76210 #106 1-16-04 FAI 70 ST. CLAIR Sec (82-3HVB-2R-1)2 JAR #106

106

99.9%

9-24-2005

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	1

*ACIM-ACBHI-070-1(178)001 *(82-3HVB-2R-1)-2

D-98-025-99

CONTENTS

STRUCTURE	DESCRIPTION
--	Traffic Control
Ramp O (SN. 082-0143)	Siesmic Retrofit, Redundancy Retrofit, Deck rehabilitation and General Repair of Deteriorations of the Substructure and Superstructure for this Structure.
Ramp M (SN. 082-0145)	Siesmic Retrofit, Redundancy Retrofit, Deck rehabilitation and General Repair of Deteriorations of the Substructure and Superstructure for this Structure.
Ramp O (SN. 082-0201)	Siesmic Retrofit, Redundancy Retrofit, Deck rehabilitation and General Repair of Deteriorations of the Substructure and Superstructure for this Structure.
Ramp N (SN. 082-0202)	Siesmic Retrofit, Redundancy Retrofit, Deck rehabilitation and General Repair of Deteriorations of the Substructure and Superstructure for this Structure.
Ramp P (SN. 082-0203)	Siesmic Retrofit, Redundancy Retrofit, Deck rehabilitation and General Repair of Deteriorations of the Substructure and Superstructure for this Structure.
ROADWAY F (SN. 082-0204)	Siesmic Retrofit, Redundancy Retrofit, Deck rehabilitation and General Repair of Deteriorations of the Substructure and Superstructure for this Structure.
ROADWAY E (SN. 082-0205)	Siesmic Retrofit, Redundancy Retrofit, Deck rehabilitation and General Repair of Deteriorations of the Substructure and Superstructure for this Structure.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED REHABILITATION

PROJECT ACIM-ACBHI-070-1(178)001

FAI ROUTE 70 (I-55/70/64

SECTION (82-3HVB-2R-1)-2

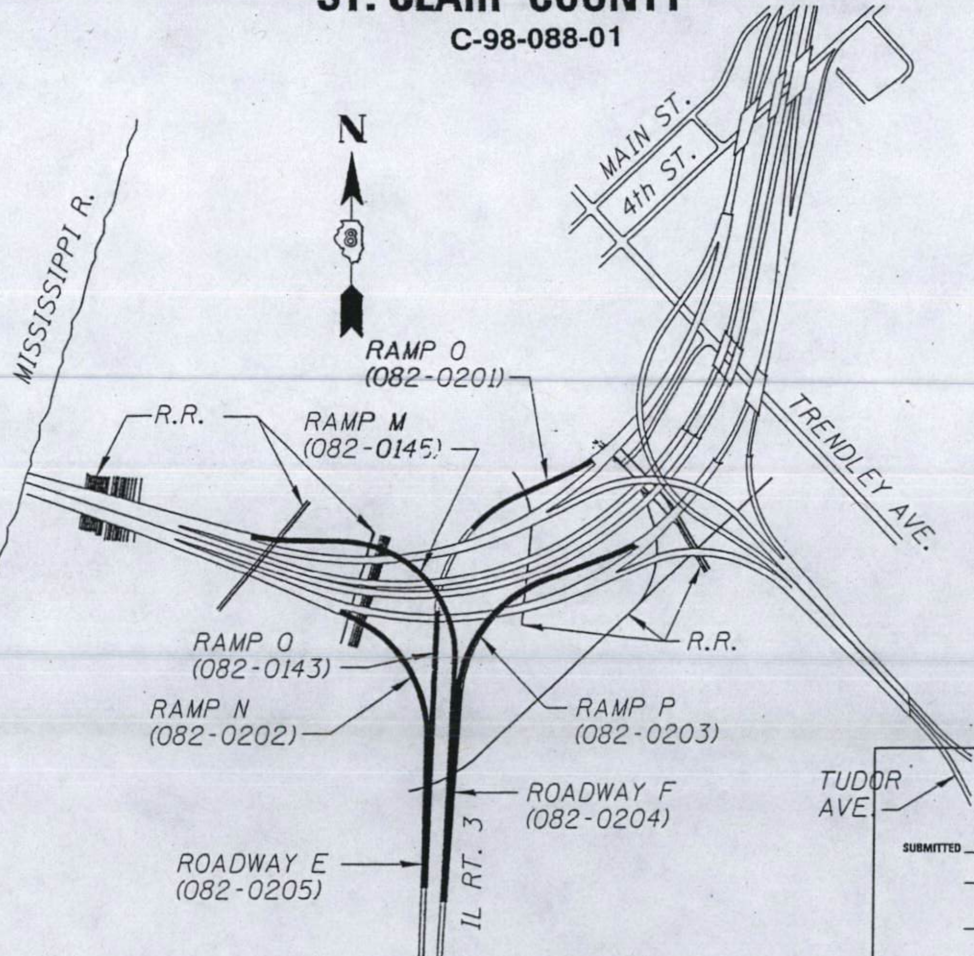
ILLINOIS ROUTE 3

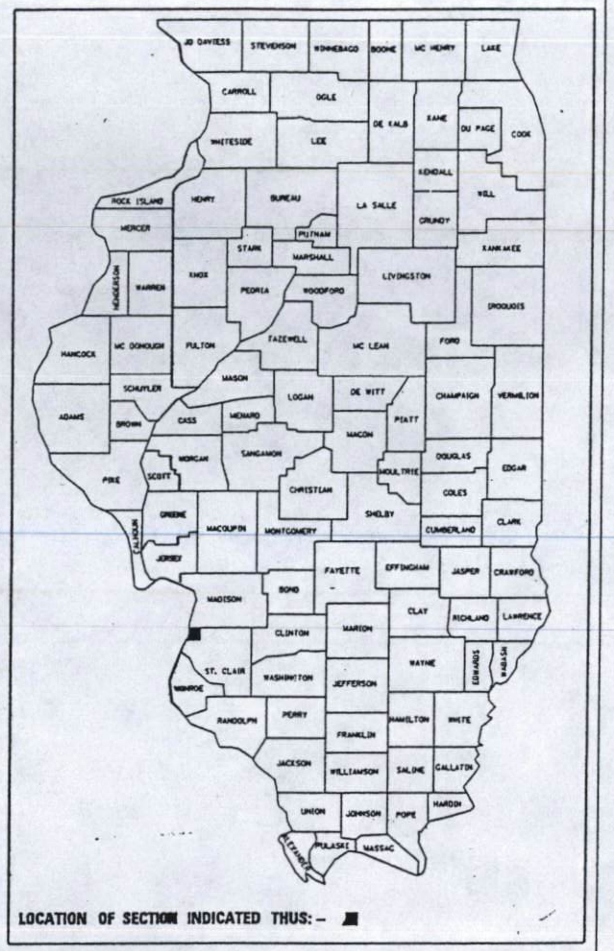
TO AND FROM

POPLAR STREET BRIDGE COMPLEX

ST. CLAIR COUNTY

C-98-088-01





RAMP O
2001 ADT = 6000 (actual)
2003 ADT = 6200 (estimated)
2003 DHV = 620 (estimated)
2023 ADT = 8350 (estimated)
2023 DHV = 840 (estimated)
SU = 4.0%
MU = 8.0%

RAMP M
2001 ADT = 9900 (actual)
2003 ADT = 10200 (estimated)
2003 DHV = 1020 (estimated)
2023 ADT = 13700 (estimated)
2023 DHV = 1370 (estimated)
SU = 4.0%
MU = 8.0%

RAMP N
2001 ADT = 8700 (actual)
2003 ADT = 9000 (estimated)
2003 DHV = 900 (estimated)
2023 ADT = 12100 (estimated)
2023 DHV = 1240 (estimated)
SU = 4.0%
MU = 8.0%

RAMP P
2001 ADT = 4300 (actual)
2003 ADT = 4400 (estimated)
2003 DHV = 440 (estimated)
2023 ADT = 5900 (estimated)
2023 DHV = 590 (estimated)
SU = 4.0%
MU = 8.0%

ROADWAY F
2001 ADT = 14200 (actual)
2003 ADT = 14600 (estimated)
2003 DHV = 1460 (estimated)
2023 ADT = 19600 (estimated)
2023 DHV = 1960 (estimated)
SU = 4.0%
MU = 8.0%

ROADWAY E
2001 ADT = 14600 (actual)
2003 ADT = 15000 (estimated)
2003 DHV = 1500 (estimated)
2023 ADT = 20200 (estimated)
2023 DHV = 2020 (estimated)
SU = 4.0%
MU = 8.0%

PROJECT LEADER: TOM MANNINO (618)346-3159
SQUAD LEADER: GREG HANCOCK (618)346-3195

CONTRACT NO. 76210

DESIGNED	--
CHECKED	--
DRAWN	E. Bazzell
CHECKED	S. Kaemmerer

082-0205

PREPARED BY: JACOBS CIVIL INC. ST. LOUIS, MO

GROSS LENGTH OF PROJECT = 7403.3 FEET = 1.40 MILES
NET LENGTH OF PROJECT = 7403.3 FEET = 1.40 MILES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Oct 24 2003
DISTRICT ENGINEER
December 5, 2003
ENGINEER OF DESIGN AND ENVIRONMENT
December 5, 2003
DIRECTOR, DIVISION OF HIGHWAYS

JOHN E. FINKE, S.E.
STRUCTURAL/SEISMIC RETROFIT
EXPIRES 11-30-2004
9/3/04

LANCE PETERMAN, S.E.
REDUNDANCY RETROFIT
LICENSE EXPIRES 11-30-04
9/2/04

ANDREW P. FREY, P.E.
TRAFFIC CONTROL
SEP 3 2003

8-260

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

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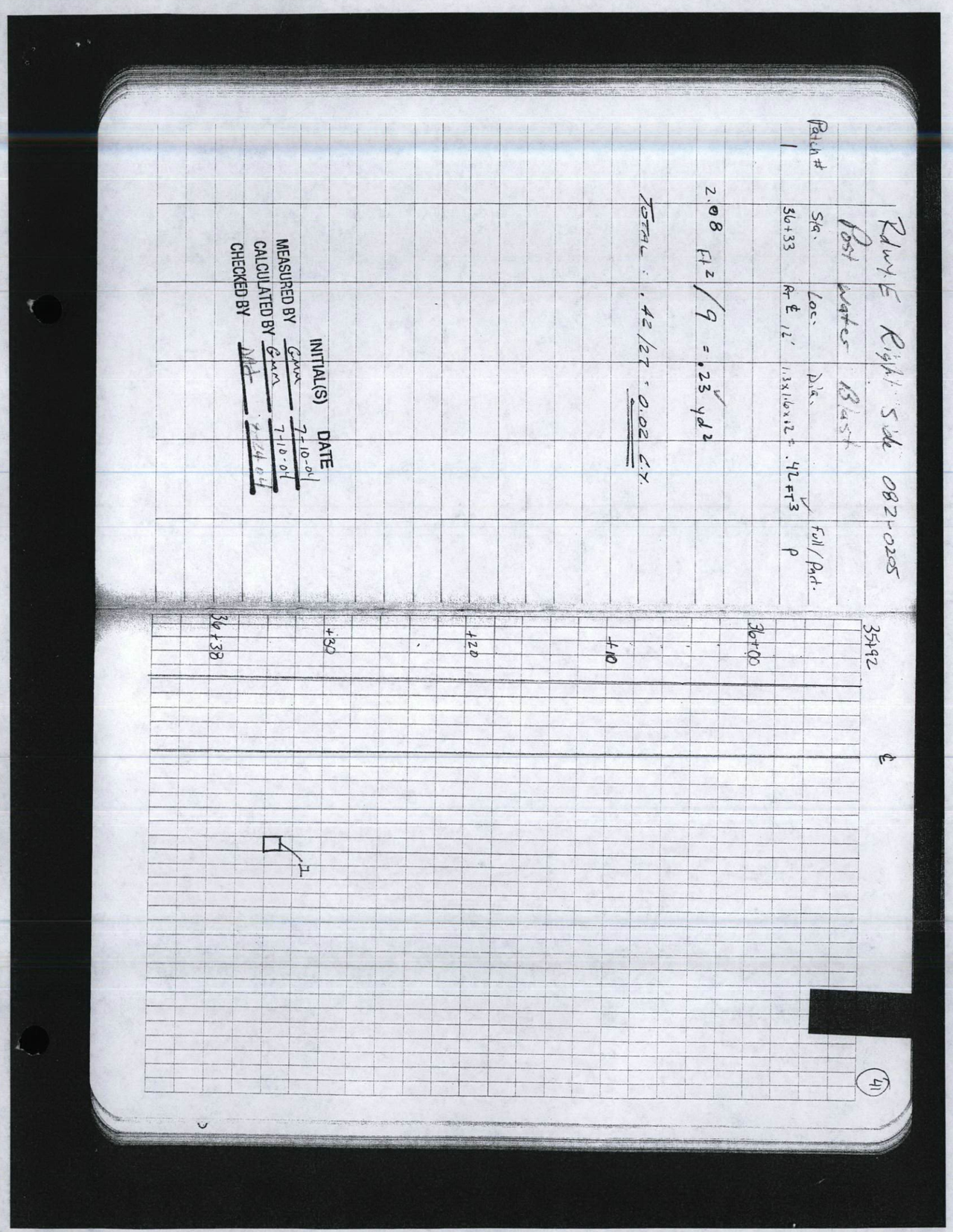


Illinois Department of Transportation

Report of Bridge Deck Patching Quantities

County St Clair

Section (82-3HVB-2R-1)-2

Route FAI 70

District 8
Contract No. 76210
Job No. C-98-088-01

Project ACIM-ACBHI-1/178/1

Structure Number 082-0205 (Rdwy E)

Plan Quantity: Partial Depth 50.35 yd² Full Depth 0.25 yd²

Final Quantity: Partial Depth 62.05 yd² Full Depth 0

Date Patching Completed 8-19-04

Please attach documentation showing patch size, type (PD or FD) and location.

Resident Steph Cook

CC: Bureau of Bridges & Structures
District Bridge Maintenance Engineer

Printed 1/9/2007

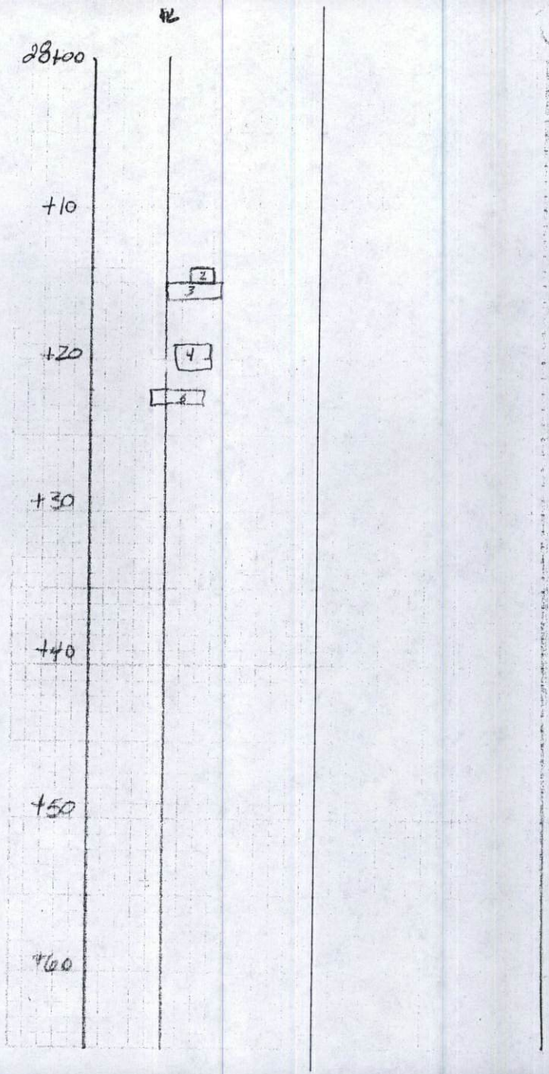
BC 2544 (6/02)

Pattern	Sta.	Loc.	Dim.		
2	28+14	1.7 R ℄	1.3x1.1x.15	1.43	= .21
3	28+15	ØR ℄	3.8x.8x.15	3.04	= .46
4	28+19	Ø.6 R ℄	2.4x1.7x.2	4.56	= .9
5	28+22	1'L ℄ - 2.5R ℄	3.5x.09x.2	3.15	= .6 / 2.17

12.18 Ft² / 9 = 1.35 yd²

0.08 cuyd

	INITIAL(S)	DATE
MEASURED BY	GMM/DMS	7-10-04
CALCULATED BY	GMM	7-10-04
CHECKED BY		



(73)

Rdwy E Post Water Blaster

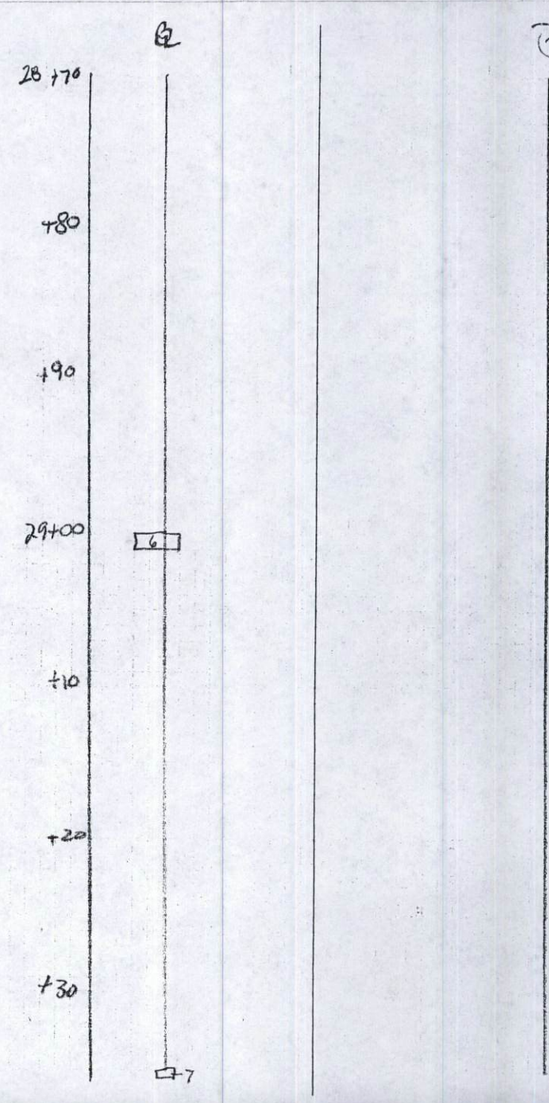
Pattern	Sta.	Loc.	Dim.		
6	29+00	2'L ℄ - 1'R ℄	3.0x1.0x.16	3.0	= .48
7	29+36	.5L ℄ - 1.0R ℄	1.5x.5x.15	.75	= .1 / .59 FT³

3.75 Ft² / 9 = .42 yd²

0.02 cuyd

Left Rdwy E post Water Blast

	INITIAL(S)	DATE
MEASURED BY	GMM/DMS	7-10-04
CALCULATED BY	GMM	7-10-04
CHECKED BY		



(74)

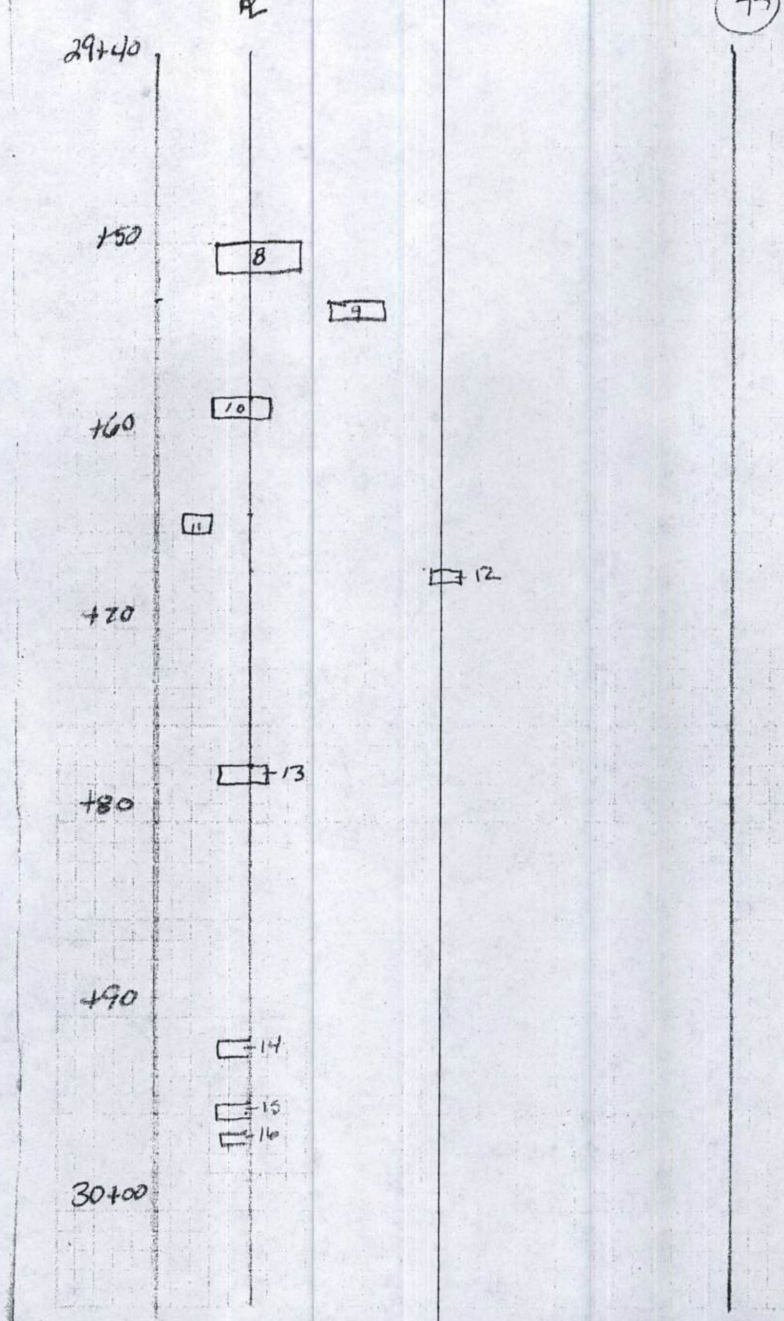
Left [illegible]

Patch #	Sta.	loc.	Dia.			
8	29+50	2'L ℄ - 2.5R ℄	1.15x4.5x.1	5.18	=	.52 ✓
9	29+53	4' R ℄	1.0x3.0x.2	3 ✓	=	.60 ✓
10	29+58	2'L ℄ - 1R ℄	3x1x.15	3 ✓	=	.45 ✓
11	29+64	2'L ℄	1.5x1x.15	1.5 ✓	=	.23 ✓
12	29+67	9.5 R ℄	1.5x0.5x.15	.75	=	.11 ✓
13	29+77	1.5L ℄ - 1R ℄	2.5x1x.12	2.5 ✓	=	.3 ✓
14	29+91	ØL ℄	1.8x.7x.2	1.26	=	.25 ✓
15	29+94.5	ØL ℄	.8x1.8x.15	1.44 ✓	=	.22 ✓
16	29+96.5	ØL ℄	1.3x.8x.17	1.04 ✓	=	.18 ✓
						2.9 ✓

19.67 Ft² / 9 = 2.19 yd²

0.11 cuyd

	INITIAL(S)	DATE
MEASURED BY	GMM/DAS	7-10-04
CALCULATED BY	GMM	7-10-04
CHECKED BY	DAS	[illegible]



Left Rdwy E Post Water Blast

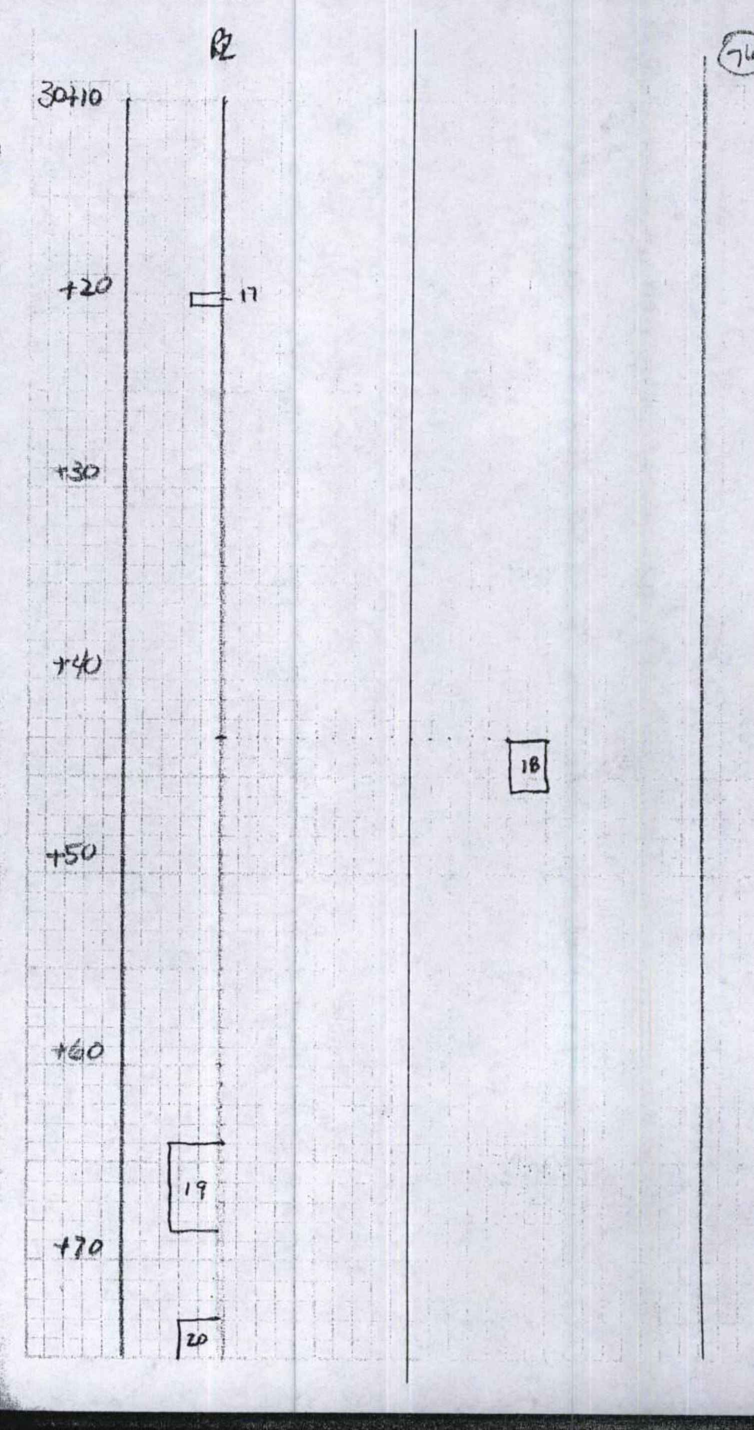
Patch #	Sta.	loc.	Dia.			
17	30+20	ØL ℄	1.5x.7x.2	~~1.05~~ 1.05	=	.21 ✓
18	30+43	15.2 R ℄	2.7x2.0x.27	5.4 ✓	=	1.5 ✓
19	30+64	ØL ℄	4.5x2.4x.25	10.8 ✓	=	2.7 ✓
20	30+73	ØL ℄	2x16x.10	32 ✓	=	3.2 ✓
						7.61 Ft³

~~49.25/9 = 5.47 yd²~~

~~58.7~~ Ft² / 9 = ~~6.52~~ yd²

0.28 cuyd

	INITIAL(S)	DATE
MEASURED BY	GMM/DAS	7-10-04
CALCULATED BY	GMM	7-10-04
CHECKED BY	DAS	[illegible]



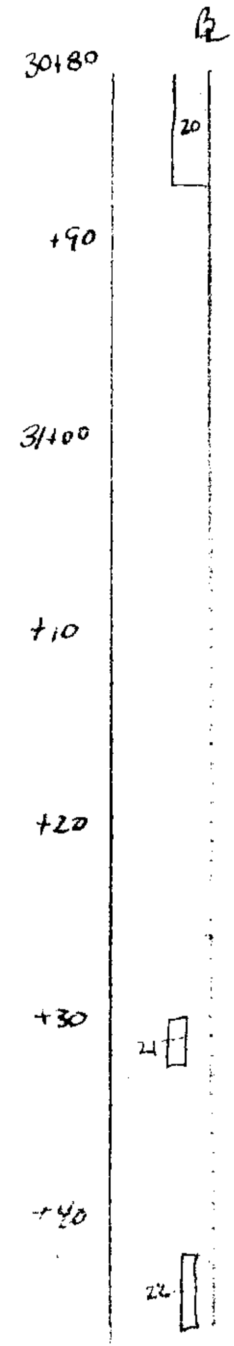
Patch #	Sta.	Loc.	Dia.			
20	30+73	ØL ℄	See Pg. #			
21	31 ~~30~~+29	1'L ℄	2.5x1.0x.15	2	=	.38
22	31+47	.5L ℄	4.0x1.0x.1	4.0	=	.40
						.78

8 ft² / 9 = .89 yd²

0.03 cuyd

Roadway E Br 3A
SUB TOTAL – 0.52 cuyd

	INITIAL(S)	DATE
MEASURED BY	GMM/DA	7-10-04
CALCULATED BY	GMM	7-10-04
CHECKED BY		



Post Water Blast Rdwy E Left Side

Patch #	Sta.	Loc.	Dia.			
23	33+30	1.2L℄ 1.1R℄	2.1x2.6x.14	5.72	=	.76
24	33+60	3.2L℄	1.6x8.1x.13	12.96	=	1.7
						2.46

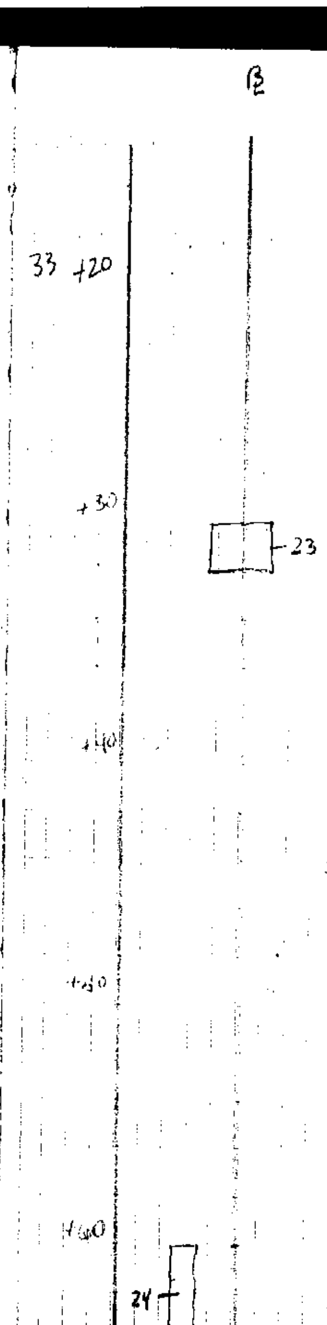
18.68 ft² / 9 = ~~2.08~~ yd²

(2001620c) (Partial)
Deck Slab repair (Partial)

18.42 ft² / 9 = 2.05 yd²

Total = 2.46 c.f. / 27 = 0.09 c.y.

	INITIAL(S)	DATE
MEASURED BY	AMM	7/01/04
CALCULATED BY	AMM	7/01/04
CHECKED BY	NRD	7/20/04



Post water Blast Rdwy E Left Side

Patch #	Sta.	Loc.	Dia.	
25	34+05	℄L ℄	1.1x1.2x.05	= .07 ✓

(Z0016200) Partial .07

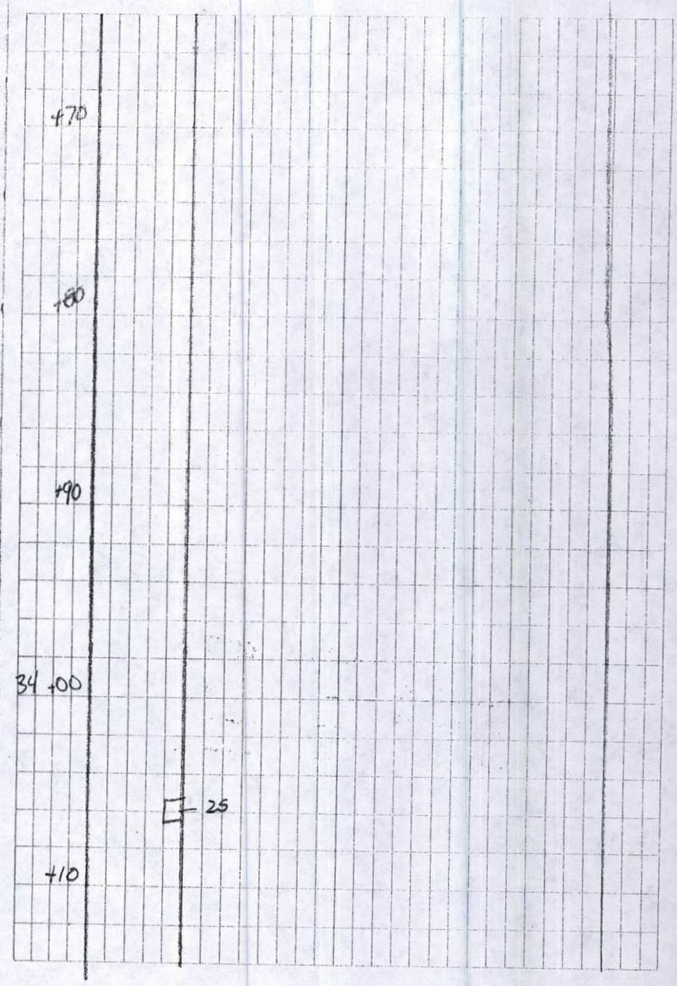
Deck slab repair (partial)

1.32 ft^2 / 9 = .15 yd^2

1.32 ft^2 / 9 = .15 yd^2

TOTAL: .07/27 = 0.003 C.Y.

	INITIAL(S)	DATE
MEASURED BY	[illegible]	7/01/04
CALCULATED BY	[illegible]	7/01/04
CHECKED BY	NRD	7/20/04



Post water Blast Rdwy E Left Side

Patch #	Sta.	Loc.	Dia.		
26	34+15	℄L ℄	9.1 3.5x2.6x.08	9.1	= .73 ✓
27	34+60	1.1L ℄	5.75 0.5x11.5x.07	5.75	= .40 ✓
	14.85 ft^2 / 9 =	1.65 yd^2			1.13 ✓

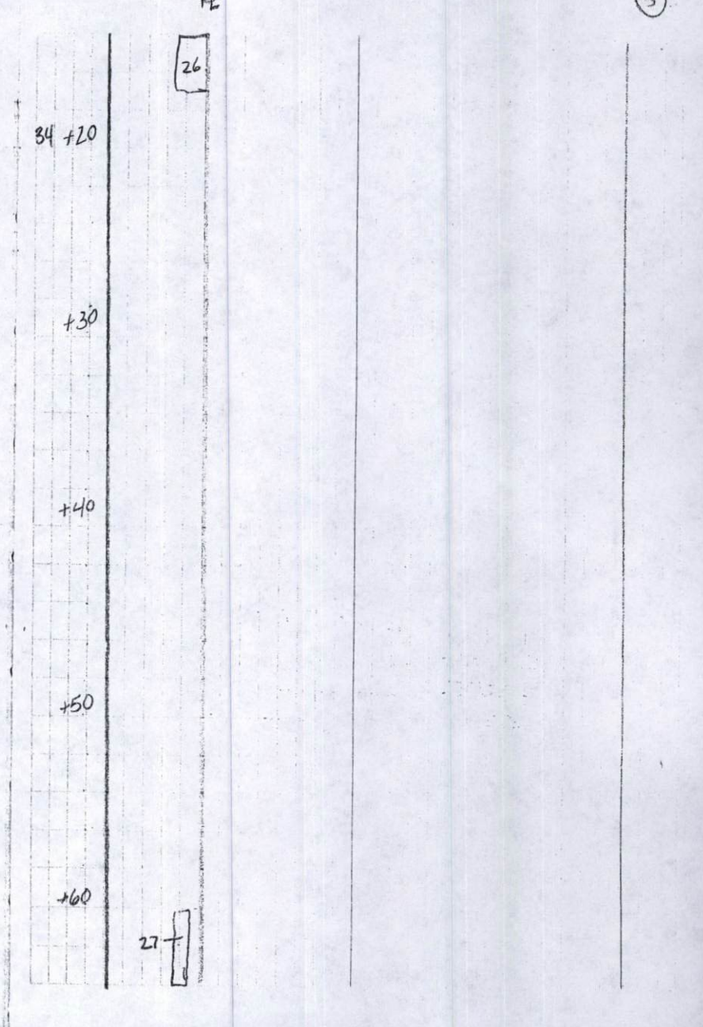
(Z0016200) Partial 1.13

Deck slab repair (partial)

14.85 ft^2 / 9 = 1.65 yd^2

TOTAL: 1.13/27 = 0.04 C.Y.

	INITIAL(S)	DATE
MEASURED BY	[illegible]	7/01/04
CALCULATED BY	[illegible]	7/01/04
CHECKED BY	NRD	7/20/04



Post water Blast Rdwy E Left Side

Patch #	Sta.	Loc.	Dia.		
28	34+90	℄L ℄	1.4x1.5x.18	=	.38 ✓

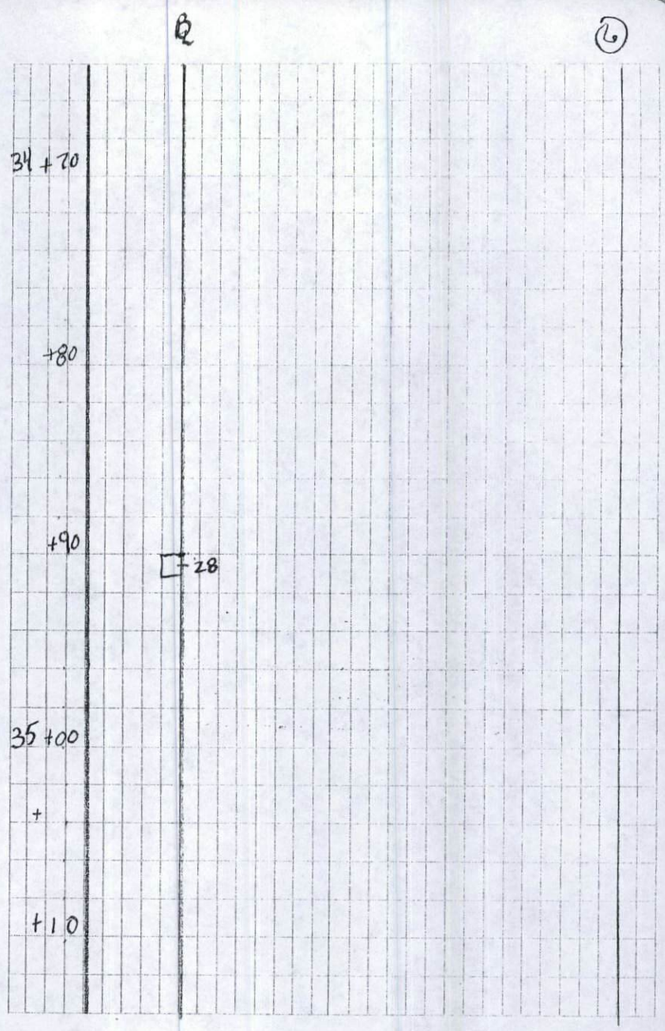
(2001620) Partial .38

Deck Slab Repair (partial)

2.1 Ft² / 9 = .23 ✓ yd²

TOTAL: .38/27 = 0.01 c.y.

	INITIAL(S)	DATE
MEASURED BY	DMM	7/1/04
CALCULATED BY	DMM	7/1/04
CHECKED BY	NED	7/20/04



Post water Blast Rdwy E Left Side

Patch #	Sta.	Loc.	Dia.		
29	35+20	1L ℄	1.0x2.1x.11	22.1 ✓ =	2.43 ✓
30	35+50.5	ØL ℄	10.7x2.6x.10	27.82 =	2.78 ✓
31	35+61.2	2.6L ℄ 18R ℄	21.0x4.4x.14	92.4 =	12.94
					18.15 ✓

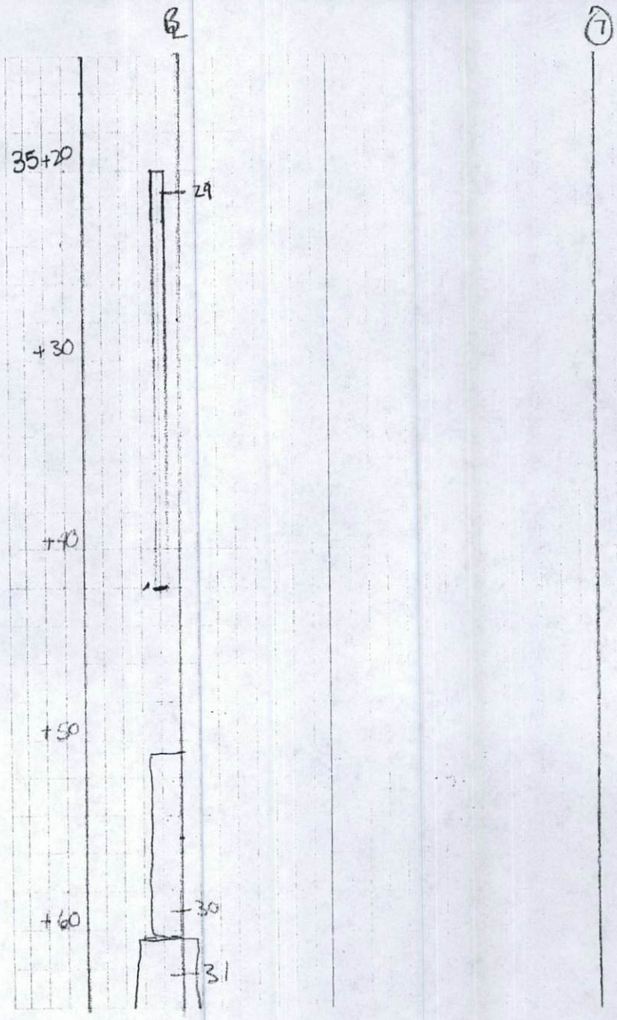
(2001620) Partial 18.15

Deck Slab Repair (partial)

142.32 Ft² / 9 = 15.81 ✓ yd²

TOTAL: 18.15/27 = 0.70 c.y.

	INITIAL(S)	DATE
MEASURED BY	DMM	7/1/04
CALCULATED BY	DMM	7/1/04
CHECKED BY	NED	7/20/04



Post water Exist Rdwy E

Patch #	Sta.	Loc.	Dia.	Left Side		
31	See	Pg 7				
32	35+82.2	℄L	3.6x2.6x.11	9.36	=	1.03 ✓
33	35+85.8	2.6L℄/1.2R℄	7.0x4.8x.10	28	=	2.80 ✓
34	35+92.8	4.2R℄/2.6L℄	7.7x.8x.08	5.74	=	.46 ✓
35	35+93.6	2.6L℄/1.9R℄	5.5x4.5x.09	24.75	=	2.23 ✓
36	35+99.1	4.5R℄/2.6L℄	7.1x1.3x.07	9.23	=	.65 ✓
37	36+00	1.8R℄/2.6L℄	5.6x4.4x.08	24.64	=	2.0 ✓
38	36+06	3.9R℄/2.6L℄	3.2x6.5x.05	20.8	=	1.0 ✓
39	36+10.7	1.4R℄/2.6L℄	1.5x4.0x.10	6	=	.60 ✓
40	36+14.5	3.9R℄/2.6L℄	6.5x1.6x.07	10.4	=	.73 .50

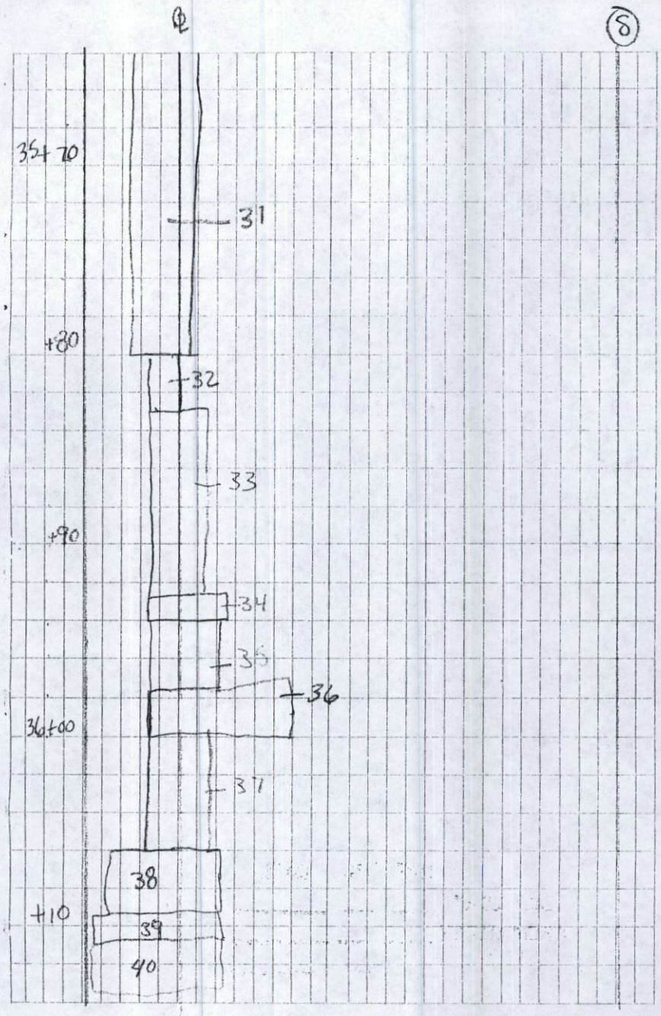
137.94 Ft² / 9 = 15.33 yd² 15.44

11.50

	INITIAL(S)	DATE
MEASURED BY	JMW	7/1/09
CALCULATED BY	JMW	7/1/09
CHECKED BY	NEA	7/20/09

(Z0016200) Partial Deck Slab repair (Partial) 11.50

Total: 11.5/27 = 0.43 C.Y.



(8)

Post water Exist Rdwy E

Patch #	Sta.	Loc.	Dia.	Left Side		
41	36+12.3	1.2R℄/2.6L℄	2.2x3.8x.7	8.36	=	5.9 ✓
42	36+14.5	6.1R℄/2.6L℄	9.2x8.7x.12	8.04	=	9.6 ✓
43	36+23.7	1.3R℄/2.6L℄	3.0x3.9x0.8	11.7	=	9.4 ✓
44	36+26.7	1.0R℄	3.2x1.0x.19	3.2	=	.7 ✓
45	36+29.9	9.1R℄/1.4L℄	4.1x10.5x.21	43.05	=	9.0 ✓

43.95 ✓

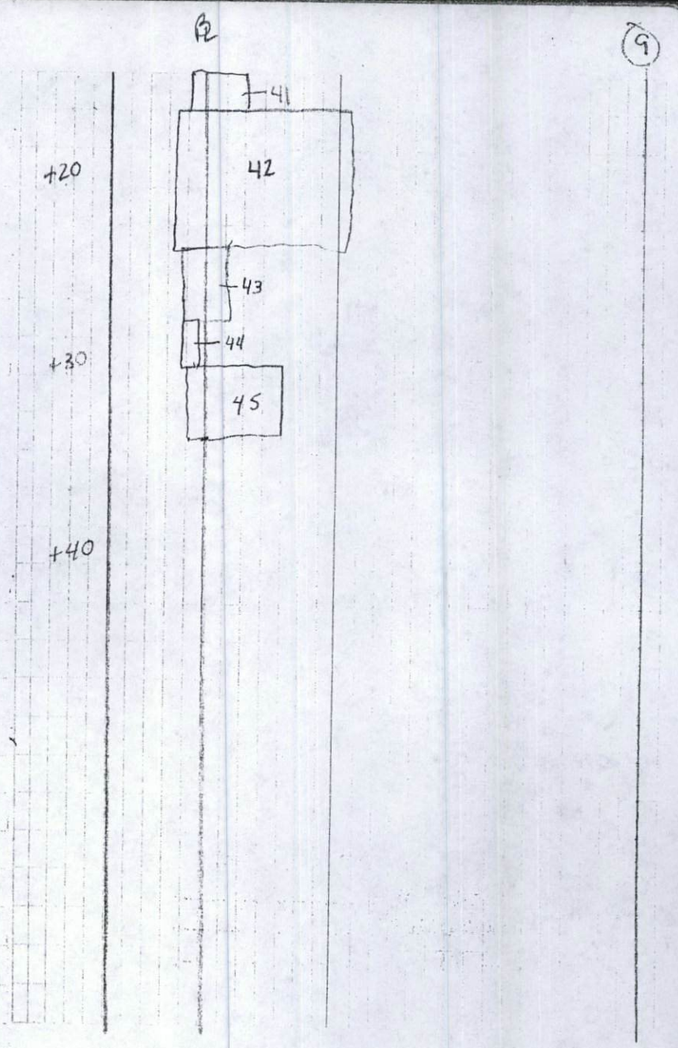
(Z0016200) Partial Deck Slab repair (partial) 43.95

146.35 Ft² / 9 = 16.26 yd²

Total: 43.95/27 = 1.63 C.Y.

	INITIAL(S)	DATE
MEASURED BY	JMW	7/1/09
CALCULATED BY	JMW	7/1/09
CHECKED BY	NEA	7/20/09

Total pgs. 1-9 → 2.90 cu yd



(9)

TOTALS:

RDWY E

Z0016200 - DECK SLAB REPAIR (PARTIAL)
= 61.97 ~ 62 S.Y.
~ 3.44 C.Y.
SLC F.B 30 PGS 72-73 ; PGS 1-9 ; 25-41 BK 33

RDWY F

Z0016200 - DECK SLAB REPAIR (PARTIAL)
= 131.66 S.Y. ~ 131.7 S.Y.
~ 5.39 C.Y.
PGS 57-59, 72-75

RAMP N

Z0016200 - DECK SLAB REPAIR (PARTIAL)
= 510.99 S.Y. ~ 511 S.Y.
~ 17.3 C.Y.
SLC PGS 10-24

RAMP P

Z0016200 - DECK SLAB REPAIR (PARTIAL)
= 427.46 S.Y. ~ 427.2 S.Y. ~ 17.68 C.Y.
PGS 61-65 ; 67-68

Z0016001 - DECK SLAB REPAIR (F.D. TYI)
1 S.F. / 9 = 0.1 S.Y. PG 65

RAMP H

Z0016200 - DECK SLAB REPAIR (PARTIAL)
= 161.78 S.Y. ~ 161.8 S.Y.
~ 5.39 C.Y.
PG 66

RAMP N (FULL DEPTH)

Z0016001 - DECK SLAB REPAIR (FULL DEPTH TYI)
@ 160-4131-2A
= 9.46 ~ 9.5 S.F. / 9 = 1.05
~ 1.1 S.Y.

X9801200 - DECK SLAB REPAIR (FULL DEPTH TYII)
@ 20-4131-2A
= 217.75 S.F. / 9 = 24.19 ~ 24.2 S.Y.

PG 10-11, 13-14, 17

MEAS BY: GMM 11/10/04
CALC. BY: SAG 9/14/05
↳ B'T DAS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	2
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO.
SHEETS

*(82-3H-3-2R-1)-2

SUMMARY OF QUANTITIES

CODE NUMBER	ITEM	UNIT	PROJECT TOTAL	URBAN ACIM 90% FED. 10% STATE ROADWAY .000	URBAN ACIM 90% FED. 10% STATE TRAFFIC CONTROL .000-2A	URBAN ACBHI 80% FED. 20% STATE RAMP O STRUCTURE NO. 082-0143 X531-2A	URBAN ACBHI 80% FED. 20% STATE RAMP M STRUCTURE NO. 082-0145 X531-2A	URBAN ACBHI 80% FED. 20% STATE RAMP O STRUCTURE NO. 082-0201 X131-2A	URBAN ACBHI 80% FED. 20% STATE RAMP N STRUCTURE NO. 082-0202 X131-2A	URBAN ACIM 90% FED.10% STATE RAMP P STRUCTURE NO. 082-0203 X531-2A	URBAN ACBHI 80% FED. 20% STATE ROADWAY F STRUCTURE NO. 082-0204 X131-2A	URBAN ACBHI 80% FED. 20% STATE ROADWAY E STRUCTURE NO. 082-0205 X131-2A	100% STATE ROADWAY H STRUCTURE NO. 082-0256 SFT-2A
44000910	BITUMINOUS CONCRETE REMOVAL (DECK)	SQ YD	21,594	--	--	1,479	3,845	2,499	1,927	3,462	4,801	3,443	139
50102400	CONCRETE REMOVAL	CU YD	3,398.3 [2]	--	--	275.5	694.9	418.6	356.7	621.9	574.1	437.1	19.5
50300150	NEOPRENE EXPANSION JOINT - 2"	FOOT	135	--	--	--	--	27	--	--	35	73	--
50300155	NEOPRENE EXPANSION JOINT - 2.5"	FOOT	209	--	--	--	27	--	--	27	62	93	--
50300160	NEOPRENE EXPANSION JOINT - 4"	FOOT	163	--	--	--	--	26	--	27	65	45	--
50300225	CONCRETE STRUCTURES	CU YD	7.8	--	--	2.1	--	2.3	--	--	1.7	1.7	--
50300255	CONCRETE SUPERSTRUCTURE	CU YD	2,670.0	--	--	215.3	561.7	342.8	286.5	493.9	427.6	327.2	15.0
50300260	BRIDGE DECK GROOVING	SQ YD	[2] 22,285	--	--	1,536	3,991	2,591	2,002	3,596	4,906	3,521	142
50300300	PROTECTIVE COAT	SQ YD	5,842	--	--	491	1,275	680	640	1,113	923	685	35
50300310	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	[1] 14	--	--	--	[6] [1]	--	--	[2] [1]	[6] [1]	--	--
50300320	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	18	--	--	--	--	8	2	--	2	6	--
50301245	FORMED CONCRETE REPAIR (DEPTH EQUAL TO OR LESS THAN 5")	SQ FT	3,771 [3]	--	--	11 [3]	1,077	222	490 [3]	215	381 [3]	1,375	--
50301250	FORMED CONCRETE REPAIR (DEPTH GREATER THAN 5")	SQ FT	4	--	--	1	3	--	--	--	--	--	--
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1	--	--	0.1	0.2	0.1	0.1	0.2	0.2	0.1	--
50500715	JACK AND REMOVE EXISTING BEARINGS	EACH	[1] 32	--	--	--	[6] [1]	8	2	[2] [1]	[8] [1]	6	--
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	523,210 [2]	--	--	43,290	107,980	59,280	55,490	96,580	88,410	69,040	3,140
54002500	EXPANSION BOLTS (SPECIAL)	EACH	1,752 [3]	--	--	92	502 [3]	154	164	390 [3]	218	232	--
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	24	24	--	--	--	--	--	--	--	--	--
67100100	MOBILIZATION	L SUM	1	1	--	--	--	--	--	--	--	--	--
70100205	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401	EACH	6	--	6	--	--	--	--	--	--	--	--
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	2	--	2	--	--	--	--	--	--	--	--
70101800	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	L SUM	1	--	1	--	--	--	--	--	--	--	--
70300220	TEMPORARY PAVEMENT MARKING LINE 4"	FOOT	15,759	--	15,759	--	--	--	--	--	--	--	--
70300240	TEMPORARY PAVEMENT MARKING LINE 6"	FOOT	5,493	--	5,493	--	--	--	--	--	--	--	--
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	4,061	--	4,061	--	--	--	--	--	--	--	--
70400500	TEMPORARY CONCRETE BARRIER (STATE OWNED)	FOOT	1,451	--	1,451	--	--	--	--	--	--	--	--
70400600	RELOCATE TEMPORARY CONCRETE BARRIER (STATE OWNED)	FOOT	4,042	--	4,042	--	--	--	--	--	--	--	--
7800310	POLYUREA PAVEMENT MARKING TYPE II - LINE 4 INCH	FOOT	17,019	14,840	2,179	--	--	--	--	--	--	--	--
7800340	POLYUREA PAVEMENT MARKING TYPE II - LINE 8 INCH	FOOT	2,380	2,380	--	--	--	--	--	--	--	--	--
78100105	RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)	EACH	74	74	--	--	--	--	--	--	--	--	--
78200100	MONODIRECTIONAL PRESMATIC BARRIER REFLECTOR	EACH	178	--	178	--	--	--	--	--	--	--	--
78300100	PAVEMENT MARKING REMOVAL	SQ FT	1,672	--	1,672	--	--	--	--	--	--	--	--
X0321781	MECHANICAL SPLICE	EACH	618	--	--	50	150	50	50	50	179	89	--
X0322050	RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL	EACH	9	--	9	--	--	--	--	--	--	--	--
X0322549	COLUMN WRAP	SQ FT	17,149 [3]	--	--	950	3,668	1,916	1,385 [3]	4,243	3,123 [3]	1,864	--
X0322553	FOUNDATION WALL DOWEL MODIFICATION	EACH	18	--	--	6	2	--	1	3	2	4	--
X0322556	STIFFENER INTERSECTION MODIFICATION	EACH	1,976	--	--	272	--	408	344	--	544	408	--
X0322559	BOLT REPLACEMENT	EACH	514	--	--	10	109	6	30	2	273	84	--
X0322560	CRACK EXTENSION MODIFICATION	EACH	28	--	--	4	4	4	4	4	4	4	--
X0322563	VERTICAL WEB STIFFENER REMOVAL	EACH	3,668	--	--	316	801	482	360	691	628	390	--
X0323082	DRAINAGE SCUPPERS, DS-33	EACH	64	--	--	2	10	8	14	7	8	15	--
X0323558	BRIDGE JOINT SYSTEM (EXPANSION), 1-5/8"	FOOT	[2] 134	--	--	26	--	26	26	39	--	--	17
X0343400	REMOVE AND REINSTALL BEARINGS	EACH	10	--	--	--	--	--	4	--	2	4	--
X7015105O	PORTABLE CHANGEABLE MESSAGE SIGN	CAL MO	126	--	126	--	--	--	--	--	--	--	--
Ø Z0076600	TRAINEES	HOUR	500	500									--
XZ193500	BRIDGE DECK MICROSILICA CONCRETE OVERLAY - 2¼"	SQ YD	[2] 23,879	--	--	1,670	4,340	2,777	2,177	3,896	5,159	3,709	151
Z0012100	CONCRETE BRIDGE DECK SCARIFICATION (1/4 INCH)	SQ YD	23,879	--	--	1,670	4,340	2,777	2,177	3,896	5,159	3,709	151
Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	5.1	--	--	0.4	0.7	0.4	0.4	0.3	0.7	0.2	--
Z0016200	DECK SLAB REPAIR (PARTIAL)	SQ YD	510.2	--	--	41.7	192.4	94.3	81.3	40.1	10.1	50.3	--
Z0018800	DRAINAGE SYSTEM	L SUM	1	--	--	0.125	0.375	0.125	0.125	0.125	0.125	--	--
Z0022400	FABRIC REINFORCED ELASTOMERIC TROUGH	FOOT	237	--	--	27	79	27	27	27	50	--	--
Δ Z0029999	IMPACT ATTENUATOR REMOVAL	EACH	1	1	--	--	--	--	--	--	--	--	--
Δ Z0030150	IMPACT ATTENUATOR (NON-REDIRECTIVE), TEST LEVEL 3	EACH	1	1	--	--	--	--	--	--	--	--	--
Z0047300	PROTECTIVE SHIELD	SQ YD	3,026	--	--	--	865	1,037	358	420	171	175	--
Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1	1	--	--	--	--	--	--	--	--	--
Z0049100	RAISED PAVEMENT MARKER REFLECTOR REPLACEMENT	EACH	9	--	9	--	--	--	--	--	--	--	--
Δ Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	24	--	24	--	--	--	--	--	--	--	--
Δ Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	48	--	48	--	--	--	--	--	--	--	--
Z0073200	TEMPORARY SHORING AND CRIBBING	EACH	[1] 32	--	--	--	[1] 6	8	2	[1] 2	8	6	--
1	REMOVE TIE BEAM (SPECIAL)	EACH	13	--	--	1	--	--	4	--	5	3	--
1	REPLACE TIE BEAM (SPECIAL)	EACH	6	--	--	--	--	--	1	--	3	2	--
1	REMOVE AND REPLACE COLUMN (SPECIAL)	EACH	6	--	--	--	--	--	3	--	1	2	--

[3]

DESIGNED	R. Victor
CHECKED	D. James
DRAWN	E. Bazzell
CHECKED	R. Victor

* SPECIALTY ITEM
Ø Y080
Δ SFTY 3N

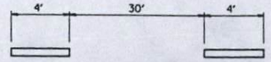
PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX

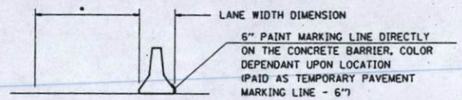
SUMMARY OF QUANTITIES
(FAI-70) ST. CLAIR CO.

P:\CIX11900\700cadd\709STR\082-0143\143sq01.dgn

[1] REVISED 07-29-04, MRC [2] REVISED 08-05-04, MRC [3] REVISED 09-15-04, MRC



REFLECTORIZED PAVEMENT MARKING
SKIP-DASH DETAIL



TYPICAL MOUNTING DETAIL
FOR BARRIER WALL REFLECTOR

NOTES

1. ALL PAVEMENT MARKINGS FOR STAGE CONSTRUCTION SHALL BE PAINTED.

2. DELETED

3. PEAK HOURS IS DEFINED AS 6:00 AM TO 9:00 AM WESTBOUND AND 3:00 PM TO 6:00 PM EASTBOUND.

4. ANY ADDITIONAL SIGNAGE REQUIRED FOR ANY/ALL PHASES OF CONSTRUCTION THAT REQUIRE LANE CLOSURES SHALL BE INCLUDED IN THE LUMP SUM PAY ITEM FOR TRAFFIC CONTROL STANDARD 701401.

5. NO LANE CLOSURE BETWEEN NOVEMBER 30 AND MAY 1 UNLESS APPROVED BY THE ENGINEER.

6. AN ESTIMATED QUANTITY OF SEVEN (7) PORTABLE CHANGEABLE MESSAGE SIGNS HAS BEEN INCLUDED IN THE PLANS FOR ADVANCED NOTICE OF DETOURS AND RAMP CLOSURES. FOUR (4) OF THE CHANGEABLE MESSAGE SIGNS WILL BE LOCATED IN MISSOURI ON INTERSTATES 44,55,64, AND 70. TWO (2) CHANGEABLE MESSAGE SIGNS WILL BE LOCATED ON INTERSTATE 255 IN ILLINOIS. ONE (1) CHANGEABLE MESSAGE SIGN WILL BE PROVIDED FOR EACH STAGE OF CONSTRUCTION. THE EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

7. STATE OWNED CONCRETE BARRIER IS LOCATED NEAR THE INTERSECTION OF IL ROUTE 111 AND FAI 55/70. THE CONTRACTOR IS RESPONSIBLE FOR PICK UP AND RETURN OF STATE OWNED BARRIER.

8. SIGNS SHALL BE MOUNTED ON EXISTING TRUSS MEMBERS. SIGN TRUSS STRUCTURAL MEMBERS ARE NOT TO BE DRILLED, CUT OR OTHERWISE MODIFIED IN MOUNTING DETOUR SIGNS.

9. TAPERED END SECTION NO LONGER ALLOWED.

10. PAINT REMOVAL SHALL BE BY THE WATER-BLAST METHOD.

11. ONE-WAY TRAFFIC IN AND OUT OF ACCESS OPENINGS.

12. WARNING SIGNS READING "TRUCKS ENTERING AND LEAVING HIGHWAY" SHALL BE PLACED IN ADVANCE OF ACCESS OPENINGS.

13. BRIDGE DECK MICROSILICA CONCRETE OVERLAY SHALL REQUIRED THE DIRECT BOND METHOD.

14. IF ANY SECTION OR SUB-SECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED OR DISTURBED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AND AUTHORIZED SURVEYOR, OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

15. ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE BE GIVEN TO ALL UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. AT (800)-892-0123, OR FOR NON-MEMBERS, THE UTILITY COMPANY DIRECTLY.

16. ALL TEMPORARY PAVEMENT MARKINGS WILL BE PLACED IN SUCH A MANNER SO AS NOT TO INTERFERE WITH THE PLACEMENT OF PERMANENT PAVEMENT MARKINGS.

17. ANY TEMPORARY CONCRETE BARRIER UNITS SHALL BE ANCHORED TO THE PAVEMENT TO PREVENT OVERTURNING AND LATERAL DEFLECTIONS GREATER THAN THOSE OBTAINED DURING THE NCHRP TESTS.

18. THE APPROACH END(S) OF TEMPORARY BARRIER SHALL BE PROTECTED WITH NCHRP TEST LEVEL 3 APPROACH DEVICE SUCH AS A MULTIPLE ARRAY OF SAND FILLED PLASTIC BARRELS OR A TYPE 3, SPECIAL TERMINAL.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	082-3HVB-2R-1)-2	ST. CLAIR	388	3
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 2
56 SHEETS

INDEX OF SHEETS

STANDARDS

000001-04
635006-02
635011-01
701401
701402-03
701426-01
702001-03
704001-02
780001-01
781001-02

INDEX OF SHEETS - PROJECT

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS

DRAWN BY A. Ledbetter
CHECKED BY A. Frey
DATE 17-NOV-2003

P:\CIVIL1900\700cadd\702civil\stage00_special_standard_02.dgn

Benchmark: #26 Elev. 404.396 X-cut in N.W. corner of concrete abutment at center pier of Ill. Central R.R Bridge over Ill. Rte. 3.

Existing Structure: SN 082-0205 was built as F.A.I. Route 70 Section (82-3HVB-2R-1)-2 in 1970. The roadway is striped for two 12-foot lanes. The Superstructure consists of three-3 span continuous units with two welded steel plate girders, plate girder floor beams, rolled stringers, and non-composite R.C. slab, and one simple span with composite slab on rolled girders. The Substructure is R.C. piers on R.C. piles and one spill through abutment. Existing structure shall be rehabilitated with seismic retrofit and redundancy retrofit. Traffic shall be maintained during the rehabilitation.

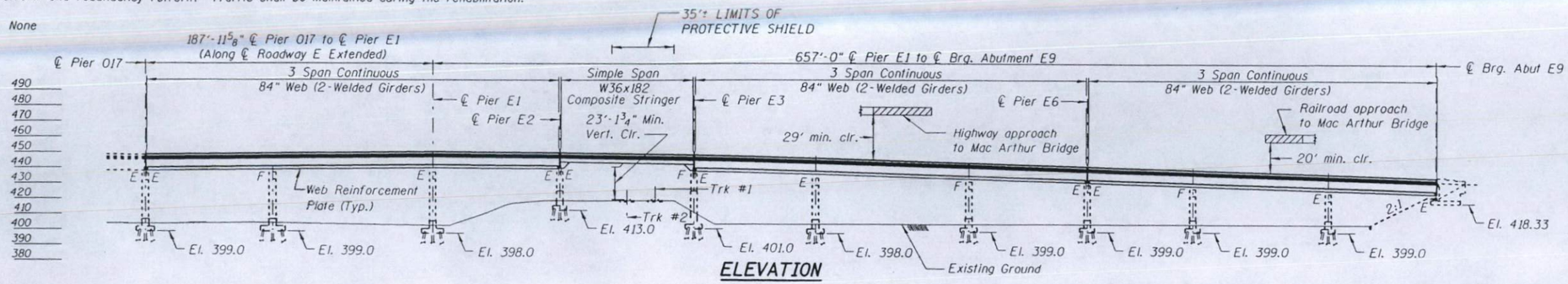
Salvage: None

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	343
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

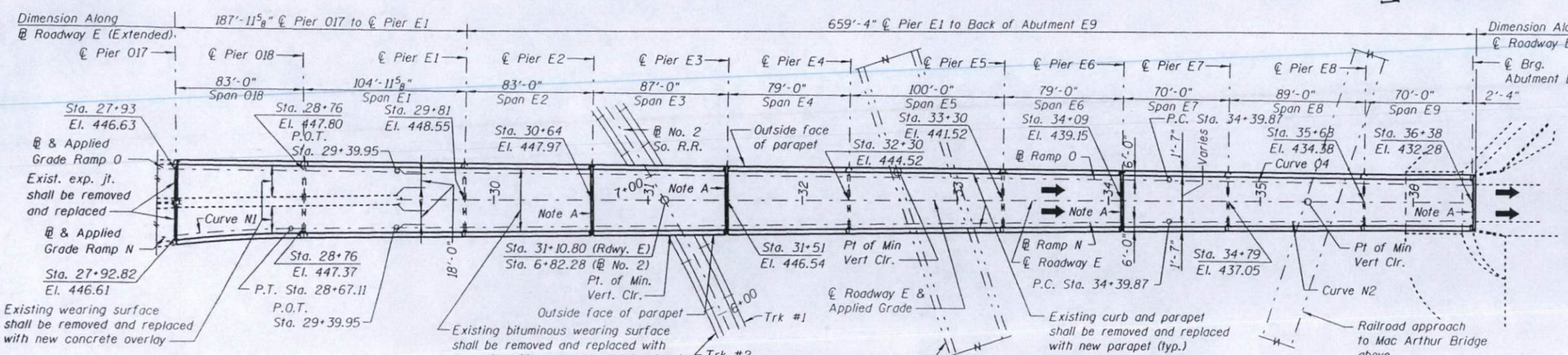
SHEET NO. 1
46 SHEETS

*(82-3HVB-2R-1)-2



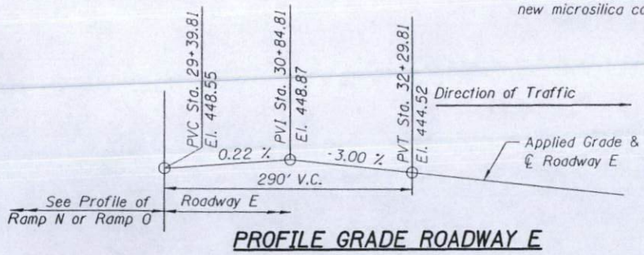
ELEVATION

Developed length along ℄ Roadway E

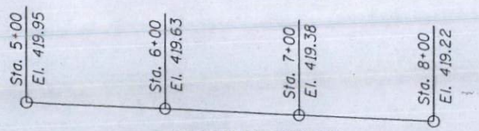


PLAN

Note A:
Exist. exp. jt. shall be removed and replaced



PROFILE GRADE ROADWAY E



PROFILE GRADE ℄ NO. 2 SOUTHERN R.R. TRK #2 NORTH RAIL

CURVE DATA

CURVE N1	CURVE N2	CURVE 04
P.I. = 25+09.37	P.I. = 35+89.88	P.I. = 35+89.88
△ = 67°44'14"	△ = 0°31'44"	△ = 0°31'44"
D = 8°11'06"	D = 0°10'35"	D = 0°10'35"
R = 700.00'	R = 32,500.00'	R = 32,500.00'
L = 827.57'	L = 300.00'	L = 300.00'
T = 469.82'	T = 150.00'	T = 150.00'
E = 143.05'	E = 0.35'	E = 0.35'
S = 8.00%		

NOTES

Profile grade elevations are to top of original slab and do not take into account wearing surface or overlay thickness.

DESIGN SPECIFICATIONS:

1996 AASHTO with 1997 thru 2002 interims.
FHWA-RD-94-052 "Seismic Retrofitting Manual for Highway Bridges", 1995

SEISMIC DATA:

Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A) = 0.12
Site Coefficient (S) = 1.0

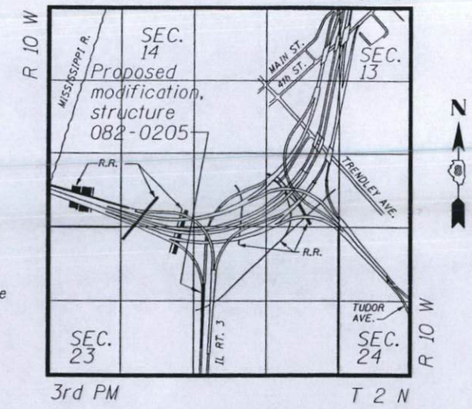
DESIGN STRESSES:

New Construction:
Reinforced concrete: f'c = 3,500 psi
Reinforcement bars: fy = 60,000 psi
Structural steel: fy=70,000 psi (M270, Grade 70W) Web Reinforcement Plate
fy=50,000 psi (M270, Grade 50) All other locations

Existing Structure:
Reinforced concrete: fc = 1,400 psi n = 10
Structural Steel: fs=20,000 psi

INDEX OF SHEETS

LOCATION SKETCH



DESIGNED	M. Capron
CHECKED	A. Amidi
DRAWN	M. King
CHECKED	D. James

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

JOHN E. FINKE, S.E.
STRUCTURAL/SEISMIC RETROFIT
EXPIRES 11-30-2004
12/4/03

LANCE PETERMAN, S.E.
REDUNDANCY RETROFIT
EXPIRES 11-30-2004
12/18/03

REHABILITATION FOR FAI 55/70 COMPLEX ROADWAY E - STRUCTURE NO. 082-0205 GENERAL PLAN AND ELEVATION SPANS 018 THRU E9

STA. 27+92.82 THRU 36+38 (FAI-70) ST. CLAIR CO.

P:\CIX11900\700cadd\709STR\082-0205\205GP01.dgn

[1] REVISED 09-15-05, MRC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	344
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2
46 SHEETS

*(82-3HVB-2R-1)-2

GENERAL NOTES

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal 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 shall be paid for the quantity actually furnished at the unit price for the work.

All transverse and longitudinal dimensions are measured horizontally. All dimensions are measured at a temperature of 50° F.

All existing operational electrical and I.T.S. equipment shall remain in operation during construction unless approved otherwise by the Engineer.

Reinforcement bars shall conform to the requirements of AASHTO M31, M42 or M53, Grade 60.

Unless noted otherwise, all new steel shall be AASHTO M270 Grade 50.

Calculated weight of Structural Steel (M270, Grade 70W) = 149,480 lbs.

Calculated weight of Structural Steel (M270, Grade 50) = 118,960 lbs.

Fasteners shall be high strength bolts.

All turnbuckles, clevises and pins shall be galvanized and capable of developing the ultimate strengths of the corresponding assemblies.

Field welding of construction accessories will not be permitted to beams or girders.

The inorganic zinc rich primer/acrylic/acrylic paint system shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat shall be Interstate Green, Munsell No. 7.5G/8. See Special Provision for "Cleaning and Painting New Metal Structures".

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the special provision "Cleaning And Painting Contact Surface Areas Of Existing Steel Structures".

All construction joints shall be bonded.

Prior to pouring the new concrete deck, all loose rust, loose mill scale, and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item covering removal of existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04.

All existing construction accessories welded to the top flange over the pier(s) between the quarter points of the beams or girders shall be removed. The remaining weld shall be ground smooth and inspected for cracks using magnetic particle testing. Any cracks that can not be removed by grinding approximately $\frac{1}{4}$ inch deep shall be indentified and reported to the Bureau of Bridges and Structures for further disposition. The cost of this work shall be paid for according to Article 109.04.

Expansion joint openings shall be adjusted according to Article 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

All web reinforcement plates and web splice plates shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with the applicable pay item for removal. [1]

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPERSTRUCTURE	SUBSTRUCTURE	TOTAL	
BITUMINOUS CONCRETE REMOVAL (DECK)	SQ YD	3,443	--	3,443	
CONCRETE REMOVAL	CU YD	437.1	--	437.1	
NEOPRENE EXPANSION JOINT - 2"	FOOT	73	--	73	
NEOPRENE EXPANSION JOINT - 2.5"	FOOT	93	--	93	
NEOPRENE EXPANSION JOINT - 4"	FOOT	45	--	45	
CONCRETE STRUCTURES	CU YD	--	1.7	1.7	
CONCRETE SUPERSTRUCTURE	CU YD	327.2	--	327.2	
BRIDGE DECK GROOVING	SQ YD	3,521	--	3,521	
PROTECTIVE COAT	SQ YD	685	--	685	
ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	6	--	6	
FORMED CONCRETE REPAIR (DEPTH EQUAL TO OR LESS THAN 5")	SQ FT	--	1,375	1,375	[1]
FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	--	--	0.1	
JACK AND REMOVE EXISTING BEARINGS	EACH	6	--	6	
REINFORCEMENT BARS, EPOXY COATED	POUND	69,040	--	69,040	
EXPANSION BOLTS (SPECIAL)	EACH	232	--	232	
MECHANICAL SPLICE	EACH	89	--	89	
COLUMN WRAP	SQ FT	--	1,864	1,864	[1]
FOUNDATION WALL DOWEL MODIFICATION	EACH	--	4	4	
STIFFENER INTERSECTION MODIFICATION	EACH	408	--	408	
BOLT REPLACEMENT	EACH	84	--	84	
CRACK EXTENSION MODIFICATION	EACH	4	--	4	
VERTICAL WEB STIFFENER REMOVAL	EACH	390	--	390	
DRAINAGE SCUPPERS, DS-33	EACH	15	--	15 *	
BRIDGE DECK MICROSILICA CONCRETE OVERLAY - 2¼"	SQ YD	3,709*	--	3,709	
CONCRETE BRIDGE DECK SCARIFICATION (1/4 INCH)	SQ YD	3,709	--	3,709	
DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	0.2	--	0.2	
DECK SLAB REPAIR (PARTIAL)	SQ YD	50.3	--	50.3	
PROTECTIVE SHIELD	SQ YD	175	--	175	
TEMPORARY SHORING AND CRIBBING	EACH	6	--	6	
REMOVE TIE BEAM (SPECIAL)	EACH	--	3	3	[1]
REPLACE TIE BEAM (SPECIAL)	EACH	--	2	2	[1]
REMOVE AND REPLACE COLUMN (SPECIAL)	EACH	--	2	2	[1]
REMOVE AND REINSTALL BEARINGS	EACH	--	4	4	[1]

* Includes Bearing Stiffener Modification (24 Total)

DESIGNED	R. Victor
CHECKED	D. James
DRAWN	S. Koemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
GENERAL NOTES AND
TOTAL BILL OF MATERIAL

(FAI-70) ST. CLAIR CO.

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[1] REVISED 09-15-05, MRC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	345
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 3
46 SHEETS

*(82-3HVB-2R-1)-2

SCOPE OF WORK

GENERAL:
The detailed drawings presented herein are for Roadway E - Structure Number 082-0205 in St. Clair County, Illinois. Work relating to Piers 017, 018, E1 through E8 and Abutment E9 and Spans 018 and E1 through E9 are included within this Scope. Work to be performed is associated with a Seismic Retrofit, a Fatigue and Redundancy Retrofit and General Rehabilitation of the Deck and Substructure.

SEISMIC RETROFIT:
1. Install Column Wraps at the following Piers:
017, 018, E1, E2, E3, E4, E5, E6, E7, E8
2. Install Tie Beam Confinement Plates at the following Piers:
018, E1, E4, E5, E7, E8
3. Remove Tie Beam at Pier E6
4. Remove and Replace Tie Beams at Pier 017
5. Install Cross Frame Connection Plates at Pier 017
6. Remove and Replace Pier Columns at 017 East and 017 West
7. Remove and Reinstall Bearings at Pier Columns 017 East (Span 017/Girder01 and Span 018/Girder E1) and 017 west (Span N7/Girder N2 and Span 018/Girder E2)
8. Install Cross Frame Assemblies (including Column Band Assemblies) at the following Piers: 017, 018, E1, E2, E3, E4, E5, E6, E7, E8
9. Install Bumper/Restrainer Assemblies at the following Piers:
017, 018, E1, E2, E3, E4, E5, E6, E7, E8
10. Install Bumper Plates at the following Piers:
017, 018, E1, E2, E3, E4, E5, E6, E7, E8
11. Install Slab-to-Floorbeam Connections at the following Piers/Abutments:
017, 018, E1, E2, E3, E4, E5, E6, E7, E8, E9
12. Remove Existing and Install New Bearings at the following Piers: E2, E8
13. Install Extensions to the following Abutments: E9
14. Perform Column Base Modifications (including Dowel Cutting and Fuse Bars) to the following Piers: E3, E6

1

FATIGUE AND REDUNDANCY RETROFIT:
1. Install Web Reinforcement Plates on the following Spans:
018E, E1, E2, E4 through E9
2. Perform Stiffener Intersection Modifications on the following Spans:
018E, E1, E2, E4 through E9

GENERAL REHABILITATION:
1. Perform Formed Concrete Repair on the following Piers/Abutments:
017, 018, E1, E2, E3, E4, E5, E6, E9
2. Perform a Type 2 Deck Rehabilitation (including Overlay Removal, Scarification and Installation of a Microsilica Concrete Overlay) on the following Spans:
018, E1 through E9
3. Remove and Replace Expansion Joints at the following Piers/Abutments:
017, E2, E3, E6, E9
4. Remove Existing Curbs and Barriers and Replace with New Parapets on the following Spans: 018E, E1, E2, E4 through E9
5. Perform Full or Partial Deck Repair on the following Spans:
018E, E1 through E4, E7, E8
6. Remove Existing Floor Drains on the following Spans:
018E, E1, E2, E4 through E9
7. Install New Scuppers or Drains on the following Spans:
018E, E1, E2, E3, E4, E6, E9

DESIGNED	R. Victor
CHECKED	S. Kaemmerer
DRAWN	M. King
CHECKED	S. Kaemmerer

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
SCOPE OF WORK
(FAI-70) ST. CLAIR CO.

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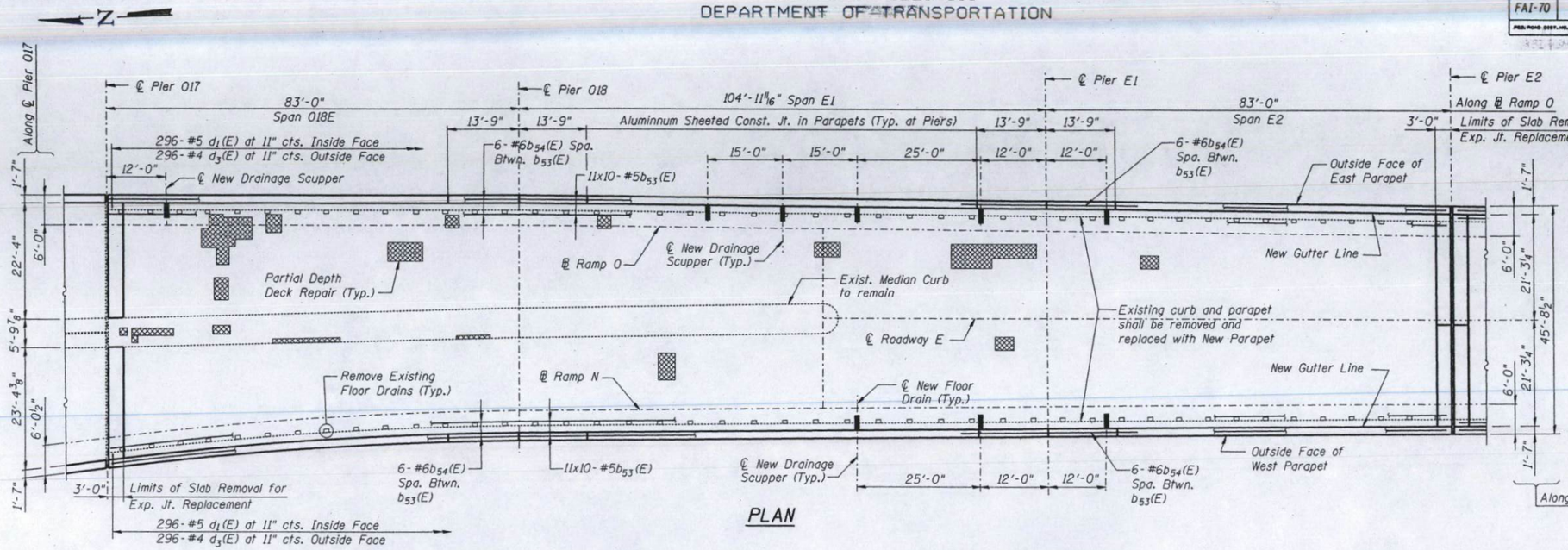
1 REVISED 09-15-05, MRC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	346

SHEET NO. 5
46 SHEETS

*(82-3HVB-2R-D-2

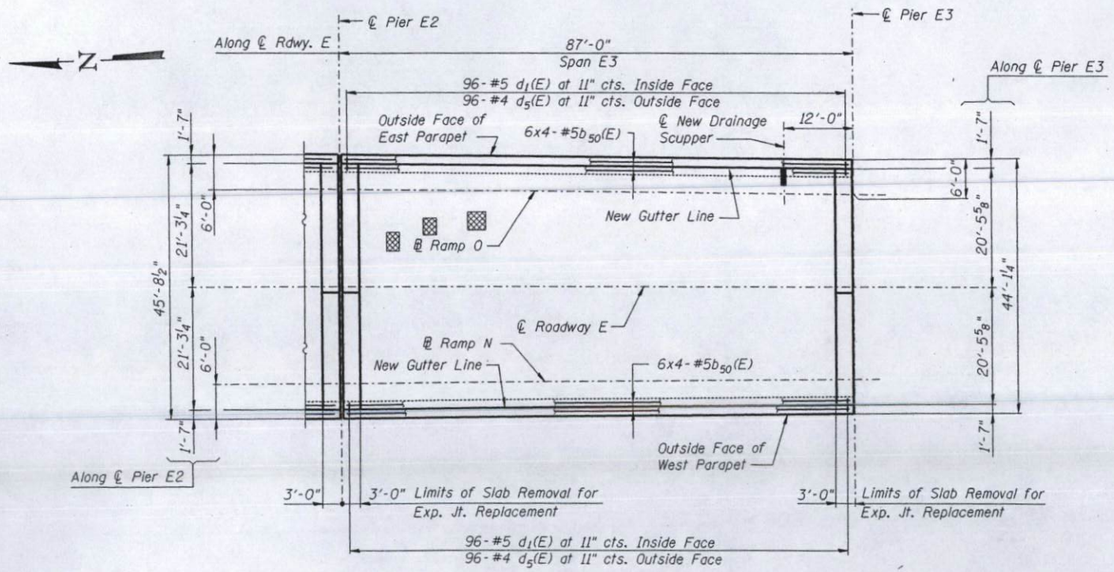


PLAN

DECK REPAIR

Deck Slab Repair (Partial)	Sq. Yd.
Spans 018E-E2	32
Spans E3-E4	5
Total	37

Areas requiring partial depth slab repair indicated thus: ▨ See Special Provisions.



PLAN

Note:
Areas of deck repairs shown are estimated. The Engineer shall show actual locations of deck repairs on As-Built Plans.

Date of Deck Survey - August, 2000.

NOTES

Lap splices:
#5 longitudinal bars 2'-7" min.

For Superstructure Bill of Material see Sheet 10.

For Parapet details, see Sheets 7 and 8.

For Drainage details, see Sheet 11.

For Expansion Joint details, see Sheet 13.

Bars indicated thus 6 x 7-#5 etc. indicates 6 lines of bars with 7 lengths per line.

Provide Full Depth Slab Repair at each Bridge Inspection Core Hole.

For Concrete Removal Details, see Sheet 10.

Additional #6 bars over piers shall be centered about centerline of pier.

DESIGNED	M. King
CHECKED	F. Camba
DRAWN	M. King
CHECKED	F. Camba

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX ROADWAY E - STRUCTURE NO. 082-0205 SLAB SPANS 018 AND E1 THRU E3

(FAI-70) ST. CLAIR CO.

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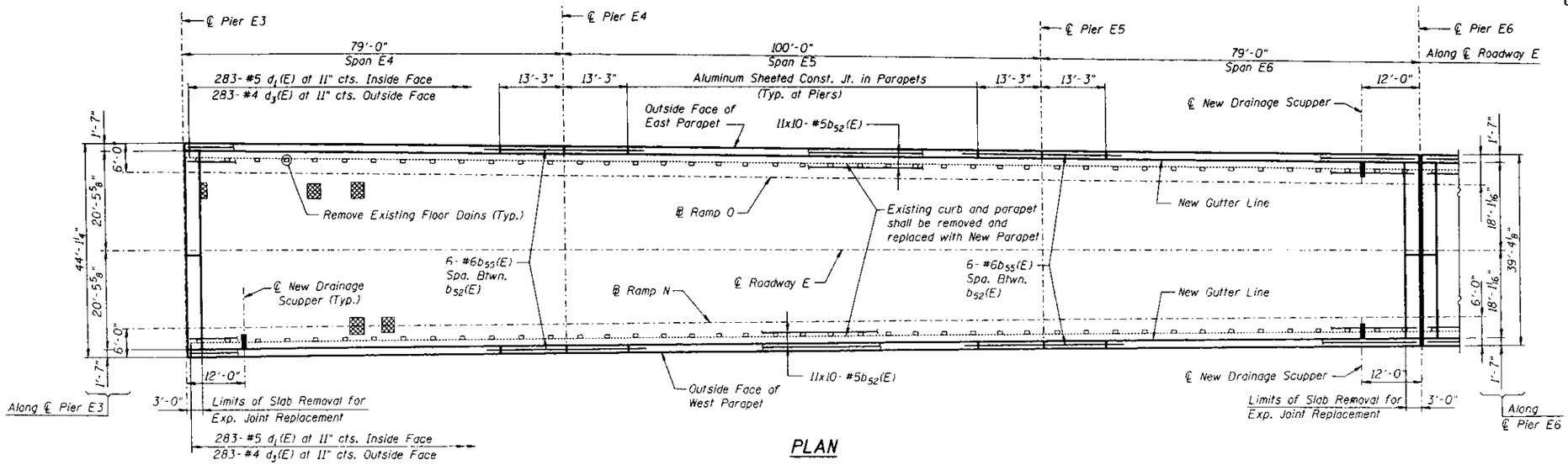
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	347
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT=		

SHEET NO. 6
46 SHEETS

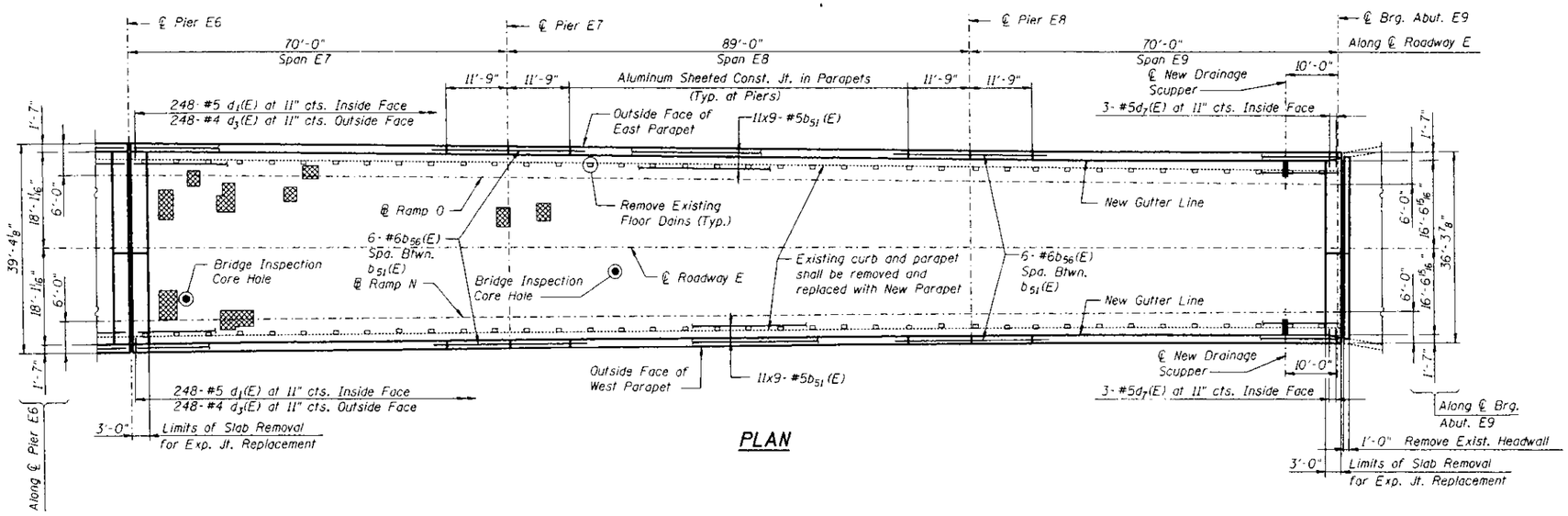
*(82-3HVB-2R-1)-2



PLAN

DECK REPAIR	
Depth Slab Repair (Partial)	Sq. Yd.
Spans E4-E6	5
Spans E7-E9	13
Total	18

Areas requiring partial depth slab repair indicated thus: ▨ See Special Provisions.



PLAN

NOTES

Work this sheet with Sheet 5.

DESIGNED	M. King
CHECKED	F. Camba
DRAWN	M. King
CHECKED	F. Camba

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
SLAB
SPANS E4 THRU E9

(FAI-70) ST. CLAIR CO.

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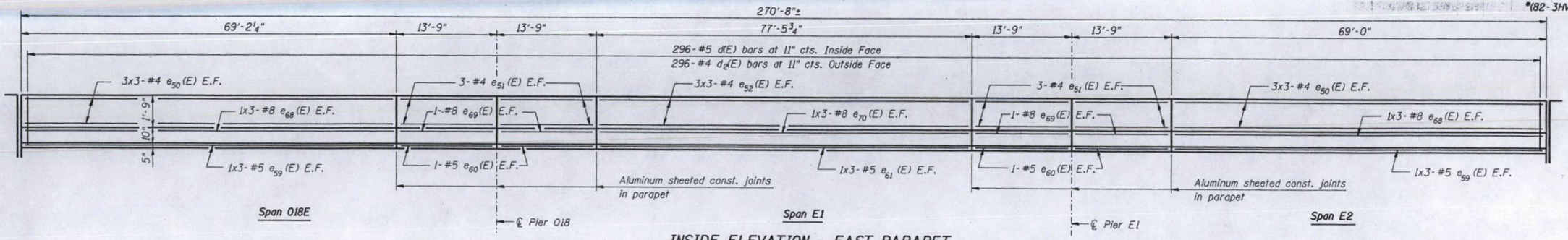
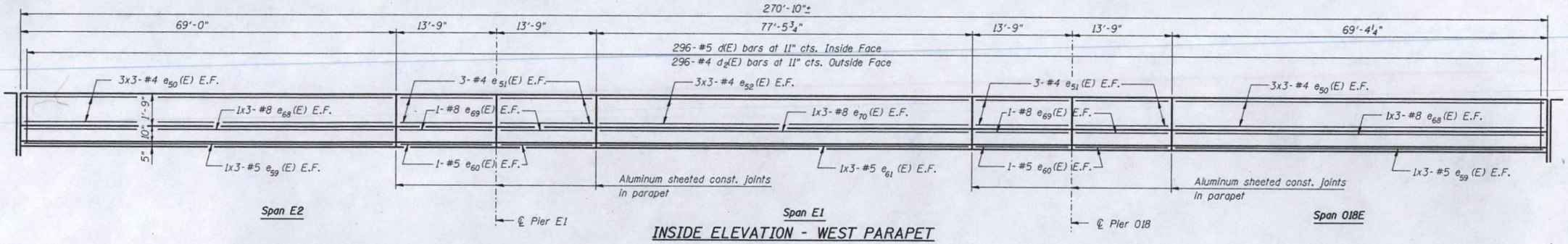
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	348
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

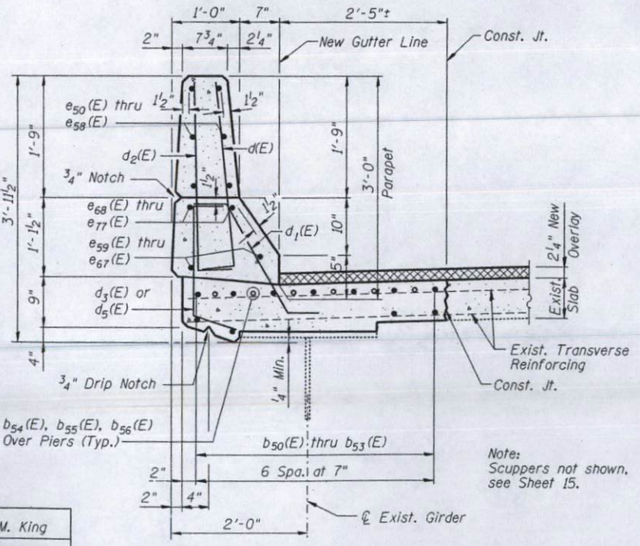
SHEET NO. 7
46 SHEETS
*(82-3HVB-2R-1)-2



INSIDE ELEVATION - EAST PARAPET

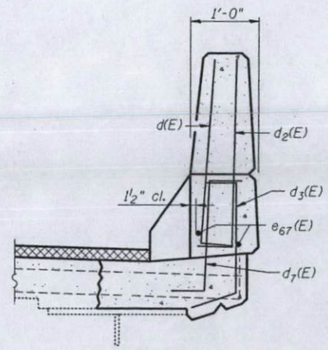


INSIDE ELEVATION - WEST PARAPET



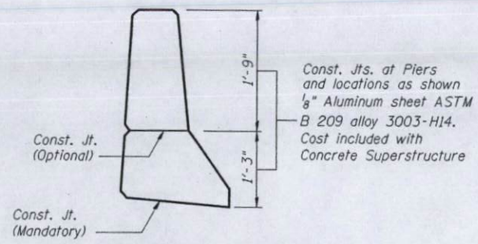
Note:
Scuppers not shown, see Sheet 15.

TYPICAL SECTION THRU PARAPETS



SECTION A-A

Note:
For details not shown see Typical Section Thru Parapet.



PARAPET JOINT DETAILS

PARAPET NOTES

Parapet lengths are taken from the plans prepared by H.W. Lochner for the original structure. Adjustment shall be made to accommodate new expansion device.

Lap splices:
#4 longitudinal bars 1'-7" min.
#5 longitudinal bars 2'-7" min.
#8 longitudinal bars 5'-6" min.

E.F. indicates each face.

All edges shall have a ¾" chamfer, unless otherwise noted.

For Superstructure Bill of Material, see Sheet 10.

Bars indicated thus 1x2 #5 etc. indicates 1 line of bars with 2 lengths per line.

For expansion joint details, see Sheet 13.

DESIGNED	M. King
CHECKED	F. Camba
DRAWN	M. King
CHECKED	F. Camba

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
PARAPET DETAILS
SPANS 018E, E1 and E2
(FAI-55) ST. CLAIR CO.

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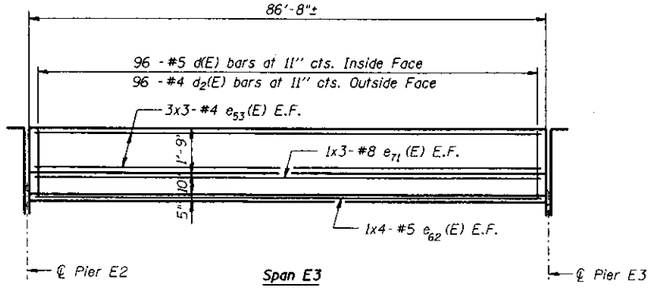
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

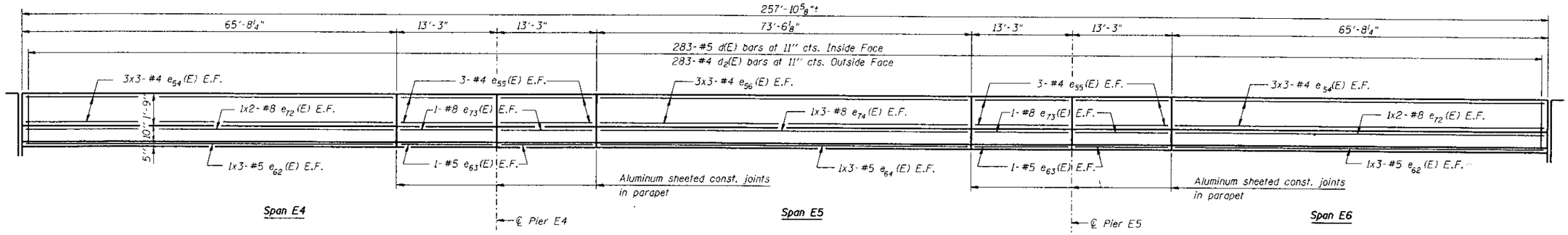
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	349

SHEET NO. 8
46 SHEETS

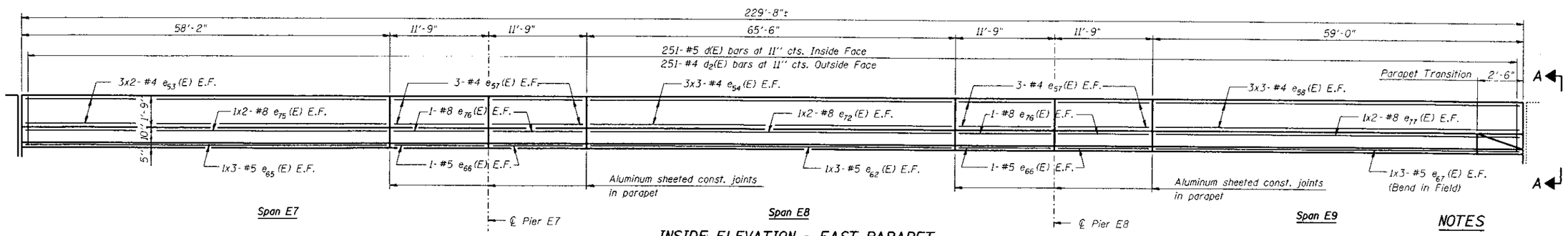
*(82-3HVB-2R-1)-2



INSIDE ELEVATION - EAST PARAPET
WEST PARAPET OPPOSITE HAND



INSIDE ELEVATION - EAST PARAPET
WEST PARAPET OPPOSITE HAND



INSIDE ELEVATION - EAST PARAPET
WEST PARAPET OPPOSITE HAND

NOTES

For SECTION A-A, see Sheet 7.

DESIGNED	M. King
CHECKED	F. Camba
DRAWN	M. King
CHECKED	F. Camba

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
PARAPET DETAILS
SPANS E3 THRU E9
(FAI-70) ST. CLAIR CO.

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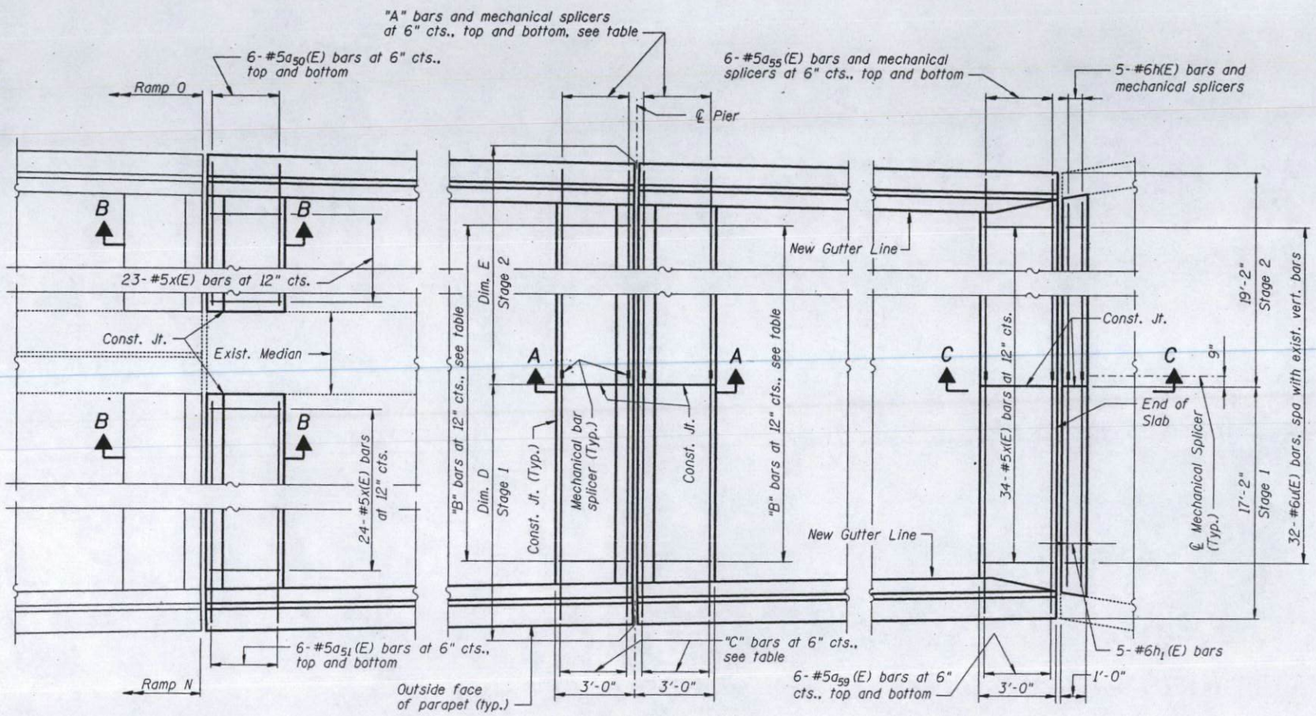
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	350
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		

SHEET NO. 9
46 SHEETS

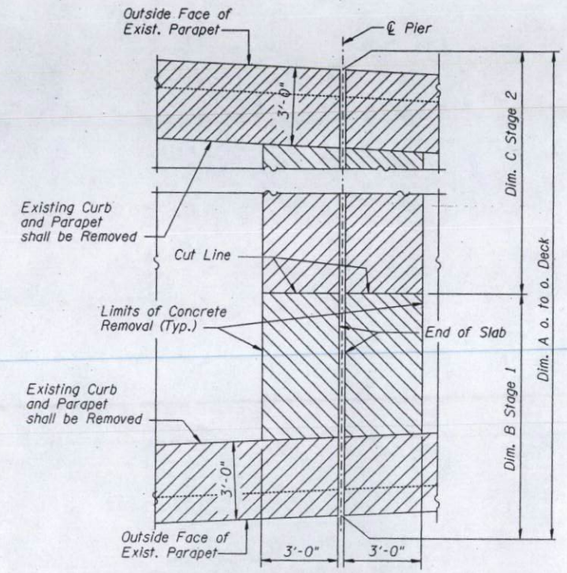
*(82-3HVB-2R-1)-2

TABLE					
PIER	"A" bars	"B" bars	"C" bars	Dim. D	Dim. E
E2	6-#5a_{52}(E)	43-#5x(E)	6-#5a_{56}(E)	21'-10¼"	23'-10¼"
E3	6-#5a_{53}(E)	41-#5x(E)	6-#5a_{57}(E)	21'-0⅝"	23'-0⅝"
E6	6-#5a_{54}(E)	37-#5x(E)	6-#5a_{58}(E)	18'-8"	20'-8"



PIER O17 | PIERS E2, E3 AND E6 | ABUTMENT E9

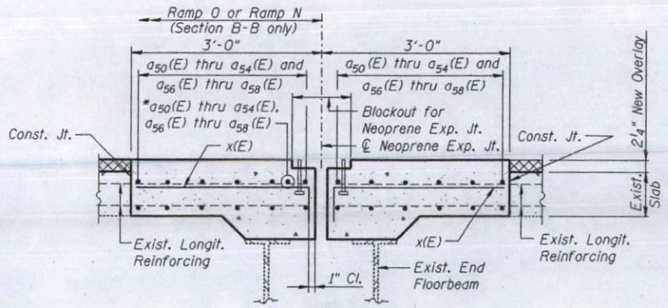
EXPANSION JOINT REPLACEMENT PLAN



DEMOLITION PLAN AT PIERS E2, E3 AND E6

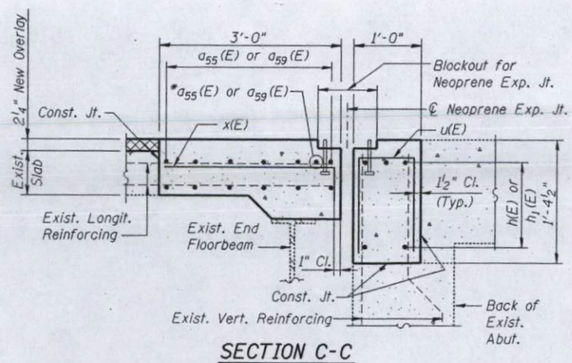
PIER	Dim. A	Dim. B	Dim. C
E2	45'-8½"	22'-10¼"	22'-10¼"
E3	44'-1¼"	22'-0⅝"	22'-0⅝"
E6	39'-4"	19'-8"	19'-8"

Neoprene Joint Size	
Pier	Size
O17	2½"
E2	4"
E3	2½"
E6	2"



SECTION A-A
SECTION B-B

* Place a_{50}(E) thru a_{54}(E) and a_{56}(E) thru a_{58}(E) bars in back of Anchor Bolt as shown if required to maintain 1" cl. (+0 -1/8"). Anchor Bolts shall be tied to a_{50}(E) thru a_{54}(E) and a_{56}(E) thru a_{58}(E) bars.



SECTION C-C

* Place a_{55}(E) and a_{59}(E) bars in back of Anchor Bolt as shown if required to maintain 1" cl. (+0 -1/8"). Anchor Bolts shall be tied to a_{55}(E) and a_{59}(E) bars.

DESIGNED	R. Victor
CHECKED	M. Supak
DRAWN	M. King
CHECKED	F. Camba

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E- STRUCTURE NO. 082-0205
EXPANSION JOINT
REPLACEMENT DETAILS
(FAI-70) ST. CLAIR CO.

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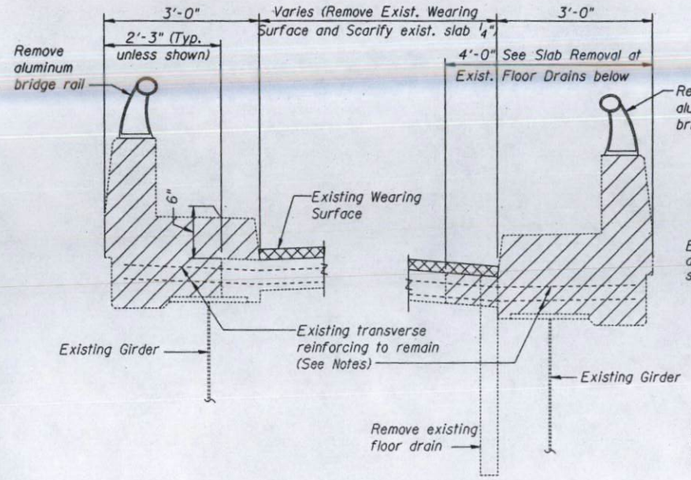
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

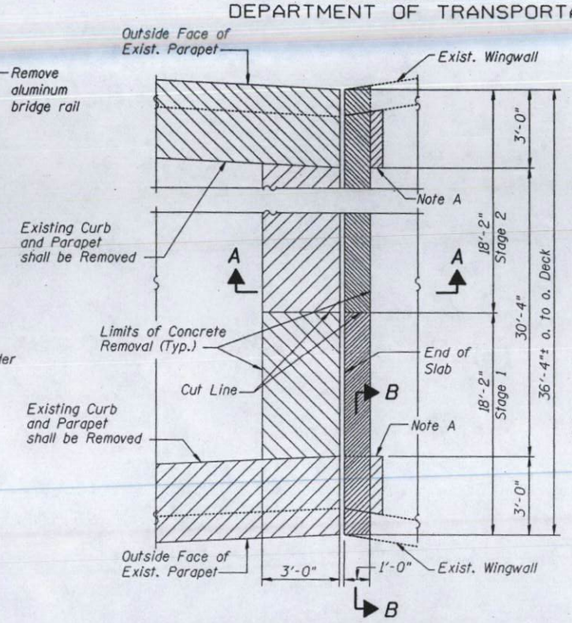
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	351
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		46 SHEETS

*(82-3HVB-2R:1)-2



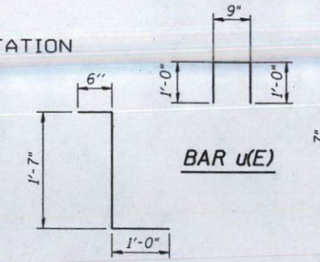
CROSS SECTION - DEMOLITION

Notes:
Remove existing curb, parapet and portion of slab to limits shown by hatched areas.
Remove existing reinforcing and other appurtenances at the light standard supports.
Remove all existing full length longitudinal bars at concrete removal areas unless otherwise noted.



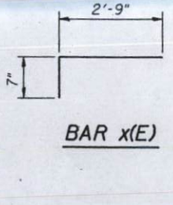
DEMOLITION PLAN AT ABUTMENT E9

Note A:
Existing Wingwall shall remain. Modify for Expansion Joint replacement. Remove Existing curb as shown on Section B-B.

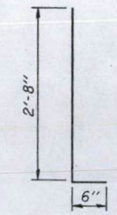


BAR u(E)

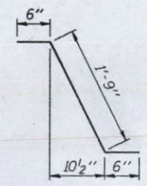
BAR d_7(E)



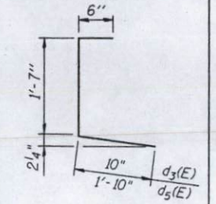
BAR x(E)



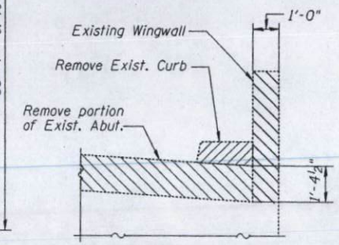
BARS d(E) & d_2(E)



BAR d_1(E)



BAR d_3(E) & d_5(E)



SECTION B-B

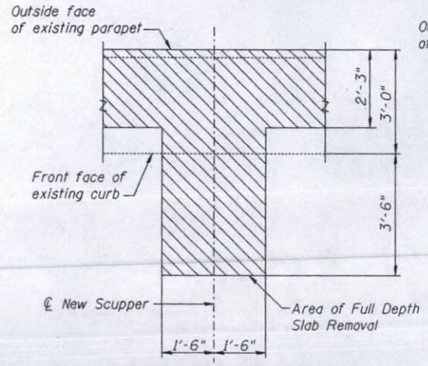
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{50}(E)	12	#5	23'-5"	
a_{51}(E)	12	#5	24'-5"	
a_{52}(E)	24	#5	22'-9"	
a_{53}(E)	24	#5	22'-0"	
a_{54}(E)	24	#5	19'-7"	
a_{55}(E)	12	#5	18'-1"	
a_{56}(E)	24	#5	22'-3"	
a_{57}(E)	24	#5	21'-6"	
a_{58}(E)	24	#5	19'-1"	
a_{59}(E)	12	#5	17'-7"	
b_9(E)	56	#5	2'-0"	
b_{50}(E)	48	#5	23'-7"	
b_{51}(E)	198	#5	27'-10"	
b_{52}(E)	220	#5	28'-2"	
b_{53}(E)	220	#5	29'-5"	
b_{54}(E)	24	#6	34'-4"	
b_{55}(E)	24	#6	33'-0"	
b_{56}(E)	24	#6	29'-4"	
d(E)	1852	#5	3'-2"	
d_1(E)	1846	#5	2'-9"	
d_2(E)	1852	#4	3'-2"	
d_3(E)	1654	#4	2'-11"	
d_5(E)	192	#4	3'-2"	
d_7(E)	6	#5	3'-1"	
h(E)	5	#6	17'-3"	
h_1(E)	5	#6	16'-9"	
e_{50}(E)	72	#4	24'-1"	
e_{51}(E)	48	#4	13'-6"	
e_{52}(E)	36	#4	26'-10"	
e_{53}(E)	60	#4	29'-11"	

Bar	No.	Size	Length	Shape
e_{54}(E)	108	#4	22'-11"	
e_{55}(E)	48	#4	13'-0"	
e_{56}(E)	36	#4	25'-6"	
e_{57}(E)	48	#4	11'-6"	
e_{58}(E)	36	#4	20'-8"	
e_{59}(E)	24	#5	24'-9"	
e_{60}(E)	16	#5	13'-6"	
e_{61}(E)	12	#5	27'-6"	
e_{62}(E)	52	#5	23'-7"	
e_{63}(E)	16	#5	13'-0"	
e_{64}(E)	12	#5	26'-2"	
e_{65}(E)	12	#5	21'-1"	
e_{66}(E)	16	#5	11'-6"	
e_{67}(E)	12	#5	21'-4"	
e_{68}(E)	24	#8	26'-8"	
e_{69}(E)	16	#8	13'-6"	
e_{70}(E)	12	#8	29'-5"	
e_{71}(E)	12	#8	32'-6"	
e_{72}(E)	24	#8	35'-6"	
e_{73}(E)	16	#8	13'-0"	
e_{74}(E)	12	#8	28'-1"	
e_{75}(E)	8	#8	31'-9"	
e_{76}(E)	16	#8	11'-6"	
e_{77}(E)	8	#8	32'-2"	
x(E)	323	#5	3'-4"	
u(E)	32	#6	2'-9"	

Reinforcement Bars, Epoxy Coated	Pound	69,040
Concrete Superstructure	Cu. Yd.	327
Concrete Removal	Cu. Yd.	437.1

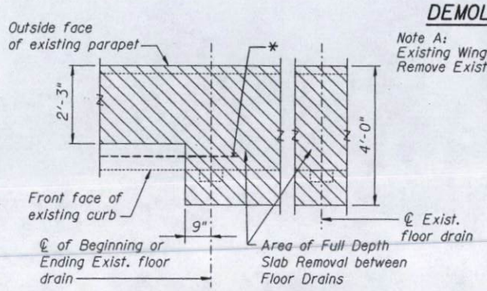
Reinforcement bars designated (E) shall be epoxy coated.



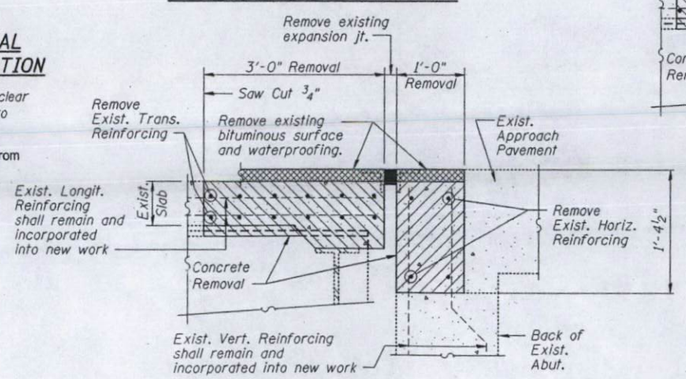
PLAN - SLAB REMOVAL AT NEW SCUPPER LOCATION

Note:
Existing transverse reinforcing shall be bent to clear New Scupper. Longitudinal reinforcing may be cut to accommodate New Scupper.

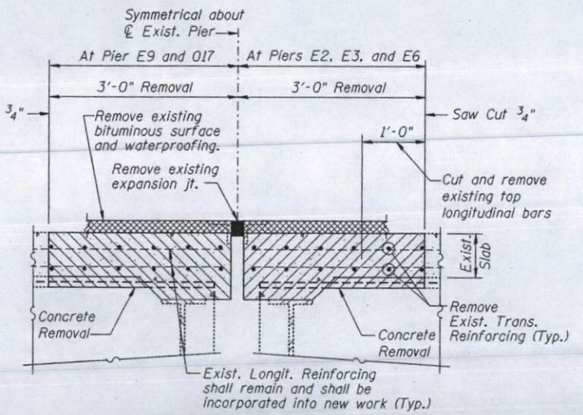
* Existing longitudinal reinforcement shall be cut off 3'-0" from removal line and lapped with new reinforcement.



PLAN - SLAB REMOVAL AT EXISTING FLOOR DRAINS



SECTION A-A



TYPICAL SECTION DEMOLITION AT EXPANSION JOINTS

NOTES

Existing reinforcement bars extending into the removal area shall be cleaned, straightened, and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with "Concrete Removal".

Contractor shall provide and install a Temporary Slab Support as required. Temporary Slab Support shall be in place before deck removal. See Special Provisions.

DESIGNED	M. King
CHECKED	F. Camba
DRAWN	M. King
CHECKED	F. Camba

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
DEMOLITION DETAILS AND
SUPERSTRUCTURE BILL OF MATERIAL
(FAI-70) ST. CLAIR CO.

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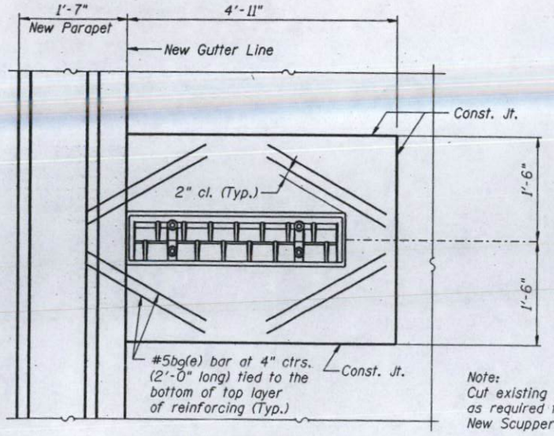
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	352
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		46 SHEETS

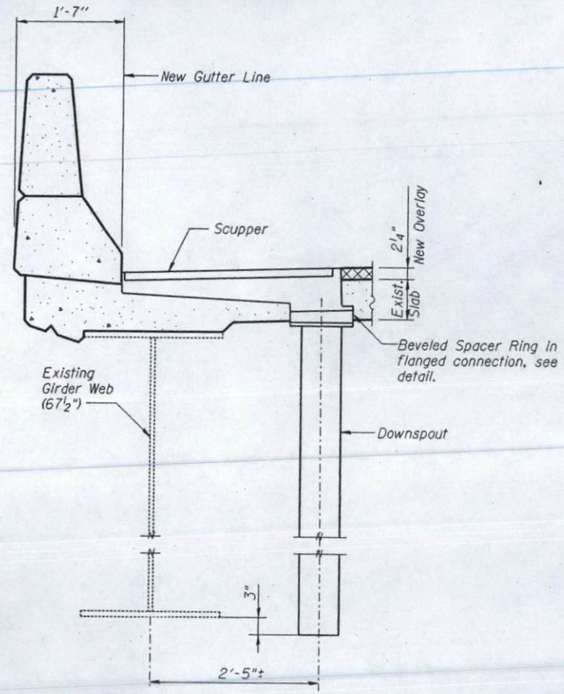
SHEET NO. 11

*(82-3HVB-2R-1)-2

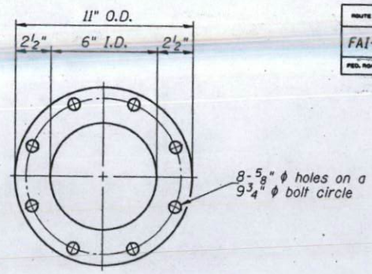


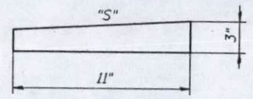
Note:
Cut existing reinforcing as required to clear New Scupper.

PLAN AT SCUPPER



SECTION AT SCUPPER





BEVELED SPACER RING DETAIL

1. "S" equals the slope of the superelevation at the individual scupper location.
2. The bevel shall be sufficient to allow vertical installation of the downspout.
3. Beveled spacer ring shall conform to the requirements of AASHTO M155, Class 35B.
4. Rings shall be galvanized according to AASHTO M111 and ASTM A385.

NOTES

1. For DS-33 Scupper detail see Sheet 12.
2. Cost and installation of scuppers, spacer rings and downspouts shall be included in the unit price for Drainage Scuppers, DS-33.
3. The cost associated with concrete removal, reinforcing bars (epoxy coated) and concrete superstructure shall be included in their respective pay items. The quantities for these items are included in the "Superstructure Bill of Material".

DESIGNED	M. King
CHECKED	R. Victor
DRAWN	M. King
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
DRAINAGE DETAILS
(FAI-70) ST. CLAIR CO.

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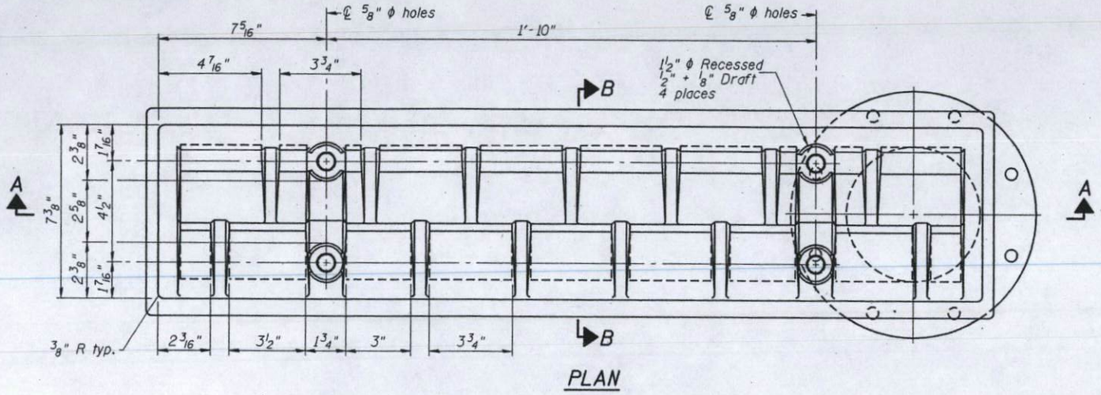
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

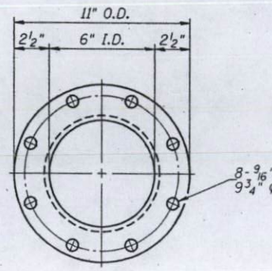
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	353
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		46 SHEETS

SHEET NO. 12

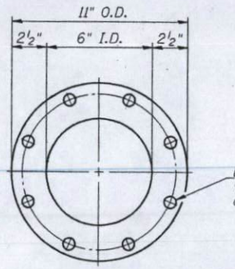
*(82-3HVB-2R-1)-252



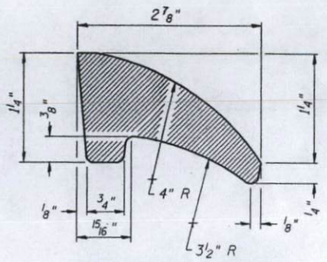
PLAN



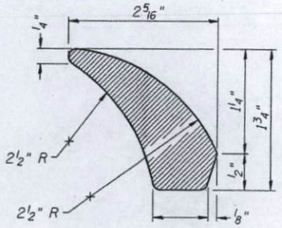
DOWNSPOUT



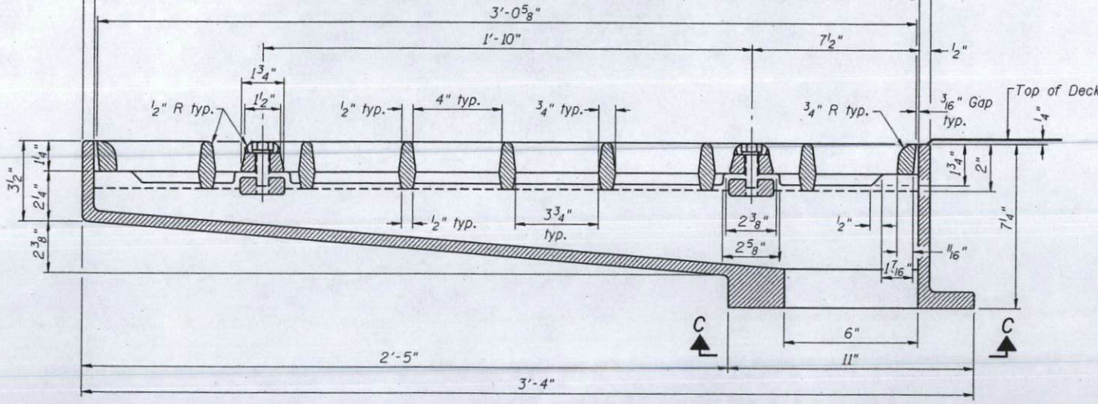
VIEW C-C



FIRST VANE DETAIL

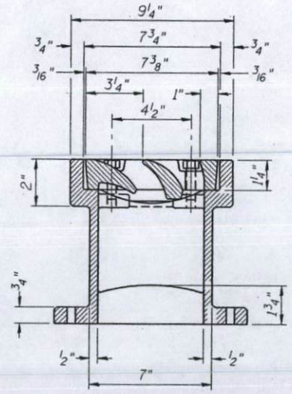


SECOND VANE DETAIL

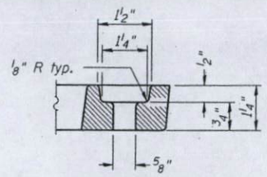


SECTION A-A

See sheet 11 of 33 for scupper location relative to parapet.



SECTION B-B



BOLT HOLE DETAIL

Notes: All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

The grate, frame and downspout shall be galvanized according to AASHTO M 111 and ASTM A 385. Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for cast iron. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval.

The Contractor shall take apropriate measures to assure that Protective Coat is not applied to the scupper.

Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-33.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-33	Each	15

DESIGNED	M. King
CHECKED	F. Camba
DRAWN	M. King
CHECKED	F. Camba

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
DRAINAGE SCUPPER
DS-33
(FAI-70) ST. CLAIR CO.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	354
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		

SHEET NO. 13
46 SHEETS

*(82-3HVB-2R-1)-2

Joint Size	"C" at 50°F	"D" at 50°F	Dim "F"
2"	2"	1½" Min.	2"
2½"	2½"	1¾" Min.	2½"
4"	3"	2½" Min.	3"

INSTALLATION NOTES

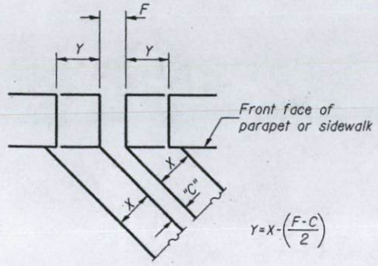
1. Install continuous seal in roadway, parapet, curb, and sidewalk.
2. Install anchor blocks as indicated.

NOTE A: Maximum spacing of anchor bolts shall be 12" centers.

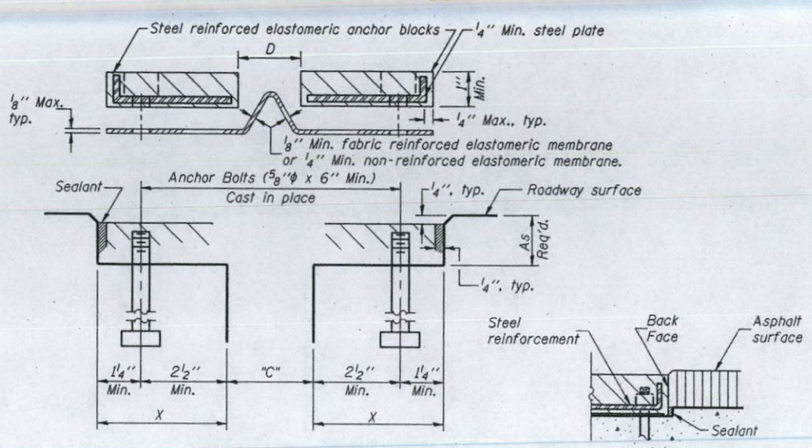
SKEW LIMITATIONS

The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews.

For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed according to dimension "D", might require modifications to insure a minimum clearance of 1½" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±12" cts.



FORMING BLOCKOUT SKETCH



CROSS SECTION

ANCHOR BLOCK WITH ASPHALT SURFACE

GENERAL NOTES

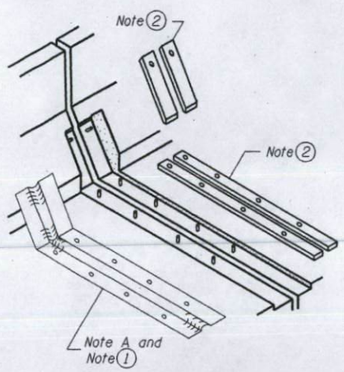
Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane.

The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

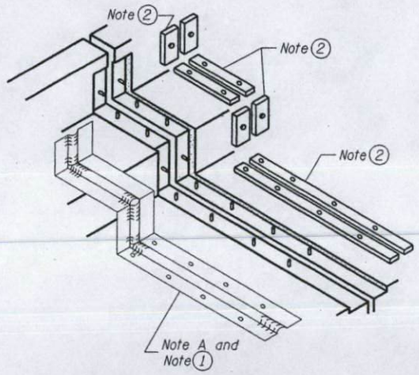
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

Joint openings shall be adjusted according to Article 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

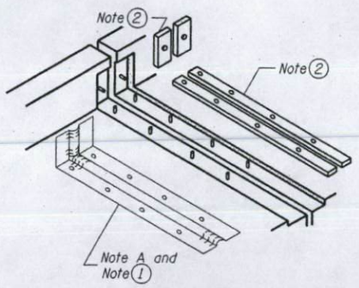
The parapet and roadway membrane shall be made continuous by an approved vulcanizing process. Lapping will not be permitted.



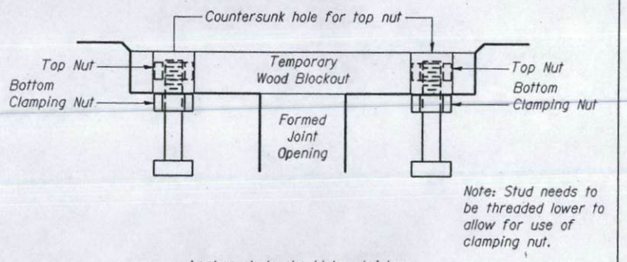
AT PARAPET



AT SIDEWALK OR MEDIAN



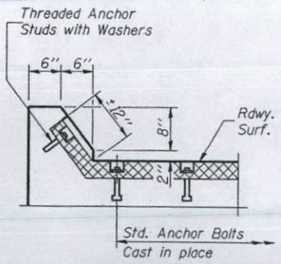
AT WALL



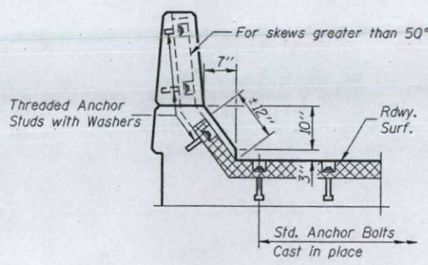
Note: Stud needs to be threaded lower to allow for use of clamping nut.

Anchor studs should be stainless

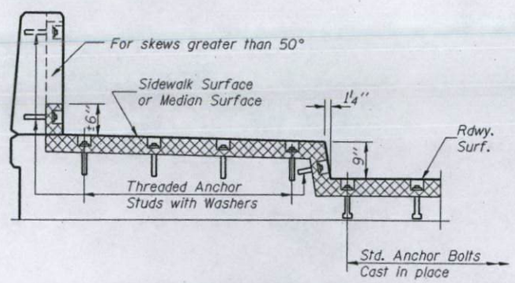
RECOMMENDED BLOCKOUT DETAIL



AT CURB

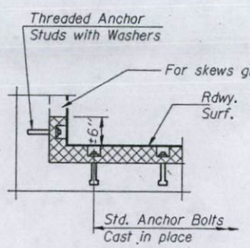


AT PARAPET



AT SIDEWALK OR MEDIAN

TYPICAL END TREATMENTS



AT WALL

DESIGNED	R. Victor
CHECKED	M. Supak
DRAWN	E. Bazzell
CHECKED	S. Kaemmerer

EJ-CS 10-31-02

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
NEOPRENE EXPANSION JOINT DETAILS
PIERS 017, E2, E3, E6 AND ABUTMENT E9

(FAI-70) ST. CLAIR CO.

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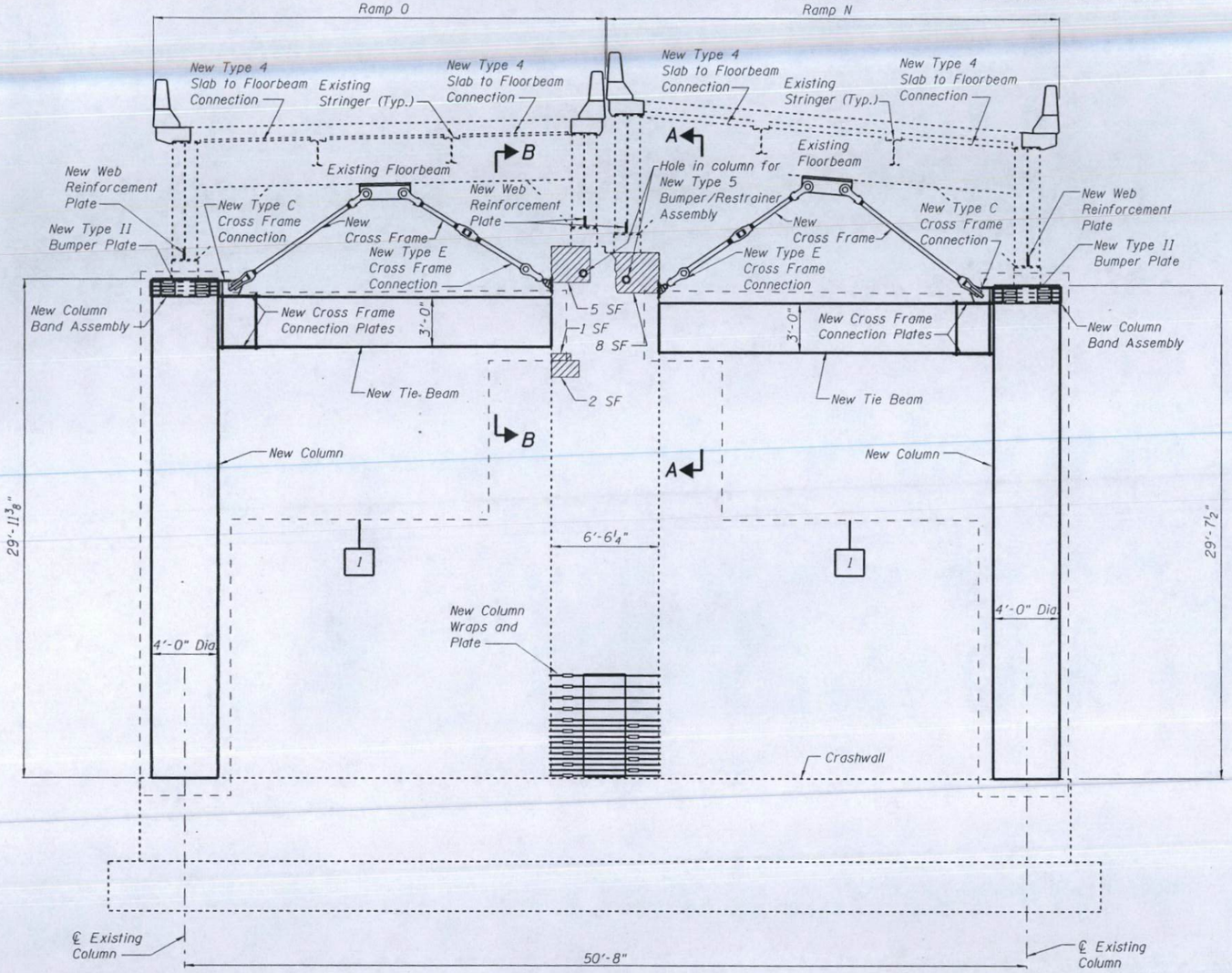
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

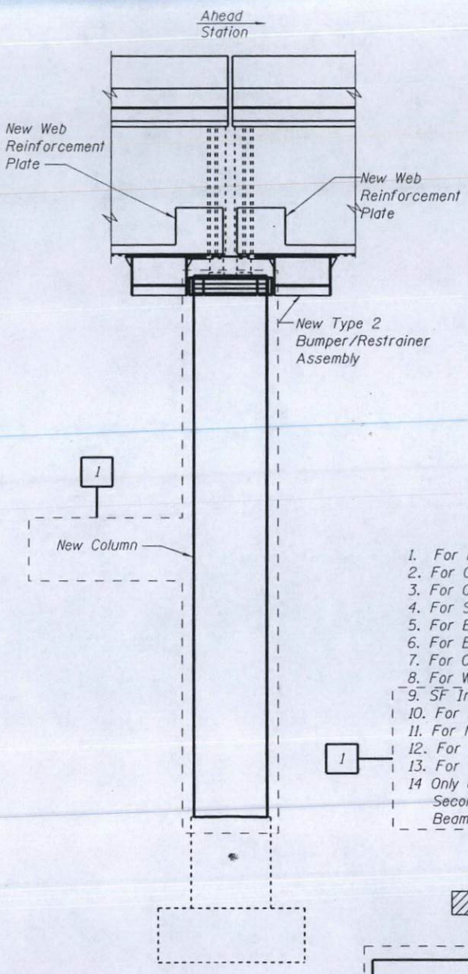
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	355
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 14
46 SHEETS

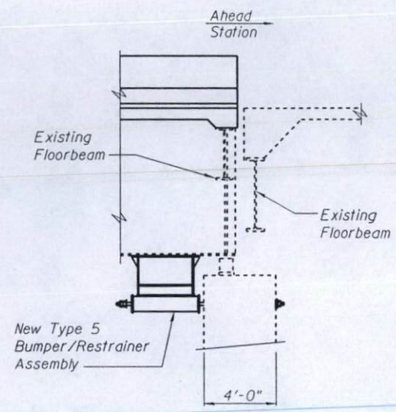
*(82-3HVB-2R-1)-2



ELEVATION
(Looking Ahead Station)

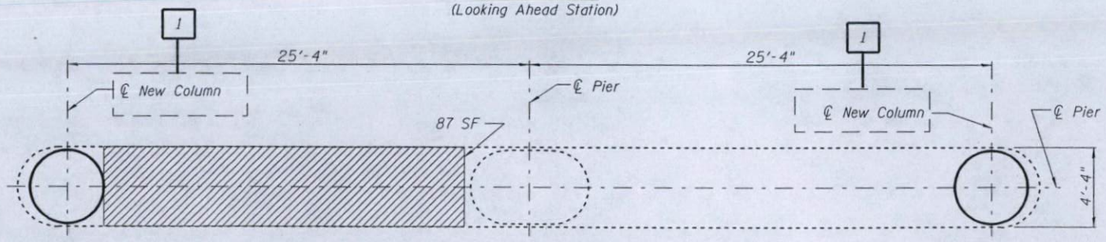


END VIEW



SECTION A-A

Note: "SECTION B-B", similar and opposite hand.



PLAN OF CRASHWALL

NOTES

1. For Formed Concrete Repairs, see Special Provisions.
2. For Cross Frame Details, see Sheets 39 and 40.
3. For Column Band Assembly Details, see Sheets 39 and 40.
4. For Slab to Floorbeam Connection Details, see Sheet 41.
5. For Bumper Plate Details, see Sheet 38.
6. For Bumper/Restrainer Assembly Details, see Sheets 34 thru 37.
7. For Column Wrap Details, see Sheet 43.
8. For Web Reinforcement Plate Details, see Sheet 30.
9. SF Indicates Square Foot.
10. For New Tie Beam Details, See Sheet 41.
11. For New Column Details, see Sheet 42.
12. For New Cross Frame Connection Plates Detail, see Sheet 43.
13. For Bearing Notes, see Sheet 15.
14. Only one Tie Beam and Column may be removed at any time. Second Tie Beam and Column may be removed after first Tie Beam and Column have been replaced.

[1]

LEGEND

▨ = Formed Concrete Repair (Depth ≤ 5")

THEORETICAL COLUMN REACTION (kips)

Pier	017					
Column	East			West		
Span	017	018	Total	N7	018	Total
Dead Load	88	135	223	96	135	231
Live Load	47	75	122	49	75	124
Impact	11	18	29	11	18	28
Cetrifugal Force	--	--	--	9	--	9

Note: Theoretical jacking loads listed above were taken from the design drawings for the original structure.
See Special Provisions "Remove and Reinstall Bearings" for requirements and limitations for jacking the structure.

[1]

BILL OF MATERIAL - PIER 017

ITEM	UNIT	QUANTITY	
Column wrap	SQ. FT.	115	[1]
Expansion Bolts (Special)	EACH	32	
Formed Concrete Repair (Depth ≤ 5")	SQ. FT.	128	[1]
Remove Tie Beam (Special)	EACH	2	
Replace Tie Beam (Special)	EACH	2	
Remove and Replace Column (Special)	EACH	2	

DESIGNED	A. Amidi
CHECKED	R. Victor/ M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX ROADWAY E - STRUCTURE NO. 082-0205 RETROFIT AND SUBSTRUCTURE REPAIR PIER 017

(FAI-70) ST. CLAIR CO.

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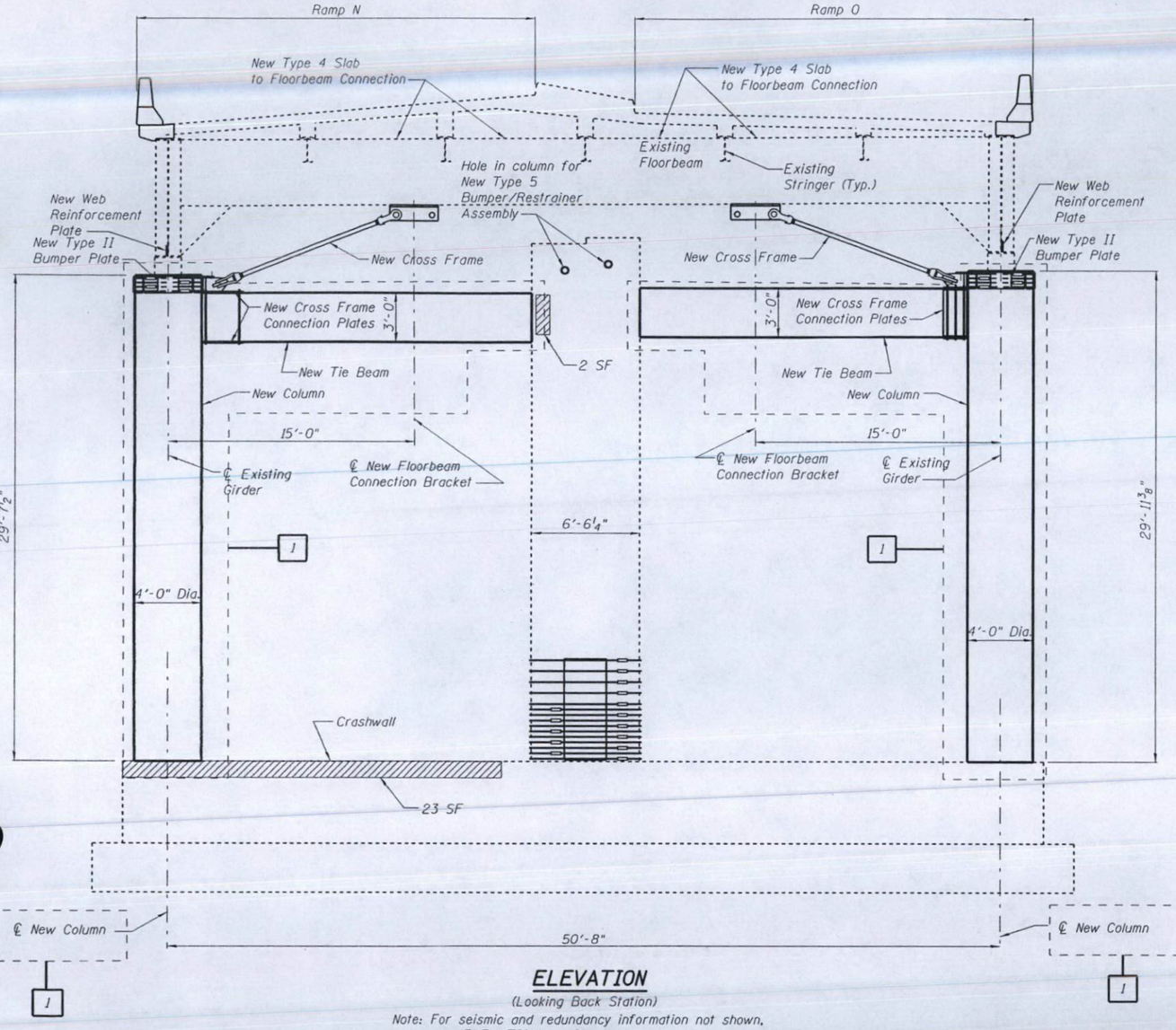
[1] REVISED 09-15-05, MRC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

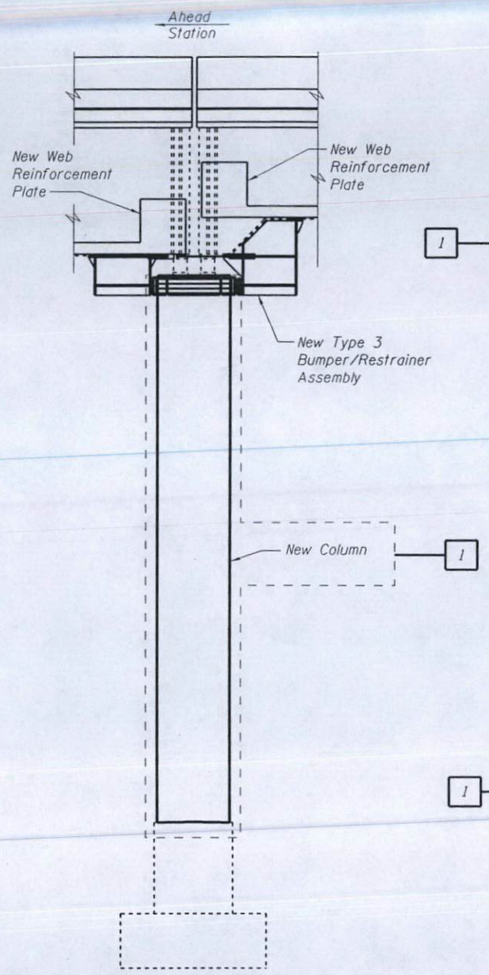
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	356
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 15
46 SHEETS

*(82-3HVB-2R-1)-2



ELEVATION
(Looking Back Station)
Note: For seismic and redundancy information not shown, see "ELEVATION" on Sheet 14.



END VIEW

BEARING NOTES

1. The capacity of the jacks used to lift the bridge shall be at least 50% to 100% greater than the theoretical jacking loads shown in the table.
2. After jacking the structure off the bearing assembly, remove existing anchor bolt nuts and or any welded plate washers that secure the existing bearing assembly to the anchor bolt. Existing anchor bolts will not be re-used and may be cut-off just above the bearing plate to minimize the jacking height requirements.
3. All portions of existing bearing assemblies including bolsters, masonry plates and shims shall be removed and stored in such a manner as to prevent damage to the assembly. The bearing assemblies shall be stored in an area where they will will be protected from damage, dust and debris. The bearing assemblies will be reinstalled once the new column has cured a minimum of 7 days or as approved by the Engineer.
4. If required, top of new column concrete shall be leveled using an epoxy grout prior to bearing installation.
5. Use shims as required between top of leveled column and bottom of bearing assembly.
6. Use a new ⅛" lead plate or ½" fabric pad between the masonry plate or shims and top of concrete.
7. New anchor bolts shall be drilled and grouted into new concrete after bearings are in place.
8. Area between restrainer bars and elastomeric bearing to be filled with an Elastomeric Polymer type sealer, 1" thick, sloped to drain.

NOTES

1. For Formed Concrete Repairs, see Special Provisions.
2. For Cross Frame Details, see Sheets 39 and 40.
3. For Slab to Floorbeam Connection Details, see Sheet 41.
4. For Bumper Plate Details, see Sheet 38.
5. For Bumper/Restrainer Assembly Details, see Sheets 34 thru 37.
6. For Web Reinforcement Plate Details, see Sheet 30.
7. SF Indicates Square Foot.
8. For New Tie Beam Details, see Sheet 41.
9. For New Column Details, see Sheet 42.
10. For New Cross Frame Connection Plates Detail, See Sheet 43.

1 = REVISED 09-15-05, MRC

LEGEND

▨ = Formed Concrete Repair (Depth ≤ 5")

DESIGNED	A. Amidi
CHECKED	R. Victor/ M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

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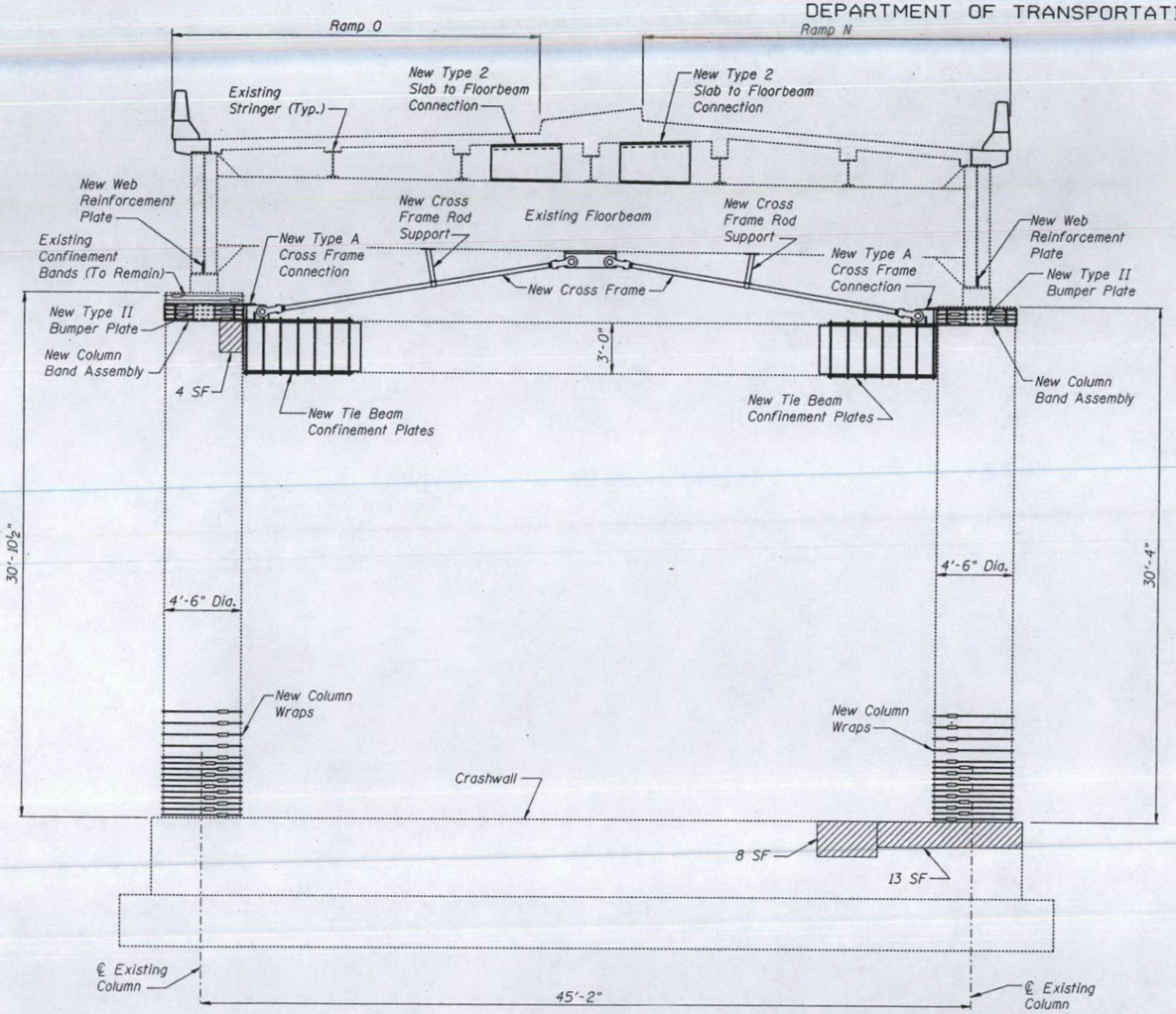
REHABILITATION FOR FAI 55/70 COMPLEX ROADWAY E - STRUCTURE NO. 082-0205 RETROFIT AND SUBSTRUCTURE REPAIR PIER 017
(FAI-70) ST. CLAIR CO.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

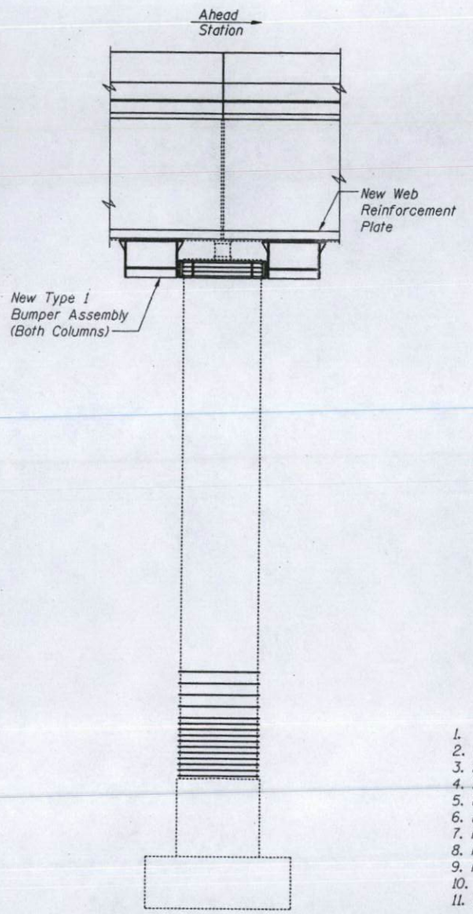
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
FAI-70	*	St. Clair	388	357	SHEET NO. 16
FED.ROAD DIST. NO. 9		ILLINOIS	FED.AID PROJECT		46 SHEETS

*(82-3HVB-2R-1)-2



ELEVATION

(Looking Ahead Station)



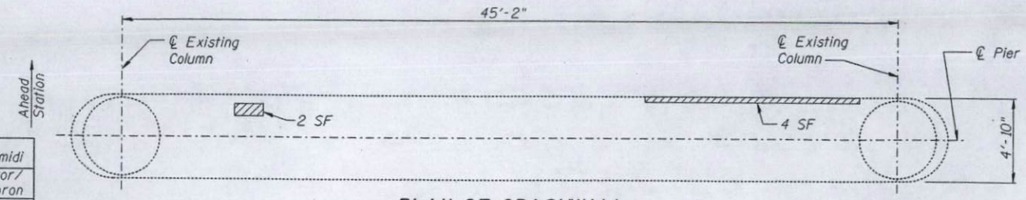
END VIEW

NOTES

1. For Formed Concrete Repairs, see Special Provisions.
2. For Cross Frame Details, see Sheets 39 and 40.
3. For Cross Frame Rod Support Details, see Sheet 38.
4. For Column Band Assembly Details, see Sheets 39 and 40.
5. For Slab to Floorbeam Connection Details, see Sheet 41.
6. For Bumper Plate Details, see Sheet 38.
7. For Bumper/Restrainer Assembly Details, see Sheets 34 thru 37.
8. For Column Wrap Details, see Sheet 43.
9. For Web Reinforcement Plate Details, see Sheet 30.
10. For Tie Beam Confinement Plates, see Sheet 43.
11. SF Indicates Square Foot.

LEGEND

▨ = Formed Concrete Repair (Depth ≤ 5")



PLAN OF CRASHWALL

BILL OF MATERIAL - PIER 018		
ITEM	UNIT	QUANTITY
Column wrap	SQ. FT.	259
Expansion Bolts (Special)	EACH	16
Formed Concrete Repair (Depth ≤ 5")	SQ. FT.	75

DESIGNED	A. Amidi
CHECKED	R. Victor/ M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
RETROFIT AND SUBSTRUCTURE REPAIR
PIER 018
(FAI-70) ST. CLAIR CO.

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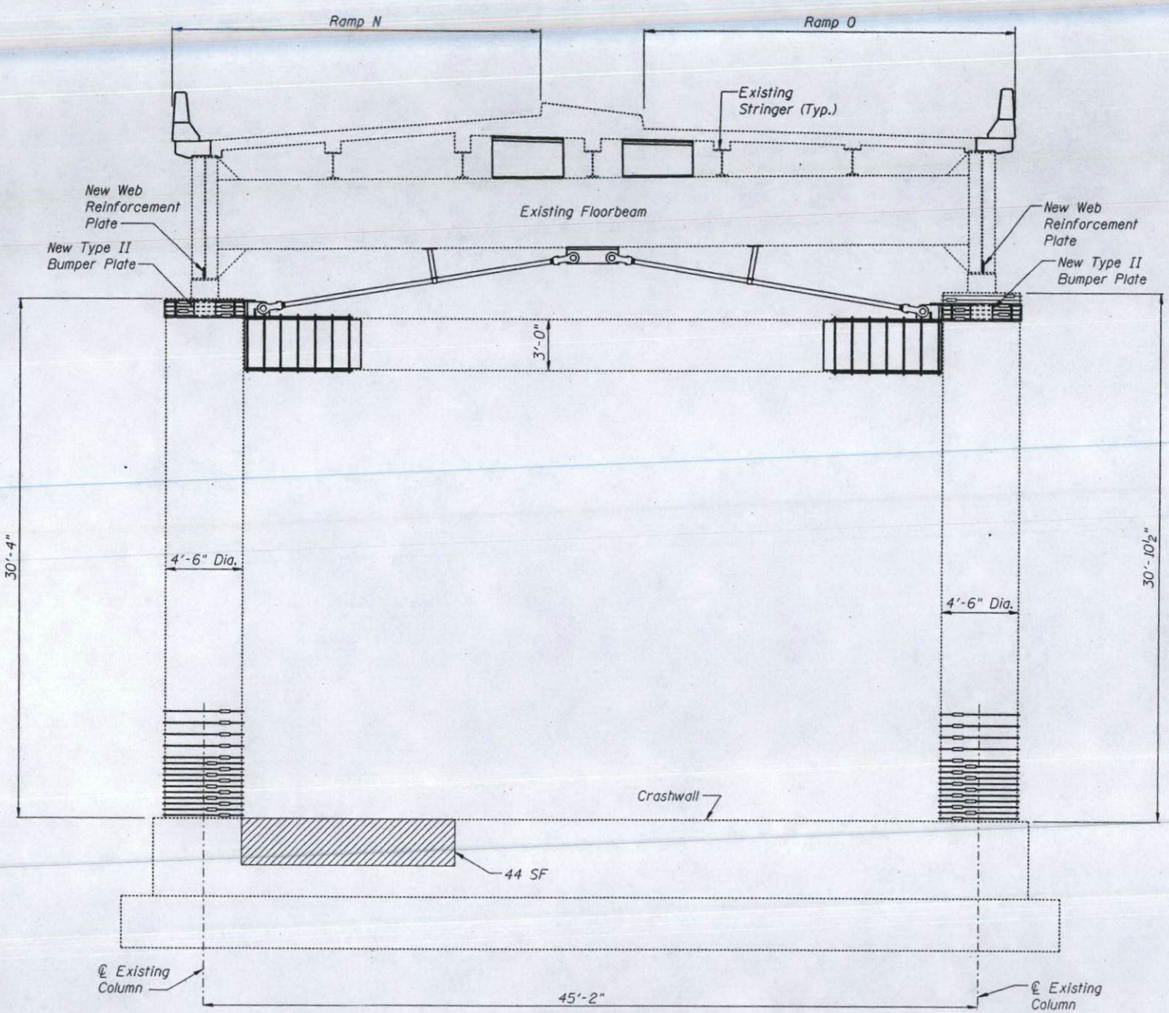
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	358
FED. ROAD DIST. NO.7		ILLINOIS	FED.AID PROJECT	

SHEET NO. 17
46 SHEETS
*(82-3HVB-2R(1)-2



ELEVATION

(Looking Back Station)
Note: For seismic and redundancy information not shown, see "ELEVATION" on Sheet 16.

NOTES

1. For Formed Concrete Repairs, see Special Provisions.
2. For Bumper Plate Details, see Sheet 38.
3. For Web Reinforcement Plate Details, see Sheet 30.
4. SF Indicates Square Foot.

LEGEND

▨ = Formed Concrete Repair (Depth ≤ 5")

DESIGNED	A. Amidi
CHECKED	R. Victor/ M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
RETROFIT AND SUBSTRUCTURE REPAIR
PIER 018
(FAI-70) ST. CLAIR CO.

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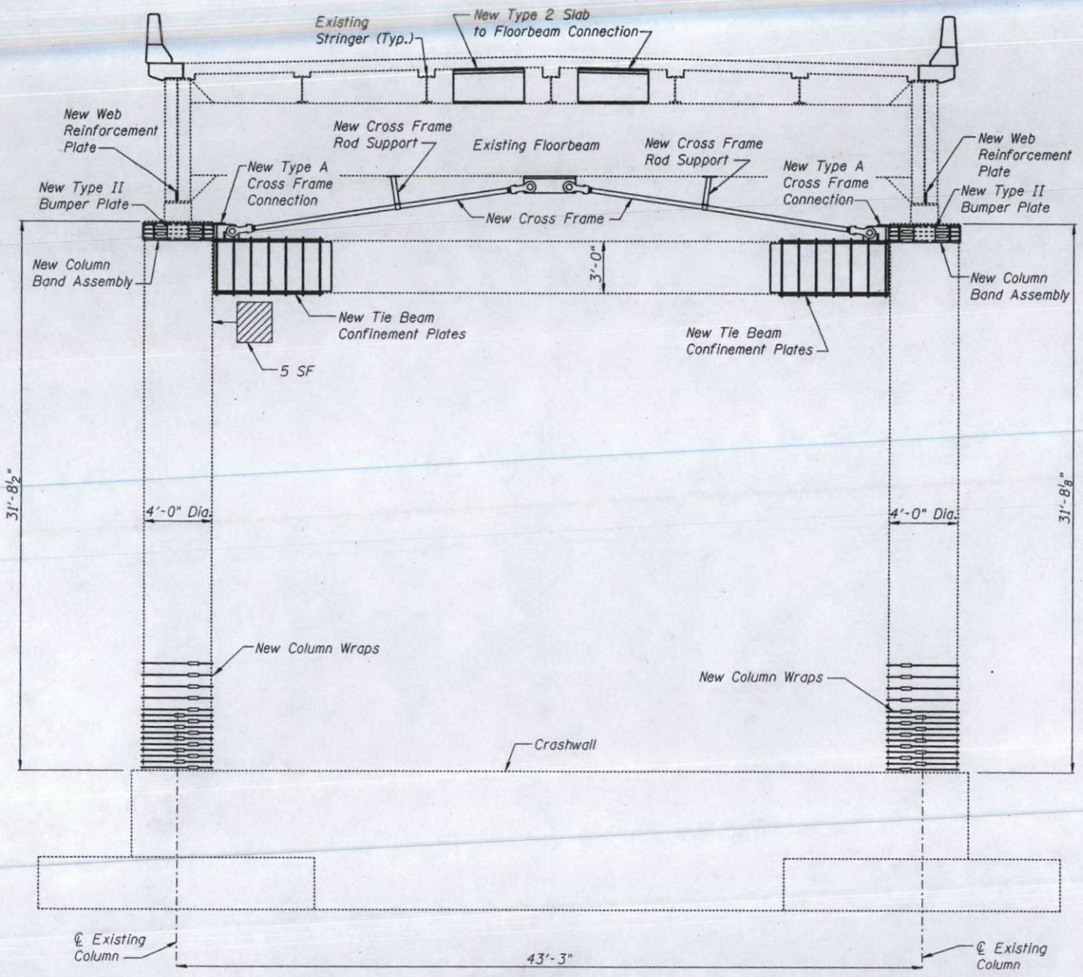
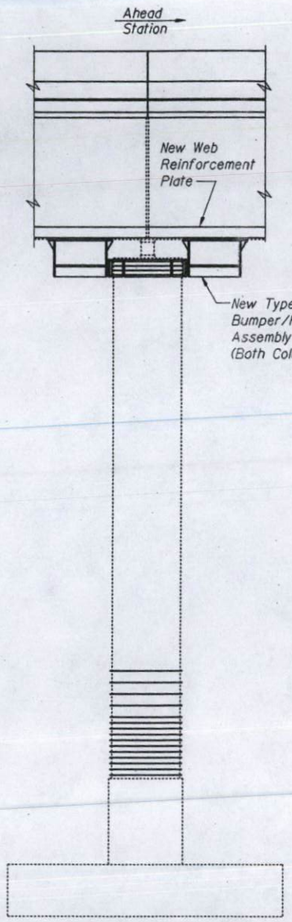
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
FAI-70	*	St. Clair	388	359	SHEET NO. 18
FED. ROAD DIST. NO.7		ILLINOIS	FED. AID PROJECT=		46 SHEETS

*(82-3HVB-2R-1)-2



ELEVATION
(Looking Ahead Station)



END VIEW

NOTES

1. For Formed Concrete Repairs, see Special Provisions.
2. For Cross Frame Details, see Sheets 39 and 40.
3. For Cross Frame Rod Support Details, see Sheet 38.
4. For Column Band Assembly Details, see Sheets 39 and 40.
5. For Slab to Floorbeam Connection Details, see Sheet 41.
6. For Bumper Plate Details, see Sheet 38.
7. For Bumper/Restrainer Assembly Details, see Sheets 34 thru 37.
8. For Column Wrap Details, see Sheet 43.
9. For Web Reinforcement Plate Details, see Sheet 30.
10. For Tie Beam Confinement Plates, see Sheet 43.
11. SF Indicates Square Foot.

LEGEND

▨ = Formed Concrete Repair (Depth ≤ 5")

DESIGNED	A. Amidi
CHECKED	R. Victor/ M. Capron
DRAWN	S. Koemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

BILL OF MATERIAL - PIER E1

ITEM	UNIT	QUANTITY
Column wrap	SQ. FT.	230
Expansion Bolts (Special)	EACH	16
Formed Concrete Repair (Depth ≤ 5")	SQ. FT.	6

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
RETROFIT AND SUBSTRUCTURE REPAIR
PIER E1
(FAI-70) ST. CLAIR CO.

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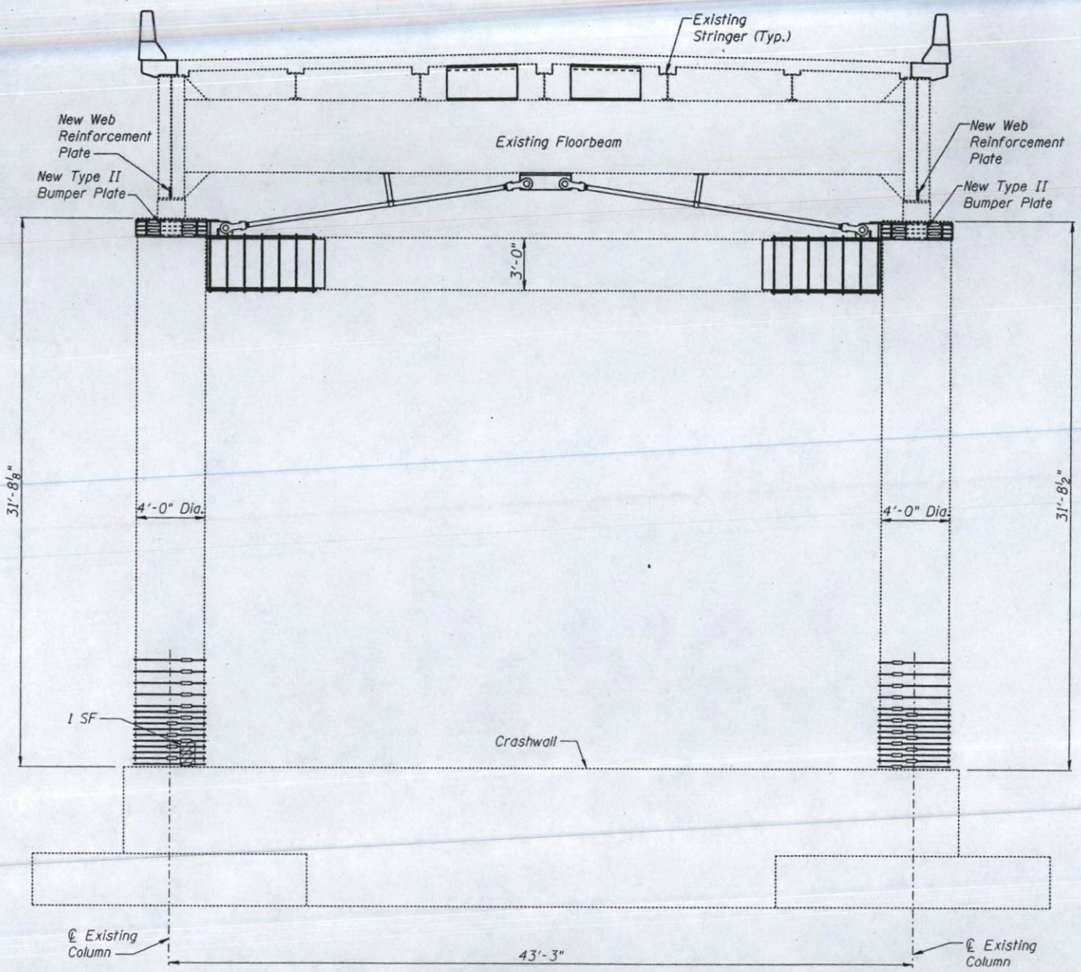
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
FAI-70	*	St. Clair	388	360	SHEET NO. 19
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT			46 SHEETS

*(82-3HVB-2R-1)-2



ELEVATION

(Looking Back Station)

Note: For seismic and redundancy information not shown, see "ELEVATION" on Sheet 18.

NOTES

1. For Formed Concrete Repairs, see Special Provisions.
2. For Bumper Plate Details, see Sheet 38.
3. For Web Reinforcement Plate Details, see Sheet 30.
4. SF Indicates Square Foot.

LEGEND

▨ = Formed Concrete Repair (Depth ≤ 5")

DESIGNED	A. Amidi
CHECKED	R. Victor/ M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
RETROFIT AND SUBSTRUCTURE REPAIR
PIER E1
(FAI-70) ST. CLAIR CO.

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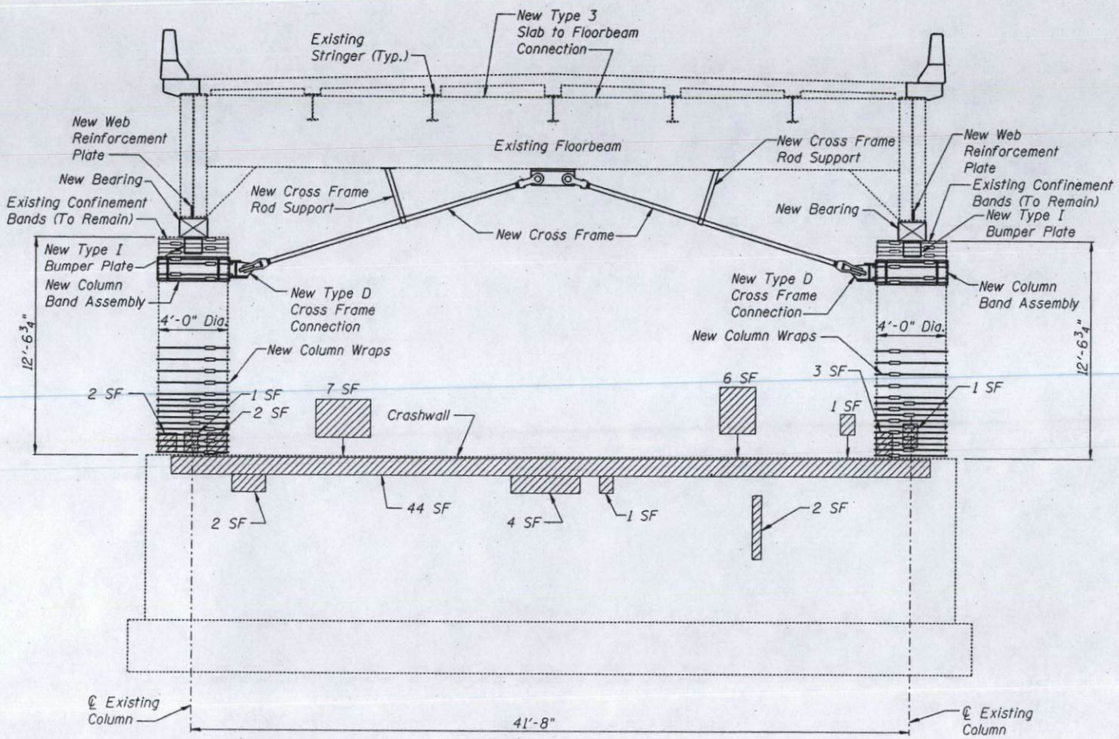
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

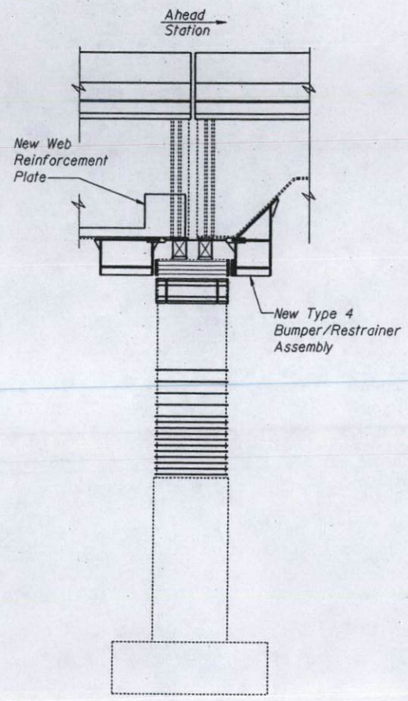
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	361
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 20
46 SHEETS

*(82-3HVB-2R-1)-2



ELEVATION
(Looking Ahead Station)



END VIEW

NOTES

1. For Formed Concrete Repairs, see Special Provisions.
2. For Cross Frame Details, see Sheets 39 and 40.
3. For Cross Frame Rod Support Detail, see Sheet 38.
4. For Column Band Assembly Details, see Sheets 39 and 40.
5. For Slab to Floorbeam Connection Details, see Sheet 41.
6. For Bumper Plate Details, see Sheet 38.
7. For Bumper/Restrainer Assembly Details, see Sheets 34 thru 37.
8. For Column Wrap Details, see Sheet 43.
9. For Web Reinforcement Plate Details, see Sheet 30.
10. For Elastomeric Bearing Details, see Sheet 44.
11. SF Indicates Square Foot.

LEGEND

▨ = Formed Concrete Repair (Depth ≤ 5")

BILL OF MATERIAL - PIER E2		
ITEM	UNIT	QUANTITY
Column wrap	SQ. FT.	180
Expansion Bolts (Special)	EACH	24
Formed Concrete Repair (Depth ≤ 5")	SQ. FT.	125
Elastomeric Bearing, Type II	EACH	4

DESIGNED	A. Amidi
CHECKED	R. Victor/ M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
RETROFIT AND SUBSTRUCTURE REPAIR
PIER E2
(FAI-70) ST. CLAIR CO.

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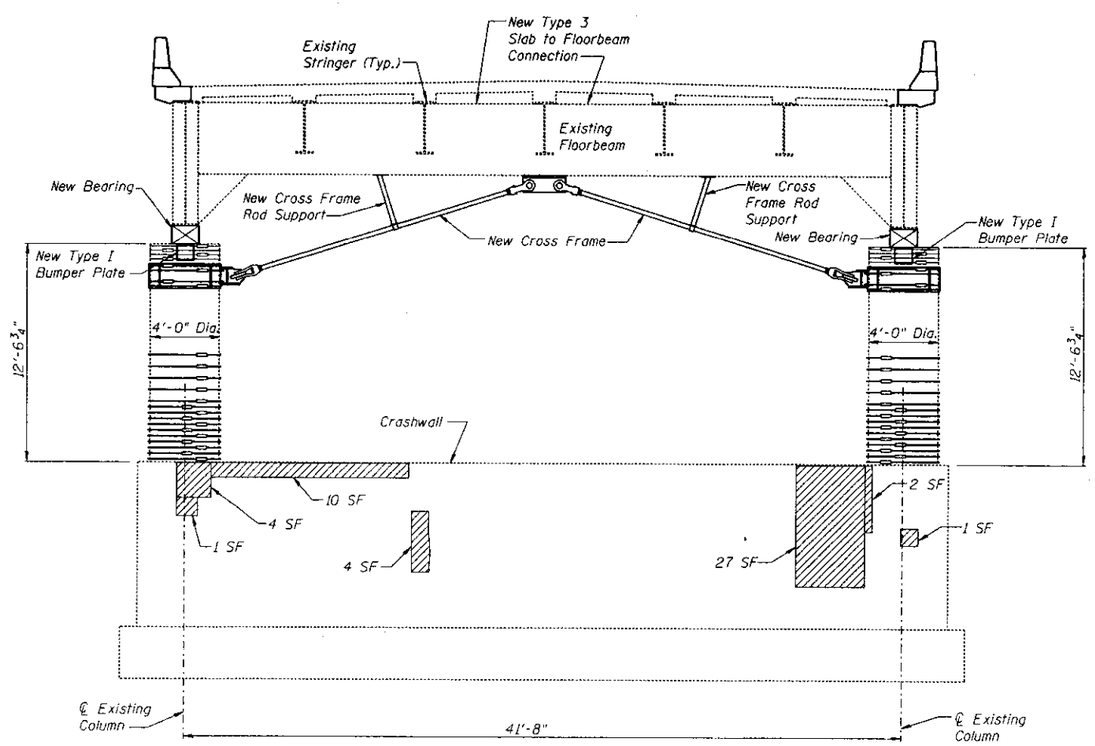
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	362
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		

SHEET NO. 21
46 SHEETS

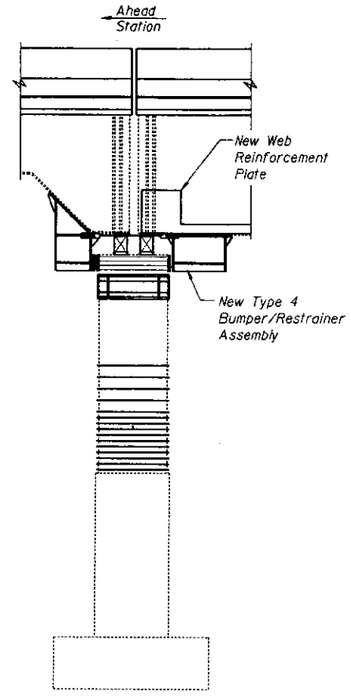
*(82-3HVB-2R-1)-2



ELEVATION

(Looking Back Station)

Note: For seismic and redundancy information not shown, see "ELEVATION" on Sheet 20.



END VIEW

NOTES

1. For Formed Concrete Repairs, see Special Provisions.
2. For Cross Frame Details, see Sheets 39 and 40.
3. For Cross Frame Rod Support Detail, see Sheet 38.
4. For Slab to Floorbeam Connection Details, see Sheet 41.
5. For Bumper Plate Details, see Sheet 38.
6. For Bumper/Restrainer Assembly Details, see Sheets 34 thru 37.
7. For Web Reinforcement Plate Details, see Sheet 30.
8. For Elastomeric Bearing Details, see Sheet 44.
9. SF Indicates Square Foot.

LEGEND

▨ = Formed Concrete Repair (Depth ≤ 5")

DESIGNED	A. Amidi
CHECKED	R. Victor/ M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
RETROFIT AND SUBSTRUCTURE REPAIR
PIER E2
(FAI-70) ST. CLAIR CO.

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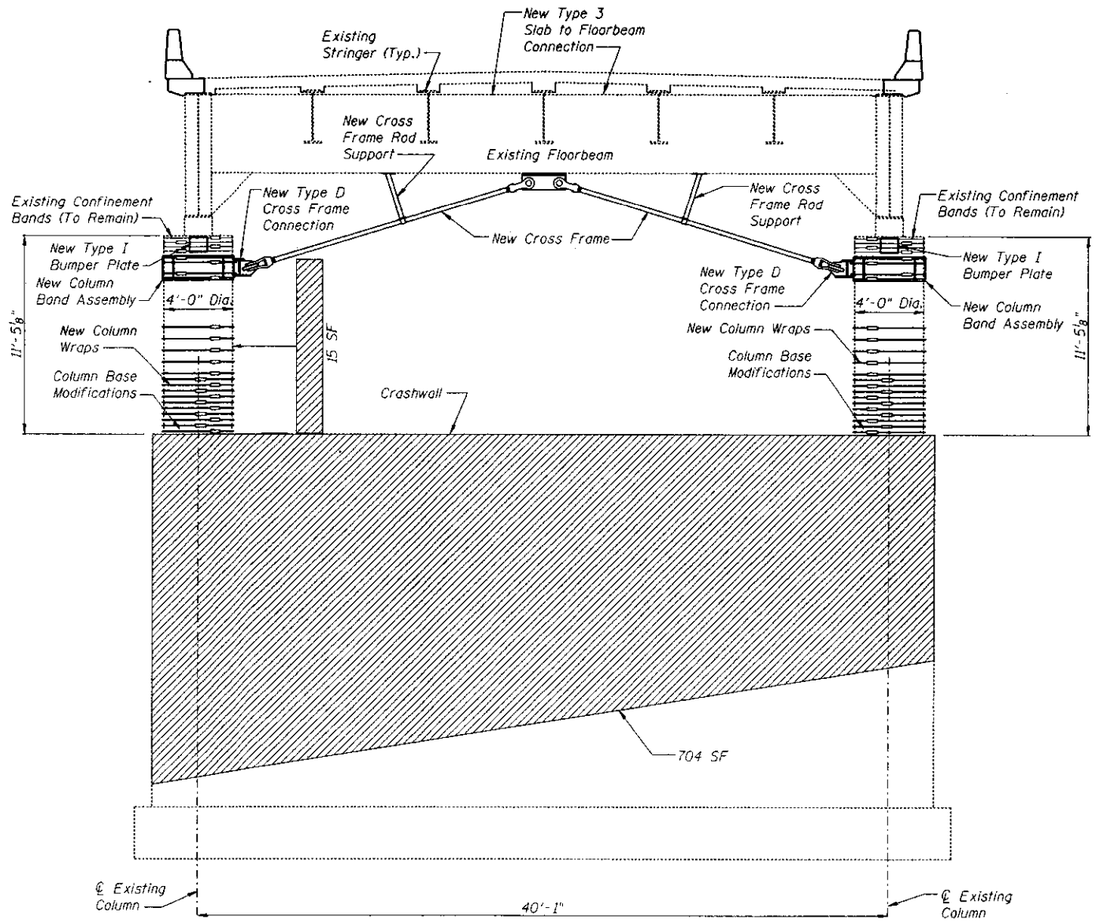
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

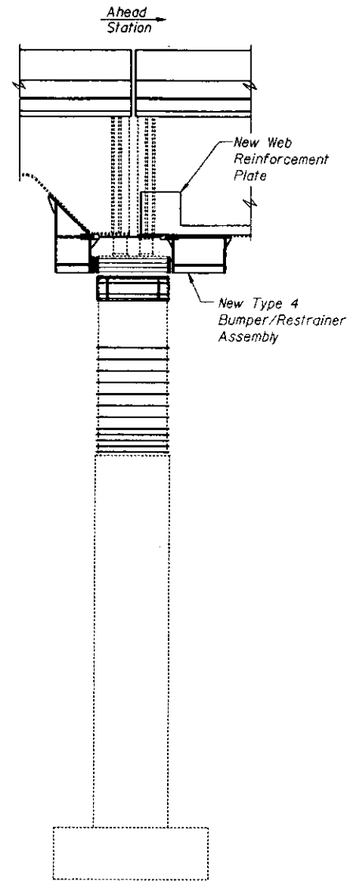
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	363
FED. ROAD DIST. NO. 9		ILLINOIS	FED. AID PROJECT	

SHEET NO. 22
46 SHEETS

*(82-3HVB-2R-1)-2



ELEVATION
(Looking Ahead Station)



END VIEW

NOTES

1. For Formed Concrete Repairs, see Special Provisions.
2. For Cross Frame Details, see Sheets 39 and 40.
3. For Cross Frame Rod Support Details, see Sheet 38.
4. For Column Band Assembly Details, see Sheets 39 and 40.
5. For Slab to Floorbeam Connection Details, see Sheet 41.
6. For Bumper Plate Details, see Sheet 38.
7. For Bumper/Restrainer Assembly Details, see Sheets 34 thru 37.
8. For Column Wrap Details, see Sheet 43.
9. For Column Base Modification Details, see Sheet 42.
10. For Web Reinforcement Plate Details, see Sheet 30.
11. SF Indicates Square Foot.

LEGEND

▨ = Formed Concrete Repair (Depth ≤ 5")

BILL OF MATERIAL - PIER E3

ITEM	UNIT	QUANTITY
Column wrap	SQ. FT.	180
Expansion Bolts (Special)	EACH	24
Foundation Wall Dowel Modification	EACH	2
Formed Concrete Repair (Depth ≤ 5")	SQ. FT.	888

DESIGNED	A. Amidi
CHECKED	R. Victor / M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX ROADWAY E - STRUCTURE NO. 082-0205 RETROFIT AND SUBSTRUCTURE REPAIR PIER E3
(FAI-70) ST. CLAIR CO.

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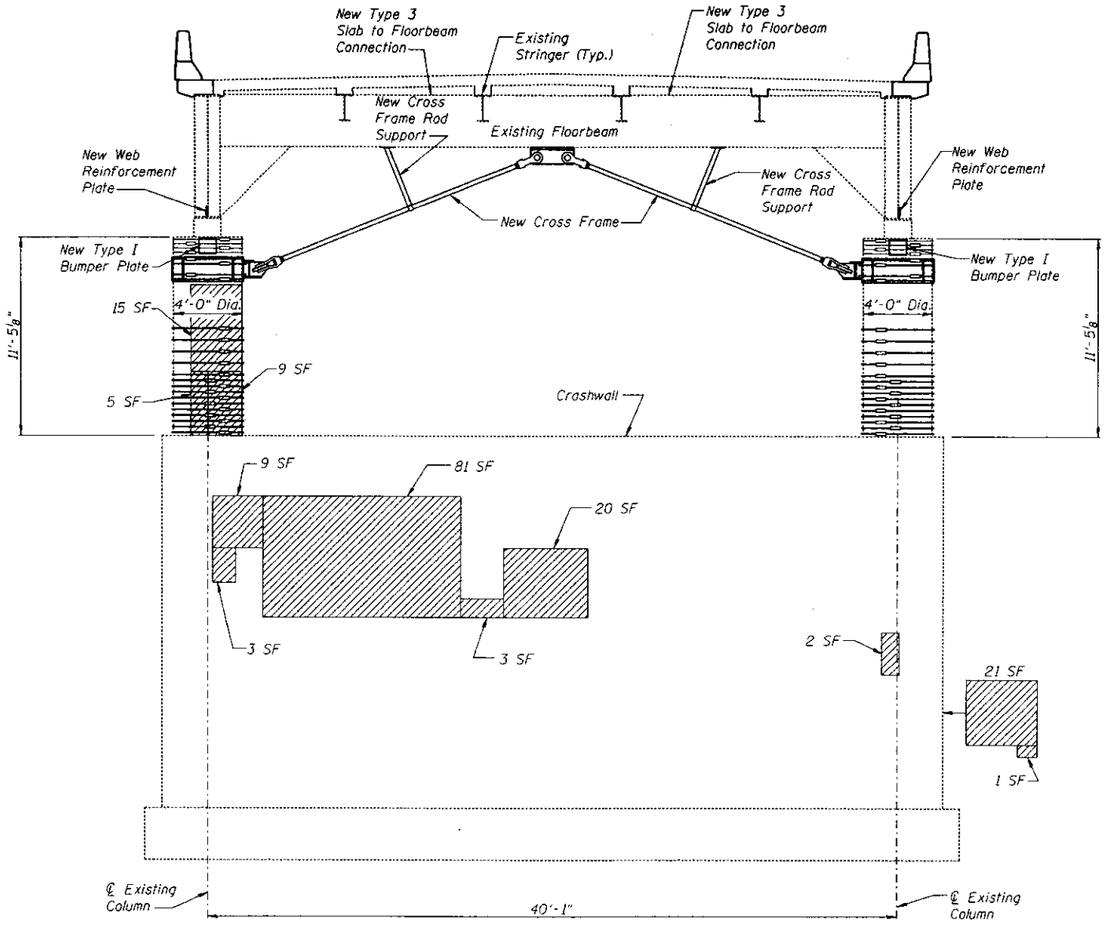
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	364
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		

SHEET NO. 23
46 SHEETS

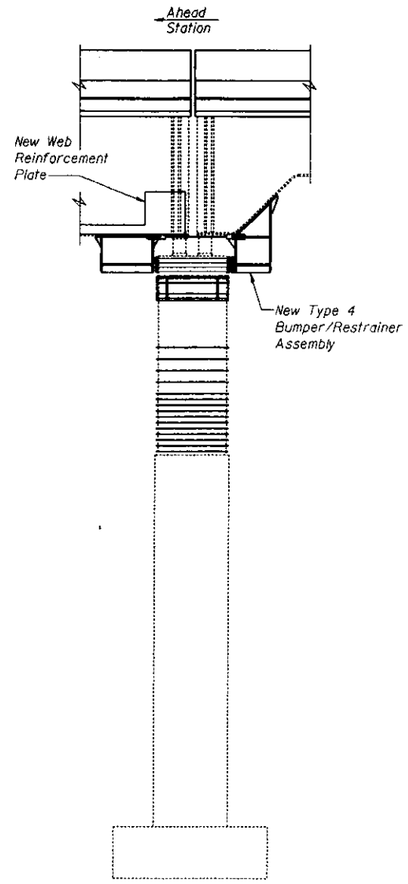
*(82-3HVB-2R-D-2



ELEVATION

(Looking Back Station)

Note: For seismic and redundancy information not shown, see "ELEVATION" on Sheet 22.



END VIEW

NOTES

1. For Formed Concrete Repairs, see Special Provisions.
2. For Cross Frame Details, see Sheets 39 and 40.
3. For Cross Frame Rod Support Detail, see Sheet 38.
4. For Slab to Floorbeam Connection Details, see Sheet 41.
5. For Bumper Plate Details, see Sheet 38.
6. For Bumper/Restrainer Assembly Details, see Sheets 34 thru 37.
7. For Web Reinforcement Plate Details, see Sheet 30.
8. SF Indicates Square Foot.

LEGEND

▨ = Formed Concrete Repair (Depth ≤ 5")

DESIGNED	A. Amidi
CHECKED	R. Victor/ M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
RETROFIT AND SUBSTRUCTURE REPAIR
PIER E3
(FAI-70) ST. CLAIR CO.

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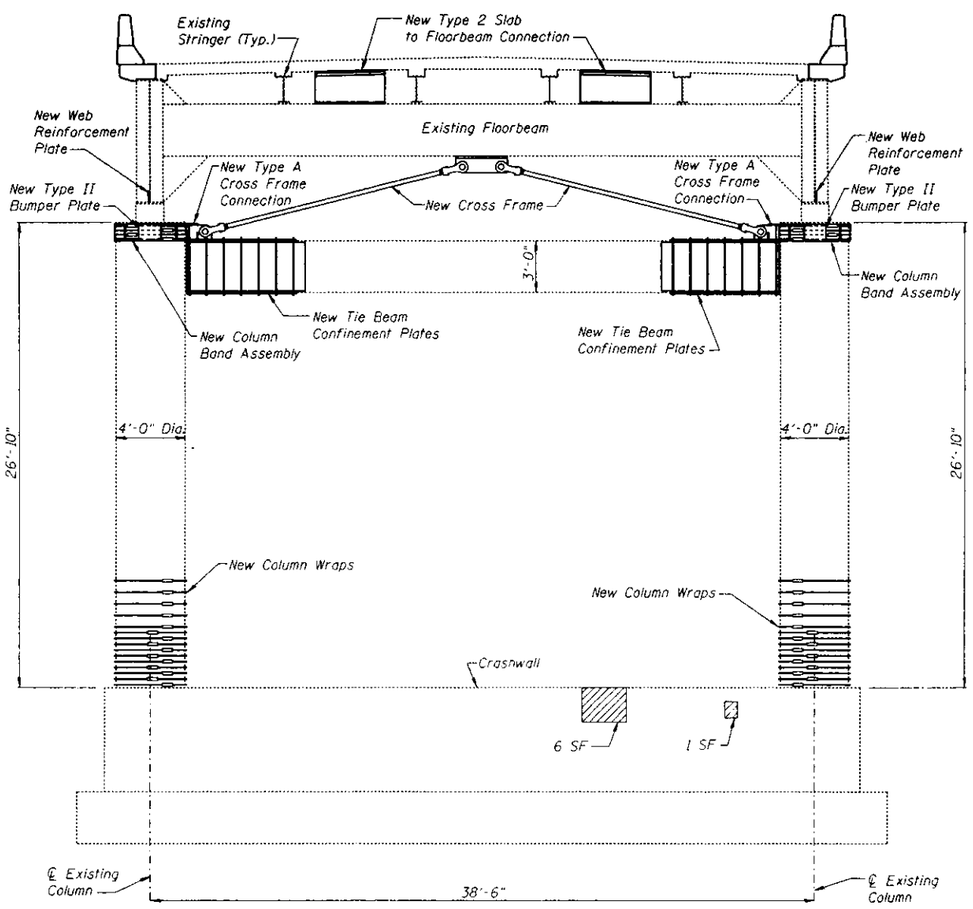
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

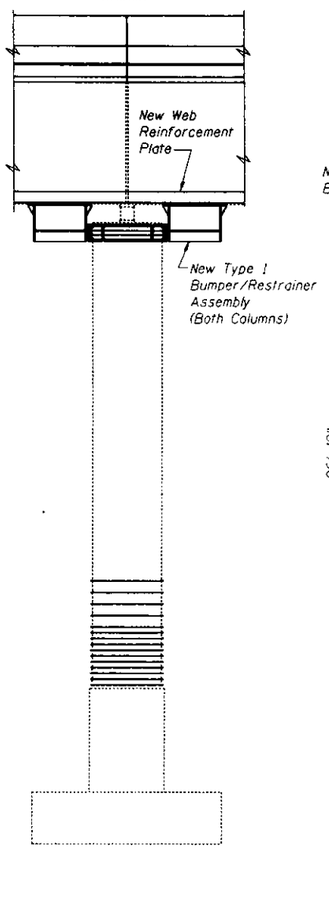
ROUTE	SECTION	COUNTY	TOTAL SHEET NO.	SHEET NO.
FAI-70	*	St. Clair	388	365

SHEET NO. 24
46 SHEETS

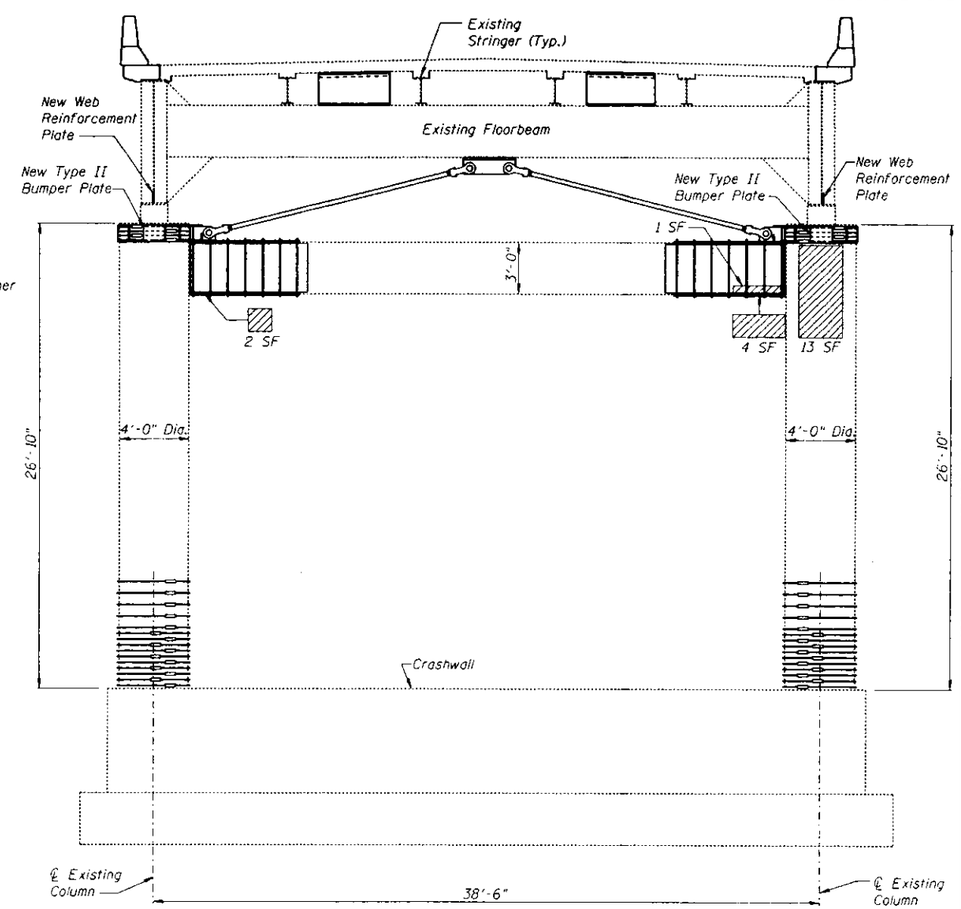
*(82-3HVB-2R-1)-2



ELEVATION
(Looking Ahead Station)



END VIEW



ELEVATION
(Looking Back Station)
Note: For seismic and redundancy information not shown, see "ELEVATION (Looking Ahead Station)".

NOTES

1. For Formed Concrete Repairs, see Special Provisions.
2. For Cross Frame Details, see Sheets 39 and 40.
3. For Column Band Assembly Details, see Sheets 39 and 40.
4. For Slab to Floorbeam Connection Details, see Sheet 41.
5. For Bumper Plate Details, see Sheet 38.
6. For Bumper/Restrainer Assembly Details, see Sheets 34 thru 37.
7. For Column Wrap Details, see Sheet 43.
8. For Web Reinforcement Plate Details, see Sheet 30.
9. For Tie Beam Confinement Plates, see Sheet 43.
10. SF Indicates Square Foot.

LEGEND

▨ = Formed Concrete Repair (Depth ≤ 5")

BILL OF MATERIAL - PIER E4

ITEM	UNIT	QUANTITY
Column wrap	SQ. FT.	180
Expansion Bolts (Special)	EACH	16
Formed Concrete Repair (Depth ≤ 5")	SQ. FT.	27

DESIGNED	A. Amidi
CHECKED	R. Victor/ M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX ROADWAY E - STRUCTURE NO. 082-0205 RETROFIT AND SUBSTRUCTURE REPAIR PIER E4

(FAI-70) ST. CLAIR CO.

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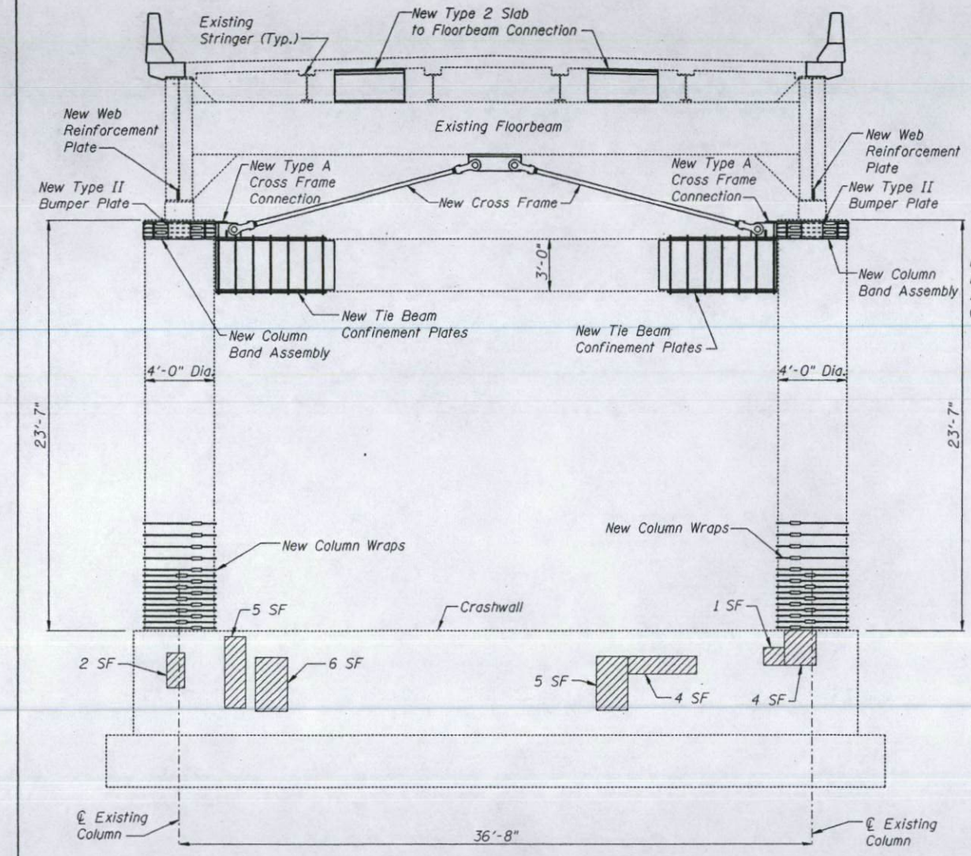
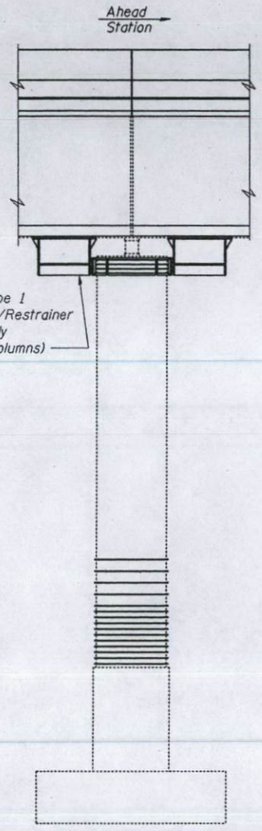
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 25
FAI-70	*	St. Clair	388	366	46 SHEETS
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT=			

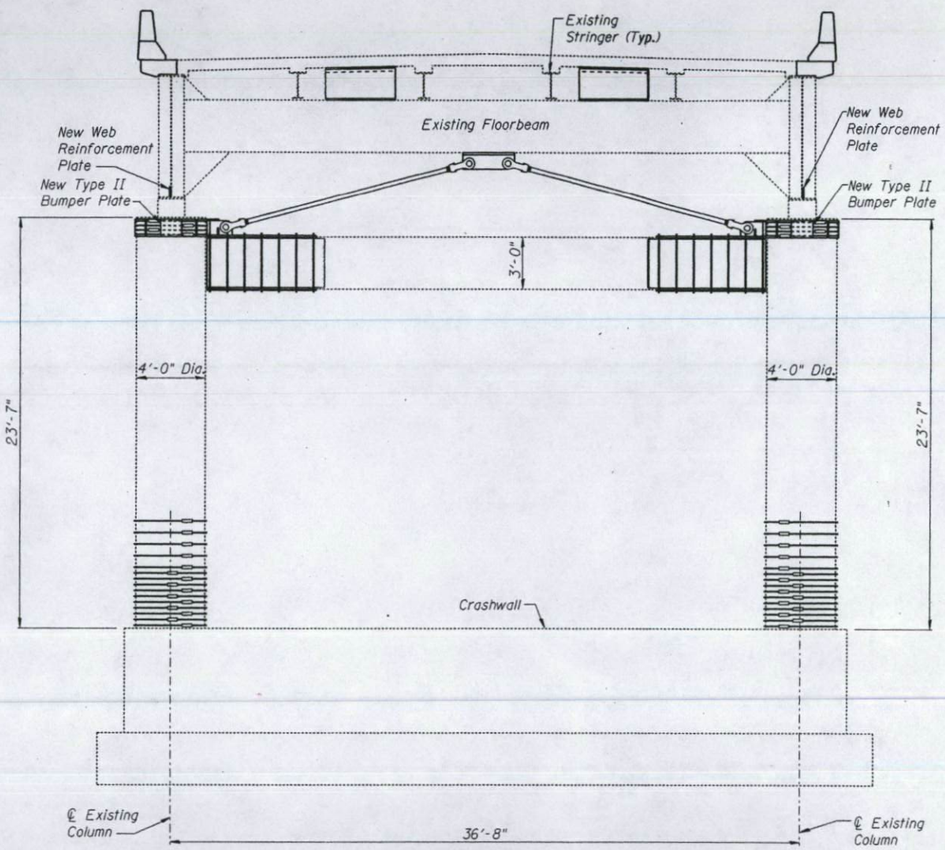
*(82-3HVB-2R-1)-2



ELEVATION
(Looking Ahead Station)



END VIEW



ELEVATION
(Looking Back Station)
Note: For seismic and redundancy information not shown, see "ELEVATION (Looking Ahead Station)".

NOTES

1. For Formed Concrete Repairs, see Special Provisions.
2. For Cross Frame Details, see Sheets 39 and 40.
3. For Column Band Assembly Details, see Sheets 39 and 40.
4. For Slab to Floorbeam Connection Details, see Sheet 41.
5. For Bumper Plate Details, see Sheet 38.
6. For Bumper/Restrainer Assembly Details, see Sheets 34 thru 37.
7. For Column Wrap Details, see Sheet 43.
8. For Web Reinforcement Plate Details, see Sheet 30.
9. For Tie Beam Confinement Plates, see Sheet 43.
10. SF Indicates Square Foot.

LEGEND

▨ = Formed Concrete Repair (Depth ≤ 5")

BILL OF MATERIAL - PIER E5

ITEM	UNIT	QUANTITY
Column wrap	SQ. FT.	180
Expansion Bolts (Special)	EACH	16
Formed Concrete Repair (Depth ≤ 5")	SQ. FT.	27

DESIGNED	A. Amidi
CHECKED	R. Victor/ M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX ROADWAY E - STRUCTURE NO. 082-0205 RETROFIT AND SUBSTRUCTURE REPAIR PIER E5

(FAI-70) ST. CLAIR CO.

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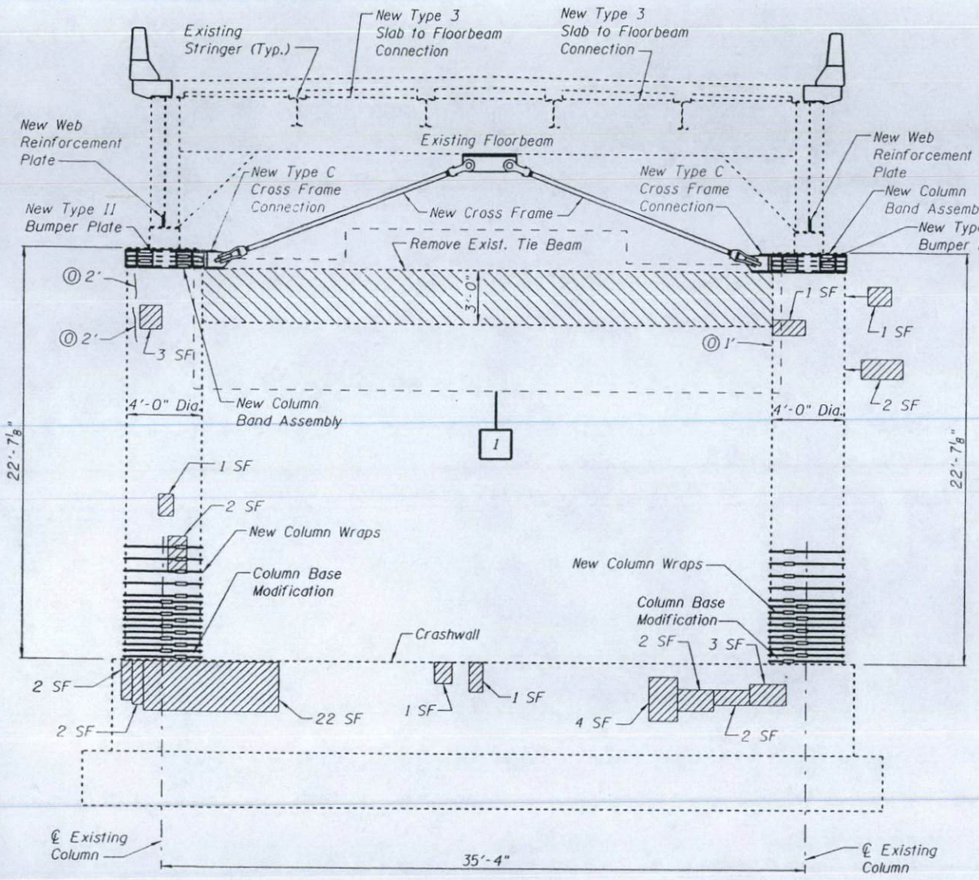
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

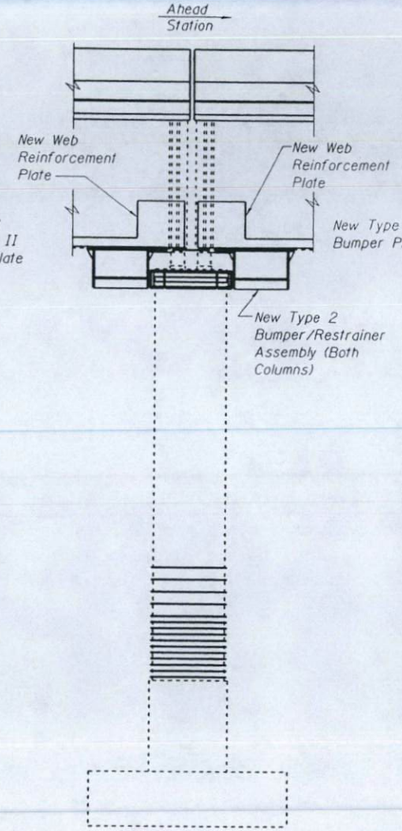
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	367
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 26
46 SHEETS

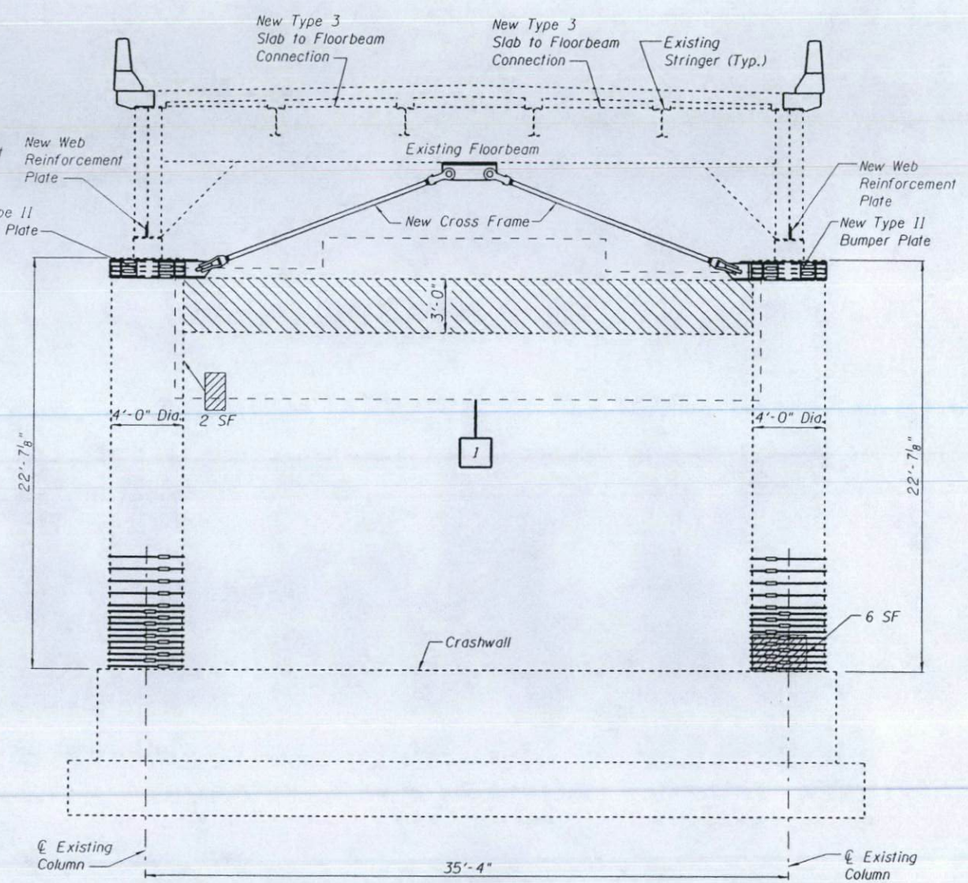
*(82-3HVB-2R-1)-2



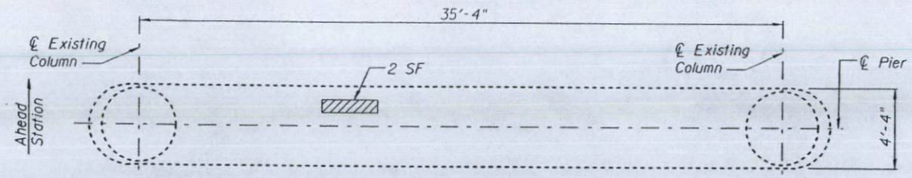
ELEVATION
(Looking Ahead Station)



END VIEW



ELEVATION
(Looking Back Station)
Note: For seismic and redundancy information not shown, see "ELEVATION (Looking Ahead Station)".



PLAN OF CRASHWALL

NOTES

1. For Formed Concrete Repairs, see Special Provisions.
2. For Cross Frame Details, see Sheets 39 and 40.
3. For Column Band Assembly Details, see Sheets 39 and 40.
4. For Slab to Floorbeam Connection Details, see Sheet 41.
5. For Bumper Plate Details, see Sheet 38.
6. For Bumper/Restrainer Assembly Details, see Sheets 34 thru 37.
7. For Column Wrap Details, see Sheet 43.
8. For Column Base Modification Details, see Sheet 42.
9. For Web Reinforcement Plate Details, see Sheet 30.
10. SF Indicates Square Foot.

LEGEND

= Formed Concrete Repair (Depth ≤ 5")
0 = Open Crack - Formed Concrete Repair (Depth ≤ 5")
Remove Tie Beam (Special)
1

DESIGNED	A. Amidi
CHECKED	R. Victor/ M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

BILL OF MATERIAL - PIER E6

ITEM	UNIT	QUANTITY
Column wrap	SQ. FT.	180
Expansion Bolts (Special)	EACH	24
Formed Concrete Repair (Depth ≤ 5")	SQ. FT.	167
Foundation Wall Dowel Modification	EACH	2
Remove Tie Beam (Special)	EACH	1

1

REHABILITATION FOR FAI 55/70 COMPLEX ROADWAY E - STRUCTURE NO. 082-0205 RETROFIT AND SUBSTRUCTURE REPAIR PIER E6
(FAI-70) ST. CLAIR CO.

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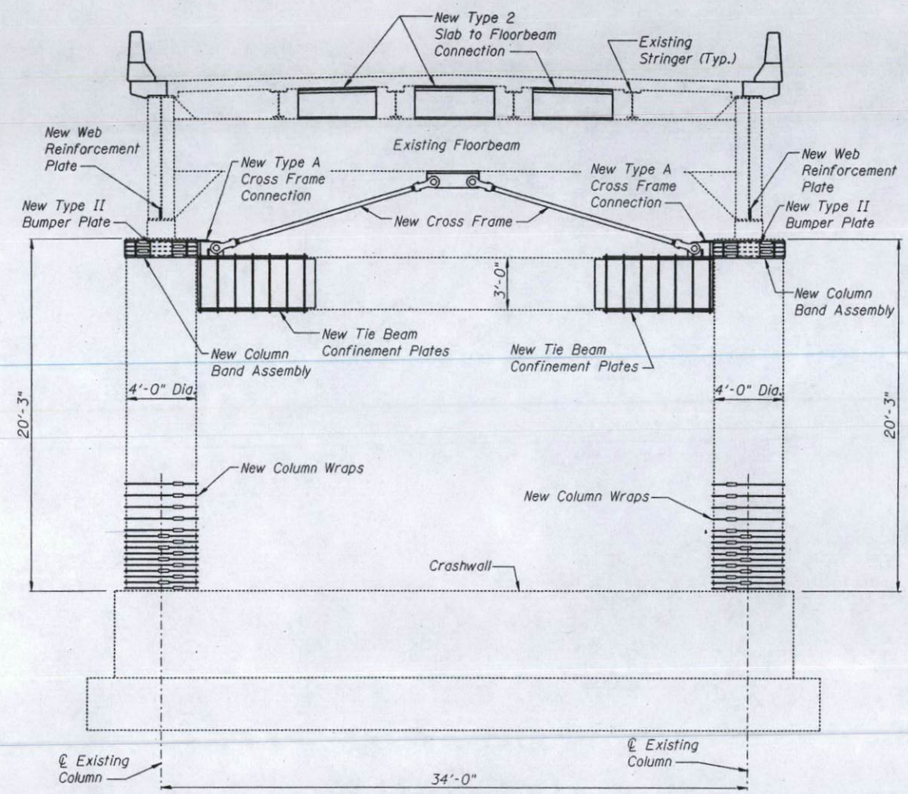
1 REVISED 09-15-05, MRC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	368
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		

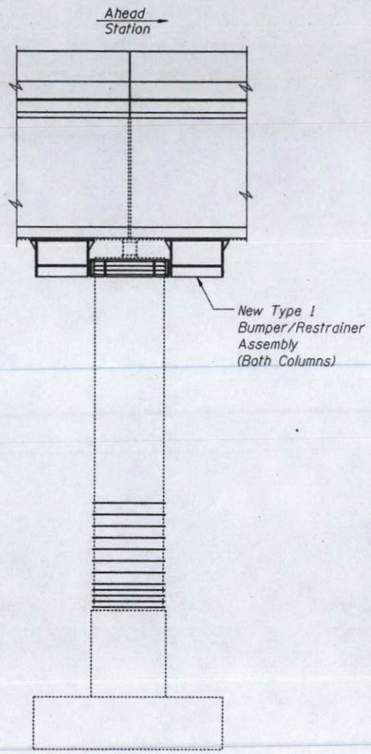
SHEET NO. 27
46 SHEETS
*(82-3HVB-2R-1)-2



ELEVATION

(Looking Ahead Station)

Note: "ELEVATION (Looking Back Station)" similar and opposite hand.



END VIEW

NOTES

1. For Cross Frame Details, see Sheets 39 and 40.
2. For Column Band Assembly Details, see Sheets 39 and 40.
3. For Slab to Floorbeam Connection Details, see Sheet 41.
4. For Bumper Plate Details, see Sheet 38.
5. For Bumper/Restrainer Assembly Details, see Sheets 34 thru 37.
6. For Column Wrap Details, see Sheet 43.
7. For Web Reinforcement Plate Details, see Sheet 30.
8. For Tie Beam Confinement Plates, see Sheet 43.

BILL OF MATERIAL - PIER E7		
ITEM	UNIT	QUANTITY
Column wrap	SQ. FT.	180
Expansion Bolts (Special)	EACH	24

DESIGNED	A. Amidi
CHECKED	R. Victor/ M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
RETROFIT AND SUBSTRUCTURE REPAIR
PIER E7
(FAI-70) ST. CLAIR CO.

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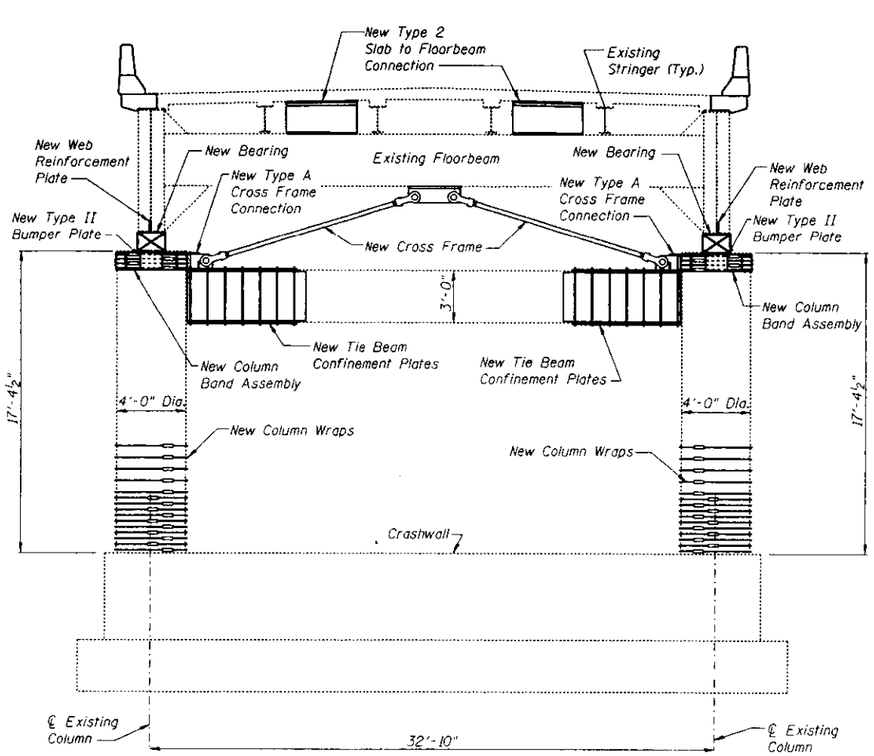
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEET NO.	SHEET NO.
FAI-70	*	St. Clair	388	369
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 28
46 SHEETS

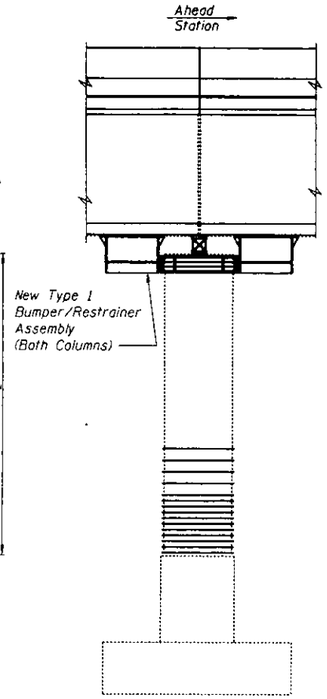
*(82-3HVB-2R-1)-2



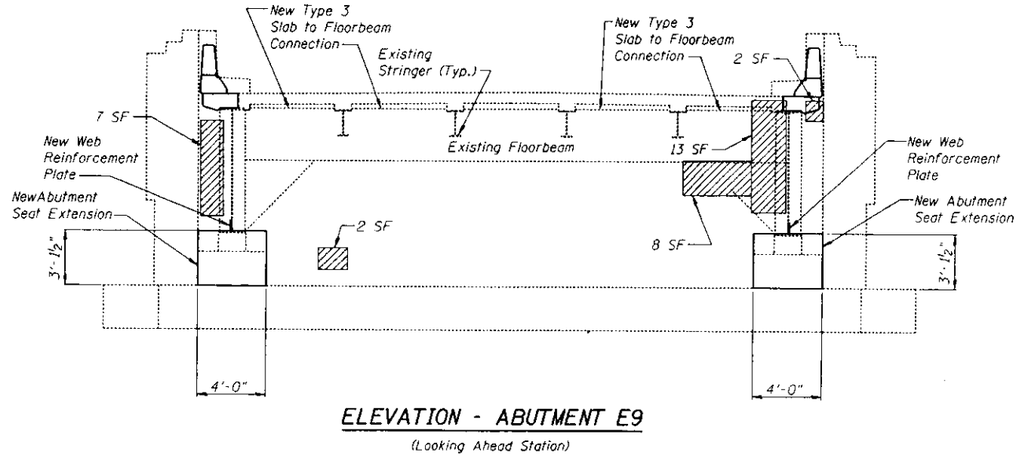
ELEVATION - PIER E8

(Looking Ahead Station)

Note: "ELEVATION (Looking Back Station)" similar and opposite hand.



END VIEW



ELEVATION - ABUTMENT E9

(Looking Ahead Station)

LEGEND

▨ = Formed Concrete Repair (Depth ≤ 5")

NOTES

1. For Formed Concrete Repairs, see Special Provisions.
2. For Abutment Seat Extensions, see Sheet 33.
3. For Cross Frame Details, see Sheets 39 and 40.
4. For Column Band Assembly Details, see Sheets 39 and 40.
5. For Slab to Floorbeam Connection Details, see Sheet 41.
6. For Bumper Plate Details, see Sheet 38.
7. For Bumper/Restrainer Assembly Details, see Sheets 34 thru 37.
8. For Column Wrap Details, see Sheet 43.
9. For Web Reinforcement Plate Details, see Sheet 30.
10. For Tie Beam Confinement Plates, see Sheet 43.
11. For Elastomeric Bearing Details, see Sheet 44A.
12. SF Indicates Square Foot.

BILL OF MATERIAL - PIER E8

ITEM	UNIT	QUANTITY
Column wrap	SQ. FT.	180
Expansion Bolts (Special)	EACH	16
Elastomeric Bearing Assembly, Type II	EACH	2

BILL OF MATERIAL - ABUTMENT E9

ITEM	UNIT	QUANTITY
Expansion Bolts (Special)	EACH	24
Reinforcement Bars (Epoxy Coated)	LBS.	1,260
Concrete Structures	C.Y.	1.7
Formed Concrete Repair (Depth ≤ 5")	SQ. FT.	32

DESIGNED	A. Amidi
CHECKED	R. Victor / M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

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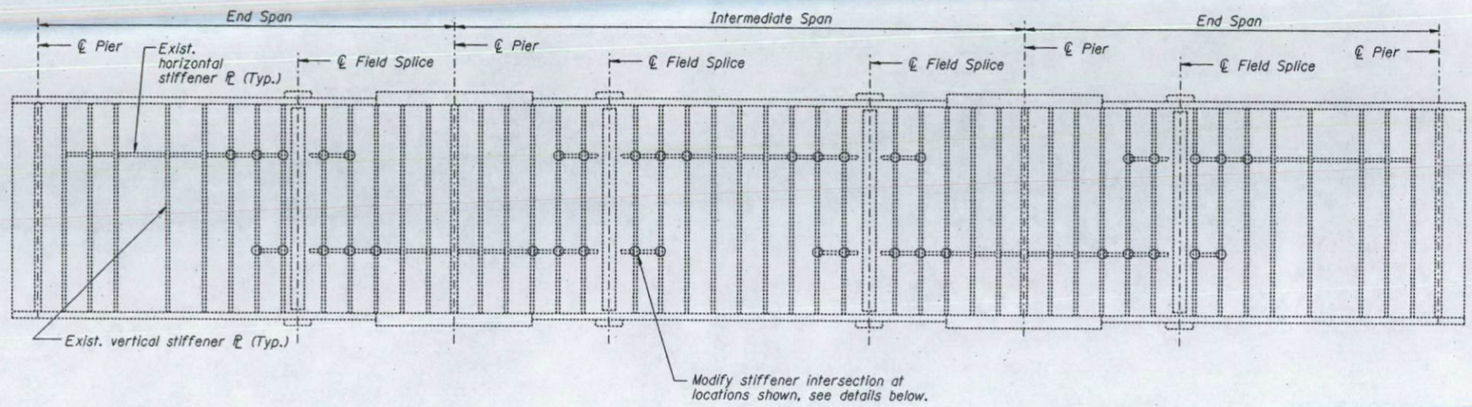
REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
RETROFIT AND SUBSTRUCTURE REPAIR
PIER E8 AND ABUTMENT E9
(FAI-70) ST. CLAIR CO.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	370
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT=		

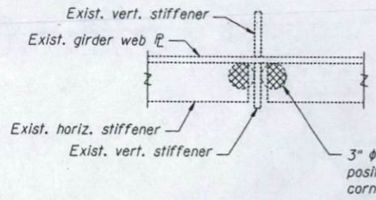
SHEET NO. 29
46 SHEETS

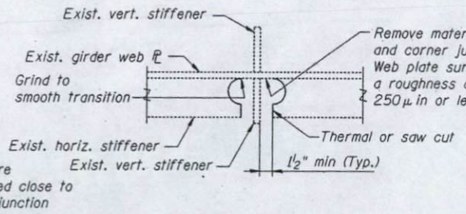
*(82-3HVB-2R-1)-2



GIRDER ELEVATION - FRACTURE CONTROL MODIFICATION LOCATIONS

Exterior Face of Girder E1. shown. Exterior Face of Girder E2, Similar.



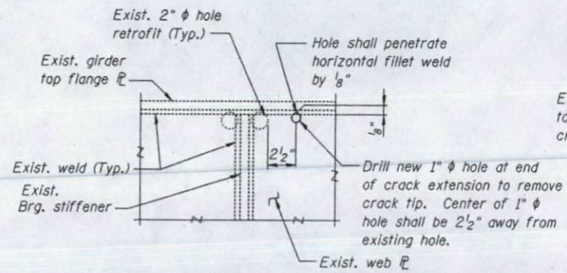


STIFFENER INTERSECTION MODIFICATION DETAILS

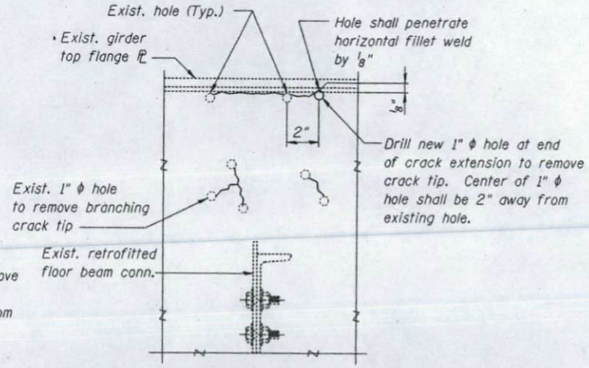
(Showing 2 locations)

Procedure:

1. Core 3" diameter hole positioned close to corner junction through ⅜" thick horizontal stiffener as shown in detail.
2. Remove material between core and intersection junction by grinding with carbide tool and a dye grinder as shown in details. Web plate surface shall have a roughness average (Ra) of 250μ in or less.
3. Remove all burrs from cut edge and check for irregularities. Cored surface shall have an Ra equal to 500μ in or less.
4. After burr removal the modification shall be inspected using liquid dye penetrant or magnetic particle (MT) inspection methods. Any cracks found shall be identified and reported to the Bureau of Bridges and Structures for further disposition.
5. The exposed steel surfaces shall be cleaned and painted using a aluminum epoxy mastic primer.
6. Obtain approval of Engineer before proceeding.
7. Paint area with top coat.



CRACK EXTENSION RETROFIT AT PIER



CRACK EXTENSION RETROFIT AT INTERIOR FLOOR BEAM

Procedure:

1. Inspect girder web plate in region of existing retrofits to determine location of crack extension and crack tip using liquid dye penetrant or magnetic particle (MT) inspection methods (Cost included with crack extension modifications).
2. Drill 1" diameter hole at end of crack extension to remove crack tip. Center of 1" diameter crack arrestor hole shall be positioned in accordance with detail.
3. Cored surfaces shall have a roughness average (Ra) of 500μ in or less.
4. Re-inspect area using liquid dye penetrant or magnetic particle (MT) methods to verify crack does not extend past the newly drilled holes (Cost included with crack extension modification).
5. Obtain approval of Engineer.
6. Clean exposed steel surfaces to remove contaminants and paint with aluminum epoxy mastic primer.

DESIGNED	L. Peterman
CHECKED	V. Van Santen
DRAWN	J. Corley
CHECKED	F. Camba

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
STIFFENER INTERSECTION MODIFICATIONS
AND CRACK EXTENSION RETROFIT
(FAI-70) ST. CLAIR CO.

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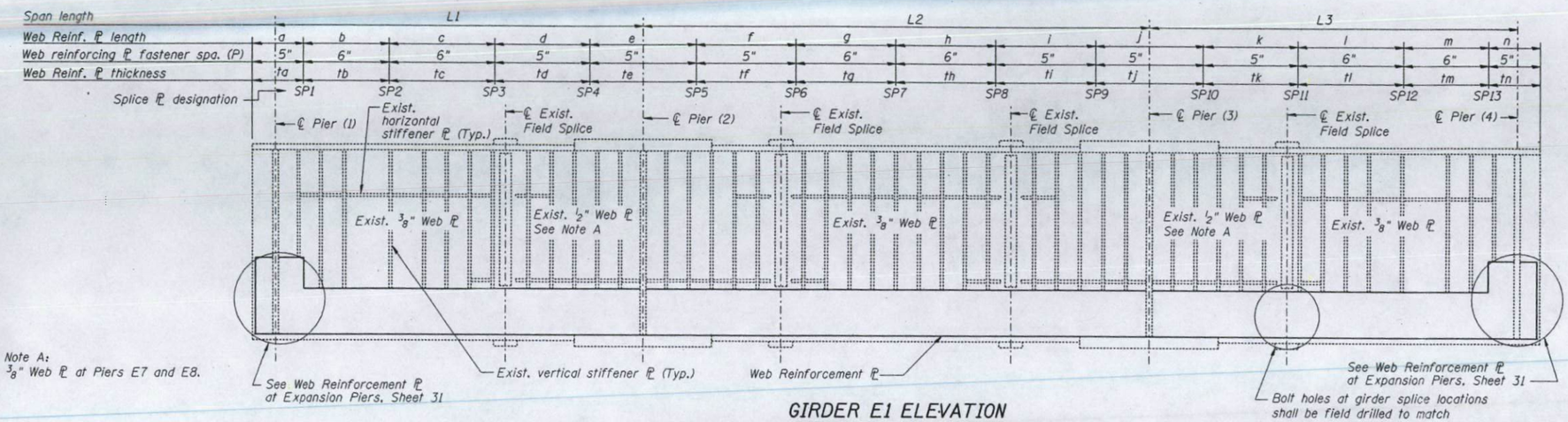
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	371
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 30
46 SHEETS

*(82-3HVB-2R-1)-2



Note A:
3/8" Web ℄ at Piers E7 and E8.

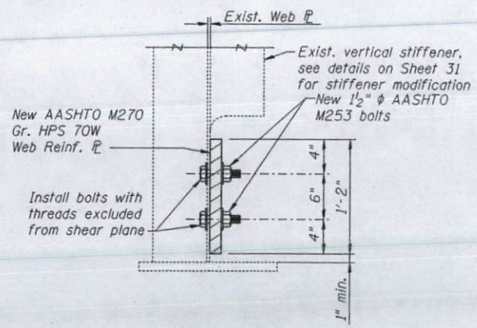
GIRDER E1 ELEVATION

Exterior Face of Girder E1, shown.
Exterior Face of Girder E2, similar and opposite hand.

Girder	Span 1												Span 2													Span 3										
	Pier (1)	L1	a	ta	b	tb	c	tc	d	td	e	te	Pier (2)	L2	f	tf	g	tg	h	th	i	ti	j	tj	Pier (3)	L3	k	tk	l	tl	m	tm	n	tn	Pier (4)
E1	E2	82'-3"	3'-5"	3/4"	23'-6"	1"	23'-6"	1"	19'-3"	1 1/2"	26'-0"	1 1/2"	E1	104'-11 15/16"	19'-3"	1 1/2"	20'-6"	1"	20'-0"	1"	19'-3"	1 1/2"	25'-11 1/2"	1 1/2"	018	82'-3"	19'-3"	1 1/2"	23'-6"	1"	23'-6"	1"	3'-5"	3/4"	017
E2	E2	82'-3"	3'-5"	3/4"	23'-6"	1"	23'-6"	1"	19'-3"	1 1/2"	25'-11"	1 1/2"	E1	104'-11 15/16"	19'-3"	1 1/2"	20'-6"	1"	20'-0"	1"	19'-3"	1 1/2"	25'-11"	1 1/2"	018	82'-5 1/16"	19'-3"	1 1/2"	23'-5"	1"	23'-11"	1"	3'-5"	3/4"	017
E1	E6	78'-3 1/16"	3'-5"	3/4"	23'-0 1/2"	1"	23'-0 1/2"	1"	17'-2"	1 1/2"	23'-10"	1 1/2"	E5	100'-0 1/16"	17'-2"	1 1/2"	21'-0"	1"	21'-0"	1"	17'-2"	1 1/2"	23'-10"	1 1/2"	E4	78'-3 1/16"	17'-2"	1 1/2"	23'-0 1/2"	1"	23'-0 1/2"	1"	3'-5"	3/4"	E3
E2	E6	78'-3 1/16"	3'-5"	3/4"	23'-0 1/2"	1"	23'-0 1/2"	1"	17'-2"	1 1/2"	23'-10"	1 1/2"	E5	100'-0 1/16"	17'-2"	1 1/2"	21'-0"	1"	21'-0"	1"	17'-2"	1 1/2"	23'-10"	1 1/2"	E4	78'-3 1/16"	17'-2"	1 1/2"	23'-0 1/2"	1"	23'-0 1/2"	1"	3'-5"	3/4"	E3
E1	E9*	70'-0"	3'-4 1/2"	3/4"	19'-11 1/2"	1"	19'-11 1/2"	1"	16'-4"	1 1/2"	21'-9"	1 1/2"	E8	89'-0"	16'-4"	1 1/2"	17'-6"	1"	17'-0"	1"	16'-4"	1 1/2"	21'-9"	1 1/2"	E7	69'-3 1/16"	16'-4"	1 1/2"	19'-6 1/2"	1"	19'-6 1/2"	1"	3'-4 1/2"	3/4"	E6
E2	E9*	70'-0"	3'-4 1/2"	3/4"	20'-0"	1"	19'-11 1/2"	1"	16'-4"	1 1/2"	21'-9"	1 1/2"	E8	89'-0"	16'-4"	1 1/2"	17'-6"	1"	17'-0"	1"	16'-4"	1 1/2"	21'-9"	1 1/2"	E7	69'-3 1/16"	16'-4"	1 1/2"	19'-6 1/2"	1"	19'-6"	1"	3'-4 1/2"	3/4"	E6

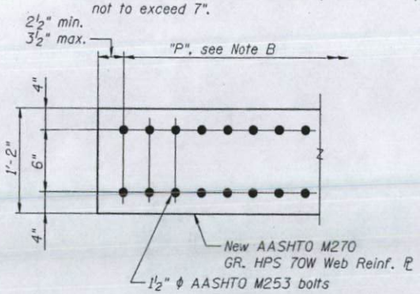
* Denotes Abutment

Piers	Web Reinforcement ℄ Splice Plate Lengths												
	SP1	SP2	SP3	SP4	SP5	SP6	SP7	SP8	SP9	SP10	SP11	SP12	SP13
E2-017	5'-7 1/2"	5'-0"	4'-8"	6'-0 1/2"	6'-0 1/2"	4'-8"	5'-0"	4'-8"	6'-0 1/2"	6'-0"	4'-8"	5'-0"	5'-7 1/2"
E6-E3	5'-7 1/2"	5'-1"	4'-8"	6'-0"	6'-0"	4'-8"	5'-0"	4'-8"	6'-0"	6'-0"	4'-8"	5'-1"	5'-7 1/2"
E9*-E6	5'-6 1/2"	5'-0"	4'-7 1/2"	6'-0"	6'-0"	4'-8"	5'-0"	4'-8"	6'-0"	6'-0"	4'-8 1/2"	5'-0"	5'-7 1/2"
℄ thk.	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1"	1"



TYPICAL WEB REINFORCEMENT PLATE

Note B:
For fastener spacing "P" see Girder Elevation this sheet. Space bolts to clear existing floorbeam connection and vertical stiffener plates. "P" spacing not to exceed 7".



WEB REINFORCEMENT PLATE ELEVATION

NOTES

Remove paint from web of existing girder under new web reinforcement plates.

Existing pier and girder designations are taken from plans prepared by H.W. Lochner Inc. for the original structure.

DESIGNED	L. Peterman
CHECKED	V. Van Santen
DRAWN	M. King
CHECKED	F. Camba

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
REDUNDANCY RETROFIT DETAILS
(FAI-70) ST. CLAIR CO.

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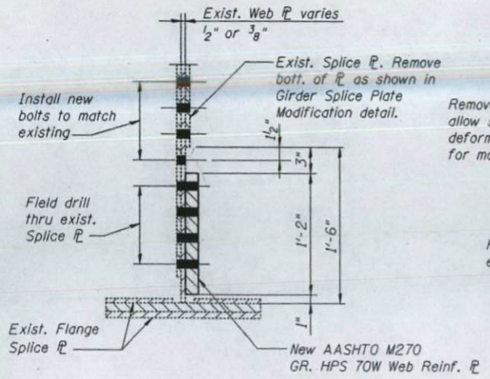
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

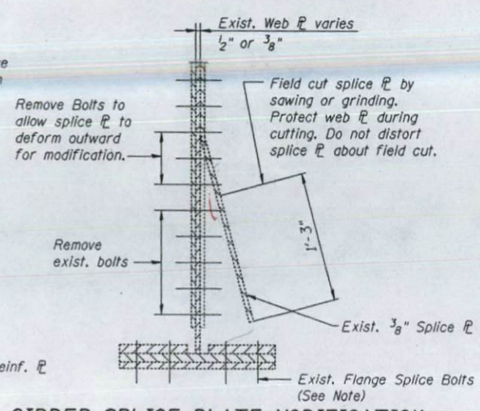
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	372
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		46 SHEETS

SHEET NO. 31

*(82-3HVB-2R-1)-2

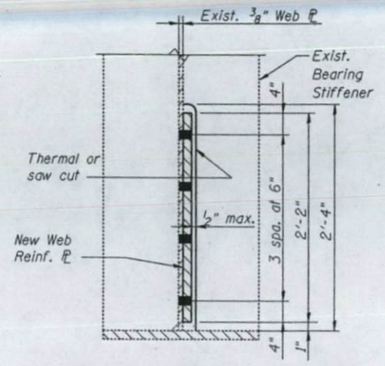


WEB REINFORCEMENT PLATE AT GIRDER WEB SPLICE

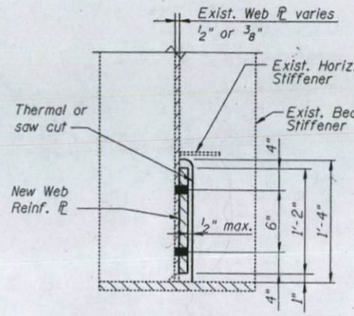


GIRDER SPLICE PLATE MODIFICATION

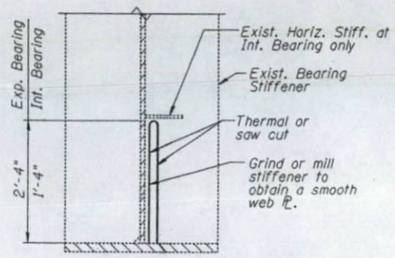
Note:
It is intended that the existing flange splice bolts remain in place during installation of the web reinforcement plate. If it is necessary to remove bolts to install web reinforcement plate, Contractor shall notify the Engineer and obtain approved sequence and procedure prior to proceeding.



TYPICAL SECTION THRU WEB REINFORCEMENT PLATE AT EXPANSION BEARING STIFFENER



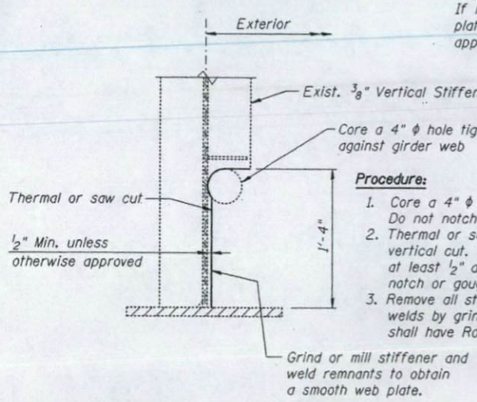
TYPICAL SECTION THRU WEB REINFORCEMENT PLATE AT INTERIOR BEARING STIFFENER



BEARING STIFFENER MODIFICATION

Procedure:

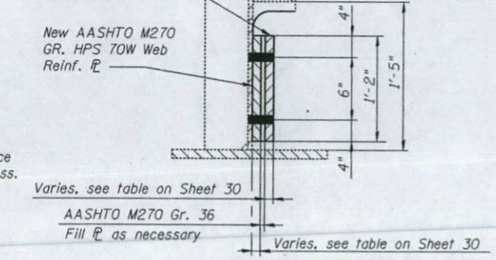
1. Thermal or saw cut horizontal cut and vertical cut. Vertical cut shall be positioned at least 1/2" away from girder web. Do not notch or gouge web plate.
2. Remove all stiffener remnants and connecting welds by grinding or by milling. Web plate surface shall have Roughness average (Ra) of 250 or less.



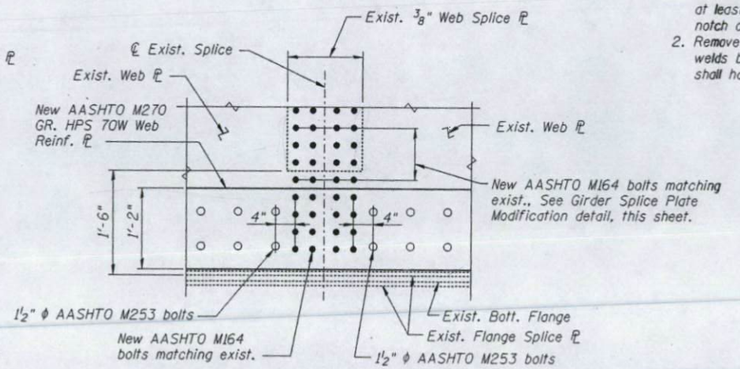
Procedure:

1. Core a 4" ϕ hole tight to girder web. Do not notch or gouge web plate.
2. Thermal or saw cut horizontal cut and vertical cut. Vertical cut shall be positioned at least 1/2" away from girder web. Do not notch or gouge web plate.
3. Remove all stiffener remnants and connecting welds by grinding or by milling. Web plate surface shall have Roughness average (Ra) of 250 or less.

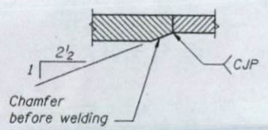
VERTICAL STIFFENER MODIFICATION



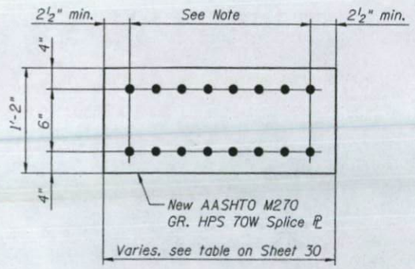
TYPICAL SECTION THRU WEB REINFORCEMENT SPLICE PLATE



ELEVATION AT GIRDER WEB SPLICE

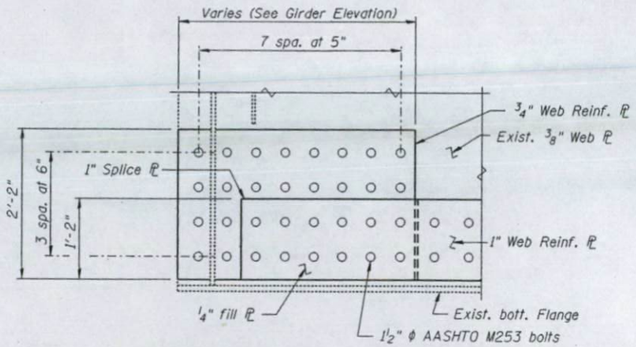


ALT. BUTT WELD SPLICE AT WEB REINF. PLATE TRANSITION



TYPICAL WEB REINFORCEMENT SPLICE PLATE

Note:
Hole sizes and spacing to match web reinforcement ℄. For alternate butt weld splice see detail this sheet.



WEB REINFORCEMENT PLATE AT EXPANSION PIERS

DESIGNED	L. Peterman
CHECKED	V. Van Santen
DRAWN	M. King
CHECKED	F. Camba

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX ROADWAY E- STRUCTURE NO. 082-0205
TYPICAL REDUNDANCY RETROFIT DETAILS
(FAI-70) ST. CLAIR CO.

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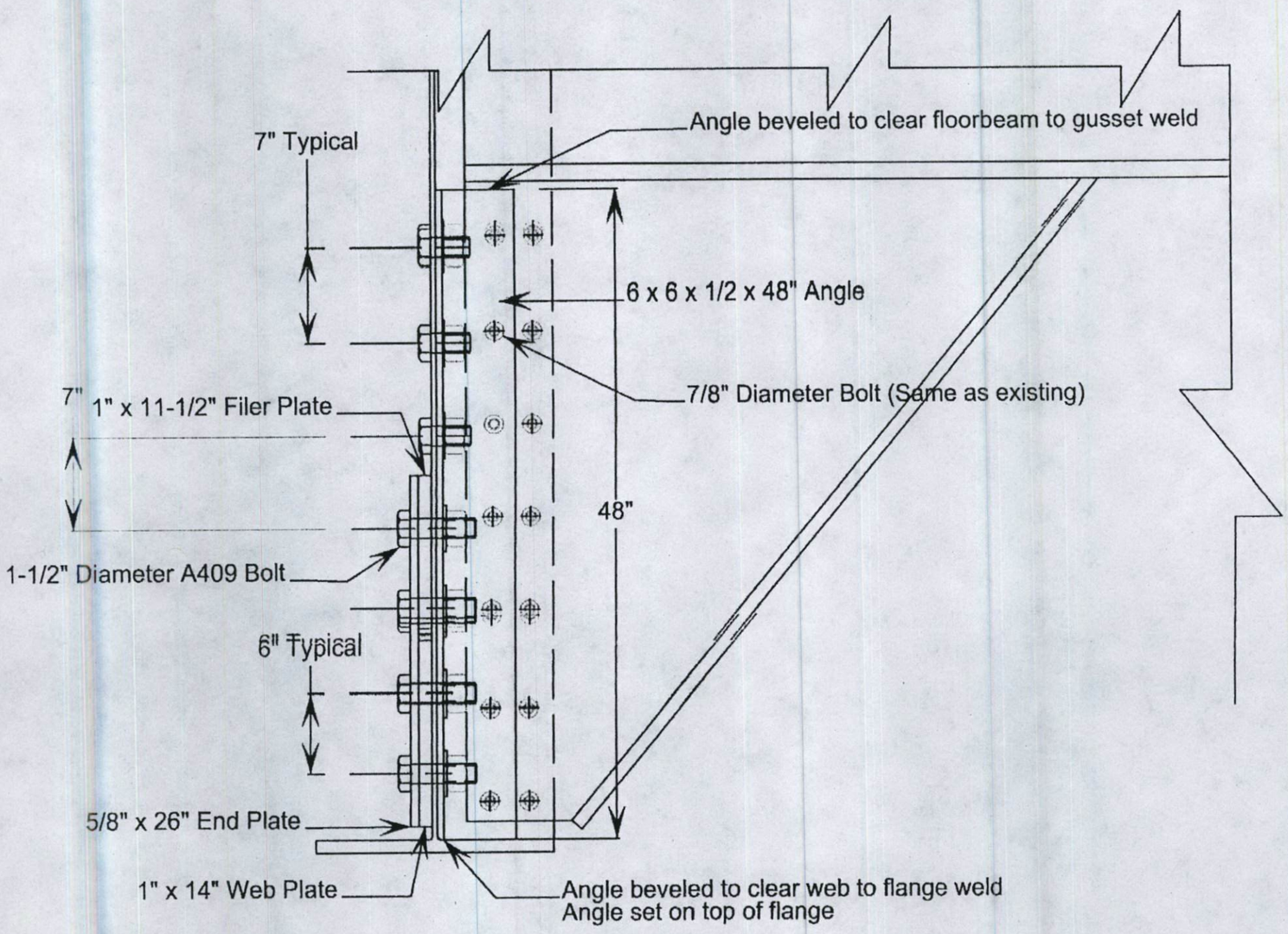

GIRDER E-2 1ST FLOORBEAM SOUTH OF PIER E-3 SN 082-0205

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	373
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT=		

SHEET NO. 32
46 SHEETS

*082-3HVB-2R-1)-2

SUPERSTRUCTURE REPAIR TABLE

Span	Floorbeam	Condition	Repair
E1	FB-6	Two bolts missing or damaged in bottom flange splice plate for Girder E1	Replace bolts
E1	FB-6	Four bolts missing or damaged in bottom flange splice plate for Girder E2	Replace bolts
E4	FB-20	Five bolts missing or damaged in bottom flange splice plate for Girder E1	Replace bolts
E4	FB-20	Four bolts missing or damaged in bottom flange splice plate for Girder E2	Replace bolts
E5	FB-22	Two bolts missing or damaged in bottom flange splice plate for Girder E1	Replace bolts
E5	FB-22	Five bolts missing or damaged in bottom flange splice plate for Girder E2	Replace bolts
E5	FB-25	Four bolts missing or damaged in bottom flange splice plate for Girder E1	Replace bolts
E5	FB-25	Eighteen bolts missing or damaged in bottom flange splice plate for Girder E2	Replace bolts
E6	FB-27	Two bolts missing or damaged in bottom flange splice plate for Girder E1	Replace bolts
E6	FB-27	Ten bolts missing or damaged in bottom flange splice plate for Girder E2	Replace bolts
E7	FB-34	Eight bolts missing or damaged in bottom flange splice plate for Girder E2	Replace bolts
E8	FB-39	Twelve bolts missing or damaged in bottom flange splice plate for Girder E2	Replace bolts
E9	FB-41	Eight bolts missing or damaged in bottom flange splice plate for Girder E2	Replace bolts

Notes:

1. Contractor shall identify all loose, broken, severely corroded or missing bolts not identified in the above table. Contractor shall replace these bolts as approved by the Engineer.
2. Girder E1 is on the left side of the structure looking ahead station.
3. Floorbeams are numbered sequentially, looking ahead station, beginning with FB-1 at Pier 017.

DESIGNED	S. Kaemmerer
CHECKED	R. Victor
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
SUPERSTRUCTURE REPAIR TABLE
(FAI-70) ST. CLAIR CO.

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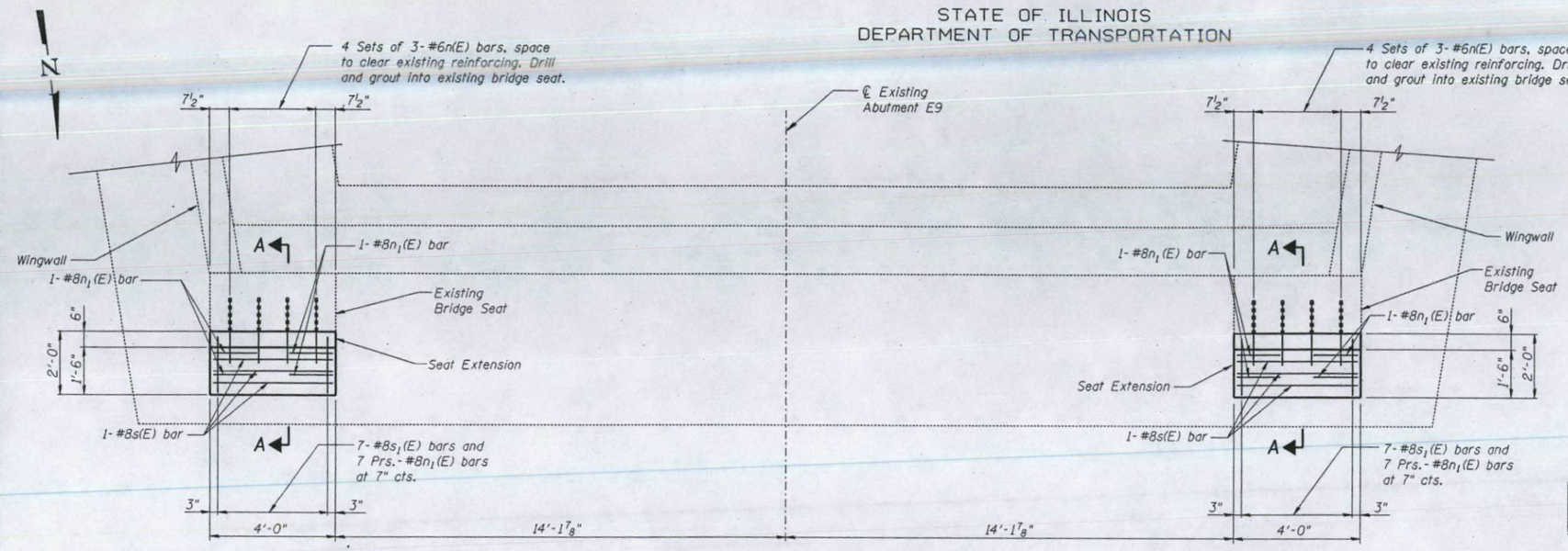
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388 374	SHEET NO. 33
FED. ROAD DIST. NO. 9		ILLINOIS	FED. AID PROJECT:	46 SHEETS

*(82-3HVB-2R-1)-2

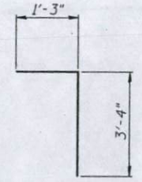


PLAN

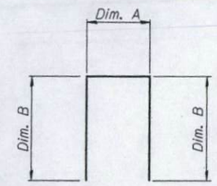
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
n(E)	24	#6	3'-3"	L
n_1(E)	36	#8	4'-7"	⅂
u(E)	12	#6	7'-3"	⊐
u_1(E)	12	#6	7'-9"	⊐
s(E)	6	#8	9'-8"	⊓
s_1(E)	14	#8	7'-2"	⊓
Reinforcement Bars, Epoxy Coated			Pound	1,260
Concrete Structures			Cu. Yd.	1.70

Reinforcement Bars designated (E) shall be Epoxy Coated.

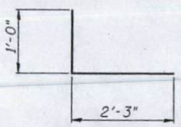


BAR - n_1(E)

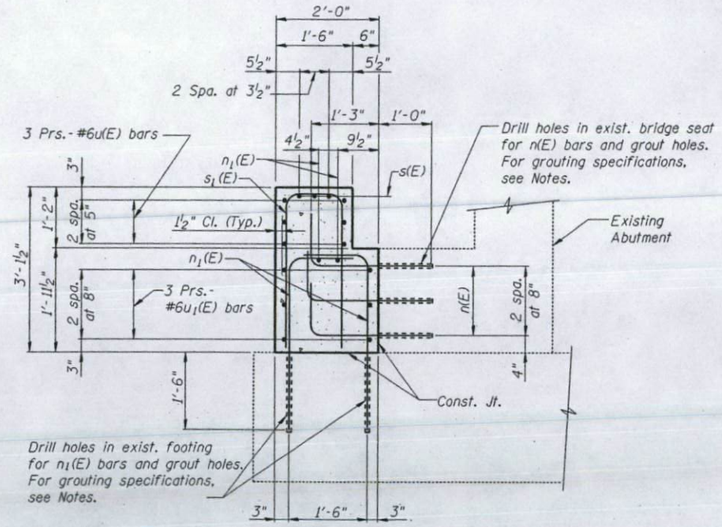


BARS - s(E), s_1(E), u(E) and u_1(E)

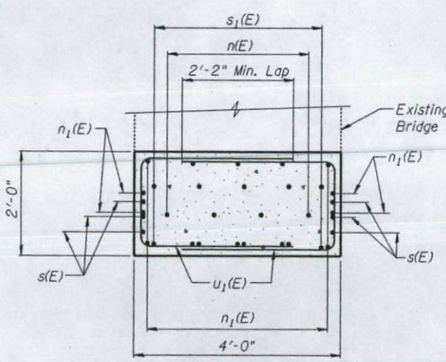
Bar	Dim. A	Dim. B
s(E)	3'-7½"	3'-0"
s_1(E)	1'-1½"	3'-0"
u(E)	1'-3"	3'-0"
u_1(E)	1'-9"	3'-0"



BAR - n(E)



SECTION A-A



SECTION THRU SEAT EXTENSION

NOTES

Drill and grout bars according to Article 584 of the Standard Specifications.

DESIGNED	A. Amidi
CHECKED	M. Capron
DRAWN	S. Kaemmerer
CHECKED	F. Camba

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
ABUTMENT SEAT EXTENSION
ABUTMENT E9
(FAI-70) ST. CLAIR CO.

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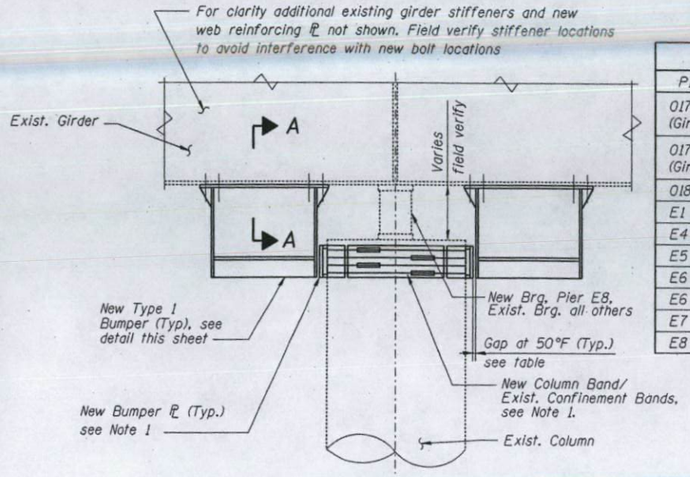
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	375
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		46 SHEETS

SHEET NO. 34

*(82-3HVB-2R-1)-2

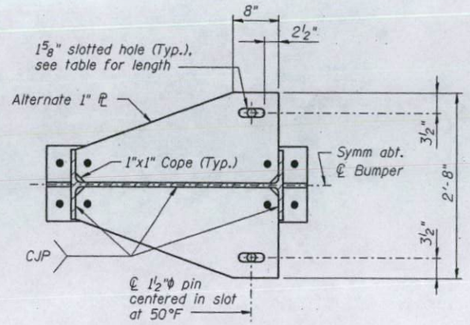


ELEVATION: TYPE 1 BUMPER/RESTRAINER ASSEMBLY

Piers 018, E1, E4, E5, E7 and E8

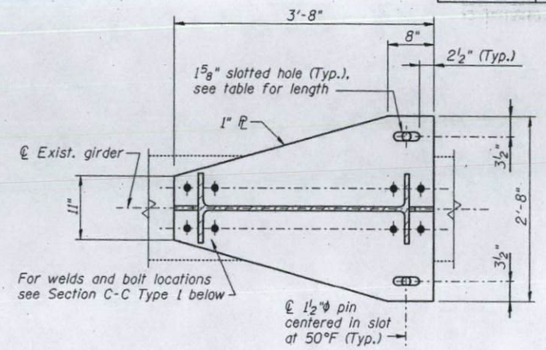
Note 1:
For new column band and bumper plate assembly details see sheets 38 thru 40.

GAP TABLE	
PIER	GAP (in)
017 Span N7 (Girder N2)	$\frac{7}{8}$"
017 Span 018 (Girder E2)	$\frac{3}{4}$"
018	$\frac{1}{4}$"
E1	$\frac{7}{8}$"
E4	$\frac{7}{8}$"
E5	$\frac{1}{4}$"
E6 Span E6	$\frac{3}{4}$"
E6 Span E7	$\frac{11}{16}$"
E7	$\frac{1}{4}$"
E8	5"



SECTION D-D

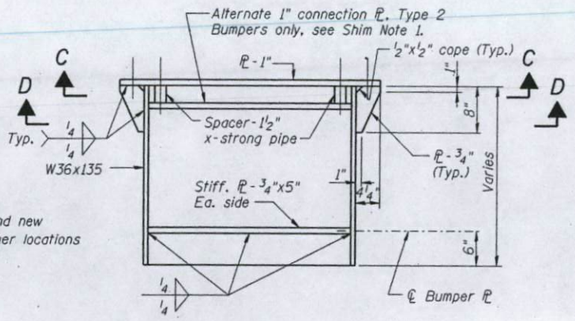
(When alternate connection ℄ is required)



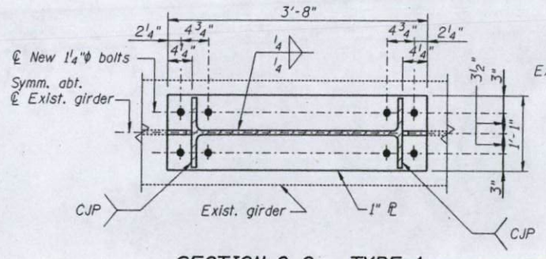
SECTION C-C - TYPE 2

Piers E2, E3, E6 and 017 (Girders E1, E2 and N2)

SLOT LENGTHS	
PIER/SPAN	LENGTH
017 Span N7 (Girder N2)	$2\frac{15}{16}$"
017 Span 018	$2\frac{13}{16}$"
E2 Span E2	$4\frac{1}{8}$"
E3 Span E4	4"
E6 Span E6	$2\frac{3}{4}$"
E6 Span E7	$2\frac{5}{8}$"

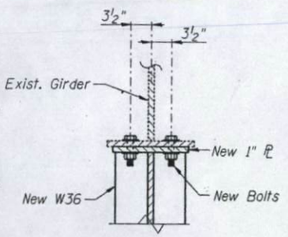


TYPE 1 OR TYPE 2 BUMPER

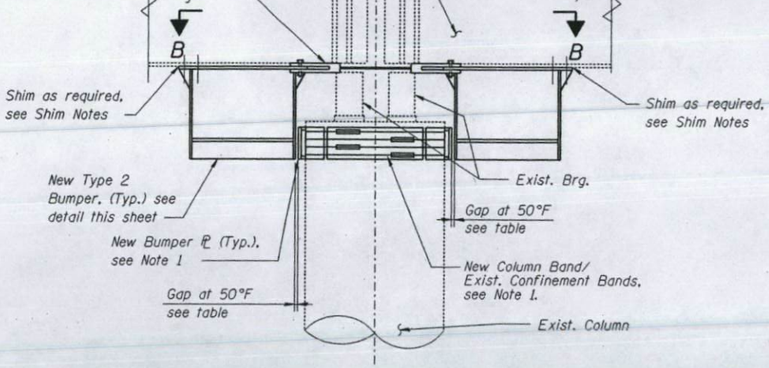


SECTION C-C - TYPE 1

Type 1: Piers 018, E1, E4, E5, E7, and E8
Type 2: With alternate connection ℄
Type 5: Pier 017 (Girders N1 and 02)

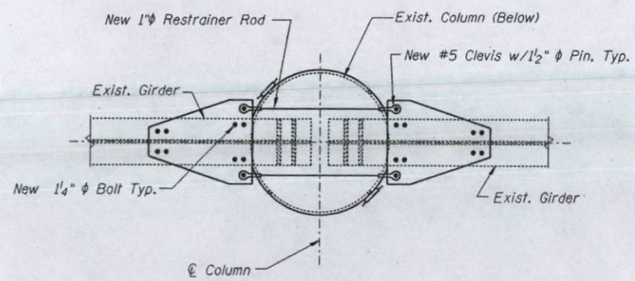


SECTION A-A



ELEVATION: TYPE 2 BUMPER/RESTRAINER ASSEMBLY

Pier E6 and 017 (Girders E2 and N2)



SECTION B-B

SHIM NOTES

1. Shim ($\frac{1}{2}$" max.) higher flange so that elevation difference between ends of rod is no more than $\frac{1}{2}$". Use alternate connection plate when shims are insufficient.
2. Shim Plate length shall match the smaller length of the plates being shimmed, and shim plate width shall match the smaller width of the plates being shimmed.
3. Field verify shim requirements.

BUMPER/RESTRAINER NOTES

1. All bolt holes shall be standard round holes ($\phi + \frac{1}{16}$) Unless Noted Otherwise.
2. All bumpers and restrainer rod connection plates shall be centered on the existing girder.
3. The total length of the unthreaded portion of each restrainer rod assembly shall not be less than 1'-8".
4. Restrainer rods shall extend 0" min. to $\frac{3}{4}$" max. into clevis openings Unless Noted Otherwise.
5. The cost of bumper/restrainer assemblies including shims shall be included in the Unit Price for "Furnishing and Erecting Structural Steel".

DESIGNED	A. Amidi
CHECKED	R. Victor
DRAWN	M. King
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
BUMPER/RESTRAINER DETAILS
(FAI-70) ST. CLAIR CO.

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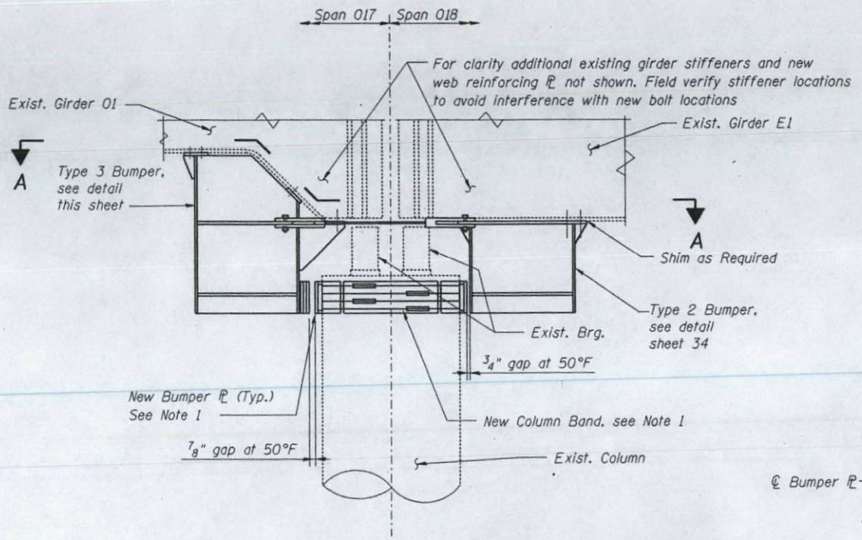
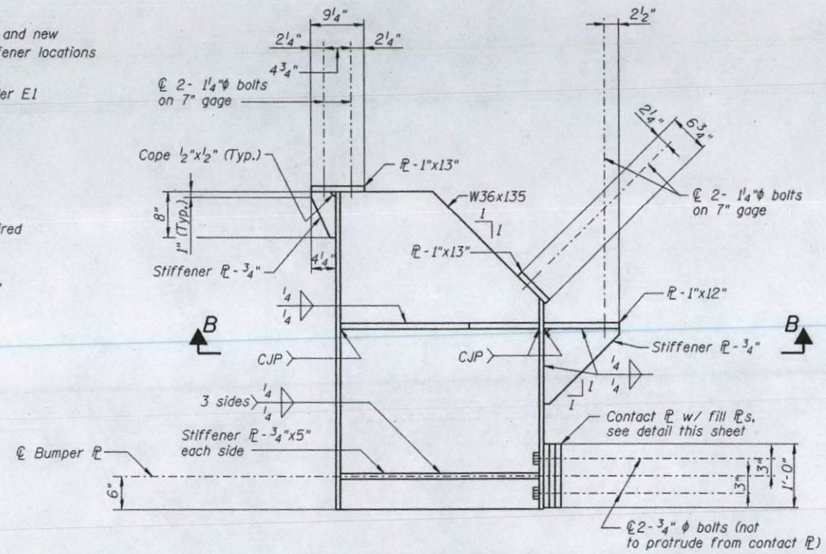
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 35
FAI-70	*	St. Clair	388	376	46 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

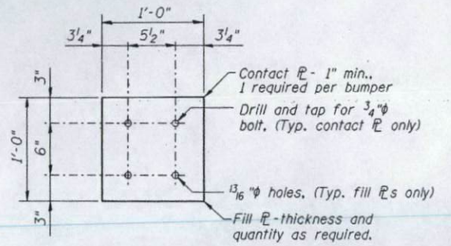
*(82-3HVB-2R-1)-2



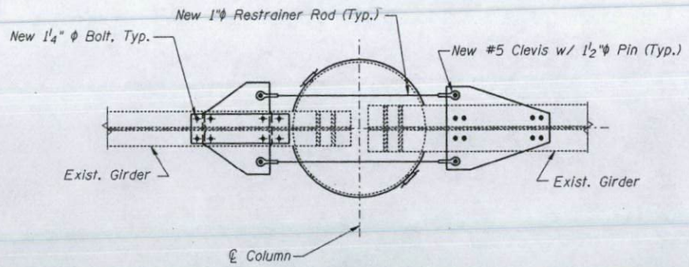
ELEVATION: TYPE 3 BUMPER/RESTRAINER ASSEMBLY
Pier 017 Girders E1 and 01



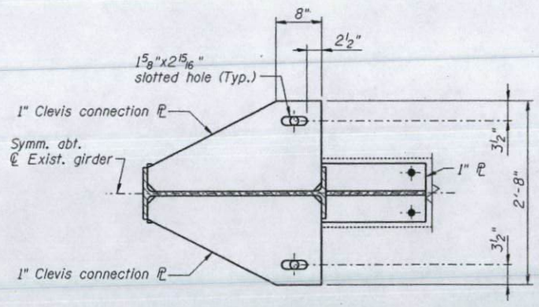
TYPE 3 BUMPER
Pier 017 girder E1



CONTACT AND FILL ℄ DETAIL



SECTION A-A



SECTION B-B

NOTES

1. For New Column Band and Bumper Plate Assembly details see sheets 38 thru 40.
2. For Bumper/Restrainer and Shim Notes see sheet 34.

DESIGNED	A. Amidi
CHECKED	R. Victor
DRAWN	M. King
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
BUMPER/RESTRAINER DETAILS
(FAI-70) ST. CLAIR CO.

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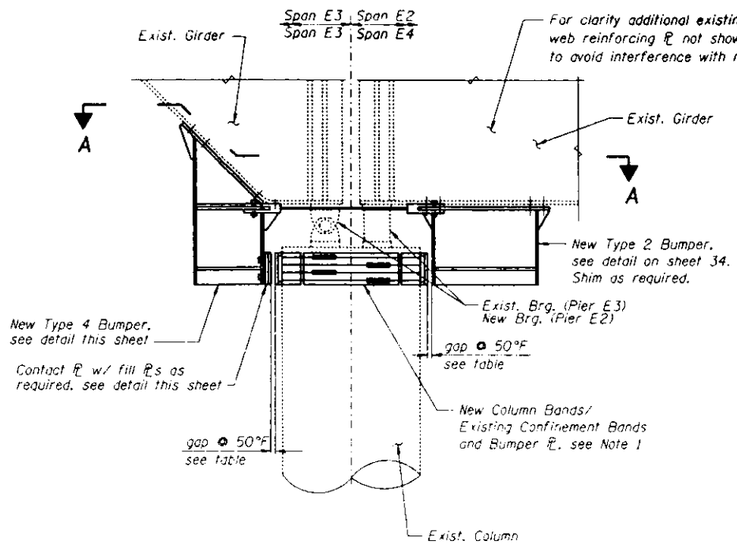
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

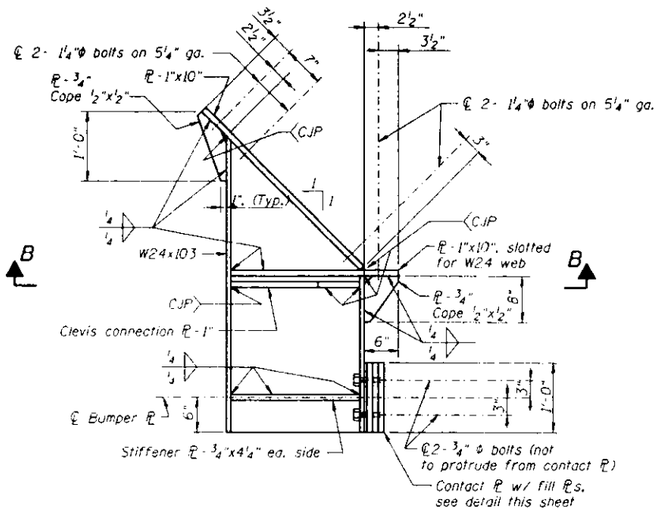
					SHEET NO. 36
FAI-70	*	St. Clair	388	377	46 SHEETS

*(82-3HVB-2R-1)-2

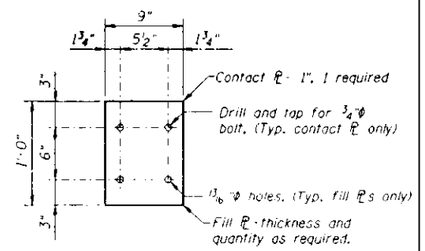


ELEVATION: TYPE 4 BUMPER/RESTRAINER ASSEMBLY
Piers E2 and E3

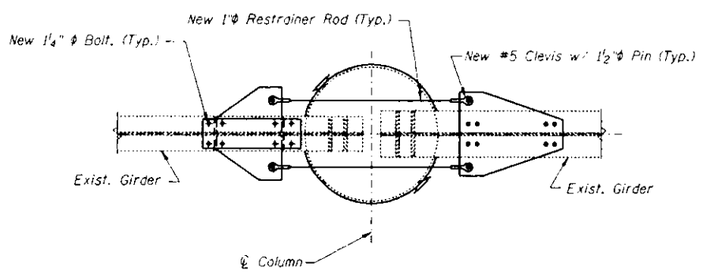
GAP TABLE	
PIER/SPAN	GAP (in)
E2 SPAN E2	5"
E2 SPAN E3	5"
E3 SPAN E3	1/4"
E3 SPAN E4	1 3/8"



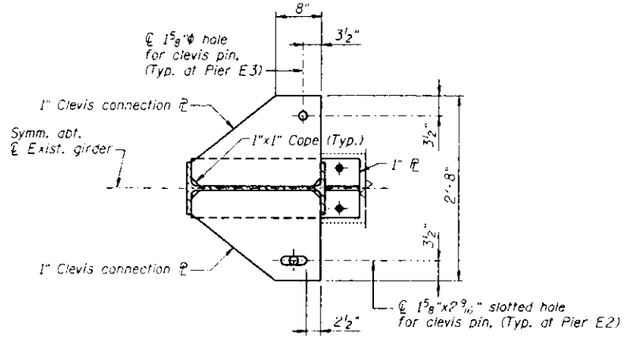
TYPE 4 BUMPER



CONTACT AND FILL ℄ DETAIL



SECTION A-A



SECTION B-B

NOTES

1. For new column band and bumper plate assembly details see sheets 38 thru 40.
2. For shim and bumper/restrainer notes see sheet 34.
3. For bearing replacement details see sheet 44.

DESIGNED	A. Amidi
CHECKED	R. Victor
DRAWN	M. King
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
BUMPER/RESTRAINER DETAILS
(FAI-70) ST. CLAIR CO.

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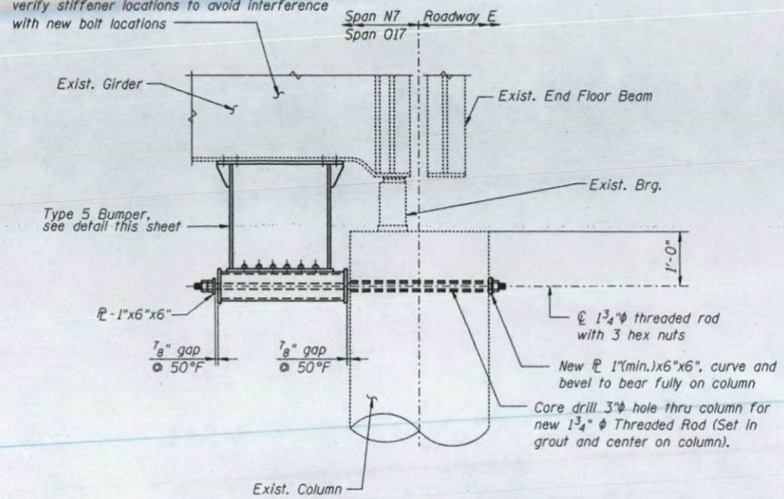
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	378
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		

SHEET NO. 37
46 SHEETS

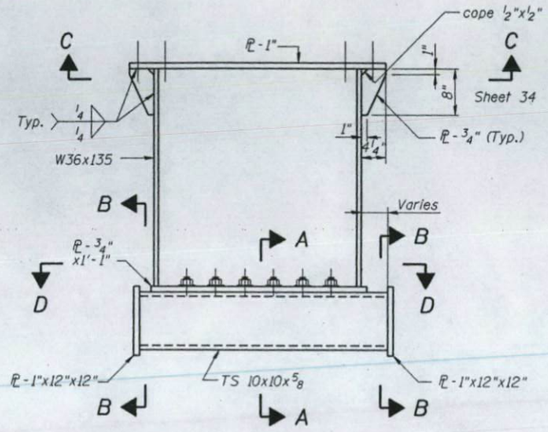
*(82-3HVB-2R-1)-2

For clarity additional existing girder stiffeners and new web reinforcing ℄ not shown. Field verify stiffener locations to avoid interference with new bolt locations



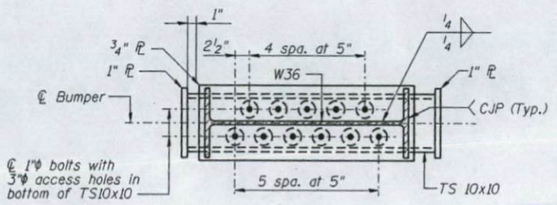
ELEVATION: TYPE 5 BUMPER/RESTRAINER ASSEMBLY

Pier 017 Girders N1 and 02

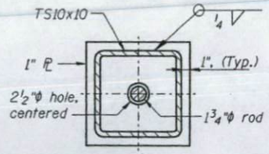


TYPE 5 BUMPER

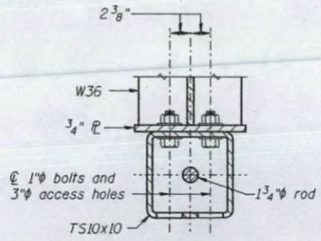
Pier 017 Girders N1 and 02



SECTION D-D



SECTION B-B



SECTION A-A

NOTES

1. For Bumper/Restrainer Notes see sheet 34.

DESIGNED	A. Amidi
CHECKED	R. Victor
DRAWN	M. King
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
BUMPER/RESTRAINER DETAILS
(FAI-70) ST. CLAIR CO.

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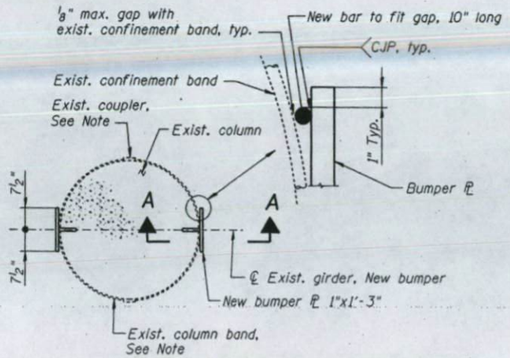
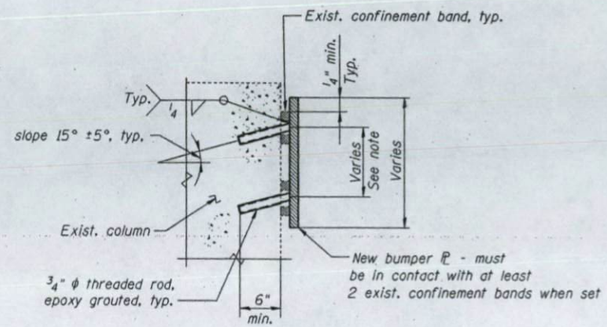
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
FAI-70	*	St. Clair	388	379	SHEET NO. 38
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:			46 SHEETS

*(82-3HVB-2R-1)-2

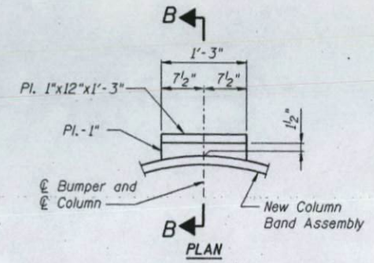


TYPE I BUMPER PLATE DETAIL

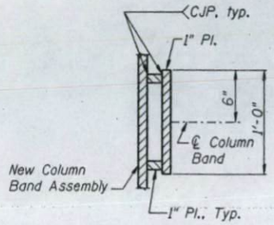


Note: Locate dowels between existing confinement bands as shown.

SECTION A-A



TYPE II BUMPER PLATE DETAIL



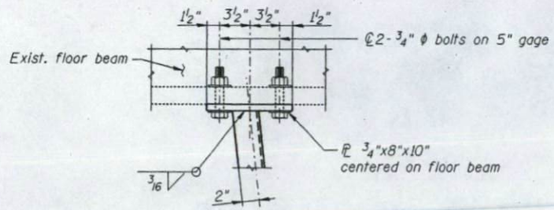
SECTION B-B

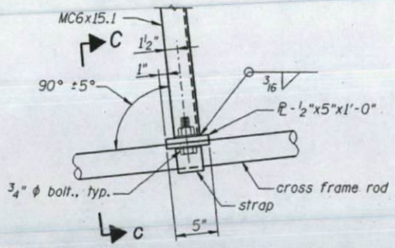
NOTE: If necessary, existing bands may be loosened and repositioned to eliminate interference between existing coupler and new bumper plate.

Loosened bands shall be reinstalled from bottom up. The repositioned bands shall be evenly spaced as possible and all shall be located within a spacing of 10" vertically. The top of the top band shall not be closer than 3¼" nor farther than 4" from the top of column.

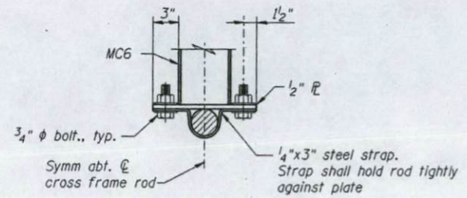
The coupler bolts shall be tightened in 55 Ft.-Lbs increments in a clockwise direction to a final torque of 220 Ft.-Lbs.

All nut threads shall be full engaged upon final tightening. Peen confinement band threads to prevent loosening.





CROSS FRAME ROD SUPPORT DETAIL



SECTION C-C

NOTES

1. The cost of bumper plates shall be included in the Unit Price for "Furnishing and Erecting Structural Steel".

2. The cost of the Cross Frame Rod Support shall be included in the Unit Price for "Furninshing and Erecting Structural Steel".

DESIGNED	A. Amidi
CHECKED	R. Victor
DRAWN	J. Corley
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
MISCELLANEOUS SEISMIC
RETROFIT DETAILS
(FAI-70) ST. CLAIR CO.

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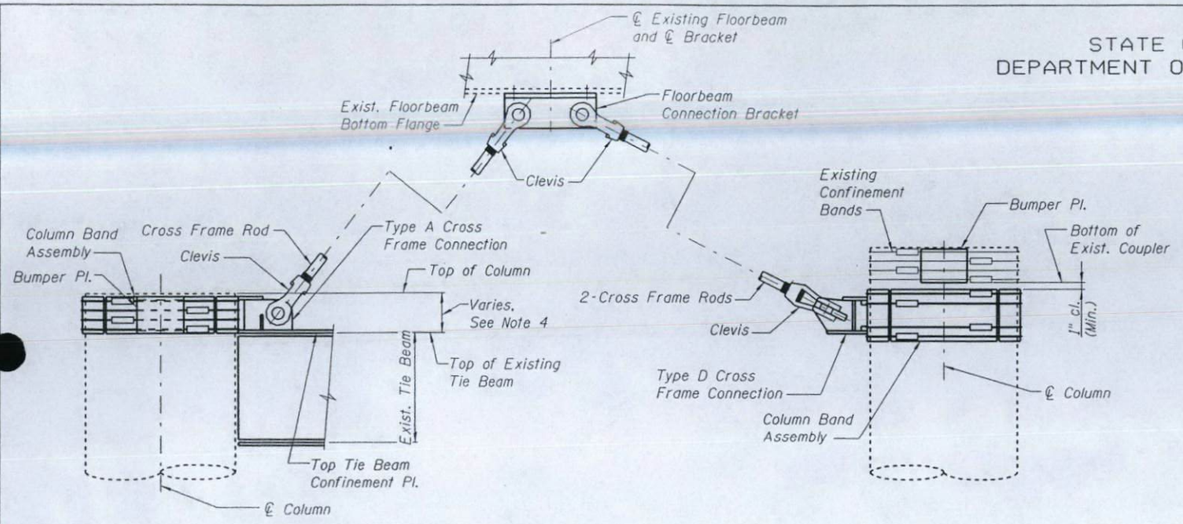
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	380
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

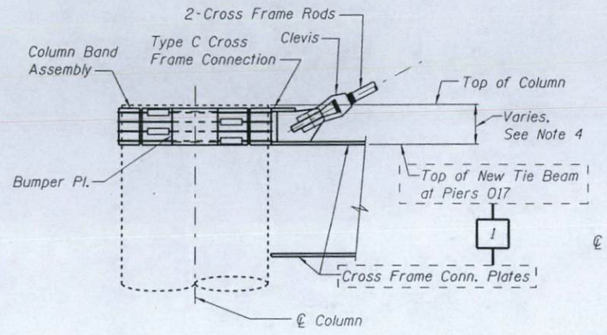
SHEET NO. 39
46 SHEETS

*(82-3HVB-2R-1)-2

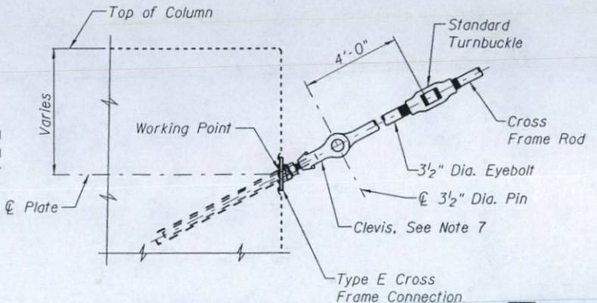


AT PIERS 018, E1, E4, E5, E7, E8

AT PIERS E2, E3



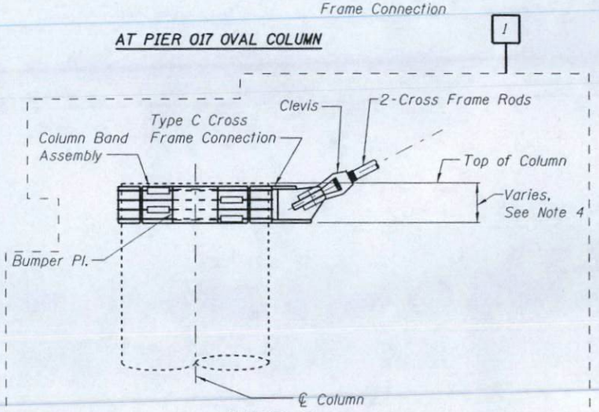
AT PIER 017



AT PIER 017 OVAL COLUMN

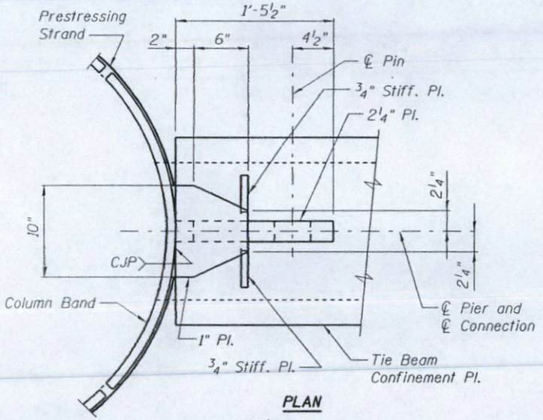
ELEVATION - NEW CROSS FRAME CONNECTIONS

Note: Threaded rods for Tie Beam Confinement Plates not shown for clarity.

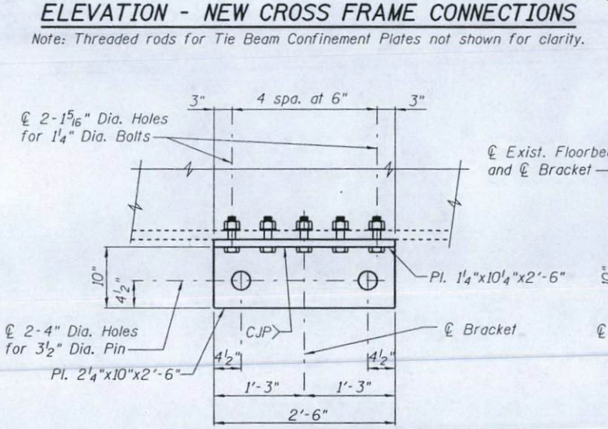


AT PIER E6

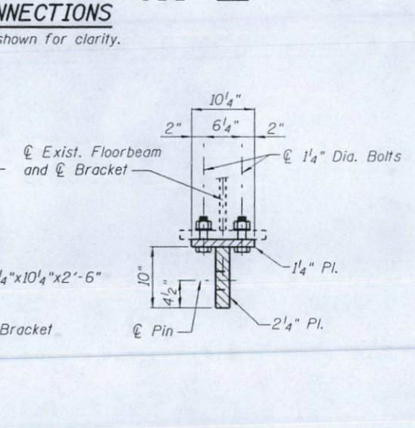
ELEVATION - NEW CROSS FRAME CONNECTIONS



PLAN



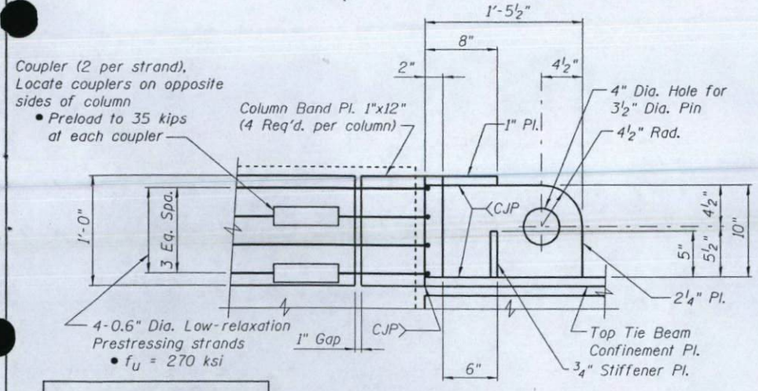
ELEVATION



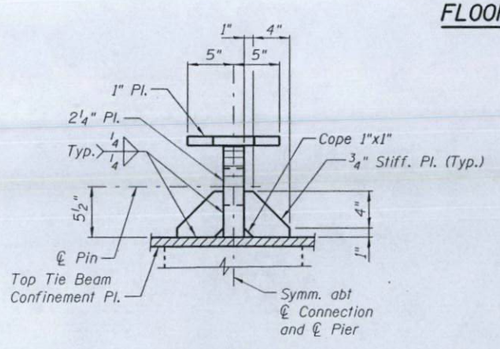
SECTION

FLOORBEAM CONNECTION BRACKET

Note: Clevis' not shown for clarity.



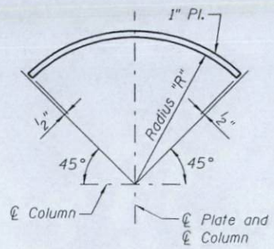
ELEVATION



END VIEW

TYPE A CONNECTION DETAIL

VARIABLES	
PIER	"R"
017	2'-0"
018	2'-3"
E1	2'-0"
E2	2'-0"
E3	2'-0"
E4	2'-0"
E5	2'-0"
E6	2'-0"
E7	2'-0"
E8	2'-0"



COLUMN BAND PLATE DETAIL

NOTES

1. Cross Frame Rods shall be 3" Dia. solid steel with 3½" Dia. Upset Ends.
2. Clevis shall be a #8 Clevis with an opening for a 3½" Dia. Pin. Pins shall be Cotter Pins.
3. Floorbeam Connection brackets shall be located at the centerline of the Existing Floorbeam between Existing Girders, Unless Otherwise Noted on Pier Elevations.
4. Existing Confinement Bands shall be removed as necessary to allow installation of the New Column Band and to give a minimum clearance of 1" from the bottom of the lowest Existing Coupler to the top of the Column Band Plate.
5. Cross Frame Rods shall extend 0" Min. to 1" Max. into Clevis Openings.
6. Column Band Assembly consists of 4 Column Band Plates and 4 Low-relaxation strands with couplers.
7. Clevis for Type E Connection shall be machined to accept threads from 2" Dia. Anchor Bolt.
8. The cost of Cross Frame Rods, Column Band Assemblies, Clevises, and Connection Brackets shall be included in the Unit Price for "Furnishing And Erecting Structural Steel".

DESIGNED	A. Amidi
CHECKED	R. Victor
DRAWN	S. Koemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
CROSS FRAME MODIFICATIONS
(FAI-70) ST. CLAIR CO.

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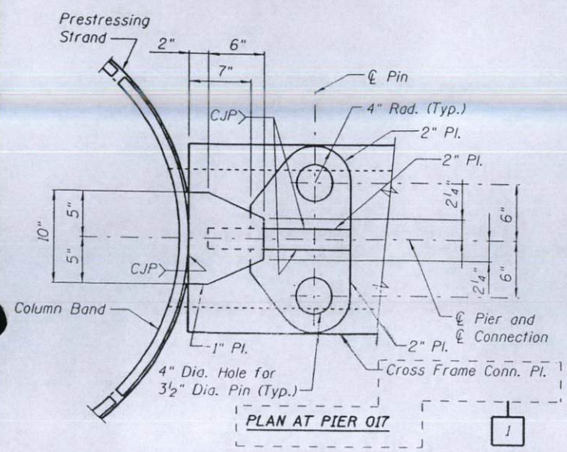
1 REVISED 09-15-05, MRC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

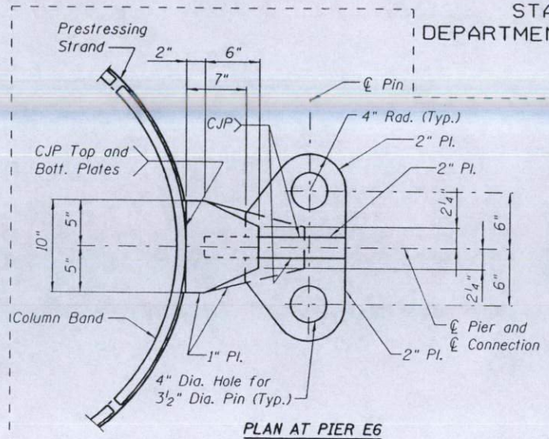
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	381
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 40
46 SHEETS

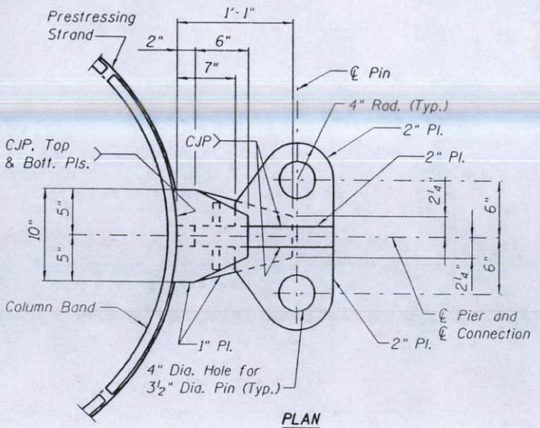
*(82-3HVB-2R-1)-2



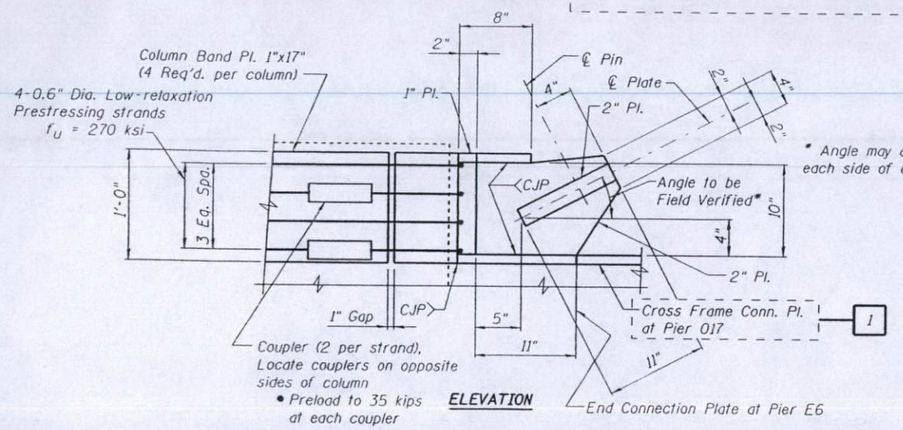
PLAN AT PIER 017



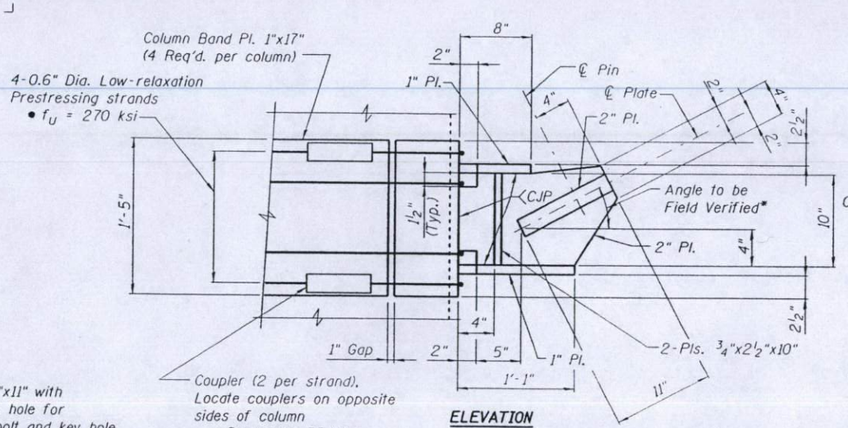
PLAN AT PIER E6



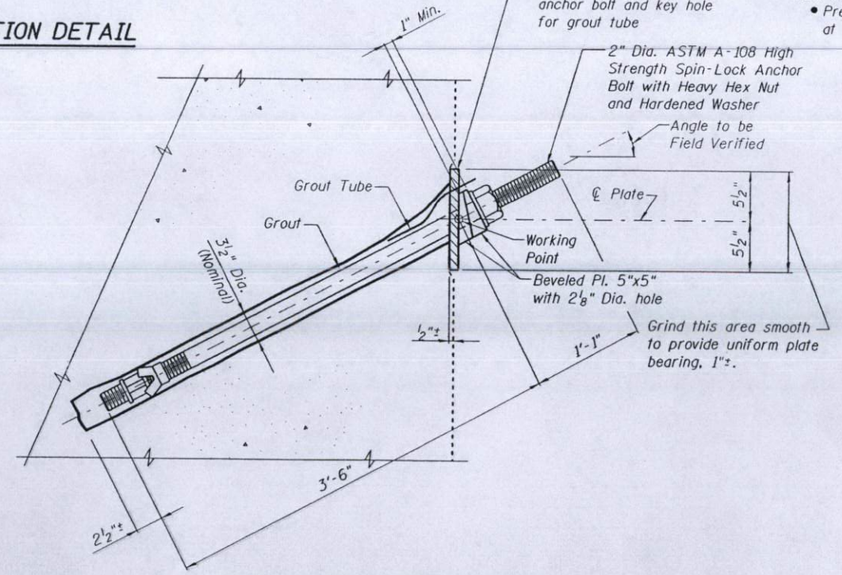
PLAN



TYPE C CONNECTION DETAIL



TYPE D CONNECTION DETAIL



TYPE E CONNECTION DETAIL

NOTES

1. Grout shall be a 2-component, 100% solids, moisture insensitive, high-modulus, high-strength, structural epoxy conforming to the current ASTM C-881 and AASHTO M-235 specifications. Minimum bond strength for hardened concrete to steel shall be 2,600 psi.
2. For Additional Notes see Sheet 39.

DESIGNED	A. Amidi
CHECKED	R. Victor
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO.

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
CROSS FRAME MODIFICATIONS
(FAI-70) ST. CLAIR CO.

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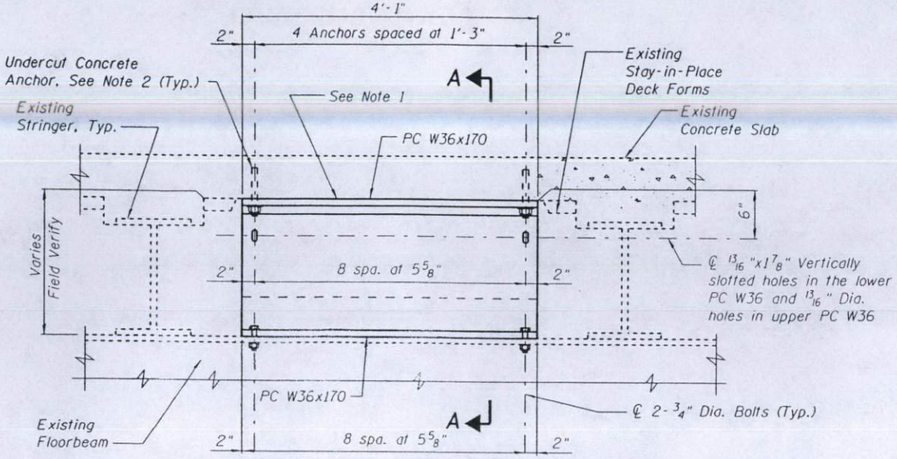
1 REVISED 09-15-05, MRC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

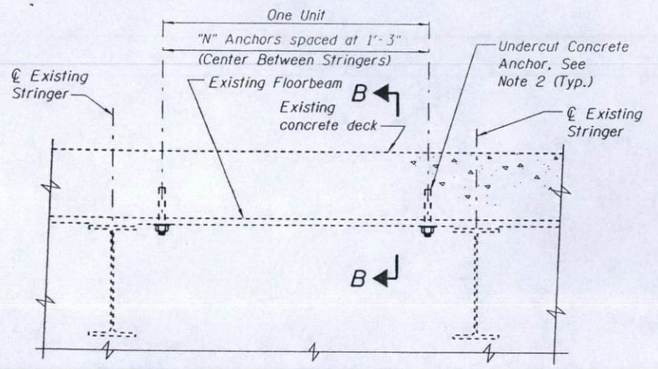
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	382
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 41
46 SHEETS

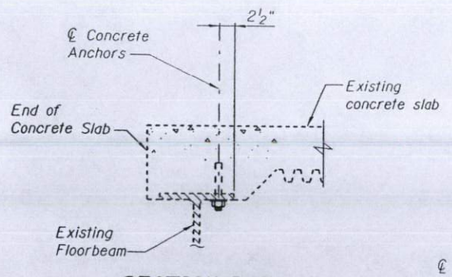
*(82-3HVB-2R-1)-2



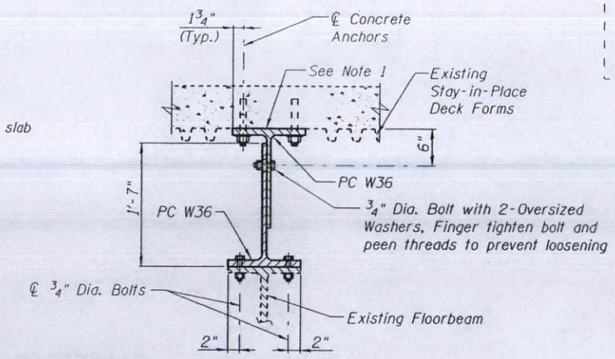
SLAB TO FLOORBEAM CONNECTION DETAIL - TYPE 2



SLAB TO FLOORBEAM CONNECTION DETAIL - TYPES 3 & 4



SECTION B-B

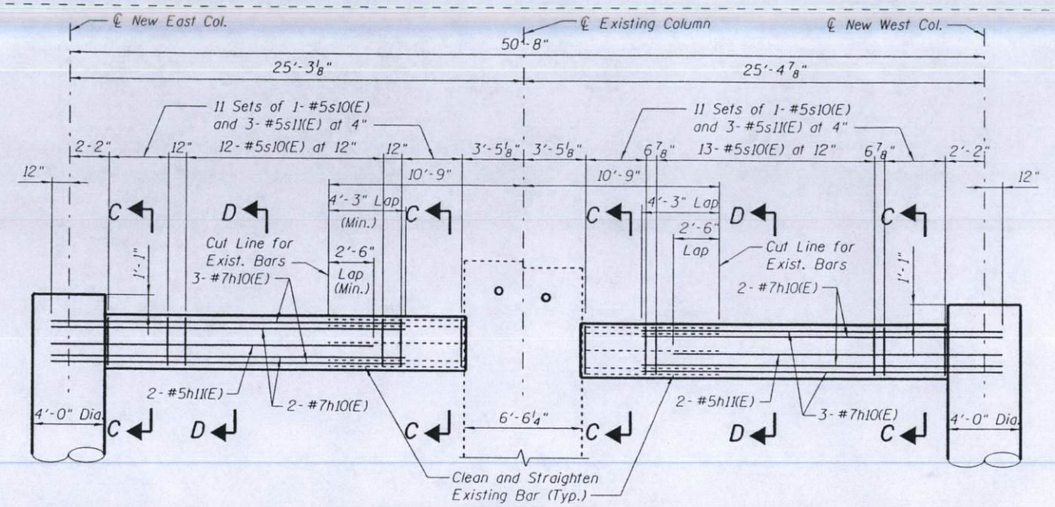


SECTION A-A

TABLE OF VARIABLES				
TYPE NO.	DIM. A	"N"	"M"	DIM. B
3	----	6	----	----
4	----	4	----	----

DESIGNED	M. Capron
CHECKED	M. Supak
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO



ELEVATION - PIER 017

(Looking Ahead Station)

SECTION C-C

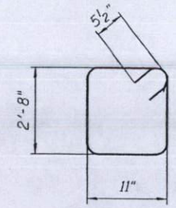
SECTION D-D

Note: The 90° hooks for two successive S11(E) bars engaging the same longitudinal bars shall be alternated end for end.

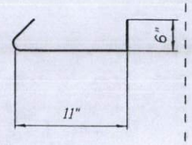
SUBSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h10(E)	20	#7	19'-11"	
h11(E)	4	#5	18'-2"	
s10(E)	69	#5	8'-1"	
s11(E)	132	#5	1'-11"	
Reinforcement			Pound	1,735
Concrete			Cu. Yd.	5.6

Reinforcement Bars designated (E) shall be Epoxy Coated.



BAR s10(E)



BAR s11(E)

NOTES

1. Remove existing stay-in-place deck form and grind concrete smooth to provide uniform bearing.
2. Undercut Concrete Anchors shall have a bolt diameter of 0.827". Bolt Yield Stress of 93 ksi and Bolt Ultimate Stress of 116 ksi. Sleeve is to have a Cross Sectional Area of 0.346 sq. in. and an Ultimate Strength of 123 ksi and extend thru the connected steel item. Embedment is to be 5" into existing concrete slab. See Special Provisions for Expansion Bolts (Special).
3. The cost of the Slab to Floorbeam connection shall be included in the Unit Price for "Furnishing And Erecting Structural Steel".
4. The cost of Undercut Concrete Anchors shall be included in the Unit Price for Expansion Bolts (Special).
1 5. The cost of reinforcement bars, concrete and all other labor, equipment and materials necessary to construct the new tie beam shall be included in the Unit Price for Replace Tie Beam (Special).

REHABILITATION FOR FAI 55/70 COMPLEX ROADWAY E - STRUCTURE NO. 082-0205 PIER SEISMIC RETROFIT DETAILS

(FAI-70) ST. CLAIR CO.

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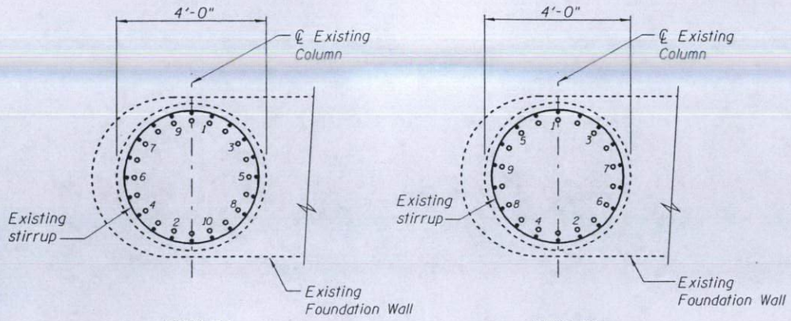
1 REVISED 09-15-05, MRC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	383
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 42
46 SHEETS
*(82-3HVB-2R-1)-2



PIER E3

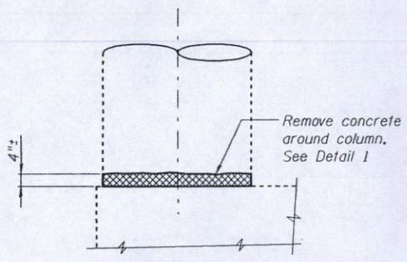
Note: Numbers indicate locations of foundation wall dowel bars to be cut (10 Total), See Detail 1.

PIER E6

Note: Numbers indicate locations of foundation wall dowel bars to be cut (9 Total), See Detail 1.

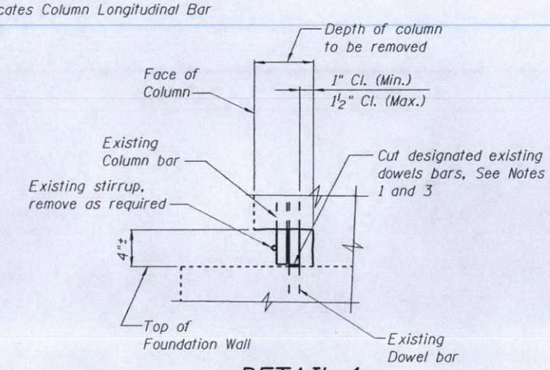
SECTIONS THRU COLUMNS

- ○ Indicates Foundation Wall Dowel Bar
- • Indicates Column Longitudinal Bar

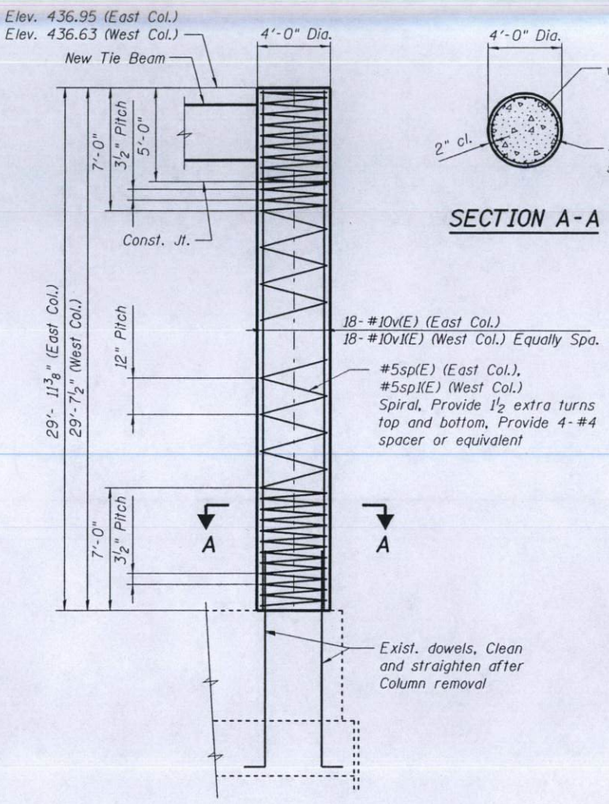


PIERS E3 AND E6

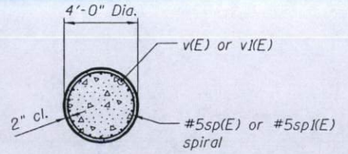
ELEVATION - DEMOLITION



DETAIL 1



ELEVATION - PIER 017 COLUMN

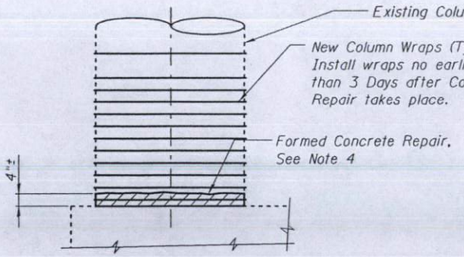


SECTION A-A

SUBSTRUCTURE BILL OF MATERIAL

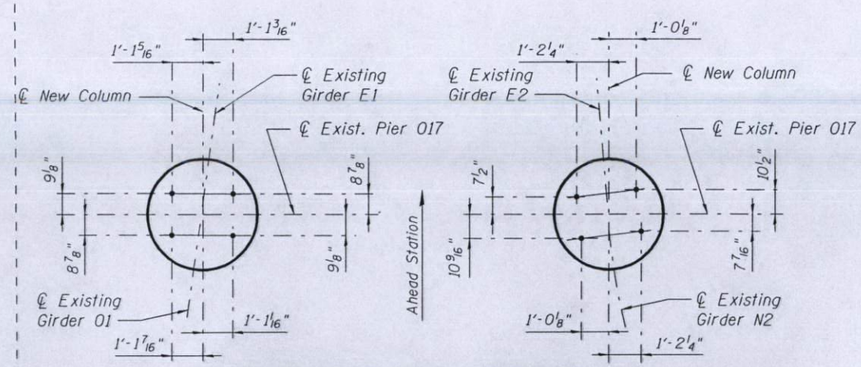
Bar	No.	Size	Length	Shape
v(E)	18	#10	29'-9"	
v1(E)	18	#10	29'-5"	
sp(E)		#5	29'-9"	
sp1(E)		#5	29'-5"	
Reinforcement			Pound	6,295
Concrete			Cu. Yd.	27.7

Reinforcement Bars designated (E) shall be Epoxy Coated.



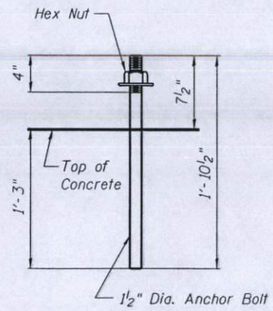
PIERS E3 AND E6

ELEVATION - FINAL CONDITION



ANCHOR BOLT PLAN - PIER 017

Note: Anchor bolts shall be drilled and grouted into new concrete.



ANCHOR BOLT DETAIL

[1]

NOTES

1. The contractor shall positively discern between column longitudinal reinforcing bars and foundation wall dowel bars prior to cutting any bars.
2. Cut number of foundation wall dowel bars indicated. To determine which bars to cut, see "SECTION THRU COLUMN", and cut bars sequentially starting with the number one. Dowel bars shall be cut within 2" of the top of the foundation wall.
3. Concrete repair shall be in accordance with the Special Provisions. Before repairing column, contractor shall replace all removed #4 stirrups with new #4 stirrups. All unsound concrete caused by modification shall be removed prior to concrete repair.
4. Only one column per pier may be modified at a time. Work on a successive column shall not start until the previous column base modification is complete and its wrapping is in place.
5. The cost of Concrete Removal and cutting existing dowel bars shall be paid at the Unit Price for "Foundation Wall Dowel Modification".
6. For New Column Wrap Details, see Sheet 43.
7. For New Tie Beam Details, see Sheet 41.
8. The cost of reinforcement bars, concrete and all other labor, equipment and materials necessay to construct the new columns shall be included in the Unit Price for Remove and Replace Column (Special).

[1]

[1] REHABILITATION FOR FAI 55/70 COMPLEX ROADWAY E - STRUCTURE NO. 082-0205

PIER COLUMN BASE MODIFICATIONS PIERS E3 AND E6 AND COLUMN REPLACEMENT PIER 017

(FAI-70) ST. CLAIR CO.

DESIGNED	R. Victor
CHECKED	A. Amidi
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

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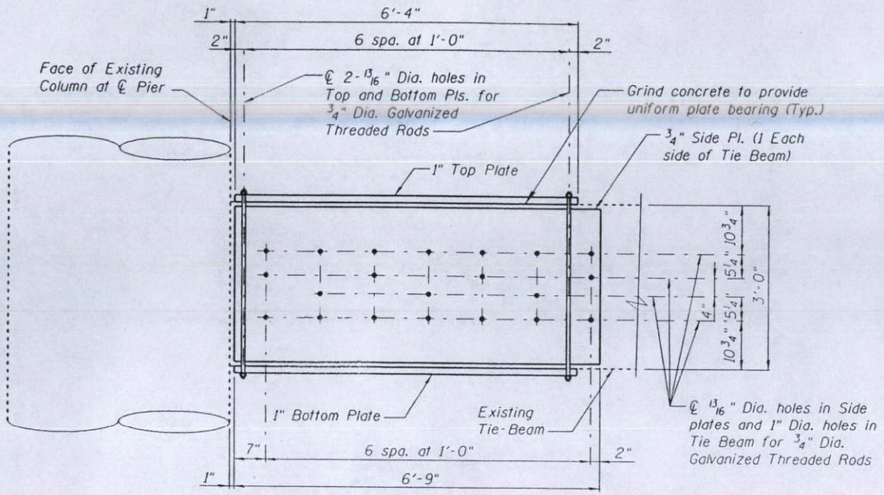
[1] REVISED 09-15-05, MRC

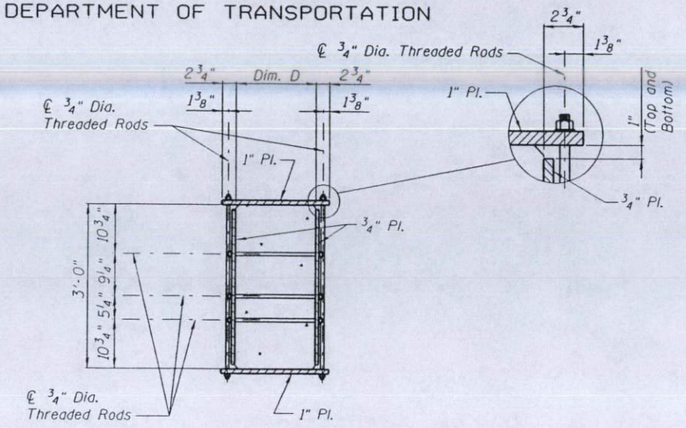
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	384
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

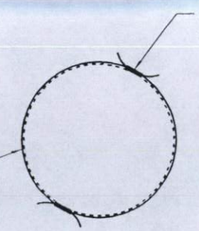
SHEET NO. 43
46 SHEETS
*(82-3HVB-2R-1)-2



ELEVATION



SECTION



Locate couplers on opposite sides of column.
- Preload to 35 kips at each coupler.
- Coupler shall be galvanized and protected by a watertight coat after tensioning.

PLAN

TIE BEAM CONFINEMENT PLATES

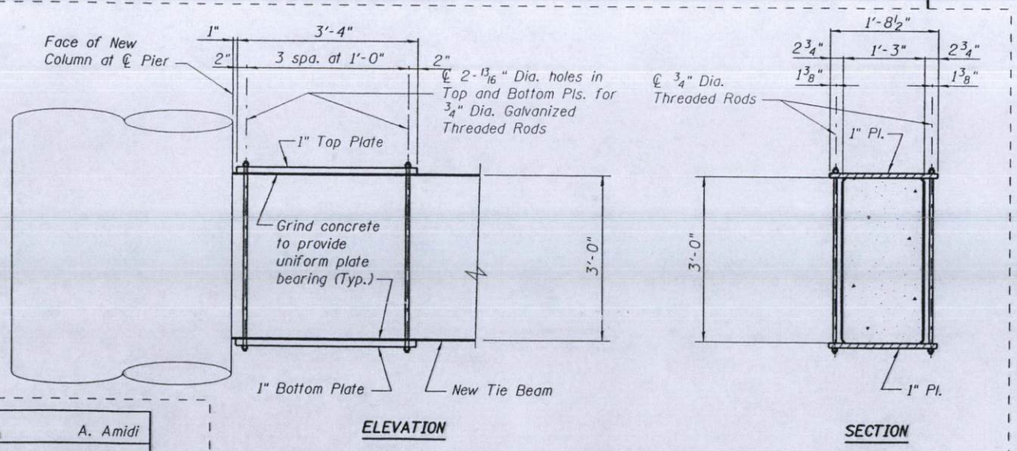
Note: Wrap each end of Tie Beam as shown. Tension Threaded Rods to 12 kips each and peen threads to prevent loosening. Grout Tension Rod holes.

TABLE OF VARIABLES

PIER	NO. COLS.	DIM. A	"B"	Dim. C	Dim. D	TOP/BOTTOM PLATES	SIDE PLATES	COMMENTS
017	-	---	-	-	---	----		See Note A
018	2	4'-6"	8	8"	2'-0"	Pl. 1"x29 1/2"x6'-4"	Pl. 3/4"x34"x6'-9"	
E1	2	4'-0"	8	8"	1'-9"	Pl. 1"x26 1/2"x6'-4"	Pl. 3/4"x34"x6'-9"	
E2	2	4'-0"	5	8"	----	----	----	No Tie Beam
E3	2	4'-0"	5	8"	----	----	----	No Tie Beam
E4	2	4'-0"	5	8"	1'-6"	Pl. 1"x23 1/2"x6'-4"	Pl. 3/4"x34"x6'-9"	
E5	2	4'-0"	5	8"	1'-6"	Pl. 1"x23 1/2"x6'-4"	Pl. 3/4"x34"x6'-9"	
E6	2	4'-0"	5	8"	----	----	----	Tie Beam Removed
E7	2	4'-0"	5	8"	1'-3"	Pl. 1"x20 1/2"x6'-4"	Pl. 3/4"x34"x6'-9"	
E8	2	4'-0"	5	8"	1'-3"	Pl. 1"x20 1/2"x6'-4"	Pl. 3/4"x34"x6'-9"	

1 Note A: Circular Column and Tie Beam replaced. Column wraps not required on New Column.

1



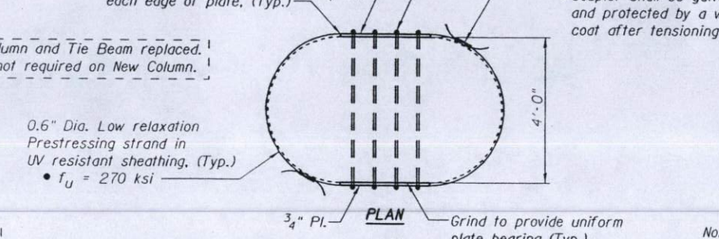
ELEVATION SECTION

CROSS FRAME CONNECTION PLATES AT PIER 017

Note: Peen threads to prevent loosening.

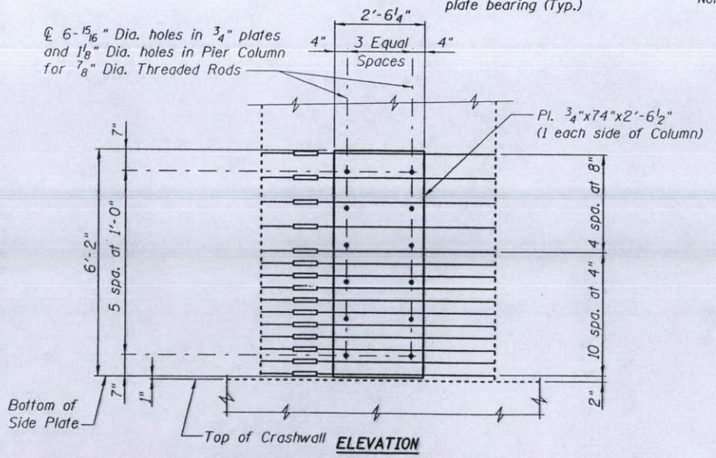
DESIGNED	A. Amidi
CHECKED	M. Capron
DRAWN	S. Kaemmerer
CHECKED	R. Victor

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO



PLAN

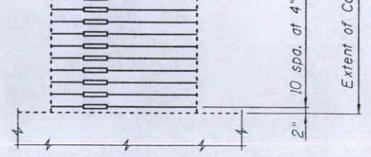
Locate couplers on opposite sides of column.
- Preload to 35 kips at each coupler.
- Coupler shall be galvanized and protected by a watertight coat after tensioning.



ELEVATION

PIER 017 OVAL COLUMN WRAP

Note: Alternate column wraps may be used. See Special Provisions.



ELEVATION

CIRCULAR COLUMN WRAP

Note: Alternate column wraps may be used. See Special Provisions.

NOTES

1. The cost of Tie Beam Confinement Plates and Threaded Rods shall be included in the Unit Price for "Furnishing And Erecting Structural Steel".
2. The cost of Side Plates and Threaded Rods for Pier 017 shall be included in the Unit Price for "Column Wrap".

REHABILITATION FOR FAI 55/70 COMPLEX ROADWAY E - STRUCTURE NO. 082-0205 PIER SEISMIC MODIFICATIONS

(FAI-70) ST. CLAIR CO.

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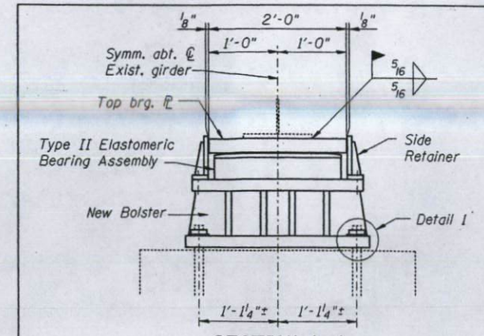
1 REVISED 09-15-05, MRC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

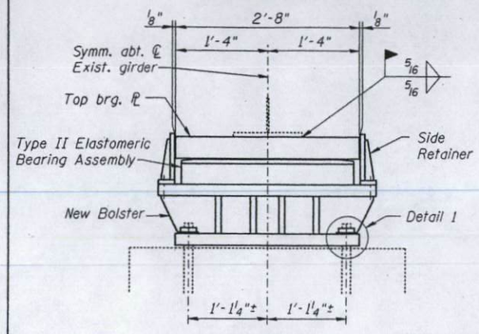
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	385

SHEET NO. 44
46 SHEETS

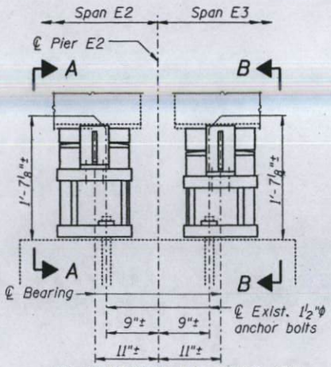
FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT: *(82-3HVB-2R-1)-2



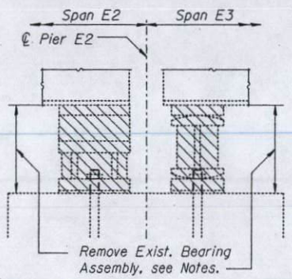
SECTION A-A



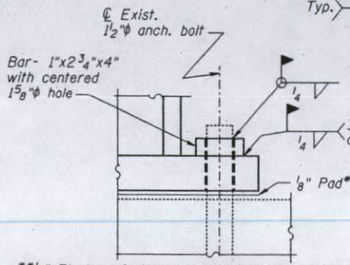
SECTION B-B



ELEVATION AT PIER E2

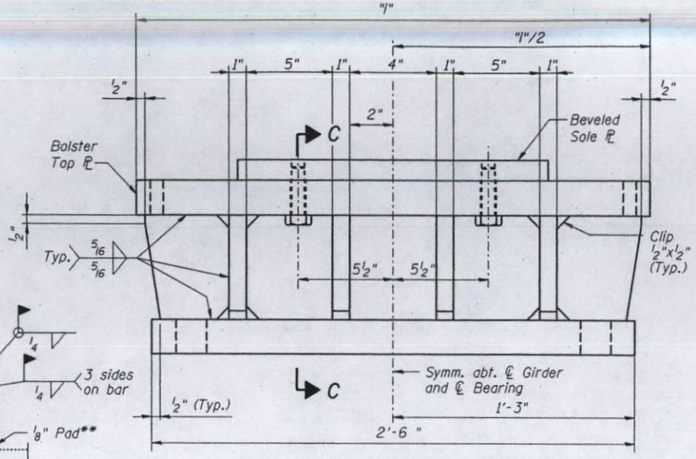


BEARING REMOVAL AT PIER E2

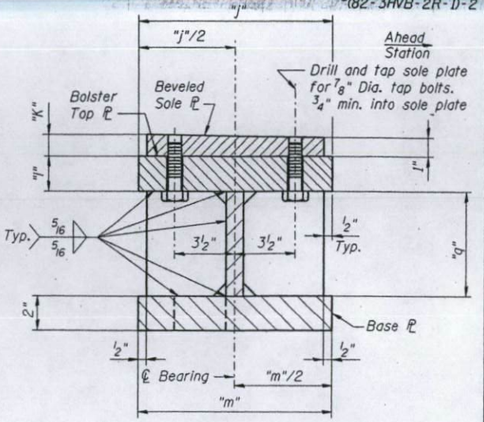


**1/8" Elastomeric Neoprene leveling pad according to Article 1052.02 of the Standard Spcifications. Cost of mat included with bearing.

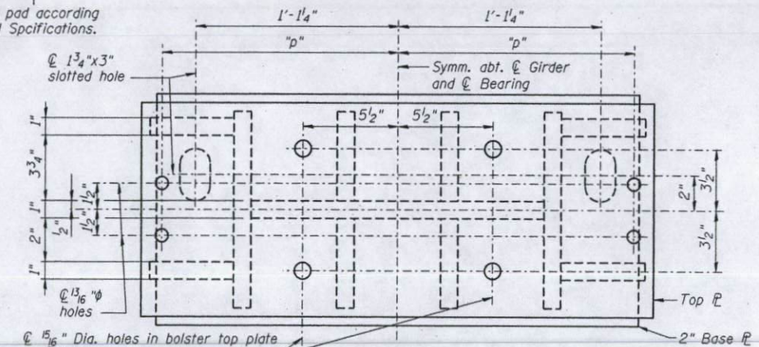
DETAIL 1



BOLSTER ELEVATION



SECTION C-C



BOLSTER PLAN

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	4

NOTES

Minimum Jack Capacity:

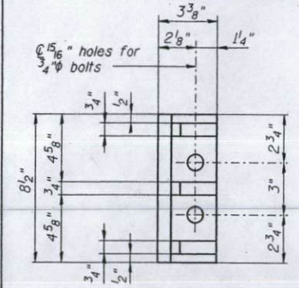
1. The capacity of the jacks used to lift the bridge shall be at least 50% to 100% greater than the theoretical jacking loads shown in the table.

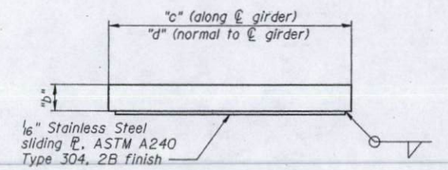
Bearing Demolition:

1. After jacking the structure off the bearing assembly, remove existing anchor bolt nuts and/or any welded plate washers that secure the existing bearing assembly to the anchor bolt. Existing anchor bolts are to remain intact to a minimum projection of 4" above top of concrete. Contractor shall verify soundness of existing anchor bolts prior to installation of new bearing assembly. Regrout in place if necessary.
2. All portions of existing bearing assemblies, including bolsters, sole plates and shims, shall be removed.

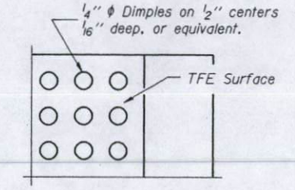
Bearing Installation:

1. Bearings to be replaced are for both girders at locations shown.
2. If the portion of the bottom flange above the new bearing is bent, the flange should be straightened using continuous pressure applied to both faces of the plate simultaneously before installation of the new bearing.
3. Top of column concrete shall be leveled using an epoxy grout prior to bearing installation.
4. Shim as required between top of leveled column and bottom of bolster.
5. Existing grounding wires to be re-attached after bearing replacement is complete.
6. Cost of Bolster and Side Retainers shall be included in the Lump Sum of "Furnishing and Erecting Structural Steel".

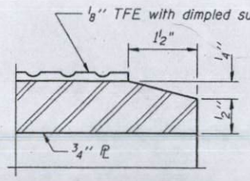




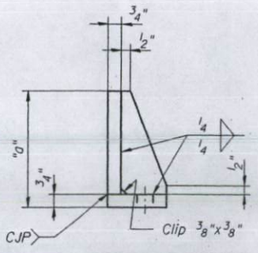
TOP BEARING ASSEMBLY



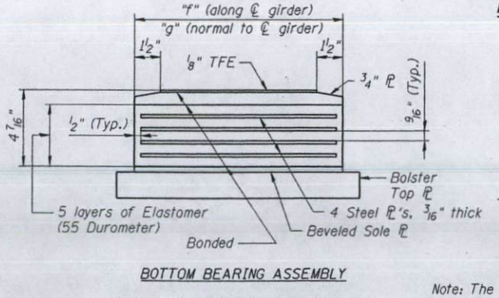
PLAN-TFE SURFACE



SECTION THRU TFE



SIDE RETAINER



BOTTOM BEARING ASSEMBLY

TYPE II ELASTOMERIC BEARING ASSEMBLY

DESIGNED	D. James
CHECKED	R. Victor
DRAWN	M. King
CHECKED	R. Victor

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 full 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.

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

TABLE OF DIMENSIONS

Pier / Span	"a"	"b"	"c"	"d"	"f"	"g"	"l"
Pier E2 Span E2	8 3/4"	2 5/8"	1'-1 3/8"	2'-0"	1'-0"	1'-10"	2'-7"
Pier E2 Span E3	9 7/8"	3 3/4"	1'-1 1/8"	2'-8"	1'-1"	2'-6"	3'-3"
Pier / Span	"j"	"k"	"l"	"m"	"p"	"q"	
Pier E2 Span E2	1'-1 3/8"	1 1/8"	1 1/8"	1'-1 3/8"	1'-1 7/8"	7 7/8"±	
Pier E2 Span E3	1'-1 1/8"	1 3/16"	1"	1'-1 1/8"	1'-5 7/8"	6 3/4"±	

THEORETICAL JACKING LOADS

Span	Pier	Jacking Load per Bearing	
		Dead Load	Live Load + Impact
E2	E2	112 k	112 k
E3	E2	184 k	151 k

Note: The theoretical jacking loads listed above were taken from the design drawings for the original structure. See Special Provision "Jack and Remove Existing Bearings" for requirements and limitations for jacking the structure.

REHABILITATION FOR FAI 55/70 COMPLEX ROADWAY E - STRUCTURE NO. 082-0205 BEARINGS
(FAI-70) ST. CLAIR CO.

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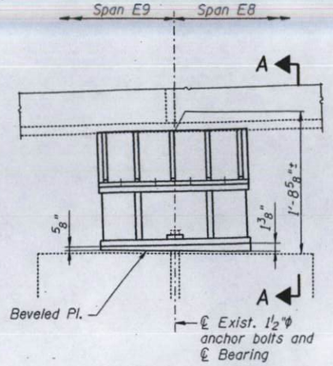
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

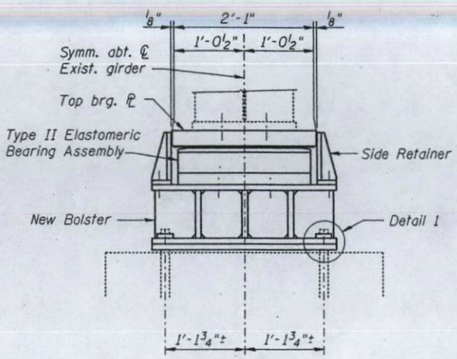
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	386

SHEET NO. 44A
46 SHEETS

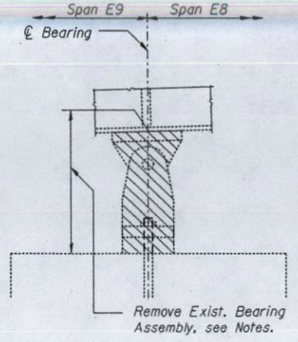
*(82-3HVB-2R-1)-2



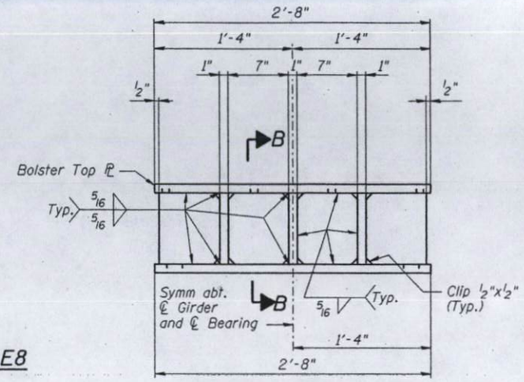
ELEVATION AT PIER E8



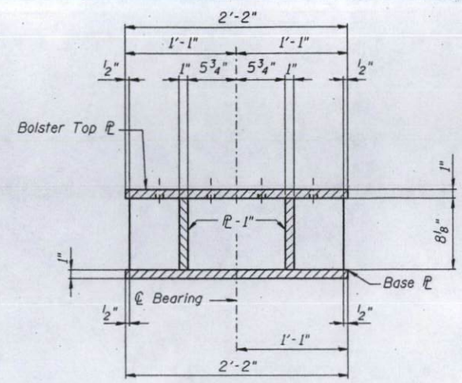
SECTION A-A



BEARING REMOVAL AT PIER E8

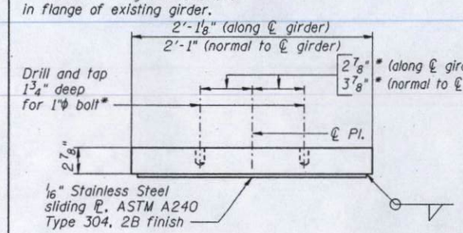


BOLSTER ELEVATION

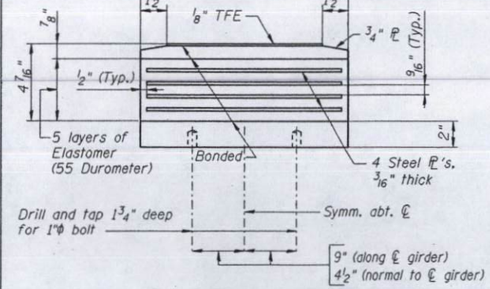


SECTION B-B

* Match existing bolt locations in flange of existing girder.

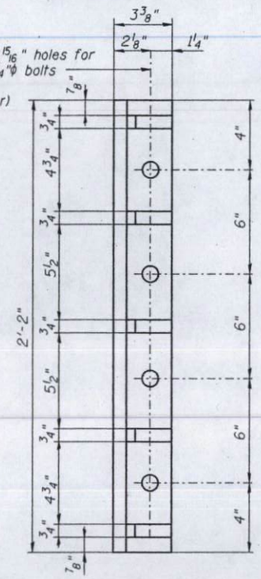


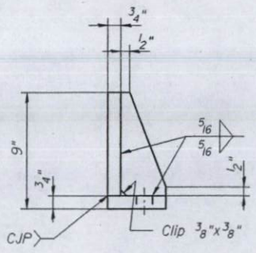
TOP BEARING ASSEMBLY



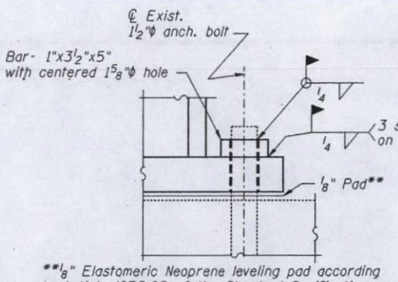
BOTTOM BEARING ASSEMBLY

TYPE II ELASTOMERIC BEARING ASSEMBLY



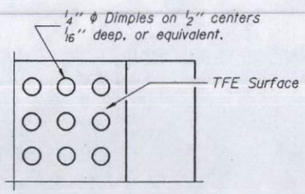


SIDE RETAINER

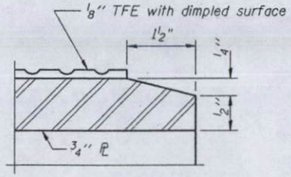


**1/8" Elastomeric Neoprene leveling pad according to Article 1052.02 of the Standard Specifications. Cost of mat included with bearing.

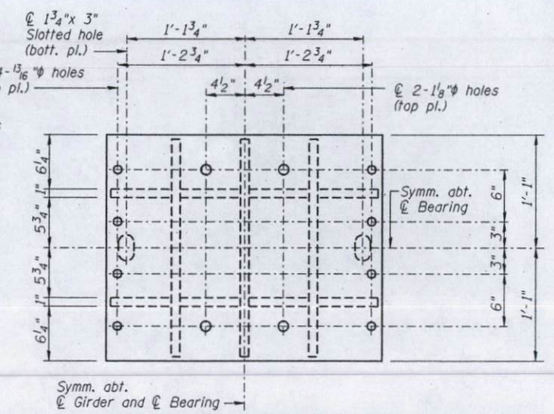
DETAIL 1



PLAN-TFE SURFACE



SECTION THRU TFE



BOLSTER PLAN

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 full 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.

THEORETICAL JACKING LOADS

Pier	Jacking Load per Bearing	
	Dead Load	Live Load + Impact
E8	286 k	132 k

Note: The theoretical jacking loads listed above were taken from the design drawings for the original structure. See Special Provision "Jack and Remove Existing Bearings" for requirements and limitations for jacking the structure.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	2

NOTES

Minimum Jack Capacity:
1. The capacity of the jacks used to lift the bridge shall be at least 50% to 100% greater than the theoretical jacking loads shown in the table.

Bearing Demolition:
1. After jacking the structure off the bearing assembly, remove existing anchor bolt nuts and/or any welded plate washers that secure the existing bearing assembly to the anchor bolts. Existing anchor bolts are to remain intact to a minimum projection of 4" above top of concrete. Contractor shall verify soundness of existing anchor bolts prior to installation of new bearing assembly. Regrout in place if necessary.
2. All portions of existing bearing assemblies, including bolsters, sole plates and shims, shall be removed.

Bearing Installation:
1. Bearings to be replaced are for both girders at locations shown.
2. If the portion of the bottom flange above the new bearing is bent, the flange should be straightened using continuous pressure applied to both faces of the plate simultaneously before installation of the new bearing.
3. Top of column concrete shall be leveled using an epoxy grout prior to bearing installation.
4. Shim as required between top of leveled column and bottom of bolster.
5. Existing grounding wires to be re-attached after bearing replacement is complete.
6. Cost of Bolster, Beveled Plate, and Side Retainers shall be included in the Lump Sum of "Furnishing and Erecting Structural Steel".

DESIGNED	D. James
CHECKED	M. Capron
DRAWN	M. King
CHECKED	M. Capron

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX ROADWAY E - STRUCTURE NO. 082-0205 BEARINGS
(FAI-70) ST. CLAIR CO.

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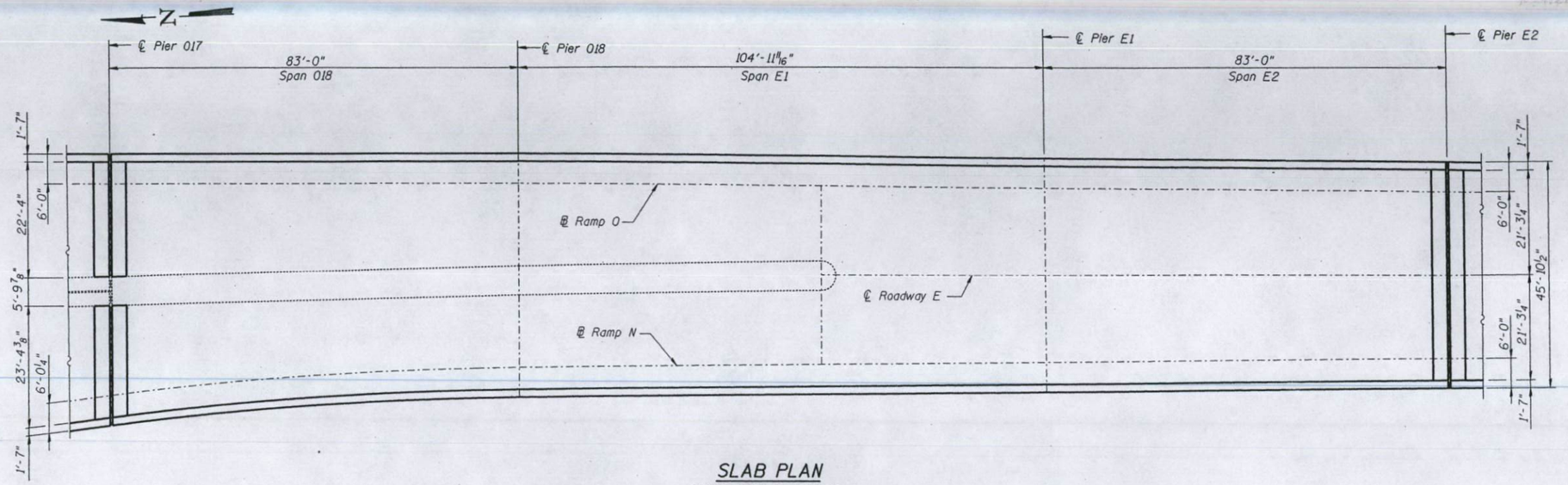
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

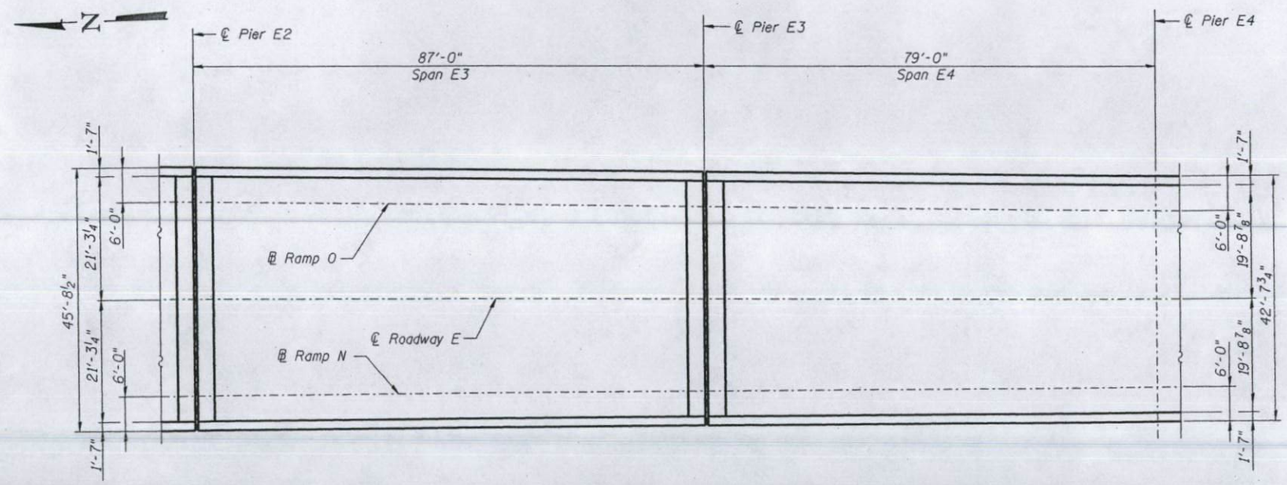
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	387
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 45
46 SHEETS

*182-3HVB-2R-1-2



SLAB PLAN
SPANS 018E, E1 AND E2



SLAB PLAN
SPANS E3 AND E4

DESIGNED
CHECKED
DRAWN
CHECKED

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
AS-BUILT DECK REPAIR LOCATIONS
SPANS 018 AND E1 THRU E4

(FAI-70) ST. CLAIR CO.

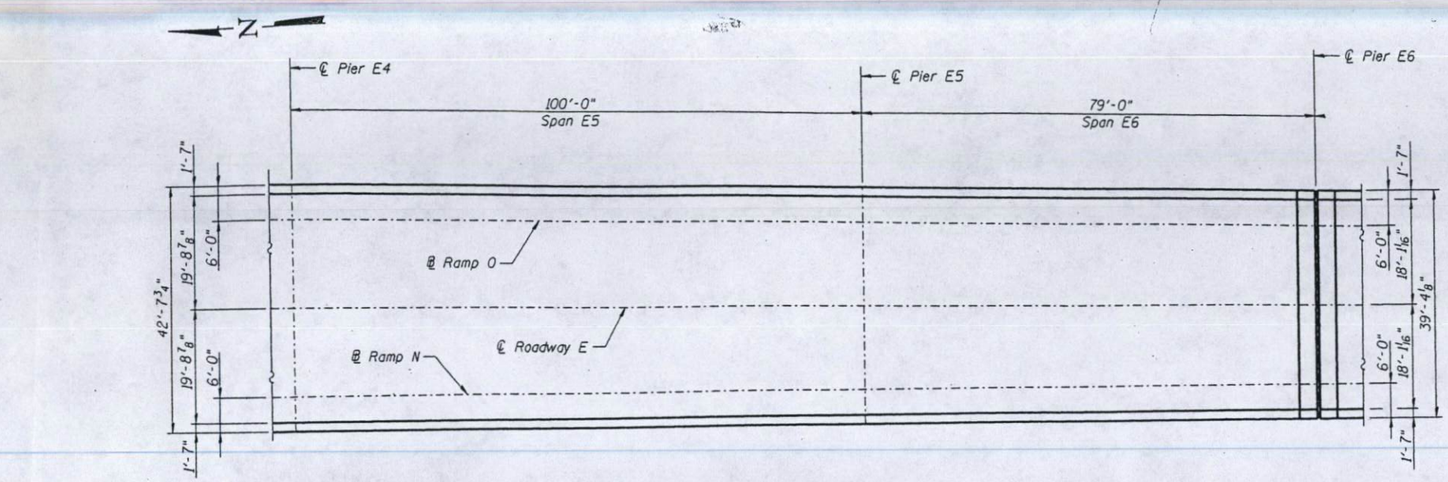
P:\C1X11900\700CADD\709STR\082-0205\205ab01.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

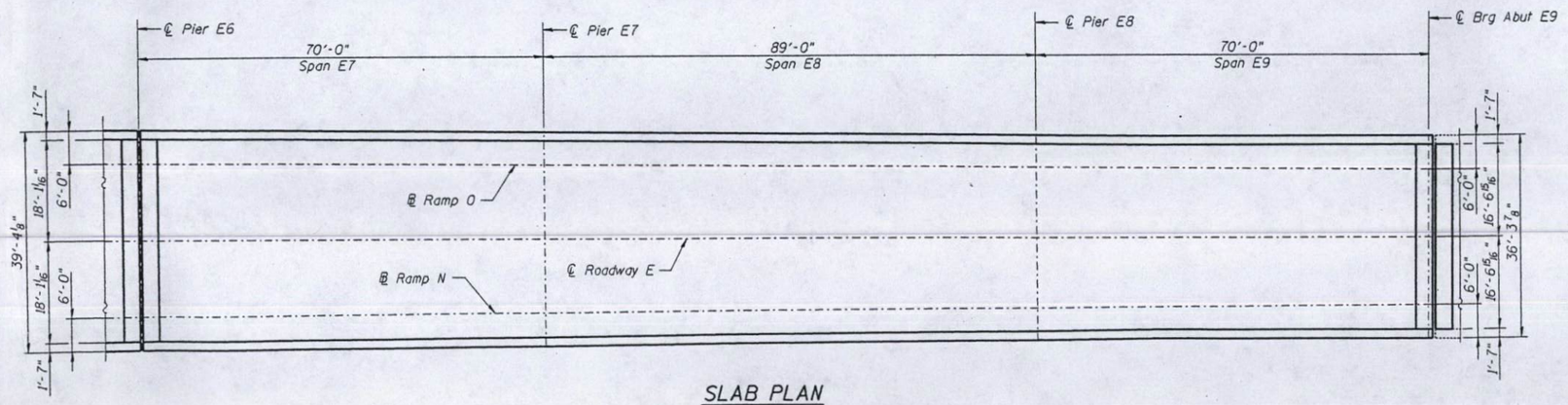
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-70	*	St. Clair	388	388
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT*	

SHEET NO. 46
46 SHEETS

*(82-3HVB-2R-1)-2



SLAB PLAN
SPANS E5 AND E6



SLAB PLAN
SPANS E7 THRU E9

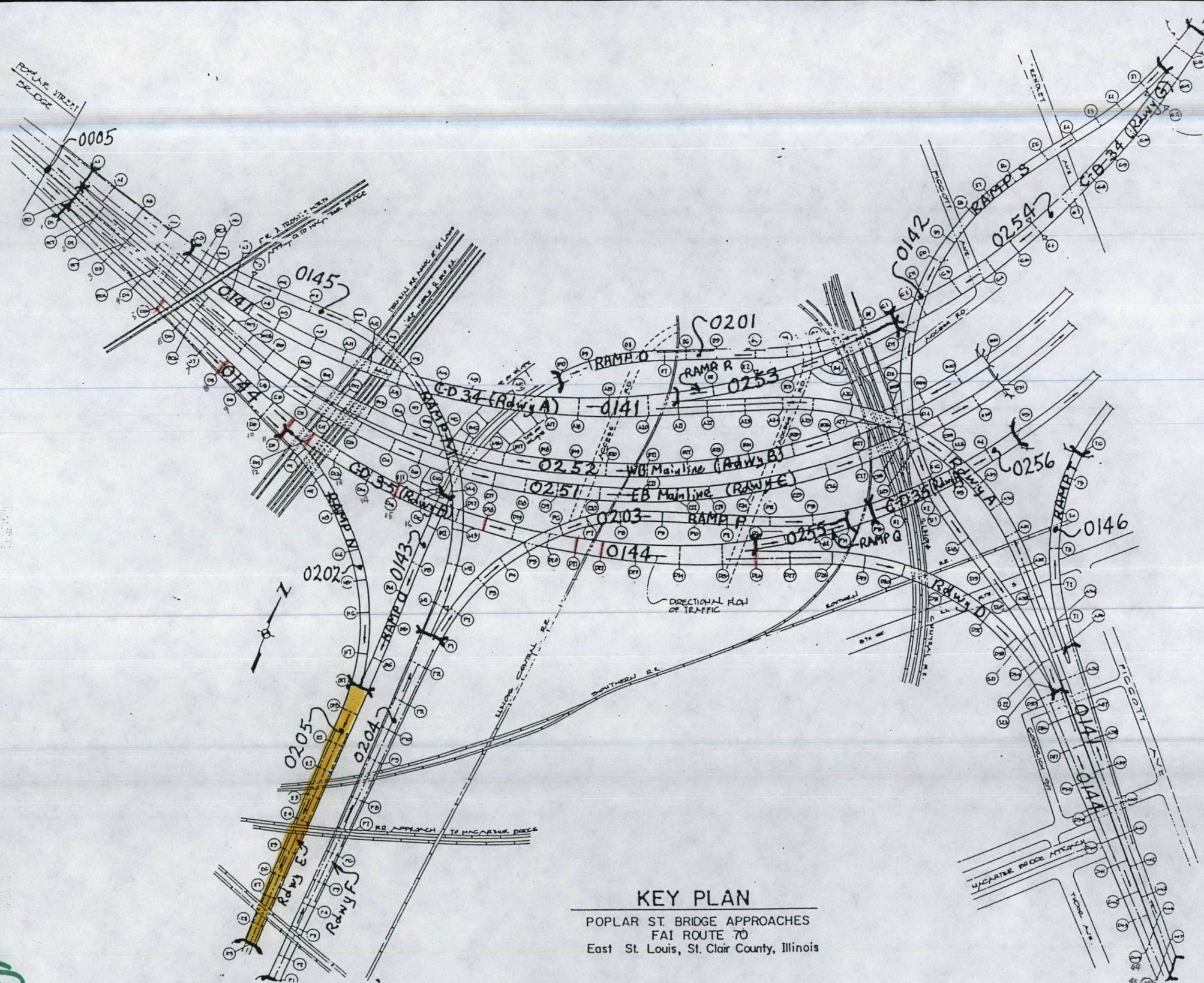
DESIGNED
CHECKED
DRAWN
CHECKED

PREPARED BY:
JACOBS CIVIL INC.
ST. LOUIS, MO

P:\CIX11900\700CADD\709STR\082-0205\205ab02.dg

REHABILITATION FOR FAI 55/70 COMPLEX
ROADWAY E - STRUCTURE NO. 082-0205
AS-BUILT DECK REPAIR LOCATIONS
SPANS E5 THRU E9

(FAI-70) ST. CLAIR CO.



KEY PLAN

POPLAR ST. BRIDGE APPROACHES
FAI ROUTE 70
East St. Louis, St. Clair County, Illinois

082-0205

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	*	ST CLAIR	11	1
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		

* (82-3HVB-1, 2, 3,) D,RS

D-98-094-96

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

FAI ROUTE 70

SECTION (82–3HVB–1, 2, 3)D,RS

ST CLAIR COUNTY

C–98–109–96

INDEX OF SHEETS

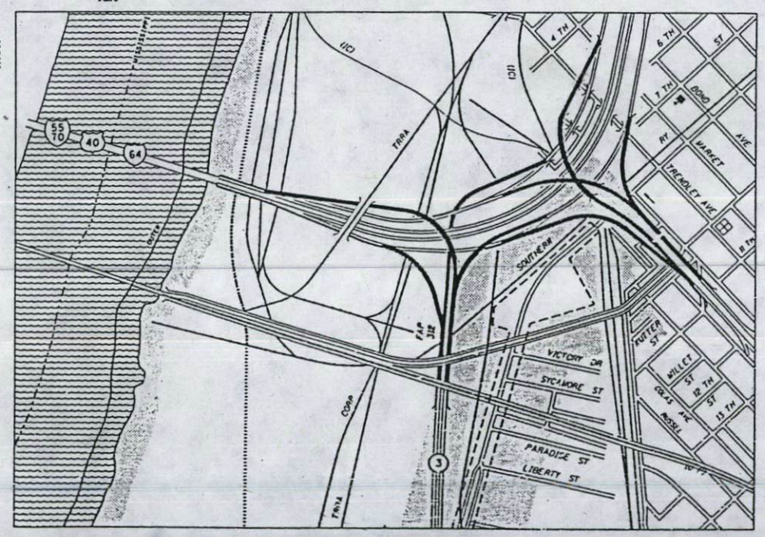
STANDARDS

2298–12
2397-2
2316–16
2396–1

Sec. (82-3HVB-1, 2, 3) D, RS
82-3HVB-R-1
82-3HVB-1R
82-3HVB-R-5
82-3HVB-R-4
82-3HVB-R-3
82-3HVB-R-2
82-3HVB-2

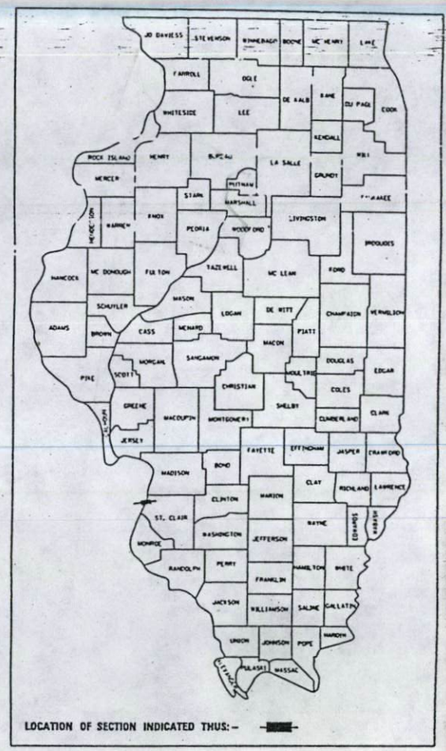
MICROFILMED _____
REEL NUMBER _____
AWARDED _____
RESIDENT ENGINEER _____
AS BUILT CHANGES WERE MADE ON THE FOLLOWING SHEETS

For Sec. 82-3HVB-1 see S.N. 0141
82-3HVB-2R-1 see S.N. 0201
82-3HVB-1E-1 see S.N. 0147
82-(3,4) DRS see S.N. 0142



PROJECT LOCATION

N



LOCATION OF SECTION INDICATED THUS:- ▬

Reels 8-224
180 M
8-159
8-151
8-147
8-136
8-76

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 6/27 19 96
DISTRICT ENGINEER

PASSED August 2 19 96
ENGINEER OF DESIGN AND ENVIRONMENT

APPROVED August 2 19 96
DIRECTOR, DIVISION OF

PROJECT ENGINEER: WILLIAM ULIVI (618) 346-3180
SQUAD LEADER: STEVE JINES (618) 346-3194

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

CONTRACT NO. 76003

Rdwy E
SN 082-0205
REEL 8-224

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

082-0205

DD C B A 0 A B C
TAMERAN

F.A.I. ROUTE	SECTION	COUNTY	TOTAL SHEETS
70	2	ST CLAIR	11
STA.	TO STA.		

EXISTING CONDITIONS:

* (82-3HVB-1, 2, 3,) D,R

TYPICAL SECTION "A"

ROADWAY/RAMP	STR. NUMBER	PIER/ABUT.	STATION TO STATION	BIT. CONC SURF. REM. SQ. METER	BIT. MATLS. PRIME CT. METRIC TON	BIT. CONC. SURF. CSE., MIX D, CL. I, TY I METRIC TON
RAMP W/ RAMP F	082-0145,0204	W-7 TO F-1	1+990.29 TO 1+887.02	4488.50	1.57	375.78
RAMP E/ RAMP D	082-0205,0143	E-[illegible] TO E-11	0+652.84 TO [illegible]	3538.10	1.24	296.21
RAMP O	082-0201	O-9 TO O-10	0+282.55 TO 0+3[illegible]	1583.58	0.55	132.59
RAMP P	082-0203	P-12 TO P-1	1+667.87 TO 2+004.06	2255.83	0.79	188.86
RAMP D	082-0144	D-33 TO D-46	2+488.08 TO 2+833.13	1577.57	0.55	132.07
RAMP A	082-0141	A-25 TO A-42	2+223.40 TO 2+760.88	3606.49	1.26	301.94
RAMP T	082-0146	A-35 TO T-6	0+190.18 TO 0+362.25	1154.59	0.40	96.66
RAMP S	082-0142,0144	S-1 TO D-39	0+122.22 TO 0+778.15	4401.29	1.54	368.48
RAMP N	082-0202	O-17 TO N-4	0+729.08 TO 0+651.31	820.16	0.29	68.66
TOTALS				23426.22	8.19	1961.25

TYPICAL SECTION "B"

ROADWAY/RAMP	STR. NUMBER	PIER/ABUT.	STATION TO STATION	BIT. SURF. REM. (COLD MILL) (CHECK SHEET #12) SQ. METER	SHEET WATERPROOF MEM. SYSTEM SQ. METER	BIT. CONC. SURF. CSE., MIX D, CL. I, TY I METRIC TON
RAMP E	082-0205	E-2 TO E-9	0+993.91 TO 1+109.57	1178.68	1178.68	126.87
RAMP N	082-0202	D-11 TO N-4	0+608.99 TO 0+729.08	549.05	549.05	59.10
RAMP W	082-0145, 0141	A-1 TO W-7	1+510.45 TO 1+887.02	2526.78	2526.78	271.98
RAMP P	082-0203	P-12 TO P-15	2+004.06 TO 2+095.96	616.65	616.65	66.38
RAMP S	082-0142	G-12 TO S-1	0+099.91 TO 0+122.22	149.70	149.70	16.11
RAMP A	082-0141	A-40 TO A-46	2+703.27 TO 2+859.73	1239.16	1239.16	133.38
RAMP D	082-0144	D-40 TO D-46	2+689.25 TO 2+833.13	657.80	657.80	70.80
TOTALS				6917.82	6917.82	744.62

The following quantities are not included on the schedules but are used for the removal and replacement of the 15.24 m bituminous tapers at abutments O-11, O-10, A-46, and D-46.

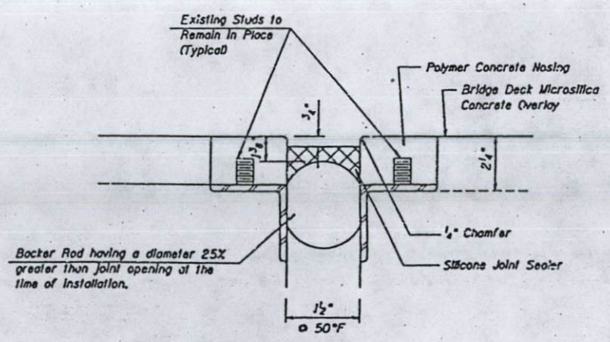
Bituminous Concrete Surface Course, Mix D, Class I, Type 1 - 40.08 Metric Tons
Bituminous Materials Prime Coat - 0.18 Metric Tons
Bituminous Concrete Surface Removal - 515.60 Sq. Meters

PARTIAL DEPTH REPAIR SCHEDULE

SPAN	SIZE (IN METERS)	BITUMINOUS CONCRETE SURFACE REMOVAL (50MM) SQ. METER	BITUMINOUS MATERIALS PRIME COAT METRIC TON	LEVELING BINDER HAND METHOD TYPE I (50 MM) METRIC TON
O-11 TO N-1	12X6	72	0.03	3.50
N-1 TO N-2	3X3	18	0.01	2.00
	2X2	4	0.01	0.50
	2X6	12	0.01	1.50
N-2 TO N-3	2X2	4	0.01	0.50
	2X2	4	0.01	0.50
	2X2	4	0.01	0.50
N-3 TO N-4	2X23	46	0.02	5.50
	2X23	46	0.02	5.50
N-4 TO N-5	2X28	56	0.02	6.50
	2X28	56	0.02	6.50
P-14 TO P-15	5X26	130	0.05	15.50
TOTALS		452	0.22	53.50

JOINT REPAIR SCHEDULE

JOINT	POLYMER CONCRETE CU. METER	SILICONE JOINT SEALER (40MM) METER
N-1	0.102	6.71
O-17	0.102	6.71
E-2	0.056	3.66
E-3	0.055	3.66
E-6	0.051	3.36
E-9	0.141	9.24
P-4	0.102	6.71
P-14	0.102	6.71
S-21	0.102	6.71
T-6	0.102	6.71
TOTALS	0.92	60.18



SILICONE JOINT SEAL

ILLINOIS DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION, JOINT REPAIR AND PARTIAL DEPTH REPAIR SCHEDULES

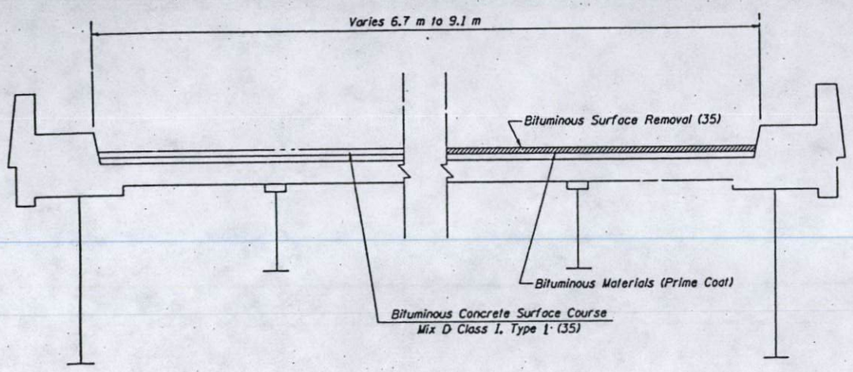
F.A.I. ROUTE 70
SECTION (82-3HVB-1, 2, 3) D,R,S
ST. CLAIR COUNTY

D C B A 0 A B C

TAMERAN

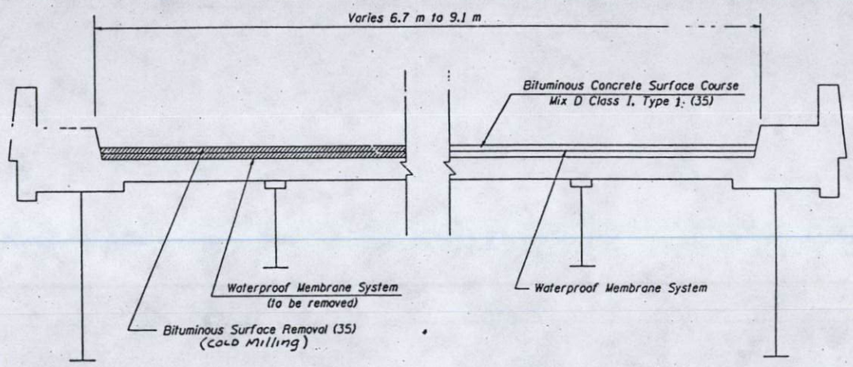
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	*	ST CLAIR	11	5
STA.		TO STA.		
EXISTING CONDITIONS:				

* (82-3HVB-1, 2, 3,) D,RS



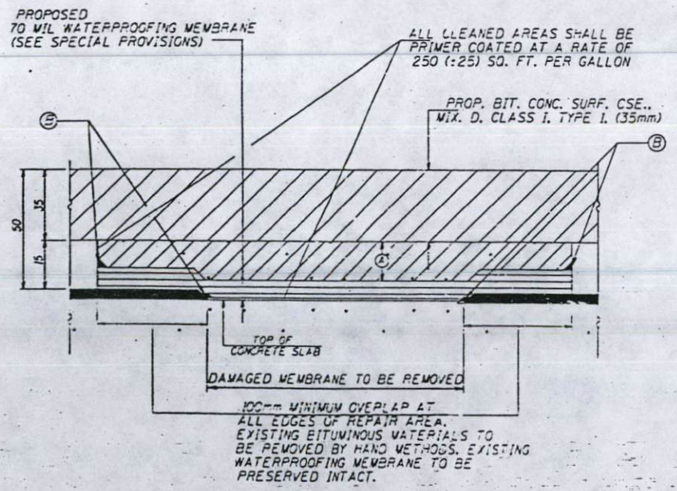
TYPICAL SECTION A

Area Shown on Plan View



TYPICAL SECTION B

Area Shown on Plan View



SECTION

WATERPROOFING MEMBRANE REPAIR

(A) AFTER COLD MILLING, EXISTING BITUMINOUS MATERIAL TO BE REMOVED TO PERMIT REPAIR OF MEMBRANE. BITUMINOUS CONCRETE SURFACE COURSE, MIXTURE D, CLASS I SHALL BE PLACED PRIOR TO PLACEMENT OF NEW BITUMINOUS CONCRETE WEARING SURFACE. (COST TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR WATERPROOFING MEMBRANE REPAIR). SEE SPECIAL PROVISIONS FOR TEMPERATURE AND DENSITY REQUIREMENTS FOR INITIAL LIFT OF BITUMINOUS SURFACE COURSE OVER REPAIR AREAS.

(B) ALL PERIMETER EDGES SHALL RECEIVE A MINIMUM 8mm BEAD OF ISO n MASTIC.

EXISTING WEARING SURFACE CONSISTS OF A 13mm ASPHALT SAND SEAL LAYER AND A 38mm BITUMINOUS SURFACE COURSE. PROPOSED COLDMILLING WILL REMOVE 35mm UNIFORMLY ON THE ENTIRE BRIDGE DECK.

ILLINOIS DEPARTMENT OF TRANS

TYPICAL SECTION

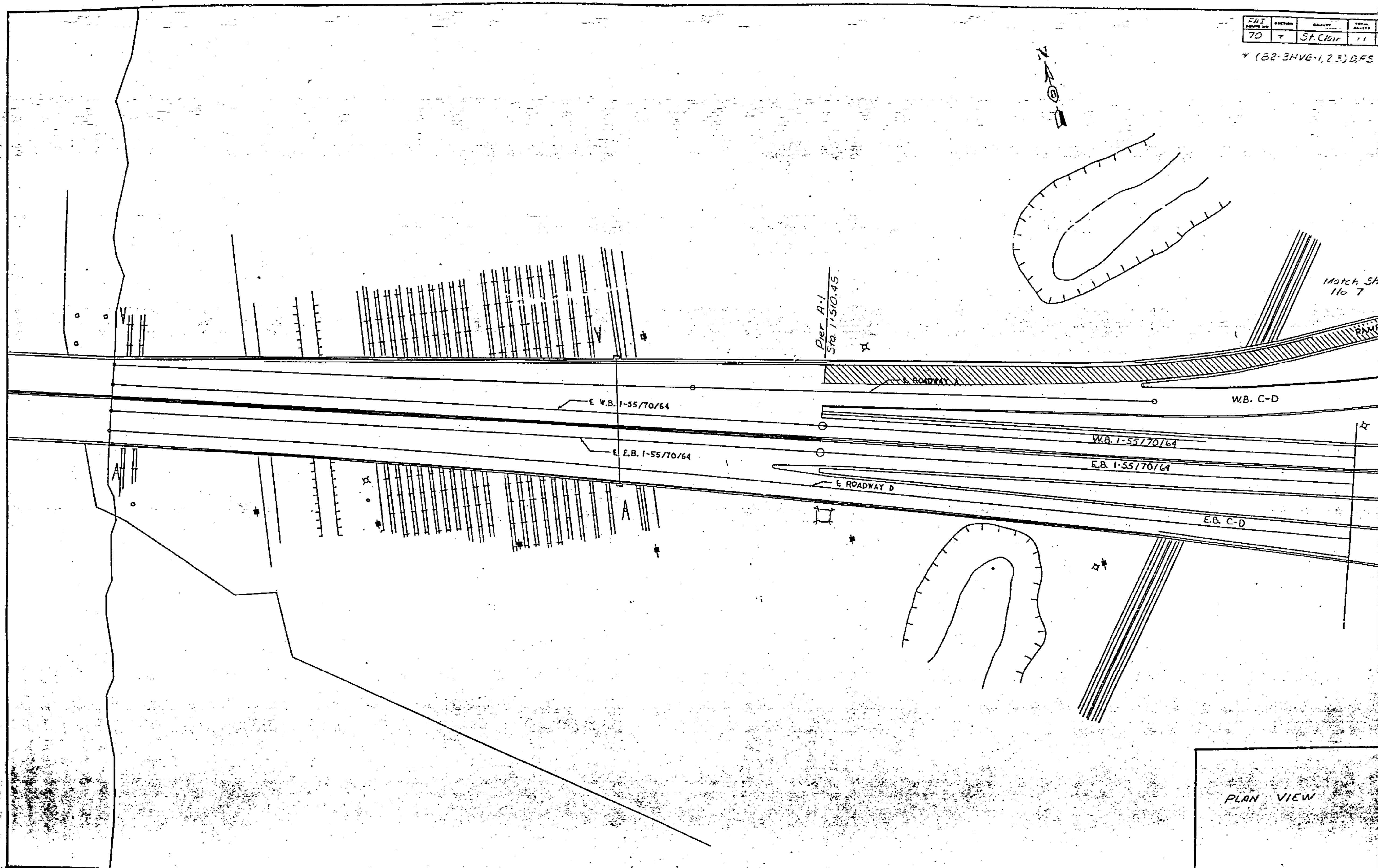
F.A.I. ROUTE 70
SECTION (82-3HVB-1, 2, 3) D,RS
ST. CLAIR COUNTY

C B A 0 A B C D

TAMERAN

FAI ROUTE NO	SECTION	COUNTY	TOTAL
70	*	St. Clair	

* (82-3HVE-1,2,3) D,F,S



TAMERAN

FAI	DIRECTION	COUNTY	TOTAL PROJECTS	SHEET NO.
70	*	ST. CLAIR	.11	8

* (82-3HVB-1,2,3)D,RS

MATCH SHEET NO. 11

N

RAMP C

Pier C-2 Sta. 0+281.85

W.B. C-D

RAMP A

Pier A-25 Sta. 2+223.21

RAMP S

TRENDLEY AVE

W.B. I-55/64/170

E.B. I-55/64/170

RAMP P

Pier P-12 Sta. 2+044.06

Pier P-15 Sta. 1+095.96

E.B. C-D

RAMP D

E.B. C-D

RAMP T

About T4 Sta. 0+362.25

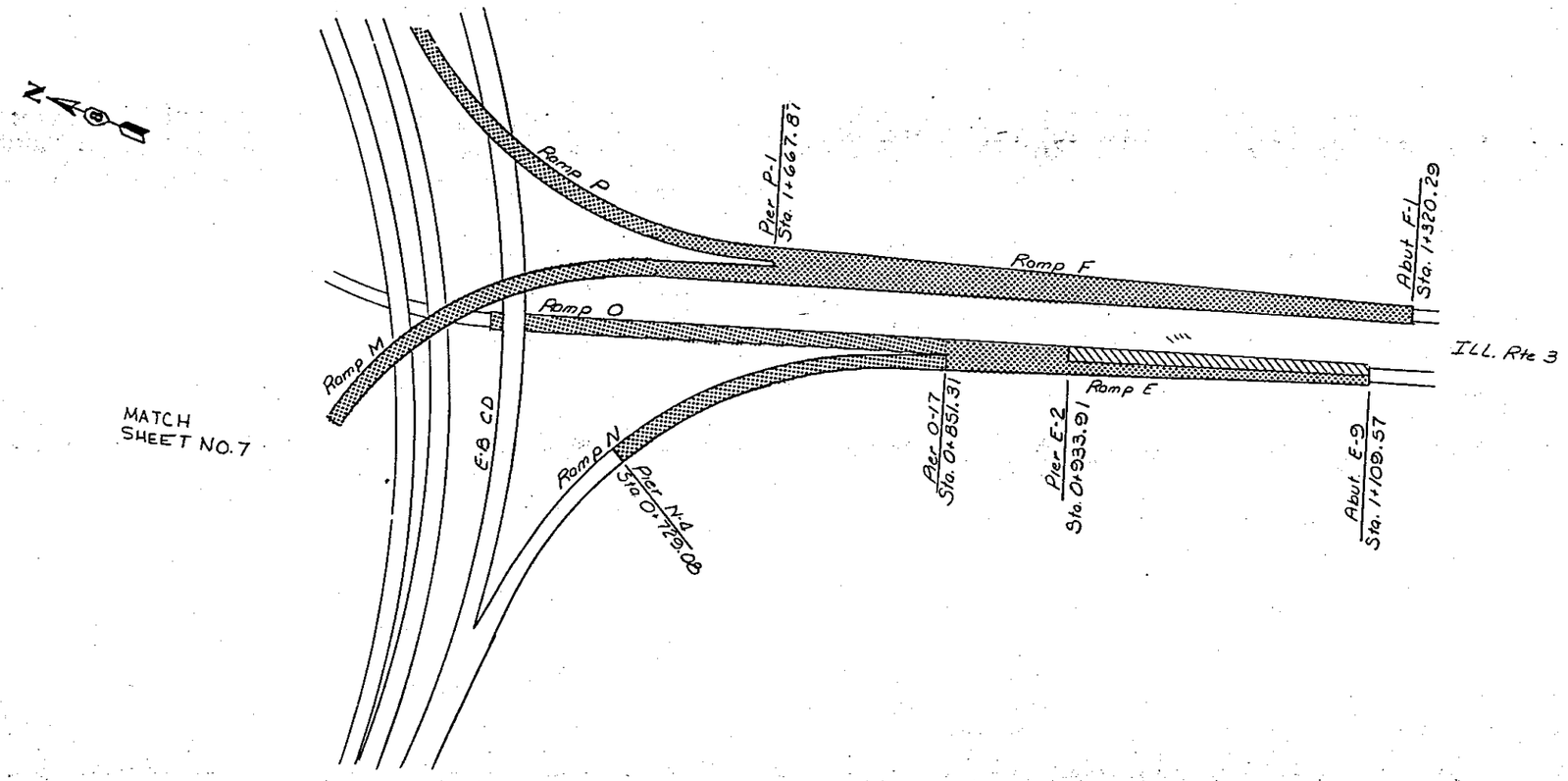
MATCH SHEET NO. 10

PLAN VIEW

DD CC BB AA TAMERAN AA BB CC DD

FAI	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	*	ST. CLAIR	11	9

* (82-3HVB-1,2,3)D,RS



PLAN VIEW

DD CC BB AA 0 AA BB CC

TAMERAN

FAI ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS
70	4E	St. Clair	11

* (62-3HVB-1, 2, 3)

Match Sheet No. 8

Match Sheet No 6

N

RAMP M

W.B. C-D

Abut O-10
Sta. 0+58.87

RAMP O

W.B. C-L

RAMP A

Pier M-7
Sta 1+887.02

W.B. I-55/64/70

E.B. I-55/64/70

RAMP P

Abut O-11
Sta 0+662.84

E.B. C-D

Pier P-11
Sta. 0+608.59

RAMP N

Pier N-4
Sta. 0+729.08

TRANSMISSION TOWER

Match Sheet No 9

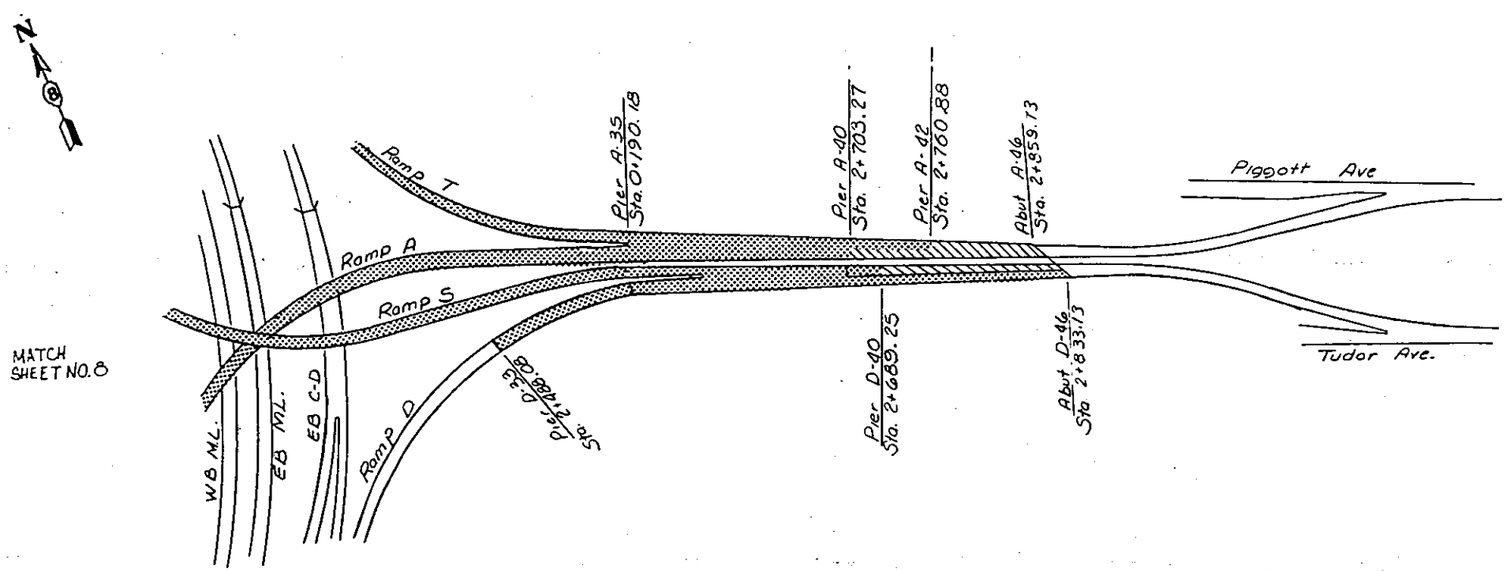
PLAN VIEW

D C B A 0 A B C

TAMERAN

FAI ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	*	ST. CLAIR	11	10

* (82-3HVB-1,2,3)0,RS



PLAN VIEW

DD CC B A 0 A B C D

TAMERAN

FAI ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	*	ST. CLAIR	11	11

* (82-3HVB-1,2,3)D,RS

MATCH SHEET NO. 8

Per S-1 Sta. 0+22.22

Per G-12 Sta. C 1099.91

RAMP S

W.B. C-D

4TH ST.

MAIN ST.

RAMP G

W.B. C-D

W.B. I-55/64/170

E.B. I-55/64/170

E.B. C-D

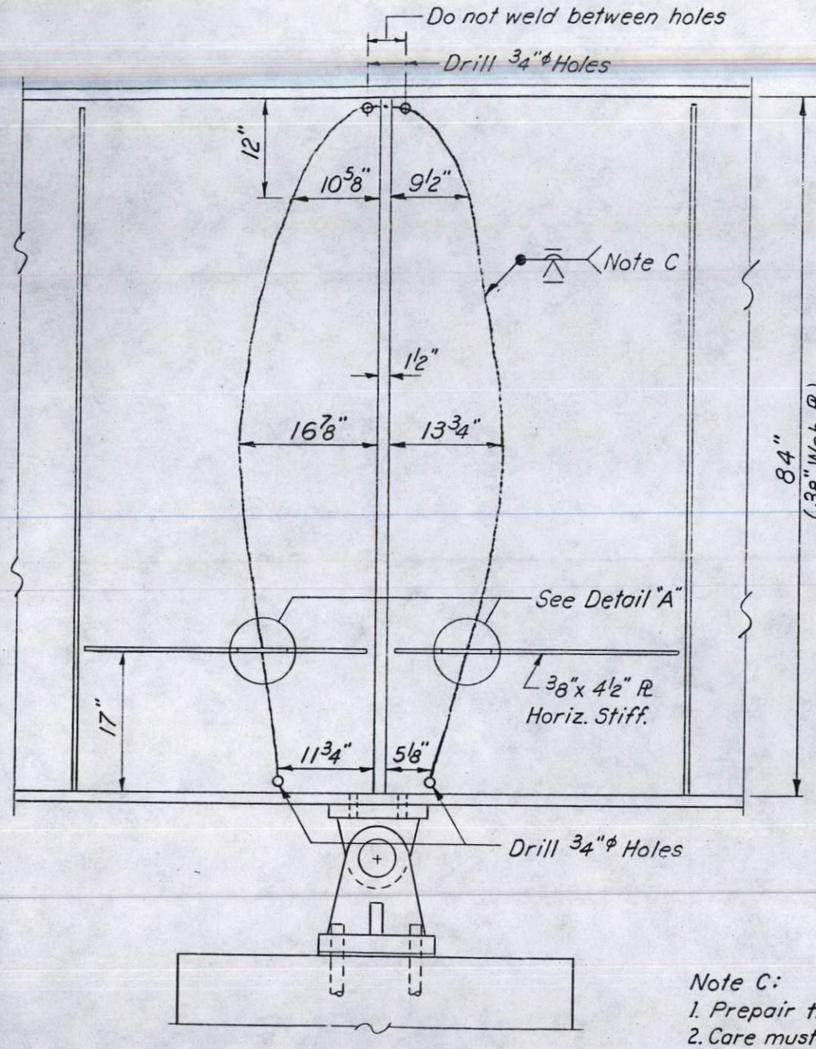
E.B. C-D

RAMP H

BRADY AVE.

PLAN VIEW

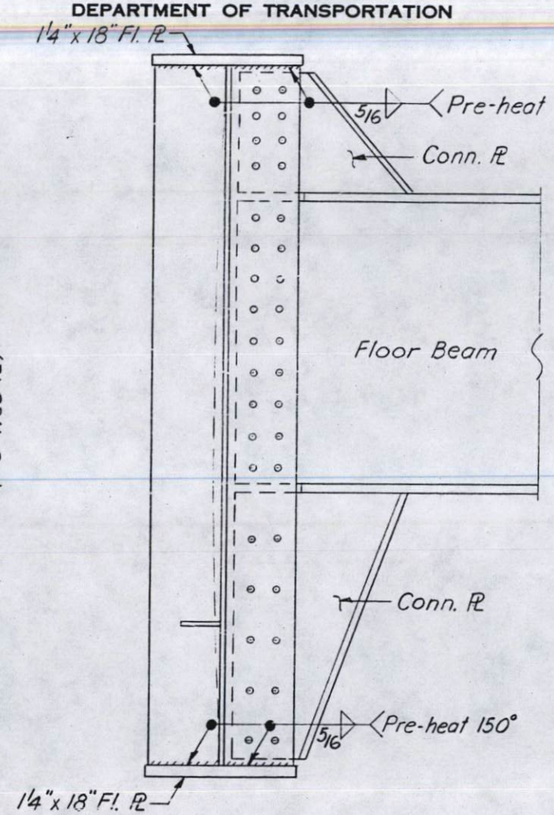
D C B A 0 A B C D



ELEVATION
WEST END PIER 7 - ROADWAY E

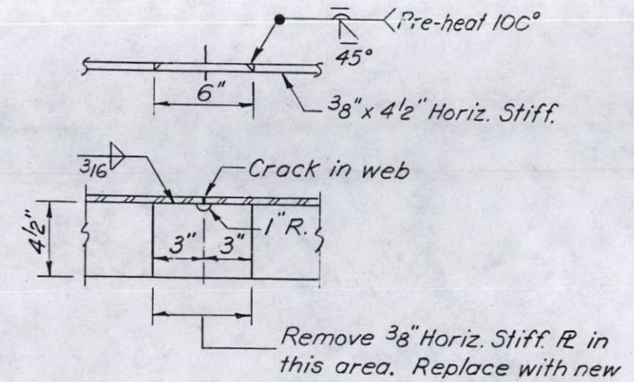
Provide temporary supports at each side of pier during repairs.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION

Note C:
1. Prepair the cracked web for single V groove weld.
2. Care must be exercised to minimize the warpping of the web plate while welding.
3. Preheat the web to 100°F.
4. Make sufficient 3"-4" intermittent welds to maintain the alignment of the web.
5. Weld the web together from one side, two passes minimum, starting from the bottom and alternating between the cracks on each side of bearing stiffener.
6. Back gouge the other side to sound metal and weld again.
7. Grind smooth both sides.



DETAIL A

REPAIR PROCEDURE:
Drill ¾"ϕ holes at bottom ends of crack. (Edge of hole may cut into web to flange weld ⅛" max.)
Remove 6" portion of horizontal stiff. at crack in web.
A — Loosen all bolts in bearing stiff. connection to a snug fit.
A — Push cracked portion of web into alignment with web.
A — Tighten bolts.
If cracked web can't be aligned as stated in A use procedure B.
B — Remove bolts in floor beam portion of connection only and replace with ⅝"ϕ H.S. bolts tightened to a snug fit.
B — Remove bolts in top and bottom connecting Pls.
B — Push cracked portion of web into alignment with web.
B — Ream holes in top & bott. conn. Pls if necessary and replace original bolts and tighten.
B — Remove ⅝"ϕ bolts from floor bm. conn., ream holes if necessary and replace original bolts and tighten.
Remove paint clean surfaces to be welded.
Weld bearing stiffener at top & bottom.
Weld crack in web. (See Note C)
Weld 6" plate in horizontal stiffeners.
Paint repaired areas to match.

TRAFFIC SHALL BE STOPPED WHILE WELDING

DESIGNED	WH
CHECKED	
DRAWN	L.a.
CHECKED	

1978
EXAMINED
PASSED
APPROVED

SHEET NO. 1
1 SHEETS

082-0205
WEB REPAIR
F.A.I. RT. 70 SEC. 82-3HVB-R-1
ST. CLAIR COUNTY

Proposed but not completed

082-0205

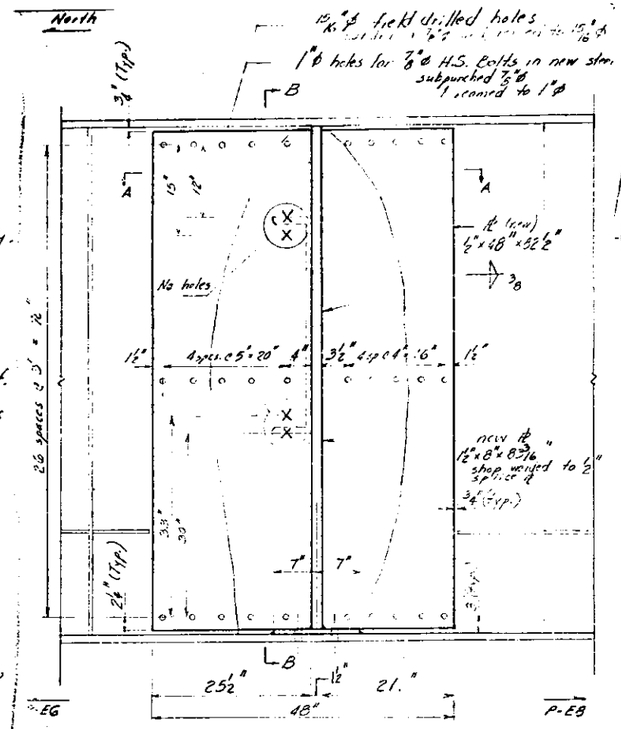
Reel 180M

St. Clair Co.
082-3HVB-R-1

Procedure

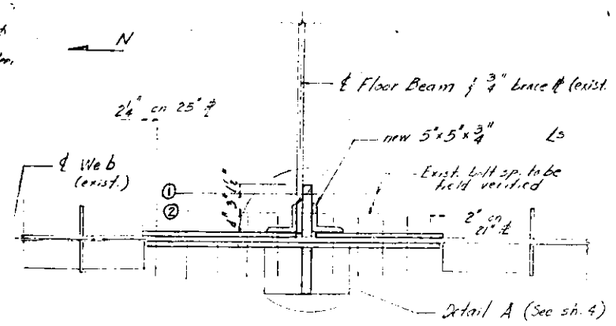
1978

1. Restrict to one lane traffic.
2. Crib on both sides of bearing.
3. No construction traffic past centerline of bearing (one span only).
4. No tack welded construction accessories. (Remove and grind smooth any existing accessories.)
5. Field dr. 11 2 lines of 15/16"ø holes in girder web, 4" to the north and 3½" to the south of the face of exist. brg. stf. (Remove paint and clean all contact surfaces for new steel and bolts.)
6. Remove bolt line ② - See Section A-A - and install inside web splice ℄'s and Ls
7. Remove existing fascia bearing stiffener and horizontal stiffeners and grind web and flange areas smooth.
8. Using inside or outside web splice ℄'s as templates, bolt the 4' web ℄ to the girder.
9. Bolt bottom ¾" × 14" fill ℄ to bottom flange and bearing assembly.
10. Stop all traffic and weld new bearing stiffener to the top flange of the girder and to the ¾" bottom fill ℄ and bottom flange of girder.

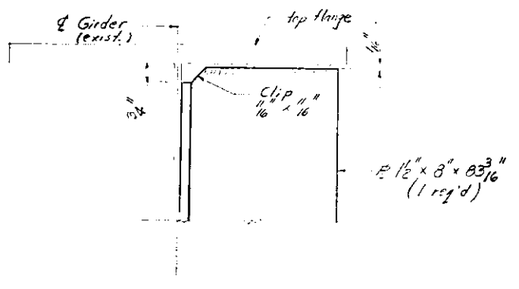


Elevation Exterior Face
℄ Pier E7

Sh. 1 of 5

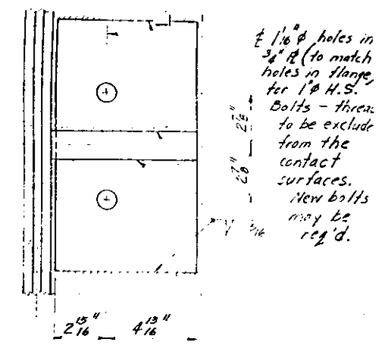


Section A-A (See sheet 1)

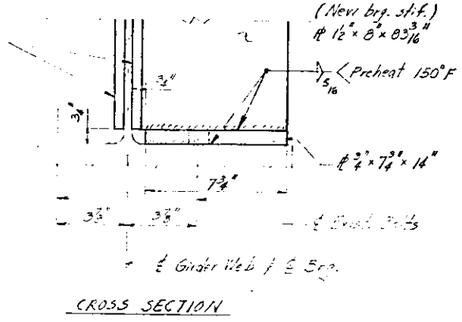


New Outside Brg. Stf. Detail

Sh. 2 of 5



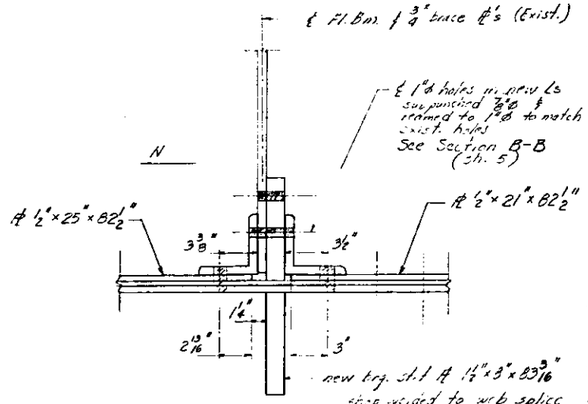
PLAN SECTION



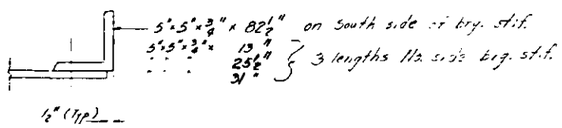
CROSS SECTION

BEARING STIF. DETAILS AT BOT. FLANGE

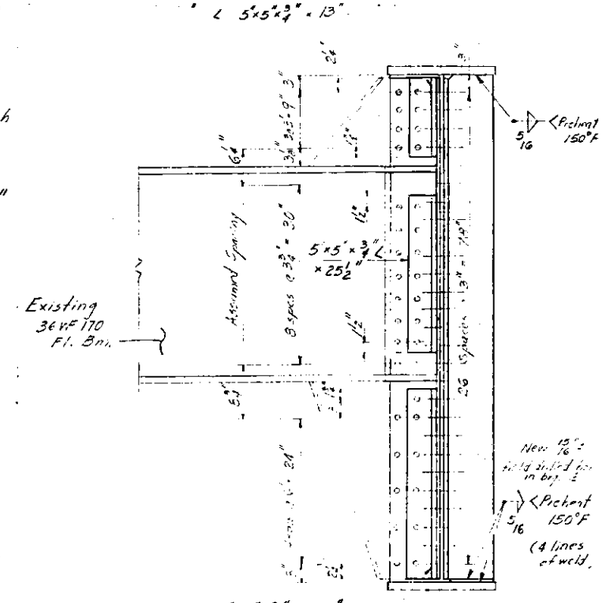
Sh. 3 of 5



DETAIL A
See sheet 2



Sh. 4 of 5



SECTION B-B
(Looking South)

See sheet 1

Sh. 5 of 5

082-0205
B2-3HVB-R-1
St. Clair Co.
1978

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED SUPERSTRUCTURE REPAIRS

FAI ROUTE 70

SECTION 82-3HVB-IR

PROJ. ACIR-70-1(147)1

POPLAR STREET BRIDGE APPROACHES

ST. CLAIR COUNTY

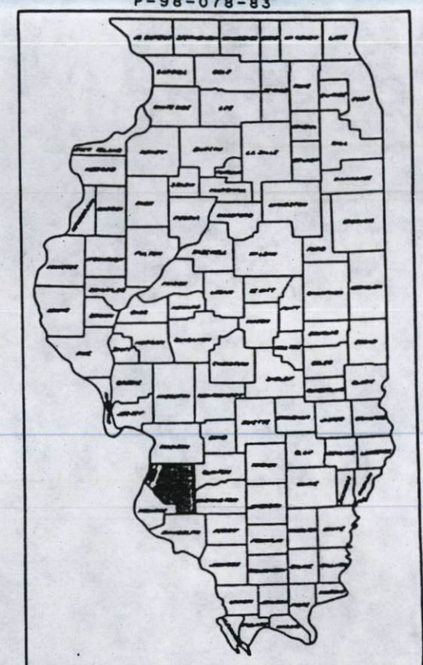
C-98-115-85

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PROJECT KEY PLAN
3	KEY PLAN FOR ROADWAYS A - H
4	KEY PLAN FOR RAMPS M - T
5	BEARING STIFFENER RETROFIT DETAILS
6	INTERIOR, NON BEARING STIFFENER RETROFIT DETAILS
7	REPAIR DETAIL LOCATIONS; ROADWAYS A,B,C
8	REPAIR DETAIL LOCATIONS; ROADWAYS D - H
9	REPAIR DETAIL LOCATIONS; RAMPS M - R
10	REPAIR DETAIL LOCATIONS; RAMPS S, T + MISCELLANEOUS DETAILS
11	TRAFFIC CONTROL AND PROTECTION
	STANDARDS: 2298-7, 2299-10, 2300-3

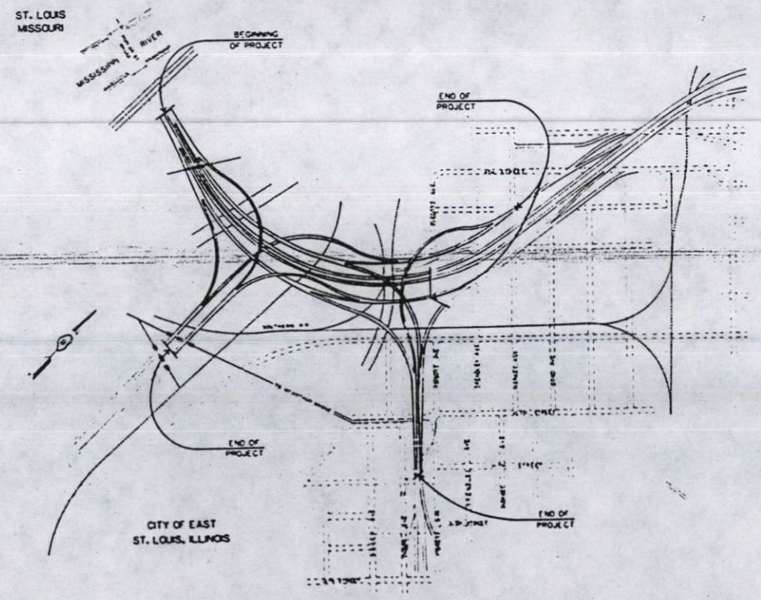
F.A.I. RTE. NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 70	*	ST. CLAIR	11	1
		ILLINOIS	PROJECT A.C.I.R. 70-1(147)1	

* 82-3HVB-IR

P-98-078-83



LOCATION OF SECTION INDICATED THUS:—



MICROFILMED _____
REEL NUMBER _____
AWARDED _____
RESIDENT ENGINEER _____

AS BUILT CHANGES WERE MADE
ON THE FOLLOWING SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SUBMITTED 3/5/86
RECOMMENDED March 21, 1986
APPROVED March 21, 1986
DIRECTOR OF HIGHWAYS

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR — DATE

B-159

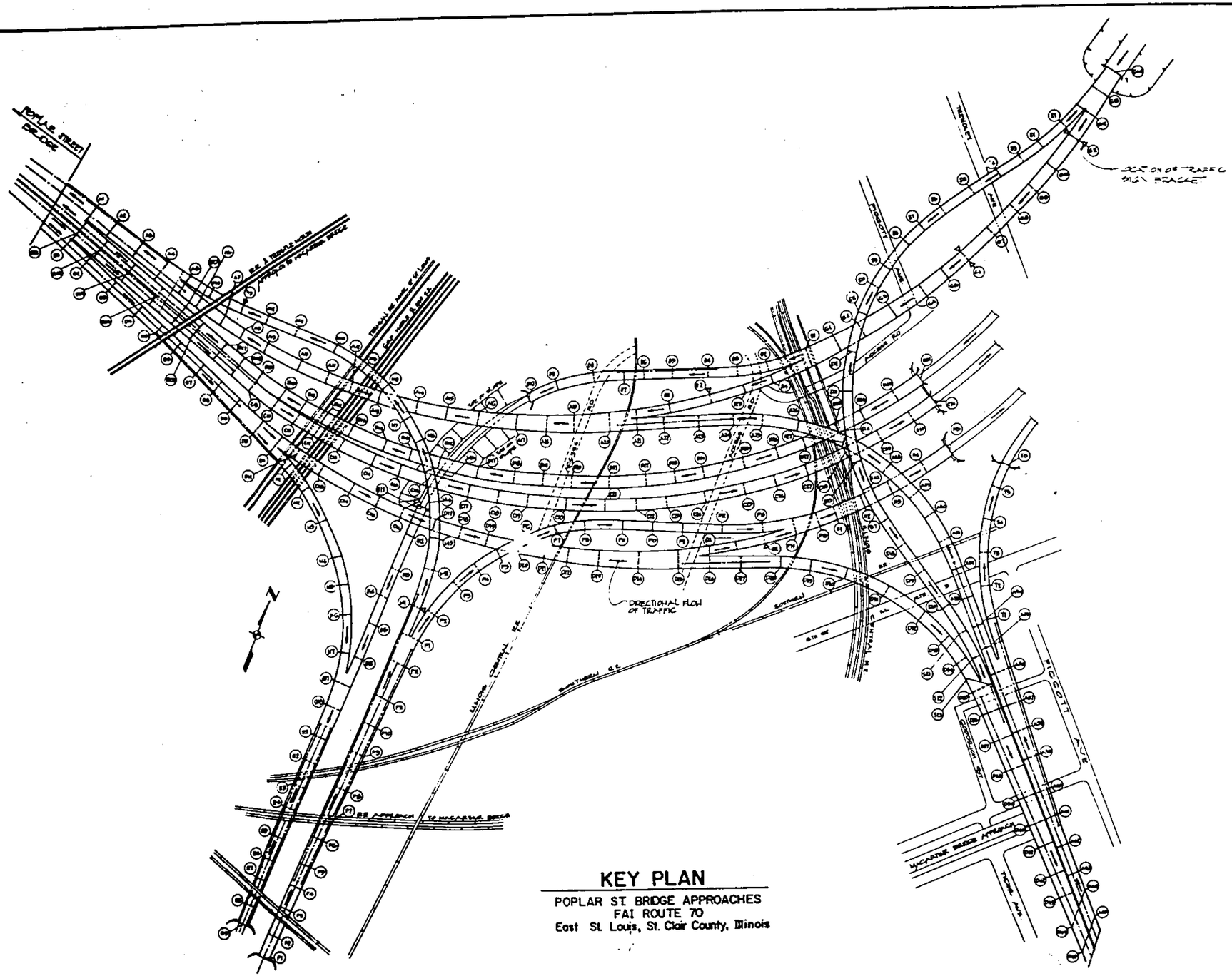
CONTRACT NO. 40769

ST. CLAIR COUNTY SECTION 82-3HVB-IR F.A.I. ROUTE 70

NET LENGTH OF PROJECT = 1.66 MILES

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

70	[illegible]	ST. CLAIR	11	2



KEY PLAN

POPLAR ST. BRIDGE APPROACHES
FAI ROUTE 70
East St. Louis, St. Clair County, Illinois

SUMMARY OF QUANTITIES

SFTY-3.D

CODE No.	ITEM	UNIT	QUANTITY
X09954	Structural Steel Repairs, Type 1	Each	355
X09955	Structural Steel Repairs, Type 2	Each	732
X09956	Removal and Replacement of Existing Traffic Signs	Each	8
X09957	Cleaning and Painting Previously Repaired Connections	Each	20
X09958	Traffic Control for Repair Locations Above Another Roadway	Each	36
Z10527	TRAINEES	HOUR	1000
650001	MOBILIZATION	L SUM	1

* CONST CODE 70350

GENERAL NOTES

1. Design criteria: A.A.S.H.T.O. Standard Specifications for Highway Bridges, 1983 Edition.
2. New fasteners shall be high-strength bolts, ⅞ inch ϕ, unless noted otherwise.
3. Plan conditions, dimensions, and details relative to the 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 conditions, dimensions, and details in the field, and make necessary approved adjustments prior to construction. Such variations shall not be cause for additional compensation for a change in scope of work. However, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

MAJOR WORK ITEMS

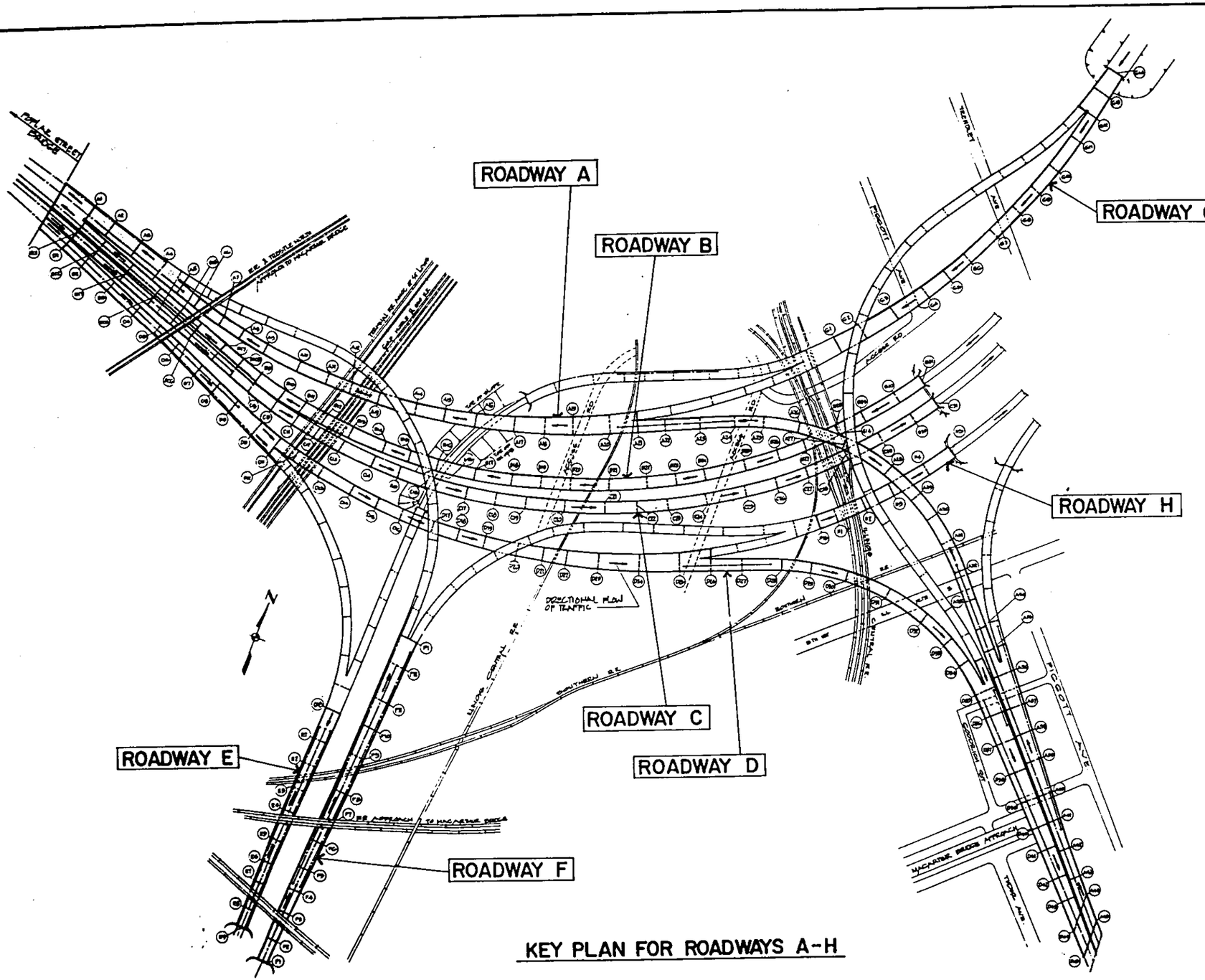
1. Installation of structural steel repair Type I at bearing stiffener connections between floor beams above piers and main girders above piers at continuous supports.
2. Installation of structural steel repair Type 2 at non-bearing stiffener connections between first interior floor beams and main girders.
3. Removal and replacement of existing traffic signs and support brackets where they interfere with Type I repairs.
4. Cleaning and painting of connections between floor beams and main girder which have been previously retrofitted with trial repairs.
5. Provide traffic control and protection for repair locations which are located above another roadway.

PROJECT KEY PLAN

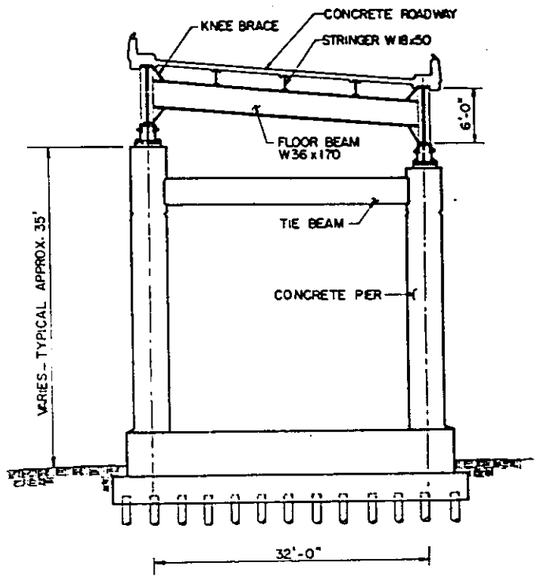
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

SCALE : NONE — DESIGN BY : GSA
DATE 2/26/86 — CHECKED BY : TLR

70	[illegible]	ST. CLAIR	11	3



KEY PLAN FOR ROADWAYS A-H



TYPICAL SECTION THROUGH ROADWAY
(Section through Ramp Similar)

KEY PLAN FOR ROADWAYS A-H

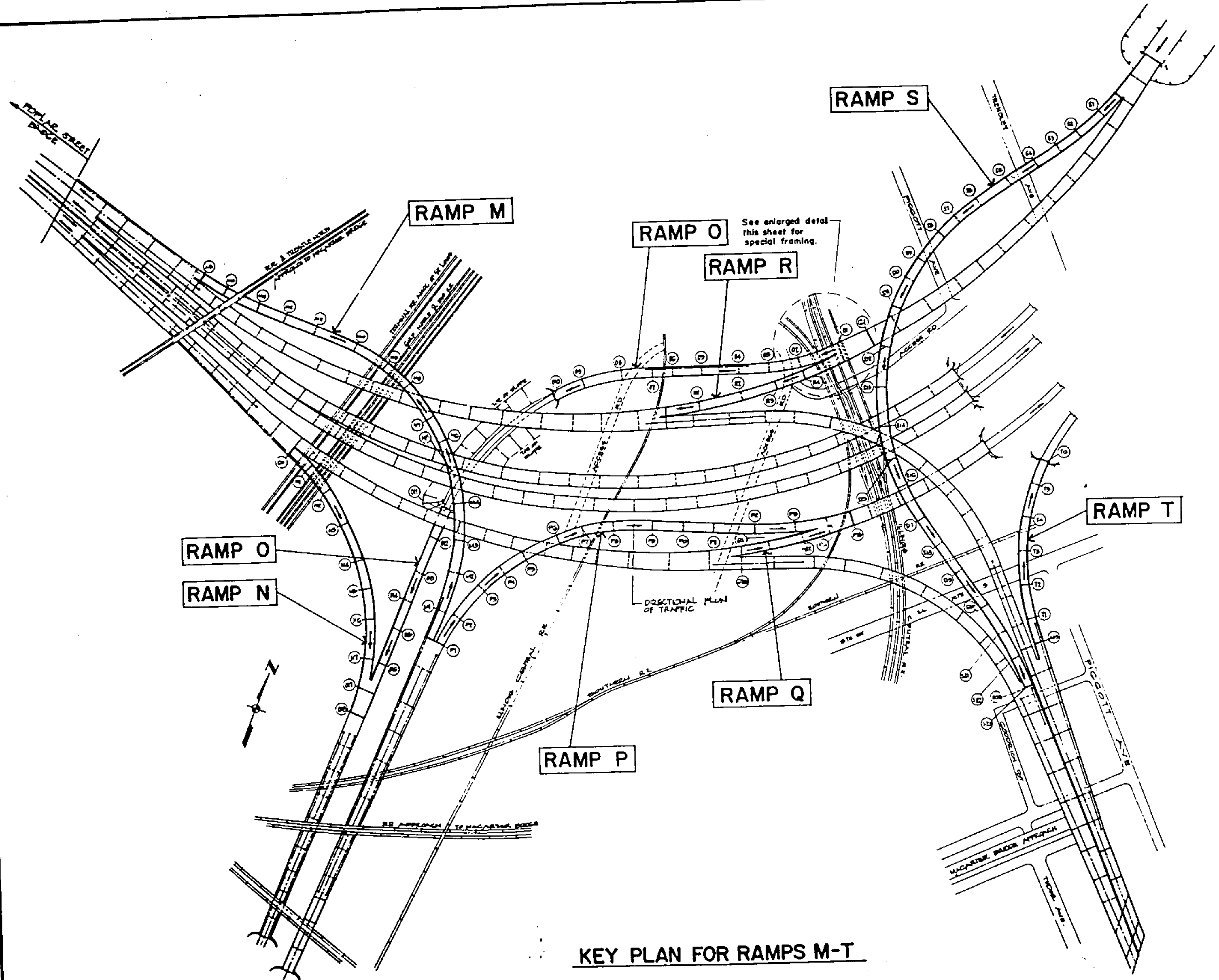
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE REPAIRS

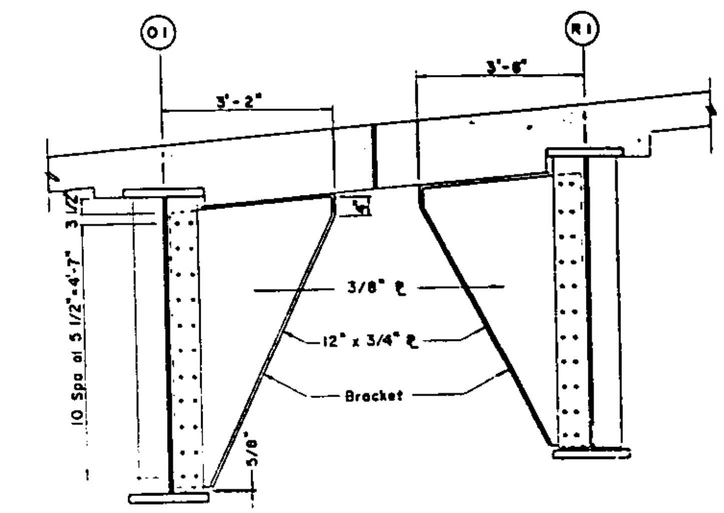
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

SCALE : NONE — DRAWN BY : GSA
DATE 2/26/86 — CHECKED BY : TLR

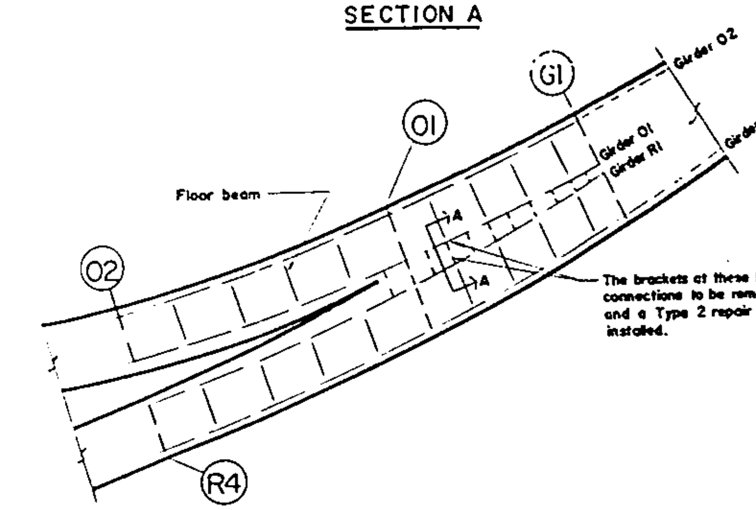
70	[illegible]	ST. CLAIR	11	4



KEY PLAN FOR RAMPS M-T



SECTION A



PLAN

EXISTING BRACKETS AT RAMP O AND RAMP R INTERSECTION

NOTE: Brackets are to be removed at two locations (OIN int-IE and OIS int-IE) and the Type 2 retrofit detail installed.

1. Remove all existing high strength bolts between the existing bracket and stiffener.
2. Remove bracket.
3. Install Type 2 retrofit detail.

KEY PLAN FOR RAMPS M-T

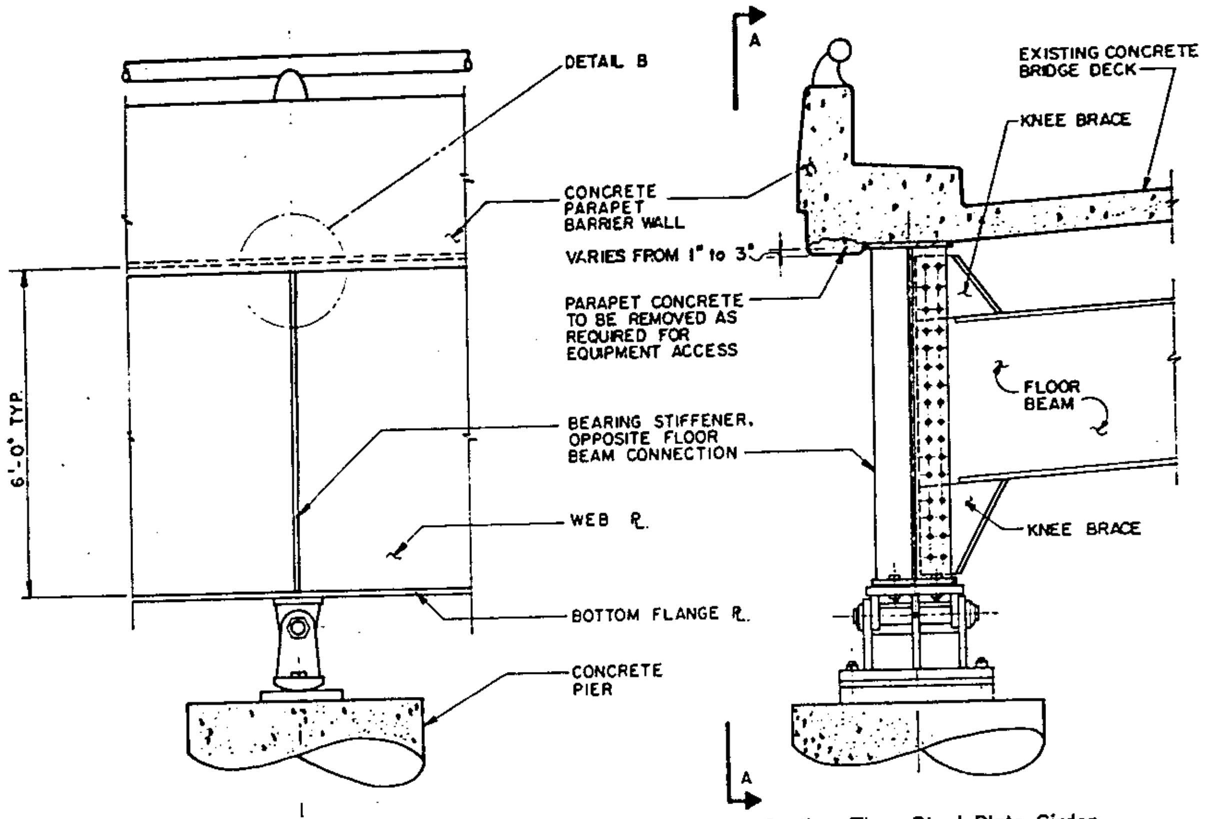
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE REPAIRS

FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

SCALE: NONE
DRAWN BY: GSA
DATE 2/26/86
CHECKED BY: TLR

F.A. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	82-3HVB-R	ST. CLAIR	11	5



SECTION A

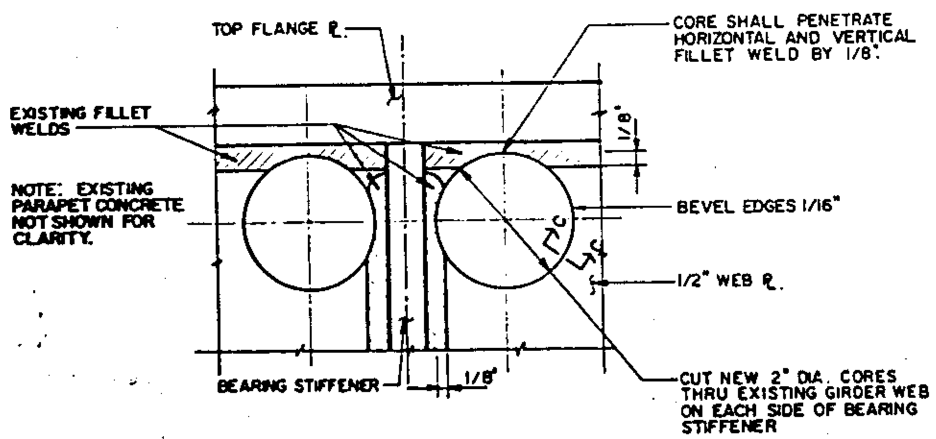
Section Thru Steel Plate Girder at a Continuous Support

DETAILS FOR REPAIR OF GIRDER WEB CRACKING

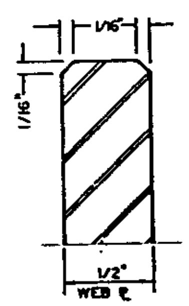
AT A FLOOR BEAM-TO-BEARING STIFFENER GIRDER CONNECTION

TYPE 1 REPAIR

Note: Refer to Sheet Nos. 7 through 10 for repair detail locations.



DETAIL B



SECTION C

REPAIR PROCEDURE FOR INSTALLATION OF BEARING STIFFENER RETROFIT

1. Remove existing parapet concrete, as required, for equipment access.
2. Core 2 in. diameter holes through web plate adjacent to the top flange as positioned in Detail B. Core hole shall penetrate horizontal and vertical fillet welds approximately 1/8 in. If core does not penetrate weld by 1/8 in., remove additional material by grinding. Remove all burrs from core surface and surface shall have a Roughness average (Ra) of 500 or less. Bevel edges of cored holes 1/16".
3. Obtain approval of engineer before proceeding.
4. Clean surface to remove any cutting oils or contaminants.
5. Clean and paint all areas of existing structural steel affected by this repair process, in accordance with the Special Provisions.
6. Patch parapet concrete at the direction of the Engineer, in accordance with the Special Provisions.

QUANTITIES

ITEM	UNIT	QUANTITY
Structural Steel Repairs, Type 1	Each	355
Removal and Replacement of Existing Traffic Signs	Each	8
Cleaning and Painting Previously Repaired Connections	Each	12
Traffic Control for Repair Locations Above Another Roadway	Each	8

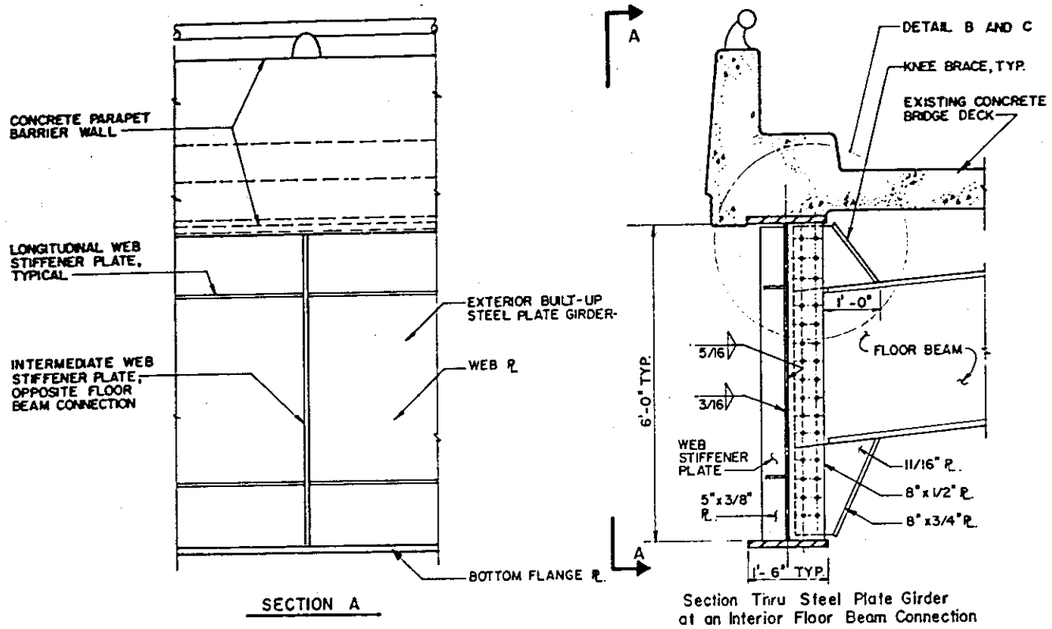
BEARING STIFFENER RETROFIT DETAILS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE REPAIRS

FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

SCALE: NONE
DRAWN BY: GSA
DATE 2/26/86
CHECKED BY: TLR



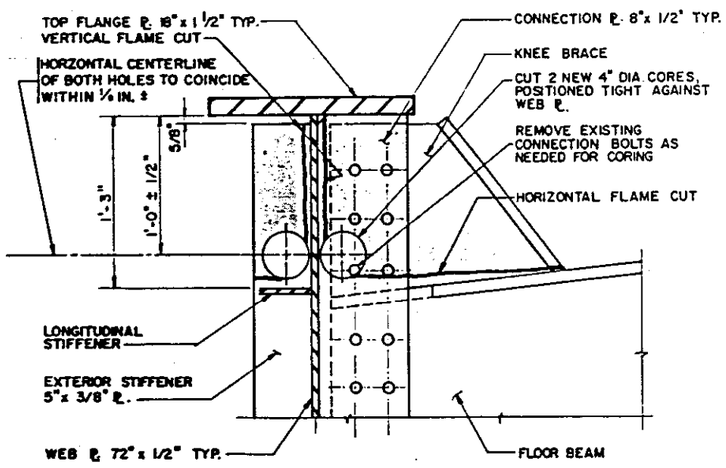
SECTION A

Section Thru Steel Plate Girder at an Interior Floor Beam Connection

DETAILS FOR REPAIR OF GIRDER WEB CRACKING AT FIRST INTERIOR FLOOR BEAM - TO - GIRDER CONNECTION

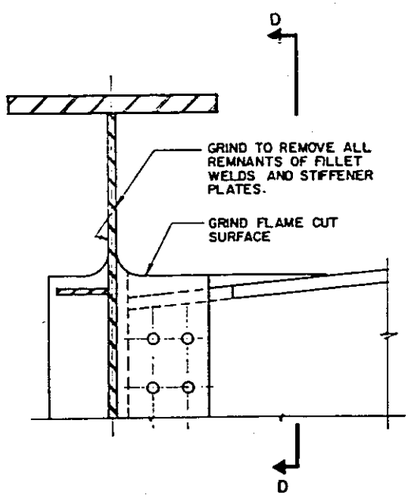
TYPE 2 REPAIR

Note: Refer to Sheet Nos. 7 through 10 for repair detail locations.



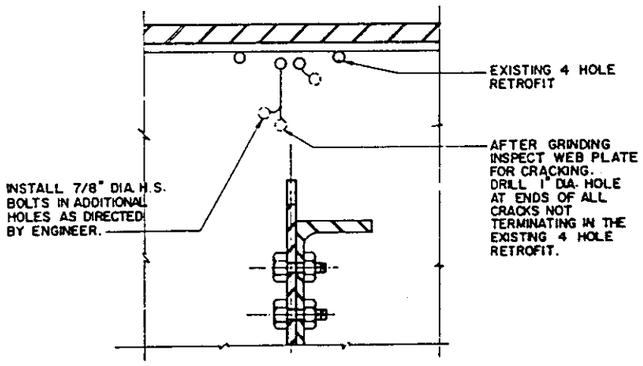
DETAIL B

Illustrating Steps 1 thru 3 of the Repair Sequence



DETAIL C

Illustrating Steps 4 and 5 of the Repair Sequence



SECTION D

Illustrating Steps 6 thru 9 of the Repair Sequence

REPAIR PROCEDURE FOR INSTALLATION OF INTERIOR NON-BEARING STIFFENER RETROFIT:

1. Remove existing bolts between floor beam and connection plate that will interfere with coring operation. Core 4 in. diameter holes through the interior and exterior stiffeners as shown in Detail B.
2. Make horizontal flame cuts through knee brace and exterior stiffener as shown in Detail B. Refer to Special Provisions.
3. Make vertical flame cuts through the exterior stiffener and interior connection plate. These cuts shall be sufficiently away from the girder web to avoid gouging of the web plate. Also, utmost care shall be taken to not gouge the top flange plate during the cutting operation. Temperature of web plate shall not exceed 800° F. Refer to Special Provisions.
4. Grind surfaces immediately after flame cutting. Roughness of all flame cut surfaces shall be (Ra)1000 or less before leaving the location.
5. Remove remnants of vertical fillet welds and stiffener plates so that the web plate has a surface roughness of (Ra) 250 or less. The final grinding shall be done parallel to the flange. Refer to Special Provisions.
6. Inspect web plate in region of repairs. Drill 1" holes at ends of all cracks that do not terminate at an existing drilled hole.
7. Obtain approval of Engineer before proceeding.
8. Install 7/8" diameter high strength A325 bolts in crack retrofit holes as specified in the Special Provisions. Hardened washers shall be installed under both nut and bolt head. Tighten bolts to the minimum fastener tension, using the "turn-of-the-nut method", as specified in the AISC "Specification for Structural Joints Using ASTM A325 or A490 Bolts".
9. Clean exposed steel surface to remove any contaminants or rust.
10. Clean and paint all areas of existing Structural Steel affected by this repair process, in accordance with the Special Provisions.

70	82-3H46-1R	ST. CLAIR	11	6

QUANTITIES

ITEM	UNIT	QUANTITY
Structural Steel Repairs, Type 2	Each	732
Cleaning and Painting Previously Repaired Connections	Each	8
Traffic Control for Repair Locations Above Another Roadway	Each	28

INTERIOR NON-BEARING STIFFENER RETROFIT DETAILS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

SCALE : NONE — DRAWN BY : GSA
DATE 2/26/86 — CHECKED BY : TLR

F.A.I. ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
70	✱	ST. CLAIR	4	1
F.H.W.A. REG. NO. 4		ILLINOIS	PROJECT IR-70-1(145)0	

✱ 82-3HVB-R-5

P-98-073-83

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX

STANDARDS:

2298-7 2300-3
2299-10 2307-6

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

F.A.I. ROUTE 70

SECTION 82-3HVB-R-5

PROJECT IR-70-1(145)0

ST. CLAIR COUNTY

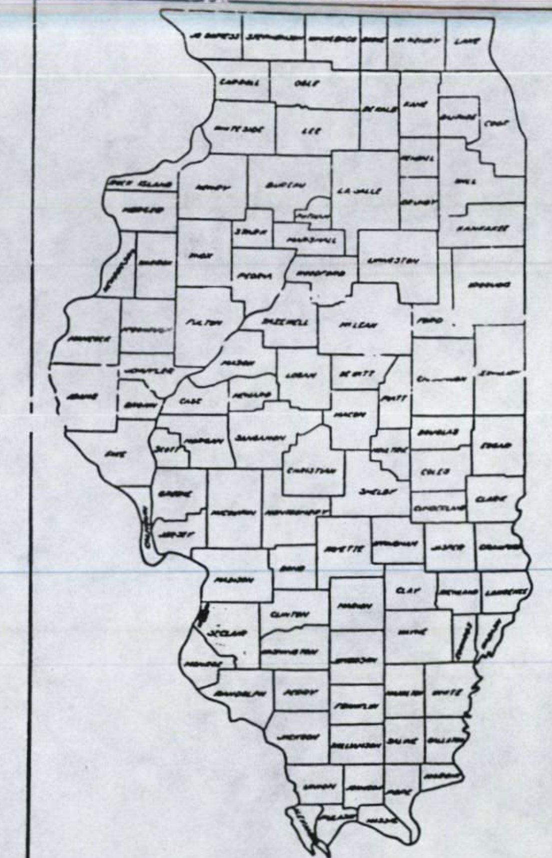
C-98-050-84

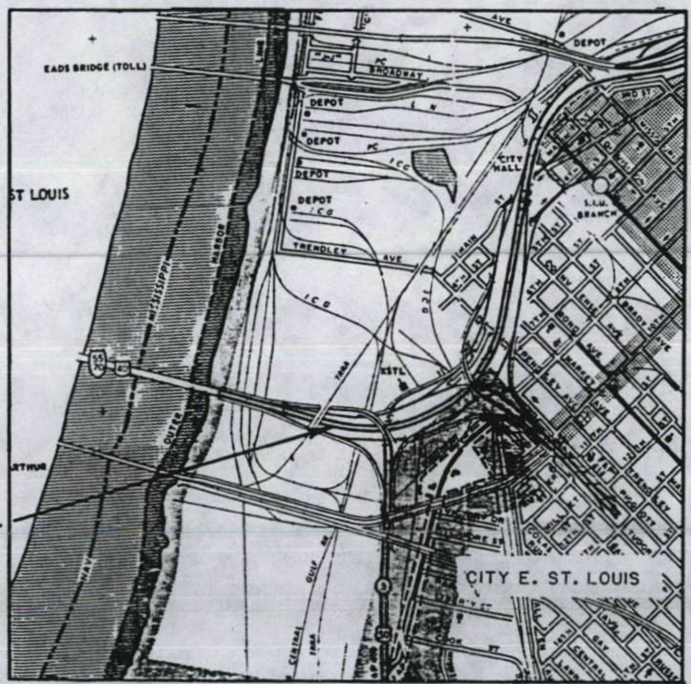
SUMMARY OF QUANTITIES

CODE NO.	PAY ITEM	UNIT	QUANTITY
* X04748	MOBILIZATION	L SUM	1
* X07723	PIER COLUMN REPAIR TYPE I	EACH	270
* X07724	PIER COLUMN REPAIR TYPE II	EACH	151
** Z10527	TRAINEES	HOURS	4,000

* CONSTRUCTION TYPE CODE Y007

** CONSTRUCTION TYPE CODE Y080





THIS PROJECT CONSISTS OF THE PIER CAP REPAIR AT VARIOUS LOCATIONS IN THE POPLAR STREET BRIDGE COMPLEX

LOCATION MAP

0 1200 2400

SCALE: 1"=1200FT.

MICROFILMED ______
REEL NUMBER ______
AWARDED ______
RESIDENT ENGINEER ______
AS BUILT CHANGES WERE MADE ON THE FOLLOWING SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED 11/27 19 84
DISTRICT ENGINEER
EXAMINED 12-20 19 84
ENGINEER OF PLANS AND CONTRACTS
PASSED 12-20 19 84
ENGINEER OF DESIGN
APPROVED 12-20 19 84
DIRECTOR OF HIGHWAYS

CONTRACT NO. 38649

REEL 8-151

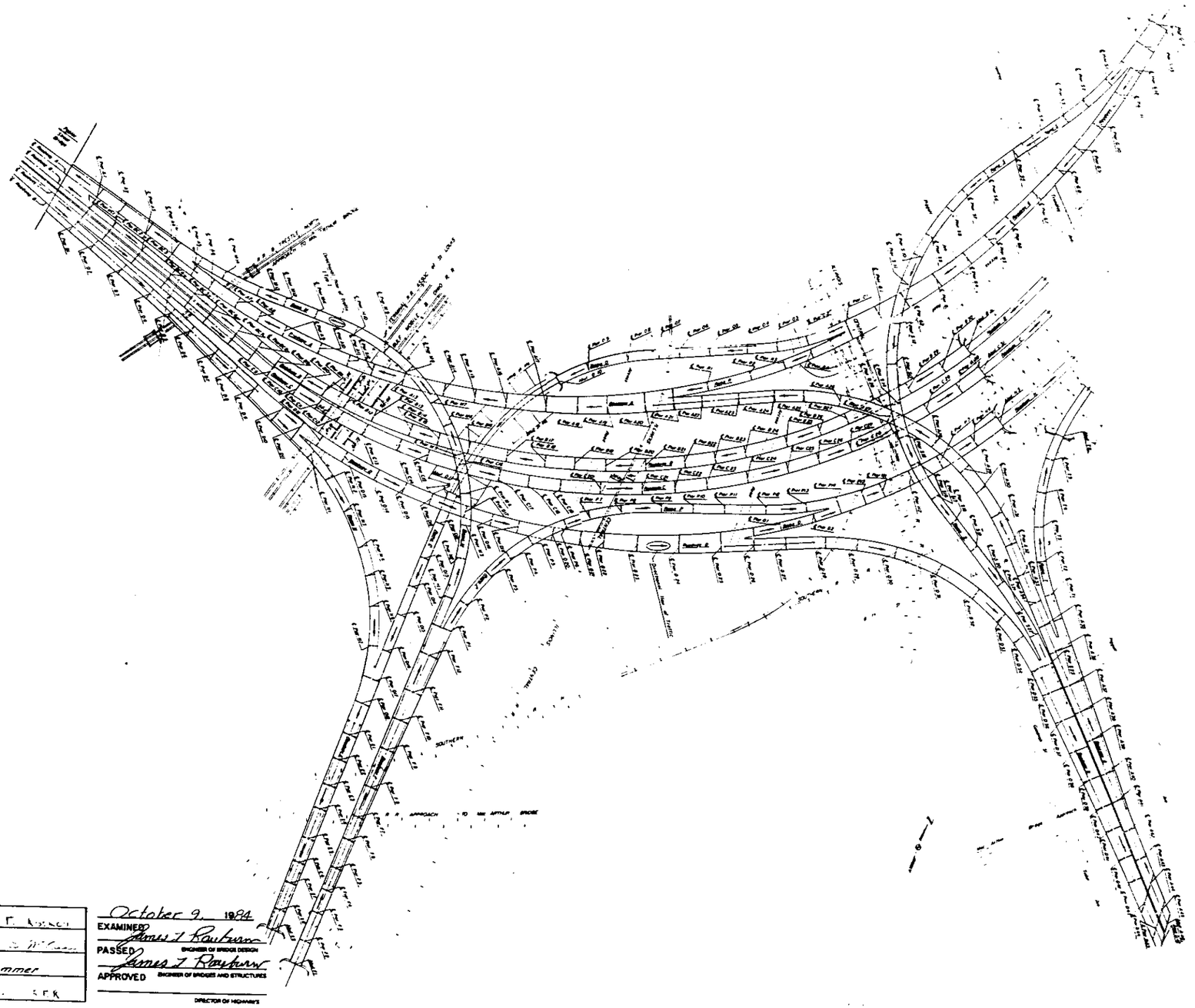
ST. CLAIR COUNTY SECTION 82-3HVB-R-5 F.A.I. ROUTE 70

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			3	1
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

Sheet No. 1
3 Sheets



TOTAL BILL OF MATERIALS

ITEM	UNIT	TOTAL
Pier Column Repair – Type I	Each	270
Pier Column Repair – Type II	Each	10

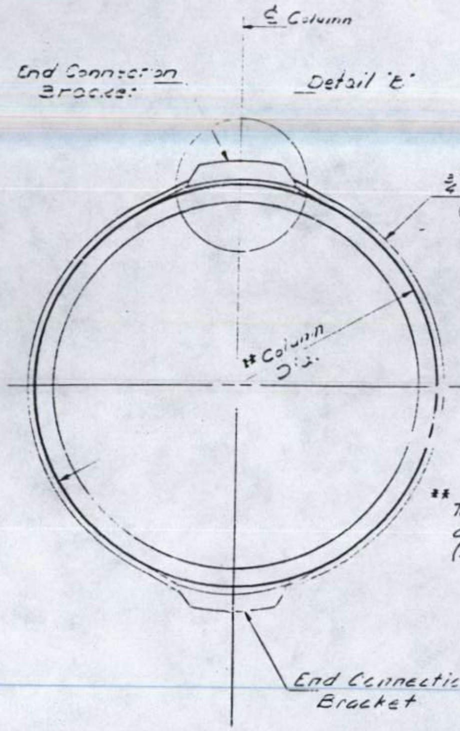
*For pier locations see special provisions

DESIGNED	[illegible]
CHECKED	[illegible]
DRAWN	A. Sommer
CHECKED	[illegible]

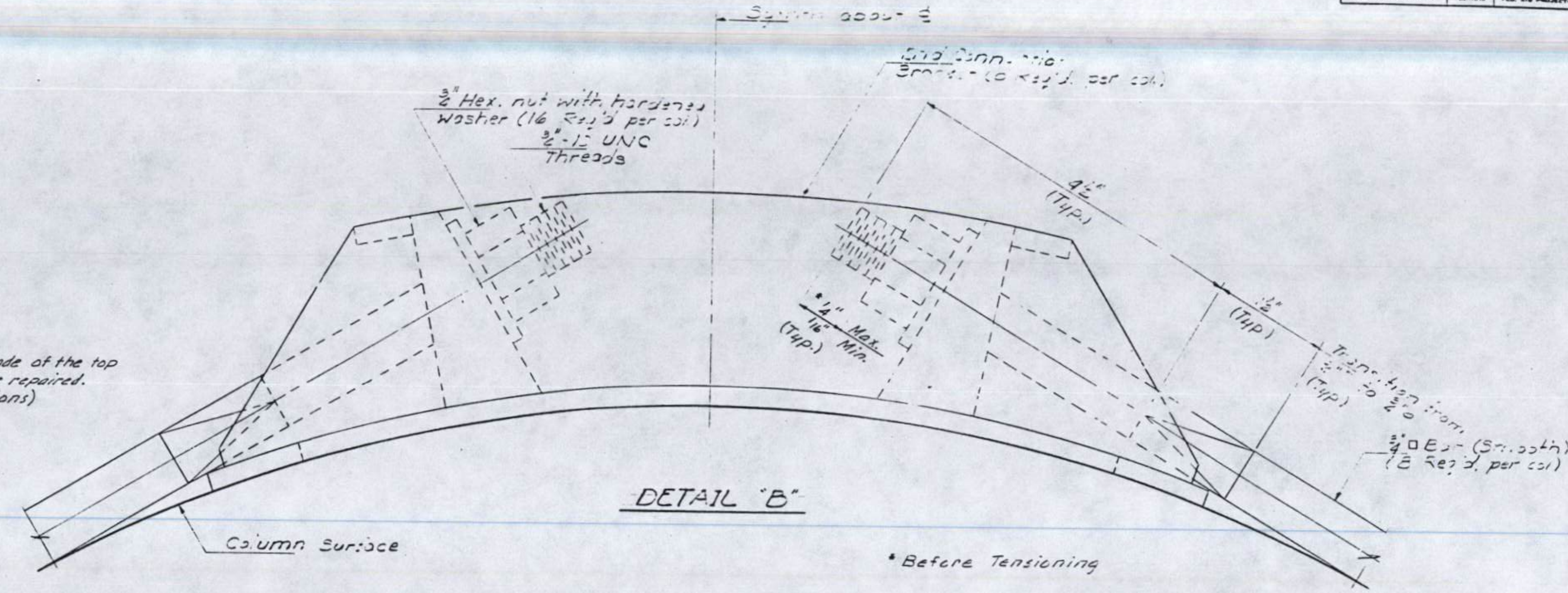
October 9, 1984
EXAMINED James T Rayburn
ENGINEER OF BRIDGE DESIGN
PASSED James T Rayburn
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

GENERAL PLAN
F.A.I. RT. 70 SEC. 82-3H [illegible]-7-5
ST. CLAIR COUNTY

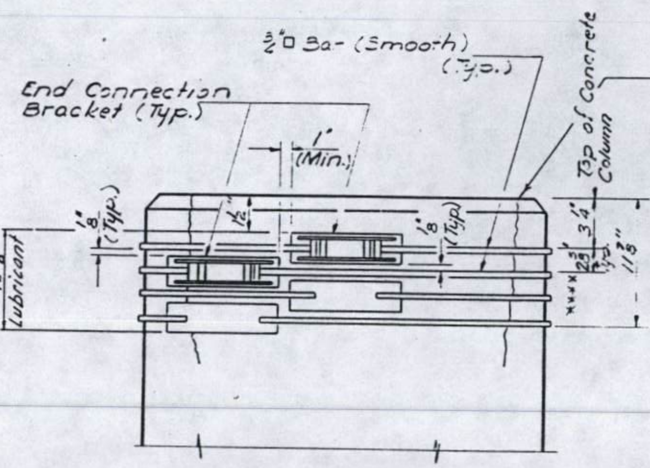
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



** Template shall be made of the top of each column to be repaired. (See Special Provisions)



DETAIL "B"



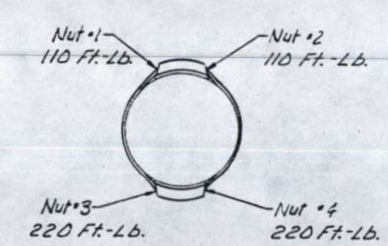
TOP OF PIER COLUMNS

For locations see Special Provisions

Clean and epoxy grout cracks before bar tensioning. See Special Provisions.

BAR TENSIONING PROCEDURE

The ¾"⌀ bars shall be tensioned in sequence from the bottom bar to the top bar. Each bar shall be tensioned by tightening the nuts to the given torques according to the following sequence:



After tightening all four nuts on a bar they shall all be checked for 220 Ft.-Lb. Torque according to the same above sequence. The Engineer shall then verify the 220 Ft.-Lb. torque on all the nuts and the threads shall be set.

QUANTITY OF STRUCTURAL STEEL PER COLUMN IN LBS.

COL. DIA.	AASHTO M-223	AISI 4140	TOTAL
4'-0"	118	96	214
4'-6"	118	108	226
5'-0"	118	120	238
5'-6"	118	132	250
6'-0"	118	144	262
6'-6"	118	156	274
7'-0"	117	168	285

All Structural Steel is incidental to "Pier Column Repair - Type I" or "Pier Column Repair - Type II" as applicable.

*** A petroleum base lubricant approved by the Engineer shall cover the entire surface area between the ¾"⌀ bars and the concrete surface. This shall be accomplished by placing lubricant on the concrete surface in the area shown around the entire circumference of the column.

**** The spacing of the Post Tensioning Bars shall be maintained throughout the perimeter of the columns, as shown, by using templates.

GENERAL NOTES

End Connection Bracket shall conform to the requirements of A.A.S.H.T.O. M223 Grade 50.

The ¾"⌀ bar shall conform to the requirements of AISI 4140, quenched and tempered to a minimum yield strength of 100,000 psi. and a maximum yield strength of 120,000 psi.

The hardened washer shall conform to the requirements of A.S.T.M. F-436.

The end connection brackets, ¾"⌀ bars, nuts and washers shall receive one shop coat of red lead paint and two shop coats of aluminum paint.

The ¾" hex. nut shall conform to the requirements of A.S.T.M. A-563, Grade DH.

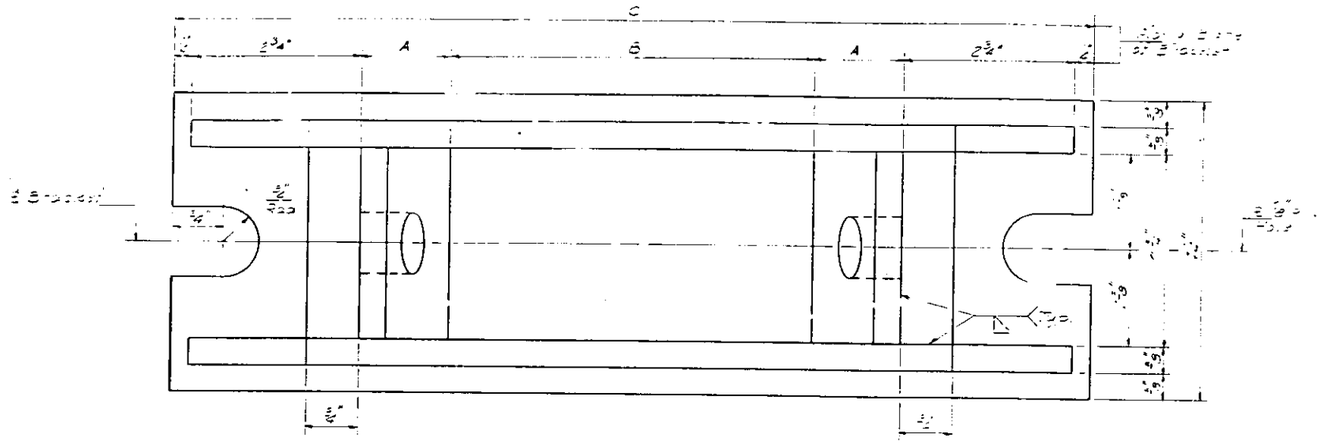
Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work.

Concrete surfaces to receive Post-Tensioning System shall be smoothed by stoning or grinding as required to eliminate projections

DESIGNED	R. F. R.
CHECKED	Paul S. McC.
DRAWN	J. Schneider / Collins
CHECKED	P.S. Mc. R.F.R.

October 9 1984
EXAMINED James T. Rasturn — ENGINEER OF BRIDGE DESIGN
PASSED James T. Rasturn — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

POST-TENSIONING SYSTEM
PIER COLUMNS - REPAIR
F.A.I. RT. 70 SEC. 82-3HVB-R-5
ST. CLAIR COUNTY



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 3
3 SHEETS

TABLE OF DIMENSIONS

COL. DIA.	A	B	C	D	E	F	G	H
4'-0"	1 7/16"	4 3/4"	13 5/8"	1 3/16"	1 1/16"	16° 40'-30"	24"	26 3/4"
4'-6"	1 3/8"	4 7/16"	13 11/16"	1 3/16"	1 1/16"	15°-50'-23"	27"	29 3/4"
5'-0"	1 3/8"	5"	13 3/4"	1 1/4"	1"	15°-23'-01"	30"	32 3/4"
5'-6"	1 5/16"	[illegible]	13 7/8"	1 1/4"	1"	14°-46'-31"	33"	35 3/4"
6'-0"	1 5/16"	5 1/4"	13 7/8"	1 1/4"	1"	14°-14'-15"	36"	38 3/4"
6'-6"	1 5/16"	5 5/16"	13 15/16"	1 5/16"	15/16"	13°-45'-10"	39"	41 3/4"
7'-0"	1 1/4"	5 1/2"	14"	1 5/16"	15/16"	13°-09'-07"	42"	44 3/4"

END CONNECTION BRACKET

SECTION D-D

DESIGNED R. F. [illegible]
CHECKED Paul S. McCammy
Collins Sommer
DRAWN J. SCHNELLER
CHECKED PSMc LFR

October 9 1984
EXAMINED James T. Raeburn
ENGINEER OF BRIDGE DESIGN
PASSED James T. Raeburn
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

END CONNECTION BRACKET
POST-TENSIONING SYSTEM
PIER COLUMNS REPAIR
F.A.I. RT. 70 SEC. 82-3HVB-R-5
ST. CLAIR COUNTY

F.A. ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
70	*	St.Clair	4	1

F.H.W.A. REG. NO. 4 ILLINOIS PROJECT

*82-3HVB-R-4

P-98-066-82

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

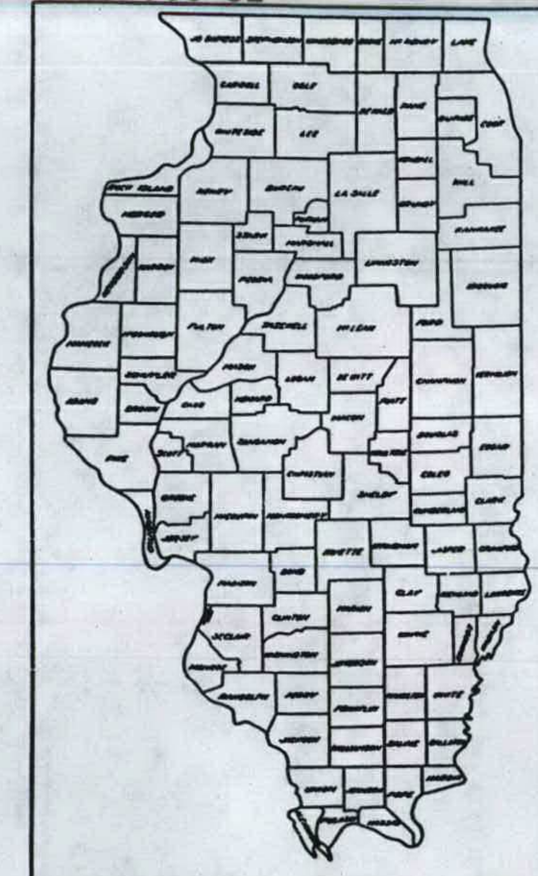
F.A.I. ROUTE 70

SECTION 82-3HVB-R-4

PROJECT IR-70-1(141)0

ST. CLAIR COUNTY

C-98-074-83



LOCATION OF SECTION INDICATED THUS:—

INDEX

STANDARDS:

2298-7

2299-10

2300-3

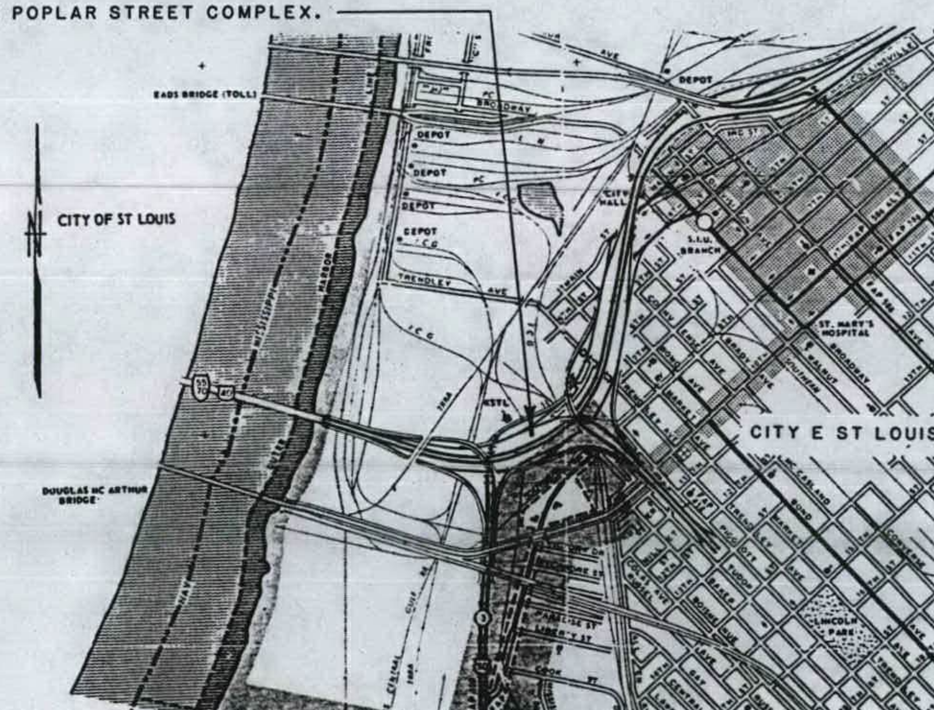
2307-5

SUMMARY OF QUANTITIES

CODE NO.	PAY ITEM	UNIT	QUANTITY*
X04748	MOBILIZATION	L SUM	1
X07723	PIER COLUMN REPAIR, TYPE I	EACH	80
X07724	PIER COLUMN REPAIR, TYPE II	EACH	28

* CONSTRUCTION TYPE CODE Y007

THIS PROJECT CONSISTS OF THE PIER CAP REPAIR AT VARIOUS LOCATIONS IN THE POPLAR STREET COMPLEX.



0 1200 2400

Scale 1" = 1200'

MICROFILMED ______

REEL NUMBER ______

AWARDED ______

RESIDENT ENGINEER ______

AS BUILT CHANGES WERE MADE ON THE FOLLOWING SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED 1/24 19 84

EXAMINED 2-3 19 84

PASSED 2-3

APPROVED 2-13 19 84

DIRECTOR OF HIGHWAYS

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR DATE

CONTRACT NO. 36877

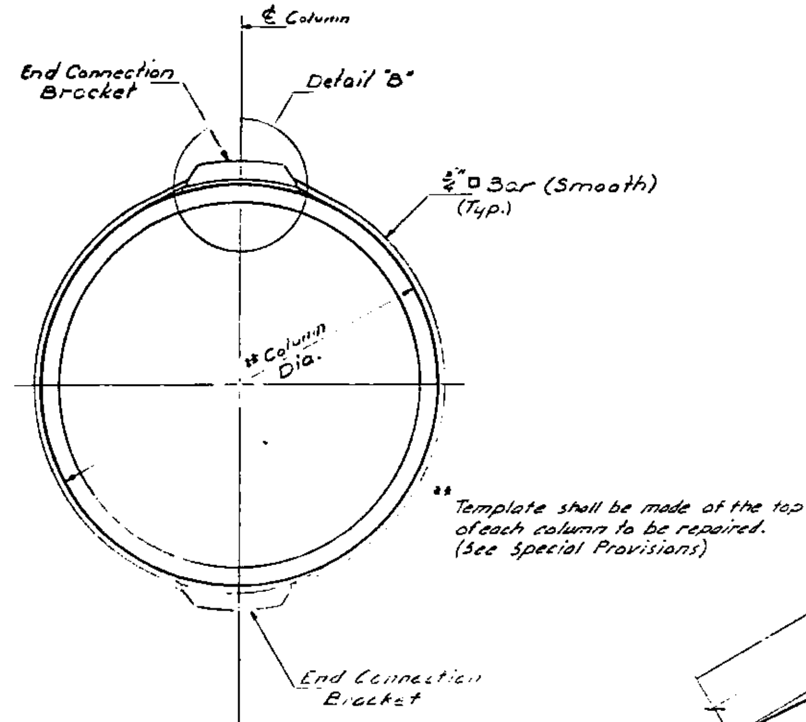
8-147

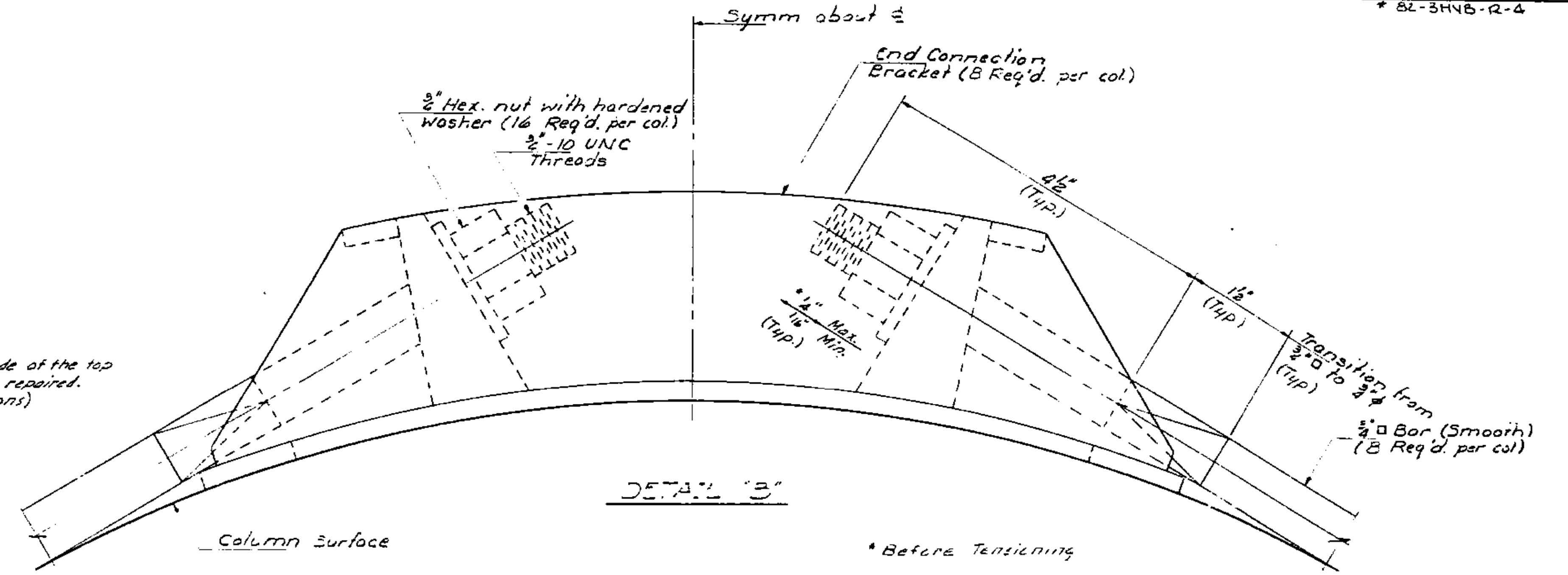
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

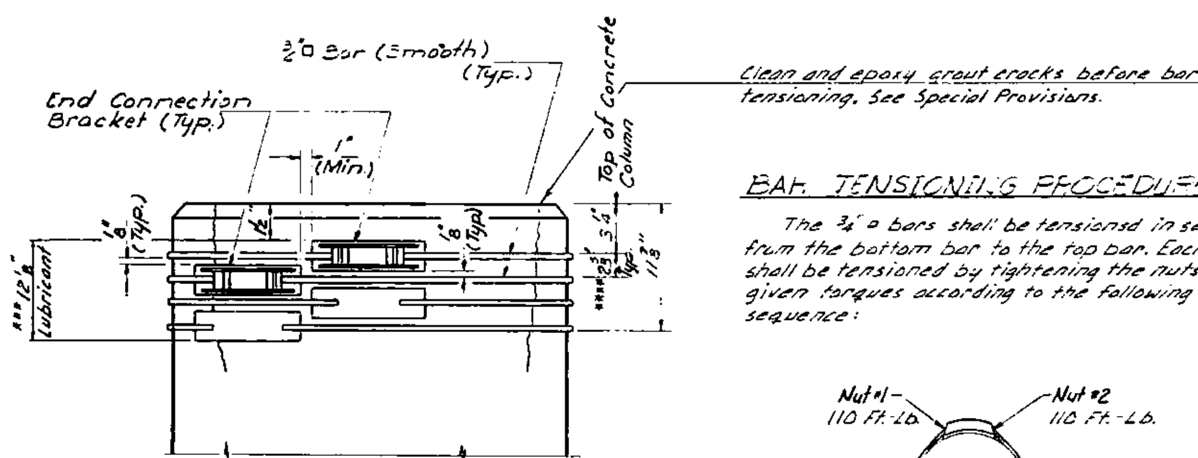
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 70	*	ST. CLAIR	4	3

* 82-3HVB-R-4

SHEET NO. 2
3 SHEETS





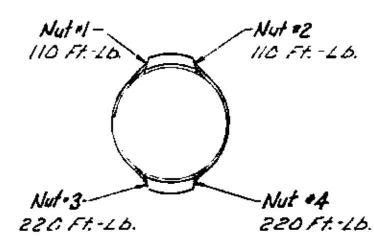


TOP OF PIER COLUMNS

For locations see Special Provisions

BAR TENSIONING PROCEDURE

The ¾" ◻ bars shall be tensioned in sequence from the bottom bar to the top bar. Each bar shall be tensioned by tightening the nuts to the given torques according to the following sequence:



After tightening all four nuts on a bar they shall all be checked for 220 Ft.-Lb. Torque according to the same above sequence. The Engineer shall then verify the 220 Ft.-Lb. torque on all the nuts and the threads shall be set.

QUANTITY OF STRUCTURAL STEEL PER COLUMN IN LBS.

COL. DIA.	AASHTO M-223	AISI 4140	TOTAL
4'-0"	118	96	214
4'-6"	118	108	226
5'-0"	118	120	238
5'-6"	118	132	250
6'-0"	118	144	262
6'-6"	118	156	274
7'-0"	117	168	285

All Structural Steel is incidental to "Pier Column Repair — Type I" or "Pier Column Repair - Type II" as applicable.

*** A petroleum base lubricant approved by the Engineer shall cover the entire surface area between the ¾" ◻ bars and the concrete surface. This shall be accomplished by placing lubricant on the concrete surface in the area shown around the entire circumference of the column.

**** The spacing of the Post-Tensioning bars shall be maintained throughout the perimeter of the Columns, as shown, by using templates.

GENERAL NOTES

Concrete surfaces to receive Post-Tensioning System shall be smoothed by stoning or grinding as required to eliminate projections.

End Connection Bracket shall conform to the requirements of A.A.S.H.T.O. M223 Grade 50.

The ¾" ◻ bar shall conform to the requirements of AISI 4140, quenched and tempered to a minimum yield strength of 100,000 psi. and a maximum yield strength of 120,000 psi.

The hardened washer shall conform to the requirements of A.S.T.M. F-436.

The end connection brackets, ¾" ◻ bars, nuts and washers shall receive one shop coat of red lead paint and two shop coats of aluminum paint.

The ¾" hex. nut shall conform to the requirements of A.S.T.M. A-563, Grade DH.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal 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.

DESIGNED	R. F. Rorke
CHECKED	Rudi S. M. / Collins R. Sommer
DRAWN	J. Schneider
CHECKED	P.S. / R.F.R.

August 4, 1983
EXAMINED
PASSED
APPROVED
DIRECTOR OF HIGHWAYS

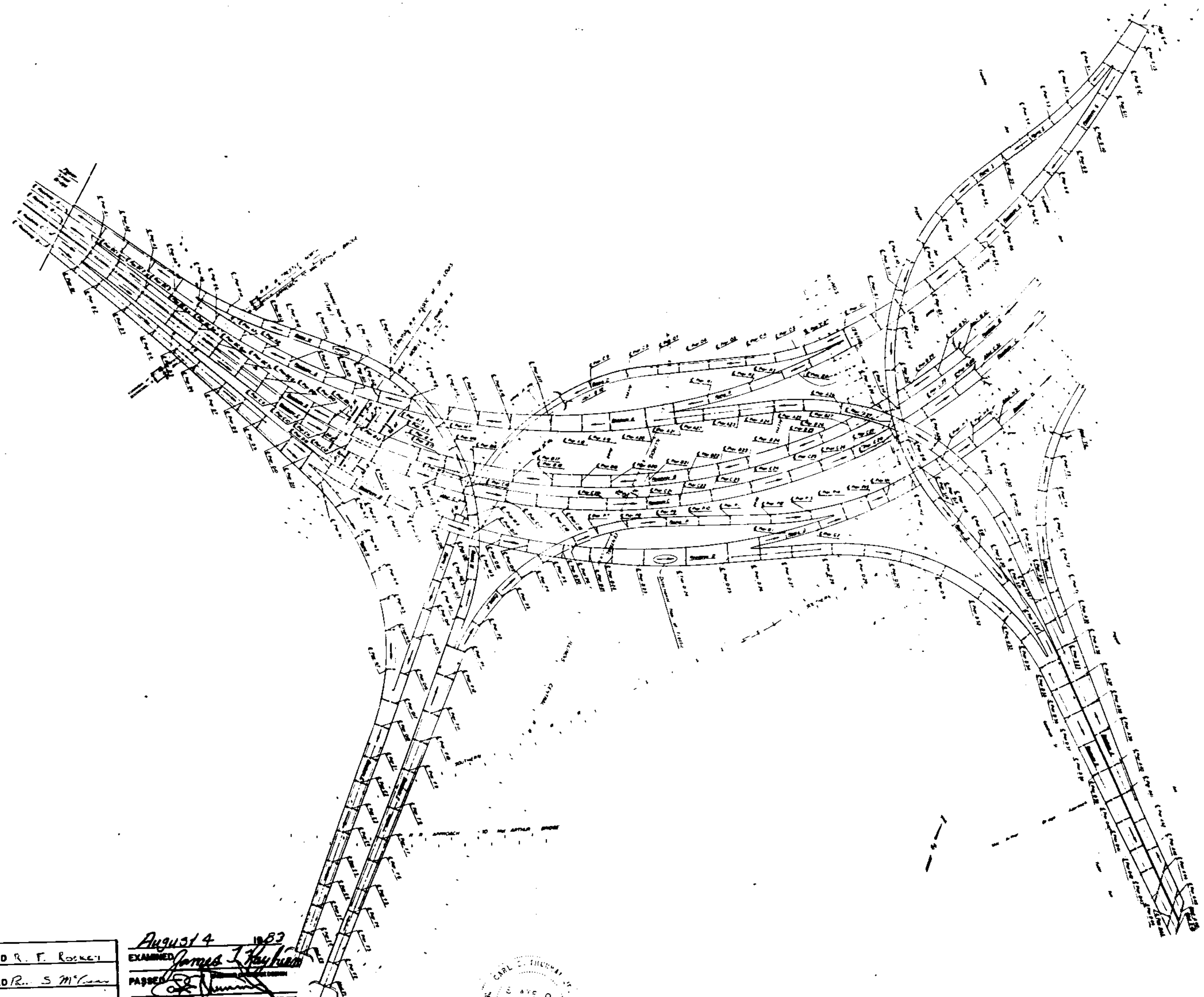
POST-TENSIONING SYSTEM
PIER COLUMNS REPAIR
F.A.I. RT. 70 SEC. 82-3HVB-R-4
ST. CLAIR COUNTY

F.A.I. ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	*	ST. CLAIR	4	2

*82-3HVB-R-4

Sheet No. 1
3 Sheets

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



TOTAL BILL OF MATERIALS

ITEM	UNIT	TOTAL
* Pier Column Repair – Type I	Each	80
* Pier Column Repair – Type II	Each	28

*For pier locations see special provisions

DESIGNED	R. F. Rocket
CHECKED	R. S. McC...
DRAWN	R. Sommer
CHECKED	R. S. M. R.F.R.

August 4 1983

EXAMINED James T. Kayhuan

PASSED

APPROVED

DIRECTOR OF HIGHWAYS

GENERAL PLAN
F.A.I. RT. 70 SEC. 82-3HVB-R-4
ST. CLAIR COUNTY

Illinois Department of Transportation

Memorandum

MAINTENANCE

JUN 9 1978

To: E. J. Kehl Attn: E. G. Wheatley

From: Thomas R. Bright By: Carl E. Thunman, Jr.

Subject: Poplar Street Repairs

Date: May 26, 1978

FAI Route 70
Section 82-3HVB-R-1
St. Clair County

Attached for your use are four (4) sets of seven (7) sheets of procedures and details for the repair of the girder web at Pier E7, Roadway E, Poplar Street Complex

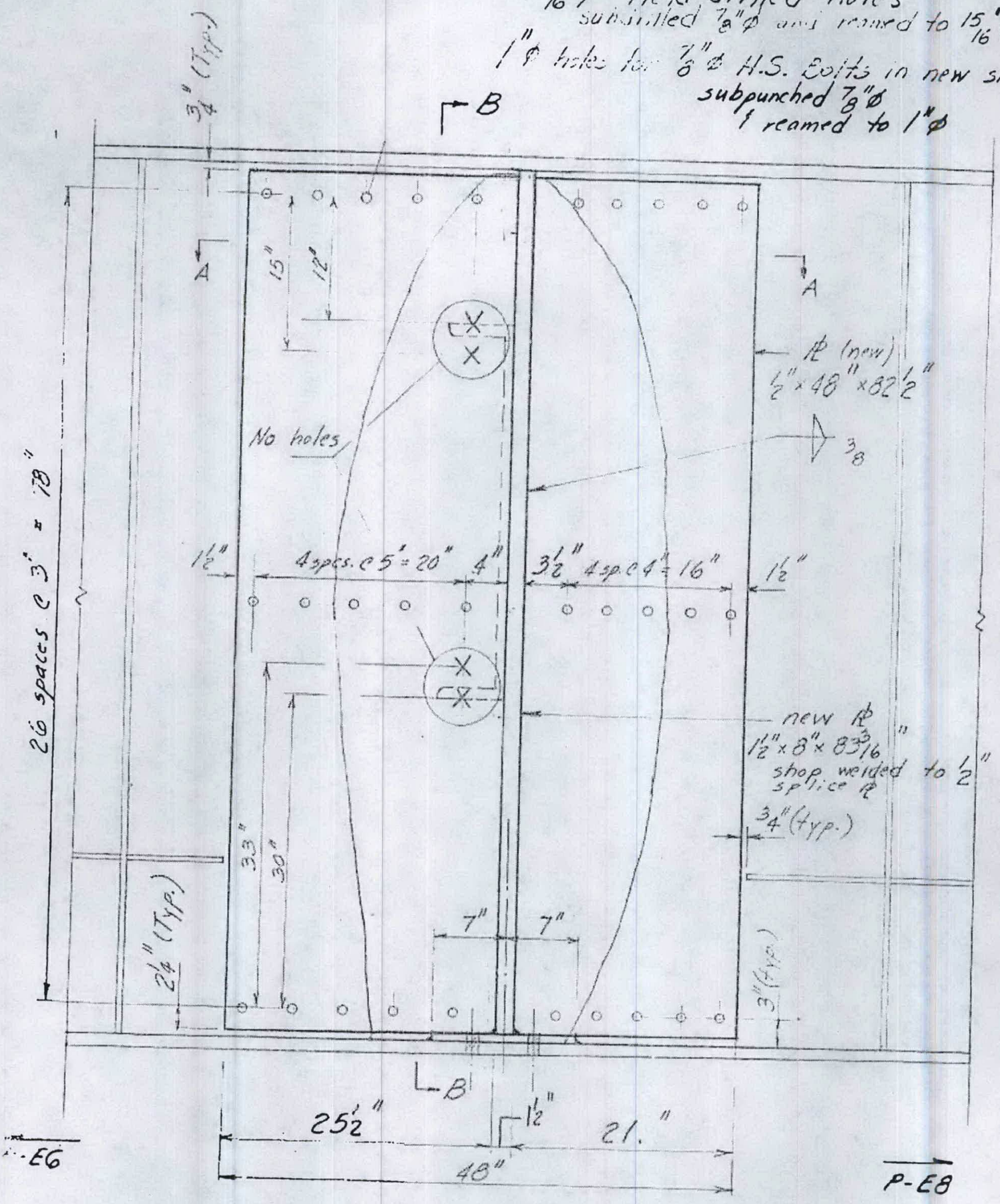
RJL:baa
cc/Attach.- Dale Klohr Attn: H. Ruffner

St. Clair Co.
82-3HVB-R-1

Procedure

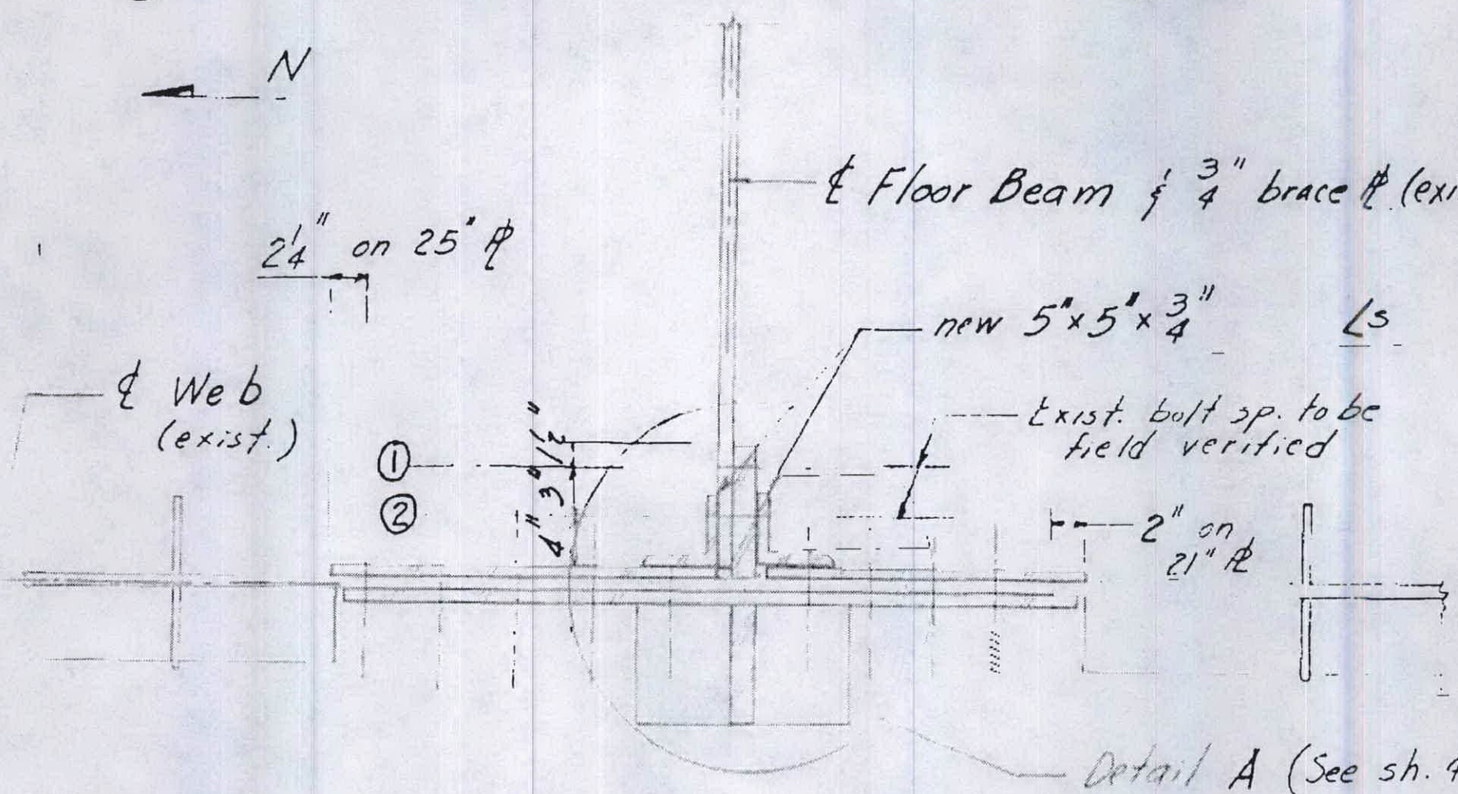
1. Restrict to one lane traffic.
2. Crib on both sides of bearing.
3. No construction traffic past centerline of bearing (one span only
4. No tack welded construction accessories. (Remove and grind smooth any existing accessories.)
5. Field drill 2 lines of $15/16$"ϕ holes in girder web, 4" to the north and $3\frac{1}{2}$" to the south of the face of exist. brg. stif. (Remove paint and clean all contact surfaces for new steel and bolts.)
6. Remove bolt line (2) - See Section A-A - and install inside web splice ℄'s and L's
7. Remove existing fascia bearing stiffener and horizontal stiffeners and grind web and flange areas smooth.
8. Using inside or outside web splice ℄'s as templates, bolt the 4' web ℄ to the girder.
9. Bolt bottom $\frac{3}{4}$" x 14" fill ℄ to bottom flange and L.
10. Stop all traffic and weld new bearing stiffener to the top flange of the girder and to the $\frac{3}{4}$" bottom fill ℄ and bottom flange of girder

15/16" ϕ field drilled holes
subdrilled 7/8" ϕ and reamed to 15/16" ϕ
1" ϕ holes for 7/8" ϕ H.S. bolts in new steel
subpunched 7/8" ϕ
& reamed to 1" ϕ

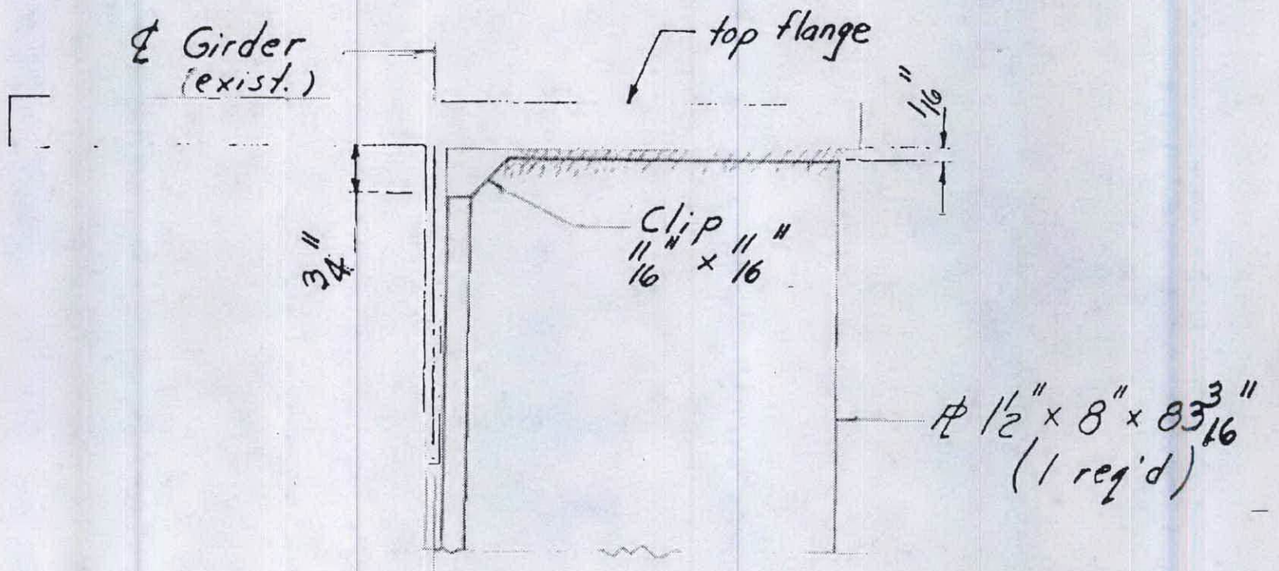


P-E6

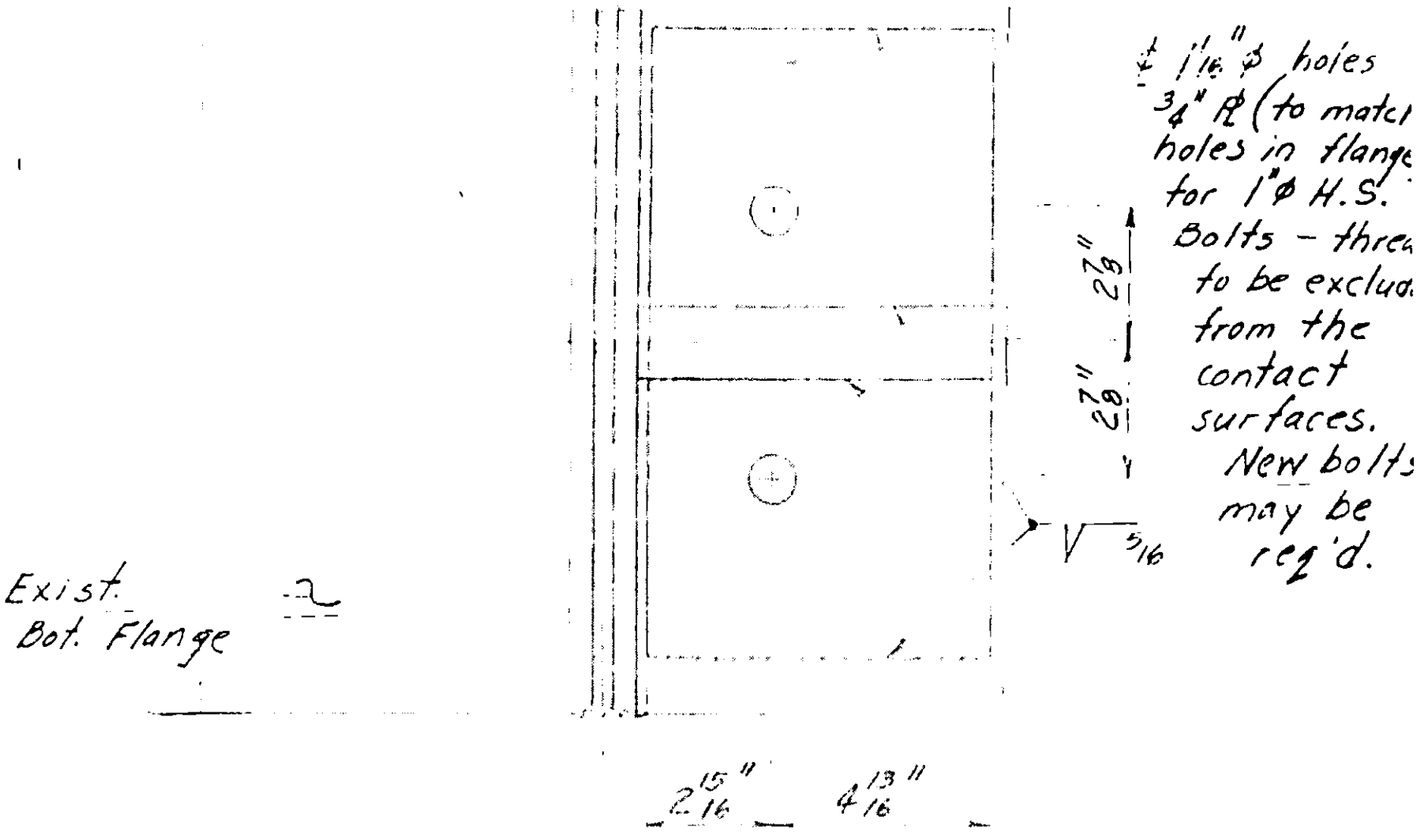
P-E8



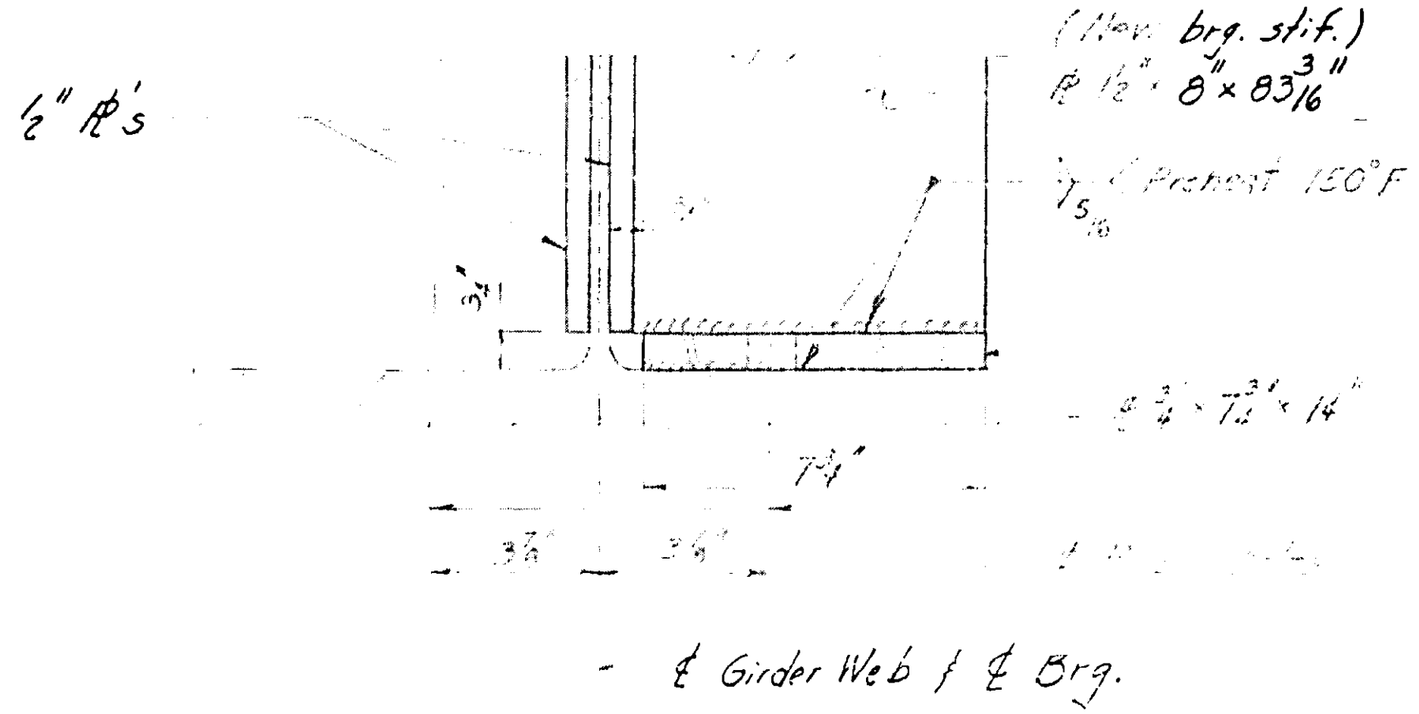
Section A-A (See sheet 1)



New Outside Brg. Stif. Detail



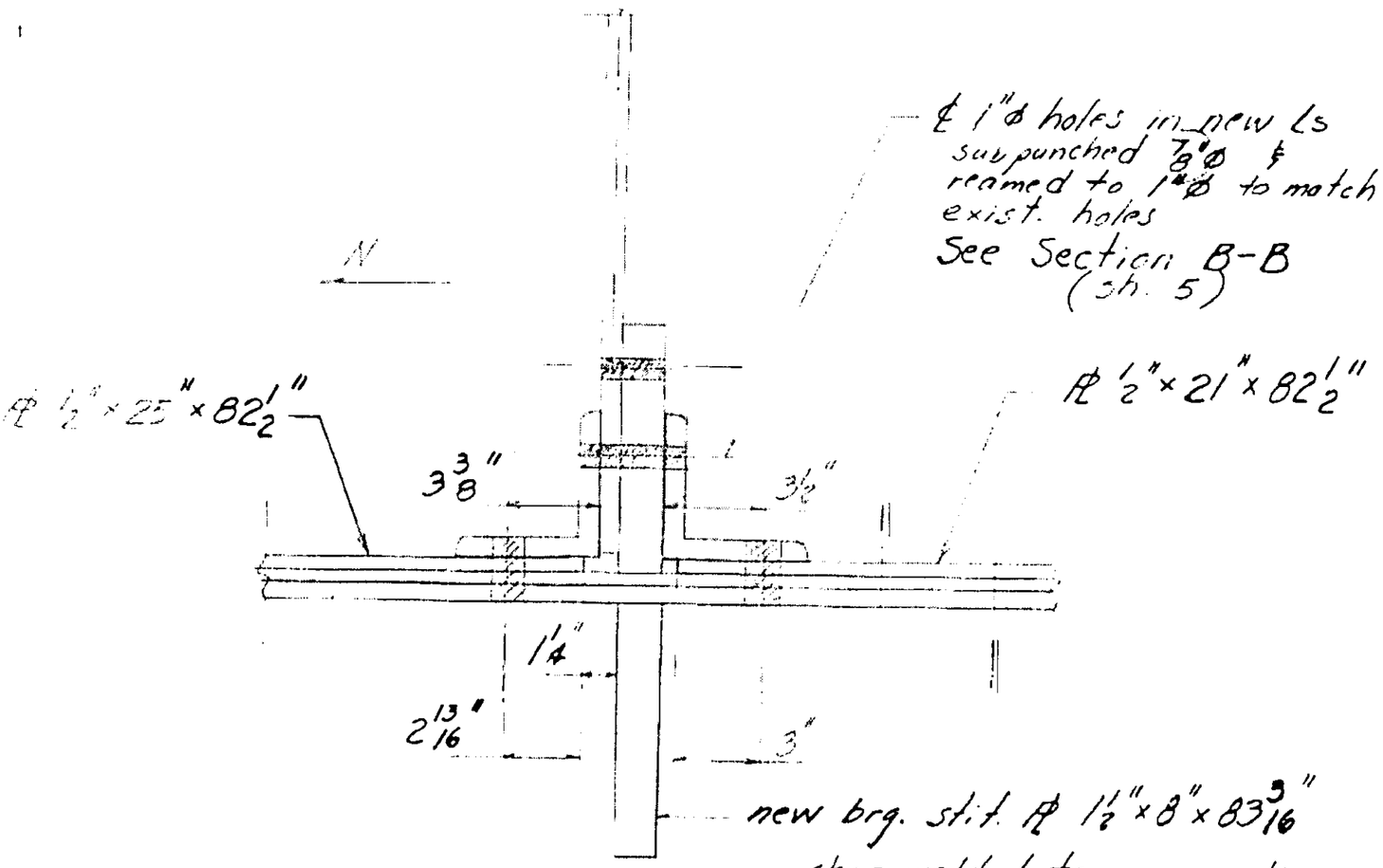
PLAN SECTION



CROSS SECTION

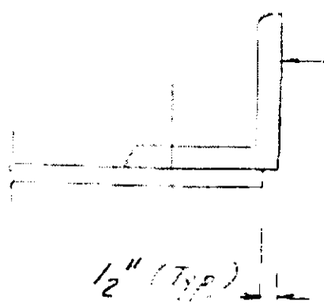
BEARING STIF. DETAILS AT BOT. FLANGE

Fl. Bm. & 3/4" brace ℄'s (Exist.)



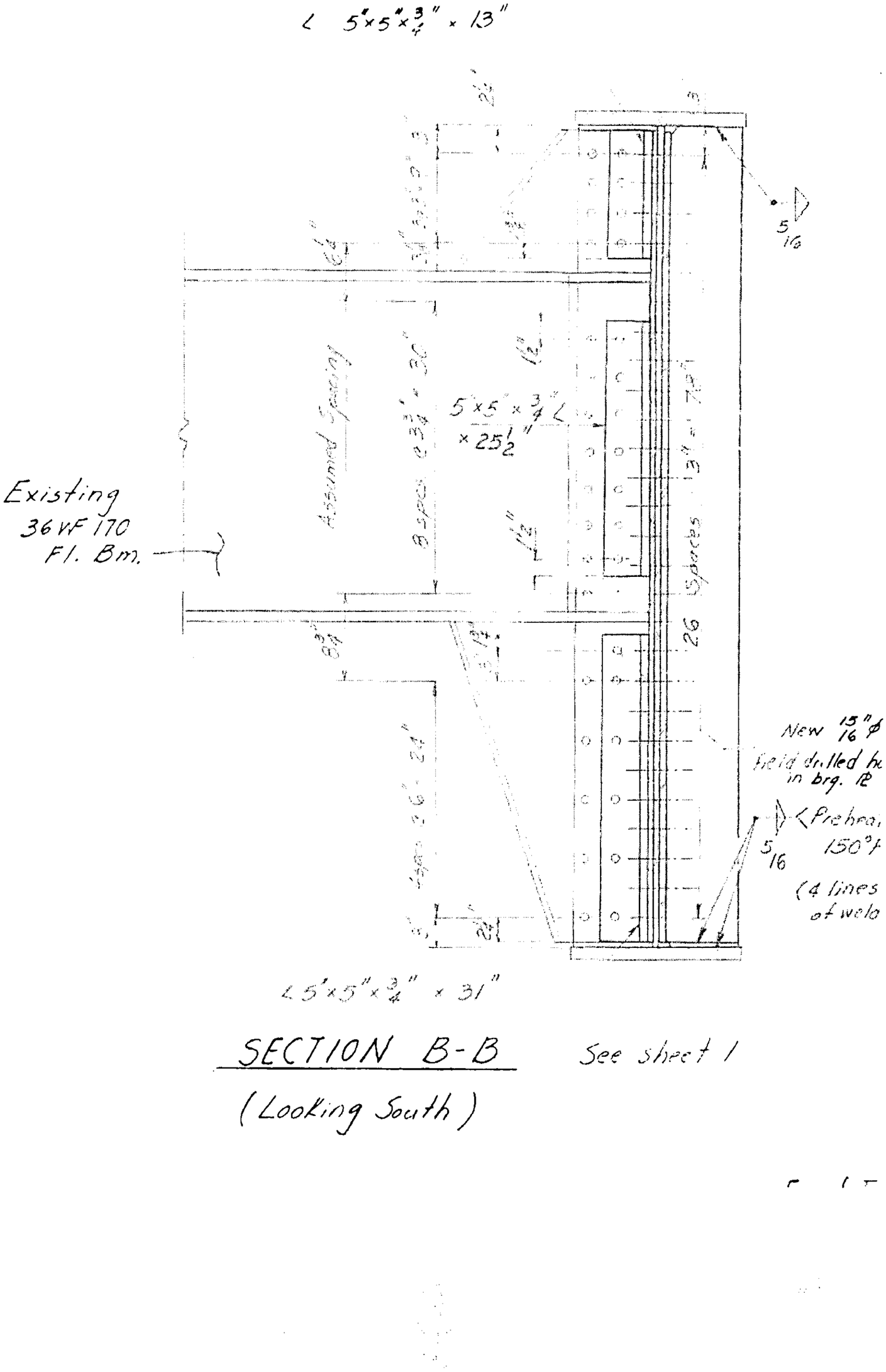
DETAIL A

See sheet 2



5" × 5" × 3/4" 82 1/2" on South side of brg. stif.

5" × 5" × 3/4" × 13" }
" " " 25 1/2" } 3 lengths side brg. stif.
" " 31" }



SECTION B-B

(Looking South)

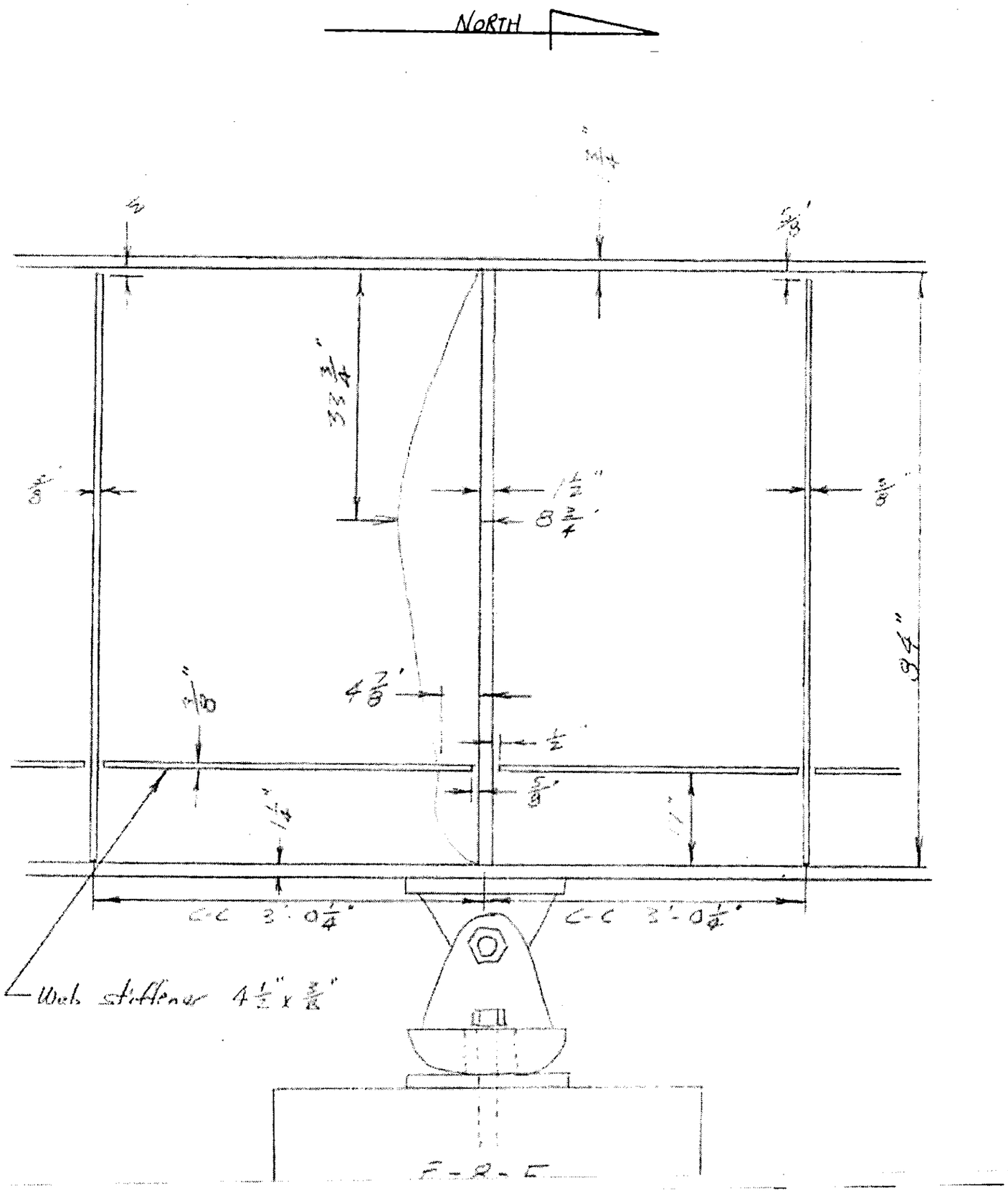
See sheet 1

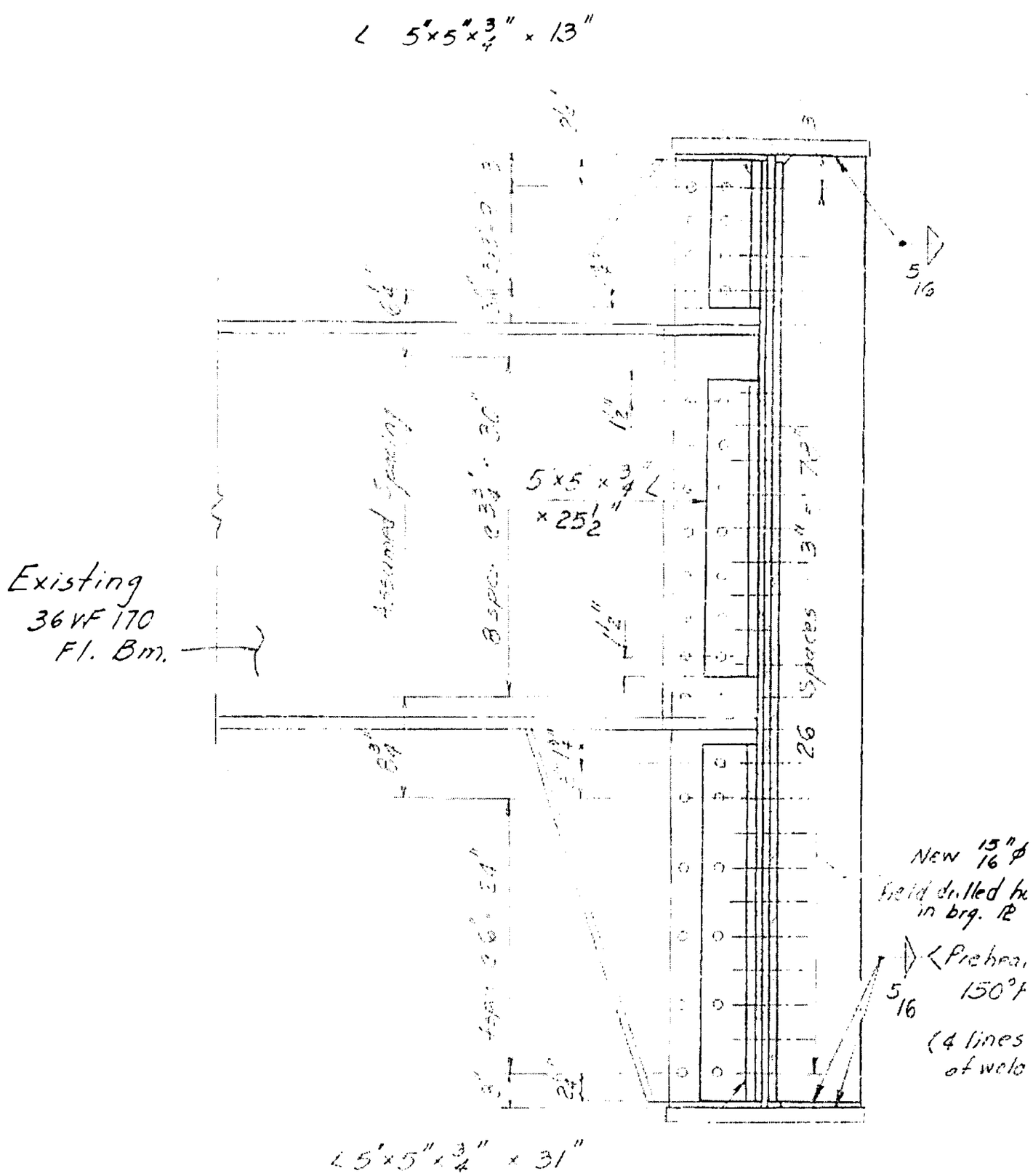
Illinois Department of Transportation

Division of Highways / District 8
9300 St. Clair Avenue / Fairview Heights, Illinois / 62208

Att. Stan Grogowicz

Illinois Department of Transportation
Division of Highways / District 8
9300 St. Clair Avenue / Fairview Heights, Illinois / 62208





SECTION B-B

(Looking South)

See sheet 1

FEDERAL-AID ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 70	82-3HVB-2	ST. CLAIR	252	1
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT I-IG-70-1(79)0		

P-98-087-00

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED FEDERAL AID HIGHWAY F.A.I. ROUTE 70

SEC. 82—3HVB-2

GRADING & PAVING AND POPLAR STREET BRIDGE APPROACHES

PROJECT I-IG-70-1(79)0

ST. CLAIR COUNTY

FOR INDEX OF SHEETS, SEE SHEET NO. 3

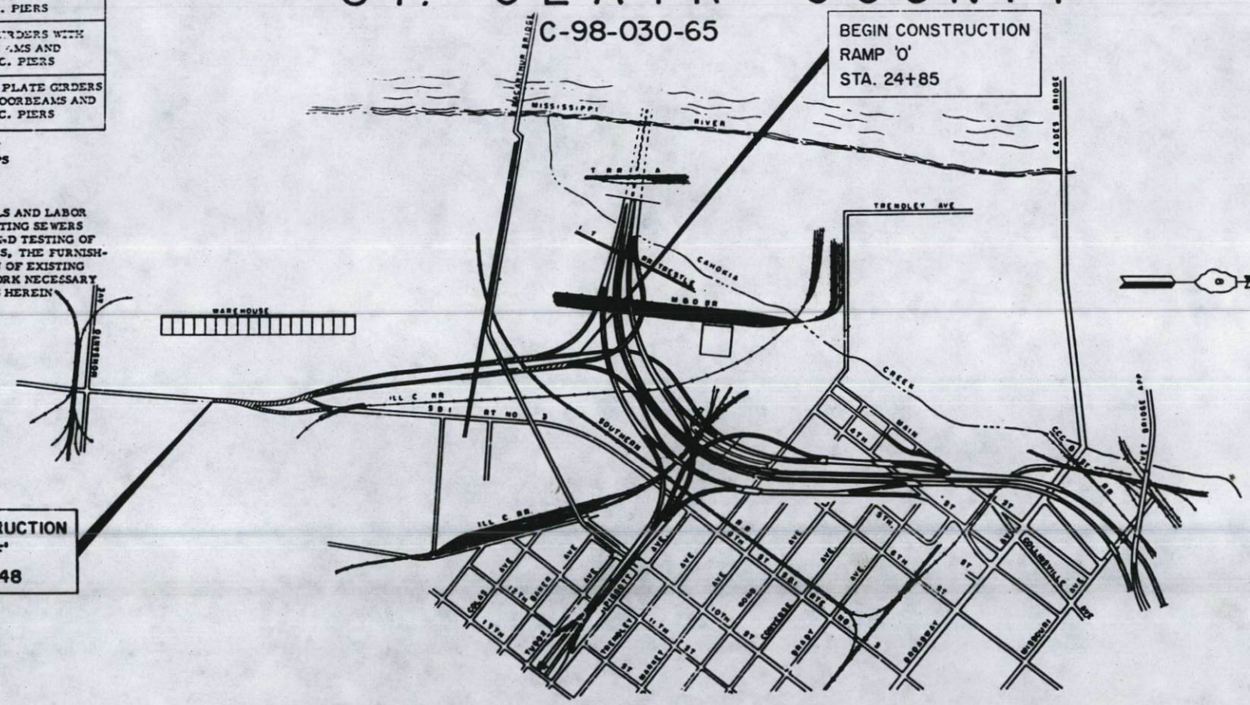
DESCRIPTION OF PROJECT:

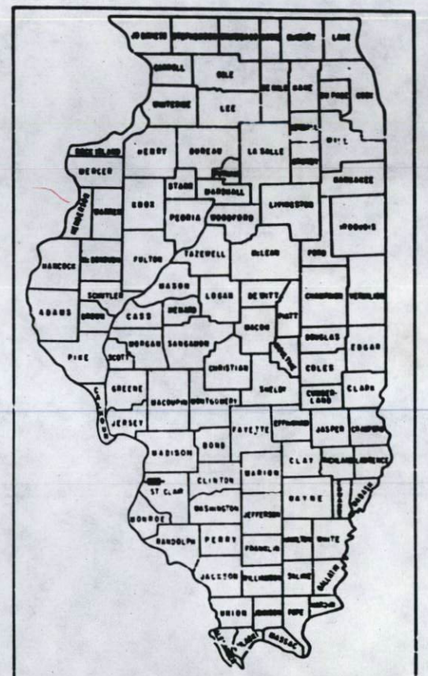
SECTION 82-3HVB-2 INCLUDES THE FURNISHING AND FABRICATING OF STRUCTURAL STEEL AND THE COMPLETE CONSTRUCTION OF THE FOLLOWING:

ROADWAY E	ONE-3 SPAN CONTINUOUS UNIT SPANS: 82'-105'-82'	WELDED PLATE GIRDERS WITH PLATE GIRDER FLOORBEAMS AND ROLLED STRINGERS ON R.C. PIERS
	TWO-3 SPAN CONTINUOUS UNIT SPANS: 1 @ 78'-100'-78' 1 @ 70'-89'-69'	WELDED PLATE GIRDERS WITH ROLLED FLOORBEAMS AND STRINGERS ON R.C. PIERS AND SPILL THRU ABUTMENT
	ONE-SIMPLE SPAN @ 85'	COMPOSITE WF ON R.C. PIERS
ROADWAY F	TWO-3 SPAN CONTINUOUS UNIT SPANS: 1 @ 76'-97'-75' 1 @ 75'-97'-75'	WELDED PLATE GIRDERS WITH ROLLED FLOORBEAMS AND STRINGERS ON R.C. PIERS AND SPILL THRU ABUTMENT
	TWO-3 SPAN CONTINUOUS UNIT SPANS: 1 @ 99'-128'-99' 1 @ 94'-122'-94'	CURVED WELDED PLATE GIRDERS WITH PLATE GIRDER FLOOR-BEAMS AND ROLLED STRINGERS ON R.C. PIERS
RAMP M	ONE-3 SPAN CONTINUOUS UNIT SPANS: 95'-125'-98'	CURVED WELDED PLATE GIRDERS WITH ROLLED FLOOR BEAMS AND STRINGERS ON R.C. PIERS
RAMP N	ONE-3 SPAN CONTINUOUS UNIT SPANS: 99'-125'-97'	CURVED WELDED PLATE GIRDERS WITH ROLLED FLOOR BEAMS AND STRINGER ON R.C. PIERS
RAMP O	ONE-3 SPAN CONTINUOUS UNIT SPANS: 93'-120'-93'	WELDED PLATE GIRDERS WITH ROLLED FLOORBEAMS AND STRINGERS ON R.C. PIERS
RAMP P	ONE-3 SPAN CONTINUOUS UNIT SPANS: 94'-119'-92'	CURVED WELDED PLATE GIRDERS WITH ROLLED FLOORBEAMS AND STRINGERS ON R.C. PIERS

THE POPLAR STREET BRIDGE APPROACHES FOR THIS SECTION CARRY THE FOLLOWING: ROADWAY E, ROADWAY F AND RAMPS M, N, O, P OVER THE TRACKS OF SOUTHERN R.R. AND UNDER THE RAILROAD AND HIGHWAY APPROACHES TO MAC ARTHUR BRIDGE.

THE WORK ALSO INCLUDES THE FURNISHING OF ALL MATERIALS AND LABOR NECESSARY TO COMPLETE THE GRADING, PAVING, CONSTRUCTING SEWERS AND DRAINAGE STRUCTURES, THE FURNISHING, INSTALLING AND TESTING OF COMPLETE HIGHWAY LIGHTING SYSTEMS AND TRAFFIC SIGNALS, THE FURNISHING AND ERECTING OF HIGHWAY SIGNS, THE RECONSTRUCTION OF EXISTING CITY STREETS, AND ALL APPURTENANT AND COLLATERAL WORK NECESSARY TO COMPLETE THE PROJECT AS SHOWN ON THE PLANS AND AS HEREIN SPECIFIED.





LOCATION OF SECTION INDICATED THUS:

DESIGN DESIGNATION

405I(88)-A-1-13.3(PCC-20)(50MPH)

CONTRACT NO. 25919

NET LENGTH TO BE IMPROVED

3527.48 FT. (0.668 MILES)

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
SUBMITTED 9-17-68
DESIGNED 2-6-69
CHECKED 2-6-69
APPROVED 2-6-69
APPROVED 2-6-69

DEPARTMENT OF TRANSPORTATION
BUREAU OF PUBLIC ROADS
APPROVED
DIVISION ENGINEER DATE

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS.

Rdwy E
S.N. 082-0205

REEL 8-76

F.A.I. ROUTE No.	SECTION	COUNTY	TOTAL SHEETS	SHEET No.
F.A.I.-70	82-3 HVB-3	ST. CLAIR	2 of 2	30
FED. ROAD DIV. No. 5	ILLINOIS	PROJECT		

INDEX OF SHEETS

* Includes Sheets 88A and 167A

** Includes sheet 80A

GENERAL NOTES

ALL ELEVATIONS REFER TO U. S. C. & G. S. MEAN SEA LEVEL DATUM.

REMOVE CROWN FOR SUPERELEVATED SECTIONS.

THE PROFILE GRADE LINE REFERS TO THE GRADE ELEVATION AT THE POINT SHOWN ON THE TYPICAL SECTIONS AND PLANS.

POSITIVE PROFILE GRADES ARE IN THE DIRECTION OF TRAFFIC AND HIGHER ELEVATIONS.

NEGATIVE PROFILE GRADES ARE IN THE DIRECTION OF TRAFFIC AND LOWER ELEVATIONS.

THE CONTRACTOR WILL BE REQUIRED TO SEED THE AREA BETWEEN RIGHT OF WAY LIMITS EXCEPT THE PAVED OR SODDED AREAS AND ANY OTHER AREAS AS DIRECTED BY THE ENGINEER. THE MEDIAN, THE PORTION OF THE SHOULDERS THAT IS NOT SURFACED AND ALL SLOPES 4:1 OR STEEPER WILL BE SEEDED.

VARIABLE WIDTH GUTTERS, CURBS AND FLAGS ARE REQUIRED AS SHOWN ON THE PLANS. ANY ADDITIONAL COST SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER LINEAL FOOT FOR THE TYPE OF GUTTER OR CURB AND GUTTER SPECIFIED. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

ALL EXPOSED EXISTING PAVEMENT SHALL BE REMOVED WITHIN THE LIMITS OF RIGHT OF WAY OR AS DIRECTED BY THE ENGINEER.

BUILDINGS WITHIN R. O. W. LIMITS HAVE BEEN REMOVED OR ARE IN THE PROCESS OF BEING REMOVED DOWN TO EXISTING GROUND LEVEL AND BASEMENTS BACKFILLED WITH BRICK OR MASONRY RUBBLE AND SAND TO FILL THE VOIDS.

TWO SIGNS (STANDARD 2151-7, 2150-5) TO BE CONSTRUCTED AT LOCATIONS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. (SHEET NO. 8)

ALL PAVEMENT DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

INDEX OF PLANS
GENERAL NOTES

H. W. LOCHNER, INC.
CHICAGO, ILL.

Revised [*] 10-13-70 J.M.J.

[**] Revised 9-28-71 J.M.J.

FEDERAL-AID ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I-70	82-3 & 82-2	ST CLAIR	[illegible]	3 of
FED. ROAD DIV. NO. 5	ILLINOIS	PROJECT		

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	TYPICAL PAVEMENT SECTIONS - ILL. ROUTE 3
3	INDEX OF PLANS, GENERAL NOTES
3a, 3c [illegible]-3e	ILLINOIS ROUTE 3 SIGNING PLANS
6	SUMMARY OF QUANTITIES
5	SUMMARY OF QUANTITIES
6	SUMMARY OF QUANTITIES, SCHEDULE OF QUANTITIES
7	PLAN - RDWY. 'E' STA. 36+00 TO STA. 49+25
8	PLAN - RDWY. 'E' STA. 49+25 TO RDWY. 'EF' STA. 60+12.48
9	PROFILE - RDWY. 'E' STA. 35+00 TO STA. 52+41.96 RDWY. 'EF' STA. 52+41.96 TO STA. 60+12.48
10	PROFILE - RDWY. 'E' STA. 28+01.20 TO STA. 45+00 TEMP. ACCESS RD. STA. 10+00 TO STA. 17+50
11	DRAINAGE PLAN - RDWY. 'E' STA. 36+00 TO STA. 49+25
12	DRAINAGE PLAN - RDWY. 'E' STA. 49+25 TO STA. 52+41.96 RDWY. 'EF' STA. 52+41.96 TO STA. 60+12.48
13	INTERSECTION DETAIL - RDWY. 'EF' WITH RAMP 'E' AND 'W'
14	TRAFFIC CONTROL - SIGNAL PLAN
14a, b	DETECTOR CONDUIT INSTALL DETAILS, HANDHOLE SPECIAL & LOOP DETECTION SYSTEM AND DETAILS
15	LIST OF BENCH MARKS, TIES TO TRAVERSE LINE AND GENERAL PLAN OF TRAVERSE LINE
16	ALIGNMENT PLAN - RDWY. 'C' STA. 43+42 TO STA. 71+00
17	ALIGNMENT PLAN - RDWY. 'E' STA. 36+00 TO RDWY. 'EF' STA. 60+79.55
18-20	LIST OF COORDINATE POINTS AND DESCRIPTIONS
21	ELECTRICAL PLANS - RDWY. 'F' STA. 49+00 TO END OF CONTRACT
22	ELECTRICAL PLANS - RDWY. 'F' STA. 34+00 TO STA. 49+00
23	ELECTRICAL PLANS - ILL. ROUTE 3 TO STA. 34+00 RDWY. 'F'
24	ELECTRICAL DETAILS - LIGHT STANDARD ON EMBANKMENT AND CONDUIT ARRANGEMENTS
24A	ELECTRICAL DETAILS - STEEL POLE DETAILS
25	ELECTRICAL DETAILS - LIGHT STANDARDS ON BRIDGES
26	ELECTRICAL DETAILS - SCHEMATIC WIRING DIAGRAM FOR CONTROL CENTER NO. 5, SCHEDULE OF LIGHT STANDARDS
27	ELECTRICAL DETAILS - PANEL FOR CONTROL CENTER NO. 5
28	ELECTRICAL DETAILS - DETAILS FOR CONTROL CENTER NO. 5 SERVICE POLE AND PAD MOUNTED TRANSFORMER
29	ELECTRICAL DETAILS - CONTROL CENTER NO. 5 CABINET DETAILS FOR LIGHTING AND METERING CABINET
30	ELECTRICAL DETAILS - SCHEMATIC WIRING DIAGRAM FOR CONTROL CENTER NO. 3
31	ELECTRICAL DETAILS - TYPICAL GROUNDING DETAILS
32	ELECTRICAL DETAILS - GROUNDING AND ARRANGEMENT OF CONDUIT WING ABUTMENT, TYPICAL DETAIL FOR FEEDER CONDUIT AT EXPANSION JOINTS
33	ELECTRICAL DETAILS - ATTACHING CONDUITS AND JUNCTION BOXES TO BRIDGES
34	ELECTRICAL DETAILS - FLUORESCENT SIGN LIGHTING FIXTURES
35	ELECTRICAL DETAILS - SIGN TRUSSES
36	ELECTRICAL DETAILS - ATTACHING CONDUIT TO BRIDGES FOR SIGN TRUSSES
37	SIGNING PLAN - RAMP 'O' STA. 24+05 TO RDWY. 'F' STA. 46+00
38	SIGNING PLAN - RDWY. 'F' STA. 46+00 TO END OF PROJECT
39	SIGNING DETAILS - SPECIAL SIGNS SE-2, SE-3, SE-4, SE-5, SE-7, SE-7A, SE-8 AND SE-9
40	SIGNING DETAILS - LOCATION OF SIGNS ON TRUSS NO. 11, 12, AND 13
41	SIGNING DETAILS - SPECIAL SIGN QUANTITIES
42	SIGNING DETAILS - SIGN MOUNTING DETAILS

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
43	SIGNING DETAILS - TYPICAL DETAILS OF ROUTE MARKER ASSEMBLY DELETED
44	SIGNING DETAILS - GENERAL PLAN AND ELEVATION OF ALUMINUM 'I' USS AND STEEL SUPPORTS
45	SIGNING DETAILS - ALUMINUM TRUSS DETAILS
46	SIGNING DETAILS - SUPPORT FRAME FOR ALUMINUM TRUSS NO. 13
47	SIGNING DETAILS - SUPPORT FRAME FOR ALUMINUM TRUSS NO. 11
48	SIGNING DETAILS - ALUMINUM WALKWAY DETAILS
49	SIGNING DETAILS - ALUMINUM WALKWAY DETAILS
50	SIGNING DETAILS - FOUNDATION DETAILS FOR TRUSS NO. 12 & NO. 13
51	SIGNING DETAILS - GENERAL PLAN AND ELEVATION OF STEEL TRUSS AND STEEL SUPPORTS
52	SIGNING DETAILS - STEEL TRUSS DETAILS
53	SIGNING DETAILS - SUPPORT FRAME FOR STEEL TRUSS NO. 13
54	SIGNING DETAILS - SUPPORT FRAME FOR STEEL TRUSS NO. 11
55	SIGNING DETAILS - STEEL WALKWAY DETAILS
55A	SIGNING DETAILS - STEEL WALKWAY DETAILS
56-66	CROSS SECTIONS - ILL. ROUTE 3
(#) 67-213	BRIDGE PLANS - F.A.I. ROUTE 70 RDWY. E AND F AND RAMPS M, N, O AND P OVER SOUTHERN RAILROAD, UNDER MAC ARTHUR BRIDGE APPROACH AND RAILROAD APPROACH TO MAC ARTHUR BRIDGE (1 THRU 147 OF 147)
214, 215	CULVERT DETAILS
216, 217	DRAINAGE DETAILS - GRATED OUTLET AND INLET BOXES
218	DETAILS FOR JUNCTION [illegible] DRAINAGE TREATMENT AT BRIDGE WINGWALLS, MEASUREMENT FOR TRENCH BACKFILL
219	DETAILS FOR GRADING AT BRIDGE CONES
220, 221	RIGHT-OF-WAY PLANS (FOR INFORMATION ONLY)
222	STANDARD DRAWINGS 2150-3, 1683-2, 2179-4
223	STANDARD DRAWINGS 2219-2, 2220-2
224	STANDARD DRAWINGS 2220*, 1766-6
225	STANDARD DRAWINGS 2246-2
226	STANDARD DRAWINGS 2217-6, 2122-6
227	STANDARD DRAWINGS 1686-3, 2115-3
228	STANDARD DRAWINGS 2225-1
229	STANDARD DRAWINGS 1909-10
230	STANDARD DRAWINGS 2224-8
231	STANDARD DRAWINGS 2251-1
232	STANDARD DRAWINGS 2300, 2151-7
233	STANDARD DRAWINGS 2230-3
234	STANDARD DRAWINGS 2231-3, 1976
235	STANDARD DRAWINGS 2253-2
236	STANDARD DRAWINGS 1971, 2150-5, 2113-1
237	STANDARD DRAWINGS 2249-1
238	STANDARD DRAWINGS 2147-4
239	STANDARD DRAWINGS 2162-4
240	STANDARD DRAWINGS 2157-2
241	STANDARD DRAWINGS 2249
242	STANDARD DRAWINGS 2250
243	STANDARD DRAWINGS 2167-2

INDEX OF SHEETS

SHEET NO.	DESCRIPTION	
244	STANDARD DRAWINGS	2161-3
245	STANDARD DRAWINGS	2162-4
246	STANDARD DRAWINGS	2173-1
247	STANDARD DRAWINGS	2206
248	STANDARD DRAWINGS	2161-8
249	STANDARD DRAWINGS	2160-4
250	STANDARD DRAWINGS	2000-7
251	STANDARD DRAWINGS	2166-9
252, 8, 8A	STANDARD DRAWINGS	2256-2, 2310-1, 2315-1 & 2318-1

GENERAL NOTES

ALL ELEVATIONS REFER TO U.S.G.S. MEAN SEA LEVEL DATUM.

REMOVE CROWN FOR SUPERELEVATED SECTIONS.

THE PROFILE GRADE LINE REFERS TO THE GRADE ELEVATION AT THE POINT SHOWN ON THE TYPICAL SECTIONS AND PLANS.

POSITIVE PROFILE GRADES ARE IN THE DIRECTION OF TRAFFIC AND HIGHER ELEVATIONS.

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THE CONTRACTOR WILL BE REQUIRED TO SEED THE AREA BETWEEN RIGHT OF WAY LIMITS EXCEPT THE PAVED OR SODDED AREAS AND ANY OTHER AREAS AS DIRECTED BY THE ENGINEER. THE MEDIAN, THE PORTION OF THE SHOULDERS THAT IS NOT SURFACED AND ALL SLOPES 6:1 OR STEEPER WILL BE SODDED.

VARIABLE WIDTH GUTTERS, CURBS AND FLAGS ARE REQUIRED AS SHOWN ON THE PLANS. ANY ADDITIONAL COST SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER LINEAL FOOT FOR THE TYPE OF GUTTER OR CURB AND GUTTER SPECIFIED. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

ALL EXPOSED EXISTING PAVEMENT SHALL BE REMOVED WITHIN THE LIMITS OF RIGHT OF WAY OR AS DIRECTED BY THE ENGINEER.

BUILDINGS WITHIN R.O.W. LIMITS HAVE BEEN REMOVED OR ARE IN THE PROCESS OF BEING REMOVED DOWN TO EXISTING GROUND LEVEL AND BASEMENTS BACKFILLED WITH BRICK OR MASONRY RUBBLE AND SAND TO FILL THE VOIDS.

TWO SIGNS (STANDARD 2151-7, 2158-5) TO BE CONSTRUCTED AT LOCATIONS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. (SHEET NO. 8)

ALL PAVEMENT DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

* Includes sheets 67A, 86A, 87A, 88B, 89A, 92A, 100A & 113A

* Includes Sheets 88A and 167A

* Includes Sheet 195A

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

INDEX OF PLANS
GENERAL NOTES

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILL.

Revised 10-13-70 J.M.J.

Revised 12-11-70 J.M.J.

Revised J.R.H. 3-4-71

FEDERAL-AID ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. I.-70	82-3HVB-2	ST CLAIR	2 of 2	3
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	TYPICAL PAVEMENT SECTIONS - ILL. ROUTE 3
3	INDEX OF PLANS, GENERAL NOTES
3A & 3B	ILLINOIS ROUTE 3 STAGING PLANS
4	SUMMARY OF QUANTITIES
5	SUMMARY OF QUANTITIES
6	SUMMARY OF QUANTITIES, SCHEDULE OF QUANTITIES
7	PLAN - RDWY. 'E' STA. 36+40 TO STA. 49+25
8	PLAN - RDWY. 'E' STA. 49+25 TO RDWY. 'EF' STA. 60+12.48
9	PROFILE - RDWY. 'E' STA. 35+00 TO STA. 52+41.96 RDWY. 'EF' STA. 52+41.96 TO STA. 60+12.48
10	PROFILE - RDWY. 'F' STA. 28+03.20 TO STA. 45+00 TEMP. ACCESS RD. STA. 10+00 TO STA. 17+50
11	DRAINAGE PLAN - RDWY. 'E' STA. 36+40 TO STA. 49+25
12	DRAINAGE PLAN - RDWY. 'E' STA. 49+25 TO STA. 52+41.96 RDWY. 'EF' STA. 52+41.96 TO STA. 60+12.48
13	INTERSECTION DETAIL - RDWY. 'EF' WITH RAMP 'X' AND 'W'
14	TRAFFIC CONTROL - SIGNAL PLAN
14A, B	DETECTOR CONDULET INSTALL DETAILS, HANDHOLE SPECIAL & LOOP DETECTION SYSTEM AND DETAILS
15	LIST OF BENCH MARKS, TIES TO TRAVERSE LINE AND GENERAL PLAN OF TRAVERSE LINE
15	ALIGNMENT PLAN - RDWY. 'C' STA. 43+42 TO STA. 71+00
17	ALIGNMENT PLAN - RDWY. 'E' STA. 36+00 TO RDWY. 'EF' STA. 60+79.55
18-20	LIST OF COORDINATE POINTS AND DESCRIPTIONS
21	ELECTRICAL PLANS - RDWY. 'F' STA. 49+00 TO END OF CONTRACT
22	ELECTRICAL PLANS - RDWY. 'F' STA. 34+00 TO STA. 49+00
23	ELECTRICAL PLANS - ILL. ROUTE 3 TO STA. 34+00 RDWY. 'F'
24	ELECTRICAL DETAILS - LIGHT STANDARD ON EMBANKMENT AND CONDUIT ARRANGEMENTS
24A	ELECTRICAL DETAILS - STEEL POLE DETAILS
25	ELECTRICAL DETAILS - LIGHT STANDARDS ON BRIDGES
26	ELECTRICAL DETAILS - SCHEMATIC WIRING DIAGRAM FOR CONTROL CENTER NO. 5, SCHEDULE OF LIGHT STANDARDS
27	ELECTRICAL DETAILS - PANEL FOR CONTROL CENTER NO. 5
28	ELECTRICAL DETAILS - DETAILS FOR CONTROL CENTER NO. 5 SERVICE POLE AND PAD MOUNTED TRANSFORMER
29	ELECTRICAL DETAILS - CONTROL CENTER NO. 5 CABINET DETAILS FOR LIGHTING AND METERING CABINET
30	ELECTRICAL DETAILS - SCHEMATIC WIRING DIAGRAM FOR CONTROL CENTER NO. 1
31	ELECTRICAL DETAILS - TYPICAL GROUNDING DETAILS
32	ELECTRICAL DETAILS - GROUNDING AND ARRANGEMENT OF CONDUIT THRU ABUTMENT, TYPICAL DETAIL FOR FEEDER CONDUIT AT EXPANSION JOINTS
33	ELECTRICAL DETAILS - ATTACHING CONDUITS AND JUNCTION BOXES TO BRIDGES
34	ELECTRICAL DETAILS - FLUORESCENT SIGN LIGHTING FIXTURES
35	ELECTRICAL DETAILS - SIGN TRUSSES
36	ELECTRICAL DETAILS - ATTACHING CONDUIT TO BRIDGES FOR SIGN TRUSSES
37	SIGNING PLAN - RAMP 'O' STA. 24+85 TO RDWY. 'F' STA. 46+00
38	SIGNING PLAN - RDWY. 'F' STA. 46+00 TO END OF PROJECT
39	SIGNING DETAILS - SPECIAL SIGNS SE-2, SE-3, SE-4, SE-5, SE-7, SE-7A, SE-8 AND SE-9
40	SIGNING DETAILS - LOCATION OF SIGNS ON TRUSS NO. 11, 12, AND 13
41	SIGNING DETAILS - SPECIAL SIGN QUANTITIES
42	SIGNING DETAILS - SIGN MOUNTING DETAILS

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
43	~~SIGNING DETAILS - TYPICAL DETAIL OF ROUTE MARKER ASSEMBLY~~ DELETED
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53	SIGNING DETAILS - SUPPORT FRAME FOR STEEL TRUSS NO. 13
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55A	SIGNING DETAILS - STEEL WALKWAY DETAILS
56-66	CROSS SECTIONS - ILL. ROUTE 3
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219	DETAILS FOR GRADING AT BRIDGE CONES
220, 221	RIGHT-OF-WAY PLANS (FOR INFORMATION ONLY)
222	STANDARD DRAWINGS 2130-3, 1683-2, 2179-4
223	STANDARD DRAWINGS 2219-2, 2220-2
224	STANDARD DRAWINGS 2228-[illegible], 1766-6
225	STANDARD DRAWINGS 2244-2
226	STANDARD DRAWINGS 2237-4, 2122-4
227	STANDARD DRAWINGS 1686-3, 2115-2
228	STANDARD DRAWINGS 2225-3
229	STANDARD DRAWINGS 1909-10
230	STANDARD DRAWINGS 2224-8
231	STANDARD DRAWINGS 2[illegible]5-1
232	STANDARD DRAWINGS 2300, 2153-7
233	STANDARD DRAWINGS 2230-3
234	STANDARD DRAWINGS 2231-3, 1976
235	STANDARD DRAWINGS 2253-2
236	STANDARD DRAWINGS 1973, 2158-5, 2113-1
237	STANDARD DRAWINGS 2299-1
238	STANDARD DRAWINGS 2147-4
239	STANDARD DRAWINGS 2167-4
240	STANDARD DRAWINGS 2257-2
241	STANDARD DRAWINGS 2319
242	STANDARD DRAWINGS 2320
243	STANDARD DRAWINGS 2167-2

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
244	STANDARD DRAWINGS 2161-1
245	STANDARD DRAWINGS 2142-4
246	STANDARD DRAWINGS 2173-1
247	STANDARD DRAWINGS 2206
248	STANDARD DRAWINGS 2141-8
249	STANDARD DRAWINGS 2140-4
250	STANDARD DRAWINGS 2080-f
251	STANDARD DRAWINGS 2146-9
252,A,B,C	STANDARD DRAWINGS 2256-2, 2310-1, 2315-1 & 2318-1
218A	REVISED SEWER PROTECTION DETAILS
66A	REVISED DIMINSION PLAN F-10 THRU F-12
87A	REVISED SLAB PLAN F-10 THRU F-12
88B	REVISED SLAB PLAN F-10 THRU F-12
89A	REVISED SLAB PLAN M-1 THRU M-3
92A	REVISED SLAB PLAN P-1 THRU P-3
100A	REVISED PARAPET AND HANDRAIL F-10 THRU F-12

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STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
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INDEX OF PLANS
GENERAL NOTES

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILL.

FEDERAL-AID ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET No.
F.A.I.-70	82-3HVB-2	ST. CLAIR	252	4
FED. ROAD DIV. No. 4	ILLINOIS	PROJECT		

IG PORTION 49%
I PORTION 51%

SUMMARY OF QUANTITIES

LOCATION OF WORK (See Legend)
CONSTRUCTION TYPE CODE

SECTION 82-3HVB-2
PROJECT I-IG-70-1(79)0

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	FEDERAL PARTICIPATION B X531 QUANTITY	B Y002 QUANTITY	B Y030 QUANTITY	STATE WORK R 7223 QUANTITY	R Y002 QUANTITY	R Y030 QUANTITY	R Y031 QUANTITY
201001	TREE REMOVAL (6 TO 15 INCH DIAMETER)	IN. DIA.	40	40						
205001	SPECIAL EXCAVATION	CU. YD.	1,276				1,276			
207001	EMBANKMENT	CU. YD.	152,825				152,825			
210001	TRENCH BACKFILL	CU. YD.	144.4				144.4			
213002	SUB-BASE GRANULAR MATERIAL, TYPE A	CU. YD	35				35			
213012	STABILIZED SUB-BASE 4"	SQ. YD.	16,440				16,440			
301002	AGGREGATE BASE COURSE, TYPE A	CU. YD.	841				841			
301016	STABILIZED BASE COURSE 7"	SQ. YD.	516				516			
402002	AGGREGATE SURFACE COURSE, TYPE A	CU. YD.	75				75			
215004	AGGREGATE SHOULDERS, TYPE B	TON	82				82			
406001	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	851				851			
406017	BITUMINOUS CONCRETE BINDER COURSE	TON	170				170			
406018	BITUMINOUS CONCRETE SURFACE COURSE, CLASS I	TON	283				283			
408005	PORTLAND CEMENT CONCRETE PAVEMENT 10"	SQ. YD.	9,894				9,894			
408006	PORTLAND CEMENT CONCRETE PAVEMENT 16 1/2 - 10 1/2 - 16 1/2	SQ. YD.	214				214			
408013	PAVEMENT FABRIC	SQ. YD.	9,894				9,894			
409003	CONTINUOUSLY REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT 8"	SQ. YD.	4,988				4,988			
409013	PAVEMENT REINFORCEMENT (8")	SQ. YD.	4,988				4,988			
502001	CLASS A EXCAVATION FOR STRUCTURES	CU. YD.	4,637	4,637						
504003	CLASS X CONCRETE	CU. YD.	8,622.6	8,596.5			26.1			
503002	CLASS X CONCRETE HEADWALLS	CU. YD.	13.7				13.7			
408014	PROTECTIVE COAT	SQ. YD.	15,547				15,547			
507001	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	33,620	33,620						
507030	FURNISHING AND ERECTING STRUCTURAL STEEL	LUM. SUM	1	1						
511004	PIPE CULVERTS, TYPE 1A, 15"	LIN. FT.	66				66			
511026	PIPE CULVERT, TYPE 1 18"	LIN. FT.	68				68			
511784	METAL END SECTIONS 12"	EACH	2				2			
511129	PIPE CULVERTS, TYPE 2, RCCP 24"	LIN. FT.	88				88			
511131	PIPE CULVERTS, TYPE 2, RCCP 36"	LIN. FT.	342				342			
512001	REINFORCEMENT BARS	POUND	1,710,610	1,692,590			18,020			
513004	FURNISHING CREOSOTED PILES UP TO 20 FEET	LIN. FT.	240		240					
513005	FURNISHING CREOSOTED PILES 20.1 TO 38 FEET	LIN. FT.	624				624			
513022	DRIVING TIMBER PILES	LIN. FT.	864		240		624			
513027	DRIVING CONCRETE PILES	LIN. FT.	34,906	34,906						
513021	FURNISHING CONCRETE PILES	LIN. FT.	34,906	34,906						
513041	TEST PILE CONCRETE	EACH	32	32						
X05729	PILE SPLICES FOR CONCRETE PILES	EACH	190	190						
514001	NAME PLATES	EACH	1	1						
X03816	WROUGHT IRON PIPE DRAIN SYSTEM	L. SUM	1	1						
607020	PIPE DRAINS, CORRUGATED STEEL 12"	LIN. FT.	178				178			
6C3127	STORM SEWERS, TYPE 1, REINFORCED CONCRETE CULVERT, STORM DRAIN AND SEWER PIPE, CLASS III 15"	LIN. FT.	120				120			
612164	INLETS, TYPE A, TYPE 10 FRAME AND GRATE	EACH	2				2			
612166	INLETS, TYPE A, TYPE 11 FRAME AND GRATE	EACH	2				2			
640041	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	LIN. FT.	72				72			
606065	COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06	LIN. FT.	331				331			
606047	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-9.12	LIN. FT.	2,024				2,024			

SUMMARY OF QUANTITIES

LOCATION OF WORK (See Legend)
CONSTRUCTION TYPE CODE

SECTION 82-3HVB-2
PROJECT I-IG-70-1(79)0

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	FEDERAL PARTICIPATION B X531 QUANTITY	B Y002 QUANTITY	B Y030 QUANTITY	STATE WORK R 7223 QUANTITY	R Y002 QUANTITY	R Y030 QUANTITY	R Y031 QUANTITY
	616137	CONCRETE MEDIAN, TYPE C-4	SQ. FT.	317				317			
	616282	CONCRETE MEDIAN SURFACE 4"	SQ. FT.	5,320				5,320			
	618001	SLOPE WALL 4 INCH	SQ. YD.	529	529						
	628001	STEEL PLATE BEAM GUARD RAIL, SINGLE RAIL	LIN. FT.	562.5				562.5			
***	106036	ELECTRIC CABLE IN CONDUIT, 600V (NEOPRENE-RUBBER INSULATED) I/C NO. 10	LIN. FT.	9,866			1,920			2,522	5,424
***	106038	ELECTRIC CABLE IN CONDUIT, 600V (NEOPRENE-RUBBER INSULATED) I/C NO. 6	LIN. FT.	8,188			8,188				
	642002	SEEDING, CLASS II *	ACRE	3.3				3.3*			
	643002	ASPHALT COATED MULCH *	TON	6.6				6.6*			
	643005	EMULSIFIED ASPHALT *	GALLON	561				561*			
	644001	SODDING *	SQ. YD.	34,373				34,373*			
	644002	SUPPLEMENTAL WATERING *	UNIT	241				241*			
	642004	NITROGEN FERTILIZER NUTRIENTS *	POUND	1,248				1,248*			
	642005	PHOSPHORUS FERTILIZER NUTRIENTS *	POUND	749				749*			
	642006	POTASSIUM FERTILIZER NUTRIENTS *	POUND	499				499*			
	L00008	CONDUIT IN TRENCH 3" DIA. GALVANIZED STEEL	LIN. FT.	220						220	
	L00053	CONDUIT ATTACHED TO STRUCTURE, 1" DIA., GALVANIZED STEEL	LIN. FT	150			150				
	L00056	CONDUIT ATTACHED TO STRUCTURE, 2" DIA., GALVANIZED STEEL	LIN. FT.	3,766			3,766				
	L00058	CONDUIT ATTACHED TO STRUCTURE, 3" DIA., GALVANIZED STEEL	LIN. FT.	20			20				
	L00110	CONDUIT IN CONCRETE, 1" DIA., GALVANIZED STEEL	LIN. FT.	90			90				
	L05414	POLE, METAL, ANCHOR BASE, 43 FT. MH, 4 FT. MAST ARM	EACH	15			15				
	L05415	POLE, METAL, TRANSFORMER BASE, 45 FT. MH, 15 FT. MAST ARM	EACH	19						19	
	L05416	POLE, METAL, TRANSFORMER BASE, 45FT. MH, 10FT. MAST ARM	EACH	3						3	
	106174	ELECTRIC CONDUCTOR IN CONDUIT (BARE ANNEALED COPPER) NO.6	LIN. FT.	3,983			3,939			44	
	628002	STEEL PLATE BEAM GUARD RAIL, DOUBLE RAIL	LIN. FT.	25				25			
	507025	STUD SHEAR CONNECTORS	EACH	2,586	2,586						
	503004	PROTECTIVE COAT	SQ YD	15,148	15,148						

LEGEND FOR "LOCATION OF WORK"

R = ROADWAY

Roadway 'E'
Sta. 36+39.83 to Sta. 52+41.96

Roadway 'F'
Sta. 28+03.19 to Sta. 43+32.17

Roadway 'EF'
Sta. 52+41.96 to Sta. 60+12.48

Ramp 'W'
Sta. 0+17.02 to Sta. 1+13.22

Ramp 'X'
Sta. 0+00 to Sta. 6+61.78

Temporary Access Road
Sta. 10+00 to Sta. 17+50

Temporary Access Road Connector
Sta. 0+00 to Sta. 1+46.04

B = BRIDGE

Roadway 'E'
Sta. 29+38.81 to Sta. 36+39.83

Roadway 'F'
Sta. 43+32.17 to Sta. 54+00

Ramp 'N'
Sta. 24+82 to Sta. 37+39.88

Ramp 'O'
Sta. 21+85 to Sta. 37+39.88

Ramp 'M'
Sta. 46+00.22 to Sta. 57+87

Ramp 'P'
Sta. 46+00.22 to Sta. 57+69

* CONSTRUCTION TYPE CODE Y005
** CONSTRUCTION TYPE CODE CE58
*** SPECIALTY ITEMS

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILL.

FEDERAL-AID ROUTE No.	SECTION	COUNTY	TOTAL SHEETS	SHEET No.
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FED. ROAD DIV. No. 4	ILLINOIS	PROJECT		

IG PORTION 49 %

I PORTION 51 %

SUMMARY OF QUANTITIES

SECTION 82-3HVB-2
PROJECT I-IG-70-1(79)0

LOCATION OF WORK (See Legend)
CONSTRUCTION TYPE CODE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	FEDERAL PARTICIPATION B X531 QUANTITY	B Y002 QUANTITY	B Y030 QUANTITY	STATE WORK R 7223 QUANTITY	R Y002 QUANTITY	R Y030 QUANTITY	R Y031 QUANTITY
L02200	POLE FOUNDATION	EACH	22						22	
L02404	LUMINAIRE, MERCURY VAPOR, WITH BUILT-IN REGULATOR BALLAST 700 WATTS	EACH	15			15				
L02434	LUMINAIRE, MERCURY VAPOR, 700 WATTS	EACH	22						22	
L05293	CONTROL INSTALLATION (CONTROL CENTER NO. 5)	LUMP SUM	1						1	
L04300	TRENCH AND BACKFILL	LIN. FT.	5,027						5,027	
L06163	ELECTRIC CONDUCTOR IN TRENCH (BARE ANNEALED COPPER NO. 6)	LIN. FT.	314						314	
L05077	ELECTRIC CABLE, UNIT DUCT, 2-600 V THW #6 1" POLYETHYLENE	LIN. FT.	1,723						885	838
L05078	ELECTRIC CABLE, UNIT DUCT, 3-600V THW #6 1" POLYETHYLENE	LIN. FT.	3,299			20			3,279	
L05294	ELECTRIC CABLE, UNIT DUCT, 3-600V THW #2 1 1/4" POLYETHYLENE	LIN. FT.	1,220						1,220	
L05066	SYSTEMS GROUNDING	LUMP SUM	1			1				
S27016	ELECTRIC CABLE IN CONDUIT NO. 8-2/C	LIN. FT.	13							13
S27018	ELECTRIC CABLE IN CONDUIT NO. 12-2/C	LIN. FT.	876							876
S27020	ELECTRIC CABLE IN CONDUIT NO. 12-5/C	LIN. FT.	538							538
S27022	ELECTRIC CABLE IN CONDUIT NO. 12-9/C	LIN. FT.	471							471
S25002	GALVANIZED STEEL CONDUIT IN TRENCH 1 1/4"	LIN. FT.	1,356							1,356
S25003	GALVANIZED STEEL CONDUIT IN TRENCH 1 1/2"	LIN. FT.	118							118
S25004	GALVANIZED STEEL CONDUIT IN TRENCH 2"	LIN. FT.	90							90
S25006	GALVANIZED STEEL CONDUIT IN TRENCH 3"	LIN. FT.	60							60
S10004	TRAFFIC CONTROL SIGNAL POST 10 FT.	EACH	6							6
S11001	CONTROLLER PEDESTAL 3 - 1/2 FT.	EACH	1							1
S06004	SIGNAL HEAD, TRAFFIC CONTROL, 1-FACE, 3-SECTION WITH 12 INCH RED LENS	EACH	3							3
S06034	SIGNAL HEAD, TRAFFIC CONTROL, 2 FACE, 3-SECTION WITH 12 INCH RED LENSES	EACH	3							3
S14005	WOOD POLE 25 FT., CLASS 4	EACH	1							1
S33001	SERVICE INSTALLATION, TYPE A	EACH	3							3
S34001	CONCRETE FOUNDATION TYPE A	EACH	6							6
S35007	HANDHOLE, SPECIAL	EACH	1							1
S37001	TRENCH AND BACKFILL	LIN. FT.	2072							2072
S34002	CONCRETE FOUNDATIONS, TYPE A (CONTROLLER)	EACH	1							1
S16027	TRAFFIC ACTUATED CONTROLLER, FULL ACTUATED SPECIAL	EACH	1							1
S23003	VEHICLE DETECTOR, INDUCTION LOOP TYPE WITH PRESENCE FEATURE	EACH	3							3
S39001	DETECTOR LOOP	LIN. FT.	334							334
S08005	ALUMINUM RAILING	LIN. FT.	6,405	6,405						
215010	STABILIZED SHOULDERS (8")	SQ. YD.	4,322				4,322			
215012	STABILIZED SHOULDERS (10")	SQ. YD.	4,320				4,320			
Z10029	BRIDGE SEAT SEALANT	LUMP SUM	1							

SUMMARY OF QUANTITIES

SECTION 82-3HVB-2
PROJECT I-IG-70-1(79)0

LOCATION OF WORK (See Legend)
CONSTRUCTION TYPE CODE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	FEDERAL PARTICIPATION B X531 QUANTITY	B Y002 QUANTITY	B Y030 QUANTITY	STATE WORK R 7223 QUANTITY	R Y002 QUANTITY	R Y030 QUANTITY	R Y031 QUANTITY
614057	GRATING	SQ. FT.	93				93			
646001	ENGINEER'S FIELD OFFICE, TYPE A**	EACH	1	1 **						
646003	ENGINEER'S FIELD LABORATORY **	EACH	1	1 **						
Z20199	SIGN PANEL, REFLECTORIZED	SQ. FT.	1,194.75		758			436.75		
Z20208	CAPITAL LETTERS AND NUMERALS 16"	EACH	12		8			4		
Z20211	CAPITAL LETTERS AND NUMERALS 12"	EACH	28		14			14		
Z20213	CAPITAL LETTERS AND NUMERALS 10"	EACH	15					15		
Z20214	CAPITAL LETTERS AND NUMERALS 8"	EACH	4		4					
Z20228	LOWER CASE LETTERS 12"	EACH	63		47			16		
Z20231	LOWER CASE LETTERS 6"	EACH	17		17					
Z20253	BORDER 2"	LIN. FT.	406.5		235.7			170.8		
Z20254	BORDER 1/4"	LIN. FT.	24.1		24.1					
Z20274	CONCRETE FOUNDATIONS	CU. YD.	63.5		61.2			2.3		
Z20326	STANDARD SIGNS R2-1-4860	EACH	6		5			1		
Z20355	STANDARD SIGNS R3-1-2430	EACH	1					1		
Z20489	STANDARD SIGNS W3-3-36	EACH	4		2			2		
Z20494	STANDARD SIGNS W4-1-48	EACH	1		1					
Z20589	STANDARD SIGNS M1-3-2424	EACH	4		2			2		
Z20593	STANDARD SIGNS M1-30-2424	EACH	2					2		
Z20594	STANDARD SIGNS M1-30(2)-3636	EACH	10		8			2		
Z20612	STANDARD SIGNS M1-5-2424	EACH	3		2			1		
Z20623	STANDARD SIGNS M3-1L-2115	EACH	1					1		
Z20631	STANDARD SIGNS M3-1BR-2115	EACH	1					1		
Z20643	STANDARD SIGNS M4-1-2115	EACH	1		1					
Z20646	STANDARD SIGNS M4-1B-2115	EACH	1		1					
Z20707	STANDARD SIGNS M6-1-219	EACH	1					1		
Z20712	STANDARD SIGNS M7-1-1812	EACH	2		1			1		
L03117	BALLAST, MERCURY VAPOR, MULTIPLE REGULATOR TYPE FOR POLE BASE MOUNTING, 700 WATTS, 240/480 VOLTS	EACH	22						22	
L04973	LAMP, MERCURY VAPOR 700 WATTS TYPE H35-18NA	EACH	37			15			22	
XZ1016	TRAFFIC CONTROL AND PROTECTION, STANDARD 2310	EACH	1				1			
XZ1008	TRAFFIC CONTROL AND PROTECTION, STANDARD 2315	CAL DAY	10				10			
XZ1020	TRAFFIC CONTROL AND PROTECTION, STANDARD 2318	EACH	1				1			

LEGEND FOR "LOCATION OF WORK"

R = ROADWAY	B = BRIDGE
Roadway 'E' Sta. 36+39.83 to Sta. 52+41.96	Roadway 'E' Sta. 29+38.81 to Sta. 36+39.83
Roadway 'F' Sta. 28+03.19 to Sta. 43+32.17	Roadway 'F' Sta. 43+32.17 to Sta. 54+00
Roadway 'EF' Sta. 52+41.96 to Sta. 60+12.48	Ramp 'N' Sta. 24+82 to Sta. 37+37.88
Ramp 'W' Sta. 0+17.02 to Sta. 3+13.22	Ramp 'O' Sta. 24+85 to Sta. 37+39.88
Ramp 'X' Sta. 0+00 to Sta. 6+61.78	Ramp 'M' Sta. 46+00.22 to Sta. 57+87
Temporary Access Road Sta. 10+00 to Sta. 17+50	Ramp 'P' Sta. 46+00.22 to Sta. 57+69
Temporary Access Road Connector Sta. 0+00 to Sta. 1+46.04	

* CONSTRUCTION TYPE CODE Y005
** CONSTRUCTION TYPE CODE C558
*** SPECIALTY ITEM

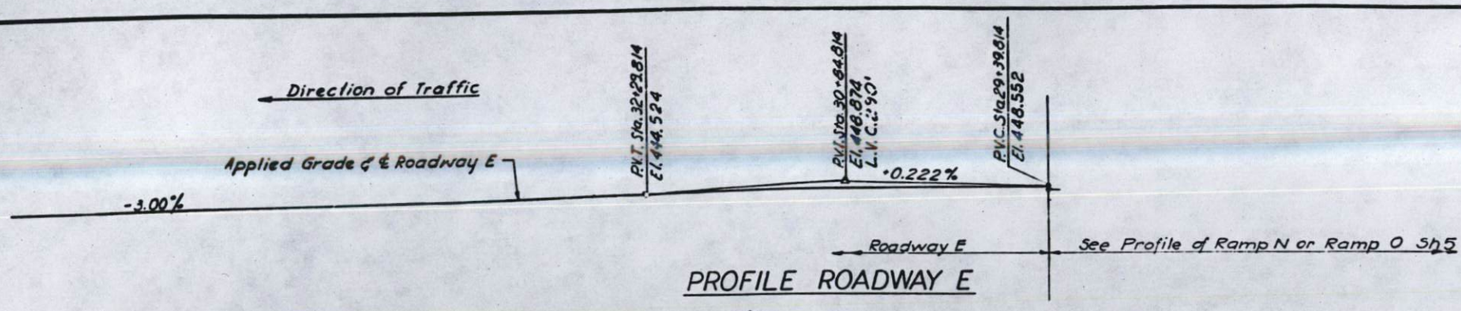
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

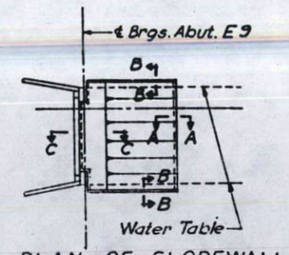
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILL.

Rev. Signing Sheet

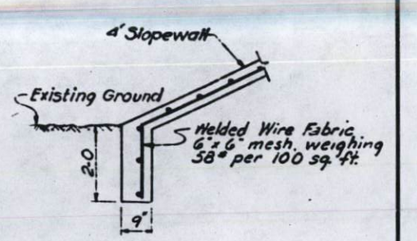
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.— 70	82-3HVB-2	ST. CLAIR	25	69
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



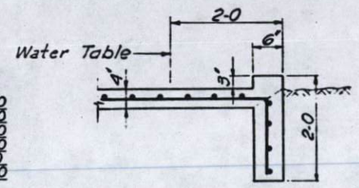
PROFILE ROADWAY E



PLAN OF SLOPEWALL

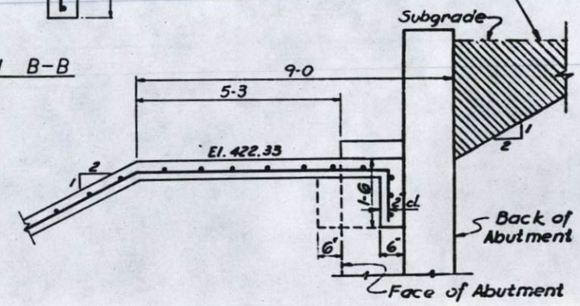


SECTION A-A

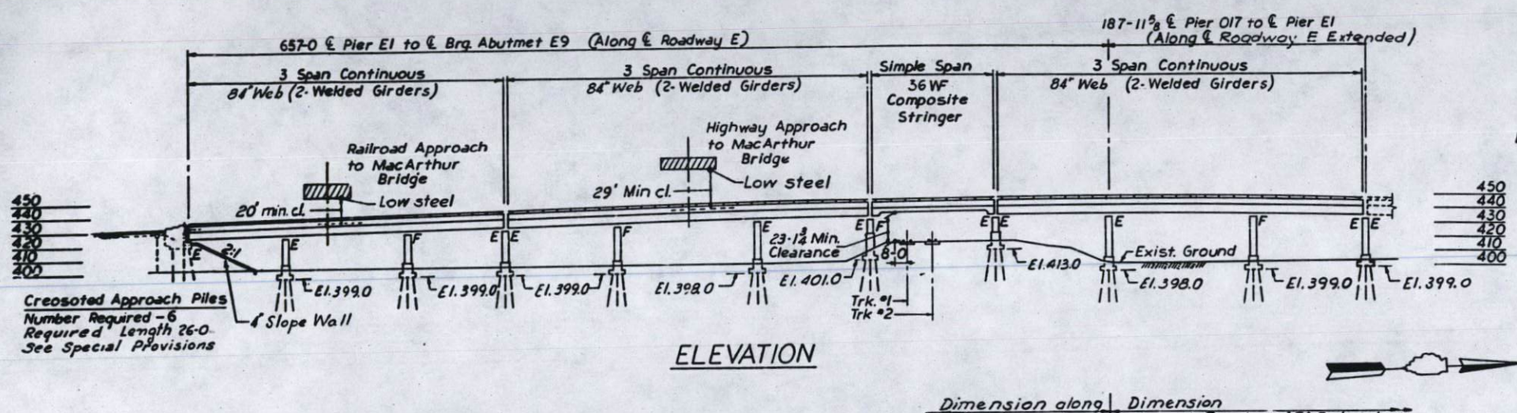


SECTION B-B

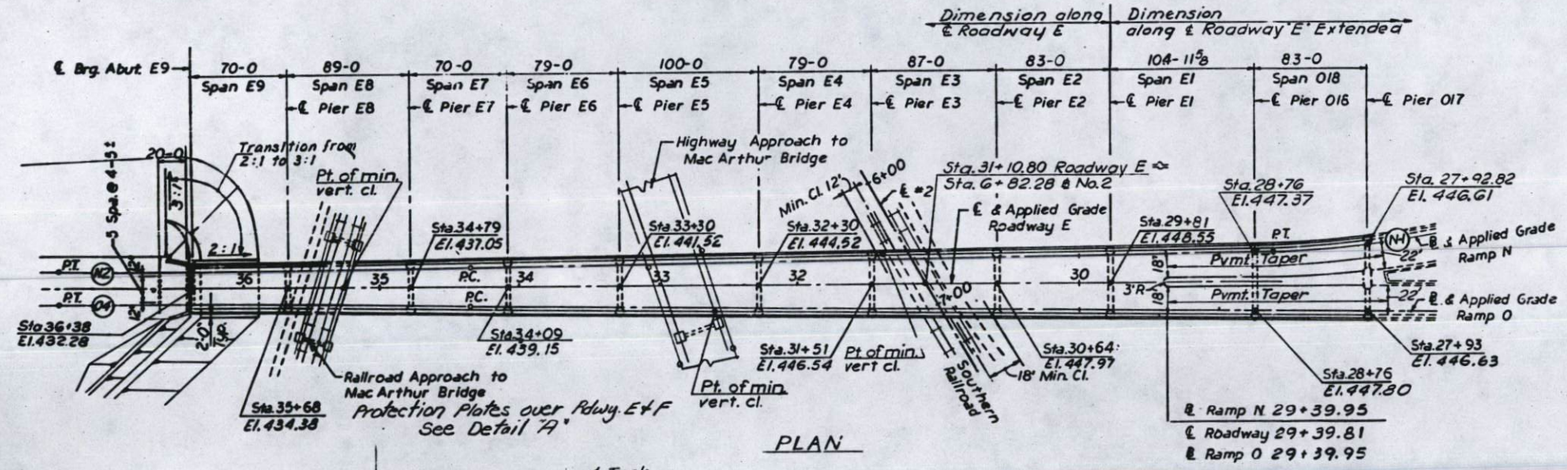
This portion of embankment to be placed after abutment is in place. (By Bridge Contractor)



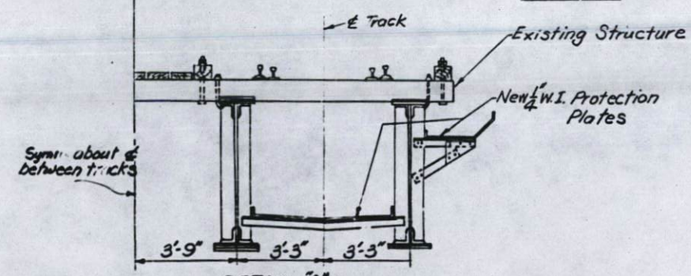
SECTION C-C



ELEVATION



PLAN



DETAIL "A"
Refer to Sheet 165a

BILL OF MATERIAL		
Item	Unit	Quantity
Slope Wall 4"	S.Y.	271

Notes:
For Curve Data see Sh. No. 14
For R.R. Profiles see Sh. No. 133.

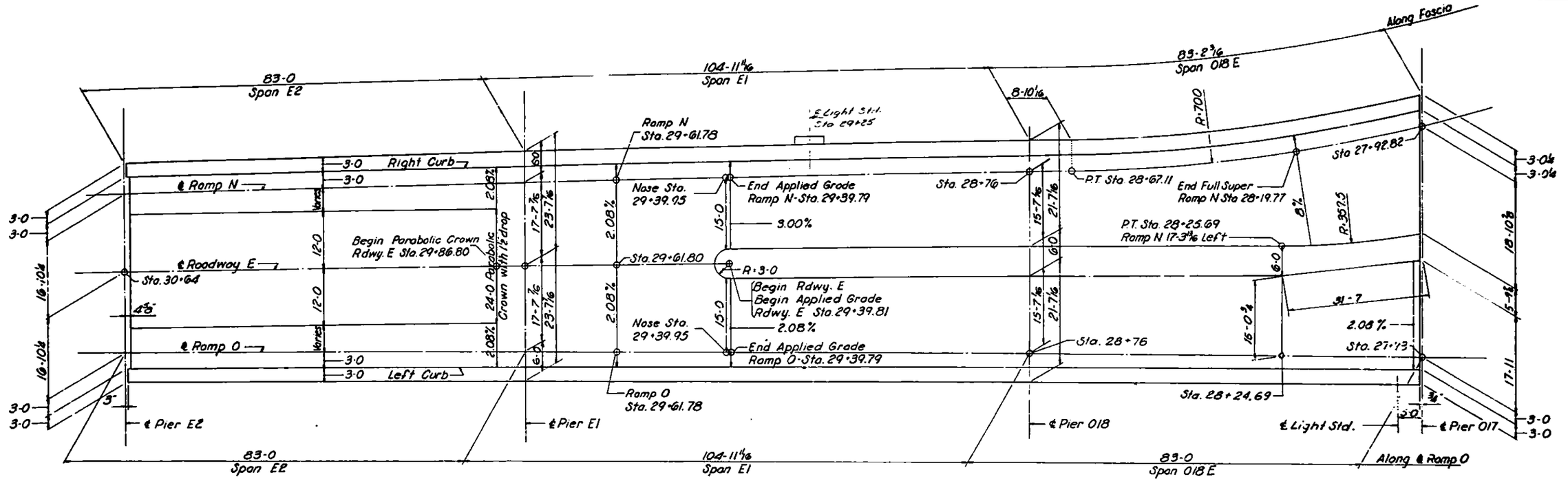
DESIGNED BY J.J.N.
DRAWN BY D.C.F.
CHECKED BY A.T.&A.T.C.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS
PLAN AND ELEVATION
SPANS E9 THRU 018
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E" & RAMP "O"
F.A.I. RT. - 70 ST. CLAIR CO. SECTION 82-3HVB-2
H. W. LOCHNER, INC. ENGINEERS CHICAGO, ILLINOIS
SHEET 3 OF 147

Rdwy E - 082-0205
(Ramp O - 082-0143)

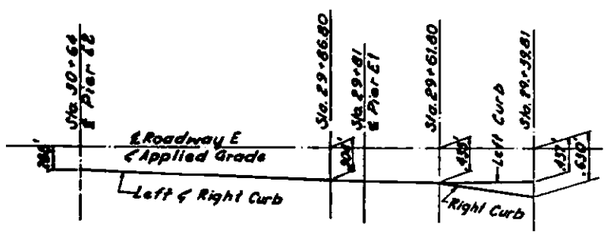
132

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. - 70	82-3HVB-2	ST. CLAIR	252	77
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		

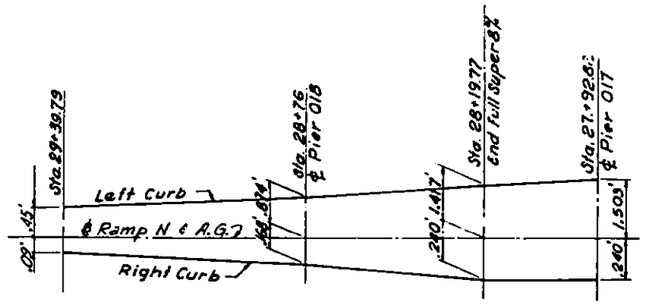


GEOMETRIC LAYOUT

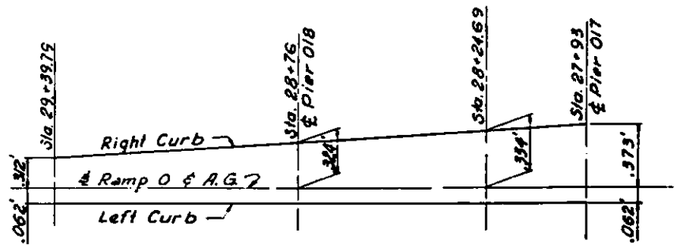
Spans E2 thru 018 E



Roadway E Cross Slope Transition



Ramp N Cross Slope Transition



Ramp O Cross Slope

DESIGNED BY R.T.
DRAWN BY Hamilton
CHECKED BY K.J.F.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

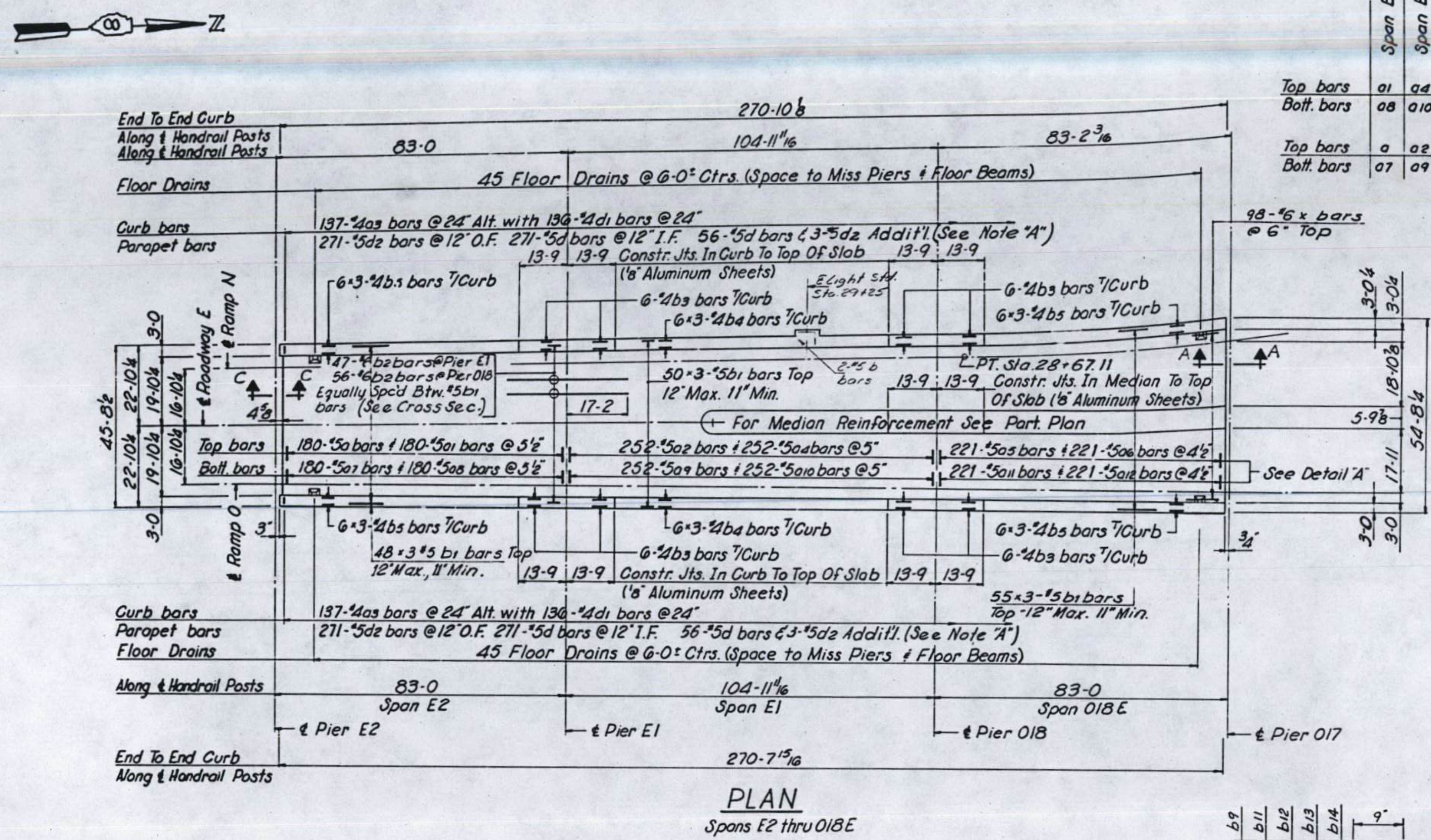
DIMENSION PLAN
SPANS E2 THRU 018 E
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

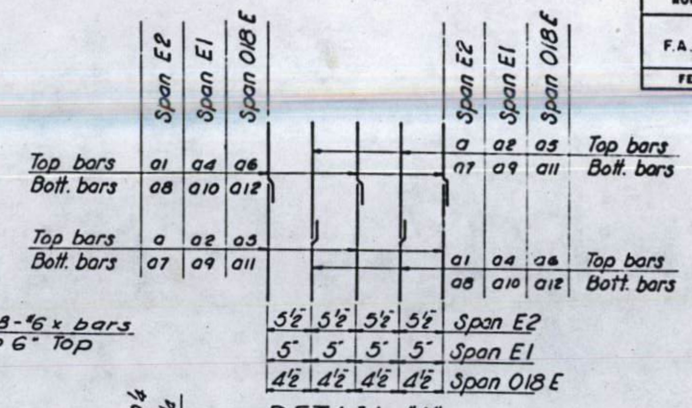
SHEET 8 OF 147

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-70	82-3HVB-2	ST. CLAIR	252	78
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



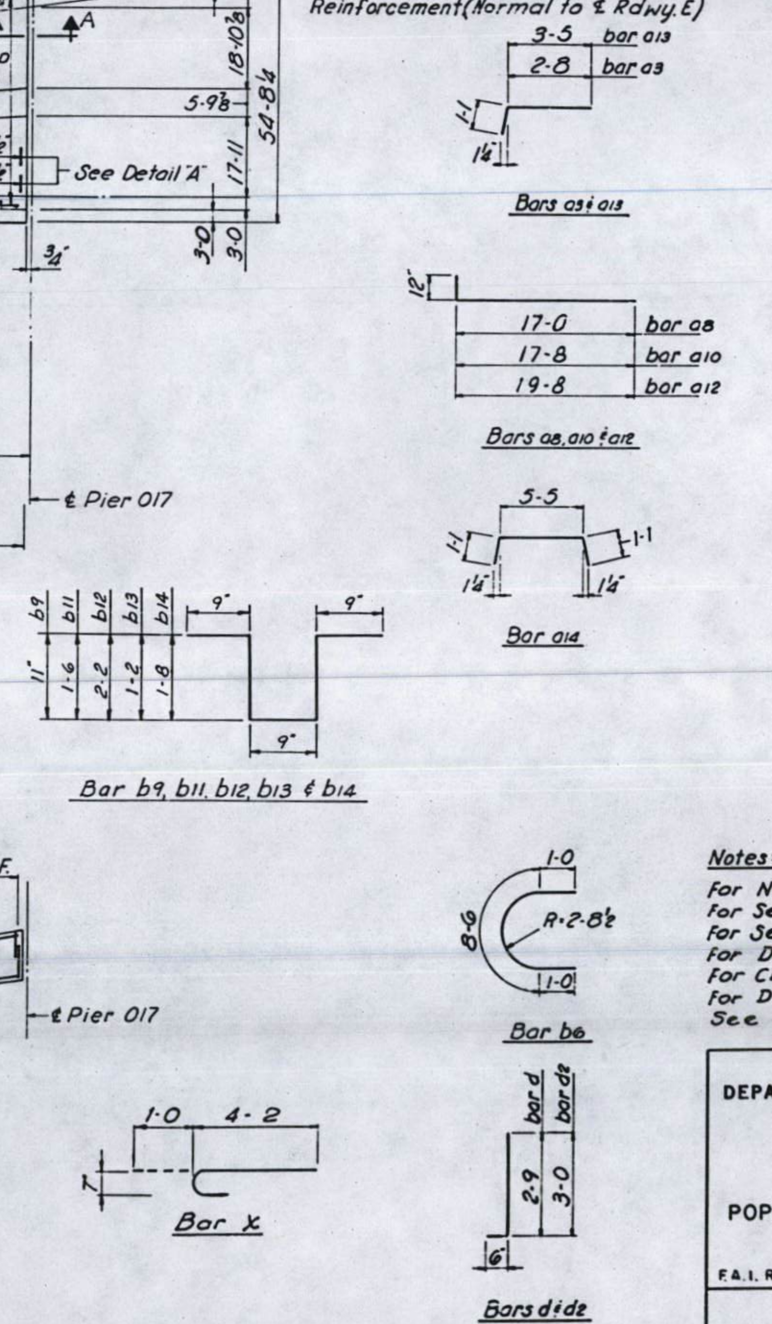
PLAN

Spans E2 thru 018E



DETAIL "A"

Arrangement of Main Reinforcement (Normal to ℄ Rdwy. E)

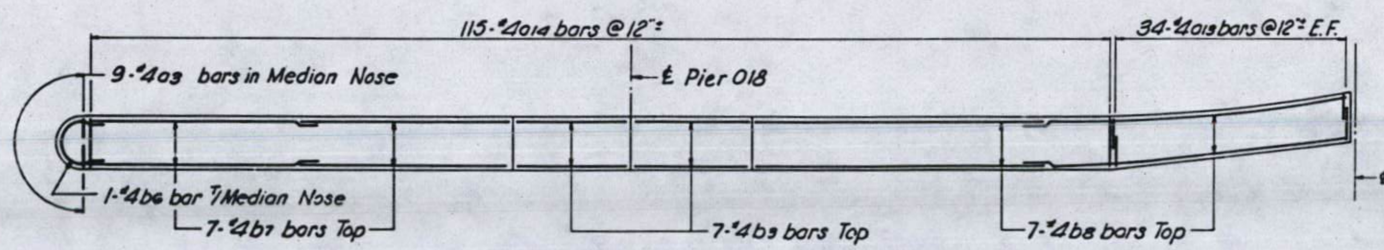


BILL OF MATERIAL

● BAR	NO.	SIZE	LENGTH	SHAPE
12 a	180	#5	20-7	—
12 a1	180	#5	27-9	—
12 a2	252	#5	28-10	—
12 a3	283	#4	3-9	┌
12 a4	252	#5	21-5	—
12 a5	221	#5	31-8	—
12 a6	221	#5	24-0	—
12 a7	180	#5	31-4	—
12 a8	180	#5	18-0	└
12 a9	252	#5	32-7	—
12 a10	252	#5	18-8	└
12 a11	221	#5	36-0	—
12 a12	221	#5	20-8	└
12 a13	68	#4	4-6	┌
12 a14	115	-	7-7	⊓
12 b	4	#5	3-8	⊔
12 b1	1143	#5	31-0	—
12 b2	103	#6	34-4	—
12 b3	62	#4	19-6	—
12 b4	36	#4	26-7	—
12 b5	72	#4	23-8	—
12 b6	1	#4	10-6	⊂
12 b7	14	#4	25-6	—
12 b8	14	#4	35-0	—
12 b9	432	#4	4-1	⊓
12 b10	60	#4	28-0	—
12 b11	104	#4	5-3	⊓
12 b12	82	#4	6-7	⊓
12 b13	126	#4	4-7	⊓
12 b14	82	#4	5-7	⊓
12 b15	2	#4	22-0	—
12 d	654	#5	3-3	┘
12 d1	272	#4	1-1	—
12 d2	548	#5	3-6	┘
12 x	98	#6	5-2	⊂

● See Note "X" Sh. No. 14

ITEM	UNIT	TOTAL
Class "X" Concrete	Cu. Yds.	403.3
Reinforcement Bars	Lbs.	126,510
Protective Coat	Sq. Yds.	1654



REINFORCEMENT PLAN — MEDIAN

Notes:

For Note "A" & Misc. Details See Sh. No. 14
For Section A-A See Sh. No. 104
For Section C-C See Sh. No. 103
For Dimension Plan See Sh. No. 11
For Cross Section See Sh. 13
For Dead Load Deflection Diagram See Sh. No. 13

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

SLAB

SPANS E2 THRU 018E

POPLAR STREET BRIDGE APPROACHES

ROADWAY "E"

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

SHEET 12 OF 147

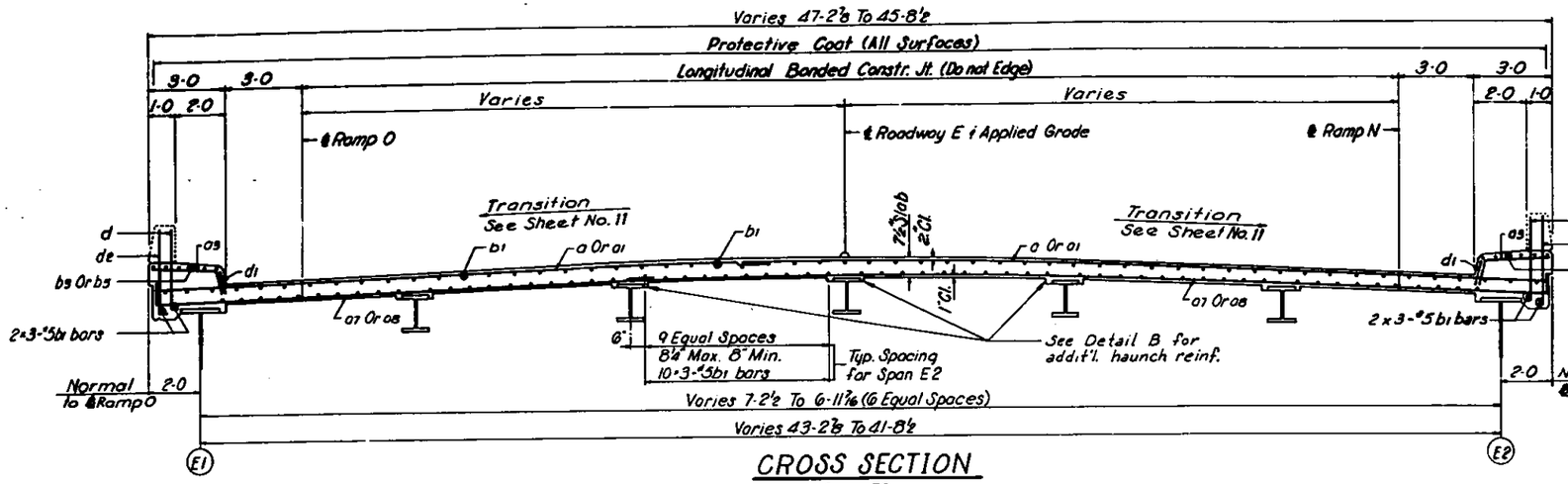
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

DESIGNED BY R.T.
DRAWN BY Hamilton
CHECKED BY W.J.F.

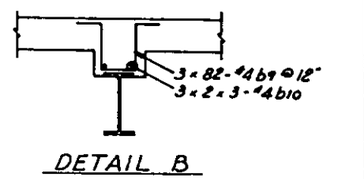
Rev 1-21-70 Slab from 7" to 7½", Class X from 352.8 to 403.3 Cu. Yds. SM

[redacted]

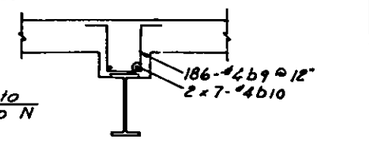
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I-70	82-3HVB-2	ST. CLAIR	252	79
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



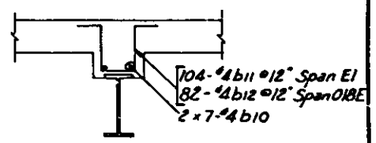
CROSS SECTION
Span E2



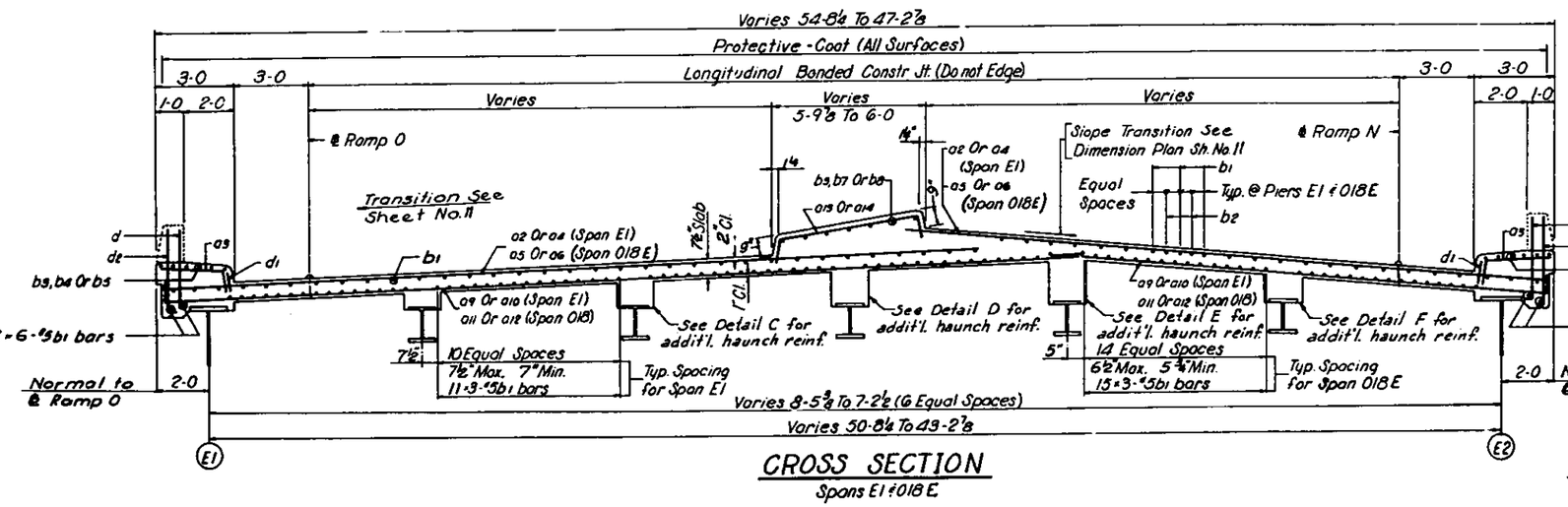
DETAIL B



DETAIL C

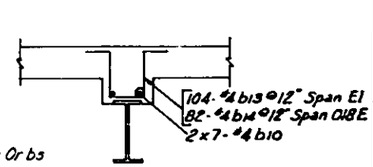


DETAIL D



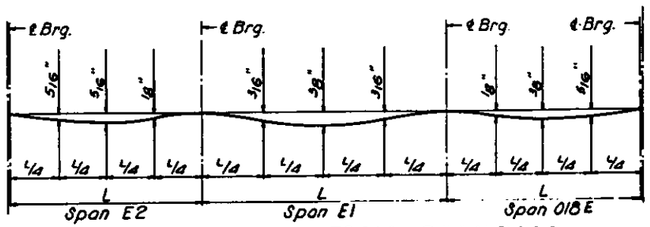
CROSS SECTION
Spans E1 & 018E

Note:
For Bill of Material See Sheet No. 12

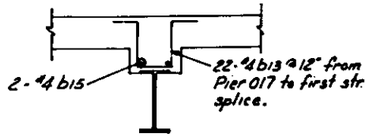


DETAIL E

Note:
Details B, C, D, E & F show additional haunch reinforcement within limits shown and at stringers indicated in Cross Section. Stirrup bars may be placed on slant to provide 2" min. clearance on top of slab.



DEAD LOAD DEFLECTION DIAGRAM
FASCIA GIRDERS
(Wt. Of Concrete Only)



DETAIL F

DESIGNED BY RT
DRAWN BY HAMILTON
CHECKED BY W.J.F.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

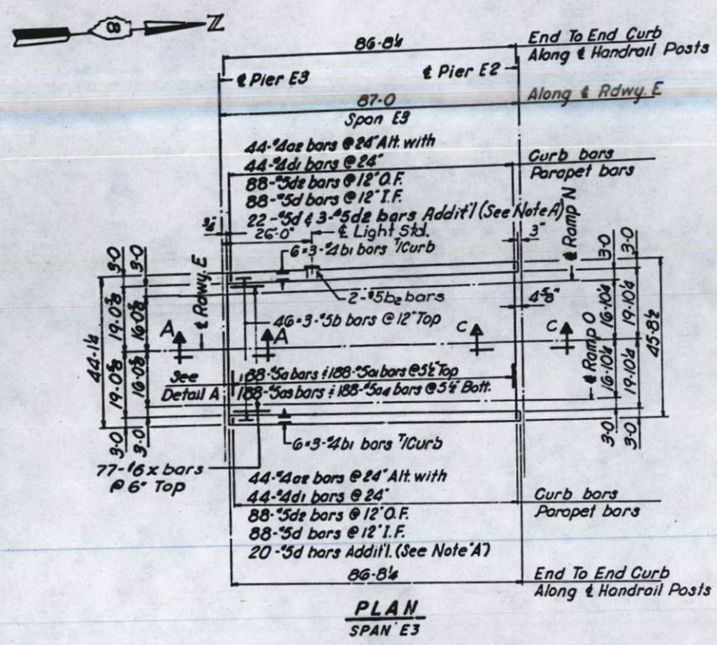
SLAB
SPANS E2, E1 AND 018E
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

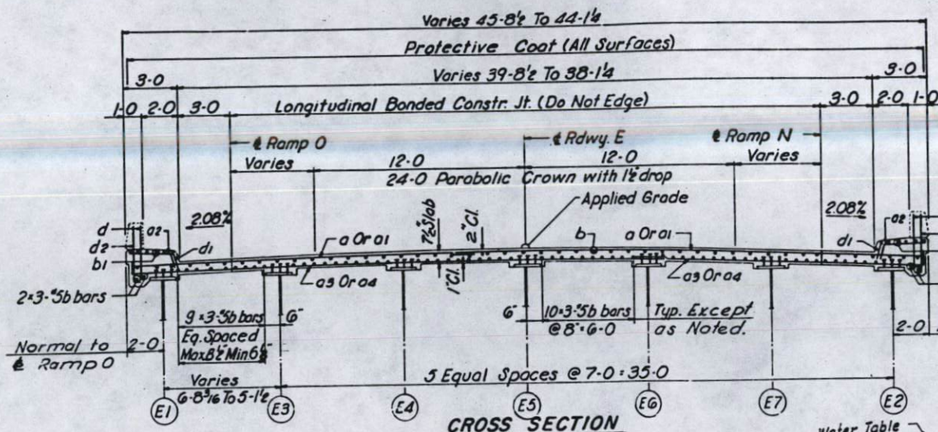
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 13 OF 147

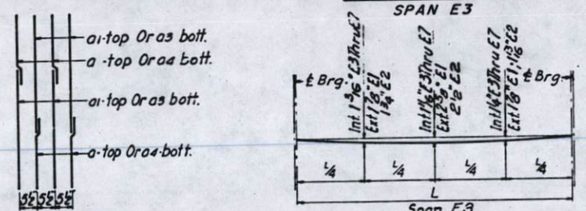
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-70	82-3HVB-2	ST. CLAIR	252	80
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



PLAN
SPAN E3

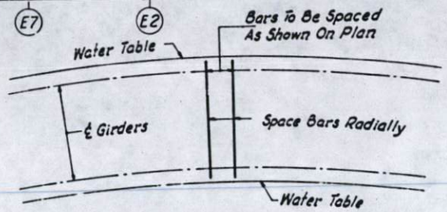


CROSS SECTION
SPAN E3



DEAD LOAD DEFLECTION DIAGRAM
(Wt. Of Concrete Only)

DETAIL A
Arrangement of Main Reinf.

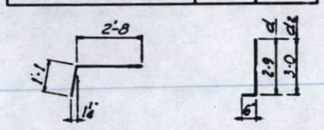


BAR SPACING DIAGRAM
See Note "C"

BILL OF MATERIAL

● BAR	NO.	SIZE	LENGTH	SHAPE
14 a	188	#5	19-4½	
14 a1	188	#5	27-0	
14 a2	88	#4	3-4	
14 a3	188	#5	30-6	
14 a4	188	#5	17-4	
14 b	327	#5	29-6	
14 b1	36	#4	29-7	
14 b2	2	#5	3-8	
14 d	218	#5	3-3	
14 d1	88	#4	1-1	
14 de	179	#5	3-6	
14 x	77	#6	5-2	
● See Note "X"				

ITEM	UNIT	TOTAL
Class "X" Concrete	Cu. Yds.	111.7
Reinforcement Bars	Lbs.	31,590
Protective Coat	Sq. Yds.	457



GENERAL SLAB NOTES

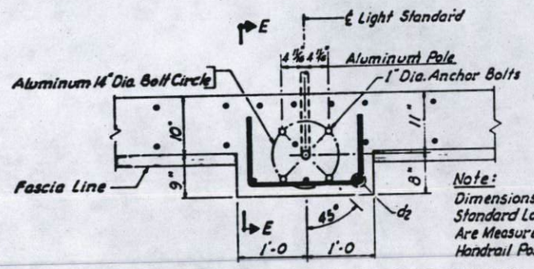
Note "A" 2-Additional #5d Bars Inside Face Of Parapet At Each Handrail Post And Light Standard. 3-Additional #5d2 Bars In Outside Face At Light Standard. Space Bars to Miss Parapet Joints.

Note "B" Bars Indicated Thus 5x6-#5 Etc. Indicates 5 Lines Of Bars With 4 Lengths Per Line Min. Bar Laps = 20 Dia. (Transverse Slab Bars Shall Have A Min. Lap Of 30 Dia.)

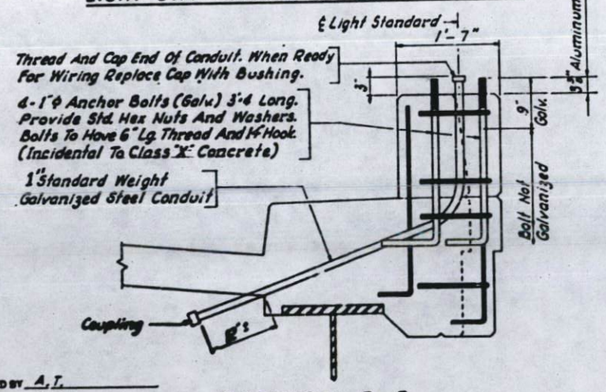
Note "C" Transverse Bars In Horizontally Curved Slab Shall Be Spaced Radially. See Bar Spacing Diagram.

Note "X" The First Two Or Three Digits Of The Bar Mark In The Bill Of Material Correspond To The Sheet No. These Digits Are Omitted On The Drawing.

NOTES:
For Section A-A See Sheet No. 104.
For Section C-C See Sheet No. 103.

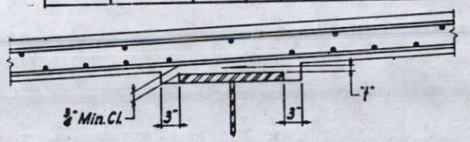


LIGHT STANDARD ANCHORAGE DETAIL



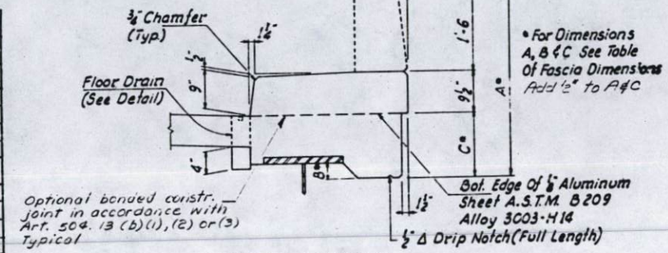
SECTION E-E

Table of Fascia Dimensions								
Location	Span	Girder E1				Girder E2			
		A	B Min.	B Max.	C	A	B Min.	B Max.	C
Rdwy. "E"	E2 Thru E18	3-4	1/2	1/2	1-0½	3-4	1/2	1/2	1-0½
	E3	3-4½	5/8	3¾	1-1	3-4	¾	3¾	1-1
	E4 Thru E6	3-3½	1/2	1	1-0	3-3½	1/2	1	1-0
	E7 Thru E9	3-3½	¾	1	1-0	3-3½	¾	1	1-0
		Girder F1				Girder F2			
Rdwy. "F"	F1 Thru F3	3-3½	1/2	1	1-0	3-3½	1/2	1	1-0
	F4 Thru F6	3-3½	5/8	1	1-0	3-3½	5/8	1	1-0
	F7 Thru F9	3-3½	¼	1	1-0	3-3½	¼	1	1-0
	F10 Thru F12	3-5	1/2	2½	1-1½	3-5	1/2	2½	1-1½
Ramp "M"		Girder M1				Girder M2			
	M1 Thru M3	3-4½	1	2	1-1	3-4½	1	2	1-1
Ramp "N"		Girder N1				Girder N2			
	N5 Thru N7	3-3½	3/8	1	1-0	3-3½	3/8	1	1-0
Ramp O		Girder O1				Girder O2			
	O15 Thru O17	3-4½	1/2	2	1-1	3-4½	1/2	2	1-1
Ramp P		Girder P1				Girder P2			
	P1 Thru P3	3-4	5/8	1½	1-0½	3-4	5/8	1½	1-0½

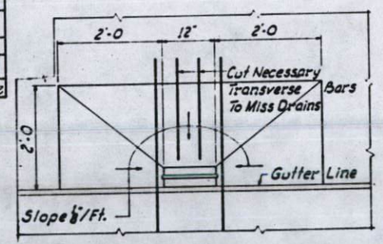


METHOD OF DETERMINING FILLET HEIGHTS "t"

After All Structural Steel Has Been Erected, Elevations Of The Top Flanges Of The Beams Shall Be Taken At Intervals Shown On Sheets 40 Thru 51 These Elevations Subtracted From The Theoretical Grade Elevations Adjusted For Dead Load Deflection Shown On Sheets 40 Thru 51 Minus Slab Thickness (7) Equals The Fillet Heights Above Top Of Beams.

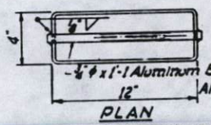


CURB DETAIL



6"x12" Drains To Be Fabricated From ⅛" Welded Sheets Of Material Conforming To A.S.T.M. B209 Alloy 3003-H14 Or A.S.T.M. B209 Alloy 6061-T6 (For Spacing See Plans)

FLOOR DRAIN DETAILS



PLAN
FLOOR DRAIN OPENING

END VIEW

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

SLAB
SPAN E3
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

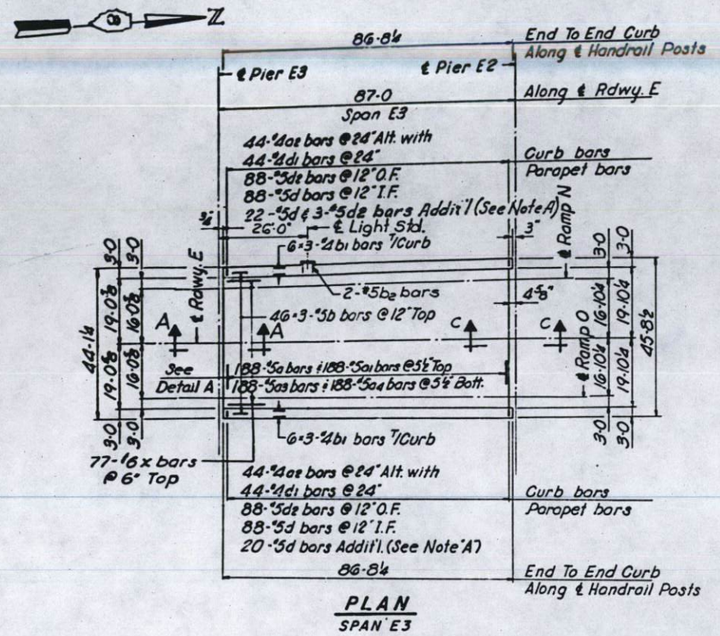
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 14 OF 147

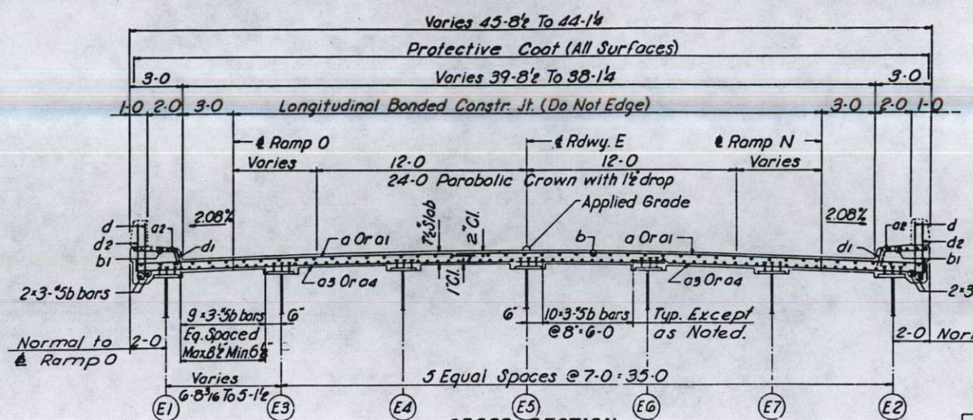
DESIGNED BY A.T.
DRAWN BY D.H
CHECKED BY N.J.F.

Rev. 1-21-70 Slab from 7" to 7½", Class X from 105.6 to 111.7 Cu Yds. S.M.

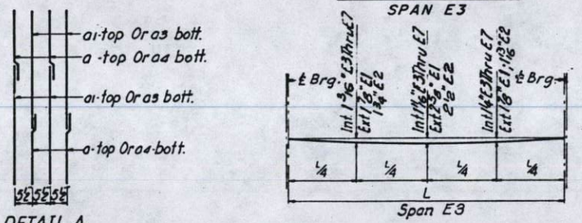
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-70	82-3HVB-2	ST. CLAIR	252	80
FED. ROAD DIV. NO. 4		ILLINOIS	PROJECT	



PLAN
SPAN E3

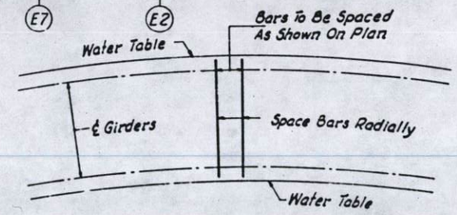


CROSS SECTION
SPAN E3



DETAIL A
Arrangement of Main Reinf.

DEAD LOAD DEFLECTION DIAGRAM
(Wt. Of Concrete Only)

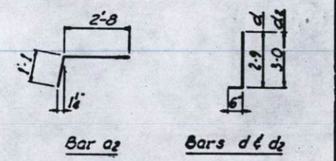


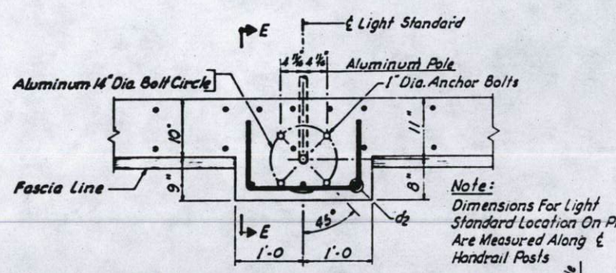
BAR SPACING DIAGRAM
See Note 'C'

BILL OF MATERIAL

● BAR	NO.	SIZE	LENGTH	SHAPE
14 a	188	#5	19-10	
14 a1	188	#5	27-0	
14 a2	88	#4	3-9	
14 a3	188	#5	30-6	
14 a4	188	#5	17-4	
14 b	327	#5	29-6	
14 b1	36	#4	29-7	
14 b2	2	#5	3-8	
14 d	218	#5	3-3	
14 d1	88	#4	1-1	
14 d2	179	#5	3-6	
14 x	77	#6	5-2	
● See Note 'X'				

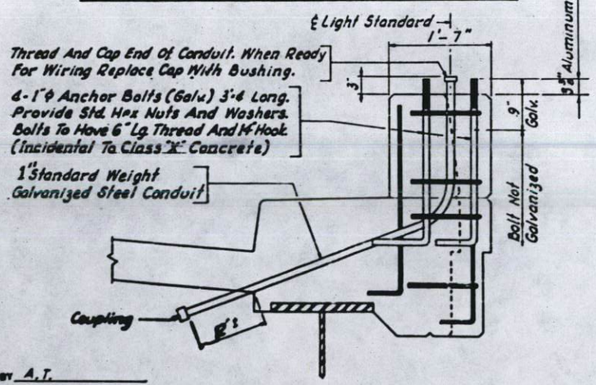
ITEM	UNIT	TOTAL
Class 'X' Concrete	Cu. Yds.	111.7
Reinforcement Bars	Lbs.	31,590
Protective Coat	Sq. Yds.	457





LIGHT STANDARD ANCHORAGE DETAIL

Note: Dimensions For Light Standard Location On Plans Are Measured Along ℄ Handrail Posts

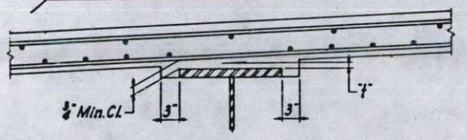


SECTION E-E

DESIGNED BY A.T.
DRAWN BY D.H
CHECKED BY N.J.F.

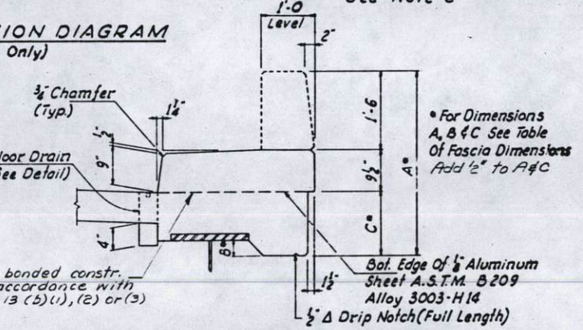
Table of Fascia Dimensions									
Location	Span	Girder E1				Girder E2			
		A	B Min	B Max	C	A	B Min	B Max	C
Rdwy. "E"	E2 Thru E18	3-4	12	12	1-0½	3-4	12	12	1-0½
	E3	3-4½	5/8	3¾	1-1	3-4½	¾	3¾	1-1
	E4 Thru E6	3-3½	12	1	1-0	3-3½	12	1	1-0
	E7 Thru E9	3-3½	¾	1	1-0	3-3½	¾	1	1-0
		Girder F1				Girder F2			
Rdwy. "F"	F1 Thru F3	3-3½	12	1	1-0	3-3½	12	1	1-0
	F4 Thru F6	3-3½	3/8	1	1-0	3-3½	5/8	1	1-0
	F7 Thru F9	3-3½	¼	1	1-0	3-3½	¼	1	1-0
	F10 Thru F12	3-5	12	2½	1-1½	3-5	12	2½	1-1½
Ramp "M"		Girder M1				Girder M2			
	M1 Thru M3	3-4½	1	2	1-1	3-4½	1	2	1-1
Ramp "N"		Girder N1				Girder N2			
	N5 Thru N7	3-3½	3/8	1	1-0	3-3½	3/8	1	1-0
Ramp O		Girder O1				Girder O2			
	O15 Thru O17	3-4½	12	2	1-1	3-4½	12	2	1-1
Ramp P		Girder P1				Girder P2			
	P1 Thru P3	3-4	5/8	1½	1-0½	3-4	5/8	1½	1-0½

VOID

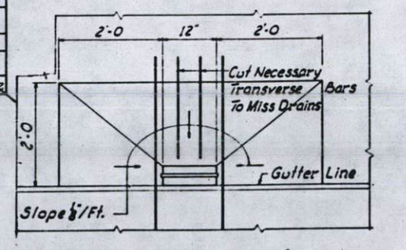


METHOD OF DETERMINING FILLET HEIGHTS "t"

After All Structural Steel Has Been Erected, Elevations Of The Top Flanges Of The Beams Shall Be Taken At Intervals Shown On Sheets 40 Thru 51 These Elevations Subtracted From The Theoretical Grade Elevations Adjusted For Dead Load Deflection Shown On Sheets 40 Thru 51 Minus Slab Thickness (7") Equals The Fillet Heights Above Top Of Beams.

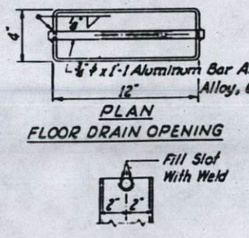


CURB DETAIL



6"x12" Drains To Be Fabricated From ⅛" Welded Sheets Of Material Conforming To A.S.T.M. B209 Alloy 3003-H14 Or A.S.T.M. B209 Alloy 6061-T6 (For Spacing See Plans)

FLOOR DRAIN DETAILS



GENERAL SLAB NOTES

Note 'A' 2-Additional #5d Bars Inside Face Of Parapet At Each Handrail Post And Light Standard. 3-Additional #5d2 Bars In Outside Face At Light Standard. Space Bars to Miss Parapet Joints.

Note 'B' Bars Indicated Thus 5x6-#5 Etc. Indicates 5 Lines Of Bars With 6 Lengths Per Line Min. Bar Laps = 20 Dia. (Transverse Slab Bars Shall Have A Min. Lap Of 30 Dia.)

Note 'C' Transverse Bars In Horizontally Curved Slab Shall Be Spaced Radially. See Bar Spacing Diagram.

Note 'X' The First Two Or Three Digits Of The Bar Mark In The Bill Of Material Correspond To The Sheet No. These Digits Are Omitted On The Drawing.

NOTES:

For Section A-A See Sheet No. 104.
For Section C-C See Sheet No. 103.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

SLAB
SPAN E3
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

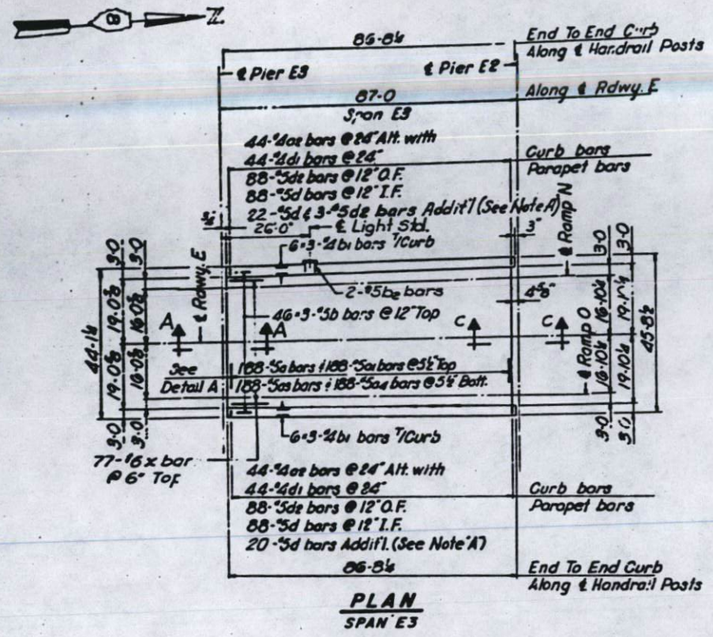
E.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

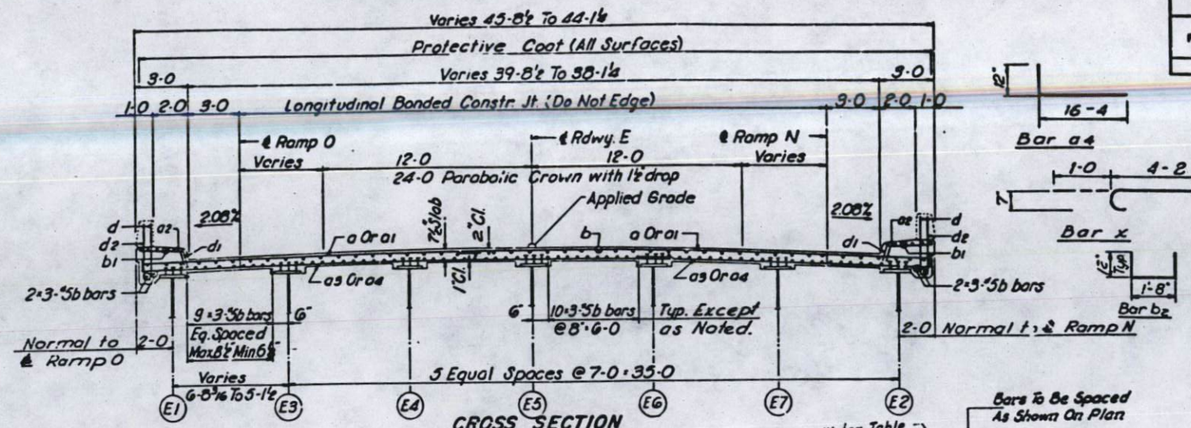
SHEET 14 OF 147

Rev. 1-27-70 Slab from 7" to 7½", Class X from 105.6 to 111.7 Cu Yds. S.M.

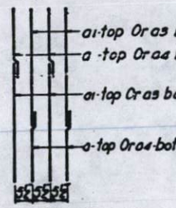
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-70	82-3HVB-2	ST. CLAIR	232	80A
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



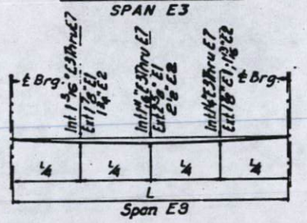
PLAN
SPAN E3



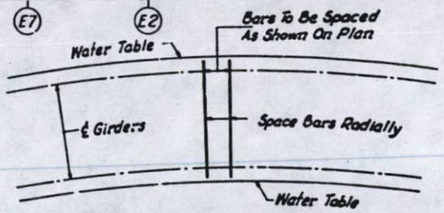
CROSS SECTION
SPAN E3



DETAIL A
Arrangement of Main Reinf.



DEAD LOAD DEFLECTION DIAGRAM
(Wt. of Concrete Only)

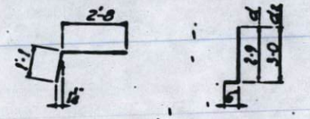


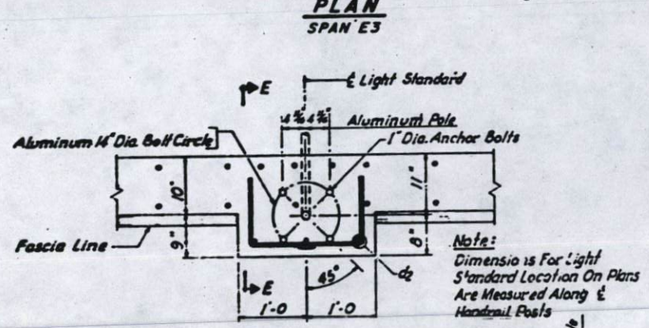
BAR SPACING DIAGRAM
See Note "C"

BILL OF MATERIAL

● BAR	NO.	SIZE	LENGTH	SHAPE
14 a	188	#5	19-10	
14 a₁	188	#5	27-0	
14 a₂	88	#4	3-9	
14 a₃	188	#5	30-6	
14 a₄	188	#5	17-4	
14 b	327	#5	29-6	
14 b₁	36	#4	29-7	
14 b₂	2	#5	3-8	
14 d	218	#5	3-3	
14 d₁	88	#4	1-1	
14 d₂	179	#5	3-6	
14 x	77	#6	5-2	
● See Note "X"				

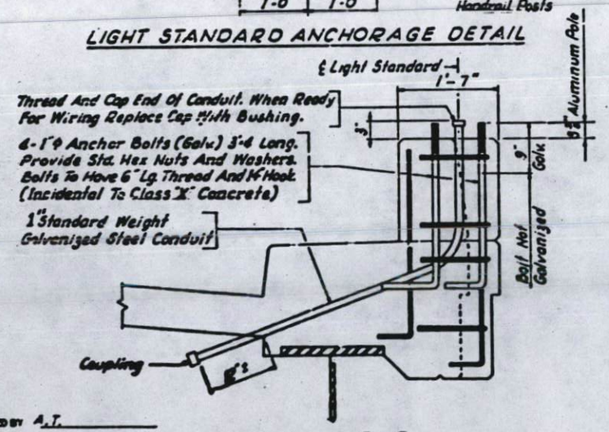
ITEM	UNIT	TOTAL
Class "X" Concrete	Cu. Yds.	111.7
Reinforcement Bars	Lbs.	31,590
Protective Coat	Sq. Yds.	457





LIGHT STANDARD ANCHORAGE DETAIL

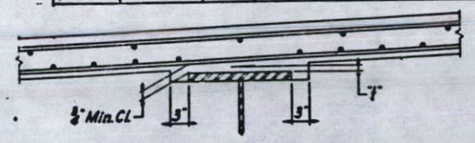
Note:
Dimensions For Light Standard Location On Plans Are Measured Along ℄ Handrail Posts



SECTION E-E

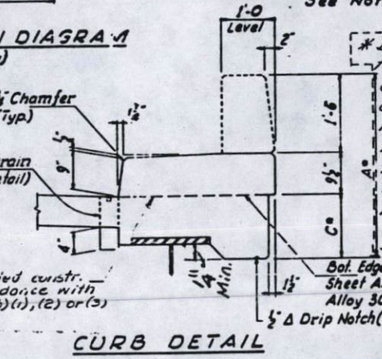
DESIGNED BY A.J.T.
DRAWN BY "
CHECKED BY N.W.L.

Table of Fascia Dimensions								
Location	Span	Girder E1				Girder E2			
		A	B Min	B Max	C	A	B Min	B Max	C
Rdv. "E"	E2 Thru E18	3-4	½	½	1-0½	3-4	½	½	1-0½
	E3	3-4½	⅝	3¾	1-1	3-4½	¾	3¾	1-1
	E4 Thru E6	3-3½	½	1	1-0	3-3½	½	1	1-0
	E7 Thru E9	3-3½	¾	1	1-0	3-3½	¾	1	1-0
		Girder F1				Girder F2			
Rdwy. "F"	F1 Thru F3	3-3½	½	1	1-0	3-3½	½	1	1-0
	F4 Thru F6	3-3½	⅝	1	1-0	3-3½	⅝	1	1-0
	F7 Thru F9	3-3½	¼	1	1-0	3-3½	¼	1	1-0
	F10 Thru F12	3-5	½	2½	1-1½	3-5	½	2½	1-1½
Ramp "M"		Girder M1				Girder M2			
	M1 Thru M3	3-4½	1	2	1-1	3-4½	1	2	1-1
Ramp "N"		Girder N1				Girder N2			
	N5 Thru N7	3-3½	⅜	1	1-0	3-3½	⅜	1	1-0
Ramp O		Girder O1				Girder O2			
	O15 Thru O17	3-4½	½	2	1-1	3-4½	½	2	1-1
Ramp P		Girder P1				Girder P2			
	P1 Thru P3	3-4	⅝	1½	1-0½	3-4	⅝	1½	1-0½



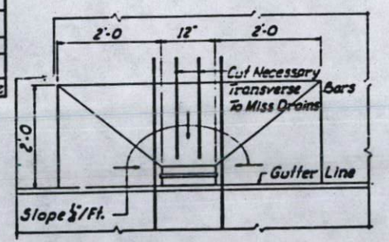
METHOD OF DETERMINING FILLET HEIGHTS "f"

After All Structural Steel Has Been Erected, Elevations Of The Top Flanges Of The Beams Shall Be Taken At Intervals Shown On Sheets 40 Thru 51 These Elevations Subtracted From The Theoretical Grade Elevations Adjusted For Dead Load Deflection Shown On Sheets 40 Thru 51 Minus Slab Thickness (T) Equals The Filled Heights Above Top Of Beams.



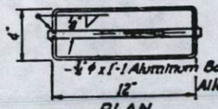
Optional bonded constr. joint in accordance with Art. 606.13 (b)(1), (2) or (3) Typical

CURB DETAIL

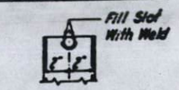


6"x12" Drains To Be Fabricated From ⅛" Welded Sheets Of Material Conforming To A.S.T.M. B209 Alloy 3003-H14 Or A.S.T.M. B209 Alloy 6061-T6 (For Spacing See Plans)

FLOOR DRAIN DETAILS



PLAN
FLOOR DRAIN OPENING



END VIEW

* Dimesions A & C are to be constant for eq. respective unit as determined in the field after top of bm. elev. are taken of the intervals indicated in tables of elev. shown on sheets 106 thru 117.

Note 'A' Note B

GENERAL SLAB NOTES

2-Additional "5d Bars Inside Face Of Parapet At Each Handrail Post And Light Standard. 3-Additional "5d Bars In Outside Face At Light Standard. Space Bars to Miss Parapet Joints. Bars Indicated Thus 5x6-"5 Etc. Indicates 5 Lines Of Bars With 6 Lengths Per Line Min. Bar Laps = 20 Dia. (Transverse Slab Bars Shall Have A Min. Lap Of 30 Dia.)

Note 'C' Transverse Bars In Horizontally Curved Slab Shall Be Spaced Radially. See Bar Spacing Diagram.

Note 'X' The First Two Or Three Digits Of The Bar Mark In The Bill Of Material Correspond To The Sheet No. These Digits Are Omitted On The Drawing.

NOTES:
For Section A-A See Sheet No. 104.
For Section C-C See Sheet No. 103.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS
SLAB
SPAN E3
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"
E.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

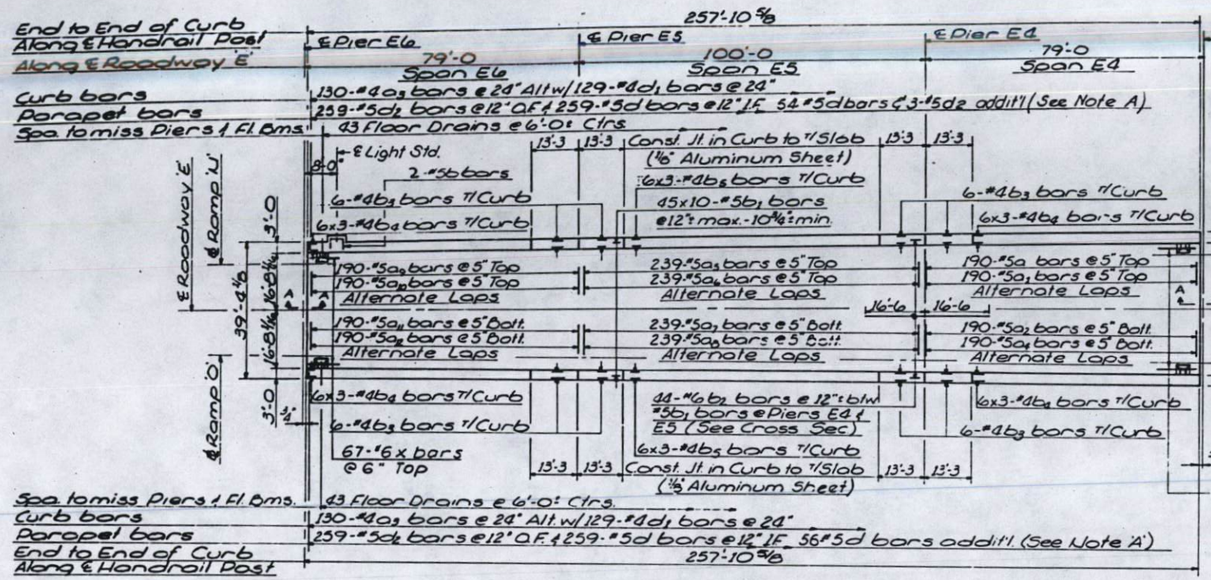
H. W. LOCHNER, INC. ENGINEERS
CHICAGO, ILLINOIS

SHEET 14 OF 147

Rev. [ ] 9-28-71 J.M.J.

Rev 1-21-70 Slab from 1" to 7½", Class X from 105.6 to 111.7 Cu Yds. S.M.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I – 70	82-3HVB-2	ST. CLAIR	252	81
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



PLAN
Spans E4, E5, E6

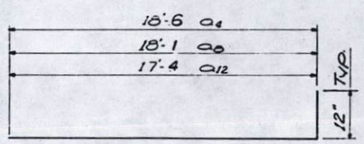
Bar x

BILL OF MATERIAL

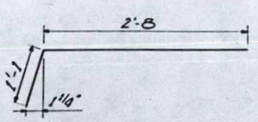
•Bar	No.	Size	Length	Shape
15 a	190	#5	30-8	
15 a1	190	#5	14-6	
15 a2	190	#5	26-8	
15 a3	260	#4	3-9	
15 a4	190	#5	19-6	
15 a5	239	#5	29-7	
15 a6	239	#5	14-2	
15 a7	239	#5	25-8	
15 a8	239	#5	19-1	
15 a9	190	#5	26-2	
15 a10	190	#5	13-8	
15 a11	190	#5	24-6	
15 a12	190	#5	18-4	
15 b	2	#5	3-8	
15 b1	1055	#5	26-8	
15 b2	88	#6	33-0	
15 b3	48	#4	12-11	
15 b4	72	#4	22-6	
15 b5	34	#4	25-2	
15 d	628	#5	3-3	
15 d1	258	#4	1-1	
15 d2	521	#5	3-6	
15 x	144	#6	5-2	

ITEM	UNIT	TOTAL
Class 'X' Concrete	Cu. Yds.	313.4
Reinforcement bars	Lbs.	99,360
Protective Coat	Sq. Yds.	1315

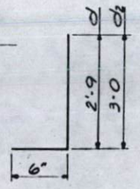
• See Note 'X' Sh. No. 14



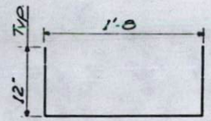
Bars a4, a6, a12



Bar a3

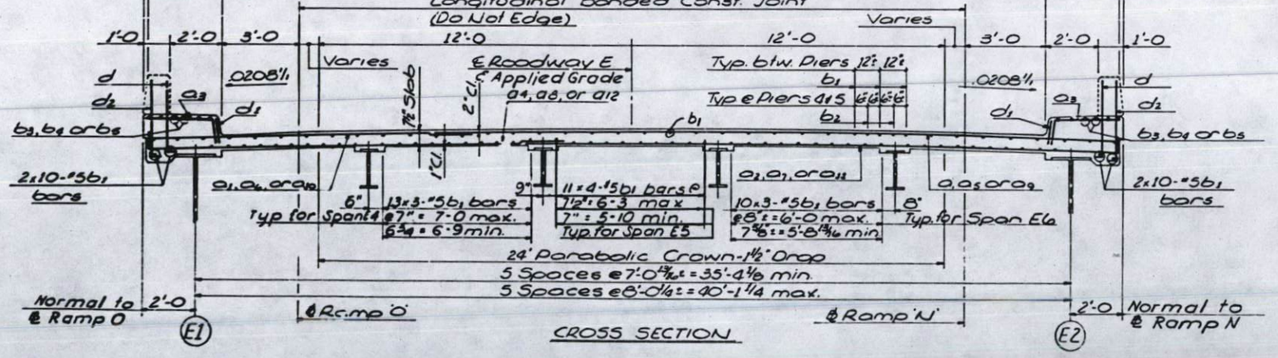


Bars d1 d2

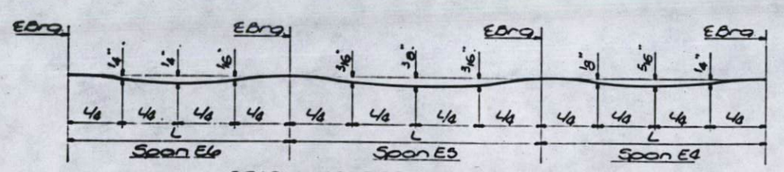


Bar b

NOTE:
For Section A-A See Sh. No. 104
For Note "A" & Misc. Details See Sh. No. 14



CROSS SECTION



DEAD LOAD DEFLECTION DIAGRAM
Fascia Girders (Wt. of Conc. only)

DESIGNED BY R.T.
DRAWN BY J.M.A.
CHECKED BY W.J.F.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

SLAB
SPANS E4 THRU E6
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

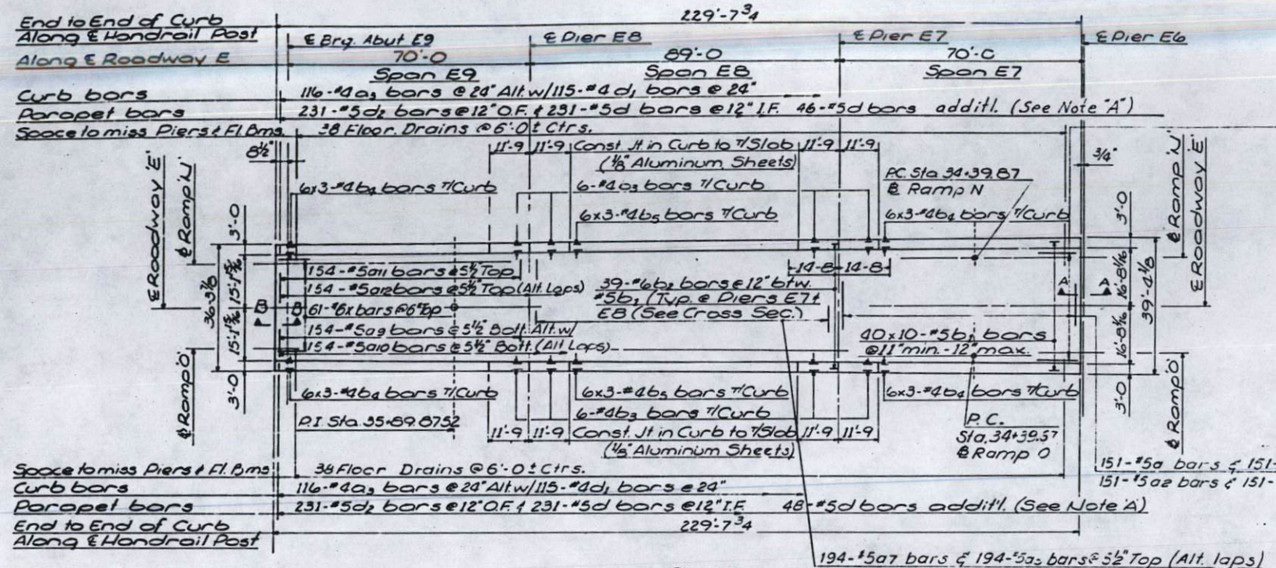
F.A.I. RT. 70 . ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS.

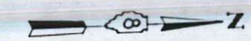
SHEET 15 OF 147

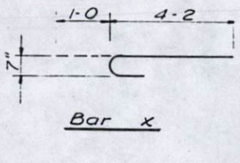
Rev 1-27-70 Slab from 7" to 7½", Class X from 296 C to 313.4 Cu yds S.M.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.–70	82-3HVB-2	ST. CLAIR	252	82
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



PLAN
Spans E7 thru E9



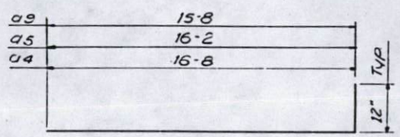


Bar x

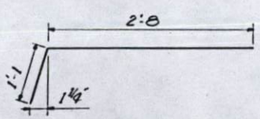
Bar	No.	Size	Length	Shape
16a	151	#5	27-3	
16a1	151	#5	13-2	
16a2	151	#5	23-9	
16a3	232	#4	3-9	
16a4	151	#5	17-8	
16a5	194	#5	17-2	
16a6	194	#5	23-0	
16a7	194	#5	12-9	
16a8	194	#5	26-5	
16a9	154	#5	16-8	
16a10	154	#5	22-4	
16a11	154	#5	12-4	
16a12	154	#5	25-8	
16b1	940	#5	23-11	
16b2	78	#6	29-4	
16b3	48	#4	11-5	
16b4	72	#4	24-0	
16b5	36	#4	22-7	
16d	556	#5	3-3	
16d1	230	#4	1-1	
16d2	462	#5	3-6	
16x	128	#6	5-2	

ITEM	UNIT	TOTAL
Class X Concrete	Cu Yds	257.9
Reinforcement bars	Lbs.	75,600
Protective Coat	Sq Yds	1072

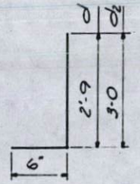
• See Note 'x' Sh. No 14



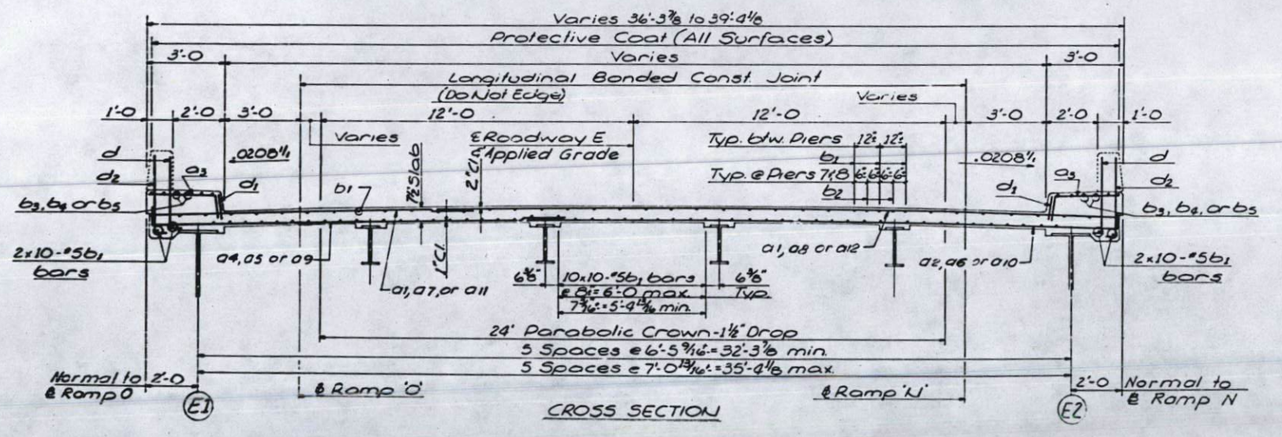
Bars a4, a5 & a9



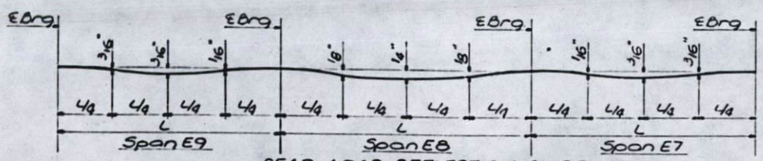
Bar a3



Bars d1 d2



CROSS SECTION



DEAD LOAD DEFLECTION DIAGRAM
Fascia Girders (Wt. of Conc. only)

Note:
For Section A-A & Section B-B See Sheet No. 104
For Note "A" & Misc. Details See Sheet No 14

DESIGNED BY A.T.
DRAWN BY
CHECKED BY W. J. F.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

SLAB
SPANS E7 THRU E9
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

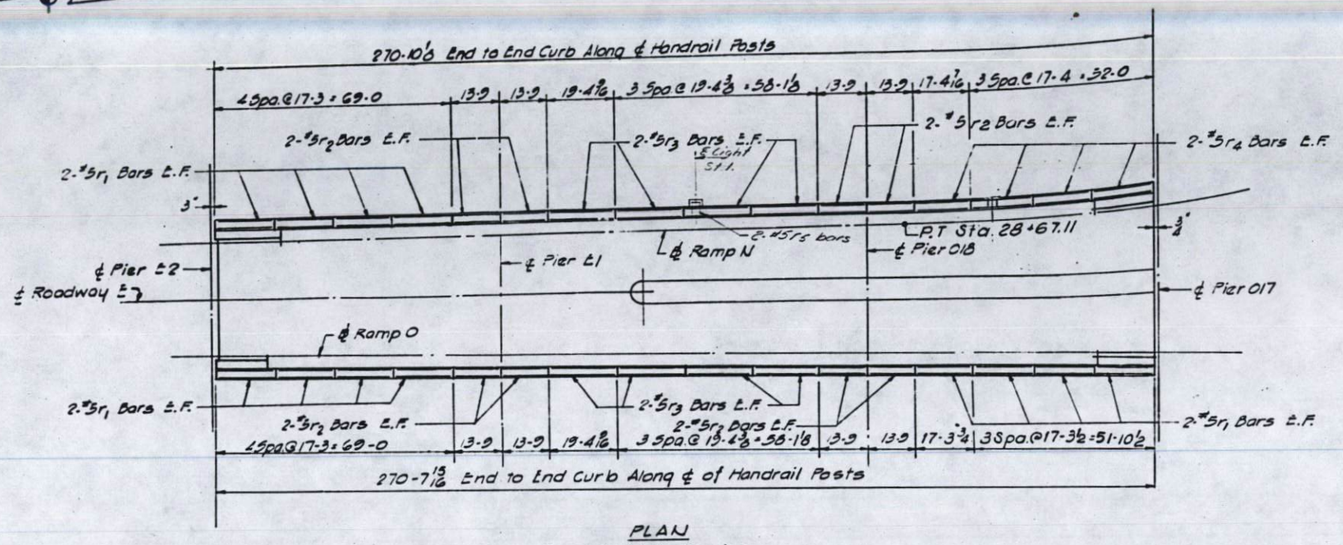
F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

N. W. LOCHNER, INC. ENGINEERS
CHICAGO, ILLINOIS

SHEET 16 OF 147

Rev 1-27-70 Slab from 7" to 7½", Class X from 244 to 257.9 Cu yds. S.M.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I.—70	82-3HVB-2	ST. CLAIR	252	93
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		

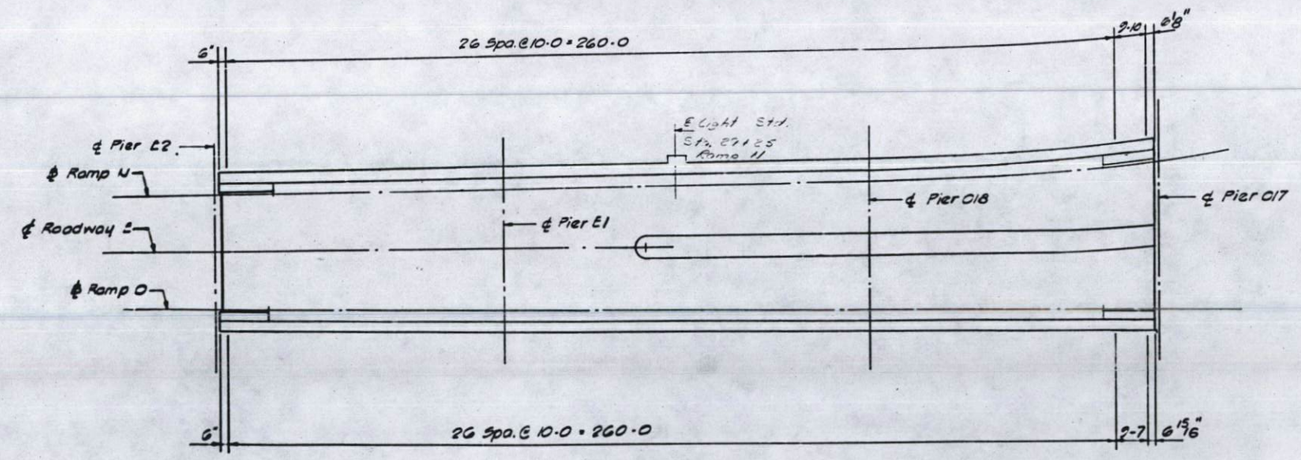


PLAN
Parapet Joint Spacing
Spans E2 thru 018E

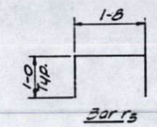
BILL OF MATERIAL				
* BAR	NO	SIZE	LENGTH	SHAPE
27 r_1	48	#5	16-11	——
27 r_2	32	#5	13-5	——
27 r_3	32	#5	13-0	——
27 r_4	16	#5	17-0	——
27 r_5	4	#5	3-8	⊓
ITEM			UNIT	TOTAL
Class X Concrete			Cu.Yd.	27.6
Reinforcement Bars			Lbs.	2230
Aluminum Railing			Lin. Ft.	342

* See Note 'X' Sheet No. 14

NOTE:
All dimensions in plan are along ℄ of posts



PLAN
Handrail Post Spacing
Spans E2 thru 018E



NOTES:
For Details of Light Std. see Sheet No. 14
For Handrail and Parapet Joint Details see Sheet No. 39

DESIGNED BY R. T.
DRAWN BY V. F.
CHECKED BY W. J. F.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

PARAPET AND HANDRAIL

SPANS E2 THRU 018 E

POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

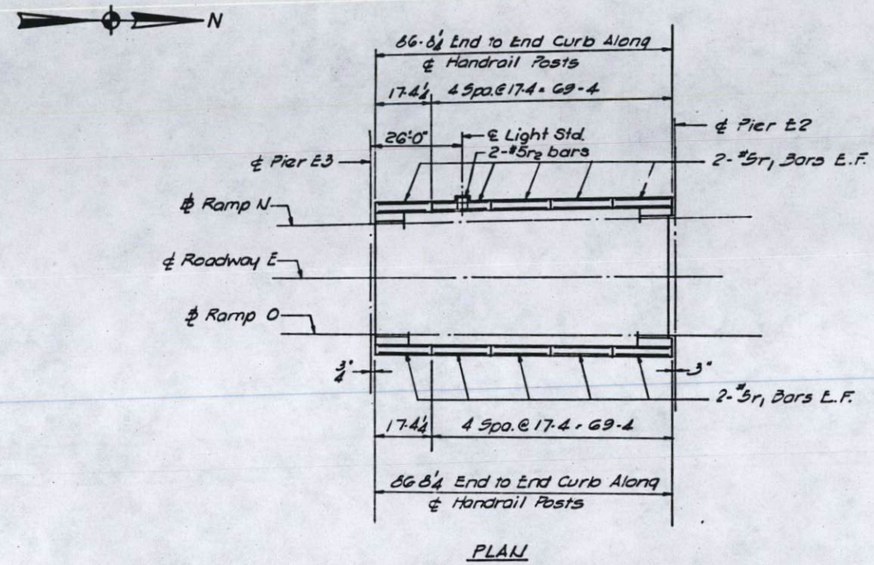
F. A. I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

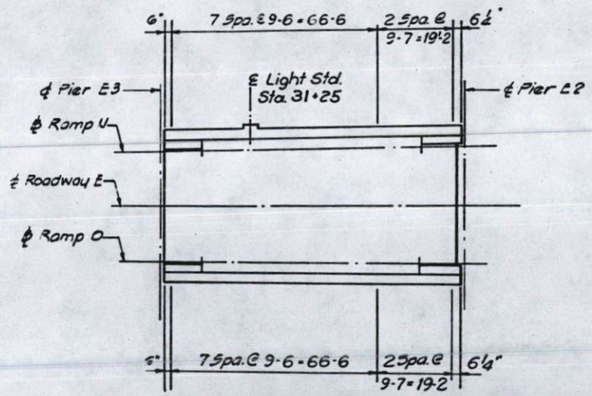
SHEET
27 OF 147

16

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I.-70	82-3HVB-2	ST. CLAIR	252	94
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



PLAN
Parapet Joint Spacing
Span E3

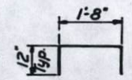


PLAN
Handrail Post Spacing
Span E3

BILL OF MATERIAL				
*BAR	NO	SIZE	LENGTH	SHAPE
28 r1	40	#5	17-0	——
28 r2	2	#5	3'-8"	⊓
ITEM			UNIT	TOTAL
Class X Concrete			Cu. Yd.	8.8
Reinforcement Bars			Lbs.	710
Aluminum Railing			Lin. Ft.	174

*See Note 'x' Sheet No 14

NOTE: All dimensions in plan are along ℄ of posts.



Bar r2

NOTES:
For Handrail and Parapet Joint Details see Sheet No. 39

DESIGNED BY A.T.
DRAWN BY
CHECKED BY W.J.F.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

PARAPET AND HANDRAIL

SPAN E3

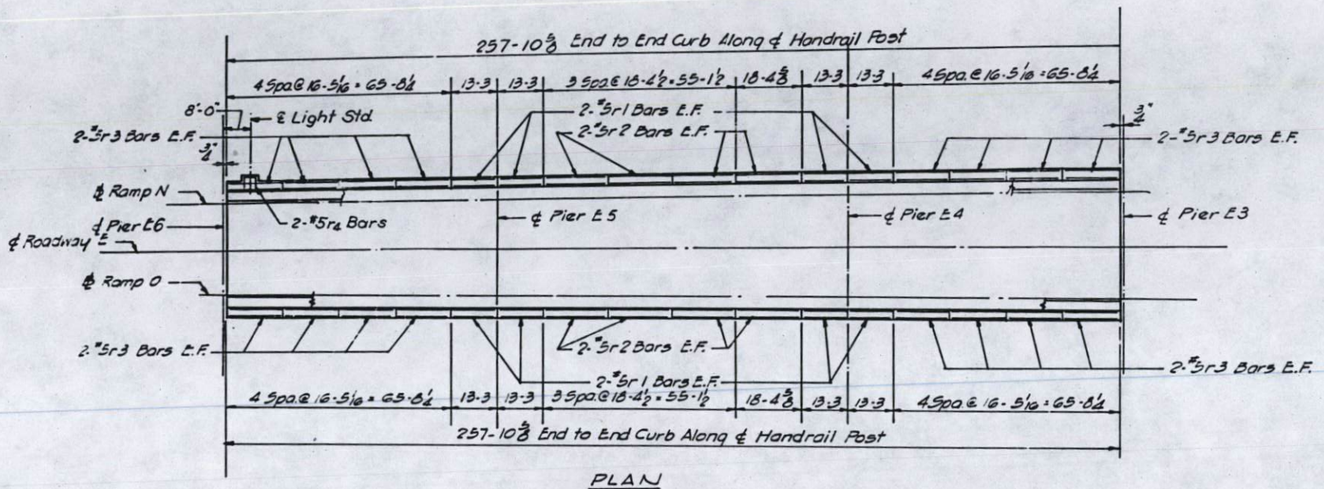
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F. A. I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

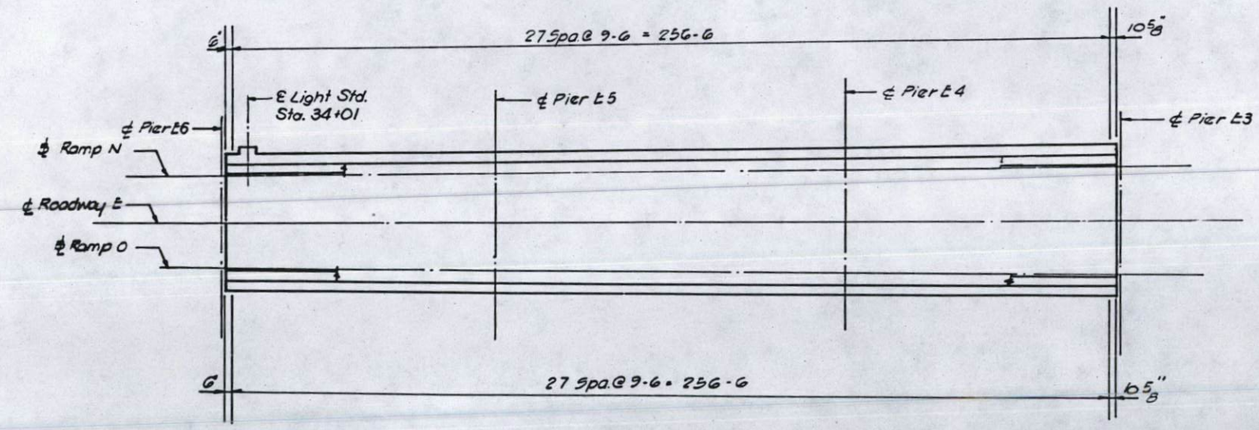
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET
28 of 147

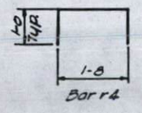
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
E.A.I.-70	82-3HVB-2	ST. CLAIR	252	95
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



PLAN
Parapet Joint Spacing
Spans E4 thru E6



PLAN
Handrail Post Spacing



NOTE: All dimensions in plan are along ℄ of post

BILL OF MATERIAL				
•BAR	NO	SIZE	LENGTH	SHAPE
29r1	32	#5	12-11	—
29r2	32	#5	18-0	—
29r3	64	#5	16-1	—
29r4	2	#5	3-8	⌐
ITEM		UNIT	TOTAL	
Class 'X' Concrete		Cu.Yds.	26.3	
Reinforcement Bars		Lbs.	2120	
Aluminum Railing		Lin.Ft.	516	

•See Note x Sheet No. 14

NOTES:
For Detail at Light Std see Sheet No. 14
For Handrail and Parapet Joint Details see Sheet No. 39

DESIGNED BY T.A.
DRAWN BY T.
CHECKED BY W.J.F.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

PARAPET AND HANDRAIL

SPANS E4 THRU E6

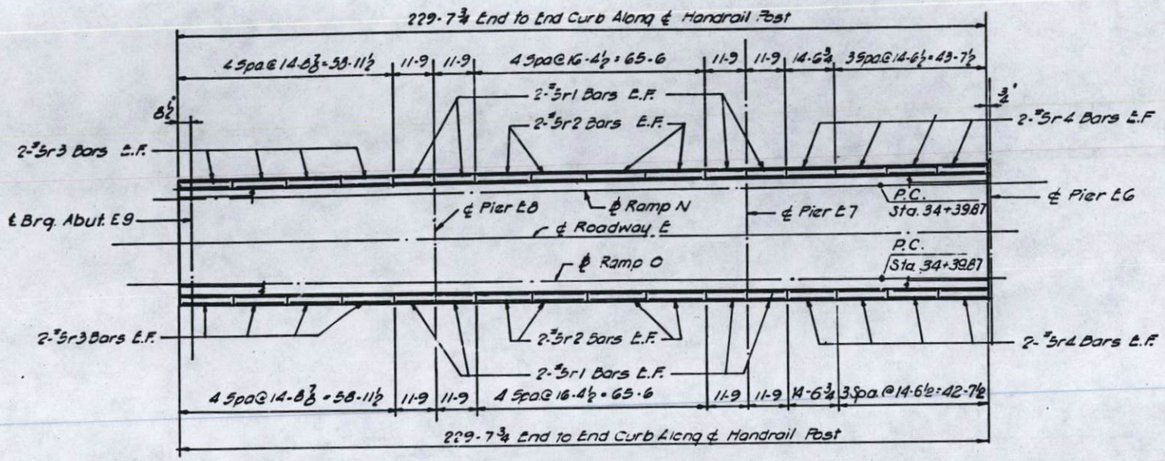
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

E.A.I.RT.70 ST. CLAIR CO. SECTION 82-3HVB-2

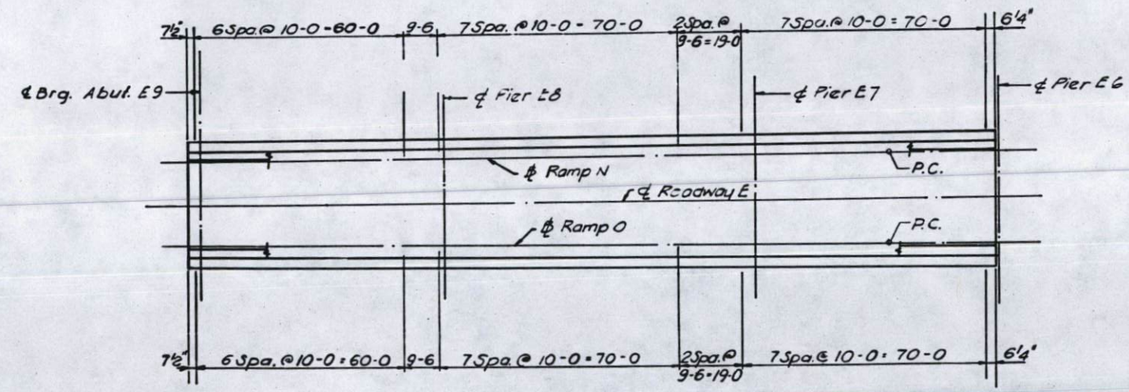
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET
29 of 147

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.—70	82-3HVB-2	ST. CLAIR	252	96
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



PLAN
Parapet Joint Spacing
Spans E7 thru E9



PLAN
Handrail Post Spacing

NOTE:
All dimensions in plan are along ℄ of post.

BILL OF MATERIAL				
*BAR	NO	SIZE	LENGTH	SHAPE
30 r1	32	#5	11-5	—
30 r2	32	#5	16-0	—
30 r3	32	#5	14-5	—
30 r4	32	#5	14-2	—
ITEM			UNIT	TOTAL
Class X Concrete			Cu. Yds.	23.4
Reinforcement Bars			Lbs.	1880
Aluminum Railing			Lin. Ft.	459

* See Note X Sheet No. 14

NOTES:
For Detail at Light Sta. See Sheet No. 14
For Handrail and Parapet Joint Details See Sheet No. 39

DESIGNED BY A.T.
DRAWN BY V.T.
CHECKED BY W.J.F.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

PARAPET AND HANDRAIL

SPANS E7 THRU E9
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

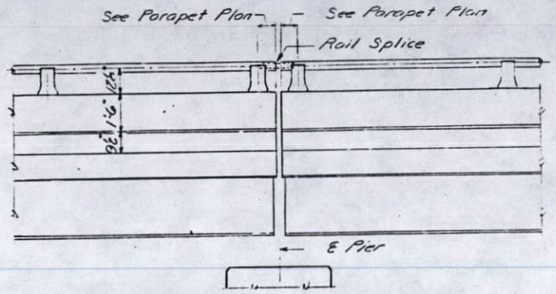
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 30 OF 147

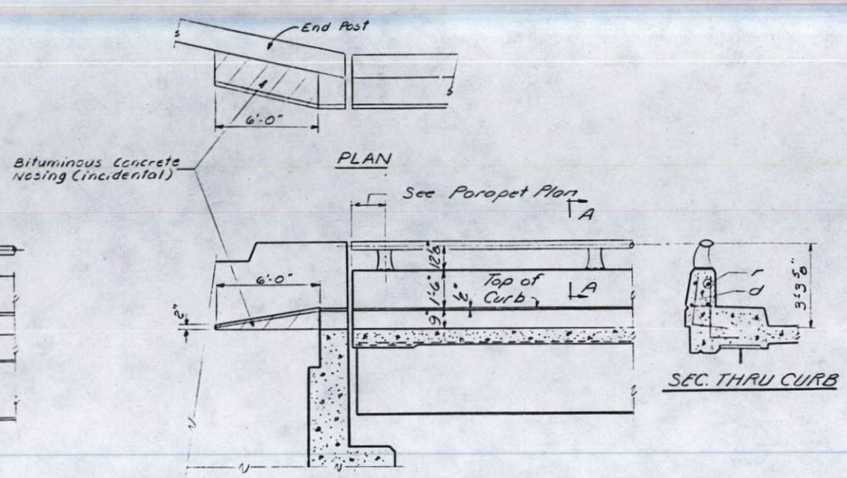
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

		St. Clair	252	105

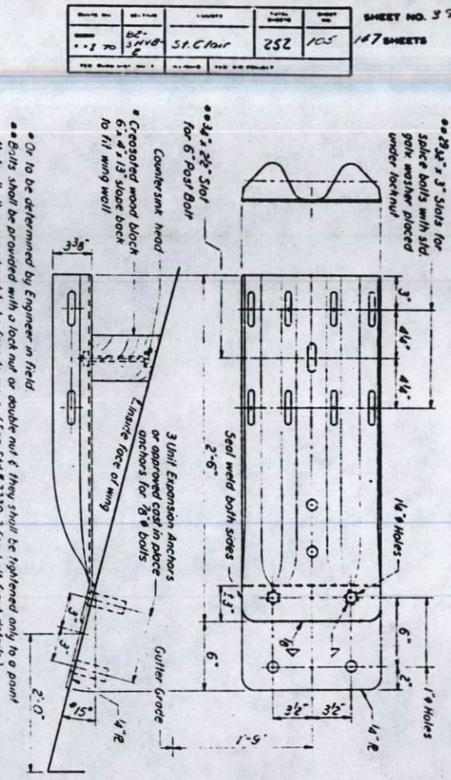
SHEET NO. 39
147 SHEETS



ELEVATION AT EXP. PIERS



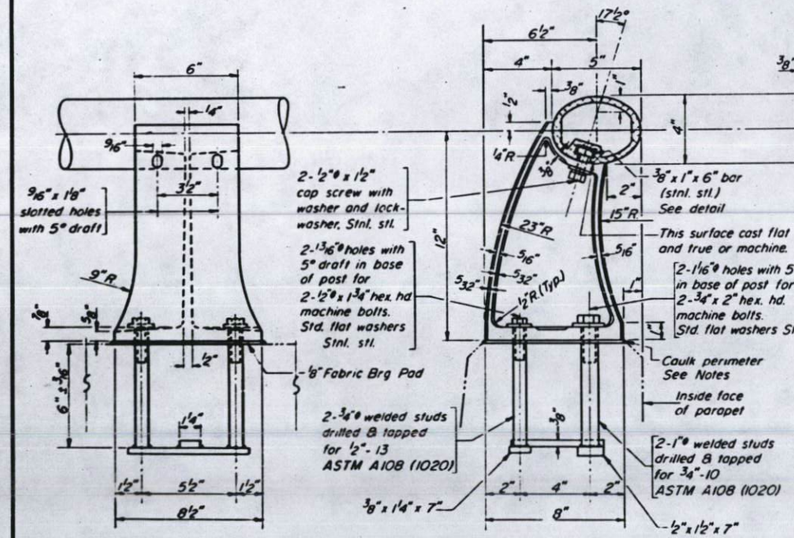
ELEVATION - END POST



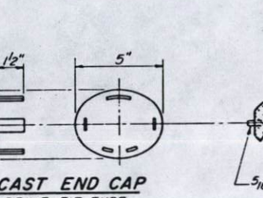
* Or to be determined by Engineer in field
** Bolts shall be provided with a lock nut or double nut & they shall be tightened only to a point that will allow guard rail to be free to move. (See Std # 2230.2 for bolt & nut details.)

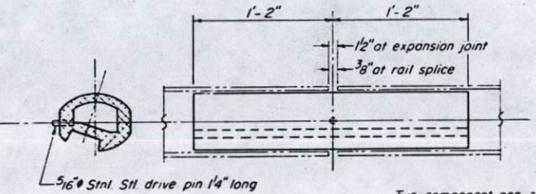
DETAIL OF GUARD RAIL CONNECTION

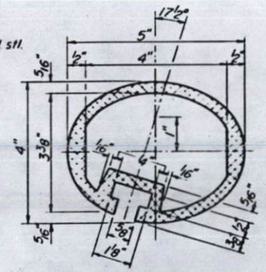
Guard Rail Connection shall be galvanized after fabrication in accordance with ASTM A-123 & A-385
Cost of connection, bolts and anchors are incidental to Bridge Contract



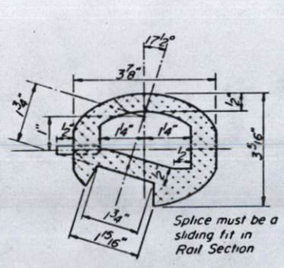
RAIL POST DETAILS





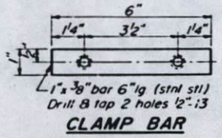


SEC. THRU ELLIPTICAL RAIL SECTION



Splice must be a sliding fit in Rail Section

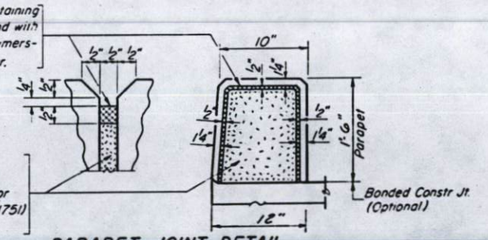
SEC. THRU SPLICE



CLAMP BAR

Two component non-staining gray sealing compound with polysulfide liquid polymers-gun grade with primer.

½" Preformed Cork Asphalt Joint Filler. (meets qualifications for ASTM: Designation D 1751) Cost incidental.



PARAPET JOINT DETAIL

NOTES:

All Aluminum Alloy Extruded Rail shall be supplied in modular lengths of 30 feet, except at the end of bridge or over open joints in bridge deck where the rail shall be attached to a minimum of 2 posts. If the rail is on a horizontal curve of 2300 foot radius or less, the modular lengths may be reduced but shall be attached to a minimum of 2 posts

All joints in rail shall be spliced per detail.

Provide 1 - ⅛" and 2 - 1/16" Aluminum Shims for 25% of the Posts Rail element shall be parallel to Grade - high spots shall be ground and low spots shimmed.

Seal perimeter of base of post to parapet with two component non-staining gray sealing compound with polysulfide liquid polymers, gun grade with primer. Fabric Bearing Pad shall have same dimensions as base of post.

Aluminum alloy rail shall conform to ASTM B 221 alloy 6061-T6 or 6351-T5 with min yield 35 ksi, min. tensile 38 ksi, and elongation of 10 % in 2 inches.

DESIGNED	
CHECKED	
DRAWN O. Derringer	
CHECKED	

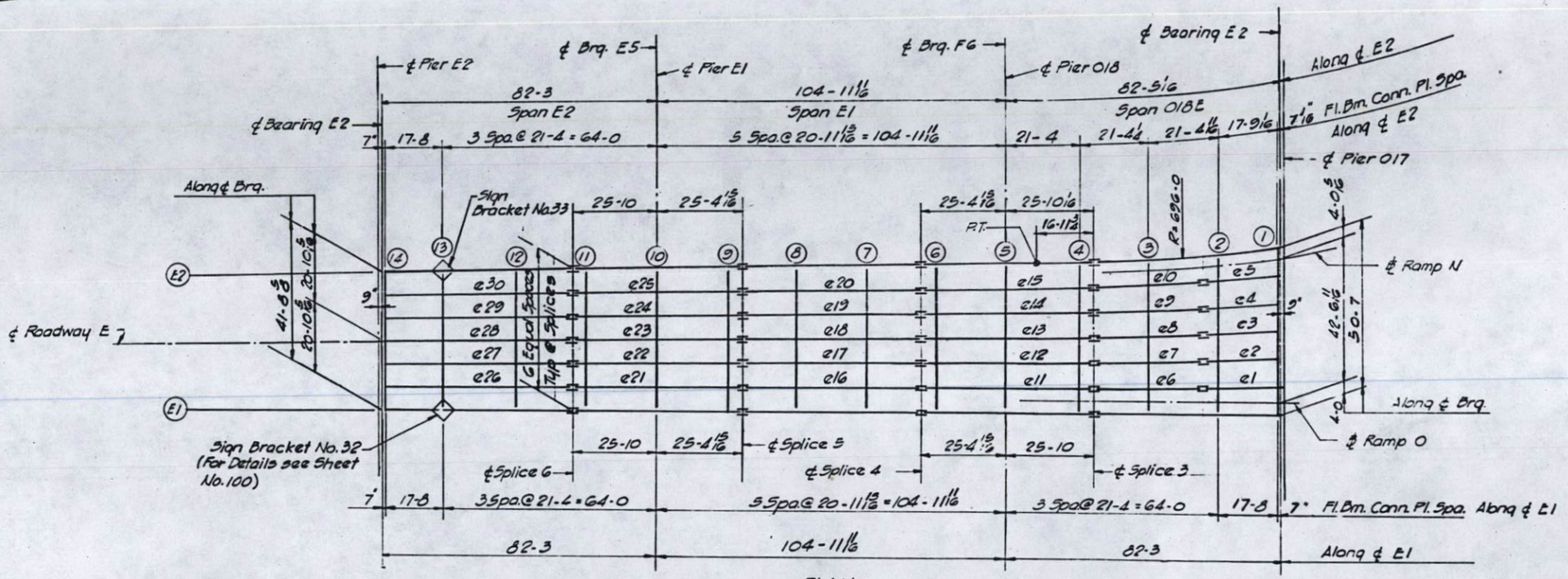
19
EXAMINED
PASSED
APPROVED

R-17 4-22-68

ALUMINUM RAILING
POPLAR ST. BRIDGE APPR.
F.A.I. RT. 70 SEC. 82-3HVBC
ST. CLAIR COUNTY

179

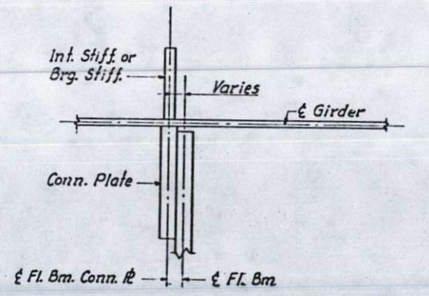
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 70	82-3HVB-2	ST. CLAIR	252	118
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



PLAN
SPANS E2 thru 018E

*ELEVATION TOP OF GIRDER WEB
* Lower all elevations .042 ft

		GIR. E1	GIR. E2	DIFF.
CL. BRG.		445.647	445.376	.271
FLOOR BEAM	1	445.656	445.382	.274
FLOOR BEAM	2	445.929	445.555	.374
FLOOR BEAM	3	446.258	445.763	.495
SPLICE	3	446.518	445.927	.591
FLOOR BEAM	4	446.561	445.980	.581
FLOOR BEAM	5	446.763	446.229	.534
FLOOR BEAM	6	446.962	446.475	.487
SPLICE	4	447.004	446.526	.478
FLOOR BEAM	7	447.065	446.715	.350
FLOOR BEAM	8	447.141	446.955	.186
SPLICE	5	447.201	447.144	.057
FLOOR BEAM	9	447.202	447.150	.051
FLOOR BEAM	10	447.208	447.179	.028
FLOOR BEAM	11	447.213	447.208	.005
SPLICE	6	447.214	447.214	.000
FLOOR BEAM	12	447.077	447.077	.000
FLOOR BEAM	13	446.982	446.982	.000
FLOOR BEAM	14	446.788	446.788	.000
CL. BRG.		446.753	446.753	.000



FLOOR BEAM LOCATION SKETCH

Weight of Bearing Assemblies with Lead Plates and Anchor Bolts are Included as Structural Steel
Wt. 6430 Lbs.

DESIGNED BY AT
DRAWN BY WT
CHECKED BY SAD

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

FRAMING PLAN

SPANS E2 THRU 018E
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET
52 OF 147

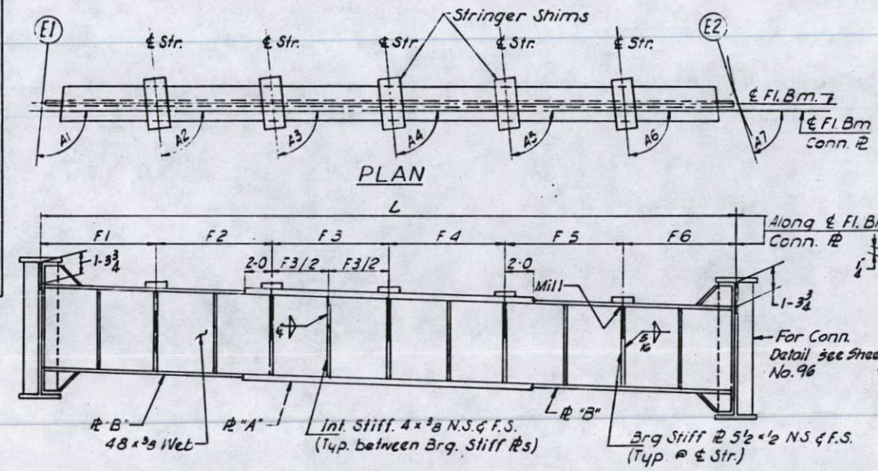
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-70	82-3HVB-2	ST. CLAIR	252	119
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		

STRINGER DIMENSIONS

STR	L	S1	S2	S3	S4	B1	B2
1	22'-2"	17'-8"			4'-6"	89.30.04	90.29.56
2	22 2 1/16	17 8 1/16			4 6	88.28.25	91.31.35
3	22 2 1/4	17 8 3/16			4 6 1/16	87.26.50	92.33.10
4	22 2 1/2	17 8 3/8			4 6 1/8	86.25.20	93.34.40
5	22 2 7/8	17 8 11/16			4 6 3/16	85.23.59	94.36.01
6	33 8	16 10			16 10	89.53.16	90.06.44
7	33 8 1/16	16 10			16 10	89.14.47	90.45.13
8	33 8 1/8	16 10 1/16			16 10 1/16	88.36.20	91.23.40
9	33 8 1/4	16 10 1/8			16 10 1/8	87.57.53	92.02.07
10	33 8 7/16	16 10 1/4			16 10 1/4	87.19.29	92.40.31
11	51 2 15/16	4 6	21 4	20 11 15/16	4 5	90.18.50	89.41.10
12	51 2 15/16	4 6	21 4	20 11 15/16	4 5	90.05.57	89.54.03
13	51 2 15/16	4 6	21 4	20 11 15/16	4 5	89.53.03	90.06.57
14	51 2 15/16	4 6	21 4	20 11 15/16	4 5	89.40.10	90.19.50
15	51 2 15/16	4 6	21 4	20 11 15/16	4 5	89.27.16	90.32.44
16	54 1 13/16	16 6 15/16	20 11 15/16		16 6 15/16	90.21.09	89.38.51
17	54 1 13/16	16 6 15/16	20 11 15/16		16 6 15/16	90.10.35	89.49.25
18	54 1 3/4	16 6 15/16	20 11 15/16		16 6 15/16	90.00.00	90.00.00
19	54 1 13/16	16 6 15/16	20 11 15/16		16 6 15/16	89.49.25	90.10.35
20	54 1 13/16	16 6 15/16	20 11 15/16		16 6 15/16	89.38.51	90.21.09
21	51 2 15/16	4 5	20 11 15/16	21 4	4 6	90.21.09	89.38.51
22	51 2 15/16	4 5	20 11 15/16	21 4	4 6	90.10.35	89.49.25
23	51 2 15/16	4 5	20 11 15/16	21 4	4 6	90.00.00	90.00.00
24	51 2 15/16	4 5	20 11 15/16	21 4	4 6	89.49.25	90.10.35
25	51 2 15/16	4 5	20 11 15/16	21 4	4 6	89.38.51	90.21.09
26	55 10	16 10	21 4		17 8	90.21.09	89.38.51
27	55 10	16 10	21 4		17 8	90.10.35	89.49.25
28	55 10	16 10	21 4		17 8	90.00.00	90.00.00
29	55 10	16 10	21 4		17 8	89.49.25	90.10.35
30	55 10	16 10	21 4		17 8	89.38.51	90.21.09

FLOOR BEAM DIMENSIONS

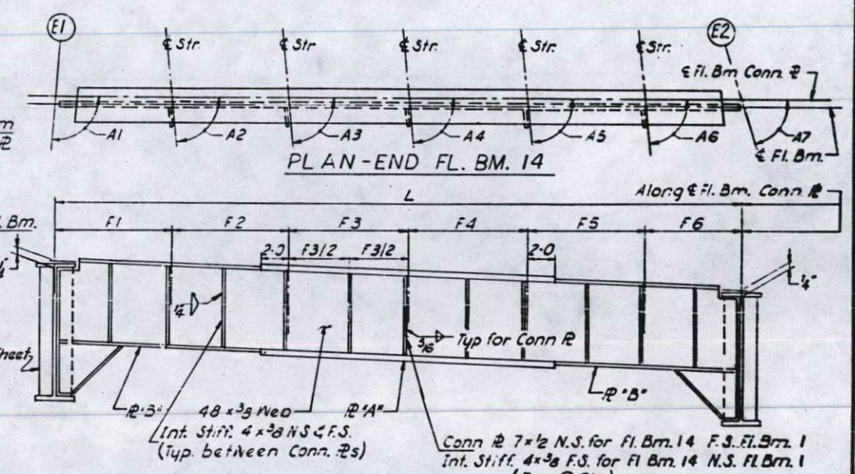
FL BM	L	F1	F2	F3	F4	F5	F6	A1	A2	A3	A4	A5	A6	A7	Plate A Top ℄ Bm.	Plate B Top ℄ Bm.
1	50'-6 1/8"	8'-5"	8'-5"	8'-5"	8'-5"	8'-5"	8'-5"	90.31.44	89.30.04	88.28.25	87.26.50	86.25.20	85.23.59	83.27.48	12 × 1⅝	12 × 1
2	48 6 5/8	8 1 3/16	8 1 3/16	8 1 3/16	8 1 3/16	8 1 3/16	8 1/2	90.31.44	89.30.04	88.28.25	87.26.50	86.25.20	85.23.59	84.55.30	12 × 1½	12 × 1⅛
3	46 9 1/2	7 10	7 10	7 10	7 10	7 10	7 7 9/16	90.31.44	89.53.16	89.14.47	88.36.20	87.57.53	87.19.29	86.41.10	12 × 1¼	12 × 1⅛
4	45 8 1/4	7 7 1/2	7 7 1/2	7 7 1/2	7 7 1/2	7 7 1/2	7 6 5/8	90.31.44	90.18.50	90.05.57	89.53.03	89.40.10	89.27.16	88.26.38	12 × 1⅛	12 × 1¼
5	45 2 1/8	7 6 9/16	7 6 9/16	7 6 9/16	7 6 9/16	7 6 9/16	7 5 5/16	90.31.44	90.18.50	90.05.57	89.53.03	89.40.10	89.27.16	89.28.16	12 × 1⅛	12 × 1¼
6	44 9 1/2	7 5 5/8	7 5 5/8	7 5 5/8	7 5 5/8	7 5 5/8	7 5 3/8	90.31.44	90.18.50	90.05.57	89.53.03	89.40.10	89.27.16	89.28.16	12 × 1⅛	12 × 1¼
7	44 4 7/8	7 4 13/16	7 4 13/16	7 4 13/16	7 4 13/16	7 4 13/16	7 4 13/16	90.31.44	90.21.09	90.10.35	90.00.00	89.49.25	89.38.51	89.28.16	12 × 1½	12 × 1⅛
8	44 3/16	7 4 1/16	7 4 1/16	7 4 1/16	7 4 1/16	7 4 1/16	7 4 1/16	90.31.44	90.21.09	90.10.35	90.00.00	89.49.25	89.38.51	89.28.16	12 × 1½	12 × 1⅛
9	43 7 9/16	7 3 1/4	7 3 1/4	7 3 1/4	7 3 1/4	7 3 1/4	7 3 1/4	90.31.44	90.21.09	90.10.35	90.00.00	89.49.25	89.38.51	89.28.16	12 × 1½	12 × 1⅛
10	43 2 7/8	7 2 1/2	7 2 1/2	7 2 1/2	7 2 1/2	7 2 1/2	7 2 1/2	90.31.44	90.21.09	90.10.35	90.00.00	89.49.25	89.38.51	89.28.16	12 × 1½	12 × 1⅛
11	42 10 3/16	7 1 11/16	7 1 11/16	7 1 11/16	7 1 11/16	7 1 11/16	7 1 11/16	90.31.44	90.21.09	90.10.35	90.00.00	89.49.25	89.38.51	89.28.16	12 × 1⅛	12 × 1
12	42 5 7/16	7 15/16	7 15/16	7 15/16	7 15/16	7 15/16	7 15/16	90.31.44	90.21.09	90.10.35	90.00.00	89.49.25	89.38.51	89.28.16	12 × 1⅛	12 × 1
13	42 3/4	7 1/8	7 1/8	7 1/8	7 1/8	7 1/8	7 1/8	90.31.44	90.21.09	90.10.35	90.00.00	89.49.25	89.38.51	89.28.16	12 × 1⅛	12 × 1
14	41 8 13/16	6 11 7/16	6 11 7/16	6 11 7/16	6 11 7/16	6 11 7/16	6 11 7/16	90.31.44	90.21.09	90.10.35	90.00.00	89.49.25	89.38.51	89.28.16	12 × 1⅛	12 × ¾



PLAN

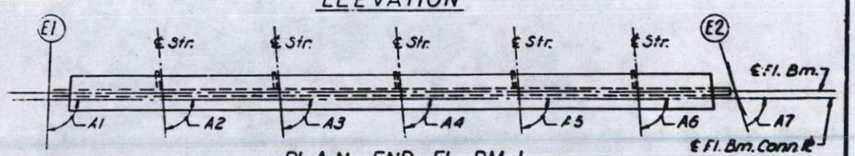
ELEVATION

INTERIOR FLOOR BEAM 2 THRU 13



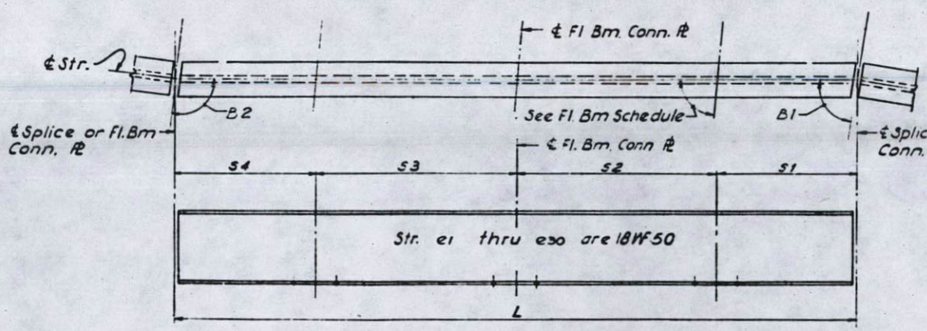
PLAN-END FL. BM. 14

ELEVATION



PLAN END FL. BM. 1

END FLOOR BEAM 1 AND 14



TYPICAL STRINGER

Notes:

Length L of Stringers and Fl. Bms. is correct as given in the table except the increment lengths are given to the nearest 1/16".
All dimensions are in the horizontal plane.
For Intermediate Stiffener, End Stiffener and Connection Plate Details see Sh. No. 97

DESIGNED BY A.T.
DRAWN BY I.M.
CHECKED BY S.A.B.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

STRINGER AND FLOOR BEAM SCHEDULE
SPANS E2 THRU 018E
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I. RT.-70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 53 OF 147

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. – 70	82-3HVB-2	ST. CLAIR	252	120
FED. ROAD DIV. NO. 6	ILLINOIS	PROJECT		

FLOOR BEAM 2 AND 3	T1	T2	T3	T4
STR. 1 THRU 10	3/8	7/16	11/16	3/4

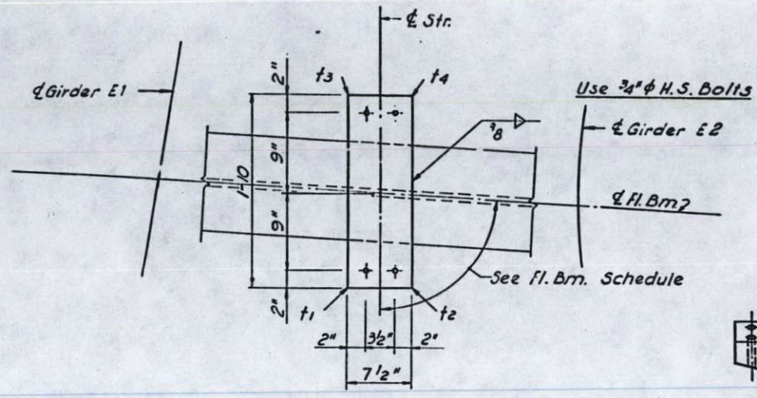
FLOOR BEAM 4 THRU 6	T1	T2	T3	T4
STR. 11 THRU 15	7/16	1/2	5/8	11/16

FLOOR BEAM 7	T1	T2	T3	T4
STR.				
16	1/2	9/16	9/16	5/8
17	7/16	1/2	5/8	11/16
18	7/16	1/2	5/8	11/16
19	7/16	1/2	5/8	11/16
20	7/16	1/2	5/8	11/16

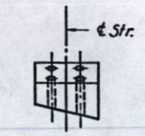
FLOOR BEAM 8	T1	T2	T3	T4
STR.				
16	1/2	1/2	5/8	5/8
17	1/2	1/2	5/8	5/8
18	7/16	1/2	5/8	11/16
19	7/16	1/2	5/8	11/16
20	7/16	7/16	11/16	11/16

FLOOR BEAM 9 THRU 11	T1	T2	T3	T4
STR. 21 THRU 25	9/16	9/16	9/16	9/16

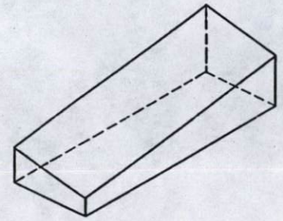
FLOOR BEAM 12 AND 13	T1	T2	T3	T4
STR. 26 THRU 30	5/8	5/8	1/2	1/2



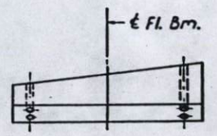
PLAN



END VIEW



ISOMETRIC VIEW



SIDE VIEW

SHIM DETAIL

Shim thickness t1, t2, t3 & t4 shown in the Table are orientated with the Plan View shown above.

DESIGNED BY A.T.
DRAWN BY L.M.
CHECKED BY A.T.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

STRINGER SHIMS
SPANS E2 THRU 018 E

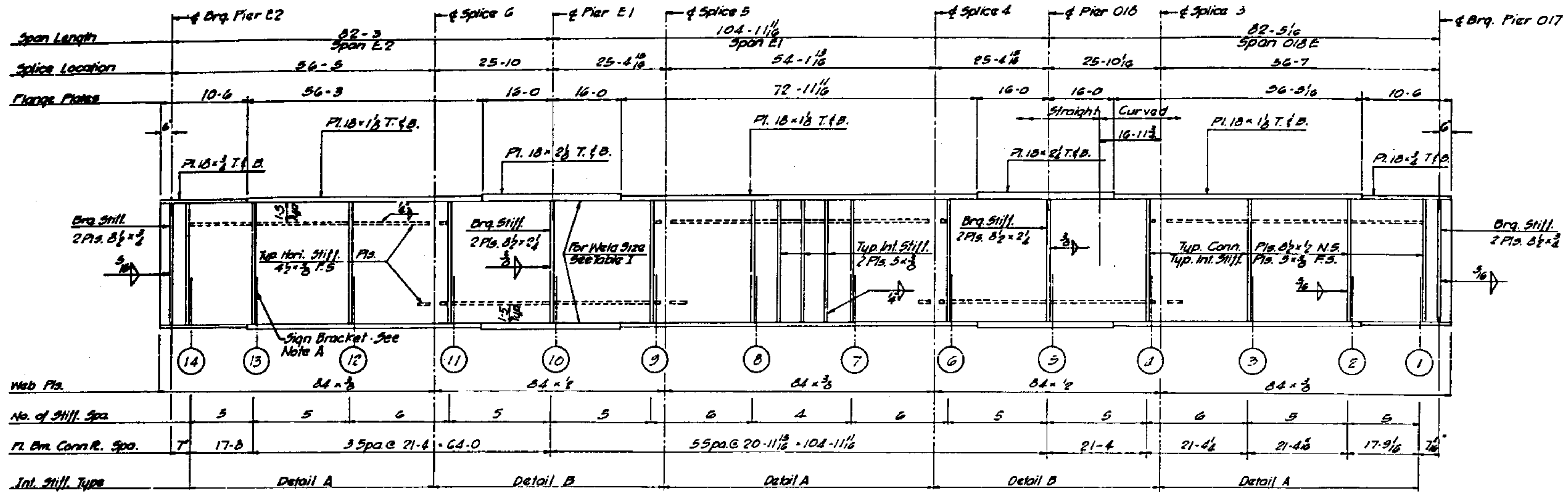
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I. RT. 70. ST. CLAIR CO. SECTION 82-3HVB-2

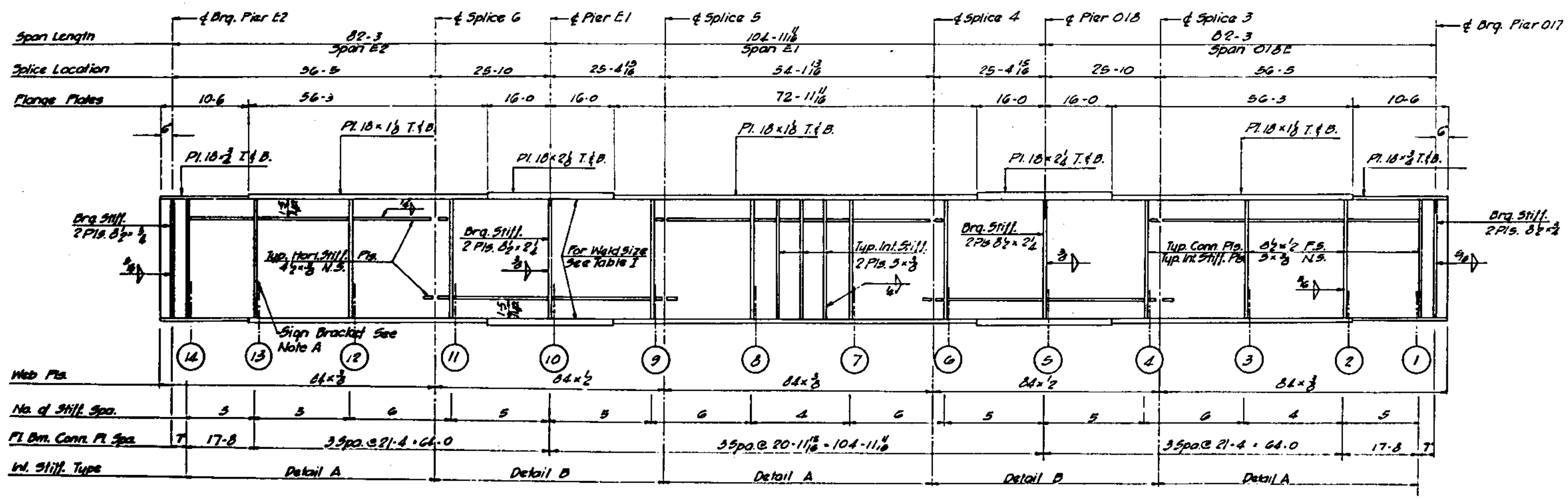
N. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET
54 OF 147

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I-70	82-3HVB-2	ST. CLAIR	252	121
FED. ROAD DIV. NO. 4		ILLINOIS	PROJECT	



GIRDER E2
Spans E2 thru 018E



GIRDER E1
Spans E2 thru 018E

NOTES:
All longitudinal dimensions shown are given along ¢ of web see Sheet No. 52
All Bearing Stiffeners and Connection Plates to be vertical.
For Splice, Stiffener, Connection Plate, Details and Table I see Sheet No. 97 & 98

Note A
Intermediate stiffeners should be moved if necessary to clear sign bracket connection plates.

DESIGNED BY A.T.
DRAWN BY
CHECKED BY S.A.B.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

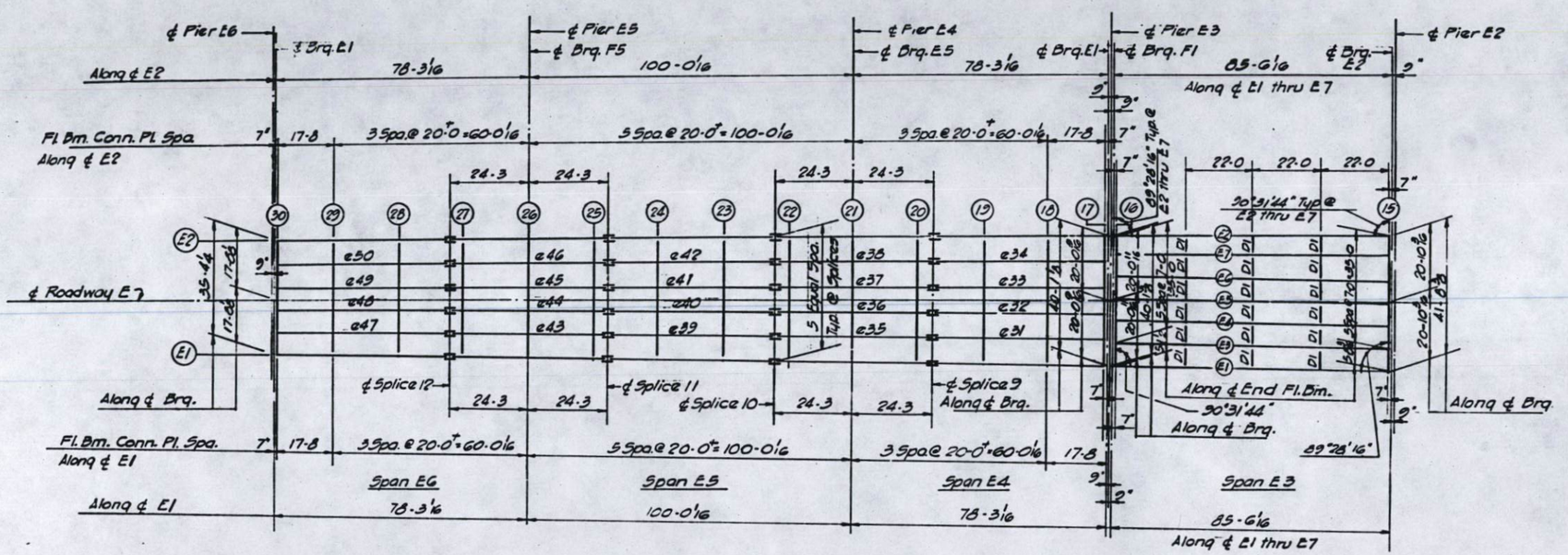
GIRDERS E1 AND E2
SPANS E2 THRU 018E
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 55 of 147

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-70	82-3HVB-2	ST. CLAIR	252	122
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



PLAN

PLAN
Spans E3 thru E6

* ELEVATION TOP OF GIRDER WEB
\# Lower all elevations .042 ft.

		GIR. E1	GIR. E2	DIFF.
CL. BRG.		445.318	445.318	.000
FLOOR BEAM	17	445.304	445.304	.000
FLOOR BEAM	18	444.878	444.878	.000
FLOOR BEAM	19	444.385	444.385	.000
SPLICE	9	444.014	444.014	.000
FLOOR BEAM	20	443.690	443.690	.000
FLOOR BEAM	21	443.388	443.388	.000
FLOOR BEAM	22	442.725	442.725	.000
SPLICE	10	442.301	442.301	.000
FLOOR BEAM	23	442.132	442.132	.000
FLOOR BEAM	24	441.536	441.536	.000
SPLICE	11	441.095	441.095	.000
FLOOR BEAM	25	440.940	440.940	.000
FLOOR BEAM	26	440.540	440.540	.000
FLOOR BEAM	27	439.747	439.747	.000
SPLICE	12	439.459	439.459	.000
FLOOR BEAM	28	439.191	439.191	.000
FLOOR BEAM	29	438.894	438.894	.000
FLOOR BEAM	30	438.638	438.638	.000
CL. BRG.		438.618	438.618	.000

* ELEVATION TOP OF FLANGE

		GIR. E1	GIR. E2	DIFF.
CL. BRG.		446.945	446.945	.000
FLOOR BEAM	15	446.935	446.935	.000
FLOOR BEAM	16	445.567	445.567	.000
CL. BRG.		445.558	445.558	.000

Note
Dimensions locating Floor Beams are given to the Floor Beam Conn. Plate see Sketch Sheet No. 52

BILL OF MATERIAL

*Structural Steel	L.S.	Lump Sum

Weight of Bearing Assemblies with Lead Plates and Anchor Bolts are Included as Structural Steel
Wt. 11,280 Lbs.

DESIGNED BY A.T.
DRAWN BY
CHECKED BY S.A.B.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

FRAMING PLAN
SPANS E3 THRU E6
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

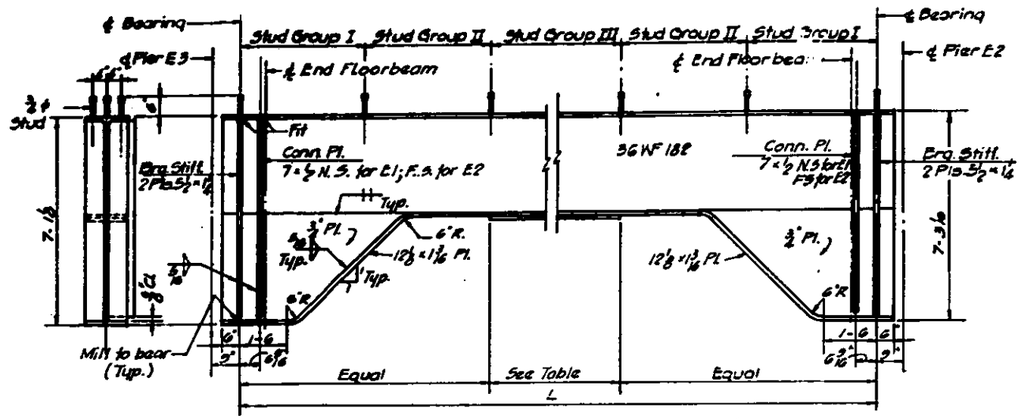
F.A.I. RT. - 70 ST. CLAIR CO. SECTION 82-3HVB-2

N. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

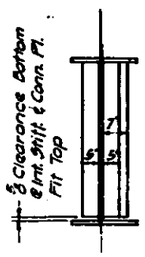
SHEET 56 OF 147

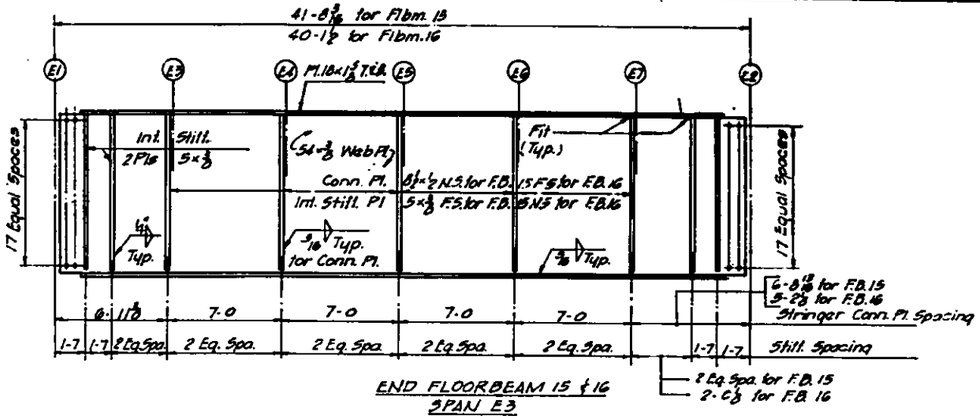
Rel. Structural Steel from 503 660 to 503,100 lbs. 10-31-68 M.P.F.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F. A. I.—70	82-3HVB-2	ST. CLAIR	252	123
FED. ROAD DIV. NO. 6	ILLINOIS	PROJECT		

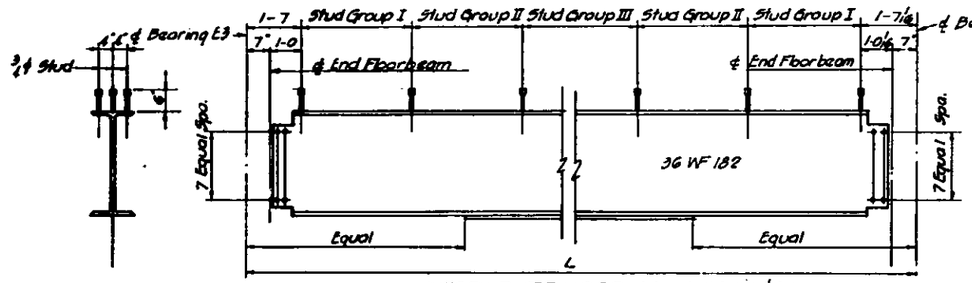


EXTERIOR STRINGER E1 & E2
SPAN E3

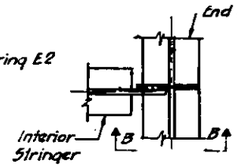




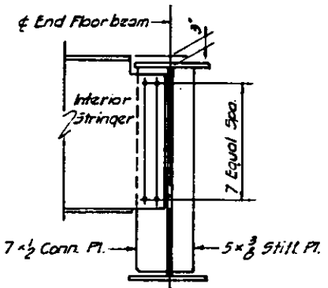
END FLOORBEAM 15 & 16
SPAN E3



INTERIOR STRINGER E3, E4, E5, E6, & E7
SPAN E3

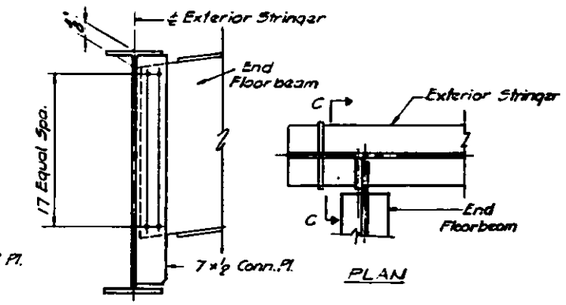


PLAN



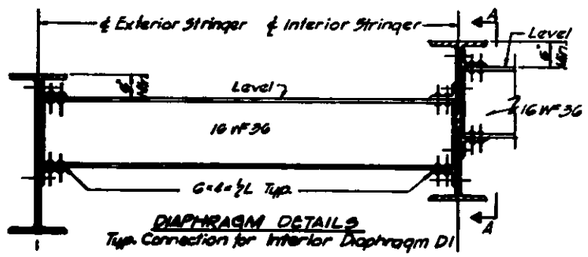
SECTION B-B

INTERIOR STRINGER TO END FLOORBEAM CONNECTION

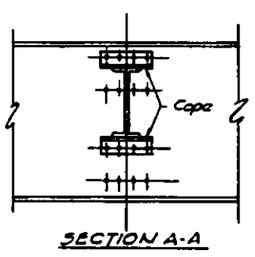


PLAN

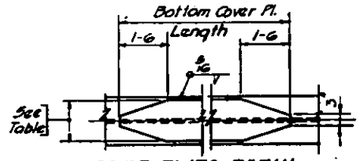
SECTION C-C
END FLOORBEAM TO EXTERIOR STRINGER CONNECTION



DIAPHRAGM DETAILS
Typ. Connection for Interior Diaphragm D1



SECTION A-A



COVER PLATE DETAIL

STRINGER & COVER PL. LENGTHS - SHEAR CONN. SPACING

STRINGER	LENGTH (L)	BOTTOM COVER PL.	STUD GROUP I	STUD GROUP II	STUD GROUP III
E1	85-6⅛	11 @ 7½ = 6-7½	23 Spa. @ 3"	18 Spa. @ 5"	8 Spa. @ 8"
E2	85-6⅛	"	"	"	"
E3	85-6⅛	"	24 Spa. @ 3½"	26 Spa. @ 7½"	12 Spa. @ 11"
E4	85-6⅛	"	"	"	"
E5	85-6⅛	"	"	"	"
E6	85-6⅛	"	"	"	"
E7	85-6⅛	"	"	"	"

DESIGNED BY A.T.
DRAWN BY V.T.
CHECKED BY A.T.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

STEEL DETAILS
SPAN E3

POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I RT. 70 ST CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 57 OF 147

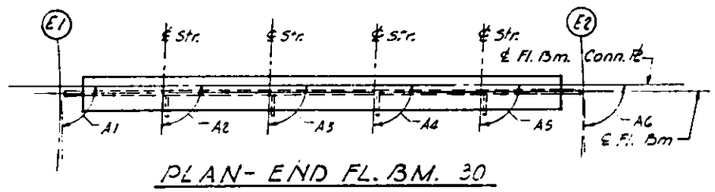
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA I – 70	82-3HVB – 2	ST. CLAIR	252	124
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		

STRINGER DIMENSIONS

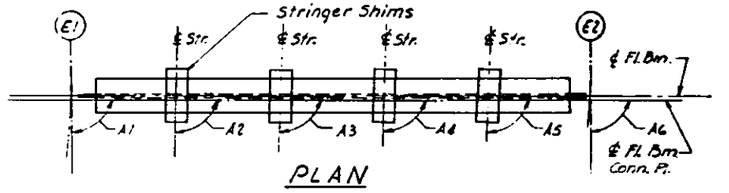
STR	L	S1	S2	S3	S4	B1	B2
31	53'-5"	17'-8"		20'-0"	15'-9"	90°19'02"	89°40'58"
32	53 5	17 8		20	15 9	90.06.21	89.53.39
33	53 5	17 8		20	15 9	89.53.39	90.06.21
34	53 5	17 8		20	15 9	89.40.58	90.19.02
35	48 6	4 3	20	20	4 3	90.19.02	89.40.58
36	48 6	4 3	20	20	4 3	90.06.21	89.53.39
37	48 6	4 3	20	20	4 3	89.53.39	90.06.21
38	48 6	4 3	20	20	4 3	89.40.58	90.19.02
39	51 6	15 9	20		15 9	90.19.02	89.40.58
40	51 6	15 9	20		15 9	90.06.21	89.53.39
41	51 6	15 9	20		15 9	89.53.39	90.06.21
42	51 6	15 9	20		15 9	89.40.58	90.19.02
43	48 6	4 3	20	20	4 3	90.19.02	89.40.58
44	48 6	4 3	20	20	4 3	90.06.21	89.53.39
45	48 6	4 3	20	20	4 3	89.53.39	90.06.21
46	48 6	4 3	20	20	4 3	89.40.58	90.19.02
47	53 5	15 9	20		17 8	90.19.02	89.40.58
48	53 5	15 9	20		17 8	90.06.21	89.53.39
49	53 5	15 9	20		17 8	89.53.39	90.06.21
50	53 5	15 9	20		17 8	89.40.58	90.19.02

FLOOR BEAM DIMENSIONS

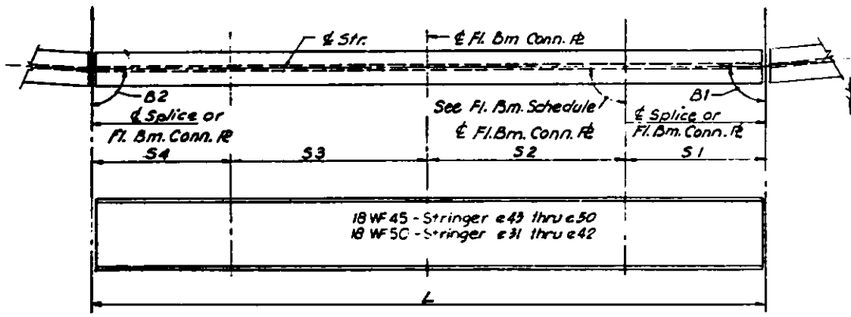
FL BM	L	F1	F2	F3	F4	F5	A1	A2	A3	A4	A5	A6
17	40'-0 15/16"	8'-0 3/16"	8'-0 3/16"	8'-0 3/16"	8'-0 3/16"	9'-0 3/16"	90°31'44"	90°19'02"	90°06'21"	89°53'39"	89°40'58"	89°28'16"
18	39 9	7 11 3/8	7 11 3/8	7 11 3/8	7 11 3/8	7 11 3/8	90.31.44	90.19.02	90.06.21	89.53.39	89.40.58	89.28.16
19	39 4 5/8	7 10 1/2	7 10 1/2	7 10 1/2	7 10 1/2	7 10 1/2	90.31.44	90.19.02	90.06.21	89.53.39	89.40.58	89.28.16
20	39 3/16	7 9 5/8	7 9 5/8	7 9 5/8	7 9 5/8	7 9 5/8	90.31.44	90.19.02	90.06.21	89.53.39	89.40.58	89.28.16
21	38 7 3/4	7 8 3/4	7 8 3/4	7 8 3/4	7 8 3/4	7 8 3/4	90.31.44	90.19.02	90.06.21	89.53.39	89.40.58	89.28.16
22	38 3 5/16	7 7 7/8	7 7 7/8	7 7 7/8	7 7 7/8	7 7 7/8	90.31.44	90.19.02	90.06.21	89.53.39	89.40.58	89.28.16
23	37 10 7/8	7 7	7 7	7 7	7 7	7 7	90.31.44	90.19.02	90.06.21	89.53.39	89.40.58	89.28.16
24	37 6 7/16	7 6 1/16	7 6 1/16	7 6 1/16	7 6 1/16	7 6 1/16	90.31.44	90.19.02	90.06.21	89.53.39	89.40.58	89.28.16
25	37 2	7 5 3/16	7 5 3/16	7 5 3/16	7 5 3/16	7 5 3/16	90.31.44	90.19.02	90.06.21	89.53.39	89.40.58	89.28.16
26	36 9 9/16	7 4 5/16	7 4 5/16	7 4 5/16	7 4 5/16	7 4 5/16	90.31.44	90.19.02	90.06.21	89.53.39	89.40.58	89.28.16
27	36 5 1/8	7 3 7/16	7 3 7/16	7 3 7/16	7 3 7/16	7 3 7/16	90.31.44	90.19.02	90.06.21	89.53.39	89.40.58	89.28.16
28	36 11/16	7 2 9/16	7 2 9/16	7 2 9/16	7 2 9/16	7 2 9/16	90.31.44	90.19.02	90.06.21	89.53.39	89.40.58	89.28.16
29	35 8 5/16	7 1 11/16	7 1 11/16	7 1 11/16	7 1 11/16	7 1 11/16	90.31.44	90.19.02	90.06.21	89.53.39	89.40.58	89.28.16
30	35 4 3/8	7 7/8	7 7/8	7 7/8	7 7/8	7 7/8	90.31.44	90.19.02	90.06.21	89.53.39	89.40.58	89.28.16



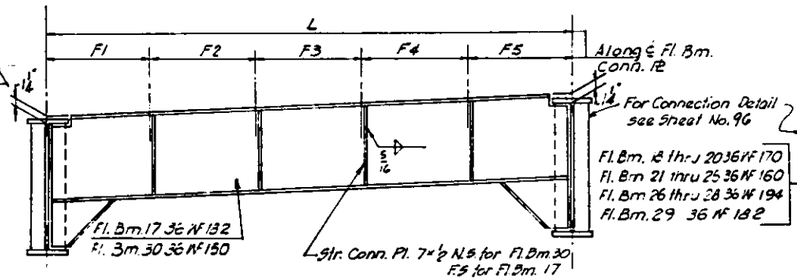
PLAN- END FL. BM. 30



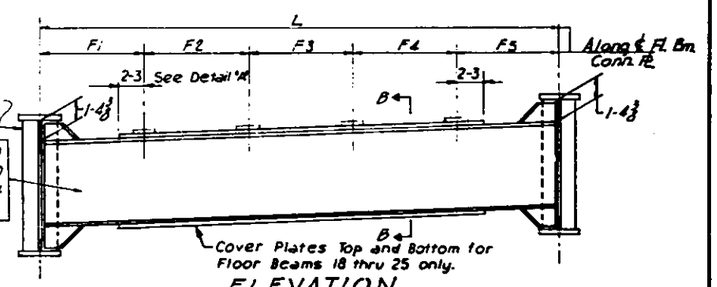
PLAN



TYPICAL STRINGER

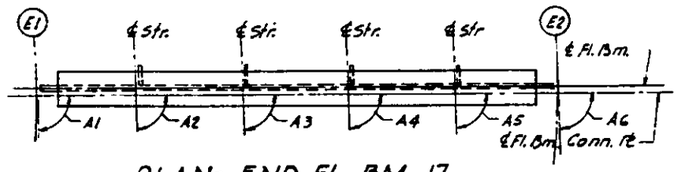


ELEVATION



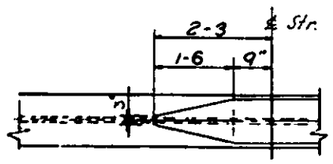
ELEVATION

INTERIOR FLOOR BEAM 18 THRU 29

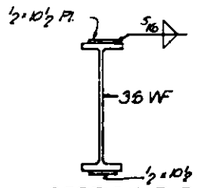


PLAN- END FL. BM. 17

END FLOOR BEAM 17 AND 30



DETAIL A



SECTION B-B

For Floorbeams 18 thru 25 only

DESIGNED BY A.T.
DRAWN BY D.H.
CHECKED BY S.A.B.

Notes:

Length L of Stringers and Fl. Bms. is Correct as given in the Table, except the increment lengths are given to the nearest ½".
All dimensions are in the horizontal plane.
For Connection Plate Details see Sheet No. 97

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS
STRINGER AND FLOOR BEAM SCHEDULE
SPANS E4 THRU E6
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"
F.A.I. RT 70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 58 OF 147

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.- 70	82-3HVB-2	ST. CLAIR	252	125
FED. ROAD DIV. NO. 5	ILLINOIS	PROJECT		

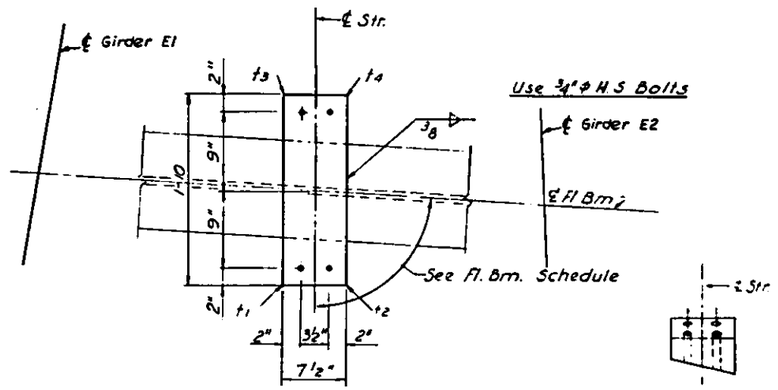
FLOOR BEAM 18 ℄ 19	T1	T2	T3	T4
STR. 31 THRU 34	15/16	15/16	7/16	7/16

FLOOR BEAM 20 THRU 22	T1	T2	T3	T4
STR. 35 THRU 38	1	1	3/8	3/8

FLOOR BEAM 23 THRU 24	T1	T2	T3	T4
STR. 39 THRU 42	1	1	3/8	3/8

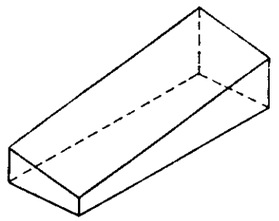
FLOOR BEAM 25 THRU 27	T1	T2	T3	T4
STR. 43 THRU 46	1	1	3/8	3/8

FLOOR BEAM 28 ℄ 29	T1	T2	T3	T4
STR. 47 THRU 50	1	1	3/8	3/8

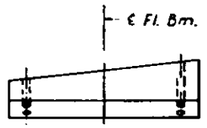


PLAN

END VIEW



ISOMETRIC VIEW



SIDE VIEW

SHIM DETAIL

Shim thickness t1, t2, t3 & t4 shown in the Table are orientated with the Plan View shown above.

DESIGNED BY A.T.
DRAWN BY F.W.
CHECKED BY A.T.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

STRINGER SHIMS
SPANS E4 THRU E6

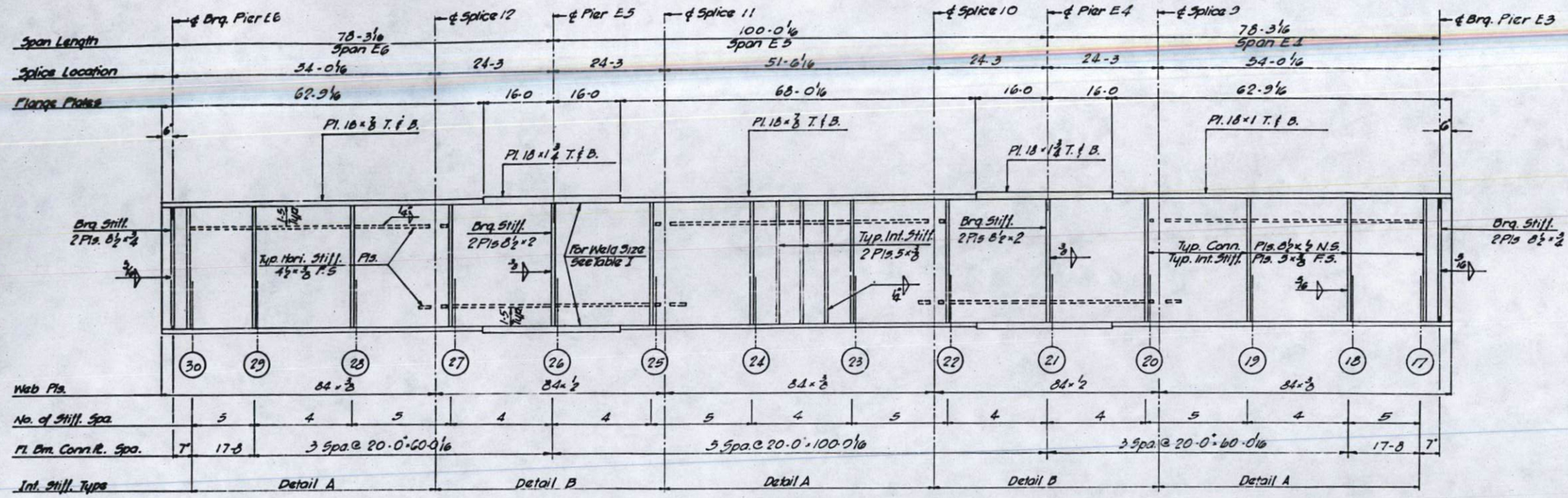
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I.RT.-70 ST. CLAIR CO. SECTION 82-3HVB-2

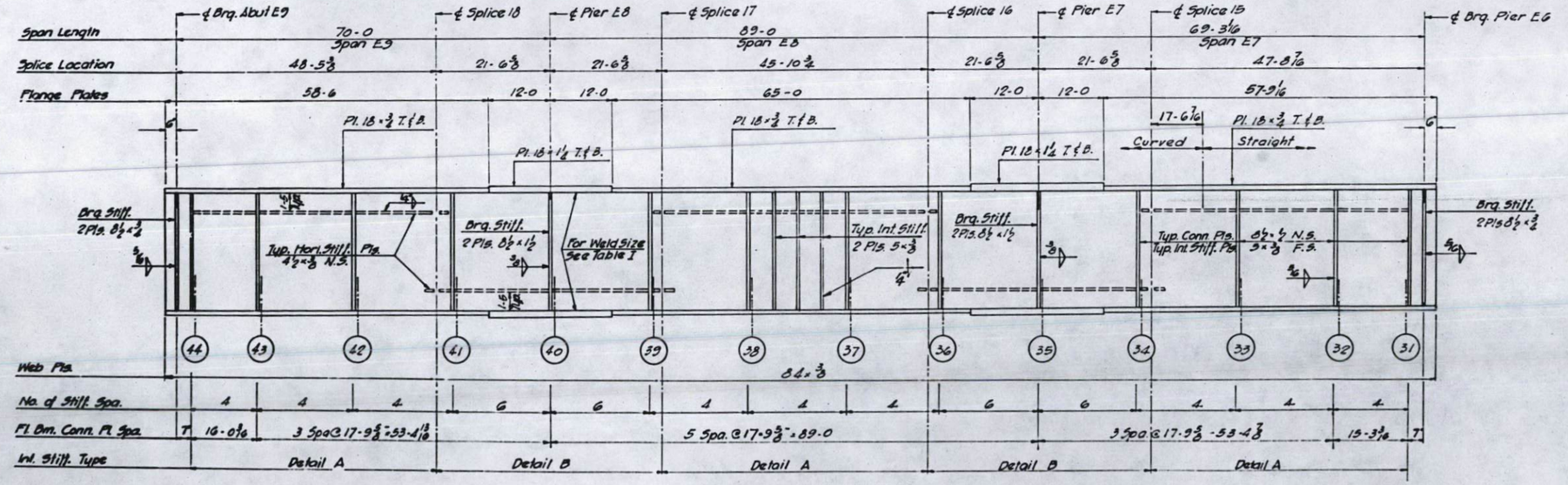
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET
59 of 147

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 70	82-3HVB-2	ST. CLAIR	252	126
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



GIRDER E2
Spans E4 thru E6
GIRDER E1 (Opposite Hand)



GIRDER E2
Spans E7 thru E9
GIRDER E1 (Opposite Hand)

NOTES:
All longitudinal dimensions shown are given along ℄ of web see Sheet No. 56 & 61
All Bearing Stiffeners and Connection Plates to be vertical.
For Splice, Stiffener, Connection Plate Details and Table I see Sheet No. 97

DESIGNED BY A.T.
DRAWN BY V.F.
CHECKED BY A.T.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

GIRDERS E1 AND E2

SPANS E4 THRU E9

POPLAR STREET BRIDGE APPROACHES

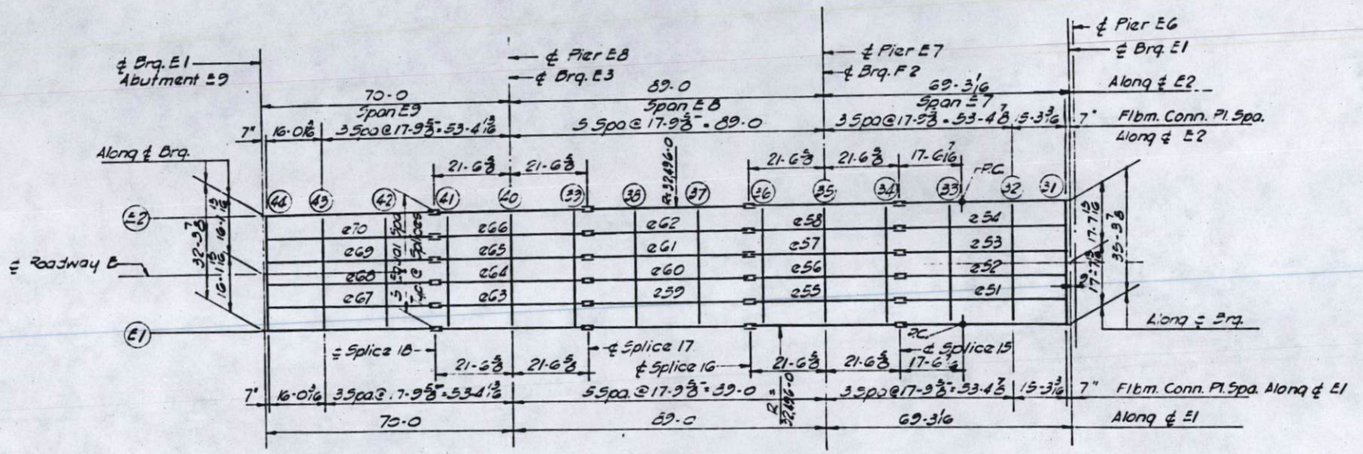
ROADWAY "E"

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 60 of 147

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-70	82-3HVB-2	ST. CLAIR	252	127
FED. ROAD DIV. NO. 6	ILLINOIS	PROJECT		



PLAN
SPANS E7 thru E9

* ELEVATION TOP OF GIRDER WEB
* Lower all elevations .042 ft.

		GIR. E1	GIR. E2	DIFF.
CL. BRG.		437.966	437.966	.000
FLOOR BEAM	31	437.949	437.949	.000
FLOOR BEAM	32	437.496	437.496	.000
FLOOR BEAM	33	436.963	436.963	.000
SPLICE	15	436.544	436.544	.000
FLOOR BEAM	34	436.432	436.432	.000
FLOOR BEAM	35	435.901	435.901	.000
FLOOR BEAM	36	435.370	435.370	.000
SPLICE	16	435.258	435.258	.000
FLOOR BEAM	37	434.839	434.839	.000
FLOOR BEAM	38	434.307	434.307	.000
SPLICE	17	433.887	433.887	.000
FLOOR BEAM	39	433.775	433.775	.000
FLOOR BEAM	40	433.243	433.243	.000
FLOOR BEAM	41	432.711	432.711	.000
SPLICE	18	432.599	432.599	.000
FLOOR BEAM	42	432.179	432.179	.000
FLOOR BEAM	43	431.646	431.646	.000
FLOOR BEAM	44	431.167	431.167	.000
CL. BRG.		431.149	431.149	.000

DESIGNED BY A.T.
DRAWN BY
CHECKED BY S.A.P.

BILL OF MATERIAL		
*Structural Steel	L.S.	Lump Sum

Weight of Bearing Assemblies with Lead Plates and Anchor Bolts are Included as Structural Steel
Wt. 6320 Lbs.

Note:
Dimensions locating Floor Beams are given to the Floor Beam Conn. Plate see Sketch Sheet No. 52

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

FRAMING PLAN
SPANS E7 THRU E9
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I. RT. 70 ST. CLAIR CO. SECTION- 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET
61 of 147

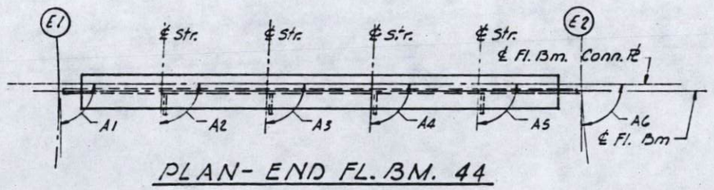
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. – 70	82–3HVB–2	ST. CLAIR	252	128
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		

STRINGER DIMENSIONS

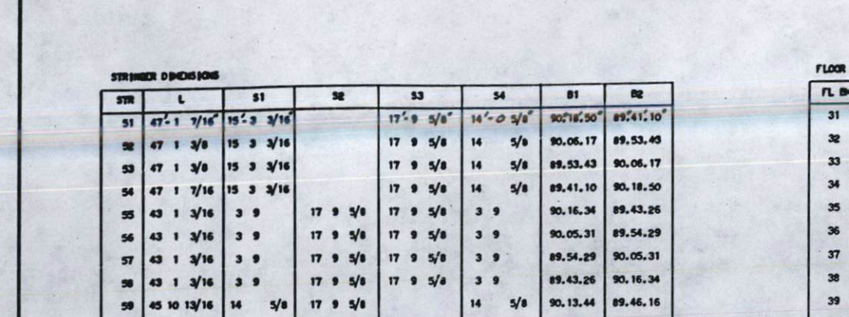
STR	L	S1	S2	S3	S4	B1	B2
51	47'-1 7/16"	15'-3 3/16"		17'-9 5/8"	14'-0 5/8"	90°18'.50"	89°41'.10"
52	47 1 3/8	15 3 3/16		17 9 5/8	14 5/8	90.06.17	89.53.43
53	47 1 3/8	15 3 3/16		17 9 5/8	14 5/8	89.53.43	90.06.17
54	47 1 7/16	15 3 3/16		17 9 5/8	14 5/8	89.41.10	90.18.50
55	43 1 3/16	3 9	17 9 5/8	17 9 5/8	3 9	90.16.34	89.43.26
56	43 1 3/16	3 9	17 9 5/8	17 9 5/8	3 9	90.05.31	89.54.29
57	43 1 3/16	3 9	17 9 5/8	17 9 5/8	3 9	89.54.29	90.05.31
58	43 1 3/16	3 9	17 9 5/8	17 9 5/8	3 9	89.43.26	90.16.34
59	45 10 13/16	14 5/8	17 9 5/8		14 5/8	90.13.44	89.46.16
60	45 10 13/16	14 5/8	17 9 5/8		14 5/8	90.04.35	89.55.25
61	45 10 13/16	14 5/8	17 9 5/8		14 5/8	89.55.25	90.04.35
62	45 10 13/16	14 5/8	17 9 5/8		14 5/8	89.46.16	90.13.44
63	43 1 3/16	3 9	17 9 5/8	17 9 5/8	3 9	90.10.55	89.49.05
64	43 1 3/16	3 9	17 9 5/8	17 9 5/8	3 9	90.03.38	89.56.22
65	43 1 3/16	3 9	17 9 5/8	17 9 5/8	3 9	89.56.22	90.03.38
66	43 1 3/16	3 9	17 9 5/8	17 9 5/8	3 9	89.49.05	90.10.55
67	47 10 3/8	14 5/8	17 9 5/8		16 3/16	90.08.01	89.51.59
68	47 10 3/8	14 5/8	17 9 5/8		16 3/16	90.02.40	89.57.20
69	47 10 3/8	14 5/8	17 9 5/8		16 3/16	89.57.20	90.02.40
70	47 10 3/8	14 5/8	17 9 5/8		16 3/16	89.51.59	90.08.01

FLOOR BEAM DIMENSIONS

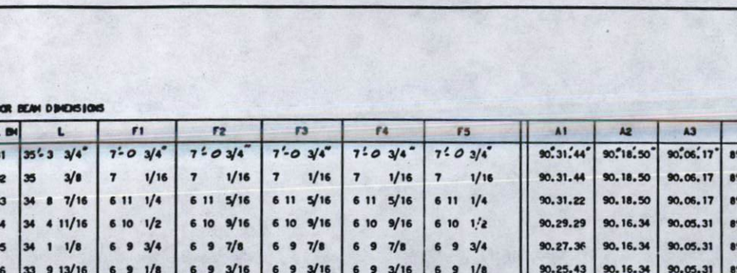
FL BM	L	F1	F2	F3	F4	F5	A1	A2	A3	A4	A5	A6
31	35'-3 3/4"	7'-0 3/4"	7'-0 3/4"	7'-0 3/4"	7'-0 3/4"	7'-0 3/4"	90°31'.44"	90°18'.50"	90°06'.17"	89°53'.43"	89°41'.10"	89°26'.16"
32	35 3/8	7 1/16	7 1/16	7 1/16	7 1/16	7 1/16	90.31.44	90.18.50	90.06.17	89.53.43	89.41.10	89.28.16
33	34 8 7/16	6 11 1/4	6 11 5/16	6 11 5/16	6 11 5/16	6 11 1/4	90.31.22	90.18.50	90.06.17	89.53.43	89.41.10	89.28.38
34	34 4 11/16	6 10 1/2	6 10 9/16	6 10 9/16	6 10 9/16	6 10 1/2	90.29.29	90.16.34	90.05.31	89.54.29	89.43.26	89.30.31
35	34 1 1/8	6 9 3/4	6 9 7/8	6 9 7/8	6 9 7/8	6 9 3/4	90.27.36	90.16.34	90.05.31	89.54.29	89.43.26	89.32.24
36	33 9 13/16	6 9 1/8	6 9 3/16	6 9 3/16	6 9 3/16	6 9 1/8	90.25.43	90.16.34	90.05.31	89.54.29	89.43.26	89.34.17
37	33 6 3/4	6 8 1/2	6 8 9/16	6 8 9/16	6 8 9/16	6 8 1/2	90.23.50	90.13.44	90.04.35	89.55.25	89.46.16	89.36.10
38	33 3 7/8	6 7 15/16	6 8	6 8	6 8	6 7 15/16	90.21.57	90.13.44	90.04.35	89.55.25	89.46.16	89.38.03
39	33 1 5/16	6 7 7/16	6 7 7/16	6 7 7/16	6 7 7/16	6 7 7/16	90.20.04	90.10.55	90.03.38	89.56.22	89.49.05	89.39.56
40	32 10 15/16	6 6 15/16	6 7	6 7	6 7	6 6 15/16	90.18.11	90.10.55	90.03.38	89.56.22	89.49.05	89.41.49
41	32 8 3/4	6 6 9/16	6 6 9/16	6 6 9/16	6 6 9/16	6 6 9/16	90.16.18	90.10.55	90.03.38	89.56.22	89.49.05	89.43.42
42	32 6 7/8	6 6 1/8	6 6 3/16	6 6 3/16	6 6 3/16	6 6 1/8	90.14.25	90.08.01	90.02.40	89.57.20	89.51.59	89.45.35
43	32 5 3/16	6 5 3/4	6 5 7/8	6 5 7/8	6 5 7/8	6 5 3/4	90.12.32	90.08.01	90.02.40	89.57.20	89.51.59	89.47.28
44	32 3 7/8	6 5 9/16	6 5 9/16	6 5 9/16	6 5 9/16	6 5 9/16	90.10.50	90.08.01	90.02.40	89.57.20	89.51.59	89.49.10



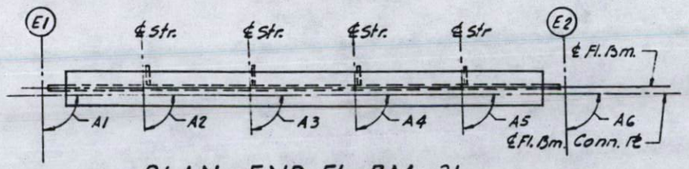
PLAN- END FL. BM. 44



TYPICAL STRINGER

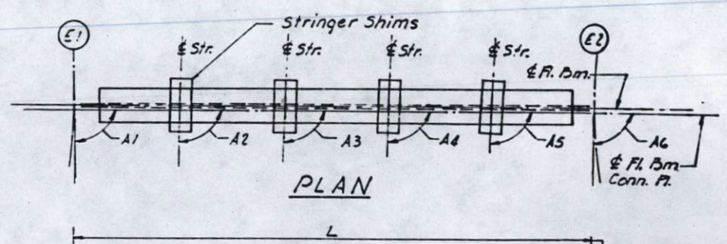


ELEVATION

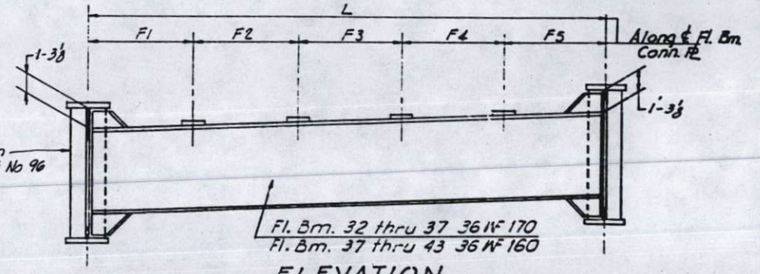


PLAN- END FL. BM. 31

END FLOOR BEAM 31 AND 44



PLAN



ELEVATION

INTERIOR FLOOR BEAM 32 THRU 43

Notes:

Length L of Stringers and Fl. Bms. is Correct as given in the Table, except the increment lengths are given to the nearest ½".
All dimensions are in the horizontal plane.
For Connection Plate Details see Sheet No. 97

DESIGNED BY A.T.
DRAWN BY V.T.
CHECKED BY S.A.D.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS
STRINGER AND FLOOR BEAM SCHEDULE
SPANS E7 THRU E9
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"
F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 62 OF 147

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. – 70	82–3HVB-2	ST. CLAIR	252	129
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		

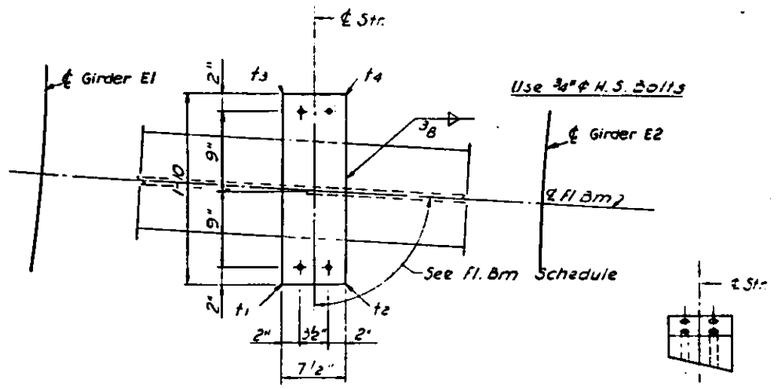
FLOOR BEAM 32 ℄ 33	T1	T2	T3	T4
STR. 51 THRU 54	1	1	3/8	3/8

FLOOR BEAM 34 THRU 36	T1	T2	T3	T4
STR. 55 THRU 58	1	1	3/8	3/8

FLOOR BEAM 37 THRU 38	T1	T2	T3	T4
STR. 59 THRU 62	1	1	3/8	3/8

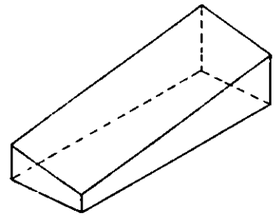
FLOOR BEAM 39 THRU 41	T1	T2	T3	T4
STR. 63 THRU 66	1	1	3/8	3/8

FLOOR BEAM 42 ℄ 43	T1	T2	T3	T4
STR. 67 THRU 70	1	1	3/8	3/8

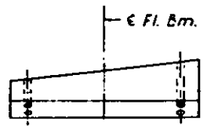


PLAN

END VIEW



ISOMETRIC VIEW



SIDE VIEW

SHIM DETAIL

Shim thickness t1, t2, t3 & t4 shown in the Table are orientated with the Plan View shown above.

DESIGNED BY A.T.
DRAWN BY I.M.
CHECKED BY A.T.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

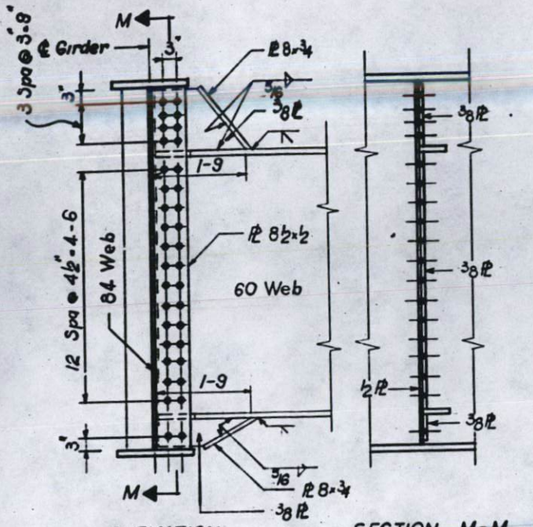
STRINGER SHIMS
SPANS E7 THRU E9
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I. RT. 70. ST. CLAIR CO. SECTION 82-3HVB-2

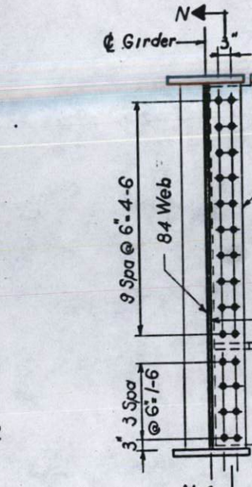
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET
63 OF 147

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I - 70	82-3HVB-2	ST. CLAIR	252	162
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



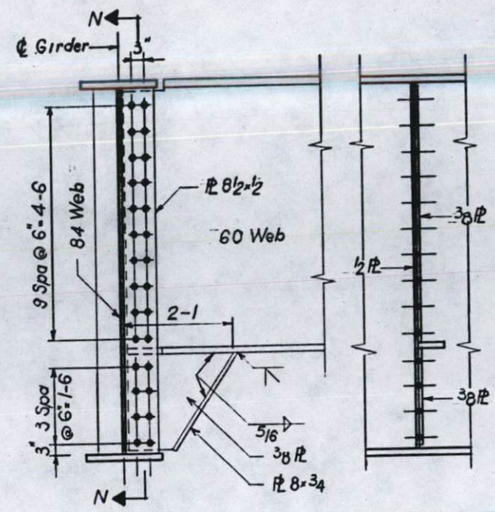
ELEVATION



SECTION M-M

SPANS F11 & F12

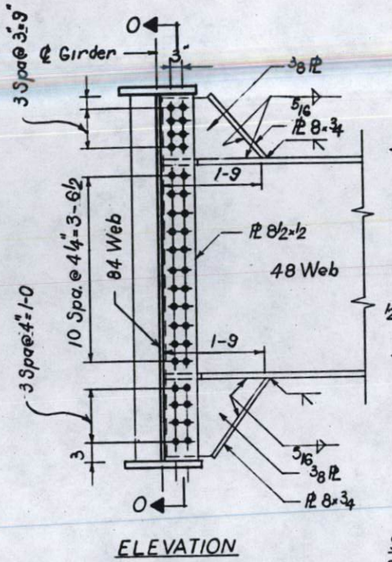
INTERIOR FLOOR BEAM TO GIRDER CONNECTION



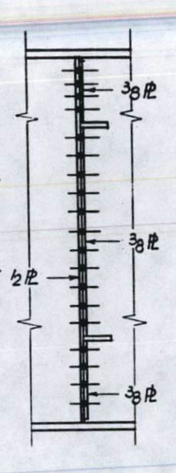
ELEVATION

SECTION N-N

END FLOOR BEAM TO GIRDER CONNECTION



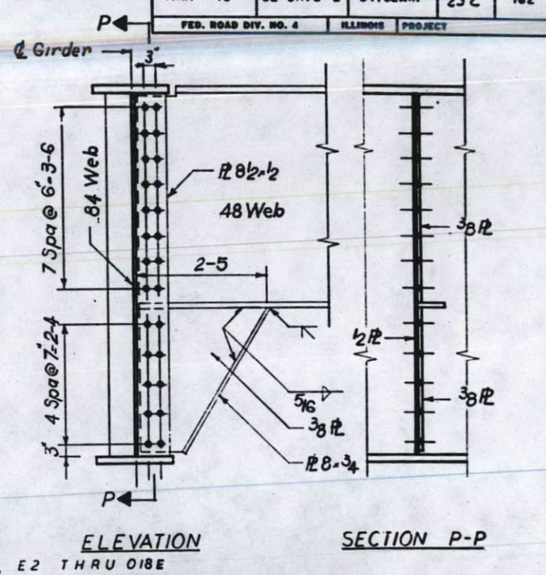
ELEVATION



SECTION O-O

SPANS F7 THRU F10, E2 THRU E18

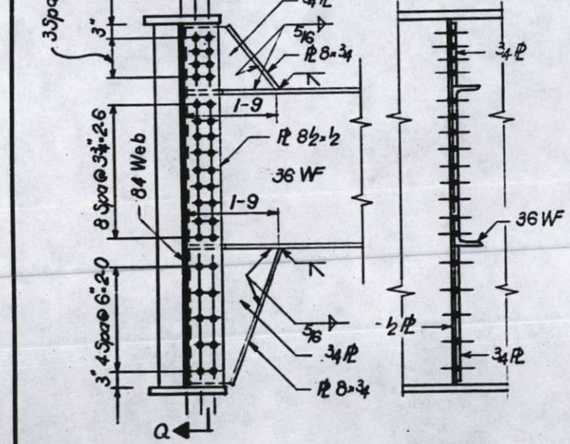
INTERIOR FLOOR BEAM TO GIRDER CONNECTION



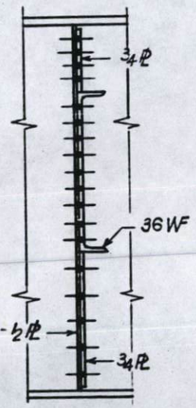
ELEVATION

SECTION P-P

END FLOOR BEAM TO GIRDER CONNECTION



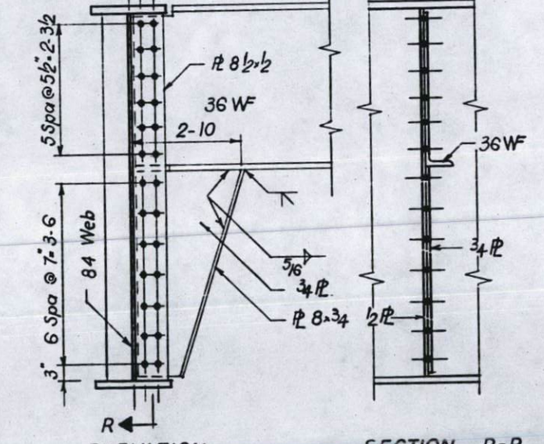
ELEVATION



SECTION Q-Q

SPANS F1 THRU F6

INTERIOR FLOOR BEAM TO GIRDER CONNECTION

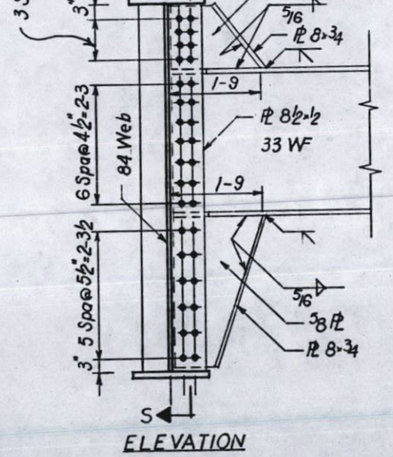


ELEVATION

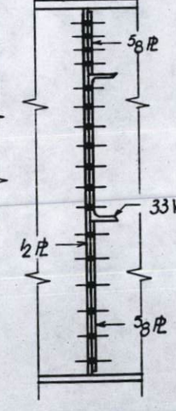
SECTION R-R

E4 THRU E9

END FLOOR BEAM TO GIRDER CONNECTION



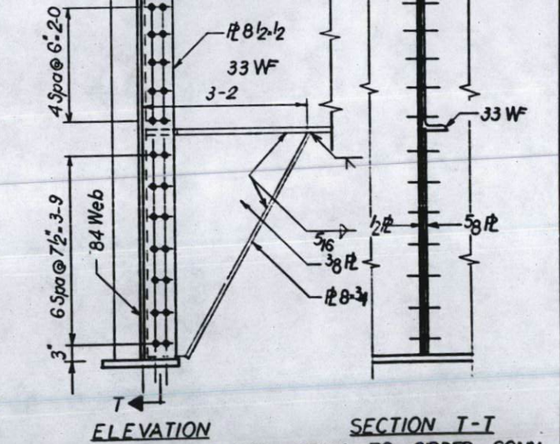
ELEVATION



SECTION S-S

INTERIOR FLOOR BEAM TO GIRDER CONNECTION

SPANS N5 THRU N7



ELEVATION

SECTION T-T

END FLOOR BEAM TO GIRDER CONN.

84 WEB GIRDER

For Notes see Sh. 97

DESIGNED BY A.A.
DRAWN BY E.C.
CHECKED BY A.T.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS
STEEL FRAMING DETAILS

POPLAR STREET BRIDGE APPROACHES

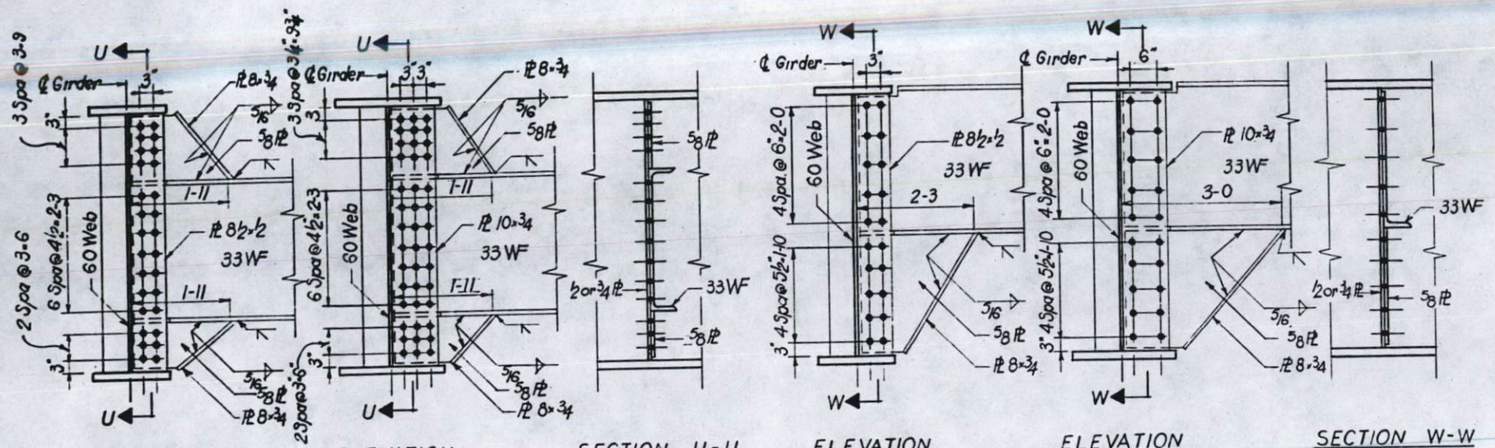
F.A.I. RT. 70 ST. CLAIR CO SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 96 OF 147

213

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I - 70	82-3HVB-2	ST. CLAIR	252	163
FED. ROAD DIV. NO. 6	ILLINOIS	PROJECT		



ELEVATION
SPANS P1 THRU P3

ELEVATION
SPANS M1 THRU M3

SECTION U-U

INTERIOR FLOOR BEAM TO GIRDER CONNECTION

ELEVATION
SPANS P1 THRU P3

ELEVATION
SPANS M1 THRU M3

SECTION W-W

END FLOOR BEAM TO GIRDER CONNECTION

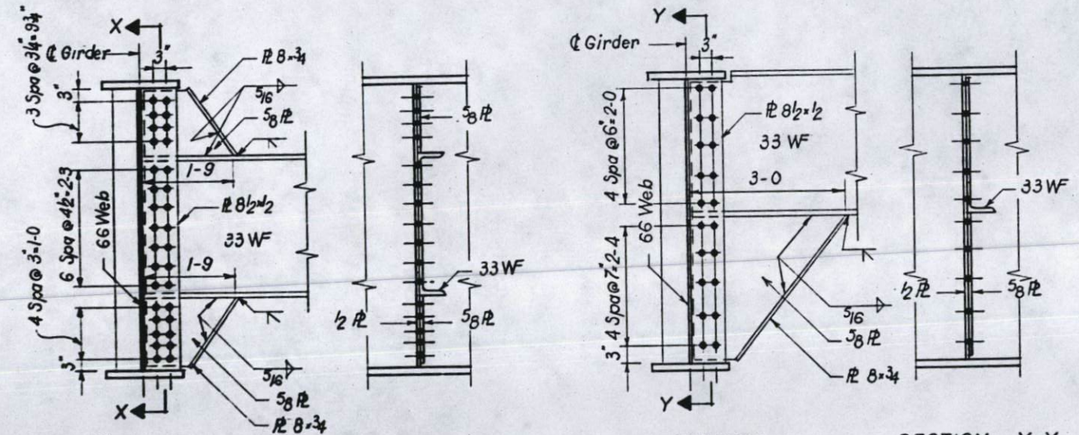
DETAIL 'A' INTERMEDIATE STIFFENERS
FOR GIRDERS AND FLOOR BEAMS

DETAIL "B"

* At Floor Beams mill plate at upper flange and tight fit at lower flange.

BEARING STIFFENERS
FOR GIRDERS AND FLOOR BEAMS

60 WEB GIRDER



ELEVATION

SECTION X-X
SPANS O14 THRU O17

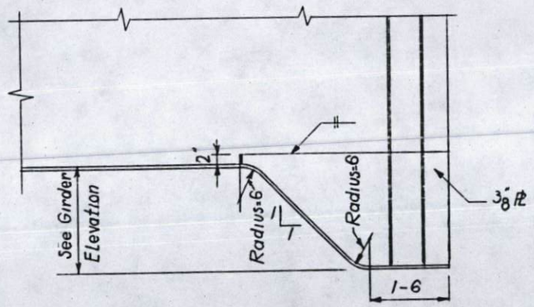
INTERIOR FLOOR BEAM TO GIRDER CONN.

ELEVATION

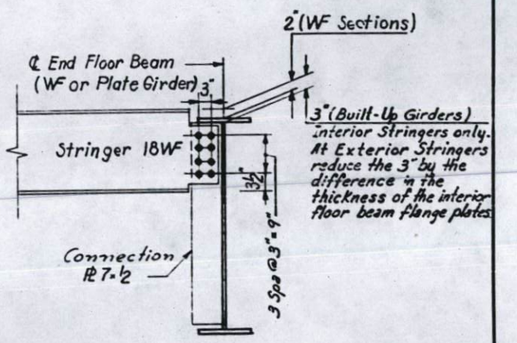
SECTION Y-Y

END FLOOR BEAM TO GIRDER CONN.

66 WEB GIRDER



HAUNCH DETAIL
FOR LOCATION SEE GIRDER ELEVATION



STRINGER TO END FLOOR BEAM CONN.

NOTES

For size of flange, plate welds see table I Sh. No. 98. Weld Connection ℓ's to the top flange and tight fit at the bottom flange in areas designated as Detail 'A'. Weld Connection ℓ's to the bottom flange and tight fit at the top flange in areas designated as Detail 'B'. For limits of Detail 'A' or Detail 'B' see the Girder Elevation Drawings.

DESIGNED BY S.K.
DRAWN BY E.C.
CHECKED BY A.T.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS
STEEL FRAMING DETAILS

POPLAR STREET BRIDGE APPROACHES

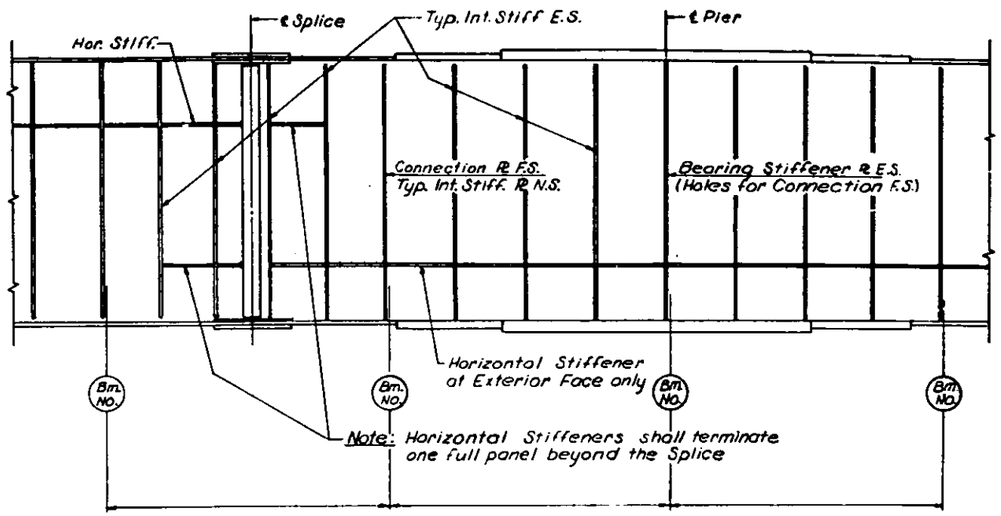
F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 97 OF 14.

LOCATION	SPLICE NO.	BMS NO.	DETAIL	GIRDER SECTION		WEB SPLICE			FLANGE SPLICE		
				WEB PLATE	FLANGE PLATES	FILL PLATES	SPLICE PLATES	A	OUTSIDE PLATES	INSIDE PLATES	B
RDWY. "E"	15,16,17,18	60	A	3/8 × 84	18 × 3/4	———	2-13 × 3/8 × 6-6	25	2-18 × 1/2 × 3-11	4-8 × 5/8 × 3-11	8
	10,11,12	60	A	3/8 ℄ 1/2 × 84	18 × 7/8	2-64 × 1/16 × 6-6	2-13 × 3/8 × 6-6	25	2-18 × 1/2 × 3-11	4-8 × 5/8 × 3-11	8
	9	60	A	3/8 ℄ 1/2 × 84	18 × 1	2-64 × 1/16 × 6-6	2-13 × 3/8 × 6-6	25	2-18 × 5/8 × 4-9	4-8 × 3/4 × 4-9	10
	3,4,5,6	55	A	1/2 ℄ 1/2 × 84	18 × 1 1/8	2-64 × 1/16 × 6-6	2-13 × 3/8 × 6-6	25	2-18 × 5/8 × 4-9	4-8 × 3/4 × 4-9	10
RDWY. "F"	2,3,4,5,8,9,10,11	67	A	3/8 × 84	18 × 3/4	———	2-13 × 3/8 × 6-6	25	2-18 × 1/2 × 3-11	4-8 × 5/8 × 3-11	8
	13	74	A	3/8 ℄ 1/2 × 84	18 × 1 3/8	2-64 × 1/16 × 6-6	2-13 × 3/8 × 6-6	25	2-18 × 3/4 × 5-7	4-8 × 7/8 × 5-7	12
	16,18	74	A	3/8 ℄ 1/2 × 84	18 × 1 1/2	2-64 × 1/16 × 6-6	2-13 × 3/8 × 6-6	25	2-18 × 3/4 × 5-7	4-8 × 7/8 × 5-7	12
	19	74	A	3/8 ℄ 1/2 × 84	18 × 1 5/8	2-64 × 1/16 × 6-6	2-13 × 3/8 × 6-6	25	2-18 × 7/8 × 6-5	4-8 × 1 × 6-5	14
	24,25,27	79	A	3/8 ℄ 5/8 × 84	18 × 1 5/8	2-64 × 1/8 × 6-6	2-13 × 3/8 × 6-6	25	2-18 × 7/8 × 6-5	4-8 × 1 × 6-5	14
	28	79	A	3/8 ℄ 5/8 × 84	18 × 1 1/4	2-64 × 1/8 × 6-6	2-13 × 3/8 × 6-6	25	2-18 × 7/8 × 6-5	4-8 × 1 × 6-5	14
RAMP M	3	83	B	3/8 ℄ 1/2 × 60	24 × 1 1/8	2-64 × 1/16 × 4-6	2-13 × 3/8 × 4-6	17	2-24 × 3/4 × 5-7	4-11 × 7/8 × 5-7	12
	4,7,10	83	B	3/8 ℄ 1/2 × 60	24 × 1 1/2	2-64 × 1/16 × 4-6	2-13 × 3/8 × 4-6	17	2-24 × 7/8 × 5-7	4-11 × 1 × 5-7	12
RAMP "N"	5,7,11,13	87	A	3/8 × 84	18 × 1/4	———	2-13 × 3/8 × 6-6	25	2-18 × 3/4 × 5-7	4-8 × 7/8 × 5-7	12
RAMP O	3,7	91	A	3/8 × 66	18 × 1/8	———	2-13 × 3/8 × 5-0	19	2-18 × 5/8 × 4-9	4-8 × 3/4 × 4-9	10
	4,6	91	A	1/2 × 66	18 × 1	———	2-13 × 3/8 × 5-0	19	2-18 × 1/2 × 3-11	4-8 × 5/8 × 3-11	8
RAMP "P"	5,7,11,13	95	A	3/8 ℄ 1/2 × 60	18 × 1 1/4	2-64 × 1/16 × 4-6	2-13 × 3/8 × 4-6	17	2-18 × 7/8 × 6-5	4-8 × 1 × 6-5	14

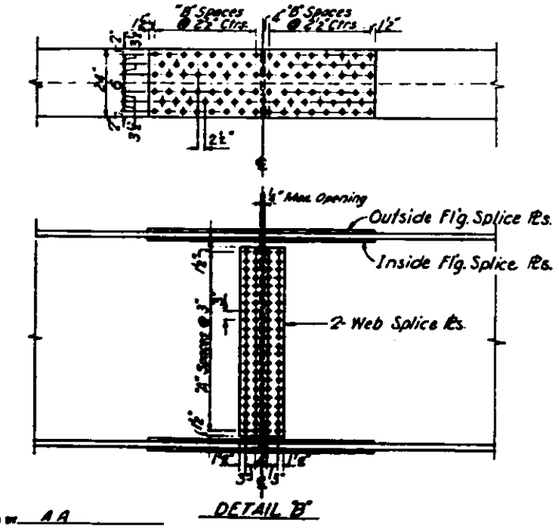
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. - 70	82-3HVB-2	ST. CLAIR	232	164
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



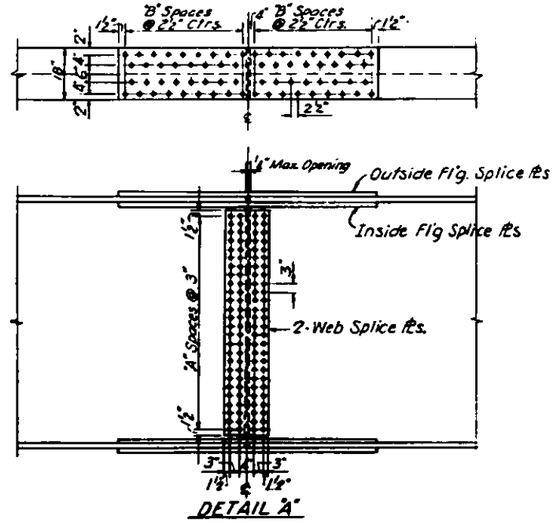
TYPICAL GIRDER DETAILS

(Exterior Face Shown)

Note: All Bearing Stiff. & Conn Rs to be Vertical.

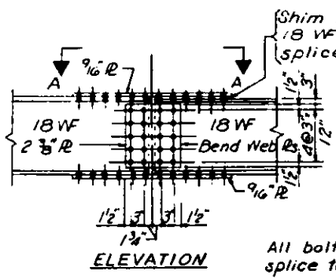


DETAIL "B"



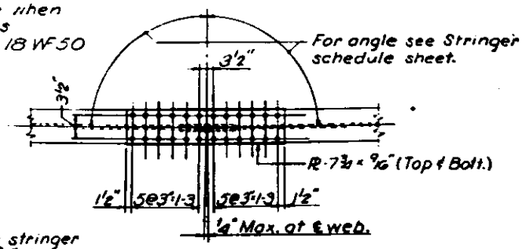
DETAIL "A"

DESIGNED BY A.A.
DRAWN BY E.C.
CHECKED BY A.T.



ELEVATION

All bolts for stringer splice to be ¾" ϕ



SECTION A-A

STRINGER SPLICE

TABLE I	
Plate Size	Min. Weld Size
To ¾" Inclusive	¼"
Over ¾" to 1½"	5/16"
Over 1½" to 2¼"	⅜"
Over 2¼" to 6"	½"

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

GIRDER SPLICES & DETAILS

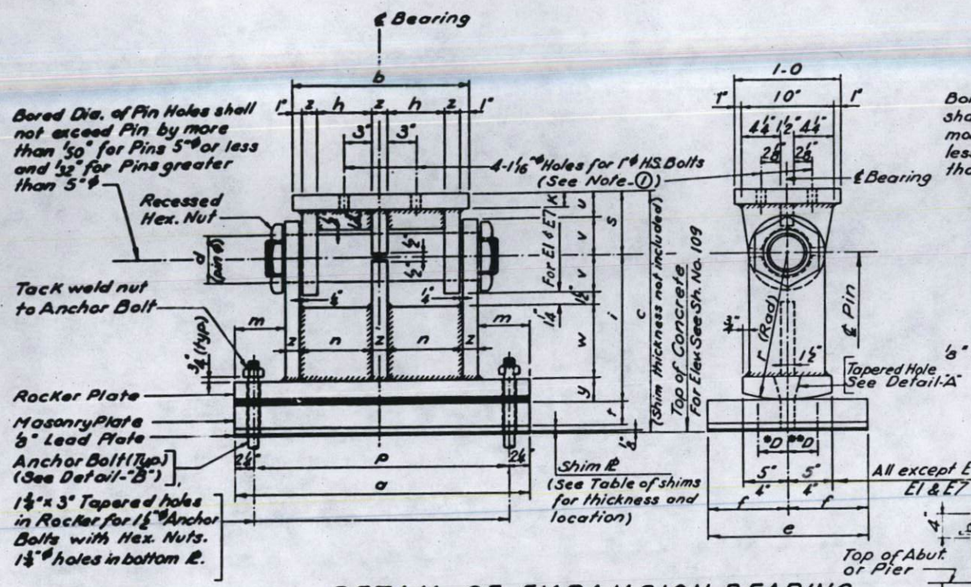
POPLAR STREET BRIDGE APPROACHES
ROADWAYS "E" & "F" AND RAMPS "M", "N", "O" & "P"

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

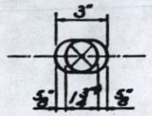
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 98 OF 147

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.I. 70	82-3HVB-2	ST. CLAIR	252	158
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



DETAIL OF EXPANSION BEARING
(For Dimensions See Table)
E1 Thru E7



DETAIL-"A"

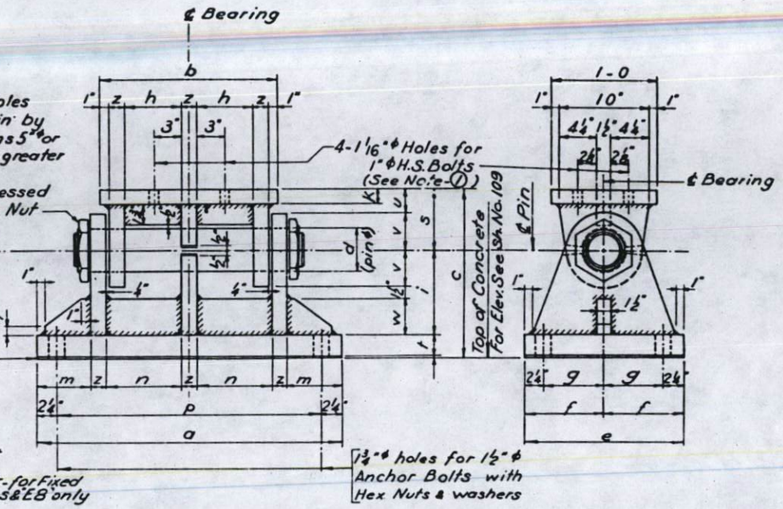
ANCHOR BOLT DIMENSIONS						
Dimension	E1 thru E5	E6 & E7	E1 & E7	E3 thru E5	E8	E8
B	5½	6½	7½	9½	11	6
C	1-8½	1-9½	1-10½	2-0½	2-2	1-9

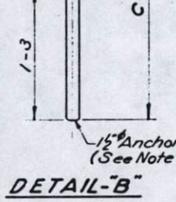
TYPE OF BEARING ASSEMBLY DIMENSIONS

TYPE OF BEARING	NO. REQ'D.	Dimension																			
		a	b	c	d	e	f	g	h	i	k	m	n	p	r	s	t	u	v	w	y	z
E1	2	2-7	1-8	1-5½	5"	1-0	6"	3½"	6½"	9¼"	1⅜"	4½"	8½"	2-2½		6½"	2"	2½"	3½"	4"		1⅜"
E2	2	2-8	1-8	1-6½	5"	1-2	7"	4⅜"	6½"	9¼"	1⅜"	5"	8½"	2-3½		6½"	2½"	2⅜"	3½"	4"		1⅜"
E3	10	2-10	1-8	1-6½	5"	1-4	8"	5⅜"	6½"	9¼"	1⅜"	6"	8½"	2-5½		6½"	2½"	2⅜"	3½"	4"		1⅜"
E4	4	2-10	2-0	1-6½	5"	1-4	8"	5⅜"	8½"	9¼"	¾"	4"	10½"	2-5½		6½"	2½"	2⅜"	3½"	4"		1⅜"
E5	2	2-10	1-8	1-6½	5½"	1-6	9"	6⅜"	6½"	9¼"	1⅜"	6"	8½"	2-5½		6½"	2½"	2⅜"	4"	4"		1⅜"
E6	4	3-0	1-8	1-7½	6"	1-8	10"	7⅜"	6½"	9¼"	2"	7"	8½"	2-7½		7½"	2⅜"	3"	4½"	4"		1⅜"
E7	2	3-4	2-0	1-8½	6½"	2-0	1-0	3½"	8"	10"	2"	6½"	10½"	2-11½		7½"	3¼"	3"	4½"	4"		2"
E1	26	2-4	1-6	1-3½	3½"	9"	4½"		5½"	7½"	1⅛"	4"	7⅜"	1-11½	7½"	5½"	2"	2½"	3"	1⅝"	1⅜"	1⅜"
E2	16	2-7	1-8	1-7½	5"	1-0	6"		6½"	10"	1⅜"	4½"	8½"	2-2½	10"	6½"	2½"	2⅜"	3⅜"	2⅜"	2"	1⅜"
E3	2	2-8	1-8	1-6½	5"	1-2	7"		6½"	11"	1⅜"	5"	8½"	2-3½	11"	6½"	3"	2⅜"	3⅜"	3⅜"	2½"	1⅜"
E4	10	2-10	1-10	1-10½	5"	1-4	8"		7½"	10½"	1⅜"	5"	9½"	2-5½	10½"	6½"	3¼"	2⅜"	3⅜"	4⅜"	2½"	1⅜"
E5	4	2-10	1-10	2-3½	5½"	1-6	9"		7½"	1-5	1⅜"	5"	9½"	2-5½	1-5	6½"	3½"	2⅜"	4"	8⅜"	2⅜"	1⅜"
E6	2	3-0	2-0	2-3½	6"	1-8	10"		8½"	1-10	2"	5"	10½"	2-7½	1-10	7½"	4"	3"	4½"	1-1	3¼"	1⅜"
E7	4	3-10	2-0	1-3½	3½"	9"	4½"		6½"	7½"	1⅛"	4"	10½"	2-5½	7½"	5½"	2"	2½"	3"	1⅝"	1⅜"	1⅜"
E8	2	(See Detail)																				

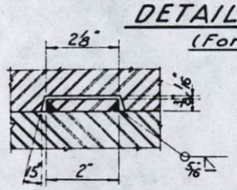
DESIGNED BY A.I. & R.M.R.
DRAWN BY S.Q.B.
CHECKED BY R.M.R.

DETAIL OF FIXED BEARING
(For Dimensions See Table)
E1 Thru F7

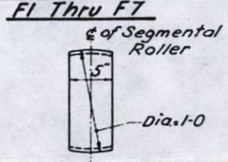




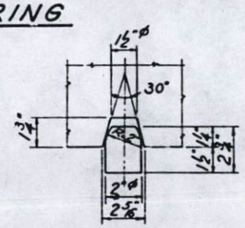
DETAIL-"B"



DETAIL-"C"



DETAIL-"D"

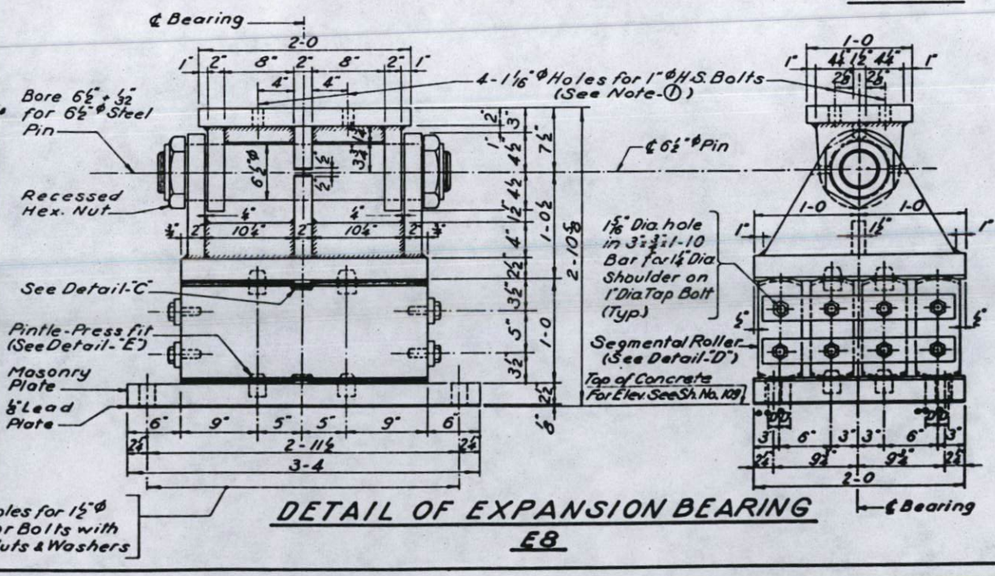


DETAIL-"E"

TABLE OF SHIMS

LOCATION		GIRDER	SHIM THICKNESS
PIER	SPAN		
E6	E6	E1 & E2	7/16"
F4	F4	F1 & F2	½"
F7	F7	F1 & F2	½"
F10	F10	F1 & F2	5/8"
014	014	P1 & P2	¾"
017	018E	E2	5/8"
P4	P4	P1	½"
		P2	5/8"
M3	M4	M1	½"
		M2	½"
N5	N4	N1 & N2	⅜"

Length and Width of Shims to be the same as the corresponding Base Plate.



DETAIL OF EXPANSION BEARING
E8

NOTES:

① The 1"ϕ H.S. Bolts to be Bearing Type. Threads to be excluded from the contact surfaces.

② ½" Continuous Fillet Welds throughout for all Expansion & Fixed Bearings.

③ Anchor Bolts to be grouted into drilled holes after beams are in place.

*D = 1/100 ft. of expansion for every 15° below the normal temperature of 50°F.

**D = ½ 100 ft. of expansion for every 15° above the normal temperature of 50°F.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

BEARING DETAILS

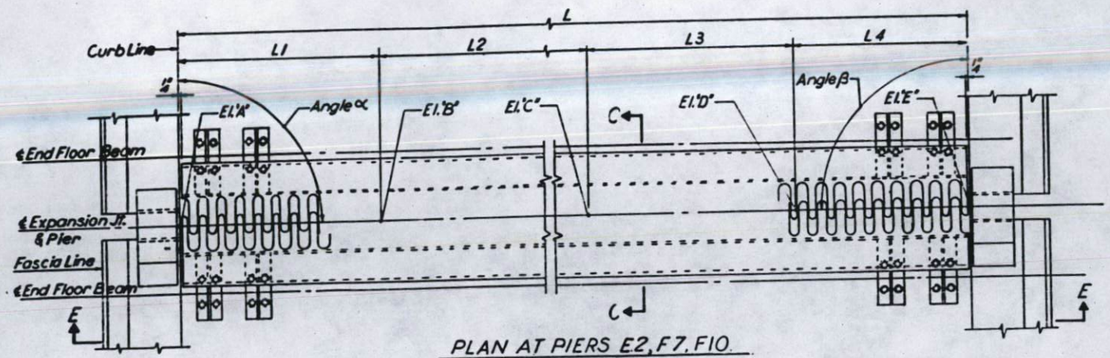
POPLAR STREET BRIDGE APPROACHES

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

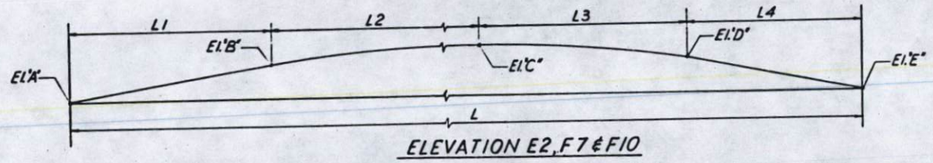
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 102 OF 147

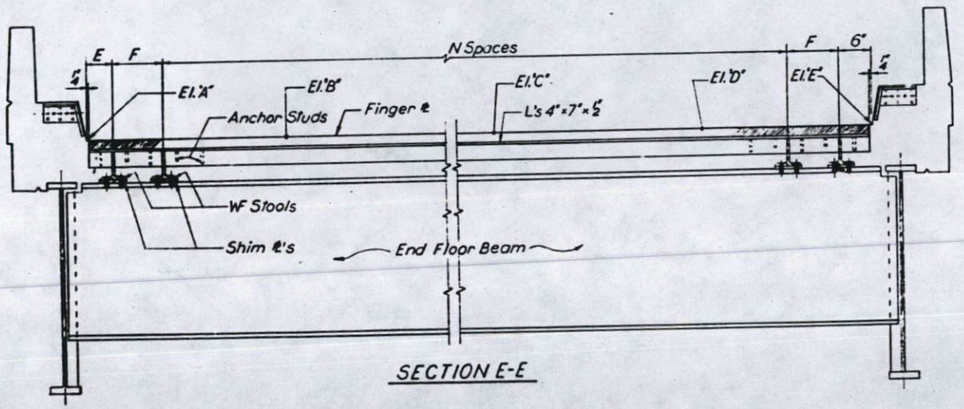
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. - 70	82-3HVB-2	ST. CLAIR	252	169
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



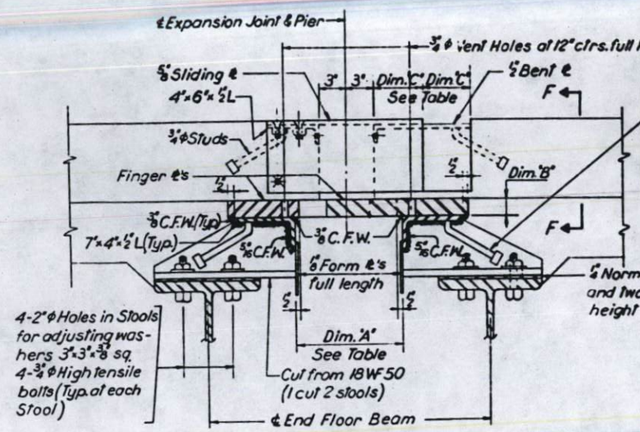
PLAN AT PIERS E2, F7, F10
N5 014 M3 P4



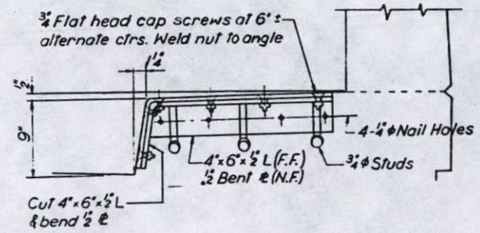
ELEVATION E2, F7 & F10



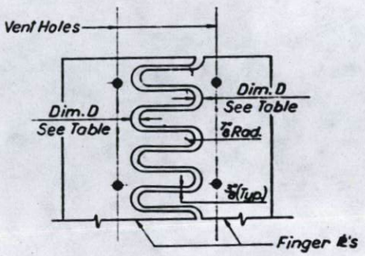
SECTION E-E



SECTION C-C



SECTION F-F



FINGER ℄ CUTTING DETAIL

EXPANSION DEVICE TABLE				
PIER NO.	Dimen. 'A' at 50°F.	Dimen. 'B' & Thickness	Dimen. 'C' at 50°F.	Dimen. 'D' at 50°F.
E2	9¼"	1⅝"	3"	2½"
F7	9¼"	1⅝"	3"	2½"
F10	12¼"	1⅞"	4"	3½"
P1	9⅞"	1⅝"	3"	2⅜"
N5	14⅛"	2¼"	4½"	4⅛"
014	12¼"	1⅞"	4"	3½"
M3	10"	1⅜"	3"	2¾"
P4	9¼"	1⅝"	3"	2½"

BILL OF MATERIAL		
ITEM	UNIT	TOTAL
*Structural Steel	L. S.	Lump Sum

TABLE OF ELEVATIONS, LENGTHS, ANGLES AND WEIGHTS OF FINGER EXPANSION DEVICES																
PIER NO.	ANGLE α	ANGLE β	ELEV. 'A'	ELEV. 'B'	ELEV. 'C'	ELEV. 'D'	ELEV. 'E'	L1	L2	L3	L4	L	E	F	N SPACES	WEIGHT
E2	89°-28'-16"	89°-28'-16"	447.68	447.85	447.97	447.85	447.68	7-10¼	12-0	12-0	7-10¼	39-8½	1-4½	1-4	18 @ 2-0 = 36-0	7970
F7	90°-39'-55"	90°-39'-55"	446.85	446.94	447.07	446.94	446.85	4-4⅜	12-0	12-0	4-4⅜	32-8¼	1-10¼	1-10	14 @ 2-0 = 28-0	6590
F10	91°-08'-46"	91°-08'-46"	456.57	456.78	456.91	456.78	456.57	10-2½	12-0	12-0	10-2½	44-5	1-9	1-8	20 @ 2-0 = 40-0	10670

Notes:
Part of Expansion Device for piers N5, 014 & P4 is obtained from contractor for section 82-3HVF & E1
Part of Expansion Device for pier M3 is obtained from contractor for section 82-3HB

NOTE:
Stool spacing to be adjusted to miss stiffener & connection plates on floor beams.

DESIGNED BY A.J.C
DRAWN BY H.B.
CHECKED BY A.T.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

EXPANSION DEVICES

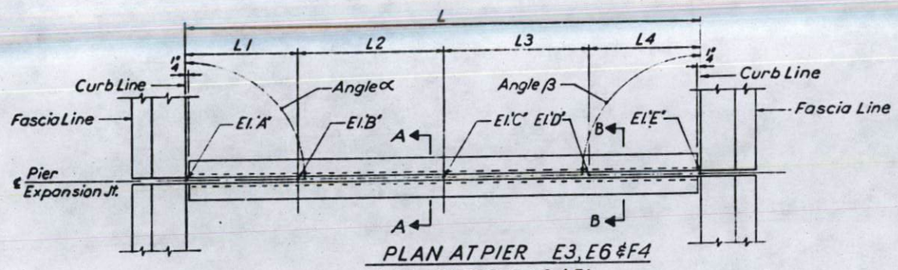
POPLAR STREET BRIDGE APPROACHES

F.A.I. RT. - 70 ST. CLAIR CO. SECTION 82-3HVB-2

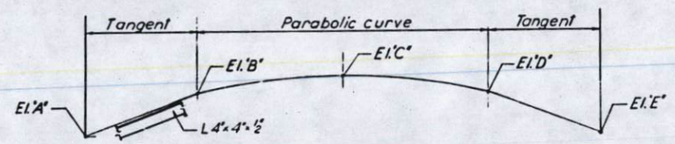
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 103 OF 147

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. – 70	82-3HVB-2	ST. CLAIR	252	170
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



PLAN AT PIER E3, E6 & F4
AND ABUTMENT E9 & F1

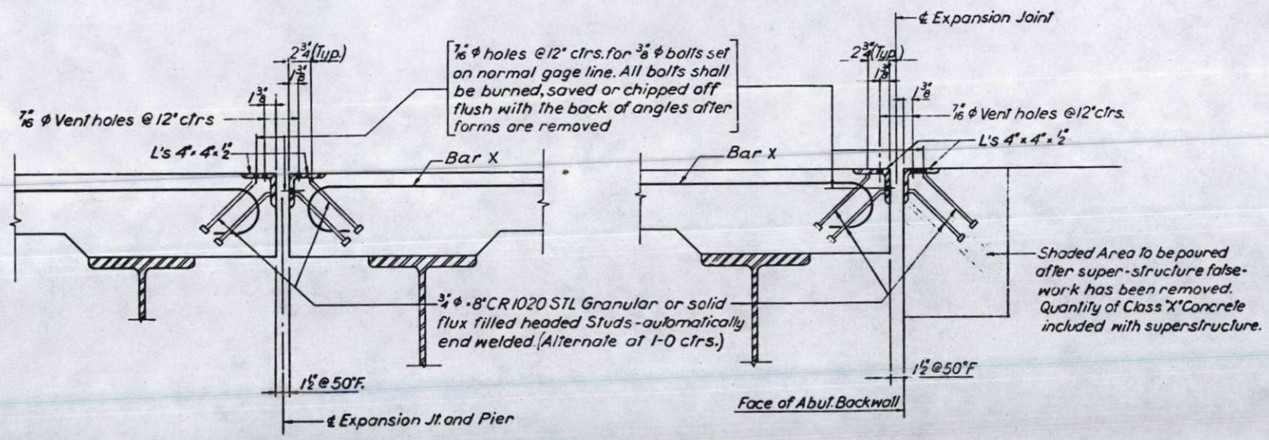


ELEVATIONS
Top of Roadway

TABLE
FOR ELEVATIONS, LENGTHS, ANGLES & WEIGHTS

PIER NO.	ANGLE ∝	ANGLE β	ELEV. 'A'	ELEV. 'B'	ELEV. 'C'	ELEV. 'D'	ELEV. 'E'	L1	L2	L3	L4	L	WEIGHT
E3	89°-28'-16"	89°-28'-16"	446.27	446.42	446.54	446.42	446.27	7-0 5/8	12-0	12-0	7-0 5/8	38-1 1/4	1050
E6	89°-28'-16"	89°-28'-16"	438.93	439.02	439.15	439.02	438.93	4-8	12-0	12-0	4-8	33-4	920
E9 *	89°-49'-18"	89°-49'-18"	432.06	432.13	432.26	432.13	432.06	3-1 7/8	12-0	12-0	3-1 7/8	30-3 3/4	840
F1 *	90°-00'-00"	90°-00'-00"	431.92	431.98	432.11	431.98	431.92	3-0	12-0	12-0	3-0	30-0	830
F4	90°-00'-00"	90°-00'-00"	439.41	439.47	439.60	439.47	439.41	3-0	12-0	12-0	3-0	30-0	830

*Abutment



SECTION A-A
AT PIERS

SECTION B-B
for Abutments E9 & F1

BILL OF MATERIAL		
ITEM	UNIT	TOTAL
*Structural Steel	L. S.	Lump Sum

DESIGNED BY A.J.C.
DRAWN BY H.B.
CHECKED BY A.T.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

EXPANSION DEVICES

POPLAR STREET BRIDGE APPROACHES

F.A.I. RT. 70 ST. CLAIR CO SECTION 82-3HVB-2

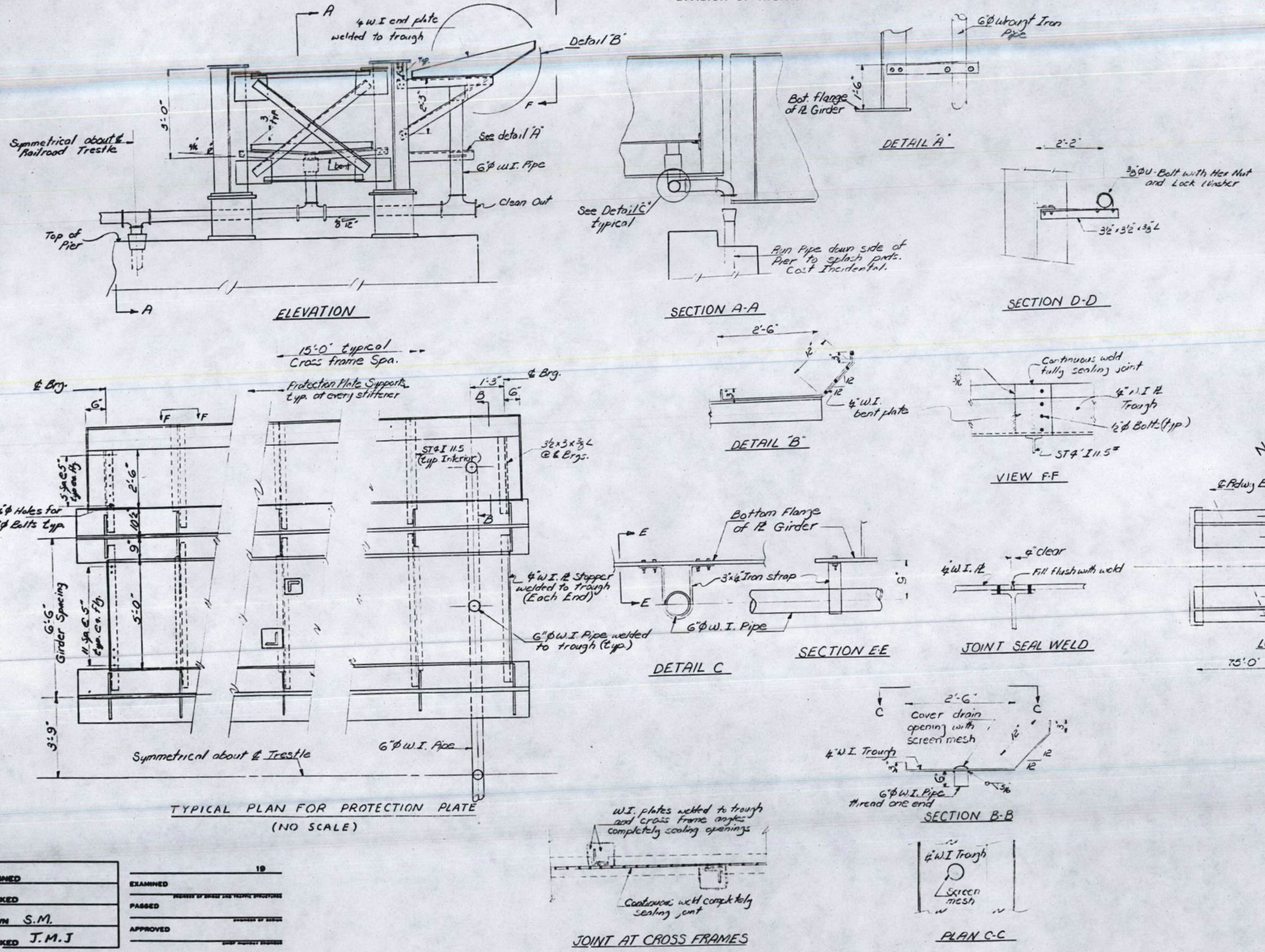
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET
104 OF 147

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-70	82-3HYB-2	ST. CLAIR	252	165a

SHEET NO. 99a
197 SHEETS



Notes:

All Wrought Iron Pipe shall be standard weight, fittings shall be either screw joint or welded joint (See Special Provisions)

The Contractor shall verify all dimensions and conditions existing in the field before ordering materials for protection plates & pipe drain system.

Protection plate shall extend between each pier adjacent to roadways E and F.

Protection plates shall be billed as Furnishing and Erecting Structural Steel.

BILL OF MATERIALS

Wrought Iron Pipe Drain System	L.S.
Furnishing & Erecting Struct. Steel	33620 Lbs

DESIGNED	
CHECKED	
DRAWN	S.M.
CHECKED	J.M.J

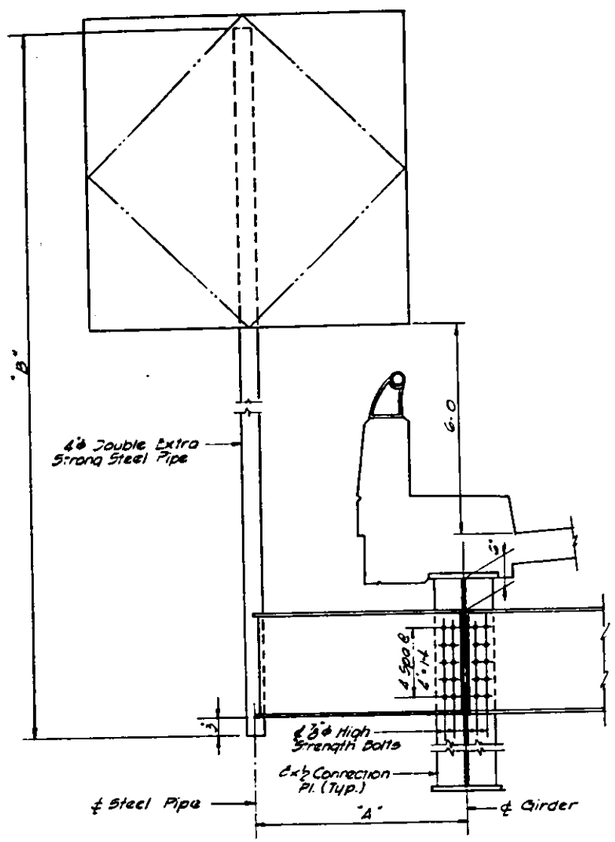
19
EXAMINED
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED
ENGINEER OF DESIGN
APPROVED
CHIEF HIGHWAY ENGINEER

PROTECTION PLATE DETAILS
AND PIPE DRAIN SYSTEM
FAI RT 70 ~ SEC 82-3HYB-2
ST CLAIR COUNTY

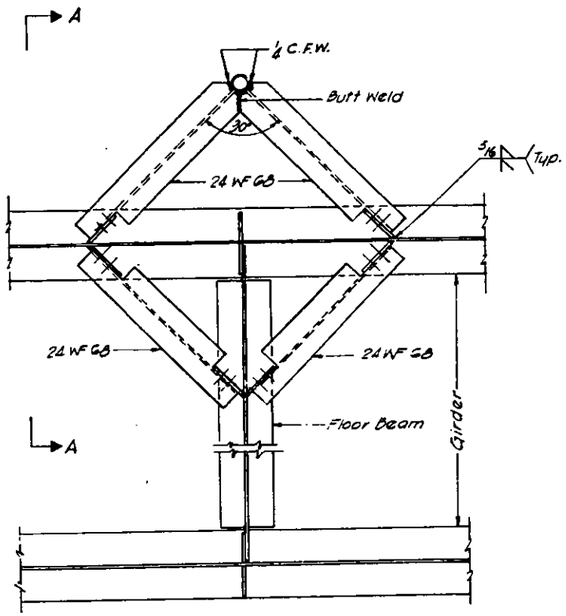
Added 6-11-70 S.F.M.

[redacted]

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.– 70	82-3HVB-2	ST. CLAIR	252	166
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



SECTION A-A



PLAN

NOTE
6"x½ Connection Pls. to be fit to Compression flange and undercut ½" at tension flange. See Girder Details for locations of Details

SIGN BRACKET DETAIL
NO.29 THRU 34

Table for Sign Bracket Dimensions

Sign Bracket	"A"	"B"	for Location see Sheet No
No 29	3-0	14-8	80
No. 30	3-10	15-4	84
No 31	3-10	15-4	88
No. 32	3-0	14-8	92
No 33	3-0	14-8	52
No. 34	3-0	14-8	75

DESIGNED BY A.T.
DRAWN BY
CHECKED BY A.T.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

SIGN BRACKET DETAILS

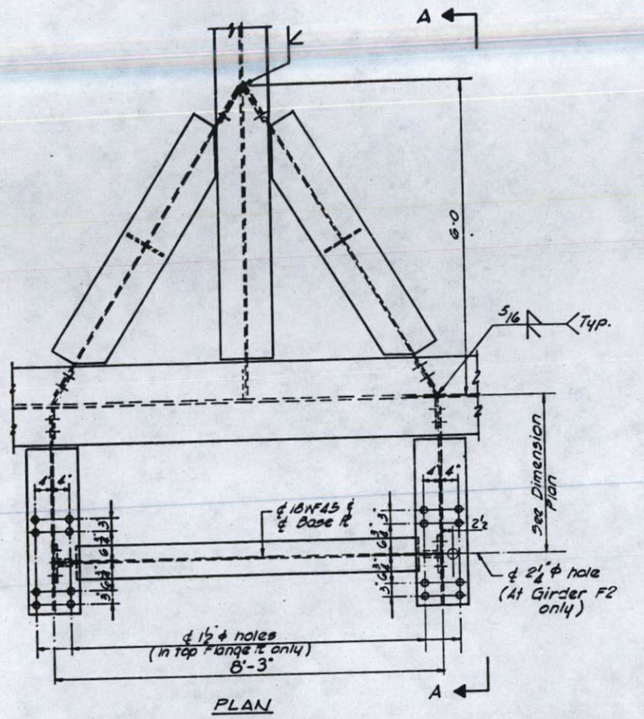
POPLAR STREET BRIDGE APPROACHES

F.A.I. RT. 70. ST. CLAIR CO. SECTION 82-3HVB-2

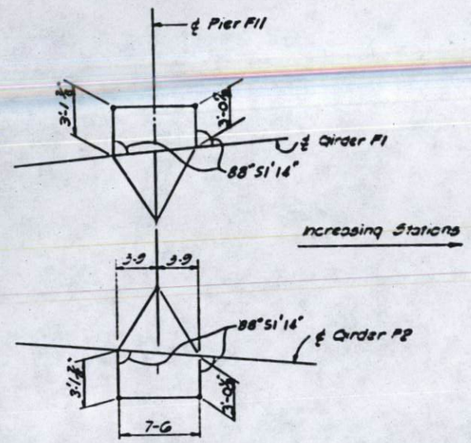
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET
100 of 147

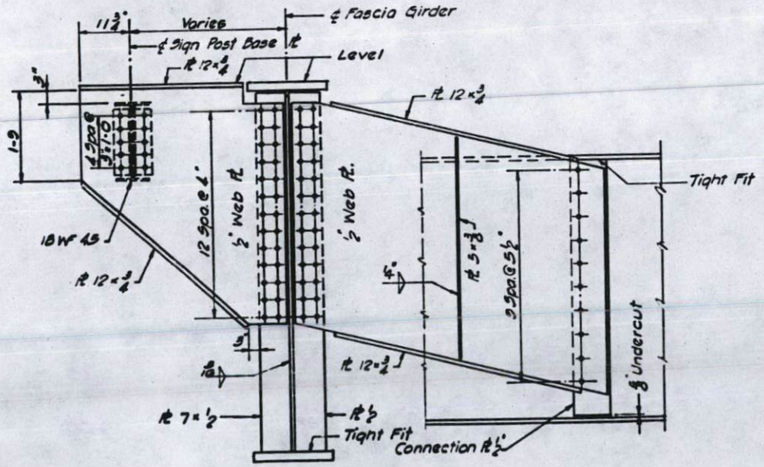
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. – 70	82-3HVB-2	ST. CLAIR	252	167
FED. ROAD DIST. NO. 6	ILLINOIS	PROJECT		



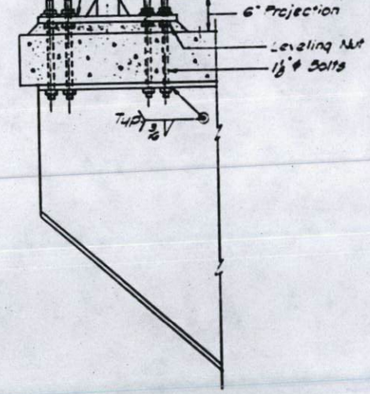
PLAN



DIMENSION PLAN
TRUSS SIGN SUPPORT
BRACKET NO. 11



SECTION A-A



DETAIL OF SIGN
POST BASE PLATE

NOTES:
For location of Truss Sign Support Bracket see Sheet 73. Weight of Truss Sign Support Bracket is included with Quantity for Structural Steel.

DESIGNED BY AT
DRAWN BY VS
CHECKED BY AT

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

TRUSS SIGN SUPPORT BRACKET

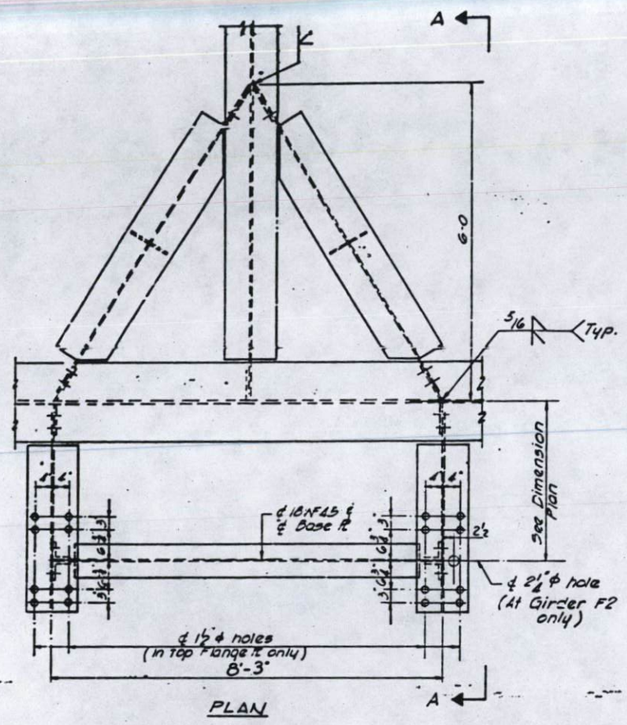
POPLAR STREET BRIDGE APPROACHES

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

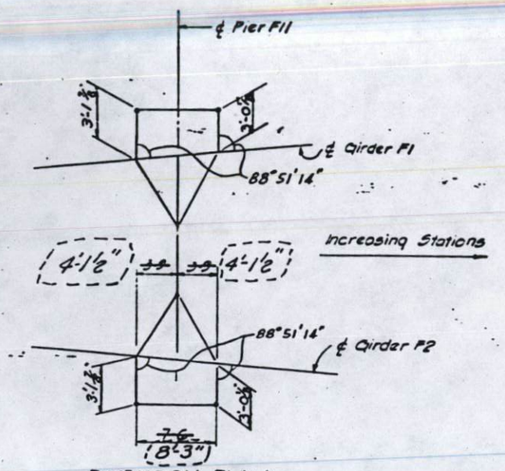
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 1 OF 1 SHTS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. – 70	82-3HVB-2	ST. CLAIR	252	167 A
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		

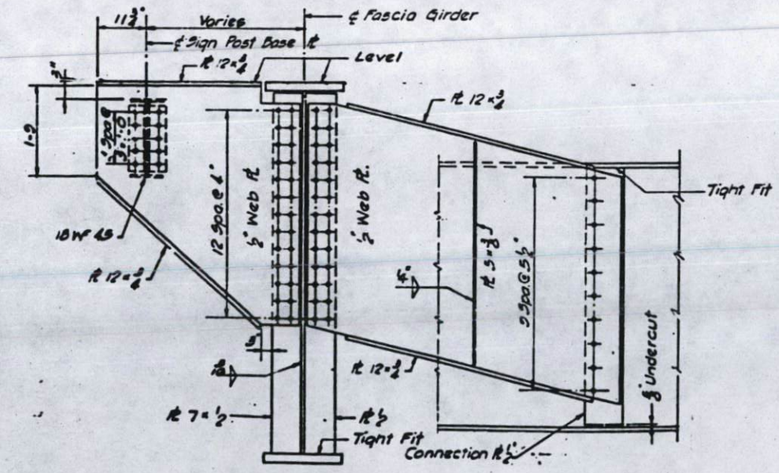


PLAN

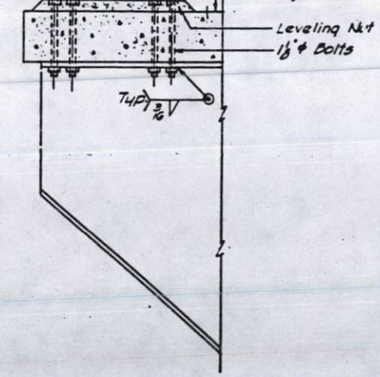


DIMENSION PLAN
TRUSS SIGN SUPPORT
BRACKET NO. 11

NOTES:
For location of Truss Sign Support Bracket see Sheet 75. Weight of Truss Sign Support Bracket is included with Quantity for Structural Steel.



SECTION A-A



DETAIL OF SIGN
POST BASE PLATE

DESIGNED BY A.T.
DRAWN BY
CHECKED BY

Revised [ ] 10-13-70 J.M.J.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

TRUSS SIGN SUPPORT BRACKET

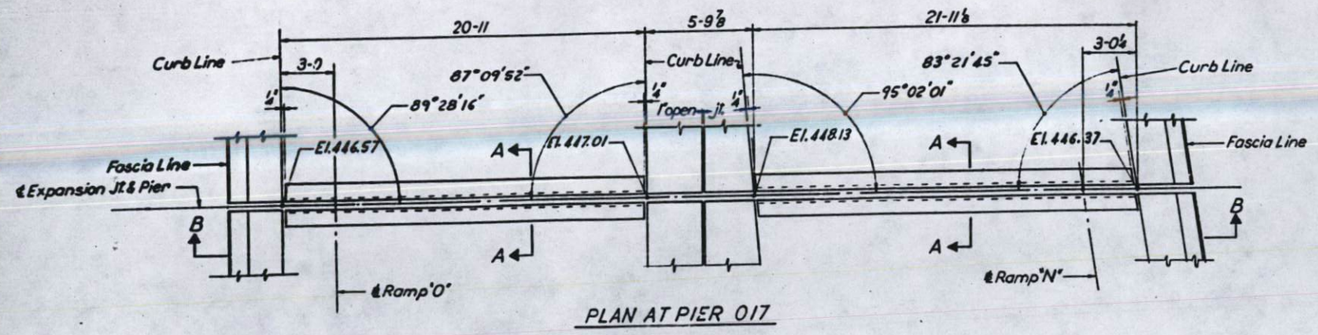
POPLAR STREET BRIDGE APPROACHES

F.A.I RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

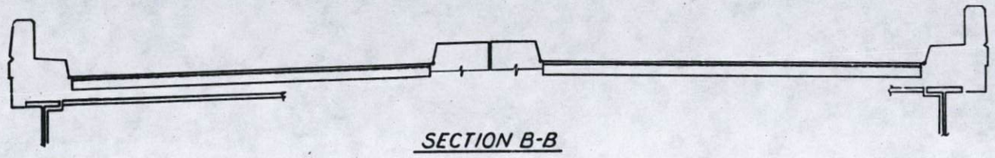
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET
101 of 147

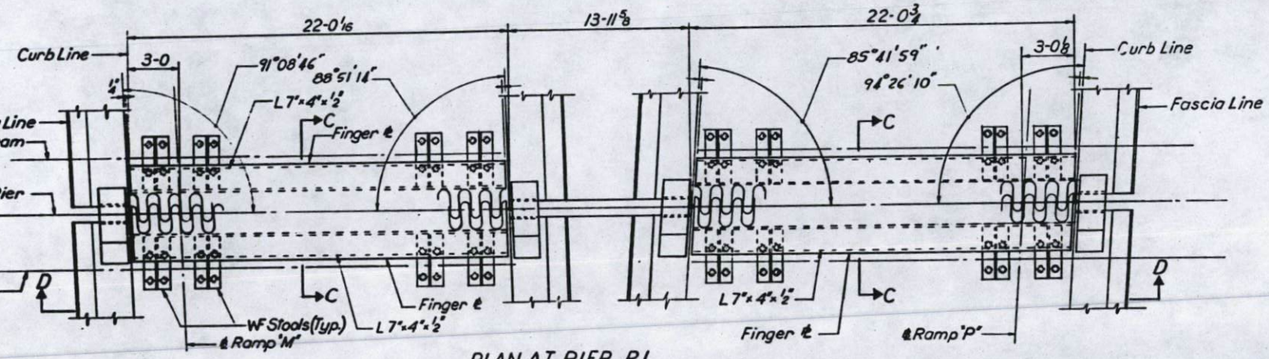
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I – 70	82-3HVB-2	ST CLAIR	252	171
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



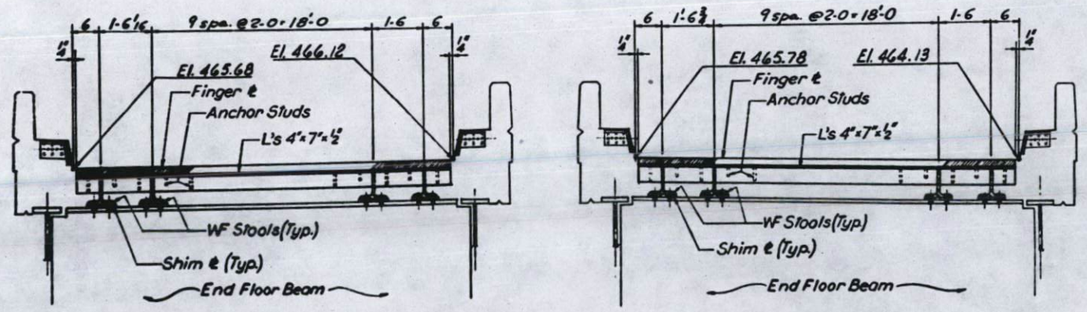
PLAN AT PIER 017



SECTION B-B



PLAN AT PIER P1



SECTION D-D

DESIGNED BY A.T.C
DRAWN BY E.C.
CHECKED BY A.T

Notes
For Section A-A see Sh. 104
For Section C-C see Sh 103

BILL OF MATERIAL		
ITEM	UNIT	TOTAL
*Structural Steel	L.S.	Lump Sum

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

EXPANSION DEVICES

POPLAR STREET BRIDGE APPROACHES

F.A.I. RT. – 70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

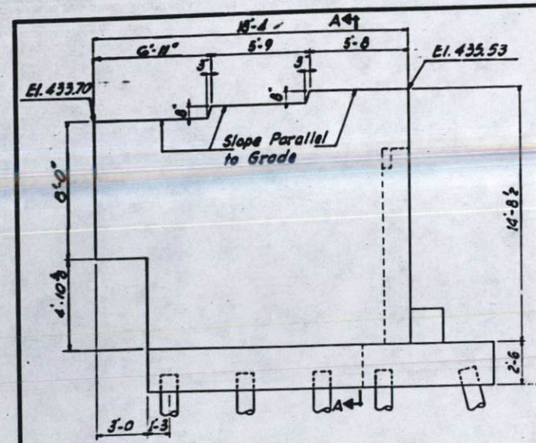
SHEET
105 of 147

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
E.A.I.—70	82-3HVB-2	ST. CLAIR	252	176
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		

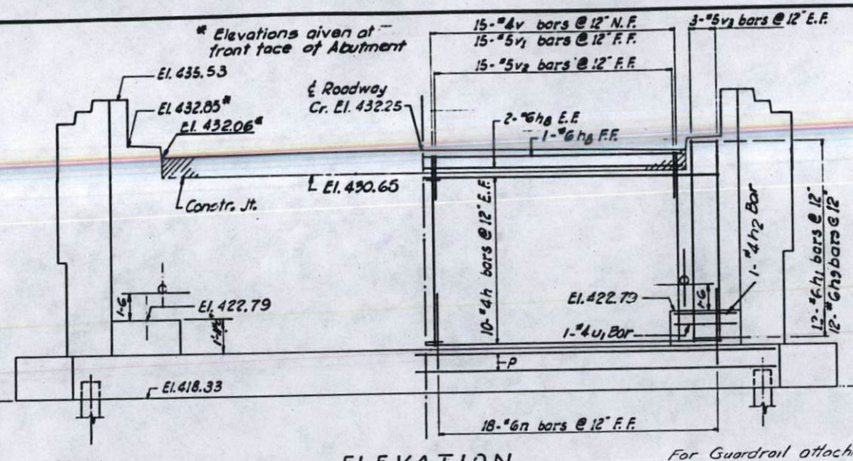
BILL OF MATERIAL

•BAR	NO.	SIZE	LENGTH	SHAPE
110 h	40	#6	18-3	
110 h_1	24	#5	6-8	
110 h_2	2	#4	3-8	
110 h_3	24	6	15-0	
110 h_4	20	6	18-0	
110 h_5	12	6	16-9	
110 h_6	4	6	11-3	
110 h_7	4	6	5-5	
110 h_8	3	6	30-0	
110 h_9	24	6	6-0	
110 n	36	6	5-8	
110 n_1	40	4	3-5	
110 n_2	32	8	7-1	
110 p	24	6	20-9	
110 p_1	24	6	16-6	
110 t	96	6	7-0	
110 t_1	40	5	7-0	
110 t_2	28	4	7-0	
110 u	4	#4	7-2	
110 u_1	2	4	3-2	
110 u_2	8	4	5-6	
110 v	30	4	11-1	
110 v_1	30	5	8-4	
110 v_2	30	5	5-1	
110 v_3	12	5	11-10	
110 v_4	12	6	14-5	
110 v_5	12	6	13-7	
110 v_6	8	6	12-09	
110 v_7	12	6	7-8	
110 v_8	12	6	12-9	
110 v_9	12	6	11-10	
110 v_{10}	8	6	11-1	
• See Note "X" Sh. No 14				

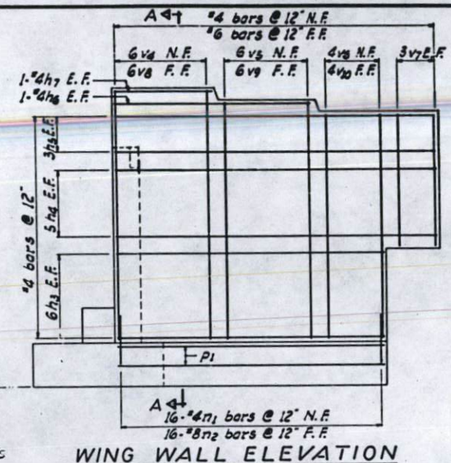
ITEM	UNIT	TOTAL
Class "X" Concrete	Cu. Yds.	83.6
Reinforcement Bars	Lbs.	6340
Concrete Piles	Lin. Ft.	1320
Test Pile	Ea.	1



WING WALL ELEVATION
DIMENSIONS

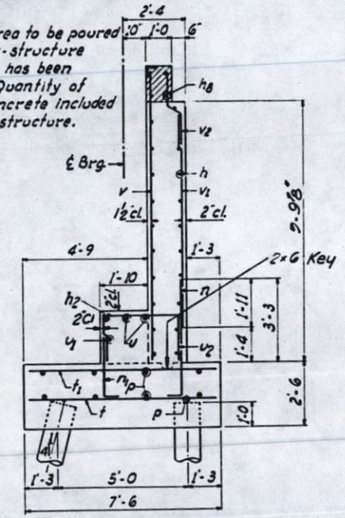


ELEVATION
SYMM. ABOUT ℄ RDWY.

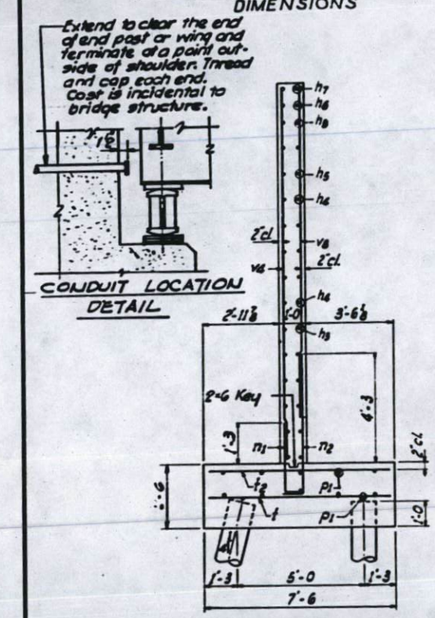


WING WALL ELEVATION
REINFORCEMENT

Note:
Hatched area to be poured after super-structure false-work has been removed. Quantity of Cross "X" Concrete included with superstructure.

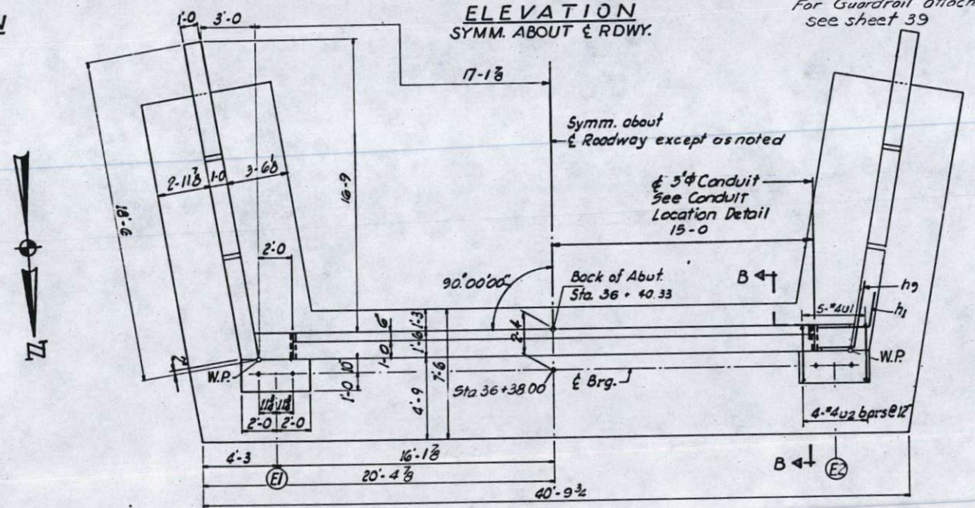


SECTION B-B

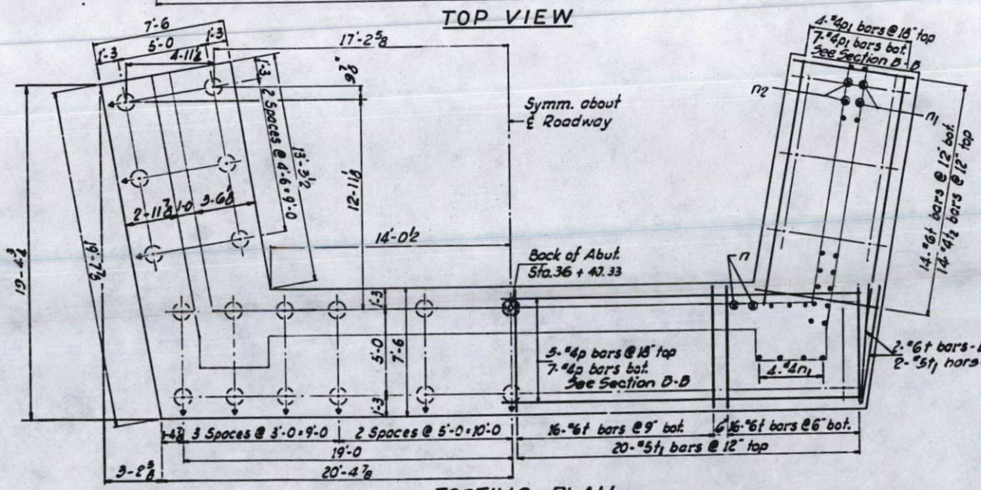


CONDUIT LOCATION DETAIL

SECTION A-A

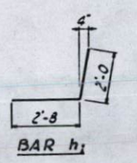


TOP VIEW

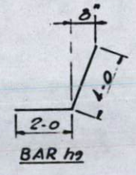


FOOTING PLAN

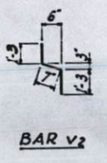
For Guardrail attachments see sheet 39



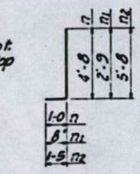
BAR h_1



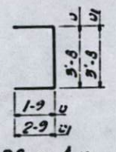
BAR h_2



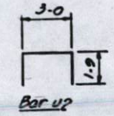
BAR v_2



BARS n, n_1 & n_2



BARS u & u_1



Bar u_2

PILE DATA

Type ..... Concrete
Req'd Capacity ... 22 Tons
Est. Length ..... 40'-0
No. Req'd. 33*
Test Pile 1
⊕ Indicates Vertical Piles
⊕ Indicates Battered Piles
⊕ Indicates Test Pile

* Does not include Test Pile

DESIGNED BY A.T.
DRAWN BY S.G.
CHECKED BY E.L.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

ABUTMENT E9

POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

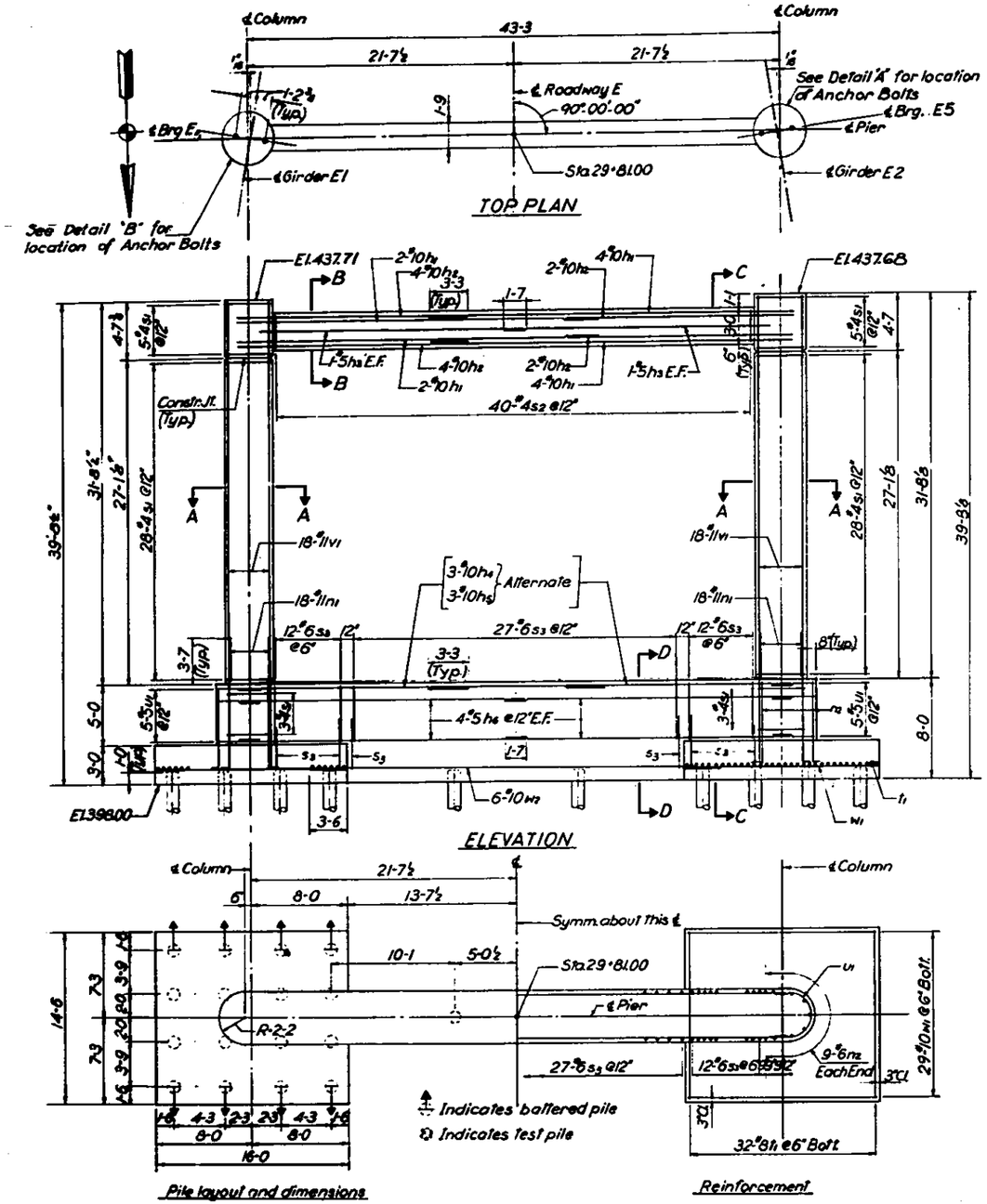
E.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

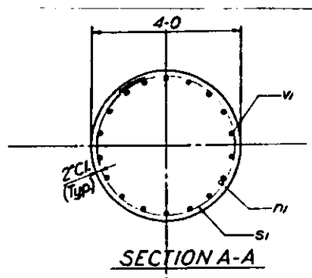
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

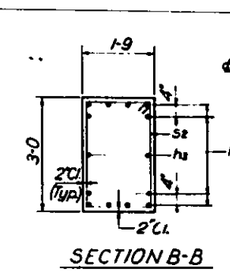
SHEET 110 OF 147

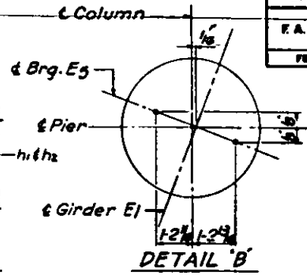
230

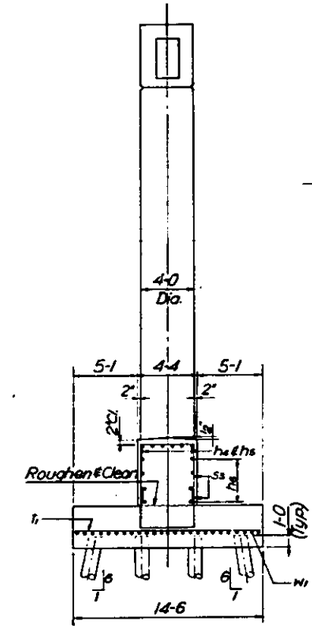
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.—70	82-3HVB-2	ST. CLAIR	252	178
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		

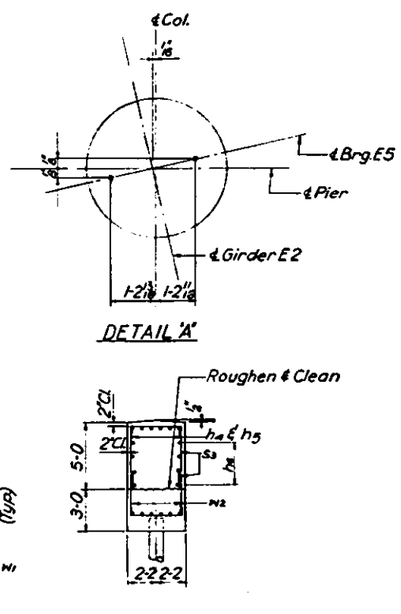












BILL OF MATERIAL

*Mark	No. Reqd.	Size	Length	Shape
112 h1	12	#10	30-0	
112 h2	12	#10	19-0	
112 h3	4	#5	21-8	
112 h4	6	#10	29-6	
112 h5	6	#10	18-0	
112 h6	16	#5	22-11	
112 n1	36	#11	12-8	
112 n2	18	#6	7-9	
112 s1	72	#4	12-9	
112 s2	40	#9	9-0	
112 s3	102	#6	12-8	
112 t1	64	#8	14-0	
112 u1	10	#5	9-5	
112 v1	36	#11	31-6	
112 w1	58	#10	15-6	
112 w2	6	#10	34-3	

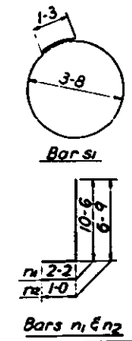
*See Note 'X' Sheet No. 14

Item	Unit	Total
Class 'X' Concrete	C.Y.	139.1
Reinforcement Bars	Lbs.	22,920
Concrete Piles	L.F.	1155
Test Pile	Ea.	1

PILE DATA

Type:	Concrete
Required Capacity:	31 Tons
Est. Length:	35-0
No. Required:	33*
Test Pile:	1

*Does not include test pile.



STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

PIER E1

POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

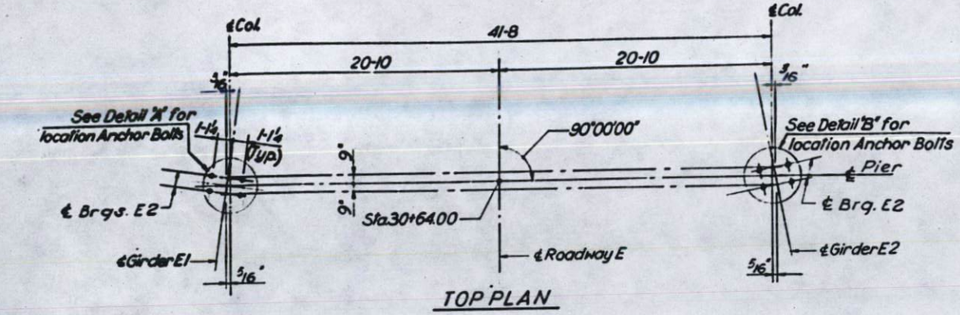
F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

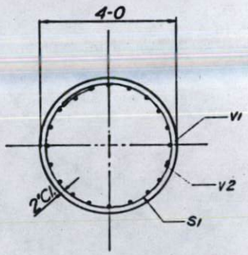
SHEET 142 OF 147

DESIGNED BY F.W.L.
DRAWN BY H.B.
CHECKED BY E.L.

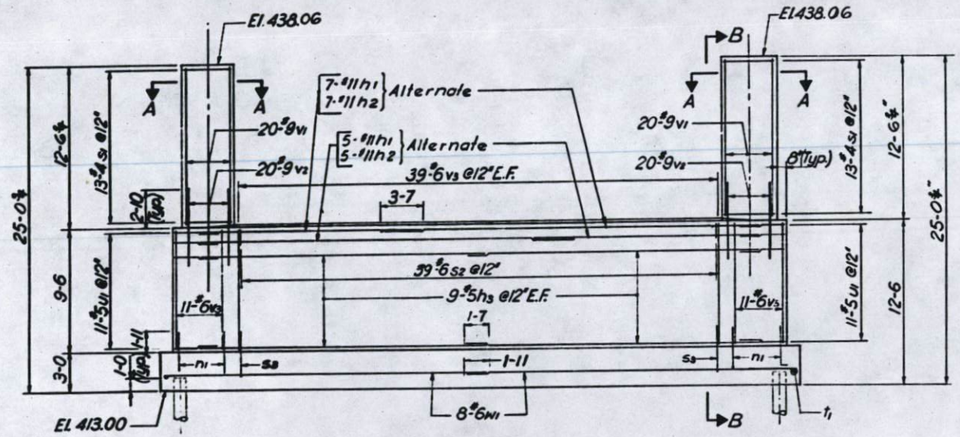
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-70	82-3HVB-2	ST. CLAIR	252	175
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



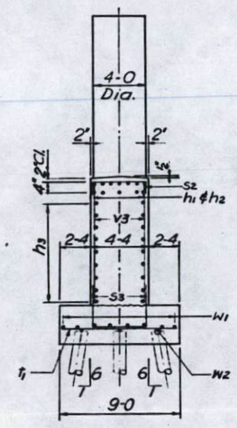
TOP PLAN



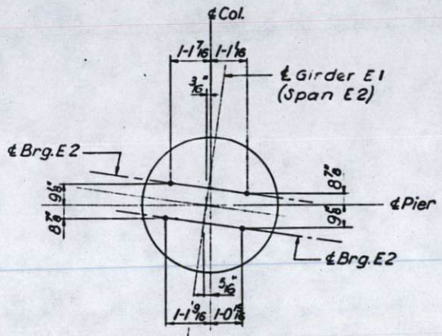
SECTION A-A



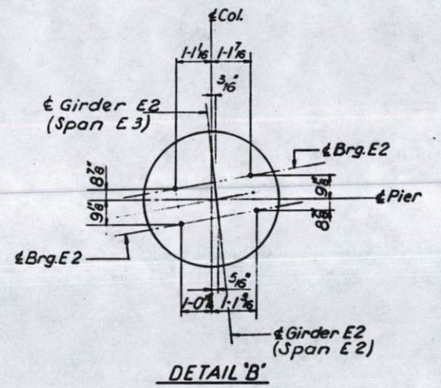
ELEVATION



SECTION B-B



DETAIL 'A'



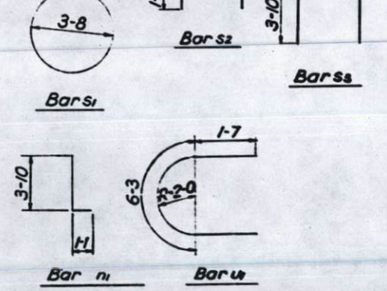
DETAIL 'B'

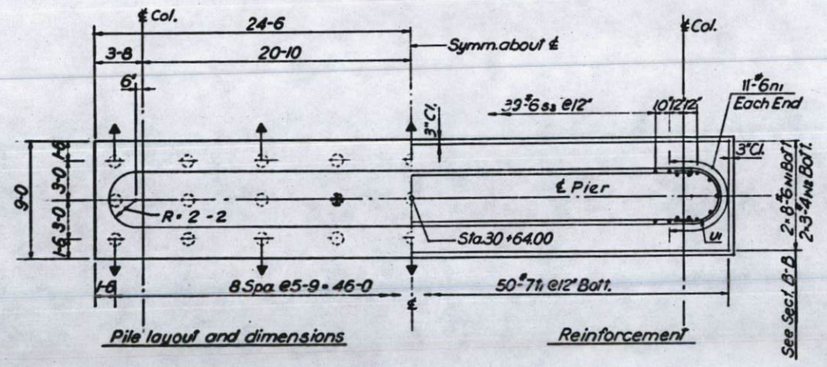
BILL OF MATERIAL

* Mark	No. Req'd	Size	Length	Shape
113 h1	12	#11	29-2	
113 h2	12	#11	17-3	
113 h3	36	#5	22-2	
113 N1	22	#6	4-11	
113 S1	26	#4	12-9	
113 S2	39	#6	6-0	
113 S3	39	#6	11-8	
113 T1	50	#7	8-8	
113 U1	22	#5	9-5	
113 V1	40	#9	12-5	
113 V2	40	#9	6-8	
113 V3	100	#6	9-4	
113 W1	16	#6	25-3	
113 W2	6	#4	25-1	

*See Note 'X' Sheet No. 14

Item	Unit	Total
Class 'X' Concrete	C.Y.	130.1
Reinforcement Bars	Lbs.	11,020
Concrete Piles	L.F.	1014
Test Pile	Ea.	1





FOOTING PLAN

↑ Indicates battered pile
⊕ Indicates test pile

PILE DATA

Type:	Concrete
Required Capacity:	31 Tons
Est. Length:	39-0
No. Required:	26*
Test Pile:	1

*Does not include test pile

DESIGNED BY E.N
DRAWN BY H.B.
CHECKED BY E.L.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

PIER E2

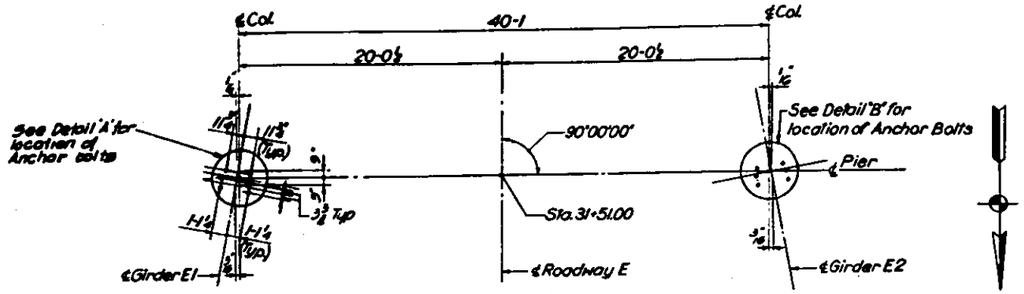
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

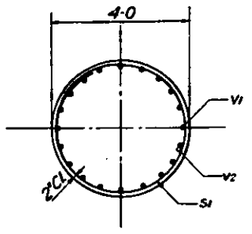
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET
113 OF 147

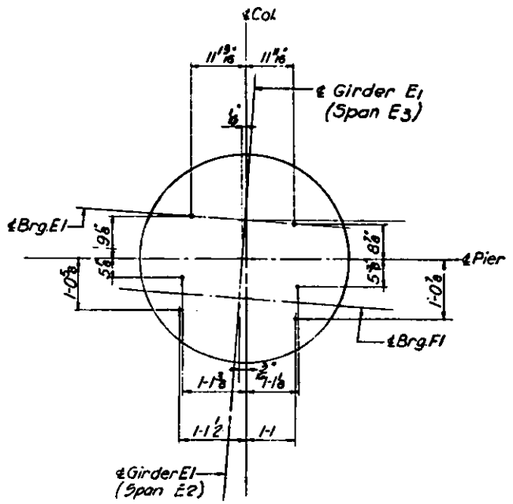
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. — 70	82-3HVB-2	ST. CLAIR	252	180
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



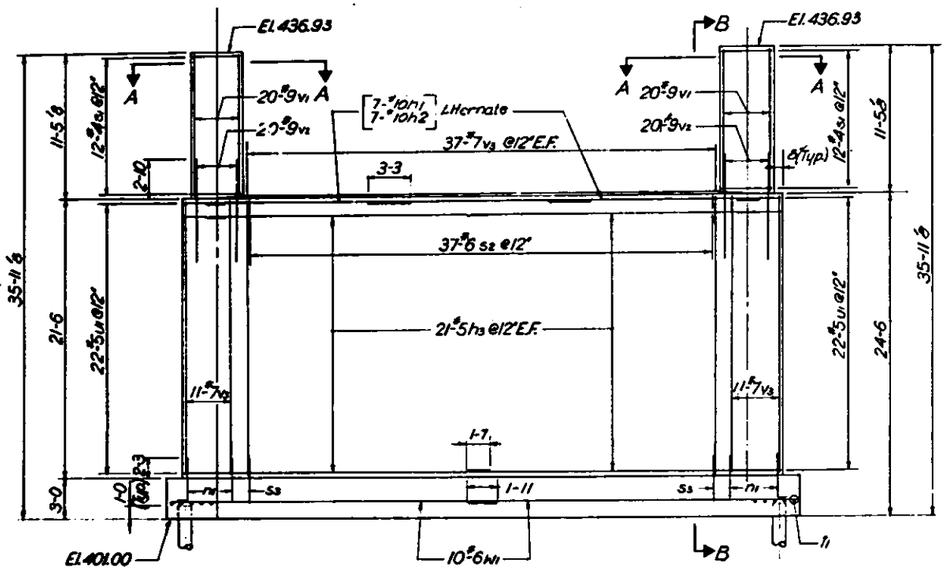
TOP PLAN



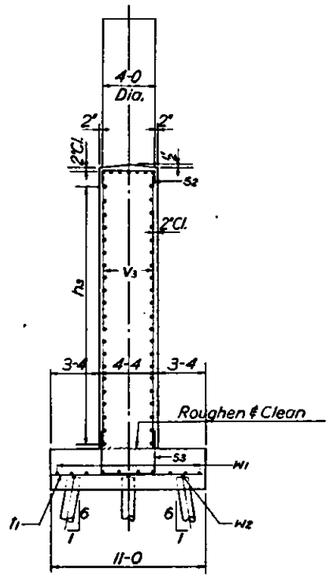
SECTION A-A



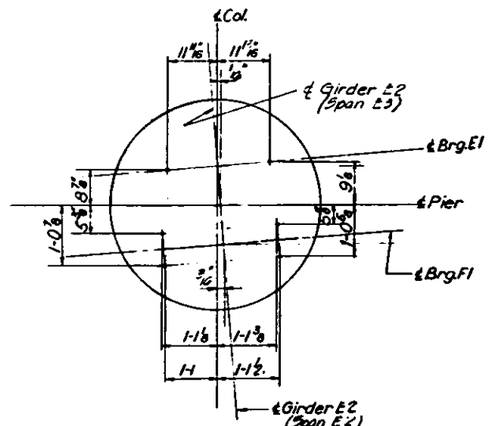
DETAIL 'A'



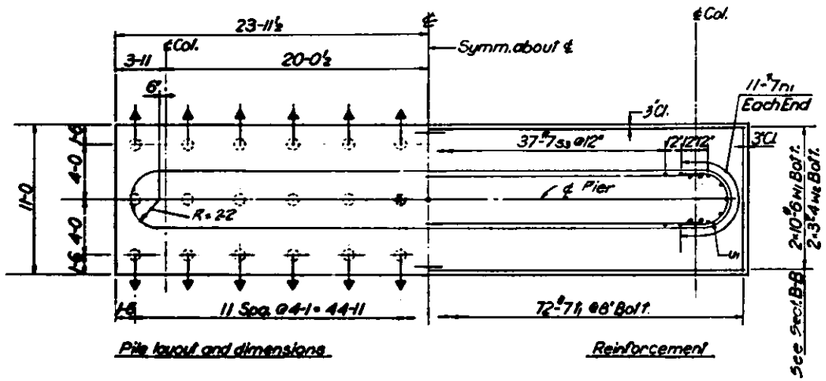
ELEVATION



SECTION B-B



DETAIL 'B'



Pile layout and dimensions — Reinforcement

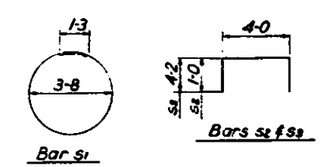
FOOTING PLAN

PILE DATA

Type:	Concrete
Required Capacity:	34 Tons
Est Length:	33-0
No. Required:	95*
Test Pile	1

* Does not include Test Pile.

△ - Indicates battered pile
● - Indicates Test Pile



BILL OF MATERIAL

*Mark	No. Req'd	Size	Length	Shape
11#h1	7	#10	28-0	
11#h2	7	#10	16-4	
11#h3	84	#5	21-4	
11#n1	22	#7	5-5	
11#s1	24	#4	12-9	
11#s2	37	#6	6-0	
11#s3	37	#7	12-4	
11#t1	72	#7	10-8	
11#u1	44	#5	9-5	
11#v1	40	#9	11-3	
11#v2	40	#9	8-8	
11#v3	96	#7	21-3	
11#w1	20	#6	24-8	
11#w2	6	#4	24-4	

*See Note 'X' Sheet No. 14

Item	Unit	Total
Class 'X' Concrete	C.Y.	2'21.5
Reinforcement Bars	Lbs.	14,750
Concrete Piles	L.F.	1155
Test Pile	Ea.	1

DESIGNED BY E.W
DRAWN BY H.B.
CHECKED BY E.L.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

PIER E3

POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 114 OF 147

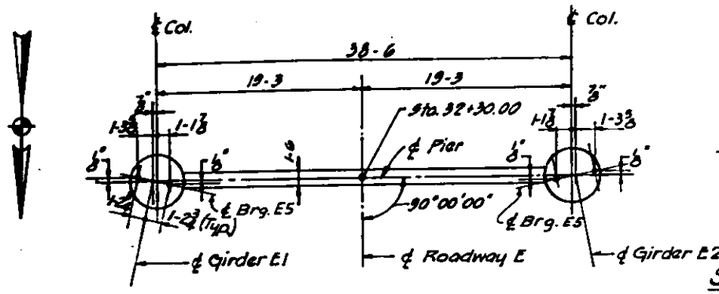
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I.-70	82-3HVB-2	ST. CLAIR	252	121
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		

BILL OF MATERIAL

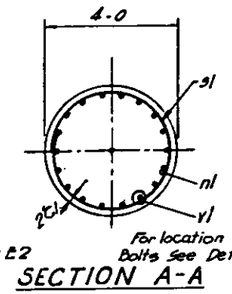
*Mark	No. Reqd. Pier E4	No. Reqd. Pier E5	Size	Length	Shape
115 h1	10	-	#10	40-10	
115 h2	7	-	#3	37-6	
115 h3	14	-	#11	39-6	
115 h4	10	-	#9	39-6	
115 h5	-	10	#9	39-0	
115 h6	-	12	#11	37-8	
115 h7	-	2	#5	35-8	
115 h8	-	10	#5	37-8	
115 n1	36	36	#11	13-8	
115 n2	14	14	#6	8-9	
115 s1	35	33	#4	8-6	
115 s2	70	-	#6	13-8	
115 s3	64	58	#4	12-9	
115 s4	-	66	#7	14-0	
115 t1	69	-	#7	10-8	
115 t2	-	35	#8	10-8	
115 v1	36	-	#11	26-8	
115 v2	-	36	#11	23-5	
115 w1	20	-	#6	28-4	
115 w2	6	-	#4	24-0	
115 w3	-	20	#6	23-2	
115 w4	-	6	#4	28-10	
115 u1	14	14	#5	9-5	

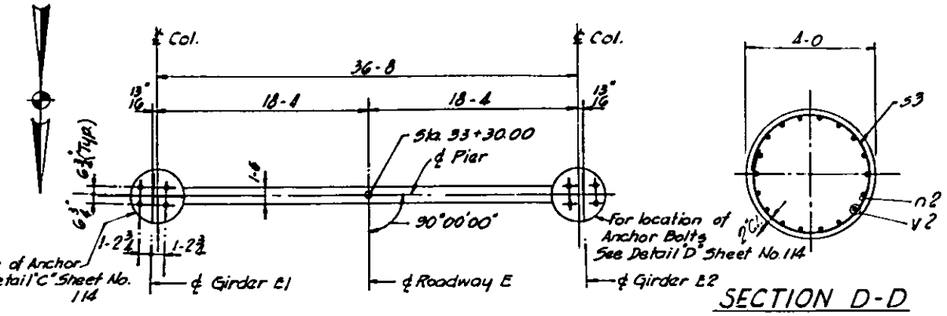
*See Note "X" Sh. No. 14

Item	Unit	Total Pier E4	Total Pier E5
Class 'X' Concrete	C.Y.	128.7	121.2
Reinforcement Bars	Lbs.	17,600	16,530
Concrete Piles	L.F.	858	1014
Test Piles (concrete)	Ea.	1	1



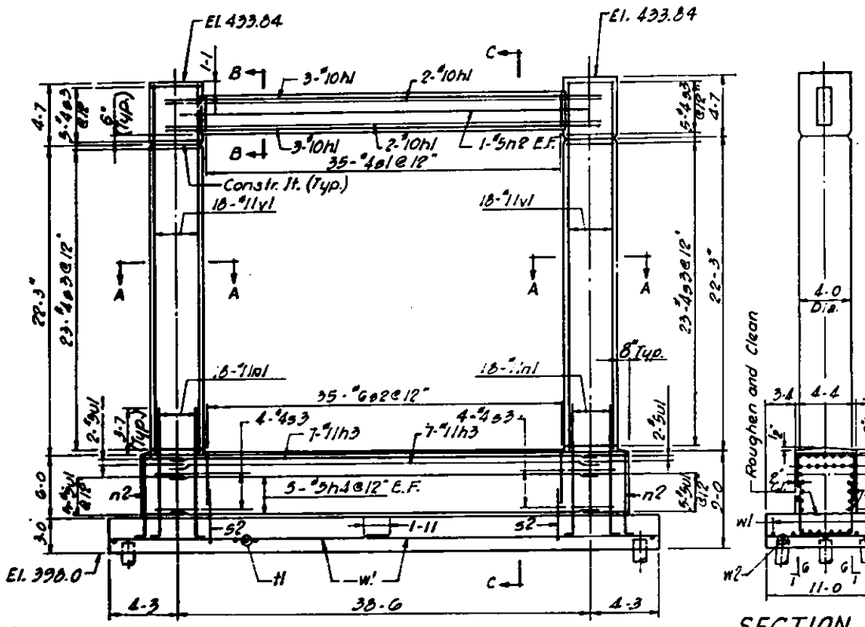
SECTION A-A





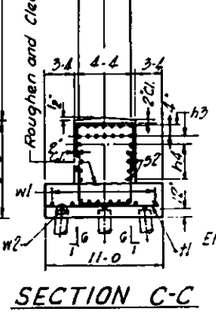
SECTION D-D

TOP PLAN - PIER E4

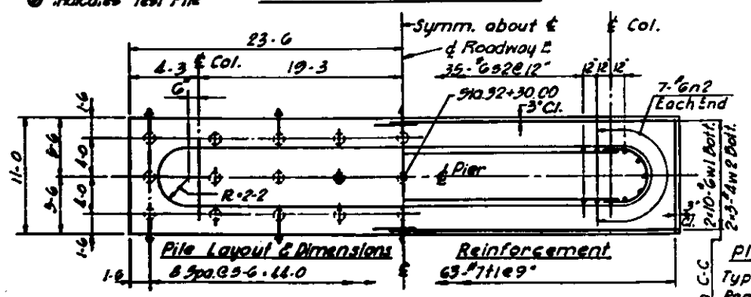


FOOTING PLAN - PIER E4

SECTION C-C



SECTION B-B



ELEVATION - PIER E4

Indicates Battered Piles
Indicates Test Pile

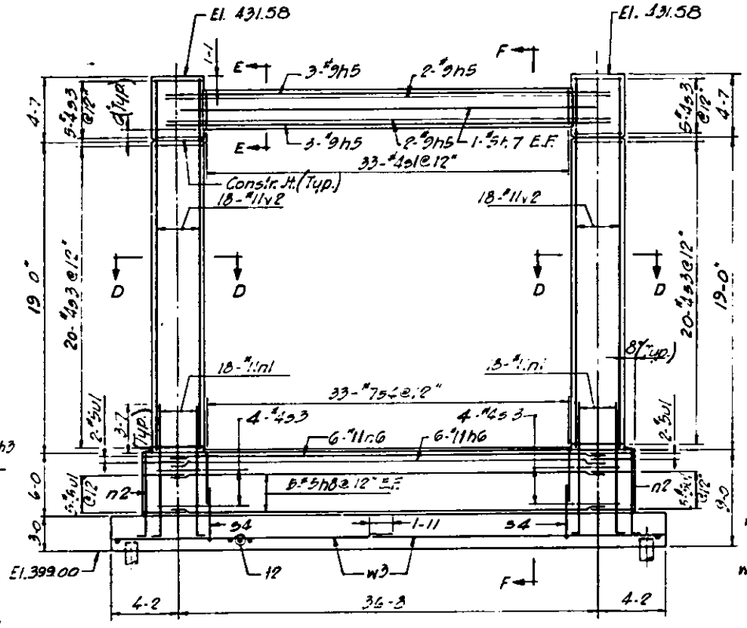
See Section C-C

PILE DATA

Type: Concrete
Req'd. Capacity: 31 Tons
Est. Length: 33-0
No. Reqd: 26*
Test Pile 1
* Does not include Test Pile

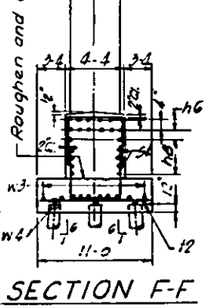
DESIGNED BY E.W.
DRAWN BY
CHECKED BY E.L.

TOP PLAN - PIER E5

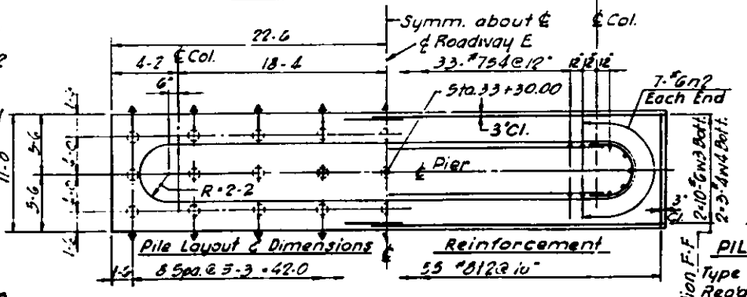


ELEVATION - PIER E5

SECTION F-F



SECTION E-E

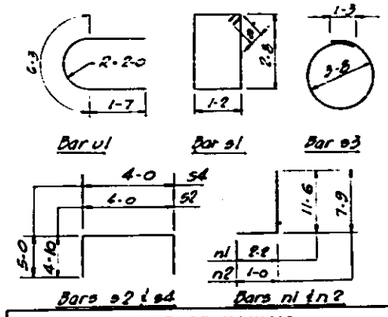


FOOTING PLAN - PIER E5

See Section F-F

PILE DATA

Type: Concrete
Req'd. Capacity: 34 Tons
Est. Length: 39-0
No. Reqd.: 24*
Test Pile: 1
* Does not include test Pile



STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

PIERS E4 AND E5

POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 125 OF 147

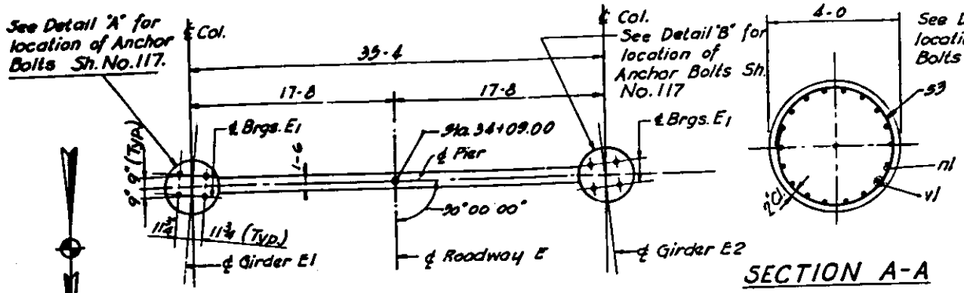
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I.—70	82-3HVB-2	ST. CLAIR	252	182
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		

BILL OF MATERIAL

Mark	No. Reqd. Per E6	No. Reqd. Per E7	Size	Length	Shape
116h1	10	--	#3	37-8	
116h2	2	--	#5	33-10	
116h3	13	-	#10	36-4	
116h4	8	--	#5	36-4	
116h5	-	10	#9	36-4	
116h6	-	14	#11	35-0	
116h7	-	8	#5	35-0	
116h8	-	2	#5	32-6	
116n1	36	-	#10	18-1	
116n2	14	--	#6	7-9	
116n3	-	36	#11	18-8	
116n4	--	14	#7	7-11	
116 s1	32	-	#4	8-6	
116 s2	64	-	#6	18-8	
116s3	34	48	#4	12-9	
116 s4	-	31	#4	8-0	
116 s5	-	62	#7	13-0	
116 v1	43	-	#7	9-5	
116v2	-	47	#7	9-5	
116w1	33	--	#10	22-5	
116w2	-	36	#11	20-1	
116u1	12	12	#5	9-6	
116w1	16	-	#6	21-10	
116w2	6	-	#4	21-6	
116w3	-	22	#6	22-1	
116w4	-	6	#4	21-9	

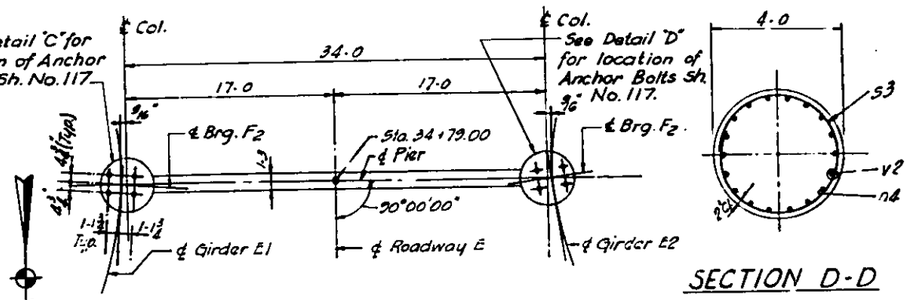
*See Note "X" Sh. No. 14

Item	Unit	Total Pier E6	Total Pier E7
Class 'X' Concrete	C.Y.	115.6	100.7
Reinforcement Bars	Lbs.	12,610	14,780
Concrete Piles	L.F.	667	1012
Test Piles (concrete)	Ea.	1	1



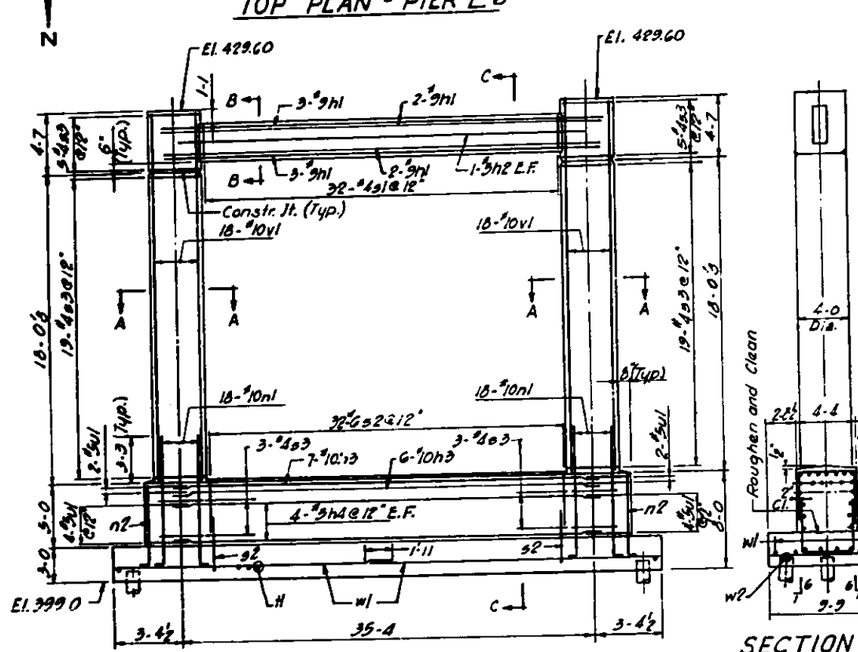
SECTION A-A

TOP PLAN - PIER E6

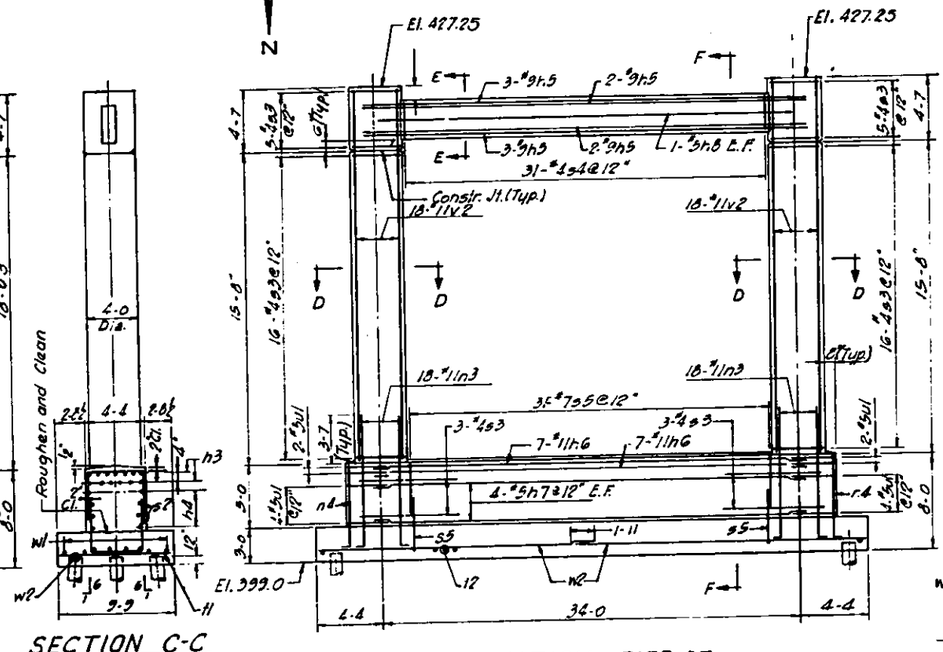


SECTION D-D

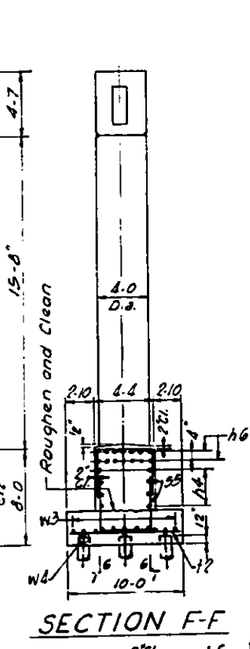
TOP PLAN - PIER E7



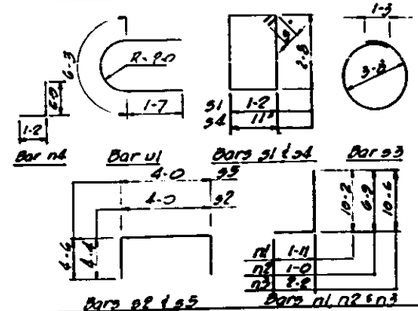
SECTION C-C

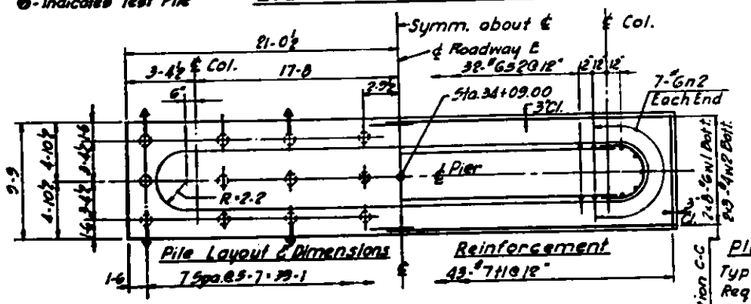


ELEVATION - PIER E7

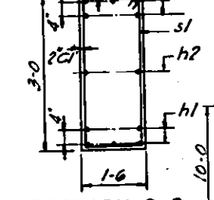


SECTION F-F

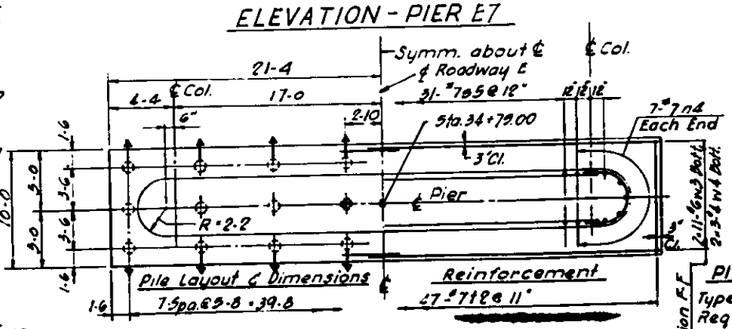




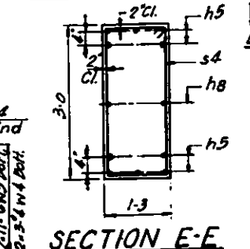
ELEVATION - PIER E6



SECTION B-B



FOOTING PLAN - PIER E7



SECTION E-E

▲-Indicates Battered Piles
●-Indicates Test Pile

FOOTING PLAN - PIER E6

PILE DATA

Type: Concrete
Req'd. Capacity: 24 Tons
Est. Length: 29-0
No. Req'd: 23*
Test Pile 1
* Does not include Test Pile.

See Section C-C

PILE DATA

Type: Concrete
Req'd. Capacity: 34 Tons
Est. Length: 44-0
No. Req'd.: 23*
Test Pile: 1
* Does not include Test Pile

See Section F-F

DESIGNED BY E.W.
DRAWN BY H.
CHECKED BY E.L.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

PIERS E6 AND E7

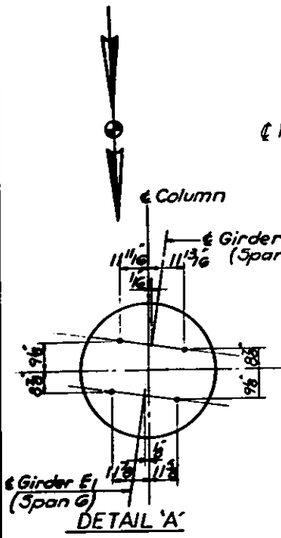
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

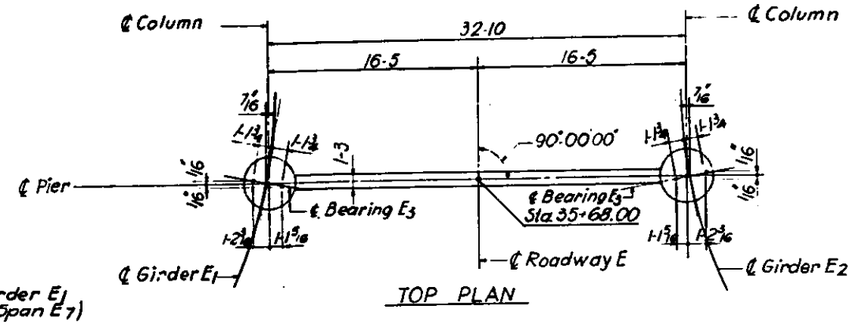
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET NO. 145 OF 147

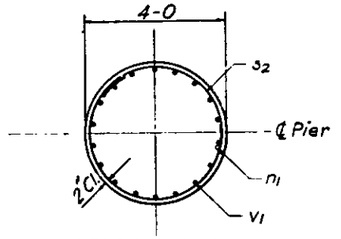
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.—70	82-3HVB-2	ST. CLAIR	252	183
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		



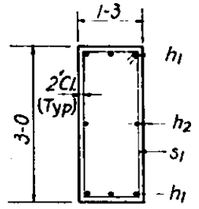
DETAIL 'A'



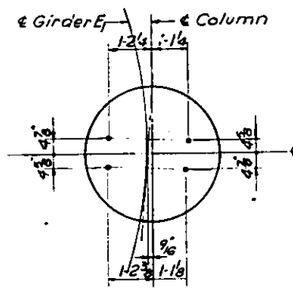
TOP PLAN



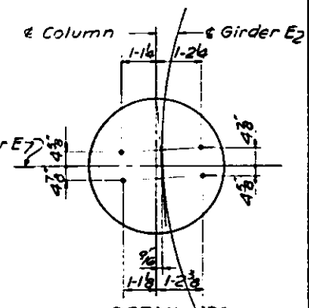
SECTION A-A



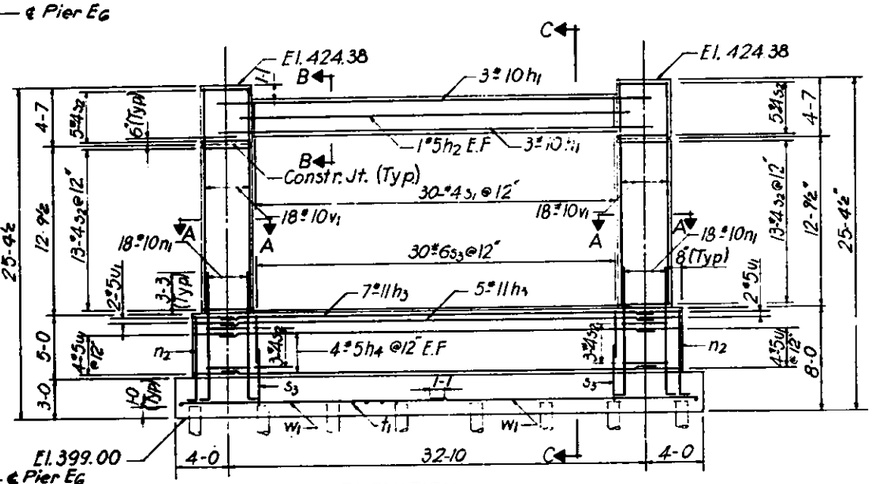
SECTION B-B



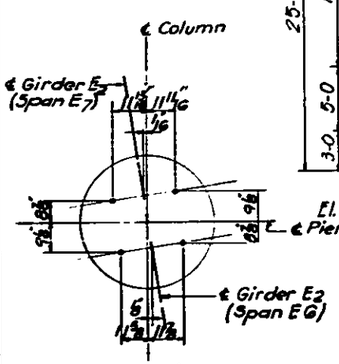
DETAIL 'C'



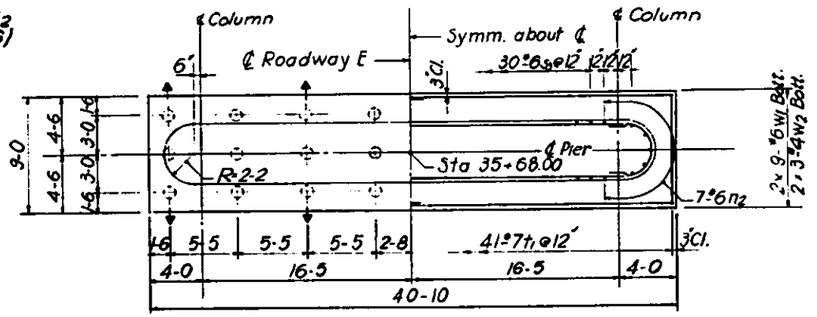
DETAIL 'D'



ELEVATION



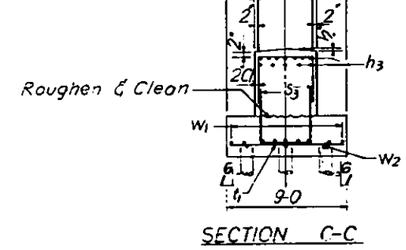
DETAIL 'B'



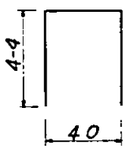
FOOTING PLAN

Pile layout & Dimensions

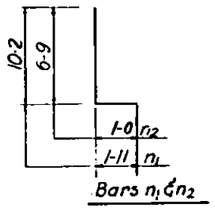
Reinforcement



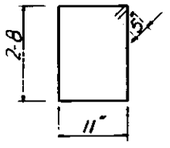
SECTION C-C



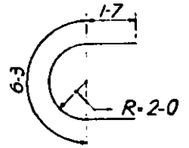
Bar s3



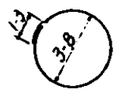
Bars n1 & n2



Bar s1



Bar u1



Bar s2

PILE DATA

Type:	Concrete
Required Capacity:	28 Tons
Est. Length:	33-0
No. Required:	23 *
Test pile:	1

* Does not include test pile.

⊘ Indicates test pile

⊙ Indicates battered pile

DESIGNED BY E.W.
DRAWN BY E.C.
CHECKED BY E.L.

BILL OF MATERIAL

* Mark	No. reqd.	Size	Length	Shape
117 h1	6	#10	35-0	
117 h2	2	#5	31-4	
117 h3	12	#11	33-10	
117 h4	8	#5	33-10	
117 n1	36	#10	12-1	
117 n2	14	#6	7-9	
117 s1	30	#4	8-0	
117 s2	42	#4	12-9	
117 s3	60	#6	12-8	
117 t1	41	#7	8-8	
117 w1	18	#6	21-3	
117 w2	6	#4	20-10	
117 u1	12	#5	9-5	
117 v1	36	#10	17-2	

* See Note 'X' Sheet No. 14

Item	Unit	Total
Class 'X' Concrete	C.Y.	90.2
Reinforcement Bars	Lbs.	11,260
Concrete Piles	L.F.	759
Test Pile	Ea.	1

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

PIER E8

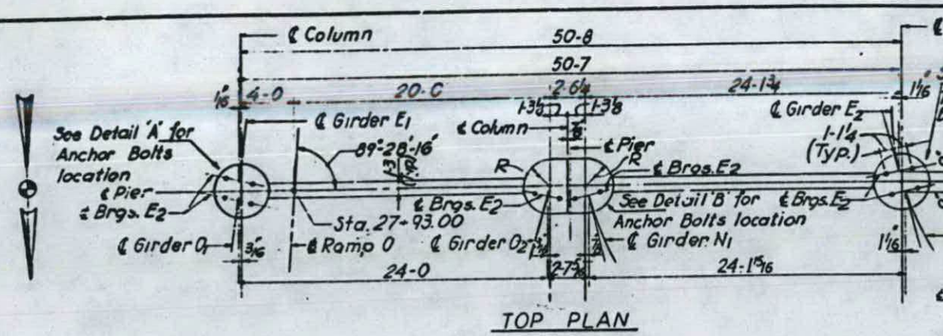
POPLAR STREET BRIDGE APPROACHES
ROADWAY "E"

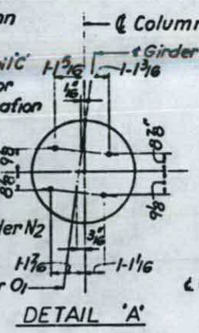
F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

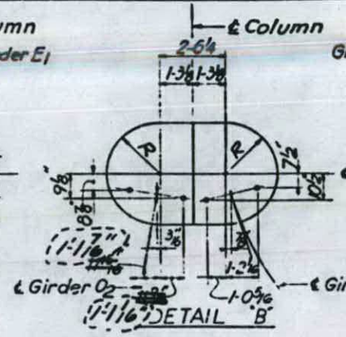
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

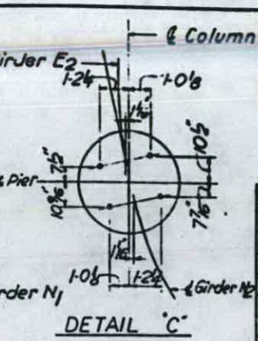
SHEET 117 OF 147

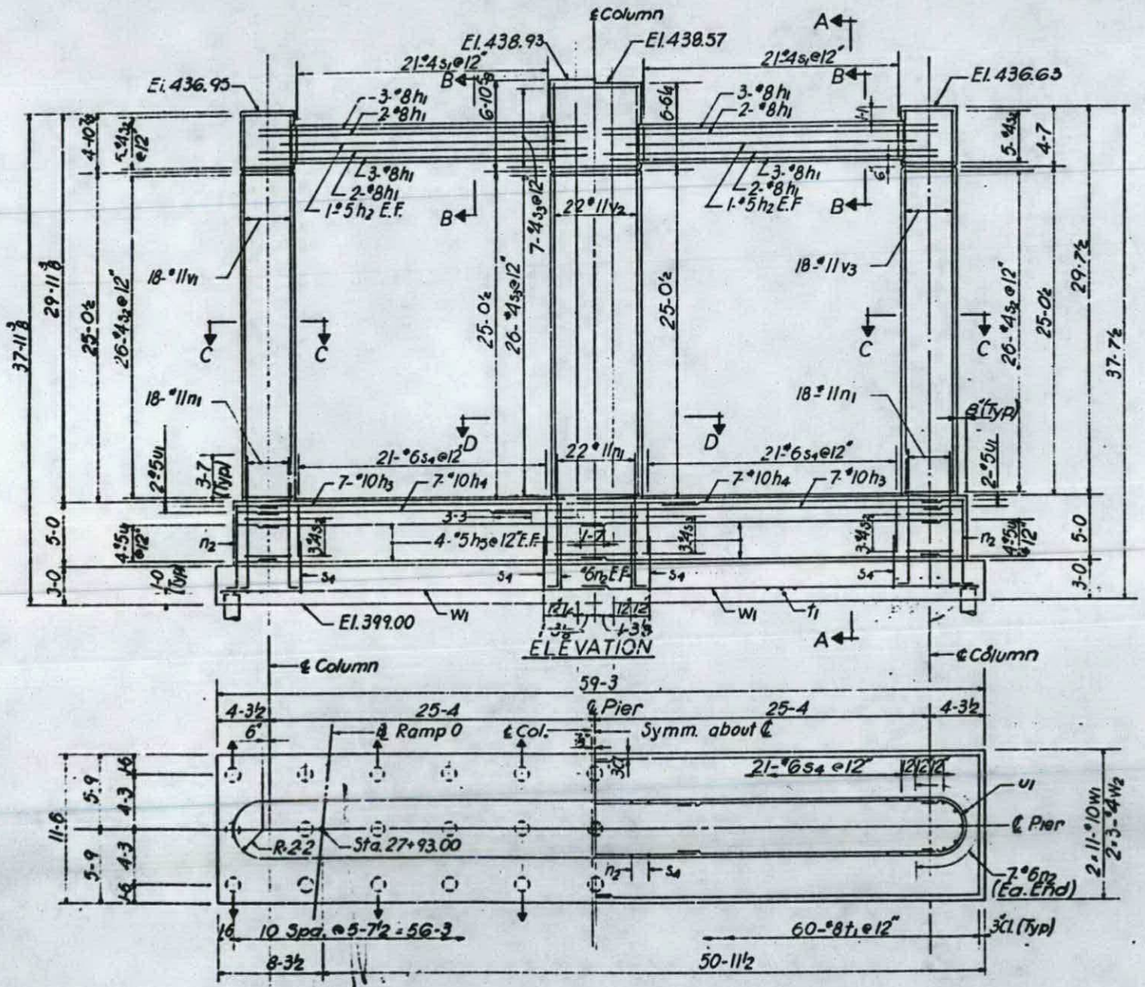
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I – 70	82-3HVB-2	ST. CLAIR	252	198A
FED. ROAD DIV. NO. 6	ILLINOIS	PROJECT		

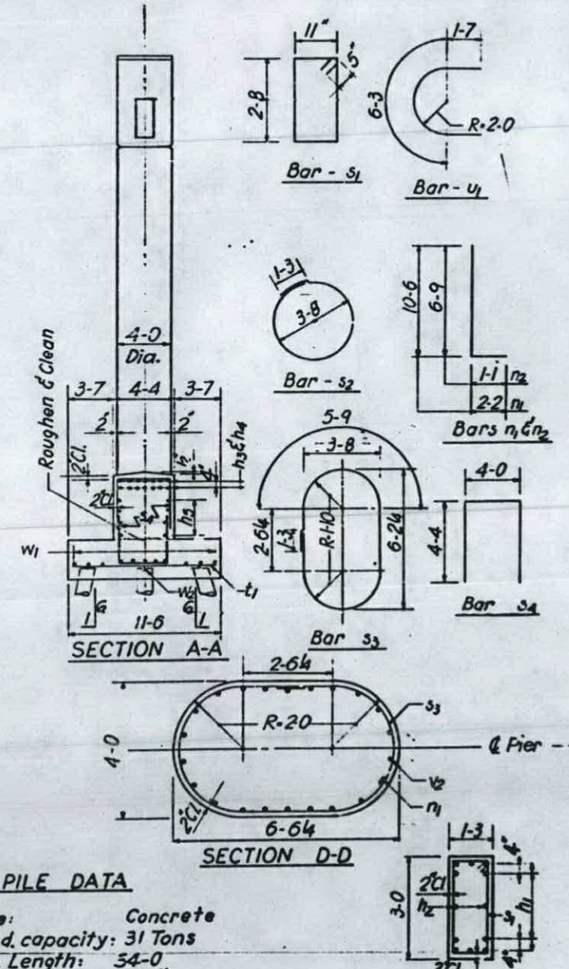












BILL OF MATERIAL

*Mark	No. Reqd	Size	Length	Shape
129h1	20	#8	26-4	
129h2	4	#5	22-6	
129h3	14	#10	33-4	
129h4	14	#10	21-7	
129h5	16	#5	26-8	
129n1	58	#11	12-8	H for U
129n2	18	#6	7-10	
129s1	42	#4	8-0	
129s2	68	#4	12-9	
129s3	36	#4	17-10	
129s4	84	#6	12-8	
129v1	18	#11	29-9	
129v2	22	#11	31-5	
129v3	18	#11	29-6	
129t1	60	#8	11-2	
129u1	12	#5	9-5	U
129w1	22	#10	31-0	
129w2	6	#4	30-0	

*See Note 'X' Sh. No. 14

Item	Unit	Total
Class 'X' Concrete	C.Y.	178.9
Reinforcement Bars	Lbs.	26,500
Concrete Piles	L.F.	1088
Test Pile	Ea.	1

PILE DATA

Type: Concrete
Reqd. capacity: 31 Tons
Est. Length: 54-0
No. Reqd.: 32 *
Test Pile 1

*Does not include test pile

DESIGNED BY F.W.
DRAWN BY E.C.
CHECKED BY E.L.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

PIER 017.

POPLAR STREET BRIDGE APPROACHES
RAMP "O"

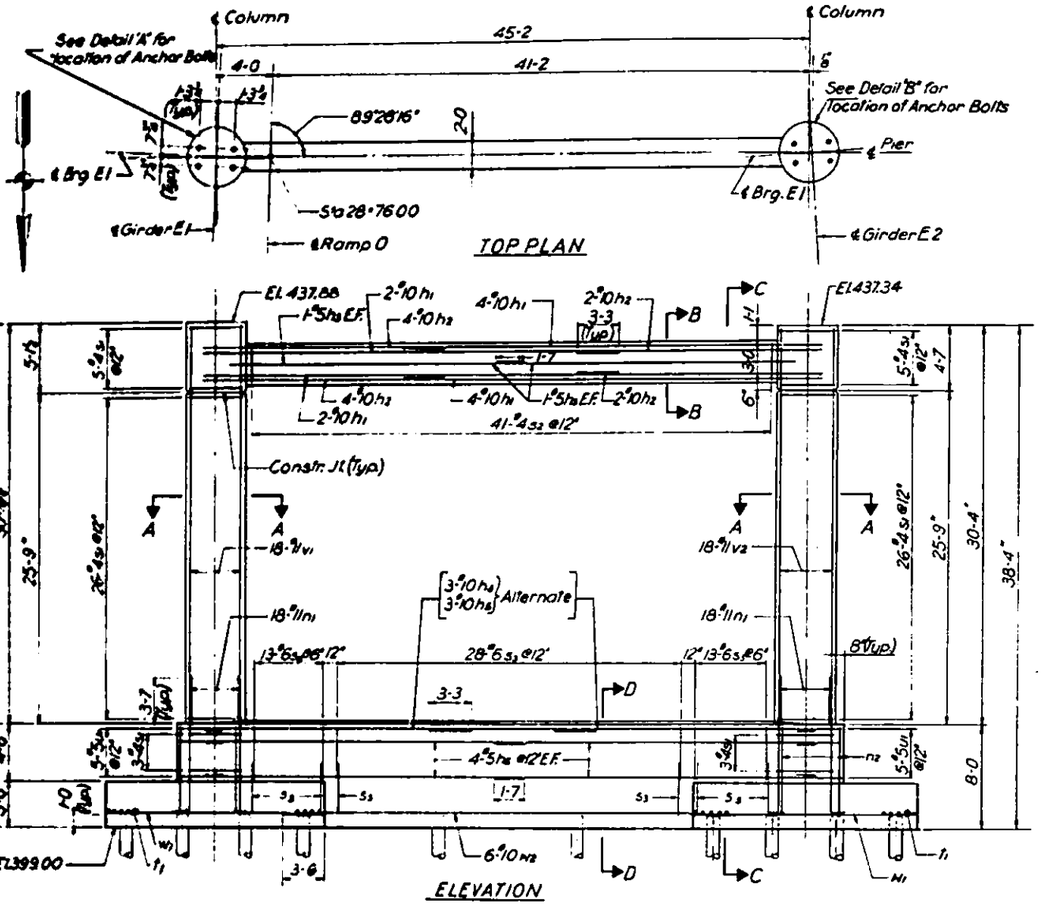
F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

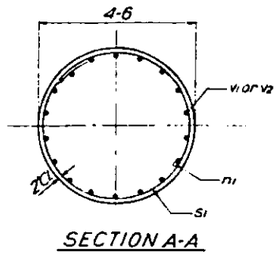
H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

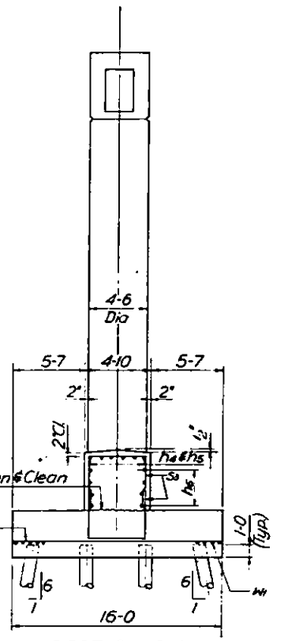
SHEET 129 OF 147

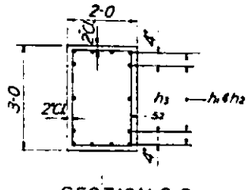
Revised 12-11-70 J.M.S.

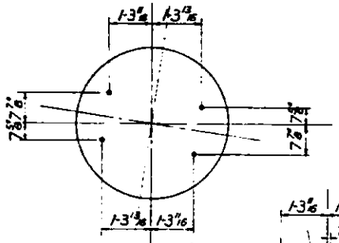
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F A I—70	82-3HVB-2	ST. CLAIR	252	195
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT		

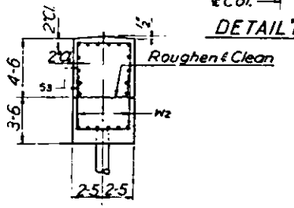


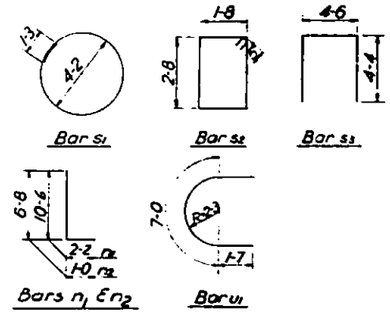












BILL OF MATERIAL

Mark	No. Req'd	Size	Length	Shape
130 h_1	12	#10	32-0	—
130 h_2	12	#10	18-9	—
130 h_3	4	#5	22-8	—
130 h_4	6	#10	31-0	—
130 h_5	6	#10	18-5	—
130 h_6	16	#5	23-11	—
130 n_1	36	#11	12-8	L L
130 n_2	22	#6	7-8	L L
130 s_1	68	#4	14-4	○
130 s_2	41	#4	9-6	□
130 s_3	108	#6	13-2	L L
130 t_1	58	#8	15-8	—
130 u_1	10	#5	10-2	U
130 v_1	18	#11	30-9	—
130 v_2	18	#11	30-2	—
130 w_1	64	#9	16-8	—
130 w_2	6	#10	35-2	—

*See Note 'X' Sheet No. 14

Item	Unit	Total
Class 'X' Concrete	C.Y.	137.3
Reinforcement Bars	Lbs.	23,010
Concrete Piles	L.F.	1551
Test Pile	Ea.	1

PILE DATA

Type: Concrete
Required Capacity: 37 Tons
Est. Length: 47-0
No. Required: 33*
Test Pile: 1

*Does not include test pile

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BLDGS.
DIVISION OF HIGHWAYS

PIER 018

POPLAR STREET BRIDGE APPROACHES
RAMP "O"

F.A.I. RT. 70 ST. CLAIR CO. SECTION 82-3HVB-2

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 130 OF 147