09-18-2015 LETTING ITEM 034

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	1
	ILLINOIS	CONTRACT NO. 72H87		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

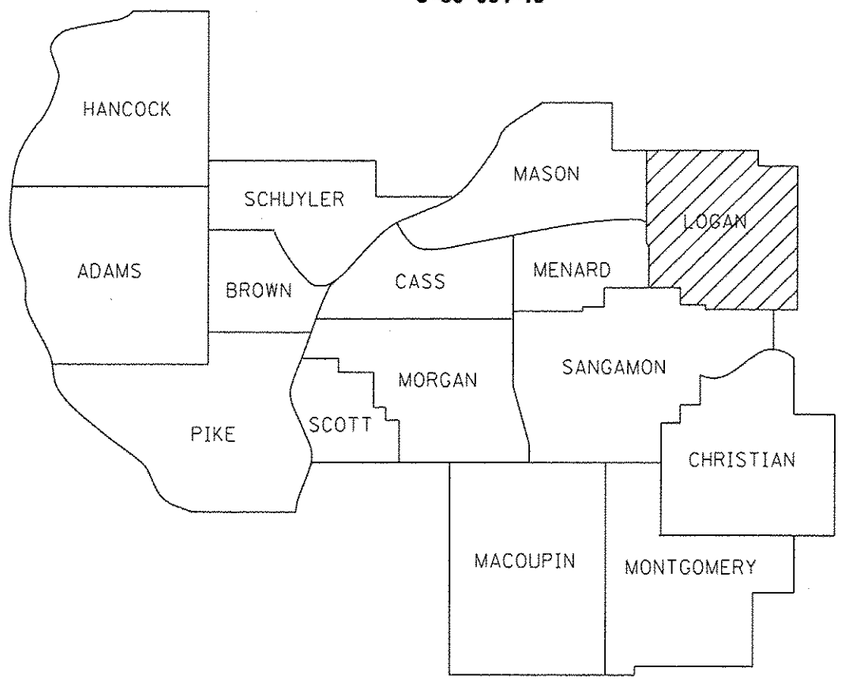
PROPOSED
BRIDGE PAINTING

VARIOUS ROUTES
SECTION D6 BDGE PAINTING 2016

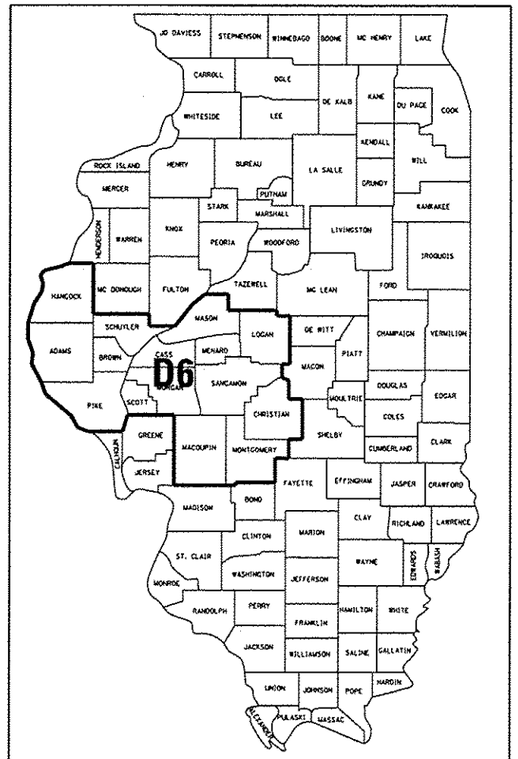
BRIDGE PAINTING
LOGAN COUNTY

C-96-064-15

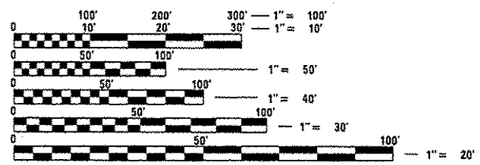
FOR INDEX OF SHEETS, SEE SHEET NO. 2



D-96-064-15



LOCATION OF SECTION INDICATED THUS: –



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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED July 8 20 15
Roger Z. Pruitt
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
Aug 14 20 15
John D. Baranzelli P.E. /a
ENGINEER OF DESIGN AND ENVIRONMENT
Aug 14 20 15
Omer Osman, P.E. /a
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

BRIDGE MAINTENANCE ENGINEER – BRANDON DUDLEY (217) 785-9290
BRIDGE INSPECTION ENGINEER – DAVE COPENBARGER (217) 785-5306

CONTRACT NO. 72H87

GROSS LENGTH = NA
NET LENGTH = NA

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

INDEX OF SHEETS

HIGHWAY STANDARDS

701001-02
701006-05
701101-04
701106-02
701201-04
701301-04
701400-08
701401-09
701423-08
701446-06
701901-04

GENERAL NOTES:

1. STRUCTURES TO BE PAINTED SHALL BE AS SPECIFIED ON THE PLAN SHEETS. CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES". THE AREAS TO BE PAINTED ON EACH BRIDGE SHALL BE AS SPECIFIED ON THE PLAN SHEETS. ALL AREAS TO BE PAINTED SHALL 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 EACH BRIDGE SHALL BE AS SPECIFIED ON THE PLAN SHEETS. THE COLORS SPECIFIED ON THE PLAN SHEETS SHALL CORRESPOND WITH THE COLOR SPECIFICATIONS SHOWN IN THE TABLE ON THIS PAGE.

2 THE USE OF AIR MONITORS WILL BE REQUIRED AT STRUCTURES SPECIFIED ON THE PLAN SHEETS. A MINIMUM OF 2 MONITORS WILL BE REQUIRED AT EACH SPECIFIED BRIDGE TO MONITOR ABRASIVE BLASTING OPERATIONS AT THOSE SITES, SEE SPECIAL PROVISIONS FOR "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES".

3. THE "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES" PAY ITEMS SHALL BE APPLICABLE AS CALLED OUT IN THE PLAN NOTES FOR EACH INDIVIDUAL STRUCTURE.

4. THE SSPC-QP-1 AND SSPC-QP2 PAINTING CONTRACTOR CERTIFICATIONS WILL BE REQUIRED FOR THESE BRIDGES.

5. 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.

6. UPON COMPLETION OF PAINTING OPERATIONS AT EACH LOCATION. 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 WITHOLD PAYMENT UNTIL SATISFACTORY CLEANUP IS ACHIEVED.

COLOR SPECIFICATION TABLE	
COLOR SPECIFIED	COLOR SPECIFICATION
GRAY	MUNSELL 5B 7/1
GREEN	MUNSELL 7.5G 4/8

WATER FILLED BARRIER SCHEDULE	
LOCATION	LENGTH
EB IL 10 @ SN 054-0046 & SN 054-0047	400'
WB IL 10 @ SN 054-0046 & SN 054-0047	400'
NB I-55 @ SN 054-0045	400'
SB I-55 @ SN 054-0045	400'

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT 6

EXAMINED JULY 6th 20 15
John C Wyngaard
ENGINEER OF OPERATIONS

EXAMINED June 29 20 15
Ron Dunlap
ENGINEER OF PROJECT IMPLEMENTATION

EXAMINED July 1 20 15
Jeffrey P. Mays
ENGINEER OF PROGRAM DEVELOPMENT

			CONSTR. CODE
			100% STATE
			BRIDGE
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	0014 VARIOUS
67100100	MOBILIZATION	L SUM	1	1
70100325	TRAFFIC CONTROL AND PROTECTION, STANDARD 701423	EACH	2	2
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1
70100800	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401	L SUM	1	1
70100815	TRAFFIC CONTROL AND PROTECTION, STANDARD 701446	L SUM	1	1
70800105	TEMPORARY WATER FILLED BARRIER	FOOT	1200	1200
X7010410	SPEED DISPLAY TRAILER	CAL MO	2	2
X7200201	WIDTH RESTRICTION SIGNING	L SUM	1	1
Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1	1
Z0007102	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 2	L SUM	1	1
Z0007103	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 3	L SUM	1	1
Z0007104	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 4	L SUM	1	1
Z0007105	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 5	L SUM	1	1
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	1
Z0010502	CLEANING AND PAINTING STEEL BRIDGE NO. 2	L SUM	1	1
Z0010503	CLEANING AND PAINTING STEEL BRIDGE NO. 3	L SUM	1	1
Z0010504	CLEANING AND PAINTING STEEL BRIDGE NO. 4	L SUM	1	1
Z0010505	CLEANING AND PAINTING STEEL BRIDGE NO. 5	L SUM	1	1

REV.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS, STANDARDS, GENERAL NOTES, SIGNATURES, & SUMMARY OF QUANTITITES

SCALE: | SHEET OF SHEETS | STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	2
		CONTRACT NO. 72H87		
	ILLINOIS FED. AID PROJECT			

CLEANING AND PAINTING STEEL BRIDGE NO. 1, SN 054-0009
IL 10 OVER SUGAR CREEK, 3.4 MILES EAST OF NEW HOLLAND, 40.1763°N, 89.5195° W

WORK SHALL CONSIST OF BLASTING AND PAINTING ALL SURFACES OF ALL FASCIA BEAMS AND ALL BEAM ENDS, END DIAPHRAGMS OR CROSS FRAMES, AND STEEL COMPONENTS OF BEARINGS AT ALL SUBSTRUCTURE UNITS. BEAM END PAINTING (74 ENDS) SHALL EXTEND 5' FROM THE ENDS OF THE BEAMS LONGITUDINALLY. THE COLOR OF THE FINAL FINISH COAT FOR THE OUTSIDE AND BOTTOM OF THE FASCIA BEAMS SHALL BE GREEN. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR SURFACES SHALL BE GRAY.

CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES SHALL BE UTILIZED. AIR MONITORS WILL BE REQUIRED.

CLEANING AND PAINTING STEEL BRIDGE NO. 2, SN 054-0046
I-55 SB OVER IL 10, I-55/IL 10 INT. WEST OF LINCOLN, 40.1599°N, 89.4176° W

WORK SHALL CONSIST OF BLASTING AND PAINTING THE OUTER HALF AND BOTTOM OF THE BOTTOM FLANGES ON BOTH FASCIA BEAMS. ALSO INCLUDED SHALL BE ALL BEAM ENDS, END DIAPHRAGMS OR CROSS FRAMES, AND STEEL COMPONENTS OF BEARINGS AT BOTH ABUTMENTS. BEAM END PAINTING (20 ENDS) SHALL EXTEND 10' FROM THE ENDS OF THE BEAMS LONGITUDINALLY. THE COLOR OF THE FINAL FINISH COAT FOR THE OUTSIDE AND BOTTOM OF THE FASCIA BEAMS SHALL BE GREEN. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR SURFACES SHALL BE GRAY.

CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES SHALL BE UTILIZED. AIR MONITORS WILL BE REQUIRED.

CLEANING AND PAINTING STEEL BRIDGE NO. 3, SN 054-0047
I-55 NB OVER IL 10, I-55/IL 10 INT. WEST OF LINCOLN, 40.1599°N, 89.4176° W

WORK SHALL CONSIST OF BLASTING AND PAINTING THE OUTER HALF AND BOTTOM OF THE BOTTOM FLANGES ON BOTH FASCIA BEAMS. ALSO INCLUDED SHALL BE ALL BEAM ENDS, END DIAPHRAGMS OR CROSS FRAMES, AND STEEL COMPONENTS OF BEARINGS AT BOTH ABUTMENTS. BEAM END PAINTING (18 ENDS) SHALL EXTEND 10' FROM THE ENDS OF THE BEAMS LONGITUDINALLY. THE COLOR OF THE FINAL FINISH COAT FOR THE OUTSIDE AND BOTTOM OF THE FASCIA BEAMS SHALL BE GREEN. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR SURFACES SHALL BE GRAY.

CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES SHALL BE UTILIZED. AIR MONITORS WILL BE REQUIRED.

CLEANING AND PAINTING STEEL BRIDGE NO. 4, SN 054-0045
CH E52 OVER I-55 NB, 0.8 MILES SOUTH OF I-55/IL 10 INT, 40.1470°N, 89.4178° W

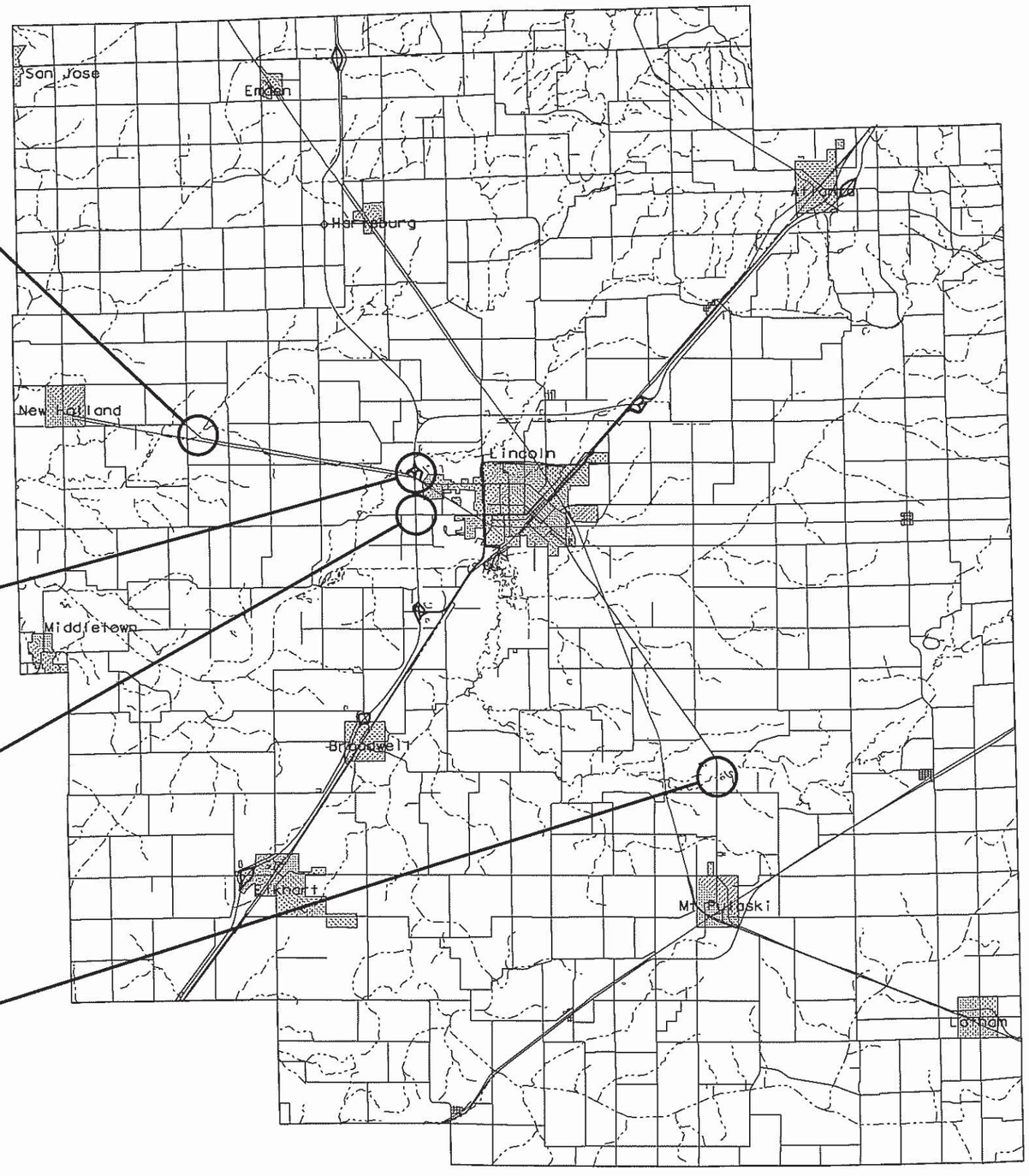
WORK SHALL CONSIST OF BLASTING AND PAINTING ALL STRUCTURAL STEEL. THE COLOR OF THE FINAL FINISH COAT FOR THE OUTSIDE AND BOTTOM OF THE FASCIA BEAMS SHALL BE GREEN. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR SURFACES SHALL BE GRAY.

CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES SHALL BE UTILIZED. AIR MONITORS WILL BE REQUIRED.

CLEANING AND PAINTING STEEL BRIDGE NO. 5, SN 054-0021
IL 121 OVER SALT CREEK, 3.9 MILES NORTH OF IL 54, 40.0544°N, 89.2820° W

WORK SHALL CONSIST OF BLASTING AND PAINTING ALL BEAM ENDS, END DIAPHRAGMS OR CROSS FRAMES, AND STEEL COMPONENTS OF BEARINGS AT BOTH ABUTMENTS AND PIERS 2 AND 5. BEAM END PAINTING (36 ENDS) SHALL EXTEND 5' FROM THE ENDS OF THE BEAMS LONGITUDINALLY. THE COLOR OF THE FINAL FINISH COAT FOR THE OUTSIDE AND BOTTOM OF THE FASCIA BEAMS SHALL BE GREEN. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR SURFACES SHALL BE GRAY.

CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES SHALL BE UTILIZED. AIR MONITORS WILL BE REQUIRED.



LOGAN COUNTY

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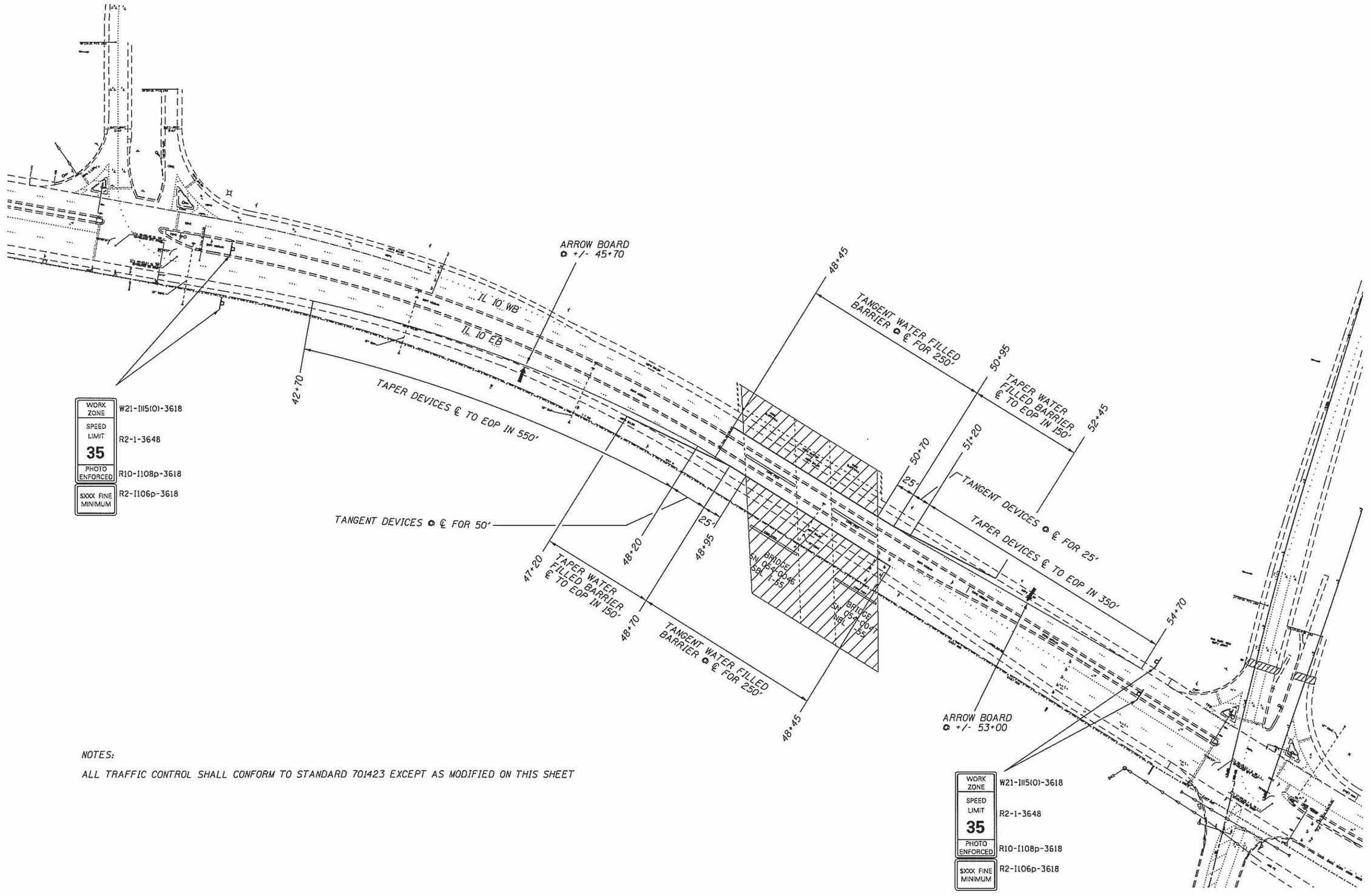
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LOCATION MAP

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	06 BDGE PAINTING 2016	LOGAN	28	3
		CONTRACT NO. 72H87		
		ILLINOIS FED. AID PROJECT		



NOTES:

ALL TRAFFIC CONTROL SHALL CONFORM TO STANDARD 701423 EXCEPT AS MODIFIED ON THIS SHEET

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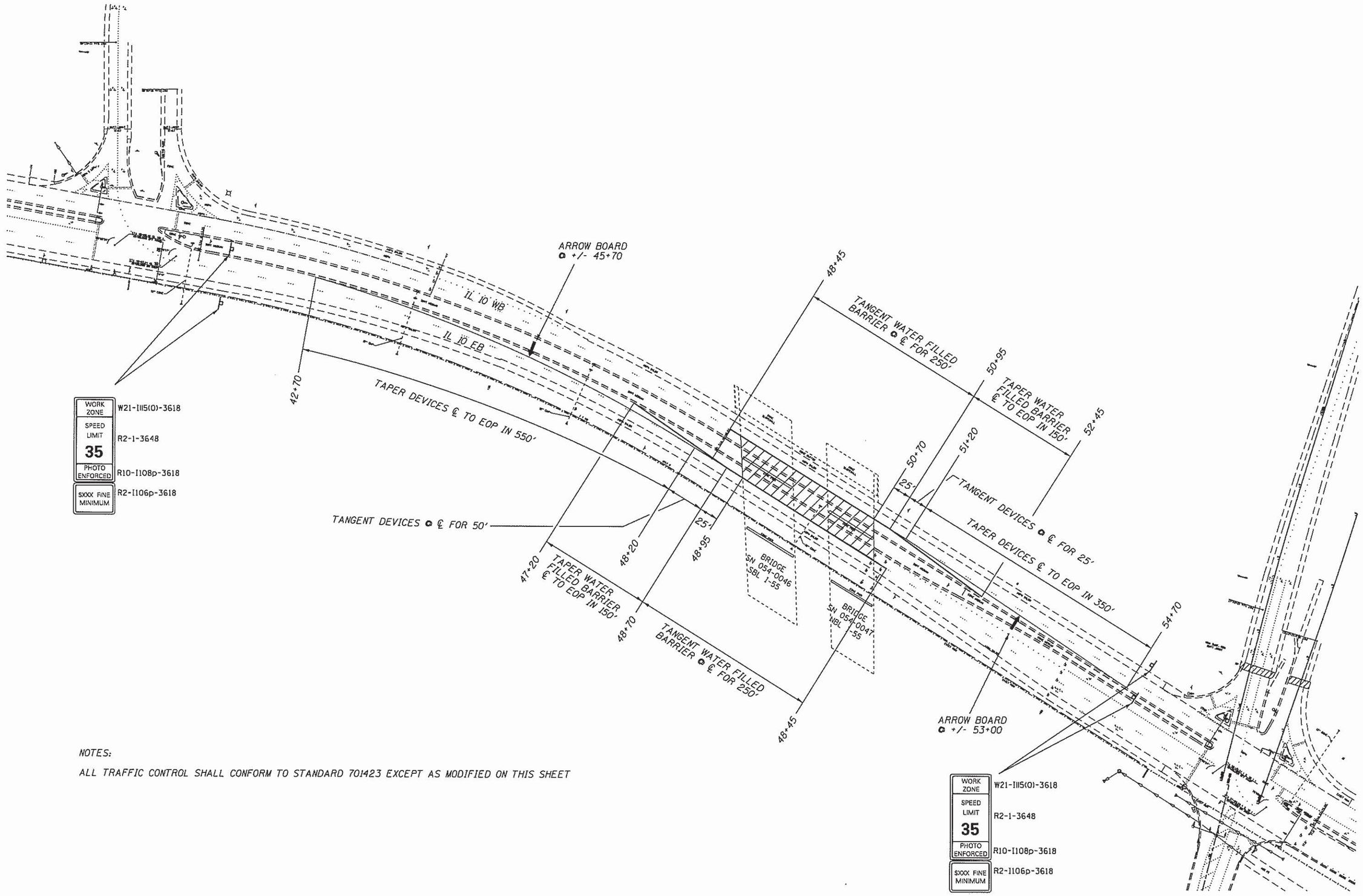
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE 1 TRAFFIC CONTROL DETAIL
SN 054-0046 & 0047

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	4
		CONTRACT NO. 72H87		
	ILLINOIS FED. AID PROJECT			



NOTES:

ALL TRAFFIC CONTROL SHALL CONFORM TO STANDARD 701423 EXCEPT AS MODIFIED ON THIS SHEET

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE 2 TRAFFIC CONTROL DETAIL
SN 054-0046 & 0047

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	5
		CONTRACT NO. 72H87		
	ILLINOIS FED. AID PROJECT			

054-0009

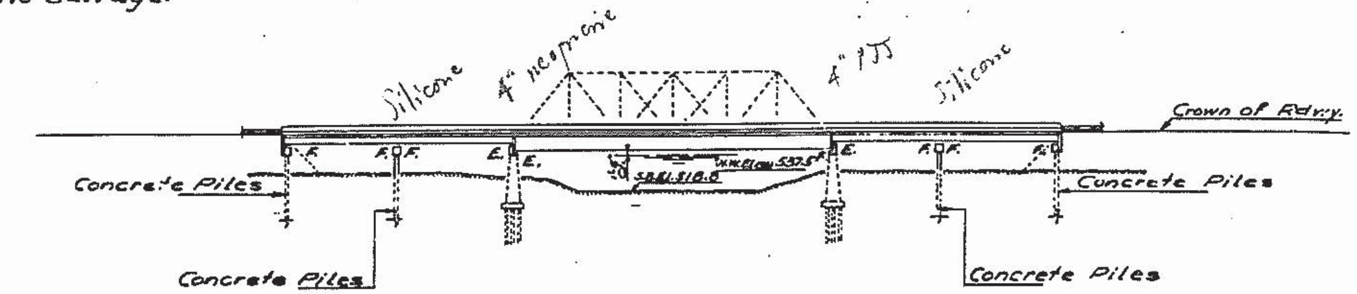
Bench mark on N.W. Wingwall of existing bridge Rt. Sta. 522+81 - Elev. 543.49.

Existing structure № 054-0009 built as S.B.I. 20, Sec. 102B&C in 1931 @ Sta. 524+30. Existing truss span to be replaced with Plate Girder. Concrete deck on the 4 spans to be removed and replaced. Existing abutments, Wings & Piers to be rebuilt to accommodate the new portion of the superstructure. No salvage.

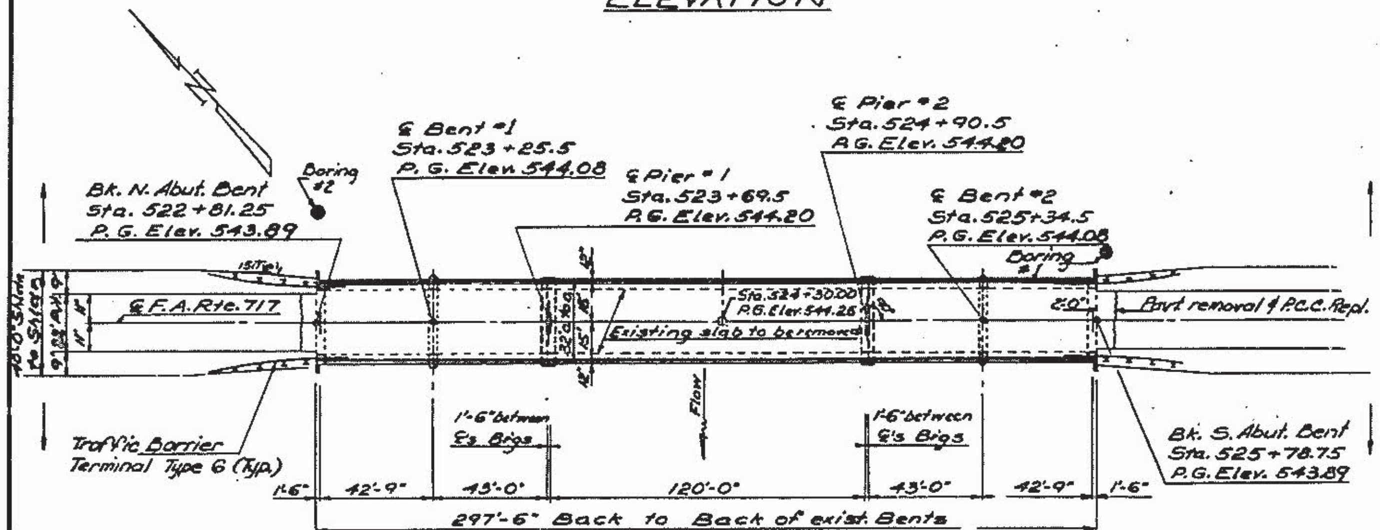
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 717	102BR	Logan	23	7

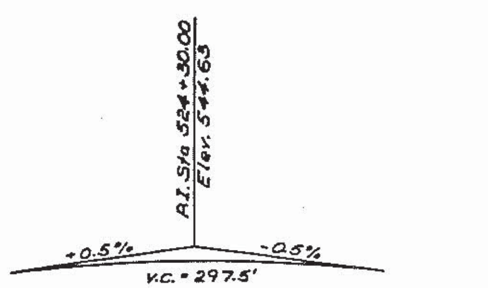
SHEET NO. 1 / 14 SHEETS



ELEVATION



PLAN



PROPOSED PROFILE F.A. RTE. 717

STATION 524+30.00
REBUILT 197_ BY
STATE OF ILLINOIS
F.A. RTE. 717 SEC. 102 BR
F.A. PROJ.
LOADING HS20*
STR. No. 054-0009

NAME PLATE
See Std. 2113

GENERAL NOTES

See Proposal for Boring Data.

All existing structural steel to remain in place shall be cleaned by Method I & painted with Basic lead silico chromate paint system.

It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.

Fasteners shall be high strength bolts. Bolts 3/4" ϕ, open holes 13/16" ϕ, unless otherwise noted.

Calculated weight of Structural Steel = 17,600# (M183) 146,000# (M223 Grade 50)

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 or cross frames over supports.

Expansion bolts shall consist of self drilling expansion anchors and 3/4"ϕ x 12" hooked bolts.

All new structural steel shall be painted with Basic lead silico chromate paint system both in shop & field.

All structural steel shall be AASHTO M183 except as noted.

Protective Coat shall be applied in accordance with Art. 503.12 of the Std. Specifications.

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 or wide flange beams.

All reinforcement bars shall be AASHTO M31 Grade 60.

The Contractor shall drive one (1) Concrete Test pile in a permanent location at So. Abut. as directed by the Engineer before ordering the remainder of piles.

TOTAL BILL OF MATERIAL

Item		Super	Sub	Total
Structural Steel	Lump Sum			1
Reinforcement Bars	Lbs.	29930	4670	34600
Reinforcement Bars (Epoxy coated)	Lbs.	32,910		32,910
Protective Coat	Sq. Yds.	1200		1200
Class X Concrete	Cu. Yds.	295.3	37.9	333.2
Preformed Jt. Sealer 2¼"	Lin. Ft.	32		32
Neoprene Expansion Jt. 2¼"	Lin. Ft.	31		31
Stud Shear Connectors	Ea.	4275		4275
Removal of Existing Superstr.	Lump Sum			1
Concrete Removal	Cu. Yds.		37	37
Expansion Bolts 3/4"	Ea.		120	120
Name Plates	Ea.			1
Pavement Removal & P.C.C. Replacement Type II (10")	Sq. Yds.	10		10
Concrete Piles	Lin. Ft.		171	171
Test Pile Concrete	Ea.			1
Cleaning & Painting Steel Bridge	Lump Sum			1
Preformed Jt. Sealer 1¼"	Lin. Ft.	64		64

WATERWAY INFORMATION

Drainage Area 364 Sq. miles
Character: Timber near Channel, Rest cultivated & Flat.
Existing Opening 1300 Sq. ft.
Required Opening * 3500 Sq. ft.
Proposed Opening * 3500 Sq. ft.
$H.W.E._{(50)}$ = 537.6
$Q_{(50)}$ = 16,300 cfs
Created Head = 0.93'
$H.W.E._{(100)}$ = 538.0
$Q_{(100)}$ = 18,600 cfs
Created Head = 1.0'
All Time repeated H.W.E. = 540.6
* Area Divided Main structure 2237 □'
Overflow 1270 □'
Total required 3507 □'

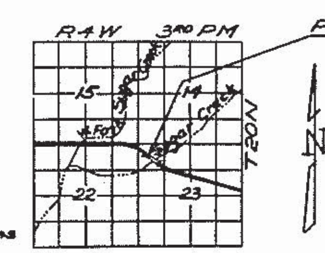
FIELD UNITS

$f'c$ = 3,500 psi
** fy = 60,000 psi (Reinf.)
fs = 27,000 psi (M223 Gr 50), 20,000 psi (M183) – New Struct. Steel

Loading HS 20-44

** Epoxy coated reinf. Bars shall be used in top of the slab.

Design Specifications: 1973 AASHTO, 1974, 1975 and 1976 Interim Specifications (as applicable)



LOCATION SKETCH

GENERAL PLAN & ELEVATION
F.A. RTE. 717 OVER SUGAR CREEK
F.A. RTE. 717 SEC. 102 BR
LOGAN COUNTY
STA. 524+30.00

DESIGNED / CHECKED / DRAWN A. Barraza / CHECKED

EXAMINED / PASSED / APPROVED — December 5, 1977

CARL E. THUNMAN JR. — STATE OF ILLINOIS — 2287 — REGISTERED STRUCTURAL ENGINEER

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS SN 054-0009
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	6
		CONTRACT NO. 72H87		

ILLINOIS FED. AID PROJECT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

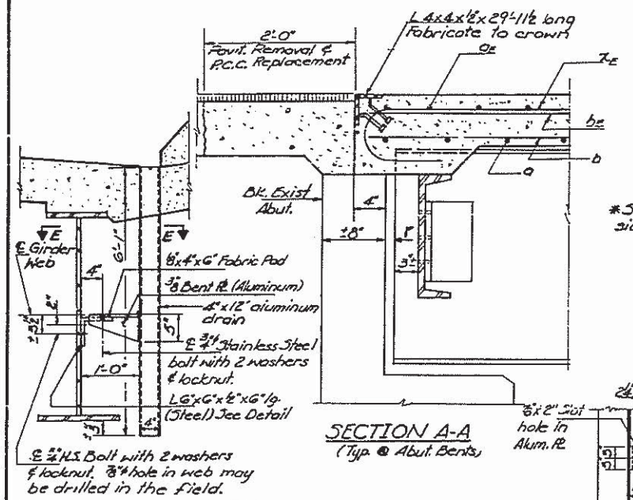
				SHEET NO. 6
A.A.717	102BR	Logan	23	14 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Note: Cost of aluminum drains & accessories for attachment shall be incidental to Class X Concrete.

6.25 ft²

104 + 22 = 126 ft²

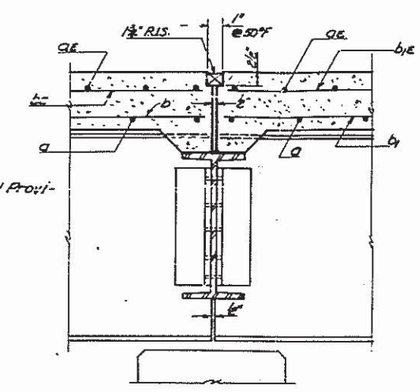
126



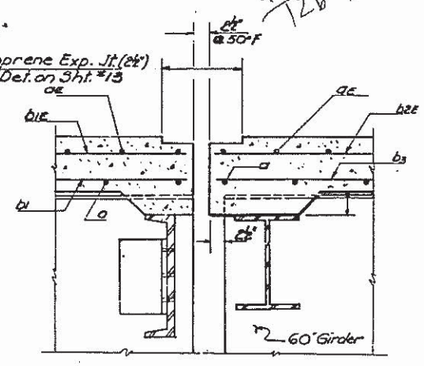
DRAIN BRACING DETAIL
For drains in Span 3

SECTION A-A
(Typ. @ Abut. Bents)

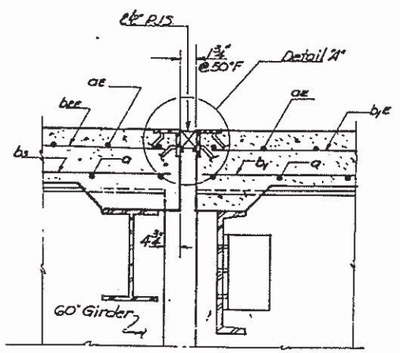
*See Special Provisions.



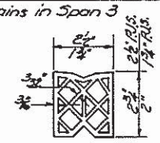
SECTION B-B
(Typ @ Bent 1 & 2)



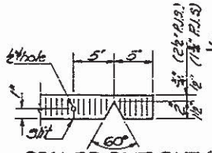
SECTION C-C
(At Pier 1)



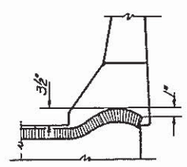
SECTION D-D
(At Pier 2)



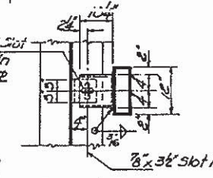
PREFORMED JT. SEALER (2½" @ 1¾")



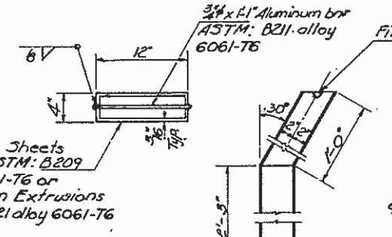
SEALER CUT-OUT (2½" @ 1¾")

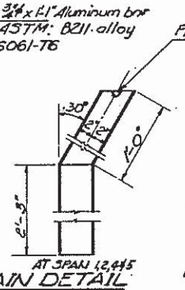


END OF SEALER TREATMENT

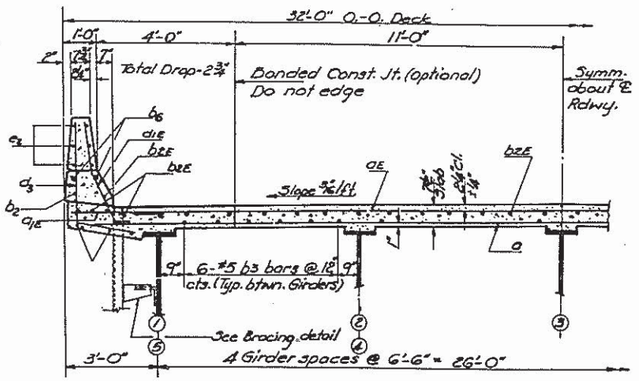


SEC. E-E

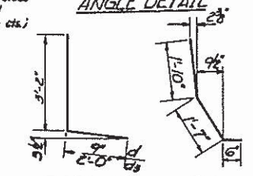


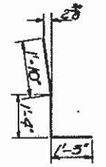


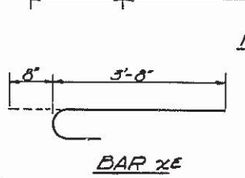
FLOOR DRAIN DETAIL

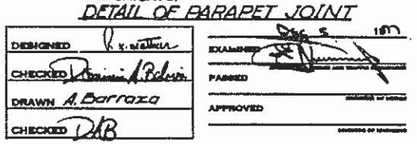


HALF CROSS SECTION
(Looking South)
Span 3

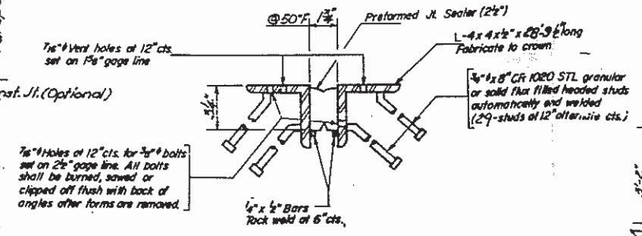








DETAIL OF PARAPET JOINT



DETAIL "A"

SUPERSTRUCTURE DETAILS
F.A. RTE. 717 SEC. 102 BR
LOGAN COUNTY
STA. 524+30.00

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS SN 054-0009
(FOR INFORMATION ONLY)

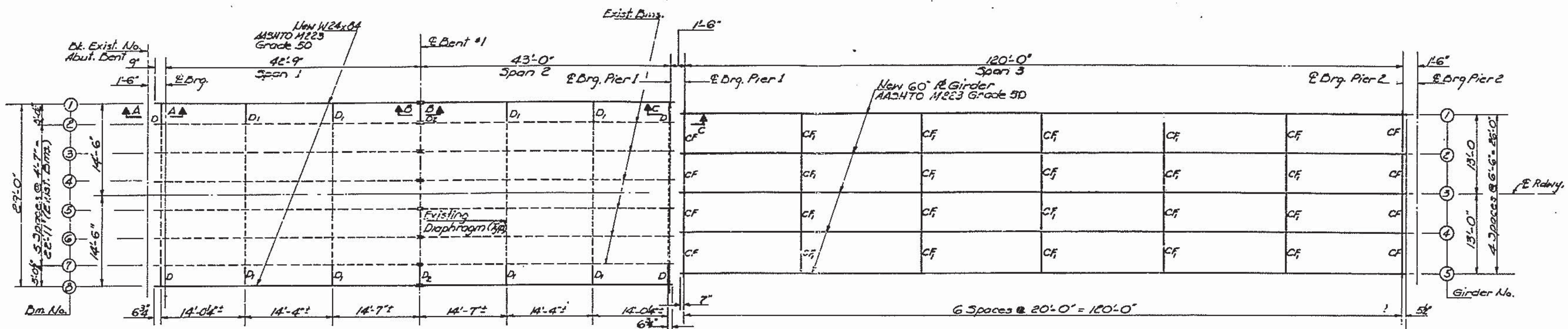
SCALE: | SHEET OF SHEETS | STA. | TO STA.

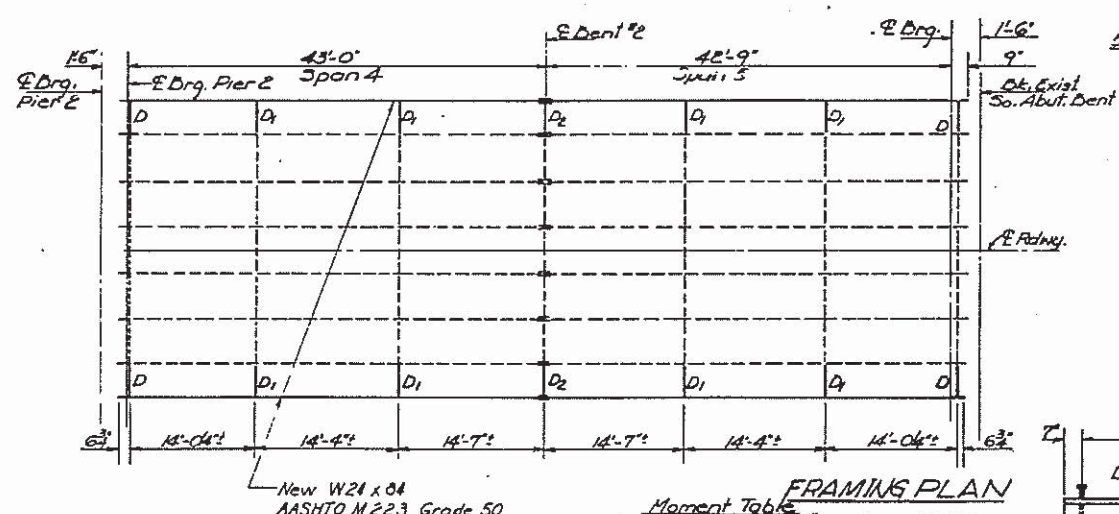
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	7
		CONTRACT NO. 72H87		
		ILLINOIS FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

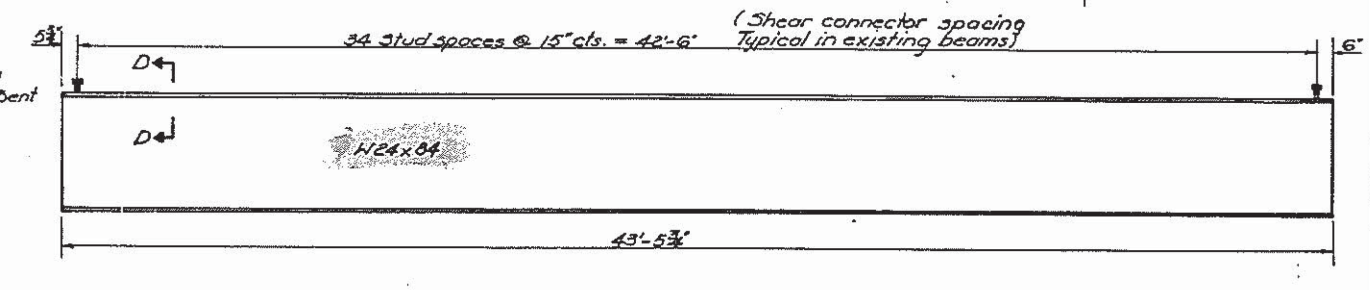
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
717	102BR	Logan	23	15

SHEET NO. 7
14 SHEETS



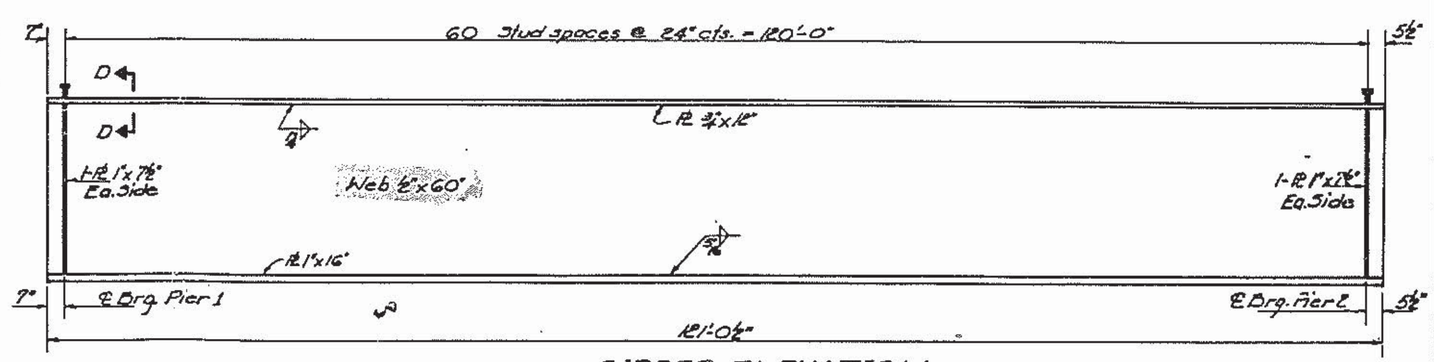


FRAMING PLAN

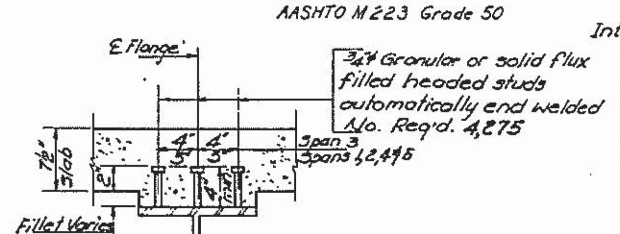


BM. ELEVATION
Bms. 1 & 8

All Structural Steel shall be AASHTO 183 except as noted.



GIRDER ELEVATION



SEC. D-D

Moment Table
Int. Girder Span 3 Ext.* Bm. Span 1,2,4 & 5

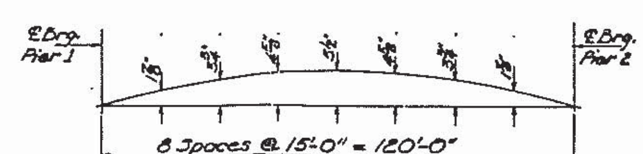
	Sp. 1,2,4 & 5	Sp. 3
Is (in⁴)	2405	31349
Ic (in⁴)	6458	74852
Ss (in³)	200	1156
Sc (in³)	294	1570
℄ (k/ft)	.546	.852
M ℄ (ft.k)	125	1534
fs ℄ (ksi)	7.5	15.9
S ℄ (k/ft)	.216	.327
MS℄ (ft.k)	50	589
fs S℄ (ksi)	2.0	4.5
M LL	208	1111
M Imp.	63	227
Total	271	1338
fs LL	11.1	10.2
** fs Total	36.4	48.7
VR	30.4	47.2

** fs Total = 1.3 [(fs ℄ + fs SDL) + 1.67 fs LL]

Reaction Table

RDL (k)	32.7	70.7
RLL (k)	23.4	39.2
Imp. (k)	7.0	8.0
R Total (k)	63.1	117.9

* Existing Bm. 24"BI 84.5#



CAMBER DIAGRAM - ℙ GIRDERS

I_s and S_s are the moment of inertia and section modulus of the steel section.

I_c and S_c are the moment of inertia and section modulus of the composite section used in computing fs.

VR is the maximum LL + impact shear range in span used to determine shear connector spacing.

See Sht. #8 for Sec. A-A, B-B & C-C and detail of Diaph. D, D1 & D2 & Cross Frames CF & CF1.

DESIGNED	R. [illegible]
CHECKED	[illegible]
DRAWN	A. Barraza
CHECKED	DAB
EXAMINED	Dec. 5 1977 [signature]
PASSED	
APPROVED	

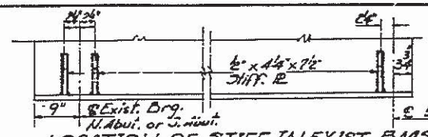
FRAMING PLAN
F.A. RTE. 717 SEC. 102 BR
LOGAN COUNTY
STA. 584+00.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

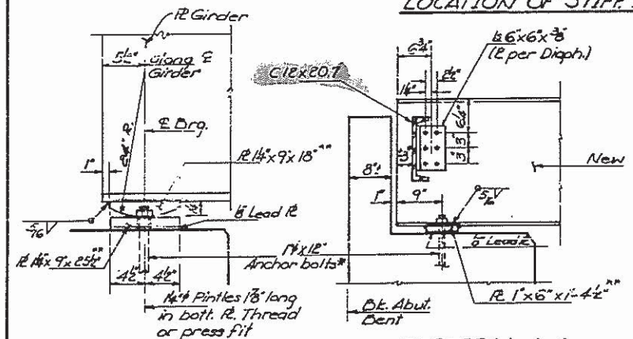
	101BR	Logan	23	12

SHEET NO. 8
14 SHEETS

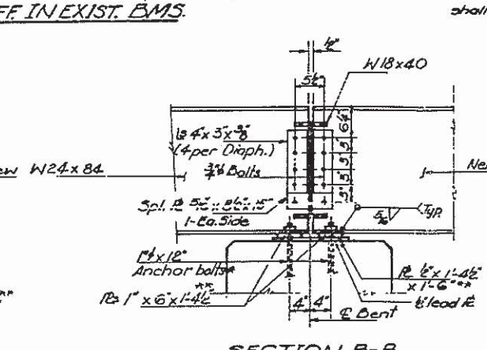
Note: Existing rivets connecting angles to existing web shall be removed & replaced with ¾" H.S. bolts when connecting new Diaphragms.
Holes in new bms. for connecting Diaphragms shall be field drilled.



LOCATION OF STIFF. IN EXIST. BMS.



FIXED BRG. DETAIL AT PIER 2

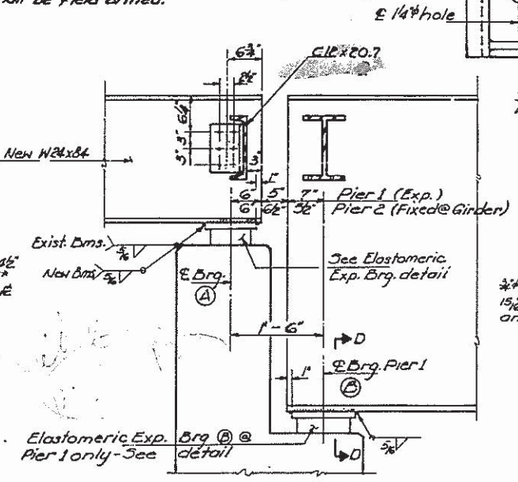


SECTION A-A
Typ. @ Abut. Bents

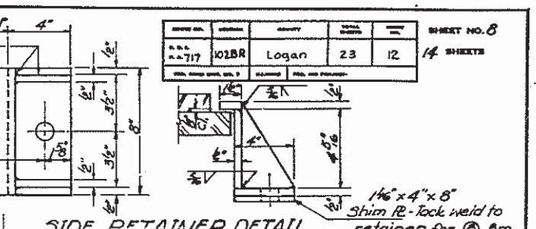
SECTION B-B
Typ. @ Bent #1 & #2

* 1⅛" ø holes for Anchor bolts
2½" x 2½" x 5/16" PL Washer under nut

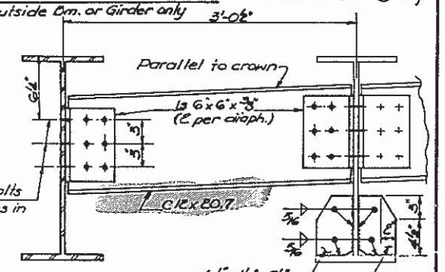
Note: Hardened washers shall be required over 1⅝" ø holes in angles.



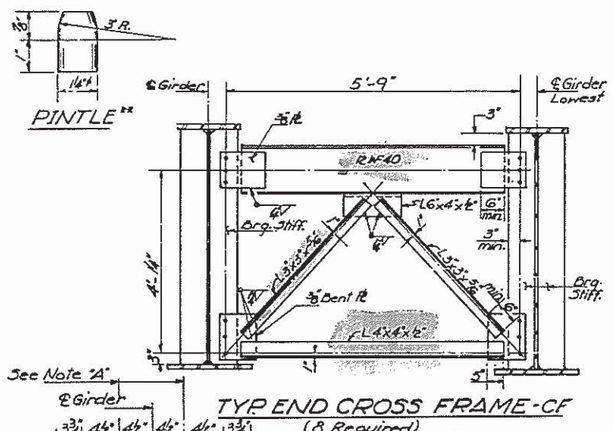
SECTION C-C
(See Fixed Brg. Detail @ Pier 2)



SIDE RETAINER DETAIL
For outside bm. or Girder only



DIAPHRAGM D
(8 Required)



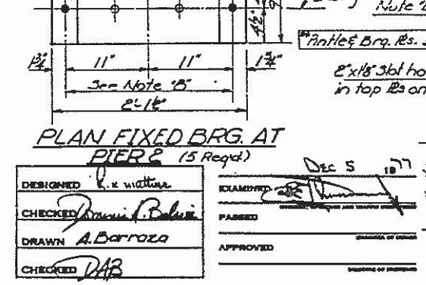
TYP. END CROSS FRAME-CF
(8 Required)

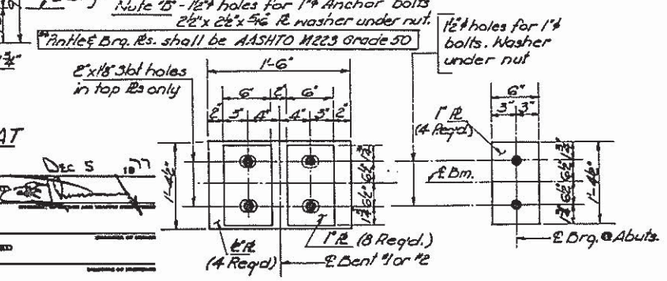
PLAN FIXED BRG. AT PIER 2 (5 Reqd)

Note "A" - 1" ø holes - 1" deep in top PL for ¼" ø pintles. Thread or press fit pintles in bott. PL.

Note "B" - 1½" ø holes for 1" ø Anchor bolts 2½" x 2½" x 5/16" PL washer under nut.

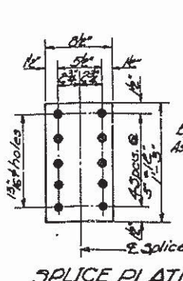
** Anchor Brg. PLs. shall be AASHTO M223 Grade 50





BEARING PLATES

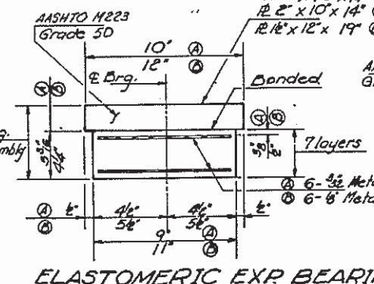
TYP. INTERIOR CROSS FRAME-CF
(20 Required)



SPLICE PLATE
12 Required

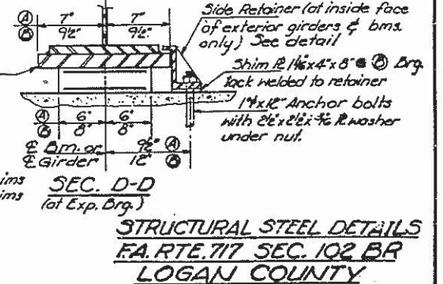
DIAPHRAGM D1
(16 Required)

PL 1⅛" x 10" x 14" (A) (Bms. 1 & 8)
PL 1⅛" x 10" x 14" (A) (Bms. 2, 3, & 7)
PL 2" x 10" x 14" (A) (Bms. 4 & 5)
PL 1⅛" x 12" x 19" (A)



ELASTOMERIC EXP. BEARING
(Type I (A) 16 Req'd. (B) 5 Req'd.) Cost incidental to Struct. Steel

DIAPHRAGM D2
(4 Required)



SEC. D-D
(at Exp. Brg.)

STRUCTURAL STEEL DETAILS
FA. RTE. 717 SEC. 102 BR
LOGAN COUNTY
STA. 524+30.00

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS SN 054-0009
(FOR INFORMATION ONLY)
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	9
		CONTRACT NO. 72H87		
	ILLINOIS FED. AID PROJECT			

054-0046 SB

054-0046

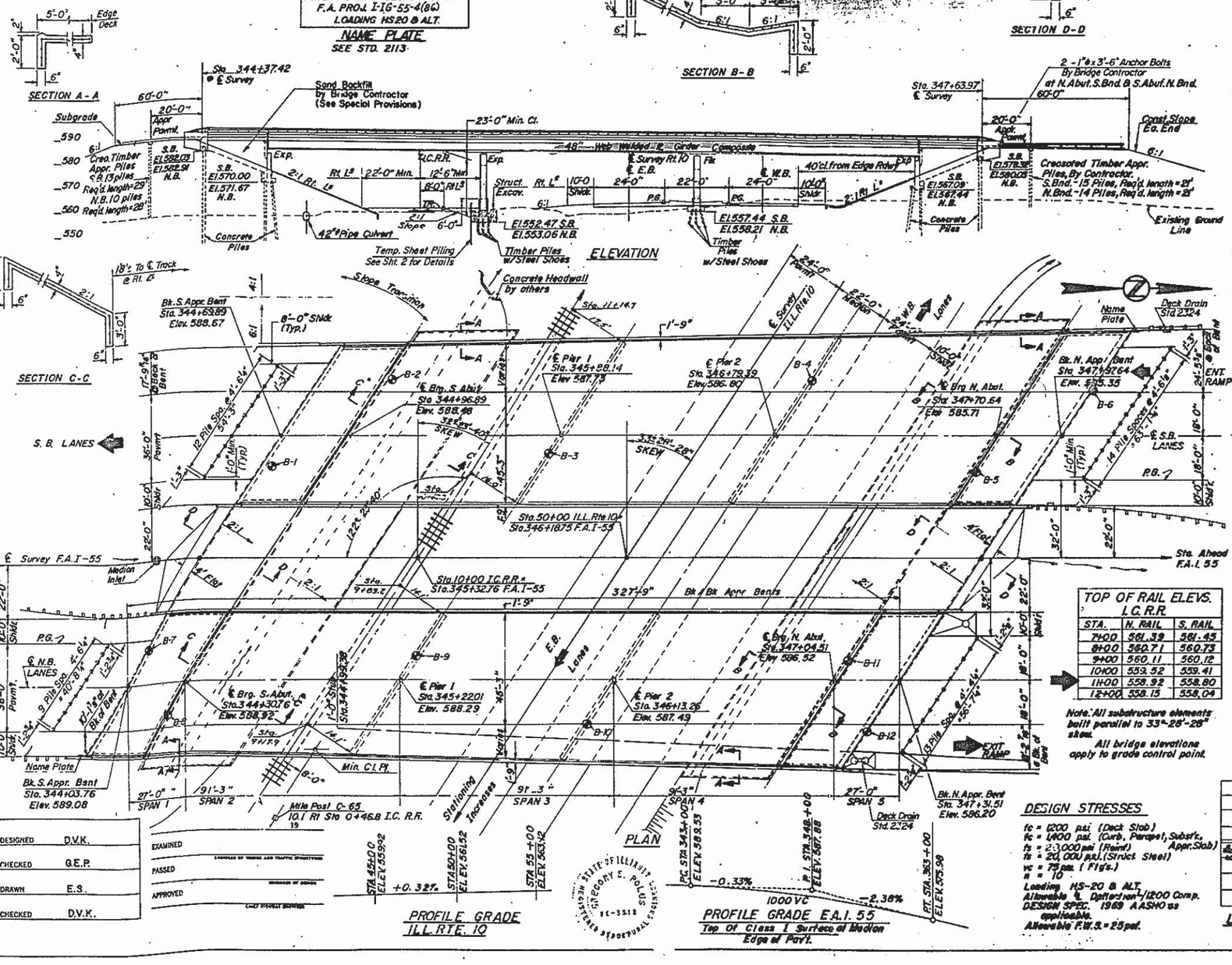
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U.S.R.T. F.A.I. 55	54-3HVB	LOGAN	442	121
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 1
35 SHEETS

B.M. #22 6" Boat spike in telegraph pole
235' Rt. Sta. 345+65, Elev. 561.34

STATION 346+18.75
BUILT 197_ BY
STATE OF ILLINOIS
F.A.I. RT. 55 SEC. 54-3HVB
F.A. PROJ. I-IG-55-4(86)
LOADING HS20 & ALT.

NAME PLATE
SEE STD. 2113



DESIGNED	D.V.K.
CHECKED	G.E.P.
DRAWN	E.S.
CHECKED	D.V.K.

EXAMINED
PASSED
APPROVED

STATE OF ILLINOIS GREGORY S. POLUS 82-3518 REGISTERED PROFESSIONAL ENGINEER

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

The Basic Lead Silico Chromate paint system shall be used for shop and field painting of structural steel.

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.

Slope wall shall be reinforced with welded wire fabric 6"x 6" mesh, weighing 58 lbs per 100 sq. ft.

The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.

The concrete reil section above the mandatory construction joint of the top of the slab shall be constructed of Class X Concrete, except the aggregate shall conform to the requirements of Handrail Concrete.

Protective coat shall not be applied to surfaces to which Coal Tar Interlayer Protective Coat is applied.

Calculated weight of Structural Steel = 1,110,300 lbs.

Fasteners shall be high strength bolts. Bolts 3/4"ø; open holes 13/16"ø, unless otherwise noted. Bolts 7/8"ø; open holes 1"ø, unless otherwise noted.

The Contractor shall drive one test pile each in the following permanent locations as directed by the Engineer before ordering the remainder of piles.

Concrete — N. Abut., S.B. Lane; S. Abut., N.B. Lane;

Timber — Pier #1, S.B. Lane, Pier #2, N.B. Lane.

Concrete piles at appr. bents shall be driven in holes precored through the embankment in accordance with Article 513.09(c) of the Standard Specification.

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.

TOTAL BILL OF MATERIALS

ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	Cu. Yds.		320	320
Class X Concrete	Cu. Yds.	1376.8	1310.2	2687.0
Structural Steel	Lump Sum			Lump Sum
Reinforcement Bars	Lbs.	396,800	144,950	541,750
Aluminum Railing	Lin. Ft.	1355		1355
Concrete Piles	Lin. Ft.		8443	8443
Test Piles (Concrete)	Each		2	2
Slope Wall (4")	Sq. Yds.		2481	2481
Stud Shear Connectors	Each	10,140		10,140
Name Plate	Each	2		2
Protective Coat	Sq. Yds.	512		512
Creosoted Piles (20' to 38')	Lin. Ft.		8360	8360
Sand Backfill	Cu. Yds.		1360	1360
Coal Tar Interlayer Protective Coat	Sq. Yds.	4504		4504
Bituminous Conc. Sur. Cse. Class "I"	Tons	367		367
Test Pile (Timber)	Each		2	2
Temporary Sheet Piling	Lump Sum			Lump Sum
Metal Shoes	Each		235	235
Preformed Joint Sealer	Lin. Ft.	165		165
Neoprene Expansion Jt. 2½"	Lin. Ft.	149		149

TOP OF RAIL ELEVS. I.C.R.R.

STA.	N. RAIL	S. RAIL
7+00	561.39	561.45
8+00	560.71	560.73
9+00	560.11	560.12
10+00	559.52	559.41
11+00	558.92	558.80
12+00	558.15	558.04

Note: All substructure elements built parallel to 33°-28'-28" skew.

All bridge elevations apply to grade control point.

DESIGN STRESSES

fc = 1200 psi (Deck Slab)
fc = 1400 psi (Curb, Parapet, Subst's, Appr. Slab)
fs = 23,000 psi (Reinf.)
fs = 20,000 psi (Struct. Steel)
wc = 75 pcf. (Figs.)
n = 10
Loading HS-20 & ALT.
Allowable f_b Differential 1200 Comp.
DESIGN SPEC. 1969 AASHO as applicable.
Allowable F.W.S. = 25 psf.

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Engineer of Bridges & Traffic Structures

GENERAL PLAN AND ELEVATION
FAI ROUTE 55 OVER
P.L. CENTRAL R.R. &
ILL. ROUTE 10
LOGAN COUNTY
SECTION 54-3HVB
STA. 346+18.75

054-0046 SB

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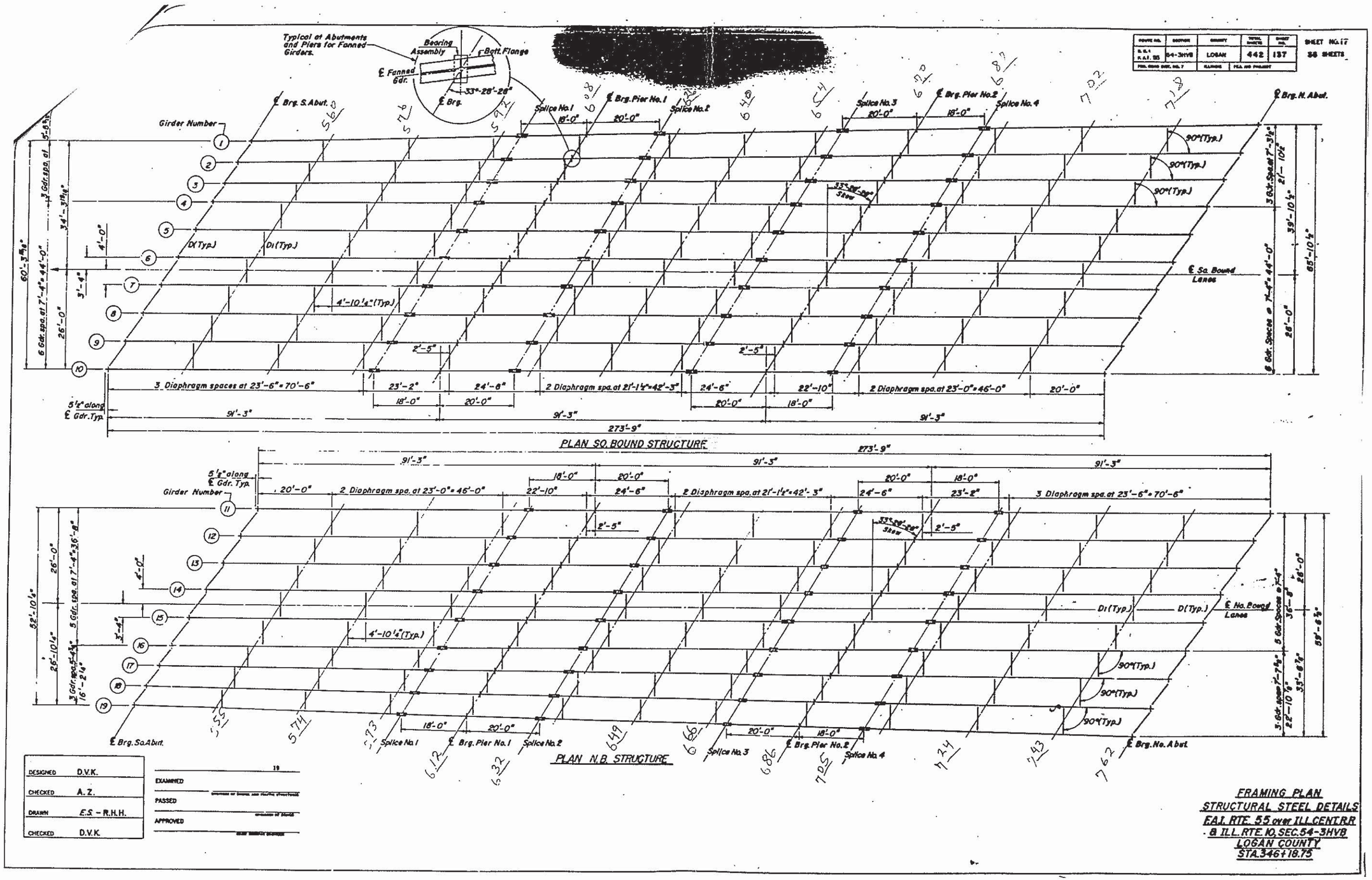
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS SN 054-0046 & 0047
(FOR INFORMATION ONLY)
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	06 BDGE PAINTING 2016	LOGAN	28	10
		CONTRACT NO. 72H87		
	ILLINOIS FED. AID PROJECT			

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A.I. 55	54-3HVB	LOGAN	442	137
PROJ. CODE SHEET NO. 7		ILLINOIS	FED. AID PROJECT	

SHEET NO. 17
36 SHEETS



DESIGNED	D.V.K.
CHECKED	A.Z.
DRAWN	E.S. - R.H.H.
CHECKED	D.V.K.

19
EXAMINED
PASSED
APPROVED

FRAMING PLAN
STRUCTURAL STEEL DETAILS
F.A.I. RTE. 55 over ILL. CENT. R.R.
& ILL. RTE. 10, SEC. 54-3HVB
LOGAN COUNTY
STA. 346+18.75

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS SN 054-0046 & 0047
(FOR INFORMATION ONLY)

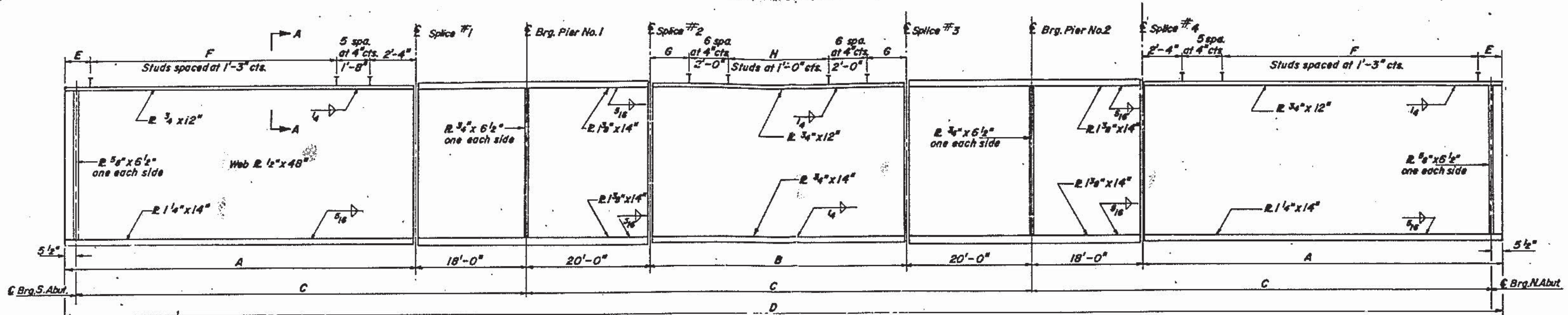
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	11
		CONTRACT NO. 72H87		
	ILLINOIS	FED. AID PROJECT		

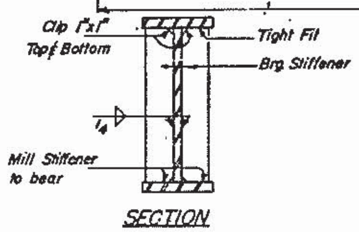
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A.I. 55	54-3HVB	LOGAN	442	138

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT

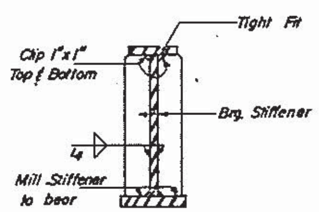
SHEET NO. 18
38 SHEETS



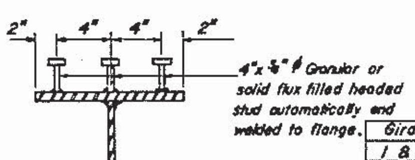
GIRDER ELEVATION



SECTION AT PIER

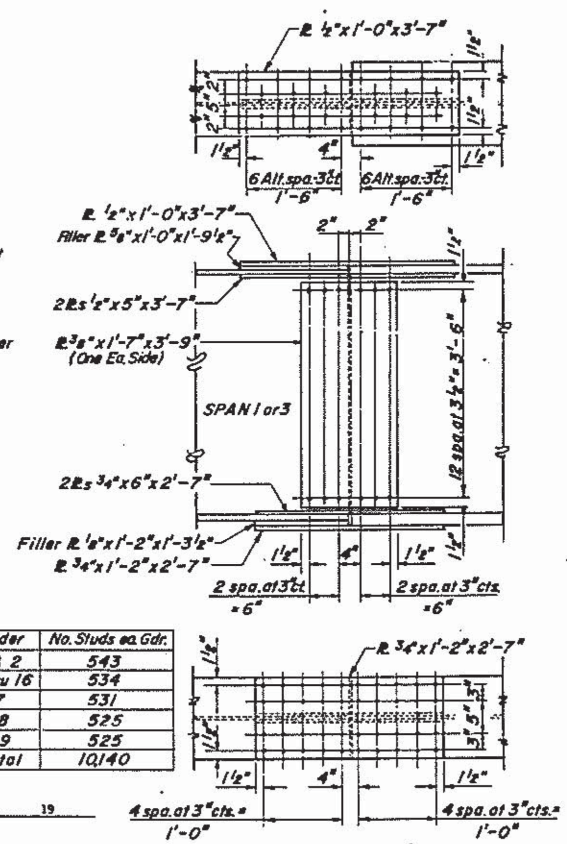


SECTION AT ABUT

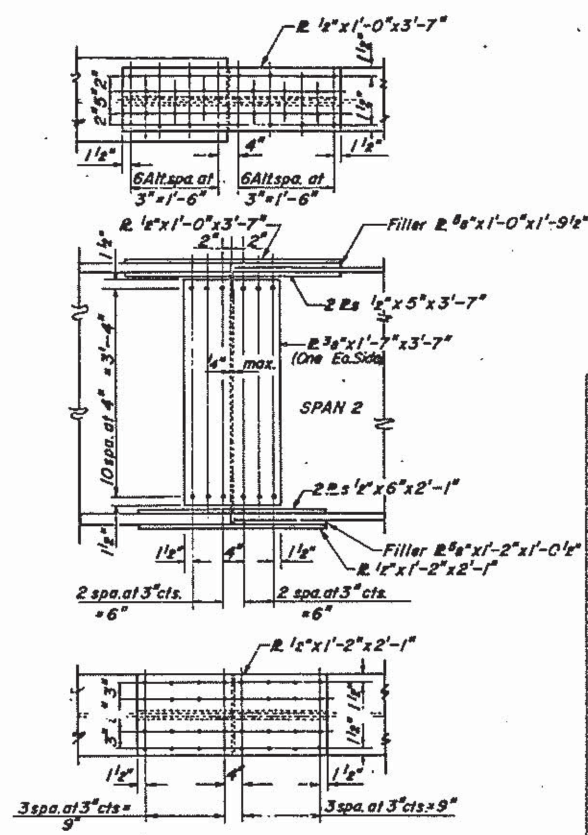


SECTION A-A

Girder	No. Studs ea. Gdr.
1 & 2	543
3 thru 16	534
17	531
18	525
19	525
Total	10,140



FIELD SPLICE 1 & 4
All fastener shall be 7/8" ϕ H.S. Bolts



FIELD SPLICE 2 & 3
All fasteners shall be 7/8" ϕ H.S. Bolts

GIRDER DIMENSIONS								
Gdr. \ Dim.	A	B	C	D	E	F	G	H
Gdr. 1	74'-11 3/8"	52'-5 7/8"	92'-5 7/8"	278'-4 5/8"	11 3/8"	70'-0"	2'-2 15/16"	44'-0"
Gdr. 2	74'-6 3/8"	52'-0 7/8"	92'-0 7/8"	277'-1 5/8"	6 3/8"	70'-0"	2'-0 7/16"	44'-0"
Gdr. 3	74'-1 3/8"	51'-7 7/8"	91'-7 7/8"	275'-10 5/8"	1'-4 3/8"	68'-9"	2'-3 15/16"	43'-0"
Gdr. 4-16	73'-8 1/2"	51'-3"	91'-3"	274'-8"	11 1/2"	68'-9"	2'-1 1/2"	43'-0"
Gdr. 17	73'-2 5/8"	50'-9 1/8"	90'-9 1/8"	273'-2 3/8"	5 5/8"	68'-9"	2'-4 9/16"	42'-0"
Gdr. 18	72'-8 3/4"	50'-3 1/4"	90'-3 1/4"	271'-8 3/4"	1'-2 3/4"	67'-6"	2'-1 5/8"	42'-0"
Gdr. 19	72'-3 1/8"	49'-9 5/8"	89'-9 5/8"	270'-3 7/8"	9 1/8"	67'-6"	2'-4 13/16"	41'-0"

*TOP OF WEB ELEVATIONS								
GIRDER	℄ BRG. S. ABUT.	℄ SPLICE #1	℄ BRG. PIER #1	℄ SPLICE #2	℄ SPLICE #3	℄ BRG. PIER #2	℄ SPLICE #4	℄ BRG. N. ABUT.
1	586.80	586.04	585.85	585.66	585.08	584.82	584.58	583.55
2	586.95	586.20	586.02	585.83	585.27	585.02	584.79	583.85
3	587.09	586.36	586.19	586.00	585.45	585.21	585.00	584.14
4	587.23	586.53	586.36	586.17	585.63	585.40	585.20	584.38
5	587.42	586.72	586.55	586.37	585.84	585.61	585.41	584.60
6	587.59	586.90	586.73	586.55	586.03	585.81	585.61	584.80
7	587.74	587.06	586.89	586.71	586.20	585.98	585.78	584.98
8	587.72	587.05	586.89	586.71	586.19	585.97	585.78	584.99
9	587.64	586.98	586.81	586.63	586.13	585.91	585.72	584.93
10	587.52	586.86	586.70	586.53	586.03	585.81	585.62	584.84
11	587.73	587.12	586.97	586.81	586.34	586.14	585.96	585.23
12	587.92	587.31	587.17	587.01	586.54	586.34	586.16	585.44
13	588.07	587.47	587.32	587.16	586.71	586.51	586.33	585.62
14	588.15	587.56	587.42	587.26	586.80	586.61	586.43	585.73
15	588.06	587.48	587.33	587.18	586.73	586.54	586.37	585.67
16	587.95	587.38	587.24	587.08	586.64	586.45	586.28	585.59
17	587.86	587.27	587.14	586.99	586.54	586.35	586.18	585.48
18	587.77	587.18	587.04	586.89	586.43	586.23	586.05	585.31
19	587.68	587.08	586.95	586.80	586.32	586.11	585.92	585.15

*For Fabrication Only

DESIGNED	D.V.K.
CHECKED	A.Z.
DRAWN	E.S.-R.H.H.
CHECKED	D.V.K.

19
EXAMINED
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED
ENGINEER OF DESIGN
APPROVED
CHIEF HIGHWAY ENGINEER

STRUCTURAL STEEL DETAILS
F.A.I. RTE. 55 OVER ILL. CENT. RR. & ILL. RTE. 10, SEC. 54-3HVB
LOGAN COUNTY
STA. 346+18.75

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		CHECKED -	REVISED -
Default	PLOT DATE = 7/7/2015	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS SN 054-0046 & 0047
(FOR INFORMATION ONLY)

SCALE: | SHEET OF SHEETS | STA. TO STA.

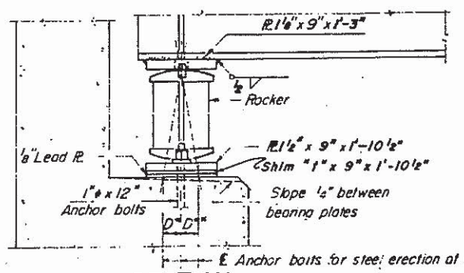
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	12

CONTRACT NO. 72H87
ILLINOIS | FED. AID PROJECT

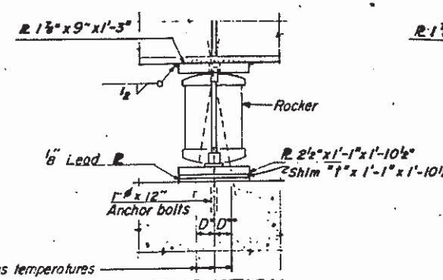
STATE OF ILLINOIS

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
54-3HVB	LOGAN	442	139

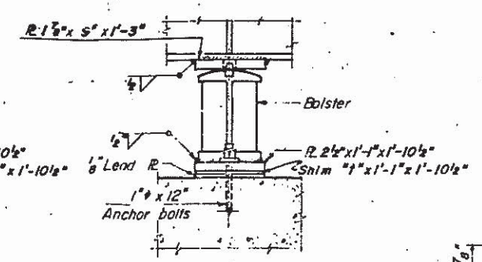
SHEET NO. 19
36 SHEETS.



SECTION



ELEVATION



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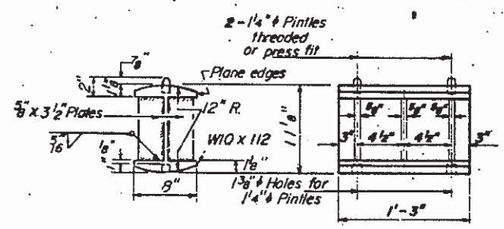
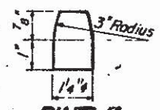
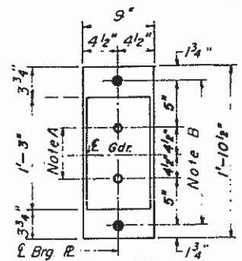


ROCKER



PINTLE



PLAN

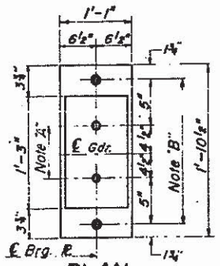
AT ABUTMENT

NOTE A

1⅜" ϕ Holes — 1" deep in top R. for pintles. Thread or press fit pintles into bottom R.

"I" Dimensions

location \ girder	7	8	11
S. Abut.	1⅛"	—	—
Pier 1	1⅛"	—	⅝"
Pier 2	—	—	⅝"
N. Abut.	½"	⅝"	—

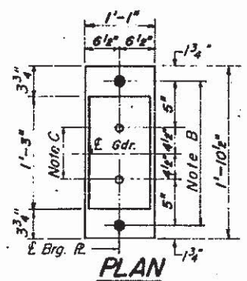


PLAN

AT PIER 1

NOTE B

1½" ϕ Holes for 1" ϕ anchor bolts ⅝" x 2½" x 2½" R. Washers under nut.

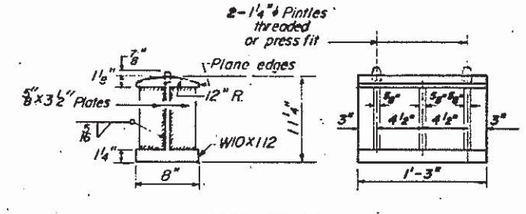


PLAN

AT PIER 2

NOTE C

1⅜" ϕ Holes 1" deep in top R. only for 1¼" ϕ pintles.



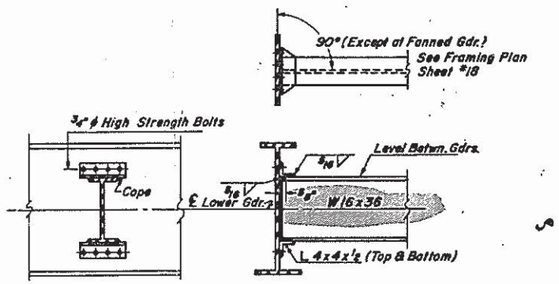
BOLSTER

NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRGS.

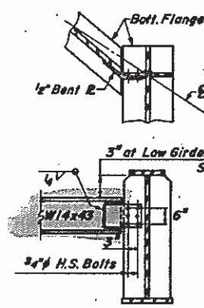
a) D* (Side of brg. away from fixed brg.)
D* = ⅛" per each 100' of expansion for every 15° fall below the normal temp. of 50°F.
D** (Side of brg. toward fixed brg.)
D** = ⅛" per each 100' of expansion for every 15° rise above the normal temp. of 50°F.

b) After beams have been erected and dimensions D* 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



INTERIOR DIAPHRAGM-D1
187 Required



DIAPHRAGM-D
34 Required

INTERIOR GIRDER MOMENT TABLE			
	0.4 Sp. 1	Pier	0.5 Sp2
Is (in⁴)	19,683.5	28,078.8	16,163.9
Ic (in⁴)	51,964.6		40,081.3
Ss (in³)	934.6	1106.6	676.1
Sc (in³)	1291.3		949.8
ℓ (k/in)	0.938	1.417	0.912
M℄ (1' k)	626.0	1173.8	106.2
fs℄ (ksi)	8.0	12.7	1.9
c℄ (k/in)	0.433		0.433
Ms℄ (1' k)	318.5		135.0
M℄ (1' k)	788.6	524.4	613.5
MImpl (1' k)	182.3	121.3	141.8
Total (1' k)	1289.4	645.7	890.3
fs℄+Impl (ksi)	12.0	7.0	11.3
fs Total (ksi)	20.0	19.7	13.2
VR (K)	57.0		48.0

INTERIOR GDR REACTION TABLE		
	Abut.	PIER
R℄ (K)	50.9	139.9
RA (K)	42.4	62.8
Imp. (K)	9.8	14.6
R total (K)	103.1	217.3

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 ℄ + Impact shear range in span used to determine Shear Connector spacing.

DESIGNED	D.V.K		19
CHECKED	A.Z.	EXAMINED	ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
DRAWN	R.H.H.	PASSED	ENGINEER OF BRIDGES
CHECKED	D.V.K.	APPROVED	CHIEF ENGINEER

FOR BEARINGS SEE NEXT TWO SHEET

BEARING DETAIL
FAI. RT 55 SEC. 54-3HVB
LOGAN COUNTY
STA. 346+1875

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		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

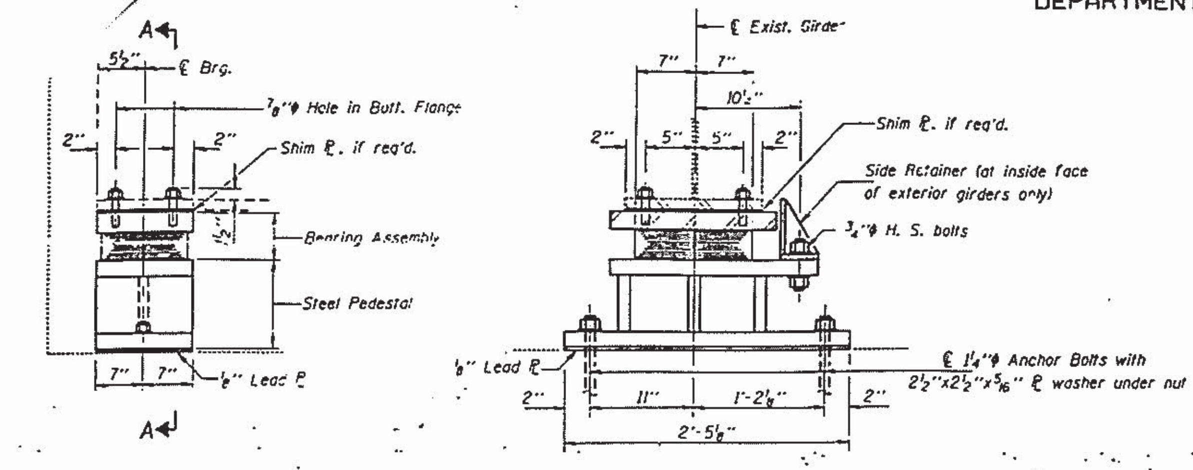
EXISTING PLANS SN 054-0046 & 0047
(FOR INFORMATION ONLY)

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	13
		CONTRACT NO. 72H87		
		ILLINOIS FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	54-3RS	LOGAN	52	48

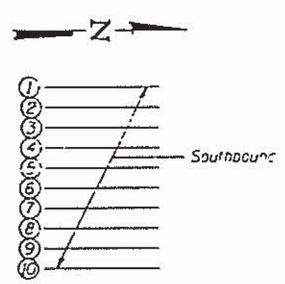


ELEVATION AT ABUT.

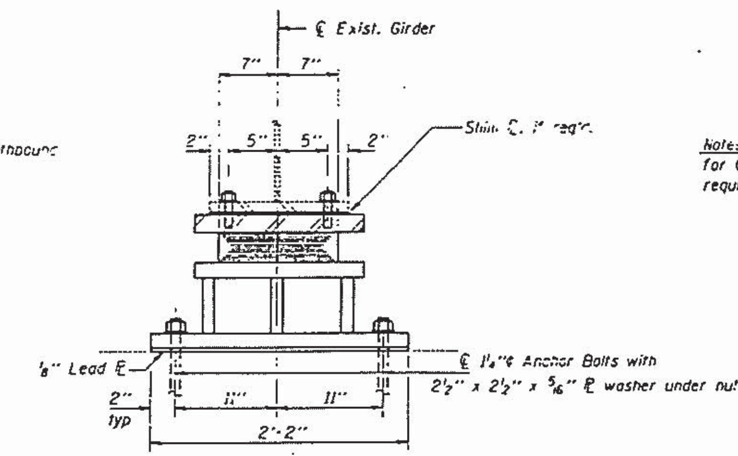
SECTION A-A (Showing Exterior Girder)

TYPE I ELASTOMERIC EXP. BRG.

Notes: Burn off existing anchor bolts flush with existing concrete surface. Grind smooth and seal with epoxy.
See sheet # for new anchor bolt details.

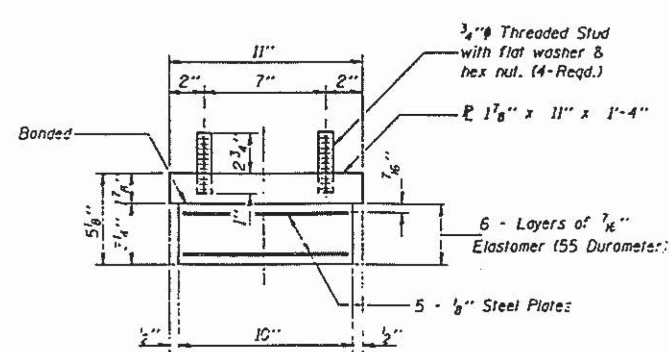


BEAM LAYOUT



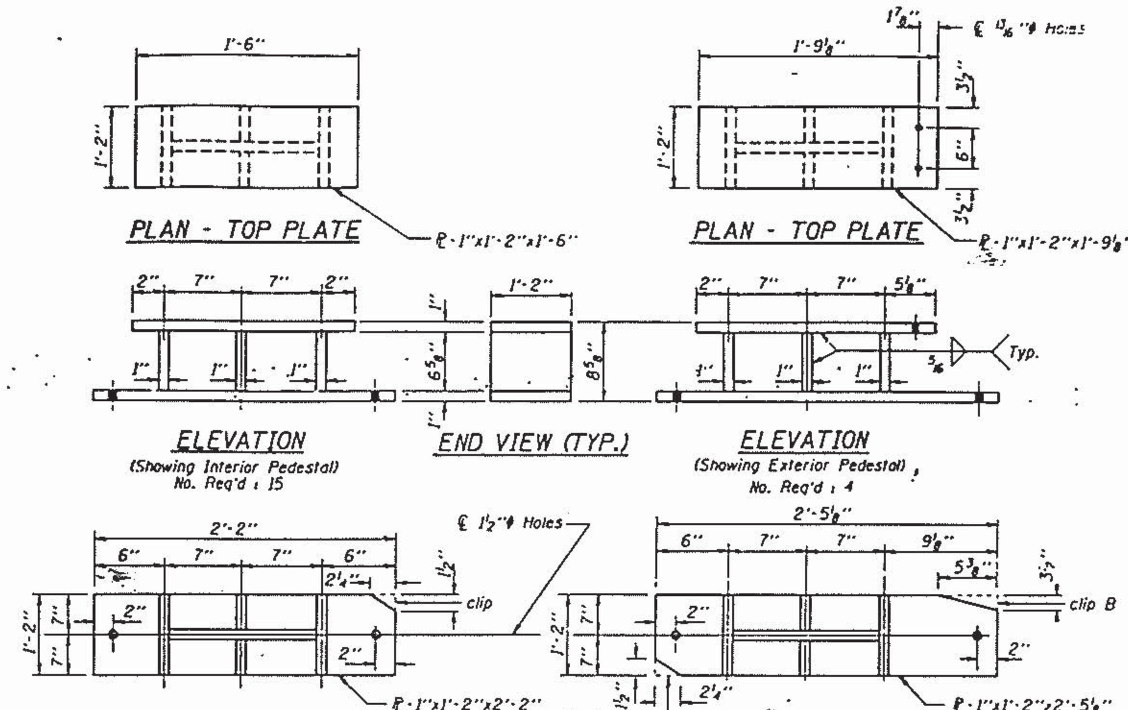
SECTION A-A (Showing Interior Girder)

Note: ½" x 11" x 1'-2" shim plate required for Girder 7 & ⅝" x 11" x 1'-2" shim plate required for Girder 8.



BEARING ASSEMBLY

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



PLAN - TOP PLATE

PLAN - TOP PLATE

ELEVATION (Showing Interior Pedestal) No. Req'd : 15

END VIEW (TYP.)

ELEVATION (Showing Exterior Pedestal) No. Req'd : 4

PLAN - BOTTOM PLATE

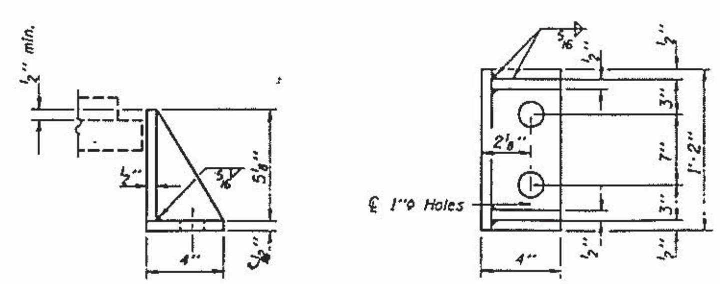
Note: Fabricate all interior pedestals with clip as shown.

PLAN - BOTTOM PLATE

Note: Fabricate 2 pedestals with Clip A and 2 with Clip B. (exterior only)

BEAM REACTIONS

Live Load	42.4 k
Dead Load	50.9 k
Impact	9.8 k



SIDE RETAINER

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

Note: New steel pedestals, side retainers and anchor bolts are included in "Furn. and Erect. Structural Steel".

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	19
Furnishing and Erecting Structural Steel	Lbs.	6230

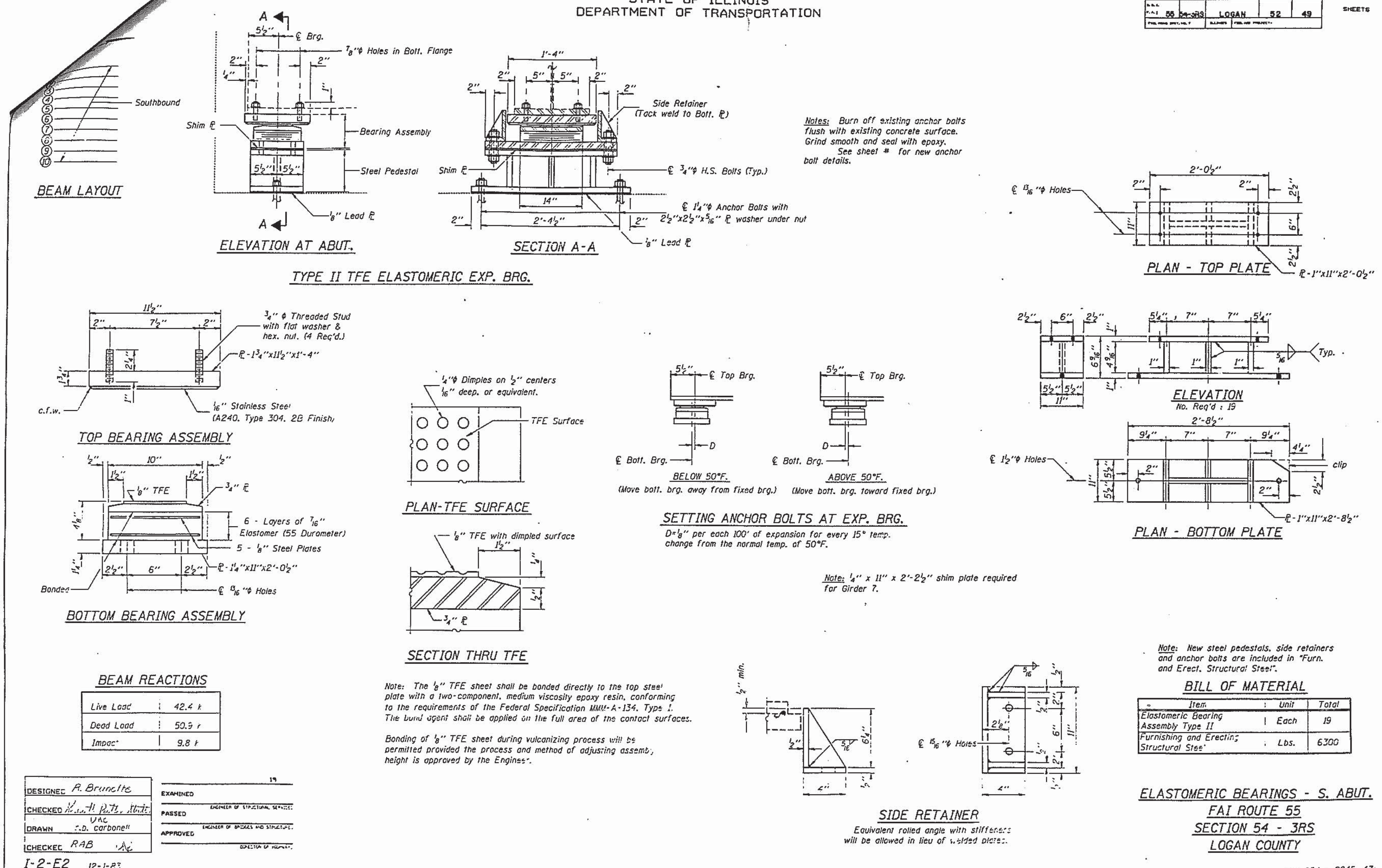
DESIGNED R. Brunette	EXAMINED		
CHECKED [illegible]	PASSED	ENGINEER OF STRUCTURAL SERVICES	
DRAWN r. b. carbone	APPROVED	ENGINEER OF BRIDGES AND STRUCTURES	
CHECKED RAB		DIRECTOR OF HIGHWAYS	

I-2-E1 12-1-83

ELASTOMERIC BEARINGS - N. ABUT.
FAI ROUTE 55
SECTION 54 - 3RS
LOGAN COUNTY

(SN 054 - 0046, 47)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



Notes: Burn off existing anchor bolts flush with existing concrete surface. Grind smooth and seal with epoxy. See sheet # for new anchor bolt details.

Note: ¼" x 11" x 2'-2½" shim plate required for Girder 7.

Note: The ⅛" 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 ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

BEAM REACTIONS

Live Load	42.4 k
Dead Load	50.9 k
Impact	9.8 k

Note: New steel pedestals, side retainers and anchor bolts are included in "Furn. and Erect. Structural Steel".

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	19
Furnishing and Erecting Structural Steel	Lbs.	6300

ELASTOMERIC BEARINGS - S. ABUT.
FAI ROUTE 55
SECTION 54 - 3RS
LOGAN COUNTY

(SN 054 - 0045, 47)

DESIGNED	A. Brunette
CHECKED	
DRAWN	F.D. Carbonell
CHECKED	RAB

EXAMINED — ENGINEER OF STRUCTURAL SERVICES
PASSED — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

I-2-E2 12-1-83

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS SN 054-0046 & 0047
(FOR INFORMATION ONLY)

SCALE: ____ SHEET ___ OF ___ SHEETS STA. ____ TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BRDGE PAINTING 2016	LOGAN	28	15

CONTRACT NO. 72H87
ILLINOIS FED. AID PROJECT

Bm #19-4 Boat spike in power pole 410' Rt. Sta. 299+20 Elev. 616.54

054-0045

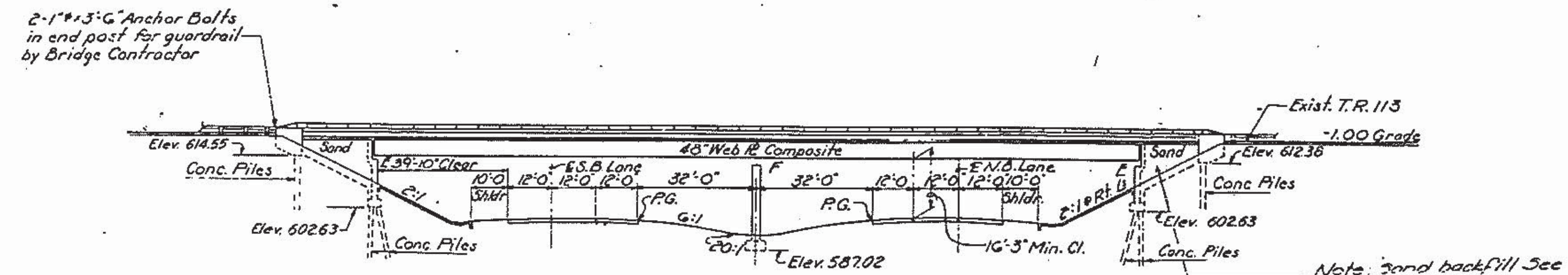
STATE OF ILLINOIS

054-0045

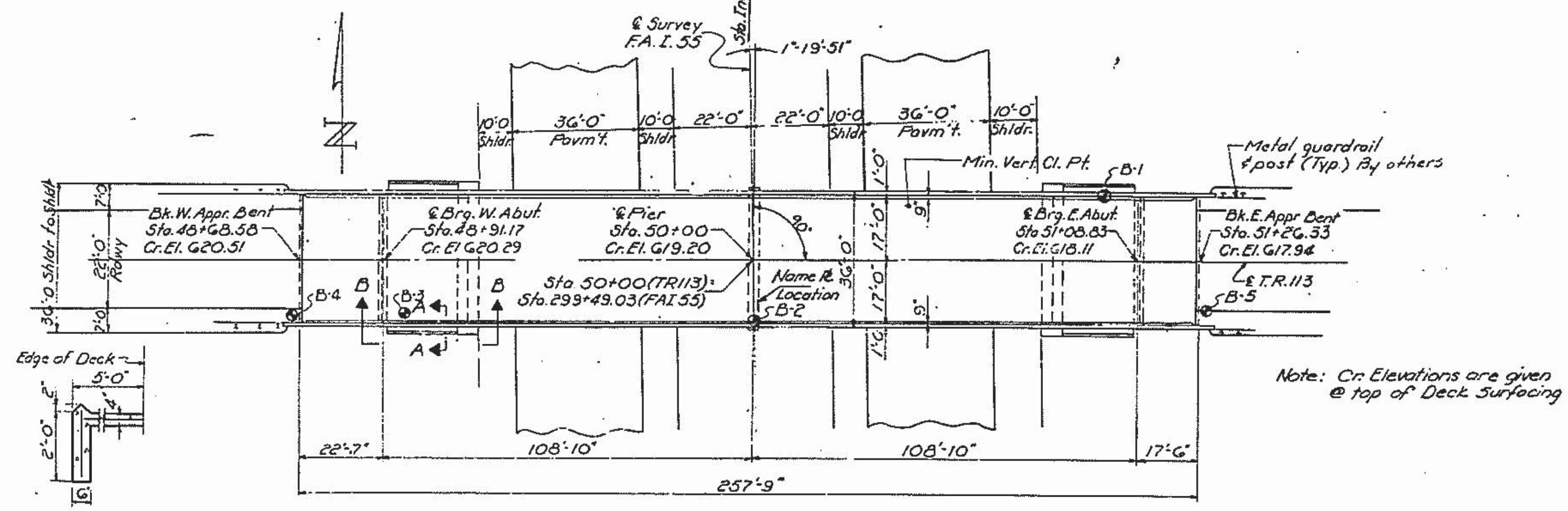
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-55	*	LOGAN	113	58

SHEET NO. 1
15 SHEETS

* 54-3A, 54-3B, 54-3B-2, 54-3HB-1



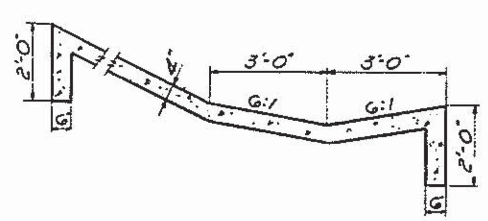
ELEVATION



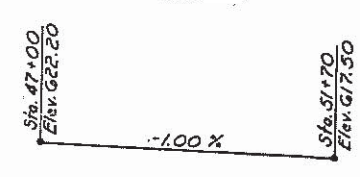
Note: Cr. Elevations are given @ top of Deck Surfacing

SECTION A-A

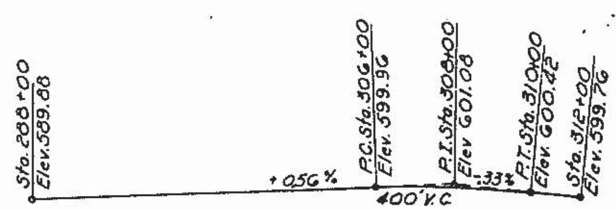
PLAN



SECTION B-B



PROFILE T.R. 113



PROFILE F.A.I. RTE. 55
(AT MEDIAN EDGE)

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

Fasteners shall be high strength bolts. Bolts 7/8"Φ open holes 15/16"Φ unless otherwise noted.

Calculated weight of Structural Steel = 278,250 Pounds.

The basic lead silico chromate paint system shall be used for shop and field painting of Structural Steel.

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.

Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, weighing 58# per 100 sq.ft.

The Contractor shall drive one Concrete test pile in a permanent location at the West Abutment as directed by the Engineer before ordering the remainder of piles.

The concrete rail section above the mandatory construction joint at top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Conc.

Protective Coat shall not be applied to surfaces to which Coal Tar Interlayer Protective Coat is applied.

TOTAL BILL OF MATERIAL

Item		Super	Sub	Total
Structure Excavation	Cu. Yds.		1170	1170
Sand Backfill	Cu. Yds.		200	200
Bituminous Concrete Surface Course Class I	Ton.	79		79
Protective Coat	Sq. Yd.	204		204
Class X Concrete	Cu. Yd.	309.5	201.8	511.3
Structural Steel	Lump Sum	L.S.		L.S.
Stud Shear Connectors	Ea.	1950		1950
Aluminum Railing	Lin. Ft.	530		530
Reinforcement Bars	Pound	75520	24290	99810
Concrete Piles	Lin. Ft.		1452	1452
Test Piles (Concrete)	Each		1	1
Name Plates	Each		1	1
Slope Wall (4")	Sq. Yd.		405	405
Coal Tar Interlayer Protective Coat	Sq. Yd.	931		931
Preformed Joint Sealer	Lin. Ft.	72		72

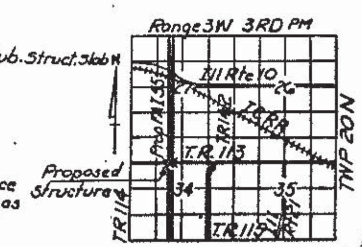
STATION 299+49.03
BUILT 197_ BY
STATE OF ILLINOIS
F.A.I. RT. 55 SEC. 54-3HB-1
F.A. PROJ. I-55-4(88)
LOADING HS-20

NAME PLATE
See Std. 2113

DESIGN STRESSES

f'c = 1200 psi	Deck Slab
fc = 1400 psi	Curb, Parapet, Sub-Struct. Slab
fs = 20000 psi	Reinf.
fs = 20000 psi	Struct.
Vc = 75 psi	Ftgs.
n = 10	

LOADING HS-20-44
Allow 25#/□' for future wearing surface
Design Specifications AASHO 1969, as applicable.



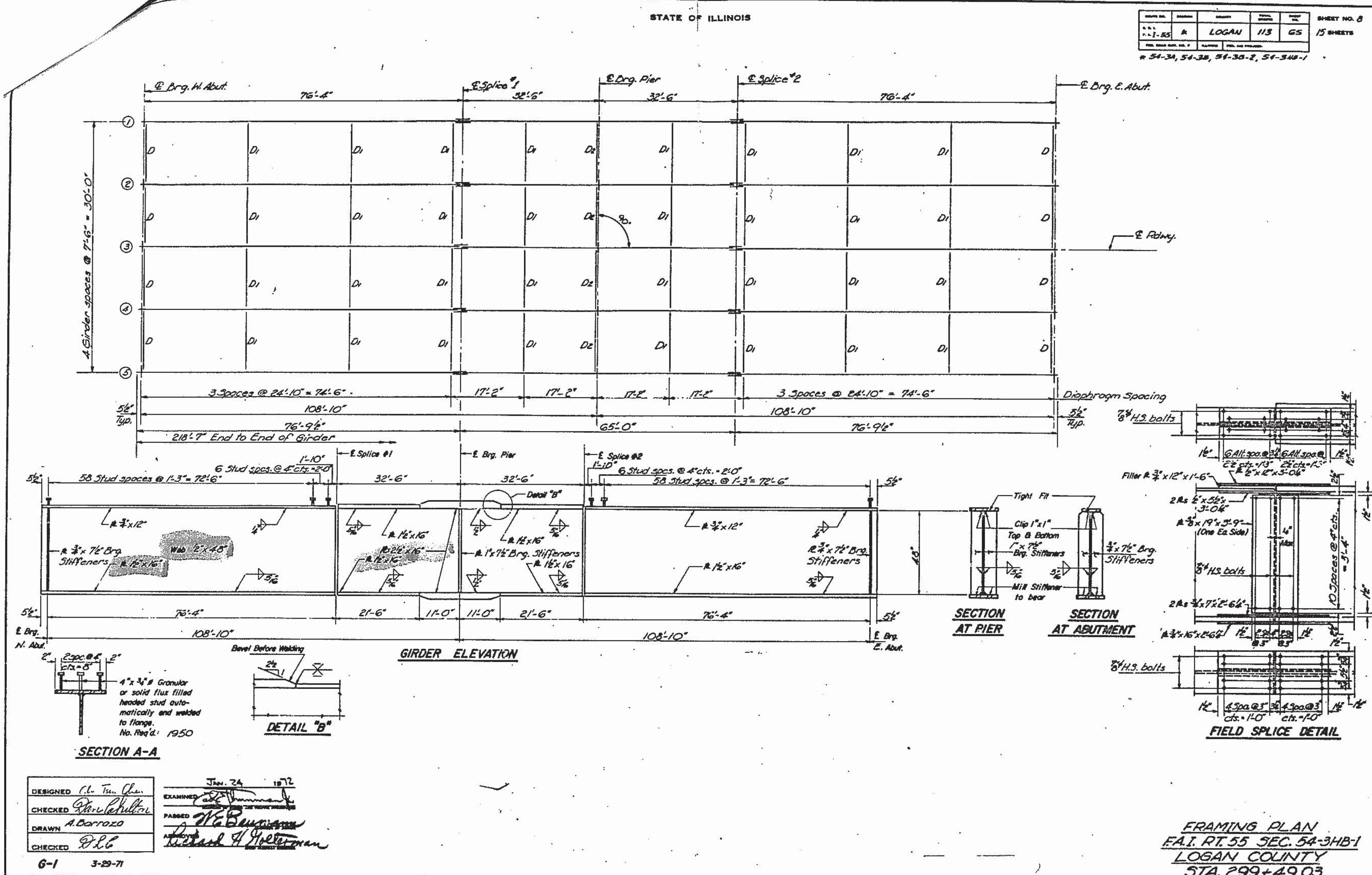
LOCATION SKETCH

054-0045

GENERAL PLAN & ELEVATION
PROJECT I-55-4(88)123
T.R. 113 OVER F.A.I. RT. 55
SECTION 54-3HB-1
LOGAN COUNTY
STA. 299+49.03

DESIGNED	Chi Tun Chen
CHECKED	[illegible]
DRAWN	A. Barroza
CHECKED	D.L.C.

January 24 1972
EXAMINED
PASSED
APPROVED



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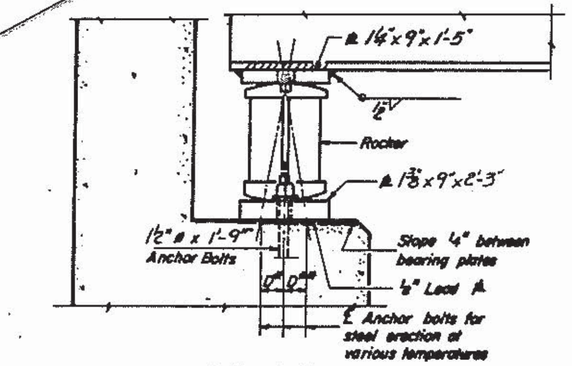
	PLOT SCALE = 100.0000 ' / in.	DRAWN -	REVISED -			VAR.	D6 BDGE PAINTING 2016	LOGAN	28	17
Default	PLOT DATE = 7/7/2015	CHECKED -	REVISED -		SCALE: SHEET OF SHEETS STA. TO STA.	CONTRACT NO. 72H87				
		DATE -	REVISED -			ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-55	&	LOGAN	113	66

SHEET NO. 9
15 SHEETS

54-3A, 54-3B, 54-3B-2, 54-3HB-1



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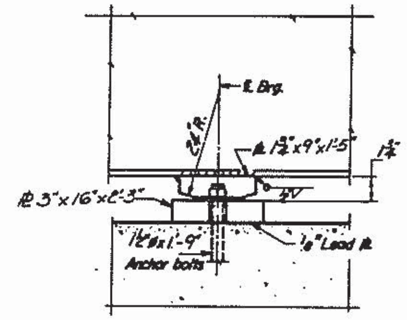

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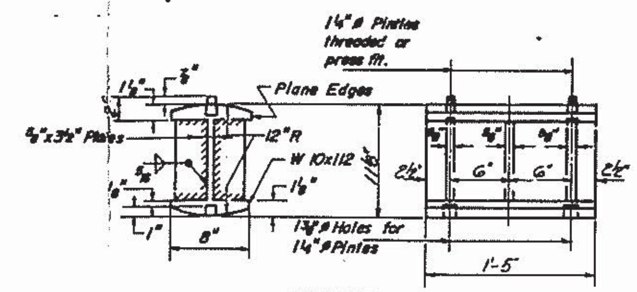
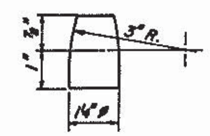
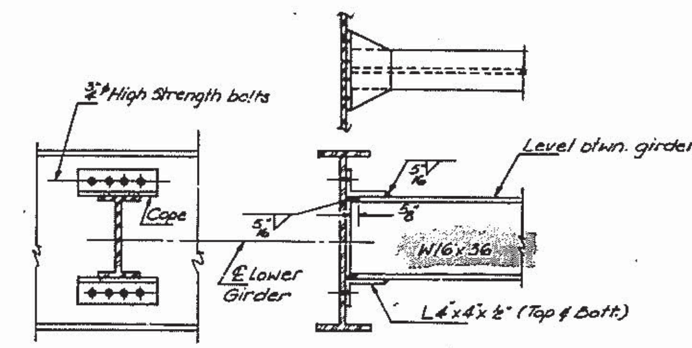


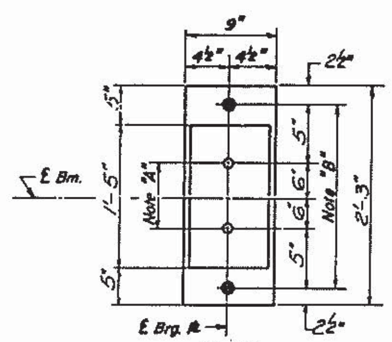
ROCKER



PINTLE



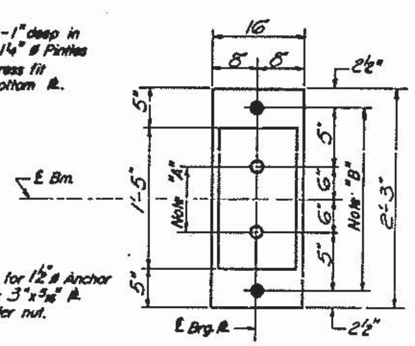
DIAPHRAGM D1
32 Required



PLAN
AT ABUTMENT

Note "A"
1¾" ø Holes - 1" deep in top ℄ for 1¼" ø Pintles
Thread or press fit pintles in bottom ℄.

Note "B"
2" ø Holes for 1½" ø Anchor Bolts - 3" x 3" x 5⁄16" ℄ Washers under nut.



PLAN
AT PIER

NOTES FOR SETTING OF ANCHOR BOLTS AT EXPANSION BEARINGS

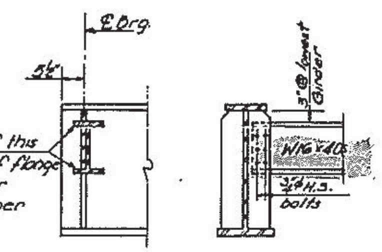
a.) D* (Side of brg. away from fixed brg.)
D* = ⅛" per. each 100' of expansion for every 15° fall below the normal temp. of 50° F.
D** (Side of brg. toward fixed brg.)
D** = ⅛" per each 100' of expansion for every 15° rise above the normal temp. of 50° F.

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.

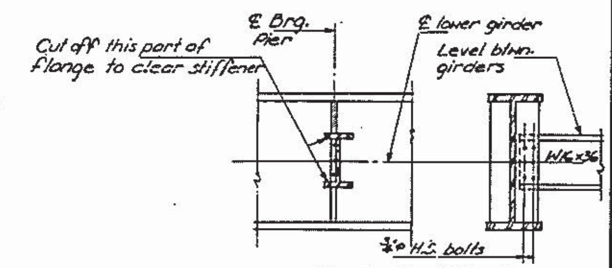
INTERIOR GIRDER MOMENT TABLE		
	0.4 Sp.1	Pier
Is (in⁴)	22200	55654
Ic (in⁴)	63488	
Ss (in³)	1173	2100
Sc (in³)	1629	
ℓ (K/ʹ)	1.022	1.022
Mℓ (ʹK)	707.8	1863.4
fsℓ (ksi)	7.24	10.65
sℓ (K/ʹ)	0.505	0.505
Msℓ (ʹK)	441.6	690.4
ML (ʹK)	954	836.1
MImp (ʹK)	200.3	175.6
Total (ʹK)	1595.9	1702.1
fsL+fssℓ (ksi)	11.76	9.73
fs Total (ksi)	19.0	20.38
VR (K)	58.7	

INTERIOR GIRDER REACTION TABLE		
	Abut.	Pier
Rℓ+sℓ (K)	59.6	213.2
RL (K)	44.0	76.2
Imp. (K)	9.2	16.0
R Total (K)	112.8	305.4

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 L + Impact shear range in span.



DIAPHRAGM D
8 Required



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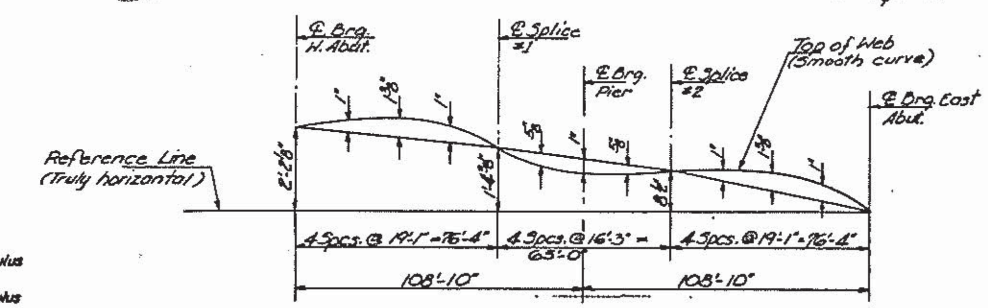

CAMBER DIAGRAM
(Typ. for all girders)

TOP OF WEB ELEVATION *

Loc.	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5
℄ Brg. W. Abut.	619.11	619.25	619.37	619.25	619.11
℄ Splice 1	618.29	618.43	618.55	618.43	618.29
℄ Brg. Pier	617.88	618.02	618.14	618.02	617.88
℄ Splice 2	617.64	617.78	617.90	617.78	617.64
℄ Brg. E. Abut.	616.93	617.07	617.19	617.07	616.93

* For Fabrication only (Included allowance for Dead Load Deflection)

DESIGNED Chi Tsen Chen
CHECKED Dan Chilton
DRAWN A. Barraza
CHECKED DLC

EXAMINED Jan 24 1972
PASSED W. E. Baumann
Richard H. Golterman

I-2-G 3-29-71

BEARING DETAILS
F.A.I. RT. 55 SEC. 54-3HB-1
LOGAN COUNTY
STA. 299+49.03

FILE NAME = D:\OPERATIONS\Bridges\Bridgeplans_CAD\72H87	USER NAME = dudleybm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS SN 054-0045 (FOR INFORMATION ONLY)	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	72H87 - Logan County paint FY16\plansheet.dgn	DRAWN -	REVISED -			VAR.	D6 BDGE PAINTING 2016	LOGAN	28	18
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Default	PLOT DATE = 7/7/2015	DATE -	REVISED -		SCALE: SHEET OF SHEETS STA. TO STA.	ILLINOIS FED. AID PROJECT				

FEDERAL AID ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 706	117 BR.	LOGAN	50	9
FED. ROAD DIV. NO.	ILLINOIS	PROJECT		

BENCH MARK: BM # 100 – WATERWAY DISK SET IN WINGWALL AT STA. 281+98, 18' RT. OF ℄ IN SOUTHWEST WINGWALL OF SALT CREEK BRIDGE. ELEVATION = 590.92 ±

EXISTING STRUCTURE: 054-0021. THE EXISTING THREE SPAN CONTINUOUS STEEL STRINGER AND NINE SIMPLE SPAN REINFORCED CONCRETE "T" BEAM BRIDGE MEASURES 549'-0" BK. TO BK. OF ABUTMENTS AND HAS A 35'-8" WATER TABLE. THIS STRUCTURE WAS BUILT AS S.B.I. RTE. 121, SEC. A-117B IN 1931. THIS STRUCTURE WAS WIDENED IN 1958 AND THE ORIGINAL THRU TRUSS WAS REPLACED BY THE THREE SPAN STEEL STRINGERS. THE EXISTING BRIDGE SHALL BE REMOVED AND REPLACED WITH A TWO SPAN AND FIVE SPAN CONTINUOUS APPROACH STRUCTURES. THE EXISTING THREE SPAN STEEL STRINGERS AND TWO HAMMERHEAD PIERS SHALL REMAIN. THE PROPOSED BRIDGE MEASURES 573'-0" BK. TO BK. OF ABUTMENTS. THERE WILL BE NO SHIFT IN ROADWAY ALIGNMENT. THE EXISTING SOUTH BOUND LANE SHALL MAINTAIN STAGE I TRAFFIC. STAGE II TRAFFIC SHALL BE MAINTAINED BY EAST HALF OF THE PROPOSED BRIDGE.

NO SALVAGE.

① EXISTING ABUTMENTS – REMOVE UPPER PORTION DURING STAGE CONSTRUCTION AS REQUIRED FOR INSTALLATION OF PROPOSED STEEL STRINGERS AND PROPOSED ABUTMENTS-⑦. LOWER PORTION OF EXISTING ABUTMENT TO REMAIN IN PLACE.

② EXISTING PIERS – REMOVE UPPER PORTION DURING STAGE CONSTRUCTION AS REQUIRED TO MINIMUM OF 1'-0" BELOW EXISTING GROUND LINE.

③ EXISTING HAMMERHEAD PIERS – TO REMAIN. REPLACE ROCKER BEARINGS WITH TYPE I, ELASTOMERIC. PRIOR TO EXISTING DECK REMOVAL, DRIVE TEMPORARY H PILING AND INSTALL TEMPORARY SUPPORT SYSTEM.

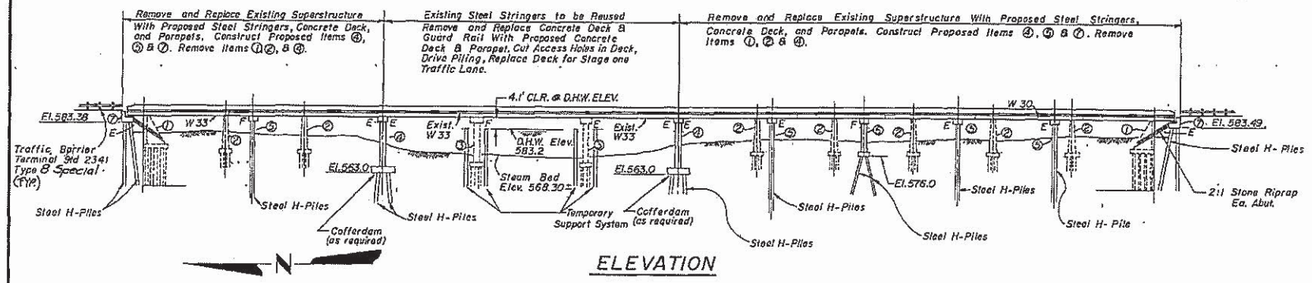
④ EXISTING PIERS – REMOVE DOWN TO BOT. OF PILE CAP DURING STAGE CONSTRUCTION. DRIVE PROPOSED STEEL PILING THROUGH/AROUND THE EXISTING TIMBER PILE GROUP. CONSTRUCT PROPOSED PIER. TEMPORARILY SUPPORT EXISTING W33 STRINGERS DURING PIER REMOVAL AND CONSTRUCTION.

⑤ PROPOSED PILE BENTS TO BE INSTALLED DURING STAGE CONSTRUCTION.

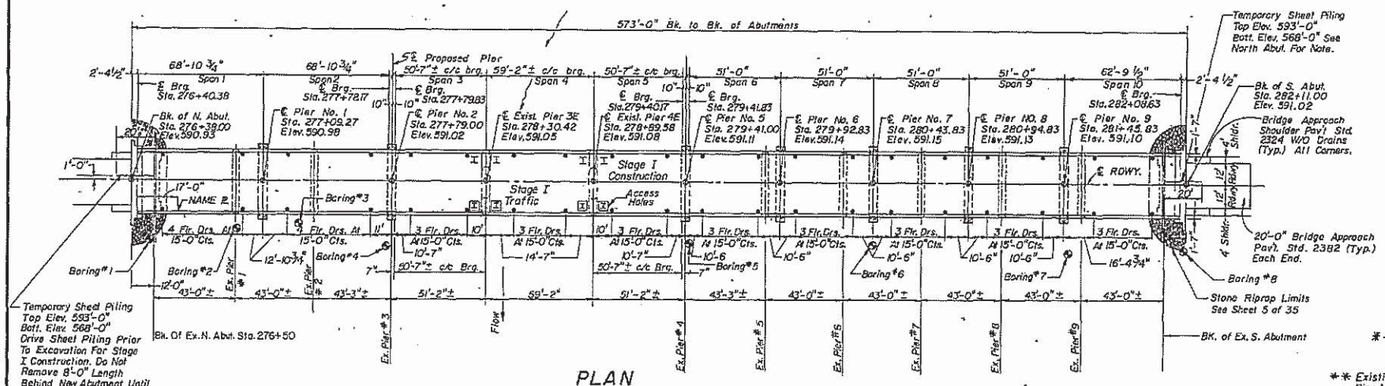
⑥ PIER NO. 5 : PROPOSED SOLID R.C. PIER.

⑦ PROPOSED ABUTMENT – PLACED BEHIND EXISTING TO AVOID DEEP EXCAVATION AND COMPLETE REMOVAL OF EXISTING ABUTMENT – ①.

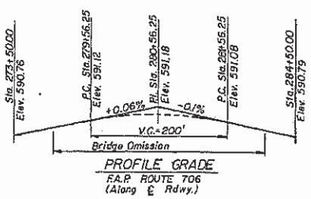
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION



PLAN



PROFILE GRADE
F.A.P. ROUTE 706 (Along ℄ Rdwy.)

DESIGN SPECIFICATIONS
AASHTO (1983 & 1984 Thru 1988 Interim), New Construction

LOADING HS 20-44
25 lbs./sq.ft. Allowance for Future Wearing Surface.

DESIGN STRESSES
f'c = 3,500 p.s.i.
fy = 60,000 p.s.i. (Reinf.)
fy = 50,000 p.s.i. (Structural Stl.) (M 223, Gr. 50)
fy = 36,000 p.s.i. (Structual Stl.) (M 183)

STATION	279 + 24.5
BUILT	19__ BY
STATE OF ILLINOIS	
F.A.	RTE. 706 SEC. 117 BR
F.A.	PROJ. ACBHP-706(16)
LOADING	HS 20
STR. NO.	054-0021

NAME PLATE
(See Standard 2115)

WATERWAY INFORMATION

Drainage Area = 435 Sq.Mi. Low Grade Elev. 587.72' at Sta. 267+95

Flood		Freq. Yr.	Q C.F.S.	Opening Exist.	Opening Prop.	Sq. Ft. Net.	H.W.E.	Head-Ft. Exist.	Head-Ft. Prop.	Headwater Elev. Exist.	Headwater Elev. Prop.
Design	Main Channel		12,280	4086	4086						
	Overflow	50	2,300	360	360	583.2'		0.38	0.38	583.58'	583.58'
	Total		14,580	4,446	4,446						
Base	Main Channel		14,032	4216	4216						
	Overflow	100	2,500	375	375	583.5'		0.45	0.45	583.95'	583.95
	Total		16,532	4591	4591						
Maximum Or Overtopping	Main Channel		17,945	——	4686						
	Overflow	500	3,000	——	400	584.0'		——	0.65	——	584.65'
	Total		20,945	——	4,886						

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
John W Clad
Registered Structural Engineer

PIER NO. 2 & 5 (ITEM ④) CONSTRUCTION SEQUENCE

1.) CONSTRUCT TEMPORARY SHORING FOR THE EXISTING W33 BEAMS DURING STAGE CONSTRUCTION.

2.) REMOVE EXISTING PIERS (ITEM ④) USING STAGE REMOVAL.

3.) REBUILD PIERS NO. 2 & 5 (ITEM ④) DURING STAGE CONSTRUCTION.

GENERAL NOTES

See Proposal for Boring Data.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to normal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

The Contractor shall drive (1) HP10x42 test pile in a permanent location at the S. Abutment, (1) HP12x63 test pile in a permanent location at Pier #6 and (1) HP14x73 test pile in a permanent location at Pier #1.***

*** For Continuation of General Notes See Sheet 5 of 35.

TOTAL BILL OF MATERIAL

	ITEM	UNIT	SUB-STRUCTURE	SUPER-STRUCTURE	TOTAL
Added	Bridge Seal Sealer	L. Sum	1		1
**	Removal of Existing Concrete Deck	L. Sum		1	1
	Structure Excavation	Cu.Yd.	1,122	—	1,122
	Floor Drains	Each	—	64	64
*	Protective Coat	Sq.Yd.	—	2,515	2,515
	Class X Concrete	Cu.Yd.	274.4	—	274.4
	Class X Concrete Super-Structure	Cu.Yd.	—	632.0	632.0
	Furn. and Erect. Structural Steel	L. Sum	—	1	1
	Reinforcement Bars	Pound	16,210	—	16,210
	Reinforcement Bars (Epoxy Coated)	Pound	8,850	151,450	160,300
	Preformed Joint Seal, 2-1/2"	Lin.Ft.	—	35	35
	Preformed Joint Seal, 4"	Lin.Ft.	—	35	35
	Neoprene Expansion Joint, 2"	Lin.Ft.	—	34	34
	Neoprene Expansion Joint, 4"	Lin.Ft.	—	34	34
	Elastomeric Bearing Assembly, Type I	Each	—	48	48
	Elastomeric Bearing Assembly, Type II	Each	—	12	12
	Temporary Bridge Rail	Lin.Ft.	—	573	573
	Removal of Existing Sub-Structures	L. Sum	1	—	1
	Removal of Existing Super-Structures	L. Sum	—	1	1
	Furnish Steel Piles (HP 10x42)	Lin.Ft.	2,076	—	2,076
	Furnish Steel Piles (HP 12x63)	Lin.Ft.	853	—	853
	Furnish Steel Piles (HP 14x73)	Lin.Ft.	240	—	240
	Driving Steel Piles	Lin.Ft.	3,169	—	3,169
	Test Pile Steel (HP 10x42)	Each	1	—	1
	Test Pile Steel (HP 12x63)	Each	1	—	1
	Test Pile Steel (HP 14x73)	Each	1	—	1
	Stud Shear Connectors	Each	—	6,456	6,456
	Nameplates	Each	—	1	1
	Stone Riprap CL A-4	Sq.Yd.	150	—	150
	Class X Concrete Encasement	Cu.Yd.	29.6	—	29.6
	Filter Fabric For Use With Riprap	Sq.Yd.	150	—	150
	Temporary Sheet Piling	Sq.Ft.	1,000	—	1,000
***	Cleaning and Painting Steel Bridge	L. Sum	—	1	1
	Temporary Support System	L. Sum	1	—	1
	Temporary Shoring	Each	—	4	4
	Jacking Existing Super-Structure	L. Sum	—	1	1
	Cofferdams	Each	2	—	2

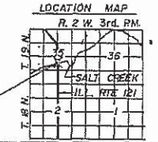
For Quantity and Location of Temporary Concrete Barrier, See Roadway Plans.

* – Includes Bridge Deck Surface

** Existing Structure From Pier No. 2 To Pier No. 5

*** Estimated Quantity 462 Sq. Ft.

LOCATION MAP
R. 2 W. 3rd. P.M.



F.A.P. ROUTE 706
SECTION 117BR
LOGAN COUNTY
STATION 279+24.5

ILLINOIS ROUTE 121 over SALT CREEK

GENERAL PLAN & ELEVATION

STRUCTURE NO. – 054-0021

REVISED 3-27-89 BY H.L.C. CHANGED "REINF. BARS" QTY. FROM 25,060 LBS. TO 16,210 LBS.
REVISED 3-27-89 BY H.L.C. CHANGED "REINF. BARS, EPOXY COATED" QTY. FROM 151,450 LBS. TO 160,300 LBS.
REVISED 3-27-89 BY H.L.C. ADDED "BRIDGE SEAL SEALER" QTY. L. SUM-1 (SEE QTY. 462 Sq.

DESIGNED	L.L. VIELEY
CHECKED	LLV / LLV
DRAWN	S.H.GRUBER
CHECKED	LLV

R.A.N. CONSULTANTS INC.

F.A. ROUTE 706 (ILL. 121)/SALT CREEK

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	PLOT DATE = 7/7/2015	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

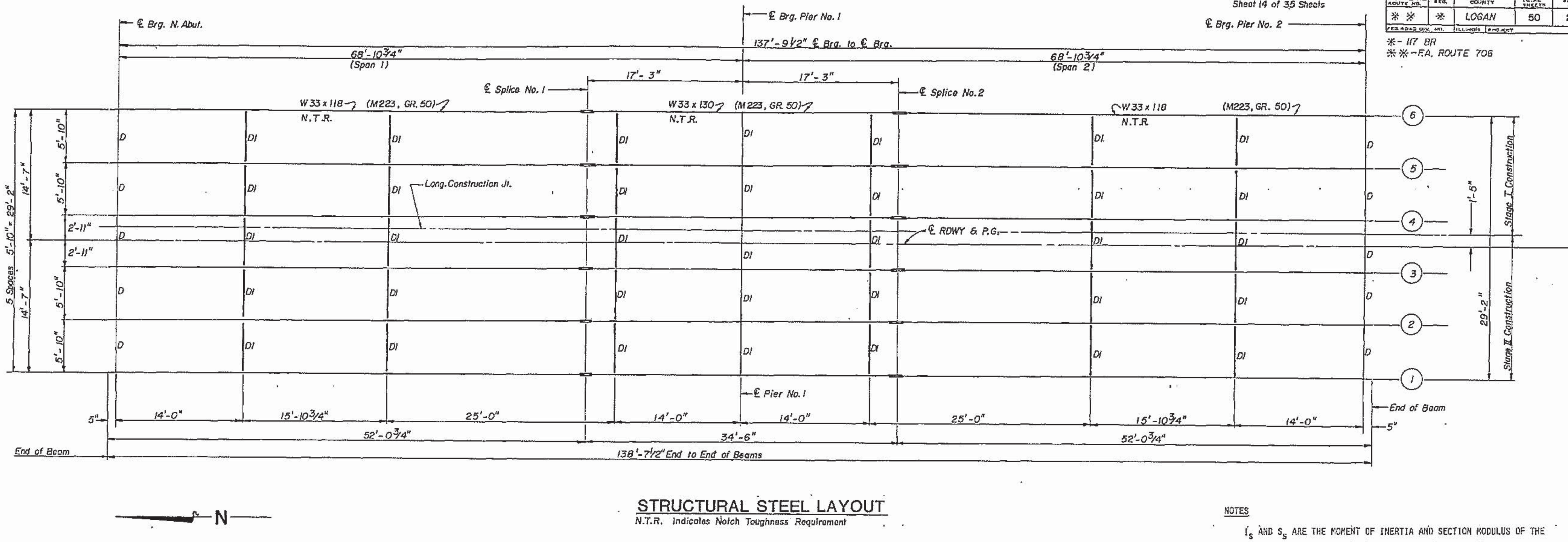
EXISTING PLANS SN 054-0021
(FOR INFORMATION ONLY)
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	19
		CONTRACT NO. 72H87		
		ILLINOIS FED. AID PROJECT		

Sheet 14 of 35 Sheets

FEDERAL AID ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
※ ※	※	LOGAN	50	22

※- 117 BR
※※-F.A. ROUTE 706



STRUCTURAL STEEL LAYOUT

N.T.R. Indicates Notch Toughness Requirement

INTERIOR GIRDER MOMENT TABLE

		0.4 Span 1 or 2	Pier No. 1
Is	(in⁴)	5900	6710
Ic	(in⁴)	16424	—
Ss	(in³)	359	406
Sc	(in³)	546	—
Dead Load	(k/ft.)	0.706	0.986
M Dead Load	(ft.-k)	228.1	572.3
S Dead Load	(k/ft.)	0.280	—
Ms Dead Load	ft.-k)	110.6	—
M Live Load	(ft.-k)	437.9	241.3
M Impact	(ft.-k)	113.0	62.3
5/3 (MLL+I)	(ft.-k)	918.2	506
※ Ma	(ft.-k)	1634	1402
※※ Mu	(ft.-k)	2275	1502
fs D.L. Non-Comp.	(ft.-k)	7.6	16.9
fs D.L. Comp.	(ksi)	2.7	—
fs 5/3 (LL+I)	(ksi)	20.2	15.0
fs Overload	(ksi)	30.5	31.9
fs Total	(ksi)	39.7	41.5
Vr	(k)	43.2	—

ELEVATION OF TOP OF BEAM

(TO BE USED FOR FABRICATION ONLY)

Beam / Location	℄ Brg. N. Abut.	℄ Splice No. 1	℄ Brg. Pier No. 1	℄ Splice No. 2	℄ Brg. Pier No. 2
Beam ①	589.970	589.897	589.907	589.917	590.053
Beam ②	590.078	590.005	590.015	590.025	590.161
Beam ③	590.169	590.096	590.106	590.116	590.252
Beam ④	590.169	590.096	590.106	590.116	590.252
Beam ⑤	590.078	590.005	590.015	590.025	590.161
Beam ⑥	589.970	589.897	589.907	589.917	590.053

See Sheet 17 for Splice Plate Connections and Diaphragm Details.

INTERIOR REACTION TABLE

		North Abut. Pier No. 2	Pier No. 1
R. Dead Load	(kips)	25.8	84.4
R. Live Load	(kips)	36.3	44.8
Impact	(kips)	9.3	11.6
R. Total	(kips)	71.4	140.8

NOTES

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 LL + IMPACT SHEAR RANGE IN SPAN.

THE FULLY PLASTIC MOMENT CAPACITY (M_u) IS COMPUTED ACCORDING TO AASHTO 10.48.1 & 10.50.1.1.

F_s (TOTAL) IS THE SUM OF THE STRESSES DUE TO $1.3 [M^{D}_{L} + \frac{5}{3}(M^{L}_{L} + I)]$.

F_s (OVERLOAD) IS THE SUM OF THE STRESSES DUE TO $M^{D}_{L} + \frac{5}{3}(M^{L}_{L} + I)$.

※ M_A (APPLIED MOMENT) = $1.3 [M^{D}_{L} + M_s{}^{D}_{L} + \frac{5}{3}(M^{L}_{L} + I)]$.

M^{D}_{L} - MOMENT DUE TO DEAD LOAD ON NON-COMPOSITE SECTION.

$M_s{}^{D}_{L}$ - MOMENT DUE TO DEAD LOAD ON COMPOSITE SECTION.

M^{L}_{L} - MOMENT DUE TO LIVE LOAD ON COMPOSITE SECTION.

I - LIVE LOAD IMPACT.

※※ Mu - ULTIMATE MOMENT CAPACITY OF SECTION.

DESIGNED	L.L.VIELEY
CHECKED	LLV/LLJ
DRAWN	S.H.GRUBER
CHECKED	LLJ

F.A.P. ROUTE 706
SECTION 117 BR
LOGAN COUNTY
STATION 279+24.5

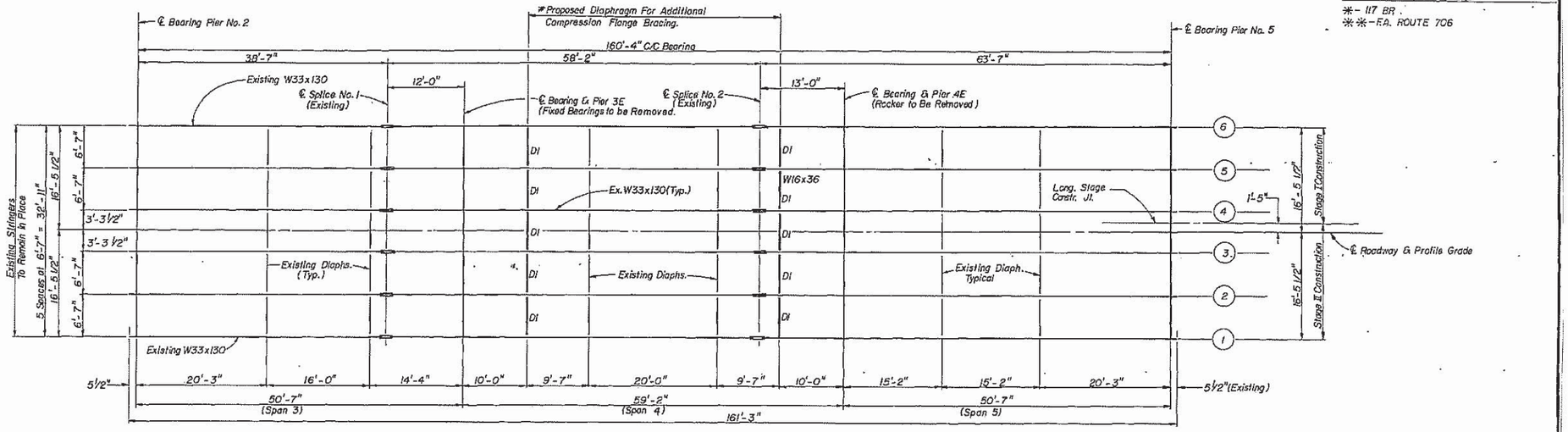
STRUCTURAL STEEL LAYOUT 2-SPAN STRUCTURE

R.A.N. CONSULTANTS, INC.

F.A. ROUTE 706 (ILL. 121)/SALT CREEK

FEDERAL-AID ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
**	*	LOGAN	50	23
FED. ROAD DIV. NO.	ILLINOIS	FED. PROJECT		

*- 117 BR.
**-F.A. ROUTE 706



N

EXISTING STRUCTURAL STEEL LAYOUT

Construction Notes:
1. Remove Existing Bridge Rail, Concrete Curb, Concrete Slab Down to Top of Steel Stringers, Per Stage Construction Sequence.
2. Existing Stringers 1 Thru 6 to Remain as Located.
3. Temporarily Shore Stringers Near Pier's No. 2 & No. 5 For Pier Construction. *See Special Provisions.*
4. Shore and Place Proposed Elastomeric Brgs. @ Existing Pier 4E.
5. Areas Noted by(*) Indicate Proposed Diaphragm to be Shop Fabricated and Field Installed.
6. *See Sheet 17 for Diaphragm Detail.*

INTERIOR GIRDER MOMENT TABLE

		0.4 Span 3 or 5	Pier 3E or 4E	0.5 Span 4
Is	(in^4)	6710	6710	6710
Ss	(in^3)	405.4	405.4	405.4
Z	(in^3)	467	——	467
Dead Load	(k/ft.)	0.836	0.836	0.836
M Dead Load	(ft.-k)	155.9	261.7	114.0
S-Dead Load	(k/ft.)	0.28	0.28	0.28
Ms Dead Load	(ft.-k)	52.2	84.3	38.2
M Live Load	(ft.-k)	306.1	239.4	290.1
M Impact	(ft.-k)	85.7	64.7	81.2
M LL+I	(ft.-k)	391.8	304.1	371.3
** Ma	(ft.-k)	1119.4	1095.6	1002.4
*** Mu	(ft.-k)	1401.0	1101.3	1401.0
fs D.L.	(ksi)	6.2	9.9	4.5
fs 5/3 (LL+I)	(ksi)	19.3	15.0	18.3
fs Overload	(ksi)	25.5	24.9	22.8
fs Total	(ksi)	33.2	32.4	29.6
Vr	(k)	48.2	——	48.7

ELEVATION OF TOP OF BEAM

Beam / Location	℄ Brg. Pier No 2	℄ Splice No. 1	℄ Brg. Pier 3E	℄ Splice No. 2	℄ Brg. Pier 4E"	℄ Brg. Pier No. 5
Beam ①	589.803	589.826	589.833	589.860	589.866	589.896
Beam ②	589.903	589.926	589.933	589.960	589.966	589.996
Beam ③	589.973	589.996	590.003	590.030	590.036	590.066
Beam ④	589.973	589.996	590.003	590.030	590.036	590.066
Beam ⑤	589.903	589.926	589.933	589.960	589.966	589.996
Beam ⑥	589.803	589.826	589.833	589.860	589.866	589.896
		N/A		N/A		

INTERIOR REACTION TABLE

		Piers 2 & 5	Piers 3E & 4E
R. Dead Load	(kips)	21.6	67.9
R. Live Load	(kips)	38.1	45.4
Impact	(kips)	10.7	12.3
R. Total	(kips)	70.4	125.6

NOTES

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).

VR IS THE MAXIMUM $\frac{1}{2}$ + IMPACT SHEAR RANGE IN SPAN.

Z IS THE PLASTIC SECTION MODULUS USED TO DETERMINE THE FULLY PLASTIC MOMENTS IN THE NON-COMPOSITE AREAS.

THE FULLY PLASTIC MOMENT CAPACITY (M_U) IS COMPUTED ACCORDING TO AASHTO 10.48.1 & 10.50.1.1.

F_S (TOTAL) IS THE SUM OF THE STRESSES DUE TO 1.3 $[M^D_L + \frac{5}{3}(M^L_L + I)]$.

F_S (OVERLOAD) IS THE SUM OF THE STRESSES DUE TO $M^D_L + \frac{5}{3}(M^L_L + I)$.

**M_A (APPLIED MOMENT) = 1.3 $[M^D_L + M^D_S + \frac{5}{3}(M^L_L + I)]$.

M^D_L - MOMENT DUE TO DEAD LOAD ON SECTION.

M^D_S - MOMENT DUE TO SUPERIMPOSED DEAD LOAD ON SECTION.

M^L_L - MOMENT DUE TO LIVE LOAD ON SECTION.

I - LIVE LOAD IMPACT.

***Mu - ULTIMATE MOMENT CAPACITY OF SECTION.

DESIGNED	L.L.VIELEY
CHECKED	
DRAWN	S.H.GRUBER
CHECKED	

F.A.R. ROUTE 706
SECTION 117 BR
LOGAN COUNTY
STATION 279+24.5

STRUCTURAL STEEL LAYOUT EXISTING 3-SPAN STRUCTURE

R.A.N. CONSULTANTS, INC.

F.A. ROUTE 706 (ILL. 121)/SALT CREEK

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Default	PLOT DATE = 7/7/2015	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS SN 054-0021
(FOR INFORMATION ONLY)

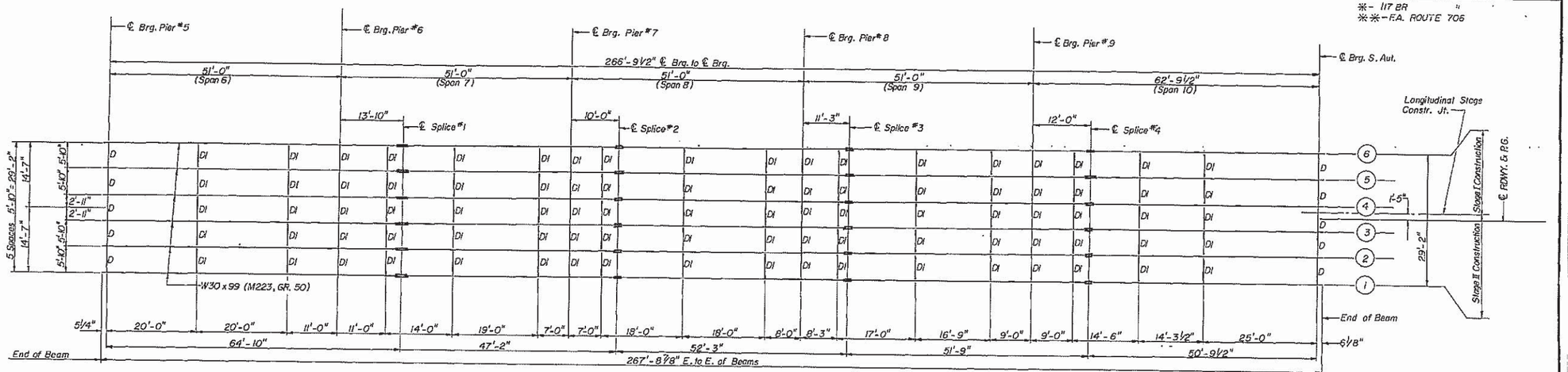
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	21
		CONTRACT NO. 72H87		
		ILLINOIS FED. AID PROJECT		

FEDERAL-AID ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
* *	*	LOGAN	50	24
FED. ROAD DIV. NO.		ILLINOIS PROJECT		

Sheet 16 of 35 Sheets

*- 117 BR
**-F.A. ROUTE 706



STRUCTURAL STEEL LAYOUT

ELEVATION OF TOP OF BEAM (TO BE USED FOR FABRICATION ONLY)

Beam / Location	℄ Brg. Pier No. 5	℄ Brg. Pier No. 6	℄ Splice No. 1	℄ Brg. Pier No. 7	℄ Splice No. 2	℄ Brg. Pier No. 8	℄ Splice No. 3	℄ Brg. Pier No. 9	℄ Splice No. 4	℄ Brg. S. Abut.
Beam ①	590.146	590.106	590.095	590.090	590.089	590.075	590.071	590.045	590.037	590.064
Beam ②	590.254	590.215	590.203	590.198	590.197	590.183	590.179	590.153	590.145	590.172
Beam ③	590.345	590.305	590.294	590.289	590.288	590.274	590.270	590.244	590.236	590.263
Beam ④	590.345	590.305	590.294	590.289	590.288	590.274	590.270	590.244	590.236	590.263
Beam ⑤	590.254	590.215	590.203	590.198	590.197	590.183	590.179	590.153	590.145	590.172
Beam ⑥	590.146	590.106	590.095	590.090	590.089	590.075	590.071	590.045	590.037	590.064

See Sheet 18 for Beam Details

INTERIOR GIRDER MOMENT TABLE

		0.4 Span 6	Pier No. 6	0.5 Span 7	Pier No. 7	0.5 Span 8	Pier No. 8	0.5 Span 9	Pier No. 9	0.6 Span 10
Is	(in^4)	3990	3990	3990	3990	3990	3990	3990	3990	3990
Ic	(in^4)	12097	—	12097	—	12097	—	12097	—	12097
Ss	(in^3)	269.1	269.1	269.1	269.1	269.1	269.1	269.1	269.1	269.1
Sc	(in^3)	428.0	—	428.0	—	428.0	—	428.0	—	428.0
Dead Load	(k/ft)	0.674	0.954	0.674	0.954	0.674	0.954	0.674	0.954	0.674
M Dead Load	(ft-k)	137.2	243.9	56.2	193.3	88.0	164.5	37.1	336.1	217.5
S- Dead Load	(k/ft.)	0.28	—	0.28	—	0.28	—	0.28	—	0.28
Ms Dead Load	(ft-k)	64.8	—	39.4	—	45.9	—	32.8	—	103.3
M Live Load	(ft.-k)	294.4	138.3	240.5	130.3	251.9	132.3	234.3	170.5	392.3
M Impact	(ft.-k)	83.6	33.3	68.3	37.0	71.5	37.6	66.6	46.9	104.4
5/3 (M L+I)	(ft.-k)	629.9	295.9	514.7	278.9	539.0	283.2	501.5	362.3	827.8
* Mo	(ft.-k)	1081.5	701.8	793.2	613.9	874.7	582.0	742.8	907.9	1493.0
** Mu	(ft.-k)	2569	1028	2569	1083	2569	1068	2569	1060	2569
fs D.L. Non-Comp.	(ft.-k)	6.1	10.9	2.5	8.6	3.9	7.3	1.7	15.0	9.7
fs D.L. Comp.	(ksi)	2.0	—	1.2	—	1.4	—	1.0	—	3.2
fs 5/3 (L L+I)	(ksi)	17.7	13.2	14.4	12.4	15.1	12.6	14.1	16.2	23.2
fs Overload	(ksi)	25.8	24.1	18.1	21.0	20.4	19.9	16.8	31.2	36.1
fs Total	(ksi)	33.5	31.3	23.5	27.3	26.5	25.9	21.8	40.6	46.9
Vr	(k)	41.9	—	42.1	—	42.0	—	42.7	—	42.8

INTERIOR REACTION TABLE

		Pier # 5	Pier # 6	Pier # 7	Pier # 8	Pier # 9	S. Abut.
R. Dead Load	(kips)	19.6	54.4	48.3	44.9	63.0	24.7
R. Live Load	(kips)	34.4	39.2	38.6	38.6	40.1	35.9
Impact	(kips)	9.7	11.1	10.9	11.0	11.0	9.5
R. Total	(kips)	63.7	104.7	97.8	94.5	114.1	70.1

NOTES

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 ℄ + IMPACT SHEAR RANGE IN SPAN.

Z IS THE PLASTIC SECTION MODULUS USED TO DETERMINE THE FULLY PLASTIC MOMENTS IN THE NON-COMPOSITE AREAS.

THE FULLY PLASTIC MOMENT CAPACITY (M_u) IS COMPUTED ACCORDING TO AASHTO 10.48.1 & 10.50.1.1.

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F_s (OVERLOAD) IS THE SUM OF THE STRESSES DUE TO $M^L_L + \frac{5}{3}(M^L_L + I)$.

* M_A (APPLIED MOMENT) = 1.3 $[M^D_L + M^D_S + \frac{5}{3}(M^L_L + I)]$.

M^D_L - MOMENT DUE TO DEAD LOAD ON NON-COMPOSITE SECTION.

M^D_S - MOMENT DUE TO DEAD LOAD ON COMPOSITE SECTION.

M^L_L - MOMENT DUE TO LIVE LOAD ON COMPOSITE SECTION.

I - LIVE LOAD IMPACT.

** Mu-ULTIMATE MOMENT CAPACITY OF SECTION

DESIGNED	L.L.VIELEY
CHECKED	LLV/MJ
DRAWN	S.H.GRUBER
CHECKED	LLV

F.A.P. ROUTE 706
SECTION 117 BR
LOGAN COUNTY
STATION 279+24.5

STRUCTURAL STEEL LAYOUT 5-SPAN STRUCTURE

R.A.N. CONSULTANTS, INC.

F.A. ROUTE 706 (ILL. 121)/SALT CREEK

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		DRAWN -	REVISED -
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Default	PLOT DATE = 7/7/2015	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

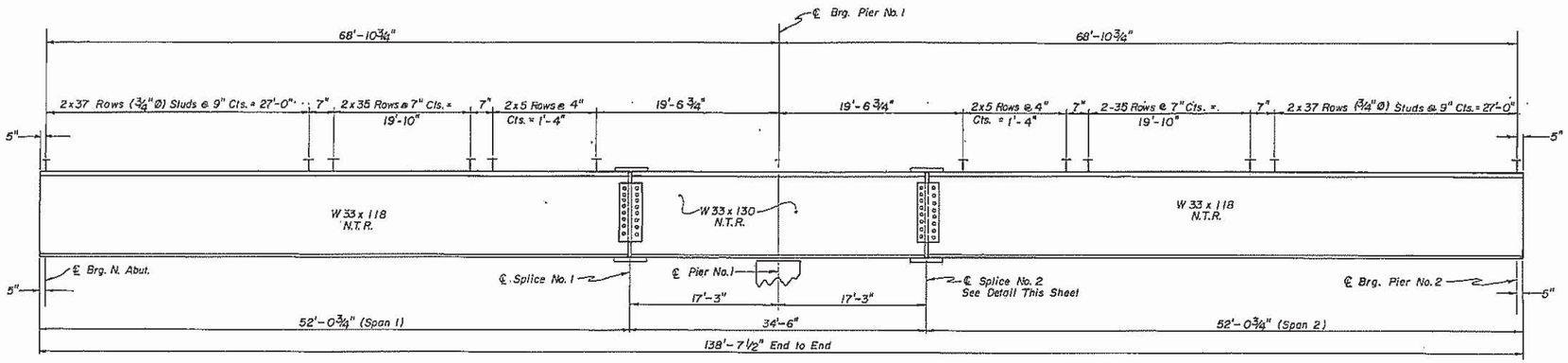
EXISTING PLANS SN 054-0021
(FOR INFORMATION ONLY)

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	06 BDGE PAINTING 2016	LOGAN	28	22
		CONTRACT NO. 72H87		
		ILLINOIS FED. AID PROJECT		

FEDERAL-AID ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
**	*	LOGAN	50	25
FED. ROAD DIV. NO.	ILLINOIS	PROJECT		

*- 117 BR
**-F.A. ROUTE 706



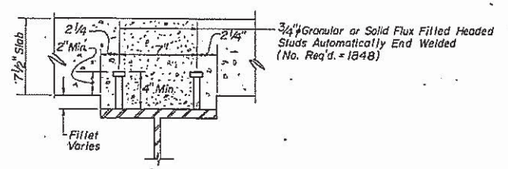
SHEAR CONNECTORS

All Structural Steel Fabricators Performing Work On The Main Load Carrying Components Of Steel Structures Shall Be Certified Under Category I (AISC) Of The Quality Certification Program.

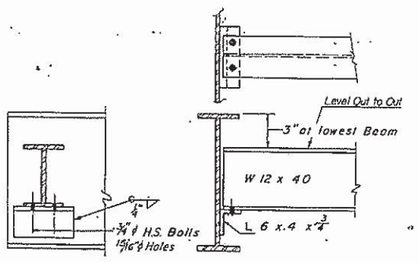
See Sheet 14 for Structural Steel Layout & Elevations.

N.T.R.- Notch Toughness Requirements Zone 2.

All W33 Beams and Splice Plate Materials Shall Be AASHTO, M-223, Grade 50 Steel.



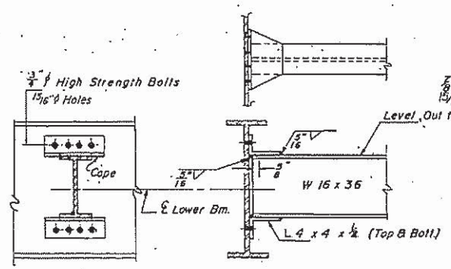
SHEAR STUDS



DIAPHRAGM D

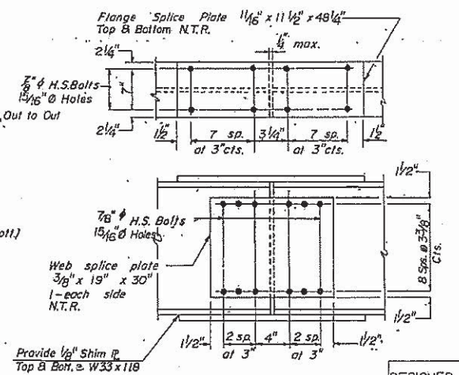
(10 Required @ 2 Span)
(10 Required @ 5 Span)

Note: Two hardened washers shall be required over all holes in diaph. connections.



DIAPHRAGM D1

(35 Required @ 2 Span)
(90 Required @ 5 Span)
(10 Required @ 3 Span)



SPLICE
No. 1 & No. 2

STUD SHEAR CONNECTORS

Span No.	No. of Rows	No. of Studs
1	77	154
2	77	154
Total Each Beam		308
Total No. Req'd. = 1848		

DESIGNED	L.L.VIELEY
CHECKED	JJJ/WW
DRAWN	S.H.GRUBER
CHECKED	JJJ

F.A.P. ROUTE 705
SECTION 117 BR
LOGAN COUNTY
STATION 279+24.5

SPLICE & DIAPHRAGM DETAILS SHEAR CONNECTORS

R.A.N. CONSULTANTS, INC.

F.A. ROUTE 706(ILL. 121)/SALT CREEK

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Default	PLOT DATE = 7/7/2015	CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

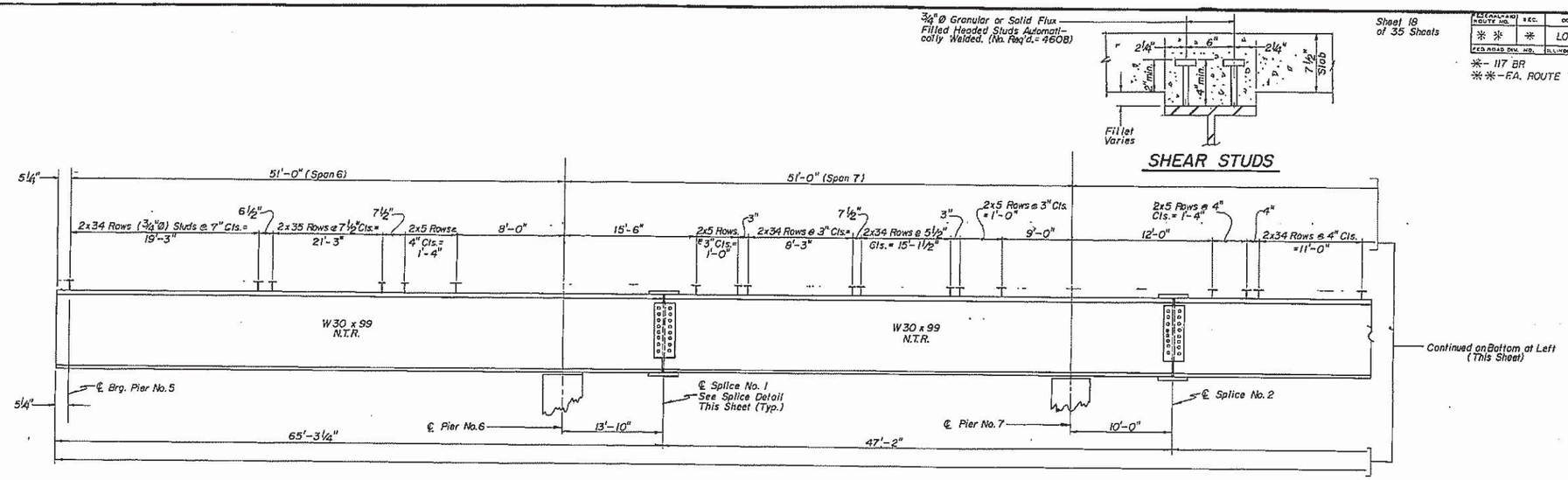
EXISTING PLANS SN 054-0021
(FOR INFORMATION ONLY)

SCALE: | SHEET OF SHEETS | STA. | TO STA.

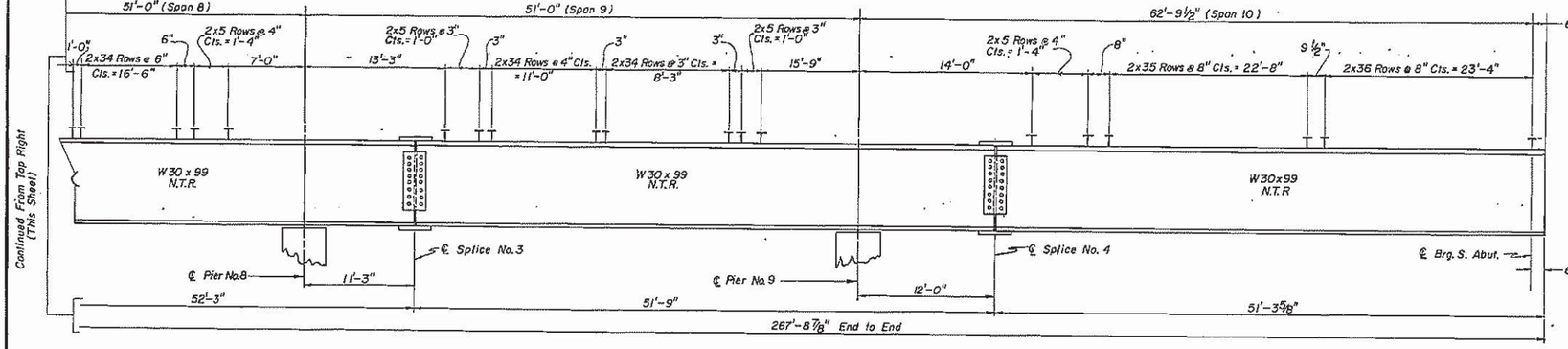
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	23
		CONTRACT NO. 72H87		
		ILLINOIS FED. AID PROJECT		

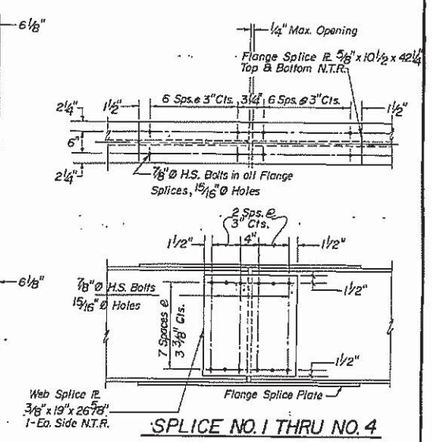
FED.ROAD/STATE ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
**	*	LOGAN	50	26
FED.ROAD DIV. NO.	ILLINOIS	PROJECT		

*- 117 BR
**-FA. ROUTE 706



SHEAR CONNECTORS





All Structural Steel Fabricators Performing Work On The Main Load Carrying Components Of Steel Structures Shall Be Certified Under Category I (AISC) Of The Quality Certification Program.

Notes:
- See Sheet 16 For Structural Steel Layout & Elevations.
- See Sheet 17 For Typical Diaphragm Details.
- N.T.R. – Notch Toughness Requirements – Zone 2.
- All W30 x 99 Beams And Splice Plate Materials Shall Be AASHTO M-223, Grade 50 Steel.

DESIGNED	L.L.VIELEY
CHECKED	LJV
DRAWN	S.H.GRUBER
CHECKED	LJV

F.A.P. ROUTE 706
SECTION 117 BR
LOGAN COUNTY
STATION 279+24.5

SPLICE DETAILS & SHEAR CONNECTORS

R.A.N. CONSULTANTS INC.

F.A. ROUTE 706 (ILL. 121) / SALT CREEK

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		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS SN 054-0021
(FOR INFORMATION ONLY)

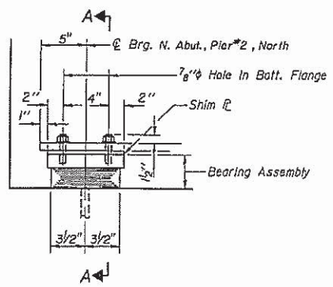
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	24
		CONTRACT NO. 72H87		
		ILLINOIS FED. AID PROJECT		

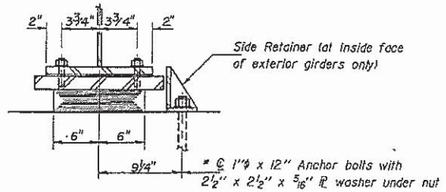
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 706	117 BR	LOGAN	50	27
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 19
SHEETS 35



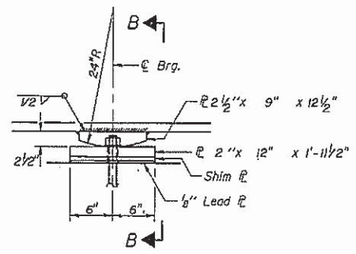
ELEVATION AT N. ABUT. & PIER # 2
(NORTH)



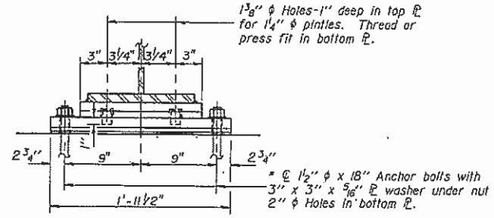
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

* Notes: Anchor bolts at fixed bearings may be built into the masonry.
See sheet # 24 for Anchor Bolt Installation.

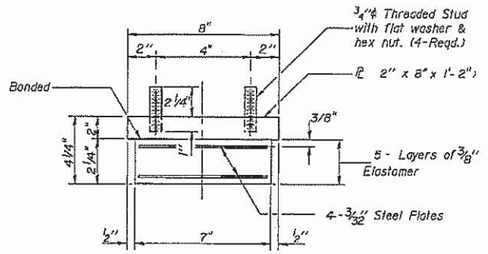


ELEVATION AT PIER # 1



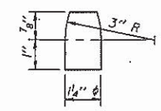
SECTION B-B
℄ Pier No. 1

FIXED BEARING

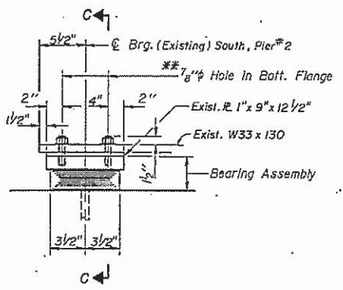


BEARING ASSEMBLY
℄ N. Abut. & Pier # 2

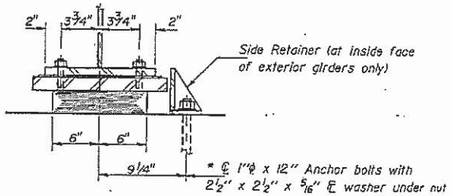
Note: Shim plates shall not be placed under Bearing Assembly.



PINTLE

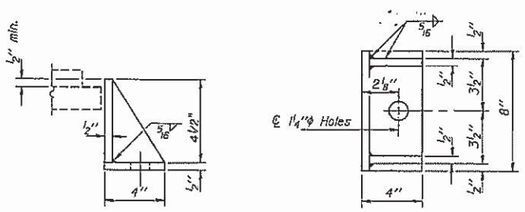


ELEVATION AT PIER # 2
(SOUTH)



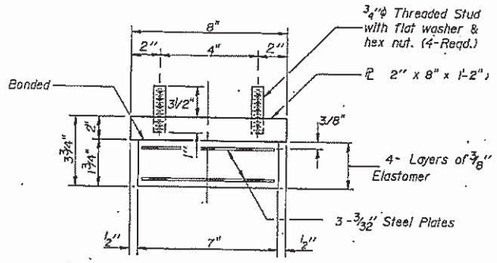
SECTION C-C
℄ Pier No. 2

** Cost of Field Drilling Existing Flanges For New Bearings Incidental to Cost of Elastomeric Bearings.
Cost of Existing Bearing Removal at Existing Piers 3 & 4 Incidental to Temporary Shoring.



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

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY
℄ Pier No. 2

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

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	18

DESIGNED	L.L.VIELEY
CHECKED	
DRAWN	S.H.GRUBER
CHECKED	

I-2-E1 12-1-83

F.A.R. ROUTE 706
SECTION 117 BR
LOGAN COUNTY.
STATION 279+24.5

BEARING DETAILS

R.A.N. CONSULTANTS, INC.

F.A. ROUTE 706 (ILL. 121)/SALT CREEK

FILE NAME = O:\OPERATIONS\Bridges\Bridgeplans.CAD\72H87 - Logan County paint FY16\plansheet.dgn	USER NAME = dudleybm	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 7/7/2015	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

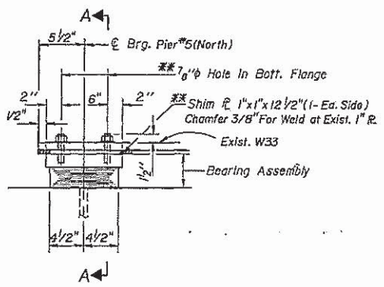
EXISTING PLANS SN 054-0021
(FOR INFORMATION ONLY)
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	25
		CONTRACT NO. 72H87		
ILLINOIS	FED. AID PROJECT			

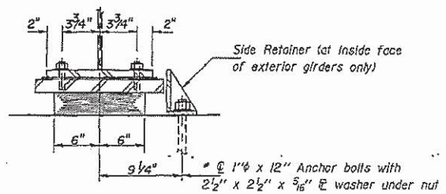
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.R. 706	117 BR	LOGAN	50	28
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT -		

SHEET NO. 20
SHEETS 35

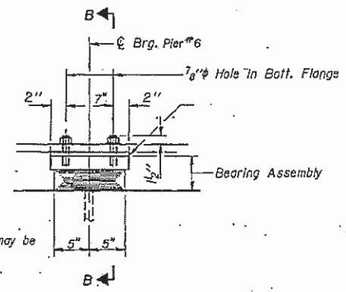


ELEVATION AT PIER NO. 5 — NORTH



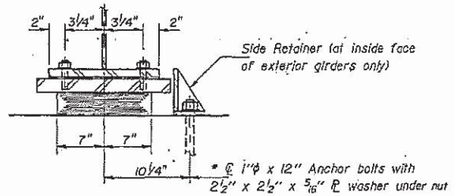
SECTION A-A
@ Pier No. 5

TYPE I ELASTOMERIC EXP. BRG.

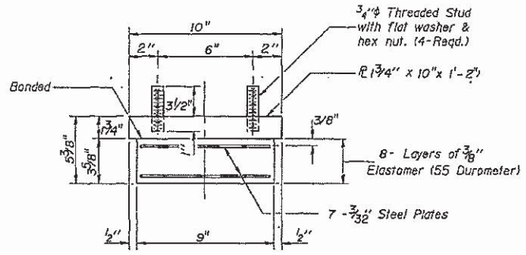


* Notes: Anchor bolts at fixed bearings may be built into the masonry.
See sheet #24 for Anchor Bolt installation.

ELEVATION AT PIER NO. 6

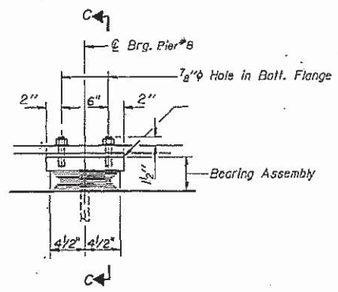


SECTION B-B
@ Pier No. 6

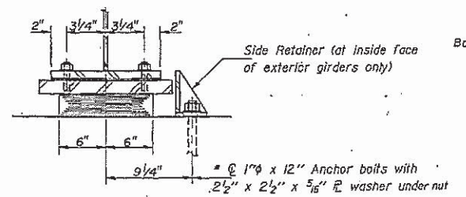


BEARING ASSEMBLY
@ Pier No. 5

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

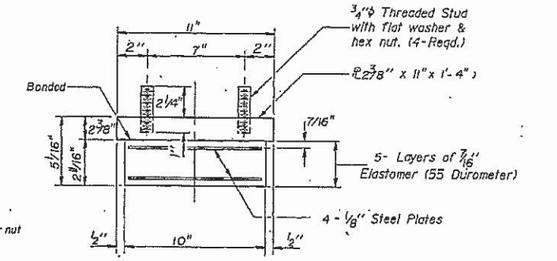


ELEVATION AT PIER NO. 8

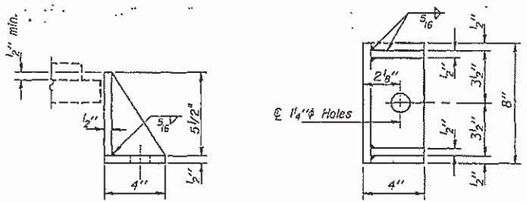


SECTION C-C
@ Pier No. 8

TYPE I ELASTOMERIC EXP. BRG.

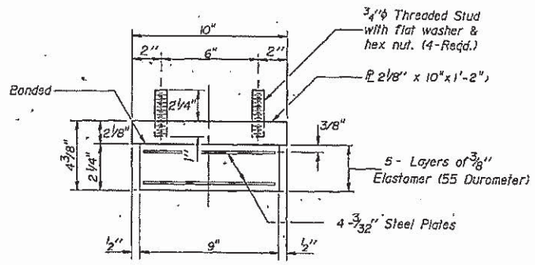


BEARING ASSEMBLY
@ Pier No. 6



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

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY
@ Pier No. 8

** Cost of Field Drilling Existing Flanges For New Bearings, including Shim Plates and Welding Incidental to Cost of Elastomeric Bearings.
Cost of Existing Bearing Removal at Existing Pier 3 & 4 Incidental to Temporary Shoring.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	18

DESIGNED	L.L.VIELEY
CHECKED	LLV/LLV
DRAWN	S.H.GRUBER
CHECKED	LLV

I-2-EI 12-1-83

F.A.R. ROUTE 706
SECTION 117 BR
LOGAN COUNTY
STATION 279+24.5

BEARING DETAILS

R.A.N. CONSULTANTS, INC.

F.A. ROUTE 706 (ILL. 121)/SALT CREEK

FILE NAME =	USER NAME = dudleybm	DESIGNED -	REVISED -
O:\OPERATIONS\Bridges\Bridgeplans_CAD\72H87 - Logan County paint FY16\plansheet.dgn		DRAWN -	REVISED -
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Default	PLOT DATE = 7/7/2015	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

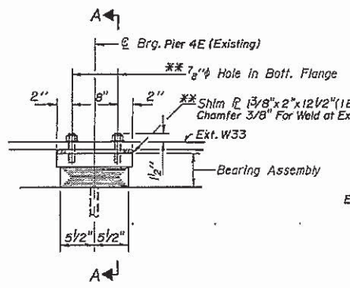
EXISTING PLANS SN 054-0021
(FOR INFORMATION ONLY)
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	06 BDGE PAINTING 2016	LOGAN	28	26
		CONTRACT NO. 72H87		
	ILLINOIS	FED. AID PROJECT		

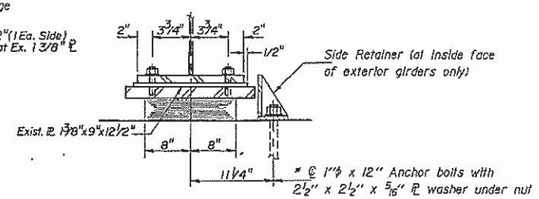
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 706	117 BR	LOGAN	50	29

SHEET NO. 21
SHEETS 35

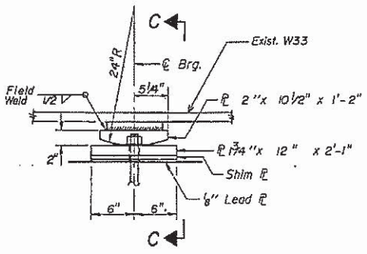


ELEVATION AT PIER 4E

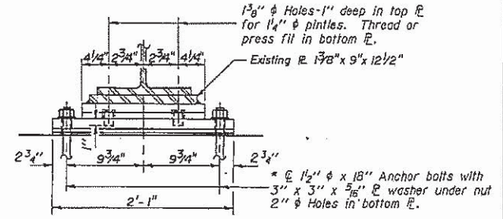


SECTION A-A
℄ Pier 4E

TYPE I ELASTOMERIC EXP. BRG.



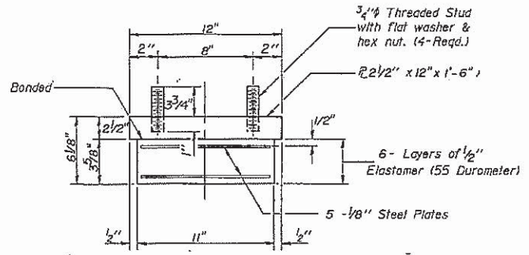
ELEVATION AT PIER 3E



SECTION C-C
℄ Pier 3E

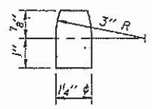
* Notes: Anchor bolts at fixed bearings may be built into the masonry.
See sheet #24 for Anchor Bolt installation.

FIXED BEARING

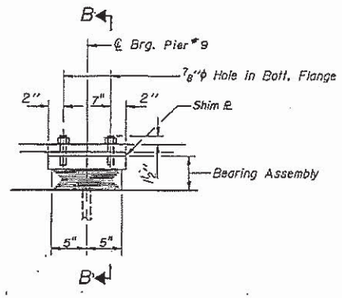


BEARING ASSEMBLY
℄ Pier 4E

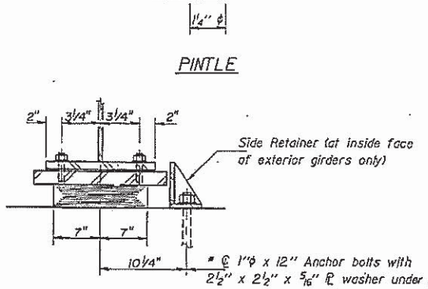
Note: Shim plates shall not be placed under Bearing Assembly.



PINTLE

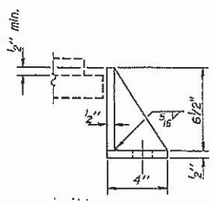


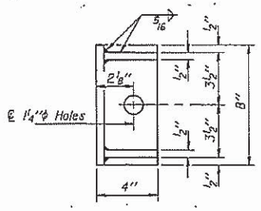
ELEVATION AT PIER NO. 9



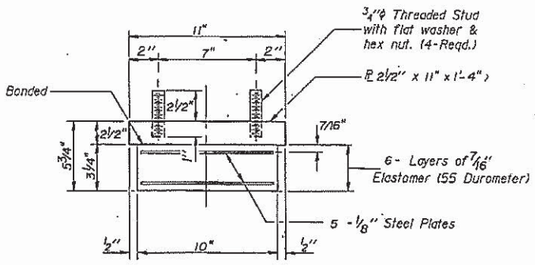
SECTION B-B
℄ Pier No. 9

TYPE I ELASTOMERIC EXP. BRG.





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



BEARING ASSEMBLY
℄ Pier No. 9

** Cost of Field Drilling Existing Flanges For New Bearing, Including Shim Plates and Welding Incidental to Cost of Elastomeric Bearings.
Cost of Existing Bearing Removal at Pier 3E & 4E Incidental to Jacking Existing Structure.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	12

DESIGNED	L.L.VIELEY
CHECKED	LLV
DRAWN	S.H.GRUBER
CHECKED	LLV

I-2-EI 12-1-83

F.A.P. ROUTE 706
SECTION 117 BR
LOGAN COUNTY
STATION 279+24.5

BEARING DETAILS

R.A.N. CONSULTANTS, INC.

F.A. ROUTE 706 (ILL. 121)/SALT CREEK

FILE NAME = D:\OPERATIONS\Bridges\Bridgeplans.CAD\72H87 - Logan County paint FY16\plansheet.dgn Default	USER NAME = dudleybm	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 7/7/2015	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

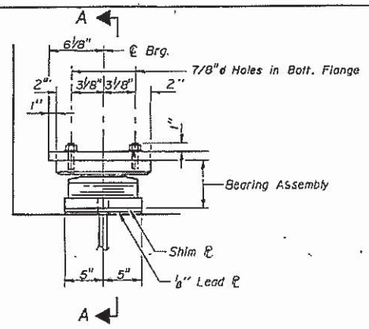
EXISTING PLANS SN 054-0021
(FOR INFORMATION ONLY)
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BDGE PAINTING 2016	LOGAN	28	27
		CONTRACT NO. 72H87		
		ILLINOIS FED. AID PROJECT		

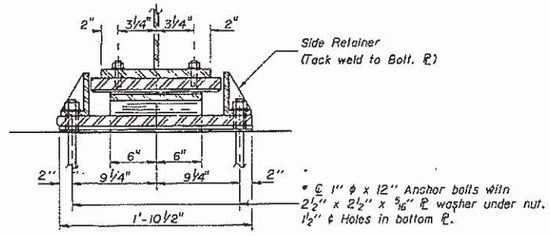
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 706	117 BR	LOGAN	50	30
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 22
SHEETS 35

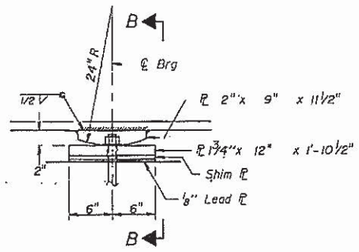
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



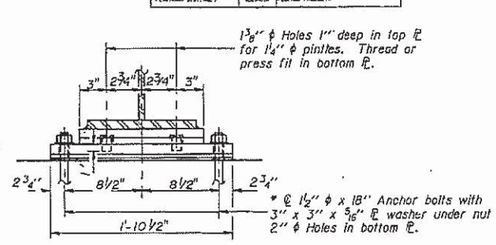
ELEVATION AT S. ABUT.



SECTION A-A
@ S. Abut.



ELEVATION AT PIER NO. 7

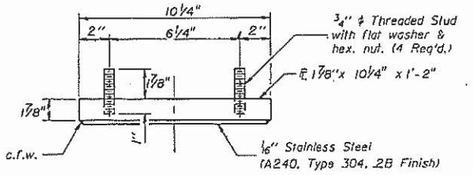


SECTION B-B
@ Pier No. 7

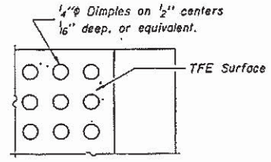
TYPE II TFE ELASTOMERIC EXP. BRG.

* Notes: Anchor bolts at fixed bearings may be built into the masonry.
See sheet #24 for Anchor Bolt installation

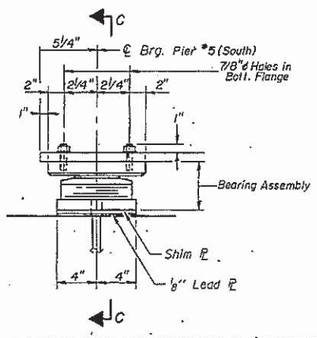
FIXED BEARING



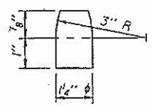
TOP BEARING ASSEMBLY



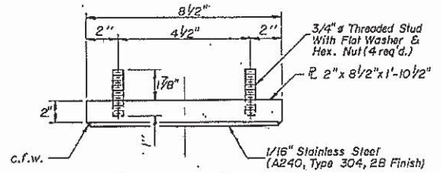
PLAN-TFE SURFACE



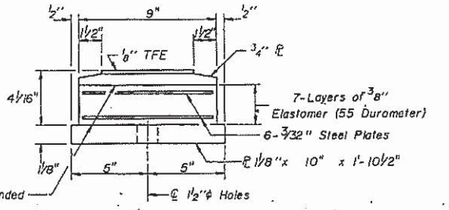
ELEVATION AT PIER NO. 5 (SOUTH)



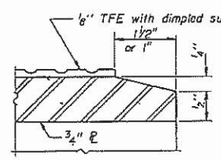
PINTLE



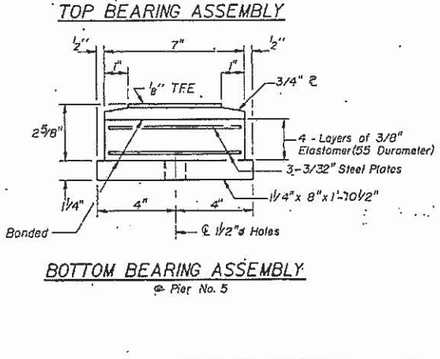
TOP BEARING ASSEMBLY



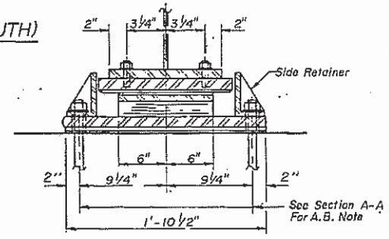
TOP BEARING ASSEMBLY



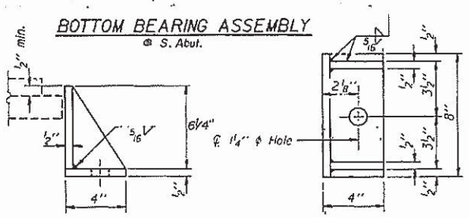
SECTION THRU TFE



BOTTOM BEARING ASSEMBLY
@ Pier No. 5



SECTION C-C
@ Pier No. 5

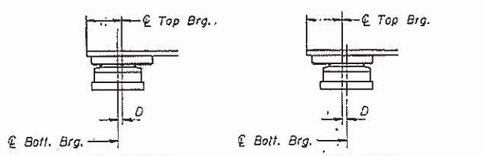


SIDE RETAINER

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 FILL 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.



SETTING ANCHOR BOLTS AT EXP. BRG.

D = ⅛' per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	12

DESIGNED	L.L.VIELEY
CHECKED	
DRAWN	S.H.GRUBER
CHECKED	

I-2-E2 12-1-83

F.A.P. ROUTE 706
SECTION 117 BR
LOGAN COUNTY
STATION 279+24.5

BEARING DETAILS

R.A.N. CONSULTANTS, INC.

F.A. ROUTE 706 (ILL. 121)/SALT CREEK

FILE NAME =	USER NAME = dudleybm	DESIGNED -	REVISED -
C:\OPERATIONS\Bridges\Bridgeplans_CAD\72H87 - Logan County paint FY16\plansheet.dgn	DRAWN -	REVISED -	
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 7/7/2015	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS SN 054-0021
(FOR INFORMATION ONLY)
SCALE: | SHEET OF SHEETS | STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BOGE PAINTING 2016	LOGAN	28	28
		CONTRACT NO. 72H87		
	ILLINOIS	FED. AID PROJECT		