

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			27	3
ILLINOIS CONTRACT NO.				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

Various Routes
SECTION D 2 OVD SIN STR REPL 11-09

HENRY, ROCK ISLAND, WINNEBAGO Counties

C-60-009-11

INDEX OF SHEETS

- 1. Cover Sheet
- 2.-3. Summary and schedule of Quantities
- 4.-24. Sign truss plans
- 25.-27 Sign designs


STANDARDS

- 701101-02
- 701106-02
- 701400-04
- 701401-05
- 701411-06
- 701901-01

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

CONTRACT NO. 46132

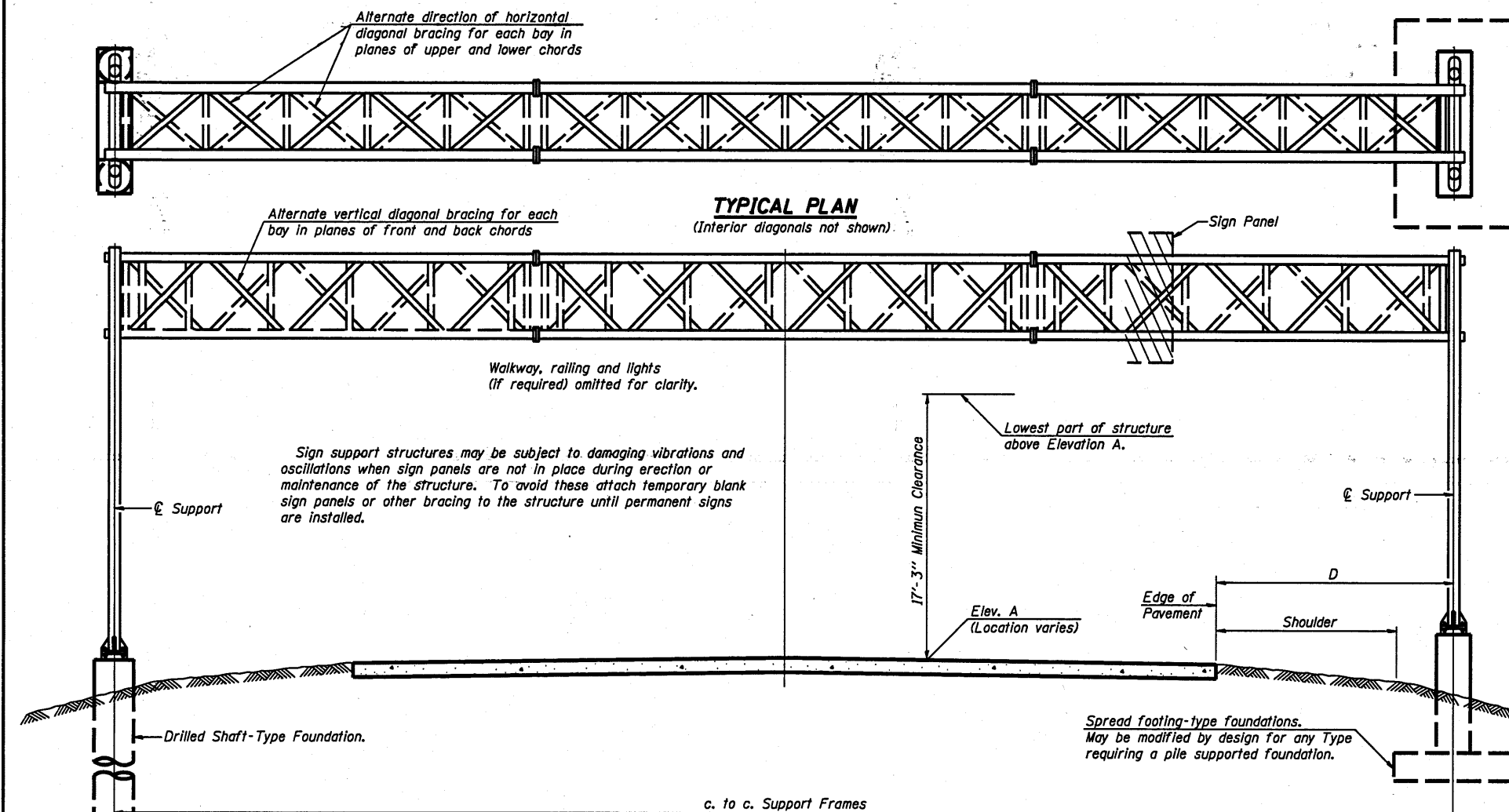
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Aug. 3 2010

ENGINEER OF OPERATIONS

October 1 2010
Scott E. Stett, P.E.
acting ENGINEER OF DESIGN AND ENVIRONMENT

October 1 2010
Christine M. Reedler
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**



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

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

DESIGN STRESSES:

Field Units
 $f_c = 3,500$ 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 or A500 Grade B or C. 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) (2) 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, 55 or 105 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.

FOUNDATIONS: The contract unit price for Concrete Foundations and Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

* 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.

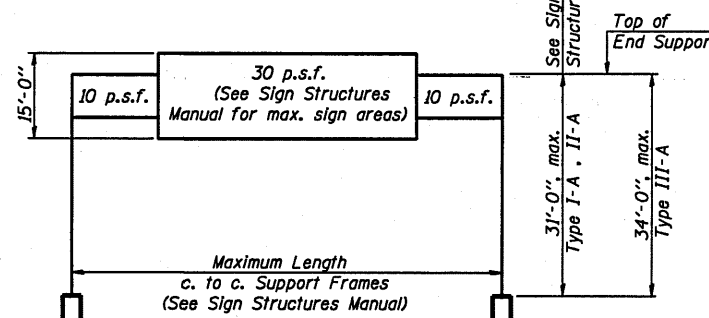
TYPICAL PLAN
(Interior diagonals not shown)

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
109	2S0371080R007.9	I-A	91'	100.96	35' ^b	15'	310 sq. ft.
108	2S0811088L017.3	I-A	94'	103.26	35' ^e	12.5'	320 sq. ft.
138	2S081S092R026.0	II-A	102'	99.61	33' ^c	9.0'	379 sq. ft.
107	2S0811088L016.6	III-A	119'	103.67	35' ^f	10'	453 sq. ft.
137	2S081S092L026.6	III-A	102'	102.78	33' ^a	9'	350 sq. ft.
048	2S0811074L001.3	I-A	86'	99.88	16' ^b	12'	493 sq. ft.

**Looking upstation for structures with signs both sides.

- 1 16' south of \mathcal{C} existing sign
- 2 16' east of \mathcal{C} existing sign
- 3 16' west of \mathcal{C} existing sign
- 4 21' north of \mathcal{C} existing sign
- 5 21' south of \mathcal{C} existing sign
- 6 21' south of \mathcal{C} existing sign
- a 70' right of \mathcal{C} southbound lanes
- b 36' right of \mathcal{C} northbound lanes
- c 69' right of \mathcal{C} northbound lanes
- d 47' right of \mathcal{C} southbound lanes
- e 47' right of \mathcal{C} westbound lanes
- f 74' right of \mathcal{C} westbound lanes



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.

NUMBER	REVISION	DATE

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE SPAN TYPE I-A	Foot	
OVERHEAD SIGN STRUCTURE SPAN TYPE II-A	Foot	
OVERHEAD SIGN STRUCTURE SPAN TYPE III-A	Foot	
OVERHEAD SIGN STRUCTURE WALKWAY TYPE A	Foot	
CONCRETE FOUNDATIONS	Cu. Yds.	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	

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

05-A-1

12-1-08

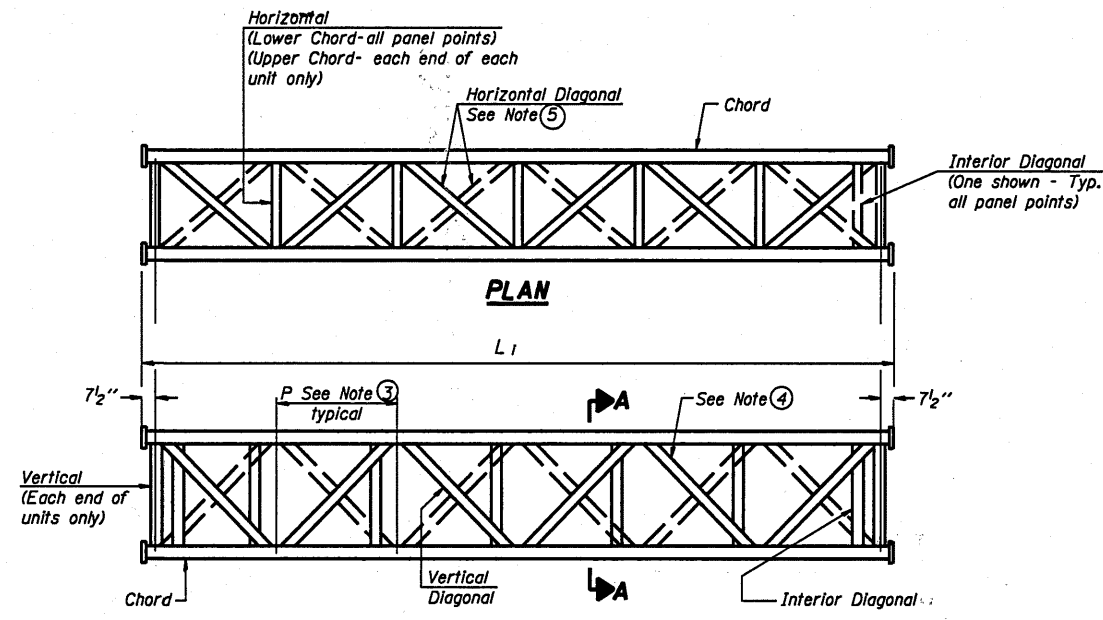
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PLOT DATE * Tue Aug 03 06:37:33 2011	DATE -	REVISED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

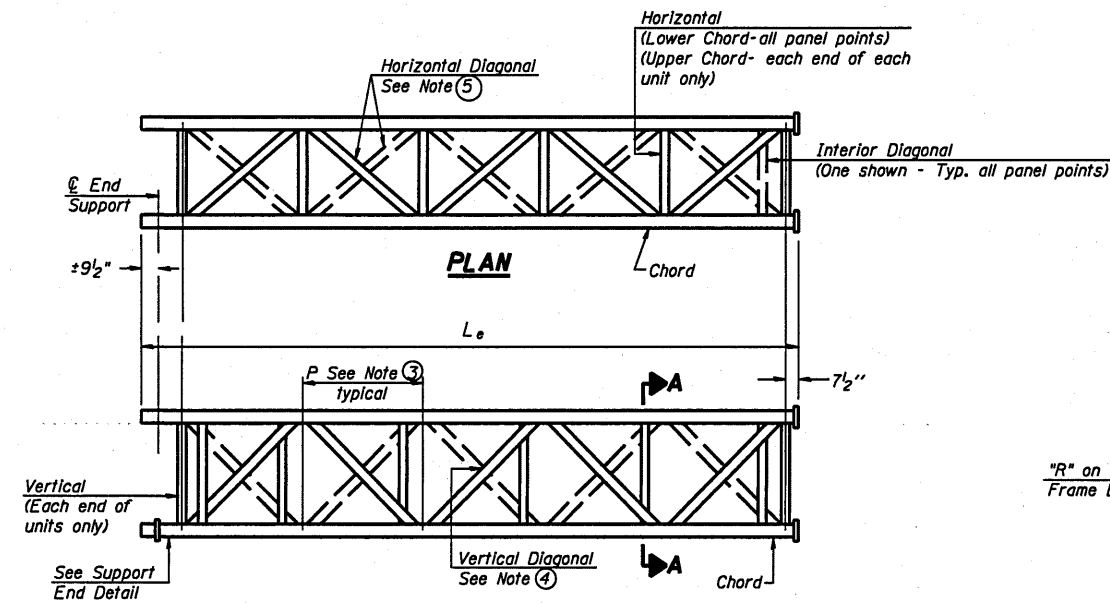
District 2 Sign
Structure Replacement

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			27	4
CONTRACT NO. 46132			ILLINOIS FED. AID PROJECT	

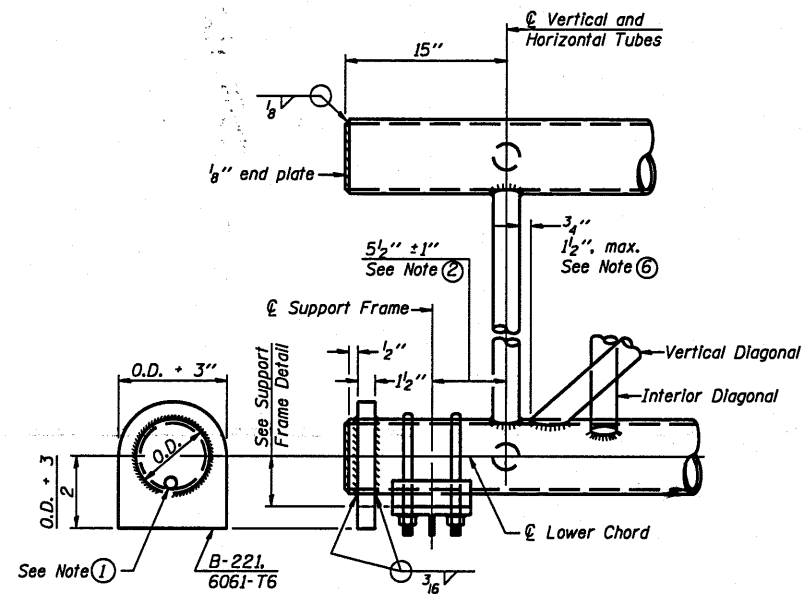
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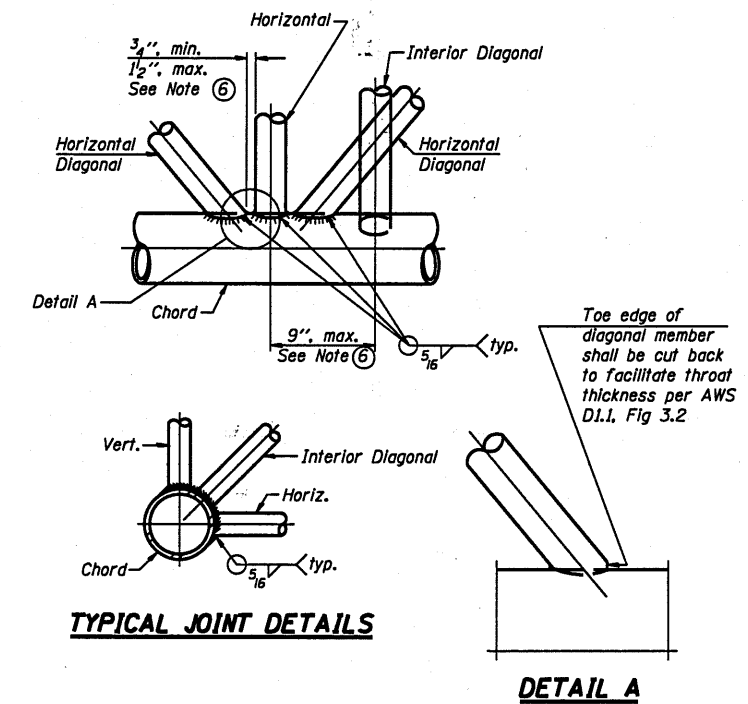
**ELEVATION
TYPICAL INTERIOR UNIT**
Even number of panels/interior unit required.



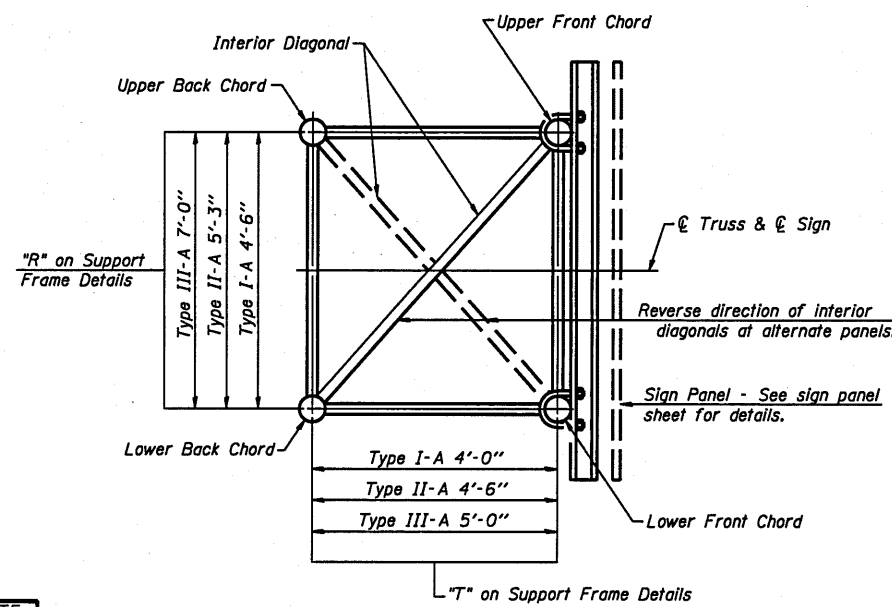
**ELEVATION
TYPICAL EXTERIOR UNIT**
Even or odd number of panels/exterior units allowed.



SUPPORT END DETAIL FOR EXTERIOR UNIT



TYPICAL JOINT DETAILS



SECTION A-A

- ① Contractor may alternatively use standard aluminum drive-fit cap to close end. 1/2" diameter drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)
- ② 5 1/2" end dimension may vary by ±1" to provide uniform panel spacing (P).
- ③ 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.
- ④ Vertical Diagonals in front and back face shall alternate.
- ⑤ Hidden lines show wind bracing alternates direction between planes of top and bottom chords.
- ⑥ 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.

NUMBER	REVISION	DATE

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

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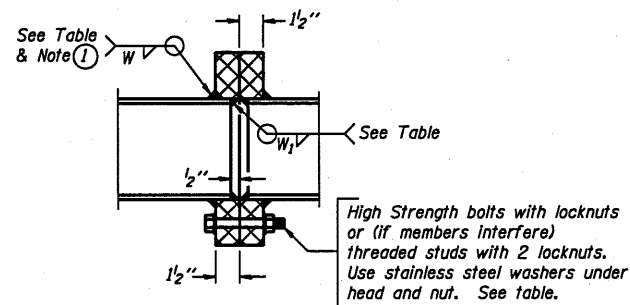
DISTRICT 2 SIGN
 STRUCTURE REPLACEMENT

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 46132				
ILLINOIS FED. AID PROJECT				

TRUSS UNIT TABLE

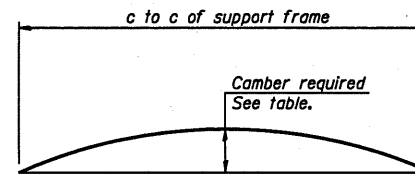
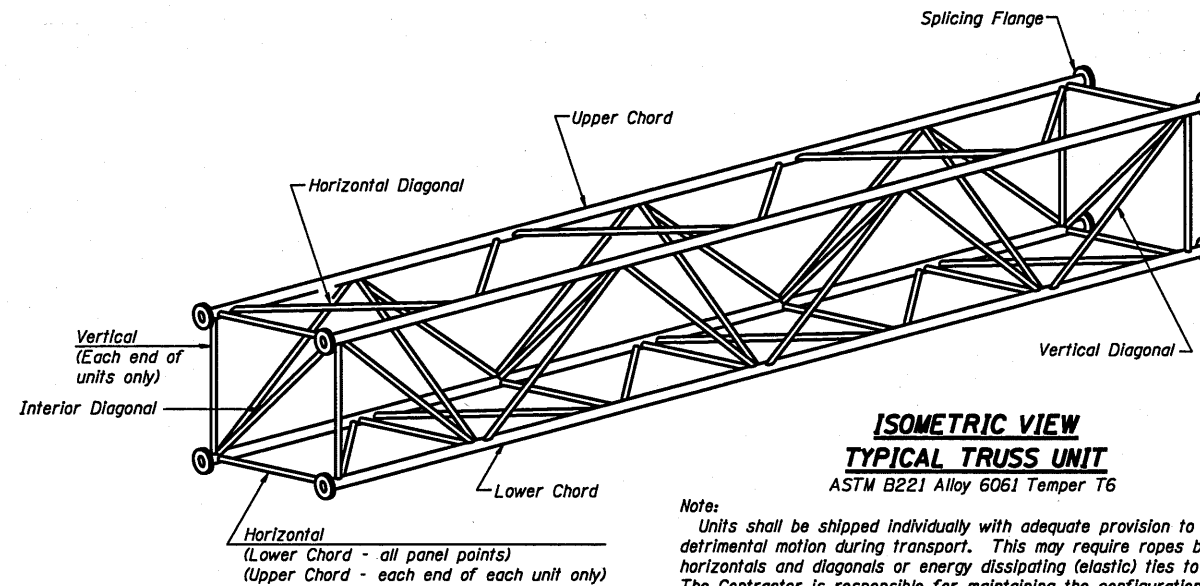
Structure Number	Station	Design Truss Type	Exterior Units (2)				Interior Unit				Upper & Lower Chord		Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals		Camber at Midspan	Splicing Flange					
			No. Panels per Unit	Unit Lgth.(L _u)	Panel Lgth.(P)	No. Req'd.	No. Panels per Unit	Unit Lgth.(L _i)	Panel Lgth.(P)	O.D.	Wall	O.D.	Wall	Bolts		Weld Sizes		A	B		
														No./Splice		Dia.	W			W ₁	
2S0371080R007.9	453+16	I-A	6	31' 1 1/2"	4' 10 1/2"	1	6	30' 6"	4' 10 1/2"	5 1/2"	5 1/8"	2 1/2"	5 1/8"	2 3/4"	6	7/8"	3/8"	1/4"	9 1/4"	12 1/4"	
2S0811088L017.3	323+16	I-A	7	33' 6 1/4"	4' 6 1/4"	1	6	28' 4 1/2"	4' 6 1/4"	5 1/2"	5 1/8"	2 1/2"	5 1/8"	3"	6	7/8"	3/8"	1/4"	9 1/4"	12 1/4"	
2S081S092R026.0	517+21	II-A	7	36' 5 1/4"	4' 11 1/4"	1	6	30' 10 1/2"	4' 11 1/4"	6 1/2"	5 1/8"	3"	5 1/8"	3 1/4"	6	1"	3/8"	1/4"	11"	14 1/2"	
2S0811088L016.6	285+84	III-A	6	30' 6"	4' 9 1/4"	2	6	29' 10 1/2"	4' 9 1/4"	7"	5 1/8"	3 1/4"	5 1/8"	3 1/4"	6	1"	3/8"	5/16"	11 1/2"	15"	
2S081S092L026.6	484+19	III-A	7	36' 5 1/4"	4' 11 1/4"	1	6	30' 10 1/2"	4' 11 1/4"	7"	5 1/8"	3 1/4"	5 1/8"	2 1/4"	6	1"	3/8"	5/16"	11 1/2"	15"	
2S0811074L001.3	296+21	I-A	6	29' 4 1/2"	4' 7"	1	6	28' 9"	4' 7"	5"	5 1/8"	2 1/2"	5 1/8"	2 1/2"	6	7/8"	5/16"	1/4"	8 3/4"	11 3/4"	



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.

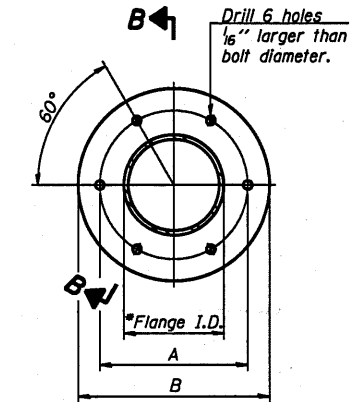
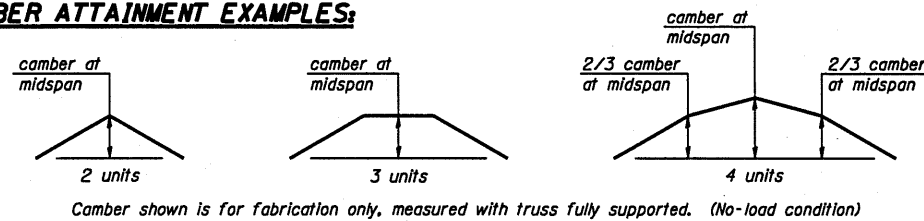
NUMBER	REVISION	DATE



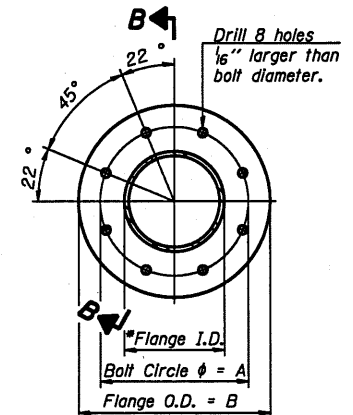
CAMBER DIAGRAM

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

CAMBER ATTAINMENT EXAMPLES:



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".

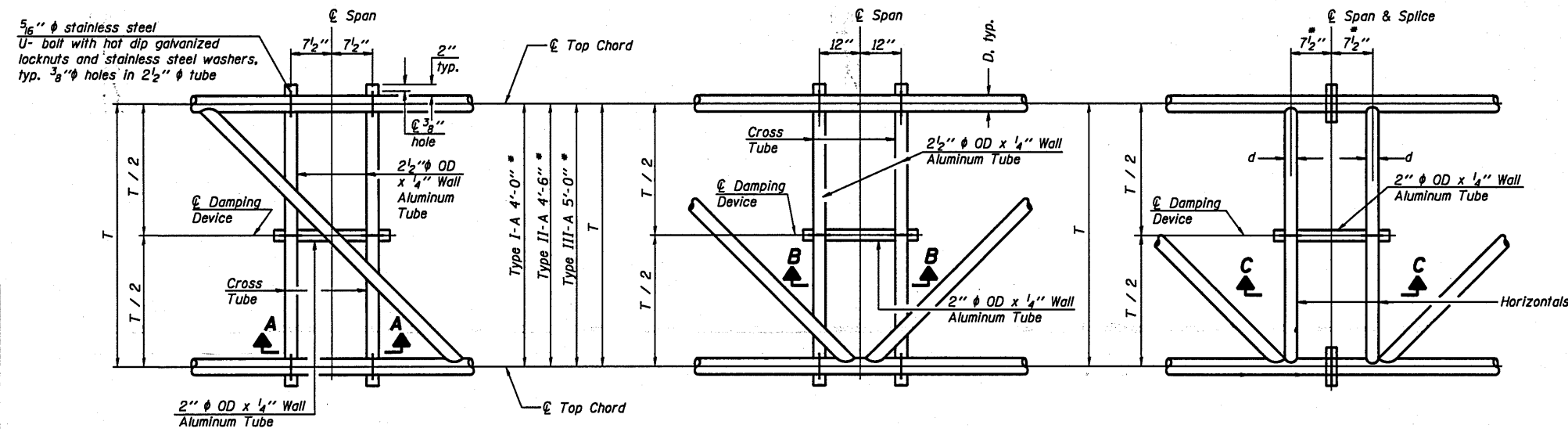
**OVERHEAD SIGN STRUCTURES
ALUMINUM TRUSS DETAILS
FOR TRUSS TYPES I-A, II-A AND III-A**

054-A-2

12-1-08

FILE NAME =	USER NAME = jmkd	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT 2 SIGN STRUCTURE REPLACEMENT	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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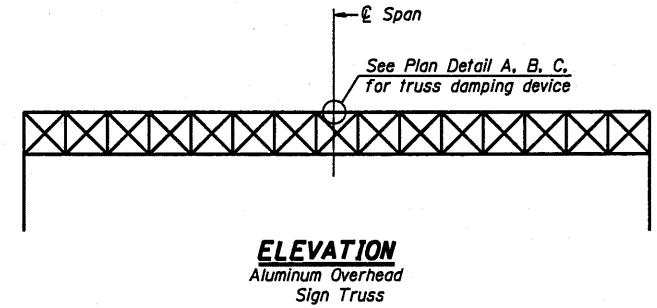
Center of horizontal to center of splice dimension may vary. Verify before drilling holes in mounting tube.



PLAN DETAIL "A"
Span between Panel Points

PLAN DETAIL "B"
Span at Panel Point

PLAN DETAIL "C"
Span at Chord Splice

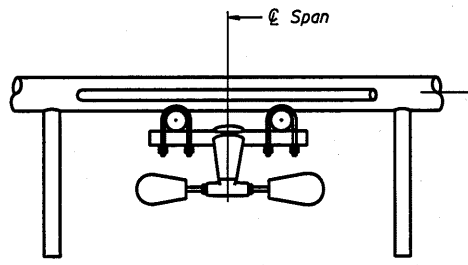


ELEVATION
Aluminum Overhead Sign Truss

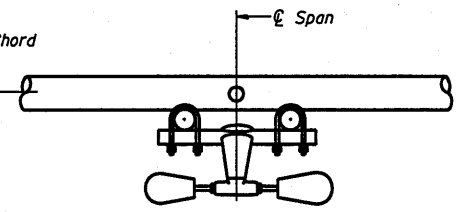
NOTES

Damper: One damper per truss. (31 lbs. minimum Stockbridge-Type Aluminum - 29" minimum between ends of weights) Cost included in Overhead Sign Structure...

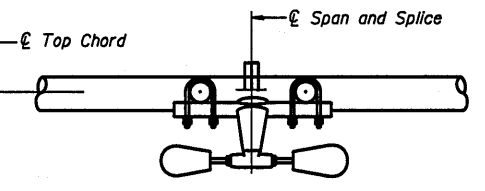
Materials: Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6. Cost included in Overhead Sign Structure...



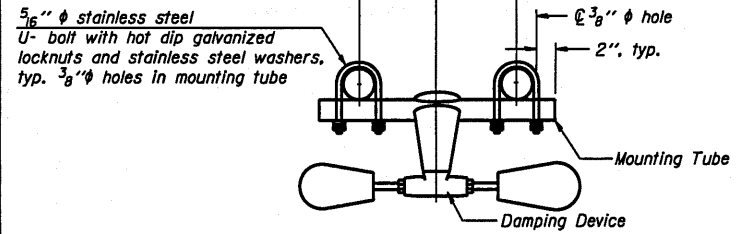
SECTION A-A



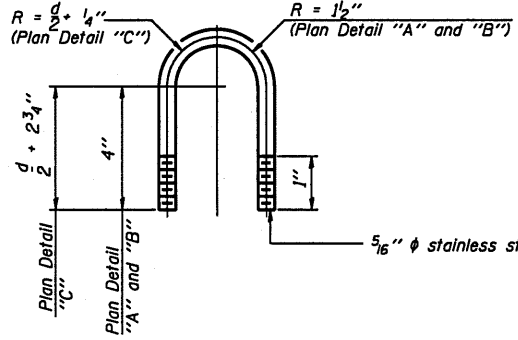
SECTION B-B



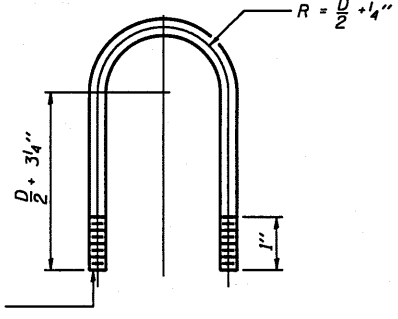
SECTION C-C



TRUSS DAMPING DEVICE CONNECTION DETAIL
(Typical)



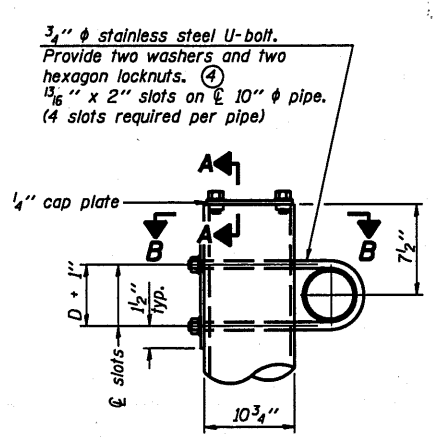
DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL
(Typical)



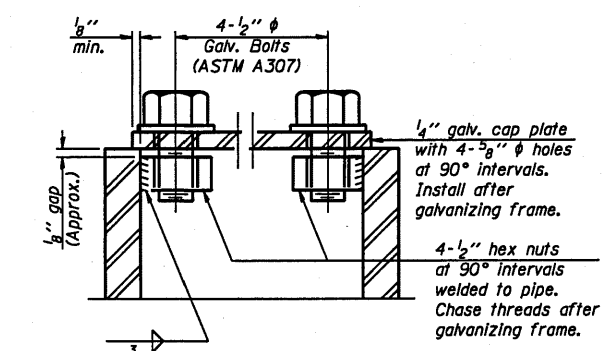
TOP CHORD TO CROSS TUBE U-BOLT DETAIL
(Typical - Detail "A" and "B")

OVERHEAD SIGN STRUCTURE DAMPING DEVICE

OS-A-D	12-1-08	FILE NAME =	USER NAME = lmkd	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT 2 SIGN STRUCTURE REPLACEMENT	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
DRAWING TRUSS\CADD Plans\2011 contr...		1\2011 plans.dgn		DRAWN -	REVISED -			.	.	VARIOUS	27	7
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PLOT DATE = Tue Aug 03 06:39:38 2010		DATE -	REVISED -									

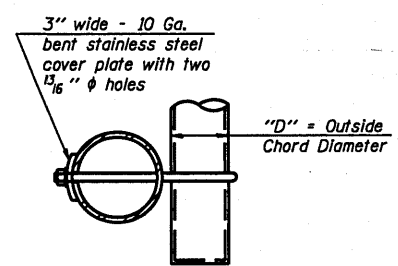


DETAIL A

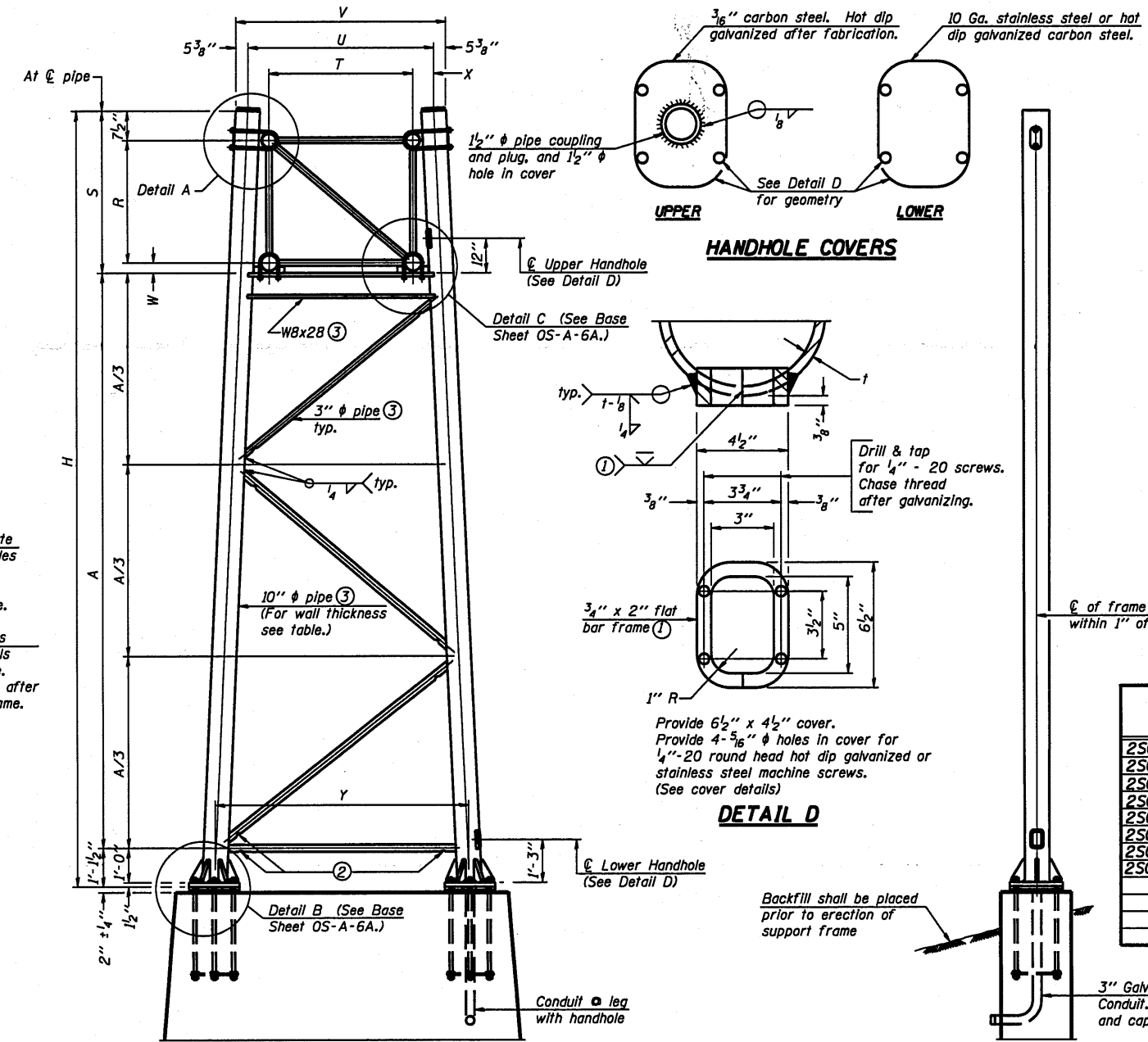


SECTION A-A

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



SECTION B-B



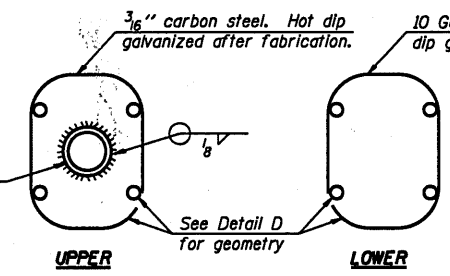
For Foundation Details, see base sheet OS-F3 (Spread Footing) or OS-F3 (Drilled Shaft).

SIDE ELEVATION

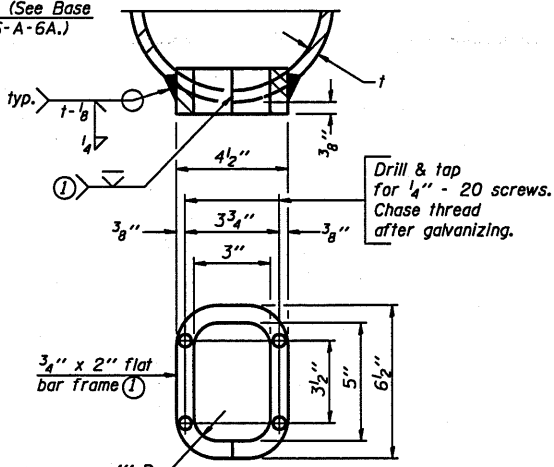
10" PIPE TRUSS SUPPORT FRAME

NUMBER	REVISION	DATE

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



HANDHOLE COVERS



DETAIL D

Backfill shall be placed prior to erection of support frame

3" Galvanized Steel Conduit. Thread and cap both ends.

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

- 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 min 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.
- "H" based on 15'-0" or actual sign height, whichever is greater.

Structure Number	Station	Support		Truss Type	Pipe Wall Thickness	H ⑥	A
		Left	Right				
2S0371080R007.9	453+16	X		I-A	0.279	29.00	22' 5"
2S0371080R007.9	453+16		X	I-A	0.279	29.00	22' 5"
2S0811088L017.3	323+16	X		I-A	0.279	29.00	22' 5"
2S0811088L017.3	323+16		X	I-A	0.279	29.00	22' 5"
2S081S092R026.0	517+21	X		II-A	0.365	29.00	21' 7 1/4"
2S081S092R026.0	517+21		X	II-A	0.365	29.00	21' 7 1/4"
2S0811074L001.3	296+21	X		I-A	0.279	24' 7"	18.00
2S0811074L001.3	296+21		X	I-A	0.279	29' 7"	23.00

**OVERHEAD SIGN STRUCTURES
SUPPORT FRAME FOR ALUMINUM TRUSS**

OS-A-6 12-1-08

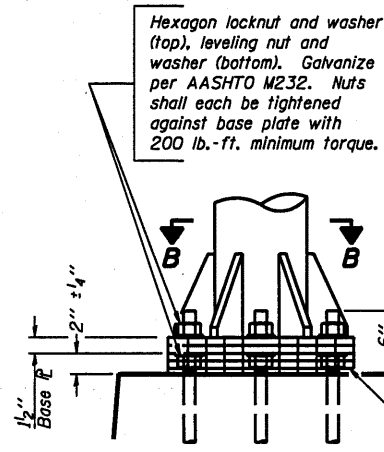
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PLOT DATE = Tue Aug 03 06:39:05 2010		DATE -	REVISD -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 2 SIGN
STRUCTURE REPLACEMENT

SCALE: SHEET NO. OF SHEETS STA. TO STA.

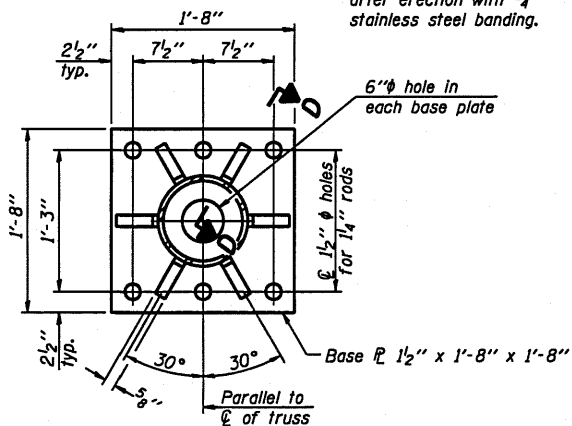
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		VARIOUS	27	8
CONTRACT NO. 46132			ILLINOIS FED. AID PROJECT	



DETAIL B

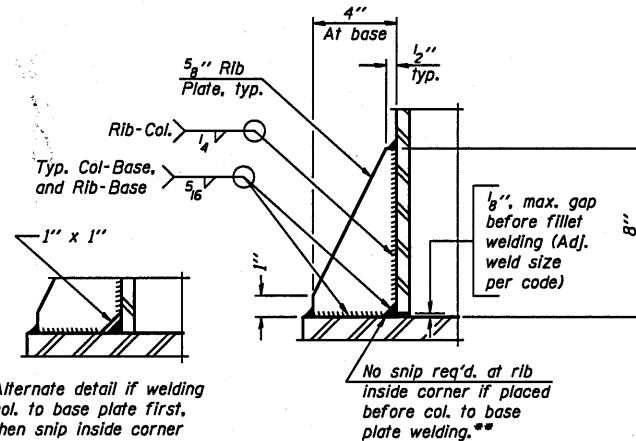
Ribs shall be cut to fit slope of pipe.

Stainless Steel Standard Grade Wire Cloth, 3" wide, 1/4" maximum opening with a minimum wire diameter of AWG. No. 16 with a minimum 2" lap. Secure to base plate after erection with 3/4" stainless steel banding.



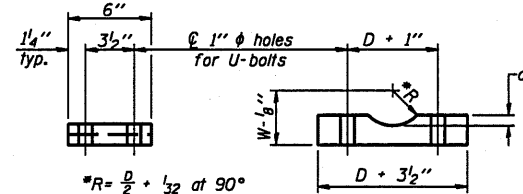
SECTION B-B

NUMBER	REVISION	DATE



SECTION D-D

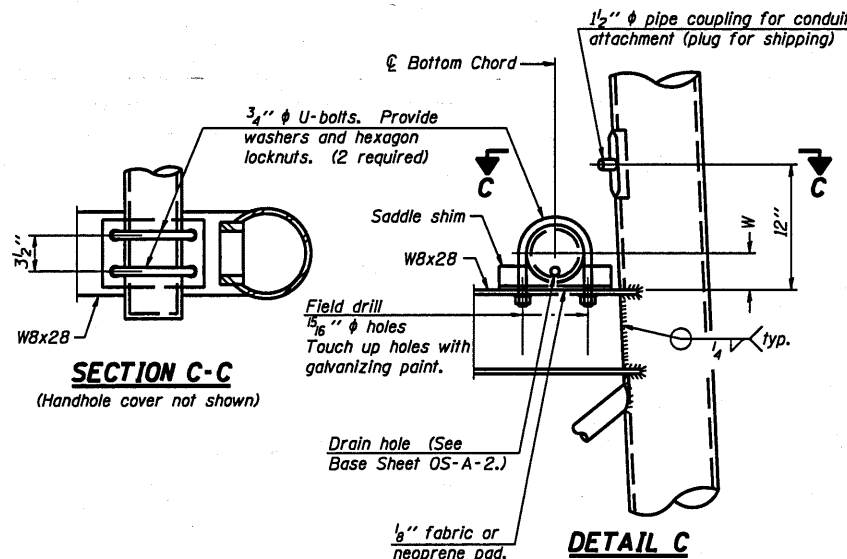
** Alternate detail if welding col. to base plate first, then snip inside corner of ribs. Terminate weld on rib 1/4" from snip.



SADDLE SHIM DETAIL

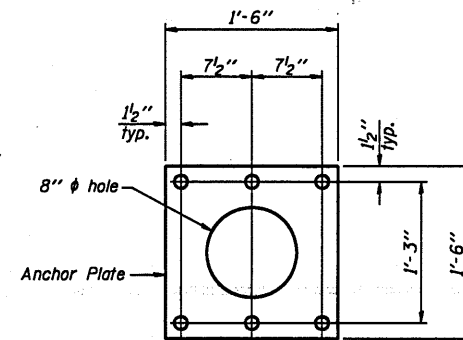
ASTM B26 Alloy 356-F
or
ASTM B209 Alloy 6061-T651
(4 required per sign truss)

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

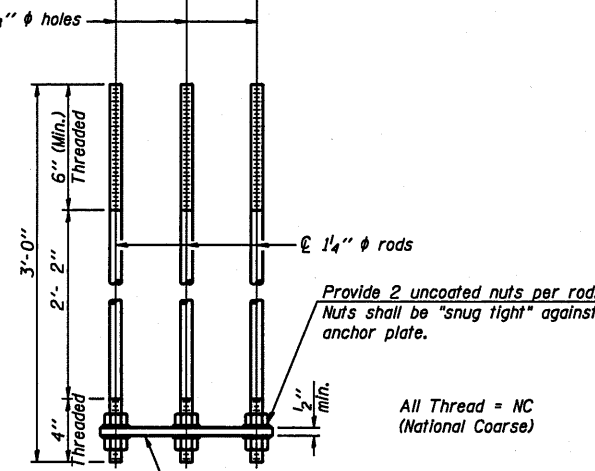


SECTION C-C

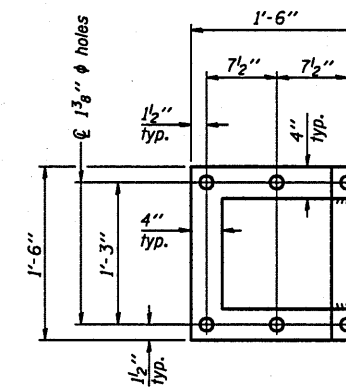
DETAIL C



Anchor Plate

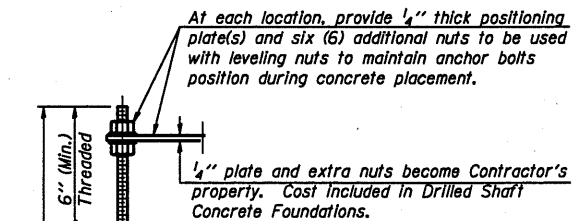


ANCHOR ROD DETAIL
Spread Footing Foundation



POSITIONING PLATE(S)

Optionally may use four (4) separate bars. Weld to maintain perpendicularity.



ANCHOR ROD DETAIL
Drilled Shaft Foundation

All Thread = NC (National Coarse)

Provide 1 uncoated nut per rod. Deform thread or use chemical thread lock to secure.

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.

10" PIPE SUPPORT FRAME DETAILS

**OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS ALUMINUM TRUSS**

OS-A-6A

12-1-08

FILE NAME	USER NAME	DESIGNED	REVISED
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		DATE	REVISED

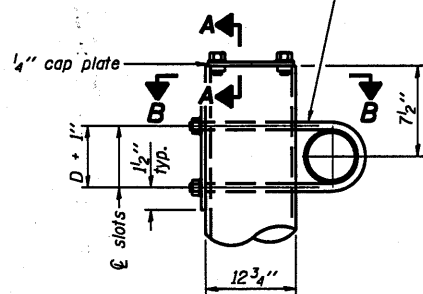
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 2 SIGN
STRUCTURE REPLACEMENT

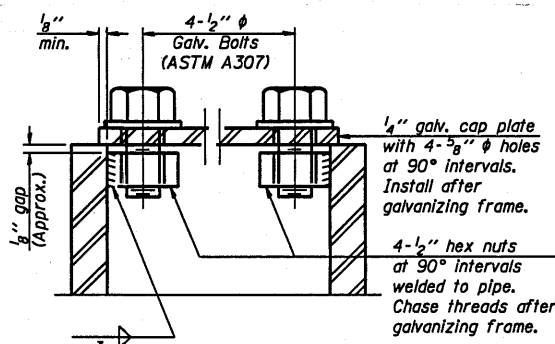
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			27	9
			CONTRACT NO. 46132	
ILLINOIS FED. AID PROJECT				

3/4" φ stainless steel U-bolt.
Provide two washers and two hexagon locknuts. (4)
1 1/2" x 2" slots on 12" φ pipe.
(4 slots required per pipe)

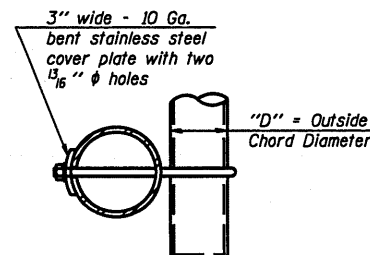


DETAIL A

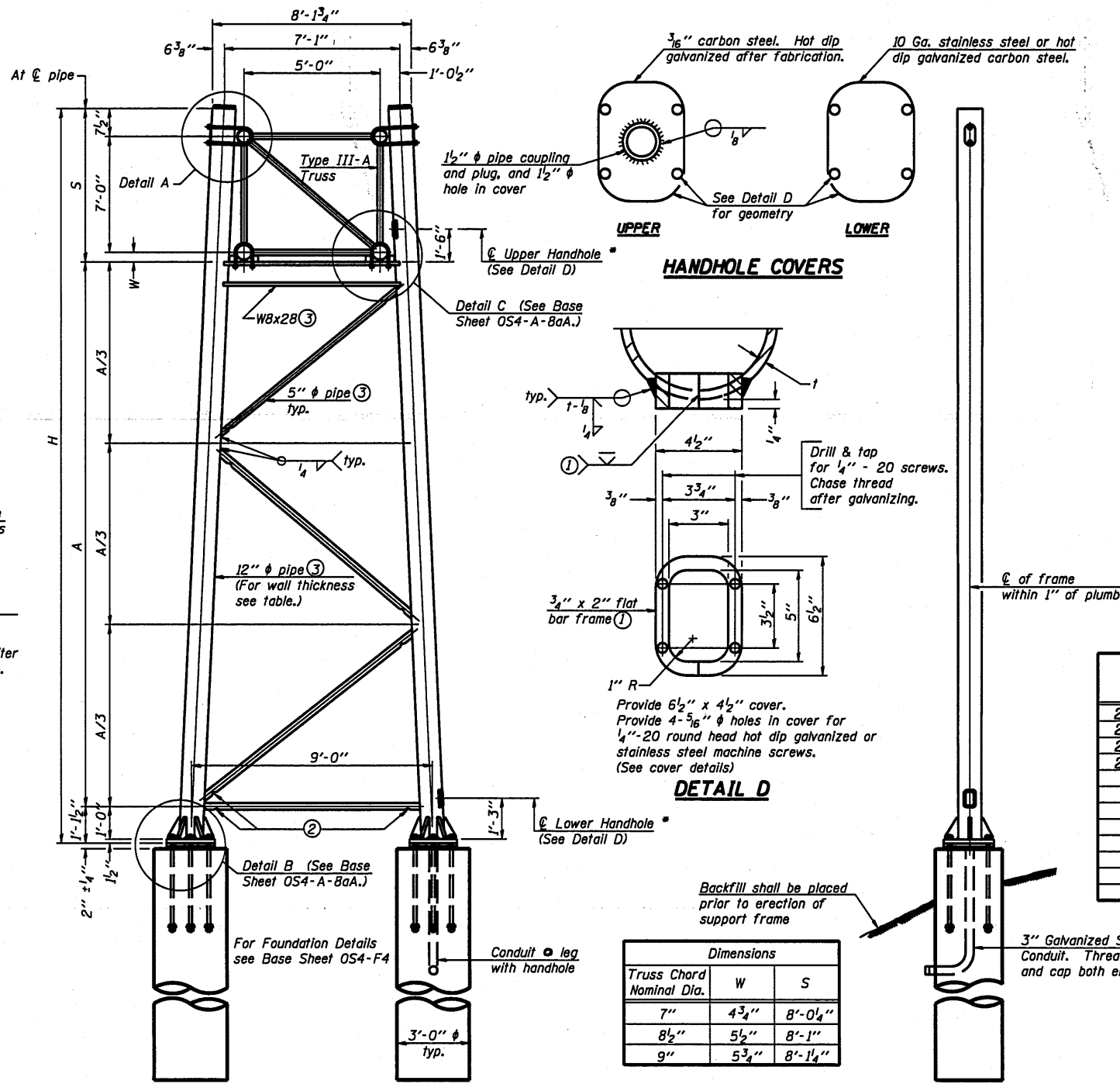


SECTION A-A

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



SECTION B-B



SIDE ELEVATION

END ELEVATION

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

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"

NUMBER	REVISION	DATE

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

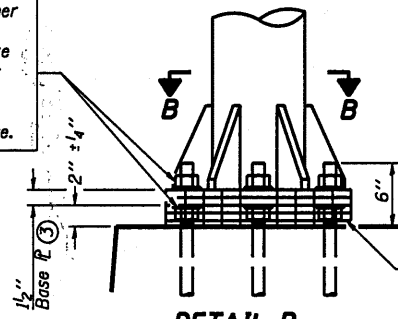
- In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 min or less.
 - Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided 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.
 - "H" based on 15'-0" or actual sign height, whichever is greater.
- * For dynamic message sign installations, provide upper and lower handholes in both legs of each support frame.

Structure Number	Station	Support		Pipe Wall Thickness	H (6)	A
		Left	Right			
2S081088L016.6	285+84	X		0.33	31' 2"	22' 0 1/4"
2S081088L016.6	285+84		X	0.33	32' 8"	23' 6 1/4"
2S0815092L026.6	484+19	X		0.33	28' 8"	19' 6 1/4"
2S0815092L026.6	484+19		X	0.33	33' 8"	24' 6 1/4"

**OVERHEAD SIGN STRUCTURES
SUPPORT FRAME FOR
TYPE III-A ALUMINUM TRUSS**

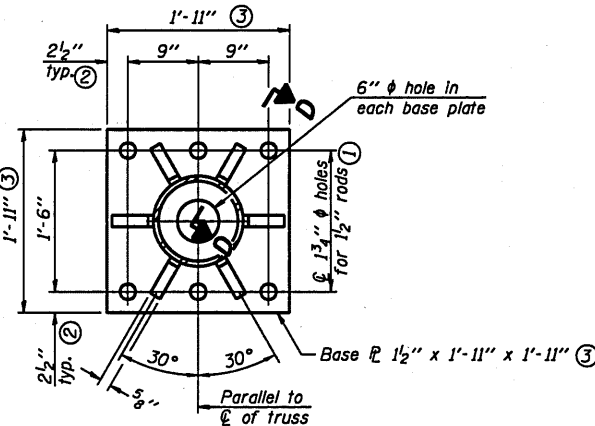
OS4-A-8a 12-1-08

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.

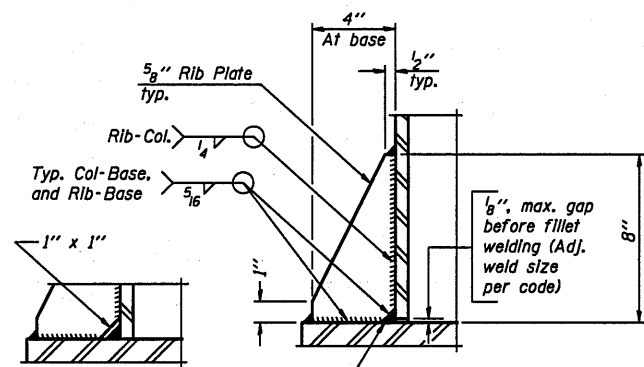


DETAIL B

Ribs shall be cut to fit slope of pipe.
Stainless Steel Standard Grade Wire Cloth, 3" wide, 1/4" maximum opening with a minimum wire diameter of AWG. No. 16 with a minimum 2" lap. Secure to base plate after erection with 3/4" stainless steel banding.



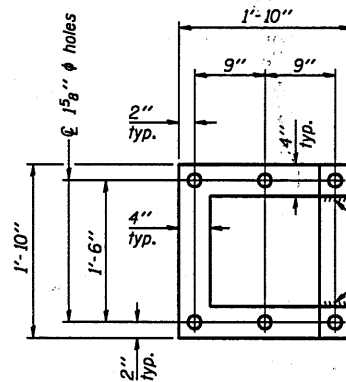
SECTION B-B



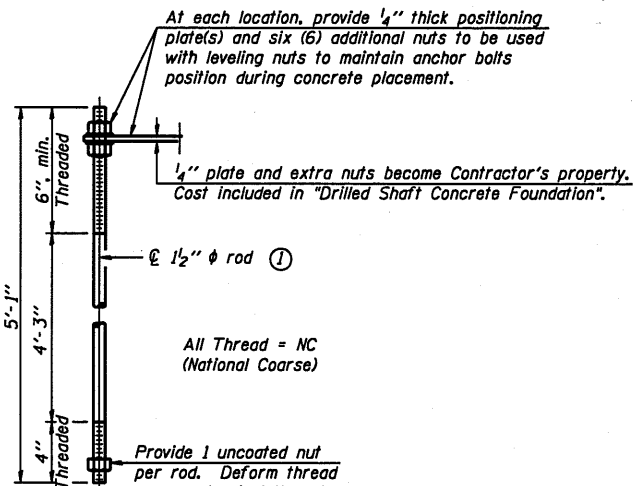
** Alternate detail if welding col. to base plate first, then snip inside corner of ribs. Terminate weld on rib 1/4" from snip.

SECTION D-D

NUMBER	REVISION	DATE



POSITIONING PLATE(S)



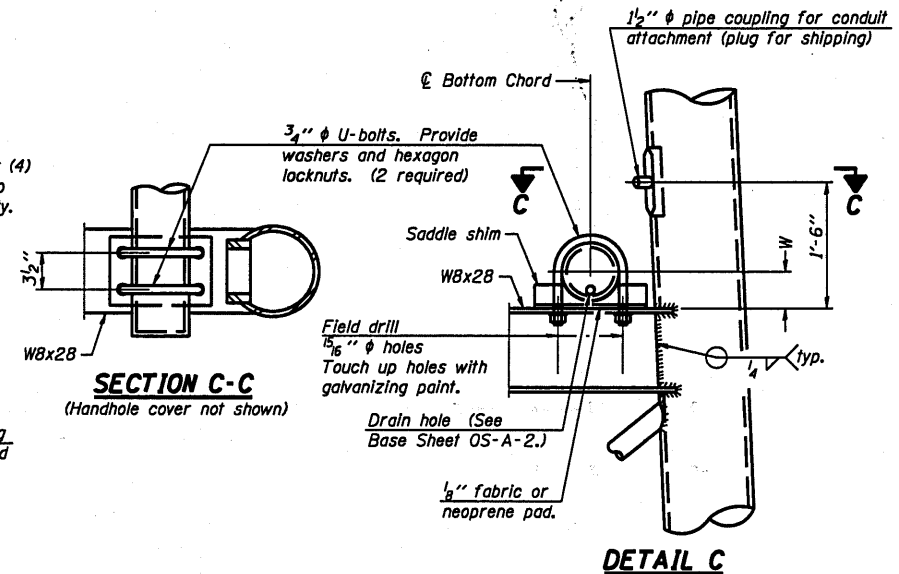
ANCHOR ROD DETAIL

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 III-A TRUSS
12" PIPE SUPPORT FRAME DETAILS**

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 P 1 5/8" x 1'-11 1/2" x 1'-11 1/2"

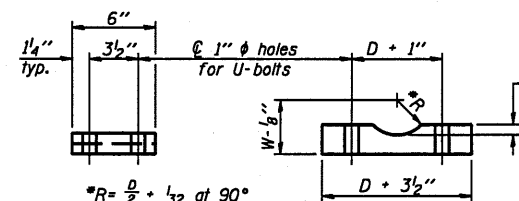


DETAIL C

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)



*R = D/2 + 1/32 at 90°
D = Outside Diameter of Chord.
For W, see Base Sheet OS-A-6.

OS4-A-80A

12-1-08

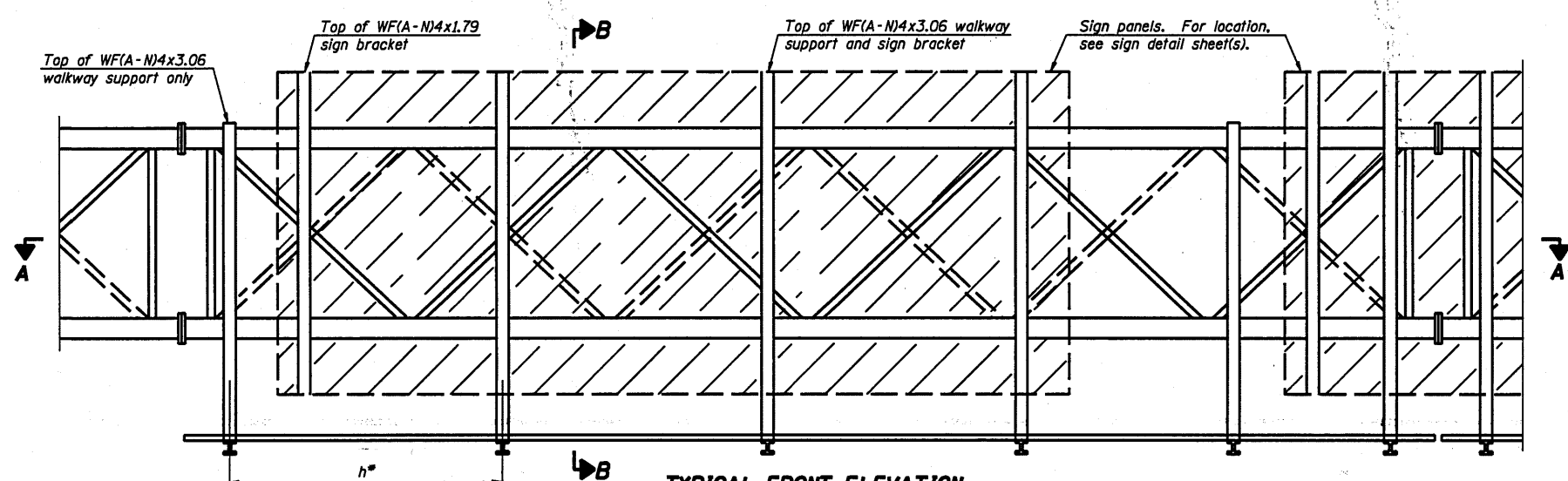
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PLOT DATE = Tue Aug 03 06:41:04 2010		DATE	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

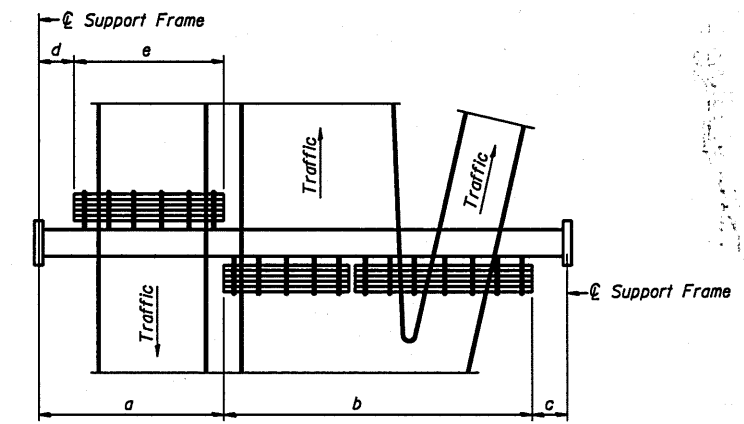
DISTRICT 2 SIGN
STRUCTURE REPLACEMENT

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			27	11
			CONTRACT NO. 46132	
ILLINOIS FED. AID PROJECT				



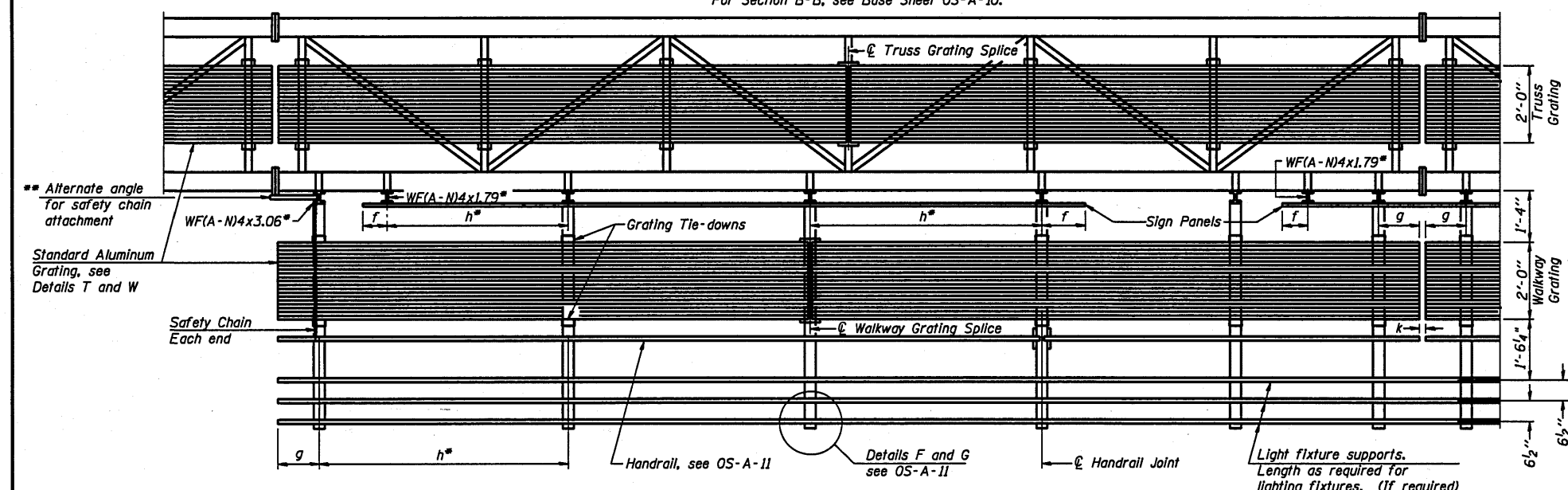
TYPICAL FRONT ELEVATION
 With lights and handrail omitted for clarity.
 For Section B-B, see Base Sheet OS-A-10.



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

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



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. Handrail joints, grating, and light support 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".

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 Handrail Details see Base Sheet OS-A-11.

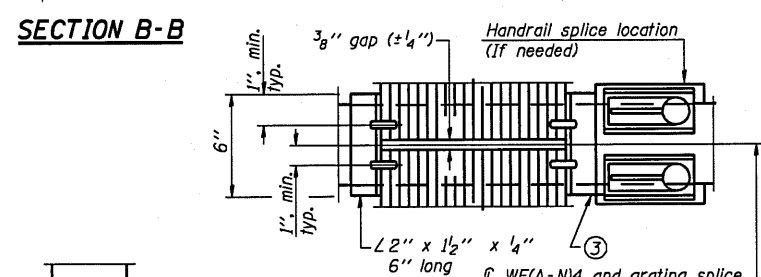
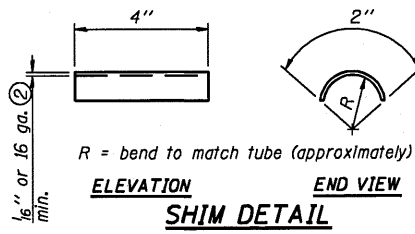
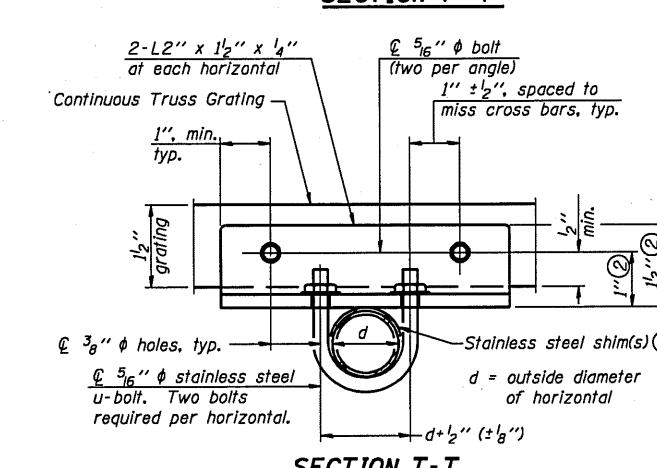
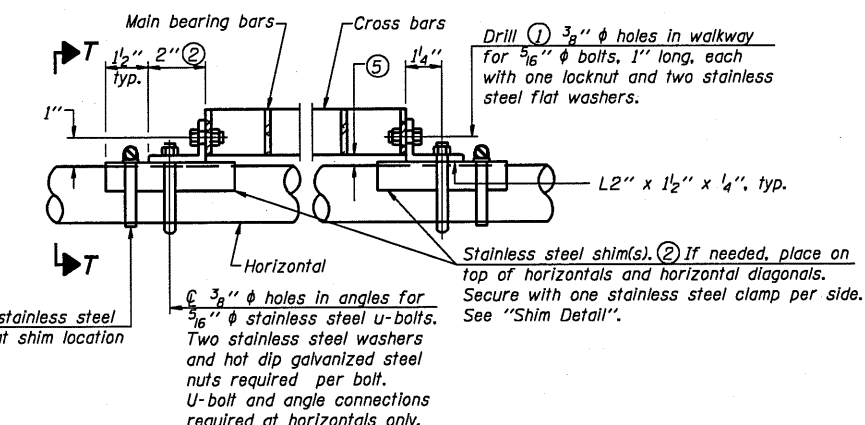
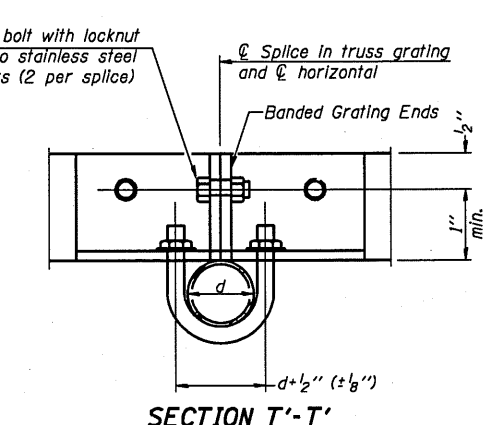
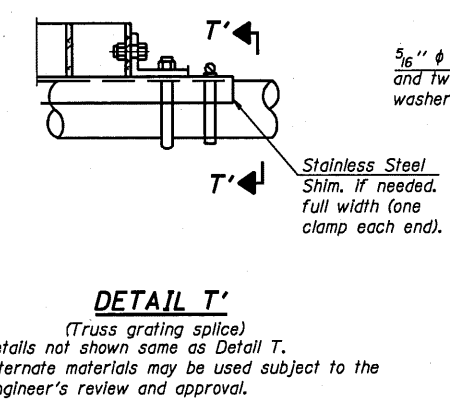
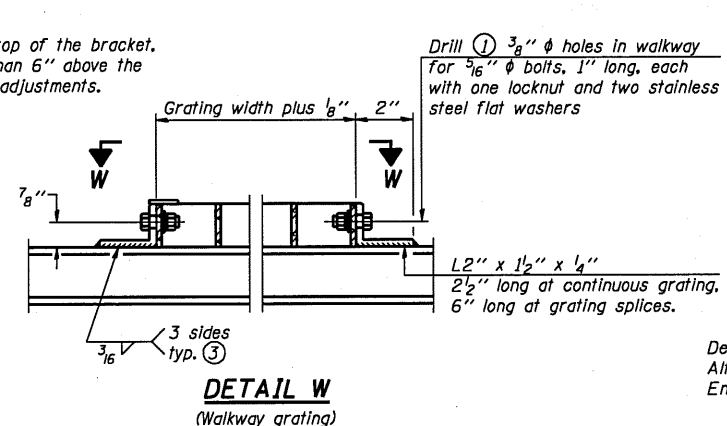
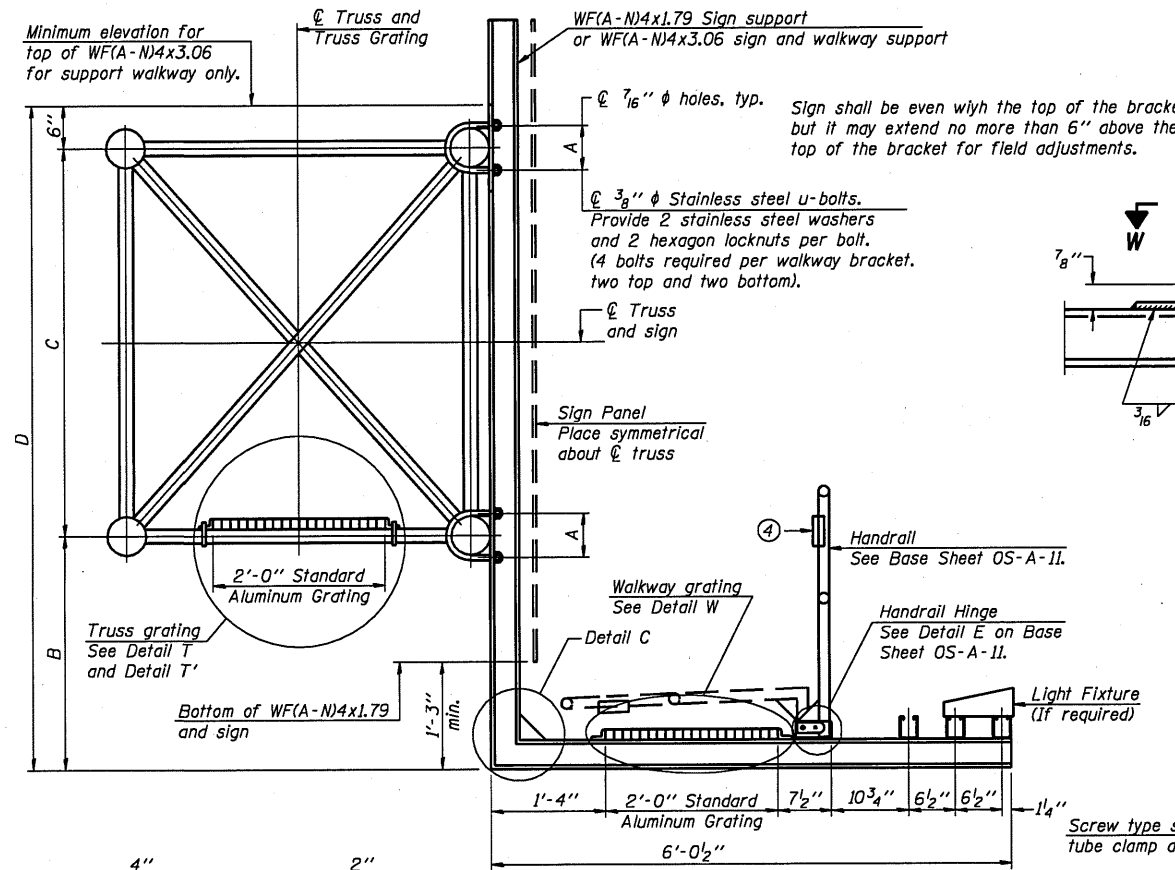
NUMBER	REVISION	DATE

Structure Number	Station	a	b	c	d	e	Walkway Grating and Handrail Lengths
2S0371080R007.9	453+16	28'	26'	37'	---	---	26'
2S0811088L017.3	323+16	30'	34'	30'	---	---	34'
2S081S092R026.0	517+21	16' 7"	53' 5"	32' 0"	---	---	53' 5"
2S0811088L016.6	285+84	29'	55'	35'	---	---	55'
2S081S092L026.6	484+19	15'	54'	33'	---	---	54'
2S0811074L001.3	296+21	23'	53'	10'	---	---	53'

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

OVERHEAD SIGN STRUCTURES ALUMINUM WALKWAY DETAILS

OS-A-9 12-1-08



DETAIL T
(Continuous Truss grating)

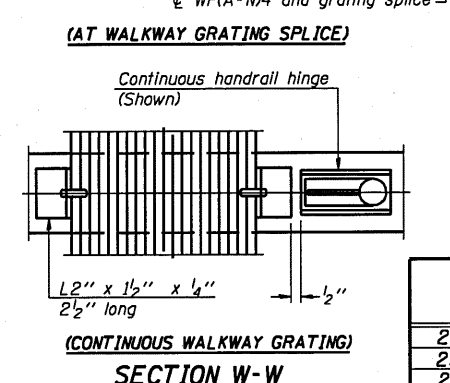
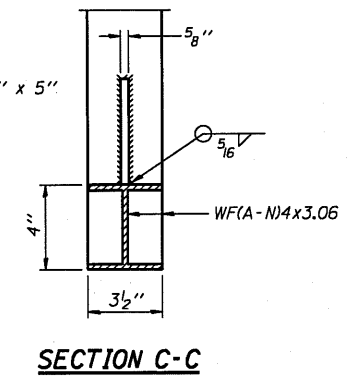
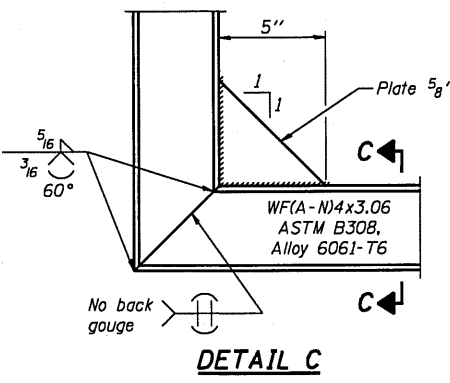
SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

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.)
- 1/8" 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.
- Based on actual height of tallest sign given on OS-A-1.



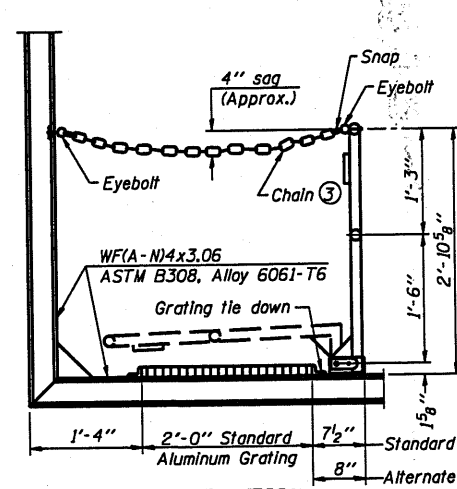
NUMBER	REVISION	DATE

Structure Number	Station	A	B	C	D
2S0371080R007.9	453+16	6' 6"	6' 6"	4' 6"	11' 6"
2S0811088L017.3	323+16	6' 6"	5' 3"	4' 6"	10' 3"
2S081S092R026.0	517+21	6' 6"	3' 1 1/2"	5' 3"	8' 10 1/2"
2S0811088L016.6	285+84	7' 6"	2' 9"	7' 0"	10' 3"
2S081S092L026.6	484+19	7' 6"	2' 3"	7' 0"	9' 9"
2S0811074L001.3	296+21	5' 6"	5' 0"	4' 6"	10' 0"

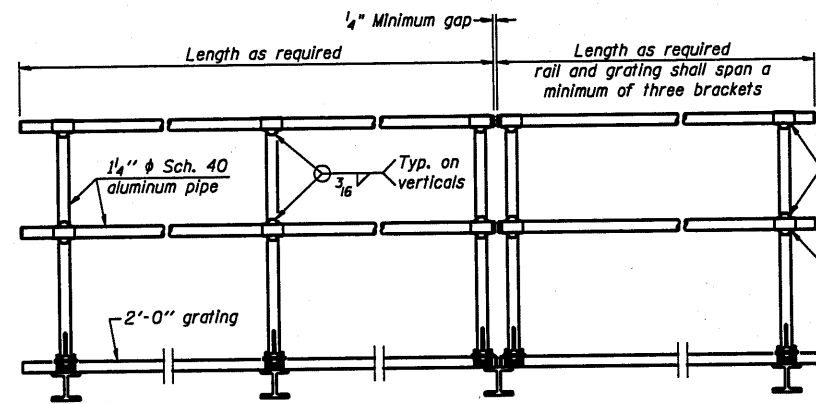
**OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS**

FILE NAME = C:\Projects\ref\2811\plans.dgn	USER NAME = hogenson,jd	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT 2 SIGN STRUCTURE REPLACEMENT	F.A. RTE. =	SECTION =	COUNTY =	TOTAL SHEETS = 27	SHEET NO. = 13
PLOT SCALE = 100.0000' / 1"	CHECKED -	REVISED -	REVISED -	SCALE: _____	SHEET NO. _____ OF _____ SHEETS	STA. _____	TO STA. _____	CONTRACT NO. 46132	ILLINOIS FED. AID PROJECT	

OS-A-10 6-1-09



SIDE ELEVATION
(Showing safety chain w/o sign)



FRONT ELEVATION

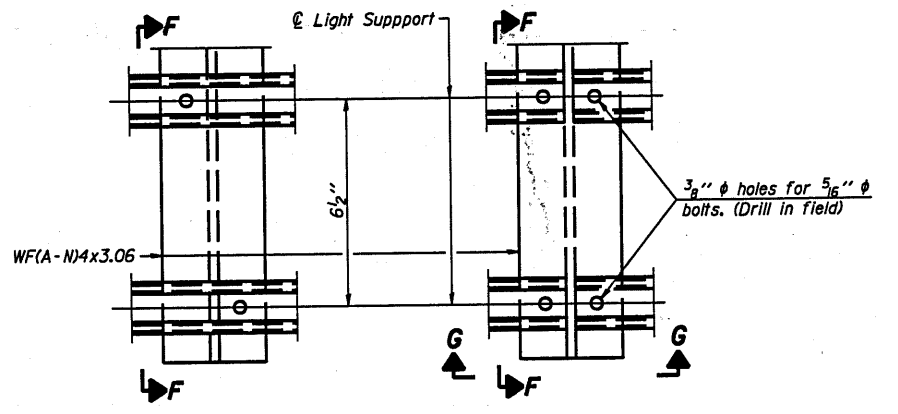
HANDRAIL DETAILS

Handrail pipe shall be ASTM B241 or B429, Alloy 6063-T6 or Alloy 6061-T6.

① Install standard force-fit end caps or weld 1/2" end plates with 3/8" c.f.w. and grind smooth. (All rail ends)

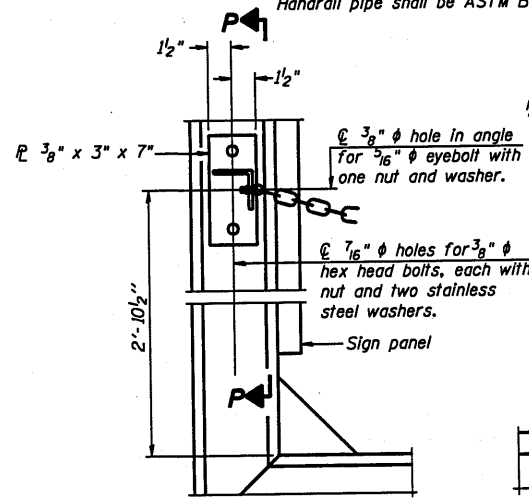
Fittings-ASTM B26. Alloy 356-T7 or 1 1/2" aluminum pipe

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.)



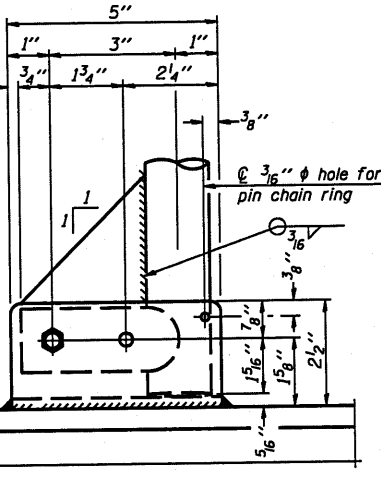
DETAIL F

DETAIL G

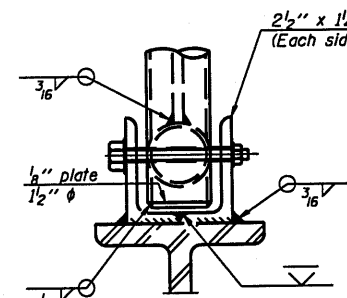


ALTERNATE SAFETY CHAIN ATTACHMENT
(With Sign Present)

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

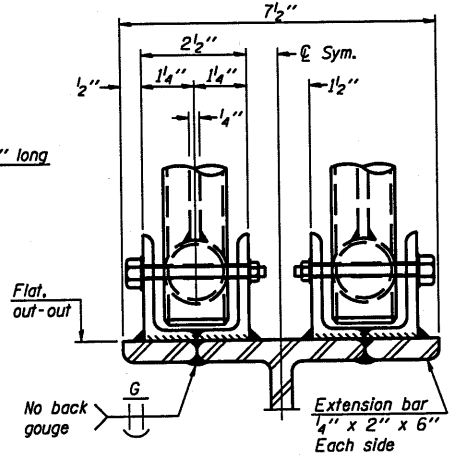


SIDE ELEVATION

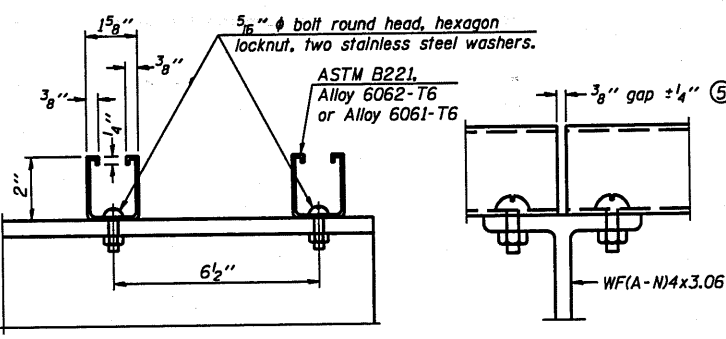


FRONT ELEVATION

See "Elevation" at right for dimensions.



ELEVATION AT HANDRAIL JOINT

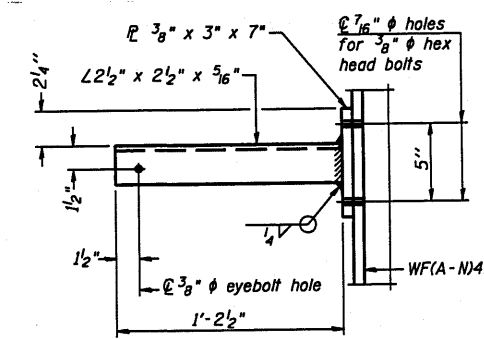


SECTION F-F

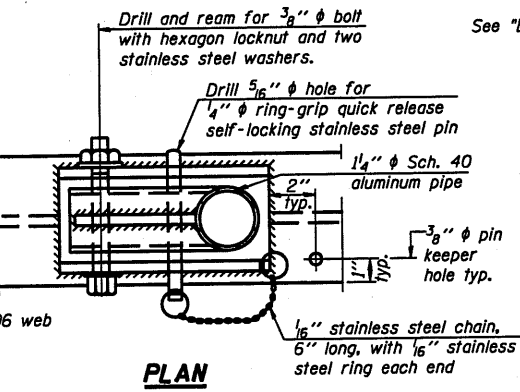
SECTION G-G

LIGHTING FIXTURE MOUNTS (IF REQUIRED)

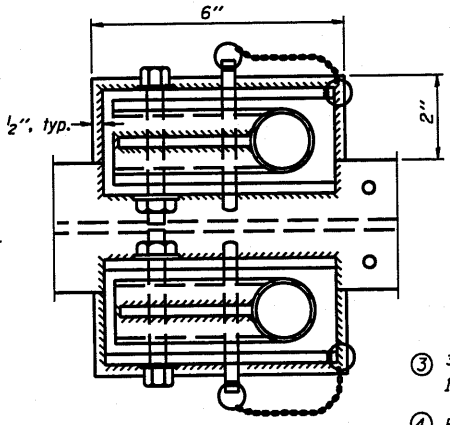
⑤ Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.



SECTION P-P

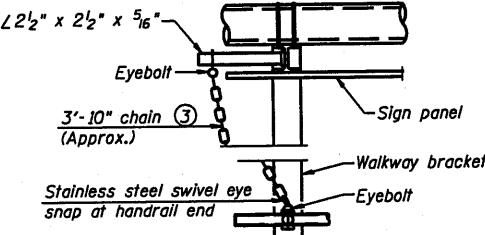


PLAN
DETAIL E HANDRAIL HINGE



PLAN AT HANDRAIL JOINT

Details not shown same as "PLAN"

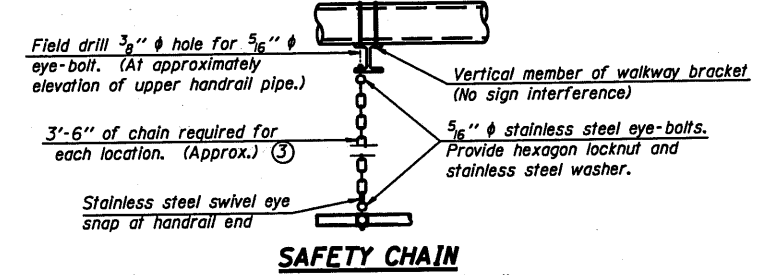


ALTERNATE SAFETY CHAIN ATTACHMENT

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

③ 3/16" Type 304L stainless steel chain, approximately 12 links per foot.

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
ALUMINUM HANDRAIL DETAILS

NUMBER	REVISION	DATE

05-A-11 12-1-08

FILE NAME	DESIGNED	REVISION
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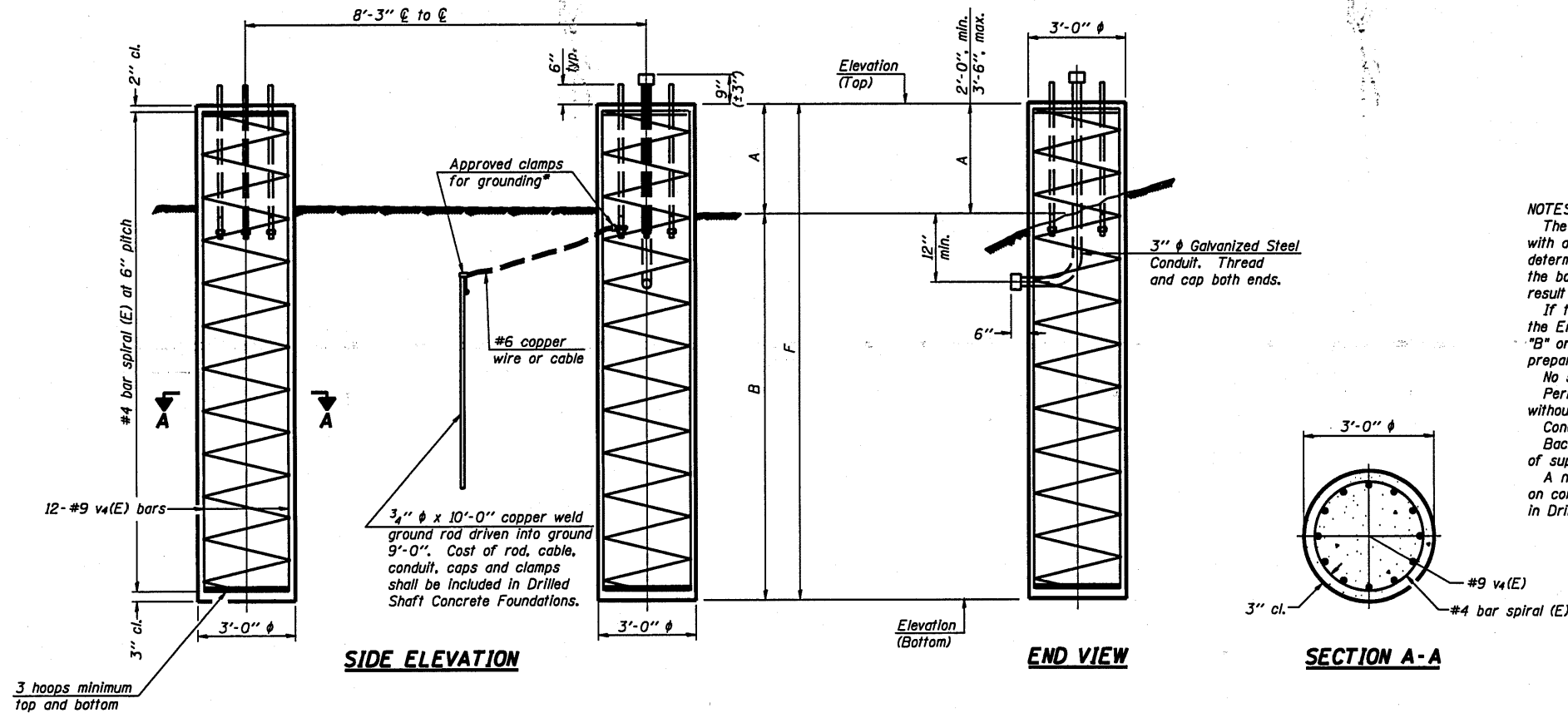
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 2 SIGN	
STRUCTURE REPLACEMENT	
SCALE:	SHEET NO. OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			27	14
ILLINOIS FED. AID PROJECT			CONTRACT NO. 46132	

For anchor rod size and placement, see Support Frame Detail Sheet.

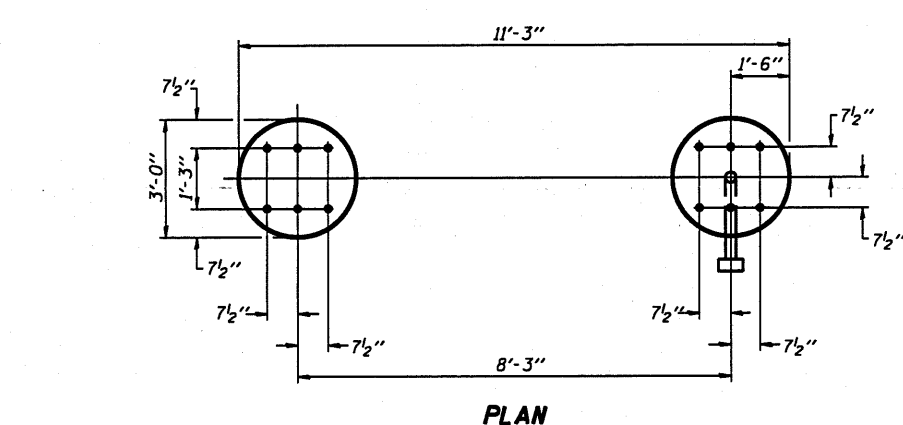
Anchor rod shall be ground or filed to bright metal at clamp and cable connection location.



BAR LIST - EACH FOUNDATION

Bar	Number	Size	Length	Shape
v4(E)	24	#9	F less 5"	—
#4 bar spiral (E) - see Side Elevation				

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 welding 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. Cast included in Drilled Shaft Concrete Foundation.



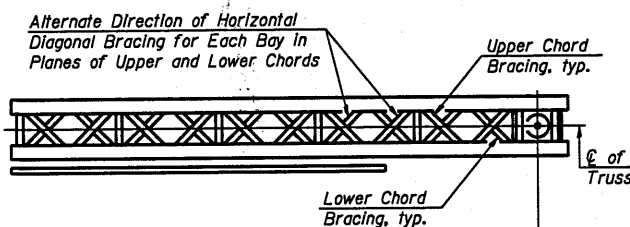
Structure Number	Station	Left Foundation					Right Foundation					Class DS Concrete (Cu. Yds.)
		Elevation Top	Elevation Bottom	A	B	F	Elevation Top	Elevation Bottom	A	B	F	
1 2S0371080R007.9	453+16	101.00	81.50	3.0	16.5	19.5	101.00	82.50	2.2	16.5	18.7	20.0
2 2S0811088L017.3	323+16	103.00	82.80	3.7	16.5	20.2	103.00	84.50	2.0	16.5	18.5	20.2
3 2S0815092R026.0	517+21	100.00	76.30	3.2	20.5	23.7	100.00	77.10	2.4	20.5	22.9	24.2
4 2S0811074L001.3	296+21	104.00	85.50	2.0	16.5	18.5	99.00	79.50	3.0	16.5	19.5	19.9

- 1 Benchmark 100.00 on top of concrete NW footing of existing sign
- 2 Benchmark 100.00 on top of concrete SW corner of NE footing of existing sign
- 3 Benchmark 100.00 on top of concrete east foundation of existing sign
- 4 Benchmark 100.00 top of concrete NE corner of the NW foundation of existing sign

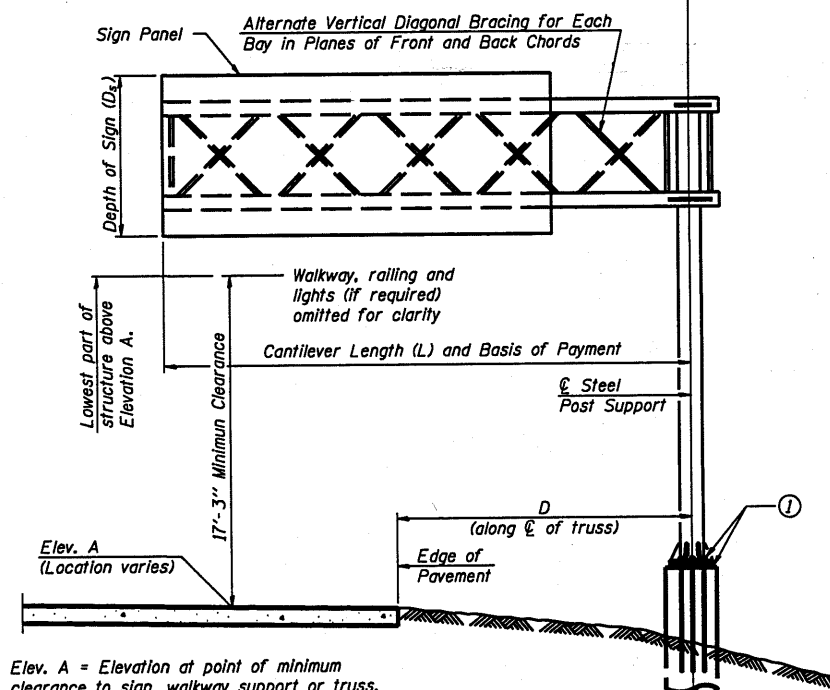
NUMBER	REVISION	DATE

**DETAILS FOR 10" φ SUPPORT FRAME
TYPE I-A or II-A TRUSS**

**OVERHEAD SIGN STRUCTURES
DRILLED SHAFT DETAILS**



TYPICAL PLAN
(Walkway not shown)



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

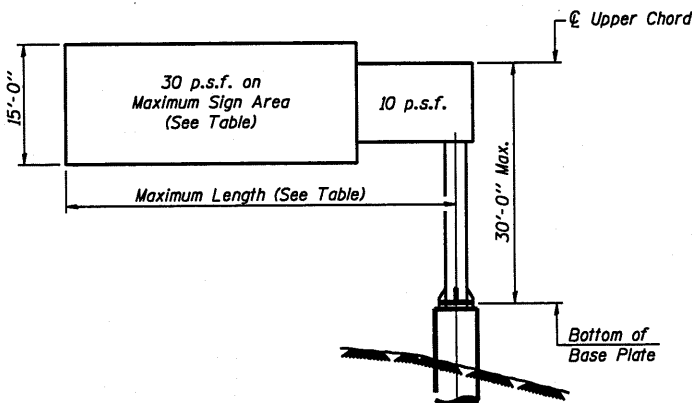
TYPICAL ELEVATION
Looking in Direction of Traffic

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.

Structure Number	Station	Design Truss Type	Cantilever Length (L)	Elev. A	Dim. D	D _s	Total Sign Area
2C081S092R028.8	* 376+96	II-C-A	27'	97.51	23' ¹	6'	72 sq. ft.
2C101S251R010.7	* 161+48	II-C-A	28'	100.22	14' ²	6.5'	94.3 sq. ft.

1 C of proposed sign is 21' south of existing sign 1 35' Right of C of northbound lanes
 2 C of proposed sign is 16' south of existing sign 2 11' right of curb face

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.

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

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

DESIGN STRESSES:
Field Units
F_c = 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 or A500 Grade B or C. 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) (2)d 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. 105 with a minimum Charpy V-Notch (CVN) energy of 15 lb.-ft. at 10° 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.

FOUNDATIONS: The contract unit price for Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

TOTAL BILL OF MATERIAL

NUMBER	REVISION	DATE

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE I-C-A	Foot	
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE II-C-A	Foot	
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE III-C-A	Foot	
OVERHEAD SIGN STRUCTURE WALKWAY, TYPE A	Foot	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	

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

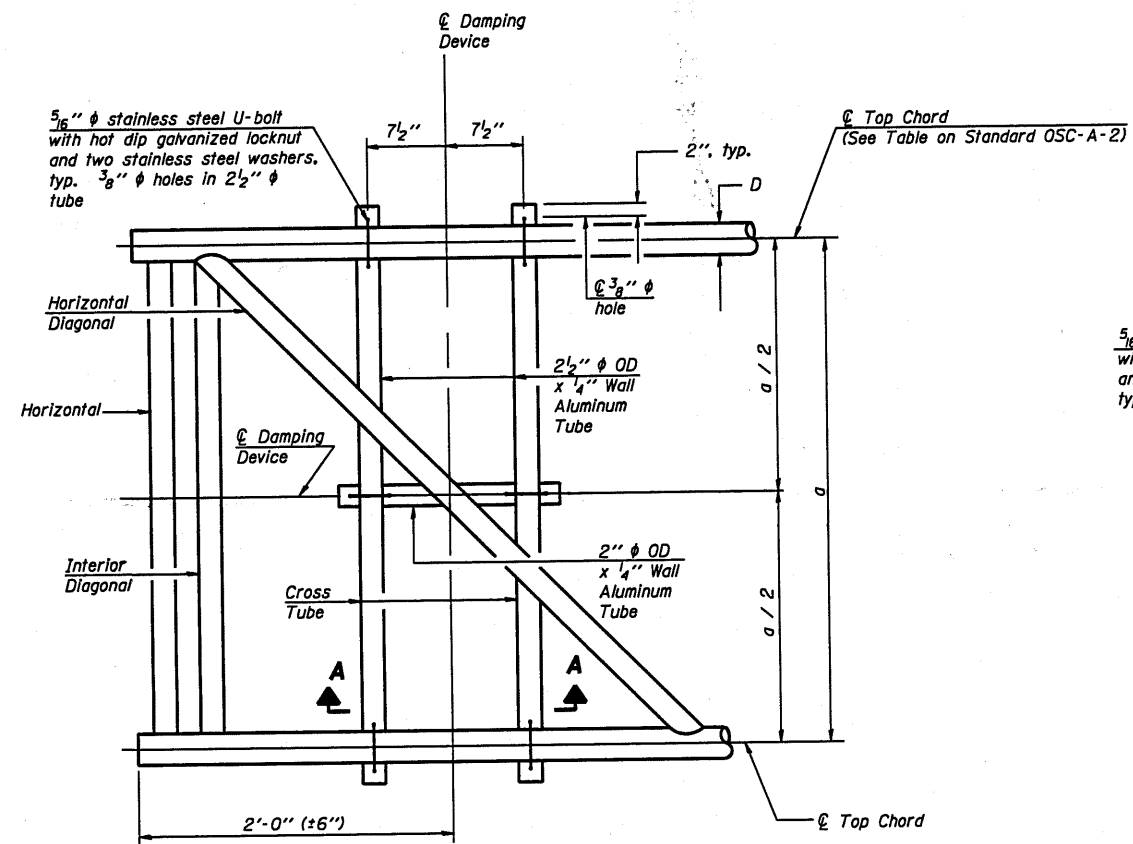
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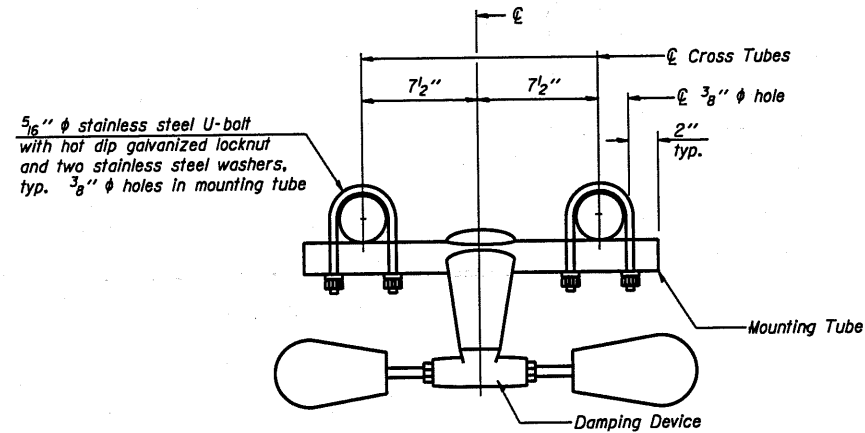
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 2 SIGN
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SCALE: SHEET NO. OF SHEETS STA. TO STA.

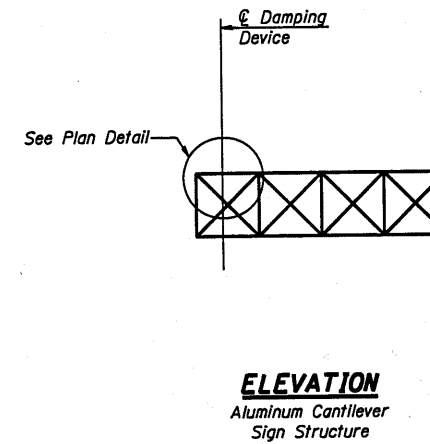
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			27	17
			CONTRACT NO. 46132	
ILLINOIS FED. AID PROJECT				



PLAN DETAIL

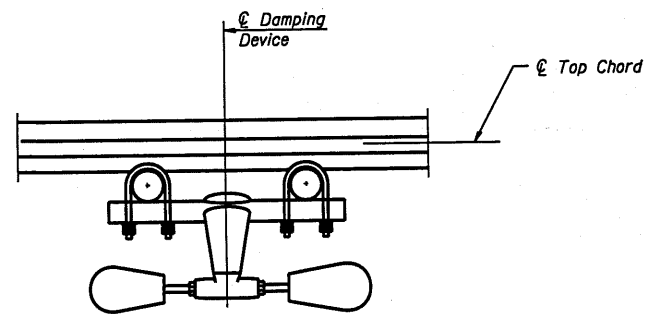


TRUSS DAMPING DEVICE CONNECTION DETAIL

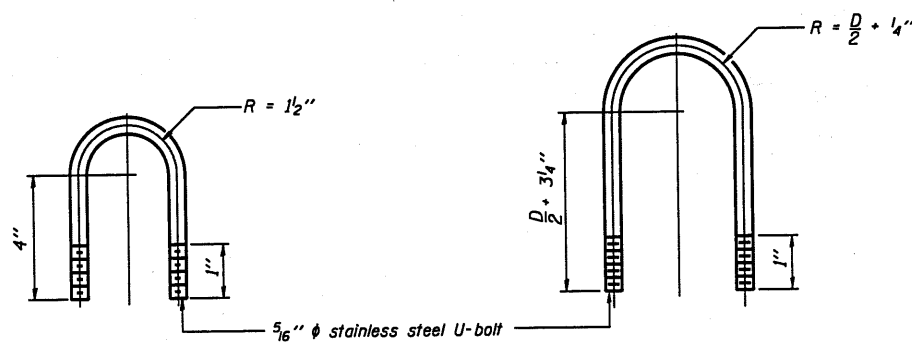


GENERAL NOTES

- Damper:** One damper per truss. (31 lbs. Stockbridge-Type Aluminum-29" minimum between ends of weights)
- 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)

CANTILEVER SIGN STRUCTURE DAMPING DEVICE

OSC-A-D

12-1-08

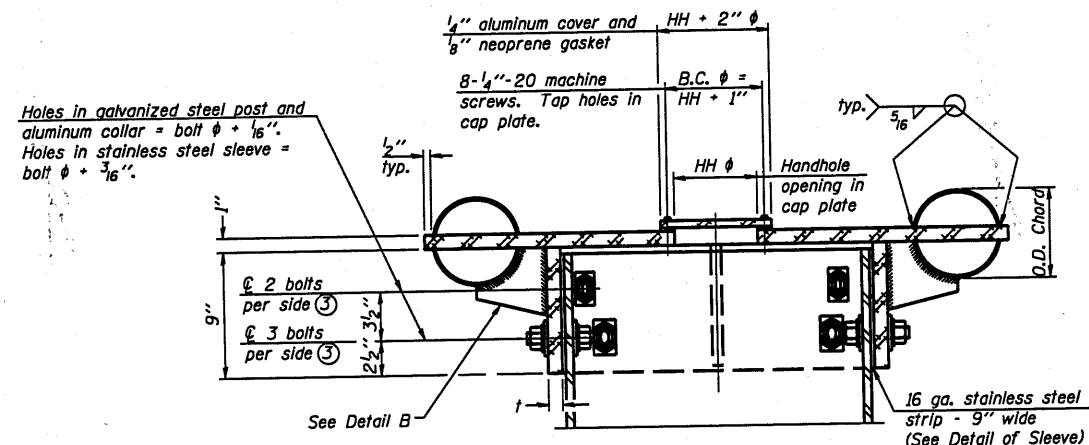
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 2 SIGN
STRUCTURE REPLACEMENT

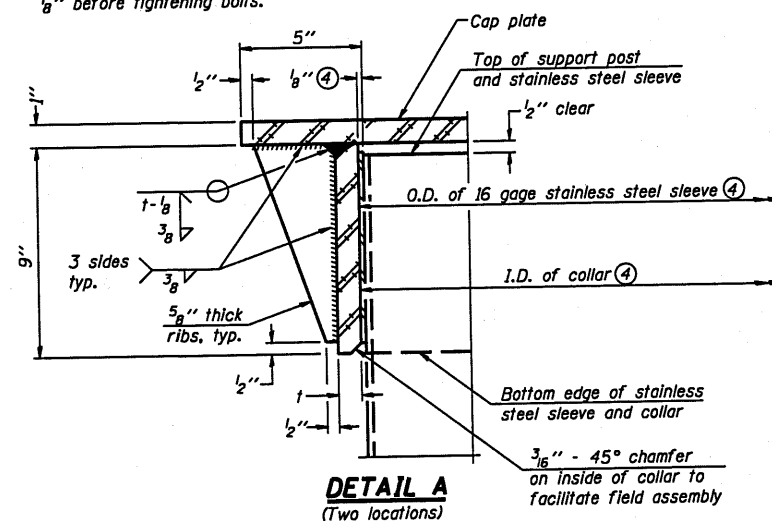
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			CONTRACT NO. 46132	
ILLINOIS FED. AID PROJECT				

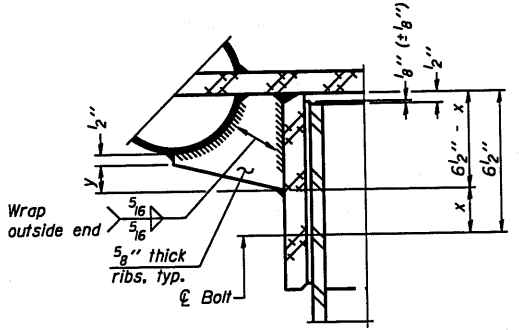


④ Collar I.D. shall be manufactured to correspond to O.D. of actual galvanized post and stainless steel sleeve plus $\frac{1}{8}$ " ($\pm \frac{1}{16}$ "). Maximum gap between post and collar at any location equals $\frac{1}{8}$ " before tightening bolts.

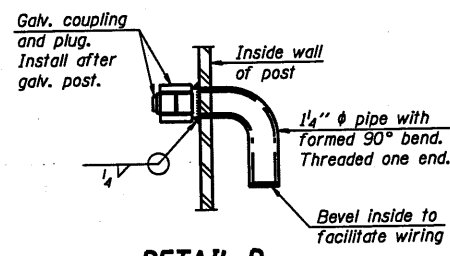
SECTION B-B
Bolts, washers (including contoured washers), and locknuts shall be stainless steel.



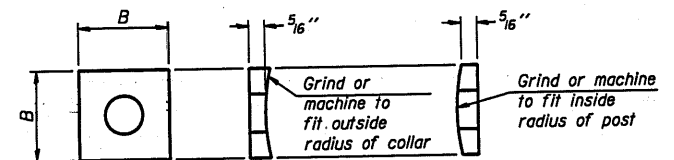
DETAIL A
(Two locations)
Bottom edge of stainless steel sleeve and collar
 $\frac{3}{16}$ " - 45° chamfer on inside of collar to facilitate field assembly



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



DETAIL D



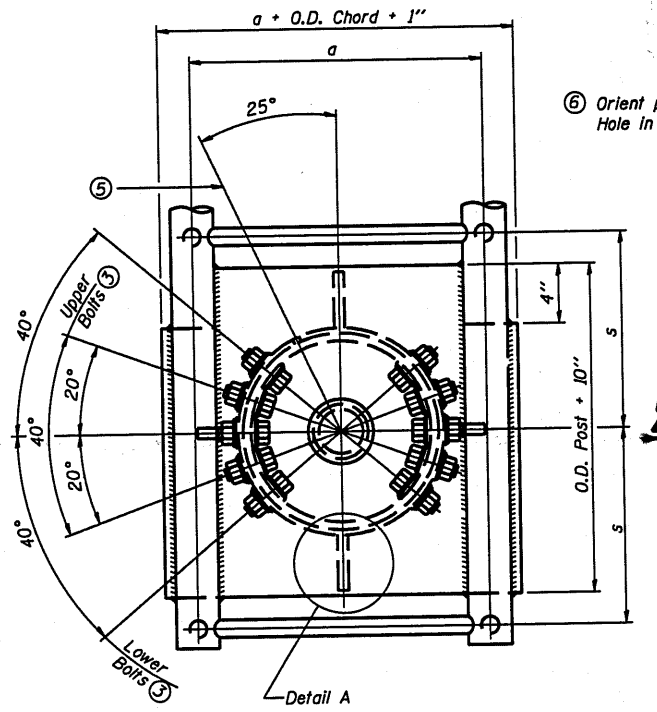
CONTOURED WASHERS

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"

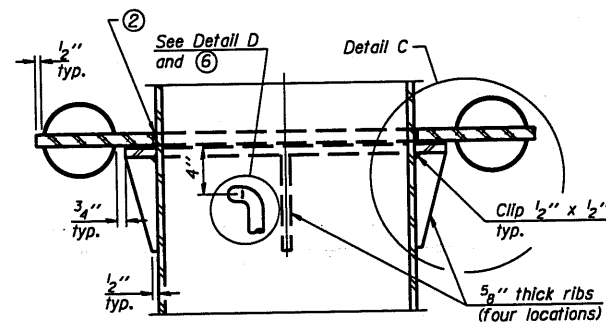
DETAIL OF STAINLESS STEEL SLEEVE

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

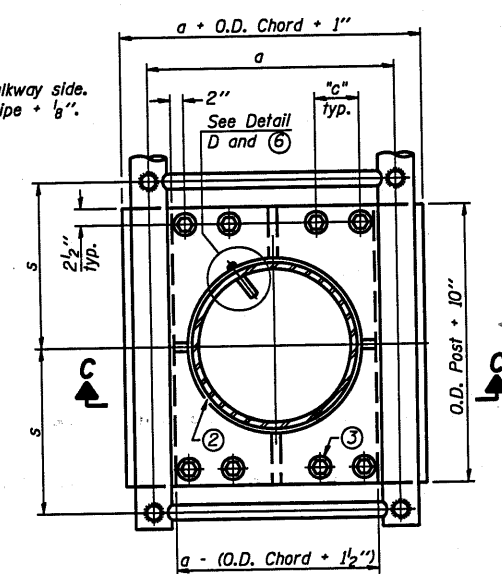
NUMBER	REVISION	DATE



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

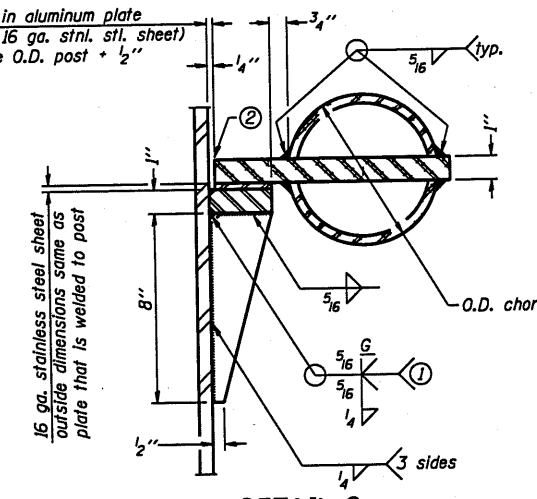


SECTION C-C



SECTION THRU POST ABOVE LOWER CHORDS

Hole in aluminum plate (and 16 ga. stnl. stl. sheet) to be O.D. post + 1/2"



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.

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

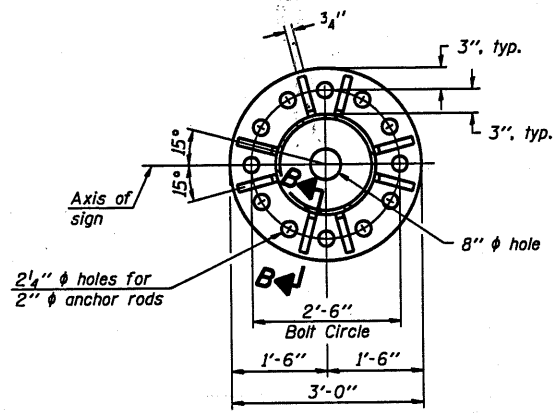
③ Upper and lower connection bolts in collar and bolts at lower chord connection shall be high strength with matching locknuts. Connection bolts shall have 2 stainless steel flat washers each.

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

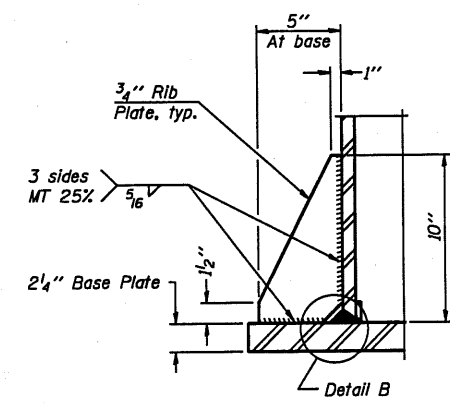
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

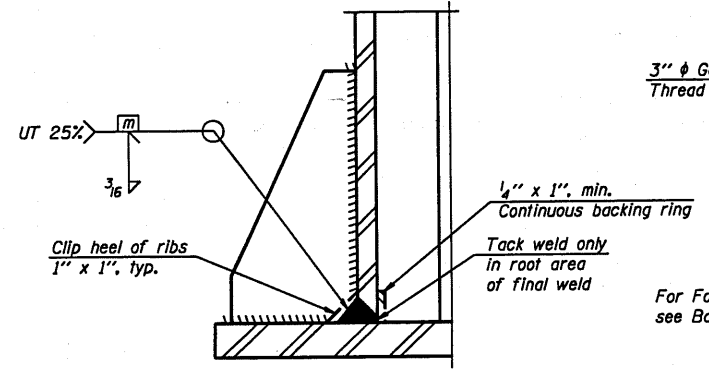
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				CONTRACT NO. 46132		
				ILLINOIS FED. AID PROJECT		



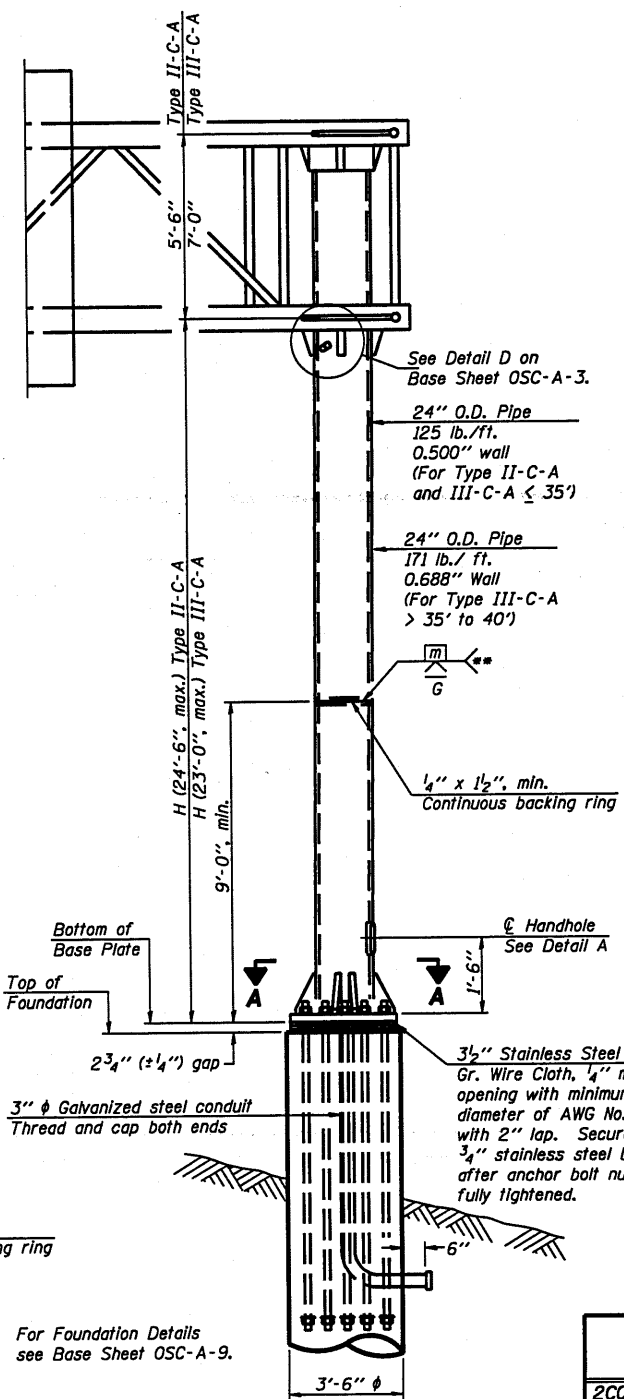
SECTION A-A



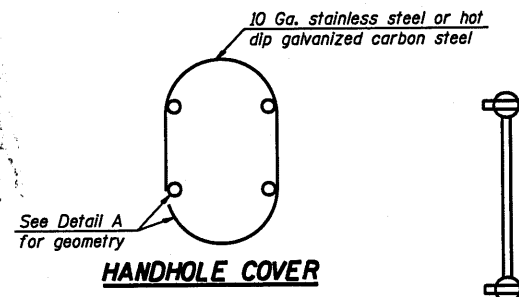
SECTION B-B



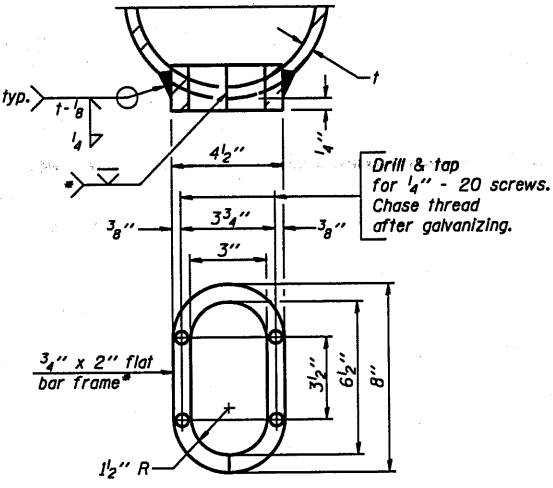
DETAIL B
(Typical rib)



FRONT ELEVATION



HANDHOLE COVER

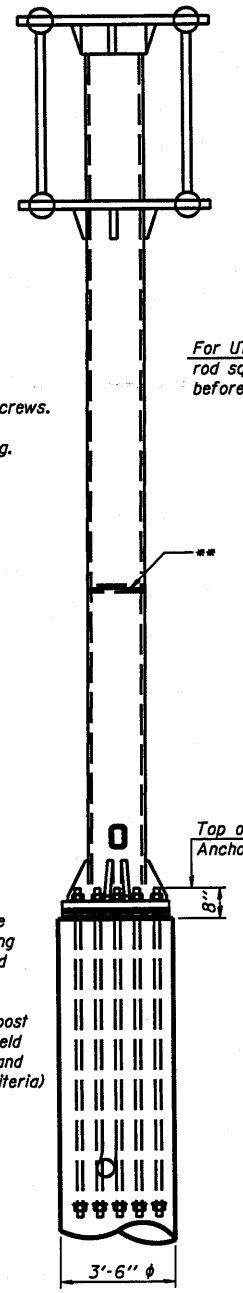


DETAIL A

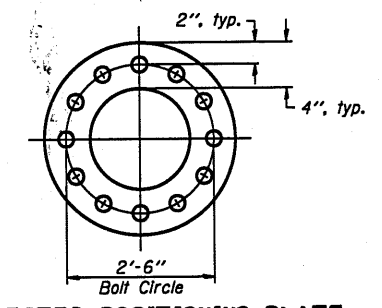
- Bent bars may be butt welded top and bottom or bottom only. In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 min or less.
- But welded joint in post is only allowed for post heights (H) over 20 ft. 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
2C081S092R028.8	376+96	23' 3"
2C101S251R010.7	161+48	22' 6"

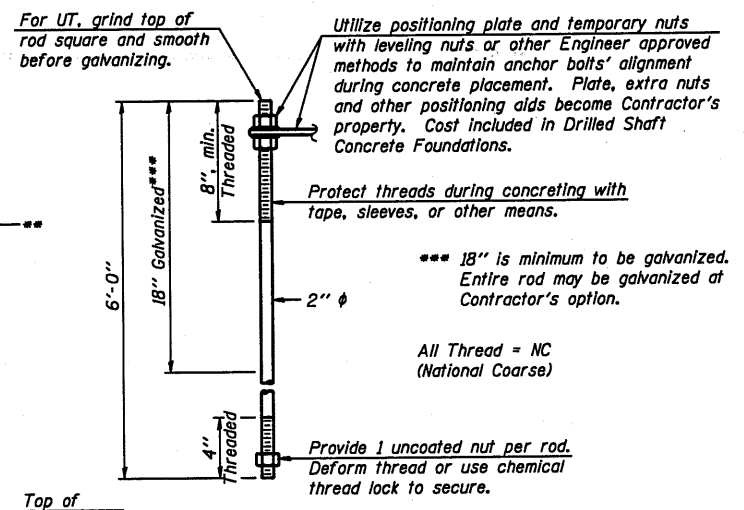
Note: "H" based on 15'-0" or actual sign height, whichever is greater.



SIDE ELEVATION



SUGGESTED POSITIONING PLATE



ANCHOR ROD DETAIL

Anchor rods shall conform to AASHTO M314 Grade 105 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" x 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.

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

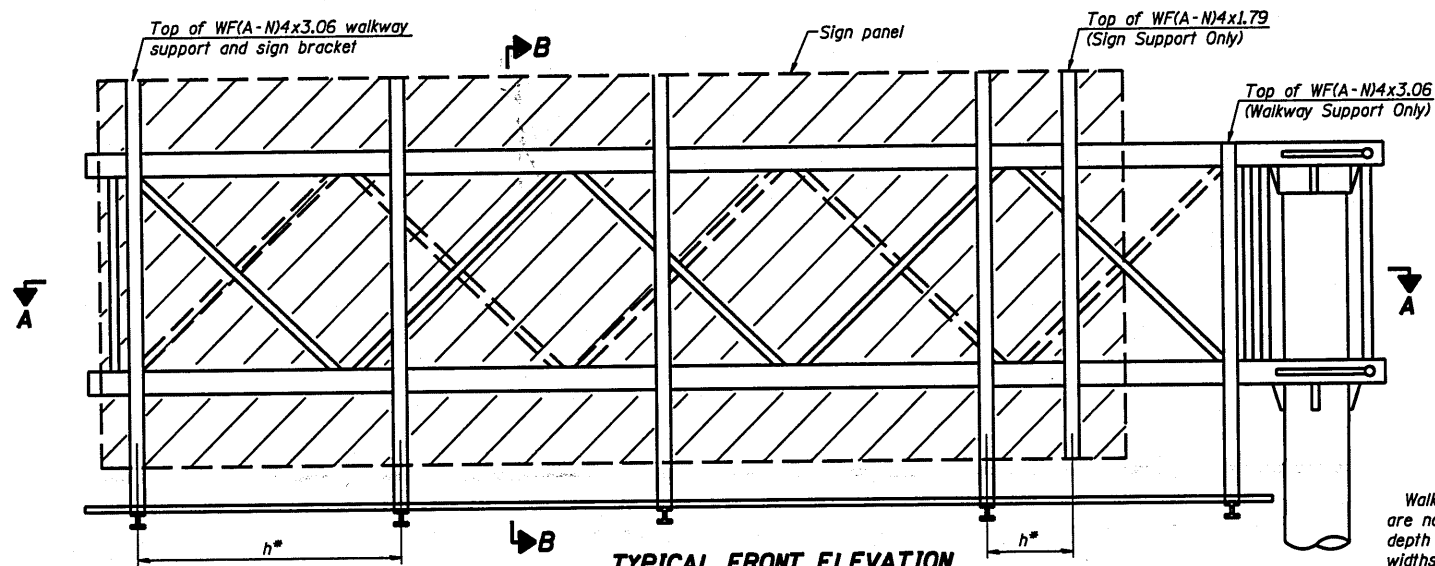
OSC-A-5 12-1-08

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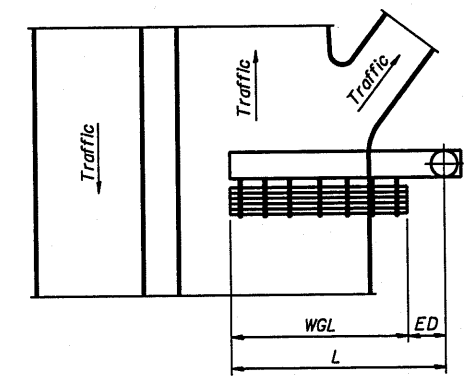
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 2 SIGN
STRUCTURE REPLACEMENT
SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 46132				
ILLINOIS FED. AID PROJECT				

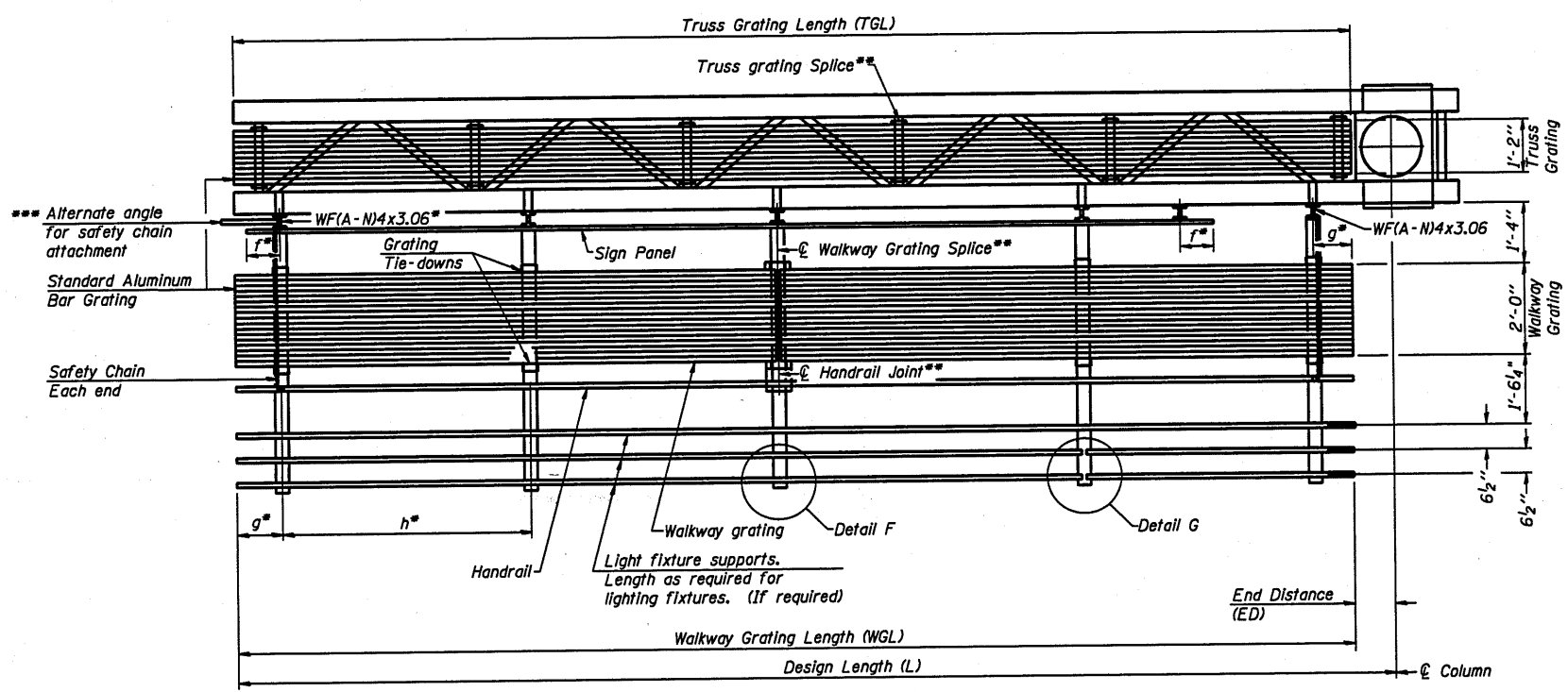


TYPICAL FRONT ELEVATION
With lights and handrail omitted for clarity.



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

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



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 joints or grating splices are optional, based on lengths needed and material availability.

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

NUMBER	REVISION	DATE

Structure Number	Station	WGL	ED	TGL
2C081S092R028.8	376+96	12' 3"	14' 9"	25' 6"
2C101S251R010.7	161+48	15' 9"	12' 3"	26' 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 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. See alternate safety chain attachment on base sheet OSC-A-8.
 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 joint, safety chain and Details F and G, see Base Sheet OSC-A-8.

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

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

OSC-A-6 12-1-08
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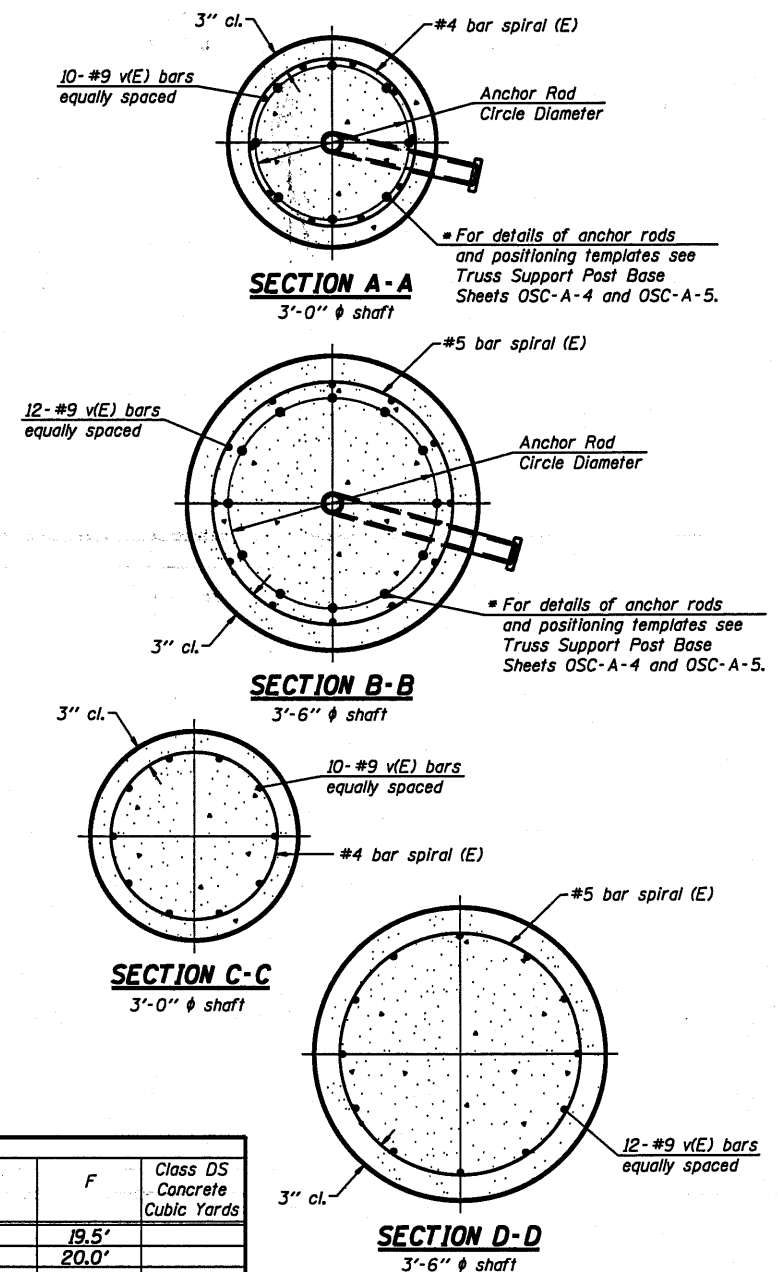
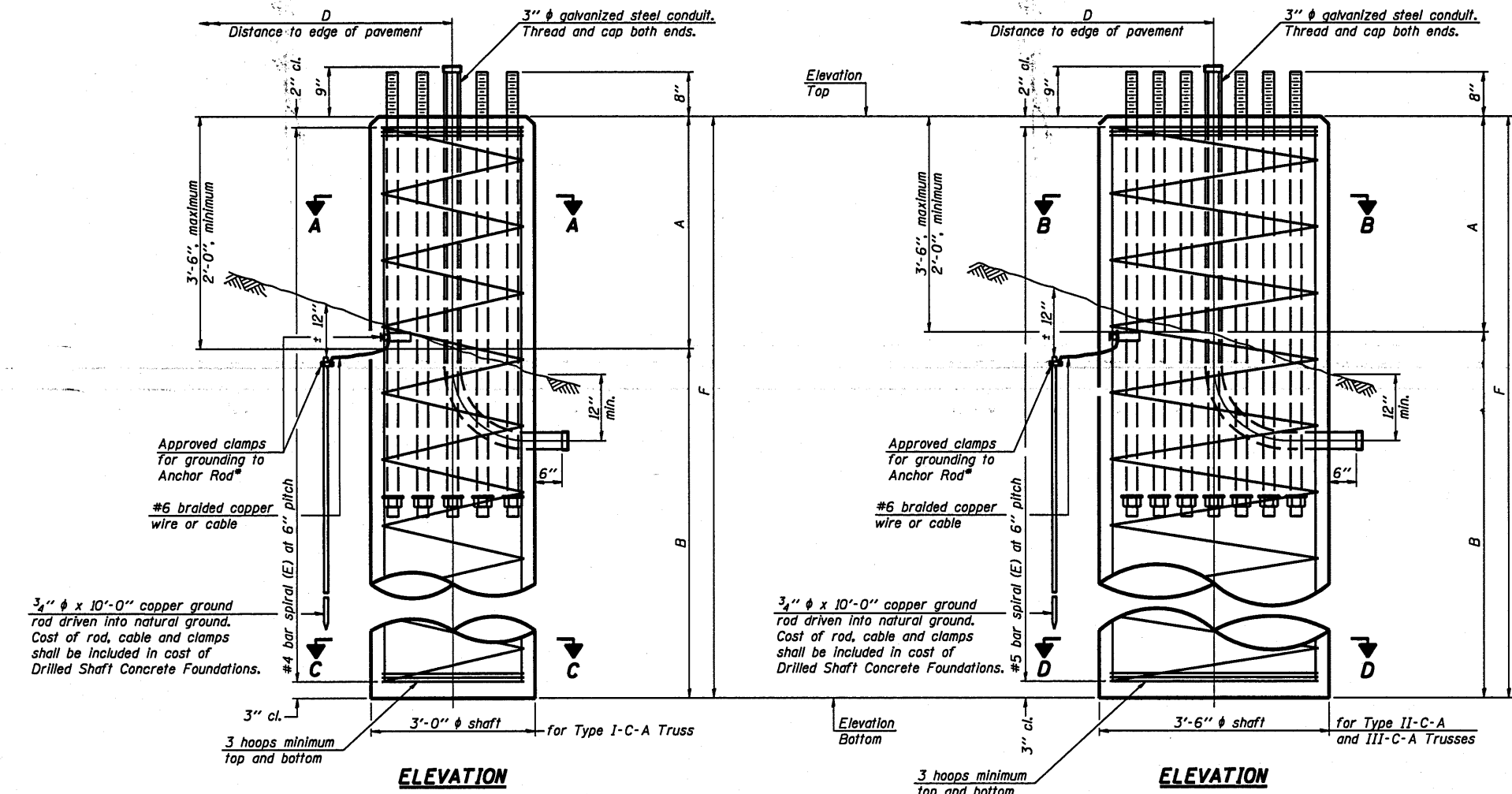
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DATE -	REVISD -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 2 SIGN
STRUCTURE REPLACEMENT
SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			27	22
			CONTRACT NO. 46132	
ILLINOIS FED. AID PROJECT				

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



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.
 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".

Structure Number	Station	Truss Type	Shaft Diameter	Elevation Top	Elevation Bottom	Qu	A	B	F	Class DS Concrete Cubic Yards
2C081S092R028.8	376+96	II-C-A	3' 6"				2.5'	17'	19.5'	
2C101S251R010.7	161+48	II-C-A	3' 6"				3.0'	17'	20.0'	

Truss Type	Post Base Sheet	Maximum Cantilever Length (ft)	Maximum Total Sign Area (sq ft)	Shaft Diameter (in)	"B" Depth (ft)	Anchor Rods		Anchor Rod Circle Diameter (in)
						No.	Diameter (in)	
I-C-A	OSC-A-4	25	170	3.0	16.0	8	2	22
II-C-A	OSC-A-5	30	170	3.5	17.0	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	32.0	12	2	30

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

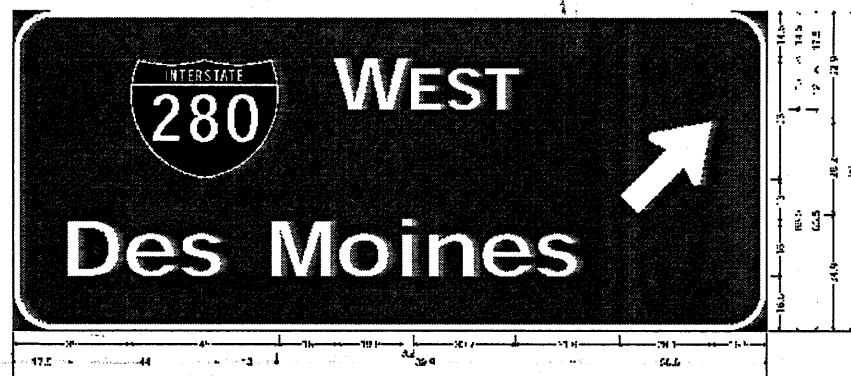
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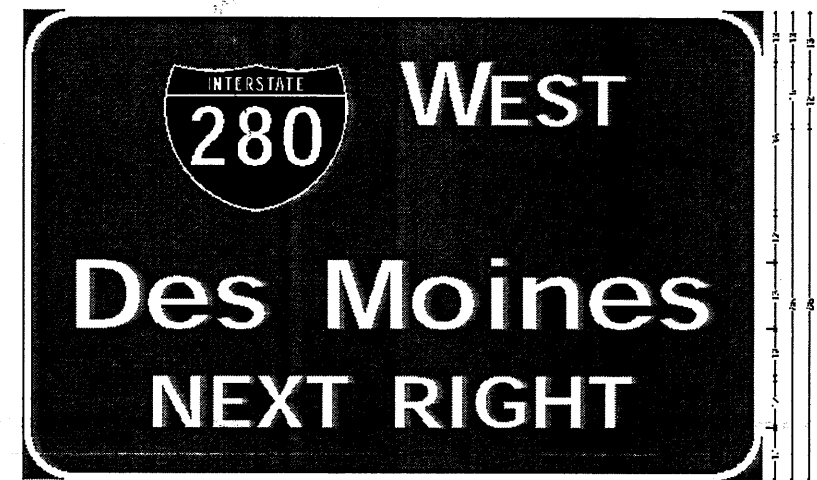
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

DISTRICT 2 SIGN
 STRUCTURE REPLACEMENT
 SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		VARIOUS	27	24
CONTRACT NO. 46132			ILLINOIS FED. AID PROJECT	



2.2. Inter. 280 West, White on Green
 10' x 14' 6" (3048 x 4426) mm. 1/4" (6.35) min. letter height. 1/4" (6.35) min. stroke width. 1/4" (6.35) min. spacing. 1/4" (6.35) min. border width. 1/4" (6.35) min. corner radius. 1/4" (6.35) min. hole diameter. 1/4" (6.35) min. hole spacing. 1/4" (6.35) min. hole diameter. 1/4" (6.35) min. hole spacing. 1/4" (6.35) min. hole diameter. 1/4" (6.35) min. hole spacing.



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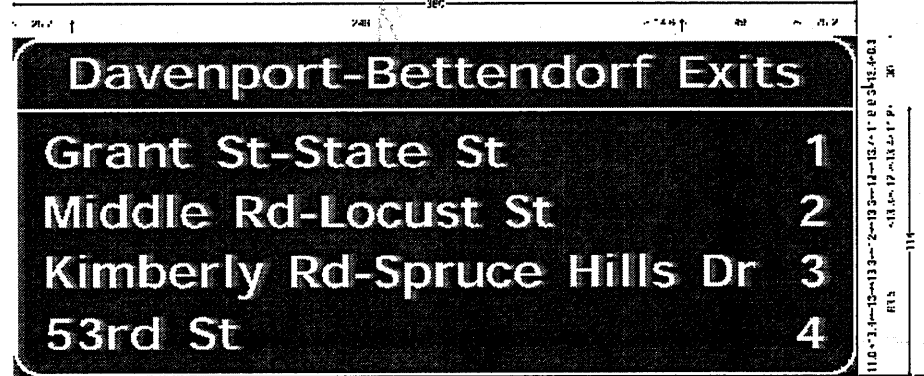


2.2. Inter. 280 East, White on Green
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FILE NAME *	USER NAME * linkaj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	District 2 Sign Structure Replacement		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	PLOT DATE = Tue Aug 03 06:58:44 2010	DATE -	REVISED -						ILLINOIS FED. AID PROJECT		



116
2102

17.0" Radius 7.0" Taper, W/T or Green
 Davenport-Bettendorf Exits' Clearway Key-W
 15.0" Radius 7.0" Taper, W/T or Green
 12.0" St-State St' Clearway Key-W, Middle Rd-Locust St' Clearway Key-W, Kimberly Rd-Spruce Hills Dr' Clearway Key-W, 53rd St' Clearway Key-W
 12.0" Clearway Key-W, 12.0" Clearway Key-W, 12.0" Clearway Key-W, 12.0" Clearway Key-W

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

District 2 Sign
Structure Replacement

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			27	27
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				