

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
BRIDGE PAINTING**

FAP 518 (IL 94)  
SECTION (102) BP

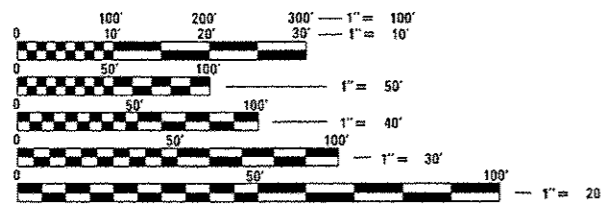
BRIDGE PAINTING  
ADAMS COUNTY

C-96-043-17

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
518	(102) BP	ADAMS	5	1
		ILLINOIS	CONTRACT NO. 72J79	

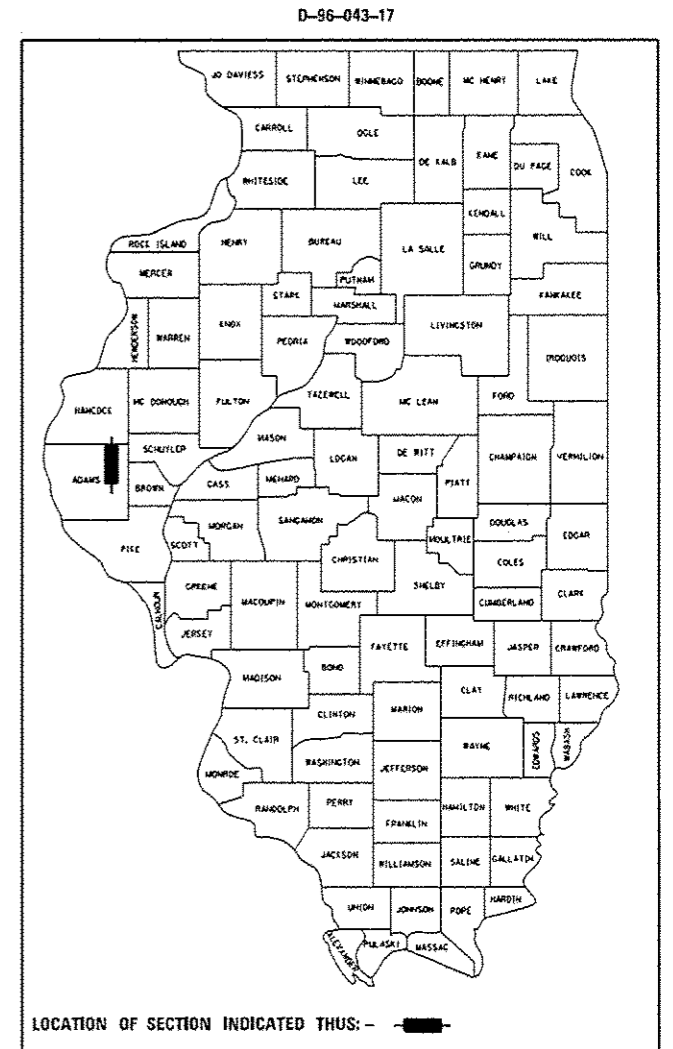
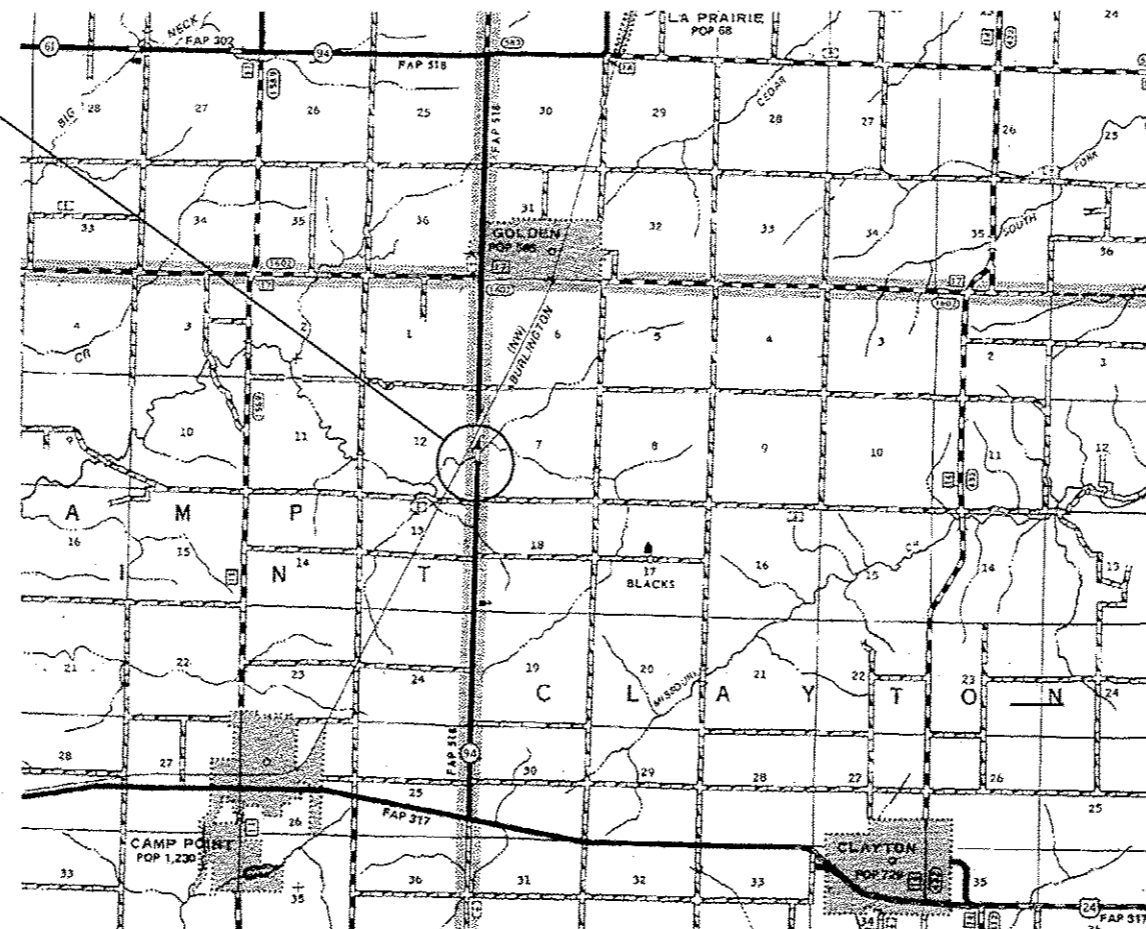
FOR INDEX OF SHEETS, SEE SHEET NO. 2

PROJECT LOCATION - SN 001-0072  
IL 94 OVER S FORK BEAR CREEK  
1.6 MILES SOUTH OF GOLDEN



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



LOCATION OF SECTION INDICATED THIS: - [black rectangle] -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED *24 March 2017*  
*[Signature]* REGION FOUR ENGINEER  
*May 12 2017*  
*Maurice M. Addis* PER  
ENGINEER OF DESIGN AND ENVIRONMENT  
*May 12 2017*  
*[Signature]* 2  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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

GROSS LENGTH = NA  
NET LENGTH = NA

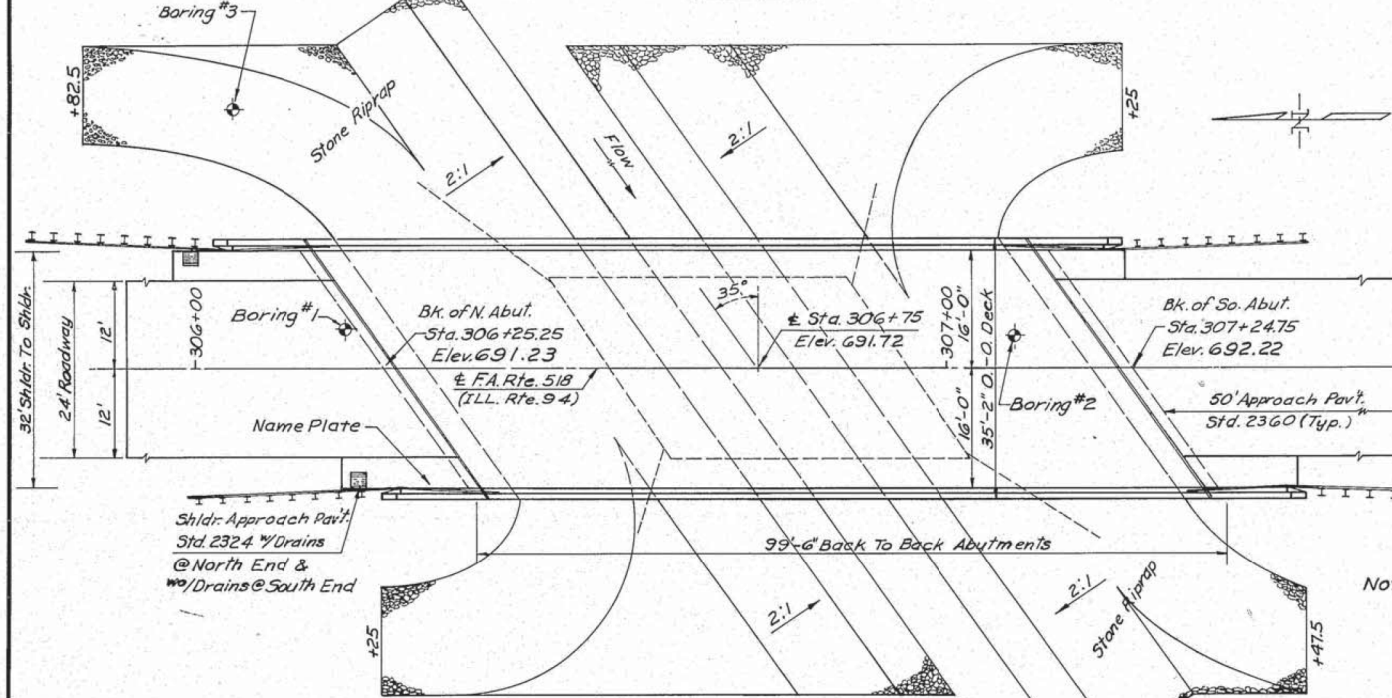
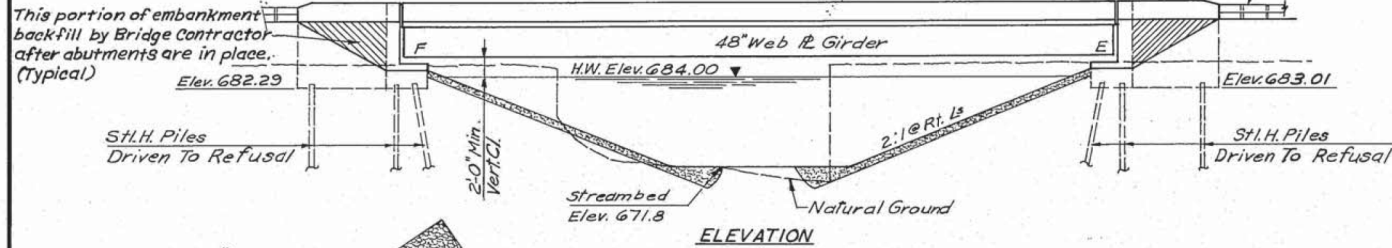
CONTRACT NO. 72J79

PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS



B.M. 711C - Cut on top Southeast corner Northeast wingwall existing bridge Elev. 685.52  
 Existing Structure: Remove 40' R.C. Bridge w/22.5' roadway & w/closed concrete abutments SN 001-0037

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
102-518	*	ADAMS	25	9
SHEET NO. 1 OF 10 SHEETS				
* 102 (W-1, RS-3 F B-D)				



STATION 306+75  
 BUILT 1990 BY  
 STATE OF ILLINOIS  
 F.A. RT. 518 SEC. 102 B-1  
 LOADING HS 20  
 STR. NO. 001-0072

NAME PLATE

**KLINGNER & ASSOCIATES, P.C.**  
 Consulting Engineers  
 613 Broadway • Quincy, Illinois 62301  
 (217) 223-3670 • FAX: 223-3503

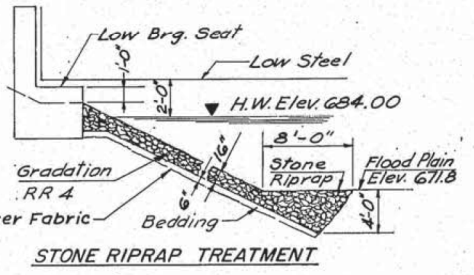
APPROVED  
 FOR STRUCTURAL ADEQUACY ONLY

*Robert E. Anderson*  
 Engineer of Bridges and Structures

WATERWAY INFORMATION\*

Flood	Freq. Yr.	Q. C.F.S.	Opening Sq. Ft.		Nat. Head - Ft.		Headwater El.		
			Exist.	Prop.	H.E.W.	Exist.	Prop.	Exist.	Prop.
Design	50	1,963	367	542	683.9	0.66	0.10	684.56	684.00
Base	100	2,255	367	542	684.5	0.88	0.50	685.38	685.00
Overtopping									
Max. Calc.	500	2,943	367	542	686.0	0.72	0.84	686.72	686.84

\* Provided by IDOT

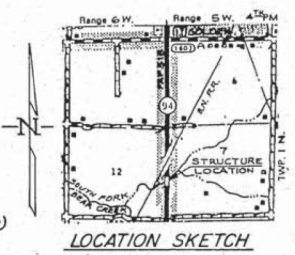


DESIGN SPECIFICATION  
 1989 AASHTO

LOADING HS 20-44  
 Allow 25 #/sq. ft. for wearing surface

DESIGN STRESSES

$f'_c = 3500$  psi  
 $f_y = 60,000$  psi (Reinf.)  
 $f_y = 50,000$  psi (Struct. M223, Grade 50)  
 $f_y = 36,000$  psi (Struct. M183)



GENERAL NOTES

- See Proposal for Boring Data.
- Fasteners shall be high strength bolts. Bolts 7/8" dia., open holes 15/16" dia., unless otherwise noted.
- Calculated weight of Structural Steel = 87,420 lbs., M183 = 7,980 lbs., M223 = 79,440 lbs.
- The Zinc-silicate and vinyl paint system shall be used for shop and field painting of Structural Steel except where otherwise noted. The color of the vinyl finish coat shall be Munsell No. 7.5G 4/8 Interstate Green.
- The quantity of Protective Coat includes the top of deck and inside face and top of parapets.
- Field welding of construction accessories will not be permitted to the bottom flange of girders. Field welding in other areas will be permitted only when approved by the Engineer.
- Bridge Seat Sealer shall be applied to the seat area of the abutments. Est. quantity = 250 sq. ft.
- Anchor bolts shall be set before bolting diaphragms over supports.
- 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.
- Reinforcement bars shall conform to the requirements of AASHTO M31, M42 or M53 Grade 60.
- The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.
- 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 1/8" adjusting shims, of the dimension of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. For Type I Elastomeric Bearings, shims of the dimensions of the top plate shall be provided and placed as detailed.
- The contractor shall drive one (1) test pile in a permanent location at the North and South Abutments as directed by the Engineer before ordering the remainder of the piles.
- Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

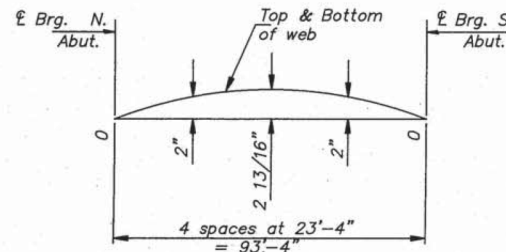
TOTAL BILL OF MATERIAL

Item	Units	Superstructure	Substructure	Total
Removal of Existing Structures	Each			1
Protective Coat	Sq. Yd.	429		429
Neoprene Expansion Joint (2")	Lin. Ft.	82		82
Elastomeric Bearing Assembly, Type I	Each	5		5
Class X Concrete Superstructure	Cu. Yd.	104.3		104.3
Class X Concrete	Cu. Yd.		100.6	100.6
Furn. and Erect Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	1120		1120
Reinforcing Bars, Epoxy Coated	Lbs.	24,740	3,190	33,930
Furn. Steel Piles HP 10x42	Lin. Ft.		380	380
Driving Steel Piles	Lin. Ft.		380	380
Test Pile Steel HP 10x42	Each		2	2
Metal Shoes	Each		22	22
Name Plates	Each	1		1
Structure Excavation	Cu. Yd.		126	126
Slope Riprap Class A4	Ton		1446	1446
Bridge Seat Sealer	L.S.		1	1
Filter Fabric for use with Riprap	Sq. Yd.		1315	1315

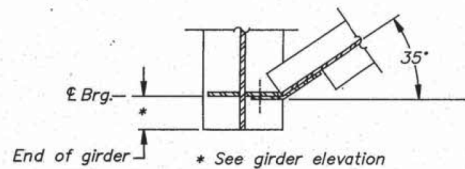
*William L. Wells* 1/29/90  
 William L. Wells Date  
 Registered Structural Engineer  
 State of Illinois No. 4362  
 License Expires November 30, 1990

GENERAL PLAN  
 ILLINOIS ROUTE 94 OVER  
 SOUTH FORK OF BEAR CREEK  
 F.A. RTE. 518 SECTION 102 (B-  
 ADAMS COUNTY  
 Sta. 306+75  
 STRUCTURE NUMBER 001-0072

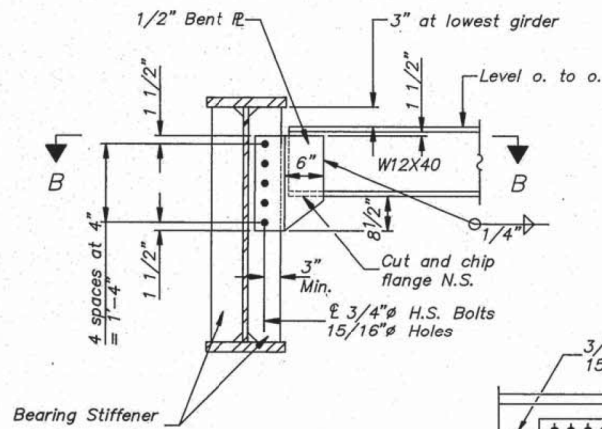
TOP OF WEB ELEVATIONS		
Girder	℄ Brg. N. Abut.	℄ Brg. S. Abut.
1	690.100	691.025
2	690.277	691.202
3	690.442	691.367
4	690.379	691.304
5	690.302	691.227



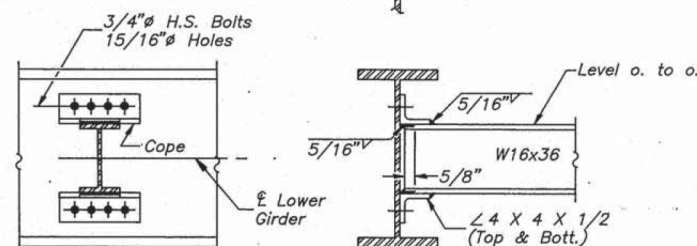
GIRDER CAMBER DIAGRAM



SECTION B-B

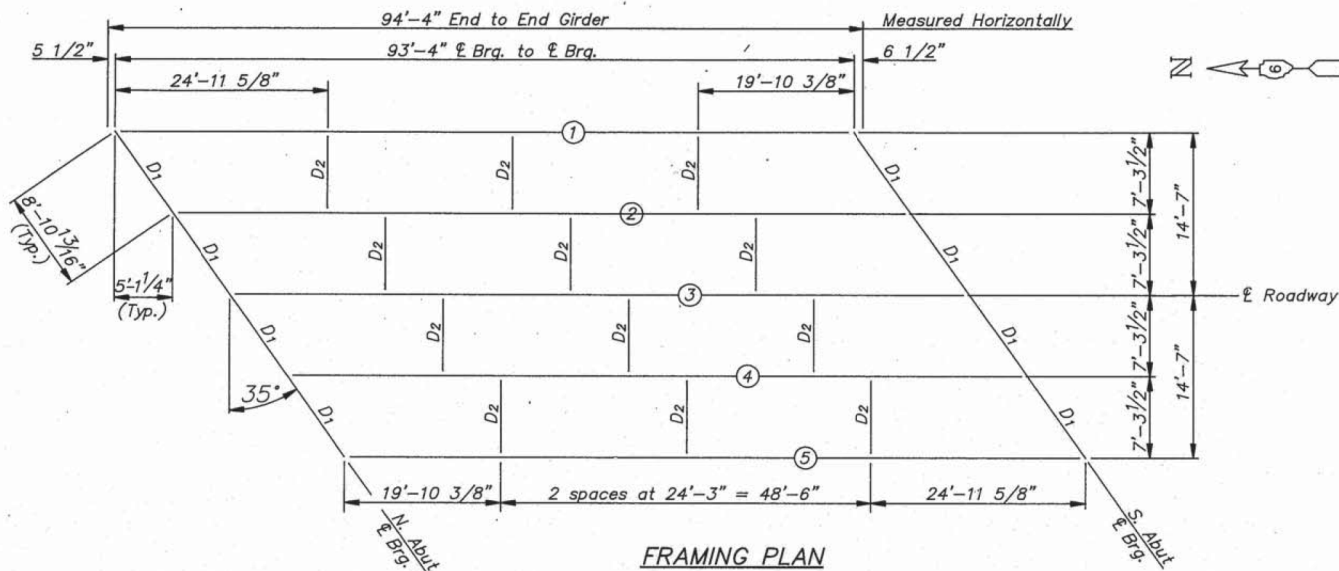


DIAPHRAGM D1  
8 Required

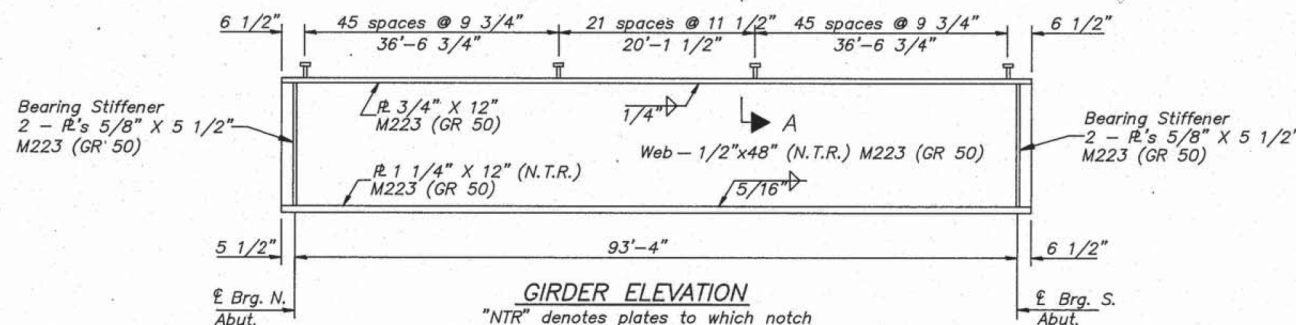


DIAPHRAGM D2  
12 Required

Note: Two hardened washers shall be required over all 15/16" holes  
All contact surfaces of joints shall be free of paint or lacquer.

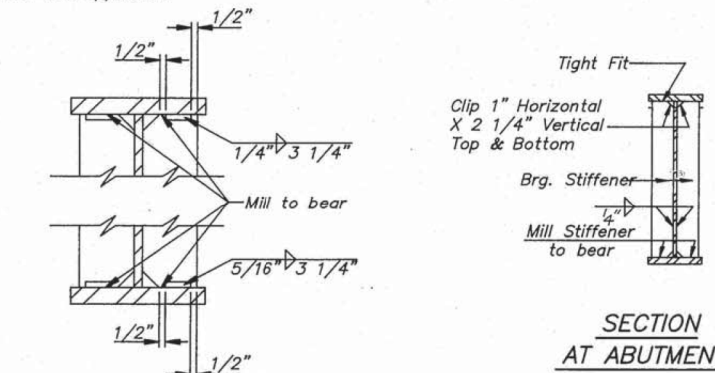


FRAMING PLAN



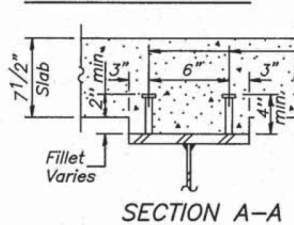
GIRDER ELEVATION

"NTR" denotes plates to which notch toughness requirements are applicable.



SECTION AT ABUTMENT

BEARING STIFFENER WELD DETAIL



SECTION A-A

3/4" Grandular or solid flux filled headed studs, conforming to the requirements of Art. 710.38 of the Std. Specs. Automatically end welded to flange. (1,120 Req'd.)

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
F.A. 518	*	ADAMS	25	14

10 SHEETS

INTERIOR GIRDER MOMENT TABLE		
Units	0.5 Span 1	
Is	(in <sup>4</sup> )	18,585
Ic	(in <sup>4</sup> )	49,342
Ss	(in <sup>3</sup> )	842
Sc	(in <sup>3</sup> )	1,190
φ	(K/ft.)	.890
M℄	(K)	969.0
s℄	(K/ft.)	.346
Ms℄	(K)	377
M℄	(K)	928.1
M (Imp)	(K)	212.5
S <sub>3</sub> (M℄+I)	(K)	1,901.0
Ma	(K)	4,221
Mu	(K)	6,086
fs℄ non-comp	(k.s.i.)	13.8
fs℄ (comp)	(k.s.i.)	3.8
fs <sub>3</sub> (℄+I)	(k.s.i.)	19.2
fs (Overload)	(k.s.i.)	36.8
VR	(K)	53.1

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).  
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total & Overload).  
VR is the maximum Live Load + Impact shear range in span.  
Ma (Applied Moment) = 1.3[M℄ + Ms℄ + S<sub>3</sub>(M℄ + I)].  
Mu is the Full Plastic Moment Capacity for Compact, Braced section.  
fs (Overload) is the sum of the stresses due to M℄ + Ms℄ + S<sub>3</sub>(M℄ + I).

INTERIOR GIRDER REACTION TABLE		
Units	N. & S. Abuts.	
R℄	(K)	57.4
R℄	(K)	43.0
Imp.	(K)	9.8
R (Total)	(K)	110.2

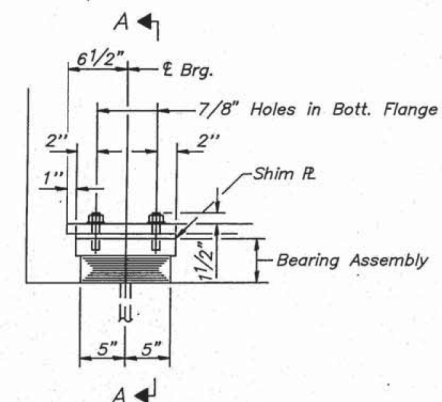
REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	RLW	W/LW			2/90

F.A. ROUTE 518 (IL 94)  
SECTION 102 B-1  
ADAMS COUNTY

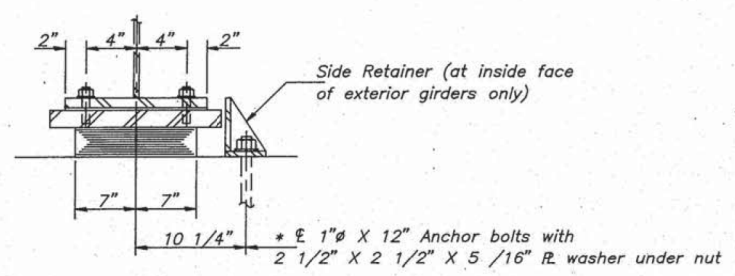
STRUCTURAL STEEL DETAILS  
STRUCTURE NO. 001-0072  
STATION 306+75



ROUTE NO.	SECTION	COUNTY	SHEETS	OF	SHEET NO. 7
F.A. 518	*	ADAMS	25	15	10 SHEETS
FED. AID DIST. NO. 7	ILLINOIS	FED. AID PROJECT			
*102(W-1, RS-3 & B-1)					



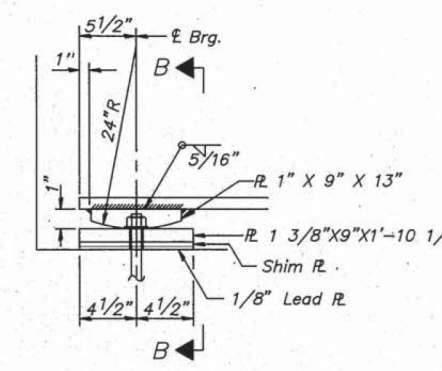
**ELEVATION AT ABUT.**  
(South)



**SECTION A-A**

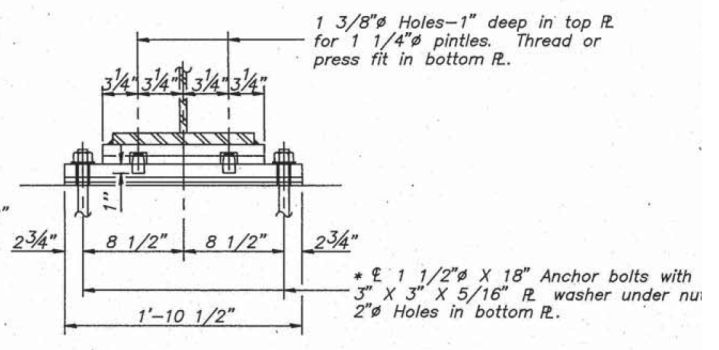
**TYPE I ELASTOMERIC EXP. BRG.**

\* Notes: Anchor bolts at fixed bearings may be built into the masonry. See sheet #8 for Anchor Bolt installation.

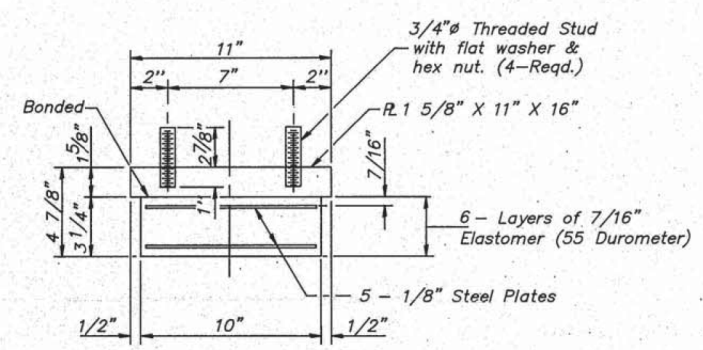


**ELEVATION AT ABUT.**  
(North)

**FIXED BEARING**

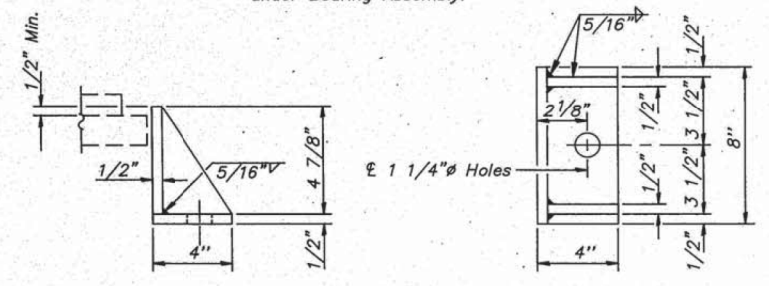


**SECTION B-B**



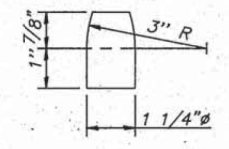
**BEARING ASSEMBLY**

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.



**PINTLE**

**BILL OF MATERIAL**

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	5

REV. NO.	DRAWN	CHKD.	APPD.	DATE	DESCRIPTION
	RLW	WLW			

F.A. ROUTE 518 (IL 94)  
SECTION 102 B-1  
ADAMS COUNTY

BEARING ASSEMBLY, TYPE I  
STRUCTURE NO. 001-0072  
STATION 306+75

FILE NAME =	USER NAME = dudleybm	DESIGNED -	REVISED -
D:\OPERATIONS\Bridges\Bridgplans_CAD\7279 - 0010072 point\plansheet.dgn		DRAWN -	REVISED -
Default	PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
	PLOT DATE = 3/23/2017	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>EXISTING PLANS SN 001-0072 (FOR INFORMATION ONLY)</b>	
SCALE:	SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
518	(102) BP	ADAMS	5	5
CONTRACT NO. 72J79				
ILLINOIS FED. AID PROJECT				