

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

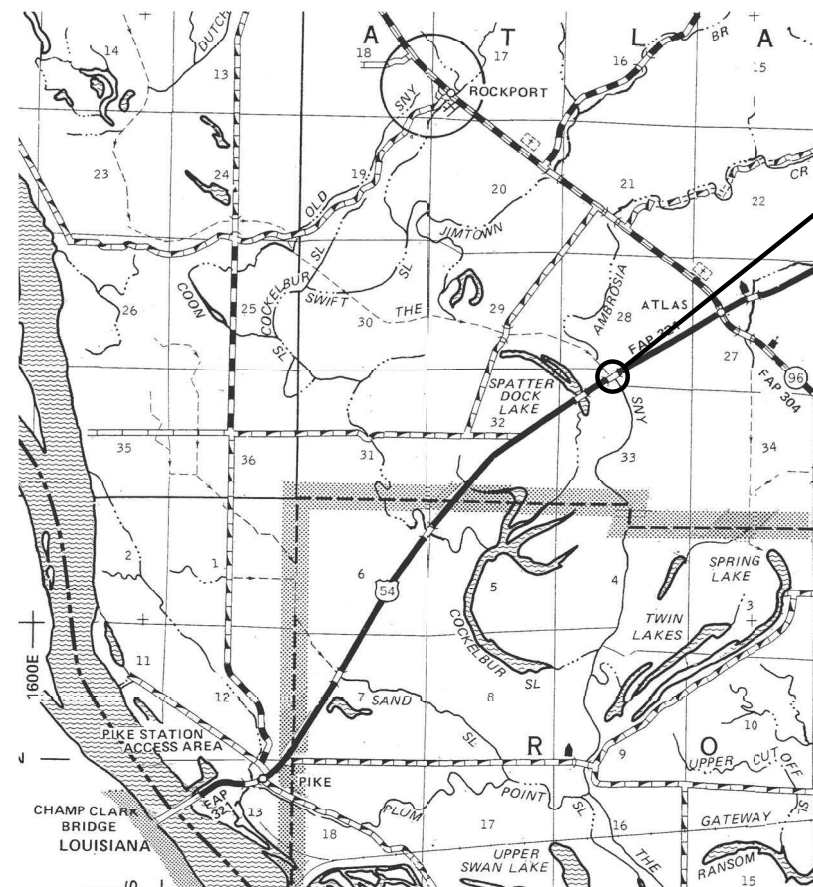
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
321	(105BR-1)BP	PIKE	8	1
		ILLINOIS	CONTRACT NO. 72649	

FOR INDEX OF SHEETS, SEE SHEET NO. 2

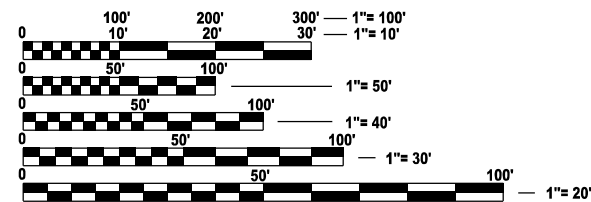
PROPOSED
HIGHWAY PLANS

FAP ROUTE 321 (US 54)
SECTION (105BR-1)BP
PROJECT NHPP-B17E(168)
BRIDGE PAINTING
PIKE COUNTY

C-96-022-25



PROJECT LOCATION:
SN 075-0080
US 54 OVER THE SNY
1 MI SW IL 96



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

PROJECT ENGINEER: BRANDON DUDLEY (217-785-9290)
PROJECT MANAGER

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

CONTRACT NO. 72649

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED August 12, 2024

[Signature]
REGIONAL ENGINEER

October 4, 2024
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

October 4, 2024
[Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

HIGHWAY STANDARDS

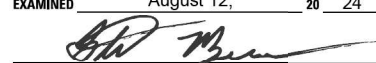
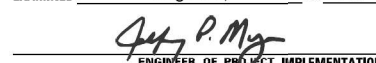
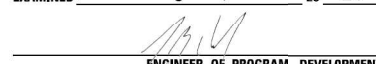
INDEX OF SHEETS

- 1 COVER SHEET
- 2 INDEX, STANDARDS, GENERAL NOTES, & SIGNATURES
- 3 SUMMARY OF QUANTITIES
- 4-8 EXISTING BRIDGE PLANS, SN 075-0080

- 000001-08
- 001006
- 701001-02
- 701006-05
- 701301-04
- 701321-18
- 701901-09
- 704001-08
- 782006-01

GENERAL NOTES:

1. WORK SHALL CONSIST OF BLASTING AND PAINTING STRUCTURAL STEEL AT LOCATIONS DESCRIBED IN THE SPECIAL PROVISIONS. CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES". ALL AREAS TO BE PAINTED SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING PER SSPC SP 10. ALL EXISTING STEEL CLEANED SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1- OZ/E/U. THE COLOR OF THE FINAL FINISH COATS SHALL BE AS DESCRIBED IN THE SPECIAL PROVISIONS.
2. THE USE OF AIR MONITORS WILL BE REQUIRED AT LOCATIONS AS CALLED OUT IN THE SPECIAL PROVISIONS.
3. THE SSPC-QP-1 AND SSPC-QP2 PAINTING CONTRACTOR CERTIFICATIONS WILL BE REQUIRED.
4. CARE SHALL BE TAKEN NOT TO DAMAGE RUBBER BEARING OR JOINT COMPONENTS DURING BLASTING AND CLEANING OPERATIONS. ANY DAMAGE TO THESE COMPONENTS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. RUBBER COMPONENTS SHALL NOT BE PAINTED.
5. UPON COMPLETION OF PAINTING OPERATIONS, THE CONTRACTOR SHALL REMOVE ALL DEBRIS FROM PIER OR ABUTMENT CAPS UPON WHICH PAINTING OPERATIONS TOOK PLACE. FINAL CLEANUP SHALL BE CONSIDERED INCIDENTAL TO THE PAINT PAY ITEM FOR THE RESPECTIVE LOCATION. THE ENGINEER SHALL HAVE THE RIGHT TO WITHHOLD PAYMENT UNTIL SATISFACTORY CLEANUP IS ACHIEVED.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS DISTRICT 6	
EXAMINED	August 12, 20 24
 ENGINEER OF OPERATIONS	
EXAMINED	August 7, 20 24
 ENGINEER OF PROJECT IMPLEMENTATION	
EXAMINED	August 5, 20 24
 ENGINEER OF PROGRAM DEVELOPMENT	

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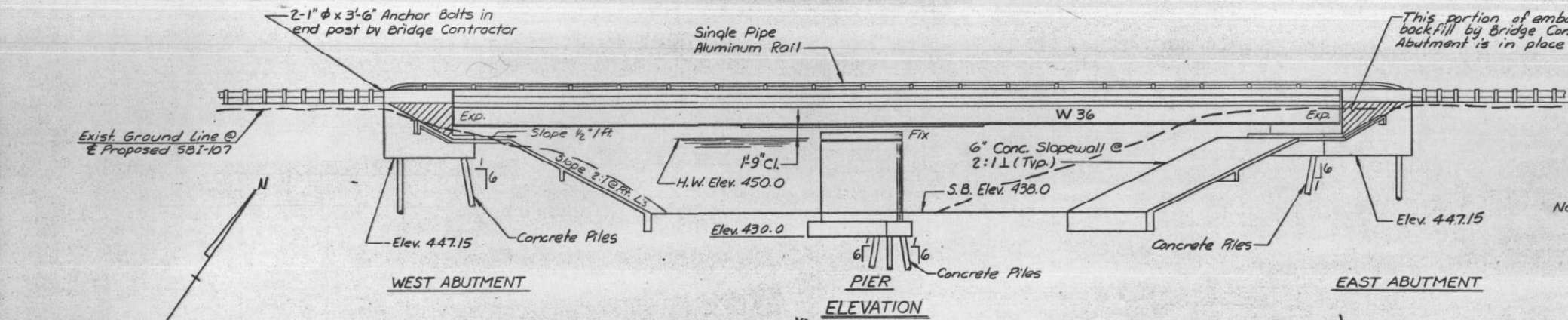
	USER NAME = brandon.dudley	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INDEX OF SHEETS, STANDARDS, GENERAL NOTES, & SIGNATURES	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			321	(105BR-1)BP	PIKE	8	2
		CHECKED -	REVISED -			CONTRACT NO. 72649				
	PLOT DATE = 7/15/2024	DATE -	REVISED -		SCALE:	SHEET	OF 1	SHEETS	STA.	TO STA.
						ILLINOIS FED. AID PROJECT				

B.M. Chisel Square S.E. Wingwall Sny River Bridge,
15' Rt. of Rte. 107 Sta. 274+96, Elev. 455.81
EXISTING 150' TRUSS?

104 B
274+20

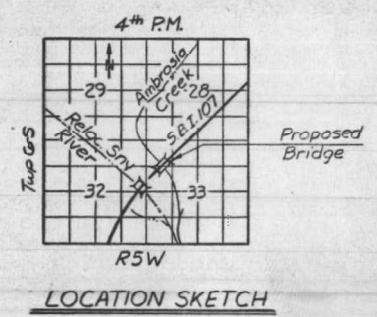
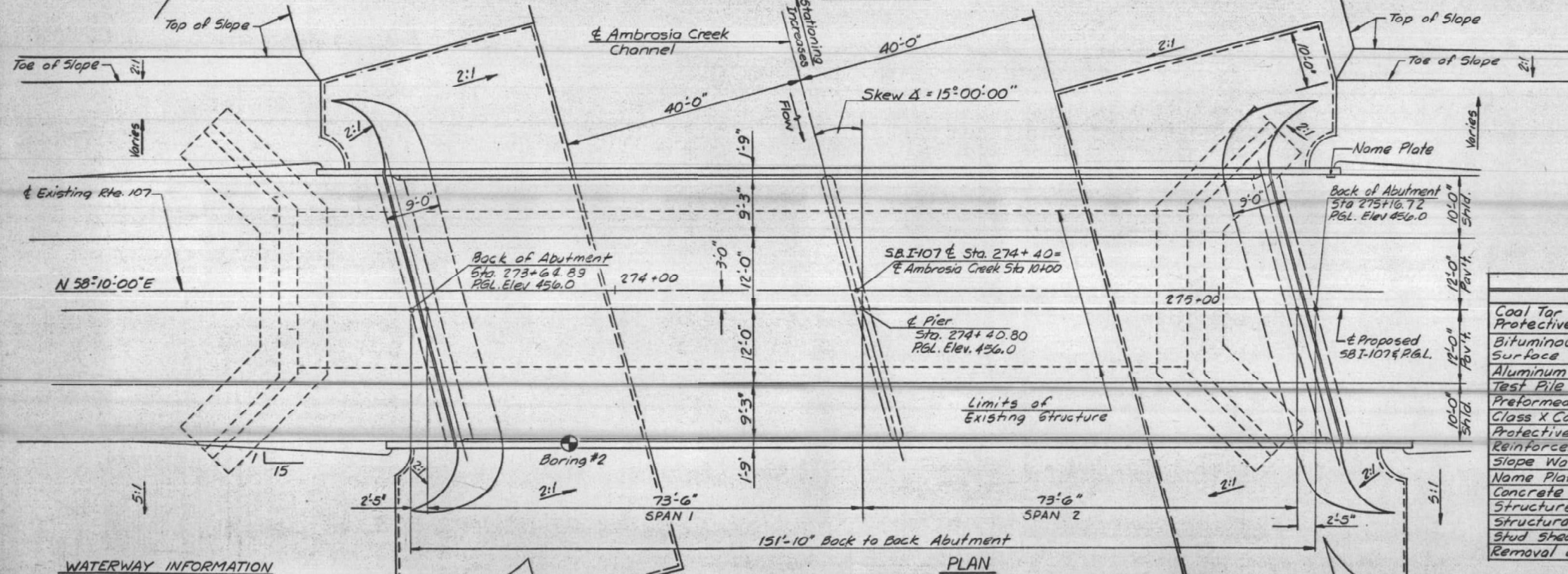
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 1
SBI 107	105 BR-1	PIKE	67	34	15 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



STATION 274+40.00
BUILT 19 BY
STATE OF ILLINOIS
SBI. RT 107 SEC. 105 BR-1
LOADING H520
NAME PLATE
(See Std 2113)

Note: Existing structure to be removed 2' below Natural Ground (or Finished Ground, if lower) by Bridge Contractor. Existing struc. single span truss 150' on conc. abutments. (No salvage)



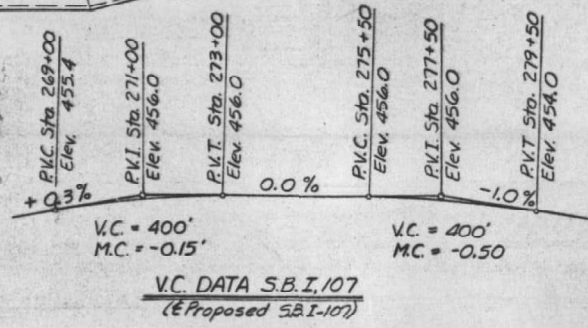
TOTAL BILL OF MATERIAL

Item	Unit	Super.	Sub.	Total
Coal Tar Interlayer Protective Coat	Sq Yd's.	701		701
Bituminous Concrete Surface Course, Class I	Tons	59		59
Aluminum Railing	Lin. Ft.	339		339
Test Pile Concrete	Each		3	3
Preformed Joint Sealer 2/2	Lin. Ft.	96		96
Class X Concrete	Cu. Yds.	211.5	214.5	426.0
Protective Coat	Sq. Yds.	130		130
Reinforcement Bars	Lbs.	56,479	11,967	68,446
Slope Wall (6 inches)	Sq Yds.			775
Name Plates	Each			1
Concrete Piles	Lin. Ft.		1,759	1,759
Structure Excavation	Cu. Yds.		350	350
Structural Steel	Lump Sum			1
Stud Shear Connectors	Each	2,016		2,016
Removal of Existing Structures	Each			1

WATERWAY INFORMATION
 Drainage Area — 6.9 Sq. Miles
 Required Opening (50 Year Flood) — 1200 Sq. Ft.
 Provided Opening — 1212 Sq. Ft.
 Present Opening — 1526 Sq. Ft.
 Q = 8938 cfs

DESIGNED R.C. THOMPSON
 CHECKED J.S. CHADWICK
 DRAWN J.S. CHADWICK
 CHECKED R.C. THOMPSON

35 10-30-73 YIG



PROFILE AMBROSIA CREEK

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
[Signature]
Engineer of Bridge & Structures

GENERAL PLAN AND ELEVATION
S.B.I 107 SECTION 105 BR-1
PIKE COUNTY
STA. 274+40 S.B.I 107
OVER AMBROSIA CREEK

McFARLAND-JOHNSON-GIBBONS-ENGINEERS, INC.

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PLOT DATE = 7/15/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

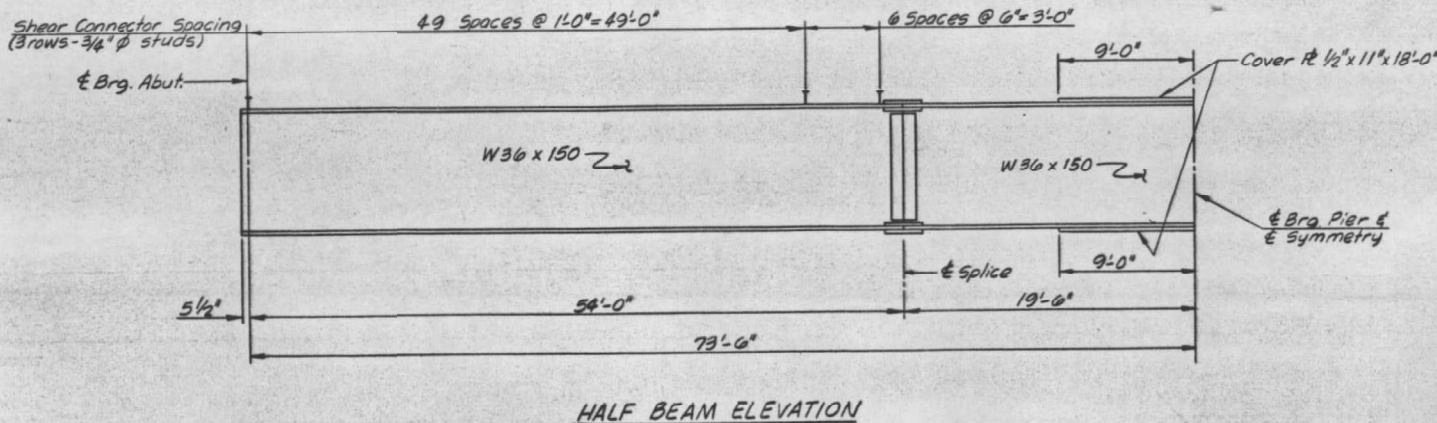
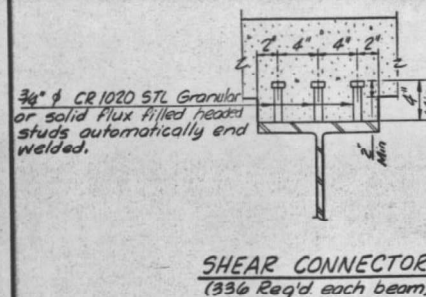
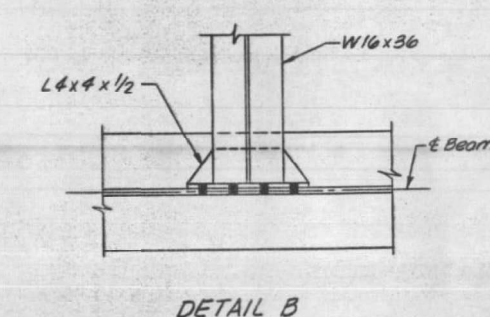
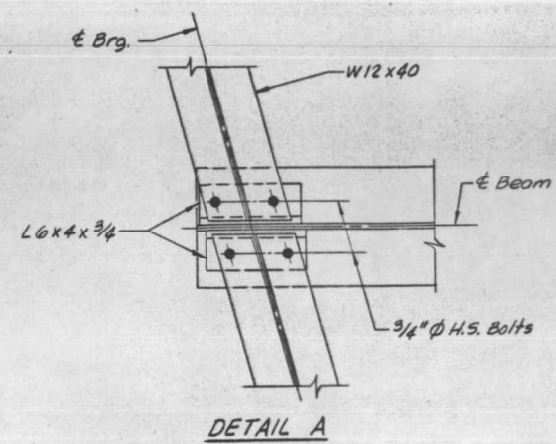
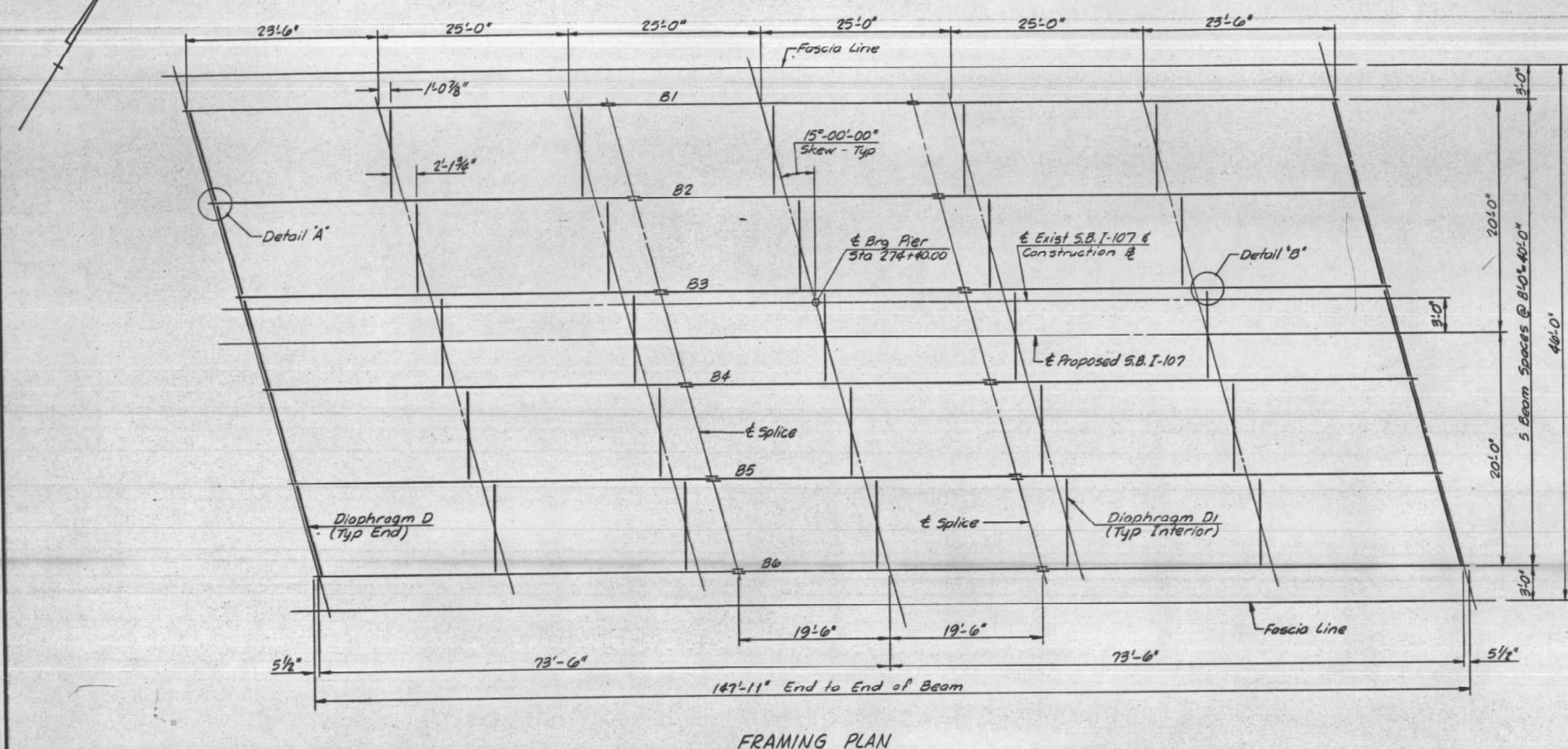
EXISTING BRIDGE PLANS, SN 075-0080
(FOR INFORMATION ONLY)

SCALE: SHEET OF 5 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
321	(105BR-1)BP	PIKE	8	4
CONTRACT NO. 72649				
ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 7
SBI 107	105 BR-1	PIKE	67	40	15 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



NOTE
For diaphragms and additional details,
see Sheet No. 8.

DESIGNED	F.A. ZMITROWITZ
CHECKED	R.C. THOMPSON
DRAWN	J.E. MONDOLFI
CHECKED	C.J. YONKIN

FRAMING PLAN	
SBI 107	SECT. 105 BR-1
PIKE COUNTY	
STA. 274 + 40	of SBI 107
McFARLAND-JOHNSON-GIBBONS ENGINEERS, INC.	

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PLOT DATE = 7/15/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

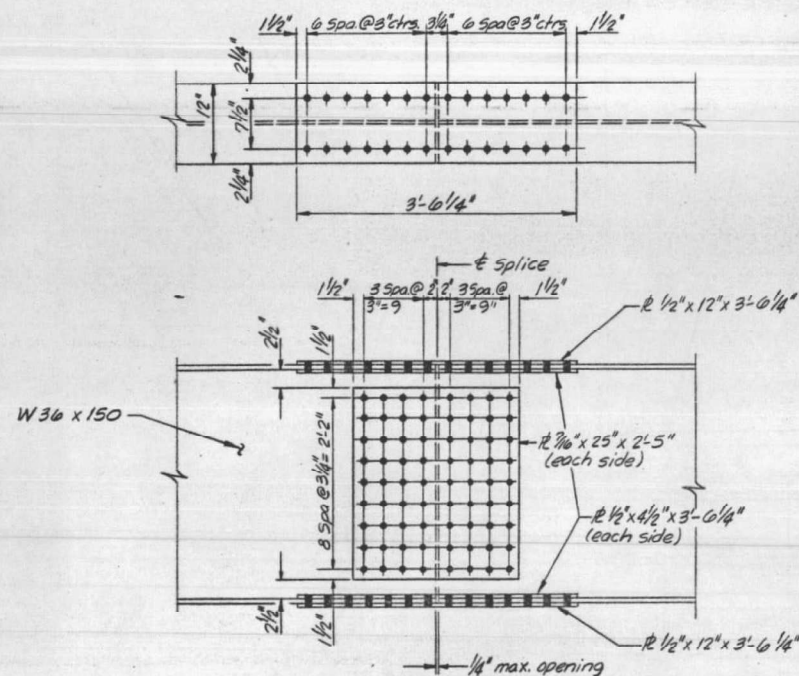
EXISTING BRIDGE PLANS, SN 075-0080
(FOR INFORMATION ONLY)

SCALE: SHEET OF 5 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
321	(105BR-1)BP	PIKE	8	5
CONTRACT NO. 72649				
ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 8 15 SHEETS
SBI. 107	105 BR-1	PIKE	67	41	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



INTERIOR BEAM MOMENT TABLE

	0.4 Sp1	Pier
I_s (in ⁴)	9012	12,043
I_c (in ⁴)	21,369	
S_s (in ³)	502	686
S_c (in ³)	702	
Q (k/1)	0.974	0.974
M_D (1k)	351	702
P_s (ksi)	8.4	12.3
S_D (k/1)	0.454	0.454
M_S (1k)	187	268
M_G (1k)	632	437
M_{Imp} (1k)	157	109
TOTAL (1k)	976	814
SDL+LL+Imp		
P_s @ \pm Imp (ksi)	16.7	14.2
P_s Total (ksi)	25.1	26.5
VR	555	

I_s and S_s are for the steel section
 I_c and S_c are for the composite section ($n=10$)
 S_D is the superimposed dead load
VR is the maximum \pm Impact shear range in span used to determine shear connector spacing.

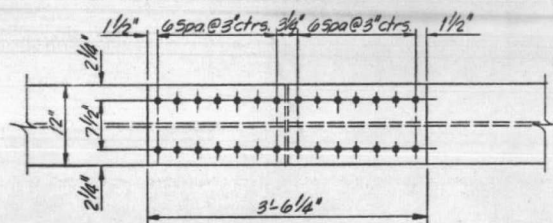
TOP OF FLANGE ELEVATIONS *

BEAM	1	2	3	4	5	6
\pm Brg W. Abut.	454.772	454.938	455.063	455.063	454.938	454.772
\pm Splice	454.772	454.938	455.063	455.063	454.938	454.772
\pm Pier	454.772	454.938	455.063	455.063	454.938	454.772
\pm Splice	454.772	454.938	455.063	455.063	454.938	454.772
\pm Brg E. Abut.	454.772	454.938	455.063	455.063	454.938	454.772

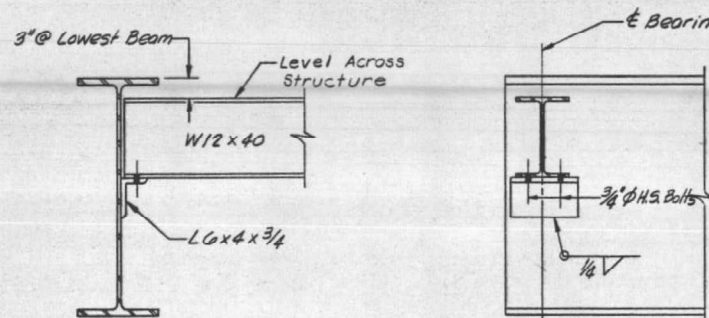
* For Fabrication only.

INTERIOR BEAM REACTION TABLE

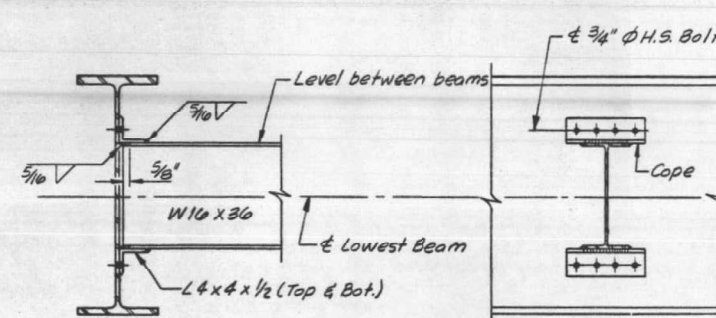
	Abut.	Pier	Abut.
$R_D + S_D$ (K)	39	131	39
R_L (K)	48	64	48
Imp (K)	12	16	12
R TOTAL (K)	99	211	99



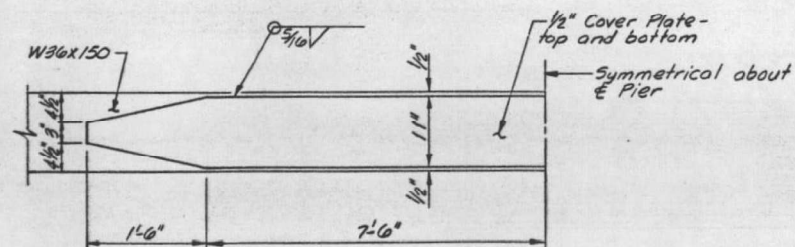
SPLICE DETAIL
(12 Req'd)



END DIAPHRAGM
(10 Req'd)



INTERIOR DIAPHRAGM
(25 Req'd)



COVER PLATE

DESIGNED	R. G. THOMPSON
CHECKED	F. A. ZMITROWITZ
DRAWN	J. E. MONDOLFI
CHECKED	C. J. YONKIN

STRUCTURAL STEEL
SBI. 107 SECT. 105 BR-1
PIKE COUNTY
STA. 274 + 40 @ S.B.I. 107

McFARLAND-JOHNSON-GIBBONS ENGINEERS, INC.

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	CHECKED -	REVISED -
PLOT DATE = 7/15/2024	DATE -	REVISED -

STATE OF ILLINOIS
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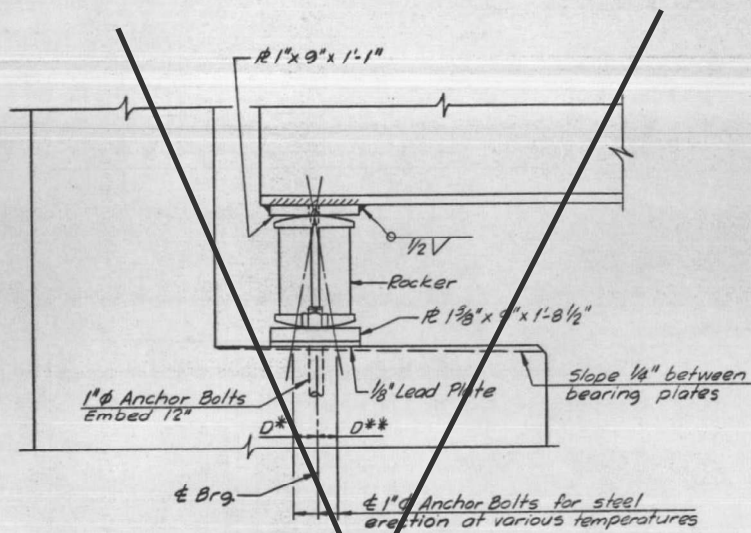
EXISTING BRIDGE PLANS, SN 075-0080
(FOR INFORMATION ONLY)

SCALE: SHEET OF 5 SHEETS STA. TO STA.

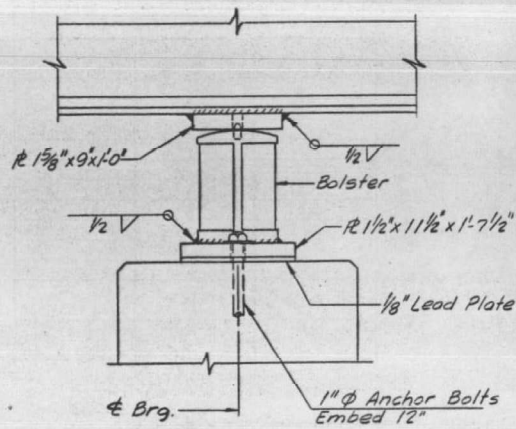
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
321	(105BR-1)BP	PIKE	8	6
CONTRACT NO. 72649				
ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

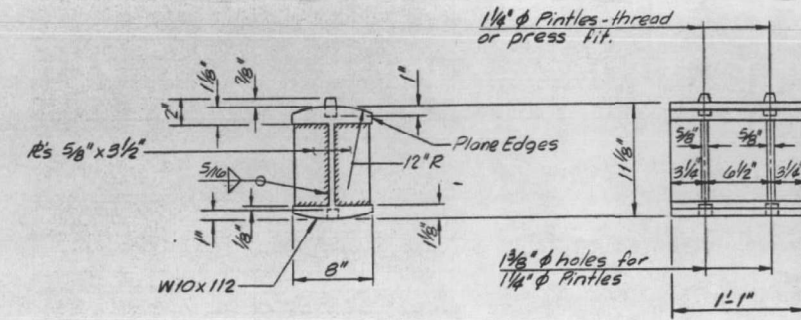
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 6
SBI. 107	BR-1	PIKE	67	39	15 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



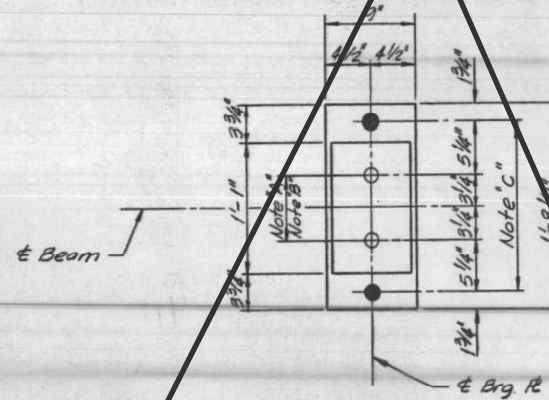
ELEVATION



ELEVATION



ROCKER

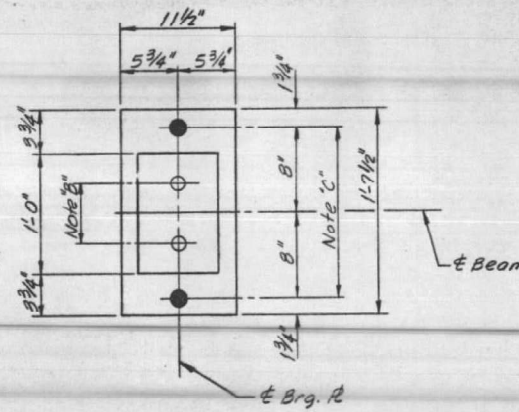


PLAN AT ABUTMENT
(12 Required)

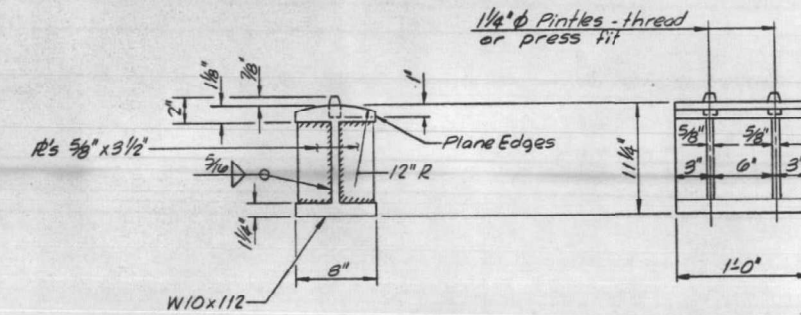
Note A: 1 3/8" ϕ holes - 1" deep in Rocker for 1/4" ϕ Pintles.
1/4" ϕ Pintles - 1 1/2" long in bottom plate. Thread or press fit.

Note B: 1 3/8" ϕ holes in top plate for 1/4" ϕ Pintles. 1 1/2" ϕ Pintles - 1 1/2" long in Rocker or Bolster. Thread or press fit.

Note C: 1 1/2" ϕ holes for 1" Anchor Bolts. 2 1/2" x 2 1/2" x 3/16" R washer under nut.



PLAN AT PIER
(6 Required)

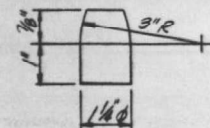


BOLSTER

NOTES ON SETTING OF ANCHOR BOLTS AT EXPANSION BEARINGS

- D* (Side of brg away from fixed brg.)
D* = 1/8" per 100' of expansion for every 15° fall below the normal temperature of 50°F.
 - D** (Side of brg toward fixed brg.)
D** = 1/8" per 100' of expansion for every 15° rise above the normal temperature of 50°F.
2. After beams have been erected and dimensions D* or D** determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

BEARING ASSEMBLY DETAILS



PINTLE

DESIGNED	R. C. THOMPSON
CHECKED	F. A. ZMITROWITZ
DRAWN	J. E. MONDOLFI
CHECKED	C. J. YONKIN

BEARING DETAILS
SBI. 107 SECT. 105 BR-1
PIKE COUNTY
STA. 274 + 40 @ SBI. 107

McFARLAND-JOHNSON-GIBBONS ENGINEERS, INC.

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		DRAWN	-	REVISED	-
		CHECKED	-	REVISED	-
PLOT DATE	= 7/15/2024	DATE	-	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 075-0080
(FOR INFORMATION ONLY)

SCALE: SHEET OF 5 SHEETS STA. TO STA.

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