

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

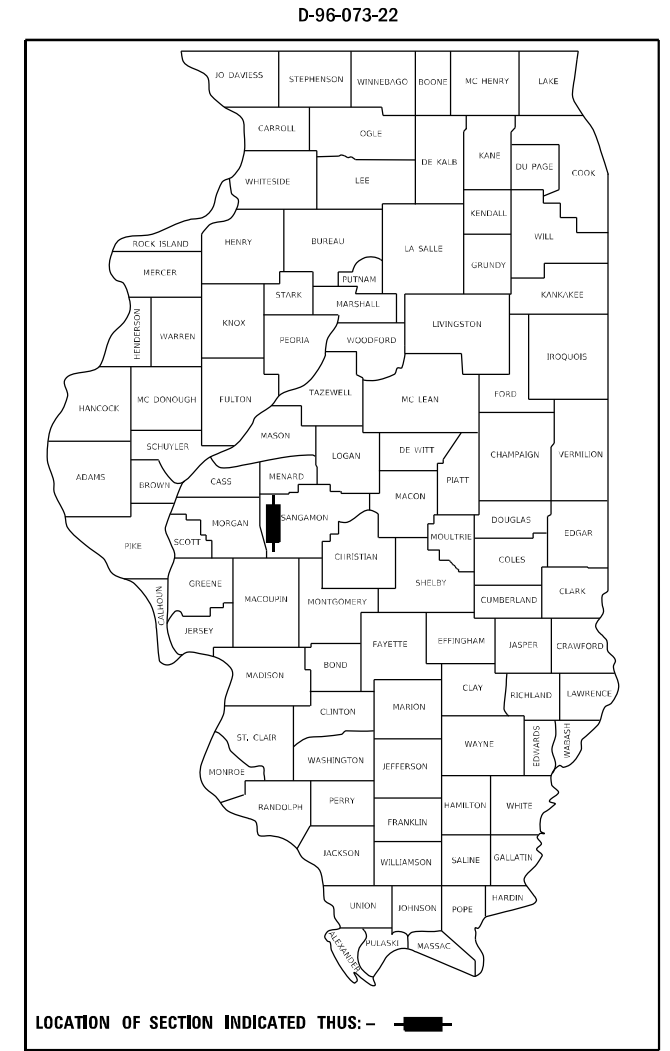
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(84-9-2HB)BP	SANGAMON	8	1
		ILLINOIS	CONTRACT NO. 72063	

FOR INDEX OF SHEETS, SEE SHEET NO. 2

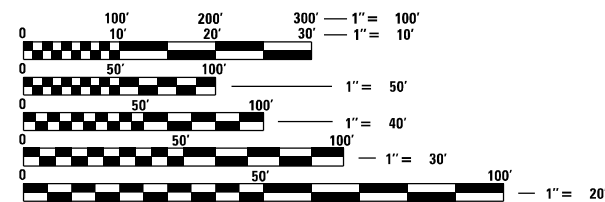
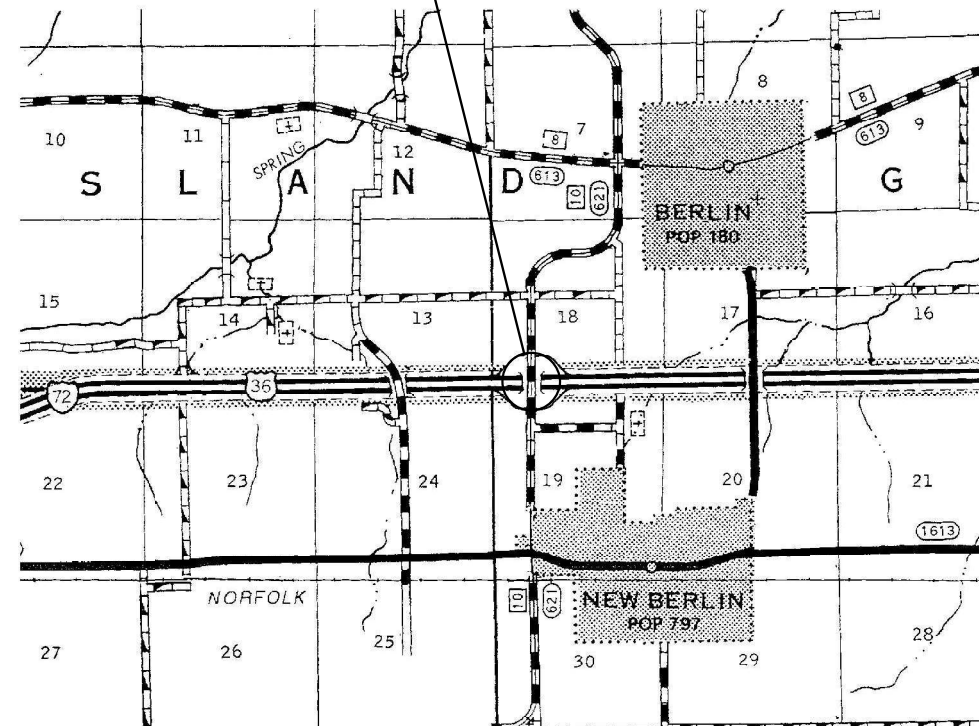
# PROPOSED HIGHWAY PLANS

FAI ROUTE 72 (I-72)  
SECTION (84-9-2HB)BP  
PROJECT NHPP-QFK2(002)  
BRIDGE PAINTING  
SANGAMON COUNTY

C-96-017-23



PROJECT LOCATION  
SN 084-0142  
CH 10 OVER I-72  
NEW BERLIN 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 = 250 FT. = 0.05 MILE  
NET LENGTH = 250 FT. = 0.05 MILE

CONTRACT NO. 72063

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED October 19, 2022

REGIONAL ENGINEER

December 9, 2022  
  
ENGINEER OF DESIGN AND ENVIRONMENT

December 9, 2022  
  
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS

HIGHWAY STANDARDS


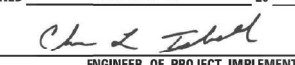
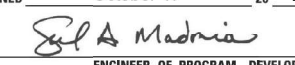
INDEX OF SHEETS

- 1 COVER SHEET
- 2 INDEX, STANDARDS, GENERAL NOTES, & SIGNATURES
- 3 SUMMARY OF QUANTITIES
- 4-8 EXISTING BRIDGE PLANS, SN 084-0142

- 000001-08
- 001006
- 701101-05
- 701106-02
- 701400-11
- 701402-12
- 701411-09
- 701901-08
- 704001-08
- 782006-01

GENERAL NOTES:

1. WORK SHALL CONSIST OF BLASTING AND PAINTING STRUCTURAL STEEL AT LOCATIONS DESCRIBED 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". 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 COATS SHALL BE AS DESCRIBED IN THE SPECIAL PROVISIONS.
2. THE USE OF AIR MONITORS WILL BE REQUIRED AT LOCATIONS AS CALLED OUT IN THE SPECIAL PROVISIONS.
3. THE SSPC-QP-1 AND SSPC-QP2 PAINTING CONTRACTOR CERTIFICATIONS WILL BE REQUIRED.
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. RUBBER COMPONENTS SHALL NOT BE PAINTED.
5. UPON COMPLETION OF PAINTING OPERATIONS, 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 WITHHOLD PAYMENT UNTIL SATISFACTORY CLEANUP IS ACHIEVED.

<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS DISTRICT 6</b>	
EXAMINED <u>October 18</u> 20 <u>22</u>	 ENGINEER OF OPERATIONS
EXAMINED <u>October 17</u> 20 <u>22</u>	 ENGINEER OF PROJECT IMPLEMENTATION
EXAMINED <u>October 17</u> 20 <u>22</u>	 ENGINEER OF PROGRAM DEVELOPMENT

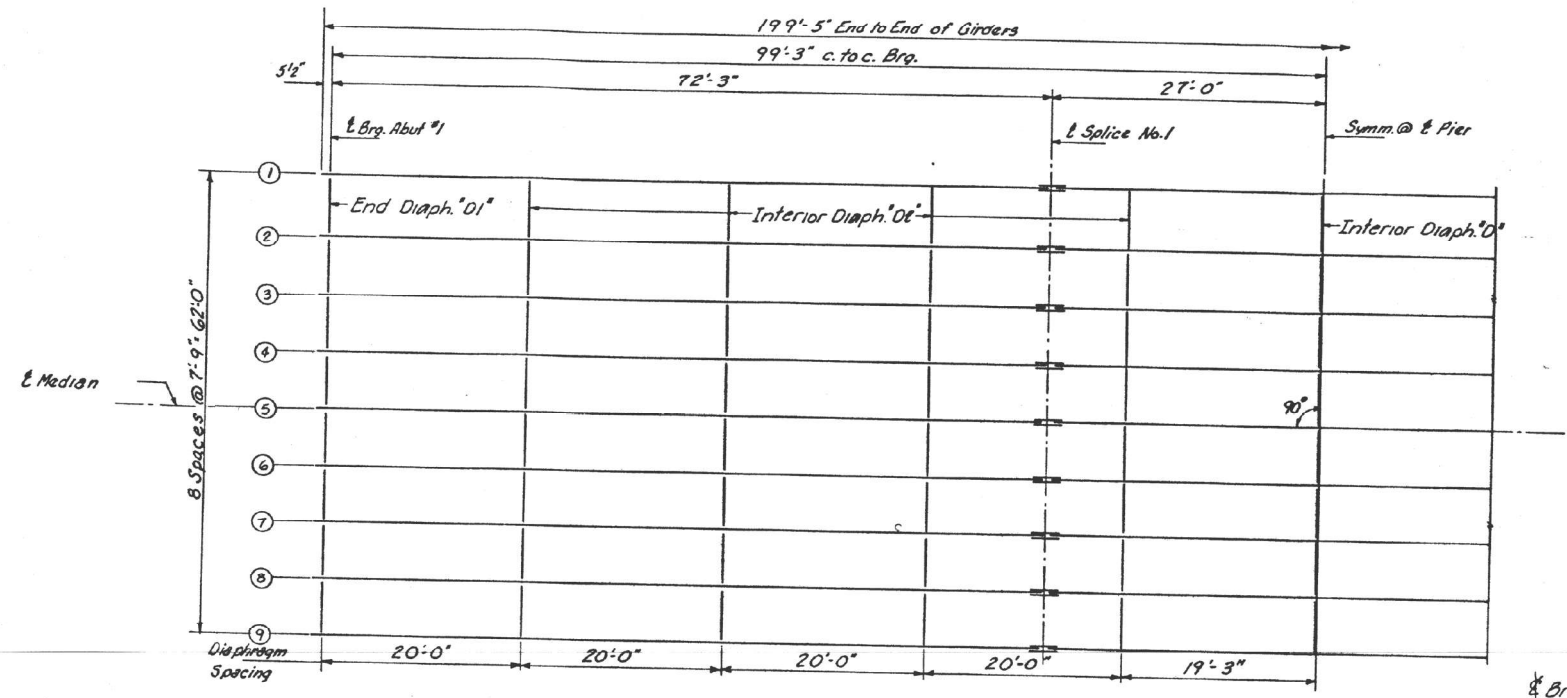
MODEL Path: \\s:\address\bridgeplans\_CAD\72063 - 0840142\main\plan\sheet.dgn

	USER NAME = Brandon.Dudley	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>INDEX OF SHEETS, STANDARDS, GENERAL NOTES, &amp; SIGNATURES</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		DRAWN -	REVISED -			72	(84-9-2HB)BP	SANGAMON	8	2	
	PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -			CONTRACT NO. 72063					
	PLOT DATE = 10/18/2022	DATE -	REVISED -			ILLINOIS FED. AID PROJECT					
					SCALE:	SHEET OF SHEETS		STA. TO STA.			

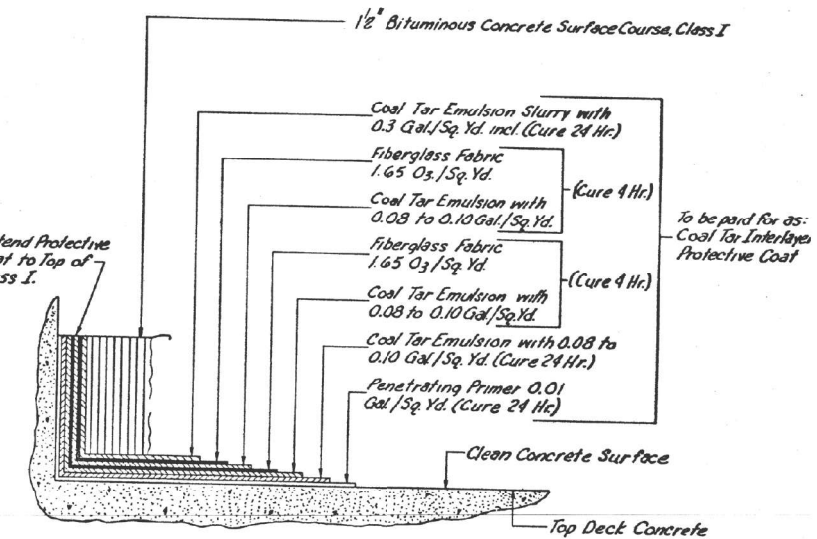




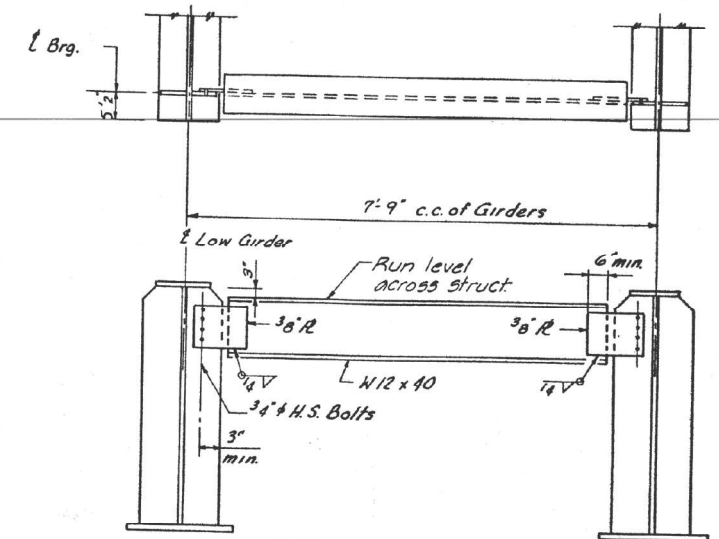
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA-408	84-9-2HB	SANGAMON	36	18
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	



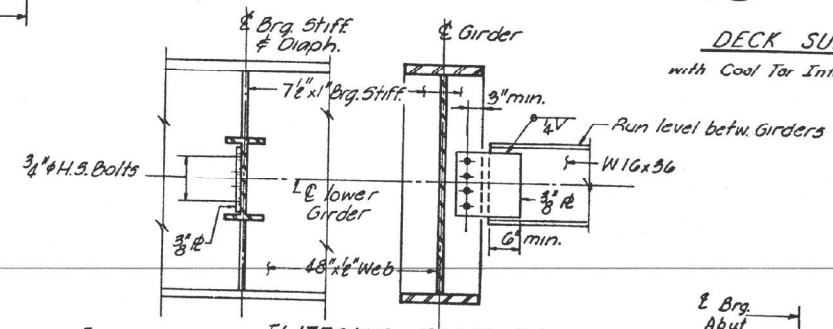
**FRAMING PLAN**  
All end Diaphragm MK D<sub>1</sub>  
All interior Diaphragm MK D or DE



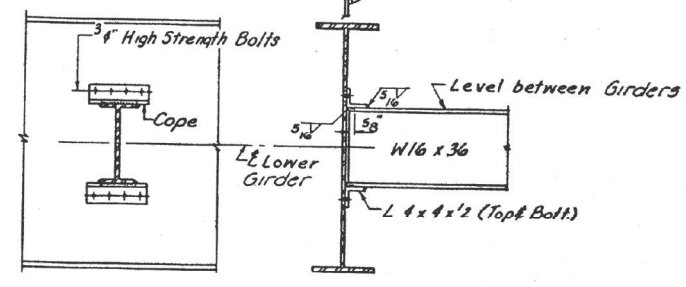
**DECK SURFACING**  
with Coal Tar Interlayer Protective Coat



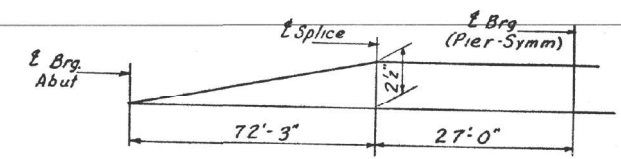
**END DIAPHRAGM**  
16 Required - MK D<sub>1</sub>



**INTERIOR DIAPHRAGM**  
8 Required - MK D



**INTERIOR DIAPHRAGM**  
64 Required MK D<sub>2</sub>



**BEAM FABRICATION DIAGRAM**

TOP OF WEB ELEVATIONS *									
GIRDER	1	2	3	4	5	6	7	8	9
E Brq. Abut #1	673.46	673.58	673.70	673.82	673.94	673.82	673.70	673.58	673.46
E Splice 1 & 2 @ Pier	673.66	673.79	673.91	674.03	674.15	674.03	673.91	673.79	673.66
E Brq. Abut #2	673.46	673.58	673.70	673.82	673.94	673.82	673.70	673.58	673.46

\* For Fabrication Only

**STRUCTURAL STEEL DETAILS**

REVISIONS	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	DRAWN BY DATE SKK 8-72
1. 8/74 G224	RELOC. C.H. 10 OVER FA 408 FA 408 SEC. 84-9-2HB Sta. 36+10.14 (FA 408) SANGAMON CO.	PROJECT NO. 2385-1
	HOMER L. CHASTAIN & ASSOCIATES CONSULTING ENGINEERS DECATUR, ILLINOIS	SHEET NO. 18

MODEL: D:\p\h\... FILE: NAME: S:\p\h\... CAD: 72063 - 084-0142 - 18\mfr\plan\sheet.dgn

USER NAME = Brandon.Dudley	DESIGNED -	REVISED -
PLOT SCALE = 100,0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/18/2022	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 084-0142  
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

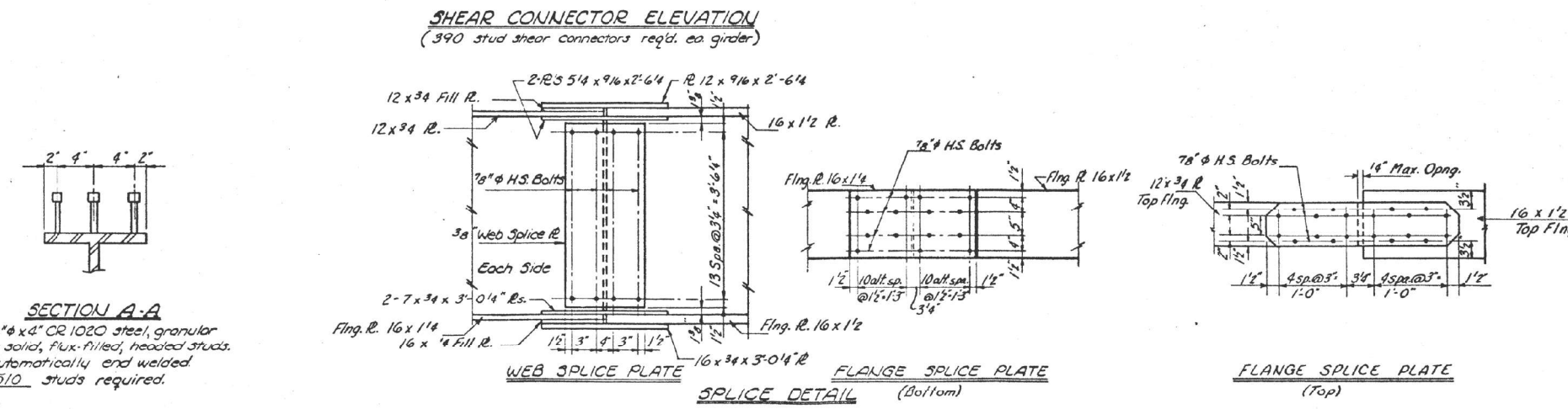
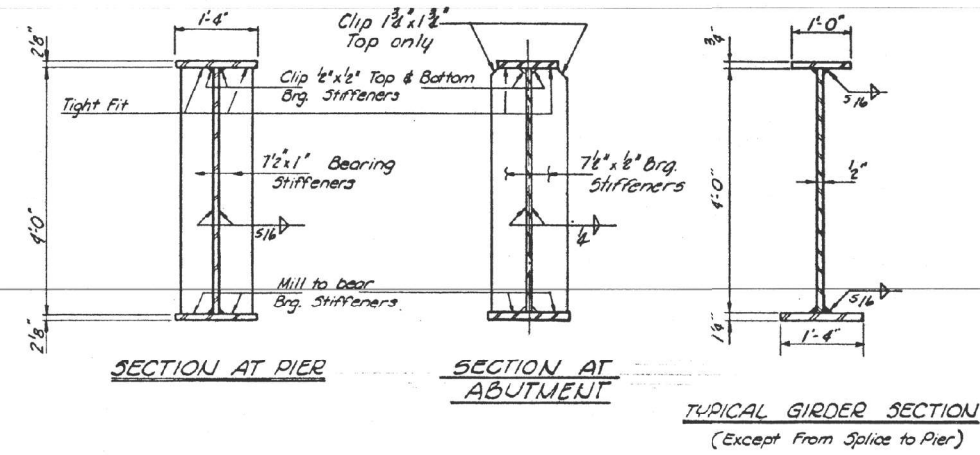
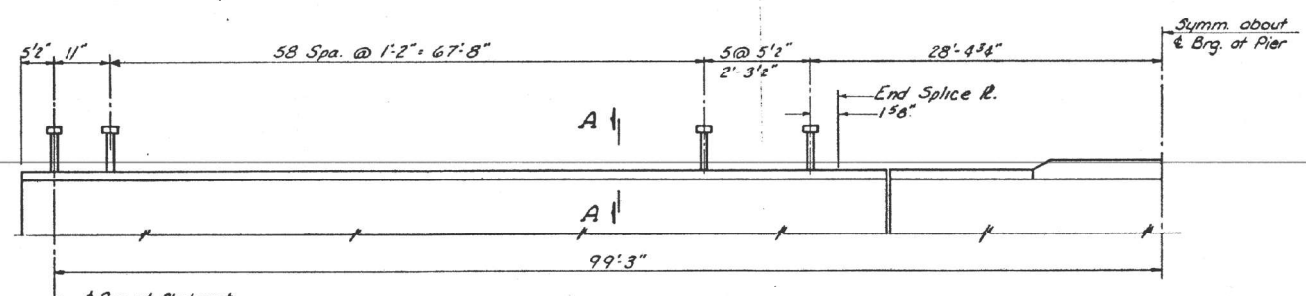
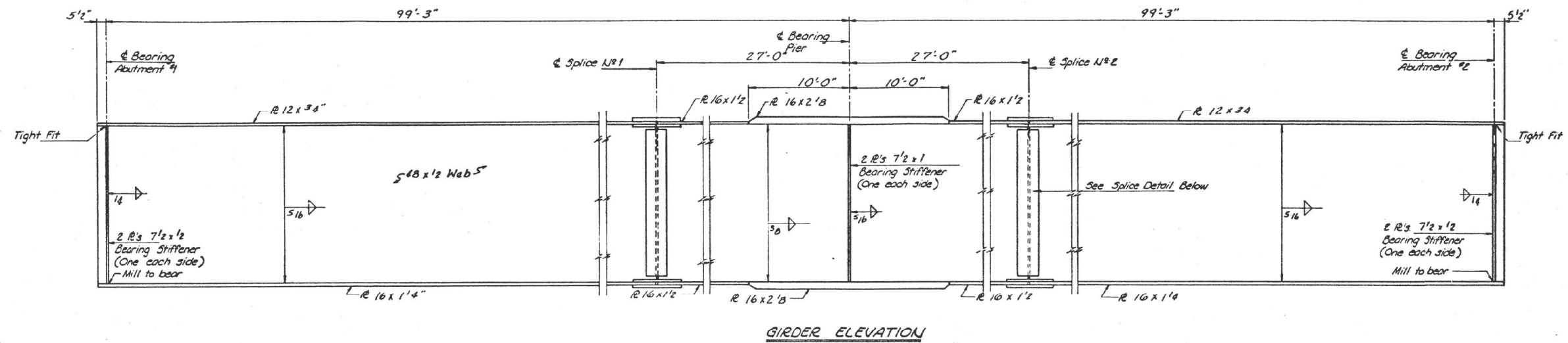
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(84-9-2HB)BP	SANGAMON	8	5
ILLINOIS			FED. AID PROJECT	

CONTRACT NO. 72063



Sheet No. 9  
of 15 Sheets

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA-408	84-9-2HB	SANGAMON	36	19
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		



REVISIONS		STRUCTURAL STEEL	
NO.	DATE	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	DRAWN BY DATE SKA 3-72
1	3/78	RELOC. C.H. 10 OVER FA. 408	DESIGNED BY DATE RJV 7-72
2		FA 408 SEC. 84-9-2HB	BOOK NUMBER
3		Sta. 36+10.14 (FA 408)	2385-1
4		SANGAMON Co.	
5		HOMER L. CHASTAIN & ASSOCIATES CONSULTING ENGINEERS DECATUR, ILLINOIS	

MODEL: D:\p\p\... FILE NAME: S:\... CAD: 72063 - 084-0142

USER NAME = Brandon.Dudley	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/18/2022	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

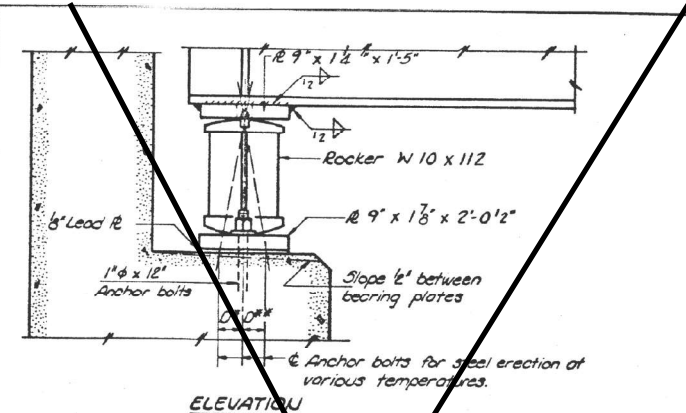
**EXISTING BRIDGE PLANS, SN 084-0142  
(FOR INFORMATION ONLY)**

SCALE: SHEET OF SHEETS STA. TO STA.

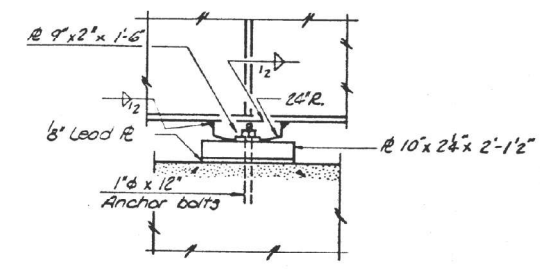
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(84-9-2HB)BP	SANGAMON	8	6
			CONTRACT NO. 72063	
		ILLINOIS	FED. AID PROJECT	

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS
FA-40B	84-9-2HB	SANGAMON	36
FED. ROAD DIST. NO.	ILLINOIS	PROJECT	

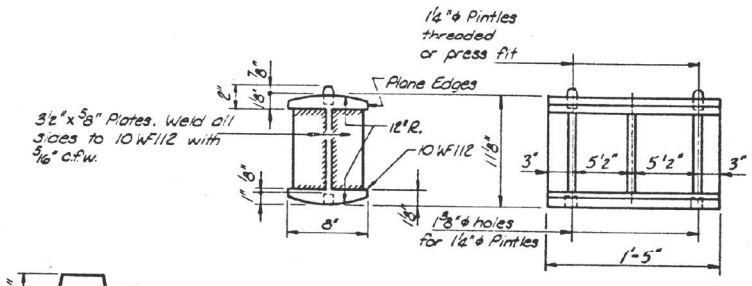
Sheet No 10  
of 15 Sheets



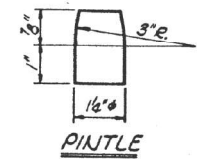
ELEVATION



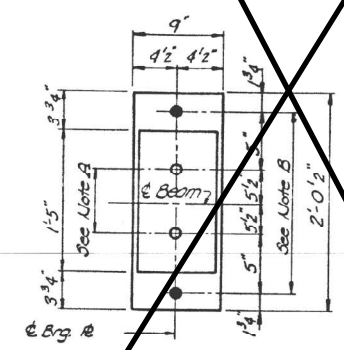
ELEVATION



ROCKER



PINTLE

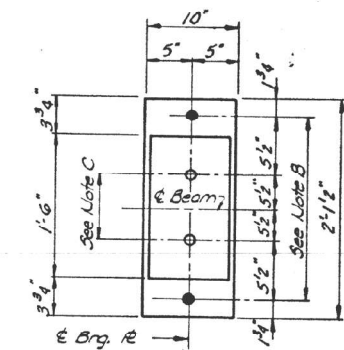


PLAN  
AT ABUTMENT

**NOTE A**  
1 1/2" holes - 1" deep in top R for pintles. Thread or press fit pintles into bottom R.

**NOTE B**  
1/2" holes for 1/4" anchor bolts. 2 1/2" x 2 1/2" x 1/8" R washers under nut.

**NOTE C**  
1 1/2" holes 1" deep in top R only for 1 1/2" x 1/2" pintles.



PLAN  
AT PIER

**NOTES ON SETTING OF ANCHOR BOLTS AT EXPANSION BEARINGS**

- a)  $D^*$  (Side of brg. away from fixed brg.)  
 $D^* = 5'$  per each 100' of expansion for every 15° below the normal temperature of 50°F.
- $D^{**}$  (Side of brg. toward fixed brg.)  
 $D^{**} = 3'$  per each 100' of expansion for every 15° above the normal temperature of 50°F.
- b) After beams have been erected and dimensions  $D^*$  or  $D^{**}$  determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

**MOMENT TABLE - 3ymm. Composite 2 Span**  
(Composites in Positive Moment Areas Only)

	Abutment	Pier
$I_x$ (in <sup>4</sup> )	20678	47346
$I_c$ (in <sup>4</sup> )	54084	
$S_x$ (in <sup>3</sup> )	1030	1812
$S_c$ (in <sup>3</sup> )	1377	
$Q$ (in)	.997	.997
$M_R$ (k)	629.1	1346.4
$f_y R$ (ksi)	7.30	8.90
$S_R$ (in <sup>3</sup> )	.490	.490
$M_s E$ (k)	352.2	626.4
$M_E$ (k)	862.0	795.0
$M_{imp}$ (k)	191.0	178.4
<b>TOTAL (k)</b>	<b>1405.0</b>	<b>1599.8</b>
$P_3 + S_E$ (k)	12.10	10.60
$P_3$ TOTAL (k)	19.35	19.51
$V_R$ (k)	62.4	

**REACTION TABLE**

	ABUTMENT	PIER
$R_R$ (k)	54.1	189.6
$R_E + S_E$ (k)	49.6	78.2
$Imp.$ (k)	11.1	17.4
<b>R TOTAL (k)</b>	<b>114.8</b>	<b>285.2</b>

$I_x$  and  $S_x$  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  $P_3$ .  
 $V_R$  is the maximum  $\pm$  Impact shear range.

**NOTE: BEARING SEAT ADJUSTMENT**

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of  $\pm 1/8"$ . Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/8" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.

REVISIONS			BEARING DETAILS	
1	DATE	BY	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	DRAWN BY S.R.K. 5-
2			PROJECT NO. 2385-	CHECKED BY K.P. 7-
3			PROJECT NO. 2385-	BOOK NUMBER
4			PROJECT NO. 2385-	SHEET NO. 20
5			PROJECT NO. 2385-	
6			PROJECT NO. 2385-	
7			PROJECT NO. 2385-	
8			PROJECT NO. 2385-	
9			PROJECT NO. 2385-	
10			PROJECT NO. 2385-	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RELOC. C.H. 10 OVER FA 40B  
FA 40B SEC 84-9-2HB  
Sta. 36+10.14 (FA 40B) SANGAMON Co.  
HOMER L. CHASTAIN & ASSOCIATES  
CONSULTING ENGINEERS  
DECATUR, ILLINOIS

MODEL Path: \\s:\address\Bridges\84-9-2HB\_084-0142\_Branch\chastain.dgn  
FILE NAME: S:\address\Bridges\84-9-2HB\_084-0142\_Branch\chastain.dgn

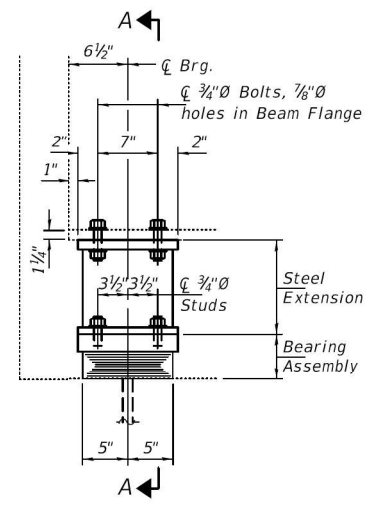
USER NAME = Brandon.Dudley	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/18/2022	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

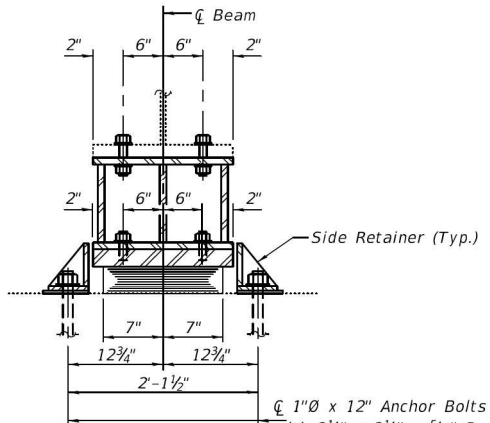
EXISTING BRIDGE PLANS, SN 084-0142  
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(84-9-2HB)BP	SANGAMON	8	7
			CONTRACT NO. 72063	
			ILLINOIS FED. AID PROJECT	



ELEVATION AT BOTH ABUTMENT'S

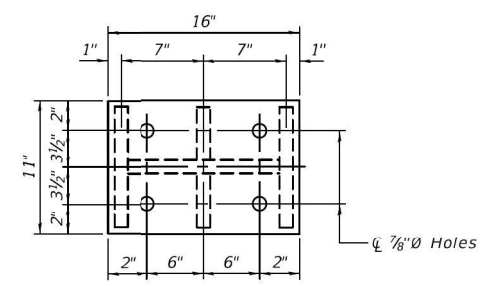


SECTION A-A

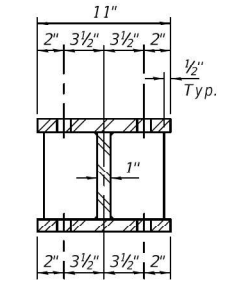
**BEAM REACTIONS**

R <sub>l</sub>	(K)	47.3
R <sub>r</sub>	(K)	41.3
Imp.	(K)	12.4
R (Total)	(K)	101

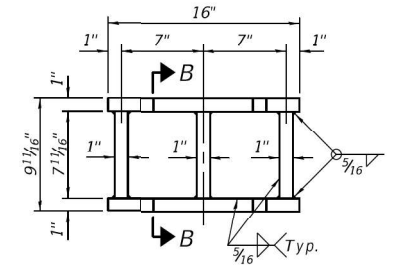
Notes:  
 Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.  
 New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.  
 Prior to ordering any material, 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 = 26 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 I.



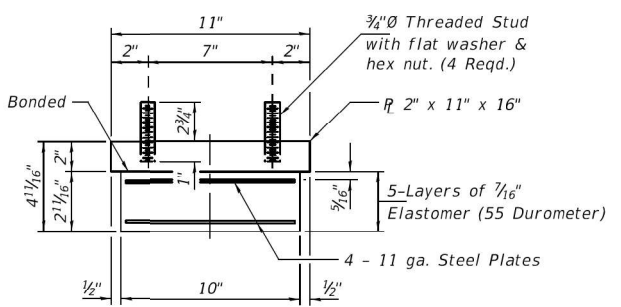
PLAN TOP AND BOTTOM PLATE



SECTION B-B

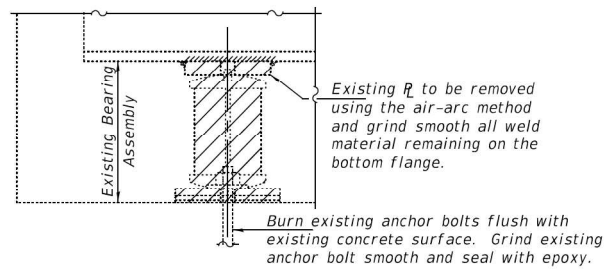


STEEL EXTENSION DETAIL



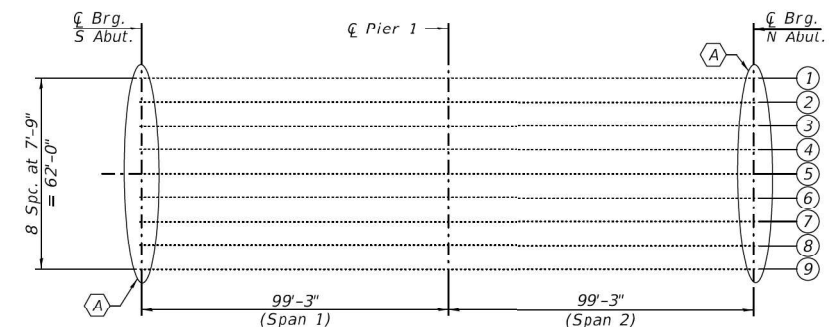
BEARING ASSEMBLY

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



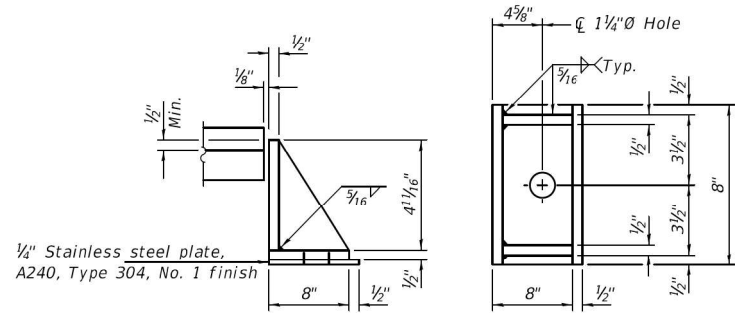
EXISTING BEARING REMOVAL DETAIL

Cost included with Jack and Remove Existing Bearings.



PARTIAL FRAMING PLAN

⊕ - Bearing Removal and Replacement.



SIDE RETAINER

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

**BILL OF MATERIAL NORTH ABUTMENT**

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	18
Jack and Remove Existing Bearings	Each	18
Furnishing and Erecting Structural Steel	Pound	3610
Anchor Bolts, 1"Ø	Each	36



EXPIRES 11-30-2022

DESIGNED - Victor H. Veliz	EXAMINED	DATE - JUNE 21, 2022
CHECKED - Steven M. Ryan	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - Venkat Ramana Reddy	PASSED	REVISED -
CHECKED - VHV SMR	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BEARING DETAILS - BOTH ABUTMENTS  
 WAVERLY ROAD (CH 10) OVER I-75 / US-36  
 SN 084-0142

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72,72A	(84-9-2HB, 84-10-1HB-1BRR)	SANGAMON	7	4
			CONTRACT NO. 72010	
ILLINOIS FED. AID PROJECT				

MODEL: D:\p\h\... FILE NAME: S:\Addresses\Bridges\plans\_CAD\72063 - 0840142\_bearingdetails.dgn

USER NAME = Brandon.Dudley	DESIGNED -	REVISED -
PLOT SCALE = 100,0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/18/2022	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 084-0142  
 (FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(84-9-2HB)BP	SANGAMON	8	8
			CONTRACT NO. 72063	
ILLINOIS FED. AID PROJECT				