

FILE NAME = 8FILE08

LE LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME = Lin	DESIGNED -	REVISED -
PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE = 3/22/2017 12:28:03 PM	DRAWN -	REVISED -
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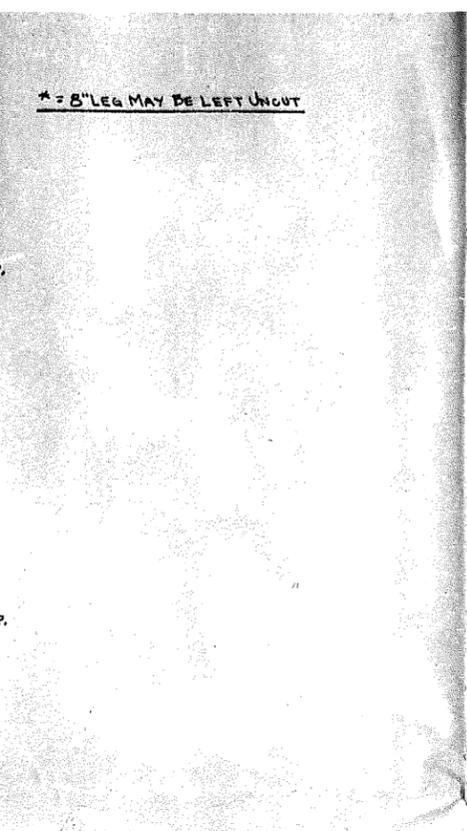
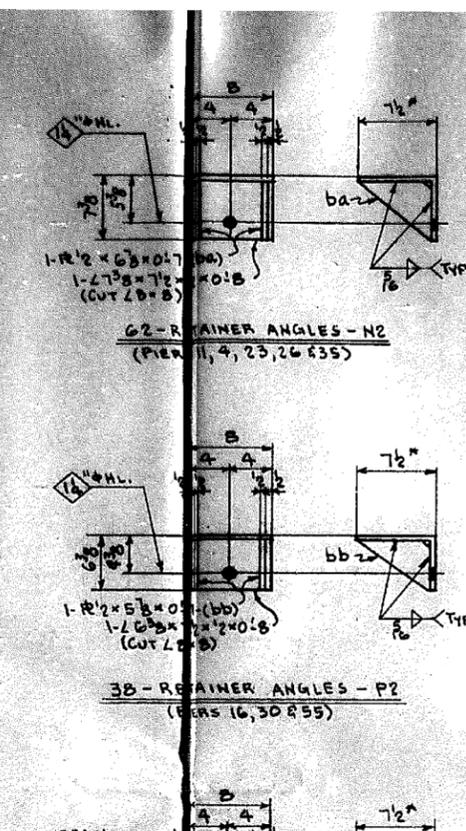
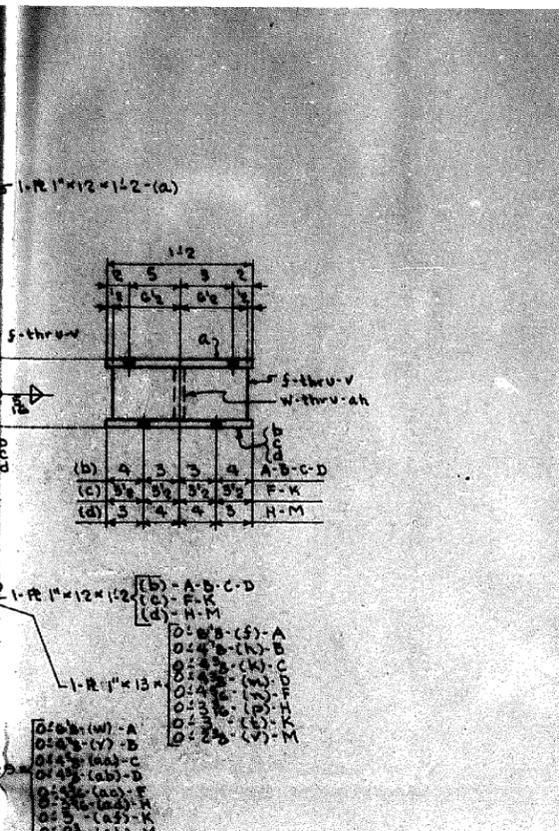
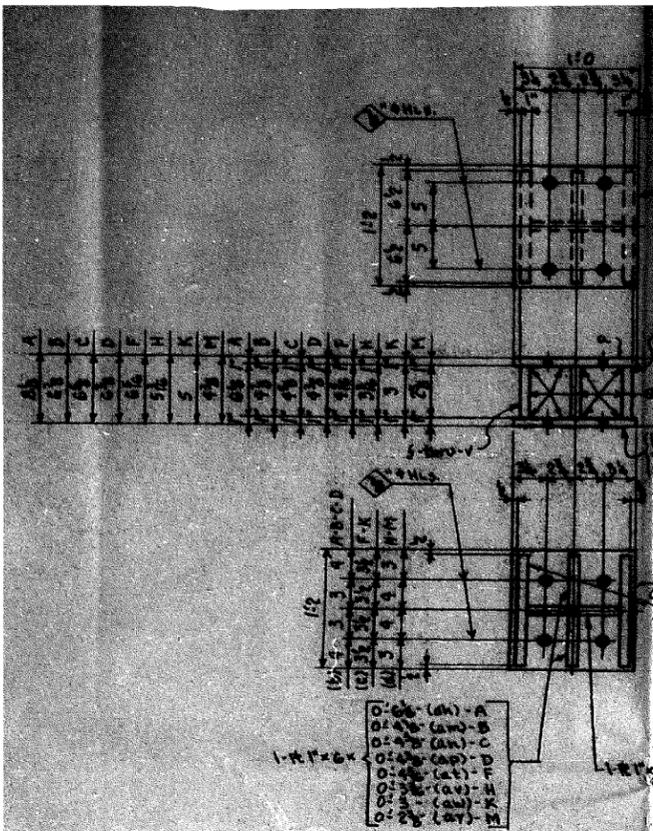
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

1994 BEARING REPLACEMENT PLAN - LOCATION 6
STRUCTURE NO. 016-2456

SHEET NO. SF-15 OF SF-42 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 102
				CONTRACT NO. 60W76

ILLINOIS FED. AID PROJECT



SHOP TO VERIFY ADEQUATE WELDS CAN BE MADE IN CORNERS OF PLATES FOR M2

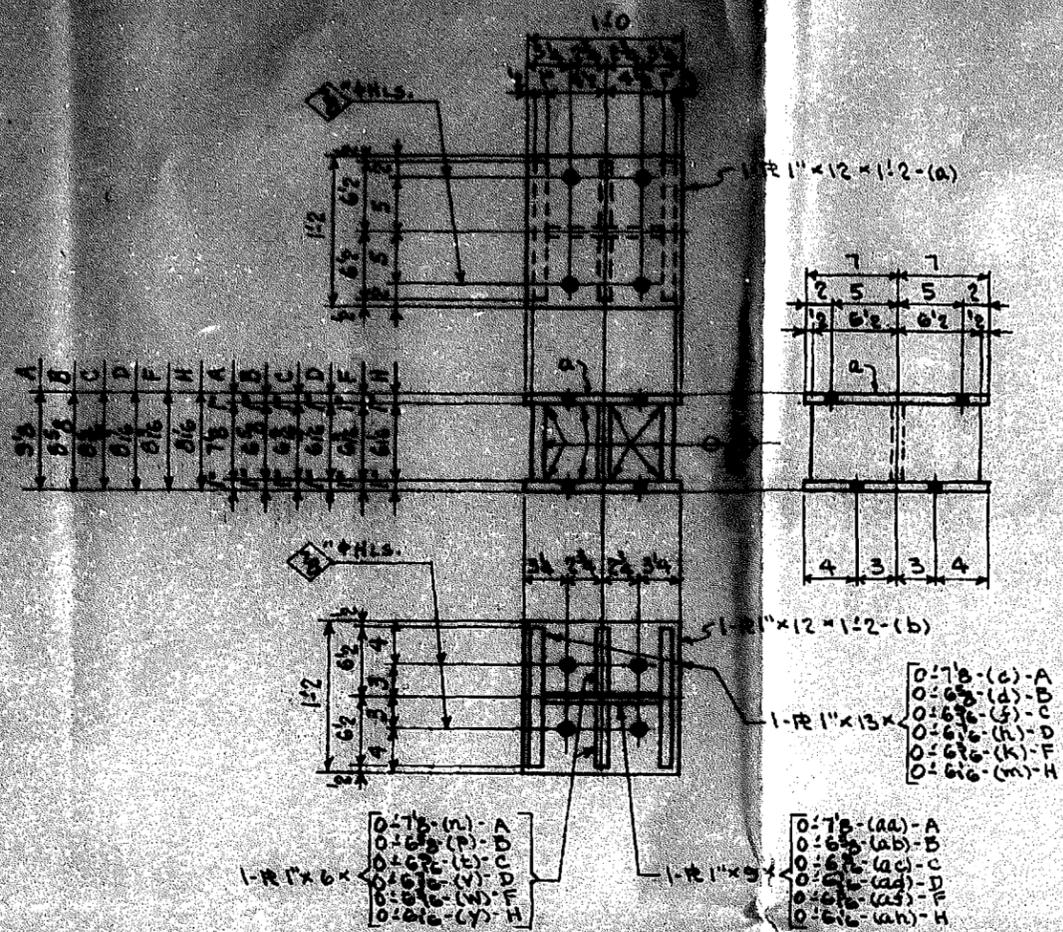
(TYPE II BRG.)

5-BEARING EXTENSIONS - A2 (PIER 26-N.BRG)			
1	DO	DO	- B2 (PIER 11-N.BRG)
6	DO	DO	- C2 (PIER 4-N.BRG)
5	DO	DO	- D2 (PIER 55-S.BRG)
8	DO	DO	- F2 (PIER 30-N.BRG)
7	DO	DO	- H2 (PIER 16-S.BRG)
5	DO	DO	- K2 (PIER 23-N.BRG)
4	DO	DO	- M2 (PIER 55-N.BRG)

BILL OF MATERIAL						
MARK NO.	PIECE NO.	NO. REQ'D.	DESCRIPTION	LENGTH FT. IN.	WEIGHT	REMARKS
A2	5	5	BEARING EXTENSION			
	a	5	R 1" x 12	1 2	238.01	
	b	5	R 1" x 12	1 2	238.01	
	f	10	R 1" x 6 1/2	1 1	225.8	
	w	5	R 1" x 6 1/2	0 9	78.09	
	ak	10	R 1" x 6 1/2	0 6	104.12	
B2	7	7	BEARING EXTENSION			
	a	7	R		333.21	
	b	7	R		333.21	
	h	14	R 1" x 4 1/2	1 1	281.42	
	y	7	R 1" x 4 1/2	0 9	87.03	
	am	14	R 1" x 4 1/2	0 6	116.04	
C2	6	6	BEARING EXTENSION			
	a	6	R		285.61	
	b	6	R		285.61	
	h	12	R 1" x 4 1/2	1 1	284.42	
	aa	6	R 1" x 4 1/2	0 9	78.76	
	an	12	R 1" x 4 1/2	0 6	94.35	
D2	8	8	BEARING EXTENSION			
	a	8	R		380.81	
	b	8	R		380.81	
	m	16	R 1" x 4 1/2	1 1	251.88	
	ab	8	R 1" x 4 1/2	0 9	87.28	
	ap	16	R 1" x 4 1/2	0 6	119.01	
F2	8	8	BEARING EXTENSION			
	a	8	R		380.81	
	c	8	R 1" x 12	1 2	380.81	
	l	16	R 1" x 4 1/2	1 1	254.17	
	ac	8	R 1" x 4 1/2	0 9	87.98	
	at	16	R 1" x 4 1/2	0 6	117.31	
H2	7	7	BEARING EXTENSION			
	a	7	R		333.21	
	d	7	R 1" x 12	1 2	333.21	
	p	14	R 1" x 3 1/2	1 1	164.35	
	ad	7	R 1" x 3 1/2	0 9	56.89	
	av	14	R 1" x 3 1/2	0 6	75.88	
K2	5	5	BEARING EXTENSION			
	a	5	R		238.01	
	c	5	R		238.01	
	t	10	R 1" x 3	1 1	110.5	
	af	5	R 1" x 3	0 9	38.25	
	aw	10	R 1" x 3	0 6	51.0	
M2	4	4	BEARING EXTENSION			
	a	4	R		192.41	
	d	4	R		192.41	
	v	8	R 1" x 2 1/2	1 1	89.98	
	ah	4	R 1" x 2 1/2	0 9	24.22	
	ay	8	R 1" x 2 1/2	0 6	32.3	
N2	62	62	RETAINER ANGLE			
	62	62	2 1/2 x 7 1/2 x 1/2	0 8	1521.71	CUT B x B L 6836
	ba	124	R 2 x 6 1/2	0 7	472.69	do
P2	38	38	RETAINER ANGLE			
	38	38	2 1/2 x 7 1/2 x 1/2	0 8	869.36	CUT B x B L 6836
	bb	72	R 2 x 5 1/2	0 7	221.4	do
T2	182	182	RETAINER ANGLE			
	182	182	2 1/2 x 7 1/2 x 1/2	0 8	4504.5	CUT B x B L 6836
	bc	364	R 2 x 7	0 7	1283.38	do

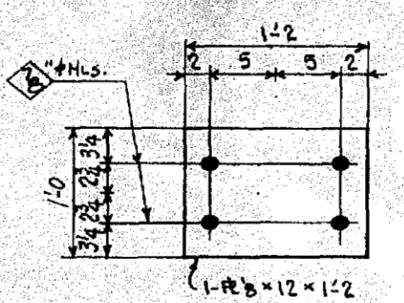
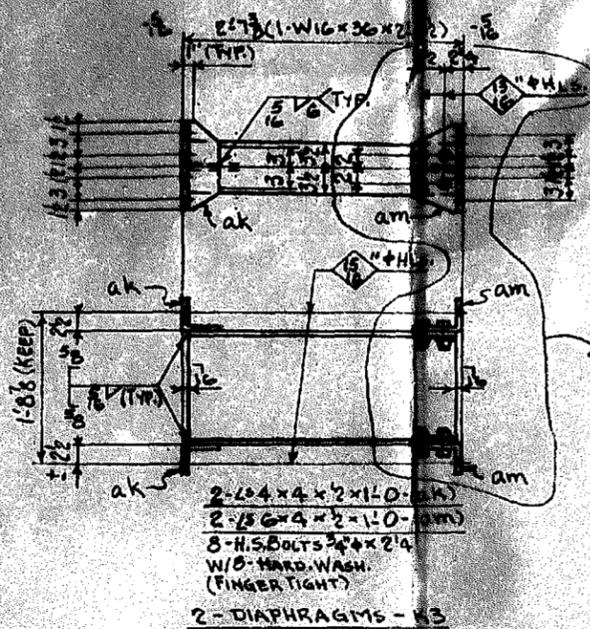
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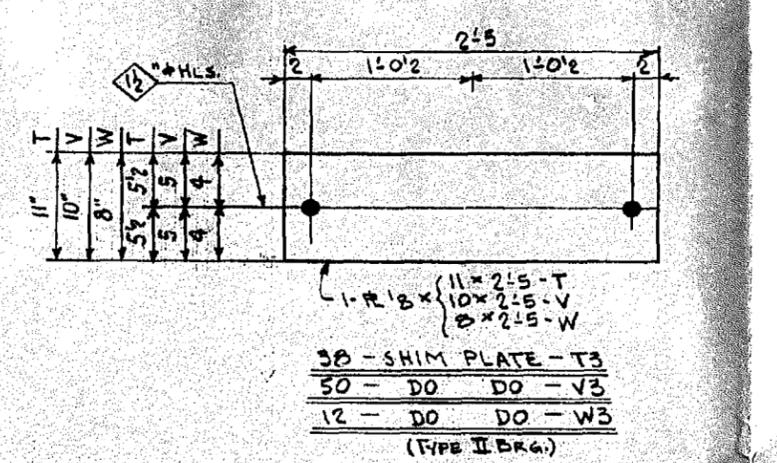
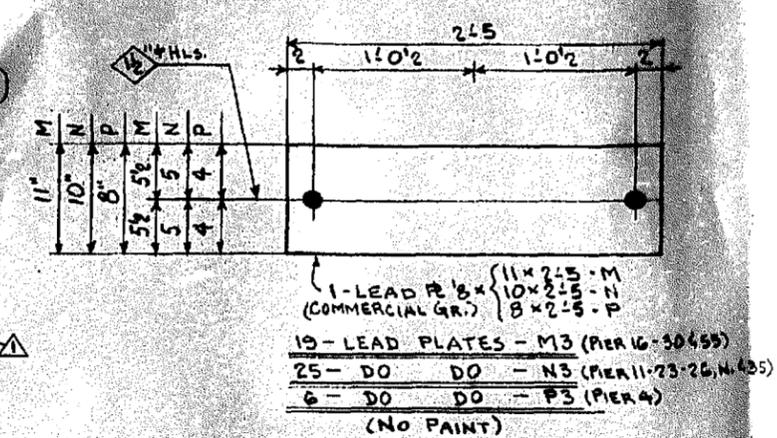


- 0-7/8 (M)-A
- 0-6/8 (P)-B
- 0-6/8 (L)-C
- 0-6/8 (V)-D
- 0-6/8 (W)-E
- 0-6/8 (Y)-H

20 - BEARING EXTENSIONS - A3 (PIER 29-N.4S.BRG.)	
5 - DO DO - B3 (PIER 60-S.BRG.)	
23 - DO DO - C3 (PIER 7-N.BRG./PIER 40-N.4S.BRG.)	
27 - DO DO - D3 (PIER 9-N.4S.BRG./PIER 10-N.BRG.)	
5 - DO DO - F3 (PIER 26-S.BRG.)	
11 - DO DO - H3 (PIER 7-S.BRG.)	
(TYPE I BRG.)	



182 - SHIM PLATES - Y3 (TYPE I BRG.)	
100 - ANCHOR BOLTS - AA3 (TYPE II BRG.)	
182 - DO DO - AB3 (TYPE I BRG.) (GALV. PER AASHTO-M252)	



50 - DO DO - V3	
12 - DO DO - W3 (TYPE II BRG.)	
282 - PLATE WASHERS - AC3 (GALV. PER AASHTO-M252)	

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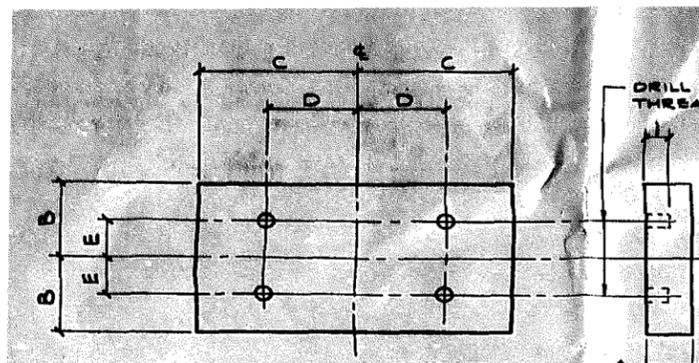
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

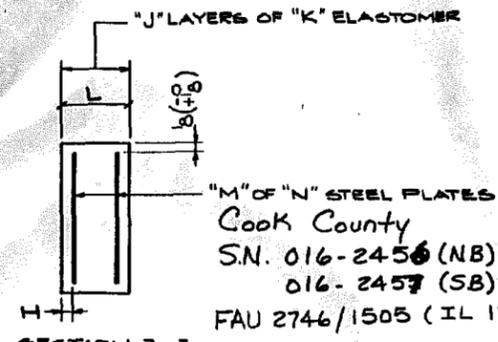
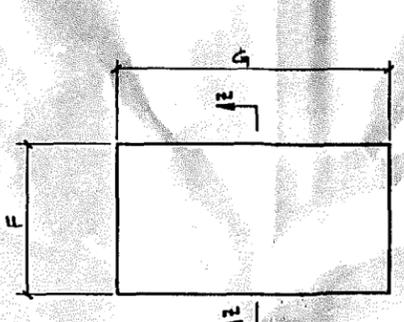
1994 BEARING REPLACEMENT DETAILS - LOCATION 6
STRUCTURE NO. 016-2456
SHEET NO. SF-17 OF SF-42 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 104
CONTRACT NO. 60W76				

ILLINOIS FED. AID PROJECT



DRILL AND TAP FOR 3/4-10 UNC THREAD (TYP 4 PLACES)



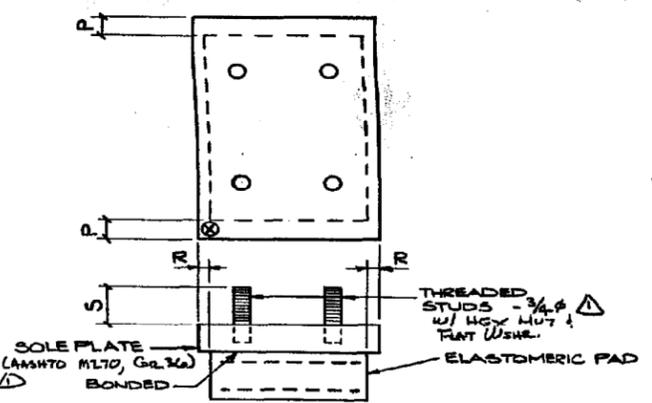
SOLE PLATES (AASHTO M270 Gr. 36)

MARK	QTY.	PL. SIZE	A	B	C	D	E
PM	23	1 1/2 x 10 x 1/2	1 1/2	5	7	2 1/2	3
PN	11	2 x 10 x 1/2	2	5	7	2 1/2	3
PP	52	2 x 10 x 1/2	2	5	7	2 1/2	3
PT	5	1 1/2 x 10 x 1/2	1 1/2	5	7	2 1/2	3

ELASTOMERIC PADS

MARK	QTY.	PAD SIZE	F	G	H	J	K	L	M	N
md	71	3 1/2 x 9 x 1/0	9	11-0	3 1/2	7	3 1/2	5 1/2	6	3 1/2
mk	20	2 1/4 x 9 x 1/0	9	11-0	3 1/2	5	3 1/2	2 1/4	4	3 1/2

FOR ASSEMBLY ONLY



BEARING ASSEMBLY

SHIPPING MARK	LOCATION	QTY.	STUD MARK	SOLE PL. MARK	PAD MARK	P	R	S
5A	PIERS 40A, 40B (016-2457)	23	5G	PM	md	1	1/2	2 1/2
5B	PIER 4A (016-2457)	11	5G	PN	md	1	1/2	2 1/2
5C	PIERS 4A, 4B (016-2457)	27	5G	PP	md	1	1/2	2 1/2
5D	PIERS 28A, 28B (016-2456)	20	5G	PP	mk	1	1/2	2 1/2
5F	PIER 60A (016-2456)	5	5G	PT	md	1	1/2	2 1/2
5G	PIER 20A (016-2456)	5	5G	PP	md	1	1/2	2 1/2

GENERAL NOTES:

- MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH ILLINOIS DOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED JULY 1, 1994 AND THE SPECIAL PROVISIONS.
- BEARINGS SHALL BE MANUFACTURED PER STANDARD SPECIFICATION 783.
- STEEL SHALL CONFORM TO AASHTO-M270, GRADE 36 (ASTM-A36) UNLESS NOTED OTHERWISE. STEEL DESIGNATED TO BE A572 SHALL CONFORM TO AASHTO-M270, GRADE 50 (ASTM-A572, GR. 50).
- STAINLESS STEEL SHALL CONFORM TO ASTM-A240, TYPE 304 WITH 2B FINISH ON ONE SIDE.
- TPE MATERIAL SHALL BE 100% VIRGIN MATERIAL PREMIUM GRADE CONFORMING TO ASTM-D1457. THE TPE SHEET (POLYTETRAFLUOROETHYLENE SHEET, PREMIUM GRADE) SHALL CONSIST OF PURE TPE RESIN, COMPRESSION MOLDED, AND SKIVED INTO SHEETS OF THE REQUIRED THICKNESSES. THE FINISHED SHEET SHALL CONFORM TO THE FOLLOWING PHYSICAL PROPERTIES:

TENSILE STRENGTH, MIN.	- ASTM-D638	- 2800 PSI
ELONGATION, MIN.	- ASTM-D638	- 200%
SPECIFIC GRAVITY	- ASTM-D792	- 2.15 - 2.20
HARDNESS, DURENOMETER D	- ASTM-D2240	- 50 - 65
DEFORMATION UNDER LOAD	- ASTM-D621	-
73 DEG F/100 PSI/24 HRS	-	- 2 - 3
122 DEG F/1200 PSI/24 HRS	-	- 4 - 8
73 DEG F/2000 PSI/24 HRS	-	- 15 MAX.
WATER ABSORPTION, STATIC	- ASTM-D570	- 0.07% MAX.
COEF. OF FRICTION AT 500 PSI BEARING PRESSURE ON STAINLESS STEEL	-	-
ADHESION TO STEEL, PEEL STRENGTH	- ASTM-492, B	- 25 LBS/IN
- ELASTOMERIC MATERIAL SHALL BE EITHER 100% VIRGIN POLYISOPRENE (NATURAL RUBBER) PER TABLE A OF STANDARD SPECIFICATION 783.02 OR 100% VIRGIN POLYCHLOROPRENE RUBBER PER TABLE B OF STANDARD SPECIFICATION 783.02. THE PROPERTIES OF THE ELASTOMERIC COMPOUNDS SHALL BE DETERMINED FROM TEST SPECIMENS CONFORMING TO ASTM-D3183. A VARIATION OF +/- 20% IN TENSILE STRENGTH AND ULTIMATE ELONGATION UNDER "PHYSICAL PROPERTIES" WILL BE PERMITTED WHEN TEST SPECIMENS ARE CUT FROM THE FINISHED PRODUCT.
- THREADED STUD SHALL CONFORM TO AASHTO/M164 (ASTM-A325) OR BE MADE FROM MATERIAL WITH SIMILAR PHYSICAL PROPERTIES.
- RESTRICTOR FIN SHALL BE MADE FROM 4340 ALLOY STEEL QUENCHED AND TEMPERED TO A MINIMUM YIELD STRENGTH OF 210,000 PSI (OR RC HARDNESS OF 50 - 55).
- FABRICATION TOLERANCES: (ELASTOMERIC PADS)

OVERALL VERTICAL DIMENSION:	
AVERAGE TOTAL RUBBER THICKNESS 1-1/4" OR LESS:	-0, +1/8"
AVERAGE TOTAL THICKNESS OVER 1-1/4":	-0, +1/4"
OVERALL HORIZONTAL RUBBER DIMENSION:	
DIMENSIONS OF 36" OR LESS:	-0, +1/8"
DIMENSIONS OVER 36":	-0, +3/16"
THICKNESS OF INDIVIDUAL LAYERS OF ELASTOMER: (55 DUROMETER ONLY)	+20%
VARIATION FROM PLANE PARALLEL TO THEORETICAL SURFACE:	1/16"/FT TOP 1/4"/FT SIDE
POSITION OF EXPOSED CONNECTION MEMBERS:	+/- 1/8"
EDGE COVER OF EMBEDDED METALLIC LAMINATE:	1/8" MIN. 1/4" MAX.
EDGE COVER OF EMBEDDED METALLIC LAMINATE AT LAMINATE RESTRAINING DEVICES AND AROUND HOLES AND SLOTS:	+/- 1/16"
LOCATION OF HOLES OR SLOTS:	+/- 1/8"
- TESTING AND ACCEPTANCE SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION 783.07.
- TOP AND BOTTOM SURFACE OF BEARING PLATES SHALL BE PLANED OR HOT STRAIGHTENED TO ASSURE FULL CONTACT. SURFACE FINISHES OF BEARING AND BASE PLATES TO BE IN CONTACT WITH EACH OTHER OR CONCRETE SHALL MEET ANSI SURFACE ROUGHNESS AS LISTED BELOW:

STEEL SLABS	- ANSI 2,000
HEAVY PLATES IN CONTACT IN SHOTS TO BE WELDED	- ANSI 1,000
MILLED ENDS OF COMPRESSION MEMBERS, MILLED OR GROUND ENDS OF STIFFENERS AND FILLERS	- ANSI 500
BRIDGE ROLLERS AND ROCKERS	- ANSI 250
FIN BOLTS	- ANSI 125
SLIDING BEARINGS	- ANSI 125
- AFTER FABRICATION ALL STEEL SHALL BE CLEANED PER STANDARD SPECIFICATION 506.03 (BLASTED PER SSPC-SP10 FOR NEAR WHITE BLAST CLEANING). BLAST PROFILE 1.0 - 2.5 MILS. PROTECT STAINLESS STEEL, TPE AND ELASTOMERIC PADS DURING BLASTING. PRIMER MUST BE APPLIED WITHIN 24 HOURS OF BLAST CLEANING.
- AFTER BLASTING ALL EXPOSED SURFACES OF STEEL SHALL BE PAINTED PER STANDARD SPECIFICATION 506.04 WITH A PRIME COAT OF INORGANIC ZINC SILICATE PRIMER (JORDON IS-B-04) ZINC SILICATE PRIMER. AVERAGE DFT 3.0 MIL MINIMUM AND 6.0 MIL MAXIMUM. PAINT SHALL BE IN ACCORDANCE WITH SPECIAL PROVISIONS. NO PAINT ON THREADED STUDS OR HARDWARE. THESE ITEMS SHALL BE PAINTED IN FIELD BY OTHERS AFTER INSTALLATION.

APPROVED
For Main Dimensions and Materials Only
APR 18 1994
Ralph E. Anderson
Engineer of Bridge & Structures

LINE NO.	DESCRIPTION	LENGTH	MK	REMARKS	WOHT.
23	BEARING ASSEMBLY - 5A	5A	P		
11	BEARING ASSEMBLY - 5B	5B	P		
52	BEARING ASSEMBLY - 5C	5C	P		
20	BEARING ASSEMBLY - 5D	5D	P		
5	BEARING ASSEMBLY - 5F	5F	P		
5G	BEARING ASSEMBLY - 5G	5G	P		
360	FIELD BOLTS				
360	360 RB 3/4 CONT. THD. RODS A550-3/2	5G	B		360
360	360 MN 3/4 HVY. A563DH	5H	B		360
360	360 FW 5/8 F436	5K	B		360
80	APPROVAL CHANGES				
REV.	DESCRIPTION				DATE INT.

FILE NAME = #FILES08

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Consulting Engineers
Springfield, Illinois

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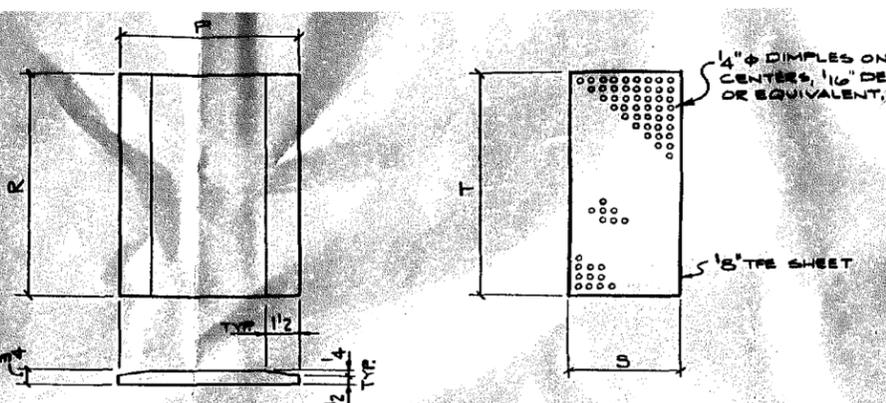
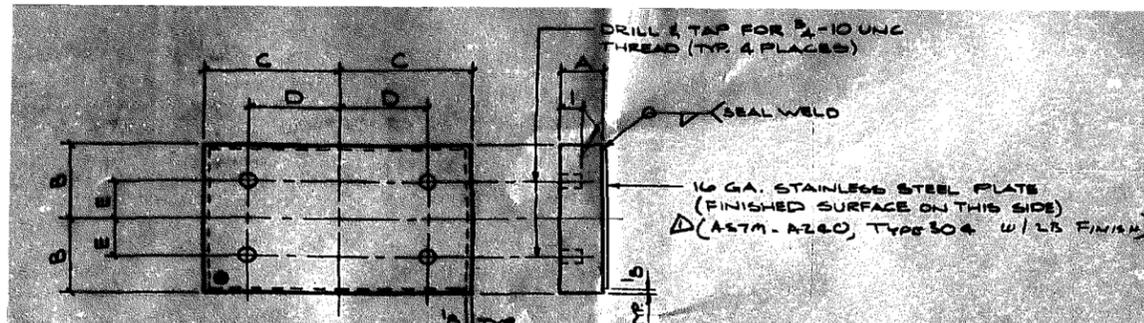
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

1994 BEARING REPLACEMENT DETAILS - LOCATION 6
STRUCTURE NO. 016-2456

SHEET NO. SF-18 OF SF-42 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 105
CONTRACT NO. 60W76				ILLINOIS FED. AID PROJECT



TOP BEARING ASSEMBLY

MARK	QTY.	R. SIZE	MARK	A	B	C	D	E	R. MARK	STAINLESS STEEL PLATE SIZE
GA	7	2x10x1/2	FP	2	5	7	2 1/2	3	fb	16GA x 7 1/2 x 1 1/2
GB	7	2x12x1/4	POB	2	6	8	2 1/2	4	fc	16GA x 11 1/2 x 1 1/2
GC	6	1 1/2 x 10 x 1/2	PM	1 1/2	5	7	2 1/2	3	fb	16GA x 9 1/2 x 1 1/2
GD	4	2 1/4 x 12 x 1/4	POB	2 1/4	6	8	2 1/4	4	fc	16GA x 11 1/2 x 1 1/2

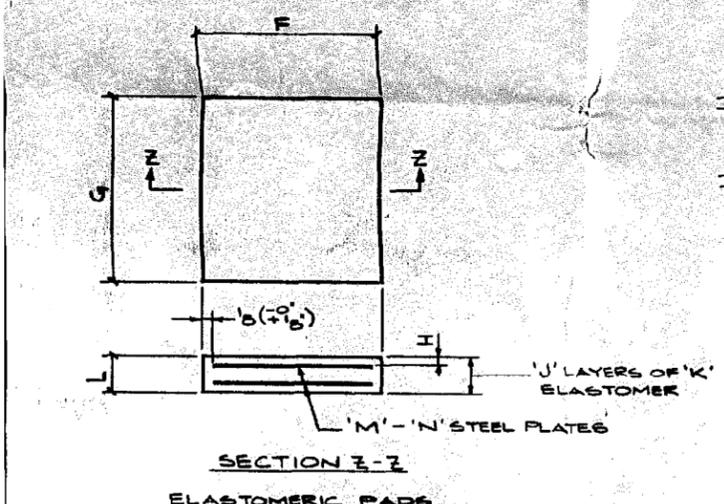
BEVELED PLATE (AASHTO M170, GR. 36) Δ

MARK	QTY.	P	R
fb	7	9	1-0
fc	11	10	1-2
fd	6	7	1-0

TFE SHEET

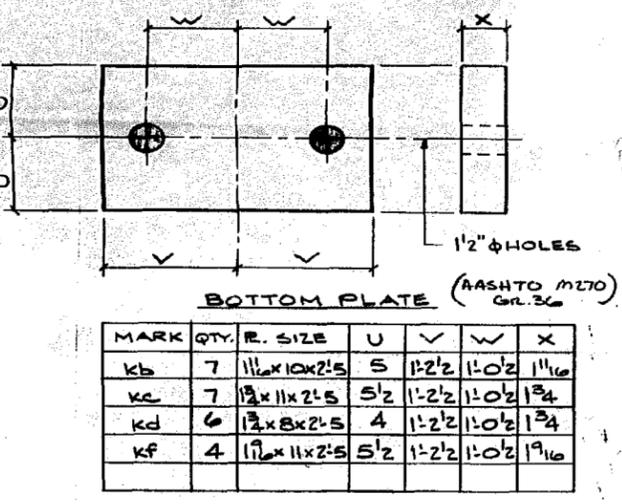
MARK	QTY.	S	T
hb	7	6	1-0
hc	11	7	1-2
hd	6	4	1-0

LINE NO.	DESCRIPTION	LENGTH	MK	REMARKS	WQHT.
1	7 TOP BEARING ASSEMBLY - GA		P		
2	7 PL 2x10	1-2	FP		
3	7 PL 16GA. 2x12x1/4	1-1 1/4	POB	SEE NOTE 4	
4					
5	7 TOP BEARING ASSEMBLY - GB		P		
6	7 PL 2x12	1-2	POB		
7	7 PL 16GA. 2x12x1/4	1-3 1/4	POB	SEE NOTE 4	
8					
9	6 TOP BEARING ASSEMBLY - GC		P		
10	6 PL 1 1/2 x 10	1-2	PM		
11	6 PL 16GA. 1 1/2 x 10 x 1/2	1-1 1/2	POB	SEE NOTE 4	
12					
13	4 TOP BEARING ASSEMBLY - GD		P		
14	4 PL 2 1/4 x 12	1-4	POB		
15	4 PL 16GA. 2 1/4 x 12 x 1/4	1-3 1/4	POB	SEE NOTE 4	
16					
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26					
27	7 BOTTOM BEARING ASSEMBLY - GF		P		
28	7 PL 3 1/2 x 9	1-0	fb		
29	7 PL 1 1/2 x 10	2-5	kb		
30	7 LP 3 1/2 x 9	1-0	md		
31	7 MI 1 1/2 x 6	TFE	hb	SEE NOTE 5	
32					
33					
34	7 BOTTOM BEARING ASSEMBLY - GG		P		
35	7 PL 3 1/2 x 10	1-2	fc		
36	7 PL 1 1/2 x 11	2-5	kc		
37	7 LP 3 1/2 x 10	1-2	mn		
38	7 MI 1 1/2 x 7	TFE	hc	SEE NOTE 5	
39					
40	6 BOTTOM BEARING ASSEMBLY - GH		P		
41	6 PL 3 1/2 x 7	1-0	fd		
42	6 PL 1 1/2 x 8	2-5	kd		
43	6 LP 3 1/2 x 7	1-0	mf		
44	6 MI 1 1/2 x 4	TFE	hd	SEE NOTE 5	
45					
46					
47	4 BOTTOM BEARING ASSEMBLY - GK		P		
48	4 PL 3 1/2 x 10	1-2	fc		
49	4 PL 1 1/2 x 11	2-5	kp		
50	4 LP 3 1/2 x 10	1-2	mn		
51	4 MI 1 1/2 x 7	TFE	hc	SEE NOTE 5	
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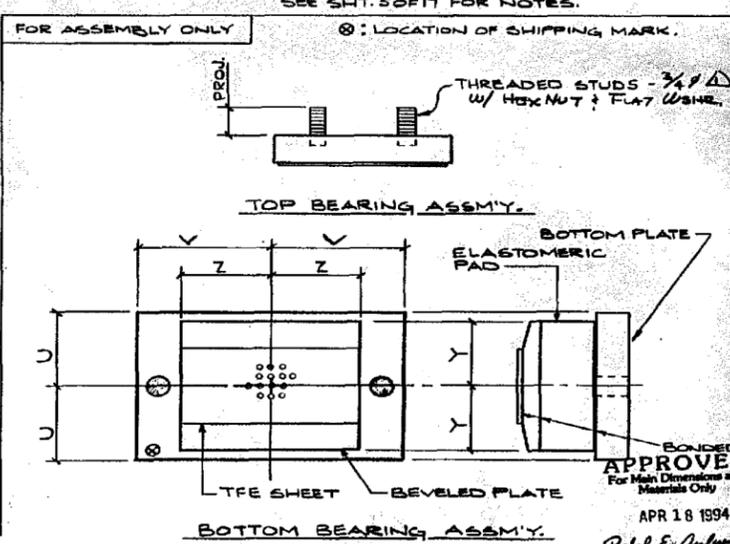
ELASTOMERIC PADS

MARK	QTY.	PAD SIZE	F	G	H	J	K	L	M	N
md	7	3 1/2 x 9 x 1-0	9	1-0	3 1/2	7	3 1/2	3 1/2	6	3 3/2
mn	11	3 1/2 x 10 x 1-2	10	1-2	7 1/6	7	7 1/6	3 1/2	6	1 1/2
mp	6	2 1/4 x 7 x 1-0	7	1-0	3 1/2	5	3 1/2	2 1/4	4	3 3/2

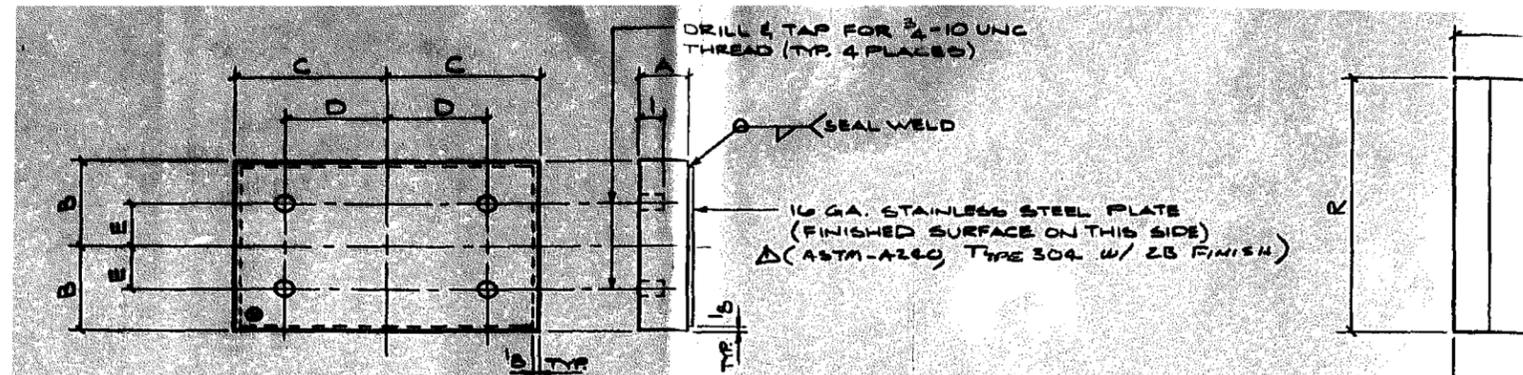


BOTTOM PLATE (AASHTO M170, GR. 36)

MARK	QTY.	R. SIZE	U	V	W	X
kb	7	1 1/2 x 10 x 2 1/2	5	1-2 1/2	1-0 1/2	1 1/16
kc	7	1 1/2 x 11 x 2 1/2	5 1/2	1-2 1/2	1-0 1/2	1 3/4
kd	6	1 1/2 x 8 x 2 1/2	4	1-2 1/2	1-0 1/2	1 3/4
kf	4	1 1/2 x 11 x 2 1/2	5 1/2	1-2 1/2	1-0 1/2	1 9/16



STRUCTURE	LOCATION	TOP BEARING ASSEMBLY MARK	QTY.	THED. STUD PROJ.	BOTTOM BEARING ASSEMBLY MARK	QTY.	TFE SHEET MARK	BEVELED PLATE MARK	ELAST. PAD MARK	BOTTOM PLATE MARK	U	V	Y	Z	
016-2457 SB	PIER 115	GA	7	GM	2 1/2	GF	7	hb	fb	md	kb	5	1-2 1/2	4 1/2	6
016-2457 SB	PIER 16A	GB	7	GM	2 1/2	GG	7	hc	fc	mn	kc	5 1/2	1-2 1/2	5	7
016-2457 SB	PIER 4B	GC	6	GM	2 1/2	GH	6	hd	fd	mf	kd	4	1-2 1/2	3 1/2	6
016-2456 NB	PIER 55B RAMP	GD	4	GM	2 1/2	GK	4	hc	fc	mn	kp	5 1/2	1-2 1/2	5	7



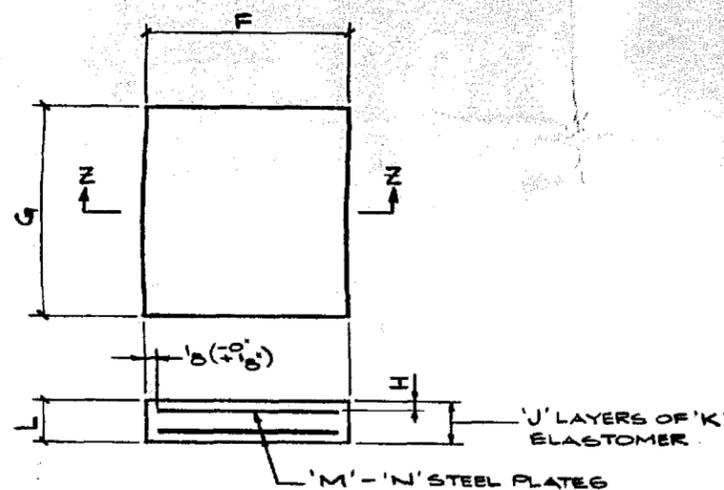
TOP BEARING ASSEMBLY

SHIPPING MARK	QTY.	P. SIZE	R. MARK	A	B	C	D	E	S.S.P. MARK	STAINLESS STEEL PLATE SIZE
7A	5	2'8" x 11' x 1-1/2"	pad	2'8"	5'2"	7'	2'2"	3'2"	dd	1/8 GA. x 10'2" x 1-1/2"
7B	5	2'8" x 10' x 1-1/2"	pn	2'8"	5'	7'	2'2"	3'	db	1/8 GA. x 9'2" x 1-1/2"
7C	8	2'4" x 11' x 1-1/4"	pp	2'4"	5'2"	8'	2'2"	3'2"	df	1/8 GA. x 10'2" x 1-1/4"
7D	8	2' x 10' x 1-1/2"	pp	2'	5'	7'	2'2"	3'	db	1/8 GA. x 9'2" x 1-1/2"

K. (AASHTO M270, GR. 36) Δ

BEVEL

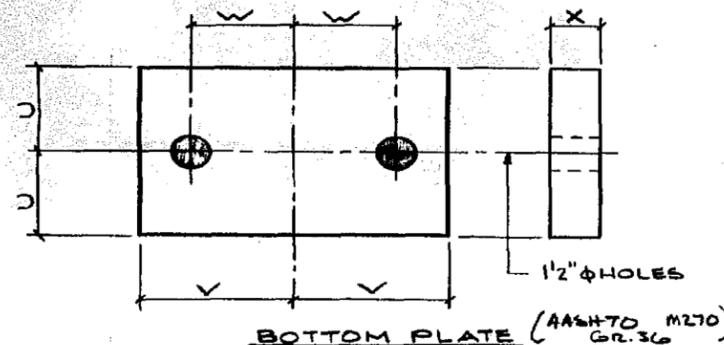
MARK	QTY.
fb	18
fc	8



SECTION Z-Z

ELASTOMERIC PADS

MARK	QTY.	PAD SIZE	F	G	H	J	K	L	M	N
mp	18	3'8" x 9' x 1'-0"	9	1'-0"	3'8"	8	3'8"	3'8"	7	3'2"
mr	8	2'1/8" x 10' x 1-1/2"	10	1'-2"	7'1/8"	5	7'1/8"	2'1/8"	4	1'8"

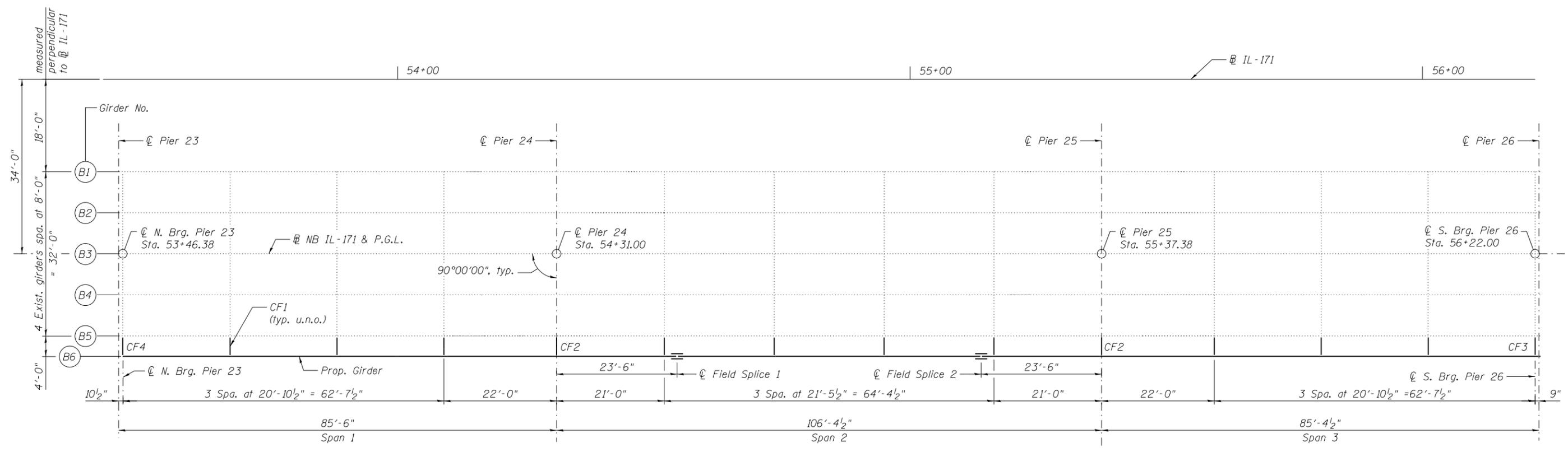


BOTTOM PLATE (AASHTO M270 GR. 36)

MARK	QTY.	P. SIZE	U	V	W	X
kg	18	1'3" x 10' x 2'-5"	5	1'-2 1/2"	1'-0 1/2"	1'3"
kh	5	1'8" x 10' x 2'-5"	5	1'-2 1/2"	1'-0 1/2"	1'8"
kk	8	1'2" x 11' x 2'-5"	5 1/2	1'-2 1/2"	1'-0 1/2"	1'2"

STRUCTURE	LOCATION	TOP BEARING ASSEMBLY MARK	QTY.	THRD. STUD MARK	PROJ
016-2456 NB	PIER 25B	7A	5	7K	2'2"
016-2456	PIER 26B	7B	5	7K	2'2"
016-2456	PIER 30B	7C	8	7K	2'2"
016-2456	PIER 35A	7D	8	7K	2'2"

FILE NAME = #FILES



FRAMING PLAN - UNIT B SPANS 1-3

FILE NAME = #FILES#



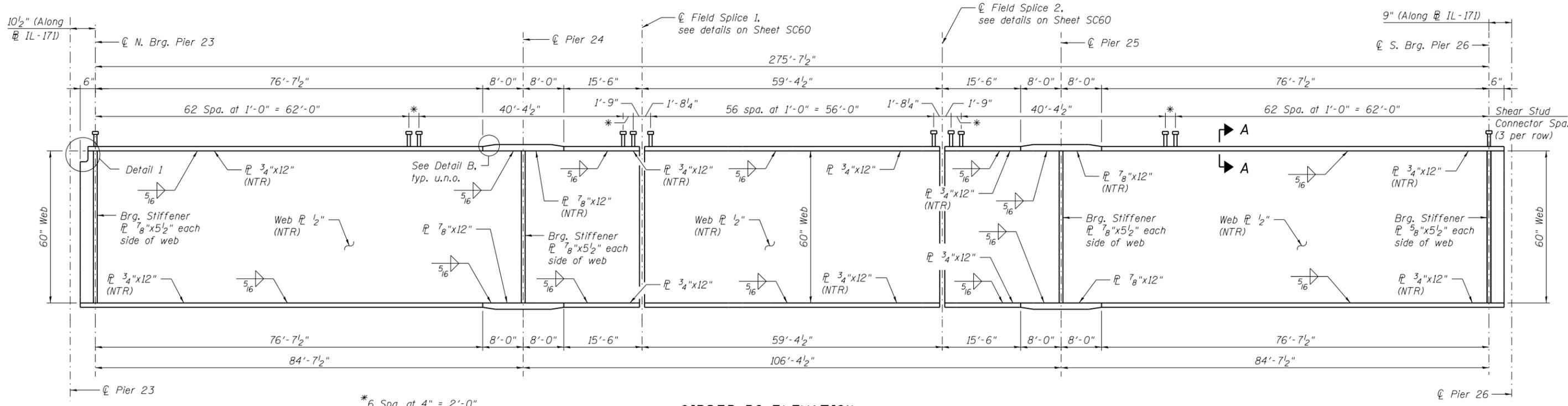
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. UNIT B FRAMING PLAN - LOCATION 6
STRUCTURE NO. 016-2456**

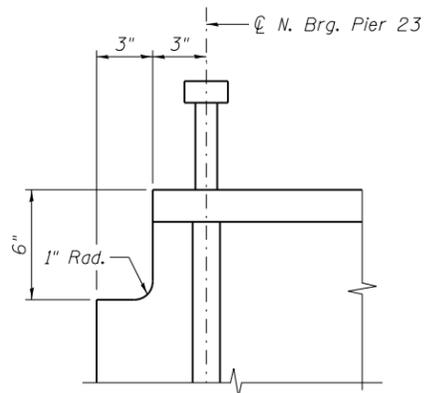
SHEET NO. SF-21 OF SF-42 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 108
CONTRACT NO. 60W76			ILLINOIS FED. AID PROJECT	

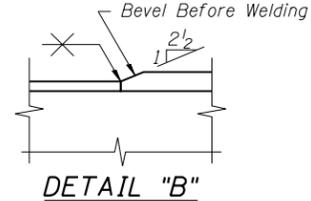


GIRDER B6 ELEVATION

(All dimensions measured along \bar{C} of Girder, unless noted otherwise)



DETAIL 1
(Cope Girder as shown)



DETAIL B

FILE NAME = #FILES*



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	CHECKED -	REVISED -
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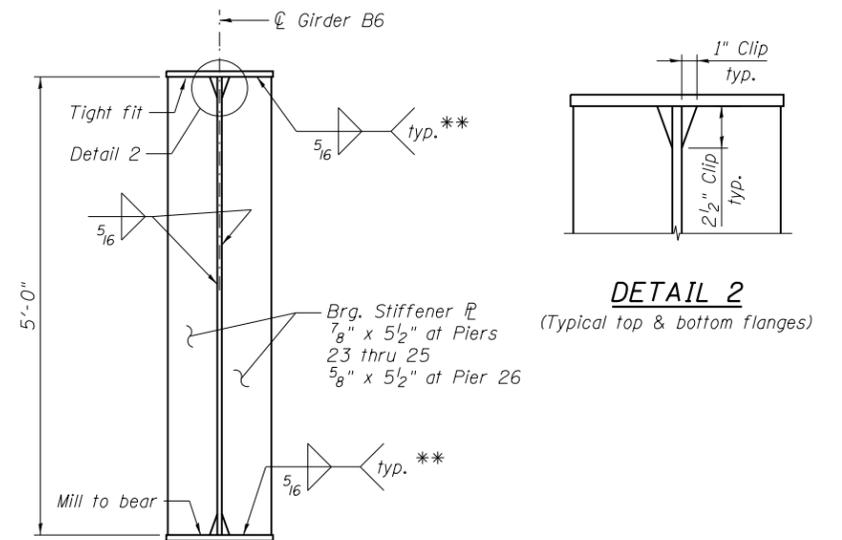
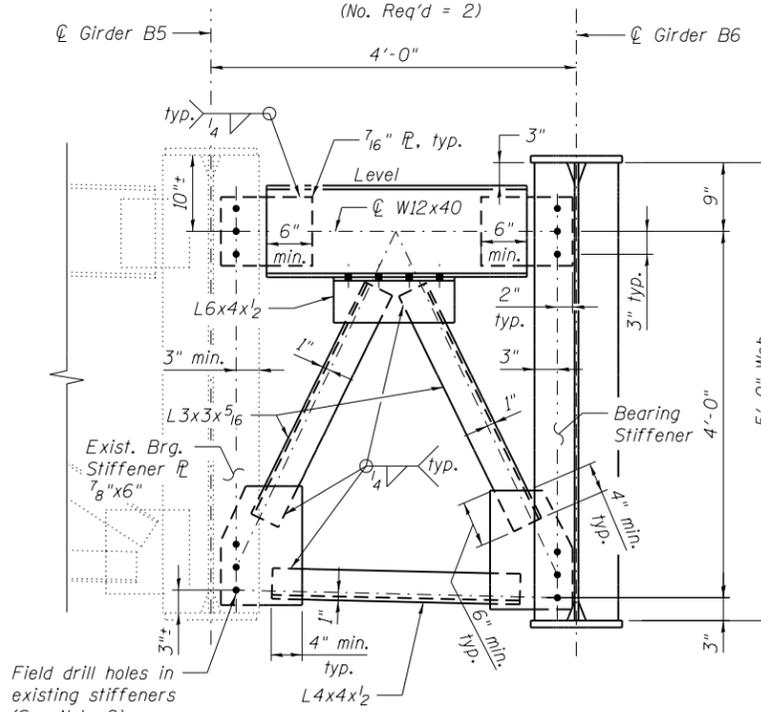
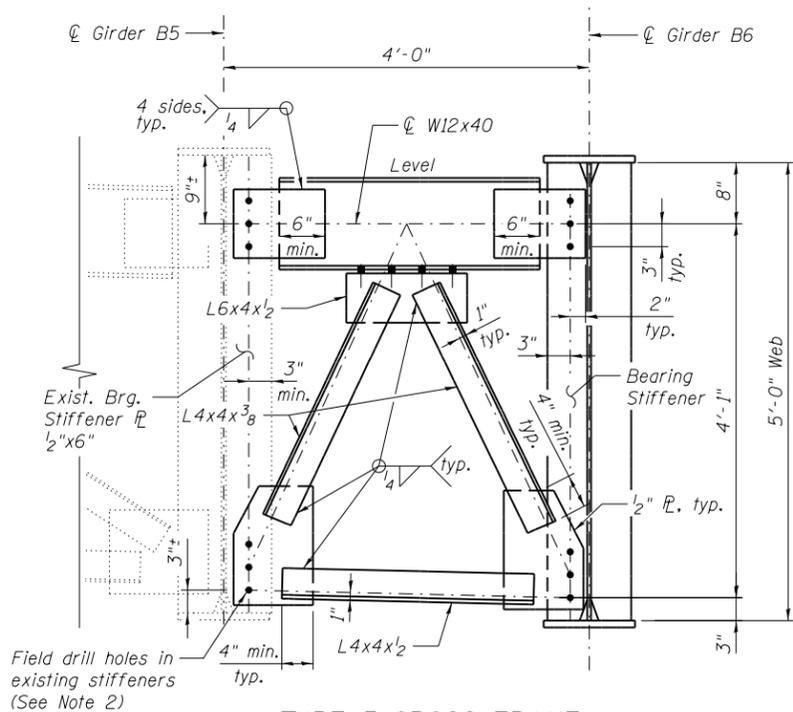
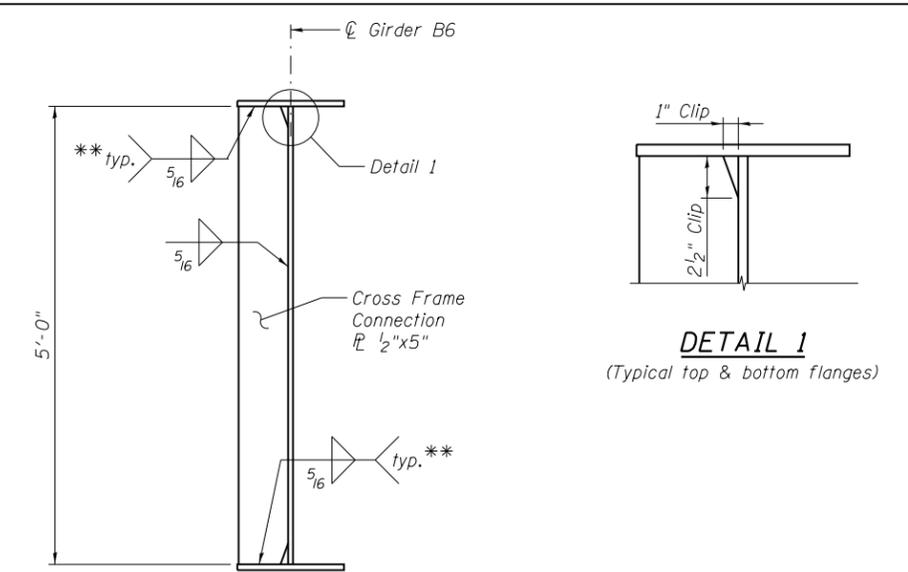
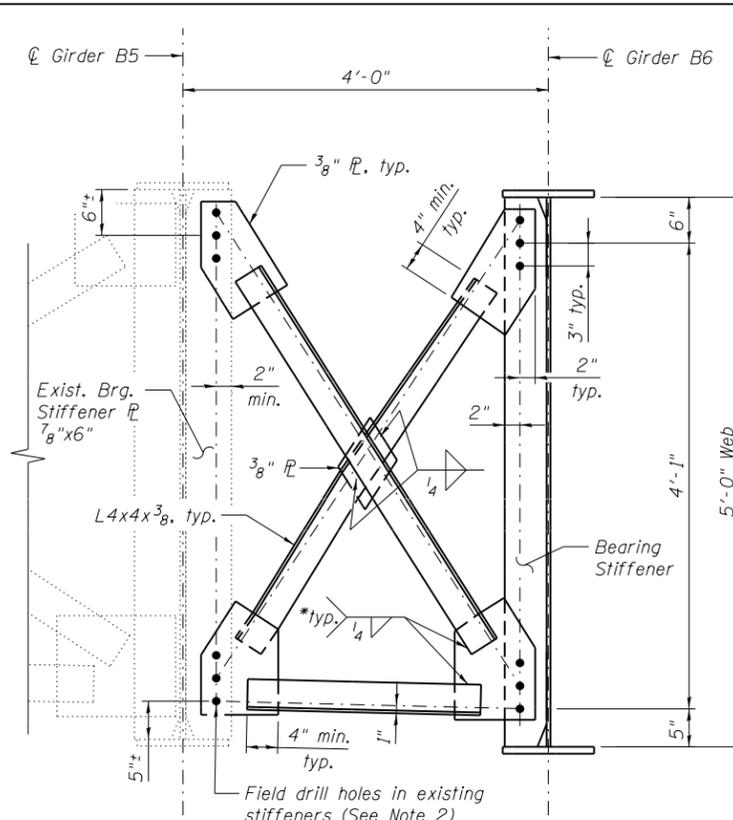
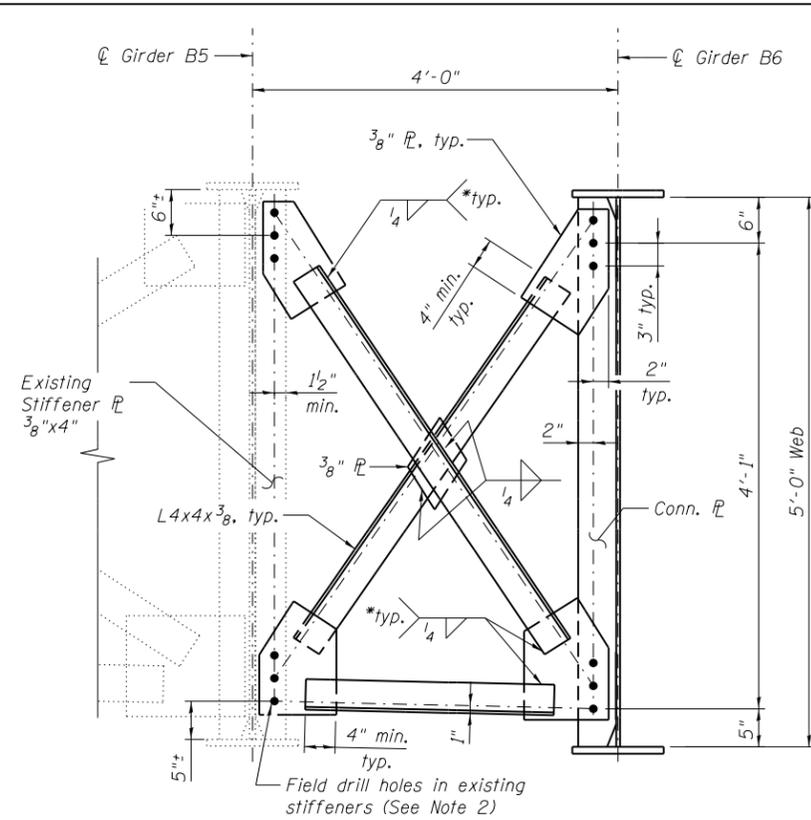
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. UNIT B GIRDER ELEVATION & STEEL DETAILS - LOCATION 6
STRUCTURE NO. 016-2456**

SHEET NO. SF-22 OF SF-42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	109
CONTRACT NO. 60W76				

ILLINOIS FED. AID PROJECT



* Fillet weld angles along 3 sides on one face of gusset plate.
** Terminate weld 1/4" from edges of stiffener.

FILE NAME = #FILES#

LE LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME = Lin
DESIGNED -
CHECKED -
PLOT SCALE =
DRAWN -
PLOT DATE = 3/22/2017 12:22:00 PM
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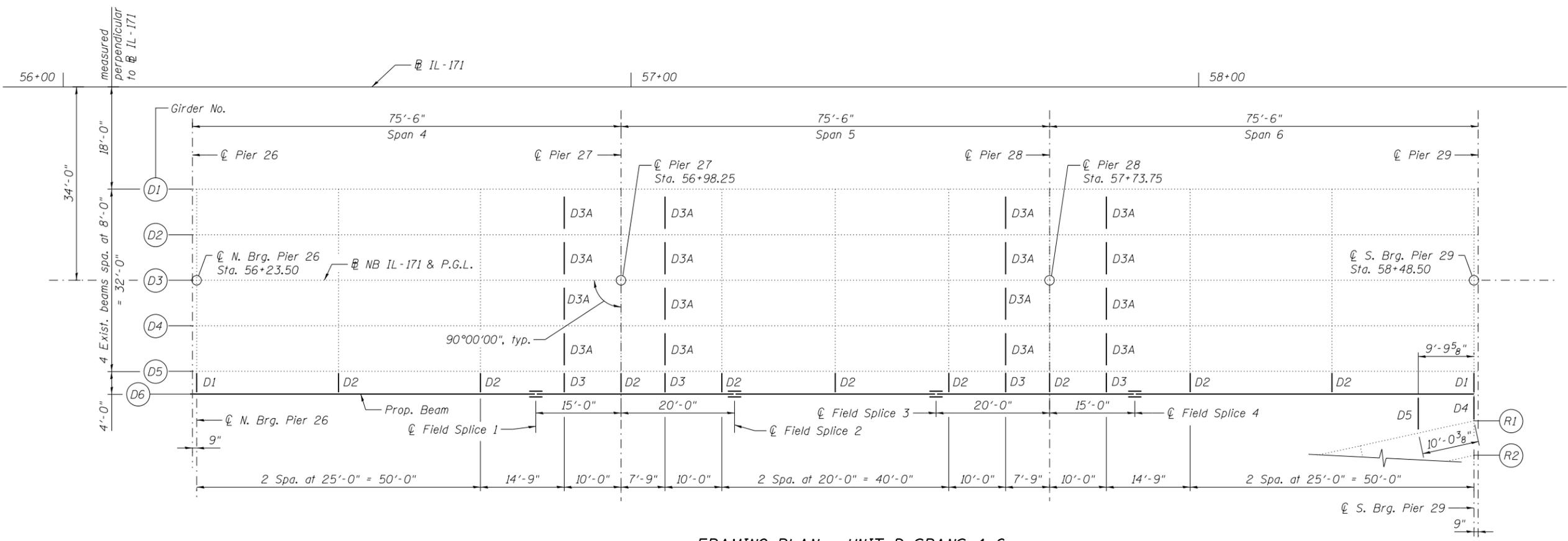
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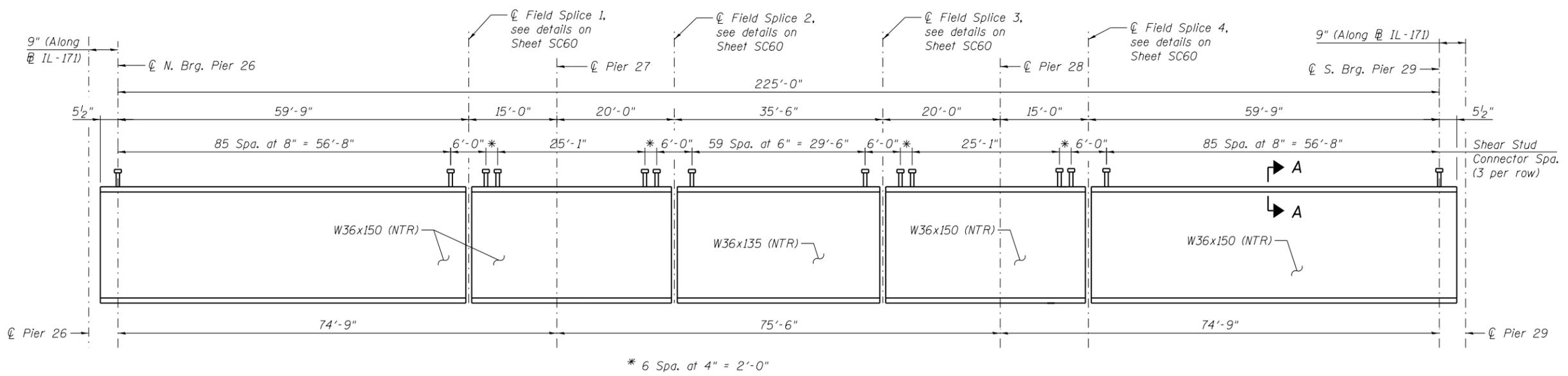
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REHAB. UNIT B CROSS FRAME DETAILS - LOCATION 6
STRUCTURE NO. 016-2456
SHEET NO. SF-23 OF SF-42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	110
CONTRACT NO. 60W76				
ILLINOIS FED. AID PROJECT				



FRAMING PLAN - UNIT D SPANS 4-6



BEAM D6 ELEVATION

(All dimensions measured along \bar{C} of Beam, unless noted otherwise)

FILE NAME = #FILES#



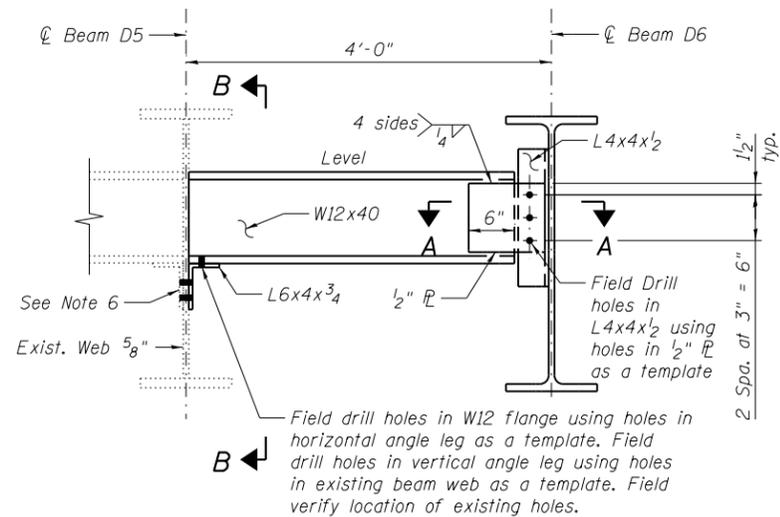
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. UNIT D FRAMING PLAN - LOCATION 6
STRUCTURE NO. 016-2456**

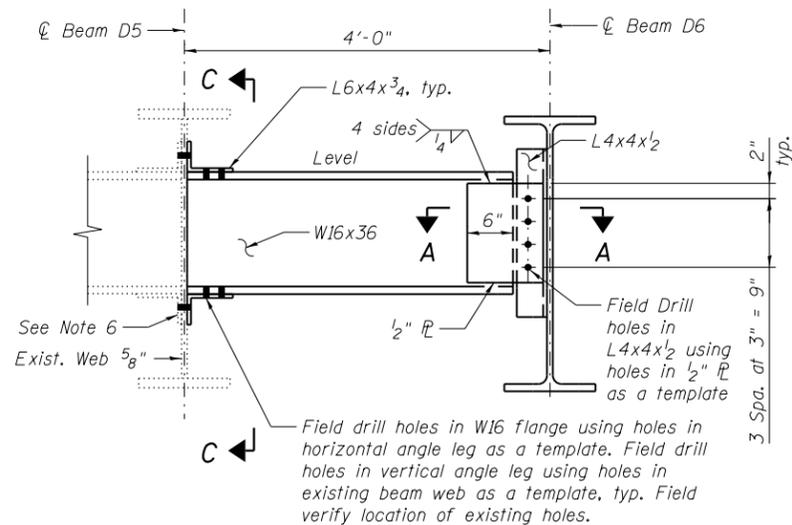
SHEET NO. SF-24 OF SF-42 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 111
CONTRACT NO. 60W76			ILLINOIS FED. AID PROJECT	



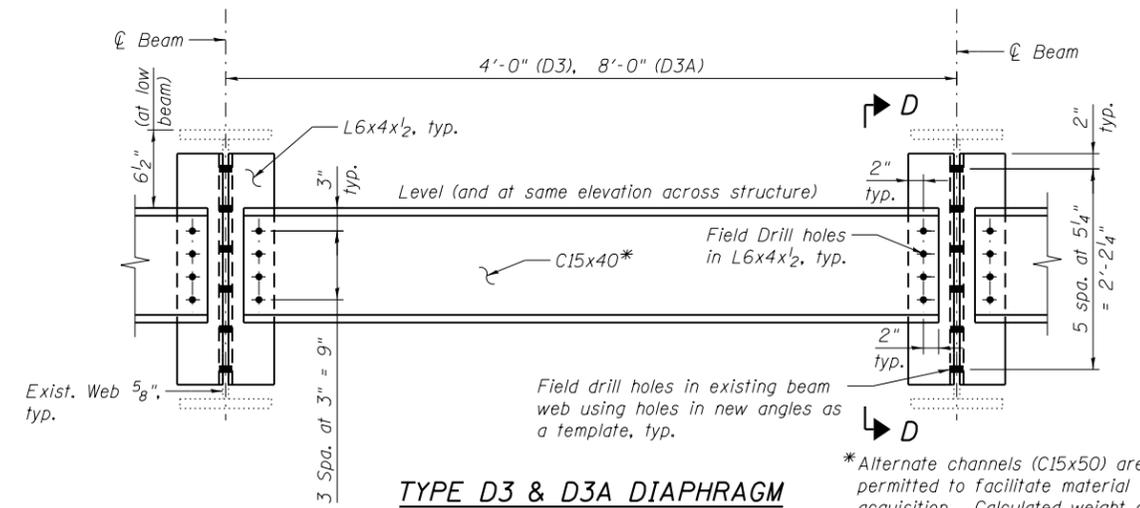
TYPE D1 DIAPHRAGM

(No. Req'd = 2)



TYPE D2 DIAPHRAGM

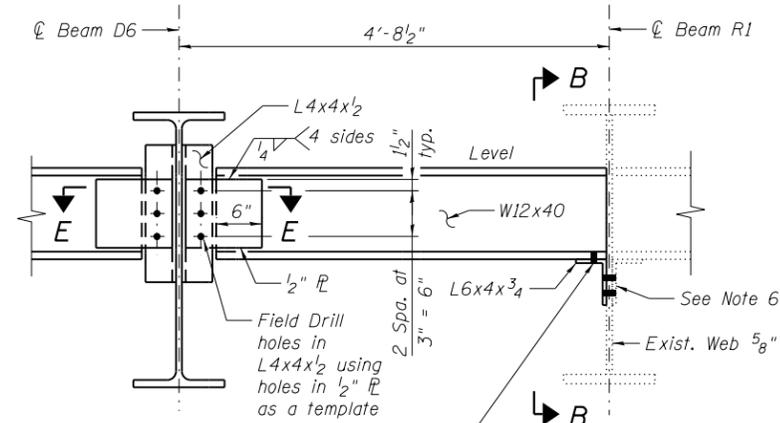
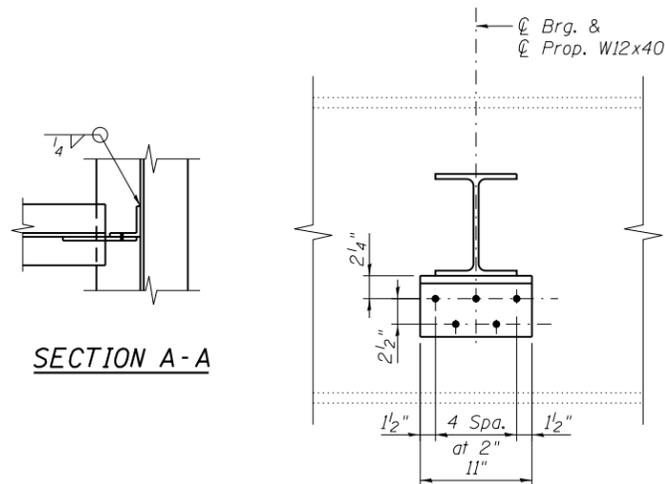
(No. Req'd = 9)



TYPE D3 & D3A DIAPHRAGM

(No. D3 Req'd = 4)
(No. D3A Req'd = 16)

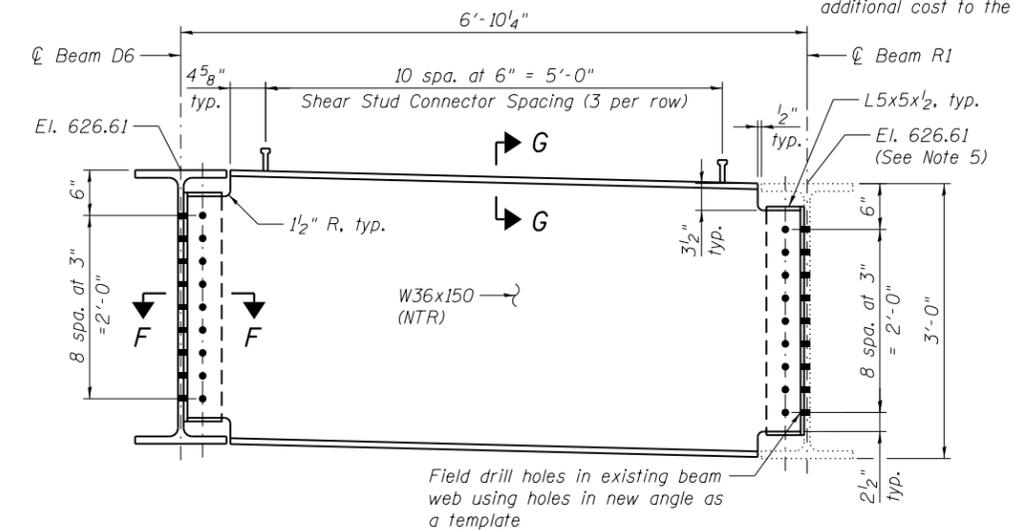
* Alternate channels (C15x50) are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.



Field drill holes in W12 flange using holes in horizontal angle leg as a template. Field drill holes in vertical angle leg using holes in existing beam web as a template. Field verify location of existing holes.

TYPE D4 DIAPHRAGM

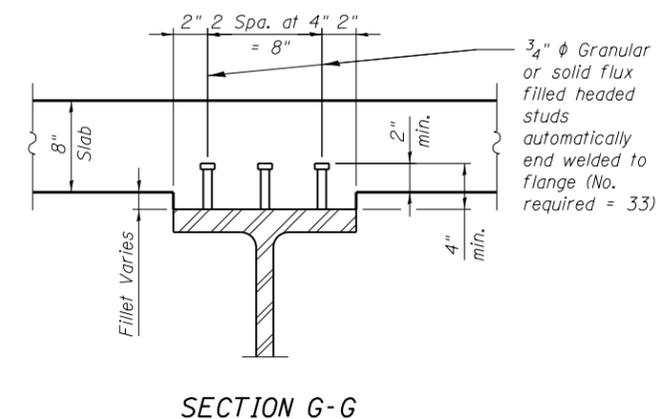
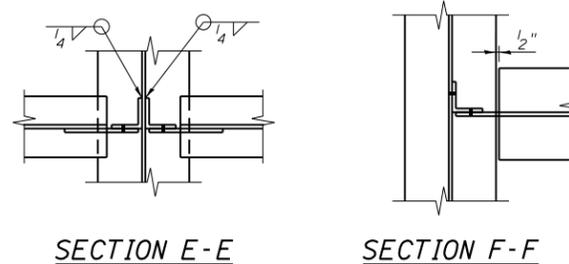
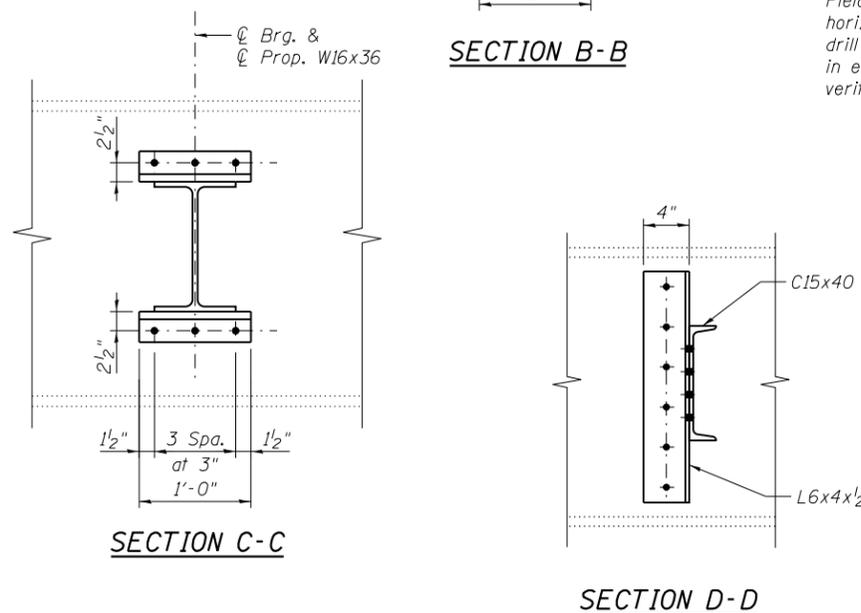
(No. Req'd = 1)



TYPE D5 DIAPHRAGM

(No. Req'd = 1)

Note: Contractor shall consider location of existing beams when determining how diaphragm will be erected to ensure fit-up.



FILE NAME = #FILES#

LE LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME = Lin
DESIGNED -
CHECKED -
PLOT SCALE =
DRAWN -
PLOT DATE = 3/22/2017 12:22:02 PM

DESIGNED -
CHECKED -
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REVISED -
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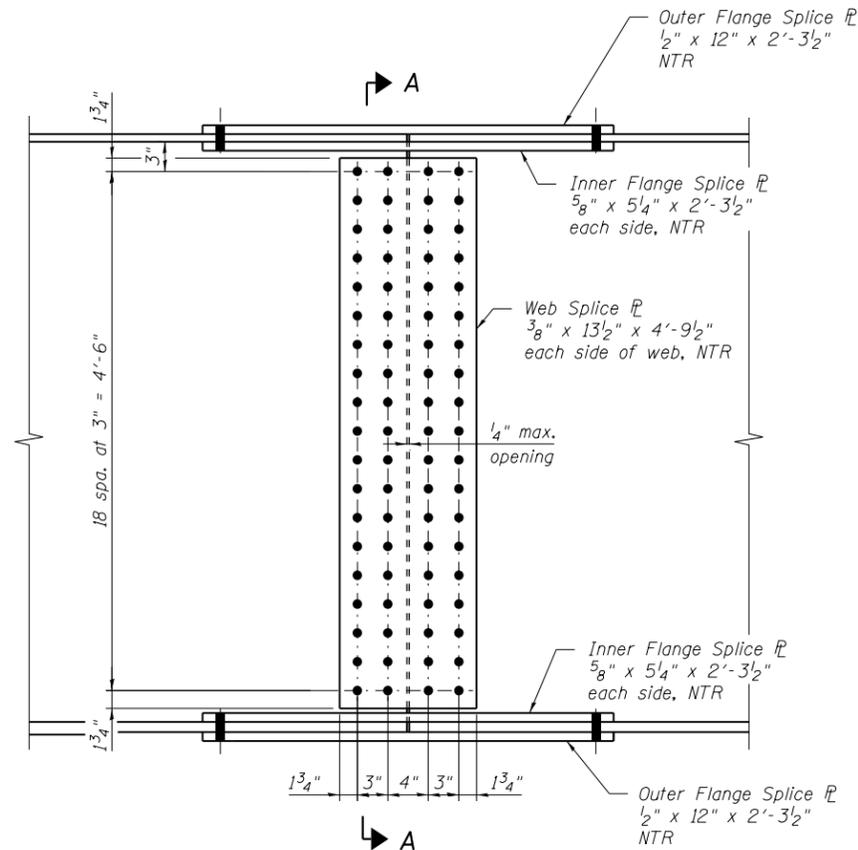
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REHAB. UNIT D BEAM DIAPHRAGM DETAILS - LOCATION 6
STRUCTURE NO. 016-2456

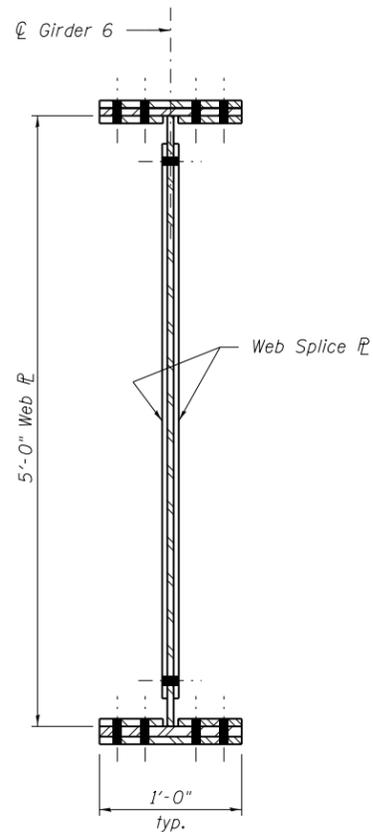
SHEET NO. SF-25 OF SF-42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	112
CONTRACT NO. 60W76				

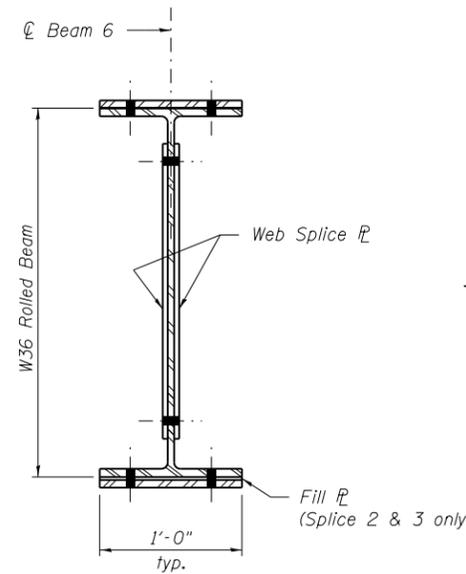
ILLINOIS FED. AID PROJECT



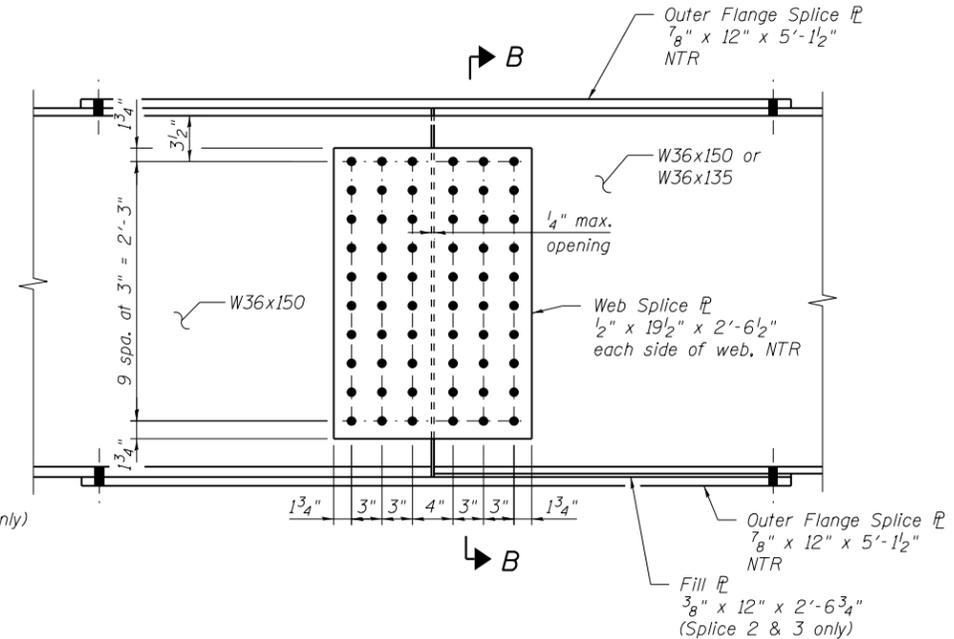
ELEVATION - FIELD SPLICE - GIRDER B6
(76 Bolts per Web Splice)



SECTION A-A



SECTION B-B



ELEVATION - FIELD SPLICE - BEAM D6
(60 Bolts per Web Splice)

TOP OF FLANGE ELEVATIONS

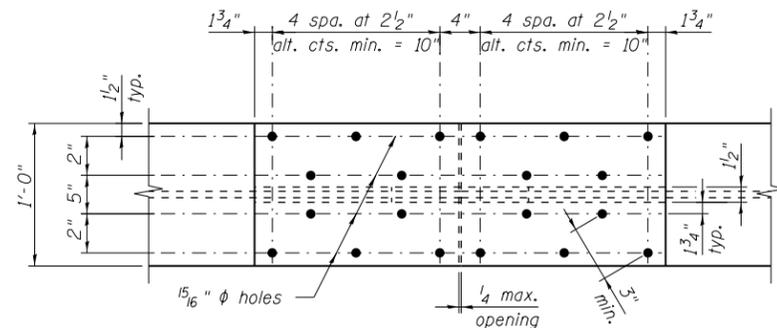
Location	Beam D6
CL. BRG. PIER 26N	623.63
FS #1	624.38
CL. BRG. PIER 27	624.56
FS #2	624.80
FS #3	625.30
CL. BRG. PIER 28	625.62
FS #4	625.86
CL. BRG. PIER 29S	626.77

For fabricator use only.

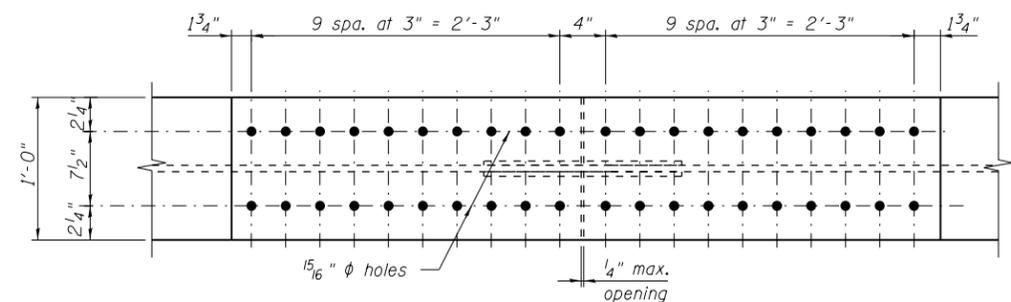
TOP OF WEB ELEVATIONS

Location	Girder B6
CL. BRG. PIER 23N	620.66
CL. BRG. PIER 24	621.48
FS #1	621.71
FS #2	622.27
CL. BRG. PIER 25	622.54
CL. BRG. PIER 26S	623.52

For fabricator use only.



UNIT B FLANGE SPLICE #1 & #2
(Top & Bottom Flanges)
(20 Bolts per Flange Splice)



UNIT D FLANGE SPLICE #1 THRU #4
(Top & Bottom Flanges)
(40 Bolts per Flange Splice)

FILE NAME = #FILES



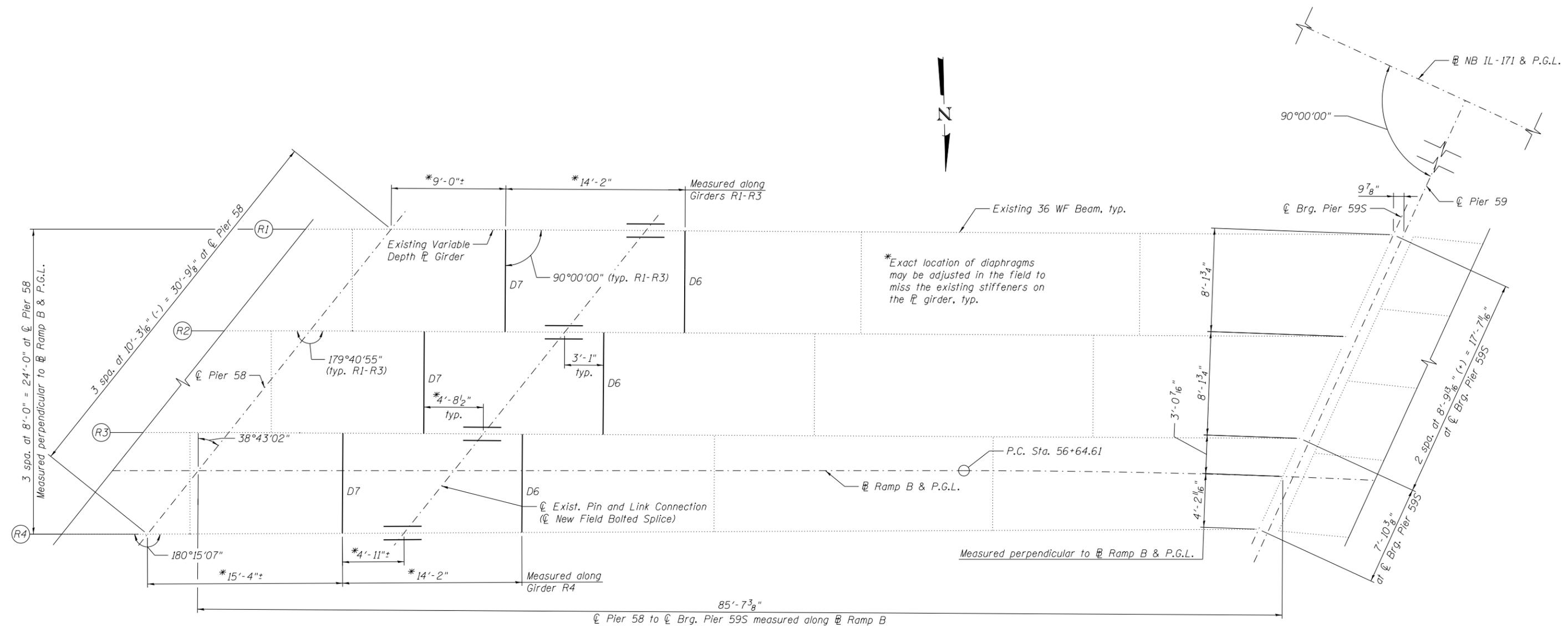
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. UNITS B & D SPLICE DETAILS - LOCATION 6
STRUCTURE NO. 016-2456**

SHEET NO. SF-26 OF SF-42 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 113
				CONTRACT NO. 60W76
ILLINOIS FED. AID PROJECT				



PARTIAL FRAMING PLAN - SPAN 4B
(Spans 1B-3B are not shown)

FILE NAME = #FILES#



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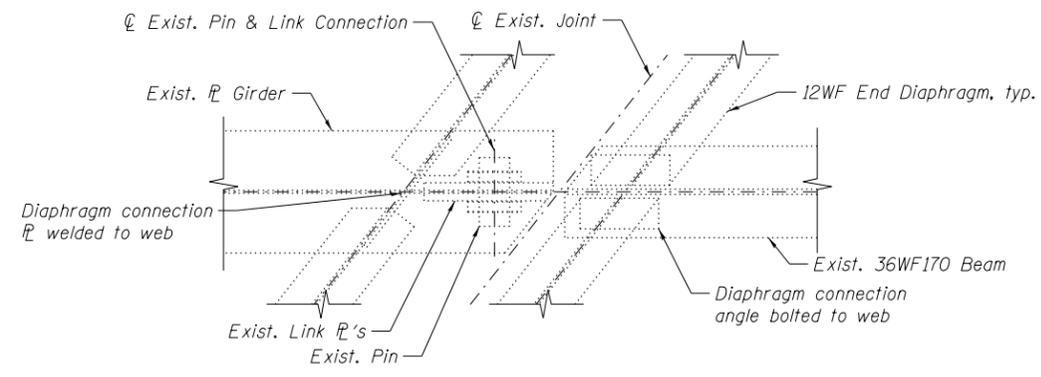
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. RAMP B PARTIAL FRAMING PLAN - LOCATION 6
STRUCTURE NO. 016-2456**

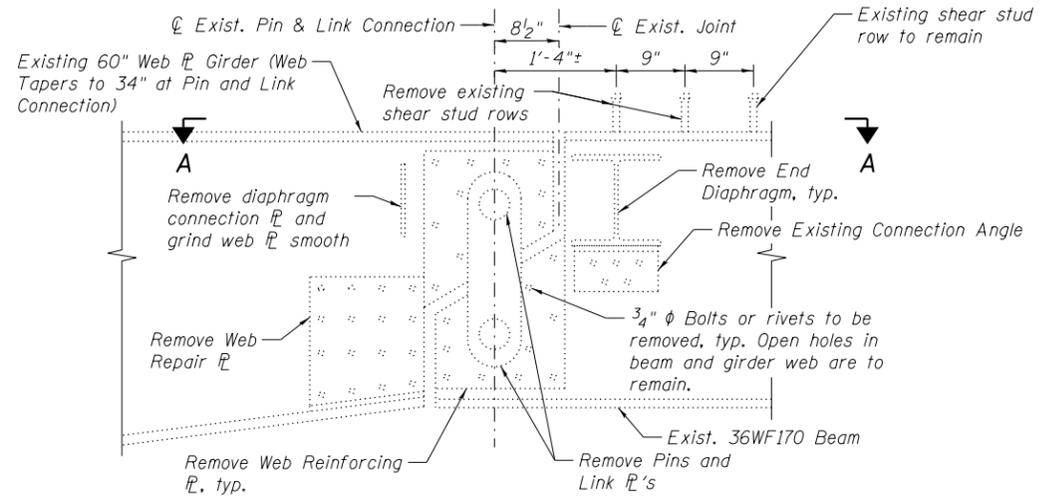
SHEET NO. SF-27 OF SF-42 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 114
CONTRACT NO. 60W76				

ILLINOIS FED. AID PROJECT



SECTION A-A



DETAIL 1

FILE NAME = #FILES#



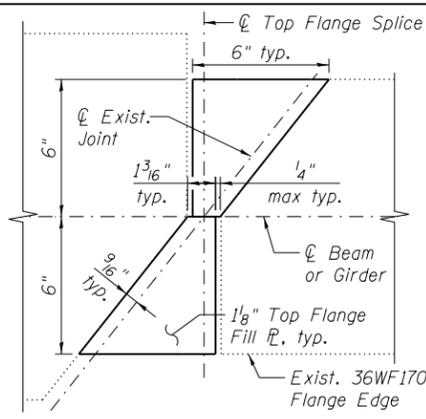
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. RAMP B PIN & LINK RETROFIT DETAILS - LOCATION 6
STRUCTURE NO. 016-2456**

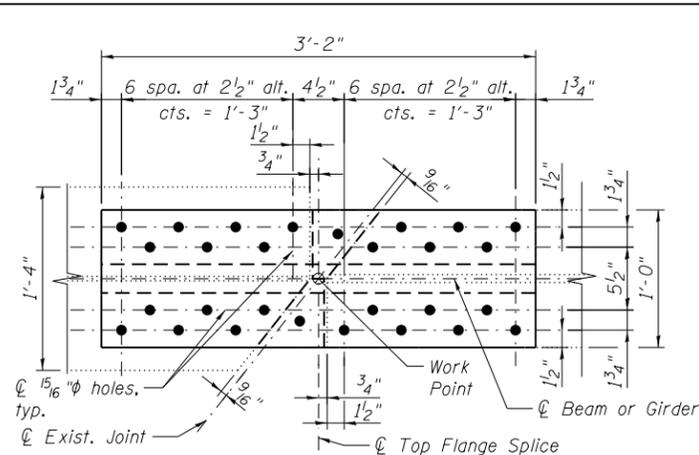
SHEET NO. SF-28 OF SF-42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	115
CONTRACT NO. 60W76			ILLINOIS FED. AID PROJECT	



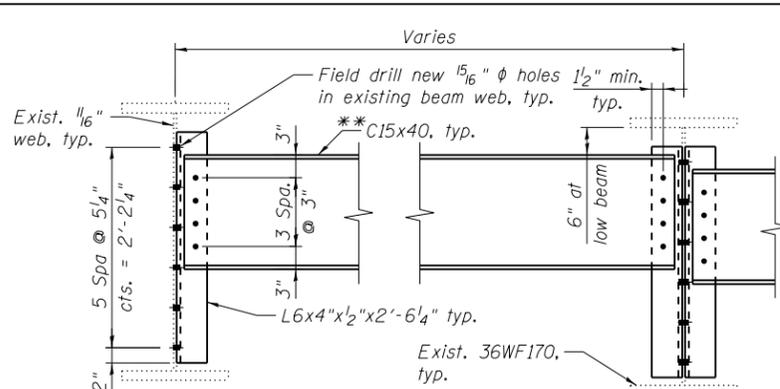
TOP FLANGE FILL PLATES

Verify all dimensions in the field.



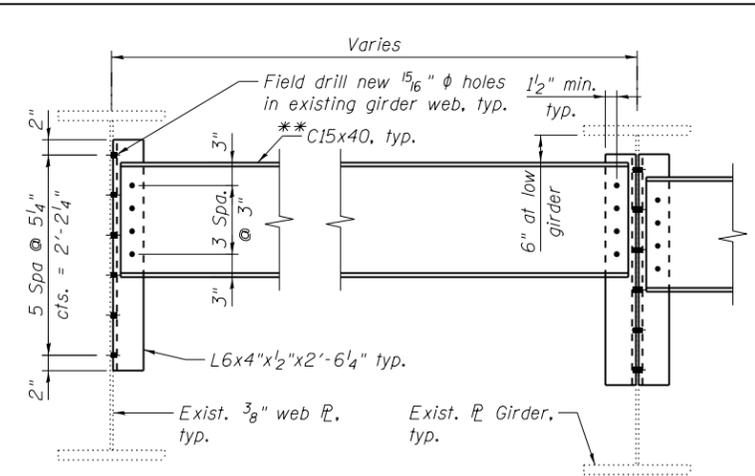
TOP FLANGE SPLICE

(Web splice P's not shown for clarity)



TYPE D6 DIAPHRAGM

(No. req'd = 3 in Span 4B of Unit B Ramp B)

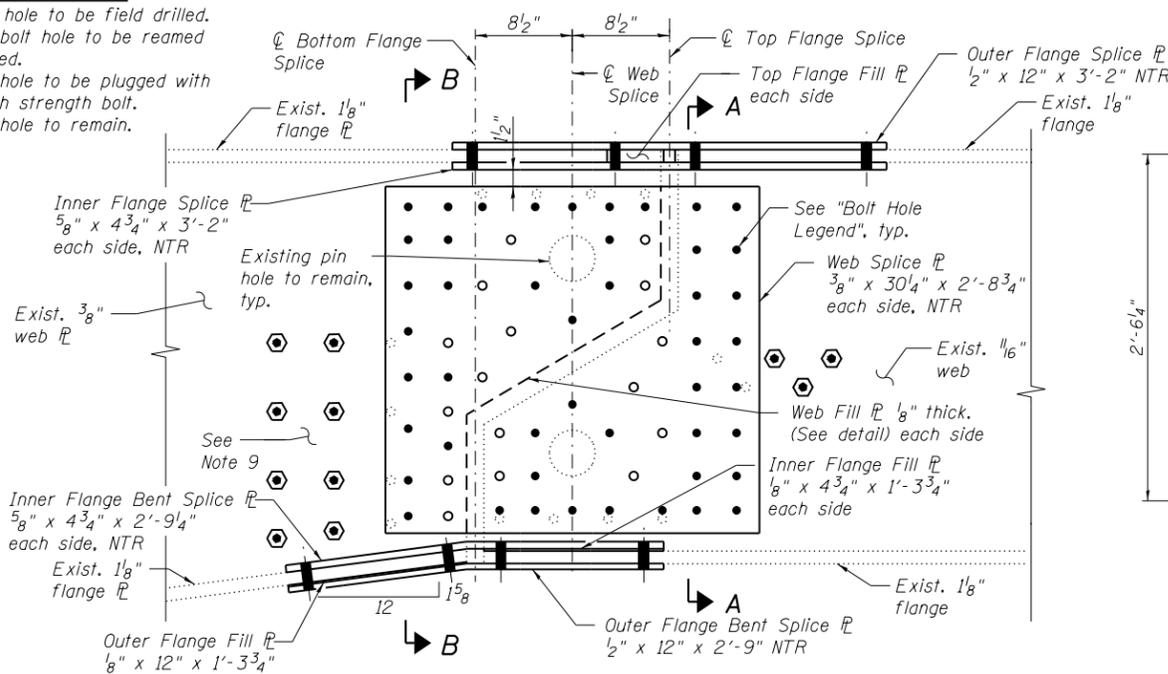


TYPE D7 DIAPHRAGM

(No. req'd = 3 in Span 4B of Unit B Ramp B)

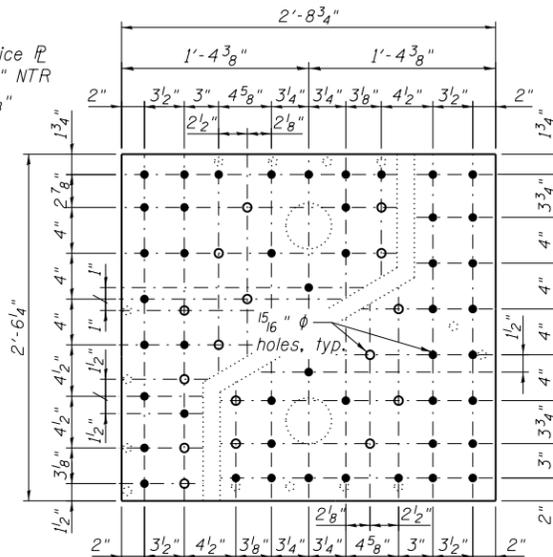
BOLT HOLE LEGEND

- New bolt hole to be field drilled.
- Existing bolt hole to be reamed and reused.
- ⊗ Existing hole to be plugged with 3/4 inch diameter high strength bolt.
- ⊙ Existing hole to remain.



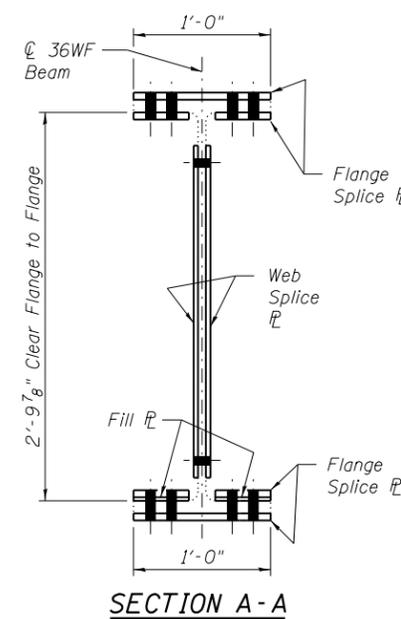
ELEVATION - FIELD SPLICE IN SPAN 4B OF UNIT B RAMP B

(4 Locations)

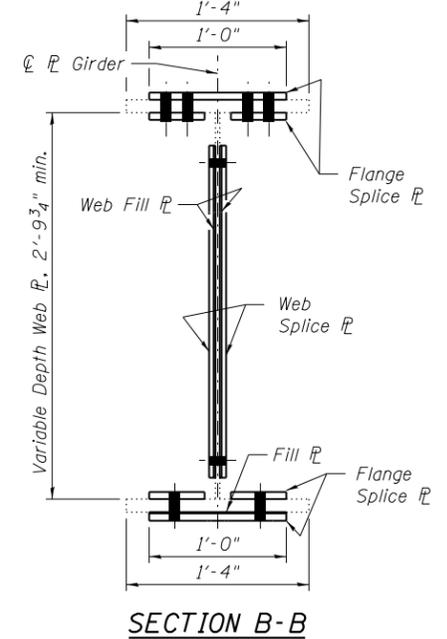


WEB SPLICE PLATE DETAIL

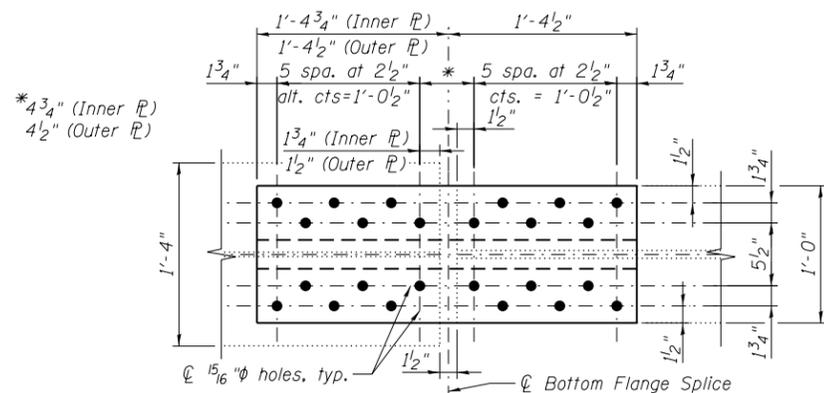
** C15x50 is permitted as an alternate channel. Calculated weight of structural steel is based on the C15x40. If C15x50 is used, it shall be provided at no extra cost to the Department.



SECTION A-A

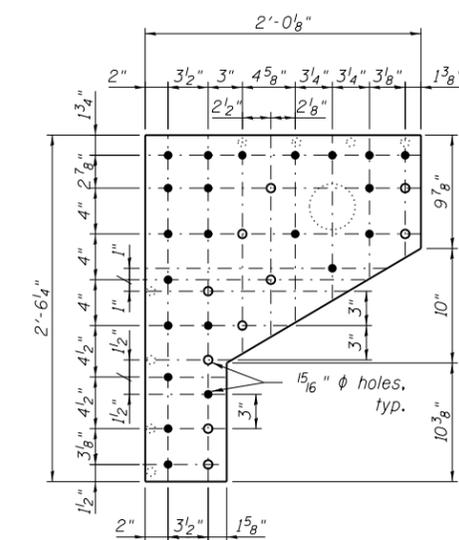


SECTION B-B



BOTTOM FLANGE SPLICE

(Web splice P's not shown for clarity)
(Dimensions along bent P)



WEB FILL PLATE DETAIL

FILE NAME = #FILES#



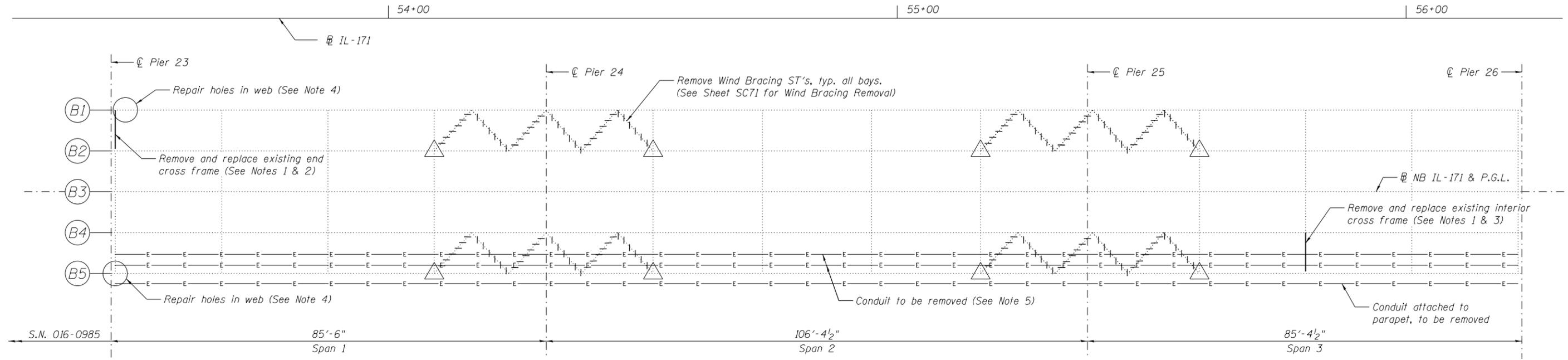
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REHAB. RAMP B SPLICE & DIAPHRAGM DETAILS - LOCATION 6
STRUCTURE NO. 016-2456

SHEET NO. SF-29 OF SF-42 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 116
CONTRACT NO. 60W76				
ILLINOIS FED. AID PROJECT				



EXISTING FRAMING PLAN - UNIT B SPANS 1 THRU 3

LEGEND

△ Remove existing gusset plate per "Structural Steel Removal" Special Provision. (See Sheet SC71 for Wind Bracing Removal)

FILE NAME = #FILES#



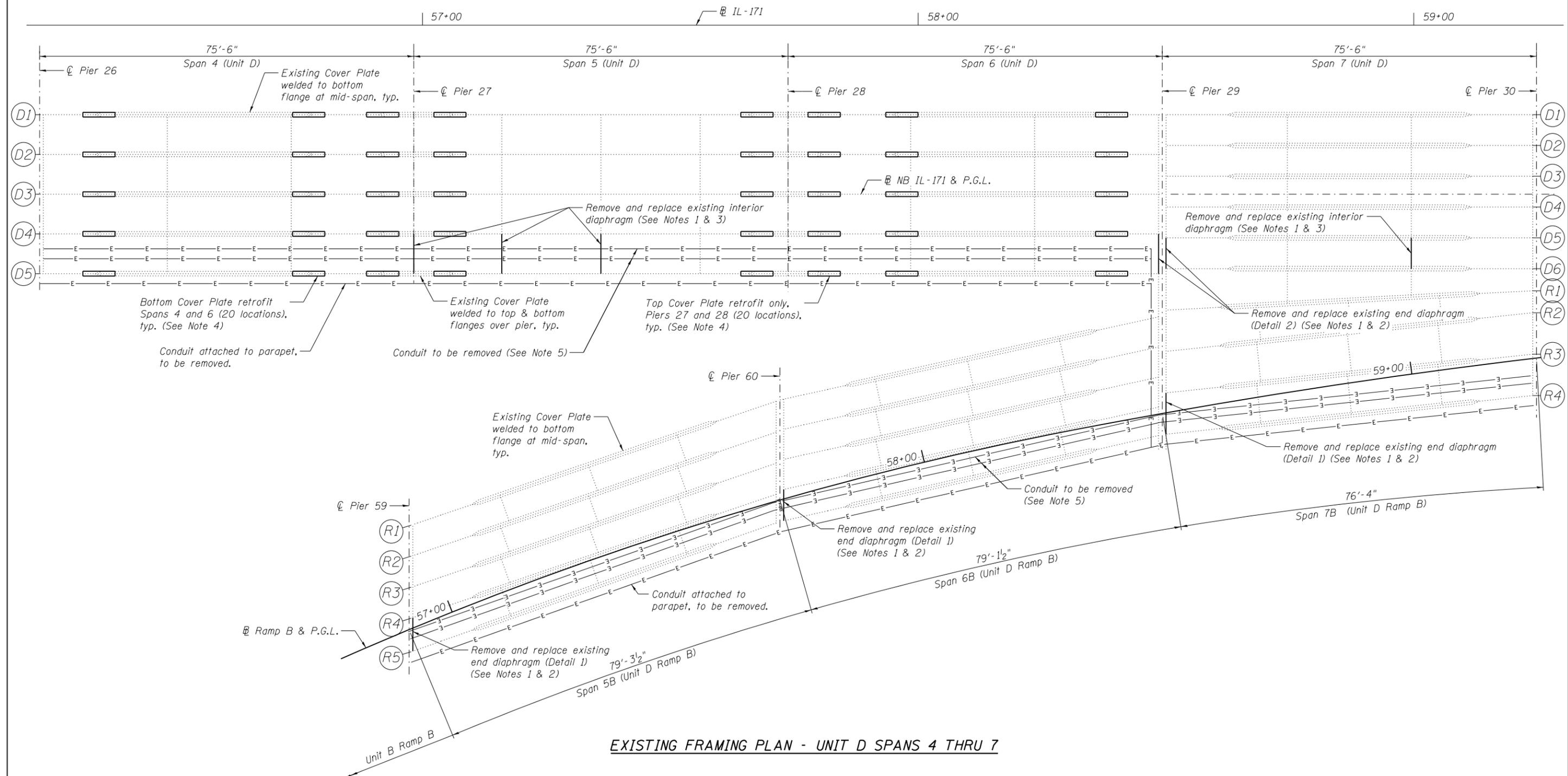
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. UNIT B STEEL REPAIR PLAN - LOCATION 6
STRUCTURE NO. 016-2456**

SHEET NO. SF-30 OF SF-42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	117
ILLINOIS FED. AID PROJECT			CONTRACT NO. 60W76	



EXISTING FRAMING PLAN - UNIT D SPANS 4 THRU 7

FILE NAME = #FILES#



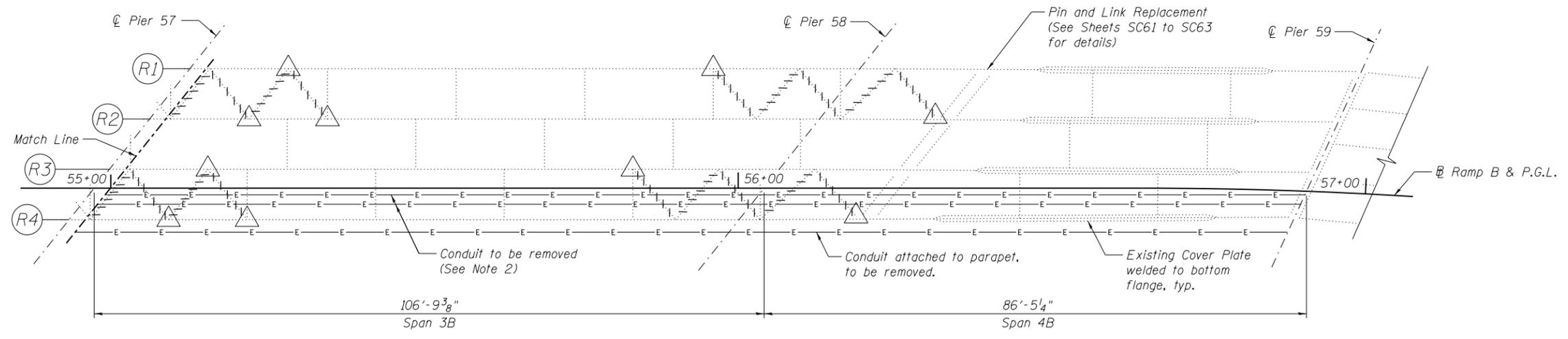
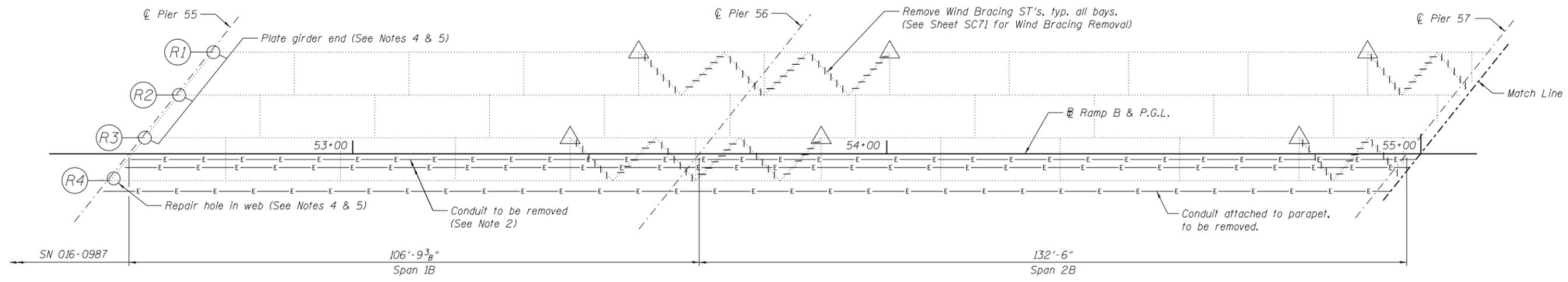
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. UNIT D STEEL REPAIR PLAN - LOCATION 6
STRUCTURE NO. 016-2456**

SHEET NO. SF-31 OF SF-42 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 118
CONTRACT NO. 60W76			ILLINOIS FED. AID PROJECT	



EXISTING FRAMING PLAN - UNIT B RAMP B SPANS 1B THRU 4B

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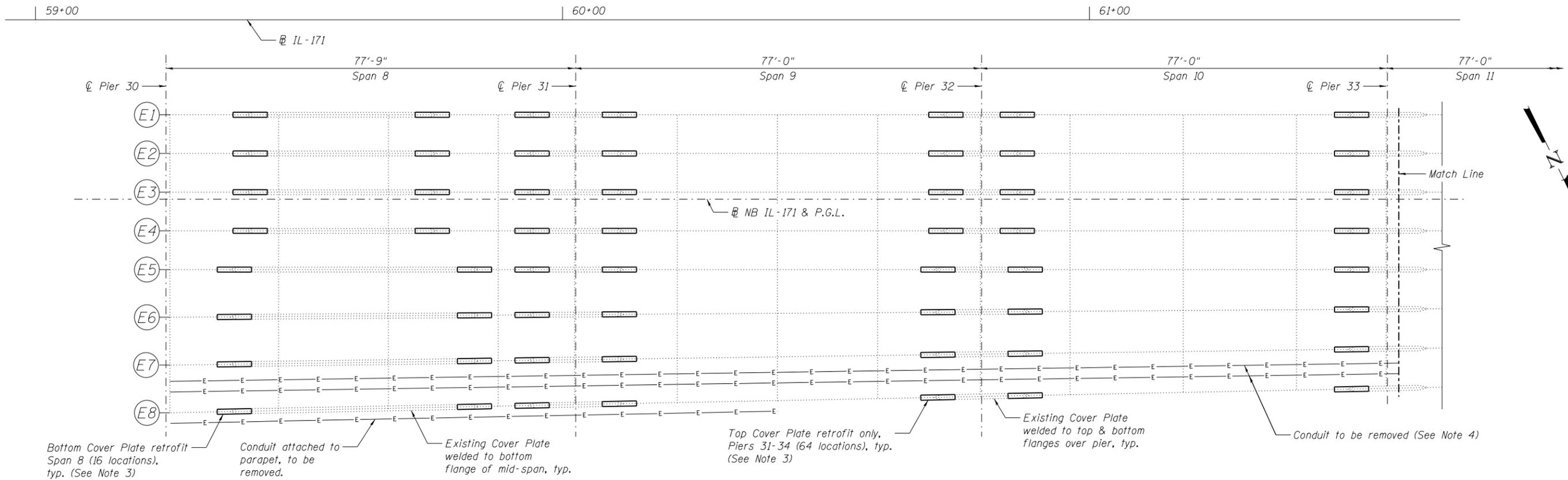
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

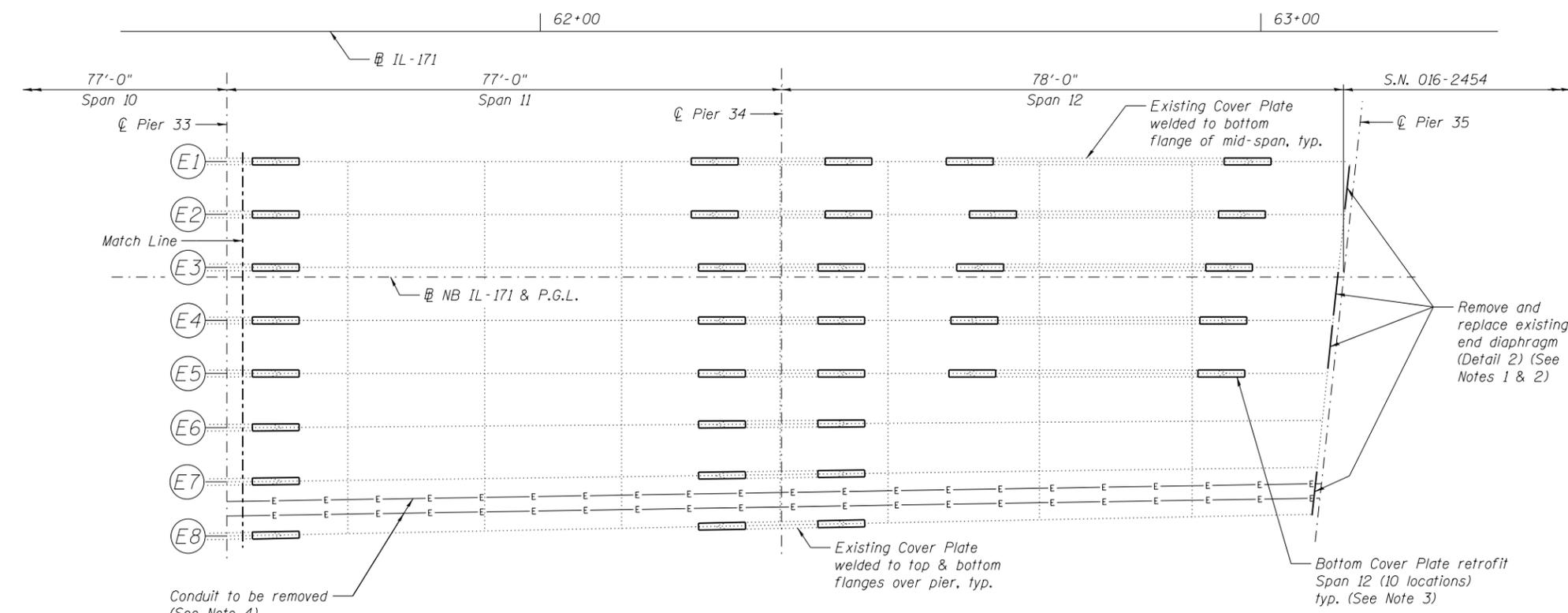
**REHAB. RAMP B STEEL REPAIR PLAN - LOCATION 6
STRUCTURE NO. 016-2456**

SHEET NO. SF-32 OF SF-42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	119
CONTRACT NO. 60W76				
ILLINOIS FED. AID PROJECT				



EXISTING FRAMING PLAN - UNIT E SPANS 8 THRU 10



EXISTING FRAMING PLAN - UNIT E SPANS 11 AND 12

- NOTES:**
1. Removal of steel paid for as "Structural Steel Removal". Replacement of steel paid for as "Furnishing and Erecting Structural Steel".
 2. See Sheet SC73 for End Diaphragm Removal & Replacement Detail 2.
 3. Place bolted cover plate at ends of existing cover plates where shown. See sheet SC71 for Cover Plate Retrofit Detail.
 4. See Sheet SC71 for Conduit Removal Detail.
 5. The Engineer will inspect all existing bearing anchor bolts to ascertain their condition. Any damaged anchor bolts shall be reported to the BBS for further direction. The Contractor shall provide all means and access for the Engineer to perform the anchor bolt inspections. All costs associated with providing the access shall be considered included in the unit price for "Furnishing and Erecting Structural Steel".

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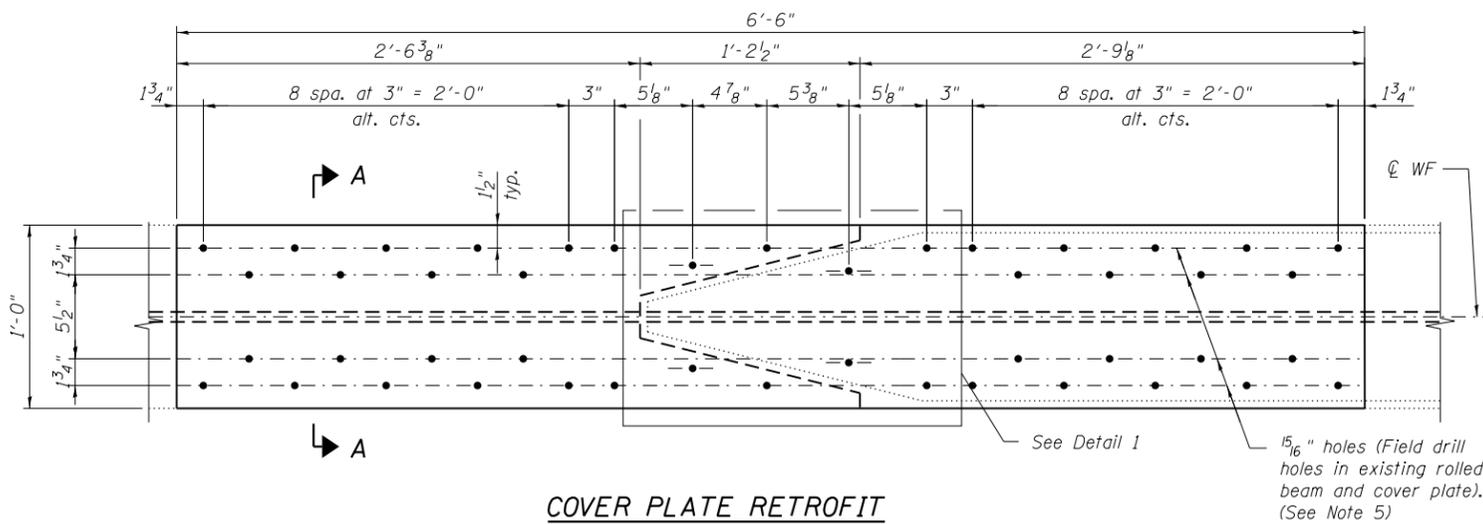
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. UNIT E STEEL REPAIR PLAN - LOCATION 6
STRUCTURE NO. 016-2456**

SHEET NO. SF-33 OF SF-42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	120
CONTRACT NO. 60W76				

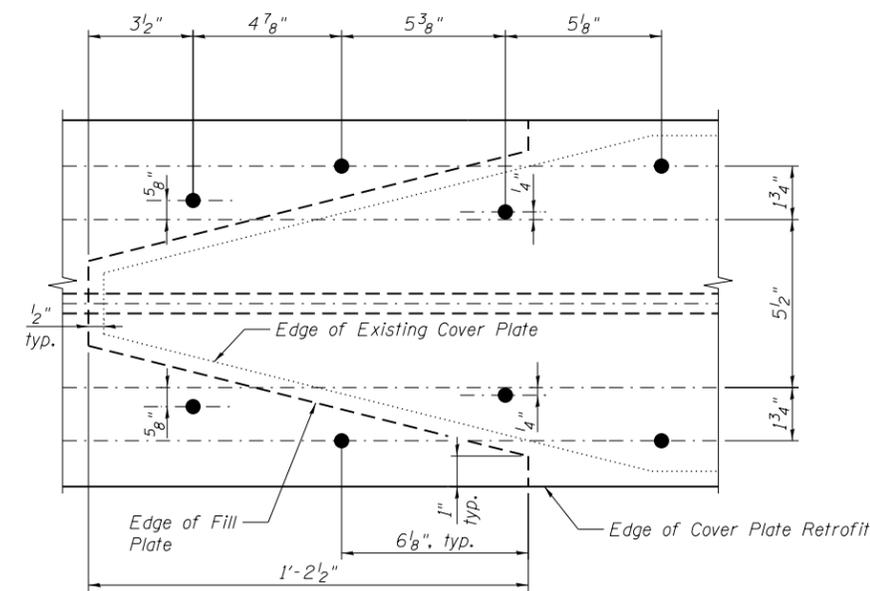
ILLINOIS FED. AID PROJECT



COVER PLATE RETROFIT

(46 bolts per retrofit)
 (130 Locations, 84 Top & 46 Bottom)
 (See Note 2)

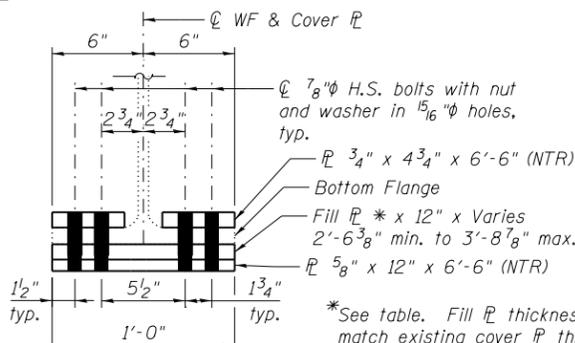
Note: Locations of Cover plate retrofit are symmetrical about the C of the existing cover plate.



DETAIL 1

EXISTING COVER PLATE THICKNESS

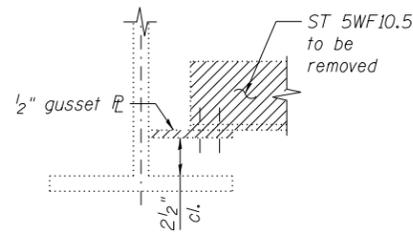
Cover PL Location	Thick.
Span 4 Beams D1-D5	1/2"
Piers 27 & 28 Beams D1-D5	1/2"
Span 6 Beams D1-D5	1/2"
Span 8 Beams E1-E4	7/16"
Span 8 Beams E5-E8	9/16"
Pier 31 Beams E1-E4	5/8"
Pier 31 Beams E5-E8	3/4"
Pier 32 Beams E1-E4	7/16"
Pier 32 Beams E5-E8	1/2"
Pier 33 Beams E1-E8	7/16"
Pier 34 Beams E1-E2	3/4"
Pier 34 Beams E3-E5	5/8"
Pier 34 Beams E6-E8	1/2"
Span 12 Beams E1-E5	7/16"



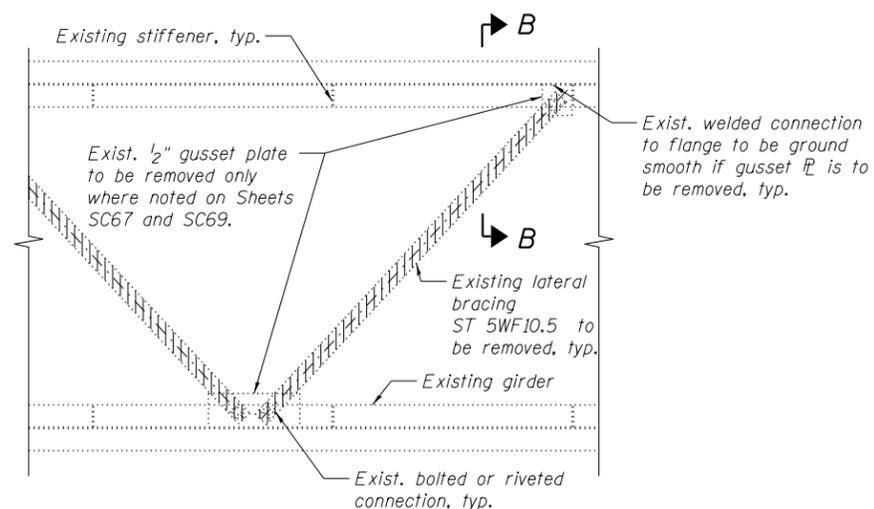
SECTION A-A

(Bottom shown, Top similar)

*See table. Fill PL thickness must match existing cover PL thickness. Contractor to field verify thickness prior to ordering new materials.

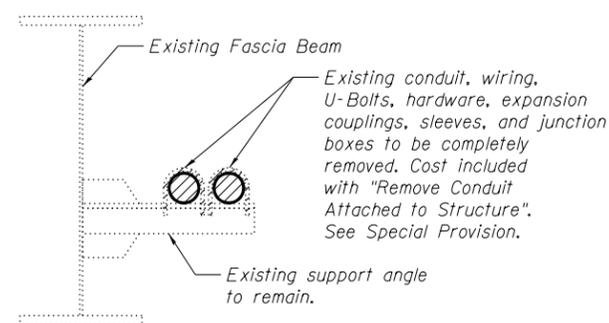


SECTION B-B

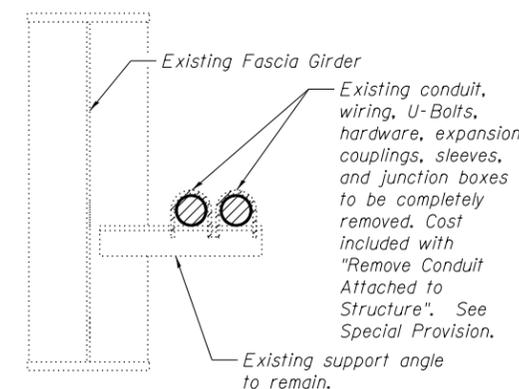


WIND BRACING REMOVAL

(Removal of lateral bracing and gusset plates paid for as "Structural Steel Removal")
 (60 angles to be removed)
 (24 gusset PL's to be removed)



CONDUIT REMOVAL DETAIL
 (Wide Flange Detail)



CONDUIT REMOVAL DETAIL
 (Plate Girder Detail)

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 CHECKED -
 PLOT SCALE =
 PLOT DATE = 3/22/2017 12:22:08 PM

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 DRAWN -
 CHECKED -

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 REVISED -
 REVISED -

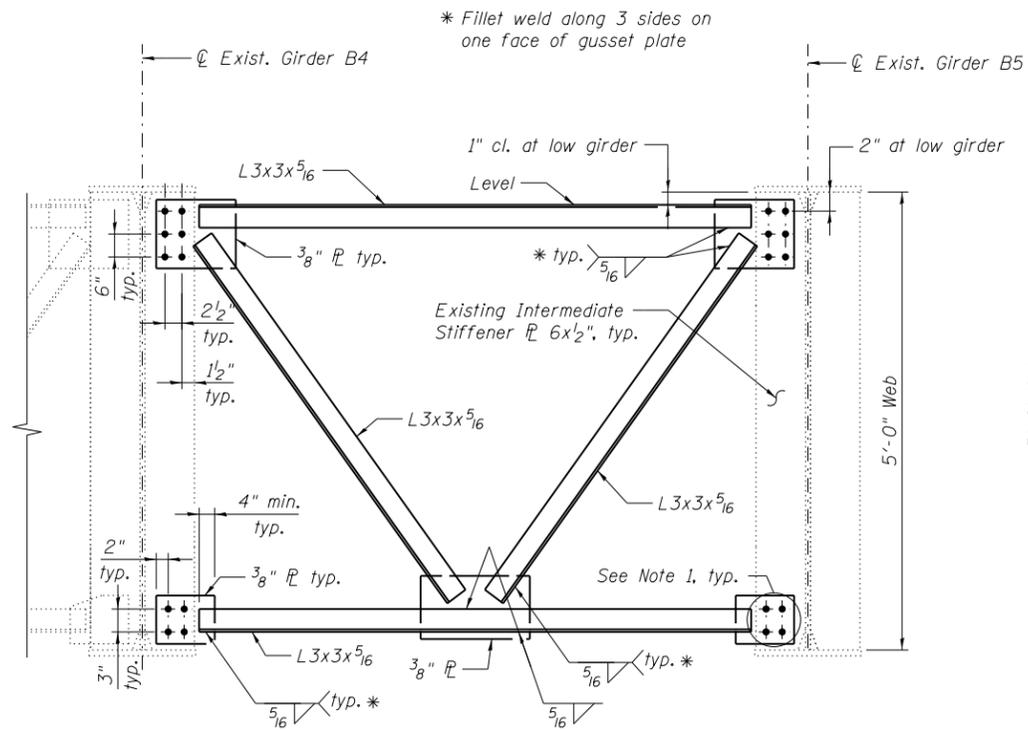
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

REHAB. STRUCTURAL STEEL REPAIR DETAILS - LOCATION 6
 STRUCTURE NO. 016-2456

SHEET NO. SF-34 OF SF-42 SHEETS

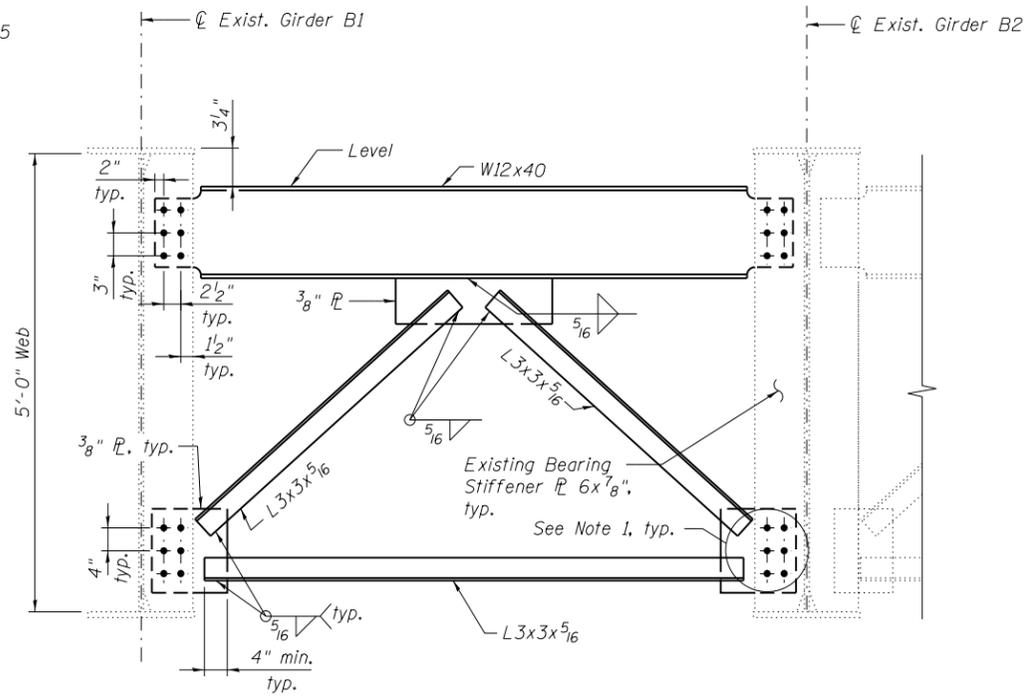
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	121
				CONTRACT NO. 60W76

ILLINOIS FED. AID PROJECT



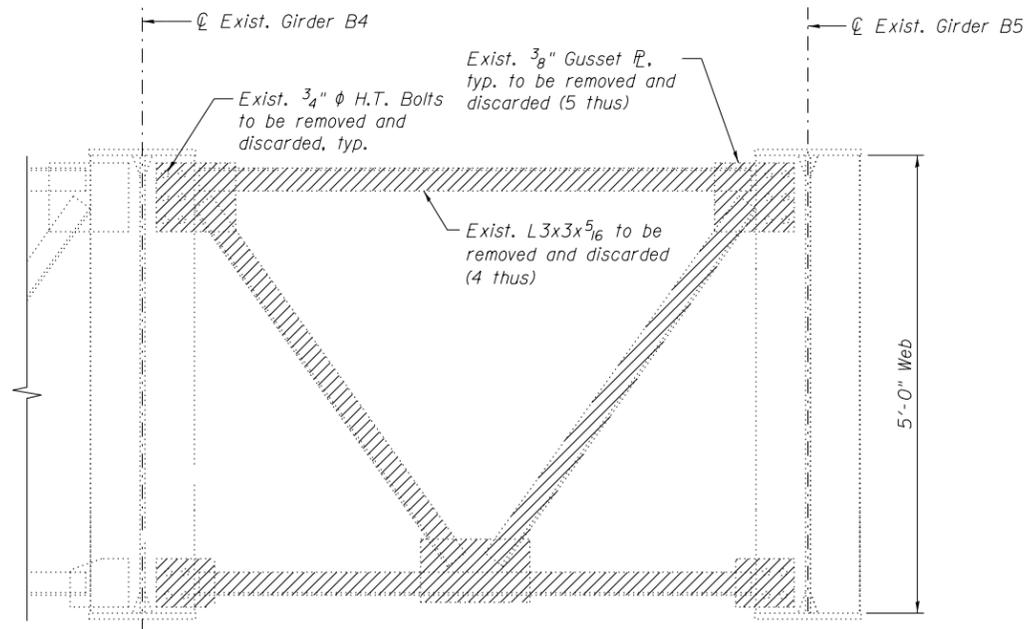
INTERIOR CROSS FRAME REPLACEMENT DETAIL

(No. of Locations = 1)



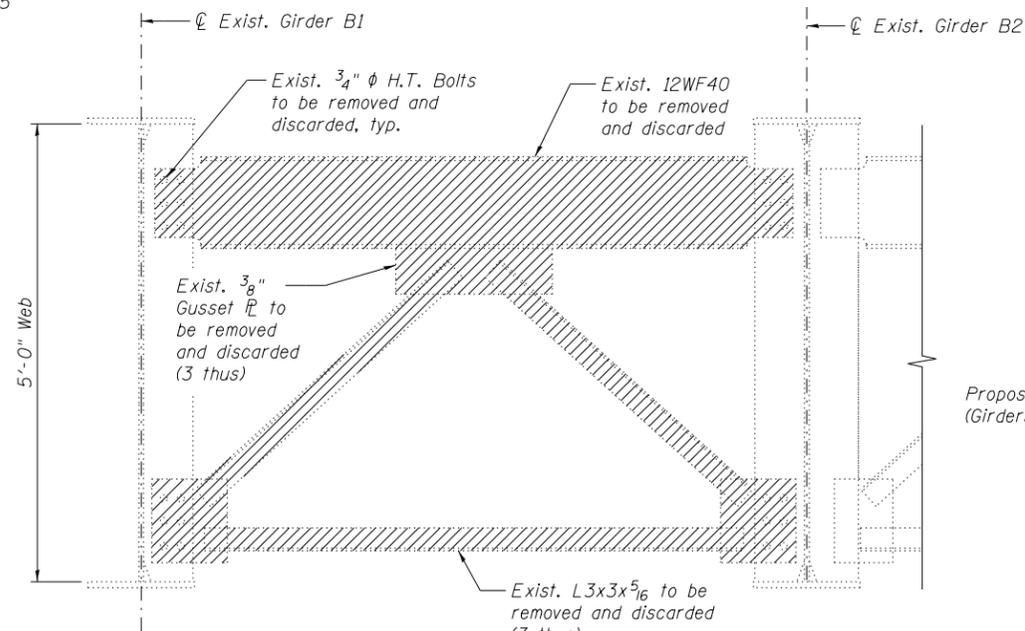
END CROSS FRAME REPLACEMENT DETAIL

(No. of Locations = 1)



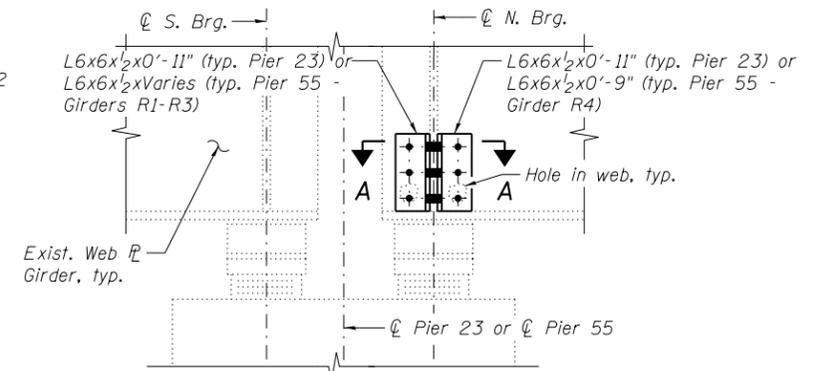
EXISTING INTERIOR CROSS FRAME REMOVAL DETAIL

(No. of Locations = 1)



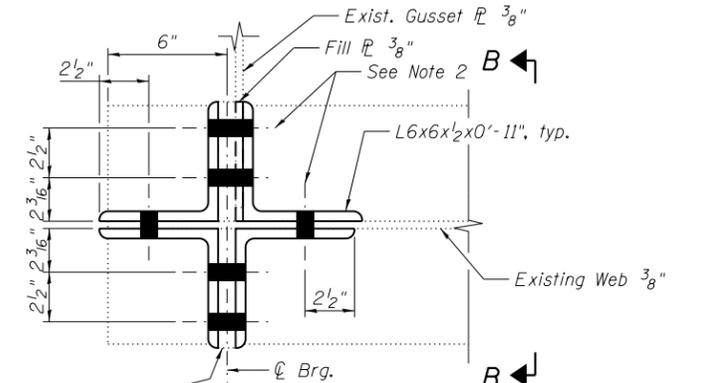
EXISTING END CROSS FRAME REMOVAL DETAIL

(No. of Locations = 1)



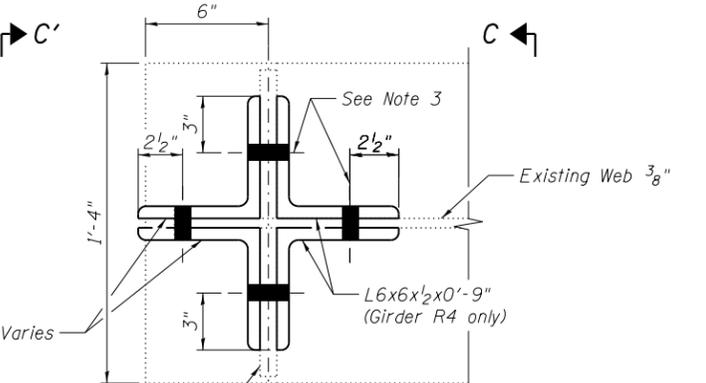
GIRDER END REPAIR DETAIL

(Pier 23 - Exist. Fascia Girders at 2 locations)
(Pier 55 - Exist. Girder at 4 locations)



SECTION A-A

(at Pier 23 - Girder B5 shown)



SECTION A-A

(at Pier 55)

FILE NAME = #FILES#



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PLOT SCALE =	CHECKED -	REVISED -
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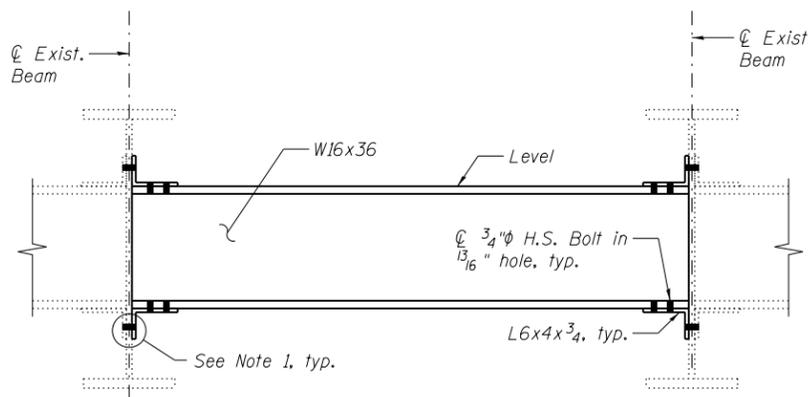
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REHAB. STRUCTURAL STEEL REPAIR DETAILS - LOCATION 6
STRUCTURE NO. 016-2456

SHEET NO. SF-35 OF SF-42 SHEETS

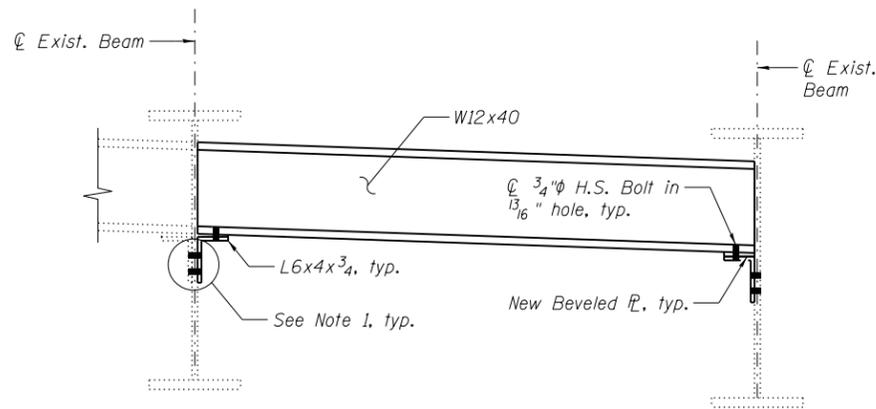
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	122
CONTRACT NO. 60W76				

ILLINOIS FED. AID PROJECT



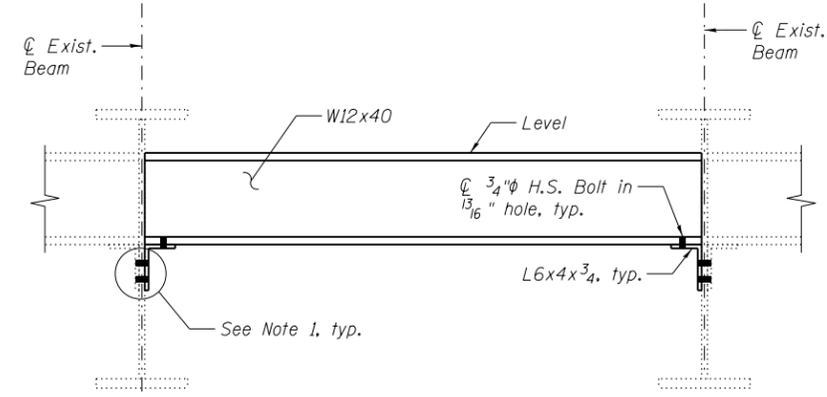
INTERIOR DIAPHRAGM REPLACEMENT DETAIL

(No. of Locations = 4)



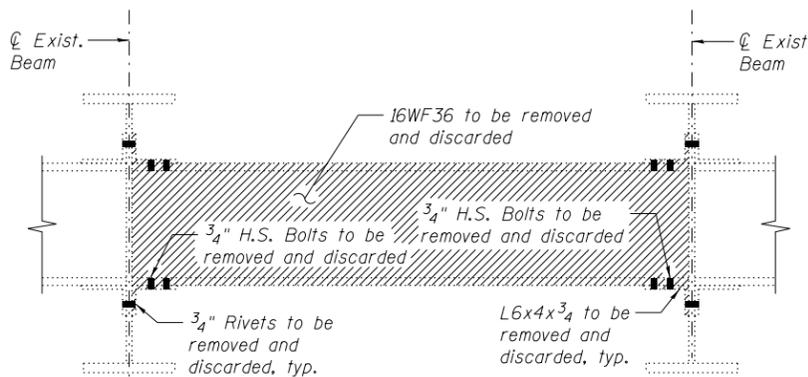
END DIAPHRAGM REPLACEMENT DETAIL 1

(No. of Locations = 3)



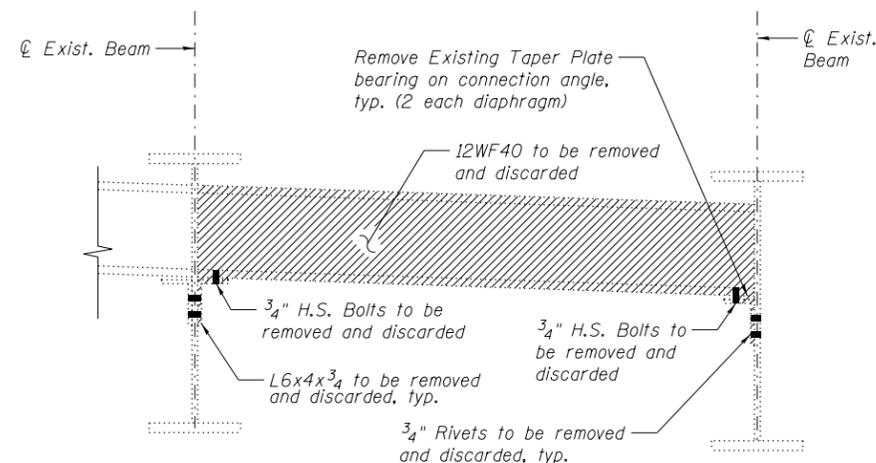
END DIAPHRAGM REPLACEMENT DETAIL 2

(No. of Locations = 6)



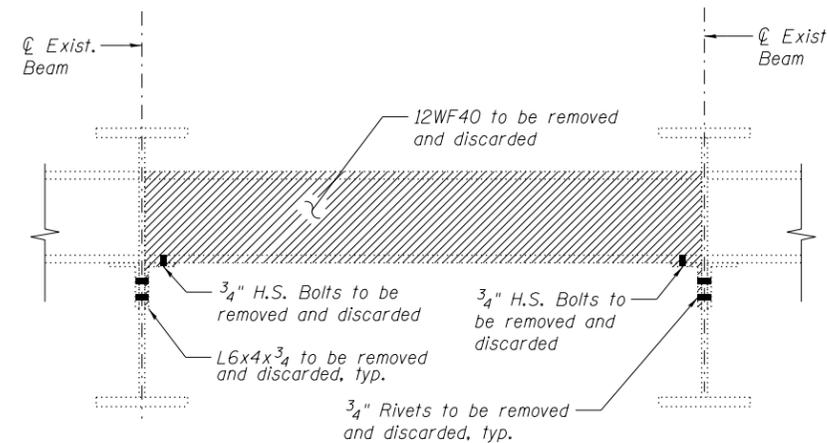
EXISTING INTERIOR DIAPHRAGM REMOVAL DETAIL

(No. of Locations = 4)



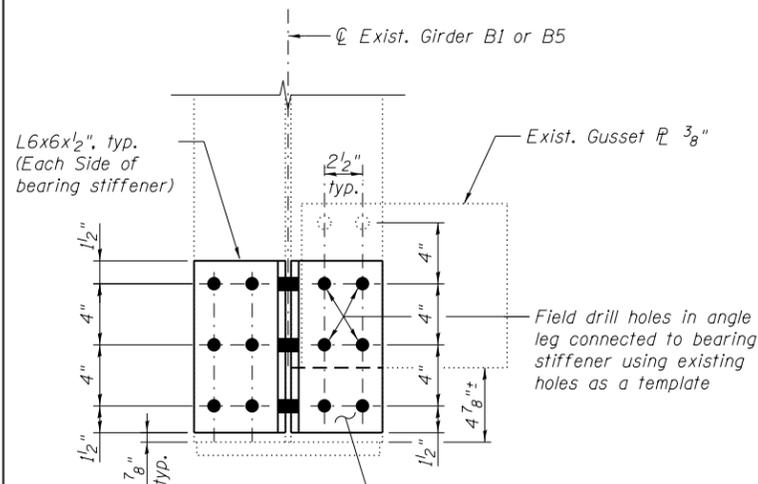
EXISTING END DIAPHRAGM REMOVAL DETAIL 1

(No. of Locations = 3)



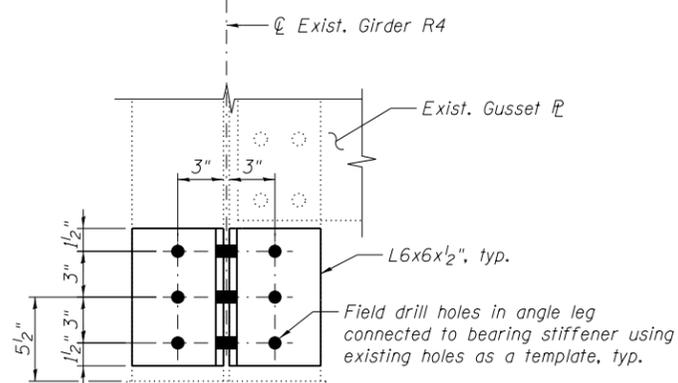
EXISTING END DIAPHRAGM REMOVAL DETAIL 2

(No. of Locations = 6)



VIEW B-B

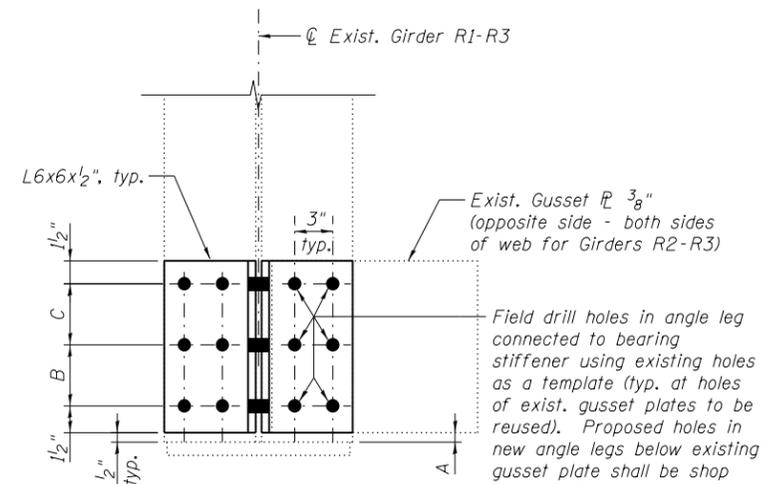
(See Sheet SCT2 and Note 6)



VIEW C-C

(See Sheet SCT2 and Note 6)
Note: Existing L6x6x1/2"x0'-9" on other side of bearing stiffener (See Sheet SCX33)

Girder	A	B	C
R1	1/2"±	4"	4"
R2	3-3/4"±	3 1/4"	4"
R3	7/4"±	2-3/4"	4"



VIEW C'-C'

(See Sheet SCT2 and Note 6)
(Girder R1 shown)

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CHECKED -
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DRAWN -
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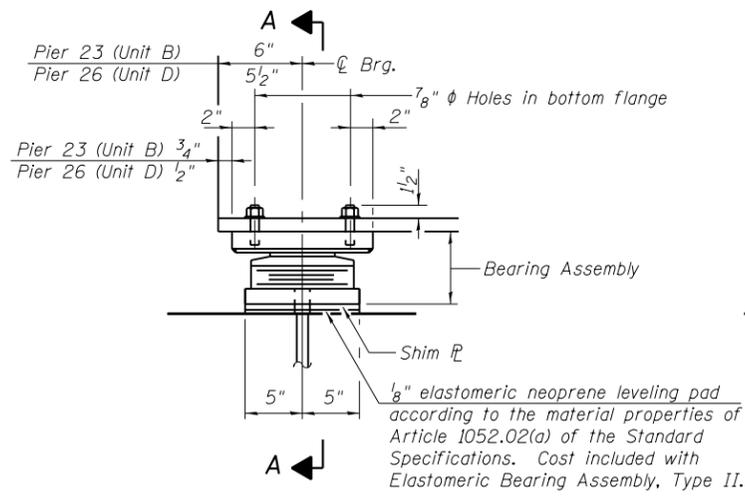
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. STRUCTURAL STEEL REPAIR DETAILS - LOCATION 6
STRUCTURE NO. 016-2456**

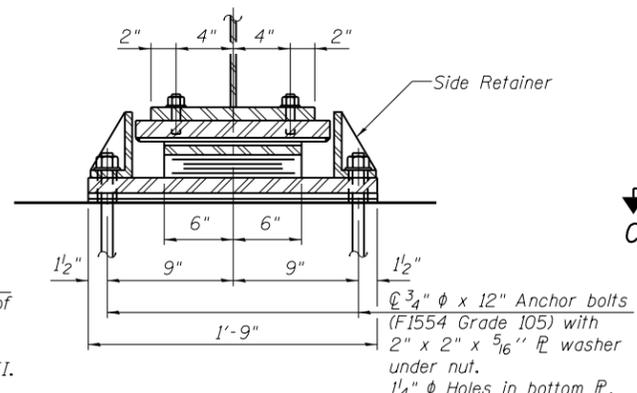
SHEET NO. SF-36 OF SF-42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	123
CONTRACT NO. 60W76				

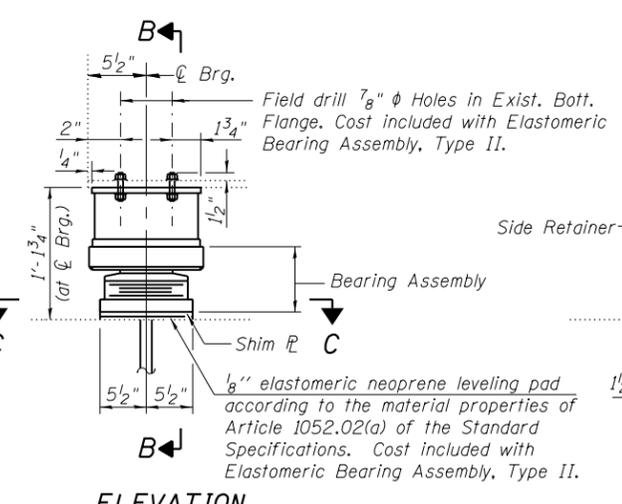
ILLINOIS FED. AID PROJECT



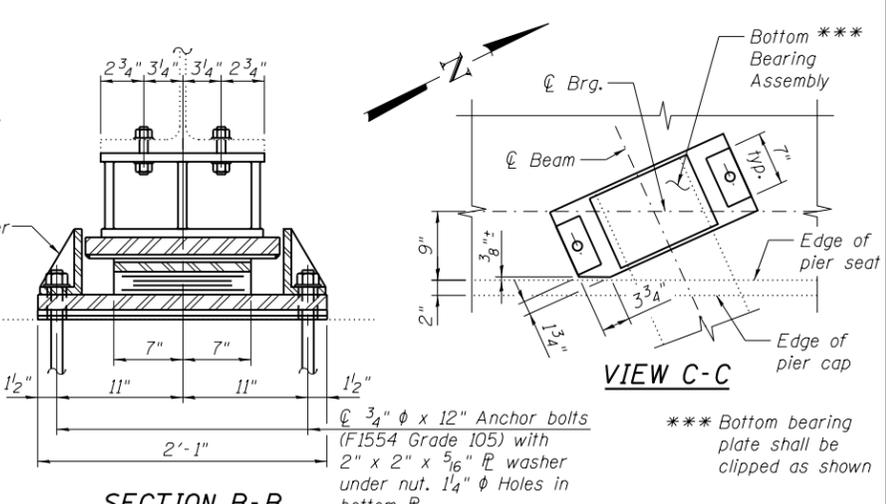
ELEVATION
TYPE II ELASTOMERIC EXP. BRG. AT PIERS 23 (UNIT B) & 26 (UNIT D)
(1 required at each pier)



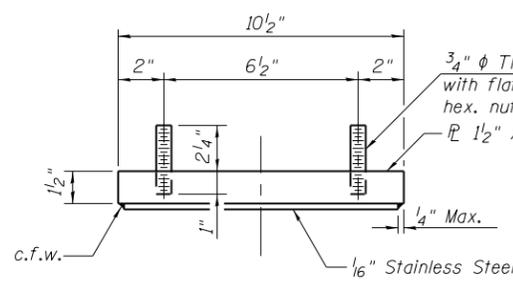
SECTION A-A



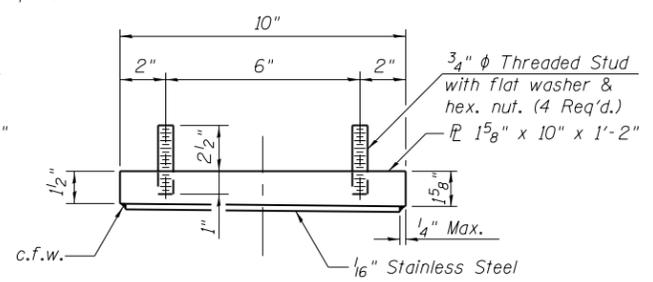
ELEVATION
TYPE II ELASTOMERIC EXP. BRG. AT PIER 59
(4 required)
(See Sheet SC75 for Existing Bearings Removal Detail)



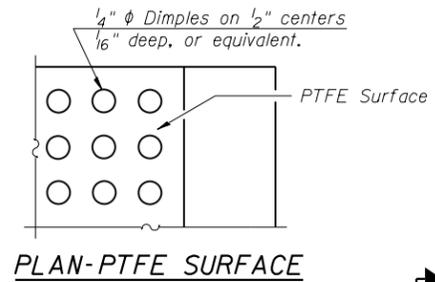
SECTION B-B



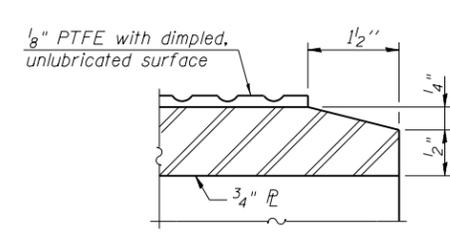
TOP BEARING ASSEMBLY
(Pier 23 (Unit B) only)



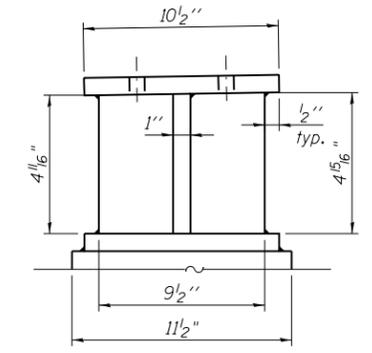
TOP BEARING ASSEMBLY
(Pier 26 (Unit D) only)



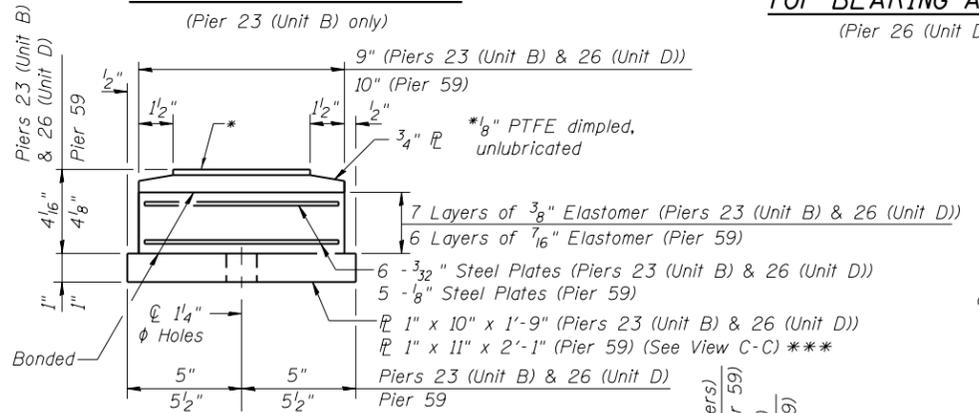
PLAN-PTFE SURFACE



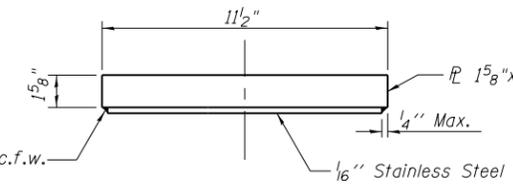
SECTION THRU PTFE



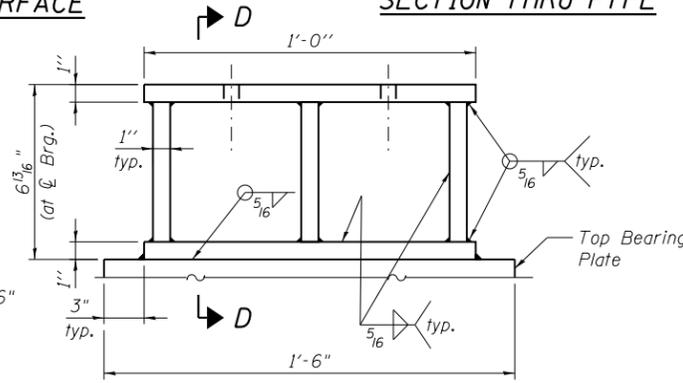
SECTION D-D



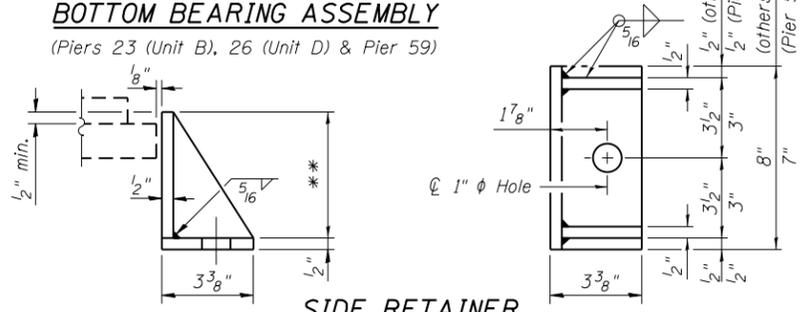
BOTTOM BEARING ASSEMBLY
(Piers 23 (Unit B), 26 (Unit D) & Pier 59)



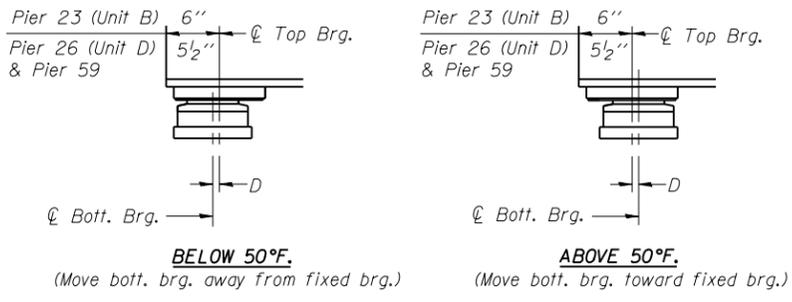
TOP BEARING PLATE
(Pier 59 only)



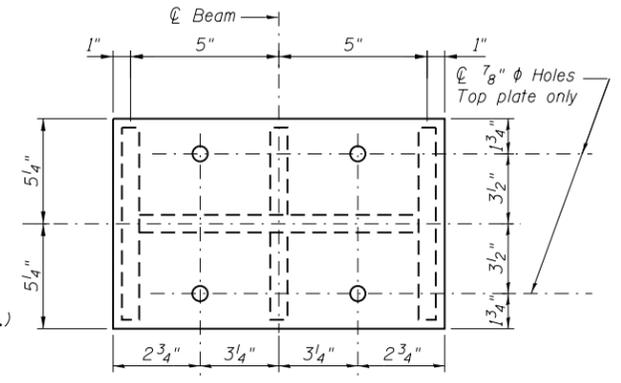
ELEVATION STEEL EXTENSION
(Weight included with Furnishing and Erecting Structural Steel.)



SETTING ANCHOR BOLTS AT EXP. BRG.
D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.
(Steel Extension at Pier 59 not shown)



PLAN STEEL EXTENSION
Prior to ordering any material, Contractor shall verify in the field all bearing height and shim thickness dimensions.



PLAN STEEL EXTENSION

FILE NAME = SFILES08

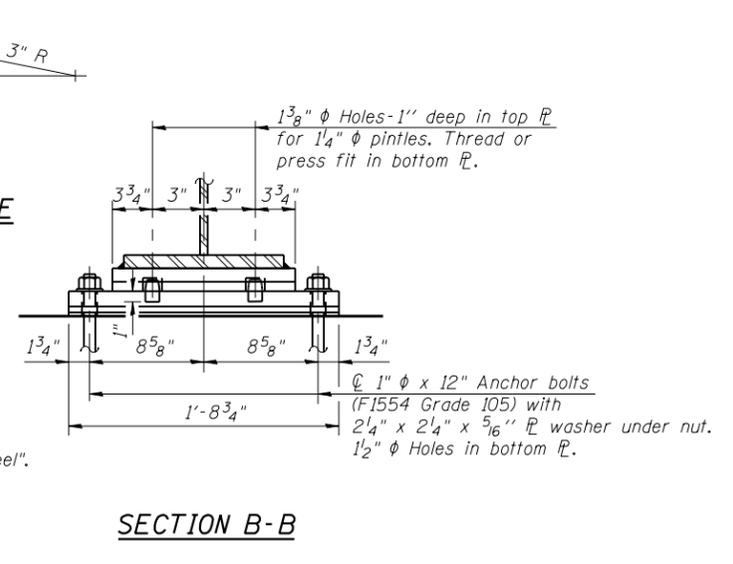
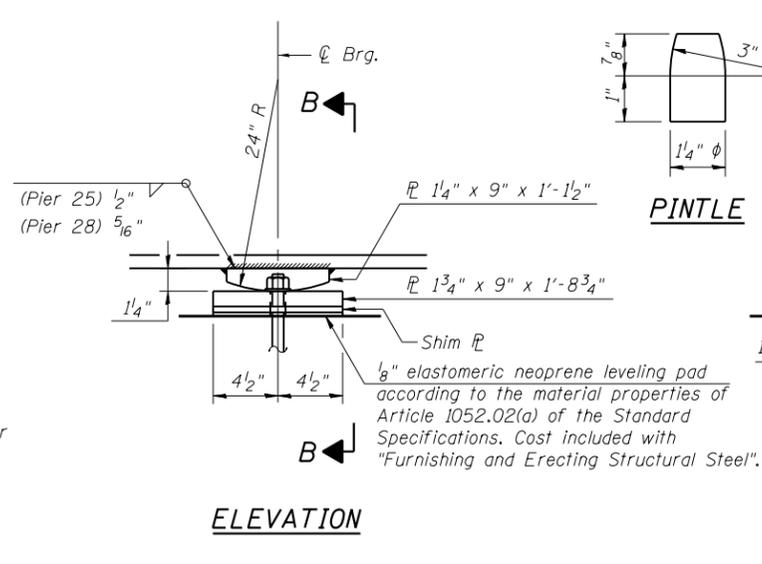
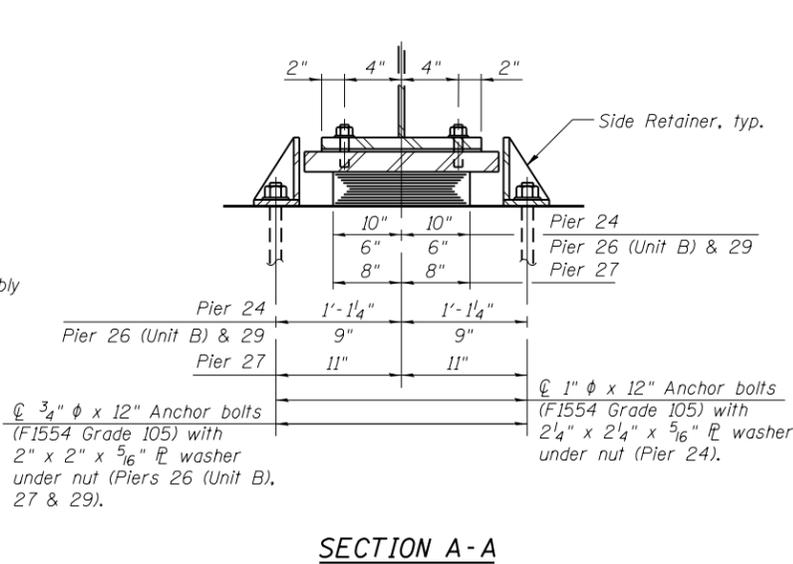
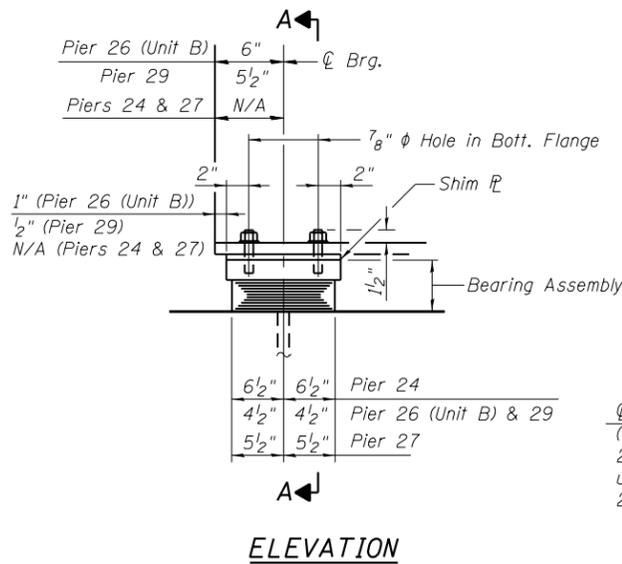
LE LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME = Lin	DESIGNED -	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

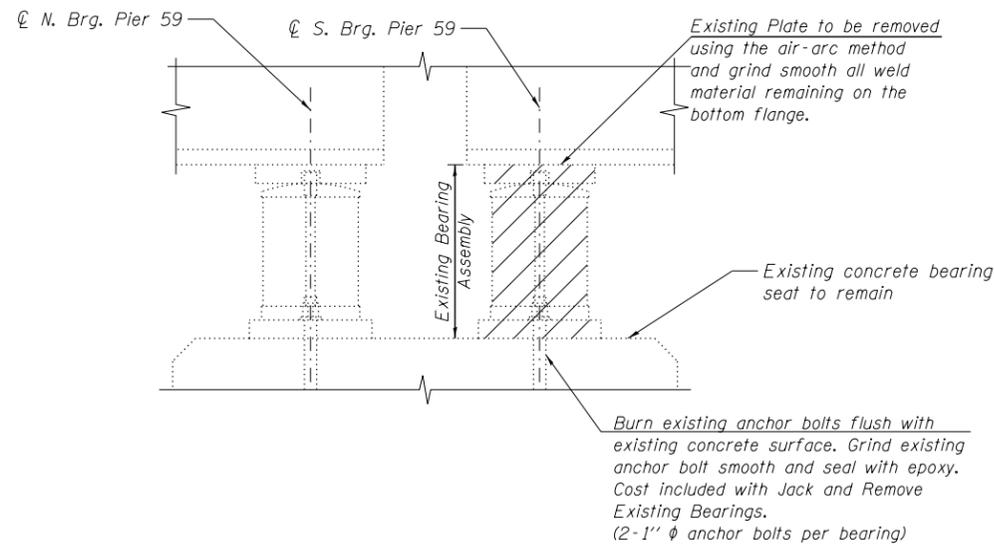
REHAB. BEARING DETAILS - LOCATION 6
STRUCTURE NO. 016-2456
SHEET NO. SF-37 OF SF-42 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 124
				CONTRACT NO. 60W76
ILLINOIS FED. AID PROJECT				

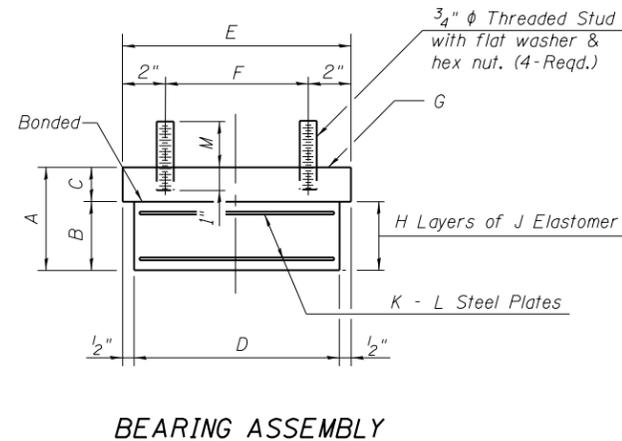


TYPE I ELASTOMERIC EXP. BRG. AT PIERS 24, 26 (UNIT B), 27 & 29
(1 required at each pier)

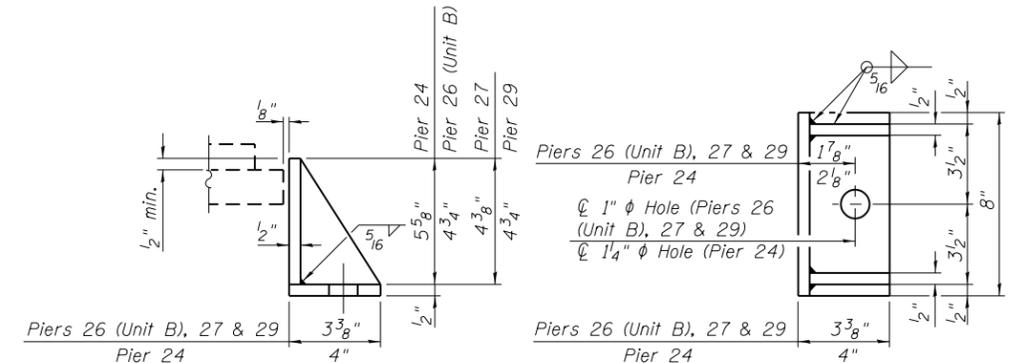
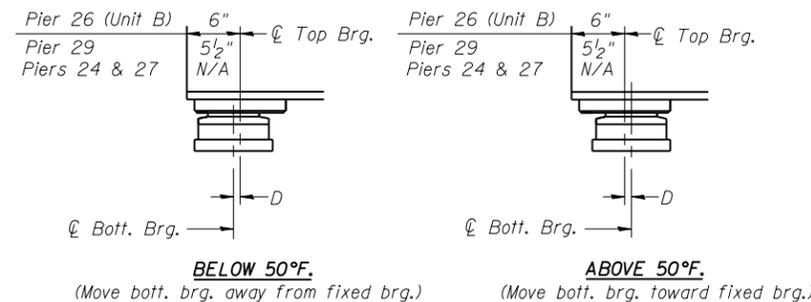
FIXED BEARING AT PIERS 25 & 28
(1 required at each pier)



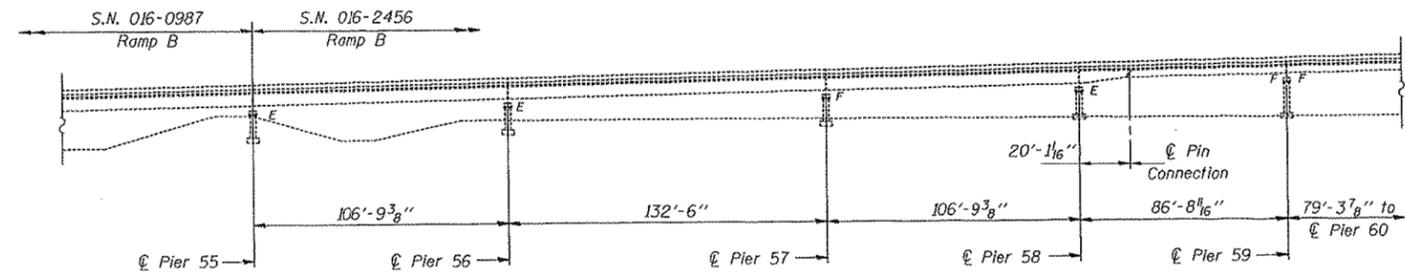
- See Special Provision for "Jack and Remove Existing Bearings".
- Jacking shall not commence until the deck has been removed entirely. The (steel only) dead load reaction is 8 kips for each south bearing at Pier 59. Minimum jack capacity = 6.0 tons.



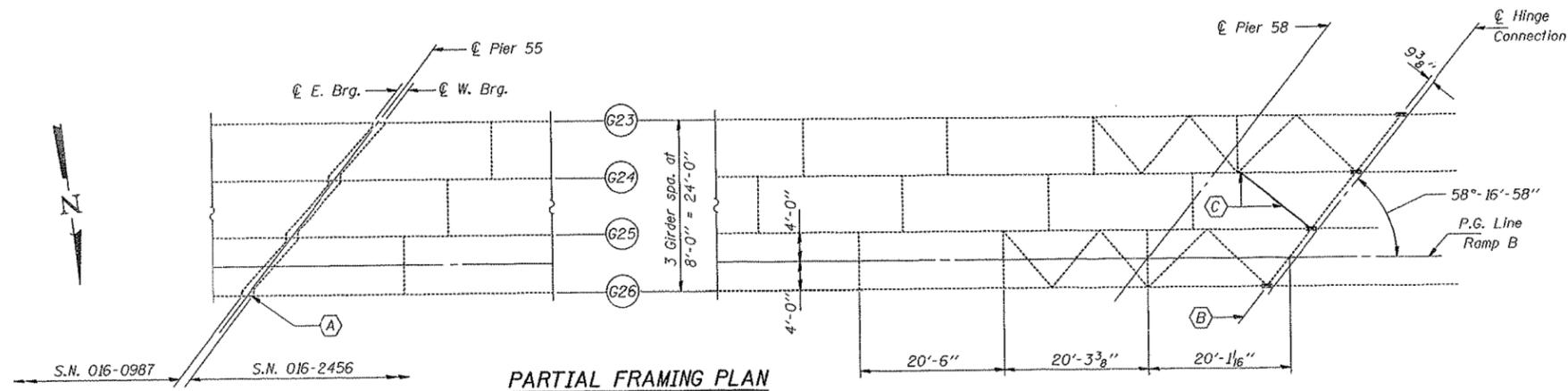
Note:
Shim plates shall not be placed under Bearing Assembly.



Location	A	B	C	D	E	F	G	H	J	K	L	M
Pier 24	5 $\frac{5}{8}$ "	3 $\frac{7}{8}$ "	1 $\frac{3}{4}$ "	13"	14"	10"	PL 1 $\frac{3}{4}$ " x 14" x 1'-10"	5	5 $\frac{5}{8}$ "	4	3 $\frac{16}{32}$ "	2 $\frac{5}{8}$ "
Pier 26 (Unit B)	4 $\frac{11}{16}$ "	3 $\frac{3}{16}$ "	1 $\frac{1}{2}$ "	9"	10"	6"	PL 1 $\frac{1}{2}$ " x 10" x 1'-2"	7	3 $\frac{3}{8}$ "	6	3 $\frac{32}{32}$ "	2 $\frac{1}{2}$ "
Pier 27	4 $\frac{3}{8}$ "	2 $\frac{3}{8}$ "	2"	11"	12"	8"	PL 2" x 12" x 1'-6"	4	1 $\frac{1}{2}$ "	3	1 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "
Pier 29	4 $\frac{11}{16}$ "	3 $\frac{3}{16}$ "	1 $\frac{1}{2}$ "	9"	10"	6"	PL 1 $\frac{1}{2}$ " x 10" x 1'-2"	7	3 $\frac{3}{8}$ "	6	3 $\frac{32}{32}$ "	2 $\frac{3}{4}$ "

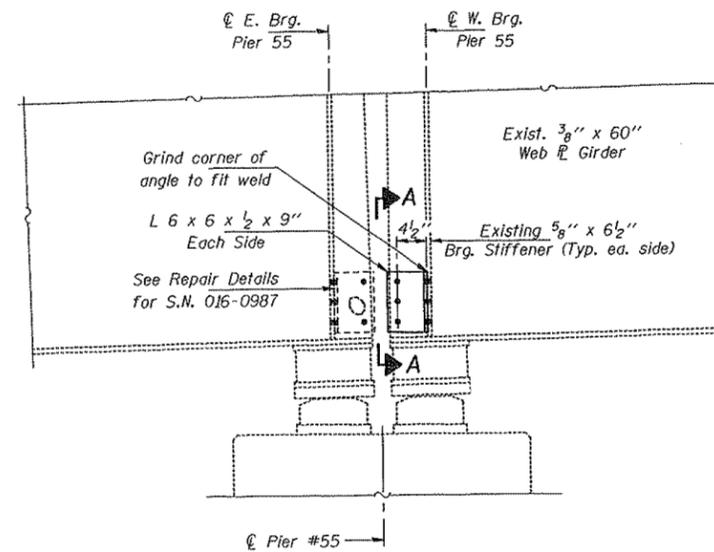


PARTIAL ELEVATION

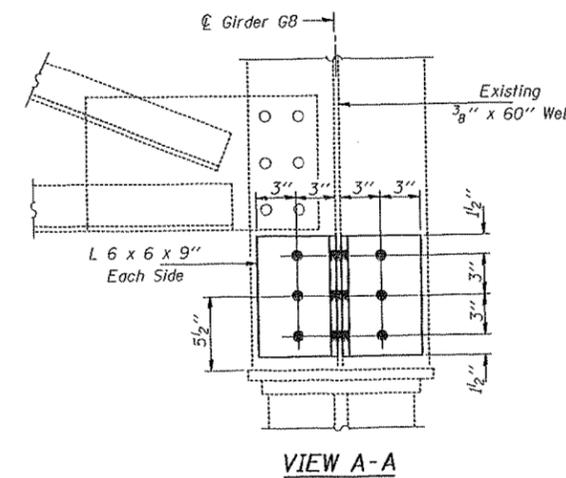


PARTIAL FRAMING PLAN

- (A) Repair G26 Girder End
- (B) Repair Girder Ends
- (C) Install new WT Bracing with L & gusset P



REPAIR A



VIEW A-A

FILE NAME = #FILES



USER NAME = Lin	DESIGNED -	REVISED -
PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE = 3/22/2017 12:22:11 PM	DRAWN -	REVISED -
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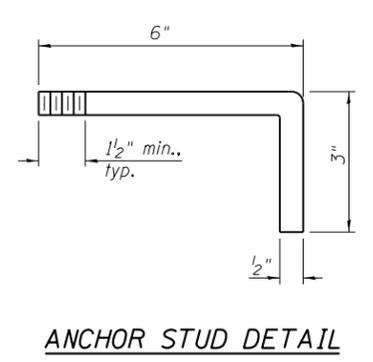
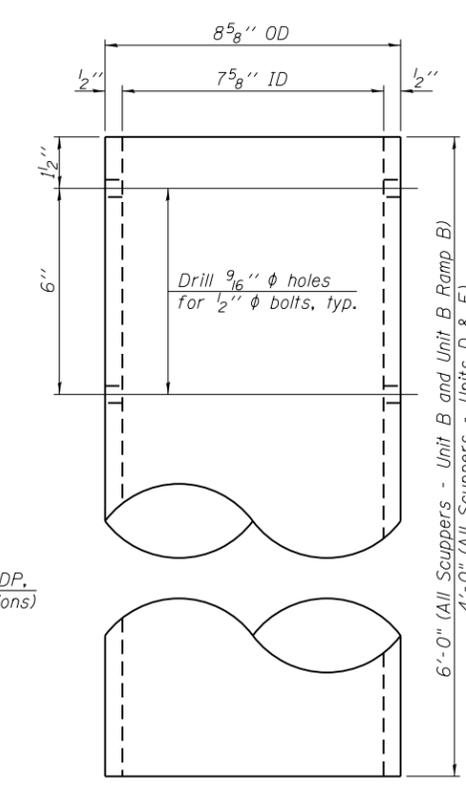
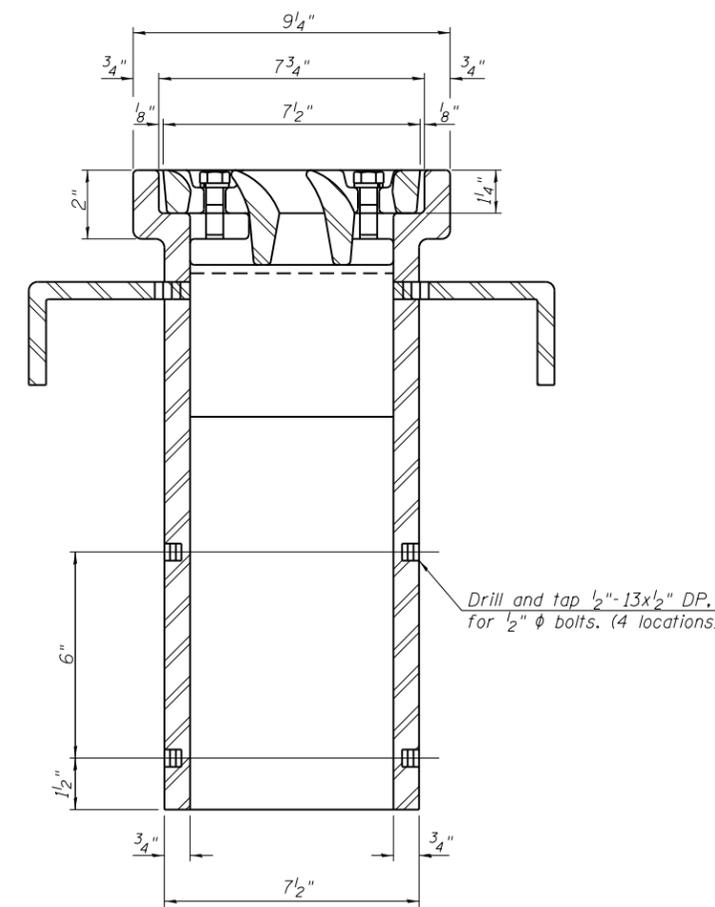
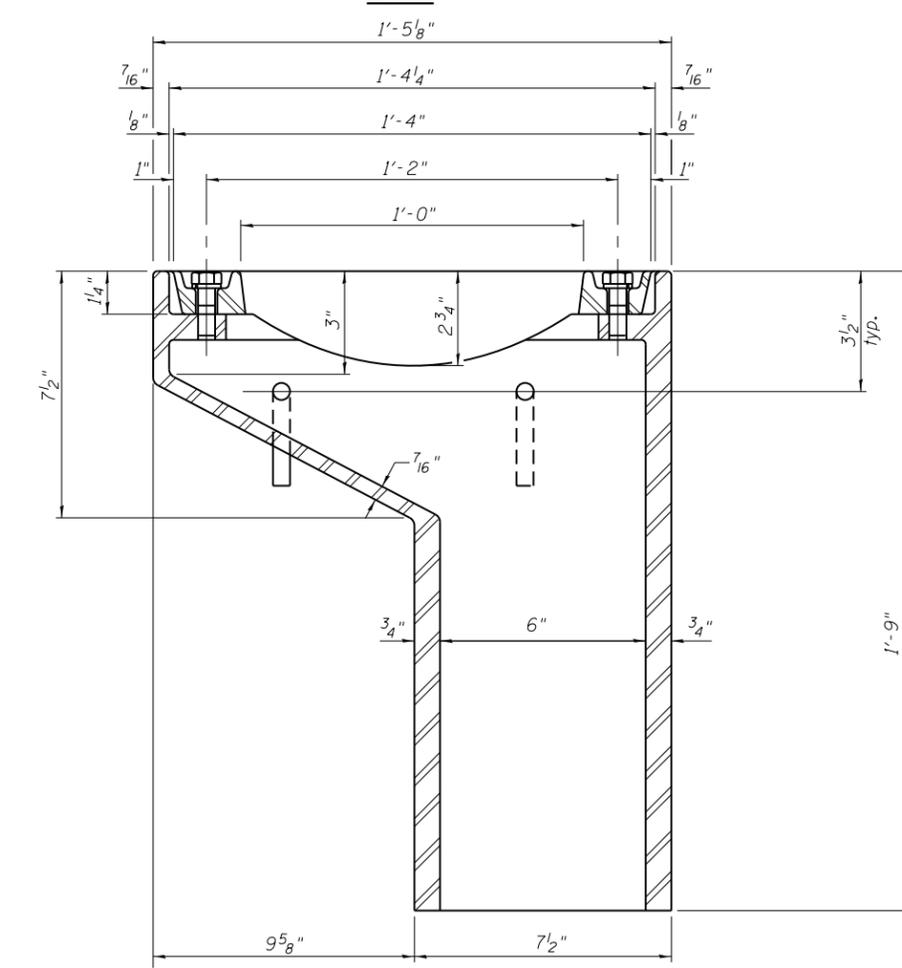
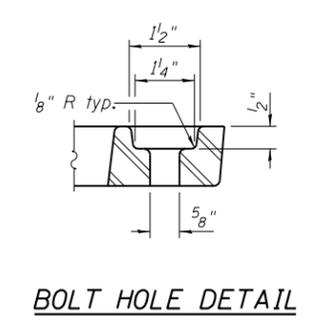
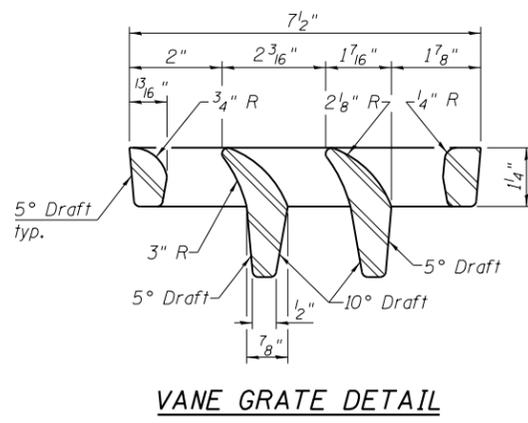
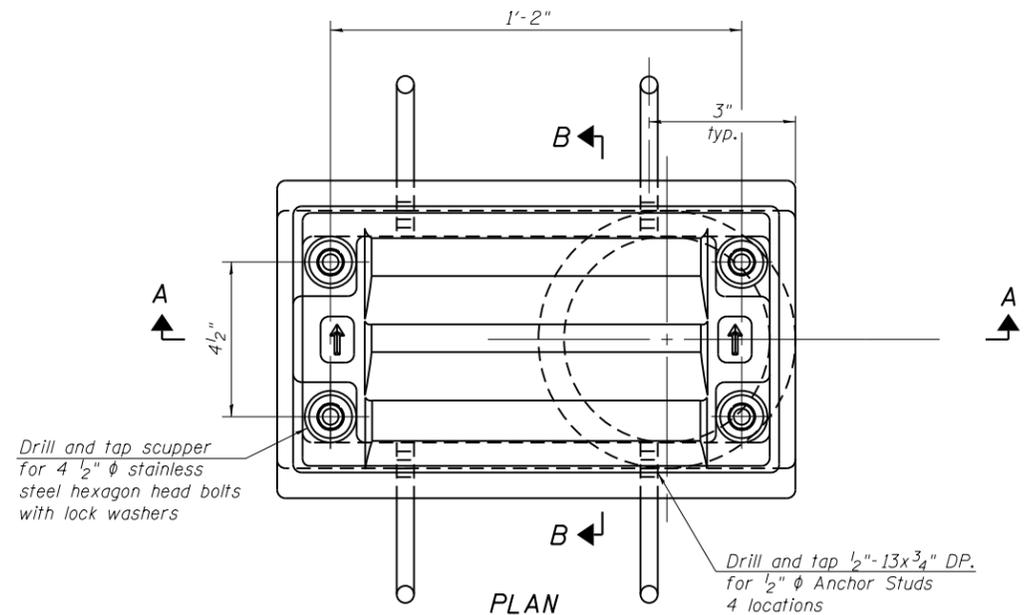
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**1999 REHAB. RAMP B STEEL REPAIR - LOCATION 6
STRUCTURE NO. 016-2456**

SHEET NO. SF-39 OF SF-42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	126
CONTRACT NO. 60W76				

ILLINOIS FED. AID PROJECT



See Sheet SC45 for scupper location relative to parapet.

DS-11

7-1-10

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	16

FILE NAME = #FILES#

LE LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME = Lin
DESIGNED -
CHECKED -
PLOT SCALE =
DRAWN -
PLOT DATE = 3/22/2017 12:22:22 PM
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DESIGNED -
CHECKED -
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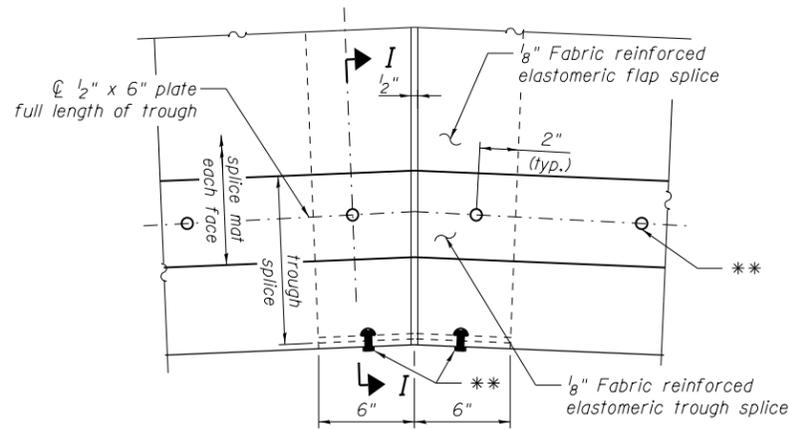
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

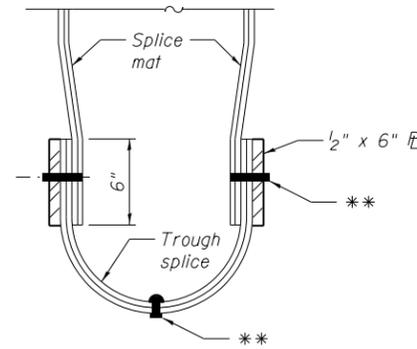
**REHAB. SCUPPER DETAILS - LOCATION 6
STRUCTURE NO. 016-2456**

SHEET NO. SF-40 OF SF-42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	127
CONTRACT NO. 60W76				
ILLINOIS FED. AID PROJECT				

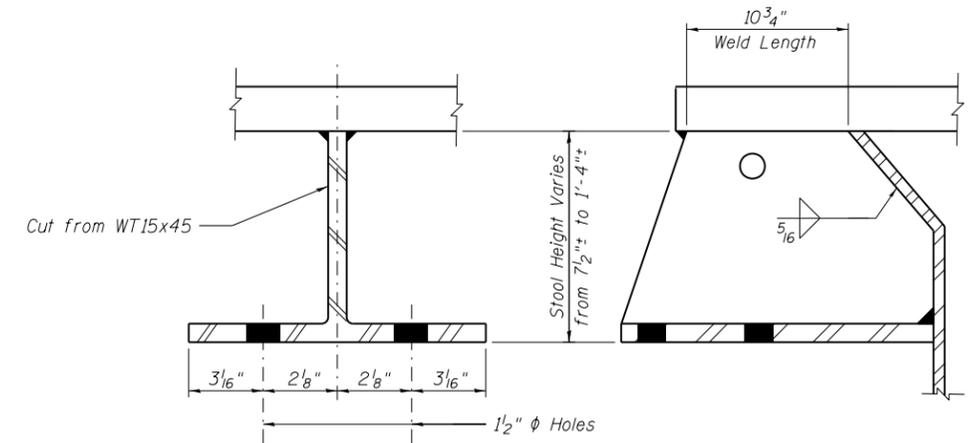


TROUGH SPLICE DETAIL



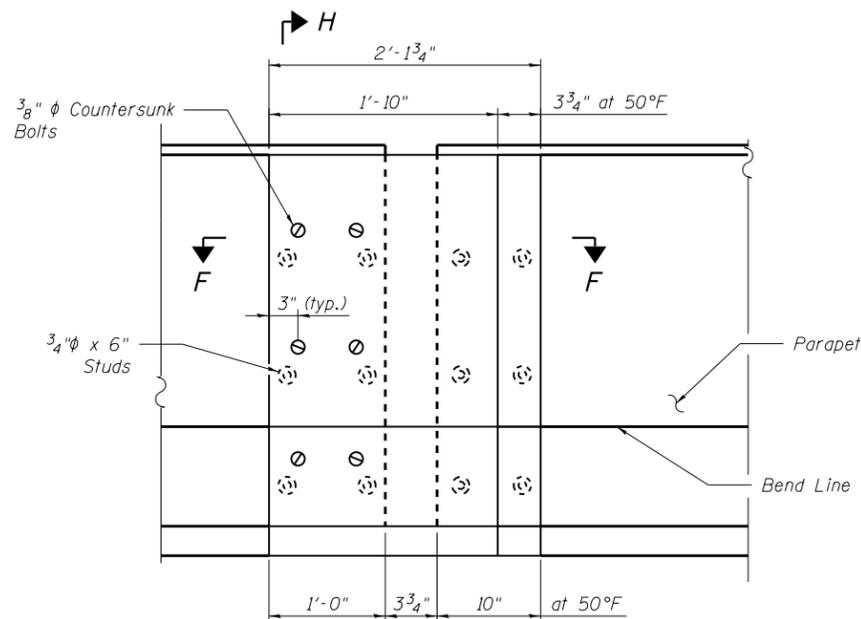
SECTION I-I

** 3/8" ϕ Stainless Steel bolts w/ washers & nuts. Provide brass grommet in trough.

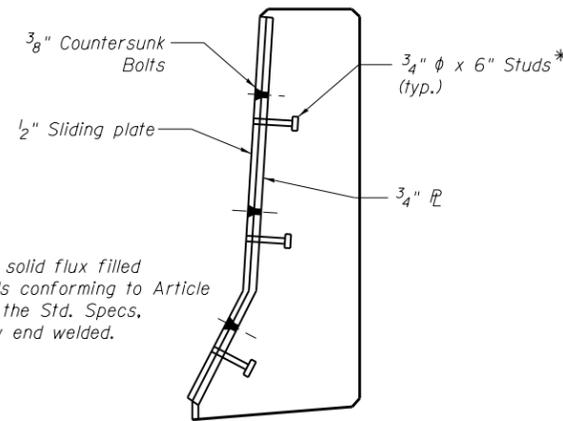


FINGER PLATE STOOL DETAIL

(Contractor shall field verify stool heights)

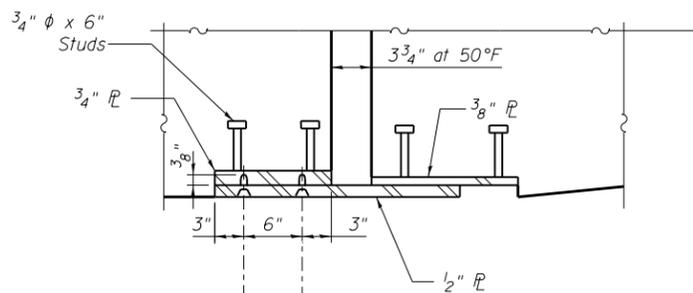


VIEW A-A



SECTION H-H

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs. automatically end welded.



SECTION F-F

ϕ 3/8" ϕ Countersunk Bolts at \pm 9" cts.

FILE NAME = #FILES#



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PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE = 3/22/2017 12:22:24 PM	DRAWN -	REVISED -
	CHECKED -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. FINGER PLATE DETAILS - LOCATION 6
STRUCTURE NO. 016-2456**

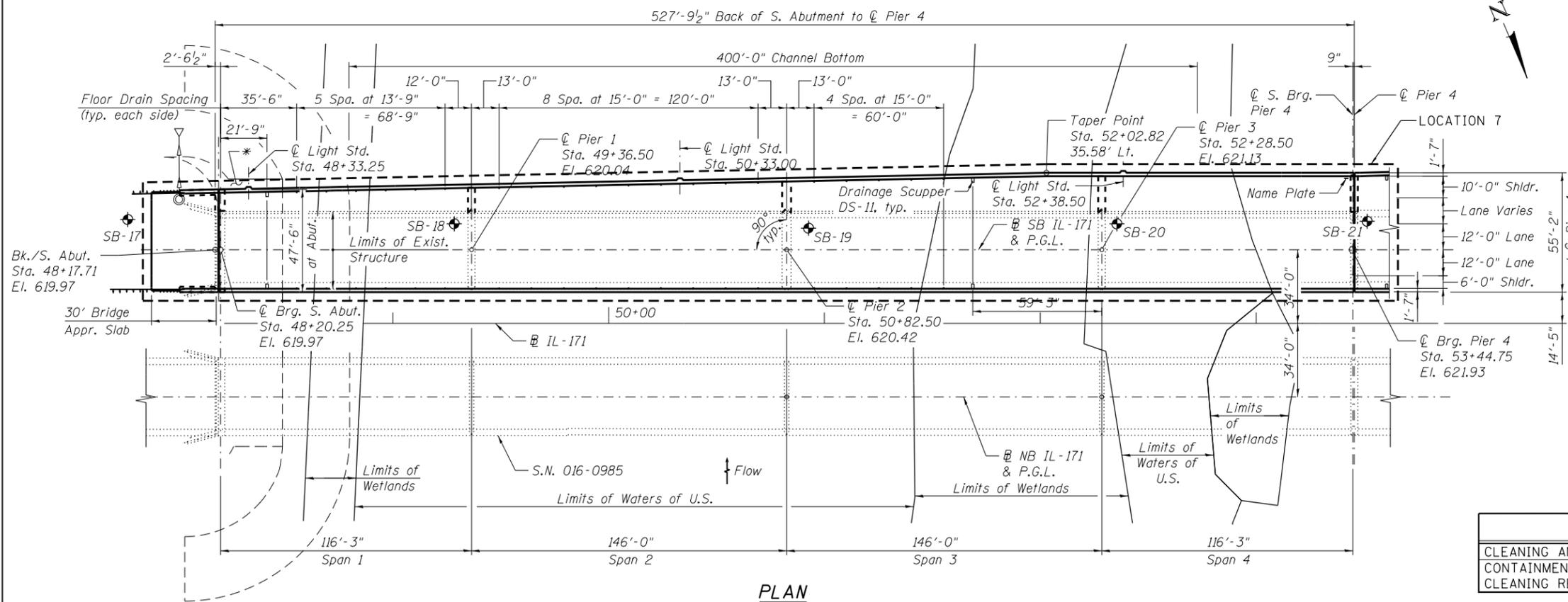
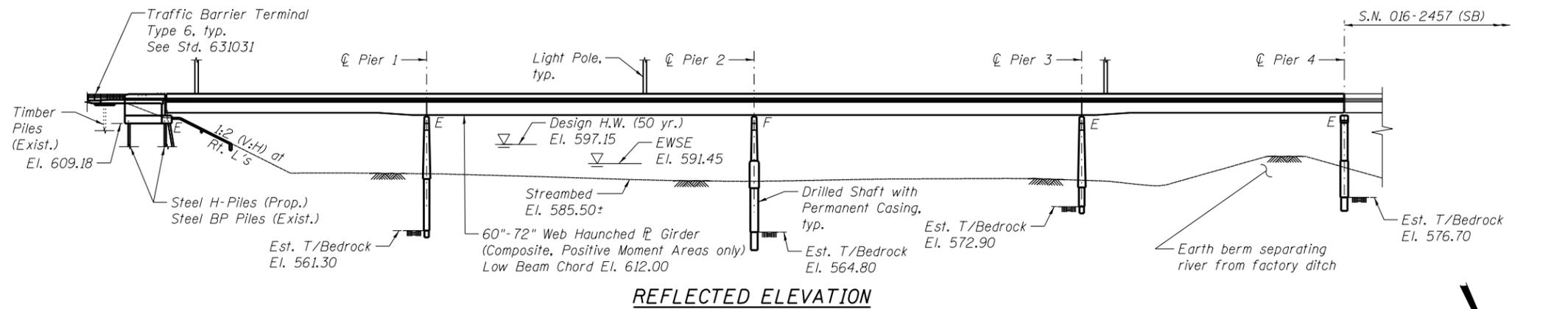
SHEET NO. SF-42 OF SF-42 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	129
CONTRACT NO. 60W76				

ILLINOIS FED. AID PROJECT

GENERAL NOTES

1. THE EXISTING STRUCTURAL STEEL COATING CONTAINS LEAD. THE CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO DEAL WITH THE PRESENCE OF LEAD ON THIS PROJECT.
2. CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISION FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES".
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS. STRUCTURAL SHEETS TAKEN FROM EXISTING PLANS CONTAIN INFORMATION NOT PERTAINING TO THIS CONTRACT AND ARE FOR INFORMATION ONLY.
4. ALL EXISTING STRUCTURAL STEEL IDENTIFIED ON SHEETS SG-6 THRU SG-14 HAS BEEN PRIMED WITH AN INORGANIC ZINC RICH PRIMER UNDER A PREVIOUS CONTRACT. THESE STEEL SURFACES SHALL BE PRESSURE WASHED CLEAN AND POWER TOOL CLEANED (SSPC SP-3 MODIFIED) AS NECESSARY PRIOR TO THE APPLICATION OF THE INTERMEDIATE AND TOP COATS. THE INORGANIC ZINC RICH PRIMER / ACRYLIC / ACRYLIC PAINT SYSTEM SHALL BE USED FOR FIELD PAINTING OF THESE LOCATIONS. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR STEEL SURFACES SHALL BE GRAY, MUNSELL NO. 5B 7/1. THE COLOR OF THE FINAL FINISH COAT FOR THE EXTERIOR AND BOTTOM FLANGE OF THE FASCIA BEAMS SHALL BE REDDISH BROWN, MUNSELL NO. 2.5YR 3/4.
5. ALL EXISTING STRUCTURAL STEEL IDENTIFIED ON SHEETS SG-2 THRU SG-5 SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING SSPC-SP10. THESE LOCATIONS SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF THE EPOXY MASTIC / EPOXY MASTIC / ACRYLIC PAINT SYSTEM. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR STEEL SURFACES SHALL BE GRAY, MUNSELL NO. 5B 7/1. THE COLOR OF THE FINAL FINISH COAT FOR THE EXTERIOR AND BOTTOM FLANGE OF THE FASCIA BEAMS SHALL BE REDDISH BROWN, MUNSELL NO. 2.5YR 3/4.
6. A MINIMUM OF 2 AIR MONITORS WILL BE REQUIRED TO MONITOR ABRASIVE BLASTING OPERATIONS AT THIS SITE. SEE SPECIAL PROVISION FOR "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES".
7. THE ELASTOMERIC PADS OF THE EXISTING BEARINGS SHALL BE MASKED OFF FOR PROTECTION DURING PAINTING AND REMOVED WHEN PAINTING IS FINISHED. COST INCLUDED WITH "CLEANING AND PAINTING STEEL BRIDGE NO. 7".
8. IF APPLICABLE, THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND DETAILS DEMONSTRATING THE STRUCTURAL INTEGRITY OF THE BRIDGE IS MAINTAINED UNDER THE ADDITIONAL IMPOSED LOADS OF THE CONTAINMENT SYSTEM. SEE SPECIAL PROVISIONS.



TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
CLEANING AND PAINTING STEEL BRIDGE NO. 7	L. SUM	1
CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 7	L. SUM	1

FILE NAME = #FILES#



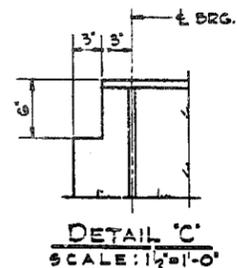
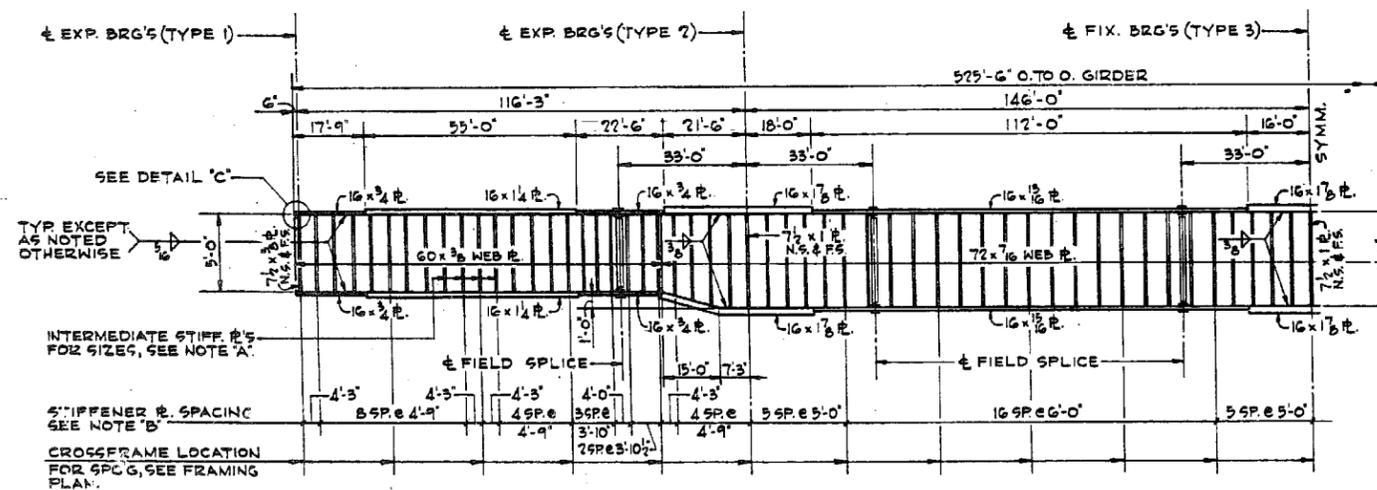
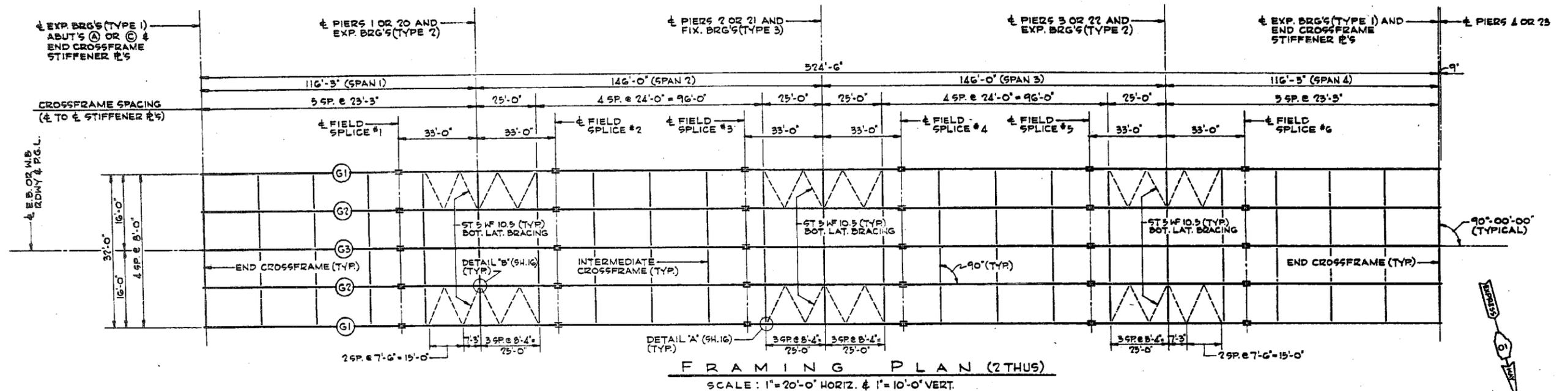
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	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION - LOCATION 7
STRUCTURE NO. 016-0483

SHEET NO. SG-1 OF SG-14 SHEETS

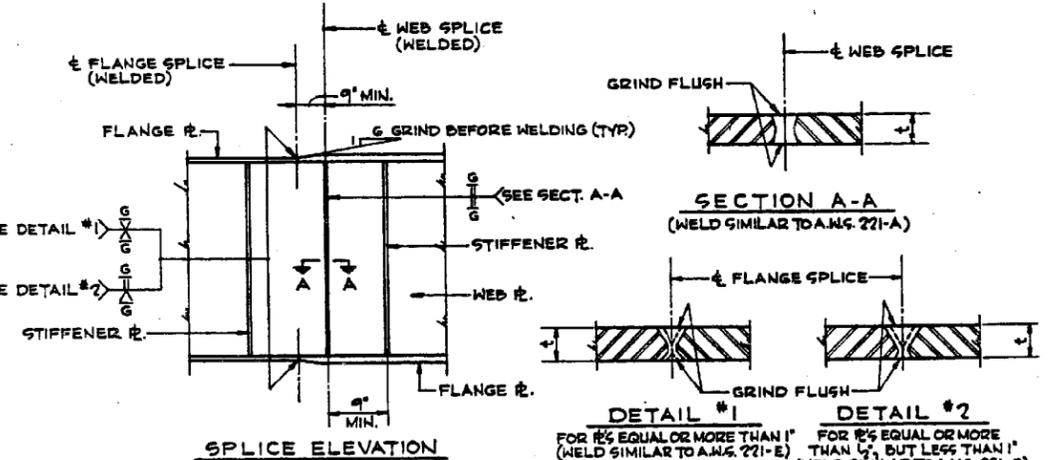
F.A.P. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-0398P	COOK	209	130
				CONTRACT NO. 60W76
ILLINOIS FED. AID PROJECT				



	MOMENTS (FT. KIPS)						REACTIONS (KIPS)					
	.4SPAN1	PIERS 1 OR 20	.5SPAN2	PIERS 2 OR 21	.5SPAN3	PIERS 3 OR 22	ABUT'S A OR C	PIERS 1 OR 20	PIERS 2 OR 21	PIERS 3 OR 22	PIERS 4 OR 23	
DEAD LOAD	1075	-2507	933	-2337	433	-2307	1075	52.9	190.0	185.3	190.0	52.9
LIVE LOAD	1073	-1440	1035	-1305	1035	-1440	1073	46.9	94.7	97.7	94.7	46.9
IMPACT	212	-281	195	-278	195	-281	212	9.7	12.1	11.7	12.1	9.7
TOTAL	2360	-4228	2263	-4120	2263	-4228	2360	109.5	296.8	294.7	296.8	109.5

NOTE 'A':
INTERMEDIATE STIFF. ϕ 'S - $6 \times 3/8 \phi$ (N.S. & F.S.), EXCEPT AT CROSSFRAMES & AS NOTED OTHERWISE ON GIRDER ELEVATION. FOR STIFF. ϕ 'S AT CROSSFRAMES, SEE TYP. CROSSFRAME DETAILS; SH. 16. FOR DETAIL OF INTERMEDIATE STIFF. ϕ 'S OTHER THAN AT CROSSFRAMES, SEE DETAIL 'A' SH. 16. FOR DETAIL OF STIFF. ϕ 'S AT BEARINGS, SEE SH. 16.

NOTE 'B':
ALL STIFFENER ϕ 'S TO BE WELDED AT RIGHT ANGLES TO WEB & FLANGES OF GIRDER.



NOTES:
FOR STRUCTURAL STEEL DESIGNATION, SEE 'GENERAL NOTES' SH. 3.
FOR TABLE 'TOP OF GIRDER WEB ϕ ELEVATIONS', SEE SH. 16.
FOR CROSSFRAME DETAILS, SEE SH. 16.
FOR FIELD SPLICE DETAILS, SEE SH. 16.
FOR 30" LATERAL BRACING CONN. DETAILS 'A' & 'B', SEE SH. 16.
FOR DETAIL OF CONDUIT SUPPORT BRACKETS, SEE SH. 20.

BILL OF MATERIAL *		
ITEM	UNIT	QUANTITY
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	1,407,993

* INCLUDES ALL STRUCTURAL STEEL SHOWN ON THIS SHEET AND SHEET 16.

FILE NAME = #FILES08

LE LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME = Lin
DESIGNED -
CHECKED -
PLOT SCALE -
PLOT DATE = 3/22/2017 12:22:26 PM

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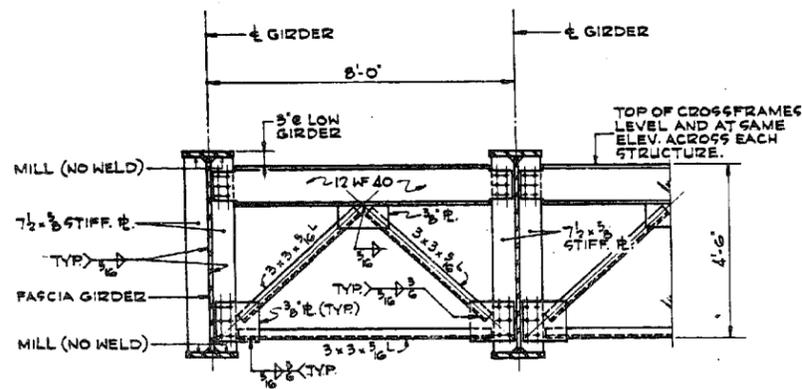
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ORIG. FRAMING PLAN & GIRDER ELEVATION - LOCATION 7
STRUCTURE NO. 016-0483

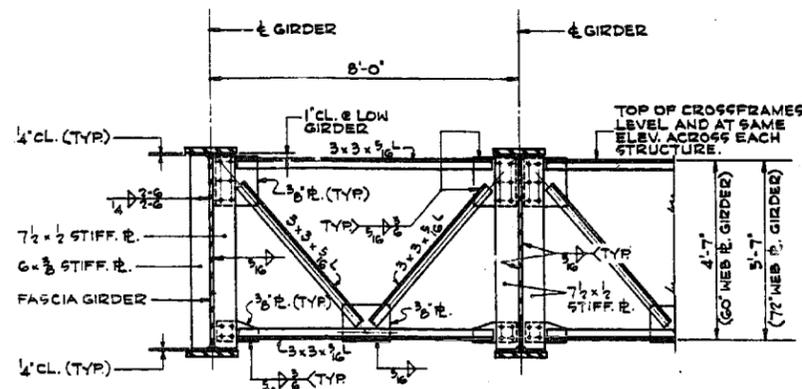
SHEET NO. SG-2 OF SG-14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-0398BP	COOK	209	131
				CONTRACT NO. 60W76

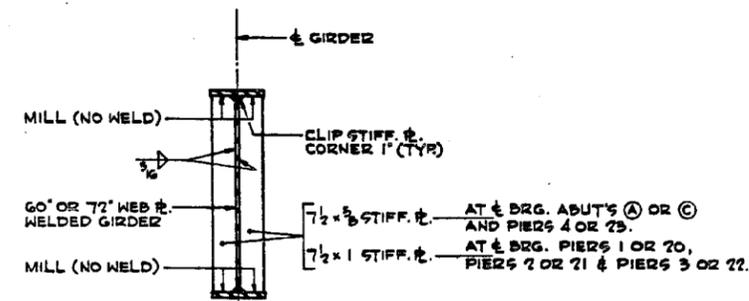
ILLINOIS FED. AID PROJECT



END CROSSFRAME DETAIL



INTERMEDIATE CROSSFRAME DETAIL

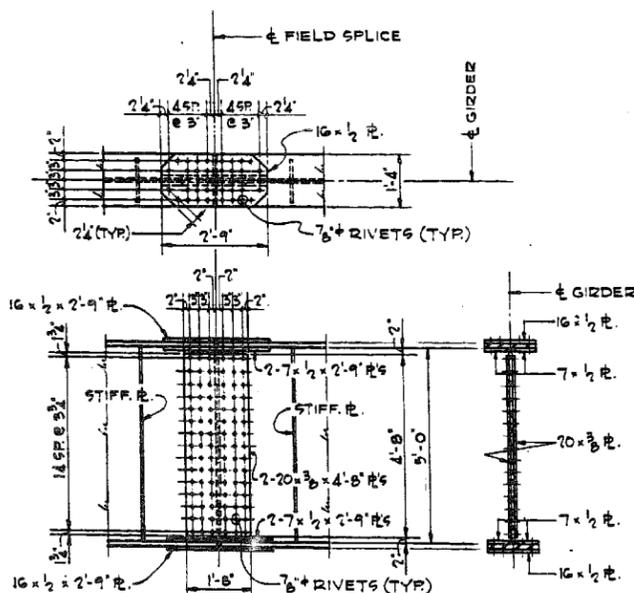


DETAIL OF BEARING STIFFENER R'S AT ABUTMENTS AND PIERS

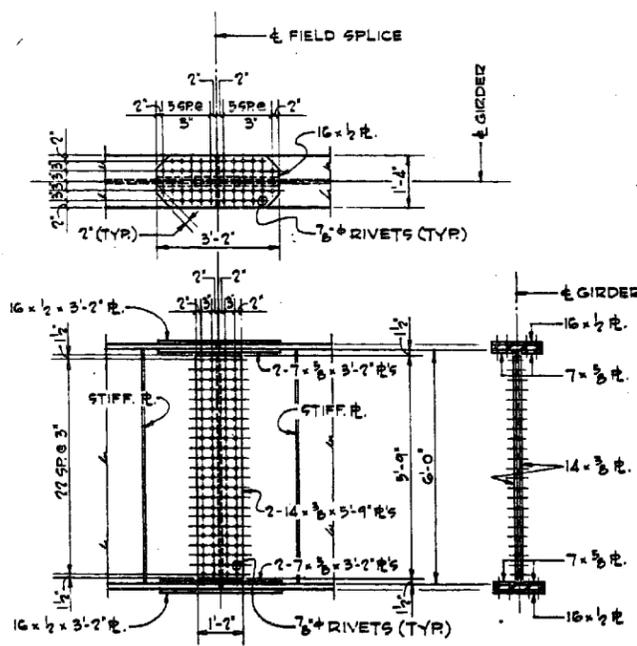
SCALE: 1/2" = 1'-0"

NOTE: USE 3/4" RIVETS FOR ALL FIELD CONNECTIONS
TYPICAL CROSSFRAME DETAILS
SCALE: 1/2" = 1'-0"

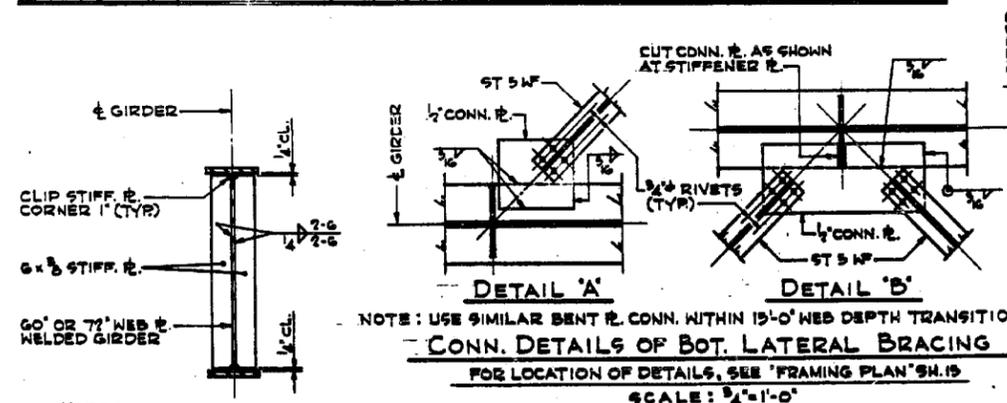
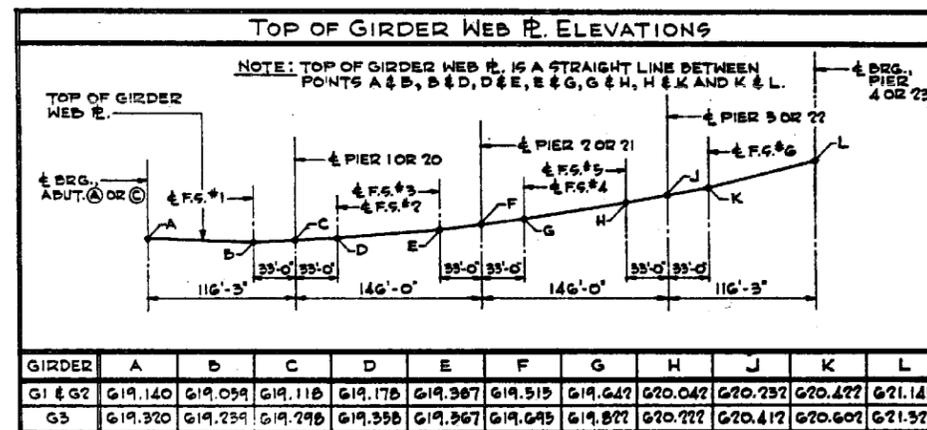
NOTE: FOR DETAILS OF CONDUIT SUPPORT BRACKETS, SEE SH. 20.



DETAIL OF FIELD SPLICE #1 & #6
60' WEB R. GIRDER
SCALE: 1/2" = 1'-0"



DETAIL OF FIELD SPLICE #2 THRU #5
72' WEB R. GIRDER
SCALE: 1/2" = 1'-0"



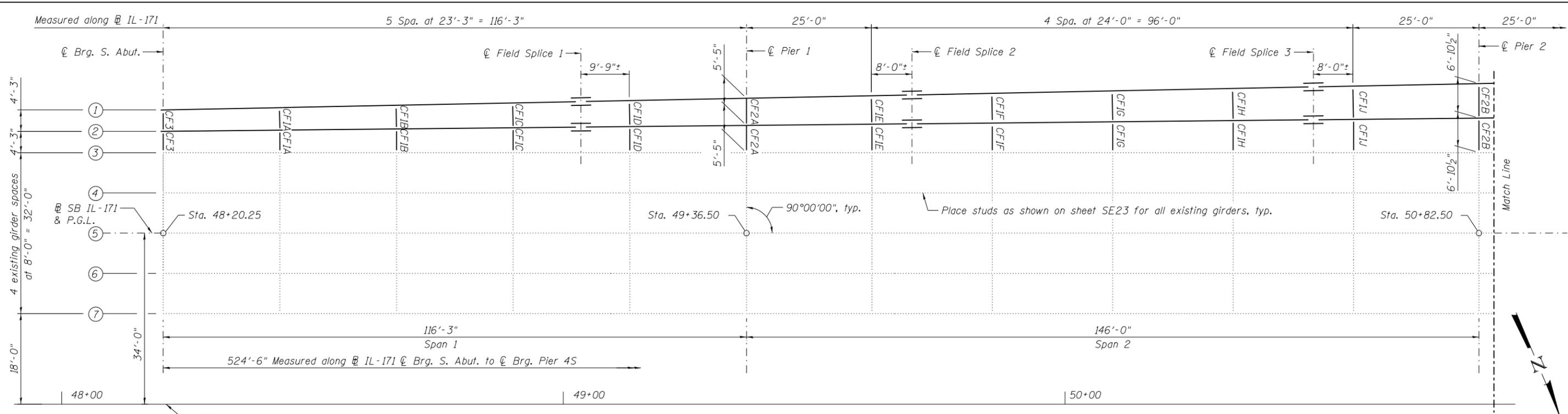
NOTE: USE SIMILAR BENT R. CONN. WITHIN 15'-0" WEB DEPTH TRANSITION
CONN. DETAILS OF BOT. LATERAL BRACING
FOR LOCATION OF DETAILS, SEE 'FRAMING PLAN' SH. 15
SCALE: 3/4" = 1'-0"

NOTE: FOR WELD DETAILS OF STIFF. R'S AT CROSS-FRAMES, SEE 'TYP. CROSSFRAME DETAILS'; FOR WELD DETAILS OF STIFF. R'S AT BEARINGS, SEE DETAIL THG SHEET.

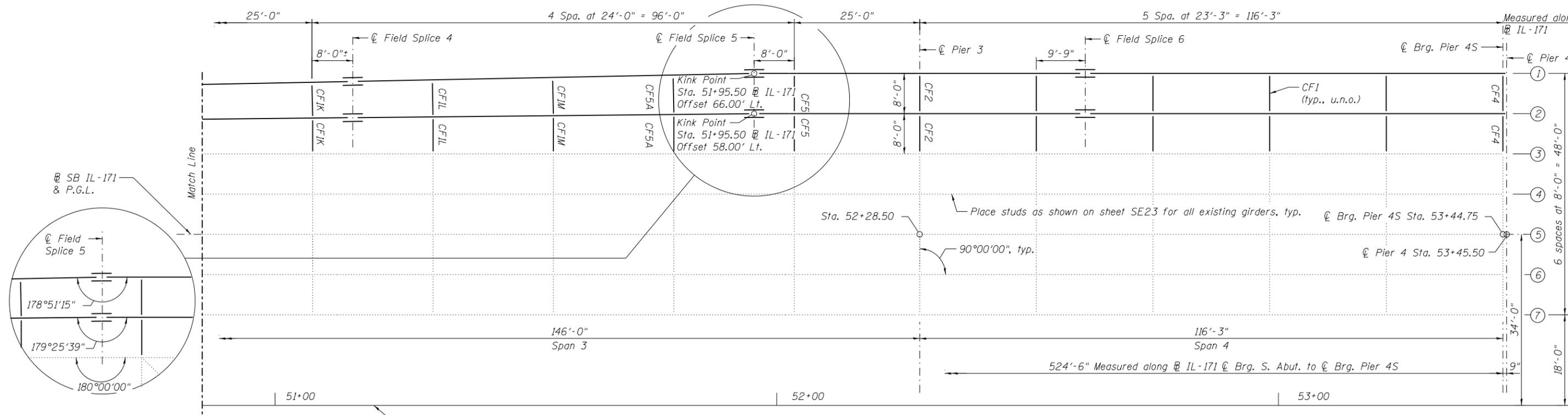
DETAIL 'X' - TYP. INTERMEDIATE STIFFENERS OTHER THAN AT CROSSFRAMES.
SCALE: 1/2" = 1'-0"

NOTE: FOR BILL OF MATERIAL, SEE SH. 15.

FILE NAME = RFILES08



FRAMING PLAN - SPANS 1 & 2



FRAMING PLAN - SPANS 3 & 4

FILE NAME = #FILES#



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PLOT SCALE =	DRAWN -	REVISED -
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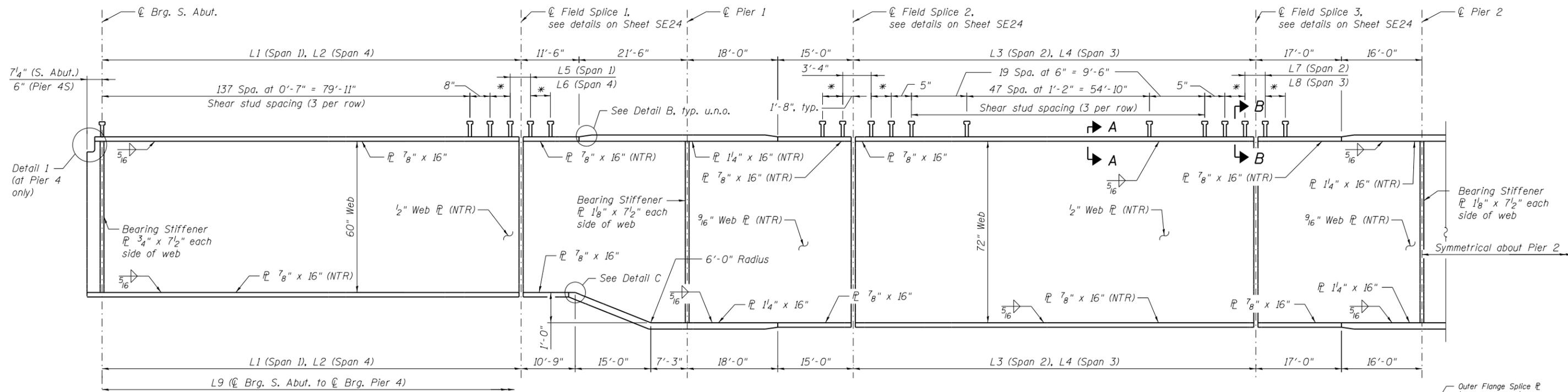
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REHAB. FRAMING PLAN - LOCATION 7
STRUCTURE NO. 016-0483

SHEET NO. SG-6 OF SG-14 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 135
CONTRACT NO. 60W76				

ILLINOIS FED. AID PROJECT



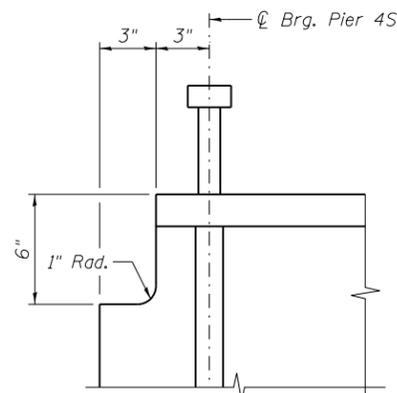
GIRDER 1 & 2 ELEVATION
(Shear stud connector, shown for Girder G1-G7)

* 3 spa. at 0'-4" = 1'-0" (4 studs per row). See Section B-B

GIRDER DIMENSIONS

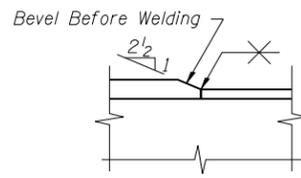
Girder No.	L1	L2	L3	L4	L5	L6	L7	L8	L9
G1	83'-3 1/4"	83'-3"	80'-0 3/8"	80'-0 1/4"	3'-4 1/4"	3'-4"	3'-4 3/8"	3'-4 1/4"	524'-6 7/8"
G2	83'-3 3/8"	83'-3"	80'-0 1/8"	80'-0"	3'-4 1/8"	3'-4"	3'-4 1/8"	3'-4 1/8"	524'-6 1/4"
Existing G3-G7	83'-3"	83'-3"	80'-0"	80'-0"	3'-4"	3'-4"	3'-4"	3'-4"	524'-6"

All dimensions along the ϕ of the girder

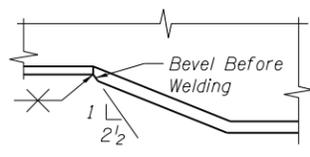


DETAIL 1

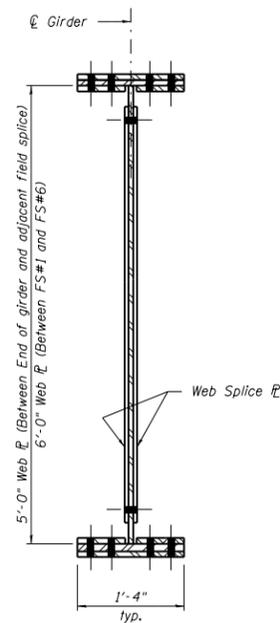
(Cope Girders as shown at Pier 4 only)



DETAIL "B"

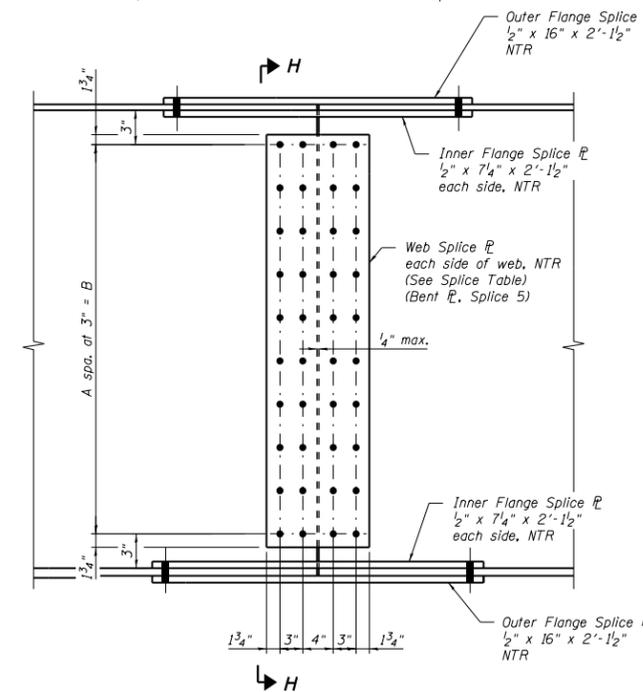


DETAIL "C"

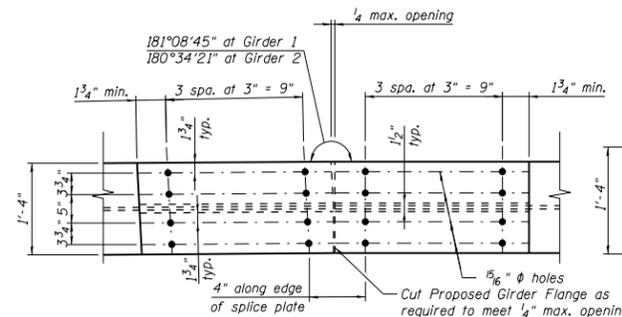


SPLICE TABLE

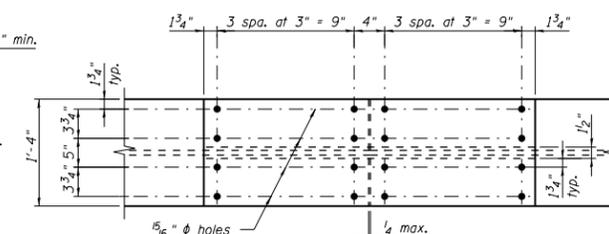
Splice Location	Web Splice ϕ	A	B	No. Bolts
Splice 1 & 6	3/8" x 13 1/2" x 4'-9 1/2"	18	4'-6"	76
Splice 2 & 5	3/8" x 13 1/2" x 5'-9 1/2"	22	5'-6"	92
Splice 3 & 4	3/8" x 13 1/2" x 5'-9 1/2"	22	5'-6"	92



ELEVATION - FIELD SPLICE - GIRDER 1 & 2



FLANGE SPLICE - #5
(Top & Bottom Flanges)



FLANGE SPLICE 1, 2, 3, 4 & 6
(Top & Bottom Flanges)
(32 Bolts per Flange Splice)

FILE NAME = #FILES#

LE LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME = Lin
DESIGNED -
CHECKED -
PLOT SCALE =
DRAWN -
PLOT DATE = 3/22/2017 12:23:00 PM
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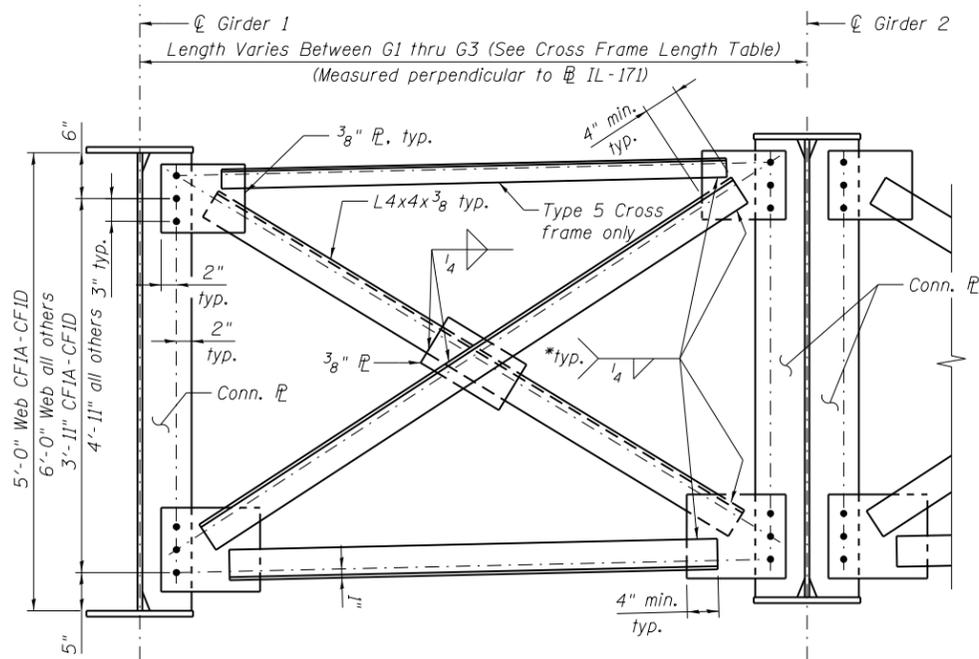
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REHAB. GIRDER ELEVATION & SPLICE DETAILS - LOCATION 7
STRUCTURE NO. 016-0483

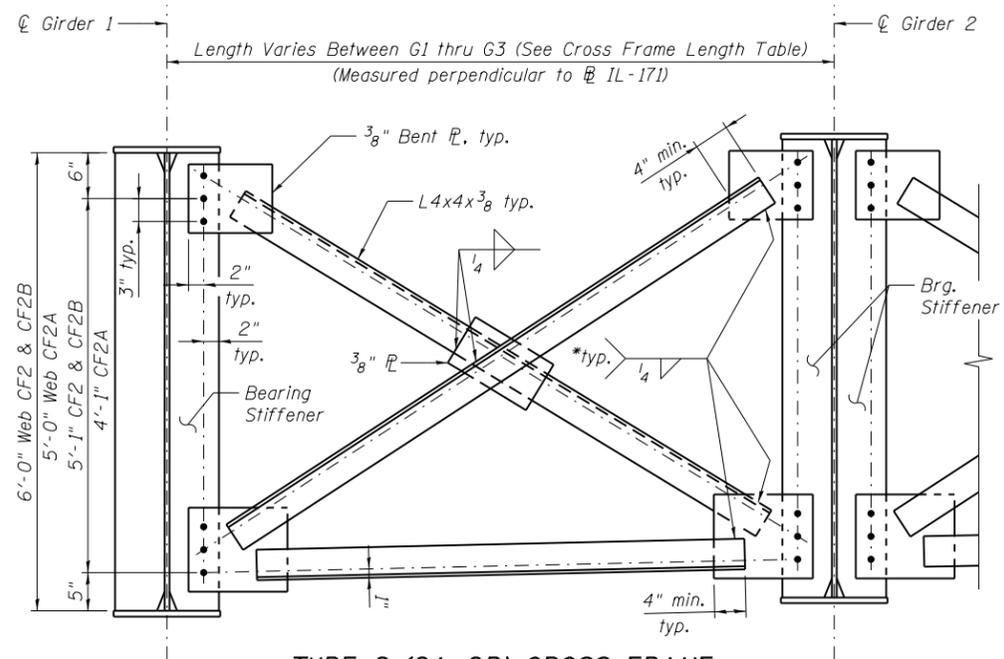
SHEET NO. SG-7 OF SG-14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	136
CONTRACT NO. 60W76				

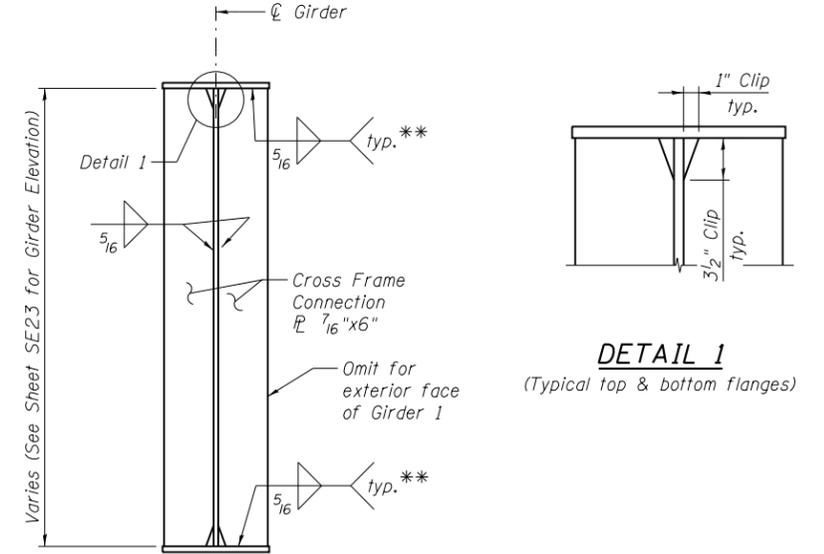
ILLINOIS FED. AID PROJECT



TYPE 1 (IA-1M) & TYPE 5 (5A) CROSS FRAME
 (CF1) (CF5)
 (No. Req'd = 34) (No. Req'd = 4)



TYPE 2 (2A-2B) CROSS FRAME AT PIERS 1 THRU 3
 (CF2)
 (No. Req'd = 6)

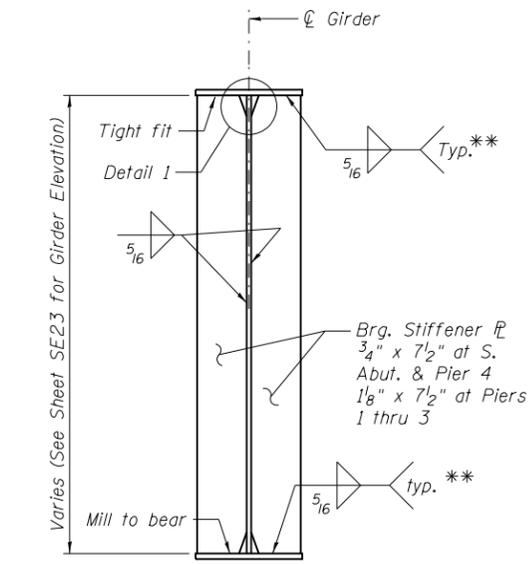


CONNECTION PLATE DETAIL
 (No. of Connection Plates Req'd = 108)

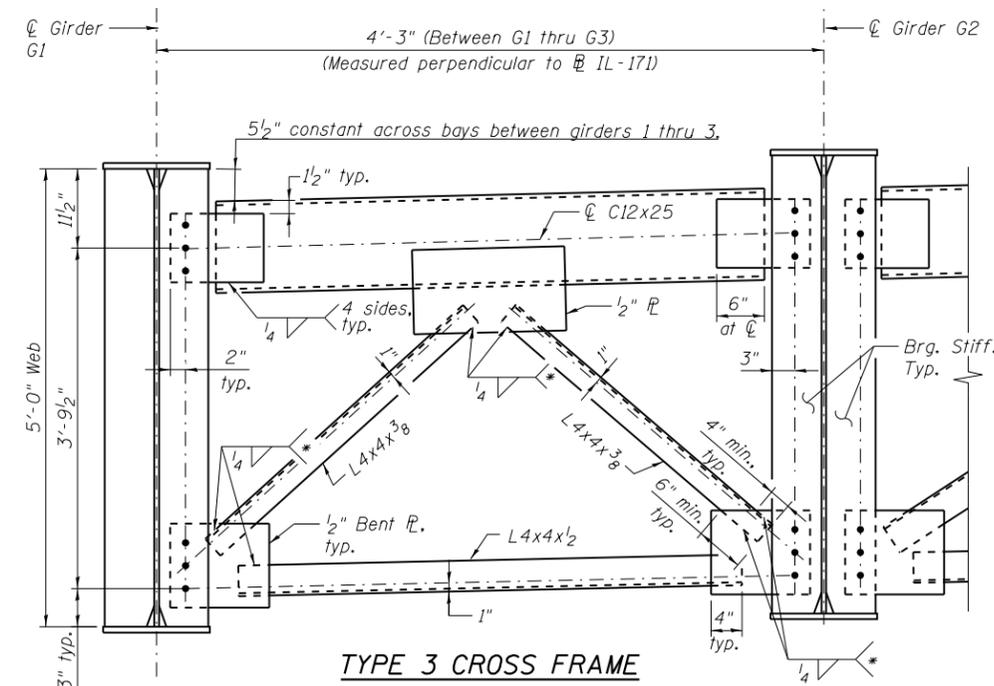
CROSS FRAME LENGTH

Cross Frame	Length
CF1	8'-0"
CF1A	4'-5 3/4"
CF1B	4'-8 1/2"
CF1C	4'-11 3/8"
CF1D	5'-2 1/8"
CF1E	5'-7 7/8"
CF1F	5'-10 3/4"
CF1G	6'-1 5/8"
CF1H	6'-4 5/8"
CF1J	6'-7 1/2"
CF1K	7'-1 1/2"
CF1L	7'-4 3/8"
CF1M	7'-7 1/4"
CF2	8'-0"
CF2A	5'-4 7/8"
CF2B	6'-10 1/2"
CF5	8'-0"
CF5A	7'-10 1/8"

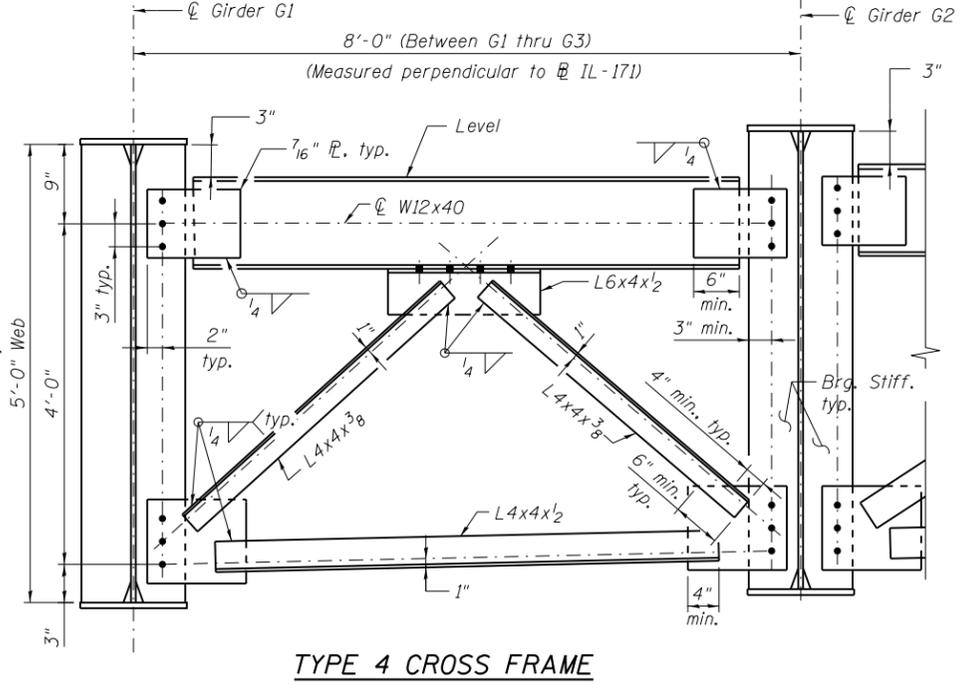
(Measured perpendicular to IL-171)



BEARING STIFFENER
 (No. of 3/4" x 7 1/2" Plates Required = 8)
 (No. of 1 1/8" x 7 1/2" Plates Required = 12)

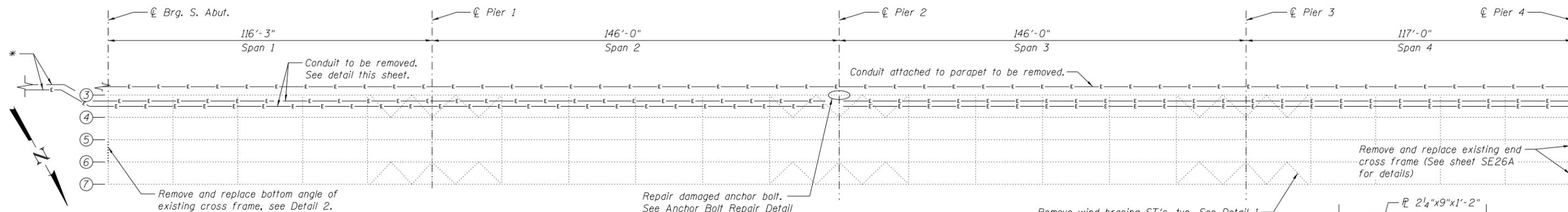


TYPE 3 CROSS FRAME AT SOUTH ABUTMENT
 (CF3)
 (No. Req'd = 2)



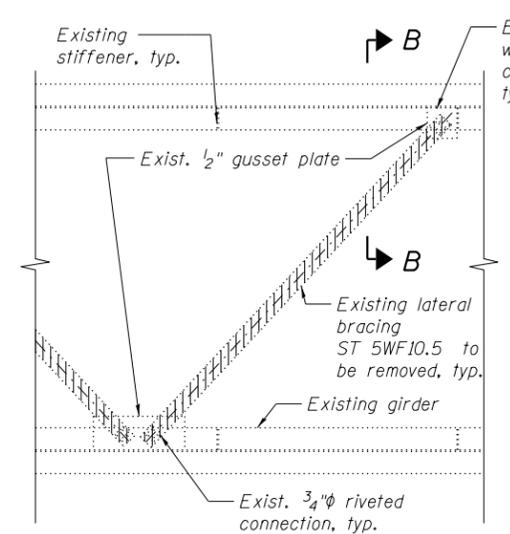
TYPE 4 CROSS FRAME AT PIER 4
 (CF4)
 (No. Req'd = 2)

FILE NAME = #FILES#



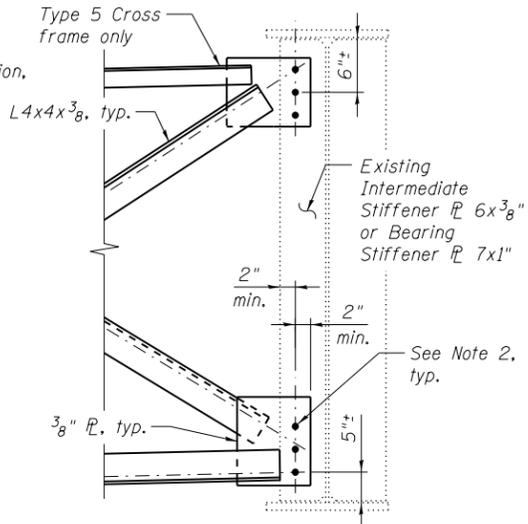
* Remove Conduit behind abutment and underneath existing approach slab. See Special Provision "Remove Conduit Attached to Structure".

EXISTING FRAMING PLAN REMOVAL AND REPAIR



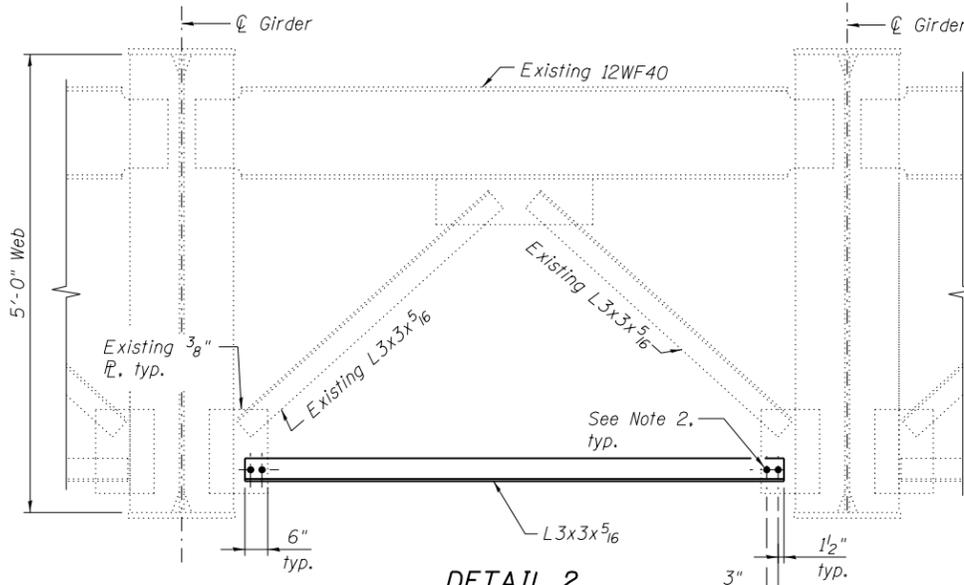
DETAIL 1

(6 Locations)
(Removal of lateral bracing paid for as "Structural Steel Removal")



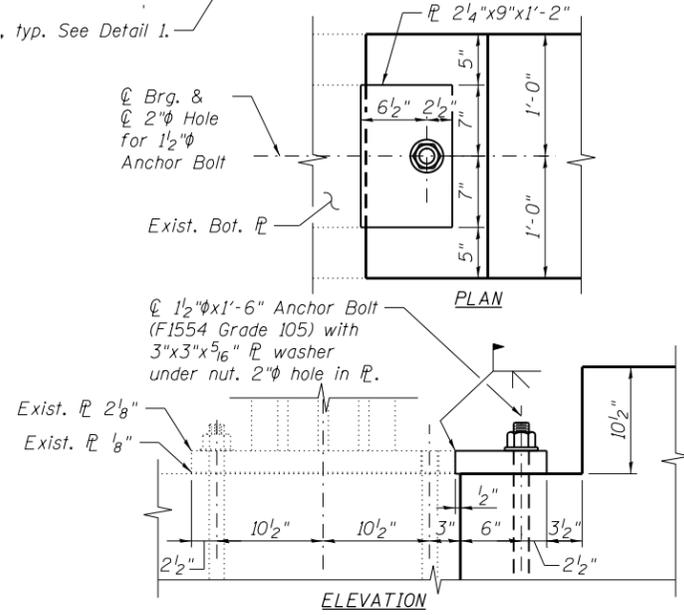
EXISTING GIRDER CONNECTION

(Cross Frame Type 1, 2 & 5)
(See sheet SE25 for additional cross frame connection details)



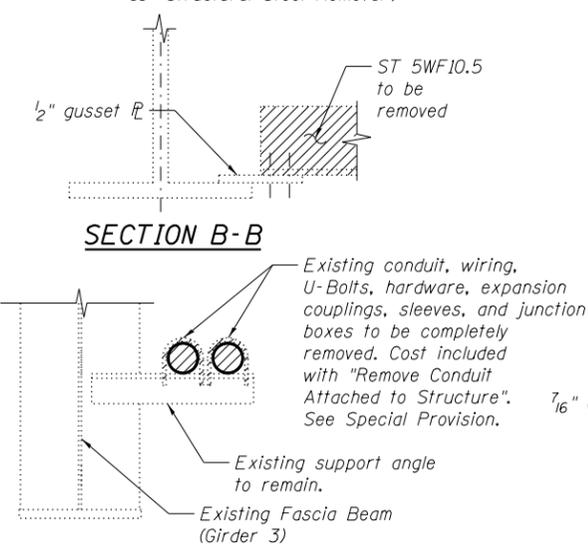
DETAIL 2

(1 Location)
(Replacement of angle paid for as "Furnishing and Erecting Structural Steel".)



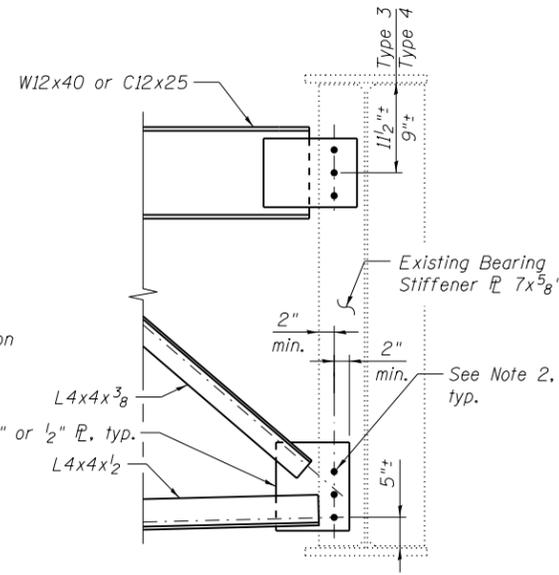
ANCHOR BOLT REPAIR DETAIL

(See Note 3)



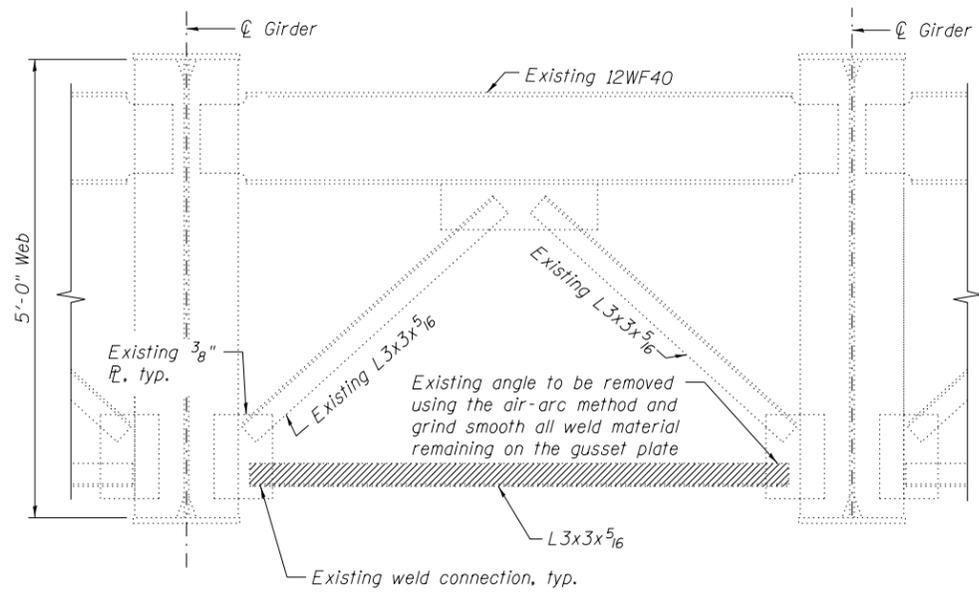
SECTION B-B

CONDUIT REMOVAL DETAIL



EXISTING GIRDER CONNECTION

(Cross Frame Type 3 & 4)
(See sheet SE25 for additional cross frame connection details)



EXISTING DETAIL 2

(Removal of angle paid for as "Structural Steel Removal".)

FILE NAME = #FILES#



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PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE = 3/22/2017 12:23:02 PM	DRAWN -	REVISED -
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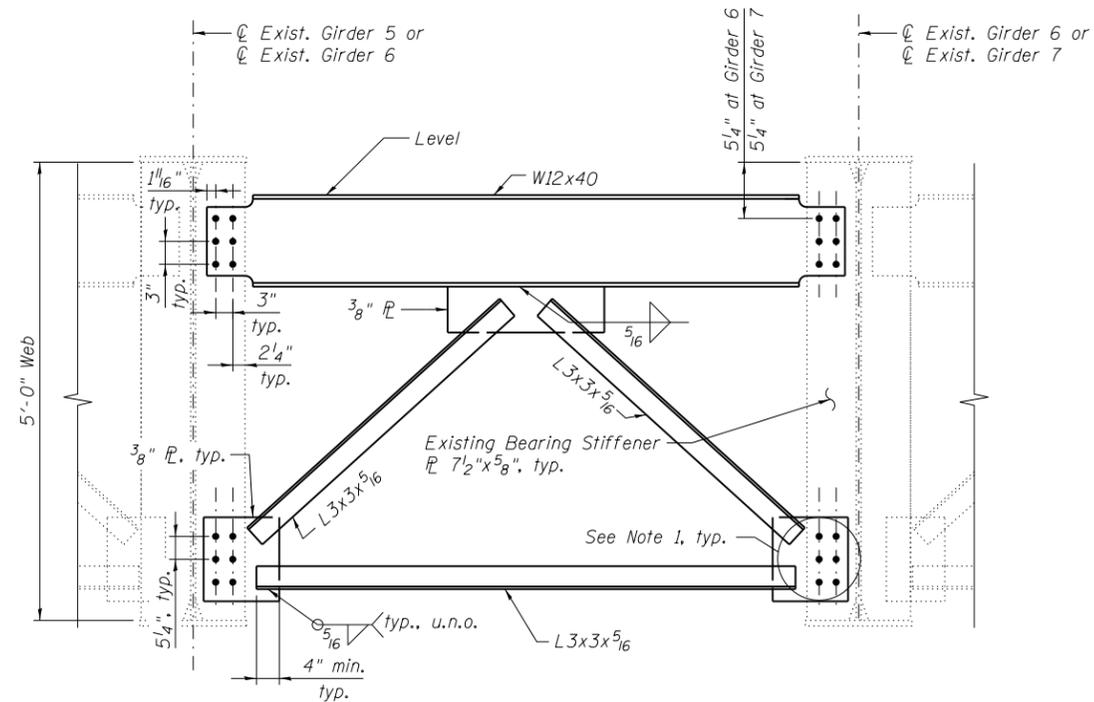
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. STRUCTURAL STEEL REPAIRS - LOCATION 7
STRUCTURE NO. 016-0483**

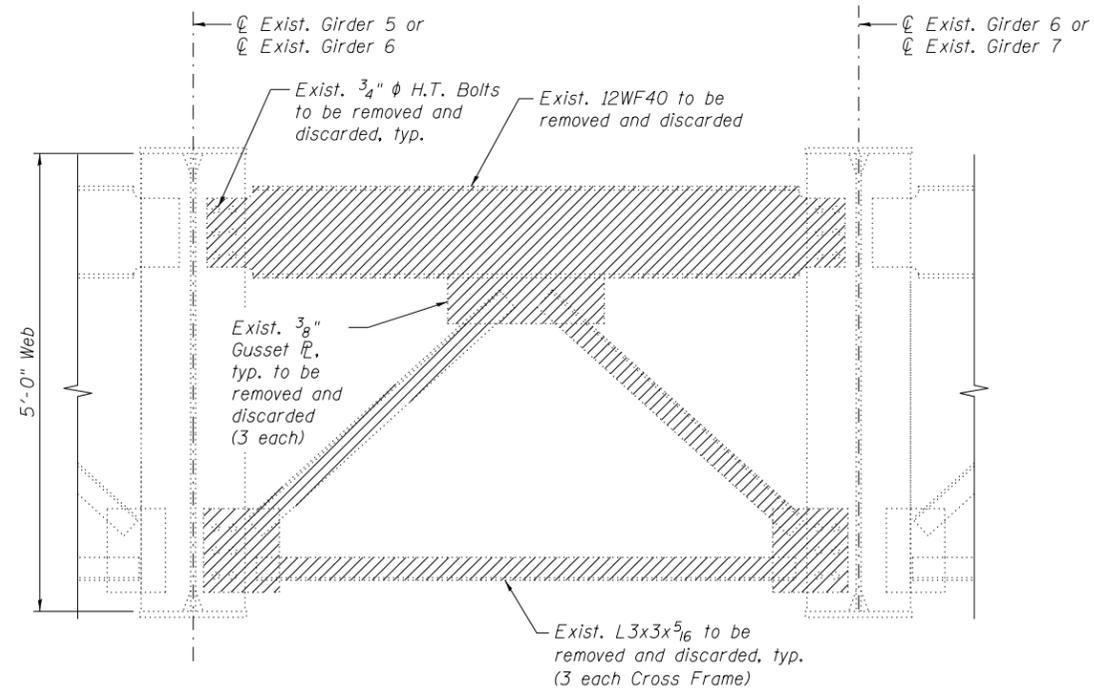
SHEET NO. SG-9 OF SG-14 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 138
				CONTRACT NO. 60W76

ILLINOIS FED. AID PROJECT



END CROSS FRAME REPLACEMENT DETAIL
(No. of Locations 2)



EXISTING END CROSS FRAME REMOVAL DETAIL
(No. of Locations 2)

FILE NAME = #FILES#



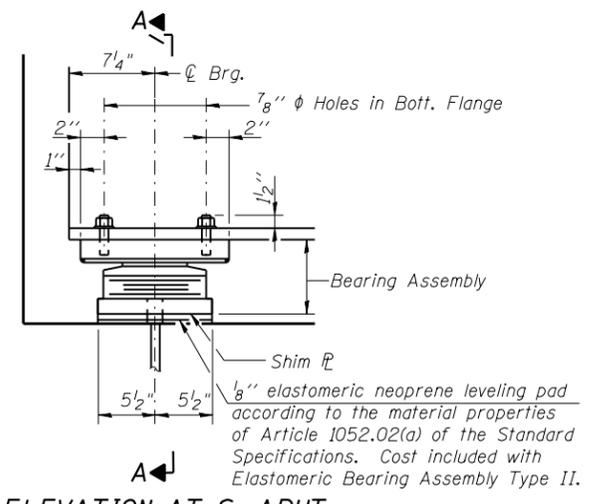
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

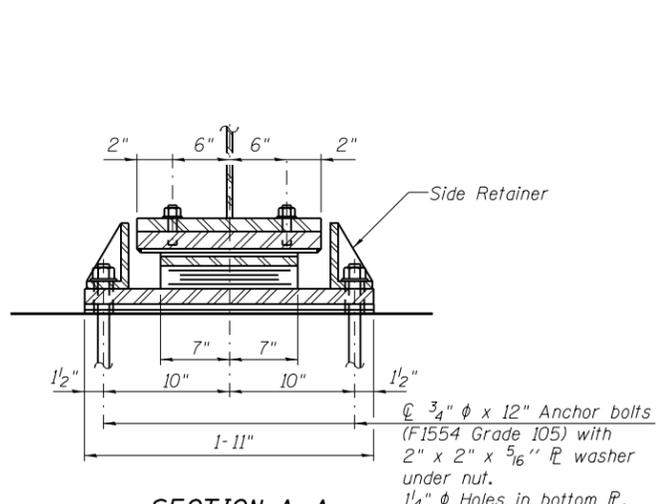
**REHAB. STEEL REPAIR DETAILS - LOCATION 7
STRUCTURE NO. 016-0483**

SHEET NO. SG-10 OF SG-14 SHEETS

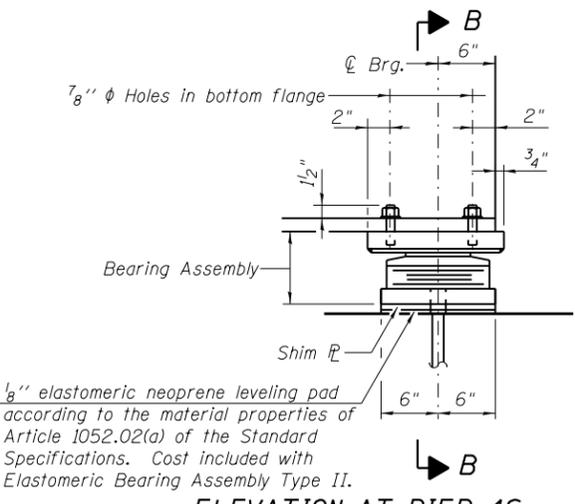
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	139
CONTRACT NO. 60W76				
ILLINOIS FED. AID PROJECT				



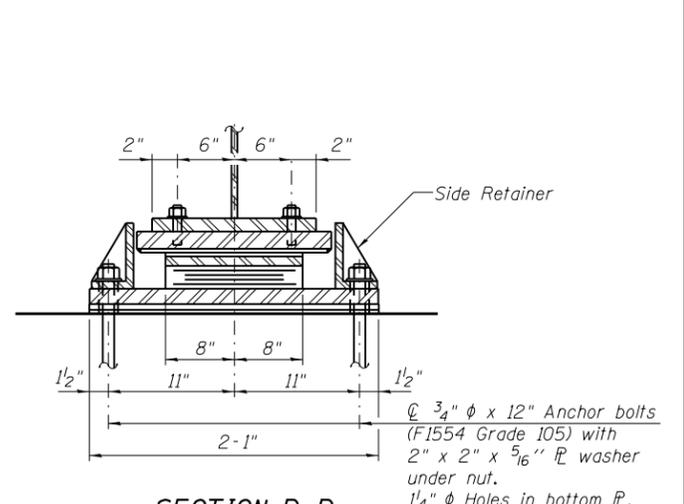
ELEVATION AT S. ABUT.
(Looking South)



SECTION A-A



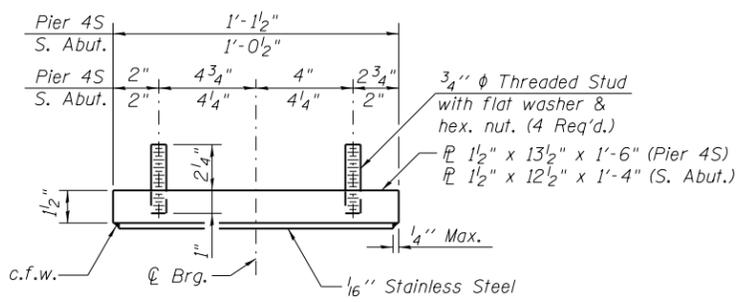
ELEVATION AT PIER 4S
(Looking South)



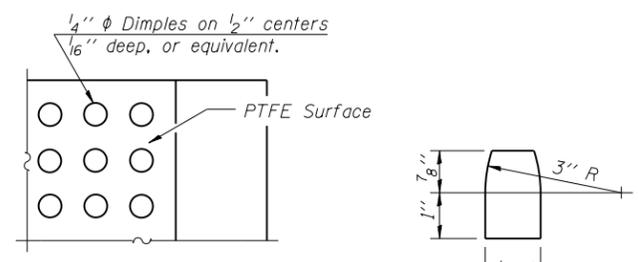
SECTION B-B

TYPE II ELASTOMERIC EXP. BRG. S. ABUT.

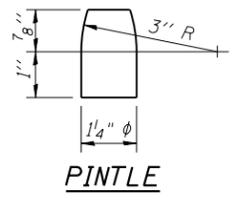
TYPE II ELASTOMERIC EXP. BRG. PIER 4S



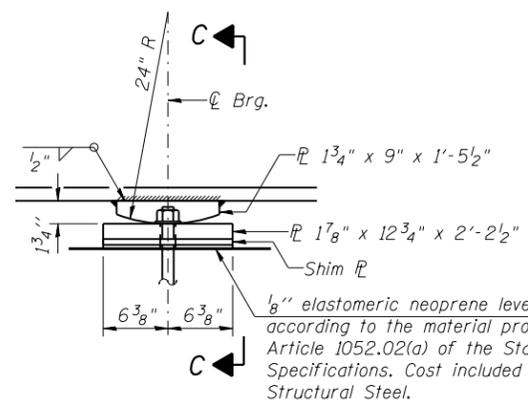
TOP BEARING ASSEMBLY



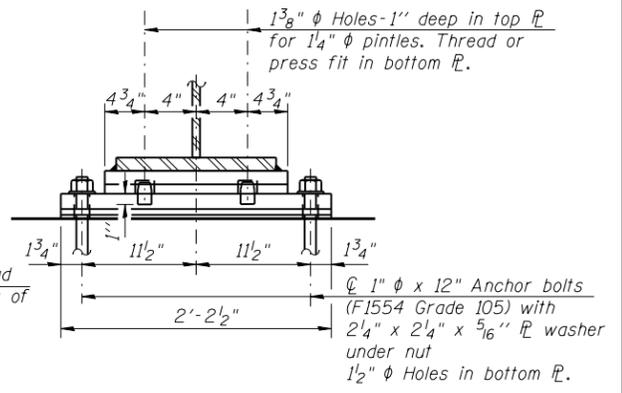
PLAN-PTFE SURFACE



PINTLE

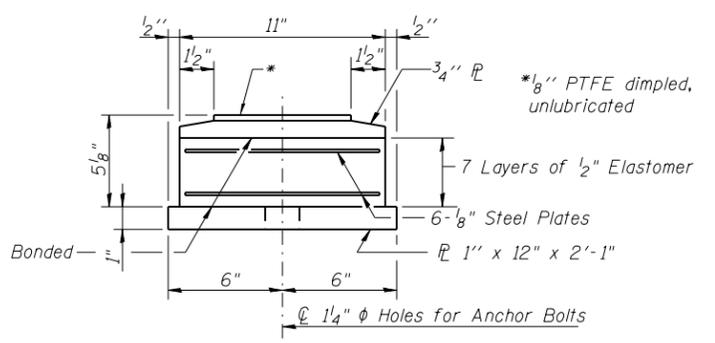


ELEVATION AT PIER 2

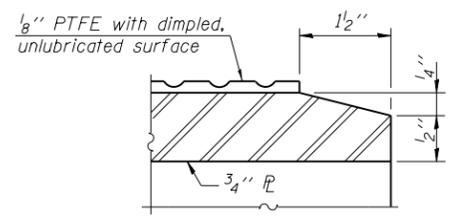


SECTION C-C

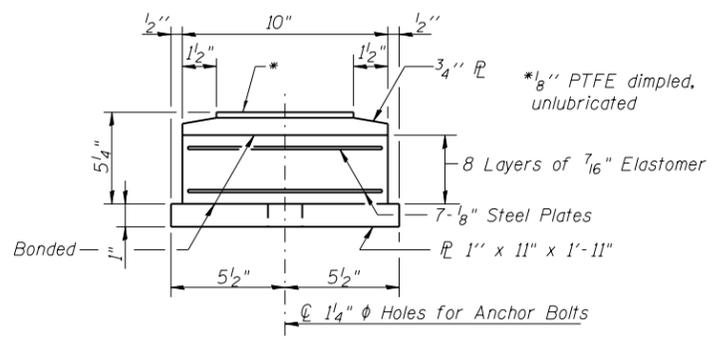
FIXED BEARING



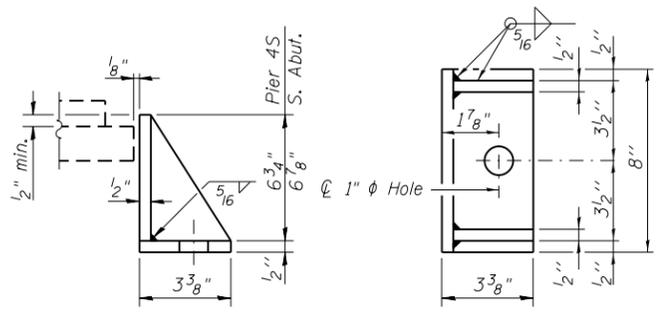
BOTTOM BEARING ASSEMBLY TYPE II PIER 4S



SECTION THRU PTFE



BOTTOM BEARING ASSEMBLY TYPE II S. ABUT.



SIDE RETAINER

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

FILE NAME = #FILES#



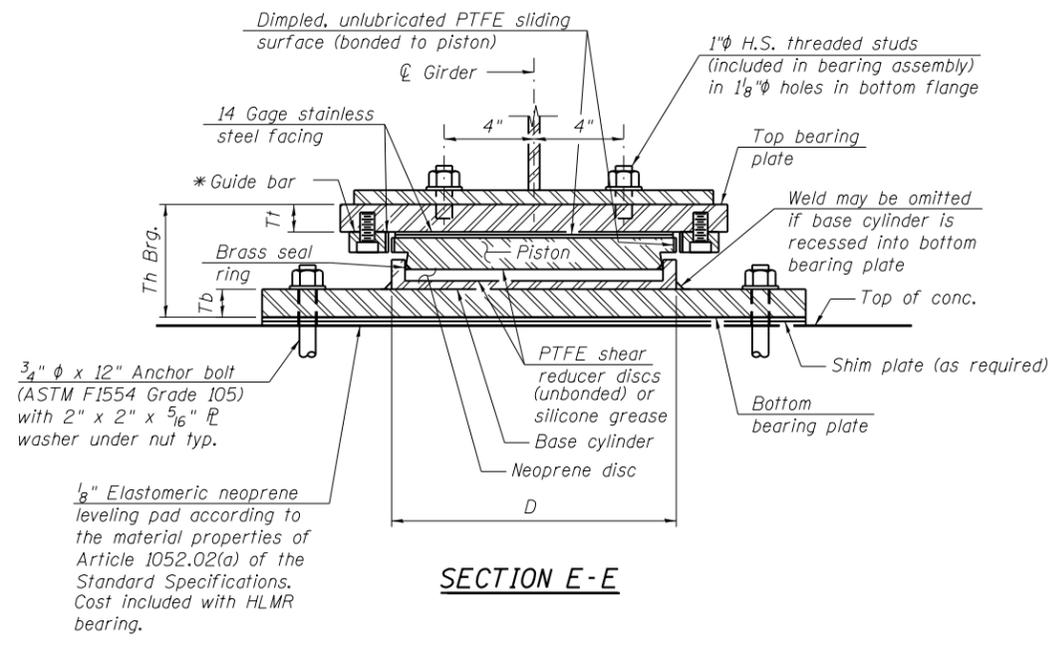
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

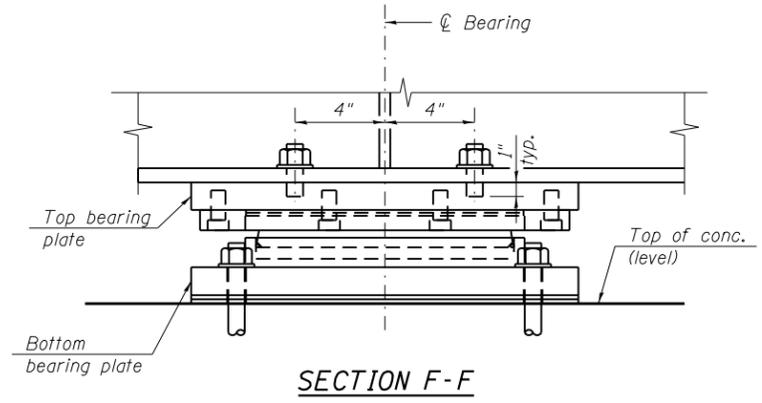
REHAB. ELASTOMERIC AND FIXED BEARING DETAILS - LOCATION 7
STRUCTURE NO. 016-0483

SHEET NO. SG-11 OF SG-14 SHEETS

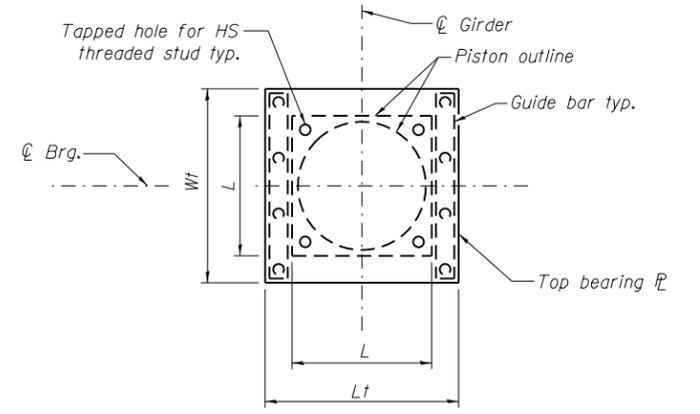
F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 140
			CONTRACT NO. 60W76	
ILLINOIS FED. AID PROJECT				



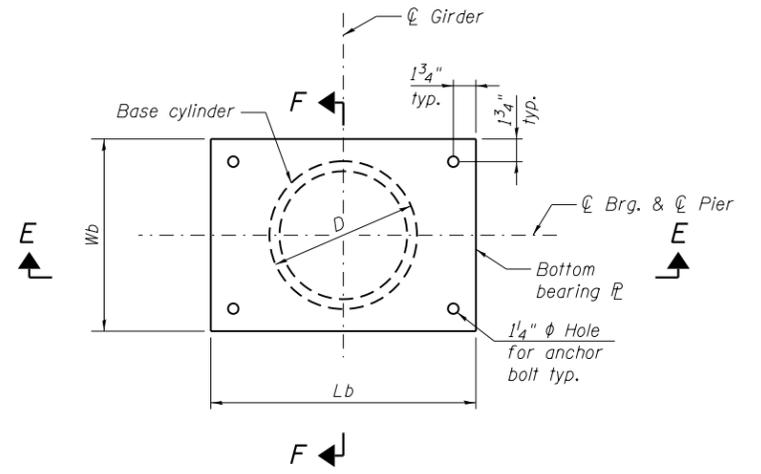
SECTION E-E



SECTION F-F



TOP BEARING PLATE AND PISTON PLAN



BOTTOM BEARING PLATE AND BASE CYLINDER PLAN

BEARING DIMENSIONS

Location	Pay Item Designation (kips)	Vert. Design Load** (kips)	Hs** (kips)	Gs (radians)	Max. Theor. Thermal Mvmt from 50 °F	Top Plate				Bearing Assembly		Bottom Plate			Total Ht.	
						Wt	Lt	Tt (min.)	Bevel	Threaded Stud φ	L	D	Wb	Lb		Tb
Pier 1	250	238	48	0.02	1"	1'-7 1/4"	1'-7 3/8"	1 1/2"	N/A	1"	1'-1 5/8"	1'-1 5/8"	1'-6"	2'-3"	1 3/8"	7 1/2"
Pier 3	300	293	59	0.02	1"	1'-8 1/4"	1'-8 5/8"	1 3/4"	N/A	1"	1'-2 5/8"	1'-2 5/8"	1'-6"	2'-3"	1 3/8"	8 1/8"

FILE NAME = #FILES#



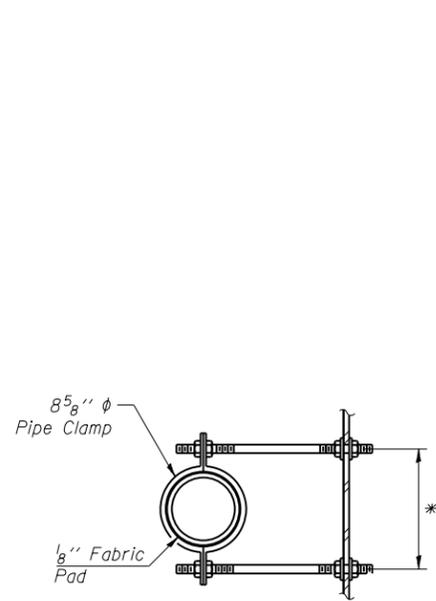
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. HLMR GUIDED EXPANSION BEARING DETAILS - LOCATION 7
STRUCTURE NO. 016-0483**

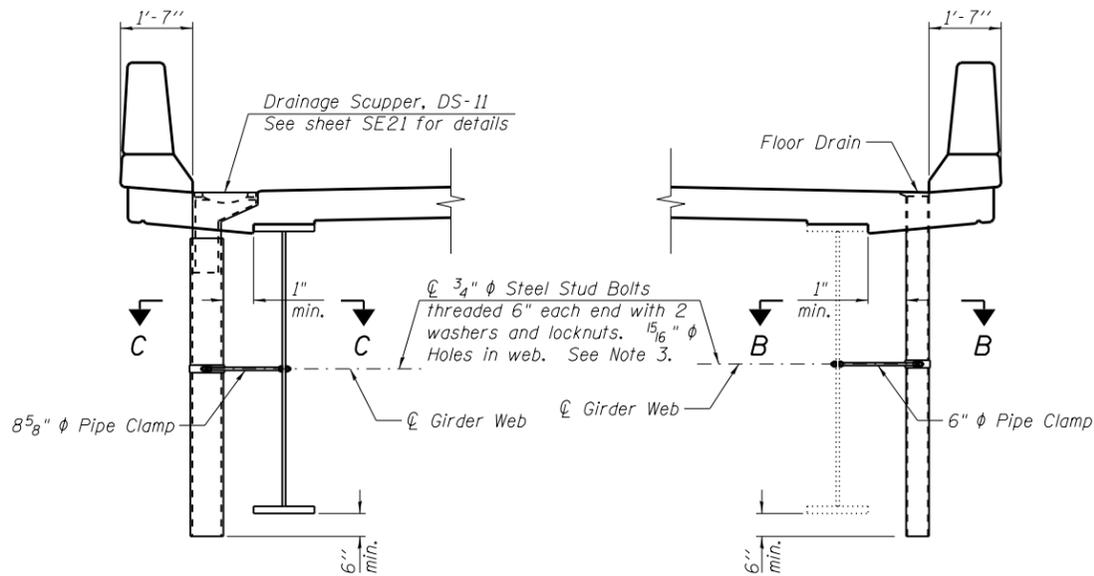
SHEET NO. SG-12 OF SG-14 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 141
CONTRACT NO. 60W76			ILLINOIS FED. AID PROJECT	



SECTION C-C

*Dimension as required by Pipe Clamp

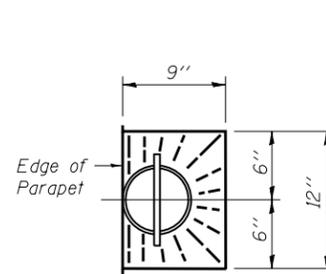


SECTION A-A

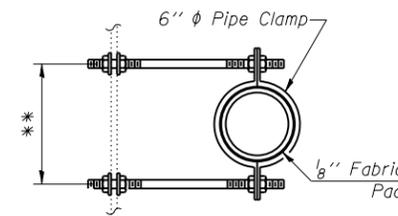
(showing proposed girder)

SECTION AT PARAPET WITH FLOOR DRAIN

(showing existing girder)

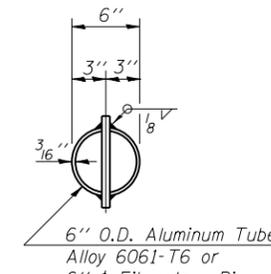


TOP PLAN



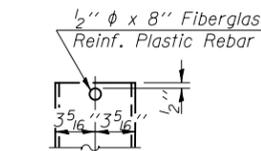
SECTION B-B

**Dimension as required by Pipe Clamp

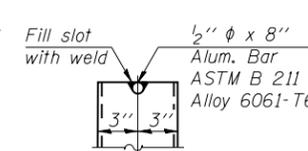


TOP PLAN

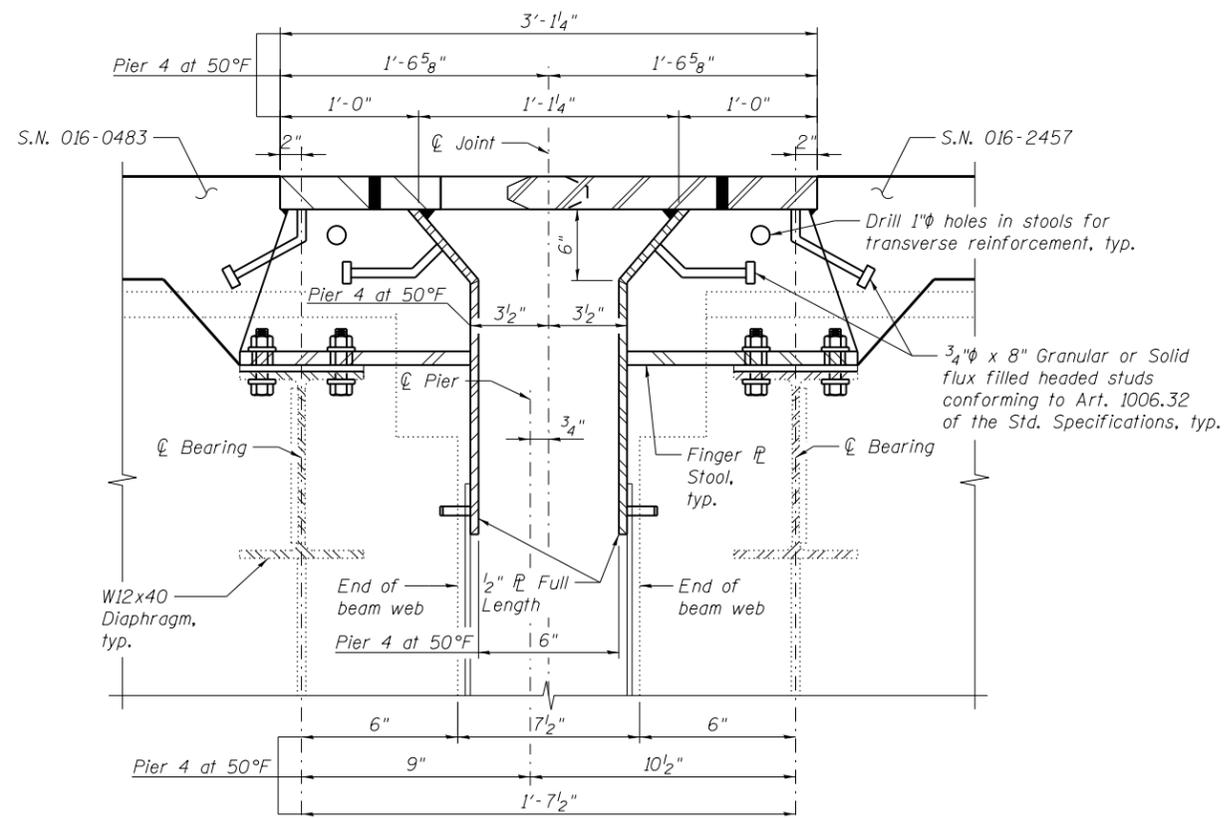
(Showing Aluminum Tube)



FIBERGLASS PIPE



ALUMINUM TUBE



SECTION B-B

(All dimensions shown along IL-171)

(See SN 016-2457 plans for additional finger plate joint details. Cost of finger plate joint included with SN 016-2457.)

FILE NAME = #FILES#



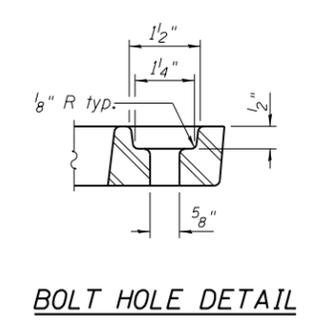
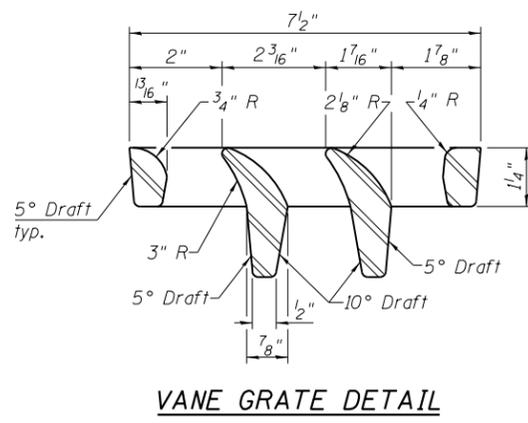
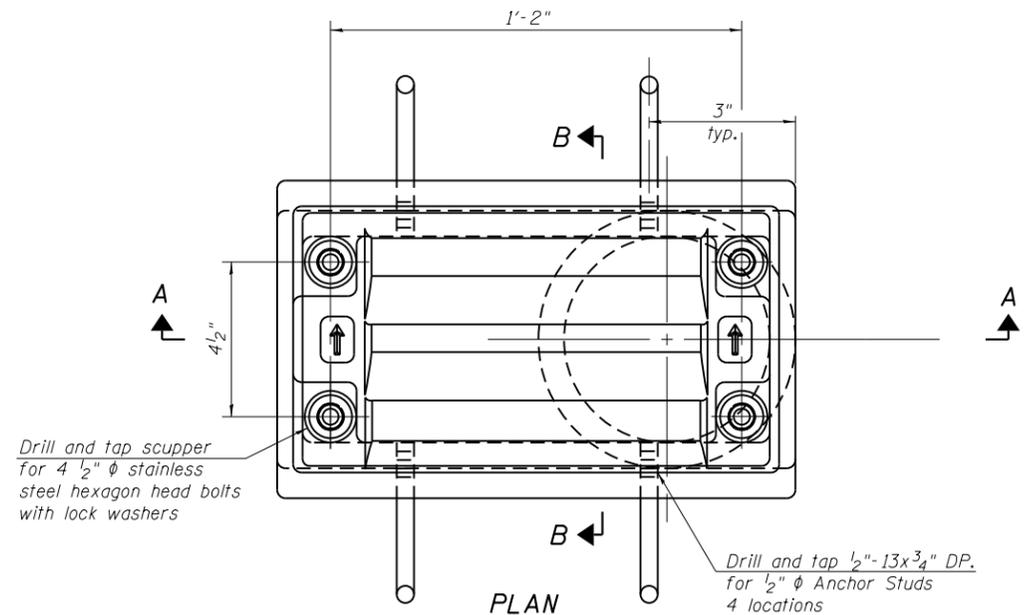
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PLOT DATE = 3/22/2017 12:23:04 PM	DRAWN -	REVISED -
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. DECK DRAIN AND FINGER PLATE DETAILS - LOCATION 7
STRUCTURE NO. 016-0483**

F.A.P. RTE. = 372	SECTION = 2013-039BP	COUNTY = COOK	TOTAL SHEETS = 209	SHEET NO. = 142
CONTRACT NO. 60W76				
ILLINOIS FED. AID PROJECT				

SHEET NO. SG-13 OF SG-14 SHEETS



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.

Downspouts located on the exterior side of a fascia beam shall be painted under a separate painting contract.

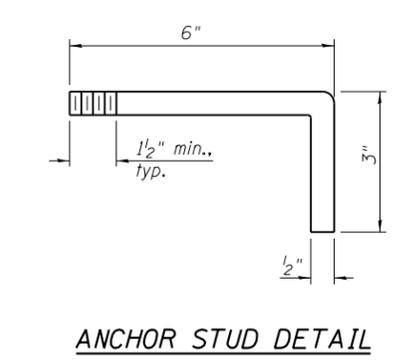
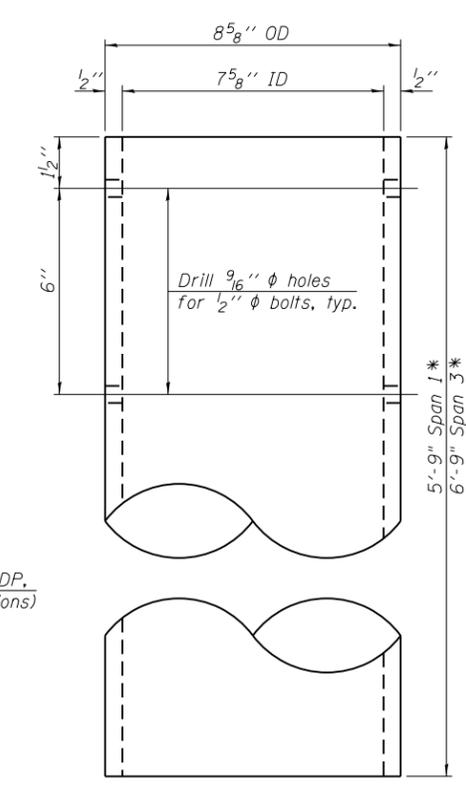
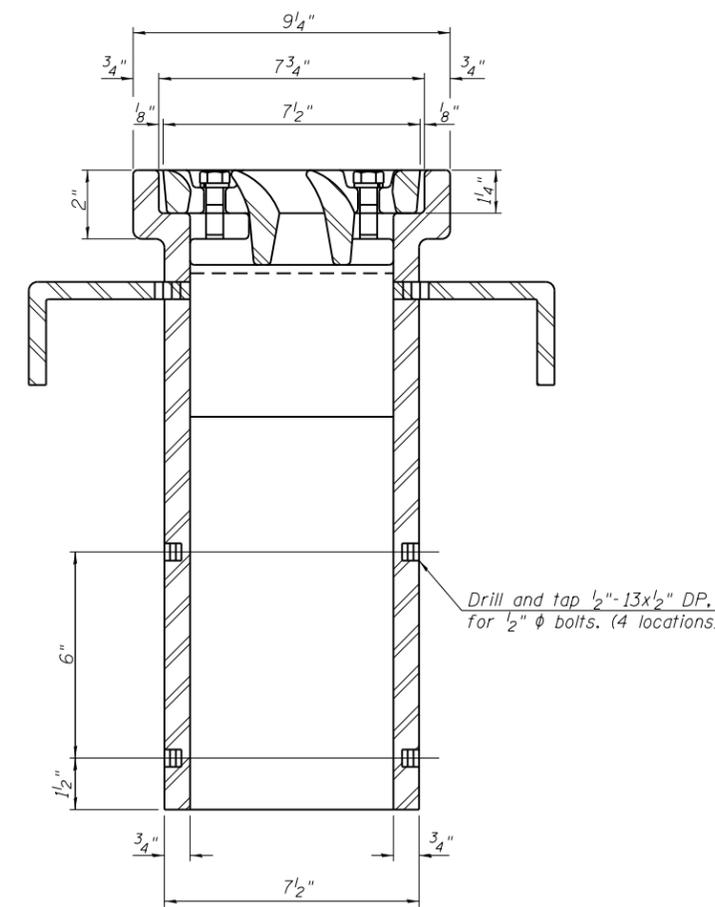
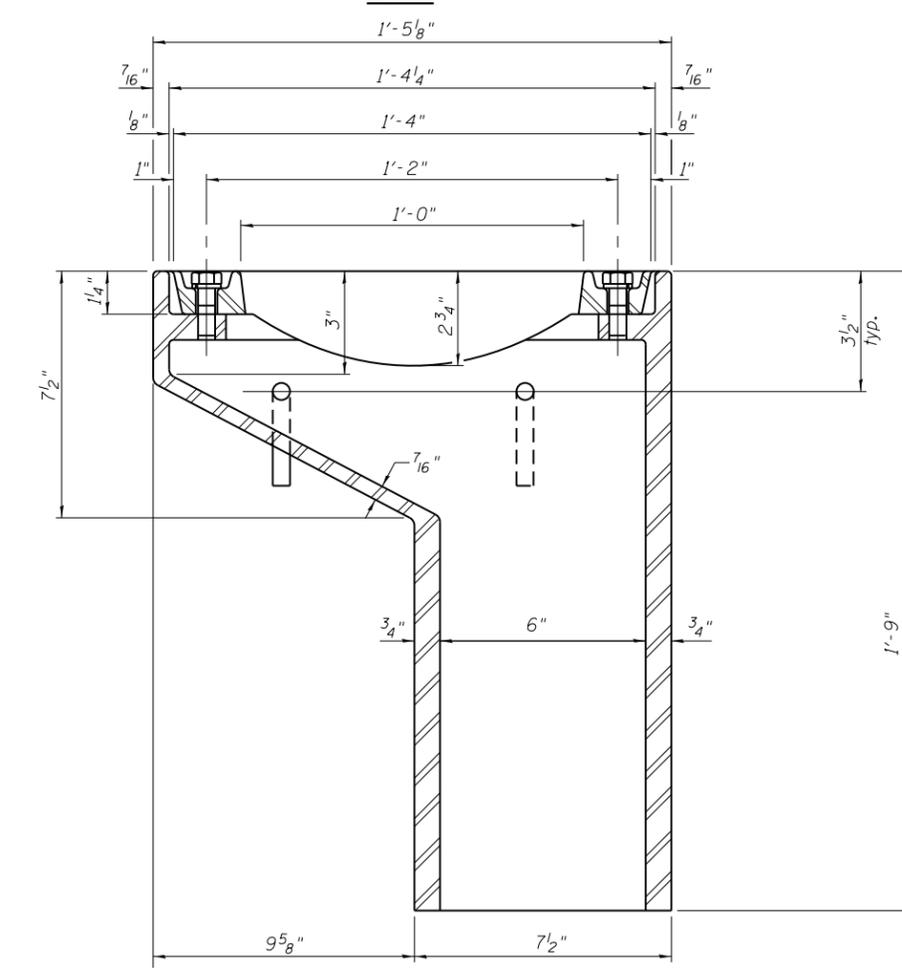
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.

The Contractor shall take appropriate 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-11.

Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.



See Sheet SE14 for scupper location relative to parapet.

*Length of downspout shall extend a minimum of 6" below the girder bottom flange.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	4

FILE NAME = #FILES#



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

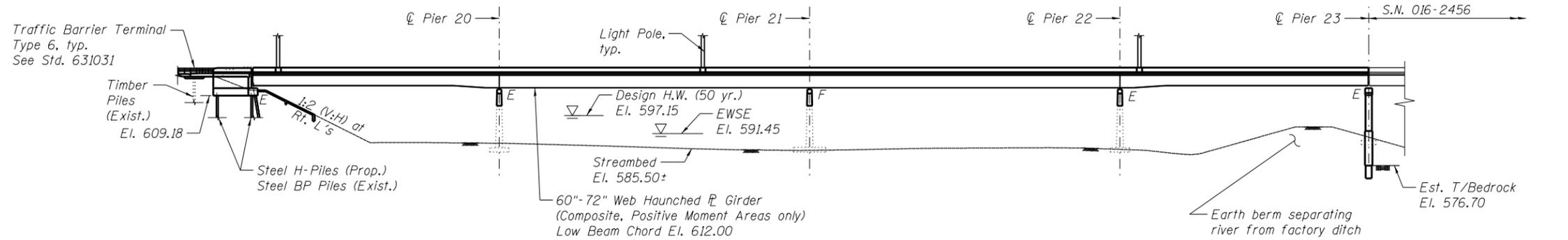
REHAB. SCUPPER DETAILS - LOCATION 7
STRUCTURE NO. 016-0483

SHEET NO. SG-14 OF SG-14 SHEETS

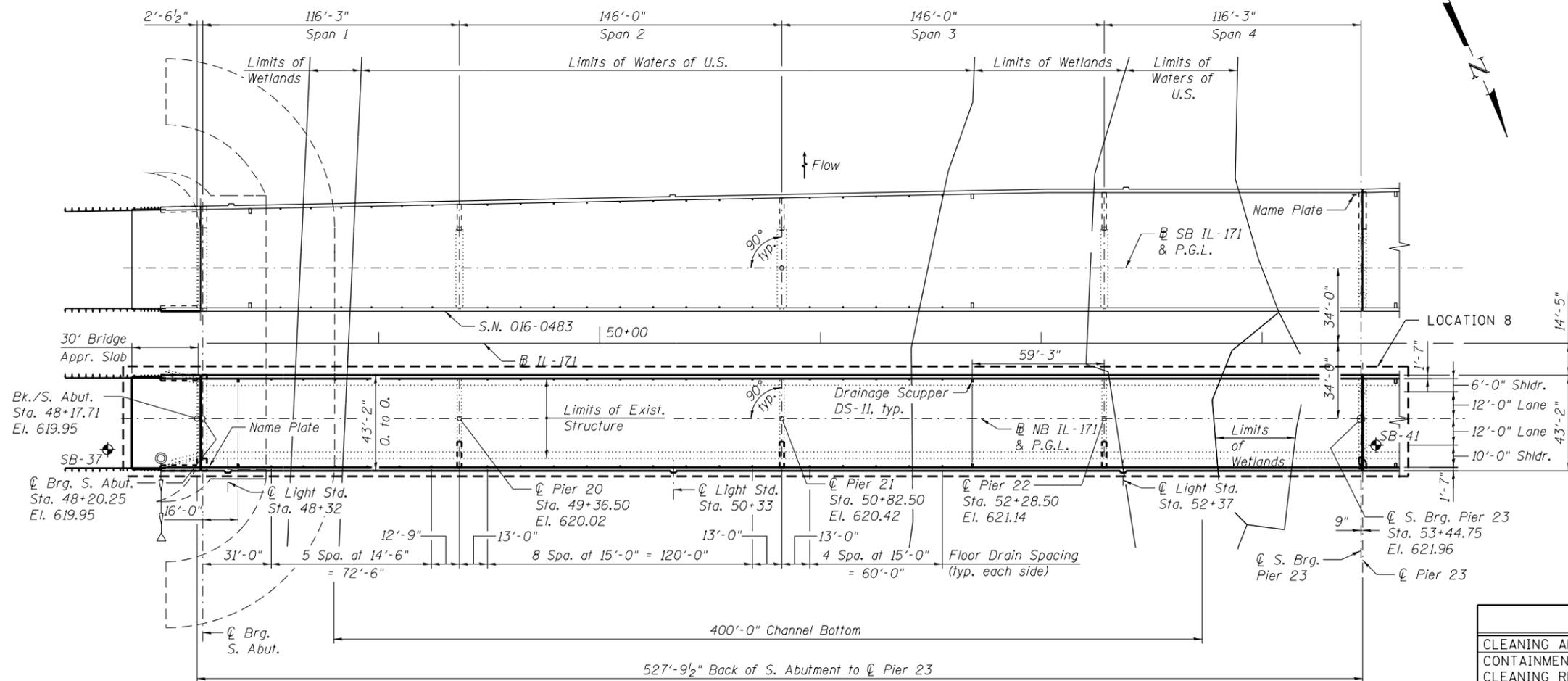
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	143
CONTRACT NO. 60W76			ILLINOIS FED. AID PROJECT	

GENERAL NOTES

1. THE EXISTING STRUCTURAL STEEL COATING CONTAINS LEAD. THE CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO DEAL WITH THE PRESENCE OF LEAD ON THIS PROJECT.
2. CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISION FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES".
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS. STRUCTURAL SHEETS TAKEN FROM EXISTING PLANS CONTAIN INFORMATION NOT PERTAINING TO THIS CONTRACT AND ARE FOR INFORMATION ONLY.
4. ALL EXISTING STRUCTURAL STEEL IDENTIFIED ON SHEETS SH-6 THRU SH-14 HAS BEEN PRIMED WITH AN INORGANIC ZINC RICH PRIMER UNDER A PREVIOUS CONTRACT. THESE STEEL SURFACES SHALL BE PRESSURE WASHED CLEAN AND POWER TOOL CLEANED (SSPC SP-3 MODIFIED) AS NECESSARY PRIOR TO THE APPLICATION OF THE INTERMEDIATE AND TOP COATS. THE INORGANIC ZINC RICH PRIMER / ACRYLIC / ACRYLIC PAINT SYSTEM SHALL BE USED FOR FIELD PAINTING OF THESE LOCATIONS. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR STEEL SURFACES SHALL BE GRAY, MUNSELL NO. 5B 7/1. THE COLOR OF THE FINAL FINISH COAT FOR THE EXTERIOR AND BOTTOM FLANGE OF THE FASCIA BEAMS SHALL BE REDDISH BROWN, MUNSELL NO. 2.5YR 3/4.
5. ALL EXISTING STRUCTURAL STEEL IDENTIFIED ON SHEETS SH-2 THRU SH-5 SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING SSPC-SP10. THESE LOCATIONS SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF THE EPOXY MASTIC / EPOXY MASTIC / ACRYLIC PAINT SYSTEM. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR STEEL SURFACES SHALL BE GRAY, MUNSELL NO. 5B 7/1. THE COLOR OF THE FINAL FINISH COAT FOR THE EXTERIOR AND BOTTOM FLANGE OF THE FASCIA BEAMS SHALL BE REDDISH BROWN, MUNSELL NO. 2.5YR 3/4.
6. A MINIMUM OF 2 AIR MONITORS WILL BE REQUIRED TO MONITOR ABRASIVE BLASTING OPERATIONS AT THIS SITE. SEE SPECIAL PROVISION FOR "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES".
7. THE ELASTOMERIC PADS OF THE EXISTING BEARINGS SHALL BE MASKED OFF FOR PROTECTION DURING PAINTING AND REMOVED WHEN PAINTING IS FINISHED. COST INCLUDED WITH "CLEANING AND PAINTING STEEL BRIDGE NO. 8".
8. IF APPLICABLE, THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND DETAILS DEMONSTRATING THE STRUCTURAL INTEGRITY OF THE BRIDGE IS MAINTAINED UNDER THE ADDITIONAL IMPOSED LOADS OF THE CONTAINMENT SYSTEM. SEE SPECIAL PROVISIONS.



REFLECTED ELEVATION



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
CLEANING AND PAINTING STEEL BRIDGE NO. 8	L. SUM	1
CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 8	L. SUM	1

FILE NAME = #FILES#

LE LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

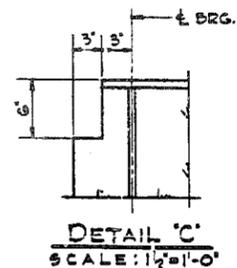
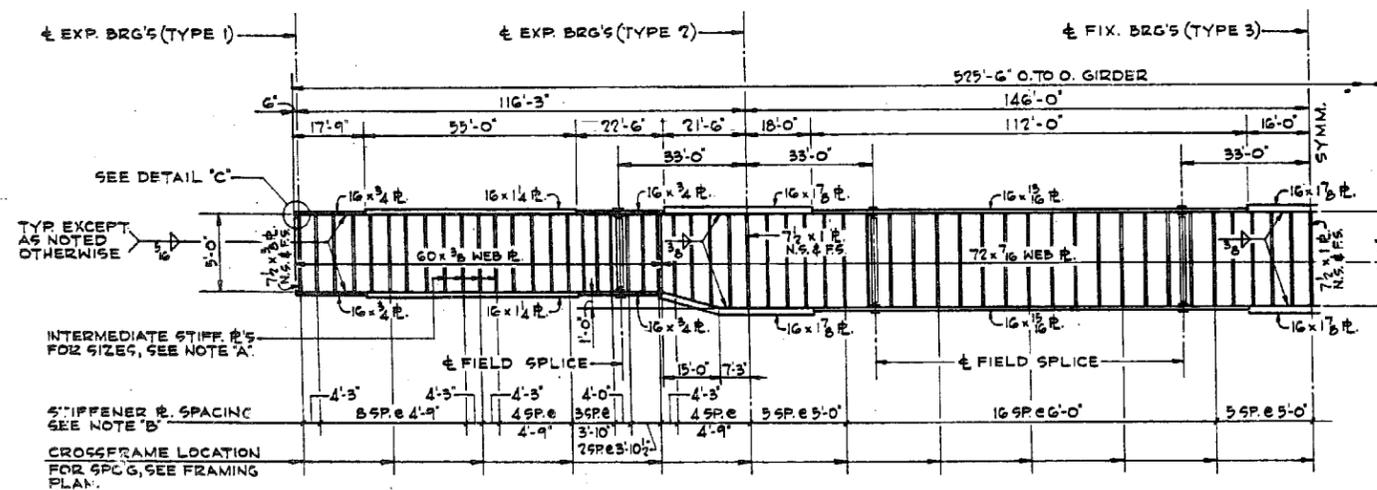
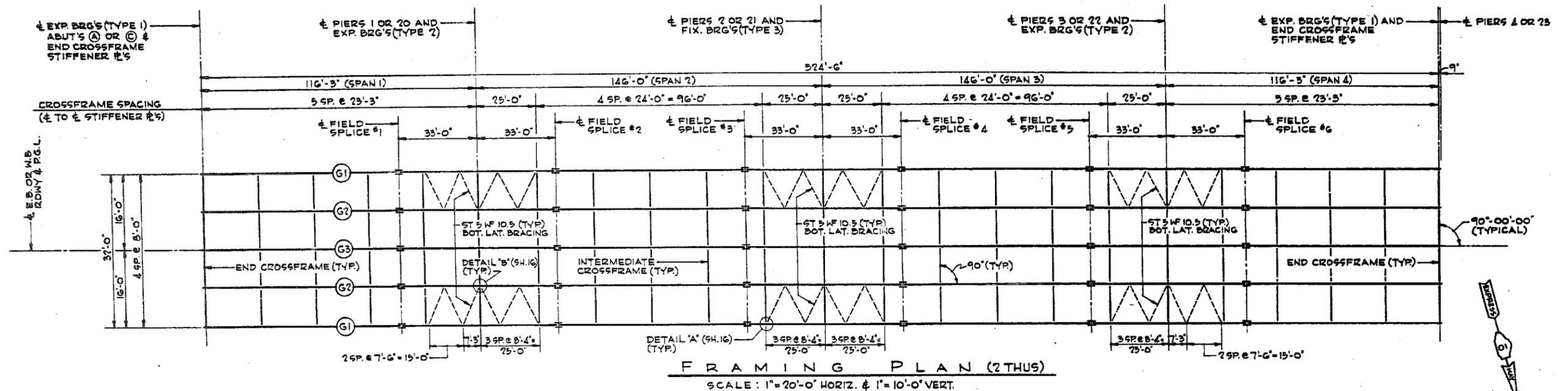
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN & ELEVATION - LOCATION 8
STRUCTURE NO. 016-0985**

SHEET NO. SH-1 OF SH-14 SHEETS

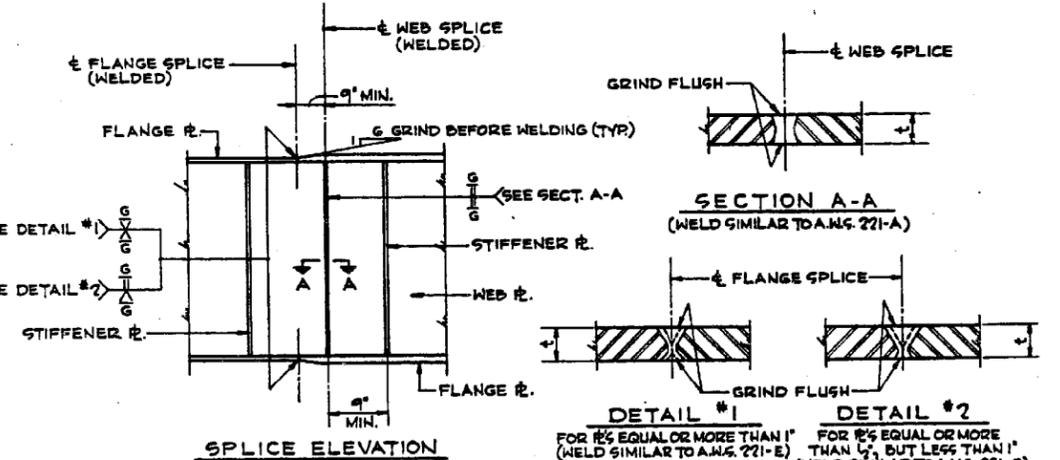
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-0398BP	COOK	209	144
CONTRACT NO. 60W76				
ILLINOIS FED. AID PROJECT				



	MOMENTS (FT. KIPS)								REACTIONS (KIPS)				
	.4SPAN1	PIERS 1 OR 20	.5SPAN2	PIERS 7 OR 21	.5SPAN3	PIERS 3 OR 22	.6SPAN4	PIERS 4 OR 23	ABUT'S A OR C	PIERS 1 OR 20	PIERS 7 OR 21	PIERS 3 OR 22	PIERS 4 OR 23
DEAD LOAD	1075	-2507	933	-2337	453	-2307	1075	52.9	190.0	185.3	190.0	52.9	
LIVE LOAD	1073	-1440	1035	-1305	1035	-1440	1073	46.9	94.7	97.7	94.7	46.9	
IMPACT	212	-281	195	-278	195	-281	212	9.7	12.1	11.7	12.1	9.7	
TOTAL	2360	-4228	2263	-4120	2263	-4228	2360	109.5	296.8	294.7	296.8	109.5	

NOTE 'A':
INTERMEDIATE STIFF. ϵ 'S - $6 \times 3/8 \epsilon$ (N.S. & F.S.), EXCEPT AT CROSSFRAMES & AS NOTED OTHERWISE ON GIRDER ELEVATION. FOR STIFF. ϵ 'S AT CROSSFRAMES, SEE TYP. CROSSFRAME DETAILS; SH. 16. FOR DETAIL OF INTERMEDIATE STIFF. ϵ 'S OTHER THAN AT CROSSFRAMES, SEE DETAIL 'A' SH. 16. FOR DETAIL OF STIFF. ϵ 'S AT BEARINGS, SEE SH. 16.

NOTE 'B':
ALL STIFFENER ϵ 'S TO BE WELDED AT RIGHT ANGLES TO WEB & FLANGES OF GIRDER.



NOTES:
FOR STRUCTURAL STEEL DESIGNATION, SEE 'GENERAL NOTES' SH. 3.
FOR TABLE 'TOP OF GIRDER WEB ϵ ELEVATIONS', SEE SH. 16.
FOR CROSSFRAME DETAILS, SEE SH. 16.
FOR FIELD SPLICE DETAILS, SEE SH. 16.
FOR 30" LATERAL BRACING CONN. DETAILS 'A' & 'B', SEE SH. 16.
FOR DETAIL OF CONDUIT SUPPORT BRACKETS, SEE SH. 20.

BILL OF MATERIAL *		
ITEM	UNIT	QUANTITY
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	1,407,993

* INCLUDES ALL STRUCTURAL STEEL SHOWN ON THIS SHEET AND SHEET 16.

FILE NAME = #FILES08

LE LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME = Lin
DESIGNED -
CHECKED -
PLOT SCALE -
PLOT DATE = 3/22/2017 12:23:08 PM

DESIGNED -
CHECKED -
DRAWN -
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REVISED -
REVISED -
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REVISED -

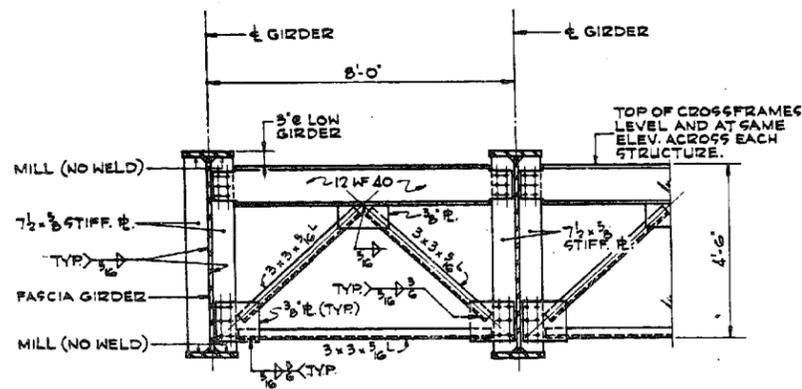
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ORIG. FRAMING PLAN & GIRDER ELEVATION - LOCATION 8
STRUCTURE NO. 016-0985

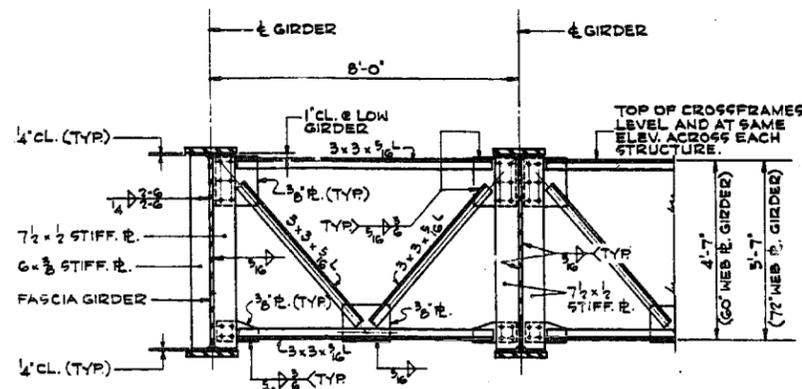
SHEET NO. SH-2 OF SH-14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-0398BP	COOK	209	145
				CONTRACT NO. 60W76

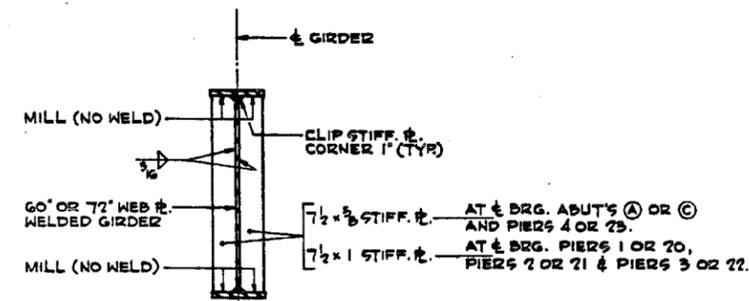
ILLINOIS FED. AID PROJECT



END CROSSFRAME DETAIL



INTERMEDIATE CROSSFRAME DETAIL



DETAIL OF BEARING STIFFENER PLATE'S
AT ABUTMENTS AND PIERS

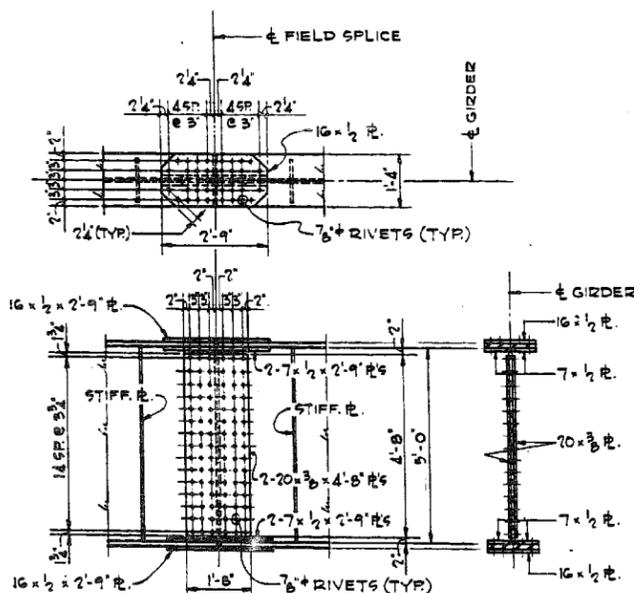
SCALE: 1/2" = 1'-0"

NOTE: USE 3/4" RIVETS FOR ALL FIELD CONNECTIONS

TYPICAL CROSSFRAME DETAILS

SCALE: 1/2" = 1'-0"

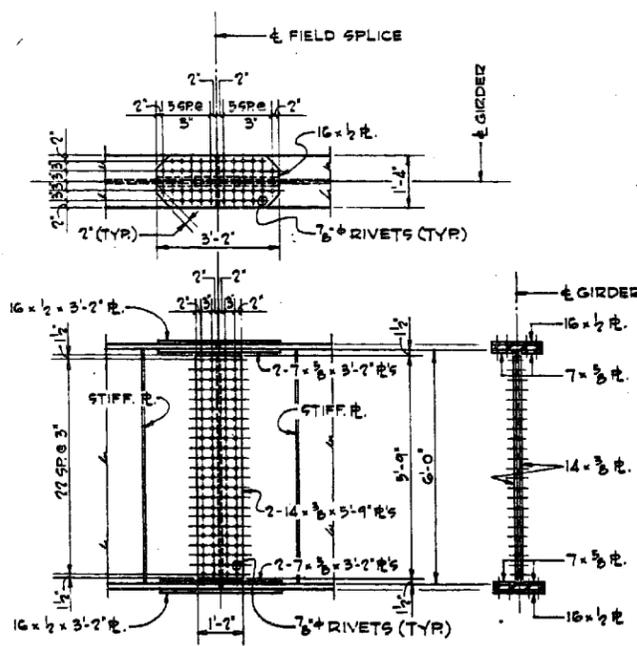
NOTE: FOR DETAILS OF CONDUIT
SUPPORT BRACKETS, SEE SH. 20.



DETAIL OF FIELD SPlice #1 & #6

60' WEB PL. GIRDER

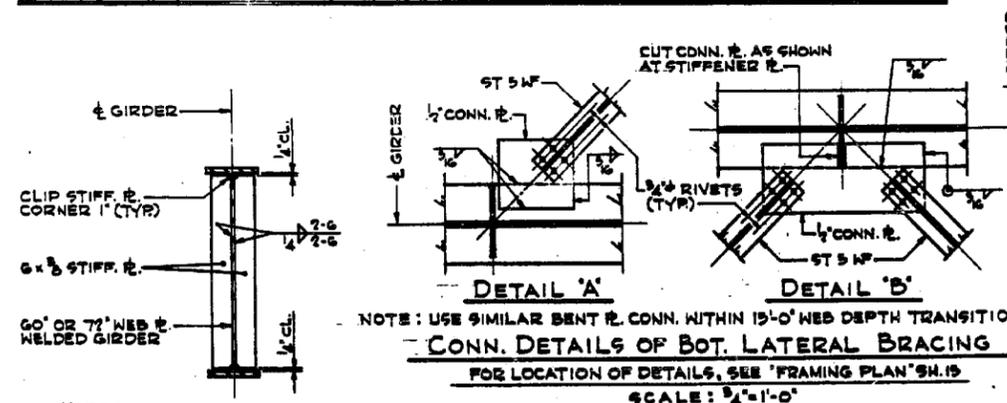
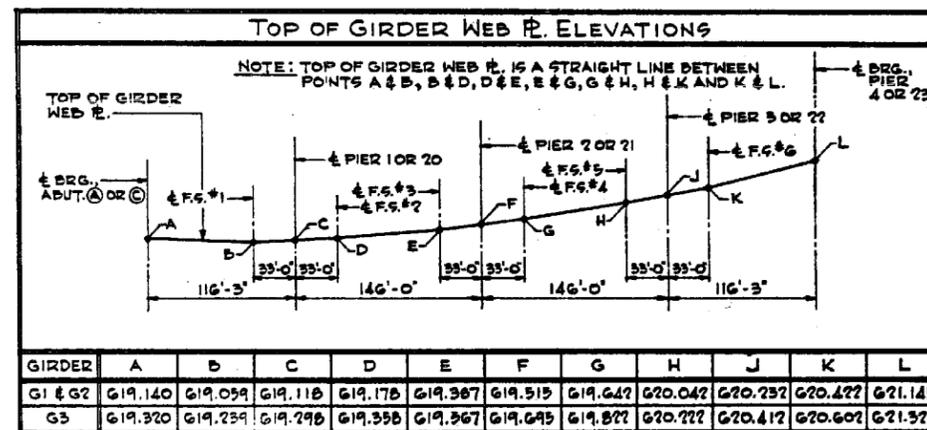
SCALE: 1/2" = 1'-0"



DETAIL OF FIELD SPlice #2 THRU #5

72' WEB PL. GIRDER

SCALE: 1/2" = 1'-0"



NOTE:
FOR WELD DETAILS OF STIFF. PL'S AT CROSS-
FRAMES, SEE 'TYP. CROSSFRAME DETAILS';
FOR WELD DETAILS OF STIFF. PL'S AT BEARINGS,
SEE DETAIL THG 9 SHEET.

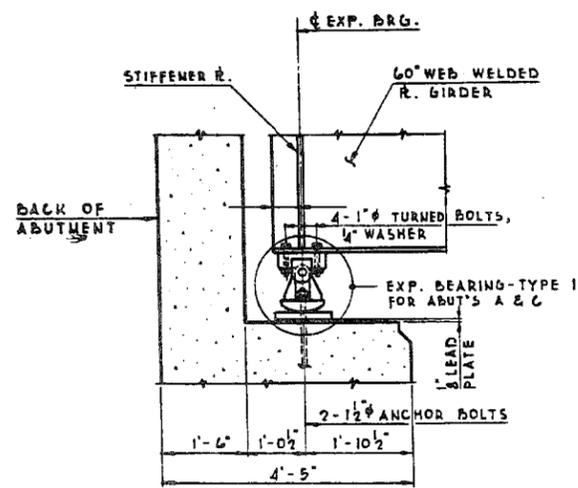
DETAIL 'X' - TYP. INTERMEDIATE STIFFENERS
OTHER THAN AT CROSSFRAMES.
SCALE: 1/2" = 1'-0"

NOTE:
FOR BILL OF MATERIAL, SEE SH. 15.

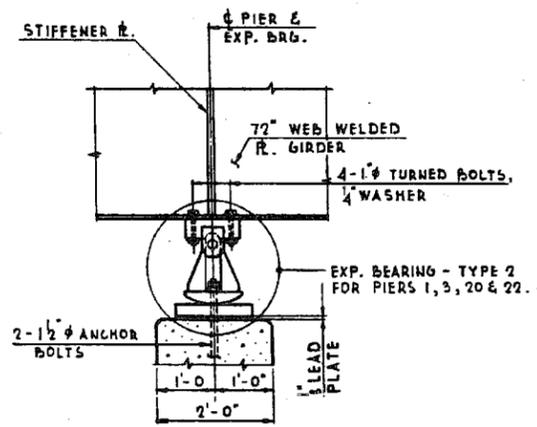
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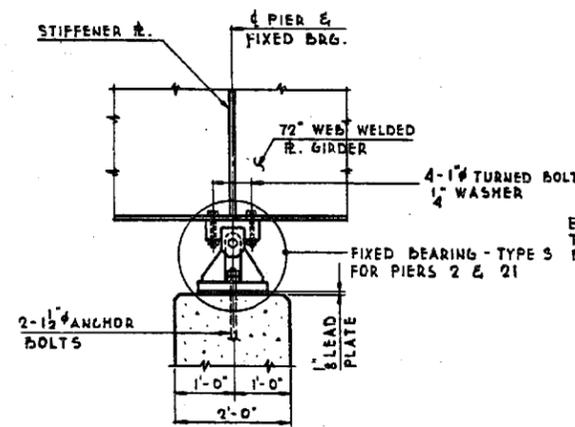
F.A.P. RT. = 372	SECTION = 2013-039BP	COUNTY = COOK	TOTAL SHEETS = 209	SHEET NO. = 146
CONTRACT NO. 60W76			ILLINOIS FED. AID PROJECT	



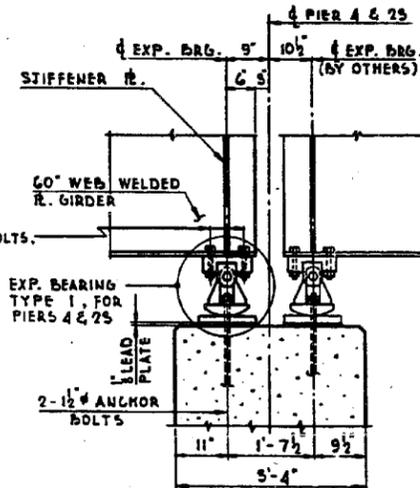
BRG. TYPE 1 AT ABUT'S A & C
SCALE: 3/4" = 1'-0"



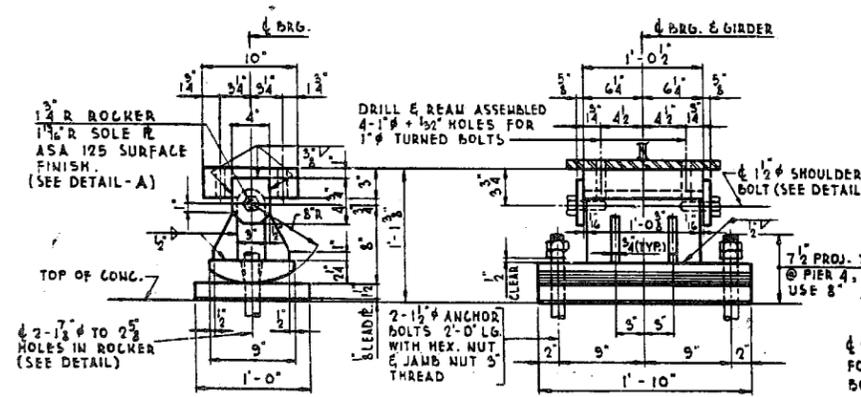
BRG. TYPE 2
AT PIERS 1, 3, 20 & 22
SCALE: 3/4" = 1'-0"



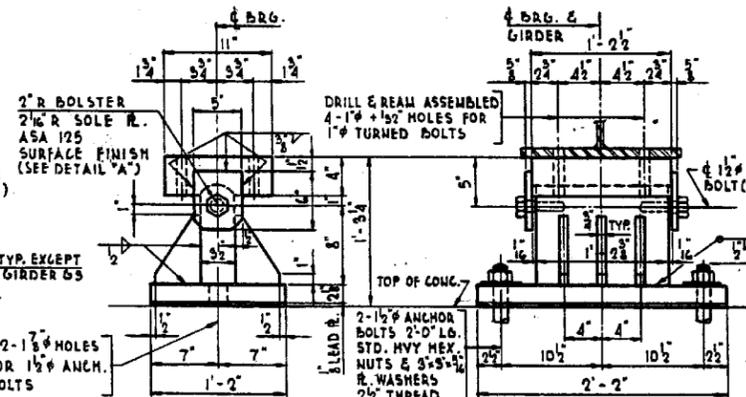
BRG. TYPE 3
AT PIERS 2 & 21
SCALE: 3/4" = 1'-0"



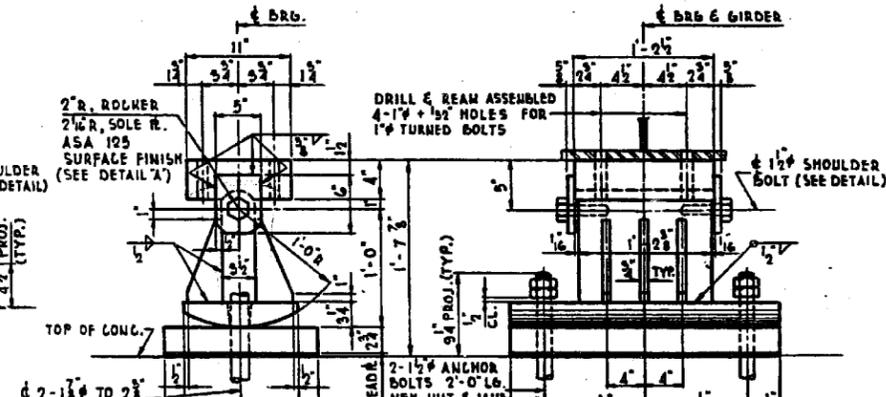
BRG. TYPE 1
AT PIERS 4 & 23
SCALE: 3/4" = 1'-0"



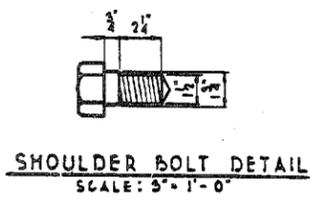
ROCKER DETAIL OF EXP. BRG. TYPE 1
SCALE: 1 1/2" = 1'-0"



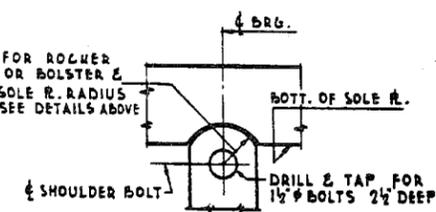
BOLSTER DETAIL OF FIXED BRG. TYPE 3
SCALE: 1 1/2" = 1'-0"



ROCKER DETAIL OF EXP. BRG. TYPE 2
SCALE: 1 1/2" = 1'-0"



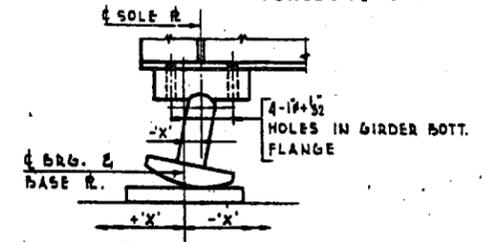
SHOULDER BOLT DETAIL
SCALE: 5" = 1'-0"



DETAIL - A
SCALE: 5" = 1'-0"

FILL PLATE SCHEDULE	
LOCATION	THICKNESS
GIRDERS G1 & G2 @ PIER 4	5/16" (4 REQ'D)
GIRDER G3 @ PIER 4	15/16"
GIRDERS G1, G2 & G3 @ PIER 23	1/8" (3 REQ'D)

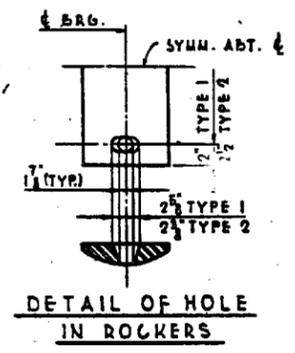
TOTAL WEIGHT OF FILL PLATES = 214 LBS



DIMENSION 'X'

TEMPERATURE F	110°	90°	70°	50°	10°
BRG'S @ ABUT'S A & C	+1/4"	+3/8"	+1/2"	0	-1/4"
BRG'S @ PIERS 1 & 20	+1/8"	+1/4"	+1/2"	0	-1/4"
BRG'S @ PIERS 3 & 22	-1/8"	-1/4"	-1/2"	0	+1/4"
E. BRG'S @ PIERS 4 & 23	-1/4"	-1/8"	-1/4"	0	+1/4"

ROCKER SETTING DIAGRAM
MINUS SIGN INDICATES & SOLE PLATE WEST OF & BEARING.
PLUS SIGN INDICATES & SOLE PLATE EAST OF & BEARING.



DETAIL OF HOLE
IN ROCKERS

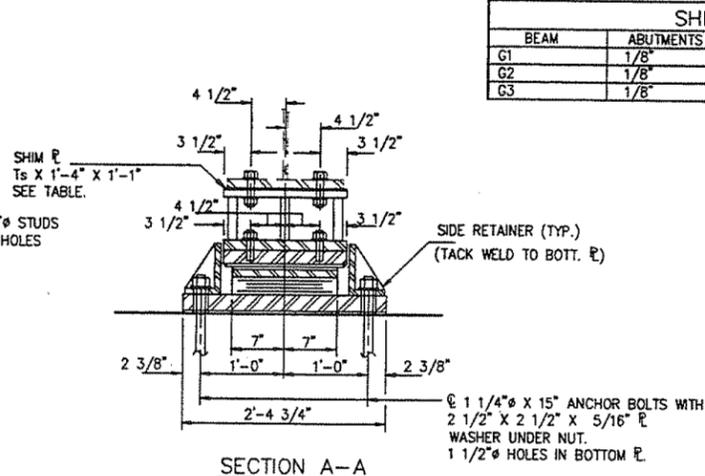
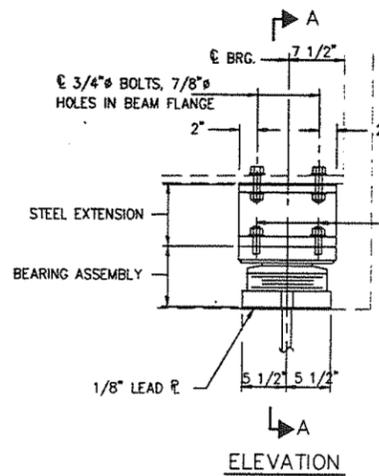
BILL OF MATERIAL **		
ITEM	UNIT	QUANTITY
FURNISHING & ERECTING STRUCTURAL STEEL	POUND	42,904

** WEIGHT OF ALL MATERIAL SHOWN ON THIS SHEET, INCL. FILL P'S.

BRG. TYPE	WT. PER BRG.	NO. REQ'D	TOTAL WT.
1	555	20	11,100
2	1,194	20	23,880
3	711	10	7,110

BEARING SCHEDULE
* DOES NOT INCLUDE FILL P'S

FILE NAME = #FILES#

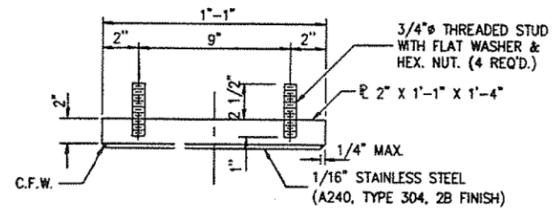


SHIM PL. Ts			
BEAM	ABUTMENTS	PIER 4 EAST	PIER 23 EAST
G1	1/8"	1/8" + 5/16"	1/8" + 1/8"
G2	1/8"	1/8" + 5/16"	1/8" + 1/8"
G3	1/8"	1/8" + 13/16"	1/8" + 1/8"

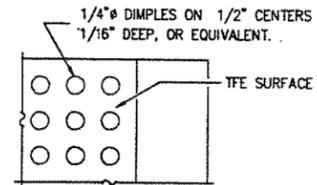
GIRDER REACTIONS		
	(K)	
RD	(K)	60.3
RE	(K)	51.6
IMP.	(K)	10.7
R (TOTAL)	(K)	122.6

NOTES: DIAPHRAGM REMOVAL AND REPLACEMENT MAY BE REQUIRED TO FACILITATE DRILLING HOLES IN THE BOTTOM FLANGE FOR BEARING ATTACHMENT. COST IS INCIDENTAL TO "FURNISHING AND ERECTING STRUCTURAL STEEL".
 NEW STEEL EXTENSIONS, SIDE RETAINERS, LEAD PLATES, CONNECTION BOLTS AND ANCHOR BOLTS ARE INCLUDED IN "FURNISHING AND ERECTING STRUCTURAL STEEL".
 SEE SHEET 18 OF 20 FOR ANCHOR BOLT INSTALLATION.
 BEFORE INSTALLING THE NEW BEARING, THE TOP PLATE OF THE EXISTING BEARING ASSEMBLY SHALL BE REMOVED FROM THE BOTTOM FLANGE USING THE AIR-ARC METHOD. GRIND SMOOTH ALL WELD MATERIAL REMAINING ON THE BOTTOM FLANGE. BURN EXISTING ANCHOR BOLTS FLUSH WITH EXISTING CONCRETE SURFACE. GRIND EXISTING ANCHOR BOLT SMOOTH AND SEAL WITH EPOXY. COST IS INCIDENTAL TO FURNISHING AND ERECTING STRUCTURAL STEEL.
 TRAFFIC SHALL BE REMOVED FROM THE PORTION OF THE STRUCTURE TO BE JACKED PRIOR TO COMMENCING JACKING OPERATIONS. TRAFFIC SHALL BE KEPT OFF THAT PORTION OF THE STRUCTURE DURING THE ENTIRE BEARING REPLACEMENT OPERATION. DIFFERENTIAL JACKING HEIGHT NOT TO EXCEED 1/8" TRANSVERSELY BETWEEN ADJACENT BEAMS OR 1/4" LONGITUDINALLY BETWEEN ADJACENT SUPPORTS.
 PRIOR TO ORDERING ANY MATERIAL, THE CONTRACTOR SHALL VERIFY IN THE FIELD ALL BEARING HEIGHT AND SHIM DIMENSIONS.
 SEE SUPERSTRUCTURE OVERLAY & REPAIR PLANS FOR BEAM LOCATIONS.

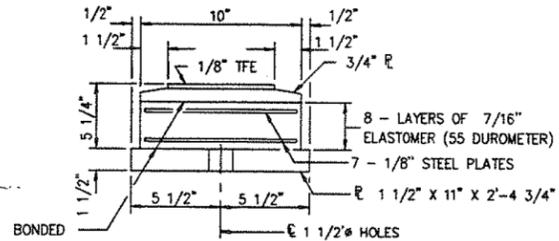
TYPE II TFE ELASTOMERIC EXP. BRG.



TOP BEARING ASSEMBLY



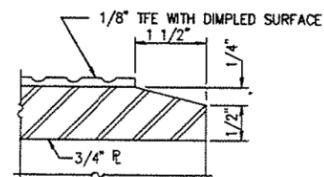
PLAN-TFE SURFACE



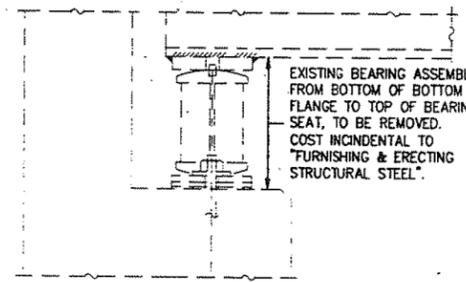
BOTTOM BEARING ASSEMBLY

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.

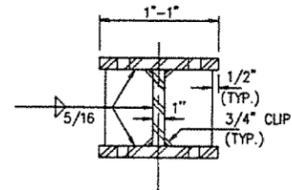
BONDING OF 1/8" TFE SHEET DURING VULCANIZING PROCESS WILL BE PERMITTED PROVIDED THE PROCESS AND METHOD OF ADJUSTING ASSEMBLY HEIGHT IS APPROVED BY THE ENGINEER.



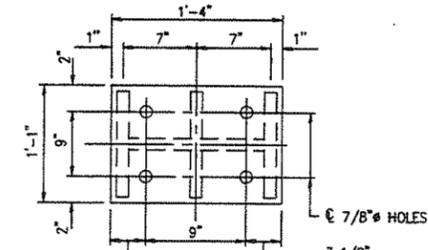
SECTION THRU TFE



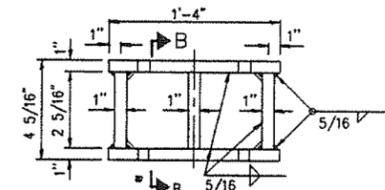
EXISTING ELEVATION



SECTION B-B



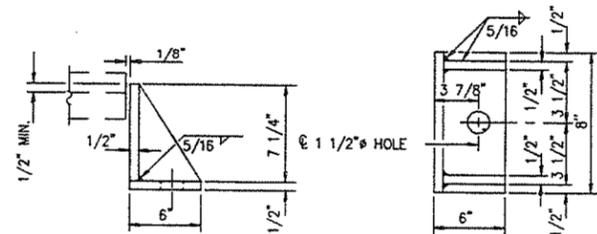
PLAN TOP & BOTTOM PLATES



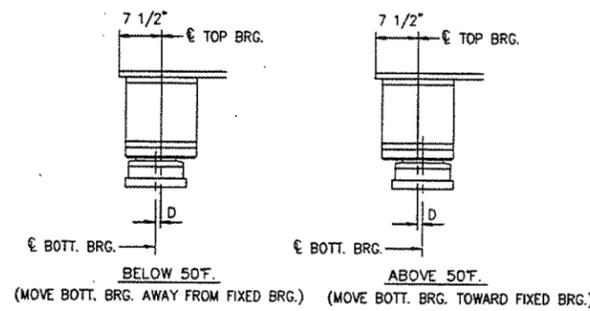
STEEL EXTENSION DETAIL

BILL OF MATERIAL

ITEM	UNIT	TOTAL
ELASTOMERIC BEARING ASSEMBLY TYPE II	EACH	20
JACK & REMOVE EXISTING BEARINGS	EACH	20
FURNISH & ERECT STRUCTURAL STEEL	LBS	4940



SIDE RETAINER
 EQUIVALENT ROLLED ANGLE WITH STIFFENERS WILL BE ALLOWED IN LIEU OF WELDED PLATES.



SETTING ANCHOR BOLTS AT EXP. BRG.
 D = 1/8" PER EACH 100' OF EXPANSION FOR EVERY 15' TEMP. CHANGE FROM THE NORMAL TEMP. OF 50°F.

FILE NAME = #FILES#



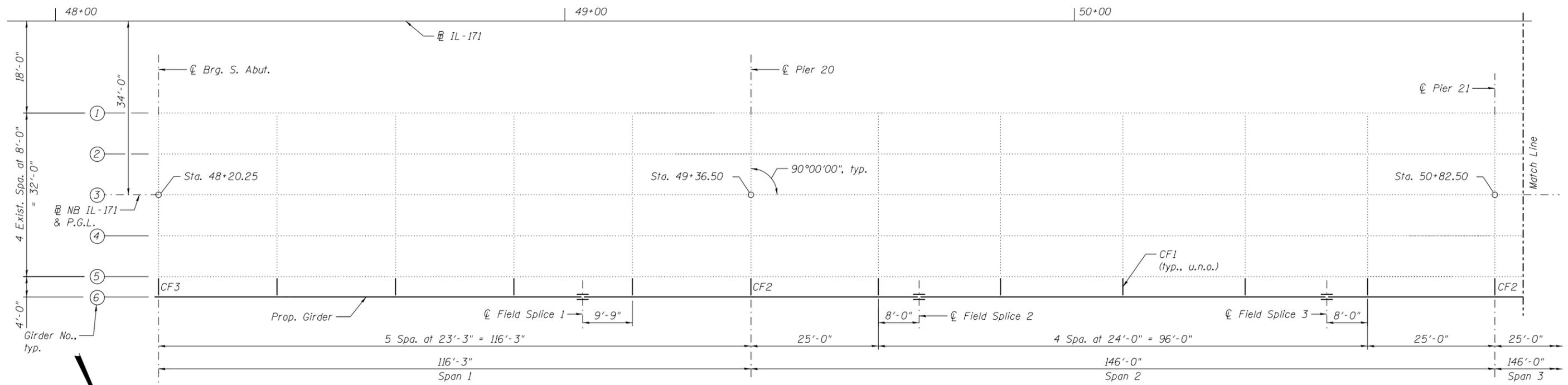
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

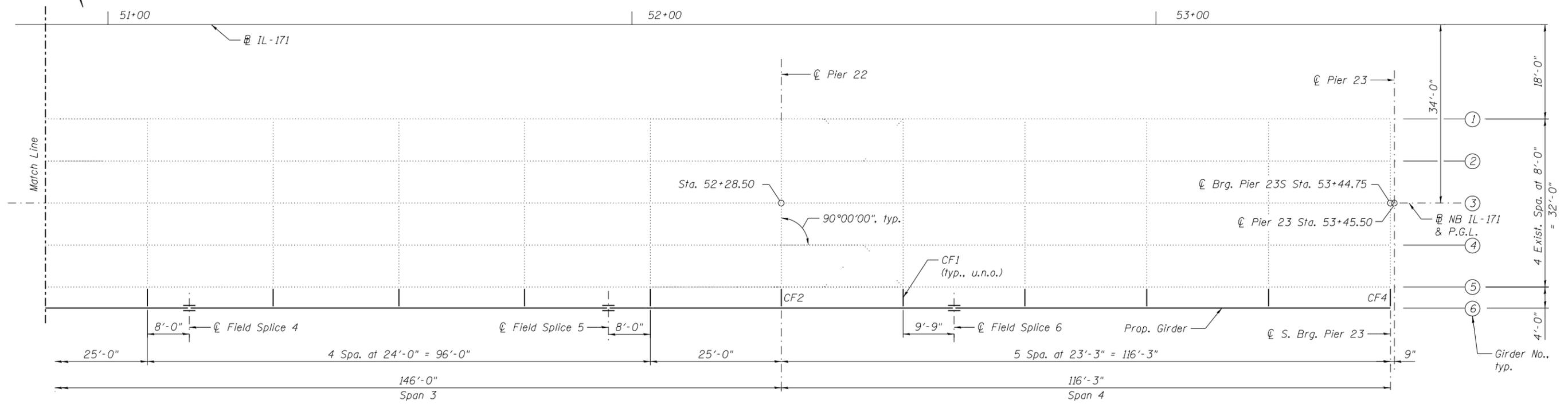
REHAB. EXP. BEARING DETAILS - LOCATION 8
STRUCTURE NO. 016-0985

SHEET NO. SH-5 OF SH-14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	148
				CONTRACT NO. 60W76
ILLINOIS FED. AID PROJECT				



FRAMING PLAN - SPANS 1 & 2



FRAMING PLAN - SPANS 3 & 4

FILE NAME = #FILES#



USER NAME = Lin	DESIGNED -	REVISED -
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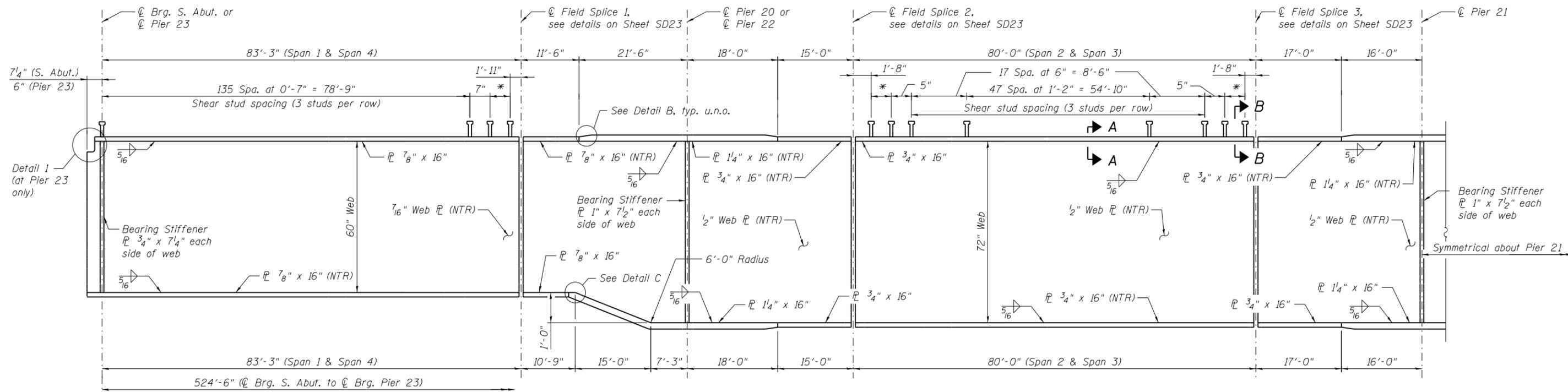
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. FRAMING PLAN - LOCATION 8
STRUCTURE NO. 016-0985**

SHEET NO. SH-6 OF SH-14 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 149
CONTRACT NO. 60W76				

ILLINOIS FED. AID PROJECT



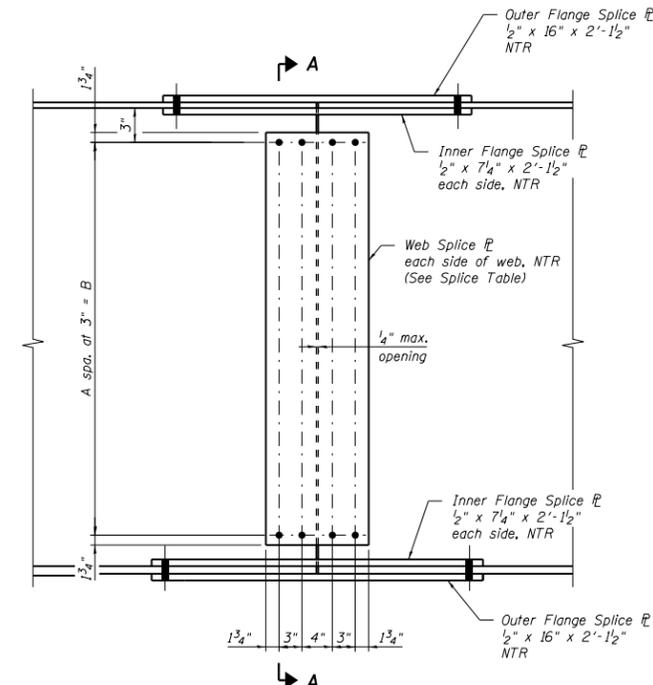
GIRDER 6 ELEVATION

(Shear stud connector spacing shown for Girders G1-G6)

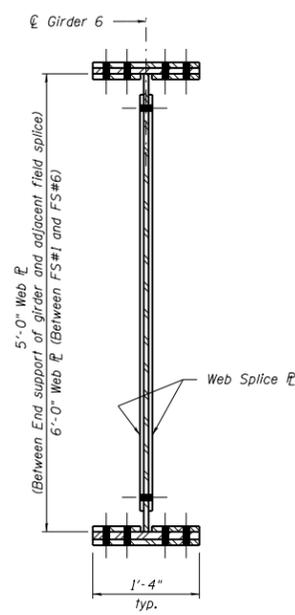
* 6 spa. at 4" = 2'-0" (4 studs per row). See Section B-B

SPLICE TABLE

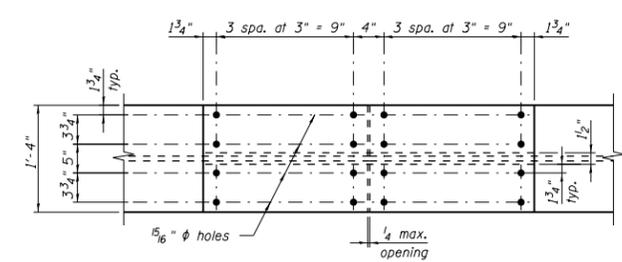
Splice Location	Web Splice PL	A	B	No. Bolts
Splice 1 & 6	3/8" x 13 1/2" x 4'-9 1/2"	18	4'-6"	76
Splice 2 & 5	3/8" x 13 1/2" x 5'-9 1/2"	22	5'-6"	92
Splice 3 & 4	3/8" x 13 1/2" x 5'-9 1/2"	22	5'-6"	92



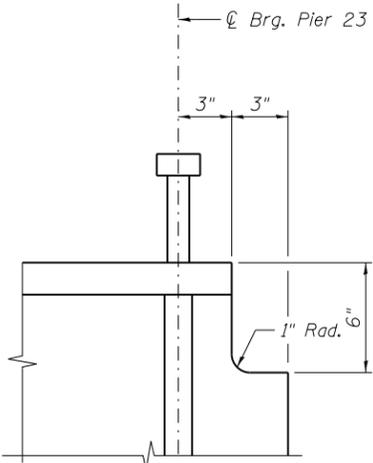
ELEVATION - FIELD SPLICE - GIRDER 6



SECTION A-A

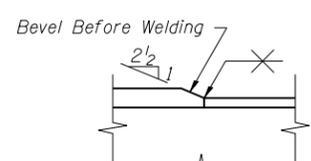


FLANGE SPLICE - GIRDER 6
(Top & Bottom Flanges)
(32 Bolts per Flange Splice)

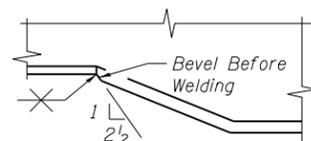


DETAIL 1

(Cope Girder 6 as shown at Pier 23 only)



DETAIL "B"



DETAIL "C"

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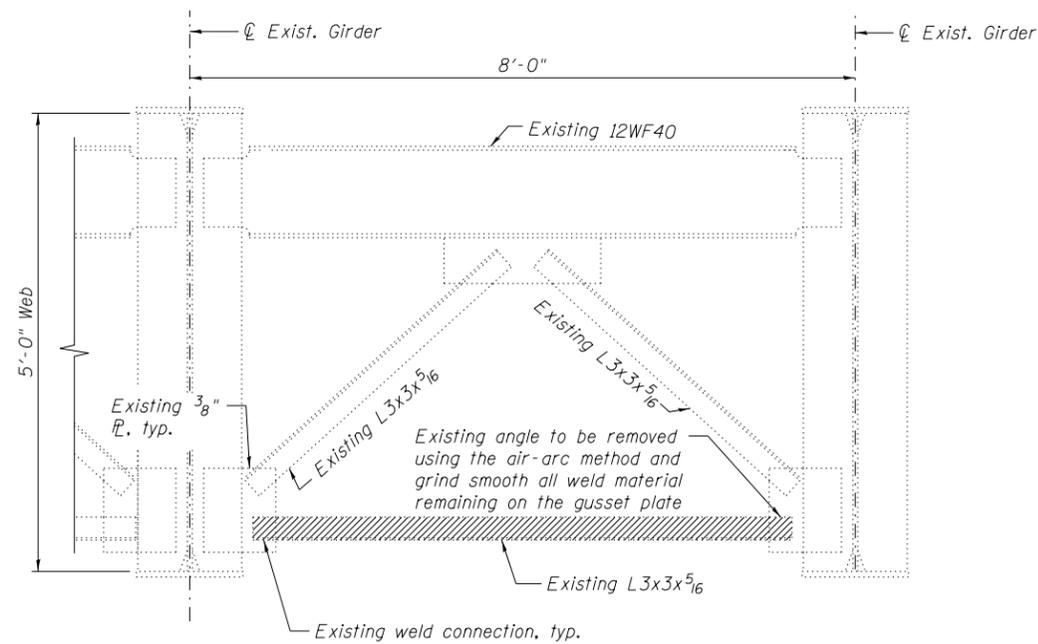
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. GIRDER ELEVATION & SPLICE DETAILS - LOCATION 8
STRUCTURE NO. 016-0985**

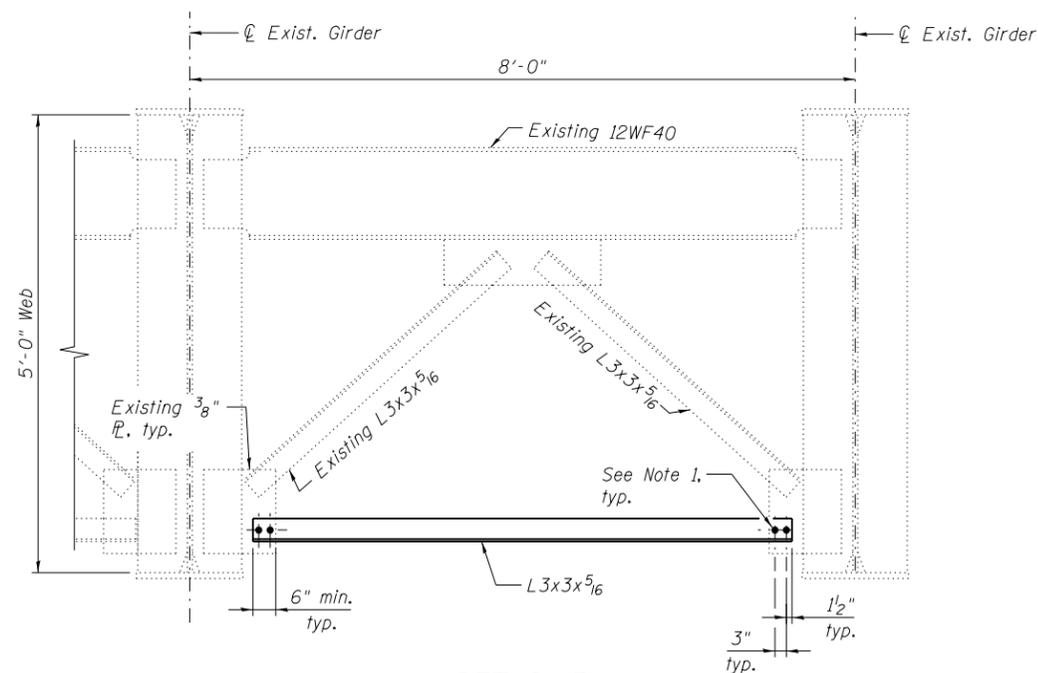
SHEET NO. SH-7 OF SH-14 SHEETS

F.A.P. R.T.E. = 372	SECTION = 2013-039BP	COUNTY = COOK	TOTAL SHEETS = 209	SHEET NO. = 150
CONTRACT NO. 60W76				

ILLINOIS FED. AID PROJECT



EXISTING DETAIL 3
(No. Req'd = 2)



DETAIL 3
(No. Req'd = 2)

NOTES:

- Fasteners shall be $\frac{3}{4}$ " ϕ ASTM A325 Type 1, mechanically galvanized bolts in $\frac{1}{16}$ " ϕ holes in existing and new steel. Field drill holes in existing steel using new steel as a template. Cost of field drilling is included with "Furnishing and Erecting Structural Steel".
- Steel removal paid for as "Structural Steel Removal". New steel paid for as "Furnishing and Erecting Structural Steel".
- The Contractor shall verify existing dimensions and locations of the connection plates and dimensions and locations of existing hole sizes and make any necessary adjustments to the bolt spacing and member sizes prior to construction or ordering of materials. Cost included with "Furnishing and Erecting Structural Steel".

FILE NAME = #FILES#



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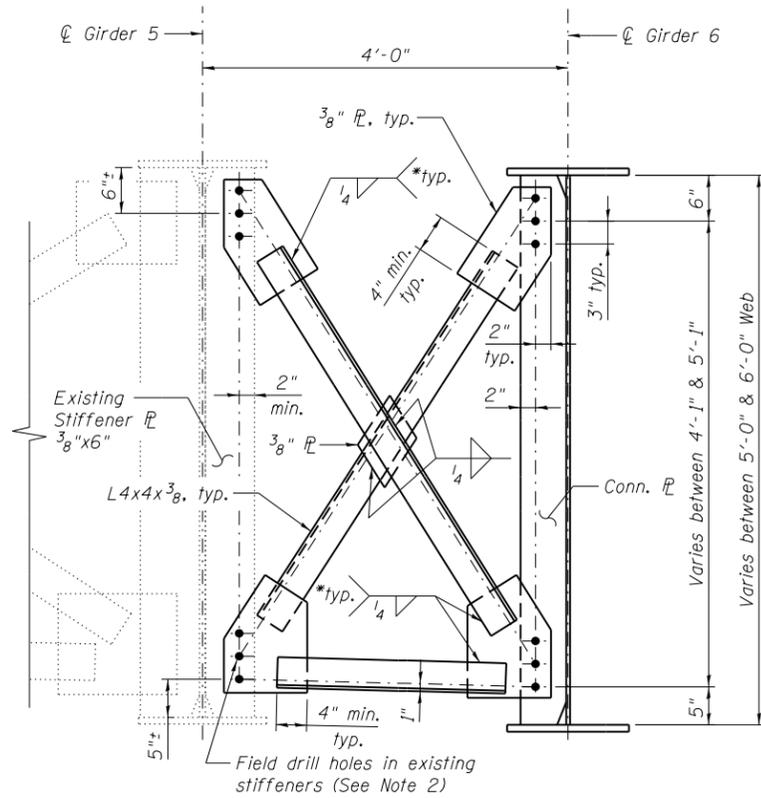
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. STRUCTURAL STEEL REPAIRS - LOCATION 8
STRUCTURE NO. 016-0985**

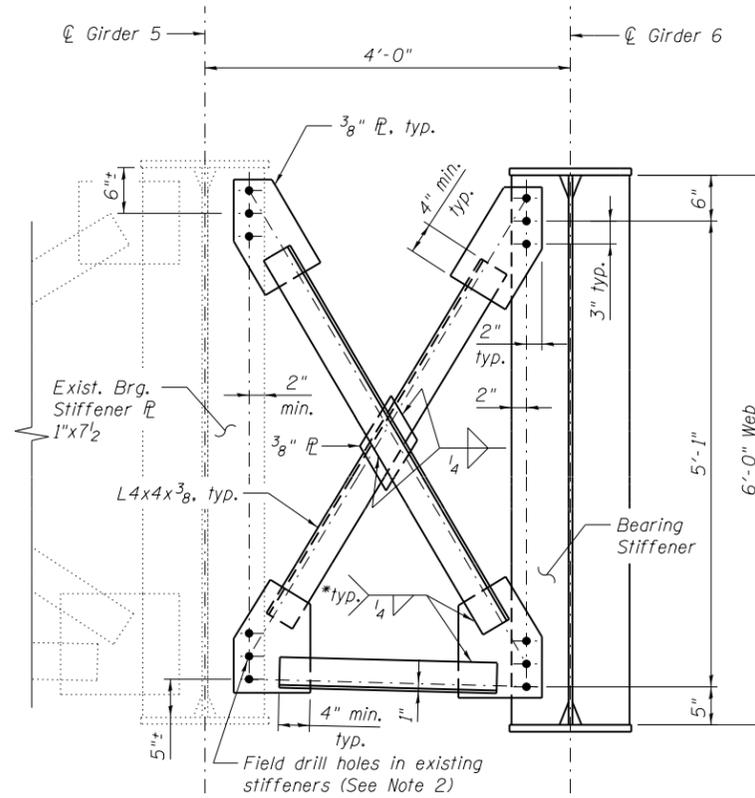
SHEET NO. SH-8 OF SH-14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	151
CONTRACT NO. 60W76				

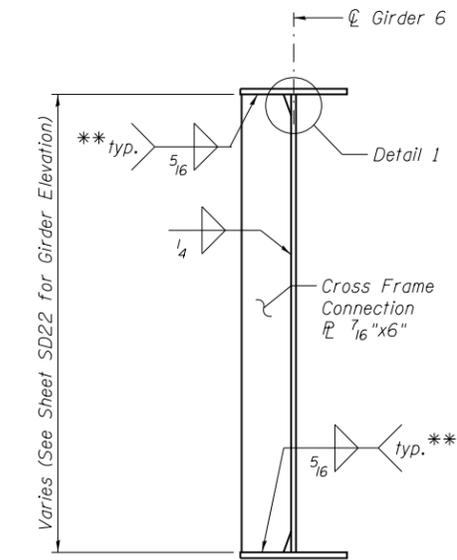
ILLINOIS FED. AID PROJECT



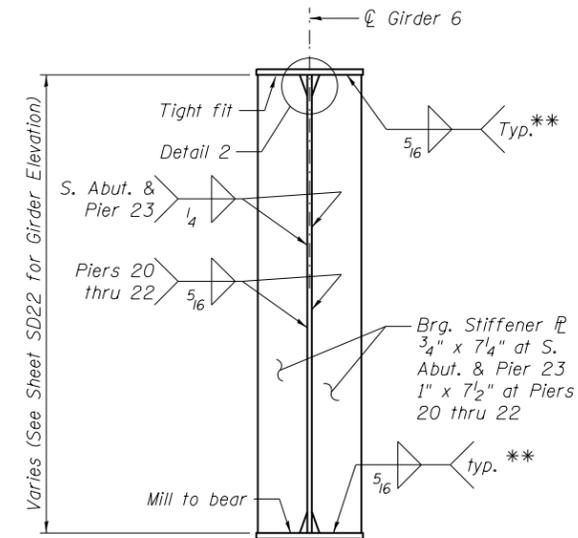
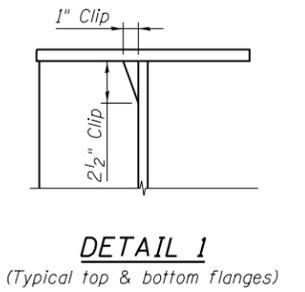
TYPE 1 CROSS FRAME
(CF1)
(No. Req'd = 18)



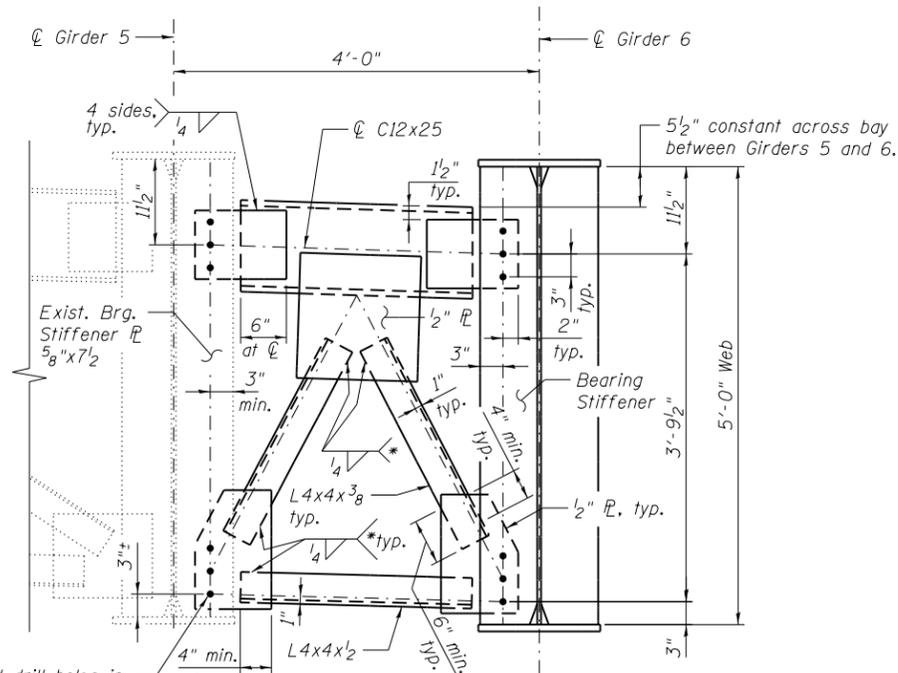
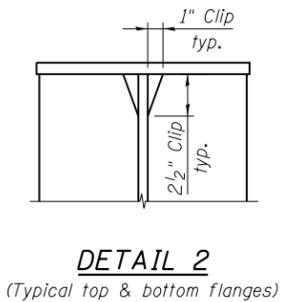
**TYPE 2 CROSS FRAME
AT PIERS 20 THRU 22**
(CF2)
(No. Req'd = 3)



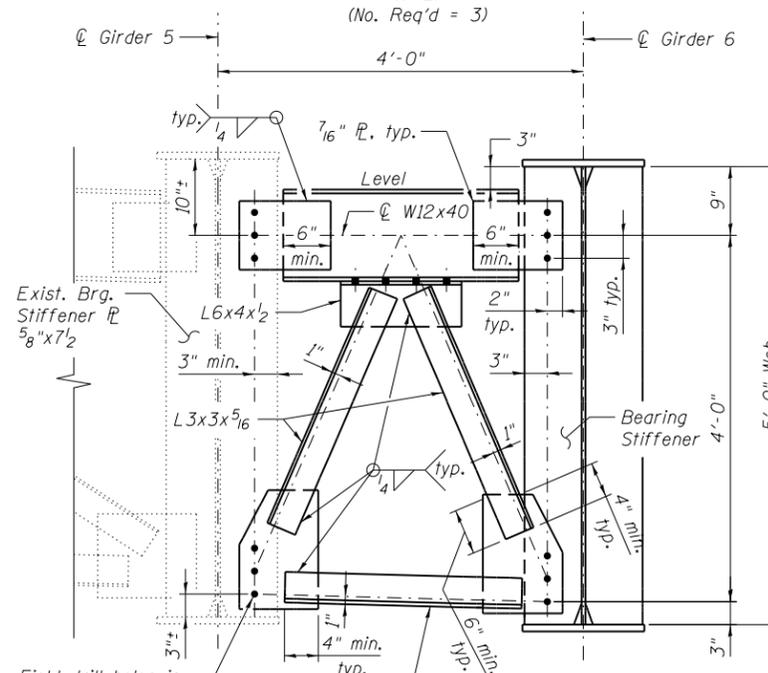
CONNECTION PLATE DETAIL
(No. of Connection Plates Req'd = 18)
(Omit cross frame connection plate from exterior face of girder 6)



BEARING STIFFENER
(No. of 3/4" x 7 1/4" Plates Required = 4)
(No. of 1" x 7 1/2" Plates Required = 6)



**TYPE 3 CROSS FRAME
AT SOUTH ABUTMENT**
(CF3)
(No. Req'd = 1)



**TYPE 4 CROSS FRAME
AT PIER 23**
(CF4)
(No. Req'd = 1)

FILE NAME = #FILES#

LE LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

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CHECKED -
PLOT SCALE =
PLOT DATE = 3/22/2017 12:23:43 PM

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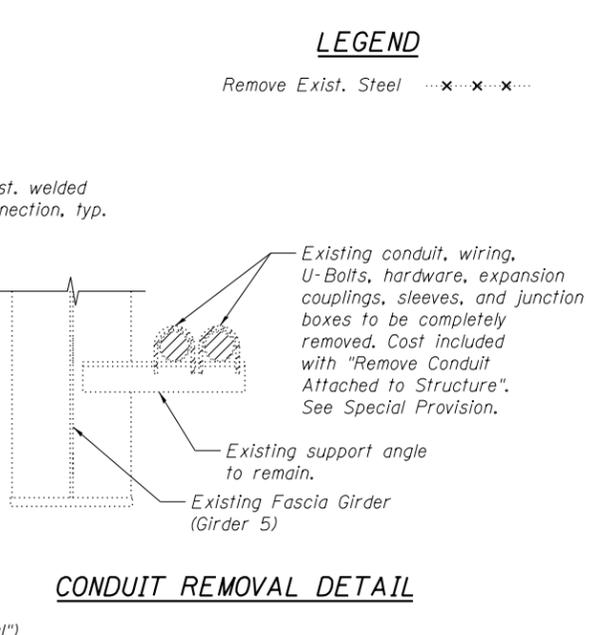
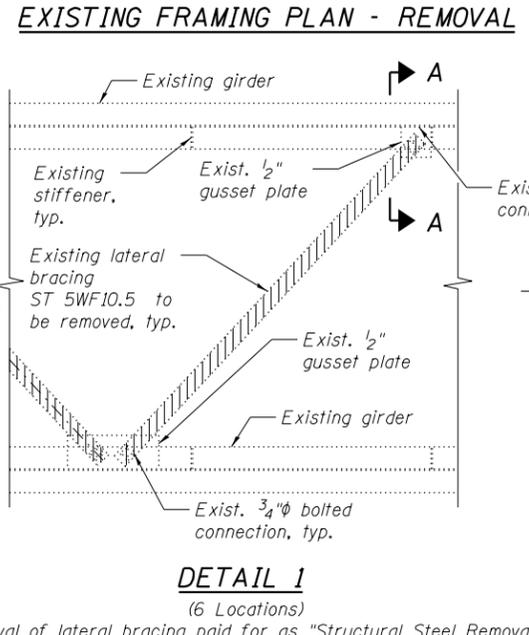
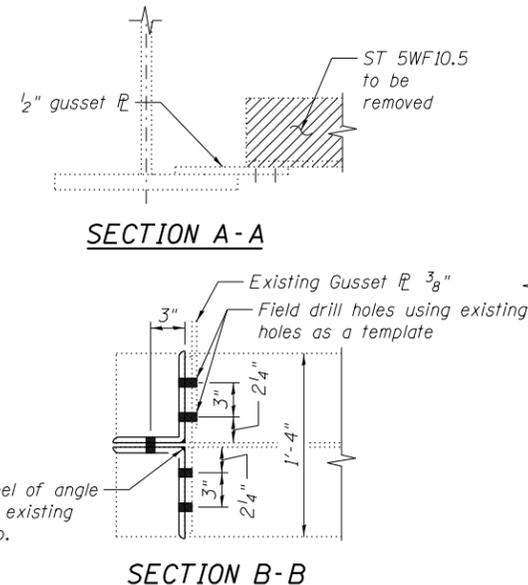
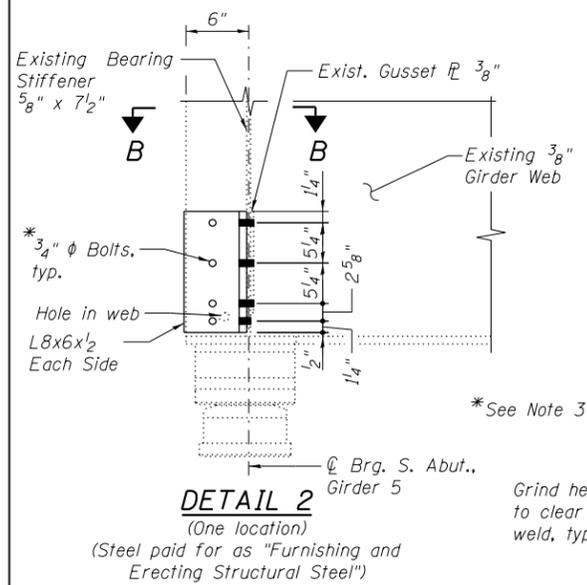
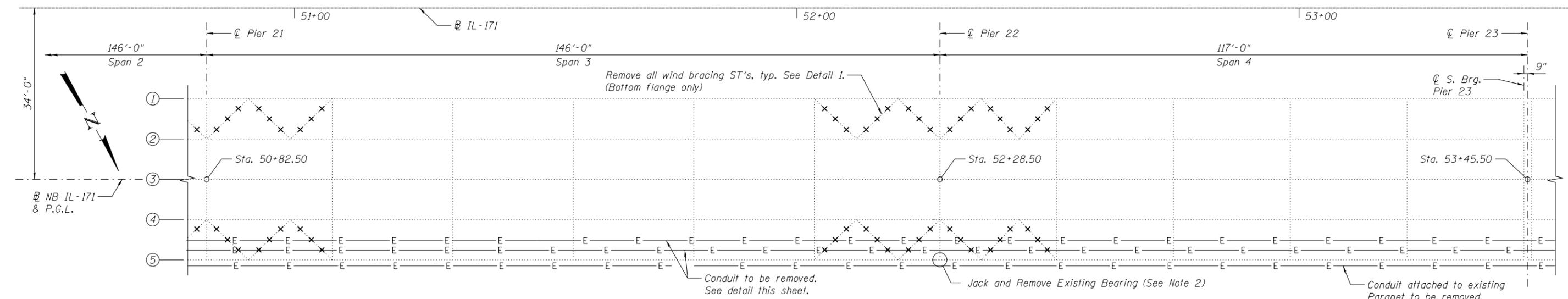
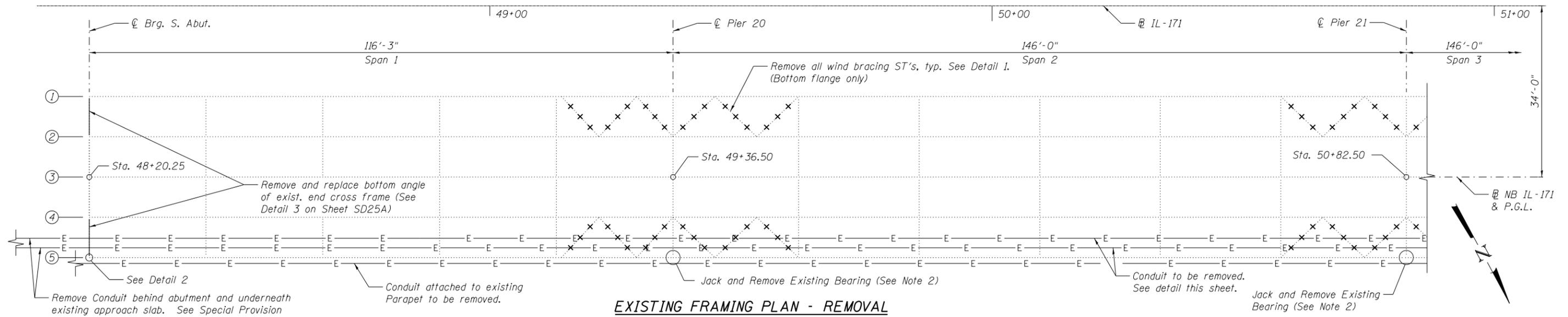
REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REHAB. STEEL PLATE GIRDER CROSS FRAMES - LOCATION 8
STRUCTURE NO. 016-0985

SHEET NO. SH-9 OF SH-14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	152
CONTRACT NO. 60W76				
ILLINOIS FED. AID PROJECT				



LEGEND

Remove Exist. Steel -x-x-x-x-

NOTES:

- The Engineer will inspect all existing bearing anchor bolts to ascertain their condition. Any damaged anchor bolts shall be reported to the BBS for further direction. The Contractor shall provide all means and access for the Engineer to perform the anchor bolt inspections. All costs associated with providing the access shall be considered included in the unit price for "Furnishing and Erecting Structural Steel".
- Bearing removal is required to facilitate construction of the pier widenings. See Sheet SD27 for Existing Bearing Removal Detail. See Sheets SD32 thru SD34 and SD36 for pier removal and widening details.
- The Contractor shall verify existing dimensions and locations of the gusset plates and existing hole sizes and make any necessary adjustments to the bolt spacing and angle sizes prior to construction or ordering of materials. Cost included with "Furnishing and Erecting Structural Steel".

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Steel Removal	Pound	3,670
Remove Conduit Attached to Structure	Foot	1,672

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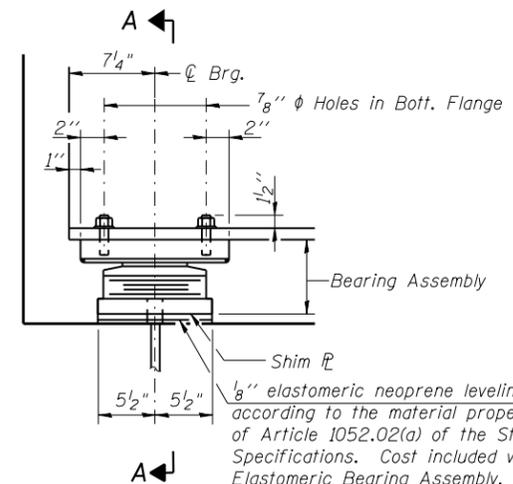
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REHAB. STRUCTURAL STEEL REPAIRS - LOCATION 8
STRUCTURE NO. 016-0985

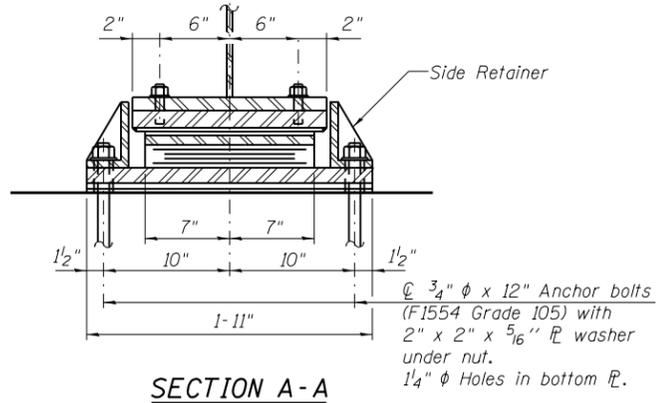
SHEET NO. SH-10 OF SH-14 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 153
CONTRACT NO. 60W76				

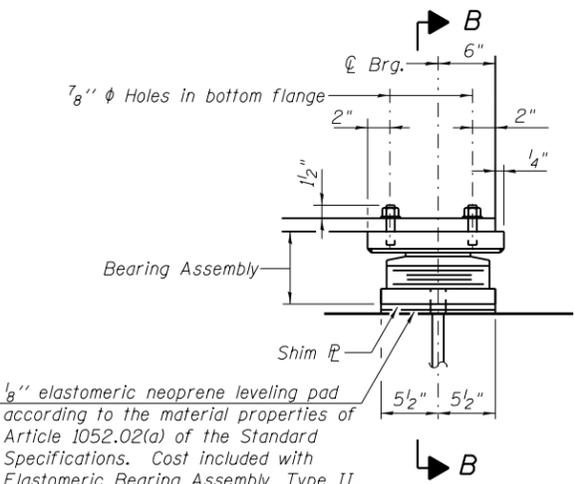
ILLINOIS FED. AID PROJECT



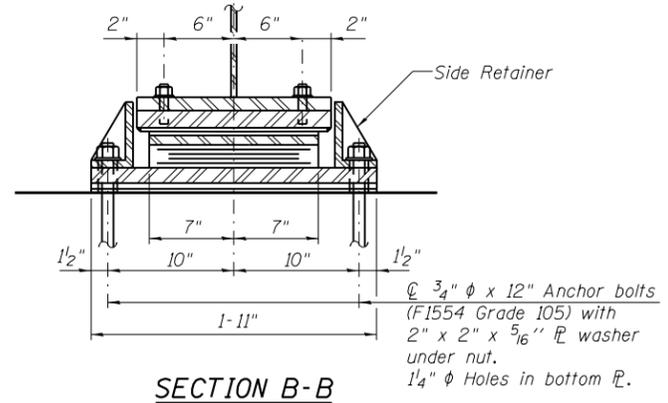
ELEVATION AT S. ABUT.
(Looking West)



SECTION A-A



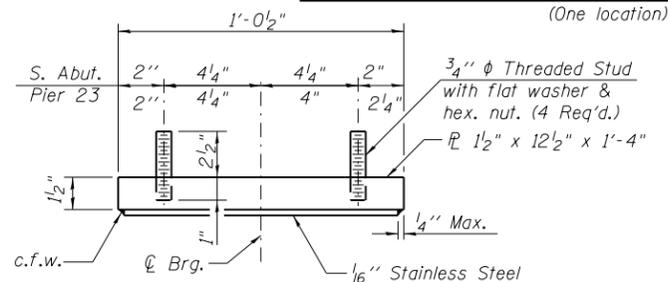
ELEVATION AT PIER 23
(Looking West)



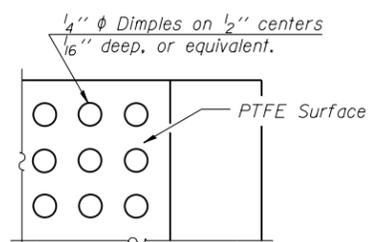
SECTION B-B

TYPE II ELASTOMERIC EXP. BRG. AT S. ABUT.

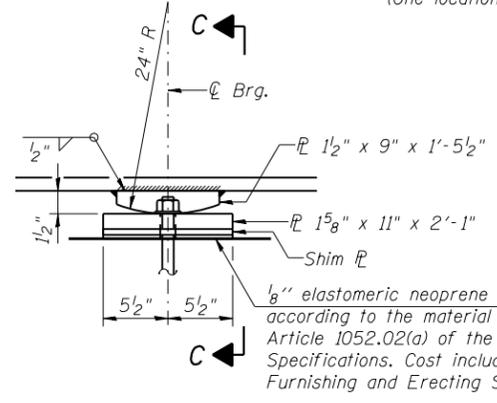
TYPE II ELASTOMERIC EXP. BRG. AT PIER 23



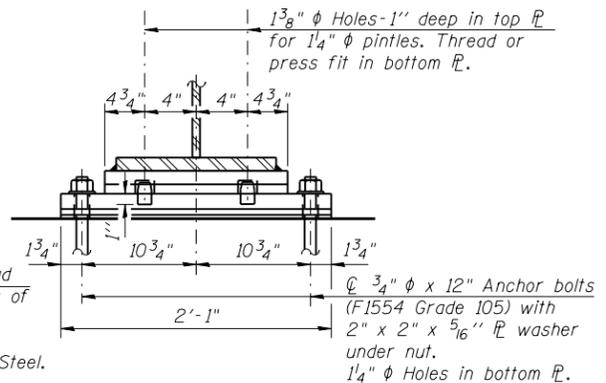
TOP BEARING ASSEMBLY



PLAN-PTFE SURFACE

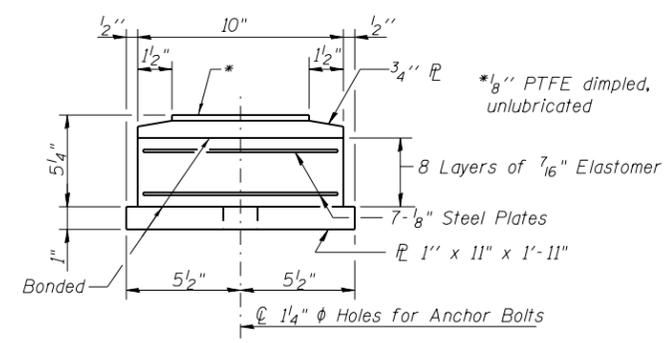


ELEVATION AT PIER 21

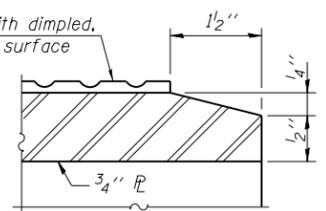


SECTION C-C

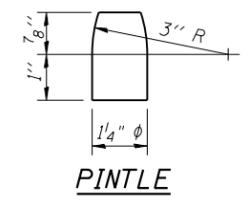
PROPOSED GIRDER 6 FIXED BEARING AT PIER 21
(One location)



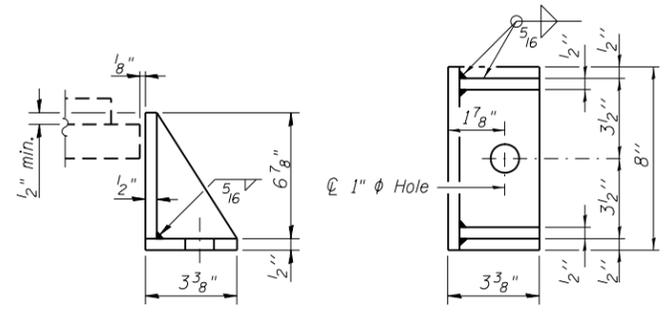
BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE



PINTLE



SIDE RETAINER

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

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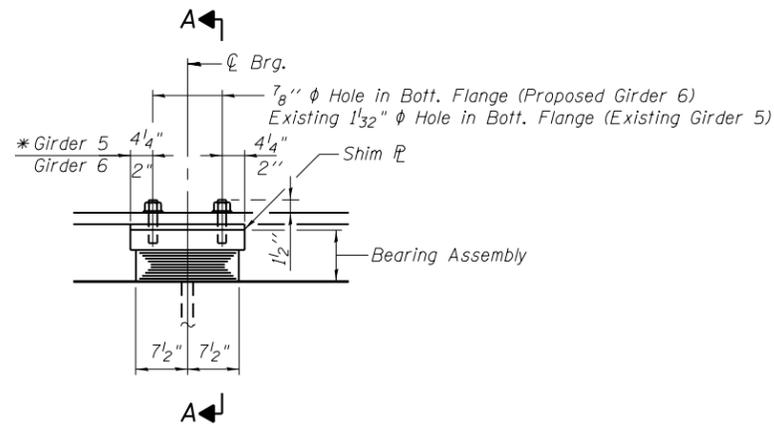
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REHAB. ELASTOMERIC AND FIXED BEARING DETAILS - LOCATION 8
STRUCTURE NO. 016-0985

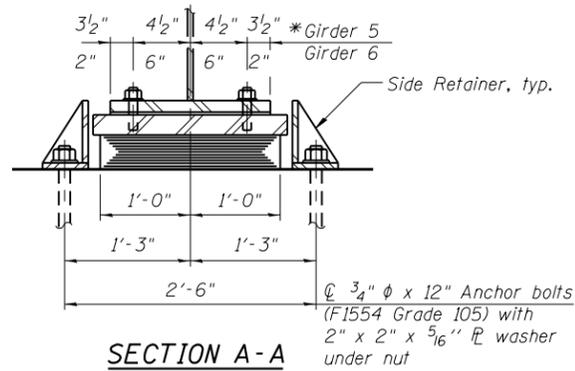
SHEET NO. SH-11 OF SH-14 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 154
				CONTRACT NO. 60W76

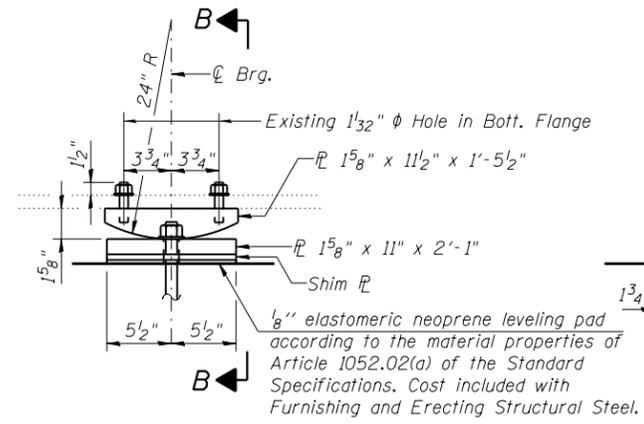
ILLINOIS FED. AID PROJECT



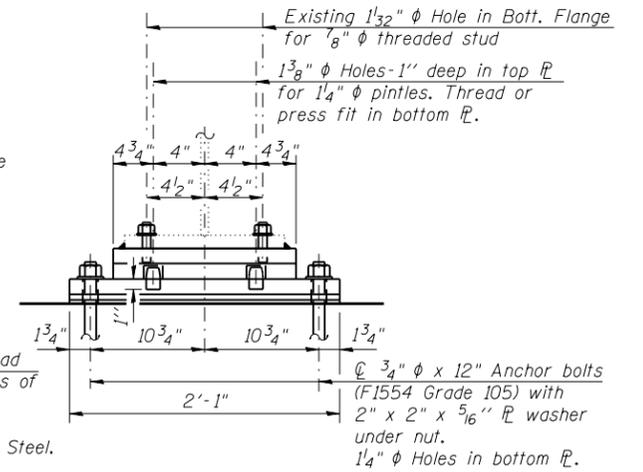
ELEVATION AT PIERS 20 & 22



SECTION A-A

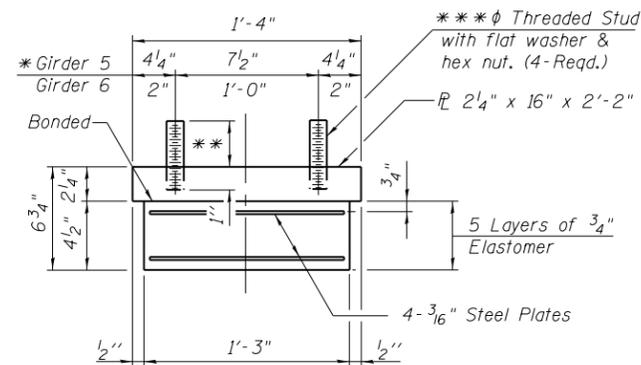


ELEVATION AT PIER 21



SECTION B-B

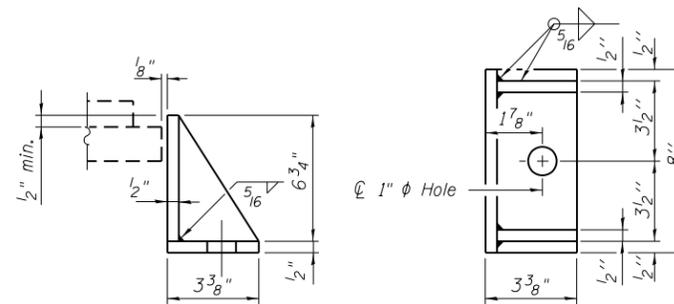
TYPE I ELASTOMERIC EXP. BRG. PIER 20 & 22
(Four locations)



BEARING ASSEMBLY

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

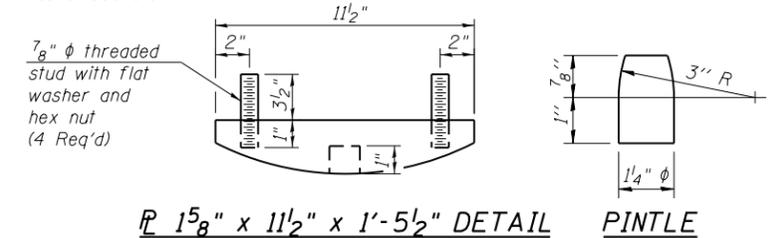
- * Prior to ordering any material the Contractor shall field verify existing drilled holes in bottom flange of existing Girder 5.
- ** 3 5/8" at existing Girder 5
3" at proposed Girder 6
- ** * 7/8" at existing Girder 5
3/4" at proposed Girder 6



SIDE RETAINER

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

EXISTING GIRDER 5 FIXED BEARING AT PIER 21
(One location)



PL 1 5/8" x 11 1/2" x 1'-5 1/2" DETAIL

PINTLE

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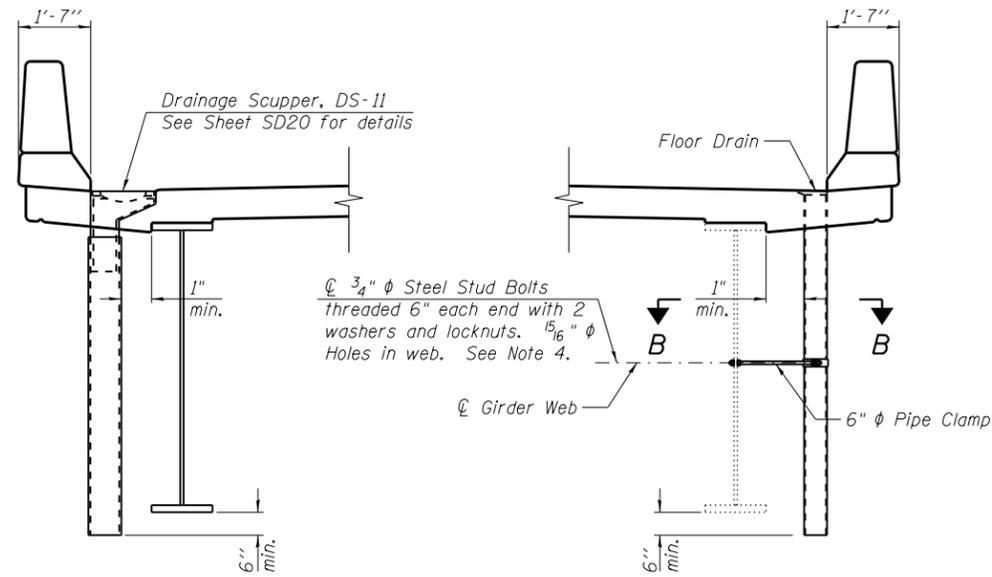


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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

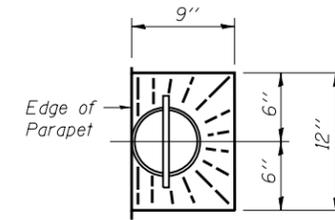
REHAB. ELASTOMERIC & FIXED BEARING DETAILS - LOCATION 8
STRUCTURE NO. 016-0985
SHEET NO. SH-12 OF SH-14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	155
CONTRACT NO. 60W76				
ILLINOIS FED. AID PROJECT				

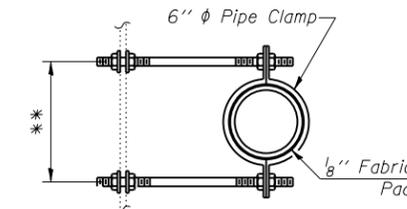


SECTION A-A
(showing proposed girder)

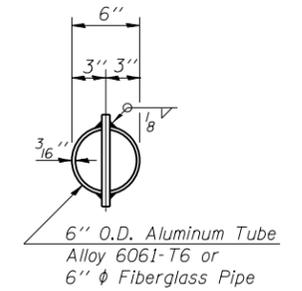
SECTION AT PARAPET WITH FLOOR DRAIN
(showing existing girder)



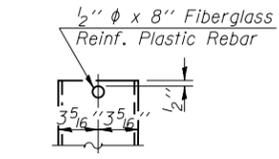
TOP PLAN



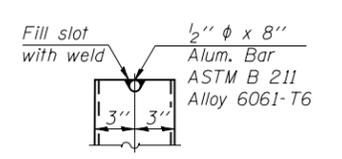
SECTION B-B
**Dimension as required by Pipe Clamp



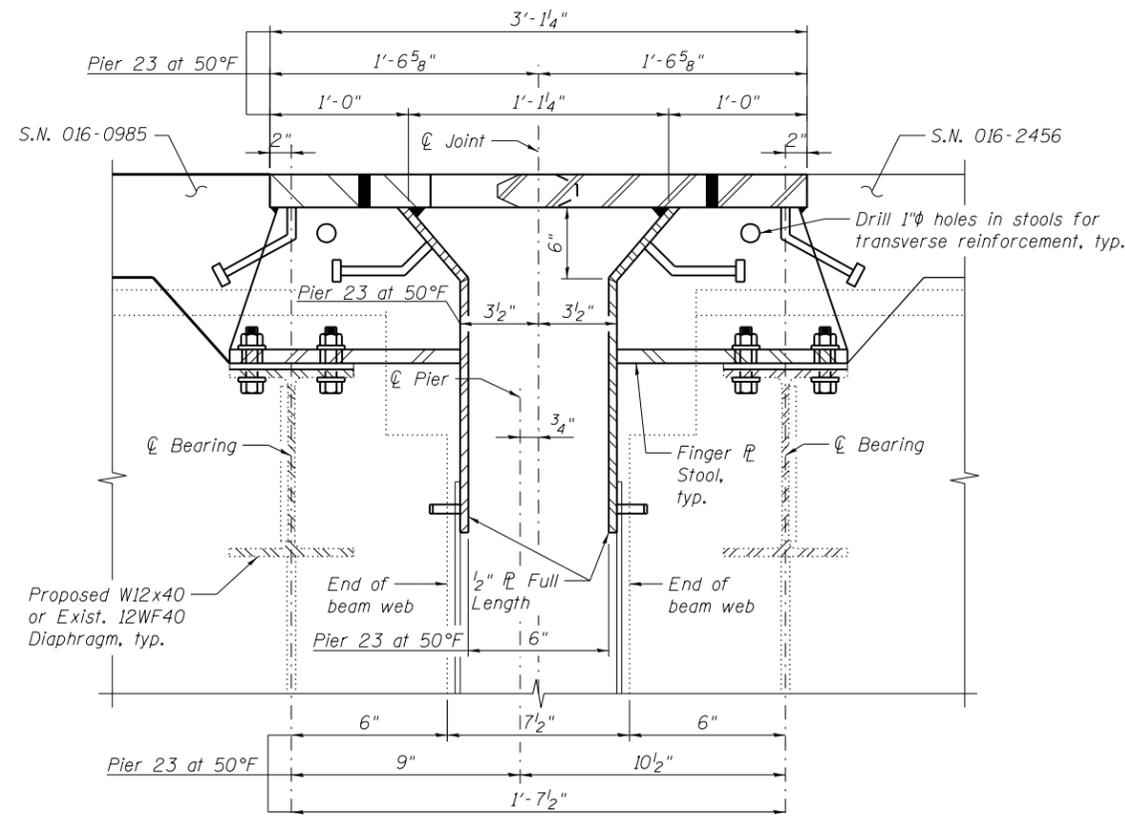
TOP PLAN
(Showing Aluminum Tube)



FIBERGLASS PIPE



ALUMINUM TUBE



SECTION X-X

(See SN 016-2456 plans for additional finger plate joint details. Cost of finger plate joint included with SN 016-2456.)

FILE NAME = #FILES#



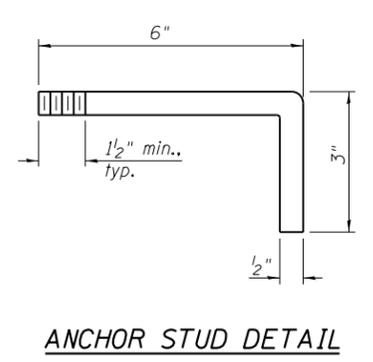
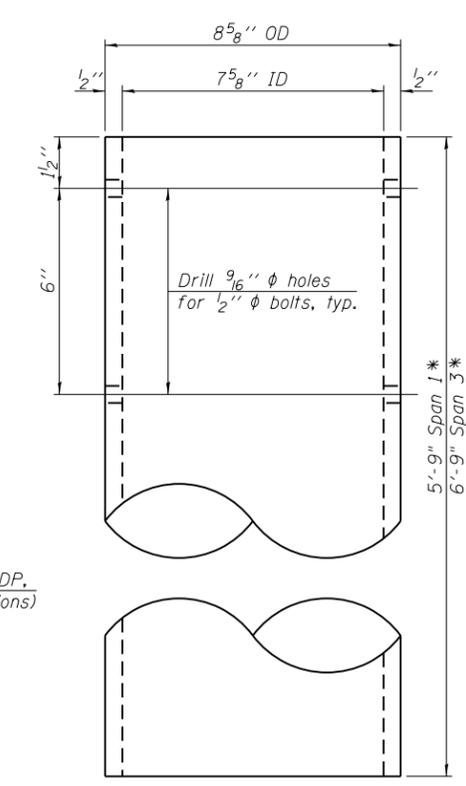
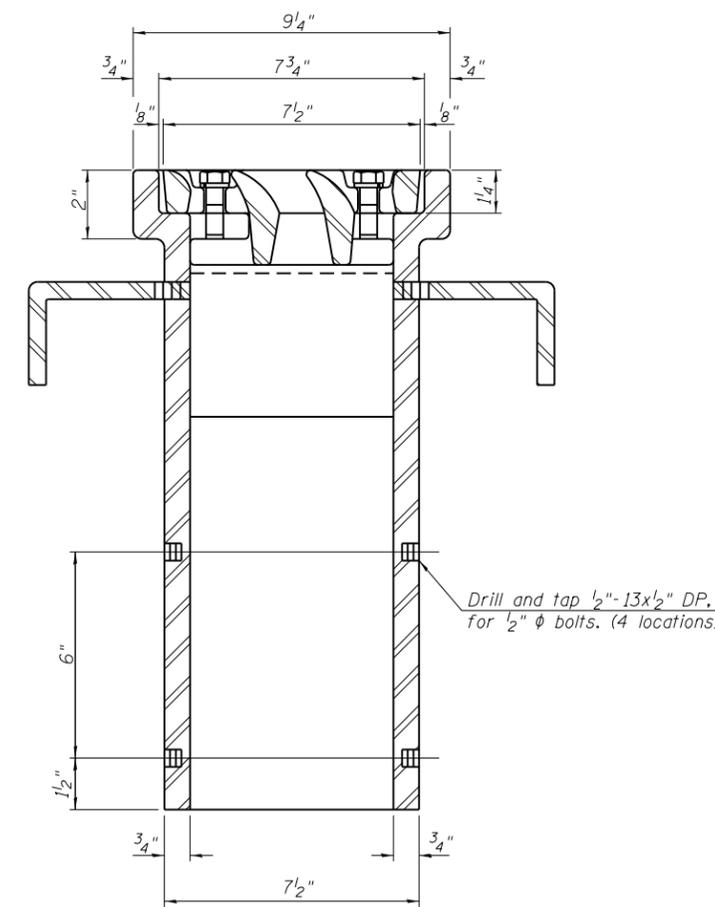
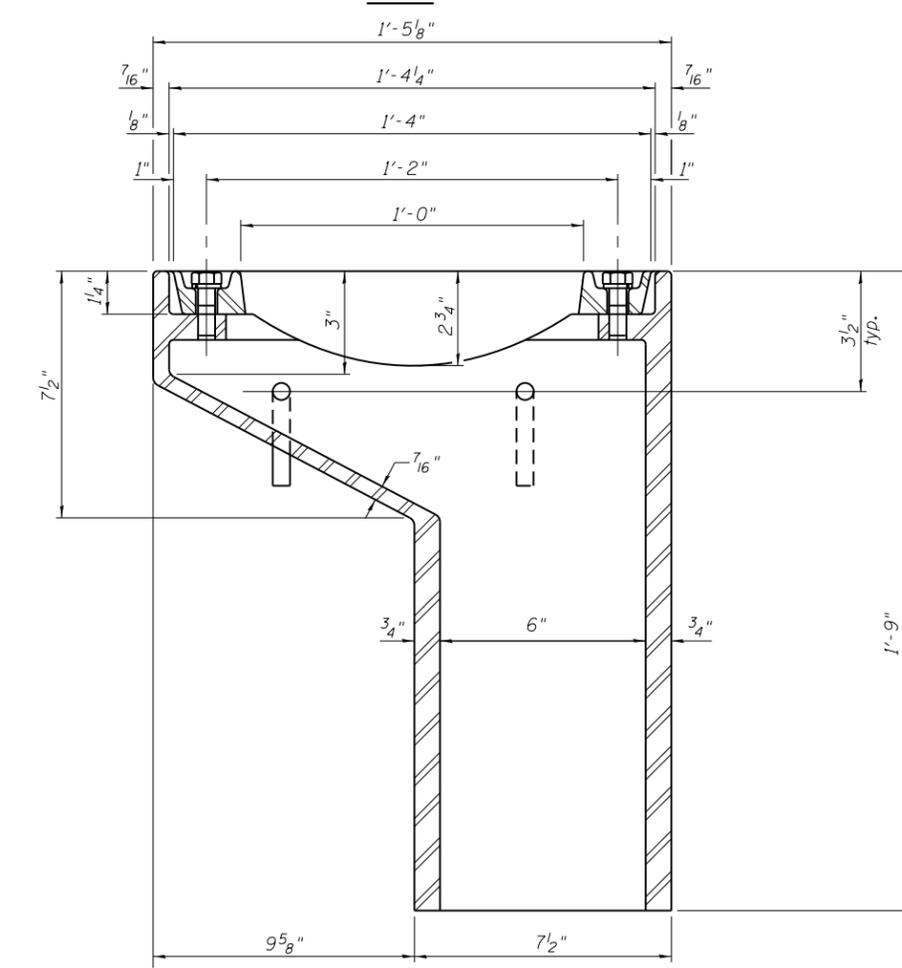
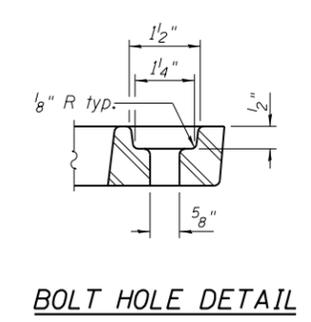
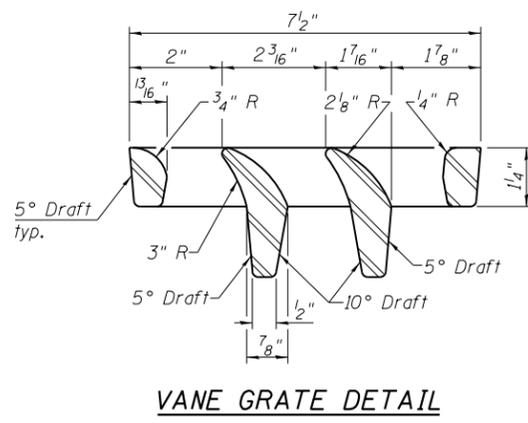
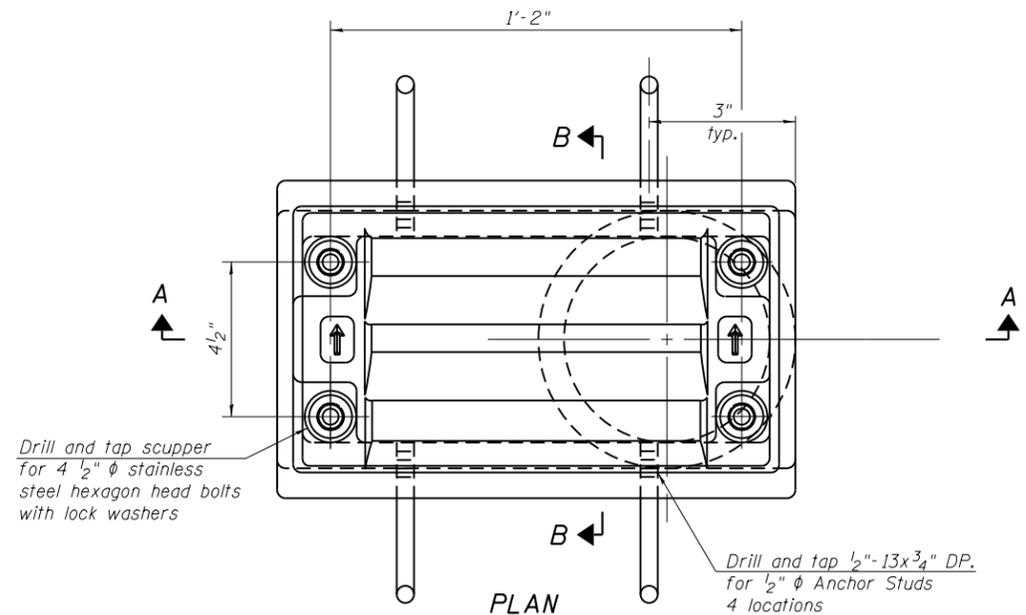
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. DECK DRAINAGE AND FINGER PLATE DETAILS - LOCATION 8
STRUCTURE NO. 016-0985**

F.A.P. RTE. = 372	SECTION = 2013-039BP	COUNTY = COOK	TOTAL SHEETS = 209	SHEET NO. = 156
				CONTRACT NO. 60W76
ILLINOIS FED. AID PROJECT				

SHEET NO. SH-13 OF SH-14 SHEETS



See Sheet SD13 for scupper location relative to parapet.

*Length of downspout shall extend a minimum of 6" below the girder bottom flange.

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.
 Downspouts located on the exterior side of a fascia beam shall be painted under a separate painting contract.
 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 the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.
 The Contractor shall take appropriate 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-11.
 Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers, DS-11	Each	4

DS-11 7-1-10

FILE NAME = #FILES#



USER NAME = Lin	DESIGNED -	REVISD -
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

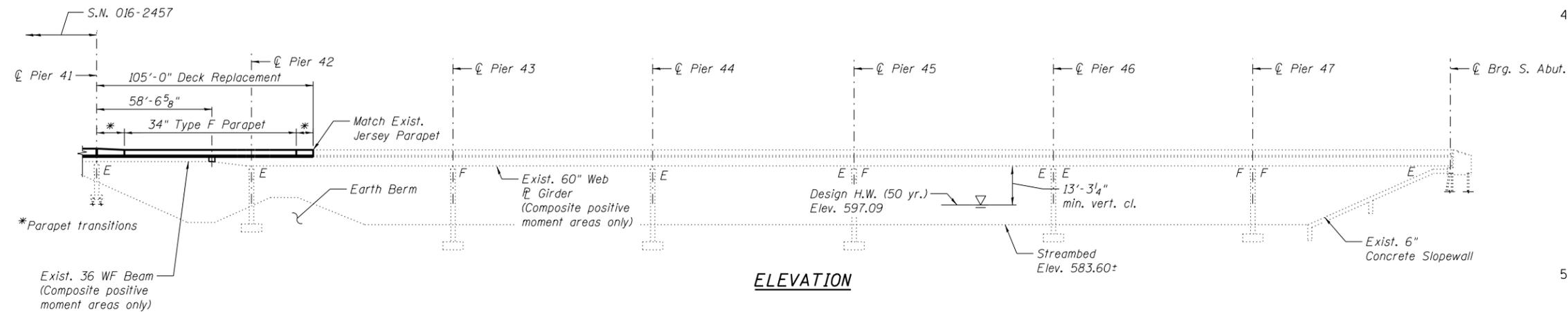
REHAB. SCUPPER DETAILS - LOCATION 8
 STRUCTURE NO. 016-0985

SHEET NO. SH-14 OF SH-14 SHEETS

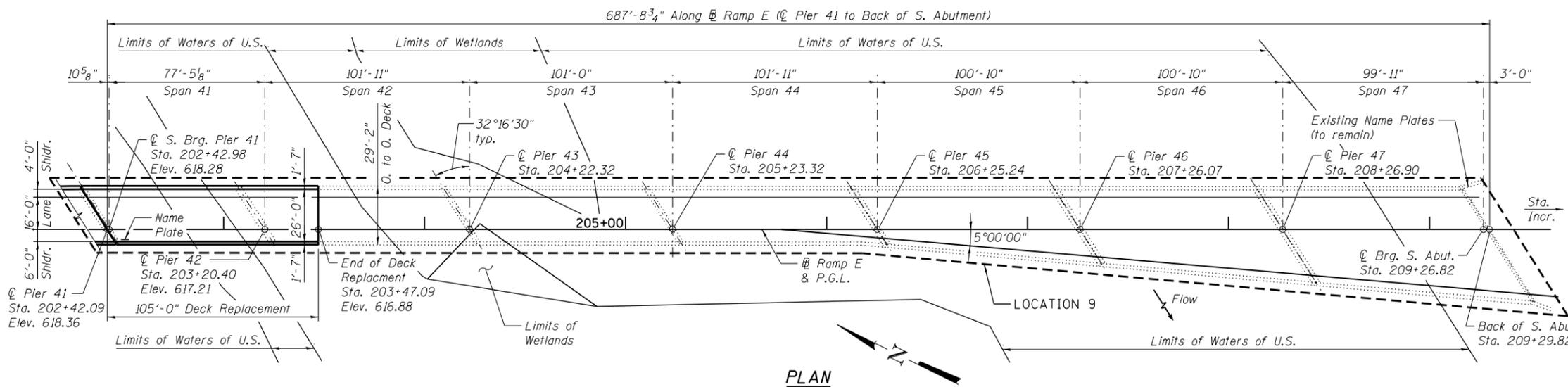
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	157
CONTRACT NO. 60W76			ILLINOIS FED. AID PROJECT	

GENERAL NOTES

1. THE EXISTING STRUCTURAL STEEL COATING CONTAINS LEAD. THE CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO DEAL WITH THE PRESENCE OF LEAD ON THIS PROJECT.
2. CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISION FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES".
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS. STRUCTURAL SHEETS TAKEN FROM EXISTING PLANS CONTAIN INFORMATION NOT PERTAINING TO THIS CONTRACT AND ARE FOR INFORMATION ONLY.
4. ALL EXISTING STRUCTURAL STEEL IDENTIFIED ON SHEETS SI-10 THRU SI-16 HAS BEEN PRIMED WITH AN INORGANIC ZINC RICH PRIMER UNDER A PREVIOUS CONTRACT. THESE STEEL SURFACES SHALL BE PRESSURE WASHED CLEAN AND POWER TOOL CLEANED (SSPC SP-3 MODIFIED) AS NECESSARY PRIOR TO THE APPLICATION OF THE INTERMEDIATE AND TOP COATS. THE INORGANIC ZINC RICH PRIMER / ACRYLIC / ACRYLIC PAINT SYSTEM SHALL BE USED FOR FIELD PAINTING OF THESE LOCATIONS. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR STEEL SURFACES SHALL BE GRAY, MUNSELL NO. 5B 7/1. THE COLOR OF THE FINAL FINISH COAT FOR THE EXTERIOR AND BOTTOM FLANGE OF THE FASCIA BEAMS SHALL BE REDDISH BROWN, MUNSELL NO. 2.5YR 3/4.
5. ALL EXISTING STRUCTURAL STEEL IDENTIFIED ON SHEETS SI-2 THRU SI-9 SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING SSPC-SP10. THESE LOCATIONS SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF THE EPOXY MASTIC / EPOXY MASTIC / ACRYLIC PAINT SYSTEM. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR STEEL SURFACES SHALL BE GRAY, MUNSELL NO. 5B 7/1. THE COLOR OF THE FINAL FINISH COAT FOR THE EXTERIOR AND BOTTOM FLANGE OF THE FASCIA BEAMS AND SHALL BE REDDISH BROWN, MUNSELL NO. 2.5YR 3/4.
6. A MINIMUM OF 2 AIR MONITORS WILL BE REQUIRED TO MONITOR ABRASIVE BLASTING OPERATIONS AT THIS SITE. SEE SPECIAL PROVISION FOR "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES".
7. THE ELASTOMERIC PADS OF THE EXISTING BEARINGS SHALL BE MASKED OFF FOR PROTECTION DURING PAINTING AND REMOVED WHEN PAINTING IS FINISHED. COST INCLUDED WITH "CLEANING AND PAINTING STEEL BRIDGE NO. 9".
8. IF APPLICABLE, THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND DETAILS DEMONSTRATING THE STRUCTURAL INTEGRITY OF THE BRIDGE IS MAINTAINED UNDER THE ADDITIONAL IMPOSED LOADS OF THE CONTAINMENT SYSTEM. SEE SPECIAL PROVISIONS.



ELEVATION



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
CLEANING AND PAINTING STEEL BRIDGE NO. 9	L. SUM	1
CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 9	L. SUM	1

FILE NAME = #FILES#

LE LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME = Lin	DESIGNED -	REVISED -
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN & ELEVATION - LOCATION 9
STRUCTURE NO. 016-1026**

SHEET NO. S1-1 OF S1-16 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 158
CONTRACT NO. 60W76				ILLINOIS FED. AID PROJECT

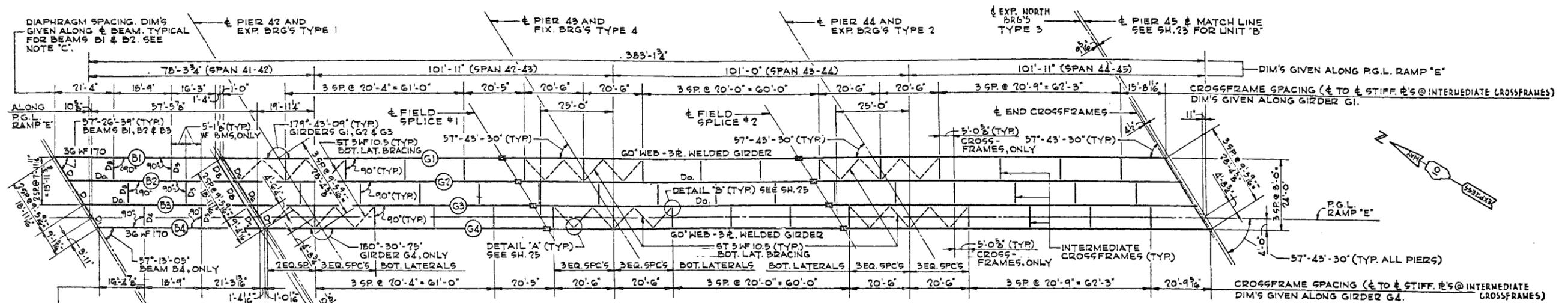


TABLE II

DIAPH.	LENGTH	NO. REQD.	DIAPH.	LENGTH	NO. REQD.	DIAPH.	LENGTH	NO. REQD.
D ₁	9'-5 1/16"	2	D ₃	7'-11 1/16"	4	D ₆	9'-5 1/16"	2
D ₂	9'-1 3/16"	1	D ₄	7'-8 1/16"	1	D ₇	9'-4 1/2"	1
D ₃	9'-4 3/8"	1	D ₅	7'-9 1/16"	1	D ₈	9'-5 1/16"	2

** LENGTH GIVEN IS
TO STIFFENERS @ INTERMEDIATE
CROSSFRAMES

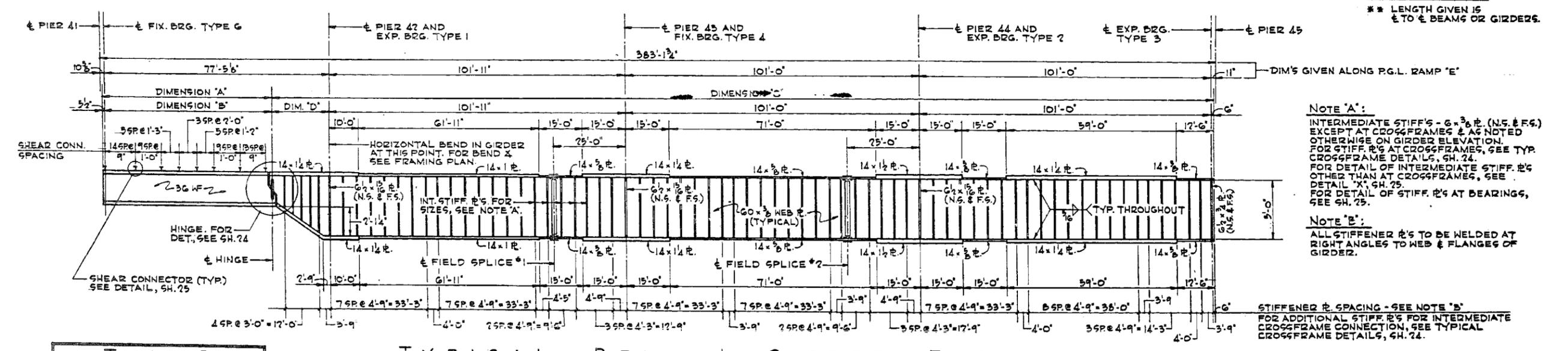


TABLE I

BEAM OR GIRDER	DIMENSIONS **			
	"A"	"B"	"C"	"D"
B1, B2, B3	58'-1 1/2"	57'-8"	—	—
B4	58'-3 1/2"	57'-9 3/4"	—	—
G1, G2, G3	—	—	374'-5"	70'-0"
G4	—	—	374'-5 3/8"	70'-0 3/8"

** GIVEN ALONG STIFFENERS

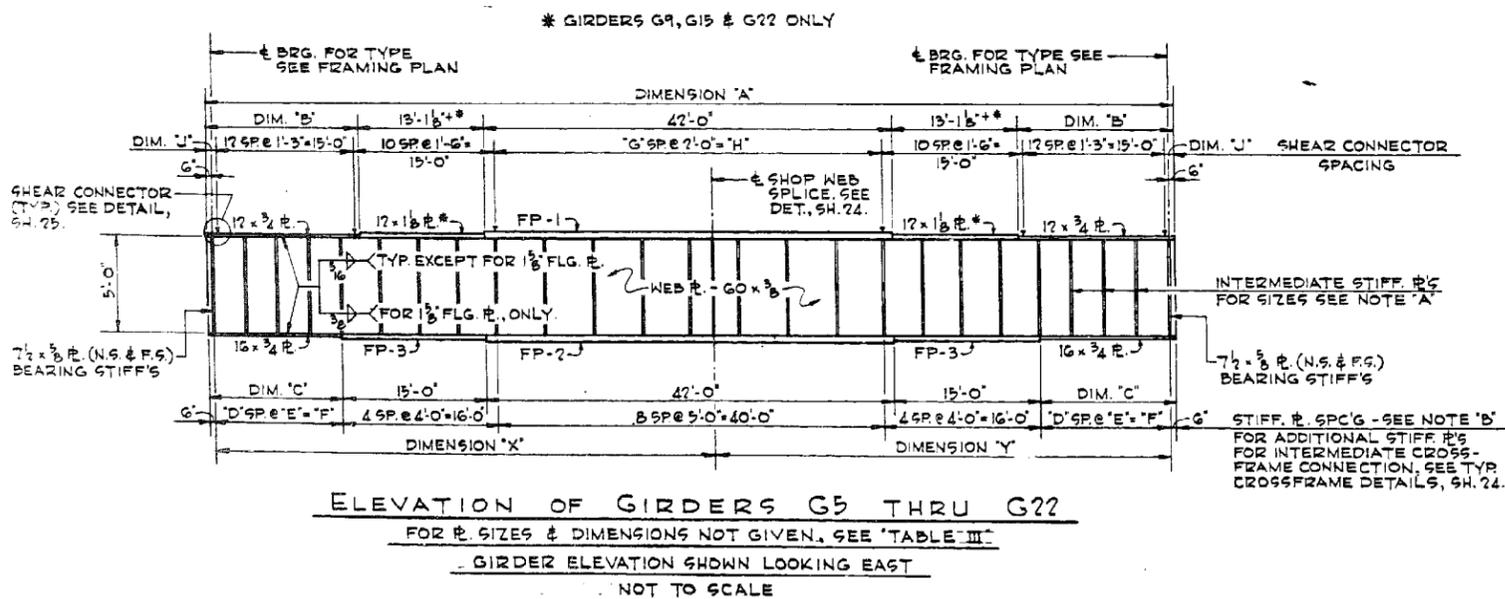
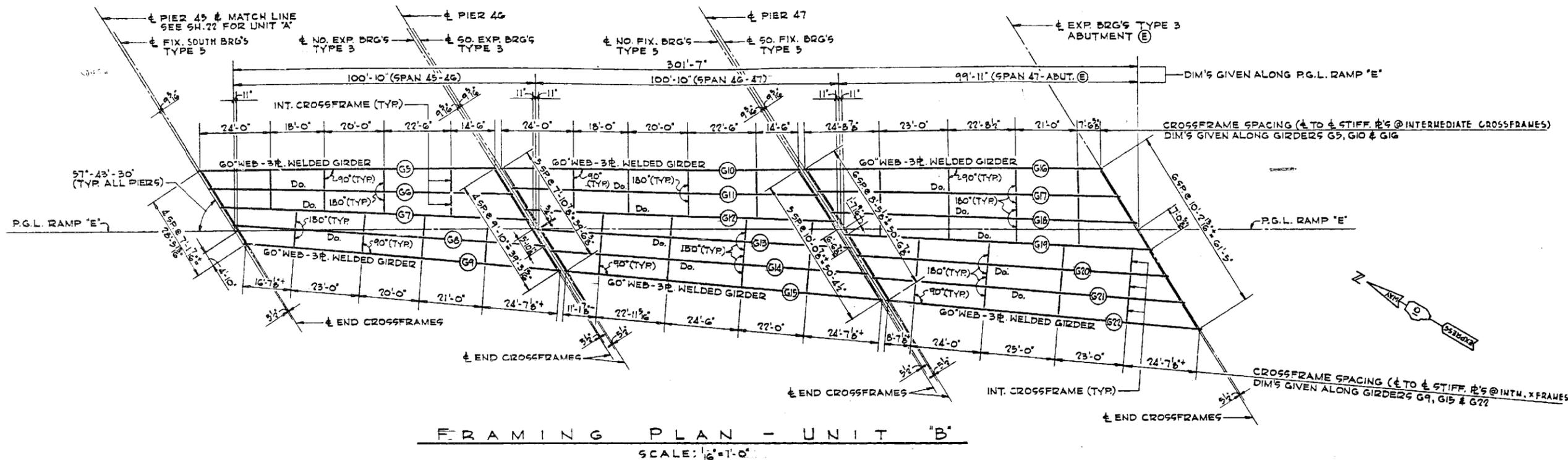
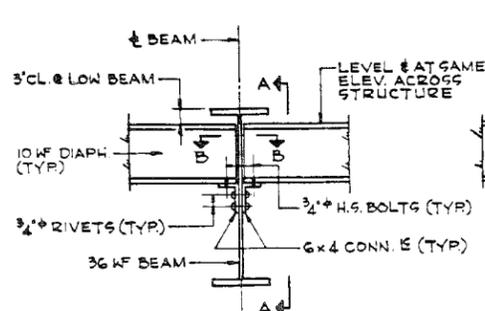


TABLE III

DIMENSIONS (GIVEN ALONG GIRDER)

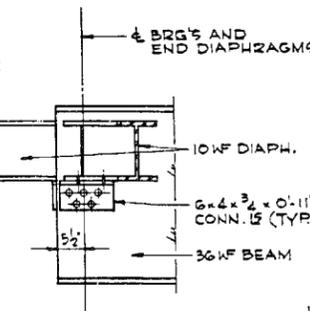
GIRDER	FLANGE R. SIZES			DIMENSIONS (GIVEN ALONG GIRDER)										
	FP-1	FP-2	FP-3	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"X"	"Y"
G5	12 x 1	16 x 1 1/2	16 x 1 3/8	100'-0"	29'-0"	14'-0"	4	3'-4 1/2	13'-6"	19	38'-0"	1'-0"	52'-0"	47'-0"
G6	12 x 1 1/2	16 x 1 1/2	16 x 1 3/8	101'-5 1/2"	29'-8 3/8"	14'-8 3/8"	4	3'-6 1/4"	14'-7 1/4"	20	40'-0"	8 13/16"	52'-9 1/16"	47'-8 3/8"
G7	12 x 1 1/2	16 x 1 1/2	16 x 1 3/8	103'-0"	30'-6"	15'-6"	4	3'-9"	15'-0"	21	42'-0"	6"	53'-6"	48'-5 1/2"
G8	12 x 1 1/2	16 x 1 1/2	16 x 1 3/8	104'-0"	31'-3 3/8"	16'-3 3/8"	5	3'-1 1/2"	15'-9 3/8"	21	42'-0"	1'-3 3/8"	54'-4 1/8"	49'-2 1/8"
G9	12 x 1 1/2	16 x 1 1/2	16 x 1 3/8	106'-2 1/2"	19'-0"	17'-1 1/2"	5	3'-3 3/8"	16'-7 1/2"	22	44'-0"	1'-1 1/2"	55'-3"	49'-11 1/2"
G10	12 x 1			100'-0"	29'-0"	14'-0"	4	3'-4 1/2	13'-6"	19	38'-0"	1'-0"	52'-0"	47'-0"
G11				101'-2 1/2"	29'-7 1/2"	14'-7 1/2"	4	3'-6 1/4"	14'-1 1/2"	20	40'-0"	7 1/2"	52'-7 3/8"	47'-6 1/2"
G12				102'-4 1/2"	30'-2 1/2"	15'-2 1/2"	4	3'-8 1/2"	14'-8 1/2"	20	40'-0"	1'-2 1/2"	53'-3"	48'-1 1/2"
G13				103'-7 1/2"	30'-9 3/8"	15'-9 3/8"	4	3'-9 3/8"	15'-3 3/8"	21	42'-0"	9 3/8"	53'-10"	48'-8 3/8"
G14	12 x 1			104'-10 1/2"	31'-5 3/8"	16'-5 3/8"	5	3'-2 1/2"	15'-11 3/8"	21	42'-0"	1'-5 3/8"	54'-6 3/8"	49'-3 3/8"
G15	12 x 1 1/2			106'-2 1/2"	19'-0"	17'-1 1/2"	5	3'-3 3/8"	16'-7 1/2"	22	44'-0"	1'-1 1/2"	55'-3"	49'-11 1/2"
G16	12 x 1			100'-0"	29'-0"	14'-0"	4	3'-4 1/2	13'-6"	19	38'-0"	1'-0"	52'-0"	47'-0"
G17				100'-11 1/2"	29'-5 1/2"	14'-5 1/2"	4	3'-6"	13'-11 1/2"	19	38'-0"	1'-5 1/2"	52'-6 1/2"	47'-5 1/2"
G18				101'-11 1/2"	29'-11 3/8"	14'-11 3/8"	4	3'-7 1/2"	14'-5 3/8"	20	40'-0"	11 3/8"	53'-0 1/2"	47'-11 1/2"
G19				103'-0"	30'-6"	15'-6"	4	3'-9"	15'-0"	21	42'-0"	6"	53'-6"	48'-5 1/2"
G20				104'-0"	31'-0 1/2"	16'-0 1/2"	5	3'-1 1/2"	15'-6 1/2"	21	42'-0"	1'-0 1/2"	54'-1 1/2"	48'-11"
G21	12 x 1			105'-1 1/2"	31'-6 3/8"	16'-6 3/8"	5	3'-2 1/2"	16'-0 3/8"	22	44'-0"	6 3/8"	54'-8 3/8"	49'-5 1/2"
G22	12 x 1 1/2	16 x 1 1/2	16 x 1 3/8	106'-2 1/2"	19'-0"	17'-1 1/2"	5	3'-3 3/8"	16'-7 1/2"	22	44'-0"	1'-1 1/2"	55'-3"	49'-11 1/2"

FILE NAME = #FILES



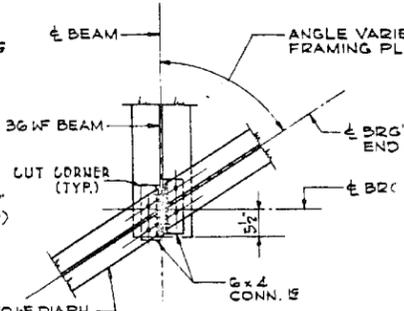
END DIAPHRAGM DETAIL AT PIER 41

DIAPHRAGMS D & D1
FOR NO. REQ'D, SEE TABLE II SH.??
SCALE: 3/4"=1'-0"



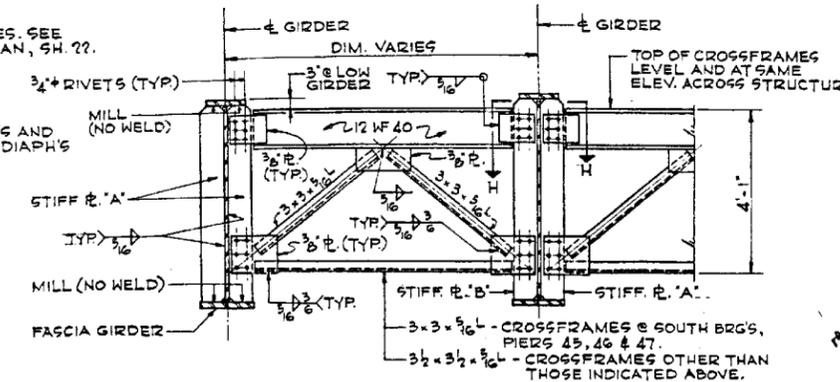
SECTION A-A

SCALE: 3/4"=1'-0"



SECTION B-B

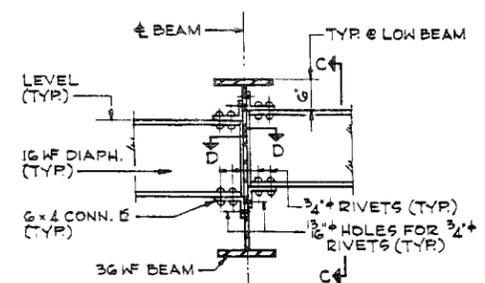
SCALE: 3/4"=1'-0"



END CROSSFRAME DETAIL

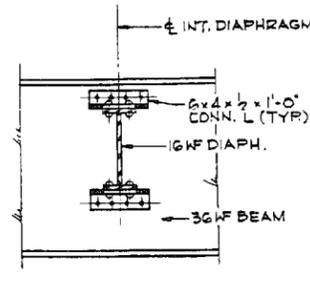
FOR SIZE OF STIFF. R. 'A' & 'B', SEE TABLE IV.

TABLE IV			
STIFF. R. LOCATION	'A'	'B'	'C'
UNIT 'A'	6 1/2 x 3/4	6 1/2 x 1/2	6 x 3/8
UNIT 'B'	7 1/2 x 3/8	7 1/2 x 1/2	5 1/2 x 3/8



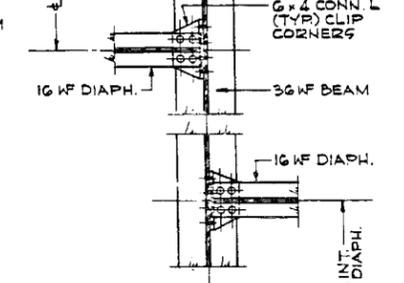
INTERMEDIATE DIAPHRAGM DETAIL

DIAPHRAGMS D3, D4 & D5
FOR NO. REQ'D, SEE TABLE II SH.??
SCALE: 3/4"=1'-0"



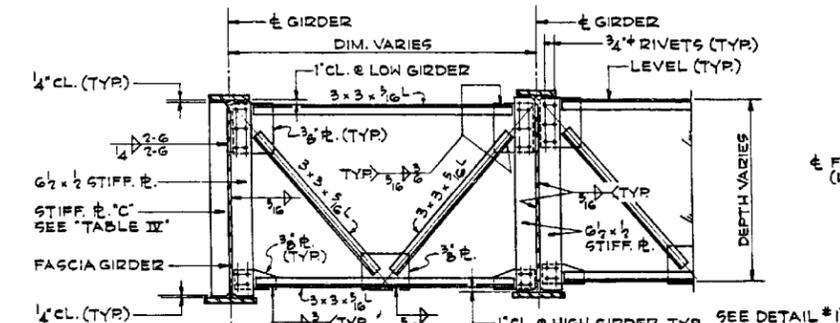
SECTION C-C

SCALE: 3/4"=1'-0"



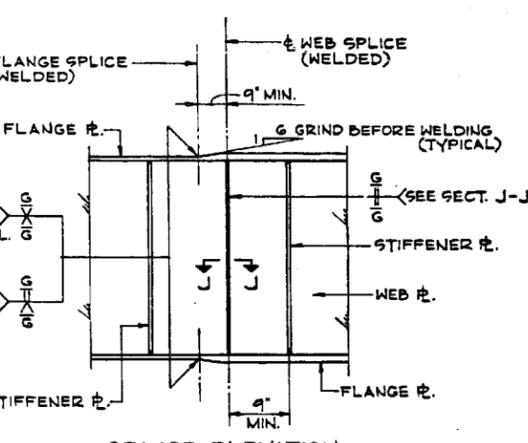
SECTION D-D

SCALE: 3/4"=1'-0"

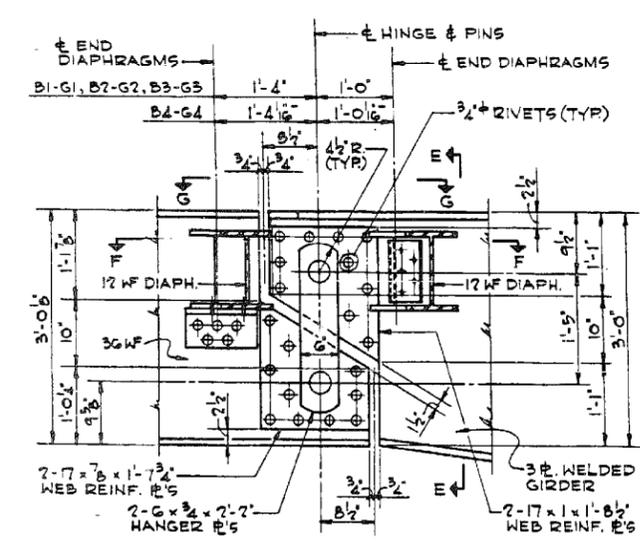


INTERMEDIATE CROSSFRAME DETAIL

SCALE: 1/2"=1'-0"

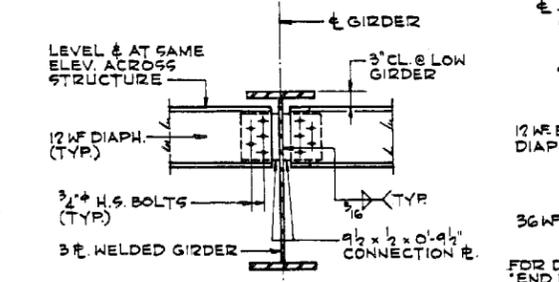


SPlice ELEVATION



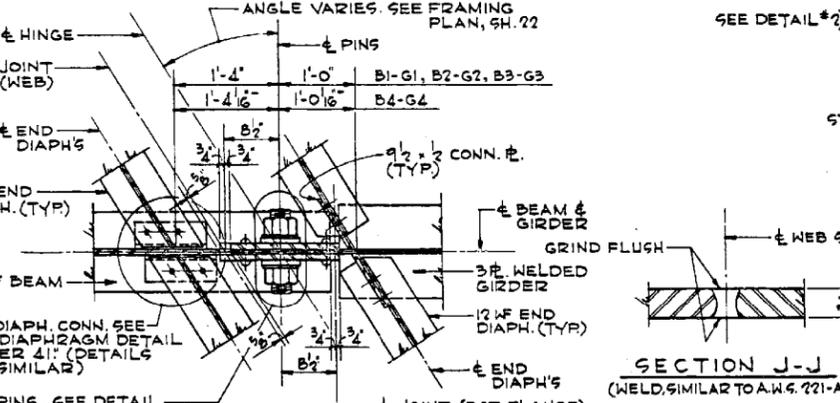
HINGE DETAIL - ELEVATION

SCALE: 1"=1'-0"



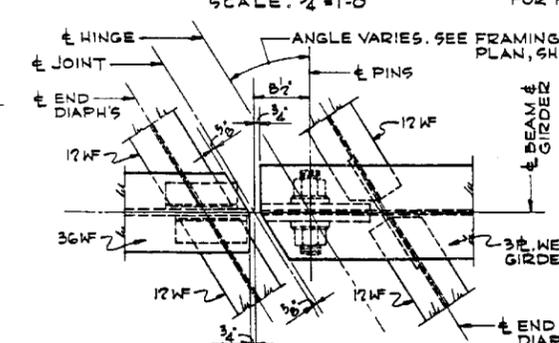
SECTION E-E

SCALE: 3/4"=1'-0"



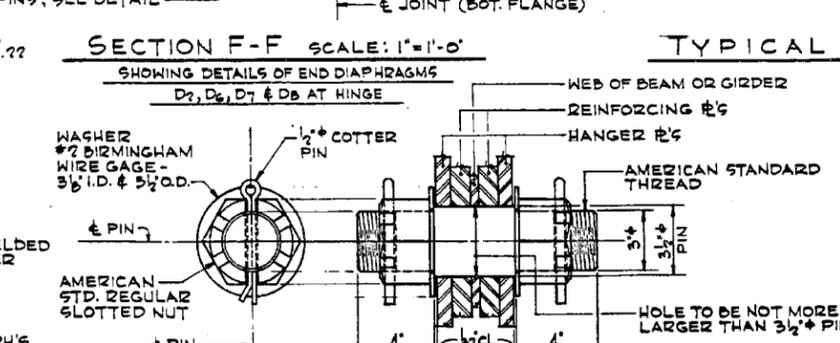
SECTION F-F

SCALE: 1"=1'-0"



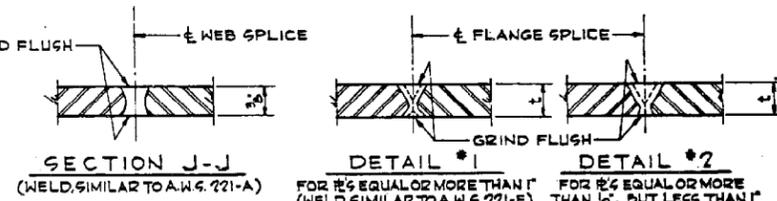
SECTION G-G

SCALE: 1"=1'-0"



PIN DETAIL

SCALE: 3"=1'-0"



TYPICAL SHOP SPlice DETAILS

NOT TO SCALE

FILE NAME = #FILE08



USER NAME = Lin
DESIGNED -
CHECKED -
PLOT SCALE -
PLOT DATE = 3/22/2017 12:24:03 PM

DESIGNED -
CHECKED -
DRAWN -
CHECKED -

REVISED -
REVISED -
REVISED -
REVISED -

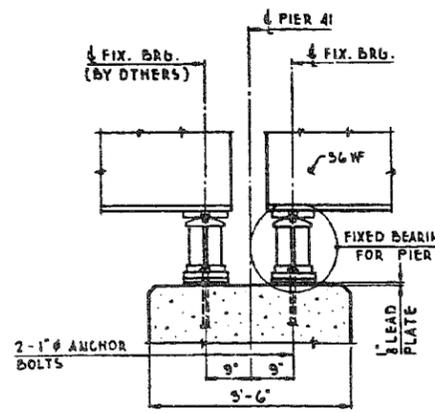
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ORIG. STEEL DETAILS - LOCATION 9
STRUCTURE NO. 016-1026

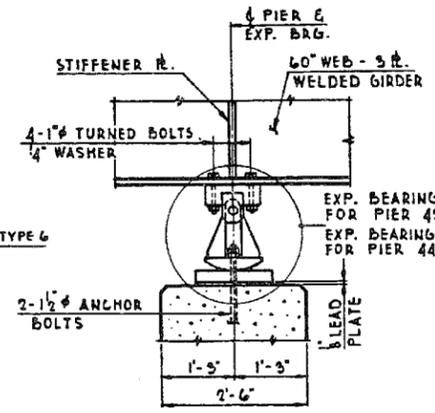
SHEET NO. S1-4 OF S1-16 SHEETS

F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-0398P	COOK	209	161
CONTRACT NO. 60W76				

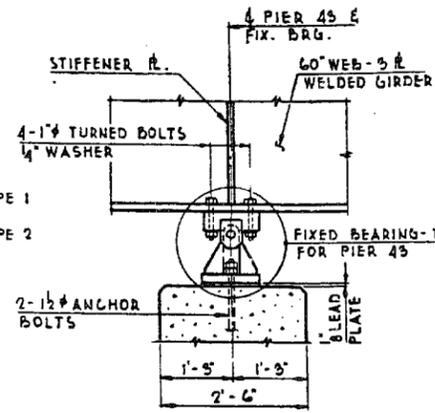
ILLINOIS FED. AID PROJECT



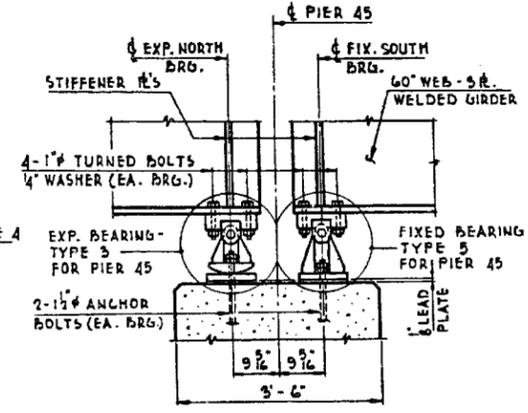
BRG. TYPE 6 AT PIER 41
SCALE: 3/4" = 1'-0"



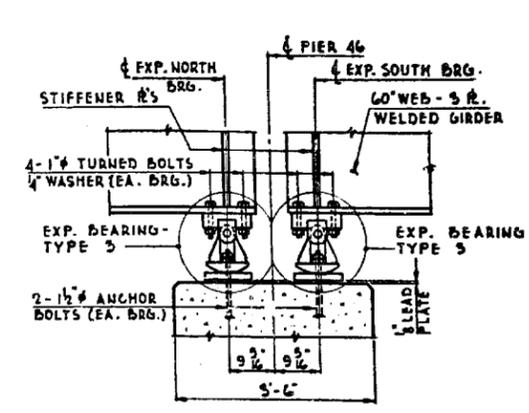
BRG. TYPE 1 & 2 AT PIERS 42 & 44
SCALE: 3/4" = 1'-0"



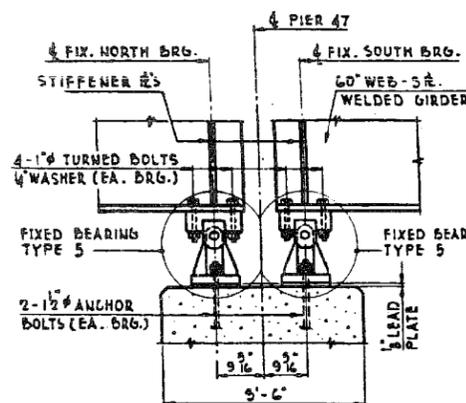
BRG. TYPE 4 AT PIER 43
SCALE: 3/4" = 1'-0"



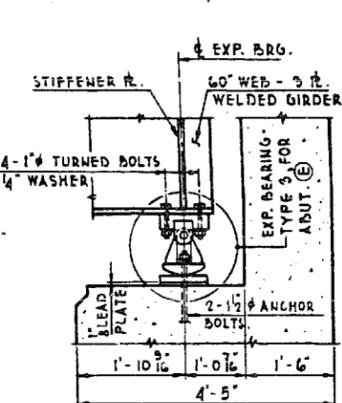
BRG. TYPE 3 & 5 AT PIER 45
SCALE: 3/4" = 1'-0"



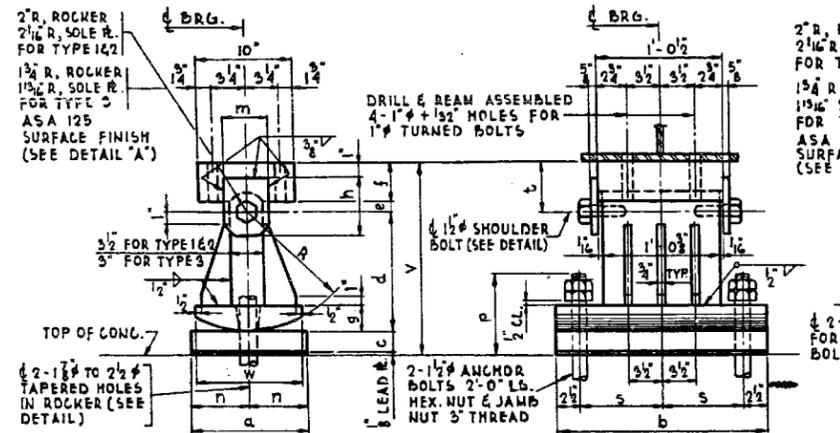
BRG. TYPE 3 AT PIER 46
SCALE: 3/4" = 1'-0"



BRG. TYPE 5 AT PIER 47
SCALE: 3/4" = 1'-0"



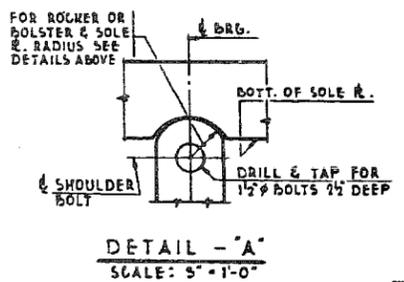
BRG. TYPE 3 AT ABUT. (E)
SCALE: 3/4" = 1'-0"



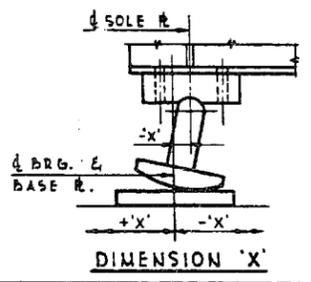
BRG. TYPE	NO. REQ'D	a	b	c	d	e	f	g	h	m	n	p	r	s	t	v	w	WT. PER BRG.	TOTAL WT.
1	4	1'-0"	1'-10"	2 1/2"	1'-0"	3 1/2"	2 3/4"	4 3/4"	5"	6"	8 1/2"	1'-0"	8 1/2"	4 1/2"	1'-6"	10"	7 1/2"	7 1/2"	2,996
2	4	1'-0"	2'-2"	2 1/2"	1'-0"	1"	3 3/4"	3 3/4"	6"	5"	6"	9"	1'-0"	10 1/2"	4 1/2"	1'-7"	11"	908	3,632
3	22	10'	1'-10"	1 1/2"	8"	3 1/2"	3"	2 1/2"	4 3/4"	4"	5"	7 1/2"	8"	8 1/2"	3 1/2"	1'-1 1/2"	9"	5 1/2"	11,946

BRG. TYPE	NO. REQ'D	a	b	c	d	e	f	g	h	m	p	t	v	WT. PER BRG.	TOTAL WT.
4	4	1'-0"	6"	1 1/2"	8"	1"	3 3/4"	6"	3 1/2"	5"	4"	4 1/2"	1'-2 1/2"	554	2,196
5	18	10'	5"	1 1/2"	8"	3 1/2"	3"	4 3/4"	3"	4"	4"	3 1/2"	1'-1 1/2"	455	7,850

BOLSTER DETAIL OF FIXED BRG. TYPE 4 & 5
* DOES NOT INCLUDE FILL R'S EXCEPT @ PIER 45-66 & 69 USE P-41



DETAIL - A
SCALE: 5" = 1'-0"

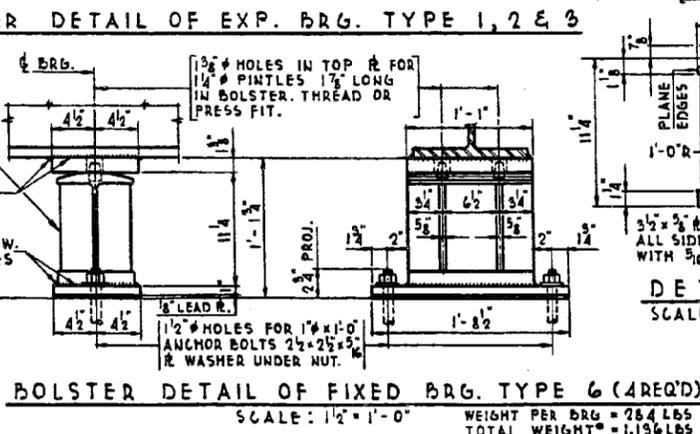


DIMENSION 'X'

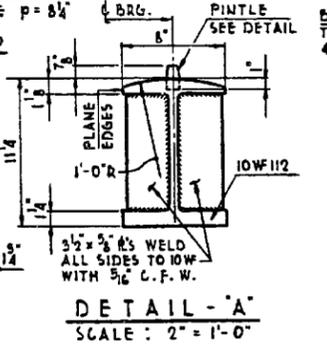
TEMPERATURE F	110°	90°	70°	50°	30°	10°
BRG'S @ PIER 42	+2"	+1 1/2"	+1 1/2"	0	-1 1/2"	-2 1/2"
BRG'S @ PIER 44	-1 1/2"	-1 1/2"	-1 1/2"	0	+1 1/2"	+1 1/2"
NO. BRG'S @ PIER 45	-1 1/2"	-1 1/2"	-1 1/2"	0	+1 1/2"	+1 1/2"
NO. BRG'S @ PIER 46	-1 1/2"	-1 1/2"	-1 1/2"	0	+1 1/2"	+1 1/2"
SO. BRG'S @ PIER 46	+1 1/2"	+1 1/2"	+1 1/2"	0	-1 1/2"	-1 1/2"
BRG'S @ ABUT. (E)	-1 1/2"	-1 1/2"	-1 1/2"	0	+1 1/2"	+1 1/2"

ROCKER SETTING DIAGRAM
MINUS SIGN INDICATES SOLE PLATE SOUTH OF & BEARING.
PLUS SIGN INDICATES SOLE PLATE NORTH OF & BEARING.

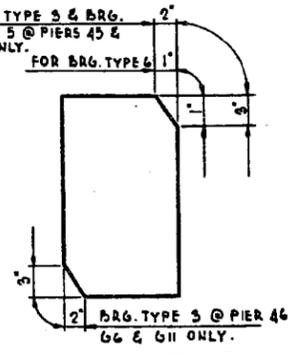
FILL PLATE SCHEDULE												
LOCATION	PIER 41	PIER 45	PIER 46				PIER 47					
GIRDER	B3	G6	G8	G9	G8&G11	G10	G12	G11	G7&G14	G13	G18	G22
FILL R.	3/16"	1/16"	3/16"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"
TOTAL WEIGHT OF FILL PLATES =	505 LBS											



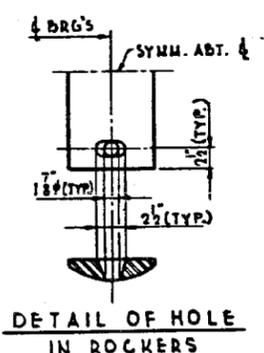
BOLSTER DETAIL OF FIXED BRG. TYPE 6 (4REQ'D)
SCALE: 1 1/2" = 1'-0" WEIGHT PER BRG. = 284 LBS TOTAL WEIGHT = 1,136 LBS



DETAIL - A
SCALE: 2" = 1'-0"



BEARING PLATE DETAIL
NOTE: FOR ORIENTATION OF BEARING PLATES SEE PIER DWG'S SHEETS 12-18

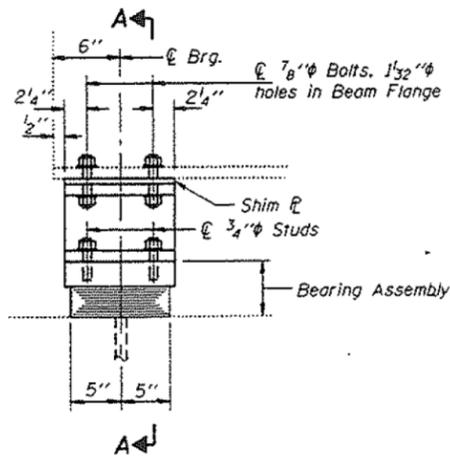


DETAIL OF HOLE IN ROCKERS

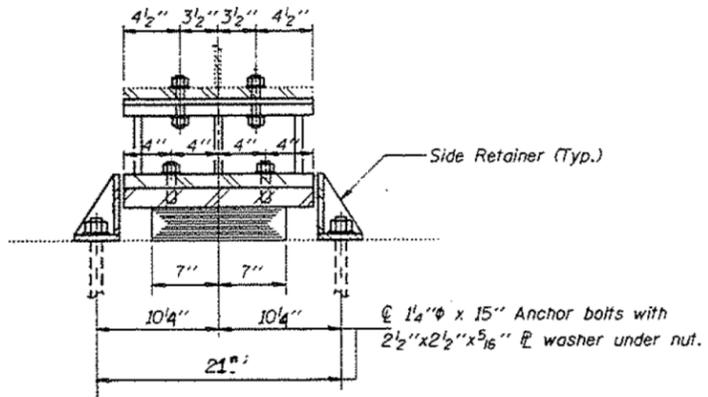
BILL OF MATERIAL **			
FURNISHING & ERECTI	STRUCTURAL STEEL	POUND	QUANTITY
**WEIGHT OF ALL MATERIAL SHOWN ON THIS SHEET, INCL. FILL R'S		50,181	

PINTLE DETAIL
NO SCALE

FILE NAME = RFILE08



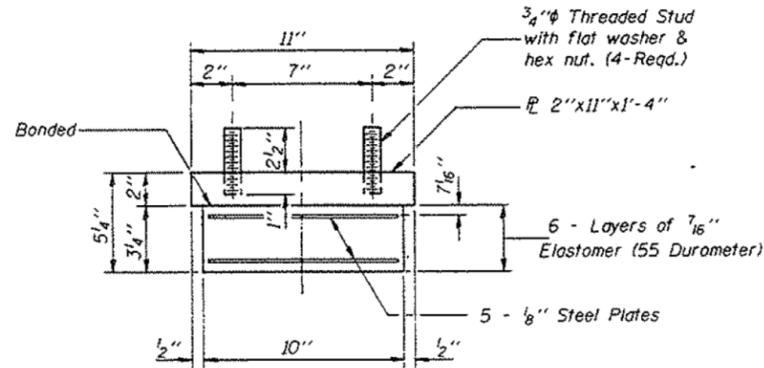
ELEVATION AT ABUT. E & PIER 46



SECTION A-A

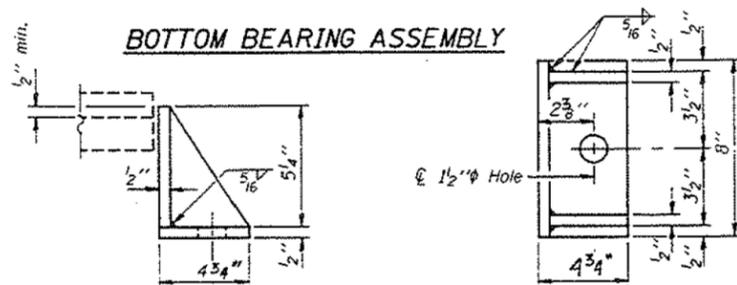
New Steel Extensions, Connection Bolts and Anchor Bolts are included in "Furnishing and Erecting Structural Steel". See sheet #20 for Anchor Bolt installation.

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

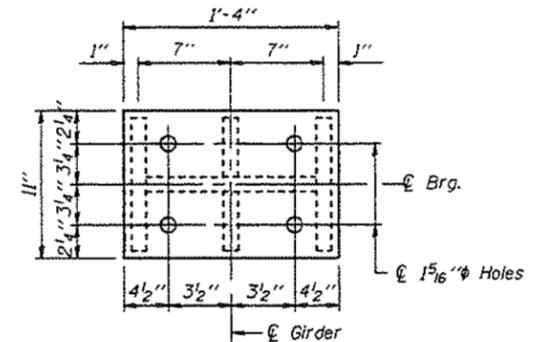
Note: Shim plates shall not be placed under Bearing Assembly.



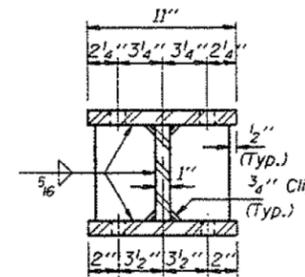
BOTTOM BEARING ASSEMBLY

SIDE RETAINER

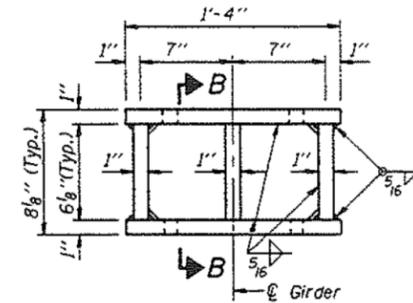
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



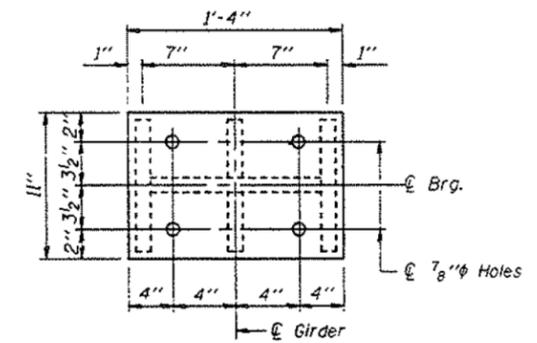
PLAN TOP PLATE



SECTION B-B



STEEL EXTENSION DETAIL



PLAN BOTTOM PLATE

FILE NAME = #FILES08



USER NAME = Lin	DESIGNED -	REVISED -
PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE = 3/22/2017 12:24:26 PM	DRAWN -	REVISED -
	CHECKED -	REVISED -

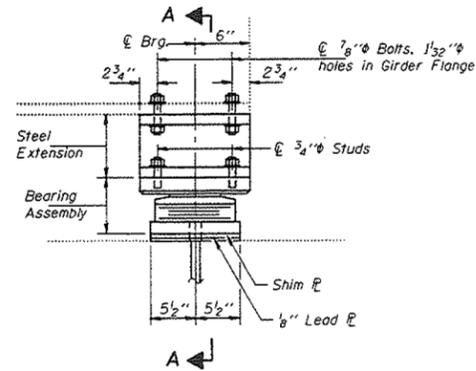
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

1994 ELASTOMERIC BEARING DETAILS - LOCATION 9
STRUCTURE NO. 016-1026

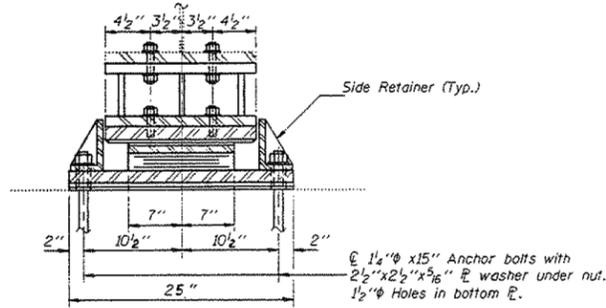
SHEET NO. SI-7 OF SI-16 SHEETS

F.A.P. RFE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	164
CONTRACT NO. 60W76				

ILLINOIS FED. AID PROJECT



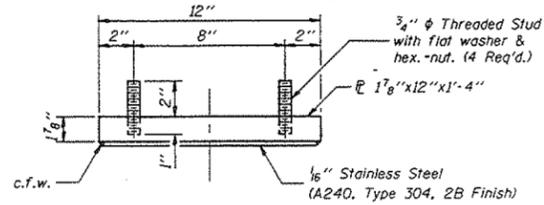
ELEVATION AT PIER 45



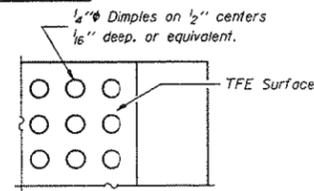
SECTION A-A

New Steel Extensions, Connection Bolts and Anchor Bolts are included in "Furnishing and Erecting Structural Steel". See sheet #20 for Anchor Bolt Installation.

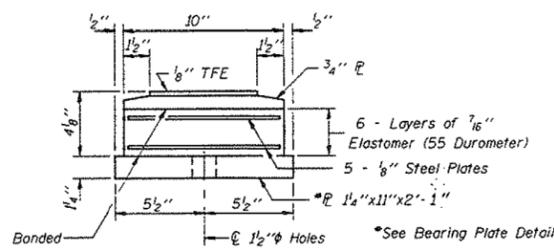
TYPE II TFE ELASTOMERIC EXP. BRG.



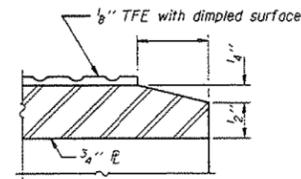
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE



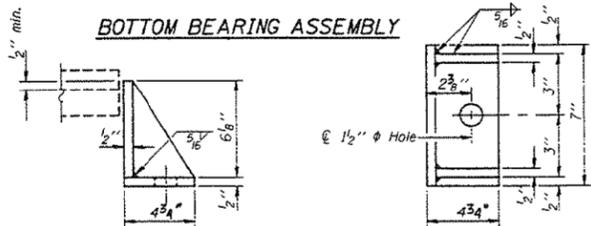
BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

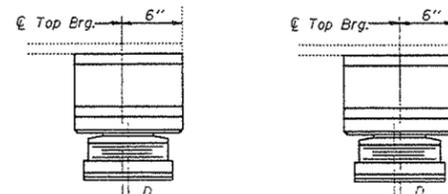
Note: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

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.



SIDE RETAINER

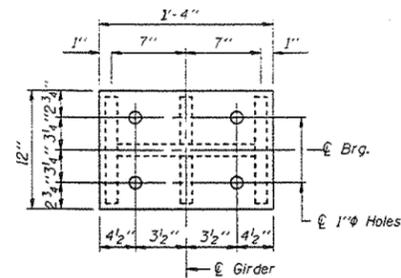
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



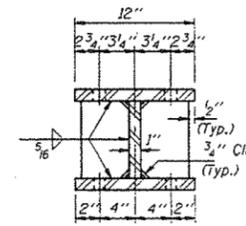
BELOW 50°F. (Move bott. brg. away from fixed brg.)
 ABOVE 50°F. (Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

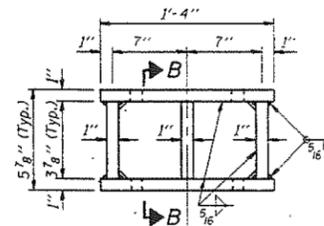
D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.



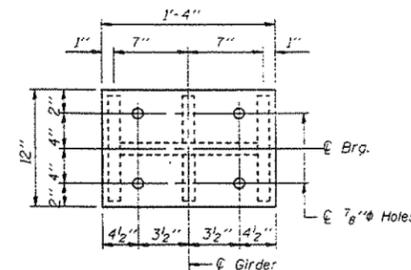
PLAN TOP PLATE



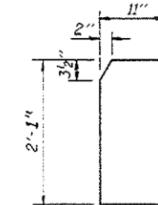
SECTION B-B



STEEL EXTENSION DETAIL



PLAN BOTTOM PLATE



BEARING PLATE DETAIL
(For orientation see Existing Plans)

FILE NAME = #FILES08



USER NAME = Lin	DESIGNED -	REVISED -
PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE = 3/22/2017 12:24:38 PM	DRAWN -	REVISED -
	CHECKED -	REVISED -

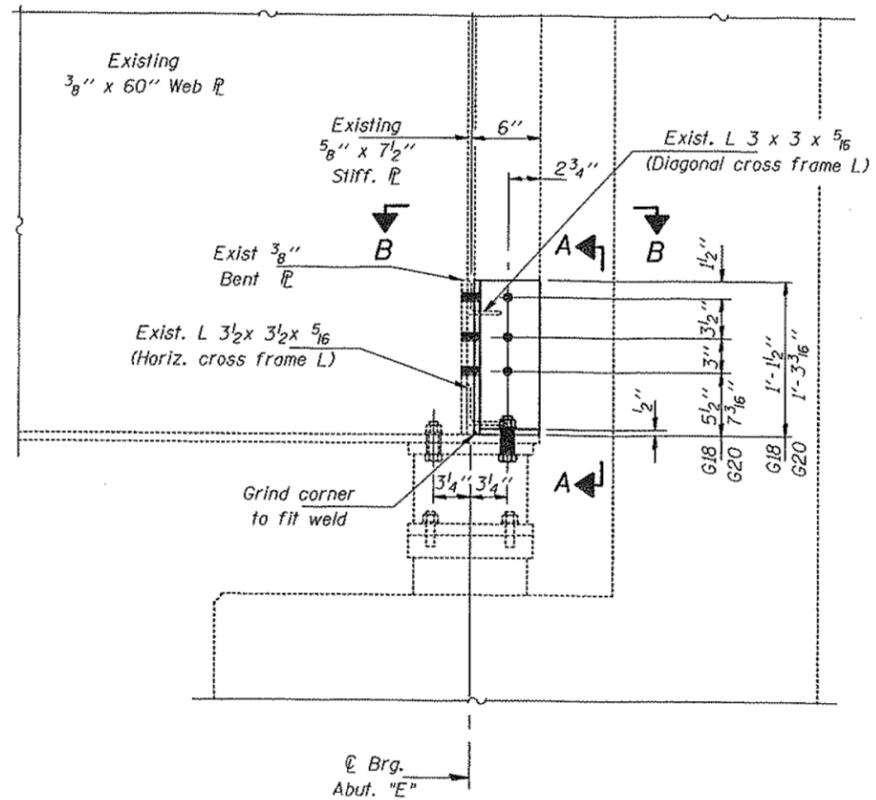
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

1994 ELASTOMERIC BEARING DETAILS - LOCATION 9
STRUCTURE NO. 016-1026

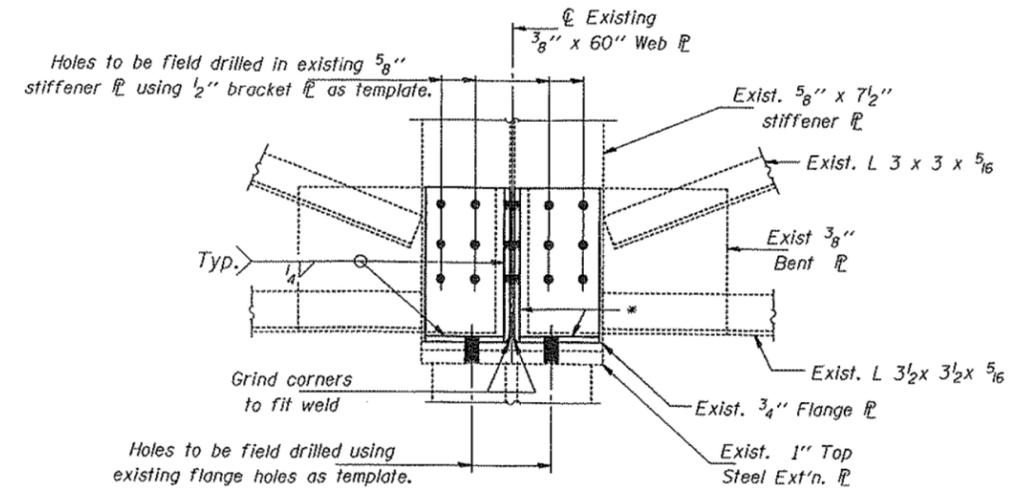
SHEET NO. S1-8 OF S1-16 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 165
				CONTRACT NO. 60W76

ILLINOIS FED. AID PROJECT

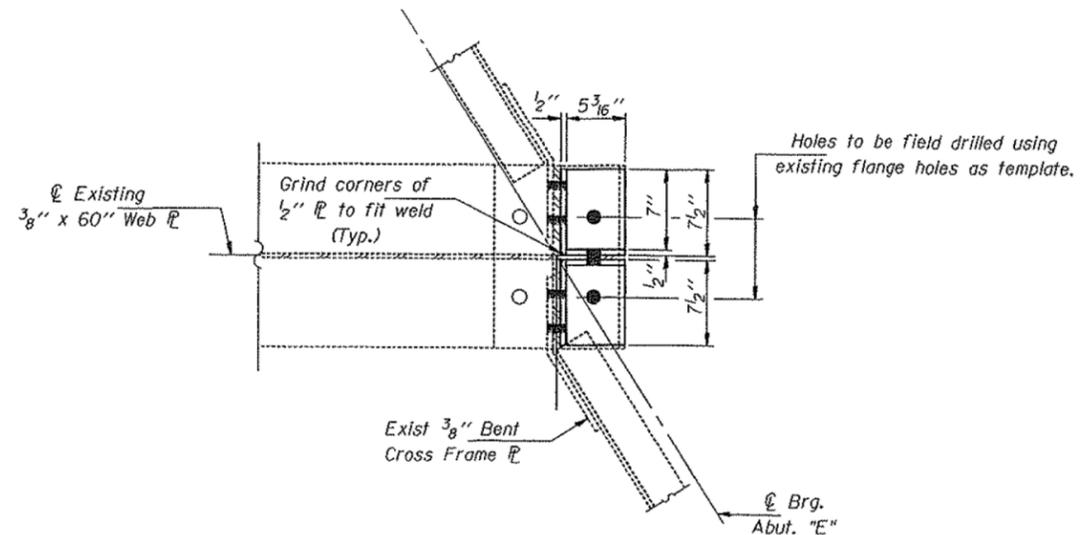


REPAIR A



VIEW A

* All plates for new stiffener brackets are to be 1/2" thick



SECTION B-B

FILE NAME = #FILES#



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PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE = 3/22/2017 12:24:49 PM	DRAWN -	REVISED -
	CHECKED -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**1994 BEAM END REPAIR - LOCATION 9
STRUCTURE NO. 016-1026**

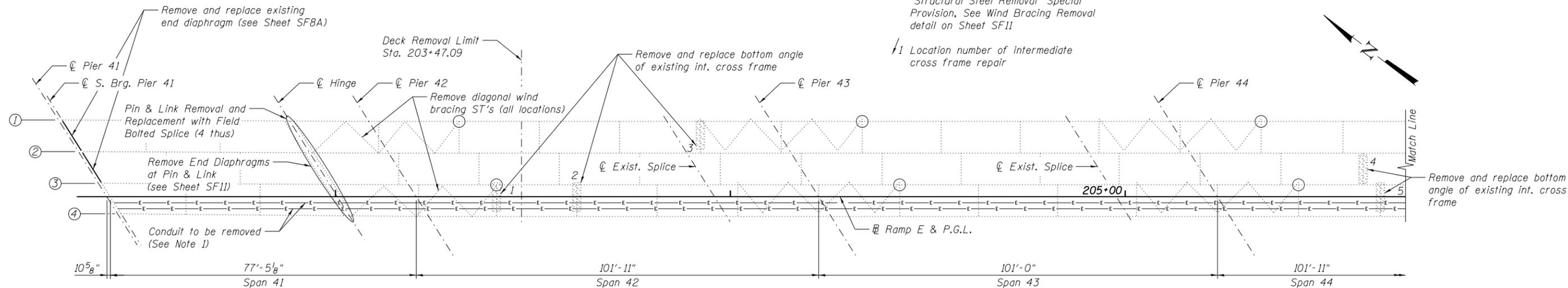
SHEET NO. SI-9 OF SI-16 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	166
CONTRACT NO. 60W76				

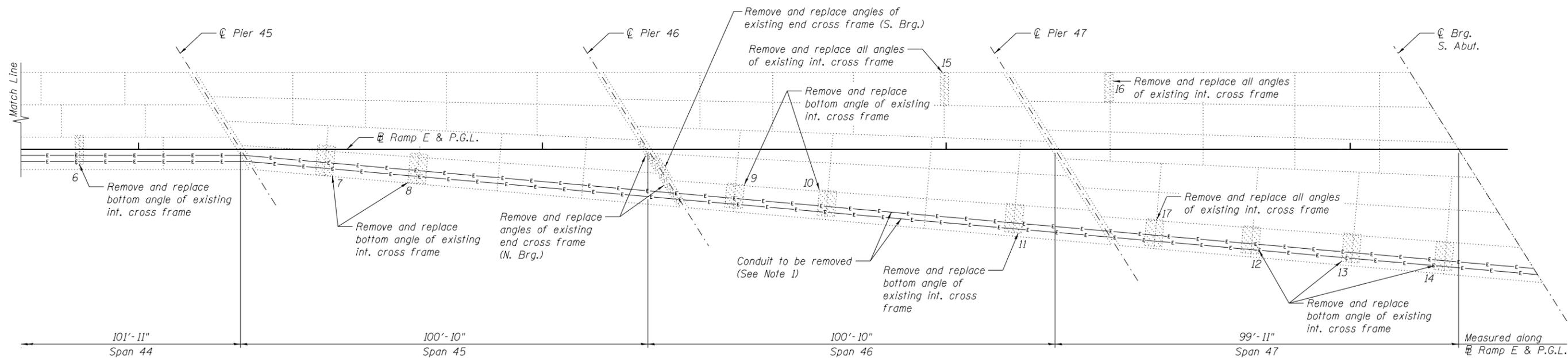
ILLINOIS FED. AID PROJECT

LEGEND

- Remove existing gusset plates per "Structural Steel Removal" Special Provision. See Wind Bracing Removal detail on Sheet SF11
- 1 Location number of intermediate cross frame repair



**EXISTING FRAMING PLAN
REMOVAL AND REPAIR**



**EXISTING FRAMING PLAN
REMOVAL AND REPAIR**

FILE NAME = #FILES#



USER NAME = Lin	DESIGNED -	REVISED -
PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE = 3/22/2017 12:25:03 PM	DRAWN -	REVISED -
	CHECKED -	REVISED -

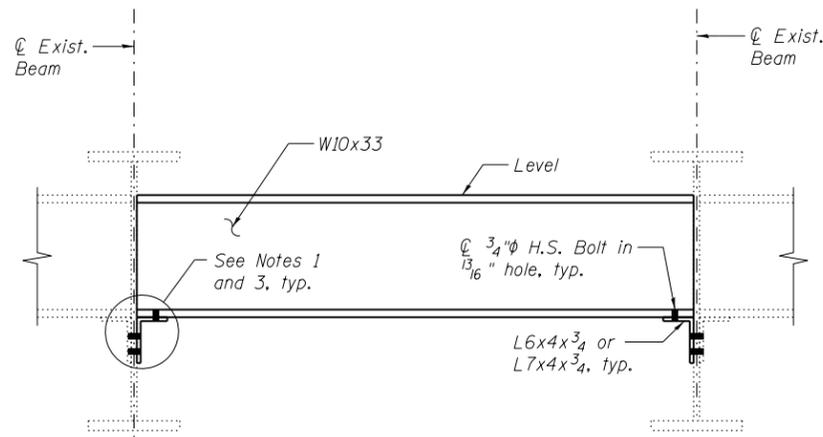
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. STEEL REPAIR FRAMING PLAN - LOCATION 9
STRUCTURE NO. 016-1026**

SHEET NO. S1-10 OF S1-16 SHEETS

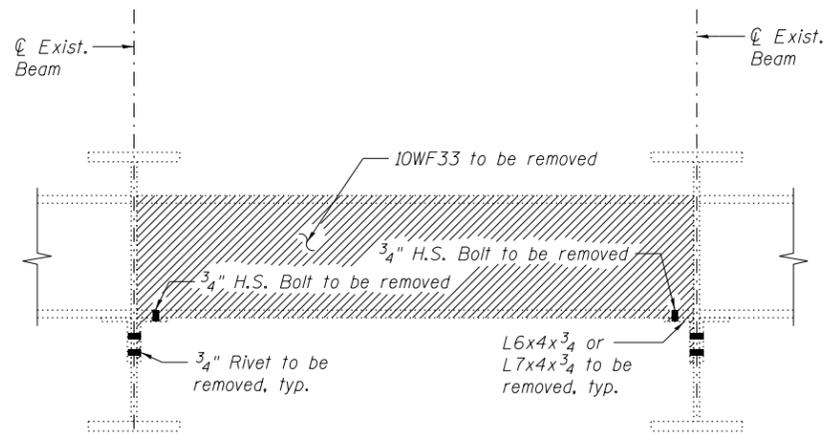
F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 167
			CONTRACT NO. 60W76	

ILLINOIS FED. AID PROJECT



END DIAPHRAGM REPLACEMENT DETAIL

(No. of Locations 2)



EXISTING END DIAPHRAGM REMOVAL DETAIL

(No. of Locations 2)

NOTES:

1. New $\frac{3}{4}$ " dia. fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Field drill holes in W10 bottom flange using holes in horizontal angle leg as a template. Field drill holes in vertical angle leg using holes in existing beam web as a template. Contractor to field verify location, size and spacing of existing holes prior to ordering new materials.
2. See Sheet SF8 for location of end diaphragm replacement and removal.
3. Contractor shall ensure that the adjacent existing diaphragm is supported during angle replacement under proposed diaphragm.

FILE NAME = #FILES*



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	CHECKED -	REVISED -
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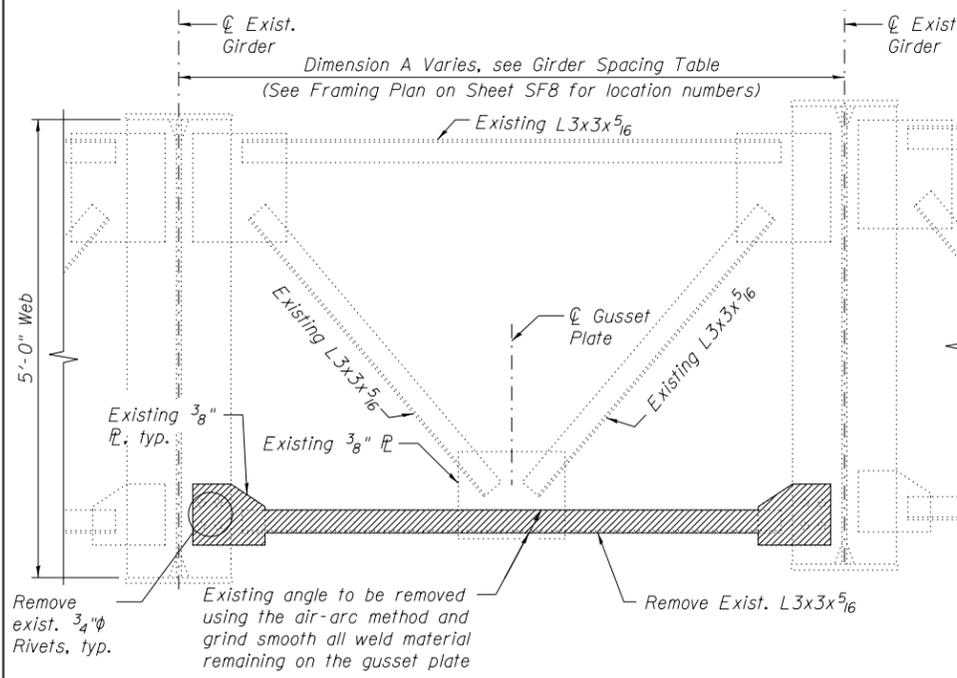
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**END DIAPHRAGM REPAIR DETAILS - LOCATION 9
STRUCTURE NO. 016-1026**

SHEET NO. SI-11 OF SI-16 SHEETS

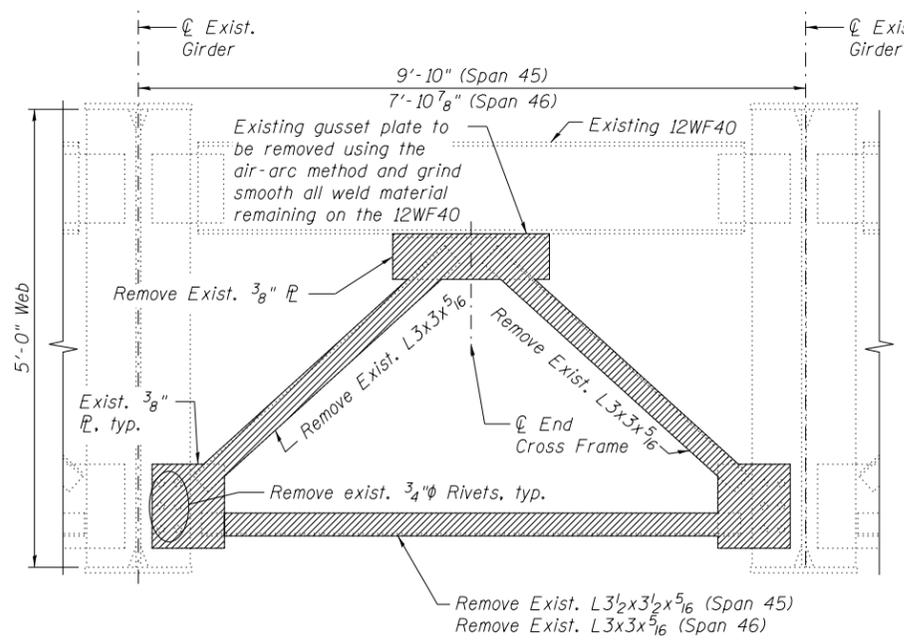
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	168
				CONTRACT NO. 60W76

ILLINOIS FED. AID PROJECT



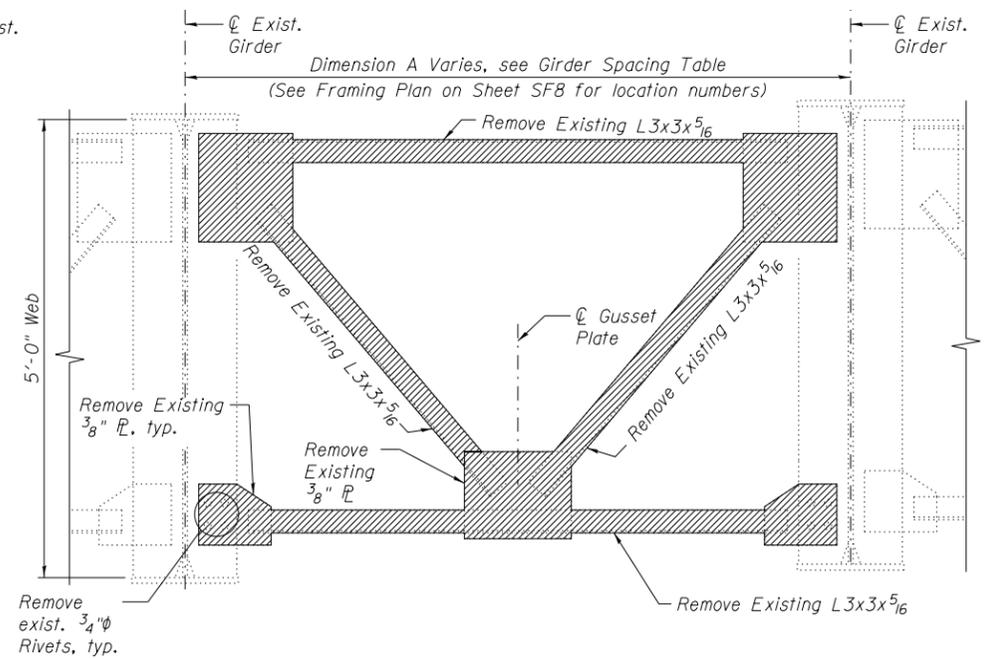
EXISTING DETAIL 2

(No. Req'd = 14)



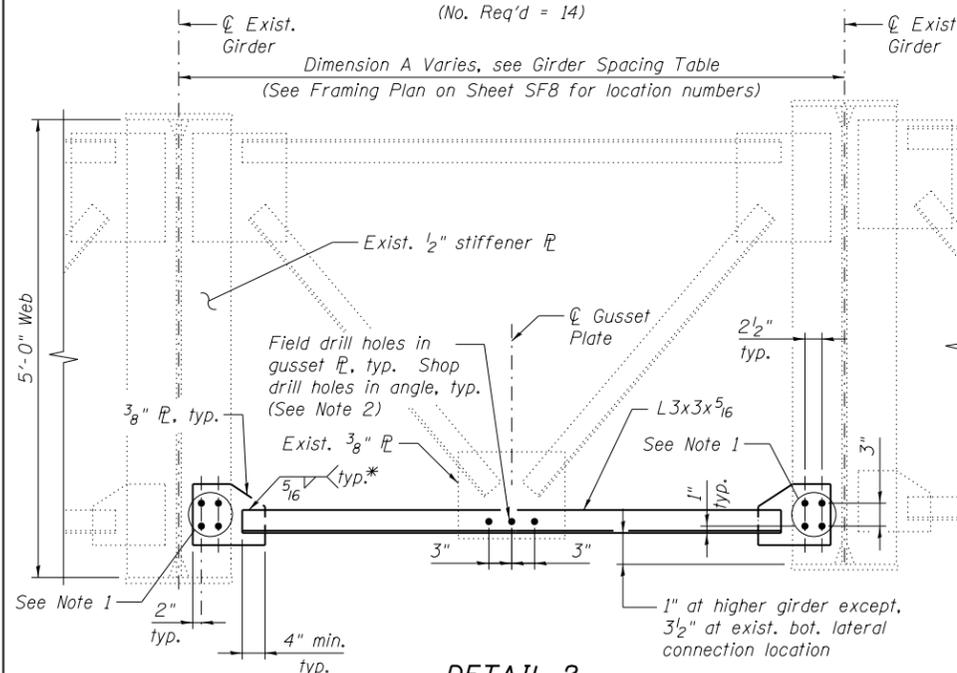
EXISTING DETAIL 3

(No. Req'd Span 45 = 2)
(No. Req'd Span 46 = 1)



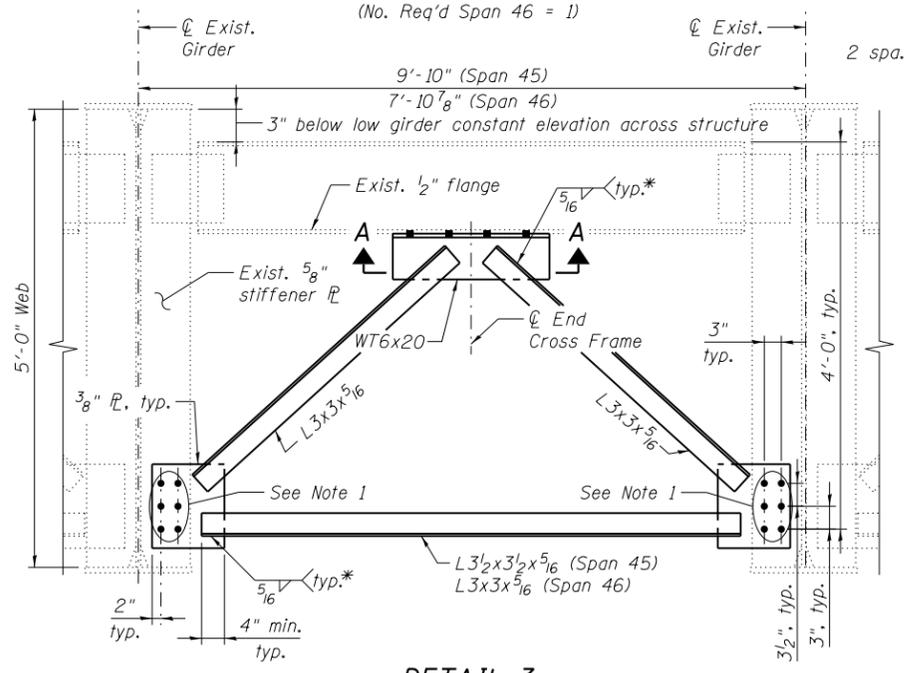
EXISTING DETAIL 4

(No. Req'd = 3)



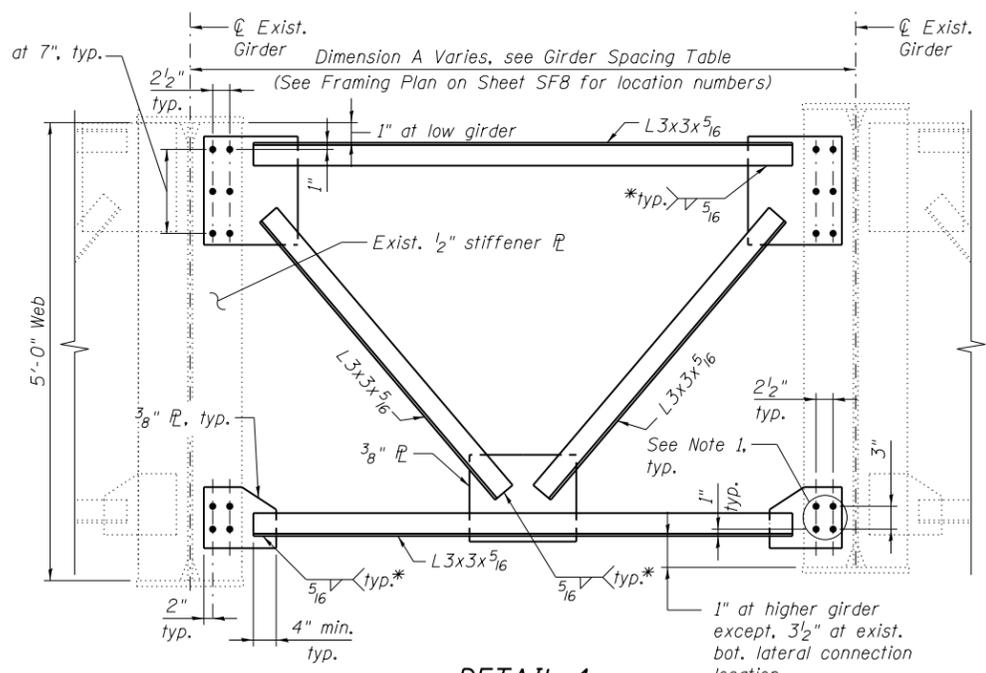
DETAIL 2

(No. Req'd = 14)



DETAIL 3

(No. Req'd Span 45 = 2)
(No. Req'd Span 46 = 1)



DETAIL 4

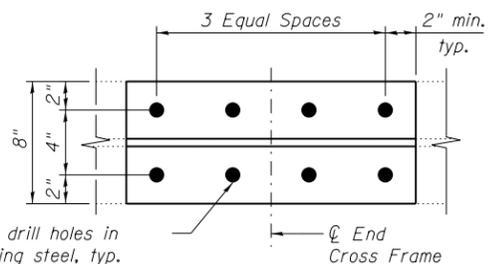
(No. Req'd = 3)

* Fillet weld angles along 3 sides on one face of gusset plate or WT section.

GIRDER SPACING TABLE

Location	A	Location	A
1	8'-0"±	9	6'-6 5/8"±
2	8'-0"±	10	6'-11 1/4"±
3	8'-0"±	11	7'-8 1/2"±
4	8'-0"±	12	7'-2 3/4"±
5	8'-0"±	13	7'-6 7/8"±
6	8'-0"±	14	7'-10 5/8"±
7	6'-1 1/4"±	15	8'-1 3/4"±
8	6'-7"±	16	7'-5 1/4"±
		17	6'-10 3/4"±

(For information only. The Contractor shall field verify existing dimensions and details prior to ordering of materials.)



Field drill holes in existing steel, typ. Shop drill holes in new steel, typ. (See Note 2)

SECTION A-A

FILE NAME = SFILES08



USER NAME = Lin
DESIGNED -
CHECKED -
PLOT SCALE =
PLOT DATE = 3/22/2017 12:25:05 PM

DESIGNED -
CHECKED -
DRAWN -
CHECKED -

REVISED -
REVISED -
REVISED -
REVISED -

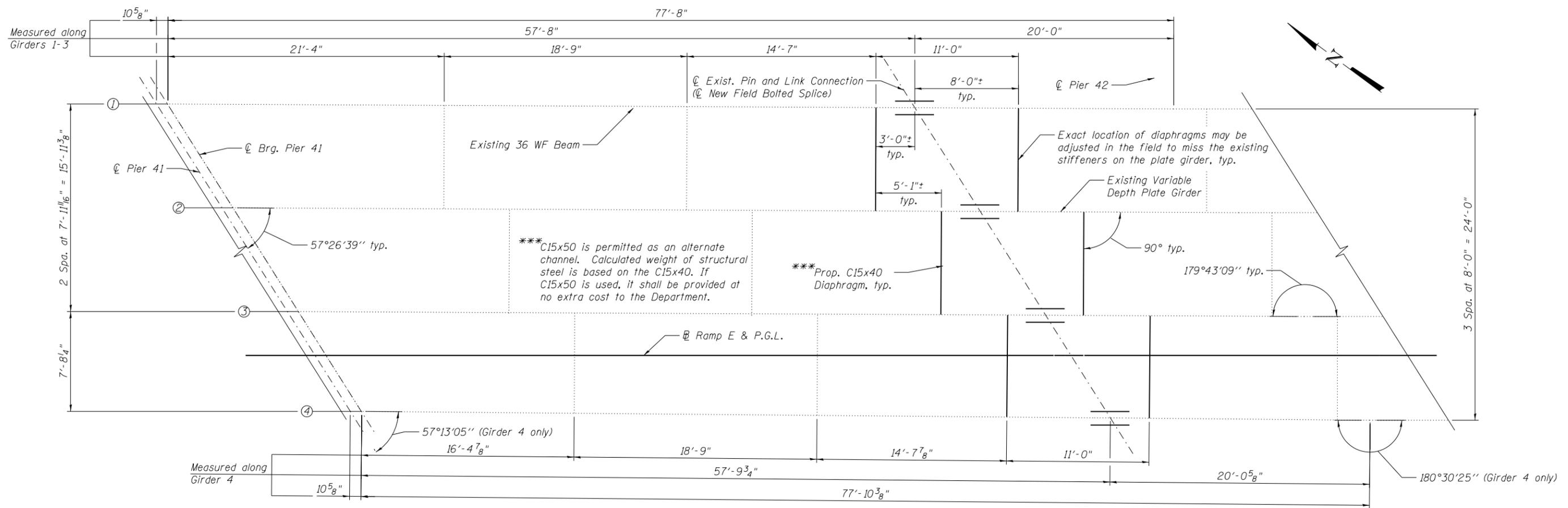
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. STEEL REPAIR DETAILS - LOCATION 9
STRUCTURE NO. 016-1026**

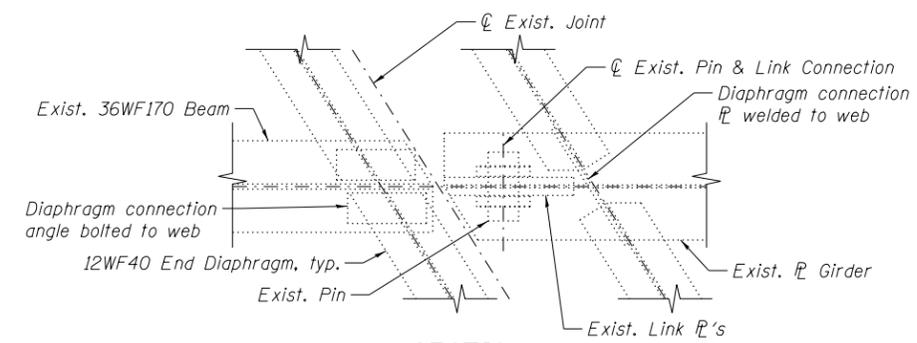
SHEET NO. S1-12 OF S1-16 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	169
CONTRACT NO. 60W76				

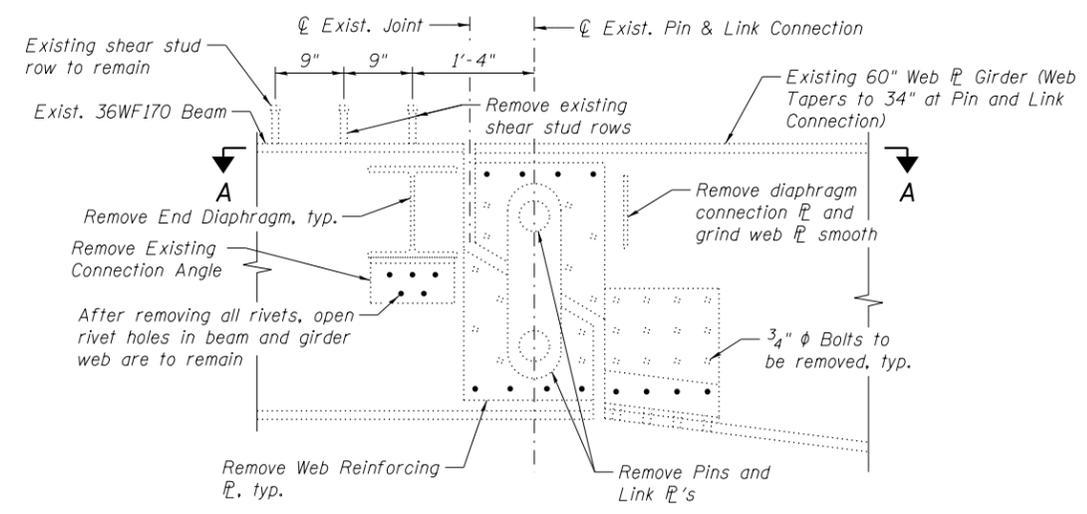
ILLINOIS FED. AID PROJECT



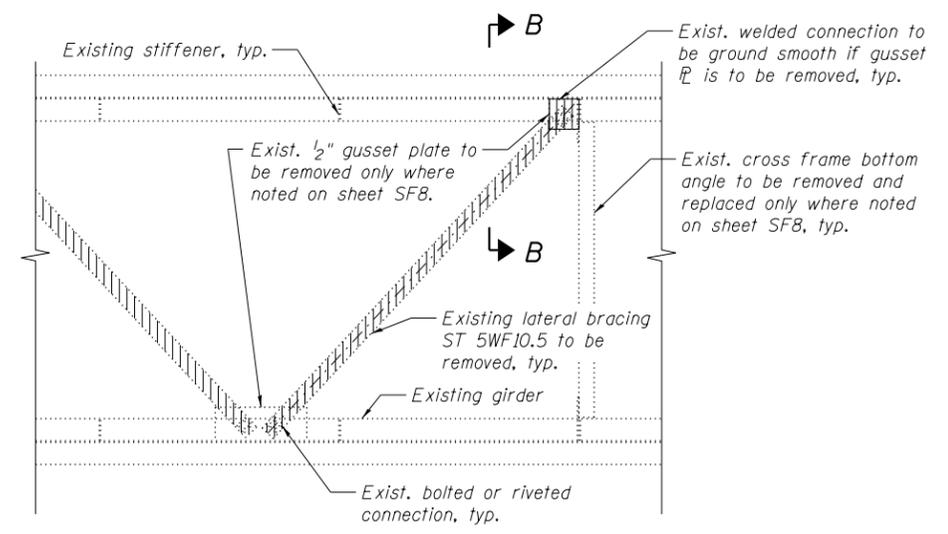
PARTIAL FRAMING PLAN (SPAN 41)



SECTION A-A

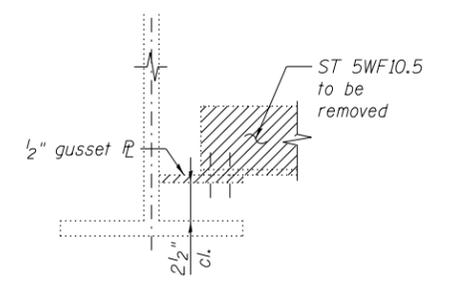


DETAIL 1



WIND BRACING REMOVAL

(Removal of lateral bracing and gusset plates paid for as "Structural Steel Removal")
 (34 ST 5WF10.5 diagonals to be removed)
 (6 gusset plates to be removed)



SECTION B-B

FILE NAME = #FILES#



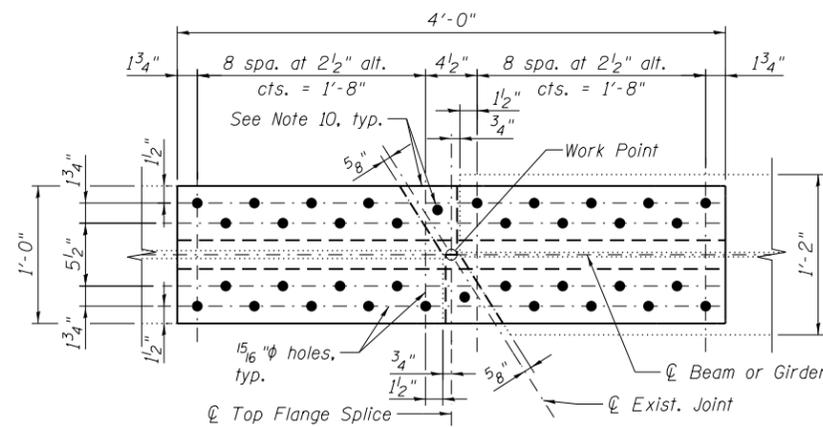
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PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE = 3/22/2017 12:25:06 PM	DRAWN -	REVISED -
	CHECKED -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. PARTIAL FRAMING PLAN - LOCATION 9
STRUCTURE NO. 016-1026**

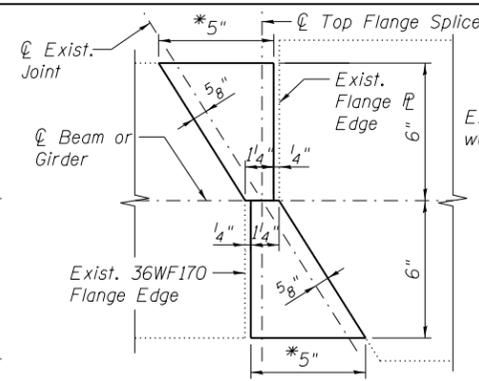
SHEET NO. SI-13 OF SI-16 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 170
				CONTRACT NO. 60W76
ILLINOIS FED. AID PROJECT				



TOP FLANGE SPLICE

(Web splice PL's not shown for clarity)

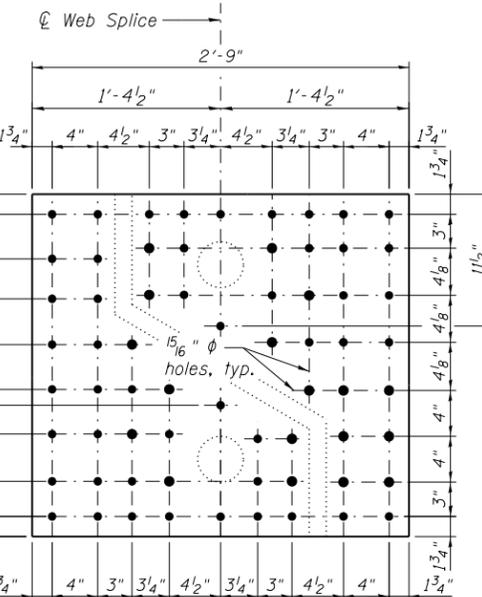


ADDITIONAL TOP FLANGE FILL PLATES

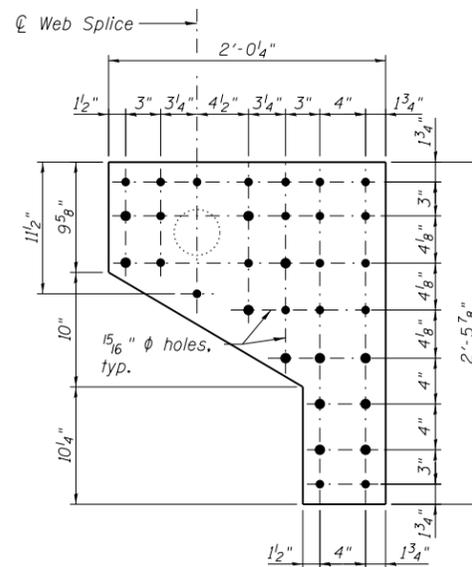
*Verify all dimensions in field.

BOLT HOLE LEGEND

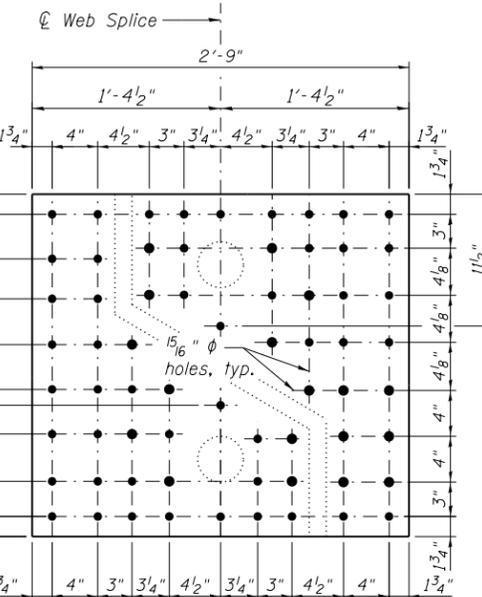
- New bolt hole to be field drilled.
- Existing bolt hole to be reamed and reused.
- ⊙ Existing hole to be plugged with 3/4" φ high strength bolt.
- ⊘ Existing hole to remain.



WEB SPLICE PLATE DETAIL

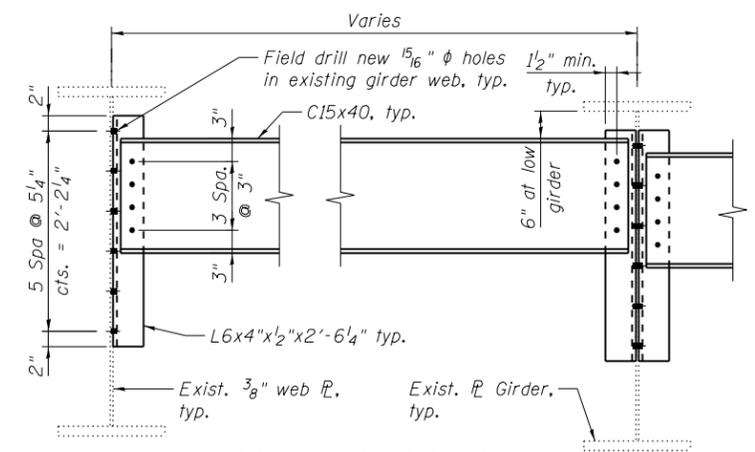


WEB FILL PLATE DETAIL



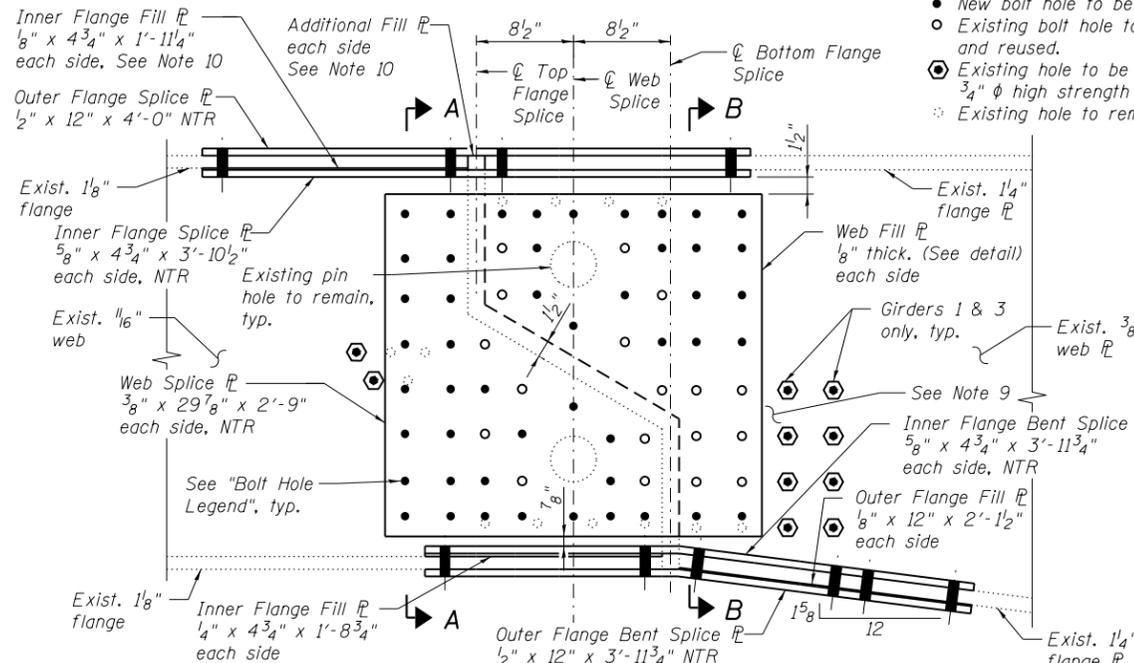
DIAPHRAGM DETAIL

(3 Locations)



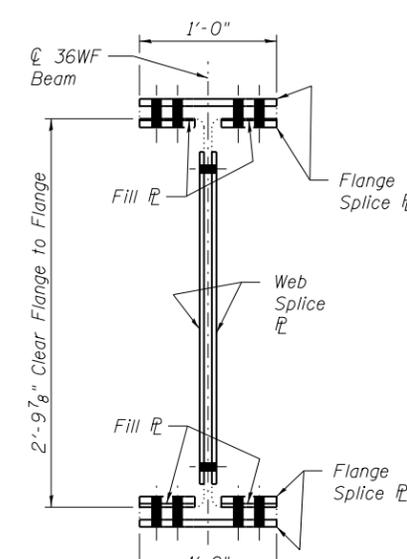
DIAPHRAGM DETAIL

(3 Locations)

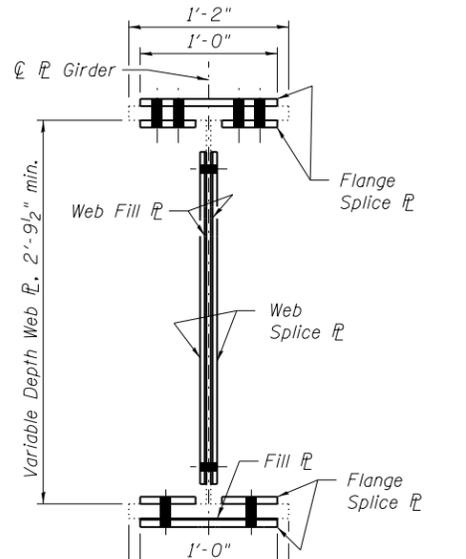


ELEVATION - FIELD SPLICE

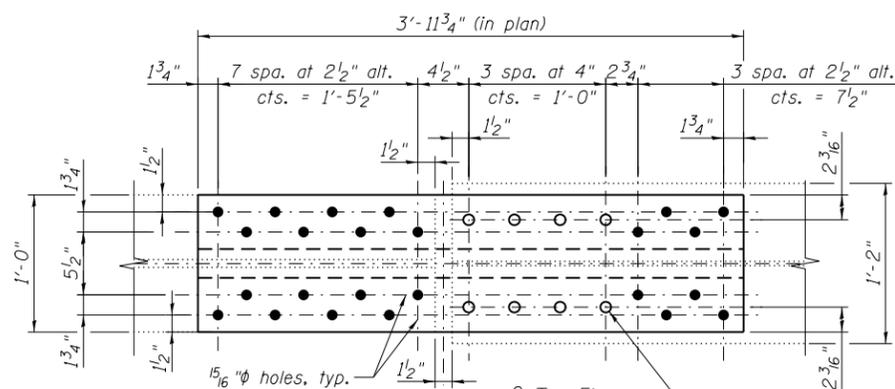
(4 Locations)



SECTION A-A



SECTION B-B



BOTTOM FLANGE SPLICE

(Web splice PL's not shown for clarity)

FILE NAME = #FILES#

LE LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME = Lin	DESIGNED -	REVISED -
PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE = 3/22/2017 12:25:07 PM	DRAWN -	REVISED -
	CHECKED -	REVISED -

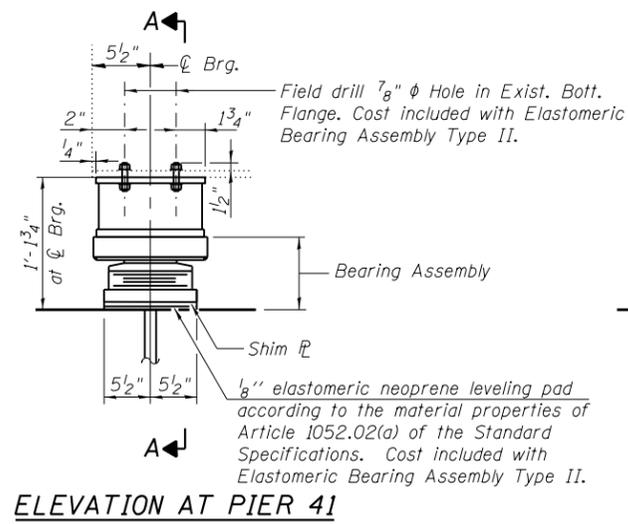
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REHAB. STEEL DETAILS - LOCATION 9
STRUCTURE NO. 016-1026

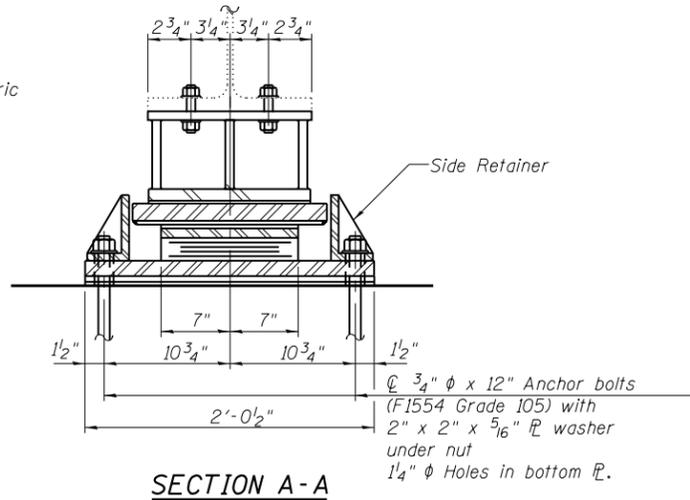
SHEET NO. SI-14 OF SI-16 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	171
CONTRACT NO. 60W76				

ILLINOIS FED. AID PROJECT



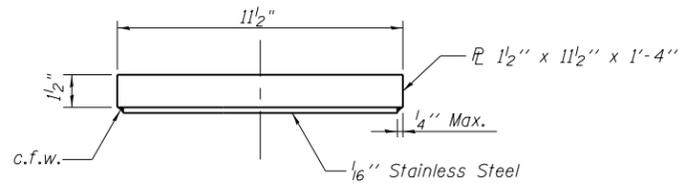
ELEVATION AT PIER 41



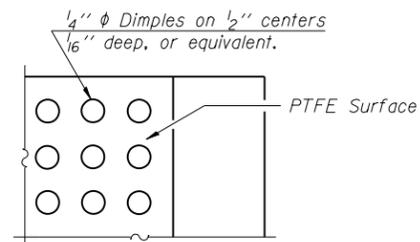
SECTION A-A

TYPE II ELASTOMERIC EXP. BRG.

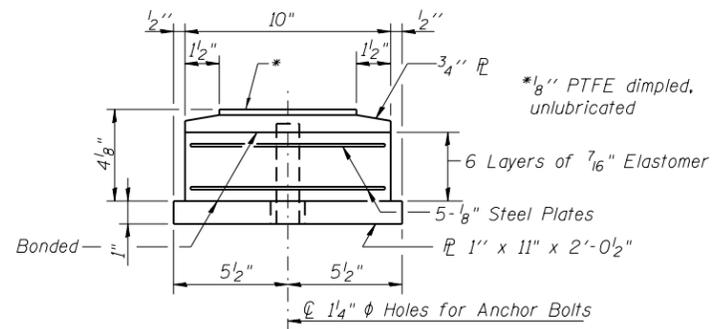
(4 Required)



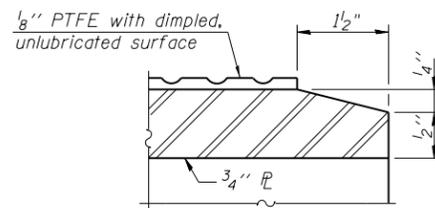
TOP BEARING PLATE



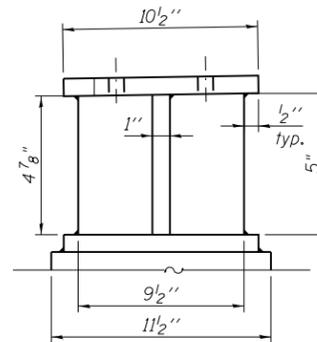
PLAN-PTFE SURFACE



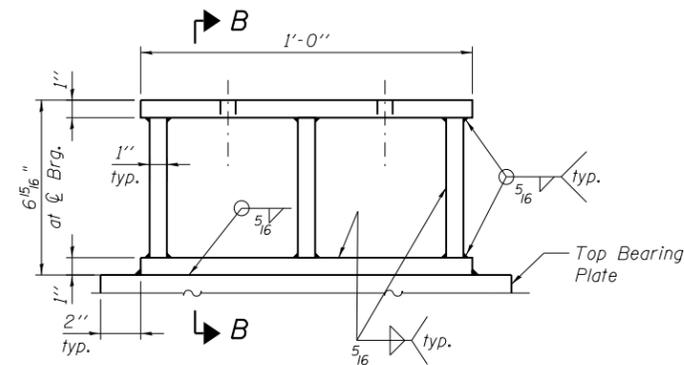
BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE

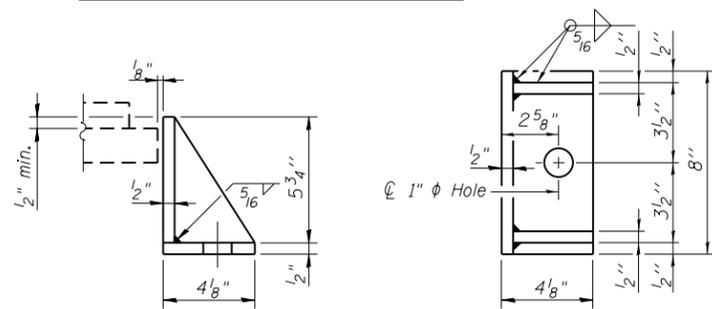


SECTION B-B



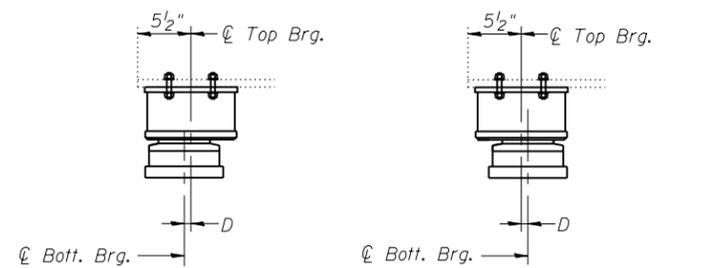
ELEVATION STEEL EXTENSION

(Paid for as Furnishing and Erecting Structural Steel.)



SIDE RETAINER

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



BELOW 50°F.

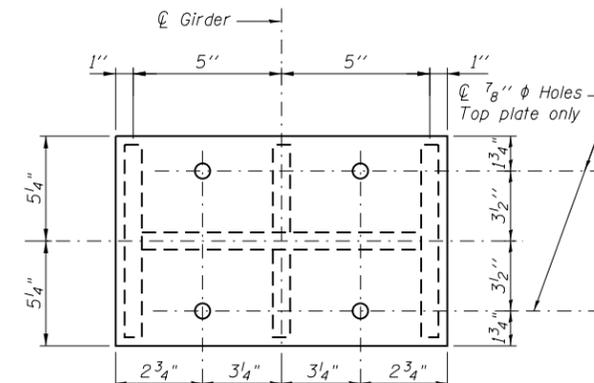
(Move bott. brg. away from fixed brg.)

ABOVE 50°F.

(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

$D = \frac{1}{8}"$ per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.



PLAN STEEL EXTENSION

Prior to ordering any material, Contractor shall verify in the field all bearing height and shim thickness dimensions.

FILE NAME = #FILES#



USER NAME = Lin	DESIGNED -	REVISED -
PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE = 3/22/2017 12:25:08 PM	DRAWN -	REVISED -
	CHECKED -	REVISED -

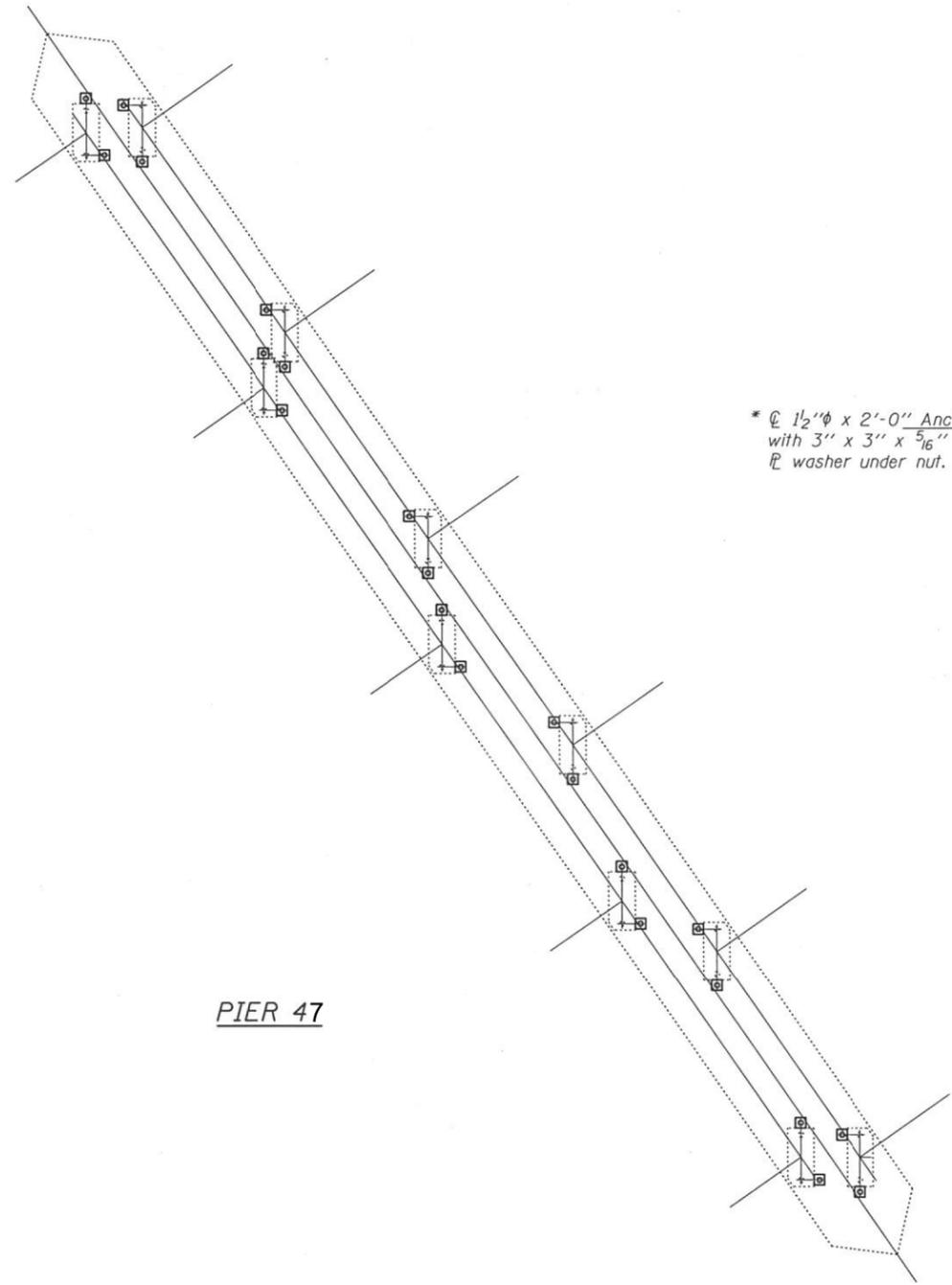
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REHAB. BEARING DETAILS - LOCATION 9
STRUCTURE NO. 016-1026

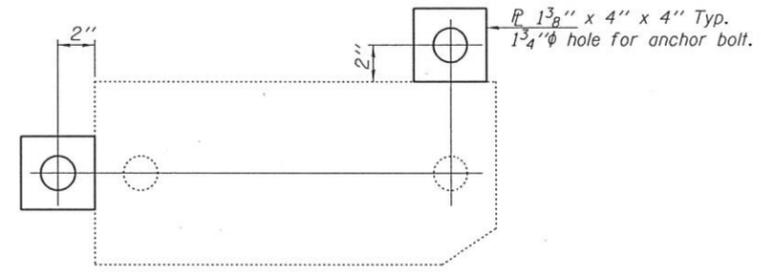
SHEET NO. S1-15 OF S1-16 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	172
CONTRACT NO. 60W76				

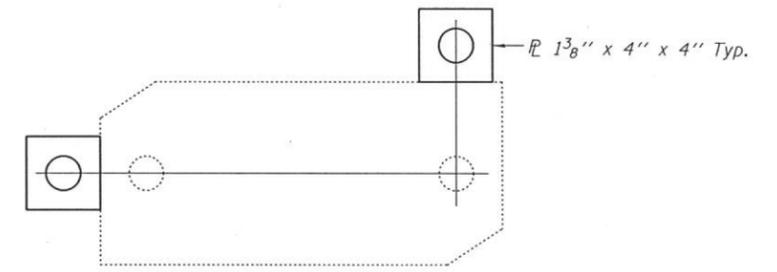
ILLINOIS FED. AID PROJECT



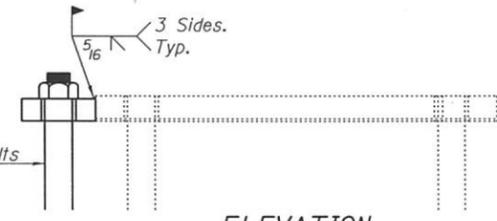
PIER 47



PLAN - 2 EDGES CLIPPED



PLAN - 1 EDGE CLIPPED



ELEVATION

* \varnothing 1 1/2" \varnothing x 2'-0" Anchor Bolts with 3" x 3" x 5/16" \varnothing washer under nut.

* Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.
 Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction 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 scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
 All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with Structural Steel Repair.
 The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
 Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the GBSP "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

FILE NAME = #FILES*



USER NAME = Lin	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE = 3/22/2017 12:25:08 PM	CHECKED -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

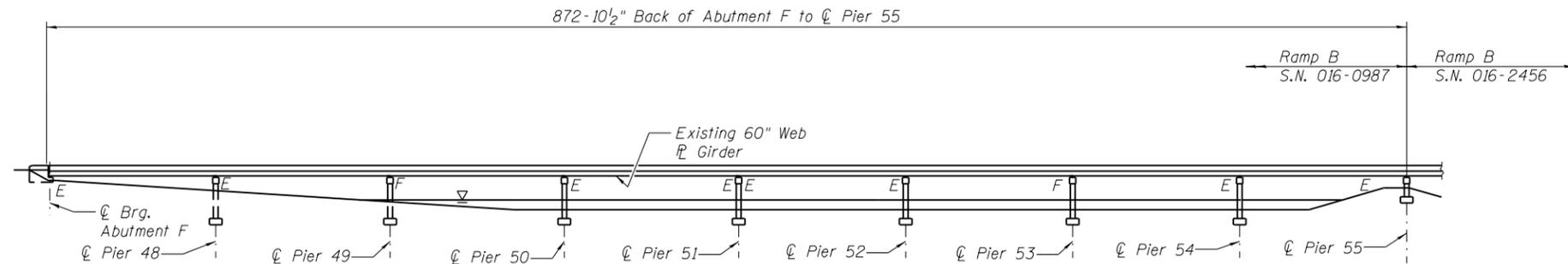
BEARING REPAIR - LOCATION 9
 STRUCTURE NO. 016-1026

SHEET NO. SI-16 OF SI-16 SHEETS

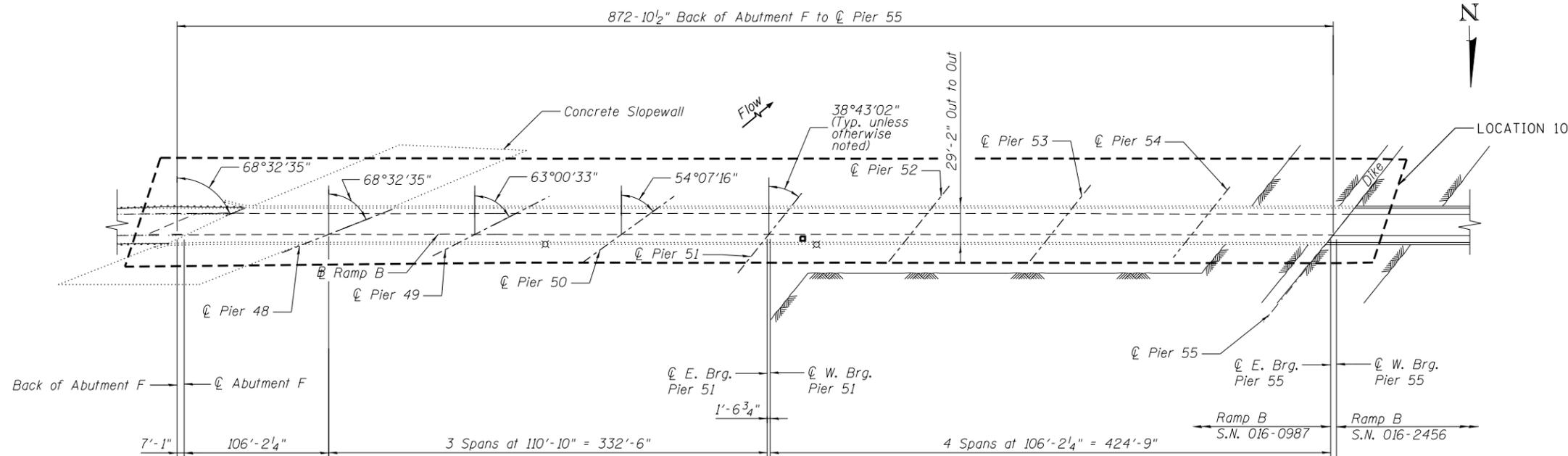
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	173
CONTRACT NO. 60W76				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

1. THE EXISTING STRUCTURAL STEEL COATING CONTAINS LEAD. THE CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO DEAL WITH THE PRESENCE OF LEAD ON THIS PROJECT.
2. CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISION FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES".
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS. STRUCTURAL SHEETS TAKEN FROM EXISTING PLANS CONTAIN INFORMATION NOT PERTAINING TO THIS CONTRACT AND ARE FOR INFORMATION ONLY.
4. ALL EXISTING STRUCTURAL STEEL IDENTIFIED ON SHEETS SJ-7 THRU SJ-13 HAS BEEN PRIMED WITH AN INORGANIC ZINC RICH PRIMER UNDER A PREVIOUS CONTRACT. THESE STEEL SURFACES SHALL BE PRESSURE WASHED CLEAN AND POWER TOOL CLEANED (SSPC SP-3 MODIFIED) AS NECESSARY PRIOR TO THE APPLICATION OF THE INTERMEDIATE AND TOP COATS. THE INORGANIC ZINC RICH PRIMER / ACRYLIC / ACRYLIC PAINT SYSTEM SHALL BE USED FOR FIELD PAINTING OF THESE LOCATIONS. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR STEEL SURFACES SHALL BE GRAY, MUNSELL NO. 5B 7/1. THE COLOR OF THE FINAL FINISH COAT FOR THE EXTERIOR AND BOTTOM FLANGE OF THE FASCIA BEAMS SHALL BE REDDISH BROWN, MUNSELL NO. 2.5YR 3/4.
5. ALL EXISTING STRUCTURAL STEEL IDENTIFIED ON SHEETS SJ-2 THRU SJ-6 SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING SSPC-SPI0. THESE LOCATIONS SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF THE EPOXY MASTIC / EPOXY MASTIC / ACRYLIC PAINT SYSTEM. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR STEEL SURFACES SHALL BE GRAY, MUNSELL NO. 5B 7/1. THE COLOR OF THE FINAL FINISH COAT FOR THE EXTERIOR AND BOTTOM FLANGE OF THE FASCIA BEAMS AND SHALL BE REDDISH BROWN, MUNSELL NO. 2.5YR 3/4.
6. A MINIMUM OF 3 AIR MONITORS WILL BE REQUIRED TO MONITOR ABRASIVE BLASTING OPERATIONS AT THIS SITE. SEE SPECIAL PROVISION FOR "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES".
7. THE ELASTOMERIC PADS OF THE EXISTING BEARINGS SHALL BE MASKED OFF FOR PROTECTION DURING PAINTING AND REMOVED WHEN PAINTING IS FINISHED. COST INCLUDED WITH "CLEANING AND PAINTING STEEL BRIDGE NO. 10".
8. IF APPLICABLE, THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND DETAILS DEMONSTRATING THE STRUCTURAL INTEGRITY OF THE BRIDGE IS MAINTAINED UNDER THE ADDITIONAL IMPOSED LOADS OF THE CONTAINMENT SYSTEM. SEE SPECIAL PROVISIONS.
9. ONLY ACCESSIBLE AREAS OF STEEL ON THE UNDERSIDE OF THE FINGER PLATE EXPANSION JOINT SYSTEM SHALL BE PAINTED. TOP SURFACE OF THE FINGER PLATES AND PARAPET PLATES SHALL NOT BE PAINTED.



ELEVATION



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
CLEANING AND PAINTING STEEL BRIDGE NO. 10	L. SUM	1
CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 10	L. SUM	1

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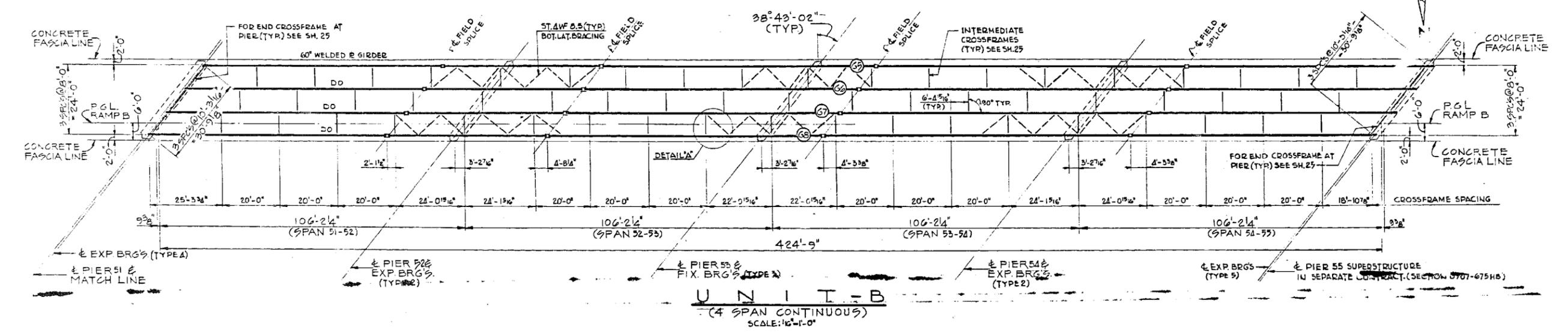
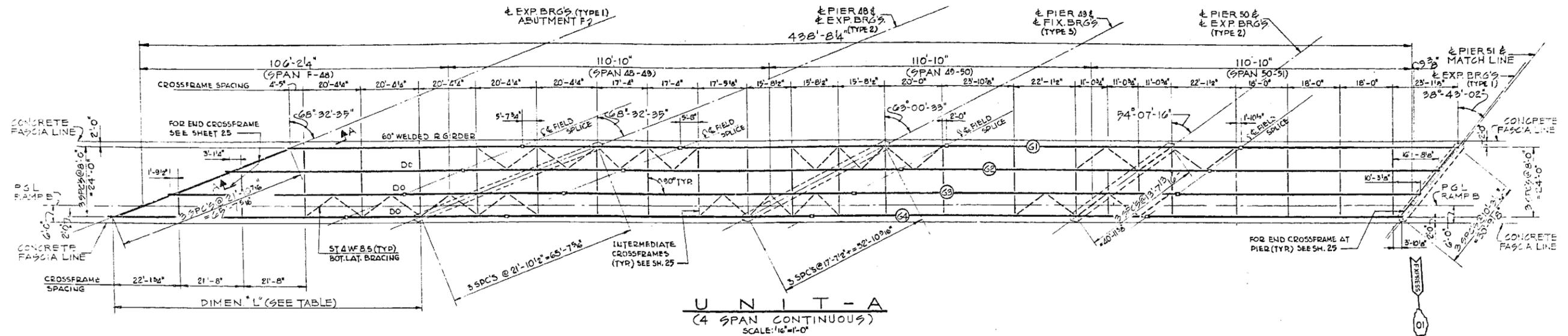
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

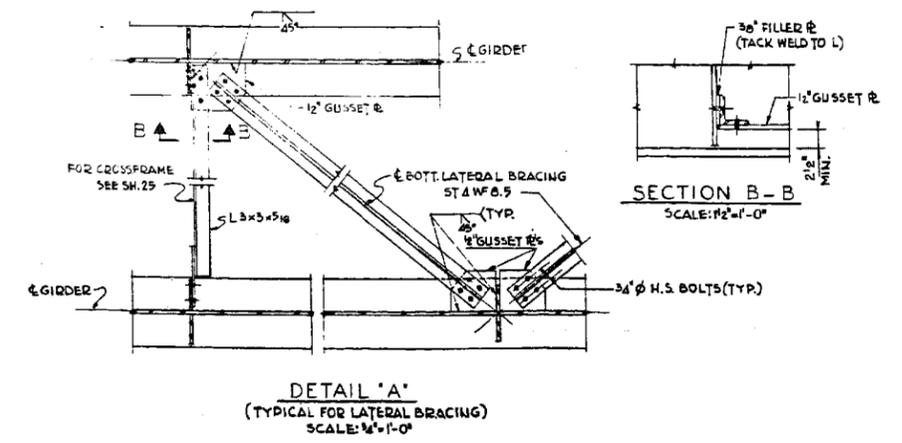
**GENERAL PLAN & ELEVATION - LOCATION 10
STRUCTURE NO. 016-0987**

SHEET NO. SJ-1 OF SJ-13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-0398P	COOK	209	174
				CONTRACT NO. 60W76
ILLINOIS FED. AID PROJECT				



GIRDER	SPAN F-48	SPAN 48-49	SPAN 49-50	SPAN 50-51
G1	106'-2 1/4"	99'-2 7/8"	99'-2 7/8"	99'-2 7/8"
G2	106'-2 1/4"	103'-10 3/8"	103'-10 3/8"	103'-10 3/8"
G3	106'-2 1/4"	108'-6 1/2"	108'-6 1/2"	108'-6 1/2"
G4	106'-2 1/4"	113'-1 7/8"	113'-1 7/8"	113'-1 7/8"



FILE NAME = 8FILE08



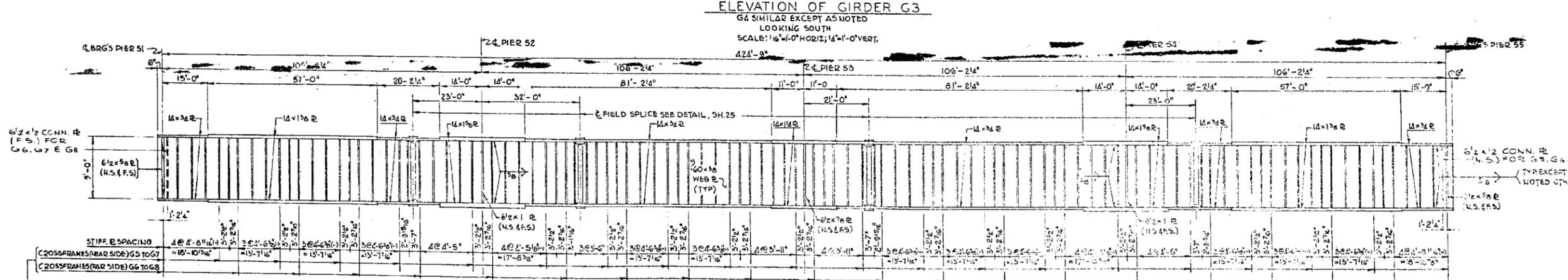
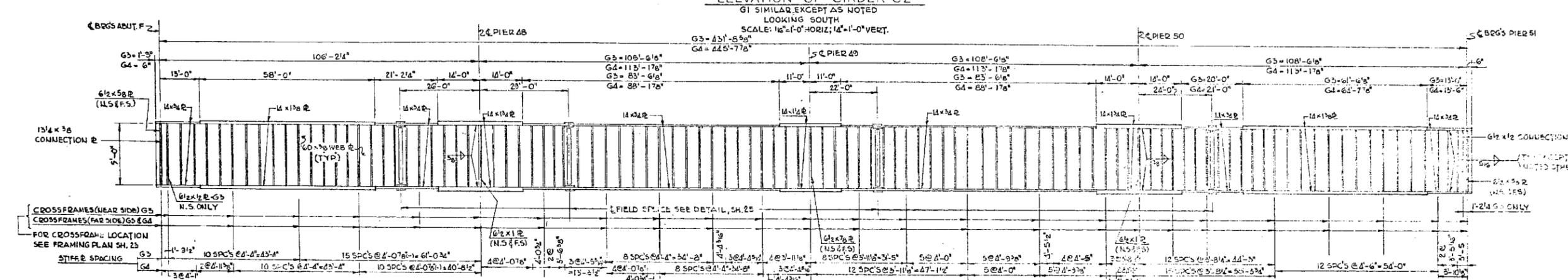
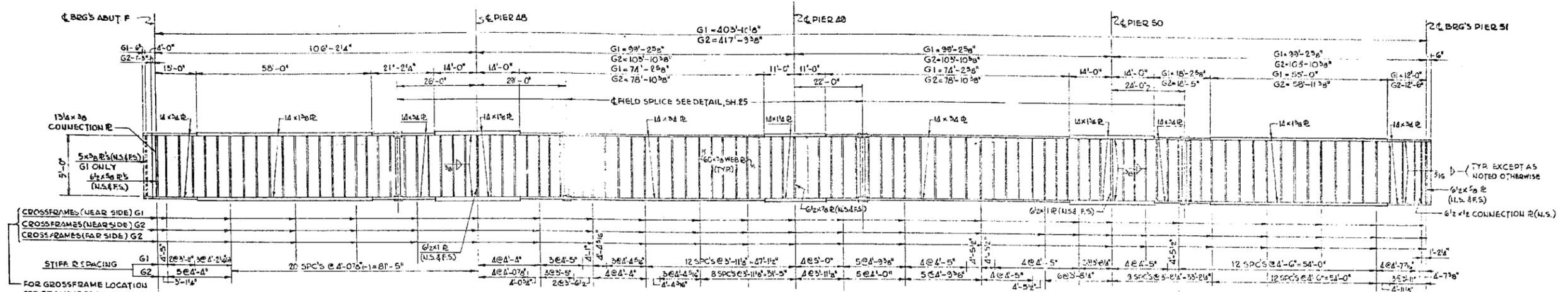
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ORIG. FRAMING PLAN - LOCATION 10
STRUCTURE NO. 016-0987

SHEET NO. SJ-2 OF SJ-13 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 175
CONTRACT NO. 60W76				ILLINOIS FED. AID PROJECT



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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

ORIG. GIRDER ELEVATIONS - LOCATION 10
 STRUCTURE NO. 016-0987

SHEET NO. SJ-3 OF SJ-13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	176
				CONTRACT NO. 60W76

ILLINOIS FED. AID PROJECT

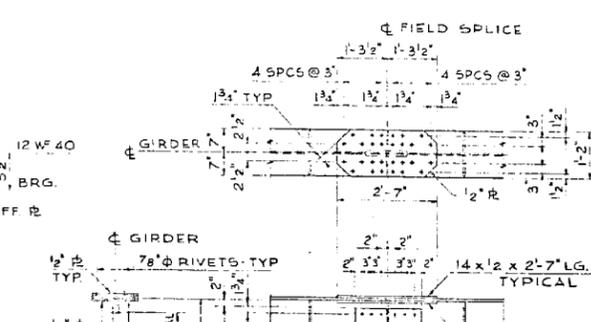
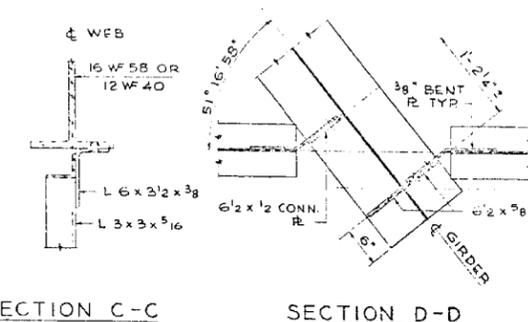
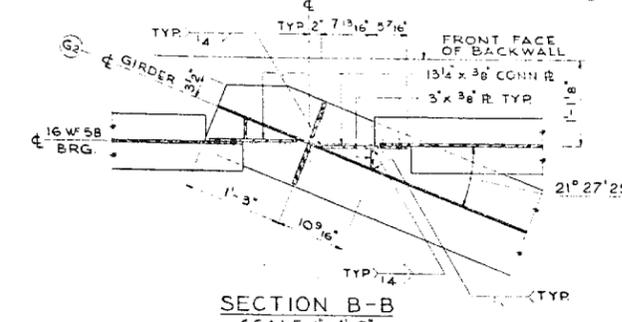
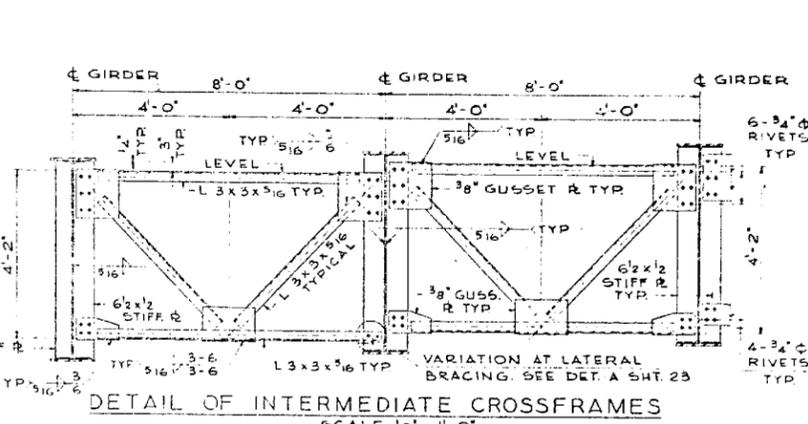
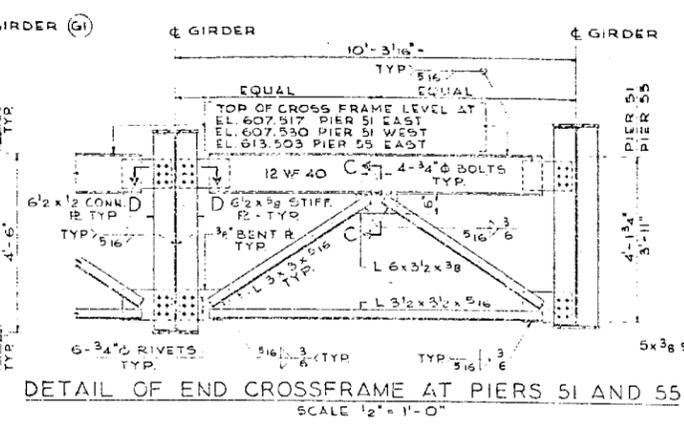
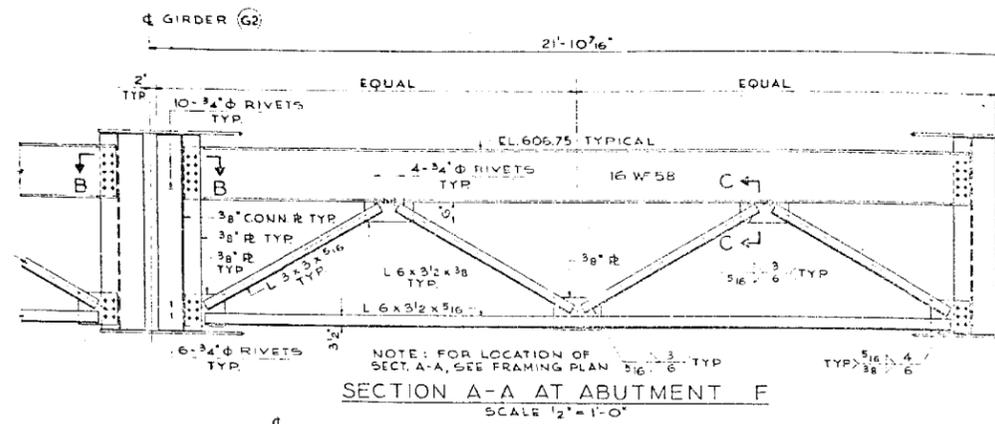


TABLE OF MOMENTS AND REACTIONS

	MOMENTS (KIP-FT.)										REACTIONS (K)				
	4 SPAN F-48	PIER-48	5 SPAN 48-49	PIER-49	5 SPAN 49-50	PIER-50	4 SPAN 50-51	ABUT-F	PIER-48	PIER-49	PIER-50	PIER-51			
G1	D.L. 1258	-1665	419	-995	479	-1545	1061	60	168	129	162	55			
	L.L. 416	-381	291	-313	288	-362	390	20	34	31	33	20			
	I 89	-83	65	-70	65	-80	87	4	7	7	7	5			
	TOTAL 1763	-2129	775	-1378	832	-1987	1538	84	209	167	202	80			
G2	D.L. 1030	-1420	411	-930	420	-1381	958	49	141	113	140	48			
	L.L. 963	-909	728	-773	721	-883	954	47	79	73	78	47			
	I 207	-196	160	-169	159	-196	207	10	17	16	17	10			
	TOTAL 2200	-2525	1299	-1672	1300	-2460	2119	106	237	202	235	105			
G3	D.L. 1000	-1479	474	-1033	457	-1510	1058	48	142	119	146	50			
	L.L. 975	-955	731	-841	731	-968	996	47	81	76	81	47			
	I 211	-205	157	-181	158	-208	214	10	17	16	17	10			
	TOTAL 2186	-2639	1362	-2055	1346	-2686	2268	105	242	211	244	107			
G4	D.L. 1180	-1860	655	-1312	593	-1980	1391	58	178	151	184	63			
	L.L. 421	-428	326	-389	329	-446	446	20	35	34	36	20			
	I 92	-92	69	-82	69	-94	94	4	8	7	8	4			
	TOTAL 1693	-2380	1050	-1783	991	-2520	1931	82	221	192	228	87			

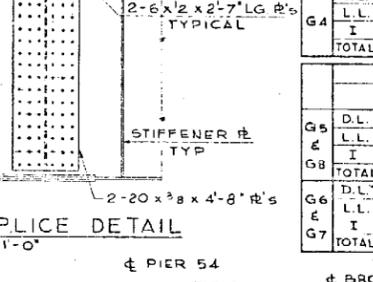
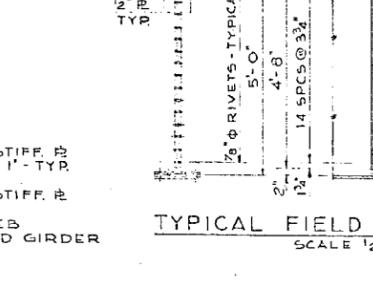
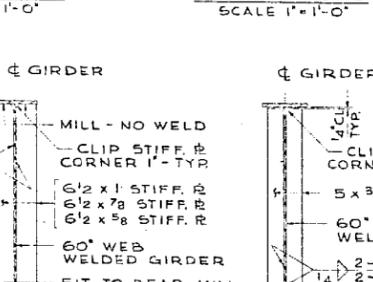
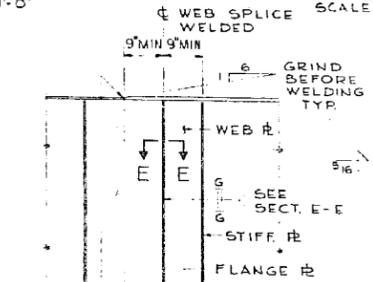
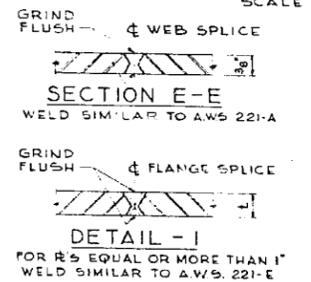
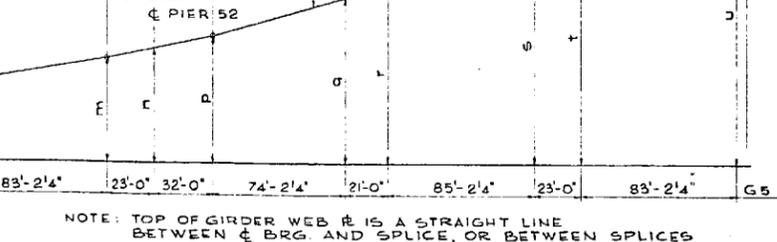
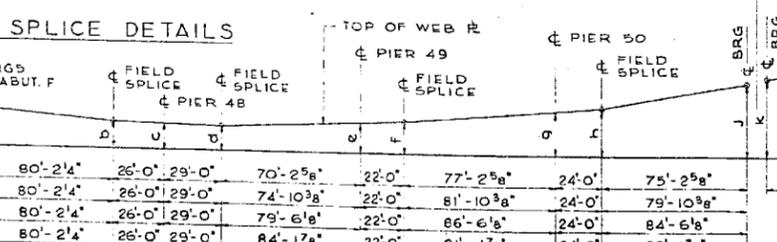
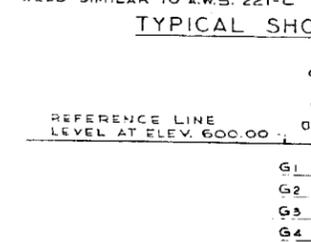
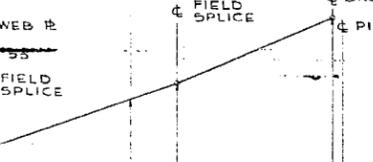
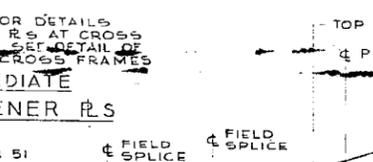
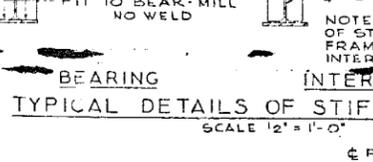
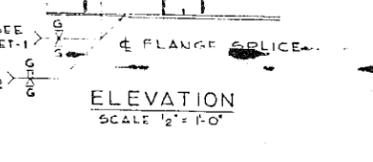
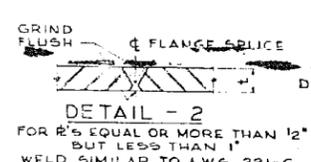


TABLE OF MOMENTS AND REACTIONS

	MOMENTS (KIP-FT.)										REACTIONS (K)				
	4 SPAN 51-52	PIER-52	5 SPAN 52-53	PIER-53	5 SPAN 53-54	PIER-54	4 SPAN 54-55	PIER-51	PIER-52	PIER-53	PIER-54	PIER-55			
G5	D.L. 1221	-1756	534	-1184	534	-1756	1221	99	173	140	173	59			
	L.L. 419	-399	317	-349	317	-399	419	20	34	32	34	20			
	I 91	-86	69	-76	69	-86	91	4	7	7	7	4			
	TOTAL 1731	-2241	920	-1609	920	-2241	1731	93	214	179	214	83			
G6	D.L. 1010	-1452	442	-979	442	-1452	1010	49	143	116	143	49			
	L.L. 975	-928	737	-813	737	-928	975	47	80	75	80	47			
	I 210	-201	160	-176	160	-201	210	10	17	16	17	10			
	TOTAL 2195	-2581	1339	-1968	1339	-2581	2195	106	240	207	240	106			



	a	b	c	d	e	f	g	h	j
G1	80'-2 1/4"	26'-0" 29'-0"	70'-2 5/8"	22'-0"	77'-2 5/8"	24'-0"	75'-2 5/8"		
G2	80'-2 1/4"	26'-0" 29'-0"	74'-10 3/8"	22'-0"	81'-10 3/8"	24'-0"	79'-10 3/8"		
G3	80'-2 1/4"	26'-0" 29'-0"	79'-6 1/8"	22'-0"	86'-6 1/8"	24'-0"	84'-6 1/8"		
G4	80'-2 1/4"	26'-0" 29'-0"	84'-1 7/8"	22'-0"	91'-1 7/8"	24'-0"	89'-1 7/8"		

NOTE: TOP OF GIRDER WEB IS A STRAIGHT LINE BETWEEN & BRG. AND SPLICE, OR BETWEEN SPLICES

GIRDER	a	b	c	d	e	f	g	h	j
G1	7.163	6.929	6.932	6.936	7.124	7.184	7.512	7.615	8.304
G2	7.088	6.808	6.796	6.782	6.942	6.989	7.311	7.405	8.110
G3	7.005	6.678	6.651	6.621	6.747	6.781	7.092	7.179	7.897
G4	6.566	6.580	6.538	6.491	6.578	6.601	6.898	6.976	7.705

GIRDER	k	m	n	p	q	r	s	t	u
G5	8.317	9.050	9.316	9.688	10.739	11.037	12.419	12.792	14.515
G6	8.123	8.840	9.103	9.468	10.506	10.800	12.166	12.535	14.247
G7	7.910	8.612	8.870	9.229	10.254	10.544	11.895	12.260	13.958
G8	7.717	8.404	8.658	9.012	10.023	10.309	11.645	12.005	13.690

GIRDERS G1 THRU G4

GIRDER FABRICATION DIAGRAM

GIRDERS G5 THRU G8

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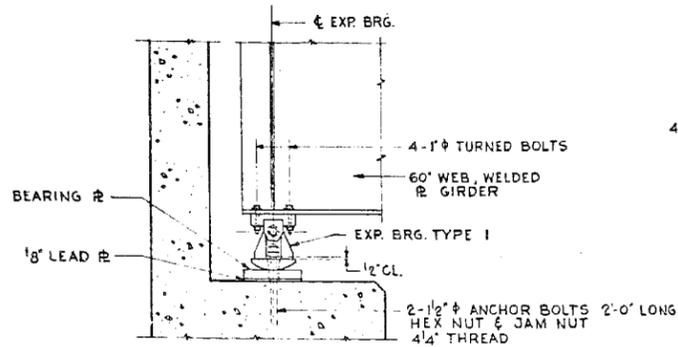
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ORIG. STEEL DETAILS - LOCATION 10
STRUCTURE NO. 016-0987

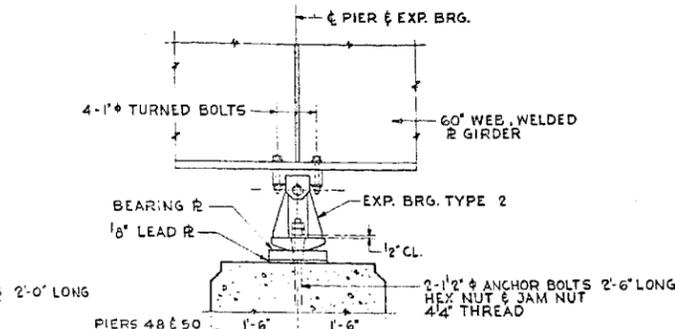
SHEET NO. SJ-4 OF SJ-13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	177

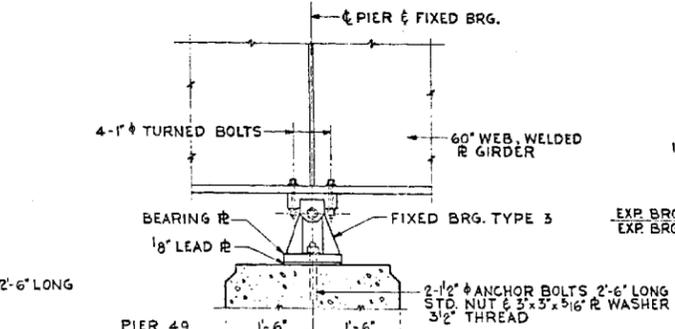
CONTRACT NO. 60W76
ILLINOIS FED. AID PROJECT



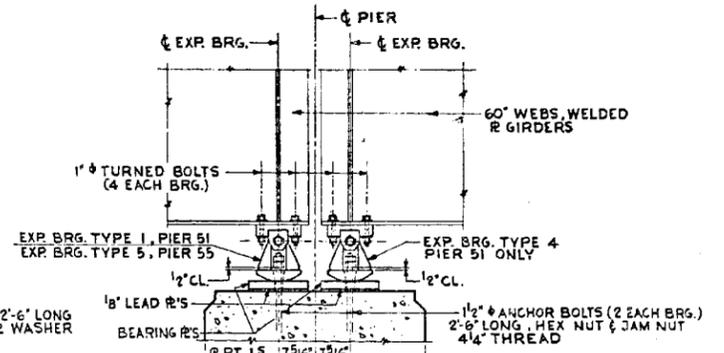
BEARING DETAIL AT ABUTMENT F
SCALE: 3/4" = 1'-0"



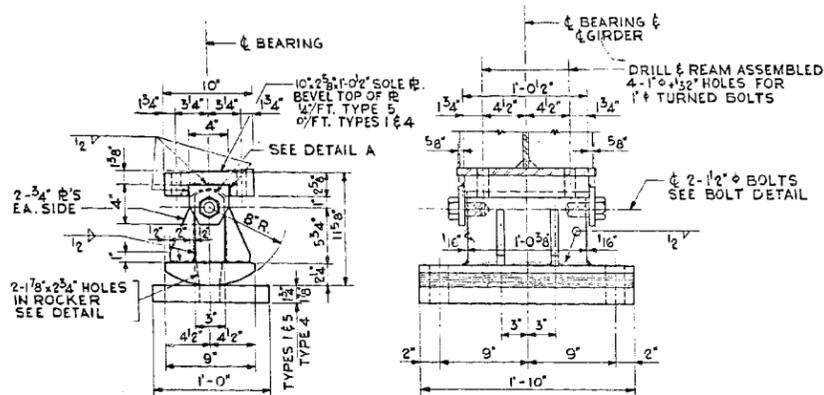
BEARING DETAIL AT PIERS 48, 50, 52 & 54
SCALE: 3/4" = 1'-0"



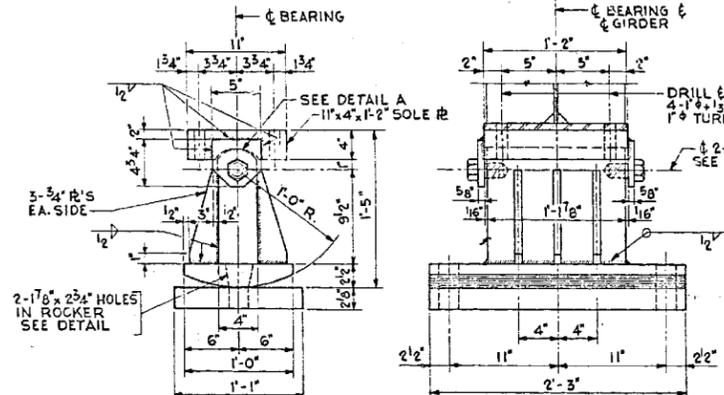
BEARING DETAIL AT PIERS 49 & 53
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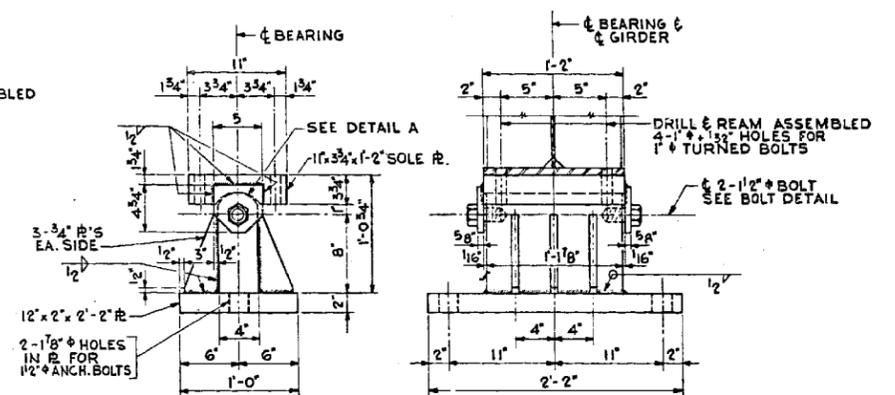
BEARING DETAIL AT PIERS 51 & 55
SCALE: 3/4" = 1'-0"



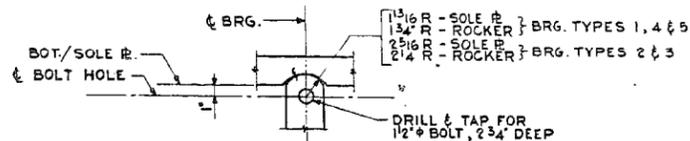
ROCKER DETAIL OF EXPANSION BEARING TYPES 1, 4 & 5
SCALE: 1/2" = 1'-0"



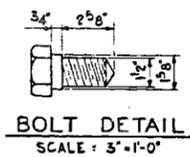
ROCKER DETAIL OF EXPANSION BEARING TYPE 2
SCALE: 1/2" = 1'-0"



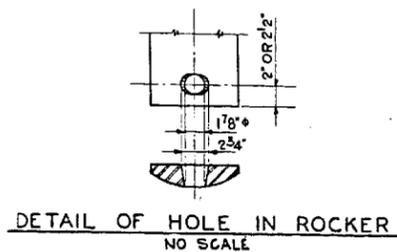
BOLSTER DETAIL OF FIXED BEARING TYPE 3
SCALE: 1/2" = 1'-0"



DETAIL A
SCALE: 1/2" = 1'-0"

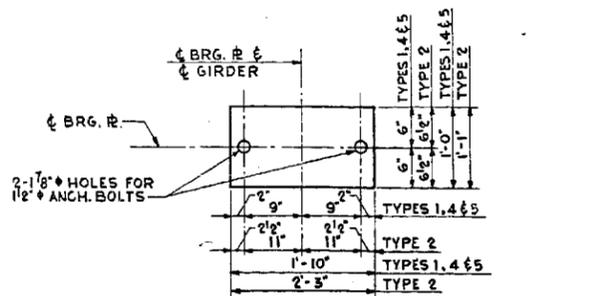


BOLT DETAIL
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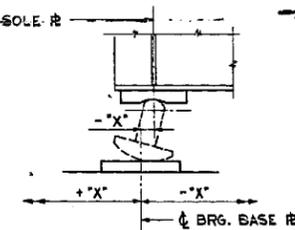


DETAIL OF HOLE IN ROCKER
NO SCALE

BRG. TYPE	NO. REQ'D	TOTAL WEIGHT LBS.
1	8	4001
2	16	14116
3	8	4635
4	4	2027
5	4	1973
		26752



BEARING PLATE DETAIL FOR EXPANSION BEARINGS TYPES 1, 2, 4 & 5
NO SCALE



TEMPERATURE - °F	DIMENSION 'X'				
	90°	70°	50°	30°	10°
EAST BRG.(TYPE 1) @ ABUT. F & BRG.(TYPE 4) @ PIER 51	+11'	+9'	0	-5'	-11'
WEST BRG.(TYPE 1) @ PIER 51 & BRG.(TYPE 5) @ PIER 55	-11'	-9'	0	+5'	+11'
BRG.(TYPE 2) @ PIERS 48 & 52	+5'	+3'	0	-3'	-5'
BRG.(TYPE 2) @ PIERS 50 & 54	-5'	-3'	0	+3'	+5'

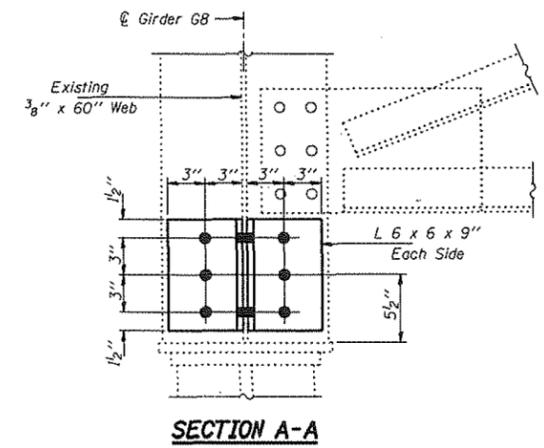
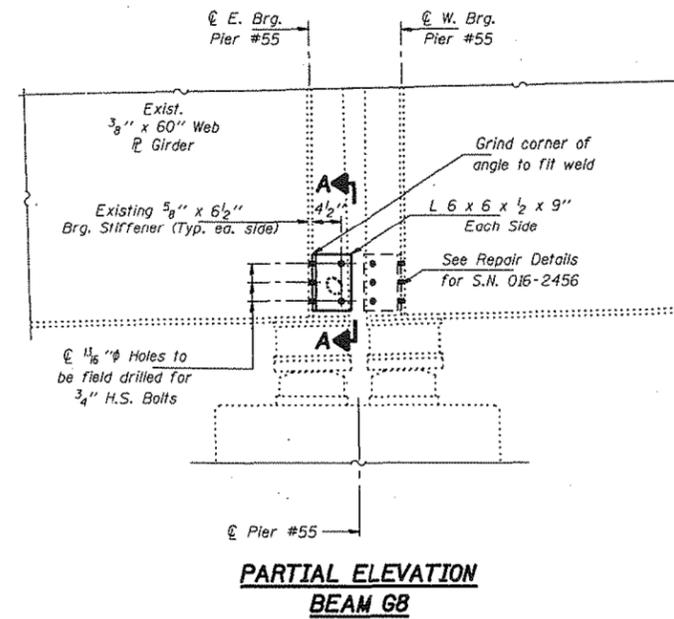
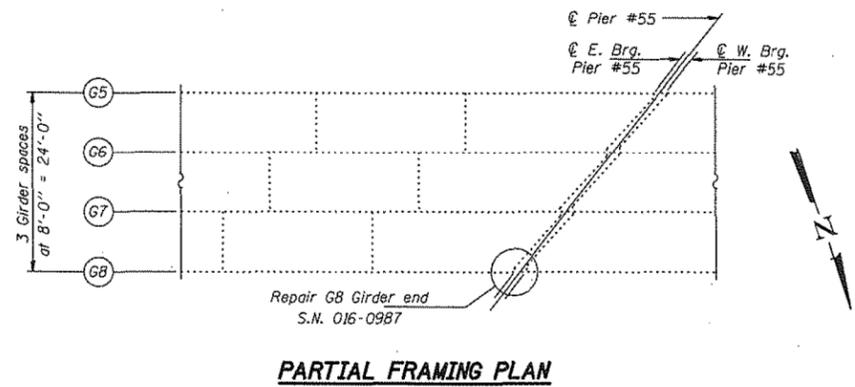
MINUS SIGN INDICATES & SOLE PLATE SET WEST OF & BRGS
PLUS SIGN INDICATES & SOLE PLATE SET EAST OF & BRGS

ROCKER SETTING DIAGRAM

BILL OF MATERIAL		
TEM	UNIT	QUANTITY
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	26,750

NOTE:
FOR ANCHOR BOLT PROJECTIONS ABOVE TOP OF CONCRETE SEE SHEETS 11 THRU 19

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FILE NAME = #FILES*



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

1999 BEAM END REPAIR - LOCATION 10
STRUCTURE NO. 016-0987

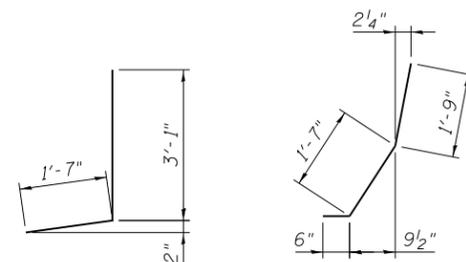
SHEET NO. SJ-6 OF SJ-13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 60W76				

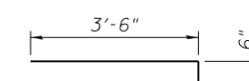
ILLINOIS FED. AID PROJECT

BILL OF MATERIAL

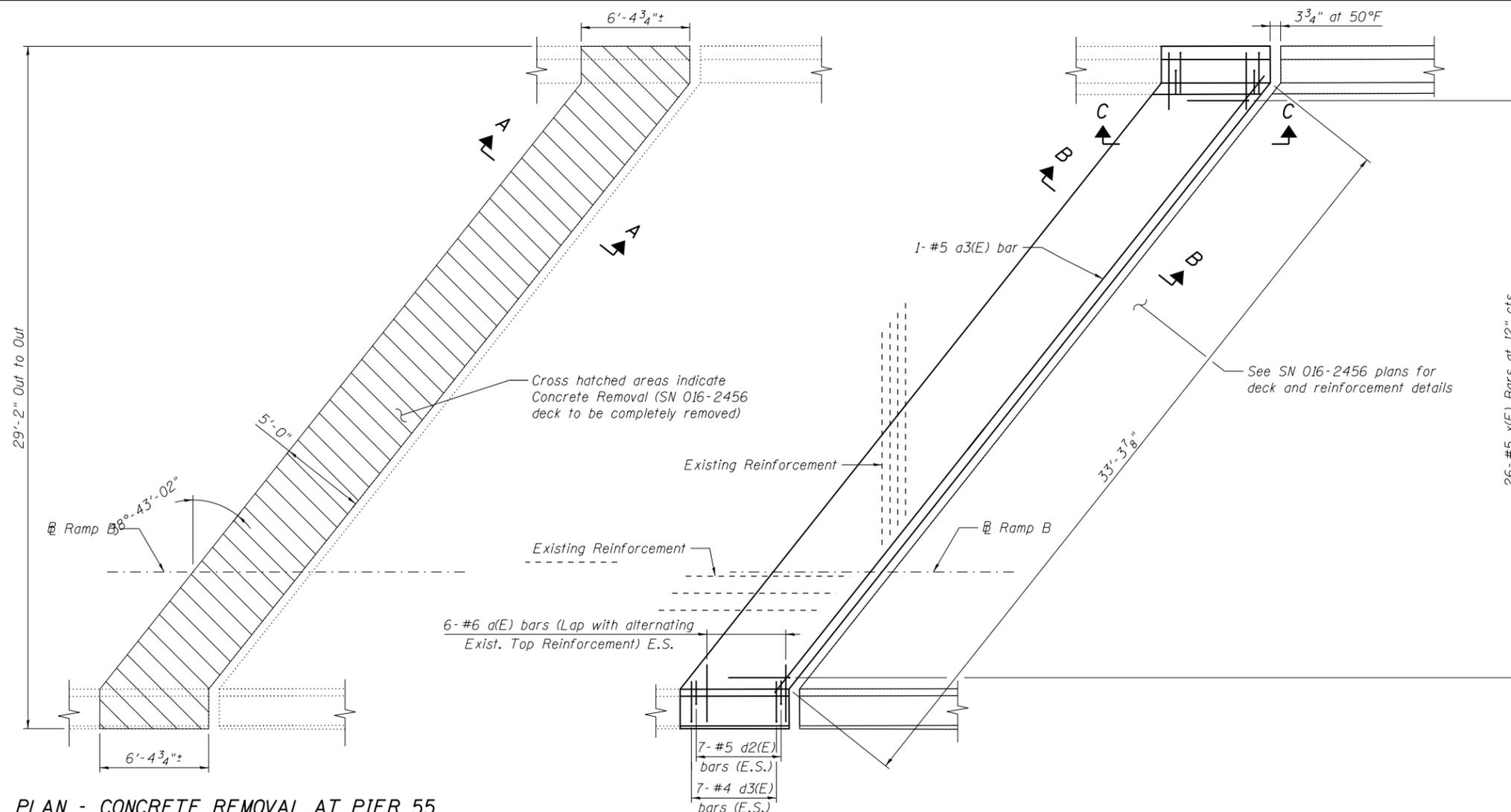
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a(E)	12	#6	4'-0"	—
a3(E)	1	#5	34'-10"	—
d2(E)	14	#5	3'-10"	J
d3(E)	14	#4	4'-8"	J
x(E)	26	#5	4'-0"	┌
Concrete Removal		Cu. Yd.	4.8	
Concrete Superstructure		Cu. Yd.	4.8	
Finger Pl. Exp. Jt., 4"		Foot	33.5	
Fabric Reinforced Elastomeric Trough		Foot	70.0	
Reinforcement Bars, Epoxy Coated		Pound	320	



BAR d3(E) **BAR d2(E)**

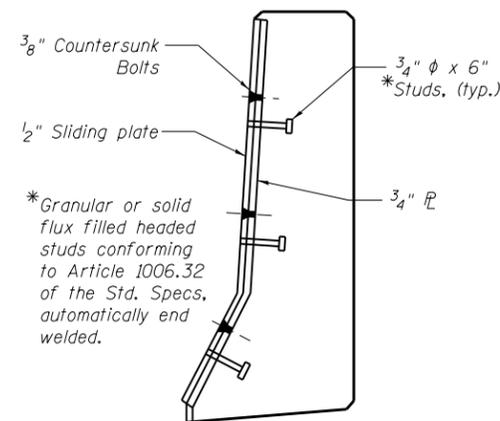


BAR x(E)

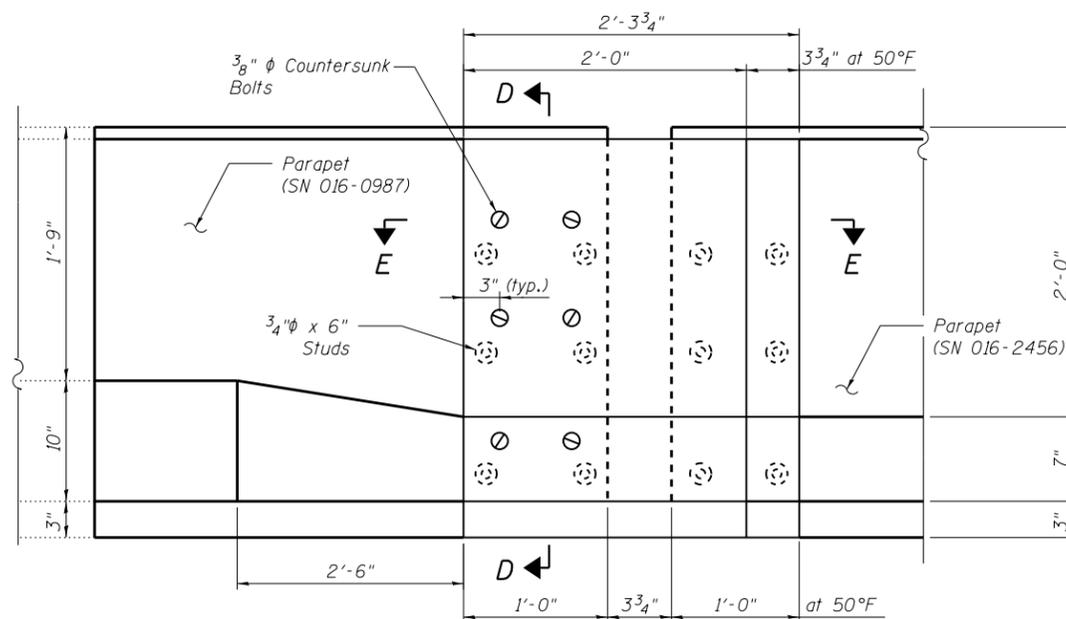


PLAN - CONCRETE REMOVAL AT PIER 55

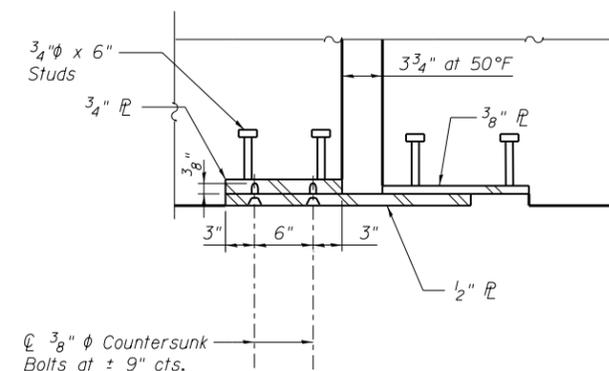
PLAN - CONCRETE REPLACEMENT AT PIER 55



SECTION D-D



VIEW C-C



SECTION E-E

- NOTES:**
1. I.F. denotes Inside Face.
O.F. denotes Outside Face.
E.S. denotes Each Side
 2. Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with "Concrete Removal".
 3. Work this sheet with sheets SE9 thru SE13.

FILE NAME = #FILES#

LE LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME = Lin
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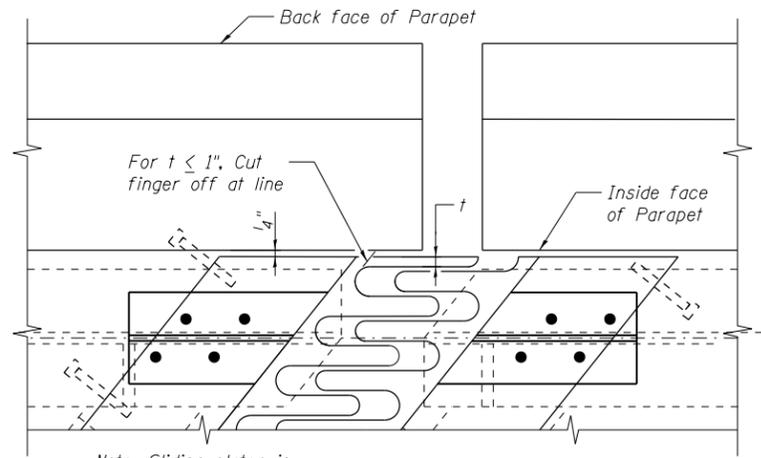
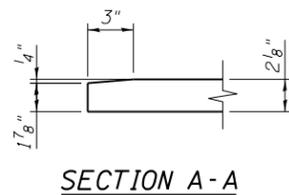
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 55 EXPANSION JOINT REPAIRS - LOCATION 10
STRUCTURE NO. 016-0987

SHEET NO. SJ-7 OF SJ-13 SHEETS

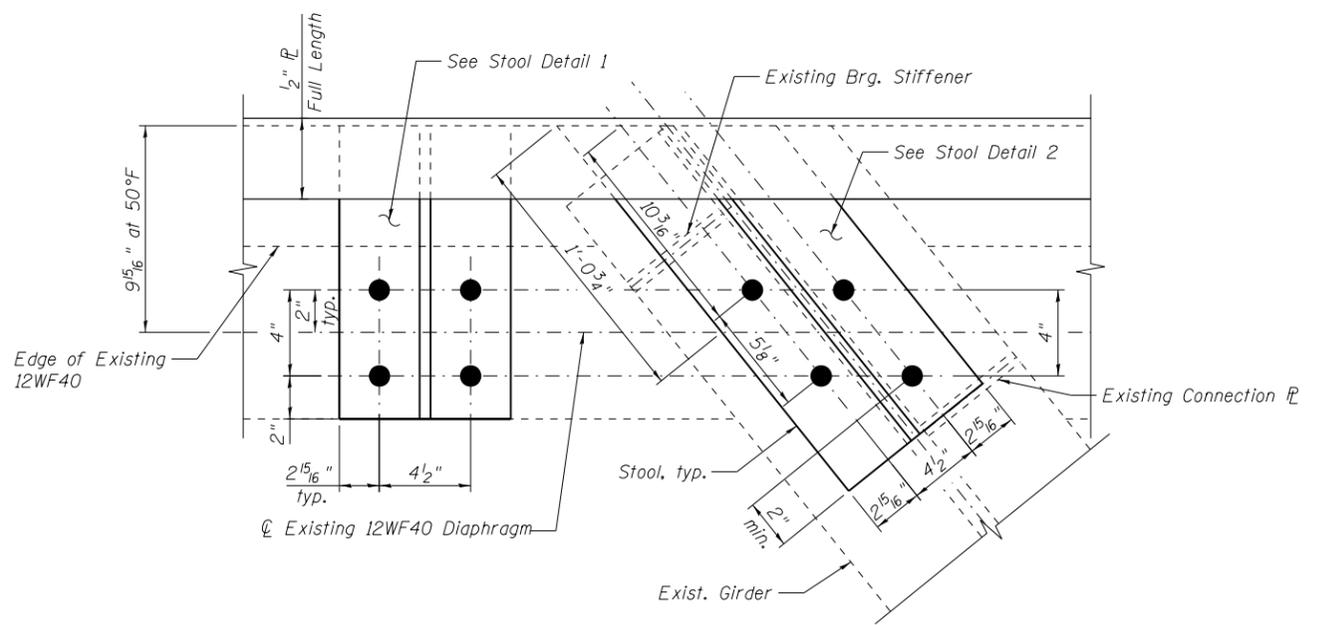
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	180
CONTRACT NO. 60W76				

ILLINOIS FED. AID PROJECT

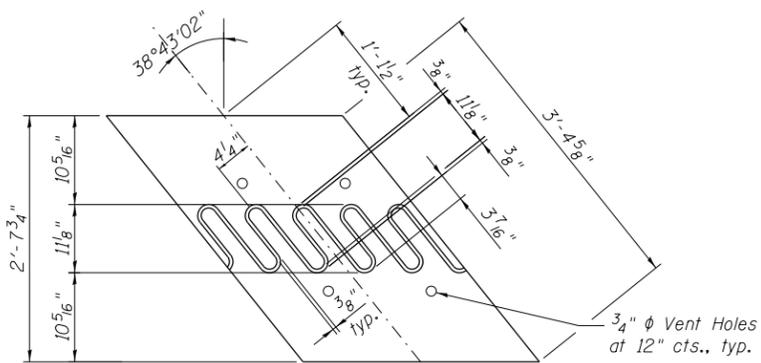


Note: Sliding plates in Parapet not shown for clarity.

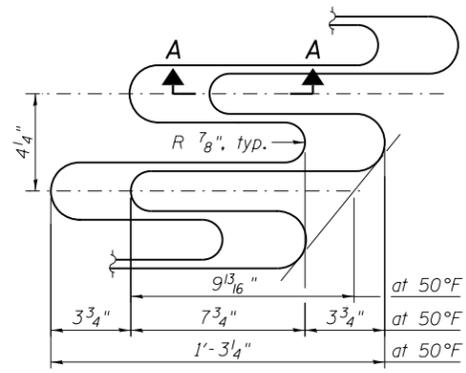
FINGER CUT DETAIL



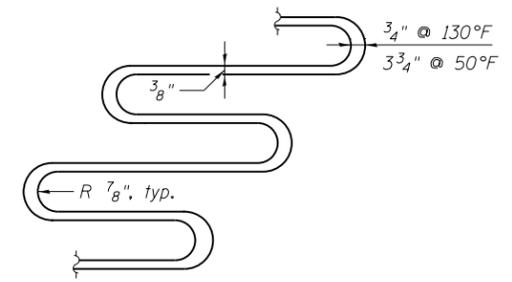
PARTIAL PLAN - STOOL LAYOUT AT PIER 55



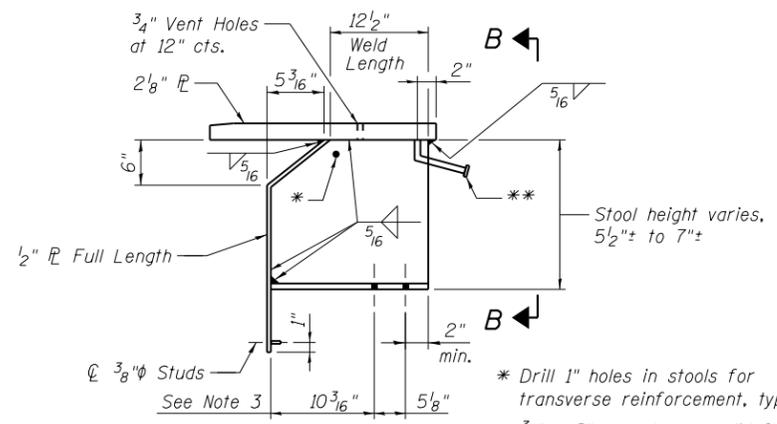
FLAME CUTTING DIAGRAM - PIER 55
(Cut from
P 2 1/8" x 2'-7 3/4" x 35'-4 5/8")



JOINT OPENING AND GEOMETRY DETAIL PIER 55



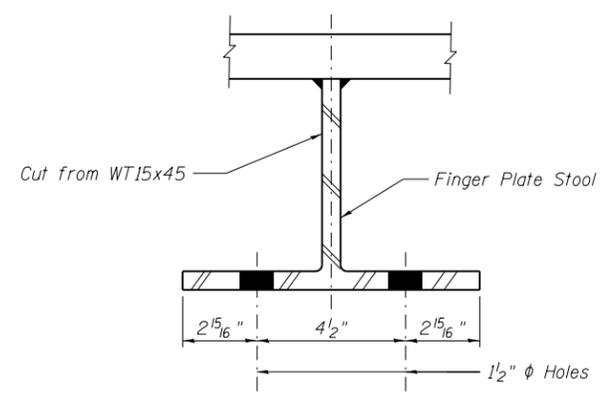
JOINT OPENING DETAIL



STOOL DETAIL 2

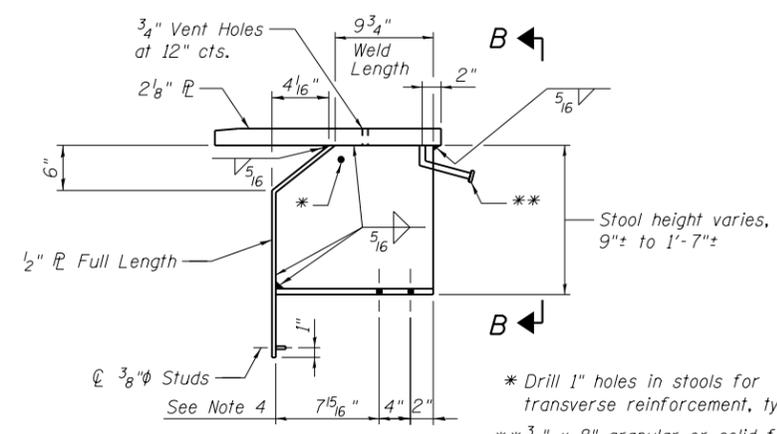
* Drill 1" holes in stools for transverse reinforcement, typ.
** 3/4" x 8" granular or solid flux filled headed studs conforming to Art. 1006.32 of the Standard Specs. typ.

All dimensions shown are measured along a stool placed on top of an existing girder.



VIEW B-B

(Contractor shall field verify stool heights)



STOOL DETAIL 1

* Drill 1" holes in stools for transverse reinforcement, typ.
** 3/4" x 8" granular or solid flux filled headed studs conforming to Art. 1006.32 of the Standard Specs. typ.

All dimensions shown are measured along a stool placed on top of an existing diaphragm.

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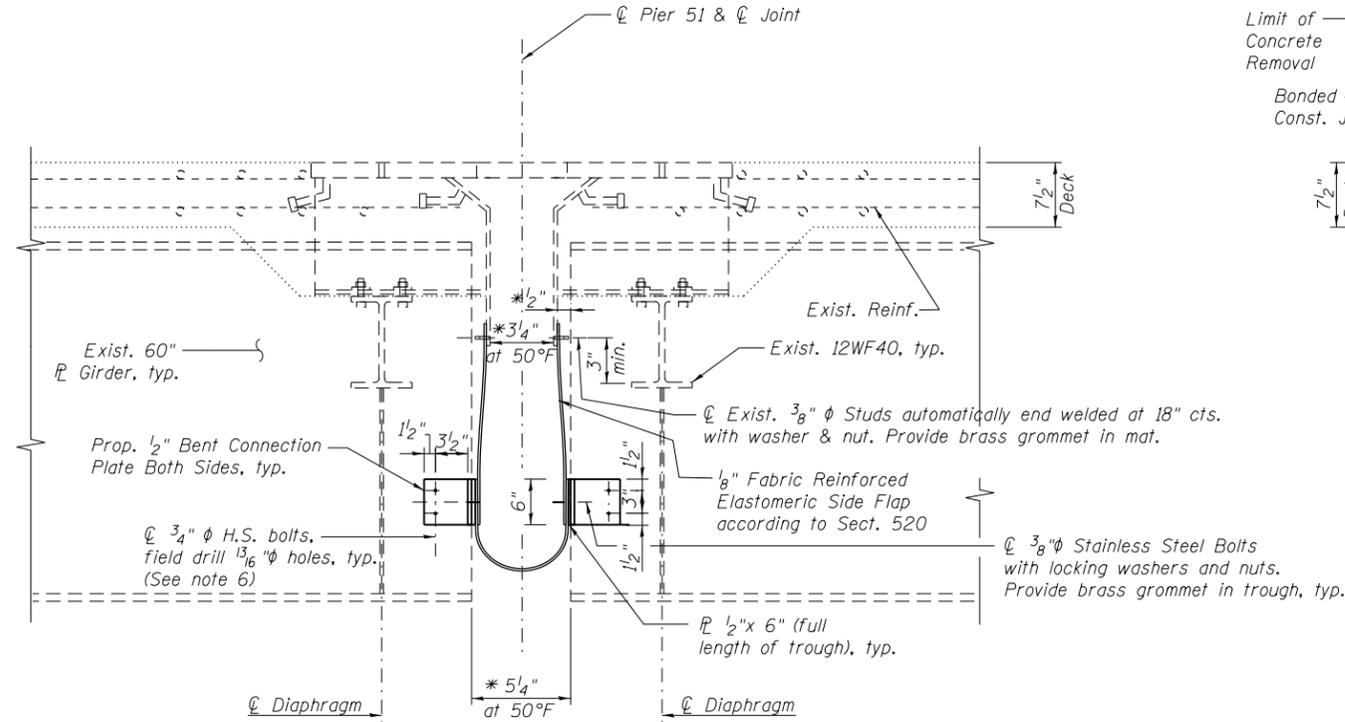
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PIER 55 EXPANSION JOINT PLAN - LOCATION 10
STRUCTURE NO. 016-0987**

SHEET NO. SJ-8 OF SJ-13 SHEETS

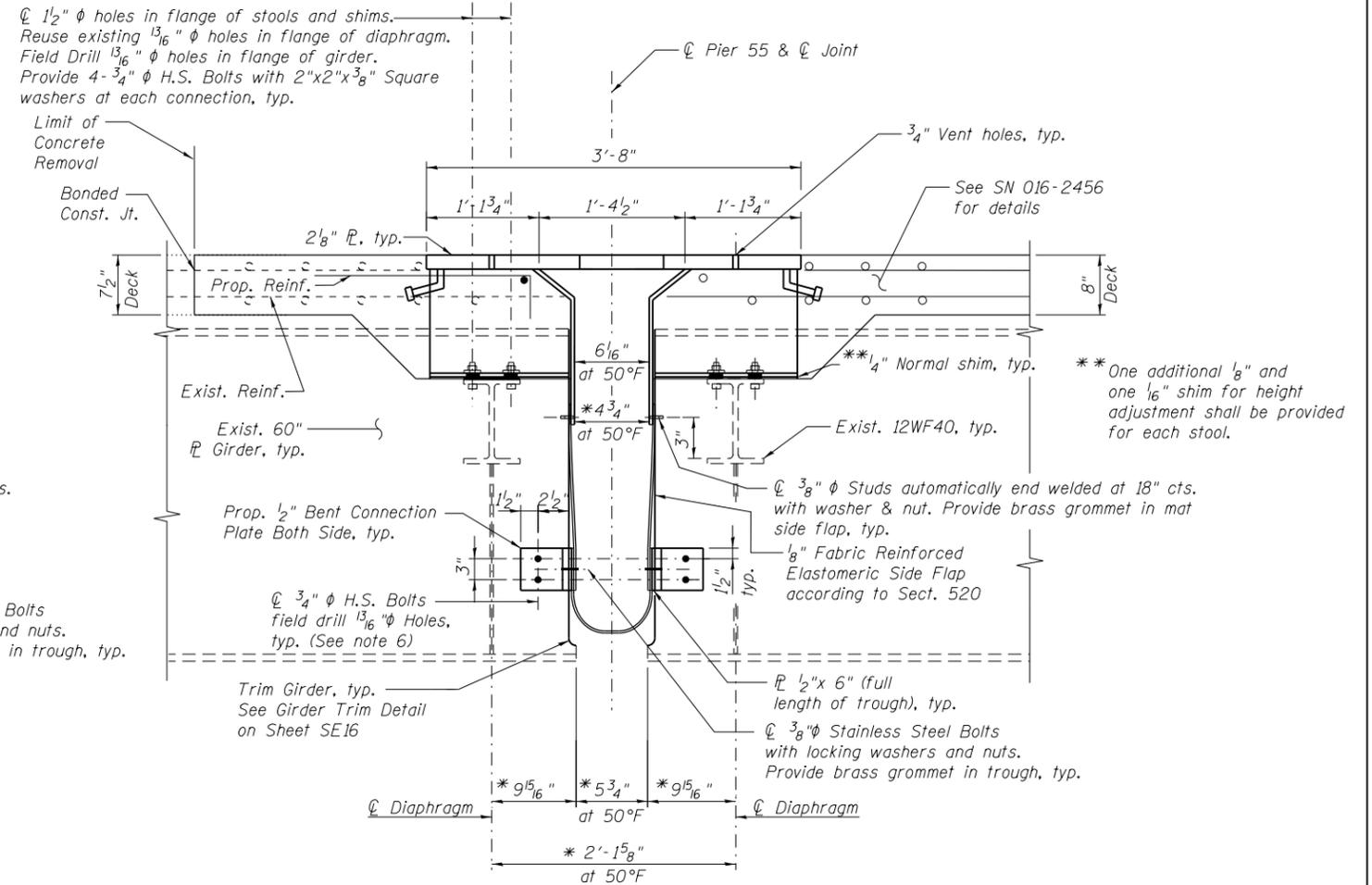
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	181
CONTRACT NO. 60W76				

ILLINOIS FED. AID PROJECT



FABRIC REINFORCED ELASTOMERIC TROUGH DETAIL AT PIER 51

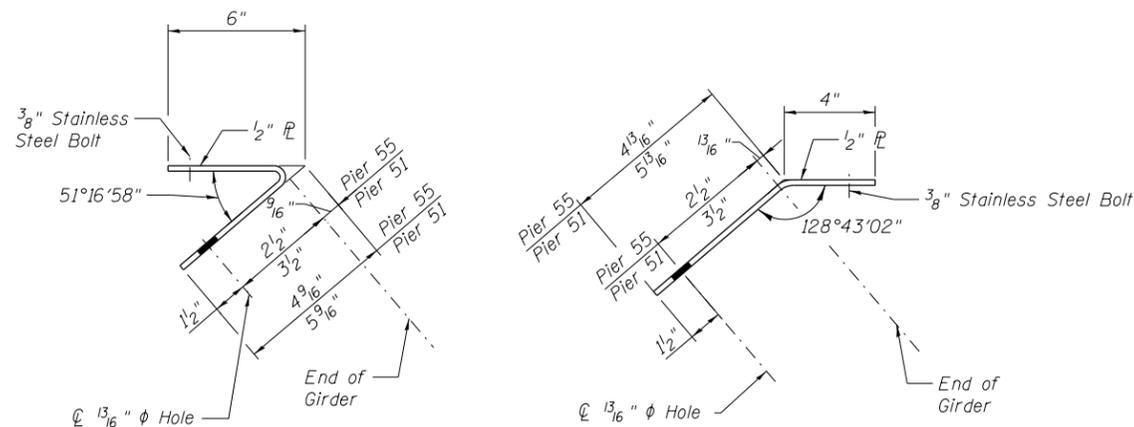
(All dimensions measured along \perp of Girder unless noted otherwise)
 (Trough and all hardware paid for as "Fabric Reinforced Elastomeric Trough")



FINGER PLATE JOINT DETAIL AT PIER 55

(All dimensions measured along \perp of Girder unless noted otherwise)
 (Joint paid for as "Finger Plate Expansion Joint, 4" and "Fabric Reinforced Elastomeric Trough")

* Dimension measured perpendicular to \perp Joint.



BENT CONNECTION PLATE DETAIL

NOTES:

1. All steel for Finger Plate Joint shall conform to AASHTO M270 specification, Gr. 50 (NTR).
2. Design expansion at Pier 55 \pm 2.82"
3. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
4. Finger plate expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.
5. Hole spacing and dimensions for proposed stools on existing cross frames shall be field verified.
6. Existing holes for bent connection plate should be plugged with 3/4" High Strength Bolts. Cost of field drilling and high strength bolts included with Finger Pl. Exp. Jt. 4".
7. Work this sheet with sheets SE8 thru SE11 and SE13.

FILE NAME = #FILES#



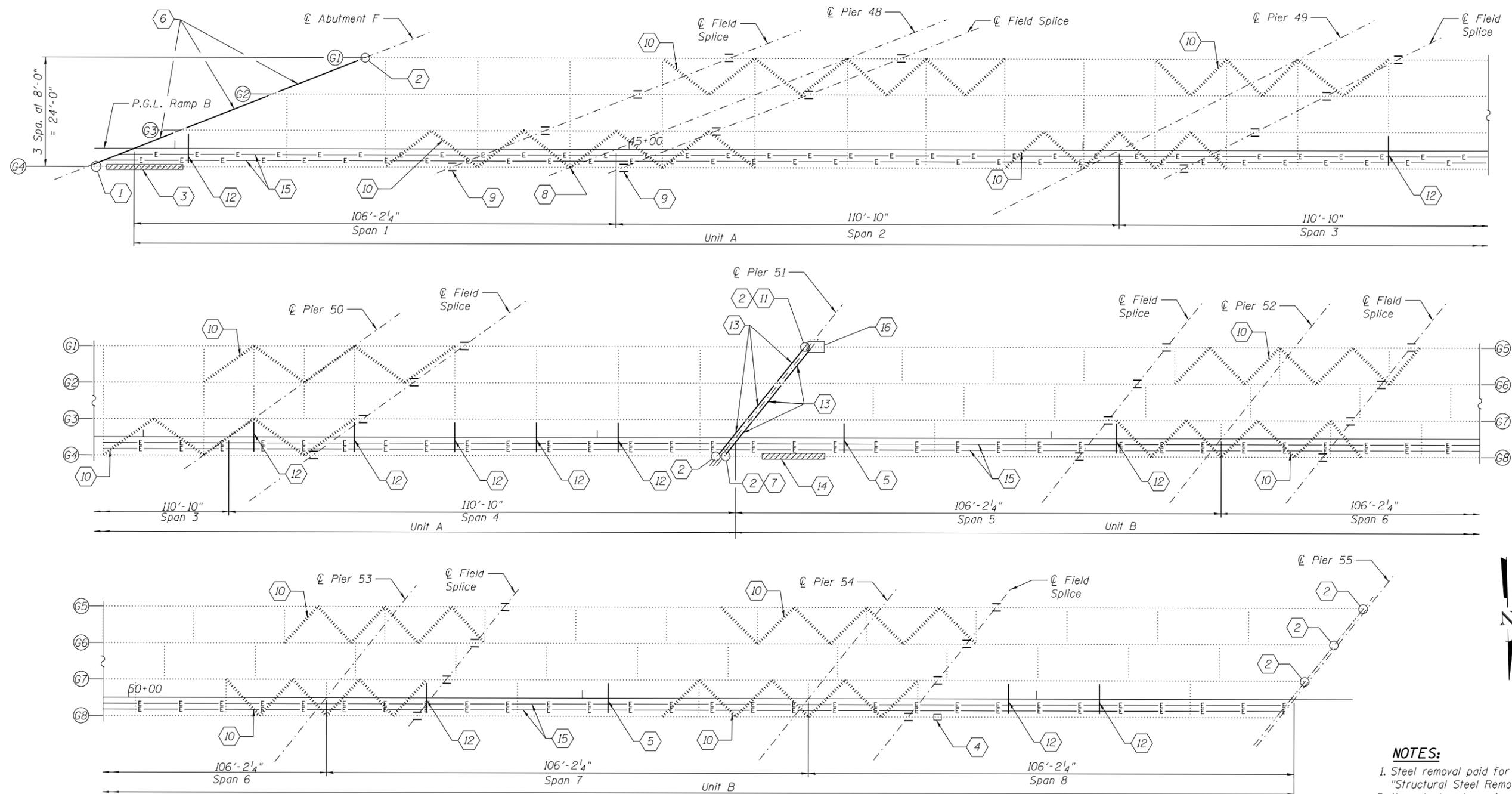
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 51 AND 55 EXPANSION JOINT - LOCATION 10
STRUCTURE NO. 016-0987

SHEET NO. SJ-9 OF SJ-13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	182
				CONTRACT NO. 60W76
ILLINOIS FED. AID PROJECT				



FRAMING PLAN

- ① Girder Web Plating at Stiffener - See Detail 1 on Sheet SE15
- ② Girder Web Plating at Stiffener - See Detail 2 on Sheet SE15
- ③ Web Plating, Full Depth - See Detail 3 on Sheet SE15
- ④ Web Plating, Partial Depth - See Detail 4 on Sheet SE15
- ⑤ Replace Cross Frame in kind - See Sheet SEX6 (For Information Only). Steel paid for as "Furnishing and Erecting Structural Steel".
- ⑥ Remove and replace existing Cross Frame - See Detail 8 on Sheet SE16. Removal of steel paid for as "Structural Steel Removal". See Sheet SEX6 (For Information Only) for existing Cross Frame details. New steel paid for as "Furnishing and Erecting Structural Steel".
- ⑦ Replace Missing Nut at Bearing
- ⑧ Fix loose bearing bolt. The existing 1 1/2" ϕ shoulder bolt was observed to be extending 3/8" from a fully tightened position. If the bolt is checked and determined to be snug tight, then no further action is required. Otherwise, this bolt shall be tightened, and inspected by the Engineer, by the turn-of-the-nut method according to Article 505.04 of the Standard Specifications. Cost included with "Structural Steel Repair". If the Engineer determines the bolt to be damaged, then it will be retrofitted to the satisfaction of the Engineer according to Article 109.04 of the Standard Specifications. The retrofit will replace the existing bolt with a 1 3/4" ϕ A325 Type I, mechanically galvanized bolt. This will involve either tapping a larger diameter hole or drilling a hole for an Engineer approved self-locking coil insert. See Sheet SEX7 (For Information Only).
- ⑨ Replace Flange Splice Plate bolts and nuts in kind. Approximately 56 nuts and bolts required for replacement. Nuts and bolts shall be replaced one at a time. Surface preparation shall be performed according to the Special Provisions. Cost included with "Structural Steel Repair".
- ⑩ Remove all lateral wind braces (78 total). Remove gusset plates and grind flush with remaining elements. See Special Provision for "Structural Steel Removal".
- ⑪ Replace missing bolts at cross-frame connection.
- ⑫ Replace bottom member of Cross Frame - See Detail 10 on Sheet SE16A. Steel paid for as "Furnishing and Erecting Structural Steel".
- ⑬ Replace bottom member of Cross Brace - See Detail 11 on Sheet SE16A. Steel paid for as "Furnishing and Erecting Structural Steel".
- ⑭ Web Plating, Full Depth - See Detail 5 on Sheet SE15
- ⑮ Remove all existing conduit and junction boxes - See Detail 6 on Sheet SE16
- ⑯ Web Plating, Partial Depth - See Detail 7 on Sheet SE16

NOTES:

1. Steel removal paid for as "Structural Steel Removal".
2. New steel and repairs are paid for as "Structural Steel Repair" unless noted otherwise.

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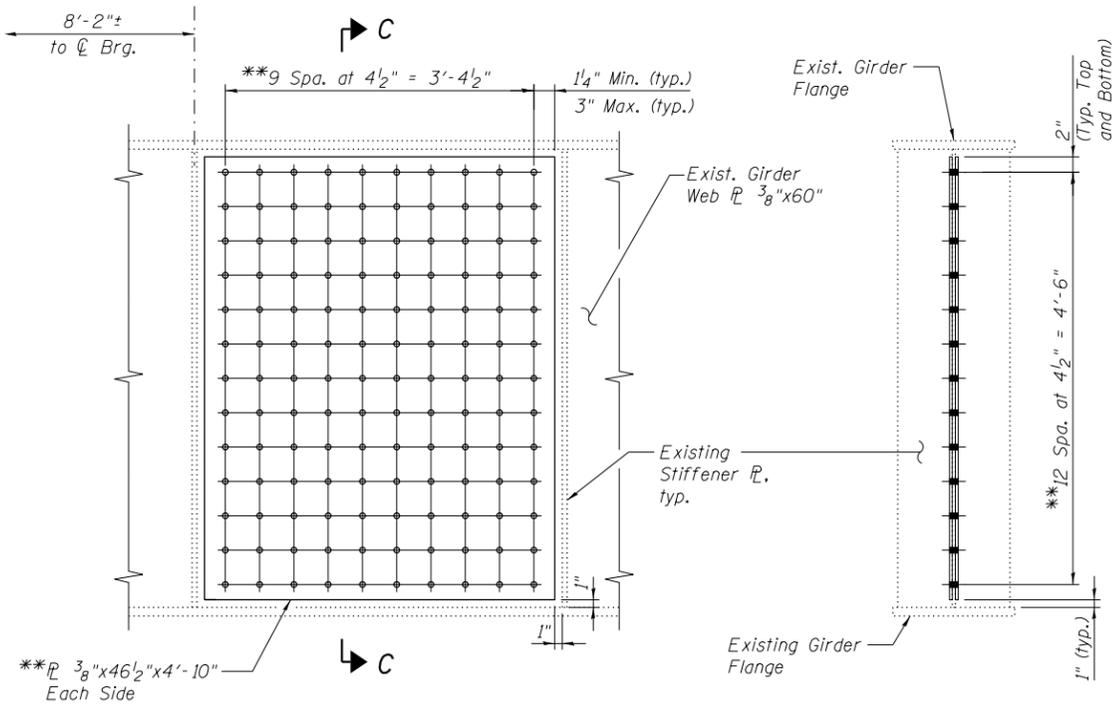
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**REHAB. FRAMING PLAN - LOCATION 10
STRUCTURE NO. 016-0987**

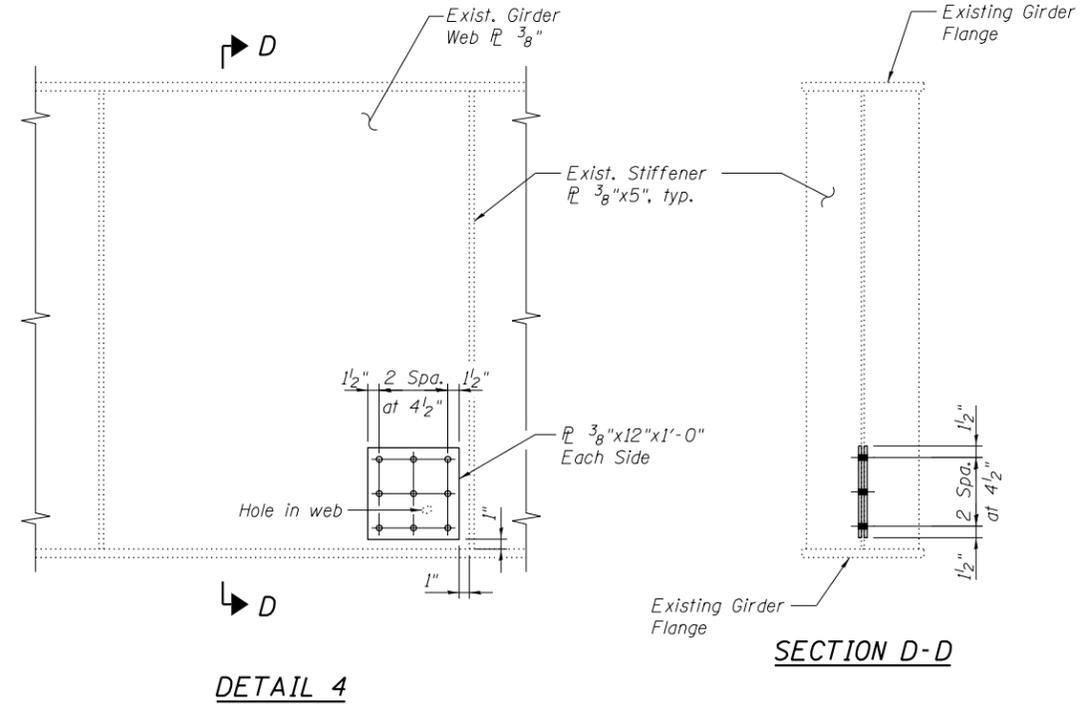
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	183
CONTRACT NO. 60W76				
ILLINOIS FED. AID PROJECT				



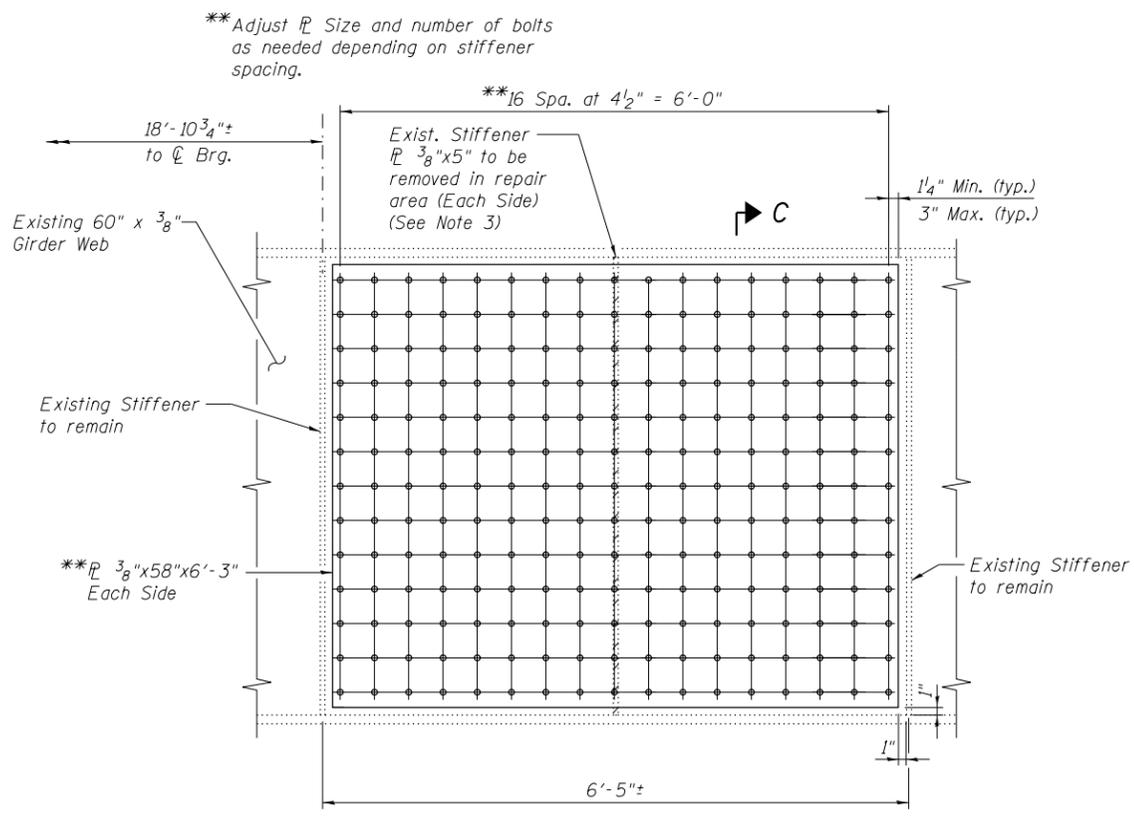
DETAIL 3

SECTION C-C

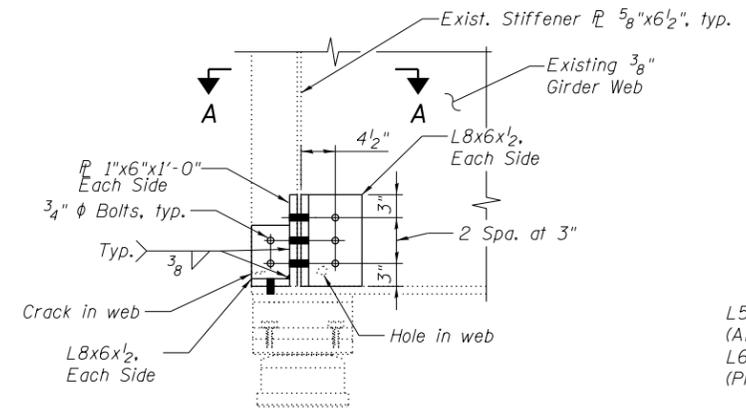


DETAIL 4

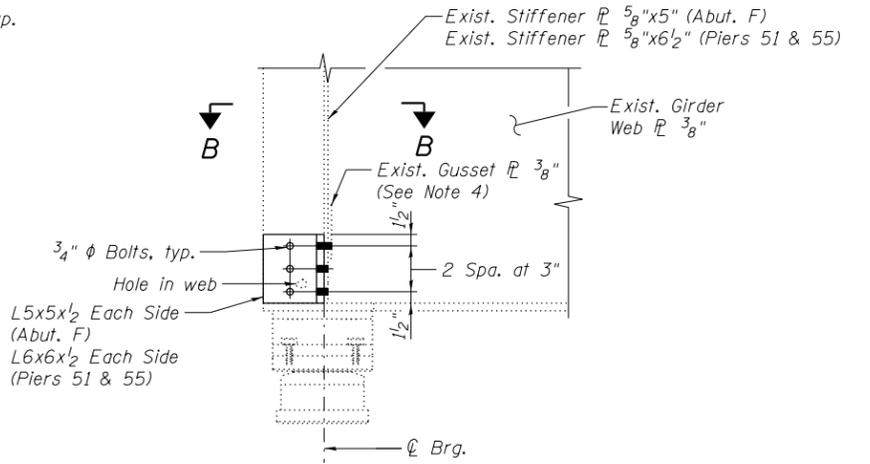
SECTION D-D



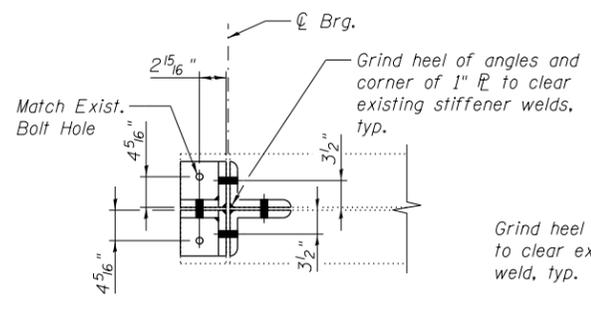
DETAIL 5



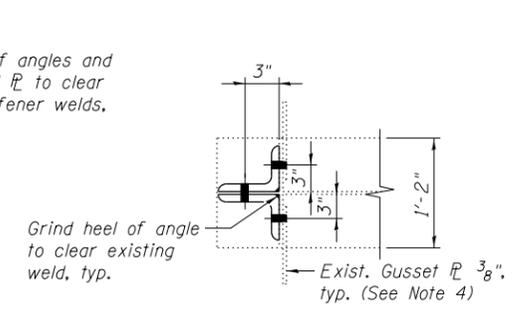
DETAIL 1
(See Note 4)



DETAIL 2
(See Note 4)



SECTION A-A
(See Note 4)



SECTION B-B
(See Note 4)

FILE NAME = #FILES#



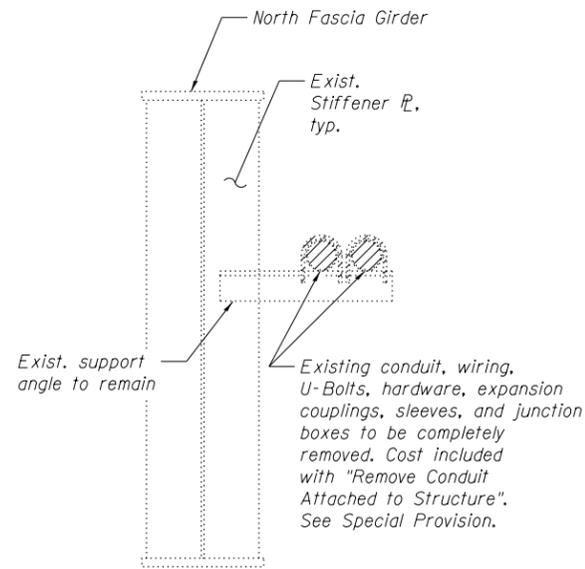
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STEEL REPAIR DETAILS - LOCATION 10
STRUCTURE NO. 016-0987**

SHEET NO. SJ-11 OF SJ-13 SHEETS

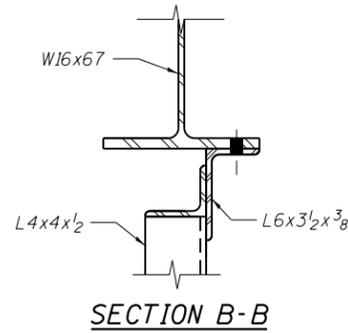
F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 184
CONTRACT NO. 60W76			ILLINOIS FED. AID PROJECT	



DETAIL 6

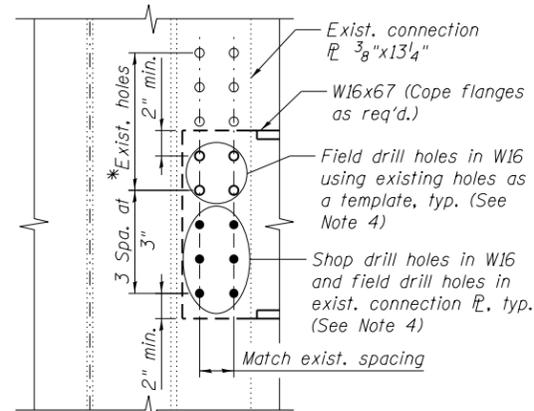
NOTES (DETAILS 8-9):

- Fasteners shall be $\frac{3}{4}$ " ϕ ASTM A325 Type 1, mechanically galvanized bolts in $\frac{13}{16}$ " ϕ holes. Except as noted, holes in new steel shall be field drilled using holes in existing steel as a template. Provide two hardened washers required for each set of oversized holes. Cost of field drilling is included with "Furnishing and Erecting Structural Steel".
- Steel removal paid for as "Structural Steel Removal". New steel paid for as "Furnishing and Erecting Structural Steel".
- The Contractor shall verify existing dimensions and locations of the connection plates and dimensions and locations of the bolt spacing and member sizes prior to construction or ordering of materials. Cost included with "Furnishing and Erecting Structural Steel".

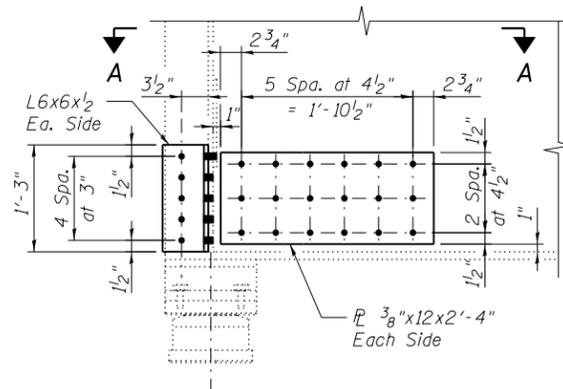


SECTION B-B

*Plug top six existing holes with $\frac{3}{4}$ " ϕ ASTM A325 Type 1, mechanically galvanized bolts, typ. Provide two hardened washers required for each set of oversized holes. Cost included with "Furnishing and Erecting Structural Steel".

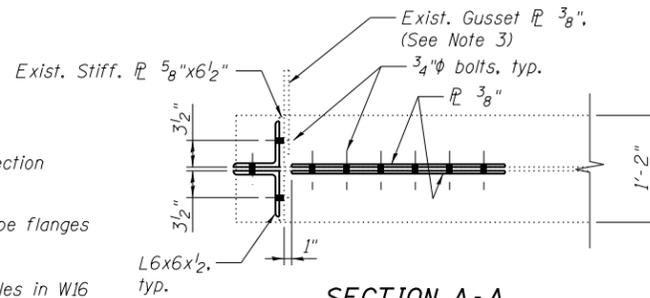


DETAIL 9



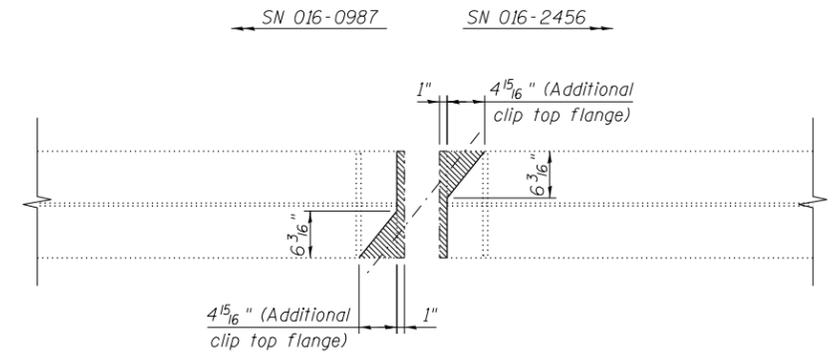
DETAIL 7

(See Note 3)



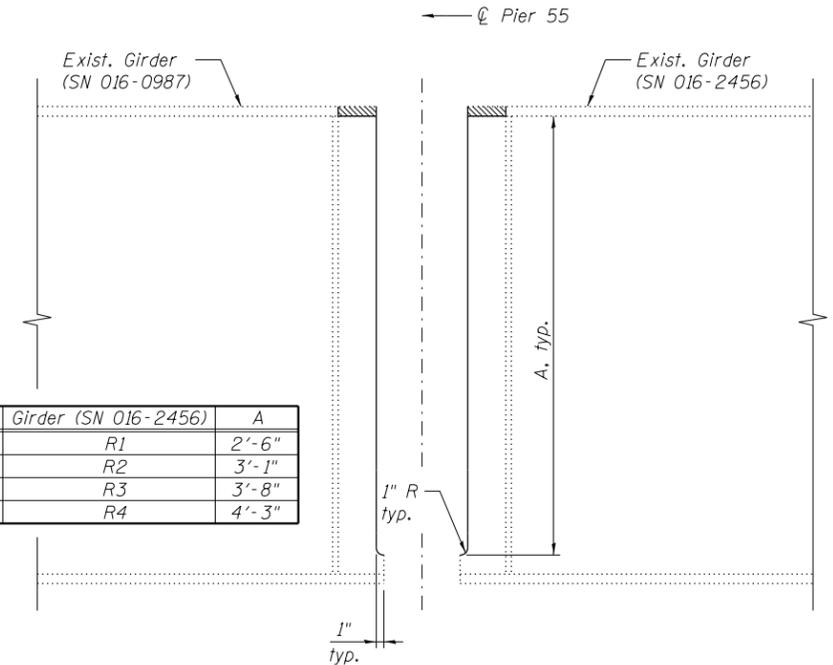
SECTION A-A

(See Note 3)



GIRDER TRIM PLAN - PIER 55

(Top flange only)

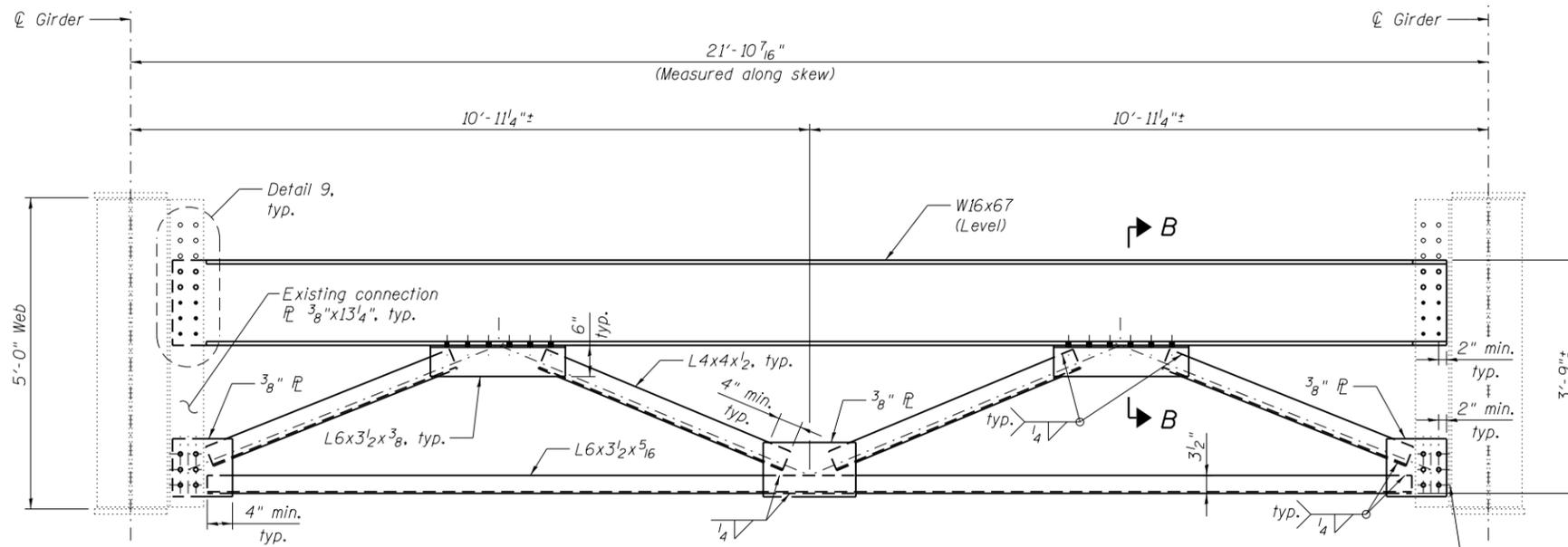


GIRDER TRIM DETAIL - PIER 55

(Cost included with "Structural Steel Removal")

NOTES (DETAILS 6-7 & GIRDER TRIM DETAIL):

- All steel repairs shown on this sheet shall be paid for as "Structural Steel Repair".
- Fasteners shall be high strength bolts. Bolts $\frac{3}{4}$ " ϕ , holes $\frac{13}{16}$ " ϕ , unless otherwise noted. New holes in existing members are to be field drilled using holes in new members as a template, unless otherwise noted. Cost included with "Structural Steel Repair".
- The Contractor shall verify existing dimensions and locations of the gusset plates and dimensions and locations of existing hole sizes and make any necessary adjustments to the bolt spacing and angle sizes prior to construction or ordering of materials. Holes in angle legs that are reusing existing holes shall be field drilled. Cost included with "Structural Steel Repair".



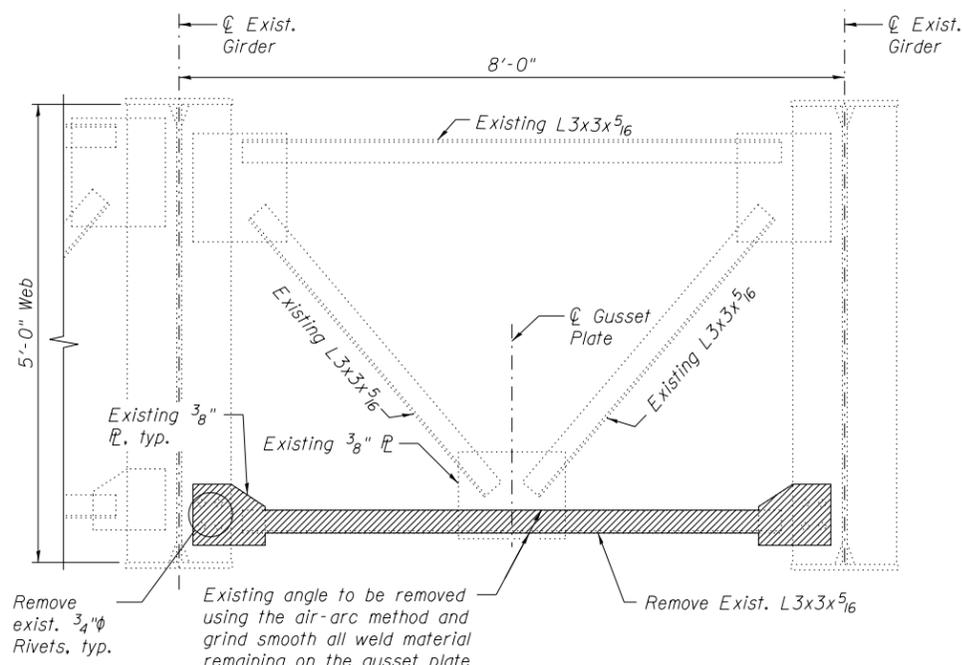
DETAIL 8

(Looking South)

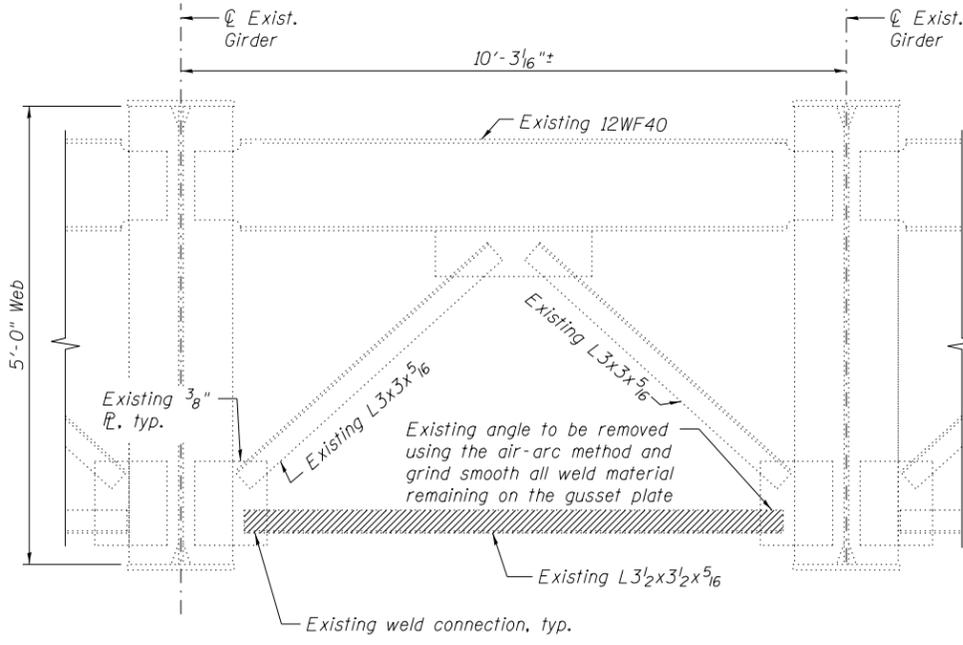
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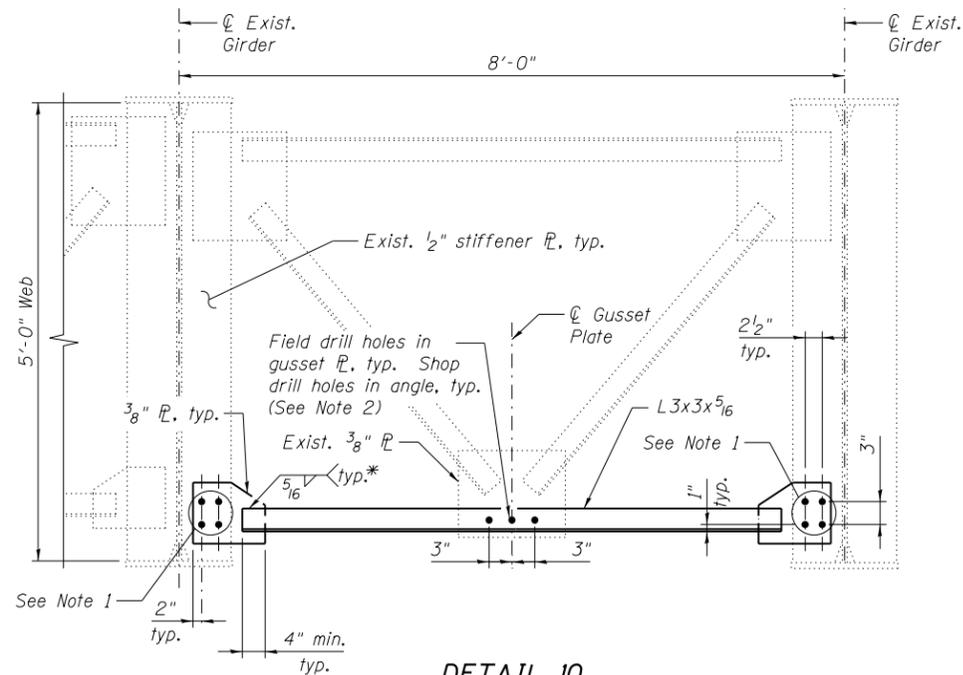
F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 185
CONTRACT NO. 60W76				
ILLINOIS FED. AID PROJECT				



EXISTING DETAIL 10
(No. Req'd = 11)

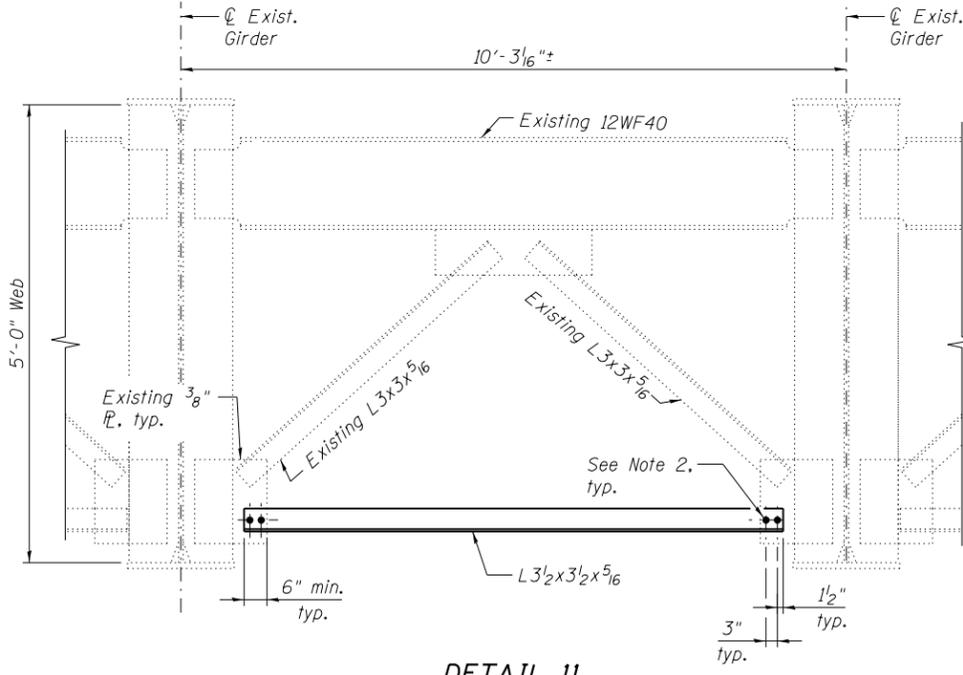


EXISTING DETAIL 11
(No. Req'd = 6)



DETAIL 10
(No. Req'd = 11)

* Fillet weld angles along 3 sides on one face of gusset plate.



DETAIL 11
(No. Req'd = 6)

NOTES:

- Fasteners shall be 3/4" φ ASTM A325 Type 1, mechanically galvanized bolts in 15/16" φ holes. Holes in new steel shall be field drilled using holes in existing steel as a template. Provide two hardened washers required for each set of oversized holes. Cost of field drilling is included with "Furnishing and Erecting Structural Steel".
- Fasteners shall be 3/4" φ ASTM A325 Type 1, mechanically galvanized bolts in 13/16" φ holes in existing and new steel. Field drill holes in existing steel using new steel as a template. Cost of field drilling is included with "Furnishing and Erecting Structural Steel".
- Steel removal paid for as "Structural Steel Removal". New steel paid for as "Furnishing and Erecting Structural Steel".
- The Contractor shall verify existing dimensions and locations of the connection plates and dimensions and locations of existing hole sizes and make any necessary adjustments to the bolt spacing and member sizes prior to construction or ordering of materials. Cost included with "Furnishing and Erecting Structural Steel".

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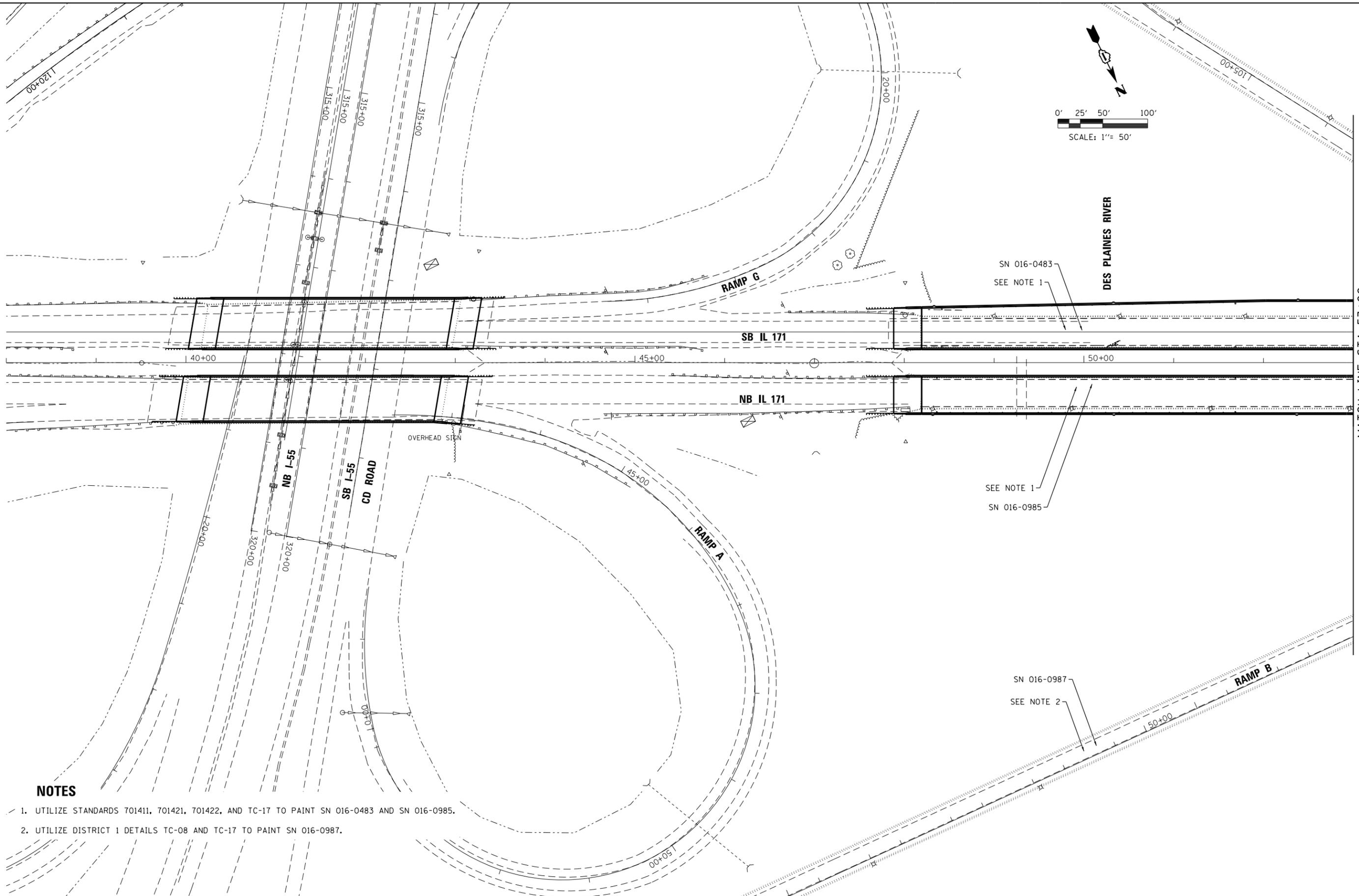
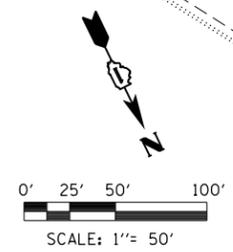
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STEEL REPAIR DETAILS - LOCATION 10
STRUCTURE NO. 016-0987**

SHEET NO. SJ-13 OF SJ-13 SHEETS

F.A.P. RTE. 372	SECTION 2013-039BP	COUNTY COOK	TOTAL SHEETS 209	SHEET NO. 186
				CONTRACT NO. 60W76

ILLINOIS FED. AID PROJECT



MATCH LINE STA 53+00

NOTES

1. UTILIZE STANDARDS 701411, 701421, 701422, AND TC-17 TO PAINT SN 016-0483 AND SN 016-0985.
2. UTILIZE DISTRICT 1 DETAILS TC-08 AND TC-17 TO PAINT SN 016-0987.



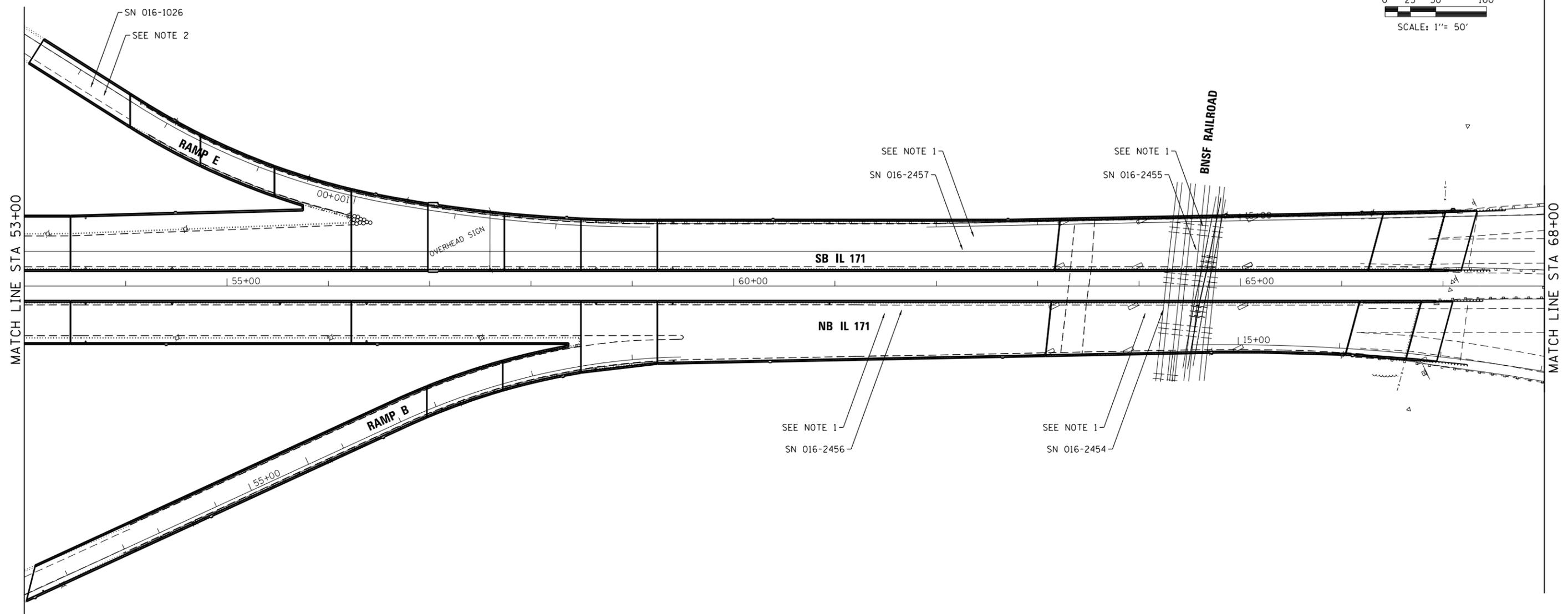
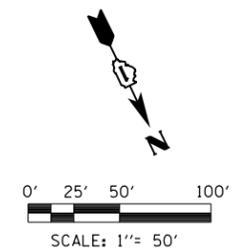
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DATE - 03/2017	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

OVERALL MAINTENANCE OF TRAFFIC

SCALE: SHEET NO. 1 OF 3 SHEETS STA. 38+00 TO STA. 53+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
IL 171	(1) BR & I	COOK	209	187
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO. 60W76	



NOTES

1. UTILIZE STANDARDS 701411, 701421, 701422, AND TC-17 TO PAINT SN 016-2454, SN 016-2455, SN 016-2456, AND SN SN 016-2457.
2. UTILIZE DISTRICT 1 DETAILS TC-08 AND TC-17 TO PAINT SN 016-1026.



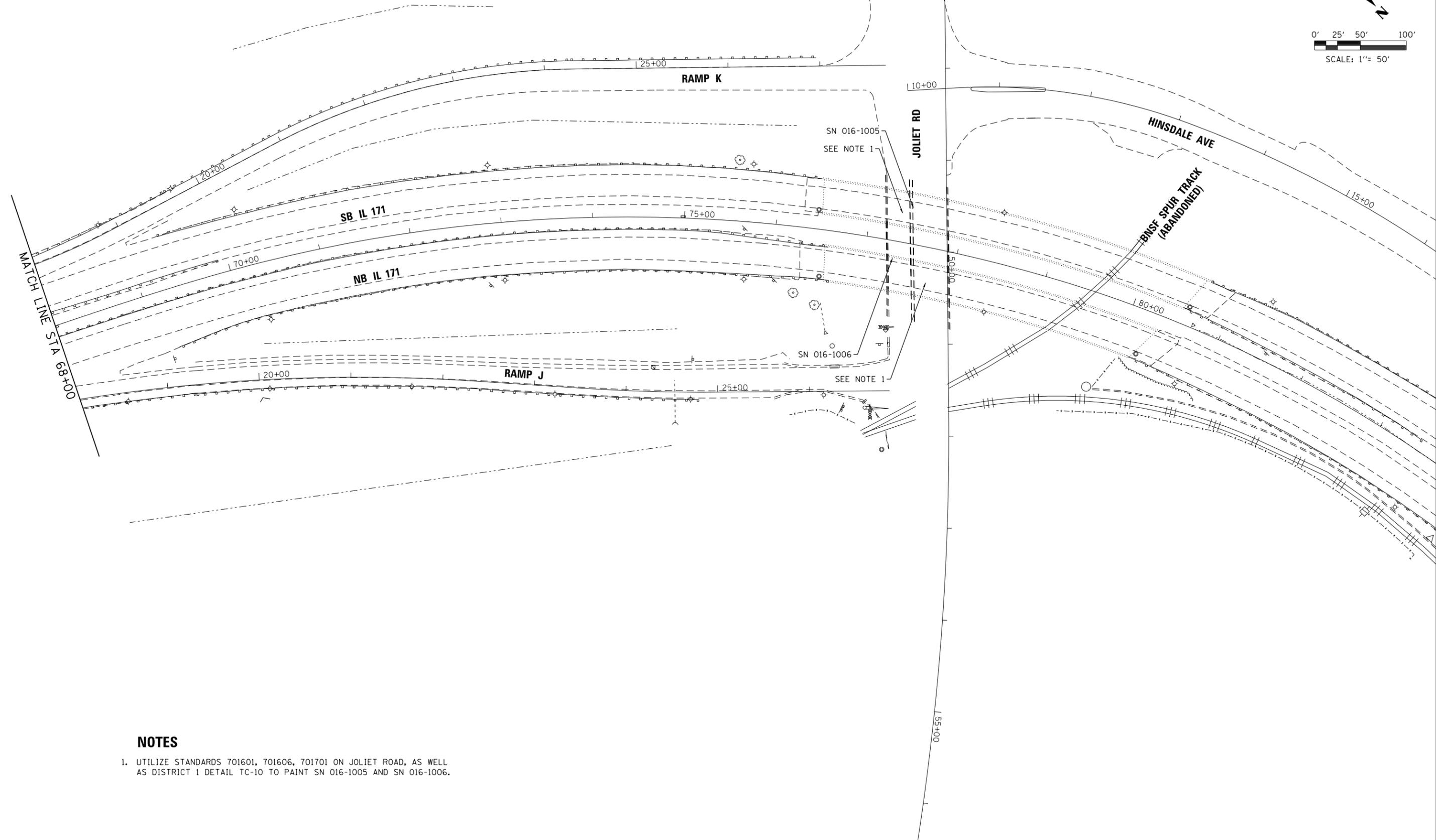
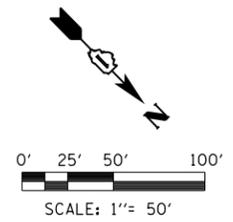
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CHECKED - ST	REVISED -
DATE - 03/2017	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

OVERALL MAINTENANCE OF TRAFFIC

SCALE: SHEET NO. 2 OF 3 SHEETS STA. 53+00 TO STA. 68+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
IL 171	(1) BR & I	COOK	209	188
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO. 60W76	



NOTES

1. UTILIZE STANDARDS 701601, 701606, 701701 ON JOLIET ROAD, AS WELL AS DISTRICT 1 DETAIL TC-10 TO PAINT SN 016-1005 AND SN 016-1006.



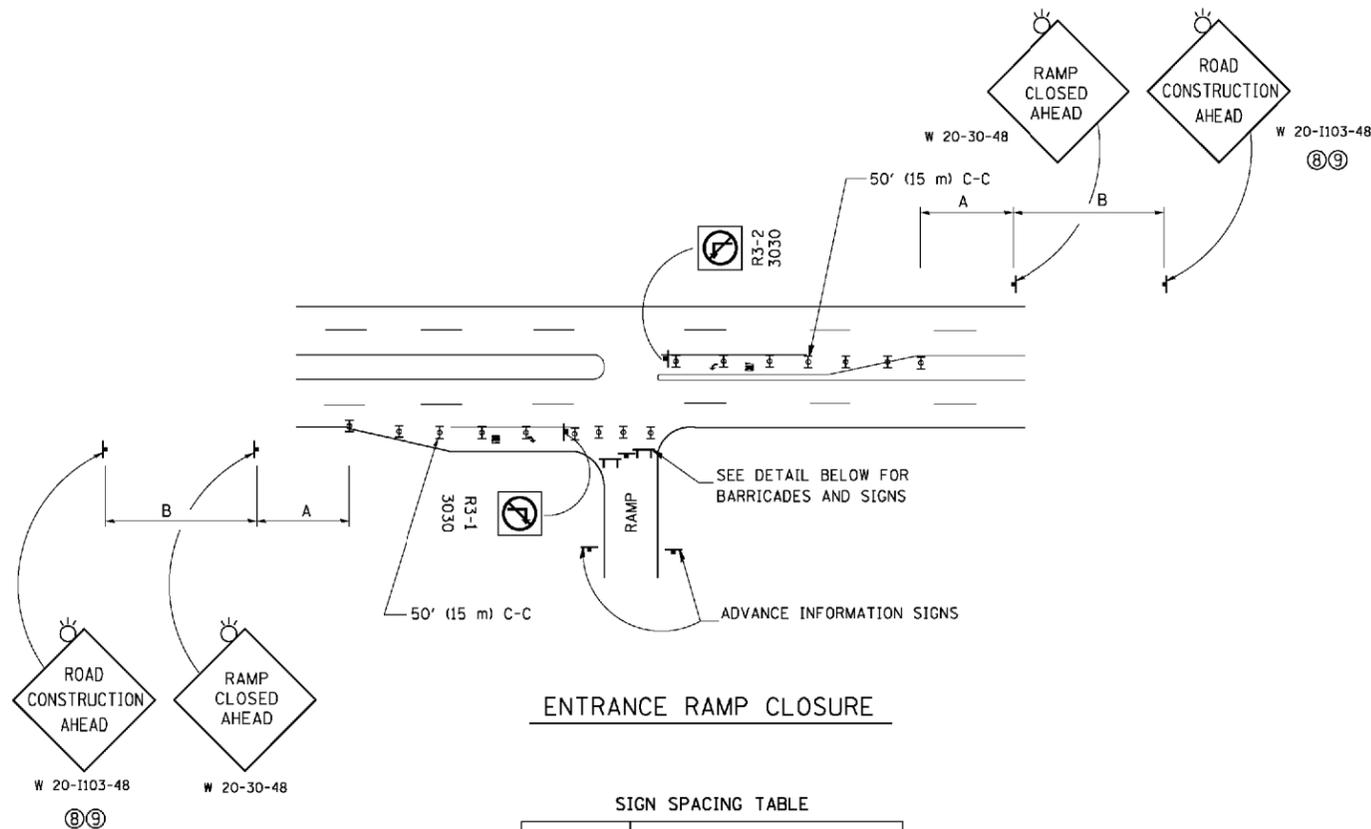
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DATE - 03/2017	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

OVERALL MAINTENANCE OF TRAFFIC

SCALE: SHEET NO. 3 OF 3 SHEETS STA. 68+00 TO STA. 83+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
IL 171	(1) BR & I	COOK	209	189
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO. 60W76	

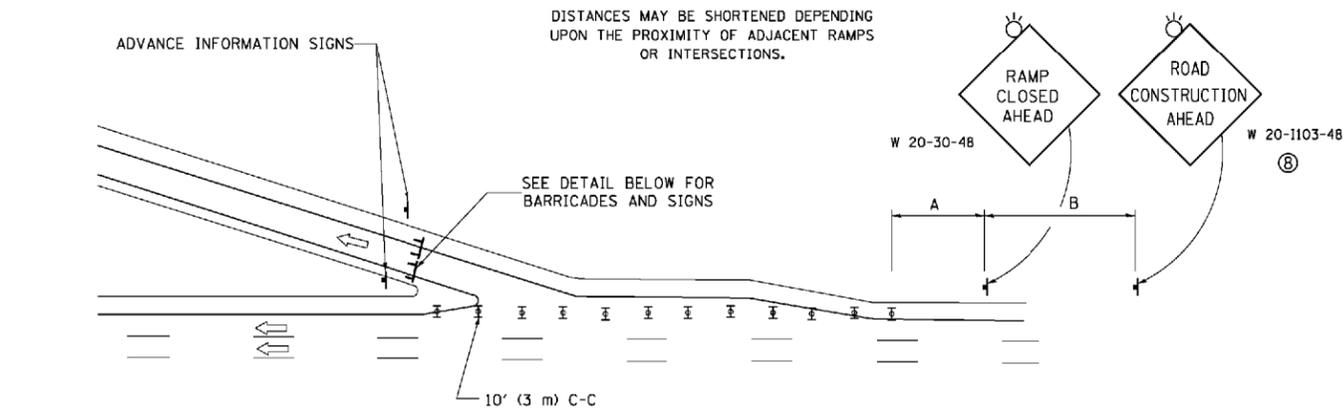


ENTRANCE RAMP CLOSURE

SIGN SPACING TABLE

FACILITY	DISTANCE BETWEEN SIGNS	
	A	B
EXPRESSWAY >24 HOURS	1000' (300 m)	1500' (450 m)
EXPRESSWAY <24 HOURS	500' (150 m)	500' (150 m)
ARTERIAL 55 MPH	500' (150 m)	500' (150 m)
ARTERIAL 50-45 MPH	350' (100 m)	350' (100 m)
ARTERIAL <45 MPH	200' (60 m)	200' (60 m)

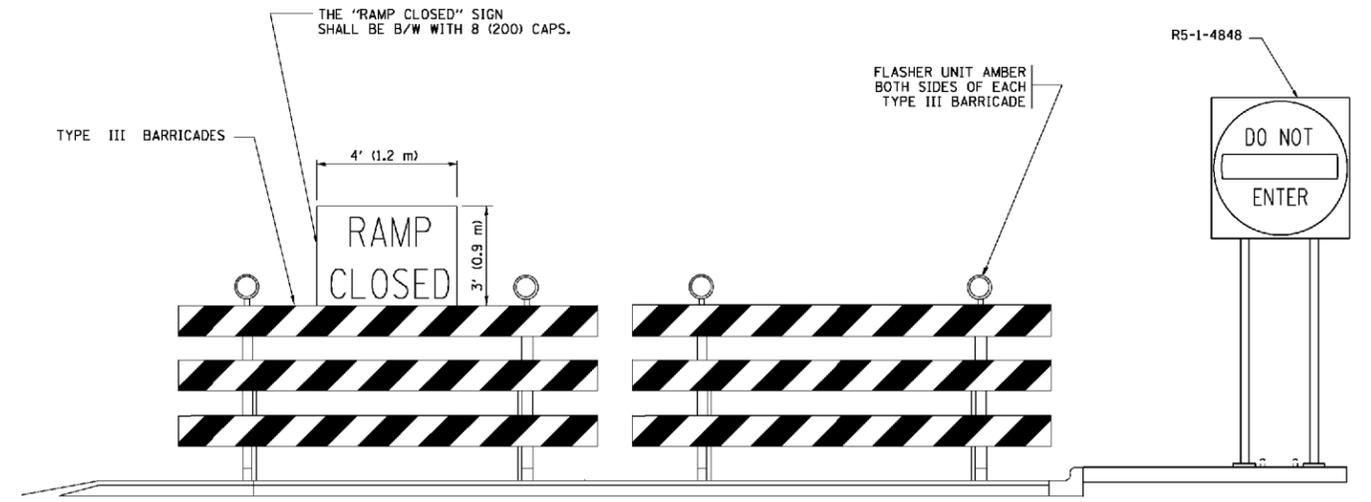
DISTANCES MAY BE SHORTENED DEPENDING UPON THE PROXIMITY OF ADJACENT RAMPS OR INTERSECTIONS.



EXIT RAMP CLOSURE

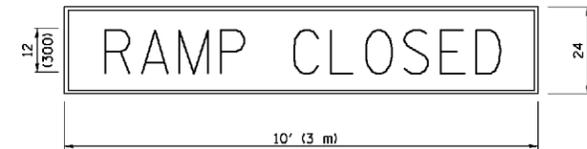
SYMBOLS

- ⊥ TYPE II BARRICADE OR DRUM WITH STEADY BURN MONO-DIRECTIONAL LIGHT
- ⊥ TYPE III BARRICADE WITH 2 FLASHING LIGHTS



DETAIL FOR REQUIRED BARRICADES & SIGNS

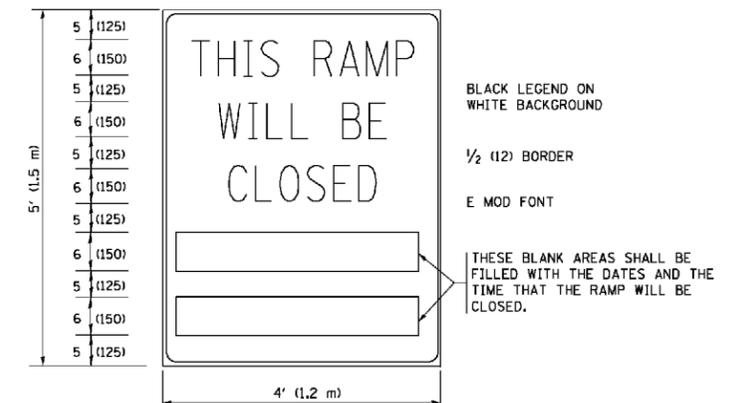
RAMP CLOSURE ADVANCE WARNING SIGN



BLACK LEGEND ON ORANGE BACKGROUND MOUNTED DIAGONALLY E MOD FONT 1 (25) BORDER

THESE SIGNS ARE REQUIRED ON ALL THE EXIT GUIDE SIGNS FOR EXIT RAMPS THAT WILL BE CLOSED FOR MORE THAN FOUR (4) CONSECUTIVE DAYS.

RAMP CLOSURE ADVANCE INFORMATION SIGN



THESE SIGNS ARE REQUIRED ON BOTH SIDES OF THE RAMP, MINIMUM OF 1 WEEK IN ADVANCE OF THE CLOSURE.

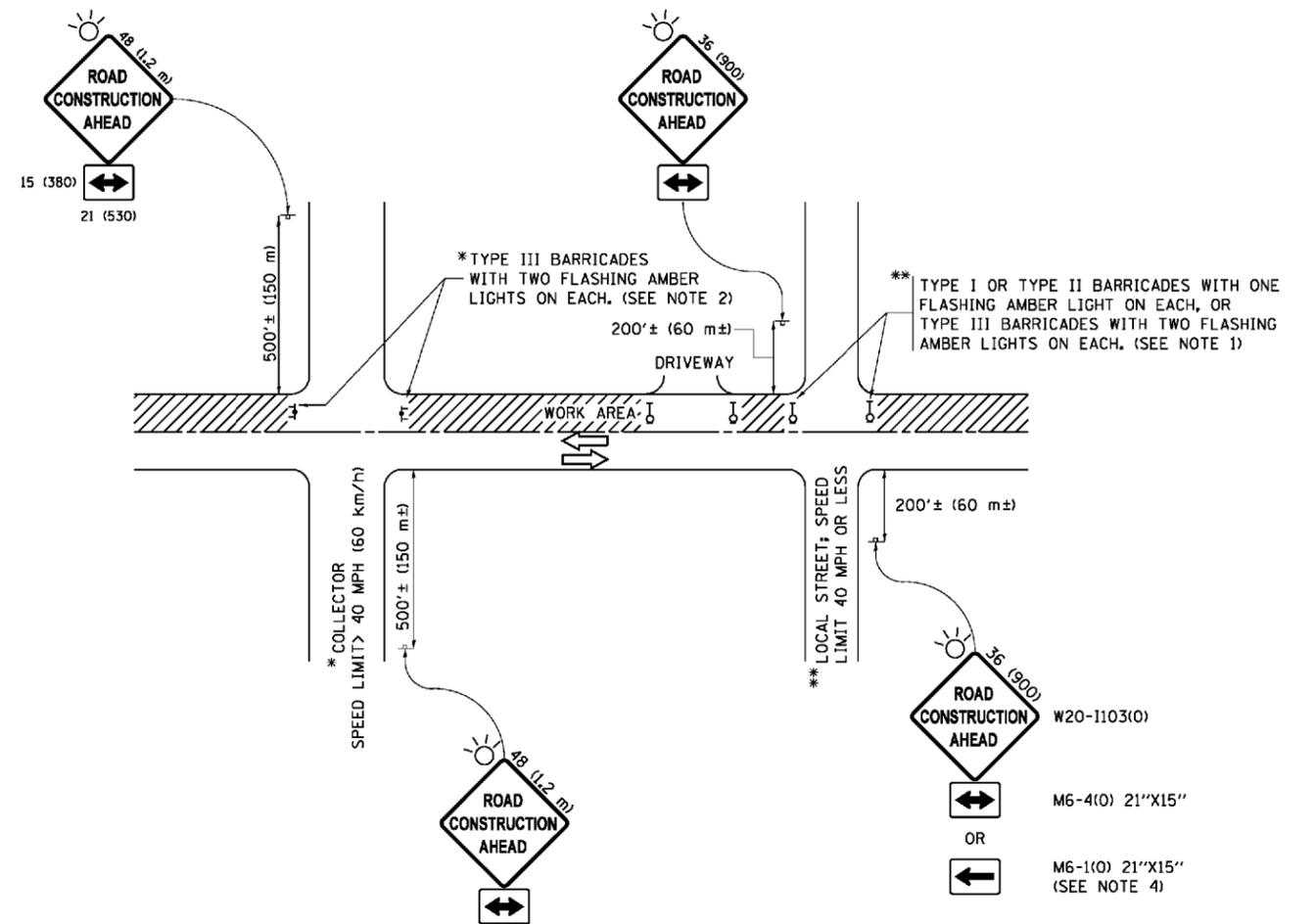
THESE SIGNS SHALL BE FABRICATED AND PAID FOR ACCORDING TO THE TEMPORARY INFORMATION SIGNING SPECIAL PROVISION

GENERAL NOTES:

- ① CONES MAY BE SUBSTITUTED FOR DRUMS OR TYPE II BARRICADES DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (700) HIGH.
- ② STEADY BURN LIGHTS WILL NOT BE REQUIRED FOR DAY OPERATIONS.
- ③ A FLAGGER SHALL BE POSITIONED AT EACH CLOSED RAMP THAT IS OPEN TO CONSTRUCTION VEHICLES, PRECEDED BY A W20-7 FLAGGER WARNING SIGN.
- ④ ALL ROUTE MARKERS AND TRAILBLAZER ASSEMBLIES WHICH DIRECT MOTORISTS TO A CLOSED ENTRANCE RAMP SHALL BE COVERED WHEN THE RAMP IS CLOSED FOR MORE THAN FOUR (4) DAYS.
- ⑤ THE SIGNING AND BARRICADING WHICH IS REQUIRED BY THIS DETAIL SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS).
- ⑥ AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL RAMP CLOSURES.
- ⑦ THE RAMP CLOSURE ADVANCE INFORMATION SIGNS SHALL BE ERECTED IF THE CLOSURE TIME EXCEEDS TWENTY-FOUR (24) HOURS. ADDITIONAL ADVANCE WARNING SIGNS ON EXIT GUIDE SIGNING WILL BE REQUIRED FOR EXIT RAMP CLOSURES THAT EXCEED FOUR (4) DAYS IN LENGTH.
- ⑧ ROAD CONSTRUCTION AHEAD SIGNS MAY BE OMITTED WHEN THIS DETAIL IS USED IN CONJUNCTION WITH OTHER TRAFFIC CONTROL THAT ALREADY INCLUDES A ROAD CONSTRUCTION AHEAD SIGN.
- ⑨ ARTERIAL ROAD CONSTRUCTION AHEAD SIGNS SHALL BE INSTALLED ON THE LEFT SIDE OF TRAFFIC IF THE MEDIAN IS MORE THAN 10 FT WIDE.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

DESIGNED - DWS DRAWN - CHECKED - DATE - 02-83	REVISED - JAF 02-06 REVISED - SPB 01-07 REVISED - SPB 12-09 REVISED - MD 06-13	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		ENTRANCE AND EXIT RAMP CLOSURE DETAILS		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
						372	2013-039BP	COOK	209	190	
PLOT SCALE = 100.0000' / 1"						TC-08		CONTRACT NO. 60W76			
PLOT DATE = 3/22/2017						SCALE: NONE		SHEET NO. 1 OF 1 SHEETS		STA. TO STA.	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT											



NOTES:

1. SIDE ROAD WITH A SPEED LIMIT OF 40 MPH (60 km/h) OR LESS AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) ONE "ROAD CONSTRUCTION AHEAD" SIGN 36 x 36 (900x900) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 200' (60 m) IN ADVANCE OF THE MAIN ROUTE.
 - b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE I, TYPE II OR TYPE III BARRICADES, 1/3 OF THE CROSS SECTION OF THE CLOSED PORTION.
2. SIDE ROAD WITH A SPEED LIMIT GREATER THAN 40 MPH (60 km/h) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) ONE "ROAD CONSTRUCTION AHEAD" SIGN 48 x 48 (1.2 m x 1.2 m) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 500' (150 m) IN ADVANCE OF THE MAIN ROUTE.
 - b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE III BARRICADES, 1/2 OF THE CROSS SECTION OF THE CLOSED PORTION.
3. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS AT HALF THE SPACING DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (710) IN HEIGHT.
4. WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).
5. WHEN WORK IS BEING PERFORMED ON A SIDE ROAD OR DRIVEWAY, FOLLOW THE APPLICABLE STANDARD(S). THE DIRECTIONAL ARROW (M6-1 OR M6-4) SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE TRAFFIC CONTROL SET-UP.
6. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAYS UNLESS OTHERWISE SPECIFIED IN THE PLANS OR BY THE ENGINEER.
7. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCLUDED IN THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

All dimensions are in inches (millimeters) unless otherwise shown.

USER NAME = Lin	DESIGNED - LHA	REVISED - A. HOUSEH 10-15-96
	DRAWN -	REVISED - T. RAMMACHER 01-06-00
PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED - A. SCHUETZE 07-01-13
PLOT DATE = 3/22/2017	DATE - 06-89	REVISED - A. SCHUETZE 09-15-16

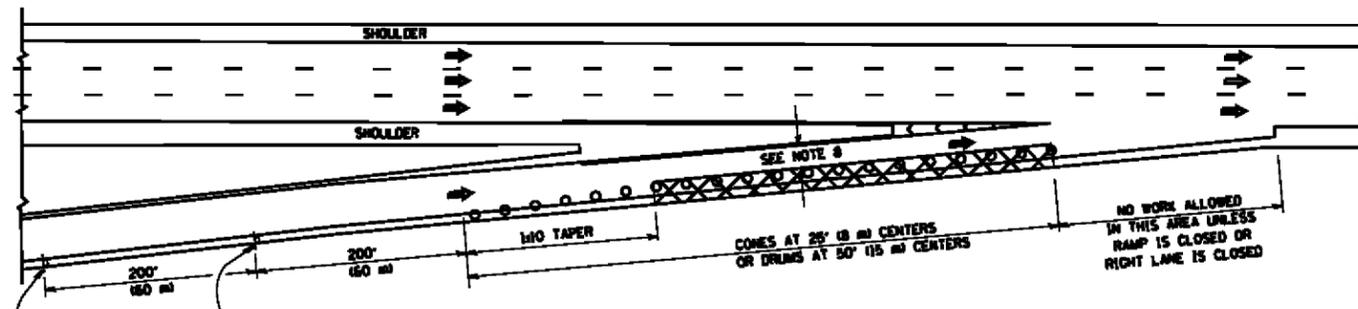
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS			
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.

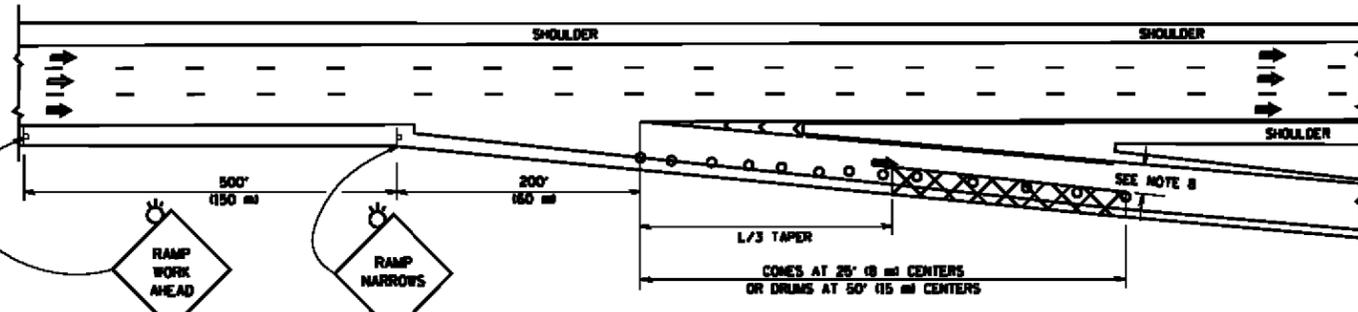
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	191
TC-10			CONTRACT NO. 60W76	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

PARTIAL RAMP CLOSURE DETAILS

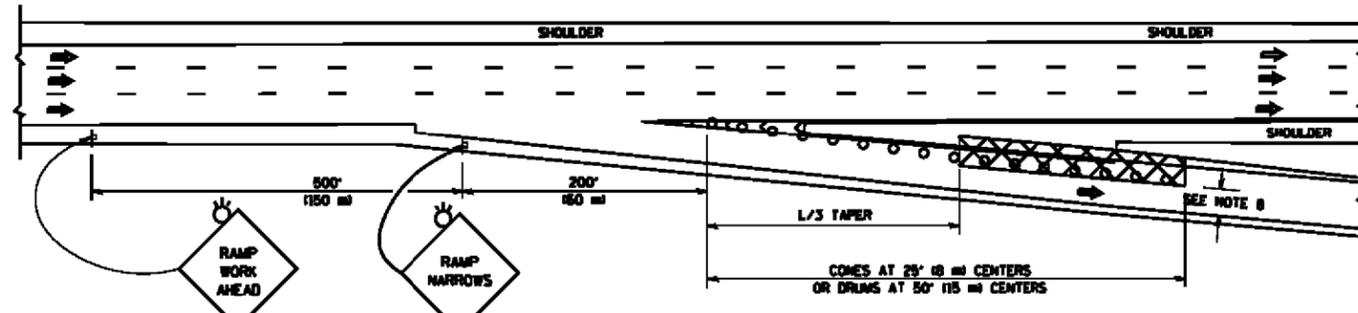
SHOULDER CLOSURE DETAILS



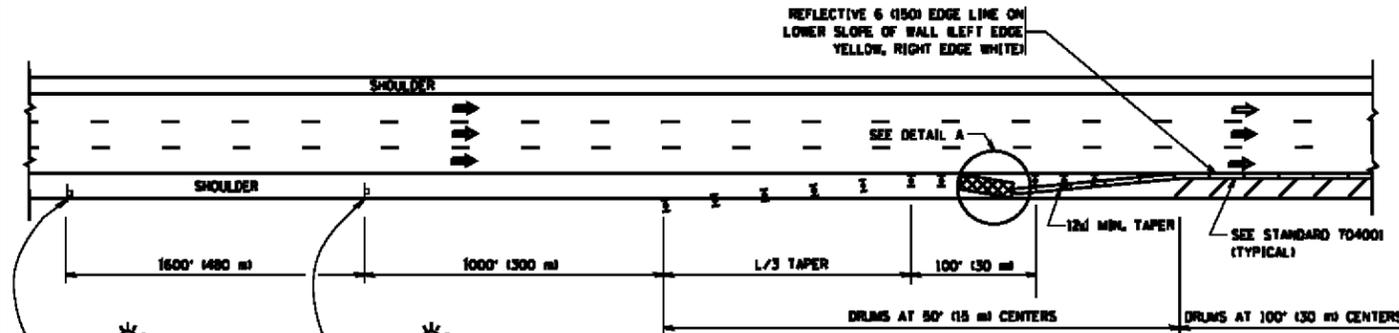
TYPICAL ENTRANCE RAMP



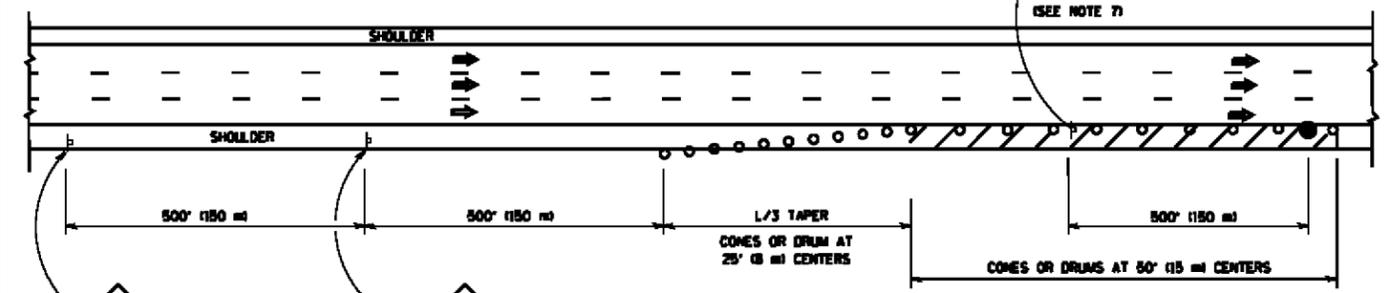
TYPICAL EXIT RAMP



TYPICAL EXIT RAMP



PERMANENT SHOULDER CLOSURE



DAYTIME SHOULDER CLOSURE

SYMBOLS

- ACTIVE WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- FLAGGER WITH CONTROL SIGN
- TYPE II BARRICADE OR DRUM WITH STEADY BURN MONO-DIRECTIONAL LIGHT
- CONE, DRUM OR BARRICADE
- IMPACT ATTENUATOR OF TYPE AND TEST LEVEL SPECIFIED

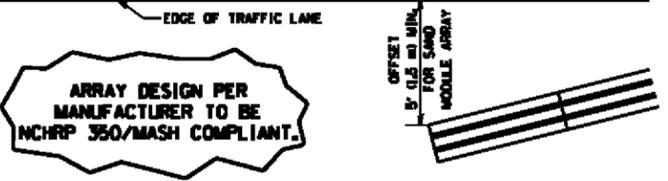
GENERAL NOTES

1. THE "L" DISTANCE EQUALS:

SPEED LIMIT		FORMULAS	
45 mph (80 km/hr)	OR GREATER	METRIC	ENGLISH
$L = 0.00005W^2$	$L = 0.00005W^2$	$L = WWS/15$	$L = WWS/15$

W = WIDTH OF OFFSET IN FEET (METERS)
S = NORMAL POSTED SPEED MPH (KM/HR)
2. PLASTIC DRUMS WITH HIGH PERFORMANCE REFLECTIVE SHEETING AND STEADY BURNING LIGHTS ARE REQUIRED FOR ALL NIGHTTIME CLOSURES.
3. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
4. FLASHING LIGHTS SHALL BE USED DURING THE HOURS OF DARKNESS AND SHALL BE INSTALLED ABOVE THE FIRST TWO SETS OF SIGNS.

5. THE IMPACT ATTENUATOR, TEMPORARY IS NOT REQUIRED WHEN THE TEMPORARY CONCRETE BARRIER WALL IS PROTECTED BY OR IS TIED INTO THE EXISTING GUARDRAIL. IF OFFSET IS LESS THAN 5 FEET USE NARROW USE TYPE DEVICE TO MEET NCHRP350/MASH.
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL FREEWAY CLOSURES.
7. THE FLAGGER AND FLAGGER SIGN ARE REQUIRED AT THE ABOVE WORK SITES WHEN:
 - a. FOUR OR MORE WORK VEHICLES ENTER THE TRAFFIC LANES IN A ONE HOUR PERIOD.
 - b. THE WORK ACTIVITY REQUIRES FREQUENT ENCROACHMENT INTO THE LANE OPEN TO TRAFFIC.
 THE FLAGGER SHALL BE STATIONED APPROXIMATELY 100' (30 m) TO 200' (60 m) IN ADVANCE OF THE WORKERS.
8. 12' MIN. WIDTH TANGENT SECTION
16' MIN. WIDTH CURVE SECTION.



**DETAIL "A"
IMPACT ATTENUATOR, TEMPORARY
(SEE NOTE 5)**

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

DESIGNED -	J.A.F. 12-06	REVISED -	J.A.F. 12-06
DRAWN -	D.W.S.	REVISED -	S.P.B. 01-07
CHECKED -		REVISED -	S.P.B. 12-09
DATE -	11-96	REVISED -	M.D. 06-13

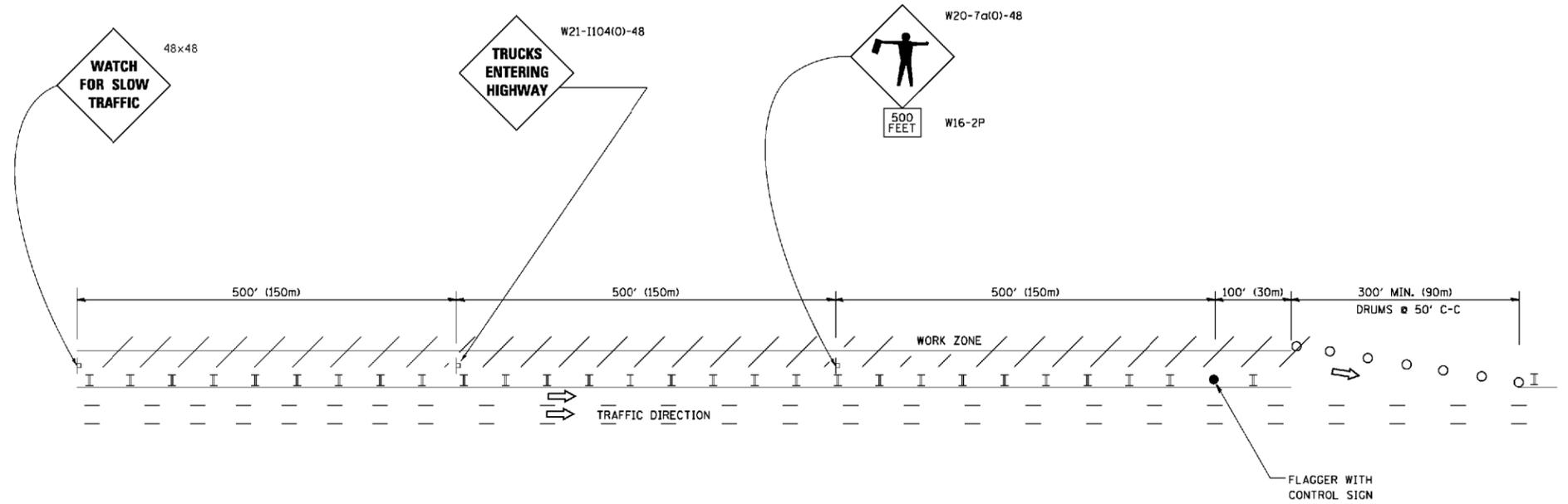
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

TRAFFIC CONTROL DETAILS FOR FREEWAY SHOULDER CLOSURES AND PARTIAL RAMP CLOSURES			
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.

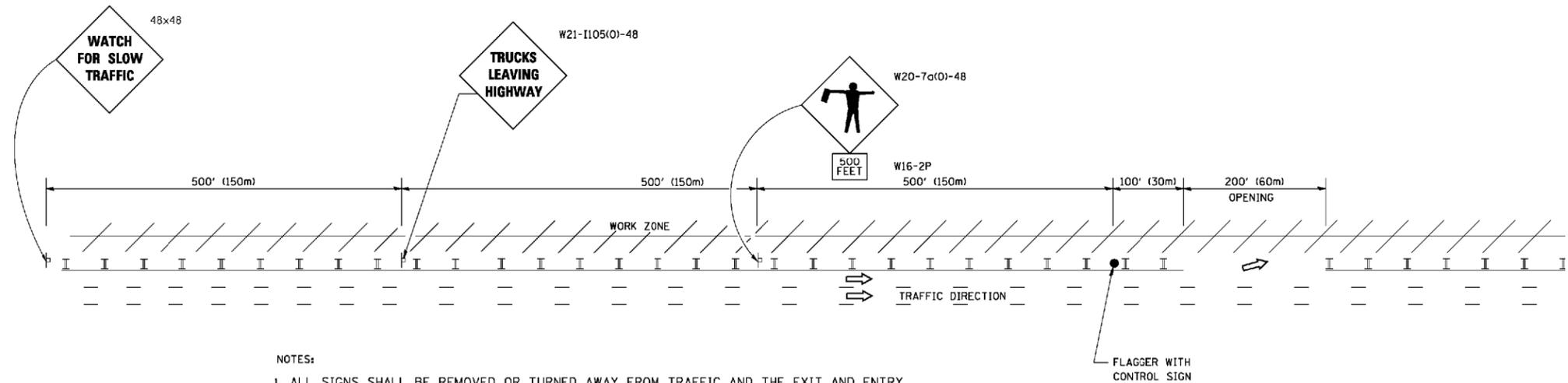
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-039BP	COOK	209	192
TC-17		CONTRACT NO. 60W76		
FED. ROAD DIST. NO. 1 (ILLINOIS) FED. AID PROJECT				

SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS

WORK ZONE EXIT OPENING



WORK ZONE ENTRY OPENING

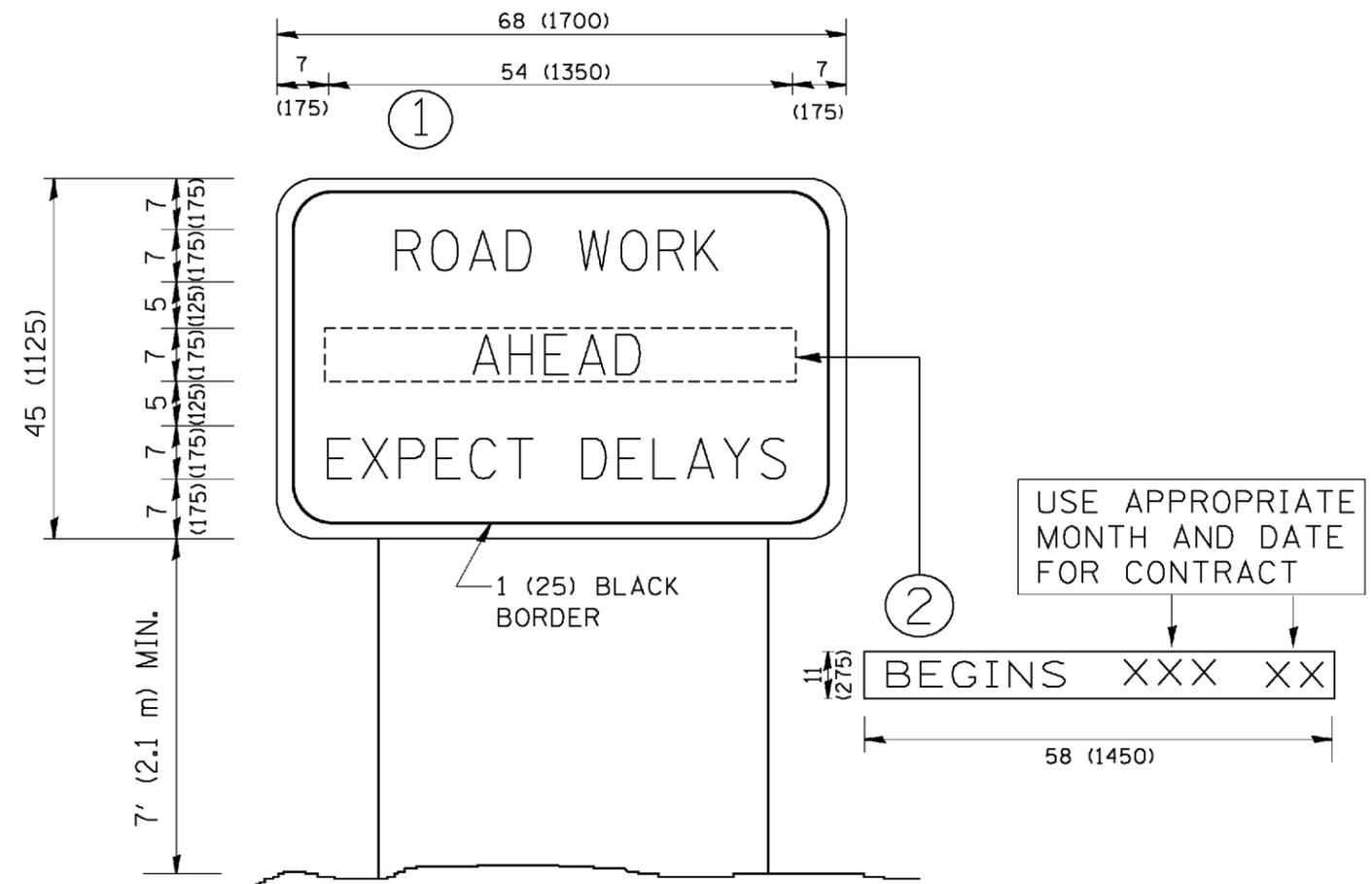


NOTES:

1. ALL SIGNS SHALL BE REMOVED OR TURNED AWAY FROM TRAFFIC AND THE EXIT AND ENTRY OPENINGS SHALL BE CLOSED WHEN THE FLAGGING OPERATION CEASES. NON OPERATING EQUIPMENT SHALL COMPLY WITH ARTICLE 701.11
2. WORK ZONE OPENINGS SHALL BE A MINIMUM OF ONE HALF MILE APART AND A MINIMUM OF ONE QUARTER MILE FROM ALL ENTRANCE AND EXIT RAMP.
3. EXITING THE WORK ZONE AT ANY PLACE OTHER THAN AT A WORK ZONE EXIT OPENING WILL BE PROHIBITED.
4. ALL VEHICLES SHALL ENTER THE WORK ZONE AT ENTRY OPENINGS, USING THEIR TURN SIGNALS TO WARN MOTORISTS
5. FLAGGERS SHALL NOT STOP TRAFFIC OR DIRECT TRAFFIC INTO AN ADJACENT LANE.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

DESIGNED - DRAWN - CHECKED - DATE -	REVISOR DESIGNED - J.A.F. 02-06 REVISED - S.P.B. 01-07 REVISED - S.P.B. 12-09 REVISED - M.D. 06-13	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FREeway/EXPRESSWAY SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS ON FREEWAYS/EXPRESSWAYS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
				372	2013-039BP	COOK	209	193
PLOT SCALE = 100.0000' / 1" / 1m. PLOT DATE = 3/22/2017				TC-18		CONTRACT NO. 60W76		
				SCALE: NONE		SHEET NO. 1 OF 1 SHEETS		STA. TO STA.
				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

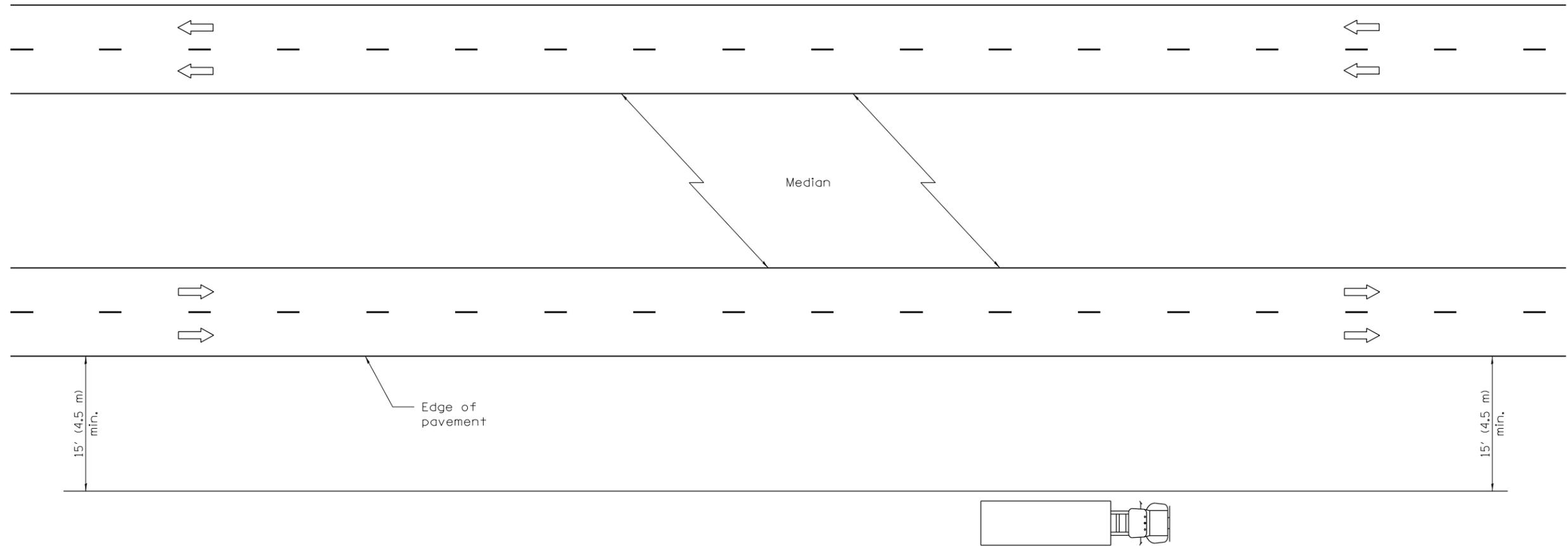


NOTES:

1. USE BLACK LETTERING ON ORANGE BACKGROUND.
2. ERECT SIGNS IN ADVANCE OF THE LOCATION FOR THE "ROAD CONSTRUCTION AHEAD" SIGN AT LOCATIONS AS DIRECTED BY THE ENGINEER.
3. ERECT SIGN ① WITH INSTALLED PANEL ② ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
4. REMOVE PANEL ② SOON AFTER THE START OF CONSTRUCTION.
5. SEE SPECIAL PROVISION FOR "TEMPORARY INFORMATION SIGNING" FOR ADDITIONAL INFORMATION.
6. ONE SIGN ASSEMBLY EQUALS 25.70 SQ. FT. (2.3 SQ. M.)
7. SHALL BE PAID FOR AS TEMPORARY INFORMATION SIGNING.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

DESIGNED -	REVISÉD - R. MIRS 09-15-97	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ARTERIAL ROAD INFORMATION SIGN		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
DRAWN -	REVISÉD - R. MIRS 12-11-97		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	372	2013-039BP	COOK	209 194
PLOT SCALE = 100.0000' / in.	CHECKED - T. RAMMACHÉR 02-02-99						TC-22		CONTRACT NO. 60W76	
PLOT DATE = 3/22/2017	DATE -		REVISÉD - C. JUCIUS 01-31-07					<small>FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT</small>		



TYPICAL APPLICATIONS

- Landscaping work
- Utility work
- Fencing contracts

GENERAL NOTES

This Standard is used where at all times all vehicles, equipment, workers or their activities are more than 15' (4.5 m) from the edge of pavement.

When the work operation requires that two or more work vehicles cross the 15' (4.5 m) clear zone in any one hour, traffic control shall be according to Standard 701101.

This Standard also applies to work performed in the median more than 15' (4.5 m) from either pavement.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-05	Switched units to English (metric).
1-1-05	Revised title.

**OFF-RD OPERATIONS, MULTILANE,
MORE THAN 15' (4.5 m) AWAY**

STANDARD 701106-02

Illinois Department of Transportation

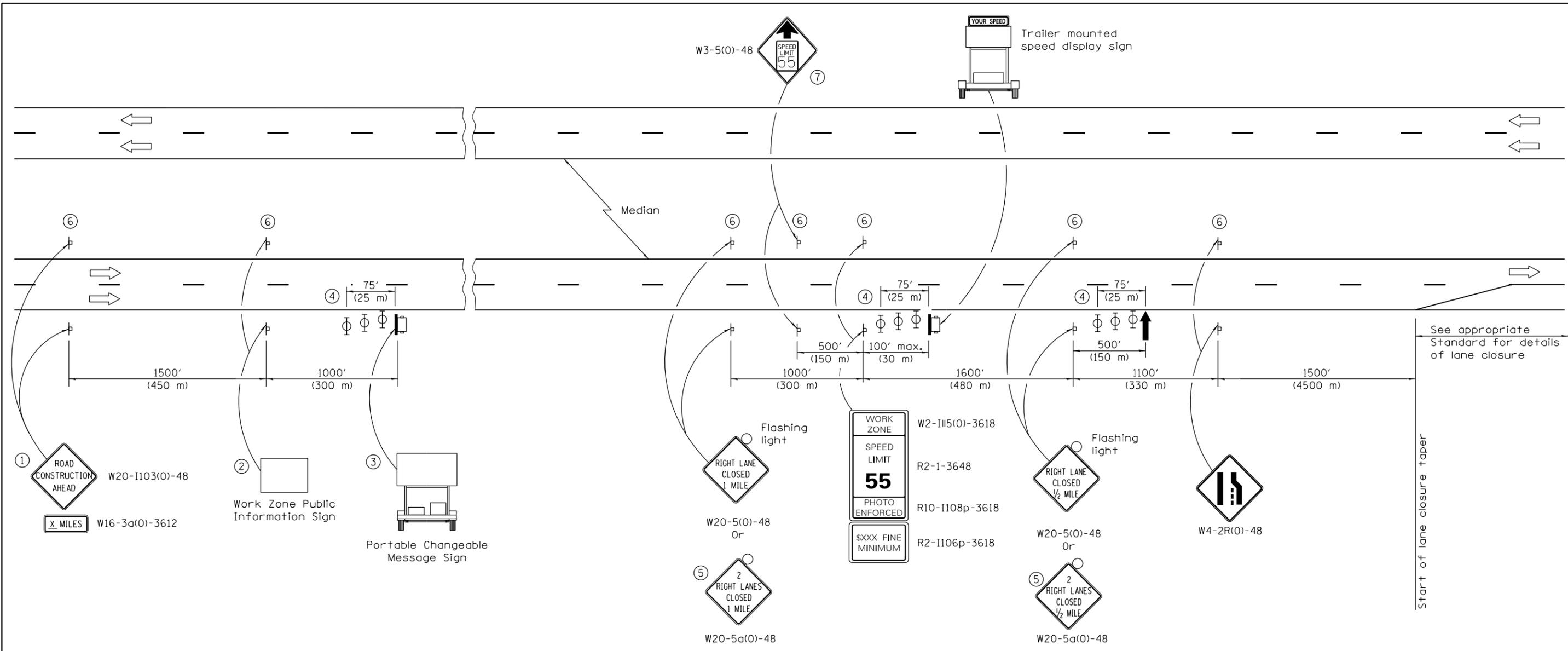
APPROVED January 1, 2009

 ENGINEER OF OPERATIONS

APPROVED January 1, 2009

 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



SYMBOLS

- ↑ Arrow board
- ☐ Trailer mounted sign
- ⊥ Sign
- ⊕ Type II barricade, drum, or vertical barricade with monodirectional flashing light

- ① The Road Construction Ahead sign shall be located 3 to 5 miles in advance of the project limits.
- ② The message and size of the Work Zone Public Information Sign shall be as specified by the Department.
- ③ The message board shall be used to display status of lanes within the project. The primary messages shall be:
 "Right Lane Closed" / " x Miles Ahead"
 "Left Lane Closed" / " x Miles Ahead"
 "All Lanes Open"
- ④ Three, Type II barricades, drums, or vertical barricades at 25' (8 m) centers.
- ⑤ This sign shall be used when 2 lanes are closed.
- ⑥ This sign shall be omitted when median width is less than 10' (3 m).
- ⑦ This sign shall only be used if the existing speed limit is greater than 65 mph.

GENERAL NOTES

This standard is used where at any time a lane is closed on a freeway/expressway. When the left lane is closed, LEFT LANE CLOSED signs shall be substituted for the RIGHT LANE CLOSED signs.

The first two signs and the message board are stationary.

The last four signs and arrow board shall be moved as necessary to maintain the required distance from the start of the lane closure taper(s).

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-17	Added trailer mounted speed display sign. Changed device spacing and note ④.
1-1-15	Revised '2 RIGHT LANES CLOSED X MILE' sign number.

APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY

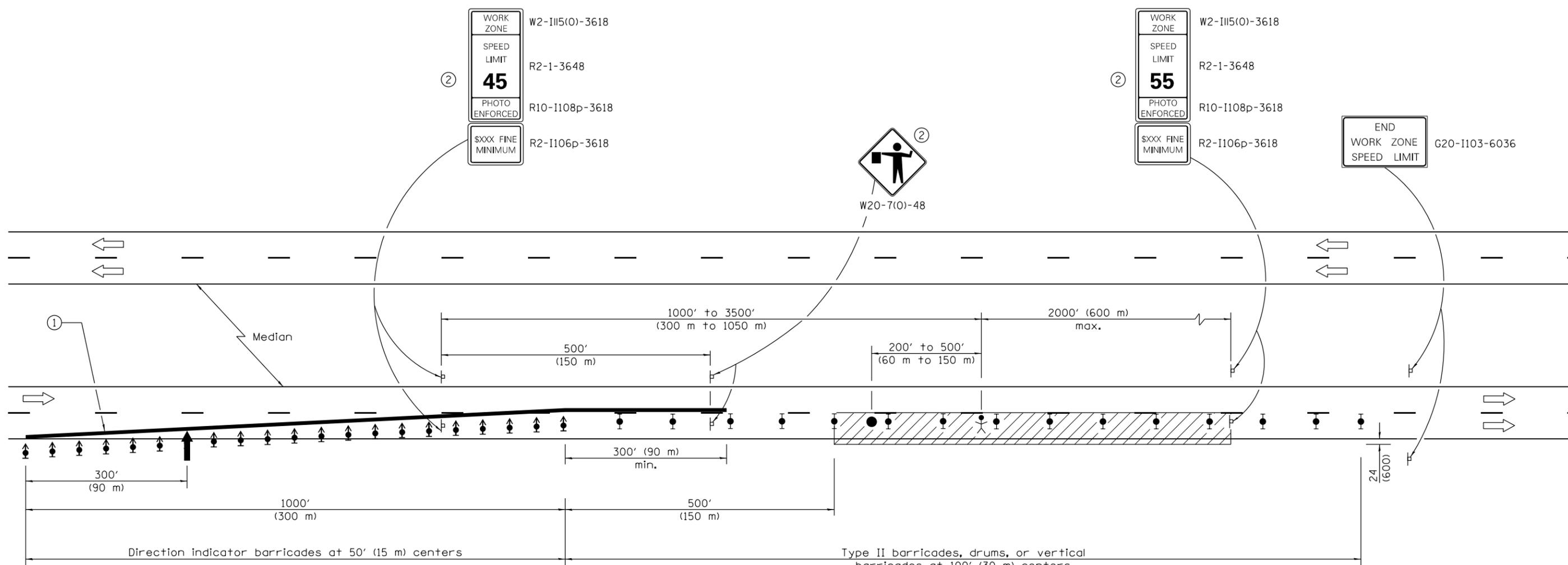
STANDARD 701400-09

Illinois Department of Transportation

APPROVED January 1, 2017
Burt L. ...
 ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2017
Maureen M. ...
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 4-1-04



See Standard 701400 for approach
Start of lane closure taper

SYMBOLS

- Arrow board
- Work area
- Worker
- Sign
- Direction indicator barricade with steady burn monodirectional light
- Type II barricade, drum, or vertical barricade with steady burn monodirectional light
- Flagger with traffic control sign

- ① ReflectORIZED temporary pavement marking tape shall be placed throughout the taper and for 300' (90 m) along-side the work area when the closure time is greater than fourteen days. The edge line shall be white for right lane closure and yellow for left lane closures.
- ② Work Zone speed limit signs and FLAGGER signs shall be moved as necessary to maintain the required spacing between the signs and the workers in each separate work activity. Work Zone Speed Limit 55 Photo Enforced sign shall be omitted when the work area dictates placement of the sign array within 500' (150 m) of the End Work Zone Speed Limit Sign.

GENERAL NOTES

This Standard is used where at any time any vehicle, equipment, workers or their activities will encroach on the lane adjacent to the shoulder, or on the shoulder within 24 (600) of the edge of pavement.

This Standard must always be used in combination with Standard 701400.

This Standard also applies when work is being performed in the left lane. Under these conditions, the setup would be a mirror image to what is shown.

A check barricade shall be placed in the middle of the closed lane and at the shoulder at 1000' (300 m) centers.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

APPROVED January 1, 2017
Bruce L. ...
ENGINEER OF SAFETY PROG. AND ENGINEERING

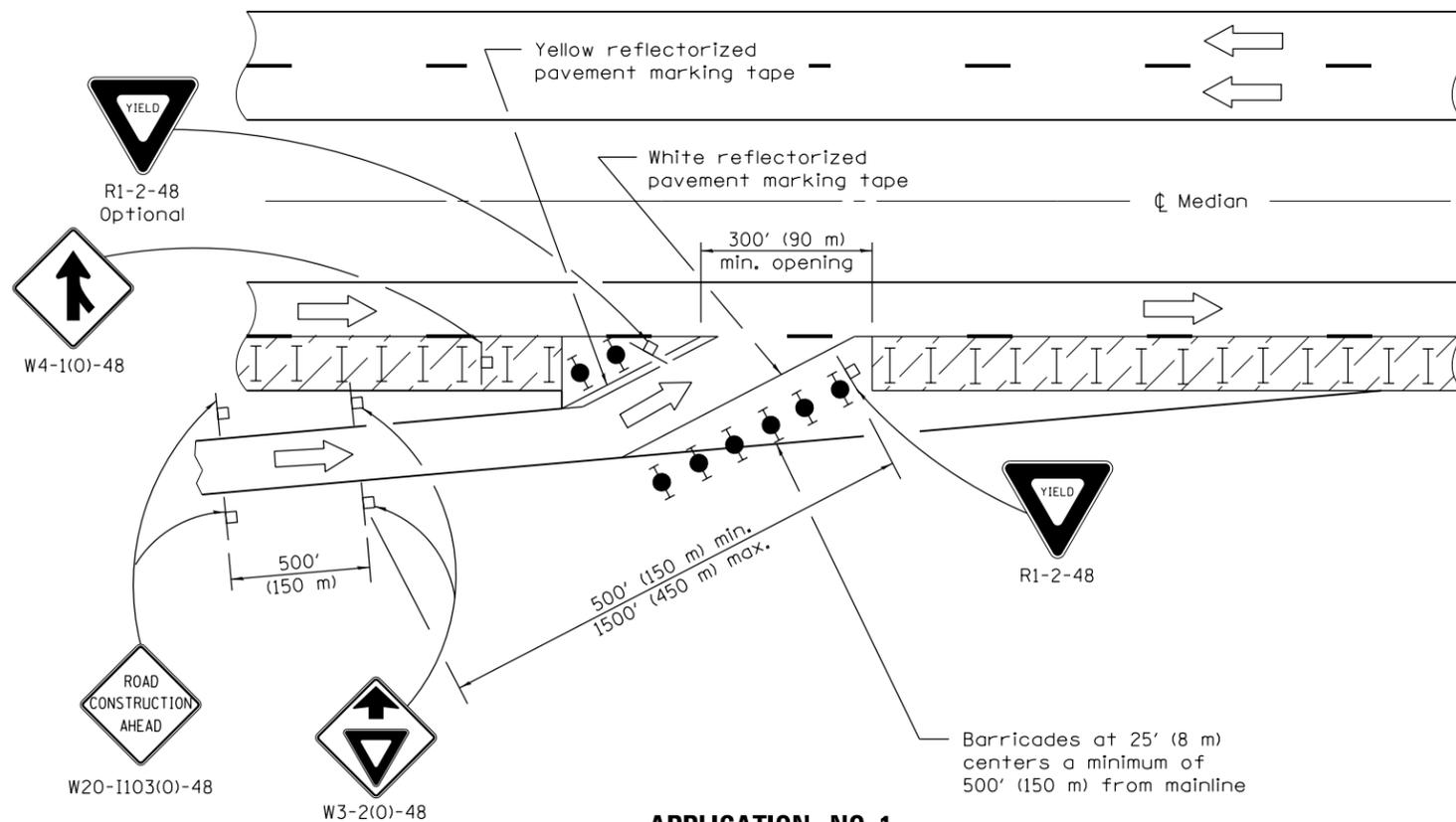
APPROVED January 1, 2017
Maureen M. ...
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-17	Revised END WORK ZONE SPEED LIMIT sign from orange to white background.
1-1-15	Revised END WORK ZONE SPEED LIMIT sign dimensions.

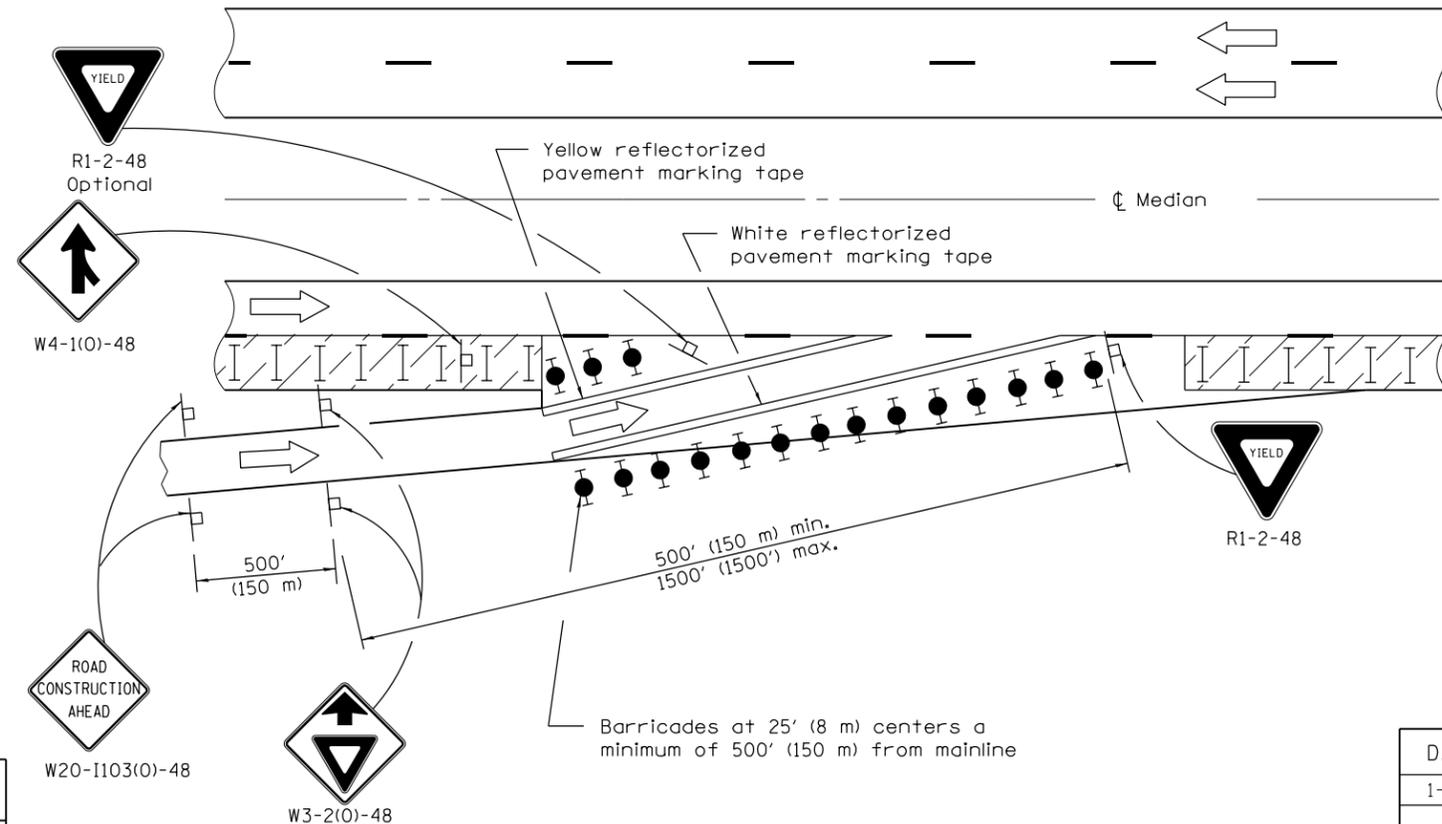
**LANE CLOSURE,
FREEWAY / EXPRESSWAY**

STANDARD 701401-10



APPLICATION NO. 1

Application No. 1 depicts a modified entrance ramp. This method shall be utilized whenever existing entrance tapers cannot be retained due to the close proximity of the work zone. The entrance location may be shifted, with the approval of the Engineer, to perform work in the entrance area. Application No. 2 shall be put into effect as soon as possible.



APPLICATION NO. 2

Application No. 2 depicts a shortening of the normal entrance ramp. This method shall be used whenever the existing geometrics can be retained. Consideration should be given to the entering motorists' line of sight, through, between, or over the delineation devices.

- SYMBOLS**
- Work area
 - Sign
 - Type II barricades or drums with steady burning monodirectional light
 - Type II barricades or drums
 - Drums with steady burning monodirectional light

- GENERAL NOTES**
- This Standard is used where, at any time any vehicle, equipment, workers or their activities require a lane closure in close proximity of an exit or entrance ramp and supplements other traffic control Standards for lane closures.
- These applications also apply when work is being performed in the left lanes and the ramps enter and exit on the left. Under these conditions, the Exit sign arrow and the Side road symbol sign shall be changed.
- Cones may be utilized during daylight operations, at one half the spacing of drums/barricades.
- Use of these APPLICATION NO. 1 and APPLICATION NO. 3 shall be limited to five days per location.
- When work does not exceed five days, pavement marking tape may be omitted.
- All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-15	Revised gen. notes to limit App's 1 and 3 to five days, omit pvt. tape for ≤ 5 days.
1-1-12	Revised merge sign to agree with MUTCD. Dimensioned EXIT OPEN AHEAD sign.

**LANE CLOSURE, MULTILANE,
AT ENTRANCE OR EXIT RAMP,
FOR SPEEDS \geq 45 MPH**
(Sheet 1 of 2)

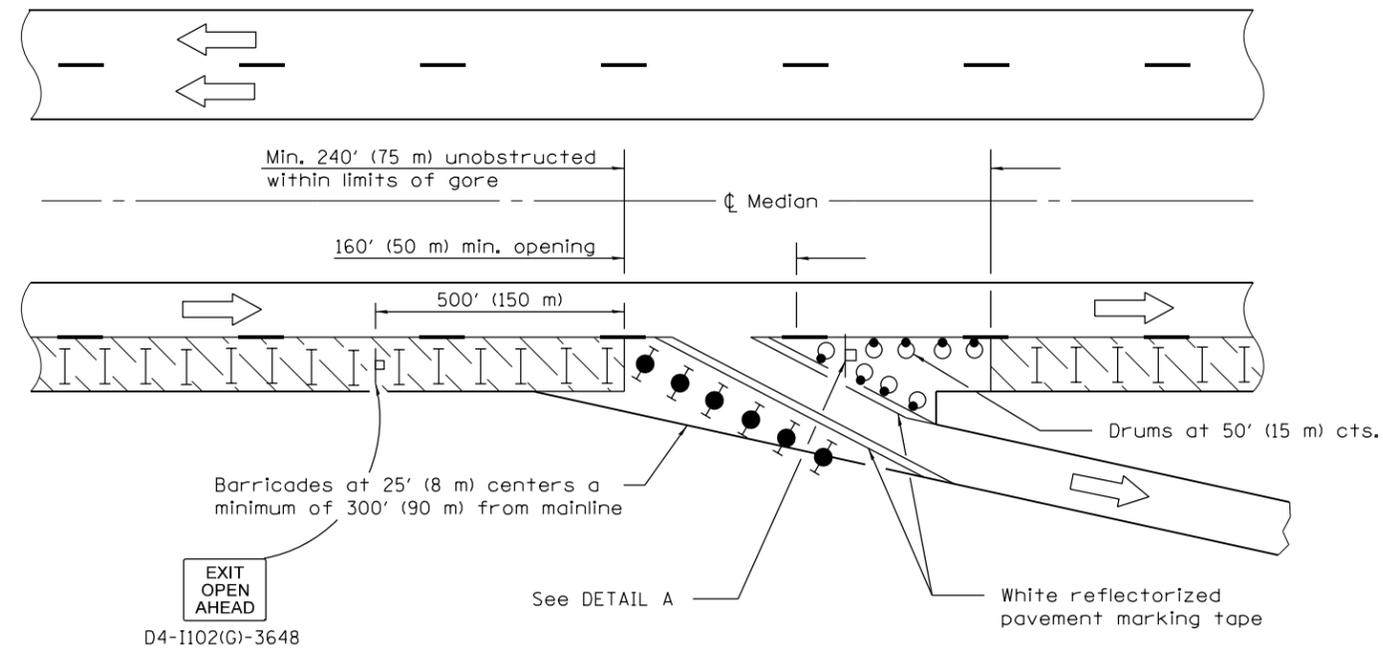
STANDARD 701411-09

Illinois Department of Transportation

APPROVED January 1, 2015
[Signature]
ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 2015
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

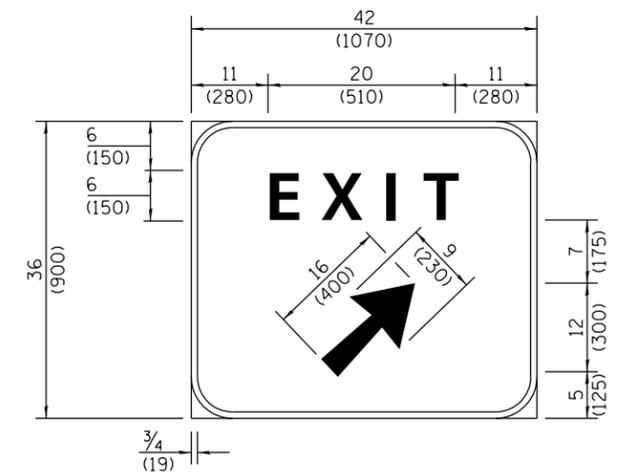
ISSUED 1-1-97



D4-I102(G)-3648

APPLICATION NO. 3

Application No. 3 depicts a modified exit ramp. The channelizing devices shall provide a clearly defined path for the exiting motorists. The minimum dimensions shown shall be increased as soon as the progress of the work will permit. The open portion of the ramp may be shifted, with the approval of the Engineer, to perform work in stages on the area adjacent to the ramp exit. Application No. 4 shall be put into effect as soon as possible.

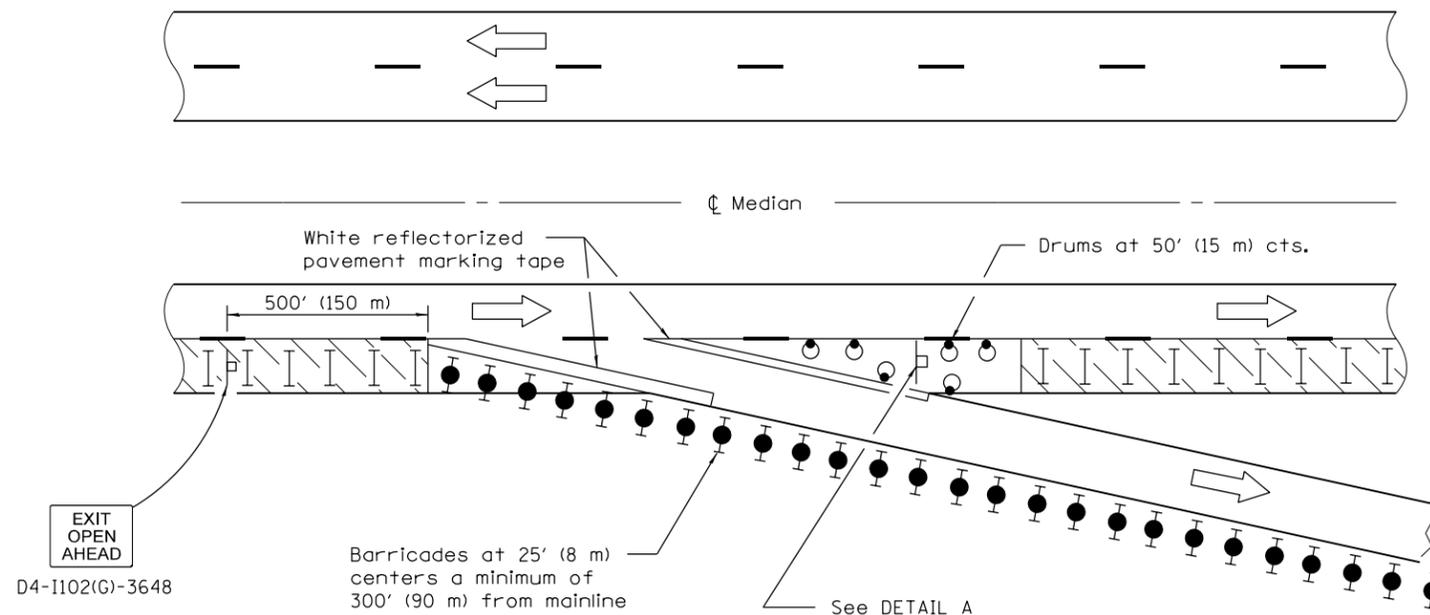


Background - Green
Border and legend - White
"D" size letters

EXIT SIGN - SPECIAL

DETAIL A

(To be utilized where distance between the two rows of channelizing devices is 6' (1.8 m) in width.)



D4-I102(G)-3648

APPLICATION NO. 4

Application No. 4 depicts an extension of the normal exit ramp. This method shall be used whenever existing geometrics can be retained. Consideration should be given to the exiting motorist's line of sight through, between or over the delineation devices.

Illinois Department of Transportation

APPROVED January 1, 2015

ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 2015

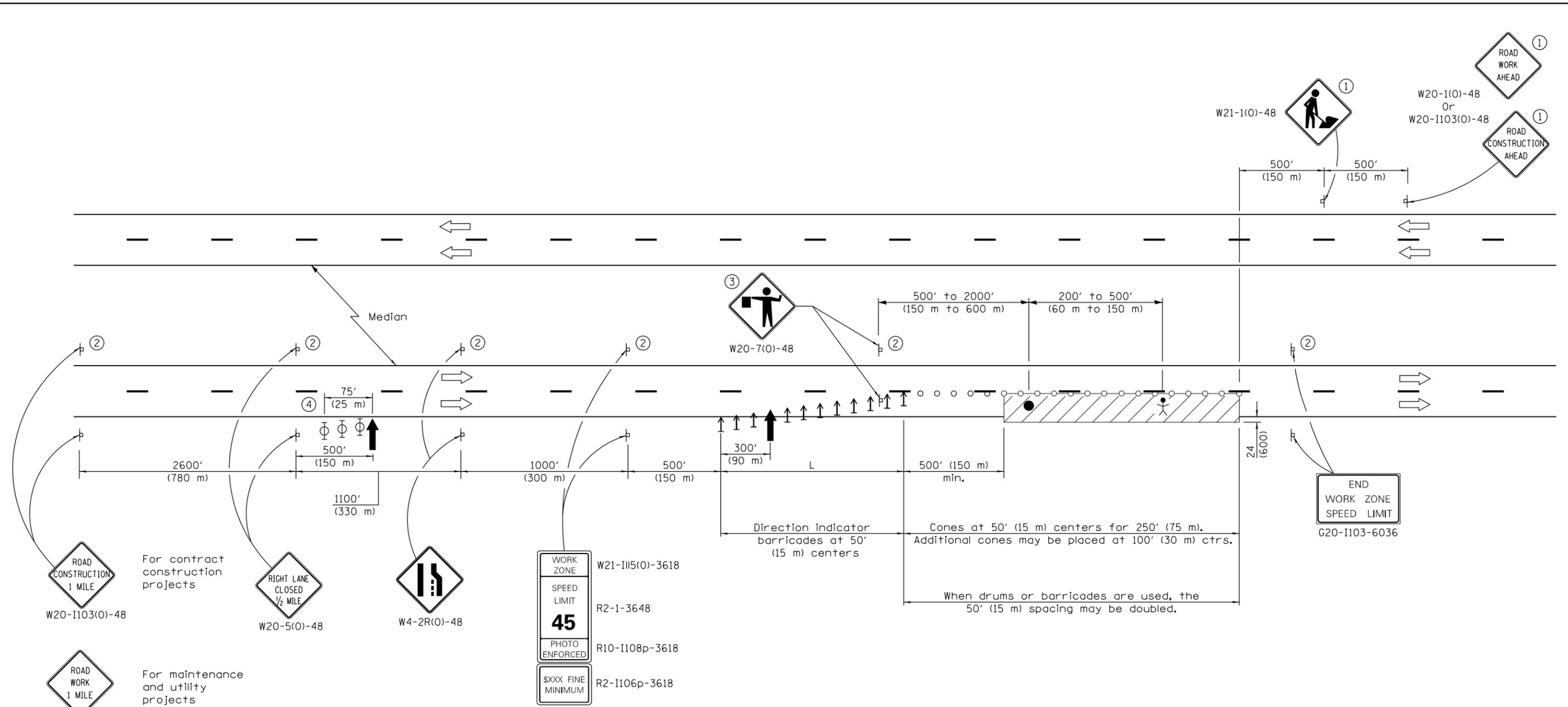
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

**LANE CLOSURE, MULTILANE,
AT ENTRANCE OR EXIT RAMP,
FOR SPEEDS ≥ 45 MPH**

(Sheet 2 of 2)

STANDARD 701411-09



ROAD CONSTRUCTION 1 MILE
W20-1103(O)-48

For contract construction projects

RIGHT LANE CLOSED 1/2 MILE
W20-5(O)-48

W4-2R(O)-48

ROAD WORK 1 MILE
W20-1(O)-48

For maintenance and utility projects

WORK ZONE W21-1115(O)-3618
SPEED LIMIT 45 R2-1-3648
PHOTO ENFORCED R10-1108p-3618
\$XXX FINE MINIMUM R2-1106p-3618

L = lane width X taper ratio	
Normal Posted Speed	Taper Ratio
mph	
55	55/1
45	45/1

SYMBOLS

- ↑ Arrow board
- ▨ Work area
- ⊥ Sign
- ↑ Direction indicator barricade
- Cone, drum or barricade
- Flagger with traffic control sign
- ⚠ Worker
- ⊕ Type II barricade, drum, or vertical barricade with monodirectional flashing light

TYPICAL APPLICATIONS

- Pavement patch
- Utility operations
- Bituminous resurfacing

- ① Undivided roadway only with left lane closure in opposite direction.
- ② Omitted when median is less than 10' (3 m).
- ③ FLAGGER signs shall be moved as necessary to maintain the required spacing between the sign and each separate work activity.
- ④ Three Type II barricades, drums, or vertical barricades at 25' (8 m) centers.

GENERAL NOTES

This Standard is used where at any time, any vehicle, equipment, workers or their activities will encroach on the lane adjacent to the shoulder, or on the shoulder within 24 (600) of the edge of pavement.

This Standard also applies when work is being performed in the left lane. Under these conditions, LEFT LANE CLOSED signs shall be substituted for RIGHT LANE CLOSED signs. On undivided highways, signs shall be added in the opposite direction as shown.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-17	Rev. END WORK ZONE SPEED LIMIT sign. Changed device spacing at first arr. brd.
1-1-15	Revised END WORK ZONE SPEED LIMIT sign dimensions.

LANE CLOSURE, MULTILANE, DAY OPERATIONS ONLY, FOR SPEEDS ≥ 45 MPH TO 55 MPH

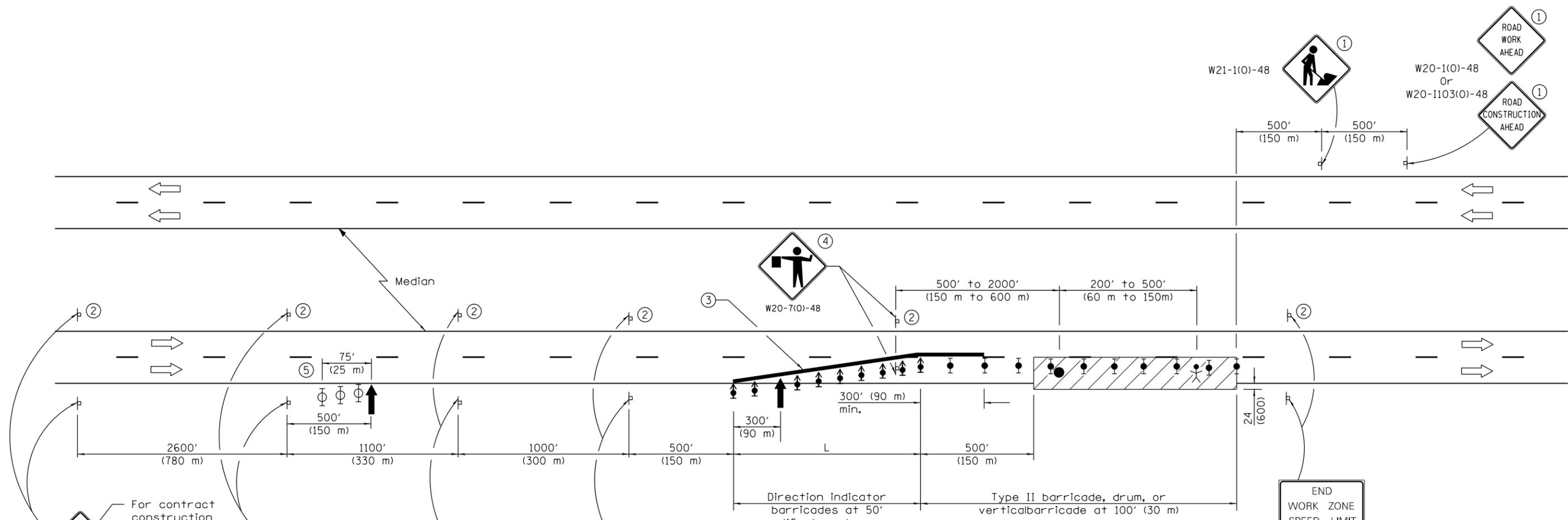
STANDARD 701421-08

Illinois Department of Transportation

APPROVED January 1, 2017
Paul L. ...
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2017
Maureen M. ...
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 4-1-04



For contract construction projects

ROAD CONSTRUCTION 1 MILE
W20-1103(0)-48

RIGHT LANE CLOSED 1/2 MILE
W20-5(0)-48

W4-2R(0)-48

For maintenance and utility projects

ROAD WORK 1 MILE
W20-1(0)-48

L = lane width X taper ratio

Normal Posted Speed	Taper Ratio
mph	
55	55/1
45	45/1

WORK ZONE W21-1115(0)-3618

SPEED LIMIT R2-1-3648

45

PHOTO ENFORCED R10-1108p-3618

SXXX FINE MINIMUM R2-1106p-3618

END WORK ZONE SPEED LIMIT
G20-1103-6036

SYMBOLS

- ↑ Arrow board
- ▨ Work area
- ⊥ Sign
- ⬆ Direction indicator barricade with steady burn monodirectional light
- ⬇ Type II barricade, drum, or vertical barricade with steady burn monodirectional light
- Flagger with traffic control sign
- ⤴ Worker
- ⊕ Type II barricade, drum, or vertical barricade with monodirectional flashing light

- ① Undivided roadway only with left lane closure in opposite direction.
- ② Omitted when median is less than 10' (3 m).
- ③ Reflectorized temporary pavement marking tape shall be placed throughout the taper and for 300' (90 m) along-side the work area where the closure time is greater than fourteen days. The edge line shall be white for right lane closures and yellow for left lane closures.
- ④ FLAGGER signs shall be moved as necessary to maintain the required spacing between the sign and each separate work activity.
- ⑤ Three Type II barricades, drums, or vertical barricades at 25' (8 m) centers.

GENERAL NOTES

This standard is used where at any time any vehicle, equipment, workers or their activities will encroach on the lane adjacent to the shoulder, or on the shoulder within 24 (600) of the edge of pavement for daylight operation exceeding one day.

This standard also applies when work is being performed in the left lane. Under these conditions LEFT LANE CLOSED signs shall be substituted for RIGHT LANE CLOSED signs. On undivided highways, signs shall be added in the opposite direction as shown.

A check barricade shall be placed in the middle of the closed lane and at the shoulder at 1000' (300 m) centers.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-17	Rev. END WORK ZONE SPEED LIMIT sign. Changed device spacing at first arr. brd.
4-1-16	Added steady burn monodirectional lights to devices at work area.

LANE CLOSURE, MULTILANE, FOR SPEEDS ≥ 45 MPH TO 55 MPH

STANDARD 701422-09

Illinois Department of Transportation

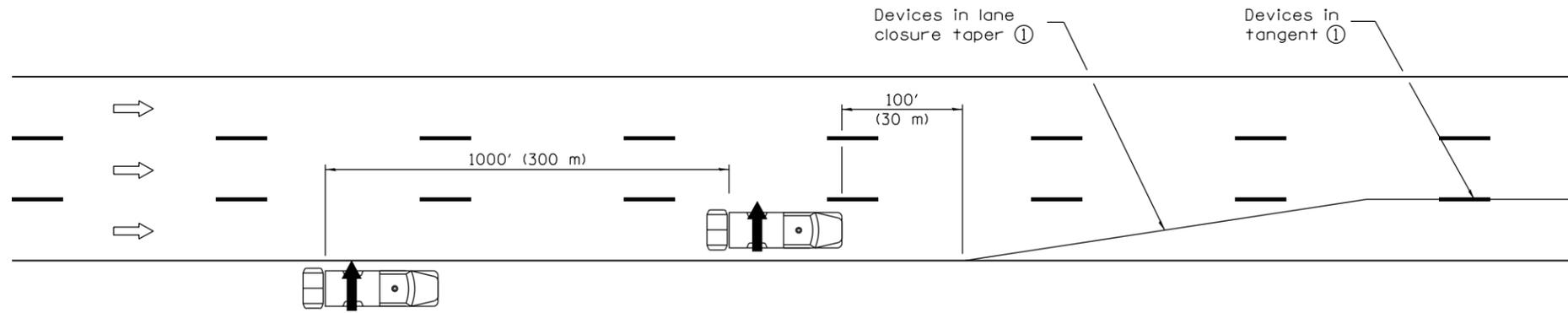
APPROVED January 1, 2017

ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2017

ENGINEER OF DESIGN AND ENVIRONMENT

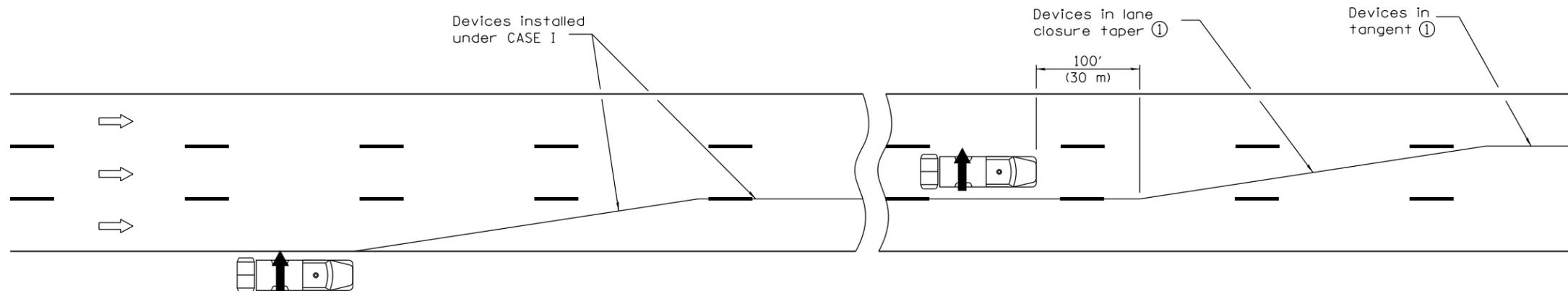
ISSUED 4-1-04



① See plans or appropriate Standard for delineating devices, spacing and length of taper/tangent.

CASE I

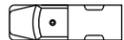
CASE I depicts the setup of delineating devices for a single outside lane closure.



CASE II

CASE II depicts the setup of delineating devices for a two lane closure. The single lane closure device setup as depicted in CASE I shall be performed prior to the setup for the second lane closure.

SYMBOLS

-  Arrow board
-  Truck with flashing amber light
-  Truck/Trailer mounted attenuator

GENERAL NOTES

This Standard is used for setup and removal of lane closures on freeways/expressways having ADT greater than 25,000.

Trucks with arrow boards and truck-mounted-attenuators shall be in place as shown for the setup and removal of the lane closure taper(s) and the first 100' (30 m) of channelizing devices in the tangent(s).

This Standard is also applicable when work is being performed in the left lane(s) or on the median shoulder. Under these conditions arrow board indications shall be directed to the right.

All dimensions are in inches (millimeter) unless otherwise shown.

DATE	REVISIONS
4-1-16	Added trailer option for attenuator symbol.
1-1-14	New Standard.

TRAFFIC CONTROL SETUP AND REMOVAL FREEWAY/EXPRESSWAY

STANDARD 701428-01

Illinois Department of Transportation

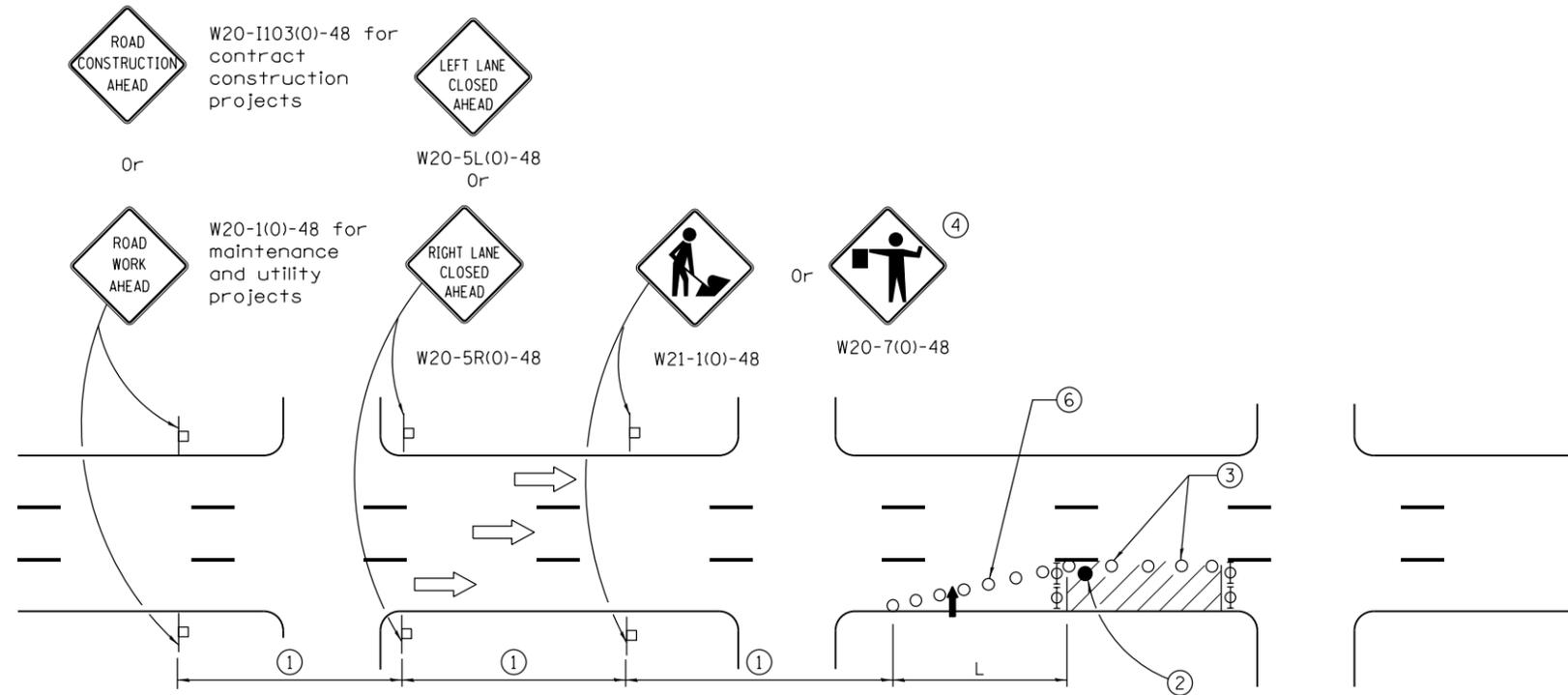
APPROVED April 1, 2016

 ENGINEER OF SAFETY ENGINEERING

APPROVED April 1, 2016

 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

SYMBOLS

- Arrow board
- Cone, drum or barricade
- Sign on portable or permanent support
- Work area
- Barricade or drum with flashing light
- Type III barricade with flashing lights
- Flagger with traffic control sign.

- ① Refer to SIGN SPACING TABLE for distances.
- ② Required for speeds > 40 MPH
- ③ Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- ④ Use flagger sign only when flagger is present.
- ⑤ For approved sideroad closures.
- ⑥ Cones, drums or barricades at 20' (6 m) in taper.

GENERAL NOTES

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement during shoulder operations or where construction requires lane closures in urban areas.

Calculate L as follows:

SPEED LIMIT	FORMULAS	
	English	(Metric)
40 mph (70 km/h) or less:	$L = \frac{WS^2}{60}$	$L = \frac{WS^2}{150}$
45 mph (80 km/h) or greater:	$L = (W)(S)$	$L = 0.65(W)(S)$

W = Width of offset in feet (meters).
S = Normal posted speed mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

APPROVED January 1, 2014
[Signature]
ENGINEER OF SAFETY ENGINEERING

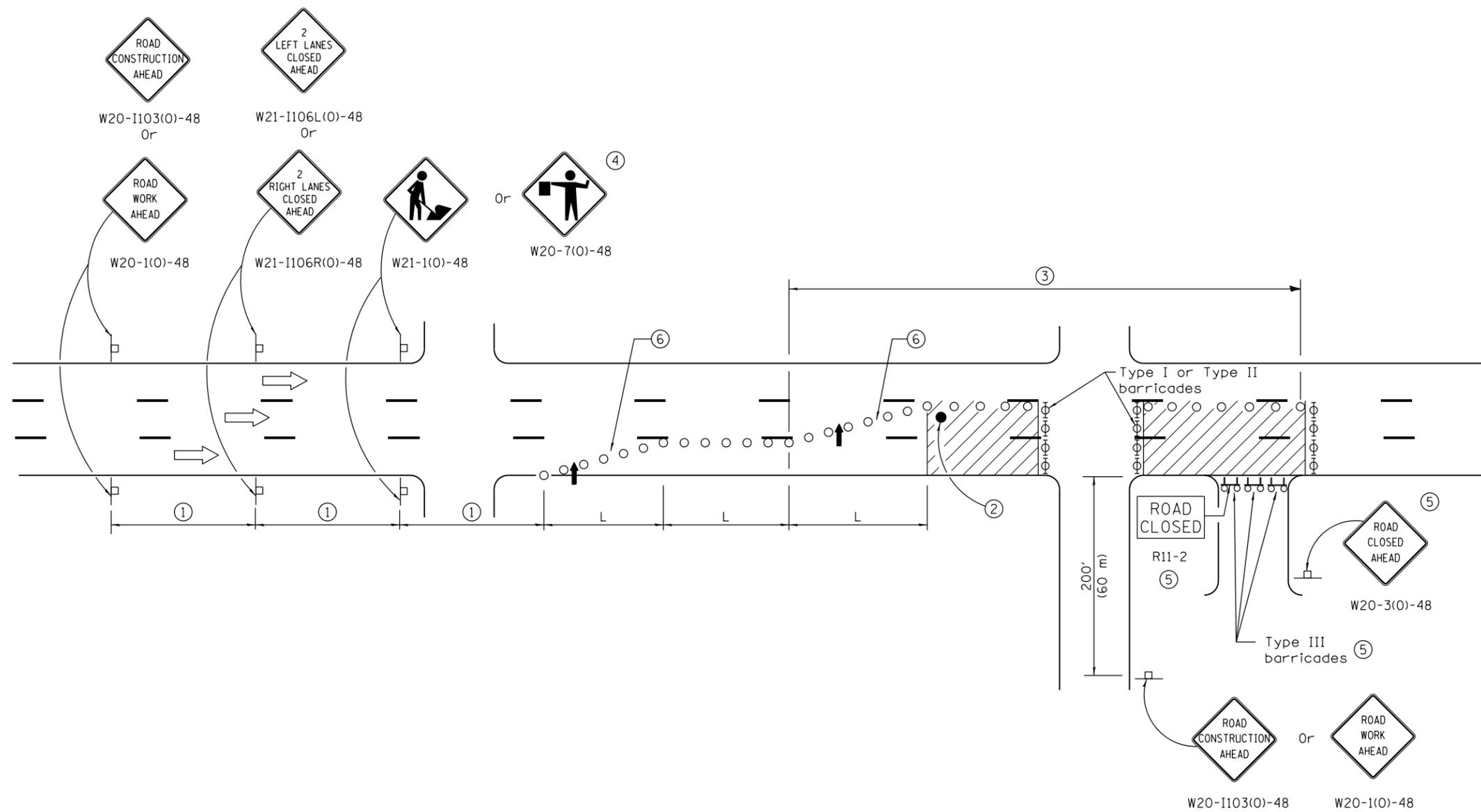
APPROVED January 1, 2014
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-14	Revised workers sign number to agree with current MUTCD.
1-1-13	Omitted text 'WORKERS' sign.

**URBAN LANE CLOSURE,
MULTILANE, 1W OR 2W WITH
NONTRAVERSABLE MEDIAN**
(Sheet 1 of 2)

STANDARD 701601-09



Illinois Department of Transportation

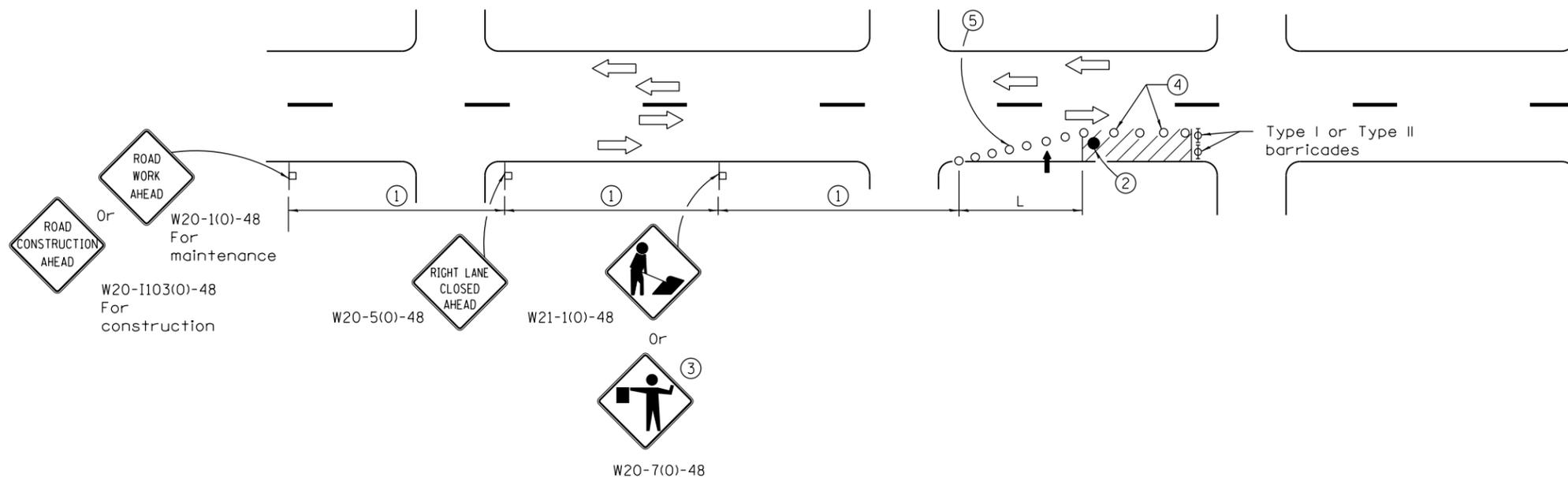
APPROVED January 1, 2014
[Signature]
 ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 2014
[Signature]
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

**URBAN LANE CLOSURE,
 MULTILANE, 1W OR 2W WITH
 NONTRAVERSABLE MEDIAN**
 (Sheet 2 of 2)

STANDARD 701601-09



SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

SYMBOLS

-  Arrow board
-  Cone, drum or barricade
-  Sign on portable or permanent support
-  Work area
-  Barricade or drum with flashing light
-  Flagger with traffic control sign.

- ① Refer to SIGN SPACING TABLE for distances.
- ② Required for speeds > 40 mph.
- ③ Use flagger sign only when flagger is present.
- ④ Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- ⑤ Cones, drums or barricades at 20' (6 m) centers in taper.

GENERAL NOTES

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement requiring the closure of one traffic lane in an Urban area.

Calculate L as follows:

SPEED LIMIT	FORMULAS	
	English	(Metric)
40 mph (70 km/h) or less:	$L = \frac{WS^2}{60}$	$L = \frac{WS^2}{150}$

45 mph (80 km/h) or greater:	$L=(W)(S)$	$L=0.65(W)(S)$
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W = Width of offset in feet (meters).

S = Normal posted speed mph (km/h).

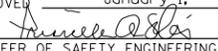
All dimensions are in inches (millimeters) unless otherwise shown.

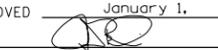
DATE	REVISIONS
1-1-15	Renamed standard. Moved case on Sheet 2 to new Highway Standard.
1-1-14	Revised workers sign number to agree with current MUTCD.

URBAN SINGLE LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN

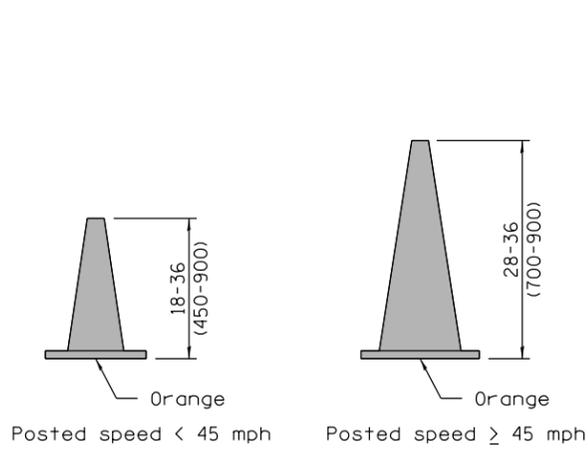
STANDARD 701606-10

Illinois Department of Transportation

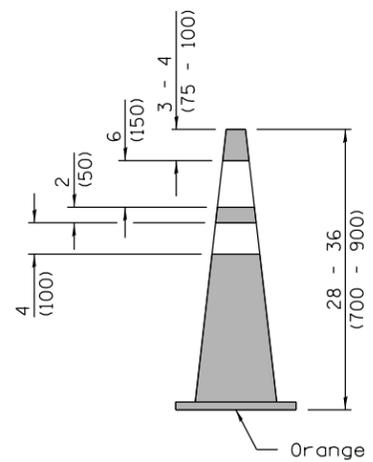
APPROVED January 1, 2015

 ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 2015

 ENGINEER OF DESIGN AND ENVIRONMENT

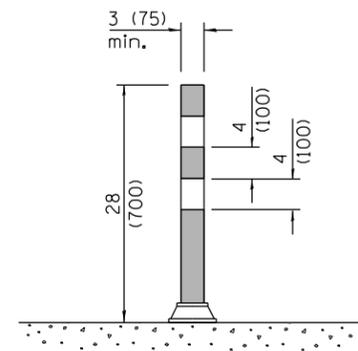
ISSUED 1-1-97



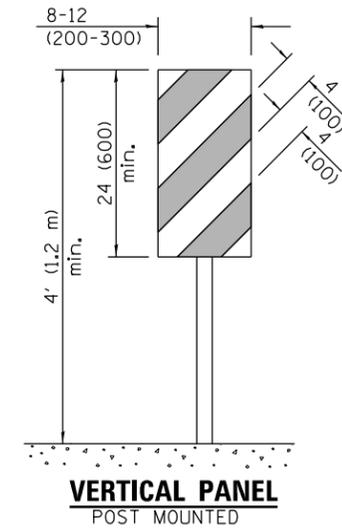
CONE FOR DAYTIME



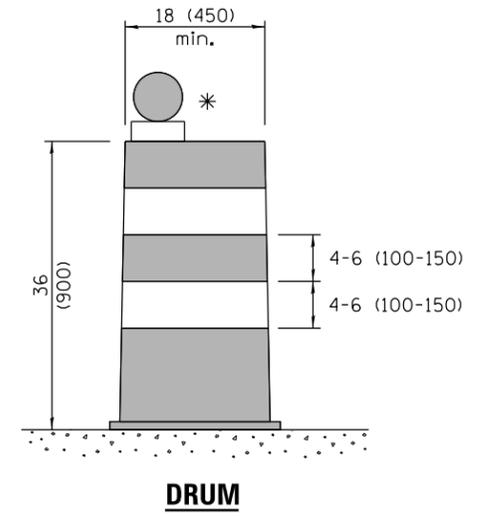
REFLECTORIZED CONE FOR NIGHTTIME



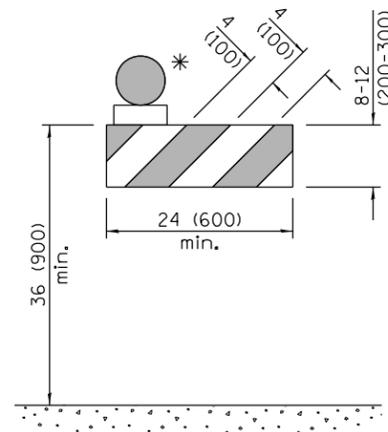
TUBULAR MARKER



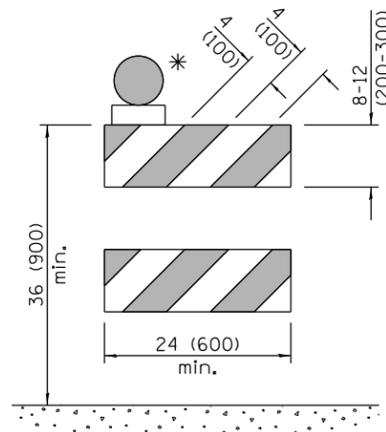
VERTICAL PANEL POST MOUNTED



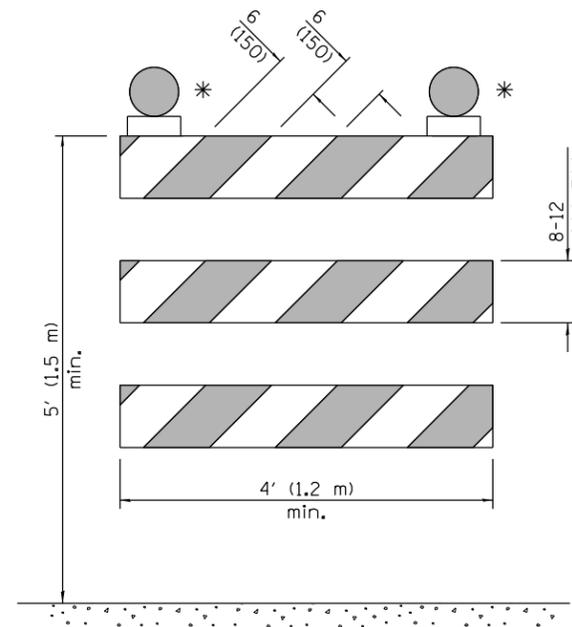
DRUM



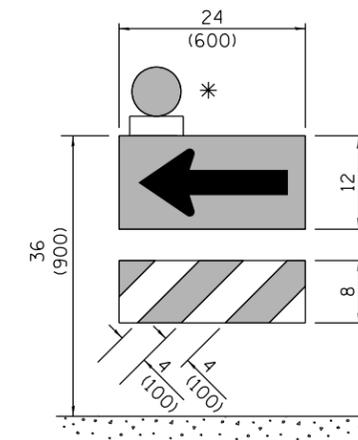
TYPE I BARRICADE



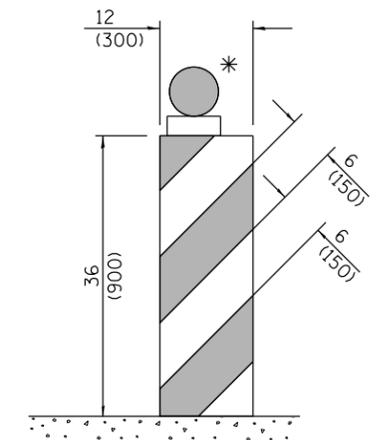
TYPE II BARRICADE



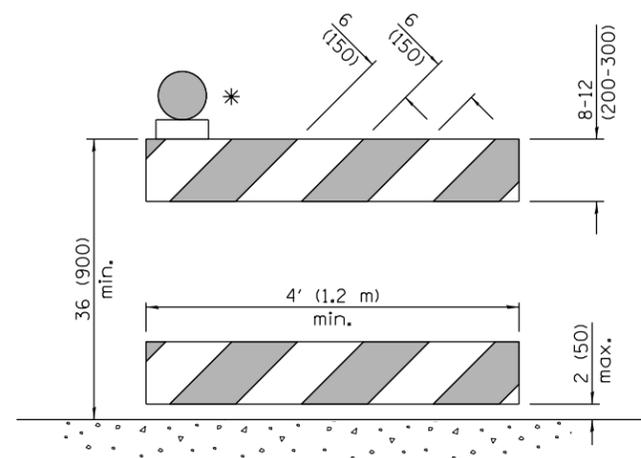
TYPE III BARRICADE



DIRECTION INDICATOR BARRICADE



VERTICAL BARRICADE



DETECTABLE PEDESTRIAN CHANNELIZING BARRICADE

* Warning lights (if required)

GENERAL NOTES

All heights shown shall be measured above the pavement surface.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-17	Changed FLEXIBLE DELINEATOR to TUBULAR MARKER.
4-1-16	Add dim's to barricades. Rev. note for post mnt. signs.
	Rev. cone d'tls. Add W12-I103.

TRAFFIC CONTROL DEVICES

(Sheet 1 of 3)

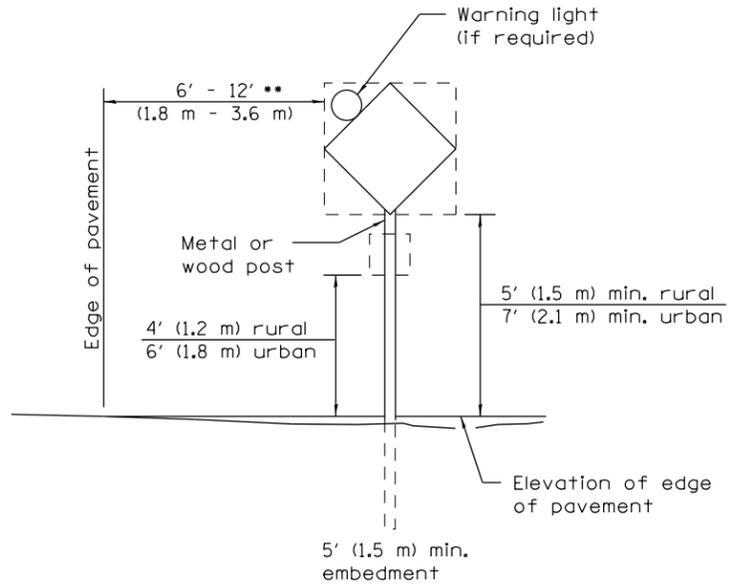
STANDARD 701901-06

Illinois Department of Transportation

APPROVED January 1, 2017
Amy Ellis
 ENGINEER OF OPERATIONS

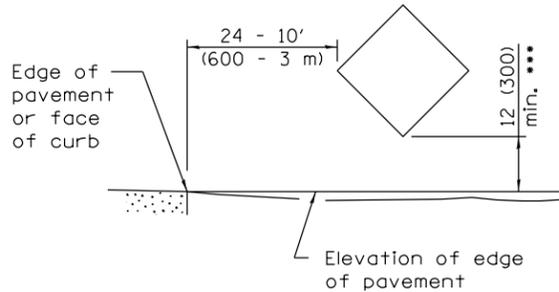
APPROVED January 1, 2017
Marcus M. Beck
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 46-1-1 03/15/11



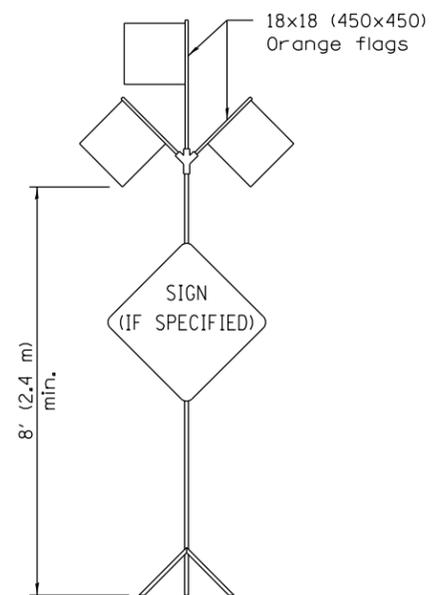
POST MOUNTED SIGNS

** When curb or paved shoulder are present this dimension shall be 24 (600) to the face of curb or 6' (1.8 m) to the outside edge of the paved shoulder.



SIGNS ON TEMPORARY SUPPORTS

*** When work operations exceed four days, this dimension shall be 5' (1.5 m) min. If located behind other devices, the height shall be sufficient to be seen completely above the devices.



HIGH LEVEL WARNING DEVICE

ROAD CONSTRUCTION NEXT X MILES	END CONSTRUCTION
G20-I104(O)-6036	G20-I105(O)-6024

This signing is required for all projects 2 miles (3200 m) or more in length.

ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.

END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).

Dual sign displays shall be utilized on multi-lane highways.

WORK LIMIT SIGNING

WORK ZONE	W21-I115(O)-3618
SPEED LIMIT XX	R2-1-3648
PHOTO ENFORCED	R10-I108p-3618 ****
XXXX FINE MINIMUM	R2-I106p-3618

Sign assembly as shown on Standards or as allowed by District Operations.

END WORK ZONE SPEED LIMIT	G20-I103(O)-6036
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This sign shall be used when the above sign assembly is used.

HIGHWAY CONSTRUCTION SPEED ZONE SIGNS

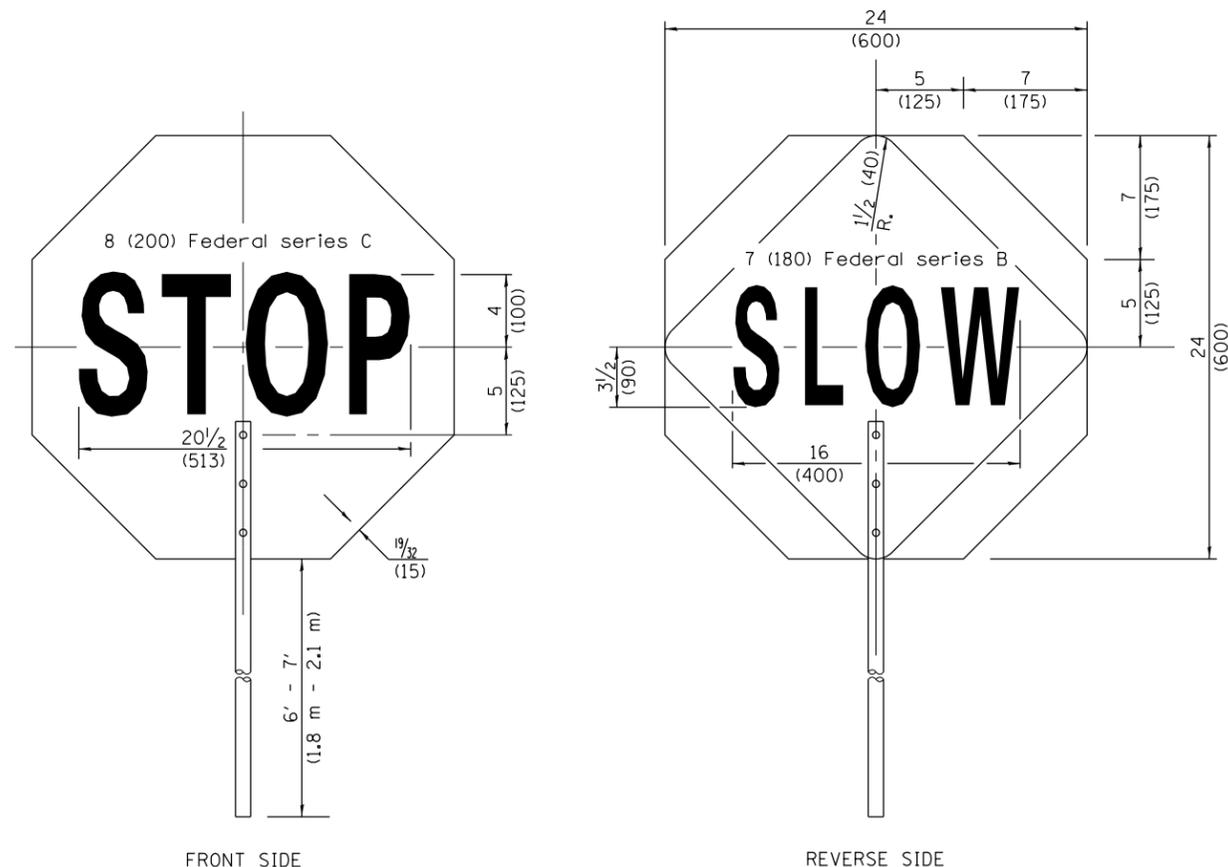
**** R10-I108p shall only be used along roadways under the jurisdiction of the State.



W12-I103-4848

WIDTH RESTRICTION SIGN

XX'-XX" width and X miles are variable.



FRONT SIDE

REVERSE SIDE

FLAGGER TRAFFIC CONTROL SIGN

Illinois Department of Transportation

APPROVED January 1, 2017
Amy Ellis
 ENGINEER OF OPERATIONS

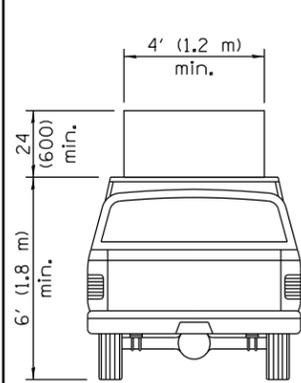
APPROVED January 1, 2017
Maureen M. Beck
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

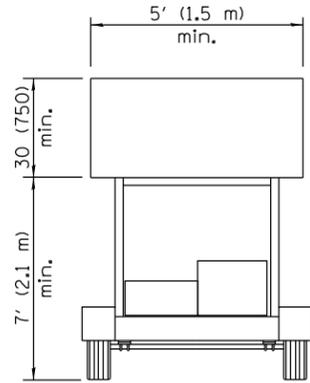
TRAFFIC CONTROL DEVICES

(Sheet 2 of 3)

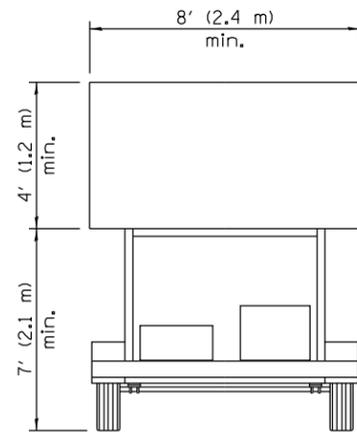
STANDARD 701901-06



**TYPE A
ROOF
MOUNTED**

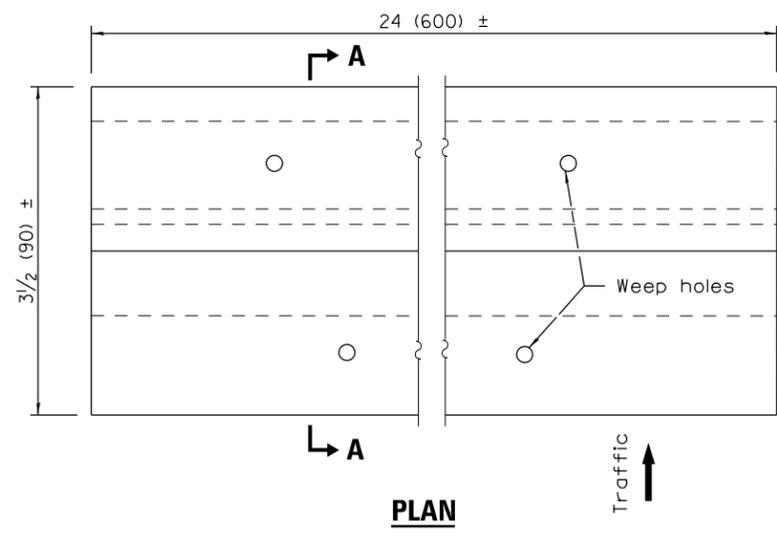


**TYPE B
ROOF OR TRAILER
MOUNTED**

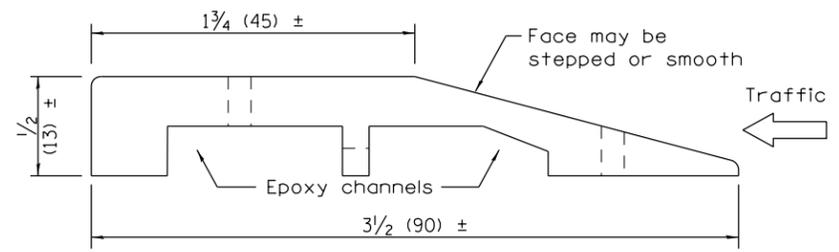


**TYPE C
TRAILER
MOUNTED**

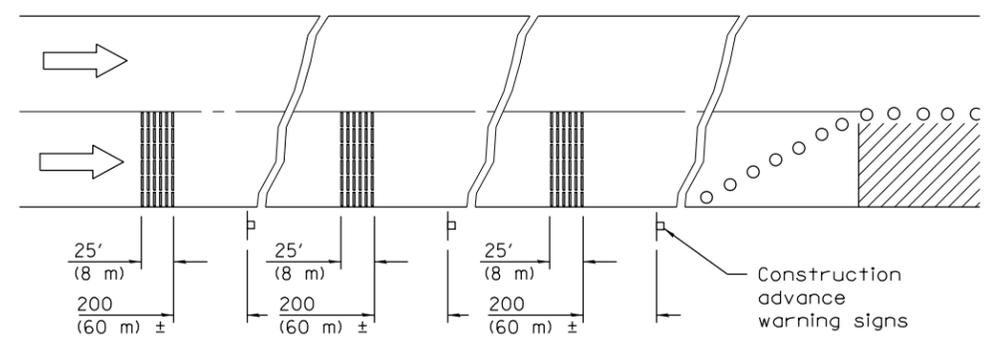
ARROW BOARDS



PLAN

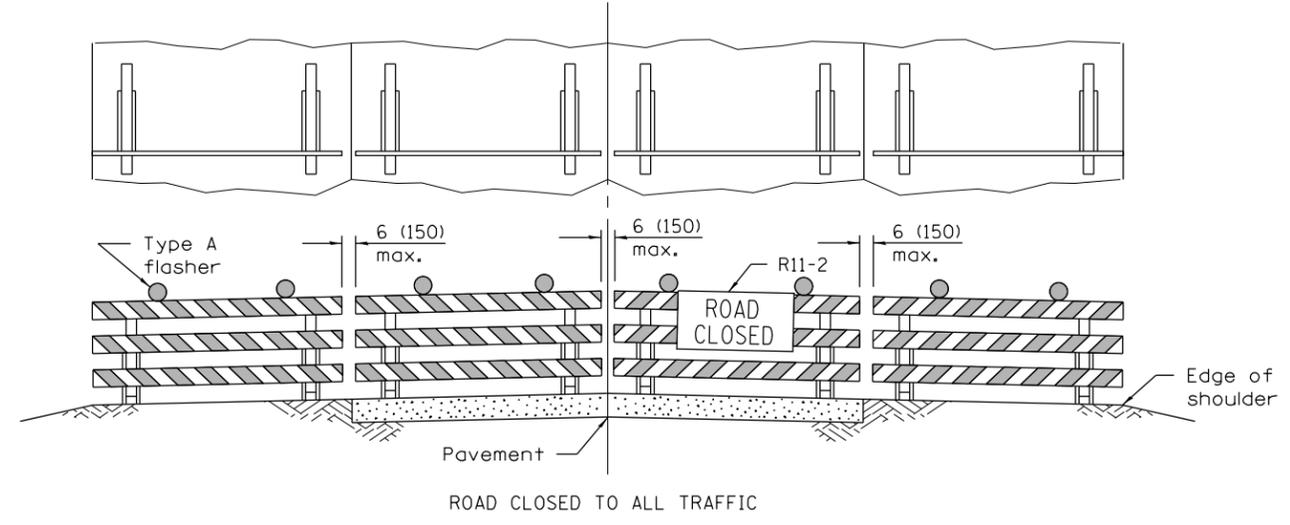


SECTION A-A



TYPICAL INSTALLATION

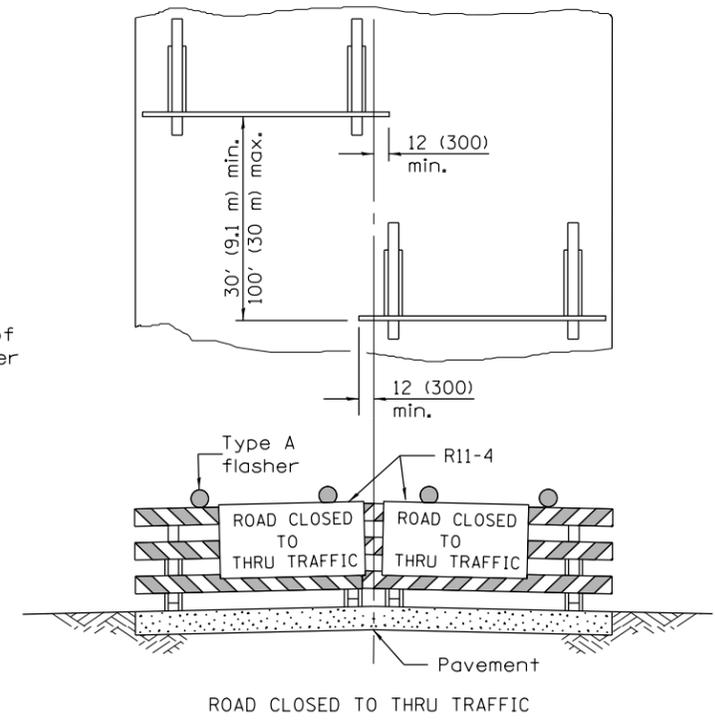
TEMPORARY RUMBLE STRIPS



ROAD CLOSED TO ALL TRAFFIC

Reflectorized striping may be omitted on the back side of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the sign may be mounted on an NCHRP 350 temporary sign support directly in front of the barricade.

**TYPICAL APPLICATIONS OF
TYPE III BARRICADES CLOSING A ROAD**



ROAD CLOSED TO THRU TRAFFIC

Reflectorized striping shall appear on both sides of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the signs may be mounted on NCHRP 350 temporary sign supports directly in front of the barricade.

Illinois Department of Transportation

APPROVED January 1, 2017
Amy Ellis
ENGINEER OF OPERATIONS

APPROVED January 1, 2017
Maureen M. Beck
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

**TRAFFIC CONTROL
DEVICES**

(Sheet 3 of 3)

STANDARD 701901-06