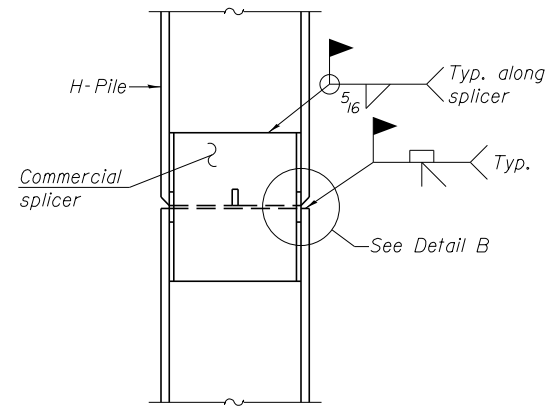
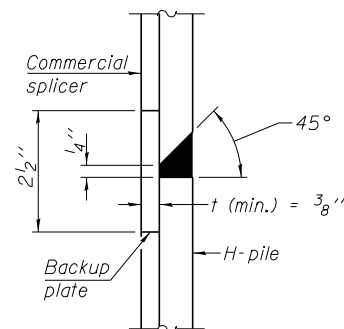


STEEL PILE TABLE

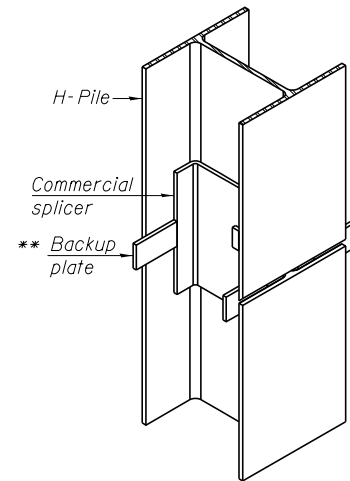
Designation	Depth d	Flange width b _f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION

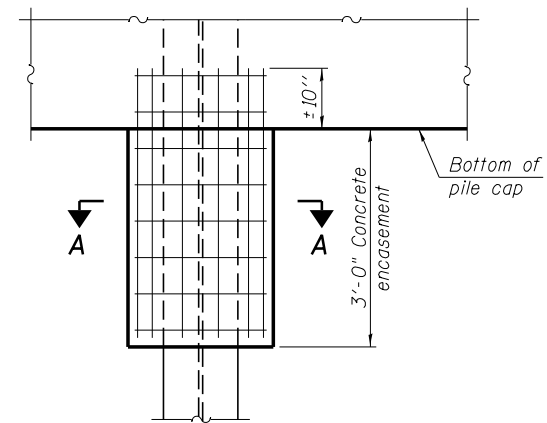


DETAIL "B"



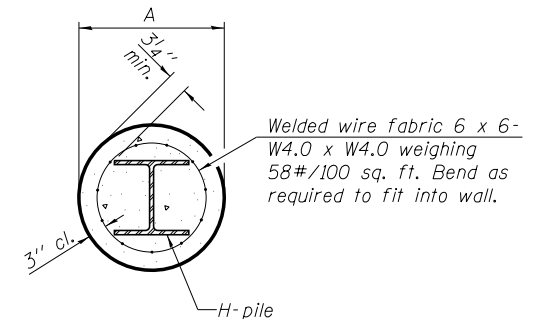
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



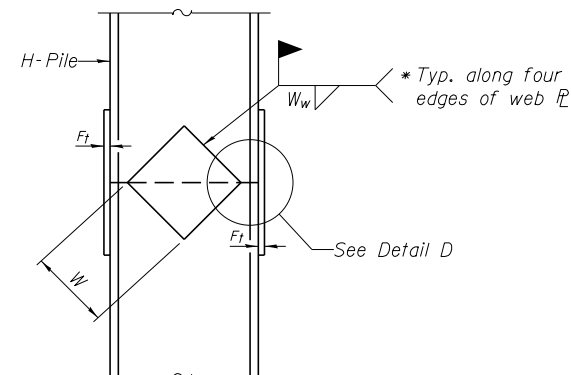
ELEVATION

PILE ENCASEMENT

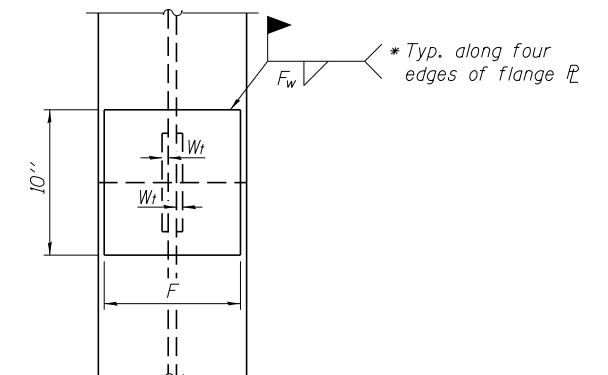


SECTION A-A

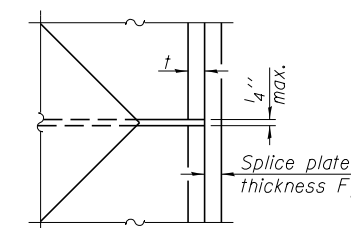
Note:
Forms for encasement may be omitted when soil conditions permit.



ELEVATION



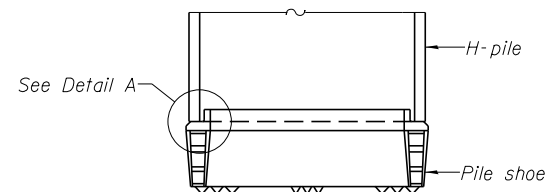
END VIEW



DETAIL D

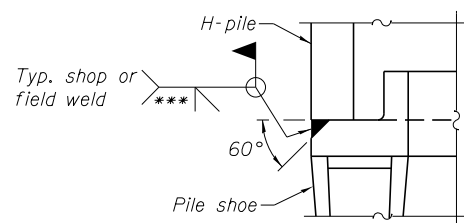
WELDED PLATE FIELD SPLICE

Designation	F	F _t	F _w	W	W _t	W _w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

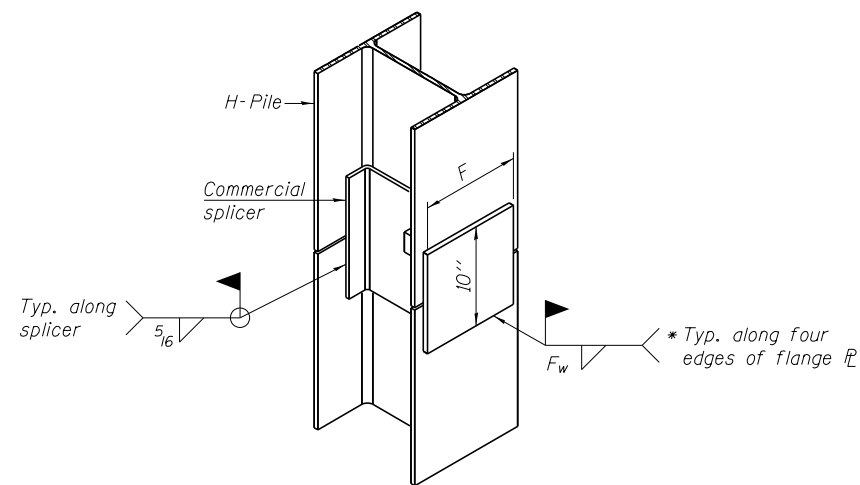


ELEVATION

H-PILE SHOE ATTACHMENT



DETAIL A



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

F-HP

1-27-12

FILE NAME =	USER NAME = ksnyder	DESIGNED - DMS	REVISED -
0161510.60W77.037_HP_Pile_Details.dgn		CHECKED - KWS	REVISED -
		DRAWN - KMS	REVISED -
		CHECKED - KWS	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**HP PILE DETAILS
STRUCTURE NO. 016-1510**

SHEET NO. SA37 OF SA43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	102
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	



SOIL BORING LOG

GSI Job No. 10025

Page 1 of 1

Date 3/13/12

ROUTE FAP 373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW
 SECTION (0707-608&611)HB-B & 0707-608HB-B-1 LOCATION SE 1/4, SEC. 11, TWP. T38N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. Station	BORING NO. Station	Ground Surface Elev. ft	DEPTH (ft)	BLOW COUNT (6")	UNSATURATED QUANTITY (tsf)	MOISTURE (%)	Description	DEPTH (ft)	BLOW COUNT (6")	UNSATURATED QUANTITY (tsf)	MOISTURE (%)
016-1510 & 016-1511 41+24.39	SB-15 41+45	602.50					18" 0" ASPHALT, 18" 0" CRUSHED STONE				
			24				CRUSHED STONE-dense to very dense (Fill) (continued)	14			
			22	3				50/4"			14
		599.50	16								
							CLAY LOAM-dark brown & gray-very stiff to hard (Fill)				
			8	4.6	14		SANDY LOAM with Gravel-gray-very dense	50/4"			11
			8	B							
			-5					-25			
							CLAY LOAM with Fractured Rock-gray-very dense	577.00			
			8					23			
			9	2.0	10			31	4.5	10	
			9	P				39	P		
		594.00									
			17				CRUSHED STONE-dense to very dense (Fill)	11			
			19	7				19	4.5	10	
			-10					22	P		
			18								
			20	4			Silty SAND & FRACTURED ROCK-gray-very dense	570.50			
			23								
			8					50/8"			9
			10		11						
			-15					-35			
			15								
			21	9			Drillers Observation: Apparent bedrock	566.00			
			29				Borehole continued with rock coring.	565.50			
			19								
			22								
			-20					-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
 BBS, from 137 (Rev. 8-99)

ROCK CORE LOG

GSI Job No. 10025

DATE 3/13/2012

LOGGED BY DR

DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement, 47th St. to 55th St.

SECTION (0707-608&611) HB-B & 0707-608HB-B-1

LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM

COUNTY Cook CORING METHOD Rotary Wash

STRUCT. NO. 016-1510 & 016-1511 CORING BARREL TYPE & SIZE NX Double Swivel-10 ft

Station 41+24.39 Core Diameter 2.0 in

BORING NO. SB-15 Top of Rock Elev. 588.0

Station 41+45 Begin Core Elev. 565.5

Offset 77.3' Left

Ground Surface Elev. 602.5

DEPTH (ft)	CORRECTION (%)	RECORDED (%)	RECOVERED (%)	CORRECTION (ft)	RECOVERED (tsf)	STRENGTH (tsf)
1	89.0	32.0	n/a			-37.3

SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE
 RUN 1 (-37.0' to -47.0')
 Light gray with horizontal to wavy bedding. Weathered with numerous horizontal & vertical fractures throughout.

Color pictures of the cores Yes. Cores will be stored for examination for ____
 The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)



Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 Job No. 10093

FILE NAME =	USER NAME = ksnyder	DESIGNED - KMS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS (1 OF 6) STRUCTURE NO. 016-1510	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0161510.60W77.038_Soil.Boring.ISB 151.dgn	PLOT SCALE =	CHECKED - JHG	REVISED -			373	(0707-608&611)HB-B	COOK	177	103
PLOT DATE = 6/23/2014	CHECKED - JHG	REVISED -	REVISED -			CONTRACT NO. 60W77				
						SHEET NO. SA38 OF SA43 SHEETS			ILLINOIS FED. AID PROJECT	

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SOIL BORING LOG

GSI Job No. 10025

Page 1 of 1

Date 3/27/12

ROUTE FAP 373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW
 SECTION (0707-608&611)HB-B & LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	Station	BORING NO.	Station	Offset	Ground Surface Elev.	DEPTH (ft)	BULGE (ft)	UCS (tsf)	MOISTURE (%)	DESCRIPTION	DEPTH (ft)	BULGE (ft)	UCS (tsf)	MOISTURE (%)
016-1510 & 016-1511	41+24.39	SB-48	40+57	0.00ft	602.60					Surface Water Elev. n/a ft Stream Bed Elev. n/a ft				
										Groundwater Elev.: First Encounter 588.6 ft Upon Completion n/a ft After Hrs. ft				
						14.0"				14.0" ASPHALT, 4.0" GRAVEL & STONE				
						601.10				GRAVEL & FRACTURED ROCK-gray-very dense				
										CLAY LOAM-brown & gray-very stiff to hard (Fill)				
										579.60				
										Clayey SAND, GRAVEL & FRACTURED ROCK-gray-dense to very dense				
										591.60				
										FRACTURED ROCK & GRAVEL-gray-medium dense				
										568.10				
										Drillers Observation: Apparent bedrock.				
										567.10				
										Borehole continued with rock coring.				
										584.60				
										Clayey SAND, GRAVEL & FRACTURED ROCK-gray-medium dense				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
 BBS, from 137 (Rev. 8-99)

ROCK CORE LOG

GSI Job No. 10025

DATE 3/27/2012

LOGGED BY DR

DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement, 47th St. to 55th St.

SECTION (0707-608&611) HB-B & LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM

COUNTY Cook CORING METHOD Rotary Wash

STRUCT. NO. 016-1510 & 016-1511 CORING BARREL TYPE & SIZE NX Double Swivel-10 ft

Station 41+24.39 Core Diameter 2.0 in

BORING NO. SB-48 Top of Rock Elev. 588.1

Station 40+57 Begin Core Elev. 587.1

Offset Baseline

Ground Surface Elev. 602.6

DEPTH (ft)	RECORDED (%)	RECOVERED (%)	CORRECTION (ft)	STRENGTH (tsf)
1	90.5	57.5	n/a	114
-40.5				
-45.5				

SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE
 RUN 1 (-35.5' to -45.5')
 Light gray mottled gray, slightly porous with horizontal bedding. Horizontal fractures @ -35.6' & -35.8'. Vertical fracture from -36.0' to -36.9'. Horizontal fracture @ -37.5'. Transverse fracture with 1/2" clay parting from -38.1' to -38.4'. Horizontal fractures @ -39.3', -40.2' & -40.4'. Weathered vertical fracture from -41.5' to -42.4'.

Color pictures of the cores. Yes. Cores will be stored for examination for ____
 The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2936)



Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10093

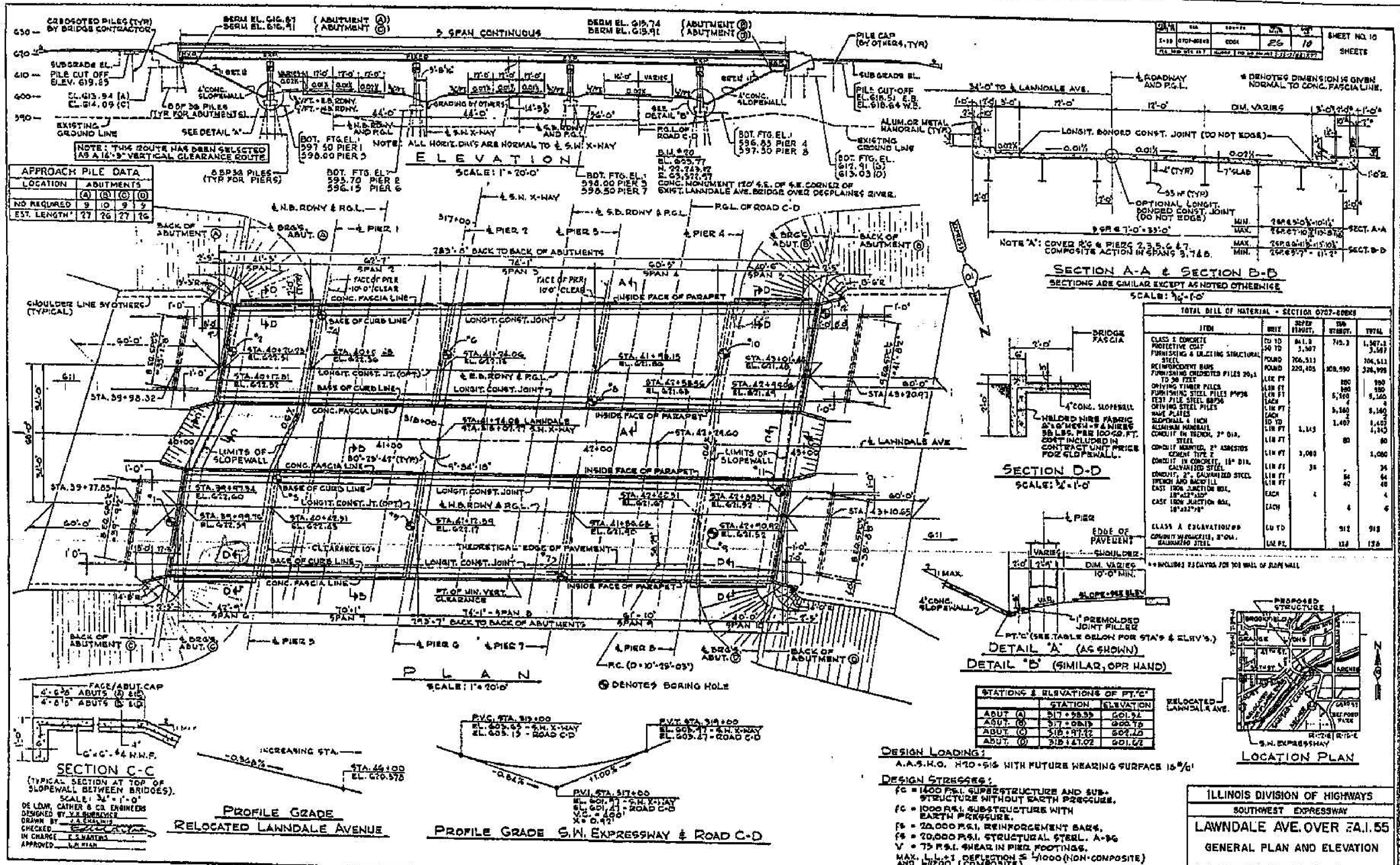
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		DRAWN - KMS	REVISED -
		CHECKED - JHG	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**SOIL BORING LOGS (5 OF 6)
 STRUCTURE NO. 016-1510**

SHEET NO. SA42 OF SA43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	107
				CONTRACT NO. 60W77
ILLINOIS FED. AID PROJECT				



APPROACH PILE DATA

LOCATION	ABUTMENTS
NO. REQUIRED	9 10 9 9
EST. LENGTH	27 26 27 26

DATE	NO.	BY	CHKD.	APP'D.	SHEET NO. 10
1-18	0707-608	EG	EG	EG	10
1-18	0707-608	EG	EG	EG	10

TOTAL BILL OF MATERIAL - SECTION 0707-608B

ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL
CLASS 2 CONCRETE	CU YD	84.8	715.2	60,641.6
PROTECTIVE COAT	SQ YD	3,307	3.58	11,839.06
REINFORCING & EMBEDDING STRUCTURAL STEEL	TON	706.511	104.613	73,918.13
REINFORCEMENT BARS	TON	222,405	308.590	68,600,000.00
PURCHASING CHOLESTEROL PILES 20x1	LINE FT			
TO 50 FEET	LINE FT	800	1.00	800.00
DRIVING TIMBER PILES	LINE FT	100	1.00	100.00
PURCHASING STEEL PILES 18x18	LINE FT	5,100	1.00	5,100.00
TEST PILE STEEL 18x18	LINE FT	2	1.00	2.00
DRIVING STEEL PILES	LINE FT	1,143	1.00	1,143.00
WAVE PLATES	SQ YD	1,407	1.00	1,407.00
SLOPEWALL 4 INCH	SQ YD	1,143	1.00	1,143.00
ALUMINUM HANDRAIL	LINE FT	1,143	1.00	1,143.00
58 LBS. PER 100 SQ. FT. CONCRETE IN TRENCH, 3" DIA.	LINE FT	80	1.00	80.00
STEEL	LINE FT	3,000	1.00	3,000.00
CONCRETE REINFORCED 2" ASPHALT CONCRETE TYPE 2	LINE FT	36	1.00	36.00
CONCRETE IN CONCRETE, 18" DIA. GALVANIZED STEEL	LINE FT	84	1.00	84.00
CONCRETE, 2" GALVANIZED STEEL	LINE FT	40	1.00	40.00
TRENCH AND BACKFILL	EACH	4	1.00	4.00
EAST IRON JUNCTION BOX, 18"x24"x36"	EACH	6	1.00	6.00
CAST IRON JUNCTION BOX, 18"x24"x36"	EACH	6	1.00	6.00
CLASS A EXCAVATION	CU YD	912	1.00	912.00
CONCRETE REINFORCED, 8" DIA. GALVANIZED STEEL	LINE FT	120	1.00	120.00

DESIGN LOADS: A.A.S.H.O. H20-516 WITH FUTURE WEARING SURFACE 1 1/2" MIN. DESIGN STRESSES: FC = 1400 P.S.I. SUPERSTRUCTURE AND SUB-STRUCTURE WITHOUT EARTH PRESSURE. FC = 1000 P.S.I. SUBSTRUCTURE WITH EARTH PRESSURE. FS = 20,000 P.S.I. REINFORCEMENT BARS. FS = 20,000 P.S.I. STRUCTURAL STEEL, A-36. V = 75 P.S.I. SHEAR IN PIER FOOTINGS. MAX. ALLOWED DEFLECTION 5/1000 (NON-COMPOSITE) AND 1/200 (COMPOSITE).

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Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME = ksnider	DESIGNED - KMS	REVISED -
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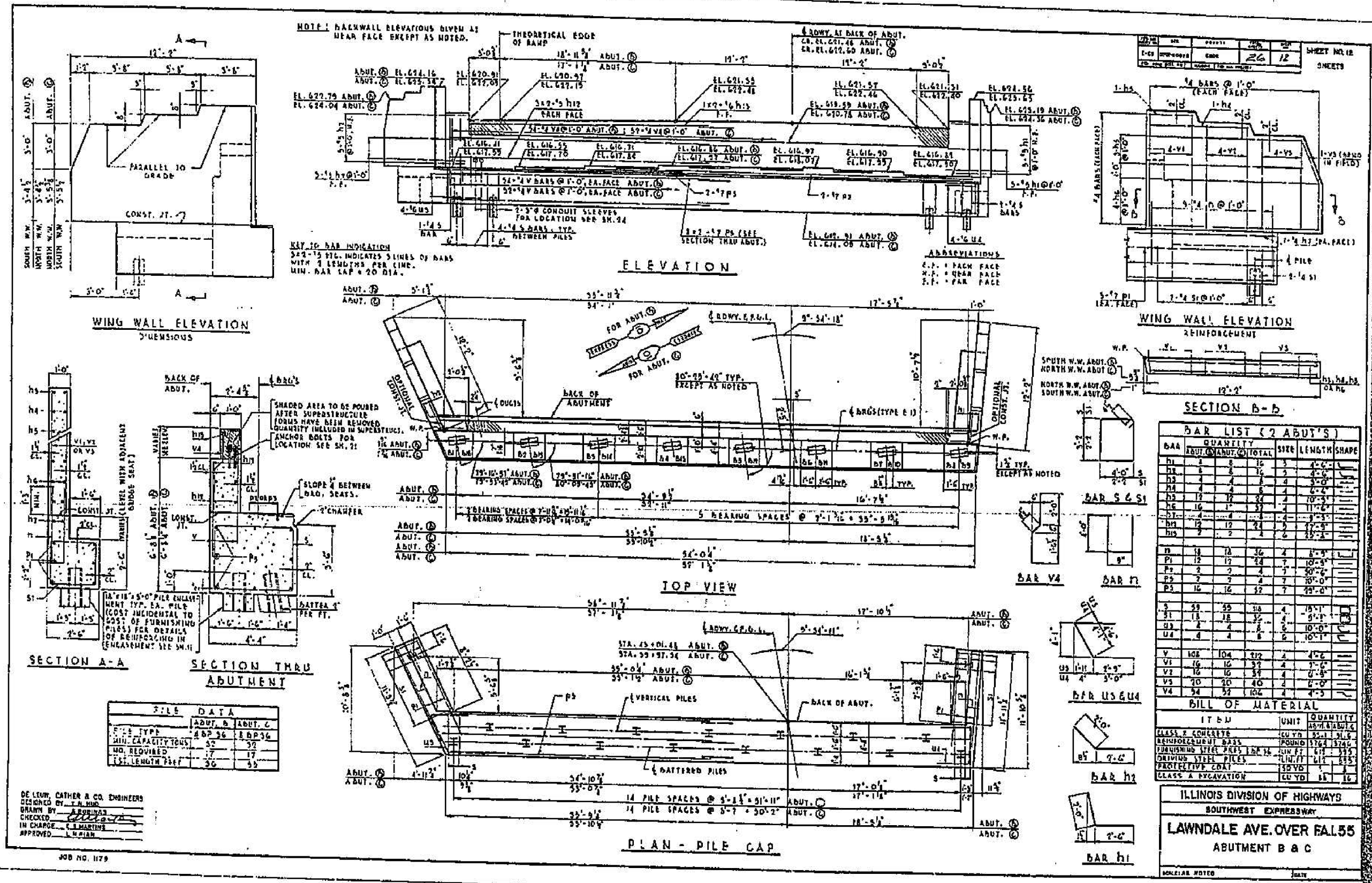
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (1 OF 8)
STRUCTURE NO. 016-1510
SHEET NO. SAX1 OF SAX8 SHEETS

FOR INFORMATION ONLY

F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	109
CONTRACT NO. 60W77				
ILLINOIS FED. AID PROJECT				

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Chicago, Illinois 60601
312-565-0450 Job No. 10093

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DESIGNED - KMS
CHECKED - JHG
PLOT SCALE =
DRAWN - KMS
PLOT DATE = 6/23/2014
CHECKED - JHG

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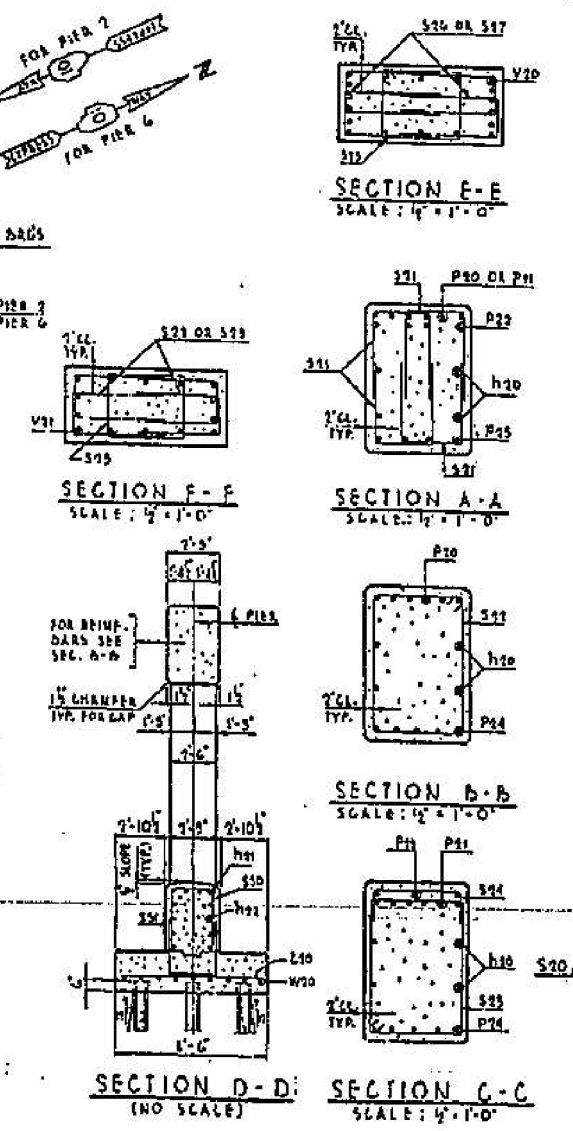
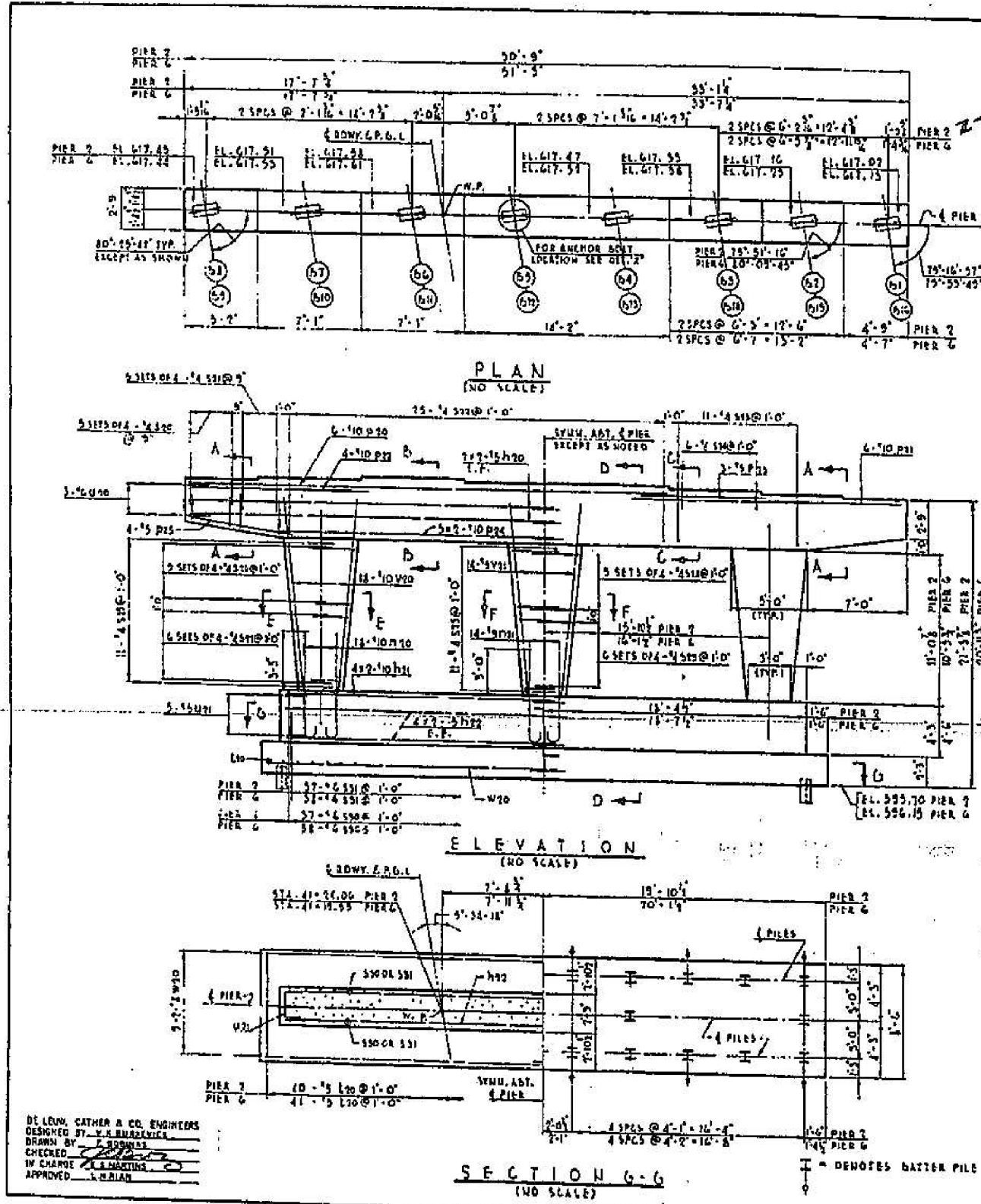
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (3 OF 8)
STRUCTURE NO. 016-1510
SHEET NO. SA33 OF SA38 SHEETS

FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	111
				CONTRACT NO. 60W77
ILLINOIS FED. AID PROJECT				

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SECTION	NO.	DATE	BY	CHKD.	NO.	DATE
1-10	0204	2004	EG	14		

SHEET NO. 14
SHEETS

BEAM	A	B
B1	75'	24'
B2	75'	12'
B3 THRU B14	75'	12'
B15	75'	12'
B16	75'	12'

DETAIL 'X'
FOR DIMENSIONS A, Z & B SEE TABLE

NOTE:
ALL ANCHOR BOLTS TO PROJECT 2" ABOVE FINISHED CONCRETE. EXCEPT AS NOTED, PROJECT SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
ALL EDGES TO HAVE 5/16" CHAMFER EXCEPT AS NOTED.
POUR STEPS MONOLITHICALLY WITH PIER CAP.
KEY TO BAR INDICATION: 5/8" 10#16 MEANS 5 LINES OF BARS WITH 1 LENDING PER LINE.
MIN. BAR LAP = 20 DIA.

BAR LIST (2 PIERS)

BAR NUMBER	PIER 2	PIER 6	TOTAL	SIZE	LENGTH	SHAPE
H20	8	8	16	3	26'-5"	
H21	8	8	16	20	15'-9"	
H22	16	16	32	5	15'-5"	
H23	36	36	72	10	7'-0"	
H24	14	14	28	5	7'-5"	
P20	6	6	12	10	33'-5"	
P21	6	6	12	10	20'-5"	
P22	6	6	12	10	19'-0"	
P23	3	3	6	5	8'-0"	
P24	10	10	20	10	20'-0"	
P25	8	8	16	5	7'-5"	
S20	40	40	80	4	6'-1"	
S21	40	40	80	4	6'-7"	
S22	28	28	56	4	15'-4"	
S23	11	11	22	4	10'-5"	
S24	6	6	12	4	25'-5"	
S25	55	55	110	4	25'-5"	
S26	40	40	80	4	25'-5"	
S27	2	2	4	6	10'-7"	
S28	4	4	8	6	6'-4"	
S29	4	4	8	6	6'-4"	
S30	4	4	8	6	6'-4"	
S31	4	4	8	6	6'-4"	
S32	4	4	8	6	6'-4"	
S33	4	4	8	6	6'-4"	
S34	4	4	8	6	6'-4"	
S35	4	4	8	6	6'-4"	
S36	4	4	8	6	6'-4"	
S37	4	4	8	6	6'-4"	
S38	4	4	8	6	6'-4"	
S39	4	4	8	6	6'-4"	
S40	4	4	8	6	6'-4"	
S41	4	4	8	6	6'-4"	
S42	4	4	8	6	6'-4"	
S43	4	4	8	6	6'-4"	
S44	4	4	8	6	6'-4"	
S45	4	4	8	6	6'-4"	
S46	4	4	8	6	6'-4"	
S47	4	4	8	6	6'-4"	
S48	4	4	8	6	6'-4"	
S49	4	4	8	6	6'-4"	
S50	4	4	8	6	6'-4"	
S51	4	4	8	6	6'-4"	
S52	4	4	8	6	6'-4"	
S53	4	4	8	6	6'-4"	
S54	4	4	8	6	6'-4"	
S55	4	4	8	6	6'-4"	
S56	4	4	8	6	6'-4"	
S57	4	4	8	6	6'-4"	
S58	4	4	8	6	6'-4"	
S59	4	4	8	6	6'-4"	
S60	4	4	8	6	6'-4"	
S61	4	4	8	6	6'-4"	
S62	4	4	8	6	6'-4"	
S63	4	4	8	6	6'-4"	
S64	4	4	8	6	6'-4"	
S65	4	4	8	6	6'-4"	
S66	4	4	8	6	6'-4"	
S67	4	4	8	6	6'-4"	
S68	4	4	8	6	6'-4"	
S69	4	4	8	6	6'-4"	
S70	4	4	8	6	6'-4"	
S71	4	4	8	6	6'-4"	
S72	4	4	8	6	6'-4"	
S73	4	4	8	6	6'-4"	
S74	4	4	8	6	6'-4"	
S75	4	4	8	6	6'-4"	
S76	4	4	8	6	6'-4"	
S77	4	4	8	6	6'-4"	
S78	4	4	8	6	6'-4"	
S79	4	4	8	6	6'-4"	
S80	4	4	8	6	6'-4"	
S81	4	4	8	6	6'-4"	
S82	4	4	8	6	6'-4"	
S83	4	4	8	6	6'-4"	
S84	4	4	8	6	6'-4"	
S85	4	4	8	6	6'-4"	
S86	4	4	8	6	6'-4"	
S87	4	4	8	6	6'-4"	
S88	4	4	8	6	6'-4"	
S89	4	4	8	6	6'-4"	
S90	4	4	8	6	6'-4"	
S91	4	4	8	6	6'-4"	
S92	4	4	8	6	6'-4"	
S93	4	4	8	6	6'-4"	
S94	4	4	8	6	6'-4"	
S95	4	4	8	6	6'-4"	
S96	4	4	8	6	6'-4"	
S97	4	4	8	6	6'-4"	
S98	4	4	8	6	6'-4"	
S99	4	4	8	6	6'-4"	
S100	4	4	8	6	6'-4"	

PILE DATA

	PIER 2	PIER 6
PILE TYPE	1 B.P. 36	1 B.P. 36
MIN. CAPACITY TONS	32	32
NO. REQUIRED	24	24
EST. LENGTH FEET	17	20
CUT OFF ELEV.	596.20	596.69

* INCLUDES 1 TEST PILE

ALL BAR DIMENSIONS ARE OUT TO OUT. PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE: 2 POINTING BARS PROFOR PIER 2 FOR ALL PIERS BAR SUPPLIES DESIN AT 20.

BILL OF MATERIAL (2 PIERS)

ITEM	UNIT	QUANTITY	
		PIER 2	PIER 6
CLASS 2 CONCRETE	CU YD	76.9	77.7
REINFORCEMENT BARS	POUNDS	17,381	17,474
FURNISHING STEEL PILES 1 B.P. 36	LINE FT	387	480
TEST PILE STEEL 1 B.P. 36	EA	1	1
DRAWING STEEL PILES	LINE FT	387	480
CLASS 2 EXCAVATION	CU YD	97	99

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
LAWDALE AVE. OVER I-55
PIERS 2 AND 6

DE LOW, CATHER & CO. ENGINEERS
DESIGNED BY: F. S. BRADSHAW
DRAWN BY: F. S. BRADSHAW
CHECKED BY: J. MARTINE
IN CHARGE: J. MARTINE
APPROVED: J. MARTINE

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engineers - scientists - planners
Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
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		JHG	
		KMS	
		JHG	

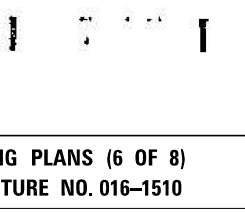
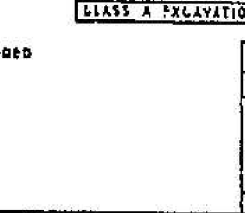
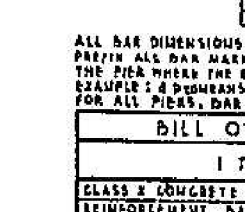
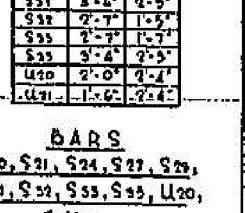
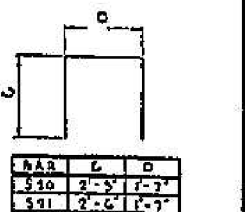
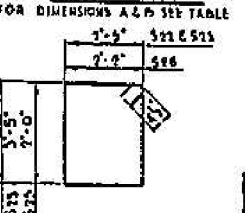
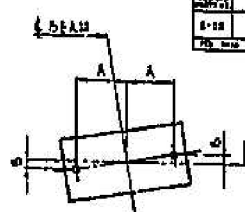
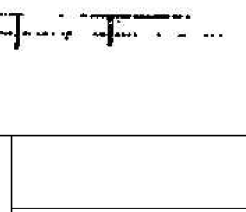
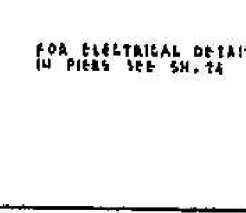
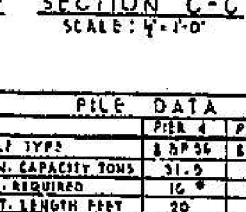
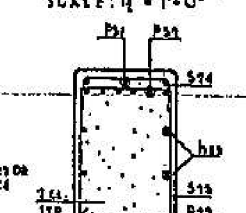
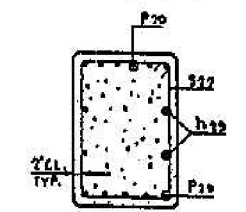
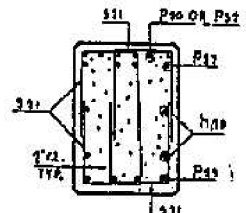
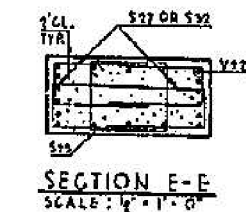
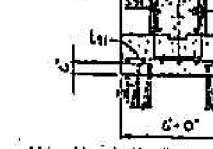
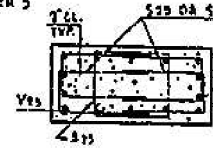
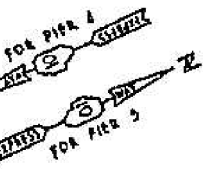
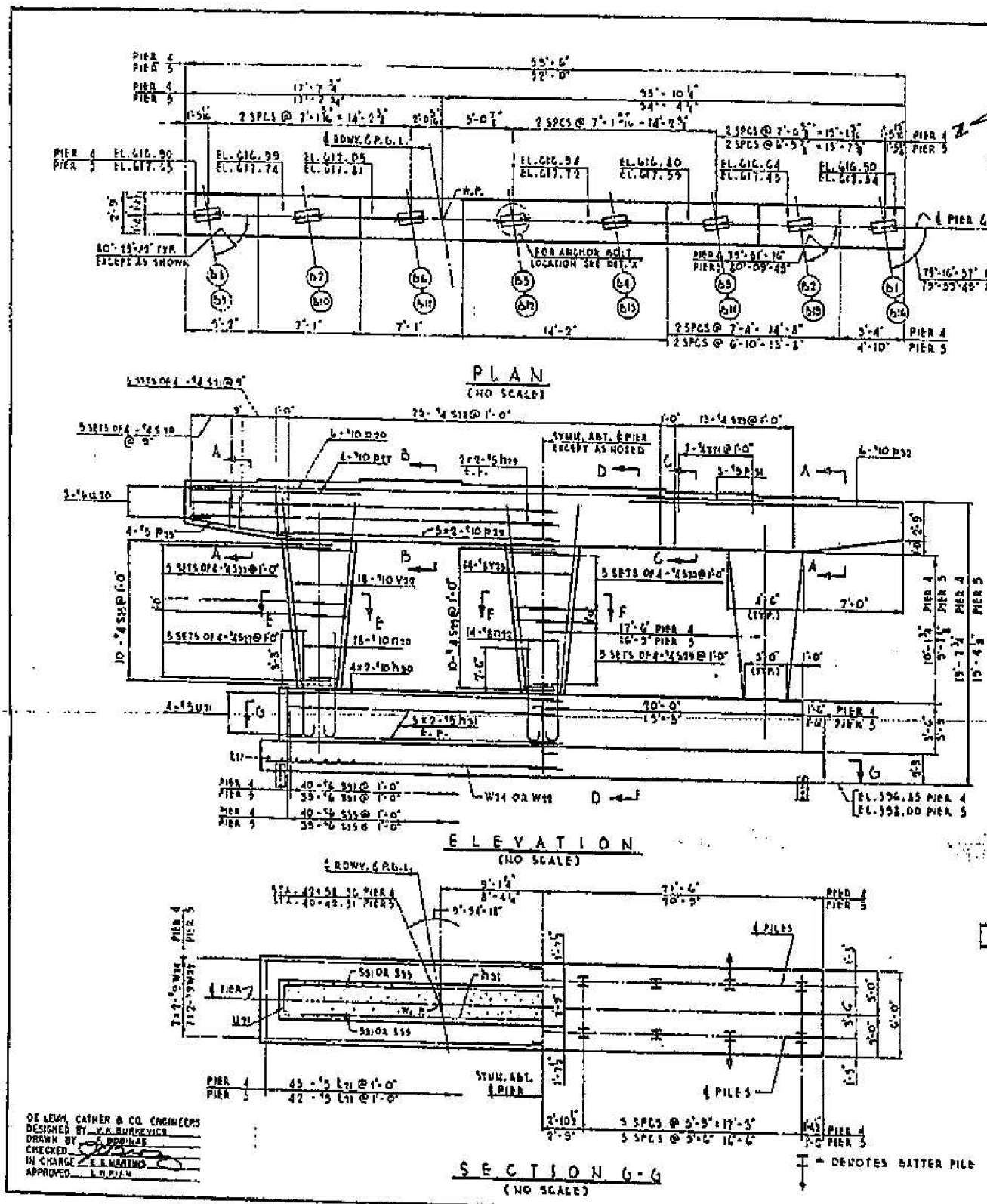
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (4 OF 8)
STRUCTURE NO. 016-1510
SHEET NO. S4X4 OF S4X8 SHEETS

FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	112
				CONTRACT NO. 60W77
ILLINOIS FED. AID PROJECT				

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DATE	NO.	DESCRIPTION	BY	CHKD.	SHEET NO. 18
6-23-14	0000	EXISTING PLANS	KMS	JHG	18

BEAM	A	B
B1	8'-0"	17'-0"
B2	8'-0"	17'-0"
B3 TRAVEL	8'-0"	17'-0"
B4 TRAVEL	8'-0"	17'-0"
B5	7'-0"	15'-0"
B6	7'-0"	15'-0"

NOTE:
 ALL ANCHOR BOLTS TO PROJECT 3" ABOVE FINISHED CONCRETE, EXCEPT AS NOTED. PROVIDE SPACING REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
 ALL EDGES TO HAVE STC. 3/4" CHAMFER EXCEPT AS NOTED.
 POUR STEPS MONOLITHICALLY WITH PIER CAP.
 SET TO BAR INDICATION
 3'-0" TO 4'-0" ETC. MEANS 5 LINES OF BARS WITH 4 LENGTHS PER LINE.
 MIN. BAR LAP = 20 DIA.

BAR LIST (2 PIERS)						
BAR	NUMBER	PIER 4	PIER 5	TOTAL	SIZE	LENGTH
S20	8	8	0	16	5	27'-0"
S21	8	8	0	16	10	21'-0"
S22	12	12	0	24	5	20'-0"
S23	24	24	0	48	10	7'-11"
S24	14	14	0	28	8	6'-11"
S25	6	6	0	12	10	53'-5"
S26	8	8	0	16	5	7'-5"
S27	8	8	0	16	10	11'-0"
S28	10	10	0	20	10	21'-0"
S29	5	5	0	10	5	8'-0"
S30	4	4	0	8	12	10'-0"
S31	40	40	0	80	4	6'-11"
S32	40	40	0	80	4	6'-11"
S33	20	20	0	40	5	15'-11"
S34	15	15	0	30	4	10'-0"
S35	7	7	0	14	5	8'-0"
S36	50	50	0	100	4	5'-0"
S37	40	40	0	80	4	2'-11"
S38	20	20	0	40	4	2'-11"
S39	40	40	0	80	4	2'-11"
S40	40	40	0	80	4	2'-11"
S41	20	20	0	40	4	2'-11"
S42	40	40	0	80	4	2'-11"
S43	20	20	0	40	4	2'-11"
S44	20	20	0	40	4	2'-11"
S45	20	20	0	40	4	2'-11"
S46	20	20	0	40	4	2'-11"
S47	20	20	0	40	4	2'-11"
S48	20	20	0	40	4	2'-11"
S49	20	20	0	40	4	2'-11"
S50	20	20	0	40	4	2'-11"
S51	20	20	0	40	4	2'-11"
S52	20	20	0	40	4	2'-11"
S53	20	20	0	40	4	2'-11"
S54	20	20	0	40	4	2'-11"
S55	20	20	0	40	4	2'-11"
S56	20	20	0	40	4	2'-11"
S57	20	20	0	40	4	2'-11"
S58	20	20	0	40	4	2'-11"
S59	20	20	0	40	4	2'-11"
S60	20	20	0	40	4	2'-11"
S61	20	20	0	40	4	2'-11"
S62	20	20	0	40	4	2'-11"
S63	20	20	0	40	4	2'-11"
S64	20	20	0	40	4	2'-11"
S65	20	20	0	40	4	2'-11"
S66	20	20	0	40	4	2'-11"
S67	20	20	0	40	4	2'-11"
S68	20	20	0	40	4	2'-11"
S69	20	20	0	40	4	2'-11"
S70	20	20	0	40	4	2'-11"
S71	20	20	0	40	4	2'-11"
S72	20	20	0	40	4	2'-11"
S73	20	20	0	40	4	2'-11"
S74	20	20	0	40	4	2'-11"
S75	20	20	0	40	4	2'-11"
S76	20	20	0	40	4	2'-11"
S77	20	20	0	40	4	2'-11"
S78	20	20	0	40	4	2'-11"
S79	20	20	0	40	4	2'-11"
S80	20	20	0	40	4	2'-11"
S81	20	20	0	40	4	2'-11"
S82	20	20	0	40	4	2'-11"
S83	20	20	0	40	4	2'-11"
S84	20	20	0	40	4	2'-11"
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S86	20	20	0	40	4	2'-11"
S87	20	20	0	40	4	2'-11"
S88	20	20	0	40	4	2'-11"
S89	20	20	0	40	4	2'-11"
S90	20	20	0	40	4	2'-11"
S91	20	20	0	40	4	2'-11"
S92	20	20	0	40	4	2'-11"
S93	20	20	0	40	4	2'-11"
S94	20	20	0	40	4	2'-11"
S95	20	20	0	40	4	2'-11"
S96	20	20	0	40	4	2'-11"
S97	20	20	0	40	4	2'-11"
S98	20	20	0	40	4	2'-11"
S99	20	20	0	40	4	2'-11"
S100	20	20	0	40	4	2'-11"
U20	6	6	12	18	6	6'-0"
U21	8	8	16	24	5	5'-0"
W11	56	56	112	224	10	12'-0"
W12	14	14	28	56	8	12'-0"
W13	14	14	28	56	8	12'-0"
W14	14	14	28	56	8	12'-0"
W15	14	14	28	56	8	12'-0"
W16	14	14	28	56	8	12'-0"

PILE DATA			
PILE TYPE	PIER 4	PIER 5	
MIN. CAPACITY TONS	31.5	31.5	
NO. REQUIRED	16	16	
EST. LENGTH FEET	20	19	
LET OFF ELEV.	597.35	598.50	

* INCLUDES 1 TEST PILE

ALL BAR DIMENSIONS ARE OUT TO OUT. PREPARE ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE: 4 #20 BARS 500 FOR PIER 4 FOR ALL PIERS, BAR SUPPLIES BEGIN AT 20.

BILL OF MATERIAL (2 PIERS)			
ITEM	UNIT	QUANTITY	PIER 4 PIER 5
CLASS 2 CONCRETE	CU YD	68.0	66.2
REINFORCEMENT BARS	POUND	11803	11803
FURNISHING STEEL PILES 8" DP 56	LINEAL FT	500	500
TEST PILE STEEL 3" DP 56	PILE	1	
DRIVING STEEL PILES	LINEAL FT	500	500
CLASS A EXCAVATION	CU YD	44	44

ILLINOIS DIVISION OF HIGHWAYS
 SOUTHWEST EXPRESSWAY
 LAWNDALE AVE. OVER I-55
 PIERS 4 AND 5

DE LEVY, CATHER & CO. ENGINEERS
 DESIGNED BY: V. BURDENIA
 DRAWN BY: J. BOBINAS
 CHECKED BY: J. BOBINAS
 IN CHARGE: E. L. HARRIS
 APPROVED: J. BOBINAS

JOB NO. 1129

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (6 OF 8)
 STRUCTURE NO. 016-1510
 SHEET NO. S46 OF S48 SHEETS

FOR INFORMATION ONLY

F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	114
CONTRACT NO. 60W77				ILLINOIS FED. AID PROJECT

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 engineers - scientists - planners
 Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10093

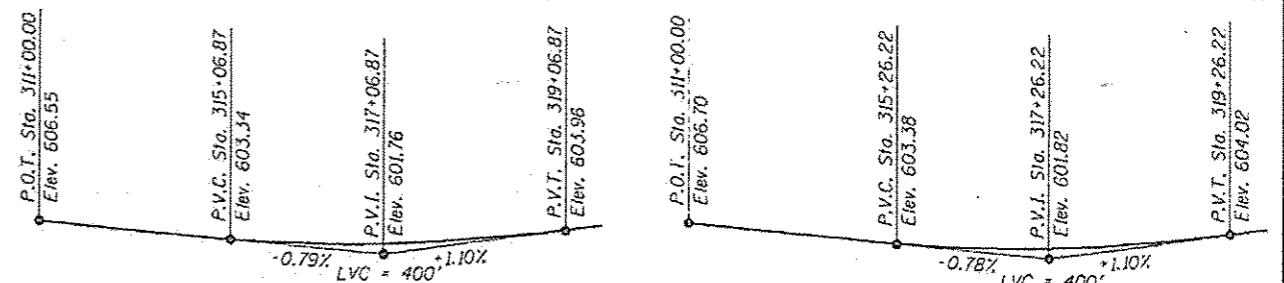
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Bench Mark: Chiseled square on wingwall at NE corner of NB IL-171 bridge wall over sanitary and ship canal. El. 625.62

Existing Structure: S.H. 016-0046 was originally built in 1963 under Section 0707-611HB. The structure consists of an 8 1/2" concrete deck (including microsilica overlay) supported by five single spans (W24 & W36 rolled beams). The substructures consist four hammerhead concrete piers and stub abutments with wingwalls on variable skew. The structure is 308'-0 1/2" back to back of abutments, with an out-to-out deck width of 28'-0". The structure is to be removed and replaced. Traffic will be detoured to complete construction of the proposed structure, but will remain in service on the existing bridge for the majority of the contract duration.

No salvage.



PROFILE GRADE NB & SB I-55
(Along Median Edge of Pavement)

PROFILE GRADE CD ROAD
(Along Median Edge of Pavement)

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with 2013 Interims

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (AASHTO M270 Grade 50)

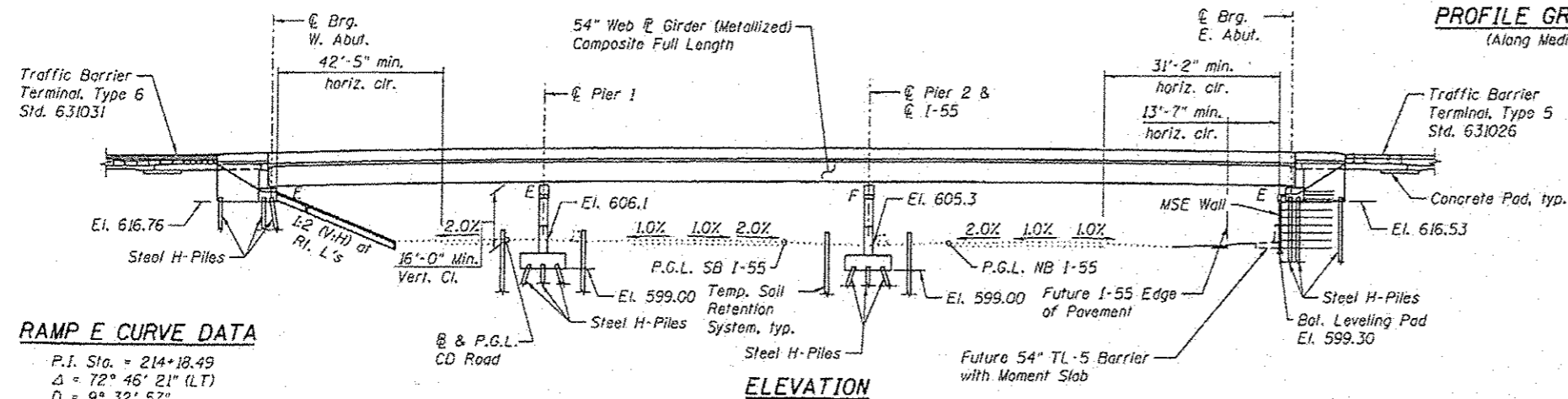
PRECAST UNITS

$f'_c = 4,500$ psi (Precast Panels)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.063 g
Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.114 g
Soil Site Class = C

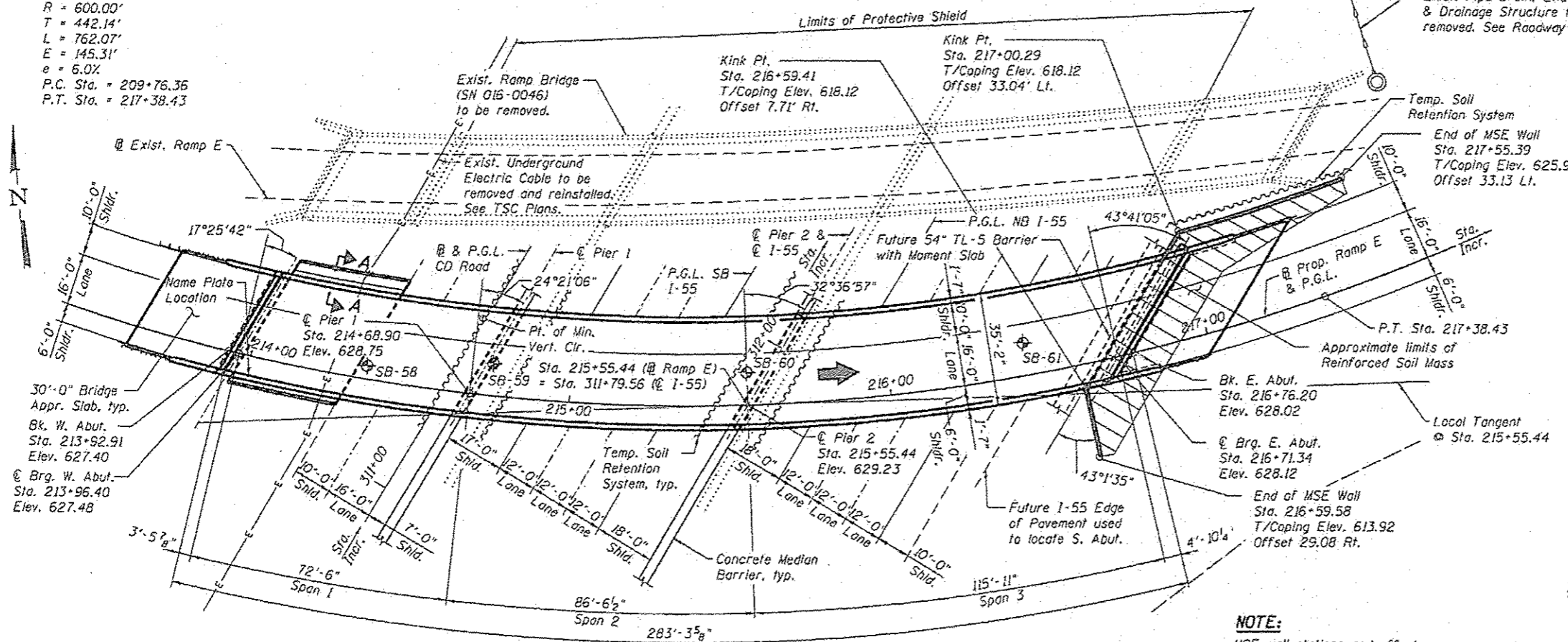
APPROVED
For Structural Adequacy Only
Dr. Carl Ruyter
Engineer of Bridges & Structures



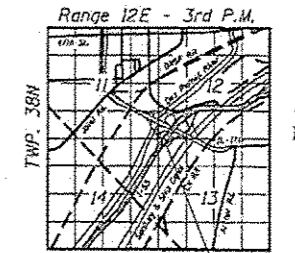
ELEVATION

RAMP E CURVE DATA

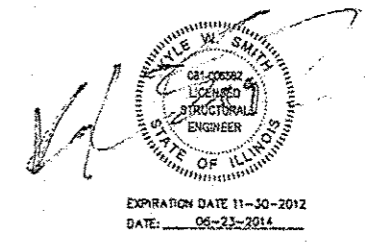
P.I. Sta. = 214+18.49
 $\Delta = 72^\circ 46' 21''$ (LT)
 $D = 9^\circ 32' 57''$
 $R = 600.00'$
 $T = 442.14'$
 $L = 762.07'$
 $E = 145.31'$
 $e = 6.0\%$
P.C. Sta. = 209+76.36
P.T. Sta. = 217+38.43



PLAN



LOCATION SKETCH



GENERAL PLAN AND ELEVATION
SB IL-171 TO NB I-55 RAMP E OVER I-55
FAP-373
SECTION (0707-608&611)HB-B
COOK COUNTY
STATION 215+55.44
STRUCTURE NO. 016-1512

NOTE:
MSE wall stations and offsets are measured from the Proposed Ramp E to the front face of precast panels.

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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-685-0450 Job No. 10093

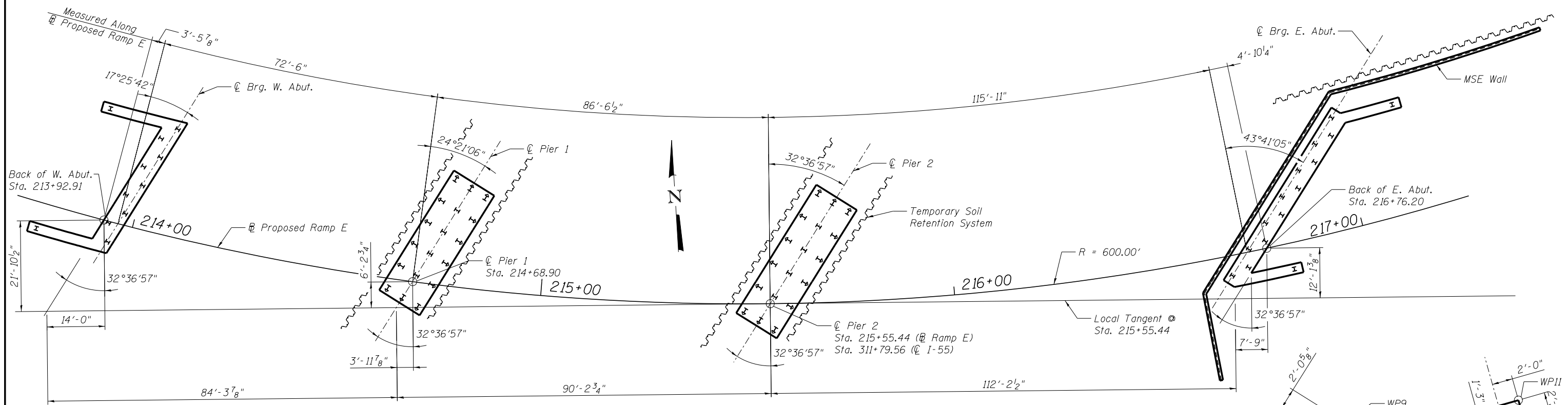
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		JHG	
		DRAWN	REVISIONS
		KWS	
		CHECKED	REVISIONS
		KJN	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. S81 OF S843 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	10707-608&611HB-B	COOK	177	117
				CONTRACT NO. 60W77

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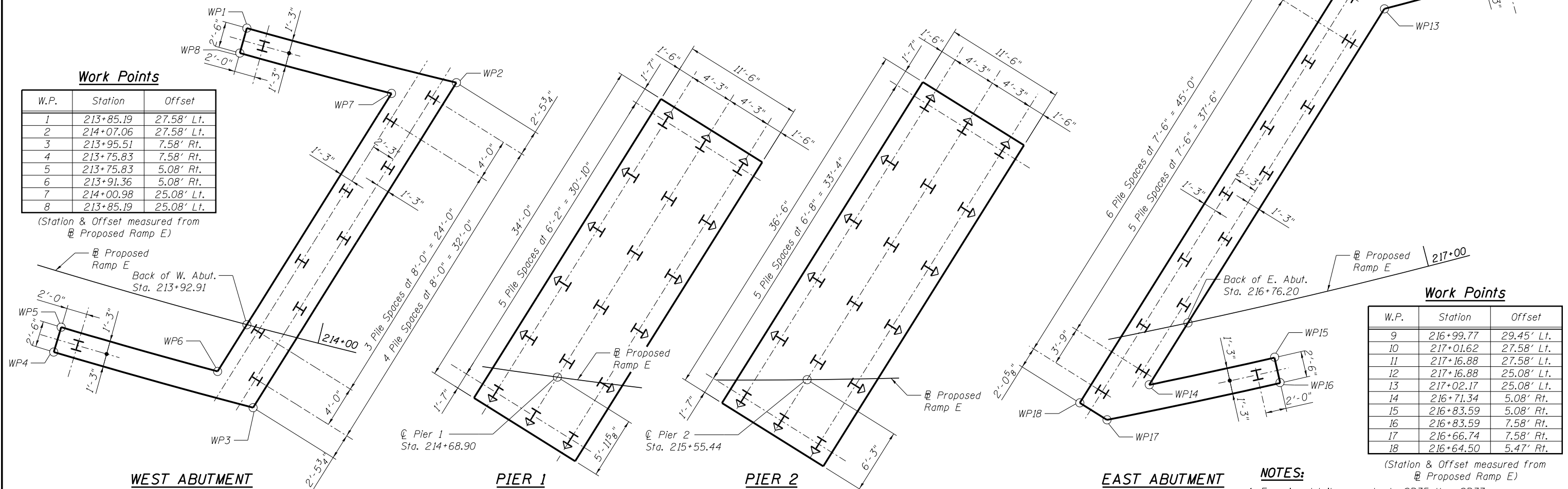


FOUNDATION LAYOUT

Work Points

W.P.	Station	Offset
1	213+85.19	27.58' Lt.
2	214+07.06	27.58' Lt.
3	213+95.51	7.58' Rt.
4	213+75.83	7.58' Rt.
5	213+75.83	5.08' Rt.
6	213+91.36	5.08' Rt.
7	214+00.98	25.08' Lt.
8	213+85.19	25.08' Lt.

(Station & Offset measured from Proposed Ramp E)



FOUNDATION LAYOUT

Work Points

W.P.	Station	Offset
9	216+99.77	29.45' Lt.
10	217+01.62	27.58' Lt.
11	217+16.88	27.58' Lt.
12	217+16.88	25.08' Lt.
13	217+02.17	25.08' Lt.
14	216+71.34	5.08' Rt.
15	216+83.59	5.08' Rt.
16	216+83.59	7.58' Rt.
17	216+66.74	7.58' Rt.
18	216+64.50	5.47' Rt.

(Station & Offset measured from Proposed Ramp E)

- NOTES:**
1. For pier details, see sheets SB35 thru SB37.
 2. For abutment details, see sheets SB29 thru SB32.
 3. For MSE Wall details, see sheets SB33 and SB34.
 4. For Temporary Soil Retention System Details, see sheet SB4.

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Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME = ksnyder	DESIGNED - JHG	REVISED -
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		DRAWN - KMS	REVISED -
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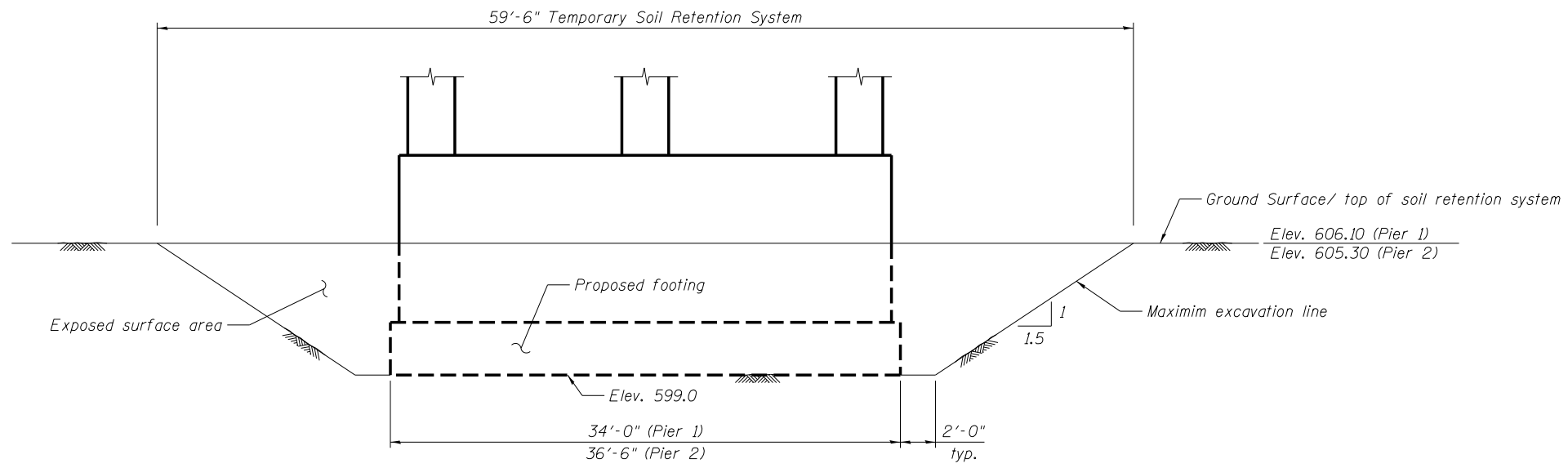
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOUNDATION LAYOUT
STRUCTURE NO. 016-1512

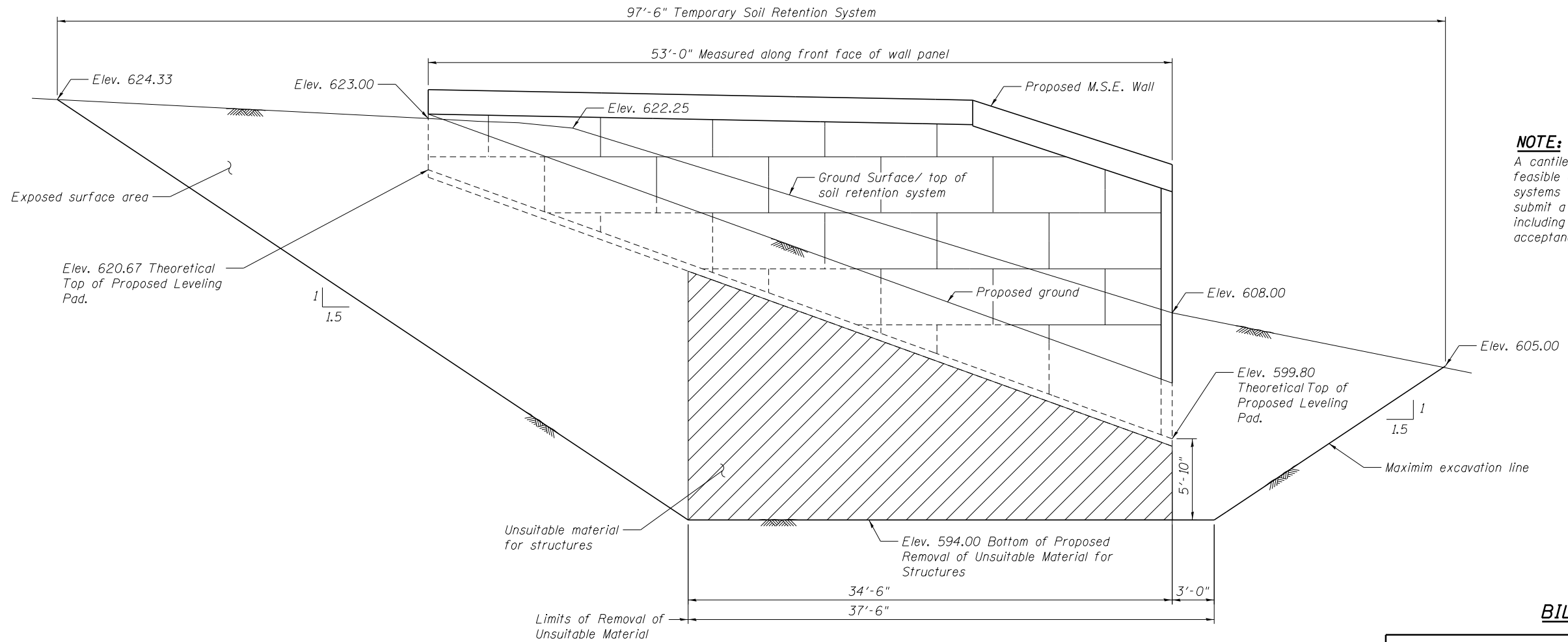
SHEET NO. SB3 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	119
CONTRACT NO. 60W77				
ILLINOIS FED. AID PROJECT				

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PIER TEMPORARY SOIL RETENTION SYSTEM



M.S.E. WALL TEMPORARY SOIL RETENTION SYSTEM

NOTE:
A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the engineer.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Temporary Soil Retention System	Sq. Ft.	2708

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Chicago, Illinois 60601
312-565-0450 Job No. 10093

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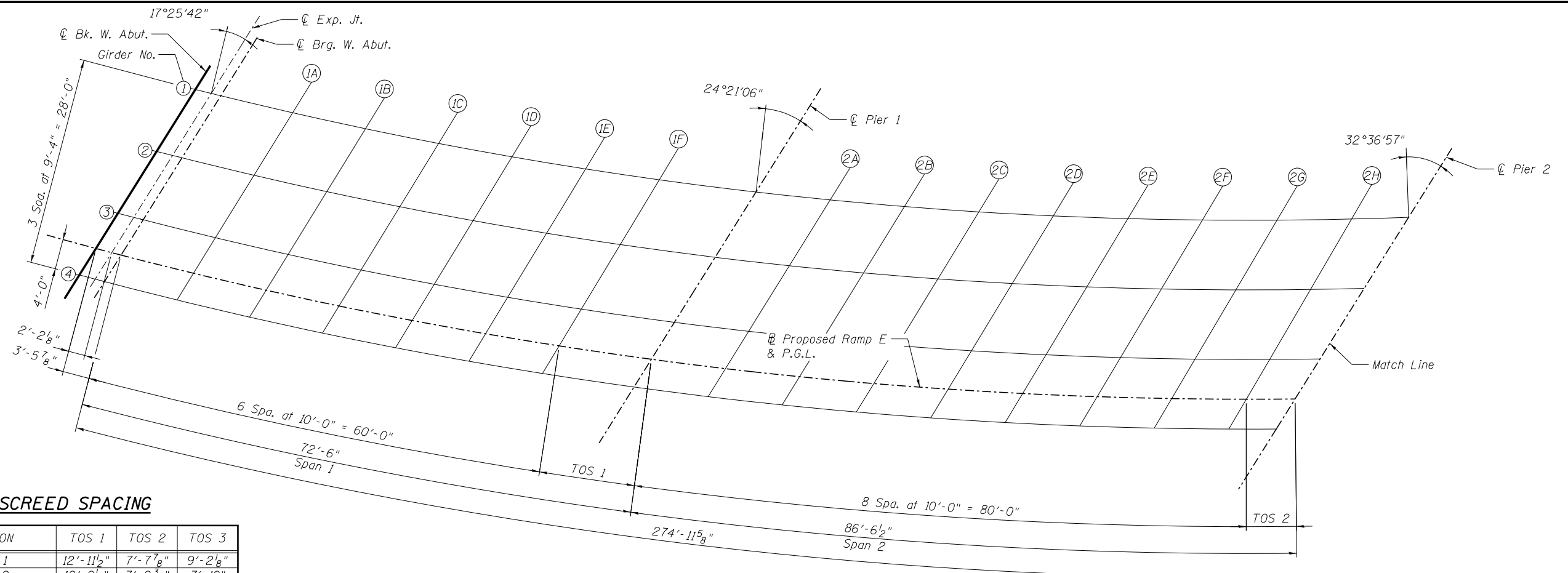
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TEMPORARY SOIL RETENTION SYSTEM
STRUCTURE NO. 016-1512**

SHEET NO. SB4 OF SB43 SHEETS

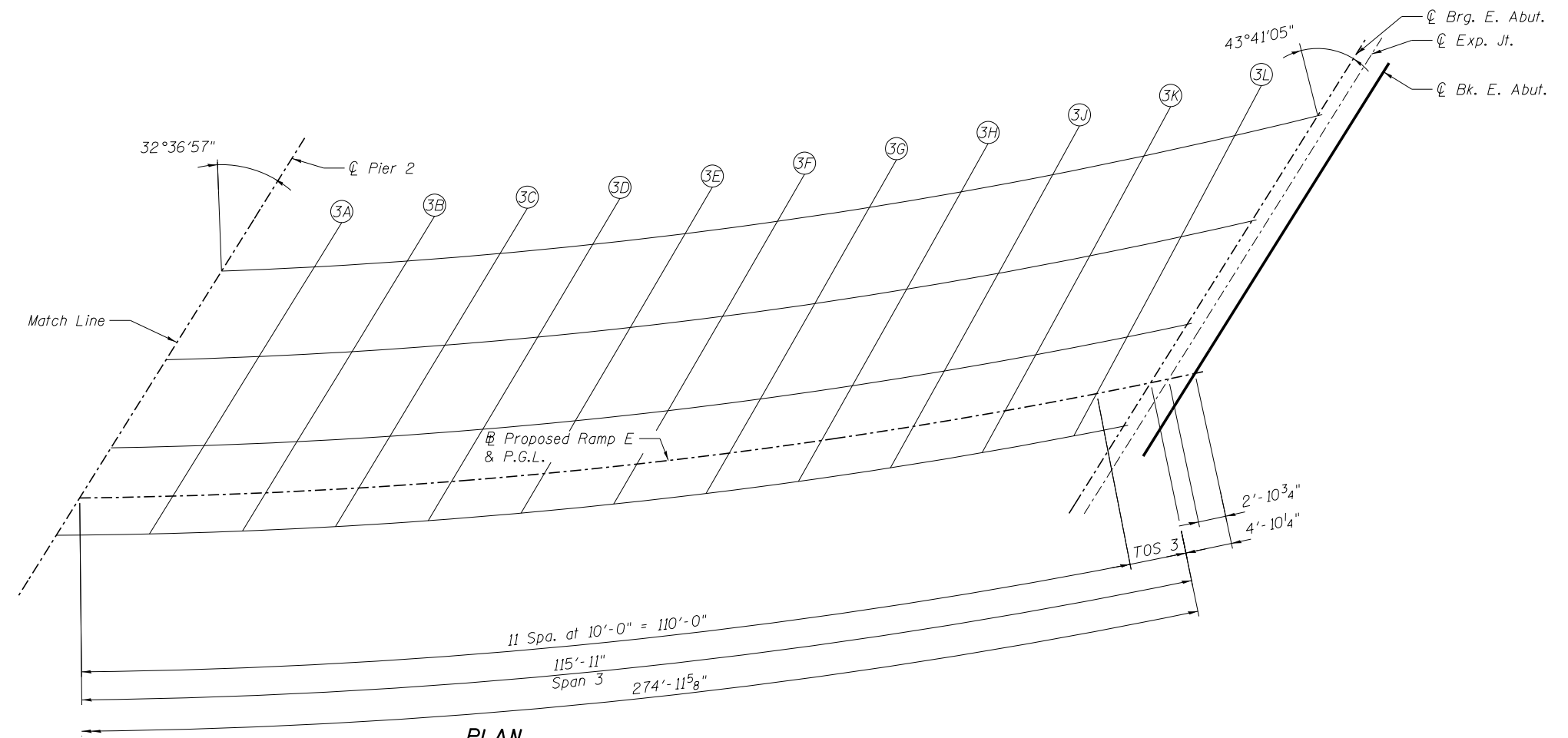
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373	(0707-608&611)HB-B	COOK	177	120
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

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SCREED SPACING

LOCATION	TOS 1	TOS 2	TOS 3
Girder 1	12'-11 ¹ / ₂ "	7'-7 ⁷ / ₈ "	9'-2 ⁵ / ₈ "
Girder 2	12'-9 ¹ / ₄ "	7'-2 ³ / ₈ "	7'-10"
Girder 3	12'-7 ¹ / ₈ "	6'-9 ⁵ / ₈ "	6'-7 ¹ / ₈ "
Proposed Ramp E	12'-6"	6'-6 ¹ / ₂ "	5'-11 ⁵ / ₈ "
Girder 4	12'-5 ¹ / ₈ "	6'-4 ¹ / ₂ "	5'-5 ⁵ / ₈ "



PLAN



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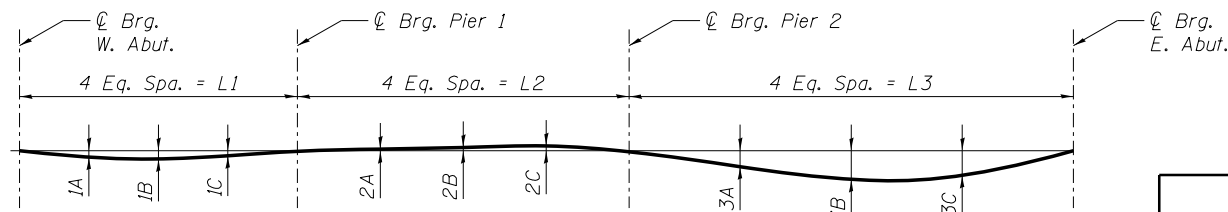
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS PLAN
STRUCTURE NO. 016-1512

SHEET NO. SB5 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	121
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

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DEAD LOAD DEFLECTION DIAGRAM

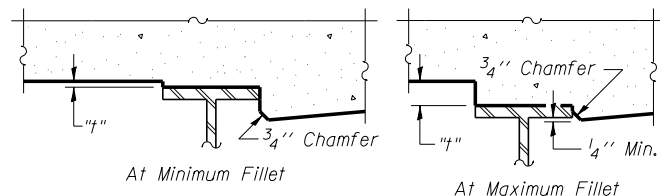
(Includes weight of concrete only.)

Note:

The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown herein and on sheet SB7.

DEAD LOAD DEFLECTION TABLE

Girder	1A	1B	1C	2A	2B	2C	3A	3B	3C	L1	L2	L3
1	3/8"	1/2"	3/8"	-0"	-1/8"	-1/4"	1/4"	2 3/8"	2"	72'-11 1/2"	87'-8"	119'-2"
2	1/2"	5/8"	1/4"	-1/8"	-1/8"	-1/4"	1 3/8"	2 3/8"	2"	72'-9 1/4"	87'-2 1/2"	117'-10"
3	1/2"	5/8"	3/8"	-1/8"	-1/8"	-1/4"	1 3/8"	2 3/8"	2"	72'-7 7/8"	86'-9 1/4"	116'-7"
4	1/2"	5/8"	3/8"	-1/8"	-1/4"	-3/8"	1 1/2"	2 5/8"	2 1/8"	72'-5 1/8"	86'-4 1/2"	115'-5 1/4"



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown herein and on sheet SB5. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown herein and on sheet SB7, minus 8" deck thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	214+00.68	-24.00	626.14	626.14
Exp. Jt.	214+02.89	-24.00	626.19	626.19
Brg. W. Abut.	214+04.26	-24.00	626.22	626.22
1A	214+14.68	-24.00	626.44	626.46
1B	214+25.09	-24.00	626.64	626.68
1C	214+35.51	-24.00	626.83	626.87
1D	214+45.93	-24.00	627.00	627.04
1E	214+56.34	-24.00	627.15	627.18
1F	214+66.76	-24.00	627.28	627.31
Brg. Pier 1	214+80.26	-24.00	627.44	627.44
2A	214+90.68	-24.00	627.54	627.54
2B	215+01.10	-24.00	627.62	627.62
2C	215+11.52	-24.00	627.69	627.69
2D	215+21.93	-24.00	627.74	627.73
2E	215+32.35	-24.00	627.77	627.76
2F	215+42.77	-24.00	627.79	627.77
2G	215+53.18	-24.00	627.79	627.77
2H	215+63.60	-24.00	627.78	627.77
Brg. Pier 2	215+71.58	-24.00	627.75	627.75
3A	215+82.00	-24.00	627.71	627.74
3B	215+92.41	-24.00	627.65	627.71
3C	216+02.83	-24.00	627.57	627.68
3D	216+13.25	-24.00	627.48	627.63
3E	216+23.66	-24.00	627.37	627.55
3F	216+34.08	-24.00	627.25	627.45
3G	216+44.50	-24.00	627.11	627.31
3H	216+54.91	-24.00	626.95	627.14
3J	216+65.33	-24.00	626.78	626.94
3K	216+75.75	-24.00	626.59	626.71
3L	216+86.16	-24.00	626.38	626.45
Brg. E. Abut.	216+95.72	-24.00	626.18	626.18
Exp. Jt.	216+97.85	-24.00	626.13	626.13
Bk. E. Abut.	217+01.00	-24.00	626.06	626.06

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	213+97.54	-14.67	626.63	626.63
Exp. Jt.	213+99.78	-14.67	626.68	626.68
Brg. W. Abut.	214+01.12	-14.67	626.71	626.71
1A	214+11.37	-14.67	626.93	626.95
1B	214+21.62	-14.67	627.14	627.18
1C	214+31.87	-14.67	627.32	627.38
1D	214+42.12	-14.67	627.50	627.54
1E	214+52.37	-14.67	627.65	627.68
1F	214+62.62	-14.67	627.79	627.80
Brg. Pier 1	214+75.72	-14.67	627.95	627.95
2A	214+85.98	-14.67	628.05	628.05
2B	214+96.23	-14.67	628.14	628.14
2C	215+06.48	-14.67	628.22	628.21
2D	215+16.73	-14.67	628.27	628.26
2E	215+26.98	-14.67	628.32	628.31
2F	215+37.23	-14.67	628.34	628.32
2G	215+47.48	-14.67	628.35	628.33
2H	215+57.73	-14.67	628.35	628.34
Brg. Pier 2	215+65.11	-14.67	628.33	628.33
3A	215+75.36	-14.67	628.30	628.33
3B	215+85.61	-14.67	628.25	628.32
3C	215+95.86	-14.67	628.19	628.30
3D	216+06.11	-14.67	628.11	628.26
3E	216+16.36	-14.67	628.01	628.19
3F	216+26.61	-14.67	627.90	628.10
3G	216+36.86	-14.67	627.77	627.97
3H	216+47.11	-14.67	627.63	627.82
3J	216+57.36	-14.67	627.47	627.63
3K	216+67.62	-14.67	627.30	627.41
3L	216+77.87	-14.67	627.11	627.16
Brg. E. Abut.	216+85.89	-14.67	626.95	626.95
Exp. Jt.	216+87.95	-14.67	626.90	626.90
Bk. E. Abut.	216+91.00	-14.67	626.84	626.84

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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	122
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	213+94.56	-5.33	627.12	627.12
☉ Exp. Jt.	213+96.77	-5.33	627.17	627.17
☉ Brg. W. Abut.	213+98.09	-5.33	627.20	627.20
1A	214+08.18	-5.33	627.42	627.45
1B	214+18.27	-5.33	627.63	627.67
1C	214+28.36	-5.33	627.82	627.87
1D	214+38.45	-5.33	628.00	628.05
1E	214+48.54	-5.33	628.16	628.20
1F	214+58.63	-5.33	628.30	628.32
☉ Brg. Pier 1	214+71.34	-5.33	628.46	628.46
2A	214+81.43	-5.33	628.57	628.56
2B	214+91.51	-5.33	628.66	628.65
2C	215+01.60	-5.33	628.74	628.73
2D	215+11.69	-5.33	628.81	628.80
2E	215+21.78	-5.33	628.86	628.84
2F	215+31.87	-5.33	628.89	628.87
2G	215+41.96	-5.33	628.91	628.89
2H	215+52.05	-5.33	628.91	628.90
☉ Brg. Pier 2	215+58.89	-5.33	628.90	628.90
3A	215+68.98	-5.33	628.88	628.91
3B	215+79.07	-5.33	628.84	628.92
3C	215+89.16	-5.33	628.79	628.91
3D	215+99.25	-5.33	628.72	628.88
3E	216+09.34	-5.33	628.64	628.83
3F	216+19.43	-5.33	628.54	628.74
3G	216+29.52	-5.33	628.43	628.63
3H	216+39.61	-5.33	628.30	628.48
3J	216+49.70	-5.33	628.15	628.31
3K	216+59.79	-5.33	627.99	628.11
3L	216+69.88	-5.33	627.82	627.87
☉ Brg. E. Abut.	216+76.53	-5.33	627.69	627.69
☉ Exp. Jt.	216+78.52	-5.33	627.65	627.65
Bk. E. Abut.	216+81.47	-5.33	627.60	627.60

PROPOSED RAMP E & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	213+92.91	0.00	627.40	627.40
☉ Exp. Jt.	213+95.09	0.00	627.46	627.46
☉ Brg. W. Abut.	213+96.40	0.00	627.49	627.49
1A	214+06.40	0.00	627.71	627.73
1B	214+16.40	0.00	627.91	627.96
1C	214+26.40	0.00	628.10	628.16
1D	214+36.40	0.00	628.28	628.33
1E	214+46.40	0.00	628.44	628.48
1F	214+56.40	0.00	628.59	628.61
☉ Brg. Pier 1	214+68.90	0.00	628.75	628.75
2A	214+78.90	0.00	628.86	628.85
2B	214+88.90	0.00	628.96	628.95
2C	214+98.90	0.00	629.04	629.03
2D	215+08.90	0.00	629.11	629.09
2E	215+18.90	0.00	629.16	629.14
2F	215+28.90	0.00	629.20	629.17
2G	215+38.90	0.00	629.22	629.20
2H	215+48.90	0.00	629.23	629.22
☉ Brg. Pier 2	215+55.44	0.00	629.23	629.23
3A	215+65.44	0.00	629.21	629.24
3B	215+75.44	0.00	629.18	629.26
3C	215+85.44	0.00	629.12	629.25
3D	215+95.44	0.00	629.07	629.24
3E	216+05.44	0.00	628.99	629.19
3F	216+15.44	0.00	628.90	629.11
3G	216+25.44	0.00	628.79	629.00
3H	216+35.44	0.00	628.67	628.86
3J	216+45.44	0.00	628.53	628.69
3K	216+55.44	0.00	628.38	628.49
3L	216+65.44	0.00	628.22	628.26
☉ Brg. E. Abut.	216+71.37	0.00	628.11	628.11
☉ Exp. Jt.	216+73.33	0.00	628.07	628.07
Bk. E. Abut.	216+76.22	0.00	628.02	628.02

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	213+91.69	4.00	627.62	627.62
☉ Exp. Jt.	213+93.85	4.00	627.67	627.67
☉ Brg. W. Abut.	213+95.15	4.00	627.70	627.70
1A	214+05.08	4.00	627.92	627.94
1B	214+15.02	4.00	628.13	628.17
1C	214+24.95	4.00	628.32	628.37
1D	214+34.89	4.00	628.50	628.55
1E	214+44.82	4.00	628.66	628.70
1F	214+54.75	4.00	628.81	628.83
☉ Brg. Pier 1	214+67.10	4.00	628.97	628.97
2A	214+77.04	4.00	629.08	629.07
2B	214+86.97	4.00	629.18	629.17
2C	214+96.90	4.00	629.27	629.25
2D	215+06.84	4.00	629.34	629.32
2E	215+16.77	4.00	629.39	629.36
2F	215+26.70	4.00	629.43	629.40
2G	215+36.64	4.00	629.46	629.43
2H	215+46.57	4.00	629.47	629.46
☉ Brg. Pier 2	215+52.90	4.00	629.47	629.47
3A	215+62.83	4.00	629.46	629.49
3B	215+72.77	4.00	629.43	629.51
3C	215+82.70	4.00	629.39	629.51
3D	215+92.63	4.00	629.33	629.50
3E	216+02.57	4.00	629.26	629.45
3F	216+12.50	4.00	629.17	629.39
3G	216+22.44	4.00	629.07	629.29
3H	216+32.37	4.00	628.95	629.15
3J	216+42.30	4.00	628.82	628.98
3K	216+52.24	4.00	628.67	628.78
3L	216+62.17	4.00	628.51	628.55
☉ Brg. E. Abut.	216+67.58	4.00	628.42	628.42
☉ Exp. Jt.	216+69.52	4.00	628.38	628.38
Bk. E. Abut.	216+72.38	4.00	628.33	628.33



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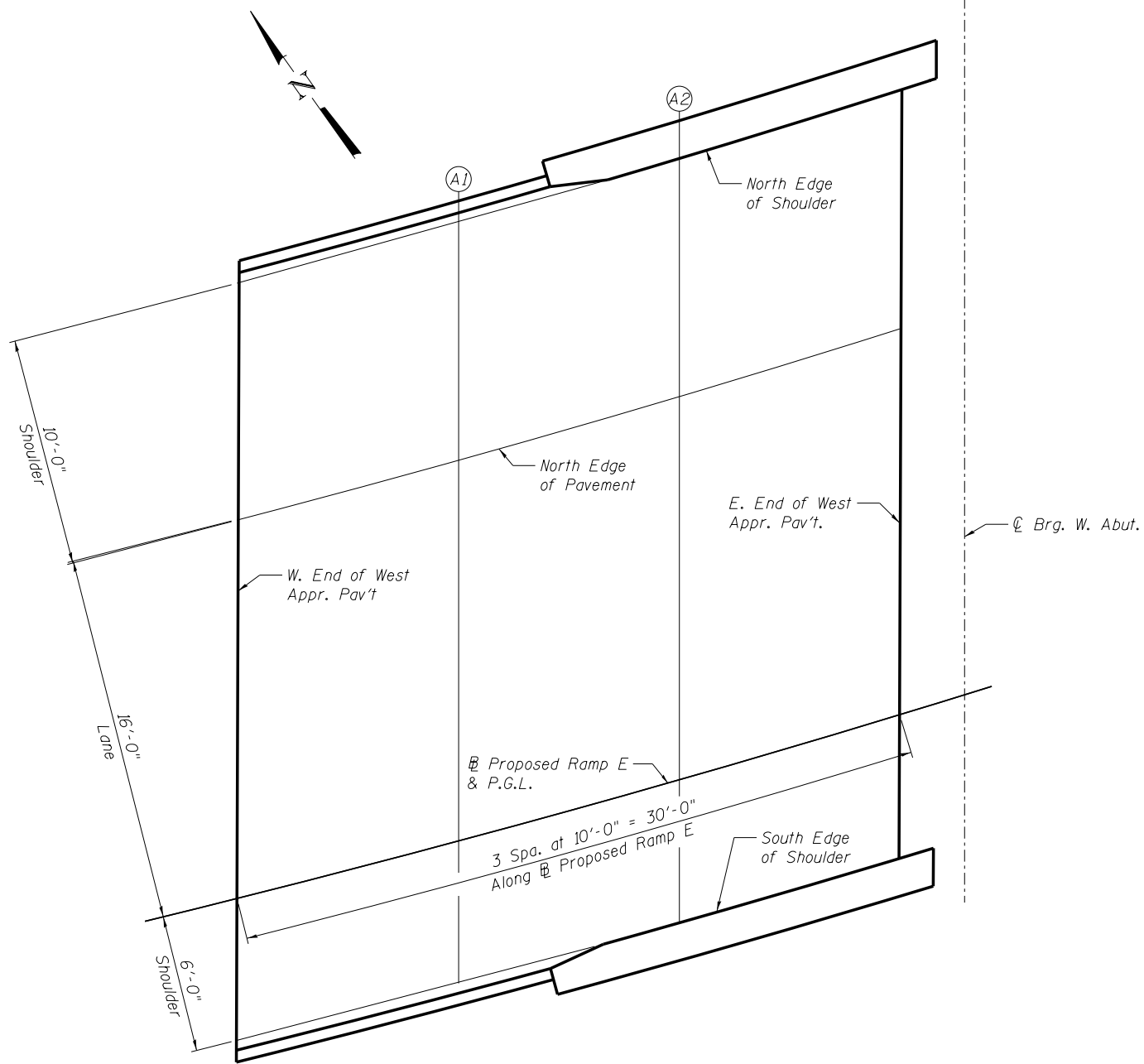
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS (2 OF 2)
STRUCTURE NO. 016-1512**

SHEET NO. SB7 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	123
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	



PLAN
West Approach

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of West Appr. Pav't.	213+70.36	-26.00	625.28
A1	213+80.85	-26.00	625.55
A2	213+91.34	-26.00	625.81
E. End of West Appr. Pav't.	214+01.83	-26.00	626.05

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End of West Appr. Pav't.	213+67.62	-16.00	625.80
A1	213+77.92	-16.00	626.08
A2	213+88.21	-16.00	626.33
E. End of West Appr. Pav't.	213+98.51	-16.00	626.57

PROPOSED RAMP E & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
W. End of West Appr. Pav't.	213+63.43	0.00	626.65
A1	213+73.43	0.00	626.92
A2	213+83.43	0.00	627.18
E. End of West Appr. Pav't.	213+93.43	0.00	627.42

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of West Appr. Pav't.	213+61.92	6.00	626.97
A1	213+71.81	6.00	627.24
A2	213+81.71	6.00	627.49
E. End of West Appr. Pav't.	213+91.60	6.00	627.73

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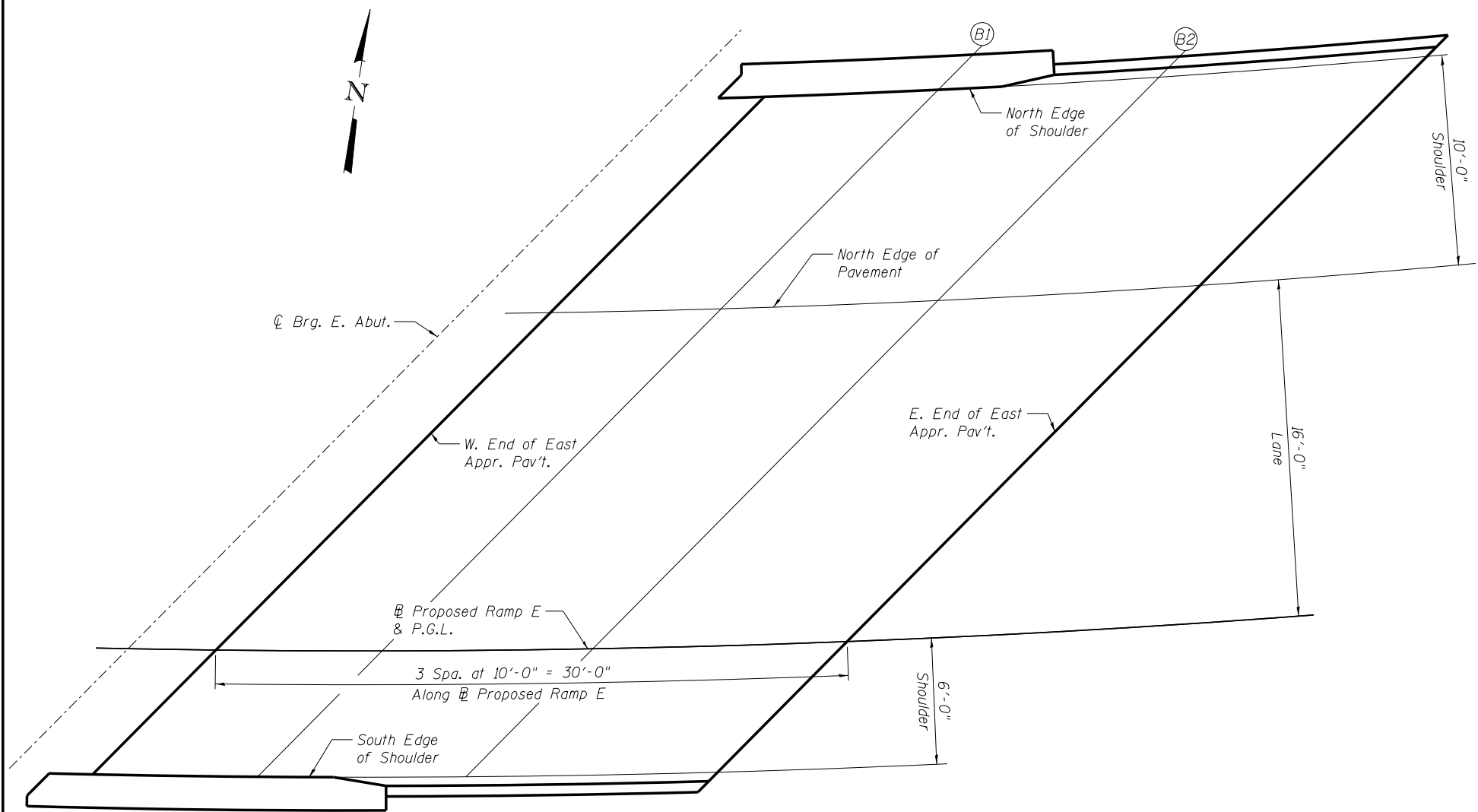
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	PLOT DATE = 6/23/2014	CHECKED - RJT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF WEST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 016-1512

SHEET NO. SB8 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	124
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	



PLAN
East Approach

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of East Appr. Pav't.	217+02.44	-26.00	625.91
B1	217+13.44	-26.00	625.64
B2	217+24.43	-26.00	625.36
E. End of East Appr. Pav't.	217+35.43	-26.00	625.07

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End of East Appr. Pav't.	216+91.66	-16.00	626.75
B1	217+02.24	-16.00	626.51
B2	217+12.83	-16.00	626.26
E. End of East Appr. Pav't.	217+23.41	-16.00	625.99

PROPOSED RAMP E & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
W. End of East Appr. Pav't.	216+75.53	0.00	628.03
B1	216+85.53	0.00	627.83
B2	216+95.53	0.00	627.62
E. End of East Appr. Pav't.	217+05.53	0.00	627.39

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of East Appr. Pav't.	216+69.80	6.00	628.50
B1	216+79.60	6.00	628.31
B2	216+89.41	6.00	628.11
E. End of East Appr. Pav't.	216+99.21	6.00	627.90

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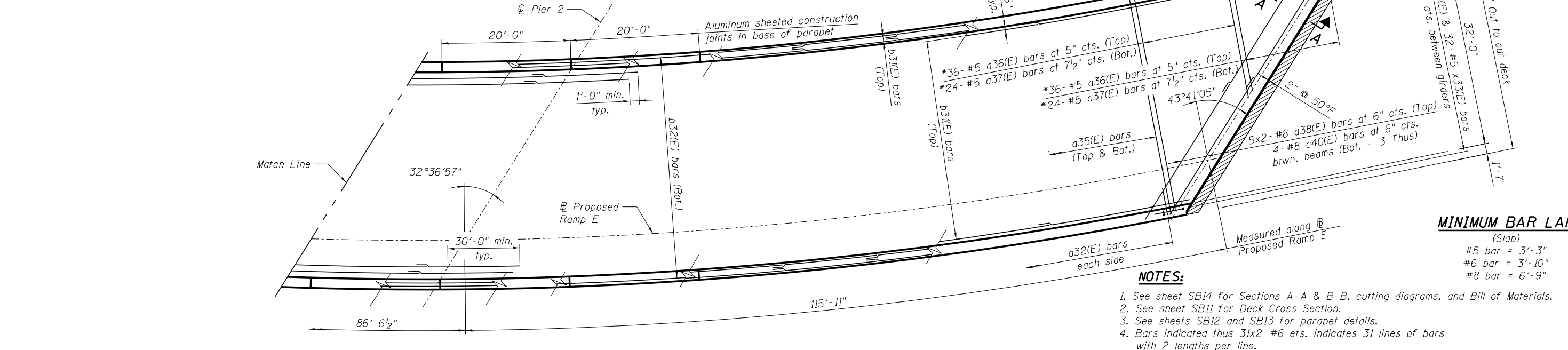
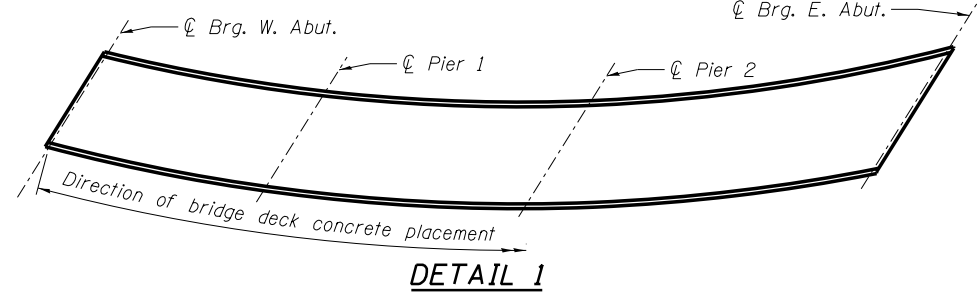
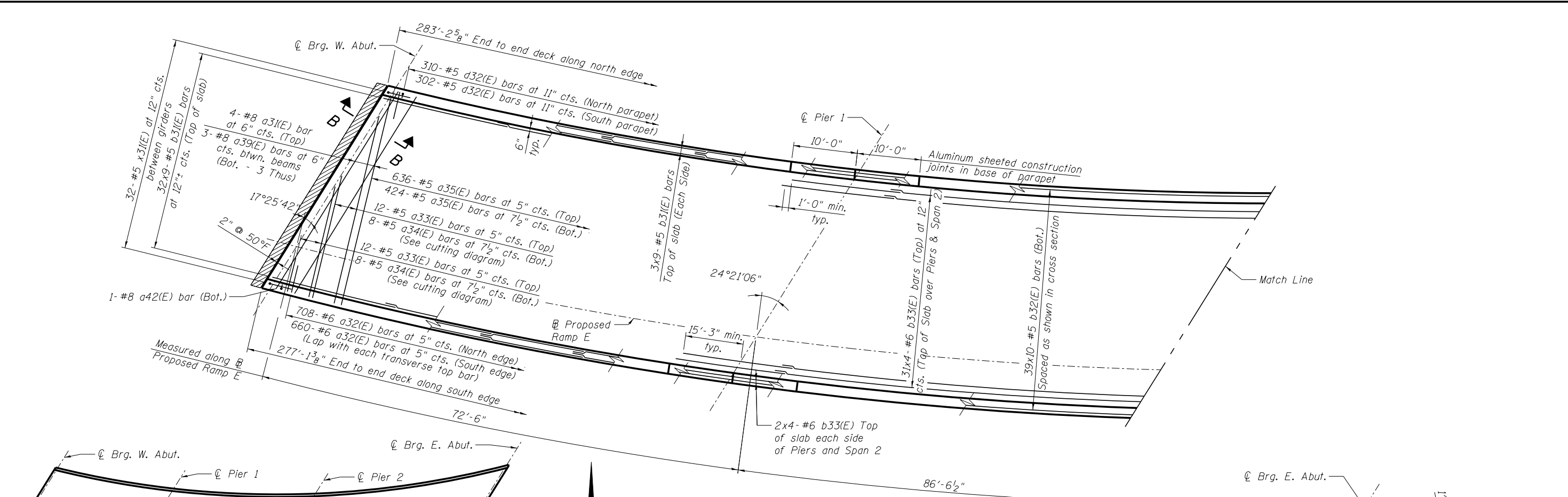
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TOP OF EAST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 016-1512

SHEET NO. SB9 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	125
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

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MINIMUM BAR LAP
(Slab)

#5 bar	= 3'-3"
#6 bar	= 3'-10"
#8 bar	= 6'-9"

- NOTES:**
- See sheet SB14 for Sections A-A & B-B, cutting diagrams, and Bill of Materials.
 - See sheet SB11 for Deck Cross Section.
 - See sheets SB12 and SB13 for parapet details.
 - Bars indicated thus 31x2-#6 ets. indicates 31 lines of bars with 2 lengths per line.
 - All transverse reinforcement is radial to the south curb.
 - Spacing of transverse reinforcement is along the south edge of deck unless noted otherwise.
 - The deck shall be poured proceeding from the west abutment to the east abutment as shown in detail 1.
 - Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Base Sheet EJ-SSJ.

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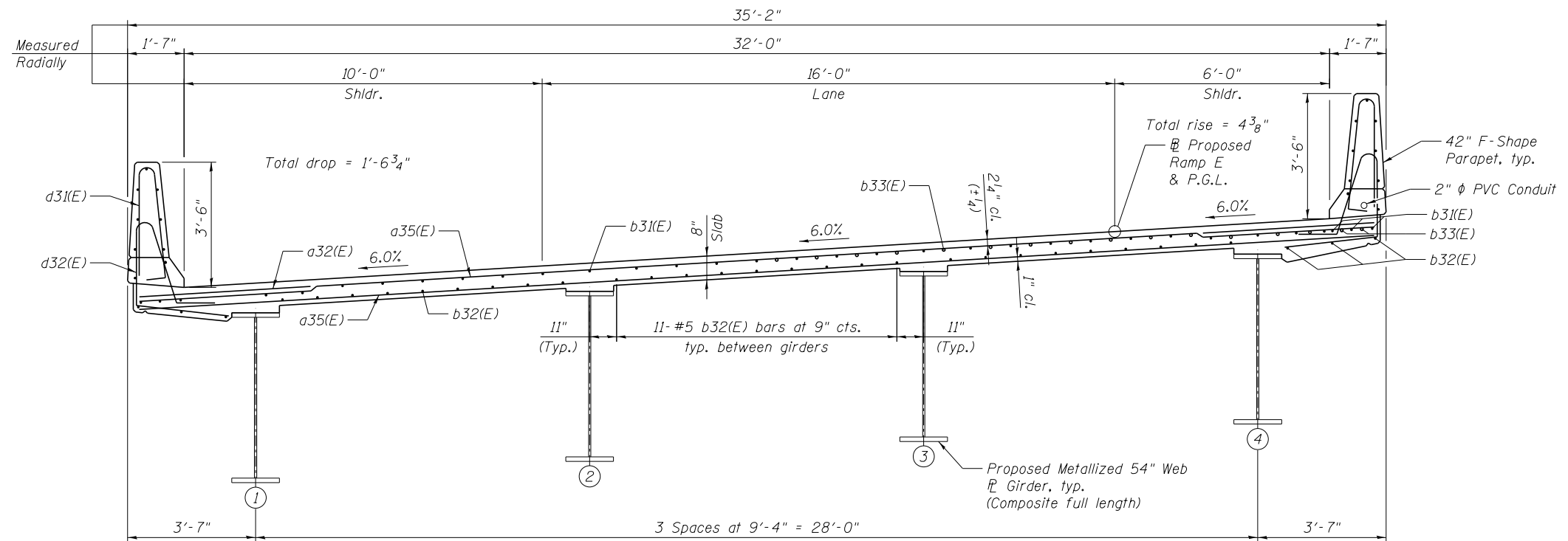
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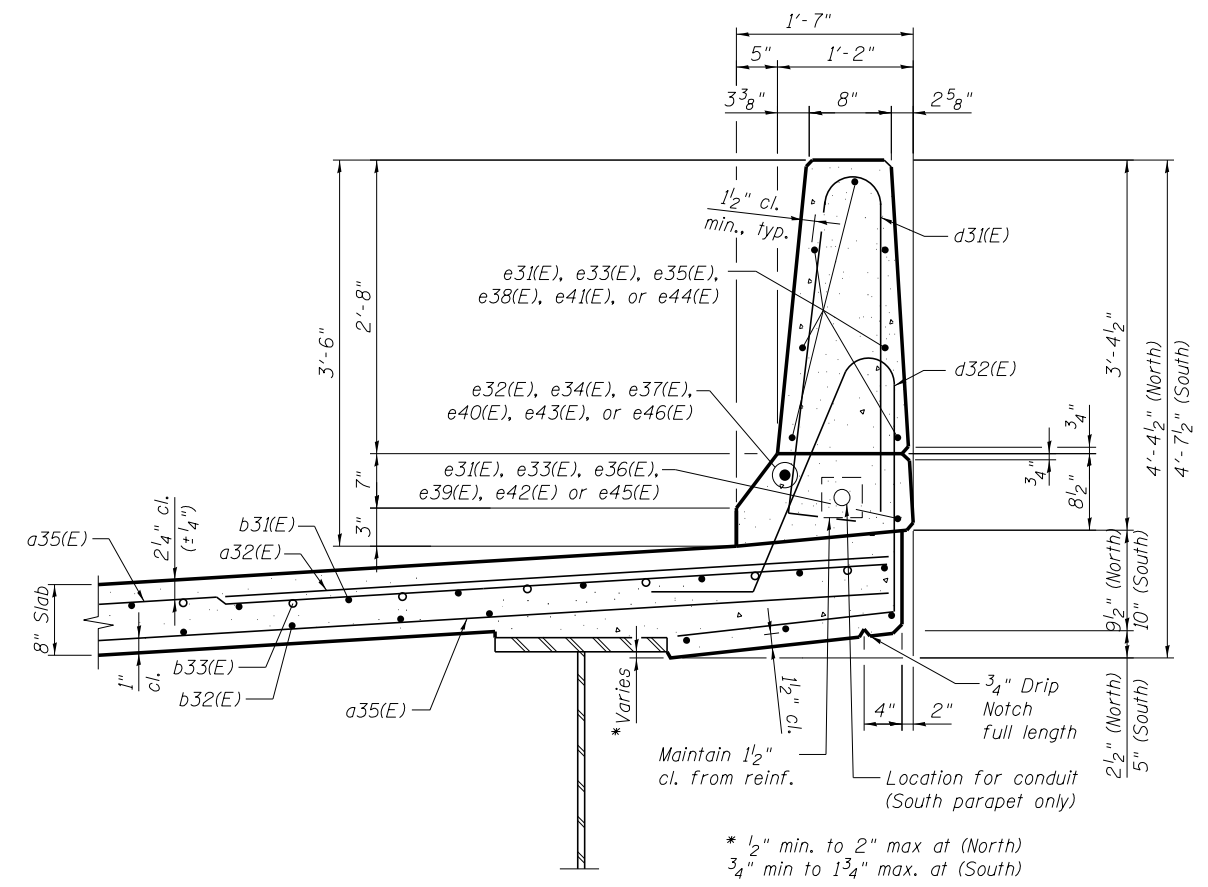
DECK REINFORCEMENT PLAN
STRUCTURE NO. 016-1512
SHEET NO. SB10 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	126
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

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DECK CROSS SECTION
(Looking East)



SECTION THRU SOUTH PARAPET
(North parapet similar)



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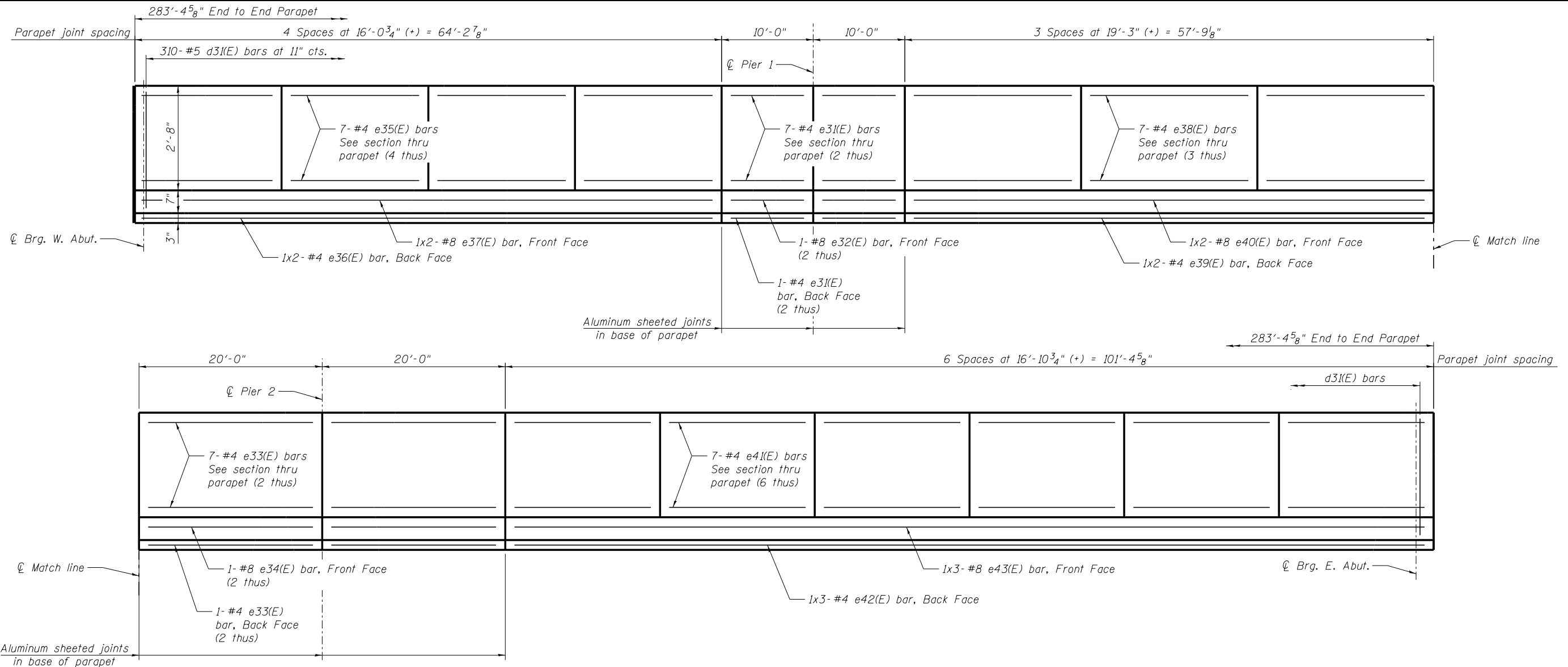
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DECK CROSS SECTION AND DETAILS
STRUCTURE NO. 016-1512

SHEET NO. SB11 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	127
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

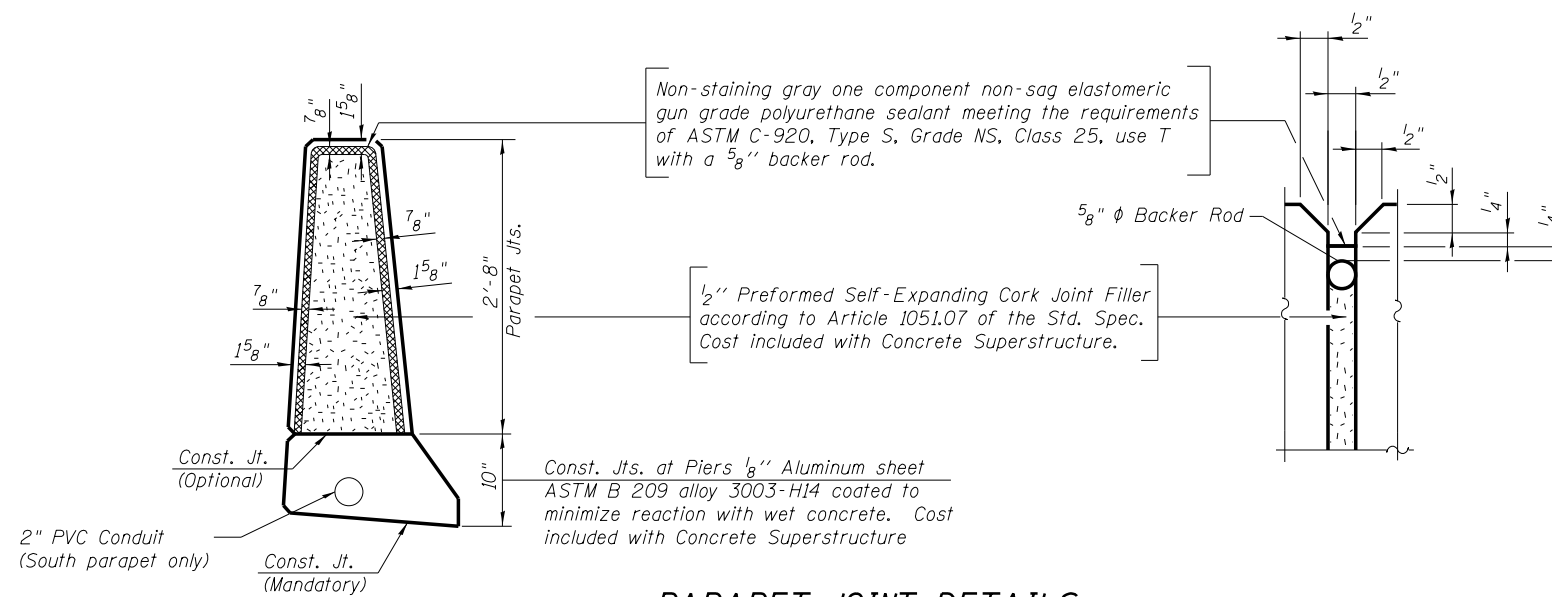
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INSIDE ELEVATION OF NORTH PARAPET

MINIMUM BAR LAP

(Parapet)
 #4 bar = 2'-0"
 #8 bar = 5'-2"



PARAPET JOINT DETAILS

NOTES:

1. All dimensions are along the inside face of the parapet (gutterline).
2. Bars indicated thus 1x3-#4 etc. indicates 1 line of bars with 3 lengths per line.

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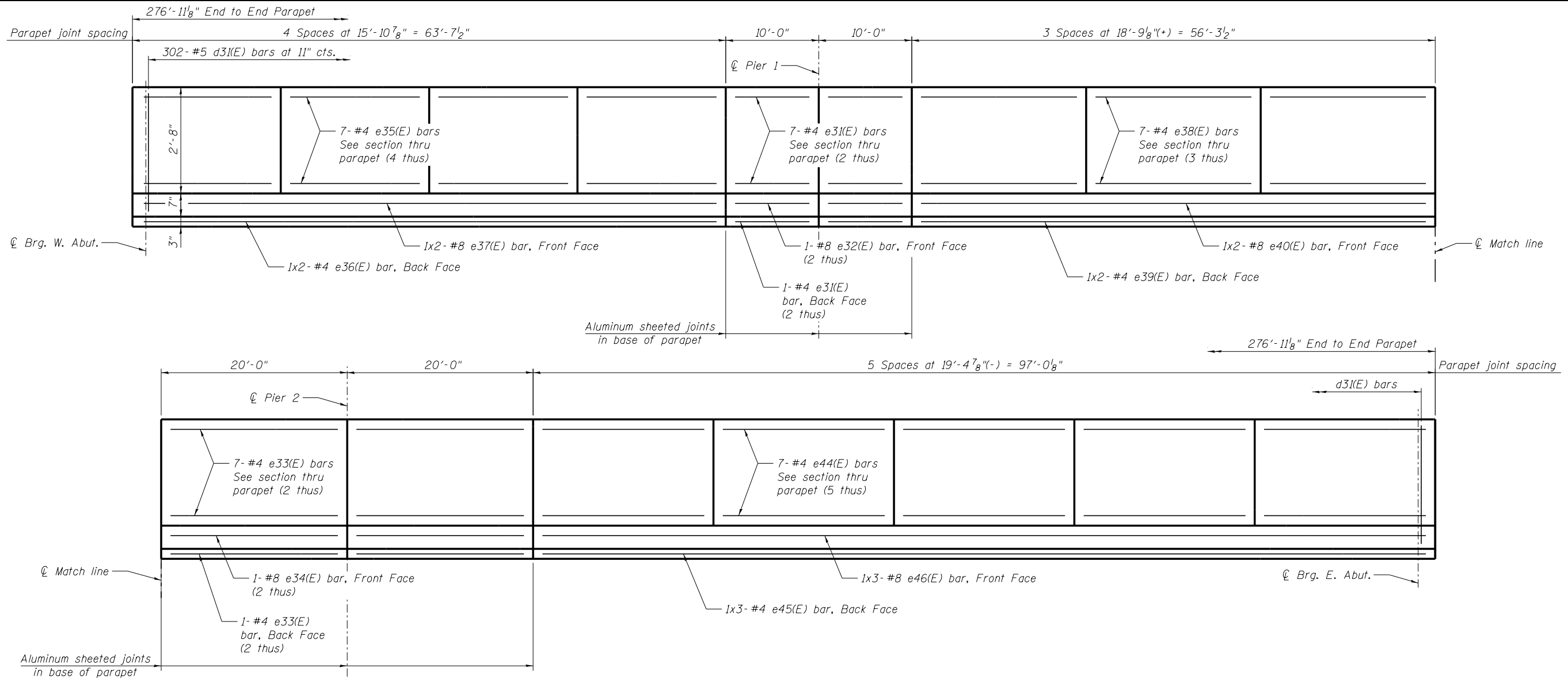
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NORTH PARAPET DETAILS
STRUCTURE NO. 016-1512

SHEET NO. SB12 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	128
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

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INSIDE ELEVATION OF SOUTH PARAPET

MINIMUM BAR LAP

(Parapet)
 #4 bar = 2'-0"
 #8 bar = 5'-2"

NOTES:

1. All dimensions are along the toe of the parapet (gutterline).
2. Bars indicated thus 1x3-#4 etc. indicates 1 line of bars with 3 lengths per line.
3. For parapet joint details, see sheet SB12.

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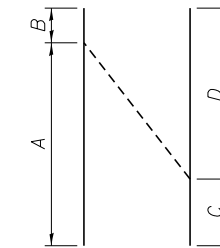
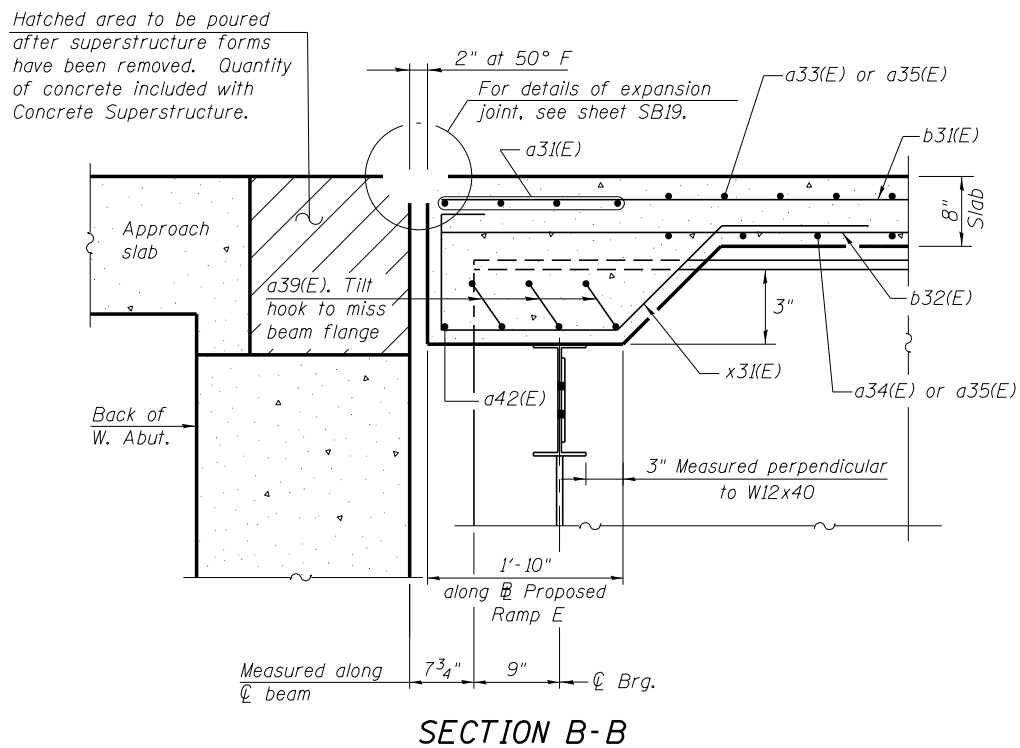
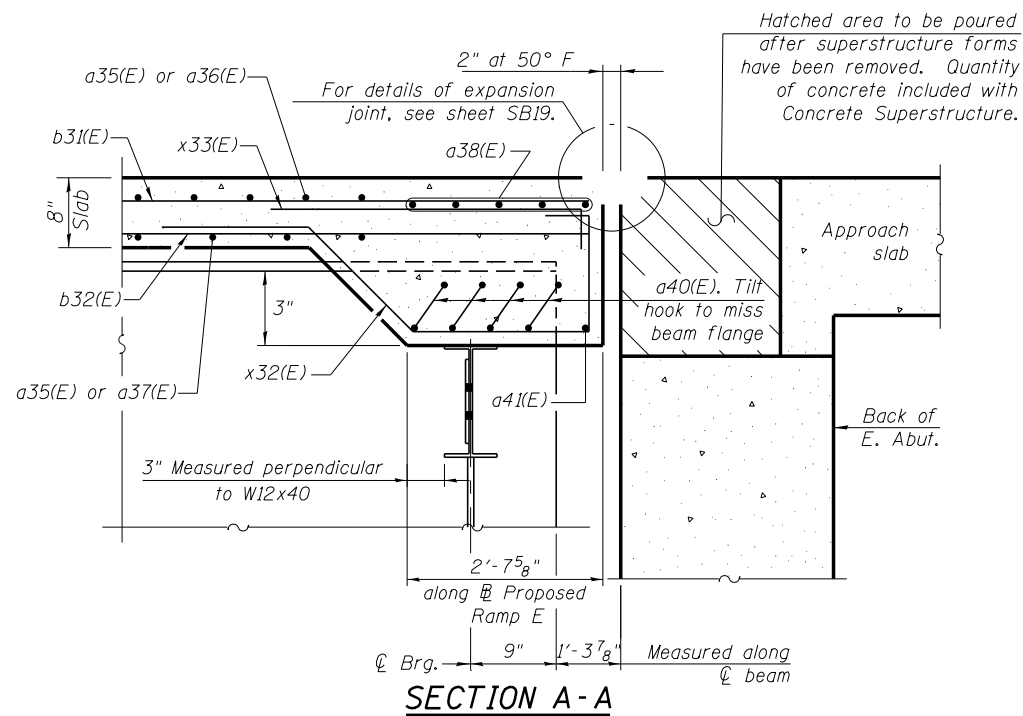
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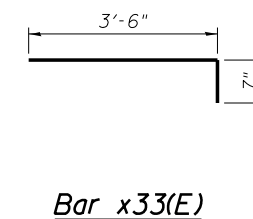
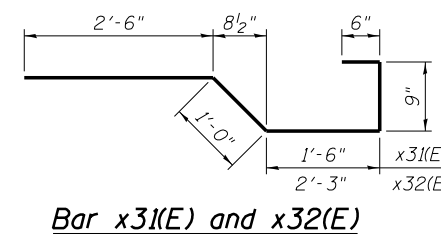
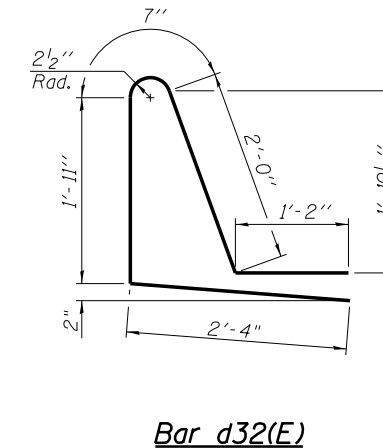
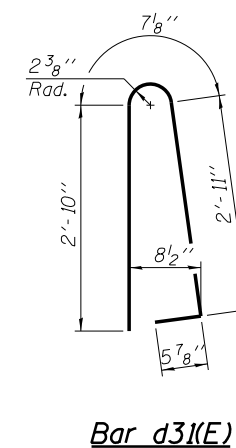
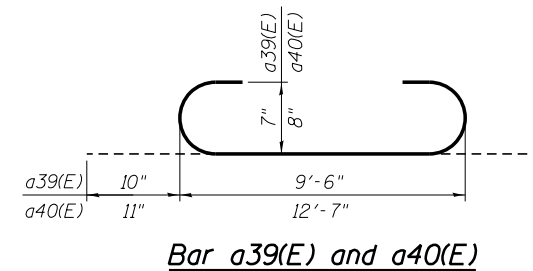
SOUTH PARAPET DETAILS
STRUCTURE NO. 016-1512

SHEET NO. SB13 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	129
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	



Bar	A	B	C	D
a33(E)	33'-5"	4'-3"	19'-6"	18'-2"
a34(E)	33'-7"	5'-0"	20'-3"	18'-4"
a36(E)	34'-0"	3'-7"	19'-0"	18'-7"
a37(E)	34'-1"	3'-0"	18'-10"	18'-3"



**SUPERSTRUCTURE
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a31(E)	4	#8	36'-2"	—
a32(E)	1368	#6	6'-6"	—
a33(E)	12	#5	37'-8"	—
a34(E)	8	#5	38'-7"	—
a35(E)	1060	#5	34'-6"	—
a36(E)	36	#5	37'-7"	—
a37(E)	24	#5	37'-1"	—
a38(E)	10	#8	27'-3"	—
a39(E)	9	#8	11'-2"	U
a40(E)	12	#8	14'-5"	U
a41(E)	2	#8	22'-6"	—
a42(E)	1	#8	29'-0"	—
b31(E)	342	#5	34'-6"	—
b32(E)	390	#5	32'-0"	—
b33(E)	140	#6	36'-3"	—
d31(E)	612	#5	6'-10"	U
d32(E)	612	#5	8'-0"	U
e31(E)	32	#4	9'-8"	—
e32(E)	4	#8	9'-8"	—
e33(E)	32	#4	19'-8"	—
e34(E)	4	#8	19'-8"	—
e35(E)	56	#4	15'-7"	—
e36(E)	4	#4	33'-0"	—
e37(E)	4	#8	34'-7"	—
e38(E)	42	#4	18'-6"	—
e39(E)	4	#4	29'-9"	—
e40(E)	4	#8	31'-5"	—
e41(E)	42	#4	16'-7"	—
e42(E)	3	#4	35'-0"	—
e43(E)	3	#8	37'-1"	—
e44(E)	35	#4	19'-1"	—
e45(E)	3	#4	33'-7"	—
e46(E)	3	#8	35'-8"	—
x31(E)	32	#5	6'-3"	U
x32(E)	32	#5	7'-0"	U
x33(E)	32	#5	4'-1"	U
Concrete Superstructure		Cu. Yd.	339.0	
Reinforcement Bars,		Pound	104,220	
Epoxy Coated				

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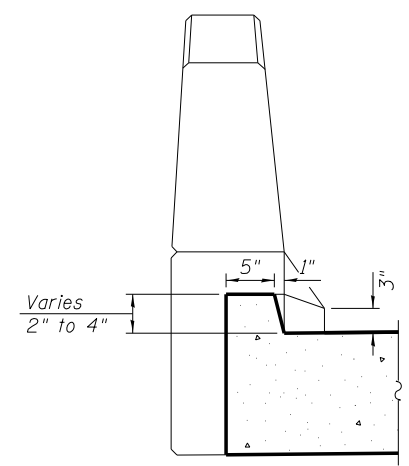
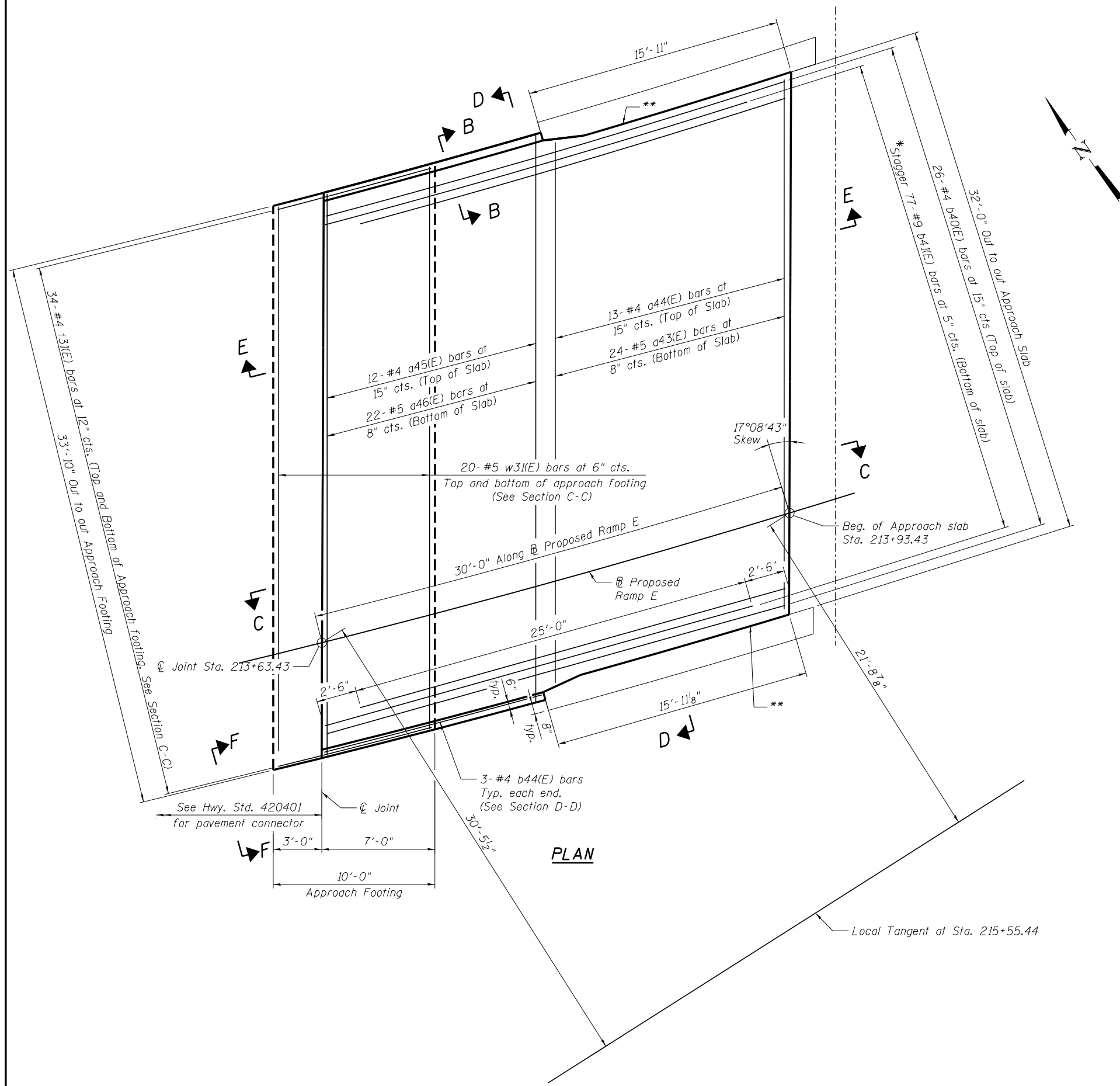
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**SUPERSTRUCTURE DETAILS
STRUCTURE NO. 016-1512**

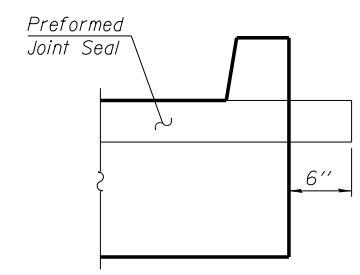
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

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VIEW B-B



VIEW F-F

- * Tilt #9 b4(E) bars as required to maintain clearance.
 ** Preformed flexible foam expansion joint filler according to Article 1051.09 of the Std. Specifications; full depth of slab, full length of parapet. Typ. each parapet. Cost included with Concrete Superstructure.

- NOTES:**
 1. See sheet SB16 for Sections C-C & D-D and View E-E.
 2. The joint opening shall be determined per Article 520.04 except that on jointless structures, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be 1 1/2" for installation purposes.
 3. a43(e) thru a46(E) bar spacings measured along \perp Rdwy.

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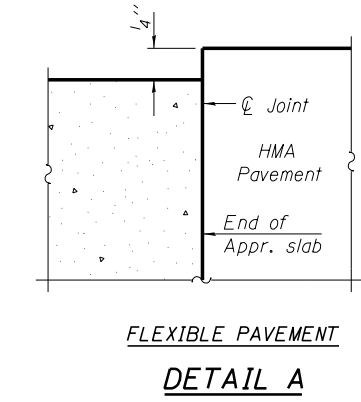
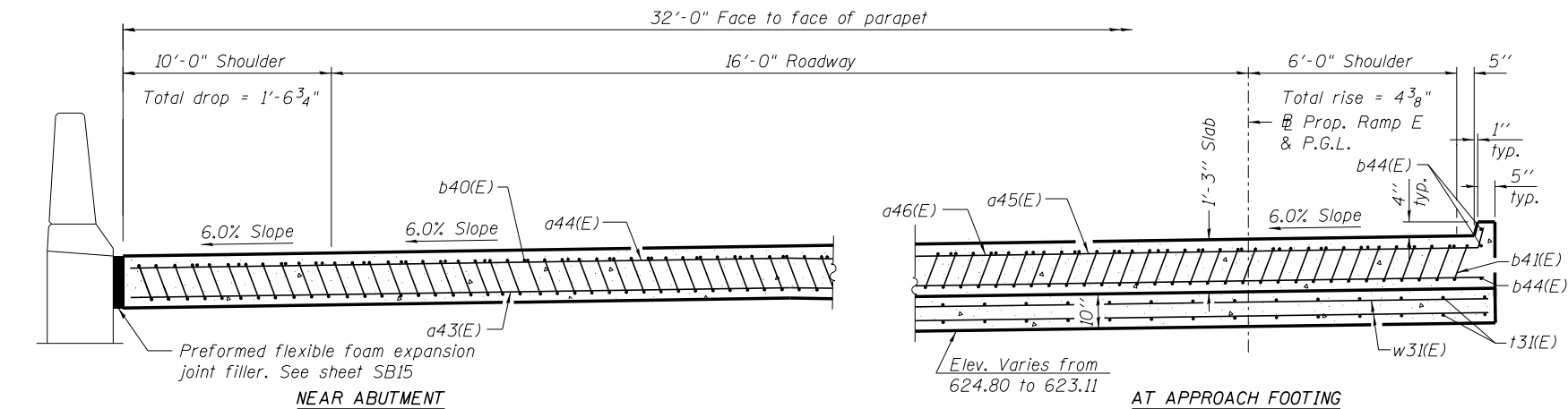
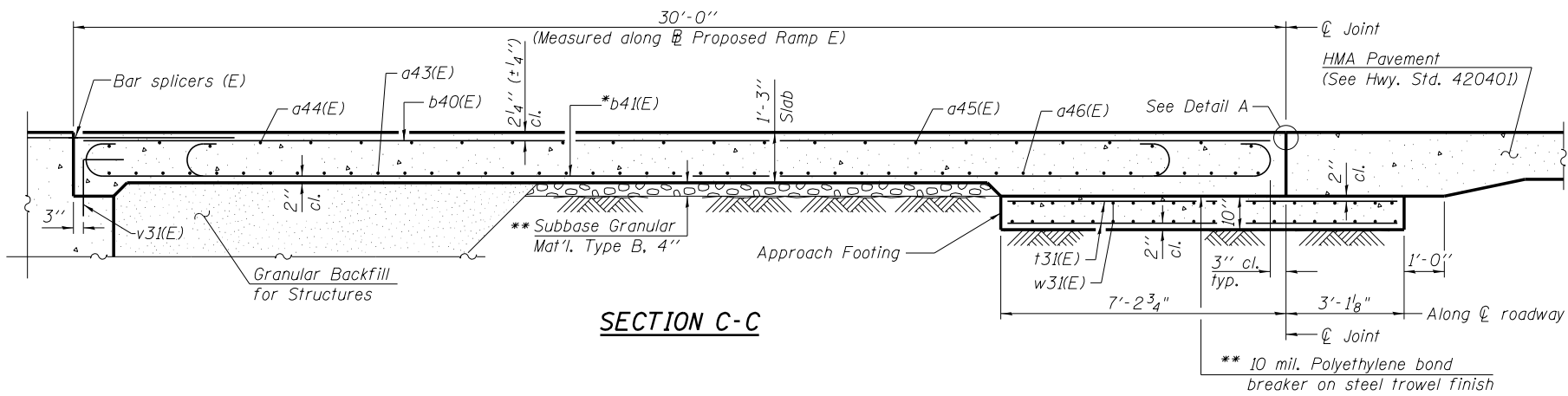
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 DEPARTMENT OF TRANSPORTATION**

**WEST APPROACH SLAB PLAN
 STRUCTURE NO. 016-1512**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	131
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

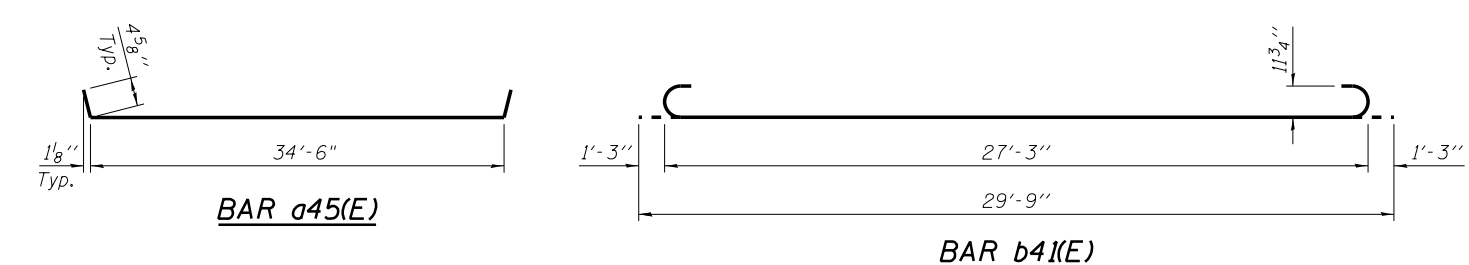
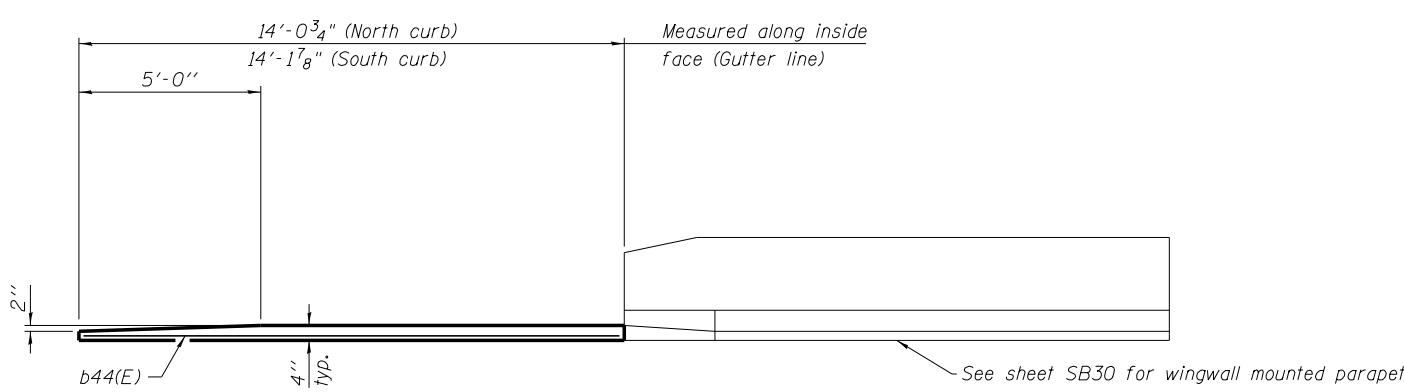
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Notes:
 See sheet SB15 for View B-B.
 Approach slab shall be paid for as Concrete Superstructure.
 Approach footing concrete shall be paid for as Concrete Structures.
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 For v31(E) bar details, see sheet SB29 and SB30.
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
 For bar splicer details, see sheet SB39.
 Cost of excavation for approach footing included with Concrete Structures.
 For Granular Backfill for Structures and drainage treatment details, see sheet SB2.

* Tilt #9 b41(E) bars as required to maintain clearance.
 ** Cost included with Concrete Superstructure.



**WEST APPROACH
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a43(E)	24	#5	33'-2"	—
a44(E)	13	#4	33'-2"	—
a45(E)	12	#4	35'-4"	—
a46(E)	22	#5	34'-7"	—
b40(E)	26	#4	29'-8"	—
b41(E)	77	#9	29'-9"	—
b44(E)	6	#4	13'-10"	—
t31(E)	68	#4	10'-1"	—
w31(E)	40	#5	34'-7"	—
Concrete Superstructure		Cu. Yd.	48.2	
Concrete Structures		Cu. Yd.	10.9	
Reinforcement Bars, Epoxy Coated		Pound	12,460	

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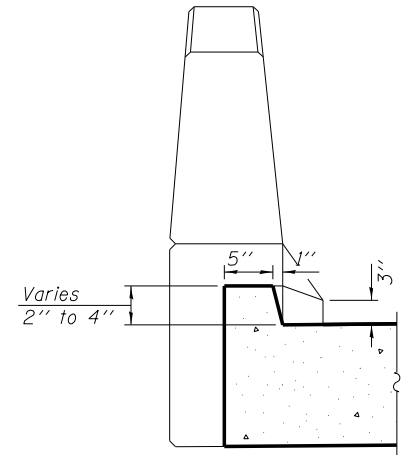
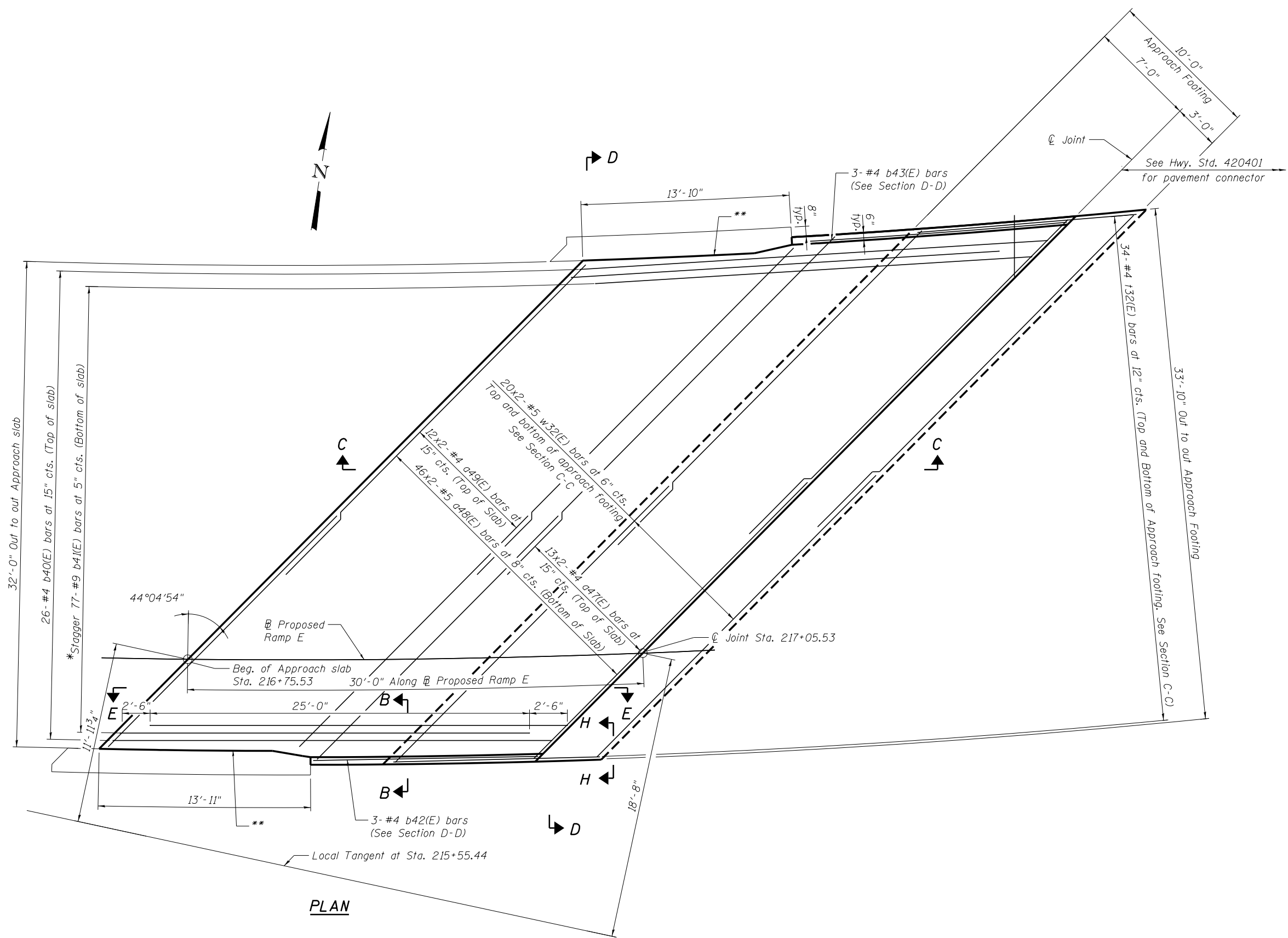
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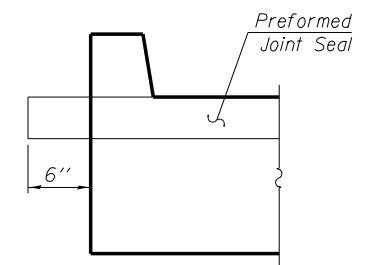
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**WEST APPROACH SLAB DETAILS
 STRUCTURE NO. 016-1512**
 SHEET NO. SB16 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	132
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

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VIEW B-B



VIEW H-H

MINIMUM BAR LAP
 (Approach)
 #4 bar = 2'-7"
 #5 bar = 3'-3"

- NOTES:**
1. See sheet SB18 for Sections C-C & D-D, and E-E.
 2. The joint opening shall be determined per Article 520.04 except that on jointless structures, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be 1/2" for installation purposes.
 3. a47(E) thru a49(E) bar spacings measured along \hat{C} Rdwy.

* Tilt #9 b41(E) bars as required to maintain clearance.
 ** Preformed flexible foam expansion joint filler according to Article 1051.09 of the Std. Specifications; full depth of slab, full length of parapet. Typ. each parapet. Cost included with Concrete Superstructure.

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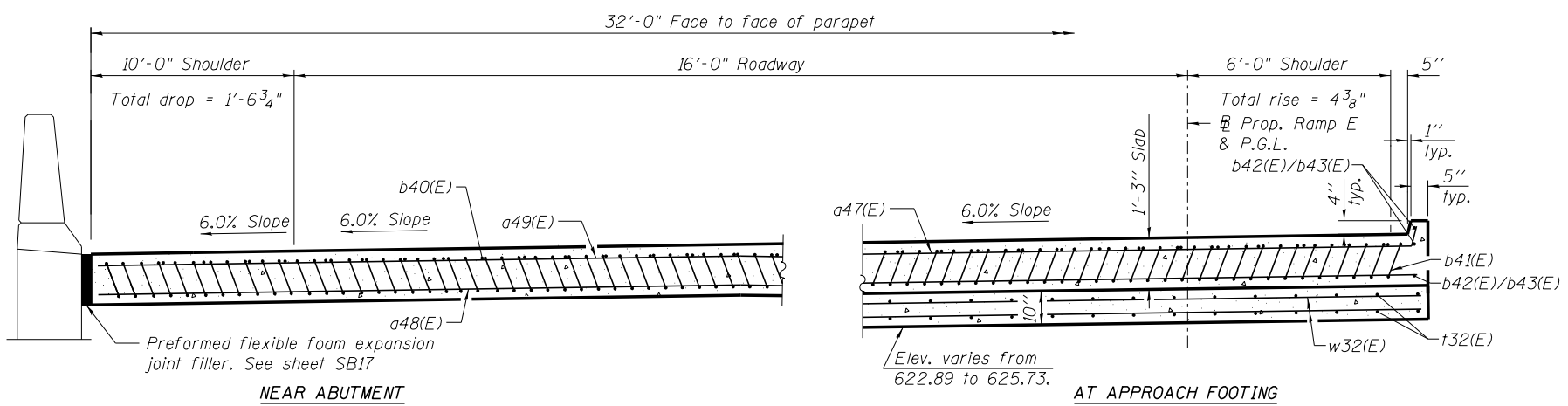
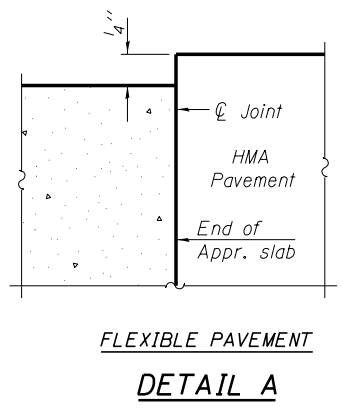
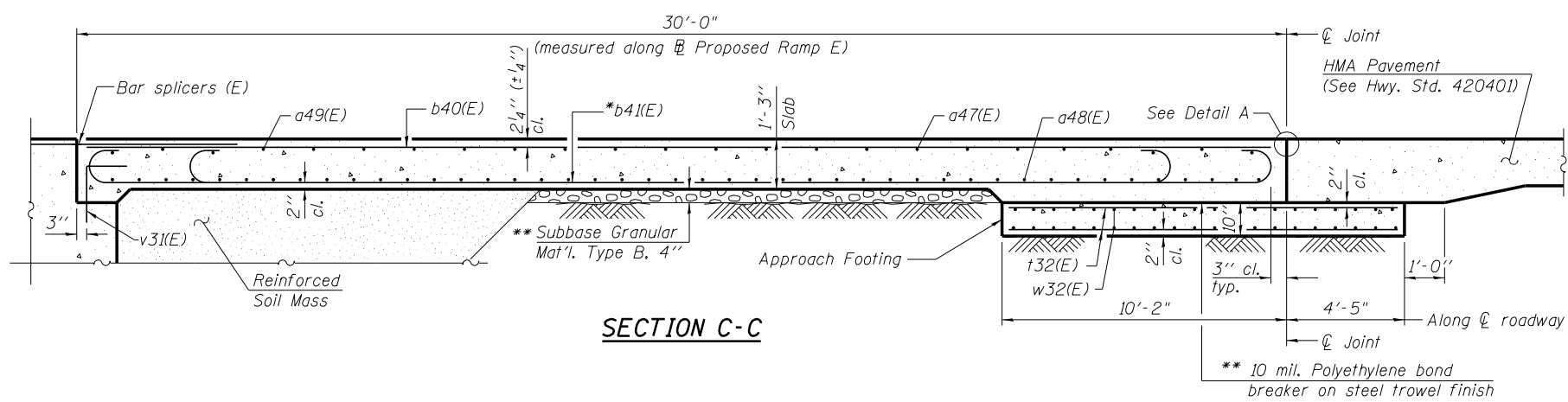
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(Sheet 1 of 2)
EAST APPROACH SLAB PLAN
STRUCTURE NO. 016-1512
 SHEET NO. SB17 OF SB43 SHEETS

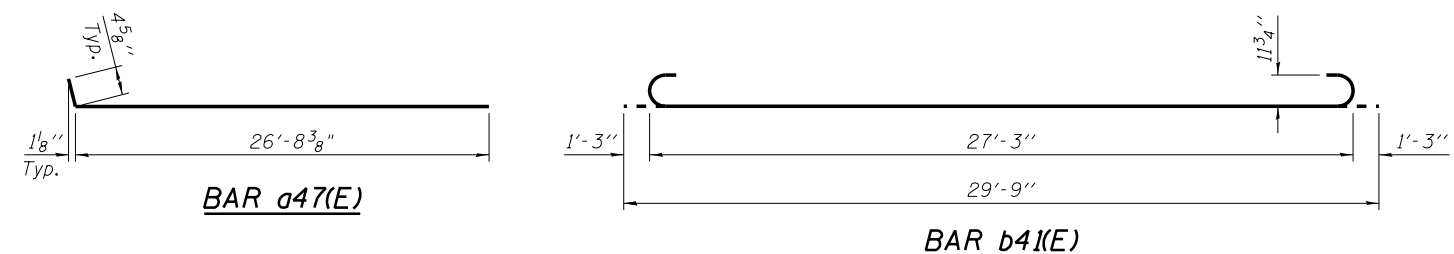
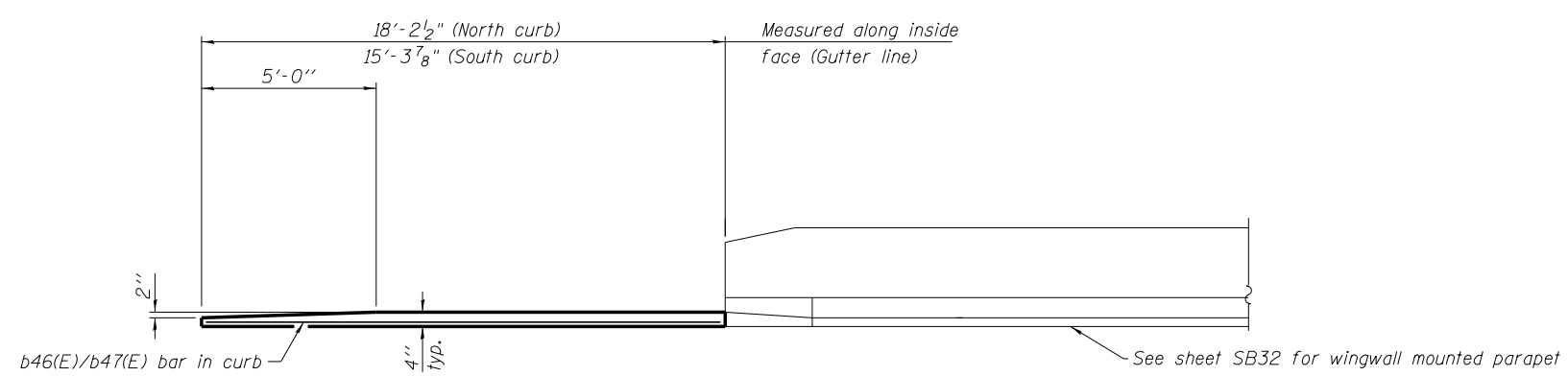
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	133
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

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Notes:
 See sheet SB17 for View B-B.
 Approach slab shall be paid for as Concrete Superstructure.
 Approach footing concrete shall be paid for as Concrete Structures.
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 For v31(E) bar details, see sheet SB31 and SB32.
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
 For bar splicer details, see sheet SB39.
 Cost of excavation for approach footing included with Concrete Structures.
 For Granular Backfill for Structures and drainage treatment details, see sheet SB2.



* Tilt #9 b41(E) bars as required to maintain clearance.
 ** Cost included with Concrete Superstructure.



**SOUTH APPROACH
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a47(E)	26	#4	27'-1"	—
a48(E)	92	#5	26'-9"	—
a49(E)	24	#4	23'-9"	—
b40(E)	26	#4	29'-8"	—
b41(E)	77	#9	29'-9"	—
b42(E)	3	#4	15'-2"	—
b43(E)	3	#4	18'-1"	—
t32(E)	68	#4	14'-3"	—
w32(E)	80	#5	26'-9"	—
Concrete Superstructure			Cu. Yd.	50.0
Concrete Structures			Cu. Yd.	14.4
Reinforcement Bars, Epoxy Coated			Pound	14,670

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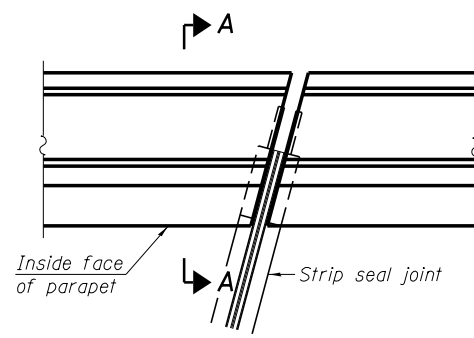
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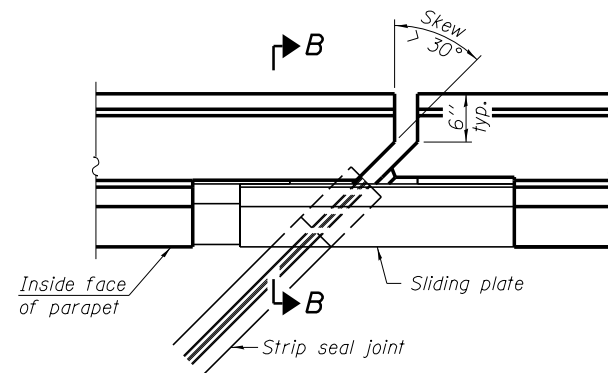
(Sheet 2 of 2)
**EAST APPROACH SLAB DETAILS
 STRUCTURE NO. 016-1512**
 SHEET NO. SB18 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	134
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

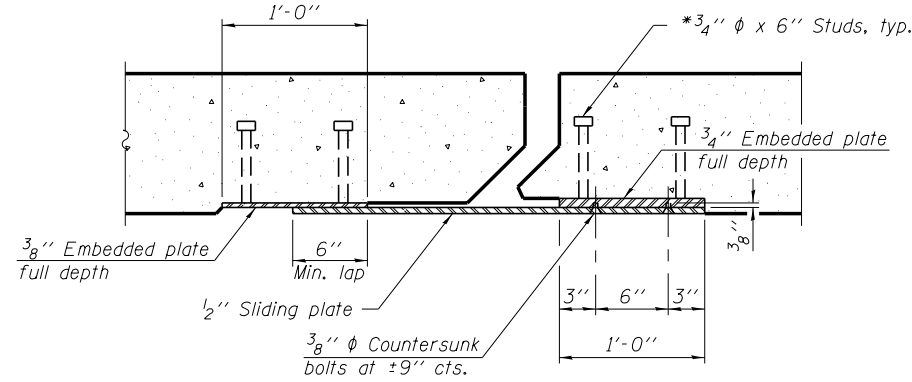
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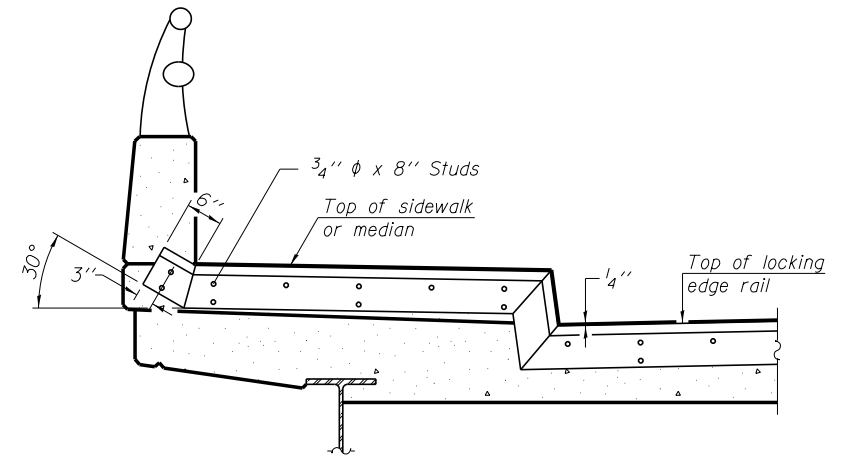
PLAN
(For skews $\leq 30^\circ$)



PLAN
(For skews $> 30^\circ$)
Showing point block

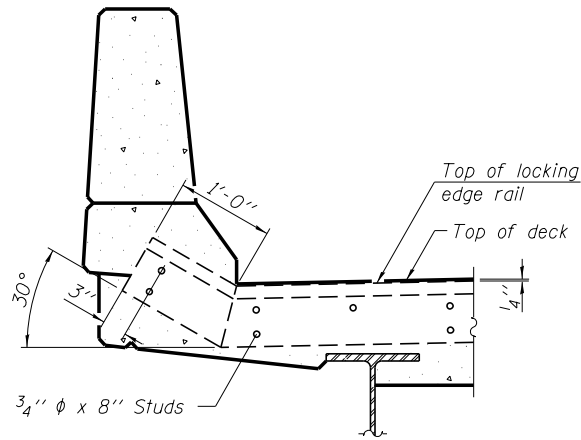


SECTION C-C

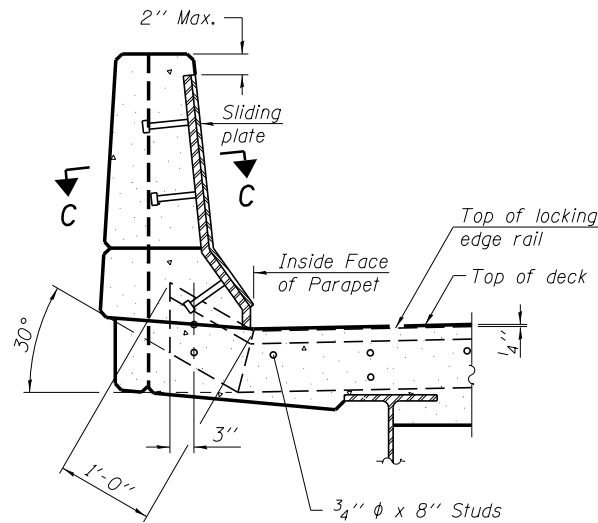


TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN

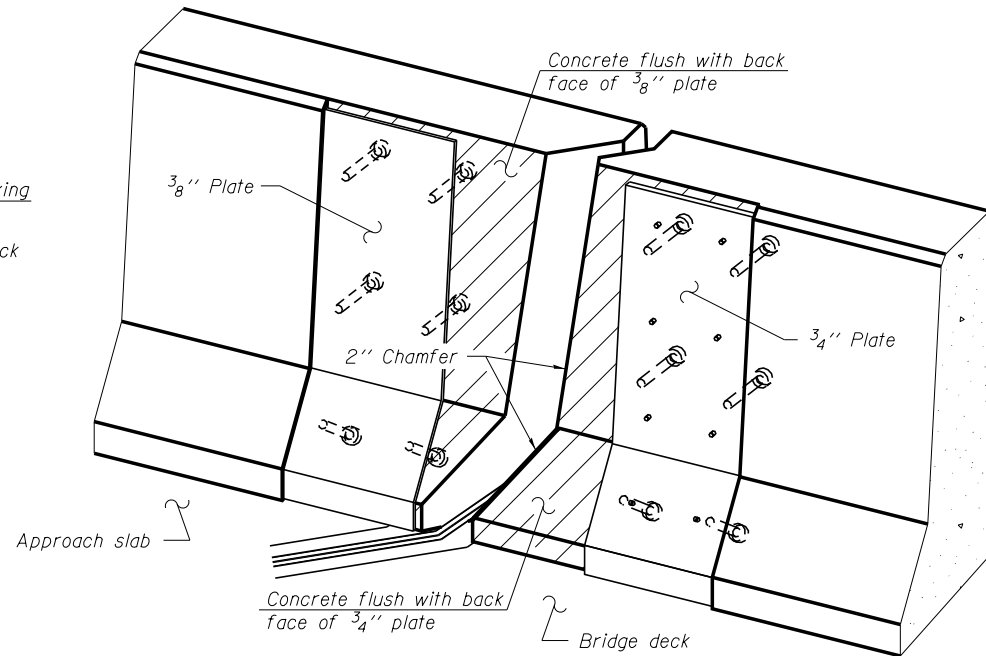
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



SECTION A-A



SECTION B-B



TRIMETRIC VIEW
(Showing back plates only)

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

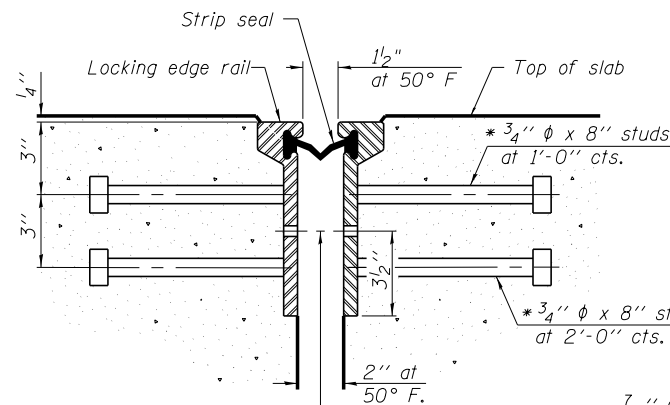
The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

The manufacturer's recommended installation methods shall be followed.

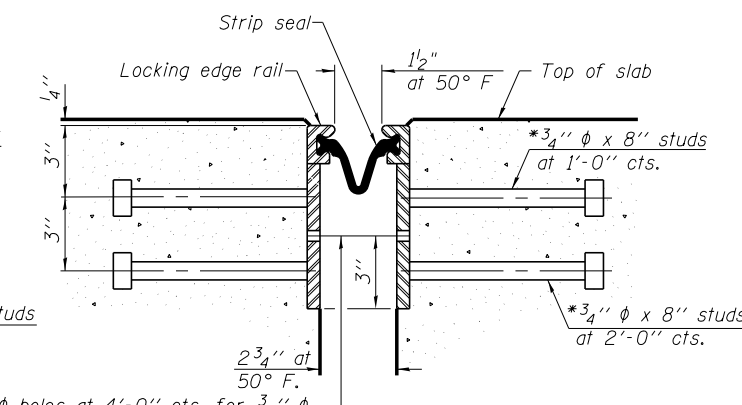
The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications. Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

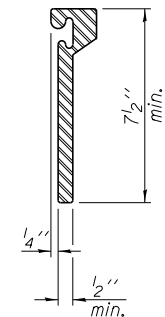
Parapet plates and anchorage studs for skews $> 30^\circ$ included in the cost of Preformed Joint Strip Seal.



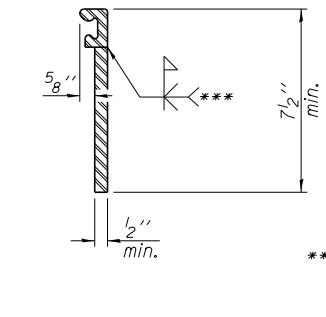
SECTION THRU ROLLED RAIL JOINT



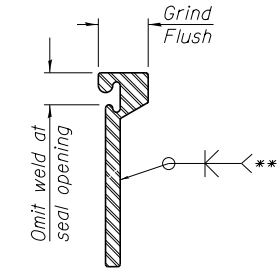
SECTION THRU WELDED RAIL JOINT



ROLLED EXTRUDED RAIL



WELDED RAIL



LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.
Rolled rail shown, welded rail similar.

*** Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE RAILS

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	83

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

EJ-SSJ

1-27-12

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**EXPANSION JOINT DETAILS
STRUCTURE NO. 016-1512**

SHEET NO. SB19 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	135
				CONTRACT NO. 60W77
ILLINOIS FED. AID PROJECT				

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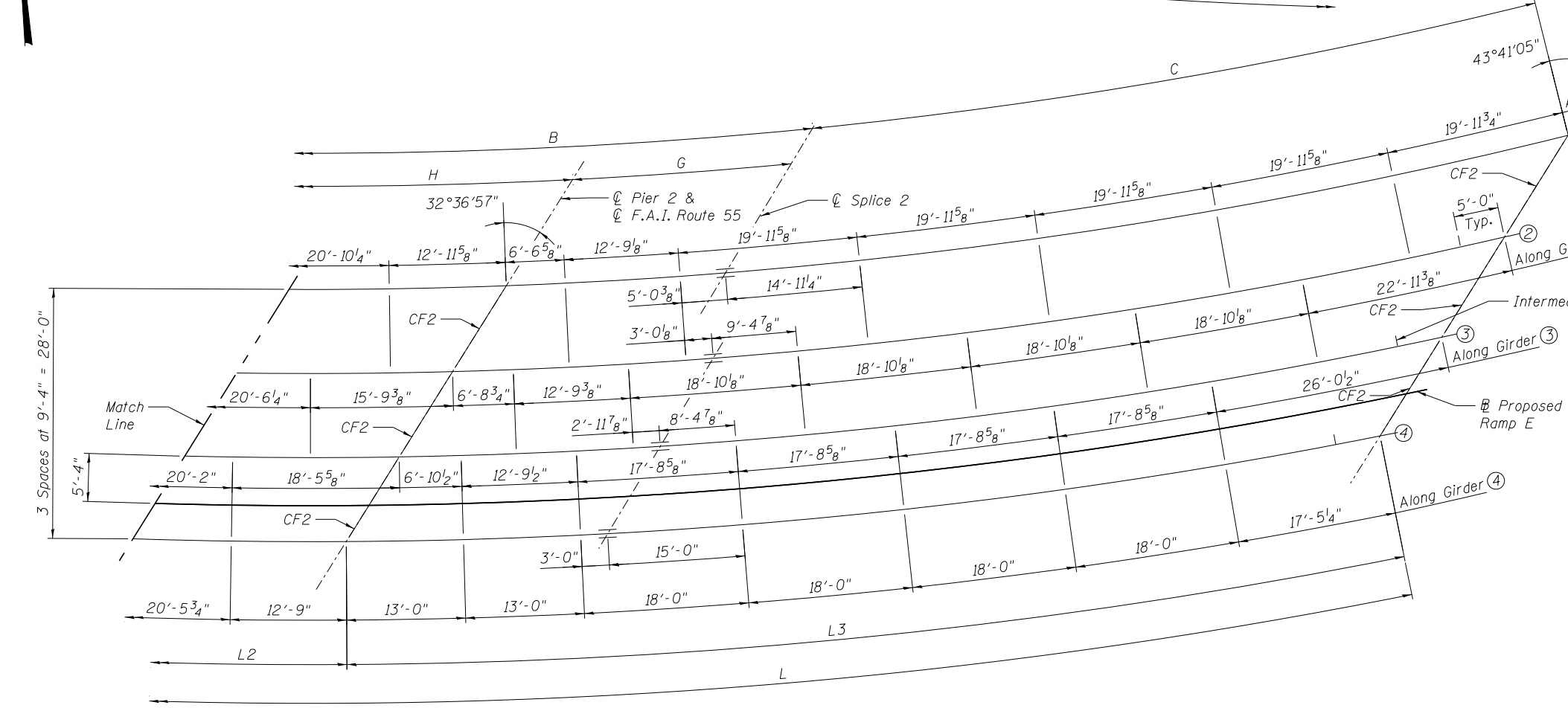
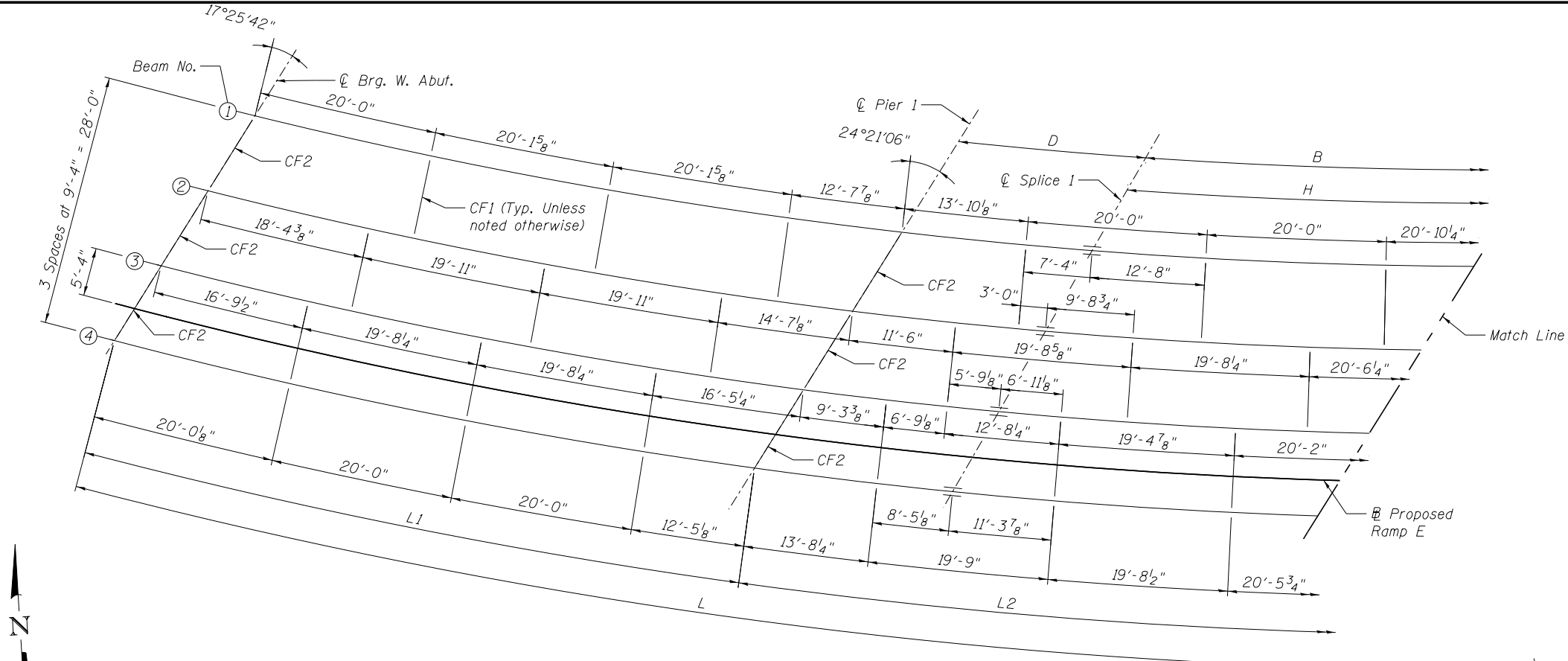
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FRAMING PLAN

NOTES:

1. All structural steel for girders and splice plates shall conform to the requirements of AASHTO M270, Grade 50. Structural steel shall be metallized.
2. All cross frames or diaphragms between beams or girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
3. For dimension L, L1 thru L3, and B thru H, see sheet SB22.



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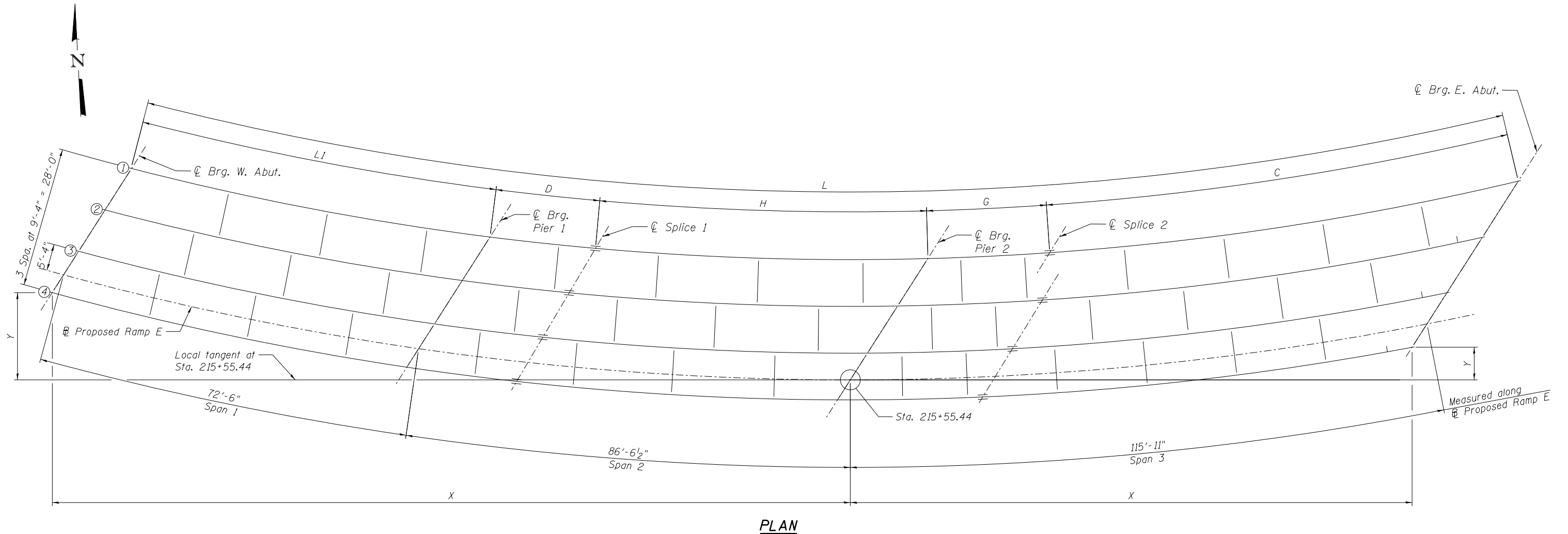
**STATE OF ILLINOIS
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**FRAMING PLAN
STRUCTURE NO. 016-1512**

SHEET NO. SB20 OF SB43 SHEETS

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373	(0707-608&611)HB-B	COOK	177	136
CONTRACT NO. 60W77				
ILLINOIS FED. AID PROJECT				

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PLAN

NOTE:

For steel framing plan, see sheet SB20.
For dimensions L, L1, C, D, G & H, See sheet SB22.

LAYOUT DIMENSIONS

Girder	Radius	C Brg. W. Abut.		C Pier 1		C Splice 1		C Pier 2		C Splice 2		C Brg. E. Abut.	
		X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1	576'-0"	-143'-7 7/8"	42'-2 1/4"	-71'-11 3/4"	28'-6 1/8"	-50'-11"	26'-3"	15'-5 7/8"	24'-2 1/2"	39'-9 3/4"	25'-4 1/2"	133'-5 1/4"	39'-8"
2	585'-4"	-148'-10 5/8"	33'-11"	-77'-6 1/2"	19'-9 7/8"	-56'-2 1/4"	17'-4 3/8"	9'-5 1/4"	14'-8 1/8"	38'-4 3/8"	15'-11 1/8"	126'-3 1/8"	28'-5 3/8"
3	594'-8"	-154'-2"	25'-8"	-83'-1"	11'-2"	-61'-5 1/4"	8'-6 1/8"	3'-5"	5'-4 1/8"	32'-4 5/8"	6'-2 5/8"	119'-2 1/4"	17'-4 3/4"
4	604'-0"	-159'-5 3/8"	17'-5 1/8"	-88'-7 1/4"	2'-6 3/8"	-66'-8 1/8"	-3 3/4"	-2'-6 5/8"	-4'-0"	26'-5 3/8"	-3'-5"	112'-2 3/4"	6'-6 1/4"

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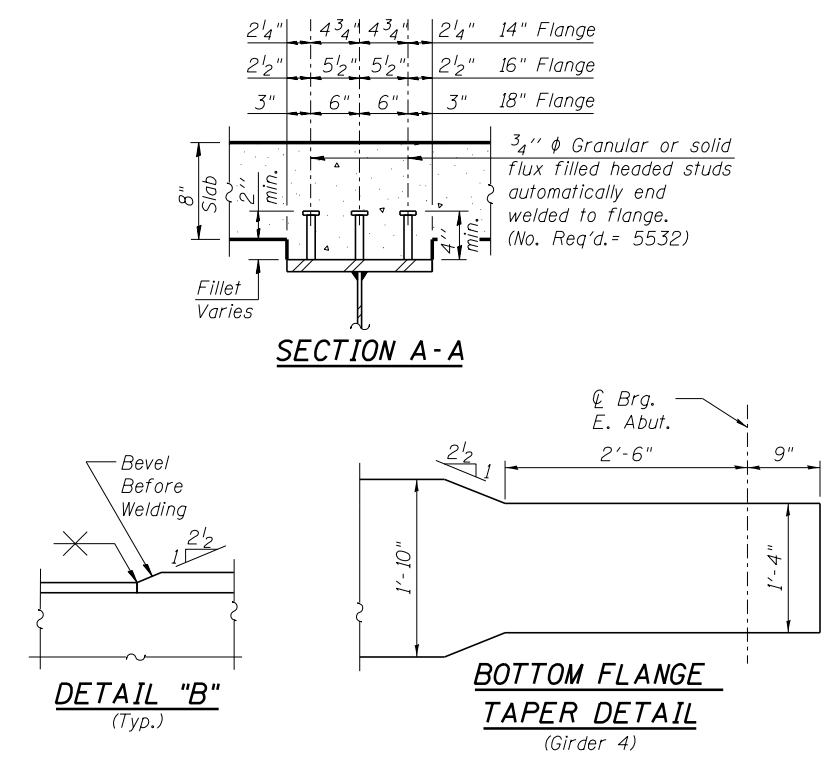
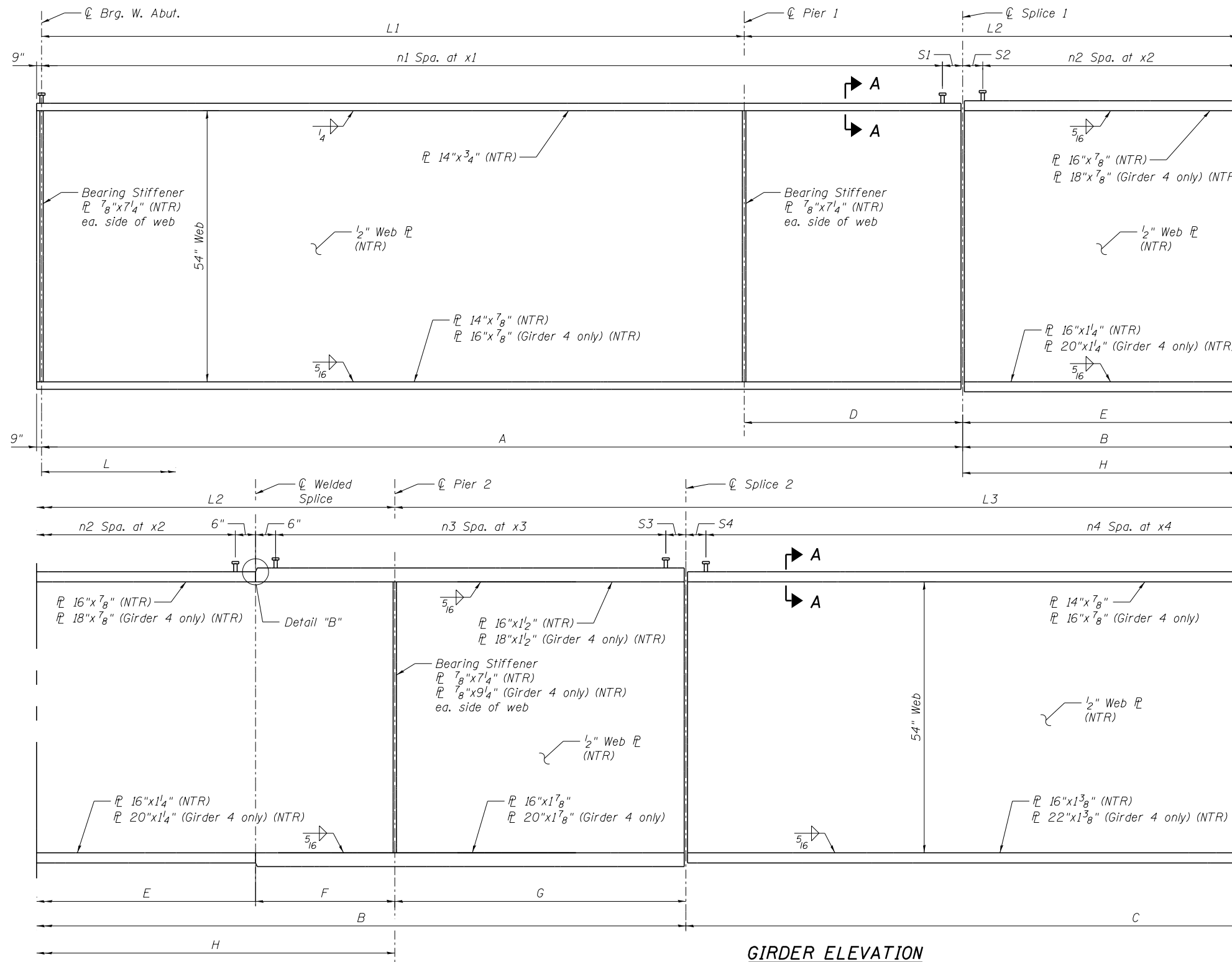
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GIRDER LAYOUT
STRUCTURE NO. 016-1512

SHEET NO. SB21 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	137
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	



SHEAR CONNECTOR SPACING

GIRDER	n1	x1	S1	S2	n2	x2	n3	x3	S3	S4	n4	x4
1	159	7"	1'-4 ⁵ / ₈ "	1'-4 ⁵ / ₈ "	76	8"	54	8"	1'-9 ³ / ₈ "	1'-5 ⁷ / ₈ "	140	8"
2	159	7"	1'-6 ¹ / ₈ "	1'-4 ¹ / ₈ "	96	7"	52	8"	1'-7 ¹ / ₈ "	1'-6 ⁵ / ₈ "	131	8"
3	139	8"	1'-8 ³ / ₈ "	1'-6 ³ / ₈ "	104	6"	57	8"	1'-4 ³ / ₄ "	1'-7 ¹ / ₄ "	129	8"
4	186	6"	1'-6 ³ / ₈ "	1'-2 ¹ / ₈ "	73	8"	70	7"	1'-7"	1'-10 ¹ / ₄ "	203	5"

GIRDER DIMENSIONS

GIRDER	RADIUS	L	L1	L2	L3	A	B	C	D	E	F	G	H
1	576'-0"	279'-9 ¹ / ₂ "	72'-11 ¹ / ₂ "	87'-8"	119'-2"	94'-1 ⁵ / ₈ "	90'-10"	94'-9 ⁷ / ₈ "	21'-2 ¹ / ₈ "	52'-6 ⁵ / ₈ "	13'-11 ¹ / ₄ "	24'-4 ¹ / ₈ "	66'-5 ⁷ / ₈ "
2	585'-4"	277'-9 ³ / ₄ "	72'-9 ¹ / ₄ "	87'-2 ¹ / ₂ "	117'-10"	94'-3 ¹ / ₈ "	94'-8"	88'-10 ⁵ / ₈ "	21'-5 ¹ / ₈ "	57'-10 ¹ / ₈ "	7'-10 ¹ / ₂ "	28'-11 ³ / ₈ "	65'-8 ⁵ / ₈ "
3	594'-8"	275'-11 ³ / ₈ "	72'-7 ¹ / ₈ "	86'-9 ¹ / ₄ "	116'-7"	94'-4 ³ / ₄ "	93'-11 ³ / ₈ "	87'-7 ¹ / ₄ "	21'-9 ⁵ / ₈ "	54'-0 ⁵ / ₈ "	10'-11"	28'-11 ³ / ₄ "	64'-11 ⁵ / ₈ "
4	604'-0"	274'-2 ¹ / ₈ "	72'-5 ¹ / ₈ "	86'-4 ¹ / ₂ "	115'-5 ¹ / ₄ "	94'-6 ¹ / ₂ "	93'-3 ¹ / ₈ "	86'-5 ¹ / ₄ "	22'-1 ³ / ₈ "	50'-4 ¹ / ₈ "	13'-11"	29'-0"	64'-3 ¹ / ₈ "

NOTES:

- All structural steel shall be AASHTO M270 Grade 50 steel. All structural steel shall be metallized.
- All bearing stiffeners, connection plates and gusset plates shall comply with NTR.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GIRDER ELEVATION
STRUCTURE NO. 016-1512**

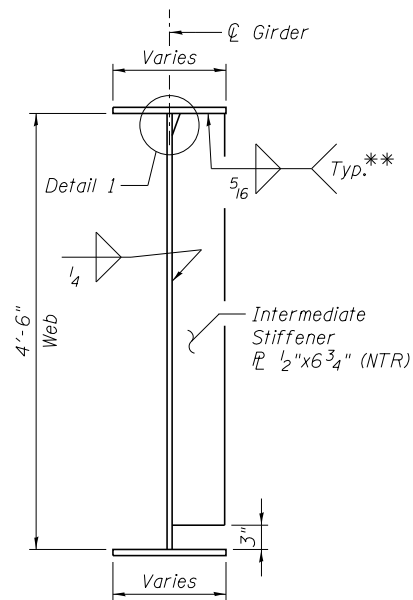
SHEET NO. SB22 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	138
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

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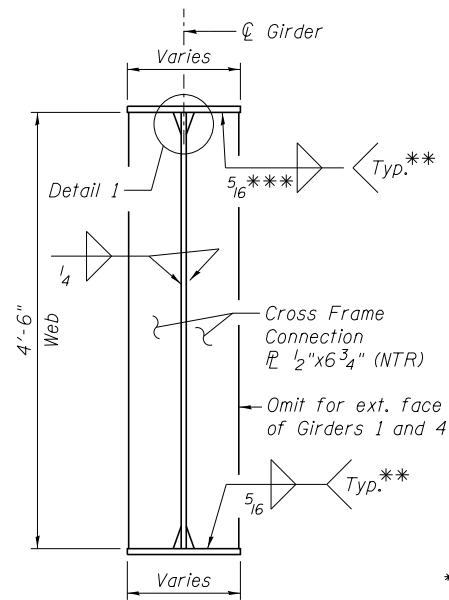
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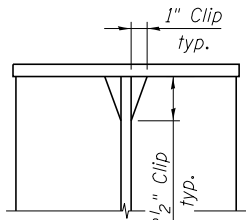
INTERMEDIATE STIFFENER DETAIL

(No. Req'd = 3)



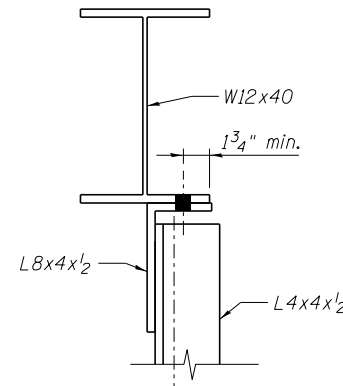
CONNECTION PLATE STIFFENER DETAIL

(No. Req'd = 78)



DETAIL 1

(Typical top & bottom flanges)

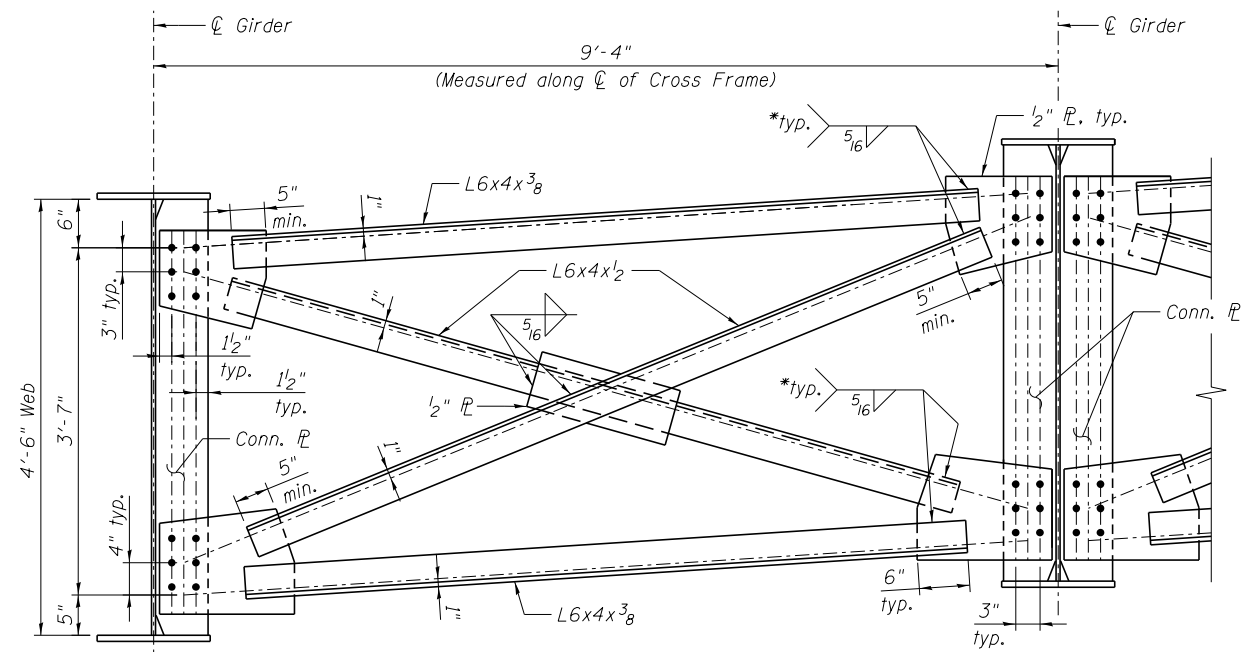


SECTION A-A

- * Fillet weld angles along 3 sides on one face of gusset plate.
- ** Terminate weld 1/4" from edges of stiffener PL.
- *** 1/4" weld for top flange to web from N. Abut to splice #1.

NOTES:

1. The Contractor shall either:
 - A. Ream cross frame connection holes during shop assembly, or
 - B. Provide detailing and fabrication controls acceptable to the Engineer which ensures accuracy such that field reaming will not exceed the amount permitted in Article 505.08(l) of the Standard Specifications.
2. The calculated deflections of the primary girders/beams under steel self-weight shall be used to detail the diaphragm, cross frame and lateral bracing connections, and to erect the structural steel such that the girders/beams will be plumb within a tolerance of ±1/8 in. per vertical ft. throughout when supporting their own weight. For steel self-weight deflections, see Sheet SB24.
3. All cross frame members shall be AASHTO M270 Grade 50 Steel. All structural steel shall be metallized.
4. All cross frames or diaphragms between beams or girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
5. Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8" φ, holes 15/16" φ.
6. All bearing stiffeners, connection plates and gusset plates shall comply with NTR.
7. All cross frame members shall comply with NTR.
8. Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.

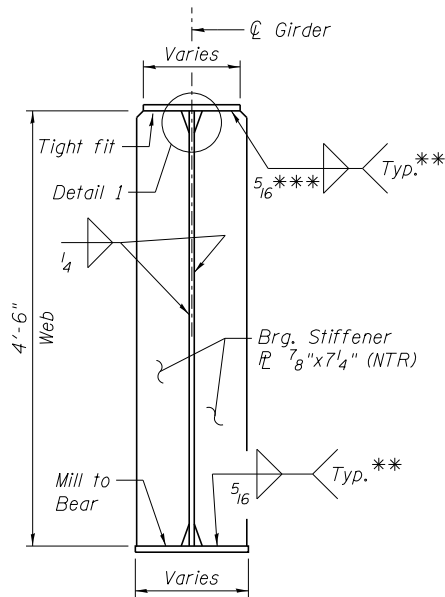


Note: Connect short leg of angles to gusset plates, typ.

INTERIOR CROSS FRAME

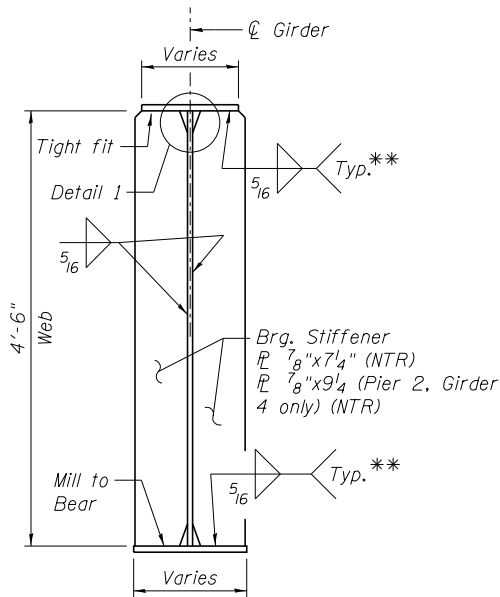
(CF1)

(No. Req'd = 39)



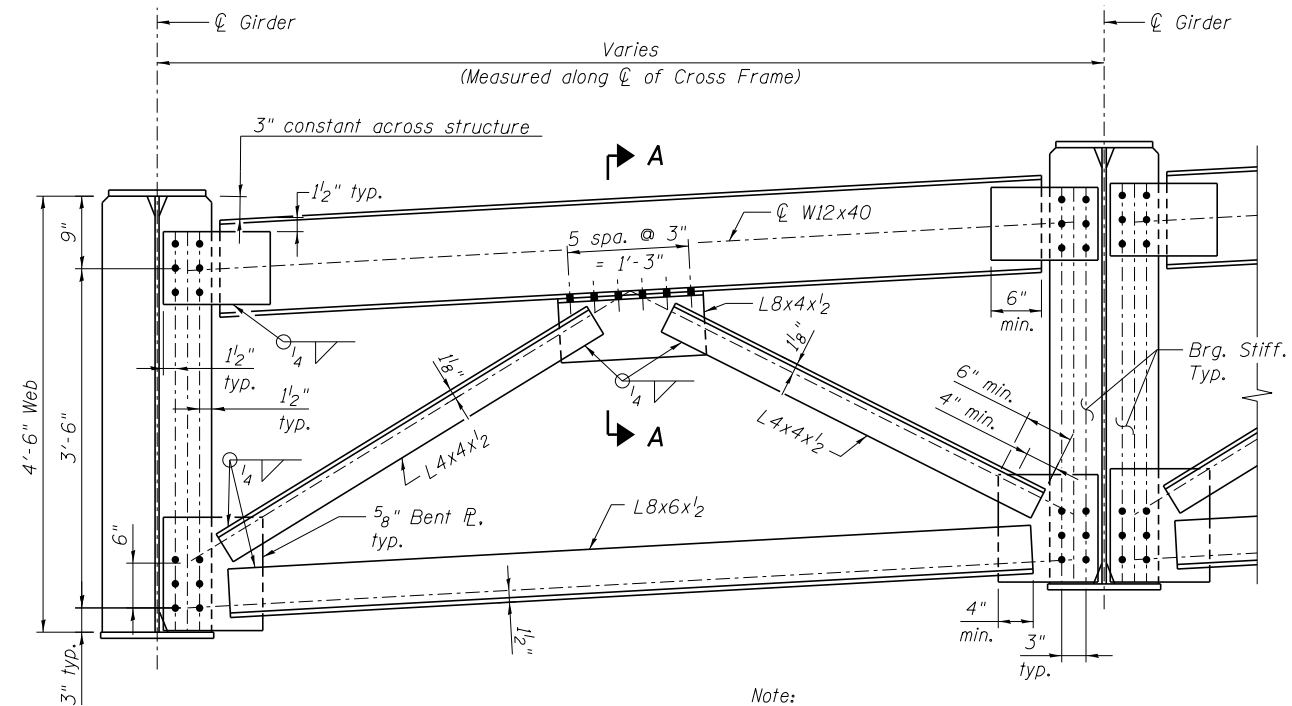
BEARING STIFFENER AT ABUTMENTS

(No. Req'd = 16)



BEARING STIFFENER AT PIERS

(No. Req'd = 16)



Note: Connect short leg of angles to gusset plates, typ.

TYPE 2 CROSS FRAME AT PIERS AND ABUTMENTS

(CF2)

(No. Req'd = 12)

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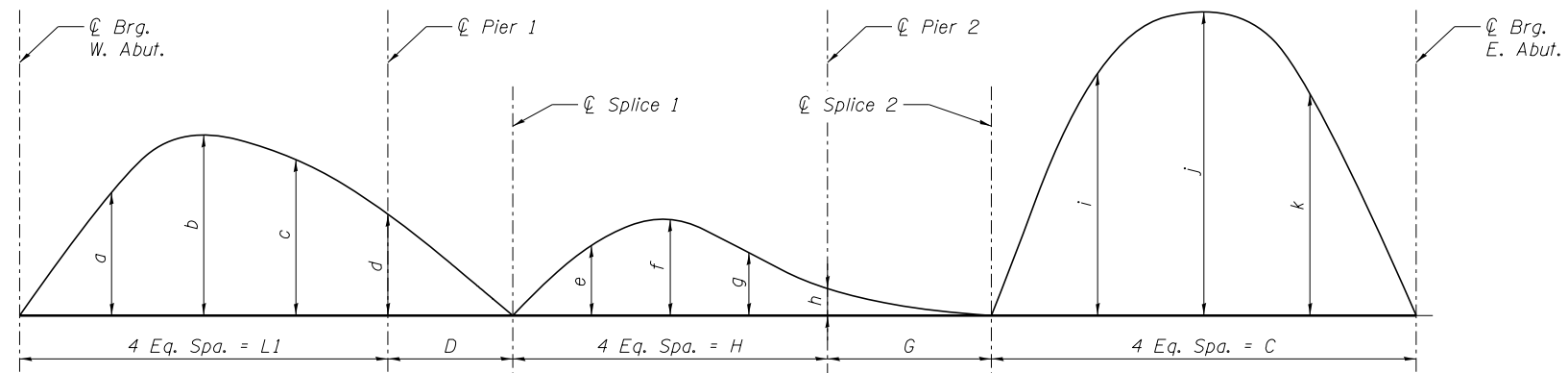
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**STRUCTURAL STEEL DETAILS (1 OF 3)
STRUCTURE NO. 016-1512**

SHEET NO. SB23 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	139
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	



CAMBER DIAGRAM

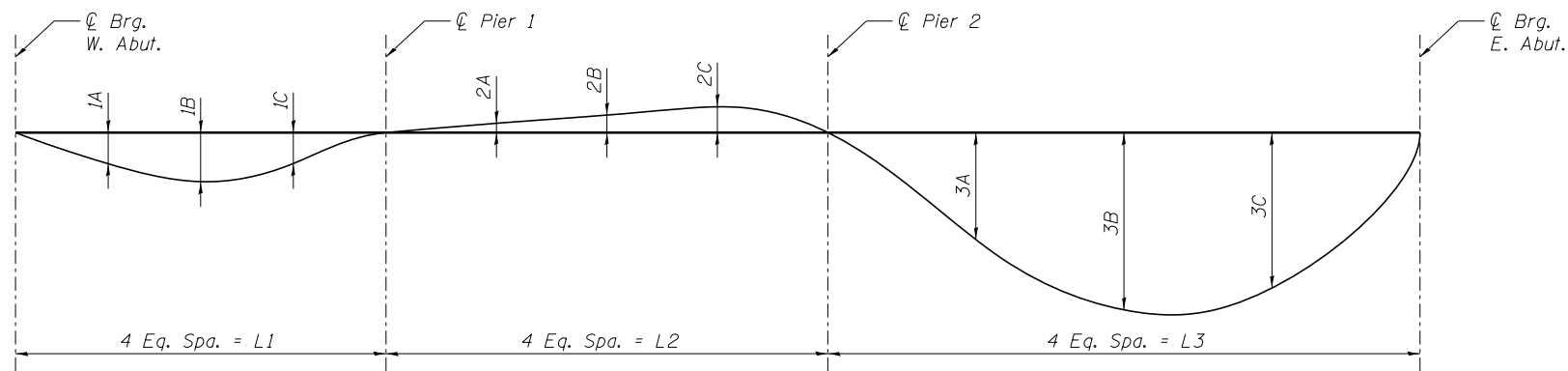
CAMBER ORDINATES

Girder	a	b	c	d	e	f	g	h	i	j	k
1	1 7/8"	2 3/4"	2 1/2"	1 1/2"	1"	1 1/2"	1"	1/4"	3 5/8"	4 1/2"	3 3/8"
2	1 7/8"	2 3/4"	2 1/2"	1 5/8"	1 1/8"	1 1/2"	7/8"	1/4"	3 1/8"	4 1/8"	3"
3	1 7/8"	2 3/4"	2 1/2"	1 5/8"	7/8"	1 1/4"	3/4"	1/4"	3 1/8"	4 1/8"	3"
4	2"	2 7/8"	2 5/8"	1 3/4"	7/8"	1 1/8"	5/8"	1/8"	3 1/8"	4"	2 5/8"

TOP OF WEB ELEVATIONS

(For fabrication only)

Location	Girder 1	Girder 2	Girder 3	Girder 4
℄ Brg. W. Abut.	625.37	625.86	626.35	626.84
℄ Brg. Pier 1	626.57	627.09	627.60	628.12
Splice 1	626.76	627.28	627.80	628.32
℄ Brg. Pier 2	626.82	627.39	627.98	628.54
Splice 2	626.81	627.41	628.03	628.63
℄ Brg. E. Abut.	625.31	626.08	626.83	627.55



STEEL DEFLECTION DIAGRAM

STEEL DEFLECTION TABLE

Girder	1A	1B	1C	2A	2B	2C	3A	3B	3C
1	1/16"	1/8"	1/16"	0"	0"	-1/16"	5/16"	1/2"	7/16"
2	1/16"	1/8"	1/16"	0"	-1/16"	-1/16"	5/16"	9/16"	1/2"
3	1/16"	1/8"	1/16"	0"	-1/16"	-1/16"	3/8"	5/8"	1/2"
4	1/8"	1/8"	1/16"	-1/16"	-1/16"	-1/8"	3/8"	1/16"	9/16"

Notes:

- Negative values indicate upward deflection.
- The calculated deflections of the primary girders/beams under steel self-weight shall be used to detail the diaphragm, cross frame and lateral bracing connections, and to erect the structural steel such that the girders/beams will be plumb within a tolerance of $\pm 1/8$ in. per vertical ft. throughout when supporting their own weight.

NOTE:

For girder length dimensions see design sheet SB22.



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PLOT SCALE =
PLOT DATE = 6/23/2014

DESIGNED - KWS
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CHECKED - SLV

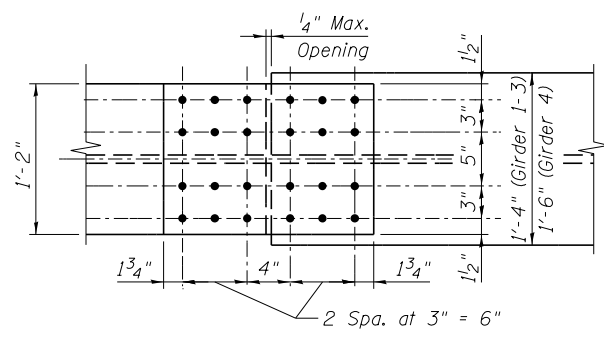
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

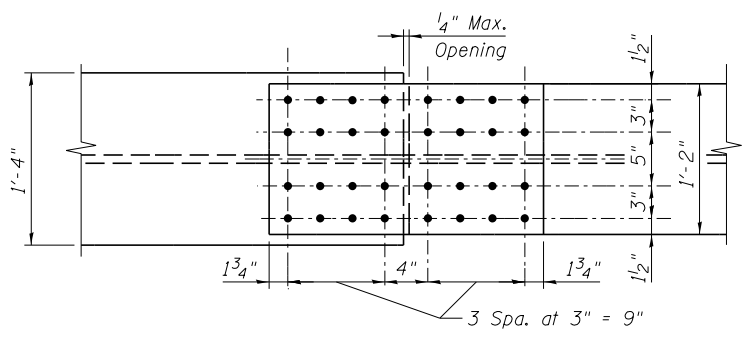
STRUCTURAL STEEL DETAILS (2 OF 3)
STRUCTURE NO. 016-1512

SHEET NO. SB24 OF SB43 SHEETS

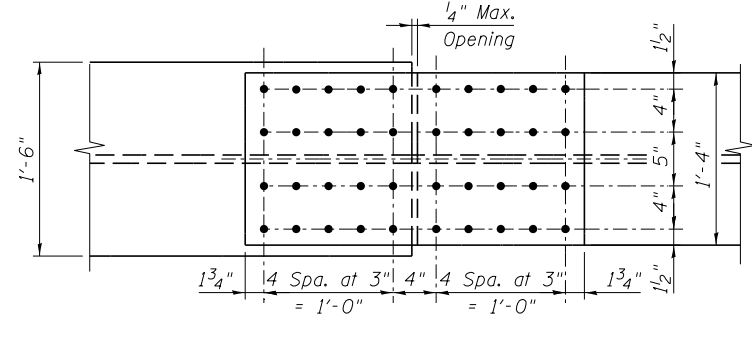
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373	(0707-608&611)HB-B	COOK	177	140
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	



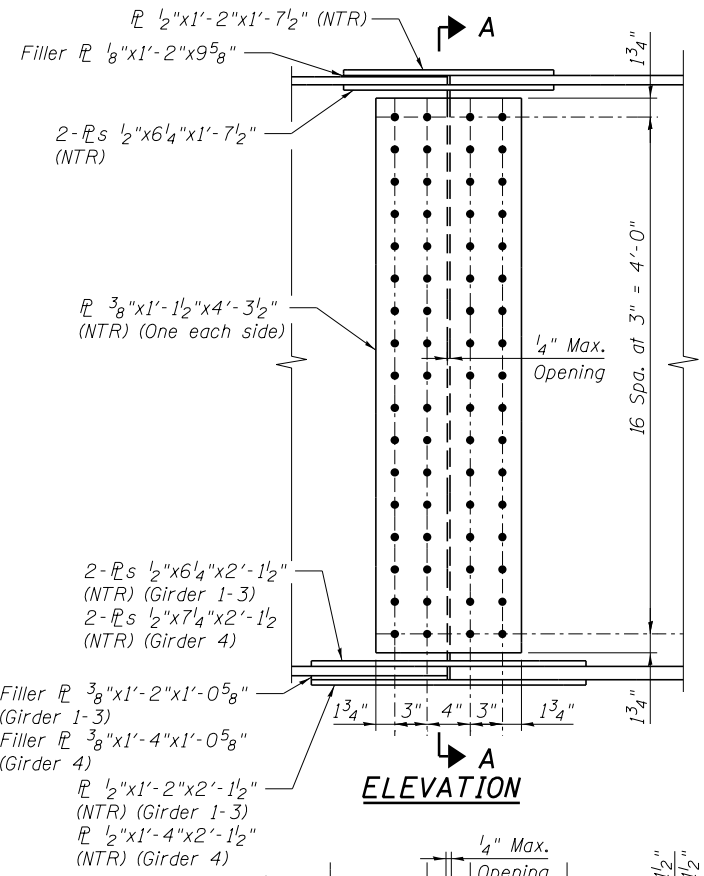
FLANGE SPLICE



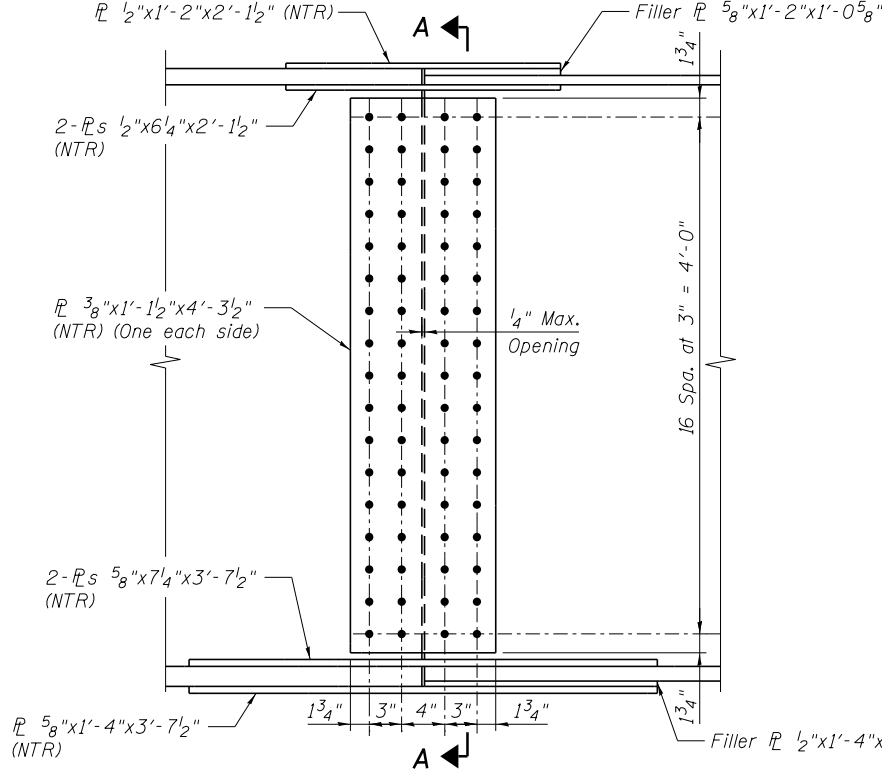
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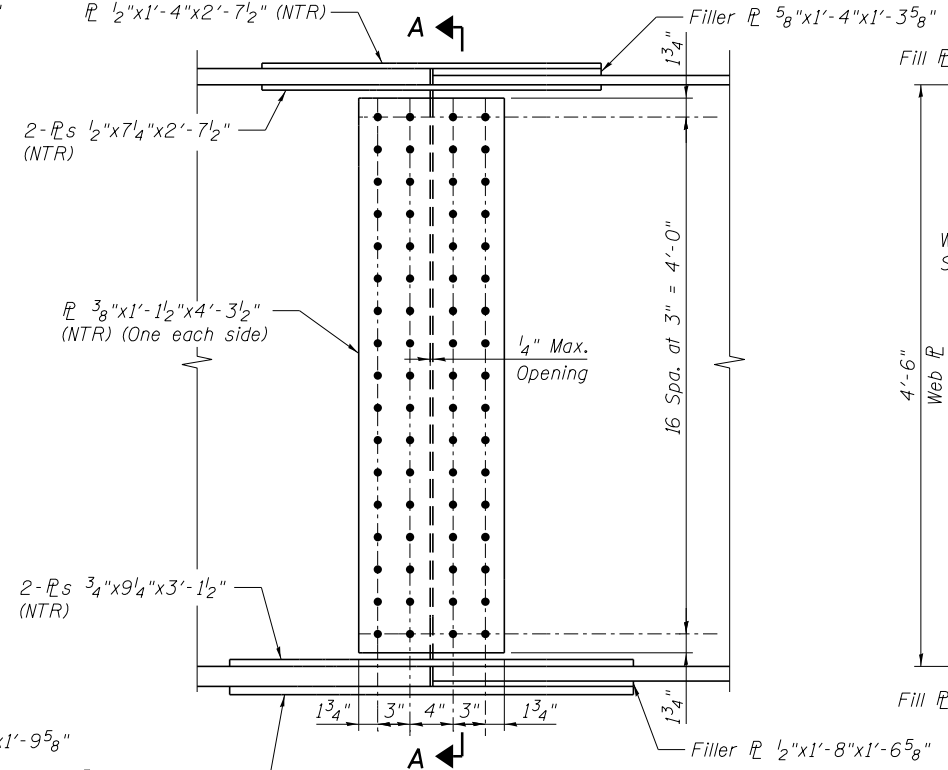
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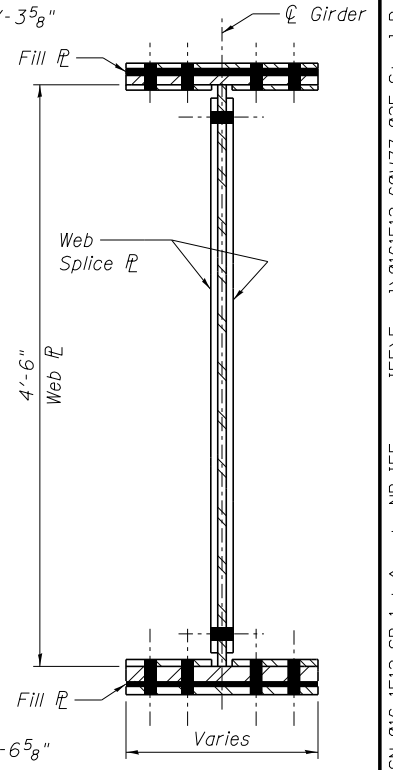
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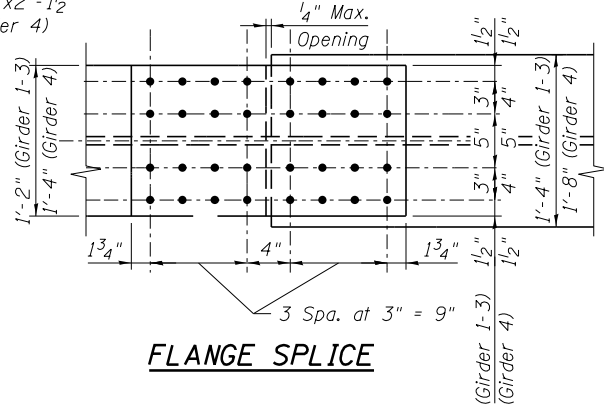
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ELEVATION

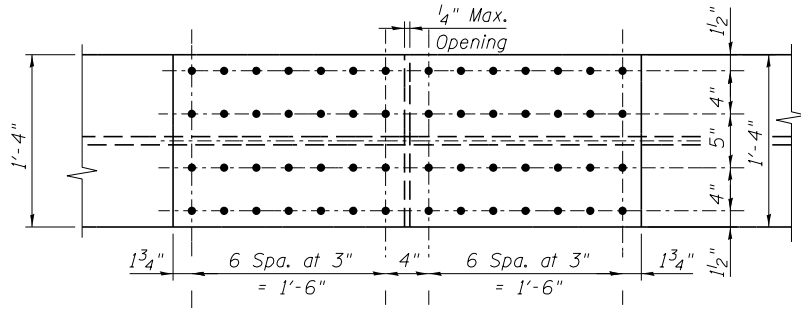


SECTION A-A



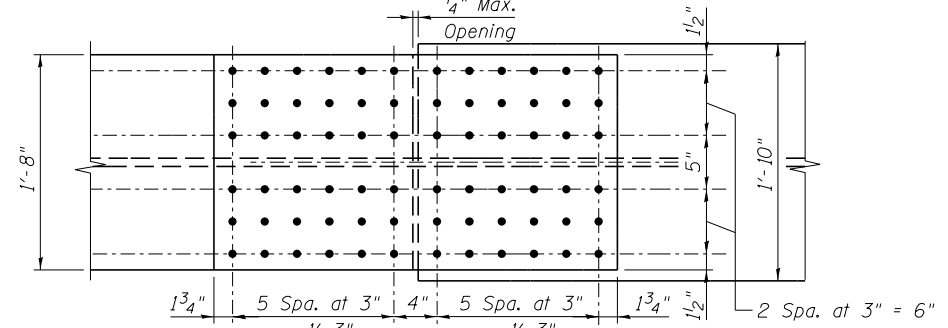
FLANGE SPLICE

FIELD SPLICE #1
(Girders 1-4)



FLANGE SPLICE

FIELD SPLICE #2
(Girders 1-3)



FLANGE SPLICE

FIELD SPLICE #2
(Girder 4)

NOTES:

1. All structural steel shall be AASHTO M270 Grade 50 steel. All structural steel shall be metallized.
2. Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME = 0161512.60W77.025.Steel.Details.3.dgn
PLOT SCALE =
PLOT DATE = 6/23/2014

USER NAME = ksnyder
DESIGNED - JHG
CHECKED - KWS
DRAWN - KMS
CHECKED - KWS

REVISOR -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS (3 OF 3)
STRUCTURE NO. 016-1512

SHEET NO. SB25 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	141
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

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GIRDERS 1 MOMENT TABLE						
	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.6 Sp. 3	
I_s	(in ⁴)	23,605	23,605	31,902	48,105	31,435
$I_c(n)$	(in ⁴)	57,857	57,857	75,218	98,636	79,167
$I_c(3n)$	(in ⁴)	43,271	43,271	55,491	73,691	57,411
$I_c(cr)$	(in ⁴)	-----	32,789	-----	59,135	-----
S_s	(in ³)	878	878	1,252	1,798	1,314
$S_c(n)$	(in ³)	1,214	1,214	1,643	2,211	1,753
$S_c(3n)$	(in ³)	1,113	1,113	1,517	2,057	1,616
$S_c(cr)$	(in ³)	-----	1,007	-----	1,926	-----
S_{xc}	(in ³)	1,105	944	1,603	1,836	1,586
DC1	(k/')	1.126	1.126	1.171	1.246	1.169
M _{DC1}	('k)	456	-590	66	-1686	1045
DC2	(k/')	0.259	0.259	0.259	0.259	0.259
M _{DC2}	('k)	107	-120	24	-342	242
DW	(k/')	0.400	0.400	0.400	0.400	0.400
M _{DW}	('k)	165	-184	38	-527	373
M _{ℓ + IM}	('k)	1066	-1105	1104	-1829	1725
f_t (Strength I)	(ksi)	6.38	3.31	2.55	2.24	4.94
$M_u + 1/3 f_t S_{xc}$	('k)	3013	3184	2215	6640	5405
$\phi_r M_n$	('k)	-----	-----	-----	-----	-----
f_s DC1	(ksi)	6.2	8.1	0.6	11.3	9.5
f_s DC2	(ksi)	1.2	1.4	0.2	2.1	1.8
f_s DW	(ksi)	1.8	2.2	0.3	3.3	2.8
f_s (ℓ+IM)	(ksi)	10.5	13.2	8.1	11.4	11.8
f_t (Service II)	(ksi)	4.79	2.61	1.91	1.70	3.72
$f_s + 1/2$ (Service II)	(ksi)	25.3	30.1	12.6	32.3	31.3
0.95R _h F _{yr}	(ksi)	47.5	47.5	47.5	47.5	47.5
$f_s + 1/3$	(ksi)	32.5	39.3	16.4	42.3	40.6
(Total)(Strength I)						
$\phi_r F_n$	(ksi)	50	50	50	50	50
V _r	(k)	58.5	70.1	48.9	75.5	59.3

GIRDER 1 REACTION TABLE					
	W. Abut.	Pier 1	Pier 2	E. Abut.	
R _{DC1}	(k)	32.4	92.2	159.7	48.5
R _{DC2}	(k)	7.2	20.2	33.2	10.5
R _{DW}	(k)	11.1	31.0	51.1	16.1
R _{ℓ + IM}	(k)	79.8	131.7	177.0	84.3
R _{Total}	(k)	130.5	275.1	421.0	159.4

* Top flange stress controls

GIRDERS 2 & 3 MOMENT TABLE						
	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.6 Sp. 3	
I_s	(in ⁴)	23,605	23,605	31,902	48,105	31,435
$I_c(n)$	(in ⁴)	59,669	59,669	77,807	102,181	82,023
$I_c(3n)$	(in ⁴)	45,105	45,105	57,862	76,505	60,025
$I_c(cr)$	(in ⁴)	-----	32,789	-----	59,135	-----
S_s	(in ³)	878	878	1,252	1,798	1,314
$S_c(n)$	(in ³)	1,225	1,225	1,657	2,229	1,767
$S_c(3n)$	(in ³)	1,128	1,128	1,535	2,078	1,636
$S_c(cr)$	(in ³)	-----	1,007	-----	1,926	-----
S_{xc}	(in ³)	1112	955	1633	1868	1580
DC1	(k/')	1.141	1.141	1.186	1.261	1.184
M _{DC1}	('k)	532	-574	16	-1746	1343
DC2	(k/')	0.259	0.259	0.259	0.259	0.259
M _{DC2}	('k)	117	-140	20	-358	303
DW	(k/')	0.400	0.400	0.400	0.400	0.400
M _{DW}	('k)	180	-215	31	-550	465
M _{ℓ + IM}	('k)	1231	-1386	1263	-1970	1990
f_t (Strength I)	(ksi)	8.10	3.56	1.68	0.88	1.47
$M_u + 1/3 f_t S_{xc}$	('k)	3486	3735	2378	6948	6302
$\phi_r M_n$	('k)	-----	-----	-----	-----	-----
f_s DC1	(ksi)	7.3	7.8	0.2	11.7	12.3
f_s DC2	(ksi)	1.2	1.7	0.2	2.2	2.0
f_s DW	(ksi)	1.9	2.6	0.2	3.4	3.4
f_s (ℓ+IM)	(ksi)	12.1	16.5	9.1	12.3	13.5
f_t (Service II)	(ksi)	6.09	2.68	1.25	0.69	1.11
$f_s + 1/2$ (Service II)	(ksi)	29.2	34.9	13.1	33.6	36.0
0.95R _h F _{yr}	(ksi)	47.5	47.5	47.5	47.5	47.5
$f_s + 1/3$	(ksi)	37.3	45.8	17.3	44.3	47.4
(Total)(Strength I)						
$\phi_r F_n$	(ksi)	50	50	50	50	50
V _r	(k)	54.2	59.6	46.7	61.1	59.9

GIRDERS 2 & 3 REACTION TABLE					
	W. Abut.	Pier 1	Pier 2	E. Abut.	
R _{DC1}	(k)	37.1	89.9	159.4	62.3
R _{DC2}	(k)	7.8	20.9	33.5	13.6
R _{DW}	(k)	12.0	32.1	51.5	21.0
R _{ℓ + IM}	(k)	102.0	157.1	189.2	109.7
R _{Total}	(k)	158.9	300.0	433.6	206.6

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in.⁴ and in.³).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to short term composite live loads (in.⁴ and in.³).

$I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to long-term composite (superimposed) dead loads (in.⁴ and in.³).

$I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in.⁴ and in.³).

S_{xc} : Section modulus about the major axis of section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange (in.³).

DC1: Un-factored non-composite dead load (kips/ft.).

M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

M_{ℓ + IM}: Un-factored live load moment plus dynamic load allowance (impact)(kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).

$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{ℓ + IM}$

GIRDERS 4 MOMENT TABLE						
	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2*	0.6 Sp. 3	
I_s	(in ⁴)	24,789	24,789	36,514	55,664	37,410
$I_c(n)$	(in ⁴)	61,708	61,708	85,301	112,895	94,914
$I_c(3n)$	(in ⁴)	45,801	45,801	62,373	83,788	67,509
$I_c(cr)$	(in ⁴)	-----	34,545	-----	67,593	-----
S_s	(in ³)	954	954	1,494	1,753	1,700
$S_c(n)$	(in ³)	1,312	1,312	1,920	2,406	2,210
$S_c(3n)$	(in ³)	1,204	1,204	1,779	2,406	2,046
$S_c(cr)$	(in ³)	-----	1,091	-----	2,406	-----
S_{xc}	(in ³)	1196	1031	1947	2030	2008
DC1	(k/')	1.133	1.133	1.200	1.289	1.210
M _{DC1}	('k)	580	-544	-134	-1939	1629
DC2	(k/')	0.259	0.259	0.259	0.259	0.259
M _{DC2}	('k)	131	-114	-8	-383	338
DW	(k/')	0.400	0.400	0.400	0.400	0.400
M _{DW}	('k)	201	-175	-12	-589	520
M _{ℓ + IM}	('k)	1348	-1367	1398	-2281	2452
f_t (Strength I)	(ksi)	5.81	2.38	2.00	1.77	3.25
$M_u + 1/3 f_t S_{xc}$	('k)	3742	3545	2359	7878	7711
$\phi_r M_n$	('k)	-----	-----	-----	-----	-----
f_s DC1	(ksi)	7.3	6.8	1.1	13.3	11.5
f_s DC2	(ksi)	1.3	1.3	0.1	1.9	2.0
f_s DW	(ksi)	2.0	1.9	0.1	2.9	3.1
f_s (ℓ+IM)	(ksi)	12.3	15.0	8.7	11.4	13.3
f_t (Service II)	(ksi)	4.36	1.87	1.49	1.42	2.45
$f_s + 1/2$ (Service II)	(ksi)	28.8	30.5	13.3	33.6	35.1
0.95R _h F _{yr}	(ksi)	47.5	47.5	47.5	47.5	47.5
$f_s + 1/3$	(ksi)	37.3	40.1	17.5	43.9	45.8
(Total)(Strength I)						
$\phi_r F_n$	(ksi)	50	50	50	50	50
V _r	(k)	74.2	89.4	65.4	86.6	81.3

GIRDER 4 REACTION TABLE					
	W. Abut.	Pier 1	Pier 2	E. Abut.	
R _{DC1}	(k)	39.4	85.6	155.4	70.4
R _{DC2}	(k)	8.5	19.2	31.4	14.5
R _{DW}	(k)	13.1	29.6	48.3	22.3
R _{ℓ + IM}	(k)	99.5	148.7	180.4	121.2
R _{Total}	(k)	160.5	283.1	415.5	228.4

f_t : Factored calculated normal stress at edge of flange for controlling flange plate due to lateral bending, Strength I or Service II as applicable (ksi).

$\phi_r M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).

f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).

M_{DC1} / S_{xc}

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).

M_{DC2} / $S_c(3n)$ or M_{DC2} / $S_c(cr)$ as applicable.

f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).

M_{DW} / $S_c(3n)$ or M_{DW} / $S_c(cr)$ as applicable.

f_s (ℓ+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live plus impact loads as calculated below (ksi).

M_{ℓ + IM} / $S_c(n)$ or M_{DW} / $S_c(cr)$ as applicable.

$f_s + 1/2$ (Service II): Sum of stresses as computed below (ksi).

$f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s (\ell + IM) + 1/2$

0.95R_hF_{yr}: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

$f_s + 1/3$ (Total) (Strength I): Sum of stresses as computed below on non-compact section (ksi).

$1.25 (f_s DC1 + f_s DC2) + 1.5 f_s DW + 1.75 f_s (\ell + IM) + 1/3$

$\phi_r F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

V_r: Maximum factored shear range in span computed according to Article 6.10.10.

Note:

M_ℓ and R_ℓ include the effects of centrifugal force and superelevation.



Alfred Benesch & Company
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Chicago, Illinois 60601
312-565-0450 Job No. 10093

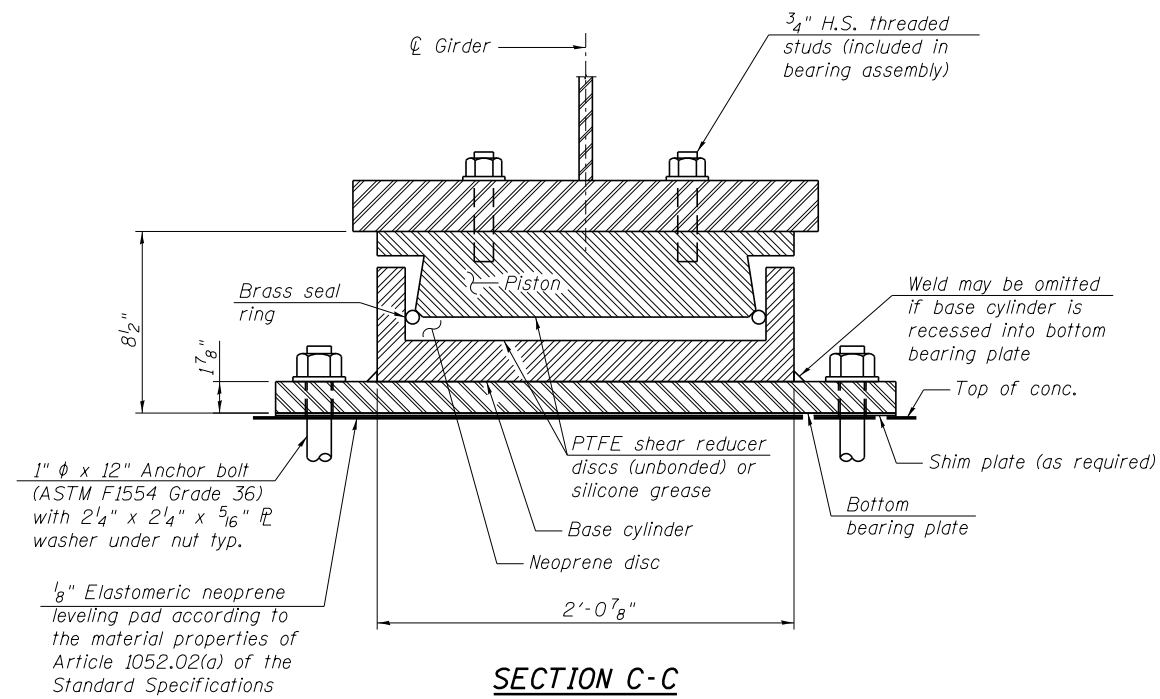
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MOMENT & REACTION TABLES
STRUCTURE NO. 016-1512

SHEET NO. SB26 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	142
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

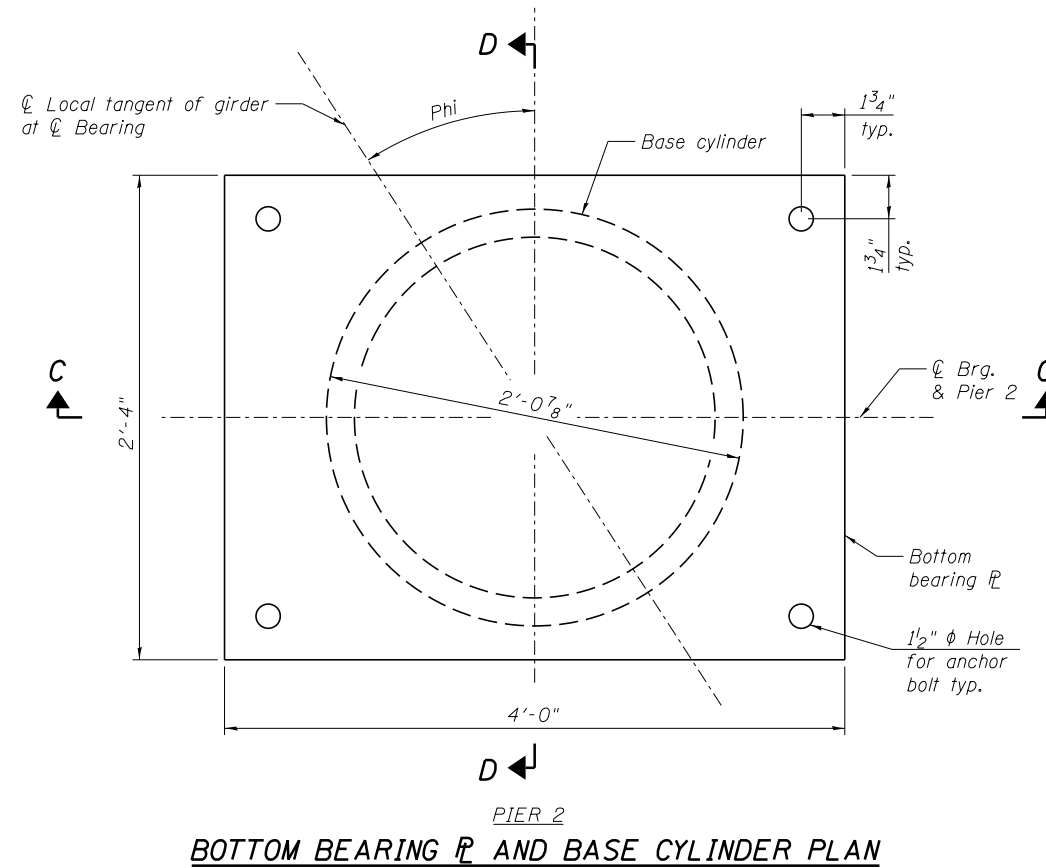
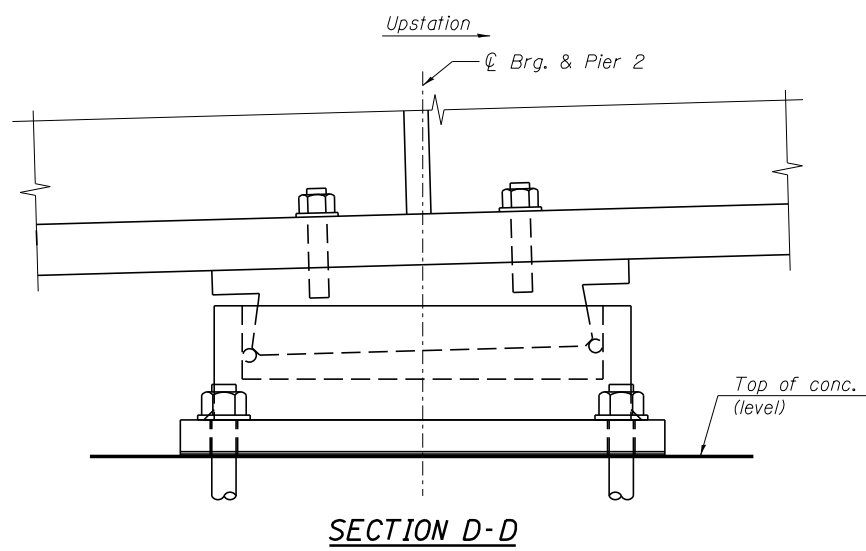
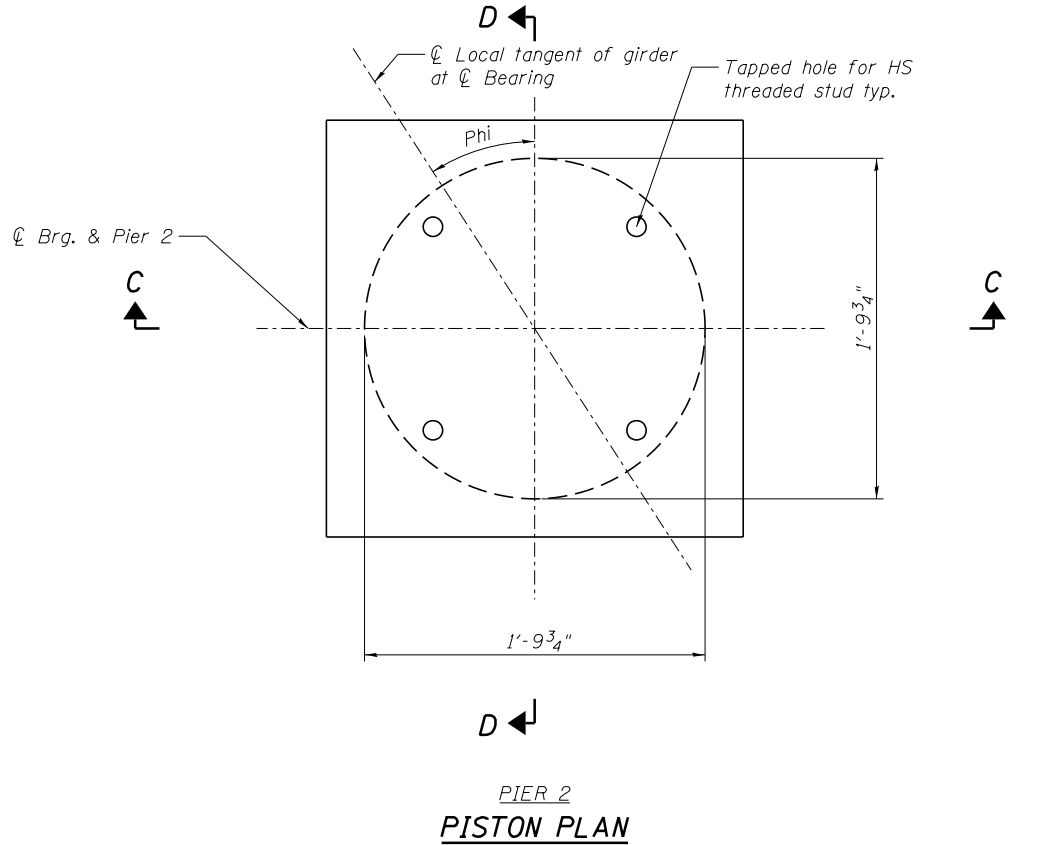


1" ϕ x 12" Anchor bolt (ASTM F1554 Grade 36) with 2 1/4" x 2 1/4" x 5/16" ϕ washer under nut typ.

1/8" Elastomeric neoprene leveling pad according to the material properties of Article 1052.02(a) of the Standard Specifications

SKEW

Location	Phi	
Pier 2	Girder 1	34°09'23"
	Girder 2	33°32'19"
	Girder 3	32°56'40"
	Girder 4	32°22'22"



BEARING DIMENSIONS

Location	Pay Item Designation (kips)	Vert. Design Load* (kips)	Hu* (kips)	θu^{**} (radians)
Pier 2	500	408	82	0.008

BILL OF MATERIAL

ITEM	UNIT	TOTAL
High Load Multi-Rotational Bearings, Fixed - 500K	Ea.	4
Anchor Bolts, 1"	Ea.	16

NOTE:
For notes, see sheet SB28.

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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

* Design Loads are the governing service loads with no dynamic allowance.
** Rotation allowances for fabrication tolerances (0.005 radians) and installation uncertainties (0.005 radians) are excluded.

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

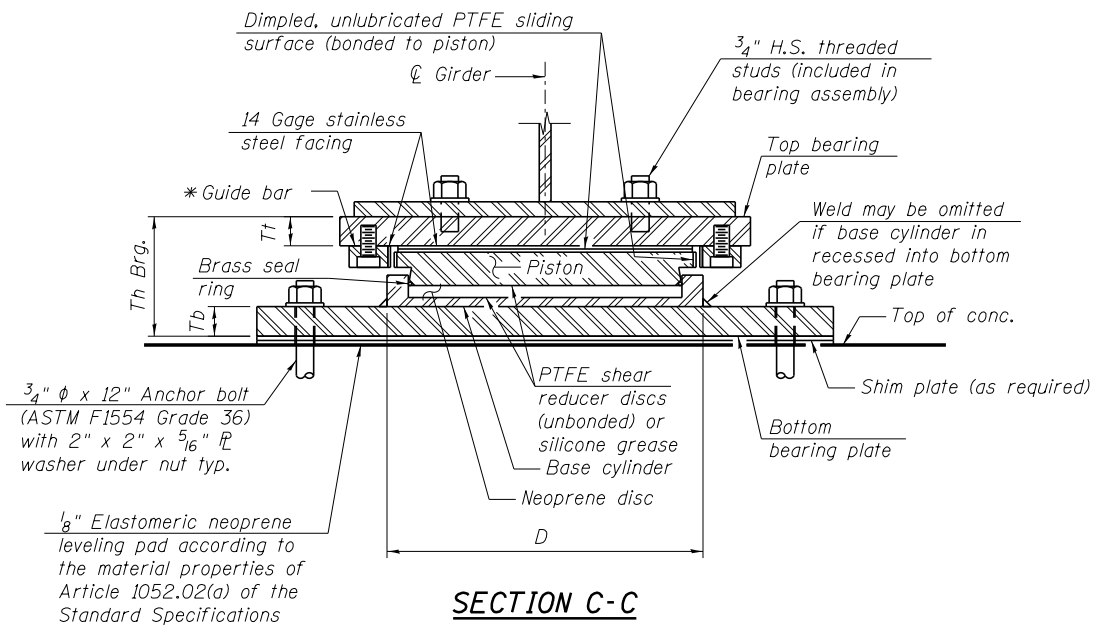
**HLMR FIXED BEARING DETAILS
STRUCTURE NO. 016-1512**

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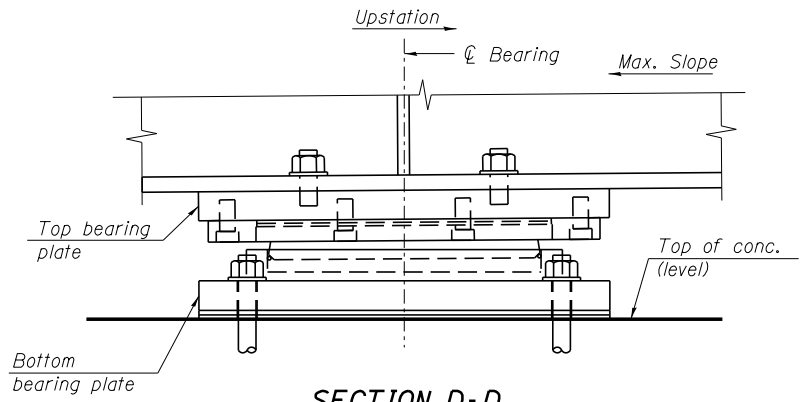
SHEET NO. SB27 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	143
CONTRACT NO. 60W77				
ILLINOIS FED. AID PROJECT				

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SECTION C-C



SECTION D-D

BILL OF MATERIAL

ITEM	UNIT	TOTAL
High Load Multi-Rotational Bearings, Guided Expansion, 150K	Ea.	4
High Load Multi-Rotational Bearings, Guided Expansion, 250K	Ea.	4
High Load Multi-Rotational Bearings, Guided Expansion, 300K	Ea.	4
Anchor Bolts, 3/4"	Ea.	48

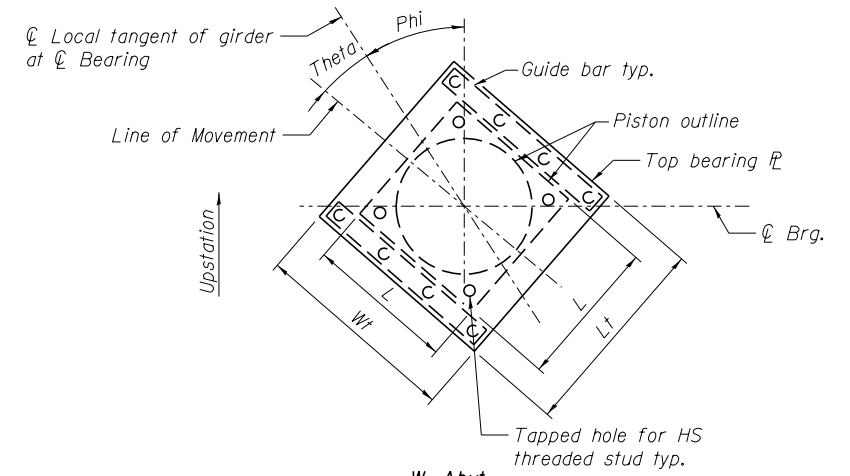
BEARING DIMENSIONS

Location	Pay Item Designation (kips)	Vert. Design Load** (kips)	Hu** (kips)	Ou*** (radians)	Max. Theor. Thermal Mvmt****	Top Plate		Bearing Assembly		Bottom Plate		Total Ht.			
						Wt	Lt	Tt (min.)	Max. Slope	L	D		Wb	Lb	Tb
W. Abut.	150	144	29	0.005	2"	1'-5 1/2"	1'-2 3/8"	1 1/2"	2.25%	1'-0 3/4"	1'-2 3/4"	1'-3 1/2"	2'-3"	1 1/8"	6 3/8"
Pier 1	300	276	55	0.006	1 1/4"	1'-8 1/4"	1'-6"	2"	1.10%	1'-6"	1'-8 7/8"	1'-8 1/2"	2'-8"	1 1/8"	7 7/8"
E. Abut.	250	208	42	0.012	1 1/2"	1'-8 1/4"	1'-4 7/8"	1 5/8"	-2.10%	1'-3 1/2"	1'-5 7/8"	1'-6"	3'-8 1/2"	2"	8"

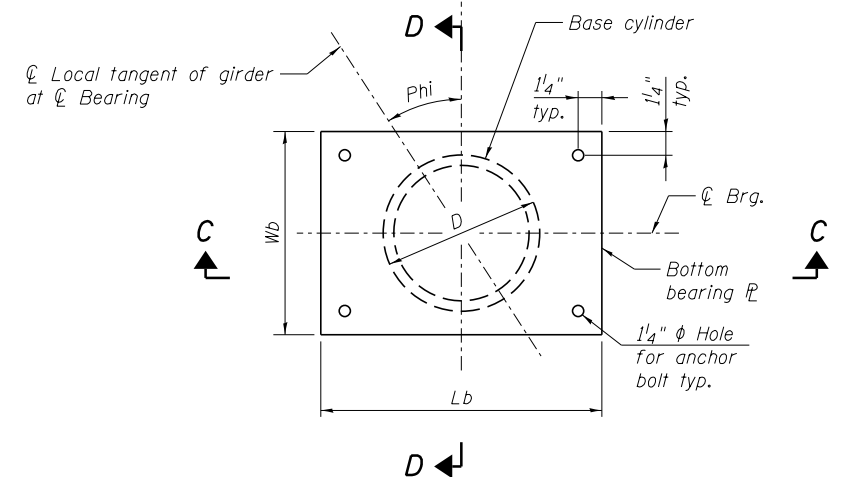
* As an alternate to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.
 ** Design Loads are the governing service loads with no dynamic load allowance.
 *** Rotation allowances for fabrication tolerances (0.005 radians), installation uncertainties (0.005 radians) are excluded.
 **** Total required movement is based on the total combined expansion and contraction of the superstructure perpendicular to the line of movement. Bearing movement tolerances are excluded.

LINE OF MOVEMENT & SKEW

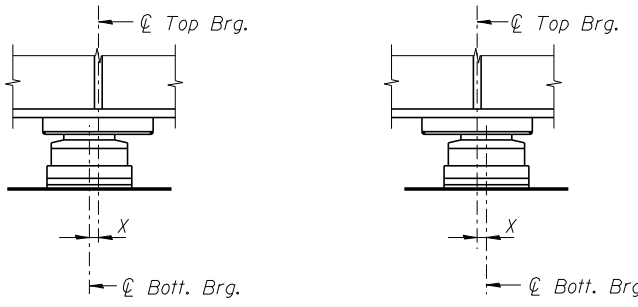
Location		Phi	Theta
W. Abut.	Girder 1	18°10'47"	7°59'19"
	Girder 2	17°52'47"	7°49'47"
	Girder 3	17°35'24"	7°40'40"
	Girder 4	17°18'34"	7°31'55"
Pier 1	Girder 1	25°26'11"	4°21'36"
	Girder 2	25°00'10"	4°16'04"
	Girder 3	24°35'02"	4°10'49"
	Girder 4	24°10'47"	4°05'47"
E. Abut.	Girder 1	46°00'37"	-5°55'37"
	Girder 2	45°04'18"	-5°45'59"
	Girder 3	44°10'38"	-5°36'59"
	Girder 4	43°19'23"	-5°28'31"



TOP BEARING PLATE AND PISTON PLAN



BOTTOM BEARING PLATE AND BASE CYLINDER PLAN



SETTING ANCHOR BOLTS AT EXP. BRG.
 X = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

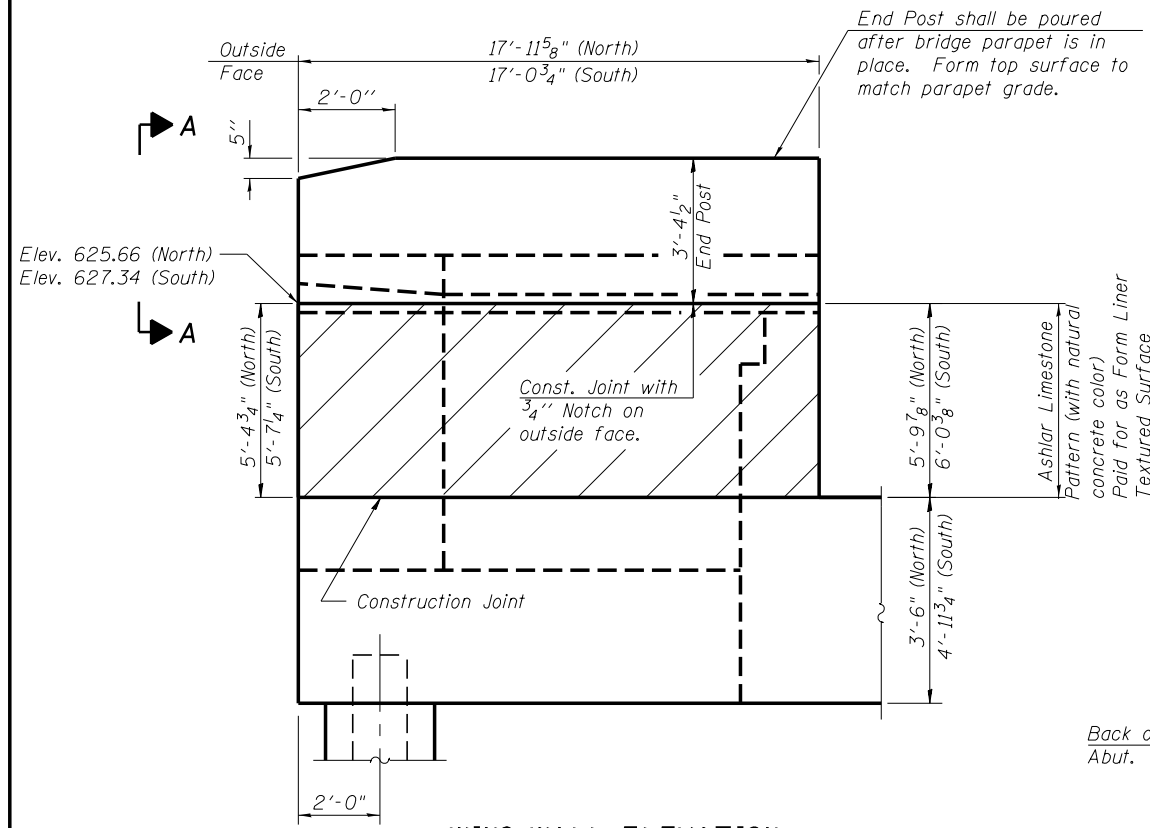
NOTES:

- All steel for bearings shall conform to the requirements of AASHTO M270 Grade 50, unless otherwise noted.
- 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. Anchor bolts may be either cast in place or installed in holes drilled after the supported member is in place. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Total bearing height (Th) is estimated based on manufacturer data. Actual bearing height may differ from contract plans. The Contractor shall be responsible for verifying bearing heights and adjusting seat elevations with approval of Engineer, if required, prior to placing pier concrete. Total bearing height is taken at the centerline of bearing for beveled top plates.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- All (embedded and separate) bearing plates, side retainers, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.

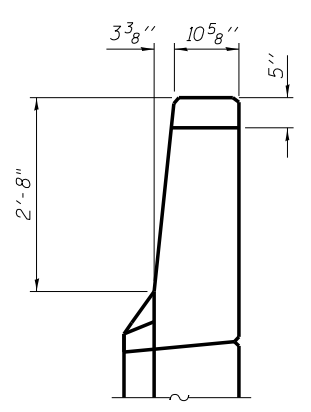


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PLOT DATE = 6/23/2014	CHECKED - KWS	REVISOR -	ILLINOIS FED. AID PROJECT							
SHEET NO. SB28 OF SB43 SHEETS										

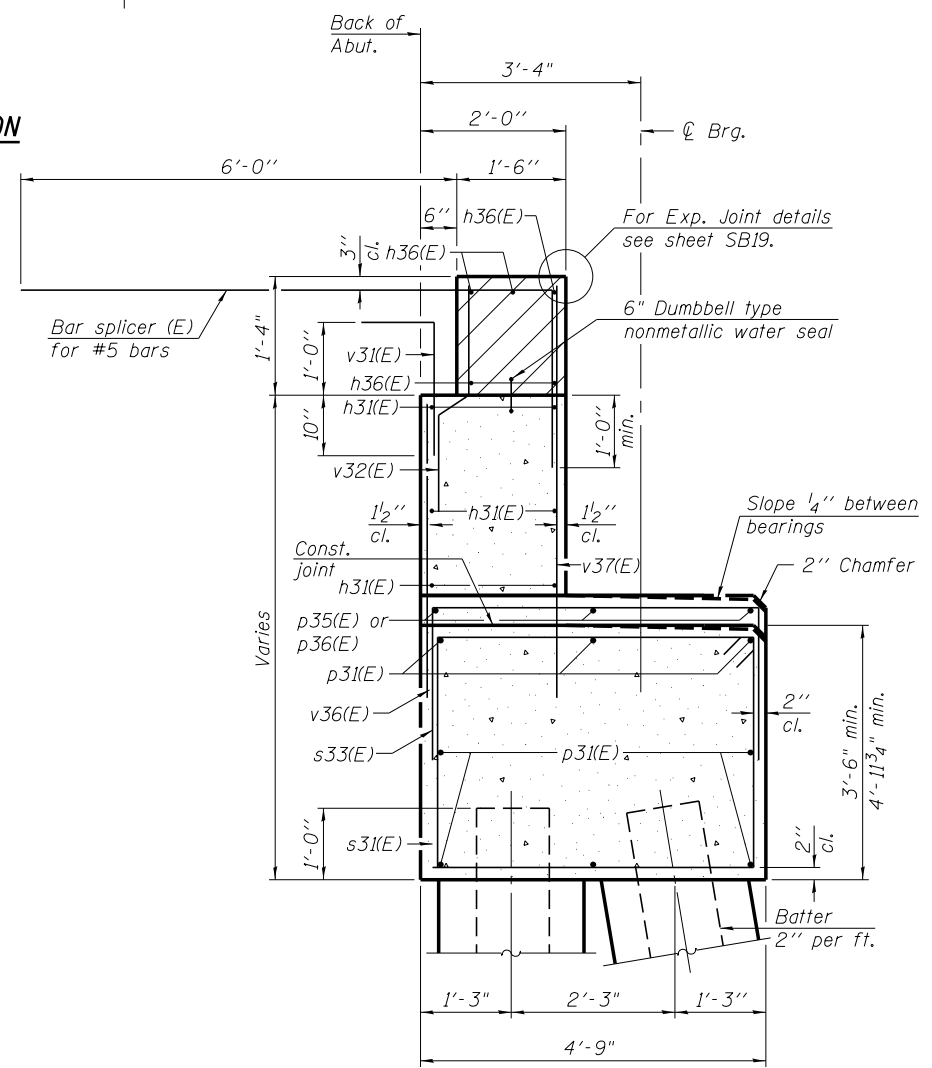
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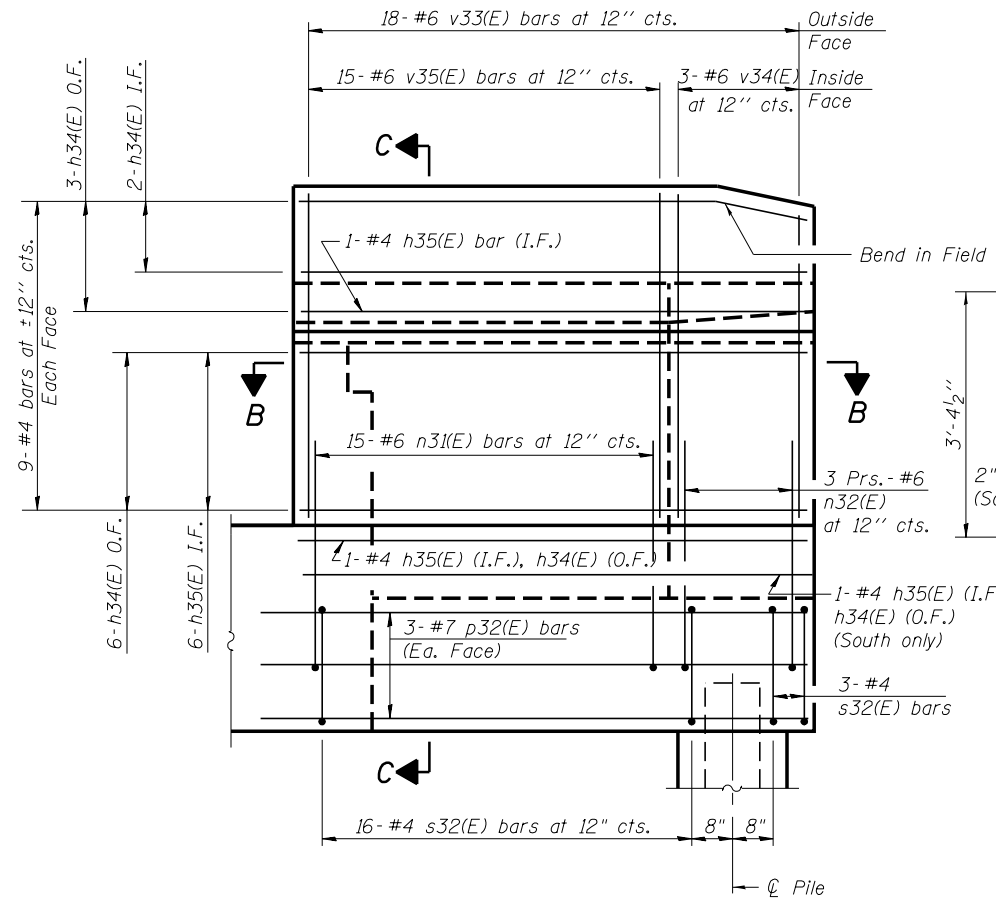
WING WALL ELEVATION
Showing Dimensions



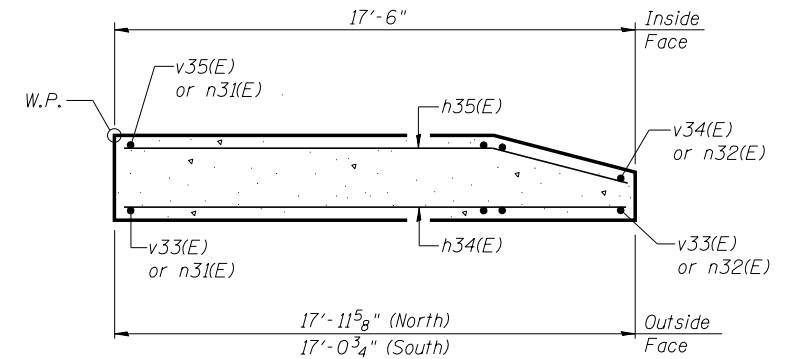
VIEW A-A



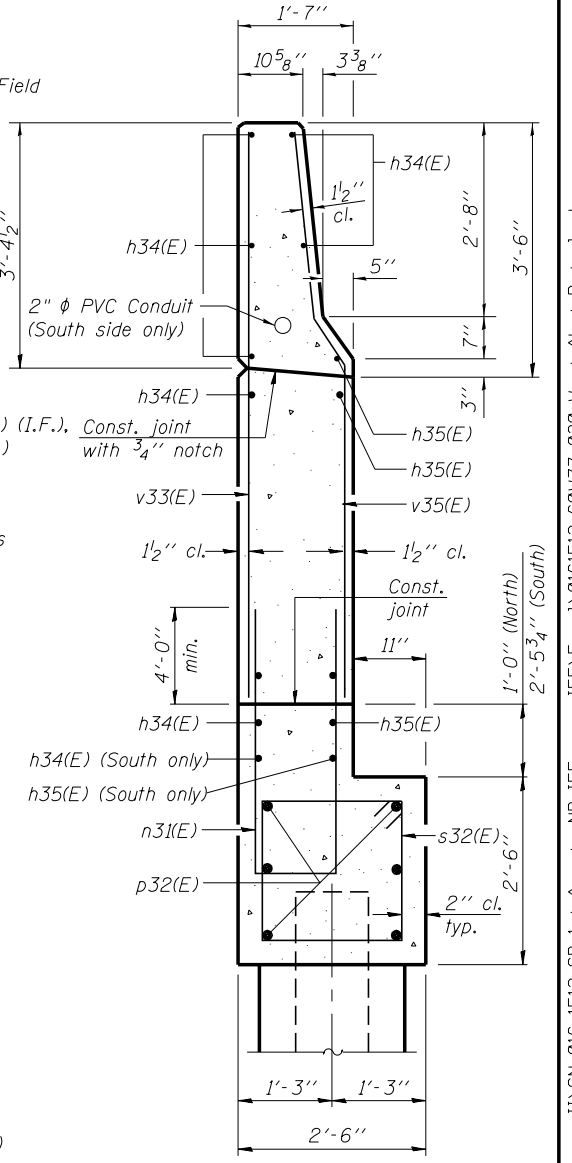
SEC. THRU ABUT.



WING WALL ELEVATION
Showing Reinforcement



SECTION B-B



SECTION C-C

Notes:
 Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure on sheet SB14.
 Space reinforcement in cap to miss anchor bolts.
 Pour steps monolithically with cap.
 Quantity of concrete in end post included with Concrete Superstructure on sheet SB14.
 For Concrete Encasement details, see sheet SB38.



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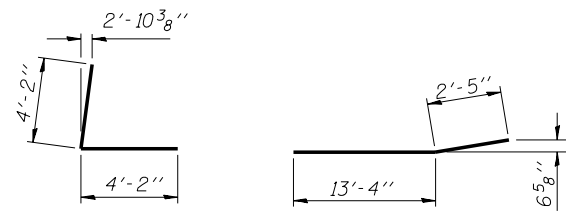
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STATE OF ILLINOIS
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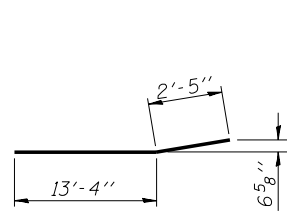
WEST ABUTMENT DETAILS
STRUCTURE NO. 016-1512
 SHEET NO. SB30 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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				CONTRACT NO. 60W77
ILLINOIS FED. AID PROJECT				

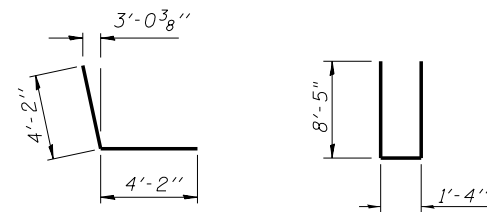
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 6/23/2014



BAR h41(E)



BAR h43(E)



BAR h45(E)

BAR n31(E)

MINIMUM BAR LAP

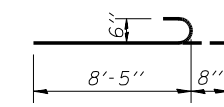
- #5 bar = 3'-3"
- #6 bar = 3'-10"
- #7 bar = 5'-2"

PILE DATA

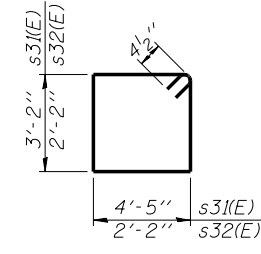
Type: HP 12x53 with pile shoes
 Nominal Required Bearing: 419 kips
 Factored Resistance Available: 230 kips
 Est. Length: 63 feet
 No. Production Piles: 14
 No. Test Piles: 1

**EAST ABUTMENT
 BILL OF MATERIAL**

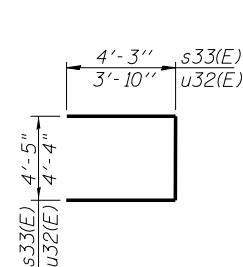
Bar	No.	Size	Length	Shape
h40(E)	20	#5	24'-11"	
h41(E)	14	#5	8'-4"	
h42(E)	12	#4	16'-9"	
h43(E)	16	#4	15'-9"	
h44(E)	10	#6	24'-5"	
h45(E)	14	#5	8'-4"	
h46(E)	10	#4	14'-6"	
h47(E)	4	#4	15'-9"	
n31(E)	28	#6	18'-2"	
n32(E)	12	#6	9'-1"	
p33(E)	16	#7	27'-0"	
p34(E)	12	#7	16'-9"	
p37(E)	6	#5	15'-2"	
p38(E)	3	#5	9'-4"	
s31(E)	77	#4	15'-11"	
s32(E)	34	#4	9'-5"	
s33(E)	37	#5	12'-11"	
u32(E)	4	#6	12'-0"	
u34(E)	4	#6	10'-7"	
v31(E)	46	#5	3'-9"	
v32(E)	46	#4	3'-0"	
v33(E)	34	#6	8'-8"	
v34(E)	6	#6	8'-1"	
v35(E)	28	#6	8'-10"	
v36(E)	46	#5	6'-8"	
v37(E)	46	#5	8'-0"	
Pile Shoes	Each		15	
Concrete Structures	Cu. Yd.		80.1	
Concrete Superstructures	Cu. Yd.		4.1	
Reinforcement Bars, Epoxy Coated	Pound		7,430	
Furnishing Steel Piles HP12x53	Foot		882	
Driving Piles	Foot		882	
Test Pile Steel HP12x53	Each		1	
Concrete Sealer	Sq. Ft.		566	
Form Liner Textured Surface	Sq. Ft.		188	



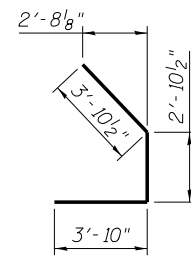
BAR n32(E)



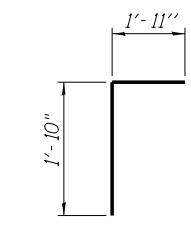
BARS s31(E) & s32(E)



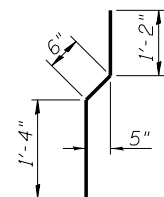
BAR s33(E) & u32(E)



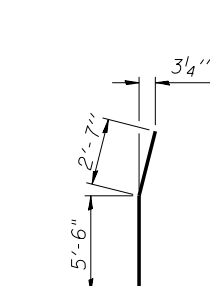
BAR u34(E)



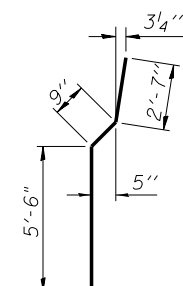
BAR v31(E)



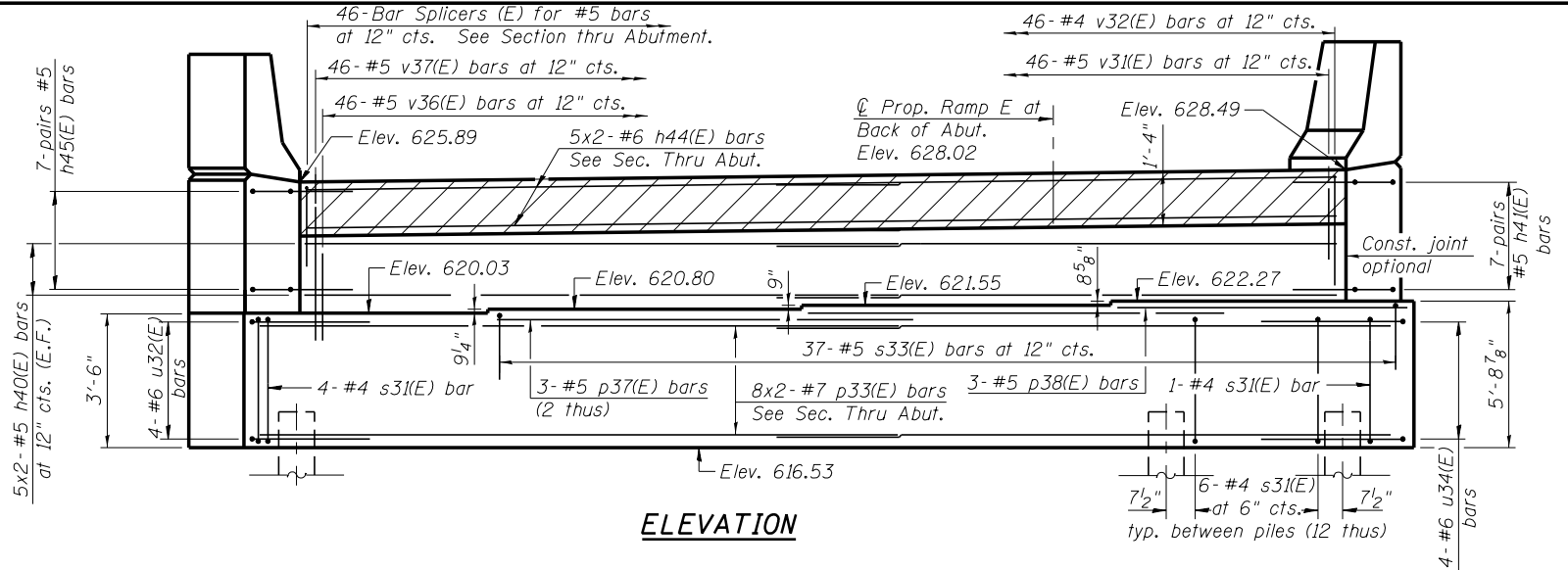
BAR v32(E)



BAR v34(E)

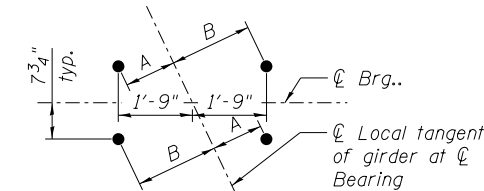


BAR v35(E)

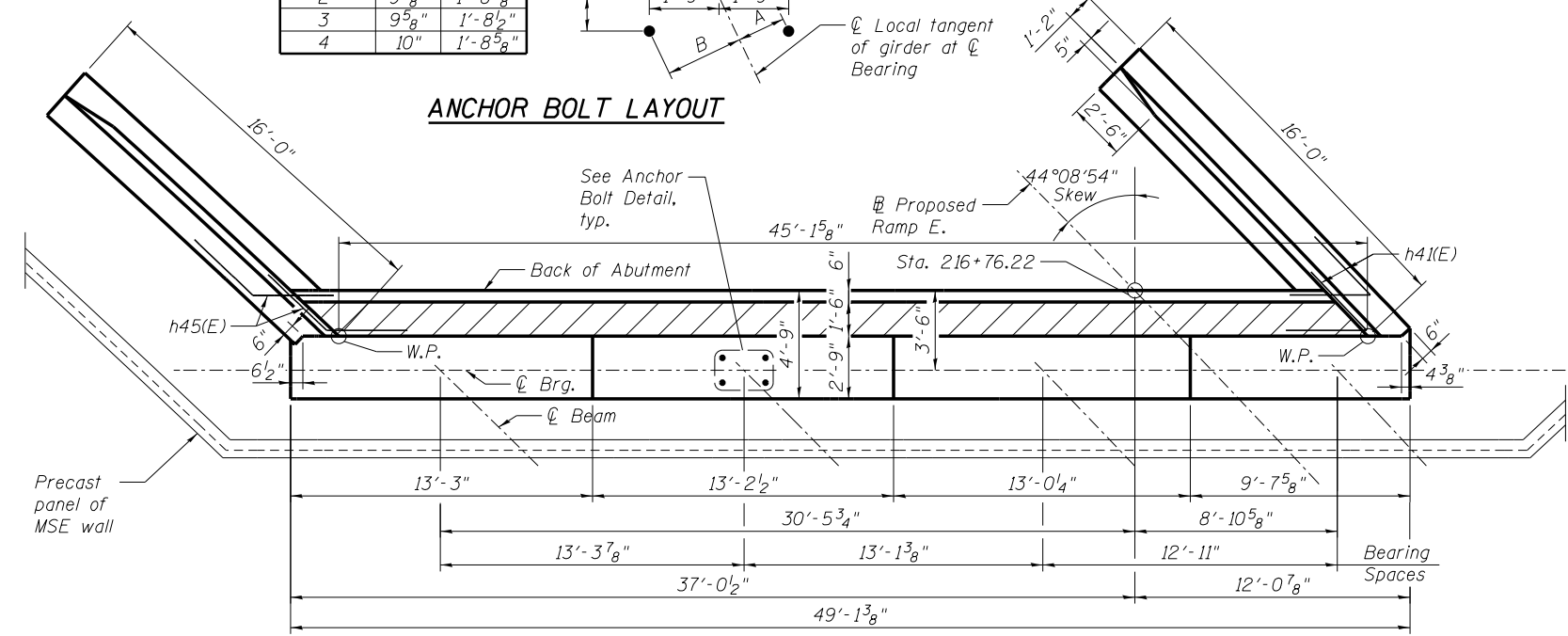


ELEVATION

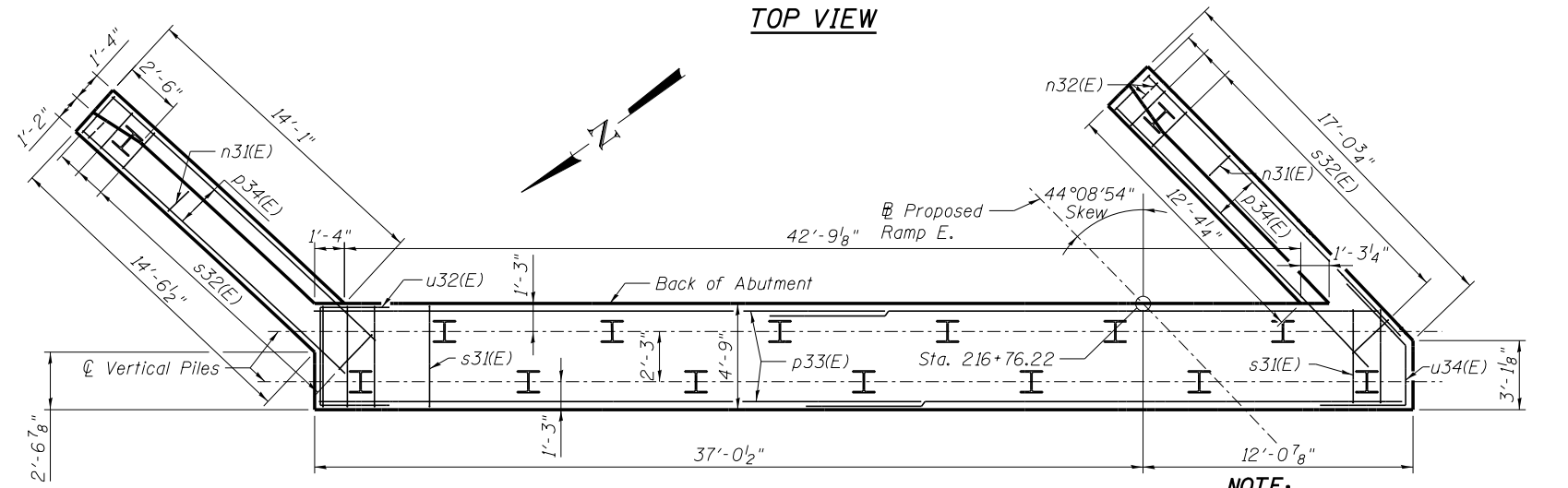
Girder	A	B
1	9"	1'-8 1/2"
2	9 3/8"	1'-8 3/8"
3	9 5/8"	1'-8 1/2"
4	10"	1'-8 5/8"



ANCHOR BOLT LAYOUT



TOP VIEW



PLAN-PILE CAP

NOTE:

1. See foundation plan, sheet SB3, for pile layout.



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 312-965-0450 Job No. 10093

FILE NAME = 0161512_60W77_031_East_Abutment.dgn	USER NAME = ksnyder	DESIGNED - JHG	REVISED -
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

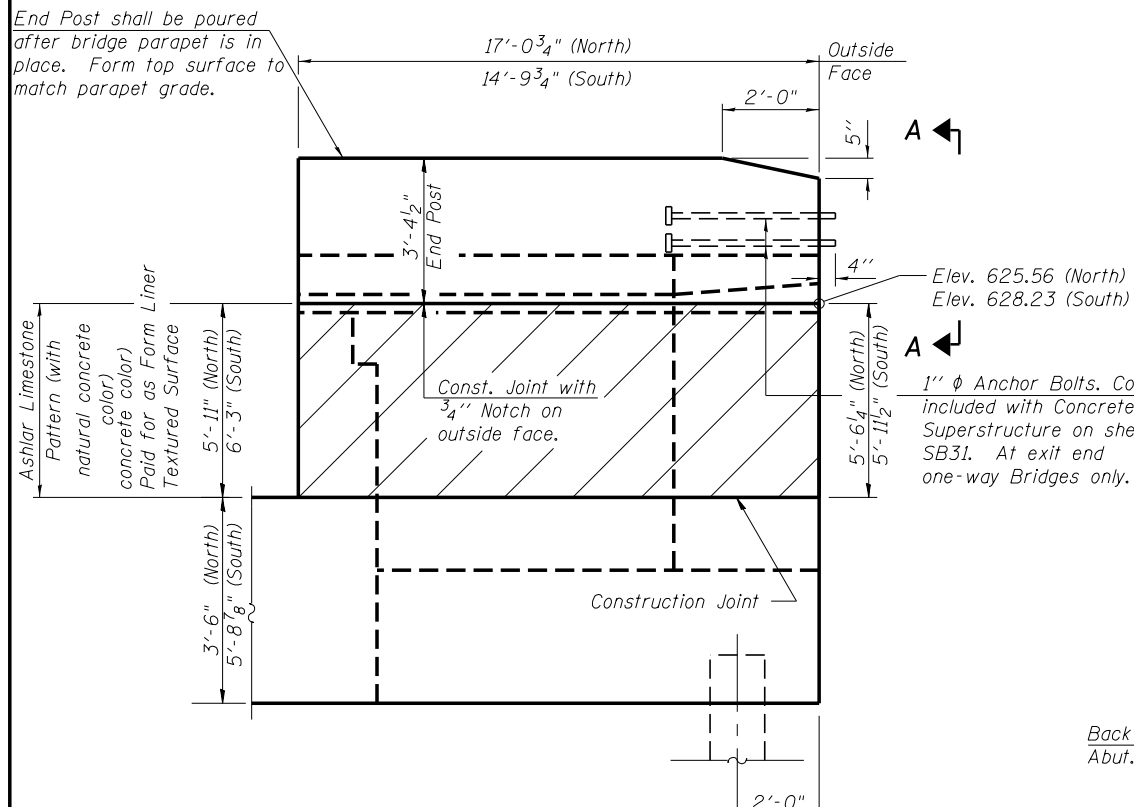
EAST ABUTMENT
 STRUCTURE NO. 016-1512

SHEET NO. SB31 OF SB43 SHEETS

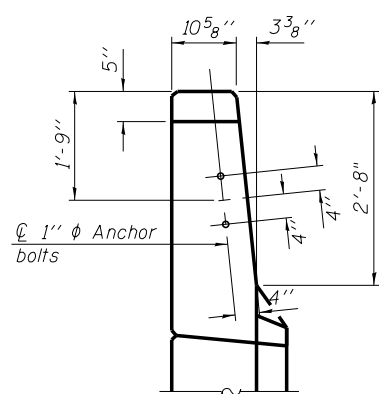
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	147
CONTRACT NO. 60W77				
ILLINOIS FED. AID PROJECT				

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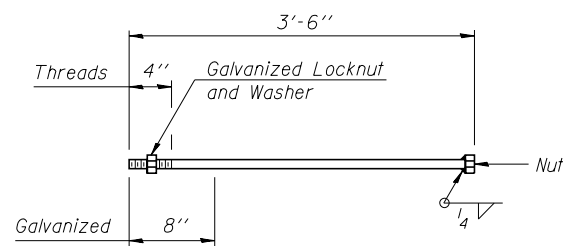
End Post shall be poured after bridge parapet is in place. Form top surface to match parapet grade.



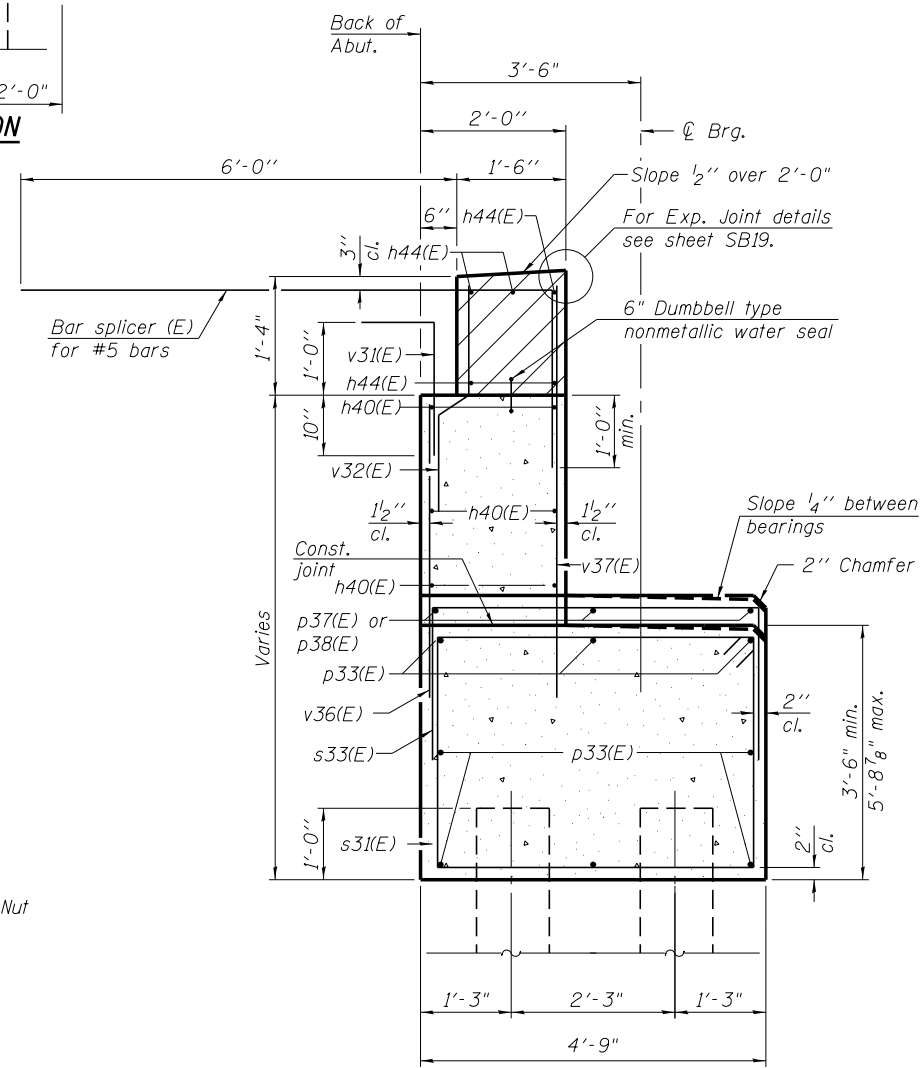
WING WALL ELEVATION
Showing Dimensions



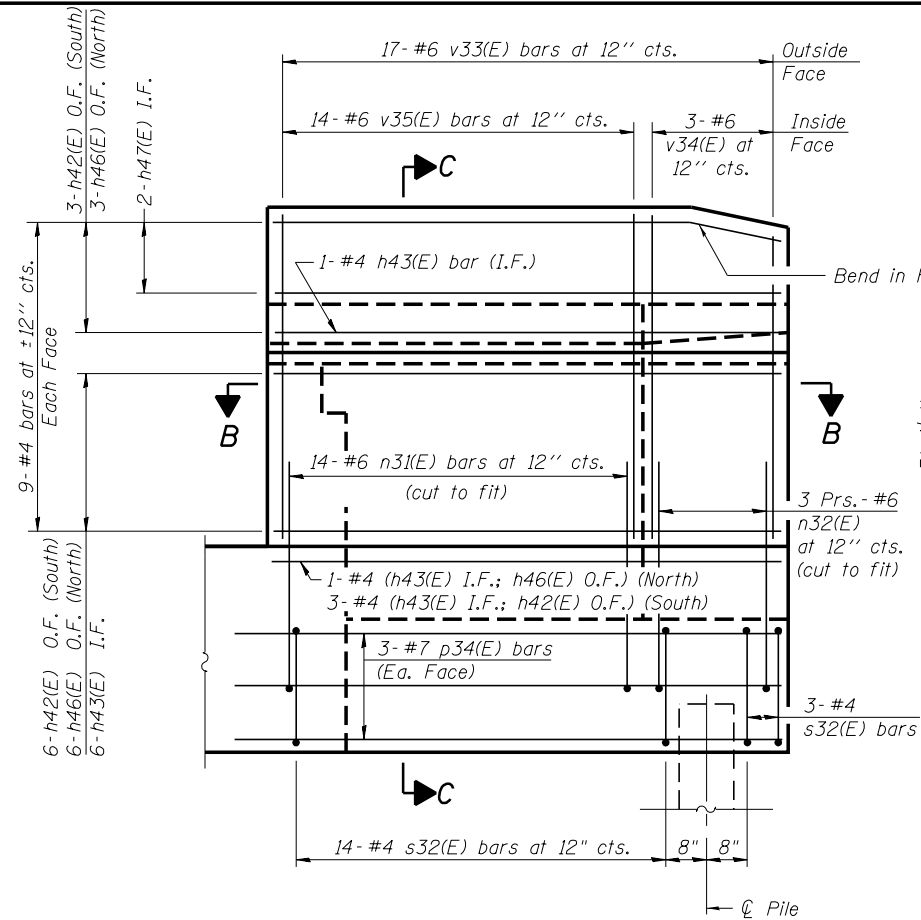
VIEW A-A



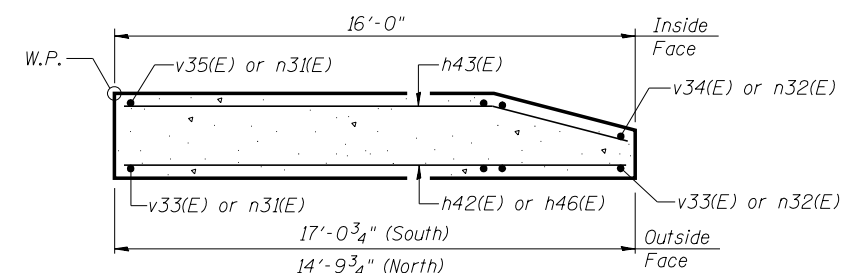
1" φ ANCHOR BOLT



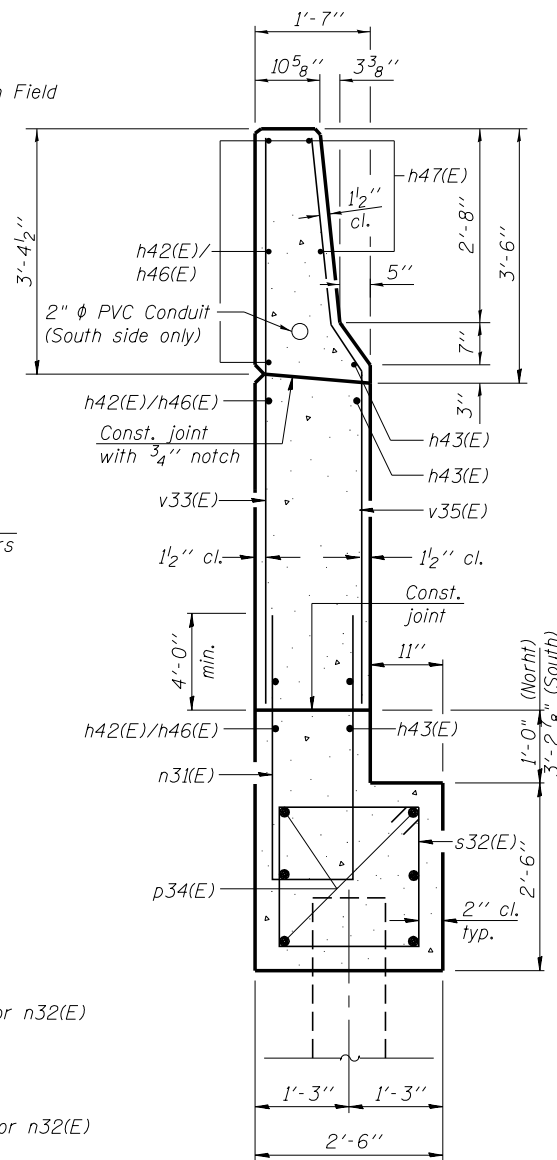
SEC. THRU ABUT.



WING WALL ELEVATION
Showing Reinforcement
South Wing Wall Shown, North Sim.



SECTION B-B



SECTION C-C

Notes:
Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure on sheet SB14.
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Quantity of concrete in end post included with Concrete Superstructure on sheet SB14.
For Concrete Encasement details, see sheet SB38.



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Chicago, Illinois 60601
312-565-0450 Job No. 10093

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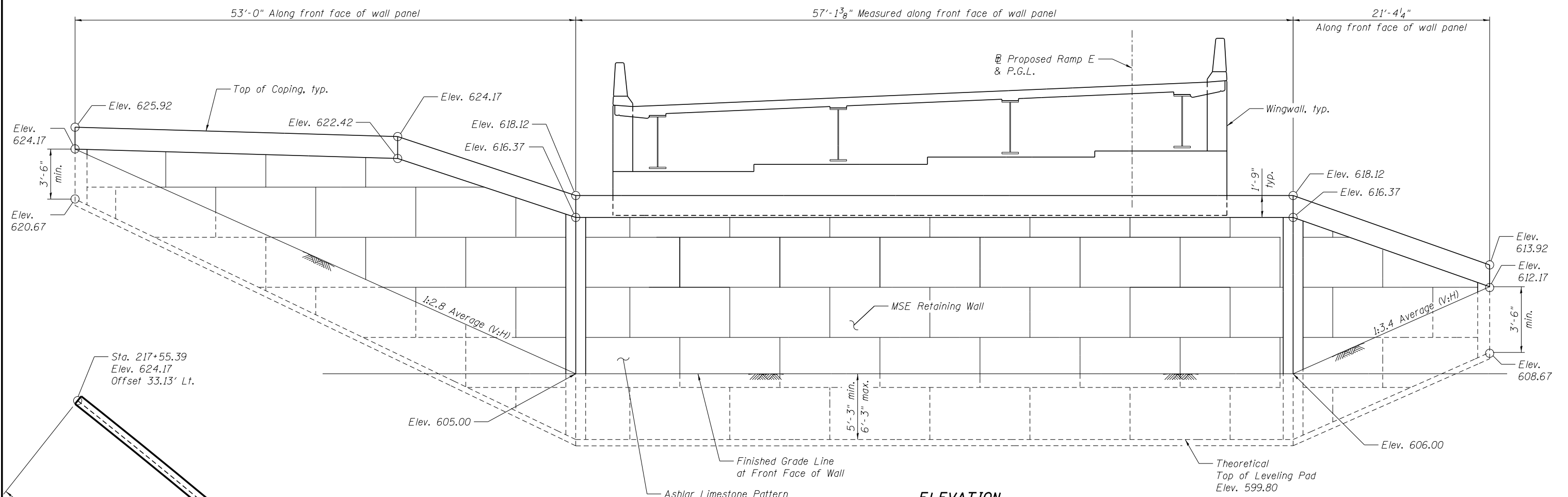
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT DETAILS
STRUCTURE NO. 016-1512

SHEET NO. SB32 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 60W77				
ILLINOIS FED. AID PROJECT				

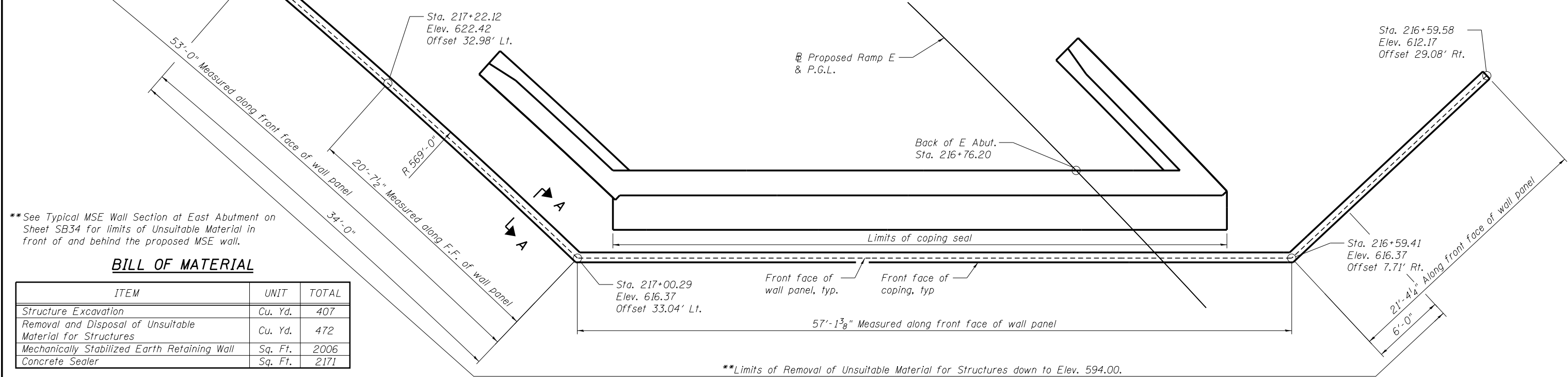
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ELEVATION

NOTES:

- 1. See sheet SB34 for Section A-A.
- 2. MSE Wall stations and offsets are measured from the Proposed Ramp E to the front face of precast panels.



PLAN

**See Typical MSE Wall Section at East Abutment on Sheet SB34 for limits of Unsuitable Material in front of and behind the proposed MSE wall.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	407
Removal and Disposal of Unsuitable Material for Structures	Cu. Yd.	472
Mechanically Stabilized Earth Retaining Wall	Sq. Ft.	2006
Concrete Sealer	Sq. Ft.	2171

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Chicago, Illinois 60601
312-965-0450 Job No. 10093

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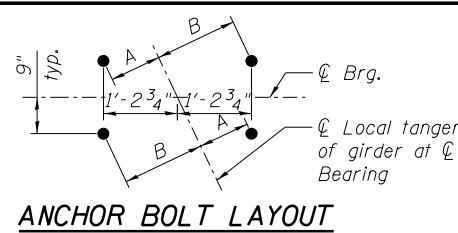
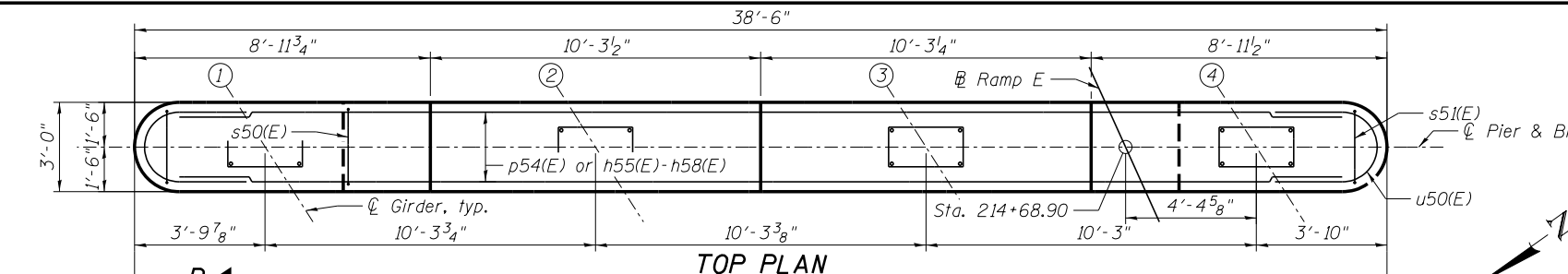
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EAST ABUTMENT MSE WALL
STRUCTURE NO. 016-1512**

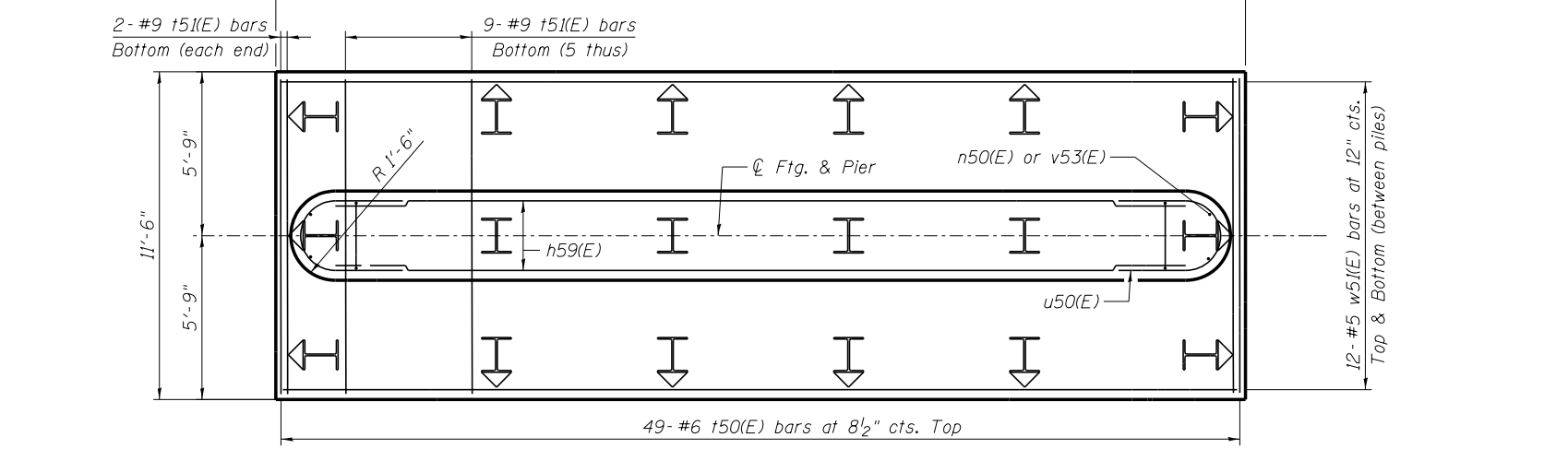
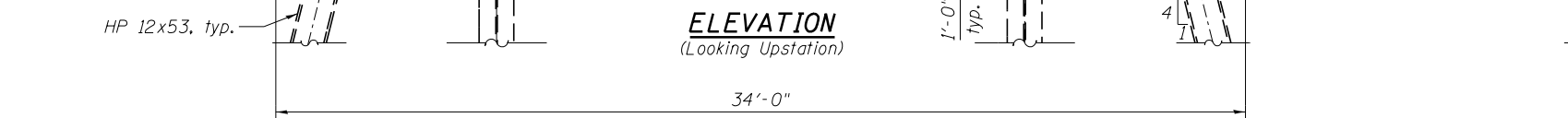
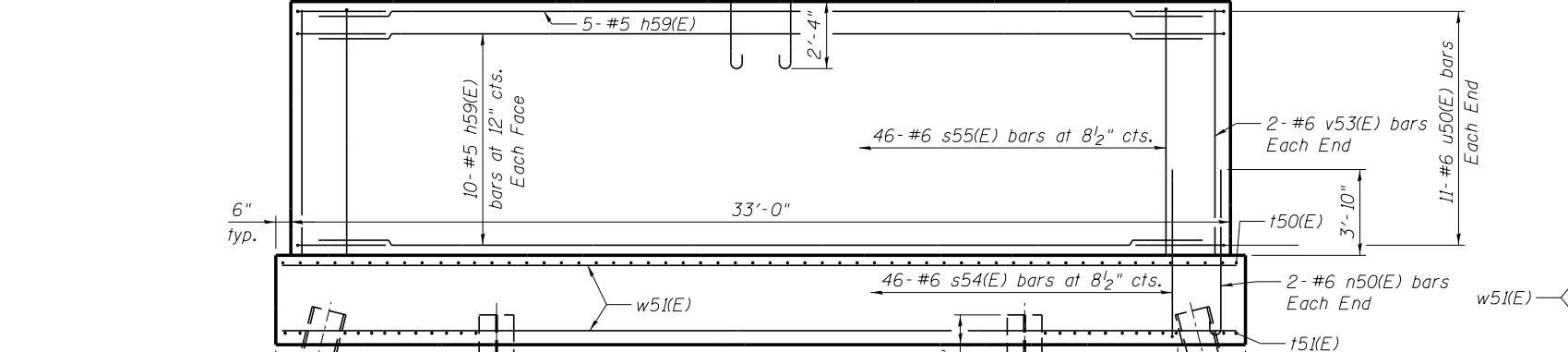
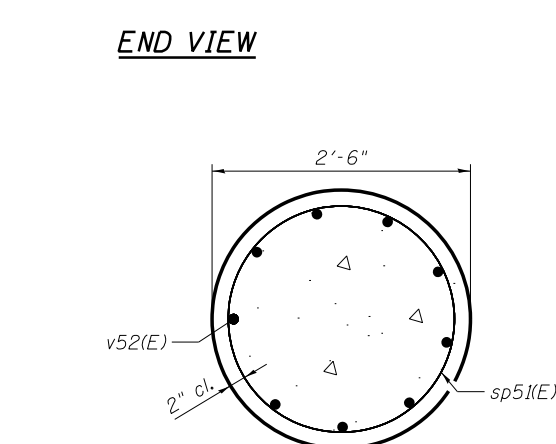
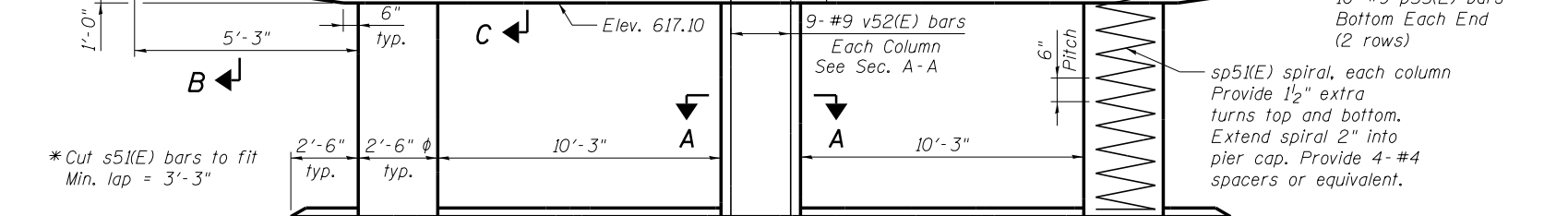
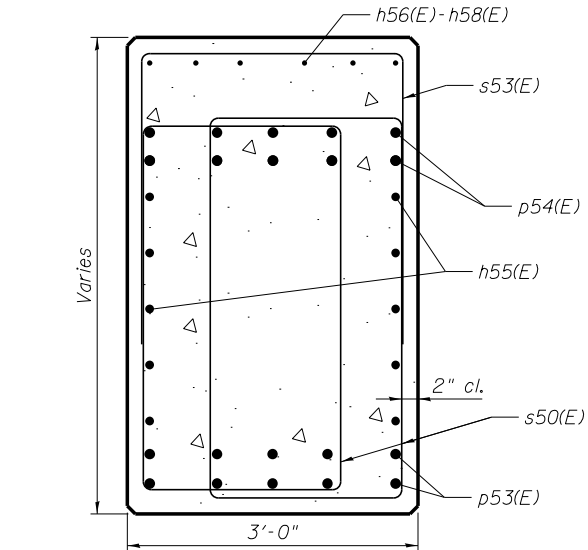
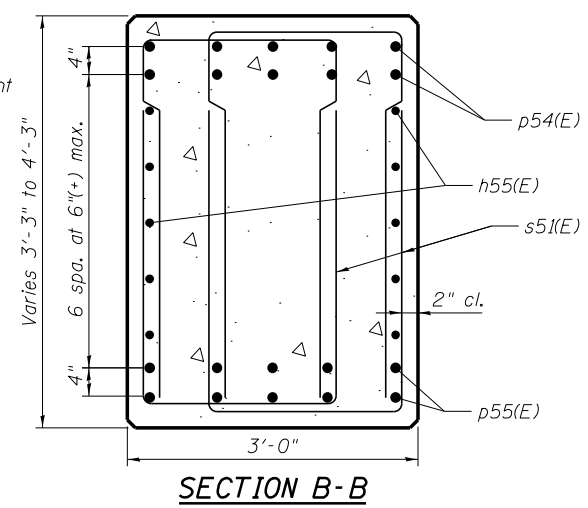
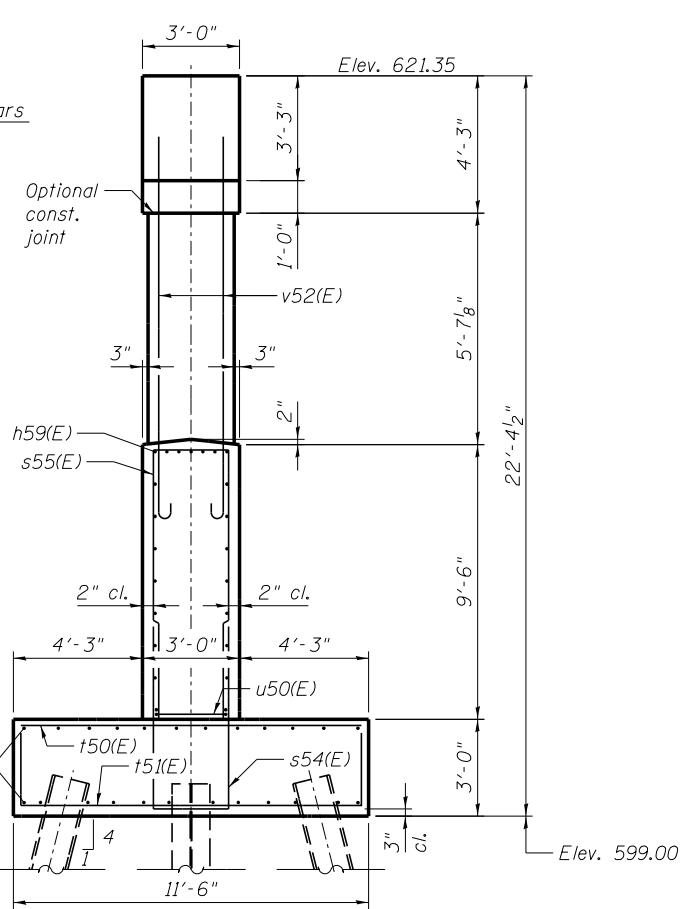
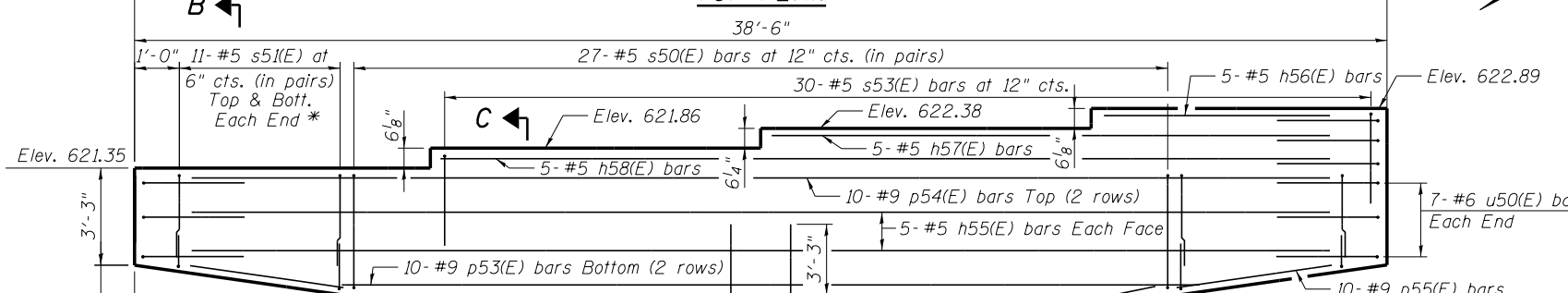
SHEET NO. SB33 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	149
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

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Girder	A	B
1	9 1/2"	1'-5 1/8"
2	9 5/8"	1'-5 1/8"
3	9 5/8"	1'-5 1/8"
4	9 3/4"	1'-5 1/8"



PILE DATA
 Type: HP 12x53 with pile shoes
 Nominal Required Bearing: 418 kips
 Factored Resistance Available: 230 kips
 Est. Length: 44'
 No. Production Piles: 17
 No. Test Piles: 1

- NOTES:**
1. Space reinforcement in cap to miss anchor bolts.
 2. Pour steps monolithically with cap.
 3. For details of piles, see sheet SB38.
 4. See foundation plan, sheet SB3, for pile layout.

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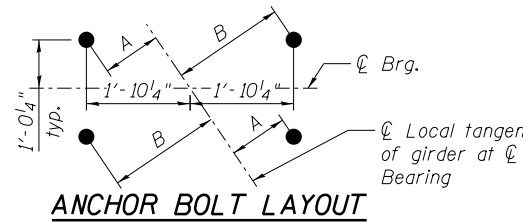
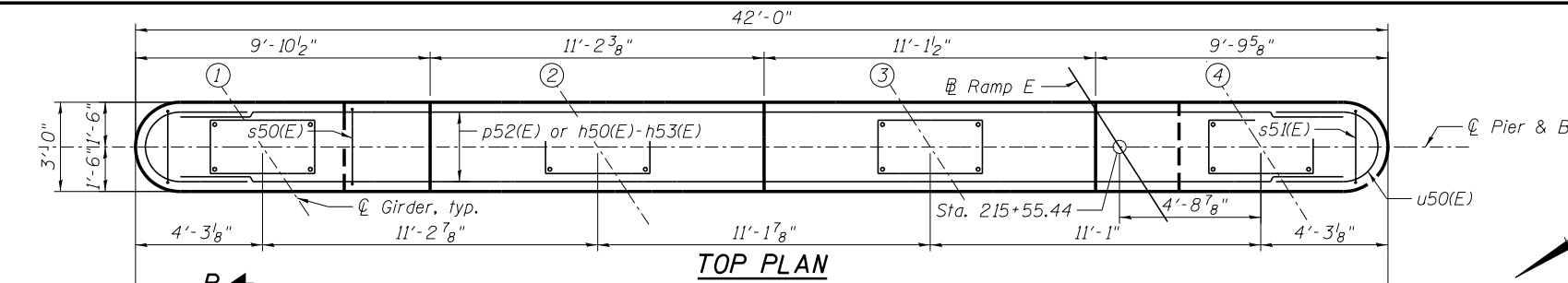
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		DRAWN - KMS	REVISED -
		CHECKED - JHG	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

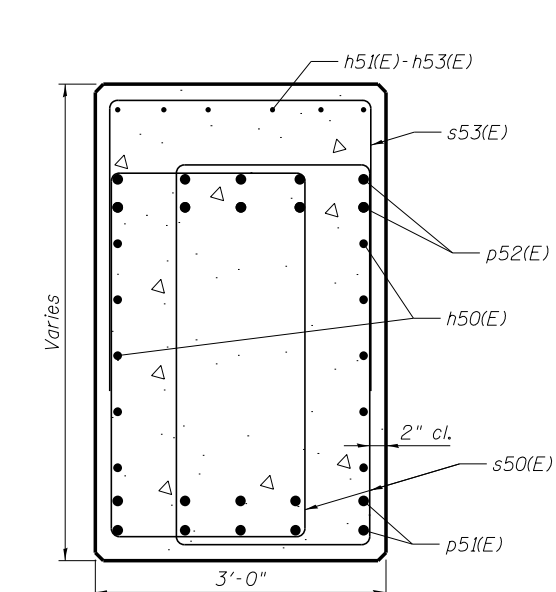
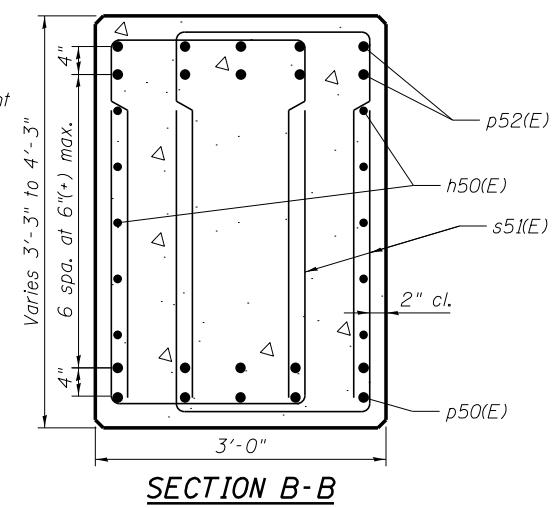
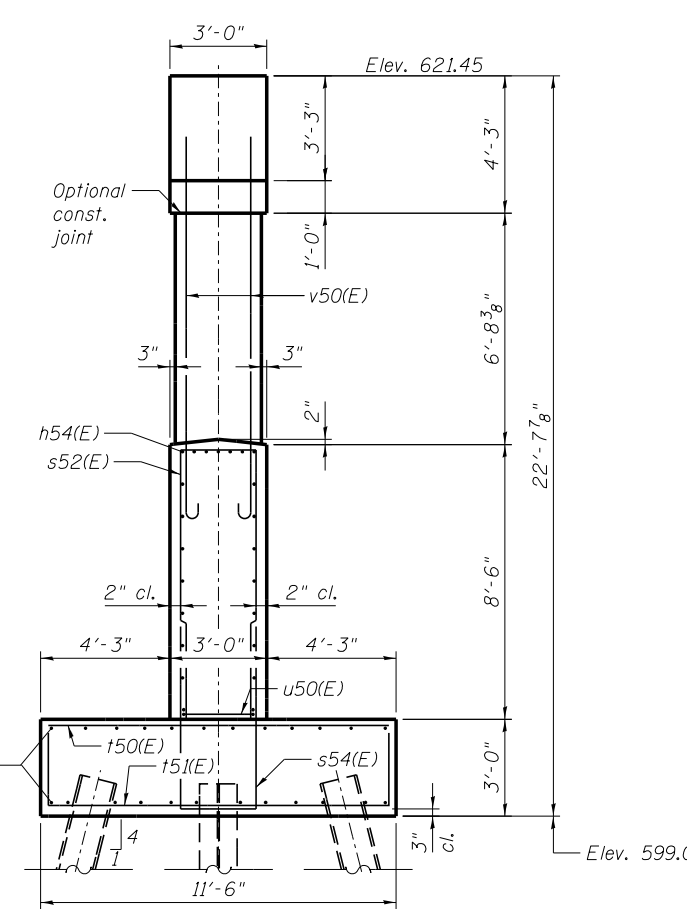
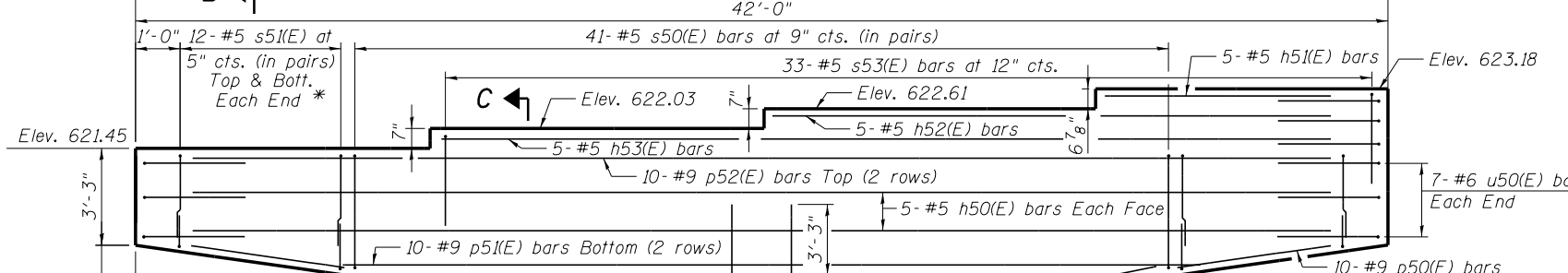
PIER 1 DETAILS
STRUCTURE NO. 016-1512
 SHEET NO. SB35 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	151
CONTRACT NO. 60W77				
ILLINOIS FED. AID PROJECT				

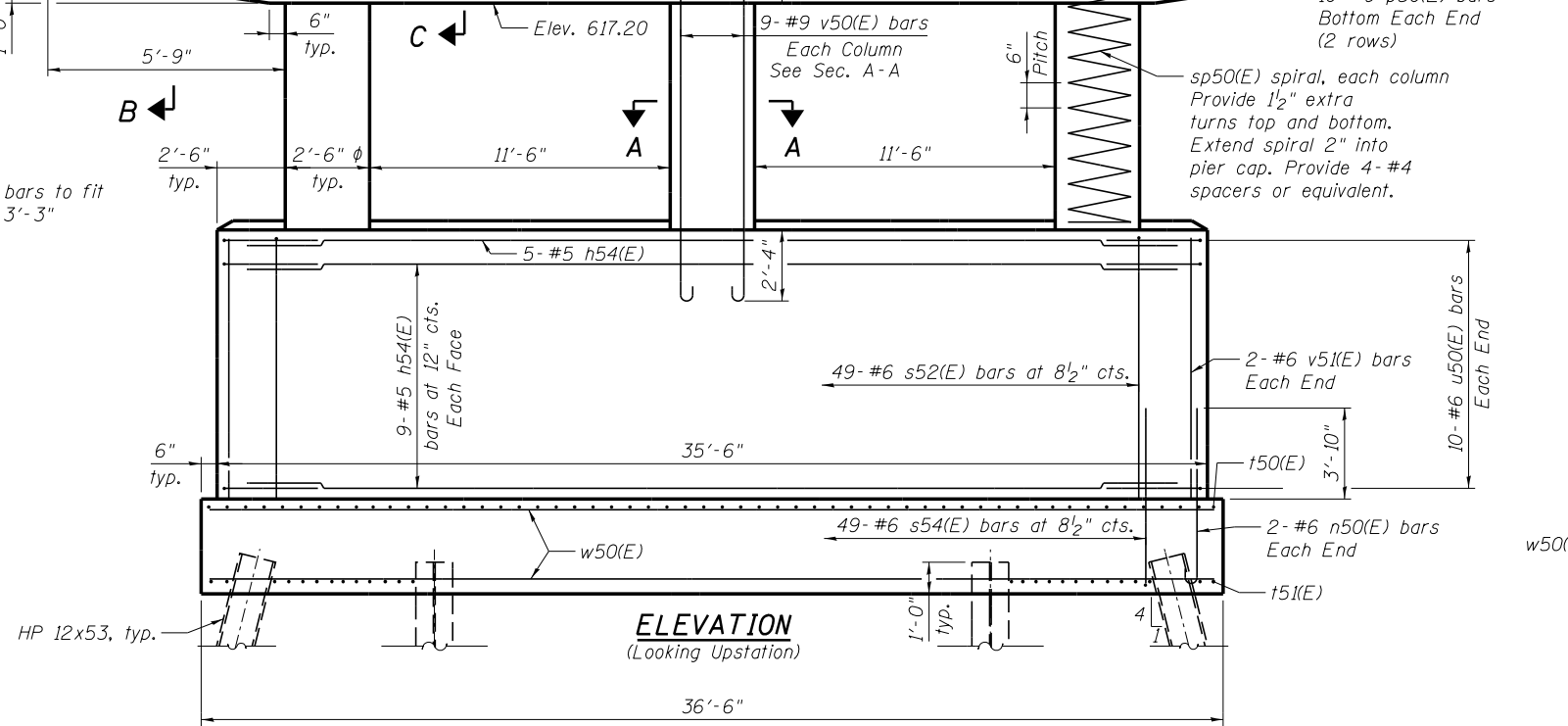
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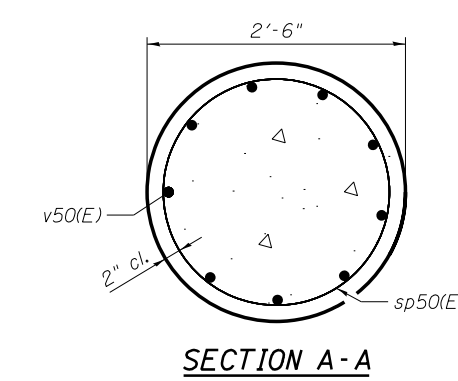
Girder	A	B
1	11 1/2"	2'-1 1/4"
2	11 3/4"	2'-1 3/8"
3	1'-0"	2'-1 3/8"
4	1'-0 1/4"	2'-1 3/8"



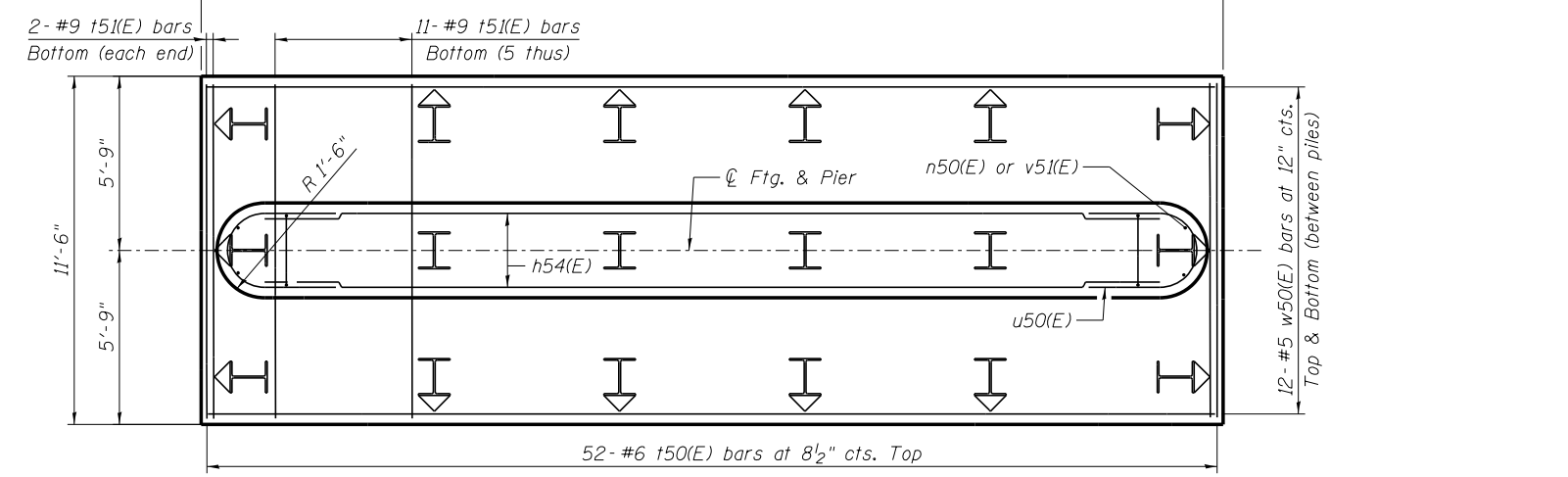
* Cut s51(E) bars to fit
Min. lap = 3'-3"



END VIEW



SECTION A-A



FOOTING PLAN

PILE DATA

Type: HP 12x53 with pile shoes
Nominal Required Bearing: 418 kips
Factored Resistance Available: 230 kips
Est. Length: 44'
No. Production Piles: 17
No. Test Piles: 1

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. Pour steps monolithically with cap.
3. For details of piles, see sheet SB38.
4. See foundation plan, sheet SB3, for pile layout.

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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME = ksnyder	DESIGNED - DMS	REVISED -
0161512.60W77.036_Pier_2_Details.dgn		CHECKED - JHG	REVISED -
		DRAWN - KMS	REVISED -
		CHECKED - JHG	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 DETAILS
STRUCTURE NO. 016-1512
SHEET NO. SB36 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	152
				CONTRACT NO. 60W77
ILLINOIS FED. AID PROJECT				

X:\100000S\10093\Eng-Docs-Phase-11\SN-016-1512-SB-1st-Ave.-to-NB-155-over-155\Final\0161512.60W77.036_Pier_2_Details.dgn 7:21:12 AM 7/17/2014

**PIER 1
BILL OF MATERIAL**

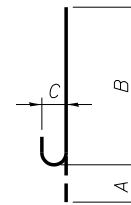
Bar	No.	Size	Length	Shape
h55(E)	10	#5	35'-6"	—
h56(E)	5	#5	7'-3"	—
h57(E)	5	#5	17'-6"	—
h58(E)	5	#5	27'-10"	—
h59(E)	25	#5	30'-0"	—
n50(E)	4	#6	7'-3"	⌋
p53(E)	10	#9	29'-0"	—
p54(E)	10	#9	35'-6"	—
p55(E)	20	#9	13'-6"	—
s50(E)	54	#5	12'-9"	□
s51(E)	88	#5	9'-2"	⌋
s53(E)	30	#5	8'-8"	⌋
s54(E)	46	#6	15'-10"	⌋
s55(E)	46	#6	21'-4"	⌋
** sp51(E)	3	#5	5'-6"	⌋
t50(E)	49	#6	11'-0"	—
t51(E)	49	#9	16'-0"	⌋
u50(E)	36	#6	11'-10"	⌋
v52(E)	27	#9	12'-1"	⌋
v53(E)	4	#6	9'-4"	—
w51(E)	24	#5	33'-6"	—
Pile Shoes		Each	18	
Structure Excavation		Cu. Yd.	155	
Concrete Structures		Cu. Yd.	101.1	
Reinforcement Bars, Epoxy Coated		Pound	15,390	
Furnishing Steel Piles HP12x53		Foot	748	
Driving Piles		Foot	748	
Test Pile Steel HP12x53		Each	1	
Concrete Sealer		Sq. Ft.	1116	

** Length is height of spiral.

**PIER 2
BILL OF MATERIAL**

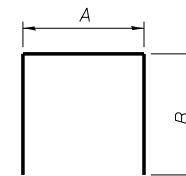
Bar	No.	Size	Length	Shape
h50(E)	10	#5	39'-0"	—
h51(E)	5	#5	8'-1"	—
h52(E)	5	#5	19'-3"	—
h53(E)	5	#5	30'-5"	—
h54(E)	23	#5	32'-6"	—
n50(E)	4	#6	7'-3"	⌋
p50(E)	20	#9	14'-0"	—
p51(E)	10	#9	31'-6"	—
p52(E)	10	#9	39'-0"	—
s50(E)	82	#5	12'-9"	□
s51(E)	96	#5	9'-2"	⌋
s52(E)	49	#6	19'-4"	⌋
s53(E)	33	#5	8'-8"	⌋
s54(E)	49	#6	15'-10"	⌋
** sp50(E)	3	#5	6'-9"	⌋
t50(E)	52	#6	11'-0"	—
t51(E)	59	#9	16'-0"	⌋
u50(E)	34	#6	11'-10"	⌋
v50(E)	27	#9	13'-5"	⌋
v51(E)	4	#6	8'-4"	—
w50(E)	24	#5	36'-0"	—
Pile Shoes		Each	18	
Structure Excavation		Cu. Yd.	147	
Concrete Structures		Cu. Yd.	106.4	
Reinforcement Bars, Epoxy Coated		Pound	16,990	
Furnishing Steel Piles HP12x53		Foot	748	
Driving Piles		Foot	748	
Test Pile Steel HP12x53		Each	1	
Concrete Sealer		Sq. Ft.	1222	

** Length is height of spiral.



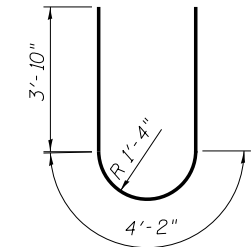
BARS n50(E), v50(E) & v52(E)

BAR	A	B	C
n50(E)	8"	6'-7"	6"
v50(E)	1'-3"	12'-2"	11 ³ / ₄ "
v52(E)	1'-3"	10'-10"	11 ³ / ₄ "

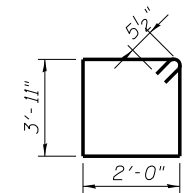


**BARS s51(E)-s55(E)
& t51(E)**

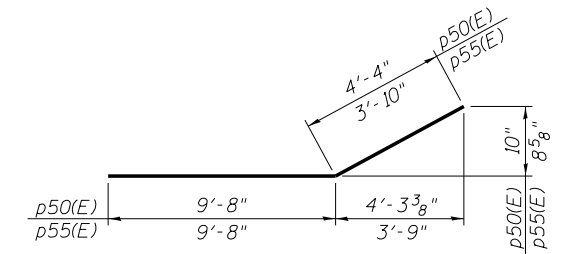
BAR	A	B
s51(E)	2'-0"	3'-7"
s52(E)	2'-8"	8'-4"
s53(E)	2'-8"	3'-0"
s54(E)	2'-8"	6'-7"
s55(E)	2'-8"	9'-4"
t51(E)	11'-0"	2'-6"



BAR u50(E)



BAR s50(E)



BAR p50(E) & p55(E)



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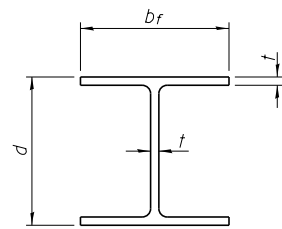
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0161512.60W77.037_Pier 1 & 2_Bar_Lists.dgn	PLOT SCALE =	CHECKED - JHG	REVISED -
	PLOT DATE = 6/23/2014	DRAWN - DMS	REVISED -
		CHECKED - JHG	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PIER 1 & 2 BAR LISTS
STRUCTURE NO. 016-1512**

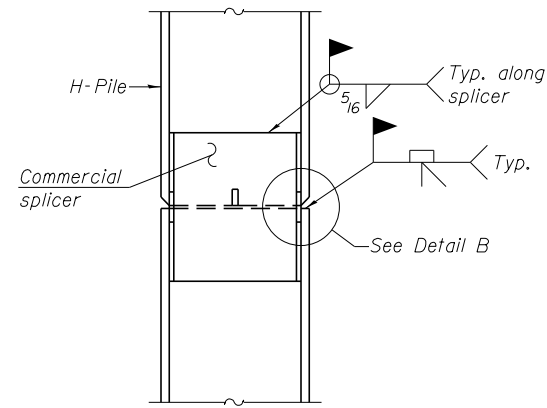
SHEET NO. SB37 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	153
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

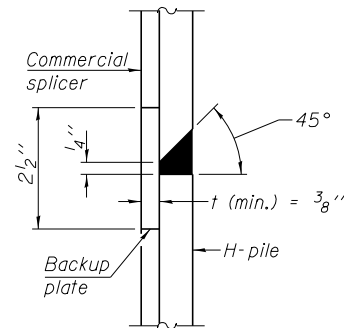


STEEL PILE TABLE

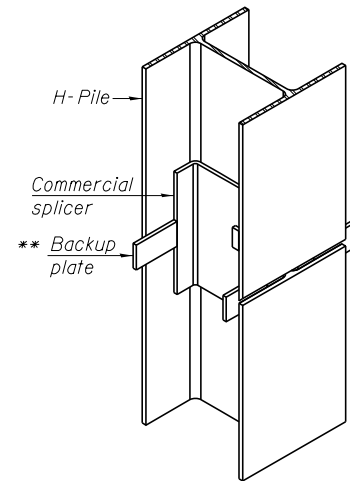
Designation	Depth d	Flange width b _f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION

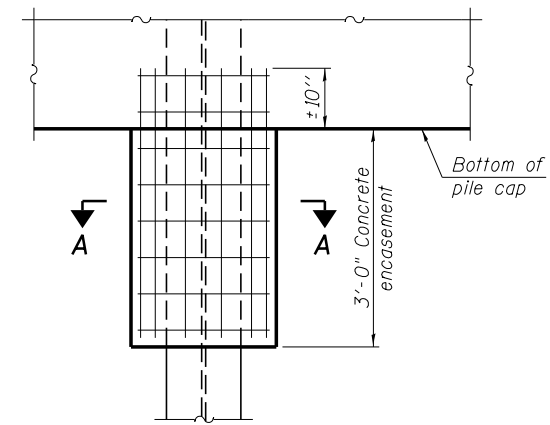


DETAIL "B"



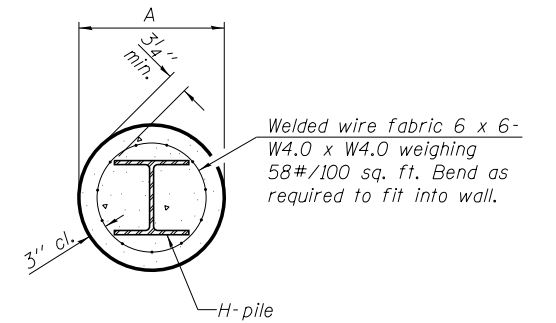
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



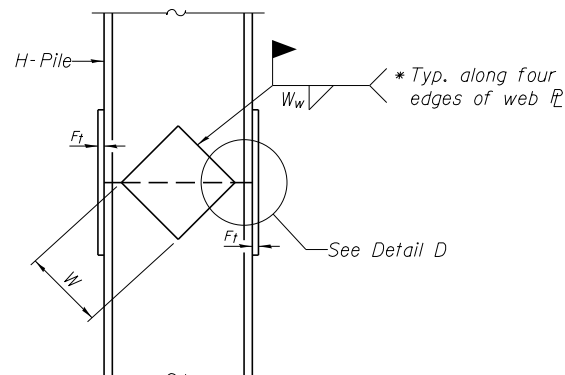
ELEVATION

PILE ENCASEMENT

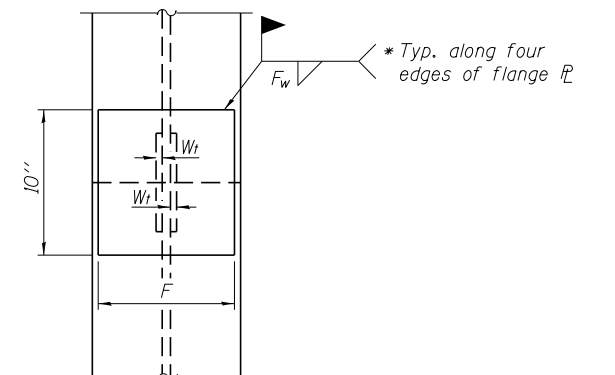


SECTION A-A

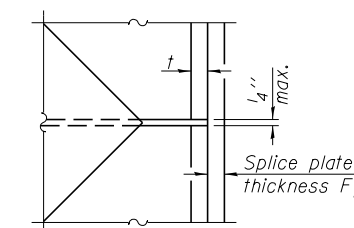
Note:
Forms for encasement may be omitted when soil conditions permit.



ELEVATION



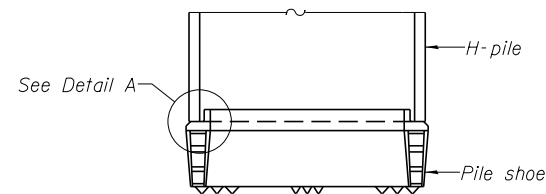
END VIEW



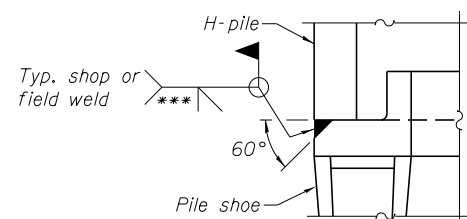
DETAIL D

WELDED PLATE FIELD SPLICE

Designation	F	F _t	F _w	W	W _t	W _w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

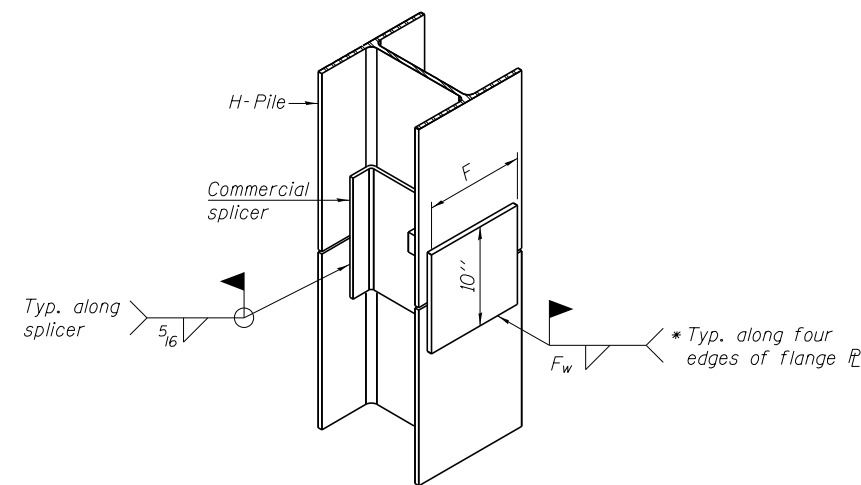


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.



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Chicago, Illinois 60601
312-565-0450 Job No. 10093

F-HP

1-27-12

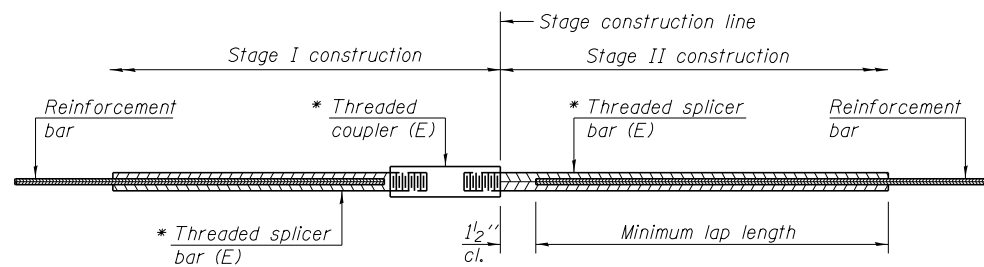
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0161512.60W77.038_HP_Pile_Details.dgn		CHECKED - JHG	REVISED -
		DRAWN - KMS	REVISED -
		CHECKED - JHG	REVISED -

**STATE OF ILLINOIS
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**HP PILE DETAILS
STRUCTURE NO. 016-1512**

SHEET NO. SB38 OF SB43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	154
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	



STANDARD BAR SPLICER ASSEMBLY

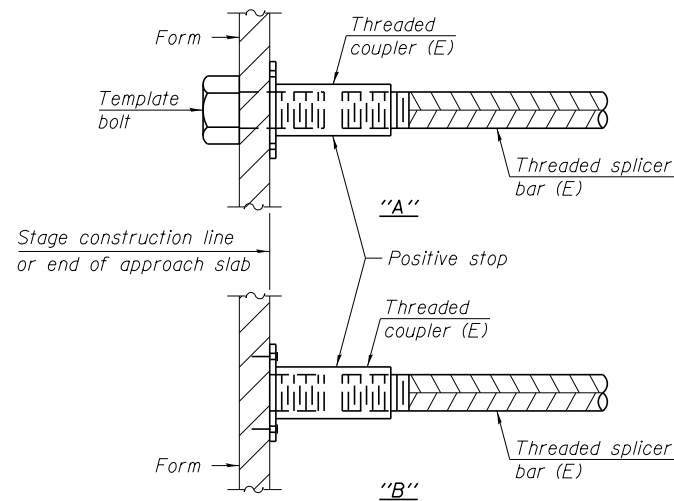
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

- Table 1: Black bar, 0.8 Class C
- Table 2: Black bar, Top bar lap, 0.8 Class C
- Table 3: Epoxy bar, 0.8 Class C
- Table 4: Epoxy bar, Top bar lap, 0.8 Class C
- Table 5: Epoxy bar, Class C
- Table 6: Epoxy bar, Top bar top, Class C

Threaded splicer bar length = min. lap length + 1/2" + thread length

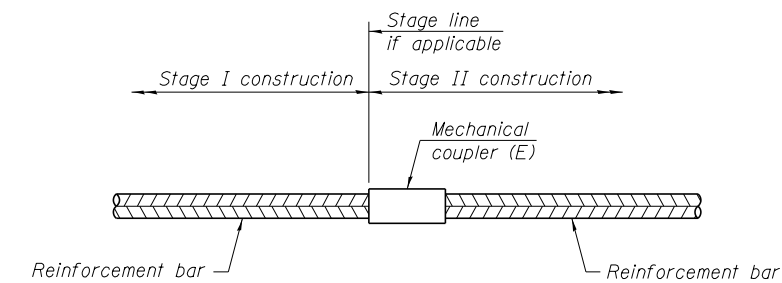
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length



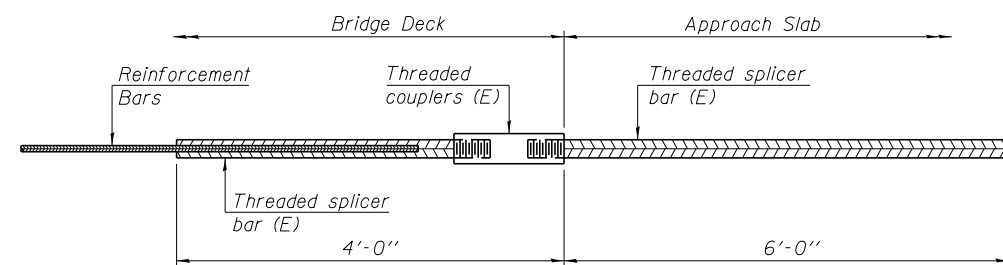
INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
 "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
 (E) : Indicates epoxy coating.



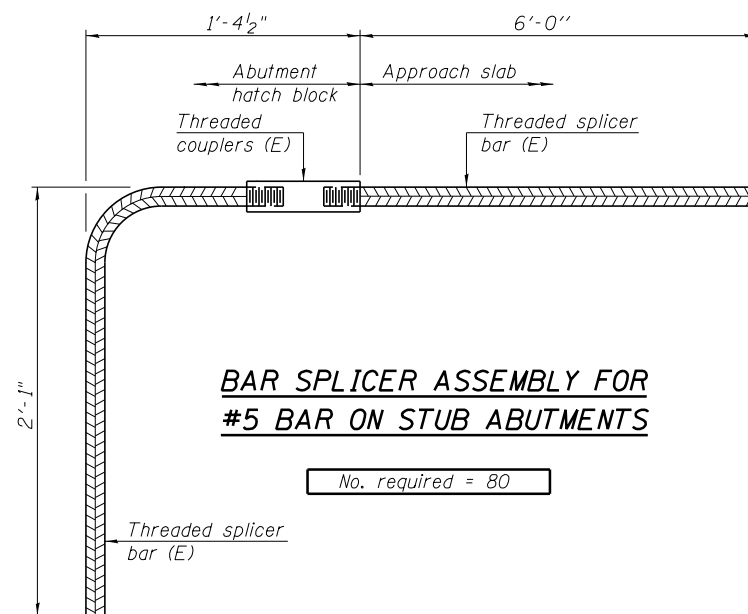
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required = 0



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 80

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
 All reinforcement shall be lapped and tied to the splicer bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.



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 312-565-0450 Job No. 10093

BSD-1

1-27-12

FILE NAME = 0161512.60W77.039_Bar_Splicer.dgn

USER NAME = ksnyder
 PLOT SCALE =
 PLOT DATE = 6/23/2014

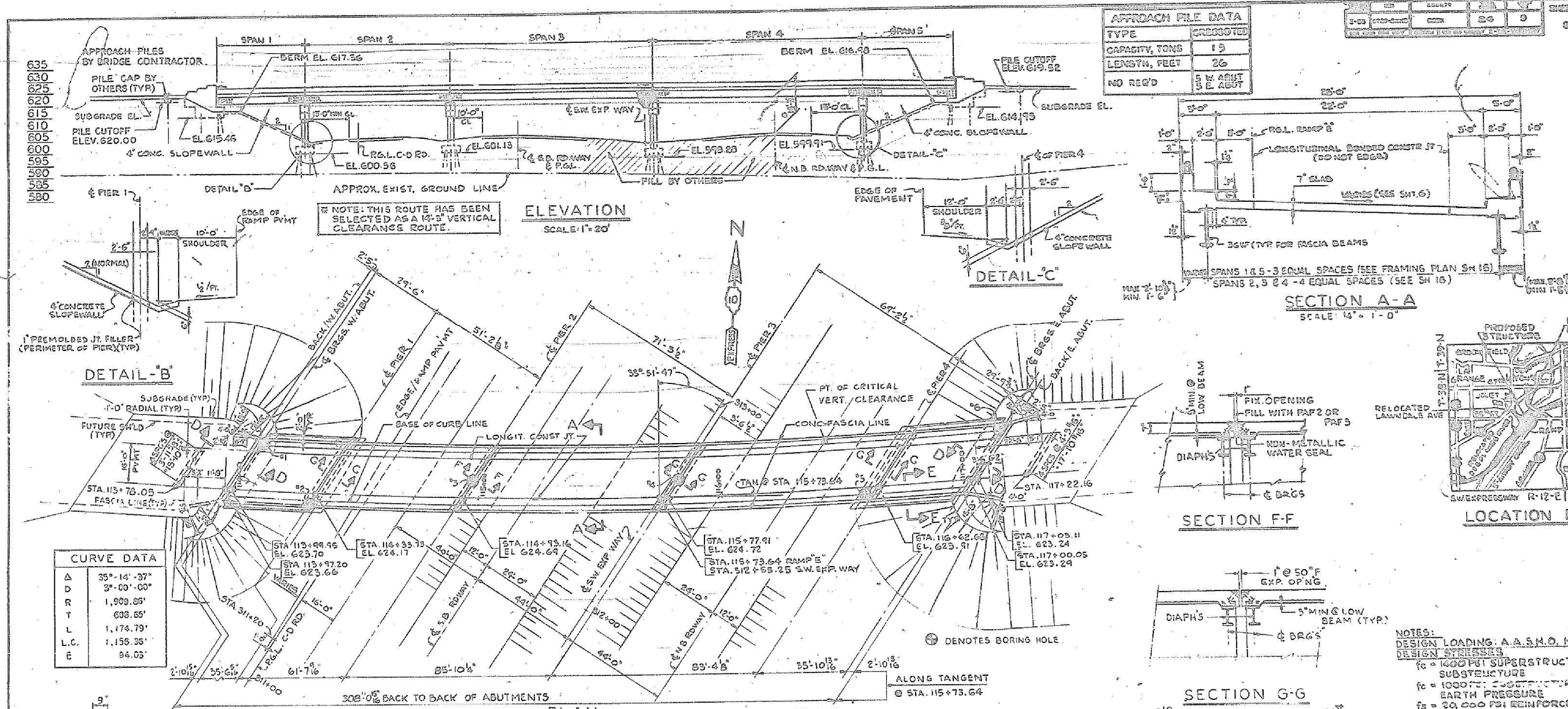
DESIGNED - DMS
 CHECKED - JHG
 DRAWN - KMS
 CHECKED - JHG
 REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
 STRUCTURE NO. 016-1512

SHEET NO. SB39 OF SB43 SHEETS

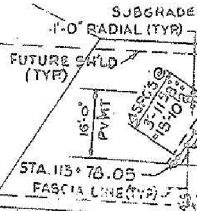
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	155
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	



APPROACH PILE DATA	
TYPE	CROSSOTED
CAPACITY, TONS	19
LENGTH, FEET	26
NO REQ'D	5 W ABUT 3 E ABUT

- 635 APPROACH PILES BY BRIDGE CONTRACTOR
- 630 PILE CAP BY OTHERS (TYP)
- 625
- 620
- 615 SUBGRADE EL.
- 610 PILE CUTOFF ELEV. 620.00
- 605
- 600 4" CONC. SLOPEWALL
- 595
- 590
- 585
- 580

DETAIL-B



CURVE DATA	
Δ	35°-14'-37"
D	3°-00'-00"
R	1,909.65'
T	608.65'
L	1,174.79'
L.C.	1,156.35'
E	94.03'

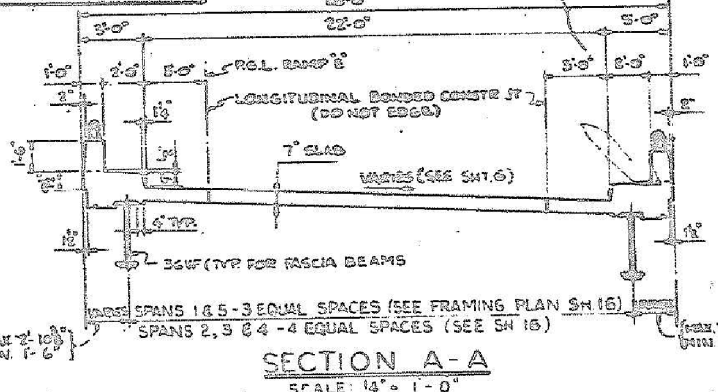
ELEVATION
SCALE: 1" = 20'

NOTE: THIS ROUTE HAS BEEN SELECTED AS A 13'-3" VERTICAL CLEARANCE ROUTE.

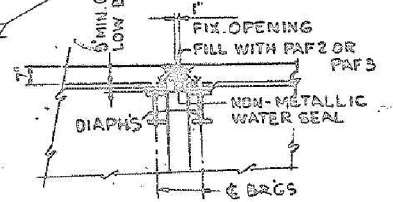
PLAN
SCALE: 1" = 20'

NOTE: SEE SH. 13 FOR PIER AND ABUTMENT LOCATION WITH RESPECT TO TAN & PCC STA. 113+65.26

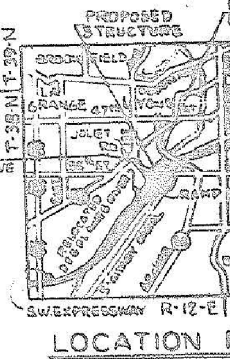
TOTAL BILL OF MATERIALS - SECTION 0707-011ND				
ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL
CLASS X CONCRETE	CU YD	286.0	233.7	539.7
PROTECTIVE COAT	SQ YD	1,103		1,103
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	278,286		778,286
REINFORCEMENT BARS	POUND	60,876		83,382
FURNISHING CROSSOTED PILES 20.1 TO 38 FEET	LIN FT	260		260
DRIVING TIEBEE PILES	LIN FT	260		260
FURNISHING STEEL PILES 88P36	LIN FT	1,828		1,828
TEST PILE STEEL 88P36	EACH	4		4
DRIVING STEEL PILES	LIN FT	1,828		1,828
NAME PLATES	EACH	2		2
SLOPE WALL 4 INCH ALUMINUM HANDRAIL	SO YD	335		335
CONDUIT IN TRENCH, 2" DIA. GALVANIZED STEEL	LIN FT	40		40
CONDUIT ADJUTED, 2" DIA. ASBESTOS CEMENT TYPE II	LIN FT	610		610
CONDUIT IN CONCRETE, 1 1/2" DIA. GALVANIZED STEEL	LIN FT	18		18
CONDUIT, 2" DIA., GALVANIZED STEEL	LIN FT	32		32
TRENCH AND BACKFILL	LIN FT	20		20
CAST IRON JUNCTION BOX, 18"x12"x10"	EACH	2		2
CAST IRON JUNCTION BOX, 18"x12"x8"	EACH	3		3
TREE REMOVAL, ACRES	ACRE			
EARTH EXCAVATION	CU YD			
CHANNEL EXCAVATION	CU YD			
BORROW EXCAVATION	CU YD			
POROUS GRANULAR EMBANKMENT	CU YD			
CONDUIT IN CONCRETE, 2" DIA. GALVANIZED STEEL	LIN FT	48		48
CONCRETE SEAT	LIN FT			
CLASS A EXCAVATION FOR STRUCTURES	CU YD	221		221



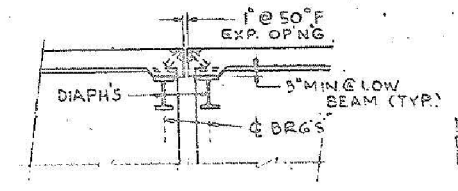
SECTION A-A
SCALE: 1/4" = 1'-0"



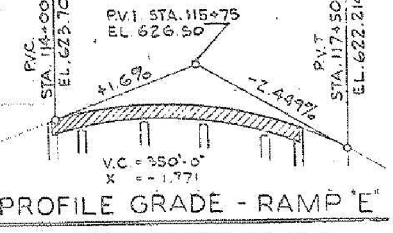
SECTION F-F



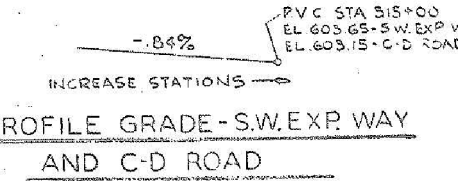
LOCATION MAP



SECTION G-G

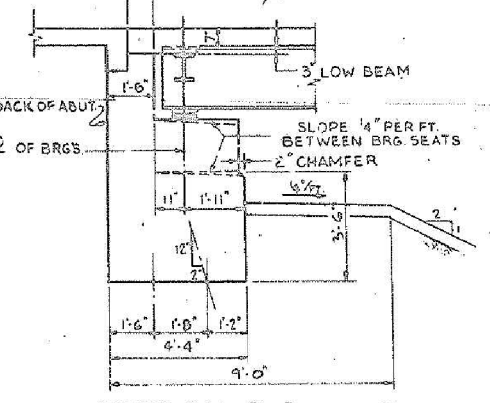


PROFILE GRADE - RAMP 'E'
SUPERELEVATION - SEE SH. 6



PROFILE GRADE - S.W. EXP. WAY AND C-D ROAD

- NOTES:**
- DESIGN LOADING: A.A.S.H.O. M DESIGN STRESSES
 - f_c = 1400 PSI SUPERSTRUCTURE SUBSTRUCTURE
 - f_c = 1000 PSI SUPERSTRUCTURE EARTH PRESSURE
 - f_s = 20,000 PSI REINFORCE
 - f_s = 20,000 PSI STRUCTURE
 - φ = 75 PSI SHEAR IN ROOF
 - MAX LL-1 DEFLECTION ≤ FOR COMPOSITE BEAM L/200 FOR NON-COMP. BEAMS.



SECTION D-D SCALE: 3/8" = 1'-0"

DE LEW, CATHER & CO. ENGINEERS
DESIGNED BY V.R. BURKEVICS
DRAWN BY J. ALLEN
CHECKED BY [Signature]
IN CHARGE E.S. [Signature]
APPROVED L.N. [Signature]

ILLINOIS DIVISION OF
SOUTHWEST EXPRESSWAY
RAMP 'E' ON SOUTHWEST EXPR
GENERAL PLAN AND
BLUE AS NOTED



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME = ksnyder	DESIGNED - DMS	REVISED -
0161512.60W77.044_Existing Plans.Ldgn		CHECKED - JHG	REVISED -
		DRAWN - KMS	REVISED -
		CHECKED - JHG	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

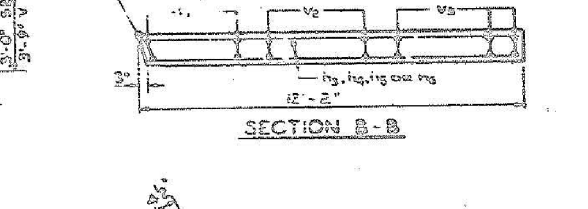
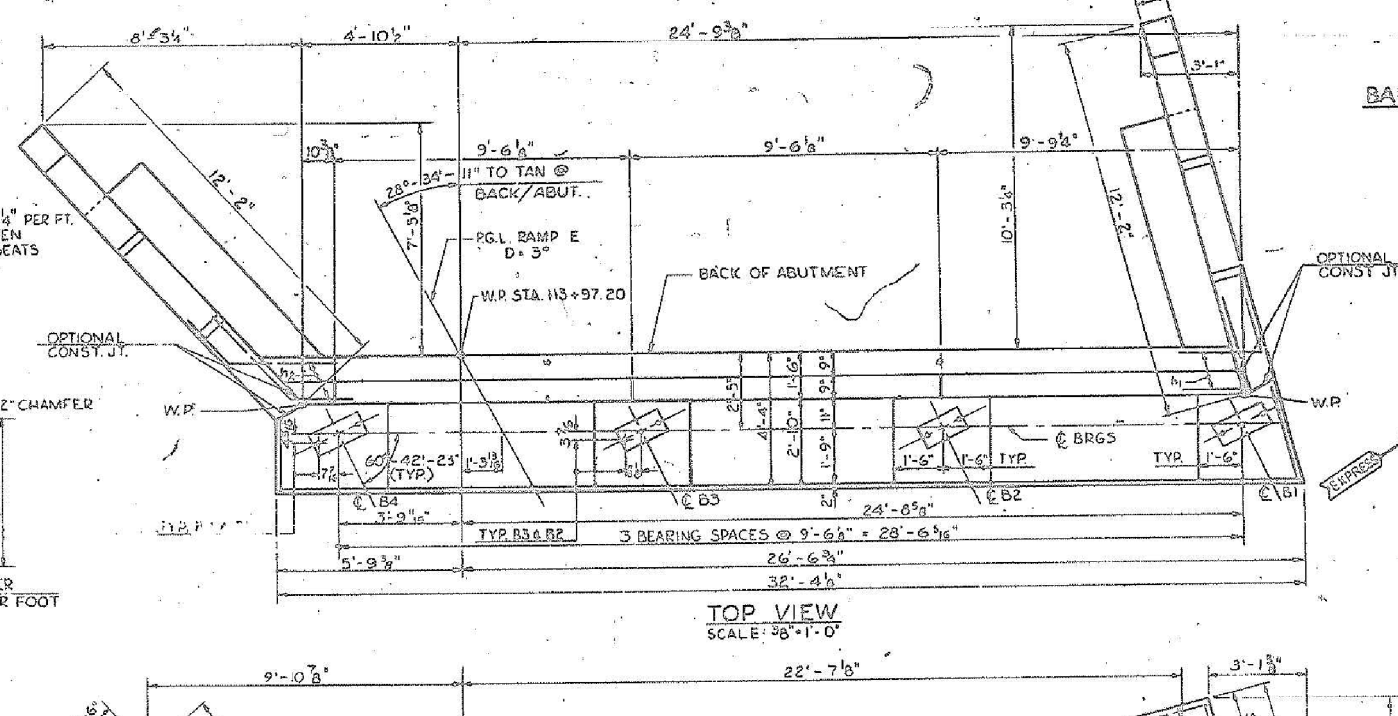
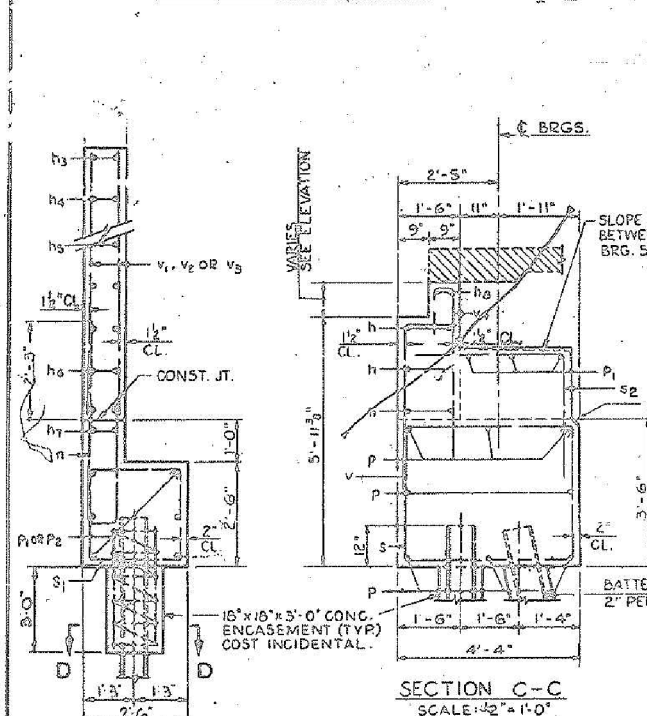
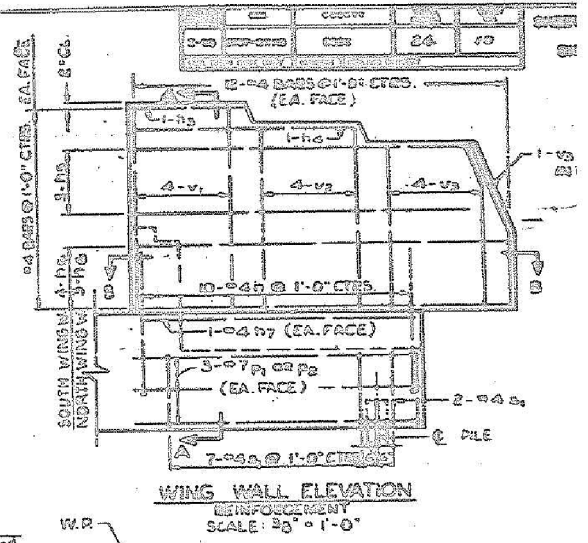
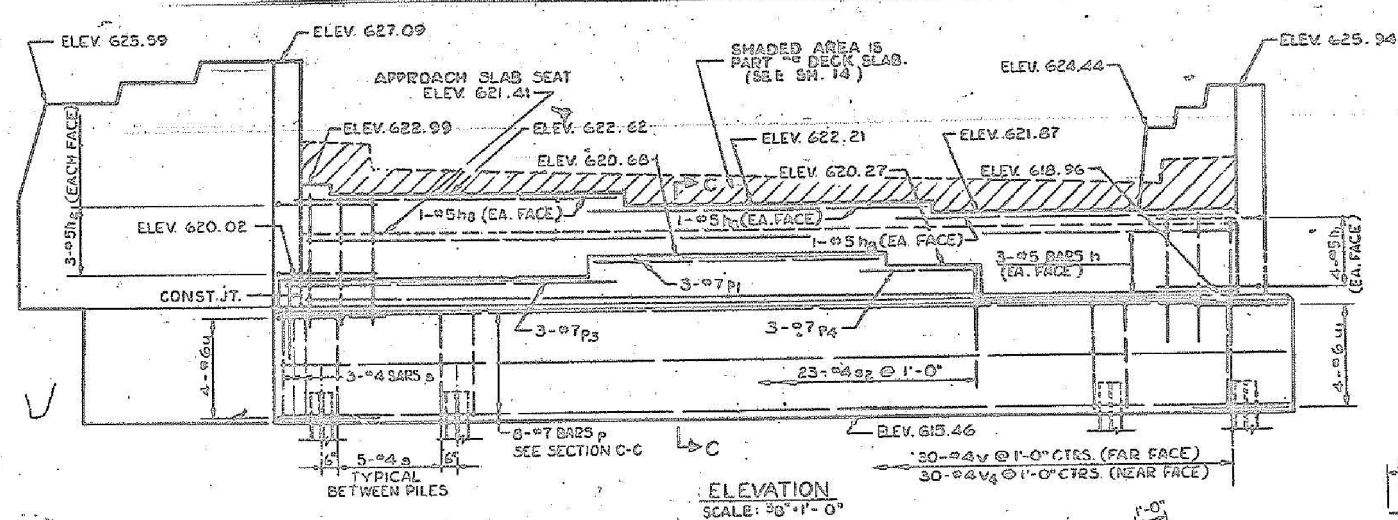
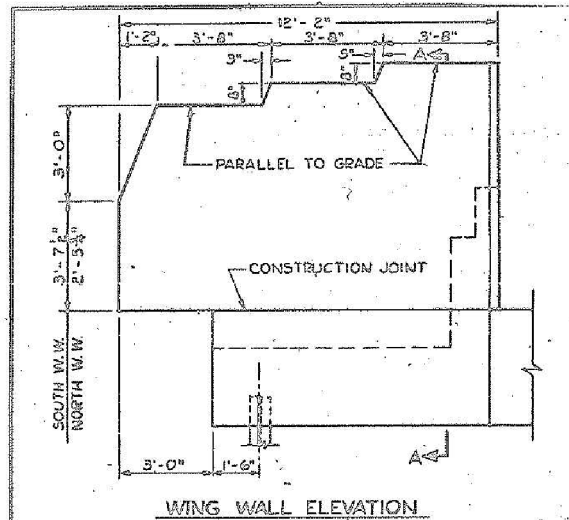
EXISTING PLANS (1 OF 7)
STRUCTURE NO. 016-1512

SHEET NO. SBX1 OF SBX7 SHEETS

FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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				CONTRACT NO. 60W77
ILLINOIS FED. AID PROJECT				

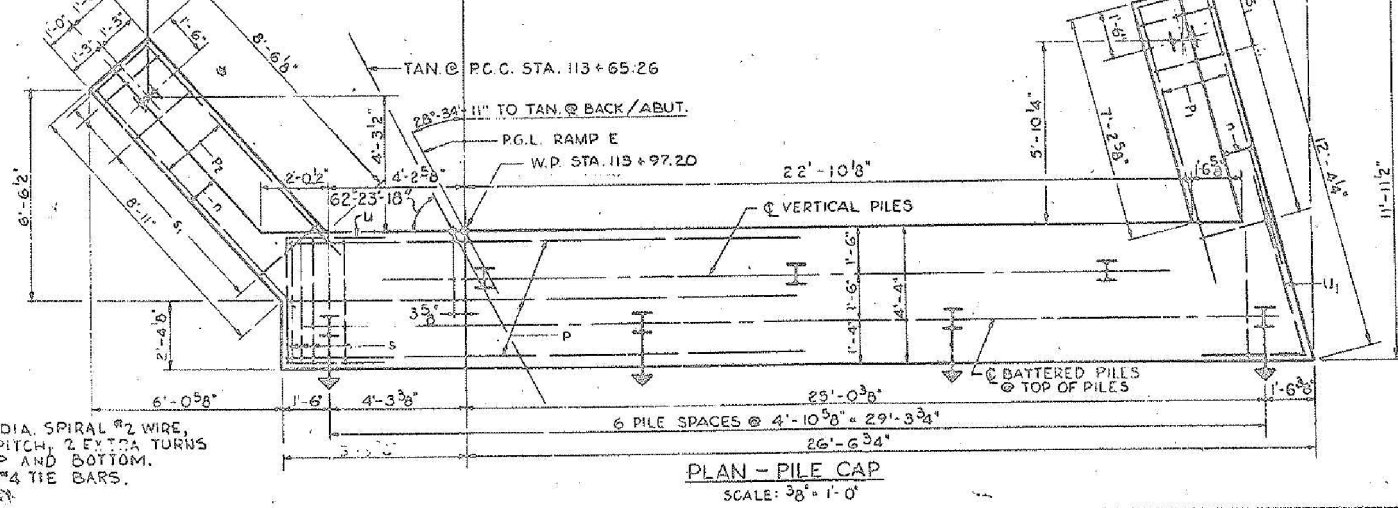
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NOTES: ALL ANCHOR BOLTS TO PROJECT 3" ABOVE FINISHED CONCRETE.
 ALL BAR DIMENSIONS ARE OUT TO OUT.
 PREFIX ALL BAR MARKS FOR SHIPMENT WITH THE LETTER W. EXAMPLE: W1 MEANS BARS IN WEST ABUTMENT.
 FOR WORK POINTS, SEE LOCATION PLAN SH.13.
 FOR SLEEVES IN ABUTMENT BACKWALL, SEE SH.20.

PILE DATA	
TYPE	BSP36
CAPACITY	25 TON
REF. LENGTH	38 FEET
NO. REQ'D.	9 (INCL TEST PILE)
CUTOFF ELEV.	616.46

DE LAY, CATHER & CO. ENGINEERS
 DESIGNED BY V.K. CHURKOVIC
 DRAWN BY J. ALLEN
 CHECKED BY J. ALLEN
 IN CHARGE R.S. MORTON
 APPROVED L.B. BISH



ABUTMENT BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH
h	6	#5	29'-0"
h1	8	#5	4'-6"
h2	6	#5	4'-6"
h3	4	#4	9'-0"
h4	4	#4	0'-0"
h5	12	#4	10'-0"
h6	14	#4	11'-0"
h7	4	#4	0'-0"
h8	6	#5	10'-0"
n	20	#4	9'-0"
p	8	#7	31'-0"
p1	9	#7	0'-0"
p2	6	#7	10'-0"
p3	5	#7	11'-0"
p4	5	#7	11'-0"
s	35	#4	15'-1"
s1	18	#4	0'-0"
s2	23	#4	0'-0"
u	4	#6	10'-1"
u1	4	#6	8'-0"
v	20	#4	5'-0"
v1	16	#4	6'-1"
v2	16	#4	5'-1"
v3	20	#4	5'-1"
v4	20	#4	7'-1"
CLASS X CONCRETE CU. Y			
PROTECTIVE COAT SQ. Y			
REINFORCEMENT BARS LB.			
FURNISHING STEEL PILES LIN. F			
TEST PILES STEEL ECU			
DRIVING STEEL PILES LIN. F			
CLASS A EXCAV FOR STRUCTS CU. Y			

ILLINOIS DIVISION OF HIGHWAYS
 SOUTHWEST EXPRESSWAY
 RAMP "E" OVER
 SOUTHWEST EXPRESSWAY
 WEST ABUTMENT
 SCALE AS NOTED

benesch
 engineers - scientists - planners
 Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0450 Job No. 10093

FILE NAME =	USER NAME = ksnyder	DESIGNED - DMS	REVISED -
0161512.60W77.045.Existing Plans.2.dgn		CHECKED - JHG	REVISED -
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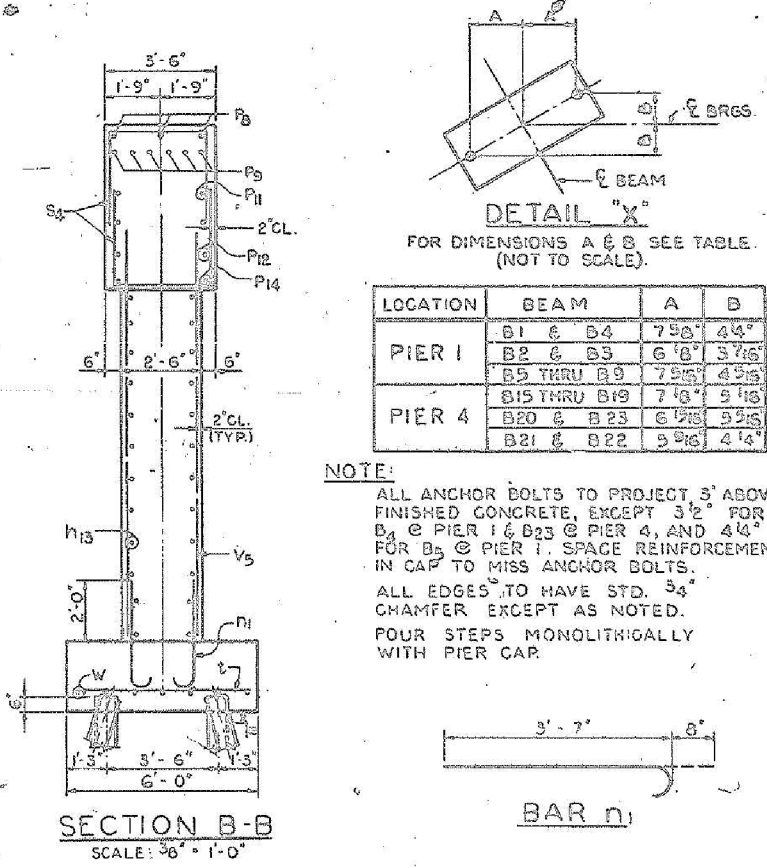
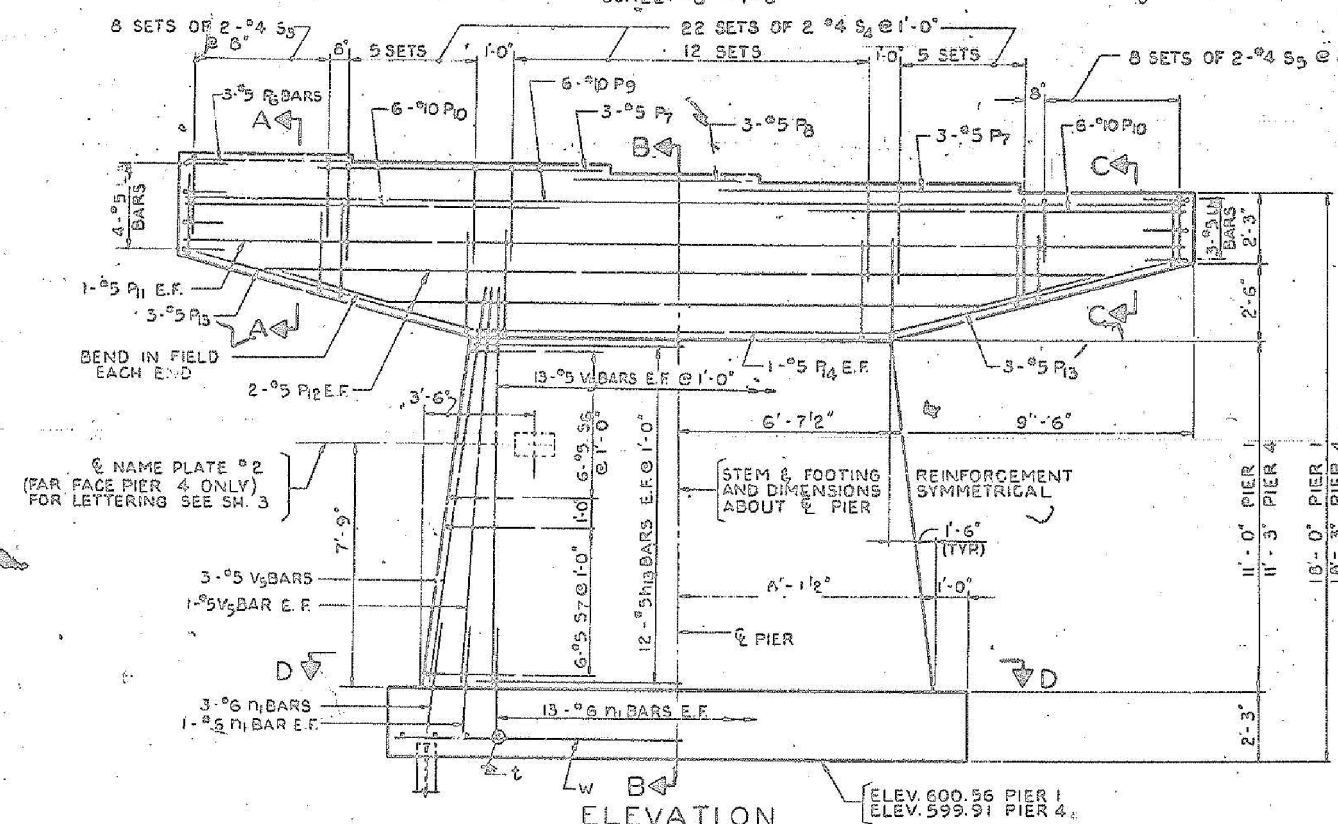
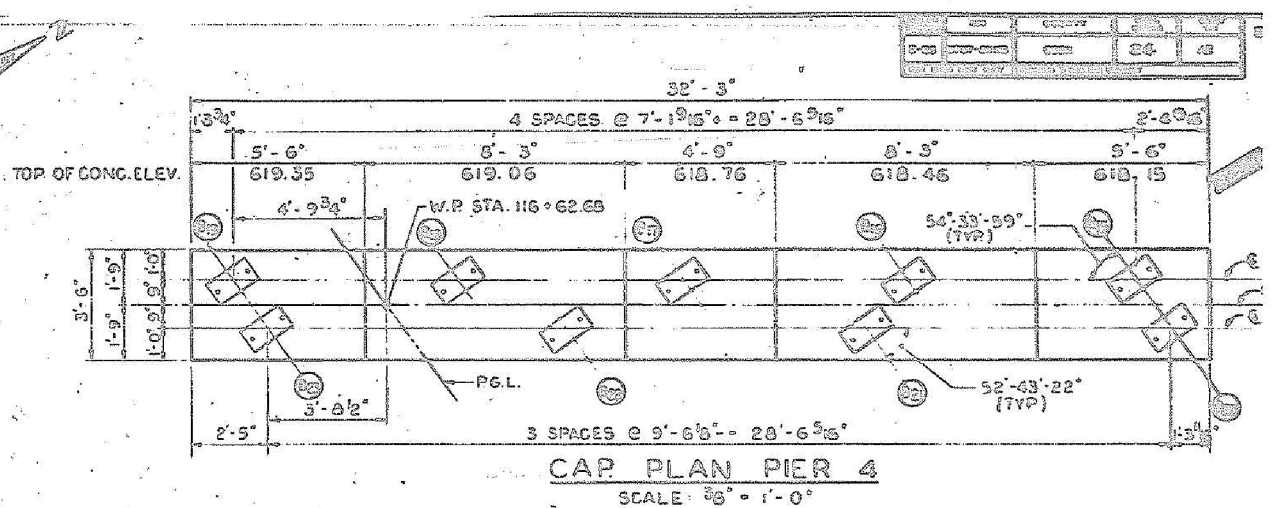
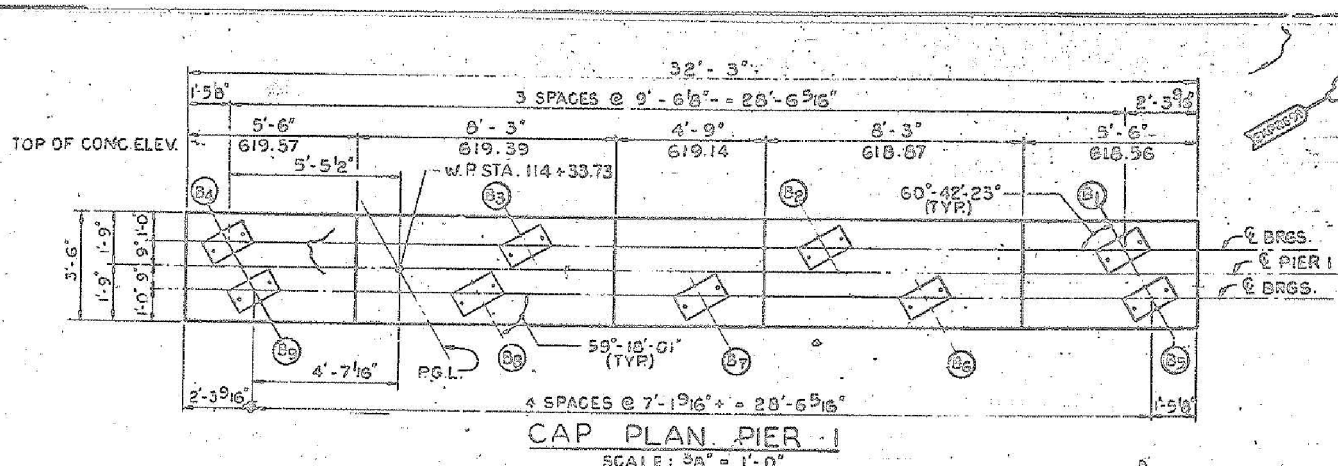
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (2 OF 7)
 STRUCTURE NO. 016-1512
 SHEET NO. SB2 OF SB7 SHEETS

FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	161
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

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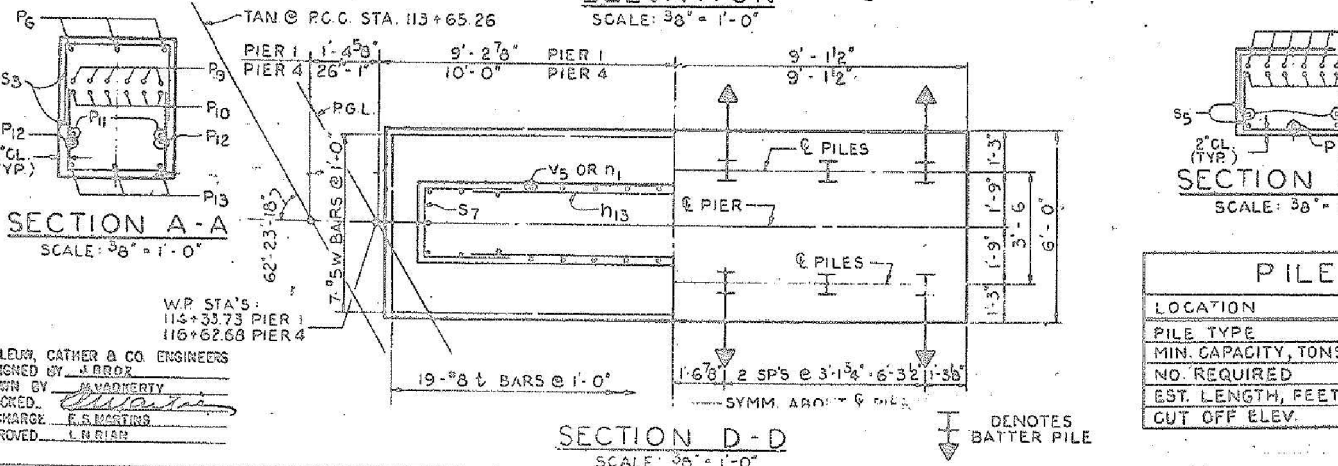


BAR	PIER 1	PIER 4	TOTAL	SIZE	LENG
n13	24	24	48	5	13'-0"
n1	36	36	72	6	4'-0"
P6	3	3	6	5	5'-0"
P7	6	6	12	9	9'-0"
P8	3	3	6	5	6'-0"
P9	6	6	12	10	10'-0"
P10	12	12	24	10	12'-0"
P11	2	2	4	9	9'-0"
P12	4	4	8	5	8'-0"
P13	6	6	12	9	10'-0"
P14	2	2	4	5	13'-0"

LOCATION	BEAM	A	B
PIER 1	B1 & B4	7'5"	4'4"
	B2 & B3	6'8"	3'7"
	B5 THRU B9	7'5"	4'5"
PIER 4	B15 THRU B19	7'4"	5'1"
	B20 & B23	6'2"	5'2"
	B21 & B22	5'6"	4'4"

NOTE:
ALL ANCHOR BOLTS TO PROJECT 3" ABOVE FINISHED CONCRETE, EXCEPT 3 1/2" FOR B4 @ PIER 1 & B23 @ PIER 4, AND 4 1/2" FOR B5 @ PIER 1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
ALL EDGES TO HAVE STD. 3/4" CHAMFER EXCEPT AS NOTED.
FOUR STEPS MONOLITHICALLY WITH PIER CAP.

BAR	PIER 1	PIER 4	TOTAL	SIZE	LENG
S3	16	16	32	4	8'-0"
S4	44	44	88	4	9'-0"
S5	16	16	32	4	7'-0"
S6	12	12	24	5	6'-0"
S7	12	12	24	5	7'-0"



LOCATION	PIER 1	PIER 4
PILE TYPE	6 BP 36	6 BP 36
MIN. CAPACITY, TONS	30	30
NO. REQUIRED	12	12
EST. LENGTH, FEET	25	24
CUT OFF ELEV.	601.05	600.40

NOTES:
FOR EMBEDDED ELECTRICAL WORK SEE SH. 20.
FOR WORK POINTS, SEE LOCATION PLAN SH. 13.

ITEM	UNIT	QUANTITY	
		PIER 1	PIER 4
CLASS X CONCRETE	CU YD	43.3	43.8
REINFORCEMENT BARS	POUND	3892	3892
FURNISHING STEEL PILES 6 BP 36	LIN FT	300	288
DRIVING STEEL PILES	LIN FT	300	288
NAME PLATE	EACH	1	1
CLASS A EXCAVATION FOR STRUCTURES	CU YD	29	30

BAR	C
S3	2'-0"
S4	3'-0"
S5	2'-0"
S6	2'-0"
S7	2'-0"
U3	1'-0"

DE LEW, CATHY & CO ENGINEERS
DESIGNED BY: ALBROX
DRAWN BY: MUMBERTY
CHECKED: F. S. MARTIN
IN CHARGE: F. S. MARTIN
APPROVED: L. B. RISH

benesch
engineers - scientists - planners
Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

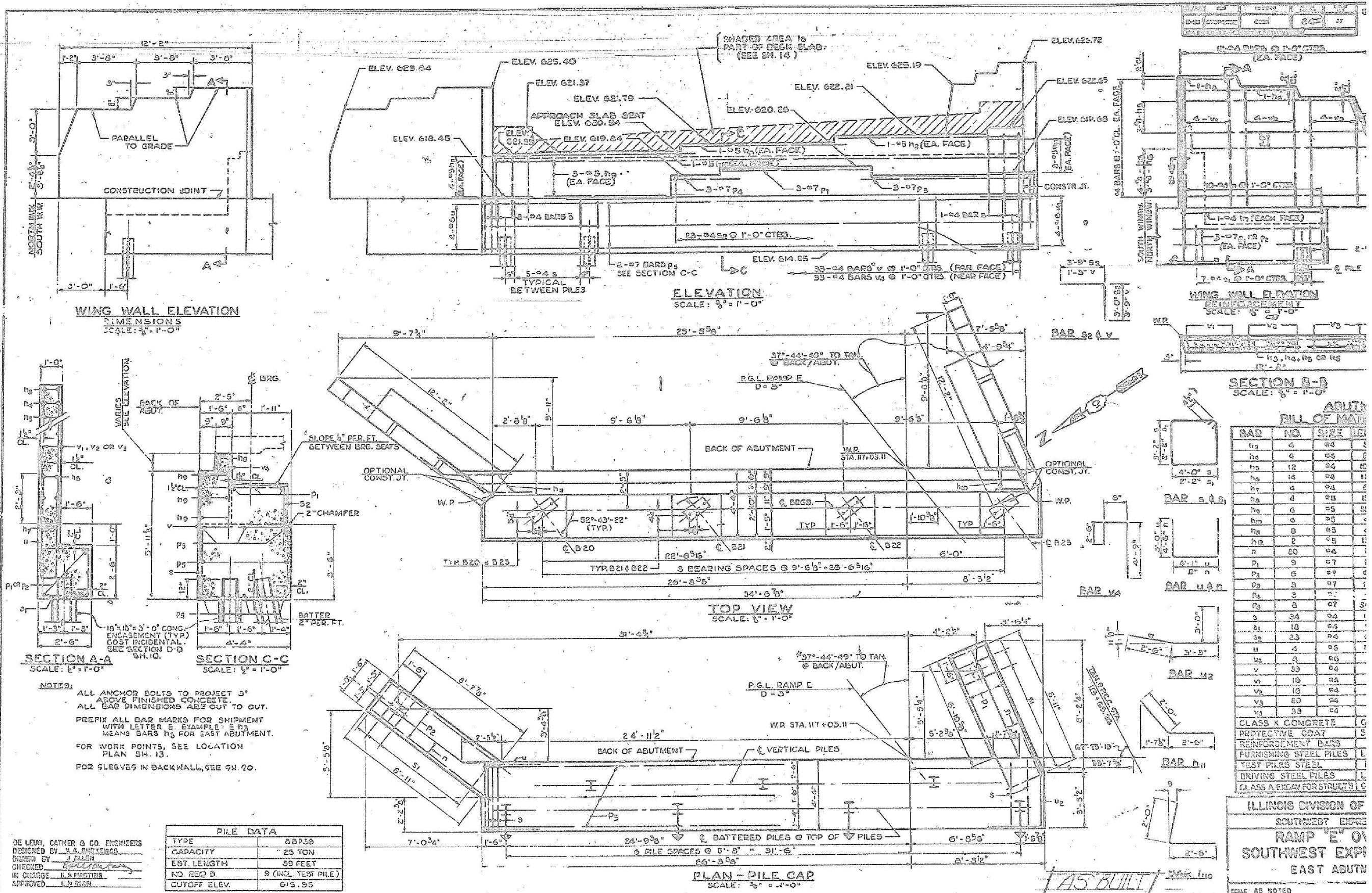
EXISTING PLANS (3 OF 7)
STRUCTURE NO. 016-1512
SHEET NO. SBX3 OF SBX7 SHEETS

FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	162
				CONTRACT NO. 60W77
ILLINOIS FED. AID PROJECT				

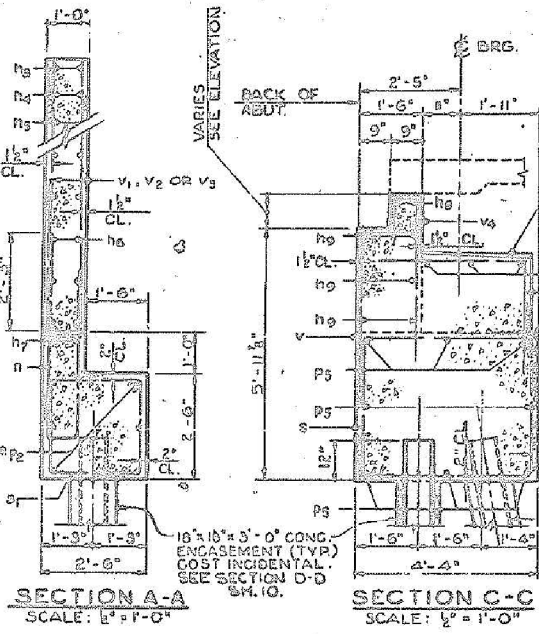
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DESIGNED - DMS
CHECKED - JHG
DRAWN - KMS
PLOT DATE = 6/23/2014
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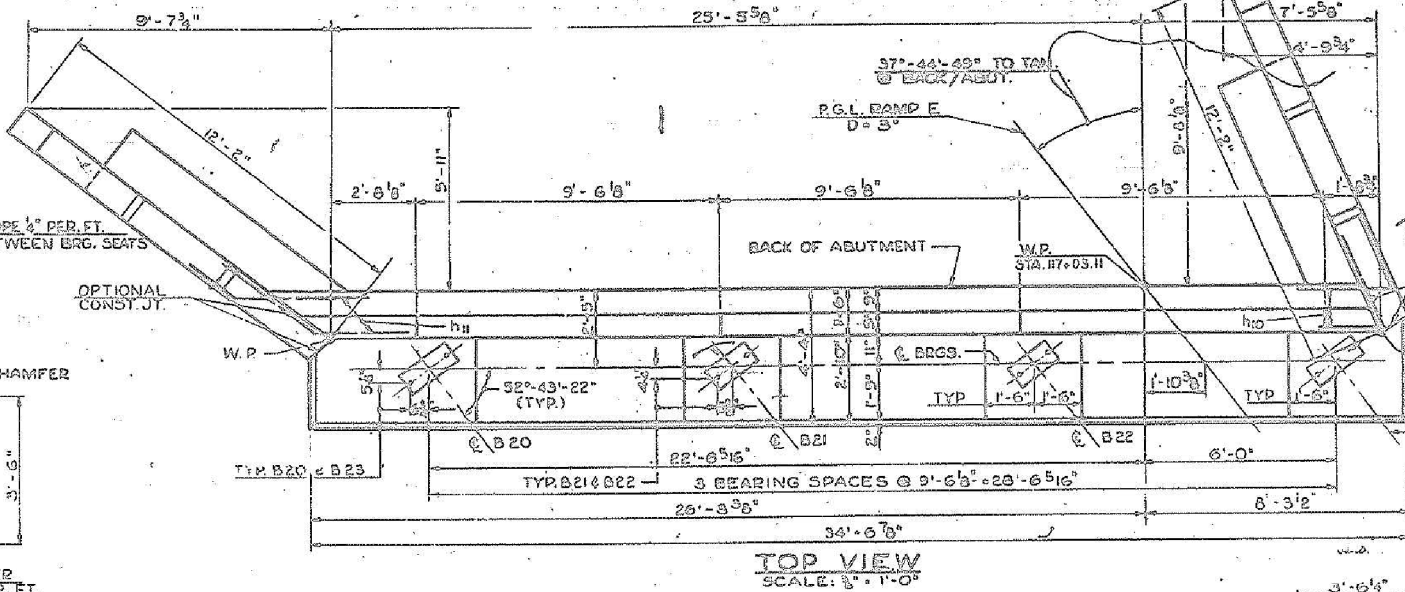
WING WALL ELEVATION
DIMENSIONS
SCALE: 3/8" = 1'-0"

ELEVATION
SCALE: 3/8" = 1'-0"

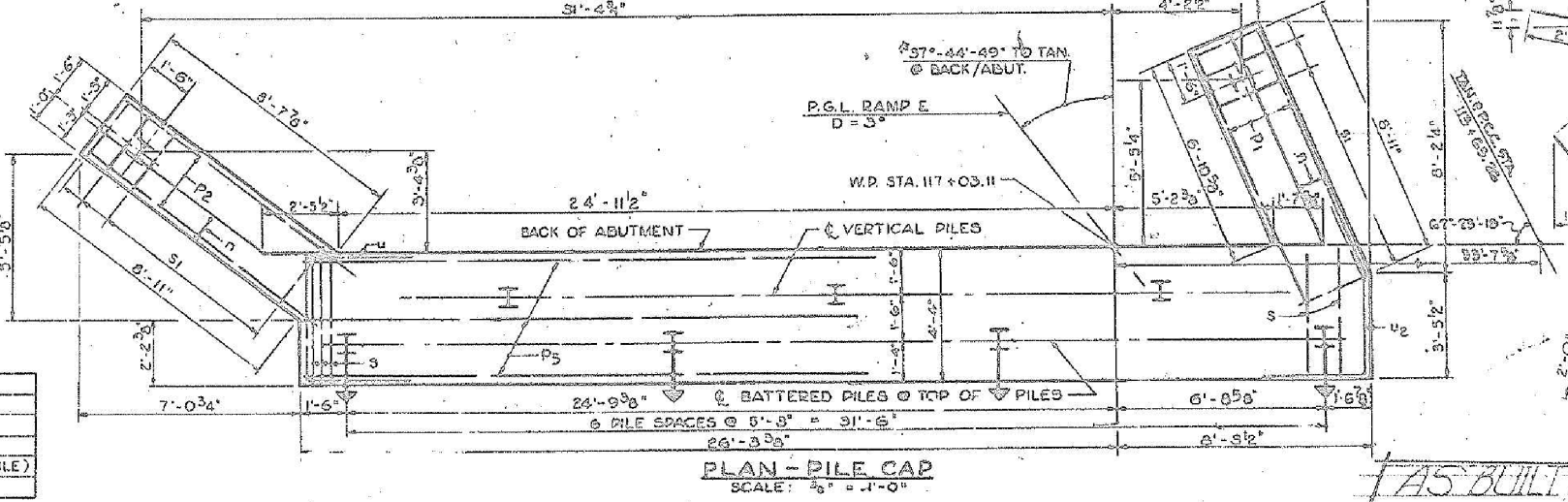


SECTION A-A
SCALE: 1/2" = 1'-0"

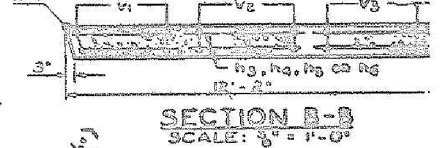
SECTION C-C
SCALE: 1/2" = 1'-0"



TOP VIEW
SCALE: 3/8" = 1'-0"



PLAN - PILE CAP
SCALE: 3/8" = 1'-0"



SECTION B-B
SCALE: 3/8" = 1'-0"

ABUTMENT BILL OF MATERIALS

BAR	NO.	SIZE	LEN.
h ₁	6	#4	12'
h ₂	4	#4	12'
h ₃	12	#4	12'
h ₄	14	#4	12'
h ₅	4	#4	12'
h ₆	4	#4	12'
h ₇	6	#5	12'
h ₈	6	#5	12'
h ₉	2	#5	12'
h ₁₀	20	#4	12'
h ₁₁	9	#7	12'
h ₁₂	6	#7	12'
h ₁₃	6	#7	12'
h ₁₄	6	#7	12'
h ₁₅	6	#7	12'
h ₁₆	6	#7	12'
h ₁₇	6	#7	12'
h ₁₈	6	#7	12'
h ₁₉	6	#7	12'
h ₂₀	6	#7	12'
h ₂₁	6	#7	12'
h ₂₂	6	#7	12'
h ₂₃	6	#7	12'
h ₂₄	6	#7	12'
h ₂₅	6	#7	12'
h ₂₆	6	#7	12'
h ₂₇	6	#7	12'
h ₂₈	6	#7	12'
h ₂₉	6	#7	12'
h ₃₀	6	#7	12'
h ₃₁	6	#7	12'
h ₃₂	6	#7	12'
h ₃₃	6	#7	12'
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h ₃₉	6	#7	12'
h ₄₀	6	#7	12'
h ₄₁	6	#7	12'
h ₄₂	6	#7	12'
h ₄₃	6	#7	12'
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h ₄₉	6	#7	12'
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h ₉₄	6	#7	12'
h ₉₅	6	#7	12'
h ₉₆	6	#7	12'
h ₉₇	6	#7	12'
h ₉₈	6	#7	12'
h ₉₉	6	#7	12'
h ₁₀₀	6	#7	12'

CLASS R CONCRETE
PROTECTIVE COAT
REINFORCEMENT BARS
FURNISHING STEEL PILES
TEST PILES STEEL
DRIVING STEEL PILES
CLASS A EXCAV FOR STRUCT'S

NOTES:
ALL ANCHOR BOLTS TO PROJECT 3" ABOVE FINISHED CONCRETE. ALL BAR DIMENSIONS ARE OUT TO OUT.
PREFIX ALL BAR MARKS FOR SHIPMENT WITH LETTER E. EXAMPLE: E h₁ MEANS BARS h₁ FOR EAST ABUTMENT.
FOR WORK POINTS, SEE LOCATION PLAN SH. 13.
FOR SLEEVES IN BACKWALL, SEE SH. 20.

PILE DATA

TYPE	CAPACITY	EST. LENGTH	NO. REQ'D	CUTOFF ELEV.
6BP36	25 TON	59 FEET	9 (INCL. TEST PILE)	615.95

DE LEW, CATHEN & CO. ENGINEERS
DESIGNED BY V.A. ANDRZEJCZAK
DRAWN BY J. ALLEN
CHECKED BY J. ALLEN
IN CHARGE E.A. MARTINEZ
APPROVED L. J. BISH



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME = 0161512.60W77.047.Existing Plans.4.dgn
PLOT SCALE =
PLOT DATE = 6/23/2014

DESIGNED	REVISIONS
DMS	REVISIONS
JHG	REVISIONS
KMS	REVISIONS
JHG	REVISIONS

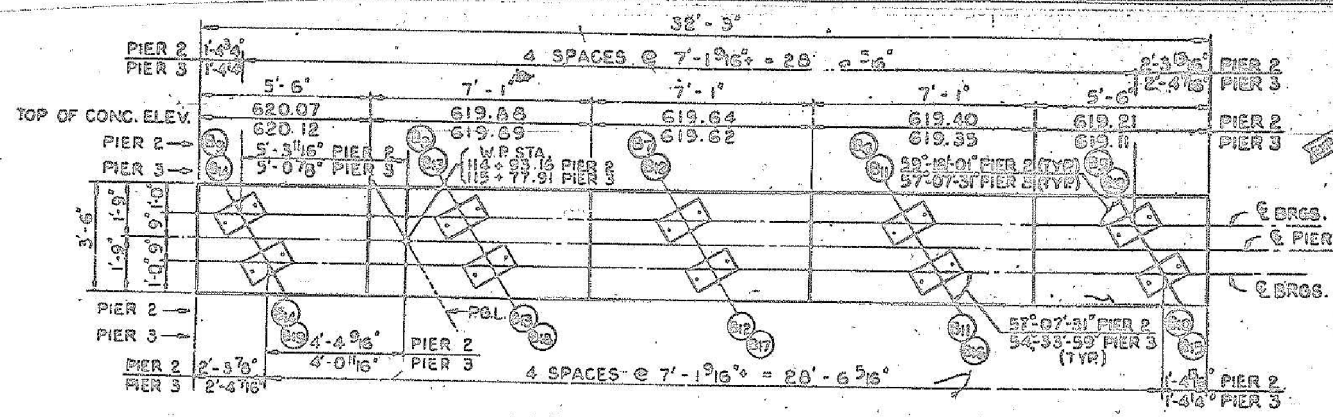
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (4 OF 7)
STRUCTURE NO. 016-1512
SHEET NO. SBX4 OF SBX7 SHEETS

FOR INFORMATION ONLY

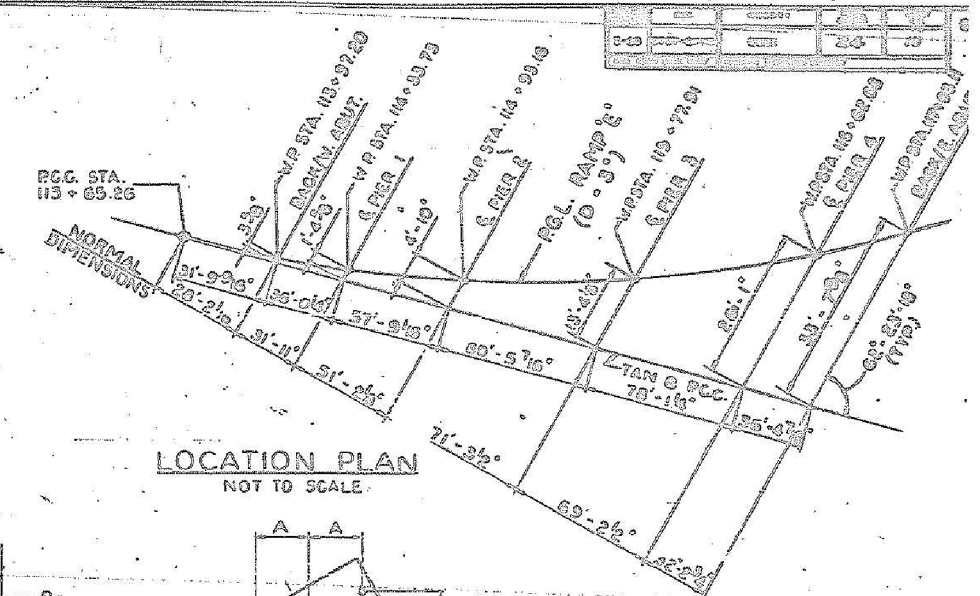
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	163
				CONTRACT NO. 60W77
ILLINOIS FED. AID PROJECT				

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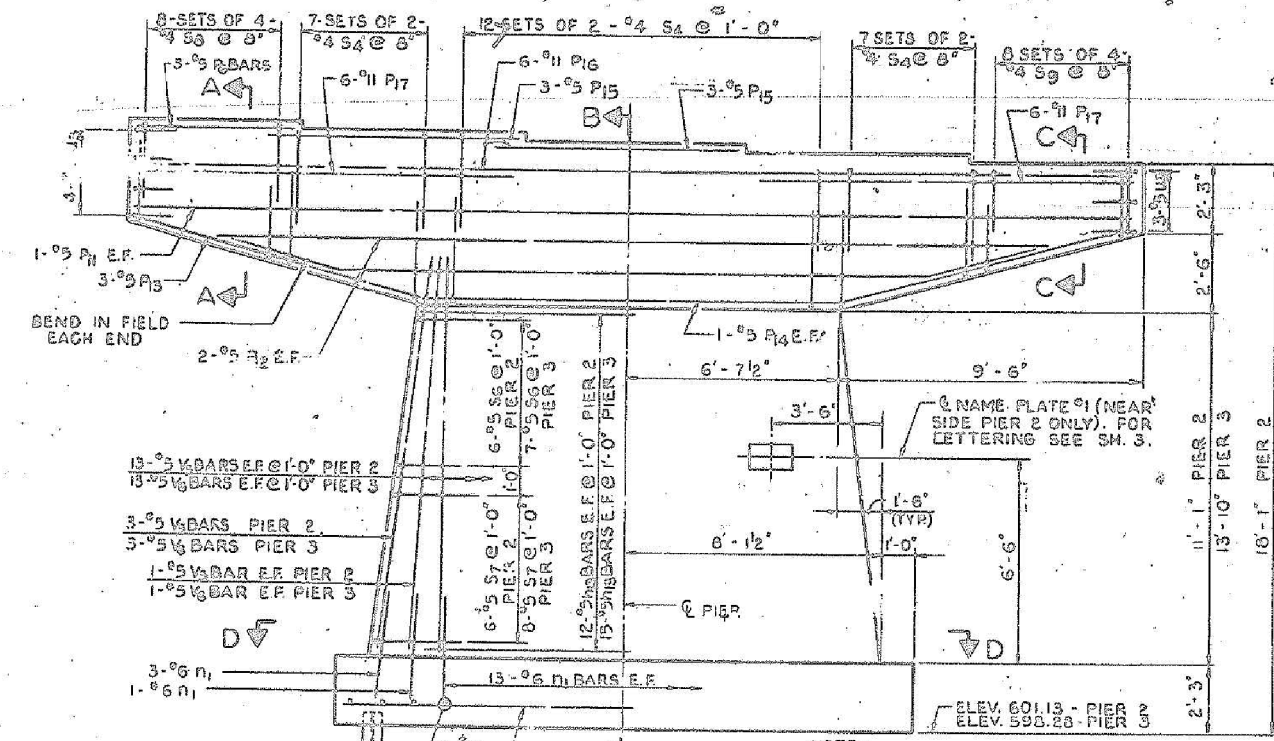


CAP PLAN PIERS 2 & 3
SCALE: 3/8" = 1'-0"

NOTE:
FOR EMBEDDED ELECTRICAL WORK SEE SH. 20.

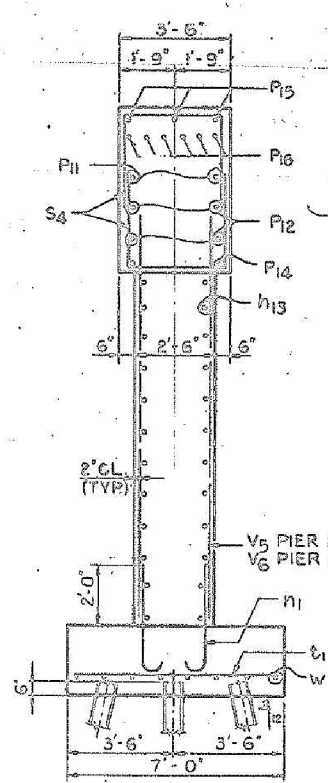


LOCATION PLAN
NOT TO SCALE.

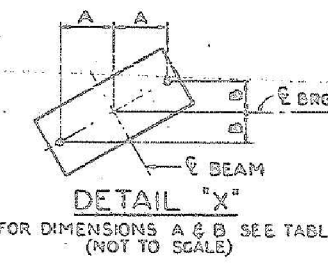


ELEVATION
SCALE: 3/8" = 1'-0"

NOTE:
STEM & FOOTING REINFORCEMENT AND DIMENSIONS SYMMETRICAL ABOUT & PIER.



SECTION B-B
SCALE: 3/8" = 1'-0"



DETAIL "X"
FOR DIMENSIONS A & B SEE TABLE (NOT TO SCALE)

LOCATION	BEAM	A	B
PIER 2	B5 THRU B9	7'12"	4'7 1/2"
	B10 THRU B14	7'5 1/2"	4'3 1/4"
PIER 3	B10 THRU B14	7'12"	4'2 1/2"
	B15 THRU B19	6'5 1/2"	4'4 1/2"

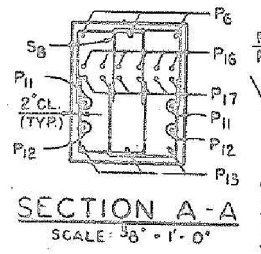
NOTE:
ALL ANCHOR BOLTS TO PROJECT 3" ABOVE FINISHED CONCRETE. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
ALL EDGES TO HAVE STD. 3/4" CHAMFER, EXCEPT AS NOTED.
FOUR STEPS MONOLITHICALLY WITH PIER CAP.

BAR	NUMBER			SIZE	LENG
	PIER 2	PIER 3	TOTAL		
n1	56	56	72	6	4'-3"
n2	3	3	6	3	5'-0"
n3	2	2	4	9	31'-0"
n4	4	4	8	9	27'-0"
n5	6	6	12	5	10'-0"
n6	2	2	4	5	19'-0"
n7	8	8	12	5	8'-0"
n8	6	6	12	11	31'-0"
n9	12	12	24	11	12'-0"

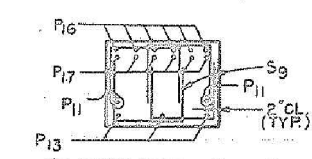
S4	52	52	104	4	9'-0"
S5	12	14	26	5	6'-0"
S7	12	16	28	5	7'-0"
S8	32	32	64	4	7'-0"
S9	32	32	64	4	6'-0"

BAR	C	D
S4	3'-1"	3'-2"
S5	2'-0"	2'-2"
S7	2'-9"	2'-2"
S8	2'-7"	2'-0"
S9	2'-1"	2'-0"
U3	1'-5"	3'-1"

NOTE: ALL BAR DIMENSIONS ARE OUT TO FACE. PREFIX ALL BAR MARKS FOR PIER WITH A NUMBER INDICATING THE PIER THE BARS WILL BE USED. EXAMPLE: P2 S4 MEANS BARS S4 TO BE USED FOR PIER 2.

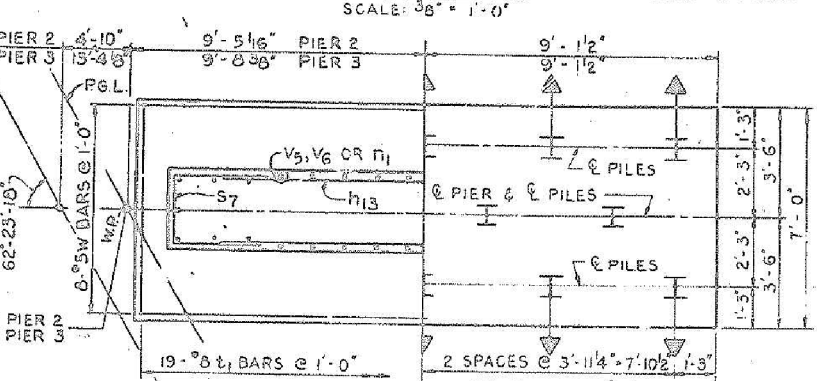


SECTION A-A
SCALE: 3/8" = 1'-0"



SECTION C-C
SCALE: 3/8" = 1'-0"

STA. 114+93.16 - PIER 2
STA. 115+77.91 - PIER 3
DE LEW, CATHOR & CO. ENGINEERS
DESIGNED BY J. BROZ
DRAWN BY M. MADRERY
CHECKED BY E. S. MARTINEZ
IN CHARGE E. S. MARTINEZ
APPROVED L. B. SIEM



SECTION D-D
SCALE: 3/8" = 1'-0"

LOCATION	PIER 2	PIER 3
PILE TYPE	8BP36	8BP36
MIN. CAPACITY, TONS	30	30
NO. REQUIRED	14*	14*
EST. LENGTH, FEET	27	21
CUT OFF ELEV.	601.63	598.78

*INCLUDES TEST PILE.

ITEM	UNIT	QUANTITY	
		PIER 2	PIER 3
CLASS X CONCRETE	CU YD	44.4	48.4
REINFORCEMENT BARS	POUND	4470	4710
FURNISHING STEEL PILES, 8BP36	LIN FT	351	273
TEST PILE, 8BP36	EACH	1	1
DRIVING STEEL PILES	LIN FT	351	273
NAME PLATE	EACH	1	1
CLASS A EXCAVATION FOR STRUCTURES	CU YD	26	39

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESS
RAMP 'E' OVER
SOUTHWEST EXPRESS
PIERS 2 AND 3

FOR INFORMATION ONLY



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

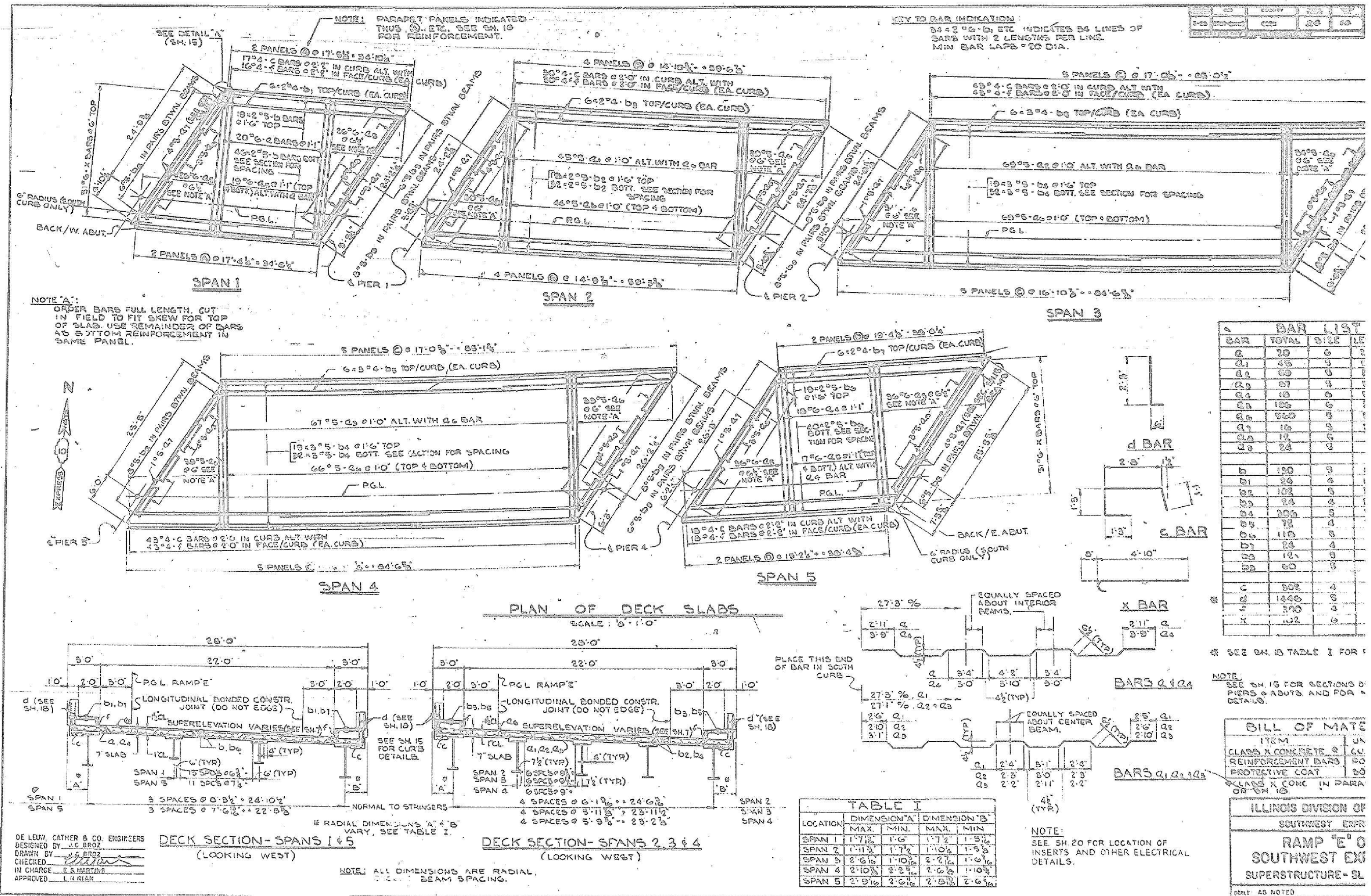
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (5 OF 7)
STRUCTURE NO. 016-1512
SHEET NO. SBX5 OF SBX7 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	164
				CONTRACT NO. 60W77
ILLINOIS FED. AID PROJECT				

FILE NAME	USER NAME	DESIGNED	REVISIONS
0161512.60W77.048.Existing Plans.5.dgn	ksnyder	DMS	-
		JHG	-
		KMS	-
		JHG	-

X:\100000\10093\Eng-Docs-Phase-11\SN-016-1512-SB-1st-Ave-to-NB-155-over-155\Inal\0161512-60W77-048-Existing Plans-5.dgn 10/4/2014 AM 6/23/2014



BAR LIST			
BAR	TOTAL	SIZE	LF
B	20	6	
B1	65	6	
B2	65	6	
B3	67	6	
B4	10	6	
B5	105	6	
B6	550	6	
B7	16	6	
B8	12	6	
B9	24	6	
B10	60	6	
C	502	4	
D	1446	8	
E	540	4	
X	132	6	

SEE SH. 15 TABLE I FOR...

NOTE: SEE SH. 15 FOR SECTIONS OF PIERS & ABUTS. AND FOR DETAILS.

BILL OF MATERIALS	
ITEM	UN
CLASS X CONCRETE	CU
REINFORCEMENT BARS	PO
PROTECTIVE COAT	SO
CLASS X CONC. IN PARAPET OR SH. 15	

ILLINOIS DIVISION OF
SOUTHWEST EXPR
RAMP "E" O
SOUTHWEST EXPR
SUPERSTRUCTURE - SL

SCALE: AS NOTED

LOCATION	DIMENSION "A"		DIMENSION "B"	
	MAX.	MIN.	MAX.	MIN.
SPAN 1	1'-7 1/2"	1'-6"	1'-7 1/2"	1'-5 1/2"
SPAN 2	1'-11 1/2"	1'-7 1/2"	1'-10 1/2"	1'-5 1/2"
SPAN 3	2'-6 1/2"	1'-10 1/2"	2'-2 1/2"	1'-6 1/2"
SPAN 4	2'-10 1/2"	2'-2 1/2"	2'-6 1/2"	1'-10 1/2"
SPAN 5	2'-9 1/2"	2'-6 1/2"	2'-8 1/2"	2'-6 1/2"

NOTE: SEE SH. 20 FOR LOCATION OF INSERTS AND OTHER ELECTRICAL DETAILS.

benesch
engineers - scientists - planners

Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME = ksnider
DESIGNED - DMS	REVISOR -
CHECKED - JHG	REVISOR -
DRAWN - KMS	REVISOR -
IN CHARGE - E.S. MARTINEZ	REVISOR -
APPROVED - L.N. RIAN	REVISOR -
PLOT SCALE =	
PLOT DATE = 6/23/2014	

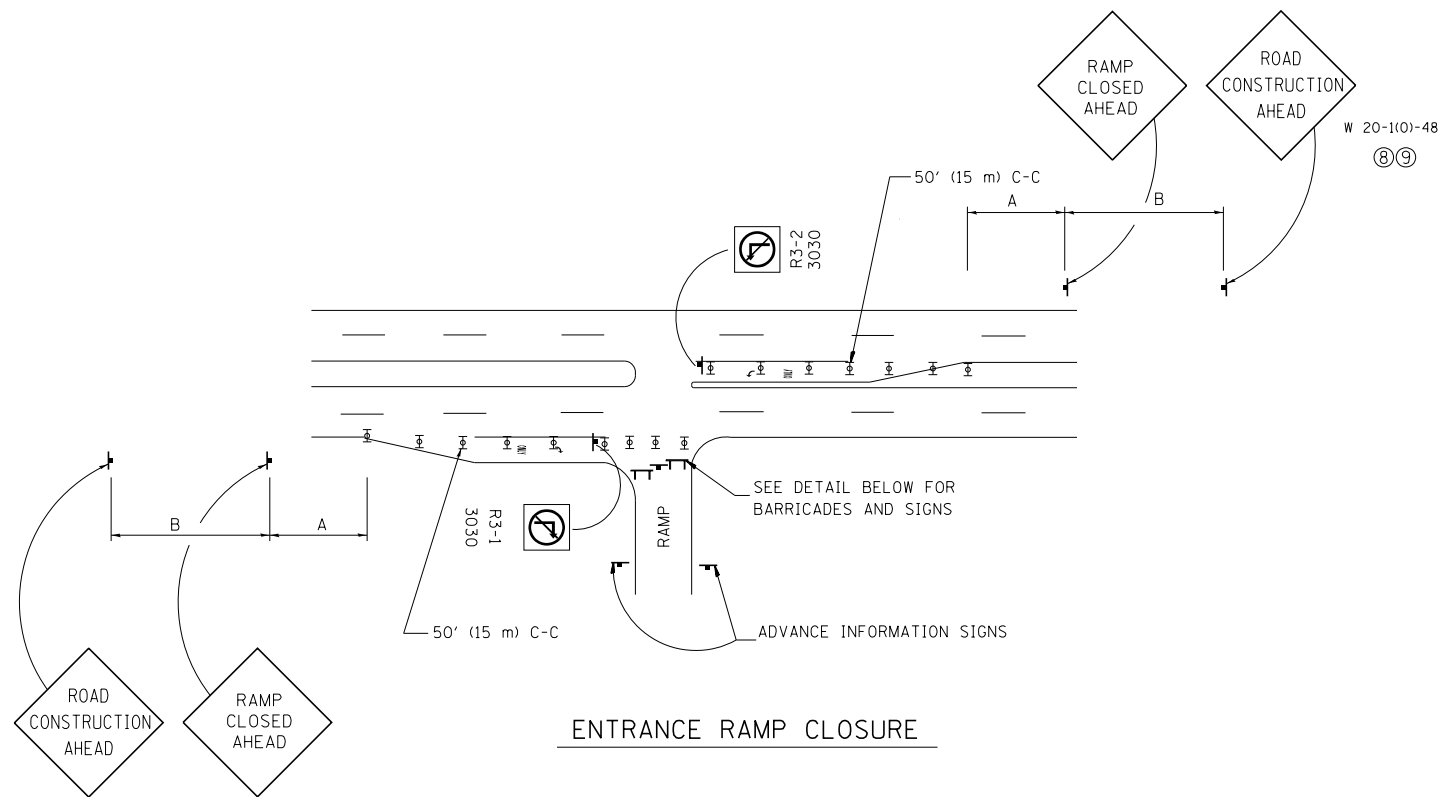
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (6 OF 7)
STRUCTURE NO. 016-1512
SHEET NO. SBX6 OF SBX7 SHEETS

FOR INFORMATION ONLY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	(0707-608&611)HB-B	COOK	177	165
CONTRACT NO. 60W77			ILLINOIS FED. AID PROJECT	

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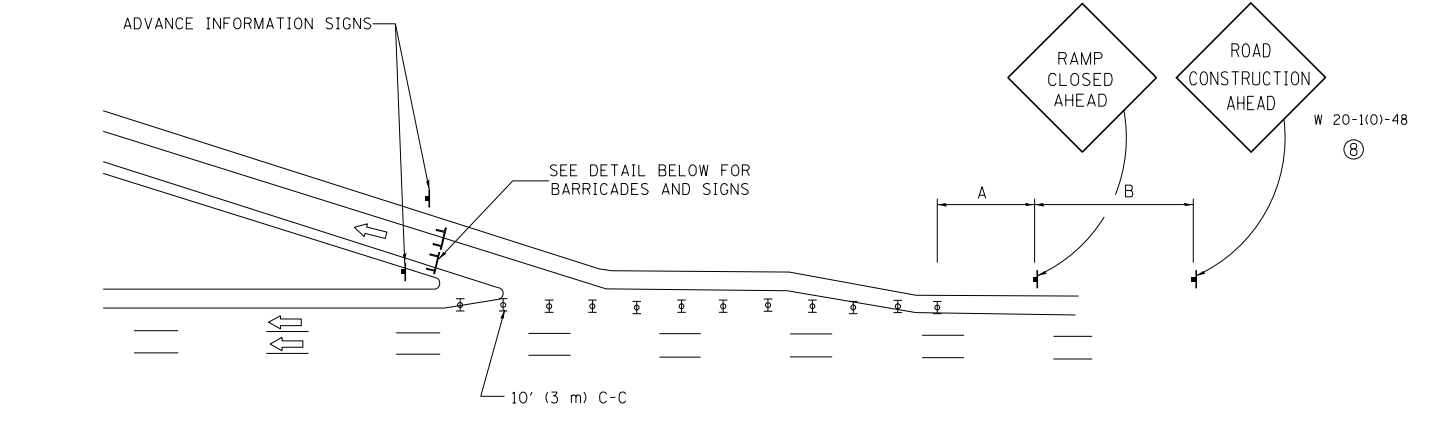
ENTRANCE RAMP CLOSURE

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 ≥45 MPH	350' (100 m)	350' (100 m)
ARTERIAL <45 MPH	150' (45 m)	150' (45 m)

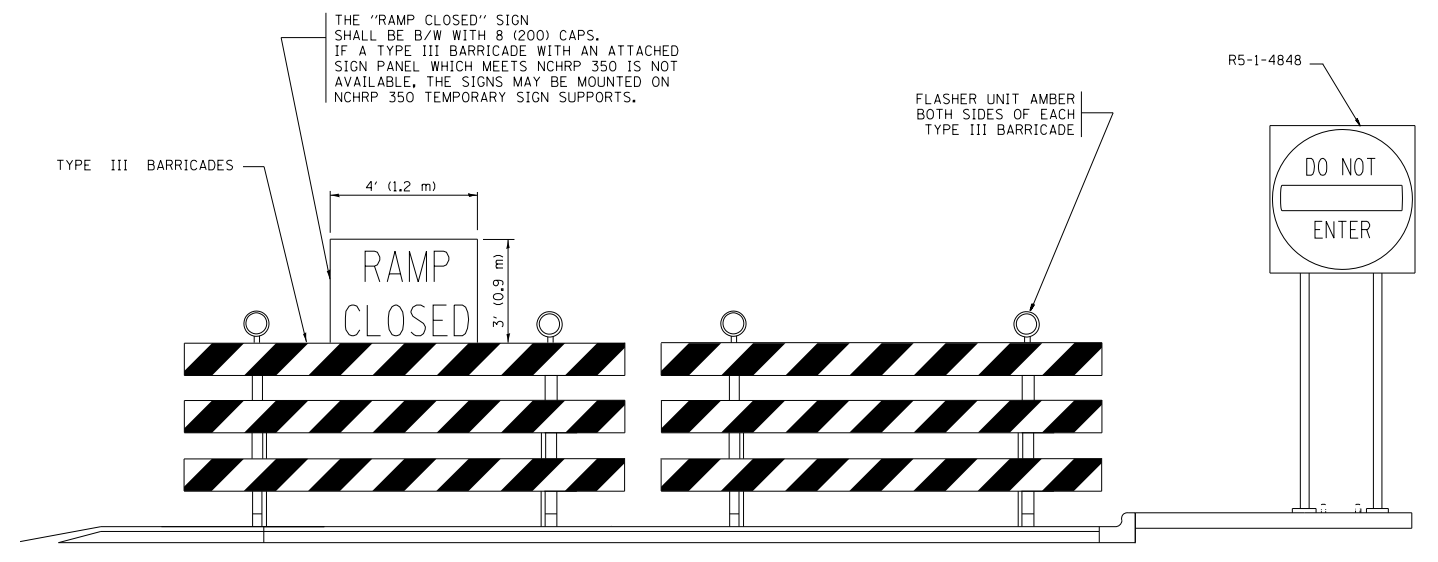
DISTANCES MAY BE SHORTENED DEPENDING UPON THE PROXIMITY OF ADJACENT RAMPS OR INTERSECTIONS.

W 20-1(0)-48
⑧⑨

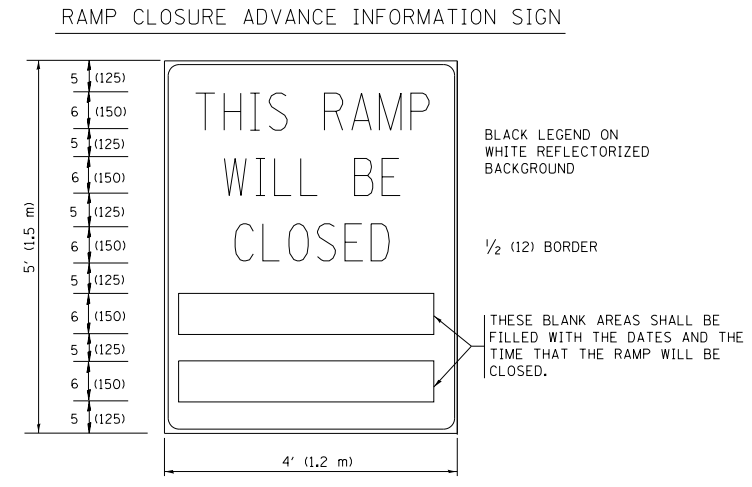
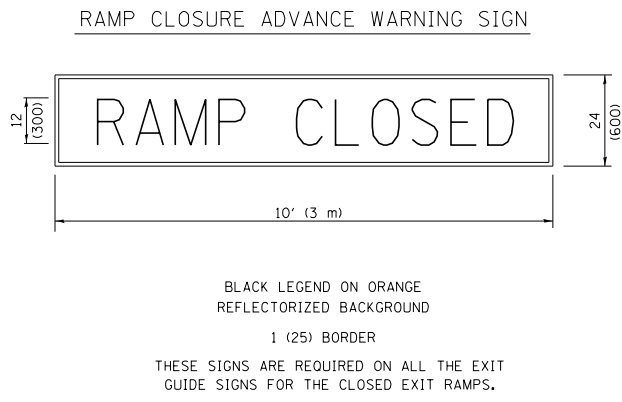


EXIT RAMP CLOSURE

- SYMBOLS**
- ⊥ TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT
 - ⊓ TYPE III BARRICADE WITH FLASHING LIGHT



DETAIL FOR REQUIRED BARRICADES & SIGNS



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

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.
- ④ ALL ROUTE MARKERS AND TRAILBLAZER ASSEMBLIES WHICH DIRECT MOTORISTS TO A CLOSED ENTRANCE RAMP SHALL BE COVERED.
- 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 TWENTY-FOUR (24) HOURS 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 MAY BE OMITTED ON CLOSURES LESS THAN 24 HOURS IN DURATION.

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

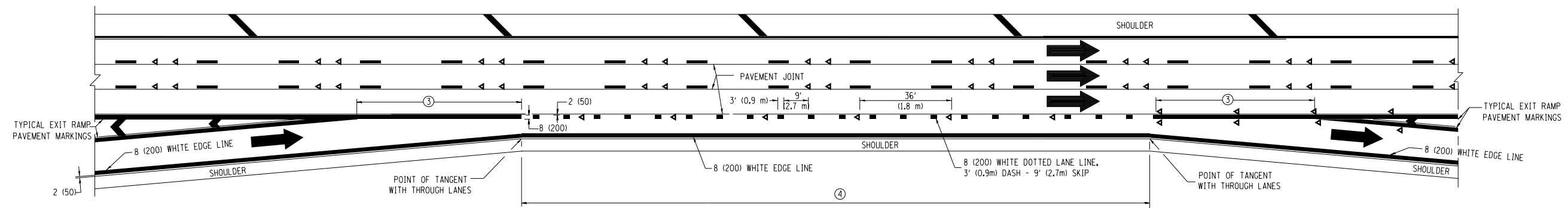
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		DRAWN -	REVISED - JAF 02-06
		CHECKED -	REVISED - SPB 01-07
		DATE - 02-83	REVISED - SPB 12-09

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

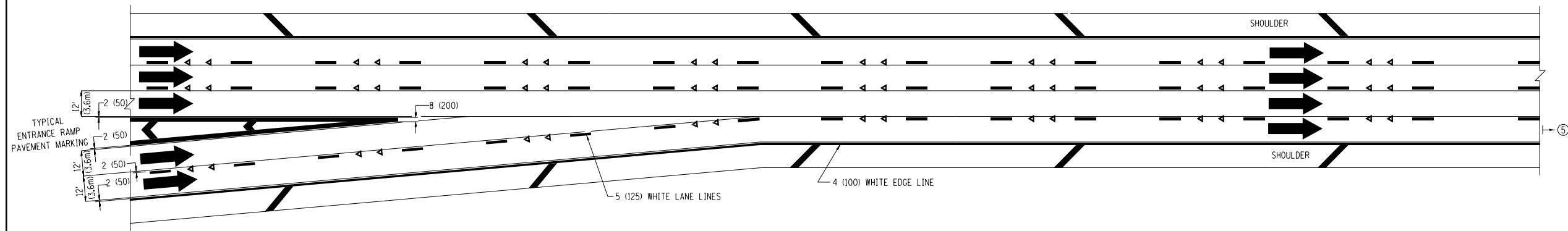
**FREEWAY ENTRANCE AND EXIT RAMP
CLOSURE DETAILS**

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

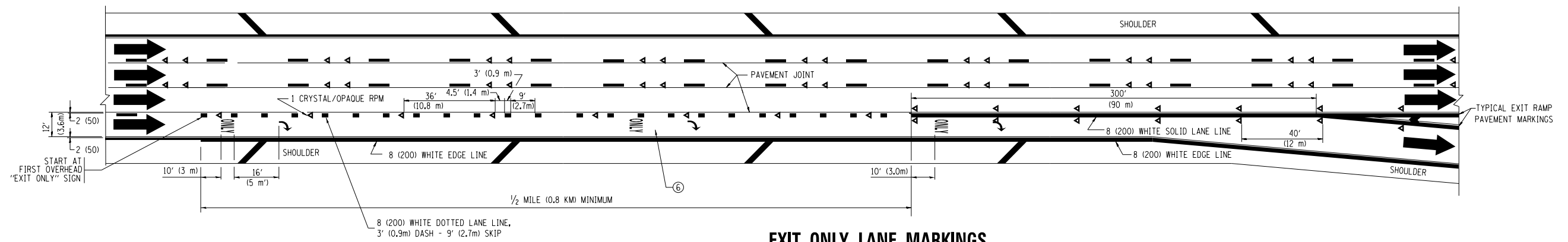
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	(0707-608&611)HB-B	COOK	177	167
TC-08			CONTRACT NO. 60W77	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



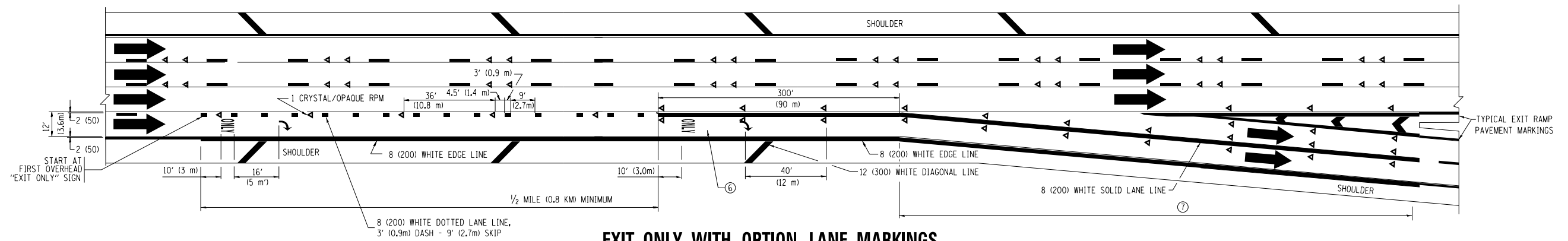
AUXILIARY LANE MARKINGS



TWO LANE ENTRANCE RAMP WITH MERGE MARKINGS



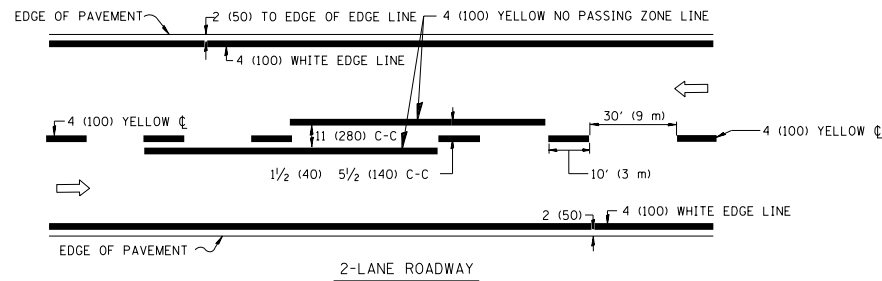
EXIT ONLY LANE MARKINGS



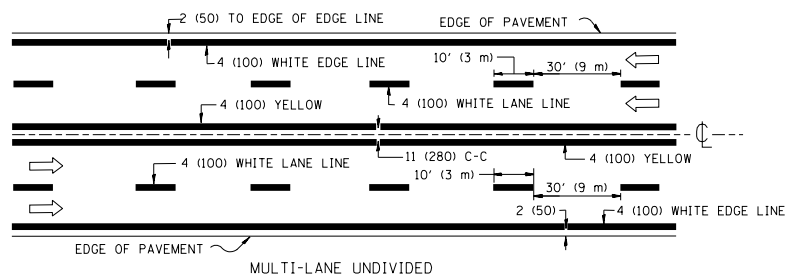
EXIT ONLY WITH OPTION LANE MARKINGS

- NOTES**
- ③ OMIT WHEN LENGTH OF AUXILIARY LANE IS LESS THAN 500' (150 m).
 - ④ 8-INCH WIDE DOTTED LANE LINE MARKINGS SHALL BE USED WHEN THE LENGTH OF THE AUXILIARY LANE IS 2 MILES OR LESS.
 - ⑤ FOR TWO-LANE ENTRANCE RAMP, IF RIGHT LANE ENDS, USE TYPICAL ENTRANCE RAMP PAVEMENT MARKINGS.
 - ⑥ ONLY AND ARROWS EQUALLY SPACED, 500' (150 m) MAXIMUM SPACING. FULL SIZE LETTERS AND ARROW SHALL BE USED.
 - ⑦ CONTINUE 8" SOLID LANE LINE THROUGH EXIT TO END OF PAVED GORE.

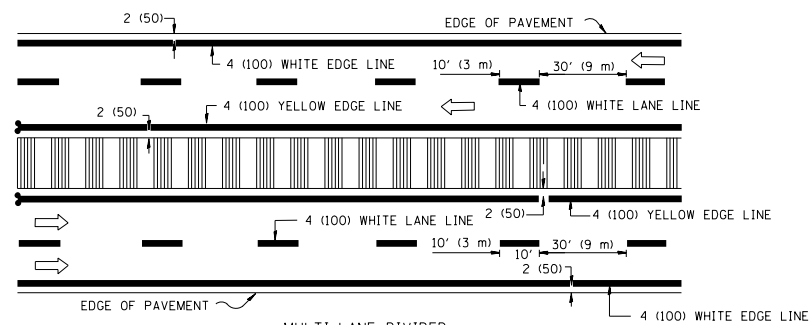
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	PLOT SCALE =	CHECKED -	REVISED - J.A.F. 02-06		SCALE: NONE	SHEET NO. 2 OF 2 SHEETS	STA.	TO STA.	(0707-6088&611)HB-B	COOK	177	169
	PLOT DATE = 6/23/2014	DATE - 01-90	REVISED - S.P.B. 01-07					TC-12		CONTRACT NO. 60W77		
			REVISED - S.P.B. 01-10					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



2-LANE ROADWAY



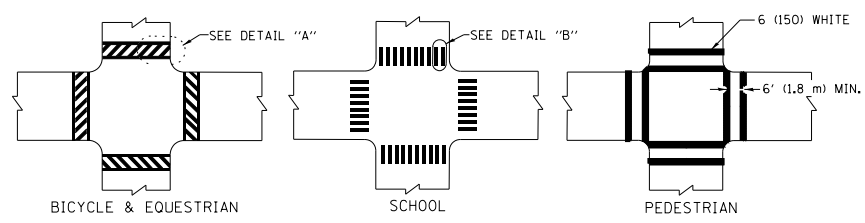
MULTI-LANE UNDIVIDED



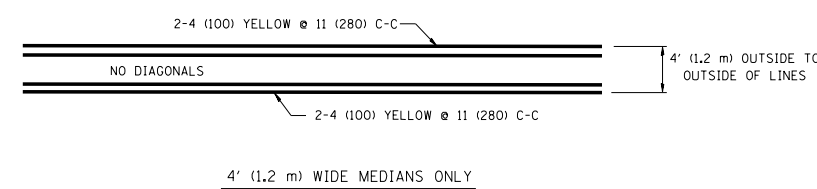
MULTI-LANE DIVIDED WITH MOUNTABLE MEDIAN

NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

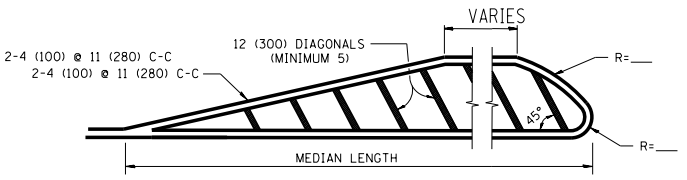
TYPICAL LANE AND EDGE LINE MARKING



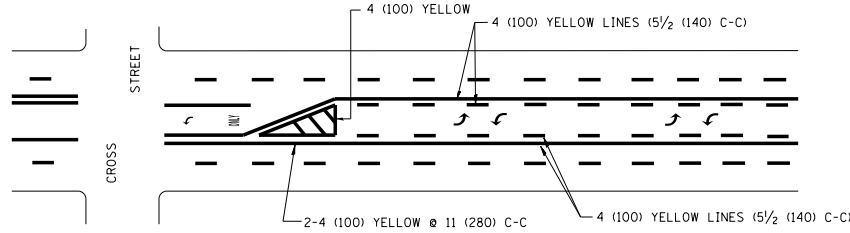
TYPICAL CROSSWALK MARKING



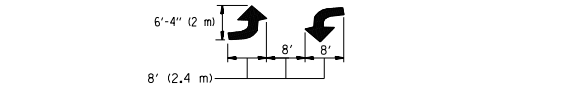
4' (1.2 m) WIDE MEDIANS ONLY



MEDIANS OVER 4' (1.2 m) WIDE



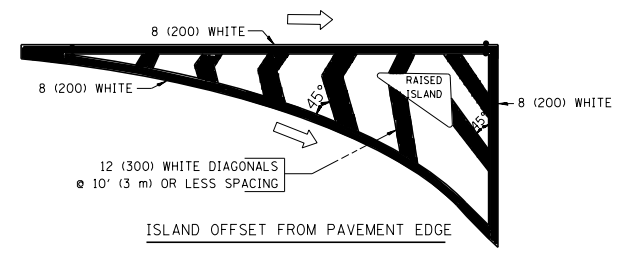
TYPICAL PAINTED MEDIAN MARKING



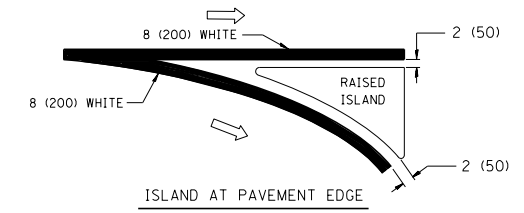
TYPICAL LEFT (OR RIGHT) TURN LANE

FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED.
 AREA = 15.6 SQ. FT. (1.5 m²) ONLY AREA = 20.8 SQ. FT. (1.9 m²)
 * TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL TURN LANE MARKING



ISLAND OFFSET FROM PAVEMENT EDGE



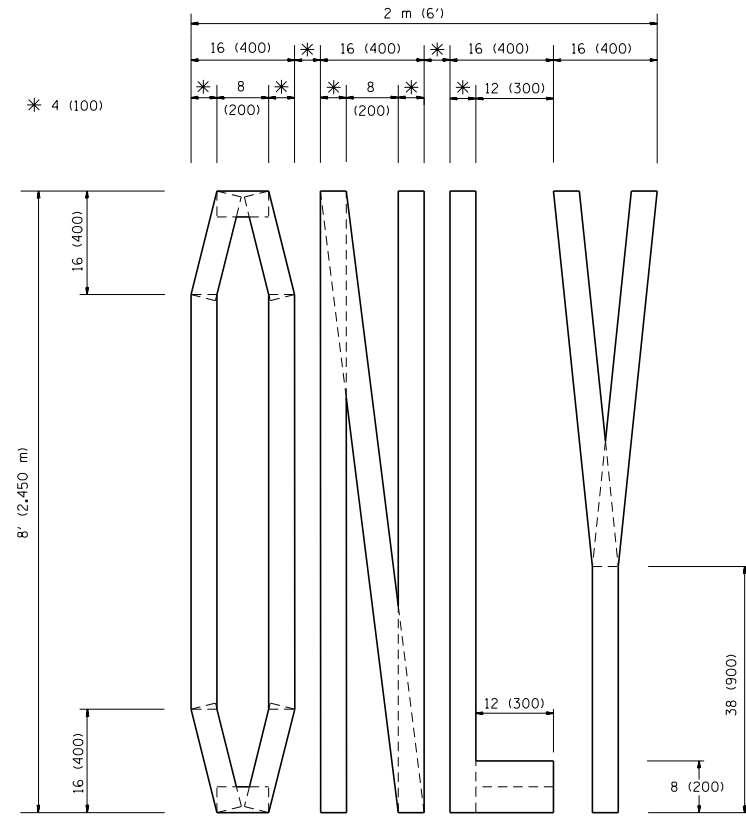
ISLAND AT PAVEMENT EDGE

TYPICAL ISLAND MARKING

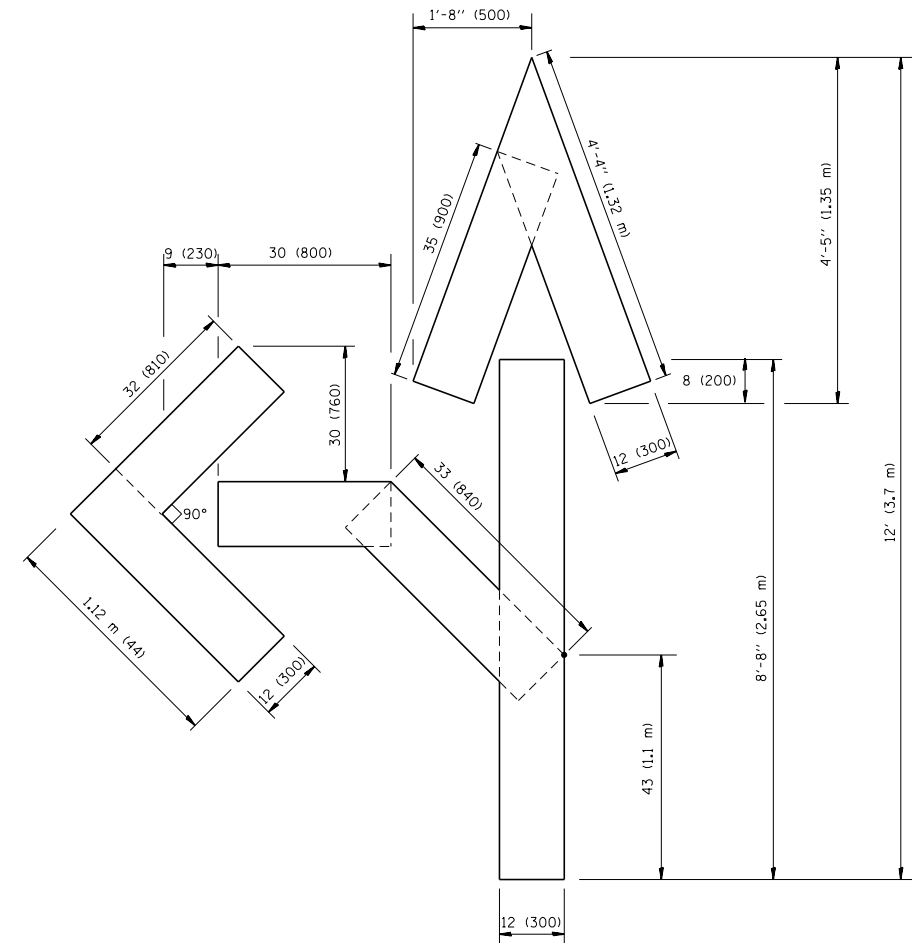
TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C
NO PASSING ZONE LINES FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 (100) 2 @ 4 (100)	SOLID SOLID	YELLOW YELLOW	5/2 (140) C-C FROM SKIP-DASH CENTERLINE 11 (280) C-C OMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8 m) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MOUNTABLE MEDIANS IN YELLOW; EDGE LINES ARE NOT USED NEXT TO BARRIER CURB
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION 8' (2.4m) LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH; 5/2 (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN) A. DIAGONALS (BIKE & EQUESTRIAN) B. LONGITUDINAL BARS (SCHOOL)	2 @ 6 (150) 12 (300) @ 45° 12 (300) @ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 6' (1.8 m) APART 2' (600) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT, OTHERWISE, PLACE AT DESIRED STOPPING POINT, PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45° NO DIAGONALS USED FOR 4' (1.2 m) WIDE MEDIANS	SOLID	YELLOW; TWO WAY TRAFFIC WHITE; ONE WAY TRAFFIC	11 (280) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 15' (4.5 m) C-C (LESS THAN 30MPH (50 km/h)) 20' (6 m) C-C (30MPH (50 km/h) TO 45MPH (70 km/h)) 30' (9 m) C-C (OVER 45MPH (70 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES; "RR" 15' (4.5 m) MIN. LETTERS; 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=3.6 SQ. FT. (0.33 m ²) EACH "X"=54.0 SQ. FT. (5.0 m ²)
SHOULDER DIAGONALS	12 (300) @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	50' (15 m) C-C (LESS THAN 30MPH (50 km/h)) 75' (25 m) C-C (30 MPH (50 km/h) TO 45MPH (70 km/h)) 150' (45 m) C-C (OVER 45MPH (70 km/h))

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STATE STANDARD 780001.

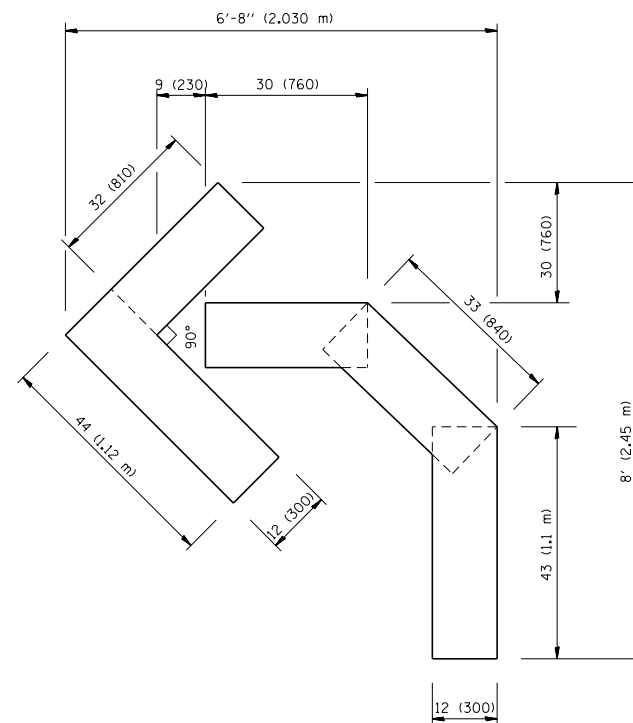
All dimensions are in inches (millimeters) unless otherwise shown.



QUANTITY
 4 (100) LINE = 64.1 ft. (19.7 m)
 21.1 sq. ft. (1.97 sq. m)



QUANTITY
 4 (100) LINE = 82.5 ft. (25.3 m)
 27.5 sq. ft. (2.53 sq. m)



QUANTITY
 4 (100) LINE = 45.5 ft. (13.9 m)
 15.2 sq. ft. (1.39 sq. m)

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

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		DRAWN -	REVISED -T. RAMMACHER 11-04-97
	PLOT SCALE =	CHECKED -	REVISED -T. RAMMACHER 03-02-98
	PLOT DATE = 6/23/2014	DATE - 09-18-94	REVISED -E. GOMEZ 08-28-00

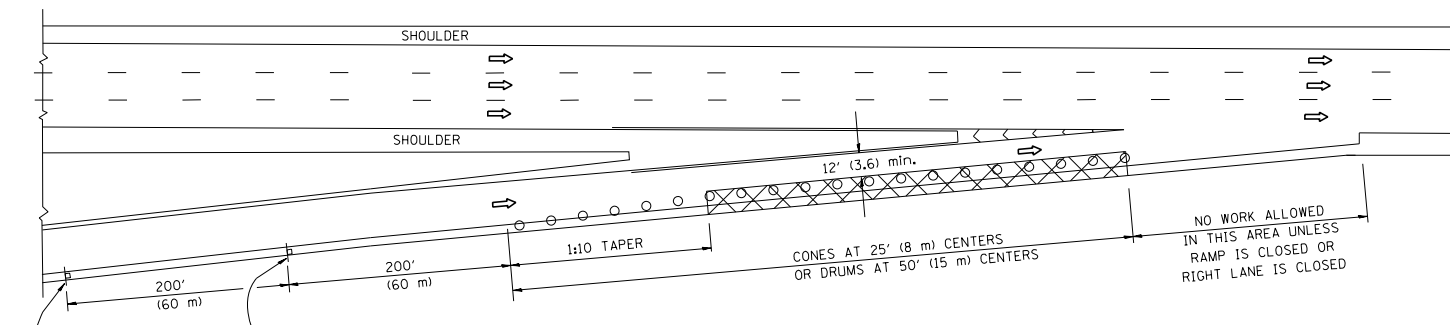
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING LETTERS AND SYMBOLS
 FOR TRAFFIC STAGING

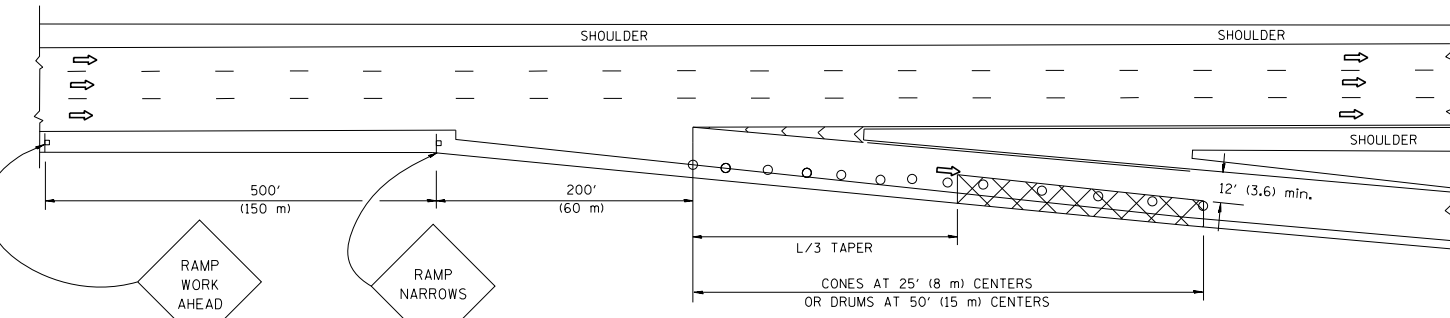
SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	(0707-608&611)HB-B	COOK	177	171
TC-16		CONTRACT NO. 60W77		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

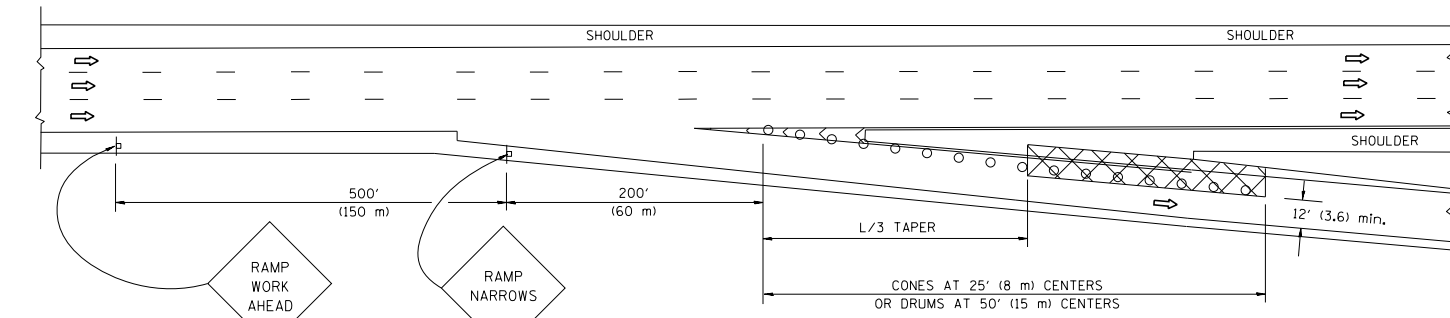
PARTIAL RAMP CLOSURE DETAILS



TYPICAL ENTRANCE RAMP



TYPICAL EXIT RAMP



TYPICAL EXIT RAMP

SYMBOLS

- ACTIVE WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- FLAGGER WITH CONTROL SIGN
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT
- CONE, DRUM OR BARRICADE

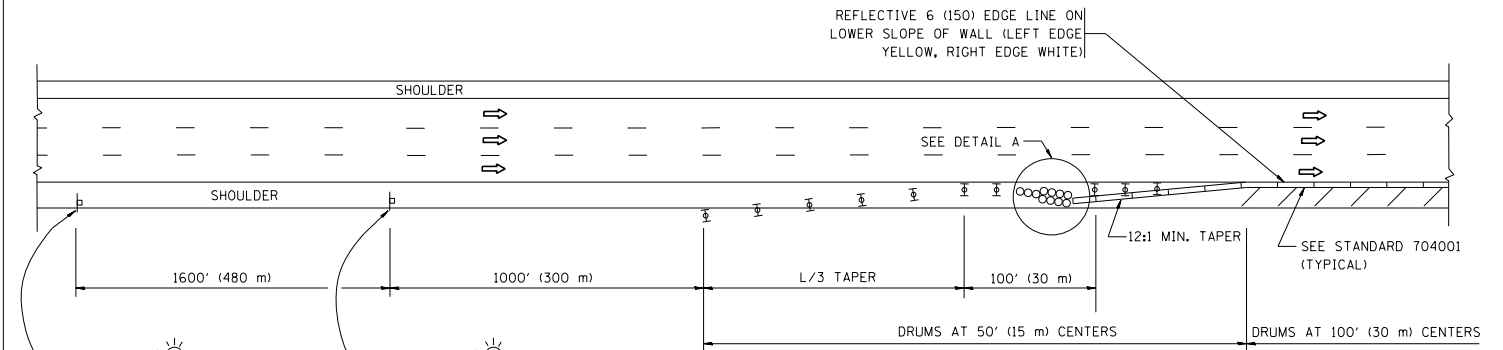
GENERAL NOTES

1. THE "L" DISTANCE EQUALS:

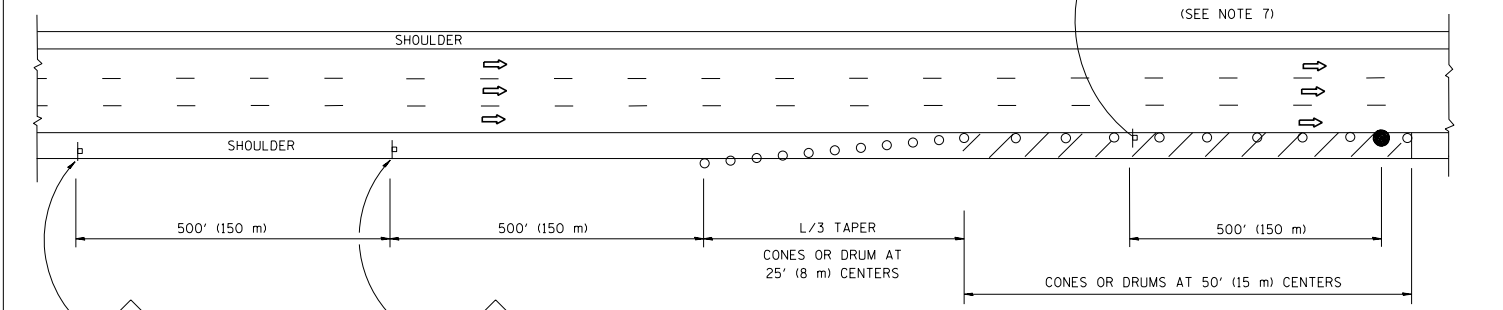
SPEED LIMIT	FORMULAS
45 mph (80 km/h) OR GREATER:	METRIC ENGLISH
	$L=0.65(W)(S)$ $L=(W)(S)$

W = WIDTH OF OFFSET IN FEET (METERS)
S = NORMAL POSTED SPEED MPH (KM/H)
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.

SHOULDER CLOSURE DETAILS

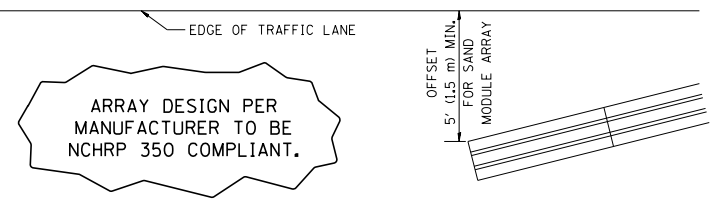


PERMANENT SHOULDER CLOSURE



DAYTIME SHOULDER CLOSURE

THIS DETAIL IS USED WHERE:
1. VEHICLES, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCRANCH IN AN AREA CLOSER THAN 15' (4.5 m) TO THE EDGE OF PAVEMENT FOR A PERIOD IN EXCESS OF 15 MINUTES.



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

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

FILE NAME = ...Standards\DI160W77-1017.dgn	USER NAME = tblank	DESIGNED - DRAWN - D.W.S.	REVISED - 04-03 REVISED - J.A.F. 12-06 REVISED - S.P.B. 01-07 REVISED - S.P.B. 12-09
PLOT SCALE =	CHECKED -	DATE - 11-96	
PLOT DATE = 6/23/2014	DATE -		

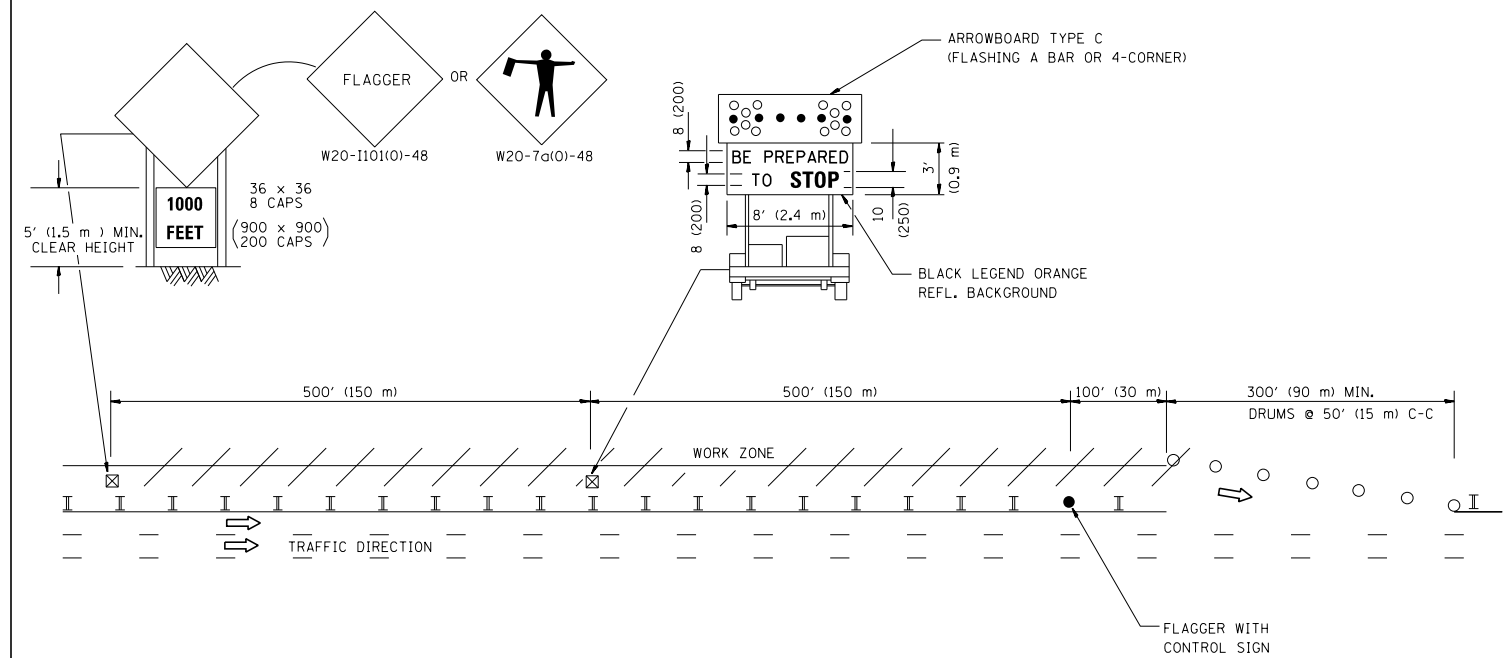
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

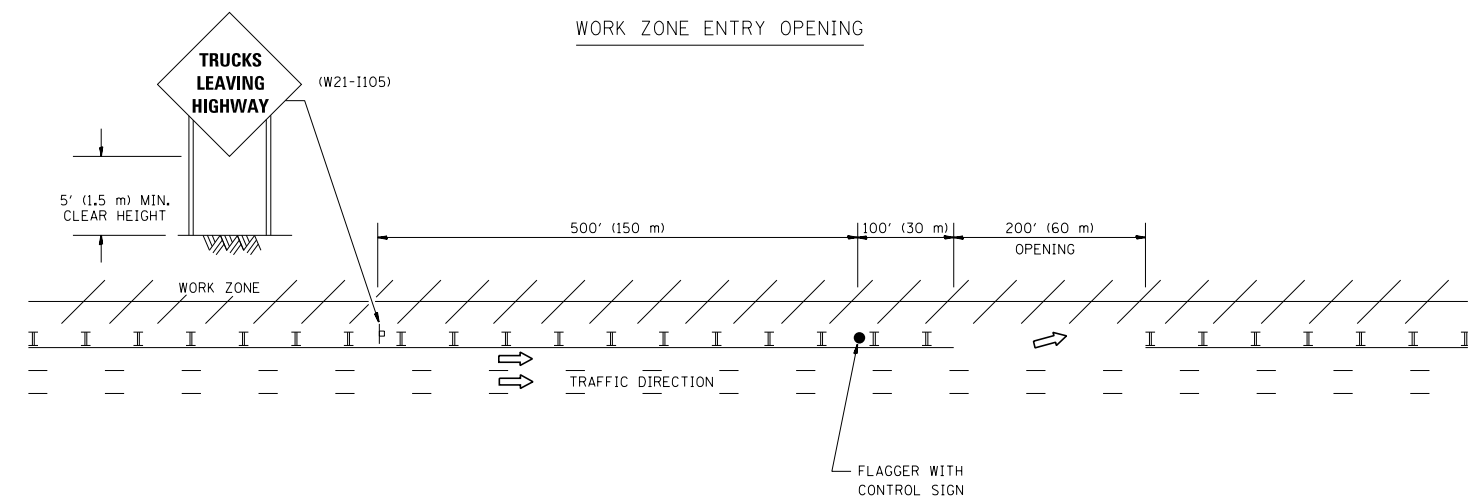
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	(0707-608&611)HB-B	COOK	177	172
TC-17		CONTRACT NO. 60W77		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS

WORK ZONE EXIT OPENING



WORK ZONE ENTRY OPENING



NOTES:

1. THE ARROWBOARD, THE FLAGGER AHEAD SIGN AND THE TRUCKS LEAVING HIGHWAY SIGN 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 EXIT OPENINGS SHOULD BE A MINIMUM OF ONE HALF MILE APART.
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

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

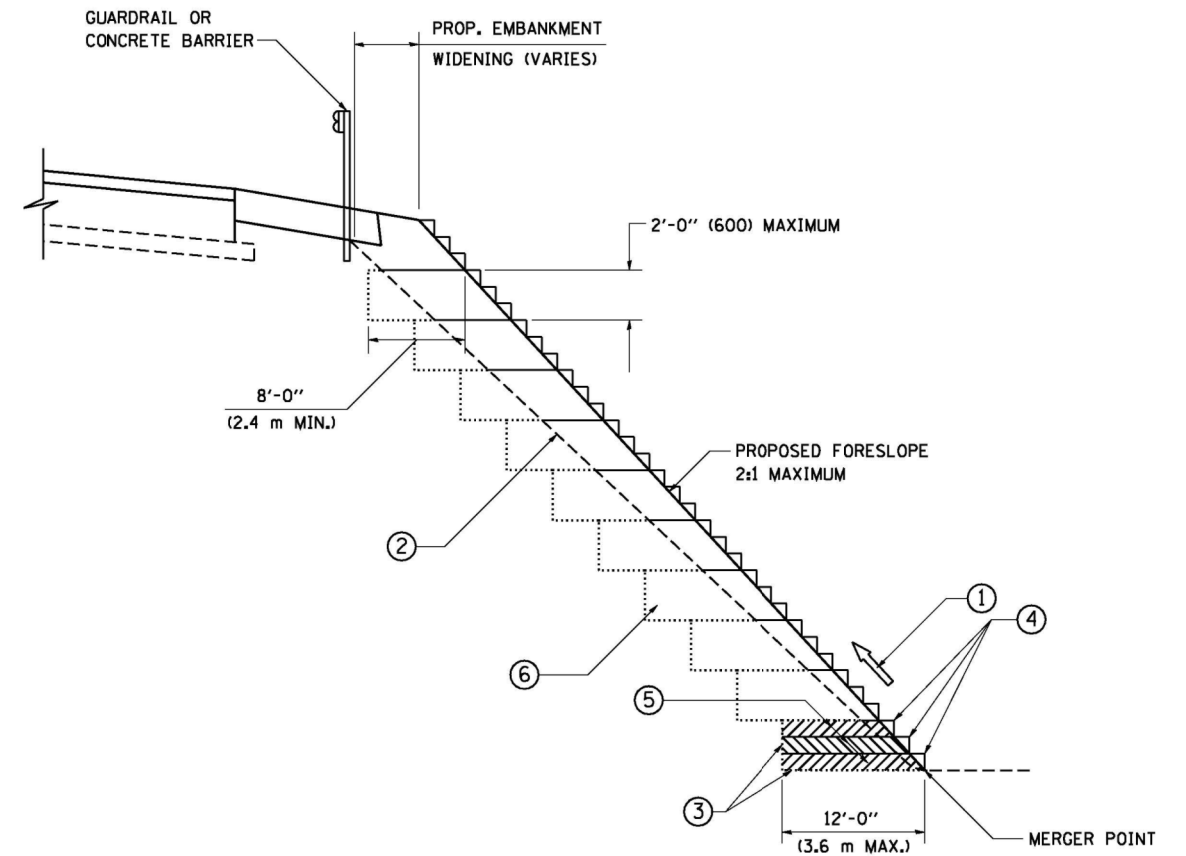
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	PLOT SCALE =	CHECKED -	REVISED - S.P.B. 01-07
	PLOT DATE = 6/23/2014	DATE -	REVISED - S.P.B. 12-09

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SIGNING FOR FLAGGING OPERATIONS
AT WORK ZONE OPENINGS**

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	(0707-608&611)HB-B	COOK	177	173
TC-18			CONTRACT NO. 60W77	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



**TYPICAL BENCHING DETAIL
FOR EMBANKMENT**

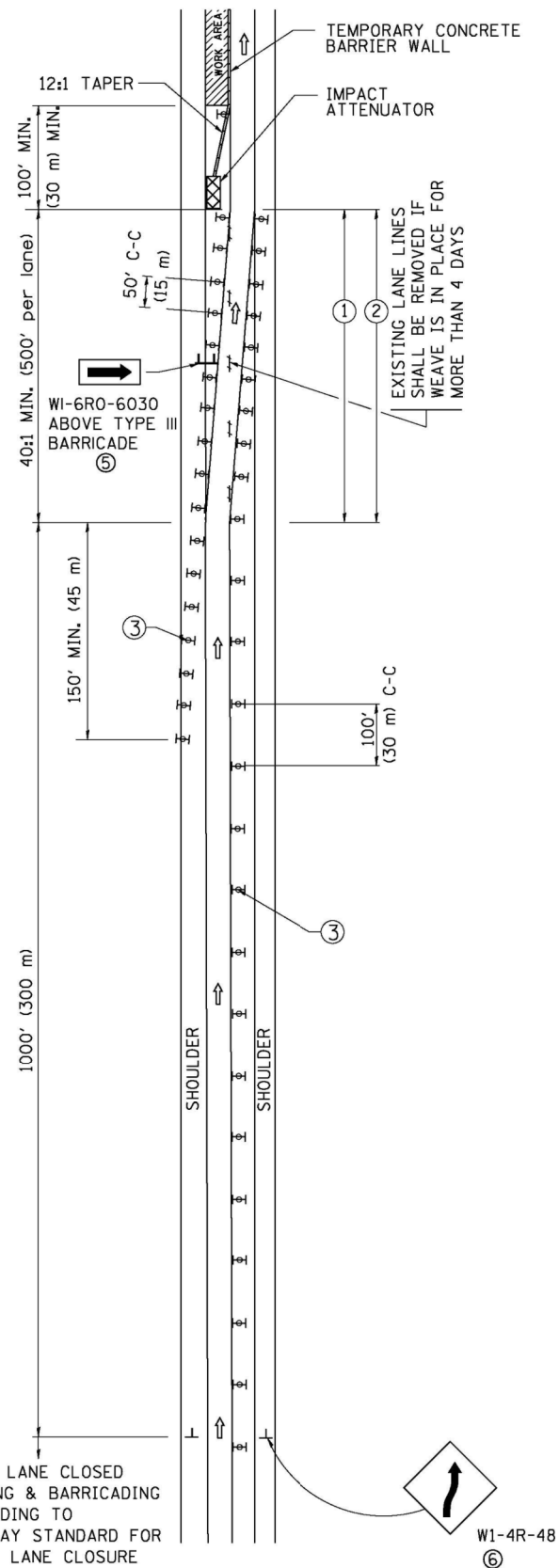
NOTES:

- ① CONSTRUCT SUCCEEDING BENCH CUTS AND EMBANKMENT PLACEMENT AND COMPACTION FROM BOTTOM TO TOP IN STAIRSTEP FASHION.
- ② EXISTING FORESLOPE PREPARED IN ACCORDANCE WITH ARTICLE 205.03 OF THE STANDARD SPECIFICATIONS.
- ③ BENCH CUT EXISTING SLOPE TYPICAL FOR EACH STEP.
- ④ TRIM TO FINAL SLOPE.
- ⑤ EQUAL 8-INCH (200) LIFTS OF EMBANKMENT COMPACTED IN ACCORDANCE WITH ARTICLE 205.05 OF THE STANDARD SPECIFICATIONS.
- ⑥ EXCAVATION OF BENCH CUTS WITHIN EXISTING EMBANKMENT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC METER OR CUBIC YARD FOR "EARTH EXCAVATION". THIS PRICE WILL INCLUDE ALL LABOR AND MATERIAL, NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- ⑦ SLOPES SHALL BE BENCHED ACCORDING TO THIS DETAIL WHEN THE SLOPE IS STEEPER THAN 4:1 AND THE HEIGHT IS GREATER THAN 5' (1.5 m).

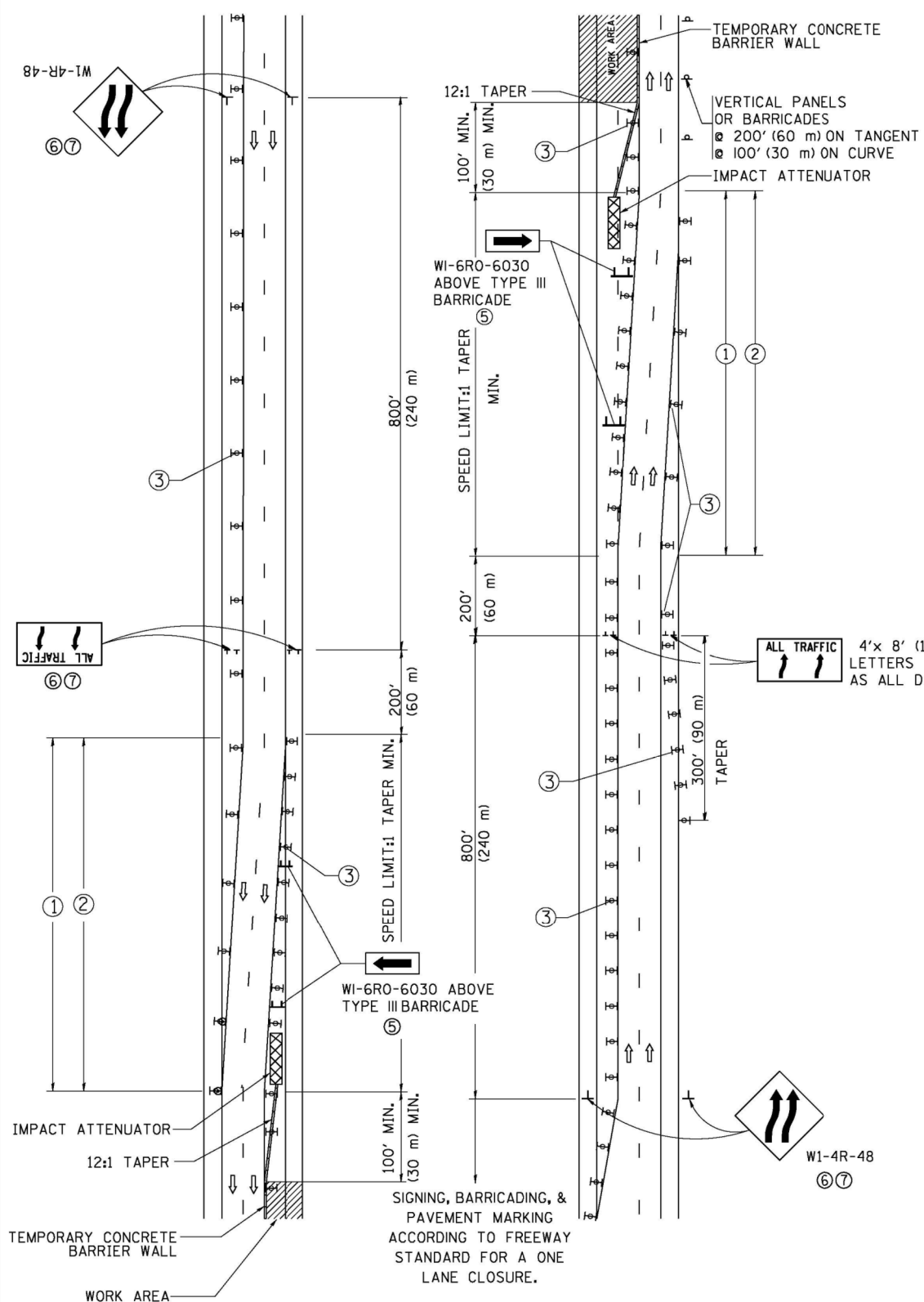
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS)
UNLESS OTHERWISE SHOWN.

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	PLOT SCALE = 50.0000' / IN.	CHECKED - S.E.B.	REVISED -		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	373	(10707-60B & 611)HB-B	COOK
PLOT DATE = 1/4/2008	DATE - 06-16-04	REVISED -	REVISED -					BD-51		CONTRACT NO. 60W77	
								FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			

SINGLE LANE WEAVE

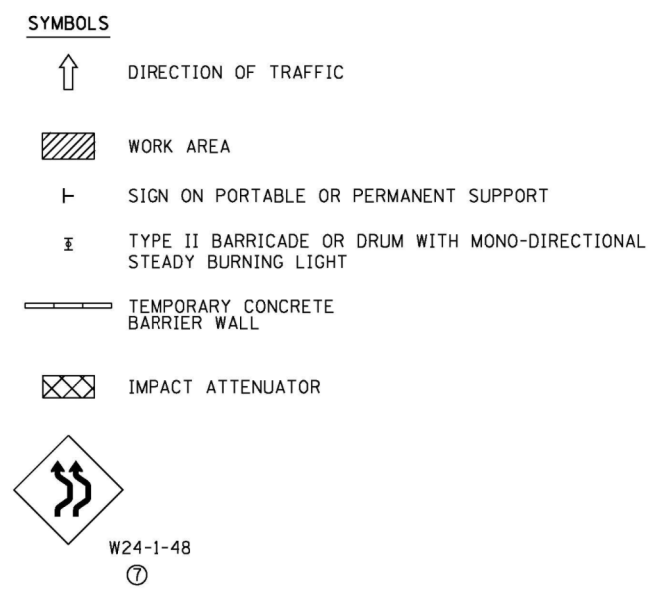


MULTI-LANE WEAVE



- ### GENERAL NOTES
- EXISTING CONFLICTING PAVEMENT MARKING LINES SHALL BE REMOVED. PAVEMENT MARKING REMOVAL SHALL NOT BE REQUIRED FOR SINGLE LANE WEAVES UNDER 4 DAYS IN DURATION.
 - CONTINUOUS REFLECTIVE 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 LEFT EDGE LINE SHALL BE YELLOW AND THE RIGHT EDGE LINE SHALL BE WHITE. FOR MULTI-LANE WEAVES LANE LINES SHALL BE 5 INCH, 10'-30' (3 m-9 m) SKIP DASH, WHITE.
 - PLASTIC DRUMS WITH STEADY BURN LIGHTS AT 50' (15 m) C-C SPACING IN TAPERS AND 100' (30 m) C-C SPACING IN TANGENTS.
 - ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
 - TYPE III BARRICADES MAY BE OMITTED FOR SINGLE-LANE WEAVES UNDER 24-HOURS IN DURATION. W1-6 SIGNS WILL STILL BE REQUIRED. IF THE WIDTH OF OFFSET IS LESS THAN 6' THEN THE TYPE III BARRICADE WITH ATTACHED ARROW SIGN PANEL CAN BE ELIMINATED IN THE TAPER AREAS.
 - WHEN THE LENGTH OF THE SHIFTED SEGMENT (DISTANCE BETWEEN WEAVE POINTS) IS LESS THAN 1500', DOUBLE REVERSE CURVE SIGNS (W24-1) SHOULD BE USED INSTEAD OF THE REVERSE CURVE (W1-4) SIGNS. ARROWS ON THE 4'X8' "ALL TRAFFIC" SIGNS SHALL BE THE SAME SHAPE.
 - THE NUMBER OF ARROWS ON THESE SIGNS SHALL MATCH THE NUMBER OF LANES OPEN TO TRAFFIC.

4'x 8' (1.2 m x 2.4 m); 1 (25) BORDER; 10 (250) CAPITAL LETTERS BACKGROUND SHEETING SHALL BE THE SAME AS ALL DIAMOND SHAPED CONSTRUCTION SIGNS.

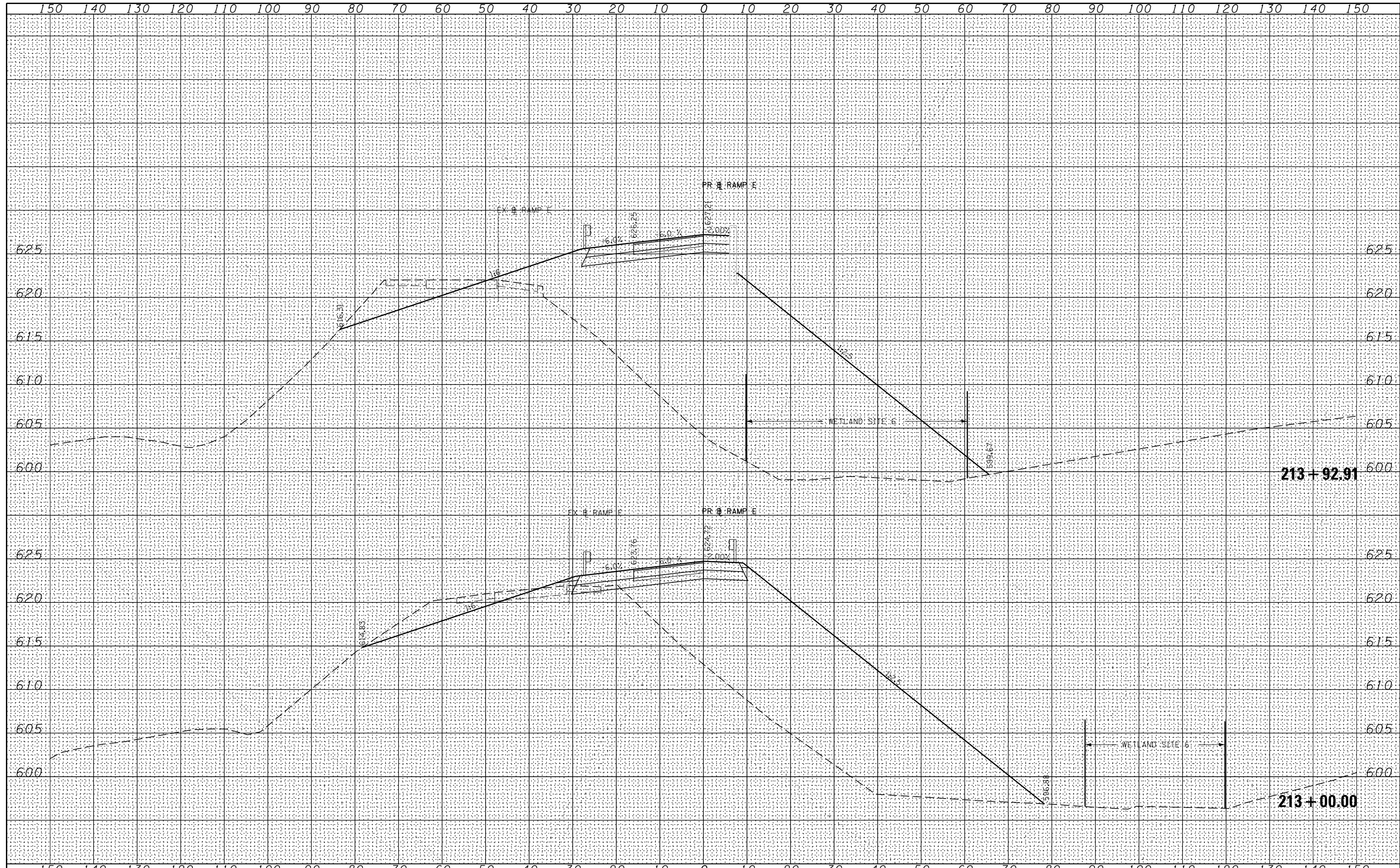


ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

FILE NAME =	USER NAME = faotemj	DESIGNED - DWS	REVISED - JAF 02-06	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC CONTROL DETAILS FOR FREEWAY SINGLE & MULTI-LANE WEAVE	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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		CHECKED -	REVISED - SPB 12-09			TC-09		CONTRACT NO. 60W77			
		DATE - 02-87	REVISED - MD 06-13			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
				SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.				

DATE	
BY	
FINAL SURVEY NO.	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY NO.	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	



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...\\D160W77-shr-xssht-prrampe.dgn	DRAWN - TMB	REVISED -
USER NAME = tblank	CHECKED - JMM	REVISED -
PLOT DATE = 12/19/2013	DATE - 6/23/2014	REVISED -



STATE OF ILLINOIS
DIVISION OF TRANSPORTATION

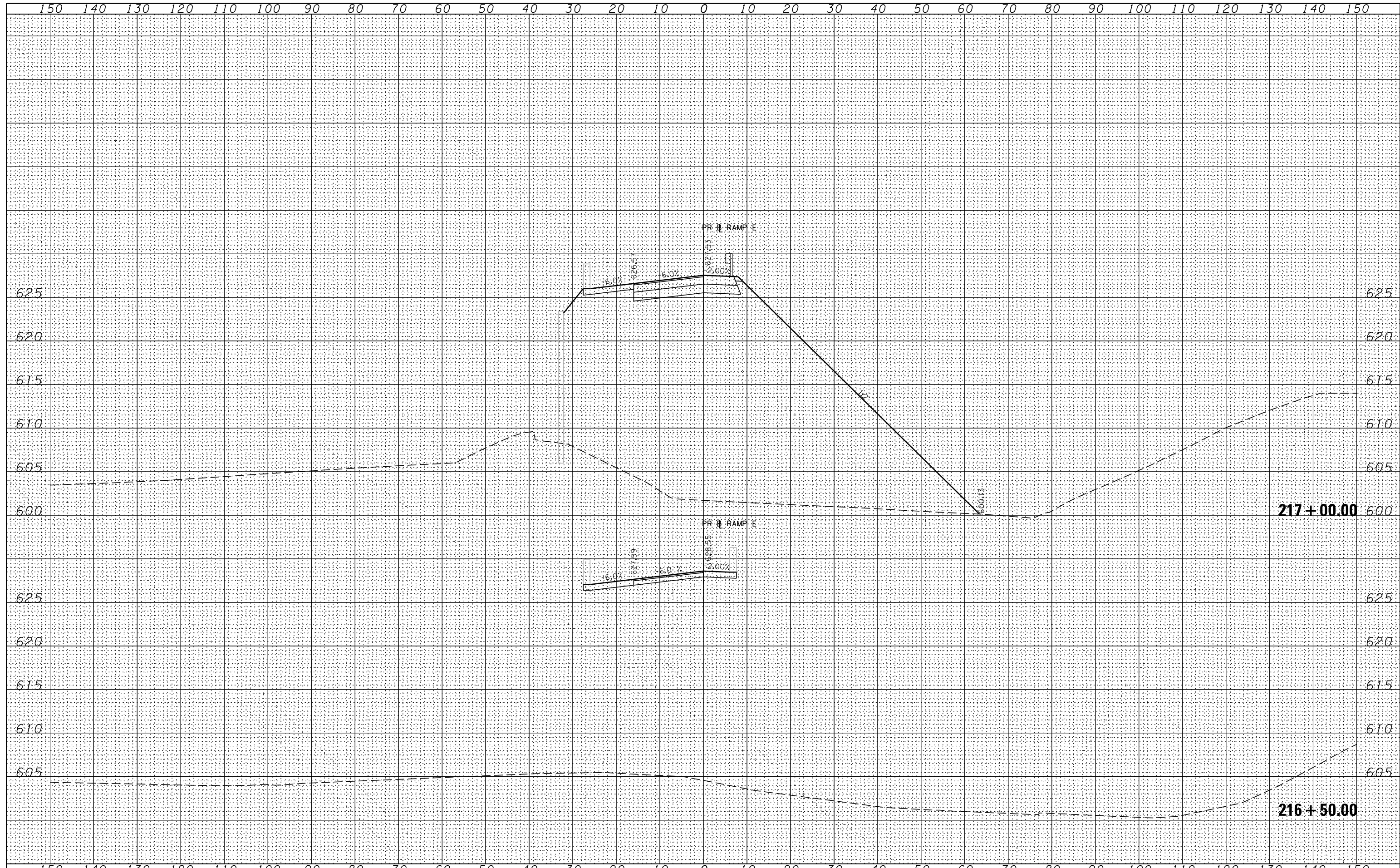
CROSS SECTIONS - RAMP E

SCALE: H 1"=10', V 1"=5' SHEET NO. 157 OF 159 SHEETS STA. 213+00.00 TO STA. 213+85.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	10707 - 608 & 611HB-B	COOK	177	175
CONTRACT NO. 60W77				

DATE	
BY	
FINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED

DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED



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PLOT DATE = 12/19/2013	DATE - 6/23/2014	REVISED -



STATE OF ILLINOIS
DIVISION OF TRANSPORTATION

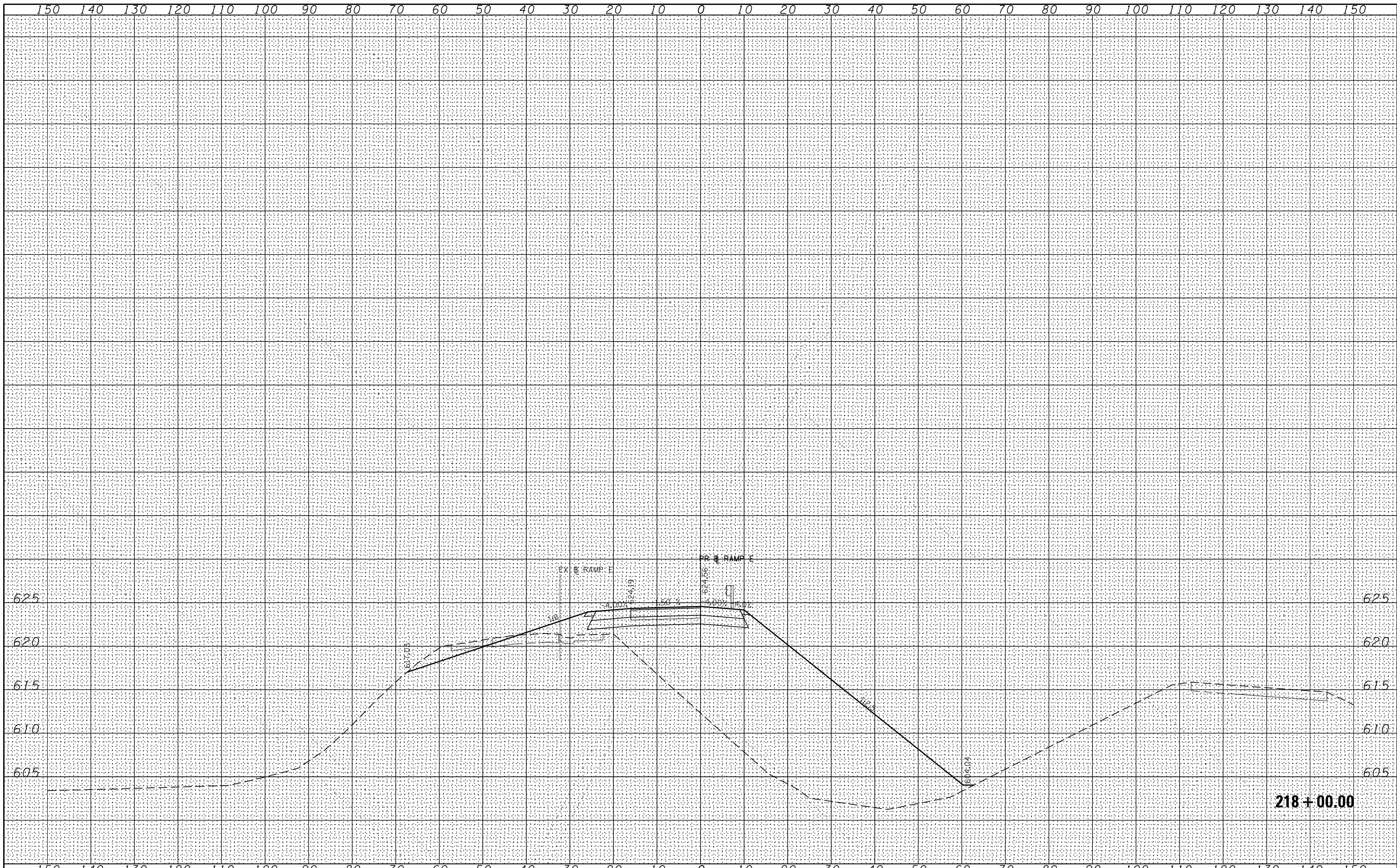
CROSS SECTIONS - RAMP E

SCALE: H 1"=10', V 1"=5' SHEET NO. 158 OF 159 SHEETS STA. 216+45.00 TO STA. 217+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	10707 - 608 & 6111HR-B	COOK	177	176
				CONTRACT NO. 60W77
<small>ILLINOIS FED. AID PROJECT</small>				

DATE	
BY	
FINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED

DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED



FILE NAME =	DESIGNED - AAA	REVISED - ___
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USER NAME = tblank	CHECKED - JMM	REVISED - ___
PLOT DATE = 12/19/2013	DATE - 6/23/2014	REVISED - ___



STATE OF ILLINOIS
DIVISION OF TRANSPORTATION

CROSS SECTIONS - RAMP E

SCALE: H 1"=10', V 1"=5' SHEET NO. 159 OF 159 SHEETS STA. 218+00.00 TO STA. 218+00.00

F.A.P. RT#	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	.0707 - 608 & 611HB-B	COOK	177	177
				CONTRACT NO. 60W77
ILLINOIS FED. AID PROJECT				