04-28-2017 LETTING ITEM 030

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
155	(54-10) BP	LOGAN	6	1
	ILLINOIS	CONTRACT NO. 72J78		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
BRIDGE PAINTING

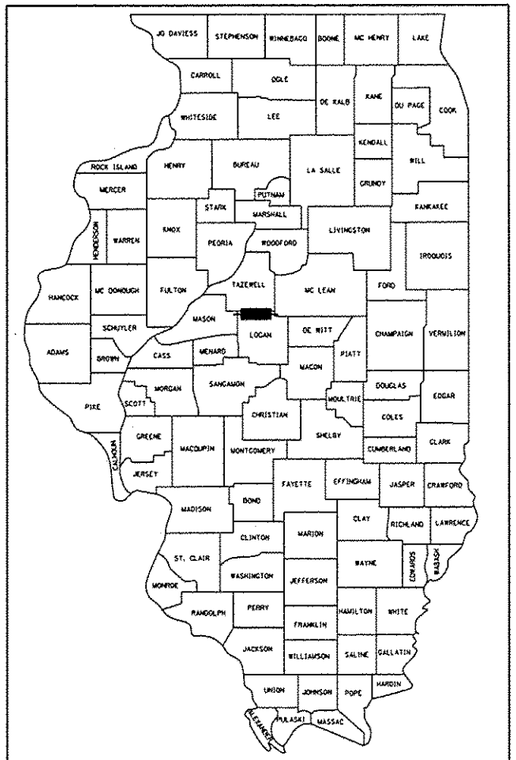
FAI 155 (I–155)
SECTION (54–10) BP

BRIDGE PAINTING
LOGAN COUNTY

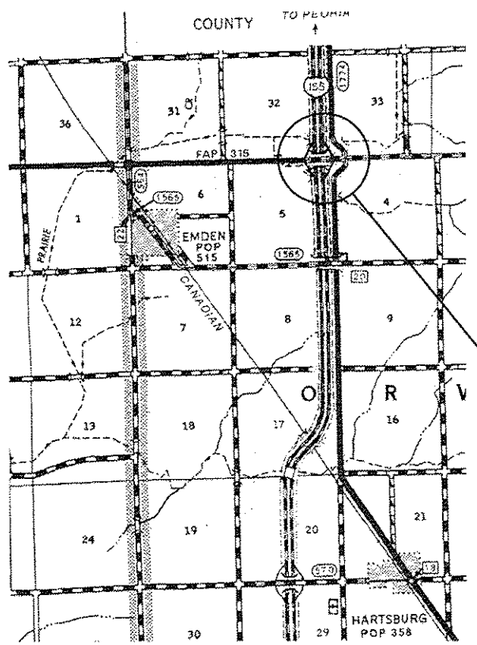
C–96–042–17

FOR INDEX OF SHEETS, SEE SHEET NO. 2

D–96–042–17



LOCATION OF SECTION INDICATED THUS: –



PROJECT LOCATION - SN 054-0079
US 136 OVER I-155
EMDEN INTERCHANGE

N

100' 200' 300' — 1" = 100'
0 10' 20' 30' — 1" = 10'
0 50' 100' — 1" = 50'
0 50' 100' — 1" = 40'
0 50' 100' — 1" = 30'
0 50' 100' — 1" = 20'

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

SUBMITTED 27 January 2017
REGION FOUR ENGINEER
May 24 2017
Maureen M. Addis PE
ENGINEER OF DESIGN AND ENVIRONMENT
May 24 2017
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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

CONTRACT NO. 72J78

GROSS LENGTH = NA
NET LENGTH = NA

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

INDEX OF SHEETS

HIGHWAY STANDARDS

000001-06
001006
701101-05
701106-02
701400-09
701402-12
701411-09
701901-06

GENERAL NOTES:

1. WORK SHALL CONSIST OF BLASTING AND PAINTING ALL STRUCTURAL STEEL ON SN 054-0079. CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES". ALL AREAS TO BE PAINTED SHALL SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING PER SSPC SP 10. ALL EXISTING STEEL CLEANED SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1 - OZ/E/U. THE COLOR OF THE FINAL FINISH COAT FOR THE OUTSIDE AND BOTTOM OF THE FASCIA BEAMS SHALL BE GREEN (MUNSELL 7.5G 4/8). THE FINISH COAT FOR ALL OTHER AREAS SHALL BE GRAY (MUNSELL 5B 7/1).

2 THE USE OF AIR MONITORS WILL NOT BE REQUIRED.

3. THE SSPC-QP-1 AND SSPC-QP2 PAINTING CONTRACTOR CERTIFICATIONS WILL BE REQUIRED.

4. CARE SHALL BE TAKEN NOT TO DAMAGE RUBBER BEARING OR JOINT COMPONENTS DURING BLASTING AND CLEANING OPERATIONS. ANY DAMAGE TO THESE COMPONENTS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. RUBBER COMPONENTS SHALL NOT BE PAINTED.

5. UPON COMPLETION OF PAINTING OPERATIONS, THE CONTRACTOR SHALL REMOVE ALL DEBRIS FROM PIER OR ABUTMENT CAPS UPON WHICH PAINTING OPERATIONS TOOK PLACE. FINAL CLEANUP SHALL BE CONSIDERED INCIDENTAL TO THE PAINT PAY ITEM FOR THE RESPECTIVE LOCATION. THE ENGINEER SHALL HAVE THE RIGHT TO WITHOLD PAYMENT UNTIL SATISFACTORY CLEANUP IS ACHIEVED.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT 6

EXAMINED January 25th 20 17

ENGINEER OF OPERATIONS

EXAMINED January 24 20 17

ENGINEER OF PROJECT IMPLEMENTATION

EXAMINED January 24 20 17

ENGINEER OF PROGRAM DEVELOPMENT

0-01513-6004
100% STATE
BRIDGE
0014
LOGAN

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	
67100100	MOBILIZATION	L SUM	1	1
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	2	2
70100420	TRAFFIC CONTROL AND PROTECTION, STANDARD 701411	EACH	2	2
70800105	TEMPORARY WATER FILLED BARRIER	FOOT	600	600
X5060601	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1	1
X7010410	SPEED DISPLAY TRAILER	CAL MO	2	2
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	1

7

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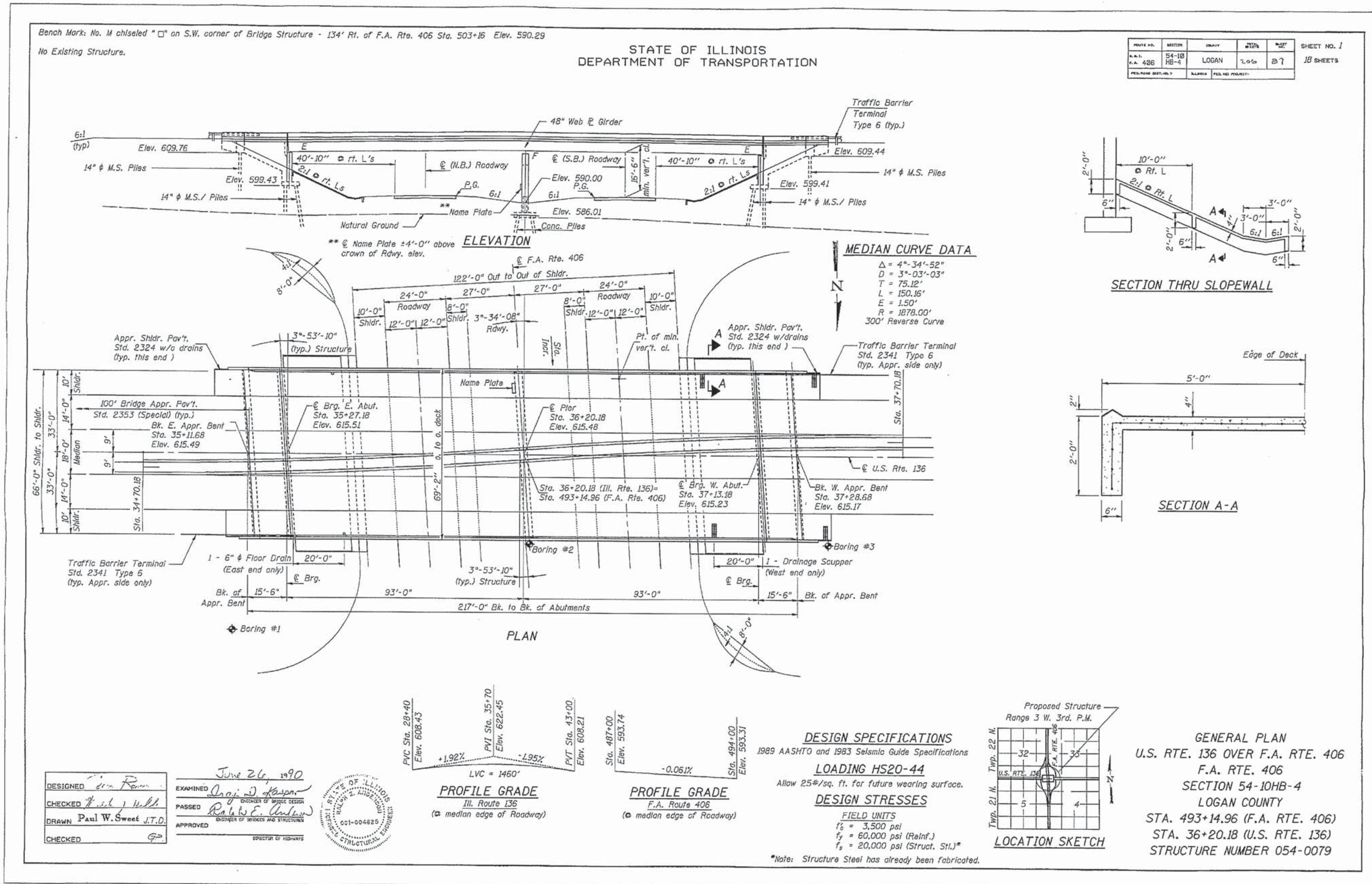
		DRAWN -	REVISED -		
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -		SCALE: SHEET OF SHEETS STA. TO STA.
Default	PLOT DATE = 1/24/2017	DATE -	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
155	(54-10) BP	LOGAN	6	2
		CONTRACT NO. 72J78		
	ILLINOIS FED. AID PROJECT			



Bench Mark: No. M chiseled "□" on S.W. corner of Bridge Structure - 134' Rt. of F.A. Rte. 406 Sta. 503+16 Elev. 590.29
No Existing Structure.
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
F.A.I. 406 | 54-10 HB-4 | LOGAN | SHEET NO. 1 | 18 SHEETS
ELEVATION
48" Web ℄ Girder
Traffic Barrier Terminal Type 6 (typ.)
Elev. 609.76
Elev. 609.44
14" ϕ M.S. Piles
Elev. 599.43
Elev. 599.41
40'-10" @ rt. L's
℄ (N.B.) Roadway
℄ (S.B.) Roadway
Elev. 590.00 P.G.
Elev. 586.01
Conc. Piles
Natural Ground
Name Plate
** ℄ Name Plate ±4'-0" above crown of Rdwy. elev.
MEDIAN CURVE DATA
Δ = 4°-34'-52"
D = 3°-03'-03"
T = 75.12'
L = 150.16'
E = 1.50'
R = 1878.00'
300' Reverse Curve
SECTION THRU SLOPEWALL
SECTION A-A
Edge of Deck
PLAN
℄ F.A. Rte. 406
122'-0" Out to Out of Shldr.
217'-0" Bk. to Bk. of Abutments
℄ Brg. E. Abut. Sta. 35+27.18 Elev. 615.51
℄ Pier Sta. 36+20.18 Elev. 615.48
℄ Brg. W. Abut. Sta. 37+13.18 Elev. 615.23
Bk. E. Appr. Bent Sta. 35+11.68 Elev. 615.49
Bk. W. Appr. Bent Sta. 37+28.68 Elev. 615.17
Sta. 36+20.18 (Ill. Rte. 136)= Sta. 493+14.96 (F.A. Rte. 406)
℄ U.S. Rte. 136
Traffic Barrier Terminal Std. 2341 Type 6 (typ. Appr. side only)
Appr. Shldr. Pav't. Std. 2324 w/o drains (typ. this end)
Appr. Shldr. Pav't. Std. 2324 w/drains (typ. this end)
100' Bridge Appr. Pav't. Std. 2353 (Special) (typ.)
1 - 6" ϕ Floor Drain (East end only)
1 - Drainage Scupper (West end only)
Boring #1
Boring #2
Boring #3
PROFILE GRADE
Ill. Route 136
(@ median edge of Roadway)
PVC Sta. 28+40 Elev. 608.43
PVI Sta. 35+70 Elev. 622.45
PVT Sta. 43+00 Elev. 608.21
+1.92%
-1.95%
LVC = 1460'
PROFILE GRADE
F.A. Route 406
(@ median edge of Roadway)
Sta. 487+00 Elev. 593.74
Sta. 494+00 Elev. 593.31
-0.061%
DESIGN SPECIFICATIONS
1989 AASHTO and 1983 Seismic Guide Specifications
LOADING HS20-44
Allow 25#/sq. ft. for future wearing surface.
DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinf.)
fs = 20,000 psi (Struct. Stl.)*
*Note: Structure Steel has already been fabricated.
LOCATION SKETCH
Proposed Structure
Range 3 W. 3rd. P.M.
Twp. 22 N.
Twp. 21 N.
GENERAL PLAN
U.S. RTE. 136 OVER F.A. RTE. 406
F.A. RTE. 406
SECTION 54-10HB-4
LOGAN COUNTY
STA. 493+14.96 (F.A. RTE. 406)
STA. 36+20.18 (U.S. RTE. 136)
STRUCTURE NUMBER 054-0079
DESIGNED
CHECKED
DRAWN Paul W. Sweet J.T.D.
CHECKED
June 26, 1990
EXAMINED
PASSED
APPROVED
ENGINEER OF BRIDGE DESIGN
ENGINEER OF BRIDGES AND STRUCTURES
DIRECTOR OF HIGHWAYS
001-004625

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	PLOT DATE = 1/26/2017	CHECKED -	REVISED -
Default		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS SN 054-0079
(FOR INFORMATION ONLY)

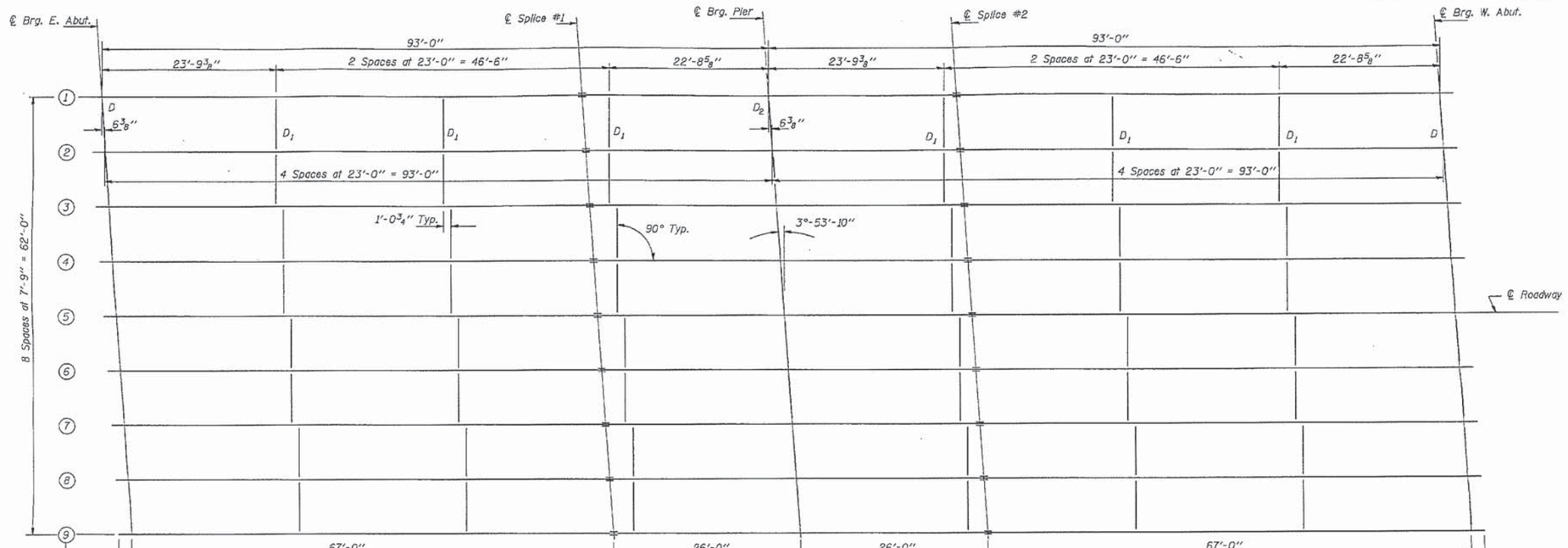
SCALE: | SHEET OF SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
155	(54-10) BP	LOGAN	6	3
		CONTRACT NO. 72J78		
		ILLINOIS FED. AID PROJECT		

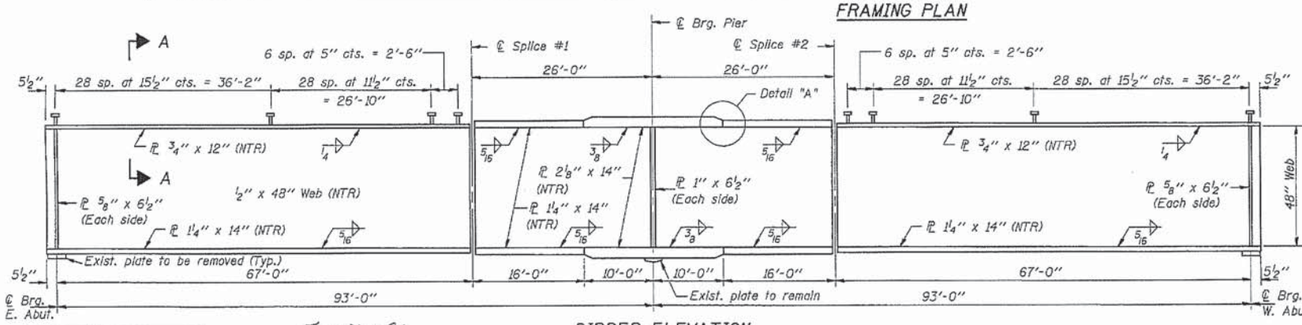
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RTE. 406	54-10 HB-4	LOGAN	7.06	99
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 11
18 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

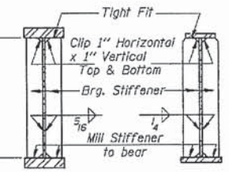


FRAMING PLAN



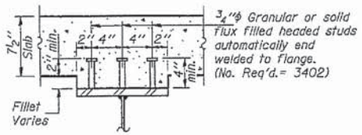
GIRDER ELEVATION

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

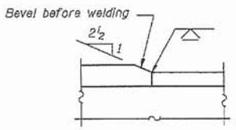


SECTION AT PIER

SECTION AT ABUTMENT



SECTION A-A



DETAIL "A"

Note: Work this sheet with sheet #12 of 18. All details on this sheet, with the exception of shear studs, are given for information only.

DESIGNED	
CHECKED W.J.H. J.W.H.	
DRAWN J.T.Downing	
CHECKED	

EXAMINED June 26, 1990 Engineer of Bridge Design
PASSED Ralph E. Anderson Engineer of Bridges and Structures
APPROVED Director of Highways

G-1 4-1-79

STRUCTURAL STEEL
F.A. RT. 406 SEC. 54-10HB-4
LOGAN COUNTY
STATION 493+14.96

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Default	PLOT DATE = 1/26/2017	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS SN 054-0079
(FOR INFORMATION ONLY)

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
155	(54-10) BP	LOGAN	6	4
		CONTRACT NO. 72J78		
		ILLINOIS FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
A.B.L. F.A. 406	54-10 HB-4	LOGAN	7.046	1.00
FED. ROAD STAT. NO. ?	S.B.I. NO.	FED. AID PROJECT-		

SHEET NO. 12
18 SHEETS

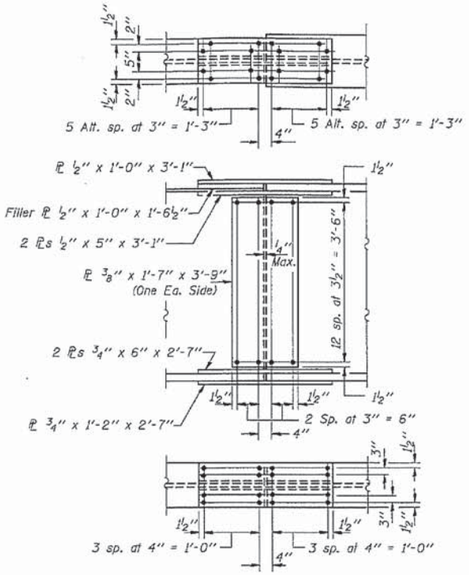
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF WEB ELEVATIONS

Loc. / Gr.	1	2	3	4	5	6	7	8	9
℄ Brg. E. Abut.	604.33	604.45	604.57	604.68	604.68	604.68	604.56	604.44	604.31
℄ Splice #1	604.37	604.49	604.61	604.73	604.73	604.73	604.61	604.49	604.37
℄ Pier	604.37	604.49	604.61	604.73	604.73	604.73	604.61	604.49	604.37
℄ Splice #2	604.37	604.49	604.61	604.73	604.73	604.73	604.61	604.49	604.37
℄ Brg. W. Abut.	604.31	604.44	604.56	604.68	604.68	604.68	604.57	604.45	604.33

For fabrication of Splice plates only.

Note: Contractor shall fabricate new splice plates and fill plates to accuracy shown in Art. 507.04(d). Holes may be located by placing beams in laydown or by match marking existing splice plates as templates, but the Contractor shall be responsible for final alignment.



FIELD SPLICE DETAIL

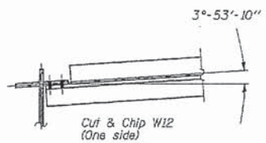
All bolts shall be ⅞"ϕ H.S.
All splice plates are new and shall meet N.T.R.

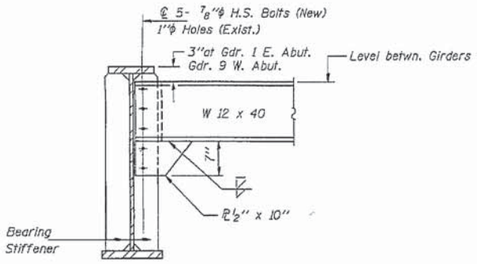
INTERIOR GIRDER MOMENT TABLE			
		0.4 Sp. #1 0.6 Sp. #2	Pier
Is	(in⁴)	19,683	42,004
Ic	(in⁴)	53,278	
Ss	(in³)	935	1,608
Sc	(in³)	1,302	
D	(K/ft.)	.978	1,296
MD	('K)	514	1,564
fsD	(k.s.i.)	6.60	11.68
sD	(K/ft.)	.318	
MsD	('K)	206	
ML	('K)	775	610
M (Imp)	('K)	231	181
Total	('K)	1006	791
fs (L+I)	(k.s.i.)	9.27	5.91
fs (Total)	(k.s.i.)	17.76	17.59
VR	(K)	57.7	

INTERIOR GIRDER REACTION TABLE			
		Abuts.	Pier
RD	(K)	43.5	154.1
RL	(K)	44.6	69.8
Imp.	(K)	10.2	16.0
R (Total)	(K)	98.3	239.9

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs Total.
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs Total.
VR is the maximum Live Load + Impact shear range in span.

NOTE: ALL GIRDERS, DIAPHRAGMS AND WELDED ATTACHMENTS, EXCEPT AS SHOWN, HAVE BEEN PREVIOUSLY FABRICATED AND ARE LOCATED IN THE DISTRICT 6 MAINTENANCE DEPOT. NEW STRUCTURAL STEEL, WHICH INCLUDES SPLICE PLATES, FILLER PLATES, HIGH STRENGTH BOLTS, WASHERS, ANCHOR BOLTS AND BOTTOM BEARING PLATES FOR THE FIXED BEARINGS, SHIM PLATES, EXPANSION JOINT PLATES AND THE DIAPHRAGMS DESIGNATED SHALL BE FURNISHED AND ERECTED BY THE CONTRACTOR.

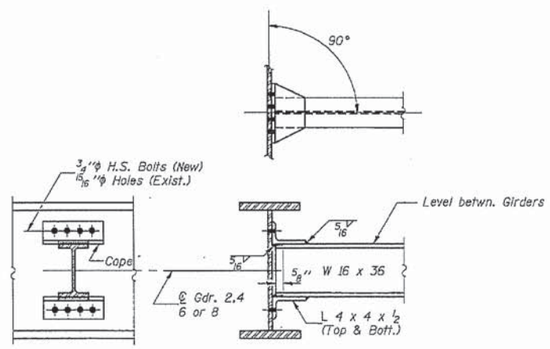




DIAPHRAGM D

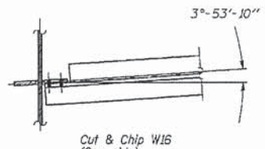
16 Required (Exist.)

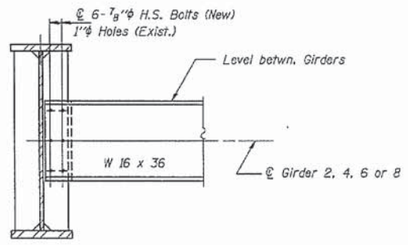
Note: Two hardened washers shall be required over all 15/16"ϕ holes at diaphragms. All details on this sheet, with the exception of bolts, diaph D, and splice plates, are given for information only.



DIAPHRAGM D_1

48 Required (42 Exist.-6 New)





DIAPHRAGM D_2

8 Required (Exist.)

STRUCTURAL STEEL DETAILS
F.A. RT. 406 SEC. 54-10HB-4
LOGAN COUNTY
STATION 493+14.96

DESIGNED		EXAMINED	June 26, 1990
CHECKED	Walter J. Hall	PASSED	Ralph E. Anderson, ENGINEER OF BRIDGES AND STRUCTURES
DRAWN	J.T.Downing	APPROVED	DIRECTOR OF HIGHWAYS
CHECKED			

I-2-D 8-30-80

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		CHECKED -	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS SN 054-0079
(FOR INFORMATION ONLY)

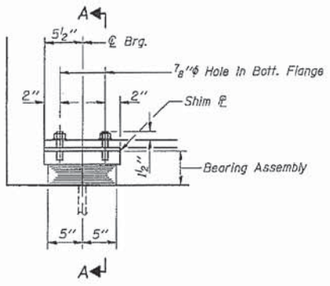
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
155	(54-10) BP	LOGAN	6	5
		CONTRACT NO. 72J78		
	ILLINOIS	FED. AID PROJECT		

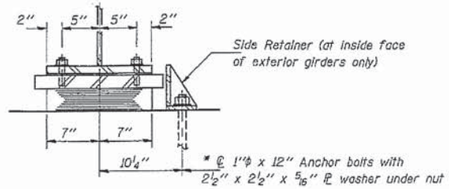
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 406	54-10 HB-4	LOGAN	206	101
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 13
18 SHEETS

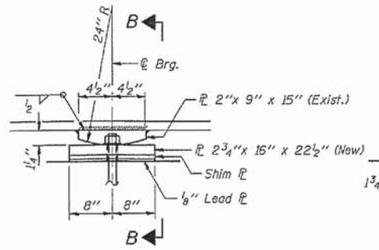
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION AT ABUTS.



SECTION A-A



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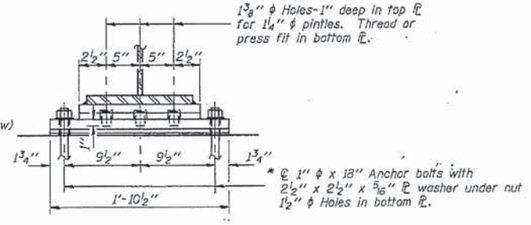
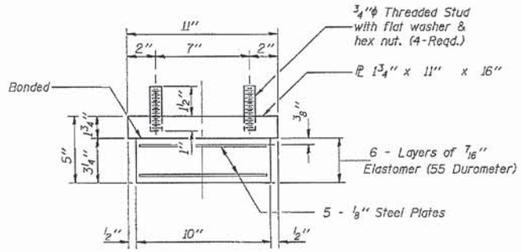


SECTION B-B

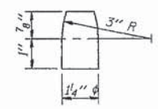
Notes: Anchor bolts at fixed bearings may be built into the masonry.
See sheet #14 of 18 for Anchor Bolt Installation.
Work this sheet with sheet #11 of 18.

TYPE I ELASTOMERIC EXP. BRG.

FIXED BEARING

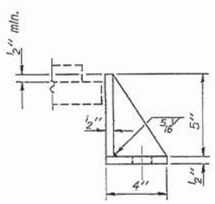


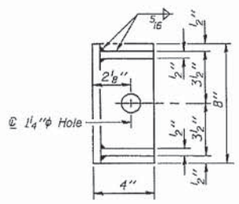
BEARING ASSEMBLY AT ABUTS.



PINTLE

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





SIDE RETAINER

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

DESIGNED	
CHECKED	
DRAWN J.T.Downing	
CHECKED	

June 26, 1990

EXAMINED Engineer of Bridge Design

PASSED Ralph E. Anderson
Engineer of Bridges and Structures

APPROVED
Director of Highways

1-2-E1 12-1-83

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	18

BEARINGS
F.A. RT. 406 SEC. 54-10HB-4
LOGAN COUNTY
STATION 493+14.96

FILE NAME = O:\OPERATIONS\Bridges\Bridgeplans_CAD\72J78 - 2540079 paint\plansheet.dgn	USER NAME = dudleybm	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/26/2017	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS SN 054-0079
(FOR INFORMATION ONLY)

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
155	(54-10) BP	LOGAN	6	6
		CONTRACT NO. 72J78		
	ILLINOIS	FED. AID PROJECT		