

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

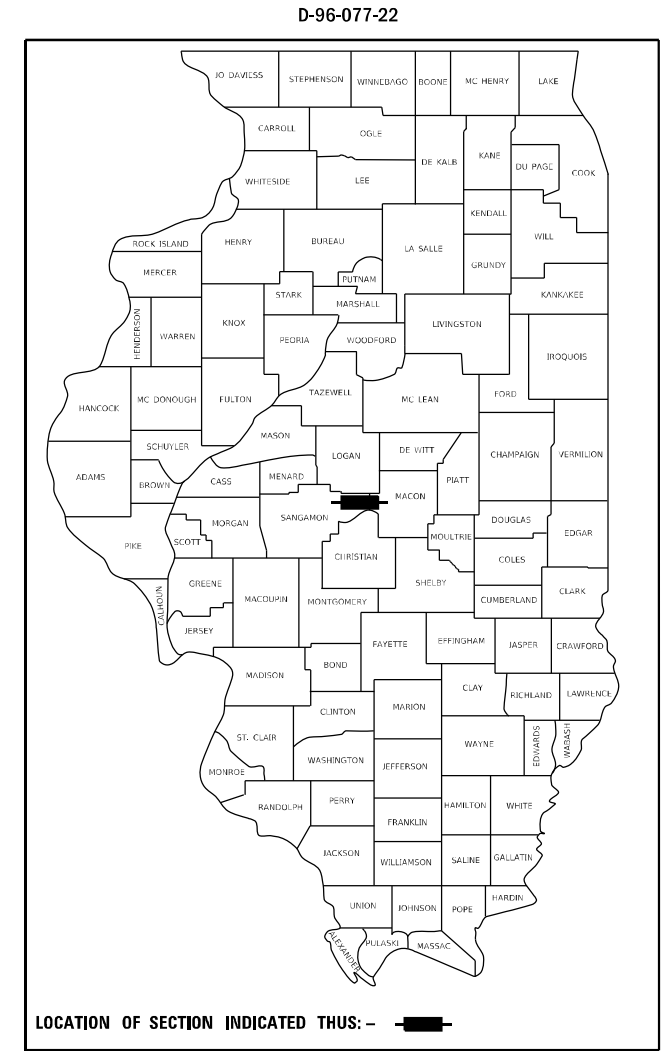
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(84-10-3HB-3)BP	SANGAMON	7	1
		ILLINOIS	CONTRACT NO. 72110	

FOR INDEX OF SHEETS, SEE SHEET NO. 2

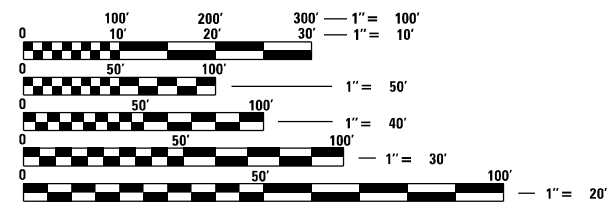
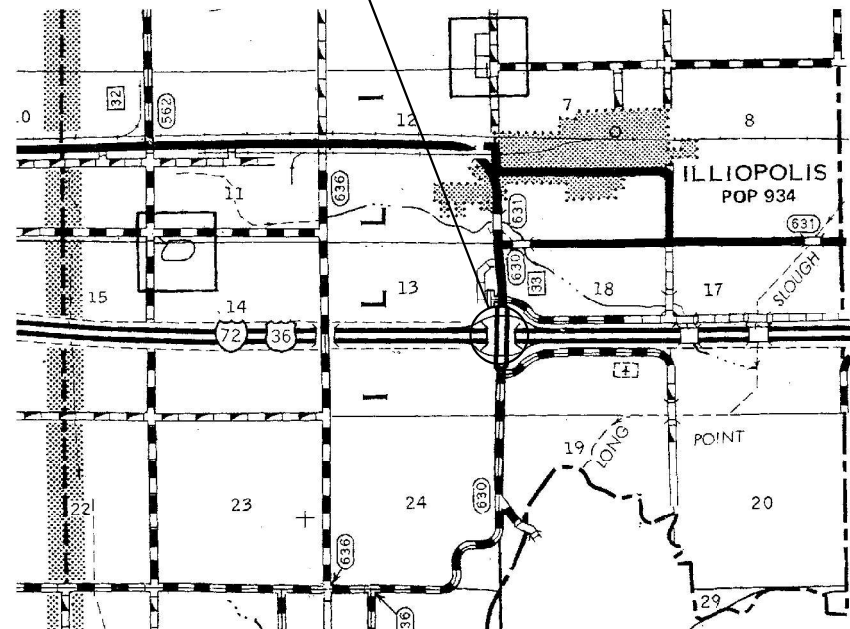
PROPOSED HIGHWAY PLANS

FAI ROUTE 72 (I-72)
SECTION (84-10-3HB-3)BP
PROJECT NHPP-U4YW(898)
BRIDGE PAINTING
SANGAMON COUNTY

C-96-020-23



PROJECT LOCATION
SN 084-0162
CH 33 OVER I-72
ILLIOPOLIS INTERCHANGE



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 EXCAVATORS
1-800-892-0123
OR 811

BRIDGE MAINTENANCE ENGINEER: BRANDON DUDLEY - (217) 785-9290

GROSS LENGTH = 246 FT. = 0.05 MILE
NET LENGTH = 246 FT. = 0.05 MILE

CONTRACT NO. 72110

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED December 13, 20 22

John P. Meyer
REGIONAL ENGINEER

February 3, 2023
Scott A. Erb
ENGINEER OF DESIGN AND ENVIRONMENT

February 3, 2023
Stephen M. Lanza
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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OF THE STATE OF ILLINOIS

F.A.I. R.T. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	84-10-3B-3	SANGAMON	46	13
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PRD.	

DESIGN DATA

DESIGN SPECIFICATIONS:
 AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 10TH EDITION, DATED 1960.

CONSTRUCTION SPECIFICATIONS:
 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS, DIVISION OF HIGHWAYS, DATED JAN. 2, 1971.

DESIGN LOAD: HS 20-44

SUPERSTRUCTURE, SUBSTRUCTURE AND ABUTMENTS:

STRUCTURAL STEEL:
 A.S.T.M. A36

REINFORCING STEEL: f_s = 20,000 PSI

CONCRETE: f_c = 20,000 PSI

ULTIMATE COMPRESSION - 14 DAYS: f'_c = 3,500 PSI

ALLOWABLE COMPRESSION (WITHOUT EARTH PRESSURE): f_c = 1,400 PSI

ALLOWABLE COMPRESSION (DECK SLAB): f_c = 1,200 PSI

ALLOWABLE COMPRESSION (WITH EARTH PRESSURE): f_c = 1,000 PSI

MODULAR RATIO: n = 10

ALLOWABLE SHEAR: BEAMS WITHOUT WEB REINFORCEMENT: v = 90 PSI

LONGITUDINAL BAR ANCHORED: v = 75 PSI

EARTH PRESSURE:

HORIZONTAL EARTH PRESSURE = EQUIV. FLUID PRESSURE: 40 p/ft

PILES, CONCRETE (ABUTMENTS): 45 TONS

PILES, CONCRETE (APPR. BENTS): 45 TONS

TIMBER PILE CAPACITY: @ APPROACH ROADWAY: 15 TONS

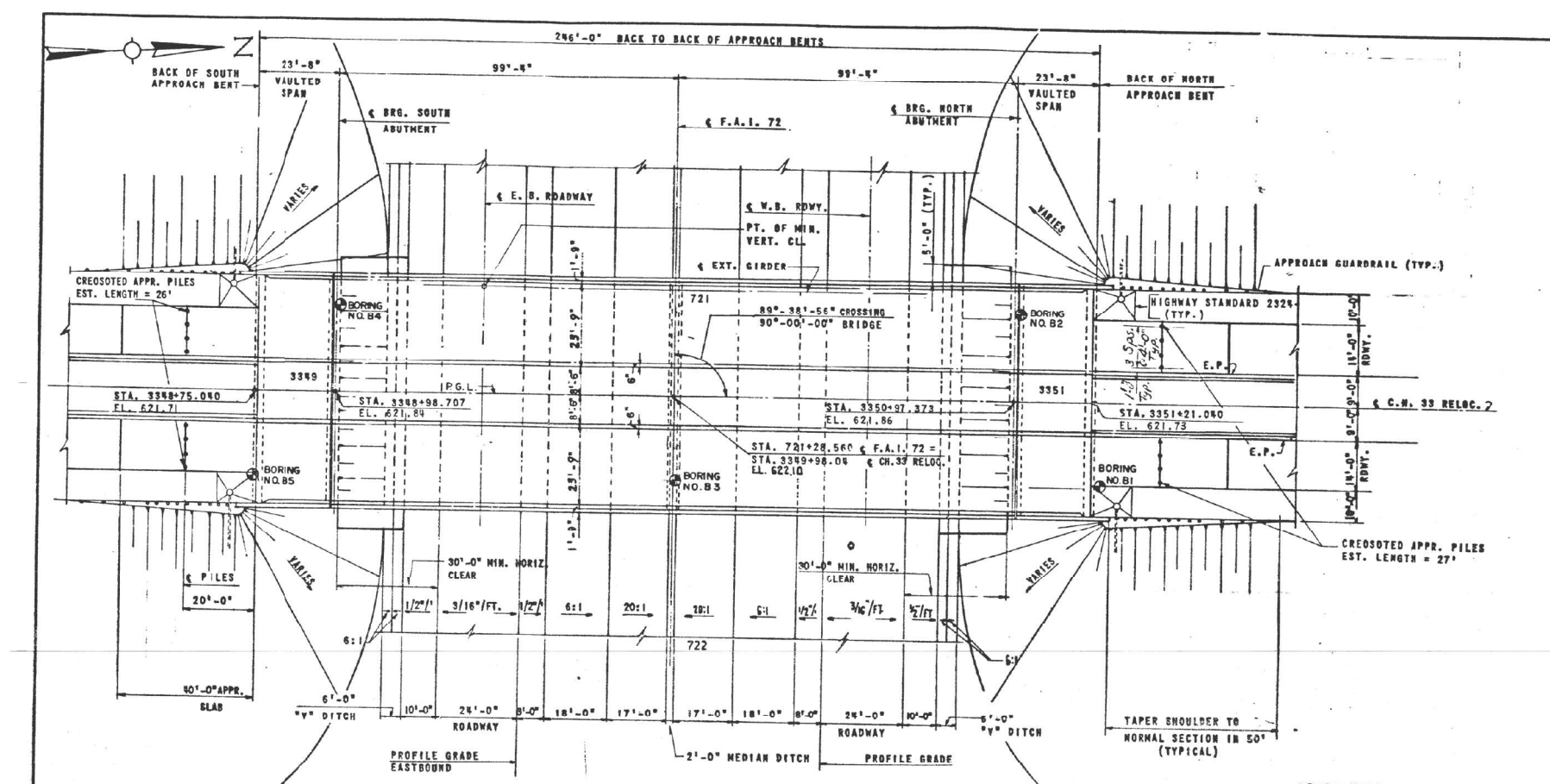
TIMBER PILE CAPACITY @ PIERS: 24 TONS

ALLOWABLE LIVE LOAD DEFLECTION (COMPOSITE): 1/1200 SPAN

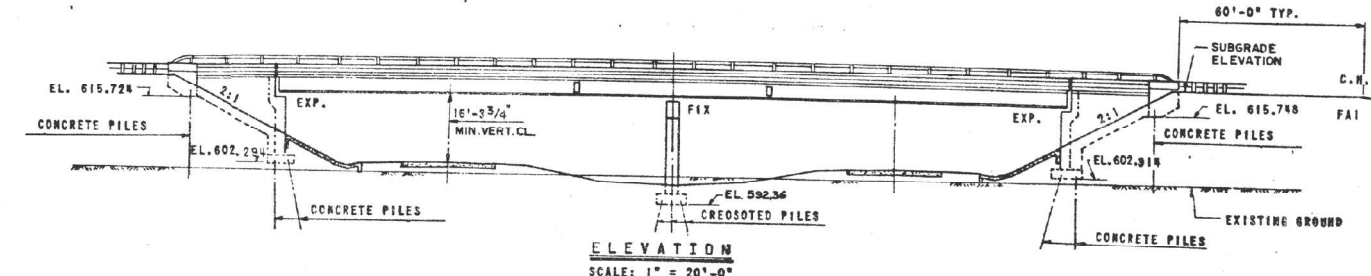
FUTURE WEARING SURFACE: 25 LBS./SQ. FT.

2 SPANS CONTINUOUS COMPOSITE PLATE GIRDER, NO STIFFENERS

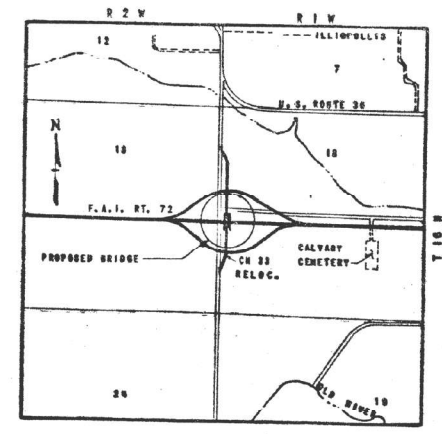
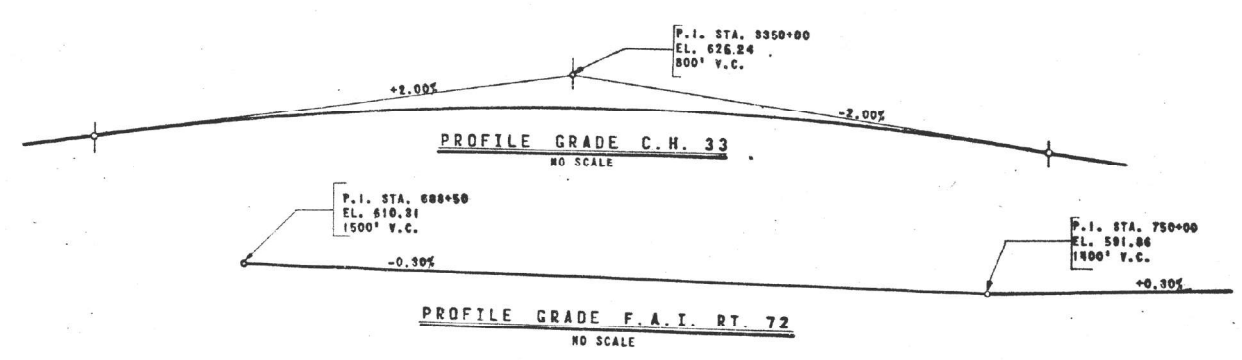
1 1/2" DECK SURFACING WITH COAL TAR INTERLAYER PROTECTIVE COAT



BENCH MARK
 T.B.M. #86 R.R. SPIKE IN POWER POLE 315 FT. LEFT OF STA. 719+87 EL. 605.10



THE UPPER PORTIONS OF THE CONCRETE PILES SHALL BE COATED WITH A 2 MIL MINIMUM THICKNESS OF 85-100 PENETRATION ASPHALT BEFORE DRIVING. THE LENGTHS TO BE COATED ARE 34.5 FEET AT APPROACH BENTS AND 23.5 FEET AT ABUTMENTS. THE COATING SHALL BE APPLIED NOT LESS THAN 24 HOURS PRIOR TO DRIVING. THE COST IS INCIDENTAL TO THE COST OF DRIVING CONCRETE PILES.



APPROVED FOR STRUCTURAL ADEQUACY ONLY

6-84

FAS 1625

CONSOER, TOWNSEND & ASSOCIATES
 CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS
 C.H. 33 OVER F.A.I. RTE. 72
 SECTION 84-10-3B-3
 SANGAMON COUNTY STA. 721+28.56

GENERAL PLAN & ELEVATION

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
	I.M.		G.D.V.			

REEL 6-84

MODEL Path: ... FILE NAME: ...

USER NAME = Brandon.Dudley	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 12/13/2022	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

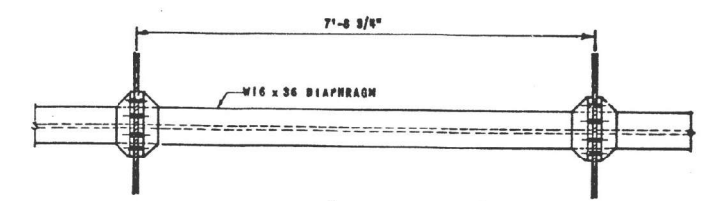
SN 084-0162 EXISTING BRIDGE PLANS
 (FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

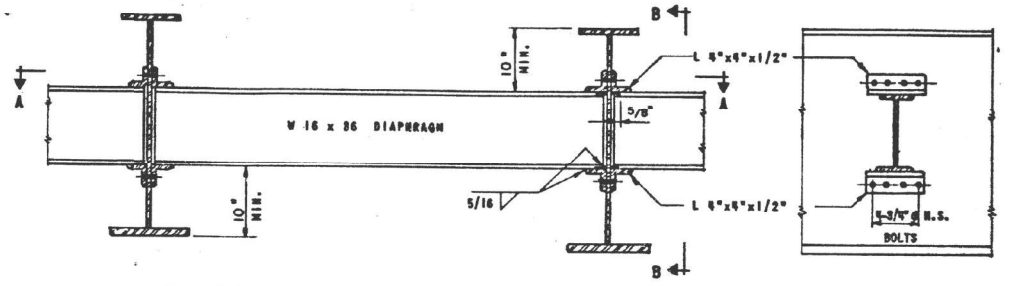
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(84-10-3B-3)BP	SANGAMON	7	4
ILLINOIS			FED. AID PROJECT	

CONTRACT NO. 72110

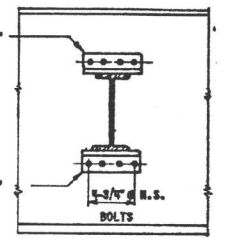
F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	84-10-3HB-3	SANGAMON	46	22
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PRAL	



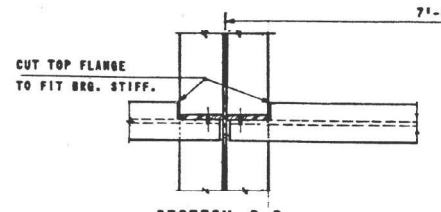
SECTION A-A



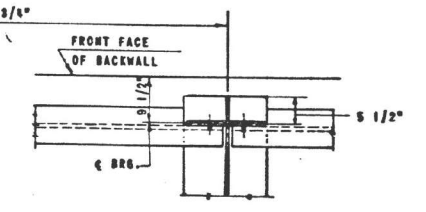
ELEVATION - INTERMEDIATE DIAPHRAGMS TYPE D2



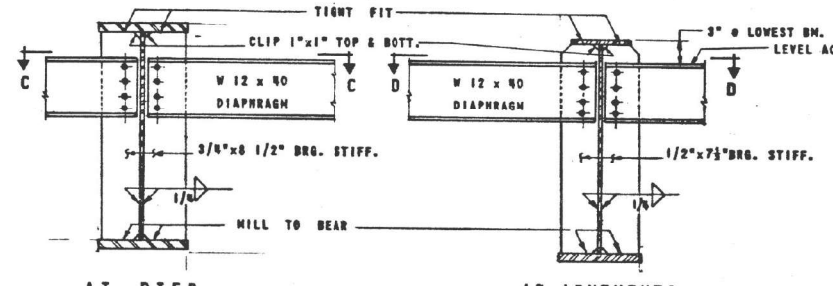
SECTION B-B



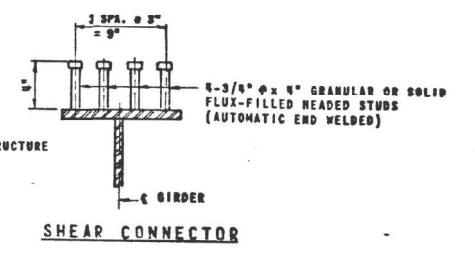
SECTION C-C



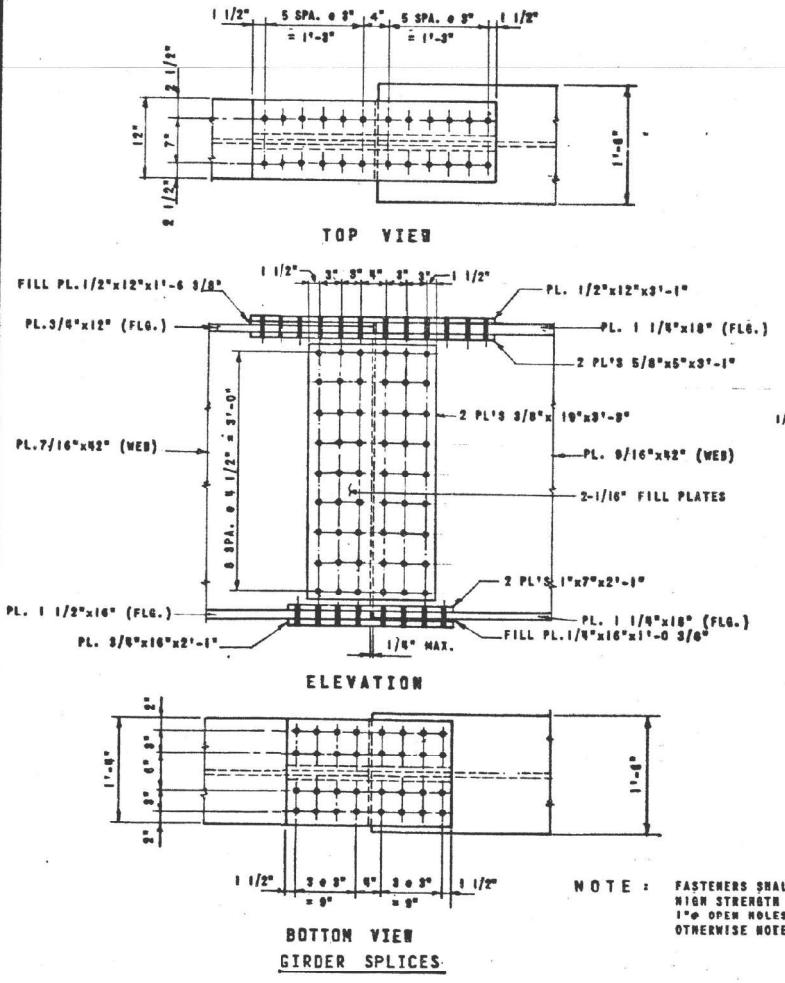
SECTION D-D



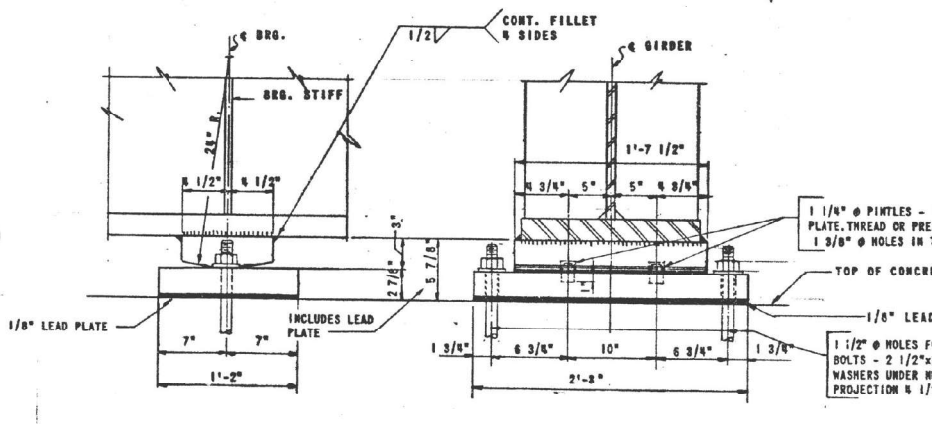
ELEVATION - END DIAPHRAGMS TYPE D1



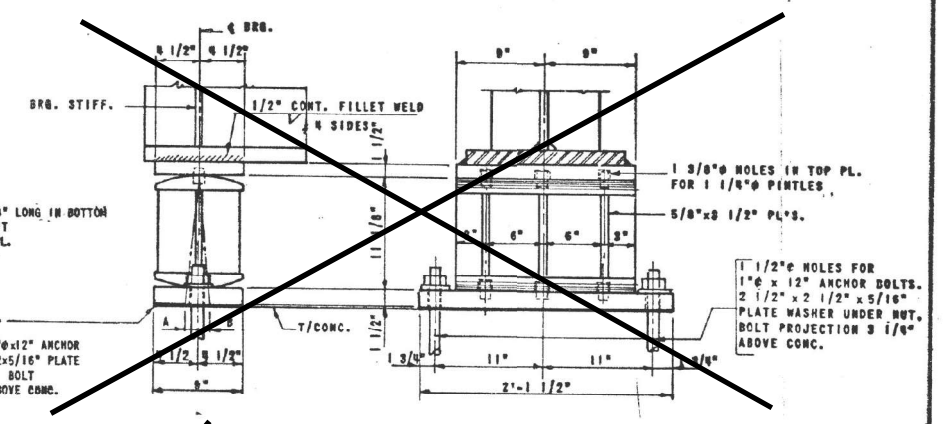
SHEAR CONNECTOR



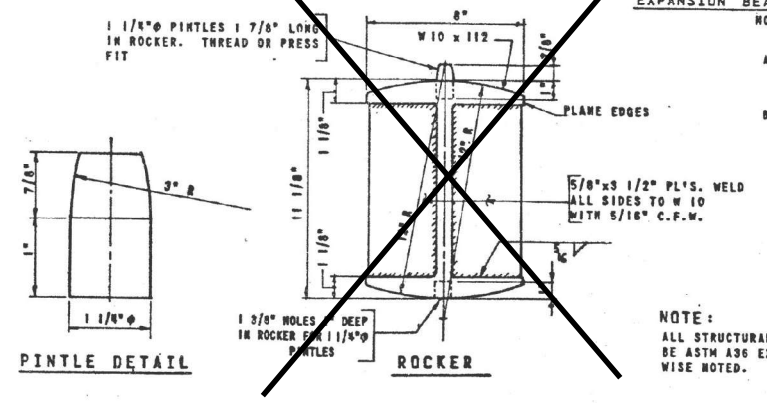
NOTE: FASTENERS SHALL BE 7/8\"/>



FIXED BEARING AT PIER



EXPANSION BEARING AT ABUTMENTS



PINTLE DETAIL

ROCKER

NOTE:
 A = (SIDE OF BEARING AWAY FROM FIXED BEARING) 1/8\"/>

CONSOER, TOWNSEND & ASSOCIATES
 CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS
 C. H. 33 OVER F. A. I. RTE. 72
 SECTION 84-10-3HB-3
 SANGAMON COUNTY STA. 721+28.56

DIAPHRAGMS, SPLICES & BEARINGS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
T. F. M.	M. L.	M. L.	G. D. W.			
T. S. W.						

MODEL Path: \\s:\projects\bridgeplans\CAD\72110 - 0840162\bridgeplans\CAD\72110 - 0840162.dwg

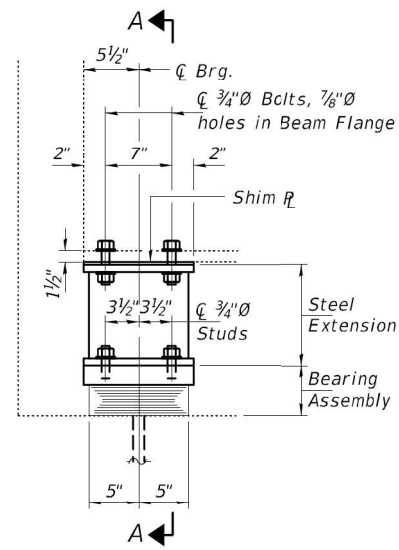
USER NAME = Brandon.Dudley	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 12/13/2022	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

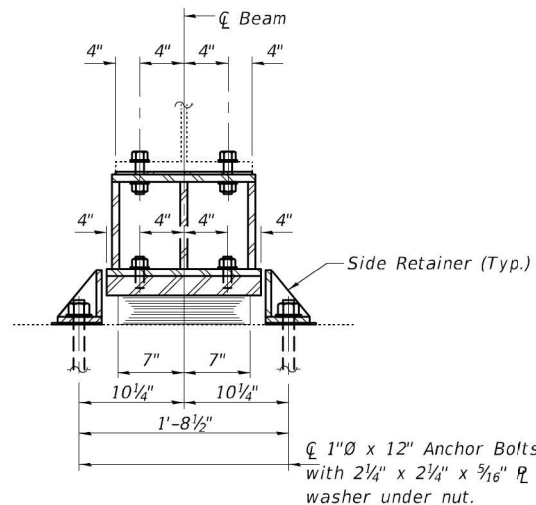
SN 084-0162 EXISTING BRIDGE PLANS
 (FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(84-10-3HB-3)BP	SANGAMON	7	6
ILLINOIS			FED. AID PROJECT	



ELEVATION AT ABUTMENT

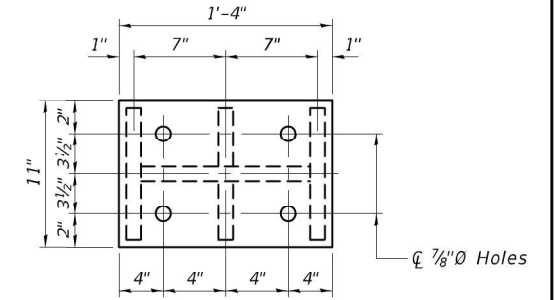


SECTION A-A

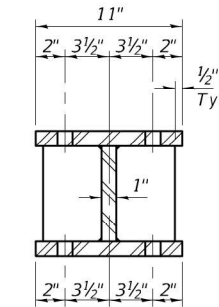
Notes:
 Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.
 New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.
 Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
 Adjustment must account for deck heave due to pack rust (if present).
 Min. jack capacity = 40 Tons.
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications. Cost of Side retainers and Stainless Steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type 1.
 The contractor shall correct elevation differences in the profile grade across the existing expansion joints at the ends of the deck. This shall be accomplished by adding shim plates at location shown on the plans. No more than two shim plate shall be added to each bearing location. The contractor shall field verify the existing dimensions and propose all vertical adjustments to the engineer prior to ordering the extra shims. The allowable elevation tolerances between the two sides of the expansion joints shall be $\pm 1/4"$. Recording accurate measurements and ordering properly sized shims shall be the sole responsibility of the contractor.

BEAM REACTIONS

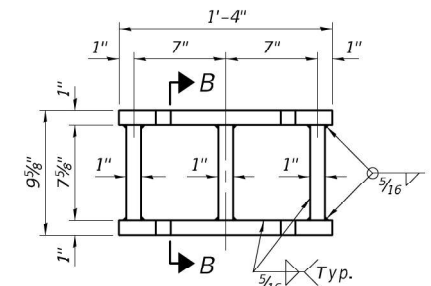
R _P	(K)	52.4
R _L	(K)	49.6
Imp.	(K)	11.1
R (Total)	(K)	113.1



PLAN TOP AND BOTTOM PLATE

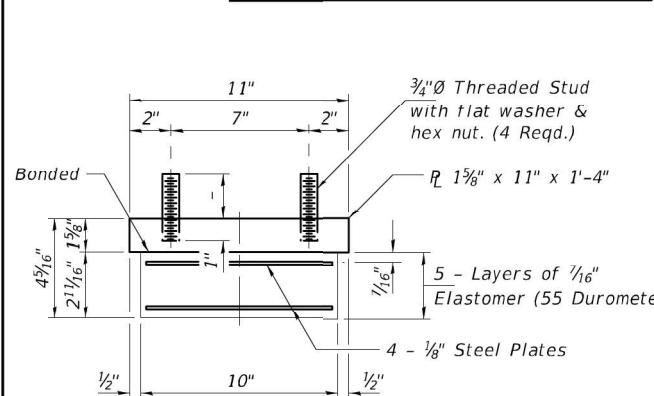


SECTION B-B



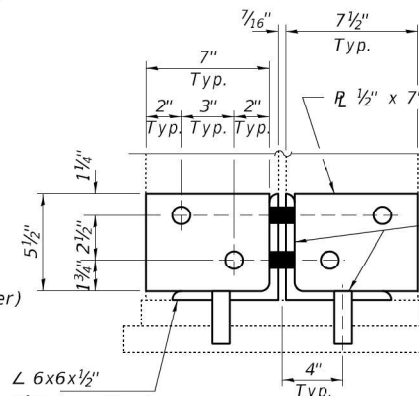
STEEL EXTENSION DETAIL

TYPE I ELASTOMERIC EXP. BRG.

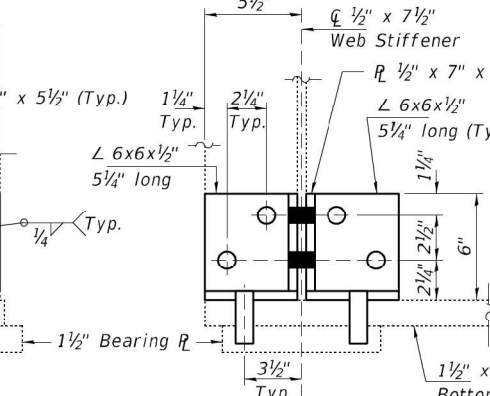


BEARING ASSEMBLY

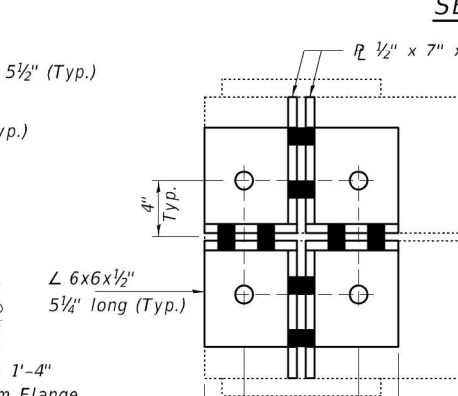
Note:
 Shim plates shall not be placed under Bearing Assembly.



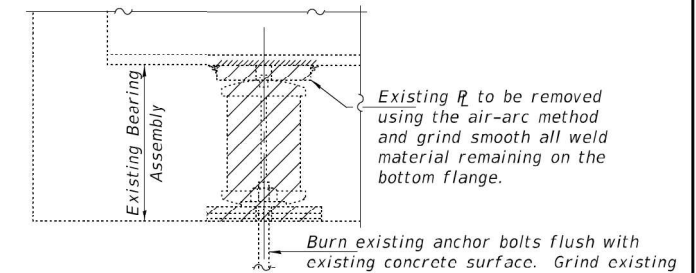
END SECTION



ELEVATION



PLAN



EXISTING BEARING REMOVAL DETAIL

Cost included with Jack and Remove Existing Bearings.

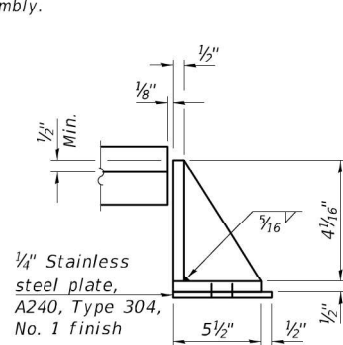
Note:
 Fasteners shall be high strength bolts. Bolts $3/4"$ ϕ , open holes $1 1/16"$ ϕ , unless otherwise noted.

BOLT HOLE LEGEND

● - Field drill using new steel as template.

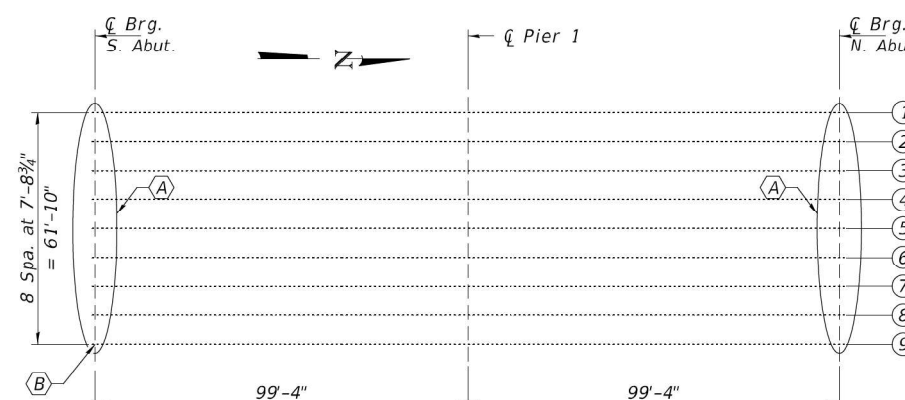
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type 1	Each	18
Jack and Remove Existing Bearings	Each	18
Furnishing and Erecting Structural Steel	Pound	3540
Anchor Bolts, 1" ϕ	Each	72
Structural Steel Repair	Pound	100



SIDE RETAINER

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



FRAMING PLAN

(A) - Remove and Replace Bearings at Both Abutments

(B) - Beam End Repair

TYI/REPS 5-17-2018

DESIGNED - Adrian T. Halloway	EXAMINED - [Signature]	DATE - JANUARY 25, 2022
CHECKED - Victor H. Veliz	PASSED - [Signature]	REVISED -
DRAWN - Venkat Ramana Reddy	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -
CHECKED - ATH VHV		

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BEARING REPLACEMENT DETAILS - REPAIR A
 SN 084-0162

SHEET NO. 4 OF 4 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(84-10-2, 84-10-3-SLP) BRR	SANGAMON	16	16
			CONTRACT NO. 72N35	
ILLINOIS FED. AID PROJECT				

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USER NAME = Brandon.Dudley	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 12/13/2022	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SN 084-0162 EXISTING BRIDGE PLANS
 (FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(84-10-3HB-3)BP	SANGAMON	7	7
			CONTRACT NO. 72110	
ILLINOIS FED. AID PROJECT				