

100

03-08-2019 LETTING ITEM 100

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

F.A. RT. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	1-2 (2) (107) (126) BP	ADAMS, HANCOCK, PIKE	19	1
ILLINOIS CONTRACT NO. 72K75				
* FAI 172, FAP 506,733,321 (I-172,IL110,IL94,IL96,US54)				
** ADAMS, HANCOCK, PIKE				

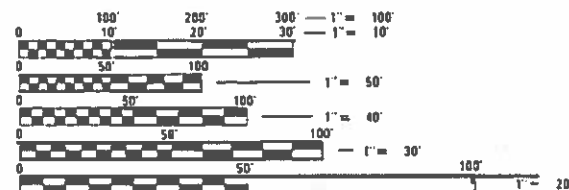
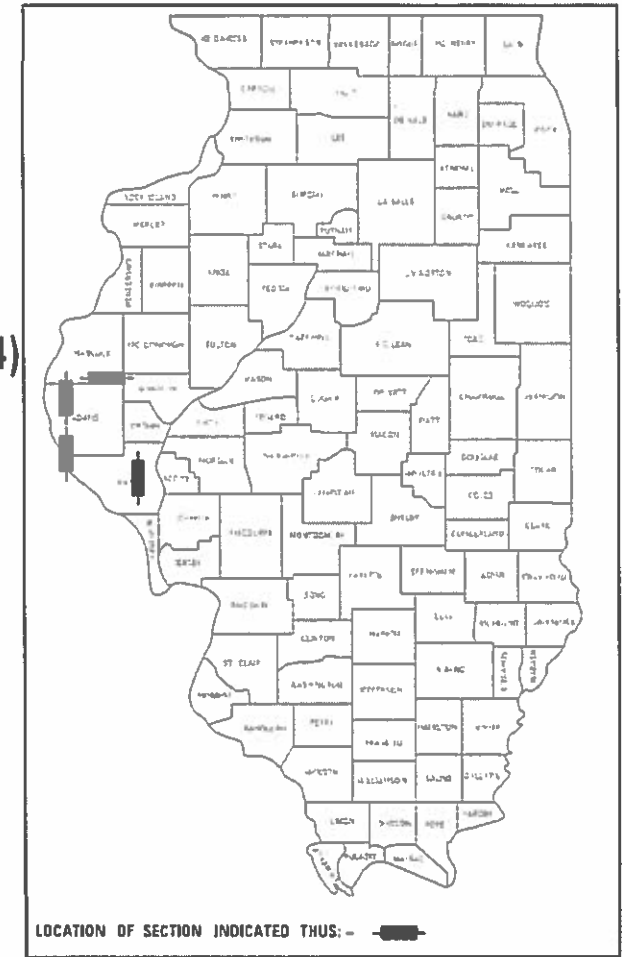
D-96-061-18

FOR INDEX OF SHEETS, SEE SHEET NO. 2

# PROPOSED BRIDGE PAINTING

FAI 172, FAP 506,733,321 (I-172,IL110,IL94,IL96,US54)  
SECTION (1-2) (2) (107) (126) BP  
PROJECT NHPP-STP-SZYL(806)  
BRIDGE PAINTING  
ADAMS, HANCOCK, & PIKE COUNTIES

C-96-109-18

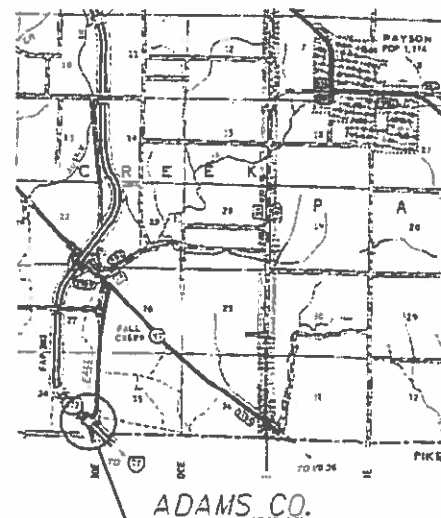


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

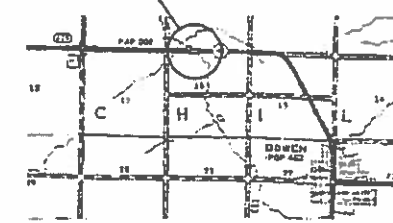
BRIDGE MAINTENANCE ENGINEER: BRANDON DUDLEY (217) 785-9290

CONTRACT NO. 72K75

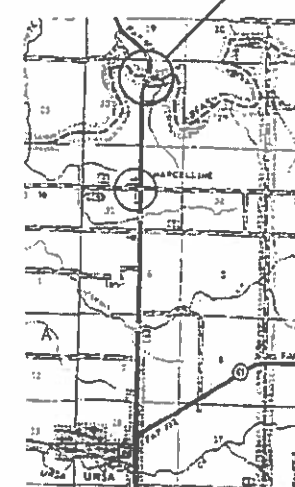


LOCATION #2  
SN 001-0069  
OR 79 OVER I-172  
2.2 MI S IL 57

LOCATION #3  
SN 034-0065  
IL 94 OVER SLATER CR.  
2.8 MI NW IL 61 IN BOWEN



LOCATION #1  
SN 001-0052  
IL 96 OVER BEAR CR.  
1.4 MI N MARCELLINE



ADAMS CO.



PIKE CO.

LOCATION #4  
SN 075-0133  
US 54/IL 107 OVER BAY CR.  
1.5 MI N IL 106 IN PITTSFIELD

LOCATION #5  
SN 075-0134  
US 54/IL 107 OVER PANTHER CR.  
1.4 MI N IL 106 IN PITTSFIELD

GROSS LENGTH = x.xx FT. = x.xxx MILE  
NET LENGTH = x.xx FT. = x.xxx MILE

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED 30 October 2018

[Signature] REGIONAL ENGINEER

Feb 1 2019

[Signature] ENGINEER OF DESIGN AND ENVIRONMENT

Feb 1 2019

[Signature] DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS

INDEX OF SHEETS

- 1 COVER SHEET
- 2 INDEX, STANDARDS, GENERAL NOTES, & SIGNATURES
- 3 SUMMARY OF QUANTITIES
- 4-19 EXISTING BRIDGE PLANS (FOR INFORMATION ONLY)

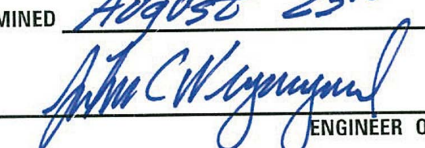
HIGHWAY STANDARDS


- 000001-07
- 001006
- 701001-02
- 701006-05
- 701101-05
- 701106-02
- 701201-05
- 701400-09
- 701406-12
- 701901-08


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 LOCATION #1 ONLY.
3. THE SSPC-OP-1 AND SSPC-OP2 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.

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

EXAMINED August 23<sup>rd</sup> 20 18  
  
 ENGINEER OF OPERATIONS

EXAMINED August 28<sup>th</sup> 20 18  
  
 ENGINEER OF PROJECT IMPLEMENTATION

EXAMINED September 17 20 18  
  
 ENGINEER OF PROGRAM DEVELOPMENT

REV. - MS

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USLR NAME = #uolbyom PLOT SCALE = 100.0000' in. PLOT DATE = 10/26/2018	DESIGNED - DRAWN - CHECKED - DATE -	REVISED - REVISED - REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INDEX OF SHEETS, STANDARDS, GENERAL NOTES, & SIGNATURES	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">F.A. RTE.</td> <td style="font-size: small;">SECTION</td> <td style="font-size: small;">COUNTY</td> <td style="font-size: small;">TOTAL SHEETS</td> <td style="font-size: small;">SHEET NO.</td> </tr> <tr> <td style="font-size: x-small;">VAR.</td> <td style="font-size: x-small;">(1-2) (2) (107) (126) 3P</td> <td style="font-size: x-small;">VAR.</td> <td style="font-size: x-small;">19</td> <td style="font-size: x-small;">2</td> </tr> <tr> <td colspan="5" style="font-size: x-small;">CONTRACT NO. 72K75</td> </tr> <tr> <td colspan="5" style="font-size: x-small;">ILLINOIS FED. AID PROJECT</td> </tr> </table>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	VAR.	(1-2) (2) (107) (126) 3P	VAR.	19	2	CONTRACT NO. 72K75					ILLINOIS FED. AID PROJECT				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.																					
VAR.	(1-2) (2) (107) (126) 3P	VAR.	19	2																					
CONTRACT NO. 72K75																									
ILLINOIS FED. AID PROJECT																									
			SCALE:	SHEET OF SHEETS STA. TO STA.																					

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	0-01515-6006	0-01515-6007	0-01515-6007	0-01515-6007
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				BRIDGE-RURAL 0047 ADAMS	BRIDGE-RURAL 0047 ADAMS	BRIDGE-RURAL 0047 HANCOCK	BRIDGE-RURAL 0047 PIKE
67100100	MOBILIZATION	L SUM	1	0.2	0.2	0.2	0.4
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	0	0.25	0.25	0.5
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1	1	0	0	0
X5060602	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES NO. 2	L SUM	1	1	0	0	0
X5060603	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES NO. 3	L SUM	1	0	0	1	0
X5060604	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES NO. 4	L SUM	1	0	0	0	1
X5060605	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES NO. 5	L SUM	1	0	0	0	1
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	150	30	30	30	60
Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1	0	1	0	0
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	0	1	0	0
Z0010502	CLEANING AND PAINTING STEEL BRIDGE NO. 2	L SUM	1	1	0	0	0
Z0010503	CLEANING AND PAINTING STEEL BRIDGE NO. 3	L SUM	1	0	0	1	0
Z0010504	CLEANING AND PAINTING STEEL BRIDGE NO. 4	L SUM	1	0	0	0	1
Z0010505	CLEANING AND PAINTING STEEL BRIDGE NO. 5	L SUM	1	0	0	0	1

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF QUANTITIES**

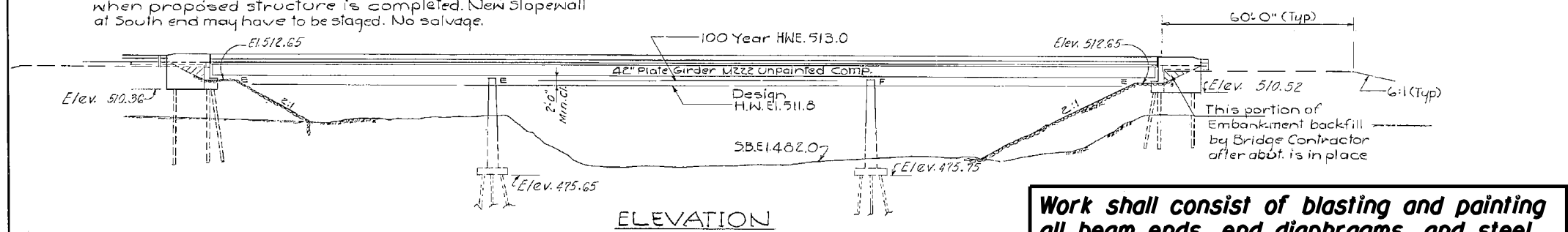
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	(1-2) (2) (107) (126) BP	VAR.	19	3
			CONTRACT NO. 72K75	
			ILLINOIS FED. AID PROJECT	

Bench Mark: U.S.G.S #1 Chisel a on S.E. corner Bear Creek bridge on top of wheel guard, El. 514.62.  
 Exist. Structure: No. 001-0021 Built in 1927 as S.B.I. Rte. 96  
 Section 126B-E-C Sta. 227+04 100 ft. steel truss span and  
 6-50 ft. R.C. thru Girder Spans with 21 ft. Roadway.  
 Substructure: R.C. solid piers and abutments.  
 The Roadway Contractor shall remove existing structure when proposed structure is completed. New Slopenwall at South end may have to be staged. No salvage.

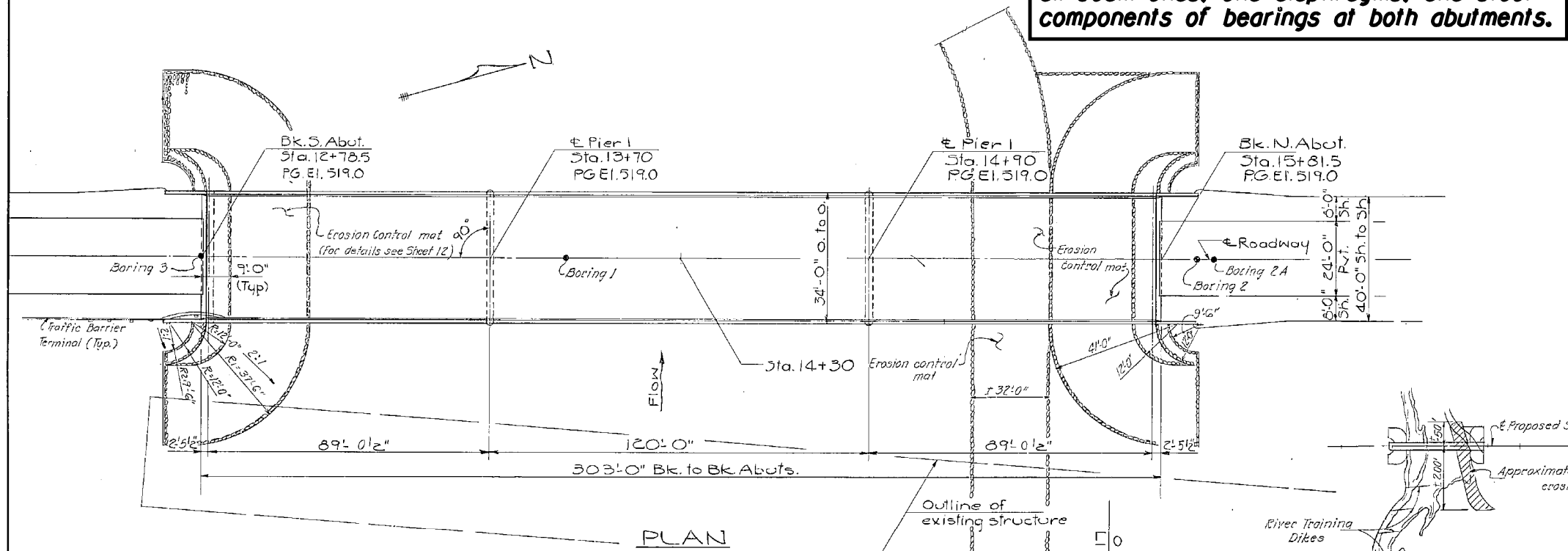
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 1 13 SHEETS
F.A. RT. 506	126B-1	Adams	60	30	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



**Work shall consist of blasting and painting all beam ends, end diaphragms, and steel components of bearings at both abutments.**

**GENERAL NOTES**  
 Fasteners shall be high strength bolts. Bolts 3/4" Ø; open holes 1 1/8", unless otherwise noted.  
 Calculated weight of Structural Steel = 244,680 Lbs. (M-222)  
 All structural steel shall be AASHTO: M 222 unpainted except expansion joint angles and attached bars which shall be AASHTO: M 183 and shop painted with two coats of basic lead silico chromate paint.  
 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.



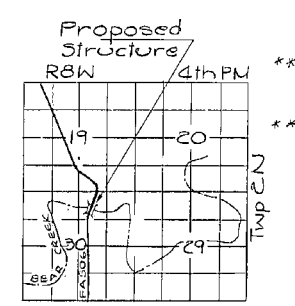
Layout of erosion control mat may be varied in the field to suit ground conditions as directed by the Engineer.  
 The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.  
 The concrete rail section above the mandatory construction 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.  
 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.  
 No shims shall be allowed under Type 1 Elastomeric Bearing Pads on Pier 1 and North Abutment.  
 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.  
 See Proposal for Boring Data.  
 The Contractor shall drive in a permanent location 1 (one) concrete test pile at Ab. Abutment, 2 (two) steel test piles (4"Ø x 42") 1 @ Pier 1 and 1 @ Pier 2 as directed by the Engineer before ordering the remainder of piles.  
 Reinforcement bars shall conform to the requirements of AASHTO M-31 Grade 60.  
 Protective coat shall be applied to surfaces of the deck and face of parapet and curb in accordance with Art. 503.12 of the Standard Specifications.

STATION 14+30  
 BUILT 197 BY  
 STATE OF ILLINOIS  
 F.A. RT. 506 SEC. 126B-1  
 LOADING HS 20  
 \*STR. NO.\*

NAME PLATE  
 (See Std. 2113)  
 \*Structure No. to be supplied by District.

**WATERWAY INFORMATION**  
 Drainage Area 352 Sq. Miles  
 Design Discharge (50Yr.) 23000 cfs  
 Exist. Opening (below 50Yr. H.W.E.) 6600 Sq. Ft.  
 Req'd. Opening (below 50Yr. H.W.E.) 46000 Sq. Ft.  
 Prop. Opening (below 50Yr. H.W.E.) 46000 Sq. Ft.  
 Created Head for Design Flood 0.4 Ft.  
 100 Year Discharge 26000 cfs  
 Created Head for 100 Year Flood 0.5 Ft.

**DESIGN STRESSES**  
 f'c = 3500 psi  
 fy = 60,000 psi - Reinf.  
 fy = 50,000 psi - Struct.  
 n = 8.5  
 Allow 25 Lbs. per Sq. Ft. for Future Wearing Surface  
 Design Specifications 1973  
 AASHTO 1974, 1975, 1976 & 1977  
 interim specifications.



DESIGNED	APRIL 13 1978
CHECKED	
DRAWN	JS
CHECKED	



**TOTAL BILL OF MATERIAL**

Item	Unit	Super	Sub	Total
Removal of Existing Structures	Each			1
Class X Concrete	Cu. Yds	310.0	76.9	386.9
Class A Concrete	Cu. Yds		331.2	331.2
Reinforcement Bars (Epoxy Coated)	Lbs.	47650		47650
Reinforcement Bars	Lbs.	33150	37080	70230
Steel Piles (HP 10 x 42)	Lin. Ft.		2640	2640
Test Piles (Steel HP 10 x 42)	Each		2	2
Name Plates	Each	1		1
Stud Shear Connectors	Each	2820		2820
Preformed Joint Sealer (2 1/2")	Lin. Ft.	34		34
Neoprene Exp. Joint (4")	Lin. Ft.	33		33
Cofferdam Pier 1	Each		1	1
Cofferdam Pier 2	Each		1	1
Cofferdam Excavation	Cu. Yds.		522	522
Protective Coat	Sq. Yds.	1271		1271
Structural Steel	L.S.			L.S.
Erosion Control Mat	Sq. Yds.	2350		2350
Concrete Piles	Lin. Ft.		1783	1783
Test Piles (Concrete)	Each		1	1
Stone Dikes	Tons			11950

\*\* See Special Provisions.

**GENERAL PLAN & ELEVATION  
 OVER BEAR CREEK  
 F.A. RTE. 506 (ILL. RTE. 96)  
 SECTION 126B-1  
 ADAMS COUNTY  
 STATION 14+30**

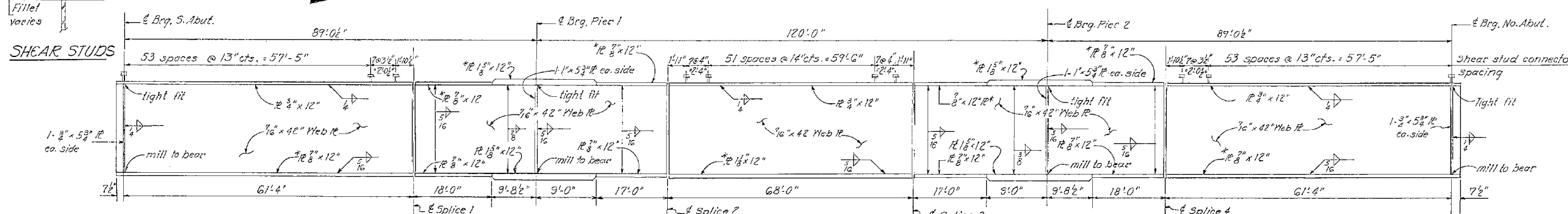
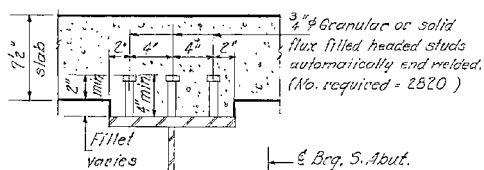
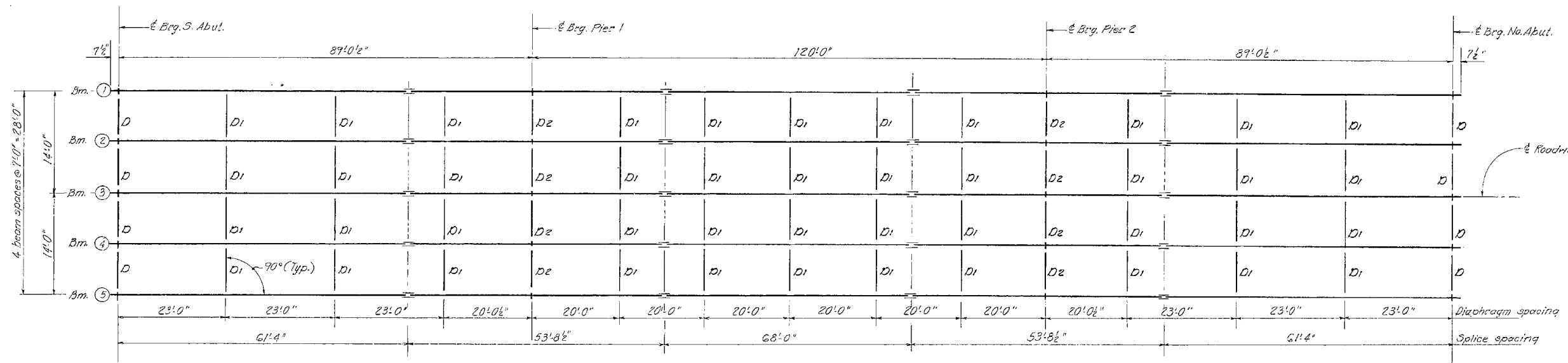
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	DATE -	REVISED -						

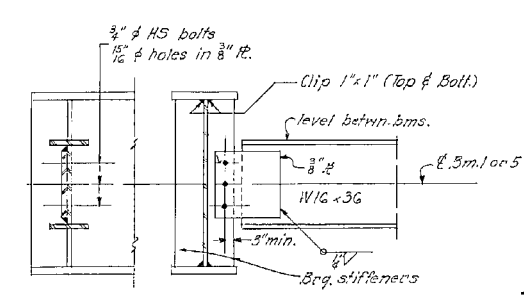
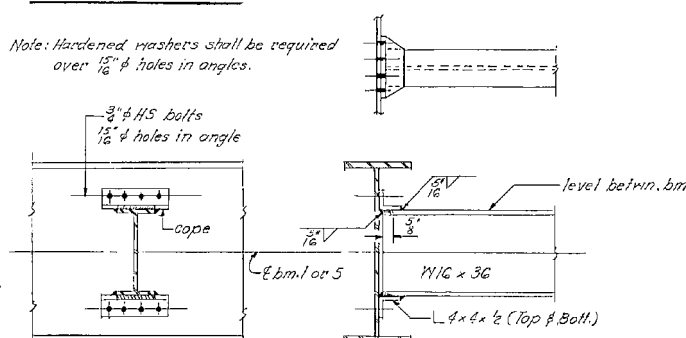
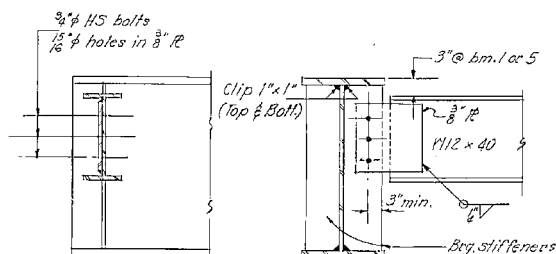
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 6 13 SHEETS
F.A.R.T. 506	126B-1	Adams	60	35	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



Note:  
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 steel girders. Tension flanges are identified by asterisk (\*).

Note: Hardened washers shall be required over 1/8" holes in angles.



DESIGNED	APRIL 13 1978
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	APPROVED

STRUCTURAL STEEL  
F.A.R.T. 506 SEC. 126B-1  
ADAMS COUNTY  
STA. 14 + 30.00

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PLOT DATE = 10/26/2018	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 001-0052  
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

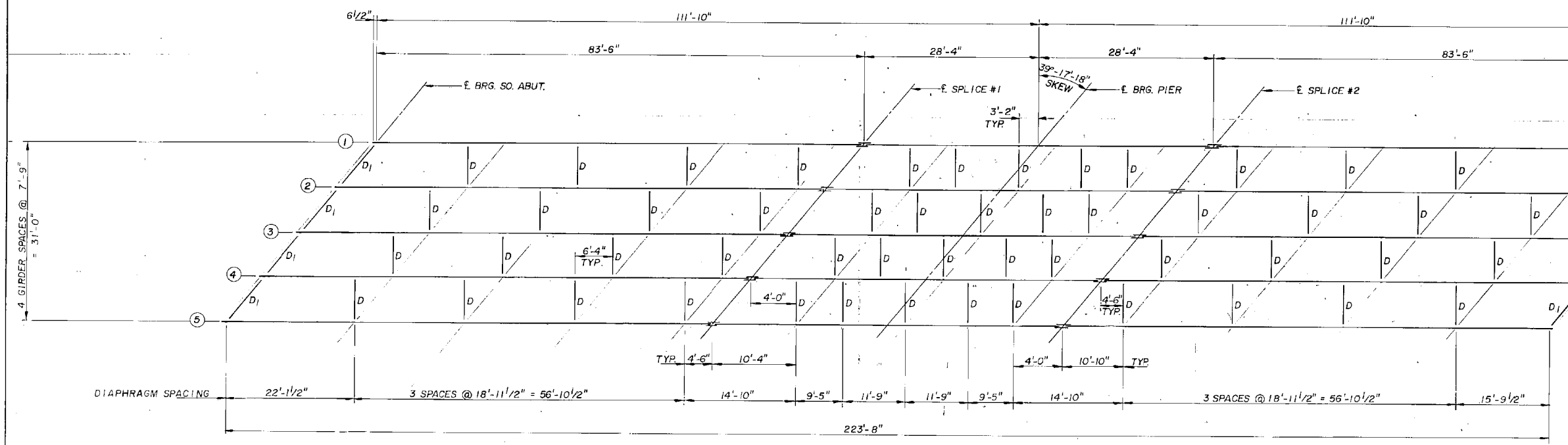
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VAR.	(1-2) (2) (107) (126) BP	VAR.	19	5
CONTRACT NO. 72K75				
ILLINOIS FED. AID PROJECT				



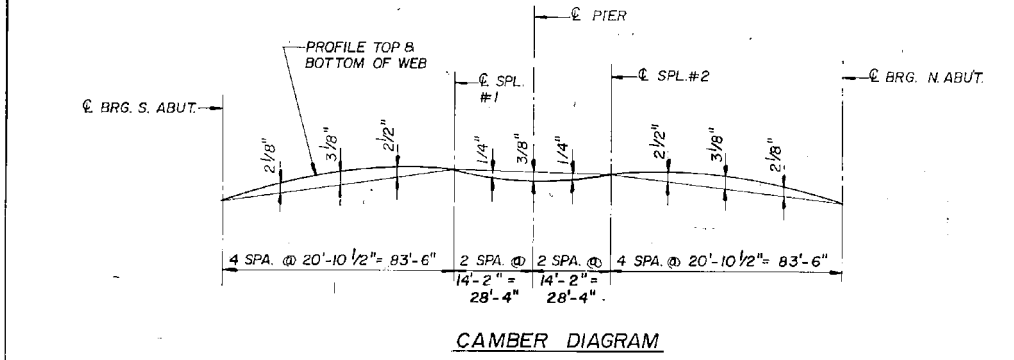


ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 408	1-2HB	ADAMS	30	18

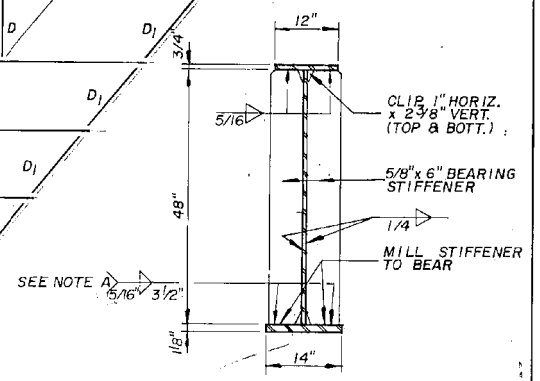
SHEET NO. 12 OF 19 SHEETS



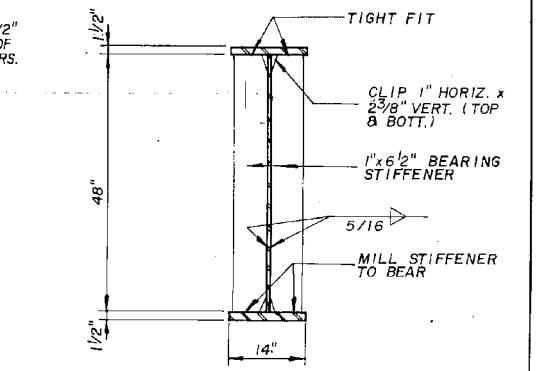
**FRAMING PLAN**



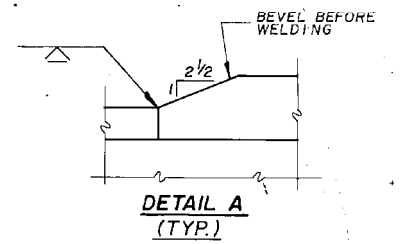
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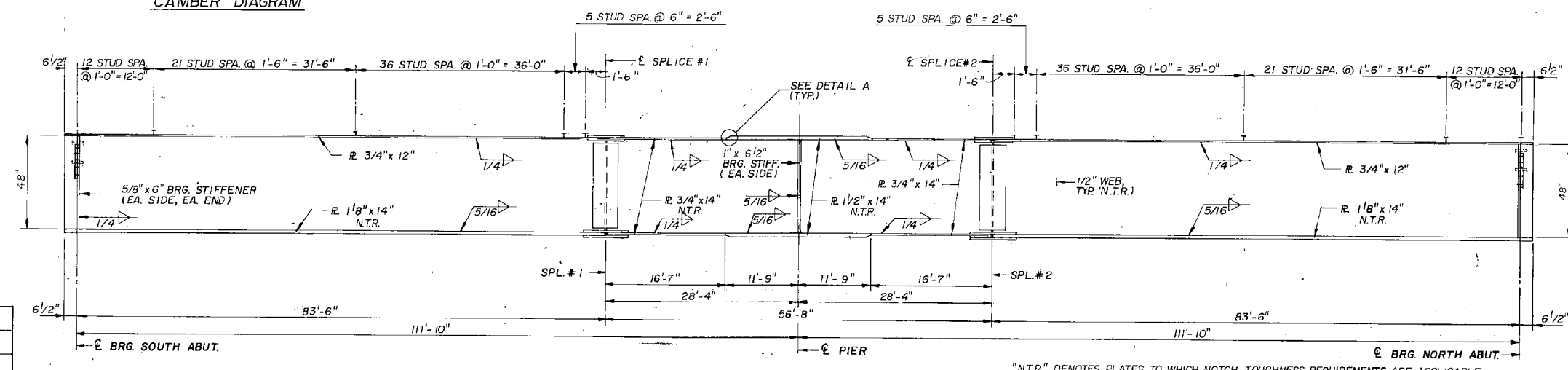
**GIRDER SECTION AT ABUTMENT**



**GIRDER SECTION AT PIER**



**DETAIL A (TYP.)**



**GIRDER ELEVATION**

NOTE A: WELD SHALL END 1/2" FROM BOTH ENDS OF BEARING STIFFENERS.

**STRUCTURAL STEEL DETAILS  
FRAMING PLAN & GIRDER ELEVATION**

ILL. RTE. 79 OVER F.A.P. RTE. 408  
F.A.P. RTE. 408, SEC. 1-2HB  
ADAMS COUNTY  
STA. 0+00.20 N.W. =  
STA. 999+99.80 S.E.

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	J.S.
CHECKED	K.L.F.

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/26/2018	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 001-0069  
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	(1-2) (2) (107) (126) BP	VAR.	19	8
CONTRACT NO. 72K75				
ILLINOIS FED. AID PROJECT				

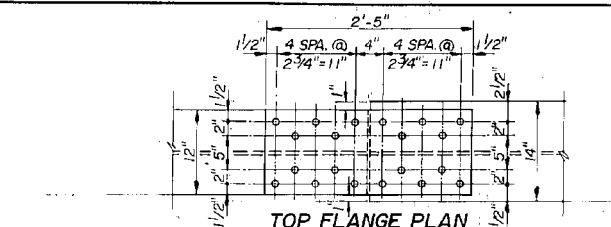
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H. M. & G. NO. 2609.22

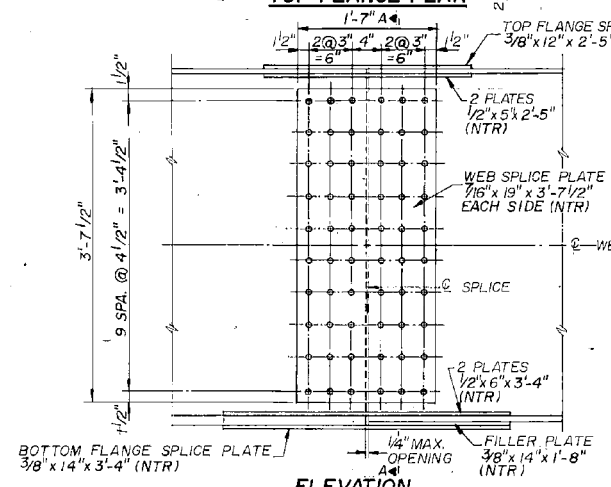


ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 40B	I-2HB	ADAMS	30	19

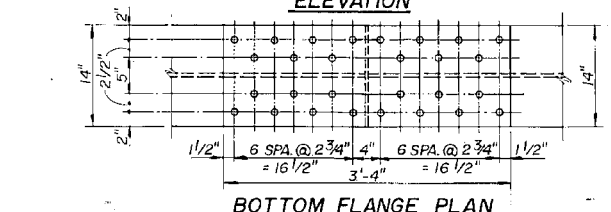
SHEET NO. 13 OF 19 SHEETS



**TOP FLANGE PLAN**



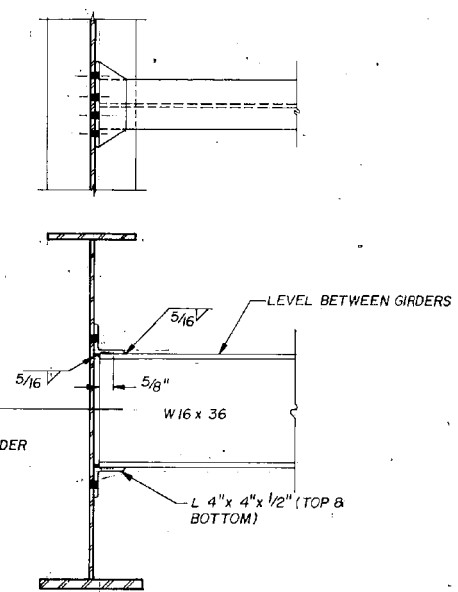
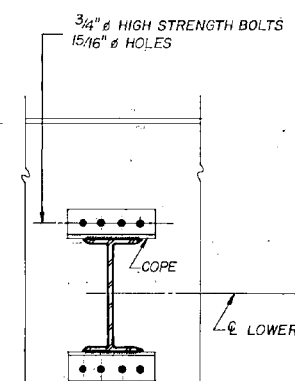
**ELEVATION**



**BOTTOM FLANGE PLAN**

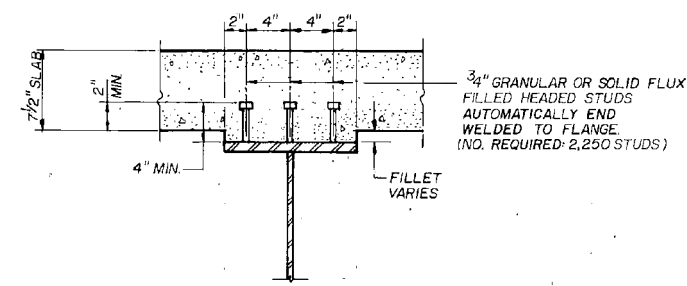
**FIELD SPLICE DETAILS**  
**SPLICE NO. 1 & 2**  
 (ALL SPLICE PLATES SUBJECT TO NTR)

- NOTES:
1. ALL BOLTS ARE 7/8" HIGH STRENGTH BOLTS 15/16" Ø OPEN HOLES.
  2. "NTR" DESIGNATES NOTCH TOUGHNESS REQUIREMENTS.
  3. ALL FLANGE SPLICE PLATES SHALL BE AASHTO M223, GR. 50 STEEL.
  4. NO BOLT THREADS IN SHEAR PLANE.

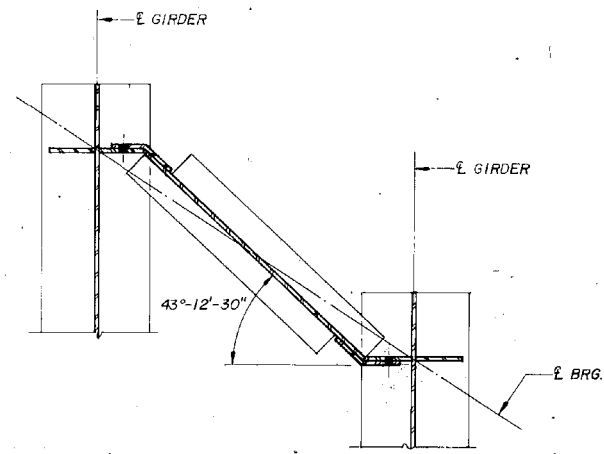


**DIAPHRAGM D**  
(52 REQ'D.)

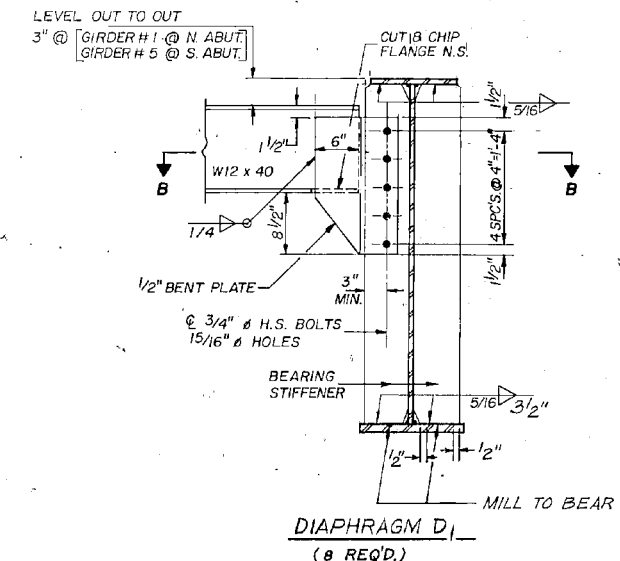
NOTE: TWO HARDENED WASHERS SHALL BE REQUIRED OVER ALL 15/16" Ø HOLES.



**SHEAR STUDS**



**SECTION B-B**



**DIAPHRAGM D1**  
(8 REQ'D.)

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	J.S.
CHECKED	K.L.F.

MODEL: Default; FILE NAME: C:\OPERATIONS\Bids\Bids\Bids\Bids\CAD\72K75 - Beam end part west 2019\Bids\Bids.dwg

USER NAME = dudleybm	DESIGNED -	REVISED -
PLOT SCALE = 100.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/26/2018	CHECKED -	REVISED -
	DATE -	REVISED -

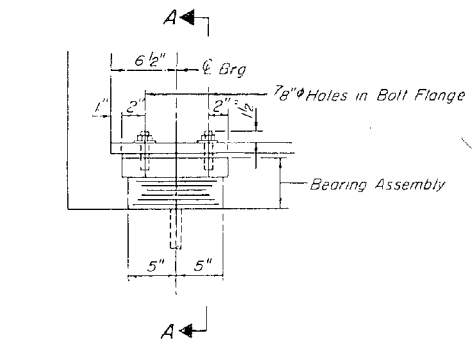
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 001-0069  
 (FOR INFORMATION ONLY)

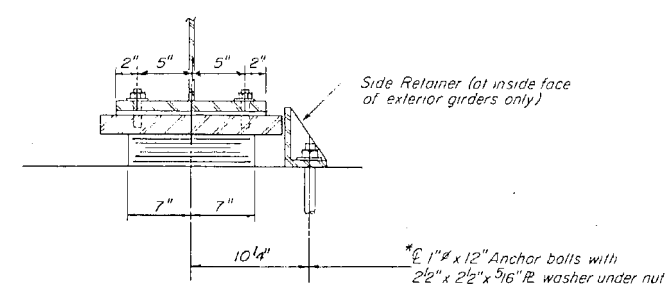
SCALE: SHEET OF SHEETS STA. TO STA.

**STRUCTURAL STEEL DETAILS**  
**GIRDER & FRAMING DETAILS**  
 ILL. RTE. 79 OVER F.A.P. RTE. 408  
 F.A.P. RTE. 408, SEC. I - 2HB  
 ADAMS COUNTY  
 STA. 0+00.20 N.W. =  
 STA. 999+ 99.80 S.E.

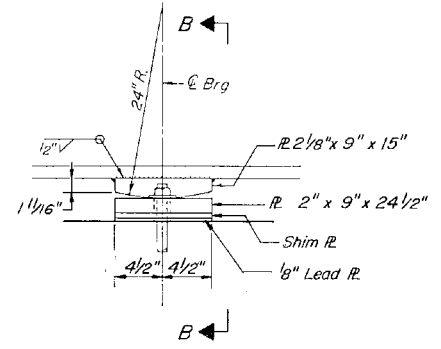
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
(1-2)	(2) (107) (126) BP	VAR.	19	9
CONTRACT NO. 72K75				
ILLINOIS FED. AID PROJECT				



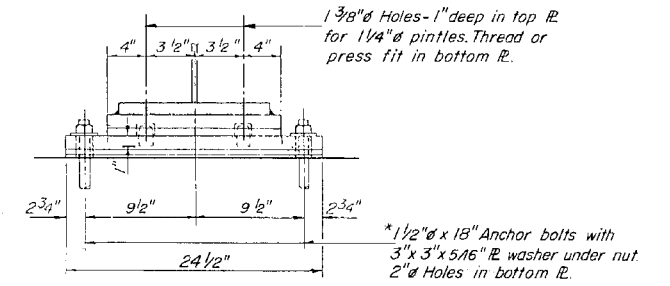
ELEVATION AT ABUT.



SECTION A-A

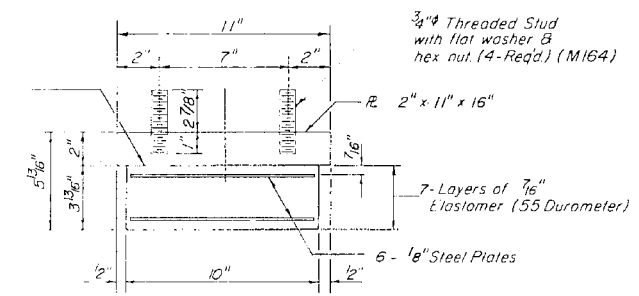


ELEVATION AT PIER



SECTION B-B

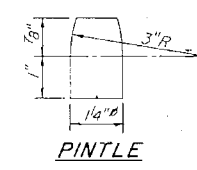
**TYPE I ELASTOMERIC EXP. BRG. AT ABUTMENTS**



BEARING ASSEMBLY

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

- NOTES:  
 \*1. After girders have been erected holes at expansion bearings shall be drilled and anchor bolts grouted in place. Anchor bolts at fixed bearings may be built into the masonry.  
 2. Steel plates for bearings shall be A.A.S.H.T.O. M-223, Grade 50.



PINTLE

MOMENT TABLE - Symmetrical Composite 2 Span (Composite in Positive Moment Area Only)

INTERIOR GIRDER	MOMENT TABLE	
	0.4 Sp. 1	Pier
$I_s$ (in <sup>4</sup> )	18,884	30,344
$I_c$ (in <sup>4</sup> )	50,320	—
$S_s$ (in <sup>3</sup> )	871	1,190
$S_c$ (in <sup>3</sup> )	1,217	—
$R$ (K/ft)	0.930	1.260
$M_D$ (K)	775	2,090
$s_D$ (K/ft)	0.330	—
$M_S$ (K)	312	—
$M_L$ (K)	1,035	808
$M_{imp}$ (K)	219	171
$5/3(M_L + I)$ (K)	2,090	1,632
$M_a$ (K)	4,130	4,839
$M_u$ (K)	4,515	4,879
$f_s$ non-comp. (k.s.i.)	10.7	21.1
$f_s$ comp. (k.s.i.)	3.1	—
$f_s$ 5/3(L+I) (k.s.i.)	20.6	16.4
$f_s$ (Overload) (k.s.i.)	34.4	37.5
$f_s$ (Total) (k.s.i.)	44.7	48.8
$VR$ (K)	60.3	—

# TOP OF WEB ELEVATIONS

LOCATION	SPLICE		PIER		N. ABUT.
	S. ABUT.	SPL. #1	SPL. #2	S. ABUT.	
GIRDER 1	486.55	486.98	486.92	486.92	486.30
GIRDER 2	486.63	487.12	487.07	487.08	486.51
GIRDER 3	486.69	487.22	487.19	487.22	486.69
GIRDER 4	486.51	487.08	487.07	487.12	486.63
GIRDER 5	486.30	486.92	486.92	486.98	486.55

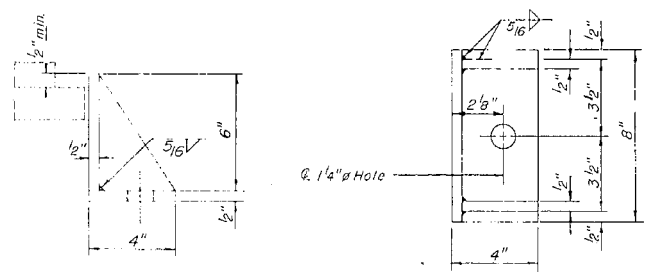
NOTE: Elevations above are top of girder web before any deflection.

# FOR FABRICATION ONLY.

INTERIOR GIRDER REACTION TABLE

	Abutment	Pier
$R_D$ (K)	53.0	182.1
$R_L$ (K)	45.7	79.2
$Imp$ (K)	9.7	16.7
$R_{Total}$ (K)	108.4	278.0

\*\*  $M_u$  = Moment Capacity for a Braced Non-compact Hybrid section computed according to A.A.S.H.T.O. 10.53.1 & 10.53.2.  
 $M_a$  (Applied Moment) =  $1.3 [M_D + M_S] + 5/3 [M_L + I]$ .  
 $I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section used in computing  $f_s$  (Total and Overload).  
 $I_c$  and  $S_c$  are the moment of inertia and section modulus of the composite section used in computing  $f_s$  (Total and Overload).  
 $VR$  is the maximum  $L + impact$  shear range in span.  
 $f_s$  Total is the sum of the stresses due to  $1.3 [M_D + M_S] + 5/3 [M_L + I]$ .  
 $f_s$  Overload is the sum of the stresses due to  $M_D + M_S + 5/3 [M_L + I]$ .  
 $M_D$  - Moment due to the dead loads on non-composite section.  
 $M_S$  - Moment due to the dead loads on composite section.  
 $M_L$  - Moment due to live loads on non-composite or composite section.  
 $I$  - Live Load Impact.



SIDE RETAINER (4 REQ'D.)

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

DESIGNED	V.S.N.
CHECKED	K.L.F.
DRAWN	J.B.
CHECKED	K.L.F.

I-2-E1

**ABUTMENT AND PIER BEARING DETAILS**

ILL. RTE. 79 OVER F.A.P. RTE. 408  
 F.A.P. RTE. 408, SEC. 1 - 2NB  
 ADAMS COUNTY  
 STA. 0+00.20 N.W. =  
 STA. 999+99.80 S.E.

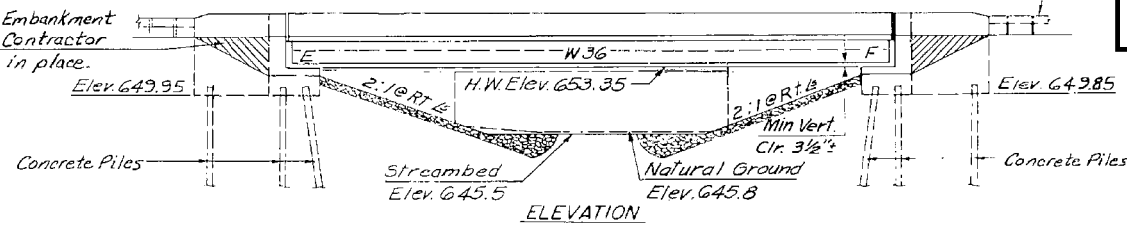
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H.M.B.C. NO. 2609-22

BM 2TD - Cut on Southwest corner of Southwest wing of existing bridge. Elev. 656.01  
 Existing Structure: SN 034-0035 Remove 37' R.C. deck girder bridge, w/22.2' Roadway & Closed Abutments.

Traffic Barrier Terminal Std 2341 (Typ.)

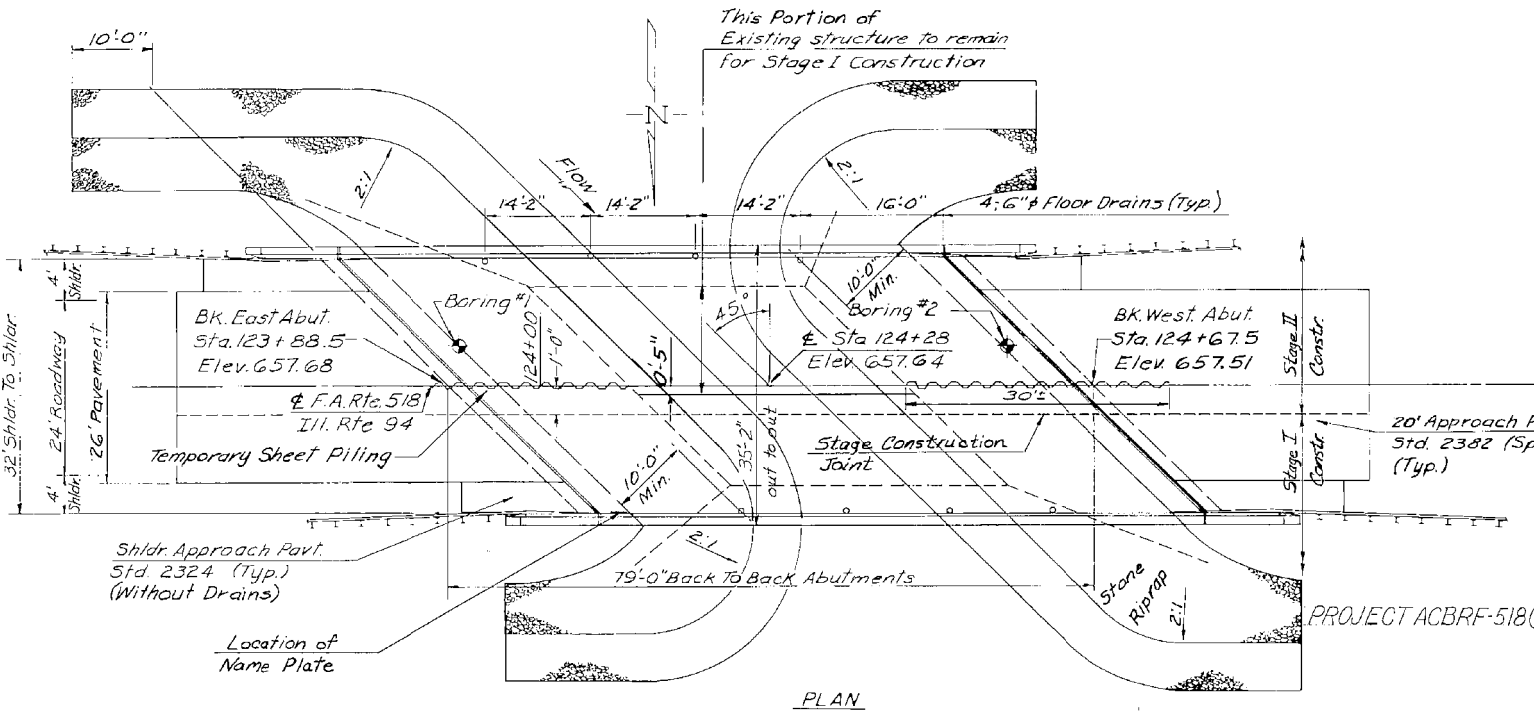
This Portion of Embankment Backfill by Bridge Contractor after Abutment is in place.



**Work shall consist of blasting and painting all beam ends, end diaphragms, and steel components of bearings at both abutments.**

**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 69,750 lbs., M183 = 10,720 lbs., M223 GR 50 = 59,030 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 final 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 beams. Field welding in other areas will be permitted only when approved by the Engineer.
- Bridge Seat Sealer shall be applied to all top surfaces of the abutments. Est. quantity = 292 sq. ft.
- Anchor bolts shall be set before bolting diaphragms over supports.
- The main load carrying components subject to tensile stress shall conform to the "Supplemental Requirements for Notch Toughness Zone 2". These components are the wide flange beams.
- 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 the construction of the abutments. (See Rdwy Plans)
- The concrete for bridge floors finished in accordance with Article 503.15 of the Standard Specifications, shall be placed and compacted parallel to the skew in uniform increments along centerline of bridge. The finishing machine, when required, shall be set parallel to the skew for striking off and screeding the concrete.
- The Contractor shall drive one (1) concrete test pile in a permanent location at the East and West 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.



STATION 124+28  
 BUILT 199 BY  
 STATE OF ILLINOIS  
 F.A. RTE. 518 SEC. 2B-2  
 LOADING HS 20  
 STR. NO. 034-0065

**NAME PLATE**  
 See Std. 2113

**TOTAL BILL OF MATERIAL**

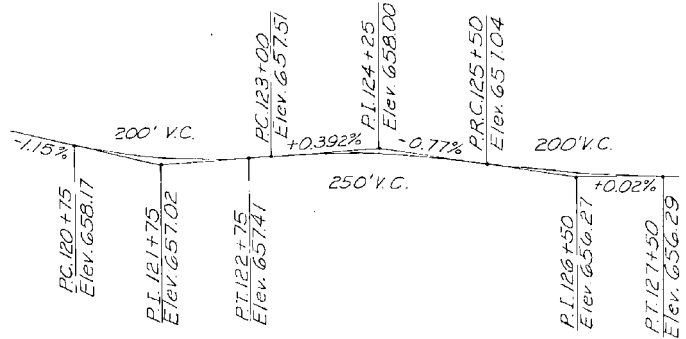
Item	Units	Superstructure	Substructure	Total
Removal of Existing Structures	Each			1
Protective Coat	Sq. Yd.	337		337
Neoprene Expansion Joint (2")	Lin.Ft.	48		48
Floor Drains	Each	8		8
Elastomeric Bearing Assembly, Type 1	Each	6		6
Class X Concrete Superstructure	Cu.Yd.	83.9		83.9
Class X Concrete	Cu.Yd.		95.0	95.0
Furn. and Erect Structural Steel	L.Sum	1		1
Stud Shear Connectors	Each	1,080		1,080
Reinforcing Bars, Epoxy Coated	Lbs.	16,560	9,240	25,800
Furnish Concrete Piles	Lin.Ft.		1,542	1,542
Driving Concrete Piles	Lin.Ft.		1,542	1,542
Test Pile, Concrete	Each	2		2
Name Plates	Each	1		1
Structural Excavation	Cu.Yd.		279	279
Stone Riprap Class A4	Ton		548	548
Bridge Seat Sealer	L.Sum		1	1
Filter Fabric for use with Riprap	Sq.Yd.		717	717
Preformed Joint Seal (1 3/4")	Lin.Ft.	49		49
Temporary Bridge Rail	Lin.Ft.	104		104
Temporary Sheet Piling	Sq.Ft.		1174	1174

\*Quantity includes Bridge Deck Surface

**TEMPORARY SHEET PILING DATA**

Top Elev. = 659.00  
 Bottom Elev. = 639.00

Notes: The information for the Temporary Sheet Piling is estimated. It is the Contractor's responsibility to provide a design and computations of the sheet piling and associated members, if required, subject to approval of the Engineer.  
 The Contractor shall anchor the sheet piling to back of existing abutment wall. The connection shall be approved by the Engineer. Sheet piling within the limits of existing footing shall have the bottom elevation at the top of the footing.



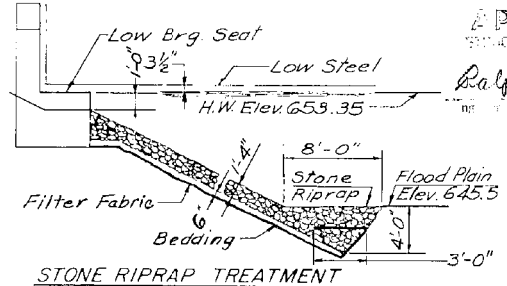
**PROFILE GRADE**  
 F.A. Rte. 518  
 Along Q. Roadway

**KLINGNER & ASSOCIATES, P.C.**

Consulting Engineers  
 813 Broadway • Quincy, Illinois 62301  
 (217) 223-3670 • FAX: 223-3603

Drainage Area 5.750 Mi.		Low Grade Elev. 656.28 @ Sta. 127+24							
Flood	Yr.	Q CFS	Opening Sq. Ft.	Head - Ft. HWE	Head - Ft. Prop.	Headwater El. Prop.	Headwater El. Prop.		
Design	50	1480	179	264	653.35	1.66	0.78	655.01	654.13
Base	100	1695	179	269	653.65	2.18	0.96	655.83	654.61
Overlapping									
Max Calc.	500	1900		269	653.89		1.20		655.08

\* Provided by 100T



**STONE RIPRAP TREATMENT**

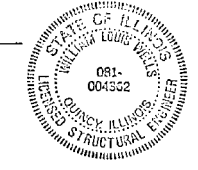
**DESIGN SPECIFICATION**

1989 AASHTO  
 LOADING HS 20-44  
 Allow 25 #/sq. ft. for future wearing surface

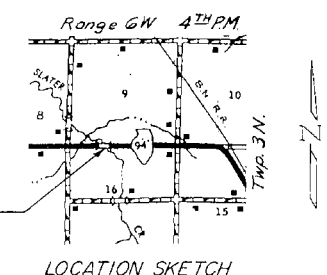
**DESIGN STRESSES**

f<sub>c</sub> = 3,500 psi  
 f<sub>y</sub> = 60,000 psi (Reinf.)  
 f<sub>y</sub> = 50,000 psi (Struct.) M223 Gr 50

APPROVED  
 RALPH E. ANKIN  
 State of Illinois Bridges and Structures



William L. Wells 7/31/90  
 Date  
 Licensed Structural Engineer  
 State of Illinois No. 4362  
 License Expires November 30, 1990



**LOCATION SKETCH**

**GENERAL PLAN**  
 ILLINOIS ROUTE 94 OVER  
 SLATER CREEK  
 F.A. RTE. 518 SECTION 2B-2  
 HANCOCK COUNTY  
 Sta. 124+28  
 STRUCTURE NUMBER 034-0065

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STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 034-0065  
 (FOR INFORMATION ONLY)

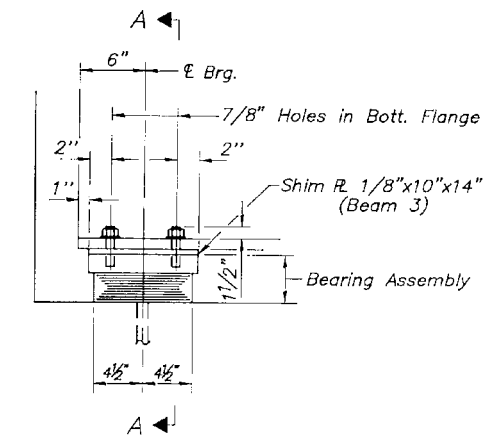
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	(1-2) (2) (107) (126) BP	VAR.	19	11

SCALE: SHEET OF SHEETS STA. TO STA.

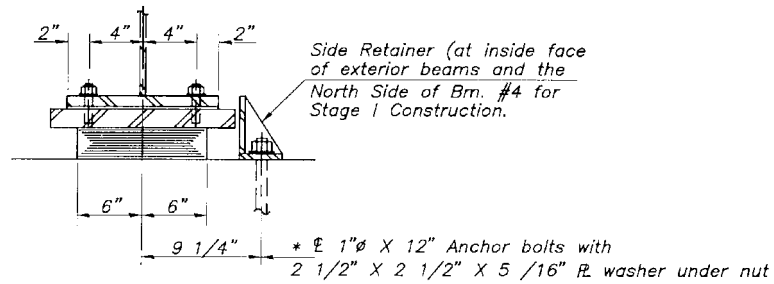
ILLINOIS FED. AID PROJECT



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 10 OF 14 SHEETS
S. B. L. F. A. 518	2B-2	HANCOCK	28	19	
FED. ROAD DIST. NO. 7	(LENGS)	FED. AID PROJECT-			



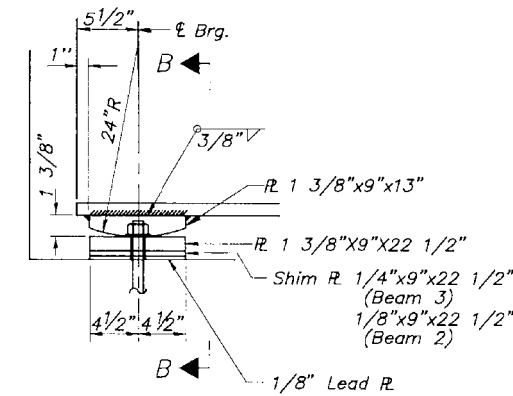
ELEVATION AT ABUT.  
(East)



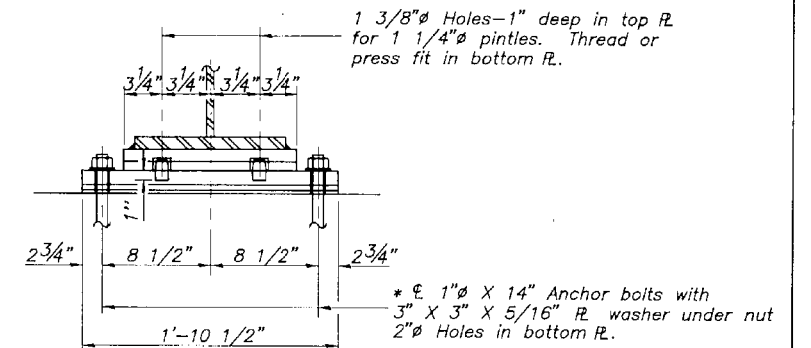
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

\* Notes: Anchor bolts at fixed bearings may be built into the masonry.  
See sheet #11 for Anchor Bolt installation.

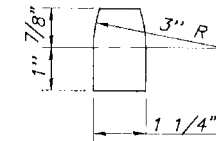


ELEVATION AT ABUT.  
(West)

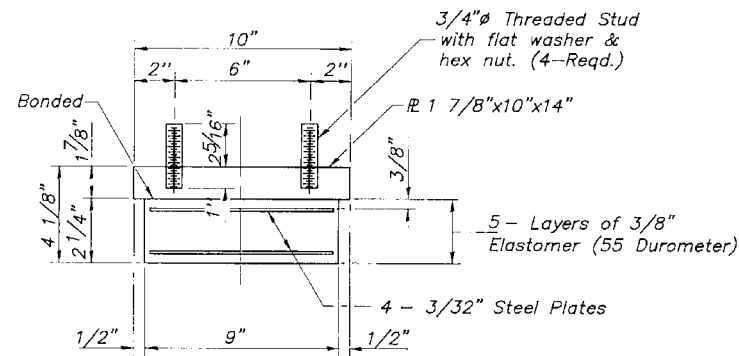


SECTION B-B

FIXED BEARING

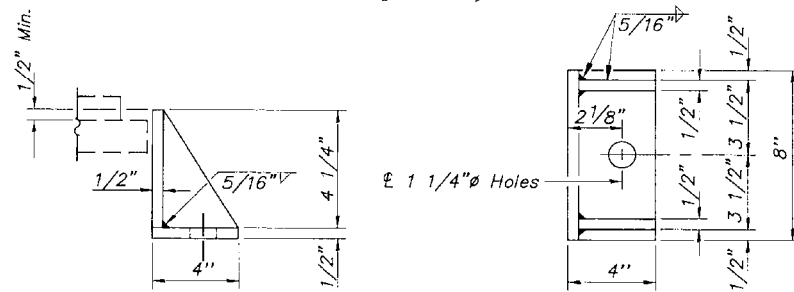


PINTLE



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.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	6

REV. NO.	DATE	DESCRIPTION	DATE

F.A. ROUTE 518 (IL 94)  
SECTION 2B-2  
HANCOCK COUNTY  
BEARING ASSEMBLY, TYPE I  
STRUCTURE NO. 034-0065  
STATION 124+28

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 034-0065  
(FOR INFORMATION ONLY)

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	(1-2) (2) (107) (126) BP	VAR.	19	13
CONTRACT NO. 72K75				
ILLINOIS FED. AID PROJECT				

USER NAME = dudleybm	DESIGNED -	REVISED -
PLOT SCALE = 100,000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/26/2018	CHECKED -	REVISED -
	DATE -	REVISED -

SCALE: SHEET OF SHEETS STA. TO STA.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**Work shall consist of blasting and painting all beam ends, end diaphragms, and steel components of bearings at both abutments.**

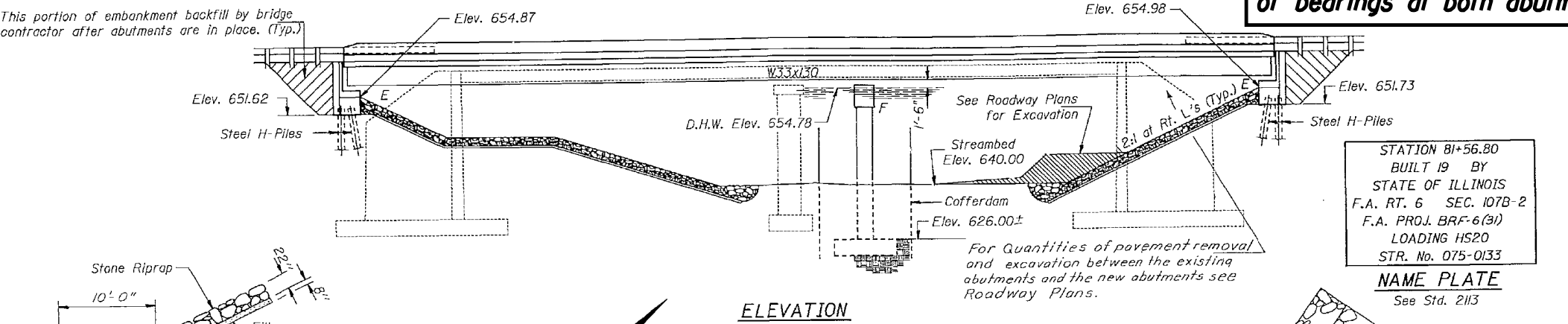
ROUTE NO.	SECTION	COUNTY	SHEETS	TOTAL SHEETS	SHEET NO. 1
107-B-2	PIKE	46	26	15	15 SHEETS

**GENERAL NOTES**

Proposed for Boring Data.  
Fasteners shall be high strength bolts. Bolts 7/8" φ, open holes 1 1/16" φ, unless otherwise noted.  
Calculated weight of M 183 Structural Steel = 20,050 Lbs.  
Calculated weight of M 223 Grade 50 Structural Steel = 140,990 Lbs.  
The Zinc-silicate and vinyl paint system shall be used for shop and field painting of Structural Steel except where otherwise noted.  
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.  
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 wide flange beams and all splice plate material of the wide flange beams.  
Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.  
Layout of slope protection system 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.  
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 dimensions 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 top plate shall be provided and placed as detailed.  
The contractor shall drive one Steel HP8x36 test pile in a permanent location at the N. Abutment as directed by the Engineer before ordering the remainder of piles.  
Bridge Seat Sealer shall be applied to the seat area of the abutments. Est. quantity = 263 Sq. Ft.

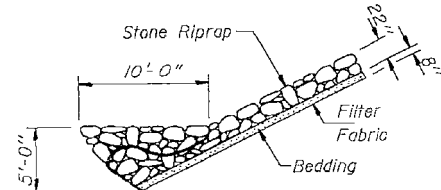
Bench Mark: B.M. #2 chiseled square 12.5' Lt., Sta. 81+06, Top wingwall S.E. corner of Bridge Elev. 659.68  
Existing Structure: # 075-0053 Built as S.B.I. Rte. 107 Sec. 107-B Sta. 81+20.00 in 1932. Two Span R.C. Girder Bridge with overall length of 104.98' Bk. to Bk. and 22'-0" width. The contractor shall remove the existing structure and replace it with a new two span R.C. Deck 7 1/2" thick slab on W 33" Bms., utilizing stage construction.  
No Salvage.

This portion of embankment backfill by bridge contractor after abutments are in place. (Typ.)

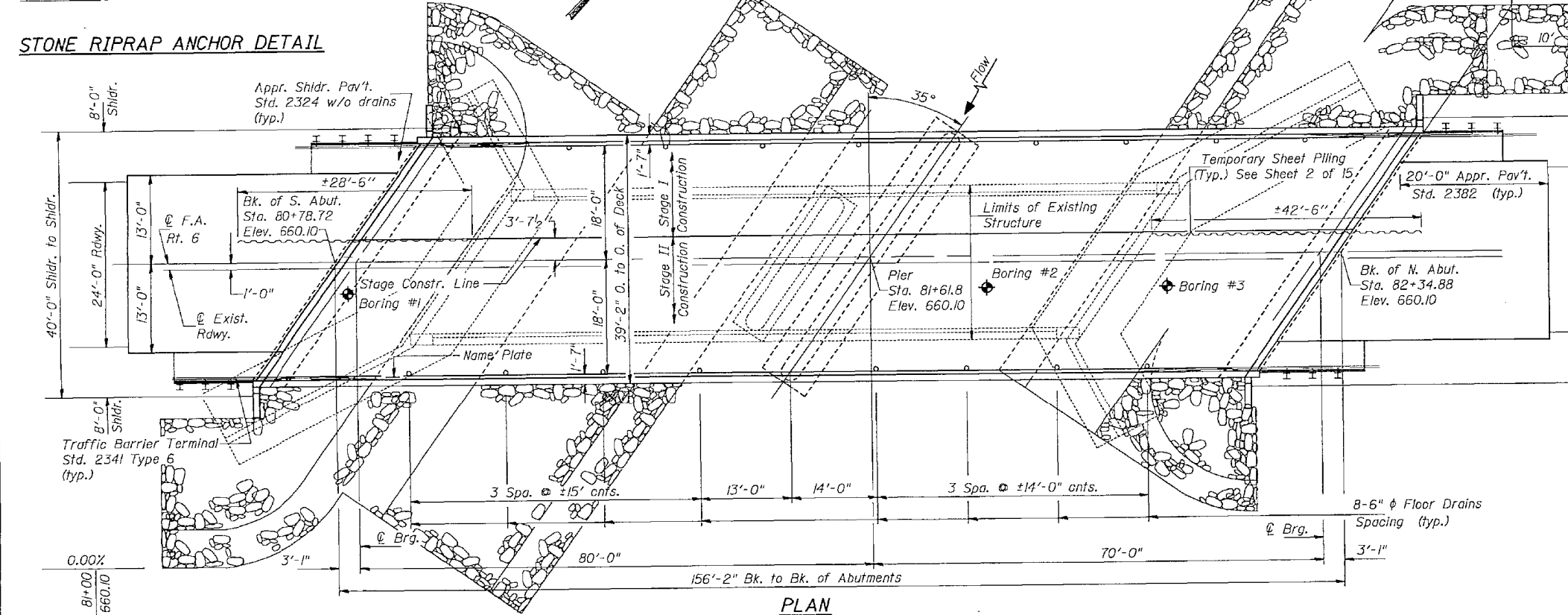


STATION 81+56.80  
BUILT 19 BY  
STATE OF ILLINOIS  
F.A. RT. 6 SEC. 107B-2  
F.A. PROJ. BR-6(31)  
LOADING HS20  
STR. No. 075-0133

**NAME PLATE**  
See Std. 2113



**STONE RIPRAP ANCHOR DETAIL**



**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Rock Excavation for Structures	Cu. Yd.		27	27
Removal of Existing Structures	Each	1		1
Structure Excavation	Cu. Yd.		158	158
Cofferdam Excavation	Cu. Yd.		287	287
Cofferdams	Each		2	2
Floor Drains	Each	16		16
Preformed Joint Seal 4"	Lin. Ft.	94		94
Protective Coat	Sq. Yd.	124		124
Elastomeric Bearing Assembly, Type I	Each	7		7
Elastomeric Bearing Assembly, Type II	Each	7		7
Class X Concrete	Cu. Yd.		222.2	222.2
Class X Concrete Superstructure	Cu. Yd.	182.1		182.1
Structural Steel	L. S.	1		1
Stud Shear Connectors	Each	2,198		2,198
Reinforcement Bars	Lbs.		11,900	11,900
Reinforcement Bars, Epoxy Coated	Lbs.	39,680	7,550	47,230
Steel Piles HP8x36	Lin. Ft.		454	454
Test Pile Steel HP8x36	Each		1	1
Name Plates	Each		1	1
Stone Riprap Class A5	Sq. Yd.		1,159	1,159
Filter Fabric For Use With Riprap	Sq. Yd.		1,342	1,342
Temporary Sheet Piling	Sq. Ft.		1,919	1,919
Bridge Seat Sealer	L. S.		1	1

**PROFILE GRADE**  
F.A.P. Rte. 6 Ill. Rte. 107

DESIGNED *Kevin J. Reckers*  
CHECKED *Mark P. Thomson*  
DRAWN *Paul W. Sweet*  
CHECKED *KLR* *MP*

December 6, 1988  
EXAMINED *Draj O. Kaspar*  
PASSED *James J. Kautzman*  
APPROVED \_\_\_\_\_  
DIRECTOR OF HIGHWAYS

**WATERWAY INFORMATION**

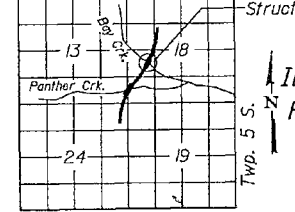
Drainage Area = 27.4 sq. mi. Low Grade Elev. 659.9 @ Sta. 80+00.00

Flood	Freq. Yr.	*Q C.F.S.	Q C.F.S.	Opening Sq. Ft. Exist.	Prop.	Nat. H.W.E.	Head - Ft. Exist.	Prop.	Headwater El. Exist.	Prop.
Design	50	9136*	10200	924	1200	654.78	4.35	1.59	659.13	656.37
Base	100	10167*	11540	964	1342	655.16	5.30	1.86	660.46	657.02
Overtopping	100	-	-	-	-	-	-	-	-	-
Max. Calc.	500	-	-	-	-	-	-	-	-	-

\* Proposed Discharge

**DESIGN SPECIFICATIONS**  
AASHTO (1983) and applicable Interims (1984 thru 1987)  
**LOADING HS 20-44**  
Allow 25# / sq. ft. for future wearing surface.  
**DESIGN STRESSES**  
FIELD UNITS  
f'c = 3,500 psi  
fy = 60,000 psi (Reinf.)  
fy = 50,000 psi (M223 Grade 50) (Struc.)  
fy = 36,000 psi (M183) (Struc.)

Range 4 W. R. 3 W. 3rd. P.M.



**LOCATION SKETCH**

**GENERAL PLAN**  
ILL. ROUTE 107 OVER BAY CREEK  
F.A. ROUTE 6 SECTION 107 B-2  
PIKE COUNTY  
STATION 81+56.8  
STRUCTURE NUMBER 075-0133

MODEL: Default; FILE: \\msbpc\OPERATIONS\bridge\bridgeplans\_CAD\72K75 - beam end plate west 2019\beamend.dwg

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 1/28/2019	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

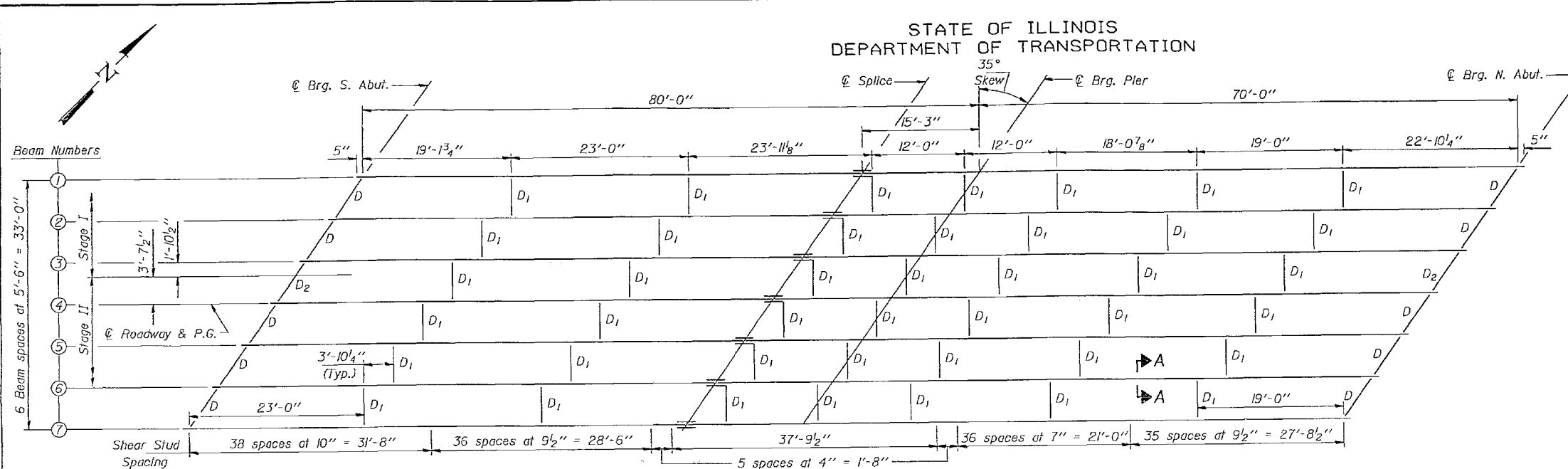
EXISTING PLANS, SN 075-0133  
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR. (1-2) (2) (107) (126) BP			VAR. 19	14
CONTRACT NO. 72K75				
ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

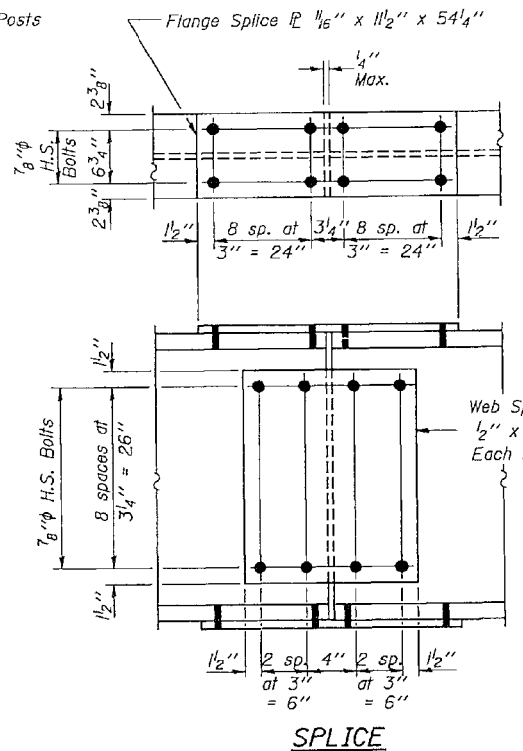
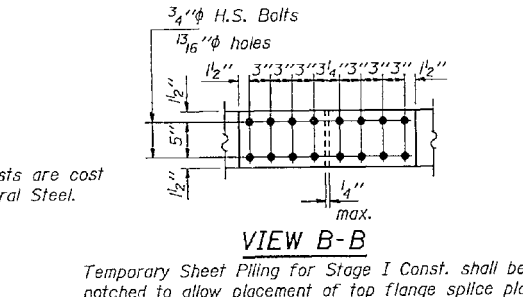
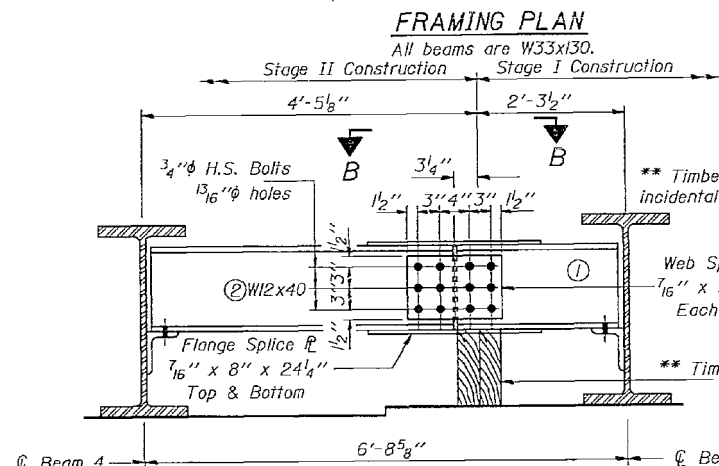
ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
			34	15 SHEETS
FED. AID DIST. NO. 7		FED. AID PROJECT NO.		



	0.4 Sp. 1	Pier	0.6 Sp. 2
Is (in <sup>4</sup> )	6,710	6,710	6,710
Ic (in <sup>4</sup> )	16,739		16,739
Ss (in <sup>3</sup> )	406	406	406
Sc (in <sup>3</sup> )	580		580
ϕ (K/ft.)	0.677	0.932	0.677
M <sub>E</sub> (K)	327	617	205
s <sub>E</sub> (K/ft.)	0.255		0.255
M <sub>sE</sub> (K)	142		96
M <sub>L</sub> (K)	511	271	429
M (Imp) (K)	123	68	112
M <sub>3</sub> (M <sub>L</sub> +I) (K)	1,057	565	902
M <sub>a</sub> (K)	1,984	1,537	1,564
M <sub>u</sub> (K)	3,115		3,115
f <sub>sE</sub> non-comp (k.s.i.)	9.7	18.2	6.1
f <sub>sE</sub> (comp) (k.s.i.)	2.9		2.0
f <sub>s</sub> (M <sub>L</sub> +I) (k.s.i.)	21.9	16.7	18.7
f <sub>s</sub> (Overload) (k.s.i.)	34.5	34.9	26.8
f <sub>s</sub> (Total) (k.s.i.)		45.4	
VR (K)	42.3		42.7

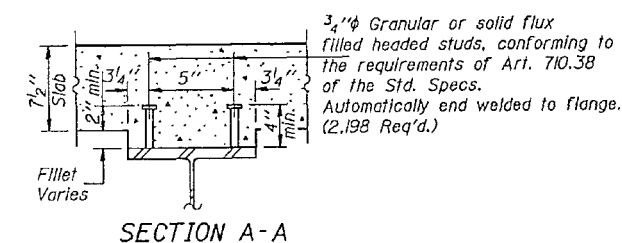
	S. Abut.	Pier	N. Abut.
RP (K)	29.6	86.5	23.8
R <sub>L</sub> (K)	31.9	42.5	31.2
Imp. (K)	7.7	10.6	8.1
R (Total) (K)	69.2	139.6	63.1

Is and Ss are the moment of inertia and section modulus of the steel section used in computing f<sub>s</sub> (Total & Overload).  
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing f<sub>s</sub> (Total & Overload).  
VR is the maximum Live Load + Impact shear  
M<sub>a</sub> (Applied Moment) = 1.3IM<sub>E</sub> + M<sub>sE</sub> + M<sub>3</sub>(M<sub>L</sub> + I)  
M<sub>u</sub> is the Full Plastic Moment Capacity for Compact, Braced section.  
f<sub>s</sub> (Overload) is the sum of the stresses due to M<sub>E</sub> + M<sub>sE</sub> + M<sub>3</sub>(M<sub>L</sub> + I).  
f<sub>s</sub> (Total) (Non-compact section) is the sum of the stresses due to 1.3IM<sub>E</sub> + M<sub>sE</sub> + M<sub>3</sub>(M<sub>L</sub> + I).

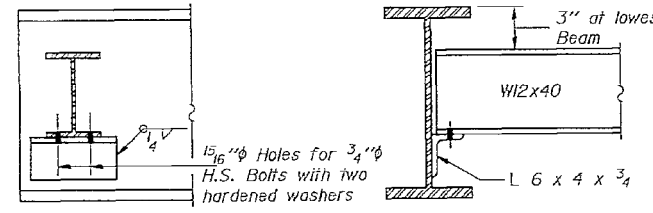


	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6	Beam 7
⊙ Brg. S. Abut.	659.10	659.20	659.29	659.38	659.29	659.20	659.10
⊙ Splice	659.10	659.20	659.29	659.38	659.29	659.20	659.10
⊙ Brg. Pier	659.10	659.20	659.29	659.38	659.29	659.20	659.10
⊙ Brg. N. Abut.	659.10	659.20	659.29	659.38	659.29	659.20	659.10

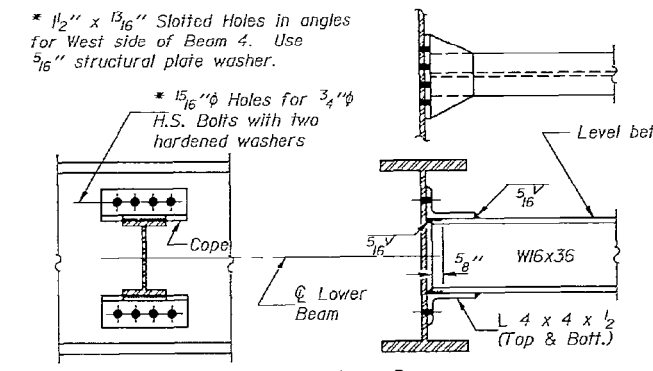
(For Fabrication Only)



STRUCTURAL STEEL  
F.A. RT. 6 SEC. 107B-2  
PIKE COUNTY  
STA. 81+56.80



DIAPHRAGM D  
10 Required



DIAPHRAGM D1  
42 Required

DIAPHRAGM D<sub>2</sub>  
2 Required  
(Looking South)  
Dimensions are along ⊙ diaphragm.  
For details of connections to beams see diaphragm D.  
**DIAPHRAGM D<sub>2</sub> CONSTRUCTION SEQUENCE**

- 1.) Order Diaphragm D<sub>2</sub> in two sections.
- 2.) Attach part ① of Diaphragm to Beam 3 and top flange splice Ⓡ during Stage I Construction.
- 3.) Place Timber Block Posts between part ① of diaphragm and abutment bearing seat.
- 4.) Attach part ② of diaphragm to both Beam 4 and part ① of diaphragm during Stage II Construction.
- 5.) Attach web splice plates to part ① and part ② of diaphragms.
- 6.) Remove Timber Block Posts.
- 7.) Attach bottom flange splice Ⓡ to part ① and part ② of diaphragms.

Notes: The bolts for the slotted holes shall only be finger-tightened prior to the deck slab pouring and then be fully-tightened after the completion of the pouring.  
The beams and their splice plate material shall be AASHTO M223, Grade 50.  
All beams and splice plate material shall conform to the Supplemental Requirements for Notch Toughness Zone 2.

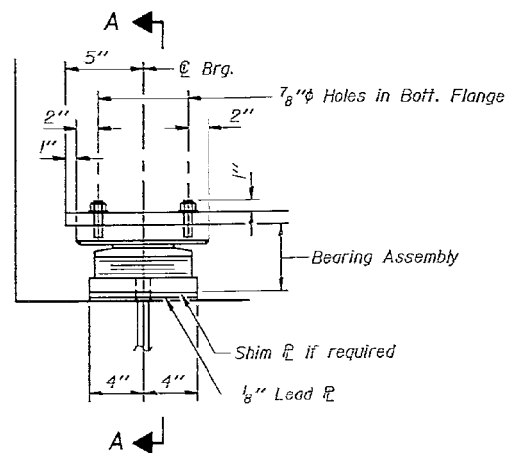
DESIGNED: Kevin A. Reichen  
CHECKED: Mark P. Tomson  
DRAWN: Paul Sumner  
CHECKED: KLR  
EXAMINED: Craig O. Kaspar  
PASSED: James J. Kasper  
APPROVED: [Signature]  
DATE: Dec 6, 1988

I-2-D 8-30-80

USER NAME = dudleybm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS, SN 075-0133 (FOR INFORMATION ONLY)	F.A. RT. 6	SECTION (1-2) (2) (107) (126) BP	COUNTY VAR.	TOTAL SHEETS 19	SHEET NO. 15
PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -	SCALE:	SHEET OF SHEETS STA.	TO STA.		CONTRACT NO. 72K75		
PLOT DATE = 10/26/2018	DATE -	REVISED -			ILLINOIS		FED. AID PROJECT		

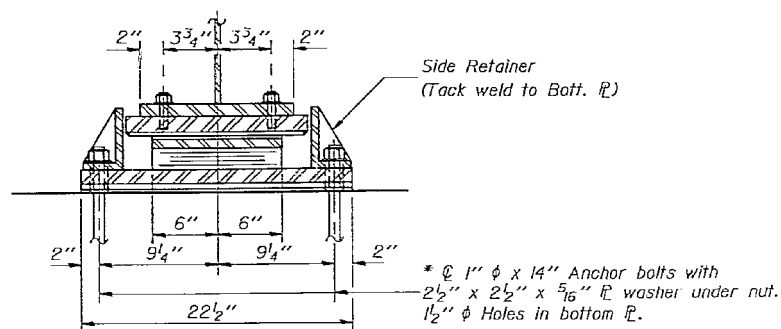
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DATE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			35	10
SHEET NO. 10 15 SHEETS				



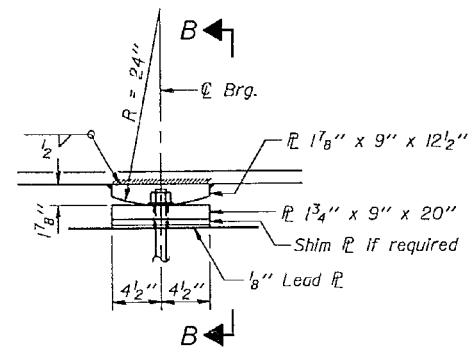
ELEVATION AT S. ABUTMENT

TYPE II ELASTOMERIC EXP. BRG.



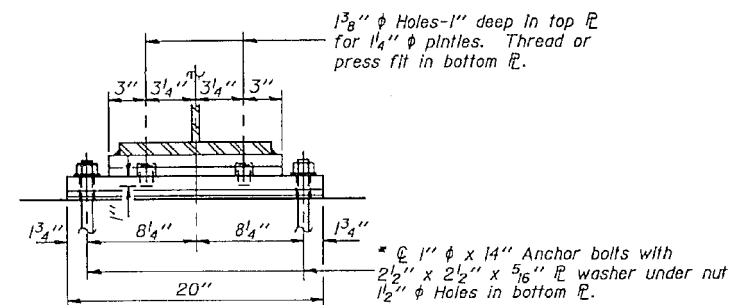
SECTION A-A

\* Notes: Anchor bolts at Pier may be built into the masonry. See sheet #1 of 15 for Anchor Bolt installation.

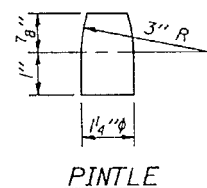


ELEVATION AT PIER

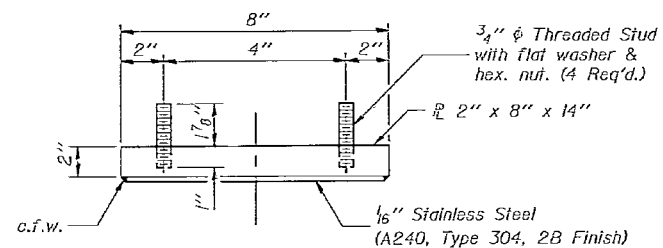
FIXED BEARING



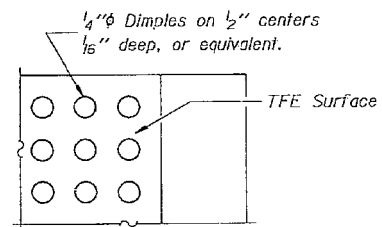
SECTION B-B



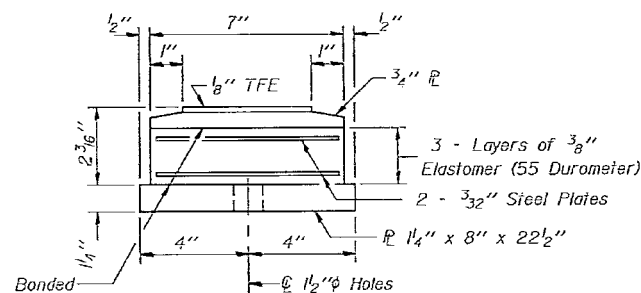
PINTLE



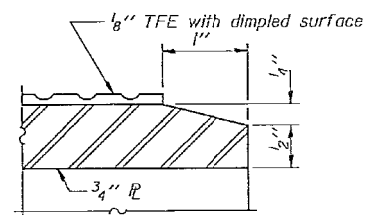
TOP BEARING ASSEMBLY



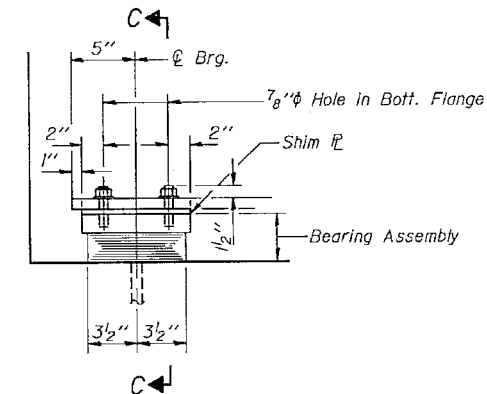
PLAN-TFE SURFACE



BOTTOM BEARING ASSEMBLY

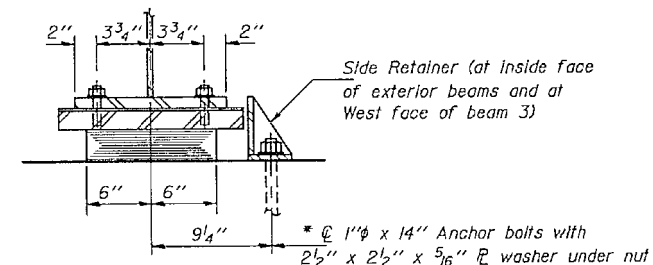


SECTION THRU TFE

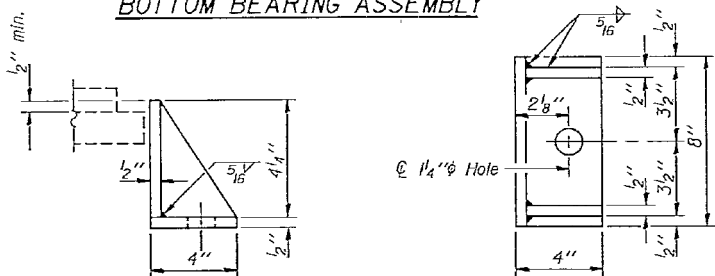


ELEVATION AT N. ABUTMENT

TYPE I ELASTOMERIC EXP. BRG.



SECTION C-C

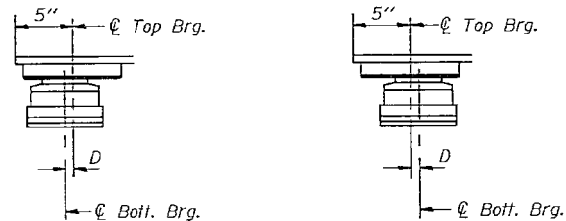


SIDE RETAINER

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

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.

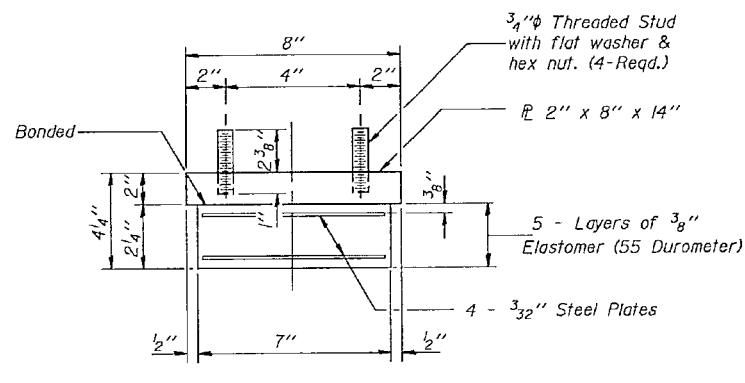
Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



BELOW 50° F. (Move bott. brg. away from fixed brg.) ABOVE 50° F. (Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50° F.



BEARING ASSEMBLY

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

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	7
Elastomeric Bearing Assembly Type I	Each	7

BEARING DETAILS  
F.A. RT. 6 SEC. 107B-2  
PIKE COUNTY  
STA. 81+56.80

DESIGNED <i>Kevin S. Ketchum</i>	EXAMINED <i>Greg J. Kaspar</i>
CHECKED <i>Mick P. Thomson</i>	PASSED <i>James J. Roubert</i>
DRAWN <i>Paul Summer</i>	APPROVED <i>[Signature]</i>
CHECKED <i>KLR</i>	DATE <i>Dec. 6 1988</i>

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USER NAME = dudleybm	DESIGNED -	REVISED -
PLOT SCALE = 100.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/26/2018	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 075-0133  
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	(1-2) (2) (107) (126) BP	VAR.	19	16
CONTRACT NO. 72K75				
ILLINOIS FED. AID PROJECT				



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.A. RT. 6	107B-1	Pike	46	11
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

**GENERAL NOTES**

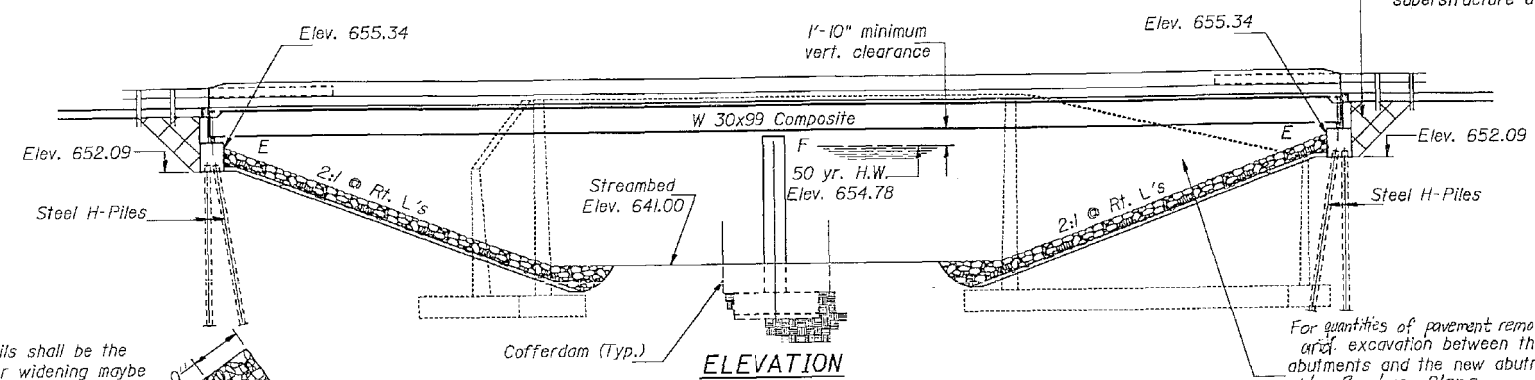
See Proposal for Boring Data.  
 Fasteners shall be high strength bolts. Bolts 7/8"φ, open holes 15/16"φ, unless otherwise noted.  
 Calculated weight of Structural Steel = 16,820 Lbs. M-183.  
 Calculated weight of Structural Steel = 89,310 Lbs. M-223.  
 The Zinc-silicate and vinyl paint system shall be used for shop and field painting of Structural Steel except where otherwise noted.  
 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.  
 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 wide flange beams (W30x99) and all splice plate material of the wide flange beams.  
 Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.  
 Layout of stone riprap 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.  
 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 dimensions 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) Steel (HPI0x42) test pile in a permanent location at the North Abutment as directed by the Engineer before ordering the remainder of piles.  
 Bridge Seat Sealer shall be applied to the seat area of the Abutments. Est. Quantity = 263 Sq. Ft.

**Work shall consist of blasting and painting all beam ends, end diaphragms, and steel components of bearings at both abutments.**

Bench Mark: B.M. #1 chiseled square 12.4' Lt., Sta. 72+95, Top of wingwall S.E. corner of Bridge. Elev. 659.73

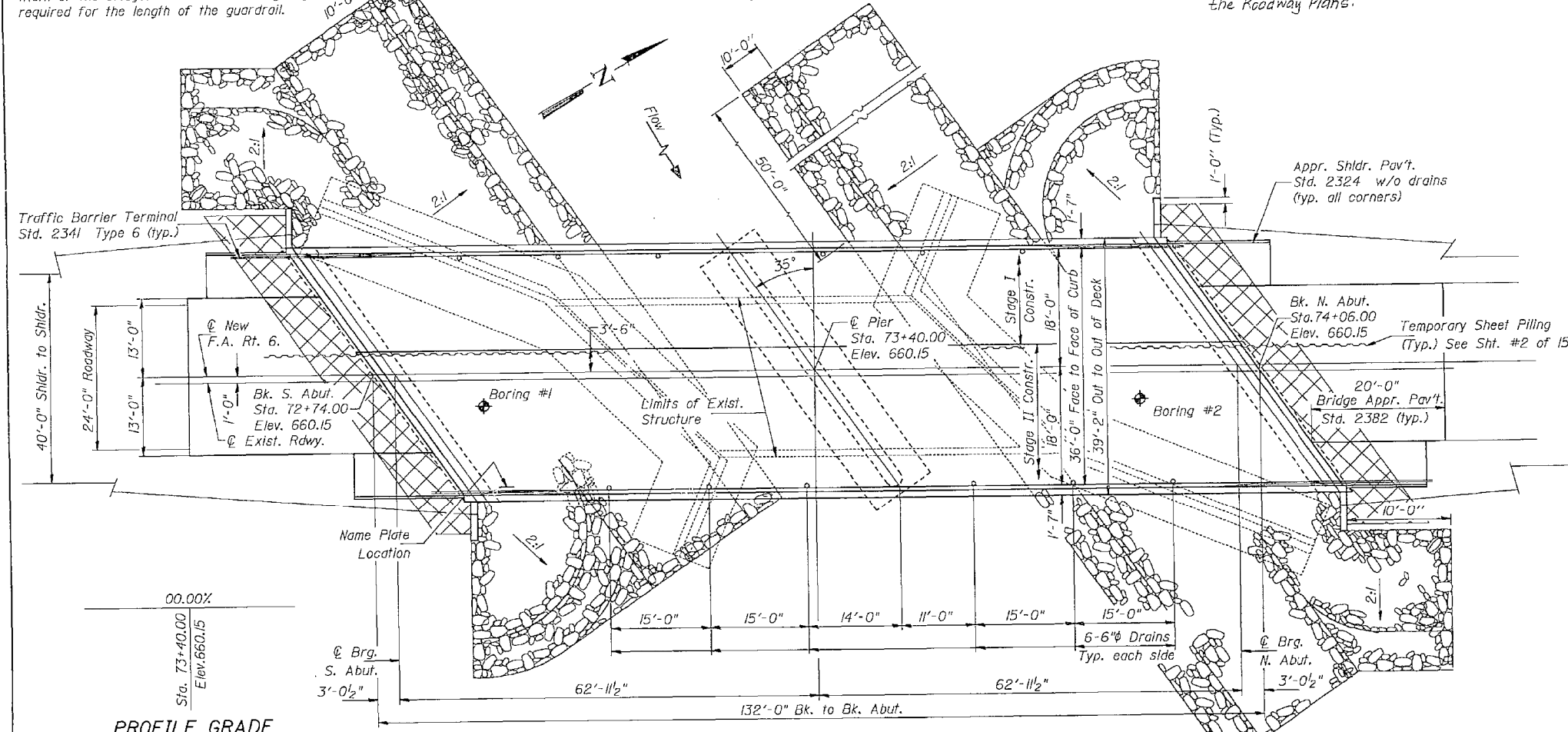
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

Existing Structure: # 075-0054 Built as S.B.I. Rte. 107, Sec. 107-B, Sta. 73+40, in 1932. A single span R.C. Girder Bridge with overall length of 58' Bk. to Bk. and 21' Curb to Curb. The contractor shall remove the entire existing structure and replace it with a new 2 span WF superstructure on pile bent abutments and pier on spread footing, utilizing stage construction.



Note:  
The width between guardrails shall be the width of the bridge. Shoulder widening maybe required for the length of the guardrail.

For quantities of pavement removal and excavation between the existing abutments and the new abutments, See the Roadway Plans.



**PROFILE GRADE**  
Along & Rdwy.

**PLAN**

**WATERWAY INFORMATION**

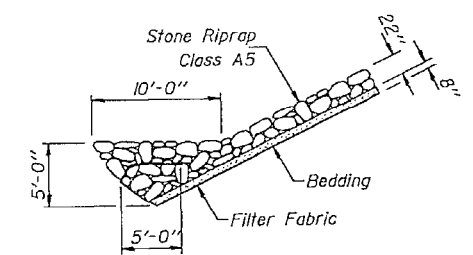
Drainage Area = 11.0 sq. mi. Low Grade Elev. 659.9 @ Sta. 80+00.00

Flood	Freq. Yr.	Q* C.F.S.	Q C.F.S.	Opening Sq. Ft.	Nat. H.W.E.	Head - Ft.	Headwater El.
		Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	50	5964*	4900	485 944	654.78	4.35 1.59	659.13 656.37
Base	100	7033*	5660	505 1020	654.16	5.30 1.86	660.46 657.02
Overtopping	100	-	-	-	-	-	-
Max. Calc.	500	-	-	-	-	-	-

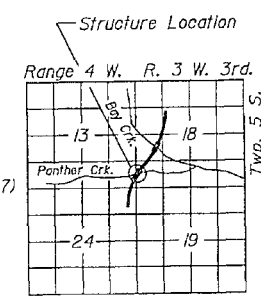
\*Proposed Discharge

STATION 73+40.00  
BUILT 1932 BY  
STATE OF ILLINOIS  
F.A. RT. 6 SEC. 107B-1  
F.A. PROJ. BAF-6(31)  
LOADING HS20  
STR. NO. 075-0134

**NAME PLATE**  
See Std. 2113



**STONE RIPRAP ANCHOR DETAIL**



**LOCATION SKETCH**

**DESIGN SPECIFICATIONS**  
AASHTO (1983) and applicable Interims (1984 thru 1987)  
**LOADING HS 20-44**  
Allow 25# / sq. ft. for future wearing surface.  
**DESIGN STRESSES**  
FIELD UNITS  
f<sub>c</sub> = 3,500 psi  
f<sub>y</sub> = 60,000 psi (Relnf.)  
f<sub>y</sub> = 50,000 psi (M223 Grade 50)

**GENERAL PLAN**  
ILL. ROUTE 107 OVER PANTHER CREEK  
F.A. ROUTE 6 SECTION 107B-1  
PIKE COUNTY  
STATION 73+40.00  
STRUCTURE NUMBER 075-0134

DESIGNED **VECTOR VELTZ**  
CHECKED **M.R. Chaudh**  
**Paul W. Sweet**  
DRAWN **John F. Schneller Jr.**  
CHECKED **G.R.A.**

December 14, 1988  
EXAMINED **Oran J. Kappas**  
PASSED **James J. Rayburn**  
APPROVED  
DIRECTOR OF HIGHWAYS

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 075-0134  
(FOR INFORMATION ONLY)

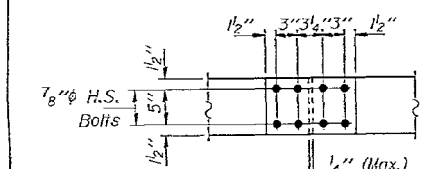
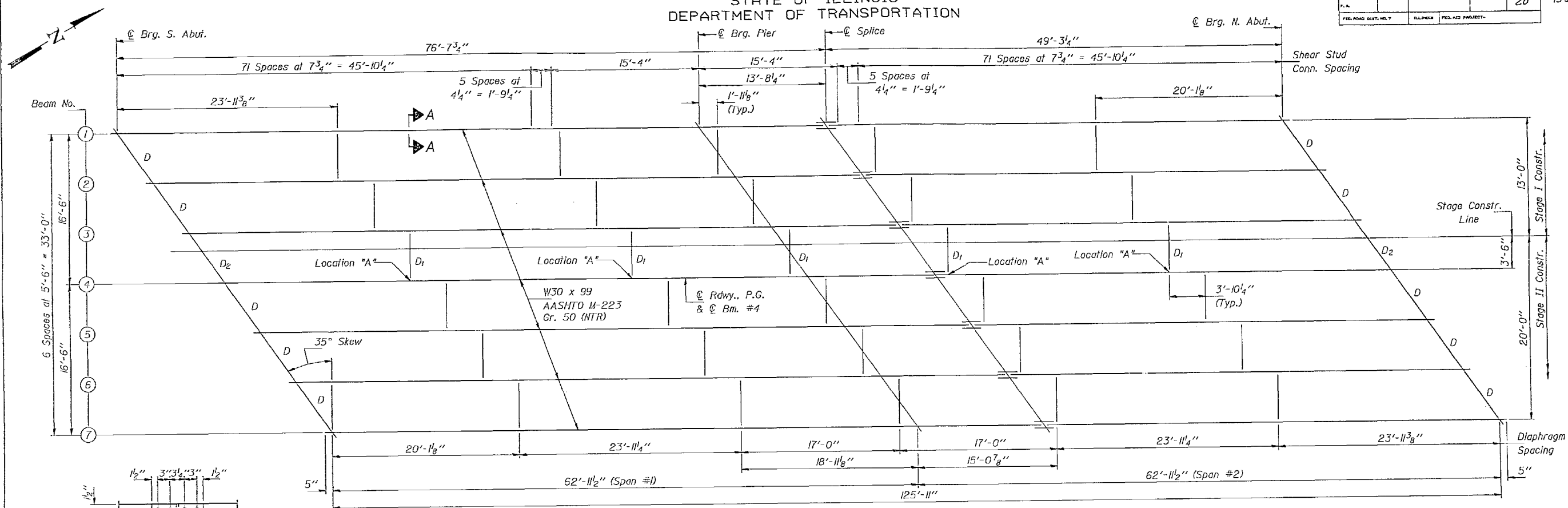
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR. (1-2) (2) (107) (126) BP			19	17
CONTRACT NO. 72K75				
ILLINOIS FED. AID PROJECT				

MODEL: D:\dtd\... FILE: I:\MISC\OPERATIONS\bridge\bridgeplans\_CAD\72K75 - beam end part west 2019.dwg

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. RT. 6	(1-2) (2) (107) (126) BP	PIKE	19	18
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	CONTRACT NO. 72K75	

SHEET NO. 10  
15 SHEETS

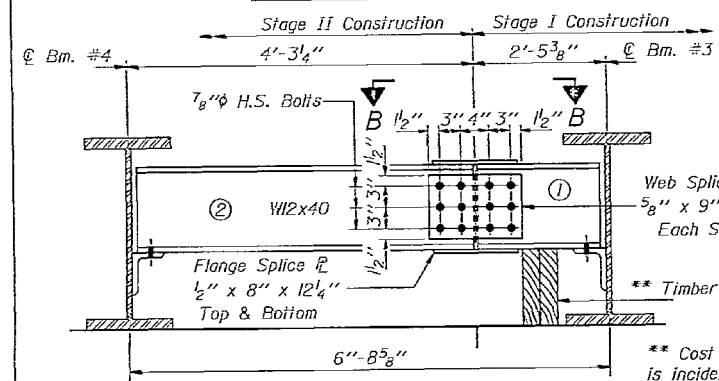


VIEW B-B

DIAPHRAGM D<sub>2</sub> CONSTRUCTION SEQUENCE

- 1.) Order Diaphragm D<sub>2</sub> in two sections with lengths of 2'-5<sup>3</sup>/<sub>8</sub>" and 4'-3<sup>1</sup>/<sub>4</sub>".
- 2.) Attach section ① of Diaphragm to Beam #3 and top flange splice ℓ during Stage I Construction.
- 3.) Place Timber Block Posts between section ① of diaphragm and abutment bearing seat.
- 4.) Attach section ② of diaphragm to both Beam #4 and section ① of diaphragm during Stage II Construction.
- 5.) Attach all remaining splice plates to sections ① and ② of diaphragms.
- 6.) Remove Timber Block Posts.

FRAMING PLAN

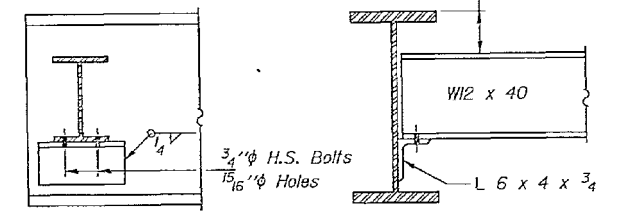


DIAPHRAGM D<sub>2</sub>

(2 Required)  
Dimensions are along ℓ diaphragm.  
(Looking South)  
For details of connections to beams see diaphragm D.

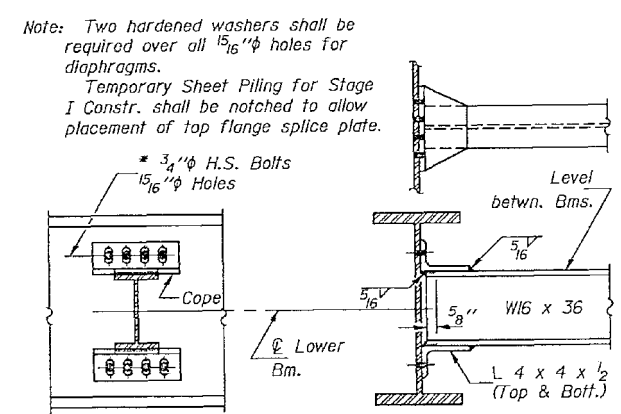
DESIGNED	VECTOR VELTZ	EXAMINED	Dec 14 1988
CHECKED	M.R. Church	PASSED	James J. Hubbard
DRAWN	John F. Schneller Jr.	APPROVED	JAMES J. HUBBARD
CHECKED	ORA	DIRECTOR OF HIGHWAYS	

I-2-D 8-30-80



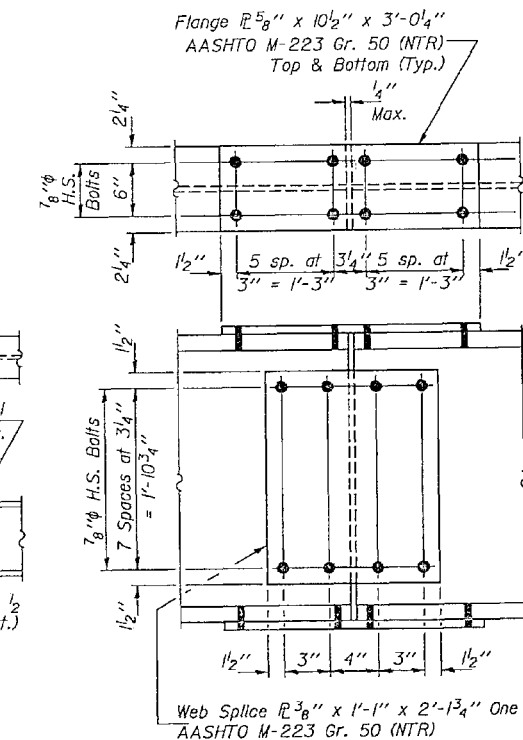
DIAPHRAGM D<sub>1</sub>

(10 Required)

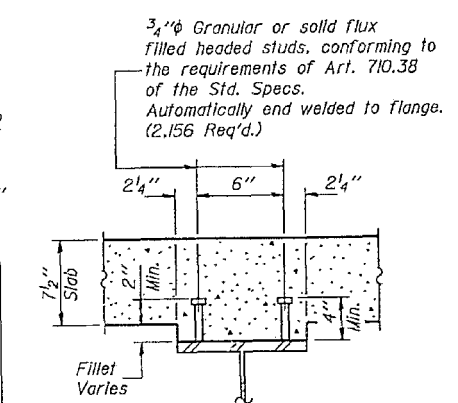


DIAPHRAGM D<sub>1</sub>

(30 Required)  
\* Use 1<sup>3</sup>/<sub>16</sub>" x 1<sup>1</sup>/<sub>2</sub>" Slotted holes in L 4 x 4 x 1<sup>2</sup>/<sub>2</sub> at Location "A" only. Provide 5<sup>16</sup>" Plate washer for slotted holes. Bolts shall be finger-tightened prior to deck pour for Stage II Construction.



SPlice



SECTION A-A

Note: "N.T.R." denotes plates to which Match Toughness Requirements are applicable.

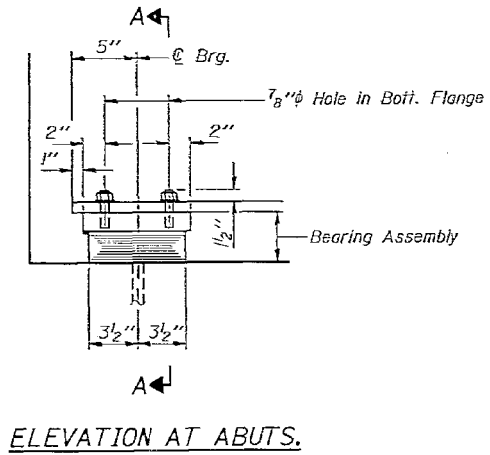
STRUCTURAL STEEL  
F.A. RT. 6 SEC. 107B-1  
PIKE COUNTY  
STA. 73+40.00

MODEL: Default; FILE: \\MAILS\OPERATIONS\Bridges\Bridges\Bridges\_CAD\72K75 - Beam end part west 2018\planstruct.dwg

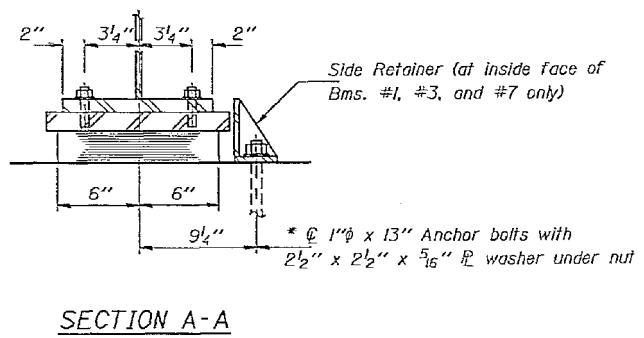
USER NAME = dudleybm	DESIGNED -	REVISED -	EXISTING PLANS, SN 075-0134 (FOR INFORMATION ONLY)	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 100.0000' / in.	DRAWN -	REVISED -	SCALE:	VAR.	(1-2) (2) (107) (126) BP	PIKE	19	18
PLOT DATE = 10/26/2018	CHECKED -	REVISED -	SHEET	CONTRACT NO. 72K75		ILLINOIS	FED. AID PROJECT	
	DATE -	REVISED -	OF	TO STA.				

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

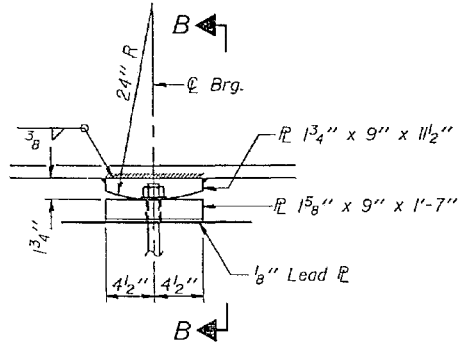
ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
			21	15 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



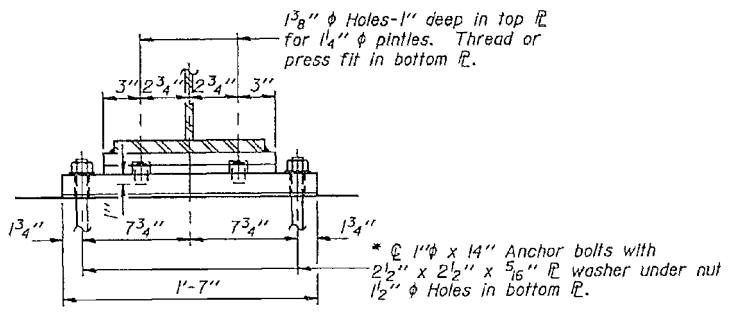
ELEVATION AT ABUTS.



SECTION A-A

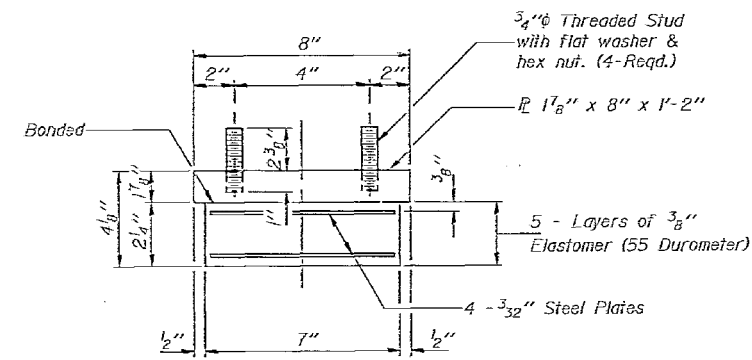


ELEVATION AT PIER



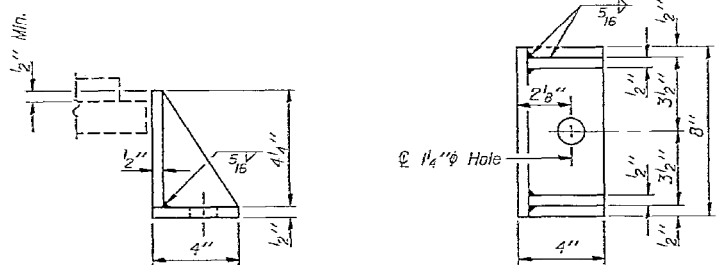
SECTION B-B

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.

INTERIOR BEAM MOMENT TABLE			
		0.4 Sp. #1 or 0.6 Sp. #2	Pier
$I_s$	(in <sup>4</sup> )	3,990	3,990
$I_c$	(in <sup>4</sup> )	11,173	
$S_s$	(in <sup>3</sup> )	269	269
$S_c$	(in <sup>3</sup> )	409	
$\phi$	(K/ft.)	0.650	0.905
$M_P$	(K)	181	413
$s_P$	(K/ft.)	0.255	
$M_{sP}$	(K)	85	
$M_L$	(K)	369	190
$M$ (Imp)	(K)	98	51
$S_3(M_L + I)$	(K)	778	402
$M_a$	(K)	1,357	1,060
$M_u$	(K)	2,437	
$f_{sP}$ non-comp (k.s.i.)		8.1	18.4
$f_{sP}$ (comp) (k.s.i.)		2.5	
$f_{sS_3}(L+I)$ (k.s.i.)		22.8	17.9
$f_s$ (Overload) (k.s.i.)		33.4	36.3
$f_s$ (Total) (k.s.i.)			47.2
$VR$	(K)	40.6	

$I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section used in computing  $f_s$  (Total & Overload).  
 $I_c$  and  $S_c$  are the moment of inertia and section modulus of the composite section used in computing  $f_s$  (Total & Overload).  
 $VR$  is the maximum Live Load + Impact shear range in span.  
 $M_a$  (Applied Moment) =  $1.3CM_P + M_{sP} + S_3(M_L + I)$ .  
 $M_u$  is the Full Plastic Moment Capacity for Compact, Braced section.  
 $f_s$  (Overload) is the sum of the stresses due to  $M_P + M_{sP} + S_3(M_L + I)$ .  
 $f_s$  (Total) (Non-compact section) is the sum of the stresses due to  $1.3CM_P + M_{sP} + S_3(M_L + I)$ .  
 \*\* These values are Service Load.

\* TOP OF FLANGE ELEVATIONS

Loc.	Bm. #1 & #7	#2 & #6	#3 & #5	#4
@ Brg. So. Abut.	659.15	659.26	659.34	659.43
@ Brg. Pier	659.15	659.26	659.34	659.43
@ Splice	659.15	659.26	659.34	659.43
@ Brg. No. Abut.	659.15	659.26	659.34	659.43

\* For Fabrication only.

** INTERIOR BEAM REACTION TABLE			
		Abuts.	Pier
$R_P$	(K)	22.0	70.1
$R_L$	(K)	29.9	36.8
Imp.	(K)	7.9	9.8
$R$ (Total)	(K)	59.8	116.7

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type 1	Each	14

BEARING DETAILS  
F.A. RT. 6 SEC. 107B-1  
PIKE COUNTY  
STA. 73+40.00

DESIGNED **VECTOR VELTZ**  
 CHECKED **Al P. Blouch**  
 DRAWN **John F. Schneller Jr.**  
 CHECKED **GPA**  
 EXAMINED **Greg O. Kaspar**  
 PASSED **James J. Reinhardt**  
 APPROVED **[Signature]**  
 Dec. 14 1988

I-2-EI 12-1-83

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