

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

P.A.1 RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(25) BP	MORGAN	6	1
ILLINOIS			CONTRACT NO. 72K31	

D-96-016-18

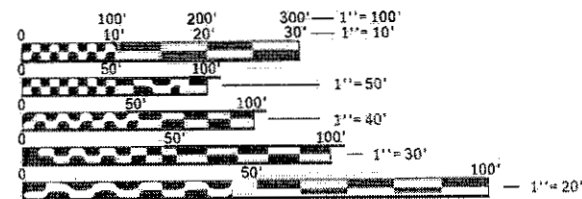
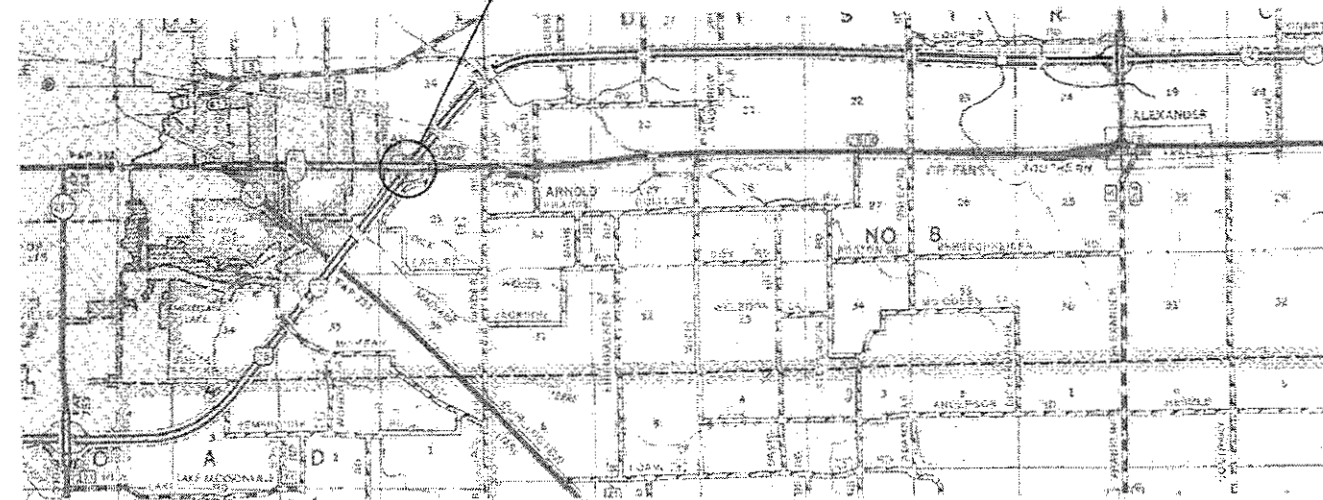
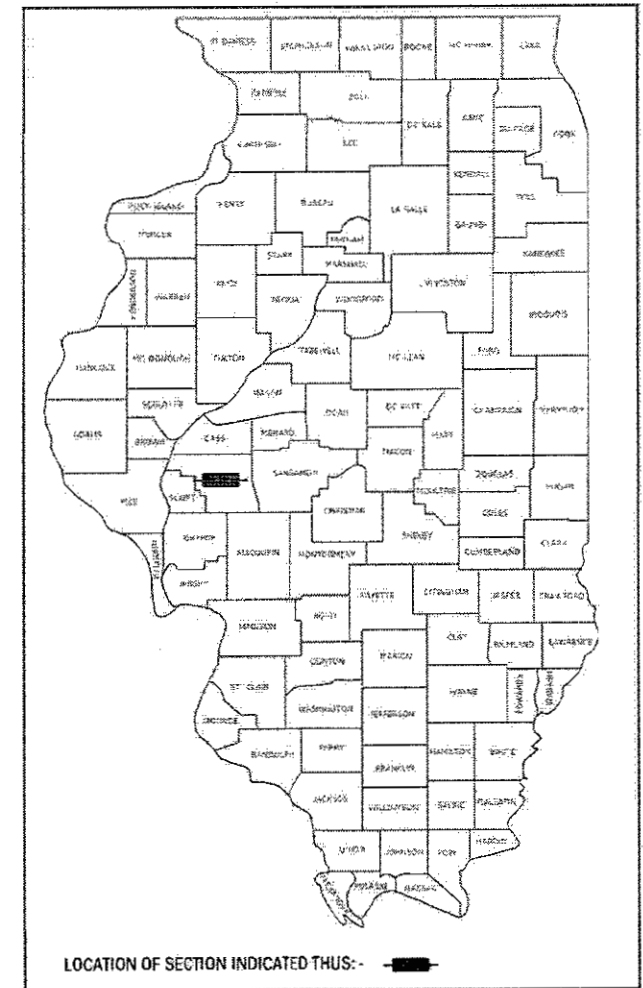
FOR INDEX OF SHEETS, SEE SHEET NO. 2

# PROPOSED BRIDGE PAINTING

FAI ROUTE 72 (I-72)  
SECTION (25) BP  
PROJECT NPP-TMHZ(358)  
BRIDGE PAINTING  
MORGAN COUNTY

C-96-023-18

PROJECT LOCATION - SN 069-0044  
OLD US 36 OVER I-72 INTERCHANGE  
EAST OF JACKSONVILLE



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

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

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED 03 October 2017  
[Signature] REGIONAL ENGINEER  
Nov 30 2017  
Maureen M. Adair, PE ENGINEER OF DESIGN AND ENVIRONMENT  
Nov 30 2017  
[Signature] DIRECTOR OF PROGRAM DEVELOPMENT 2

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OF THE STATE OF ILLINOIS

CONTRACT NO. 72K31

INDEX OF SHEETS

- 1 COVER SHEET
- 2 INDEX, STANDARDS, GENERAL NOTES, SIGNATURES, & SUMMARY OF QUANTITIES
- 3-6 EXISTING BRIDGE PLANS (FOR INFORMATION ONLY)

HIGHWAY STANDARDS

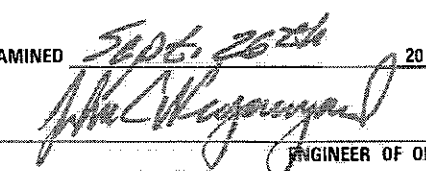
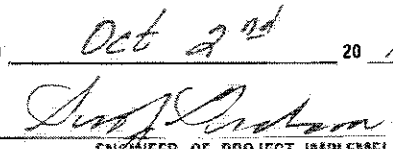
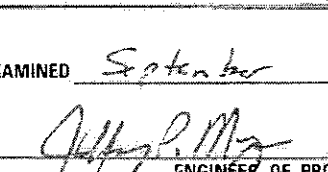
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- 701402-12
- 701411-09
- 701901-07
- 704001-08
- 782006

0-01514-6003  
NHPP 90/10

BRIDGE  
0047  
URBAN

GENERAL NOTES:

1. WORK SHALL CONSIST OF BLASTING AND PAINTING ALL STRUCTURAL STEEL ON SN 069-0044. 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 COAT FOR THE OUTSIDE AND BOTTOM OF THE FASCIA BEAMS SHALL BE GREEN (MUNSELL 7.5G 4/8). THE FINISH COAT FOR ALL OTHER AREAS SHALL BE GRAY (MUNSELL 5B 7/1).
2. THE USE OF AIR MONITORS WILL NOT BE REQUIRED.
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.

<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS DISTRICT 6</b>	
EXAMINED <u>Sept 26<sup>th</sup></u> 20 <u>17</u>	
 ENGINEER OF OPERATIONS	
EXAMINED <u>Oct 2<sup>nd</sup></u> 20 <u>17</u>	
 ENGINEER OF PROJECT IMPLEMENTATION	
EXAMINED <u>September 26</u> 20 <u>17</u>	
 ENGINEER OF PROGRAM DEVELOPMENT	

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	BRIDGE	
				0047	URBAN
67100100	MOBILIZATION	L SUM	1	1	
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	2	2	
70100420	TRAFFIC CONTROL AND PROTECTION, STANDARD 701411	EACH	2	2	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	600	600	
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	600	600	
70600260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2	
70600332	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2	
Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1	1	
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	1	

Bench Mark: T.B.M. #103, R.R. Spike in Telephone Pole,  
490' Rt Sta. 52+0.5,  
Elev. 627.99

LEGEND: E: Expansion Bearing  
F: Fixed Bearing

FA 408 \* MORGAN 309 145

\* 69-8 (VHB, B-1)  
69-9 (A, HB, SB)

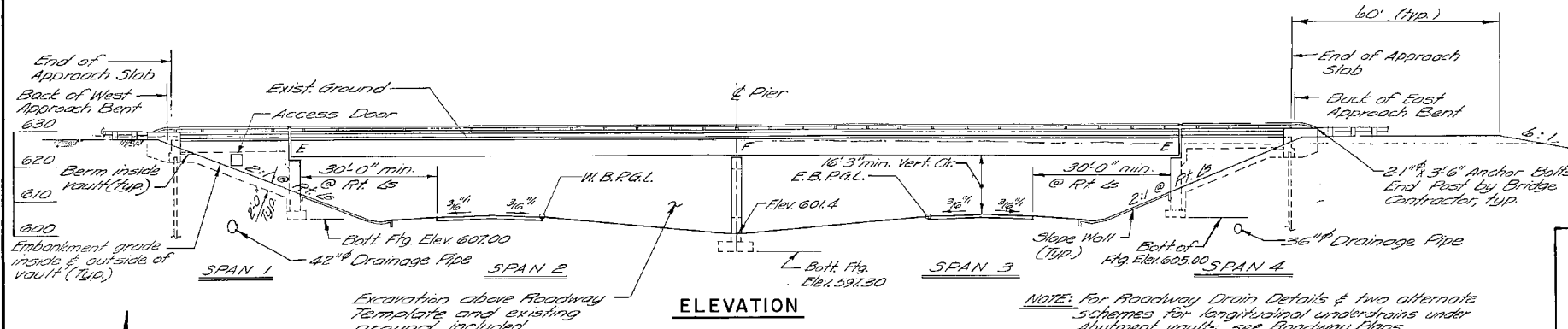
GENERAL NOTES

- SPECIFICATIONS: THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED July 2, 1973 SHALL APPLY.
- CONCRETE: CLASS X CONCRETE SHALL BE USED THROUGHOUT. 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.
- ALL REINFORCEMENT BARS SHALL BE LAPPED 24 DIAMETERS UNLESS OTHERWISE SHOWN.
- SLOPE WALL SHALL BE REINFORCED WITH WELDED WIRE FABRIC 6"x6" MESH WEIGHING 58# PER 100 SQ. FT.
- CALCULATED WEIGHT OF STRUCTURAL STEEL = 949,390 LBS.
- FASTENERS SHALL BE HIGH STRENGTH BOLTS. BOLTS 3/4 Ø OPEN HOLES 13/16 Ø UNLESS OTHERWISE NOTED.
- 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 CROSS FRAMES OVER SUPPORTS.
- THE BASIC LEAD SILICO CHROMATE PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF STRUCTURAL STEEL.
- PROTECTIVE COAT SHALL NOT BE APPLIED TO SURFACES TO WHICH Waterproofing Membrane System IS APPLIED.
- BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITH 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.
- THE CONTRACTOR SHALL DRIVE ONE TEST PILE IN EACH APPROACH BENT IN THE PERMANENT POSITION SHOWN ON PLANS IN ACCORDANCE WITH ARTICLE 513.15 OF STANDARD SPECIFICATIONS BEFORE ORDERING THE REMAINDER OF PILES.
- THE EMBANKMENT CONFIGURATION SHOWN SHALL BE THE MINIMUM EMBANKMENT THAT MUST BE CONSTRUCTED PRIOR TO CONSTRUCTION OF ABUTMENTS.

The main load carrying member components subject to the Supplemental Requirements for Notch Toughness are the flanges, webs, and splice plates of the steel girders or wide flange beams.

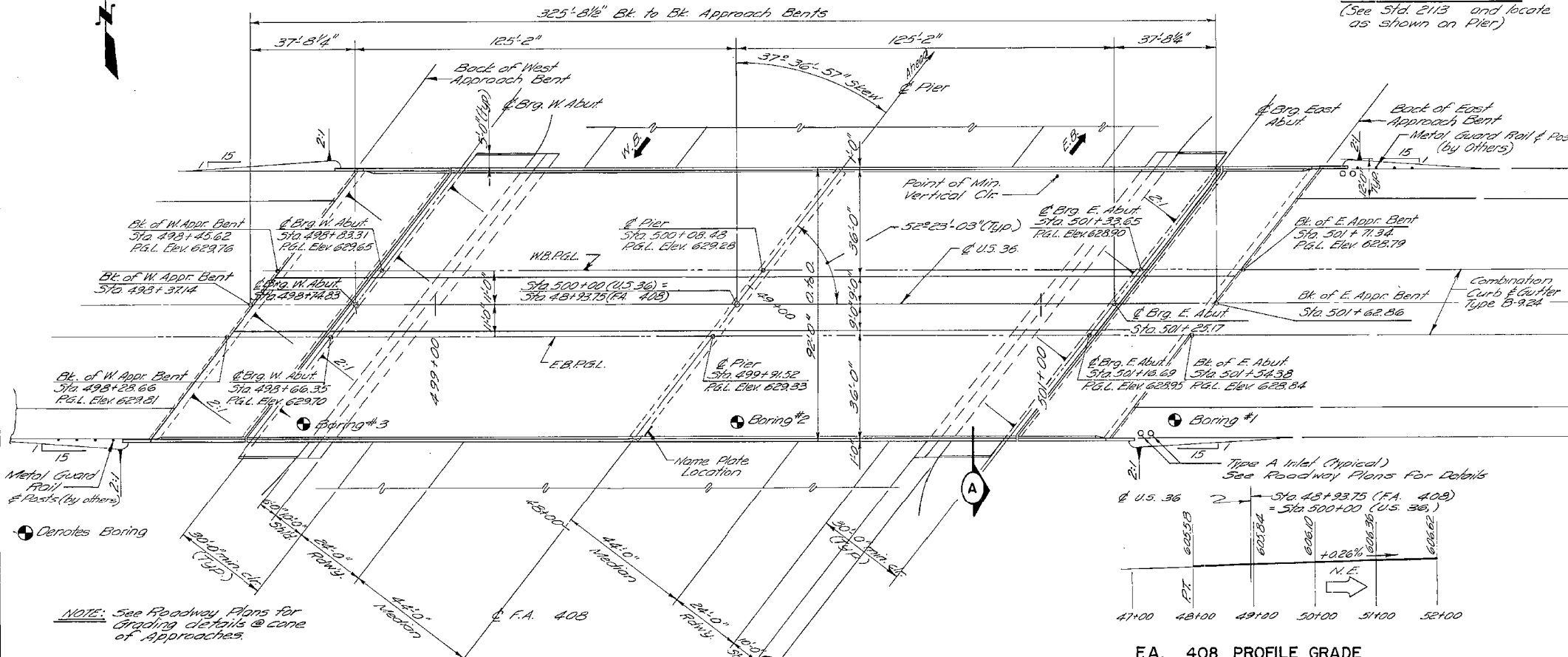
TOTAL BILL OF MATERIAL

Item	Unit	Super Struc.	Sub Struc.	Total
Structure Excavation	cu. yds.		1191	1191
Class X Concrete	cu. yds.	9691	8277	17968
Furnishing and Erecting Structural Steel	Lump Sum			Lump Sum
Reinforcement Bars	lbs.	247,450	83,400	330,850
Name Plate	each		1	1
Aluminum Railing	lin. ft.	675		675
Slope Wall (4')	sq. yds.		735	735
Furnishing & Erecting Precast Prestressed Concrete I Beams (36")	lin. ft.	820		820
Protective Coat	sq. yds.	940	16	956
Waterproofing Membrane System	sq. yds.	2540		2540
Bit. Concrete Surface Course Class 2	tons	222		222
Neoprene Expansion Joint, 2"	lin. ft.	234		234
Furnishing Concrete Piles	lin. ft.	572		572
Driving Concrete Piles	lin. ft.	572		572
Test Pile (Concrete)	each		2	2
Stud Shear Connectors, 3/4"	each	5292		5292

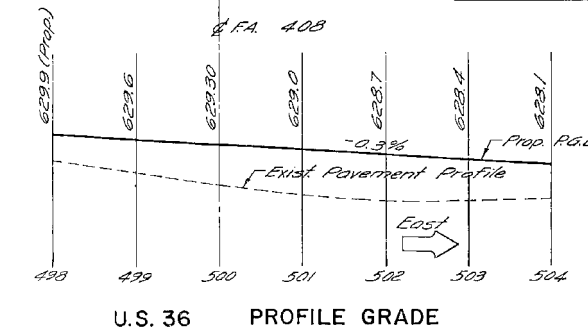


STATION 48+93.75  
BUILT 197 BY  
STATE OF ILLINOIS  
FA RT. 408 SEC. 69-9HB  
FA PROJ. EBRF-EBRFG-408-2(27)  
LOADING HS 20

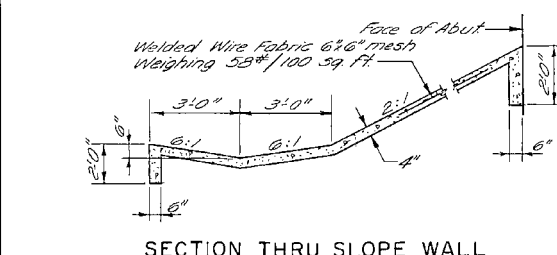
NAME PLATE DATA  
(See Std. 2113 and locate as shown on Pier)



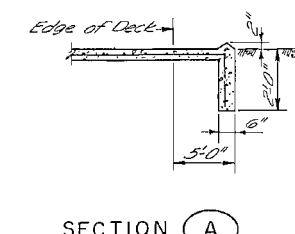
F.A. 408 PROFILE GRADE



U.S. 36 PROFILE GRADE



SECTION THRU SLOPE WALL



SECTION A

MAXIMUM DESIGN SOIL BEARING PRESSURE  
ABUTMENTS: 5 1/2 TONS/SQ. FT.  
PIER: 7 1/2 TONS/SQ. FT.

DESIGN NOTES

- DESIGN LOADING: HS-20-44 AND ALLOWANCE FOR 25 P.S.F. FUTURE WEARING SURFACE.
- DESIGN STRESSES:  
fc = 1,400 P.S.I. EXCEPT AS FOLLOWS:  
fc = 1,200 P.S.I. FOR DECK SLAB  
fc = 1,000 P.S.I. FOR CONC. IN CONTACT WITH EARTH  
fs = 20,000 P.S.I. - A36 STRUCTURAL STEEL  
fs = 20,000 P.S.I. - REINFORCEMENT STEEL  
v = 75 P.S.I. - ALLOWABLE SHEAR IN FOOTINGS  
n = 10
- ALLOWABLE LIVE LOAD DEFLECTION = L/1200 (COMPOSITE)
- DESIGN SPECIFICATIONS: AASHTO 1969 AS APPLICABLE.

APPROVED  
7.12.1972  
Olevis D. Dintinger

GENERAL PLAN AND ELEVATION  
U.S. 36 OVER F.A. 408  
F.A. 408 ROUTE MORGAN CO.  
SECTION 69-9HB  
STATION 48+93.75

CLARK, DIETZ AND ASSOCIATES - ENGINEERS, INC. Sheet No. 1 of 26 JOB NO. 1346

USER NAME	DESIGNED	REVISED
= dudleybm	-	-
	DRAWN -	REVISED -
	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS SN 069-0044  
(FOR INFORMATION ONLY)

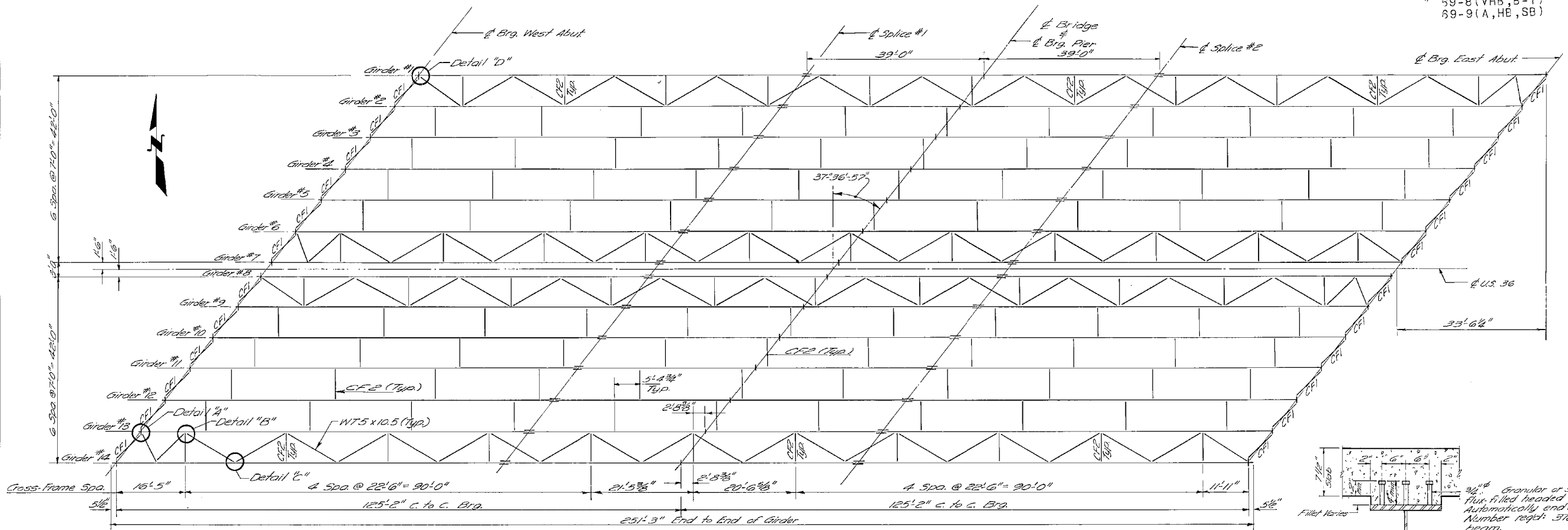
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(25) BP	MORGAN	6	3
ILLINOIS FED. AID PROJECT			CONTRACT NO. 72K31	

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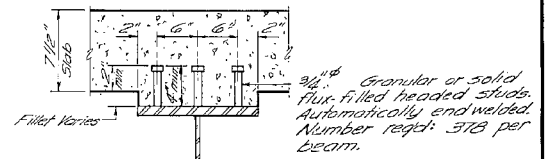
DESIGNED BY: AD DRAWN BY: JMN 1-82 CHECKED BY: AD IN CHARGE: AD DATE: 10/3/2017

\* 69-8 (VHB, B-1)  
69-9 (A, HB, SB)



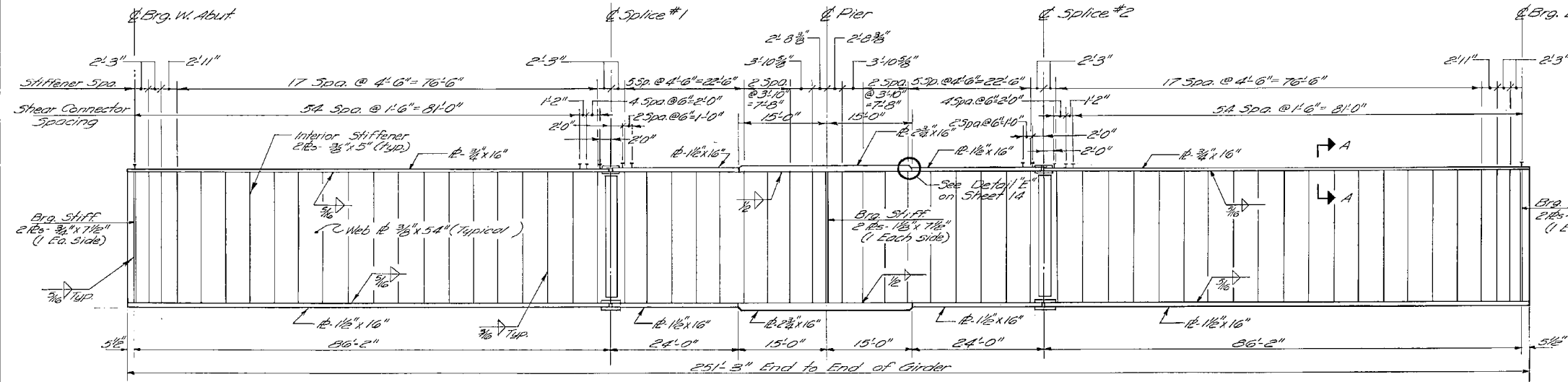
For Lateral Bracing Connection Details (A) (B) (C) & (D)  
See Sheet 14

**FRAMING PLAN**  
(Interior Stiffeners not shown)



**SECTION A-A**  
**SHEAR CONNECTOR DETAIL**

- Notes:**
- 1) All Structural steel to be in accordance with ASTM A-36 Specifications.
  - 2) For Stiffeners, Cross Frames and Lateral Bracing details see Sheet 14
  - 3) For Bearing Details see sheet 15
  - 4) For Camber Diagram see sheet 16



**GIRDER ELEVATION**

(Girder No. 14 Shown, all other Girders similar, Lateral Bracing and Connection Plates not shown)

<b>STRUCTURAL STEEL</b>	
U.S.36 OVER F.A. 408	
F.A. 408 ROUTE MORGAN CO.	
SECTION 69-9HB	
STATION 48+93.75	

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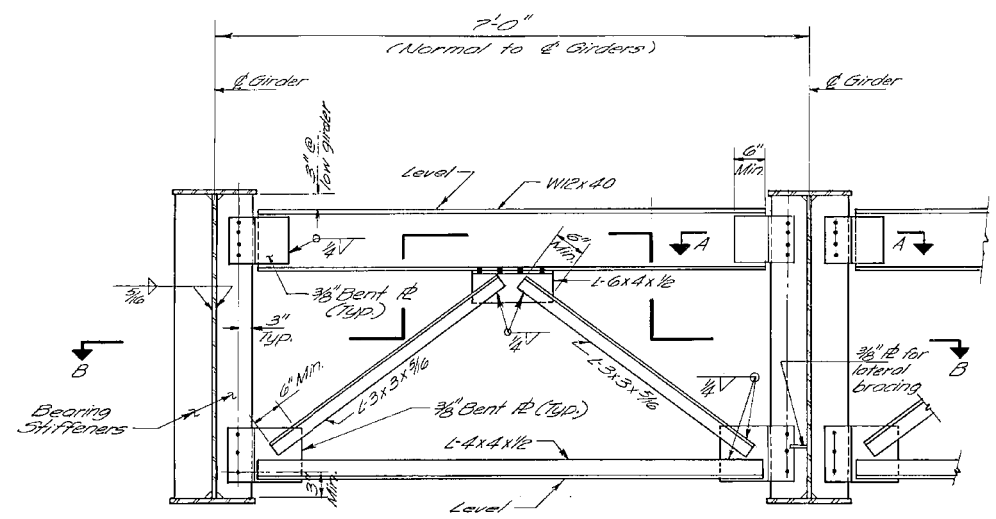
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PLOT DATE = 10/3/2017	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

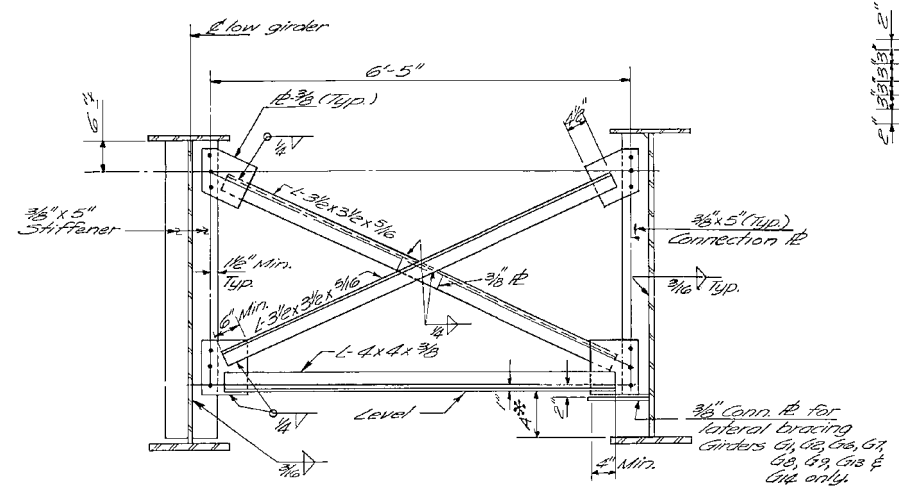
<b>EXISTING BRIDGE PLANS SN 069-0044</b>			
<b>(FOR INFORMATION ONLY)</b>			
SCALE:	SHEET	OF SHEETS	STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(25) BP	MORGAN	6	4
CONTRACT NO. 72K31				
ILLINOIS FED. AID PROJECT				

\* 69-8 (VHB, B-1)  
69-9 (A, HB, SB)

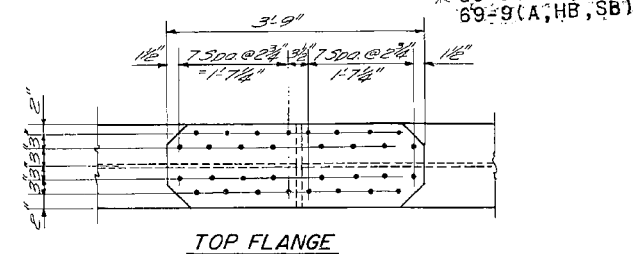


END CROSS FRAME CFI

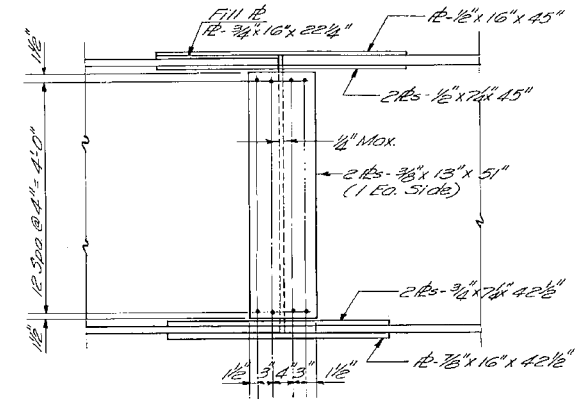


INTERIOR CROSS FRAME CF2

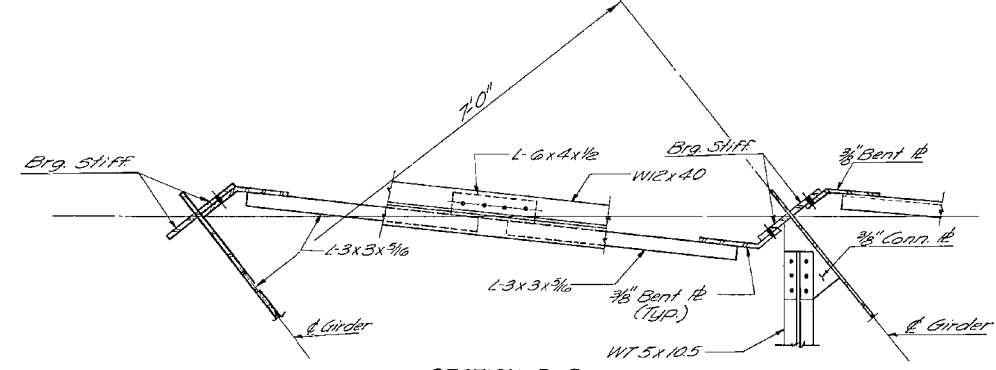
\* A = 9" Girders G1, G2, G3, G4, G5, G6, G7, G8, G9 and G10 where bottom lateral bracing is provided only.  
\* A = 3" @ all other locations



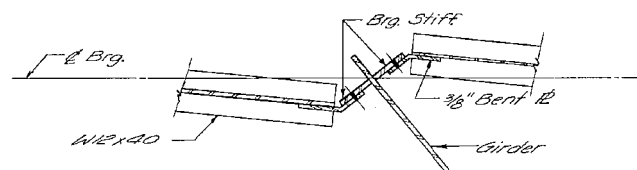
TOP FLANGE



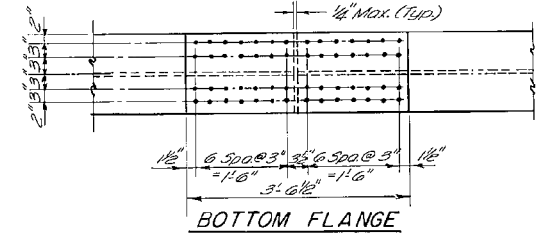
WEB SPLICE



SECTION B-B

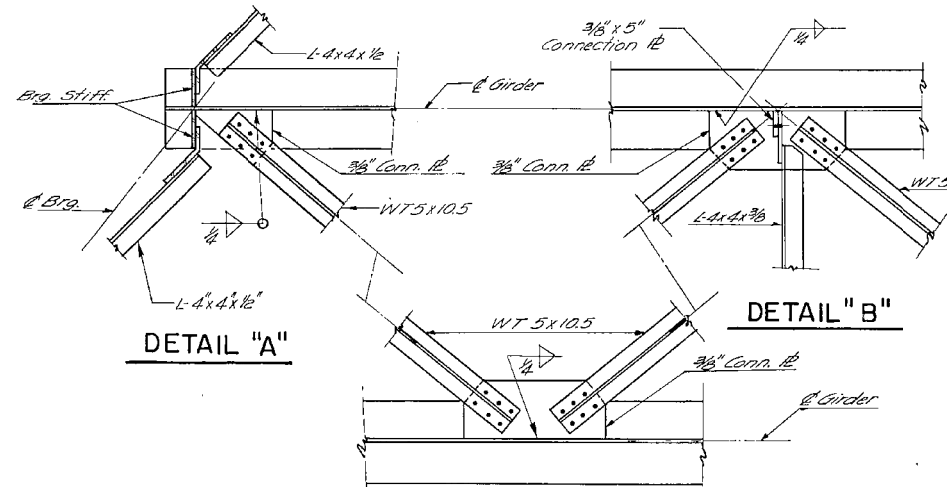


SECTION A-A



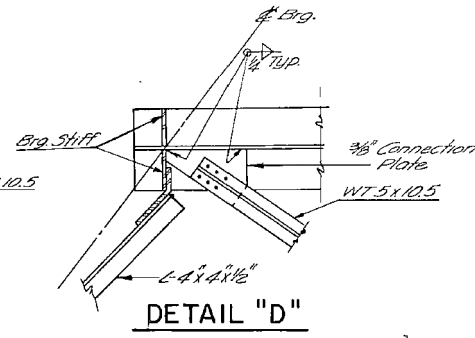
BOTTOM FLANGE

FIELD SPLICE DETAILS  
All bolts are 7/8" H.S.



DETAIL "A"

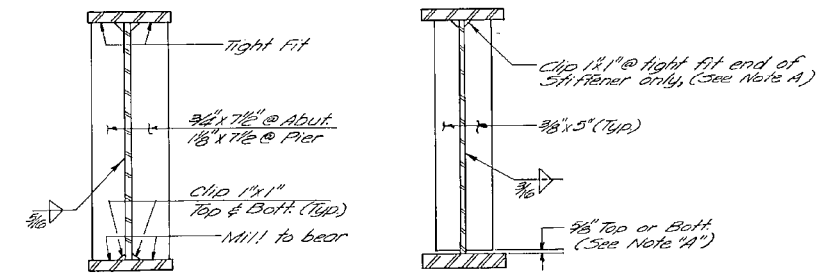
DETAIL "B"



DETAIL "D"

DETAIL "E"

DETAIL "C"  
LATERAL BRACING CONNECTION DETAILS



BEARING STIFFENER INTERMEDIATE STIFFENER

STIFFENER DETAILS

NOTE "A": The intermediate stiffener within 39'-0" either side of Pier shall be tight fit at the bottom and undercut 3/8" at the top. Intermediate stiffeners at all other locations shall be tight fit at the top and undercut 3/8" at the bottom.

NOTE: For Framing Plan see Sheet 13

For cross frame connections use 15/16" holes in gusset pl's with hardened washers over holes.

STRUCTURAL STEEL DETAILS  
U.S. 36 OVER FA. 408  
FA. 408 ROUTE MORGAN CO.  
SECTION 69-9HB  
STATION 48+93.75

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/3/2017	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

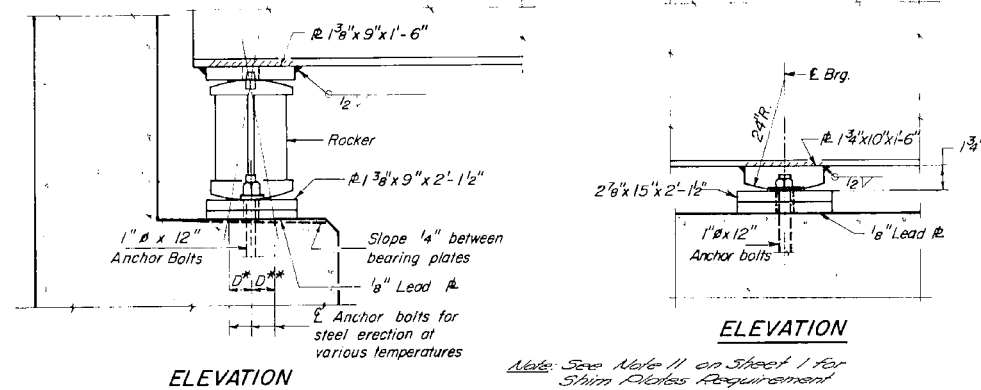
EXISTING BRIDGE PLANS SN 069-0044  
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

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CONTRACT NO. 72K31				

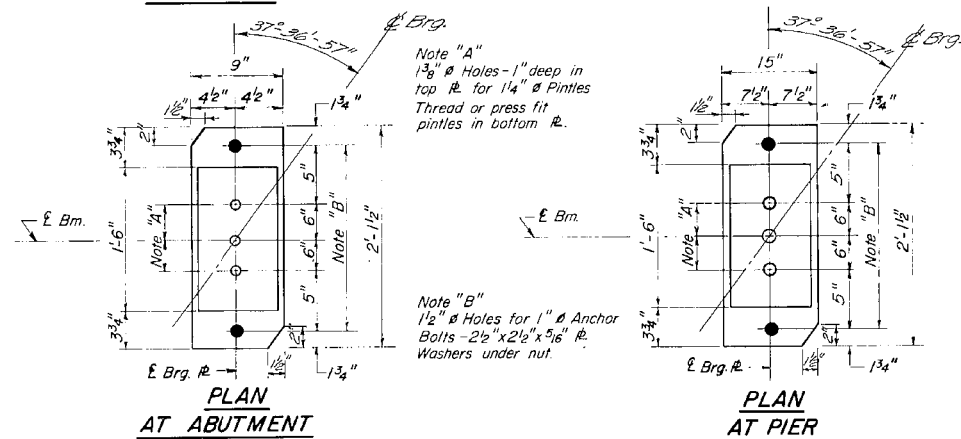
ILLINOIS FED. AID PROJECT

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**ELEVATION**

**ELEVATION**



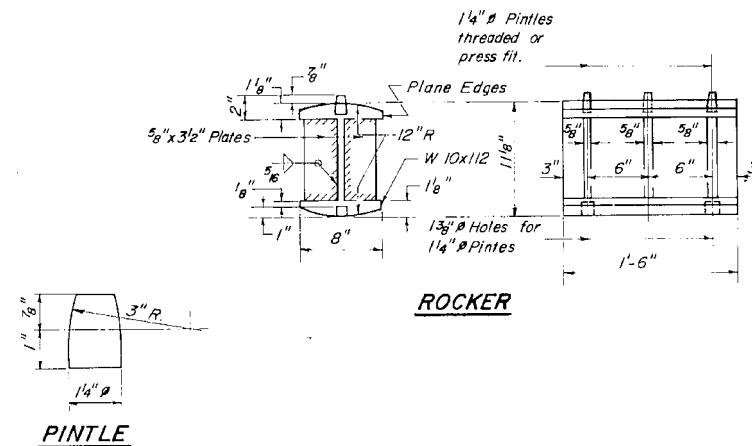
**PLAN AT ABUTMENT**

**PLAN AT PIER**

**\*TOP OF WEB ELEVATIONS**

GIRDER	W. ABUT.	SPLICE #1	PIER	SPLICE #2	E. ABUT.
# 1	628.047	627.866	627.672	627.633	627.296
# 2	628.172	627.391	627.797	627.758	627.421
# 3	628.297	628.116	627.922	627.883	627.546
# 4	628.424	628.243	628.048	628.009	627.673
# 5	628.549	628.368	628.173	628.134	627.798
# 6	628.674	628.493	628.298	628.259	627.923
# 7	628.799	628.618	628.424	628.385	628.048
# 8	628.799	628.618	628.424	628.385	628.048
# 9	628.713	628.532	628.338	628.299	627.962
# 10	628.620	628.439	628.245	628.206	627.869
# 11	628.528	628.347	628.152	628.113	627.777
# 12	628.434	628.253	628.058	628.019	627.683
# 13	628.341	628.160	627.965	627.926	627.590
# 14	628.248	628.067	627.873	627.834	627.497

\*For fabrication only (Undeformed Girder)



**ROCKER**

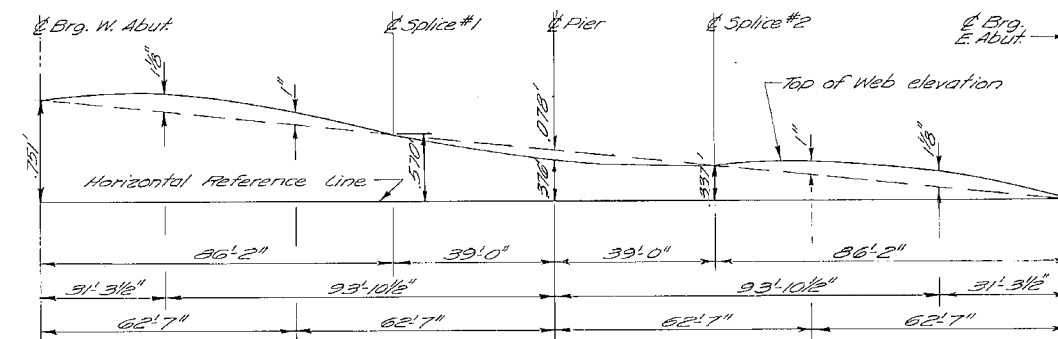
**PINTLE**

**MOMENT TABLE**  
(COMPOSITE IN POSITIVE AREA ONLY)

INTERIOR GIRDER MOMENT TABLE		
	04 Sp. 2x3	Pier
Is (in <sup>4</sup> )	30375	75829
Ic (in <sup>4</sup> )	72237	
Ss (in <sup>3</sup> )	1350	2549
Sc (in <sup>3</sup> )	1713	
R (K/)	.92	1.14
MR (K)	879	2314
fs (ksi)	7.81	10.89
s (K/)	.330	.330
Ms (K)	367	628
M (K)	1030	1043
Mimp (K)	206	209
Total (K)	1603	1880
fs (ksi)	11.23	8.85
fs Total (ksi)	19.04	19.74
VR (K)	57.8	

REACTION TABLE		
INTERIOR GIRDER REACTION TABLE		
	Abut.	Pier
R (K)	54.6	198.8
R (K)	41.6	79.8
Imp. (K)	8.3	16.0
R Total (K)	104.5	294.6

Is and Ss are the moment of inertia and section modulus of the steel section.  
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs.  
VR is the maximum  $\frac{1}{2}$  + Impact shear range in span used to determine shear connector spacing.



**CAMBER AND BLOCKING DIAGRAM**

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

- a.) D\* (Side of brg. away from fixed brg.)  
D\* =  $\frac{1}{8}$ " per each 100' of expansion for every 15° fall below the normal temp. of 50°F.
- D\*\* (Side of brg. toward fixed brg.)  
D\*\* =  $\frac{1}{8}$ " per each 100' of expansion for every 15° rise above the normal temp. of 50°F.

- b.) After beams have been erected and dimensions D\* & D\*\* determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

BEARING DETAILS  
TOP OF WEB ELEV. & CAMBER DIAGRAM  
US 36 OVER FA. 408  
FA. 408 ROUTE MORGAN CO.  
SECTION 69-9HB  
STATION 48+93.75

JOB NO. 346

USER NAME = dudleybm	DESIGNED -	REVISED -
PLOT SCALE = 100,0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/3/2017	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS SN 069-0044  
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(25) BP	MORGAN	6	6
CONTRACT NO. 72K31				
ILLINOIS FED. AID PROJECT				