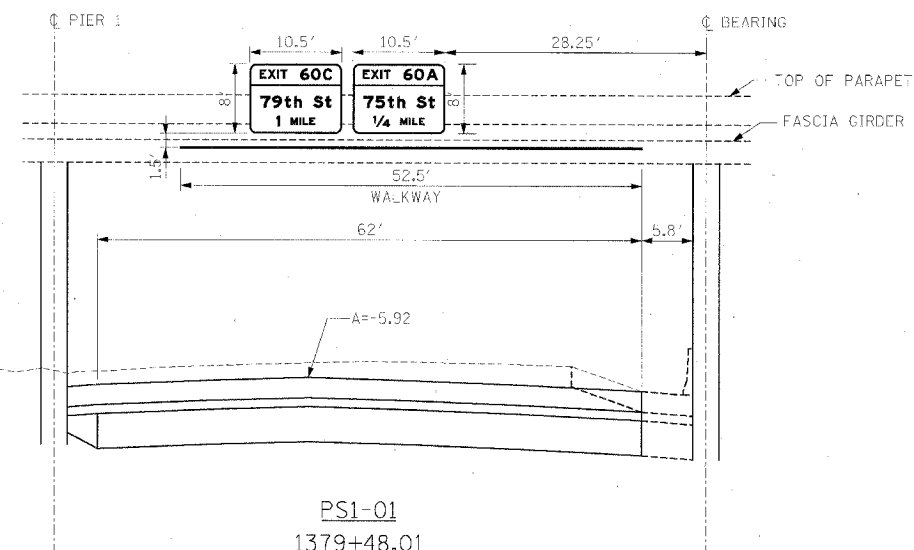
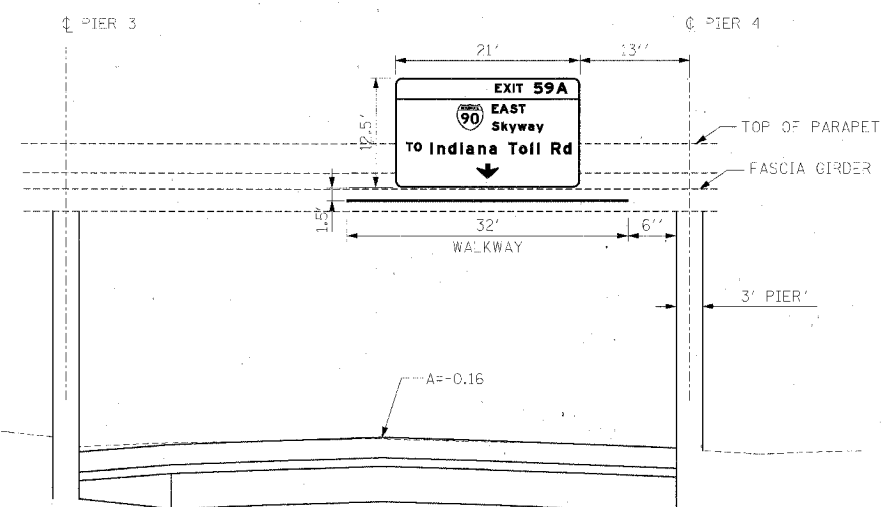


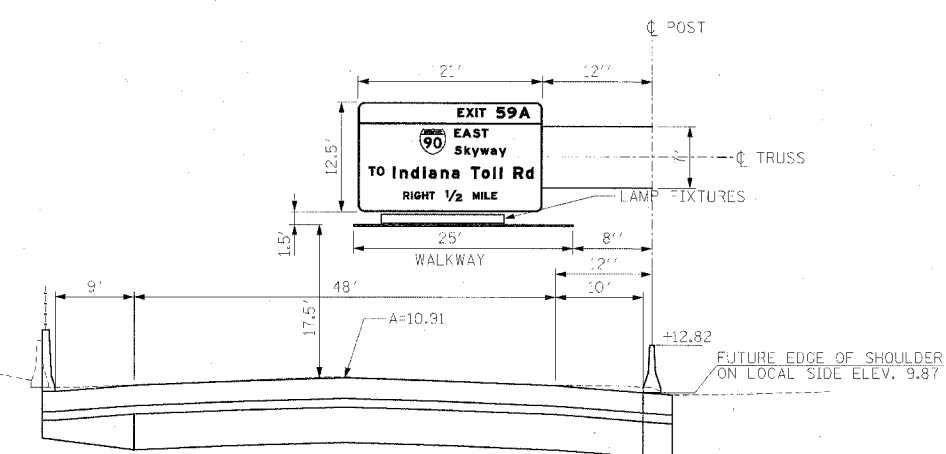
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	302
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302	* (1818, ETC, 2324.6-1)PR-9			



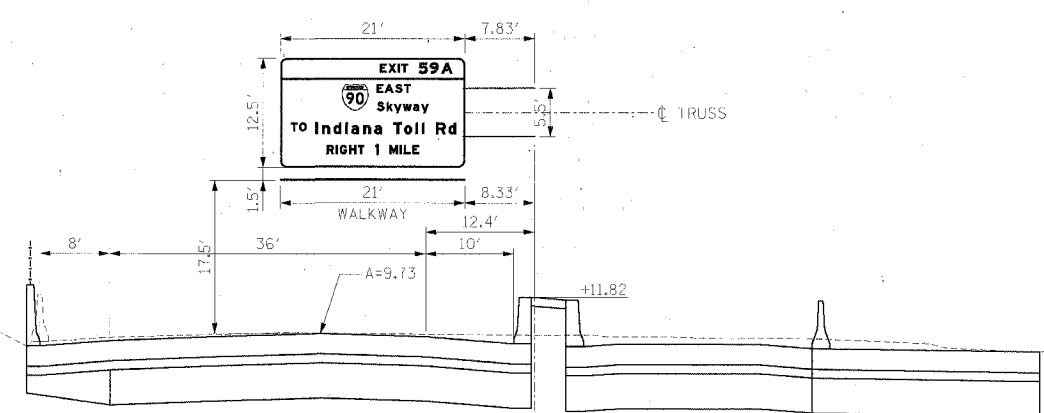
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LOOKING SOUTH
(BRIDGE MOUNT)



PS4-03
1462+62.82
LOOKING SOUTH
(BRIDGE MOUNT)



PS5-01
1486+00.00
LOOKING SOUTH
(CANTILEVER)



PS6-02
1514+30.00
LOOKING SOUTH
(CANTILEVER)

Edwards AND Kelcey
ONE NORTH FRANKLIN
CHICAGO, IL 60606
PHONE: (312) 251-3000
FAX: (312) 251-3015
WEB: WWW.EKCORP.COM

REVISIONS	
NAME	DATE

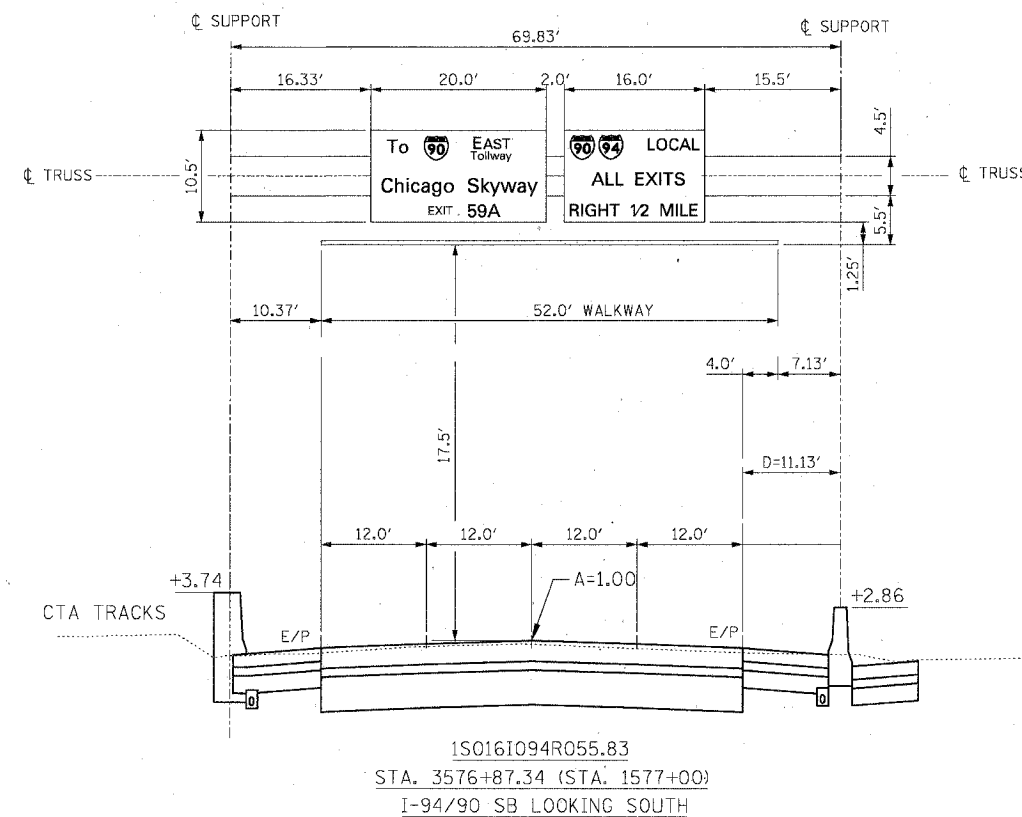
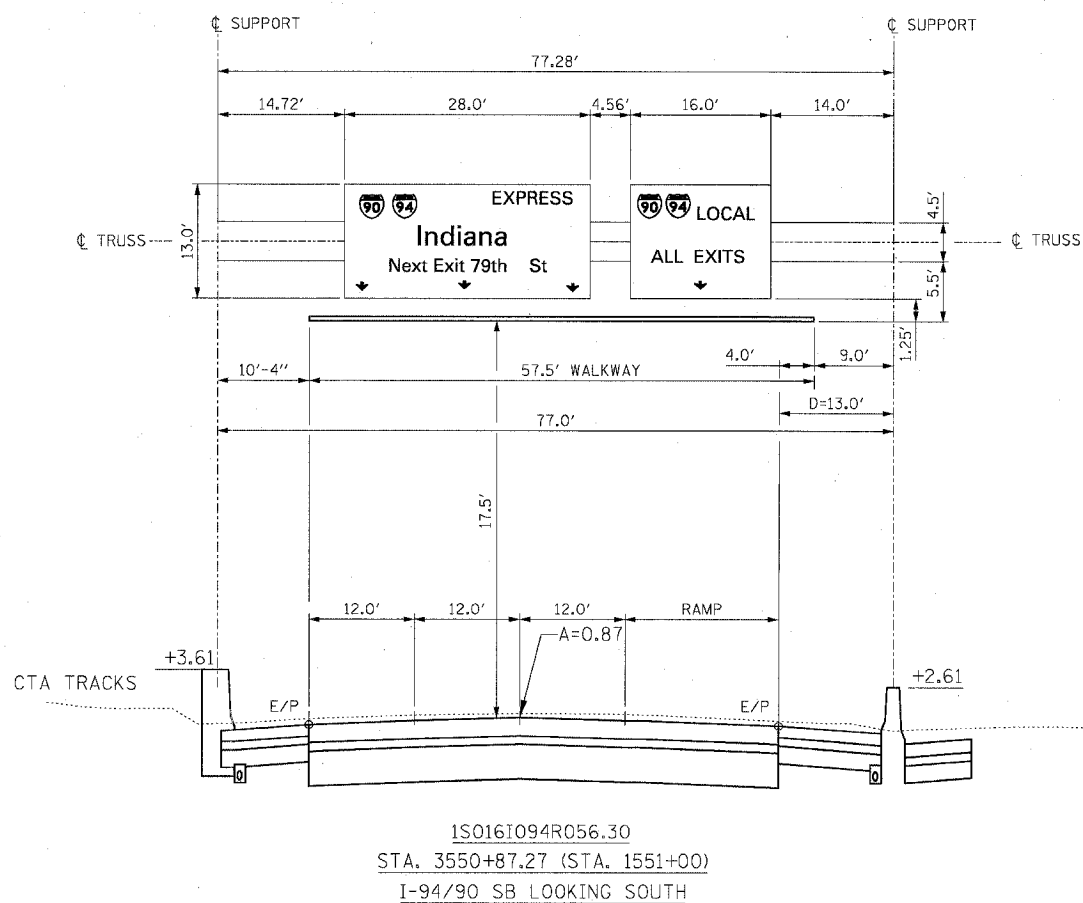
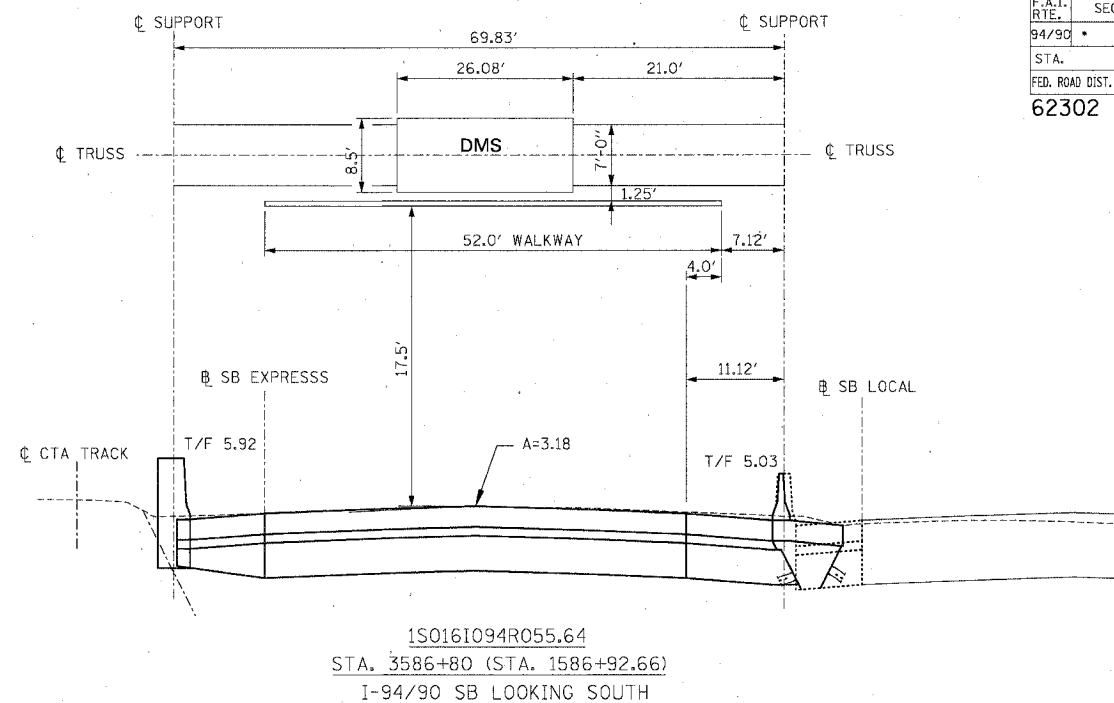
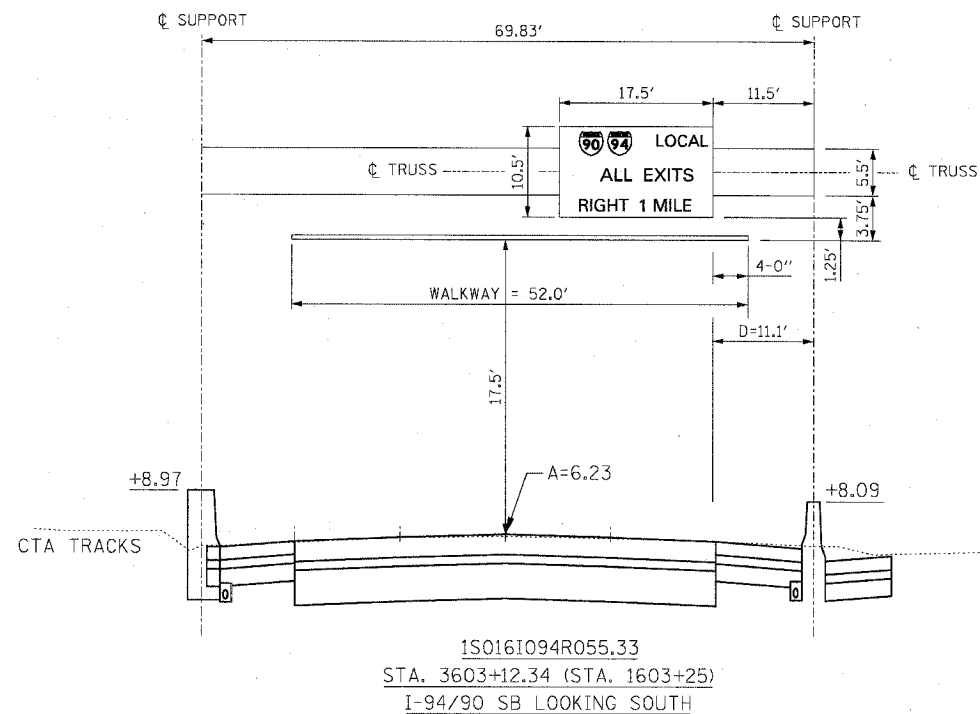
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
SIGN PLACEMENT DETAILS

SCALE: NONE
DATE: 7/7/05

DRAWN BY: RLK
CHECKED BY: PJM

SGN-05
06/24/2005 10:44:33 AM

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	303
STA.		TO STA.		
62302		*0818, ETC, 2324.6-IPR-9		



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
SIGN PLACEMENT DETAILS

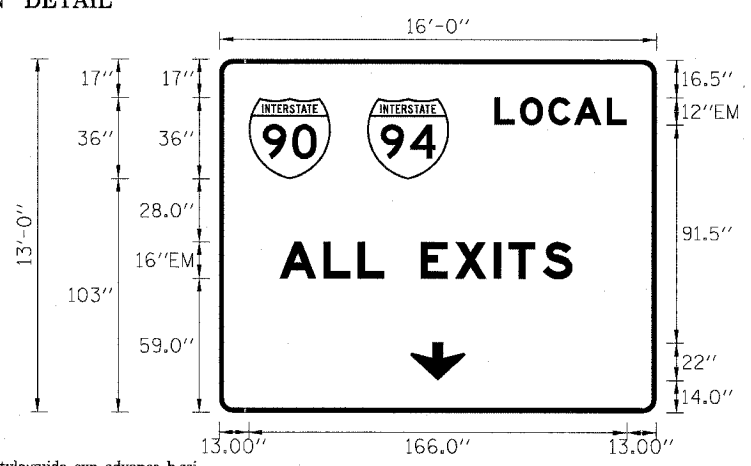
SCALE: NONE
DATE: 07/07/05
DRAWN BY: MD
CHECKED BY: MSA

K&E KAM ENGINEERING, INC.
CONSULTING ENGINEERS
707A Davis Road, Suite 205
Evanston, Illinois 60201-3669

SGN-06
6/24/2005 3:52:01 PM

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	304
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT		
62302		*(1818, ETC, 2324.6-1PIR-9		

SIGN DETAIL
1:100



SIGN NUMBER	IS016I094R056.32
WIDTH x HGHT.	16'-0" x 13'-0"
BORDER WIDTH	2"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective COLOR: Green
LEGEND/BORDER	TYPE: Reflective COLOR: White

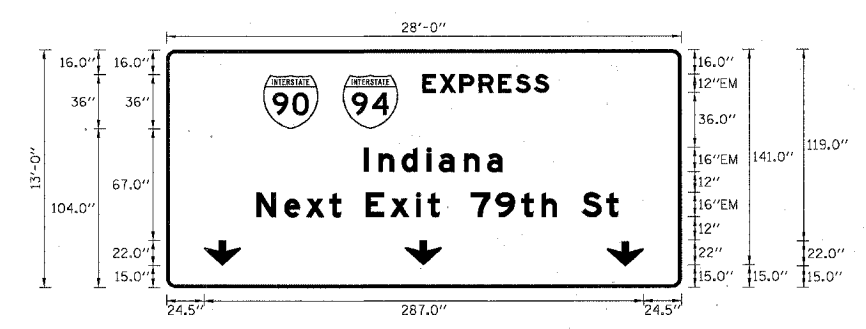
SYMBOL	X	Y	WID	HT
M1_1	12.9	103.1	36	36
M1_1	64.9	103	36	36
ARDOWN	82	14.2	32	22

Panel Style:guide_exp_advance_b.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)										LENGTH	SERIESSIZE
L	O	C	A	L							EM12
120.9	132.2	144.6	155.8	170.3						58.2	
A	L	L		E	X	I	T	S			EM16
18.6	38	53	64.8	80.8	95.8	112.9	119.4	134.4		128.8	

SIGN DETAIL
1:75



SIGN NUMBER	IS016I094R056.32
WIDTH x HGHT.	28'-0" x 13'-0"
BORDER WIDTH	2"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective COLOR: Green
LEGEND/BORDER	TYPE: Reflective COLOR: White

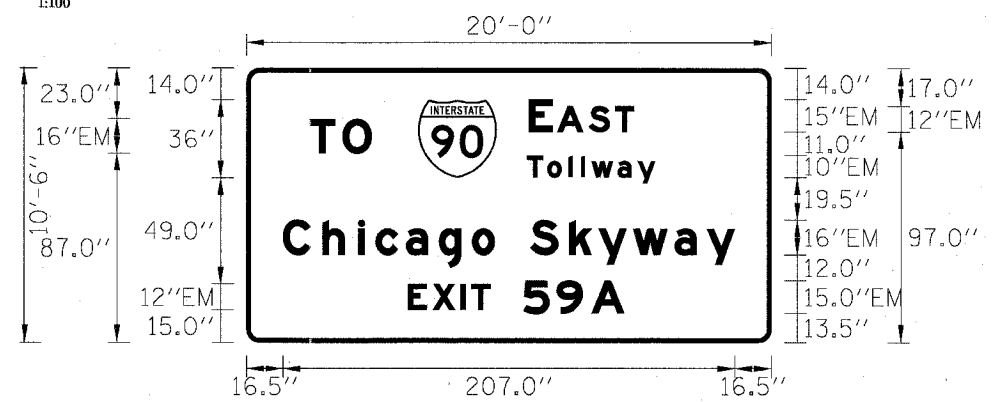
SYMBOL	X	Y	WID	HT
M1_1	63.1	103.7	36	36
M1_1	115.2	103.7	36	36
ARDOWN	24.5	15.0	32	22
ARDOWN	155.7	15.0	32	22
ARDOWN	287.5	15.0	32	22

Panel Style:guide_exp_advance_b.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)										LENGTH	SERIESSIZE							
E	X	P	R	E	S	S					EM12							
167.2	178.5	191.3	203.9	216.6	227.9	239.9				82.5								
I	n	d	i	a	n	a					EM16/12							
128.8	138.5	153.6	169.9	177.9	194.2	209.4				90.7								
N	e	x	t	E	x	i	t	7	9	t	h	S	t		EM16/12			
58.7	77	90.8	106.2	114.2	130.2	146	162.9	170.5	178.6	198.7	214.8	231.7	244.8	255	271	287.1	236.5	

SIGN DETAIL
1:100



SIGN NUMBER	IS016I094R056.83
WIDTH x HGHT.	20'-0" x 10'-6"
BORDER WIDTH	2"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective COLOR: Green
LEGEND/BORDER	TYPE: Reflective COLOR: White

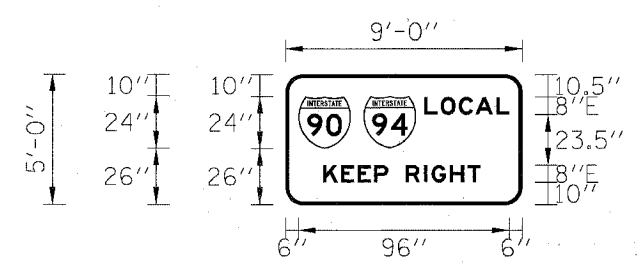
SYMBOL	X	Y	WID	HT
M1_1	78.4	75.7	36	36

Panel Style:guide_exp_advance_b.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)										LENGTH	SERIESSIZE				
E	A	S	T								EM15,EM12				
129.1	142	156.4	168.5							48.2					
T	O										EM16				
28.9	48.9									28.3					
T	o	I	l	w	a	y					EM10/7.5				
128.4	137.6	147.3	153	157.8	169.7	178.8				58.5					
C	h	i	c	a	g	o	S	k	w	a	y		EM16/12		
16.7	34.7	51	59	72.9	88	103.1	113.7	129.6	147.6	160.9	176.7	195.7	210.4	206.6	
E	X	I	T	5	9	A									EM12,EM15.1
73.8	85.1	97.9	102.8	126.6	141.7	157.7								99	

SIGN DETAIL
1:100



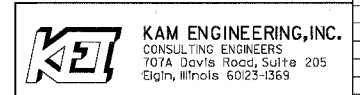
SIGN NUMBER	TS02-01
WIDTH x HGHT.	9'-0" x 5'-0"
BORDER WIDTH	1.5"
CORNER RADIUS	6"
MOUNTING	Groundmount
BACKGROUND	TYPE: Reflective COLOR: Green
LEGEND/BORDER	TYPE: Reflective COLOR: White

SYMBOL	X	Y	WID	HT
M1_1	6	26	24	24
M1_1	35.6	26	24	24

Panel Style:guide_exp_advance_b.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)										LENGTH	SERIESSIZE
L	O	C	A	L							Es
63.4	70.9	79.2	86.7	96.3						38.8	
K	E	E	P	R	I	G	H	T			Es
17.3	25.4	33	40.5	46.9	54.9	63.3	66.7	75.2	83.2	71.8	



REVISIONS	
NAME	DATE

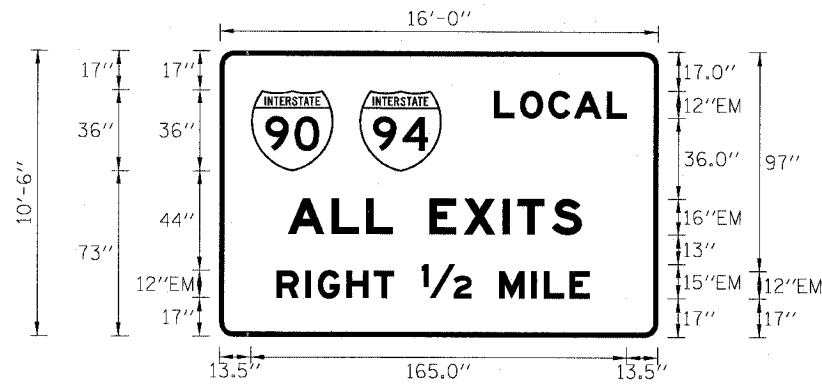
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
SIGN PANEL DETAILS
SCALE: NONE
DATE: 07/07/05
DRAWN BY: MD
CHECKED BY: MSA

SGN-07

3:32:29 PM
6/24/2005

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	305
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT	
62302		* (I818, ETC, 2324.6-1PJR-9		

SIGN DETAIL
1:100



SIGN NUMBER	1S016I094R055.83
WIDTH x HGHT.	16'-0" x 10'-6"
BORDER WIDTH	2"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective COLOR: Green
LEGEND/BORDER	TYPE: Reflective COLOR: White

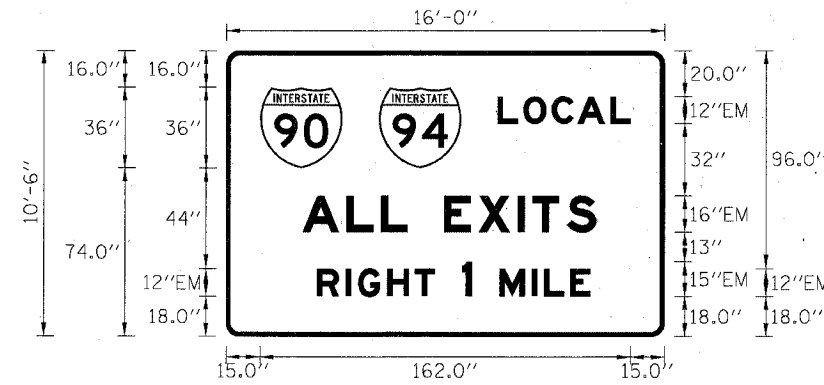
SYMBOL	X	Y	WID	HT
M1_1	13.6	73	36	36
M1_1	61.1	73	36	36

Panel Style:guide_exp_advance_b.ssi
Dimensions are in inches,tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)												LENGTH	SERIESIZE
L	O	C	A	L									EM12
120.2	131.5	143.9	155.1	169.6								58.2	
A	L	L		E	X	I	T	S					EM16
29.8	49.1	64.2	75.9	91.9	107	124.1	130.5	145.6				128.8	
R	I	G	H	T	I	M	I	L	E				EM12,EM15
24.9	37.6	43	55.7	67.7	88.5	122.5	136.6	142.1	153.3			137.2	

SIGN DETAIL
1:100



SIGN NUMBER	1C016I094R055.33
WIDTH x HGHT.	16'-0" x 10'-6"
BORDER WIDTH	2"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective COLOR: Green
LEGEND/BORDER	TYPE: Reflective COLOR: White

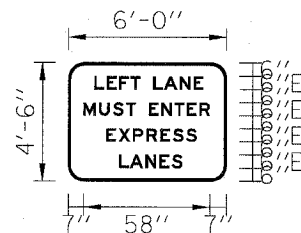
SYMBOL	X	Y	WID	HT
M1_1	14.9	73.7	36	36
M1_1	66.9	73.7	36	36

Panel Style:guide_exp_advance_b.ssi
Dimensions are in inches,tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)												LENGTH	SERIESIZE
L	O	C	A	L									EM12
118.9	130.2	142.6	153.8	168.3								58.2	
A	L	L		E	X	I	T	S					EM16
33.4	52.7	67.8	79.5	95.5	110.6	127.6	134.1	149.1				128.8	
R	I	G	H	T	I	M	I	L	E				EM12,EM15
39.8	52.5	57.9	70.6	82.6	103.4	119.9	134	139.4	150.7			119.7	

SIGN DETAIL
1:100



SIGN NUMBER	TIS 3530+00
WIDTH x HGHT.	6'-0" x 4'-6"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Ground Mount
BACKGROUND	TYPE: Reflective COLOR: Green
LEGEND/BORDER	TYPE: Reflective COLOR: White

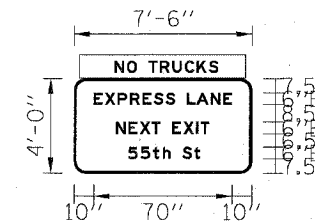
SYMBOL	X	Y	WID	HT

Panel Style:guide_exp_advance_b.ssi
Dimensions are in inches,tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)												LENGTH	SERIESIZE
L	E	F	T		L	A	N	E					E6
11.8	17.5	23.1	28.4	32.8	38.8	43.6	50.8	57.1				49.7	
M	U	S	T		E	N	T	E	R				E6
6.9	14	20.3	26.3	30.8	36.8	42.4	48.4	54.1	59.7			57.6	
E	X	P	R	E	S	S							E6
17.3	23	29.4	35.7	42	47.7	53.7	58.5					41.2	
L	A	N	E	S									E6
23.2	28	35.3	41.6	47.2								28.8	

SIGN DETAIL
1:100



SIGN NUMBER	TS02-02
WIDTH x HGHT.	7'-6" x 4'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	6"
MOUNTING	Groundmount
BACKGROUND	TYPE: Reflective COLOR: Green
LEGEND/BORDER	TYPE: Reflective COLOR: White

SYMBOL	X	Y	WID	HT

Panel Style:guide_exp_advance_b.ssi
Dimensions are in inches,tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)												LENGTH	SERIESIZE
E	X	P	R	E	S	S		L	A	N	E		E6
10	15.7	22.1	28.4	34.7	40.4	46.4	51.2	57.2	62	69.3	75.6	69.9	
N	E	X	T		E	X	I	T					E6
21.4	27.8	33.4	39.4	43.8	49.8	55.4	61.9	64.1				47.1	
5	5	t	h		S	t							E64.5
27.5	33.8	40.1	45	48.9	54.9	60.9						36.5	

REVISIONS	
NAME	DATE



ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
SIGN PANEL DETAILS

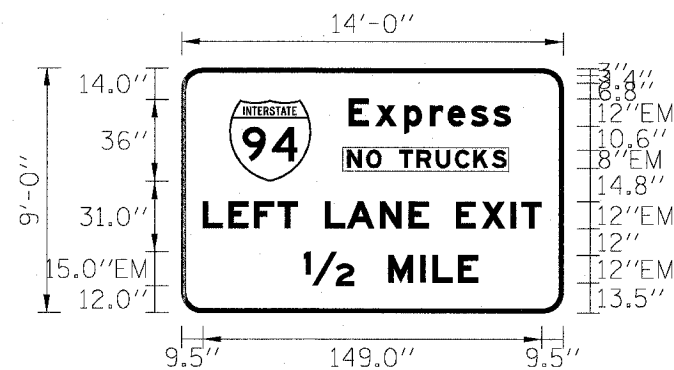
SCALE: NONE
DATE: 07/07/05
DRAWN BY: MD
CHECKED BY: MSA

SGN-08

3.3.2021 FM
6/24/2005

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	306
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT		
62302		*1818, ETC, 2324.6-IPR-9		

SIGN DETAIL
1:100



SIGN NUMBER	TIS 3556+35
WIDTH x HGHT.	14'-0" x 9'-0"
BORDER WIDTH	2"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective COLOR: Green
LEGENDBORDER	TYPE: Reflective COLOR: White

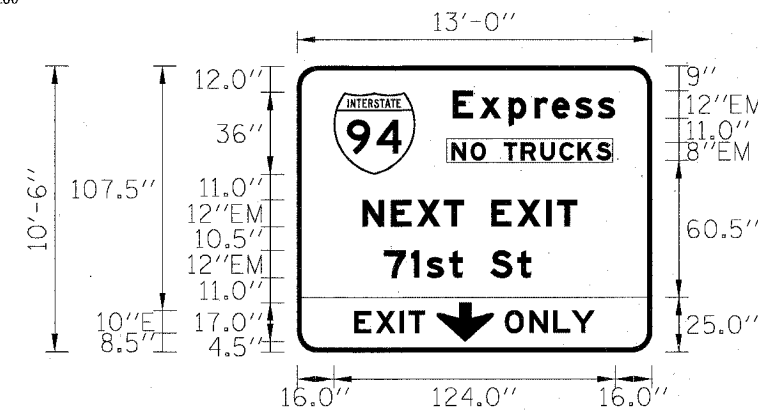
SYMBOL	X	Y	WID	HT
M1_1	20.9	58.2	36	36

Panel Style:guide_exp_advance_b.ssi
Dimensions are in inches,tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)													LENGTH	SERIESSIZE	
E	x	p	r	e	s	s								EM129	
73.4	85.3	98.1	109.4	117	127.3	137.2							71.4		
N	O		T	R	U	C	K	S						EM8	
72.9	81.3	87.9	95.9	103.4	111.9	120.3	128.4	136.5					70.2		
L	E	F	T		L	A	N	E	E	X	I	T		EM12	
9.3	20.6	31.9	42.4	51.2	63.2	72.8	87.3	99.9	108.7	120.7	132	144.8	149.7	149.2	
12	M	I	L	E											EM15.1,EM12
53.9	91	105.1	110.5	121.8										76.8	

SIGN DETAIL
1:100



SIGN NUMBER	TIS 3529+30
WIDTH x HGHT.	13'-0" x 10'-6"
BORDER WIDTH	2"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective COLOR: Green /Yellow
LEGENDBORDER	TYPE: Reflective COLOR: White /Black

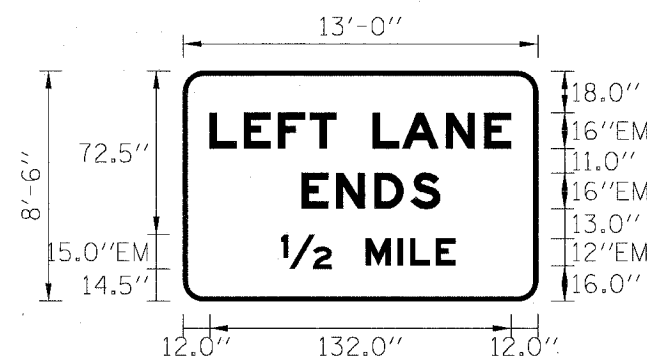
SYMBOL	X	Y	WID	HT
M1_1	16.1	78.7	36	36
ARDOWN	61.4	4.7	25	17.2

Panel Style:guide_exp_advance_b.ssi
Dimensions are in inches,tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)													LENGTH	SERIESSIZE
E	x	p	r	e	s	s								EM129
68.6	80.4	93.1	104.5	112.1	122.4	132.3							71.4	
N	O		T	R	U	C	K	S						EM8
68	76.4	83	91	98.6	107	115.4	123.4	131.6					70.2	
N	E	X	T		E	X	I	T						EM12
28.8	41.4	52.7	64.7	73.5	85.5	96.8	109.6	114.5					94.5	
7	I	S	T		S	T								EM129
38.2	50.3	56.9	66.9	72.9	84.9	97							64.9	
E	X	I	T											E10
25.2	34.6	45.3	49.1										31.2	
O	N	L	Y											E10
91.4	102.3	112.8	120.8										39.4	

SIGN DETAIL
1:100



SIGN NUMBER	TIS 3566+23
WIDTH x HGHT.	13'-0" x 8'-6"
BORDER WIDTH	2"
CORNER RADIUS	9"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective COLOR: Green
LEGENDBORDER	TYPE: Reflective COLOR: White

SYMBOL	X	Y	WID	HT

Panel Style:guide_exp_advance_b.ssi
Dimensions are in inches,tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)													LENGTH	SERIESSIZE
L	E	F	T		L	A	N	E						EM16
11.7	26.8	41.8	55.8	67.5	83.5	96.4	115.7	132.5					132.5	
E	N	D	S											EM16
52.2	67.3	84.1	100.2										61.1	
12	M	I	L	E										EM15.1,EM12
43.2	80.3	94.5	99.9	111.2									76.8	



REVISIONS	
NAME	DATE

SGN-09
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
TEMPORARY INFORMATION SIGNING
PANEL DETAILS
SCALE: NONE
DATE: 07/07/05
DRAWN BY: MD
CHECKED BY: MSA

6/24/2005 3:32:22 PM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
94/90	*	COOK	598	307
FED. ROAD DIST. NO. 1				
ILLINOIS				
FED. AID PROJECT				
62302 *1B18, ETC, 2324.6-1PIR-9				

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY
WIND LOADING: 30 p.s.f. normal to Sign Panel Area and truss elements not behind sign Loading Diagram.

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

DESIGN STRESSES:
Field Units
f' = 3,500 p.s.i.
fy = 60,000 p.s.i. (reinforcement)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specifications.

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B with a minimum yield of 35,000 p.s.i., or A500 Grade B or C with a minimum yield of 46,000 p.s.i. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.

All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W*. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer.

The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. (Zone 2) before galvanizing.

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04(f) of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("RCAP") testing of bolts will not be required.

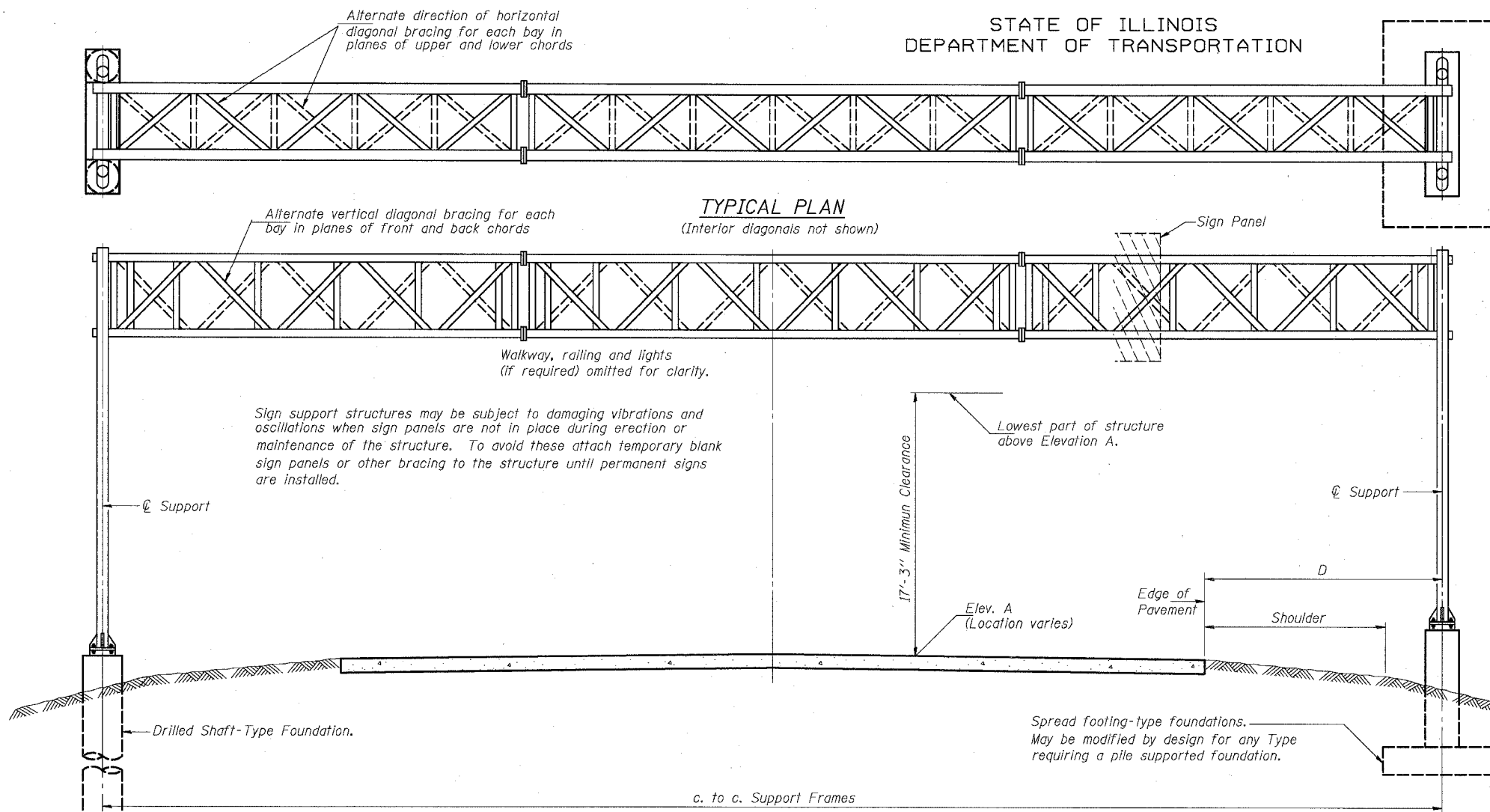
U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: Shall conform to AASHTO M314 Gr. 36 or 55 with a minimum Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F.

CONCRETE SURFACES: All concrete surfaces above an elevation 6" below the lowest final ground line at each foundation shall be cleaned and coated with Bridge Seat Sealer in accordance with the Standard Specifications.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.



TYPICAL ELEVATION
(Looking at Face of Signs**)

Elev. A = Elevation at point of minimum clearance to sign, walkway support or truss.

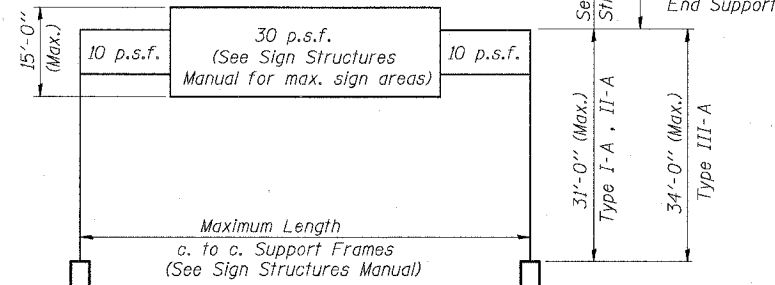
Structure Number	Station	Design Truss Type	c. to c. Supports	Elev. A	Dim. D	Height of Tallest Sign	Total Sign Area
IS0161094R056.32	3550+87.27	I-A	77'-3 3/4"	0.87	13'-0"	13'-0"	572
IS0161094R055.83	3576+87.34	I-A	69'-9 3/4"	1.00	11.13'	10'-6"	378
IS0161094R055.64	3586+80	III-A	69'-9 3/4"	3.18	11.12'	8'-6"	222
IS0161094R055.33	3603+12.34	I-A	69'-9 3/4"	6.23	11.10'	10'-6"	184

**Looking upstation for structures with signs both sides.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE TYPE I-A (4'-0" x 4'-6")	Foot	216.9
OVERHEAD SIGN WALKWAY TYPE A	Foot	212.0
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	111.8
OVERHEAD SIGN STRUCTURE TYPE III-A (5'-0" x 7'-0")	Foot	69.9

NUMBER	REVISION	DATE



DESIGN WIND LOADING DIAGRAM

Parameters shown are basis for I.D.O.T. Standards and Sign Manual Tables. Installations not within dimensional limits shown require special analysis for all components.

DESIGNED	MSA	20
CHECKED	AS	EXAMINED
DRAWN	MD	PASSED
CHECKED	MSA	ENGINEER OF STRUCTURAL SERVICES
		ENGINEER OF BRIDGES AND STRUCTURES

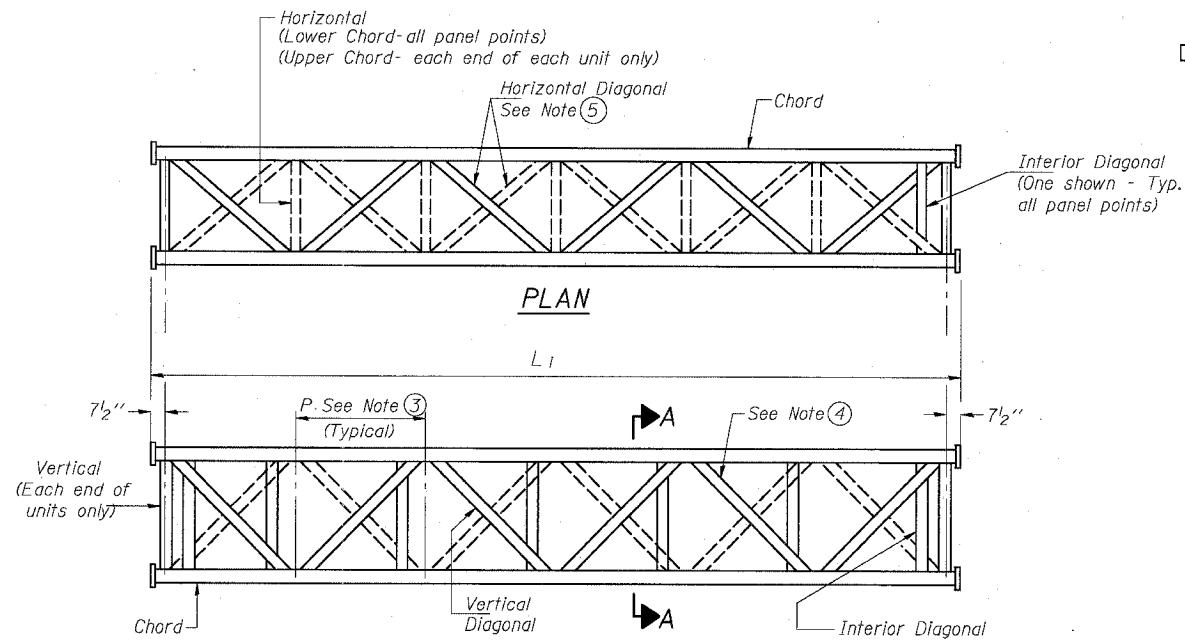
OVERHEAD SIGN STRUCTURES
GENERAL PLAN & ELEVATION
ALUMINUM TRUSS & STEEL SUPPORTS

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES

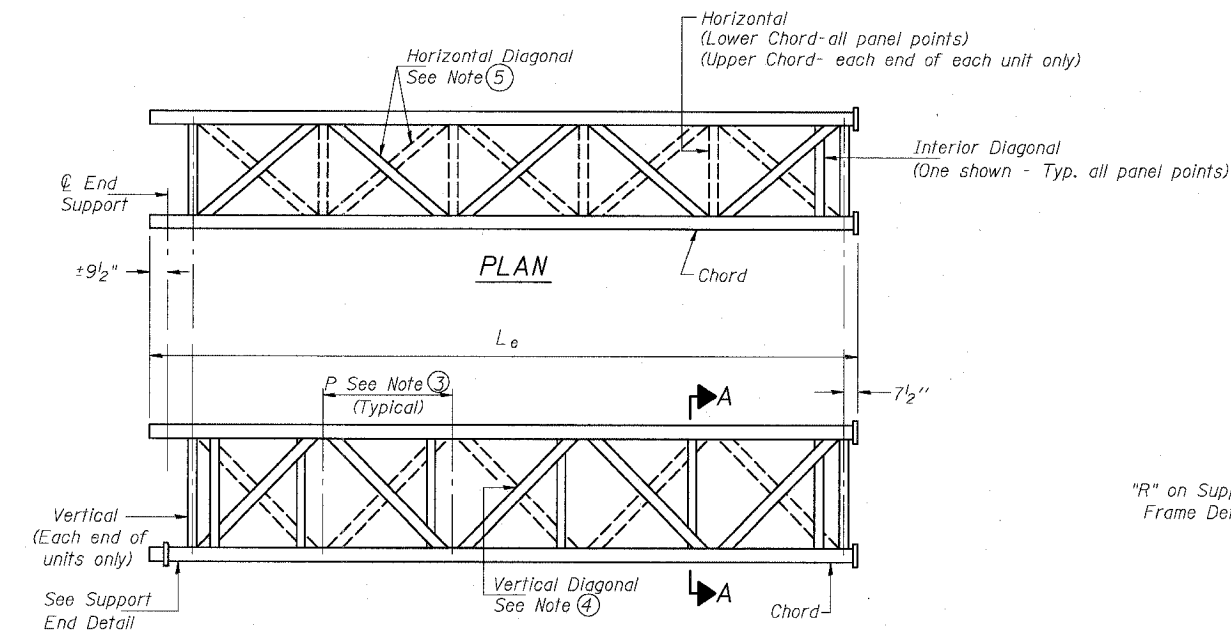
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	308
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

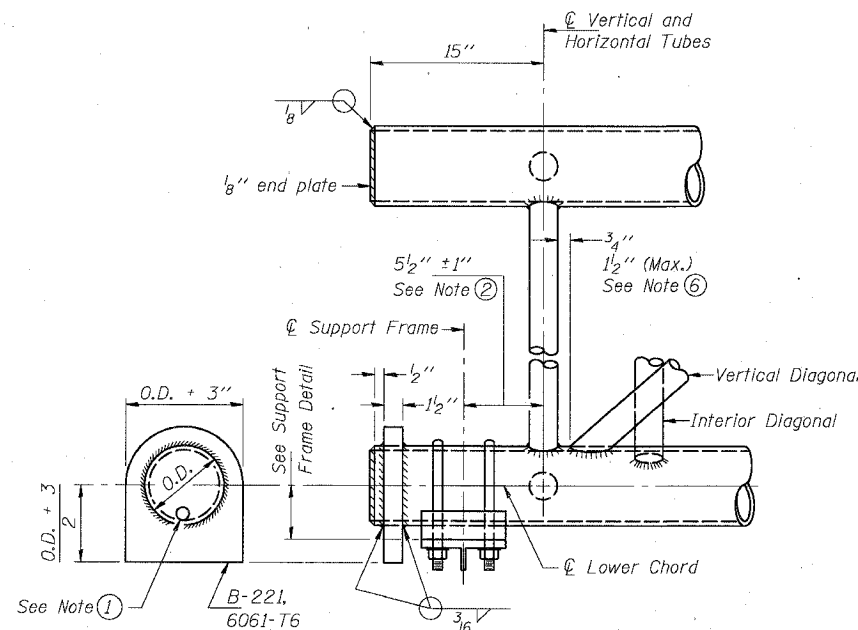
62302 * (1818, ETC, 2324.6-1PIR-9



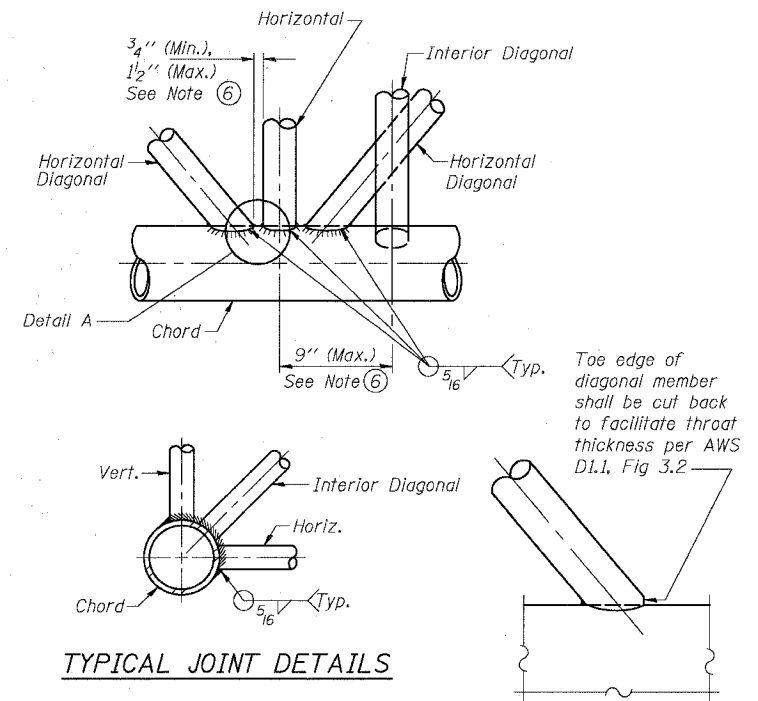
**ELEVATION
TYPICAL INTERIOR UNIT**
Even number of panels/interior unit required.



**ELEVATION
TYPICAL EXTERIOR UNIT**
Even or odd number of panels/exterior units allowed.



SUPPORT END DETAIL FOR EXTERIOR UNIT

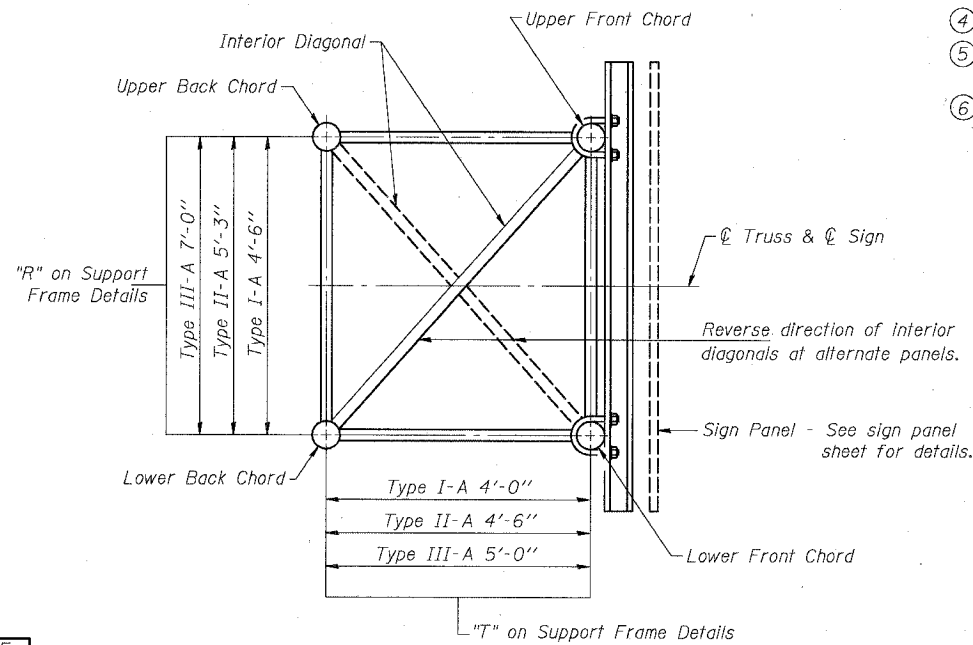


TYPICAL JOINT DETAILS

DETAIL A

NOTES

- Contractor may alternatively use standard aluminum drive-fit cap to close end. 1/2" ϕ drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)
- 5 1/2" end dimension may vary by $\pm 1"$ to provide uniform panel spacing (P).
- Panel spacing (P) shall be uniform for entire truss and between 4'-0" and 5'-0" for Type I-A or 4'-0" and 5'-6" for Types II-A and III-A.
- Vertical Diagonals in front and back face shall alternate.
- Hidden lines show wind bracing alternates direction between planes of top and bottom chords.
- All diagonals shall be detailed for minimum offset from the panel point based on the following: Offset shall be such as to provide a 3/4" minimum to 1 1/2" maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walkway brackets.



SECTION A-A

DESIGNED	MSA
CHECKED	AS
DRAWN	MD
CHECKED	MSA

EXAMINED	20
PASSED	ENGINEER OF STRUCTURAL SERVICES
	ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

OS-A-2 11/1/2002

SGN-11

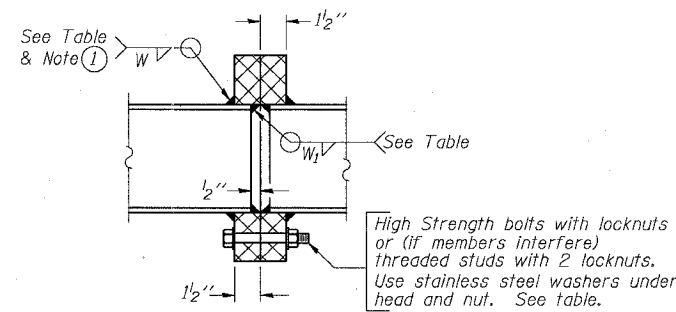
OVERHEAD SIGN STRUCTURES
ALUMINUM TRUSS DETAILS
FOR TRUSS TYPES I-A, II-A and III-A
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRUSS UNIT TABLE

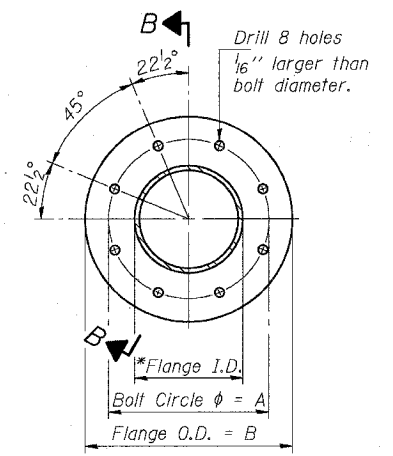
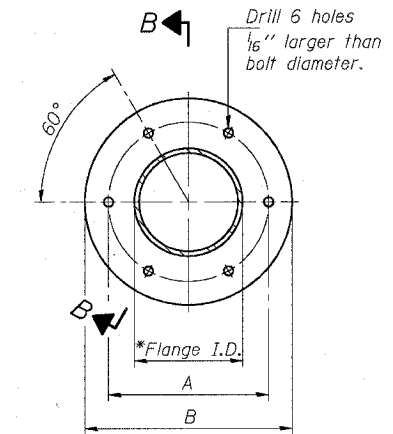
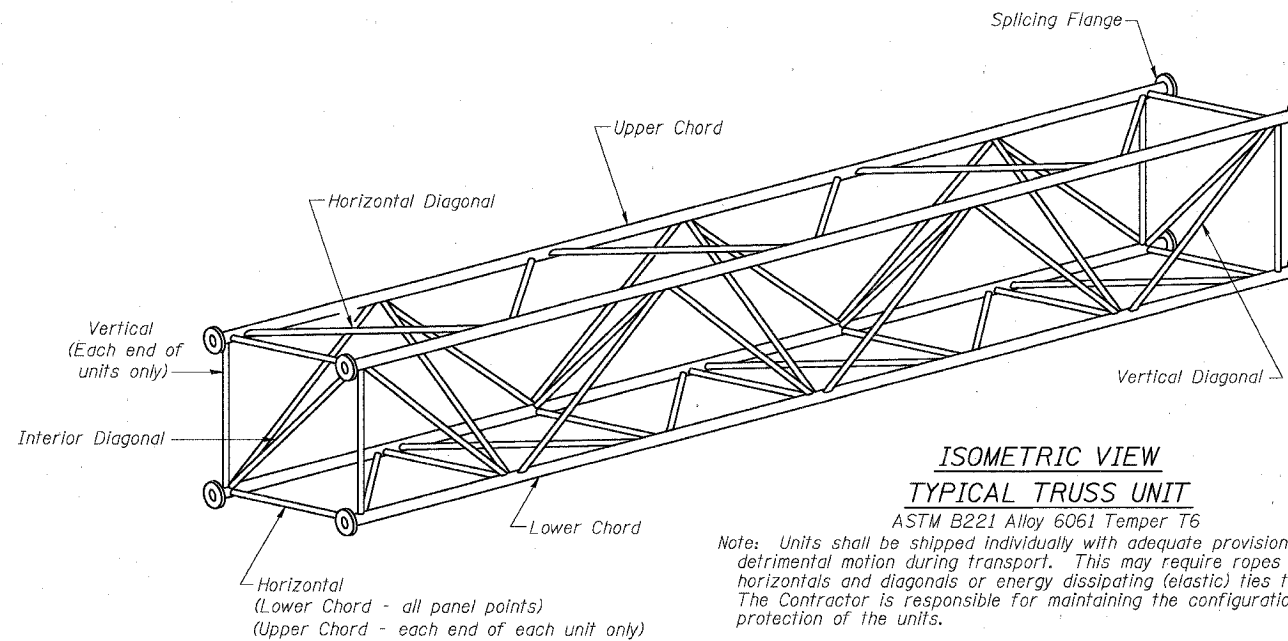
Structure Number	Station	Design Truss Type	Exterior Units (2)			Interior Unit				Upper & Lower Chord		Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals		Camber at Midspan	Splicing Flange					
			No. Panels per Unit	Unit Lgth.(L _e)	Panel Lgth.(P)	No. Req'd.	No. Panels per Unit	Unit Lgth.(L _i)	Panel Lgth.(P)	O.D.	Wall	O.D.	Wall		Bolts		Weld Sizes		A	B
															No./Splice	Dia.	W	W _i		
ISO161094R056.32	3550+87.27	I-A	8	39'-5"	4'-8 ⁵ / ₁₆ "	-	-	-	-	5"	5 ¹⁶ / ₁₆ "	2 ¹ / ₂ "	5 ¹⁶ / ₁₆ "	2.10"	6	7 ⁸ / ₈ "	5 ¹⁶ / ₁₆ "	1 ⁴ / ₄ "	8 ³ / ₄ "	11 ³ / ₄ "
ISO161094R055.83	3576+87.34	I-A	7	35'-8 ¹ / ₂ "	4'-10"	-	-	-	-	5"	1 ⁴ / ₄ "	2 ¹ / ₂ "	1 ⁴ / ₄ "	1.73"	6	7 ⁸ / ₈ "	5 ¹⁶ / ₁₆ "	1 ⁴ / ₄ "	8 ³ / ₄ "	11 ³ / ₄ "
ISO161094R055.64	3586+80	III-A	7	35'-8 ¹ / ₂ "	4'-10"	-	-	-	-	7"	5 ¹⁶ / ₁₆ "	3 ¹ / ₄ "	5 ¹⁶ / ₁₆ "	1.73"	6	1"	7 ¹⁶ / ₁₆ "	5 ¹⁶ / ₁₆ "	11 ¹ / ₂ "	15"
ISO161094R055.33	3603+12.34	I-A	7	35'-8 ¹ / ₂ "	4'-10"	-	-	-	-	5"	1 ⁴ / ₄ "	2 ¹ / ₂ "	1 ⁴ / ₄ "	1.73"	6	7 ⁸ / ₈ "	5 ¹⁶ / ₁₆ "	1 ⁴ / ₄ "	8 ³ / ₄ "	11 ³ / ₄ "

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	309
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT	
62302 *11B18, ETC. 2324.6-1P1R-9				

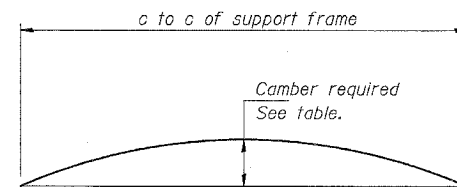


SECTION B-B

① Splicing Flanges shall be attached to each truss unit with the truss shop assembled to camber shown. Truss units shall be in proper alignment and flange surfaces shall be shop bolted into full contact before welding. Sufficient external welds or tacks shall be made to secure flanges until remaining welds are made after disassembly. Adjacent flanges shall be "match marked" to insure proper field assembly.



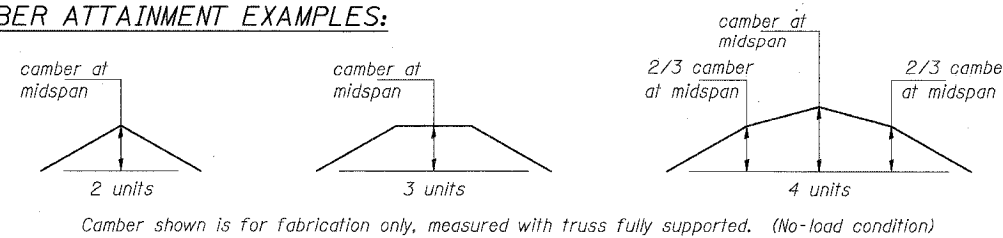
SPLICING FLANGES
ASTM B221, Alloy 6061-T6
or ASTM B209, Alloy 6061-T651
*To fit O.D. of Chord with maximum gap of 1/16".



CAMBER DIAGRAM

Camber curve shown is theoretical. Actual camber attained by slope changes at splices between units.

CAMBER ATTAINMENT EXAMPLES:



NUMBER	REVISION	DATE

DESIGNED	MSA	20
CHECKED	AS	EXAMINED
DRAWN	MD	PASSED
CHECKED	MSA	ENGINEER OF STRUCTURAL SERVICES
		ENGINEER OF BRIDGES AND STRUCTURES

OS4-A-2 11/1/2002

SGN-12

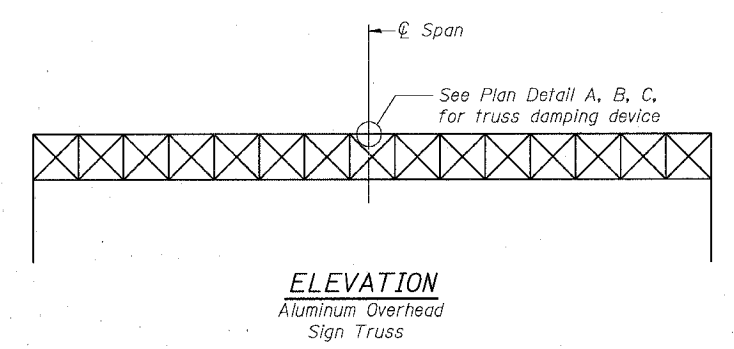
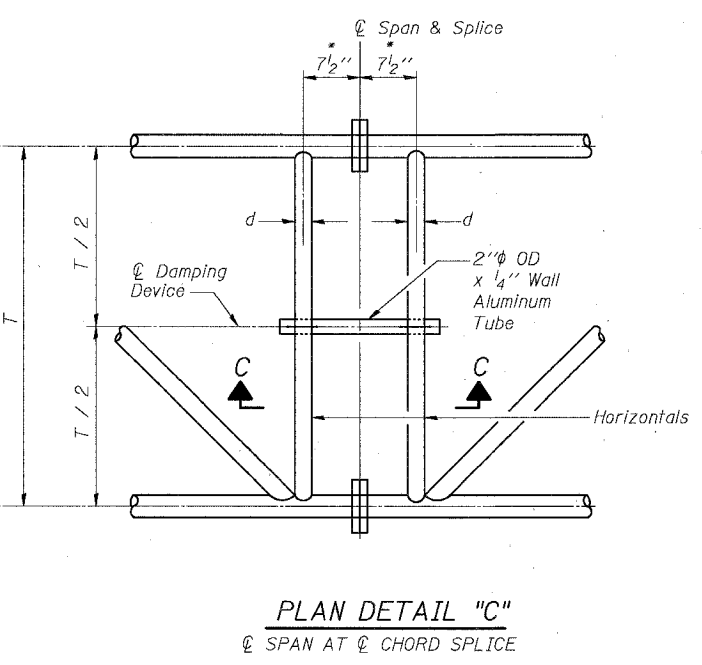
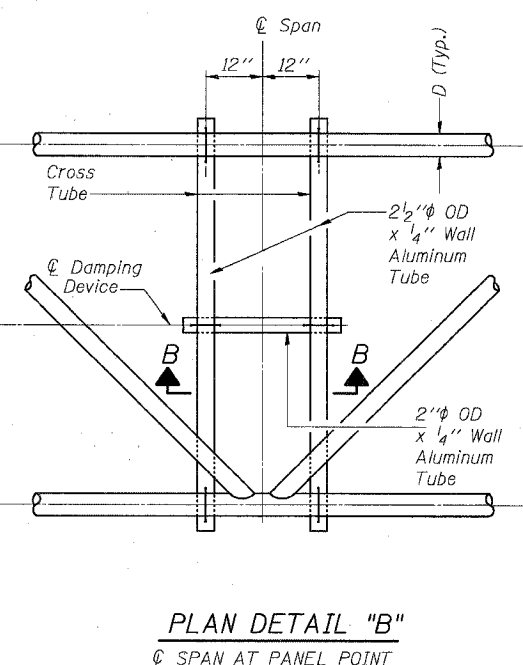
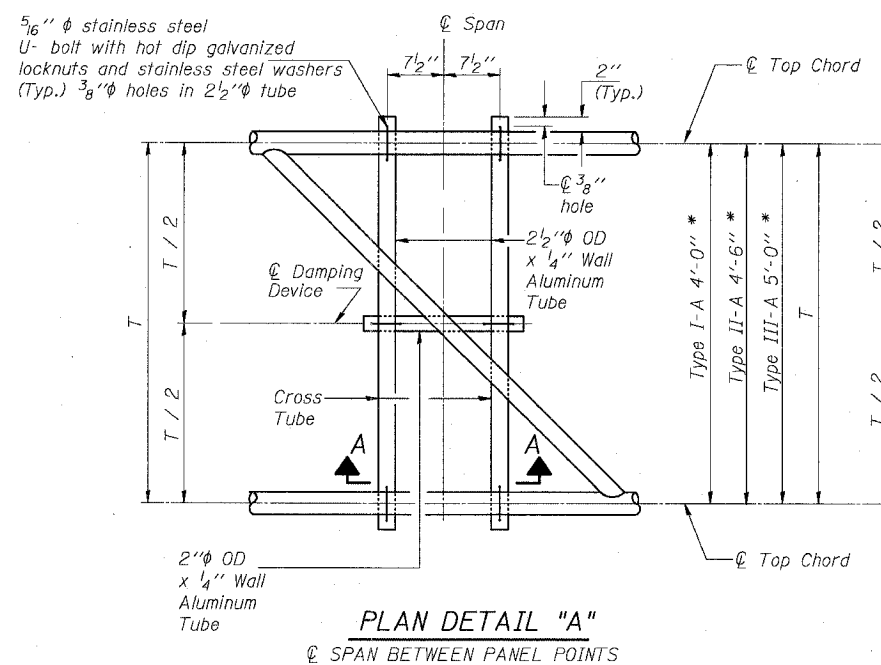
OVERHEAD SIGN STRUCTURES
ALUMINUM TRUSS DETAILS
FOR TRUSS TYPES I-A, II-A and III-A

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Center of horizontal to center of splice dimension may vary. Verify before drilling holes in mounting tube.

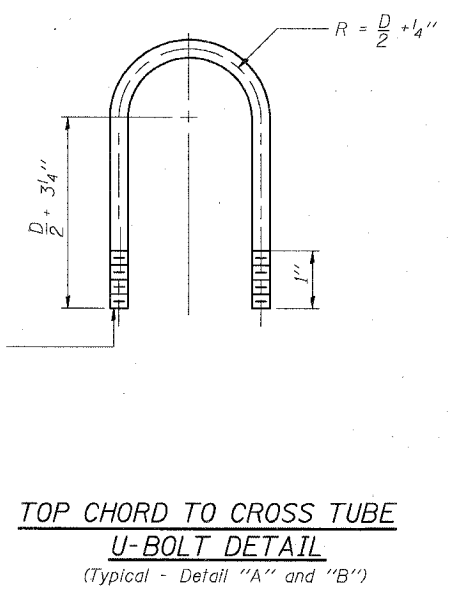
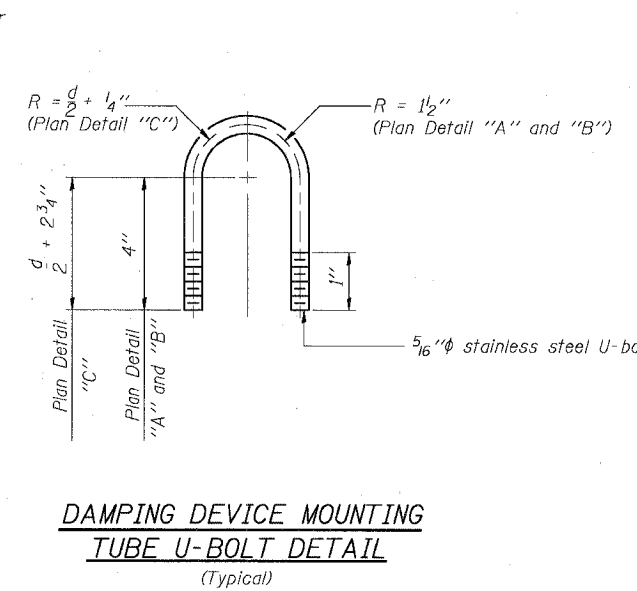
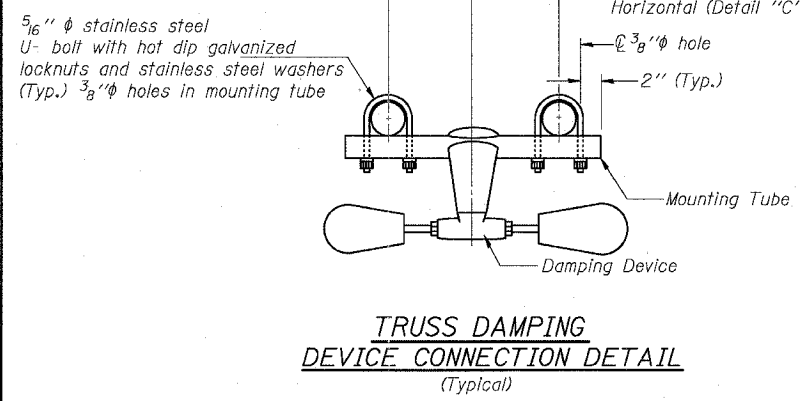
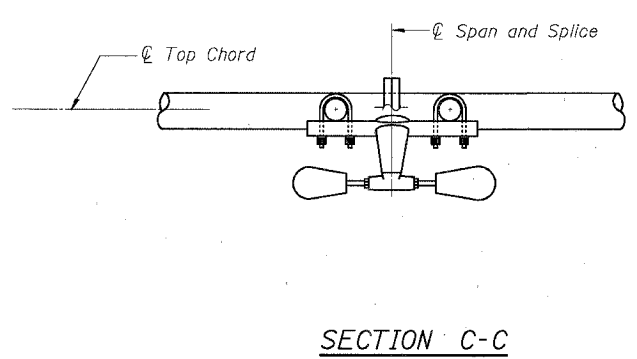
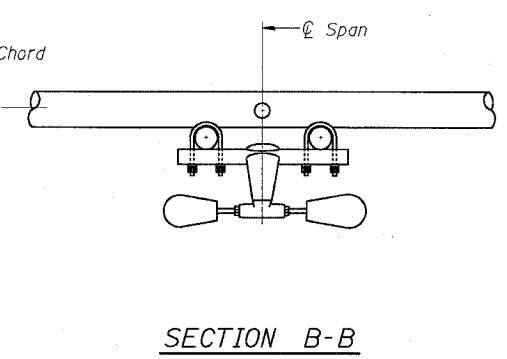
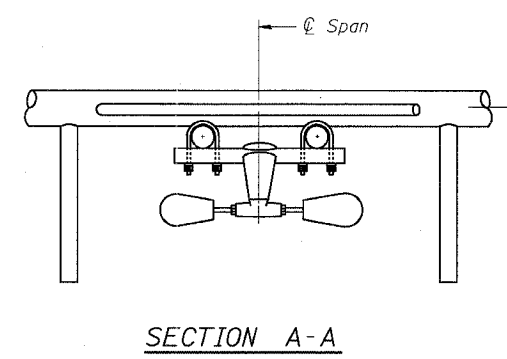
ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET TOTAL
94/90	*	COOK	598	310
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		
62302 *CB18, ETC. 2324.6-1PIR-9				



NOTES

Damper: One damper per truss.
(31 lbs. Stockbridge-Type Aluminum)
Cost included in "Overhead Sign Structure..."

Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6. Cost included in "Overhead Sign Structure..."



DESIGNED	MSA
CHECKED	AS
DRAWN	MD
CHECKED	MSA

EXAMINED	20
PASSED	ENGINEER OF STRUCTURAL SERVICES
	ENGINEER OF BRIDGES AND STRUCTURES

OS-A-D 11/1/2002

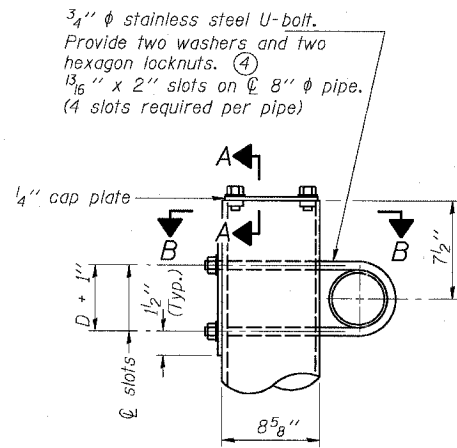
OVERHEAD SIGN STRUCTURE
DAMPING DEVICE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES

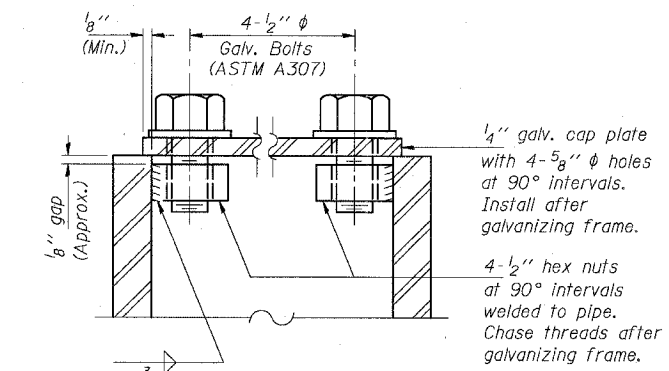
SGN-13

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	311
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		
62302 • I1819, ETC, 2324.6-1PIR-9				

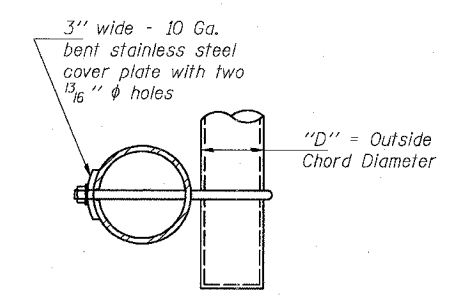


DETAIL A

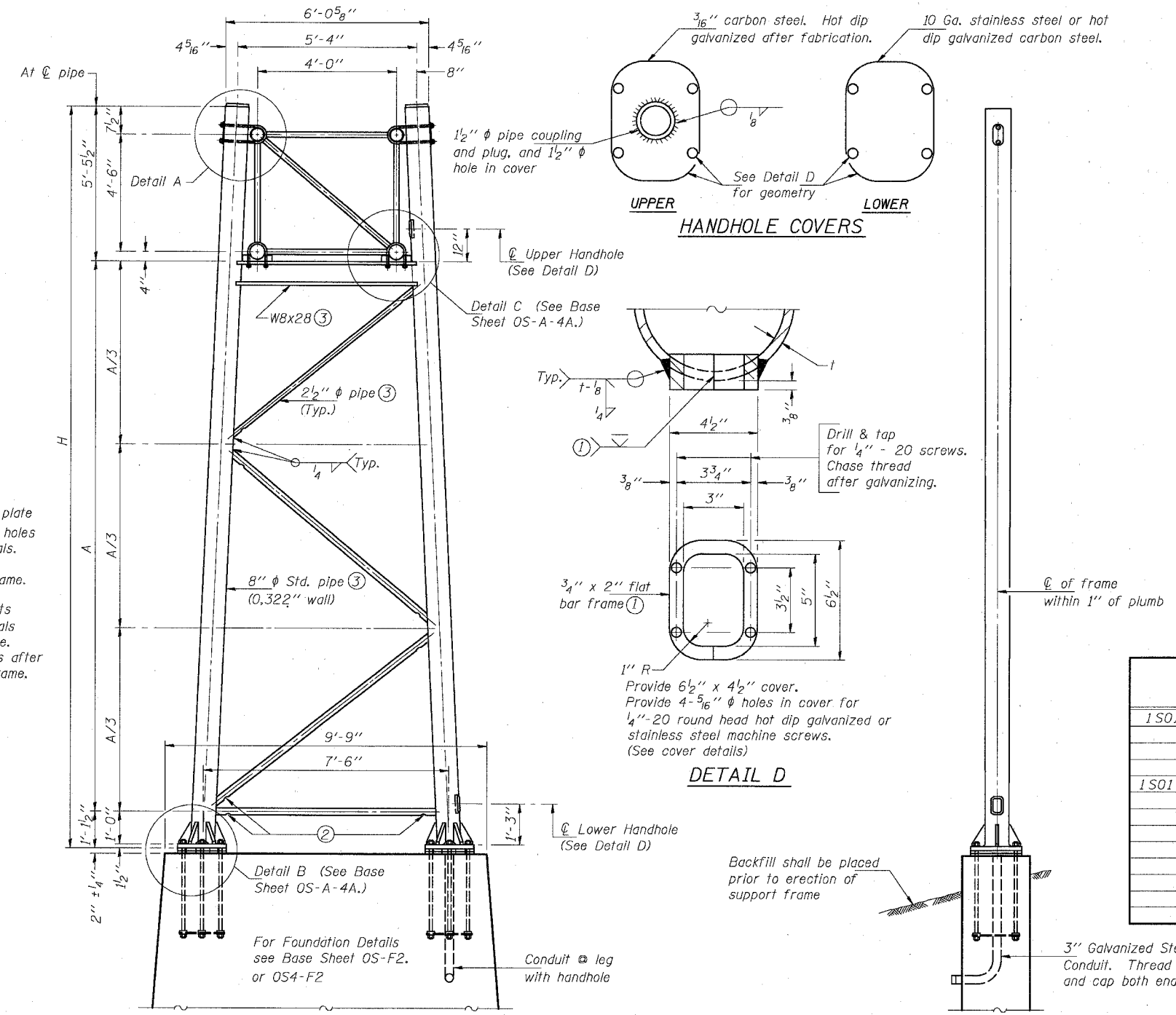


SECTION A-A

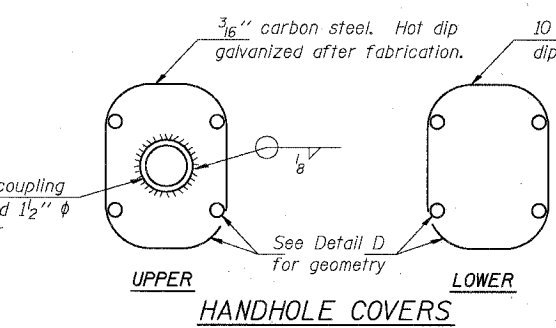
As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.



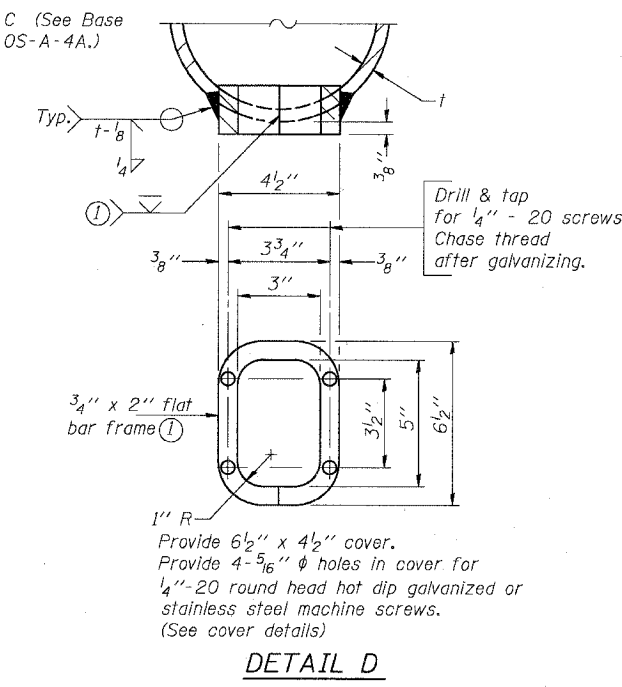
SECTION B-B



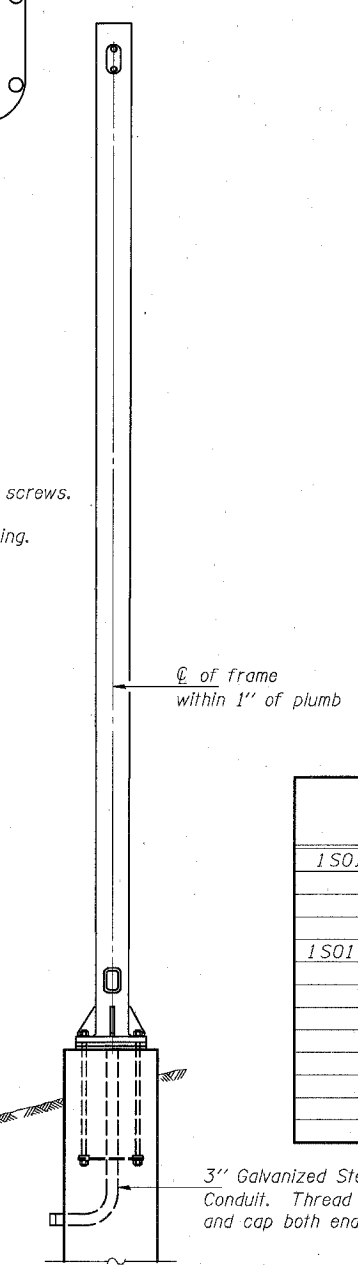
SIDE ELEVATION



UPPER
LOWER
HANDHOLE COVERS



DETAIL D



END ELEVATION

Support Design Loads: See Base Sheet OS-A-1 for design and loading criteria.
Load combinations checked include deadload plus:
a) 100% wind normal to sign, 20% parallel to sign
b) 60% wind normal to sign, 30% parallel to sign

- ① In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 \sqrt{in} or less.
- ② Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred. (Typ.)
- ③ Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet OS-A-1.
- ④ See General Notes for fasteners.
- ⑤ Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.

Structure Number	Station	Support		H	A
		Left	Right		
IS0161094R055.83	3576+87.34	*		23'-11 1/2"	17'-4 1/16"
			*	24'-10 3/16"	18'-3 1/4"
IS0161094R055.33	3603+12.34	*		23'-11 1/2"	17'-4 1/16"
			*	24'-10 3/16"	18'-3 1/4"

DESIGNED	MSA	20
CHECKED	AS	EXAMINED
DRAWN	MD	PASSED
CHECKED	MSA	ENGINEER OF BRIDGES AND STRUCTURES

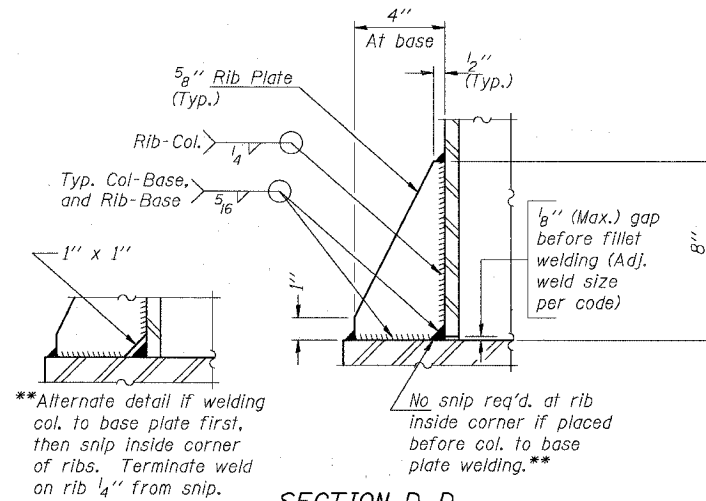
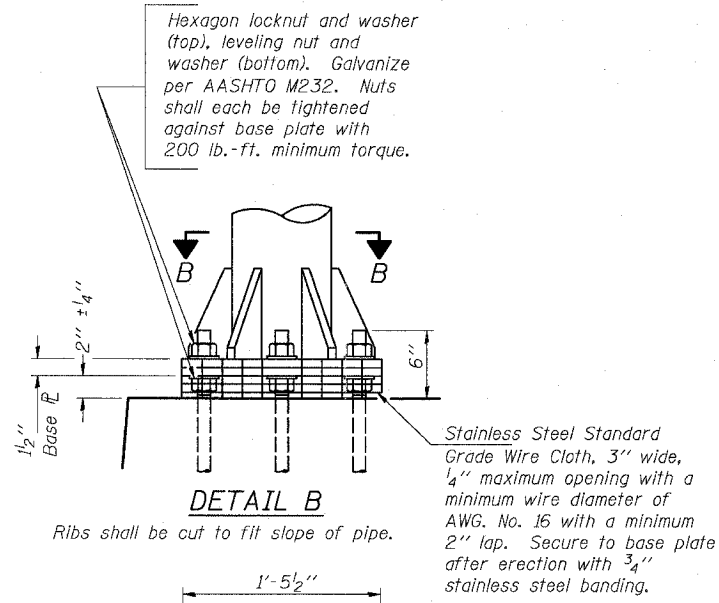
NUMBER	REVISION	DATE

8" ϕ PIPE TRUSS SUPPORT FRAME

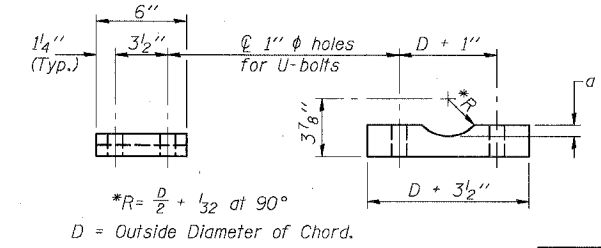
OVERHEAD SIGN STRUCTURES
SUPPORT FRAME for TYPE I-A ALUMINUM TRUSS
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	312
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	
62302 •1818, ETC, 2324.6-1PIR-9				



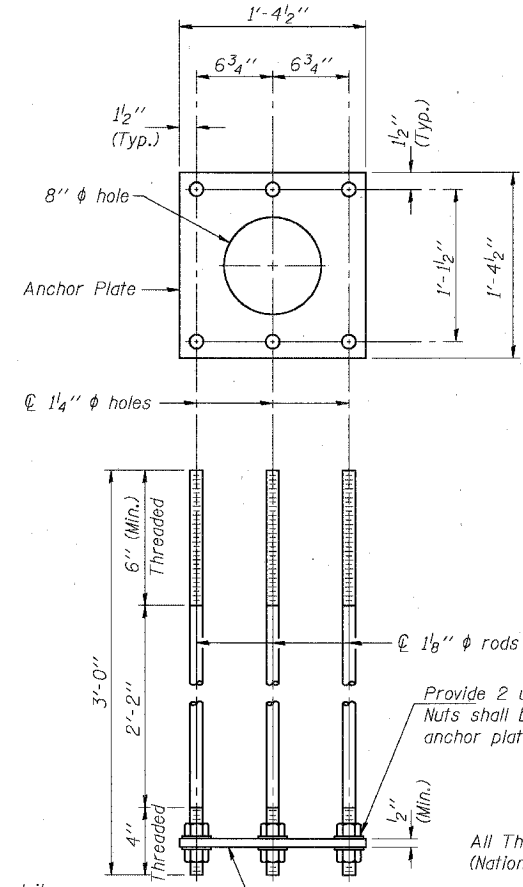
SECTION D-D



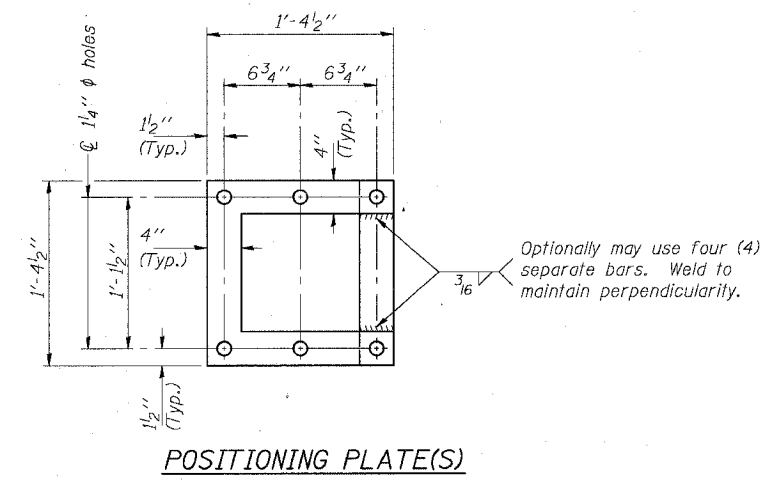
SADDLE SHIM DETAIL

ASTM B26	Alloy 356-F
or	
ASTM B209	Alloy 6061-T651
(4 required per sign truss)	

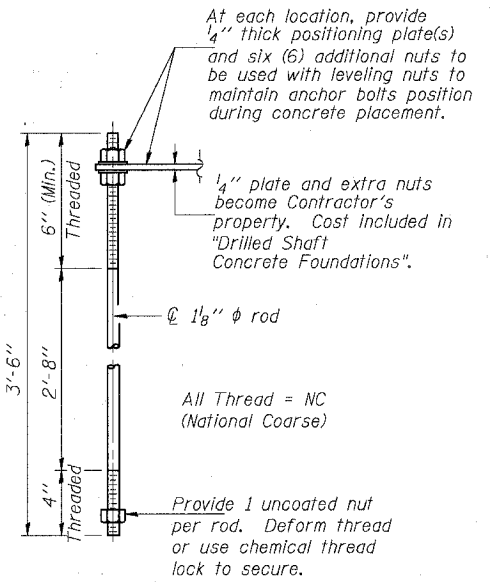
Truss Chord Nominal Dia.	a
5"	3/4"
5 1/2"	13/16"
6"	7/8"
6 1/2"	15/16"



ANCHOR ROD DETAIL
Spread Footing Foundation



POSITIONING PLATE(S)



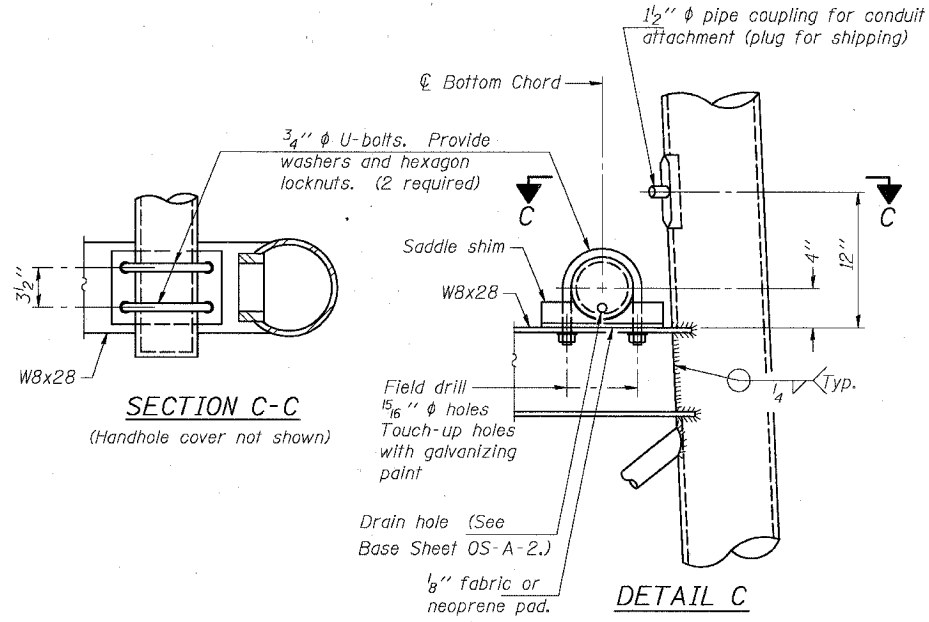
ANCHOR ROD DETAIL
Drilled Shaft Foundation

Anchor rods shall conform to AASHTO M314 Grade 36 or 55 and meet Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. Galvanize upper 12" per AASHTO M232. No welding shall be permitted on rods.

TYPE I-A TRUSS
8" φ PIPE SUPPORT FRAME DETAILS

NUMBER	REVISION	DATE

DESIGNED	MSA	20
CHECKED	AS	EXAMINED
DRAWN	MD	ENGINEER OF STRUCTURAL SERVICES
CHECKED	MSA	PASSED
		ENGINEER OF BRIDGES AND STRUCTURES



SECTION C-C
(Handhole cover not shown)

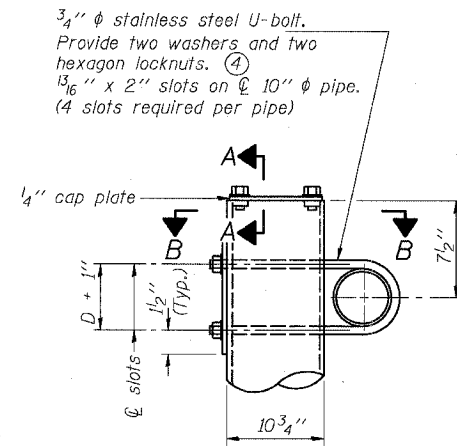
DETAIL C

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS ALUMINUM TRUSS

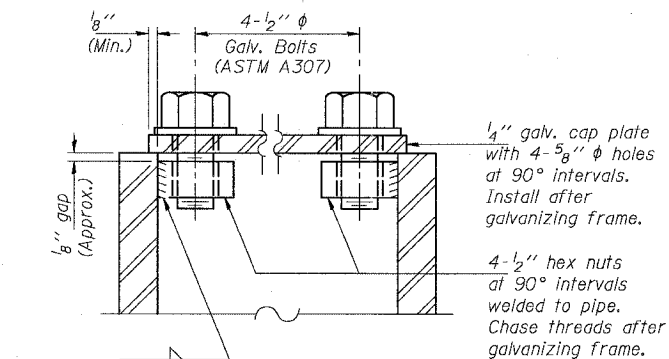
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET TOTAL
94/90	*	COOK	598	313
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	
62302 * (1818, ETC., 2324.6-1P1R-9)				

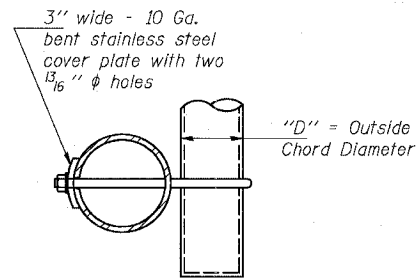


DETAIL A

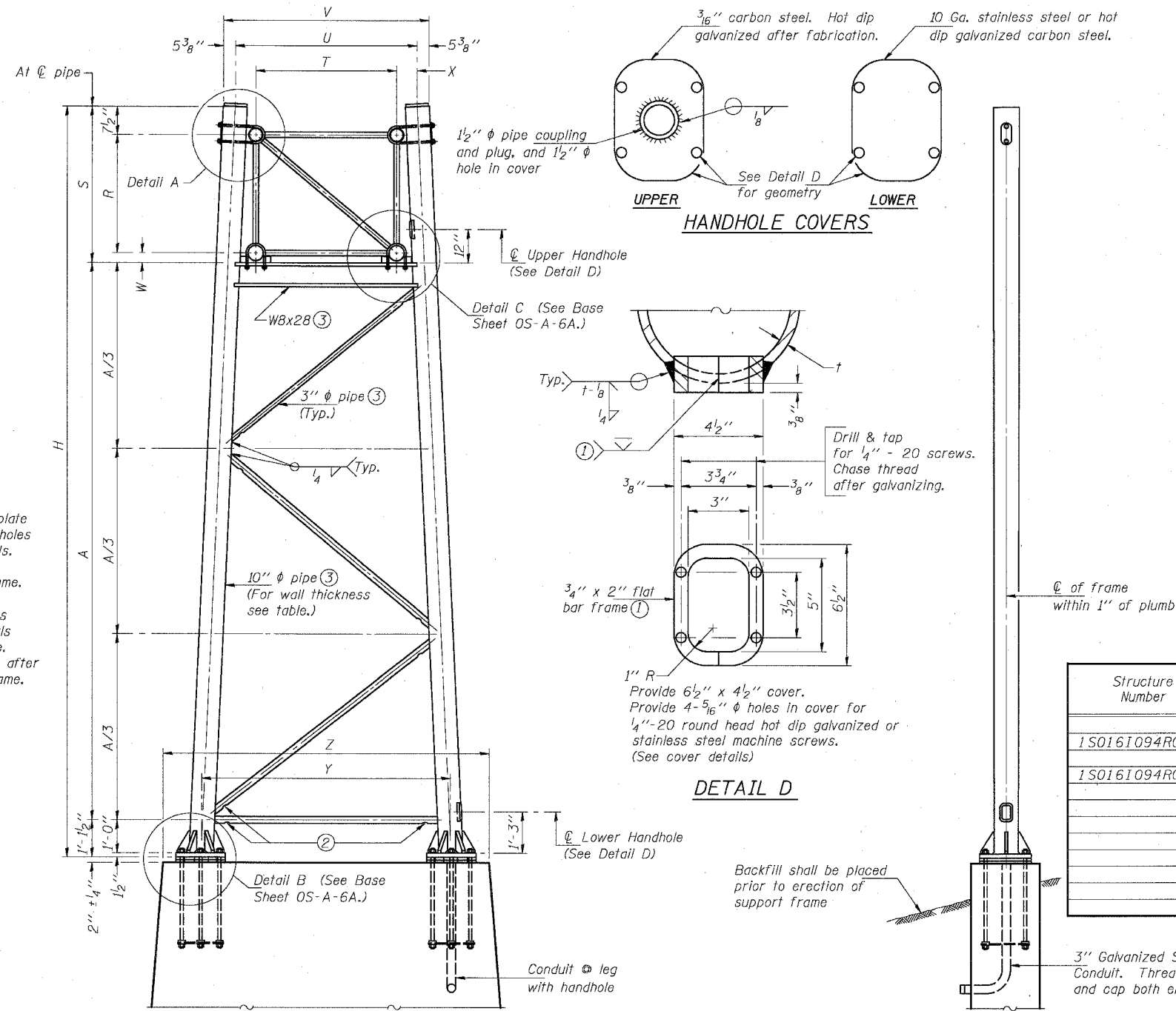


SECTION A-A

As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.



SECTION B-B



FOR FOUNDATION DETAILS SEE BASE SHEET OS-F3 (Spread Footing) or OS4-F3 (Drilled Shaft).

SIDE ELEVATION

END ELEVATION

10" ϕ PIPE TRUSS SUPPORT FRAME

Support Design Loads: See Base Sheet OS-A-1 for design and loading criteria.
Load combinations checked include deadload plus:
a) 100% wind normal to sign, 20% parallel to sign
b) 60% wind normal to sign, 30% parallel to sign

- ① In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 \sqrt{in} or less.
- ② Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred. (Typ.)
- ③ Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet OS-A-1.
- ④ See General Notes for fasteners.
- ⑤ Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.

Structure Number	Station	Support		Truss Type	Pipe Wall Thickness	H	A
		Left	Right				
1S0161094R056.32	3550+87.27		*	I-A	0.279"	26'-2 5/8"	19'-5 5/8"
1S0161094R056.32	3550+87.27		*	I-A	0.279"	25'-2 5/8"	18'-5 5/8"

DESIGNED	MSA		20
CHECKED	AS	EXAMINED	
DRAWN	MD	PASSED	ENGINEER OF STRUCTURAL SERVICES
CHECKED	MSA		ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

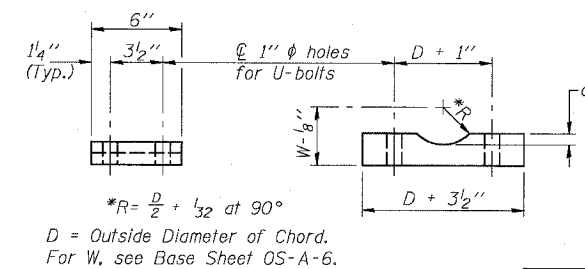
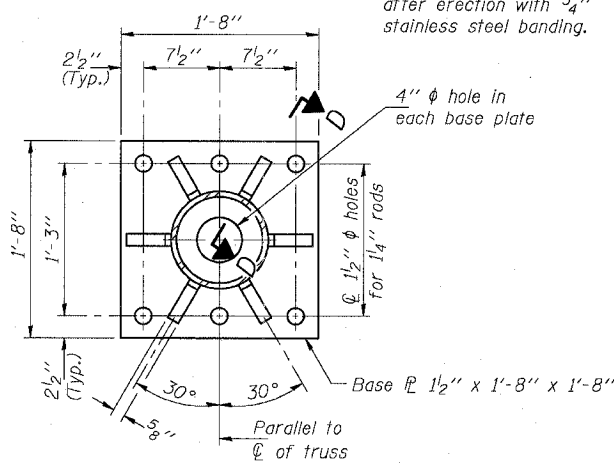
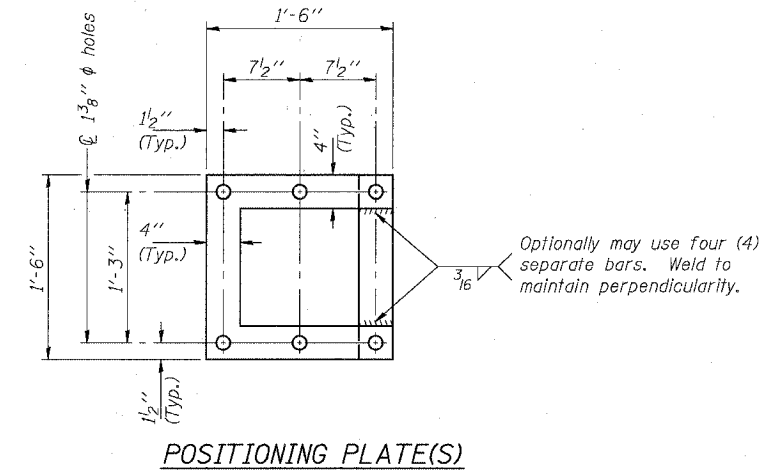
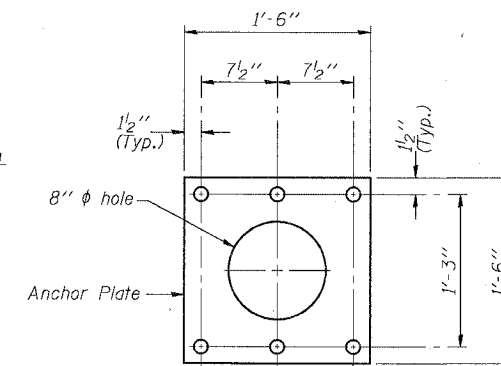
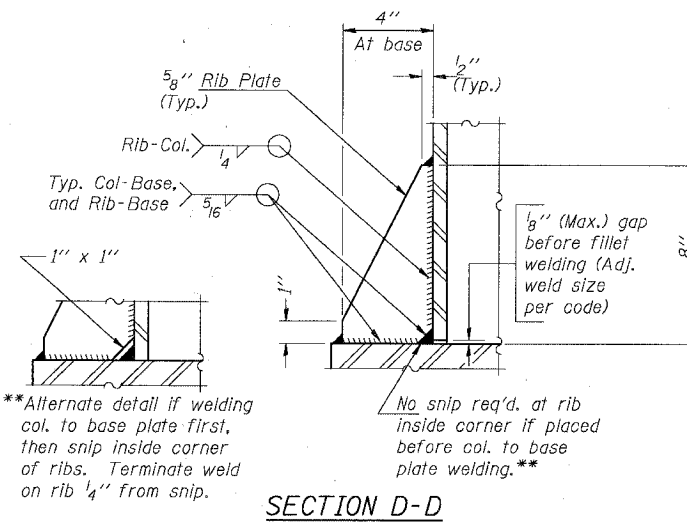
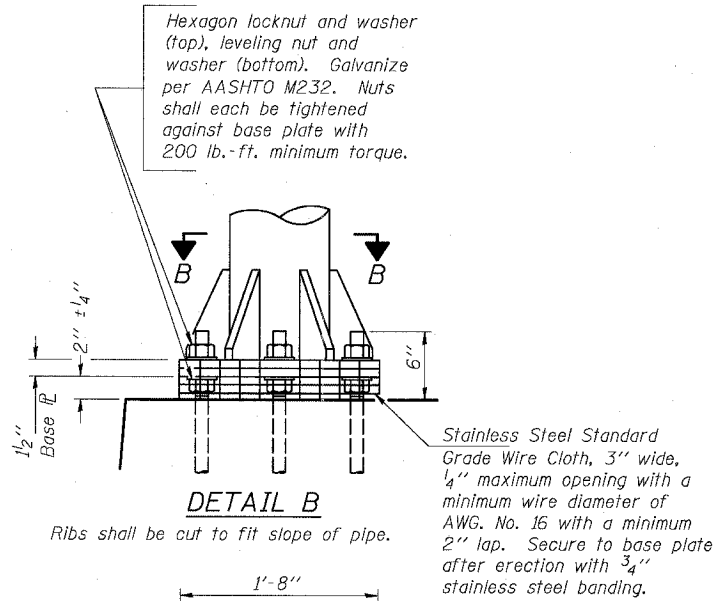
Truss Type	Dimensions									
	R	S	T	U	V	W	X	Y	Z	
I-A	4'-6"	5'-5 1/2"	4'-0"	5'-6"	6'-4 3/4"	4"	9"	8'-3"	10'-9"	
II-A (5)	5'-3"	6'-3 1/4"	4'-6"	6'-1"	6'-11 3/4"	4 3/4"	9 1/2"	8'-3"	10'-9"	

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME for ALUMINUM TRUSS

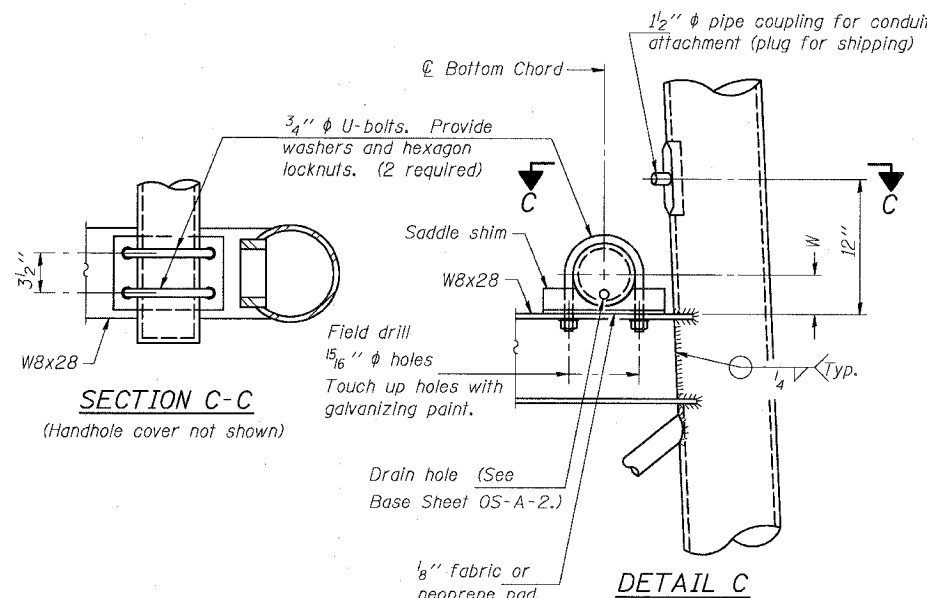
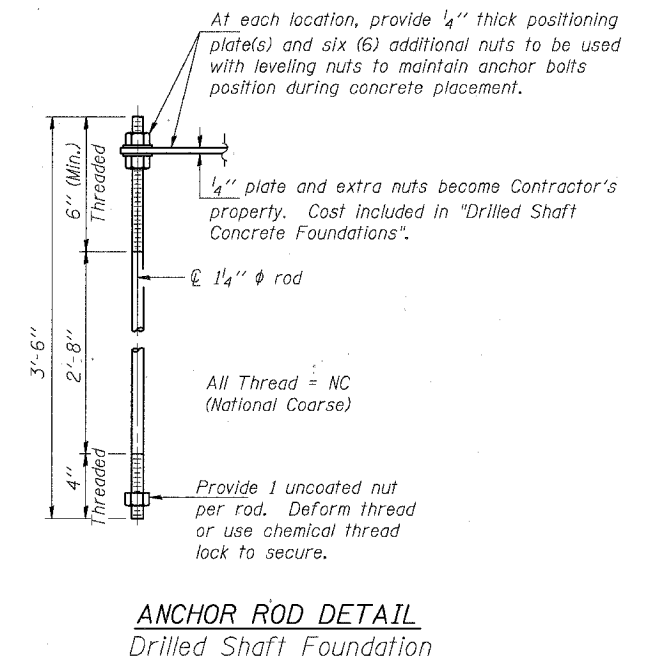
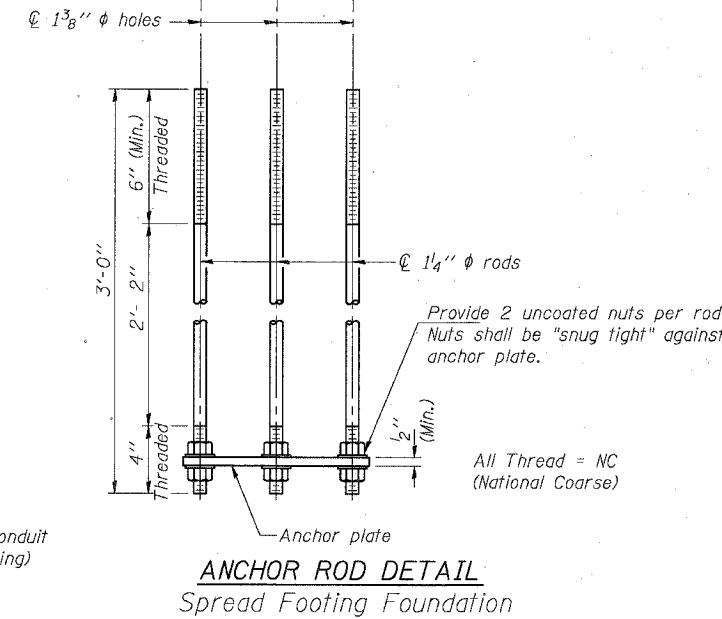
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET
94/90	*	COOK	598	314
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	
62302 *1B1B, ETC, 2324.6-1PR-9				



Truss Chord Nominal Dia.	a
5"	3 3/4"
5 1/2"	13 1/16"
6"	7 7/8"
6 1/2"	15 1/16"
7"	1"



10" phi PIPE SUPPORT FRAME DETAILS

Anchor rods shall conform to AASHTO M314 Grade 36 or 50 and meet Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. Galvanize upper 12" per AASHTO M232. No welding shall be permitted on rods.

NUMBER	REVISION	DATE

DESIGNED	MSA	20
CHECKED	AS	EXAMINED
DRAWN	MD	PASSED
CHECKED	MSA	ENGINEER OF STRUCTURAL SERVICES
		ENGINEER OF BRIDGES AND STRUCTURES

OS-A-6A 11/1/2002

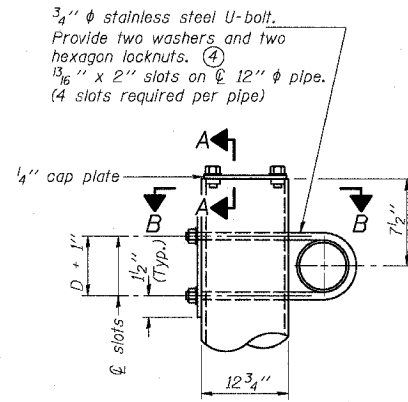
SGN-17

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS ALUMINUM TRUSS

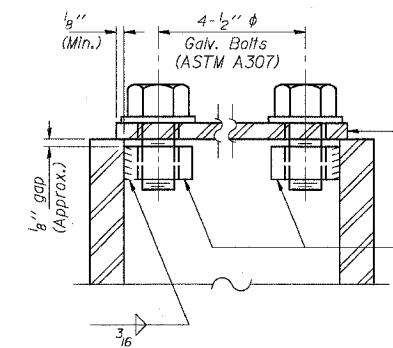
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
94/90	*	COOK	598	315
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		
62302 *11818, ETC, 2324.6-1PR-9				

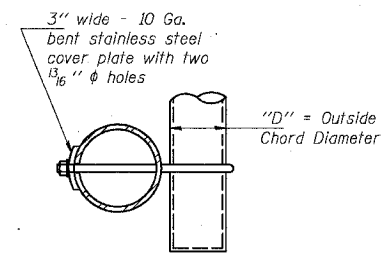


DETAIL A

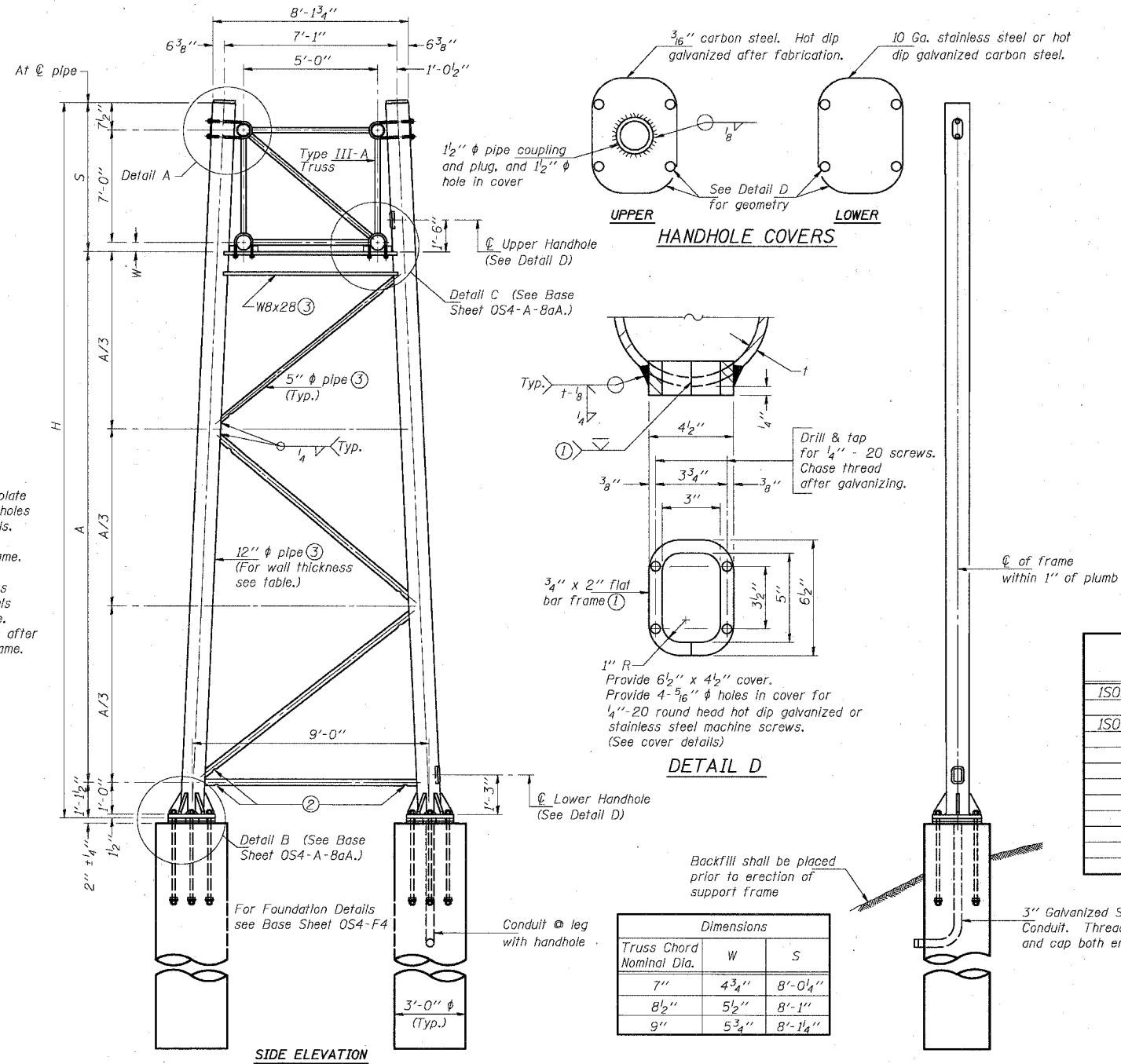


SECTION A-A

As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.



SECTION B-B



SIDE ELEVATION

END ELEVATION

Dimensions		
Truss Chord Nominal Dia.	W	S
7"	4 3/4"	8'-0 1/4"
8 1/2"	5 1/2"	8'-1"
9"	5 3/4"	8'-1 1/4"

TRUSS SUPPORT DETAILS
(12" ϕ Pipe-Type III-A Truss)

Support Design Loads: See Base Sheet OS-A-1 for design and loading criteria.
Load combinations checked include deadload plus:
a) 100% wind normal to sign, 20% parallel to sign
b) 60% wind normal to sign, 30% parallel to sign

- In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 \sqrt{in} or less.
- Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred. (Typ.)
- Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet OS-A-1.
- See General Notes for fasteners.
- Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.

Structure Number	Station	Support		Pipe Wall Thickness	H	A
		Left	Right			
ISO161094R055.64	3586+80		X	0.33	25.11'	15.96'
ISO161094R055.64	3586+80	X		0.33	24.22'	15.07'

SGN-18

OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION

OVERHEAD SIGN STRUCTURES

DESIGNED	SL
CHECKED	AS
DRAWN	MD
CHECKED	SL

EXAMINED	ENGINEER OF STRUCTURAL SERVICES
PASSED	ENGINEER OF BRIDGES AND STRUCTURES

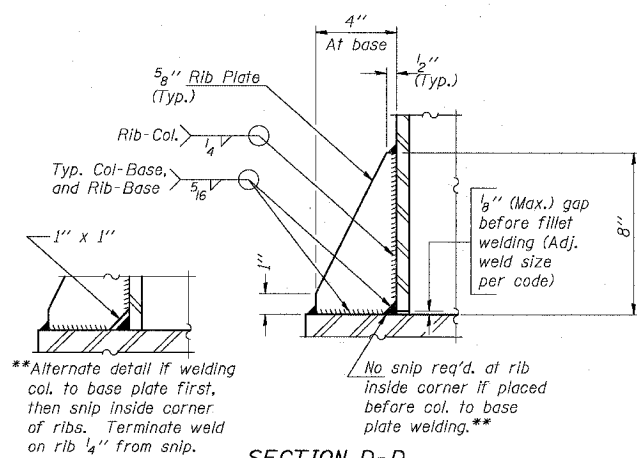
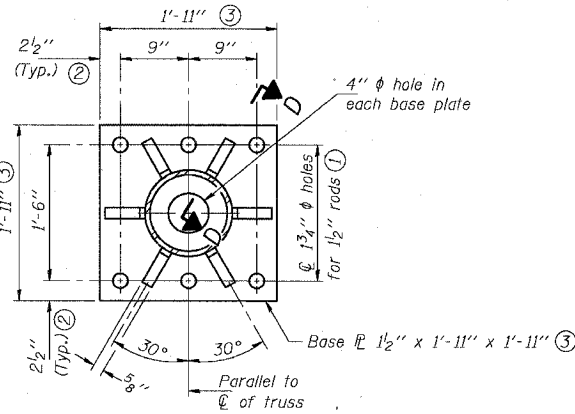
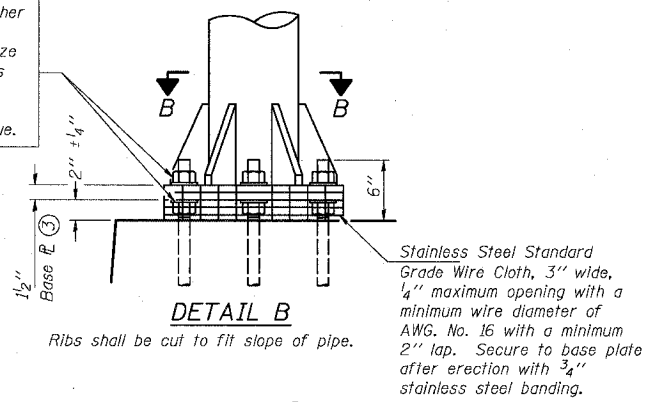
OS4-A-8a 11/1/2002

NUMBER	REVISION	DATE

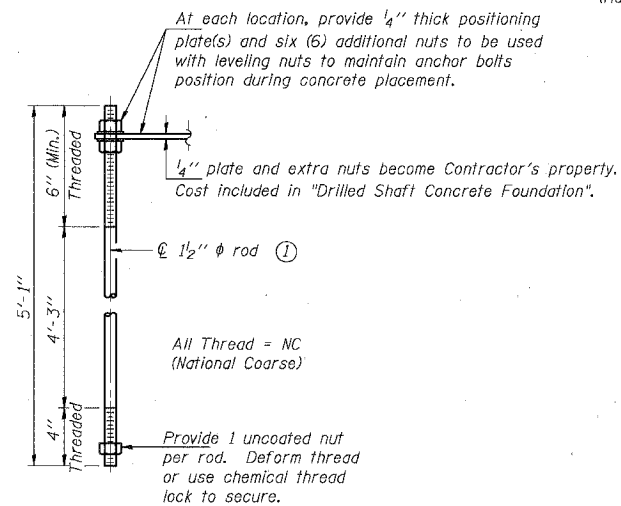
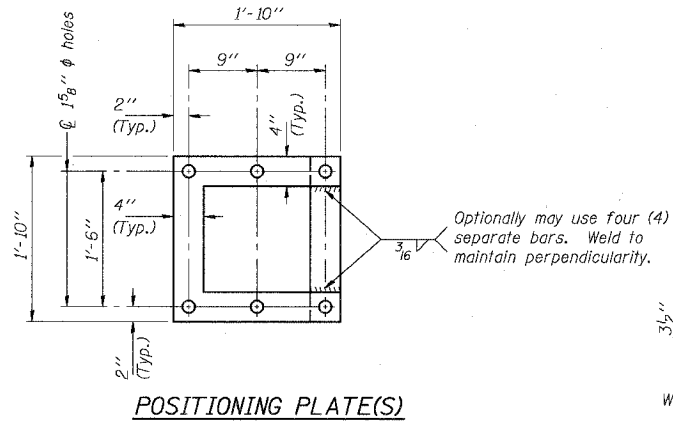
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL SHEETS
94/90	*	COOK	598	316
FED. ROAD DIST. NO. 1	ALLIANCE	FED. AID PROJECT		
62302	*1818, ETC.	2324.6-1P1R-9		

Hexagon locknut and washer (top), leveling nut and washer (bottom). Galvanize per AASHTO M232. Nuts shall each be tightened against base plate with 200 lb.-ft. minimum torque.



**Alternate detail if welding col. to base plate first, then snip inside corner of ribs. Terminate weld on rib 1/4" from snip.

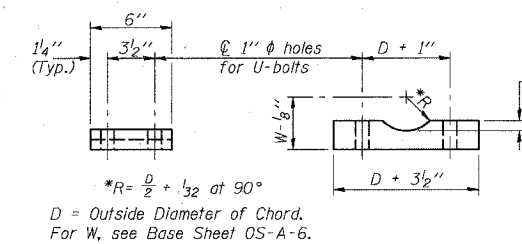
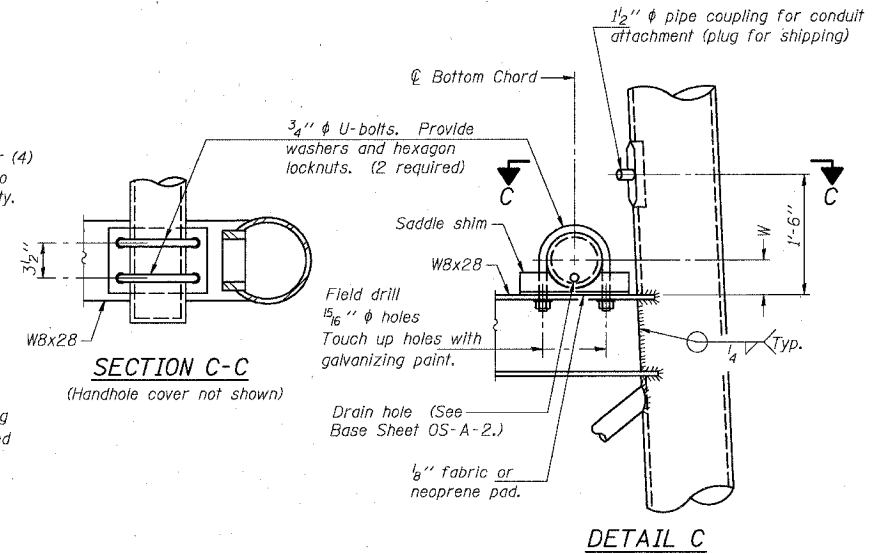


TYPE III-A TRUSS
12" ϕ PIPE SUPPORT FRAME DETAILS

Anchor rods shall conform to AASHTO M314 Grade 36 or 55 and meet Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. Galvanize upper 12" per AASHTO M232. No welding shall be permitted on rods.

Notes: For Type III-A Truss spans greater than 150 ft. and up to 160 ft.:

- ① 1-3/4" ϕ rod, 2" ϕ holes
- ② 2-3/4" edge distance
- ③ Base Pl 1-5/8" x 1-11/2" x 1-11/2"



Truss Chord Nominal Dia.	a
7"	1"
8 1/2"	1 1/4"
9"	1 3/8"

SADDLE SHIM DETAIL

ASTM B26 Alloy 356-F
or
ASTM B209 Alloy 6061-T651
(4 required per sign truss)

DESIGNED	SL
CHECKED	AS
DRAWN	MD
CHECKED	SL

EXAMINED	20
PASSED	ENGINEER OF STRUCTURAL SERVICES
	ENGINEER OF BRIDGES AND STRUCTURES

OS4-A-8aA 11/1/2002

NUMBER	REVISION	DATE

SGN-19

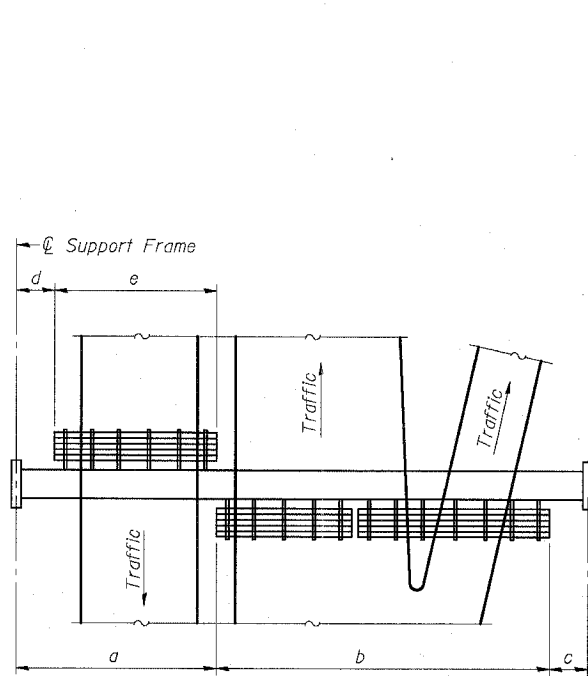
OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION

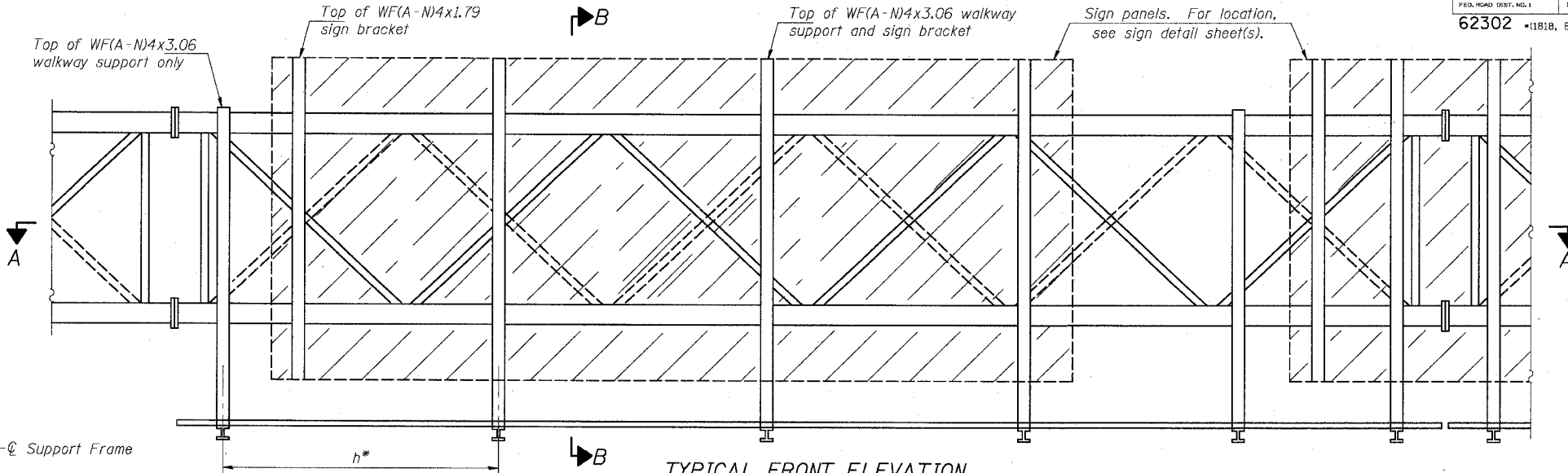
OVERHEAD SIGN STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

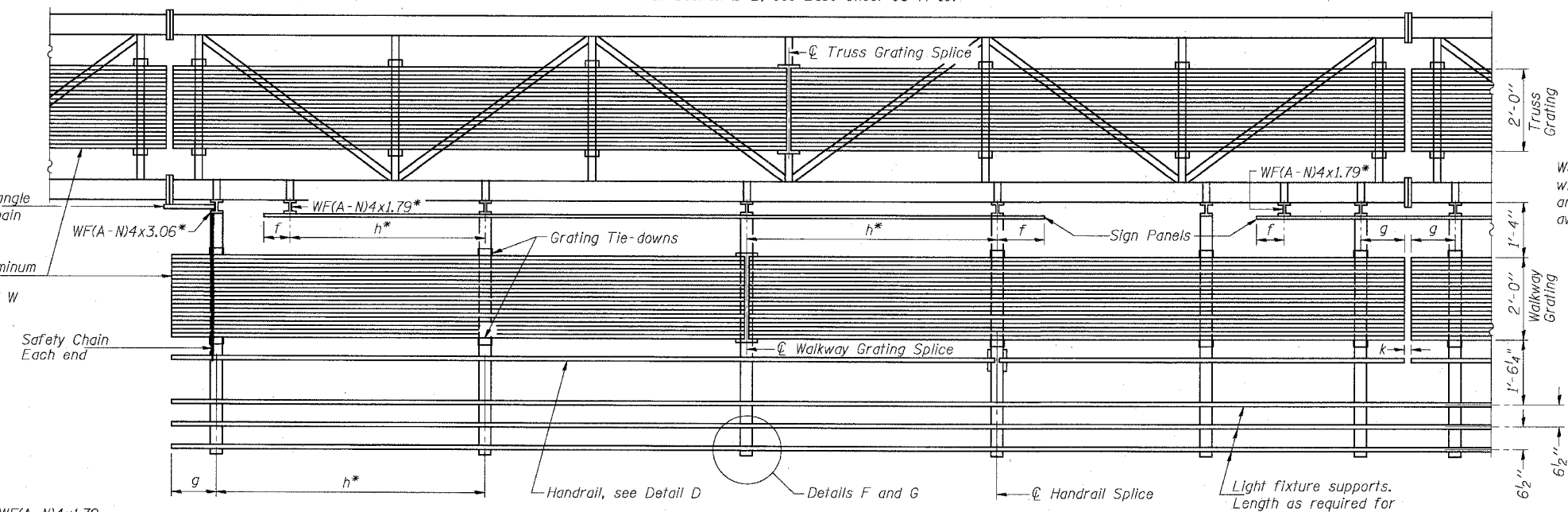
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	317
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	
62302		*1818, ETC, 2324.6-1PIR-9		



PLAN
WALKWAY AND HANDRAIL SKETCH
(Road plan beneath truss varies)



TYPICAL FRONT ELEVATION
With lights and handrail omitted for clarity.
For Section B-B, see Base Sheet OS-A-10.



SECTION A-A

Handrail and walkway shall span a minimum of three brackets between splices and/or gap joints.
Place all sign and walkway brackets as close to panel points as practical.
Grating, handrail and light support splices placed as needed.

Walkway and Truss Grating width dimensions are nominal and may vary ±1/2" based on available standard widths.

BRACKET TABLE

WF(A-N)4x1.79 or WF(A-N)4x3.06 ASTM B308, Alloy 6061-T6		
Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
	8'-0"	2
8'-0"	14'-0"	3
14'-0"	20'-0"	4
20'-0"	26'-0"	5
26'-0"	32'-0"	6

Notes: *Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within limits shown:

- f = 12" maximum, 4" minimum (End of sign to center of nearest bracket)
- g = 12" maximum, 4" minimum (End of walkway grating to center of nearest support bracket)
- h = 6'-0" maximum (center to center of sign and/or walkway support brackets, WF(A-N)4x1.79 or WF(A-N)4x3.06)
- k = 2" maximum gap between adjacent walkway grating sections and handrail ends

**If walkway bracket at safety chain location is behind sign, add angle to bracket, see Alternate Safety Chain Attachment on Base Sheet OS-A-11.

For Details T and W, Section B-B and Grating Splice Details, see Base Sheet OS-A-10.
For Details D, F, G and P and Handrail Splice Details, see Base Sheet OS-A-11.

Structure Number	Station	a	b	c	d	e	Walkway, Grating and Handrail Lengths
IS0161094R056.32	3550+87.27	10.37'	52.0'	7.46'	-	-	52.0'
IS0161094R055.83	3576+87.34	10.37'	52.0'	7.46'	-	-	52.0'
IS0161094R055.33	3603+12.34	10.73'	52.0'	7.10'	-	-	52.0'

DESIGNED	MSA	20
CHECKED	AS	EXAMINED
DRAWN	MD	PASSED
CHECKED	MSA	ENGINEER OF STRUCTURAL SERVICES
		ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

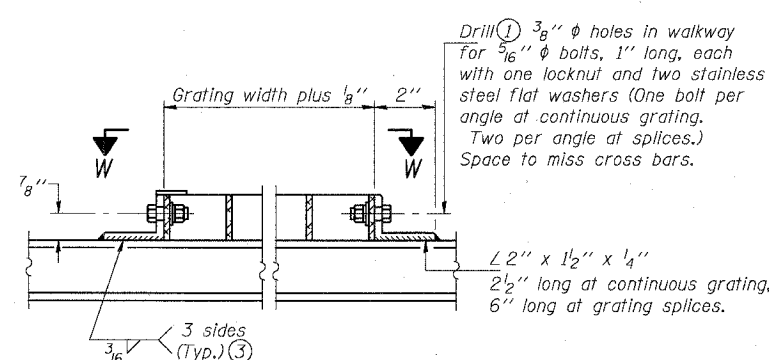
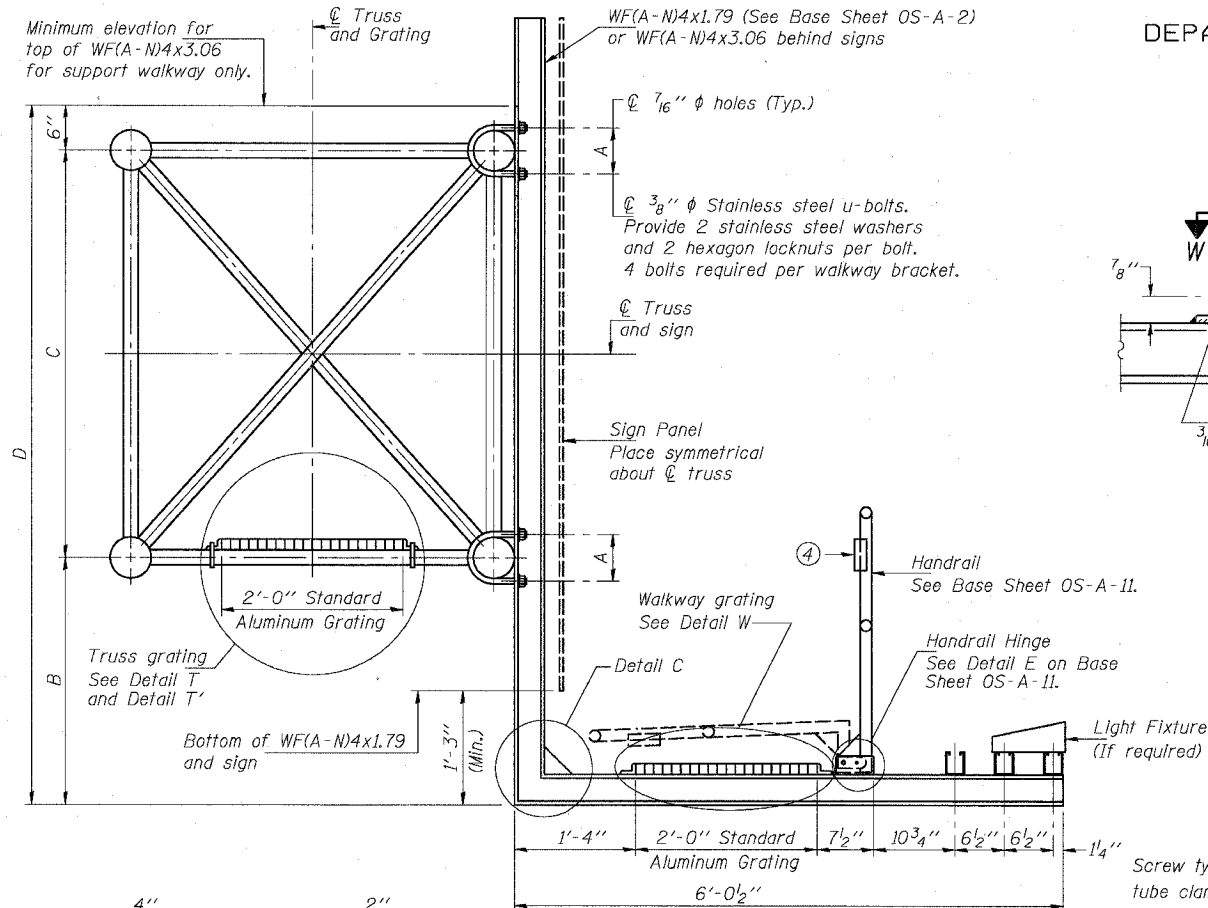
SGN-20

**OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS**

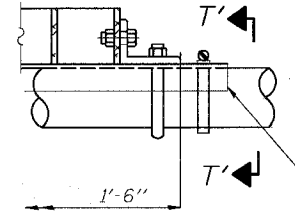
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	318
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	
62302 *0818, ETC, 2324.6-1P1R-9				

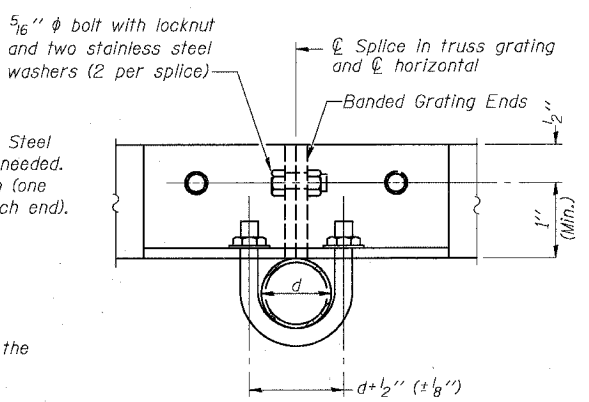


DETAIL W
(Walkway grating)

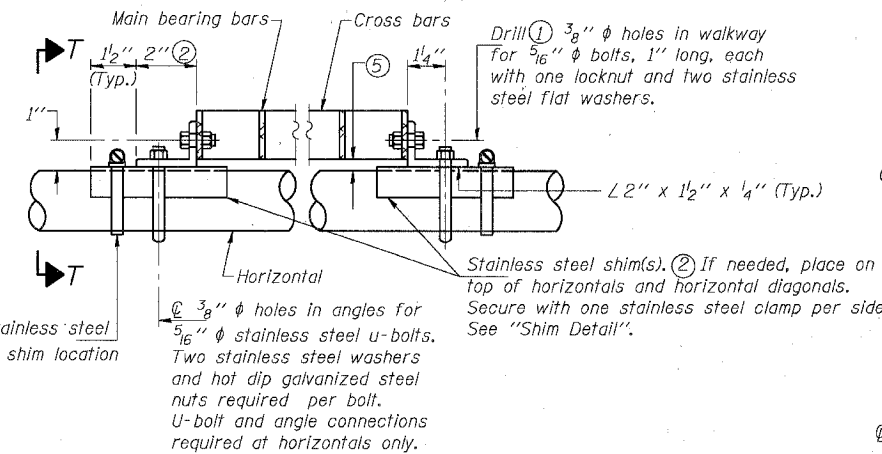


DETAIL T'

(Truss grating splice)
Details not shown same as Detail T.
Alternate materials may be used subject to the Engineer's review and approval.

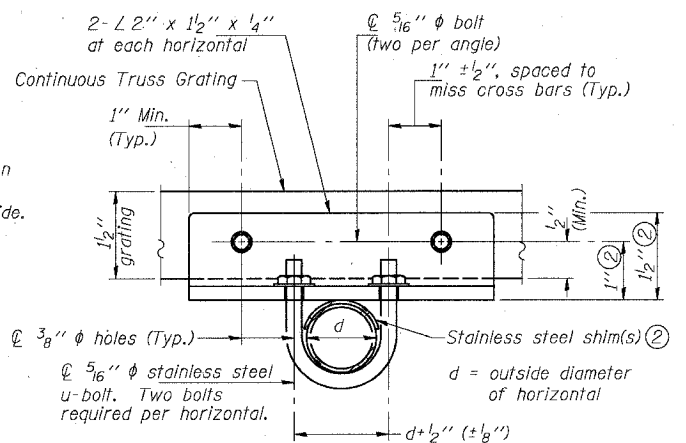


SECTION T-T'



DETAIL T

(Continuous Truss grating)



SECTION T-T

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

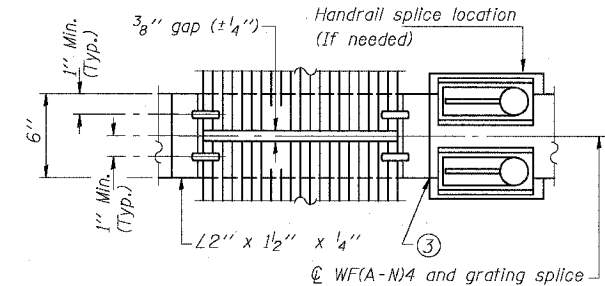
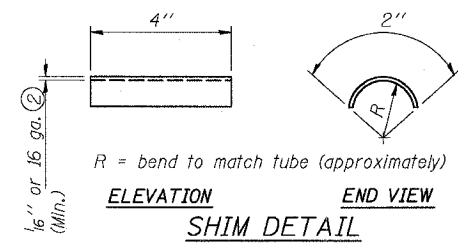
Main Bearing Bars shall be 3/16" x 1 1/2" on 1 3/16" centers and conform to ASTM B221 Alloy 6061-T6.
Cross bars shall be 3/16" x 1 1/2" on 4" centers and conform to ASTM B221 Alloy 6063-T5 or 6061-T6.

OR

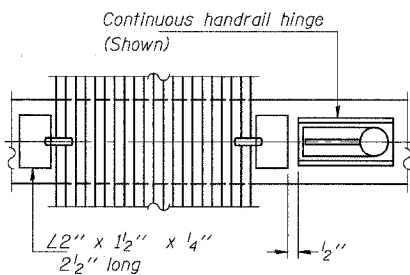
Aluminum Grating with modified "I" sections for main bearing bars shall meet the following requirements:
Main bars shall conform to ASTM B221 Alloy 6061-T6 and have a minimum section modulus equal to 0.0705 in.³ per bar, a depth of 1 1/2", spaced on 1 3/16" centers.
Cross bars shall conform to ASTM B221 Alloy 6063-T5 or T-42 and spaced on 4" centers.

- Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
- Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.
- If Handrail joint present, weld angle to WF(A-N)4 and 1/4" extension bars. (See Base Sheet OS-A-11.)
- 1/2" x 1/2" x 2" welded to handrail posts to protect locations that contact grating.
- Tube to grating gap may vary from 0 to 1/2" (max.) to align walkway, allow for camber, etc.

SECTION B-B

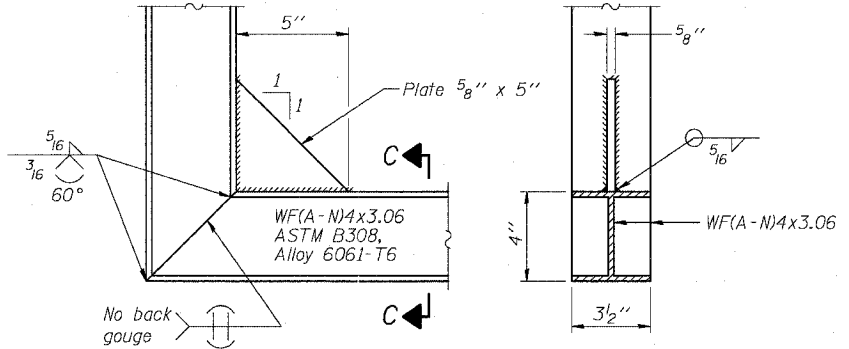


(AT WALKWAY GRATING SPLICE)



SECTION W-W

SECTION C-C



DESIGNED	MSA
CHECKED	AS
DRAWN	MD
CHECKED	MSA

EXAMINED	20
PASSED	ENGINEER OF STRUCTURAL SERVICES
	ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

Structure Number	Station	A	B	C	D
1S0161094R056.32	3550+87.27	5 ³ / ₃₂ "	4'-3"	4'-6"	9'-3"
1S0161094R055.83	3576+87.34	5 ³ / ₃₂ "	4'-3"	4'-6"	9'-3"
1S0161094R055.33	3603+12.34	5 ³ / ₃₂ "	3'-6"	4'-6"	8'-6"

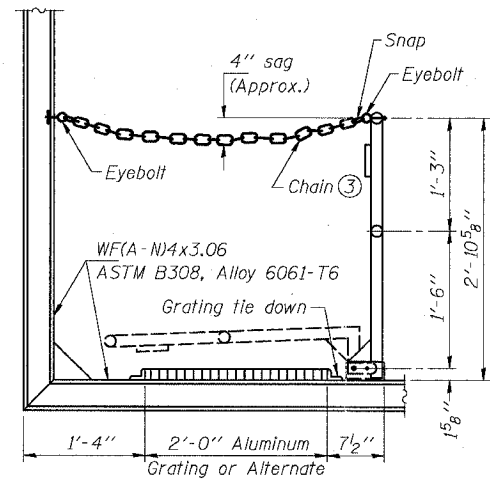
SGN-21

OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS

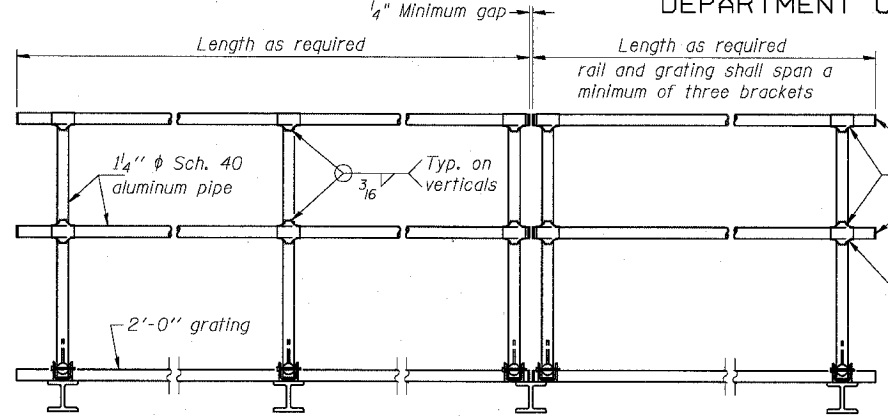
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	LIST NO.	SHEET NO.
94/90	*	COOK	598	319
FED. ROAD DIST. NO. 1		ALLIANCE	FED. AID PROJECT-	
62302 *1818, ETC. 2324.6-1PIR-9				



SIDE ELEVATION
(Showing safety chain w/o sign)

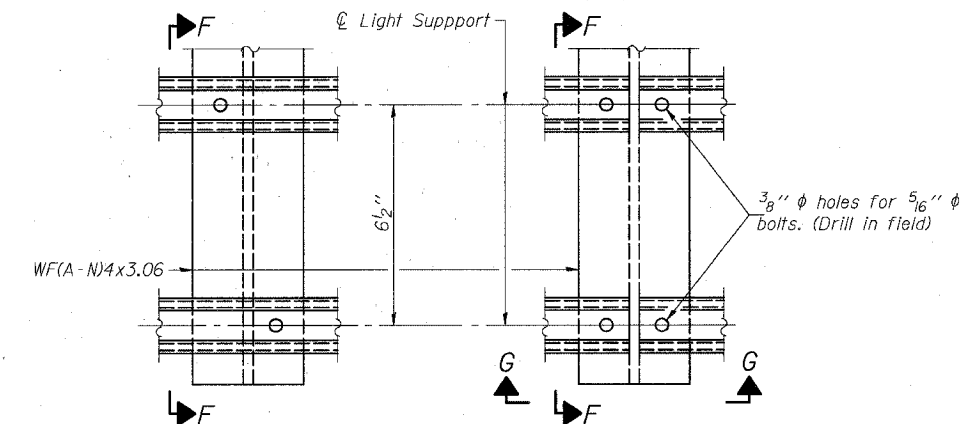


HANDRAIL DETAILS

FRONT ELEVATION

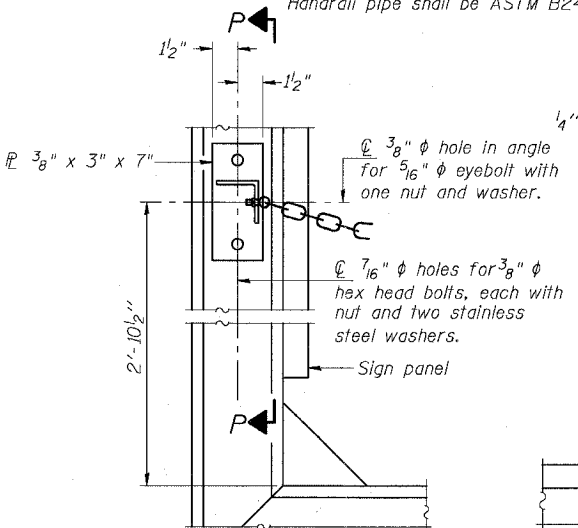
① Install standard force-fit end caps or weld 1/8" end plates with 1/8" c.f.w. and grind smooth. (All rail ends)

② Horizontal handrail member shall be continuous thru fitting. Provide 1/16" hole in fitting for 3/8" bolt. Field drill 1/16" hole in horizontal rail member. Provide locknut and two stainless steel washers for bolt. (Use 5/16" eyebolts in 1/16" holes on top rail at ends only.)

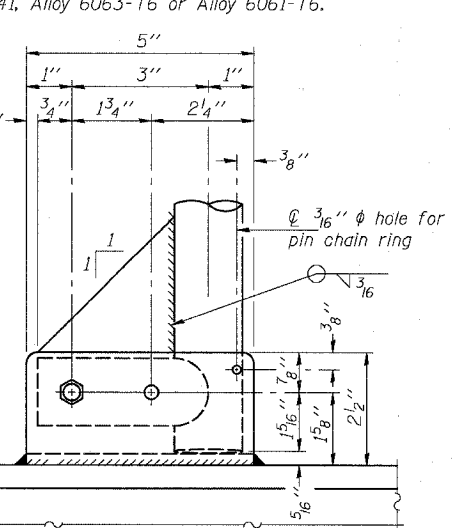


DETAIL F

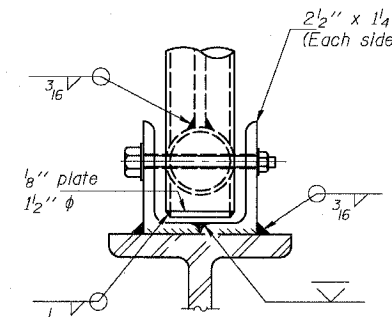
DETAIL G



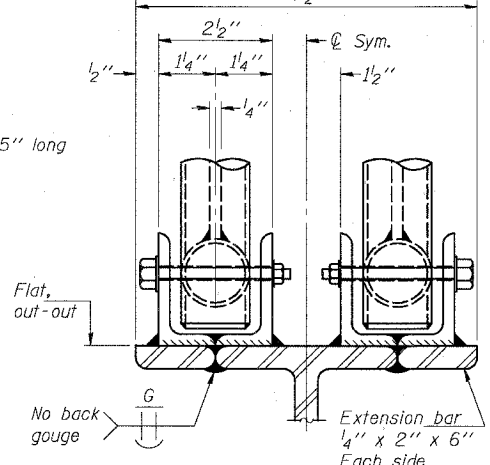
ALTERNATE SAFETY CHAIN ATTACHMENT



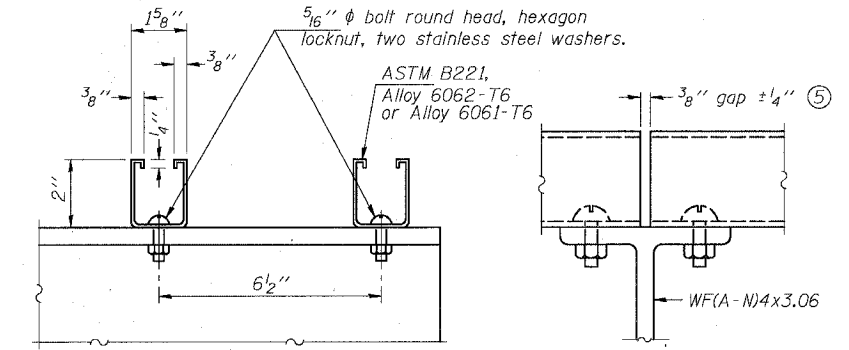
SIDE ELEVATION



FRONT ELEVATION



ELEVATION AT HANDRAIL JOINT ④

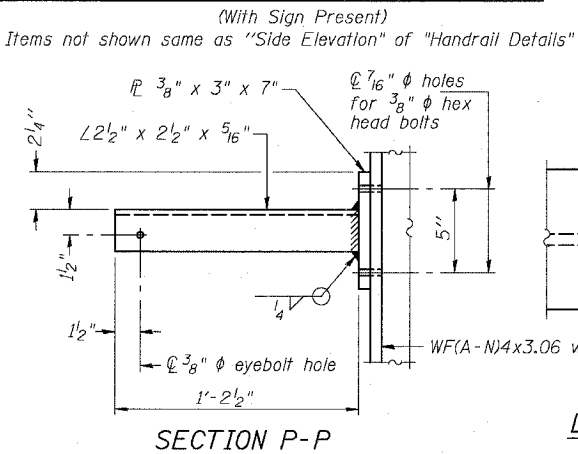


SECTION F-F

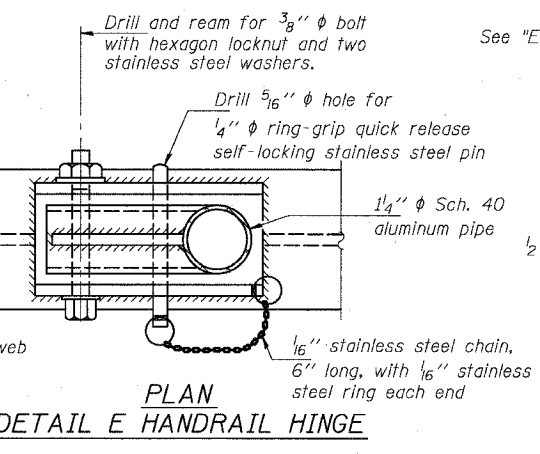
SECTION G-G

LIGHTING FIXTURE MOUNTS (IF REQUIRED)

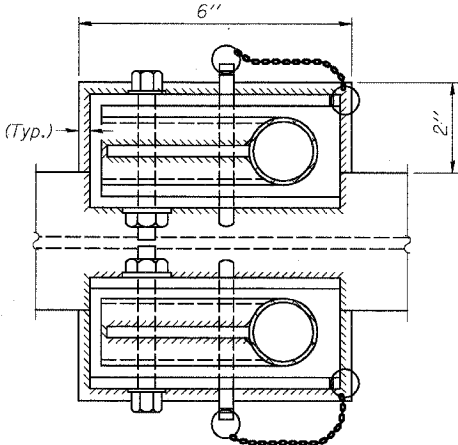
⑤ Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.



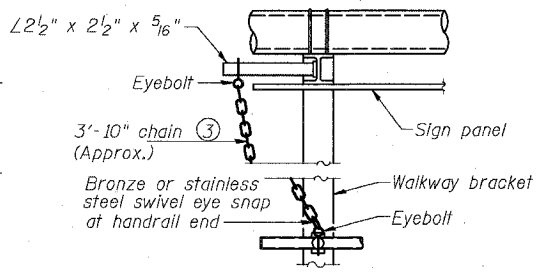
SECTION P-P



**PLAN
DETAIL E HANDRAIL HINGE**



PLAN AT HANDRAIL JOINT
Details not shown same as "PLAN"

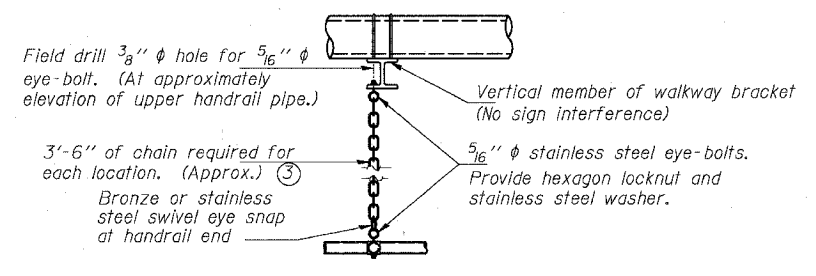


ALTERNATE SAFETY CHAIN ATTACHMENT

Details not shown similar to "Safety Chain" Details (Walkway omitted for clarity)

③ 3/16" galvanized steel chain, approximately 12 links per foot. Chain to be hot dip galvanized after manufacture and suitable for prolonged exterior exposure. Alternate materials may be substituted with the Engineer's approval.

④ Extrusions may be used in lieu of the details shown, with approval of the Engineer.



SAFETY CHAIN

One required for each end of each walkway.

SGN-22

DESIGNED	MSA	20
CHECKED	AS	EXAMINED
DRAWN	MD	PASSED
CHECKED	MSA	ENGINEER OF STRUCTURAL SERVICES
		ENGINEER OF BRIDGES AND STRUCTURES

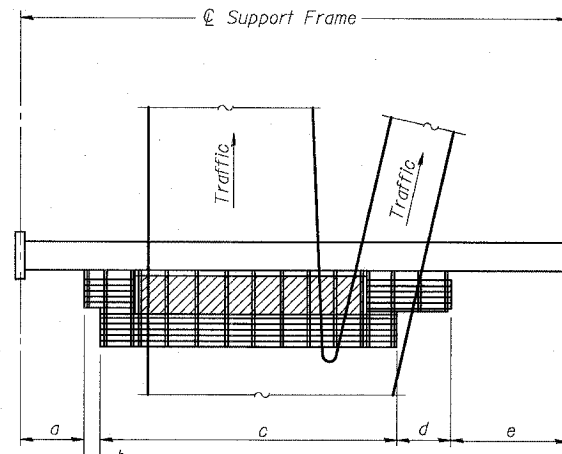
NUMBER	REVISION	DATE

OVERHEAD SIGN STRUCTURES
ALUMINUM HANDRAIL DETAILS
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

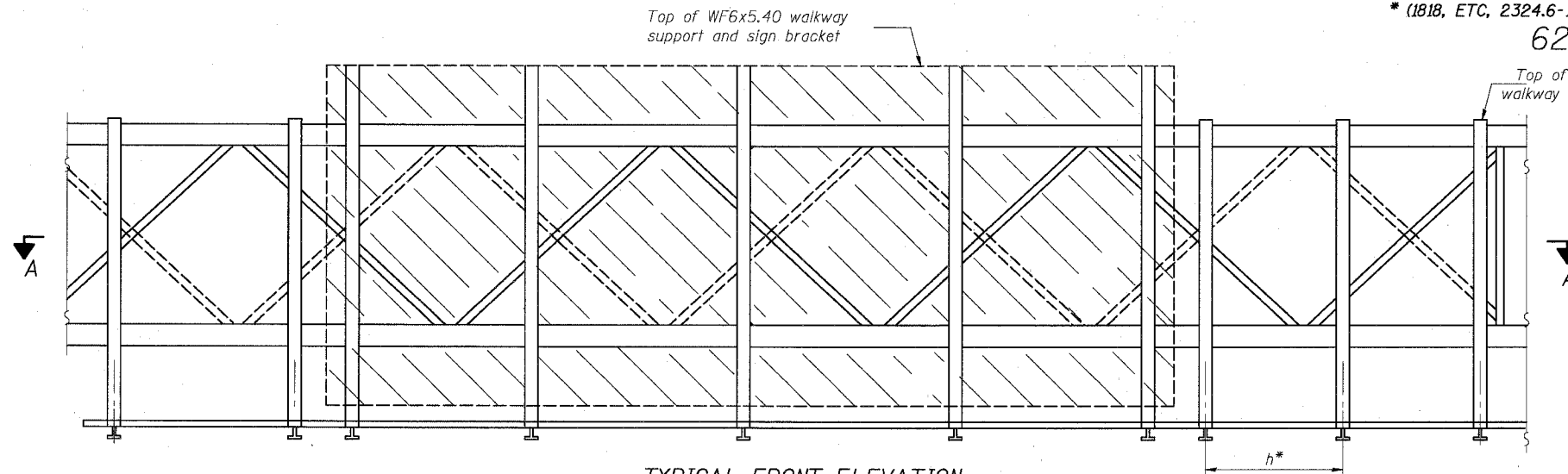
ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
90/94	*	COOK	598	320
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				
* (1818, ETC, 2324.6-IP) R-9				

62302



WALKWAY AND HANDRAIL SKETCH

(Road plan beneath truss varies)



TYPICAL FRONT ELEVATION

With handrail omitted for clarity.
For Section B-B, see Base Sheet OS-A-10-DMS2
For Section B'-B', and B''-B'', see Base Sheet OS-A-10a-DMS2

Walkway and Truss Grating width dimensions are nominal and may vary $\pm 1/2$ " based on available standard widths.

BRACKET TABLE

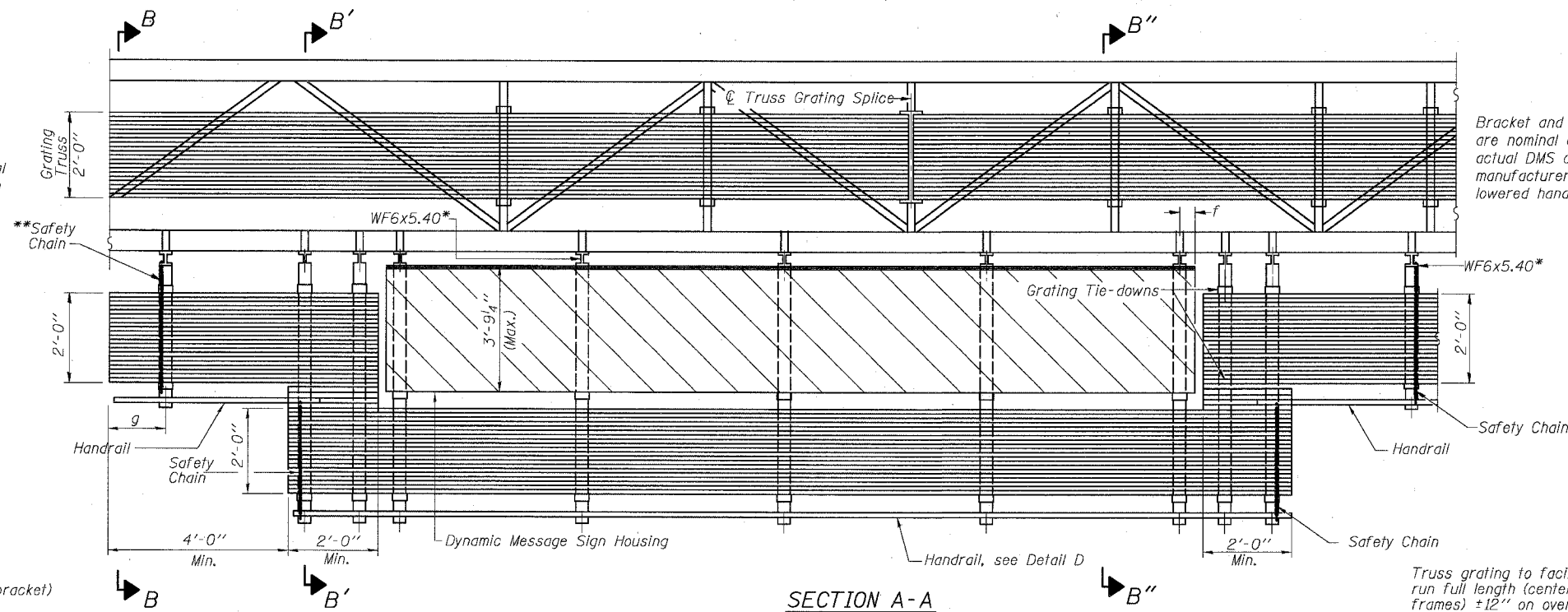
Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
10'-0"	10'-0"	2
16'-0"	16'-0"	3
22'-0"	22'-0"	4
28'-0"	28'-0"	5
34'-0"	34'-0"	6

Notes: *Space WF6x5.40 brackets for efficiency and within limits shown:

- f = 12" maximum, 4" minimum (End of sign to \mathcal{C} of nearest bracket)
- g = 12" maximum, 4" minimum (End of walkway grating to \mathcal{C} of nearest support bracket)
- h = 6'-0" maximum (\mathcal{C} to \mathcal{C} of walkway support brackets, WF6x5.40)

**If walkway bracket at safety chain location is behind sign, add angle to bracket, see Alternate Safety Chain Attachment on Base Sheet OS-A-11-DMS2

For Details T and W, Section B-B and Grating Splice Details, see Base Sheet OS-A-10-DMS2.
For Details D, F, G and P and Handrail Splice Details, see Base Sheet OS-A-11-DMS2.



Bracket and grating dimensions are nominal and will vary based on actual DMS cabinet dimensions plus manufacturer's mounting devices, lowered handrail and DMS cabinet.

Truss grating to facilitate inspection shall run full length (center to center of support frames) ± 12 " on overhead trusses. Cost of truss grating is included in "Overhead Sign Structure"

Handrail and walkway shall span a minimum of three brackets between splices and/or gap joints. Place all sign and walkway brackets as close to panel points as practical. Grating and handrail splices placed as needed.

SGN-23

OVERHEAD SIGN STRUCTURES
ALTERNATE ALUMINUM WALKWAY DETAILS

F.A.I. 90/94 (DAN RYAN EXPRESSWAY)
31st Street to 71st Street
(SB Express Lanes)

DESIGNED	
CHECKED	
DRAWN	
CHECKED	

EXAMINED	19
PASSED	ENGINEER OF STRUCTURAL SERVICES
	ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

Structure Number	Station	a	b	c	d	e	Walkway Grating and Handrail Lengths
ISO161094R057.7	1476+25.00	4.69'	12.00'	32.00'	12.00'	7.33'	56.00'
ISO161094R055.64	3586+80	10.71'	9.54'	31.08'	11.38'	7.12'	56.0'

OS-A-9-DMS2 7/1/2001

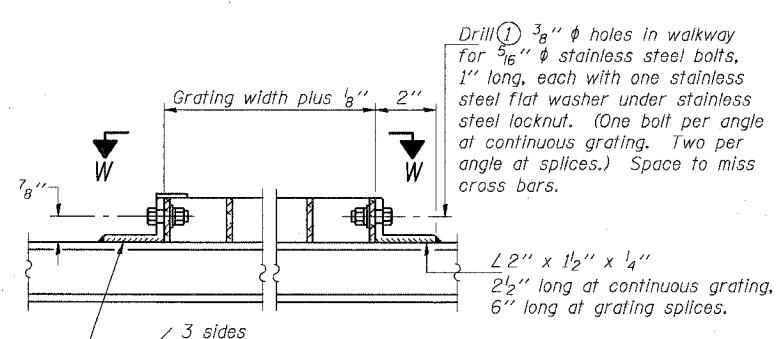
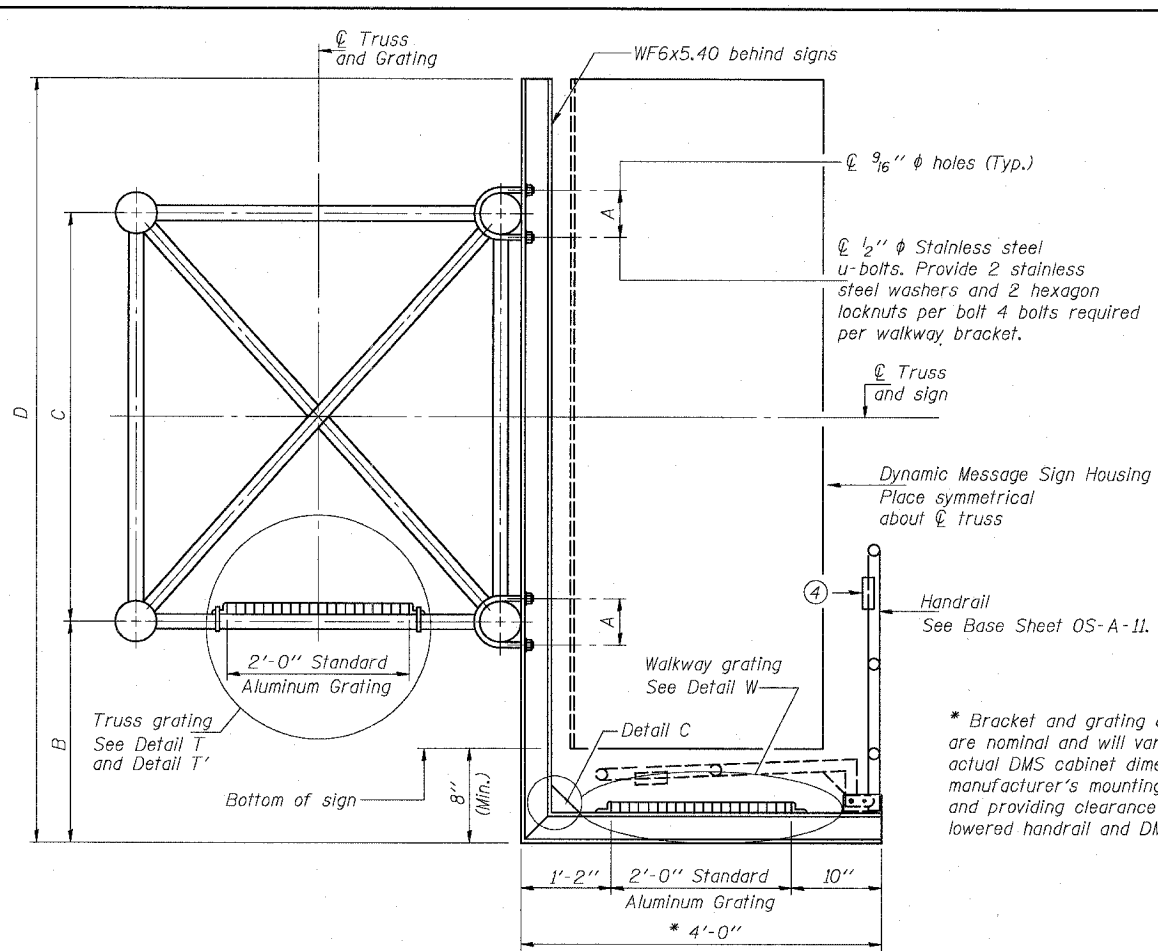
6/24/2005 3:52:16 PM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

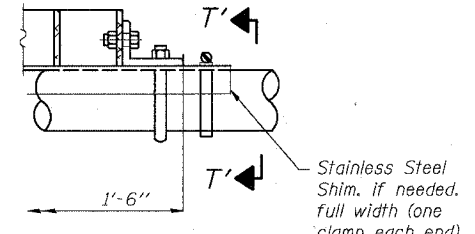
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	*	COOK	598	321

* (1818, ETC, 2324.6-1P) R-9

62302

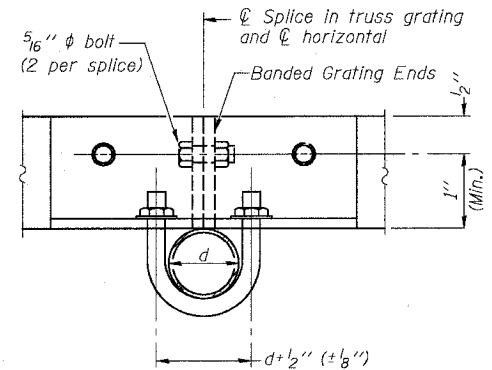


DETAIL W
(Walkway grating)

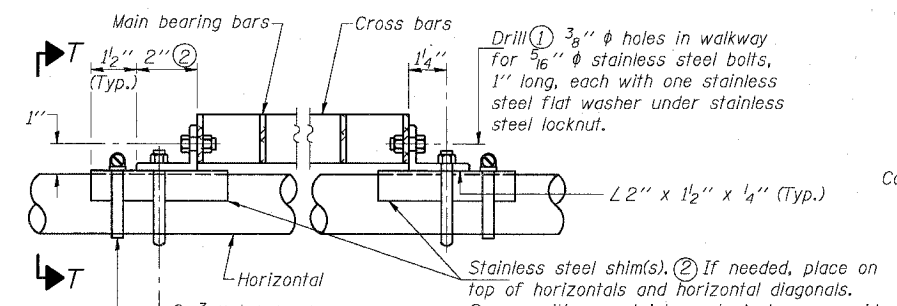


DETAIL T'

(Truss grating splice)
Details not shown same as Detail T.
Alternate materials may be used subject to the Engineer's review and approval.

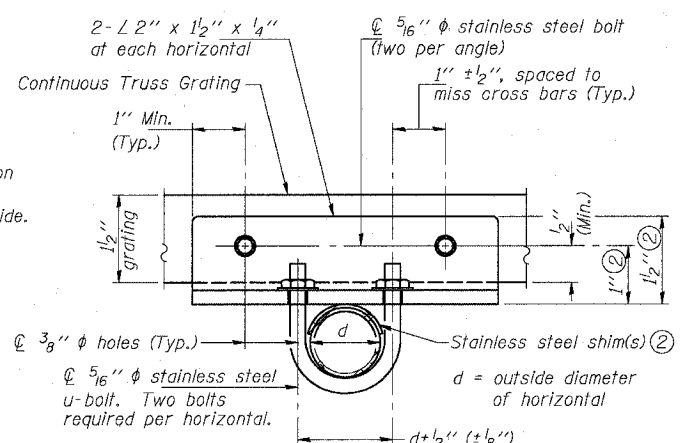


SECTION T'-T'



DETAIL T

(Continuous Truss grating)

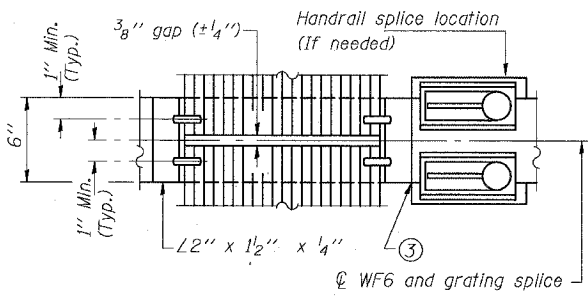


SECTION T-T

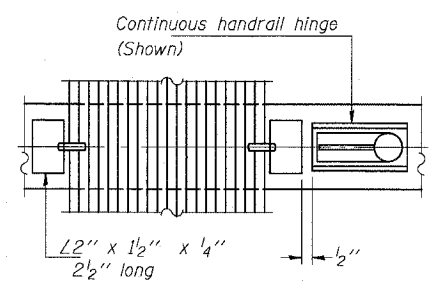
* Bracket and grating dimensions are nominal and will vary based on actual DMS cabinet dimensions plus manufacturer's mounting devices, and providing clearance between the lowered handrail and DMS cabinet.

Screw type stainless steel tube clamp at shim location

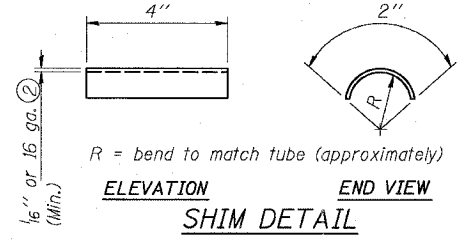
SECTION B-B



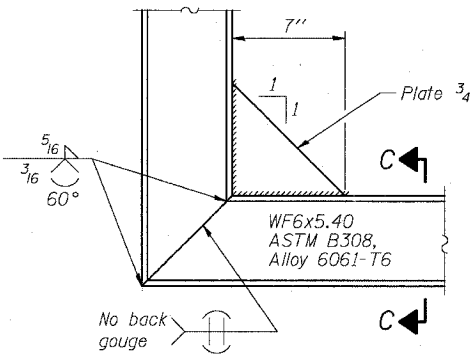
(AT WALKWAY GRATING SPLICE)



SECTION W-W
(CONTINUOUS WALKWAY GRATING)



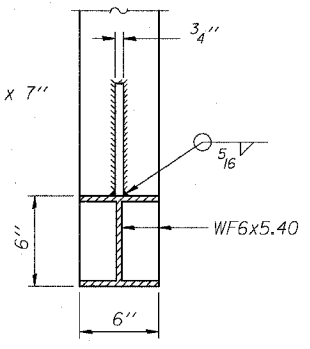
SHIM DETAIL



DETAIL C

(See Detail P, Base Sheet OS-A-11-DMS2.)

SECTION C-C



SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

Main Bearing Bars shall be 3/8" x 1 1/2" on 1 3/16" centers and conform to ASTM B211 Alloy 6061-T6.
Cross bars shall be 3/8" x 1 1/2" on 4" centers and conform to ASTM B221 Alloy 6063-T5 or 6061-T6.

OR

Aluminum Grating with modified "T" sections for main bearing bars shall meet the following requirements:
Main bars shall conform to ASTM B221 Alloy 6061-T6 and have a minimum section modulus equal to 0.0705 in.³ per bar, a depth of 1 1/2", spaced on 1 3/16" centers.
Cross bars shall conform to ASTM B221 Alloy 6063-T5 or T-42 and spaced on 4" centers.

Structure Number	Station	A	B	C	D
ISO161094R057.7	1476+25.00	7 1/2"	1' 5"	7' 0"	9' 2"
ISO161094R055.64	3586+80	7 1/2"	1.25'	7.0'	8.8'

- Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
- Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.
- If Handrail Joint present, weld angle to WF6 and 1/4" extension bars. (See Base Sheet OS-A-11-DMS2.)
- 1/2" x 1/2" x 2" welded to handrail posts to protect locations that contact grating.

DESIGNED	19
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES

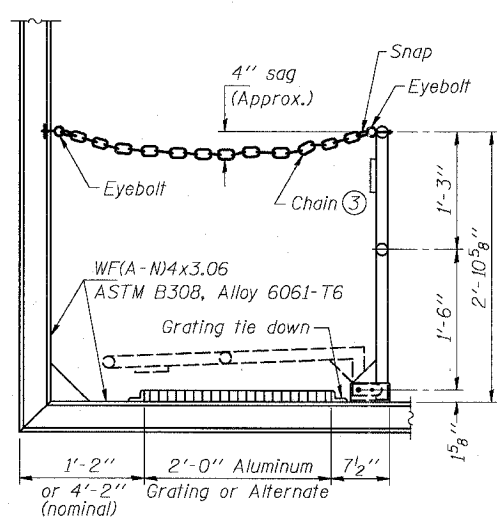
NUMBER	REVISION	DATE

SGN-24
OVERHEAD SIGN STRUCTURES
ALTERNATE ALUMINUM WALKWAY DETAILS
F.A.I. 90/94 (DAN RYAN EXPRESSWAY)
31st Street to 71st Street
(SB Express Lanes)
OVERHEAD SIGN STRUCTURES

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	322
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

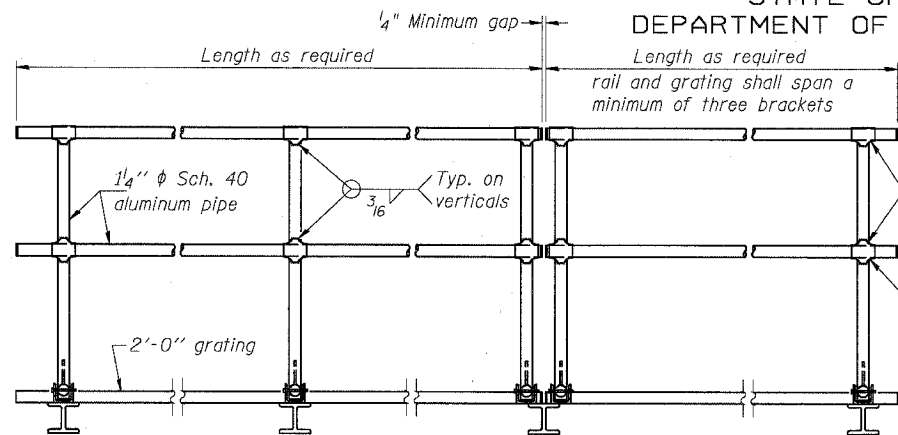


SIDE ELEVATION

(Showing safety chain w/o sign)

HANDRAIL DETAILS

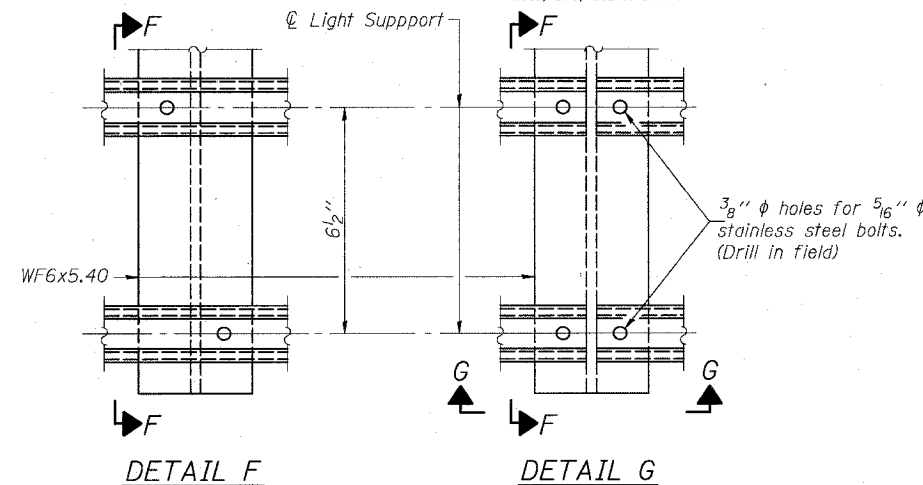
Handrail pipe shall be ASTM B241, Alloy 6063-T6 or Alloy 6061-T6.



FRONT ELEVATION

① Install standard force-fit end caps or weld 1/8" end plates with 1/8" c.f.w. and grind smooth. (All rail ends)
Fittings-ASTM B26, Alloy 356-T7

② Horizontal handrail member shall be continuous thru fitting. Provide 7/16" hole in fitting for 3/8" bolt. Field drill 7/16" hole in horizontal rail member. Provide washer and locknut for bolt. (Use 5/16" eyebolts in 7/16" holes on top rail at ends only.)



DETAIL F

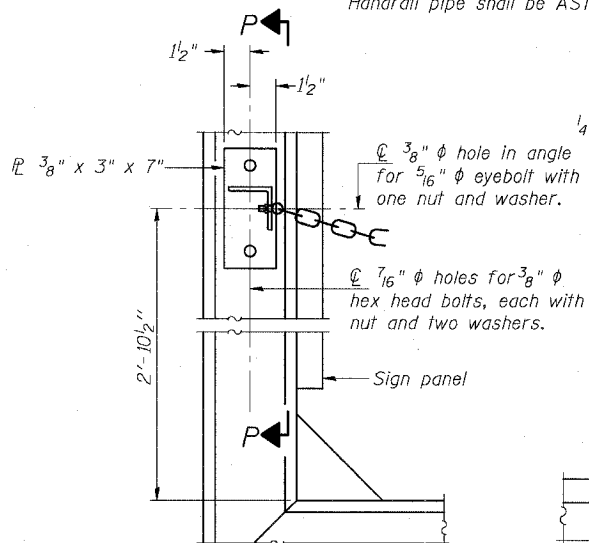
DETAIL G

SECTION F-F

SECTION G-G

LIGHTING FIXTURE MOUNTS (IF REQUIRED)

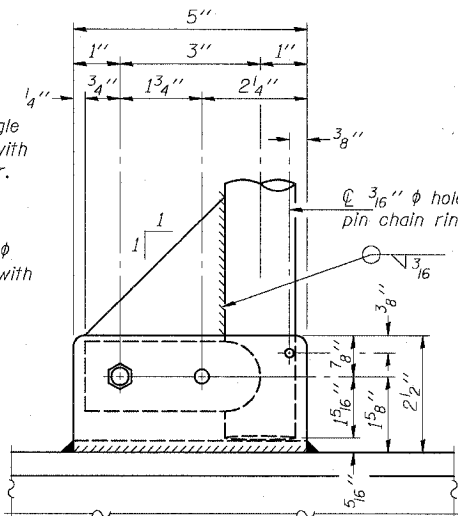
⑤ Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.



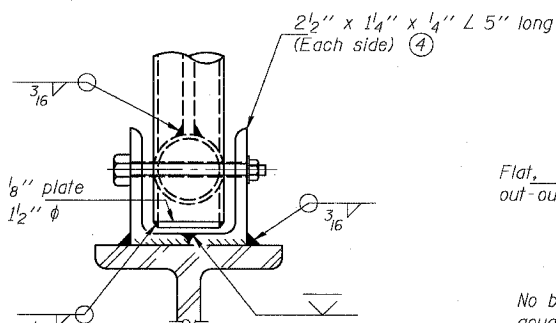
ALTERNATE SAFETY CHAIN ATTACHMENT

(With Sign Present)

Items not shown same as "Side Elevation" of "Handrail Details"

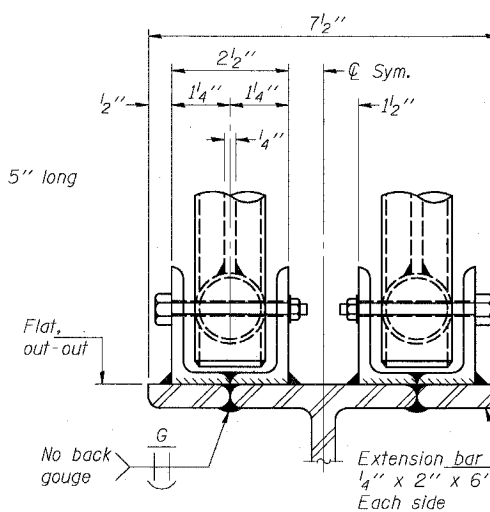


SIDE ELEVATION

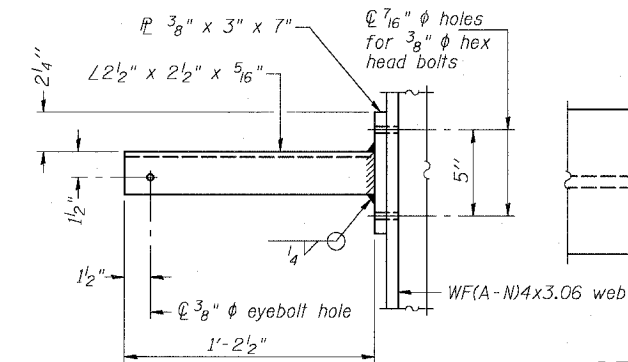


FRONT ELEVATION

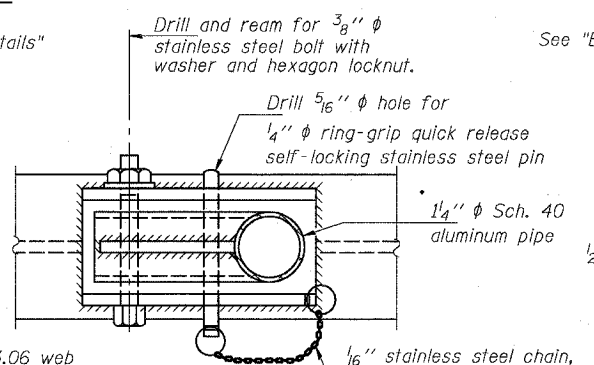
See "ELEVATION" at right for dimensions.



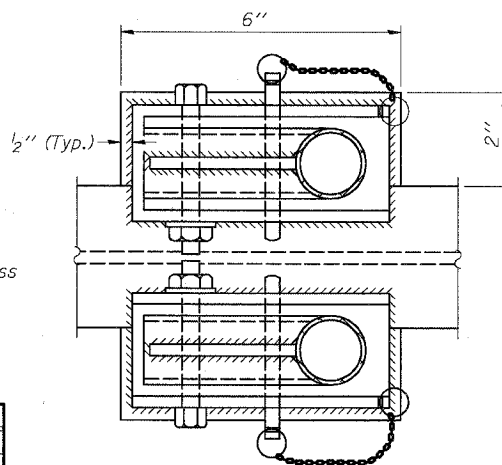
ELEVATION AT HANDRAIL JOINT



SECTION P-P

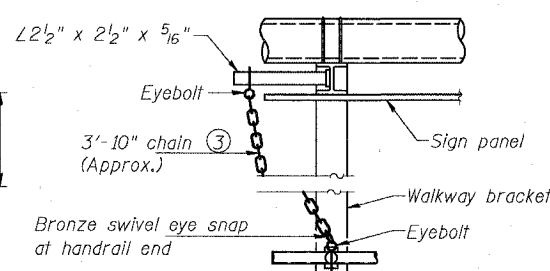


PLAN DETAIL E HANDRAIL HINGE



PLAN AT HANDRAIL JOINT

Details not shown same as "PLAN"

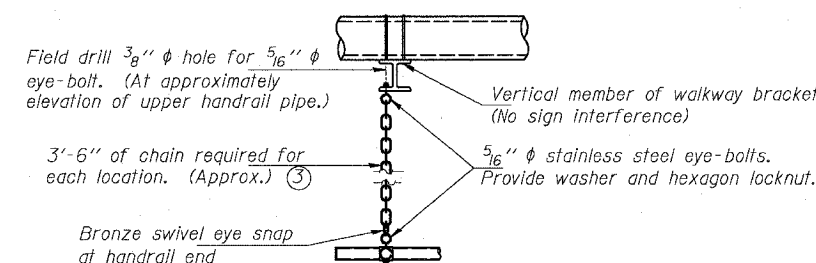


ALTERNATE SAFETY CHAIN ATTACHMENT

Details not shown similar to "Safety Chain" Details (Walkway omitted for clarity)

③ 3/16" galvanized steel chain, approximately 12 links per foot. Chain to be hot dip galvanized after manufacture and suitable for prolonged exterior exposure. Alternate materials may be substituted with the Engineer's approval.

④ Extrusions may be used in lieu of the details shown, with approval of the Engineer.



SAFETY CHAIN

One required for each end of each walkway.

DESIGNED	19
CHECKED	ENGINEER OF BRIDGE DESIGN
DRAWN	PASSED
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.	SHEET NO.
90/94		COOK	598	323	
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
62302		• (1818, ETC, 2324.6-1P) R-9			

SHEET NO. -
- SHEETS

NOTES:

The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Q_u) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission. Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column. A normal surface finish followed by a Bridge Seat Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in "Drilled Shaft Concrete Foundation".

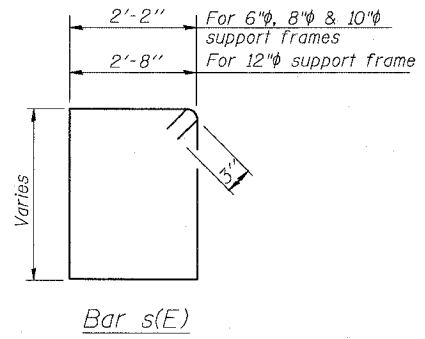
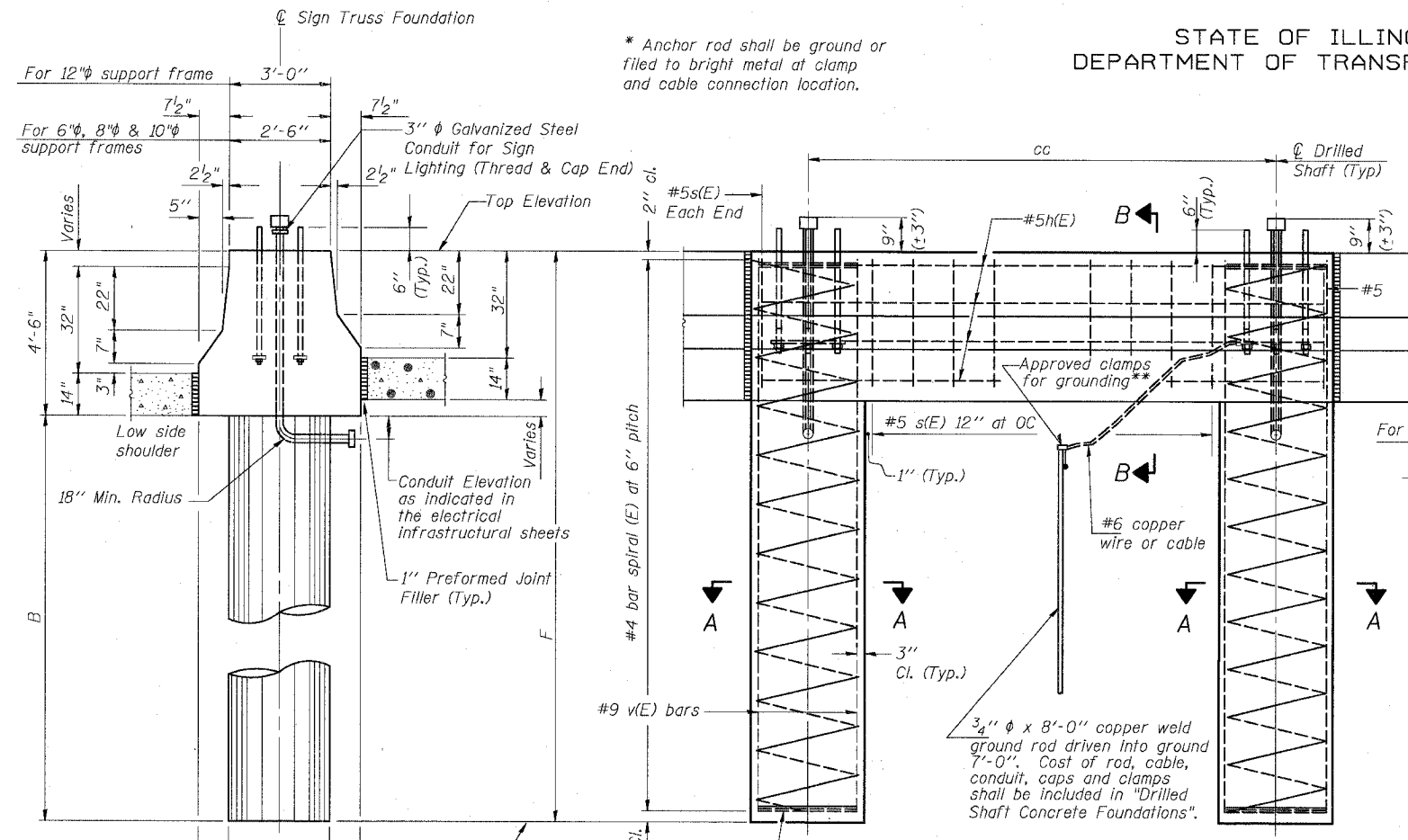
Face of median support foundation shall match dimensions of permanent barrier wall F shape.

Refer to CONTRACT 62583 for orientation and location of the conduit.

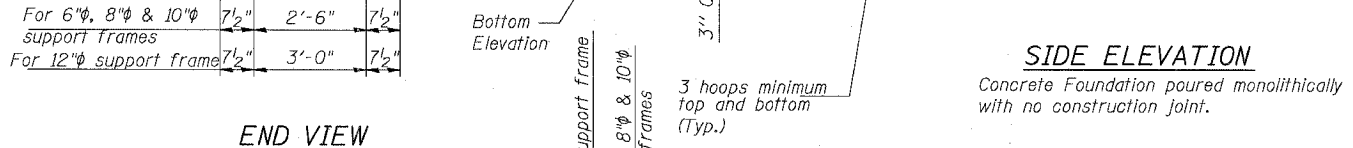
BAR LIST - EACH FOUNDATION

Bar	Number	Size	Length	Shape
h(E)	10	#5	M less 0'-4"	—
s(E)	9	#5	Varies	□
v(E)	24	#9	F less 0'-5"	—
v(E)	16	#9	F less 0'-5"	—
#4(E) bar spiral - see Side Elevation				

For 12" support frame
For 6", 8" & 10" support frames



SECTION B-B

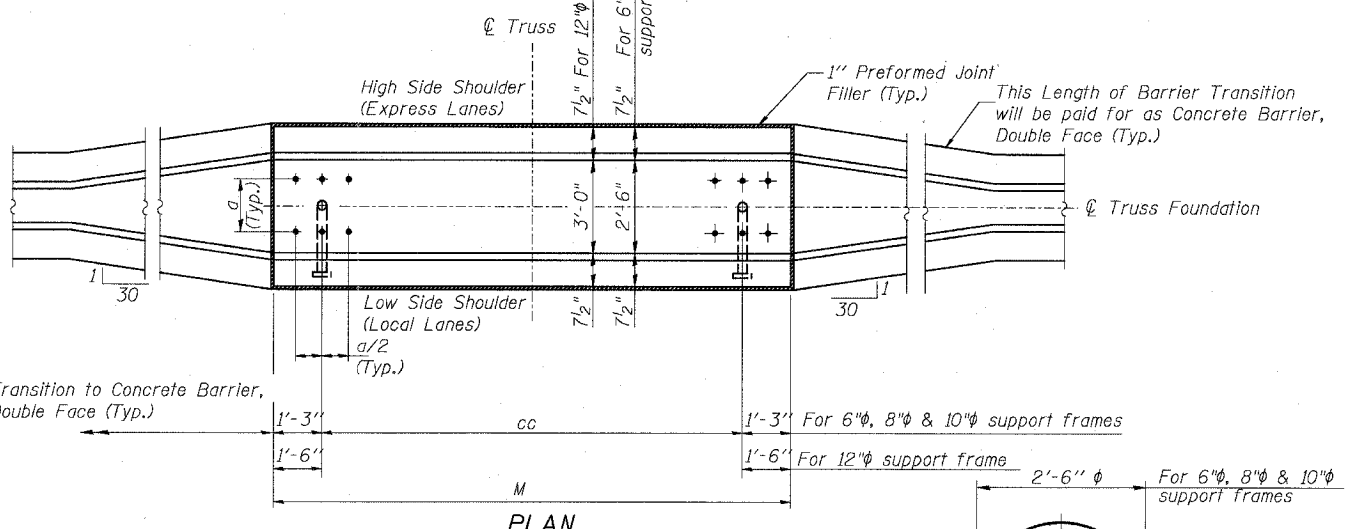


END VIEW

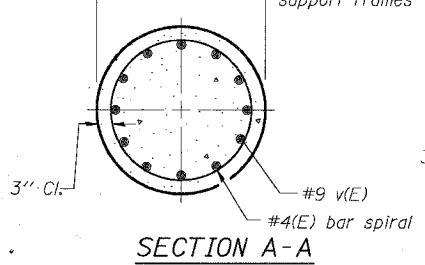
SIDE ELEVATION

Concrete Foundation poured monolithically with no construction joint.

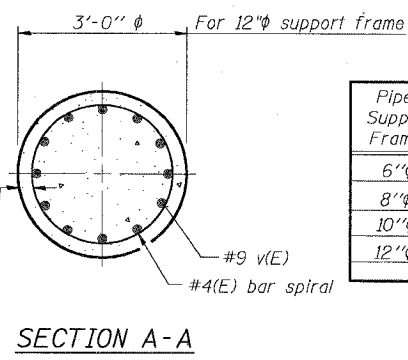
Pipe Support Frame	Structure Number	Station	Left Foundation		Right Foundation		Class SI Concrete (Cu. Yds.)		
			Elevation Top	Elevation Bottom	Elevation Top	Elevation Bottom			
	ISO161094R058.3	3444+50			21.0	24.5	22.8		
12"φ	ISO161094R056.47	3543+00	10.09'	14.31'	17.5'	24.4'	13.5		
10"φ	ISO161094R056.32	3550+87.24	-	-	2.61	-20.74	16.50'	23.35'	11.2
8"φ	ISO161094R055.83	3576+87.34	-	-	2.86	-17.64	13.50'	20.05'	9.5
12"φ	ISO161094R055.64	3586+80	-	-	5.03	-19.61	18.00'	24.64'	11.3
12"φ	ISO161094L055.64	3586+50	4.39'	-20.01'	18.0'	24.4'	-	-	13.3
10"φ	ISO161094L056.67	3532+00	4.15'	-19.36'	16.5'	23.51'	-	-	12.2
8"φ	ISO161094L056.02	3566+30	-0.80'	-10.22'	14.5'	9.42'	-	-	10.0
8"φ	ISO161094L055.46	3596+00	14.75'	-4.30'	14.5'	19.05'	-	-	10.0
8"φ	ISO161094L055.08	3616+00	5.71'	-13.63'	14.5'	19.34'	-	-	10.0
8"φ	ISO161094R055.33	3603+12.34	-	-	8.09'	-11.09'	13.5'	19.18'	10.8



PLAN



SECTION A-A



SECTION A-A

Pipe Support Frames	cc	M	a	a/2
6"φ	7'-0"	9'-6"	0'-11"	5 1/2"
8"φ	7'-6"	10'-0"	1'-1 1/2"	6 3/4"
10"φ	8'-3"	10'-9"	1'-3"	7 1/2"
12"φ	9'-0"	12'-0"	1'-6"	9"

DESIGNED	-	20
CHECKED	-	EXAMINED
DRAWN	-	PASSED
CHECKED	-	ENGINEER OF BRIDGES AND STRUCTURES

MODIFIED FROM OS4-MED

OVERHEAD SIGN STRUCTURES
MEDIAN SUPPORT FOUNDATION DETAILS

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION

OVERHEAD SIGN STRUCTURES

SGN-26

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POST MILES	SHEET NO.	SHEET NO.
90/94	*	COOK	598	324	- SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-		
62302		*181B, ETC. 2324.6-IP/P-9			

NOTES:

The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Q_u) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

No sonotubes or decomposable forms shall be used below the lower conduit entrance. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

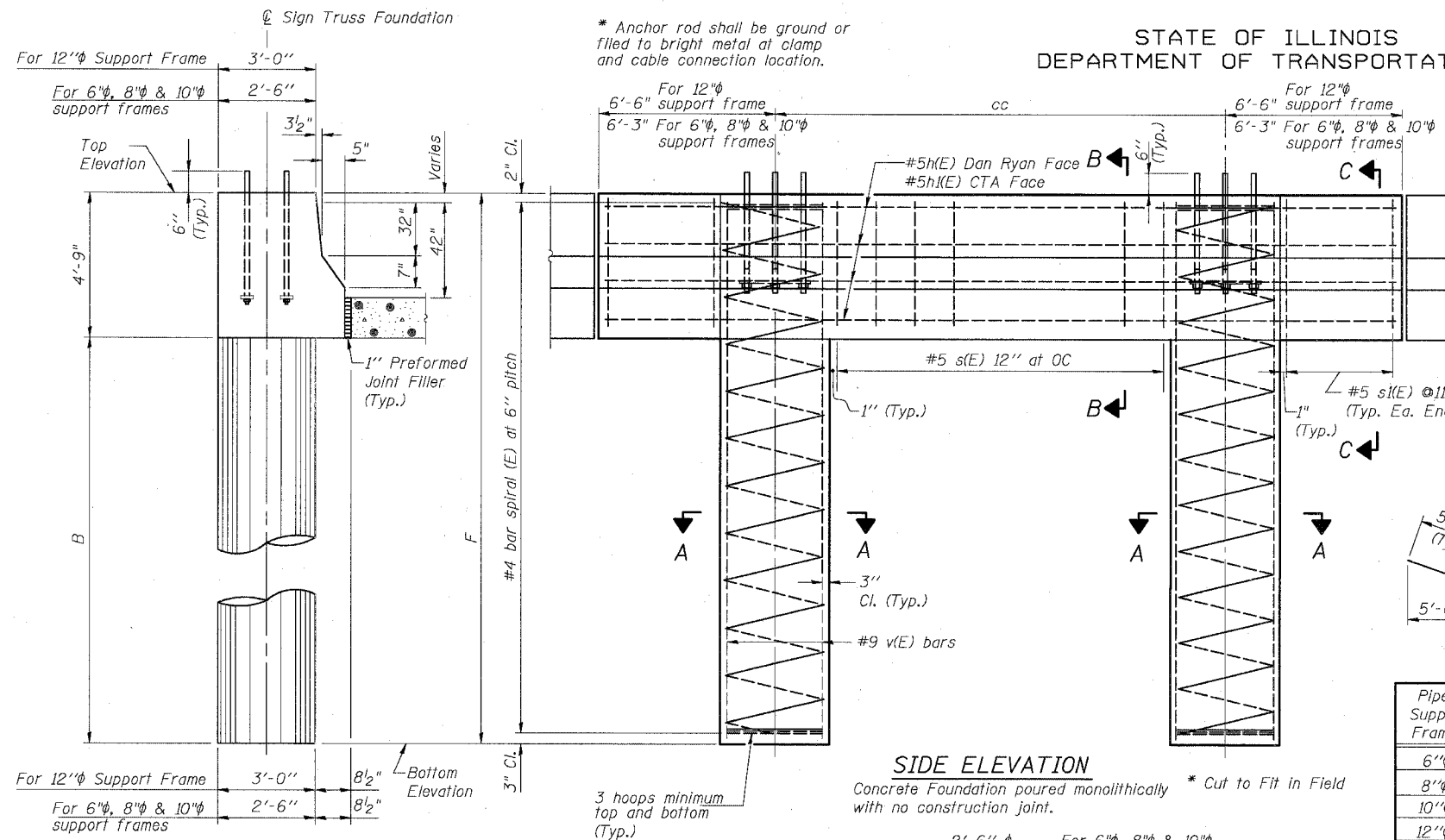
Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Bridge Seat Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in "Drilled Shaft Concrete Foundation".

Face of median support foundation shall match dimensions of permanent barrier wall F shape.

Refer to CONTRACT 62583 for location and orientation of the conduit.



SIDE ELEVATION

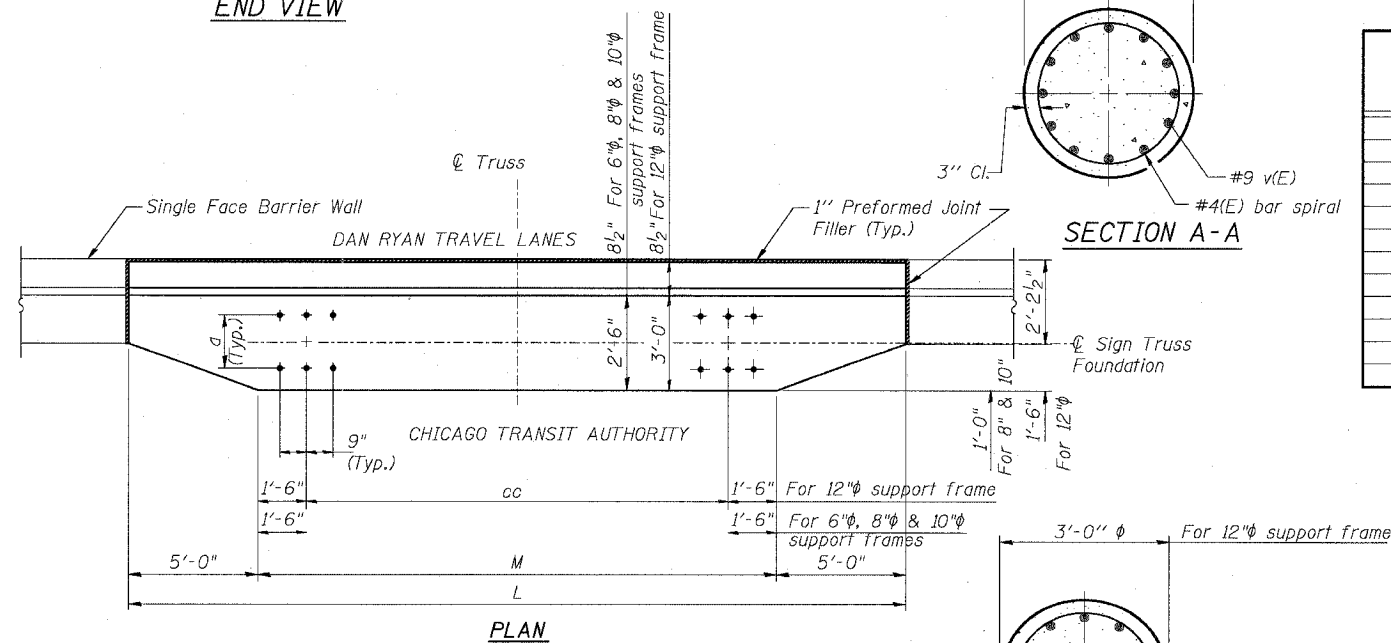
Concrete Foundation poured monolithically with no construction joint. * Cut to Fit in Field

Pipe Support Frames	cc	M	a	a/2
6"φ	7'-0"	9'-6"	0'-11"	5 1/2"
8"φ	7'-6"	10'-0"	1'-1 1/2"	6 3/4"
10"φ	8'-3"	10'-9"	1'-3"	7 1/2"
12"φ	9'-0"	12'-0"	1'-6"	9"

BAR LIST - EACH FOUNDATION

Bar	Number	Size	Length	Shape
h(E)	6	#5	L less 0'-4"	—
h(E)	4	#5	M less 4" + 10'-6"	—
s(E)	Varies	#5	14'-6"	□
s(E)	24	#5	8'-0"	—
v(E)	24	#9	F less 0'-5"	—
v(E)	16	#19	F less 0'-5"	—
*#4(E) bar spiral - see Side Elevation				

END VIEW

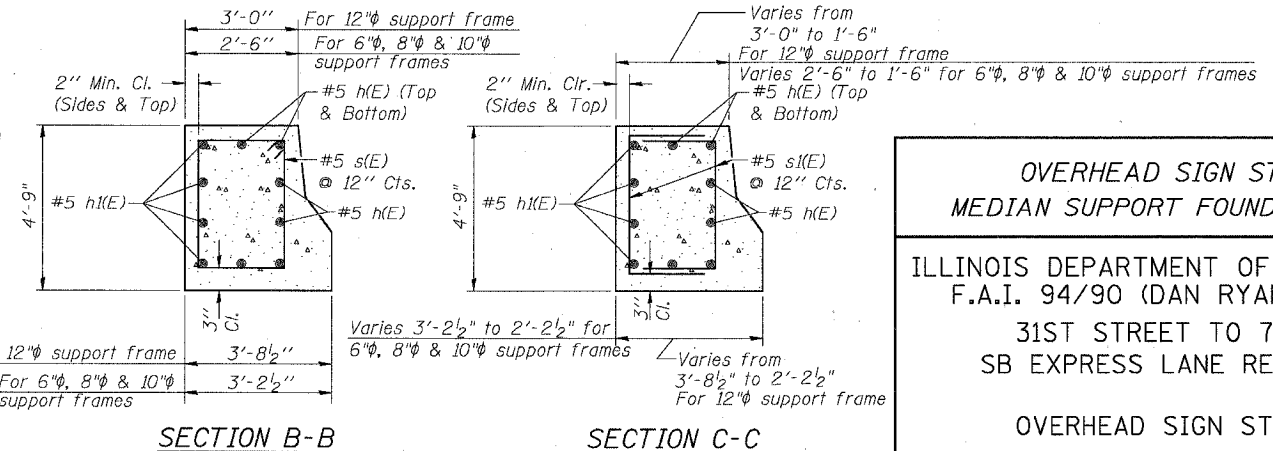


SECTION A-A

SECTION A-A

RIGHT FOUNDATION USES DOUBLE FACE MEDIAN SUPPORT

Structure Number	Station	Left Foundation				Right Foundation				Class SI Concrete (Cu. Yds.)
		Elevation Top	Elevation Bottom	B	F	Elevation Top	Elevation Bottom	B	F	
ISO161094R055.64	3586+80	5.92'	-16.83'	18.0'	22.75'	-	-	-	-	22.5
ISO161094R056.32	3550+87.27	3.61'	-17.64'	16.50'	21.25'	-	-	-	-	12.80
ISO161094R055.81	3576+87.34	3.74'	-15.51'	13.50'	19.25'	-	-	-	-	11.7
ISO161094R055.33	3603+12.34	8.97'	-9.28'	13.50'	18.25'	-	-	-	-	20.1



SECTION B-B

SECTION C-C

DESIGNED - SLW	20
CHECKED - RD	EXAMINED
DRAWN -	PASSED
CHECKED -	ENGINEER OF STRUCTURAL SERVICES
	ENGINEER OF BRIDGES AND STRUCTURES

MODIFIED FROM OS4-MED

OVERHEAD SIGN STRUCTURES
MEDIAN SUPPORT FOUNDATION DETAILS

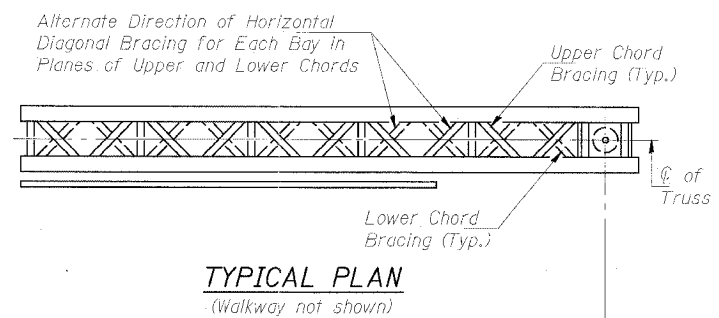
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION

OVERHEAD SIGN STRUCTURES

SGN-27

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	325
FED. ROAD DIST. NO. 1		BALANCE	FEE AND PAYMENT	
62302		*1818, ETC. 2324.6-1PR-9		



Structure Number	Station	Design Truss Type	Cantilever Length (L)	Elev. A	Dim. D	D _s	Total Sign Area
IC0161094R057.5	1486+00	III-C-A	33'-0"	10.91	12'-0"	12.5'	263.0
IC0161094R057.0	1514+30	II-C-A	29'-0"	9.73	12'-4"	12.5'	263.0

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY
WIND LOADING: 30 p.s.f. normal to Sign Panel Area and truss elements not behind sign Loading Diagram.
WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

DESIGN STRESSES:
Field Units
f' = 3,500 p.s.i.
fy = 60,000 p.s.i. (reinforcement)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specifications.

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B with a minimum yield of 35,000 p.s.i., or A500 Grade B or C with a minimum yield of 46,000 p.s.i. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.
All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W*. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer.
The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 15 lb. ft. at 40° F. (Zone 2) before galvanizing.

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04(f) of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing of bolts will not be required.

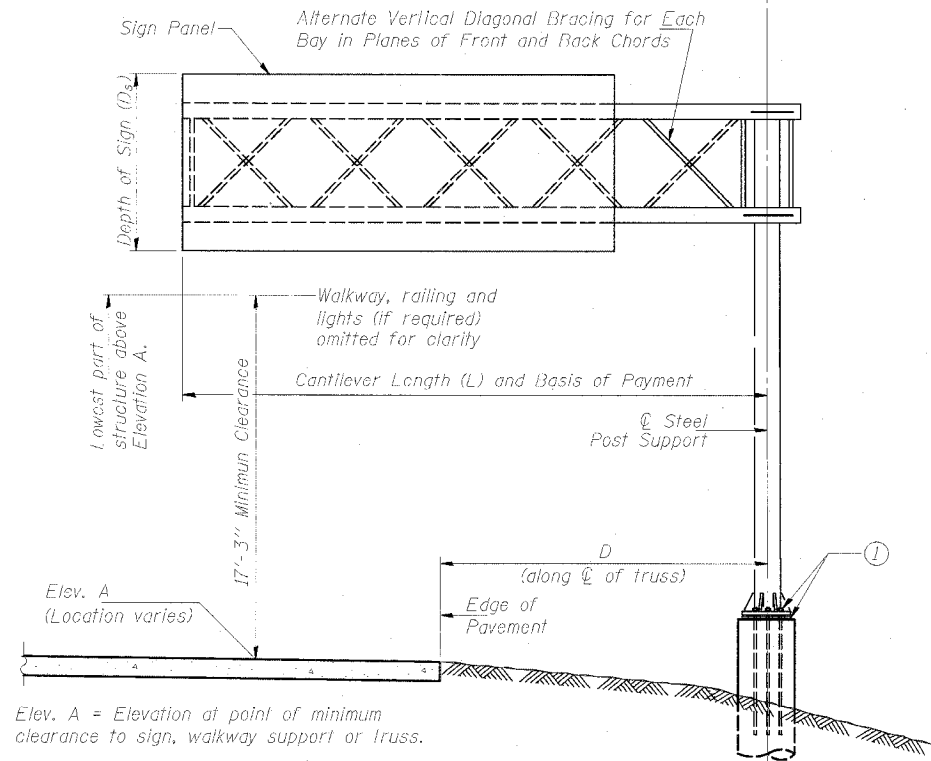
U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

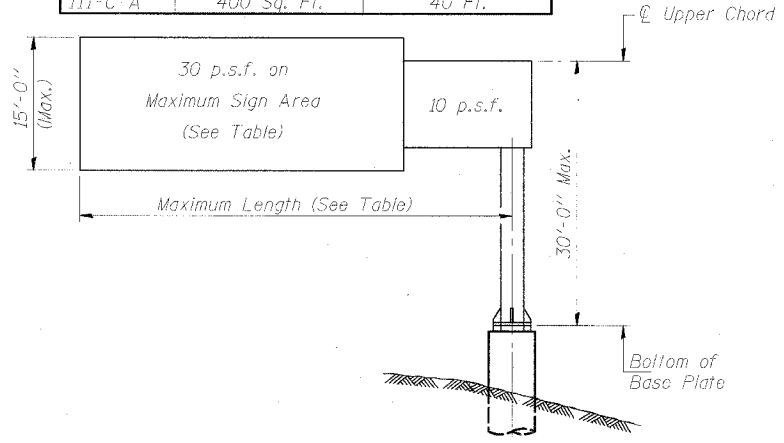
ANCHOR RODS: Shall conform to AASHTO M314 Gr. 36 or 55 with a minimum Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F.

CONCRETE SURFACES: All concrete surfaces above an elevation 6" below the lowest final ground line at each foundation shall be cleaned and coated with Bridge Seat Sealer in accordance with the Standard Specifications.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.



Truss Type	Maximum Sign Area	Maximum Length
I-C-A	170 Sq. Ft.	25 Ft.
II-C-A	340 Sq. Ft.	30 Ft.
III-C-A	400 Sq. Ft.	40 Ft.



DESIGN WIND LOADING DIAGRAM

Parameters shown are basis for I.D.O.T. Standards
Installations not within dimensional limits shown
require special analysis for all components.

① After adjustments to level truss and insure adequate vertical clearance, all top and leveling nuts shall be tightened against the base plate with a minimum torque of 200 lb.-ft. Stainless steel mesh shall then be placed around the perimeter of the base plate. Secure to base plate with stainless steel banding.

Note: Trusses shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The contractor is responsible for maintaining the configuration and protection of the trusses.

*If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.

SGN-28

TYPICAL ELEVATION

Looking in Direction of Traffic

Sign support structures may be subject to damaging vibrations and oscillations when sign panels are not in place during erection or maintenance of the structure. To avoid these vibrations and oscillations, consideration should be given to attaching temporary blank sign panels to the structure.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE I-C-A	Foot	-
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE II-C-A	Foot	29.0'
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE III-C-A	Foot	33.0'
OVERHEAD SIGN WALKWAY-CANTILEVER TYPE A	Foot	46.0'
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	23.0

CANTILEVER SIGN STRUCTURES
GENERAL PLAN & ELEVATION
ALUMINUM TRUSS & STEEL POST

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES CANTILEVER

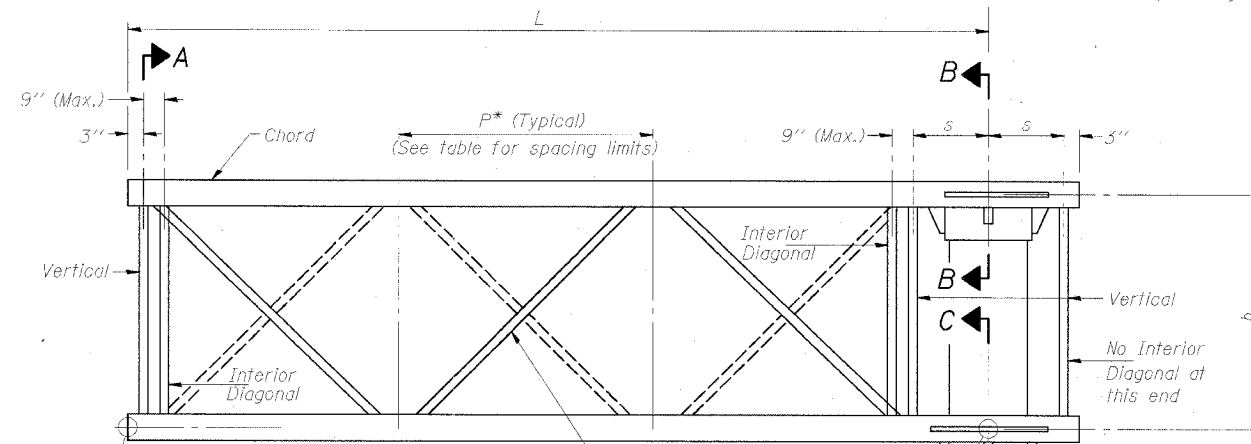
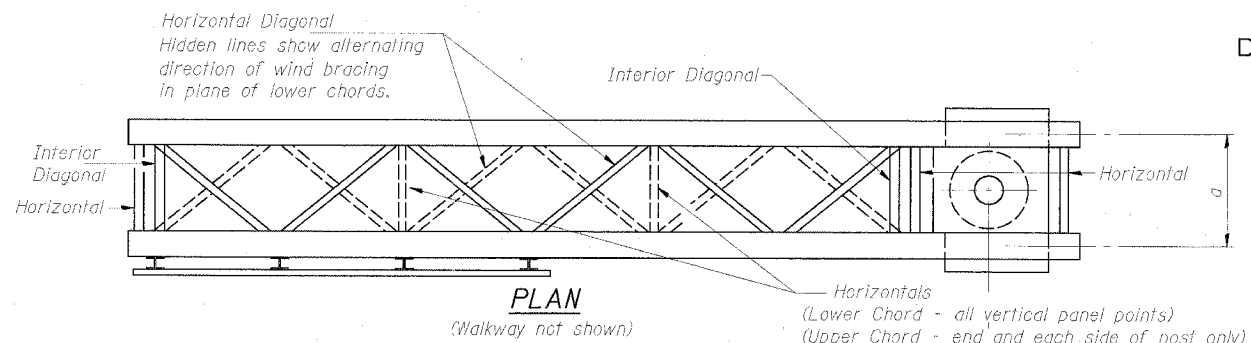
DESIGNED	MSA
CHECKED	AS
DRAWN	MD
CHECKED	MSA

EXAMINED	20
PASSED	ENGINEER OF STRUCTURAL SERVICES
	ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

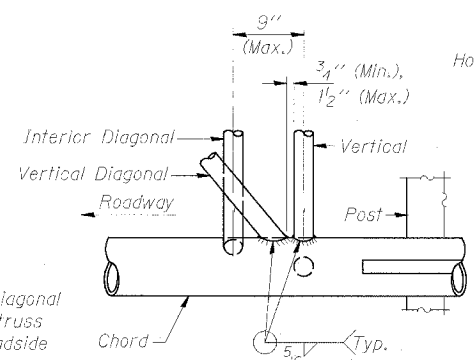
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	326
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT	
62302 • (1818, ETC. 2324.6-1)PR-9				

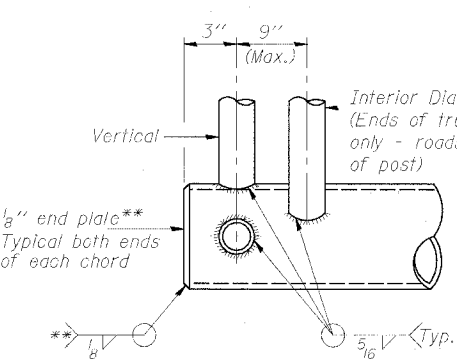


TYPICAL TRUSS UNIT
For Section B-B and Section C-C, see Base Sheet OSC-A-3.

Note: There are twice as many horizontal diagonals as there are vertical diagonals.



POST END JOINT DETAIL



CANTILEVER END JOINT DETAIL

**Contractor may alternatively use standard aluminum drive-fit cap to close ends.

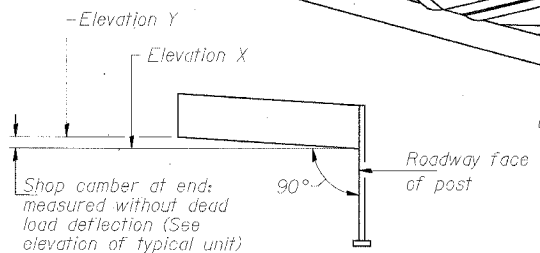
DESIGNED	MSA	EXAMINED	20
CHECKED	AS	PASSED	ENGINEER OF STRUCTURAL SERVICES
DRAWN	MD		ENGINEER OF BRIDGES AND STRUCTURES
CHECKED	MSA		

OSC-A-2 11/1/2002

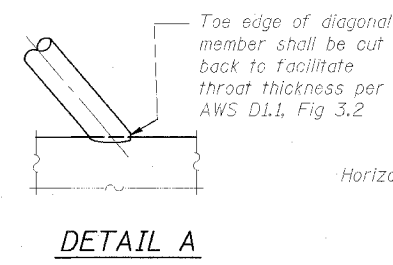
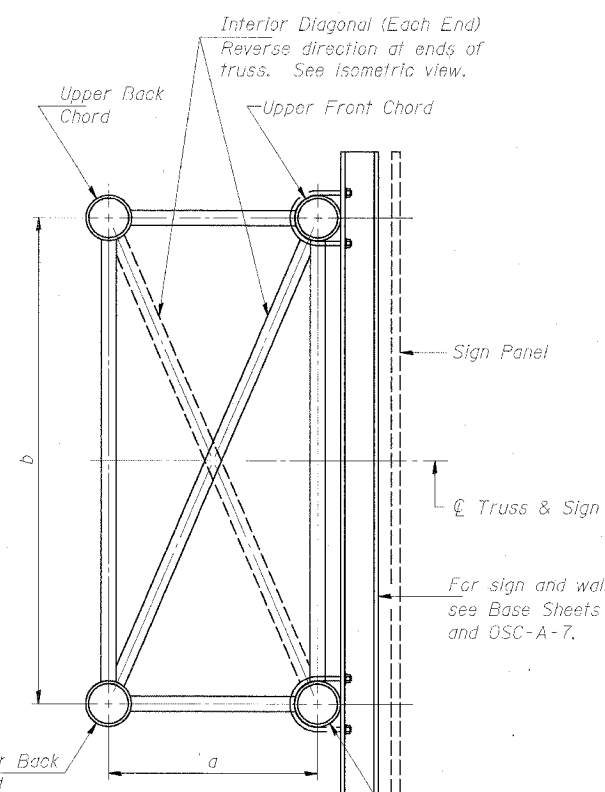
SHOP CAMBER TABLE

Unit Length (L)	Shop Camber at End
15'	1 1/2"
16'-17'	1 3/4"
18'-20'	2"
21'-22'	2 1/4"
23'-25'	2 1/2"
26'-27'	2 3/4"
28'-30'	3"
31'-32'	3 1/4"
33'-35'	3 1/2"
36'-37'	4"
38'-40'	4 1/2"

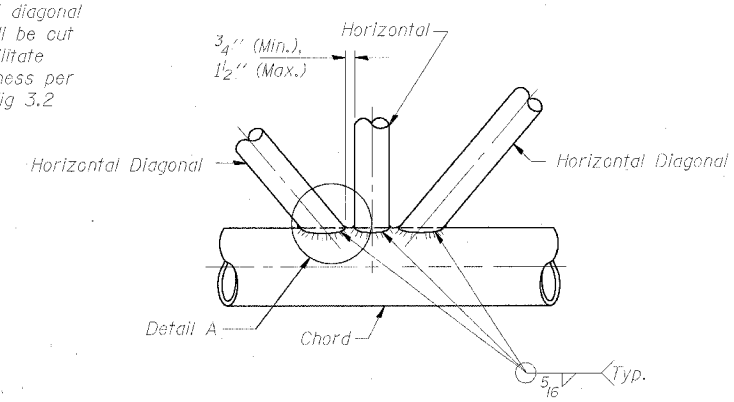
CAMBER DIAGRAM
(For Fabrication Only)



SECTION A-A



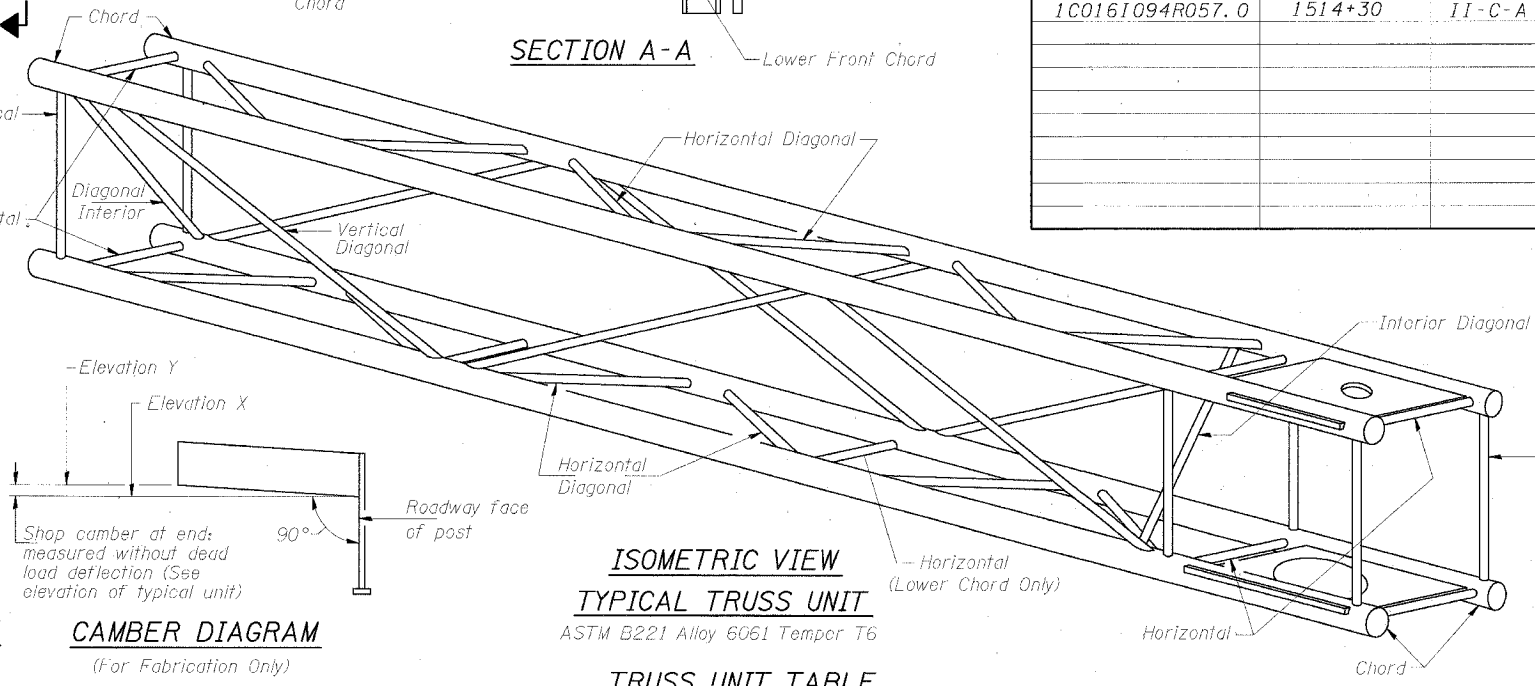
DETAIL A



TRUSS INTERIOR JOINT DETAIL

Structure Number	Station	Truss Type	Design Length (L)	Number of Panels Per Unit	Panel Length (P)*
1C0161094R057.5	1486+00	III-C-A	33'-0"	7	4.43'
1C0161094R057.0	1514+30	II-C-A	29'-0"	7	3.857'

ISOMETRIC VIEW
TYPICAL TRUSS UNIT
ASTM B221 Alloy 6061 Temper T6



TRUSS UNIT TABLE

Truss Type	Dimension "a"	Dimension "b"	Dimension "s"	Limits for Panel Spacing (P)*	Up. & Low. Chord		Verticals, Horizontals, Vertical, Horizontal, and Interior Diagonals	
					O.D.	Wall	O.D.	Wall
I-C-A	24"	54"	16"	36" Min. to 48" Max.	5"	5/16"	2 1/2"	5/16"
II-C-A	36"	66"	21"	42" Min. to 54" Max.	6 1/2"	5/16"	3 1/4"	5/16"
III-C-A (35' Max.)	36"	84"	21"	48" Min. to 66" Max.	7"	3/8"	3 1/2"	3/8"
III-C-A (>35' to 40')	36"	84"	21"	48" Min. to 66" Max.	8"	3/8"	3 1/2"	3/8"

*P = (L - s - 3") / # Panels

NUMBER	REVISION	DATE

SGN-29

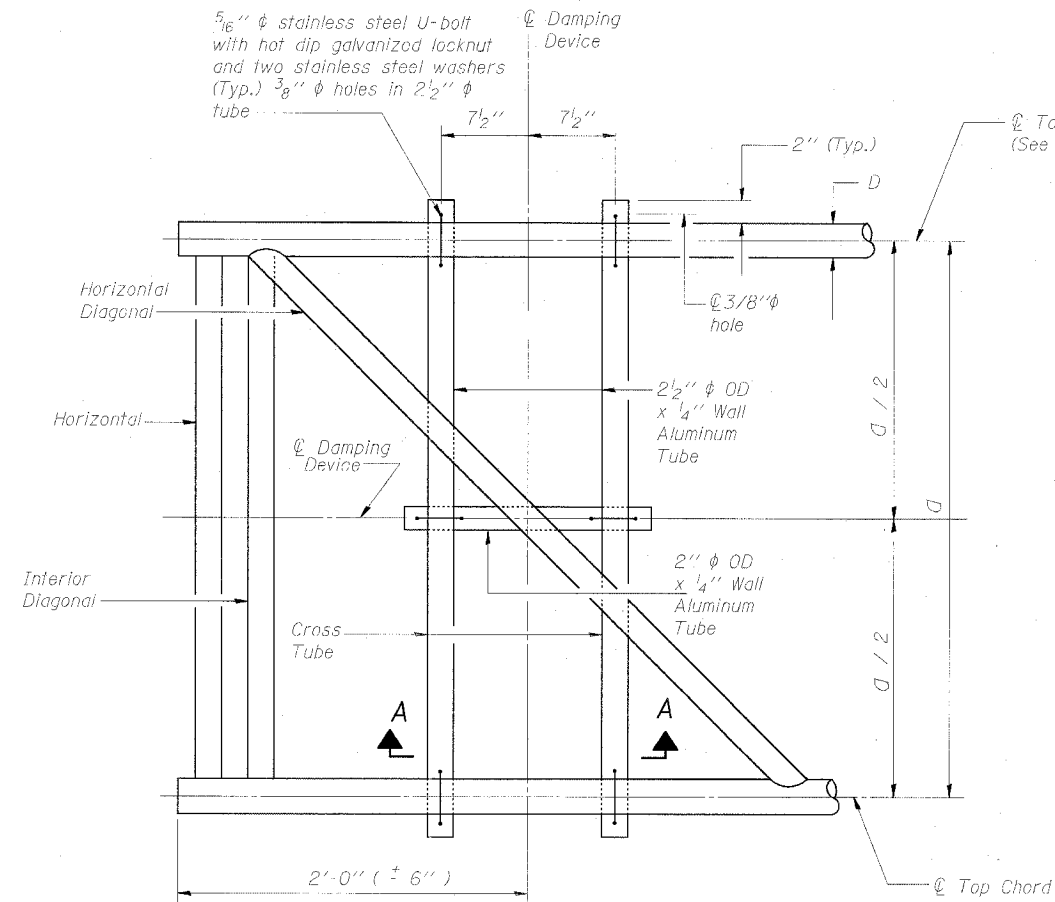
CANTILEVER SIGN STRUCTURES TRUSS DETAILS ALUMINUM TRUSS & STEEL POST

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)

31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES CANTILEVER

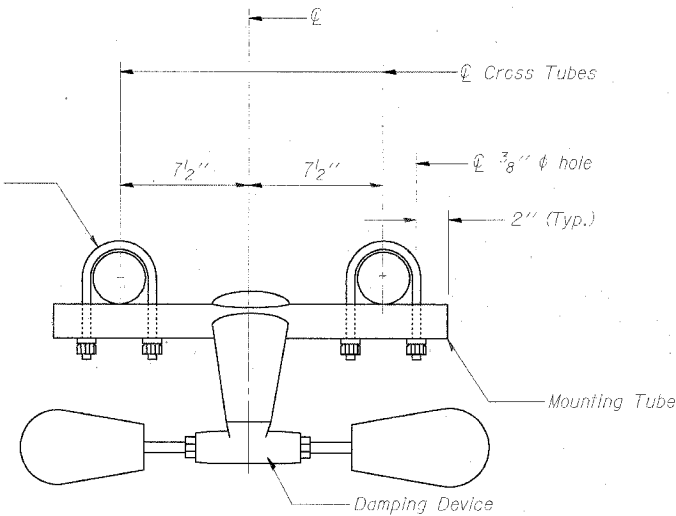
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	327
FED. AID DIST. NO. 1	LL. INOBS	FED. AID PROJECT		
62302 • (1818, ETC, 2324.6-IPR-9)				

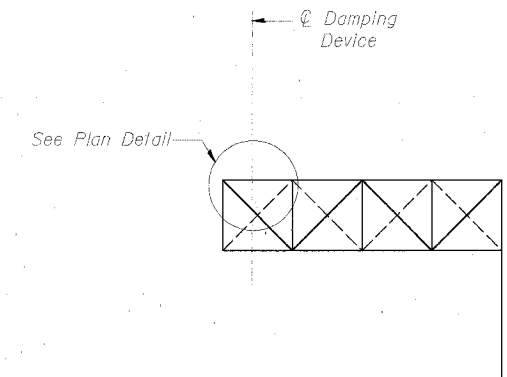


PLAN DETAIL

5/16" stainless steel U-bolt with hot dip galvanized locknut and two stainless steel washers (Typ.) 3/8" holes in mounting tube



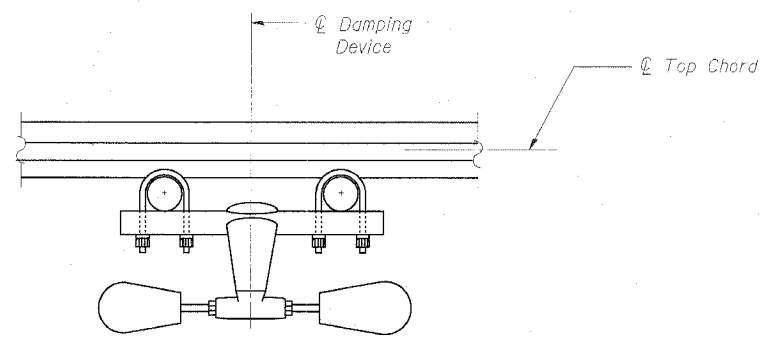
TRUSS DAMPING DEVICE CONNECTION DETAIL



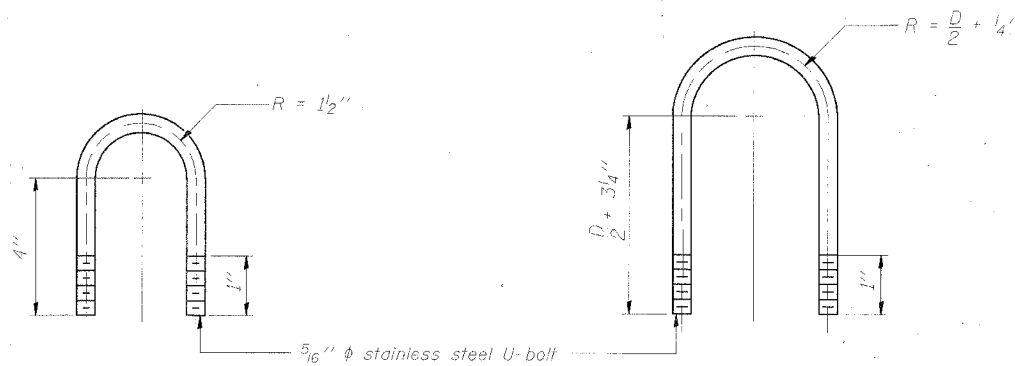
ELEVATION
Aluminum Cantilever Sign Structure

GENERAL NOTES

- Damper: One damper per truss. (31 lbs. Stockbridge-Type Aluminum)
- Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6



SECTION A-A



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL
(Typical)

TOP CHORD TO CROSS TUBE U-BOLT DETAIL
(Typical)

DESIGNED	MSA	20
CHECKED	AS	EXAMINED
DRAWN	MD	PASSED
CHECKED	MSA	ENGINEER OF BRIDGES AND STRUCTURES

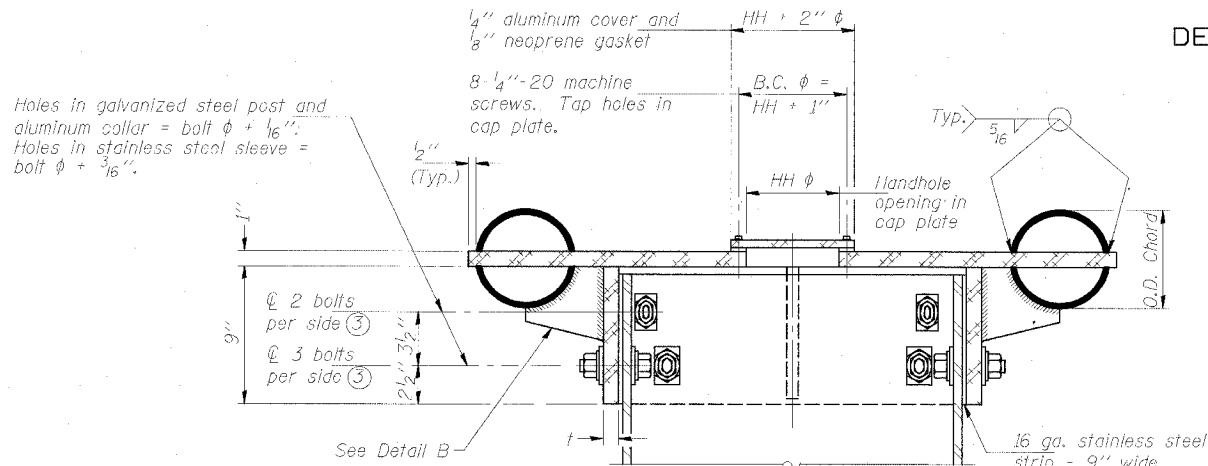
OSC-A-D 11/1/2002

SGN-30

CANTILEVER SIGN STRUCTURE DAMPING DEVICE
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES CANTILEVER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

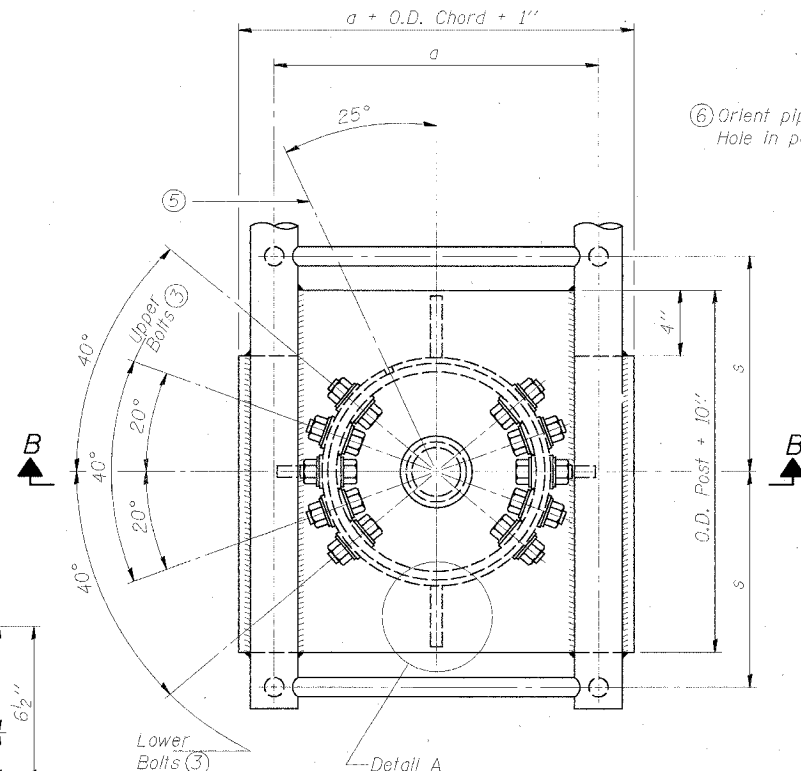
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94/90	*	COOK	598	328
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT	
62302 •(1818, ETC, 2324.6-1P)R-9				



SECTION B-B

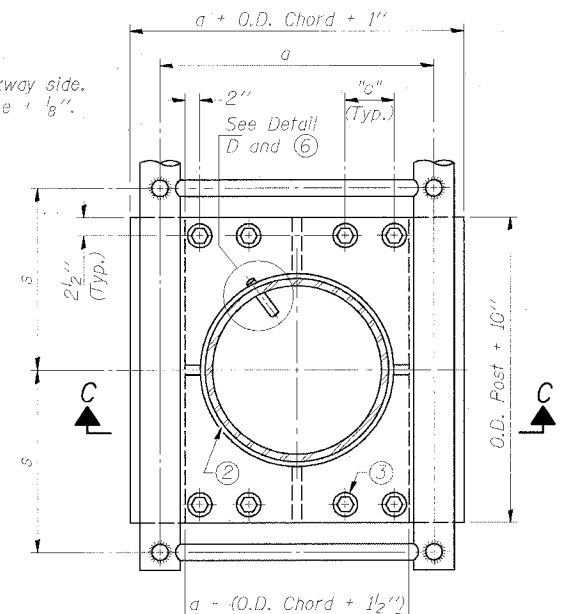
Bolts, washers (including contoured washers), and locknuts shall be stainless steel.

④ Collar I.D. shall be manufactured to correspond to O.D. of actual galvanized post and stainless steel sleeve plus 1/8 inch (±1/16 inch). Maximum gap between post and collar at any location equals 1/8 inch before tightening bolts.

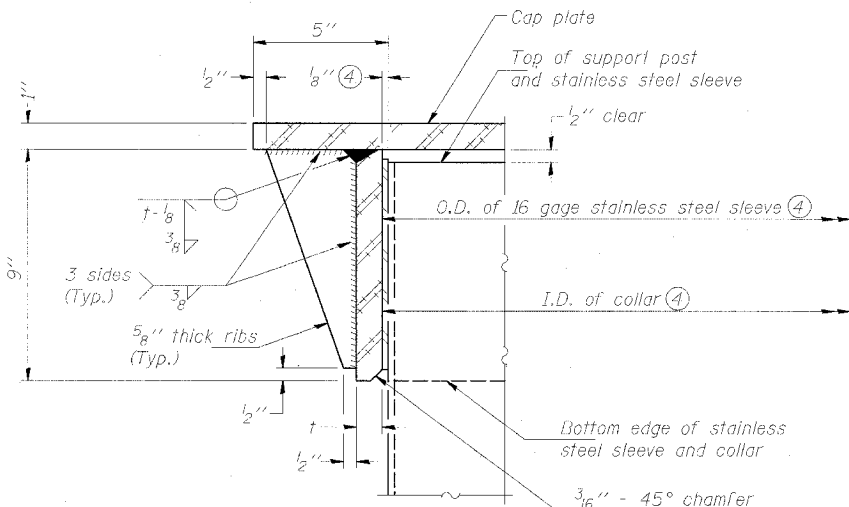


PLAN VIEW - TOP OF COLUMN

⑤ Optional full penetration weld in collar. (Two locations maximum....(180° apart)....X-ray or UT 100%)

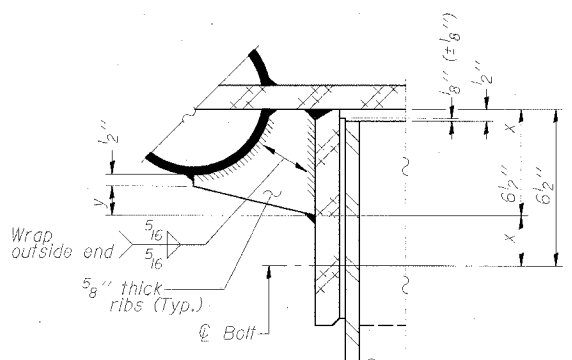


SECTION THRU POST ABOVE LOWER CHORDS



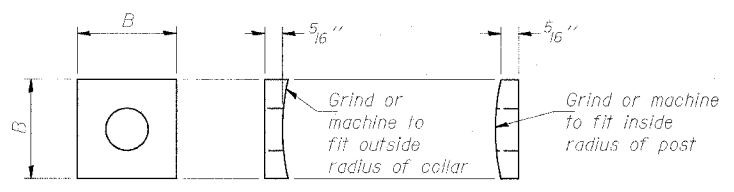
DETAIL A

(Two locations)



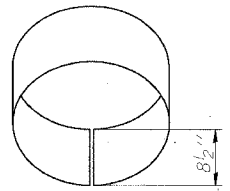
DETAIL B

Two locations (For details not shown, see Detail C)



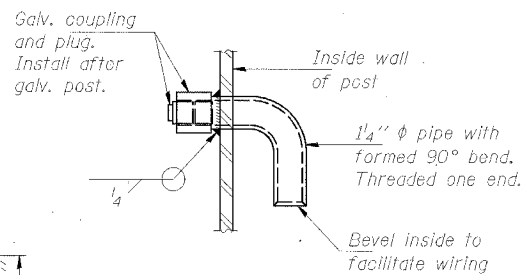
CONTOURED WASHERS

Bolt Size	Contoured Washers	
	Hole Dia.	B
7/8"	1"	2 1/2"
1"	1 1/8"	3"
1 1/4"	1 3/8"	3 1/4"

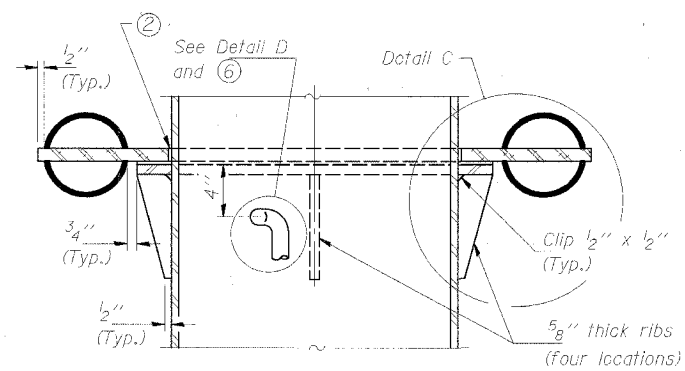


DETAIL OF STAINLESS STEEL SLEEVE

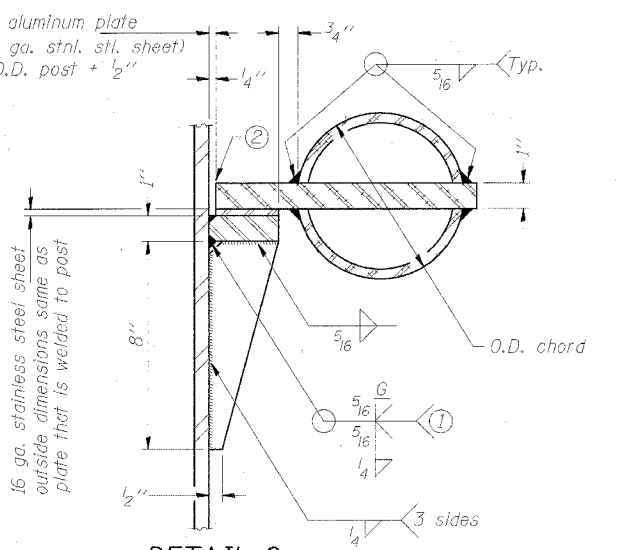
Weld to post after galvanizing. (Prepare post surface to insure tight, uniform fit and allow welding.) Welds to be 1/2 inch long at 6 inch cts. along top edge and at 1/4 inch opening.



DETAIL D



SECTION C-C



DETAIL C

① Grind top if required to fully seat aluminum plate and stainless steel sheet.
② After tightening lower connection bolts, fill gap with non-hardening, silicone caulk suitable for exterior exposure and acceptable to the Engineer. Cost is included in "Overhead Sign Structure Cantilever". SGN-31

Truss Type	Post Size	Upper & Lower Connection Bolt Diameter ③	Lower Junction Bolt Spacing Dimension "c" ③	Opening in Cap Plate "HH"	Collar Thickness (t)	Side Ribs	
						x	y
I-C-A	16" φ (83#1)	7/8"	3 1/4"	8"	5/8"	1 3/4"	2 1/4"
II-C-A	24" φ (125#1)	1"	3 1/2"	12"	7/8"	2"	1 1/4"
III-C-A (35' Max.)	24" φ (125#1)	1 1/4"	3 1/2"	12"	7/8"	2"	1"
III-C-A (>35' to 40')	24" φ (171#1)	1 1/4"	3 1/2"	12"	7/8"	2"	1"

③ Upper and lower connection bolts in collar and bolts at lower chord connection shall be high strength with matching locknuts. Connection bolts shall have 2 stainless steel flat washers each.

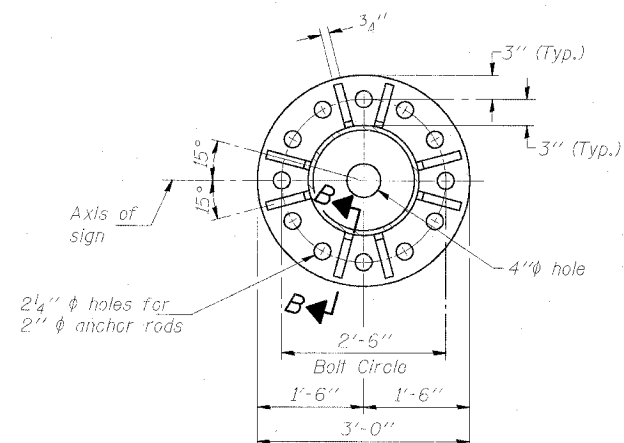
DESIGNED	MSA	20
CHECKED	AS	EXAMINED
DRAWN	MD	PASSED
CHECKED	MSA	

NUMBER	REVISION	DATE

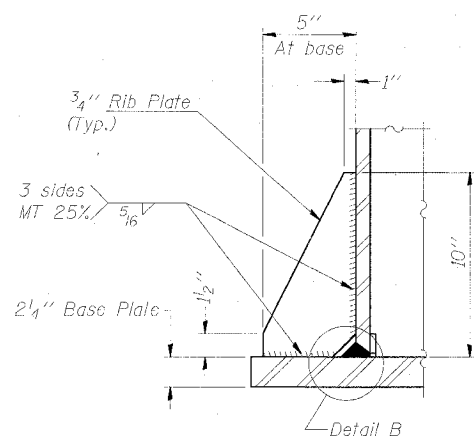
**CANTILEVER SIGN STRUCTURES
JUNCTURE DETAILS
ALUMINUM TRUSS & STEEL POST**
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES CANTILEVER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

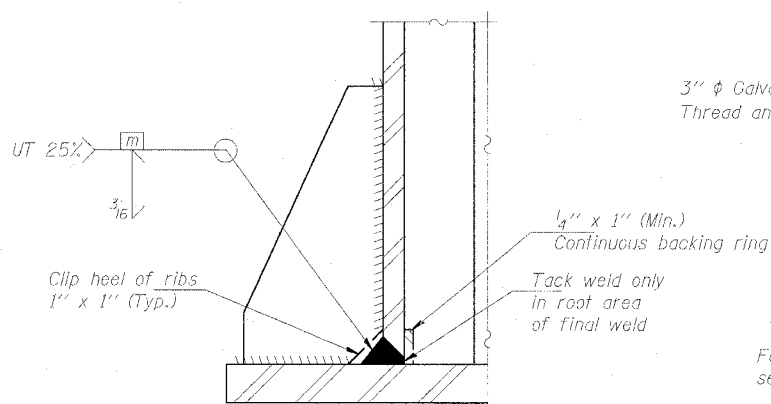
ROUTE NO.	SECTION	COUNTY	DIST. NO.	SHEET NO.
94/90		COOK	598	329
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	
62302 *1818, ETC, 2324.6-1P)R-9				



SECTION A-A

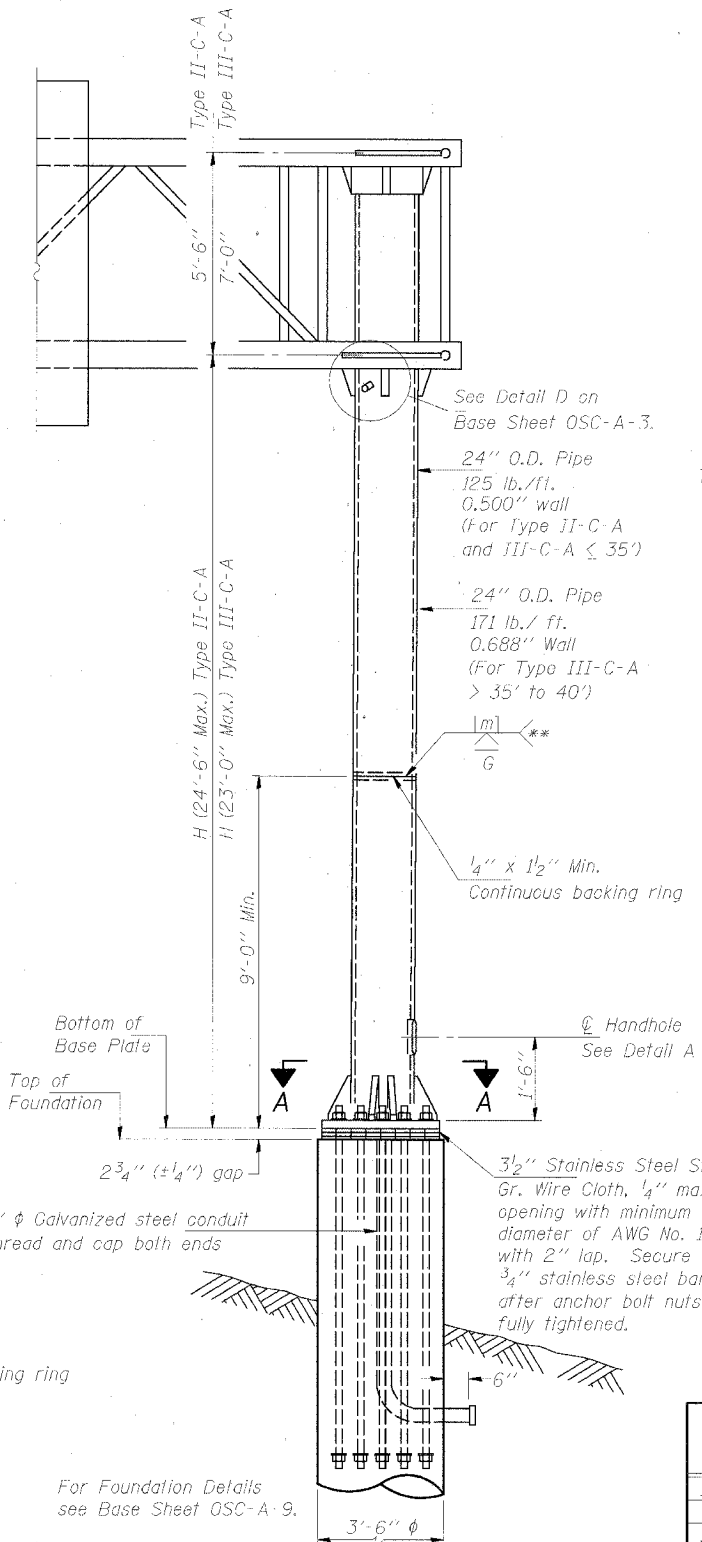


SECTION B-B

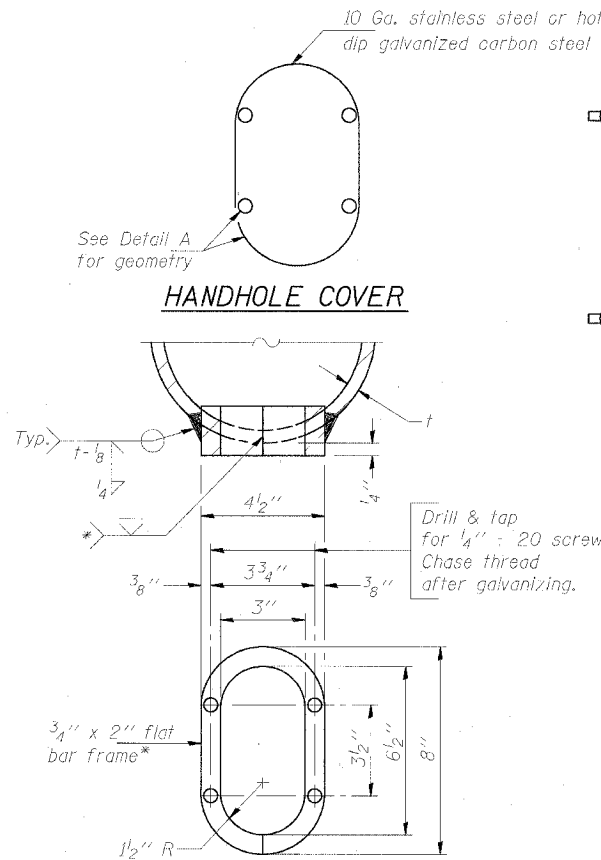


DETAIL B

(Typical rib)



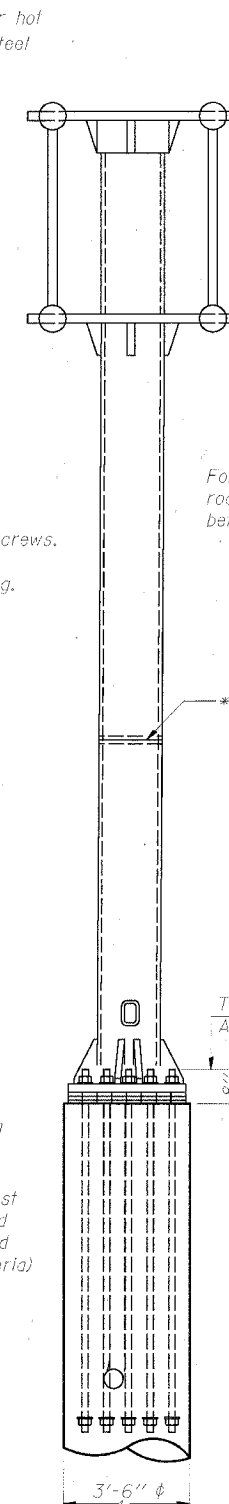
FRONT ELEVATION



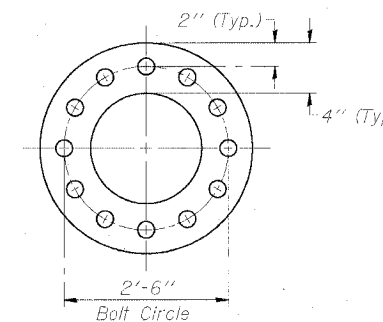
DETAIL A

*Bent bars may be butt welded top and bottom or bottom only. In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 \sqrt{in} or less.
**Butt welded joint in post is only allowed for post heights (H) over 20 ft. in length. If used, weld procedure must be preapproved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.

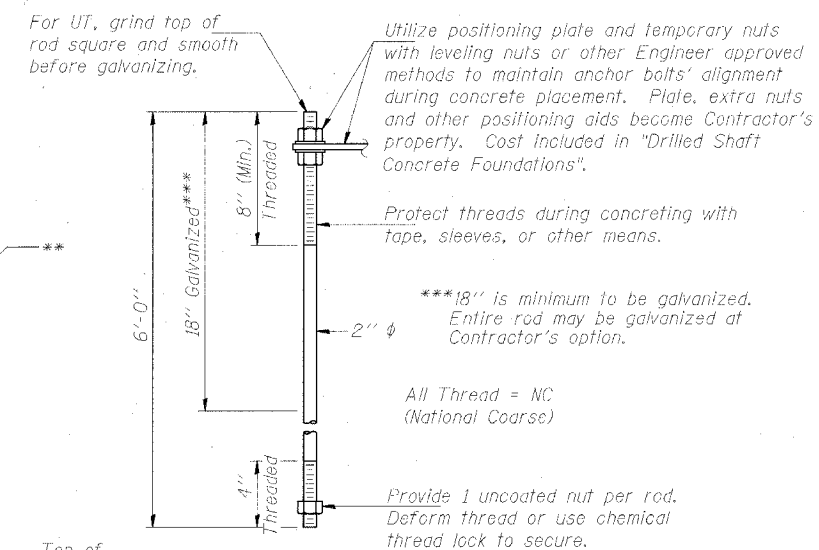
Structure Number	Station	H
1C0161094R057.5	1486+00	19.61'
1C0161094R057.0	1514+30	20.18'
1C0161094R055.33	3603+12	19.12'



SIDE ELEVATION



SUGGESTED POSITIONING PLATE



ANCHOR ROD DETAIL

Anchor rods shall conform to AASHTO M314 Grade 55 and meet Charpy V-Notch (CVN) energy of 15 lb.-ft. at 10° F. before galvanizing. Galvanize the upper 18" (minimum) and associated M291, Grade A, C or DH heavy hex nuts and hardened washers per AASHTO M232. No welding shall be permitted on rods. Provide an unfinished nut at bottom, a hexagon locknut and washer above base plate and a leveling nut and washer below base plate. Nuts shall each be tightened with 200 lb.-ft. minimum torque against base plate. Before or after threading, but before galvanizing, each anchor rod shall be ultrasonically tested (UT) by a Level II or III inspector, qualified in accord with ANSI guidelines, using a straight beam, 1/2" ϕ 3.5 mhz. transducer, to insure no rejectable flaws exist in the upper 18" (tension criteria). Cost of testing included in "Drilled Shaft Concrete Foundations".

SGN-32

CANTILEVER SIGN STRUCTURES
TYPE II-C-A & III-C-A TRUSS SUPPORT POST
ALUMINUM TRUSS & STEEL POST

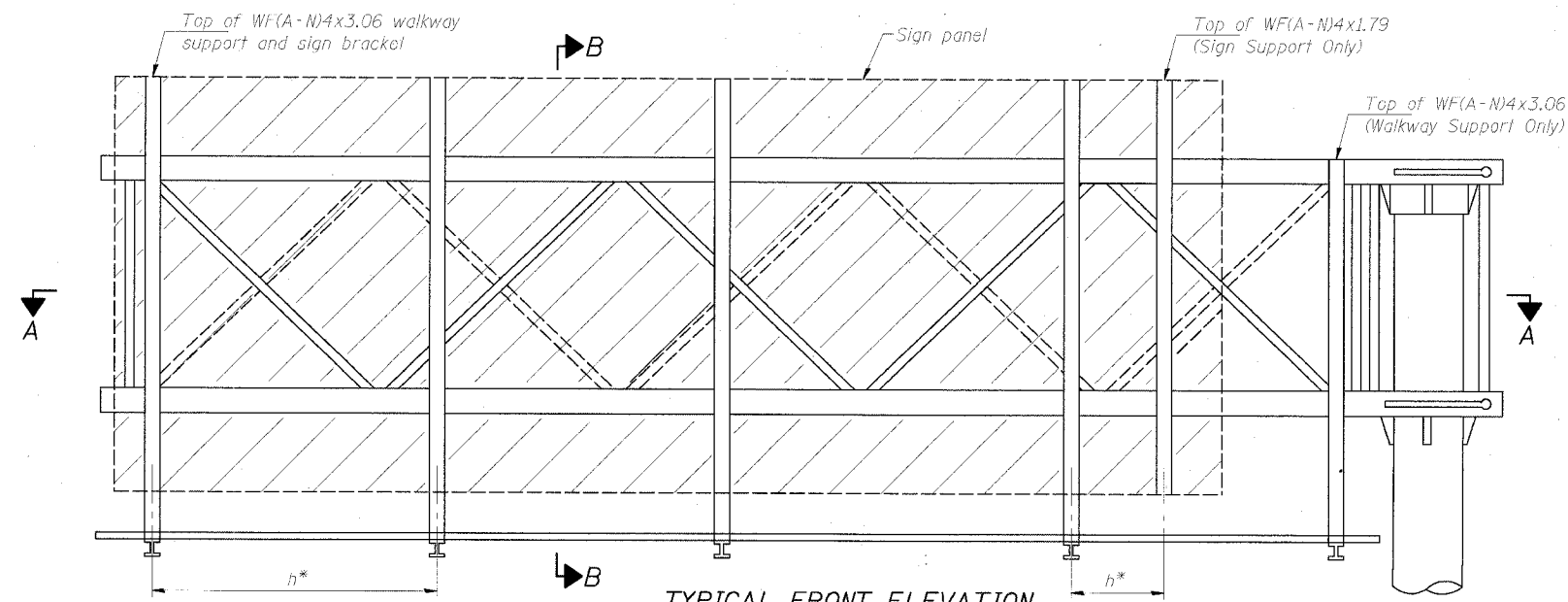
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES CANTILEVER

DESIGNED	MSA	20
CHECKED	AS	EXAMINED
DRAWN	MD	PASSED
CHECKED	MSA	

NUMBER	REVISION	DATE

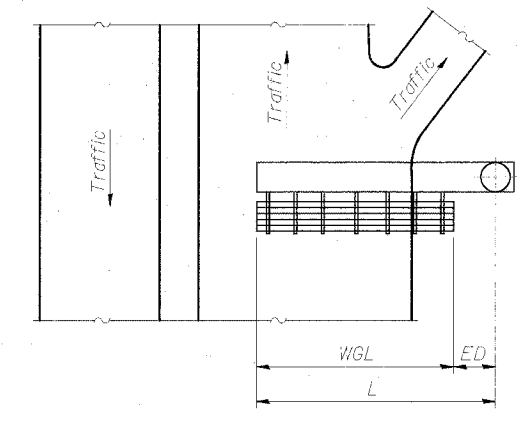
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	330
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
62302		*(1818, ETC, 2324.6-1P)R-9		

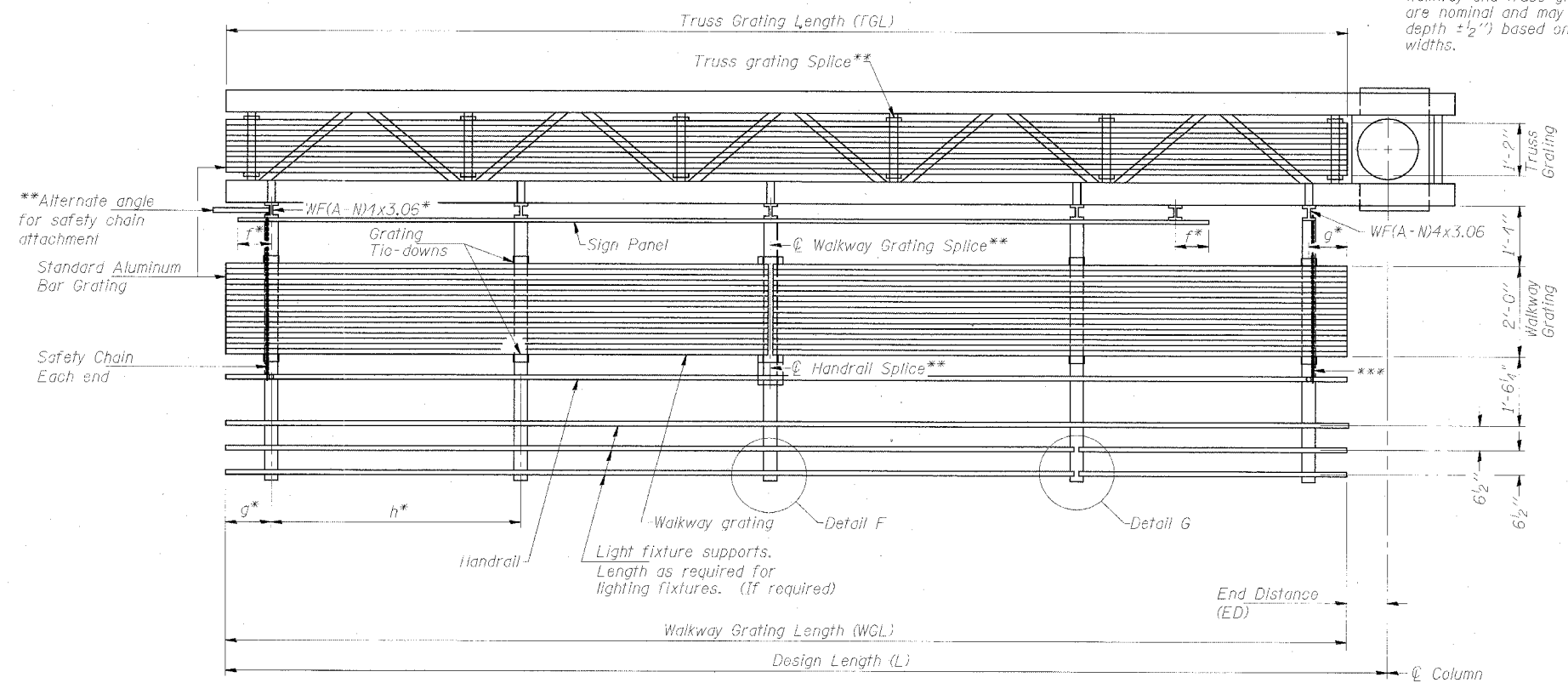


TYPICAL FRONT ELEVATION
With lights and handrail omitted for clarity.

Walkway and truss grating dimensions are nominal and may vary (width ±1/2", depth ±1/2") based on available standard widths.



PLAN
WALKWAY AND HANDRAIL SKETCH
(Road plan beneath truss varies)



SECTION A-A

Truss grating to facilitate inspection shall run full length of cantilevers. Cost of truss grating is included in "Overhead Sign Structure Cantilever".

Handrail and walkway grating shall span a minimum of three brackets between splices.
**Use and location of handrail or grating splices are optional, based on lengths needed and material availability.

$$TGL = L - \left(\frac{\text{Post O.D.}}{2} + 6'' \right)$$

DESIGNED	MSA
CHECKED	AS
DRAWN	MD
CHECKED	MSA

EXAMINED	20
PASSED	

NUMBER	REVISION	DATE

Structure Number	Station	WGL	ED	TGL
1C0161094R057.5	1486+00	25'-0"	8'-0"	31.5'
1C0161094R057.0	1514+30	21'-0"	8'-0"	27.5'

Notes: *Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within limits shown:
f = 12" maximum, 4" minimum (End of sign to center of nearest bracket)
g = 12" maximum, 4" minimum (End of walkway to center of nearest bracket)
h = 6'-0" maximum (center to center sign and/or walkway support brackets, WF(A-N)4x1.79 or WF(A-N)4x3.06)
***If walkway bracket at safety chain location is behind sign, add angle to bracket.
For details of sign placement, sign/walkway brackets, truss and walkway gratings, grating splices and Section B-B, see Base Sheet OSC-A-7.
For details of handrail, handrail splice, safety chain and Details F and G, see Base Sheet OSC-A-8.

BRACKET TABLE

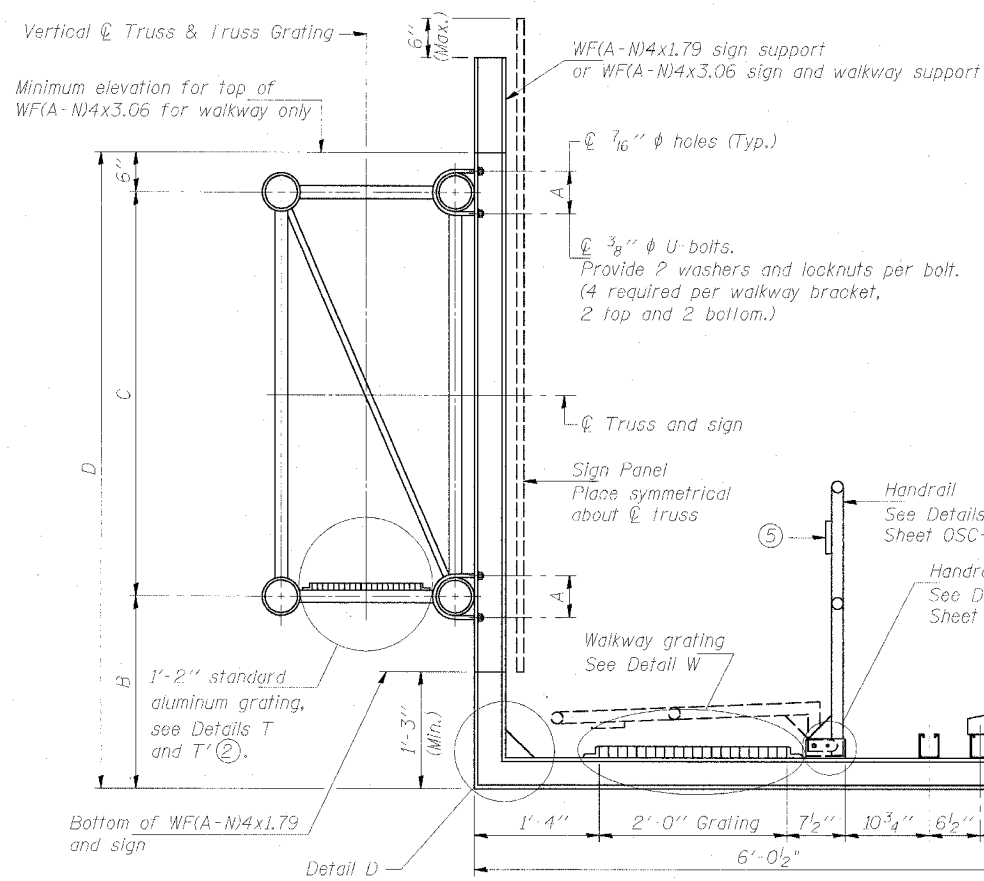
Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
8'-0"	8'-0"	2
14'-0"	14'-0"	3
20'-0"	20'-0"	4
26'-0"	26'-0"	5
32'-0"	32'-0"	6

**CANTILEVER SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS
ALUMINUM TRUSS & STEEL POST**

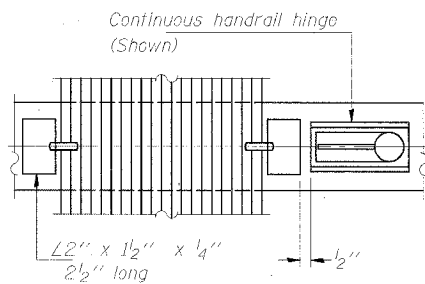
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES CANTILEVER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET
94/90		COOK	598	331
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		
62302	(1818, ETC. 2324.6-1)PR-9			

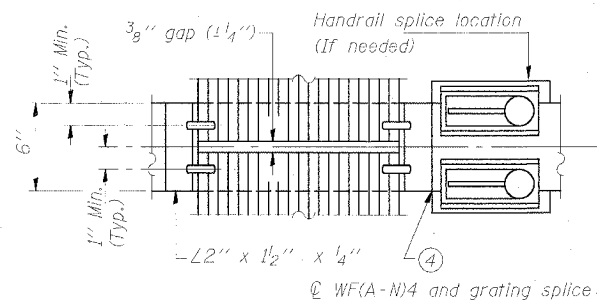


SECTION B-B

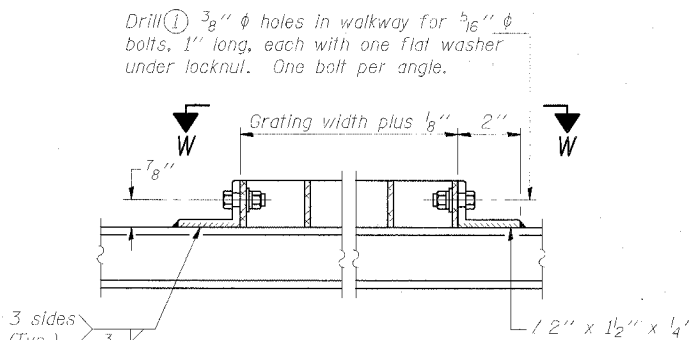


(CONTINUOUS WALKWAY GRATING)

SECTION W-W

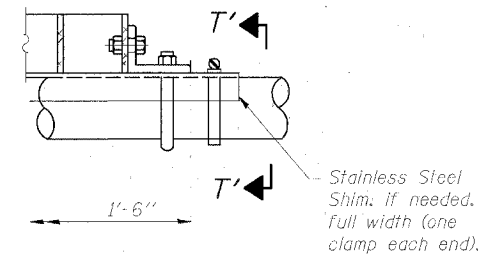


(AT WALKWAY GRATING SPLICE)



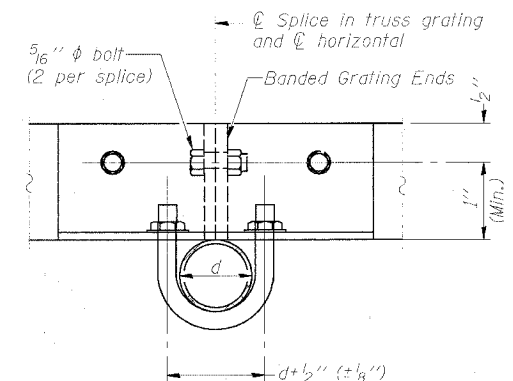
DETAIL W

(Walkway grating)

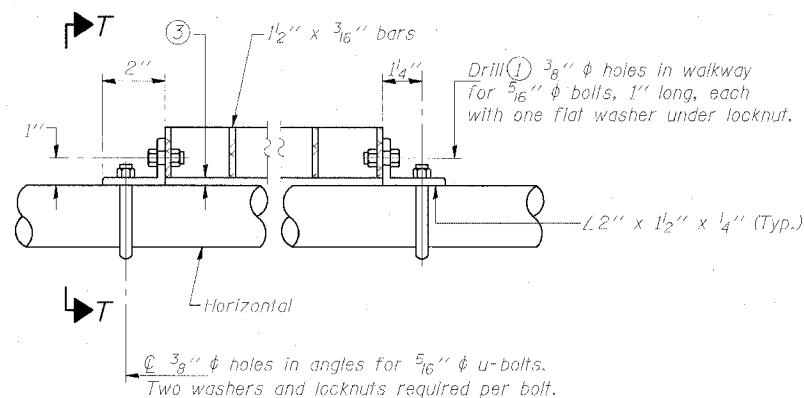


DETAIL T'

(Truss grating splice)
Details not shown same as Detail T.
Alternate materials may be used subject to the Engineer's review and approval.

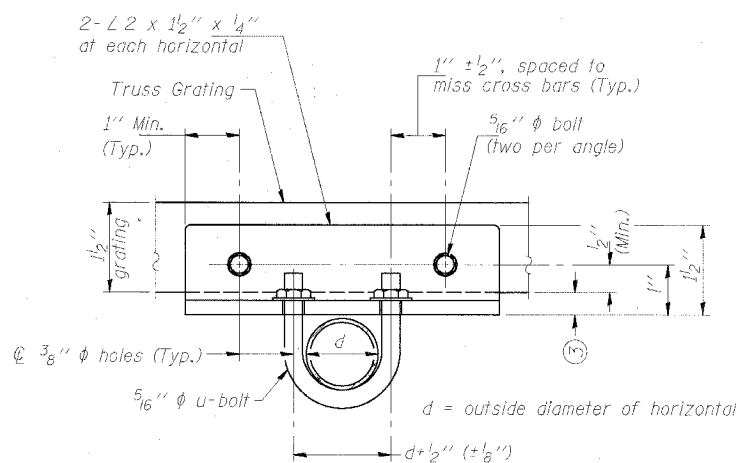


SECTION T'-T'

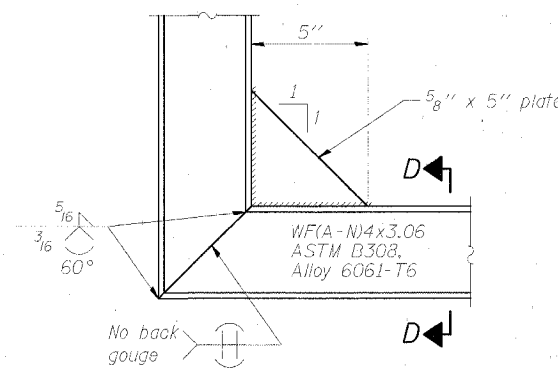


DETAIL T

(Truss grating at horizontal)

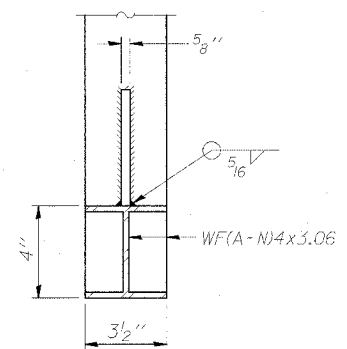


SECTION T-T



DETAIL D

(See Detail P, Base Sheet OSC-A-8.)



SECTION D-D

NUMBER	REVISION	DATE

DESIGNED	MSA
CHECKED	AS
DRAWN	MD
CHECKED	MSA

EXAMINED	20
PASSED	ENGINEER OF STRUCTURAL SERVICES
	ENGINEER OF BRIDGES AND STRUCTURES

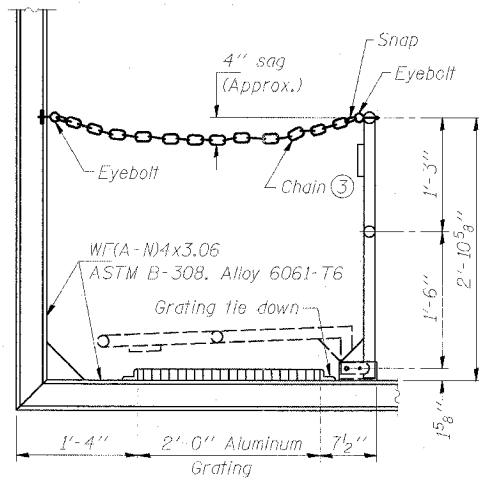
- Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
- When truss grating must be spliced, use suggested detail or other methods subject to the Engineer's review and approval. Locate splice to avoid interference between cross bars and bolt locations.
- Tube to grating gap may vary from 0 to 1/2" (Max.) to align walkway, allow for camber, etc.
- If Handrail Joint present, weld angle to WF(A-N)4 and 1/4" extension bars. (See Base Sheet OSC-A-8)
- 1/8" x 1/2" x 2" welded to handrail posts to protect locations that contact grating.

Structure Number	Station	A	B	C	D
1C0161094R057.5	1486+00	8 ³ / ₈ "	4.25'	7.0'	11.75'
1C0161094R057.0	1514+30	6 ⁷ / ₈ "	5.0'	5.5'	11.0'
1C0161094R055.33	3603+12	5 ¹³ / ₃₂ "	3.75'	5.5'	9.75'

CANTILEVER SIGN STRUCTURES
WALKWAY DETAILS
ALUMINUM TRUSS & STEEL POST
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES CANTILEVER

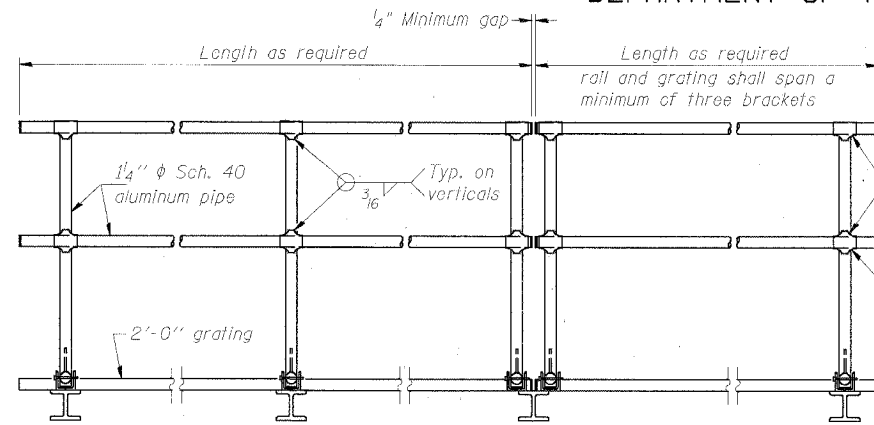
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	DIVISION	COUNTY	MILEPOSTS	POST
94/90		COOK	598	332
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		
62302 (1818, ETC, 2324.6-1PIR-9)				



SIDE ELEVATION

(Showing Safety Chain W/O Sign)



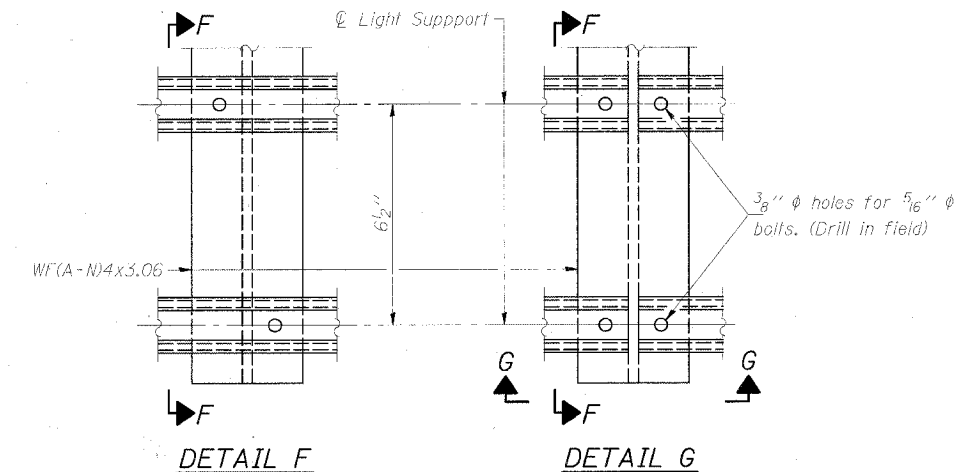
FRONT ELEVATION

HANDRAIL DETAILS

Handrail pipe shall be ASTM B241, Alloy 6063-T6 or Alloy 6061-T6.

① Install standard force-fit end caps or weld 1/8" end plates with 1/8" c.f.w. and grind smooth. (All rail ends)

② Horizontal handrail member shall be continuous thru fitting. Provide 1/16" hole in fitting for 3/8" bolt. Field drill 1/16" hole in horizontal rail member. Provide locknut and two stainless steel washers for bolt. (Use 5/16" eyebolts in 1/16" holes on top rail at ends only.)



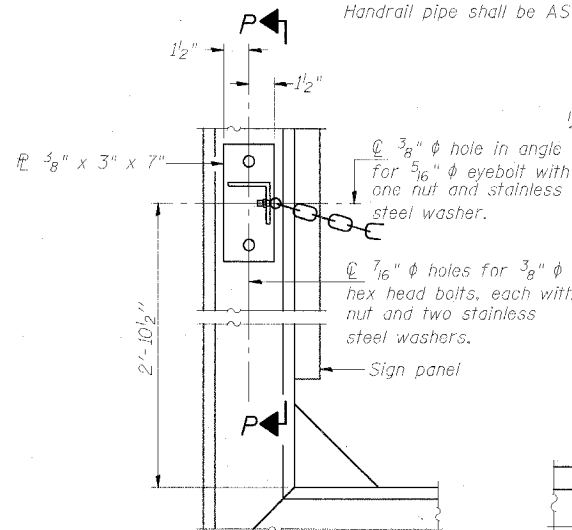
DETAIL F

DETAIL G

SECTION F-F

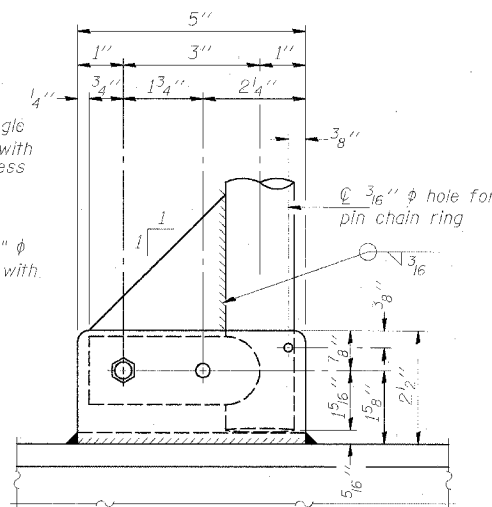
LIGHTING FIXTURE MOUNTS (IF REQUIRED)

⑤ Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.

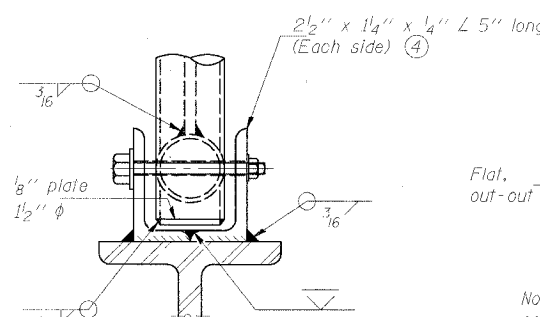


ALTERNATE SAFETY CHAIN ATTACHMENT

(With Sign Present)
Items not shown same as "Side Elevation" of "Handrail Details"

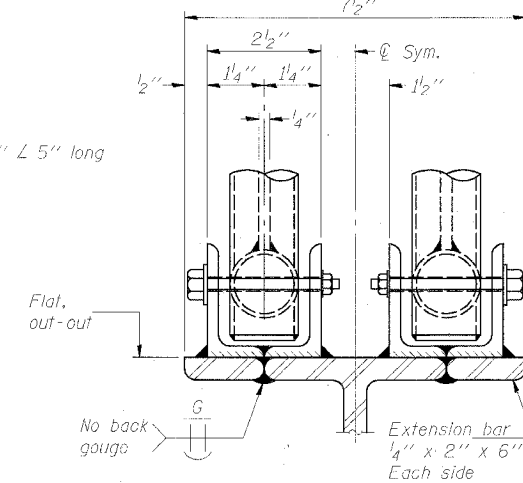


SIDE ELEVATION



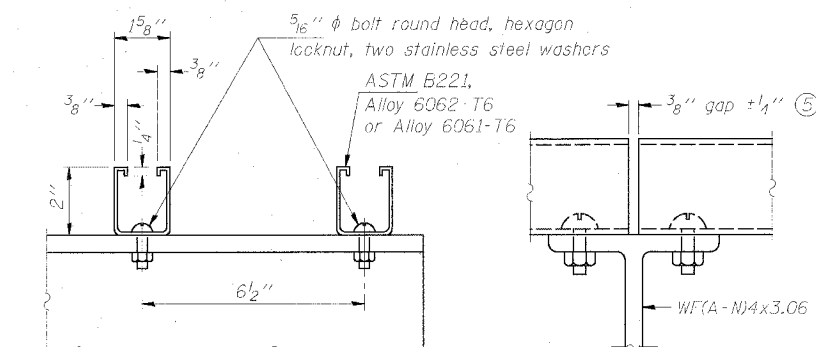
FRONT ELEVATION

Details not shown same as "ELEVATION" at right.

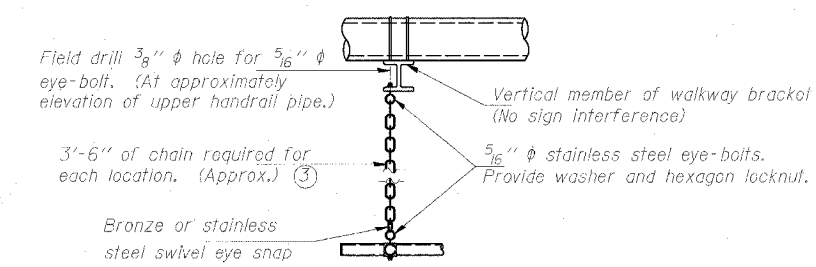


ELEVATION AT HANDRAIL JOINT

Details not shown same as "FRONT ELEVATION"

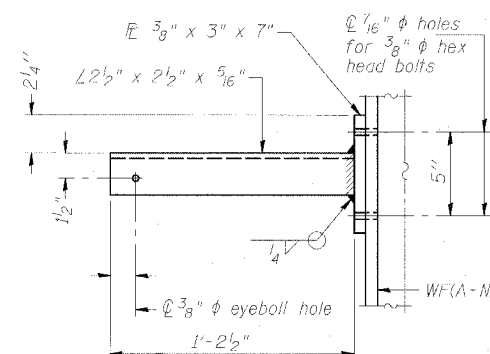


SECTION G-G

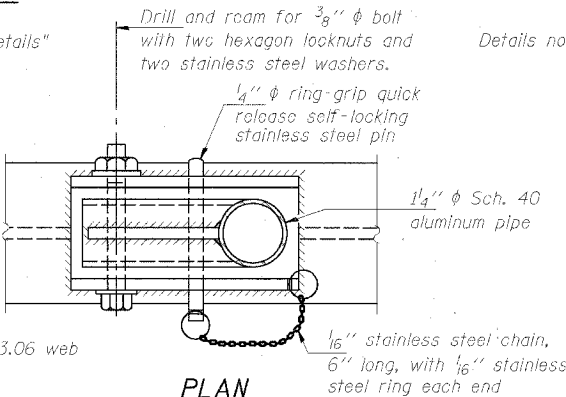


SAFETY CHAIN

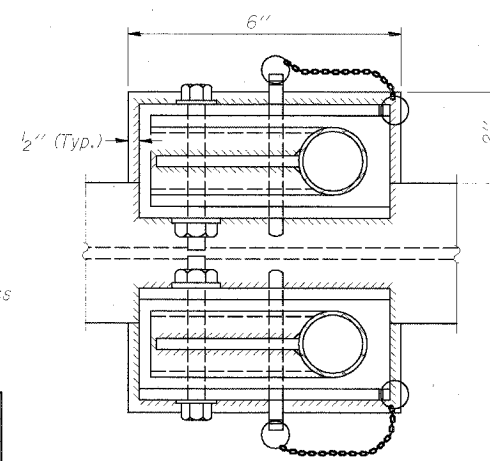
One required for each end of each walkway.



SECTION P-P

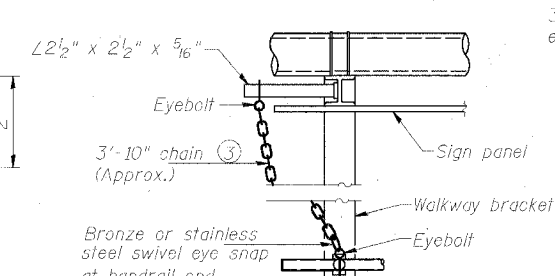


PLAN DETAIL E HANDRAIL HINGE



PLAN AT HANDRAIL JOINT

Details not shown same as "PLAN"



ALTERNATE SAFETY CHAIN ATTACHMENT

Details not shown similar to "Safety Chain" Details (Walkway omitted for clarity)

③ 3/16" galvanized steel chain, approximately 12 links per foot. Chain to be hot dip galvanized after manufacture and suitable for prolonged exterior exposure. Alternate materials may be substituted with the Engineer's approval.

④ Extrusions may be used in lieu of the details shown, with approval of the Engineer.

DESIGNED	MSA	EXAMINED	20
CHECKED	AS	PASSED	ENGINEER OF STRUCTURAL SERVICES
DRAWN	MD		ENGINEER OF BRIDGES AND STRUCTURES
CHECKED	MSA		

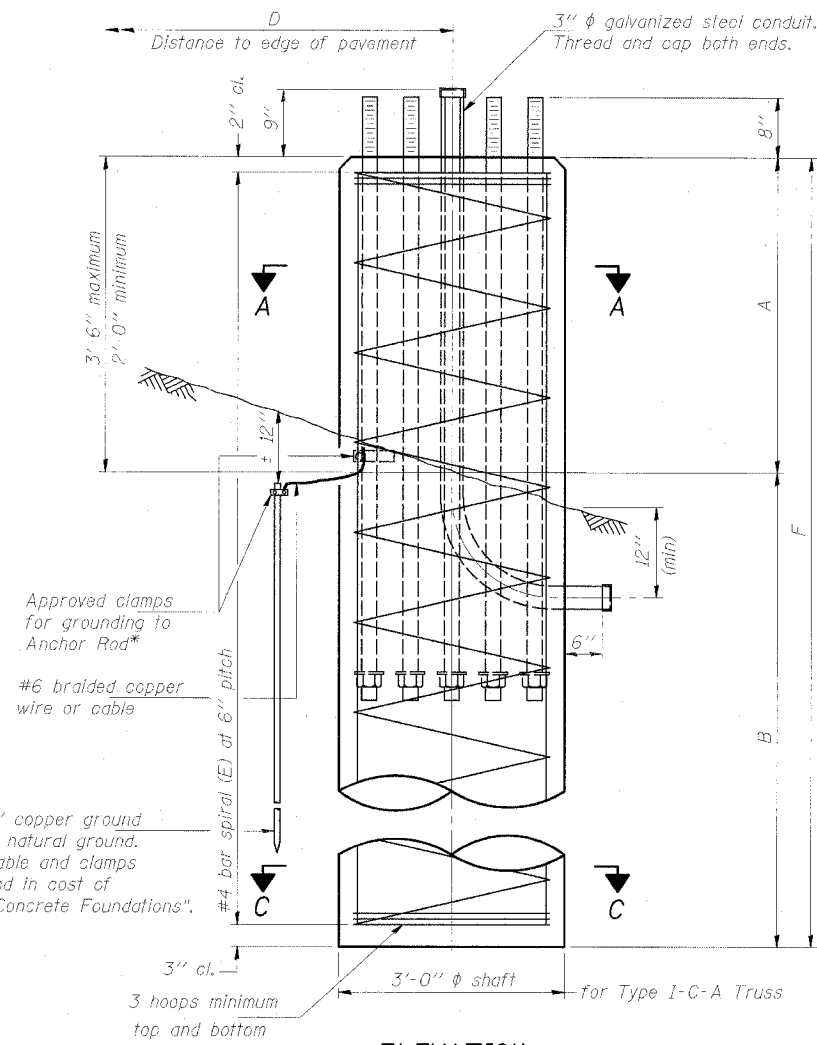
NUMBER	REVISION	DATE

SGN-35
CANTILEVER SIGN STRUCTURES
HANDRAIL DETAILS
ALUMINUM TRUSS & STEEL POST
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES CANTILEVER

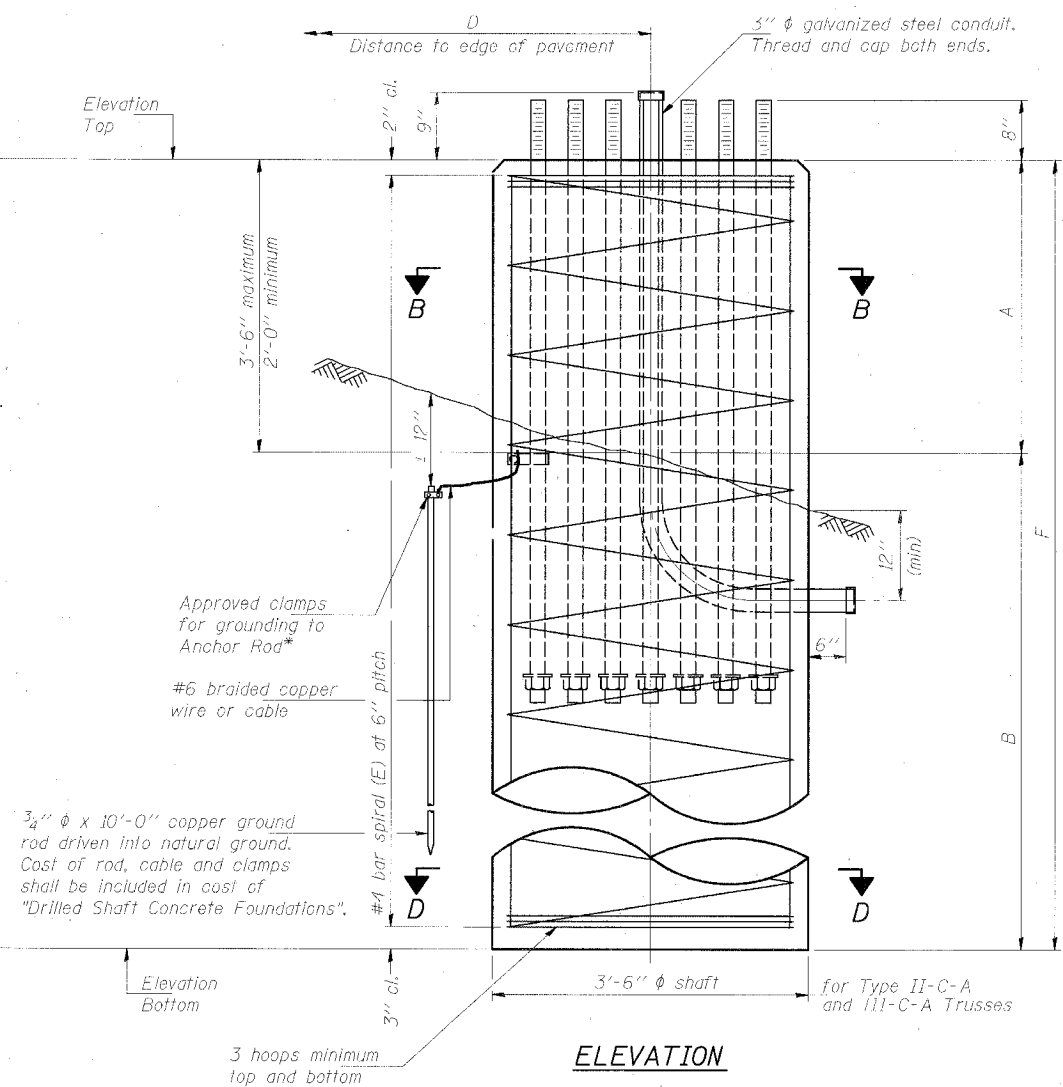
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DISTRICT	SHEET
94/90		COOK	598	333
FED. AID PROJ. NO. 62302 * (1818, ETC. 2324.6-1PR-9)				
ILLINOIS FED. AID PROJECT				

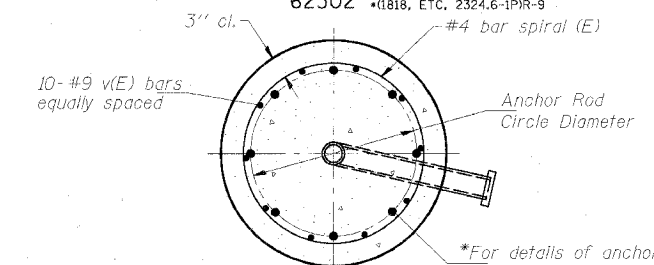
*Grind anchor rod to bright finish at ground clamp location before installing clamp.



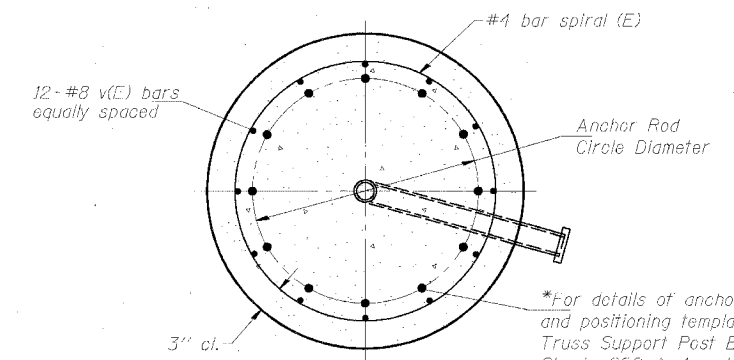
ELEVATION



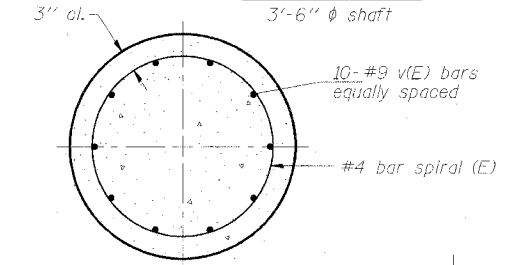
ELEVATION



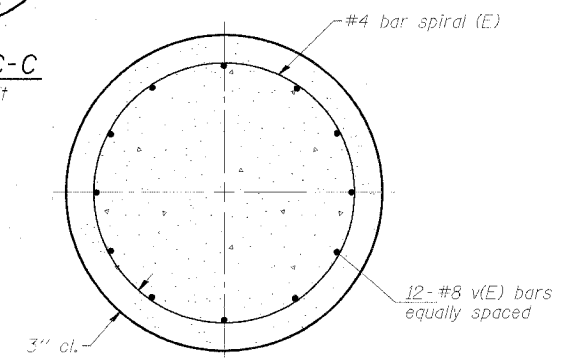
SECTION A-A
3'-0" shaft



SECTION B-B
3'-6" shaft



SECTION C-C
3'-0" shaft



SECTION D-D
3'-6" shaft

NOTES:
The foundation dimensions shown in the Foundation Design Table are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown in the Foundation Data Table will be the result of site specific designs.

to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

No sonotubes or decomposable forms shall be used below the lower conduit entrance. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Bridge Seal Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in "Drilled Shaft Concrete Foundation".

Structure Number	Station	Truss Type	Shaft Diameter	Elevation Top	Elevation Bottom	A	B	F	Class SI Concrete Cubic Yards
1C0161094R057.5	1486+00	III-C-A	3.5'	12.82	-19.85	2'-8"	30'-0"	32'-8"	13.0
1C0161094R057.0	1514+30	II-C-A	3.5'	11.82	-12.35	2'-8"	21'-6"	24'-2"	10.0

Truss Type	Post Base Sheet	Maximum Cantilever Length (ft)	Maximum Total Sign Area (sq ft)	Shaft Diameter (ft)	"B" Depth (ft)	Anchor Rods No.	Anchor Rod Diameter (in)	Anchor Rod Circle Diameter (in)
I-C-A	OSC-A-4	25	170	3.0	15.5	8	2	22
II-C-A	OSC-A-5	30	170	3.5	15.0	12	2	30
II-C-A	OSC-A-5	30	340	3.5	21.5	12	2	30
III-C-A	OSC-A-5	35	170	3.5	19.0	12	2	30
III-C-A	OSC-A-5	35	250	3.5	22.5	12	2	30
III-C-A	OSC-A-5	35	400	3.5	26.5	12	2	30
III-C-A	OSC-A-5	40	400	3.5	30.0	12	2	30

DESIGNED	MSA
CHECKED	AS
DRAWN	MD
CHECKED	MSA

EXAMINED	20
PASSED	ENGINEER OF STRUCTURAL SERVICES
	ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

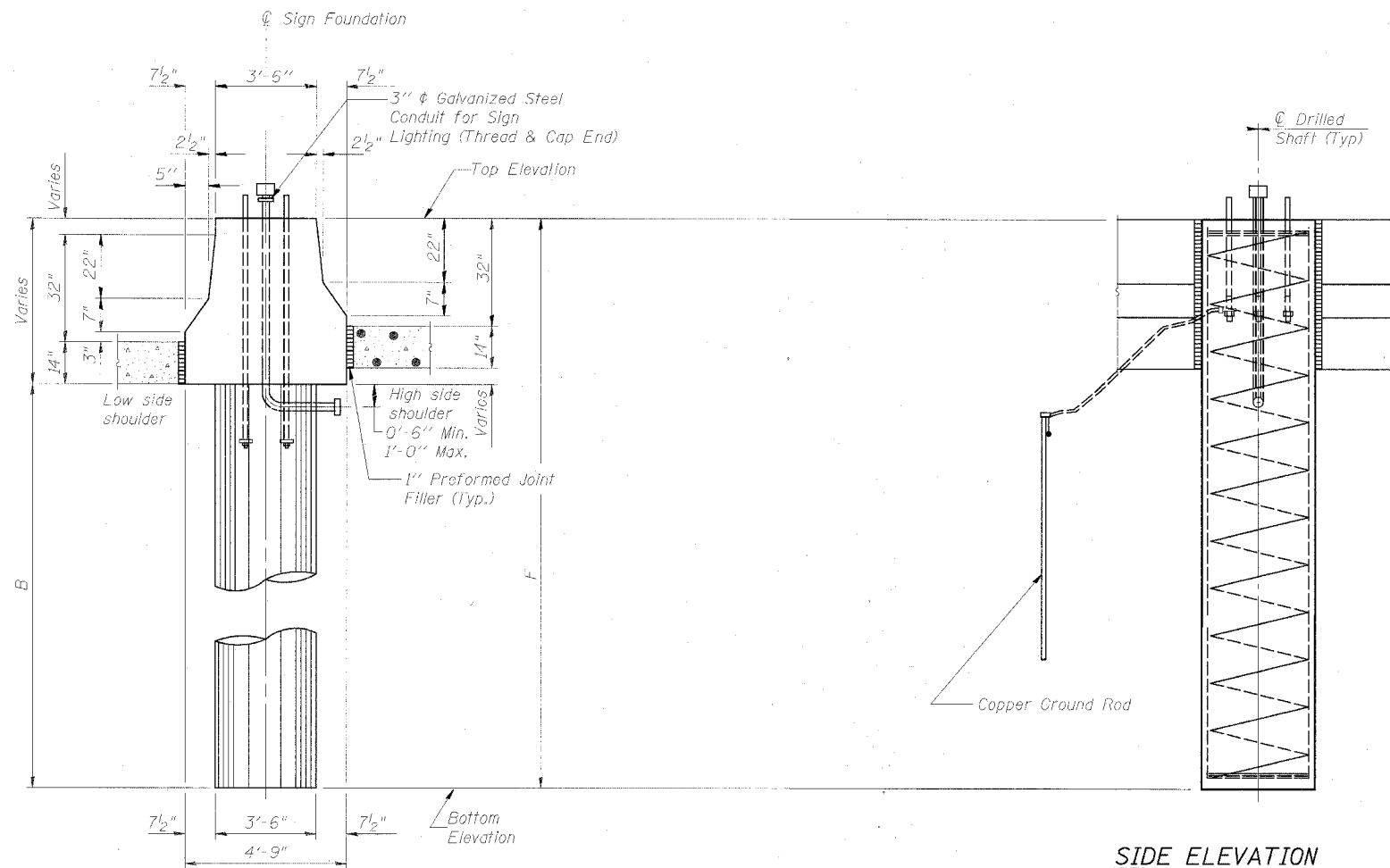
**CANTILEVER SIGN STRUCTURES
DRILLED SHAFT
ALUMINUM TRUSS & STEEL POST**

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES CANTILEVER

ROUTE NO.	SECTION	COUNTY	LEGAL SHEETS	SHEET NO.
94/90		COOK	598	334
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

• (1818, ETC, 2324.6-1P) R-9

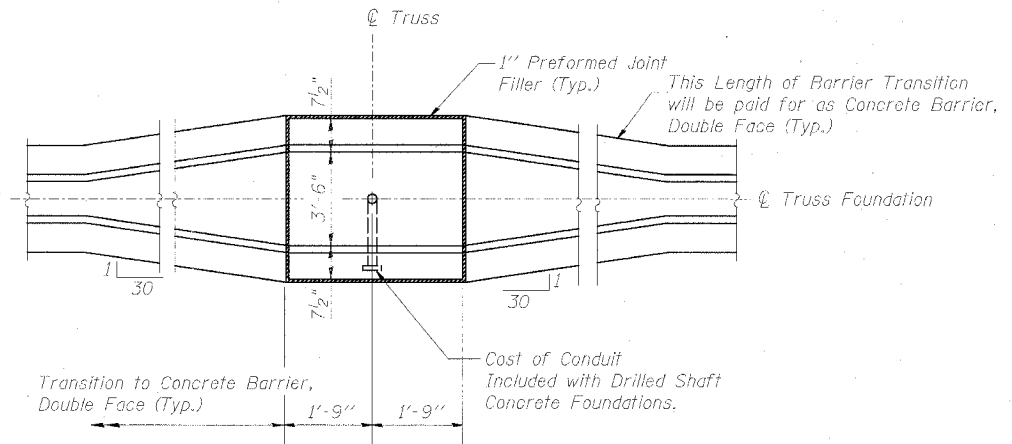
62302



SIDE ELEVATION

Concrete Foundation poured monolithically with no construction joint.

END VIEW



PLAN

Structure Number	Station
1C016T094R057.5	1486+00

SGN-37

**CANTILEVER SIGN STRUCTURES
MEDIAN SUPPORT FOUNDATION DETAILS**

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31st STREET TO 71st STREET
(SB Express Lanes)
DOUBLE FACE MEDIAN SUPPORT FOUNDATION

DESIGNED	RLK	20
CHECKED	EL	EXAMINED
DRAWN	RLK	PASSED
CHECKED	PJM	ENGINEER OF BRIDGES AND STRUCTURES

MODIFIED BY EK ENGINEERS, INC. FROM OS4-MED

14-03000190.35/Con 14845/CA/ADD/15/SS/506/6/PL/ST 06/24/2005 11:03:13 AM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET
94/90		COOK	598	335
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
62302		•1818, ETC. 2324.6-1PR-9		

GENERAL NOTES

SPECIFICATIONS:

- DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications") (2)
- CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")
- LOADING: 80 M.P.H. WIND VELOCITY PLUS 30% GUST FACTOR
- WIND LOADING: 35 p.s.f. normal to Sign Panel Area and truss elements not behind sign Loading Diagram.
- WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.
- MINIMUM CLEARANCE: 3" greater than bridge members at all locations. (All Obstructions)
- WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 Structural Welding Code (Steel) and the Standard Specifications.
- MATERIALS: All Structural Steel Pipe shall be ASTM A53 Grade B with a minimum yield of 35,000 p.s.i., or A500 Grade B or C with a minimum yield of 46,000 p.s.i. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.
All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 (M183, M223 Gr. 50.).
- HIGH STRENGTH BOLTS: All bolts, washers, nuts and locknuts shall satisfy the requirements of ASTM designation A307 unless noted as "H.S." which shall require AASHTO M164 (A325), ASTM A449, or approved alternate. All fasteners shall be hot dip galvanized per AASHTO M232 unless otherwise specified.
- GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.
- ANCHOR RODS: All-threaded rod conforming to ASTM A307, 3/4" ϕ x 12" long, each with one plate washer and locknut and be hot dip galvanized per AASHTO M232. They shall be either cast into the concrete or epoxy grouted in accordance with Section 584 of the Standard Specifications. Minimum embedment in concrete shall be 9".

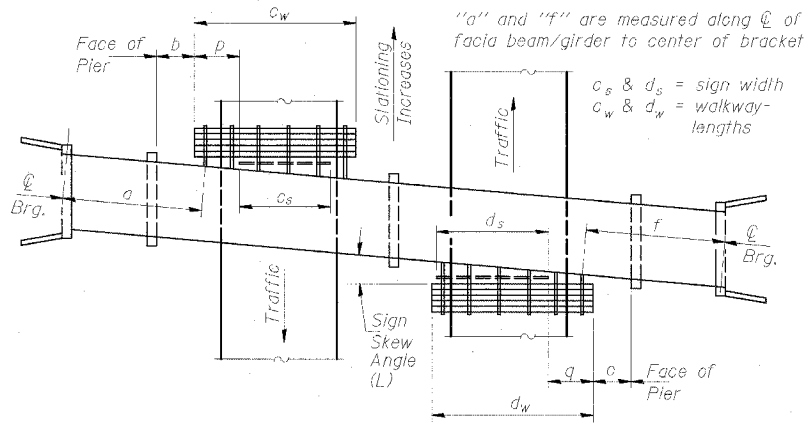
- Bracket spacing $g \leq 6'-0"$ max. Spacing shall be uniform if possible but may vary $\pm 6"$ to miss existing obstruction (rail post, light poles, web stiffeners, splice plates, etc.). Adjust bracket lengths accordingly on skewed structures.
- Any design modifications shall be based on the current version of applicable specifications and submitted for the Engineer's approval.
- Unit price includes grating, handrail, brackets, supports, anchor bolts, fasteners, fabrication, delivery, erection, field drilling and other necessary items. Limits of payment are based on grating length (and, d_w) unless otherwise specified.
- For Safety Chain Details and Details D, F and G, see Base Sheet BM-4.
If walkway bracket at safety chain location is behind sign, add angle to bracket. See detail on Base Sheet BM-4.

NUMBER	REVISION	DATE

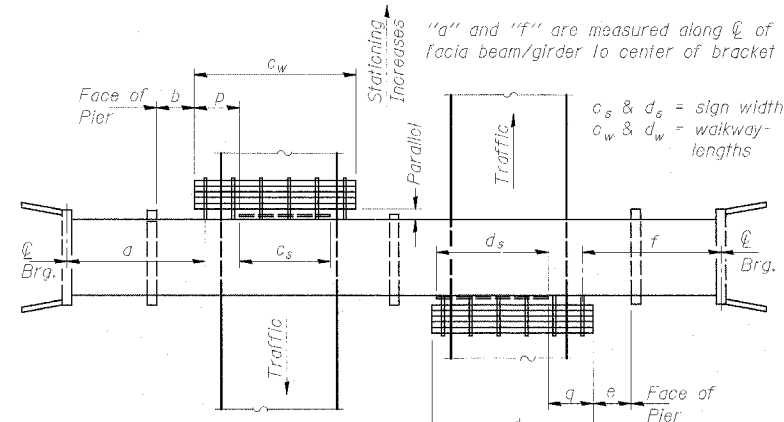
TOTAL BILL of MATERIAL SGN-38

(3) OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	Foot	70
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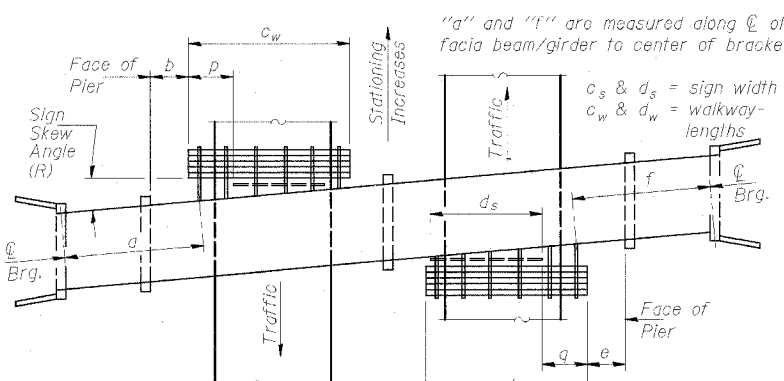
BRIDGE MOUNT SIGN STRUCTURES
GENERAL PLAN AND ELEVATION
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES CANTILEVER



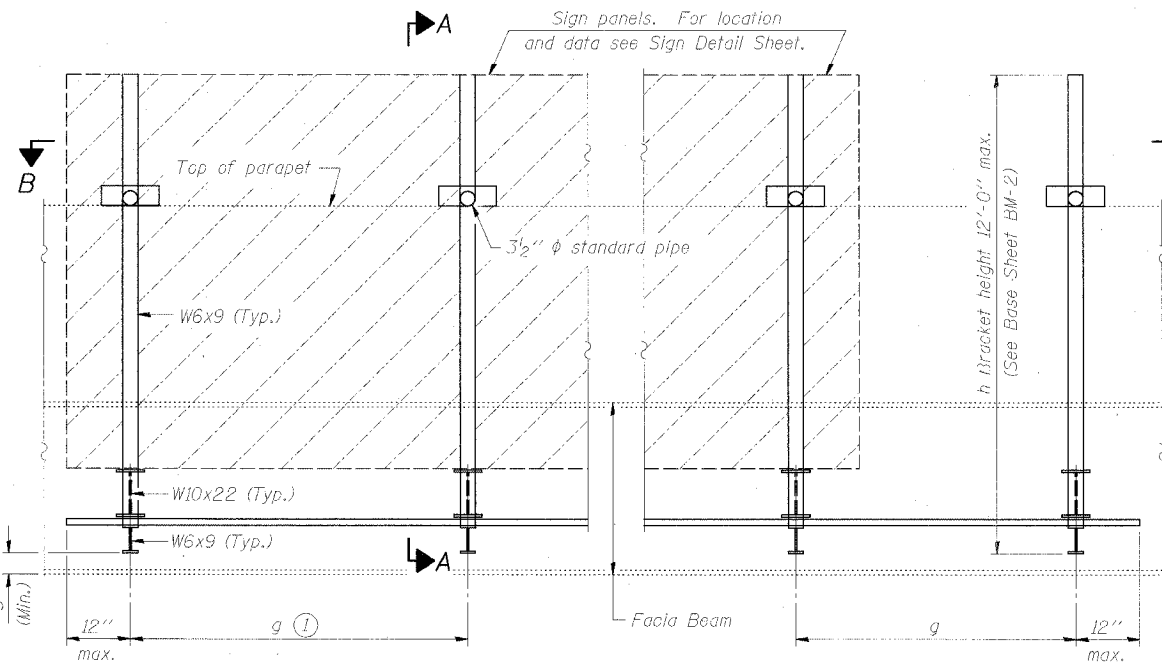
PLAN
(Left Sign Skew > 15°)
WALKWAY AND HANDRAIL SKETCH
(Road plan beneath structure varies.)



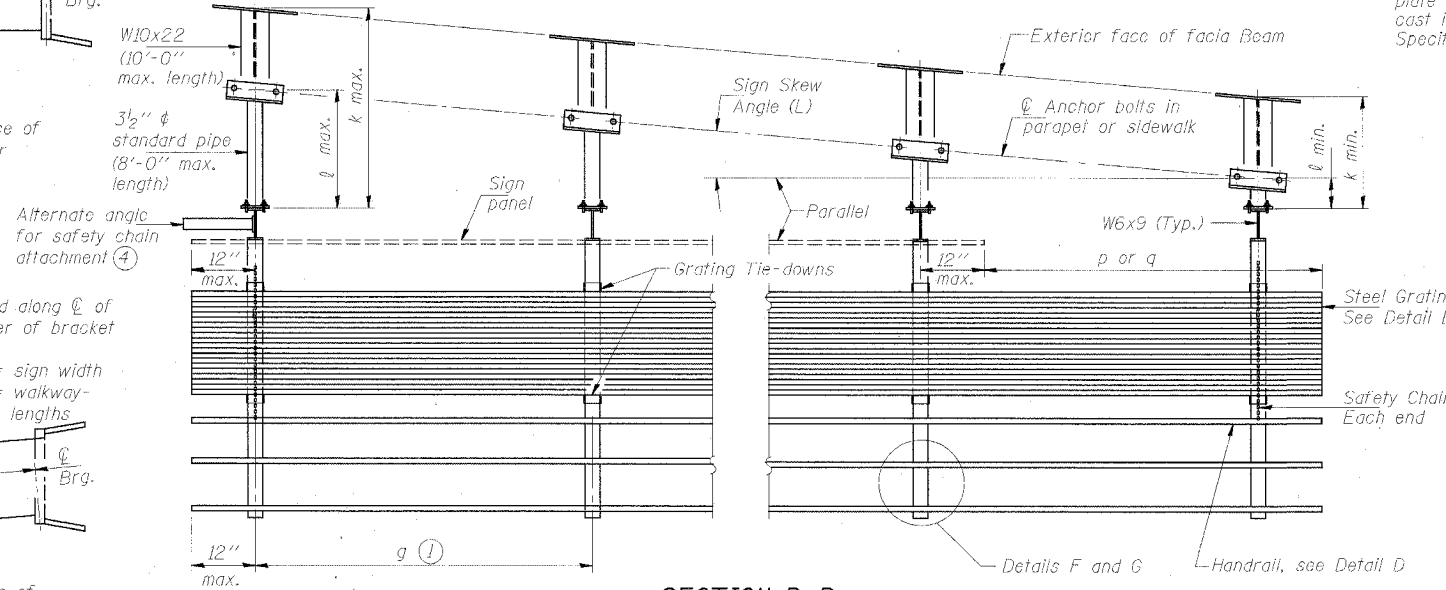
PLAN
(For Sign Skew $\leq 15^\circ$, all brackets constant)
WALKWAY AND HANDRAIL SKETCH
(Road plan beneath structure varies.)



PLAN
(Right Sign Skew > 15°)
WALKWAY AND HANDRAIL SKETCH
(Road plan beneath structure varies.)



TYPICAL FRONT ELEVATION
(With lights, safety chain and handrail omitted for clarity.)



SECTION B-B
(Shown: Left Sign Skew > 15°)

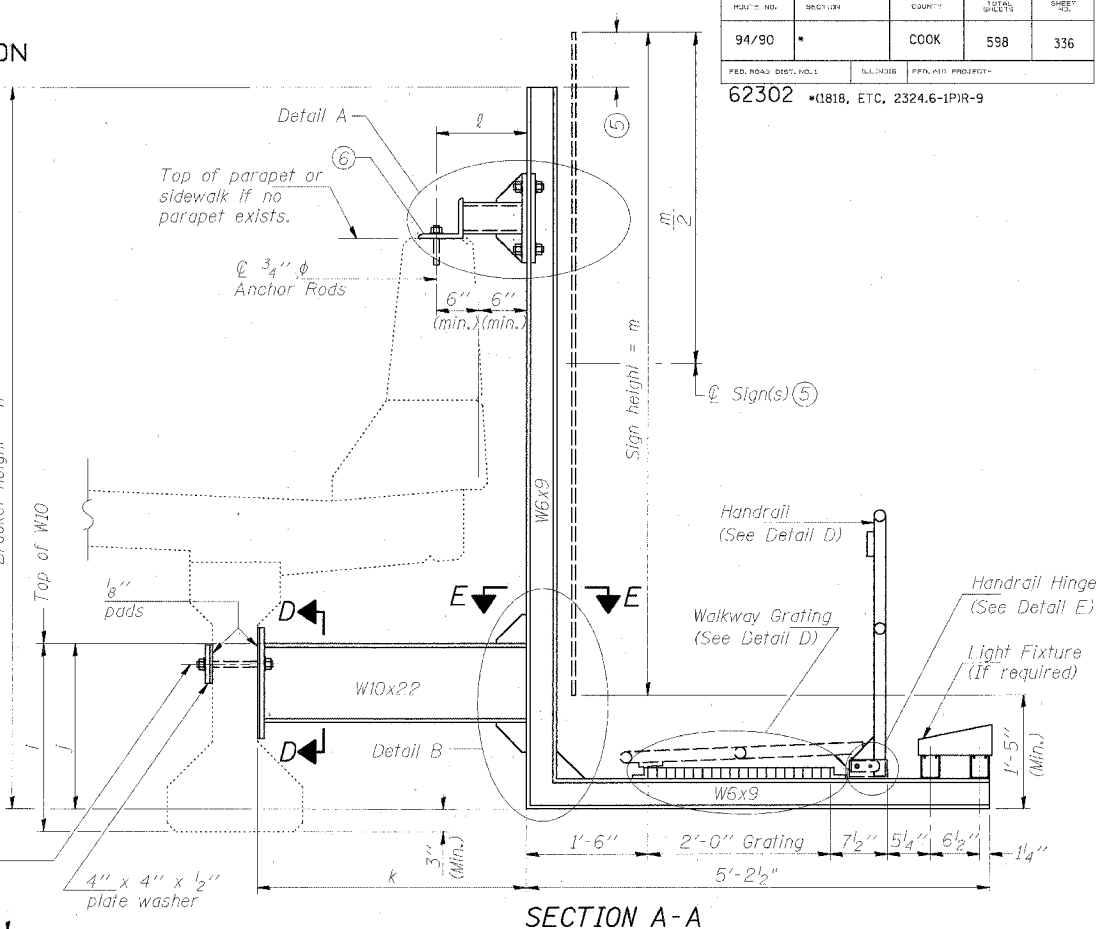
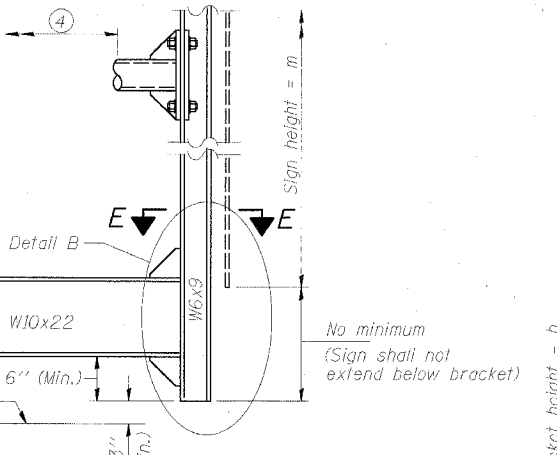
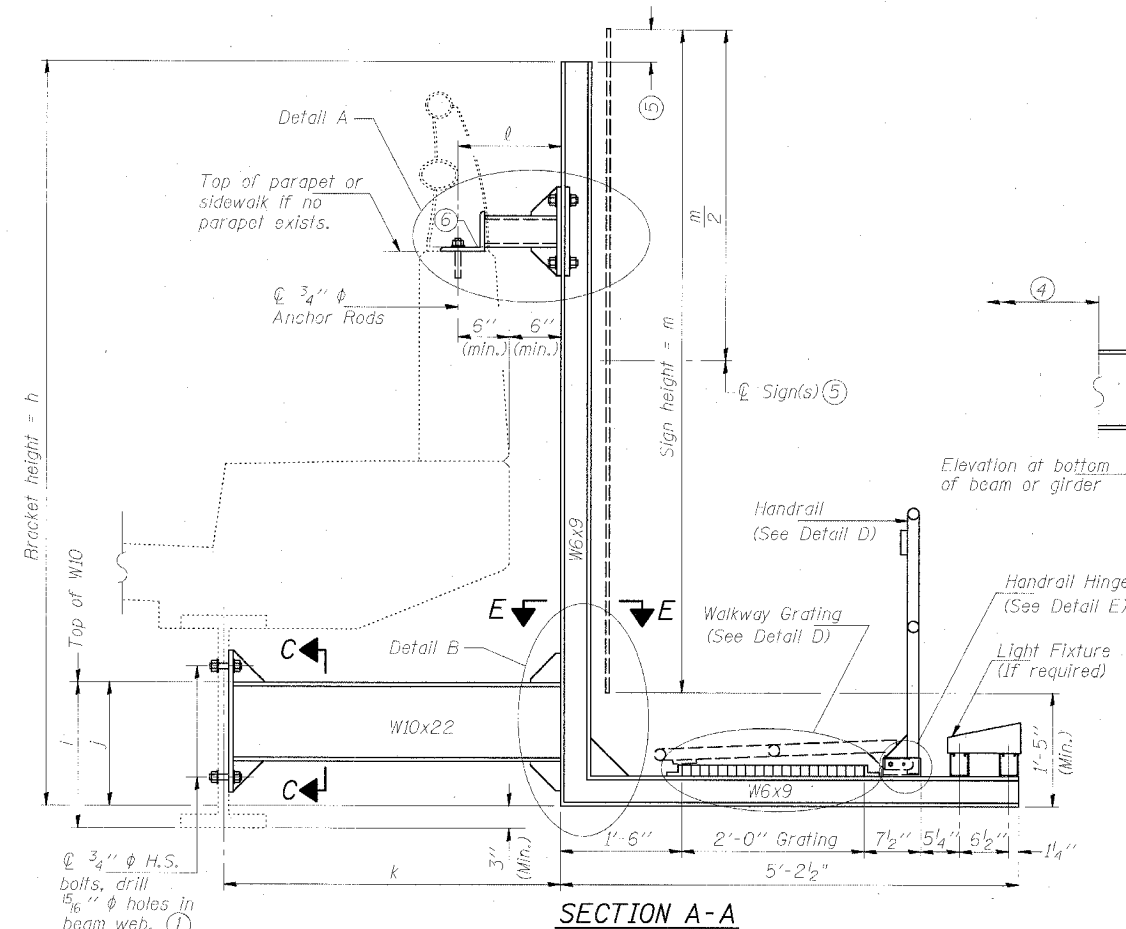
Structure Number	Sign Skew Angle (L) or (R)	Bridge Station	Bridge Structure Number	Contract Route Designation	a	b	c _s	c _w	d _s	d _w	e	f	g	No. of Brackets (Total)	p	q	Total Grating/Handrail Lengths (c _w + d _w)
1C0161094R059.5	R-0°2'25"	1379+48.01	016-0189	I-94	56.43	17.75	10.5	52.5	-	-	-	-	6.0	7	9.5	-	52.5
1C0161094R058.0	L-0°15'35"	1462+62.82	016-1151	I-94	83.1	6.0	21.0	32.0	-	-	-	-	6.0	6	5.5	-	32.0

Dimensions a, b, e, f & g may vary as approved by the Engineer, see (1).
When $c_w < c_s$ and/or $d_w < d_s$, use alternate brackets without walkway supports where applicable, see (3).

DESIGNED	MSA	EXAMINED	20
CHECKED	AS	PASSED	ENGINEER OF STRUCTURAL SERVICES
DRAWN	MD	PASSED	ENGINEER OF BRIDGES AND STRUCTURES
CHECKED	MSA		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	SHEET	SHEET
94/90	*	COOK	598	336
FED. ROAD DIST. NO. 1		FED. AID PROJECT		
62302		*1818, ETC. 2324.6-1PIR-9		



SECTION A-A
Details for mounting to steel beam or girder
& Details for mounting with existing parapet mounted rail

SECTION A-A
Alternate with no lights or walkways

SECTION A-A

Details for mounting to PPC I Beam or Bulb "I"
& Details for mounting to parapet w/o rail

Structure Number	Station	h (12'-0" max.)	l	j	k max. (10'-0" max.)	l max. (8'-0" max.)	m (11'-0" max.)
1C0161094R059.5	1379+48.01	9.0'	1.75	1.5	3'-8"	1'-1"	8'-6"
1C0161094R058.0	1462+62.82	13.0'	1.75	1.5	3'-8"	1'-1"	12'-6"

For Details A & B, Sections C-C, D-D and E-E, see Base Sheet BM-3.
For Details D & E, see Base Sheet BM-4.

- Holes in new steel members may be drilled in the fabrication shop or in the field. Field drill existing members.
- For new PPC I beams, holes shall be formed during casting. For existing PPC I beams, prestressing strand locations shall be determined and spaced to miss strands by 6" min. Minimize spalling during field drilling of existing beams.
- For new construction, form holes. For existing RC beams, locate primary reinforcement and space holes to miss by 6" min. Minimize spalling and concrete fracturing/damage during field drilling of existing concrete. Spalls over 1/4" deep or beyond the coverage of the 4x4 plate washer shall be repaired with epoxy mortar before installing washer.

DESIGNED	MSA	20
CHECKED	AS	EXAMINED
DRAWN	MD	PASSED
CHECKED	MSA	ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

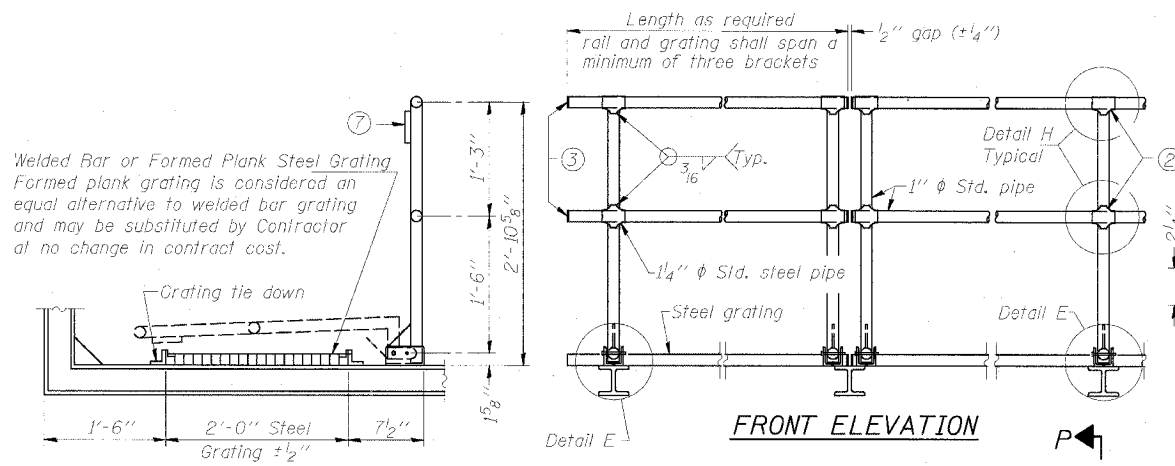
NOTES:
Installations not within dimensional limits shown require special analysis for all components and must be submitted to the Bureau of Bridges and Structures for approval.
Contractor shall field check all pertinent existing bridge dimensions shown on plans before submitting shop drawings.
All holes in bridge beams or girders should be located in the middle half of the member's depth. There shall be no holes drilled in the lower quarter of the member's depth. (For R.C. girder, depth = bottom of deck to bottom of the girder.) Proposed exceptions must be approved by the Bureau of Bridges and Structures.
The Engineer may adjust dimension "h" to meet the above condition and to keep the sign level.

- Sign shall not extend more than 6" above top of bracket, and this dimension may vary to keep sign level if bridge is on grade or vertical curve. Multiple signs of various heights shall share a common horizontal centerline and use equal bracket heights. If no sign is attached to a W6x9 vertical (bracket only supporting walkway), dimension h shall be the same as an adjacent bracket with a sign attached, unless Engineer specifically directs shorter brackets due to locational restraints on future uses. (See Detail A for minimum bracket height.)
- For bridge mounted sign structures installed on new bridges with railing, during design, bracket spacing must be coordinated with railing post spacing and the Contractor must install upper brackets prior to railing installation. For bridge mounted sign structures installed on existing bridges with railing, during design, brackets spacing must be coordinated with railing post spacing and the Contractor must temporarily remove sections of railing to facilitate upper bracket installation. If it is determined during design that existing railings can't be removed, alternate upper connection details must be developed for the contract plans and approved by the Bureau of Bridges and Structures.

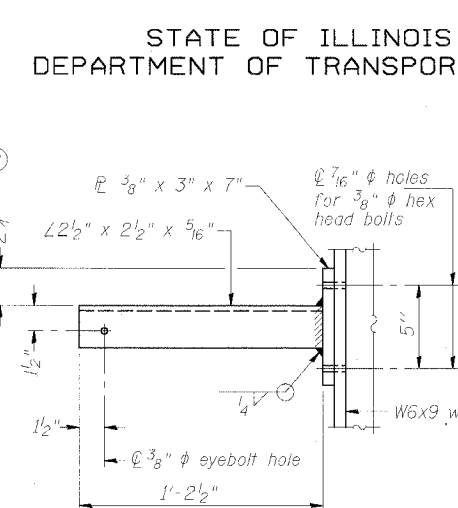
BRIDGE MOUNT SIGN STRUCTURES
WALKWAY AND CONNECTION DETAILS
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES CANTILEVER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

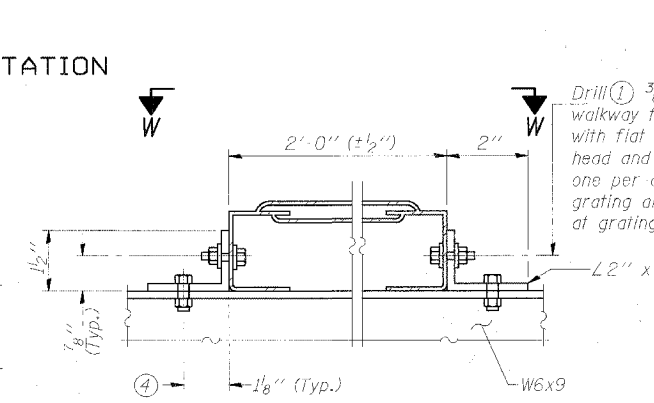
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	338
FED. ROAD DIST. NO. 1		ILLINIS	FED. AID PROJECT	
62302		•(1818, ETC. 2324.6-1P1R-9		



SIDE ELEVATION **DETAIL D HANDRAIL**

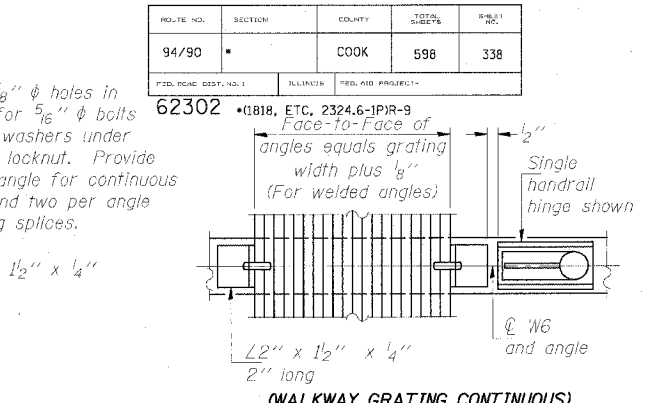


SECTION P-P



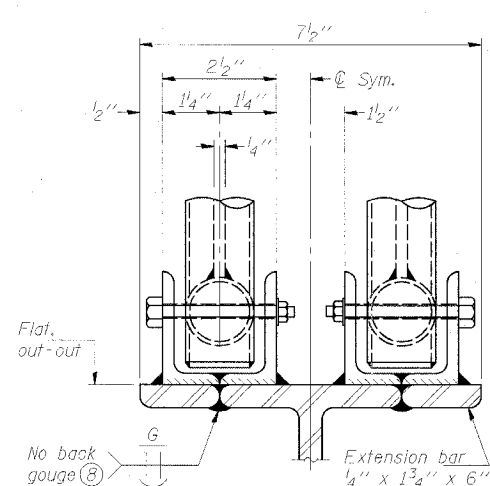
ALTERNATE FORMED PLANK GRATING DETAILS

Plank Grating: nominal depth = 2 1/2" (± 1/4"); perforated or expanded steel sheet with a non-skid surface (non-serrated) concentrated load capacity = 500 lbs. with 6'-0" clear span.



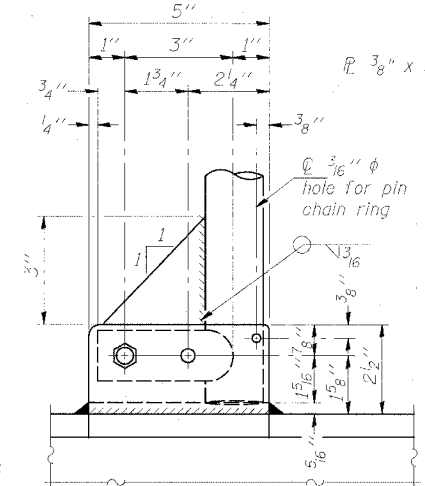
(WALKWAY GRATING CONTINUOUS)

(AT WALKWAY GRATING SPLICE) PLAN

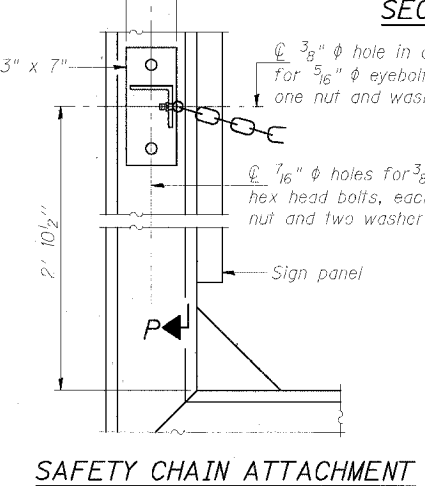


ELEVATION AT HANDRAIL JOINT

(Details not shown same as "FRONT ELEVATION")

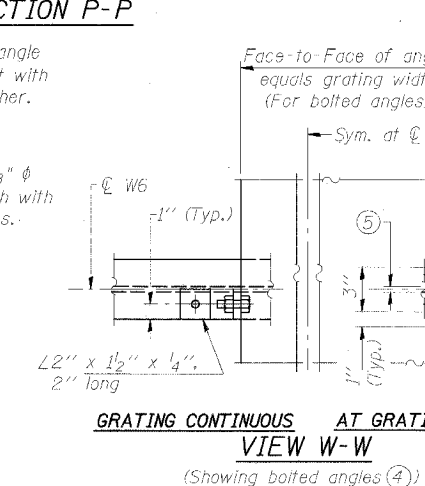


SIDE ELEVATION



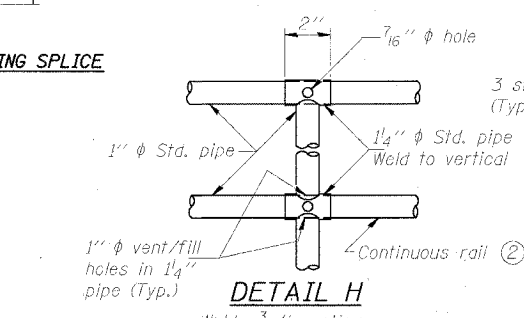
SAFETY CHAIN ATTACHMENT

(With Sign Present)
Items not shown same as "SIDE ELEVATION" and "SAFETY CHAIN"



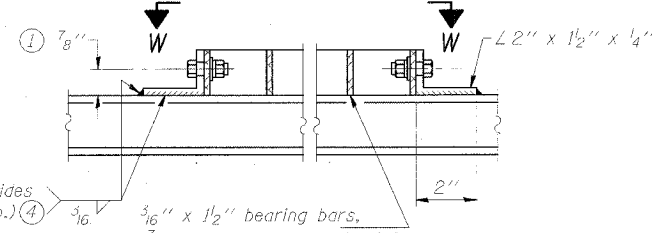
GRATING CONTINUOUS AT GRATING SPLICE VIEW W-W

(Showing bolted angles)



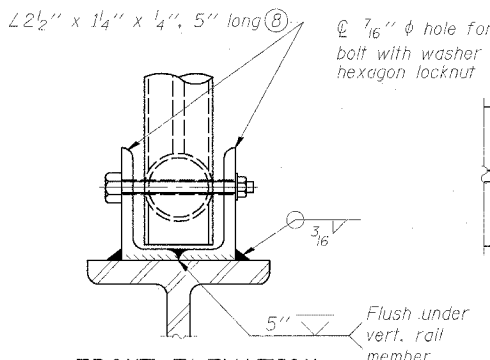
DETAIL H

Welds: 3/16" continuous



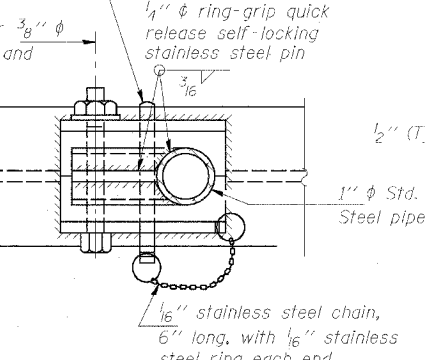
WELDED BAR GRATING DETAILS

(Showing optional welded angle attachment)

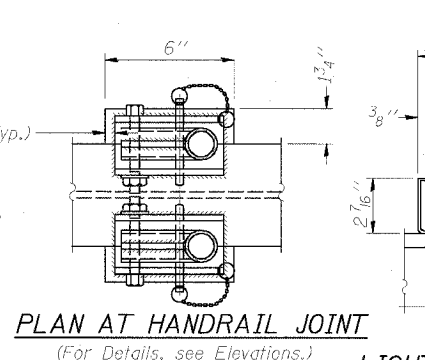


FRONT ELEVATION

(See above Elevations for dimensions.)

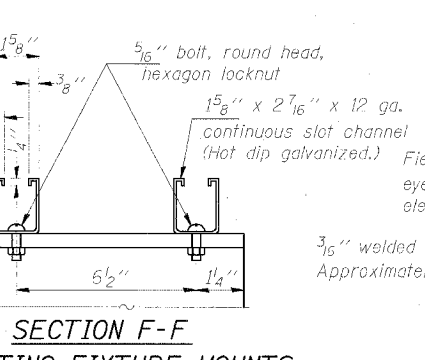


PLAN AT SINGLE HANDRAIL HINGE



PLAN AT HANDRAIL JOINT

(For Details, see Elevations.)



SECTION F-F LIGHTING FIXTURE MOUNTS

(If required)

NUMBER	REVISION	DATE

DESIGNED	MSA
CHECKED	AS
DRAWN	MD
CHECKED	MSA

EXAMINED	
PASSED	

DETAIL E

- Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
- Horizontal rail member shall be continuous thru 1 1/4" pipe. Provide 7/16" hole in fitting for 3/8" bolt. Field drill 1/16" hole in horizontal rail member. Provide washer and locknut for bolt. (Use 5/16" eyebolts in 7/16" holes on top rail at ends only.)
- Install standard force-fit end caps or weld 1/8" end plates with 1/8" c.f.w. and grind smooth. (All rail ends.)
- Grating tie-down angles may be either bolted to W6x9 after galvanizing or welded to W6x9 before galvanizing, at the Contractor's option. (No weld on grating side.)
- 3/8" (± 1/4") gap between grating panels at splice.

NOTES

- Chain to be hot dip galvanized after manufacture and suitable for prolonged exterior exposure. Alternate materials may be substituted with the Engineer's approval. Approximately 3'-6" long chain per location. Maximum sag with handrail erected = 4".
- 1/8" x 1/2" x 2" welded to handrail posts to protect locations that contact grating.
- Extrusions may be used in lieu of details shown, with approval by Engineer.
- Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.

**BRIDGE MOUNT SIGN STRUCTURES
WALKWAY DETAILS**

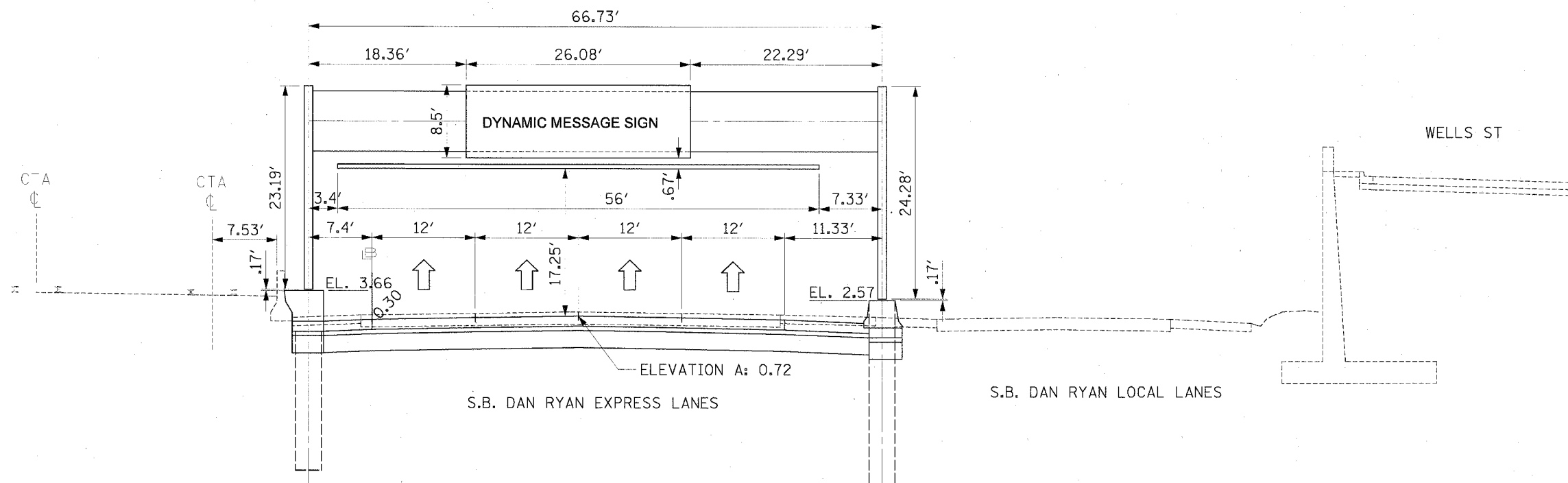
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES CANTILEVER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94		COOK	598	339
STA.		TO STA.		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
• 11818, ETC, 2324.6-1P/R-9				62302

NOTES:

1. DYNAMIC MESSAGE SIGN WILL BE INSTALLED IN ANOTHER CONTRACT. COORDINATE WITH CONTRACT 62583 FOR LOCATION, TYPE, AND ORIENTATION OF HARDWARE AND CONDUIT.
2. THE FABRICATOR SHALL COORDINATE WITH THE MANUFACTURER OF THE DYNAMIC MESSAGE SIGN (DMS) TO DETERMINE THE ACTUAL SIZE, WEIGHT AND MOUNTING DETAILS OF THE DMS BEFORE ORDERING OR FABRICATING ANY MATERIALS FOR THE TRUSS OR WALKWAY/SIGN SUPPORTS.



1S016I094R057.7
MOUNTING DETAIL
PROPOSED OVERHEAD SIGN STRUCTURE
FOR DYNAMIC MESSAGE SIGN
STA. 1476+22.50/3476+16.47 S.B. I-90/94
LOOKING SOUTH

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION F.A.I. 90/94 (DAN RYAN EXPRESSWAY) 31st STREET TO 71st STREET (SB Express Lanes) PROPOSED DYNAMIC MESSAGE SIGN INSTALLATION
NAME	DATE	

SCALE: NONE DRAWN BY: SWANG
DATE: JULY 7, 2005 CHECKED BY: JAL

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

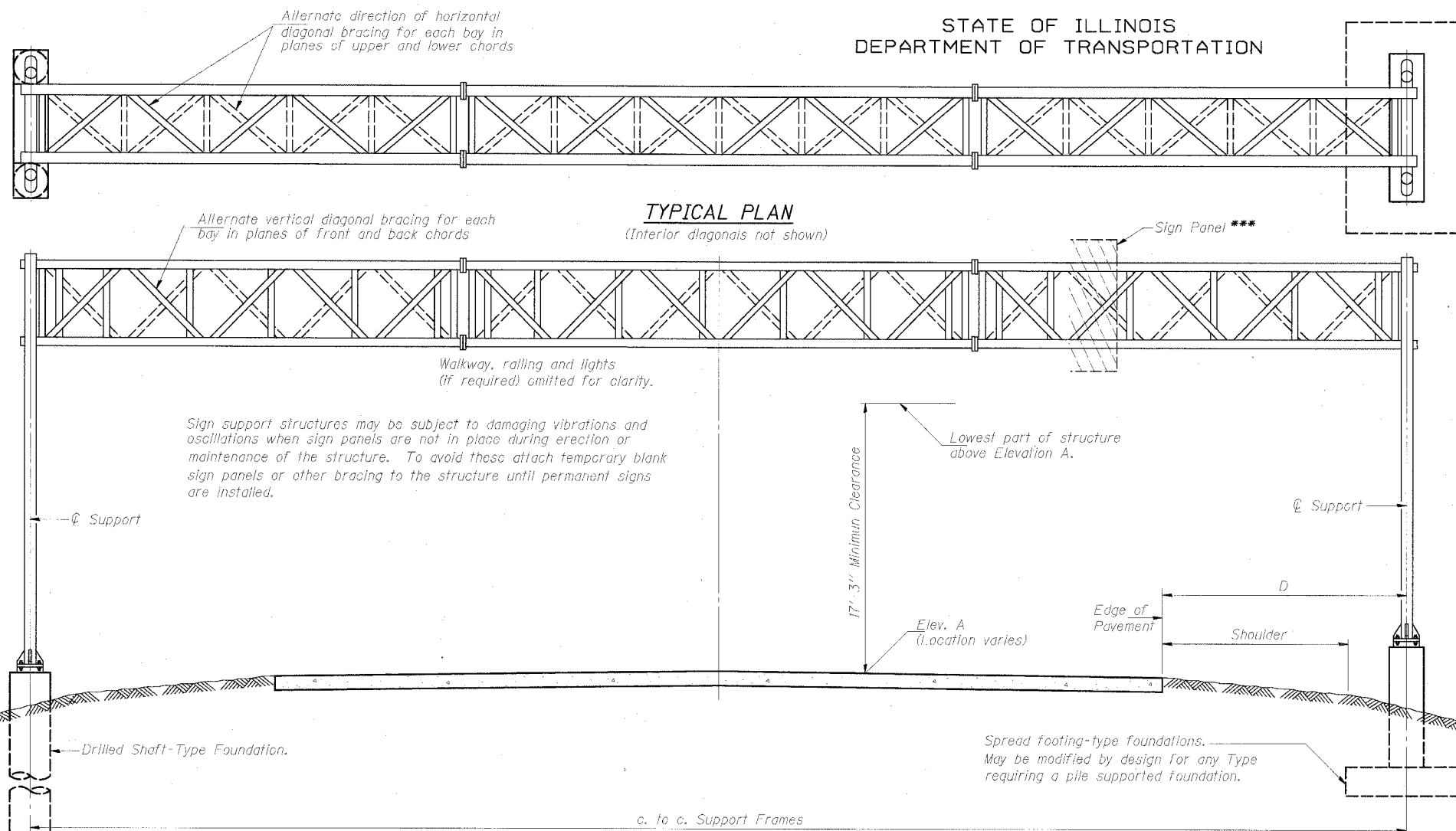
ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.	SHEET NO. SHEETS
90/94	*	COOK	598	340	
FED. ROAD DIST. NO. 7					
FUNDING PROJECT					
* (1818, ETC., 2324.6-1P) R-9					

62302

GENERAL NOTES

- DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")
- CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")
- LOADING: 90 M.P.H. WIND VELOCITY
WIND LOADING: 30 p.s.f. normal to Sign Panel Area and truss elements not behind sign Loading Diagram.
WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.
- DESIGN STRESSES:
Field Units
 $f' = 3,500$ p.s.i.
 $f_y = 60,000$ p.s.i. (reinforcement)
- WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specifications.
- MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B with a minimum yield of 35,000 p.s.i., or A500 Grade B or C with a minimum yield of 46,000 p.s.i. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.
All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W*. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer.
The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. (Zone 2) before galvanizing.
- FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04(f) of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing of bolts will not be required.
- U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.
- GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.
- ANCHOR RODS: Shall conform to AASHTO M314 Gr. 36 or 55 with a minimum Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F.
- CONCRETE SURFACES: All concrete surfaces above an elevation 6" below the lowest final ground line at each foundation shall be cleaned and coated with Bridge Seal Sealer in accordance with the Standard Specifications.
- REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

*If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.



TYPICAL ELEVATION
(Looking at Face of Signs)**

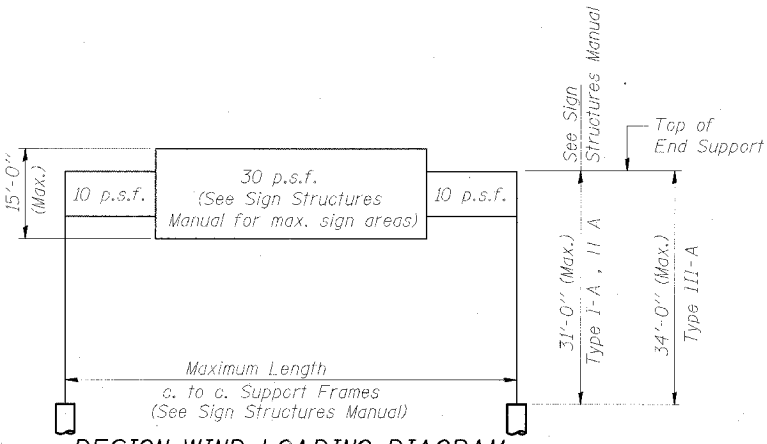
Structure Number	Station	Design Truss Type	c. to c. Supports	Elev. A	Dim. D	Height of Tallest Sign	Total*** Sign Area
ISO161094R057.7	1476+22.50	III-A	66.73'	0.72	7.40' L 11.33' R	8.5'	221.7 SF

**Looking upstation for structures with signs both sides.
***A DYNAMIC MESSAGE SIGN (DMS) WILL BE INSTALLED ON THIS TRUSS IN CONTRACT 62583

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE TYPE I-A (4'-0" x 4'-6")	Foot	
OVERHEAD SIGN STRUCTURE TYPE II-A (4'-6" x 5'-3")	Foot	
OVERHEAD SIGN STRUCTURE TYPE III-A (5'-0" x 7'-0")	Foot	66.7
OVERHEAD SIGN WALKWAY TYPE A	Foot	56
CONCRETE FOUNDATIONS	Cu. Yds.	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	34.4

NUMBER	REVISION	DATE



DESIGN WIND LOADING DIAGRAM

Parameters shown are basis for I.D.O.T. Standards and Sign Manual Tables. Installations not within dimensional limits shown require special analysis for all components.

DESIGNED - SWANG	20
CHECKED - JAL	EXAMINED
DRAWN -	PASSED
CHECKED -	

OS-A-1 11/1/2002

OVERHEAD SIGN STRUCTURES
GENERAL PLAN & ELEVATION
ALUMINUM TRUSS & STEEL SUPPORTS

F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31st STREET TO 71st STREET
(SB Express Lanes)

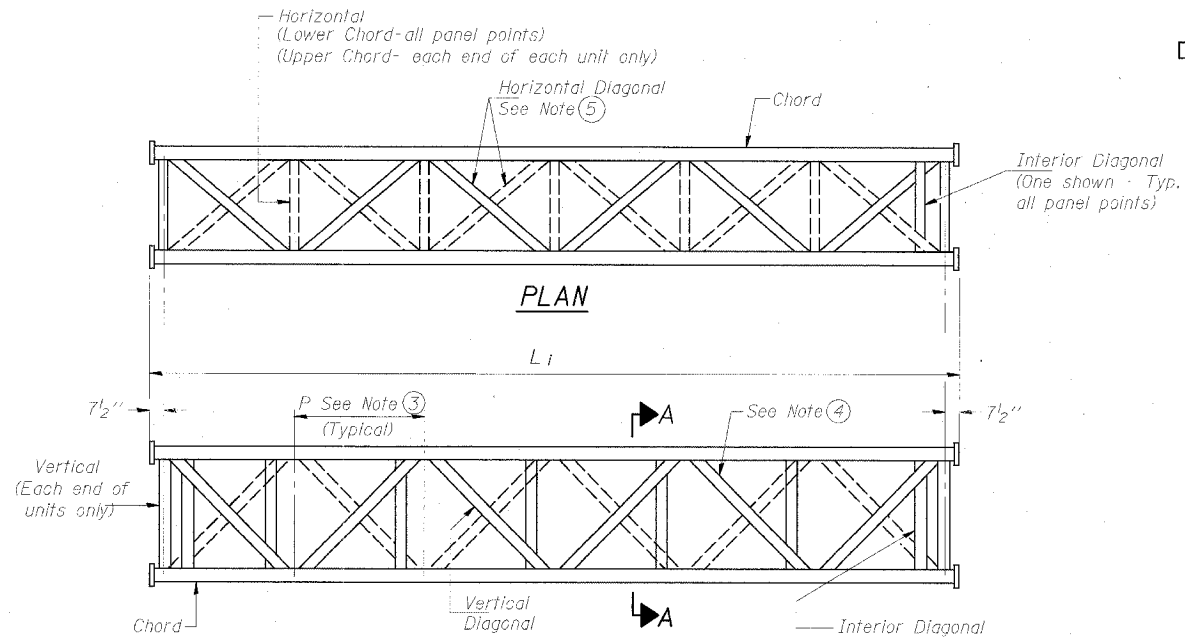
06/24/2005 02:43:30 PM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

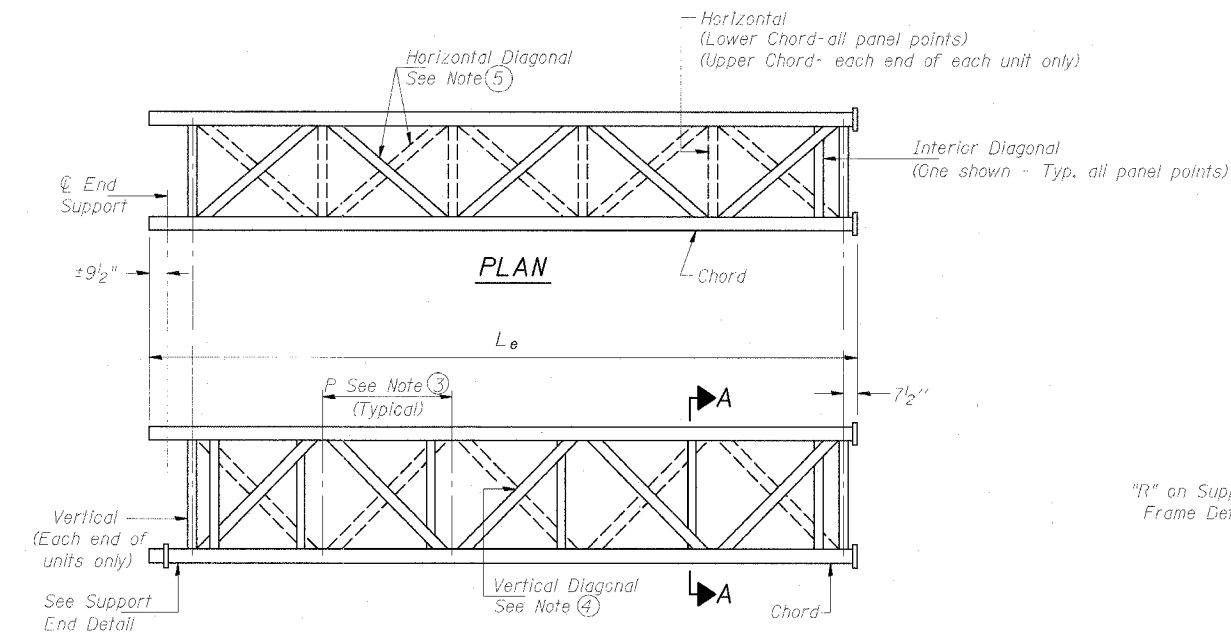
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET	SHEET NO.
90/94	*	COOK	598	341	- SHEETS
FED. ROAD DIST. NO. 7		T.A. NO.	FED. AID PROJECT NO.		

(1818, ETC., 2324.6-1P) R-9

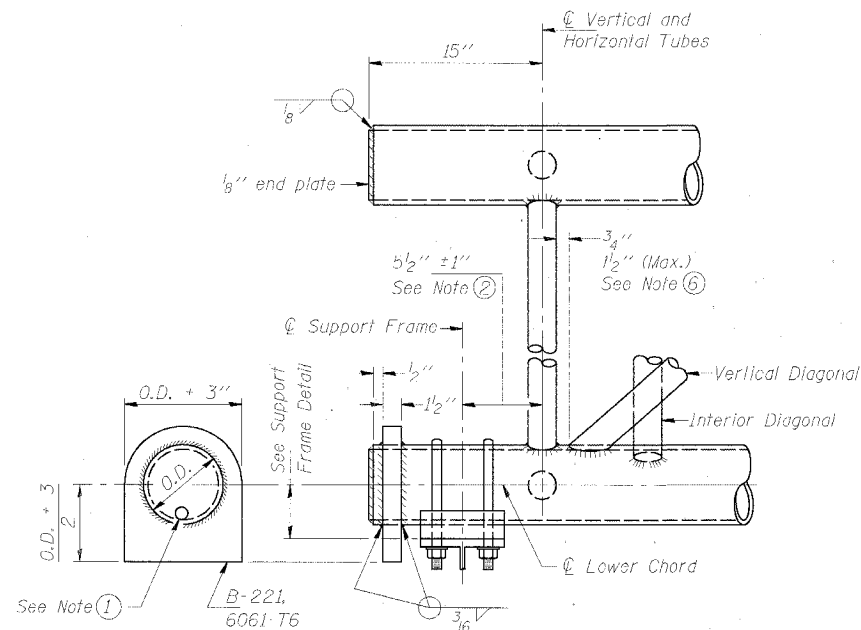
62302



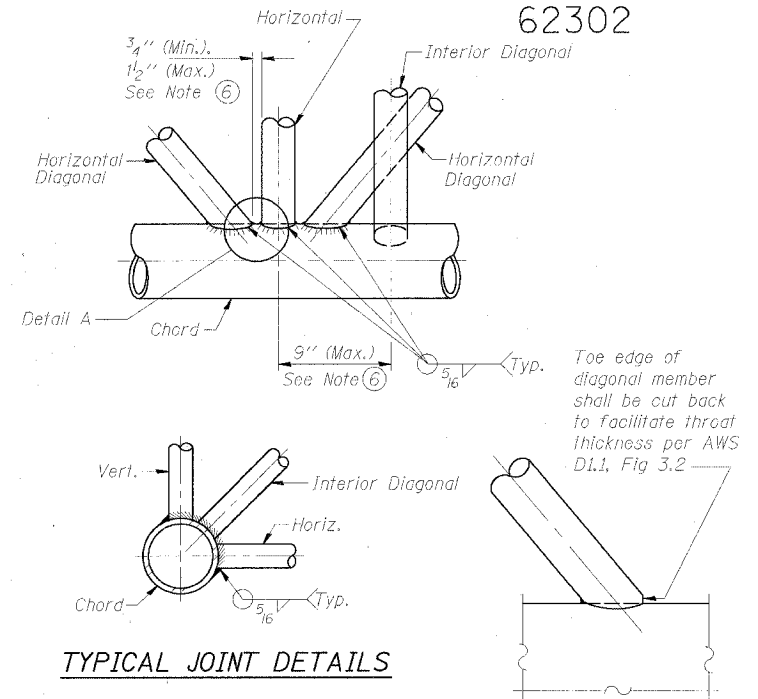
**ELEVATION
TYPICAL INTERIOR UNIT**
Even number of panels/interior unit required.



**ELEVATION
TYPICAL EXTERIOR UNIT**
Even or odd number of panels/exterior units allowed.



SUPPORT END DETAIL FOR EXTERIOR UNIT

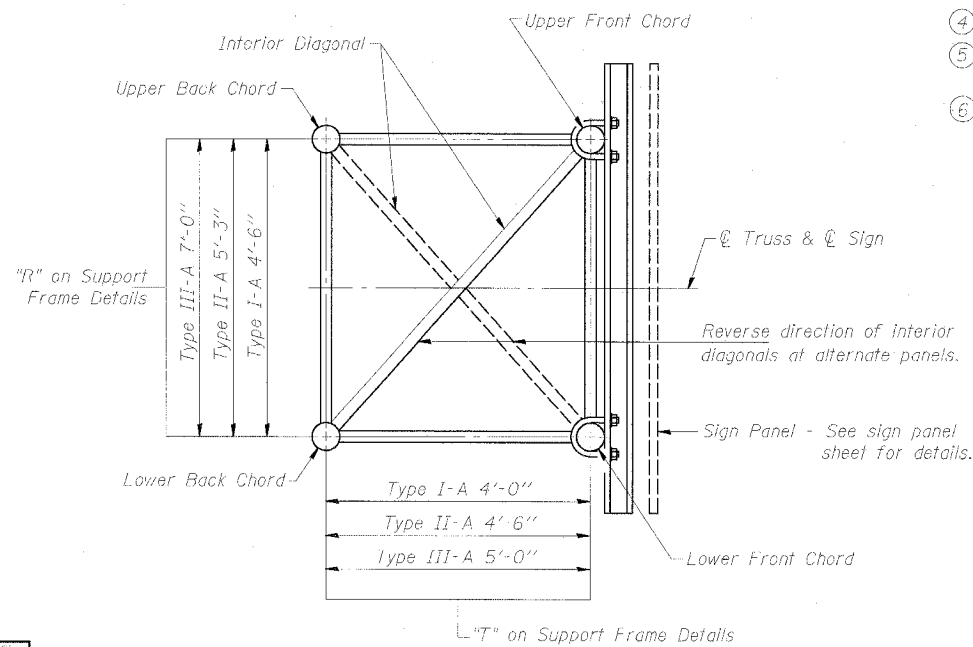


TYPICAL JOINT DETAILS

DETAIL A

NOTES

- Contractor may alternatively use standard aluminum drive-fit cap to close end. 1/2" ϕ drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)
- 5 1/2" end dimension may vary by $\pm 1"$ to provide uniform panel spacing (P).
- Panel spacing (P) shall be uniform for entire truss and between 4'-0" and 5'-0" for Type I-A or 4' 0" and 5' 6" for Types II-A and III-A.
- Vertical Diagonals in front and back face shall alternate.
- Hidden lines show wind bracing alternates direction between planes of top and bottom chords.
- All diagonals shall be detailed for minimum offset from the panel point based on the following: Offset shall be such as to provide a 3/4" minimum to 1 1/2" maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walkway brackets.



SECTION A-A

DESIGNED	SWANG
CHECKED	JAI
DRAWN	
CHECKED	

EXAMINED	20
PASSED	ENGINEER OF STRUCTURAL SERVICES
	ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

OS-A-2 11/1/2002

**OVERHEAD SIGN STRUCTURES
ALUMINUM TRUSS DETAILS
FOR TRUSS TYPES I-A, II-A and III-A**

F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31st STREET TO 71st STREET
(SB Express Lanes)

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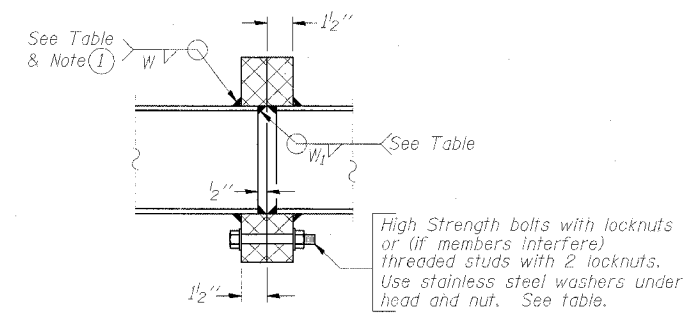
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POST MILE	SHEET	SHEET NO.
90/94	*	COOK	598	342	SHEETS
FED. ROAD DIST. NO. 7					
ILLINOIS					
FED. AID PROJECT					

(1818, ETC, 2324.6-1P) R-9
62302

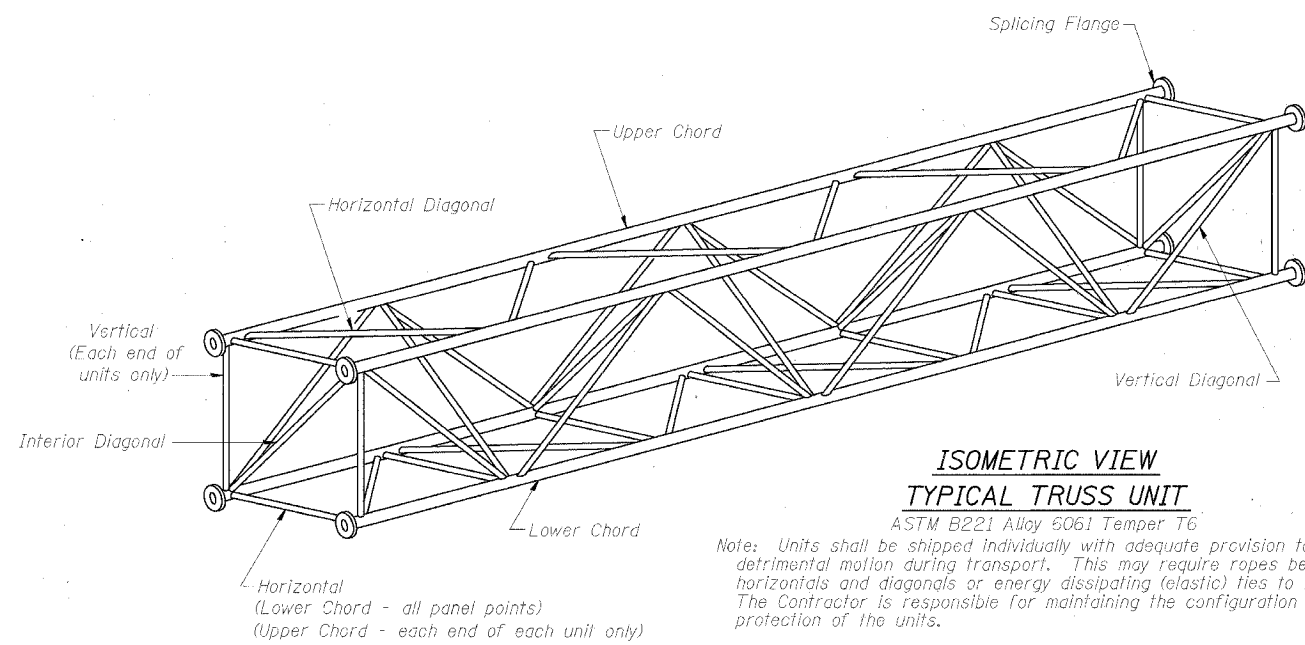
TRUSS UNIT TABLE

Structure Number	Station	Design Truss Type	Exterior Units (2)			Interior Unit			Upper & Lower Chord		Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals		Camber at Midspan	Splicing Flange					
			No. Panels per Unit	Unit Lgth.(L _e)	Panel Lgth.(P)	No. Req'd.	No. Panels per Unit	Unit Lgth.(L _i)	Panel Lgth.(P)	O.D.	Wall	O.D.		Wall	Bolts No./Splice	Bolts Dia.	Weld Sizes W	W ₁	A
ISO161094R057.7	1476+22.50	III - A	7	34.10'	4.60'				7"	5/16"	3 1/4"	5/16"	1.8"	6	1"	7/16"	5/16"	11 1/2"	15"



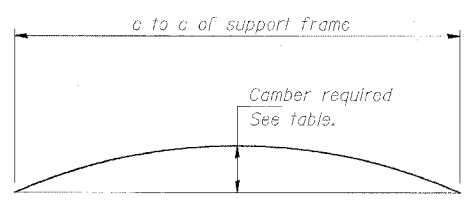
SECTION B-B

① Splicing Flanges shall be attached to each truss unit with the truss shop assembled to camber shown. Truss units shall be in proper alignment and flange surfaces shall be shop bolted into full contact before welding. Sufficient external welds or tacks shall be made to secure flanges until remaining welds are made after disassembly. Adjacent flanges shall be "match marked" to insure proper field assembly.



ISOMETRIC VIEW
TYPICAL TRUSS UNIT

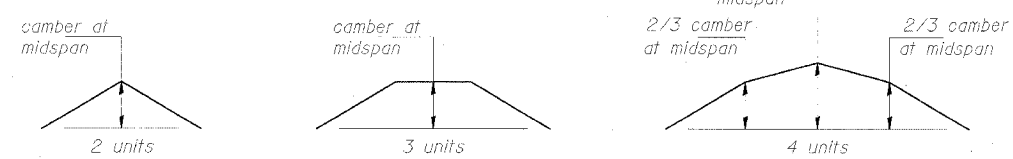
ASTM B221 Alloy 6061 Temper T6
Note: Units shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The Contractor is responsible for maintaining the configuration and protection of the units.



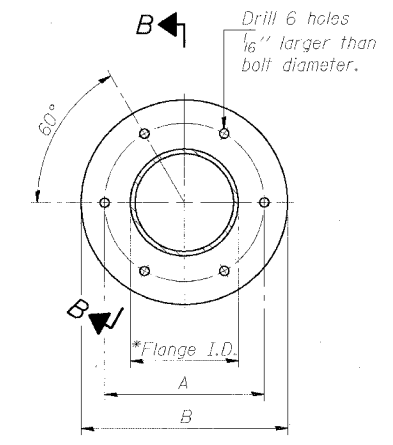
CAMBER DIAGRAM

Camber curve shown is theoretical. Actual camber attained by slope changes at splices between units.

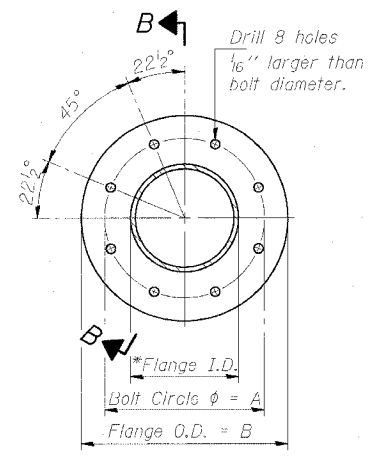
CAMBER ATTAINMENT EXAMPLES:



Camber shown is for fabrication only, measured with truss fully supported. (No-load condition)



TRUSS TYPES I-A, II-A, & III-A



TRUSS TYPES II-A & III-A

SPLICING FLANGES

ASTM B221, Alloy 6061-T6
or ASTM B209, Alloy 6061-T651
*To fit O.D. of Chord with maximum gap of 1/16".

OVERHEAD SIGN STRUCTURES
ALUMINUM TRUSS DETAILS
FOR TRUSS TYPES I-A, II-A and III-A

F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31st STREET TO 71st STREET
(SB Express Lanes)

NUMBER	REVISION	DATE

DESIGNED - SLW	20
CHECKED - RD	EXAMINED
DRAWN -	PASSED
CHECKED -	ENGINEER OF BRIDGES AND STRUCTURES

OS4-A-2 11/1/2002

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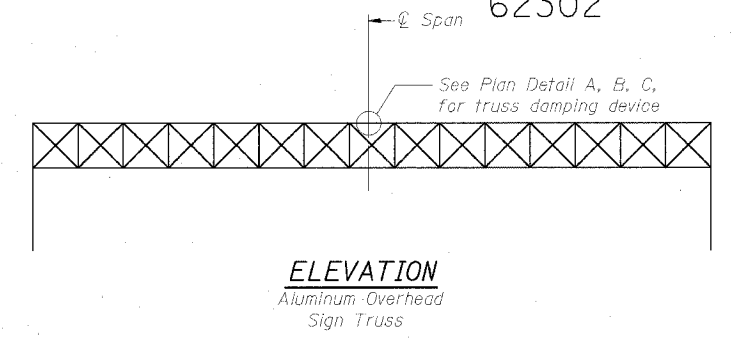
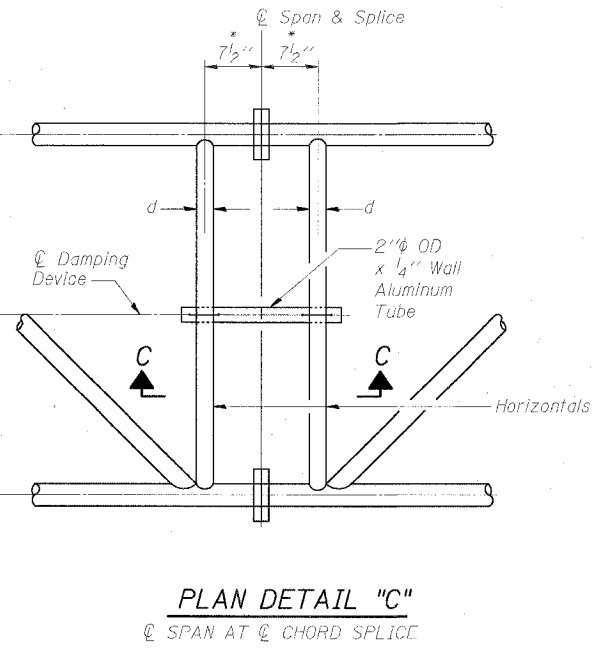
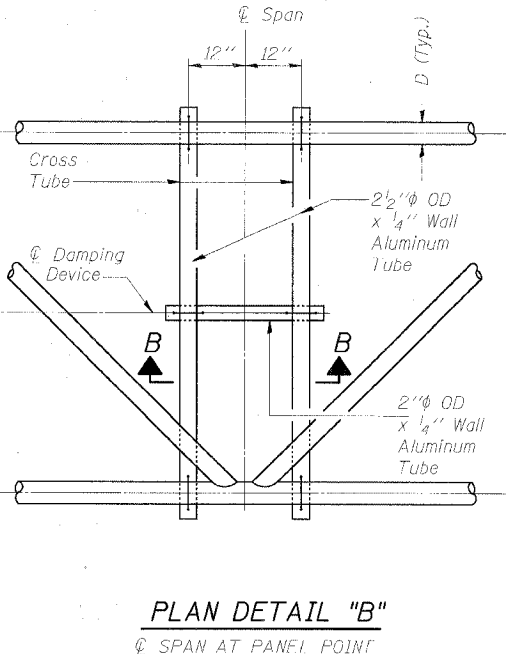
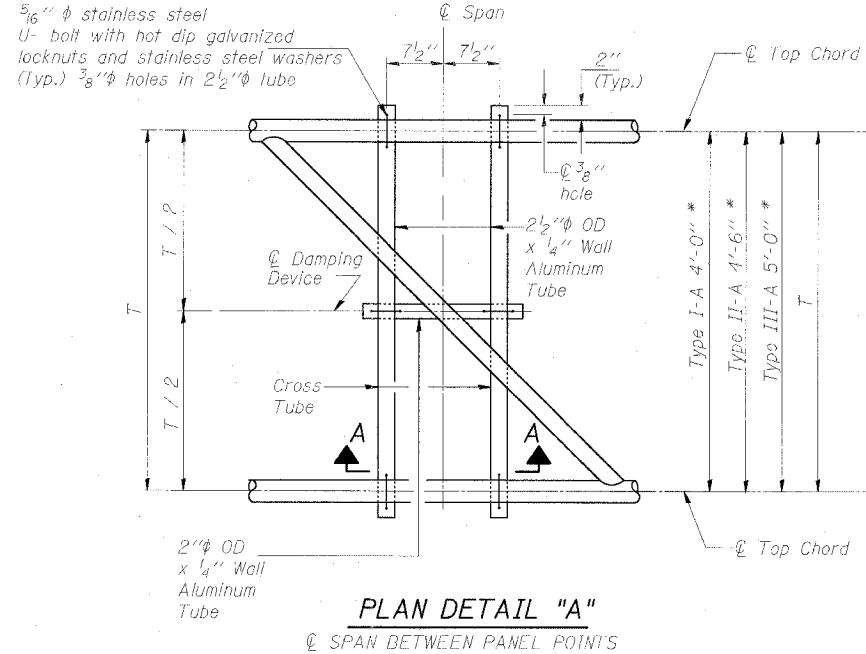
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Center of horizontal to center of splice dimension may vary. Verify before drilling holes in mounting tube.

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
90/94	*	COOK	598	343
FED. ROAD DIST. NO. 7	FED. AID PROJECT			

(1818, ETC, 2324.6-1P) R-9

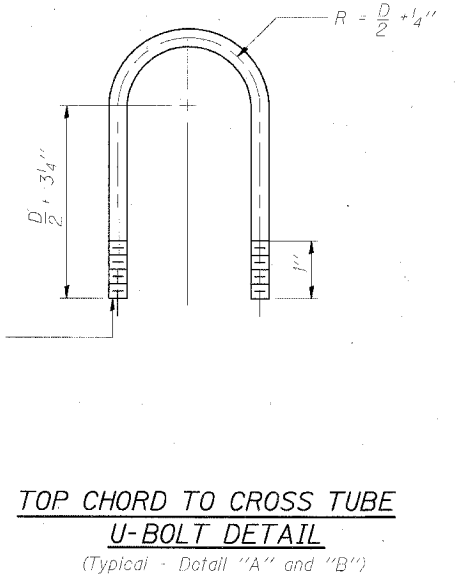
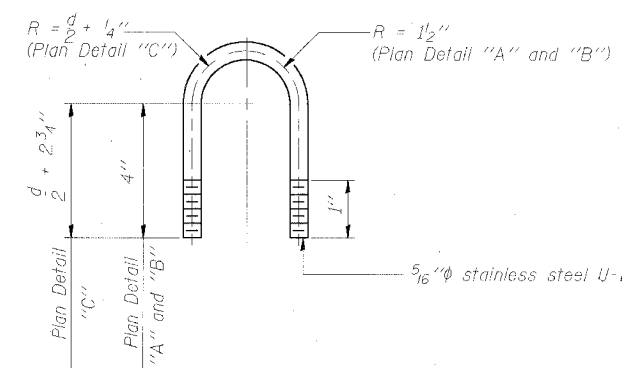
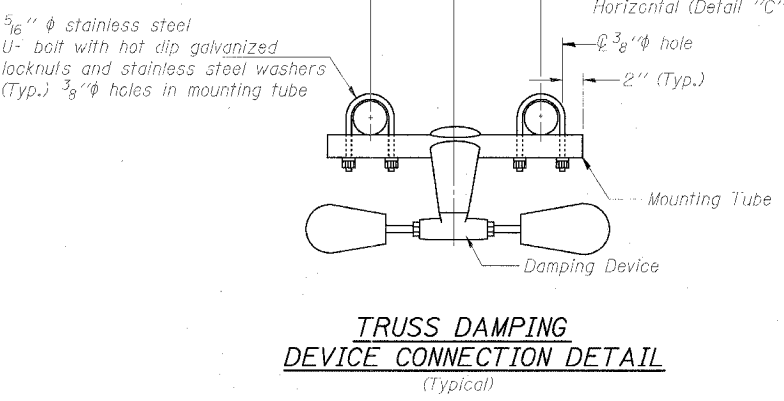
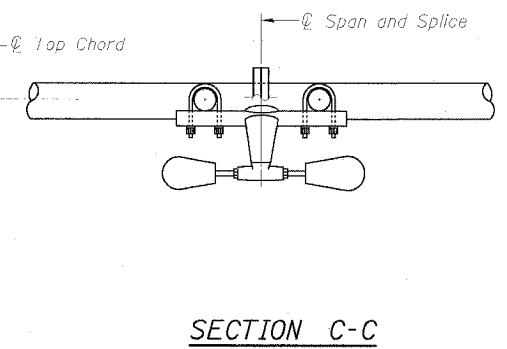
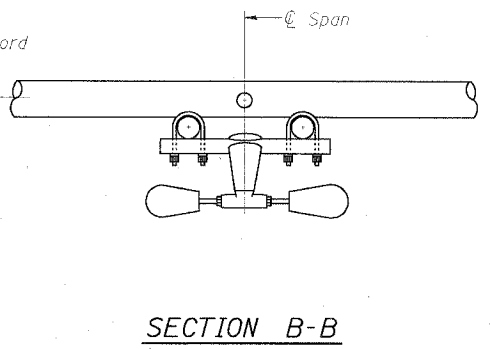
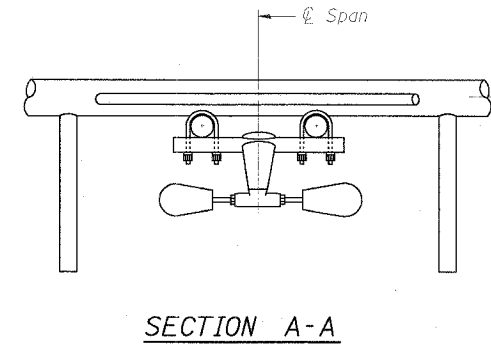
62302



NOTES

Damper: One damper per truss.
(31 lbs. Stockbridge-Type Aluminum)
Cost included in "Overhead Sign Structure..."

Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6. Cost included in "Overhead Sign Structure..."



DESIGNED - SWANG	20
CHECKED - JAL	EXAMINED
DRAWN -	PASSED
CHECKED -	ENGINEER OF STRUCTURAL SERVICES
	ENGINEER OF BRIDGES AND STRUCTURES

OS-A-D 11/1/2002

OVERHEAD SIGN STRUCTURE DAMPING DEVICE

F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31st STREET TO 71st STREET
(SB Express Lanes)

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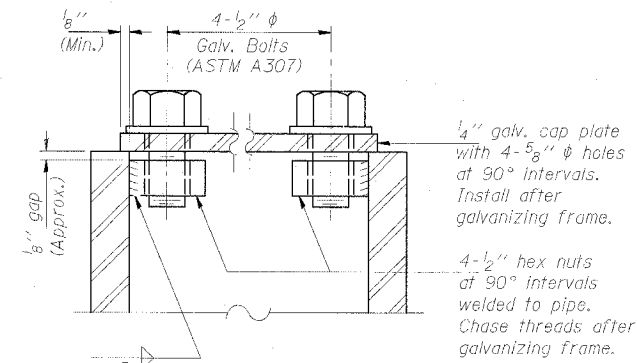
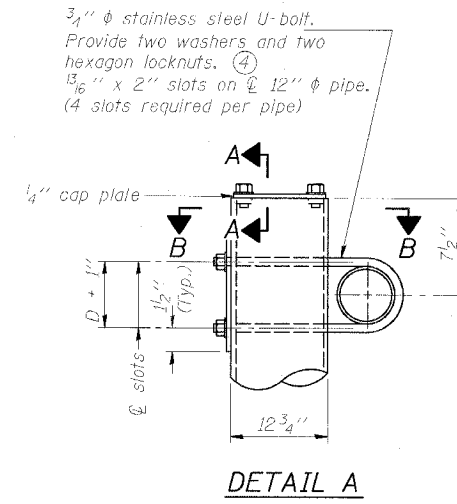
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.	SHEET NO.
90/94	*	COOK	598	344	
FED. ROAD DIST. NO. 7		BILLINGS		PROJ. AND PREPARED BY	

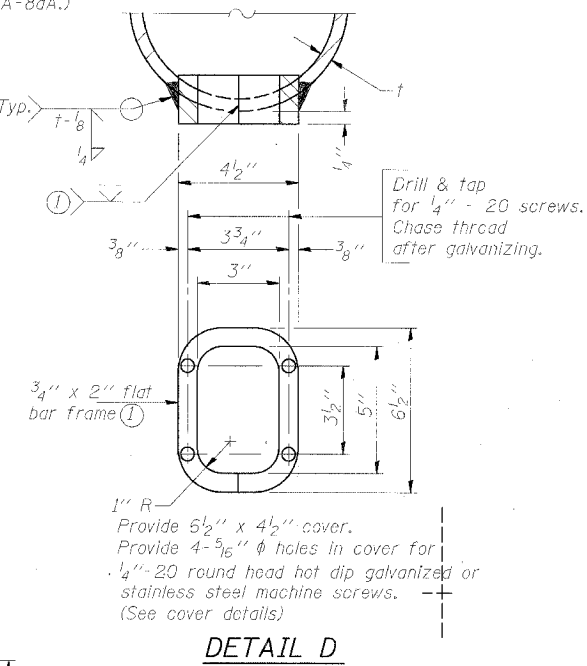
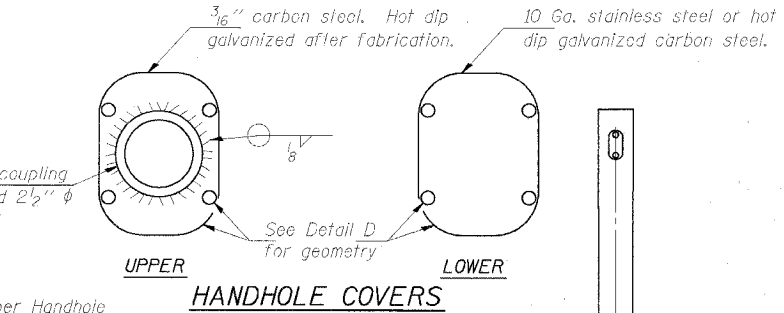
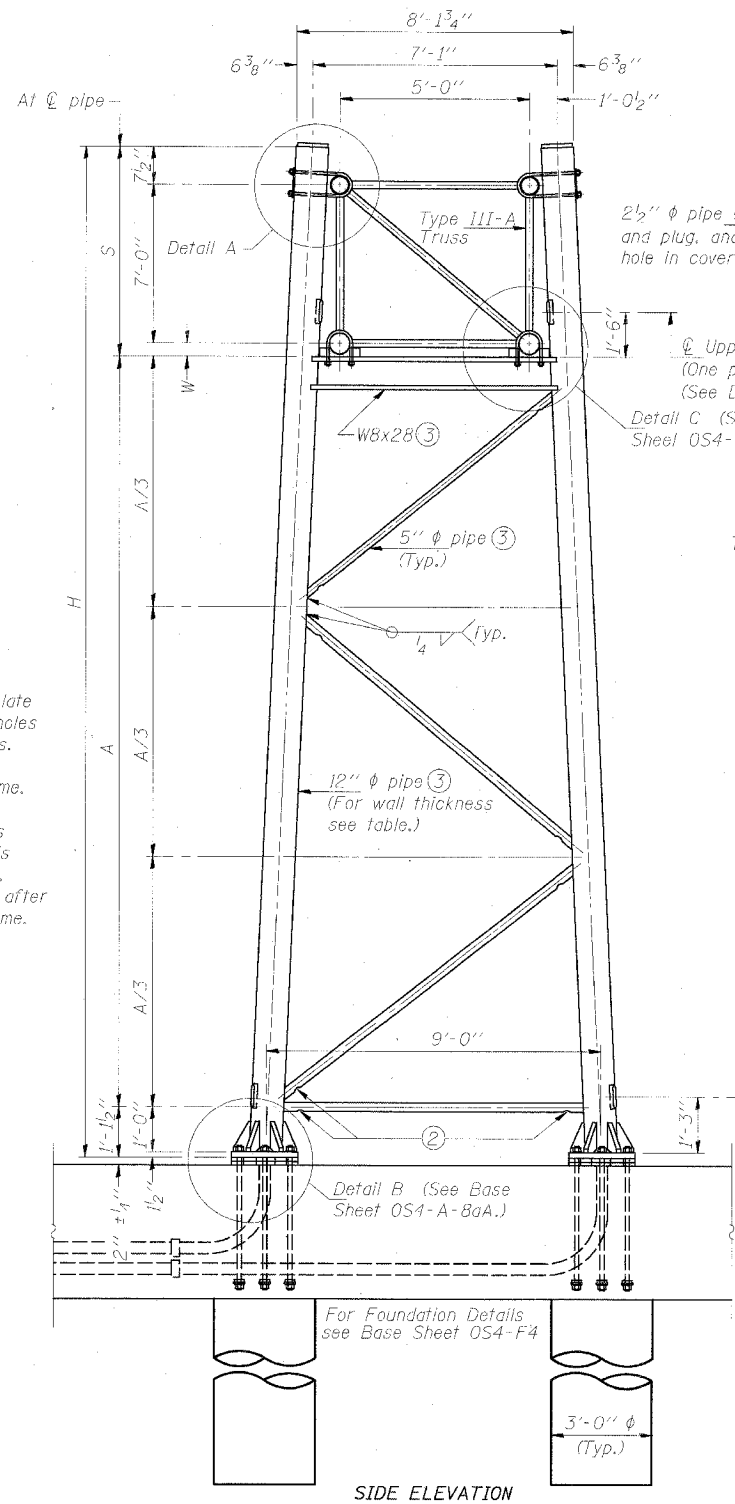
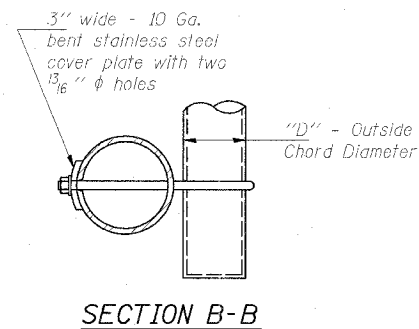
(1818, ETC, 2324.6-1P) R-9
62302

Support Design Loads: See Base Sheet OS-A-1 for design and loading criteria.
Load combinations checked include deadload plus:
a) 100% wind normal to sign, 20% parallel to sign
b) 60% wind normal to sign, 30% parallel to sign

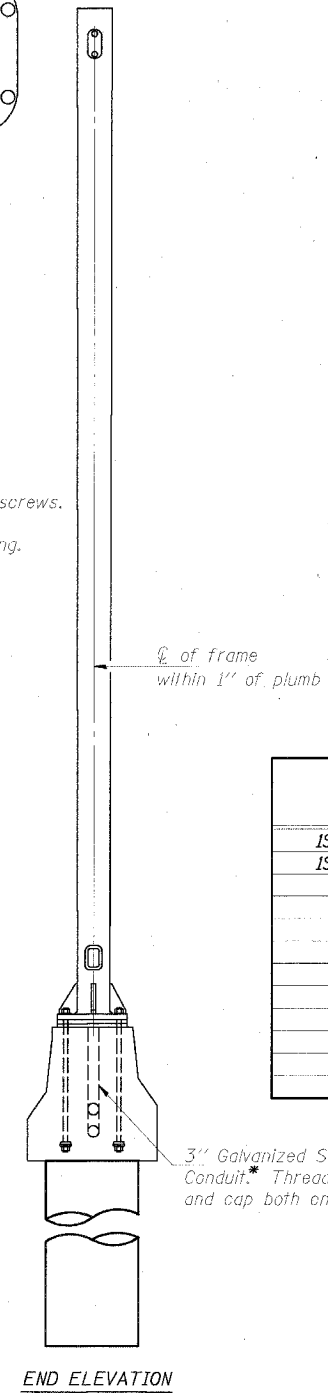
- In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 $\sqrt{\text{in}}$ or less.
- Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred. (Typ.)
- Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet OS-A-1.
- See General Notes for fasteners.
- Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.



As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.



Dimensions		
Truss Chord Nominal Dia.	W	S
7"	4 3/4"	8'-0 1/4"
8 1/2"	5 1/2"	8'-1"
9"	5 3/4"	8'-1 1/4"



Structure Number	Station	Support		Pipe Wall Thickness	H	A
		Left	Right			
ISO161094R057.7	1476+22.50	X		.33	23.19'	14.04'
ISO161094R057.7	1476+22.50		X	.33	24.28'	15.14'

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME for TYPE III-A ALUMINUM TRUSS

F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31st STREET TO 71st STREET
(SB Express Lanes)

DESIGNED - XXX	20
CHECKED - XXX	EXAMINED
DRAWN	PASSED
CHECKED	

NUMBER	REVISION	DATE

TRUSS SUPPORT DETAILS
(12" ϕ Pipe-Type III-A Truss)

* COORDINATE WITH CONTRACT 62583 FOR LOCATION, TYPE, AND ORIENTATION OF CONDUIT.

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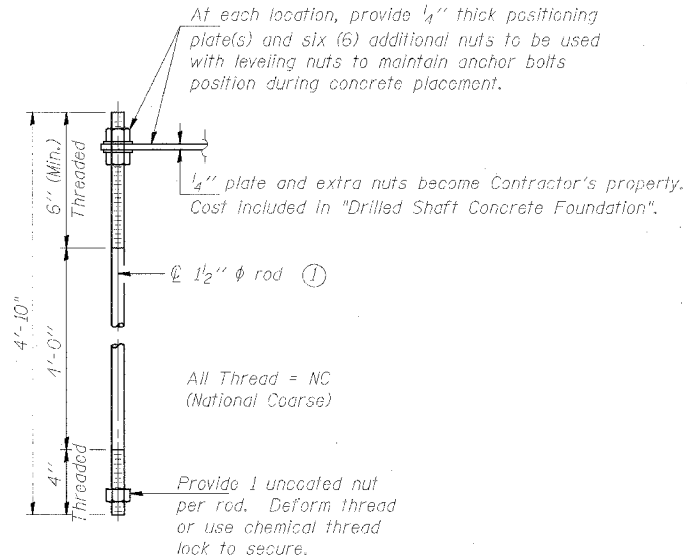
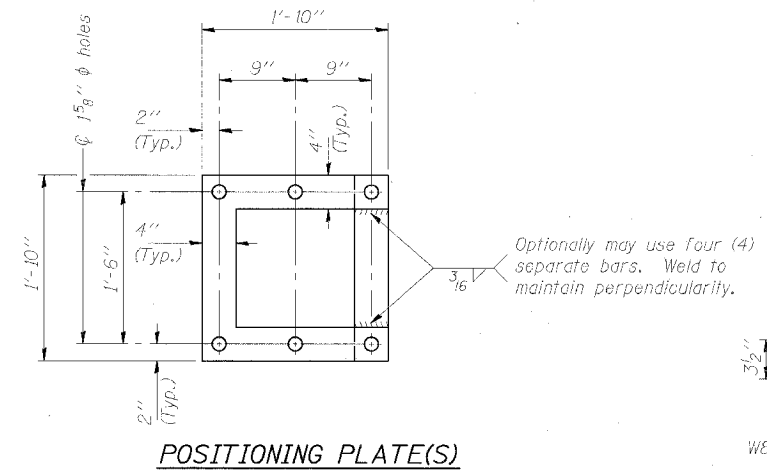
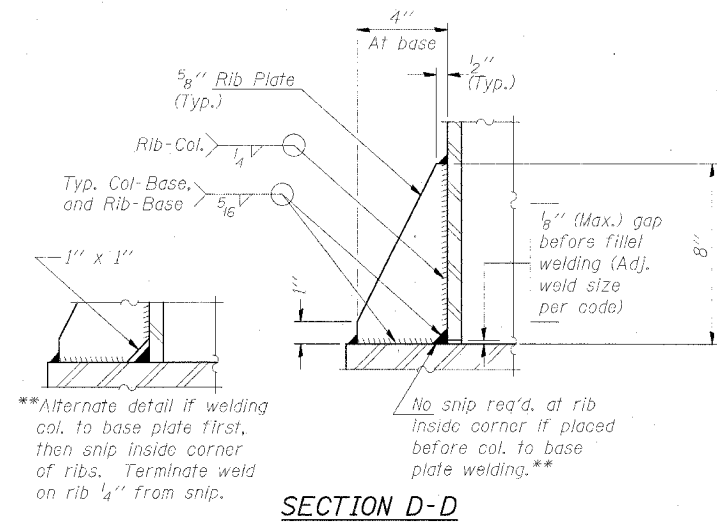
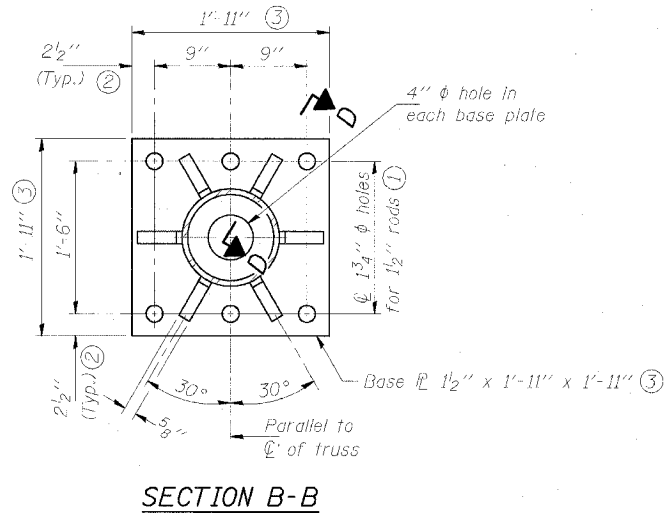
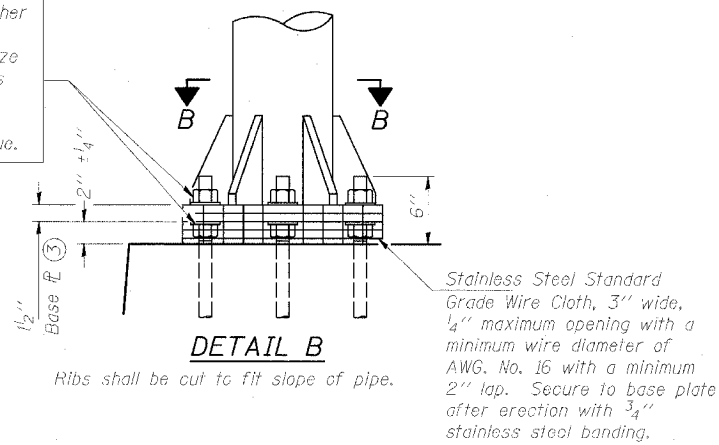
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POST MILES	SHEET NO.
90/94	*	COOK	598	345
FED. ROAD DIST. NO. 7				
ILLINOIS FED. AID PROJECT				

(1818, ETC, 2324.6-1P) R-9
62302

SHEET NO. -
SHEETS

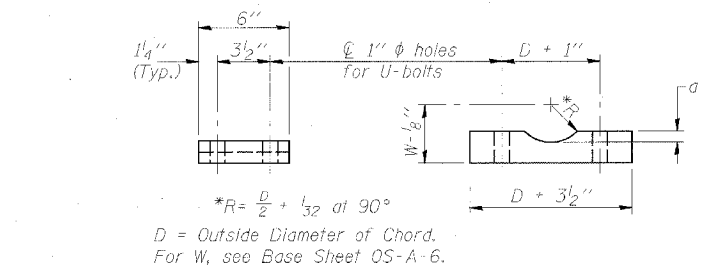
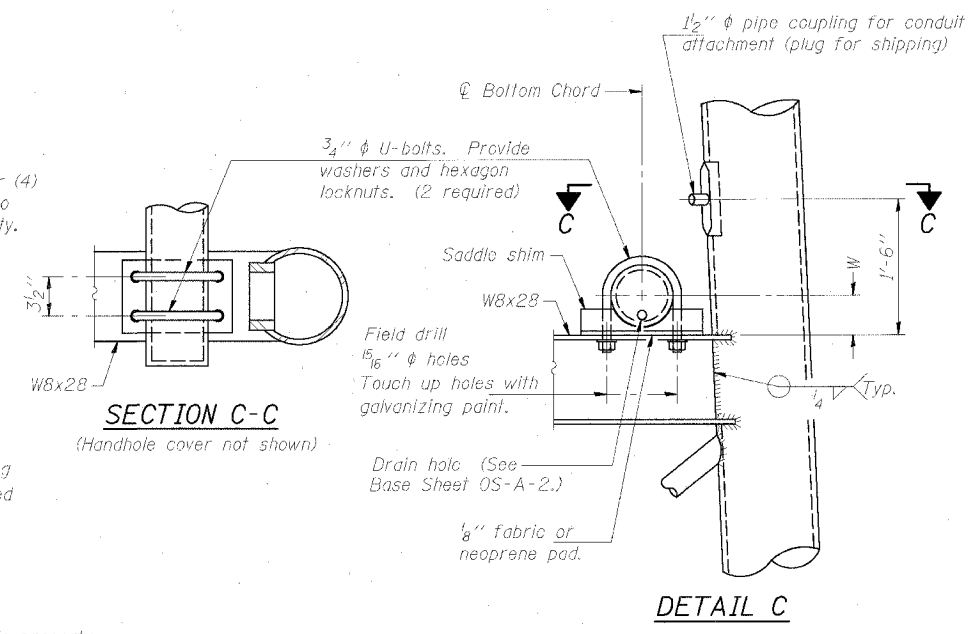
Hexagon locknut and washer (top), leveling nut and washer (bottom). Galvanize per AASHTO M232. Nuts shall each be tightened against base plate with 200 lb.-ft. minimum torque.



TYPE III-A TRUSS
12" ϕ PIPE SUPPORT FRAME DETAILS

Notes: For Type III-A Truss spans greater than 150 ft. and up to 160 ft.:

- 1 3/4" ϕ rod, 2" ϕ holes
- 2 3/4" edge distance
- Base ϕ 1 5/8" x 1'-11 1/2" x 1'-11 1/2"



Truss Chord Nominal Dia.	a
7"	1"
8 1/2"	1 1/4"
9"	1 3/8"

SADDLE SHIM DETAIL

ASTM B26 Alloy 356-F
or
ASTM B209 Alloy 6061-T651
(4 required per sign truss)

DESIGNED - SWANG	20
CHECKED - JAL	EXAMINED
DRAWN -	PASSED
CHECKED -	ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

OS4-A-8aA 11/1/2002

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME for TYPE III-A ALUMINUM TRUSS

F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31st STREET TO 71st STREET
(SB Express Lanes)

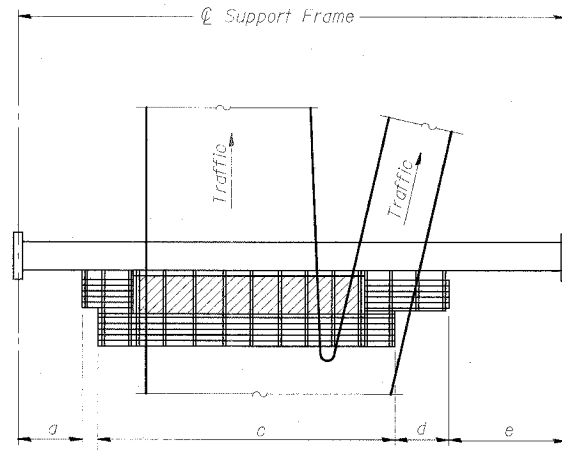
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

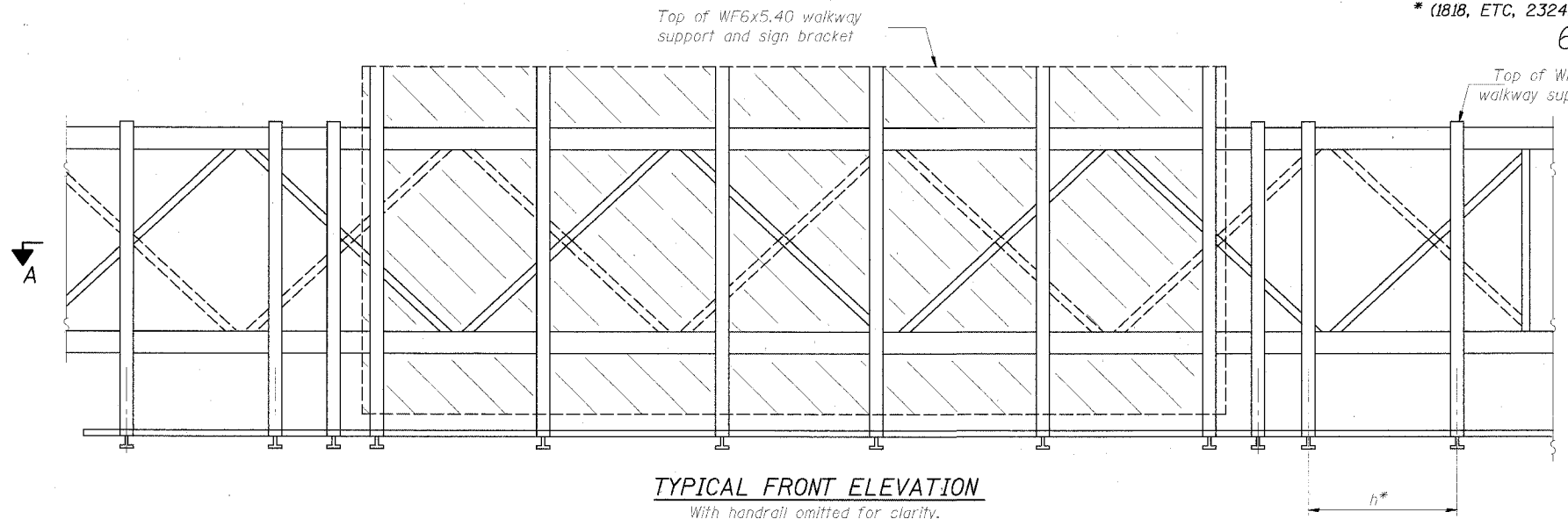
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90/94	*	COOK	598	346
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT-		

SHEET NO.
SHEETS

* (1818, ETC, 2324.6-1P) R-8
62302



PLAN
WALKWAY AND HANDRAIL SKETCH
(Road plan beneath truss varies)



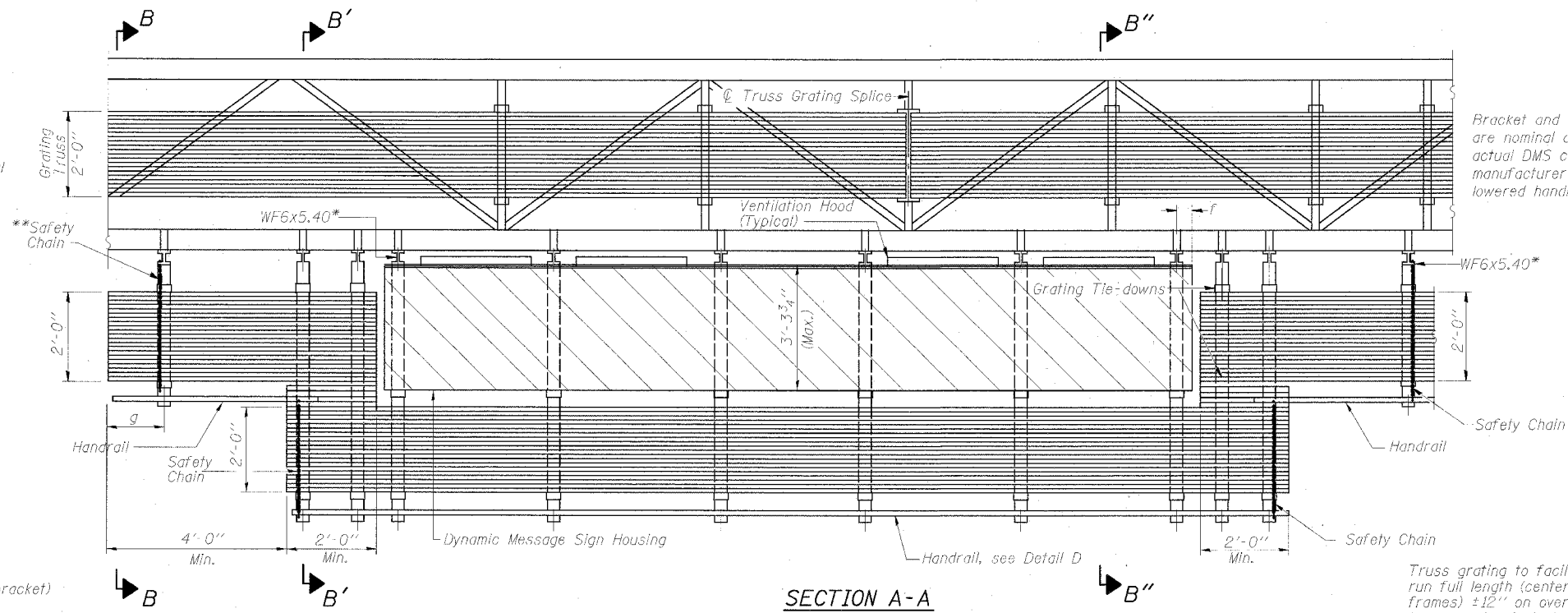
TYPICAL FRONT ELEVATION
With handrail omitted for clarity.
For Section B-B, see Base Sheet OS-A-10-DMS2
For Section B'-B', and B''-B'', see Base Sheet OS-A-10a-DMS2

Walkway and Truss Grating width dimensions are nominal and may vary $\pm 1/2$ " based on available standard widths.

Bracket and grating dimensions are nominal and will vary based on actual DMS cabinet dimensions plus manufacturer's mounting devices, lowered handrail and DMS cabinet.

BRACKET TABLE

WF6x5.40 ASTM B308, Alloy 6061-T6	
Sign Width	Number Brackets Required
26'-1"	6



SECTION A-A

Notes: *Space WF6x5.40 brackets for efficiency and within limits shown:

- f = 12" maximum, 4" minimum (End of sign to ϕ of nearest bracket)
- g = 12" maximum, 4" minimum (End of walkway grating to ϕ of nearest support bracket)
- h = 6'-0" maximum (ϕ to ϕ or walkway support brackets, WF6x5.40)

**If walkway bracket at safety chain location is behind sign, add angle to bracket, see Alternate Safety Chain Attachment on Base Sheet OS-A-11-DMS2

For Details T and W, Section B-B and Grating Splice Details, see Base Sheet OS-A-10-DMS2.
For Details D, F, G and P and Handrail Splice Details, see Base Sheet OS-A-11-DMS2.

Handrail and walkway shall span a minimum of three brackets between splices and/or gap joints.
Place all sign and walkway brackets as close to panel points as practical.
Grating and handrail splices placed as needed.

Truss grating to facilitate inspection shall run full length (center to center of support frames) ± 12 " on overhead trusses. Cost of truss grating is included in "Overhead Sign Structure"

**OVERHEAD SIGN STRUCTURES
ALTERNATE ALUMINUM WALKWAY DETAILS**

F.A.I. 90/94 (DAN RYAN EXPRESSWAY)
31st Street to 71st Street
(SB Express Lanes)

DESIGNED	19
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	

19	EXAMINED
	PASSED

NUMBER	REVISION	DATE

Structure Number	Station	a	b	c	d	e	Walkway Grating and Handrail Lengths
ISO161094R057.7	1476+22.50	3.40'	12.00'	32.00'	12.00'	7.33'	56.00'

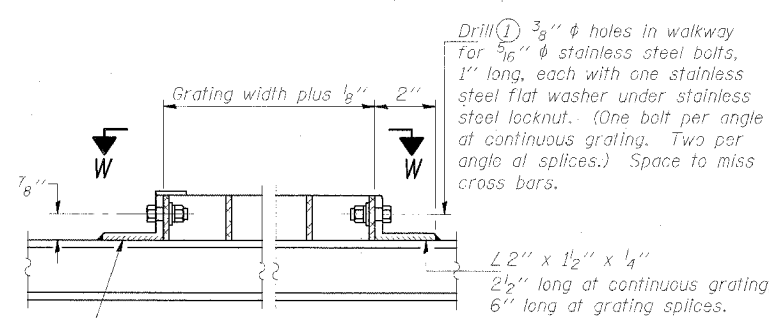
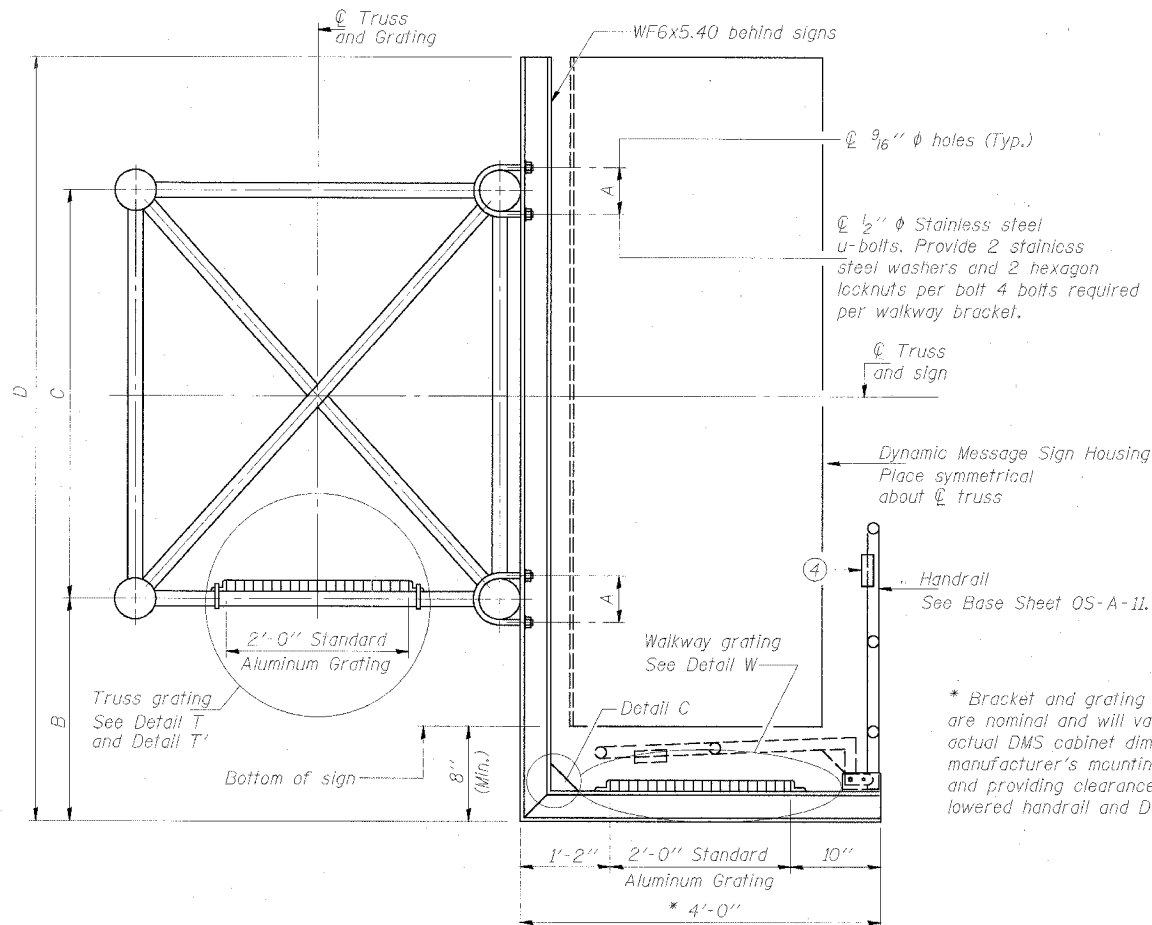
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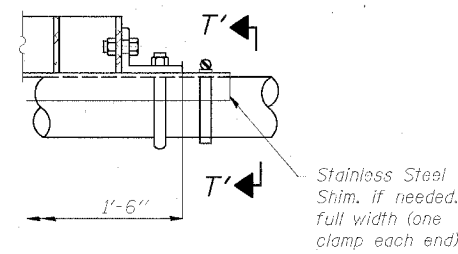
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
90/94	*	COOK	598	347

*(1818, ETC, 2324.6-1P) R-9
62302

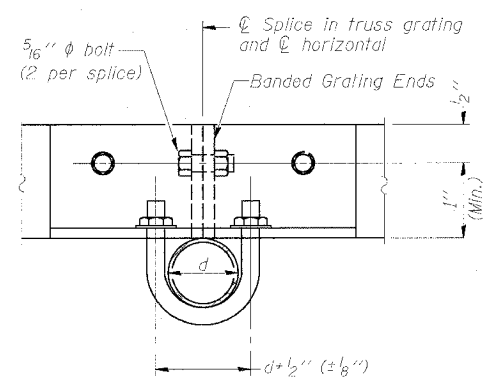


DETAIL W
(Walkway grating)

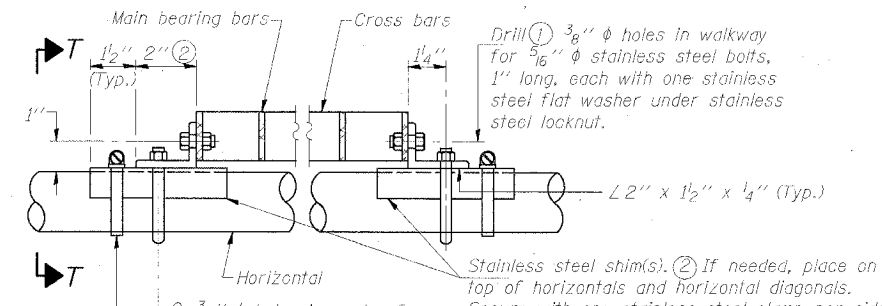


DETAIL T'

(Truss grating splice)
Details not shown same as Detail T.
Alternate materials may be used subject to the Engineer's review and approval.

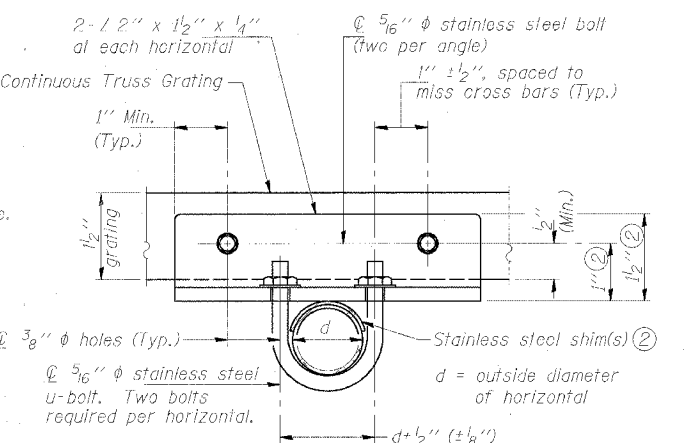


SECTION T'-T'



DETAIL T

(Continuous Truss grating)

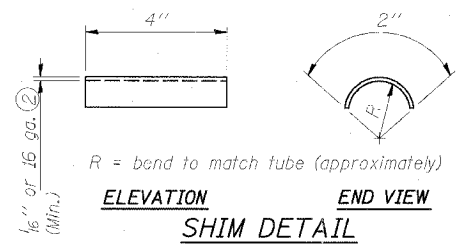


SECTION T-T

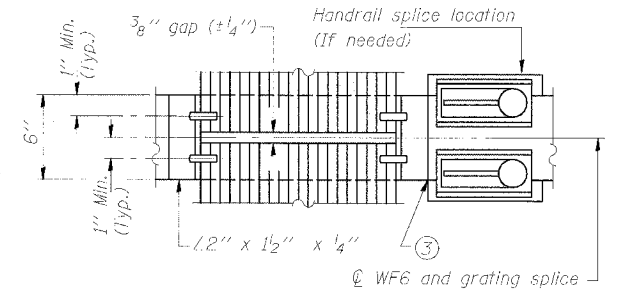
* Bracket and grating dimensions are nominal and will vary based on actual DMS cabinet dimensions plus manufacturer's mounting devices, and providing clearance between the lowered handrail and DMS cabinet.

Screw type stainless steel tube clamp at shim location

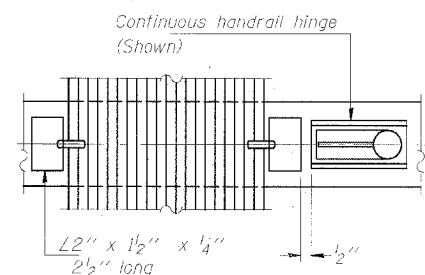
SECTION B-B



SHIM DETAIL



(AT WALKWAY GRATING SPLICE)



(CONTINUOUS WALKWAY GRATING)

SECTION W-W

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

Main Bearing Bars shall be 3/16 inch x 1 1/2 inch on 1 3/8 inch centers and conform to ASTM B221 Alloy 6061-T6.
Cross bars shall be 3/16 inch x 1 1/2 inch on 4 inch centers and conform to ASTM B221 Alloy 6063-T5 or 6061-T6.

OR

Aluminum Grating with modified "I" sections for main bearing bars shall meet the following requirements:
Main bars shall conform to ASTM B221 Alloy 6061-T6 and have a minimum section modulus equal to 0.0705 in.³ per bar, a depth of 1 1/2 inch, spaced on 1 3/8 inch centers.
Cross bars shall conform to ASTM B221 Alloy 6063-T5 or T-42 and spaced on 4 inch centers.

Structure Number	Station	A	B	C	D
IS0161094R057.7	1476+22.50	7 1/2"	1'-5"	7'-0"	9'-2"

**OVERHEAD SIGN STRUCTURES
ALTERNATE ALUMINUM WALKWAY DETAILS**

F.A.I. 90/94 (DAN RYAN EXPRESSWAY)
31st Street to 71st Street
(SB Express Lanes)

DESIGNED	19
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	

NUMBER	REVISION	DATE

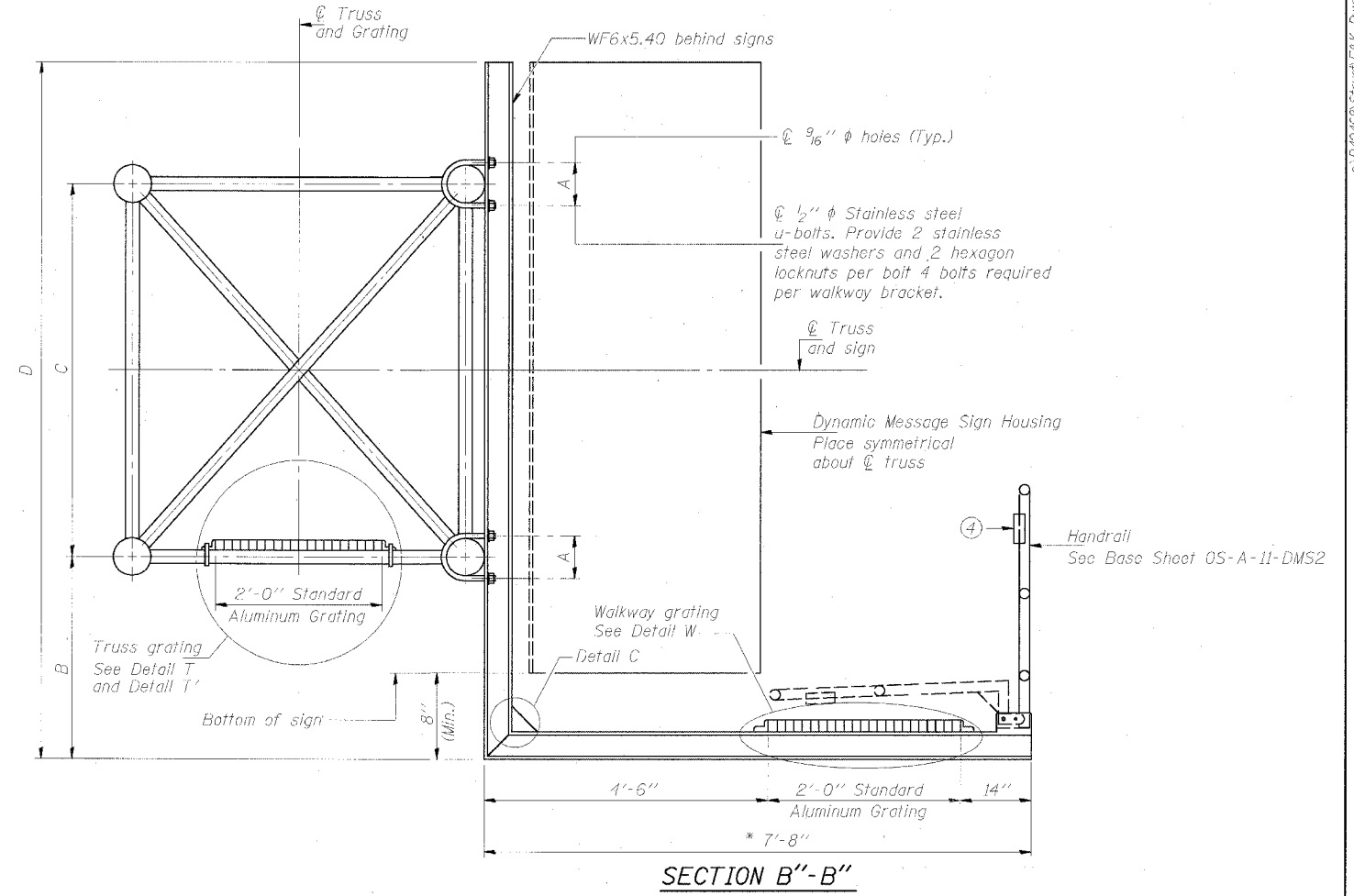
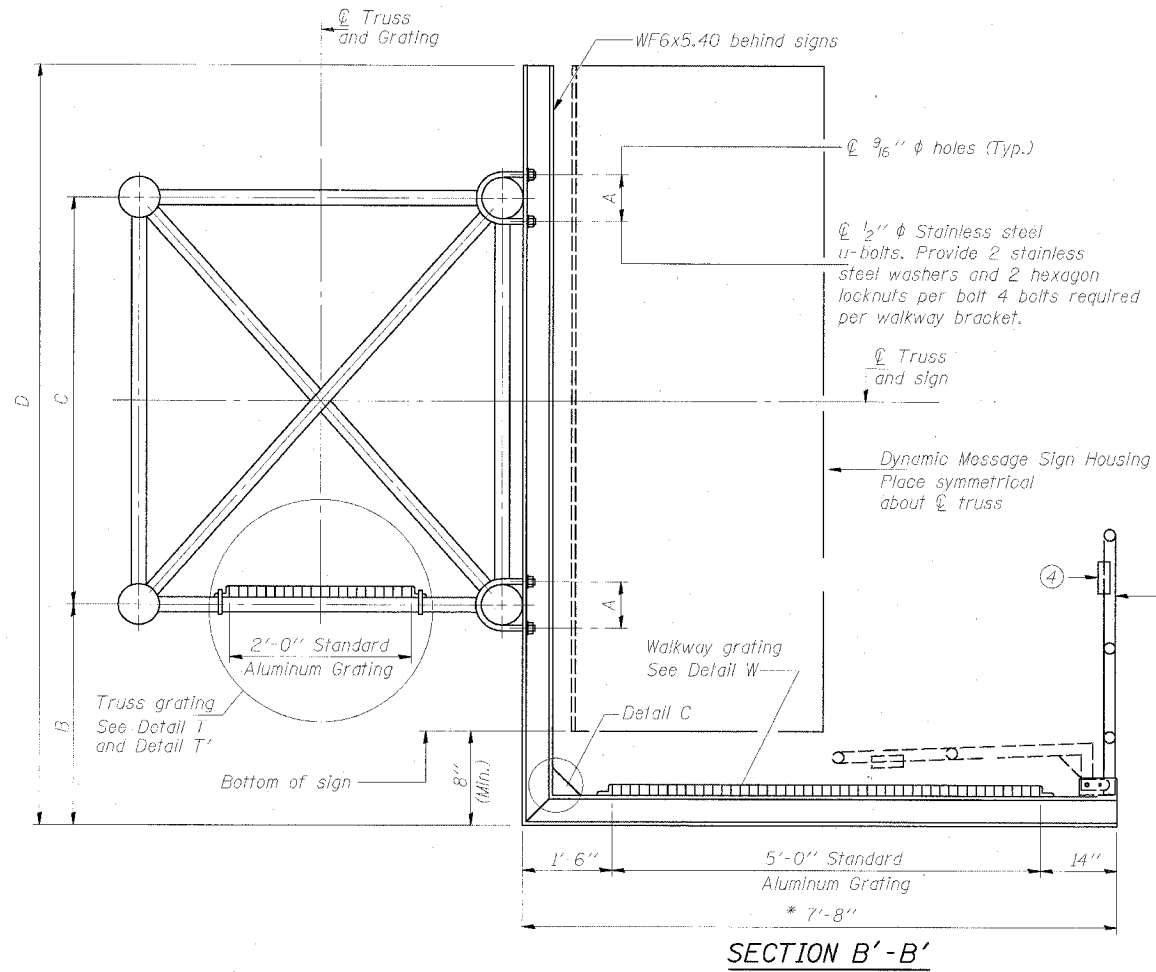
06/24/2005 02:46:03 PM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE	SHEET
90/94	*	COOK	598	348

*(1818, ETC, 2324.6-1P) R-9

62302



* Bracket and grating dimensions are nominal and will vary based on actual DMS cabinet dimensions plus manufacturer's mounting devices, and providing clearance between the lowered handrail and DMS cabinet.

Note:
For dimensions "A" to "D" and remaining details, see sheet OS-A-10-DMS2

DESIGNED	19
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	

ENGINEER OF STRUCTURAL SERVICES
ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

OVERHEAD SIGN STRUCTURES
ALTERNATE ALUMINUM WALKWAY DETAILS

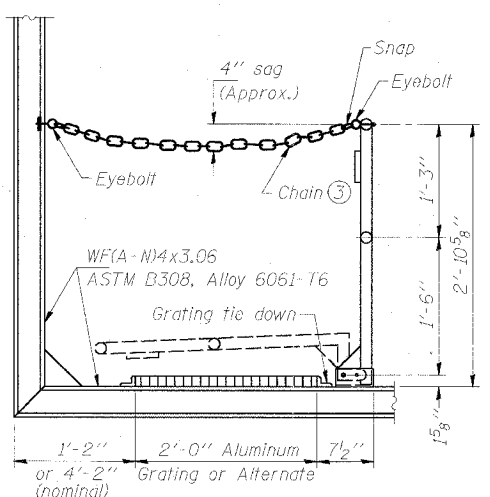
F.A.I. 90/94 (DAN RYAN EXPRESSWAY)
31st Street to 71st Street
(SB Express Lanes)

OS-A-10a-DMS2 7/1/2001

P:\P40460\Struc\EA&K_Dwgs\Chfr_67302\01_Sign\ss50502a2a.rvt 06/24/2005 02:16:16 PM

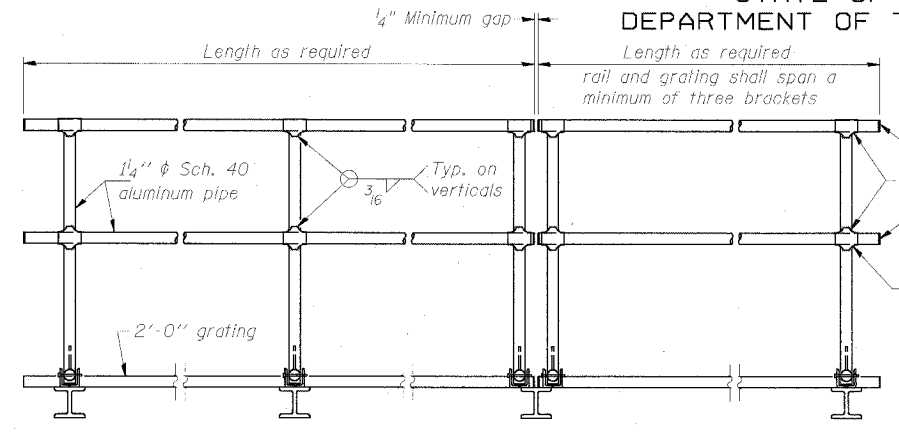
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
90/94	*	COOK	598	349
ILLINOIS FED. AID PROJECT-				
* (1818, ETC, 2324.6-1P) R-9				



SIDE ELEVATION

(Showing safety chain w/o sign)



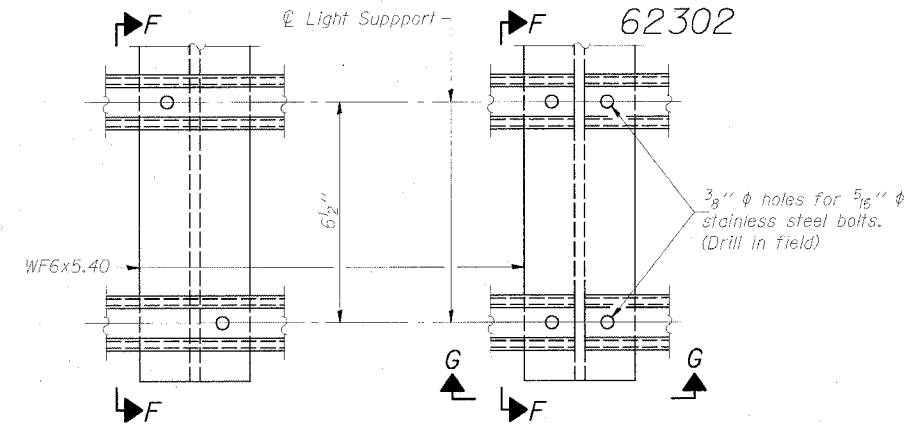
FRONT ELEVATION

HANDRAIL DETAILS

Handrail pipe shall be ASTM B241, Alloy 6063-T6 or Alloy 6061-T6.

① Install standard force-fit and caps or weld 1/8 inch end plates with 1/8 inch c.f.w. and grind smooth. (All rail ends)

② Horizontal handrail member shall be continuous thru fitting. Provide 7/16 inch hole in fitting for 3/8 inch bolt. Field drill 1/16 inch hole in horizontal rail member. Provide washer and locknut for bolt. (Use 5/16 inch eyebolts in 1/16 inch holes on top rail at ends only.)



DETAIL F

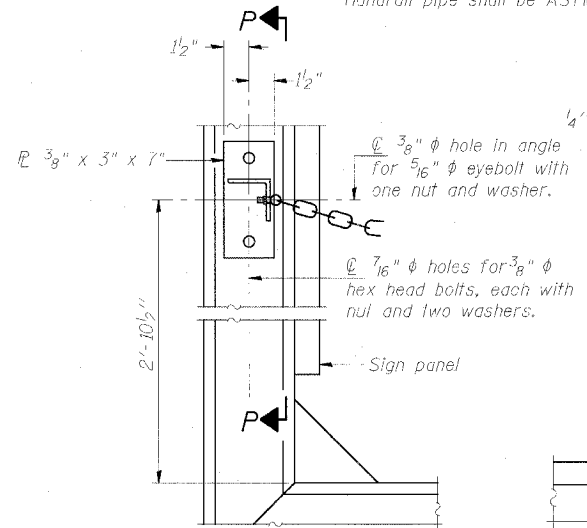
DETAIL G

SECTION F-F

SECTION G-G

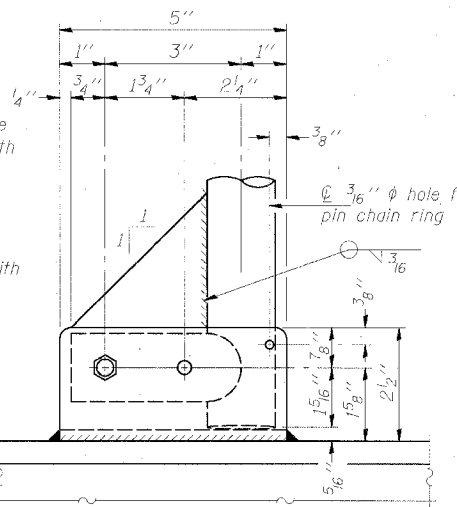
LIGHTING FIXTURE MOUNTS (IF REQUIRED)

⑤ Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.

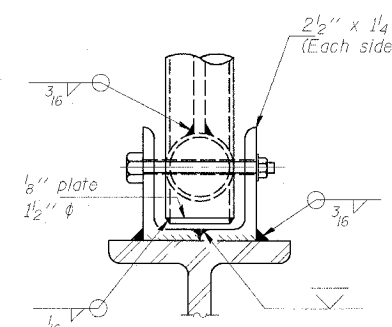


ALTERNATE SAFETY CHAIN ATTACHMENT

(With Sign Present)
Items not shown same as "Side Elevation" of "Handrail Details"

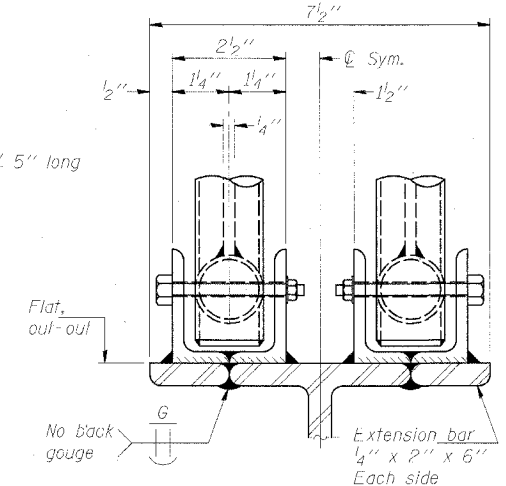


SIDE ELEVATION

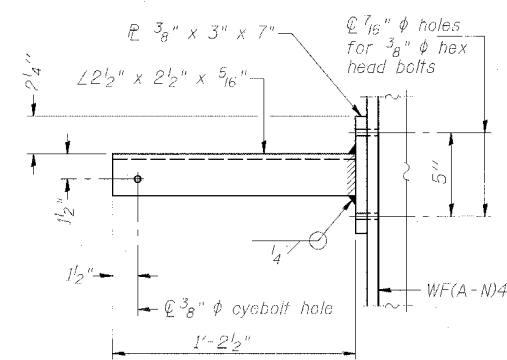


FRONT ELEVATION

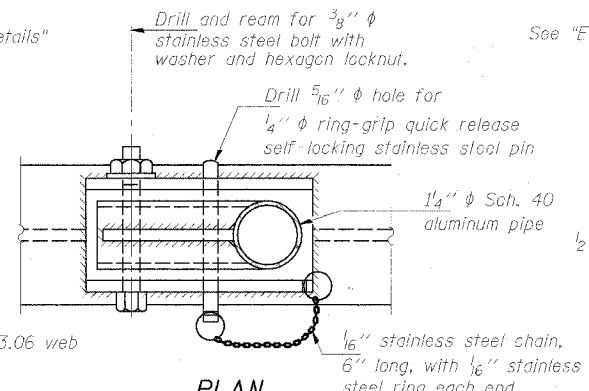
See "ELEVATION" at right for dimensions.



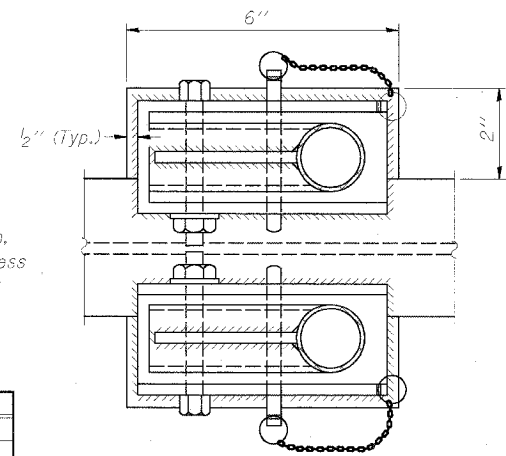
ELEVATION AT HANDRAIL JOINT



SECTION P-P

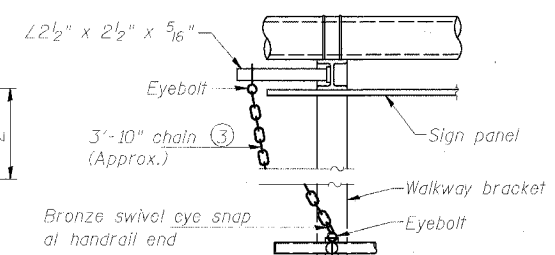


**PLAN
DETAIL E HANDRAIL HINGE**



PLAN AT HANDRAIL JOINT

Details not shown same as "PLAN"

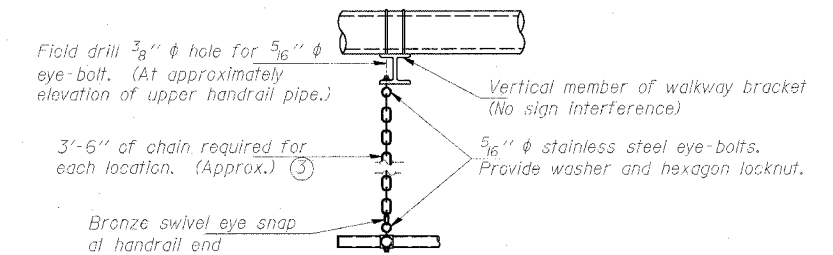


ALTERNATE SAFETY CHAIN ATTACHMENT

Details not shown similar to "Safety Chain" Details (Walkway omitted for clarity)

③ 3/16 inch galvanized steel chain, approximately 12 links per foot. Chain to be hot dip galvanized after manufacture and suitable for prolonged exterior exposure. Alternate materials may be substituted with the Engineer's approval.

④ Extrusions may be used in lieu of the details shown, with approval of the Engineer.



SAFETY CHAIN

One required for each end of each walkway.

**OVERHEAD SIGN STRUCTURES
ALTERNATE ALUMINUM HANDRAIL DETAILS**

F.A.I. 90/94 (DAN RYAN EXPRESSWAY)
31st Street to 71st Street
(SB Express Lanes)

DESIGNED	
CHECKED	
DRAWN	
CHECKED	

EXAMINED	19
PASSED	ENGINEER OF BRIDGE DESIGN
	ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POST MILE	SHEET	SHEET NO.
90/94	*	COOK	598	350	- SHEETS
FED. ROAD DIST. NO. Y					ILLINOIS
FED. AID PROJECT					

* (1818, ETC., 2324.6-1P) R-9
62302

NOTES:

The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

No sonotubes or decomposable forms shall be used below the lower conduit entrance. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

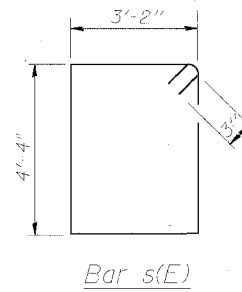
Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

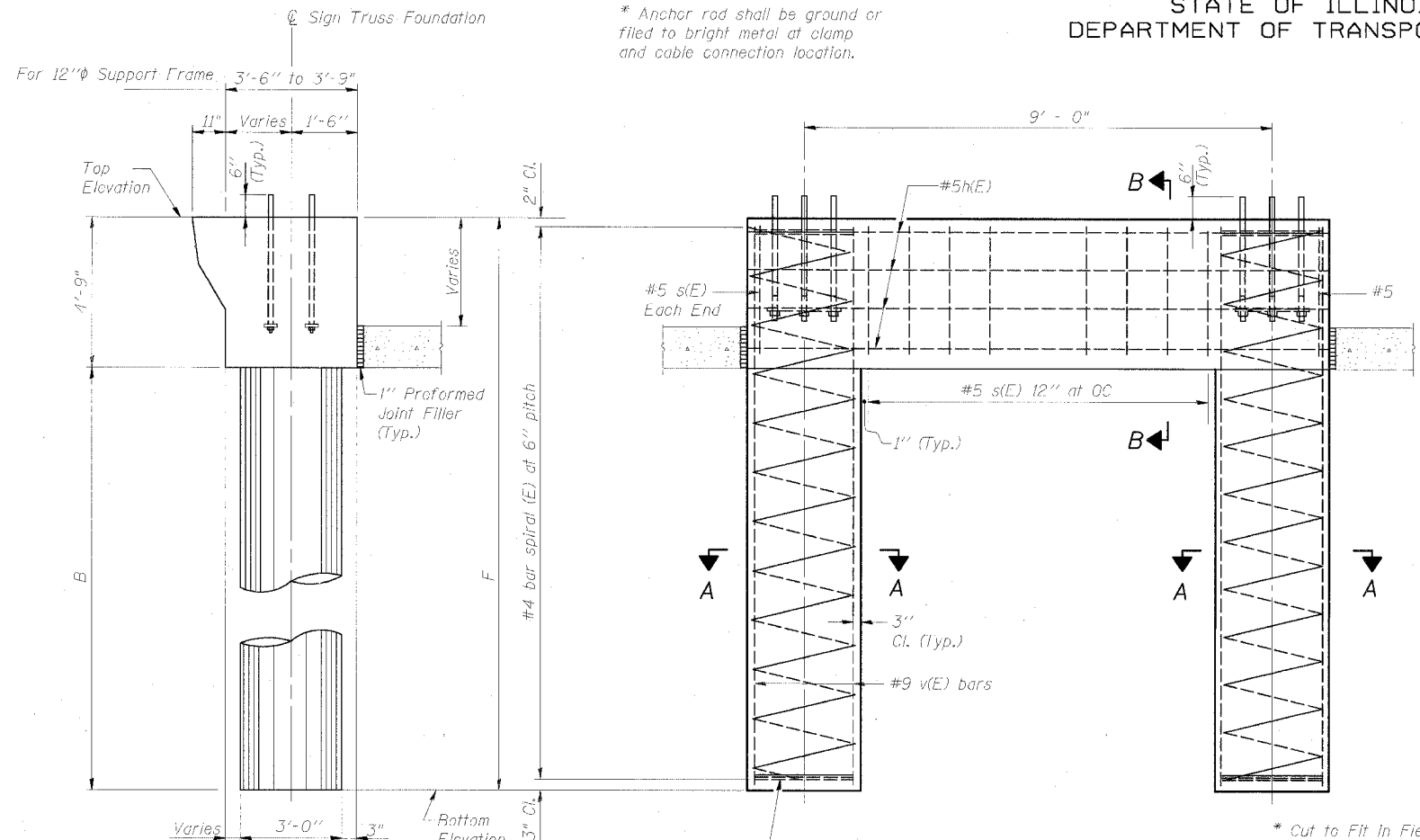
A normal surface finish followed by a Bridge Seat Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in "Drilled Shaft Concrete Foundation".

Face of median support foundation shall match dimensions of permanent barrier wall F shape.

Refer to CONTRACT 62583 for location and orientation of the conduit.



Bar s(E)



SIDE ELEVATION

Concrete Foundation poured monolithically with no construction joint.

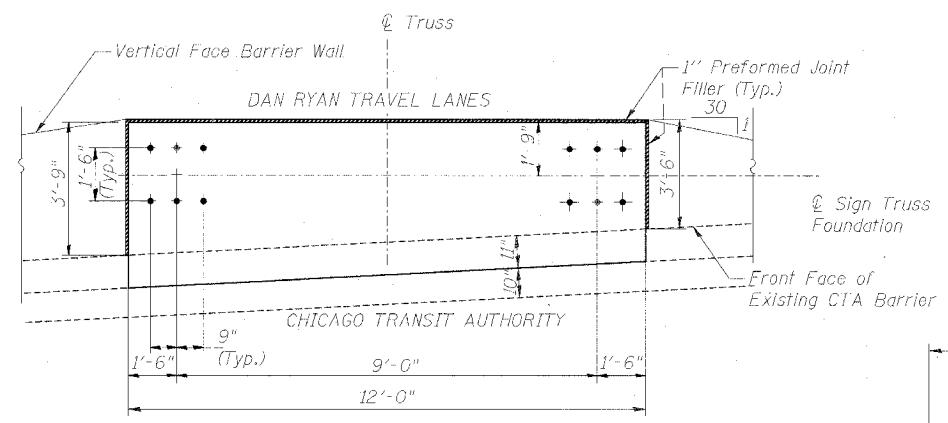
3 hoops minimum top and bottom (Typ.)

BAR LIST - EACH FOUNDATION

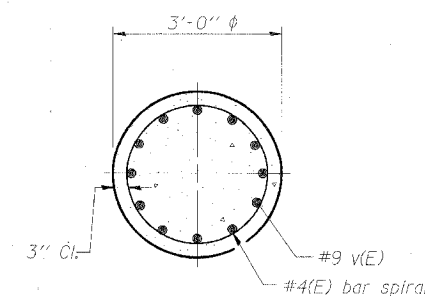
Bar	Number	Size	Length	Shape
h(E)	6	#5	11'-8"	—
s(E)	Varies	#5	15'-6"	□
v(E)	24	#9	22'-4"	—
#4(E) bar spiral ... see Side Elevation				

RIGHT FOUNDATION USES DOUBLE FACE MEDIAN SUPPORT

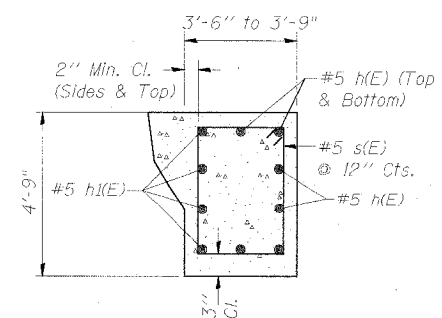
Structure Number	Station	Left Foundation				Right Foundation				Class S1 Concrete (Cu. Yds.)
		Elevation Top	Elevation Bottom	B	F	Elevation Top	Elevation Bottom	B	F	
ISO161094R057.7	1476+22.50	3.66'	-19.09'	18'	22.75'					17.3



PLAN



SECTION A-A



SECTION B-B

DESIGNED	SLW	20
CHECKED	RD	EXAMINED
DRAWN		PASSED
CHECKED		

MODIFIED BY CTE ENGINEERS, INC. FROM OS4-MED

OVERHEAD SIGN STRUCTURES
MEDIAN SUPPORT FOUNDATION DETAILS
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31st STREET TO 71st STREET
(SB Express Lanes)
SINGLE FACE MEDIAN SUPPORT FOUNDATION

06/24/2005 02:16:39 PM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.	SHEET NO.
90/94	*	COOK	598	351	
ILLINOIS FEDERAL PROJECT					

(1818, ETC, 2324.6-1P) R-9
62302

NOTES:

The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Q_u) of at least 1.25 tsf, which must be determined by previous soil investigations of the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

No sonotubes or decomposable forms shall be used below the lower conduit entrance. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Bridge Seat Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in "Drilled Shaft Concrete Foundation".

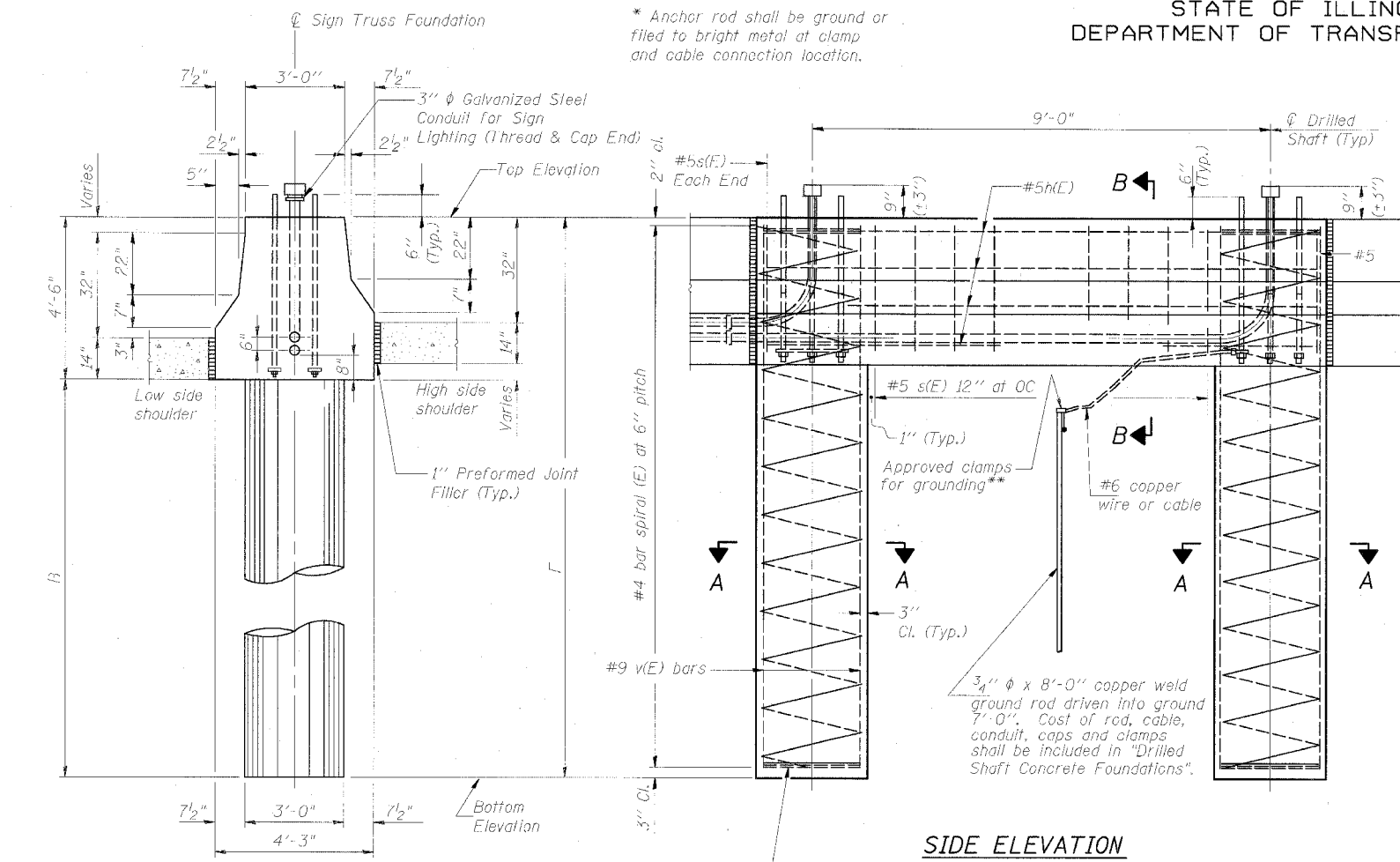
Face of median support foundation shall match dimensions of permanent barrier wall F shape.

Refer to CONTRACT 62583 for orientation and location of the conduit.

BAR LIST - EACH FOUNDATION

Bar	Number	Size	Length	Shape
h(E)	10	#5	11'-8"	—
s(E)	9	#5	Varies	□
v(E)	24	#9	F less 0'-5"	—

#4(E) bar spiral - see Side Elevation

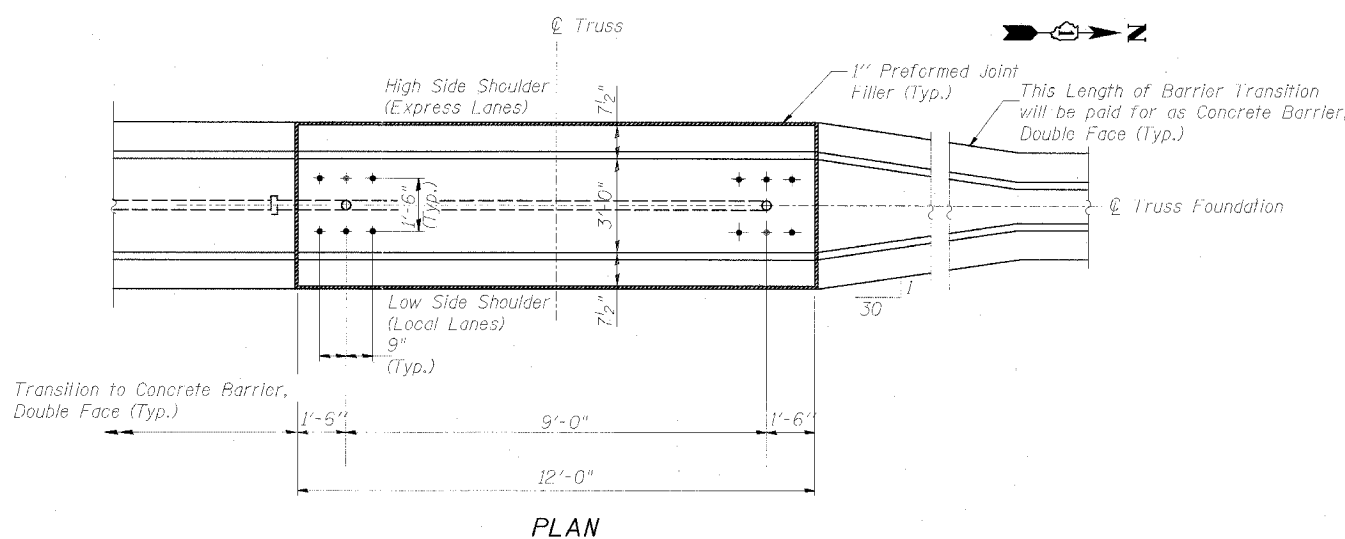


SIDE ELEVATION

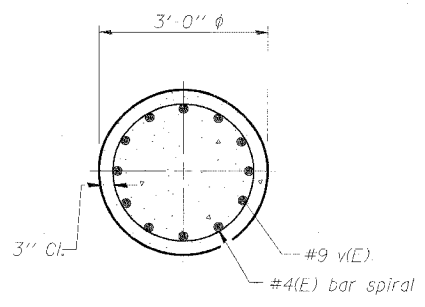
Concrete Foundation poured monolithically with no construction joint.

LEFT FOUNDATION USES SINGLE FACE MEDIAN SUPPORT FOUNDATION

Structure Number	Station	Left Foundation				Right Foundation				Class SI Concrete (Cu. Yds.)
		Elevation Top	Elevation Bottom	B	F	Elevation Top	Elevation Bottom	B	F	
150161094R057.7	1476+22.50					2.57'	-19.93'	18'	22.50'	17.1



PLAN



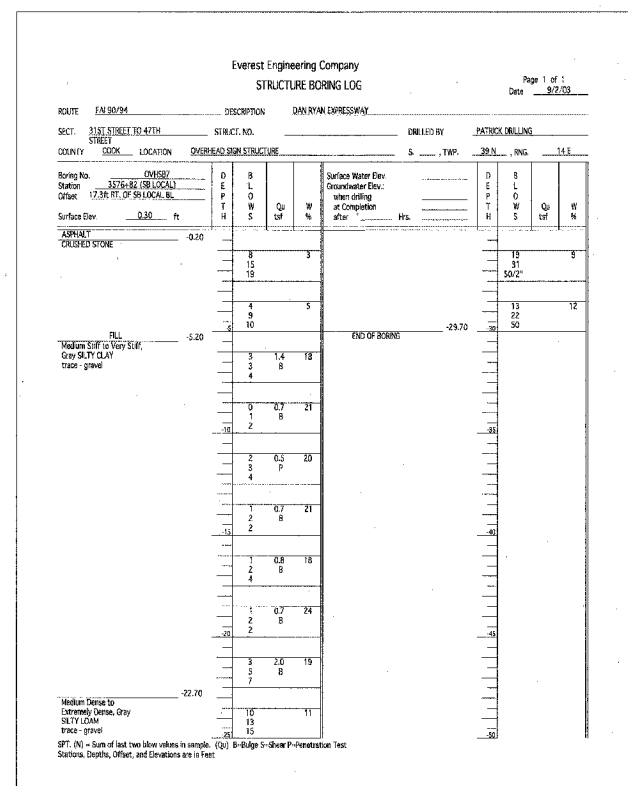
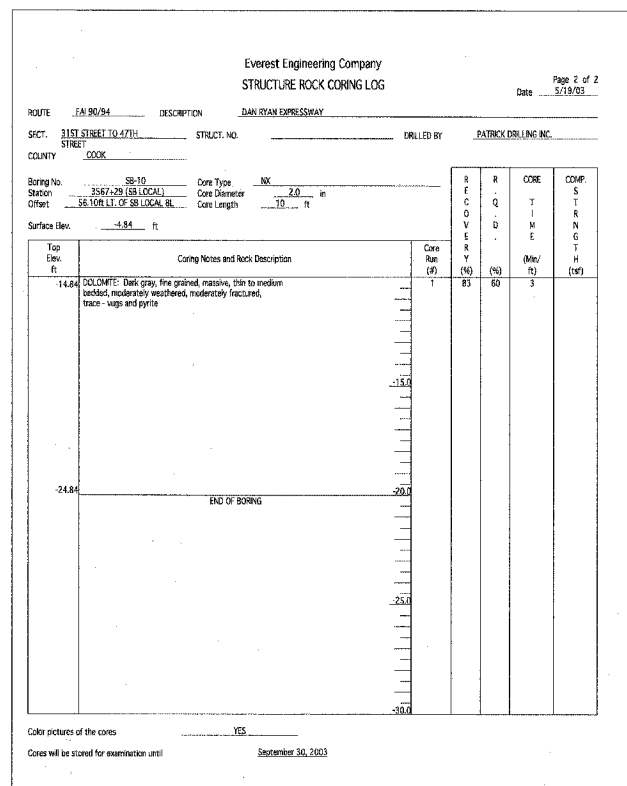
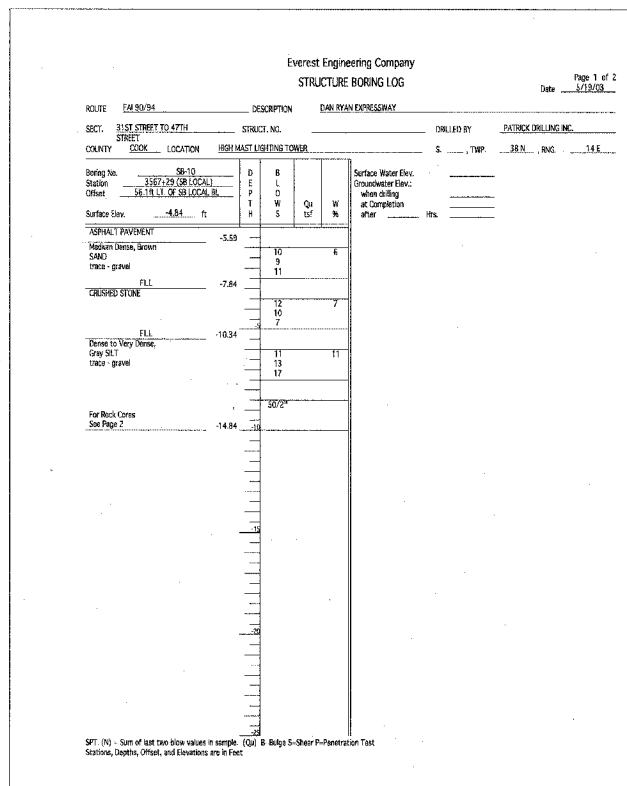
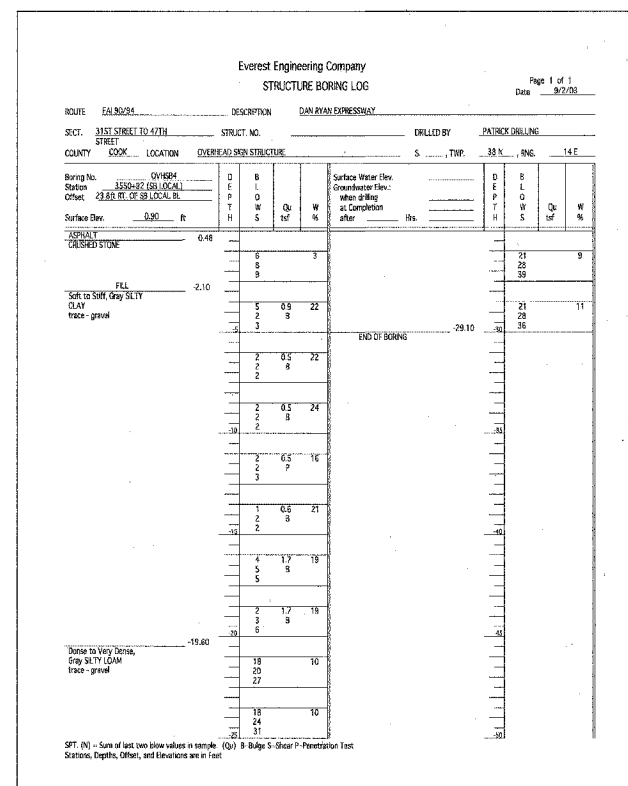
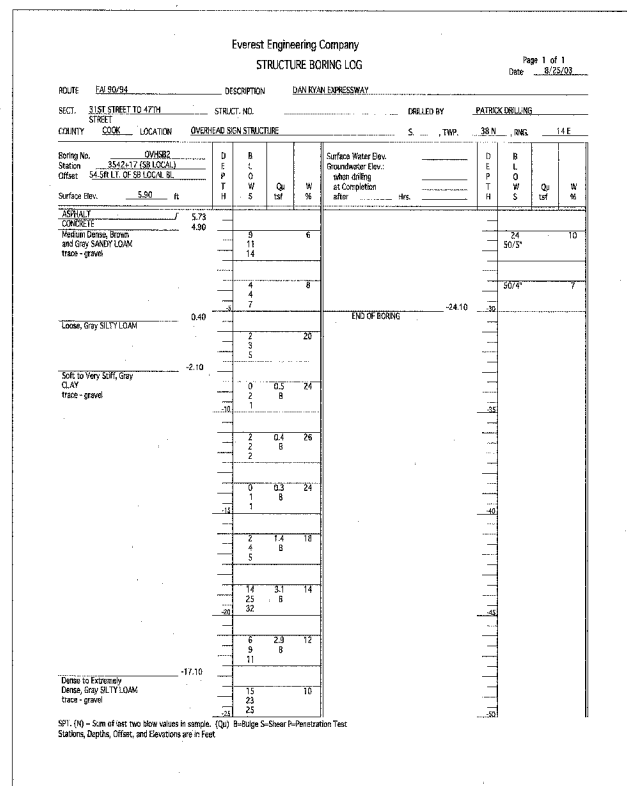
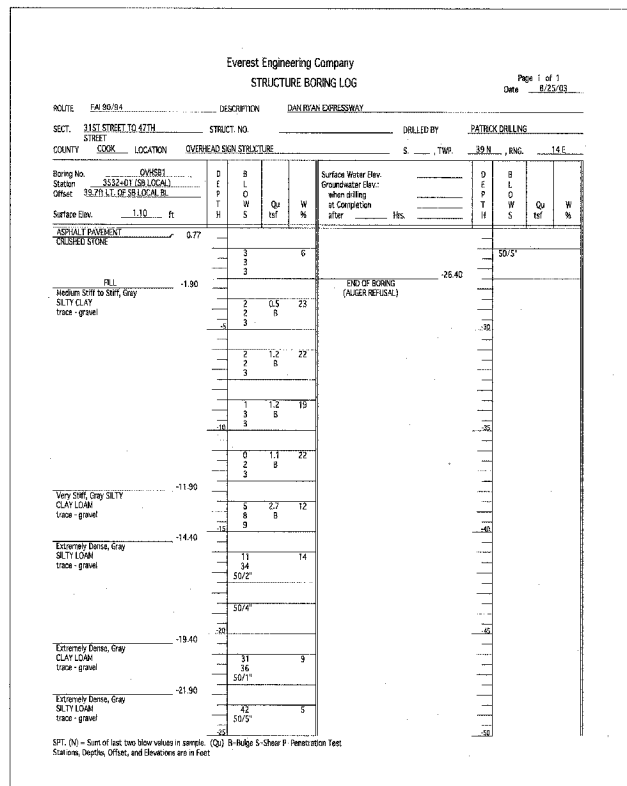
SECTION A-A

DESIGNED	SWANG	20
CHECKED	JAL	EXAMINED
DRAWN		PASSED
CHECKED		

MODIFIED BY CTE ENGINEERS, INC. FROM OS4-MED

OVERHEAD SIGN STRUCTURES
MEDIAN SUPPORT FOUNDATION DETAILS
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31st STREET TO 71st STREET
(SB Express Lanes)
DOUBLE FACE MEDIAN SUPPORT FOUNDATION

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BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
www.bbainc.com

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
OVERHEAD SIGN STRUCTURES
SOIL BORING LOGS 1

SCALE: NTS
DATE: 07/07/05

DRAWN BY: MTR
CHECKED BY: JDC

5/28/03 17M 5/28/03 17M

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	355
STA. TO STA.		ILLINOIS FED. AID PROJECT		
62302		* (1818, ETC, 2324.6-1P)R-9		
FED. ROAD DIST. NO.		PROPOSED IDOT CONTROLLER "U" STA. 1528+10, 160LT		

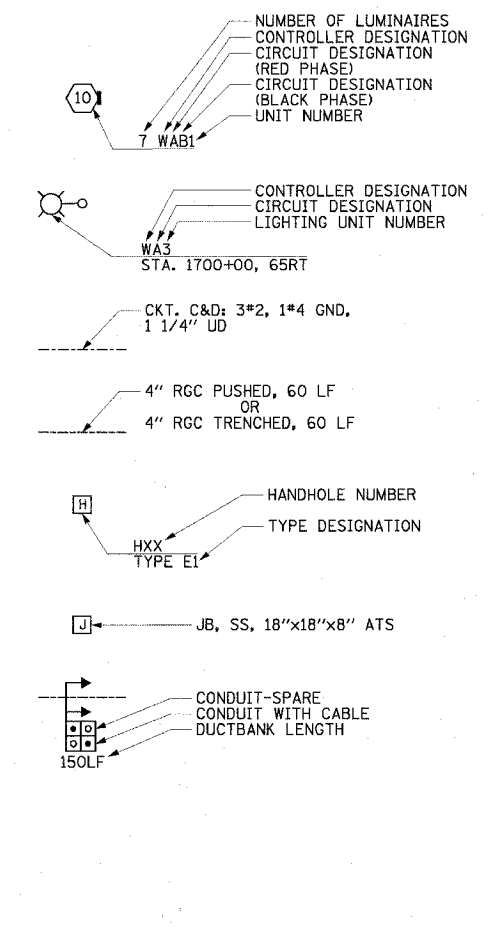
ELECTRICAL SYMBOLS FOR PROPOSED WORK

GENERAL ELECTRICAL CALLOUTS

- LIGHT TOWER FOUNDATION
NUMBER INSIDE HEXAGON INDICATES TOWER TYPE
HANDHOLE LOCATION AS INDICATED
TOWER INSTALLED BY OTHERS,
UNDER A SEPARATE CONTRACT
- TYPE TOWER HEIGHT
10 - 100 FEET
11 - 110 FEET
12 - 120 FEET
- LIGHT POLE FOUNDATION
POLE INSTALLED BY OTHERS
UNDER A SEPARATE CONTRACT
- TEMPORARY LIGHTING UNIT INCLUDING 60 FOOT
WOOD POLE (CLASS 4), 8'-0" MAST ARM WITH
400 WATT HPS LUMINAIRE
- ELECTRIC HANDHOLE: TYPE AS INDICATED
TYPE E1: PC CONCRETE, 21.5"x21.5"x30"
IDOT STANDARD 814001
TYPE E2: PC CONCRETE-HEAVY DUTY, 22"x22"x30",
IDOT STANDARD 814001
TYPE C1: COMMUNICATIONS VAULT
TYPE S1: PC CONCRETE-HEAVY DUTY, 22"x22"x36"
TYPE S2: PC CONCRETE-HEAVY DUTY SPECIAL,
30"x30"x36"
- JUNCTION BOX: TYPE AND SIZE AS INDICATED
ON PLANS
- PULL BOX: TYPE AND SIZE AS INDICATED
ON PLANS
- TELEPHONE CONNECTION
- FIBER OPTIC COMMUNICATIONS HUT
- LIGHTED SIGN STRUCTURE-CANTILEVER TYPE
(NUMBER OF FLUORESCENT FIXTURES AS
INDICATED WITH ASSOCIATED DISCONNECT
SWITCH - TYP.) (N.I.C.)

- LIGHTED SIGN STRUCTURE-TRUSS TYPE (N.I.C.)
- TEMPORARY LIGHTED SIGN STRUCTURE-TRUSS
TYPE, QUANTITY OF LUMINAIRES AS SHOWN
ON SIGNING PLANS
- LIGHTED SIGN STRUCTURE-BRIDGE MOUNT TYPE (N.I.C.)
- DYNAMIC MESSAGE SIGN (N.I.C.)
- FLASHING BEACON SIGN (N.I.C.)
- CLOSED CIRCUIT TELEVISION CAMERA (N.I.C.)
- MICROWAVE DETECTOR (N.I.C.)
- DETECTOR LOOP
- CONTROLLER CABINET FOUNDATION
- CONTROLLER CABINET FOUNDATION: SURVEILLANCE
- CONTROLLER CABINET FOUNDATION: SURVEILLANCE,
TYPE 334
- RAMP METER SIGNAL POLE/HEAD FOUNDATION
- RAMP METER FLASHER FOUNDATION
- TEMPORARY WOOD POLE, 50 FOOT LENGTH
(10 FOOT BURIED, 40 FOOT INSTALLED HEIGHT)
- HIGHWAY ADVISORY RADIO ANTENNA (N.I.C.)
- ELECTRIC UTILITY POLE
- CCTV CAMERA POLE (N.I.C.)

- POLE MOUNTED ELECTRIC UTILITY TRANSFORMER(S)
- PAD MOUNTED ELECTRIC UTILITY TRANSFORMER
- GROUND ROD
- MAIN SERVICE FUSED DISCONNECT SWITCH
(RATING AS INDICATED)
- EXISTING RACEWAY OR CONDUIT RUN
AS INDICATED ON PLANS
- RACEWAY EMBEDDED IN STRUCTURE
- RACEWAY OR DIRECT BURIAL CABLE
UNDERGROUND WITHOUT ENCASEMENT
- RIGID GALVANIZED STEEL CONDUIT
SLEEVE, TRENCHED OR PUSHED
- UNDERGROUND REINFORCED CONCRETE ENCASED
DUCTBANK, UNO. (NUMBER, TYPE, AND SIZE OF
DUCTS AS SHOWN)
- RACEWAY OR CONDUIT IN TRENCH, TYPE AS
INDICATED ON PLANS
- AERIAL CABLE, TYPE AS INDICATED ON PLANS
- CONDUIT TURNED DOWN
- CONDUIT TURNED UP



ELECTRICAL SYMBOLS FOR EXISTING CONDITIONS

- EXISTING LIGHTING UNIT, TWIN LUMINAIRE
- EXISTING LIGHTING UNIT
- EXISTING TEMPORARY LIGHTING UNIT
- EXISTING CDOT LIGHTING UNIT
- EXISTING UNDERPASS LUMINAIRE
- EXISTING ELECTRIC HANDHOLE
- EXISTING JUNCTION BOX
- EXISTING PULL BOX
- EXISTING TELEPHONE CONNECTION
- EXISTING FIBER OPTIC COMMUNICATIONS HUT
- EXISTING ELECTRIC HANDHOLE/MANHOLE

- EXISTING CDOT ELECTRIC HANDHOLE/MANHOLE
- EXISTING LIGHTED SIGN STRUCTURE-
CANTILEVER TYPE
- EXISTING LIGHTED SIGN STRUCTURE-TRUSS TYPE
- EXISTING LIGHTED SIGN STRUCTURE-
BRIDGE MOUNT TYPE
- EXISTING DYNAMIC MESSAGE SIGN
- EXISTING FLASHING BEACON SIGN
- EXISTING CLOSED CIRCUIT TELEVISION CAMERA
- EXISTING MICROWAVE DETECTOR
- EXISTING DETECTOR LOOP
- EXISTING LIGHTING CONTROLLER, DUPLEX
- EXISTING CONTROLLER CABINET
- EXISTING RAMP METER SIGNAL POLE/HEAD

- EXISTING RAMP METER FLASHER
- EXISTING HIGHWAY ADVISORY RADIO ANTENNA
- EXISTING CCTV CAMERA POLE
- EXISTING UTILITY SERVICE CONNECTION,
POLE MOUNTED
- EXISTING UTILITY SERVICE CONNECTION,
PAD MOUNTED
- EXISTING CONCEALED CONDUIT IN STRUCTURE
- EXISTING EXPOSED CONDUIT
- EXISTING RACEWAY OR DIRECT BURIED CABLE
WITHOUT ENCASEMENT
- EXISTING CONCEALED CONDUIT UNDERGROUND,
TRENCHED OR PUSHED
- EXISTING ELECTRIC CABLE IN CONDUIT

Edwards AND Kelcey
ONE NORTH FRANKLIN
CHICAGO, IL 60606
PHONE: (312) 251-3000
FAX: (312) 251-3015
WEB: WWW.EDKORP.COM

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL SYMBOLS

SCALE: NOT TO SCALE
DATE: 7/1/05
DRAWN BY: CJM
CHECKED BY: WDS

EI-100

06/24/2005 12:07:07 PM

ABBREVIATIONS

A	AMPERES	ID	INNERDUCT	WB	WESTBOUND
AC	ALTERNATING CURRENT	IDOT	ILLINOIS DEPARTMENT OF TRANSPORTATION	WM	WALL MOUNTED
A/C	AERIAL CABLE	IN	INCHES	WP	WOOD POLE
AFG	ABOVE FINISHED GRADE	J, JB	JUNCTION BOX	XFMR	TRANSFORMER
ANT	ANTENNA	KVA	KILOVOLT-AMPERE		
AOBE	AS ORDERED BY THE ENGINEER	KW	KILOWATT		
ASPH	ASPHALT	LF	LINEAR FEET		
ATS	ATTACHED TO STRUCTURE	LP	LIGHT POLE		
AVE	AVENUE	L SUM	LUMP SUM		
BHD	BULKHEAD	LT	LEFT		
BIT	BITUMINOUS	M	METER		
BLK	BLOCK	MA	MAST ARM		
BR	BRIDGE	MD	MICROWAVE DETECTOR		
C	CONDUIT, CONDUCTOR	MM	MULTI-MODE		
CAB	CABINET	MW	MESSENGER WIRE		
CBW	CONCRETE BLOCK WALL	NB	NORTHBOUND		
CC	COMMUNICATIONS CENTER	NIC	NOT IN CONTRACT		
CCTV	CLOSED CIRCUIT TELEVISION	NM	NONMETALLIC		
CDOT	CDOT-CHICAGO DEPARTMENT OF TRANSPORTATION	NO	NUMBER		
COMED	COMED	NTS	NOT TO SCALE		
CKT	CIRCUIT	OH	OVERHEAD		
CLF	CHAIN LINK FENCE	PL	PROPERTY LINE		
CNC	COILABLE NONMETALLIC CONDUIT	PH	PHASE		
COMM	COMMUNICATIONS	PIN	PROJECT IDENTIFICATION NUMBER		
CONC	CONCRETE	PNL	PANEL		
CONST	CONSTRUCTION	PROP	PROPOSED		
CORR	CORRUGATED	PTZ	PAN-TILT-ZOOM		
CW	CONCRETE WALL	PEC	POLYETHYLENE CONDUIT		
☉	CENTERLINE	PVC	POLYVINYL CHLORIDE		
DB	DIRECT BURIED	PVCC	POLYVINYL CHLORIDE COATED		
DC	DIRECT CURRENT	R	EXISTING UNIT TO BE REMOVED (OWNER SALVAGED UNO)		
DF	DARK FIBER	RC	REINFORCED CONCRETE		
DIA	DIAMETER	RD	ROAD		
DMS	DYNAMIC MESSAGE SIGN	RGC	RIGID GALVANIZED STEEL CONDUIT		
DWG	DRAWING(S)	RM	RAMP METER		
E	EXISTING UNIT TO REMAIN	ROW	RIGHT OF WAY		
EA	EACH	RR	EXISTING UNIT TO BE REMOVED AND REINSTALLED		
EB	EASTBOUND	RT	RIGHT		
ECA	ELECTRIC CABLE ASSEMBLY	RW	RETAINING WALL		
EL	ELEVATION	SB	SOUTHBOUND		
EM	EXISTING UNIT TO BE MODIFIED (e.g. NEW LUMINAIRE, BALLAST, OR MAST ARM)	SH	SHEET		
ER	EXISTING RELOCATED UNIT	SM	SINGLE MODE		
ET	EXISTING TEMPORARY UNIT TO REMAIN OR MODIFIED	SS	STAINLESS STEEL		
ETP	EMERGENCY TRAFFIC PATROL	ST	STREET		
ETR	EXISTING TEMPORARY RELOCATED UNIT	STA	STATION		
EXCAV	EXCAVATION	STD	STANDARD		
F, FT	FOOT, FEET	STL	STEEL		
FDN	FOUNDATION	STRUCT	STRUCTURE		
FO	FIBER OPTIC	SURF	SURFACE		
GM	GROUND MOUNTED	SURV	SURVEILLANCE		
GND, GRD	GROUND	SW	SIDEWALK		
GR	GUARD RAIL	T	TEMPORARY		
GSC	GALVANIZED STEEL CONDUIT	TAN	TANGENT		
HAR	HIGHWAY ADVISORY RADIO	TC	TRAY CABLE		
HD	HEAVY DUTY	TEL	TELEPHONE		
HH	HANDHOLE	TS	TRAFFIC SIGNAL		
HPS	HIGH PRESSURE SODIUM	TSC	TRAFFIC SYSTEMS CENTER		
HYD	HYDRANT	TYP	TYPICAL		
I	INTERSTATE	UD	UNIT DUCT		
		UND	UNDERDRAIN		
		UNO	UNLESS NOTED OTHERWISE		
		V	VOLT		
		W	WATT		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	356
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302	• (1818, ETC, 2324.6-IPJR-9			



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
 31ST STREET TO 71ST STREET
 SB EXPRESS LANE RECONSTRUCTION
 ELECTRICAL ABBREVIATIONS

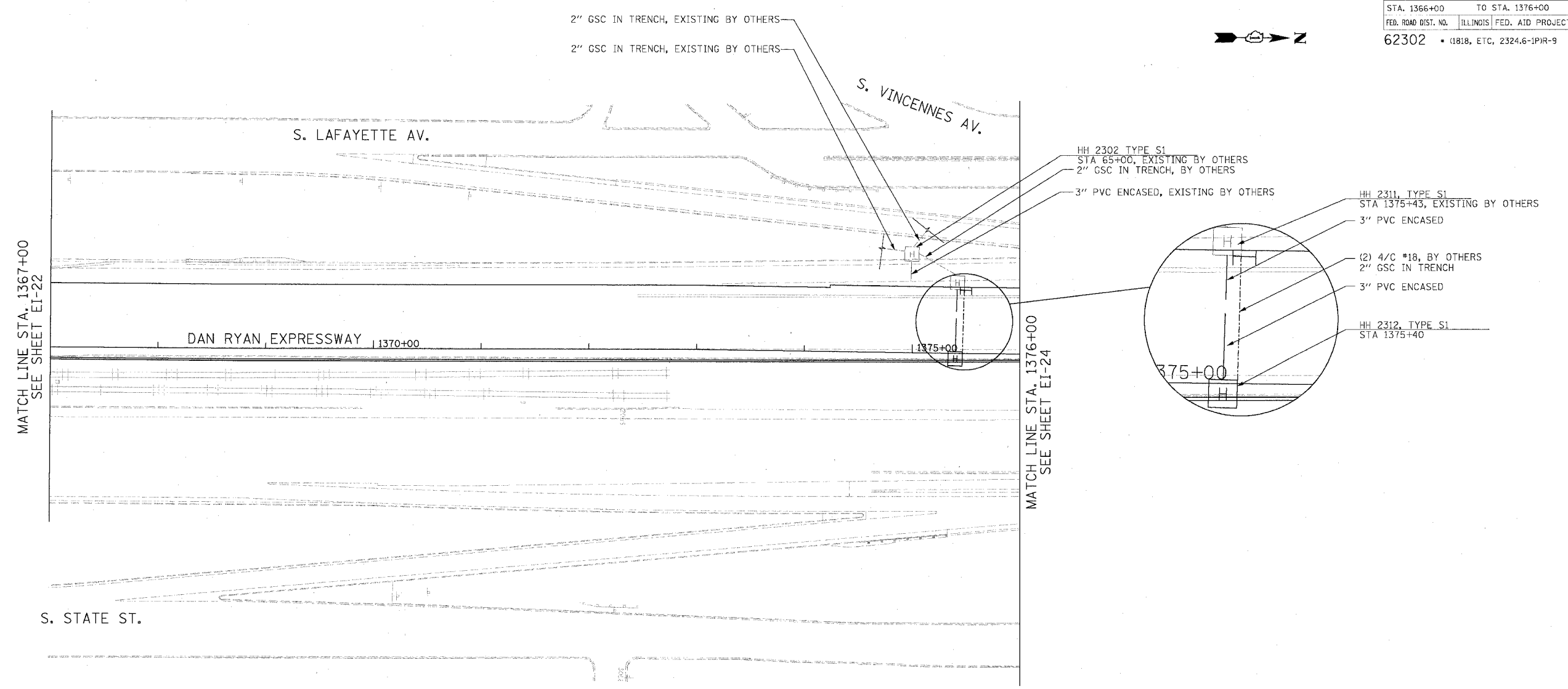
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DRAWN BY: CJM
 CHECKED BY: WDS

EI-101

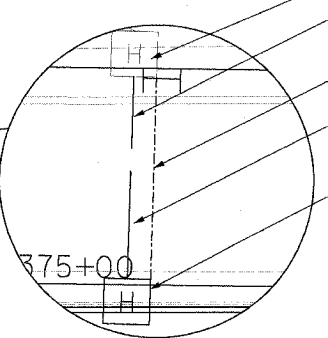
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	357
STA. 1366+00		TO STA. 1376+00		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62302 • (1818, ETC, 2324.6-1P)R-9				

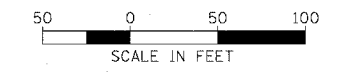


MATCH LINE STA. 1367+00
SEE SHEET EI-22

MATCH LINE STA. 1376+00
SEE SHEET EI-24



- NOTES:**
- SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
 - UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
 - TRENCHED CONDUITS INSTALLED IN PARALLEL ARE TO BE INSTALLED IN COMMON TRENCH.
 - THIS SHEET ONLY DEPICTS INSTALLATION OF DETECTION/RAMP METER ELEMENTS. REFER TO SHEETS FOR OTHER SUBSYSTEMS FOR ADDITIONAL ELEMENTS IN THE AREA SHOWN.
 - DETECTOR LOOPS INSTALLED BY OTHERS.
 - REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.



EI-23

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
 31ST STREET TO 71ST STREET
 SB EXPRESS LANE RECONSTRUCTION
 ELECTRICAL INFRASTRUCTURE PLAN
 SOUTHBOUND STA. 1367+00 TO 1376+00

SCALE: 1"=50'
 DATE: 7/7/05

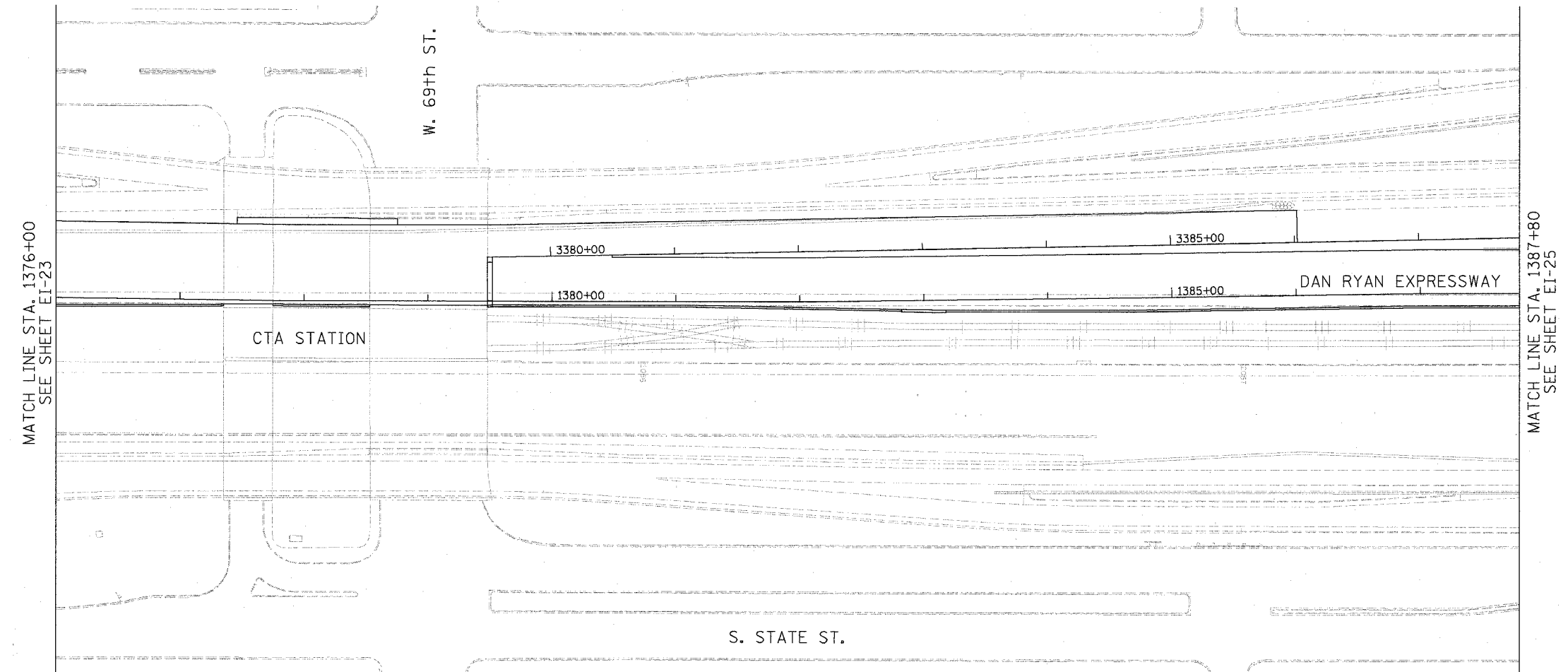
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 CHECKED BY: MJL

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	358
STA. 1376+00		TO STA. 1388+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302	*	(1818, ETC, 2324.6-1PR-9		



NO PROPOSED WORK
ON THIS SHEET

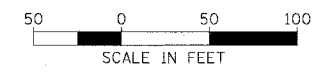


MATCH LINE STA. 1376+00
SEE SHEET EI-23

MATCH LINE STA. 1387+80
SEE SHEET EI-25

- NOTES:
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 5. DETECTOR LOOPS INSTALLED BY OTHERS.
 6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA. 1376+00 TO 1387+80

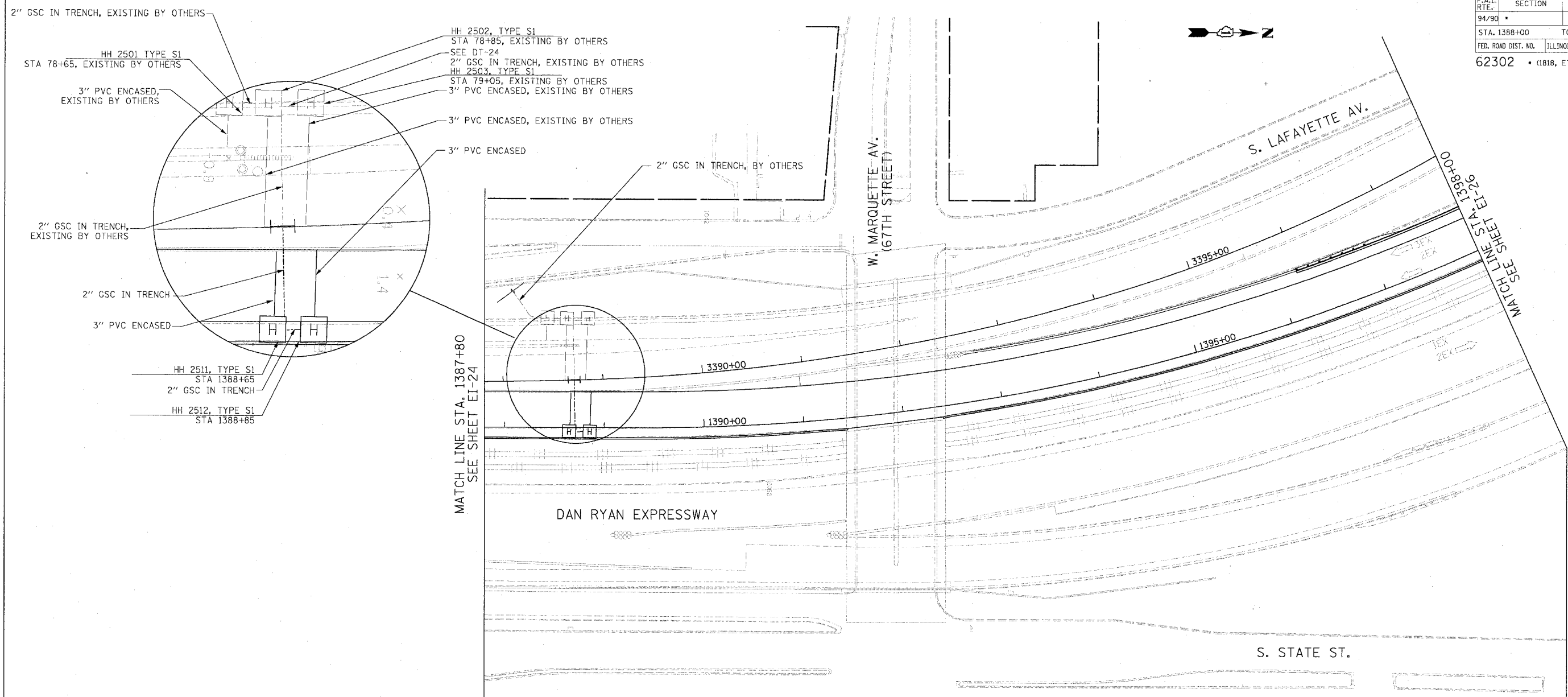
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DATE: 7/7/05

DRAWN BY: CJH
CHECKED BY: MJL

EI-24

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	359
STA. 1388+00		TO STA. 1398+00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
62302		* (1818, ETC, 2324.6-1)PR-9		



MATCH LINE STA. 1387+80
SEE SHEET EI-24

MATCH LINE STA. 1398+00
SEE SHEET EI-26

- NOTES:
1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
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 5. DETECTOR LOOPS INSTALLED BY OTHERS.
 6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.



EI-25

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
 31ST STREET TO 71ST STREET
 SB EXPRESS LANE RECONSTRUCTION
 ELECTRICAL INFRASTRUCTURE PLAN
 SOUTHBOUND STA. 1387+80 TO 1398+00

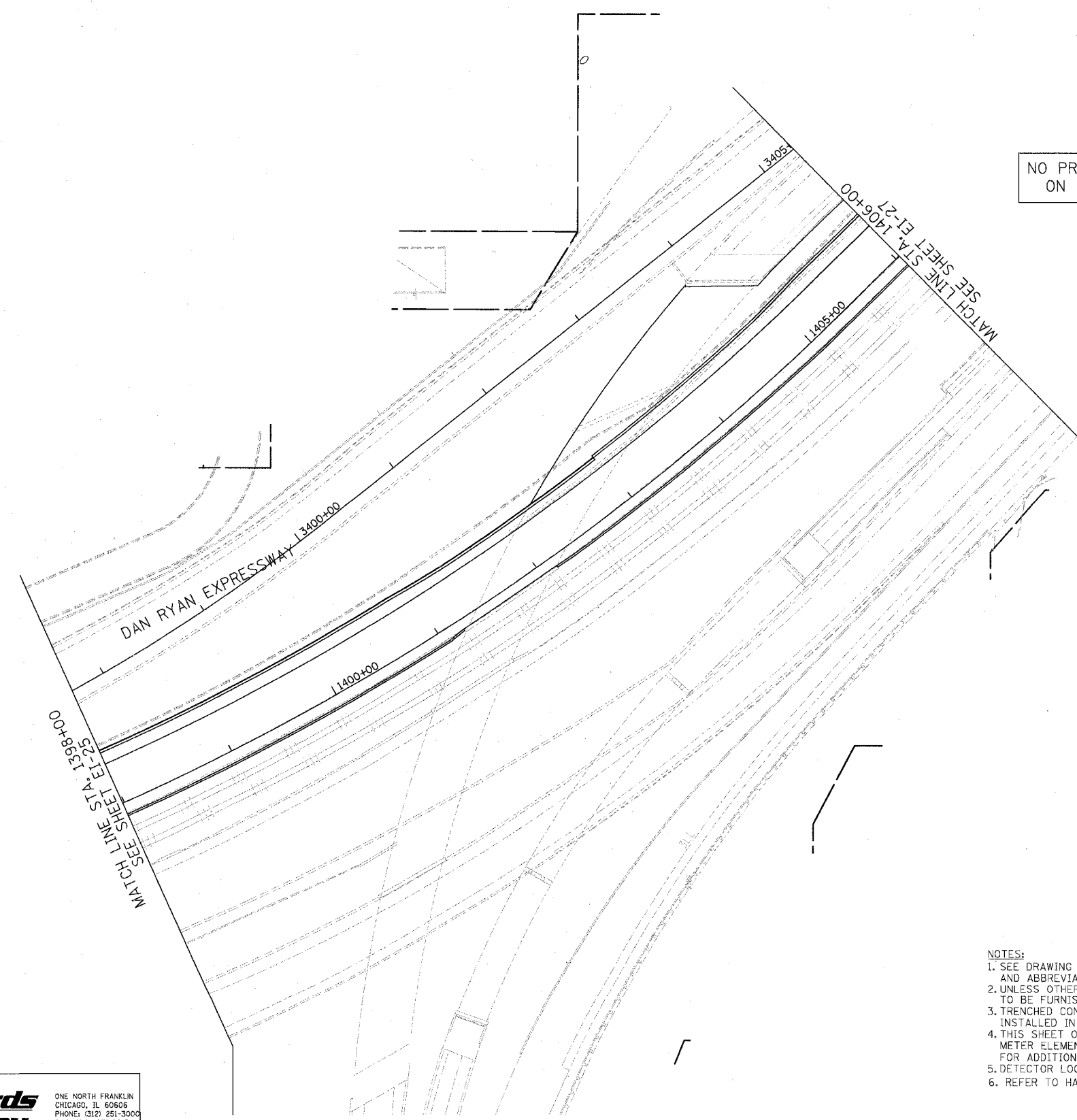
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 DRAWN BY: CJH
 CHECKED BY: MJL

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AND Kelcey**

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 CHICAGO, IL 60606
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 FAX: (312) 251-3015
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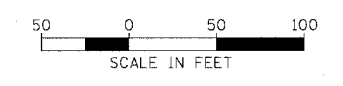
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	360
STA. 1398+00		TO STA. 1406+00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
62302		• (1818, ETC, 2324.6-IP)R-9		



NO PROPOSED WORK
ON THIS SHEET

- NOTES:
1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
 2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
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 5. DETECTOR LOOPS INSTALLED BY OTHERS.
 6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.



EI-26

**Edwards
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REVISIONS	
NAME	DATE

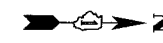
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA 1398+00 TO 1406+00

SCALE: 1"=50'
DATE: 7/7/05

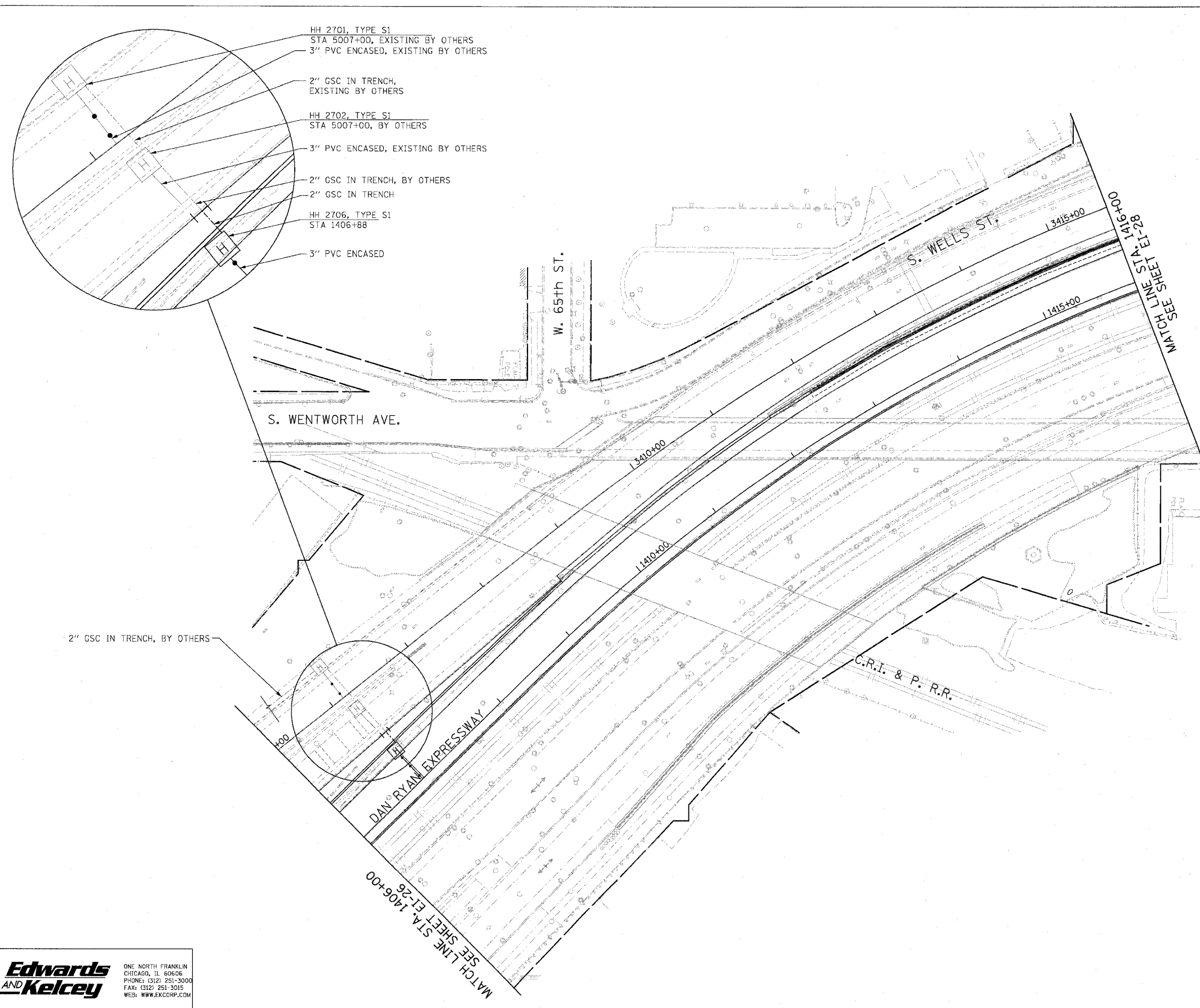
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CHECKED BY: MJL

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	361
STA. 1406+00		TO STA. 1416+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302 • (1818, ETC, 2324.6-1)PR-9				



- NOTES:
1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
 2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
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 5. DETECTOR LOOPS INSTALLED BY OTHERS.
 6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.

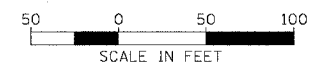


- HH 2701, TYPE S1
STA 5007+00, EXISTING BY OTHERS
- 3" PVC ENCASED, EXISTING BY OTHERS
- 2" GSC IN TRENCH, EXISTING BY OTHERS
- HH 2702, TYPE S1
STA 5007+00, BY OTHERS
- 3" PVC ENCASED, EXISTING BY OTHERS
- 2" GSC IN TRENCH, BY OTHERS
- 2" GSC IN TRENCH
- HH 2706, TYPE S1
STA 1406+88
- 3" PVC ENCASED

2" GSC IN TRENCH, BY OTHERS

MATCH LINE STA 1406+00
SEE SHEET EI-26

MATCH LINE STA 1416+00
SEE SHEET EI-28



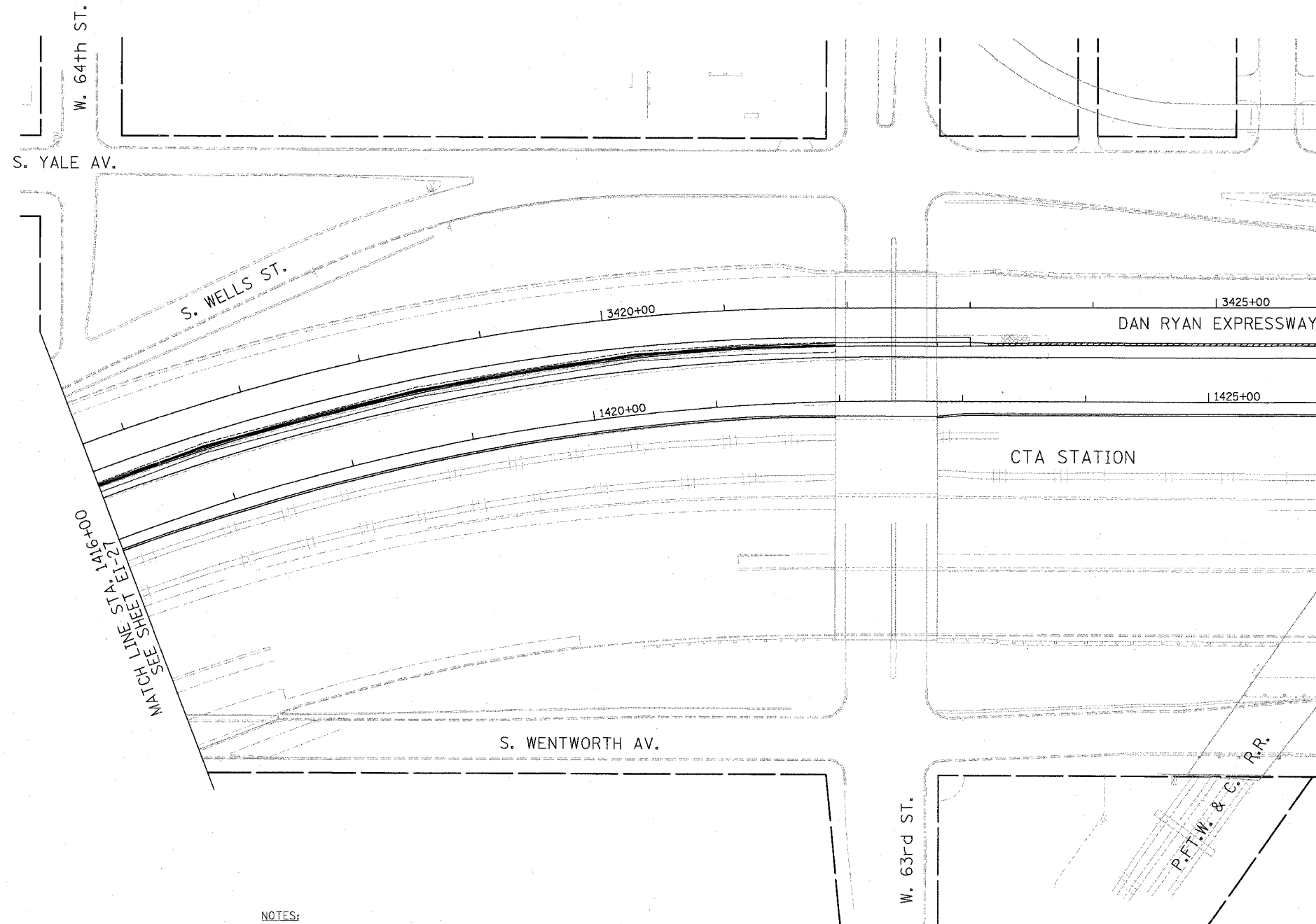
EI-27

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NAME	DATE	F.A.I. 94/90 (DAN RYAN EXPRESSWAY)	
		31ST STREET TO 71ST STREET	
		SB EXPRESS LANE RECONSTRUCTION	
		ELECTRICAL INFRASTRUCTURE PLAN	
		S08UTHBOUND STA. 1406+00 TO 1416+00	
		SCALE: 1"=50'	DRAWN BY: CJH
		DATE: 7/7/05	CHECKED BY: MJL

Edwards AND Kelcey
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 WEB: WWW.EKCCORP.COM

P:\0300\9035\00149\5\CADD\5\DET\0202\2E.SHT 05/27/2005 11:59:29 AM

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90 *		COOK	598	362
STA. 1416+00		TO STA. 1426+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302 • (1818, ETC, 2324.6-1)R-9				

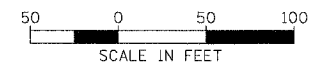


NO PROPOSED WORK
ON THIS SHEET

MATCH SEE SHEETS EI-27, EI-28, EI-29

MATCH LINE STA. 1426+00
SEE SHEET EI-29

- NOTES:**
1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
 2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
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 4. THIS SHEET ONLY DEPICTS INSTALLATION OF DETECTION/RAMP METER ELEMENTS. REFER TO SHEETS FOR OTHER SUBSYSTEMS FOR ADDITIONAL ELEMENTS IN THE AREA SHOWN.
 5. DETECTOR LOOPS INSTALLED BY OTHERS.
 6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.



EI-28

**Edwards
AND
Kelcey**
ONE NORTH FRANKLIN
CHICAGO, IL 60606
PHONE: (312) 251-3000
FAX: (312) 251-3015
WEB: WWW.EKCORP.COM

REVISIONS	
NAME	DATE

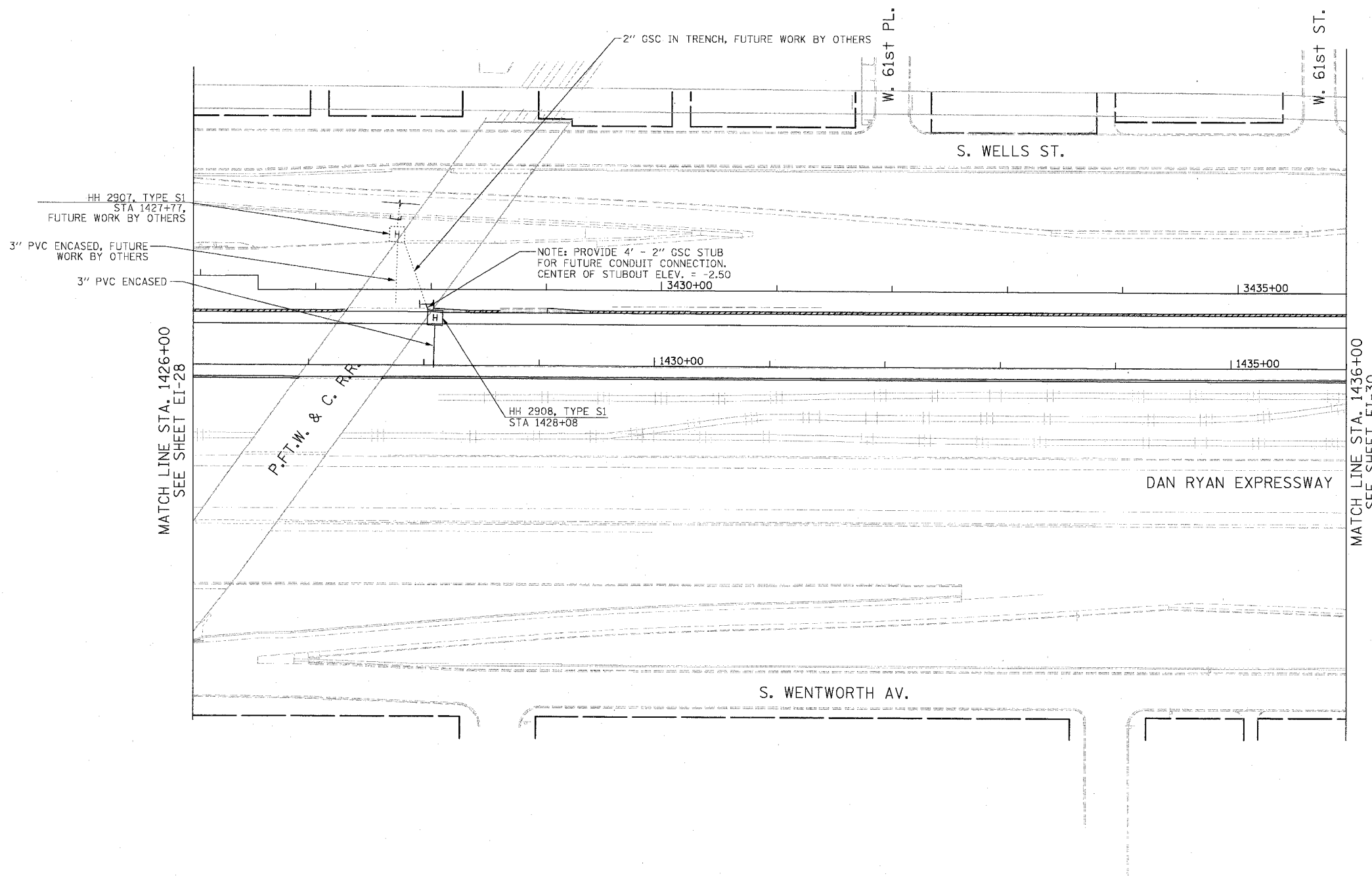
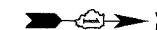
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA 1416+00 TO 1426+00

SCALE: 1"=50'
DATE: 7/7/05

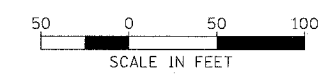
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	363
STA. 1426+00		TO STA. 1436+00		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62302	* (1818, ETC, 2324.6-1)PR-9			



- NOTES:**
1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
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 6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.



EI-29

REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA. 1426+00 TO 1436+00

SCALE: 1"=50'
DATE: 7/7/05

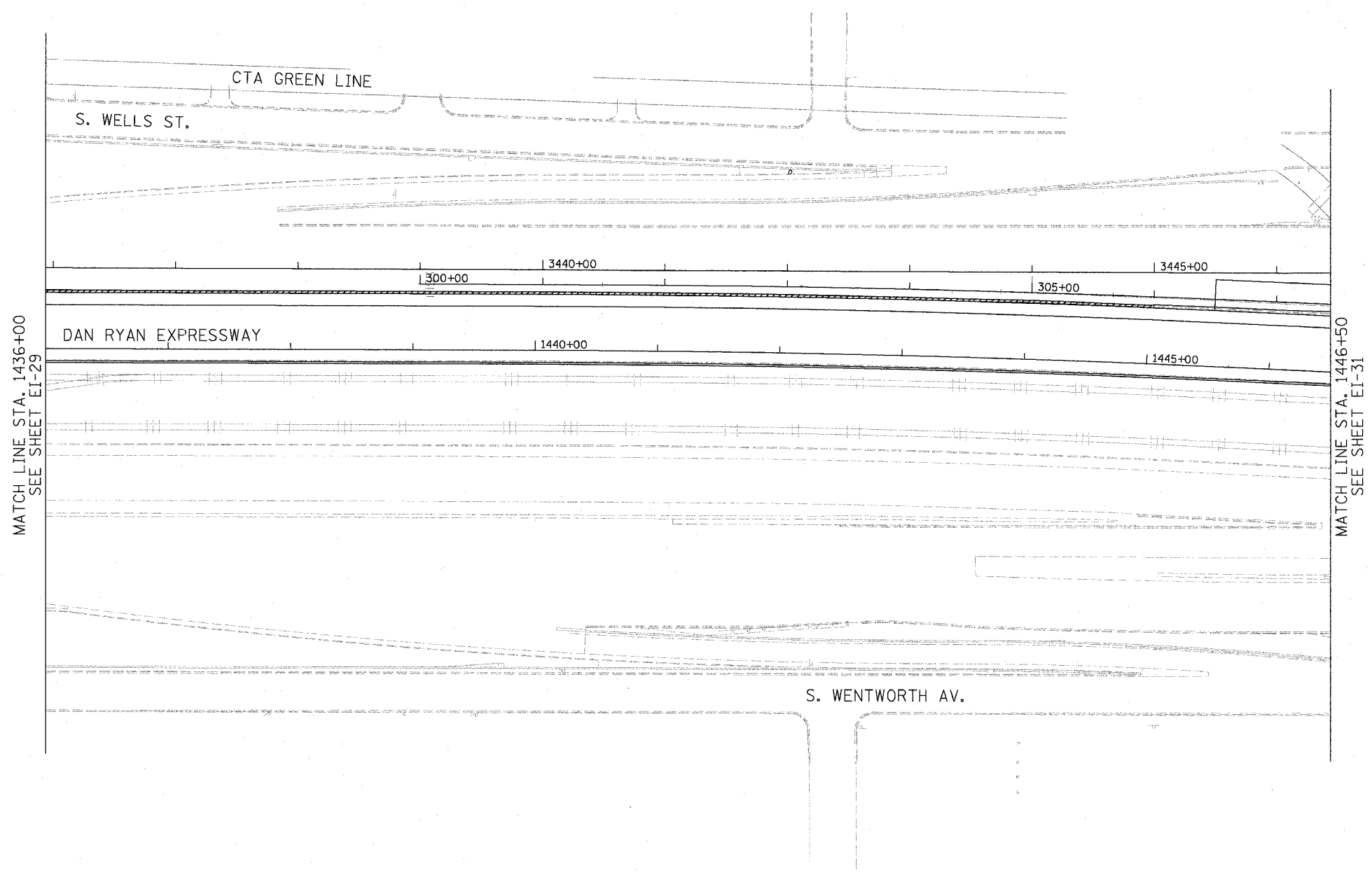
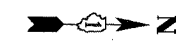
DRAWN BY: CJH
CHECKED BY: MJL

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	364
STA. 1436+00		TO STA. 1446+50		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302		• (1818, ETC, 2324.6-1P)R-9		

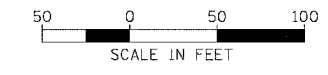


NO PROPOSED WORK
ON THIS SHEET

MATCH LINE STA. 1436+00
SEE SHEET EI-29

MATCH LINE STA. 1446+50
SEE SHEET EI-31

- NOTES:**
1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
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EI-30

**Edwards
AND Kelcey**
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FAX: (312) 251-3015
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REVISIONS	
NAME	DATE

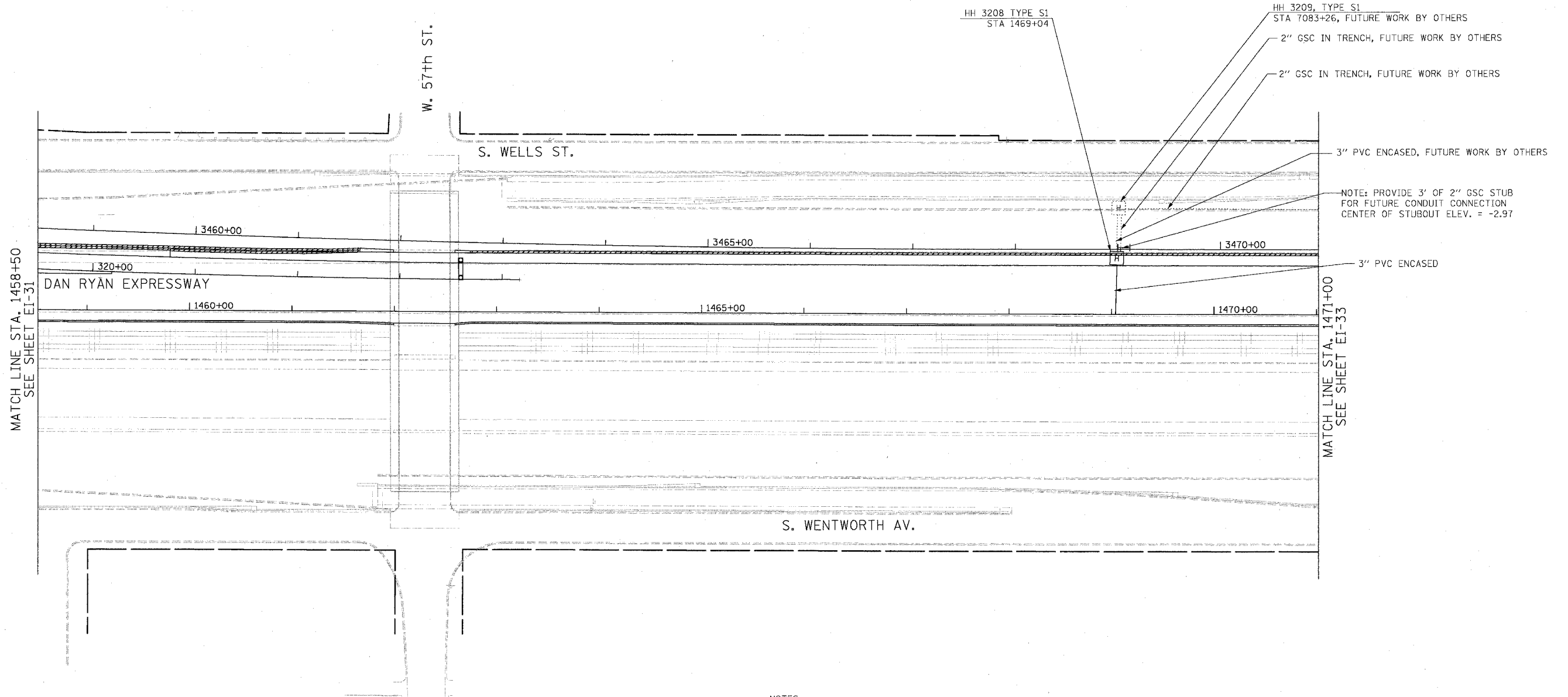
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA. 1436+00 TO 1446+50

SCALE: 1"=50'
DATE: 7/7/05

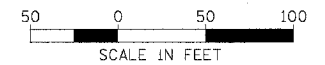
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	366
STA. 1458+50		TO STA. 1471+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302 • (1818, ETC. 2324.6-1)PR-9				



- NOTES:
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 - DETECTOR LOOPS INSTALLED BY OTHERS.



EI-32

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
 31ST STREET TO 71ST STREET
 SB EXPRESS LANE RECONSTRUCTION
 ELECTRICAL INFRASTRUCTURE PLAN
 SOUTHBOUND STA. 1458+50 TO 1471+00

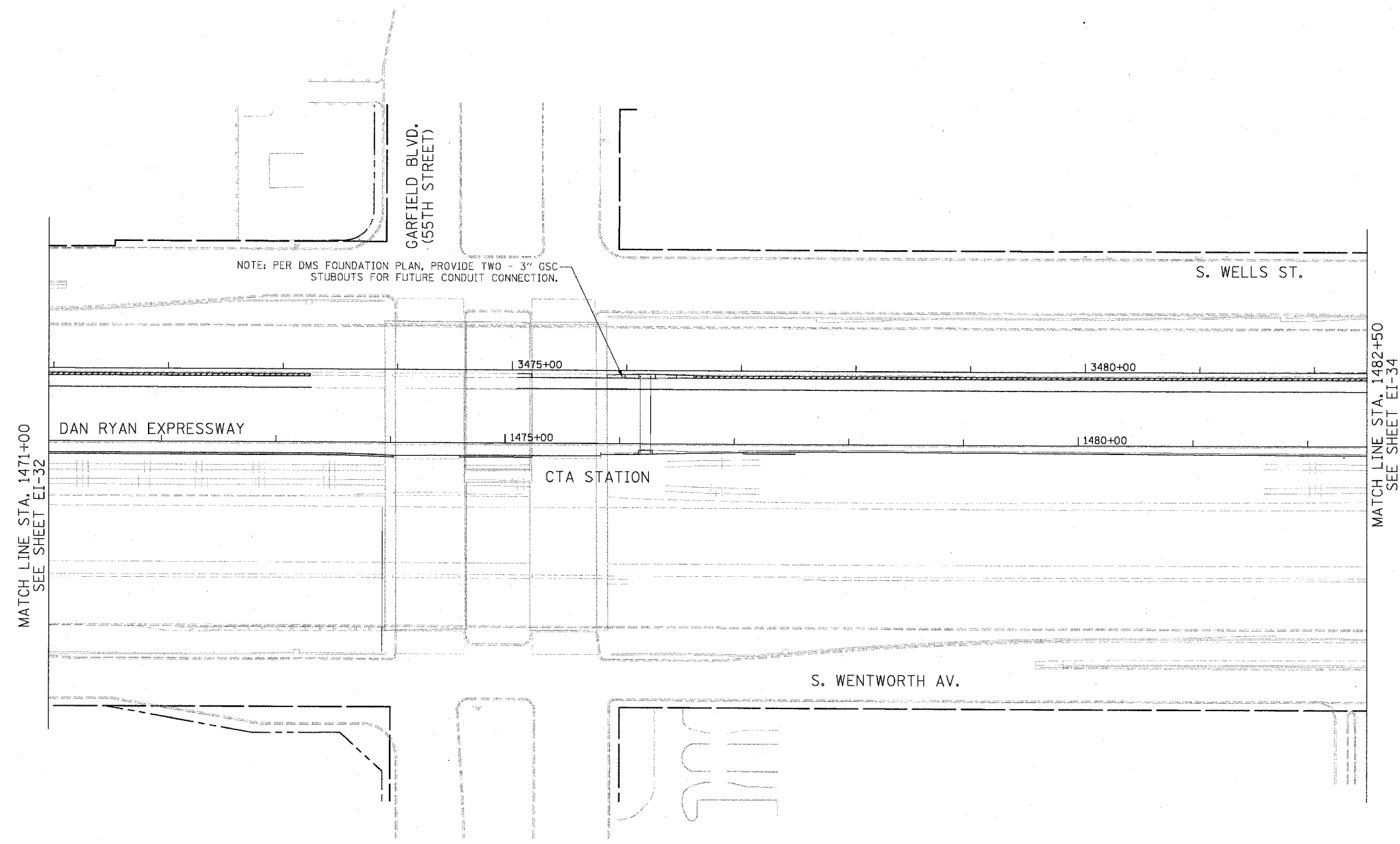
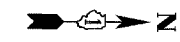
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DRAWN BY: CJH
 CHECKED BY: MJL

Edwards AND Kelcey
 ONE NORTH FRANKLIN
 CHICAGO, IL 60606
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P:\030009\0305\Com 148\5-CADD\50ET 020322Z-511

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	367
STA. 1471+00		TO STA. 1482+50		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302	11818, ETC, 2324.6-1PR-9			

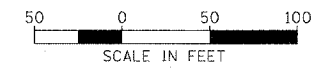


MATCH LINE STA. 1471+00
SEE SHEET EI-32

MATCH LINE STA. 1482+50
SEE SHEET EI-34

NOTE: PER DMS FOUNDATION PLAN, PROVIDE TWO - 3" GSC STUBOUTS FOR FUTURE CONDUIT CONNECTION.

- NOTES:**
1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
 2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
 3. TRENCHED CONDUITS INSTALLED IN PARALLEL ARE TO BE INSTALLED IN COMMON TRENCH.
 4. THIS SHEET ONLY DEPICTS INSTALLATION OF DETECTION/RAMP METER ELEMENTS. REFER TO SHEETS FOR OTHER SUBSYSTEMS FOR ADDITIONAL ELEMENTS IN THE AREA SHOWN.
 5. DETECTOR LOOPS INSTALLED BY OTHERS.
 6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.



EI-33

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 CHICAGO, IL 60606
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 FAX: (312) 251-3015
 WEB: WWW.EKCORP.COM

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
 31ST STREET TO 71ST STREET
 SB EXPRESS LANE RECONSTRUCTION
 ELECTRICAL INFRASTRUCTURE PLAN
 SOUTHBOUND STA 1471+00 TO 1482+50
 SCALE: 1"=50'
 DATE: 7/7/05
 DRAWN BY: CJH
 CHECKED BY: MJL

06/24/2005 12:02:22 PM P:\03000\9035\CDR\14815-CAUDN\5\DEL\020332E-517

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	368
STA. 1482+50		TO STA. 1494+50		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62302 • (1818, ETC, 2324.6-1)PR-9				



HH 3408, TYPE S1
STA 1488+71, FUTURE WORK BY OTHERS
3" PVC ENCASED, FUTURE WORK BY OTHERS
2" GSC IN TRENCH, FUTURE WORK BY OTHERS

HH 3409, TYPE S1
STA 1488+71
3" PVC ENCASED

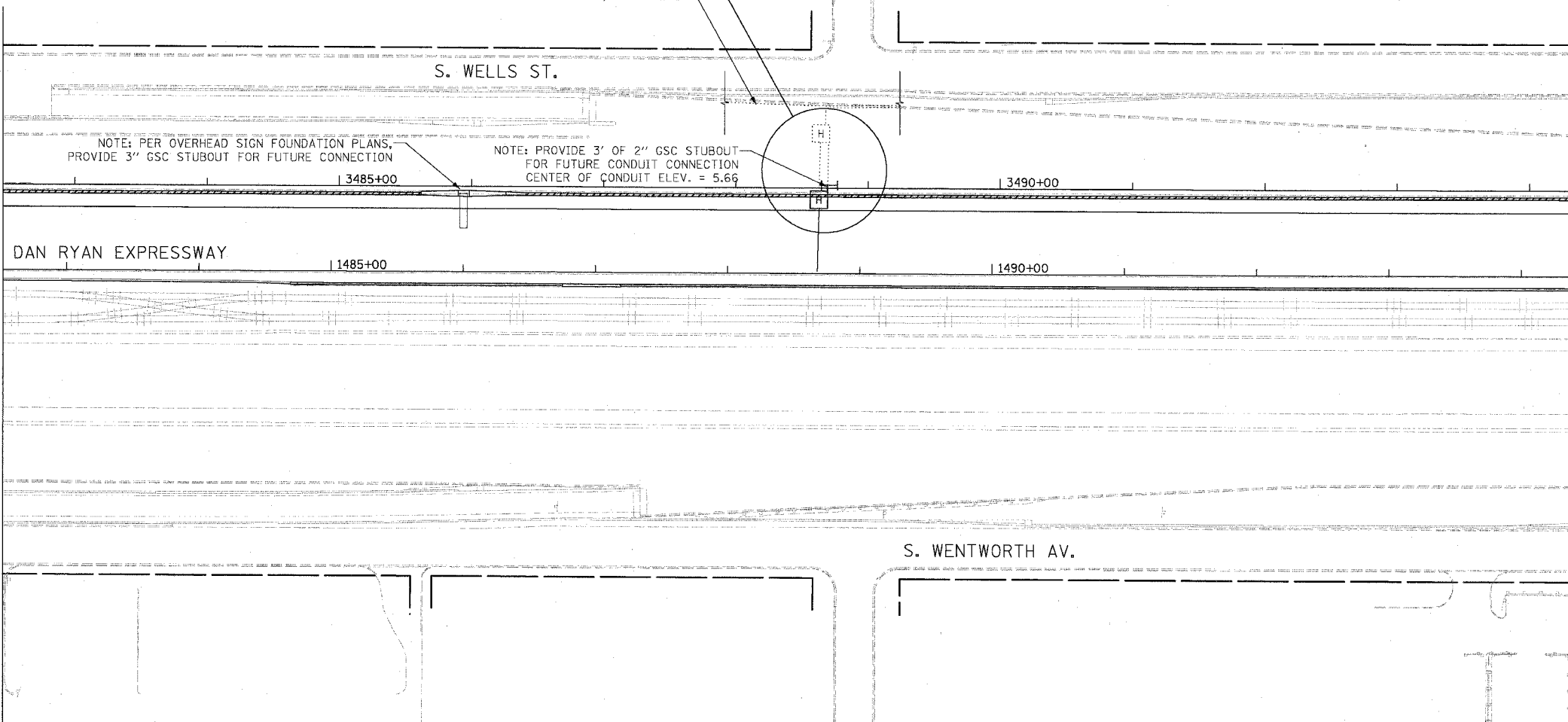
2" GSC IN TRENCH, BY OTHERS

NOTE: PER OVERHEAD SIGN FOUNDATION PLANS,
PROVIDE 3" GSC STUBOUT FOR FUTURE CONNECTION

NOTE: PROVIDE 3' OF 2" GSC STUBOUT
FOR FUTURE CONDUIT CONNECTION
CENTER OF CONDUIT ELEV. = 5.66

MATCH LINE STA. 1482+50
SEE SHEET EI-33

MATCH LINE STA. 1494+50
SEE SHEET EI-35



- NOTES:**
1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
 2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
 3. TRENCHED CONDUITS INSTALLED IN PARALLEL ARE TO BE INSTALLED IN COMMON TRENCH.
 4. THIS SHEET ONLY DEPICTS INSTALLATION OF DETECTION/RAMP METER ELEMENTS. REFER TO SHEETS FOR OTHER SUBSYSTEMS FOR ADDITIONAL ELEMENTS IN THE AREA SHOWN.
 5. DETECTOR LOOPS INSTALLED BY OTHERS.
 6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.



EI-34

**Edwards
AND
Kelcey**
ONE NORTH FRANKLIN
CHICAGO, IL 60606
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FAX: (312) 251-3015
WEB: WWW.EKCORP.COM

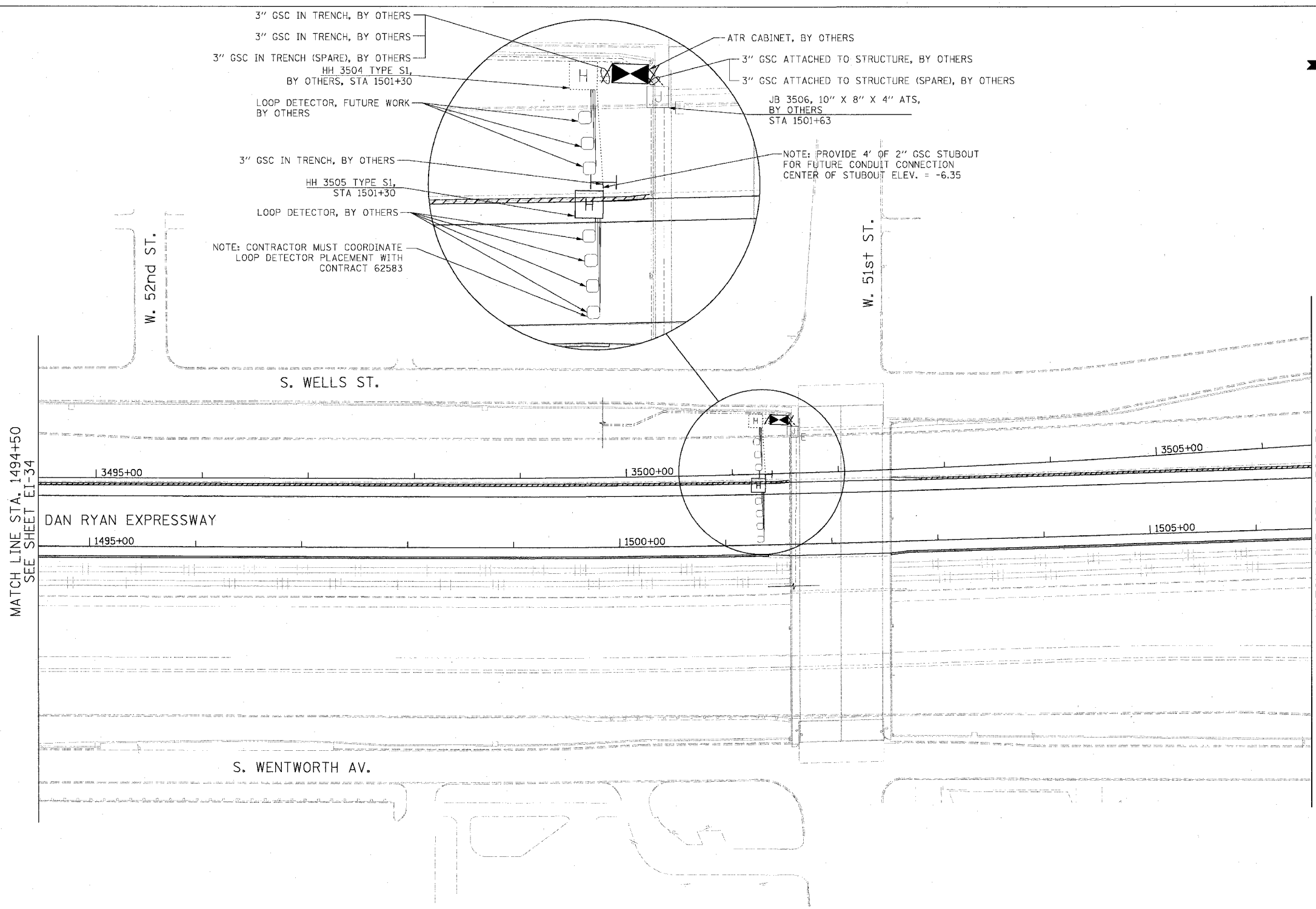
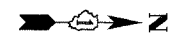
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA 1482+50 TO 1494+50

SCALE: 1"=50'
DATE: 7/7/05
DRAWN BY: CJH
CHECKED BY: MJL

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEET NO.
94/90		COOK	598
STA. 1494+50	TO STA. 1506+50		369
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	
62302	11818, ETC, 2324.6-1PR-9		



3" GSC IN TRENCH, BY OTHERS

3" GSC IN TRENCH, BY OTHERS

3" GSC IN TRENCH (SPARE), BY OTHERS
HH 3504 TYPE S1
BY OTHERS, STA 1501+30

LOOP DETECTOR, FUTURE WORK
BY OTHERS

3" GSC IN TRENCH, BY OTHERS
HH 3505 TYPE S1
STA 1501+30

LOOP DETECTOR, BY OTHERS

NOTE: CONTRACTOR MUST COORDINATE
LOOP DETECTOR PLACEMENT WITH
CONTRACT 62583

ATR CABINET, BY OTHERS

3" GSC ATTACHED TO STRUCTURE, BY OTHERS

3" GSC ATTACHED TO STRUCTURE (SPARE), BY OTHERS

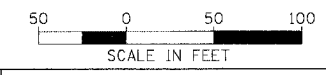
JB 3506, 10" X 8" X 4" ATS,
BY OTHERS
STA 1501+63

NOTE: PROVIDE 4' OF 2" GSC STUBOUT
FOR FUTURE CONDUIT CONNECTION
CENTER OF STUBOUT ELEV. = -6.35

MATCH LINE STA. 1494+50
SEE SHEET EI-34

MATCH LINE STA. 1506+50
SEE SHEET EI-36

- NOTES:**
1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
 2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
 3. TRENCHED CONDUITS INSTALLED IN PARALLEL ARE TO BE INSTALLED IN COMMON TRENCH.
 4. THIS SHEET ONLY DEPICTS INSTALLATION OF DETECTION/RAMP METER ELEMENTS. REFER TO SHEETS FOR OTHER SUBSYSTEMS FOR ADDITIONAL ELEMENTS IN THE AREA SHOWN.
 5. DETECTOR LOOPS INSTALLED BY OTHERS.
 6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.



EI-35

**Edwards
AND
Kelcey**

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA 1494+50 TO 1506+50

SCALE: 1"=50'
DATE: 7/7/05

DRAWN BY: CJH
CHECKED BY: M.JL

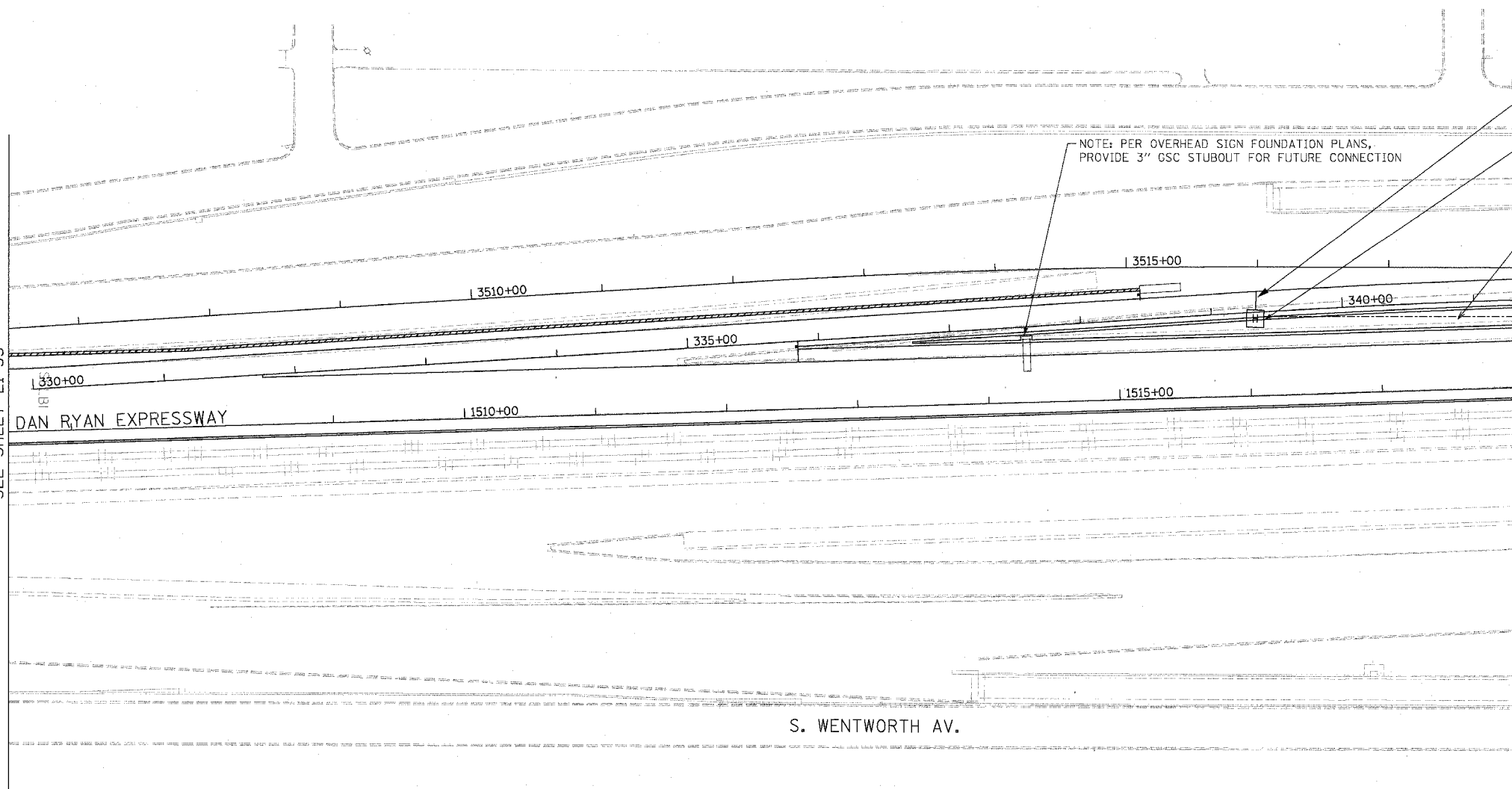
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	370
STA. 1506+50		TO STA. 1518+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302		11818, ETC, 2324.6-1PR-9		



MATCH LINE STA. 1506+50
SEE SHEET EI-35

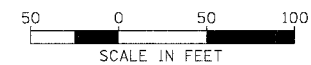


MATCH LINE STA. 1518+00
SEE SHEET EI-37

S. WENTWORTH AV.

NOTES:

1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
3. TRENCHED CONDUITS INSTALLED IN PARALLEL ARE TO BE INSTALLED IN COMMON TRENCH.
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5. DETECTOR LOOPS INSTALLED BY OTHERS.
6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.



EI-36

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FAX: (312) 251-3015
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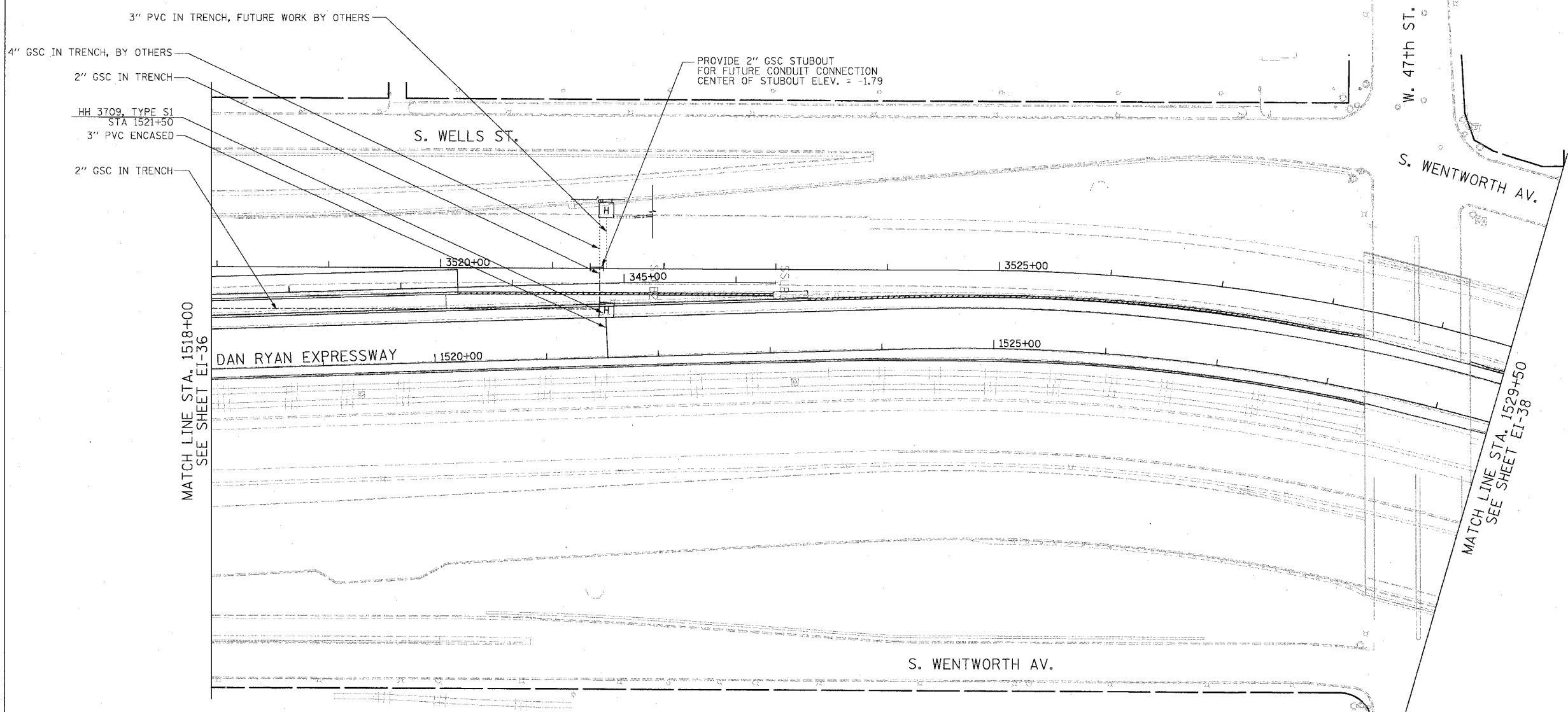
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA. 1506+50 TO 1518+00

SCALE: 1"=50'
DATE: 7/7/05
DRAWN BY: CJH
CHECKED BY: MJL

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90 *		COOK	598	371
STA. 1518+00	TO STA. 1529+50			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302 * (1818, ETC, 2324.6-1P)R-9				



- NOTES:
1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
 2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
 3. TRENCHED CONDUITS INSTALLED IN PARALLEL ARE TO BE INSTALLED IN COMMON TRENCH.
 4. THIS SHEET ONLY DEPICTS INSTALLATION OF DETECTION/RAMP METER ELEMENTS. REFER TO SHEETS FOR OTHER SUBSYSTEMS FOR ADDITIONAL ELEMENTS IN THE AREA SHOWN.
 5. DETECTOR LOOPS INSTALLED BY OTHERS.
 6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.



EI-37

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 CHICAGO, IL 60606
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 FAX: (312) 251-3015
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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
 31ST STREET TO 71ST STREET
 SB EXPRESS LANE RECONSTRUCTION
 ELECTRICAL INFRASTRUCTURE PLAN
 SOUTHBOUND STA 1518+00 TO 1529+50

SCALE: 1"=50'
 DATE: 7/7/05

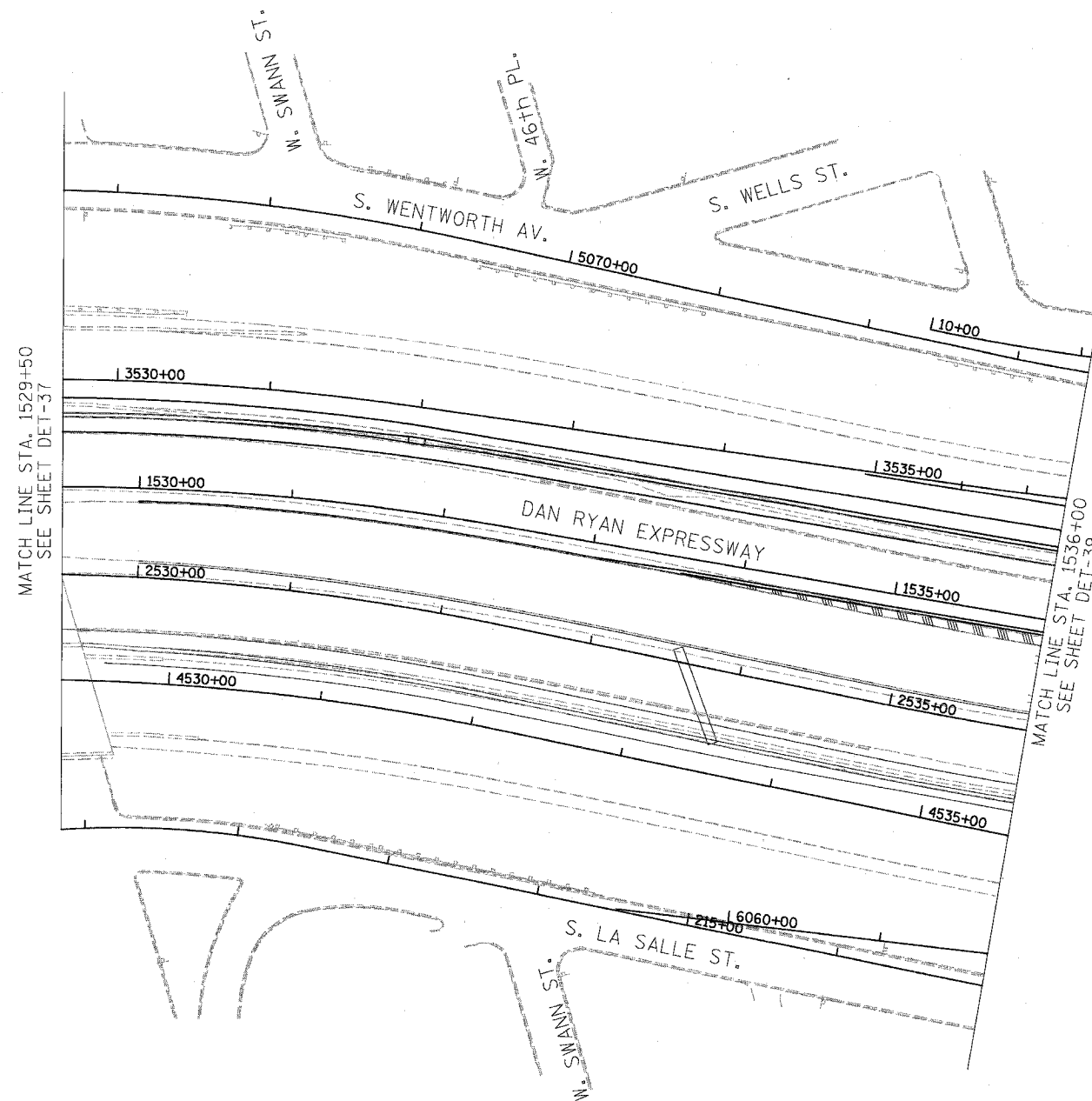
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 CHECKED BY: MJL

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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	372
STA.	1529+50	TO STA.	1536+00	
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302	*1818, ETC.	2324.6-1PR-9		



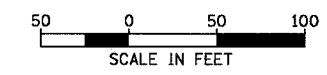
NO PROPOSED WORK ON THIS SHEET



NOTES:

1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
3. TRENCHED CONDUITS INSTALLED IN PARALLEL ARE TO BE INSTALLED IN COMMON TRENCH.
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5. DETECTOR LOOPS INSTALLED BY OTHERS.
6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.

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Chicago, Illinois
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EI-38

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA. 1529+50 TO STA. 1536+00
SCALE: 1"=50'
DATE: 07/07/05
DRAWN BY: TER
CHECKED BY: JDC

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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90 *		COOK	598	373
STA. 1536+00	TO STA. 1548+00			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302 *1818, ETC, 2324.6-1PR-9				

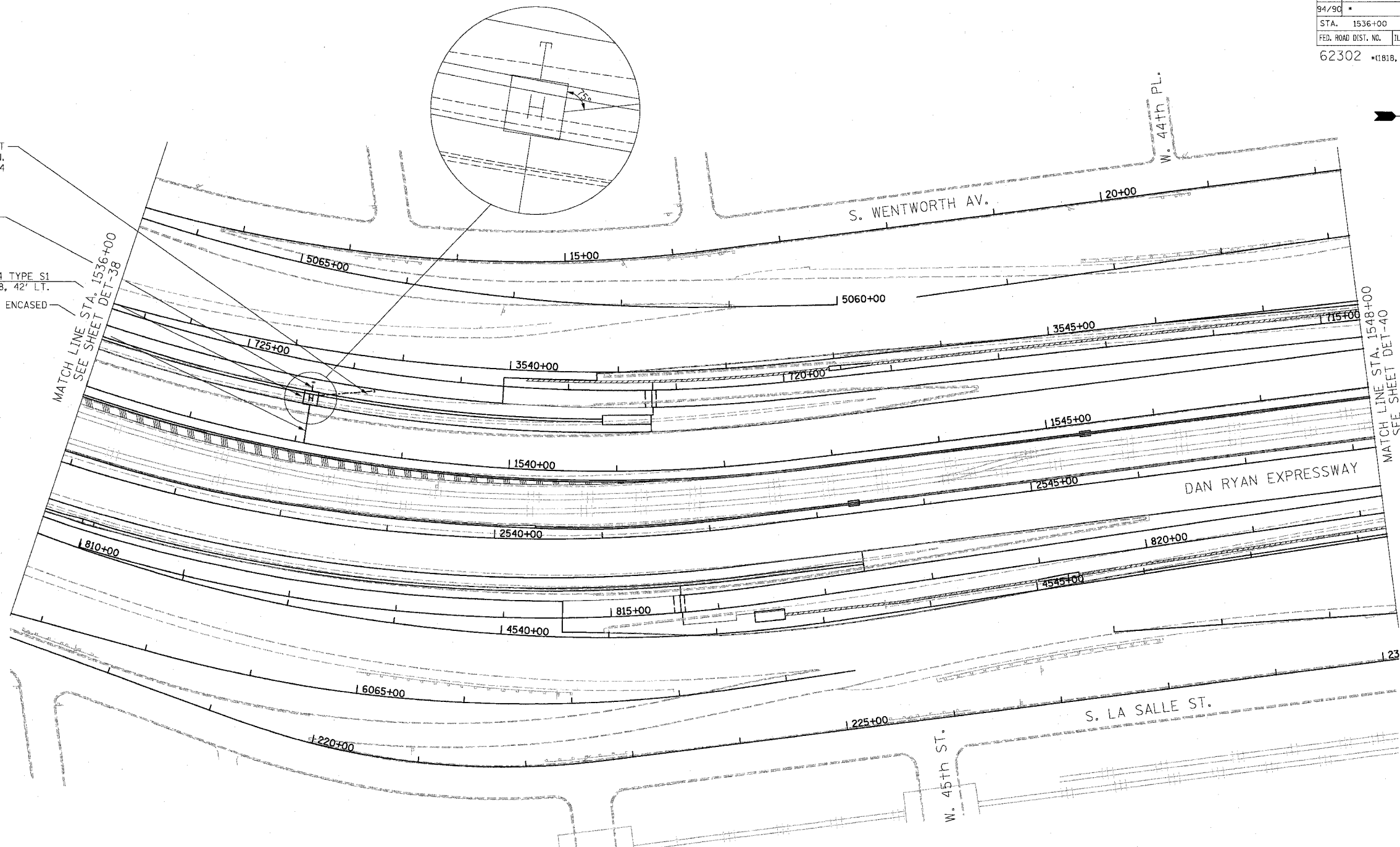


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NOTE: PROVIDE 60' OF 2" GSC STUBOUT FOR FUTURE CONDUIT CONNECTION. CENTER OF STUBOUT ELEV. = -2.24

NOTE: PROVIDE 16' OF 2" GSC STUBOUT FOR FUTURE CONDUIT CONNECTION. CENTER OF STUBOUT ELEV. = -2.84

HH 3904 TYPE S1
STA 1538+08, 42' LT.
3" PVC ENCASED

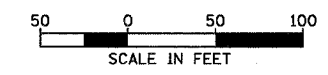


MATCH LINE STA. 1536+00
SEE SHEET DET-38

MATCH LINE STA. 1548+00
SEE SHEET DET-40

- NOTES:
1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
 2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
 3. TRENCHED CONDUITS INSTALLED IN PARALLEL ARE TO BE INSTALLED IN COMMON TRENCH.
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 5. DETECTOR LOOPS INSTALLED BY OTHERS.
 6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.

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EI-39

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA. 1536+00 TO STA. 1548+00

SCALE: 1"=50'
DATE: 07/07/05

DRAWN BY: TER
CHECKED BY: JDC

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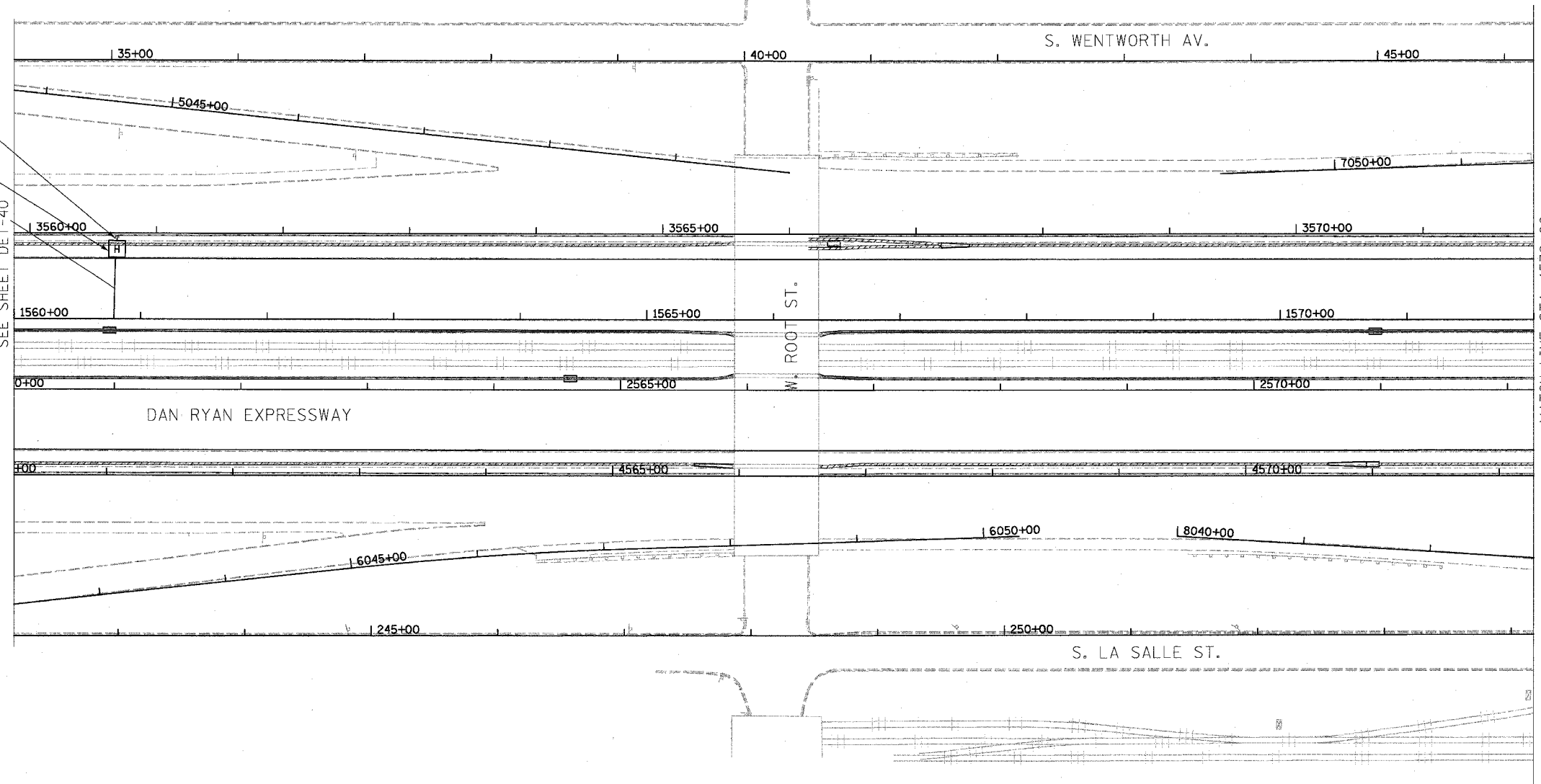
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	375
STA. 1560+00	TO STA. 1572+00			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302	*1818, ETC, 2324.6-1PIR-9			



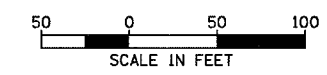
NOTE: PROVIDE 12' OF 2" GSC STUBOUT FOR FUTURE CONDUIT CONNECTION. CENTER OF STUBOUT ELEV. = -4.78

HH 4103, TYPE S1
STA 1560+79, 54' LT.
3" PVC ENCASED

MATCH LINE STA. 1560+00
SEE SHEET DET-40



MATCH LINE STA. 1572+00
SEE SHEET DET-42



- NOTES:
1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
 2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
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 5. DETECTOR LOOPS INSTALLED BY OTHERS.
 6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA. 1560+00 TO 1572+00

SCALE: 1"=50'
DATE: 07/07/05

DRAWN BY: TER
CHECKED BY: JDC

EI-41

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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	376
STA. 1572+00		TO STA. 1584+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302	*1818, ETC,	2324.6-1PR-9		

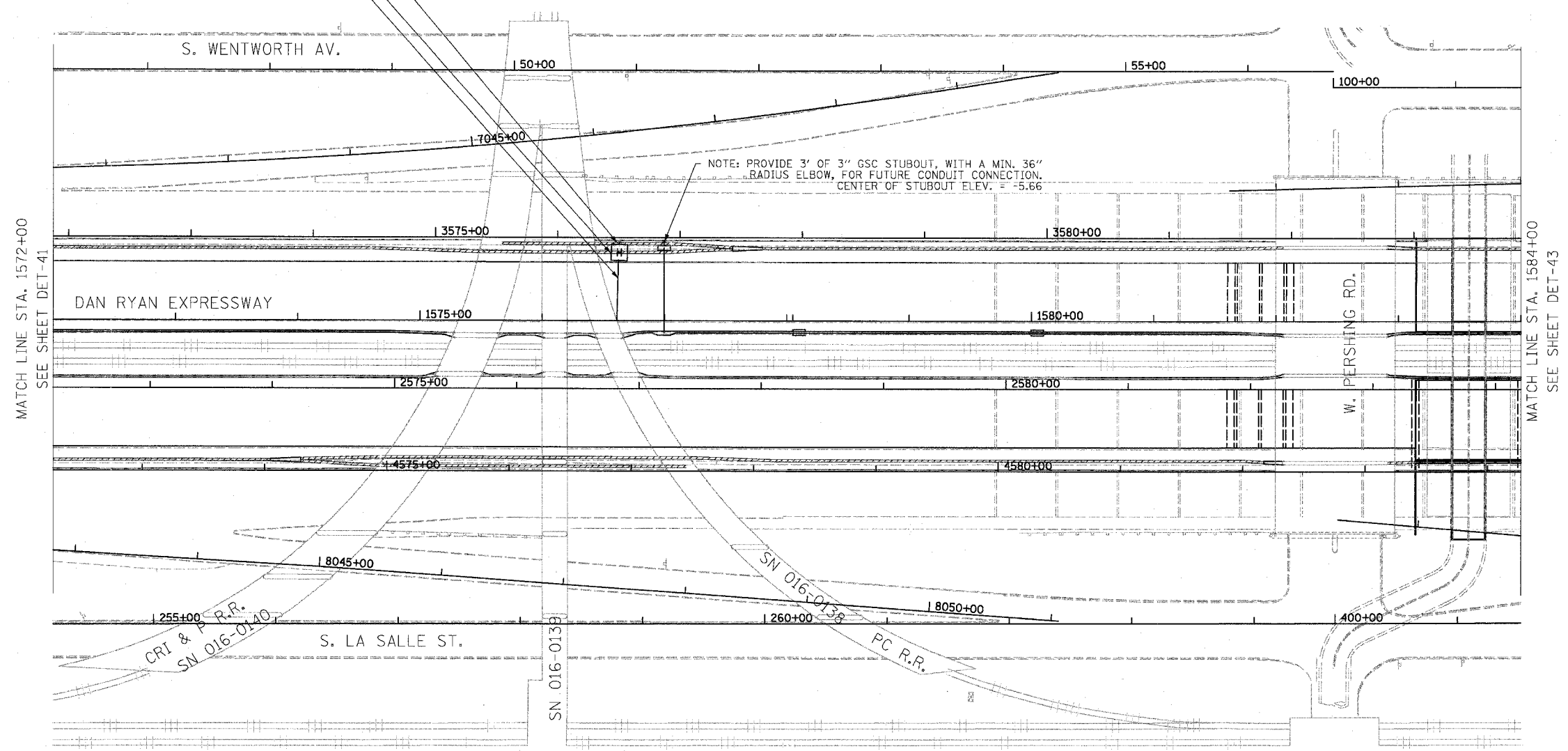


NOTE: PROVIDE 12' OF 2" GSC STUBOUT FOR FUTURE CONDUIT CONNECTION. CENTER OF STUBOUT ELEV. = -4.21

HH 4203, TYPE S1
STA. 1576+61, 54' LT.

3" PVC ENCASED

NOTE: PROVIDE 3' OF 3" GSC STUBOUT, WITH A MIN. 36" RADIUS ELBOW, FOR FUTURE CONDUIT CONNECTION. CENTER OF STUBOUT ELEV. = -5.66

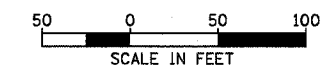


MATCH LINE STA. 1572+00
SEE SHEET DET-41

MATCH LINE STA. 1584+00
SEE SHEET DET-43

NOTES:

1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
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5. DETECTOR LOOPS INSTALLED BY OTHERS.
6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.



EI-42

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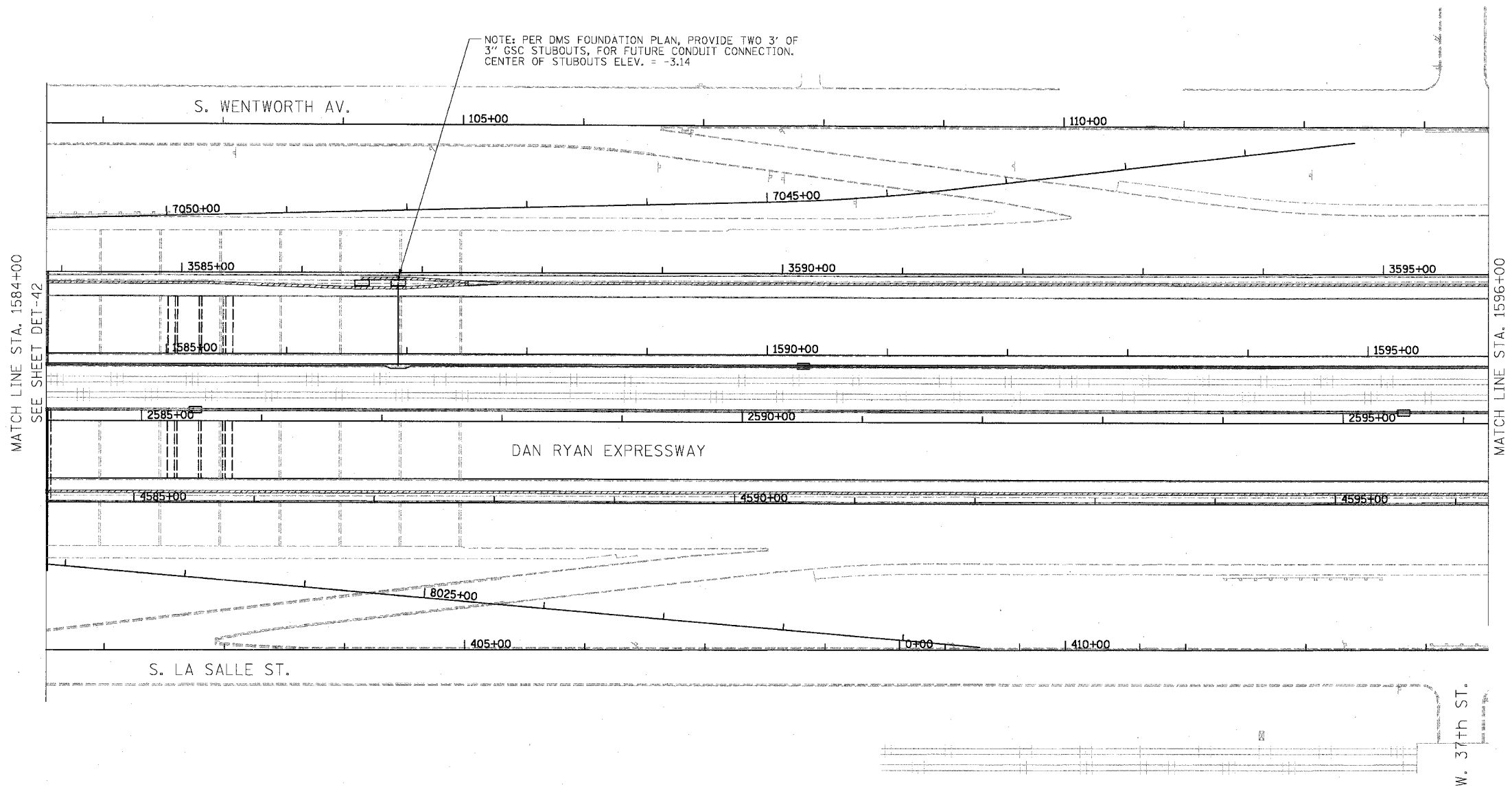
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA. 1572+00 TO 1584+00

SCALE: 1"=50'
DATE: 07/07/05
DRAWN BY: TER
CHECKED BY: JDC

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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90 *		COOK	598	377
STA. 1584+00	TO STA. 1596+00			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



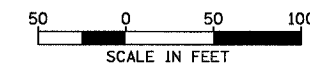
MATCH LINE STA. 1584+00
SEE SHEET DET-42

MATCH LINE STA. 1596+00
SEE SHEET DET-44

W. 37th ST.

NOTES:

1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
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5. DETECTOR LOOPS INSTALLED BY OTHERS.
6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.



EI-43

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REVISIONS	
NAME	DATE

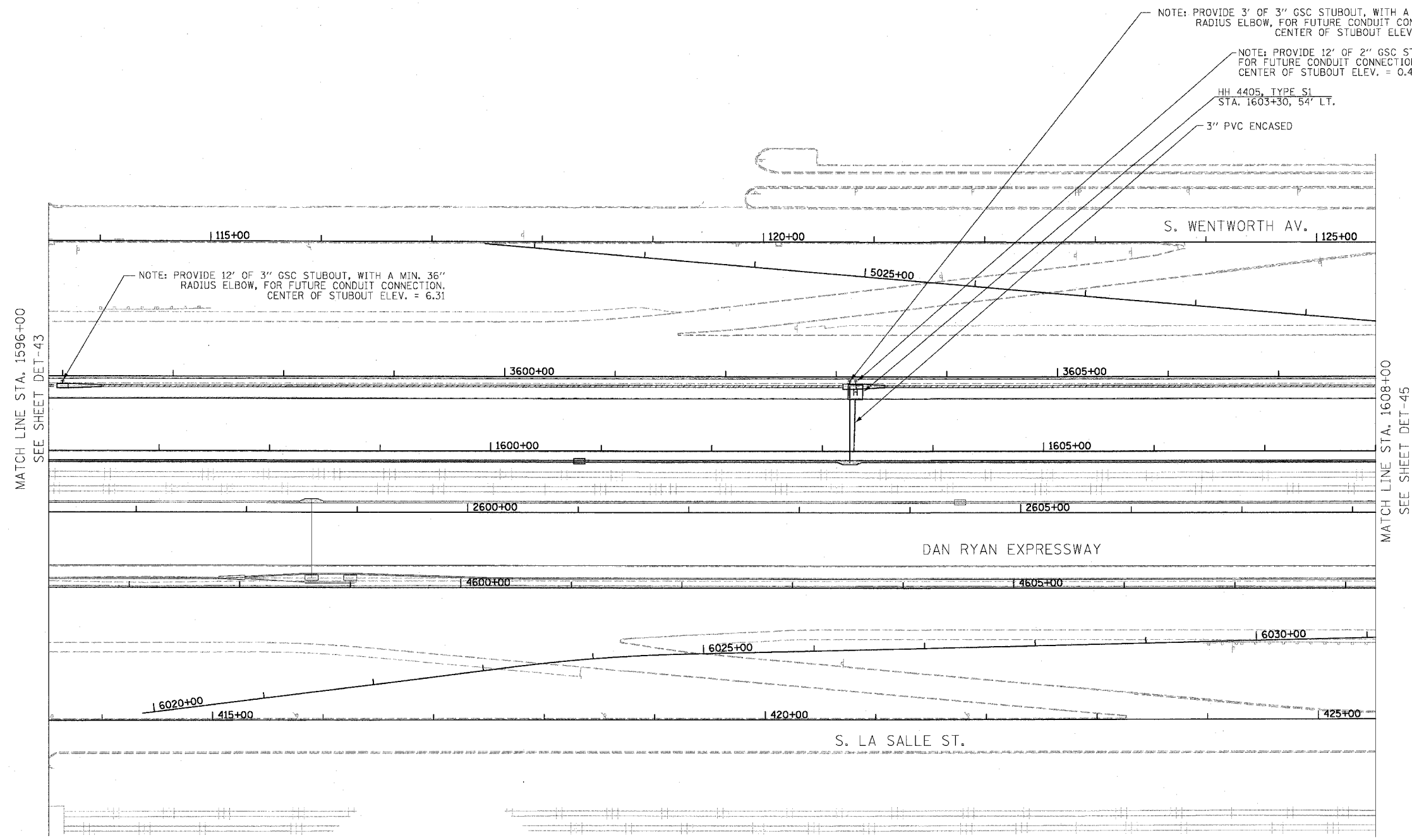
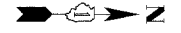
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA. 1584+00 TO STA. 1596+00

SCALE: 1"=50'
DATE: 07/07/05

DRAWN BY: TER
CHECKED BY: JDC

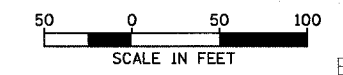
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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	378
STA. 1596+00	TO STA. 1608+00			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302 • (1818, ETC, 2324.6-1PIR-9				



NOTES:

1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
3. TRENCHED CONDUITS INSTALLED IN PARALLEL ARE TO BE INSTALLED IN COMMON TRENCH.
4. THIS SHEET ONLY DEPICTS INSTALLATION OF DETECTION/RAMP METER ELEMENTS. REFER TO SHEETS FOR OTHER SUBSYSTEMS FOR ADDITIONAL ELEMENTS IN THE AREA SHOWN.
5. DETECTOR LOOPS INSTALLED BY OTHERS.
6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.



BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
www.bbandainc.com

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA. 1596+00 TO STA. 1608+00

SCALE: 1"=50'
DATE: 07/07/05

DRAWN BY: TER
CHECKED BY: JDC

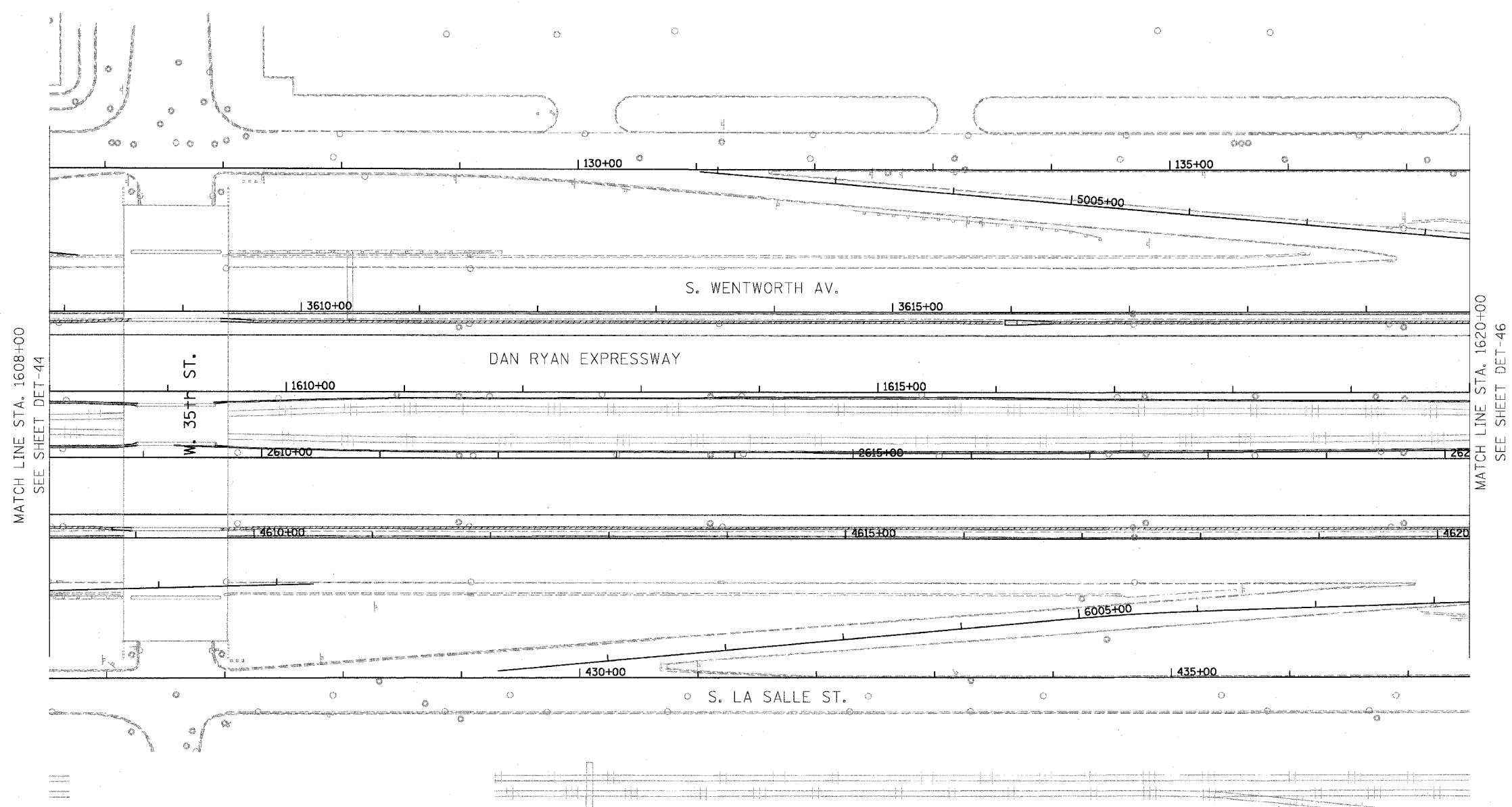
EI-44

6/27/2005 6:44/PM

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	379
STA. 1608+00	TO STA. 1620+00			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302	*(1818, ETC, 2324.6-IPR-9			

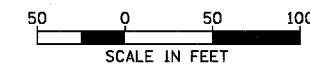


NO PROPOSED WORK ON THIS SHEET



MATCH LINE STA. 1608+00
SEE SHEET DET-44

MATCH LINE STA. 1620+00
SEE SHEET DET-46



EI-45

- NOTES:
1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
 2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
 3. TRENCHED CONDUITS INSTALLED IN PARALLEL ARE TO BE INSTALLED IN COMMON TRENCH.
 4. THIS SHEET ONLY DEPICTS INSTALLATION OF DETECTION/RAMP METER ELEMENTS. REFER TO SHEETS FOR OTHER SUBSYSTEMS FOR ADDITIONAL ELEMENTS IN THE AREA SHOWN.
 5. DETECTOR LOOPS INSTALLED BY OTHERS.
 6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.

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CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
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REVISIONS	
NAME	DATE

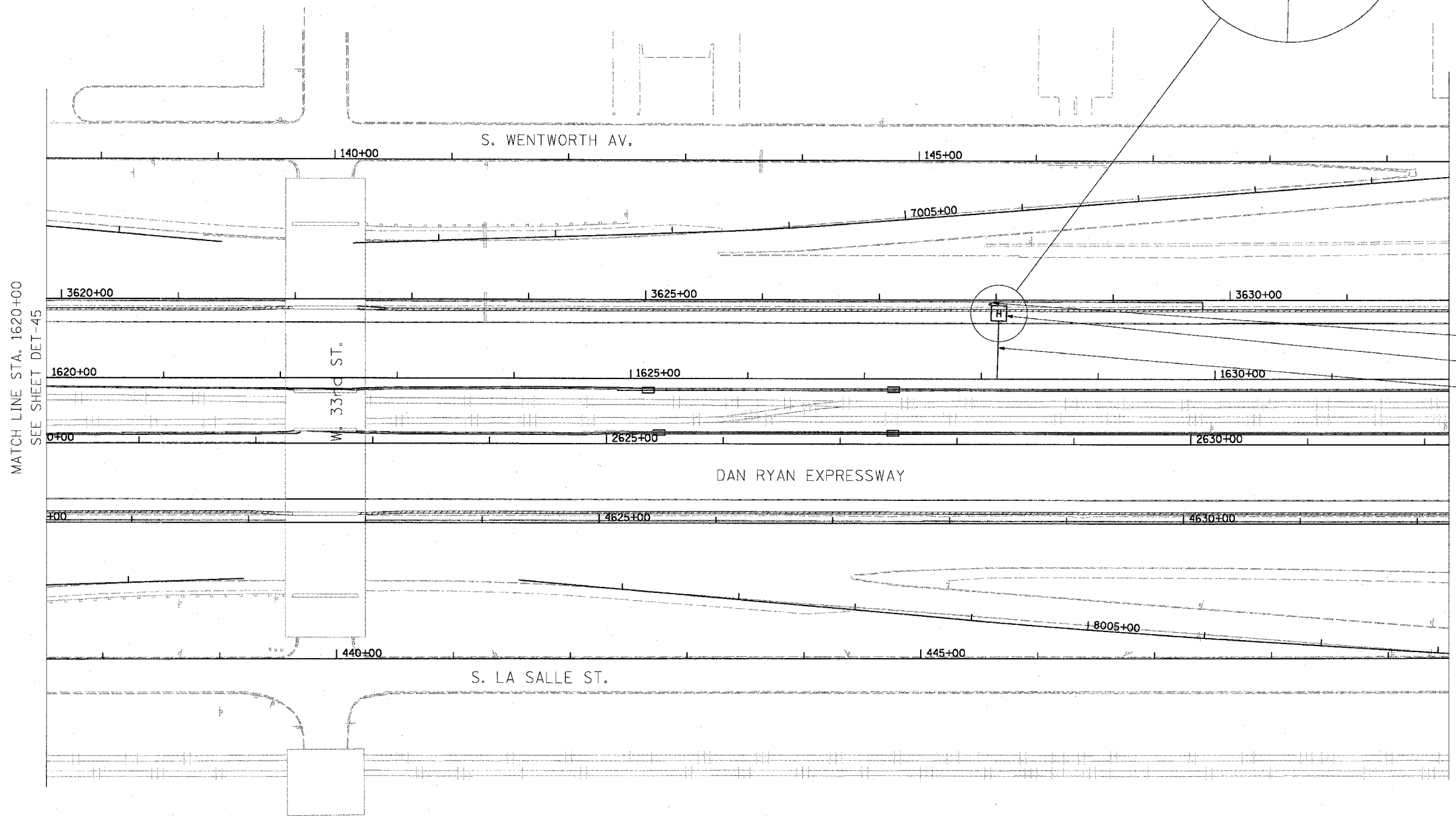
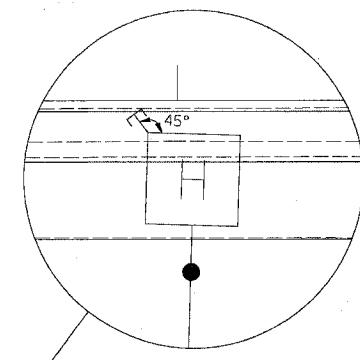
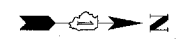
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA. 1608+00 TO STA. 1620+00

SCALE: 1"=50'
DATE: 07/07/05

DRAWN BY: TER
CHECKED BY: JDC

6/27/2005 6:46:2 PM

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	380
STA. 1620+00	TO STA. 1632+00			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302	*1818, ETC, 2324.6-1PR-9			



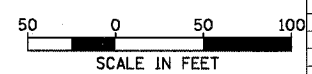
MATCH LINE STA. 1620+00
SEE SHEET DET-45

MATCH LINE STA. 1632+00
END OF ELECTRICAL INFRASTRUCTURE WORK

NOTE: PROVIDE 14' OF 2" GSC STUBOUT FOR FUTURE CONDUIT CONNECTION. CENTER OF STUBOUT ELEV. = -3.70
HH 4607 TYPE S1
STA 1628+13, 54' LT.
3" PVC ENCASED

- NOTES:**
1. SEE DRAWING EI-100 AND EI-101 FOR ELECTRICAL SYSTEMS AND ABBREVIATIONS.
 2. UNLESS OTHERWISE STATED, ALL NOTED CABLE TO BE FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT.
 3. TRENCHED CONDUITS INSTALLED IN PARALLEL ARE TO BE INSTALLED IN COMMON TRENCH.
 4. THIS SHEET ONLY DEPICTS INSTALLATION OF DETECTION/RAMP METER ELEMENTS. REFER TO SHEETS FOR OTHER SUBSYSTEMS FOR ADDITIONAL ELEMENTS IN THE AREA SHOWN.
 5. DETECTOR LOOPS INSTALLED BY OTHERS.
 6. REFER TO HANDHOLE DETAILS. SEE DRAWING DT-29.

BOWMAN, BARRETT & ASSOCIATES INC
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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
ELECTRICAL INFRASTRUCTURE PLAN
SOUTHBOUND STA. 1620+00 TO STA. 1632+00

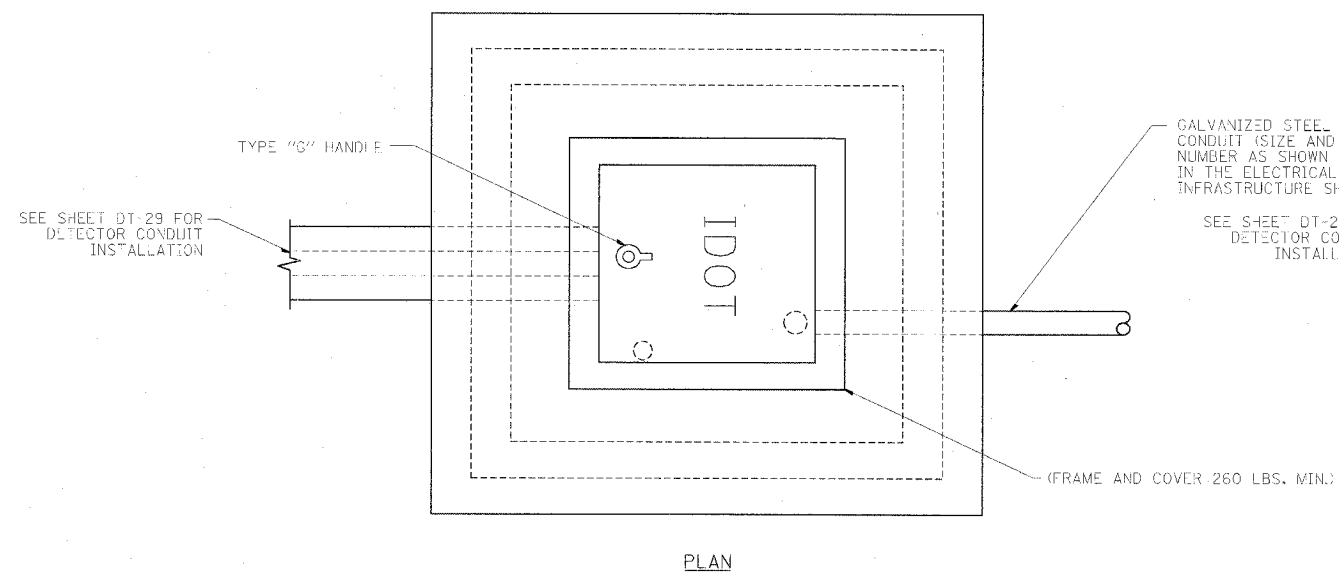
SCALE: 1"=50'
DATE: 07/07/05

DRAWN BY: TER
CHECKED BY: JDC

EI-46

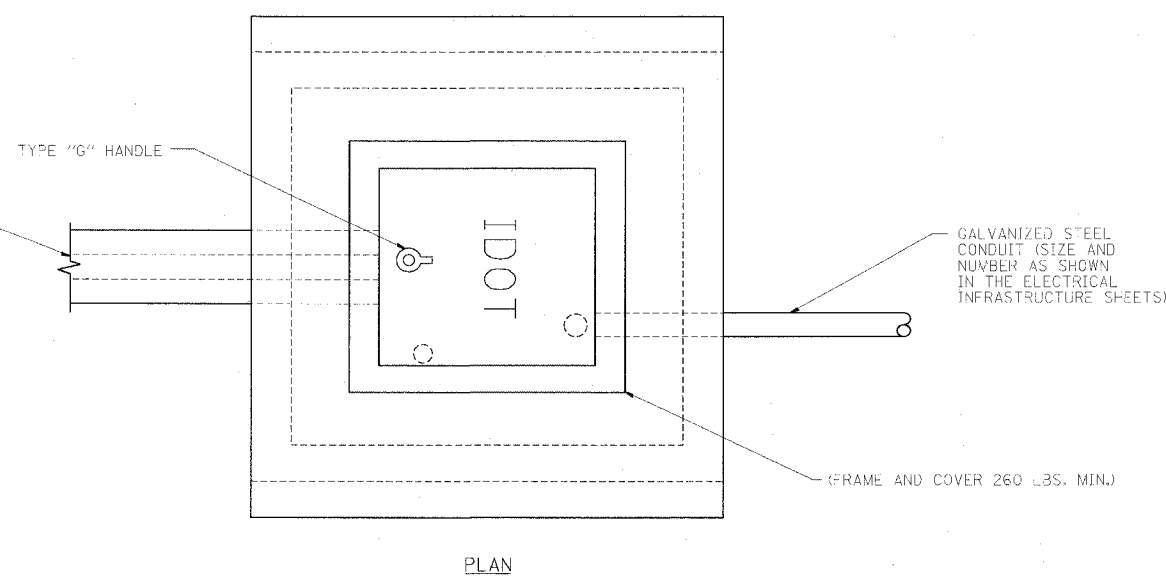
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	382
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62302	11816, ETC, 2324.6-1PR-9			



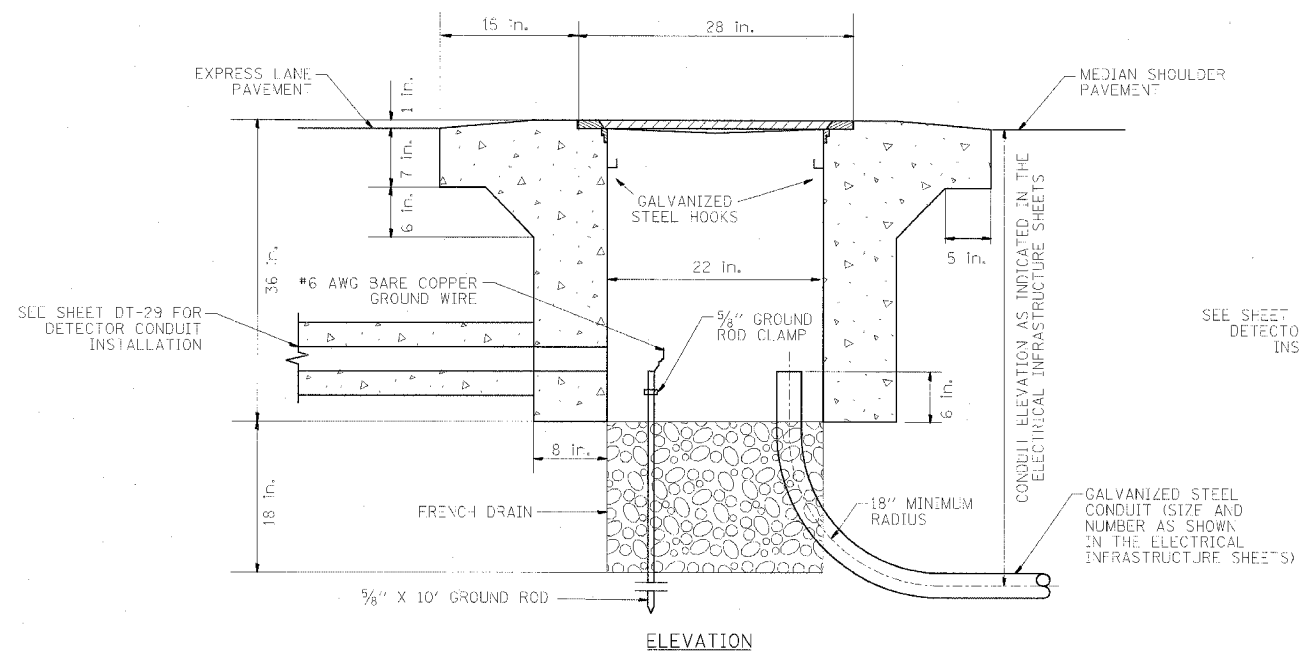
PLAN

GALVANIZED STEEL CONDUIT (SIZE AND NUMBER AS SHOWN IN THE ELECTRICAL INFRASTRUCTURE SHEETS)
SEE SHEET DT-29 FOR DETECTOR CONDUIT INSTALLATION



PLAN

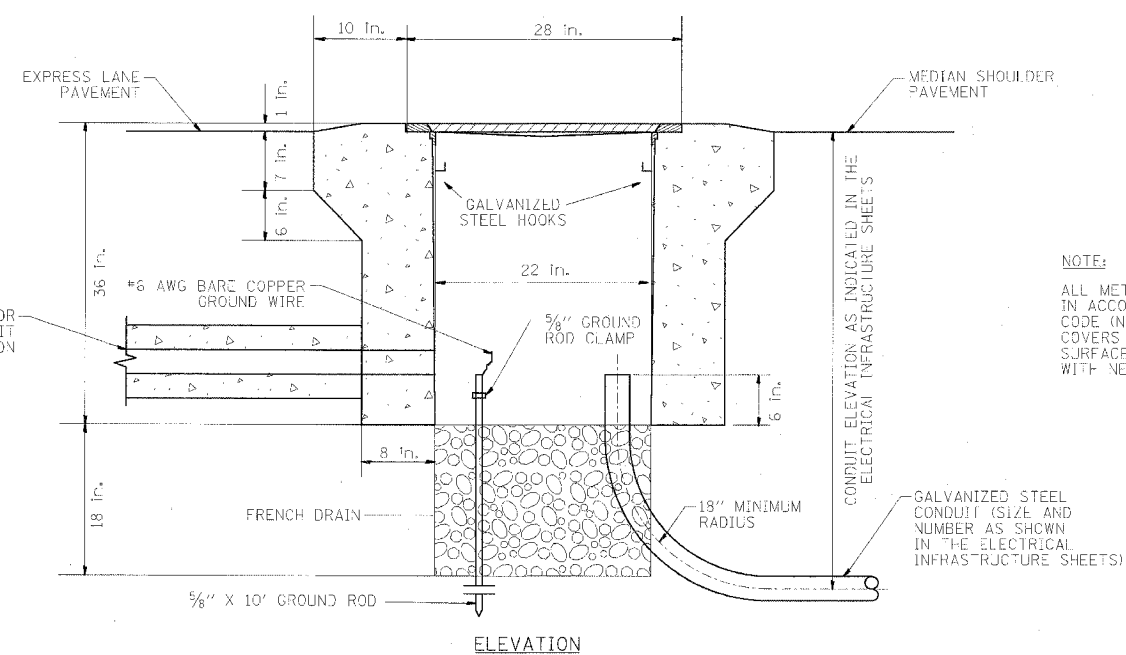
GALVANIZED STEEL CONDUIT (SIZE AND NUMBER AS SHOWN IN THE ELECTRICAL INFRASTRUCTURE SHEETS)



ELEVATION

PC CONCRETE - HEAVY DUTY HANDHOLE

SEE SHEET DT-29 FOR DETECTOR CONDUIT INSTALLATION



ELEVATION

PC CONCRETE - HEAVY DUTY HANDHOLE (SPECIAL)

NOTE:
ALL METALLIC ELEMENTS SHALL BE GROUND IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC), SECTION 250, GROUNDING, METAL COVERS AND OTHER EXPOSED CONDUCTIVE SURFACES SHALL BE BONDED IN ACCORDANCE WITH NEC ARTICLE 250.96 (A).

Edwards AND Kelcey
ONE NORTH FRANKLIN
CHICAGO, IL 60606
PHONE: (312) 251-3000
FAX: (312) 251-3015
WEB: WWW.EKCORP.COM

REVISIONS	
NAME	DATE

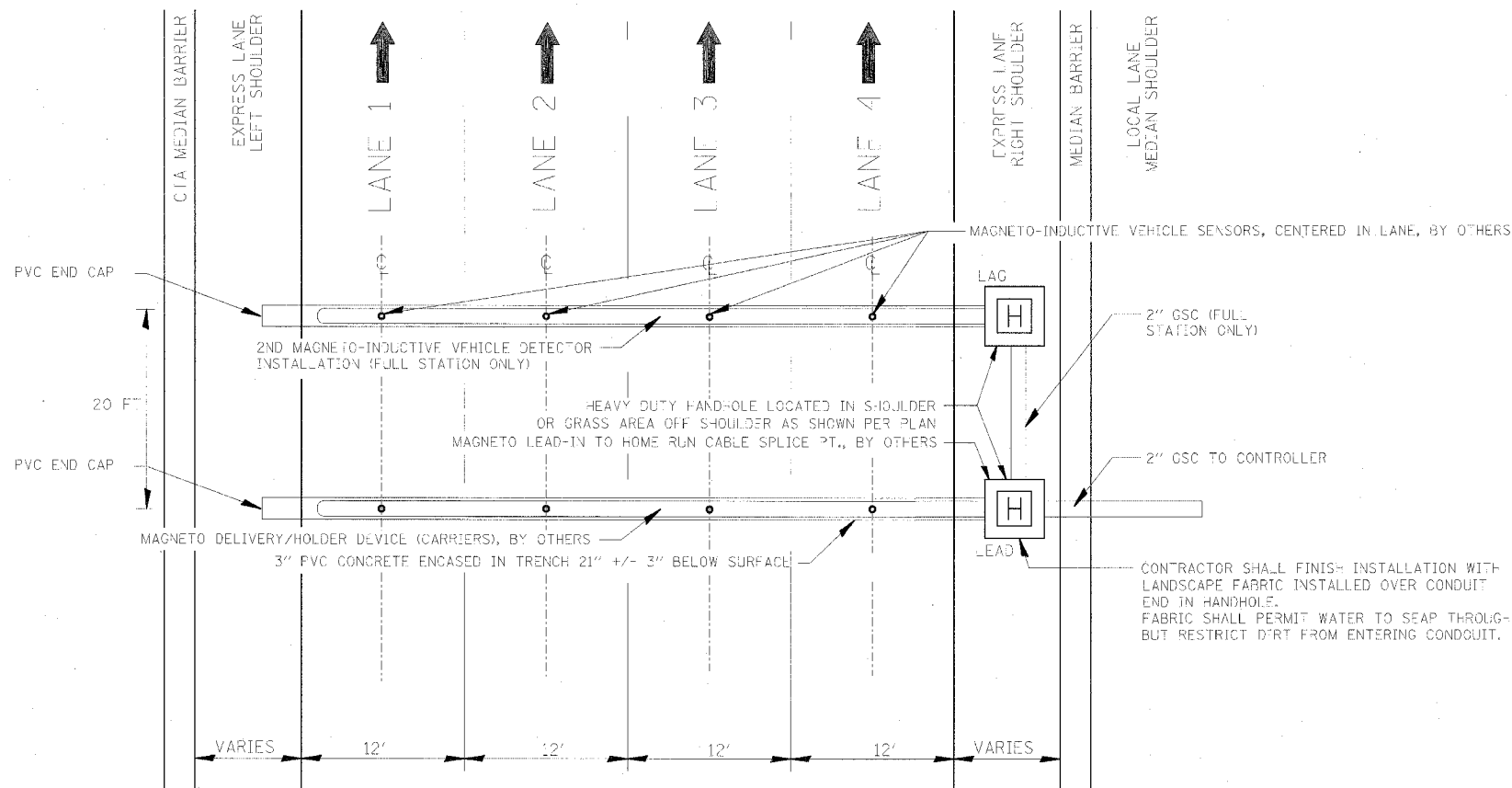
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
PC CONCRETE - HEAVY DUTY HANDHOLE DETAIL (TYPE S1)
SCALE: NTS
DATE: 7/7/05
DRAWN BY: CJH
CHECKED BY: MJL

DT-46

06/24/2005 12:05:42 PM

NOTES:

1. ANY DEVIATION IN CONDUIT ALIGNMENT SHALL BE LESS THAN 1/4 IN. PER FT.
2. CONDUIT END CAP TO BE PRESS FITTED (NO ADHESIVE). 3/8 IN. DRAINAGE HOLE TO BE DRILLED IN END CAP. HOLE TO BE POSITIONED AT BOTTOM.
3. CONDUIT TO EXTEND APPROXIMATELY 3 IN. INTO HANDHOLE.
4. FOR 3" PVC CONCRETE ENCASED IN TRENCH DETAIL, SEE SHEET DT-29. FOR HANDHOLE DETAIL, SEE SHEET DT-46.



DAN RYAN TYPICAL 4 LANE CROSS SECTION WITH NON-INVASIVE MAGNETO-INDUCTIVE VEHICLE SENSOR (PROBE) INSTALLED IN ALL LANES

DT-24

REVISIONS	
NAME	DATE

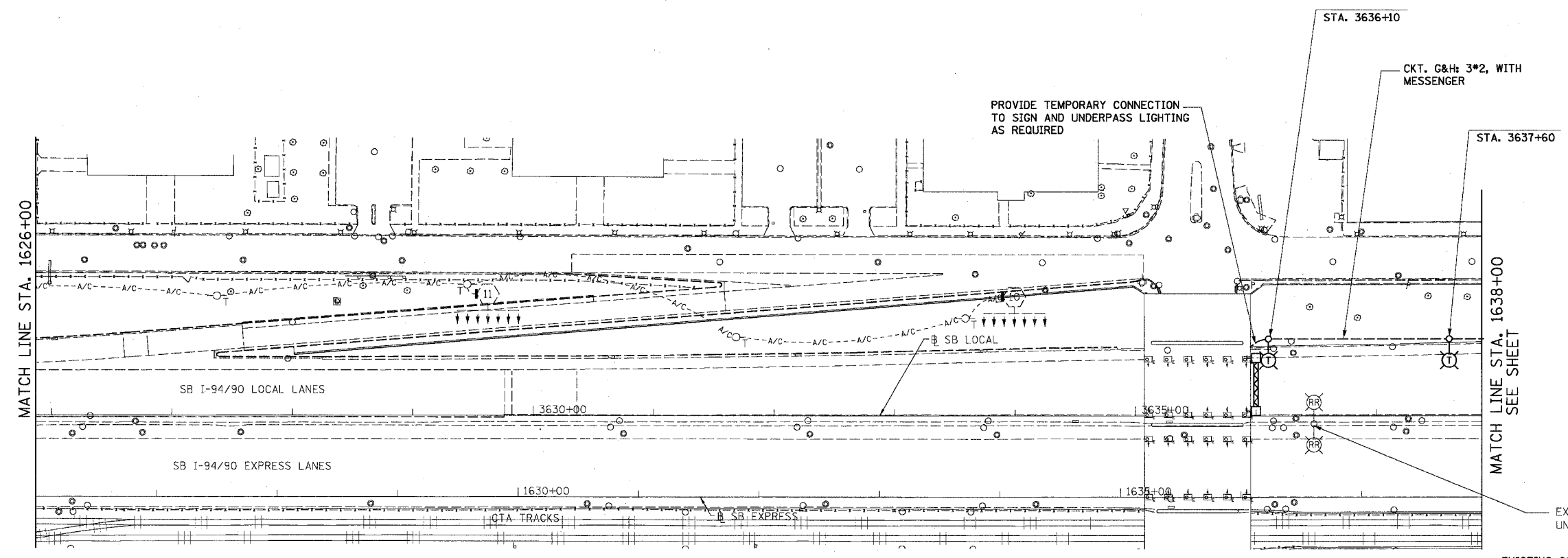
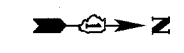
ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
 31ST STREET TO 71ST STREET
 SB EXPRESS LANE RECONSTRUCTION
 TYPICAL MULTIPLE MAGNETO-INDUCTIVE
 VEHICLE SENSOR (MICROLOOP) - FULL
 INSTALLATION/SPEED MEASURING LAYOUT

SCALE: NTS
 DATE: 7/7/05

DRAWN BY: NB
 CHECKED BY: CTC

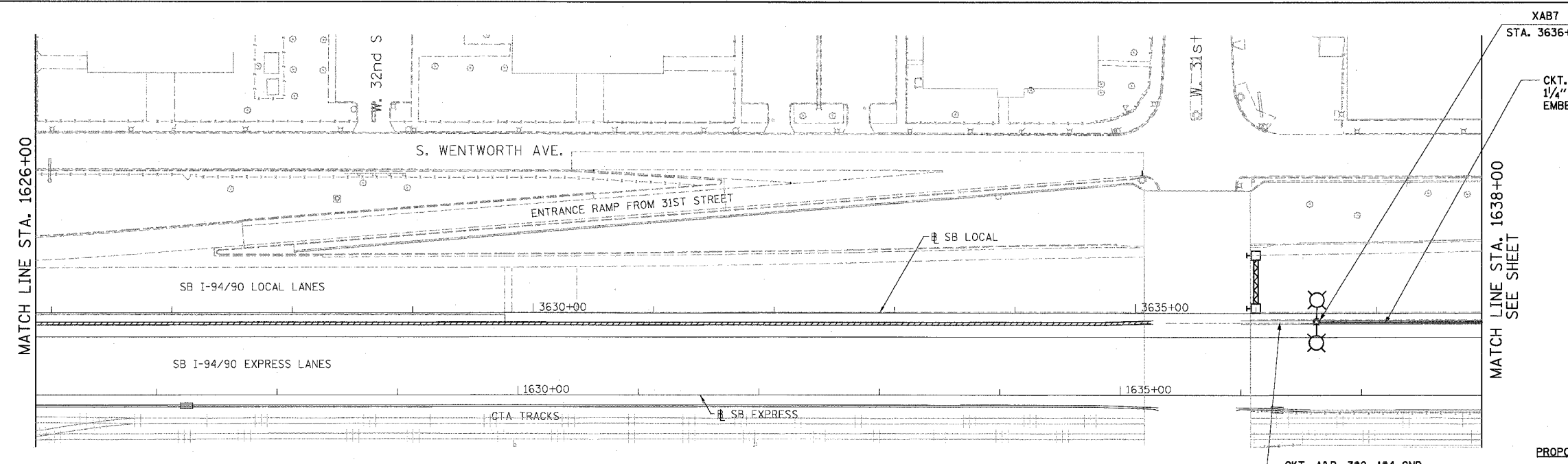
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	384
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT		

62302 *1818, ETC, 2324.6-1PR-9



- NOTES:**
- TEMPORARY LIGHTING UNITS SHALL BE SET BACK 20 FT FROM EDGE OF PAVEMENT.
 - EXISTING LIGHTING UNITS SHALL BE REMOVED AND STORED.
 - SEE DRAWINGS EI-100 AND EI-101 FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS.

EXISTING CONDITIONS AND REMOVAL

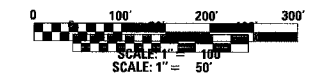


- NOTES:**
- EXISTING LIGHTING UNITS SHALL BE RE-INSTALLED ON THE PROPOSED MEDIAN WALL.

PROPOSED CONDITIONS

EL-1

K&E KAM ENGINEERING, INC.
CONSULTING ENGINEERS
707A Davis Road, Suite 205
Elgin, Illinois 60123-1369



REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
EXISTING AND PROPOSED LIGHTING PLAN

SCALE: DATE: 06-03-05

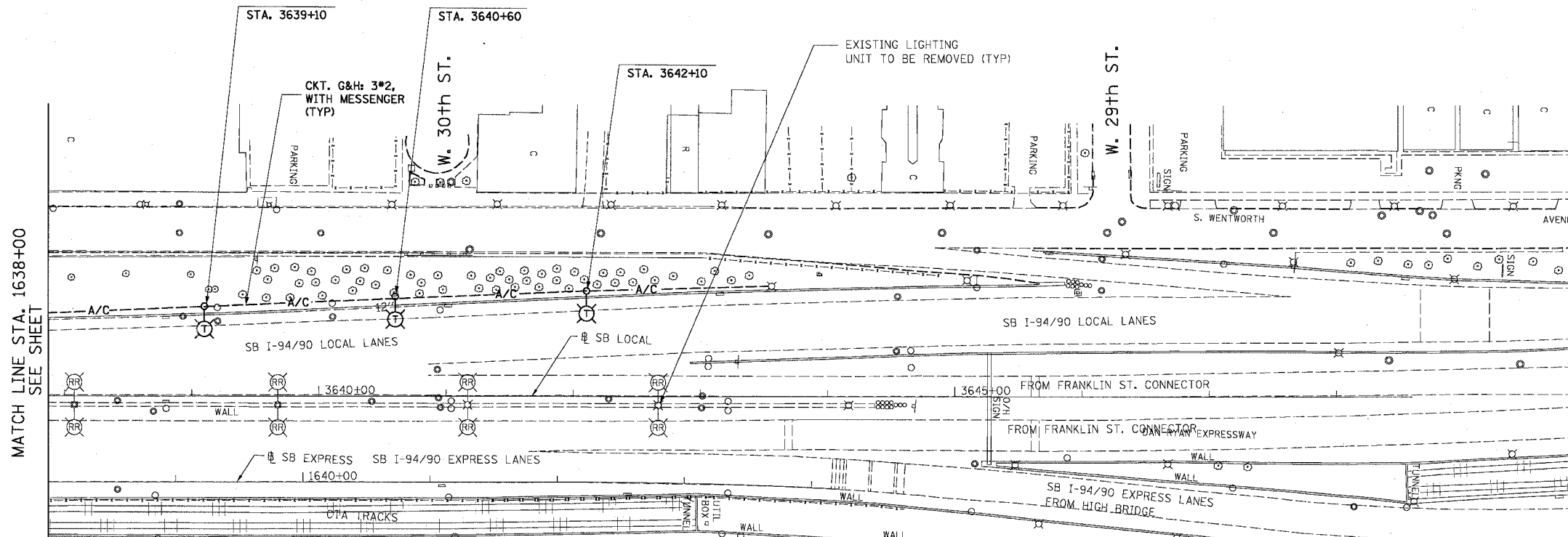
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CHECKED BY: RC

7-2-2005 7:27:06 PM

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	385
STA.	TO STA.			
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

62302 • (1818, ETC., 2324.6-1P)R-9

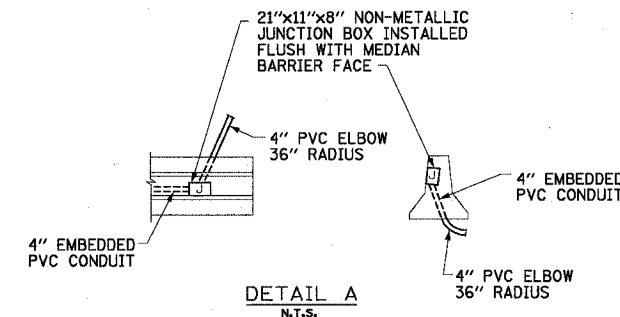
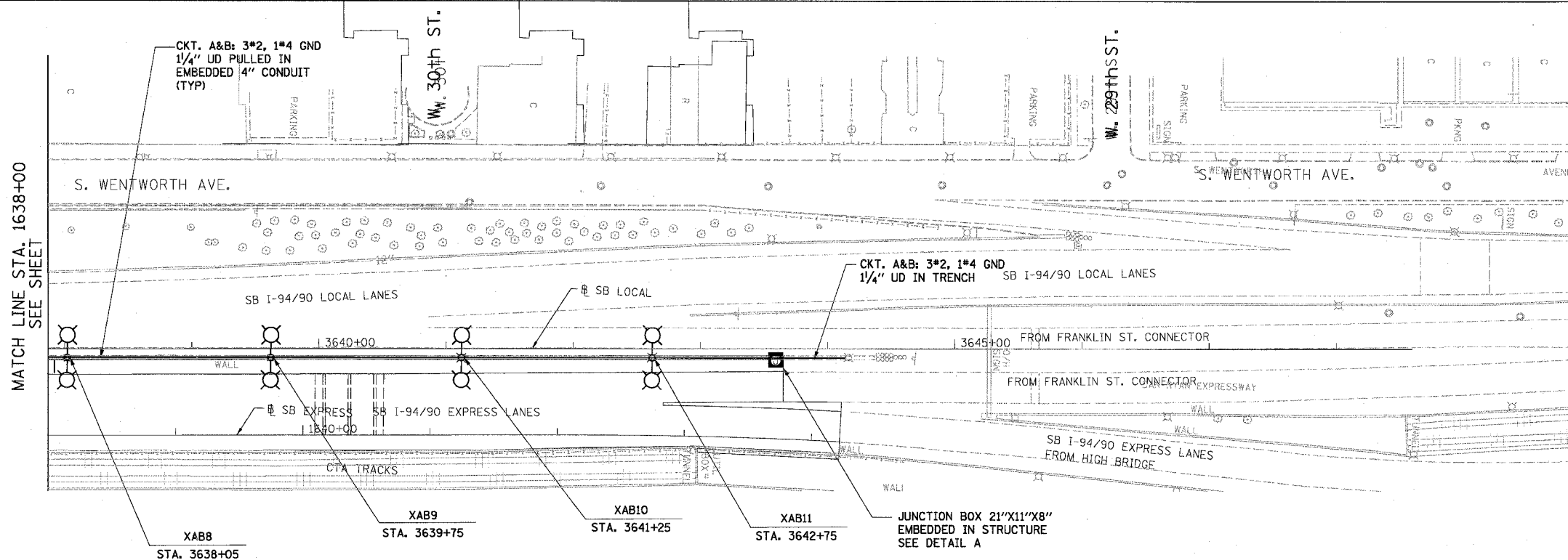
14-650-0000 (M)NS/SHEET 15/660-15/249



NOTES:

1. TEMPORARY LIGHTING UNITS SHALL BE SET BACK 20 FT FROM EDGE OF PAVEMENT.
2. EXISTING LIGHTING UNITS SHALL BE REMOVED AND STORED.
3. SEE DRAWINGS EI-100 AND EI-101 FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS.

EXISTING CONDITIONS AND REMOVAL

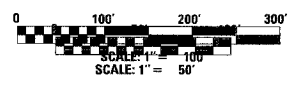


PROPOSED CONDITIONS

EL-2

KAM ENGINEERING, INC.
CONSULTING ENGINEERS
707A Davis Road, Suite 205
Evanston, Illinois 60231-1369

- NOTE:**
1. EXISTING LIGHTING UNITS SHALL BE RE-INSTALLED ON THE PROPOSED MEDIAN WALL.



REVISIONS	
NAME	DATE

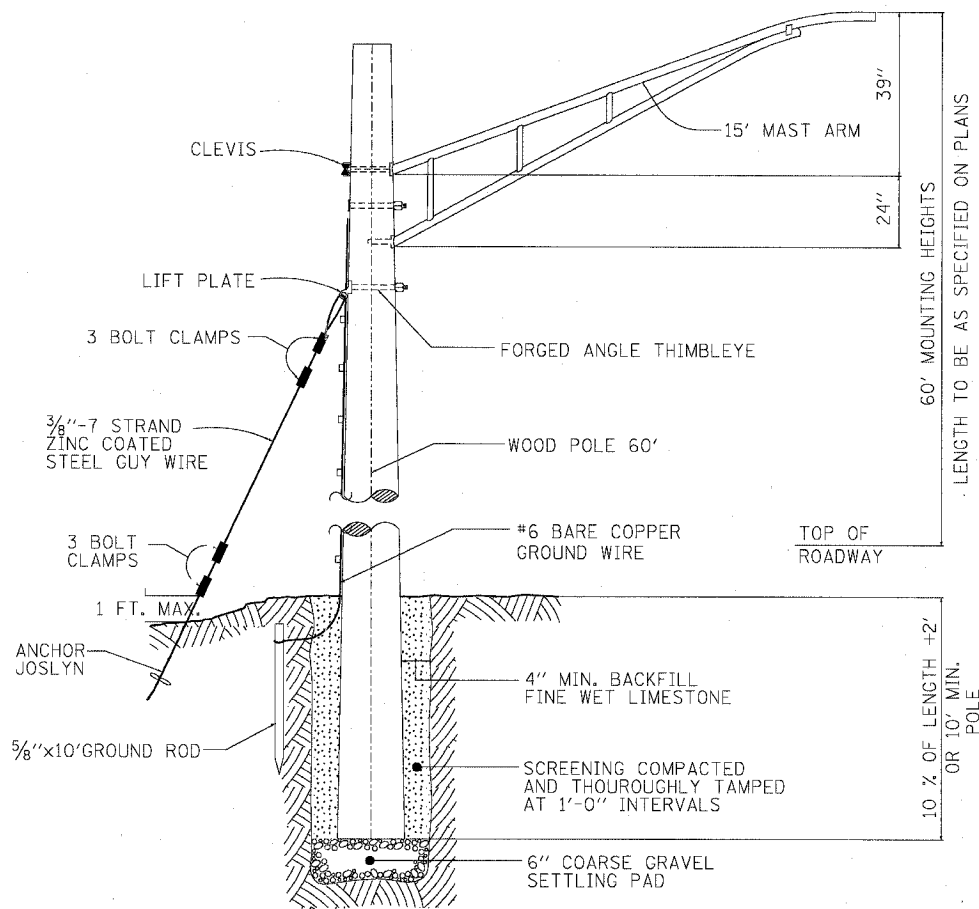
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
3 EXISTING AND PROPOSED LIGHTING PLAN

SCALE: DATE: 06-03-05.

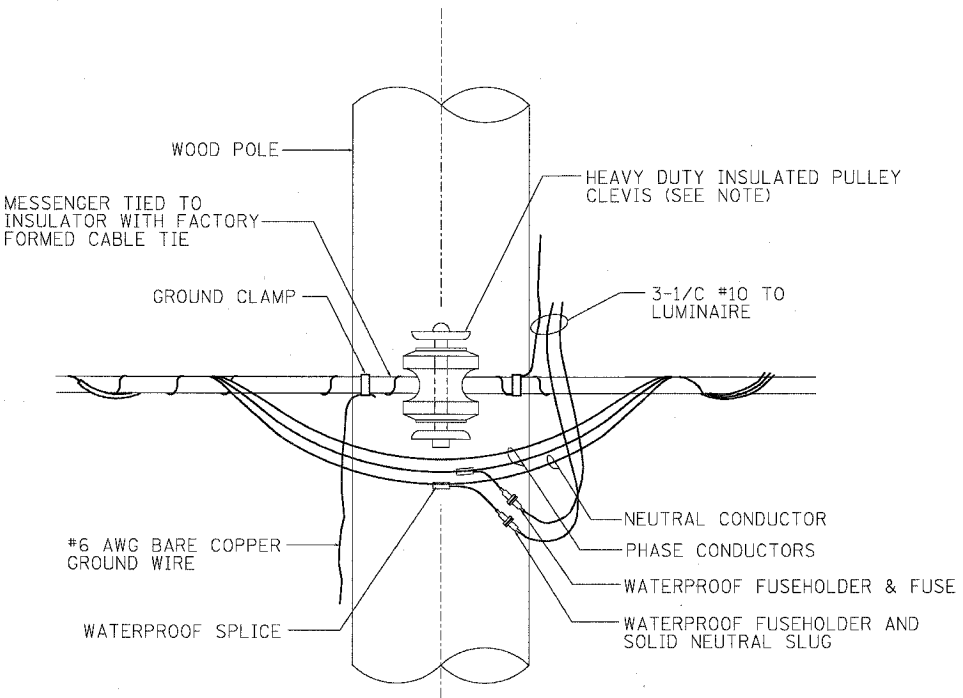
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CHECKED BY: RC

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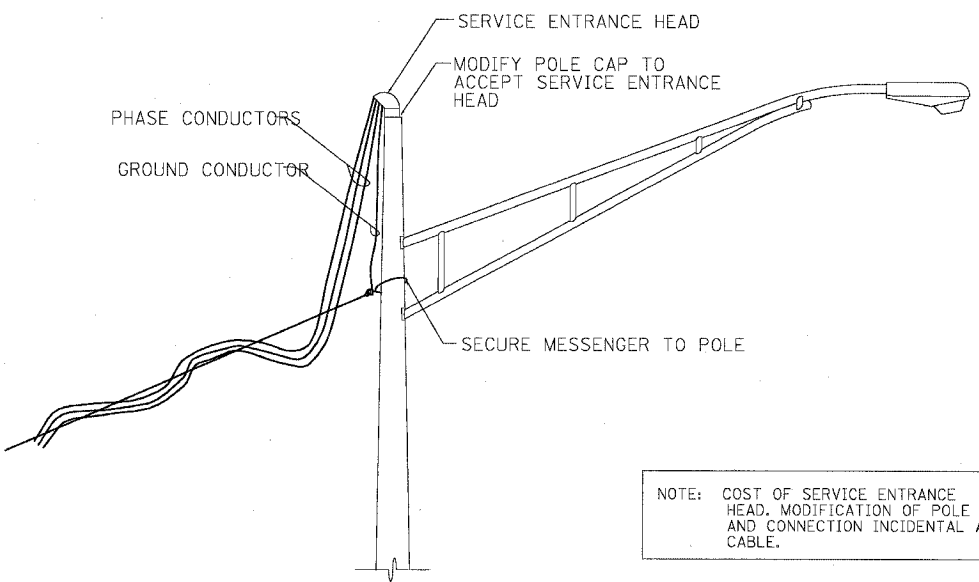
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	387
STA.		TO STA.		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
62302 *11818, ETC, 2324.6-1PIR-9				



TEMPORARY LIGHT POLE DETAIL



TEMPORARY LIGHT POLE CABLE ATTACHMENT DETAIL



NOTE: COST OF SERVICE ENTRANCE HEAD, MODIFICATION OF POLE CAP AND CONNECTION INCIDENTAL AERIAL CABLE.

ED-AIR
TEMPORARY POWER FEED TO POLE

K&J KAM ENGINEERING, INC.
CONSULTING ENGINEERS
707A Davis Road, Suite 205
Elgin, Illinois 60123-1369

REVISIONS	
NAME	DATE

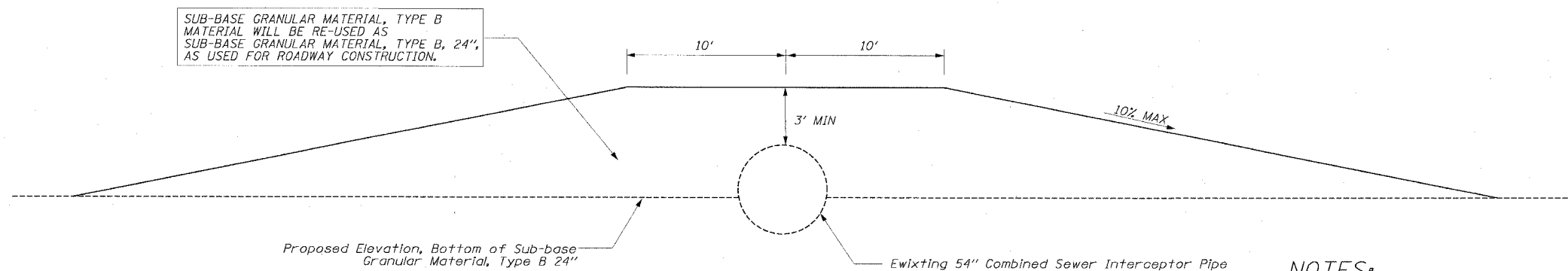
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
TEMPORARY POLE DETAILS

SCALE: NTS
DATE: 06-03-05

DRAWN BY: BL
CHECKED BY: RC

6/27/2005 8:55:57 PM

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90 *		COOK	598	388
STA. 7111+80.00	TO STA. 7114+90.00			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302	* (1818, ETC, 2324.6-1)R-9			



54" SEWER INTERCEPTOR (STA. 1385+44 SB, 2385+64 NB)
36" WATER MAIN (STA. 1533+28 SB, 2533+49 NB)
CONSTRUCTION PROTECTION

NOTES:

1. Contractor will provide a minimum cover, as shown above at all times during construction and prior to the installation of the permanent Water Main/Sewer Protection Cap. Construction traffic shall not cross the water main/sewer pipe without protection in place.

2. CONTRACTOR IS RESPONSIBLE FOR THE INTEGRITY OF WATER MAIN/SEWER PIPE THROUGH THE DURATION OF THE PROJECT, AND WILL NOT BE PAID FOR ANY REPAIRS REQUIRED, AS DETERMINED BY THE ENGINEER, TO THE PIPE, DUE TO CONSTRUCTION ACTIVITIES.

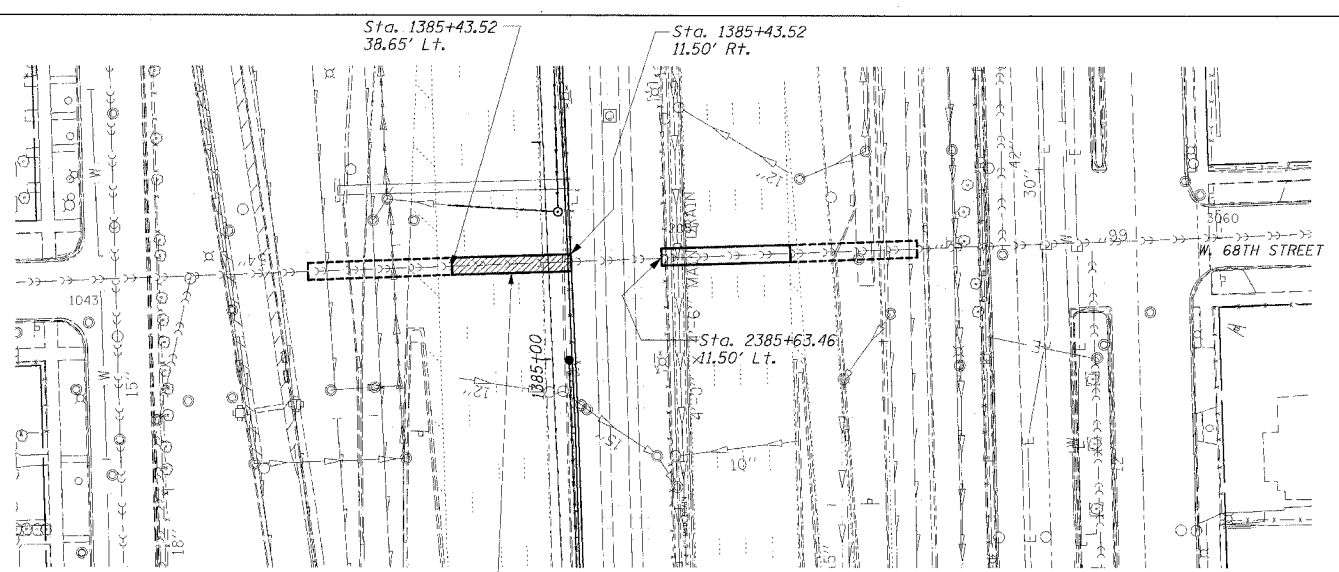
Edwards AND Kelcey
 ONE NORTH FRANKLIN
 CHICAGO, IL 60606
 PHONE: (312) 251-3000
 FAX: (312) 251-3015
 WEB: WWW.EKCORP.COM

REVISIONS	
NAME	DATE

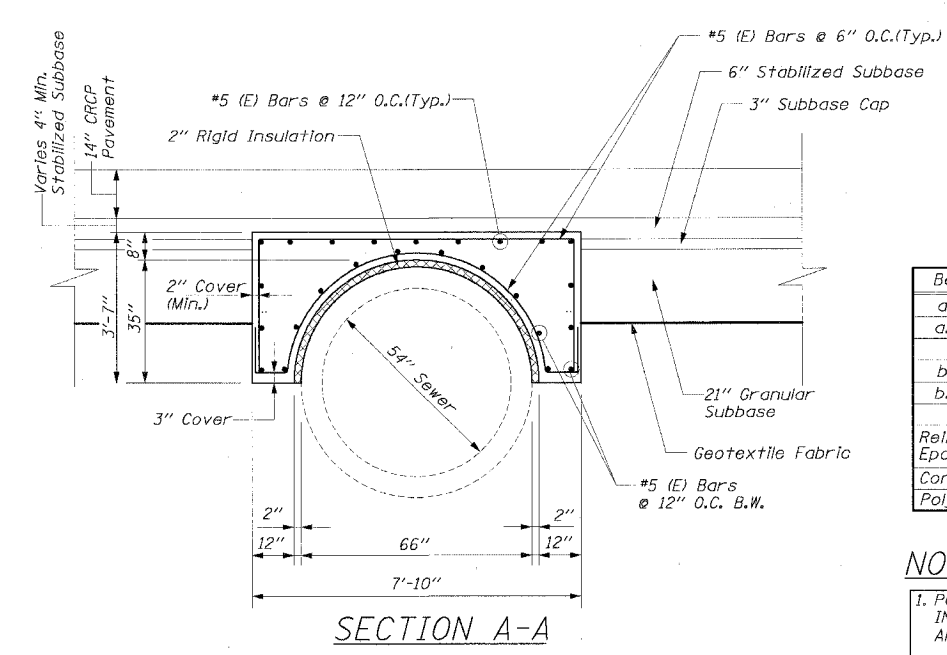
ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
 31ST STREET TO 71ST STREET
 SB EXPRESS LANE RECONSTRUCTION
 CIVIL DETAILS
 CONSTRUCTION PROTECTION
 SCALE: NOT TO SCALE
 DATE: 7/7/05
 DRAWN BY: TAI
 CHECKED BY: DPB

CDT-1
 06/24/2005 12:09:06 PM

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90 *		COOK	598	389
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
62302		• (1818, ETC., 2324.6-1)PR-9		



TOPOGRAPHIC PLAN

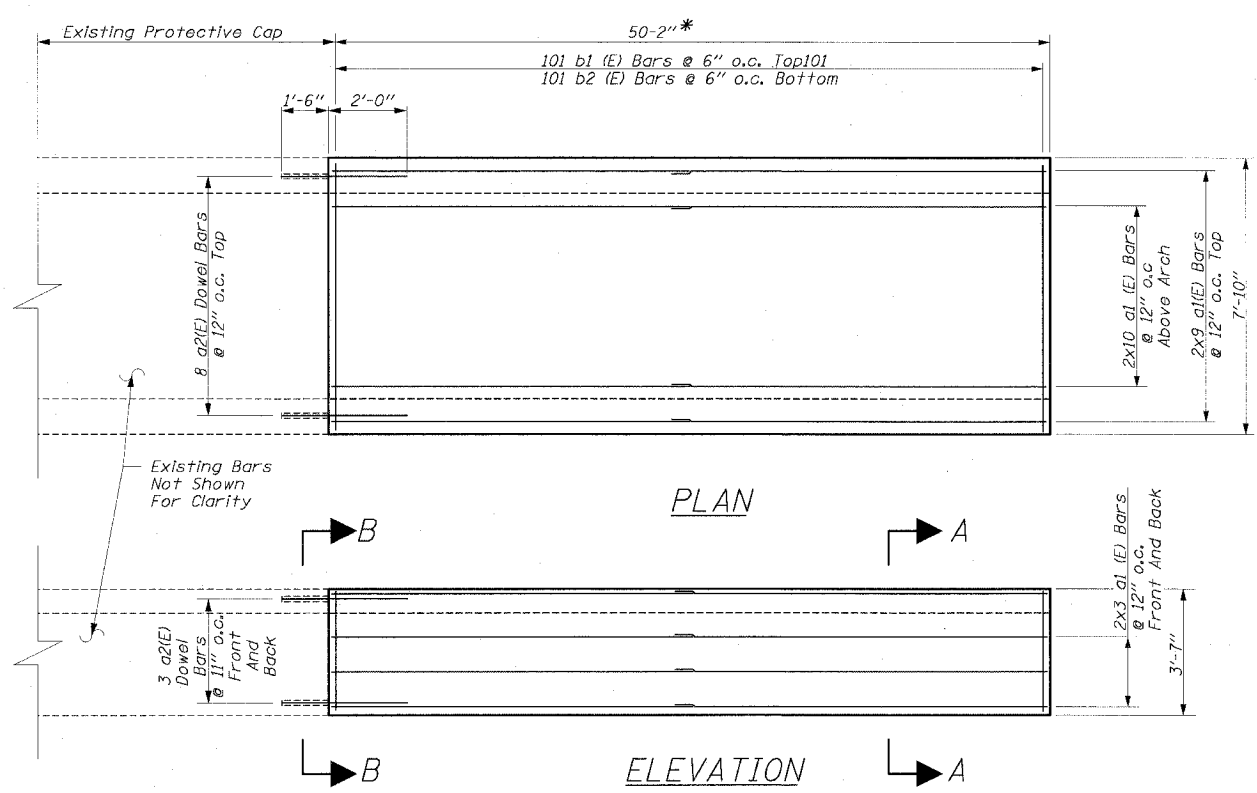


BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1(E)	50	#5	26'-0"	—
a2(E)	14	#6	3'-6"	—
b1(E)	101	#5	13'-10"	⌒
b2(E)	101	#5	13'-0"	⌒
Reinforcement Bars, Epoxy Coated		Pounds	4,260	
Concrete Structures		Cu. Yd.	27.3	
Polystyrene Insulation		Sq. Ft.	460	

NOTES

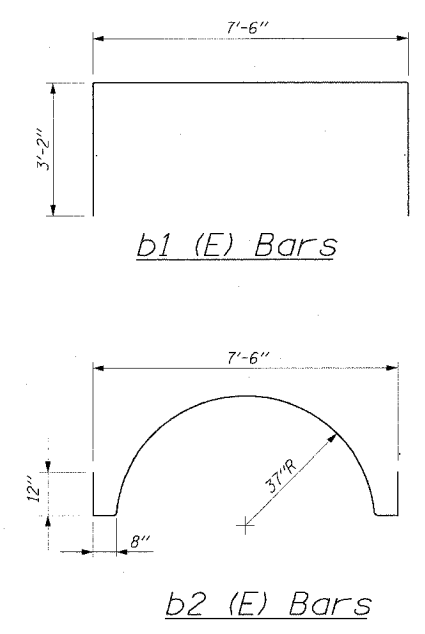
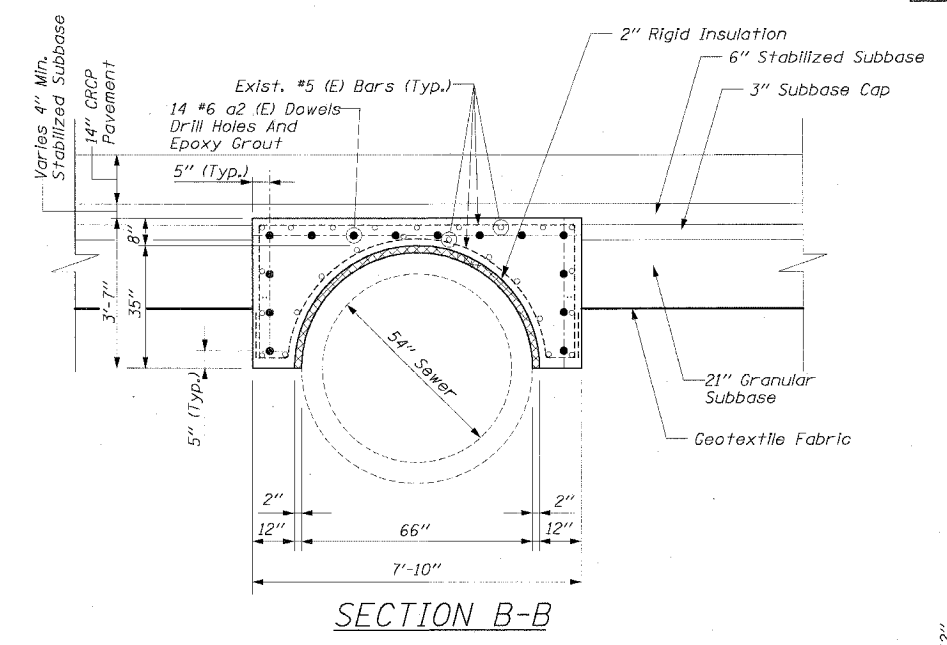
- POLYSTYRENE INSULATION SHALL BE INCLUDED IN 54" SEWER PROTECTION CAP CONSTRUCTION, AND WILL NOT BE PAID FOR SEPARATELY.
- DRILLING AND EPOXY GROUTING OF a2(E) BARS IS PAID FOR UNDER REINFORCEMENT BARS, EPOXY COATED.



*Field Verify Dimension Prior to Ordering Reinforcement Bars

NOTES:

- All bars designated (E) must be epoxy coated.
- All bars must be #5 bars with a minimum overlap of 2'-2".
- All dowel bars must be #6 bars.
- Sewer location based on existing plans. Field adjustment of lengths may be necessary.



REVISIONS	
NAME	DATE

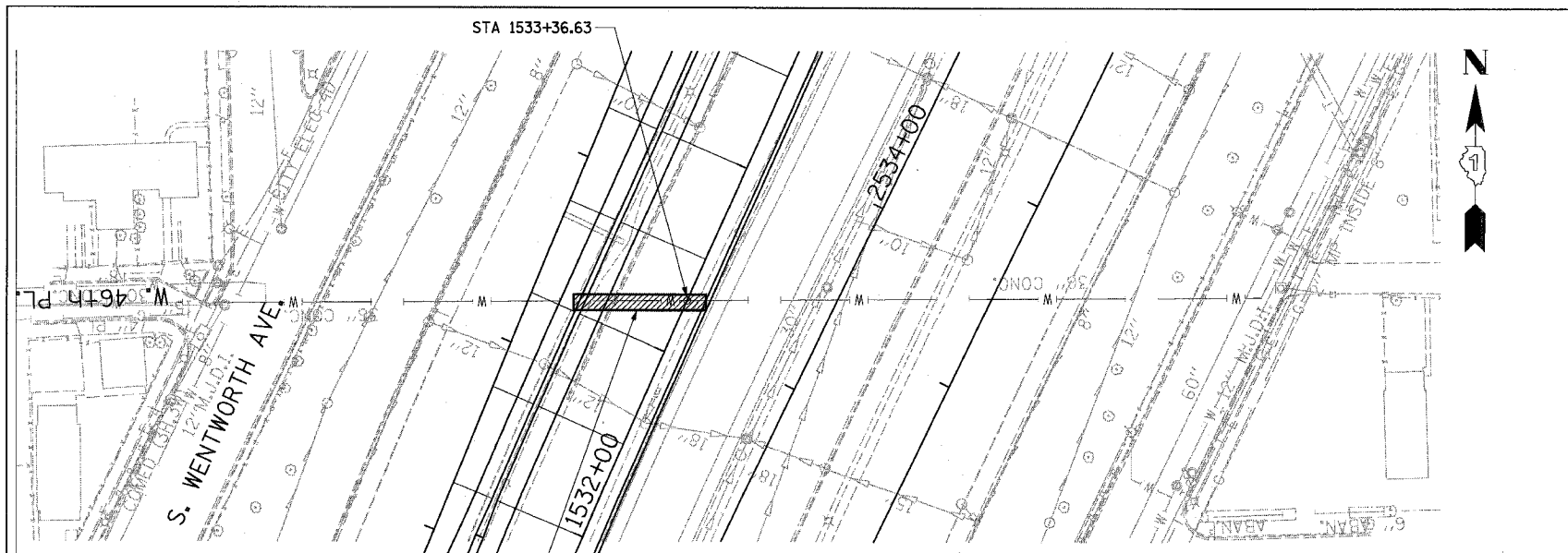
CDT-2

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
CIVIL DETAILS - 68TH STREET CROSSING
54" SEWER PROTECTION CAP

SCALE: NOT TO SCALE
DATE: 7/7/05

DRAWN BY: TAI
CHECKED BY: PJM

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	390
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62302	11818, ETC, 2324.6-1PIR-9			



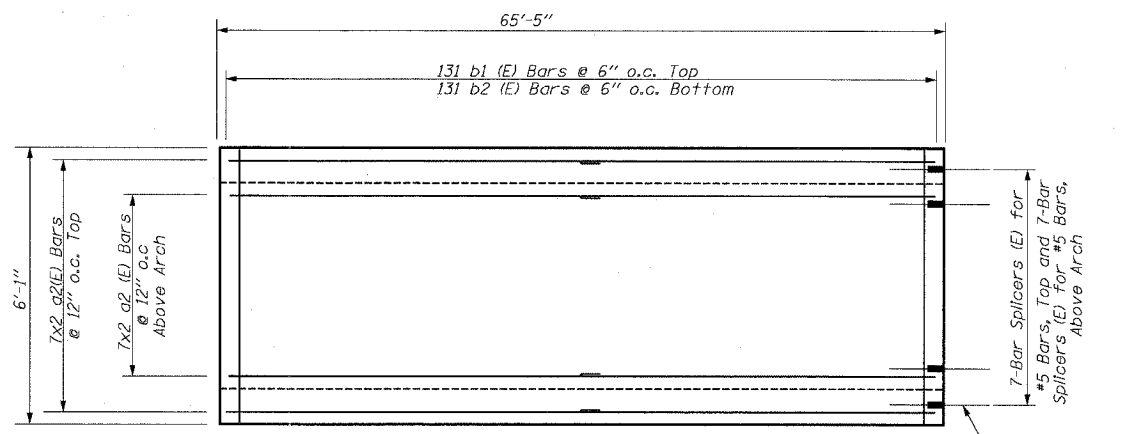
TOPOGRAPHIC PLAN

BILL OF MATERIAL

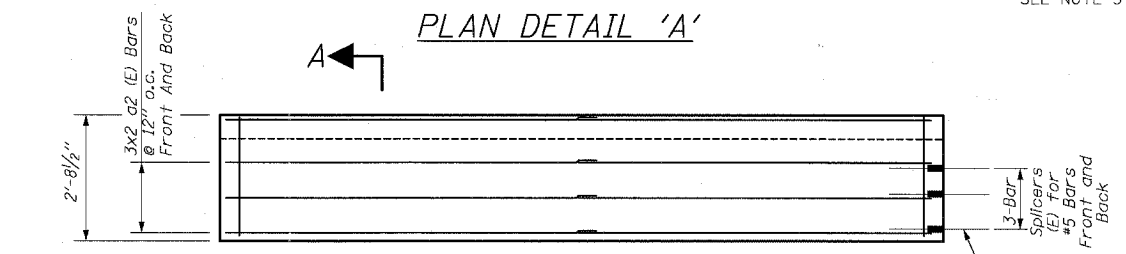
Bar	No.	Size	Length	Shape
a2(E)	40	#5	33'-8"	—
b1(E)	131	#5	10'-4"	⌒
b2(E)	131	#5	10'-3"	⌒
Reinforcement Bars, Epoxy Coated		Pounds	4,260	
Bar Splicers		Each	20	
Concrete Structures		Cu. Yd.	24.0	

NOTES:

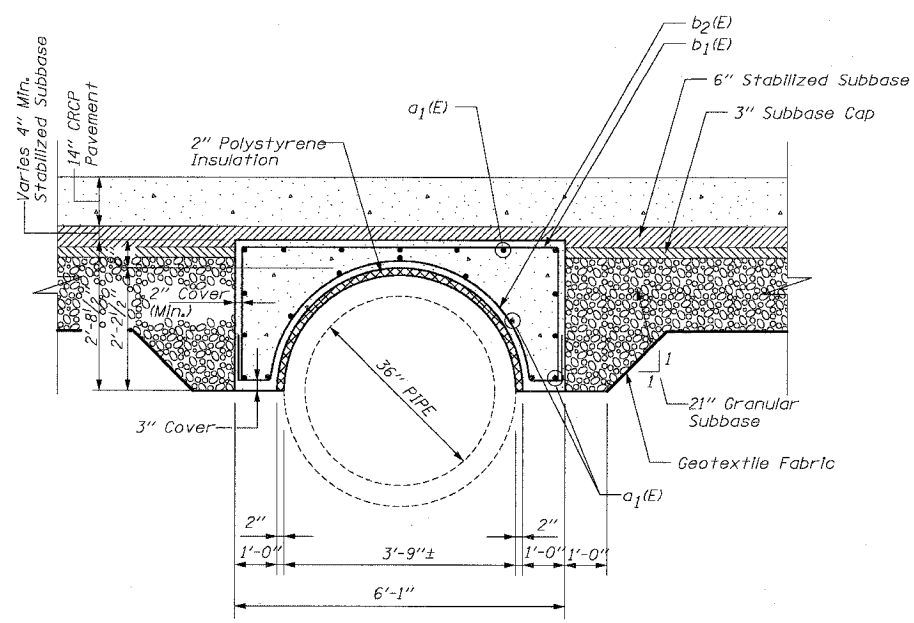
1. THE 2" POLYSTYRENE INSULATION SHALL BE INCLUDED IN THE COST OF 36" WATER MAIN PROTECTION CAP CONSTRUCTION. THE ESTIMATED QUANTITY IS 420 SQ. FT.
2. ADDITIONAL GRANULAR SUB-BASE REQUIRED AS SHOWN IN SECTION A-A OR AS DIRECTED BY ENGINEER WILL BE INCLUDED IN THE COST OF SUB-BASE GRANULAR MATERIAL, TYPE B 24".
3. CONTRACTOR SHALL PROVIDE BAR SPLICERS AS SHOWN. INSTALL STAGE I PORTION AND PROVIDE STAGE II PORTION TO THE ENGINEER. PLUG THREADED COUPLER WITH PLASTIC NIPPLE OR H.S. BOLT FOR PROTECTION. COST INCLUDED WITH "BAR SPLICERS".



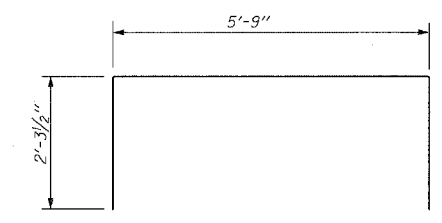
PLAN DETAIL 'A'



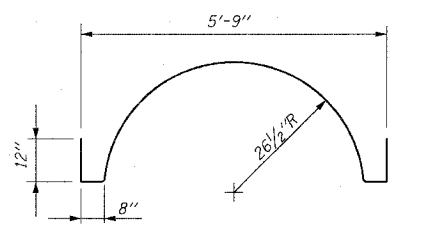
ELEVATION 'A'



SECTION A-A



b1(E) Bars



b2(E) Bars

NOTES:

1. All bars designated (E) must be epoxy coated.
2. All bars must be #5 bars with a minimum overlap of 2'-2".

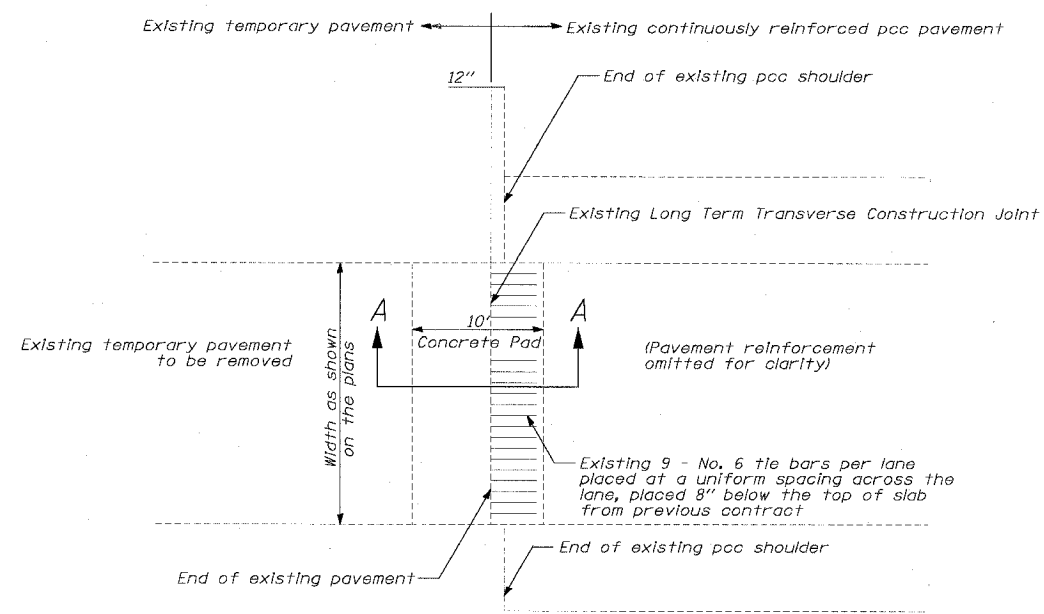
BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
www.bbainc.com

REVISIONS	DATE
NAME	

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
CIVIL DETAILS - 46TH ST CROSSING
36" WATER MAIN PROTECTION CAP
SCALE: =NTS DRAWN BY: EGH
DATE: 07/07/05 CHECKED BY: CBB

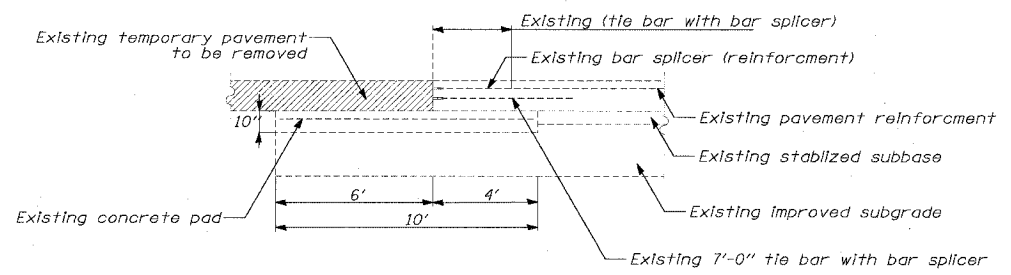
CDT-3

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6/27/2005

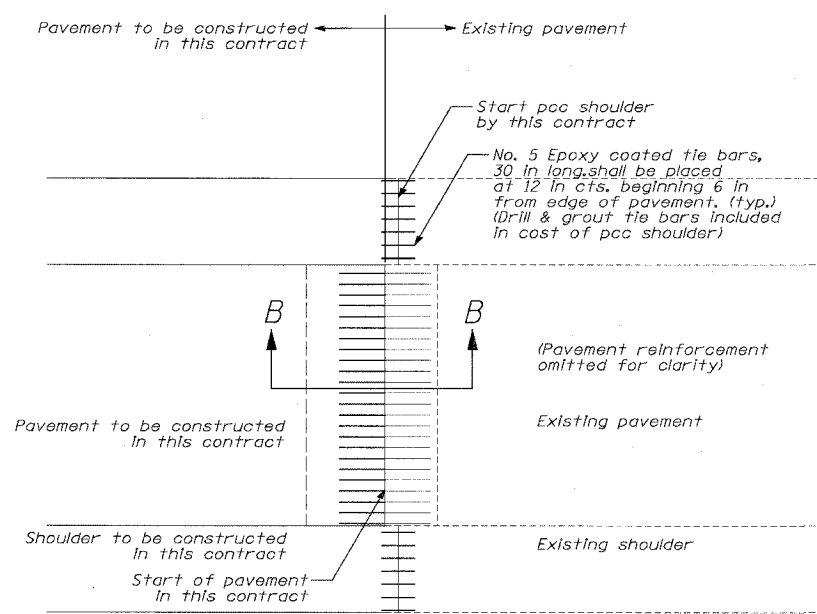


PLAN

(EXISTING LONG TERM TRANSVERSE CONSTRUCTION JOINT)

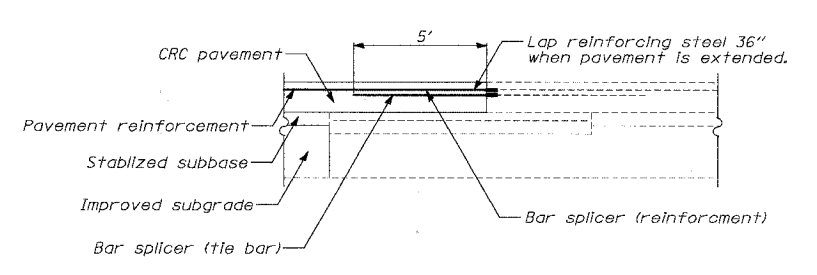


LONG TERM TRANSVERSE CONSTRUCTION JOINT SECTION A-A

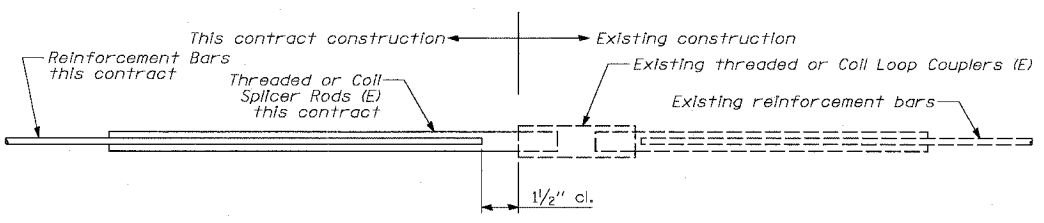


PLAN

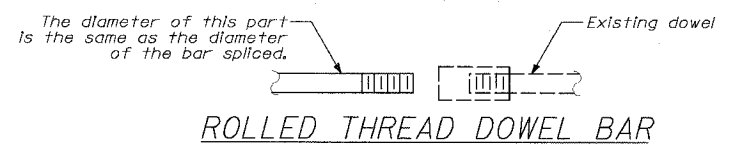
(CONNECTION TO EXISTING LONG TERM TRANSVERSE CONSTRUCTION JOINT)



LONG TERM TRANSVERSE CONSTRUCTION JOINT SECTION B-B



BAR SPLICER ASSEMBLY DETAIL
(E) : Indicates epoxy coating.



ROLLED THREAD DOWEL BAR

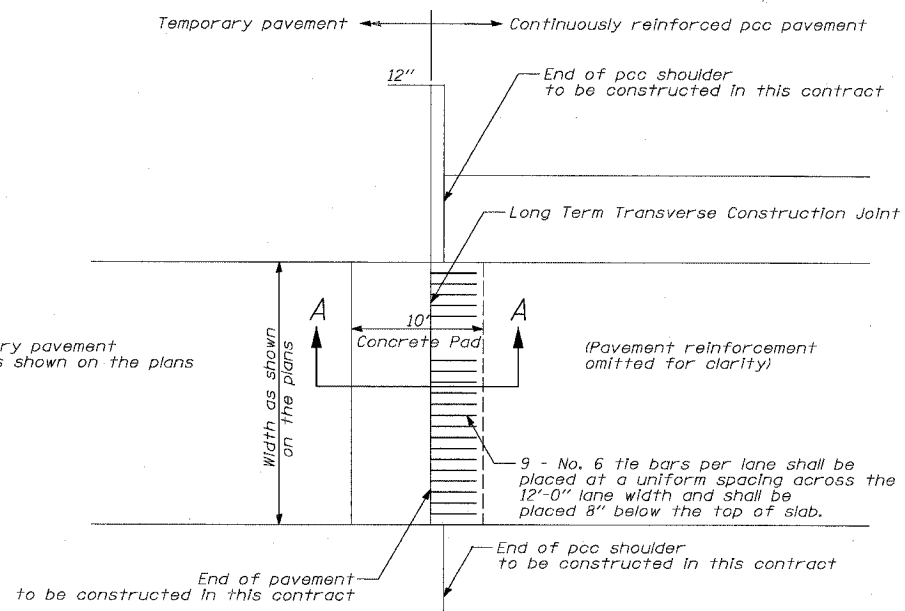
NOTES

- This detail shows connection of proposed CRC pavement to existing pavement at an existing long term transverse construction joint.
- Bar splicer assemblies shall be of an IDOT approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
- Bar splicers shall be of the "coupler" type, and shall not have flanges.
- Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
- All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
- Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
- Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:
 - Minimum Capacity (Tension in ksl) = $1.25 \times f_y \times A(f)$
 - Minimum Pull-out Strength (Tension in ksl) = $1.25 \times f_s(\text{allow}) \times A(f)$

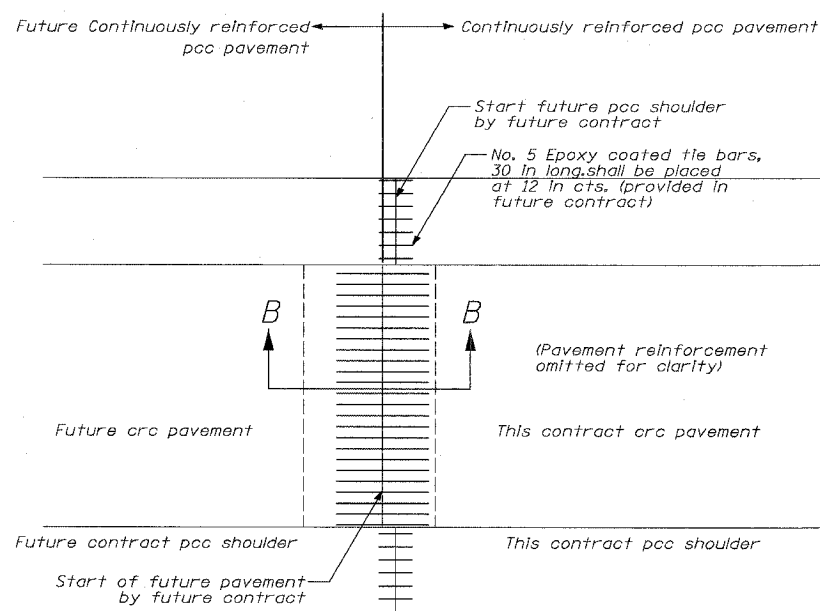
Where:
 f_y = Yield strength of lapped reinforcement bars in ksi.
 $f_s(\text{allow})$ = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
 $A(f)$ = Tensile stress area of lapped reinforcement bars (in²).
 * = 28 day concrete

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	STRENGTH REQUIREMENTS	
		Min. Capacity (klps) tension	Min. Pull-Out Strength (klps) tension
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0

- Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted.
- Reinforcement shall not be paid for separately but included in the cost of CONTINUOUSLY REINFORCED PORTLAND CEMENT PAVEMENT, of the thickness specified.
- Connection to long term transverse construction joint work includes the installation of the bar splicers, payment for this work will be included in the cost of CONTINUOUSLY REINFORCED PORTLAND CEMENT PAVEMENT of the thickness specified. Tie bars to be drilled and grouted shall not be paid for separately but included in the cost of PORTLAND CEMENT CONCRETE SHOULDERS, of the thickness specified.



PLAN
(LONG TERM TRANSVERSE CONSTRUCTION JOINT IN THIS CONTRACT)



PLAN
(CONNECTION TO LONG TERM TRANSVERSE CONSTRUCTION JOINT BY FUTURE CONTRACT)

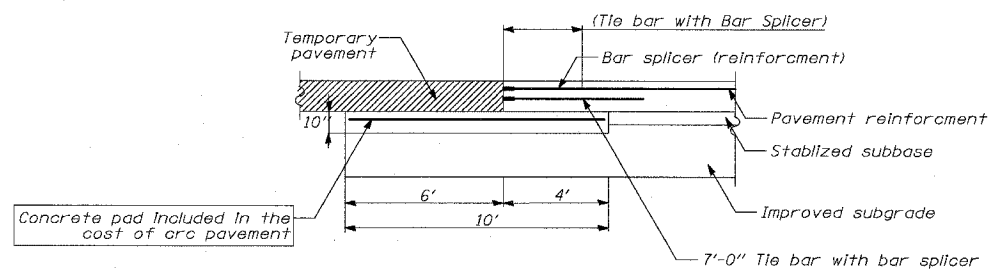
NOTES

- This detail shows the termination of proposed CRC pavement that will be extended by future construction.
- Bar splicer assemblies shall be of an IDOT approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
- Bar splicers shall be of the "coupler" type, and shall not have flanges.
- Splicer rods shall be of minimum 60 ksi yield strength, threaded or rolled full length.
- All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
- Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
- Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

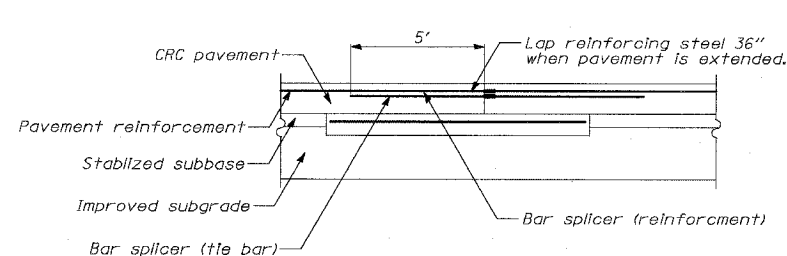
- Minimum Capacity (Tension in ksi) = $1.25 \times f_y \times A(t)$
- Minimum Pull-out Strength (Tension in ksi) = $1.25 \times f_{s(allow)} \times A(t)$

Where:
 f_y = Yield strength of lapped reinforcement bars in ksi.
 $f_{s(allow)}$ = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
 $A(t)$ = Tensile stress area of lapped reinforcement bars (in²).
 * = 28 day concrete

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	STRENGTH REQUIREMENTS	
		Min. Capacity (kips) tension	Min. Pull-Out Strength (kips) tension
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0

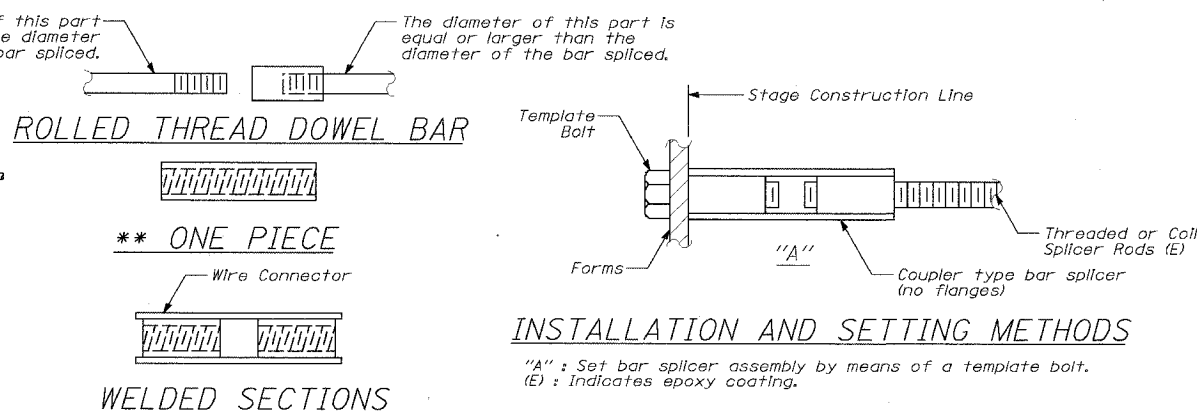
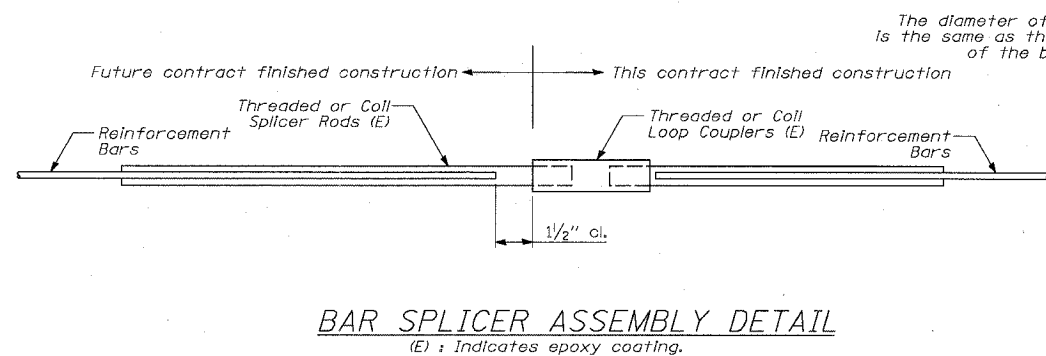


LONG TERM TRANSVERSE CONSTRUCTION JOINT SECTION A-A



LONG TERM TRANSVERSE CONSTRUCTION JOINT SECTION B-B

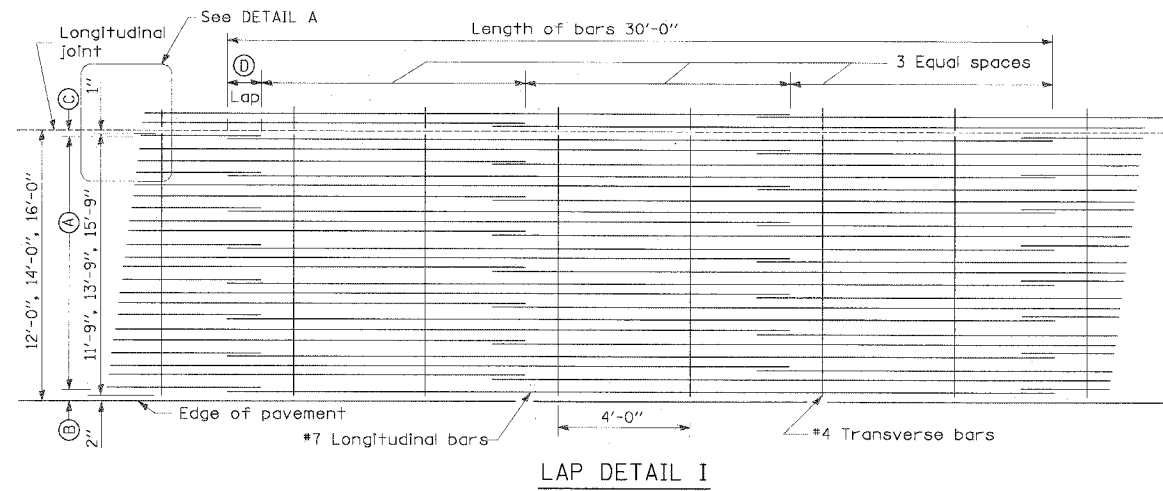
- Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted.
- Reinforcement shall not be paid for separately but included in the cost of CONTINUOUSLY REINFORCED PORTLAND CEMENT PAVEMENT, of the thickness specified.
- Connection to long term transverse construction joint work includes the installation of the bar splicers, payment for this work will be included in the cost of CONTINUOUSLY REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT of the thickness specified. Tie bars to be drilled and grouted shall not be paid for separately but included in the cost of PORTLAND CEMENT CONCRETE SHOULDERS, of the thickness specified.



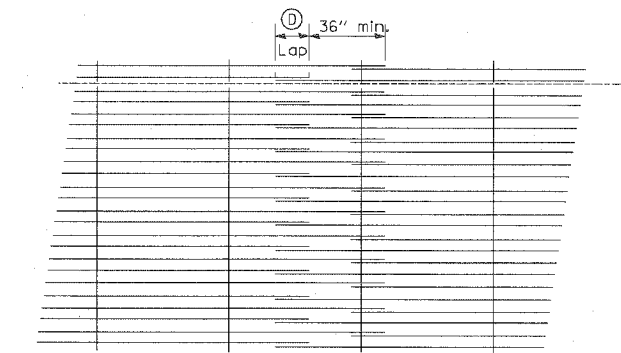
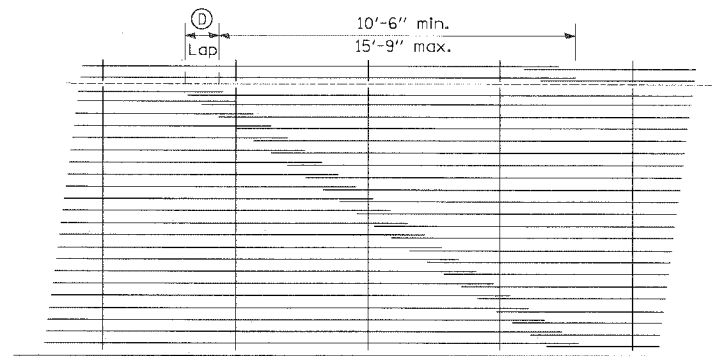
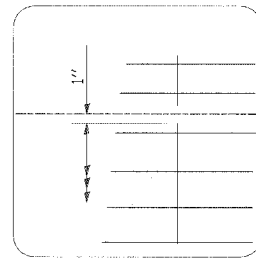
BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 563M, Grade C, D or DH may be used.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	393
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302	• 11818, ETC, 2324.6-1PR-9			



Pavement Width	Bar Size	Pavement Thickness	ⓐ (Approx. Spacing)	ⓑ	ⓒ	ⓓ
12 feet	#7	14"	26 spaces (27 bars) @ 5 1/4"	3 1/2"	3"	26"
14 feet	#7	14"	30 spaces (31 bars) @ 5 3/8"	3 1/2"	3"	26"
16 feet	#7	14"	35 spaces (36 bars) @ 5 1/4"	3 1/2"	3"	26"



GENERAL NOTES

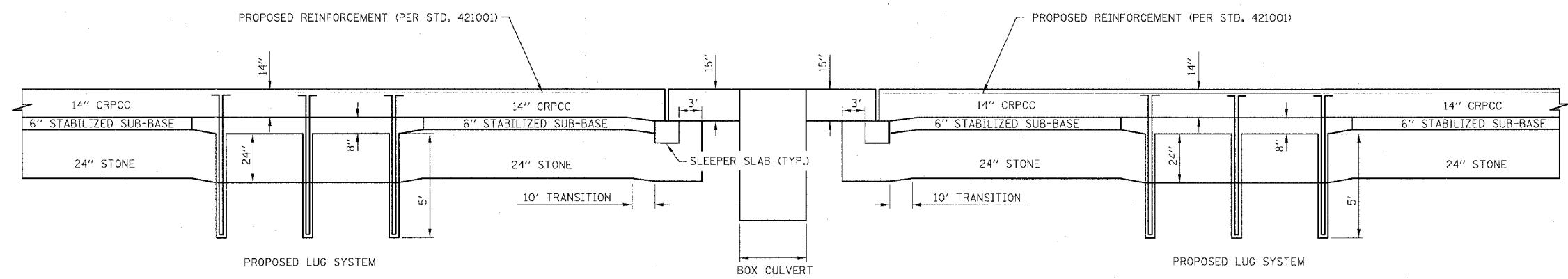
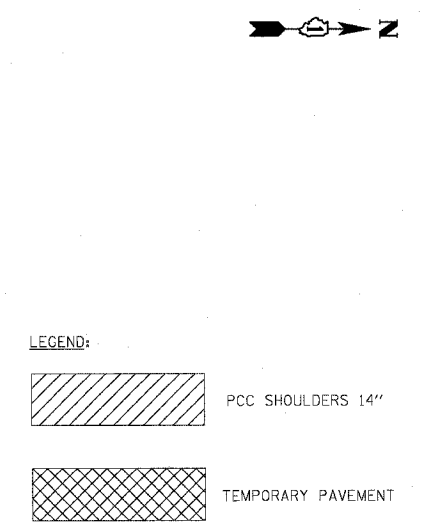
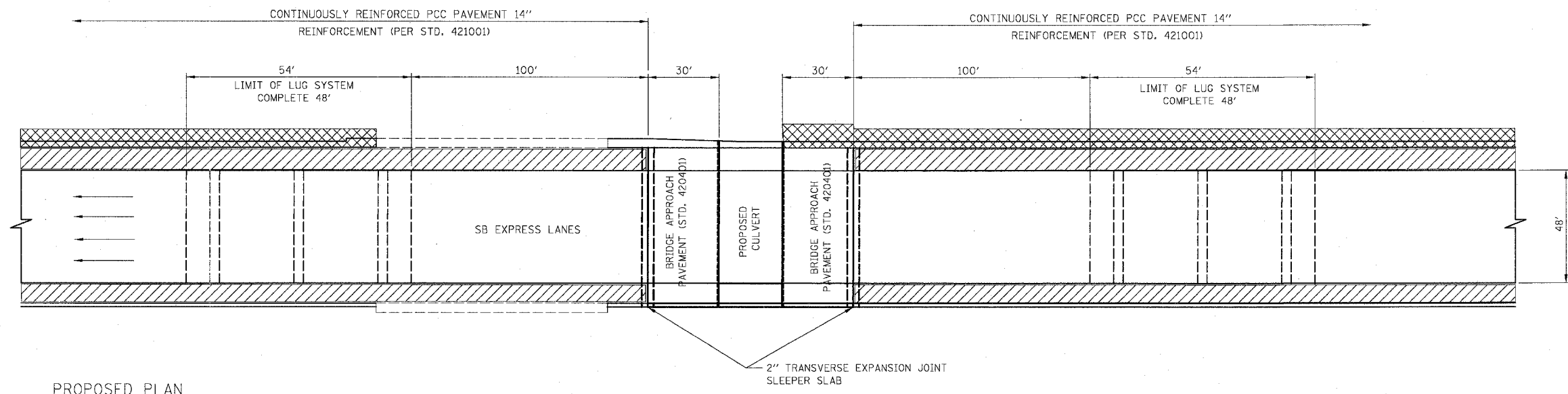
1. THE PAVEMENT REINFORCEMENT SHALL BE 4.5" FROM THE TOP OF PAVEMENT.
2. EXCEPT AS NOTED OR SHOWN, THE DIMENSIONS AND NOTES SPECIFIED FOR LAP DETAIL I ARE TYPICAL FOR LAP DETAIL II AND III.
3. THE ⓓ DIMENSION AND THE DISTANCE FROM THE END OF THE TRANSVERSE BAR TO THE EDGE OF PAVEMENT MAY BE INCREASED BY 1" FOR SLIP FORM PAVING.

Edwards AND Kelcey
 ONE NORTH FRANKLIN
 CHICAGO, IL 60606
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 FAX: (312) 251-3015
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REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION F.A.I. 94/90 (DAN RYAN EXPRESSWAY) 31ST STREET TO 71ST STREET SB EXPRESS LANE RECONSTRUCTION CIVIL DETAILS EXTENDED LANE REINFORCEMENT FOR CONTINUOUSLY REINFORCED PCC PAVEMENT SCALE: NONE DRAWN BY: TAI DATE: 7/1/05 CHECKED BY: DPB
NAME	DATE	

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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90 *		COOK	598	394
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62302	*11818, ETC, 2324.6-1PR-5			



MATERIALS REQUIRED FOR ONE LUG SYSTEM COMPLETE 48'
(EXCLUDING PAVEMENT CONCRETE AND PAVEMENT REINFORCEMENT)

BAR	QTY.	SIZE	LENGTH	SHAPE
a	266	#8	16'-4"	
b	18	#5	48'-9"	
c	266	#5	20'-0"	
d	56	#4	11'-9"	

CONCRETE 116 CU. YDS.
REINFORCING BARS 18,502 LBS.

- NOTE**
1. ABOVE SCHEDULE ONLY ACCOUNTS FOR ONE OF THE TWO LUG SYSTEMS
 2. LUG SYSTEM COMPLETE 48' IS SIMILAR TO (24') CRC PAVEMENT - WITH LUG SYSTEM (STD. 421201). SEE STANDARD 421201 FOR LAYOUT OF REINFORCING BARS.

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Chicago, Illinois
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REVISIONS	
NAME	DATE

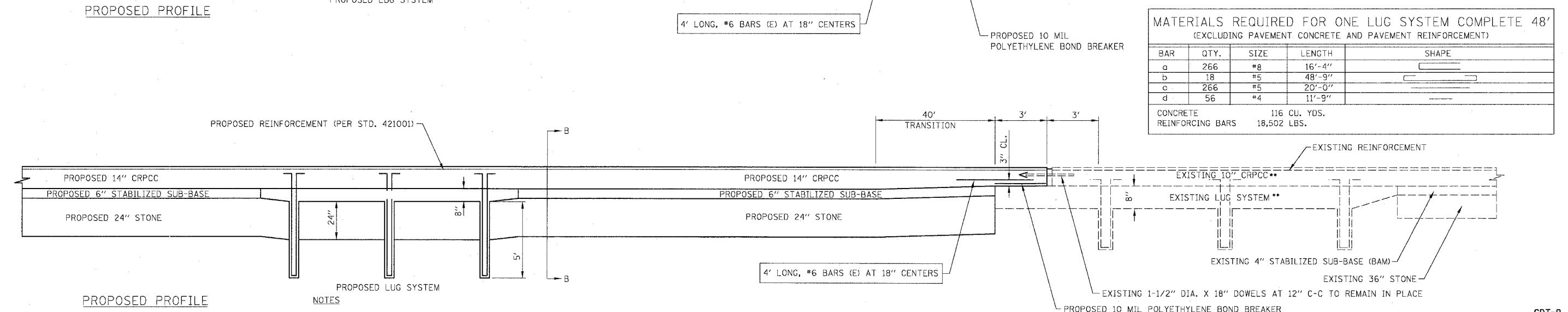
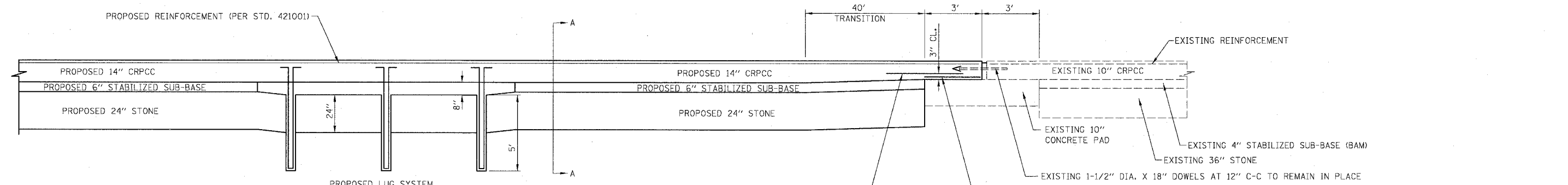
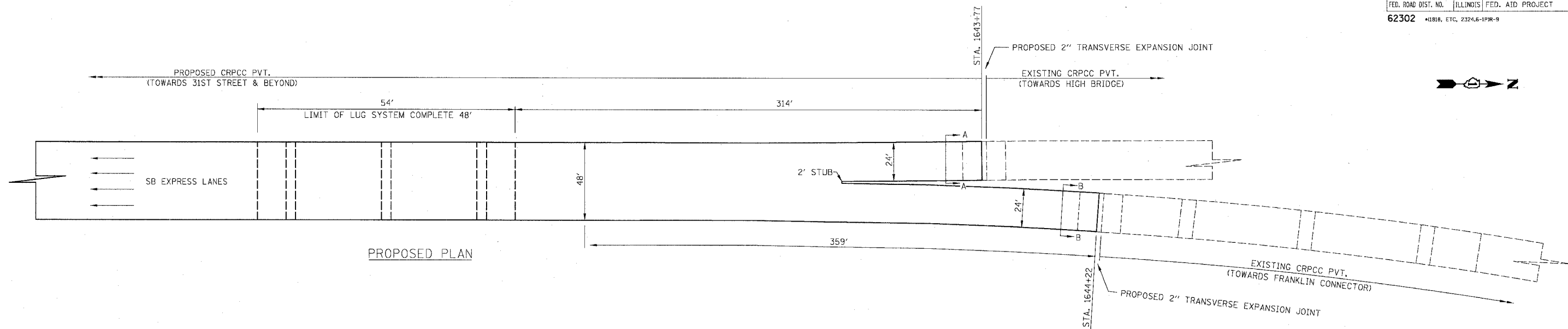
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
LUG SYSTEM INTERFACE
AT PERSHING ROAD

SCALE: NTS
DATE: 07/07/05

DRAWN BY: JDC
CHECKED BY: TF

CDT-7

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MATERIALS REQUIRED FOR ONE LUG SYSTEM COMPLETE 48'
(EXCLUDING PAVEMENT CONCRETE AND PAVEMENT REINFORCEMENT)

BAR	QTY.	SIZE	LENGTH	SHAPE
a	266	#8	16'-4"	
b	18	#5	48'-9"	
c	266	#5	20'-0"	
d	56	#4	11'-9"	

CONCRETE 116 CU. YDS.
REINFORCING BARS 18,502 LBS.

- NOTES**
- EXISTING LUG SYSTEM AND RELIEF JOINT LOCATIONS MAY DIFFER FROM STATIONING SHOWN IN PLANS. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING EXISTING LUG SYSTEMS AND RELIEF JOINTS PRIOR TO WORK BEING PERFORMED.
 - THE CONTRACTOR SHALL TAKE CARE IN REMOVING THE EXISTING CRC PAVEMENT SO AS NOT TO DAMAGE THE PORTIONS OF THE LUG SYSTEM TO BE INCORPORATED. ANY DAMAGE TO THE EXISTING LUG SYSTEM IS TO BE REPAIRED AT THE CONTRACTOR'S EXPENSE AS DIRECTED BY THE ENGINEER.
 - 4'-#6 BARS ARE TO BE SUPPORTED BY PINS OR OTHER METHOD AS APPROVED BY THE ENGINEER. MUCKING IN OF THE BARS IS NOT ACCEPTABLE. COST OF THESE ADDITIONAL BARS WILL NOT BE PAID FOR SEPARATE, BUT WILL BE INCLUDED IN THE PRICE FOR CRPCC PAVEMENT 14".
 - TRANSITION AREA FROM 10" TO 14" CRPCC AND 10" CRPCC WILL BE PAID AS CRPCC PAVEMENT 14".
 - LUG SYSTEM COMPLETE 48' IS SIMILAR TO (24') CRC PAVEMENT - WITH LUG SYSTEM (STD. 421201). SEE STANDARD 421201 FOR LAYOUT OF REINFORCING BARS.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
LUG SYSTEM INTERFACE
AT 31ST STREET

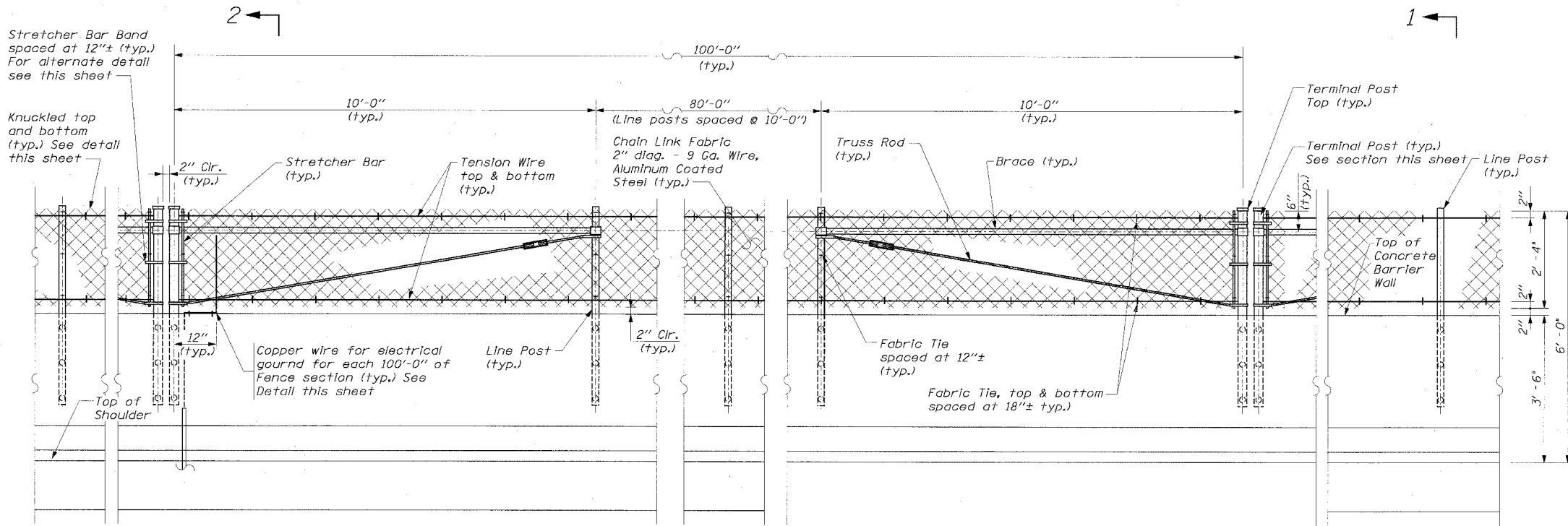
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DATE: 07/07/05

DRAWN BY: JDC
CHECKED BY: RR

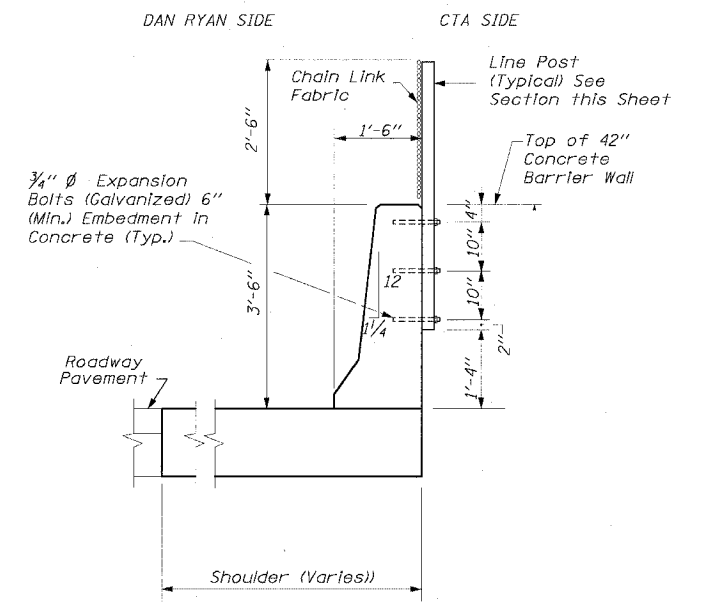
BOWMAN, BARRETT & ASSOCIATES INC.
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6/27/2005 6:46:27 PM

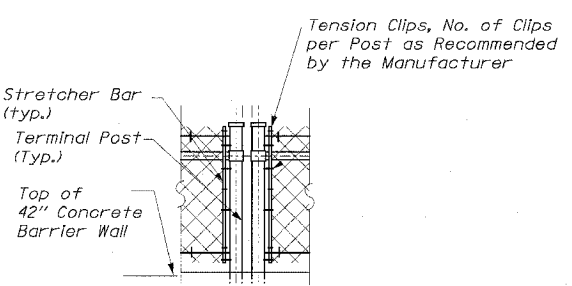
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	397
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62302	• 11818, ETC, 2324.6-1P/R-9			



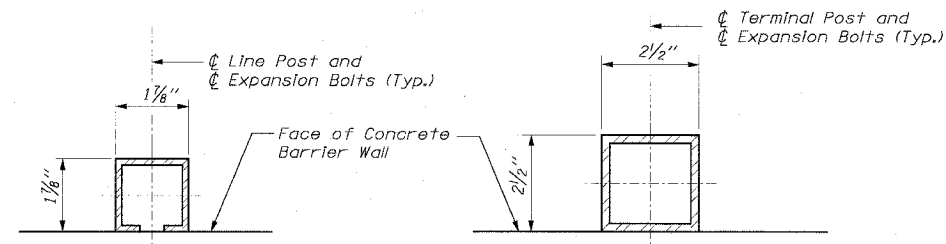
ELEVATION
CHAIN LINK FENCE ON CONCRETE BARRIER WALL



SECTION 1-1



ALTERNATE DETAIL FOR
STRETCHER BAR BAND

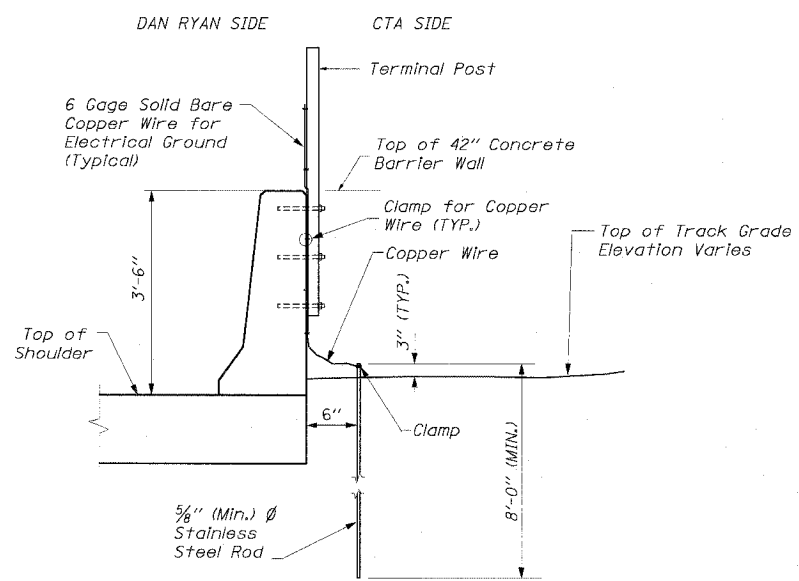


LINE POST SECTION

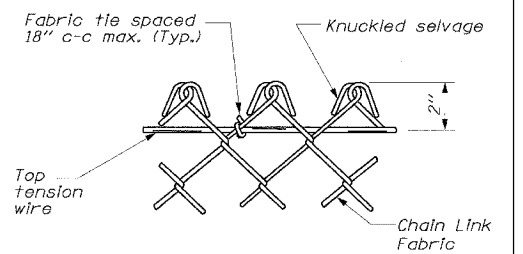
TERMINAL POST SECTION

NOTE:
The Contractor May Use Another C Section as per the Standards of the Illinois Department of Transportation.

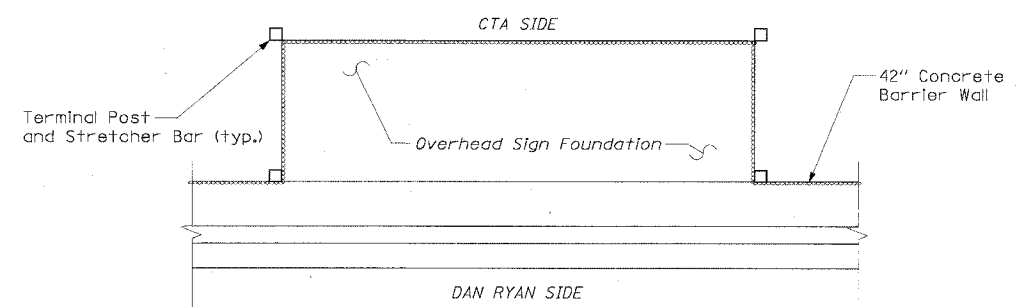
NOTE:
Where the fence meets bridge piers and other vertical structures taller than the fence a maximum gap of 2" clear between the terminal post is to be provided.



SECTION 2-2
ELECTRICAL GROUND DETAIL



KNUCKLED DETAIL



DETAIL AT OVERHEAD SIGN FOUNDATIONS

Fence, hardware and posts around the overhead sign foundation are paid for as CTA Fence.

REVISIONS		DATE	DRAWN BY: RLK	CHECKED BY: EL
NAME				

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION

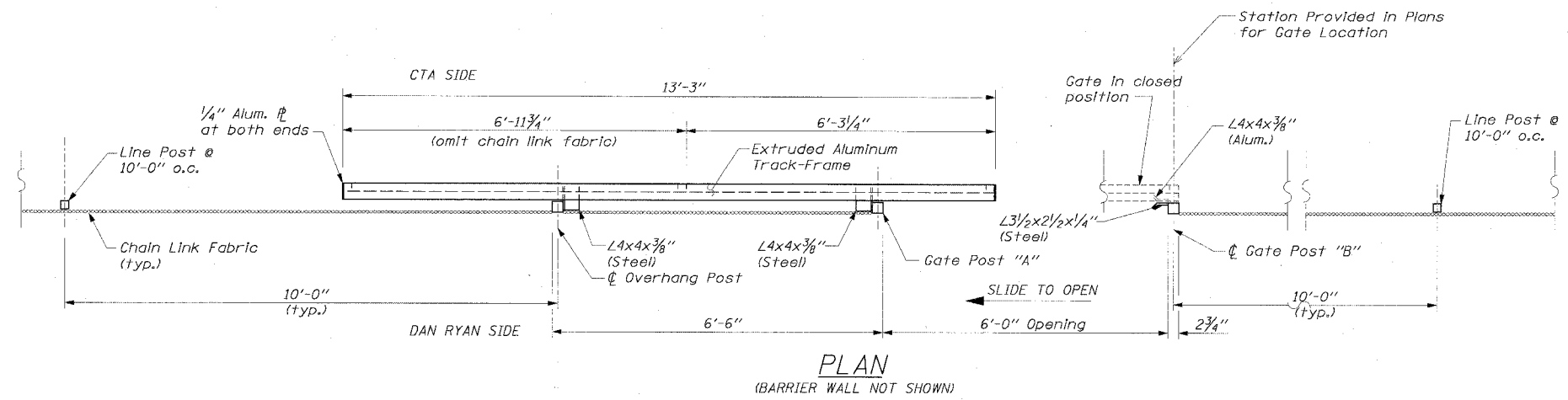
CTA FENCE
ELEVATIONS AND DETAILS
SHEET 1 OF 3

SCALE: NONE
DATE: 7/7/05

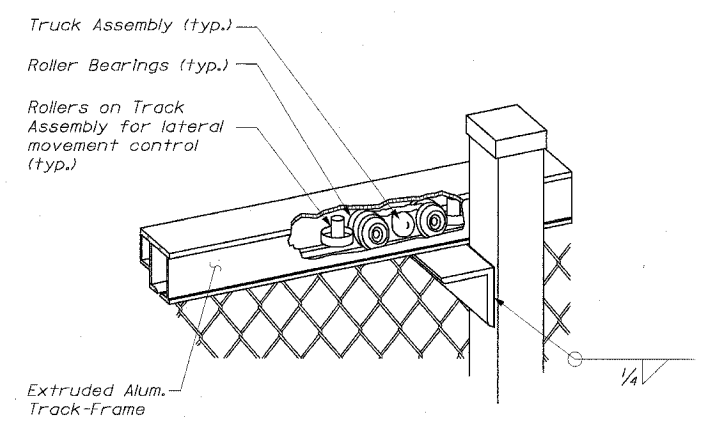
Edwards AND Kelcey
ONE NORTH FRANKLIN
CHICAGO, IL 60606
PHONE: (312) 251-3000
FAX: (312) 251-3015
WEB: WWW.EKCORP.COM

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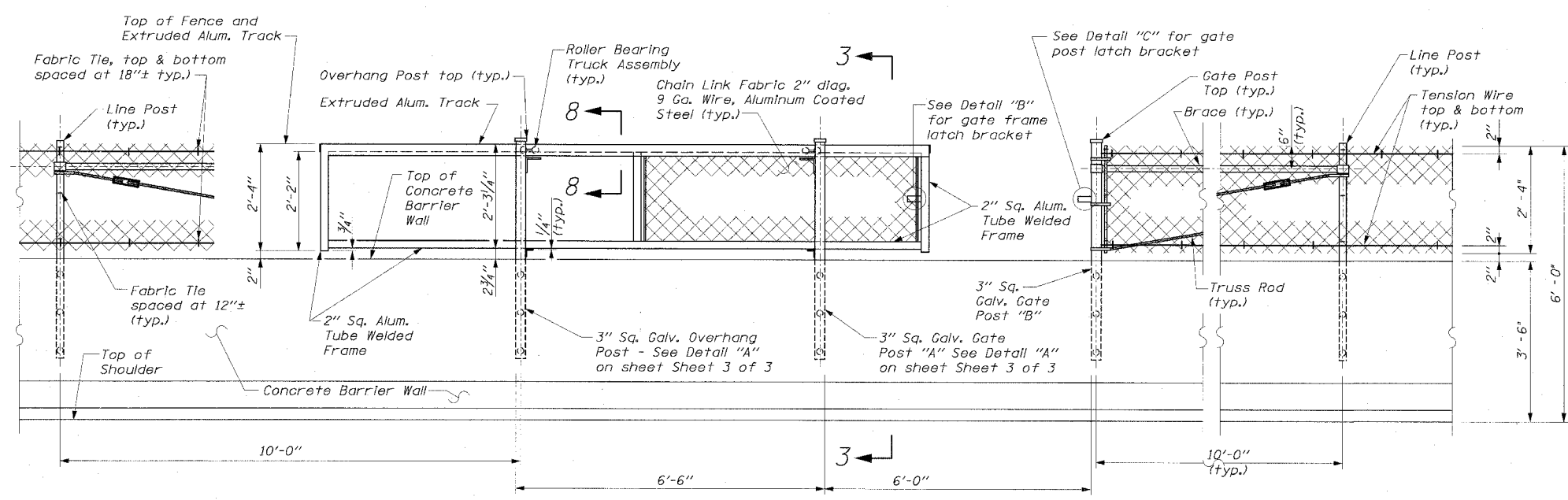
F.A.I. RTE.:	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	*	COOK	598	398
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62302	* (1818, ETC, 2324.6-1)PR-9			



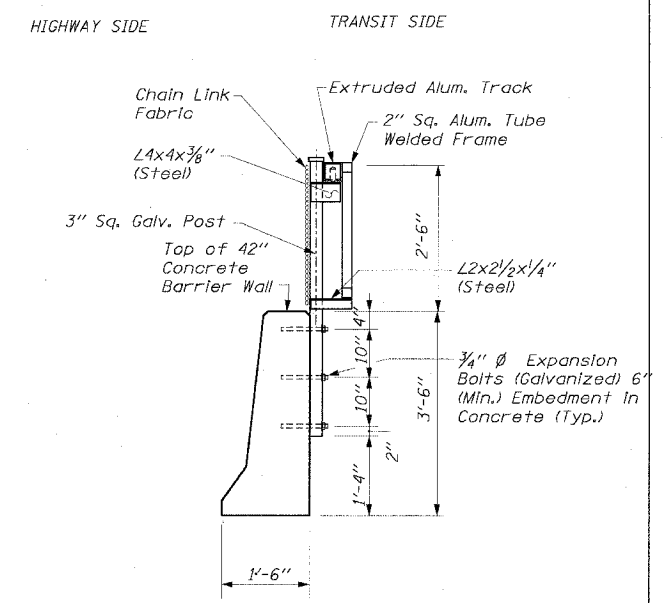
PLAN
(BARRIER WALL NOT SHOWN)



ROLLER BEARING TRUCK ASSEMBLY DETAIL



ELEVATION
CHAIN LINK FENCE SLIDING GATE
(FOOTING NOT SHOWN)



SECTION 3-3

NOTE: For Additional Details and Sections see Sheet 3 of 3

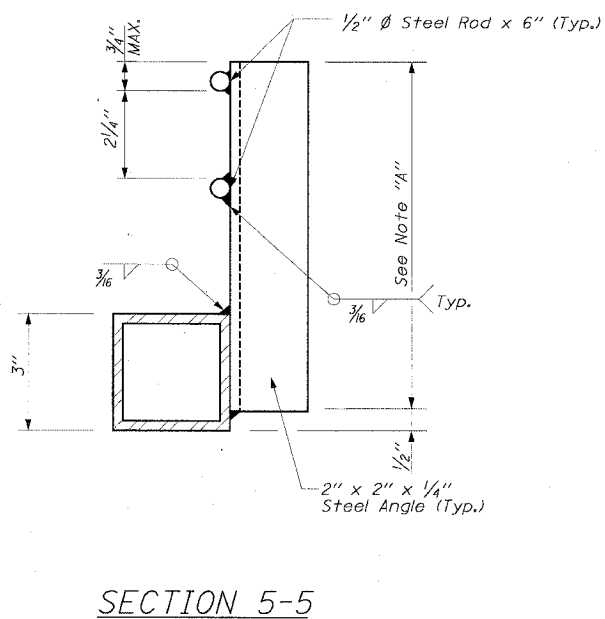
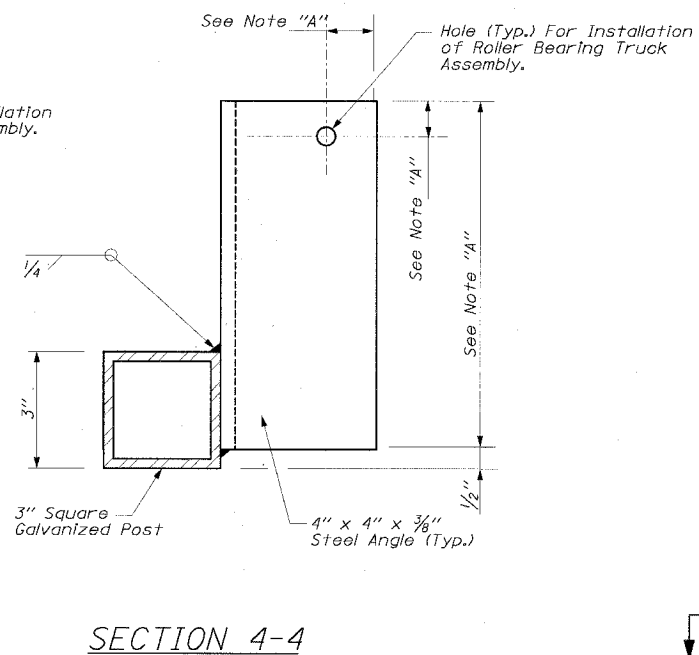
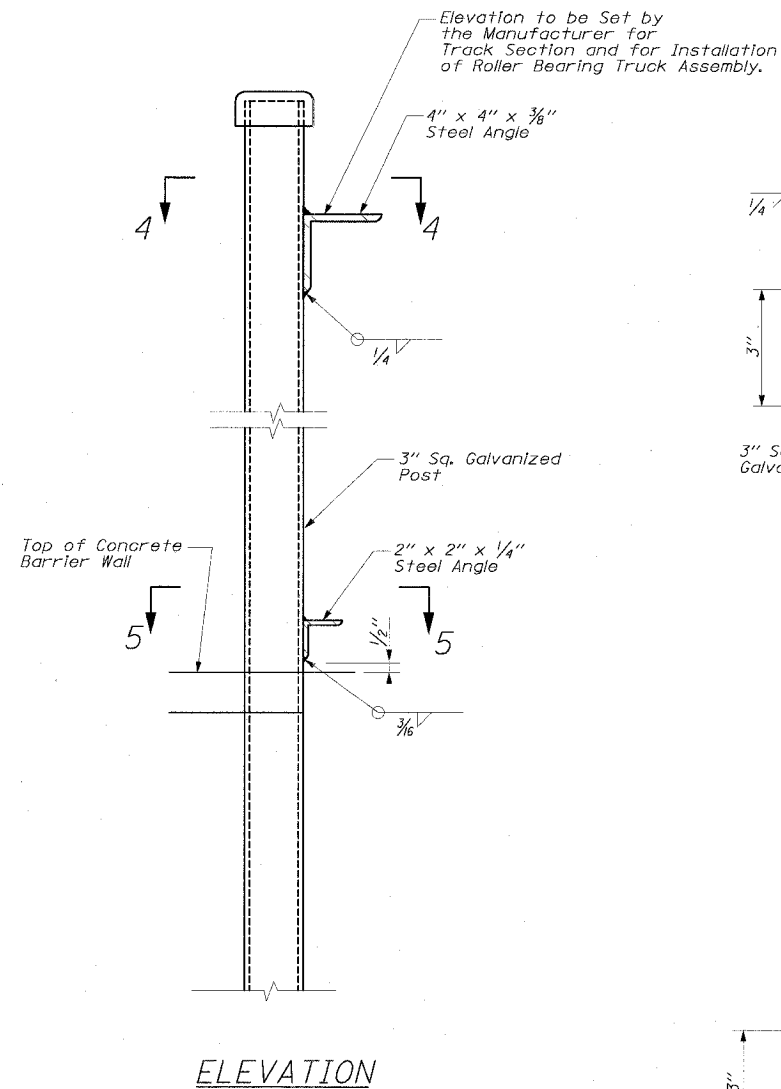
REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
CTA FENCE
ELEVATIONS AND DETAILS
SHEET 2 OF 3
SCALE: NONE
DATE: 7/1/05
DRAWN BY: RLK
CHECKED BY: EL

Edwards AND Kelcey
ONE NORTH FRANKLIN
CHICAGO, IL 60606
PHONE: (312) 251-3000
FAX: (312) 251-3015
WEB: WWW.EKCORP.COM

06/24/2005 12:22:20 PM

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	399
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62302	• (1818, ETC, 2324.6-1P)R-9			

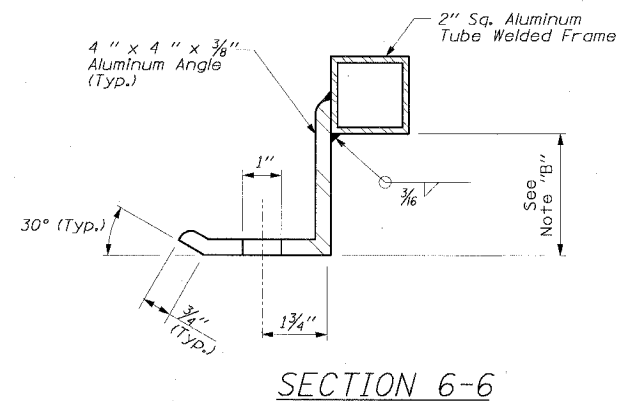
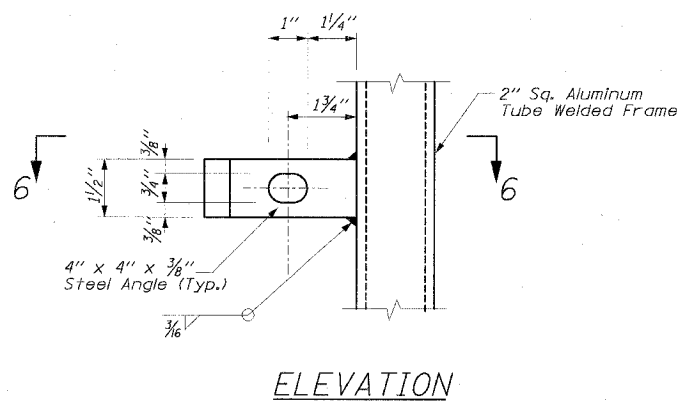
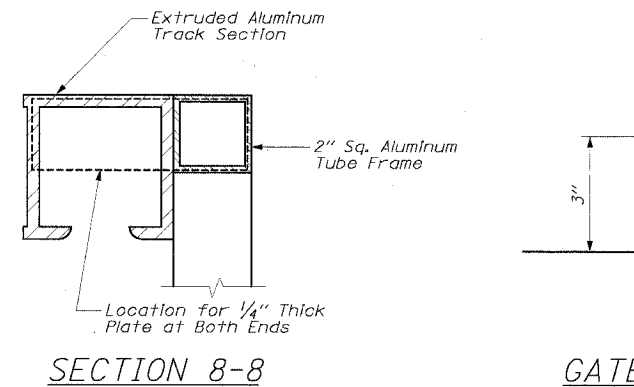


DETAIL A

For Overhang Post - As Shown
For Gate Post "A" - Opposite Hand

NOTE:

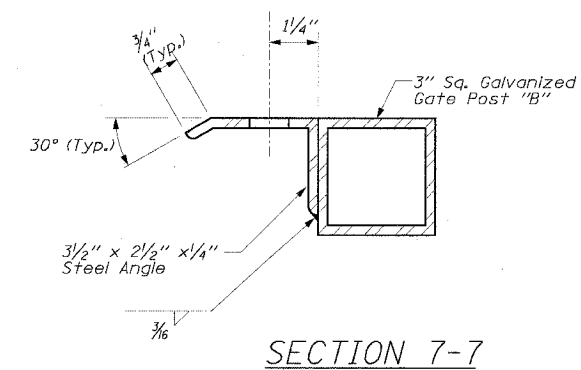
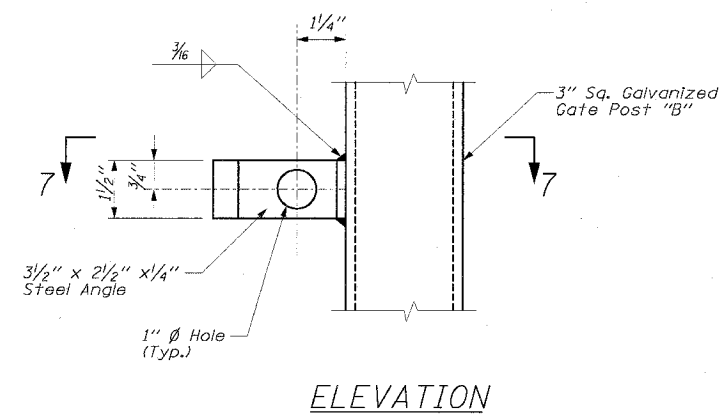
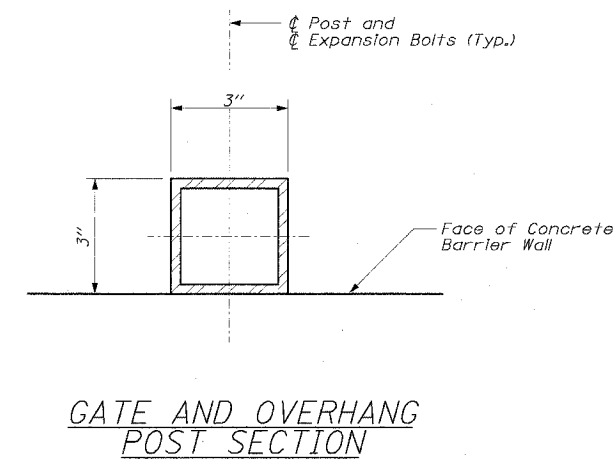
"A": The Manufacturer of the Sliding Gate Shall Determine the Length of Angles and Location of Hole for Installation of Roller Bearing Truck Assembly.



DETAIL B

NOTE:

"B": The Manufacturer of the Sliding Gate Shall Set the Angle Based on the Size of the Track Frame



DETAIL C

GENERAL NOTE:

The Slide Gates Shall be of the Cantilevered Type with NO Track or Support Across the Opening.

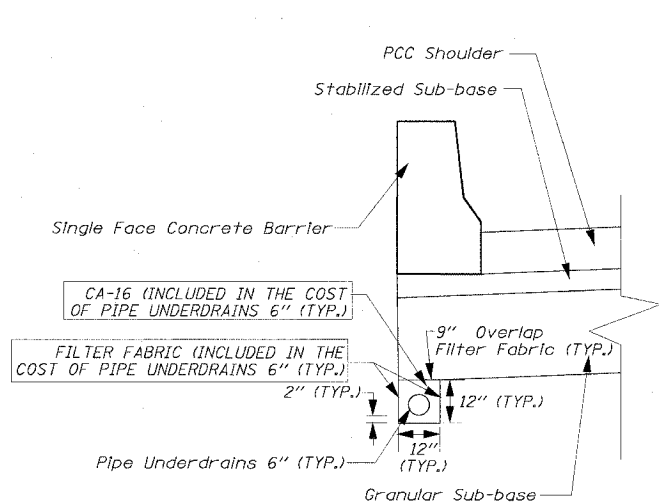
Edwards AND Kelcey
ONE NORTH FRANKLIN CHICAGO, IL 60606
PHONE: (312) 251-3000
FAX: (312) 251-3015
WEB: WWW.EKCORP.COM

REVISIONS	
NAME	DATE

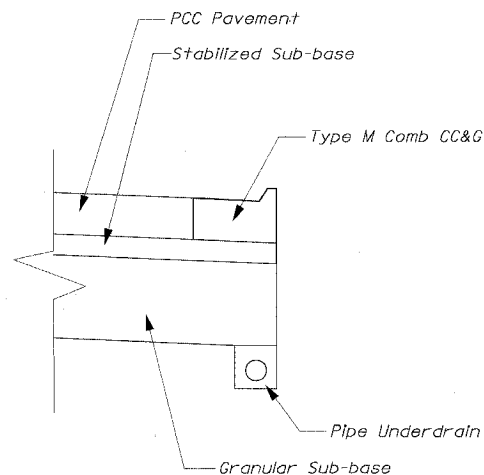
ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
31ST STREET TO 71ST STREET
SB EXPRESS LANE RECONSTRUCTION
CTA FENCE
ELEVATIONS AND DETAILS
SHEET 3 OF 3
SCALE: NONE
DATE: 7/1/05
DRAWN BY: RLK
CHECKED BY: EL

CDT-12
06/24/2005 12:22:52 PM

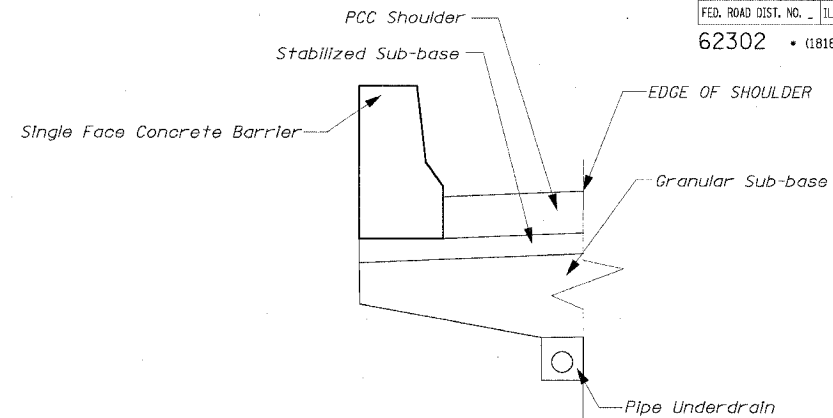
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90		COOK	598	400
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62302	• (1818, ETC, 2324.6-1)PR-9			



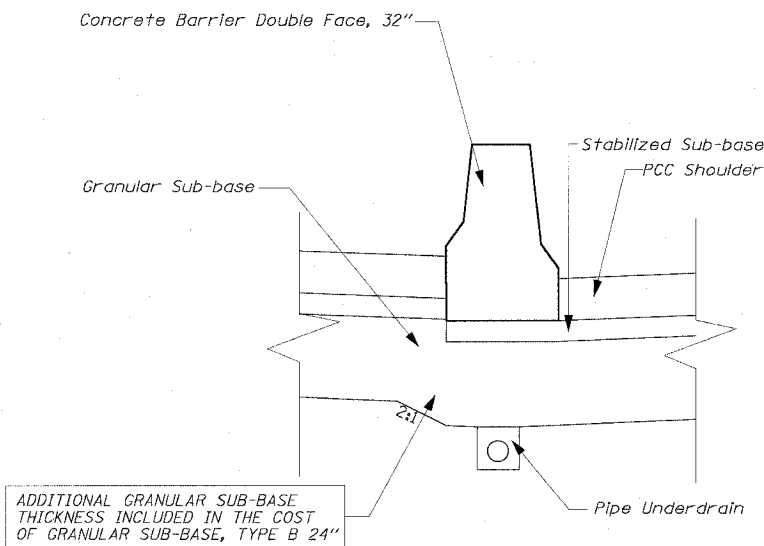
PIPE UNDERDRAINS 6" UNDER SINGLE FACE BARRIER WALL



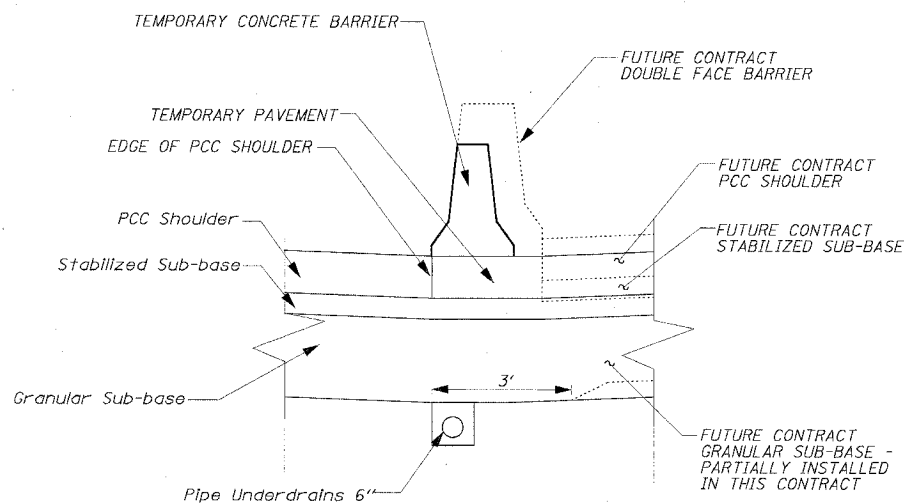
PIPE UNDERDRAINS 6" - UNDER TYPE M COMBINATION CONCRETE CURB & GUTTER



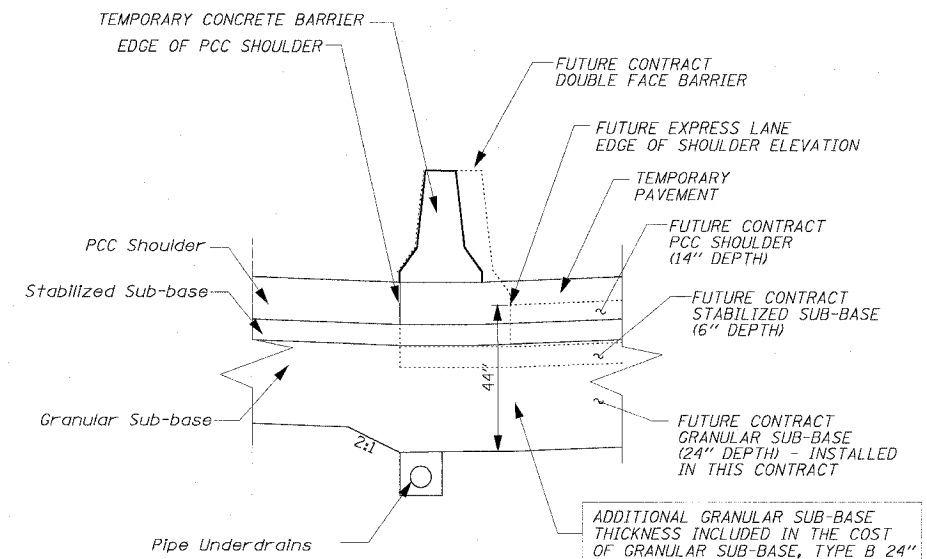
PIPE UNDERDRAINS 6" UNDER SHOULDER ADJACENT TO CTA



PIPE UNDERDRAINS 6" UNDER DOUBLE FACE BARRIER WALL



PIPE UNDERDRAINS 6" UNDER TEMPORARY CONCRETE BARRIER WALL SCENARIO A - FUTURE LOCAL LANES HIGHER THAN EXPRESS LANES



PIPE UNDERDRAINS 6" UNDER TEMPORARY CONCRETE BARRIER WALL SCENARIO B - FUTURE LOCAL LANES LOWER THAN EXPRESS LANES

.....INDICATES FUTURE CONTRACT CONSTRUCTION

.....INDICATES FUTURE CONTRACT CONSTRUCTION

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ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)
 31ST STREET TO 71ST STREET
 SB EXPRESS LANE RECONSTRUCTION
 CIVIL DETAILS
 PIPE UNDERDRAINS 6"
 SCALE: NONE
 DATE: 7/7/05
 DRAWN BY:
 CHECKED BY:

CDT-13
 06/24/2005 12:28:14 PM