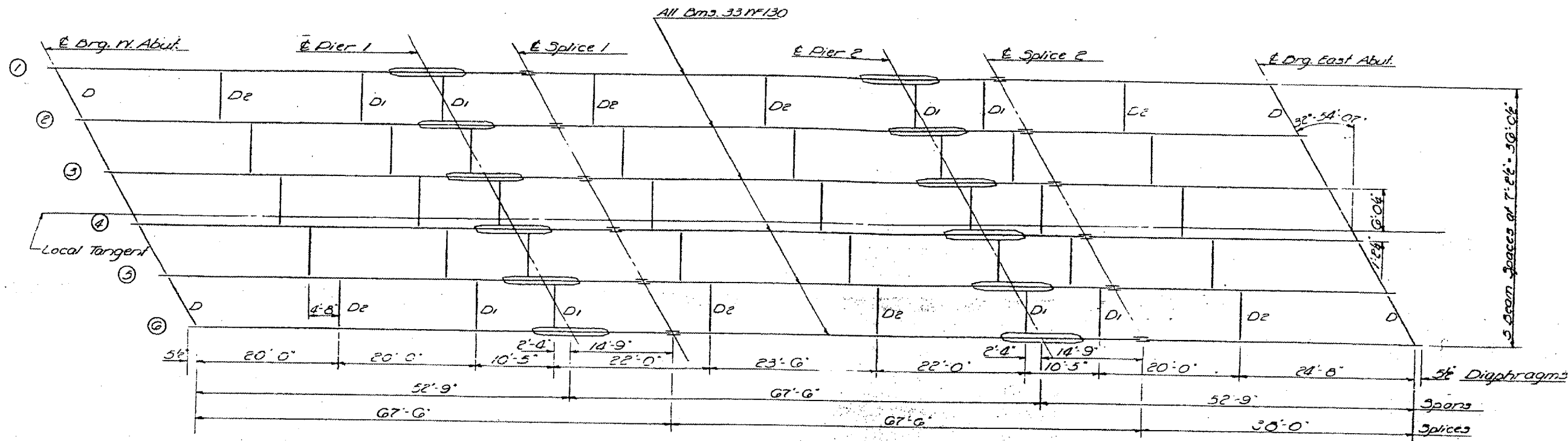
BRIDGE NO. 1 STRUCTURE 064-0020

DESIGNED	H. J. S. C.	EXAMINED	SEPT 30 1968
CHECKED	J. Whiteman	PASSED	
DRAWN	J. S. C.	APPROVED	
CHECKED	J. S. C.		

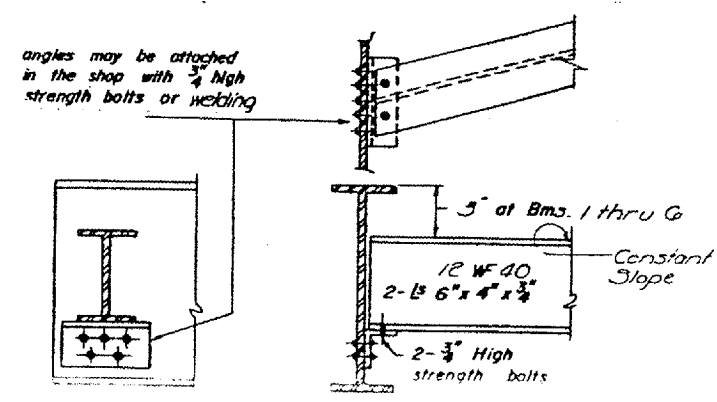
STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

CONTRACT NO.: 98882  
ROUTE: VARIOUS  
COUNTY: VARIOUS  
SECTION: D-9 CONTRACT MAINTENANCE  
SHEET NO.: 11 OF 43

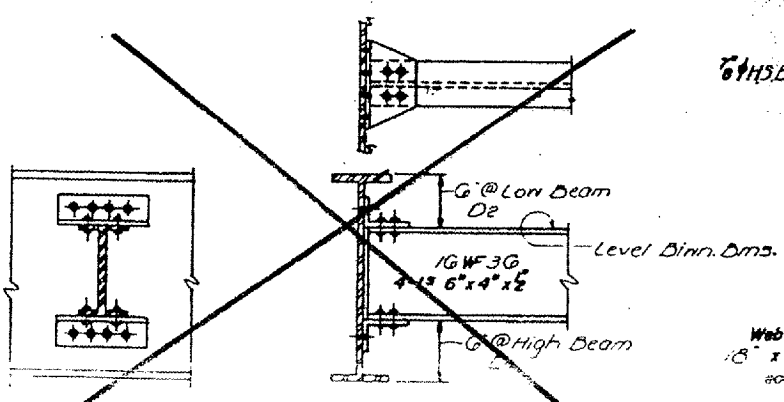
NO.	DATE	BY	REVISION
1	11-24	GA-248	MASSAC 79 40



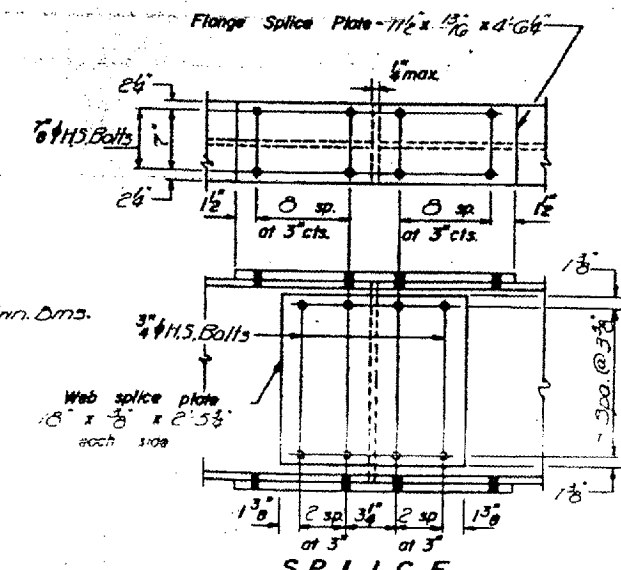
PLAN



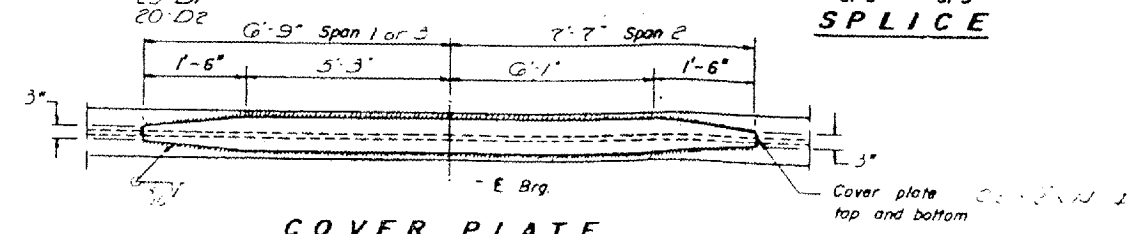
DIAPHRAGM D  
10 Required



DIAPHRAGM D1 & D2  
Required 20-D1, 20-D2



SPLICE



COVER PLATE

ELEVATION TOP OF DE

Location	Beam 1	2	3	4	5	6
E Brg. W. Abut.	394.003	394.356	394.629	394.901	395.173	395.444
E Pier 1	394.400	394.673	394.946	395.218	395.490	395.761
E Splice 1	394.406	394.759	395.032	395.304	395.576	395.847
E Pier 2	394.779	395.052	395.325	395.597	395.869	396.140
E Splice 2	394.861	395.134	395.407	395.679	395.951	396.222
E Brg. E Abut.	395.31	395.604	395.877	396.149	396.421	396.692

DESIGNED *Heng Lee*  
CHECKED *Sam E. Johnson*  
DRAWN *J. Schneller*  
CHECKED *H.W. SFM*

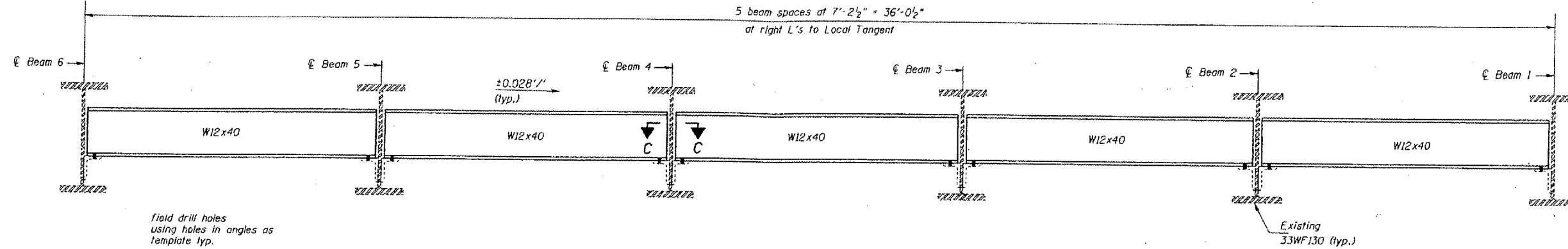
EXAMINED *SEPT 30 1968*  
PASSED  
APPROVED

FOR INFORMATION ONLY:  
BRIDGE NO. 1 STRUCTURE 064-0020

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

ROUTE NO.	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 24	MASSAC	234	158

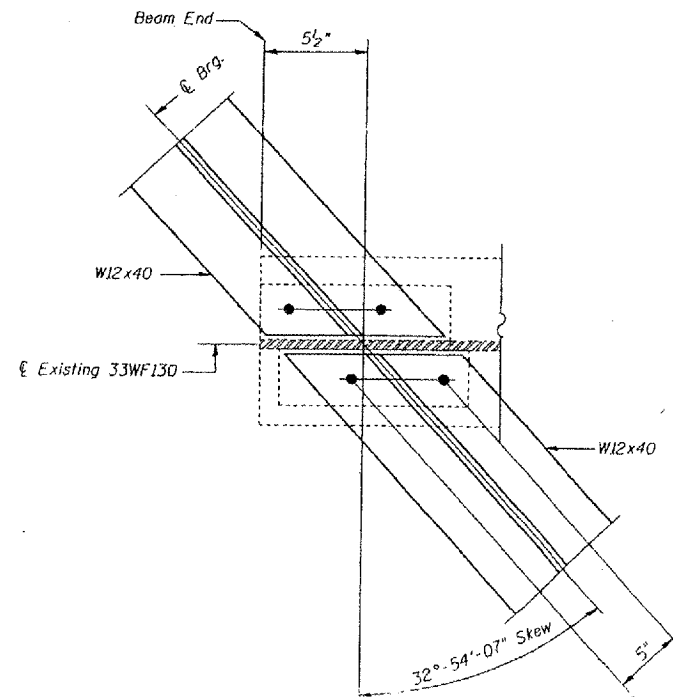
64(1.2.2-1.3-1.3)RS-1 BSMART FY2002-2



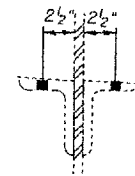
field drill holes  
 using holes in angles as  
 template typ.

DIAPHRAGM REPLACEMENT AT ABUTMENTS

Required: 10 - W12 x 40 x 8'-5 3/4" long



SECTION C-C



CLIP ANGLES

Note: 5/16"  $\phi$  Holes for new 3/4" H.S. Bolts shall be used for all diaphragm connections. Two hardened washers shall be required at diaphragm connections. Existing angles are welded to the web and are to be reused

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

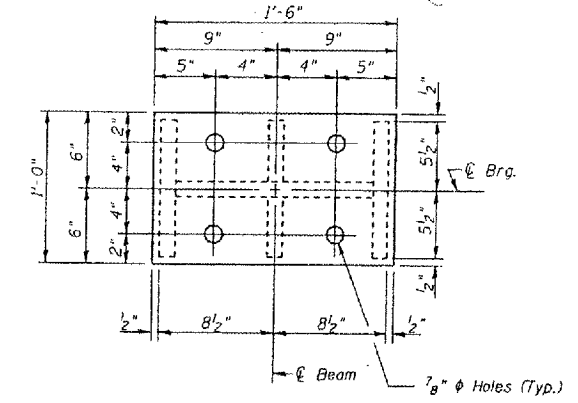
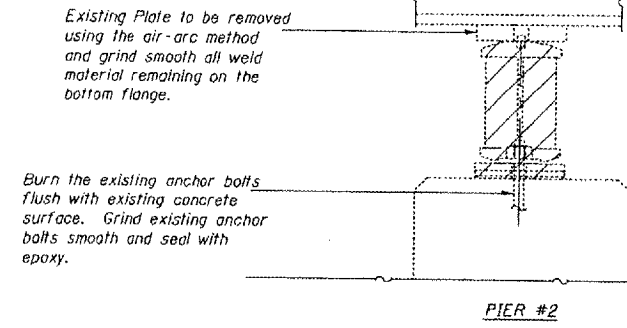
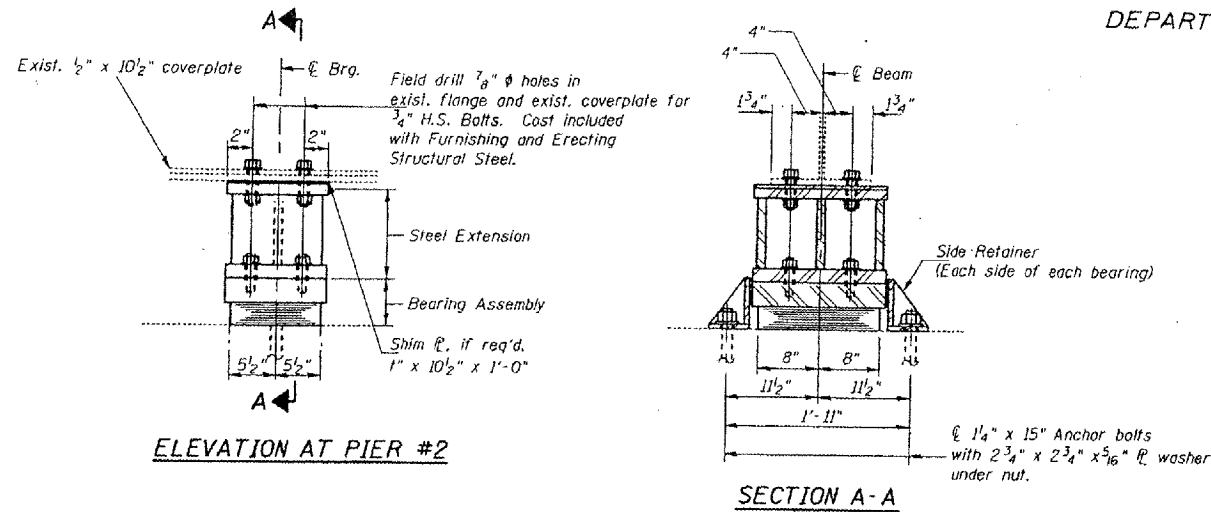
FOR INFORMATION ONLY:

BRIDGE NO. 1 STRUCTURE  
 064-0020

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

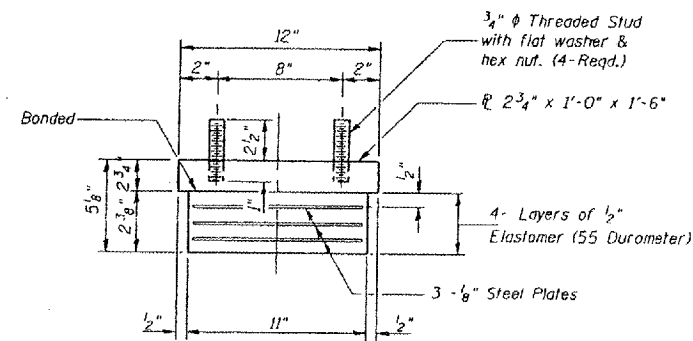
ROUTE NO.	SECTION	COUNTY	POST MILE	SHEET NO.
F.A.I. 24		MASSAC	234	161
SHEETS				

PER. ROAD DIST. NO. 1  
 PLANED FOR AID PROJECT:  
 \* 64(1.2-1.3-1.3RS-1) BSMART FY2002-2



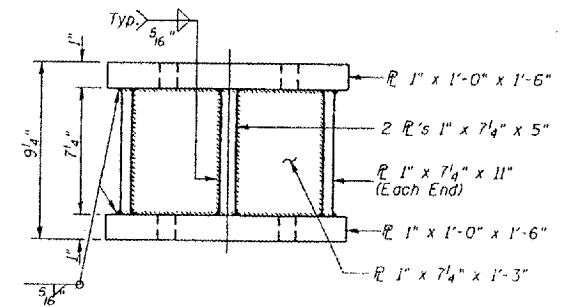
**TYPE I ELASTOMERIC EXP. BRG.**

Notes: See sheet 172 for Anchor Bolt installation.



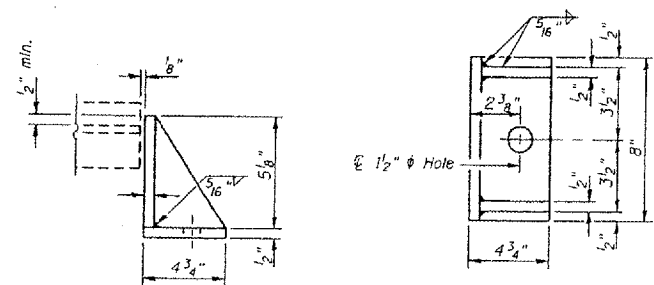
**GIRDER REACTIONS**

R <sub>L</sub>	(K)	76.70
R <sub>R</sub>	(K)	47.10
Imp.	(K)	14.13
R (Total)	(K)	137.93



**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. Weight included with Furnishing and Erecting Structural Steel.

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

Notes:  
 Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. The minimum jack capacity required is 85 Tons. New steel extensions, side retainers, connection bolts, anchor bolts and any shim are included in "Furnishing and Erecting Structural Steel."

**BILL OF MATERIAL**

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	6
Jack and Remove Existing Bearings	Each	6

FOR INFORMATION ONLY:

BRIDGE NO. 1 STRUCTURE 064-0020

Thu Jul 5 10:34:20 AM 2002  
 C:\PROJECTS\ESPOND\ASPH\00000001.dwg LVAH-63

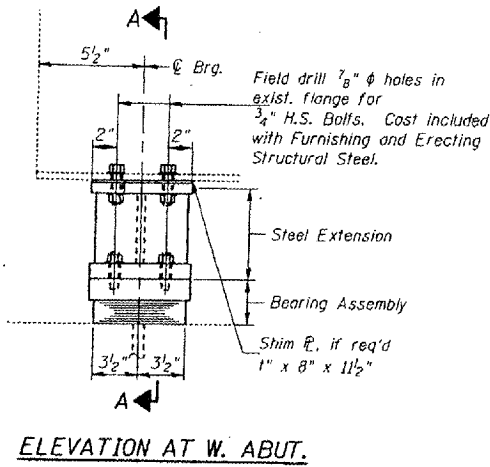




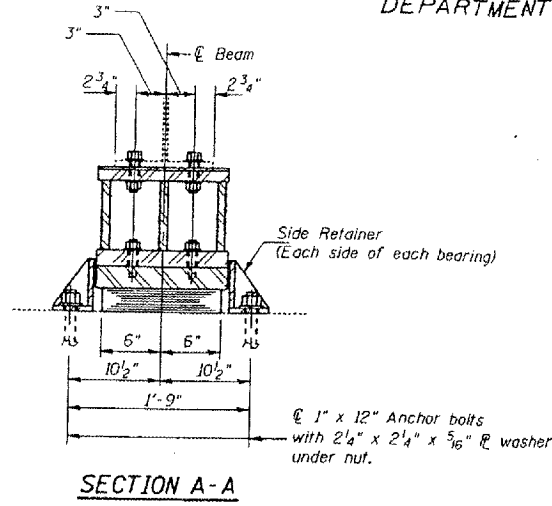
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

DATE	SECTION	UNIT	AMOUNT	SHEET NO.
F.A.I. 24		MASSAC	234	159
PER. HOUR RATE	ALIGNED	PER. HOUR RATE		

6411.2-1.3-L3RS-1 BSMART FY2002-2

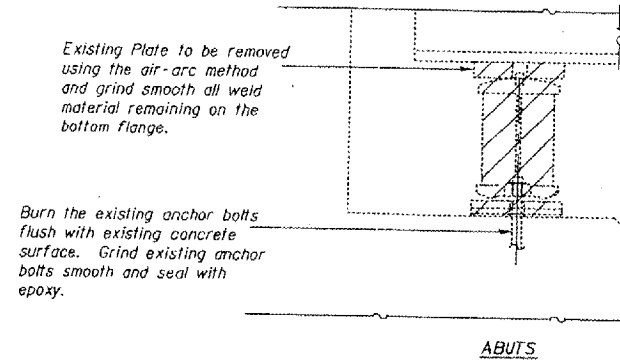


ELEVATION AT W. ABUT.

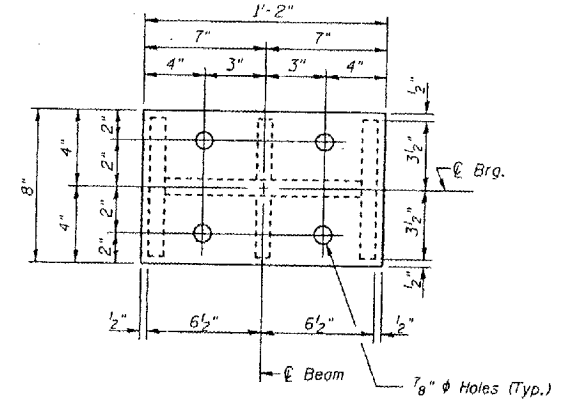


SECTION A-A

Notes: See sheet 172 for Anchor Bolt installation.

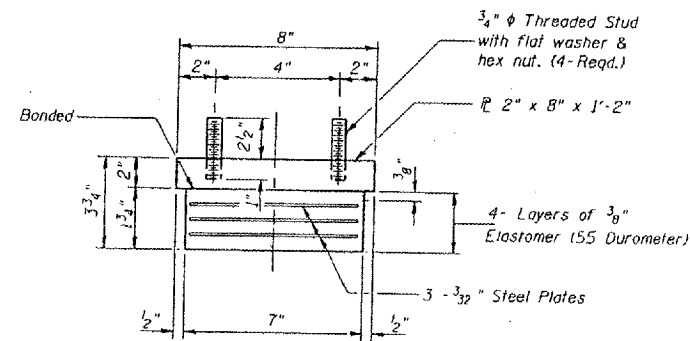


EXISTING BEARING REMOVAL DETAIL  
 Cost is included with Jack and Remove Existing Bearings



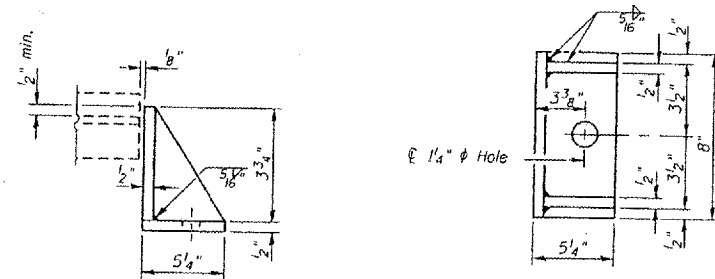
PLAN-TOP & BOTTOM PLATE

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. Weight included with Furnishing and Erecting Structural Steel.

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

GIRDER REACTIONS

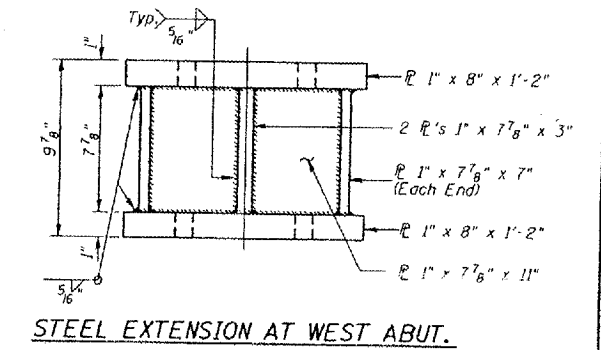
R $\phi$	(K)	22.60
R $\downarrow$	(K)	37.30
Imp.	(K)	11.19
R (Total)	(K)	71.09

Notes:

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. The minimum jack capacity required is 35 Tons.

New steel extensions, side retainers, connection bolts, any shim and anchor bolts are included in "Furnishing and Erecting Structural Steel".

Hatched areas indicate Jack and Remove Existing Bearings. Existing plate beam reaction and new plate beam reaction shall be coordinated with drilling holes in bottom flange for bearing attachment, if necessary, to provide clearance for the drill.



STEEL EXTENSION AT WEST ABUT.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	6
Jack and Remove Existing Bearings	Each	6

WEST ABUTMENT

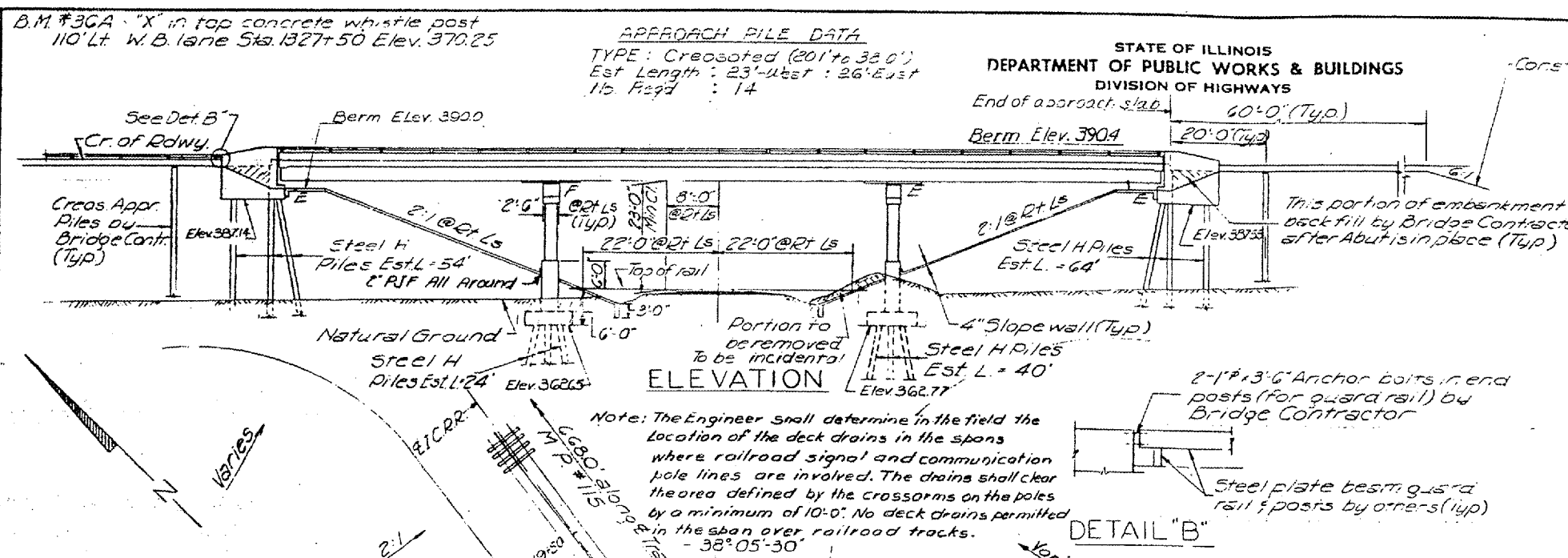
FOR INFORMATION ONLY:

BRIDGE NO. 1 STRUCTURE 064-0020



DATE	NO.	BY	REVISION
10-29-64	1	MASSAC	79
11-11-64	2		22
12-24-64	3		119

SHEET NO. 17  
 OF SHEETS 28



I.C.R.R.  
 BUILT 197 BY  
 STATE OF ILLINOIS  
 FAI Rt. 24 ~ SEC. 64-2VB  
 FA PROJ. 16-24-1 (19)  
 LOADING HS20 4 ALT.  
 NAME PLATE  
 See Std 2113

**GENERAL NOTES**

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

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

Calculated weight of Structural Steel = 188,220 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 to the bottom flange of beams or girders nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.

Anchor bolts shall be set before bolting diaphragms over supports.

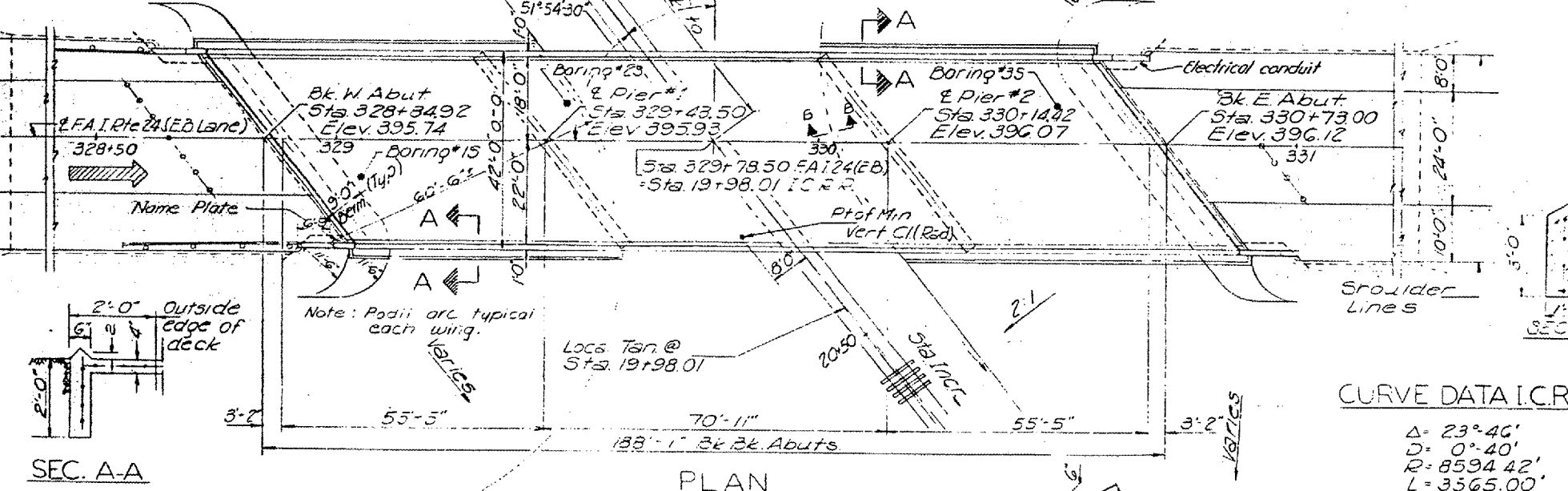
Slope wall shall be reinforced with welded wire fabric 6" x 6" mesh, weighing 58# per 100 sq. ft.

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 2 Steel H test piles in permanent locations, one of Pier 1 and one of the East Abutment, as directed by the Engineer before ordering the remainder of piles.

Steel H Piles shall be driven to refusal.



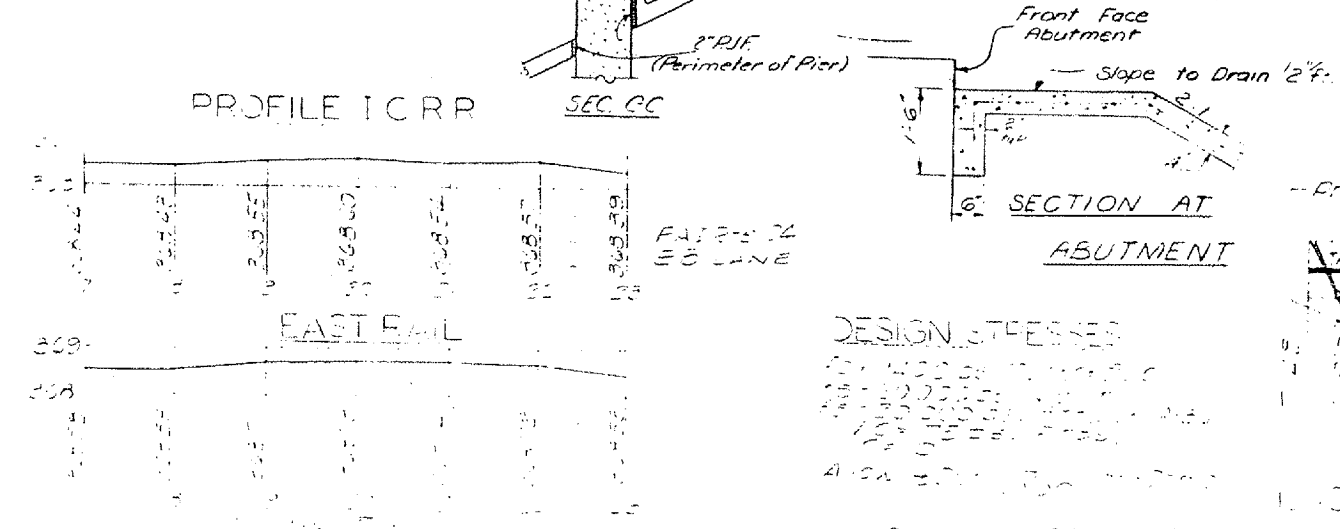
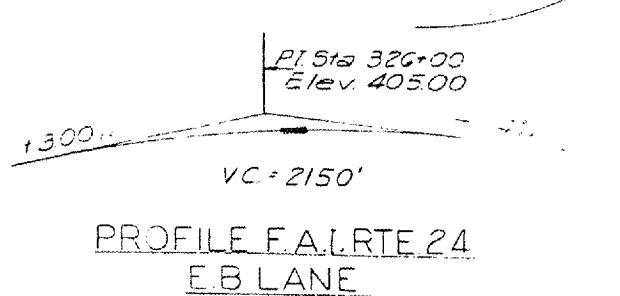
**CURVE DATA I.C.R.R.**

Δ = 23° 46'  
 D = 0° 40'  
 R = 8594.42'  
 L = 3565.00'

**BILL OF MATERIAL E.B.L. STRUCTURE**

Item	Unit	Super	Sub	Total
Class A Excavation for Structures	Cu Yds	—	—	233
Class X Concrete	Cu Yds	225.9	27.7	504.6
Structural Steel	L.S.	1/2	—	1/2
Aluminum Fencing	Lin Ft	368	—	368
Reinforcement Bars	Lbs.	66,975	28,950	95,925
Steel Piles (B.B.P.36)	Lin Ft	—	2586	2586
Test Piles Steel (B.B.P.36)	Each	—	2	2
Name Plate	Each	—	—	1
Slope wall "4"	Sq Yds	—	—	770
Protective Coat	Sq Yds	970	—	970
Bridge Seat Sealant	—	—	—	6
Creasoted Piles (201 to 380')	Lin Ft	—	—	343

\* Class A Excavation includes excavation for sidewalks.  
 \*\* 25% to be used for east abutment.  
 \*\*\* See sheet #36 for Bill of Material W.P.L. Structure



DESIGNED: *Sam E. Molise*  
 CHECKED: *[Signature]*  
 DRAWN: *SM*  
 CHECKED: *[Signature]*

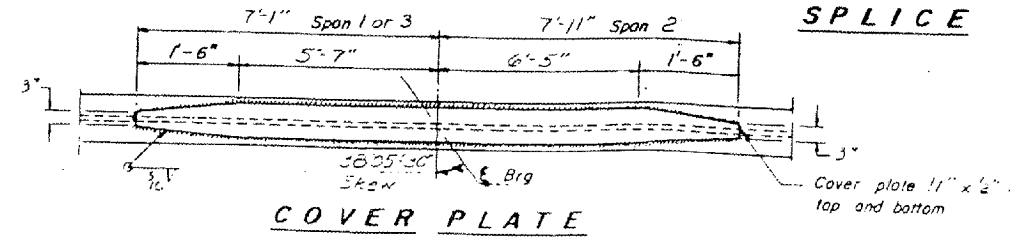
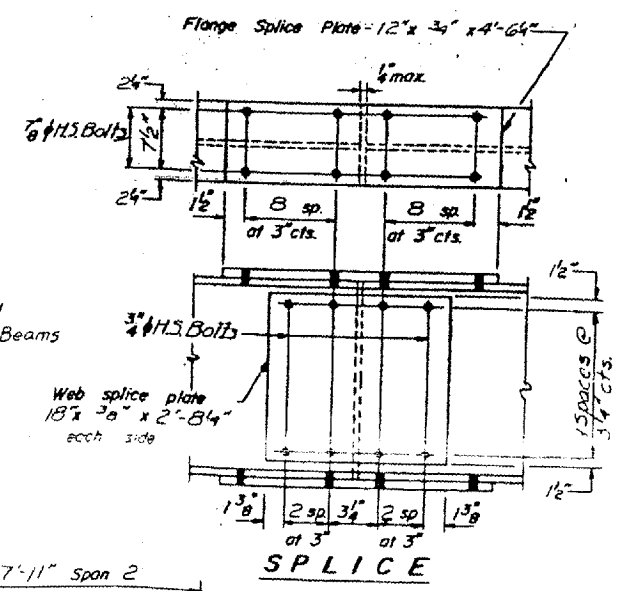
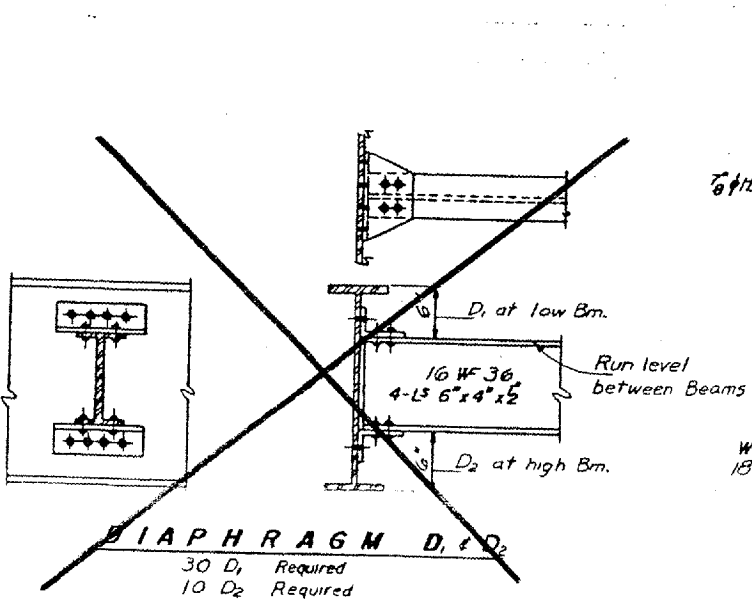
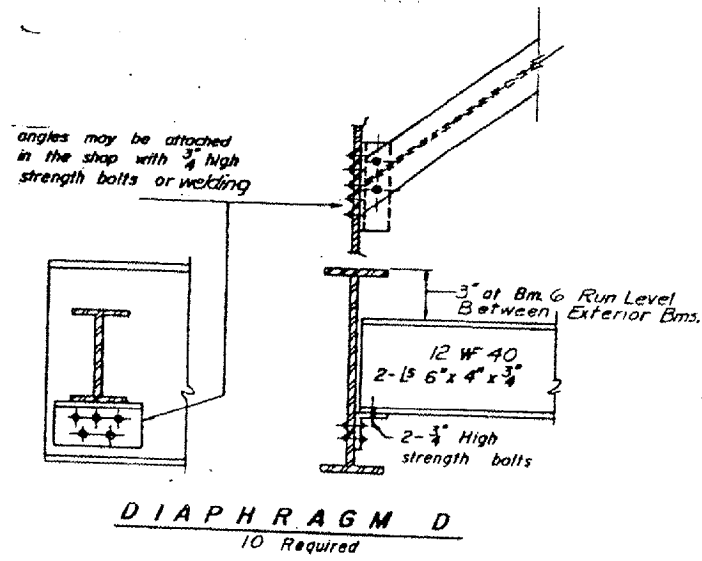
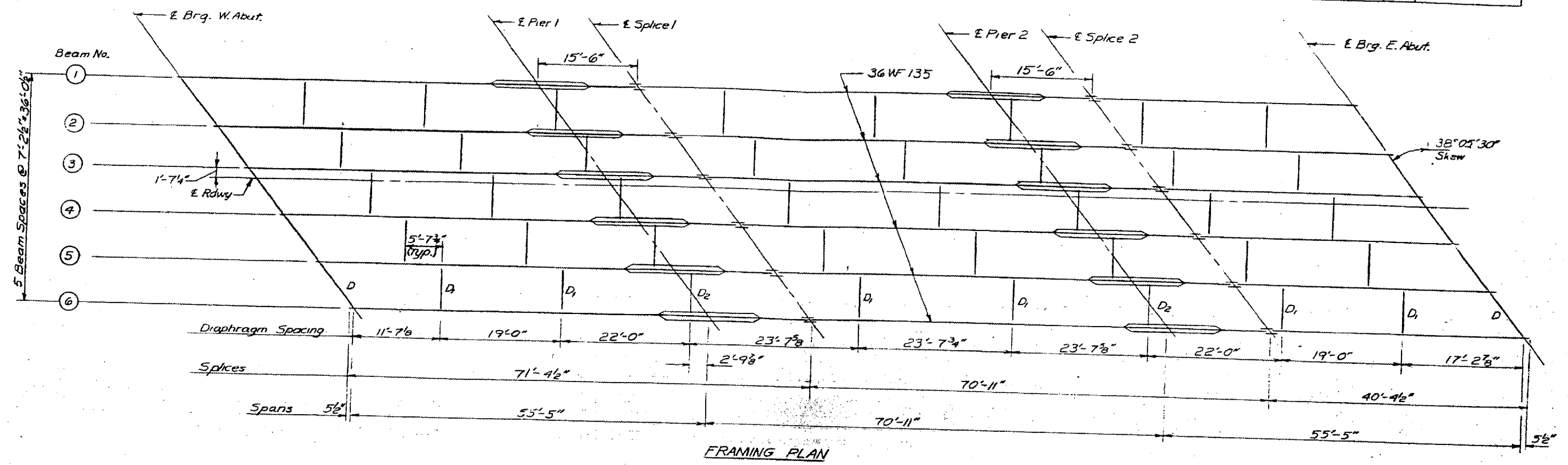
EXAMINED: *[Signature]*  
 PASSED: *[Signature]*  
 APPROVED: *[Signature]*

SEP-30 1968

FOR INFORMATION ONLY:  
 BRIDGE NO. 2 STRUCTURE 064-0021

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

PROJECT NO.	DATE	BY	CHECKED
246+218	MASSAC	79	25
SHEET NO.		// SHEETS	



**STRESS TABLE**  
**INTERIOR BEAMS**

	MOMENTS			REACTIONS	
	1 sp. 1 or 3	Pier 1 or 2	Sp. 2	Abuts.	Piers
D.L.	233.4	505.5	238.3	136.2	482.9
L.L.	379.1	346.1	386.9	114.6	148.7
Imp.	105.0	92.1	98.6		
Total	717.5	943.7	723.8	250.8	631.6

Moments are in FT-Kips  
 Reactions and Shears are in Kips

**TOP OF BEAM ELEVATIONS**

Beam No.	Pier 1	Splice 1	Pier 2	Splice 2	E. Brq. E.A.
1	394.809	394.933	394.966	395.092	395.217
2	394.945	395.069	395.104	395.228	395.353
3	395.059	395.183	395.218	395.342	395.467
4	394.998	395.122	395.157	395.281	395.316
5	394.882	395.006	395.041	395.165	395.200
6	394.732	394.856	394.891	395.015	395.140

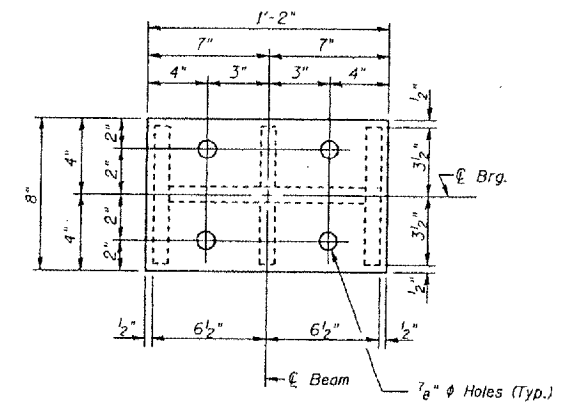
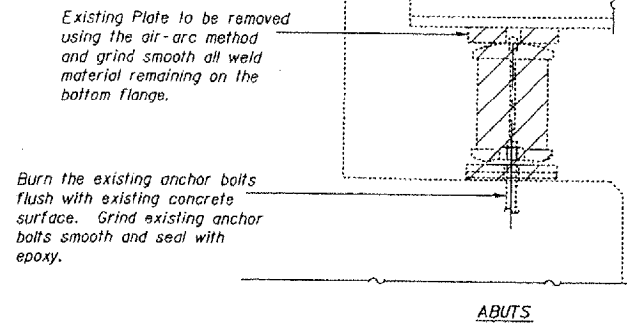
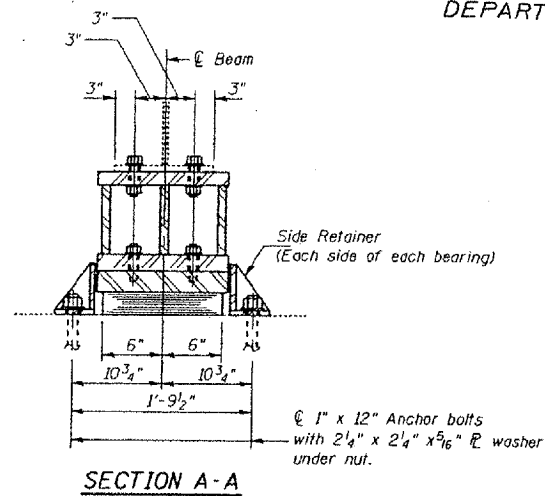
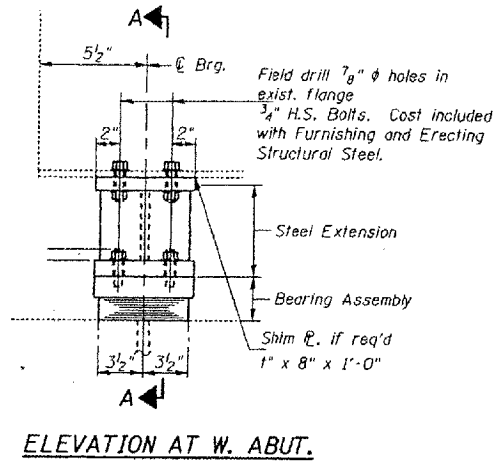
FOR INFORMATION ONLY:  
 BRIDGE NO. 2 STRUCTURE 064-0021

DESIGNED *J. Schneller*  
 CHECKED *J. Schneller*  
 DRAWN *J. Schneller*  
 EXAMINED *S. B. 30 1965*  
 PASSED  
 APPROVED



STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
F.A.I. 24		MASSAC	234	167
FED. ROAD DIST. NO. 1				
ELIMD				
FED. AID PROJECT				
* 6412.2-L3-1.31RS-1 BSMART FY2002-2				



ELEVATION AT W. ABUT.

SECTION A-A

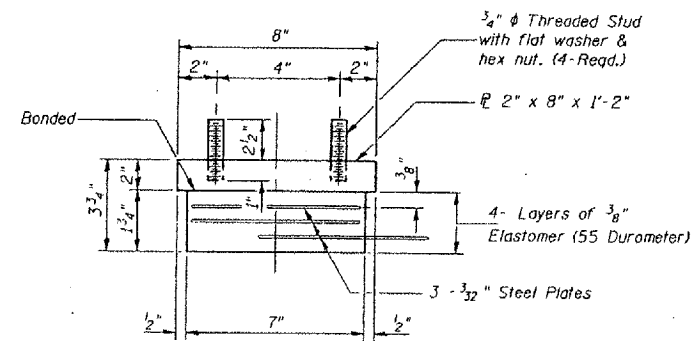
EXISTING BEARING REMOVAL DETAIL

Cost shall be included in the cost of Jack & Remove Existing Bearing.

PLAN-TOP & BOTTOM PLATE

TYPE I ELASTOMERIC EXP. BRG.

Notes: See sheet 172 for Anchor Bolt installation.

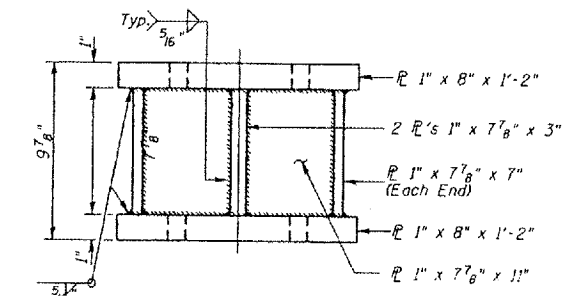


BEARING ASSEMBLY

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

GIRDER REACTIONS

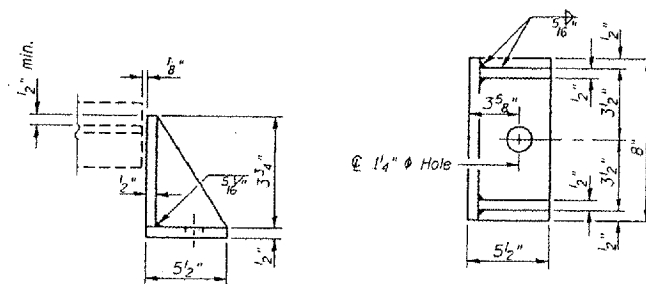
RP	(K)	24.00
RL	(K)	37.7
Imp.	(K)	11.31
R (Total)	(K)	73.01



STEEL EXTENSION AT WEST ABUT.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	6
Jack and Remove Existing Bearings	Each	6



SIDE RETAINER

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

Notes:

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. The minimum jack capacity required is 37 Tons.

New steel extensions, side retainers, connection bolts, any shim and anchor bolts are included in "Furnishing and Erecting Structural Steel".

Hatched areas indicate Jack and Remove Existing Bearings. Existing diaphragm, cutout and bow diaphragm erection shall be coordinated with drilling holes in bottom flange for bearing attachment, if necessary, to provide clearance for the drill.

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

WEST ABUTMENT

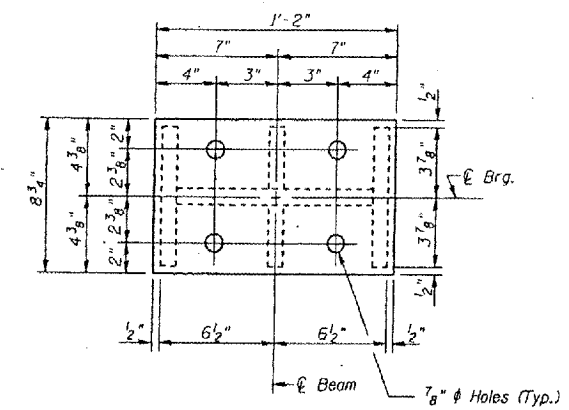
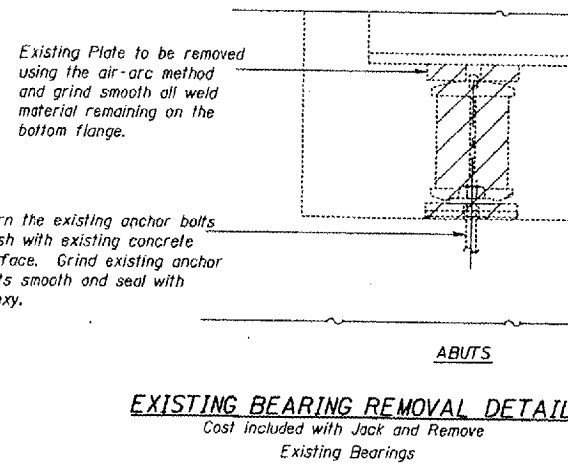
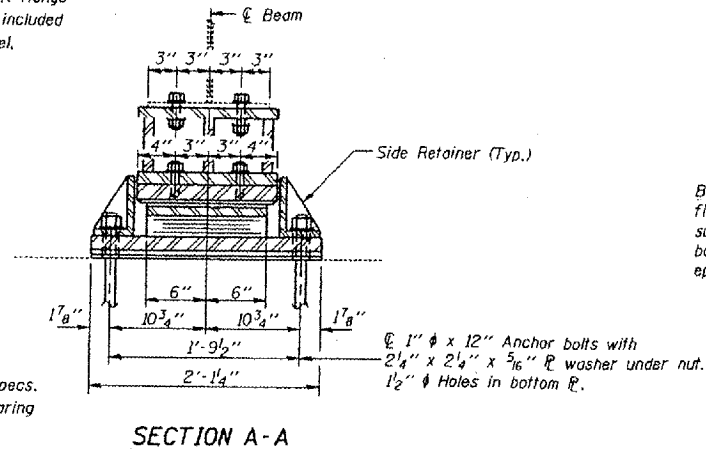
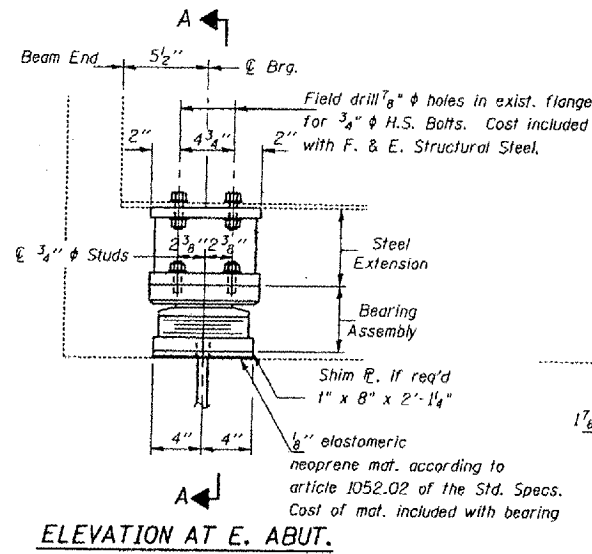
FOR INFORMATION ONLY:

BRIDGE NO. 2 STRUCTURE 064-0021

DATE	BY	CHKD	APP'D	SHEET NO.
F.A.L. 24	MASAC	234	168	SHEETS

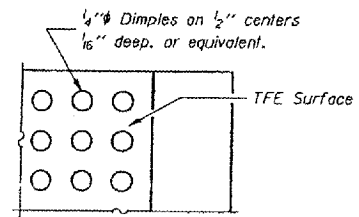
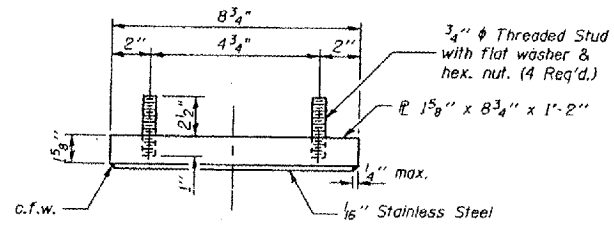
64(1.2.2-1.3-L3RS-1) BSMART FY2002-2

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION



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

Notes: See sheet 172 for Anchor Bolt Installation.

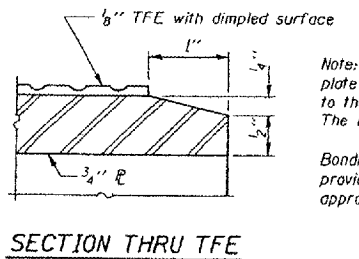
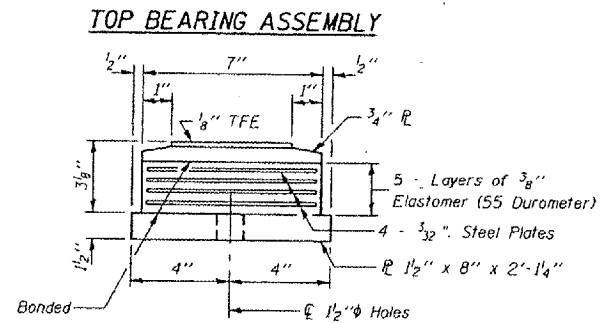
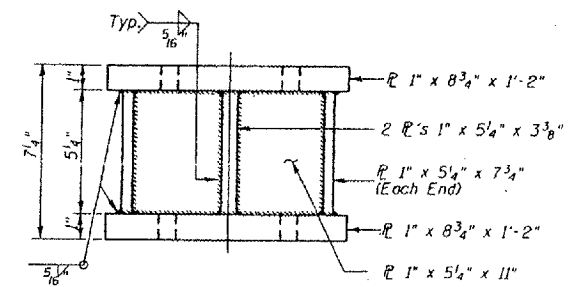


Notes:

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. The minimum jack capacity required is 37 Tons.

New steel extensions, side retainers, connection bolts, any shim and anchor bolts are included in "Furnishing and Erecting Structural Steel".

Hatched areas indicate Jack and Remove Existing Bearings. Existing diaphragm removal and new diaphragm erection shall be coordinated with drilling holes in bottom flange for bearing attachment, if necessary, to provide clearance for the drill.



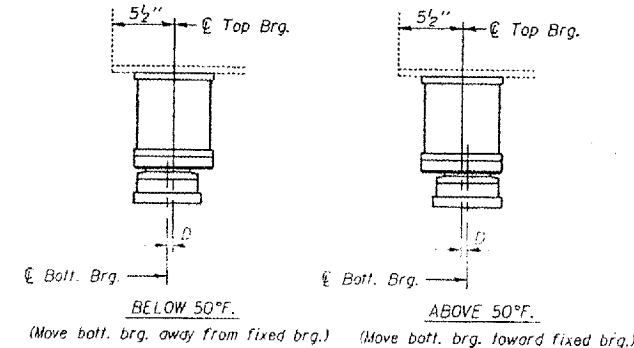
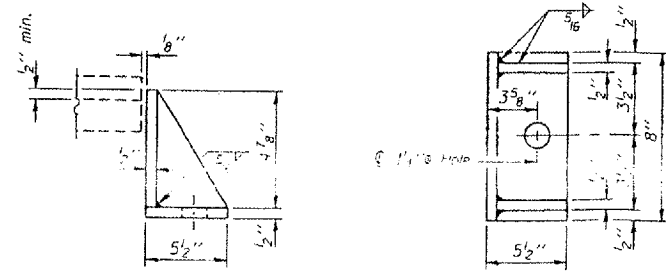
Note: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

**GIRDER REACTIONS**

RP	(K)	24.00
RE	(K)	37.70
Imp.	(K)	11.31
R (Total)	(K)	73.01

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH



**BILL OF MATERIAL**

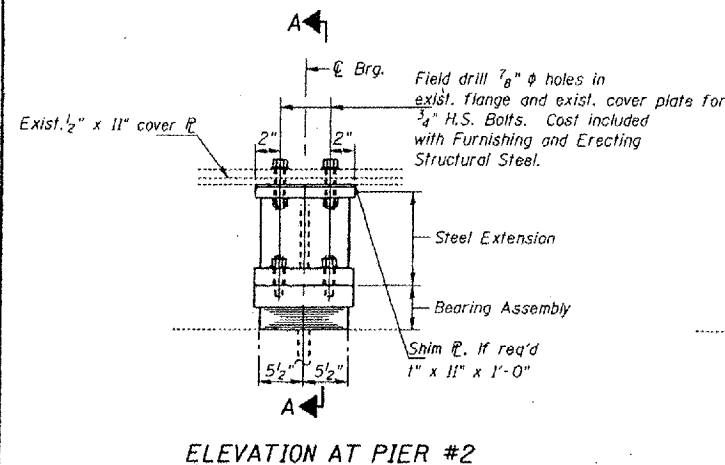
Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	6
Jack and Remove Existing Bearings	Each	6

FOR INFORMATION ONLY:  
 BRIDGE NO. 2 STRUCTURE 064-0021

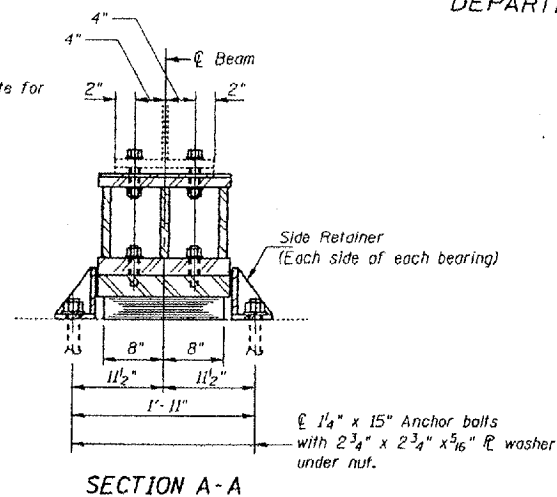
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

DATE	BY	CHKD.	APP'D.	SHEET NO.
F.A.I. 24		MASSAC	234	169

PER. PROJ. DIST. NO. 1  
 ALIGNED PER. AIR PROJECT  
 # 5411.2.2-1.3-1.31RS-1 BSMART F72002-2



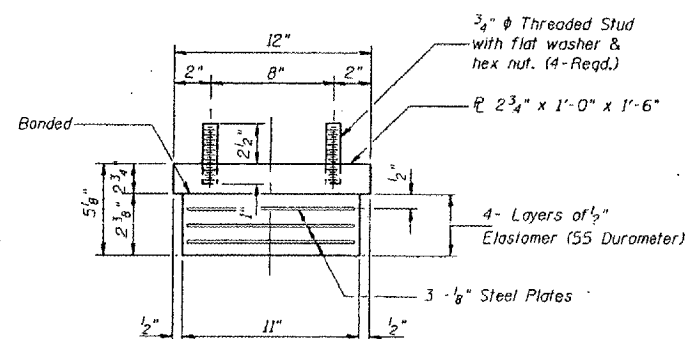
ELEVATION AT PIER #2



SECTION A-A

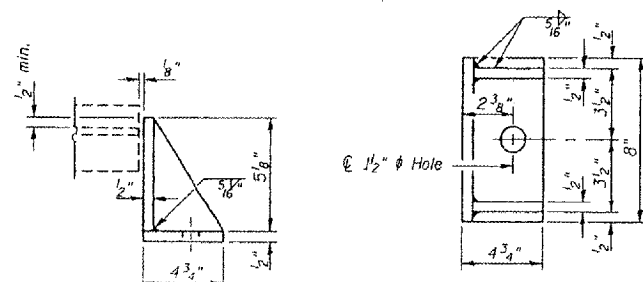
TYPE I ELASTOMERIC EXP. BRG.

Notes: See sheet 172 for Anchor Bolt installation.



BEARING ASSEMBLY

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



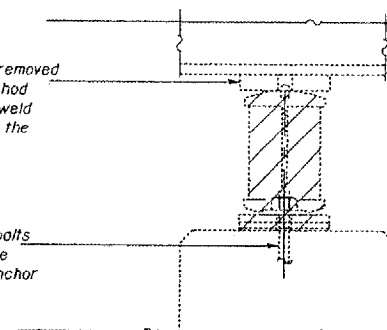
SIDE RETAINER

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

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

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

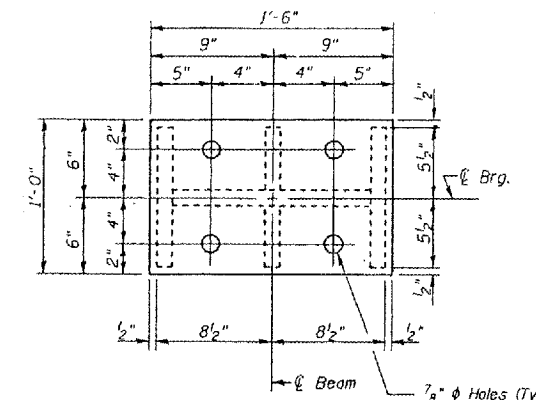
Burn the existing anchor bolts flush with existing concrete surface. Grind existing anchor bolts smooth and seal with epoxy.



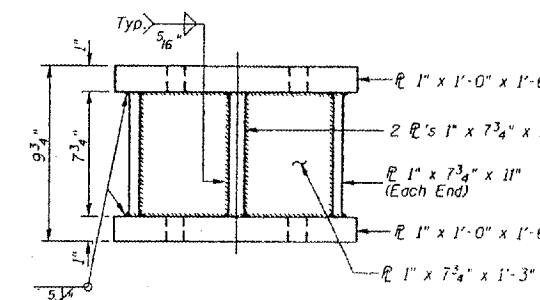
PIER #2

EXISTING BEARING REMOVAL DETAILS

Cost is included with Jack and Remove Existing Bearings



PLAN-TOP & BOTTOM PLATE



STEEL EXTENSION AT PIER #2

GIRDER REACTIONS

R <sub>L</sub>	(K)	81.10
R <sub>R</sub>	(K)	48.60
Imp.	(K)	14.58
R (Total)	(K)	144.28

Notes:

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. The minimum jack capacity required is 85 Tons.

New steel extensions, side retainers, connection bolts, any shim and anchor bolts are included in "Furnishing and Erecting Structural Steel".

BILL OF MATERIAL

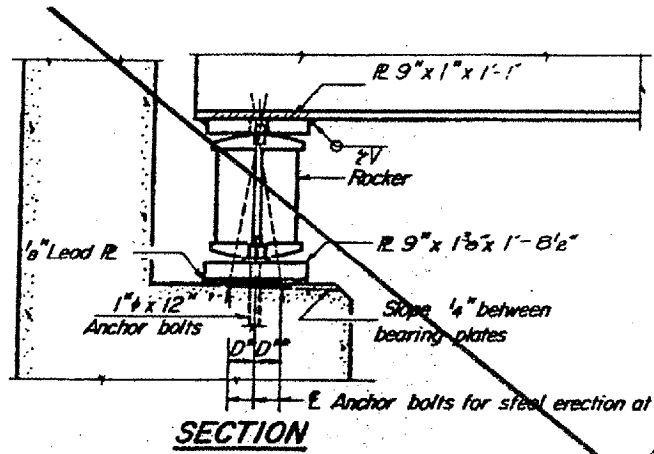
Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	6
Jack and Remove Existing Bearings	Each	6

FOR INFORMATION ONLY:

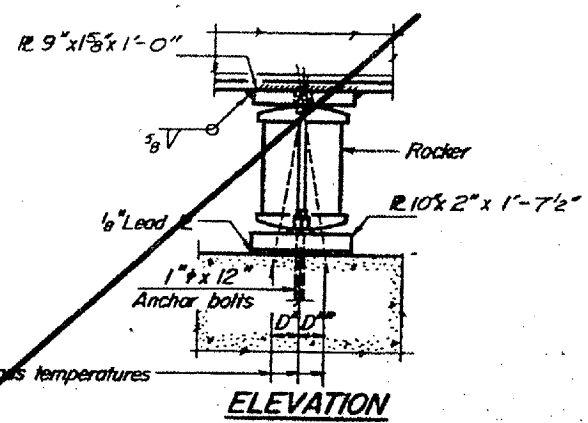
BRIDGE NO. 2 STRUCTURE 064-0021

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

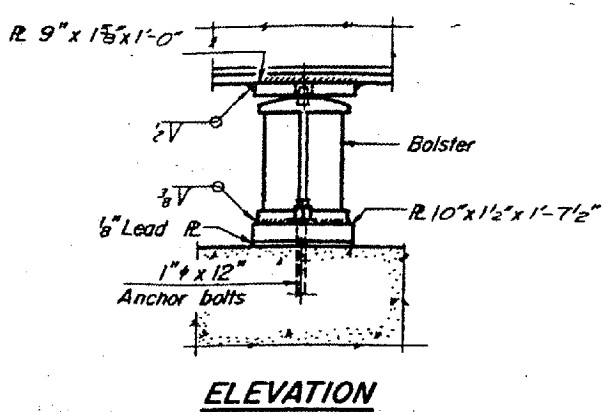
DATE	DESCRIPTION	QUANTITY	UNIT	AMOUNT
27	64-218	MASSAC	79	27
SHEET NO. 5				11 SHEETS



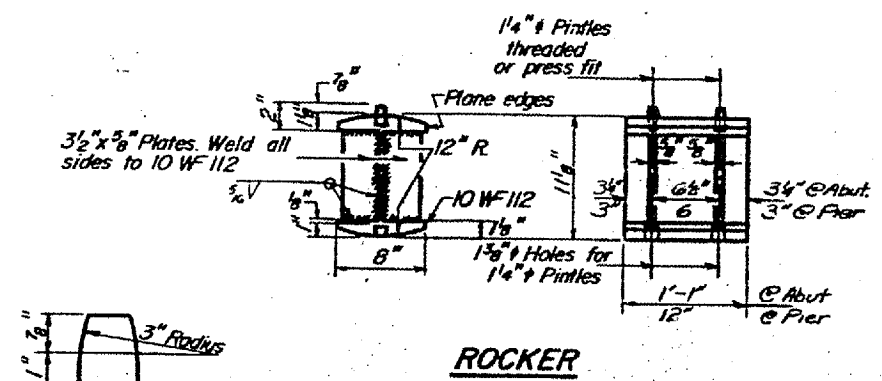
SECTION



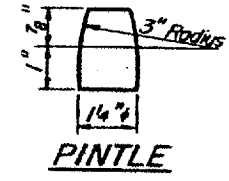
ELEVATION



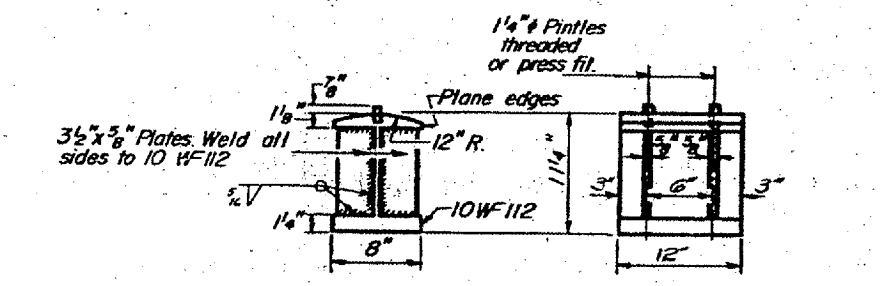
ELEVATION



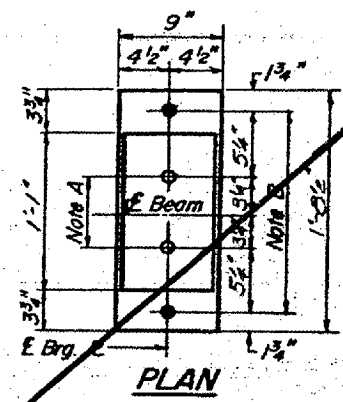
ROCKER



PINTLE

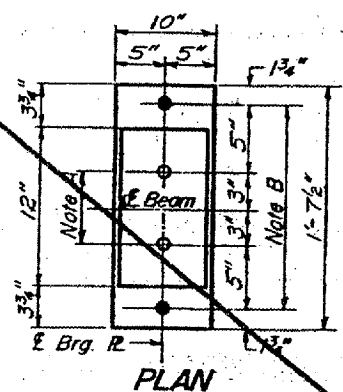


BOLSTER



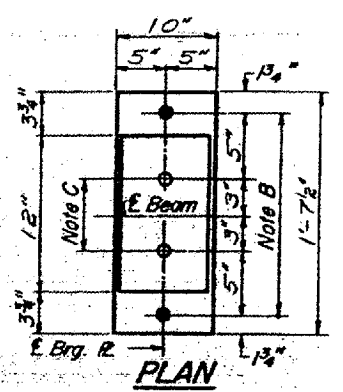
PLAN

AT ABUTMENT



PLAN

AT PIER 2



PLAN

AT PIER 1

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

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

**NOTE C**  
 1 3/8 inch Holes 1 inch deep in top R.  
 only for 1 1/4 inch pintles.

**NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRGS.**

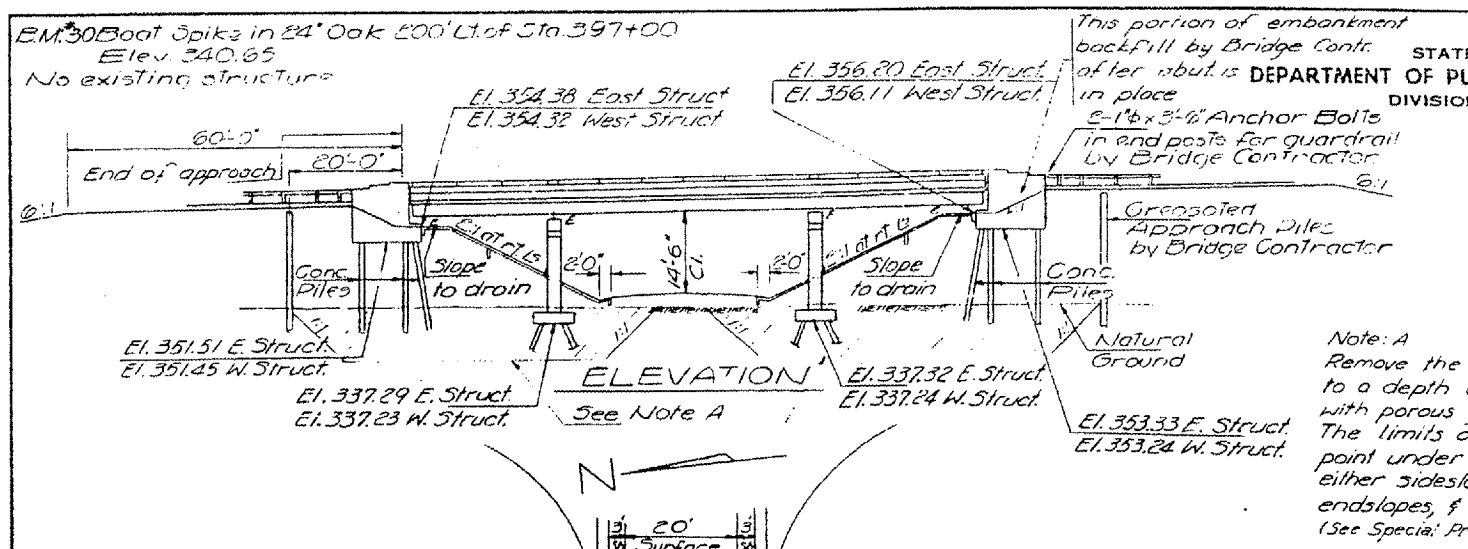
- a) D\* (Side of brg. away from fixed brg.)  
 $D^* = \frac{1}{8}$  inch per each 100' of expansion for every 15° fall below the normal temp. of 50°F.
- D\*\* (Side of brg. toward fixed brg.)  
 $D^{**} = \frac{1}{8}$  inch per each 100' of expansion for every 15° rise above the normal temp. of 50°F.
- 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**

DESIGNED <i>Sam Melner</i>	EXAMINED <i>Sept 30 1960</i>
CHECKED <i>H. J. ...</i>	PASSED
DRAWN <i>P.G. Barnett</i>	APPROVED
CHECKED <i>H.L.</i>	

FOR INFORMATION ONLY:  
 BRIDGE NO. 2 STRUCTURE 064-0021

ROUTE NO.	SECTION	SHEET NO.	NO. SHEETS
24-34R	MASSAC 44 13	24	19



CREOSOTED APPR. PILE DATA

No. Reqd	Length
6	18' N. Abut. E. Struct.
6	21' S. Abut. E. Struct.
6	22' N. Abut. W. Struct.
6	25' S. Abut. W. Struct.

**GENERAL NOTES**

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

Rivets 3/8" open holes 1/2", unless otherwise noted.

The exposed surfaces of the expansion guard 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.

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.

Anchor bolts shall be set before riveting diaphragms over supports.

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.

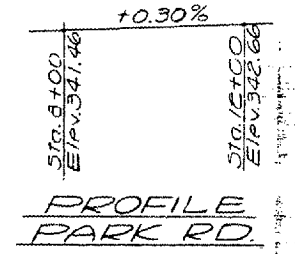
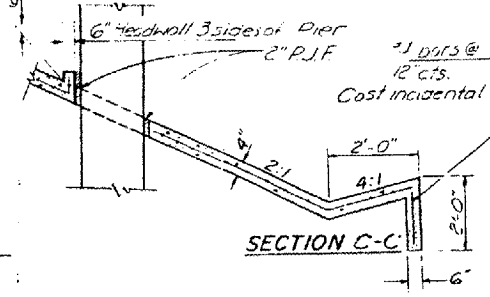
Slope wall shall be reinforced with welded wire fabric 6" x 6" mesh, weighing 58# per 100 sq. ft.

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

The Contractor shall drive one (1) concrete test pile in a permanent location @ the N. Abut. West Struct. & Pier 2 East Struct. as directed by the Engineer before ordering the remainder of piles.

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

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.



**CURVE DATA**

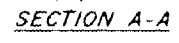
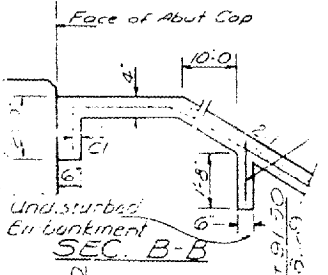
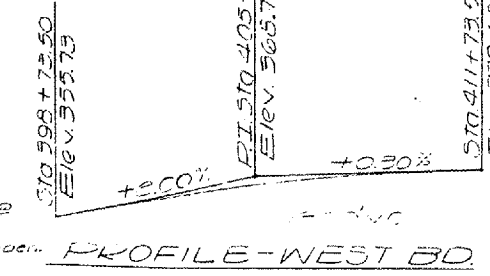
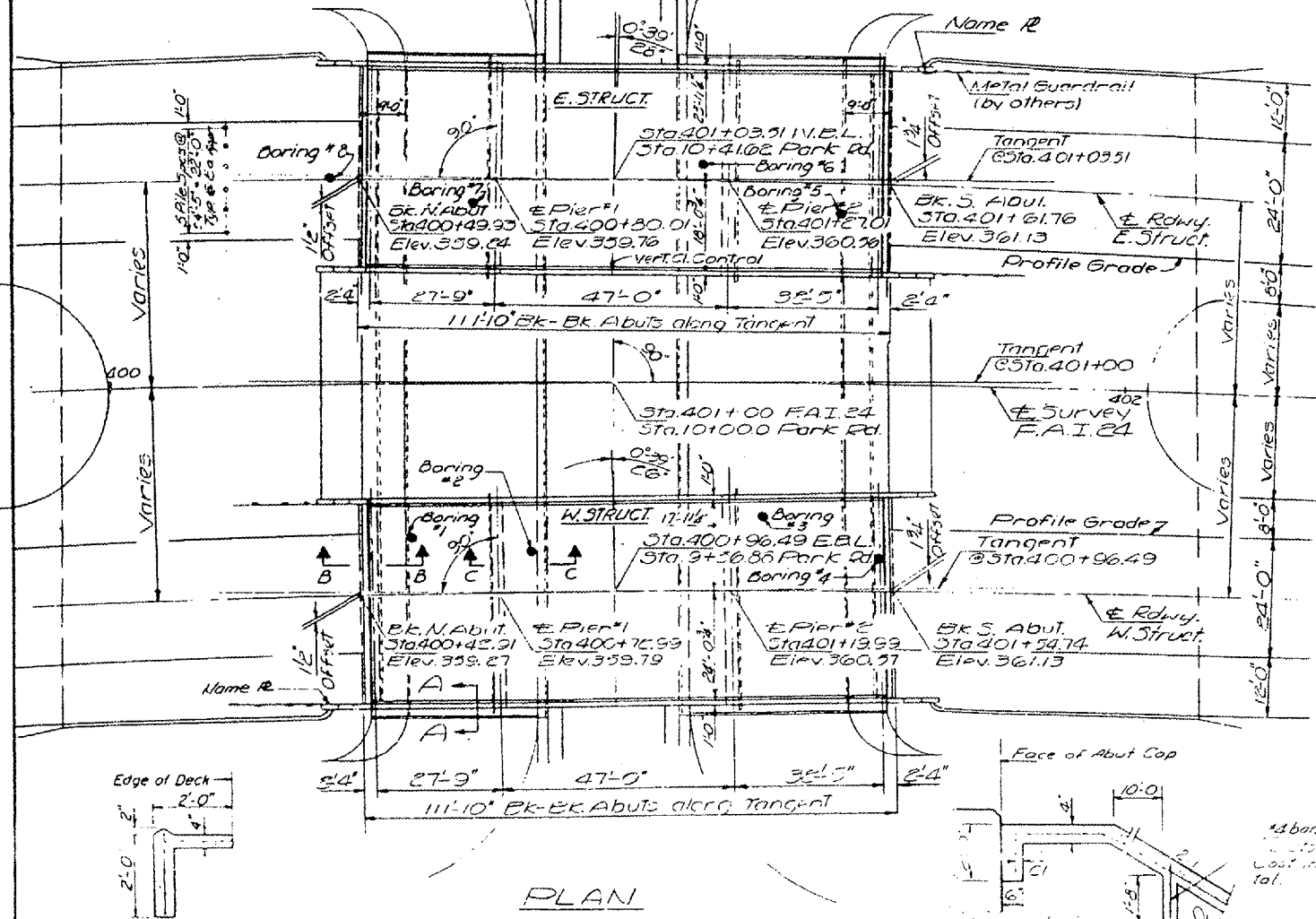
N. Ed. Lane P.I. Sta. 406+50.74  
 E. Ed. Lane P.I. Sta. 409+36.72  
 P.I. Sta. 408+08.73  
 $\Delta = 15^\circ - 28' - 39"$   
 $D = 0^\circ - 30'$   
 $R = 11,459.16'$   
 $L = 3,098.84'$   
 $T = 1,558.93'$   
 $E = 105.55'$   
 $SE = 0.01311$

STATION 401+00  
 BUILT 196 BY  
 STATE OF ILLINOIS  
 F.A.I. RT. 24 SEC. 64-3HR-2  
 F.A. PROJ 1-16-24-1(23)  
 LOADING H520 & ALT.

NAME PLATE  
 See Std. 2113-1

**TOTAL BILL OF MATERIAL**

Item	Super	Sub	Total
Earth Excavation Cu. Yds.		4200	4200
Porous Granular Backfill Cu. Yds.		4200	4200
Protective Coat Sq. Yds.	1190		1190
Class X Concrete Cu. Yds.	294.5	386.2	680.7
Structural Steel Lump Sum	0.26		0.26
Stud Shear Connectors Ea.	1692		1692
Aluminum Railing Lin. Ft.	434		434
Reinforcement Bars Lbs.	16,190	39,220	55,410
Creosoted Piles (Up to 20') Lin. Ft.		108	108
Creosoted Piles (20' to 38') Lin. Ft.		408	408
Concrete Piles Lin. Ft.		2031	2031
Test Pile Concrete Ea.		2	2
Name Plates Ea.	2		2
Slope Wall 4' Sq. Yds.	1120		1120
Preformed Jt Sealer Lin. Ft.	168		168

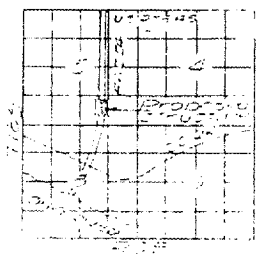


DESIGNED	W. W. Smith	EXAMINED	W. E. Bayman
CHECKED	A. Barroza	PASSED	W. E. Bayman
DRAWN	A. Barroza	APPROVED	W. E. Bayman
CHECKED	A. Barroza		

JANUARY 22 1969

DESIGN STRESSES

1.150 Deck Jmb  
 1.150 Deck Jmb  
 1.150 Deck Jmb



PROJ 1-16-24-1(23)37  
 GENERAL PLAN & ELEVATION  
 F.A.I. 24 OVER

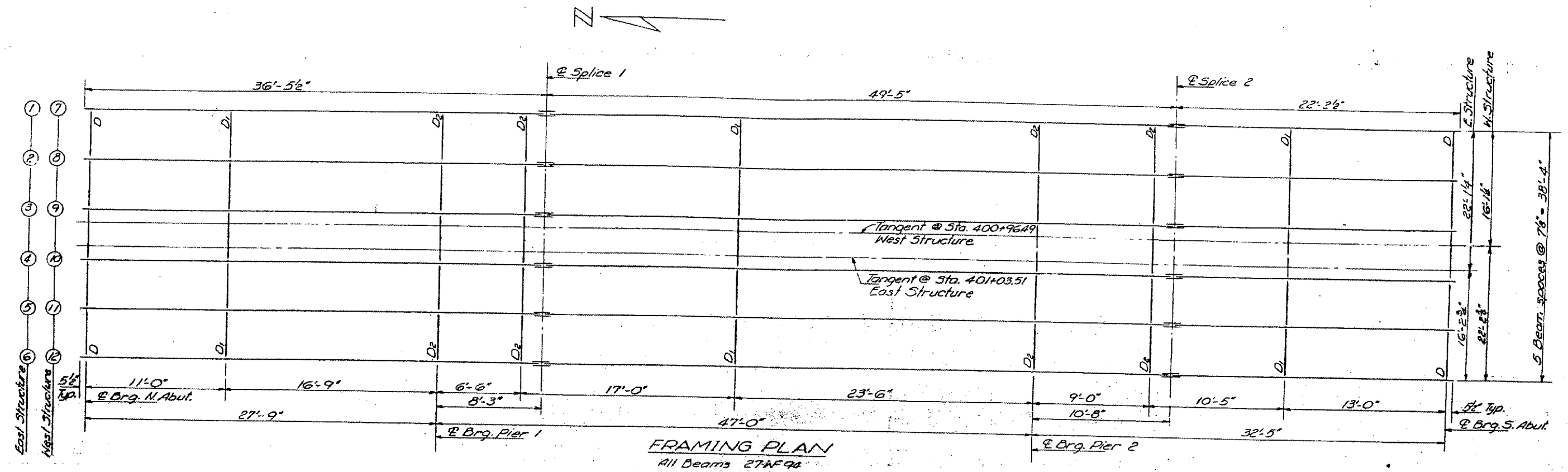
FOR INFORMATION ONLY:

BRIDGE NO. 3 STRUCTURE 064-0030  
 BRIDGE NO. 4 STRUCTURE 064-0031



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

DATE	BY	NO.	DATE	BY	NO.
1.24	JHR	2	MASSAC	44	23
SHEET NO.:			19 SHEETS		

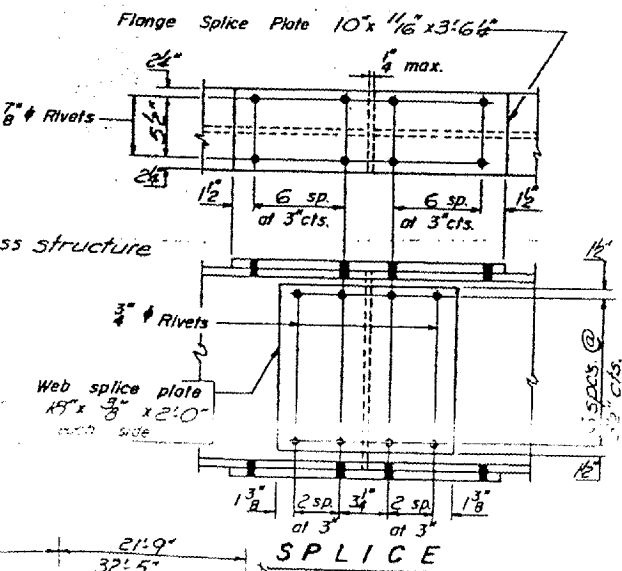
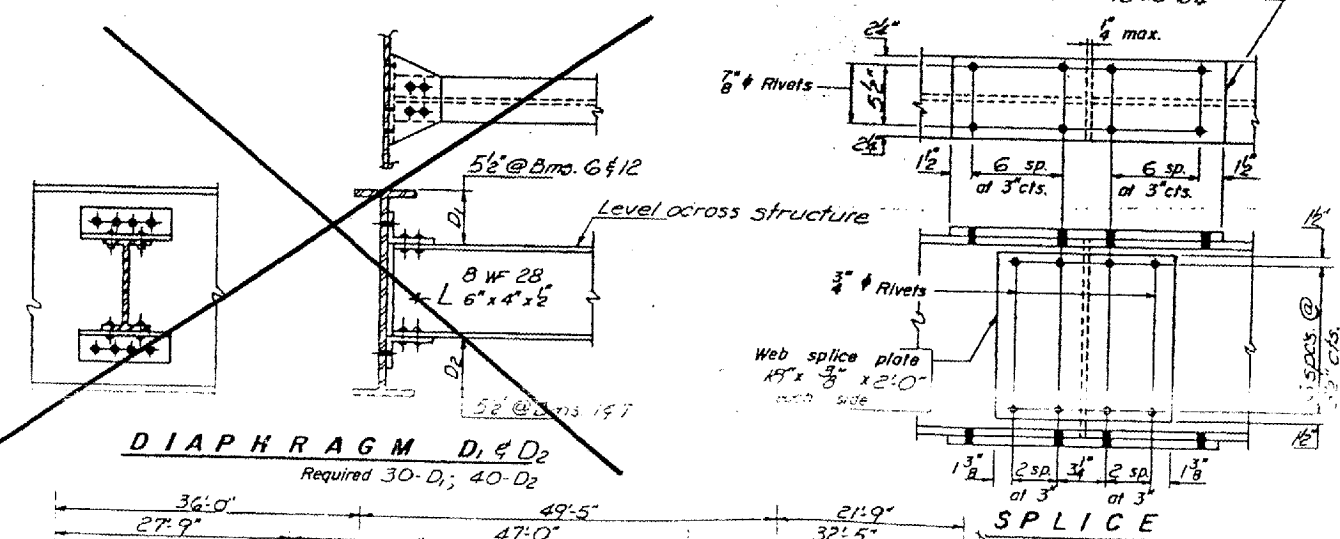
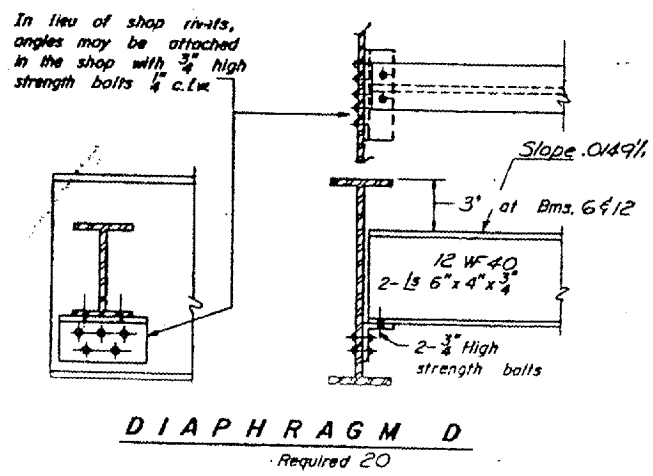


**TOP OF BEAM ELEVATIONS**  
 (For Fabrication only)

Beam No.	1	2	3	4	5	6
E. Brq. N. Abut.	358.94	358.83	358.72	358.60	358.48	358.37
E. Brq. Pier 1	359.37	359.26	359.15	359.03	358.91	358.80
E. Splice 1	359.50	359.39	359.28	359.16	359.04	358.93
E. Brq. Pier 2	360.16	360.04	359.94	359.82	359.70	359.59
E. Splice 2	360.34	360.23	360.12	360.00	359.88	359.77
E. Brq. S. Abut.	360.76	360.65	360.54	360.42	360.30	360.19

Beam No.	7	8	9	10	11	12
E. Brq. N. Abut.	358.89	358.77	358.66	358.54	358.43	358.31
E. Brq. Pier 1	359.32	359.20	359.09	358.97	358.86	358.74
E. Splice 1	359.45	359.33	359.22	359.10	358.99	358.87
E. Brq. Pier 2	360.04	359.92	359.80	359.68	359.57	359.45
E. Splice 2	360.27	360.15	360.04	359.92	359.81	359.69
E. Brq. S. Abut.	360.69	360.57	360.45	360.33	360.22	360.10

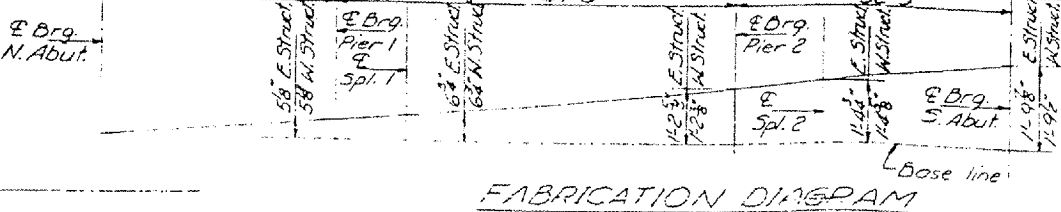
Note: See Sheet # 12 for Bearing Details & Shear Stud Spacing.  
 Diaphragm connections may be adopted to shop drawings subject to approval by the Engineer.



DESIGNED: J. M. Bunker  
 CHECKED: J. M. Bunker  
 DRAWN: J. Schneller  
 CHECKED: J. C. C.

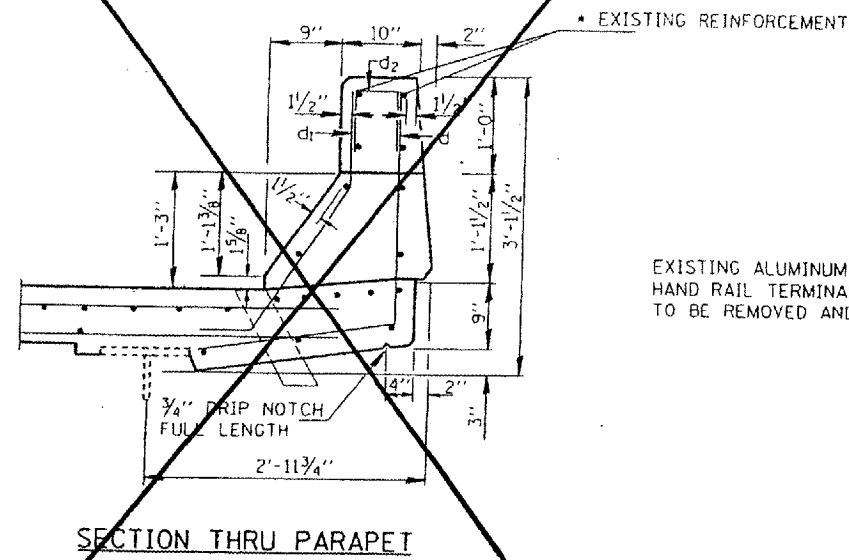
EXAMINED: J. M. Bunker  
 PASSED: J. M. Bunker  
 APPROVED: J. M. Bunker

Jan. 22 1969

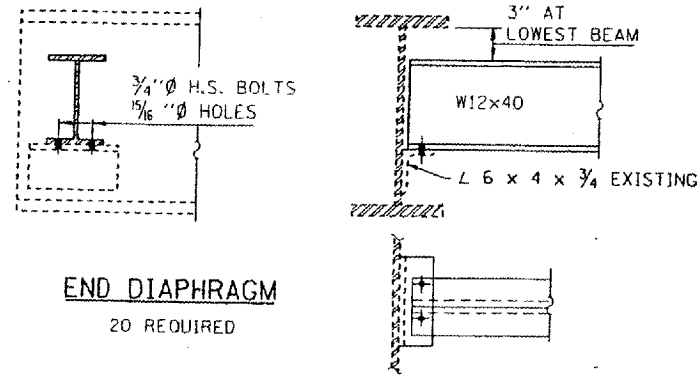


FOR INFORMATION ONLY:  
 BRIDGE NO. 3 STRUCTURE 064-0030  
 BRIDGE NO. 4 STRUCTURE 064-0031

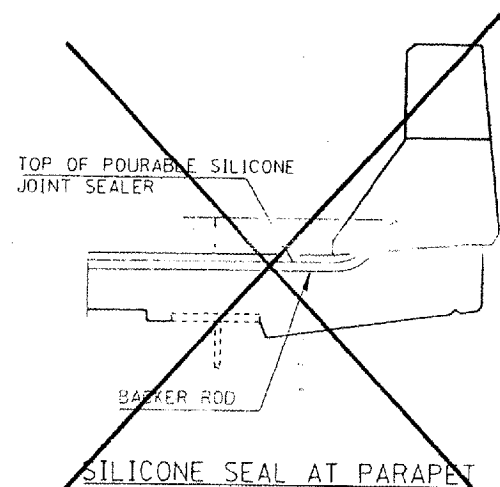
NOTE:  $d_1$  (E) and  $d_2$  (E) BARS SPACED AT 12" CTRS.



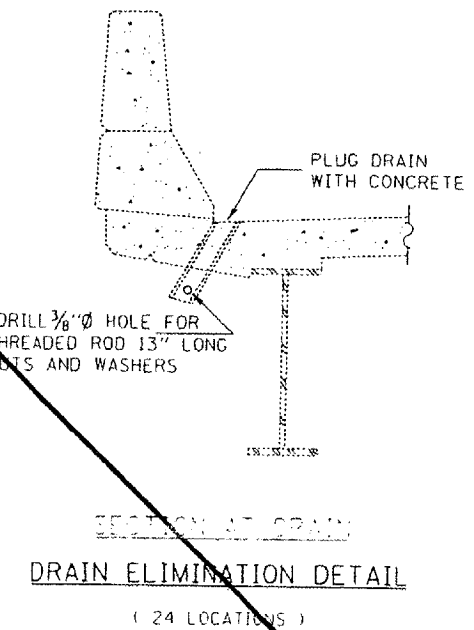
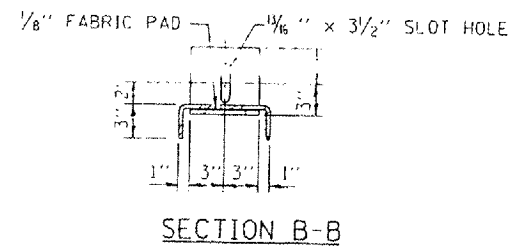
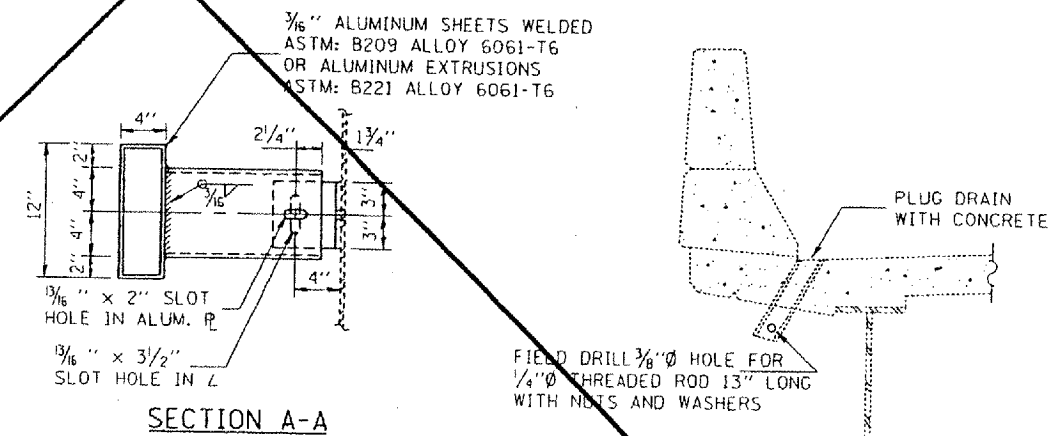
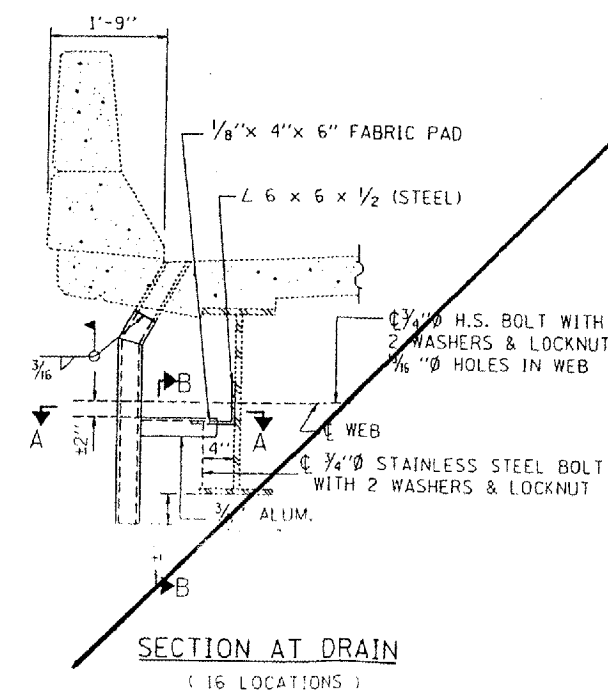
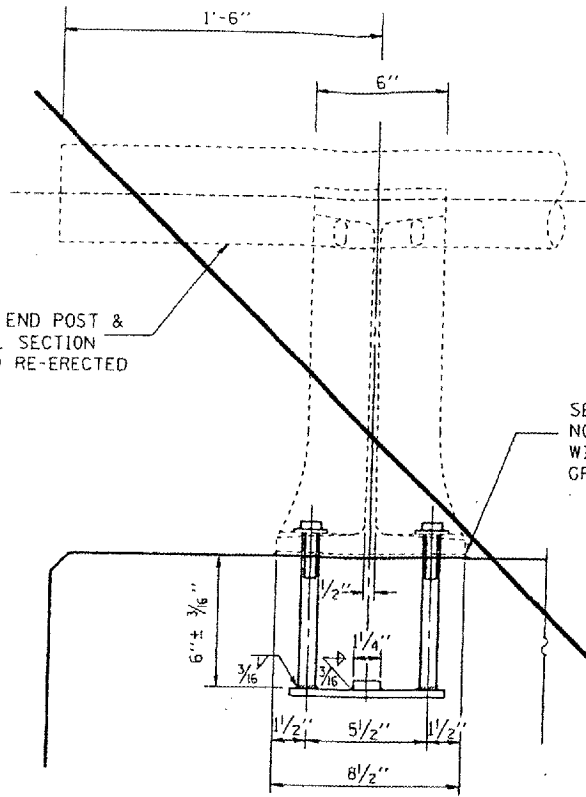
EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREA SHALL BE CLEANED, STRAIGHTENED AND INCORPORATED INTO THE NEW CONSTRUCTION. COST INCLUDED IN CONCRETE REMOVAL.



NOTE: TWO HARDENED WASHERS SHALL BE REQUIRED OVER ALL OVERSIZE HOLES FOR DIAPHRAGMS.



DESIGNED	J.C.P.
CHECKED	
DRAWN	T. F.
CHECKED	



FOR INFORMATION ONLY:

BRIDGE NO. 3 STRUCTURE 064-0030

BRIDGE NO. 4 STRUCTURE 064-0031

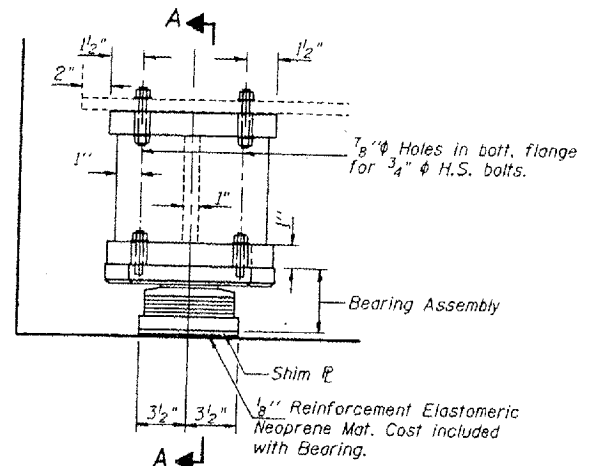
RC ENGINEERS, LTD.  
 CONSULTING ENGINEERS - SPRINGFIELD, ILLINOIS

CONCRETE SUPERSTRUCTURE, SILICONE JOINT DETAIL, DI

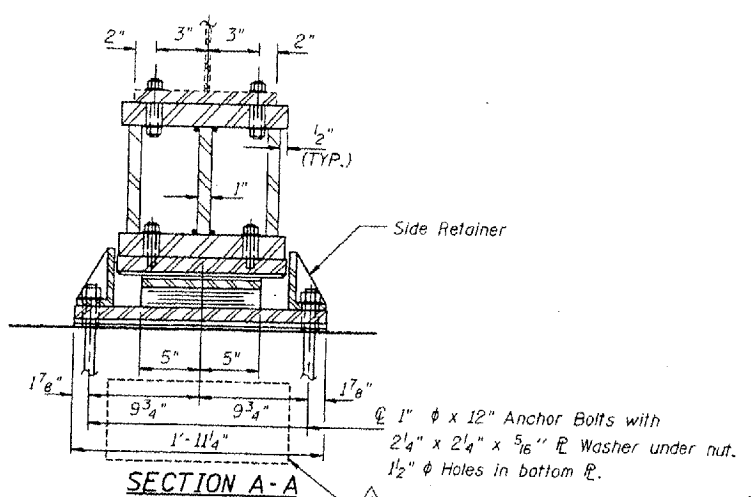


F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-24	D-9 BSMART FY2001	MASSAC	234	209

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT  
 Sheet 7 of 11 sheets

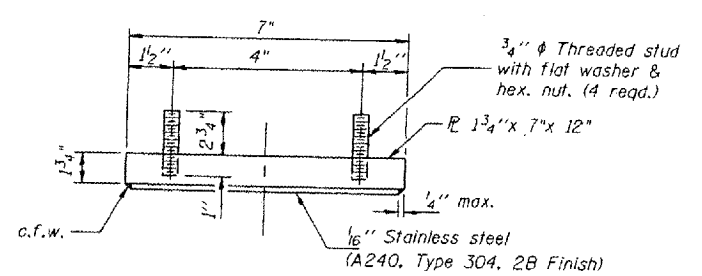


ELEVATION AT ABUT.

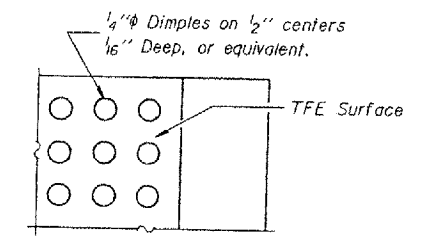


SECTION A-A

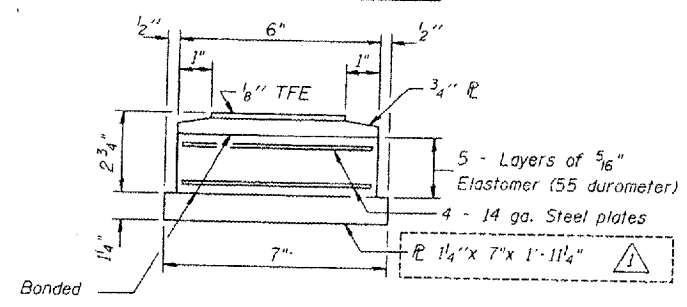
TYPE II ELASTOMERIC EXP. BRG.



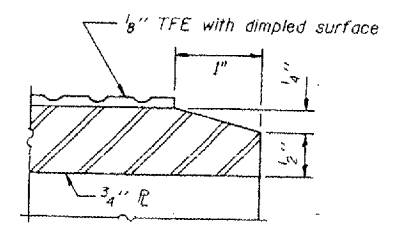
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE



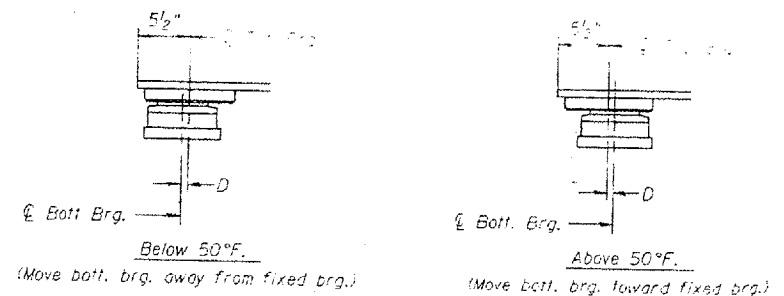
BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

NOTE: The  $\frac{1}{8}$ " TFE 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  $\frac{1}{8}$ " TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



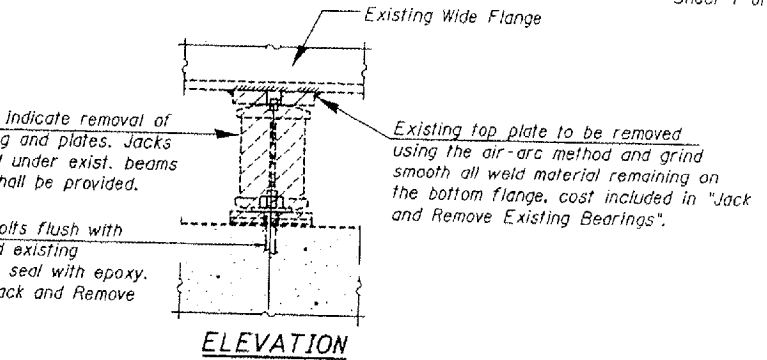
SETTING ANCHOR BOLTS AT EXP. BRG.

$D = \frac{1}{8}$ " per each 100' of expansion for every 15° temp. Change from the normal temp. of 50°F.

\*INTERIOR BEAM REACTION TABLE

	SERVICE LOADS
R D (K)	13.0
R L (K)	32.3
Imp (K)	9.7
R Total (K)	55.0

\* Min. Jack capacity at each Beam shall be 30 Tons.



ELEVATION

Hatched areas indicate removal of existing bearing and plates. Jacks shall be placed under exist. beams and cribbing shall be provided.

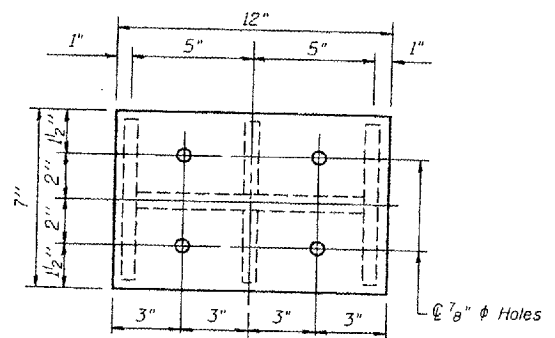
Burn existing anchor bolts flush with concrete surface. Grind existing anchor bolt smooth and seal with epoxy. Cost is incidental to "Jack and Remove Existing Bearings".

Notes:

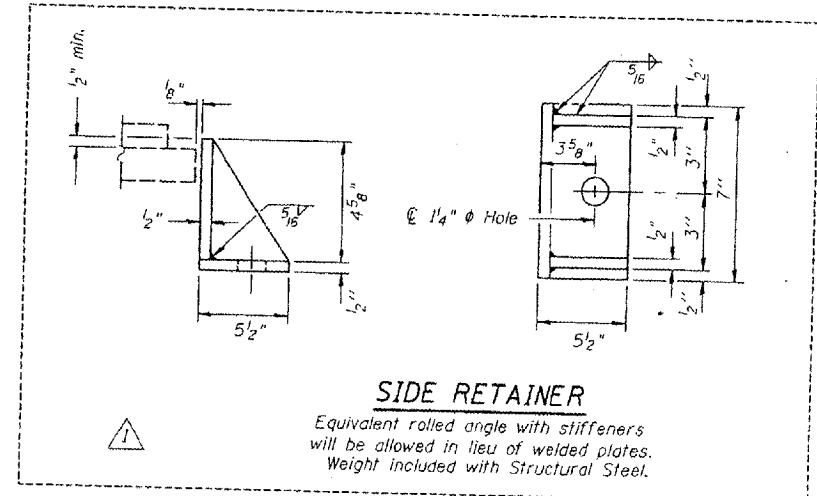
Prior to ordering any material, the contractor shall verify in the field all bearing height dimensions.

For anchor bolt installation details see sheet # 8 of 11

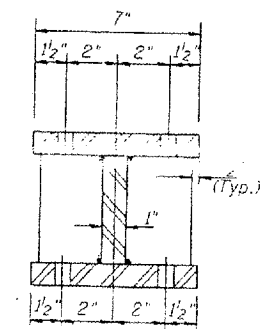
New steel extensions, side retainers, connection bolts, anchor bolts, and shim plates are included in "Furnishing and Erecting Structural Steel".



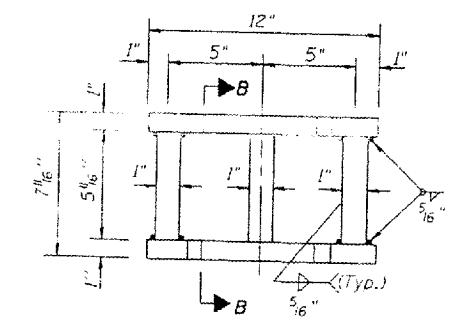
PLAN TOP AND BOTTOM PLATE



SIDE RETAINER



SECTION B-B



STEEL EXTENSION DETAIL

BILL OF MATERIAL

ITEM	UNIT	TOTAL
ELASTOMERIC BEARING	EACH	10

FOR INFORMATION ONLY:

BRIDGE NO. 3 STRUCTURE 064-0030

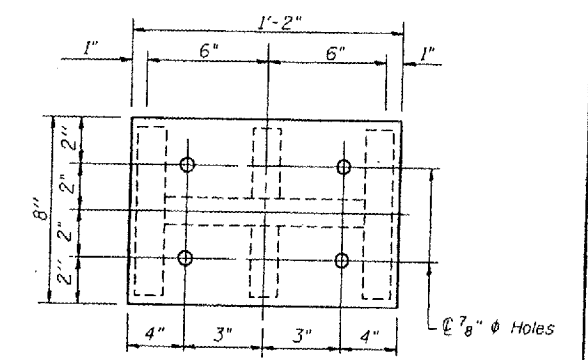
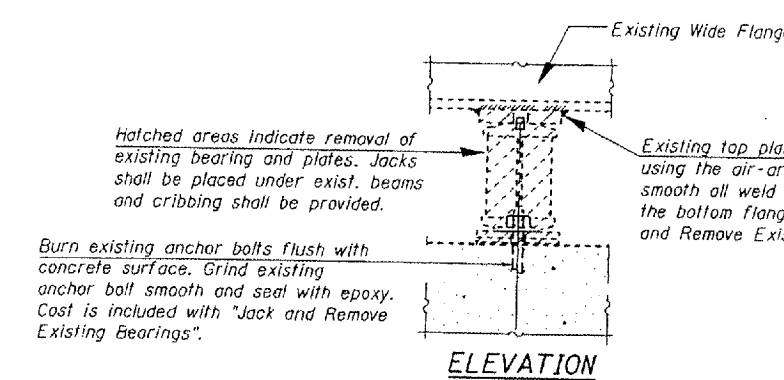
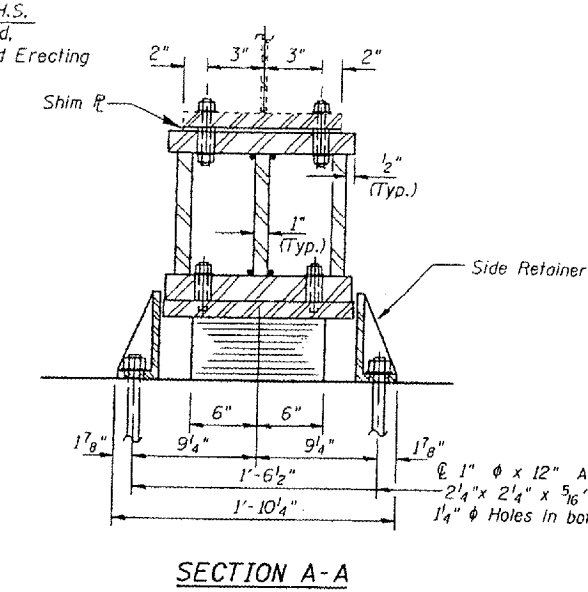
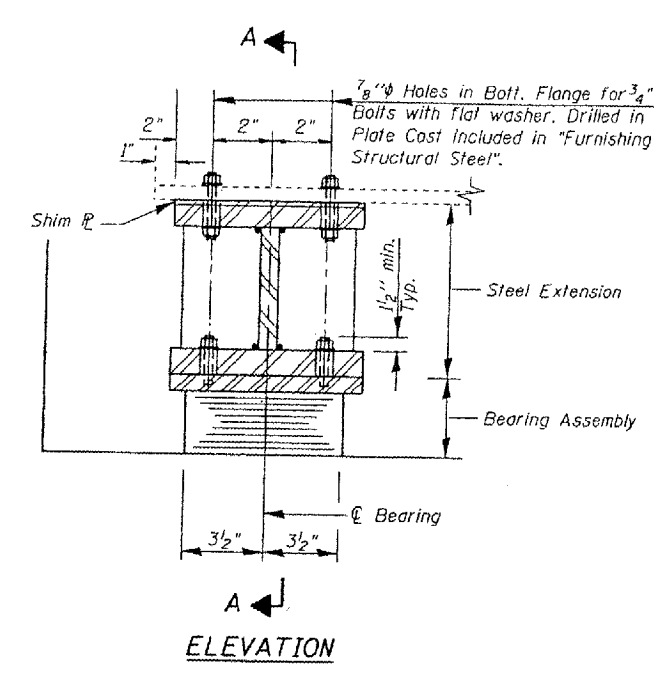
BRIDGE NO. 4 STRUCTURE 064-0031

DESIGNED	J.C.P.
CHECKED	
DRAWN	T. F.
CHECKED	



ELASTOMERIC

9/10/2001 AKK

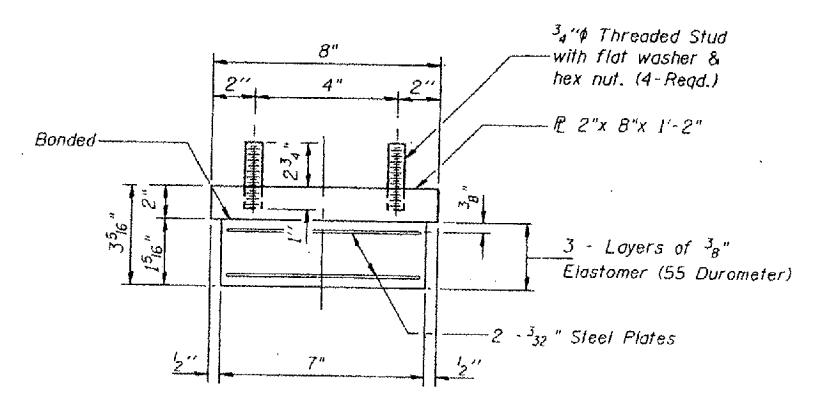


**TYPE I ELASTOMERIC BEARING SOUTH ABUT.**

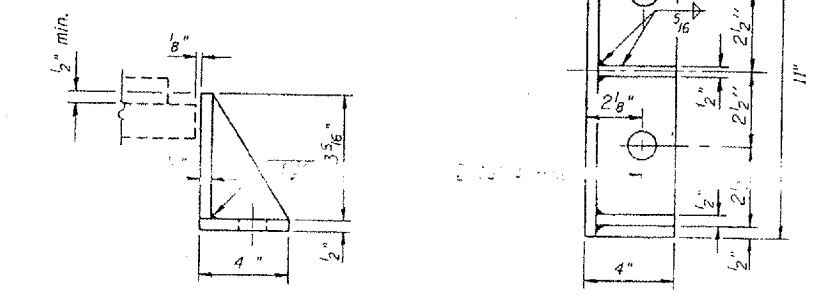
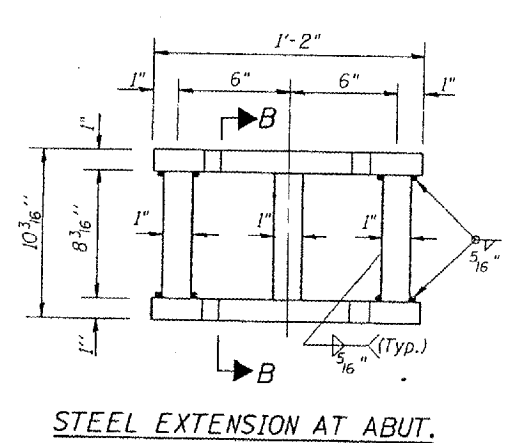
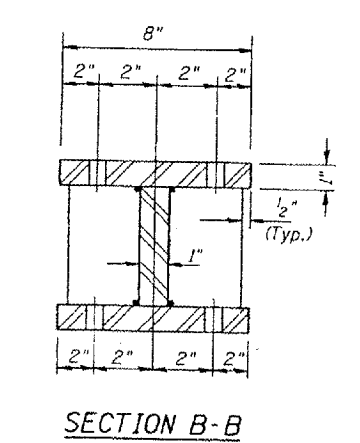
**\*INTERIOR BEAM REACTION TABLE**

	SERVICE LOADS
R D (K)	17.0
R L (K)	34.5
Imp (K)	10.4
R Total (K)	61.9

\* Min. Jack capacity at each Beam shall be 30 Tons.



Note: Shim plates shall not be placed under Bearing Assembly



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

Notes:  
 Prior to ordering any material, the contractor shall verify in the field all bearing height dimensions.  
 For anchor bolt installation details see sheet # 8 of 11.  
 New steel extension, side retainers, approach to abutment, etc. shall be included in furnishing and erecting at bid or bid.

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	12

FOR INFORMATION ONLY:

ELASTOMERIC E  
 BRIDGE NO. 3 STRUCTURE 064-0030  
 BRIDGE NO. 4 STRUCTURE 064-0031

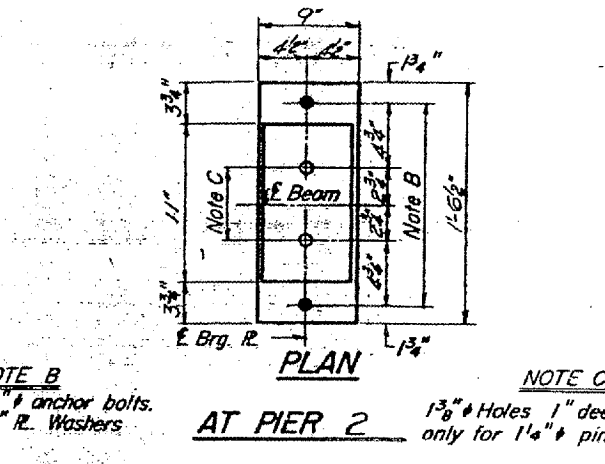
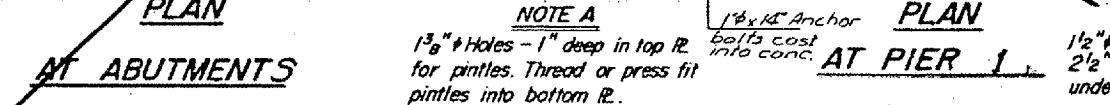
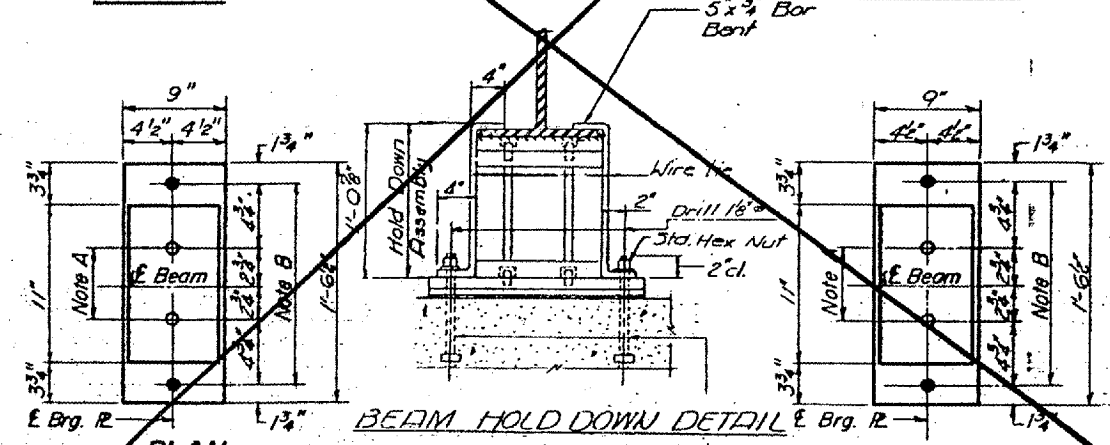
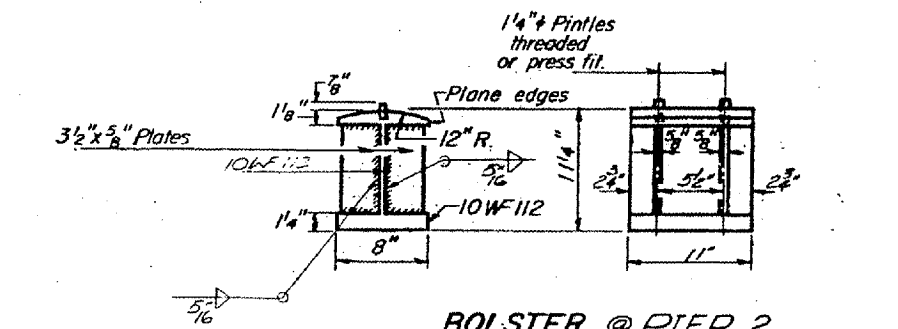
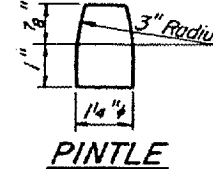
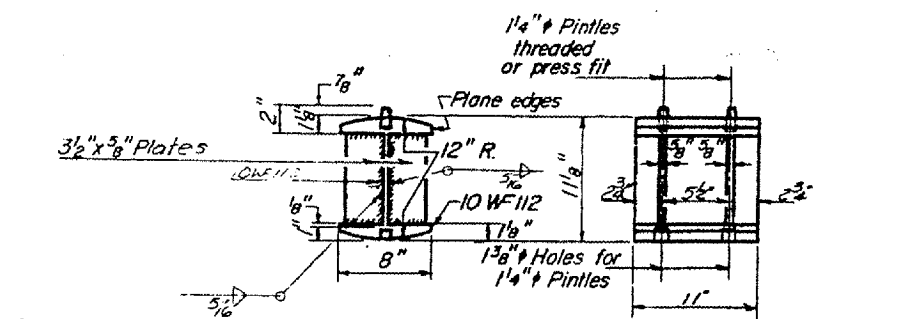
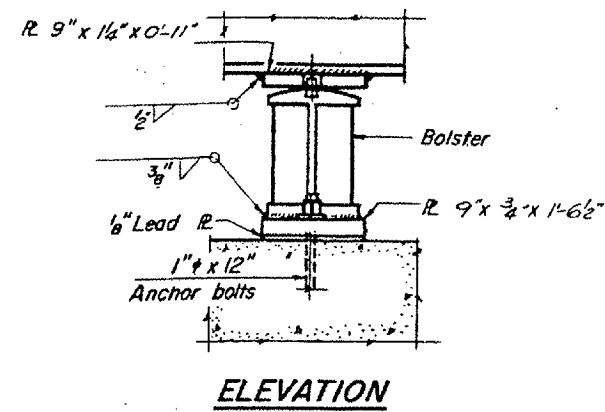
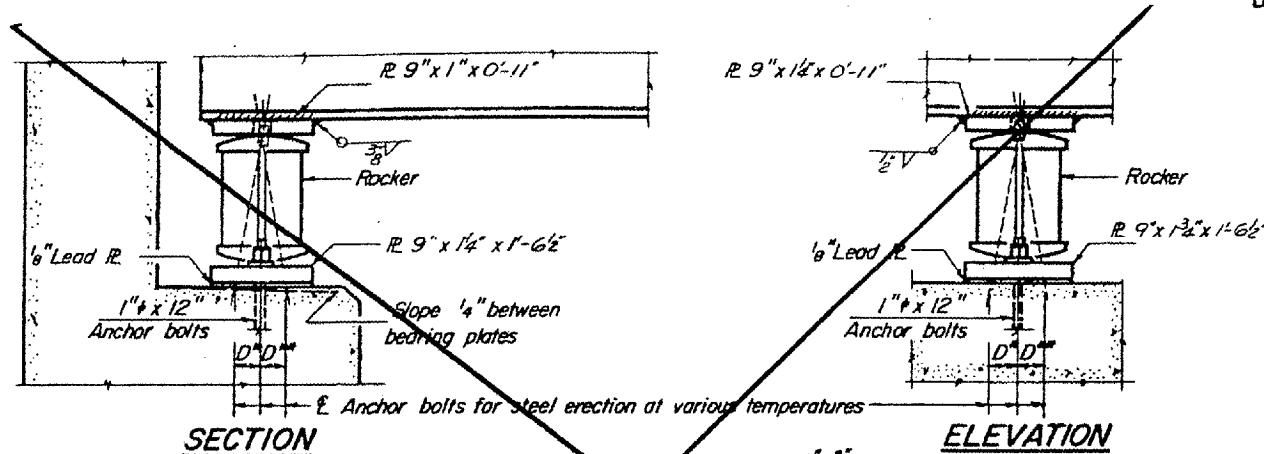


Tue Jul 17 15:18:09 2001  
 c:\p\object\sb\sm\064-0030\typ\m\area30\_31.dgn LV1-63

DESIGNED	J.C.P.
CHECKED	
DRAWN	T.F.
CHECKED	

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

DATE	SECTION	SUBJECT	SHEET NO.	TOTAL SHEETS
1/24/63	3/38	MASSAC	44	24
SHEET NO. 12				
19 SHEETS				



**NOTE A:** 1 3/8 inch Holes - 1 inch deep in top R. for pintles. Thread or press fit pintles into bottom R.  
**NOTE B:** 1 1/2 inch Holes for 1 inch anchor bolts. 2 1/2 x 2 1/2 x 5/16 inch R. Washers under nut.  
**NOTE C:** 1 3/8 inch Holes 1 inch deep in top R. only for 1 1/4 inch pintles.

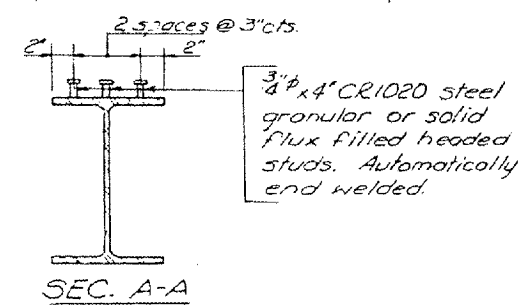
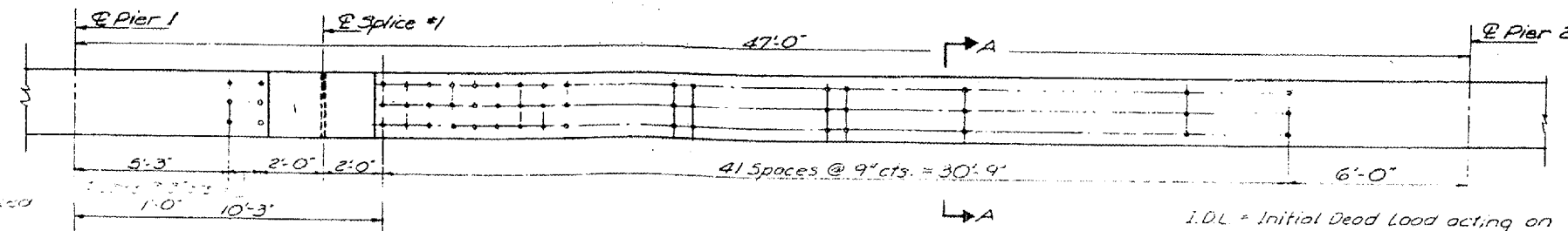
**NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRGS.**

- a) D\* (Side of brg. away from fixed brg.)  
 $D^* = \frac{1}{8}''$  per each 100' of expansion for every 15° fall below the normal temp. of 50°F.
- D\*\* (Side of brg. toward fixed brg.)  
 $D^{**} = \frac{1}{8}''$  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 placed in place, except as noted. All fixed anchor bolts may be built into the masonry.

Note: See Sheet #11 for Framing Plan, Splice & Diaphragm Details.

Note: Beams shall be held down at the Abutment on the opposite end of Bridge from which the deck pour is commenced. After pouring is completed the Hold Down Assembly shall be removed and nuts placed on Anchor Bolts. Cost of Hold Down Assembly, incidental to Class X Concrete.



**SHEAR STUD SPACING**  
 Typical for all beams in Span 2

**STRESS TABLE - INTERIOR BMS**

	Moments (FT-Kips)				Reactions (Kips)				
	4 Span	Pier 1	5 Span	Pier 2	16 Span	N. Abut	Pier 1	Pier 2	S. Abut
I.D.L.	26.8	138.4	100.4	152.1	51.3	7.4	37.9	40.3	9.8
S.D.L.	15.2	43.6	50.6	50.4	21.4	3.3	14.4	15.6	4.1
L.L.	42.0	130.0	206.0	141.9	177.6	31.4	44.5	44.5	35.4
Imp.	42.9	39.1	82.4	42.6	53.3	9.4	13.4	13.3	10.6
Total	226.9	351.1	519.4	387.0	306.6	51.5	110.2	113.7	59.9

**PROPERTIES**

Steel Section	
I <sub>s</sub>	3266.7 in <sup>4</sup>
S <sub>s</sub>	22.5 in <sup>3</sup>
J <sub>s</sub>	282.8 in <sup>3</sup>
Composite Section	
I <sub>c</sub>	9386.0 in <sup>4</sup>
S <sub>c</sub>	1172.0 in <sup>3</sup>
J <sub>c</sub>	365.8 in <sup>3</sup>

- I.D.L. = Initial Dead Load acting on steel section
- S.D.L. = Superimposed Dead Load acting on composite section
- L.L. = Live Load
- I = Impact
- I<sub>s</sub> = Moment of inertia steel section
- S<sub>s</sub> = Sec. Mod top steel section
- S<sub>cs</sub> = Sec Mod bott steel s
- I<sub>c</sub> = Moment of inertia cor
- S<sub>c</sub> = Sec Mod top comp. sec
- J<sub>c</sub> = Sec. Mod bott comp sec

**FOR INFORMATION ONLY:**

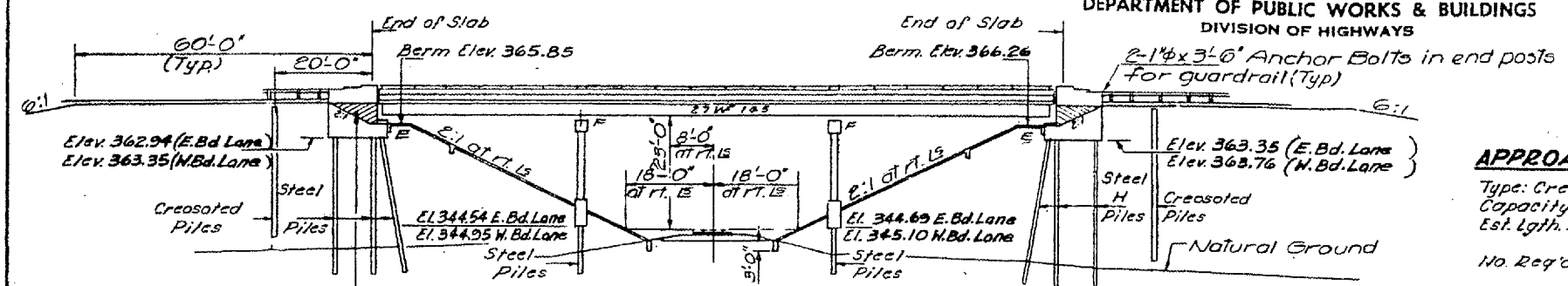
BRIDGE NO. 3 STRUCTURE 064-0030  
 BRIDGE NO. 4 STRUCTURE 064-0031

DESIGNED	Jan 23 1963
CHECKED	
DRAWN	
CHECKED	

NO. 24	SECTION 3VR	QUANTITY MosSOC	DATE 76	BY 17	SHEET NO. 7
					13 SHEETS

D.M. \*31 Boat Spike in 20' Oak  
 250' left of Sta. 408 Elev. 338.42

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



**APPROACH PILE DATA**

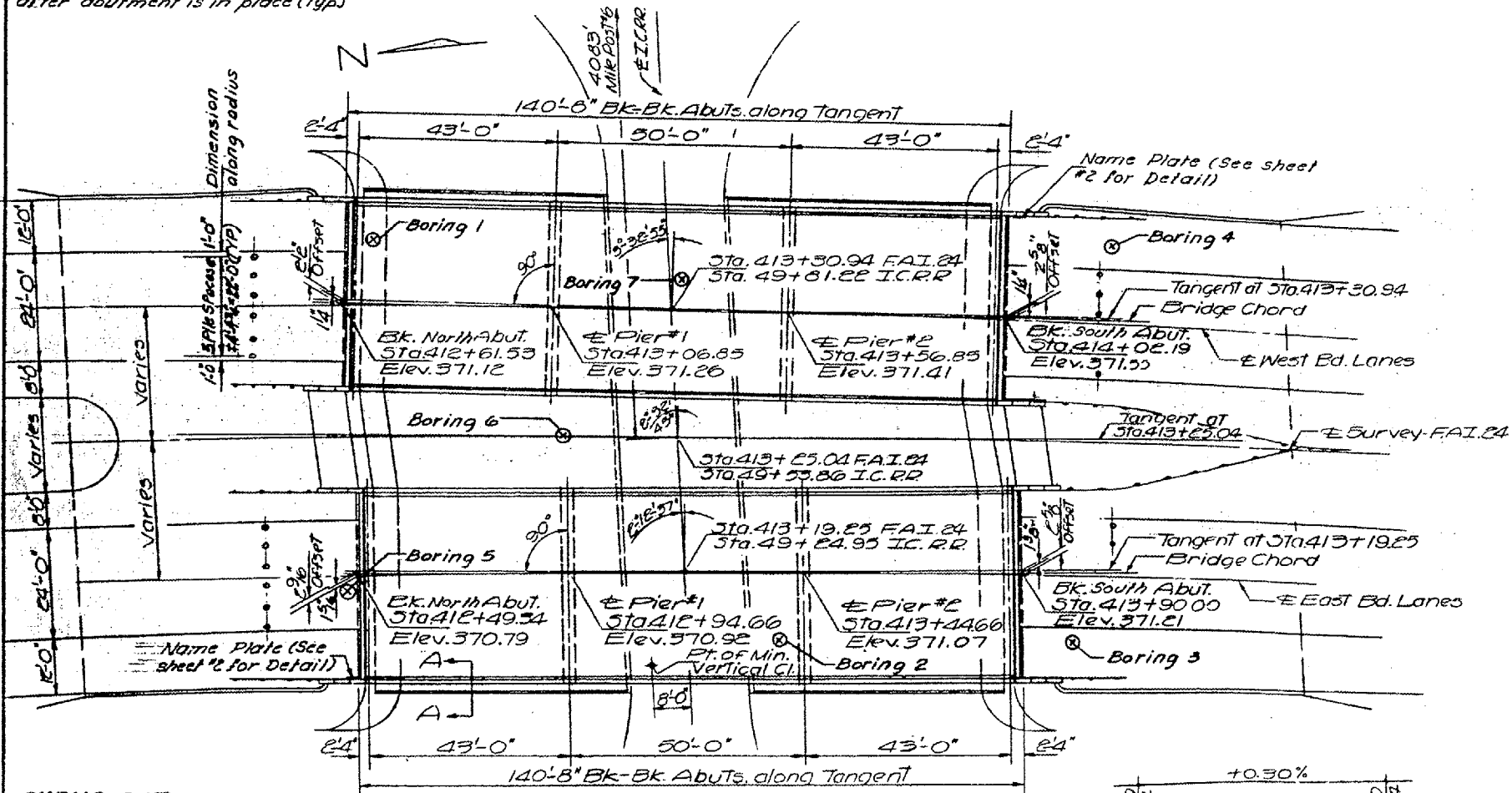
Type: Creosoted  
 Capacity: 20 Tons.  
 Est. Lgth.: 28'-0" (No. Appra.)  
 30'-0" (So. Appra.)  
 No. Req'd.: 24

**GENERAL NOTES**

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.  
 Rivets 3/4", open holes 1 1/8", unless otherwise noted.  
 Diaphragm connections may be adapted to shop welding subject to approval by the Engineer.  
 The exposed surfaces of the expansion guard 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.  
 Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint.  
 Field welding of construction accessories will not be permitted in the bottom of 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 riveting diaphragms (bolting cross frames) over supports.  
 Slope wall shall be reinforced with welded wire fabric 6" x 6" mesh, weighing 58 lb. per 100 sq. ft.  
 The Contractor shall drive 4 test piles, one each at N. Abut., E. Bd. Lane, S. Abut., W. Bd. Lane, Pier 1, H. Bd. Lane and Pier 2, E. Bd. Lane. All in Permanent locations as directed by the Engineer before ordering the remainder of piles.  
 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 or piers.  
 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.  
 Pier and abutment piles shall be driven to the minimum length noted and the bearing required obtained at or below this level.

This portion of the embankment backfill by the Bridge Contractor after abutment is in place (Typ)

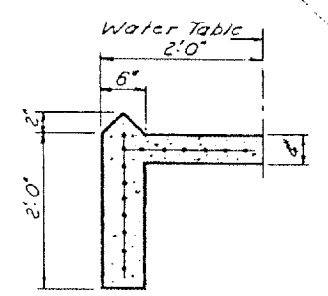
**ELEVATION**



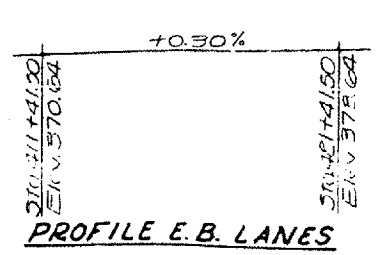
**CURVE DATA**

West Bd. Lane P.I. Sta. 406+80.74  
 East Bd. Lane P.I. Sta. 409+36.72  
 P.I. Sta. 408+08.73  
 Δ = 15°-29'-39"  
 D = 0°-30'  
 R = 11,459.16'  
 L = 3,098.84'  
 T = 1,558.93'  
 E = 105.55'  
 S.E. = 0.015%

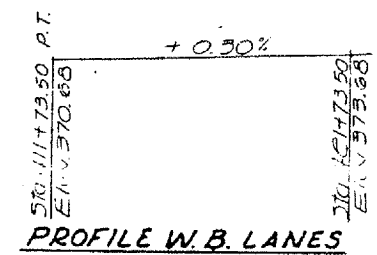
**PLAN**



**SECTION A-A**



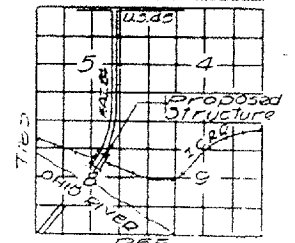
**PROFILE E.B. LANES**



**PROFILE W.B. LANES**

**DESIGN STRESSES**

f<sub>c</sub> = 1200 PSI - Deck Slab  
 f<sub>c</sub> = 1400 PSI - Curb, Parapet, Sub  
 f<sub>s</sub> = 20000 PSI - Rein. F.  
 f<sub>s</sub> = 20000 PSI - STRUCT.  
 f<sub>c</sub> = 75 PSI - FTG.  
 n = 10  
 Allowable Future W.S. = 2.5%  
 Allowable E.O. = 1/1000 Non Composite



**TOTAL BILL OF MATERIAL**

Item	Unit	Super	Sub	Total
Protective Coat	Sq. Yds.	1450		1450
Class A Excav. for Structures	Cu. Yds.		20	20
Class X Concrete	Cu. Yds.	354.9	351.9	706.2
Structural Steel	Lump Sum	0.48		0.48
Aluminum Railing	Lin. Ft.	550		550
Reinforcement Bars	Lbs.	86870	60940	147810
Creosoted Piles (20" x 38")	Lin. Ft.		696	696
Steel Piles (BBP36)	Lin. Ft.		2690	2690
Test Piles Steel (BBP36)	Ea.		4	4
Name Plates	Ea.		2	2
Slope Wall (4")	Sq. Yds.		1700	1700
Preformed Joint Sealer	Lin. Ft.		170	170

\* CALCULATED WEIGHT OF STRUCTURAL STEEL = 307,270 Lbs.

**FOR INFORMATION ONLY:**

BRIDGE NO. 5 STRUCTURE 064-0032

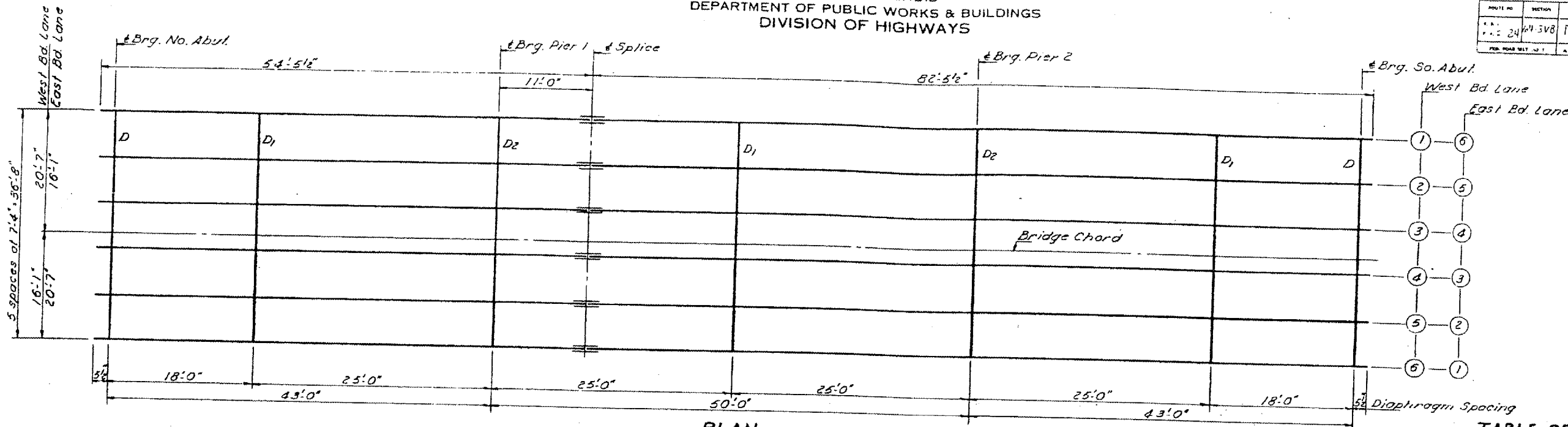
BRIDGE NO. 6 STRUCTURE 064-0033

DESIGNED	S. Lin
CHECKED	A.A. Hummel
DRAWN	J. Kessler
CHECKED	A.A. Hummel

EXAMINED	Jan 27 1969
PASSED	
APPROVED	

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

ROUTE NO.	SECTION	SHEET NO.:		13 SHEETS
24	64.3V8	76	23	
PROJECT: MASSAC				

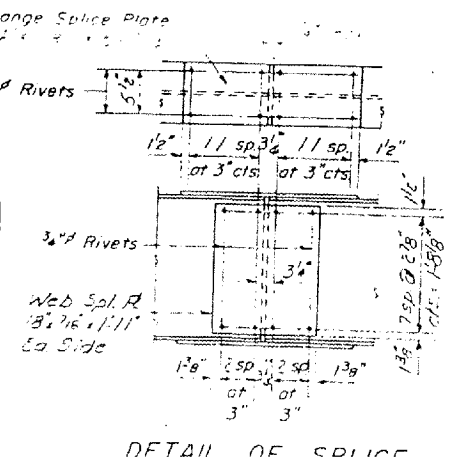
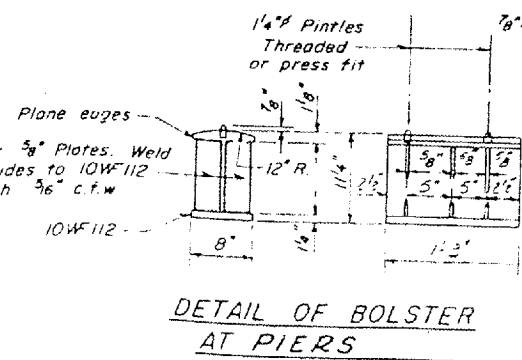
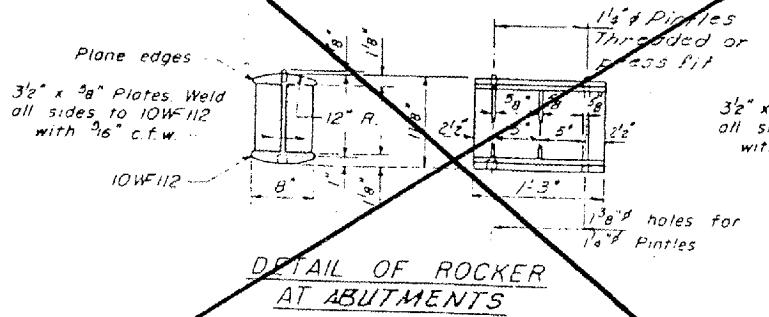
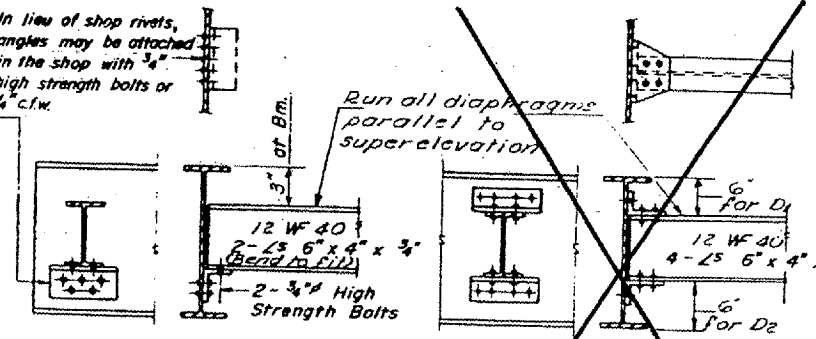
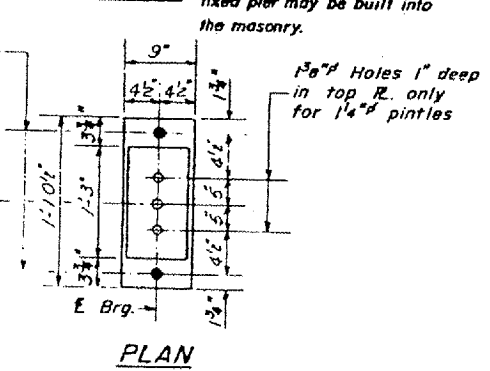
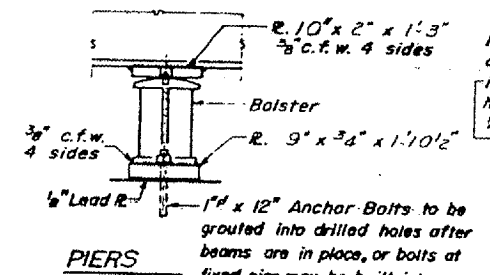
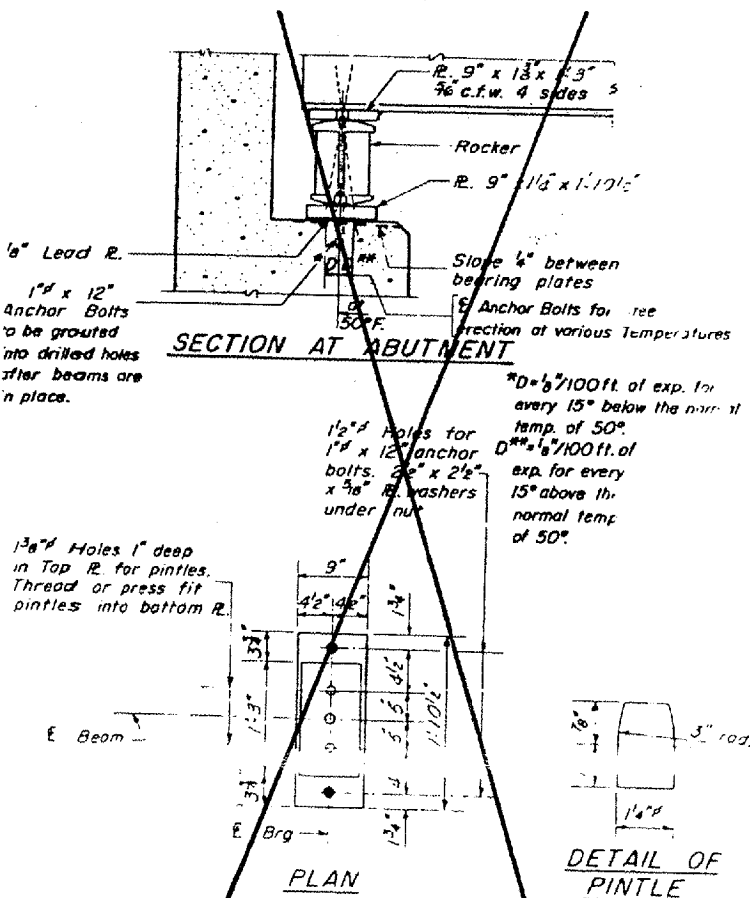


**PLAN**  
 (All beams are 27WF145)

**TABLE OF MOMENTS & REACTIONS-INT. BEAMS**

	Moments			Reactions	
	at Splice	Pier No. 1	Sp. 2	Abutts	Piers
D.L.	167.4	270.7	121.8	20.4	64.1
L.L.	267.8	207.7	257.3	35.3	44.8
Imp.	77.7	62.3	77.2	10.3	13.0
<b>Total</b>	<b>512.9</b>	<b>540.7</b>	<b>456.3</b>	<b>66.2</b>	<b>121.9</b>

Moments are in Ft.-Kips  
 Reactions are in Kips



**ELEVATION TOP OF W**  
 For Fabrication Only

East Bound Lane						
	1	2	3	4	5	6
±Brg. N.A.	369.84	369.95	370.06	370.17	370.28	370.39
±Brg. P-1	369.96	370.07	370.18	370.29	370.40	370.51
±Splice	369.99	370.10	370.21	370.32	370.43	370.54
±Brg. P-2	370.11	370.22	370.33	370.44	370.55	370.66
±Brg. S.A.	370.25	370.36	370.47	370.58	370.69	370.80

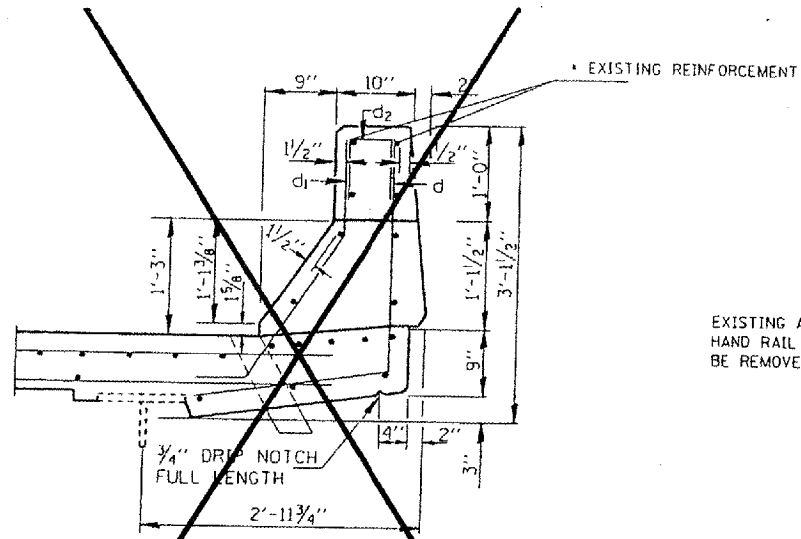
West Bound Lane						
	1	2	3	4	5	6
±Brg. N.A.	370.80	370.69	370.58	370.47	370.36	370.25
±Brg. P-1	370.92	370.81	370.70	370.59	370.48	370.37
±Splice	370.95	370.84	370.73	370.62	370.51	370.40
±Brg. P-2	371.07	370.96	370.85	370.74	370.63	370.52
±Brg. S.A.	371.21	371.10	370.99	370.88	370.77	370.66

DESIGNED: S. Lim  
 CHECKED: A. H. Hummel  
 DRAWN: W. A. Sausaman, Jr.  
 EXAMINED: Carl Hummel  
 DATE: Jan 27 1964

FOR INFORMATION ONLY:  
 BRIDGE NO. 5 STRUCTURE 064-0032  
 BRIDGE NO. 6 STRUCTURE 064-0033

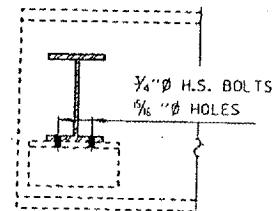


NOTE: d1(E) and d2(E) BARS SPACED AT 12" CTRS.



**SECTION THRU PARAPET**

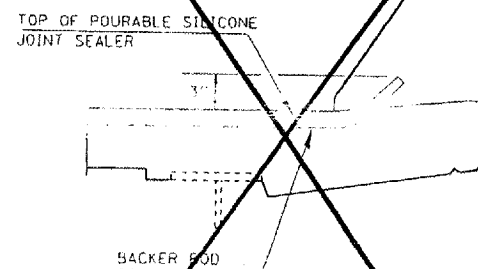
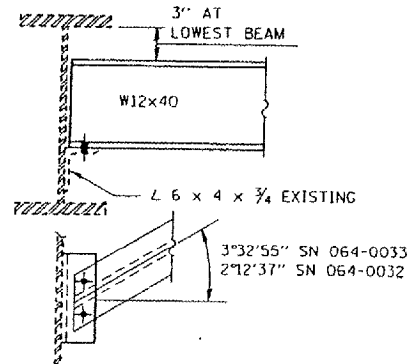
EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREA SHALL BE CLEANED, STRAIGHTENED AND INCORPORATED INTO THE NEW CONSTRUCTION. COST INCLUDED IN CONCRETE REMOVAL.



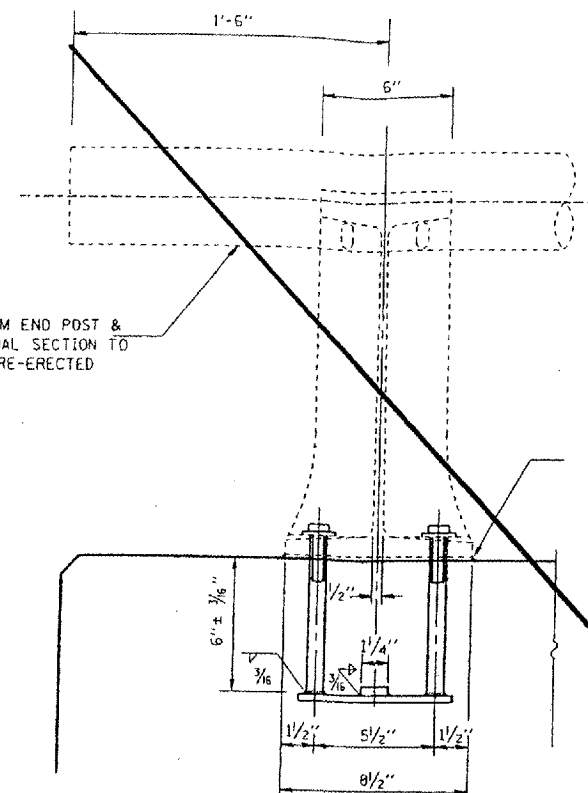
**END DIAPHRAGM**

20 REQUIRED

NOTE: TWO HARDENED WASHERS SHALL BE REQUIRED OVER ALL OVERSIZE HOLES FOR DIAPHRAGMS.

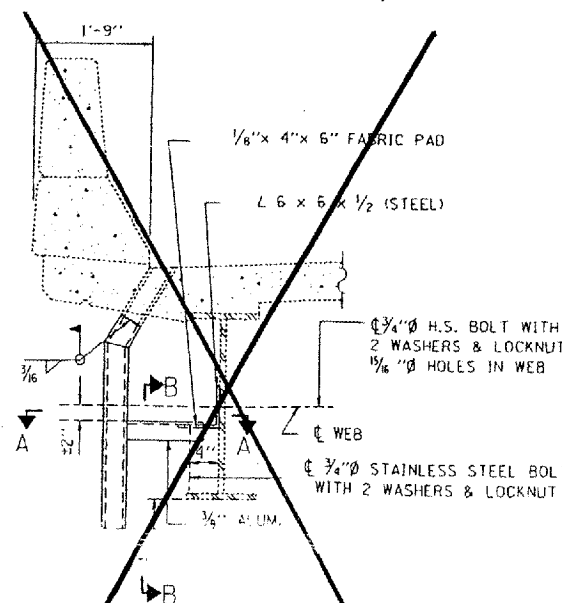


**SILICONE SEAL AT PARAPET**



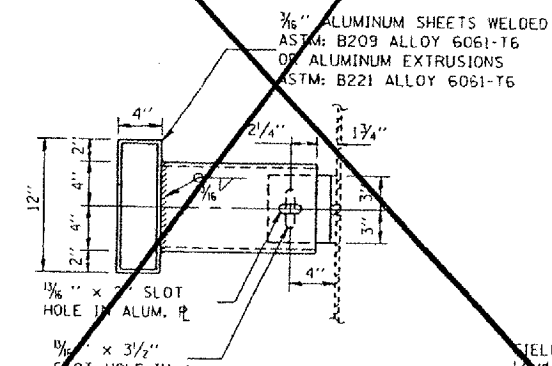
NOTE: RAIL SHALL BE REMOVED AND RE-ERECTED AS NECESSARY TO ALLOW JOINT REPAIR. COST INCLUDED IN CONCRETE REMOVAL.

**RAIL POST DETAILS**

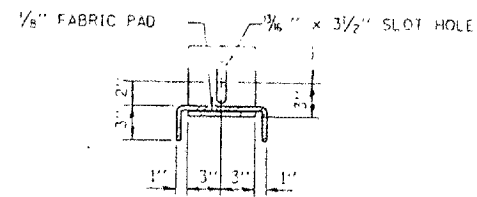


**SECTION AT DRAIN**

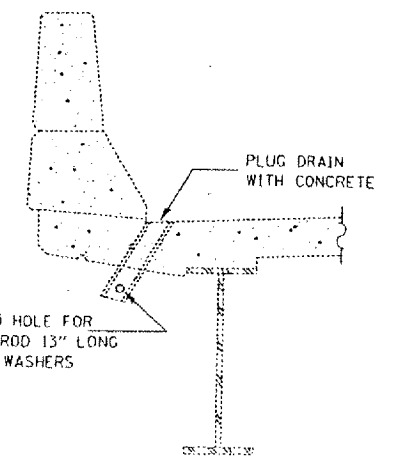
( 32 LOCATIONS )



**SECTION A-A**



**SECTION B-B**



**DRAIN ELIMINATION DETAIL**

( 16 LOCATIONS )

FOR INFORMATION ONLY:

BRIDGE NO. 5 STRUCTURE 064-0032

BRIDGE NO. 6 STRUCTURE 064-0033

CONCRETE SUPERSTRUCTURE, SILICONE JOINT DETAIL, DI



Tue Jul 17 16:27:48 2001  
 c:\projects\rc\beamr\064-0032\consult 12.33.dgn LVet-63

DESIGNED	J.C.P.
CHECKED	
DRAWN	I. F.
CHECKED	

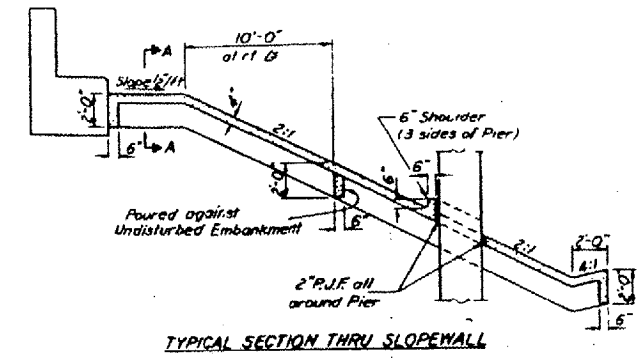
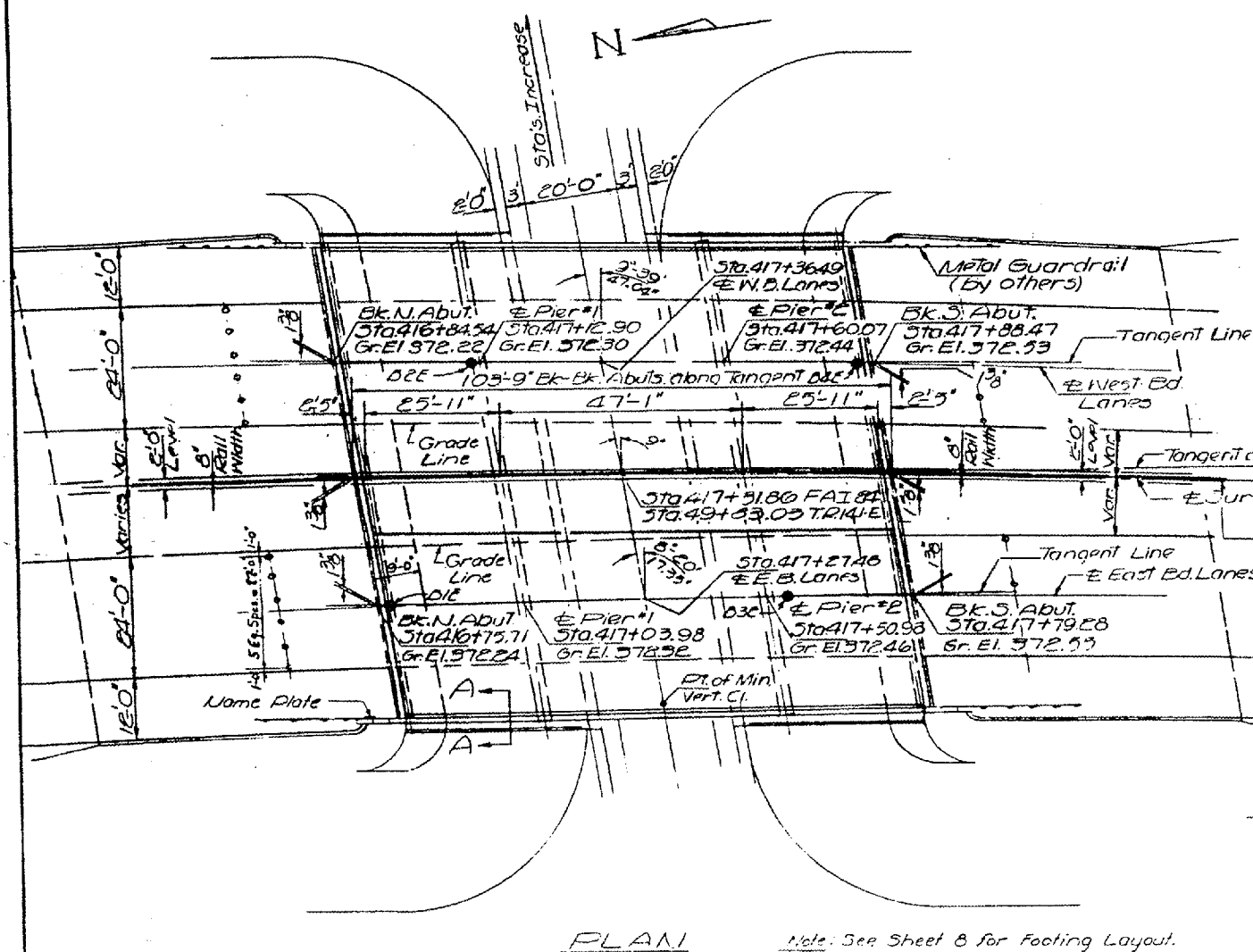
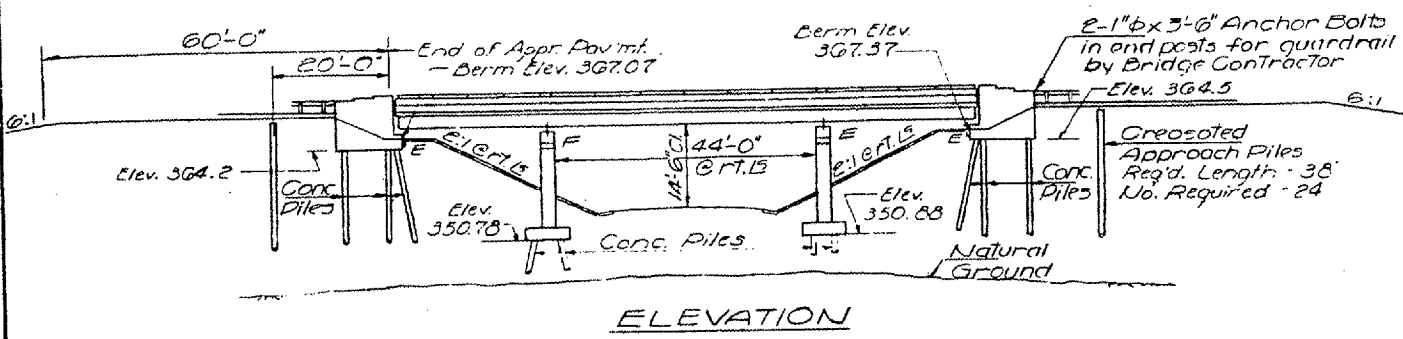


DATE	BY	NO.	REVISION
2-24-63	MS	3	

MASSAC 7L 30 14 SHEETS

B.M. #32 Bat Spike in 12" Sasafra  
 400' Lt. of Station 419 Elev. 342.24

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



**CURVE DATA**  
 N.B.L. P.I. Sta. 406+8074  
 E.B.L. P.I. Sta. 409+3672  
 E.P.I. Sta. 408+0873  
 $\Delta = 15^\circ 29' 39''$   
 $D = 0^\circ 30'$   
 $R = 11,479.16'$   
 $L = 3,098.84'$   
 $T = 1,558.93'$   
 $E = 105.35'$   
 $J.E. = 0.0151$

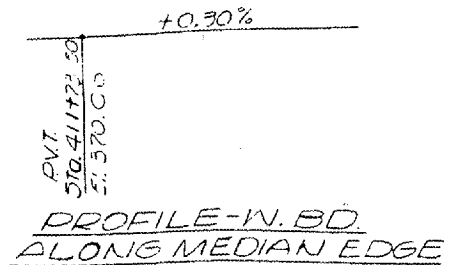
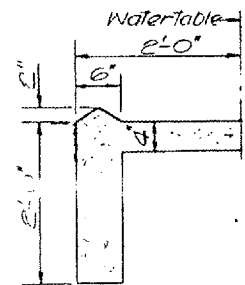
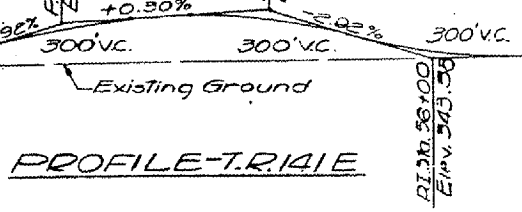
**TOTAL BILL OF MATERIAL**

Item	Unit	Super	Sub	Total
Class X Concrete	Cu. Yds.	287.5	412.9	700.4
Protective Coat	Sq. Yds.	1100		1100
Structural Steel	Lump Sum	0.26		0.26
Aluminum Railing	Lin. Ft.	201		201
Reinforcement Bars	Lbs.	73 980	43 100	117 040
Creosoted Piles (20' to 36')	Lin. Ft.		912	912
Concrete Piles	Lin. Ft.		5600	5600
Test Piles (Concrete)	Each		4	4
Name Plates	Each	1		1
Slope Wall 4"	Sq. Yds.		1010	1010
Stud Shear Connectors	Each	1638		1638
Preformed Joint Beater	Lin. Ft.	196		196

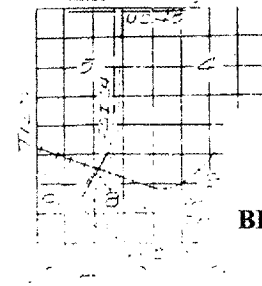
\* CALCULATED WEIGHT OF STRUCTURAL STEEL = 165,450 Lbs.

**GENERAL NOTES**

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.  
 Field connections shall be bolted using high strength bolts. Bolts  $\frac{3}{4}$ " $\phi$ , open holes  $\frac{1}{8}$ " $\phi$ , unless otherwise noted.  
 Diaphragm connections may be adapted to shop welding subject to approval by the Engineer.  
 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 58# per 100 sq. ft.  
 Concrete piles shall be driven in holes precast 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 and piers.  
 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.  
 This Contractor shall drive 4 Concrete test piles in permanent locations as directed by the Engineer, one each at the N. Abut. (N.D. Lanes), S. Abut. (S.D. Lanes), Pier 1 (E.D. Lanes) and Pier 2 (W.D. Lanes) before construction of the remainder of piles.  
 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.  
 A finishing machine as specified in Article 503.16(c) will be required for the two 24 foot lanes. A vibrating screed and hand methods or other methods approved by the Engineer will be permitted for the remaining portions of the deck.



**DESIGN STRESSES**  
 $F_c = 1200 \text{ psi} - \text{Deck Slab}$   
 $F_c = 1400 \text{ psi} - \text{Gurb. Piers 1, 2, 3, 4}$   
 $F_c = 20,000 \text{ psi} - \text{Gains}$   
 $F_c = 20,000 \text{ psi} - \text{Steel}$   
 $n = 15$   
 Allowable Stress = 20,000 psi  
 Allowable Moment = 100,000 ft-lb



**GENERAL PLAN & ELEVATION**

FOR INFORMATION ONLY:

BRIDGE NO. 7 STRUCTURE 064-0034

DESIGNED: [Signature]  
 CHECKED: George H. [Signature]  
 DRAWN: [Signature]  
 CHECKED: George H. [Signature]

EXAMINED: [Signature]  
 PASSED: [Signature]  
 APPROVED: Richard H. [Signature]

FEB 6 1963

STATION 417 + 31.86  
 STATE OF ILLINOIS  
 DIVISION OF HIGHWAYS  
 NAME PLATE

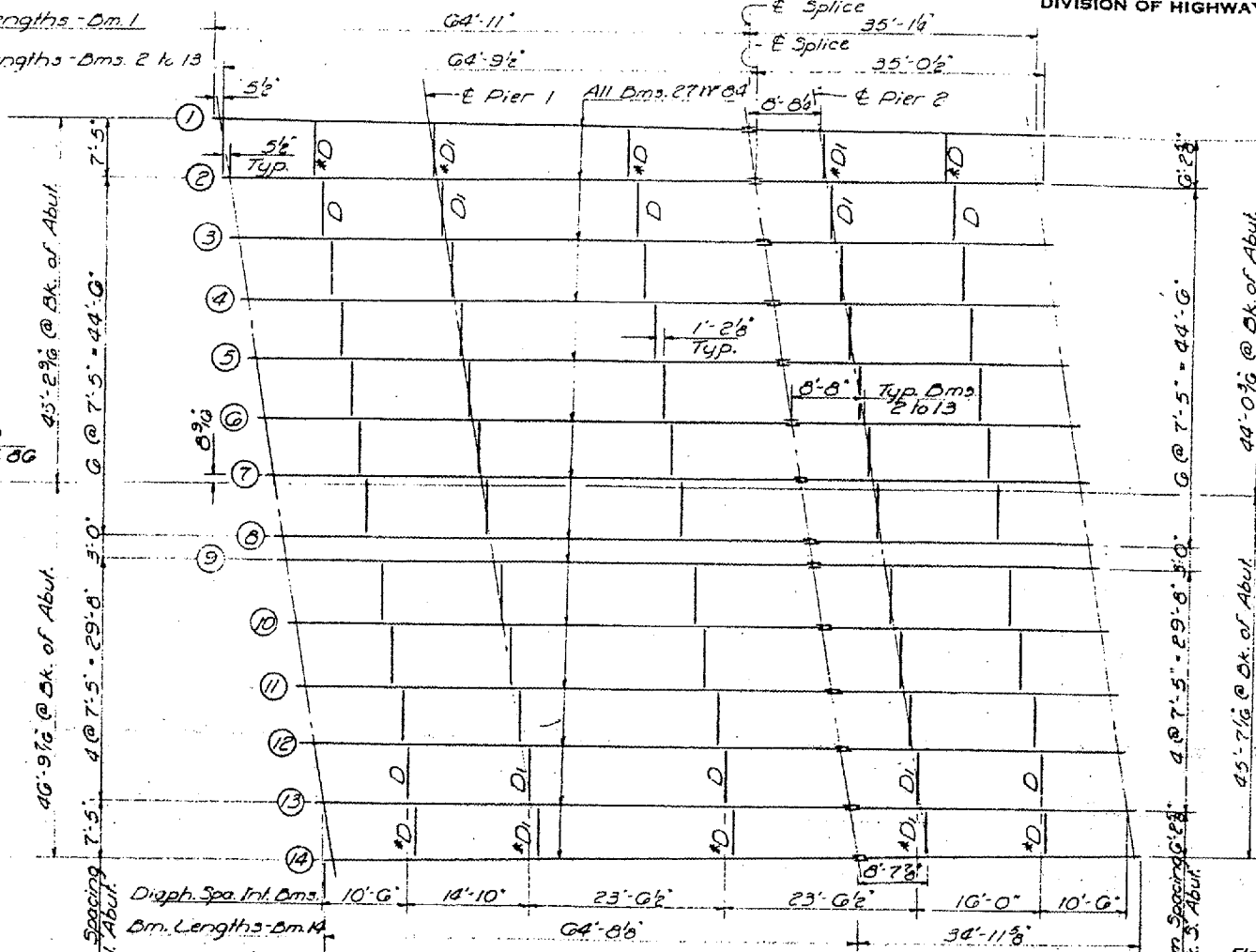
STATE OF ILLINOIS  
DEPARTMENT OF PUBLIC WORKS & BUILDINGS  
DIVISION OF HIGHWAYS

CONTRACT NO.: 98882  
ROUTE: VARIOUS  
COUNTY: VARIOUS  
SECTION: D-9 CONTRACT  
MAINTENANCE  
SHEET NO.: 36 OF 43

ROUTE NO.	SECTION
24	3
SHEET NO.: 36 OF 43	

Beam Lengths - Dm. 1

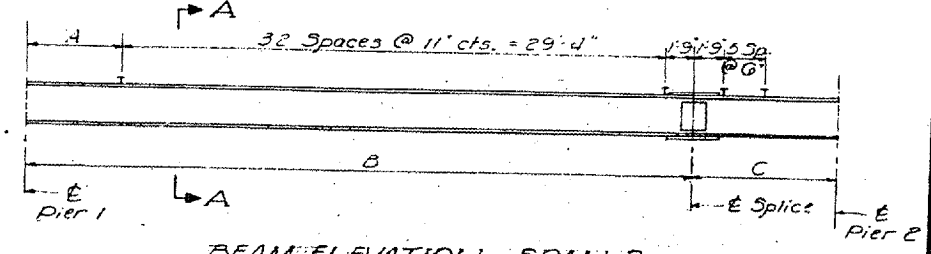
Beam Lengths - Dms. 2 to 13



TOP OF RF ELEVATIONS

Beam Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14
E. Brg. Uo. Abut.	372.03	371.92	371.81	371.71	371.60	371.42	371.11	371.29	371.41	371.40	371.37	371.20	371.15	371.05
E. Pier 1	372.11	372.00	371.89	371.79	371.68	371.50	371.19	371.37	371.49	371.50	371.45	371.34	371.29	371.13
E. Splice	372.28	372.11	372.00	371.90	371.79	371.61	371.30	371.48	371.60	371.67	371.56	371.45	371.34	371.24
E. Pier 2	372.25	372.13	372.03	371.93	371.82	371.64	371.33	371.51	371.63	371.70	371.59	371.48	371.37	371.27
E. Brg. So. Abut.	372.33	372.21	372.11	372.01	371.90	371.72	371.41	371.59	371.71	371.70	371.67	371.56	371.45	371.35

	A	B	C
Dm. 1	7'-4 1/2"	38'-5 1/2"	8'-8 1/2"
Dms. 2-13	7'-4"	38'-5"	8'-8"
Dm. 14	7'-3 1/2"	38'-4 1/2"	8'-7 1/2"



BEAM ELEVATION - SPAN 2  
(117 Studs per Beam)

MOMENTS & REACTIONS (INT. BMS.)

	*MOMENTS (FT.-Kips)			REACTIONS (Kips)	
	A Sp. 1	Pier 1	Sp. 2	Abuts.	Piers
D.L.	12.1	142.4	95.1	5.0	30.0
S.D.L.	7.5	33.7	38.4	2.1	10.0
L.L. & Imp.	158.5	171.4	343.7	29.3	43.9
Total	178.1	347.5		37.0	91.5

\* 5ymm. about E Span 2

SHEARS - SPAN 2

	.25L	.5L
S.D.L.	3.1	-
L.L. & Imp.	35.0	18.4
Total	38.1	18.4

PROPERTIES

STEEL SECTION

Ic	2824.8 in. <sup>4</sup>
Sc	211.7 in. <sup>3</sup>
I (Pier)	4061.0 in. <sup>4</sup>
I (Abut.)	233.0 in. <sup>4</sup>

COMPOSITE SECTION

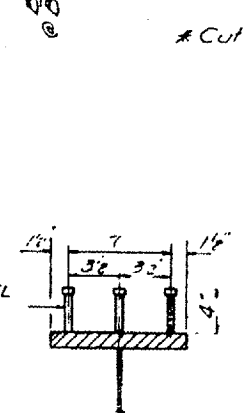
Ic	8877.3 in. <sup>4</sup>
Sc	336.6 in. <sup>3</sup>

FOR INFORMATION ONLY:

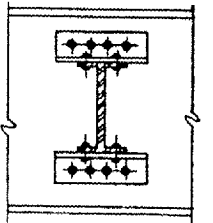
BRIDGE NO. 7 STRUCTURE 064-0034

PLAN

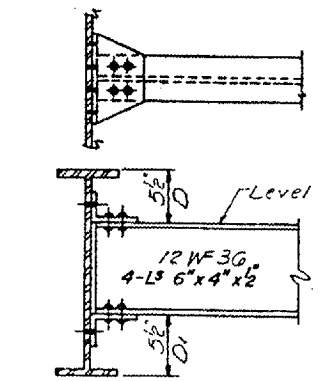
\* Cut Diaphragms to fit.



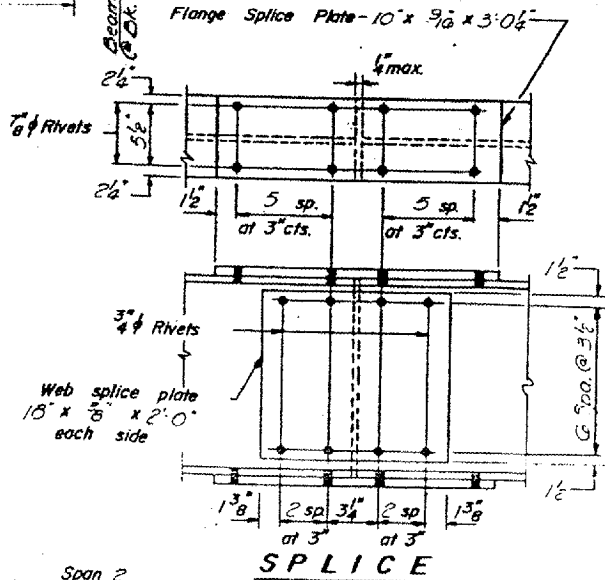
SEC. A-A



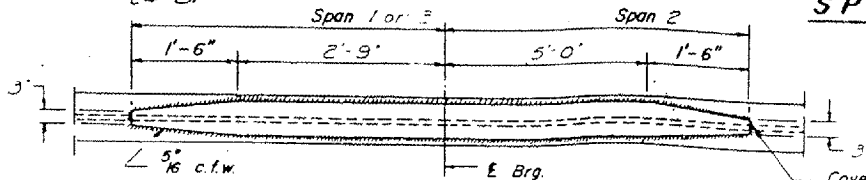
DIAPHRAGM D



Required  
36'-0"  
24'-0"



SPLICE



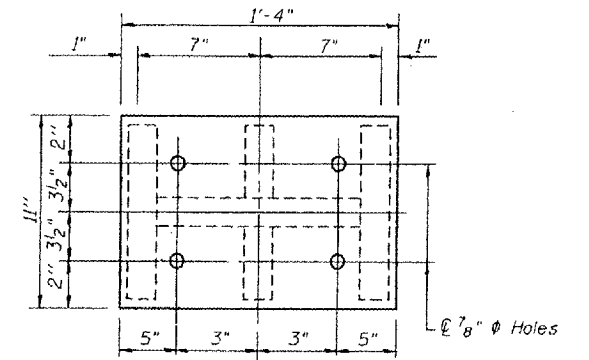
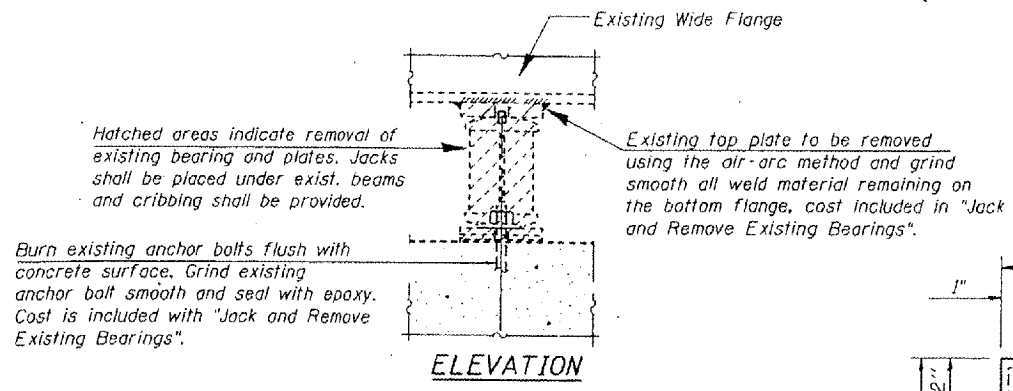
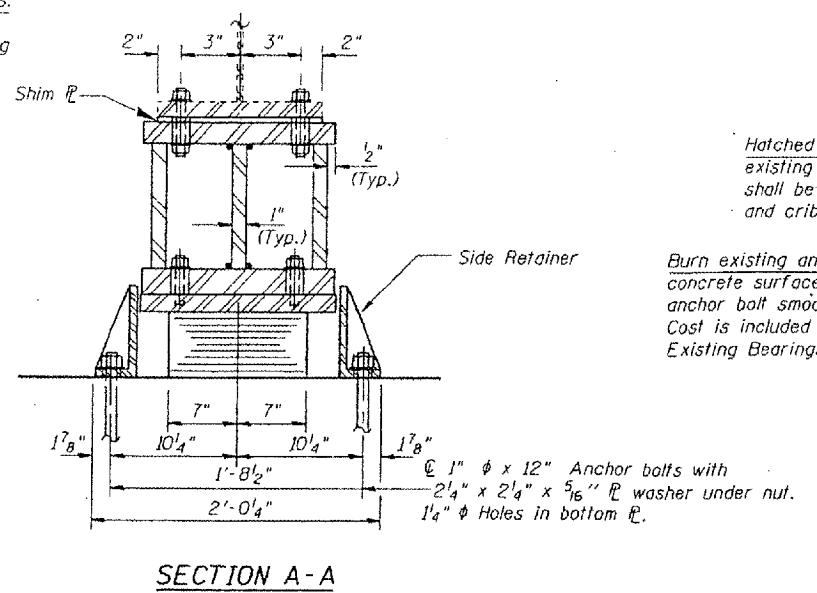
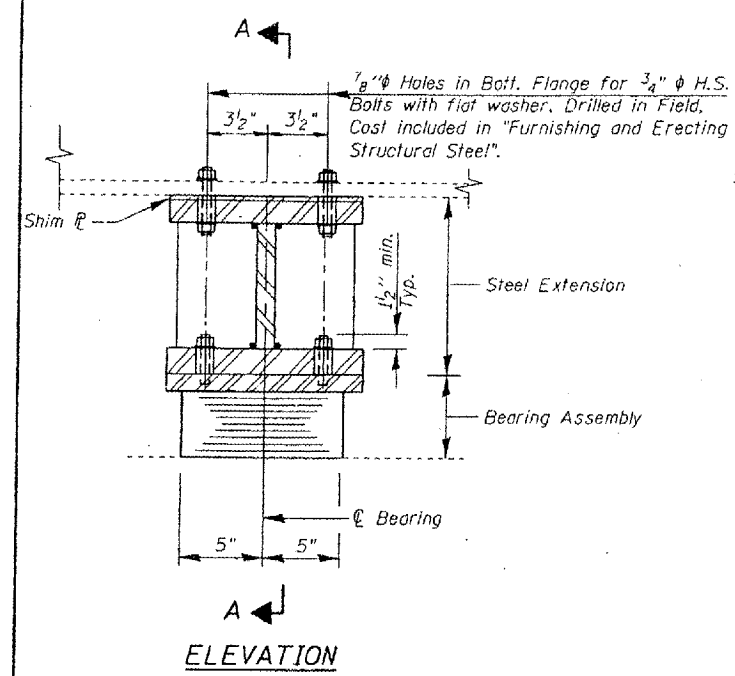
COVER PLATE  
AT PIERS

DESIGNED	<i>[Signature]</i>
CHECKED	<i>[Signature]</i>
DRAWN	J. Schneller
CHECKED	<i>[Signature]</i>

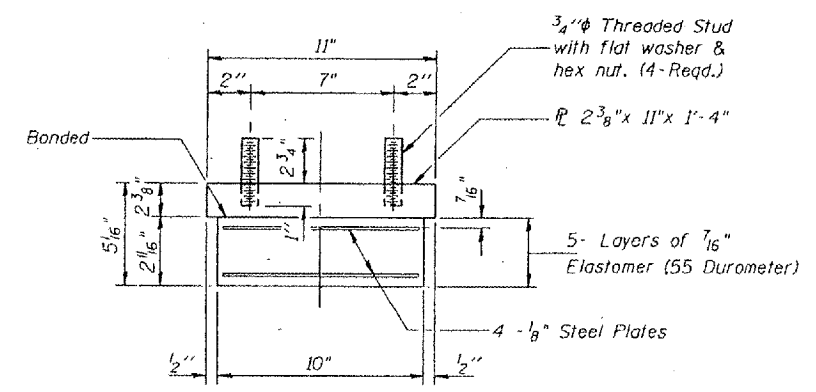
EXAMINED	<i>[Signature]</i>
PASSED	<i>[Signature]</i>
APPROVED	<i>[Signature]</i>

I-2-CD 9-1-65

FED. ROAD DIST. NO. ILLINOIS  
 \* 64(1.2.2-1.3-1.3)RS-L BSMART FY2002-2  
 Sheet 8 of 12 sheets



TYPE I ELASTOMERIC BEARING PIER 2



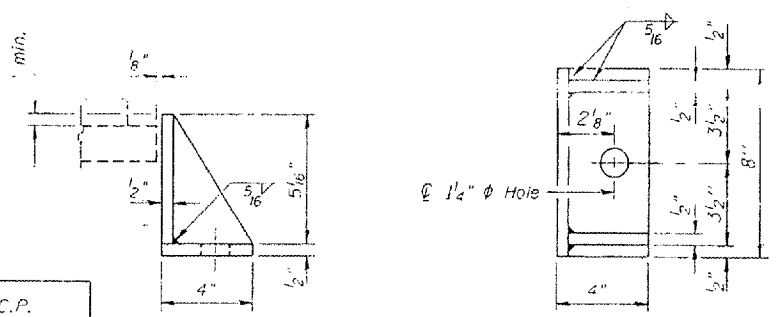
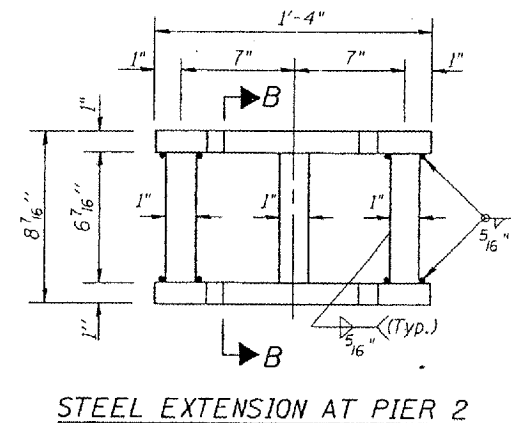
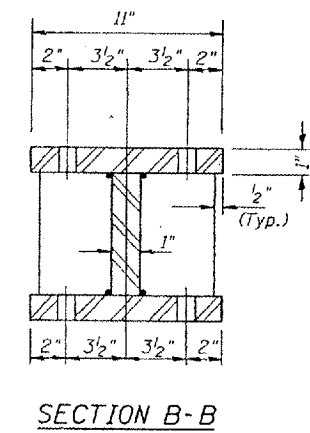
BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly

\* BEAM REACTION TABLE

	SERVICE LOADS
R $\phi$ (K)	58.5
R $\perp$ (K)	43.3
Imp (K)	13.0
R Total (K)	114.8

\* Min. Jack capacity at each Beam shall be 65 Tons.



SIDE RETAINER

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

Notes:  
 Prior to ordering any material, the contractor shall verify in the field all bearing  
 For anchor bolt installation details see sheet # 10 of 12.  
 New steel extensions, side retainers, connection bolts, anchor bolts, and shim plates are included in "Furnishing and Erecting Structural Steel".

BILL OF MATERIAL

ITEM	UNIT	TOTAL
ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	14

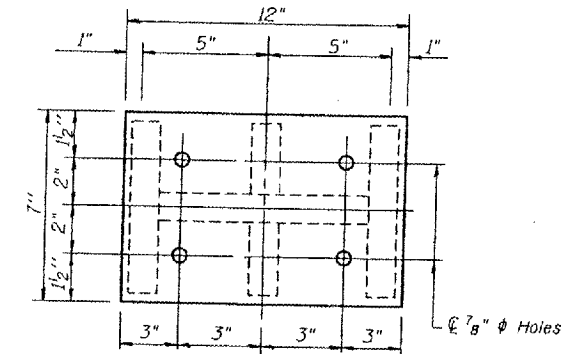
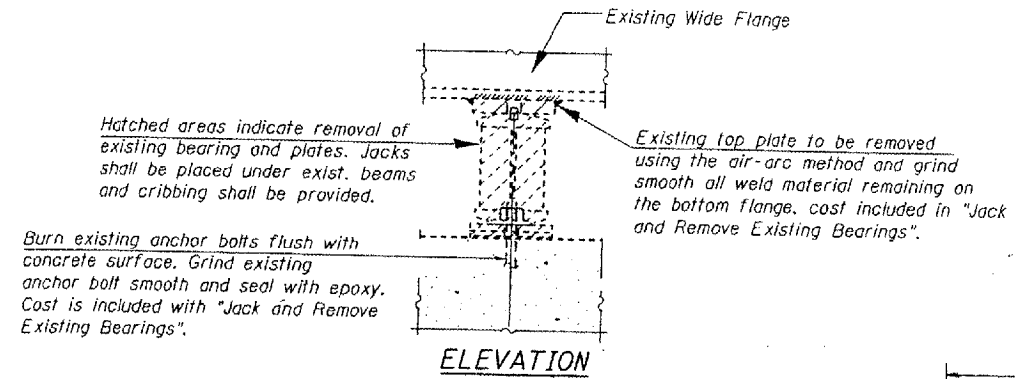
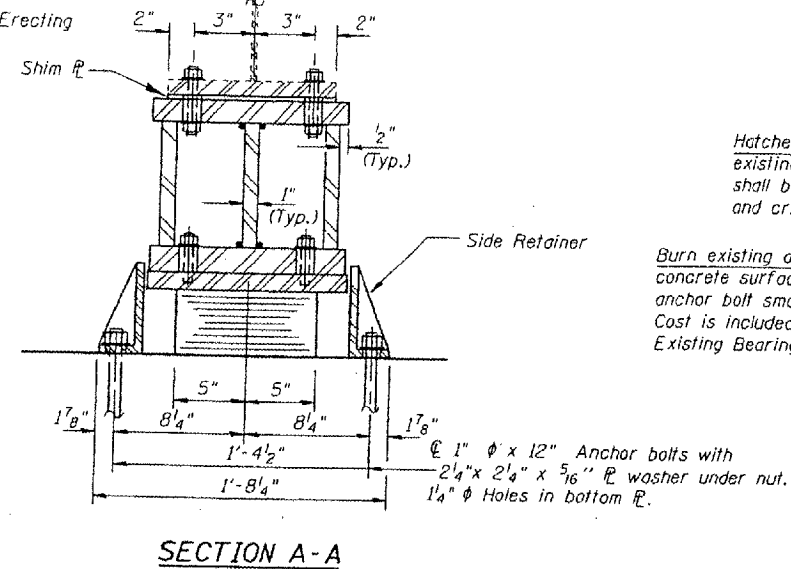
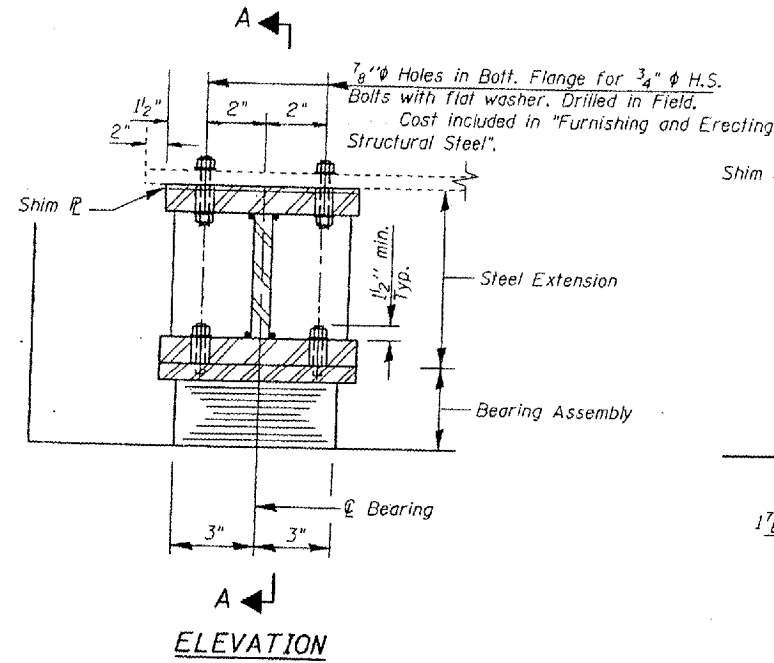
FOR INFORMATION ONLY:

ELASTOM. BRIDGE NO. 7 STRUCTURE 064-0034

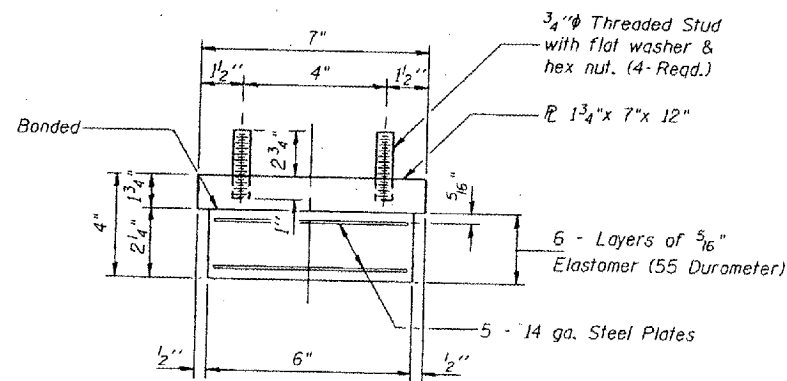


Wed Jul 18 09:40:26 2001  
 c:\p\01\elast\064-0034\type1bear3.rvt LV:el-63

DESIGNED	J.C.P.
CHECKED	
DRAWN	T.F.
CHECKED	



TYPE I ELASTOMERIC BEARING SOUTH ABUT.



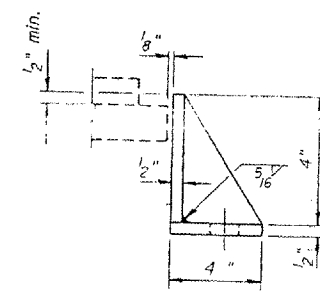
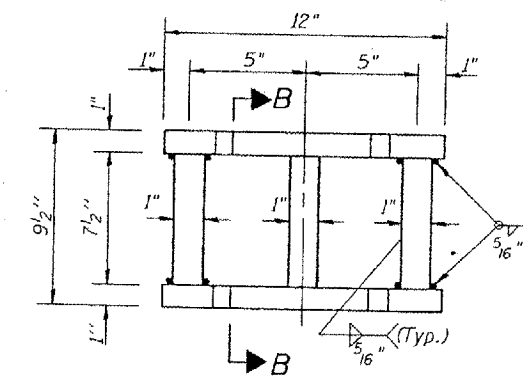
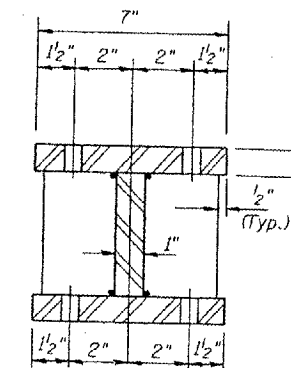
BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly

\*INTERIOR BEAM REACTION TABLE

	SERVICE LOADS
R $\mathcal{Q}$ (K)	10.9
R $\mathcal{L}$ (K)	30.8
Imp (K)	9.2
R Total (K)	50.9

\* Min. Jack capacity at each Beam shall be 25 Tons.



SIDE RETAINER

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

Notes:

Prior to ordering any material, the contractor shall verify in the field all bearing front dimensions.

For anchor bolt installation details see sheet # 10 of 12.

New steel extensions, side retainers, connection bolts, anchor bolts, and shim plates are included in "Furnishing and Erecting Structural Steel".

BILL OF MATERIAL

ITEM	UNIT	TOTAL
ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	14

FOR INFORMATION ONLY:

ELASTOMERIC BRIDGE NO. 7 STRUCTURE 064-0034



DESIGNED	J.C.P.
CHECKED	
DRAWN	T.F.
CHECKED	



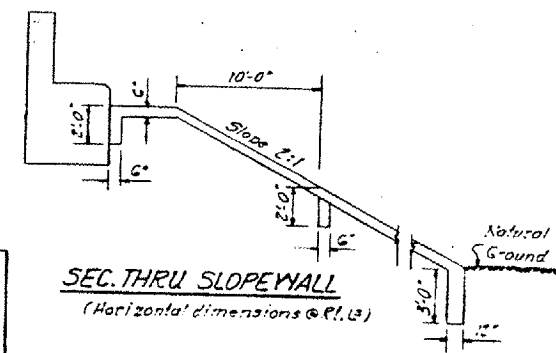
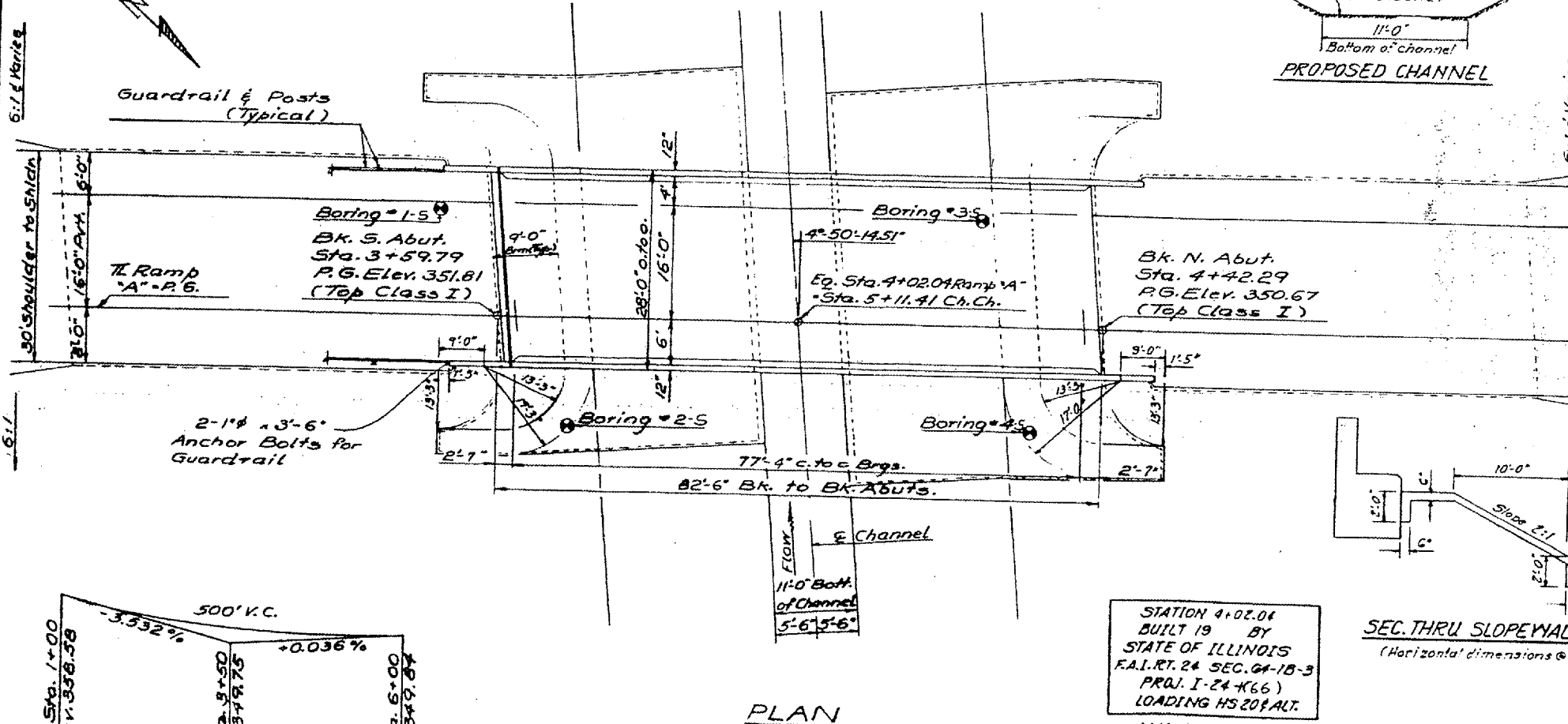
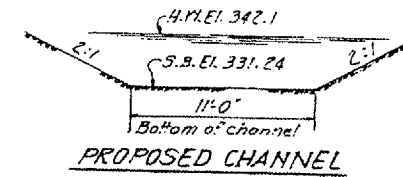
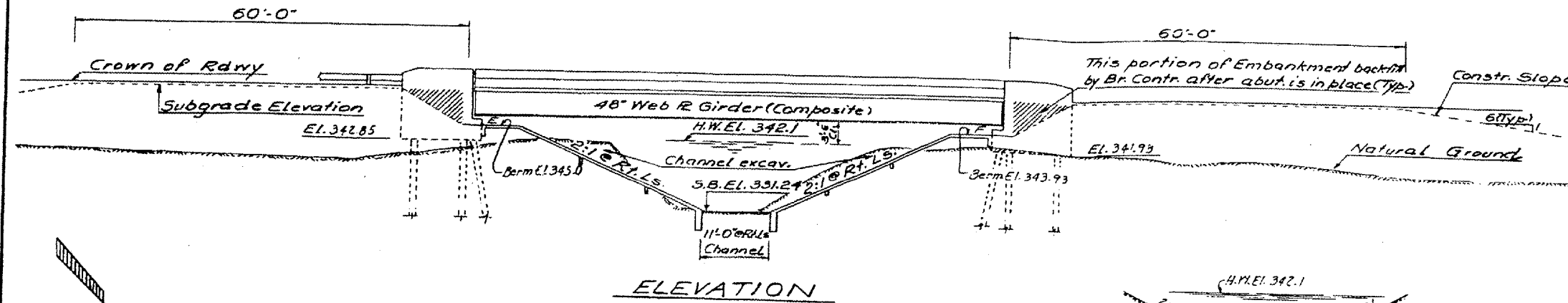
NO.	DATE	BY	REVISION
1	10-18-75	MASSAC	117
2			117
3			117

SHEET NO. 1  
8 SHEETS

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

B.M. Survey Marker - Eastbound Lanes (West Lanes) Sta. 199+00 - Elev. 351.54

No existing structure.



**GENERAL NOTES**

Fasteners shall be high strength bolts. Bolts 3/4" ø, open holes 15/16" unless otherwise noted.  
 Calculated weight of Structural Steel = 58930 lbs.  
 The Basic Lead Silico Chromate paint system shall be used for shop and field painting of structural steel.  
 Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.  
 Anchor bolts shall be set before bolting diaphragms over supports.  
 Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, weighing 58# per 100 sq. ft.  
 Layout of slope walls may be varied in the field to suit ground conditions as directed by the Engineer.

The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.  
 Protective Coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.  
 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 1/2" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.  
 For borings see Proposa.

The Contractor shall drive one concrete test pile in a permanent location of North Abutment as directed by the Engineer before ordering the remainder of piles.

**TOTAL BILL OF MATERIAL**

Item	Unit	Super	Sub	Total
Bimastic Concrete Surface Course Class I	Sq. Yds	13		13
Structure Excavation	Cu. Yds.		12	12
Protective Coat	Sq. Yds	86		86
Waterproofing Membrane System	Sq. Yds	222		222
Class I Concrete	Cu. Yds.	81.2	73.8	155.0
Structural Steel	L.S.			708
Stud Shear Connectors	Each	708		708
Reinforcement Bars	Lbs	17880	7350	25230
Concrete Piles	Lin. Ft.		1070	1070
Test Piles (Concrete)	Each		1	1
Name Plates	Each		1	1
Slope Wall (6")	Sq. Yds.		7'6"	7'6"
Preformed Joint Sealer (1/2")	Lin. Ft.	28		28

STATION 4+02.04  
 BUILT 19 BY  
 STATE OF ILLINOIS  
 F.A.I. RT. 24 SEC. 04-18-3  
 PROJ. I-24-K66  
 LOADING HS 20 S.A.L.T.

**NAME PLATE**  
 (See S.M. 2113)

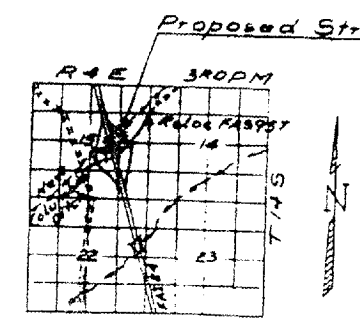
**WATERWAY INFORMATION**

Drainage Area 3900 Acres  
 Character: Level, Cultivated, Silty Clay  
 Required Opening 323 Sq. Ft.  
 Proposed Opening 355 Sq. Ft.

**DESIGN STRESSES**

$f_c = 1200$  psi Deck Slab  
 $f_c = 1400$  psi Curb parapet & sub.  
 $f_b = 20000$  psi (M 183)  
 $n = 8.5$

Loading HS 20-44 S.A.L.T.  
 1975 AASHTO, 1974 and 1975 Interim Specifications.  
 Allow 25% for Future W. 3.



**GENERAL PLAN & ELEVATION**  
 PROJECT: I-24-( )  
 RAM  
 FOR INFORMATION ONLY:  
 F.A.I.  
 BRIDGE NO. 8 STRUCTURE 064-0037

**PROPOSED PROFILE RAMP 'A'**  
 (along transit line)

DESIGNED	March 15 1976
CHECKED	
DRAWN	
CHECKED	

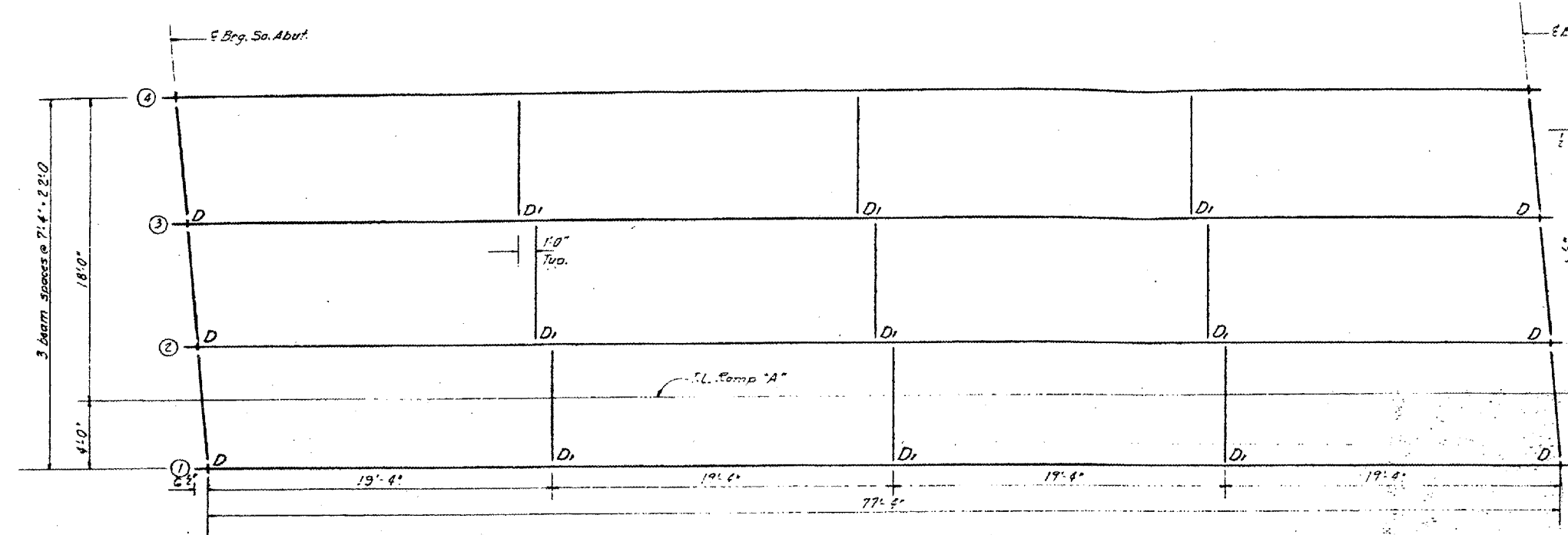
$Q(50) = 1780$  cfs  
 H.W. Elev. = 342.1 (50 yr)  
 $Q(100) = 2260$  cfs  
 H.W. Elev. = 342.3 (100 yr)



STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

DATE	NO.	BY	REVISION
11-24	14-183	MASSAC	117 43

SHEET NO. 4  
8 SHEETS

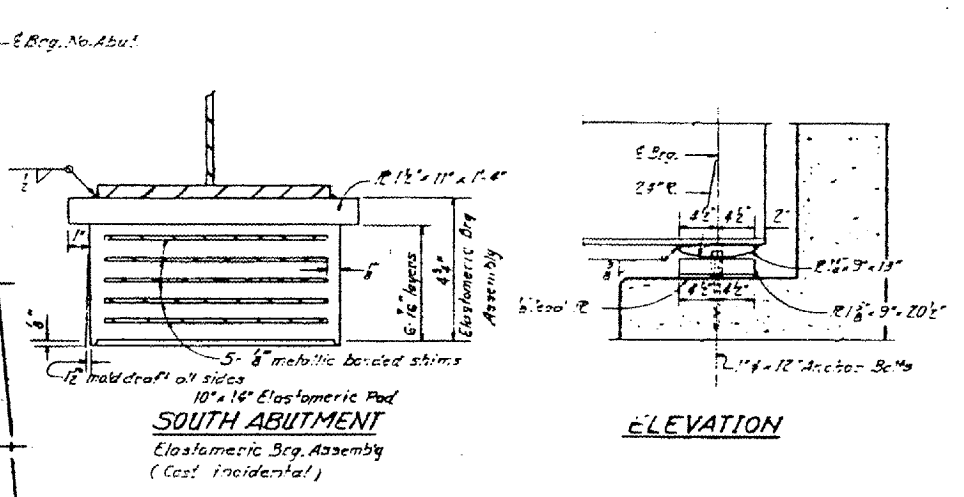


FRAMING PLAN

$I_s$  and  $S_s$  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  $f_s$ .  
 $f_s$  is the maximum  $E$  + impact shear range in span used to determine shear connector spacing.

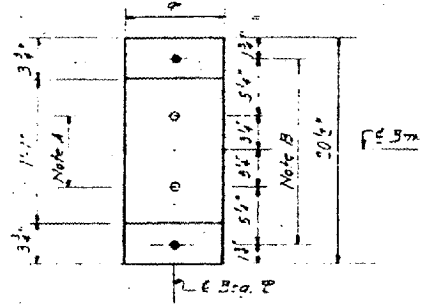
TOP OF WEB ELEVATIONS

Loc.	1	2	3	4
So. Abut.	350.81	350.93	351.06	351.18
No. Abut.	349.74	349.86	349.98	350.10



SOUTH ABUTMENT  
 Elastomeric Brg. Assembly  
 (Cast incidental)

Note A:  
 1/2" dia holes 1" deep in top flange for 1/2" dia pins. Thread on press fit angles in both flanges.  
 Note B:  
 1/2" dia hole for 1/2" x 12" anchor bolts. 2 1/2" x 2 1/2" x 1/4" washer under nut.



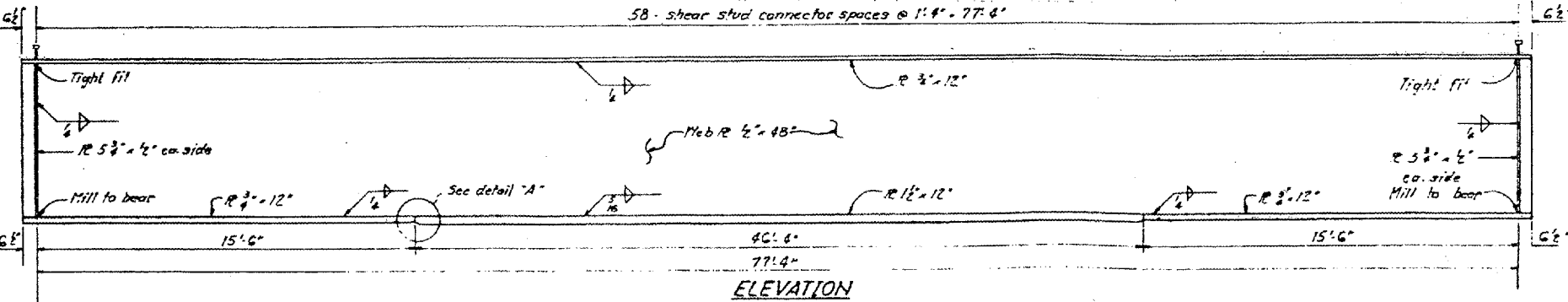
PLAN AT NO. ABUT

INTERIOR GIRDER MOMENT TABLE

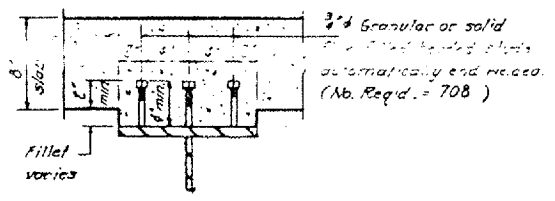
Span	$I_s$ (in <sup>4</sup> )	$I_c$ (in <sup>4</sup> )	$S_s$ (in <sup>3</sup> )	$S_c$ (in <sup>3</sup> )	$f_s$ (ksi)	$M_E$ (k)	$M_{imp}$ (k)	$M_{total}$ (k)	$f_s$ (ksi)	$f_s$ total (ksi)	$V_R$ (k)
1st Span	12977	56232	948	1342	.93	675	8.8	502	375	747	187
2nd Span											
3rd Span											
4th Span											
Total											

INTERIOR GIRDER REACTION TABLE

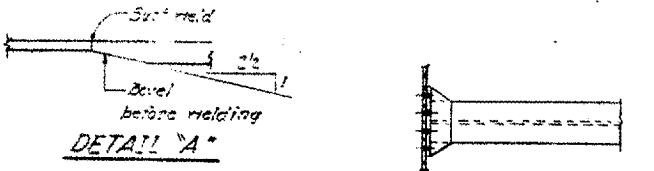
Abut.	$R_H$ (k)	$R_V$ (k)	$R_{imp}$ (k)	$R$ total (k)
1st	55.8	42.2	10.6	108.6
2nd				
3rd				
4th				



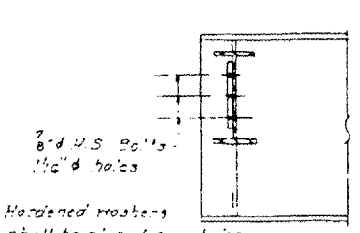
ELEVATION



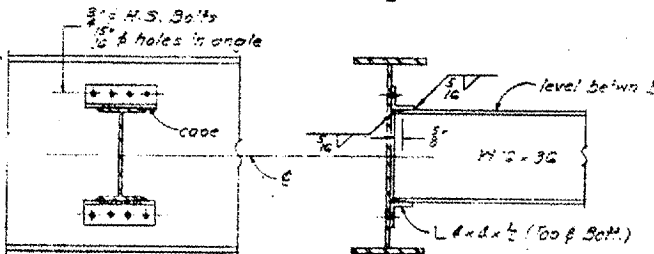
SHEAR STUD



DETAIL 'A'

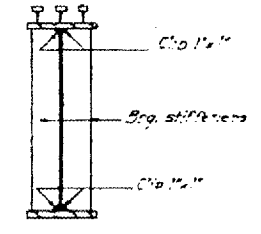


DIAPHRAGM - D  
 No. Reqd. = 6

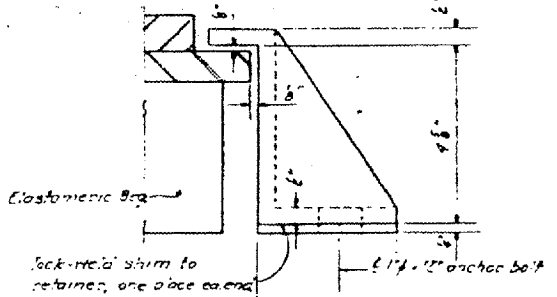


DIAPHRAGM - D1  
 No. Reqd. = 9

PINTE



END VIEW



SIDE RETAINER DETAILS

Note:  
 The main load carrying member components subject to the Strength Requirements for North Trussness. Some of these are the flanges and webs of the steel girders.

FOR INFORMATION ONLY:

BRIDGE NO. 8 STRUCTURE 064-0037

DESIGNED: [Signature]  
 CHECKED: Robert K. [Signature]  
 DRAWN: [Signature]  
 CHECKED: RKQ

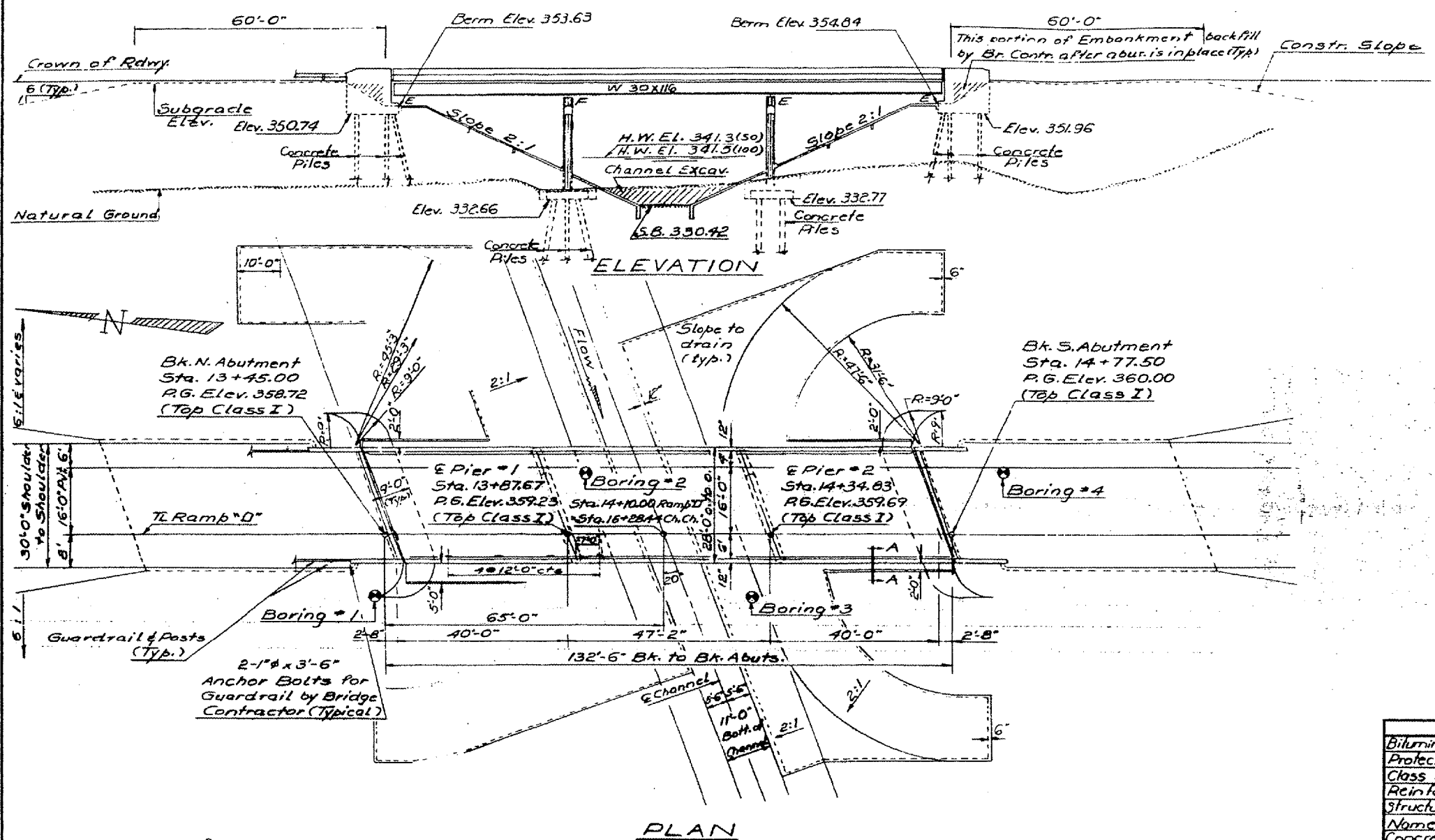
EXAMINED: [Signature] MARCH 15 1976  
 PAIRED: [Signature]  
 APPROVED: [Signature]

3/4" U.S. Bolts  
 1/2" dia holes  
 Hardened washers shall be placed over holes in bent 'C'.

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

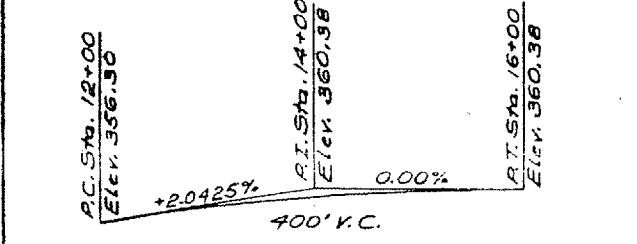
B.M. Survey marker - Eastbound Lanes  
 (West Lanes) Sta. 199+00 - Elev. 351.54



Fasteners shall be high strength bolts. Bolts 3/8" open holes 1/16" unless otherwise noted.  
 See Special Provisions for Boring Data.  
 The basic lead silico chromate paint shall be used for shop and field painting of Structural Steel.  
 Field welding of construction accessories will not be permitted to the bottom flange of beams 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 58# per 100 sq. ft.  
 Layout of slope walls may be varied in the field to suit ground conditions as directed by the Engineer.  
 The Contractor shall drive one concrete test pile in a permanent location at Pier 2 as directed by the Engineer before ordering the remainder of piles.  
 Calculated weight of Structural Steel = 74,290 Lbs.  
 Concrete piles of abutments shall be driven in holes prepared through the embankment in accordance with Article 513.09(c) of the Standard Specifications.  
 Backfill shall be placed behind the abutment after the superstructure has been poured and the falsework removed. See Article 502.11 of the Standard Specifications.  
 The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments and piers.  
 The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.  
 Protective Coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.  
 Bearing seal 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 6" 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 main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the tension flanges, webs and all splice plate material of the wide flange beams.

**TOTAL BILL OF MATERIAL**

Item	Unit	Super	Sub	Total
Biluminous Concrete Surface Course, Class I	Tons	20		20
Protective Coat	Sq. Yd.	100	19	119
Class X Concrete	Cu. Yd.	122.3	156.8	279.1
Reinforcement Bars	Pound	29170	12980	42150
Structural Steel	Lump Sum	1		1
Name Plates	Each	1		1
Concrete Piles	Lin. Ft.		1680	1680
Test Piles Concrete	Each		1	1
Slope Wall (6')	Sq. Yd.		1606	1606
* Waterproofing Membrane System	Sq. Yd.	352		352
Preformed Joint Sealer (2")	Lin. Ft.	60		60
Cofferdam Excavation	Cu. Yd.		55	55
Cofferdam (Pier 1)	Each		1	1
Cofferdam (Pier 2)	Each		1	1



**WATERWAY INFORMATION**

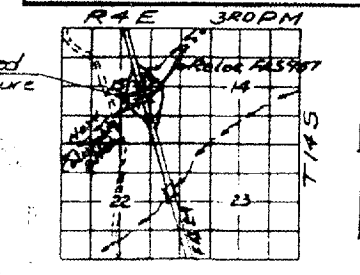
Drainage Area 3915 Acres  
 Design Discharge (50yr) 1785 c.f.s.  
 Existing Opening (below 50yr HWE) Sq. Ft.  
 Required Opening (below 50yr HWE) 323 Sq. Ft.  
 Proposed Opening (below 50yr HWE) 321 Sq. Ft.  
 Created Head for Design Flood 100-Year Discharge 2268 c.f.s.  
 Created Head for 100-Year Flood Ft.

**DESIGN STRESSES**

Proposed Structure  
 fc = 1200 psi (Deck Slab)  
 fc = 1400 psi (Curb, parapet, sub)  
 fs = 20000 psi (Reinf.)  
 fs = 20000 psi (Struct. M 183)  
 vc = 75 psi (Ftg.)  
 n = 10

**PROPOSED GRADE PROFILE RAMP "D"**  
 (along TL)

DESIGNED: J. J. J.	EXAMINED: [Signature]
CHECKED: J. J. J.	PAVED: [Signature]
DRAWN: R. Doly	APPROVED: [Signature]
CHECKED: J. J. J.	



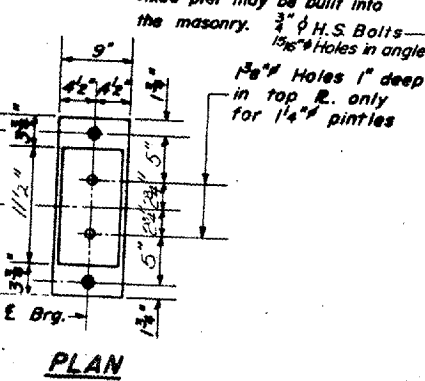
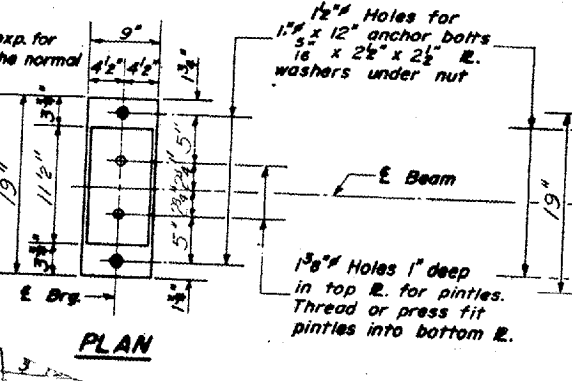
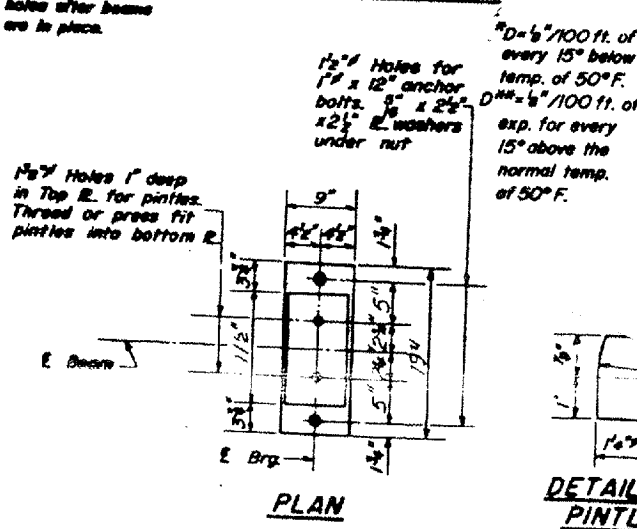
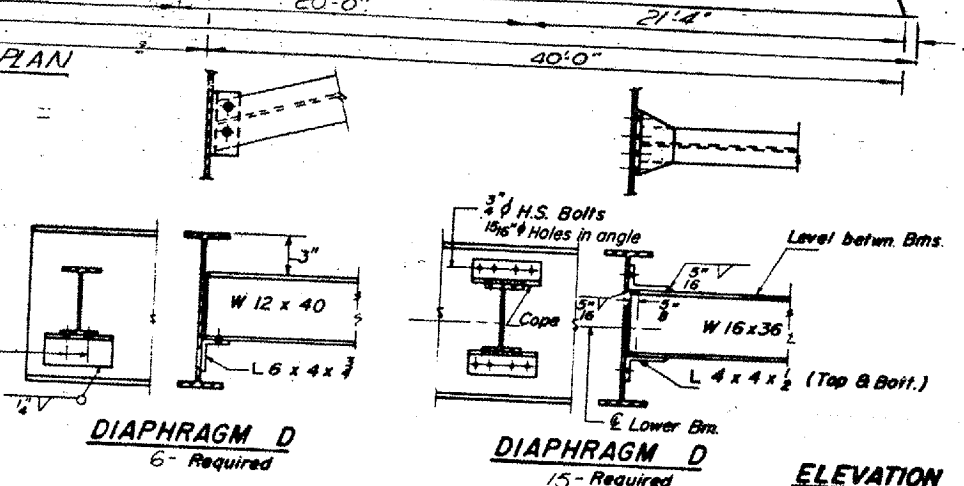
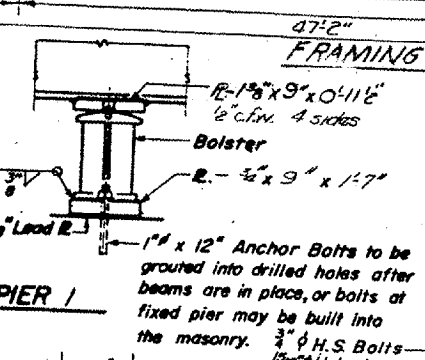
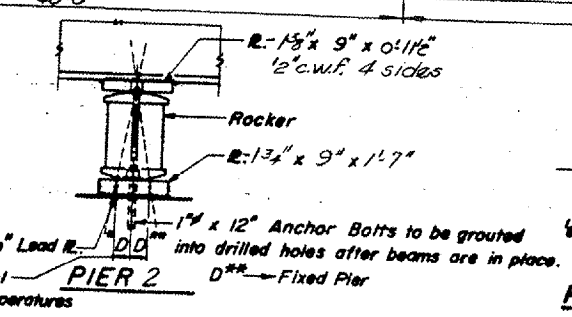
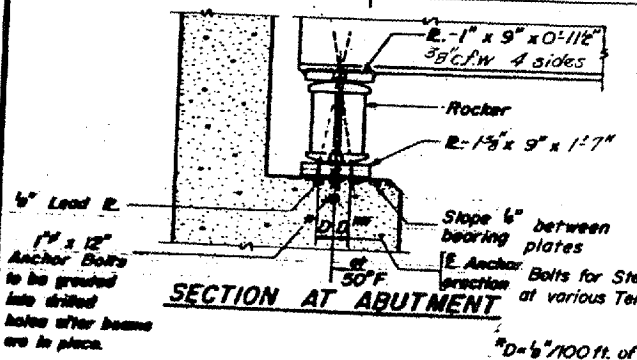
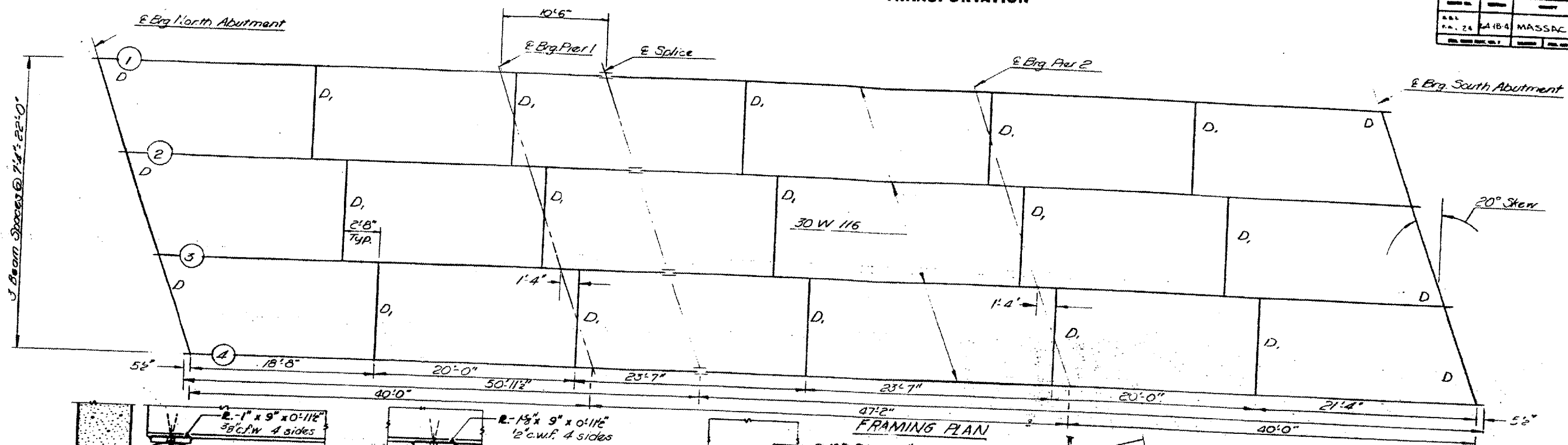
**GENERAL PLAN & ELEVATION**

RAM FOR INFORMATION ONLY:  
 F.A.I. BRIDGE NO. 9 STRUCTURE  
 064-0038

Leading H-20-44 & Alt.  
 1973 AASHTO, 1974 and 1975 Interim Specifications.  
 Allow 25' for Future W.S.

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

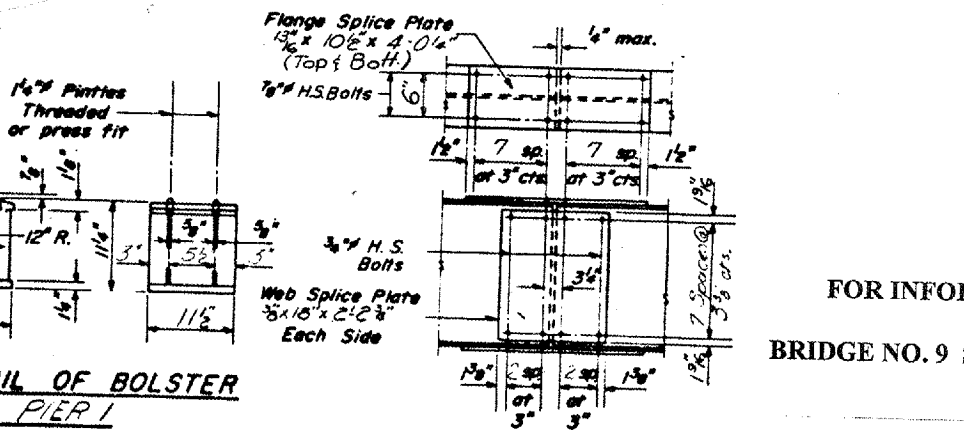
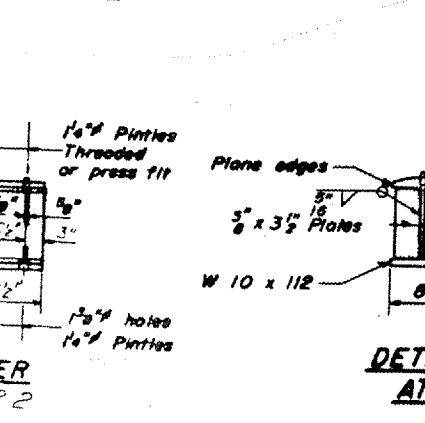
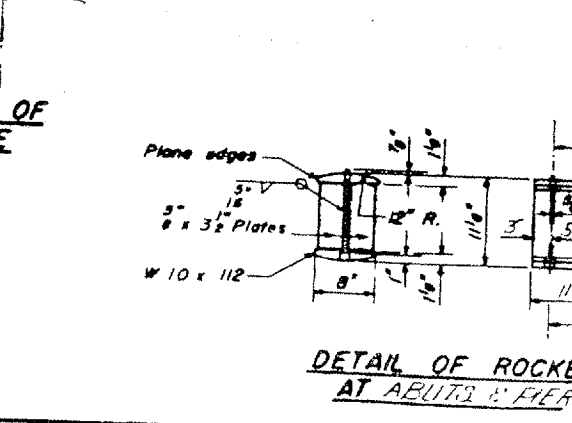
NO.	DATE	BY	REVISION
1	10/18/73	J.F.P.	ISSUED FOR CONSTRUCTION
2	11/14/73	J.F.P.	REVISED TO SHOW REVISIONS
3	12/11/73	J.F.P.	REVISED TO SHOW REVISIONS
4	1/15/74	J.F.P.	REVISED TO SHOW REVISIONS
5	2/12/74	J.F.P.	REVISED TO SHOW REVISIONS
6	3/11/74	J.F.P.	REVISED TO SHOW REVISIONS
7	4/8/74	J.F.P.	REVISED TO SHOW REVISIONS
8	5/6/74	J.F.P.	REVISED TO SHOW REVISIONS
9	6/3/74	J.F.P.	REVISED TO SHOW REVISIONS
10	7/1/74	J.F.P.	REVISED TO SHOW REVISIONS
11	7/29/74	J.F.P.	REVISED TO SHOW REVISIONS
12	8/26/74	J.F.P.	REVISED TO SHOW REVISIONS



ELEVATION TOP OF WF

Location	Brn. 1	Brn. 2	Brn. 3	Brn. 4
E Brg N Abut.	358.12	358.00	357.96	357.80
E Brg Pier 1	358.58	358.43	358.37	358.28
E Splice	358.65	358.56	358.47	358.39
E Brg Pier 2	359.00	358.91	358.82	358.72
E Brg S Abut.	359.30	359.29	359.19	359.09

DESIGNED: J.F.P.  
 CHECKED: J.F.P.  
 DRAWN: J.F.P.  
 APPROVED: J.F.P.  
 DIRECTOR OF HIGHWAYS



FOR INFORMATION ONLY:  
 BRIDGE NO. 9 STRUCTURE 064-0038