

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	D6 REHAB BR PAINTING 2007-1	LOGAN	7	1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

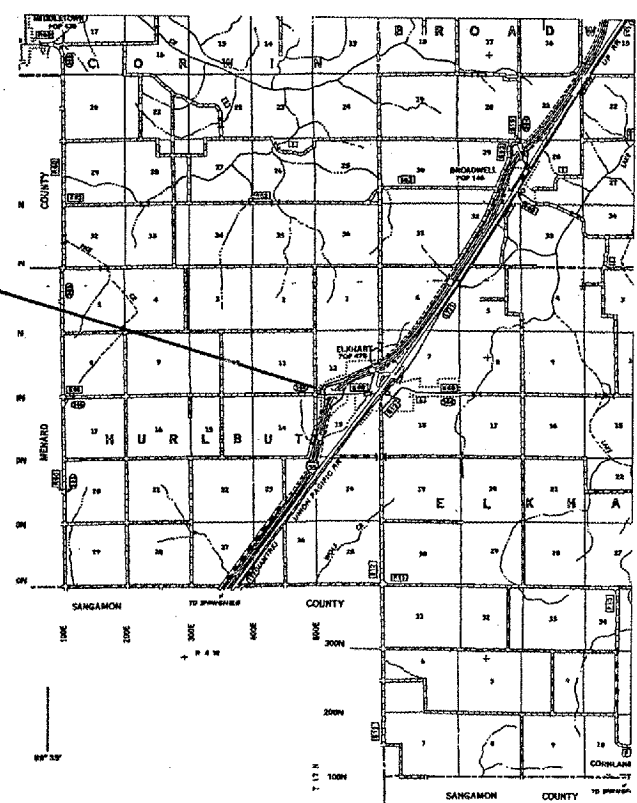
**PROPOSED
HIGHWAY PLANS**

FAI ROUTE 55 (I-55)
SECTION - D6 REHAB BR PAINTING 2007-1
PROJECT C-96-014-07
LOGAN COUNTY

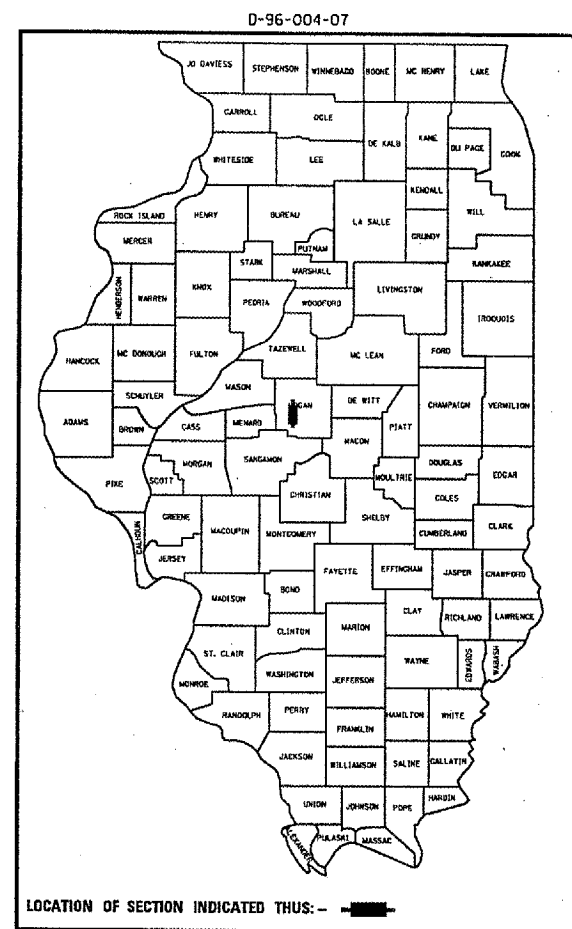
FOR INDEX OF SHEETS, SEE SHEET NO. 2



SN 054-0038



NET LENGTH OF SECTION: 314' = .06 MI



LOCATION OF SECTION INDICATED THUS: - [black rectangle] -

BRIDGE ENGINEER
STEVE BERAN - (217) 785-9290

BRIDGE INSPECTION ENGINEER
DAVE COPENBARGER - (217) 785-5306

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

CONTRACT NO. 72A71

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED *October 26, 2006*
Chris M. Reed
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

December 8, 2006
Eric E. Harman
INTERIM ENGINEER OF DESIGN AND ENVIRONMENT

December 20, 2006
Melton R. Sees, P.E.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS

INDEX OF SHEETS

- 1 COVER SHEET
- 2 INDEX, GENERAL NOTES, & SIGNATURES
- 3 SUMMARY OF QUANTITIES
- 4-7 EXISTING STRUCTURE PLANS

STANDARDS

- 701001-02
- 701006-02
- 701101-01
- 701106-01
- 701400-02
- 701402-05
- 701411-03
- 701446
- 702001-06

GENERAL NOTES

CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES". ALL EXISTING STRUCTURAL STEEL SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING - SSPC-SP10. ALL EXISTING STEEL SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1 - OZEU. THE COLOR OF THE FINAL FINISH COAT FOR EXTERIOR AND BOTTOM FLANGE OF THE FASCIA BEAMS SHALL BE INTERSTATE GREEN, MUNSELL NO 7.5G 48. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR STEEL SURFACES SHALL BE GRAY, MUNSELL NO 5B 71.

THE SSPC-QP-1 AND SSPC-QP2 PAINTING CONTRACTOR CERTIFICATIONS WILL BE REQUIRED FOR THIS BRIDGE.
THE USE OF AIR MONITORS WILL BE REQUIRED.

NOT

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS DISTRICT 6
EXAMINED <u>October 16</u> 20 <u>06</u> <u>Roni Harris</u> ENGINEER OF OPERATIONS
EXAMINED <u>OCT 17</u> 20 <u>06</u> <u>W.R. Jung</u> ENGINEER OF PROGRAM IMPLEMENTATION
EXAMINED <u>October 20</u> 20 <u>06</u> <u>William E. Motta</u> ENGINEER OF PROGRAM DEVELOPMENT

C-96-014-07
INDEX, GENERAL
NOTES, & SIGNATURES

Rev.

SUMMARY OF QUANTITIES				RURAL 100% STATE SANGAMON
ITEM #	DESCRIPTION	UNIT	QUANTITY	SFTY-2A
X0324401	PORTABLE TEMPORARY BARRIER SYSTEM, TEST LEVEL 3	FOOT	1300	1300
X7040092	RELOCATE PORTABLE TEMPORARY BARRIER SYSTEM, TEST LEVEL 3	L SUM	1	1
X7011420	TRAFFIC CONTROL AND PROTECTION, STANDARD 701411	L SUM	1	1
50600600	CLEANING AND PAINTING STEEL BRIDGE, NO. 1	L SUM	1	1
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	1	1
50606400	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES	L SUM	1	1
67100100	MOBILIZATION	L SUM	1	1
70100805	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	L SUM	1	1
70100815	TRAFFIC CONTROL AND PROTECTION, STANDARD 701446	L SUM	1	1

C-96-014-07
SUMMARY OF QUANTITIES

B.M. # 34-2, El. 599.16, R.R. Spike
in Pole Rt. Sta. 44+97

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. - 55	54-1MB	LOGAN	60	25
PER. ROAD DIV. NO. 7		ILLINOIS	PROJECT E-55-4(75)24	

GENERAL NOTES

THE CONCRETE RAIL SECTION ABOVE THE MANDATORY CONSTR. JOINT AT THE TOP OF THE SLAB SHALL BE CONSTRUCTED OF CLASS X CONCRETE EXCEPT THE AGGREGATES SHALL CONFORM TO THE REQUIREMENTS OF HANDRAIL CONCRETE.

ALL REINFORCEMENT BARS SHALL BE LAPPED 24 DIAMETERS UNLESS OTHERWISE SHOWN.

FASTENERS SHALL BE HIGH STRENGTH BOLTS: BOLTS 3/4" & OPEN HOLES 1 1/16" & UNLESS OTHERWISE NOTED.

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 IN THE BOTTOM OF FLANGE OF BEAMS OR GIRDERS NOR ON THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE-FOURTH THE SPAN LENGTH EACH WAY FROM THE PIER SUPPORTS. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.

ANCHOR BOLTS SHALL BE SET BEFORE BOLTING CROSS FRAMES OVER SUPPORTS.

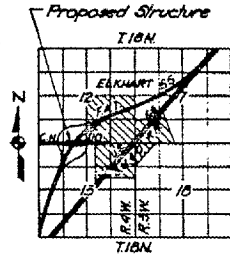
SLOPE WALL SHALL BE REINFORCED WITH WELDED WIRE FABRIC 6" X 6" MESH, WEIGHING 5# PER 100 SQ. FT.

THE CONTRACTOR SHALL DRIVE THREE (3) CONCRETE TEST PILES IN PERMANENT LOCATION, ONE AT THE EAST ABUT., ONE AT WEST ABUT. AND ONE AT PIER, AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.

CONCRETE PILES AT ABUT. BENTS SHALL BE DRIVEN IN HOLES PRECURED THROUGH THE EMBANKMENT IN ACCORDANCE WITH ARTICLE 51309 (c) OF THE STANDARD SPECIFICATIONS.

THE EMBANKMENT CONFIGURATION SHOWN SHALL BE THE MINIMUM EMBANKMENT THAT MUST BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE ABUTMENTS.

CALCULATED WEIGHT OF STRUCTURAL STEEL = 559,350 LBS.

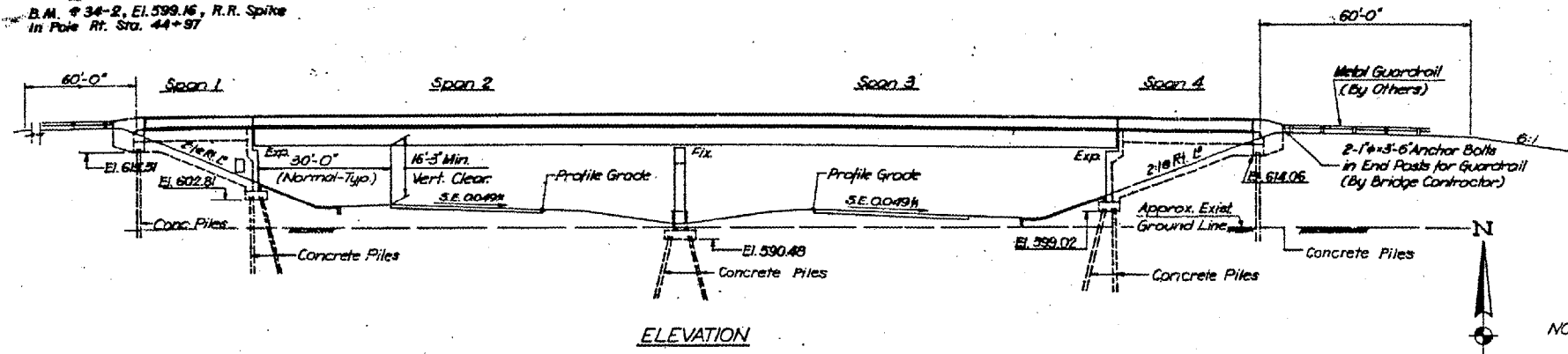


LOCATION PLAN

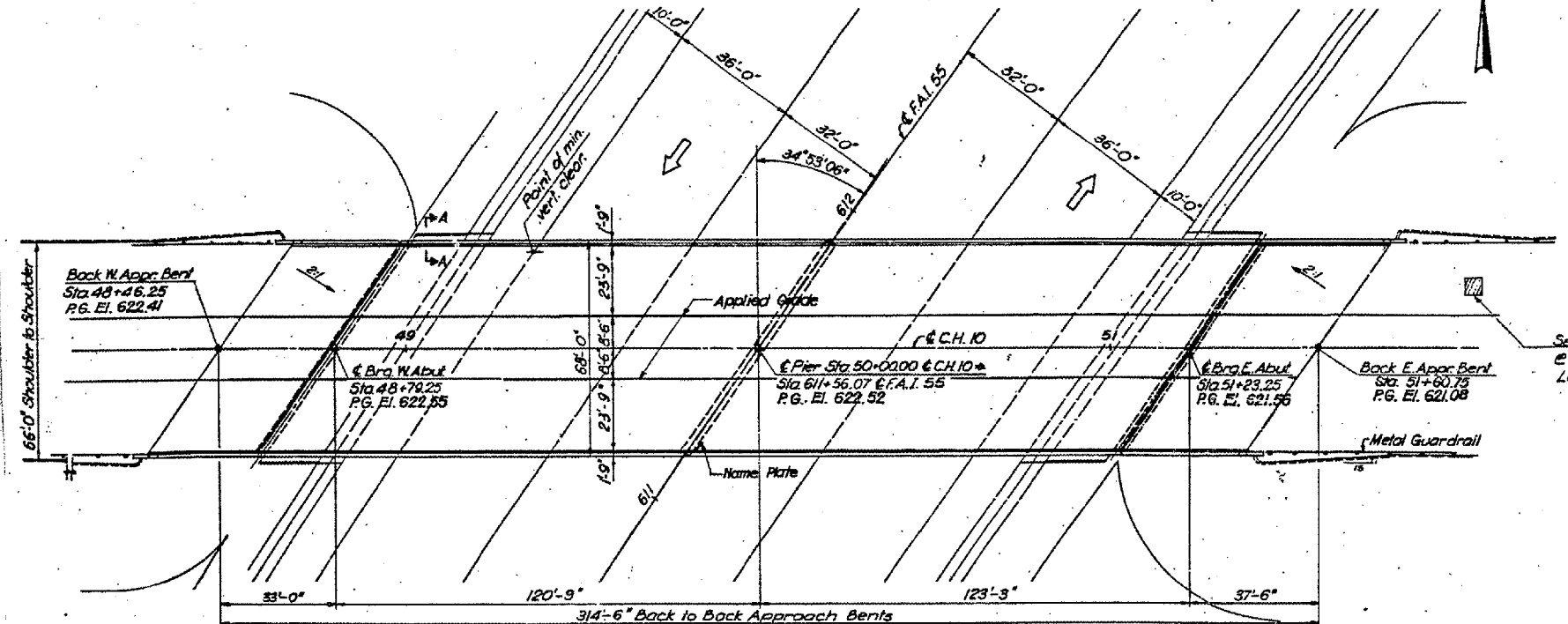
NOTE: See Special Provisions For Settlement Platform in the Embankment Construction At The East Abutment. See Sheet No. 4 For Detail.

STATION 611+56.07
BUILT 197 BY
STATE OF ILLINOIS
F.A.I. RT. 55 SEC. 54-1MB
F.A.I. PROJ. I-55-4(75)
LOADING HS20

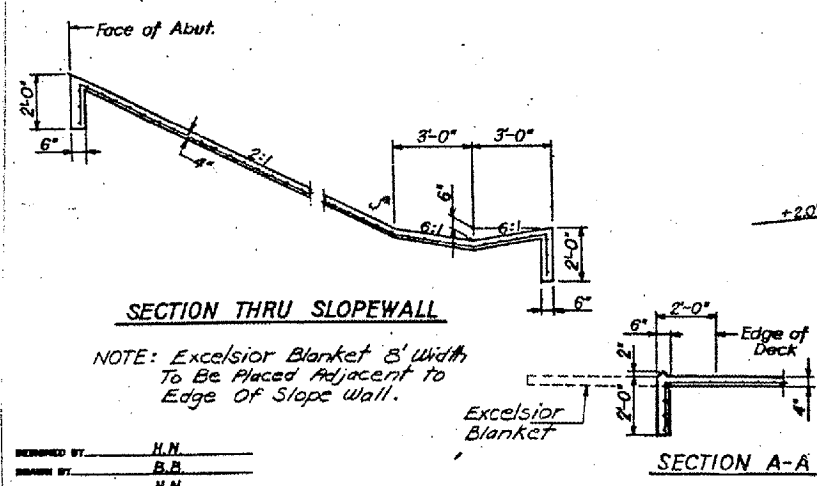
NAME PLATE
See Std. 2/13



ELEVATION



PLAN

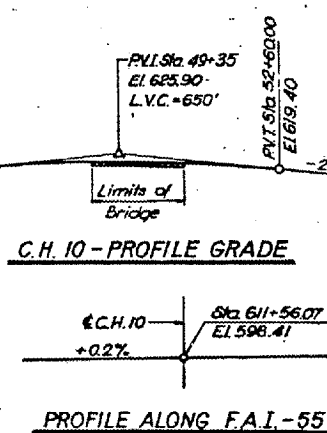


SECTION THRU SLOPEWALL

NOTE: Excelsior Blanket 8' Width To Be Placed Adjacent to Edge of Slope Wall.

SECTION A-A

C.H. 10 - PROFILE GRADE



PROFILE ALONG F.A.I. - 55

F.A.I. - 55 CURVE DATA

P.I. = Sta 615+26.56
Δ = 55° 59' 57"
D = 1' 45"
R = 3274.05'
L = 3192.95'
T = 1740.01'
P.C. = Sta 597+85.75
P.T. = Sta 629+85.70

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
C. E. T. [Signature]

DESIGN STRESSES AND LOADS

f_s = 248,000 psi. Prestressing Steel
f_{si} = 178,600 psi.
f_c = 5,000 psi. Prestressed Concrete
f_{ci} = 4,000 psi.
f_c = 1,200 psi. Superstructure
f_{cs} = 1,400 psi. Substructure
f_s = 20,000 psi. Structural Steel (A-36)
f_s = 20,000 psi. Reinforcement
w = 75 psi. Footings
w = 10.
Max. allow. Live Load Defl. = $\frac{L}{160}$ (Corr.)
LOADING: HS20-44
Future Wearing Surface = 25' x 9" sq. ft.
* Alternate f_s = 270,000 psi is permitted

TOTAL BILL OF MATERIAL

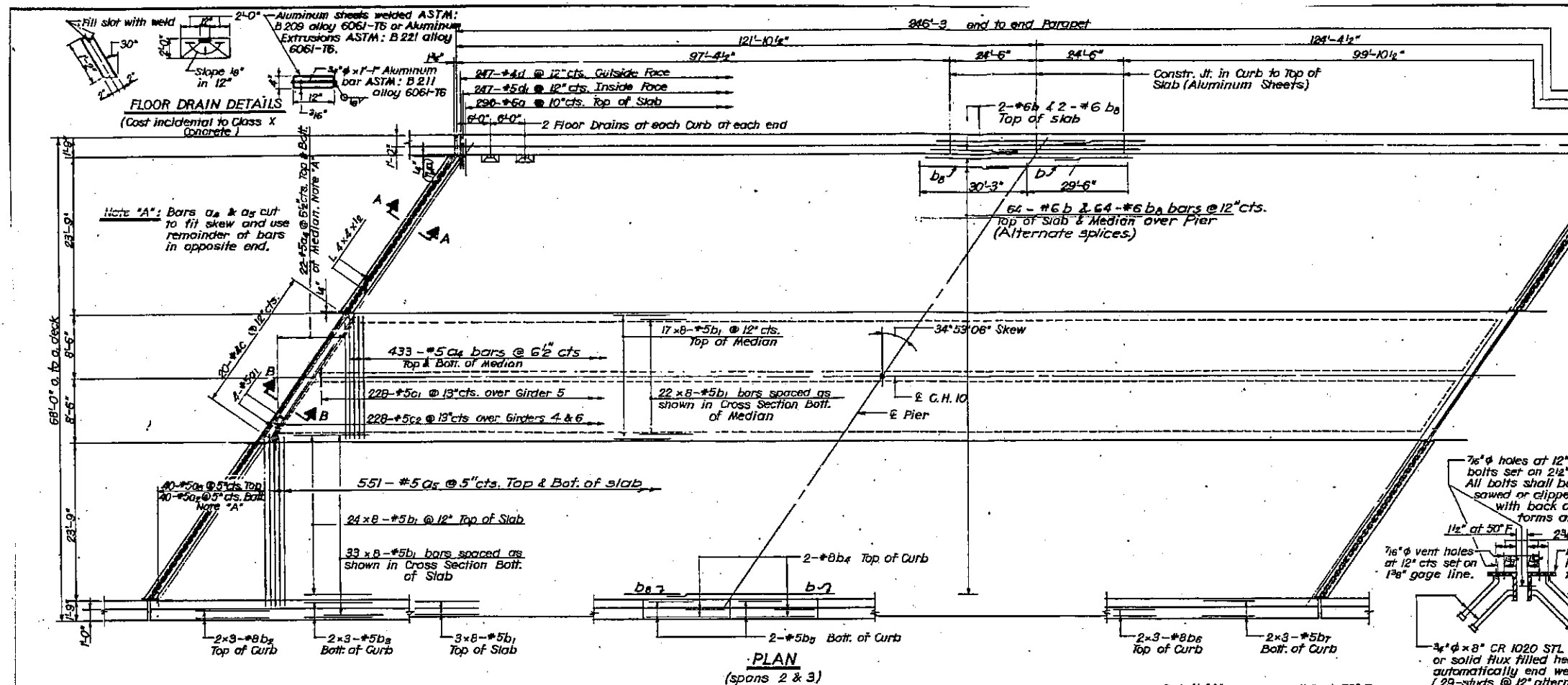
Item	Unit	Super	Sub	Total
Structure Excavation	Cu Yds	—	108	108
Class X Concrete	Cu Yds	693.0	519.7	1,212.7
Protective Coat	Sq Yds	2,590	—	2,590
Furnishing and Erecting Structural Steel	Lump Sum	—	—	—
Reinforcement Bars	Lbs	182,360	49,990	232,350
Bridge Seat Sealer **	Lump Sum	—	1	1
Furnishing Concrete Piles	Lin. Ft.	—	7803	7803
Driving Concrete Piles	Lin. Ft.	—	7803	7803
Test Pile Concrete	Ea	—	3	3
Name Plates	Ea	—	1	1
Slope Wall 4"	Sq Yds	—	534	534
Sandblasting Concrete	Sq. Yds.	137	—	137
Stud Shear Connectors	Each	2,810	—	2,810
Furnishing and Erecting Precast Prestressed Concrete I-Beams (36")	Lin. Ft.	448	—	448

** At Abut

C-96-014-07
SN 054-0038
EXISTING BRIDGE PLANS
FOR INFORMATION ONLY
(NOT TO SCALE)

DESIGNED BY: H.N.
DRAWN BY: B.D.
CHECKED BY: H.N.

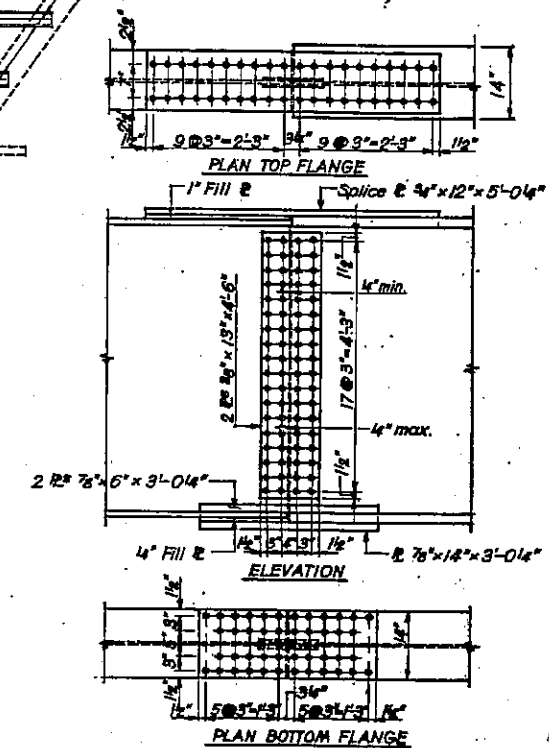
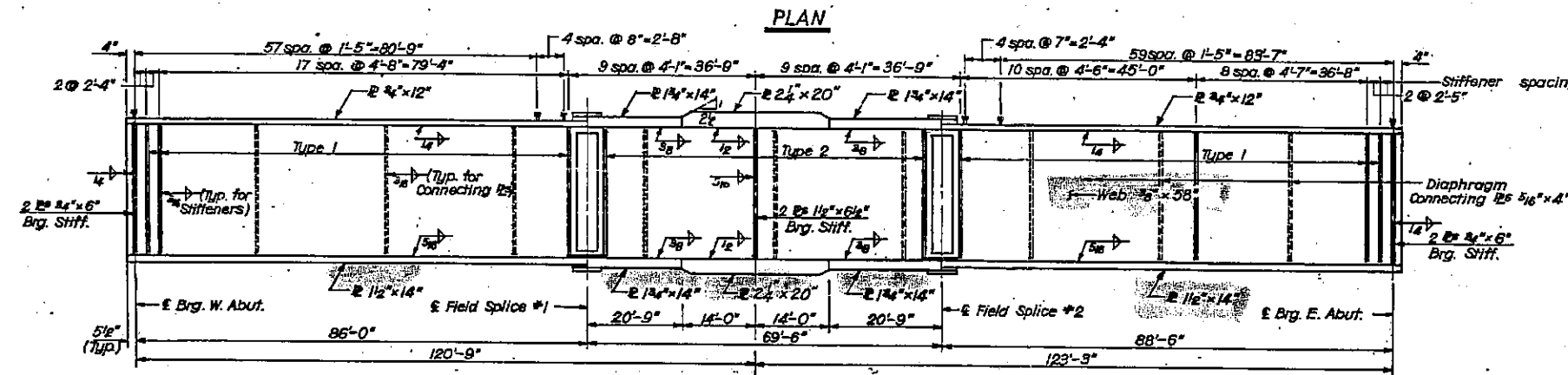
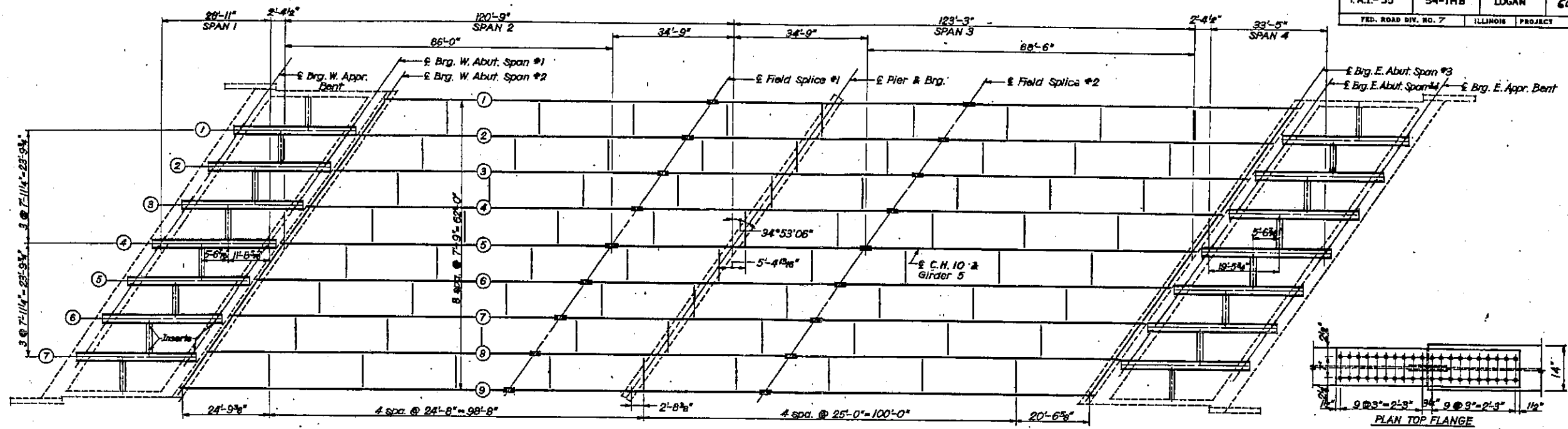
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-55	54-1HB	LOGAN	60	27
FED. ROAD DIV. NO. 7		ILLINOIS	PROJECT	



BILL OF MATERIAL

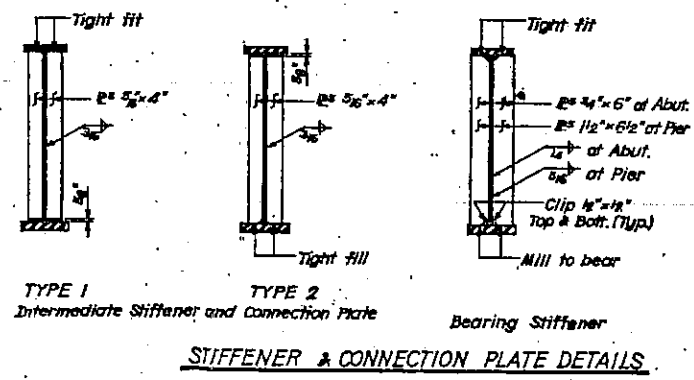
Bar	No.	Size	Length	Shape
a	592	#6	4-0	—
a1	8	#5	20-2	—
a2	80	#5	26-7	—
a3	910	#5	16-7	—
a4	2284	#5	15-8	—
b	68	#6	40-0	—
b1	1272	#5	31-10	—
b2	12	#8	33-9	—
b3	12	#5	33-3	—
b4	8	#8	24-3	—
b5	8	#5	24-3	—
b6	12	#6	34-6	—
b7	12	#5	34-0	—
b8	68	#6	21-3	—
c	40	#4	3-6	H
c1	228	#5	3-7	L
c2	228	#5	1-11	L
d	494	#4	5-2	J
d1	494	#5	4-0	J
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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAL-55	54-1HB	LOGAN	60	30
FED. ROAD DIV. NO. 7		ILLINOIS PROJECT		



TOP OF GIRDER WEB ELEVATIONS FOR FABRICATION
(DEFLECTION NOT INCLUDED)

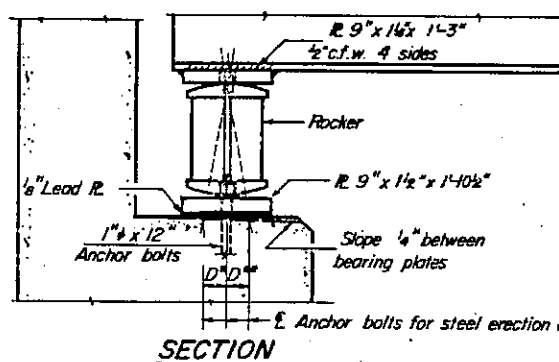
Location	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6	Girder 7	Girder 8	Girder 9
Brig. W. Abut.	621.495	621.605	621.715	621.825	621.935	621.785	621.645	621.495	621.355
Splice #1	621.325	621.462	621.601	621.740	621.898	621.785	621.645	621.523	621.411
Brig. Pier	621.139	621.289	621.439	621.589	621.729	621.629	621.529	621.419	621.319
Splice #2	620.953	621.116	621.277	621.438	621.590	621.503	621.413	621.315	621.227
Brig. E. Abut.	620.185	620.365	620.555	620.745	620.925	620.865	620.805	620.745	620.685



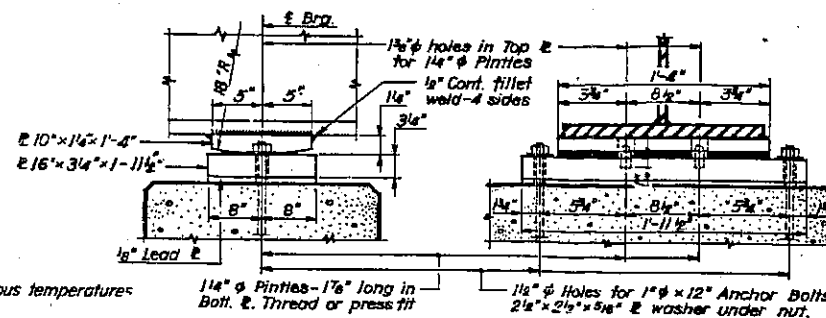
C-96-014-07
SN 054-0038
EXISTING BRIDGE PLANS
FOR INFORMATION ONLY
(NOT TO SCALE)

BY: H.N.
BY: B.B.
BY: V.B.

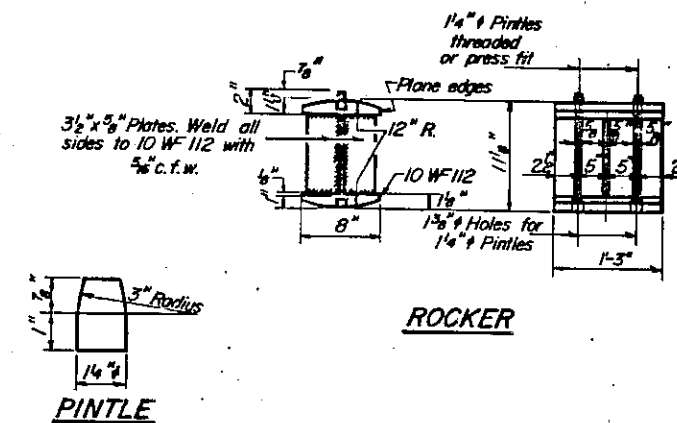
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAJ 55	54-IHB	LOGAN	60	31
FED. ROAD DIV. NO. 7		ILLINOIS	PROJECT	



SECTION

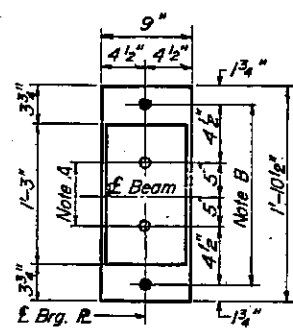


BEARING ASSEMBLY DETAIL

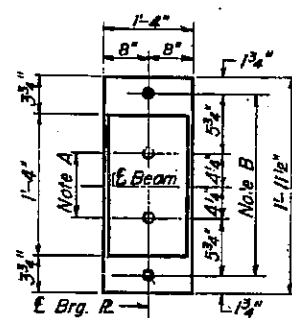


ROCKER

PINTLE



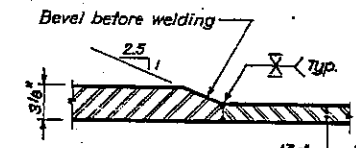
PLAN AT ABUTMENTS



PLAN AT PIER

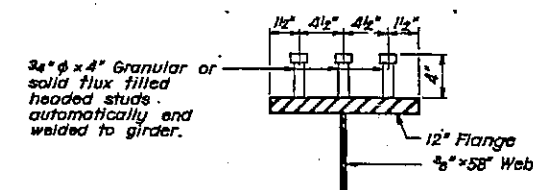
NOTE A
1 1/4" Holes - 1" deep in top R. for pintles. Thread or press fit pintles into bottom R.

NOTE B
1 1/2" Holes for 1" anchor bolts. 2 1/2" x 2 1/2" x 5/16" R. Washers under nut.

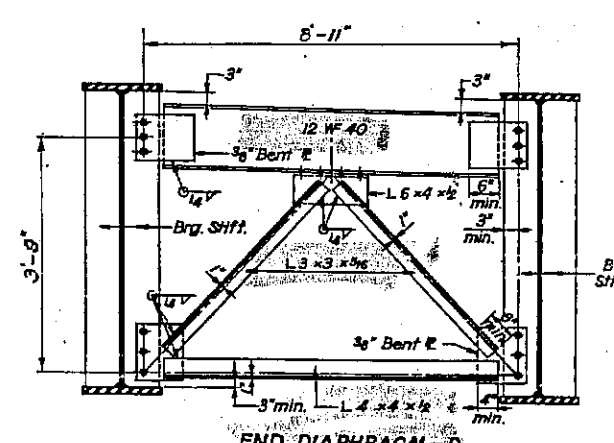


NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRGS.

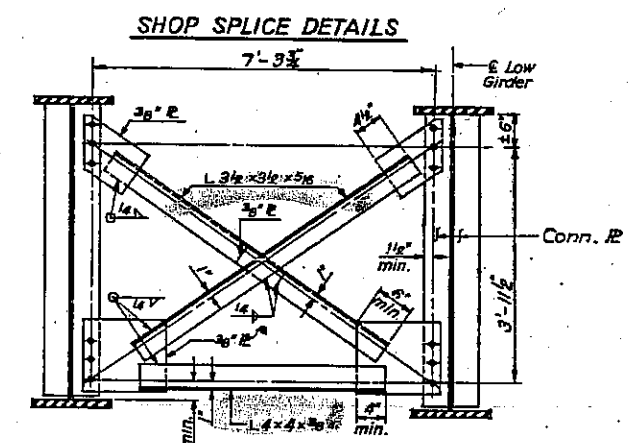
- a) D* (Side of brg. away from fixed brg.)
D* = 1/8" per each 100' of expansion for every 15° fall below the normal temp. of 50°F.
- D** (Side of brg. toward fixed brg.)
D** = 1/8" per each 100' of expansion for every 15° rise above the normal temp. of 50°F.
- b) After beams have been erected and dimensions D* 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.



SHEAR CONNECTOR DETAIL



END DIAPHRAGM - D



INTERIOR CROSS FRAME - DI

INTERIOR GIRDER MOMENT TABLE

	O4 Sp. 2	Pier	O4 Sp. 3
I _a (in ⁴)	29,940	87,773	29,940
I _c (in ⁴)	80,232	—	80,232
S _a (in ³)	1272	2809	1272
S _c (in ³)	1694	—	1694
R (ft)	1.052	1.316	1.052
M _R (ft-k)	811	3054	890
f _s (ksi)	7.65	13.05	8.30
S _R (in ³)	0.254	—	0.254
M _s (ft-k)	260	—	278
M _t (ft-k)	1087	1160	1100
M _{imp} (ft-k)	221	235	222
TOTAL (ft-k)	1569	1395	1600
f _s (ksi)	11.11	5.96	11.33
f _s TOTAL (ksi)	18.76	19.01	19.63
VR (ft)	636	—	—

INTERIOR GIRDER REACTION TABLE

	W. Abut.	Pier	E. Abut.
R _P (k)	53.8	210.0	55.8
R _R (k)	46.7	81.7	46.7
Imp. (k)	9.4	17.9	9.4
R _{TOTAL} (k)	109.9	315.6	111.9

DESIGNED BY: H.N.
DRAWN BY: B.B.
CHECKED BY: H.N.

C-96-014-07
SN 054-0038
EXISTING BRIDGE PLANS
FOR INFORMATION ONLY
(NOT TO SCALE)