

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
BRIDGE PAINTING**

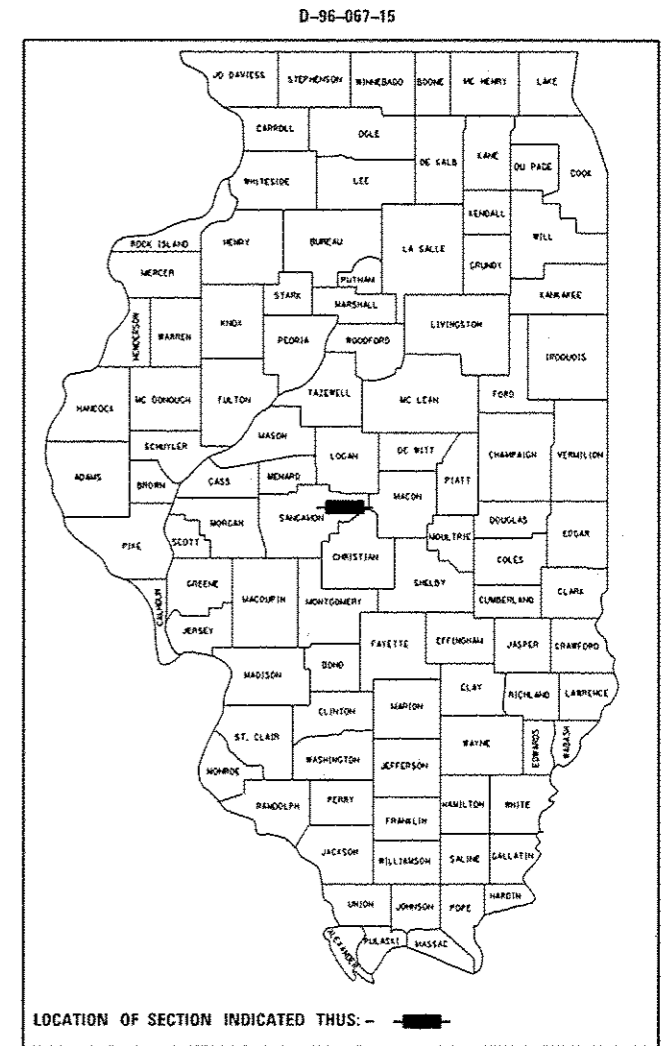
FAI 72 (I-72)  
SECTION D6 BDGE PAINTING 2016-3

BRIDGE PAINTING  
SANGAMON COUNTY

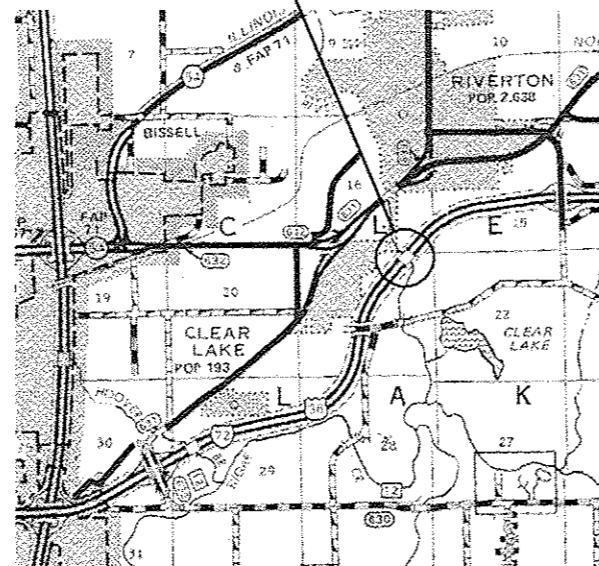
C-96-067-15

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	D6 BDGE PAINTING 2016-3	SANGAMON	10	1
		ILLINOIS	CONTRACT NO. 72H90	

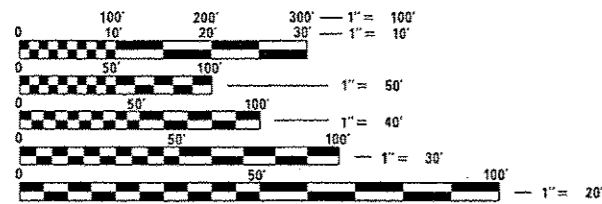
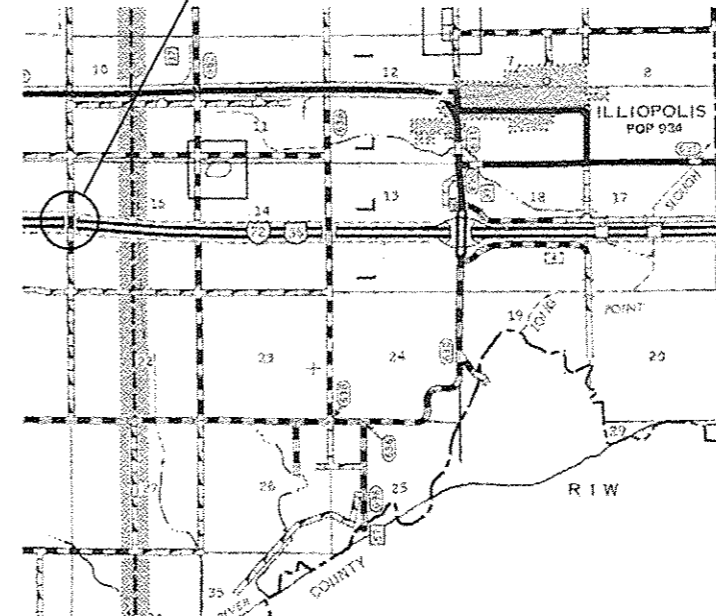
FOR INDEX OF SHEETS, SEE SHEET NO. 2



LOCATION #1 & #2:  
SN 084-0152 (WB) &  
SN 084-0153 (EB)  
I-72 OVER SANGAMON RIVER  
3.5 MILES EAST OF I-55



LOCATION #3:  
SN 084-0160  
KENT FARM RD OVER I-72  
3 MILES WEST OF ILLIOPOLIS



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

BRIDGE MAINTENANCE ENGINEER - BRANDON DUDLEY (217) 785-9290  
BRIDGE INSPECTION ENGINEER - DAVE COPENBARGER (217) 785-5306

GROSS LENGTH = NA  
NET LENGTH = NA

CONTRACT NO. 72H90

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED *September 15, 2015*  
*Ray Z. Smith*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

*March 18, 2016*  
*Maureen M. Addis P.E.*  
ENGINEER OF DESIGN AND ENVIRONMENT

*March 18, 2016*  
*Cher Osman P.E.*  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**

INDEX OF SHEETS

- 1 COVER SHEET
- 2 INDEX, STANDARDS, GENERAL NOTES, SIGNATURES, & SUMMARY OF QUANTITIES
- 3-10 EXISTING BRIDGE PLANS (FOR INFORMATION ONLY)

HIGHWAY STANDARDS

- 701101-05
- 701106-02
- 701400-08
- 701402-11
- 701901-05

GENERAL NOTES:

1. STRUCTURES TO BE PAINTED SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS. CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES". THE AREAS TO BE PAINTED ON EACH BRIDGE SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS. ALL AREAS TO BE PAINTED SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING PER SSPC SP 10. ALL EXISTING STEEL CLEANED SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1 - OZ/E/U. THE COLOR OF THE FINAL FINISH COAT FOR EACH BRIDGE SHALL BE GREEN (MUNSELL 7.5G 4/8), EXCEPT AS MODIFIED IN THE SPECIAL PROVISIONS.
- 2 THE USE OF AIR MONITORS WILL NOT BE REQUIRED.
3. THE SSPC-OP-1 AND SSPC-OP2 PAINTING CONTRACTOR CERTIFICATIONS WILL BE REQUIRED FOR THESE BRIDGES.
4. CARE SHALL BE TAKEN NOT TO DAMAGE RUBBER BEARING OR JOINT COMPONENTS DURING BLASTING AND CLEANING OPERATIONS. ANY DAMAGE TO THESE COMPONENTS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
5. UPON COMPLETION OF PAINTING OPERATIONS AT EACH LOCATION, THE CONTRACTOR SHALL REMOVE ALL DEBRIS FROM PIER OR ABUTMENT CAPS UPON WHICH PAINTING OPERATIONS TOOK PLACE. FINAL CLEANUP SHALL BE CONSIDERED INCIDENTAL TO THE PAINT PAY ITEM FOR THE RESPECTIVE LOCATION. THE ENGINEER SHALL HAVE THE RIGHT TO WITHOLD PAYMENT UNTIL SATISFACTORY CLEANUP IS ACHIEVED.

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
DISTRICT 6**

EXAMINED AUGUST 19th 20 15  
*John C. Weymeyer*  
ENGINEER OF OPERATIONS

EXAMINED August 20 20 15  
*Ron Ackerman*  
ENGINEER OF PROJECT IMPLEMENTATION

EXAMINED AUGUST 25 20 15  
*Jeffrey P. Meyer*  
ENGINEER OF PROGRAM DEVELOPMENT

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE
				100% STATE
				BRIDGE 0014 SANGAMON
67100100	MOBILIZATION	L SUM	1	1
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	1	1
70800105	TEMPORARY WATER FILLED BARRIER	FOOT	500	500
X7010410	SPEED DISPLAY TRAILER	CAL MO	2	2
Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1	1
Z0007102	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 2	L SUM	1	1
Z0007103	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 3	L SUM	1	1
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	1
Z0010502	CLEANING AND PAINTING STEEL BRIDGE NO. 2	L SUM	1	1
Z0010503	CLEANING AND PAINTING STEEL BRIDGE NO. 3	L SUM	1	1

B.M.: 306 P.R. spike in 10" Elm 92' Right of Sta. 193+80 - Elev. 525.89.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. /
72	84-10-1B-2	SANGAMON	36	5	26 SHEETS
FED. ROAD DIST. NO. 7	SECTION	FED. AID PROJECT			

GENERAL NOTES

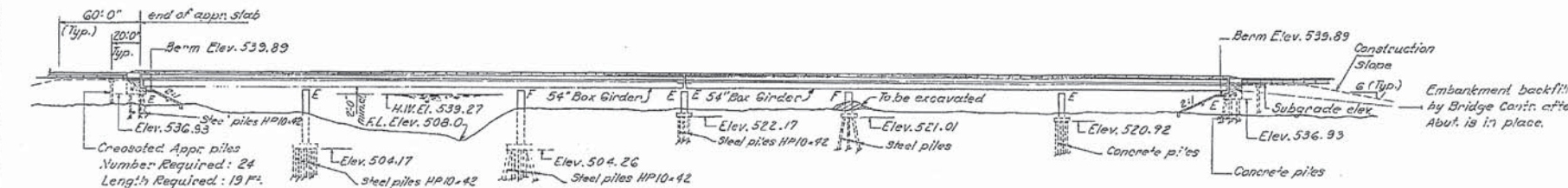
All reinforcement bars shall be lap spliced 24 diameters unless otherwise shown.  
Fasteners shall be high strength bolts 3/4" dia. with 1/2" open holes 1 1/2" dia. unless otherwise noted.  
Calculated weight of Structural Steel = 2408,670 Lbs.  
The basic lead silico chromate paint system shall be used for shop and field painting of Structural Steel.  
The exterior surface of the aluminum access doors shall be cleaned and given a washcoat pretreatment, in accordance with the Steel Structures Painting Council's Specifications SSPC-SP1 and SSPC-PT3 followed by the basic lead silico chromate painting specified for 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.

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 steel test pile (HP10x42) in a permanent location @ West Abut., West Bd. Lanes, one steel test pile (HP10x42) @ Pier 2 East Bd. Lanes, one steel test pile (HP10x42) @ Pier 4 West Bd. Lanes, one concrete test pile in a permanent location @ Pier 5 East Board Lanes, one concrete test pile @ East Abut., West Board Lanes.  
Concrete piles @ East Abut. only shall be driven in holes prepared through the embankment in accordance with Article 513.09(c) of the Sd. Specifications.  
The embankment configuration, shown shall be the minimum embankment that must be constructed prior to construction of the abutments.  
The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.  
Protective coat shall not be applied to surfaces to which Coal Tar Interlayer Protective Coat is applied.  
All interior surfaces of Box Girders shall be given two shop coats of paint and spot painted in the field after cross frames and forms have been removed. No additional field coat will be required for interior surfaces.

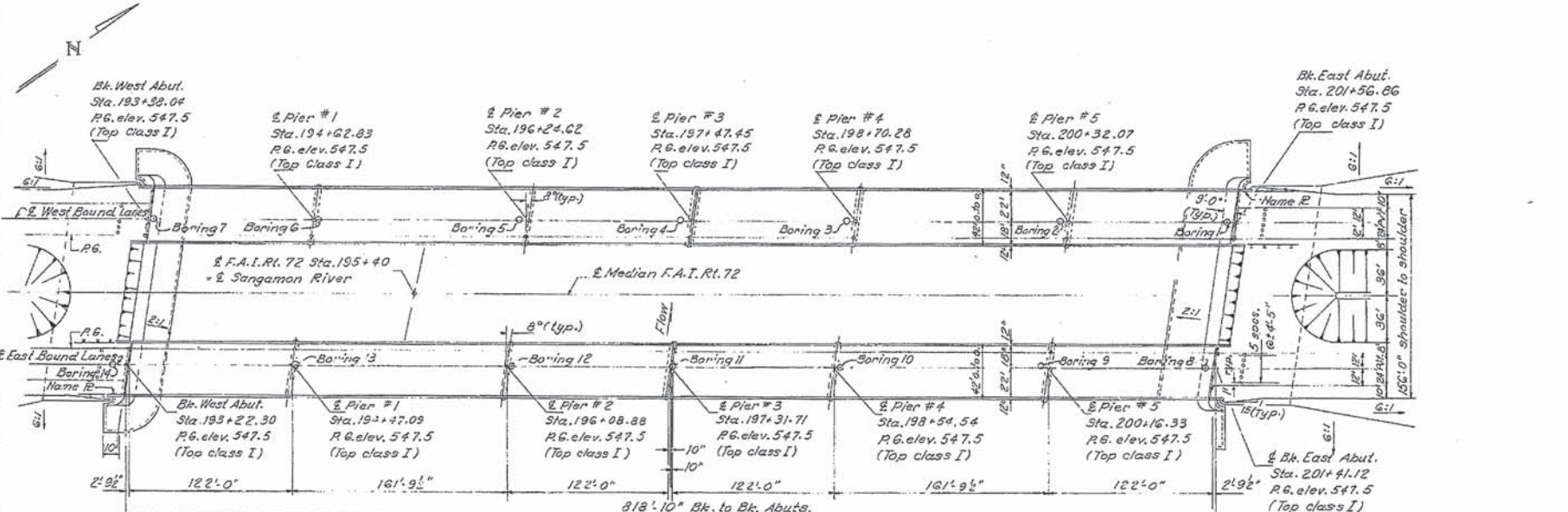
TOTAL BILL OF MATERIAL

Item	Unit	Spec'd	Sub	Total
Bimultaneous Concrete Surface Class I	Sq. Yds	502		502
Structure Excavation	Cu. Yds		508	508
Protective Coat	Sq. Yds	1300		1300
Coal Tar Interlayer Protective Coat	Sq. Yds	6,948		6,948
Class X Concrete	Cu. Yds	2048.8	384.1	2432.9
Structural Steel	Lbs.			L.S.
Stud Shear Connectors	Each	16,770		16,770
Aluminum Beaming	Lin. Ft.	3370		3370
Reinforcement Bars	Lbs	528,710	120,740	649,450
Crossed Piles (up to 20' deep)	Lin. Ft.	450		450
Steel Piles (HP10x42)	Lin. Ft.		2,338	10,538
Test Piles (Steel HP10x42)	Each		3	3
Concrete Piles	Lin. Ft.		2940	2940
Test Piles (Concrete)	Each		2	2
Wave Plates	Each		2	2
Slope Wall (6")	Sq. Yds		2699	2699
Neoprene Expansion Joint (4")	Lin. Ft.	255		255
Earth Excavation	Cu. Yds		3626	3626
Porous Granular Embankment	Cu. Yds		784	784
Cofferdam Excavation	Cu. Yds		2168	2168
Cofferdams	Each		4	4

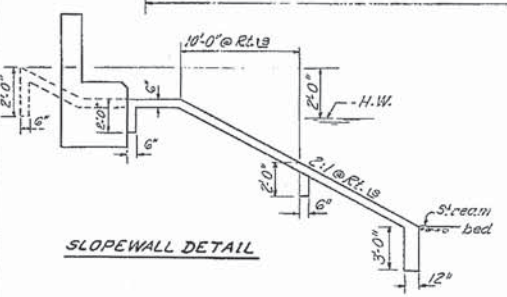
\*\* Bld. Cont. Surf. Class I, Coal Tar Interlayer Protective Coat + Prot. Coat are included in Sec. 84-10-1



ELEVATION



PLAN  
All elevations @ Median edge Pavement



SLOPEWALL DETAIL

WATERWAY INFORMATION

Drainage Area: 2560 Sq. mi.  
Character: Rolling, Cultivated  
Required Opening (50 yr. R. req.) 11,300 sq. ft.  
Proposed Opening 11,300 sq. ft.  
Ordinary water elev. 520.0  
Low water elev. 511.0  
H. water elev. 539.27  
Q (150) = 56000 cfs  
Created head = 1.27'

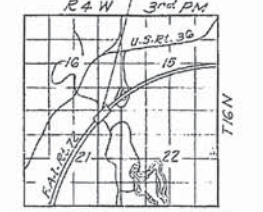
DESIGN STRESSES

16 - 1200 psi (Deck Slab)  
16 - 1400 psi (Parapet, Curb & Sub)  
18 - 20000 psi (Rein't)  
vc = 75 psi (Figs.)  
n = 10  
16 - 20000 psi (A-36) 16 - 27000 psi (A-572)  
Loading HS 20 - 44 & Alt.  
Design specifications: AASHTO, 1969 as applicable.  
Allow 25% per cent for future w.s.

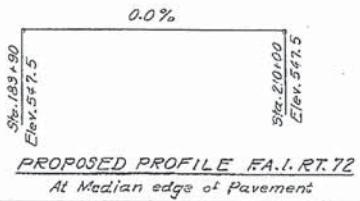
STATION 197+39.58  
BUILT 19 BY  
STATE OF ILLINOIS  
F.A.I.R.T. 72 SEC. 84-10-1B-2  
F.A.PROJ. I-72-(16)  
LOADING HS 20 # ALT.

NAME PLATE

(See Std. 2113)



LOCATION SKETCH



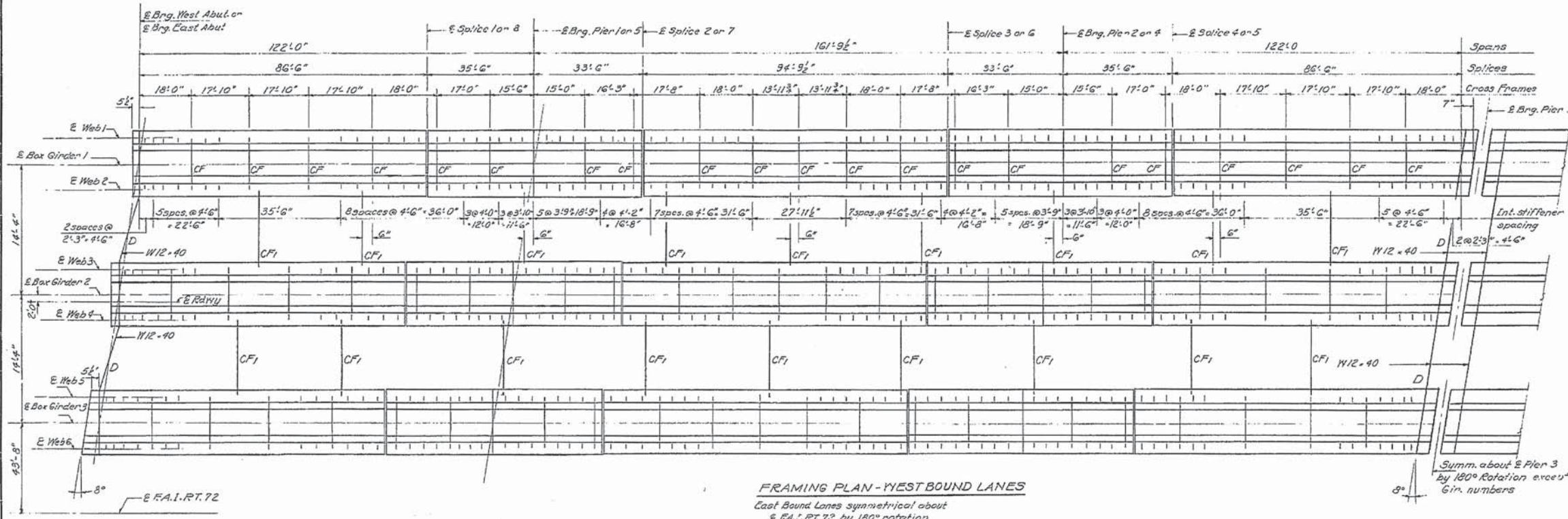
PROPOSED PROFILE F.A.I.R.T. 72  
At Median edge of Pavement

GENERAL PLAN & ELEVATION  
PROJECT: I-72-(16)3  
F.A.I.R.T. 72 OVER SANGAMON RIVER  
F.A.I.R.T. 72 SECTION 84-10-1B-2  
SANGAMON COUNTY  
STA. 197+39.58

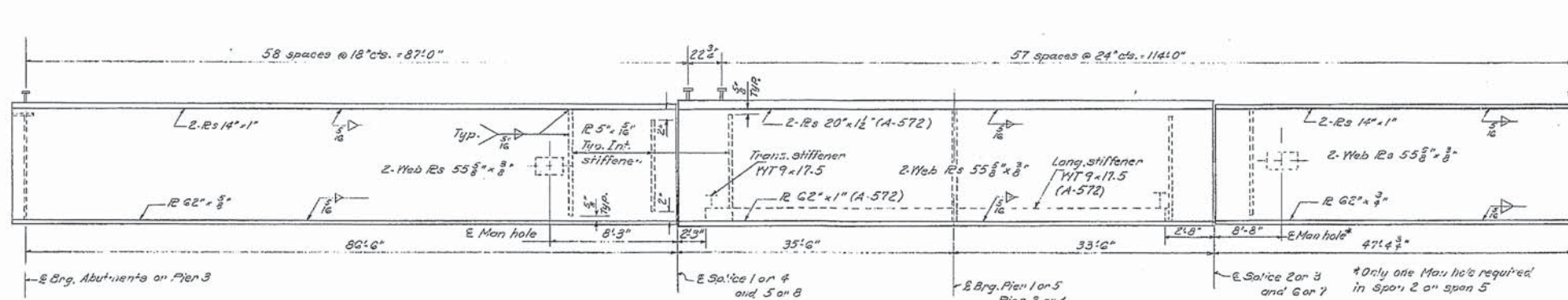
DESIGNED	REVISION	DATE
CHECKED	REVISION	DATE
DRAWN	REVISION	DATE
CHECKED	REVISION	DATE

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

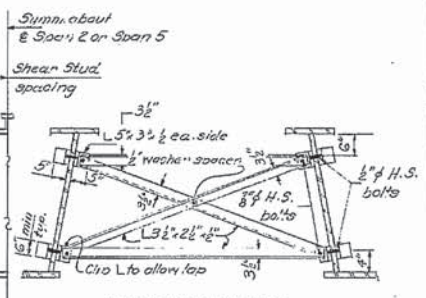
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 9
72	04-10-18-2	SANGAMON	36	13	26 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



FRAMING PLAN - WESTBOUND LANES  
East Bound Lanes symmetrical about  
E F.A.I. RT. 72 by 180° rotation



ELEVATION



CROSS FRAME CF1  
(1/2 Required)  
Cross Frames CF1 shall be in place during  
placement and curbing of the deck, after  
which these Cross Frames shall be removed  
with the exception of 2" x 4" H.S. bolts  
through the web.

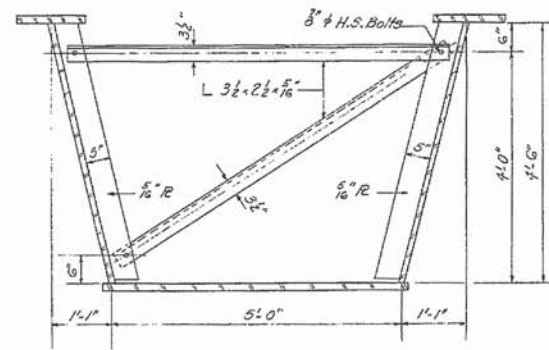
All steel shall be ASTM A36 except  
where otherwise noted.  
All ASTM A572 steel shall be grade 50.

STRUCTURAL STEEL  
F.A.I. RT. 72 SEC. 04-10-18-2  
SANGAMON COUNTY  
STA. 197+39.58

DESIGNED	James P. Pender	EXAMINED	[Signature]
CHECKED	Ravi K. Mathur	PASSED	[Signature]
DRAWN	Shawn K. McManis	APPROVED	[Signature]
CHECKED	R. E. M.		

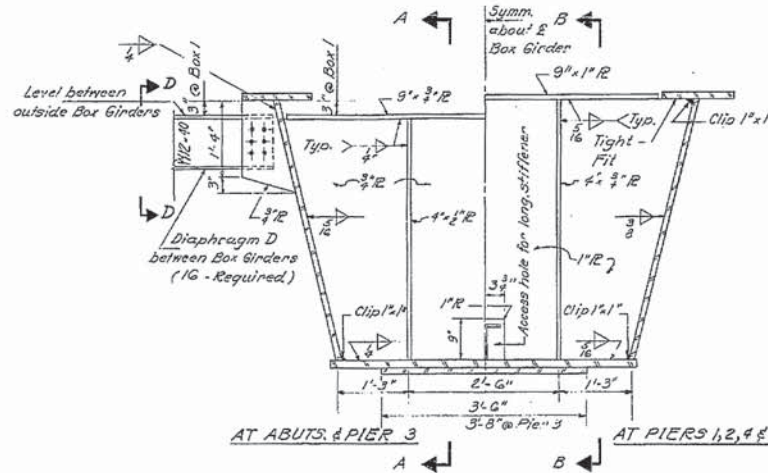
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
72	84-10-18-2	SANGAMON	36	14	26 SHEETS

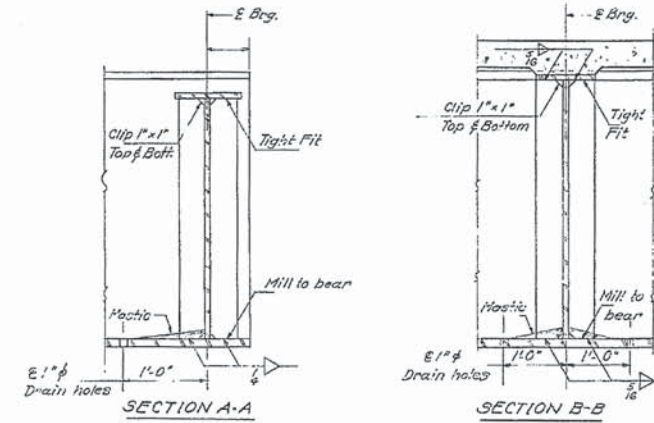


TYPICAL CROSS SECTION OF CF

Note:  
Cross Frames CF shall be placed in the shop and shall remain in place to stiffen the girders during erection, placement and curing of the concrete deck, after which these Cross Frames along with deck forms shall be removed.  
(ES2 Required)

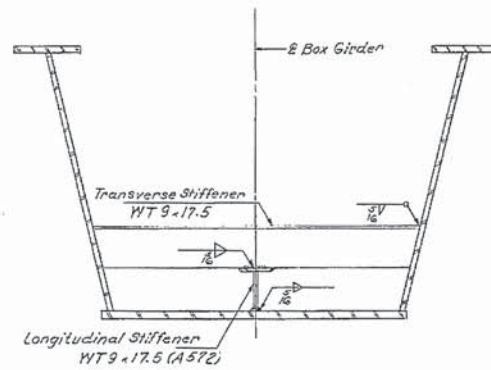


SECTION AT BEARINGS

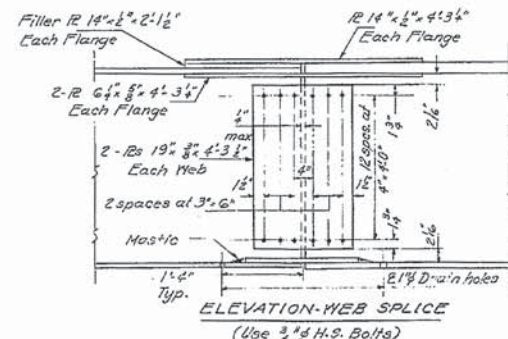


SECTION A-A

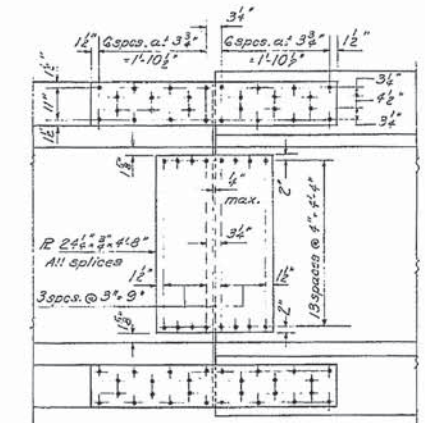
SECTION B-B



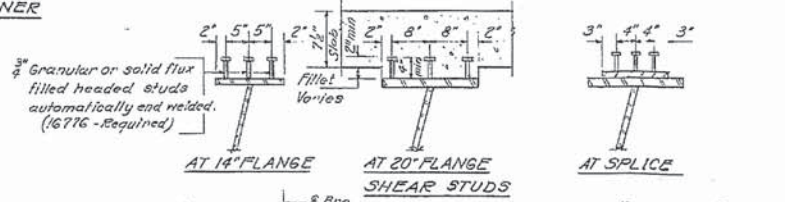
SECTION AT TRANSVERSE STIFFENER



ELEVATION-WEB SPLICE  
(Use 3/4" H.S. Bolts)



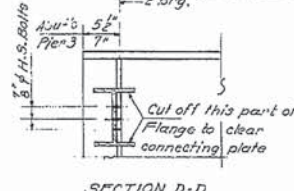
PLAN-FLANGE SPLICES  
(Use 3/4" H.S. Bolts)



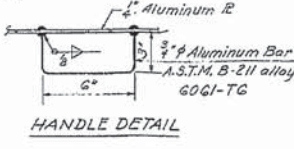
AT 14" FLANGE

AT 20" FLANGE

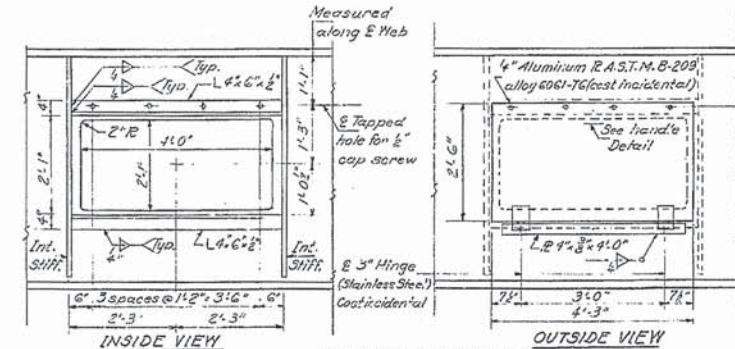
AT SPLICE



SECTION D-D



HANDLE DETAIL



INSIDE VIEW

OUTSIDE VIEW

DETAILS OF MANHOLES  
(Manholes shall be put in on inside web of ea. Box Girder)

Note:  
For Camber Diagram and Top of Web Elevations see Sheet # 25.

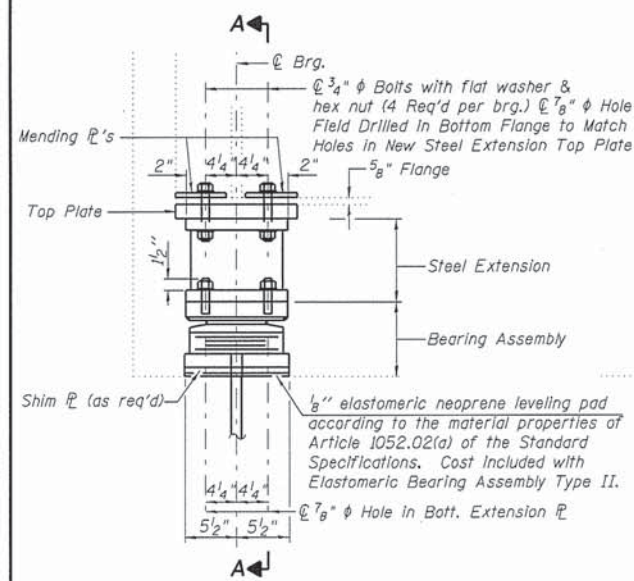
CAUTION - VENTILATE BEFORE ENTERING AND WHILE WORKING INSIDE BOX GIRDERS  
WARNING NOTE

Note:  
Warning Note shall be stenciled inside of door using approved paint and two inch high letters. A 1/2" x 3/8" Neoprene gasket shall be cemented to inside of door plate around the edges.

STRUCTURAL STEEL-DETAILS  
F.A.I.R.T. 72 SEC. 84-10-18-2  
SANGAMON COUNTY  
STA. 197+39.58

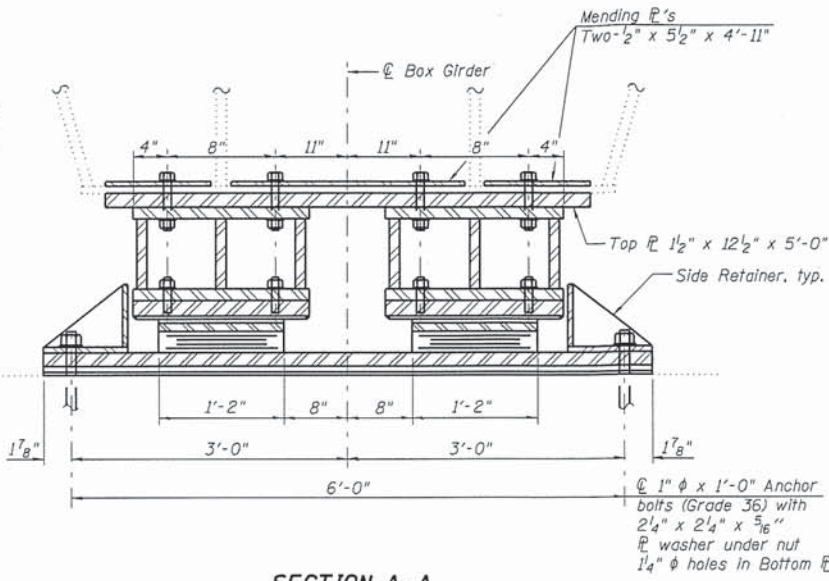
DESIGNED	James L. ...
CHECKED	Ravi K. Mathur
DRAWN	Sumit K. Mathur
CHECKED	Ravi

EXAMINED	Aug. 9 1972
PASSED	W. E. Bauman
APPROVED	Richard H. Holman



**ELEVATION AT ABUT.**

**TYPE II ELASTOMERIC EXP. BRG.**



**SECTION A-A**

(Dims. at Rt. L's to  $\phi$  Girder)

**STEEL EXTENSION DIMENSIONS**

	A	B
WB W. Abut.	9 $\frac{3}{4}$ "	7 $\frac{3}{4}$ "
EB W. Abut.	11 $\frac{3}{16}$ "	9 $\frac{3}{16}$ "
WB E. Abut.	10 $\frac{1}{16}$ "	8 $\frac{1}{16}$ "
EB E. Abut.	11 $\frac{3}{16}$ "	9 $\frac{1}{16}$ "

**BOX GIRDER REACTION TABLE**

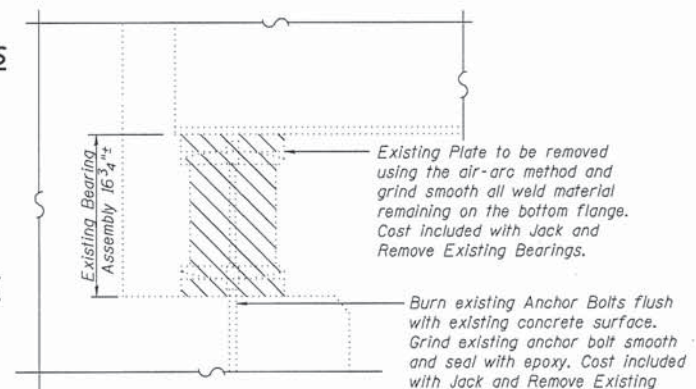
(From Existing Plans)

	Per Girder	Per Bearing
Dead Load (k)	120	60
Live Load (k)	68	34
Impact (k)	14	7
Total (k)	202	101
Min. Jack Capacity (Tons)	120	60

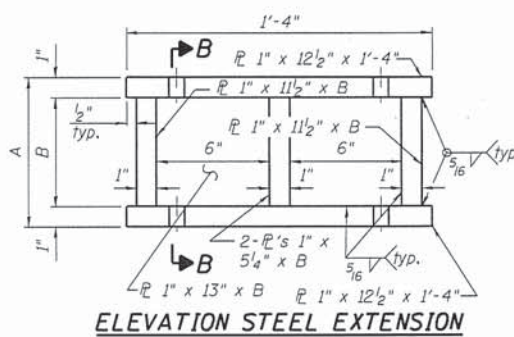
No Live Load during Jacking.

Notes:

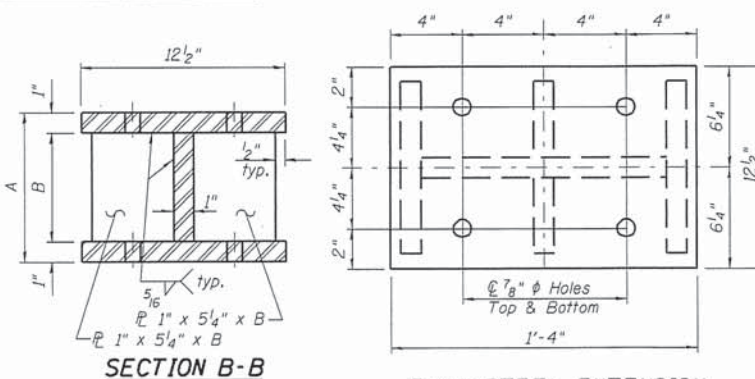
Hatched area indicates Bearing removal. See Special Provision for Jack and Remove Existing Bearings.  
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.  
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
Two  $\frac{1}{8}$  in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.  
The Contractor is to verify the existing dimensions prior to fabricating the steel extensions. Existing bearing dimensions shown are taken from the original plans.  
 $\frac{1}{2}$ " top plate, side retainers, Steel Extensions, Fasteners and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.  
Fasteners shall be AASHTO M164 Type I, mechanically galvanized bolts.  
The bearings shall be in place and the jacks lowered before the new concrete deck is poured.  
Cost of  $\frac{1}{2}$ " mending plates and fasteners required for beam end repairs is included in the cost of Structural Steel Repair. See Sheet 13 of 20 for details.  
The  $\frac{1}{8}$ " PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.  
Bonding of  $\frac{1}{8}$ " PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.  
See Sheet 13 of 20 for details of  $\frac{1}{2}$ " Top Plate,  $\frac{1}{2}$ " Mending Plates and Anchor Bolt Layout.



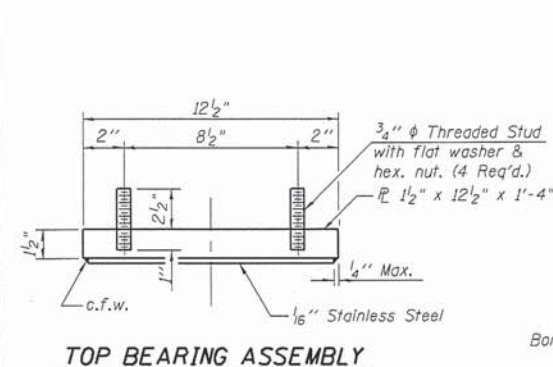
**EXISTING BEARING REMOVAL DETAIL**



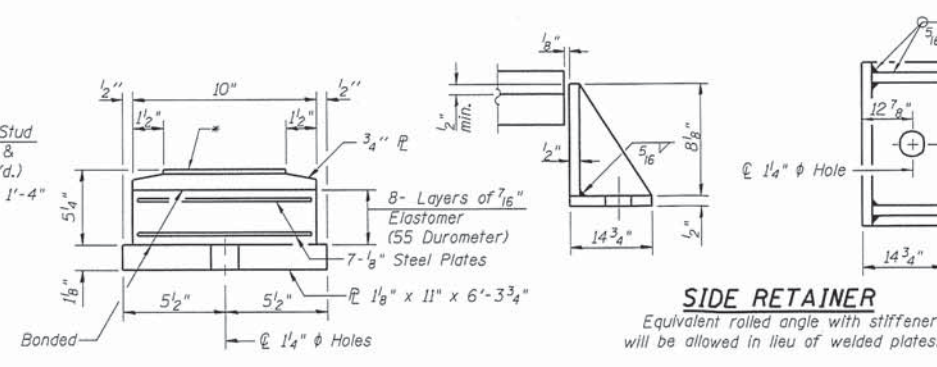
**ELEVATION STEEL EXTENSION**



**PLAN STEEL EXTENSION**



**TOP BEARING ASSEMBLY**



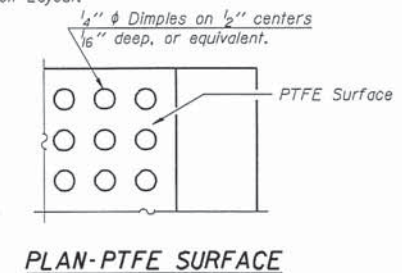
**BOTTOM BEARING ASSEMBLY**

$\frac{1}{8}$ " PTFE dimpled, unlubricated

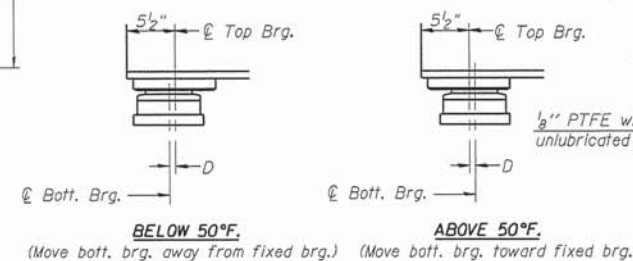
**SIDE RETAINER**  
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

**BILL OF MATERIAL**

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	24
Anchor Bolts, 1"	Each	24
Jack and Remove Existing Bearings	Each	12

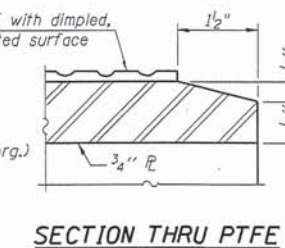


**PLAN-PTFE SURFACE**



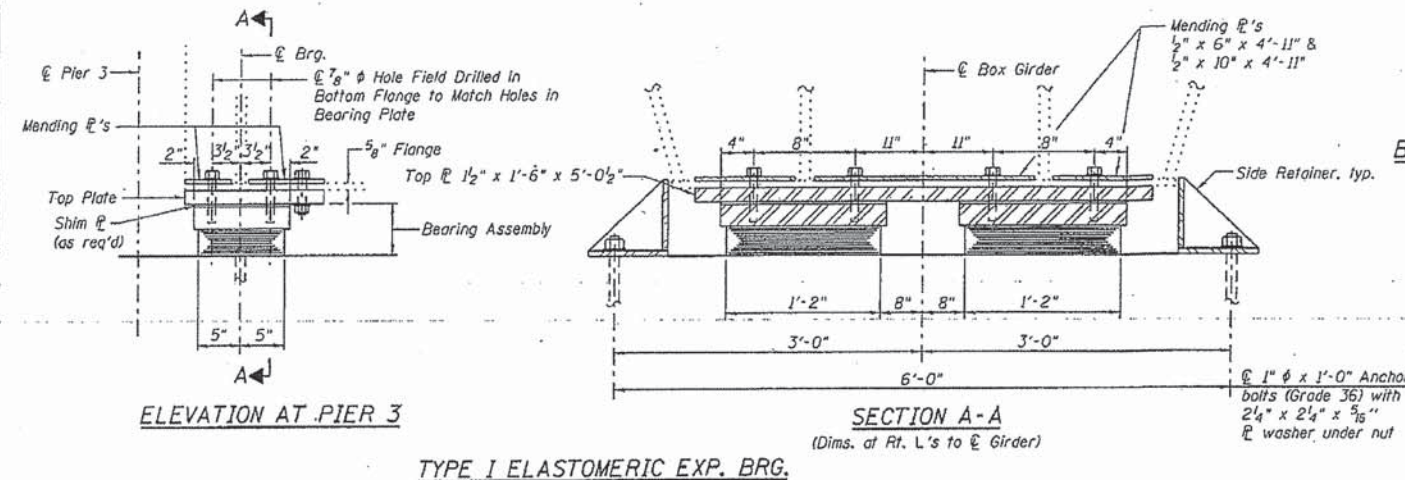
**SETTING ANCHOR BOLTS AT EXP. BRG.**

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



**SECTION THRU PTFE**

	USER NAME = dudleybm	DESIGNED - ESH	REVISED -	STATE OF ILLINOIS	BEARING DETAILS AT ABUTMENTS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	FILE NAME =	CHECKED - MTH	REVISED -			72	D6 BDGE PAINTING 2016-3	SANGAMON	10	6



ELEVATION AT PIER 3

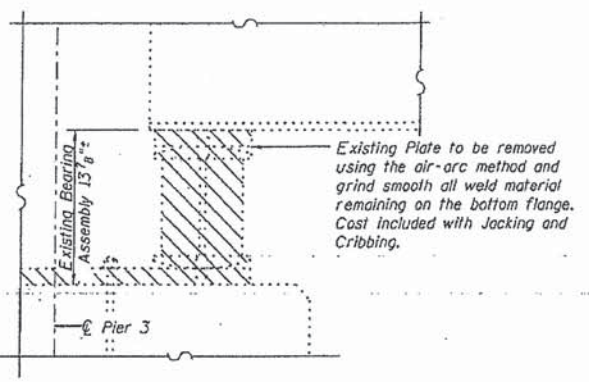
TYPE I ELASTOMERIC EXP. BRG.

SECTION A-A  
(Dims. at Rt. L's to G Girder)

BOX GIRDER REACTION TABLE  
(From Existing Plans)

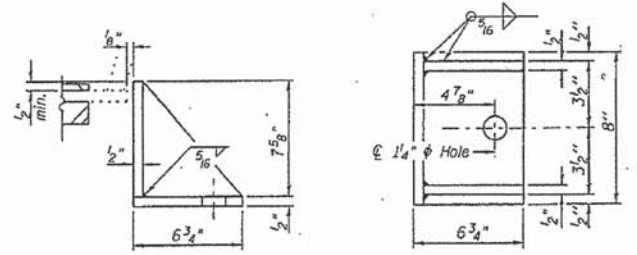
	Per Girder	Per Bearing
Dead Load (k)	120	60
Live Load (k)	68	34
Impact (k)	14	7
Total (k)	202	101
Min. Jack Capacity (Tons)	120	60

No Live Load during jacking.

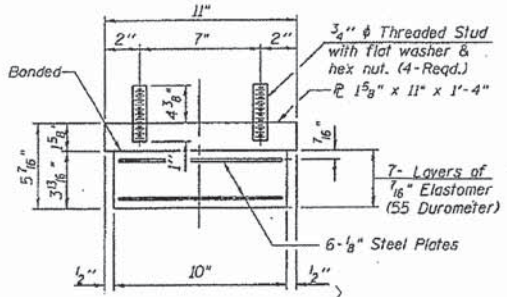


EXISTING BEARING REMOVAL DETAIL

Notes:  
 Hatched area indicates Bearing removal. Cost included with Jacking and Cribbing. See Special Provision for Jacking and Cribbing.  
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Anchor bolts for side retainers may be cast in place or installed in holes drilled after members are in place. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications. Two 1/2 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.  
 Existing bearing dimensions shown are taken from the original plans.  
 Cost of 1/2" top plate, side retainers, fasteners and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.  
 Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts.  
 The bearings shall be in place and the jacks lowered before the new concrete deck is poured.  
 Cost of 1/2" mending plates and fasteners required for beam end repairs is included in the cost of Structural Steel Repair. See Sheet 13 of 20 for details.  
 See Sheet 14 of 20 for Pier 3 reconstruction details.  
 See Sheet 13 of 20 for details of 1/2" Top Plate, 1/2" Mending Plates and Anchor Bolt Layout.



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



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

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	24
Anchor Bolts, 1"	Each	24
Jacking and Cribbing	Each	12

**LE** LIN ENGINEERING, LTD.  
Consulting Engineers  
Bridges & Structures

USER NAME	DESIGNED	ESH	REVISED	-
FILE NAME	CHECKED	MTH	REVISED	-
PLOT SCALE	DRAWN	ESH	REVISED	-
PLOT DATE	CHECKED	MTH	REVISED	-

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS AT PIER 3  
STRUCTURE NOS. 084-0152 & 084-0153

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEET NO.
72	184-10-11BDR	SANGAMON	35
			26
			CONTRACT NO. 72F01

B.M. "B.R.K." Pkts in Power Pole 39' Left ETR Sta 462+08 Elev 601.54

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

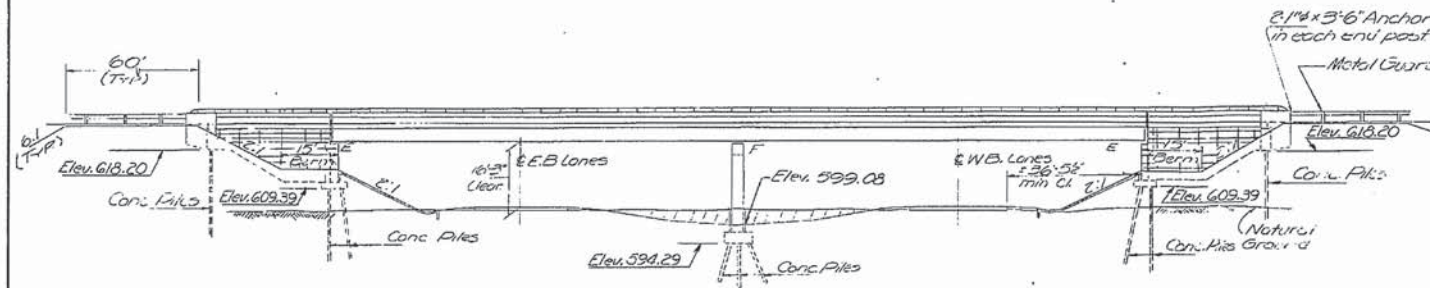
DATE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7/2	#	SANGAMON	42	11
PROJECT NO. 7				
# 84-10-3HB-1				

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.  
Fasteners shall be high strength bolts. Bolts 2", open holes 1 1/2", unless otherwise noted.  
Calculated weight of Structural Steel = 210,700  
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.  
Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, weighing 58# per 100 sq. ft.  
The Contractor shall drive one (1) concrete test pile each in a permanent location at the Pier and Abuts. as directed by the Engineer before ordering the remainder of piles.  
The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.  
The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.  
Protective Coat shall not be applied to surfaces to which Coal Tar Interlayer Protective Coat is applied.  
All interior surfaces of Box Girders shall be given two shop coats of paint and spot painted in the field after cross frames and forms are removed. No additional field coat will be required for interior surfaces.  
Concrete piles at bents shall be driven in holes precored through the embankment in accordance with Art. 513.09(c) of the Std. Specifications.

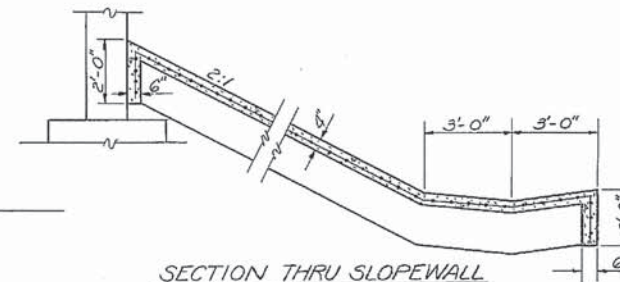
TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Structure Excavation	Cu. Yd.		53	53
Precast Prestressed Concrete I Beams (36')	Lin. Ft.	177		177
Bituminous Concrete Surface	Ton	73		73
Course Class I				
Protective Coat	Sq. Yd.	210		210
Class X Concrete	Cu. Yd.	282.7	178.1	460.8
Structural Steel	Lump Sum	1		1
Stud Shear Connectors	Each	1680		1680
Aluminum Foiling	Lin. Ft.	562		562
Reinforcement Bars	Pound	64,750	22,580	87,330
Concrete Piles	Lin. Ft.		1724	1724
Test Piles Concrete	Each		3	3
Name Plates	Each		1	1
Slope Wall (4')	Sq. Yd.		334	334
Coal Tar Interlayer Protective Coat	Sq. Yd.	865		865
Preformed Joint Sealer	Lin. Ft.	64		64

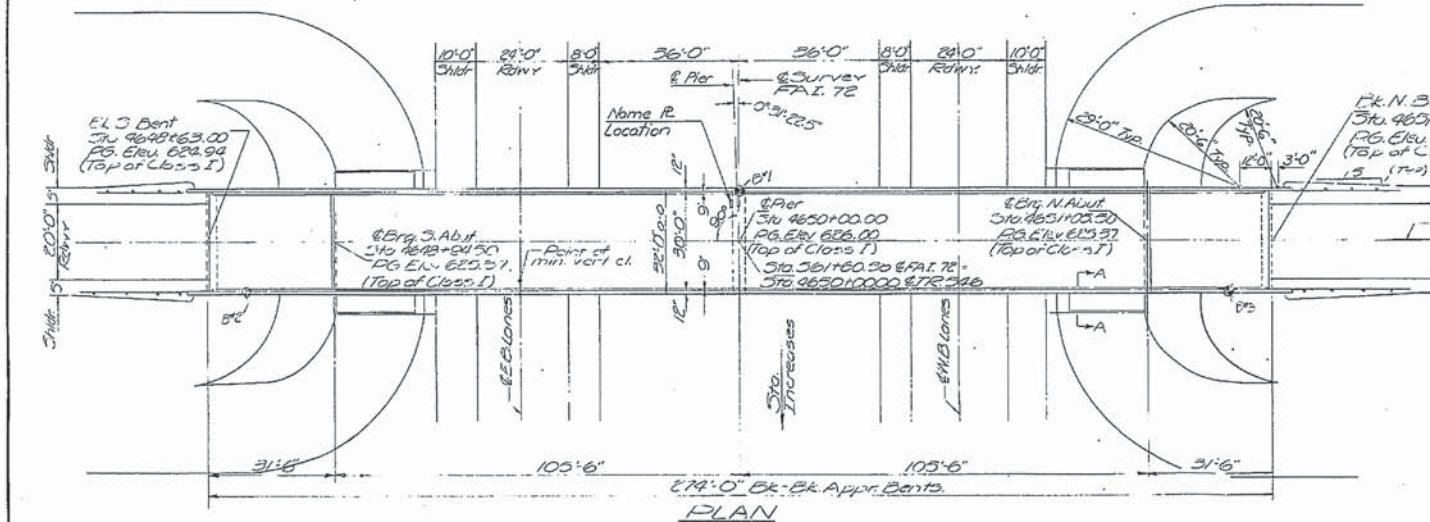


ELEVATION

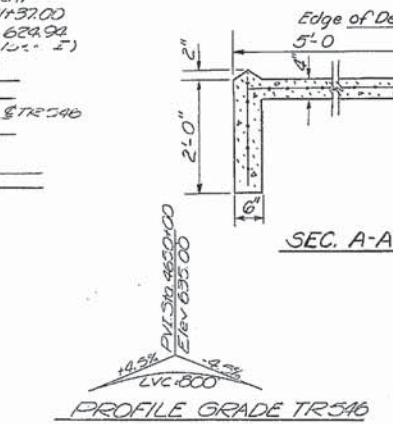
STATION 561+60.58  
BUILT BY  
STATE OF ILLINOIS  
F.A.I. RT. 72 SEC. 84-10-3HB-1  
PROJ. I-72-1 (21)  
LOADING HS15  
NAME PLATE  
See Std. 2113



SECTION THRU SLOPEWALL



PLAN



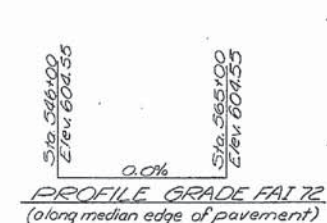
SEC. A-A

PROFILE GRADE TR 516

DESIGN STRESSES  
f<sub>c</sub> = 12000 psi. Deck Slab  
f<sub>c</sub> = 14000 psi. Curb, Parapet & Sub  
f<sub>s</sub> = 20000 psi. Reinfr.  
v<sub>c</sub> = 75 psi. Flgs.  
n = 10

PRECAST PRESTRESSED UNITS  
f<sub>c</sub> = 5000 psi  
f<sub>c</sub> = 4000 psi  
f<sub>s</sub> = 270000 psi (2" x 3/16 dia)  
f<sub>s</sub> = 188,700 psi (2" x 3/16 dia)

Design Specifications 1969 AA310  
(as applicable)  
Allow for 25# / 30 Ft. for Future W3  
LOADING HS15-44



PROFILE GRADE FAI 72  
(along median edge of pavement)



LOCATION SKETCH

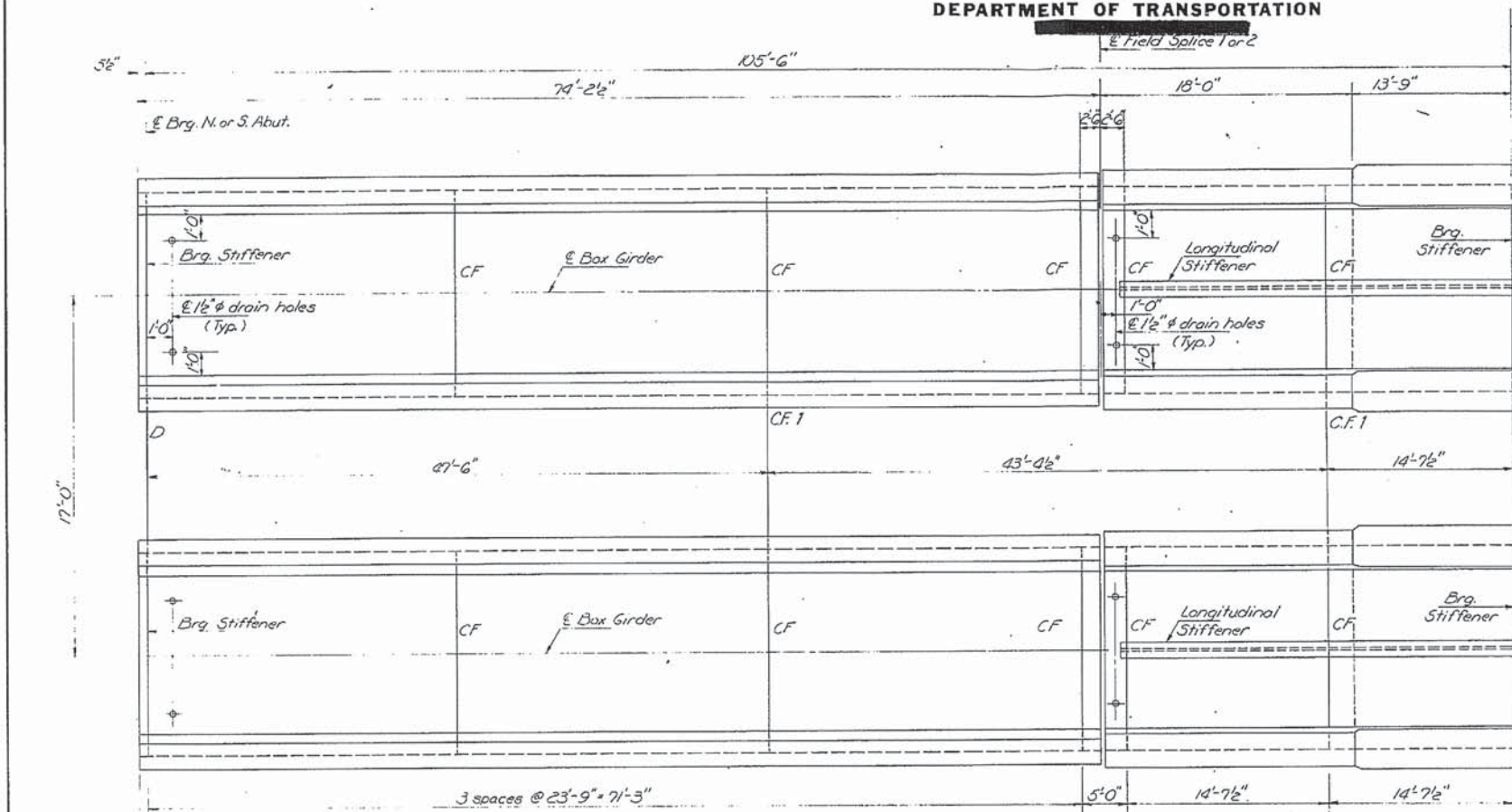
GENERAL PLAN & ELEVATION  
PROJECT I-72-1 (21) 116  
TR 516 over F.A.I. RTE. 72  
F.A.I. RTE. 72 SEC. 84-10-3HB-1  
SANGAMON COUNTY  
STA. 561+60.58

DESIGNED: [Signature]  
CHECKED: [Signature]  
DRAWN: [Signature]  
CHECKED: [Signature]  
EXAMINED: [Signature]  
PASSED: [Signature]  
APPROVED: [Signature]

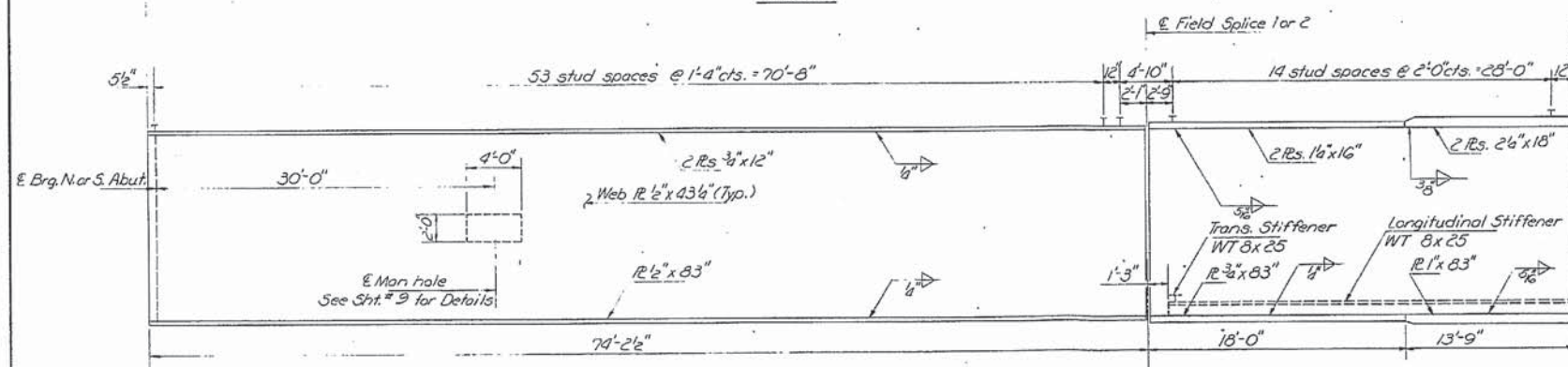


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	SANGAMON	42	18
SHEET NO. 8			
14 SHEETS			



PLAN



ELEVATION

TOP OF WEB ELEVATIONS

Box 1 & 2	
E Brg. South Abut.	624.33
E Splice 1 *	624.86
E Brg. Pier	624.82
E Splice 2 *	624.86
E Brg. North Abut.	624.33

\* before any deflection

(for fabrication only)

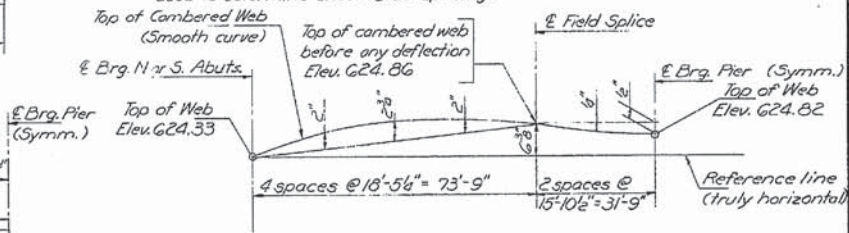
GIRDER MOMENT TABLE

	0.4 Sp. 1	Pier
$I_s$ (in <sup>4</sup> )	30,902	85,960
$I_c$ (in <sup>4</sup> )	82,690	98,687
$S_s$ Top (in <sup>3</sup> )	1162	3622
$S_s$ Bott. (in <sup>3</sup> )	1855	3994
$S_c$ Top (in <sup>3</sup> )	8059	4571
$S_c$ Bott. (in <sup>3</sup> )	2507	4171
$I_D$ (in <sup>4</sup> )	2,053	2,053
$M_D$ (k)	1306	3589
$f_s D$ (ksi)	8.45	11.89
$S D$ (in <sup>3</sup> )	1052	1052
$M S D$ (k)	811	1485
$M L$ (k)	1095	1062
$M$ Imp. (k)	238	231
Total (k)	2144	2778
$f_b L + S D$ (ksi)	10.26	7.29
$f_s$ Total (ksi)	18.71	19.18
$V R$ (k)	71.9	69.4

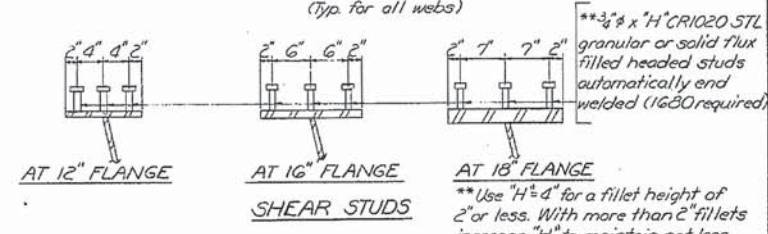
GIRDER REACTION TABLE

	Abut.	Pier
$R D$ (k)	115.7	423.7
$R L$ (k)	53.5	92.3
Imp. (k)	11.6	20.0
$R$ Total (k)	180.8	536.0

$I_s$  &  $S_s$  are the moment of inertia & section modulus of the steel section.  
 $I_c$  &  $S_c$  are the moment of inertia & section modulus of the composite section.  
 $V R$  is the maximum  $L +$  Impact shear range in span used to determine shear stud spacing.



CAMBER DIAGRAM



SHEAR STUDS

Note: See Sht. #9 for remainder of Structural Steel Details

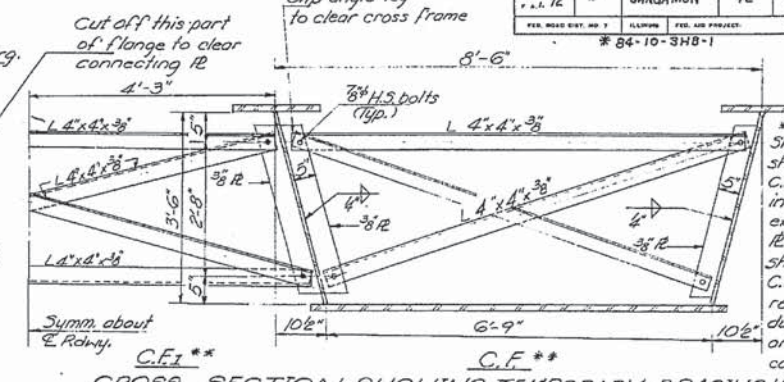
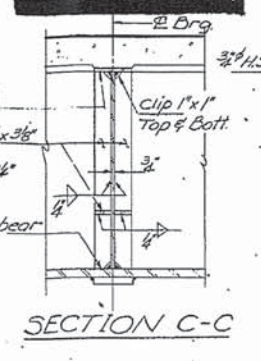
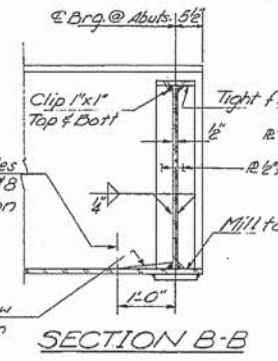
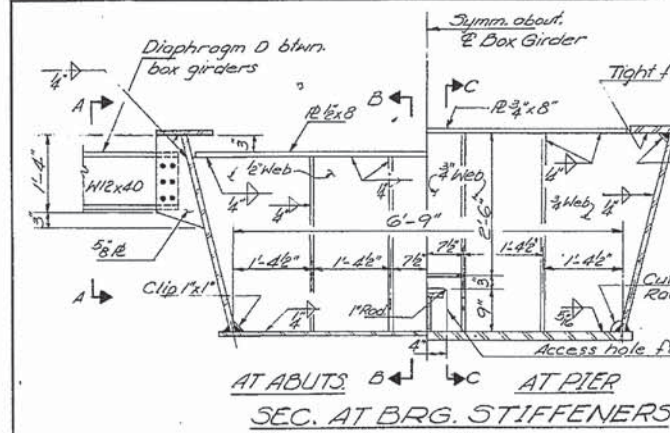
STRUCTURAL STEEL  
F.A.I. RT. 72 SEC. 84-10-3HB-1  
SANGAMON COUNTY  
STATION 561+60.58

DESIGNED	EXAMINED
CHECKED	PASSED
DRAWN	APPROVED
CHECKED	

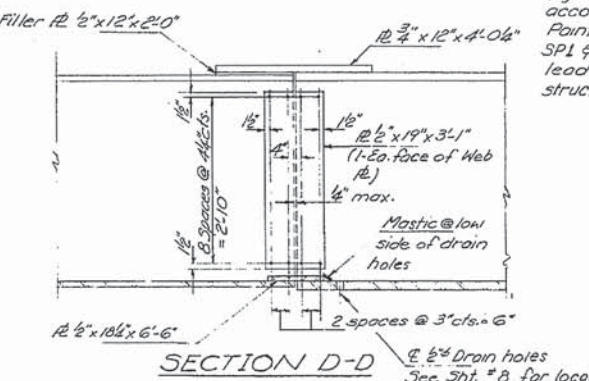
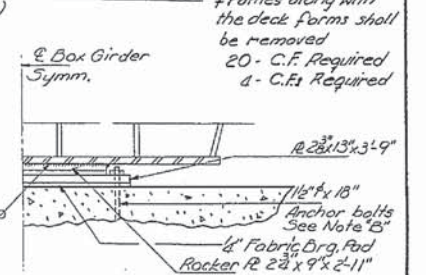
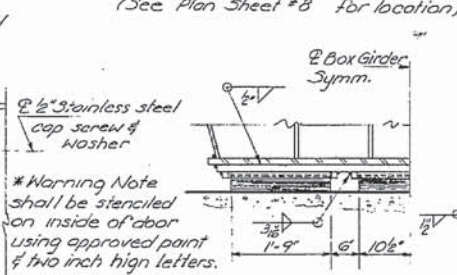
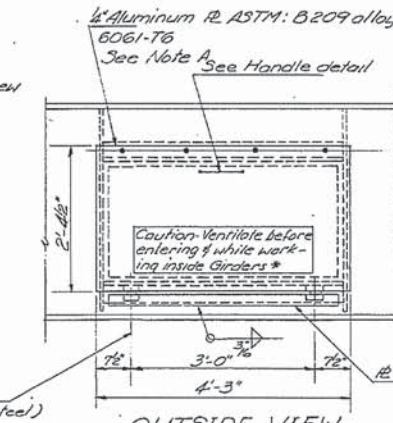
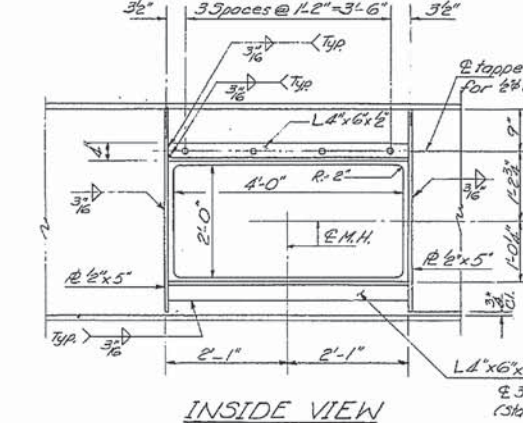
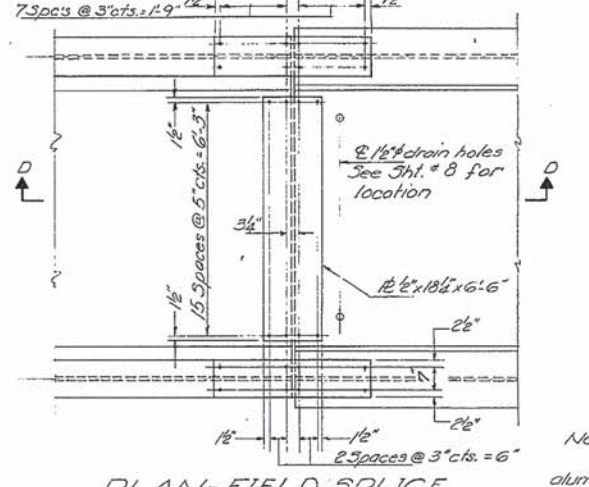
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	#	SANGAMON	42	19

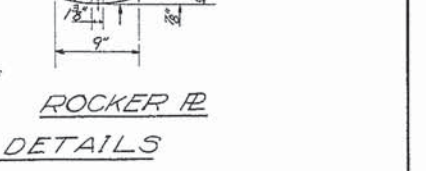
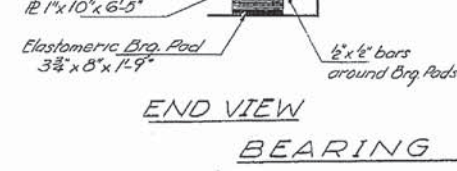
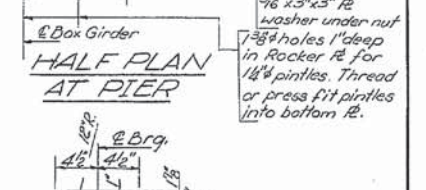
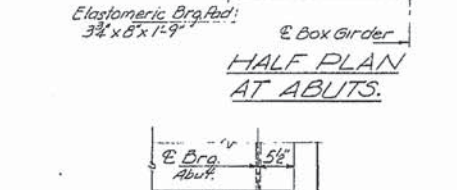
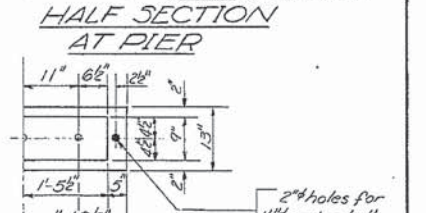
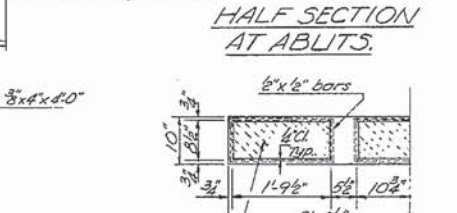
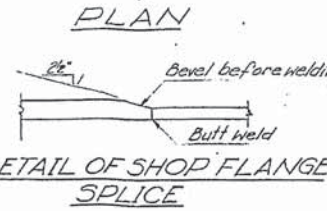
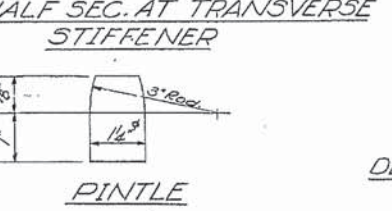
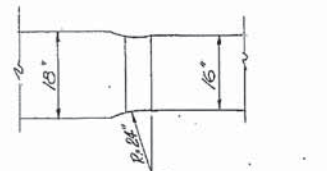
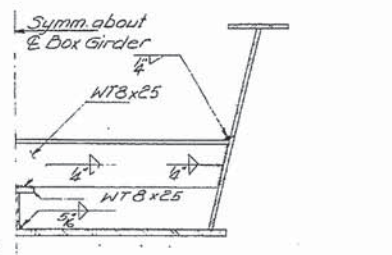
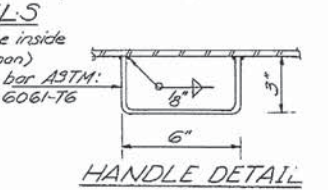
SHEET NO. 9  
1/4 SHEETS



\*\* Cross frames C.F. shall be placed in the shop & cross frames C.F.1 shall be placed in the field with the exception of the  $\frac{25}{8}$  R. which shall be shop welded. Both C.F. & C.F.1 shall remain in place during placement and curing of the concrete deck, after which these cross frames along with the deck forms shall be removed  
20 - C.F. Required  
4 - C.F.1 Required



Note A:  
The exterior surface of the aluminum access doors shall be cleaned & given a washcoat pretreatment in accordance with the Steel Structures Painting Council's Specifications SSPC-SP1 & SSPC-PT3 followed by the basic lead silico chromate painting specified for structural steel.



DESIGNED	<i>Paul L. Wilfong</i>	EXAMINED	<i>Richard H. Holtzman</i>
CHECKED	<i>A. Barraza</i>	PASSED	<i>Richard H. Holtzman</i>
DRAWN	<i>A. Barraza</i>	APPROVED	<i>Richard H. Holtzman</i>
CHECKED	<i>GR</i>		