

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Various Routes
D 8 OVD SIN STR REPL 2010-45
Madison & St. Clair Counties
Sheet 1 of 16
Contract Number 46109

PLANS FOR PROPOSED
FEDERAL AID HIGHWAY

Various Routes
D 8 OVD SIN STR REPL 2010-45
MADISON AND ST. CLAIR COUNTIES
C-60-046-10

INDEX OF SHEETS

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701106-02
701400-04
701401-05
701411-06
701456
701901-01

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED DEC. 21 2009
PASSED


ENGINEER OF OPERATIONS

January 21 2010
acting Scott E. Stitt P.E. (R)
ENGINEER OF DESIGN AND ENVIRONMENT

APPROVED January 29 2010
Christine M. Reed (R)
DIRECTOR DIVISION OF HIGHWAYS

JOINT UTILITY LOCATING INFORMATION FOR
EXCAVATIONS PHONE: 800-892-0123

CONTRACT NO. 46109

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
Summary and Schedule of Quantities

Various Routes
D 8 OVD SIN STR REPL 2010-45
Madison & St. Clair Counties
Sheet 2 of 16
Contract Number 46109

CODE NUMBER	PAY ITEM	UNIT	Y002 - 1C 100% STATE TOTAL QUANTITY	URBAN MADISON COUNTY	URBAN ST. CLAIR COUNTY
T9992530	REPLACE ^{AND} TIGHTEN ^{SIGN MOUNTING} CLIPS PER SIGN EACH	EACH	11.00	1.00	10.00
T9995200	REPLACE U-BOLT	EACH	34.00	11.00	23.00
T9995400	FURNISH ^{AND} INSTALL SADDLE SHIM BLOCK	EACH	24.00	8.00	16.00
T9996200	REPAIR CONCRETE FOUNDATION FOR OVERHEAD SIGN STRUCTURE	EACH	2.00	2.00	0.00
T9996300	OVERHEAD SIGN SUPPORT GROUT REPAIR	EACH	24.00	8.00	16.00
T9997255	FURNISH ^{AND} INSTALL TRUSS DAMPER	EACH	6.00	2.00	4.00
T9997700	FURNISH ^{AND} INSTALL SAFETY CHAIN	EACH	12.00	4.00	8.00
T9998300	TIGHTEN SPLICE FLANGE	EACH	2.00	0.00	2.00
T99998815	REPAIR HANDRAIL LOCKING PIN CONNECTION	EACH	4.00	0.00	4.00
T9998995	DISCONNECT ^{AND} RECONNECT ELECTRIC SERVICE	EACH	6.00	2.00	4.00
67100100	MOBILIZATION	L SUM	1.00	0.33	0.67
70101700	TRAFFIC CONTROL ^{AND} PROTECTION	L SUM	1.00	0.33	0.67
73305000	OVERHEAD SIGN STRUCTURE WALKWAY	FOOT	549.00	139.00	410.00
73800100	STRUCTURAL STEEL SUPPORT FOR OVERHEAD SIGN STRUCTURE - SPAN	EACH	12.00	4.00	8.00
73801100	REMOVE ^{AND} RE ERECT OVERHEAD SIGN STRUCTURE-SPAN	EACH	6.00	2.00	4.00
X0326836	REMOVE ^{AND} REINSTALL VIDEO CAMERA ^{AND} EQUIPMENT	EACH	1.00	0.00	1.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Various Routes
D 8 OVD SIN STR REPL 2010-45
Madison & St. Clair Counties
Sheet 3 of 16
Contract Number 46109

District 8
Schedule of Overhead Sign Structure Replacement

Location No.:	8-01	State I.D. No.:	8S082S013L002.5				
County:	St. Clair	Route:	il - 13	M.P.:	2.5	Direction:	WB
Description of Work	Unit	Quantity					
REMOVE & RE-ERECT OVERHEAD SIGN STRUCTURE-SPAN	EACH	1.00					
STRUCTURAL STEEL SUPPORT FOR OVERHEAD SIGN STRUCTURE	EACH	2.00					
FURNISH & INSTALL SADDLE SHIM BLOCK	EACH	4.00					
FURNISH & INSTALL SAFETY CHAIN	EACH	2.00					
DISCONNECT/RECONNECT ELECTRIC SERVICE	EACH	1.00					
FURNISH & INSTALL INTERNAL TRUSS DAMPER	EACH	1.00					
OVERHEAD SIGN STRUCTURE WALKWAY	FOOT	139.00					
OVERHEAD SIGN SUPPORT GROUT REPAIR	EACH	4.00					
REPLACE / TIGHTEN CLIP PER SIGN	EACH	4.00					
TIGHTEN SPLICE FLANGE	EACH	1.00					

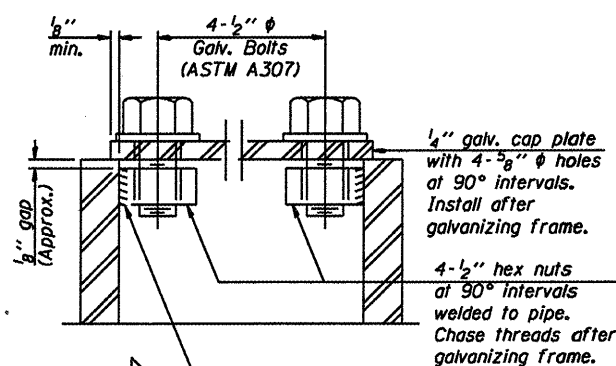
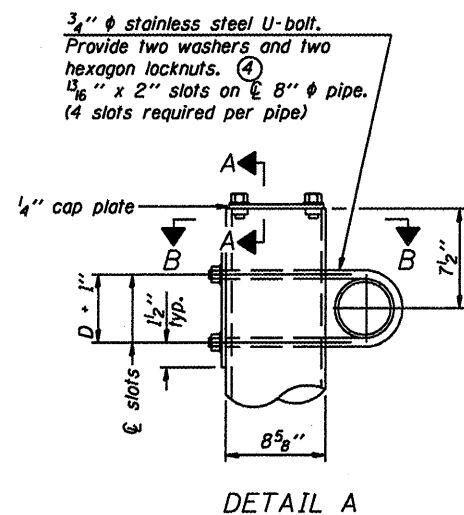
Location No.:	8-02	State I.D. No.:	8S082S015R007.7				
County:	St. Clair	Route:	IL - 15	M.P.:	7.7	Direction:	EB
Description of Work	Unit	Quantity					
REMOVE & RE-ERECT OVERHEAD SIGN STRUCTURE-SPAN	EACH	1.00					
STRUCTURAL STEEL SUPPORT FOR OVERHEAD SIGN STRUCTURE	EACH	2.00					
FURNISH & INSTALL SADDLE SHIM BLOCK	EACH	4.00					
FURNISH & INSTALL SAFETY CHAIN	EACH	2.00					
DISCONNECT/RECONNECT ELECTRIC SERVICE	EACH	1.00					
FURNISH & INSTALL INTERNAL TRUSS DAMPER	EACH	1.00					
OVERHEAD SIGN STRUCTURE WALKWAY	FOOT	95.00					
REPLACE U-BOLT	EACH	4.00					
OVERHEAD SIGN SUPPORT GROUT REPAIR	EACH	4.00					
REPLACE / TIGHTEN CLIP PER SIGN	EACH	2.00					
TIGHTEN SPLICE FLANGE	EACH	1.00					

Location No.:	8-03	State I.D. No.:	8S082S015R007.6				
County:	St. Clair	Route:	IL - 15	M.P.:	7.6	Direction:	EB
Description of Work	Unit	Quantity					
REMOVE & RE-ERECT OVERHEAD SIGN STRUCTURE-SPAN	EACH	1.00					
STRUCTURAL STEEL SUPPORT FOR OVERHEAD SIGN STRUCTURE	EACH	2.00					
FURNISH & INSTALL SADDLE SHIM BLOCK	EACH	4.00					
DISCONNECT/RECONNECT ELECTRIC SERVICE	EACH	1.00					
FURNISH & INSTALL INTERNAL TRUSS DAMPER	EACH	1.00					
REPLACE / TIGHTEN CLIPS PER SIGN	EACH	2.00					
OVERHEAD SIGN STRUCTURE WALKWAY	FOOT	78.00					
FURNISH & INSTALL SAFETY CHAIN	EACH	2.00					
OVERHEAD SIGN SUPPORT GROUT REPAIR	EACH	4.00					
REPLACE U-BOLT	EACH	15.00					
REPAIR HANDRAIL LOCKING PIN CONNECTION	EACH	4.00					

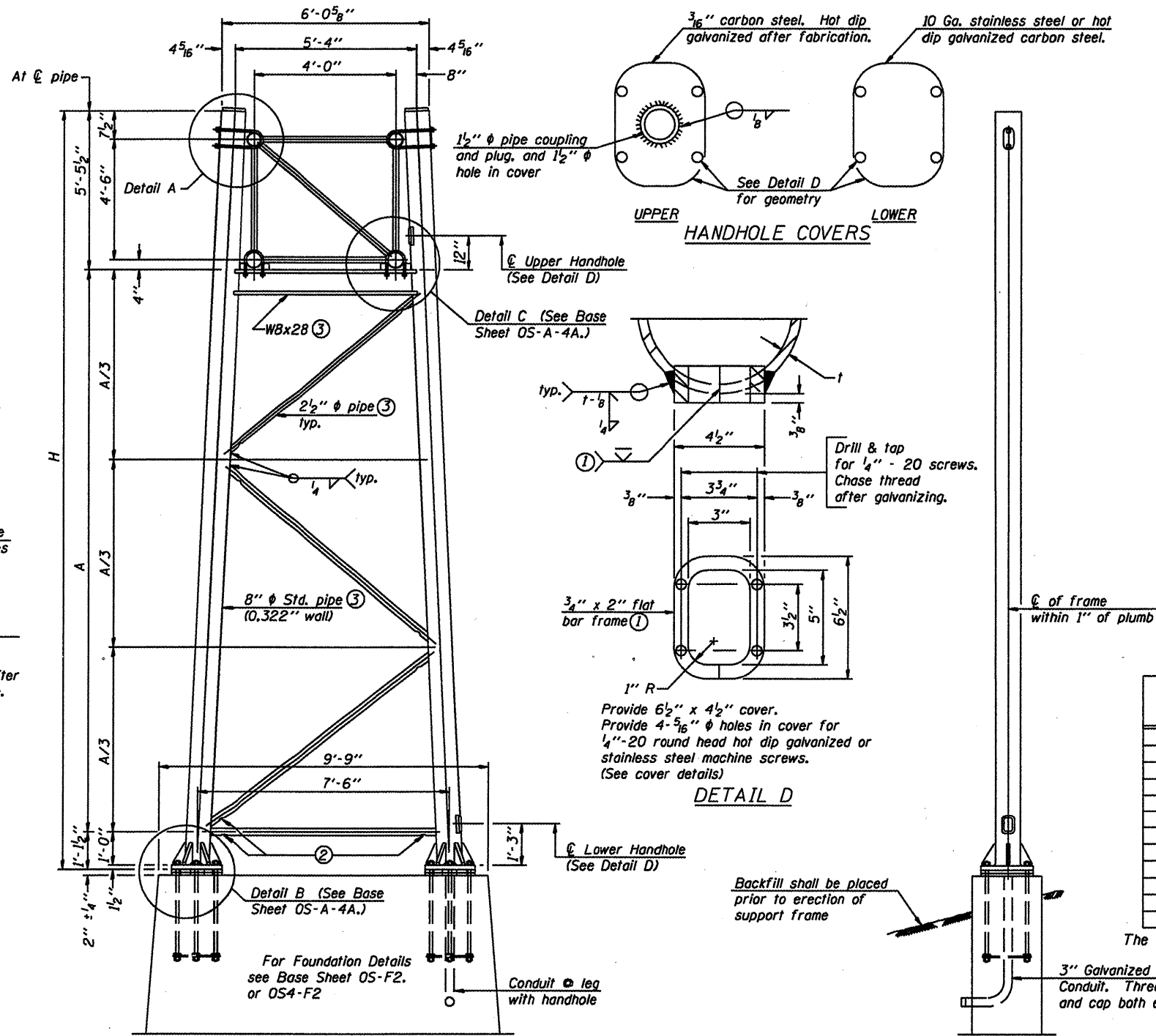
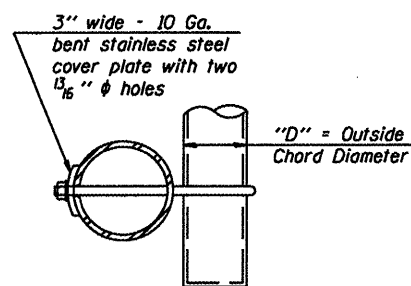
Location No.:	8-04	State I.D. No.:	8S060I270R013.2				
County:	Madison	Route:	I-270	M.P.:	13.2	Direction:	EB
Description of Work	Unit	Quantity					
REMOVE & RE-ERECT OVERHEAD SIGN STRUCTURE-SPAN	EACH	1.00					
STRUCTURAL STEEL SUPPORT FOR OVERHEAD SIGN STRUCTURE	EACH	2.00					
OVERHEAD SIGN STRUCTURE WALKWAY	FOOT	87.00					
FURNISH & INSTALL INTERNAL TRUSS DAMPER	EACH	1.00					
FURNISH & INSTALL SAFETY CHAIN	EACH	2.00					
OVERHEAD SIGN SUPPORT GROUT REPAIR	EACH	4.00					
DISCONNECT/RECONNECT ELECTRIC SERVICE	EACH	1.00					
FURNISH & INSTALL SADDLE SHIM BLOCK	EACH	4.00					
REPAIR CONCRETE FOUNDATION FOR OVERHEAD SIGN STRUCTURE	EACH	2.00					

Location No.:	8-05	State I.D. No.:	8S082I055R003.7				
County:	St. Clair	Route:	I-55	M.P.:	3.7	Direction:	NB
Description of Work	Unit	Quantity					
REMOVE & RE-ERECT OVERHEAD SIGN STRUCTURE-SPAN	EACH	1.00					
STRUCTURAL STEEL SUPPORT FOR OVERHEAD SIGN STRUCTURE	EACH	2.00					
FURNISH & INSTALL SADDLE SHIM BLOCK	EACH	4.00					
FURNISH & INSTALL INTERNAL TRUSS DAMPER	EACH	1.00					
FURNISH & INSTALL SAFETY CHAIN	EACH	2.00					
DISCONNECT/RECONNECT ELECTRIC SERVICE	EACH	1.00					
OVERHEAD SIGN SUPPORT GROUT REPAIR	EACH	4.00					
OVERHEAD SIGN STRUCTURE WALKWAY	FOOT	98.00					
REPLACE U-BOLT	EACH	4.00					
REPLACE / TIGHTEN CLIPS PER SIGN	EACH	2.00					
REMOVE & REINSTALL VIDEO CAMERA & EQUIPMENT	EACH	1.00					

Location No.:	8-06	State I.D. No.:	8S060S003R015.3				
County:	Madison	Route:	IL - 3	M.P.:	15.3	Direction:	NB
Description of Work	Unit	Quantity					
REMOVE & RE-ERECT OVERHEAD SIGN STRUCTURE-SPAN	EACH	1.00					
STRUCTURAL STEEL SUPPORT FOR OVERHEAD SIGN STRUCTURE	EACH	2.00					
FURNISH & INSTALL INTERNAL TRUSS DAMPER	EACH	1.00					
FURNISH & INSTALL SADDLE SHIM BLOCK	EACH	4.00					
FURNISH & INSTALL SAFETY CHAIN	EACH	2.00					
DISCONNECT/RECONNECT ELECTRIC SERVICE	EACH	1.00					
OVERHEAD SIGN STRUCTURE WALKWAY	FOOT	52.00					
OVERHEAD SIGN SUPPORT GROUT REPAIR	EACH	4.00					
REPLACE / TIGHTEN CLIPS PER SIGN	EACH	1.00					
REPLACE U-BOLT	EACH	11.00					



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



SIDE ELEVATION

END ELEVATION

8" 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 μ m 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.
- ⑥ "H" based on 15'-0" or actual sign height, whichever is greater.

Structure Number	Station	Support		H ⑥	A
		Left	Right		
BS060S003R015.3	1020 + 00	X	X	25' - 1"	18'-4 1/2"

The "H" and "A" dimensions shown were taken from the existing end support details.

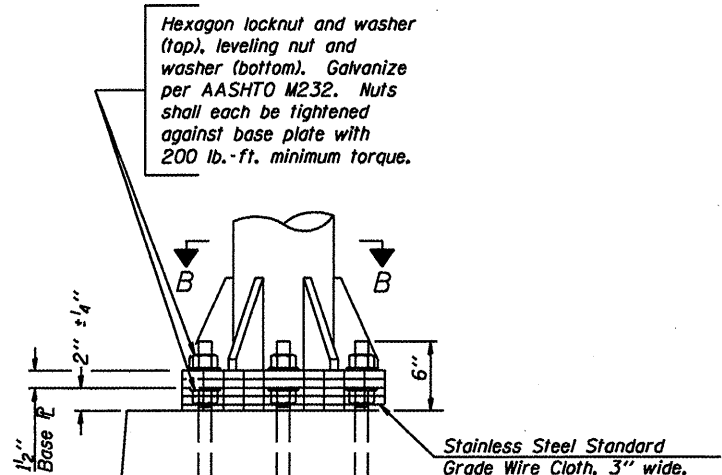
DESIGNED -	20
CHECKED -	EXAMINED
DRAWN -	PASSED
CHECKED -	ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

NOTES:
1. New End Supports to be installed on existing concrete foundations with existing anchor bolts. The Contractor shall provide new anchor bolt nuts and washers as necessary.
2. Some of these are non standard end supports the Contractor and the Engineer shall field verify the existing end support dimensions and the existing anchor bolt dimensions prior to fabrication of the new end supports. This measurement should include the horizontal distance between the center lines of the columns at the base plate to assure the new supports will fit the existing anchor bolt pattern.

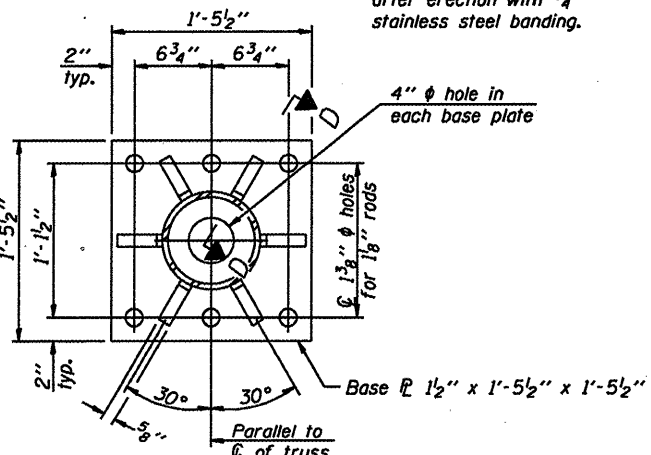
OVERHEAD SIGN STRUCTURES
SUPPORT FRAME for TYPE I-A ALUMINUM TRUSS

District 8
Sign Structure Replacement

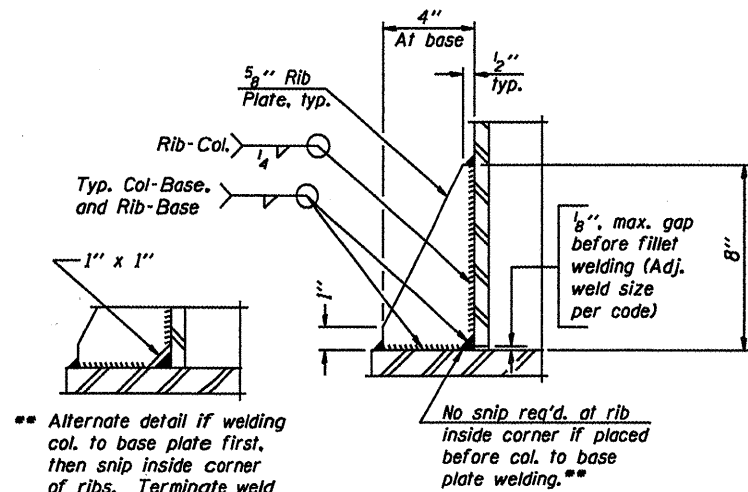


DETAIL B

Ribs shall be cut to fit slope of pipe.

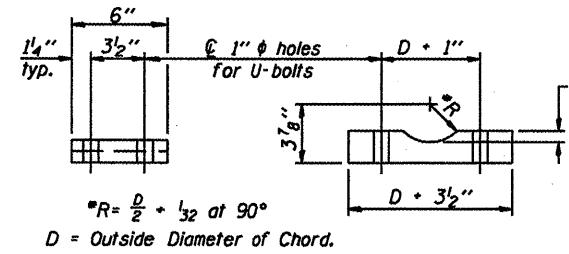


SECTION B-B



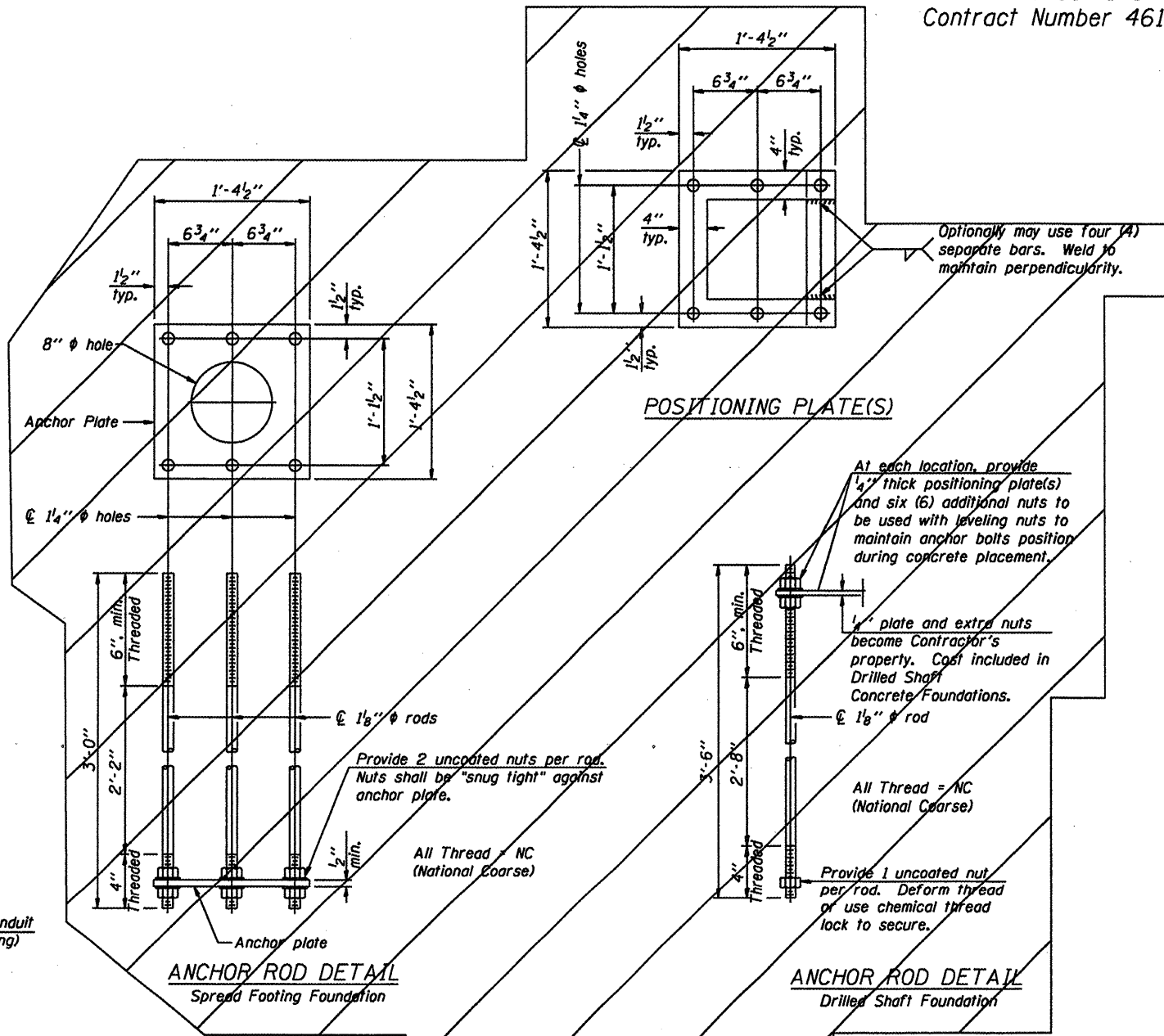
SECTION D-D

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)

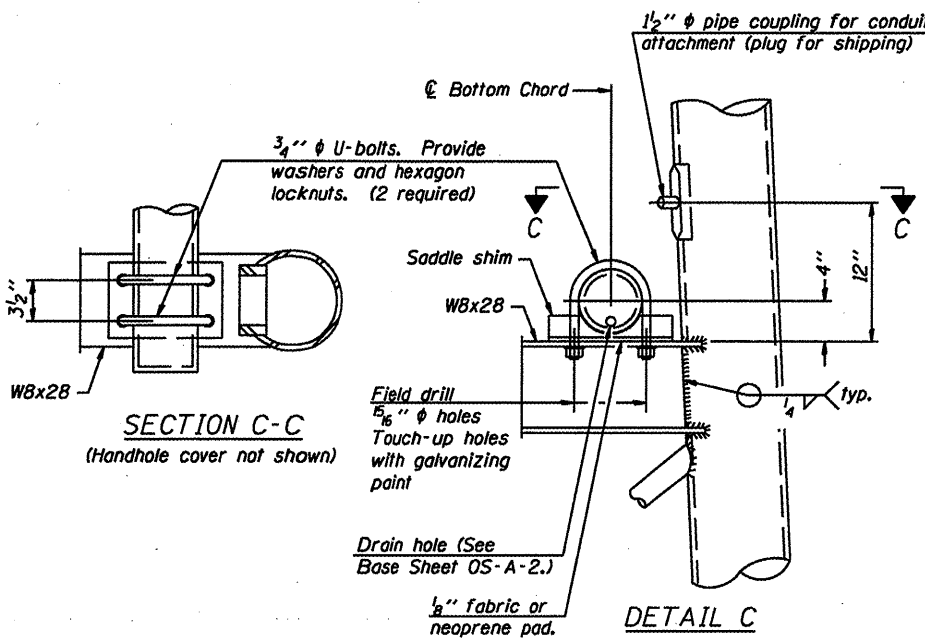
Truss Chord Nominal Dia.	a
5"	3/4"
5 1/2"	13/16"
6"	7/8"
6 1/2"	15/16"



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

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS ALUMINUM TRUSS

District 8
Sign Structure Replacement

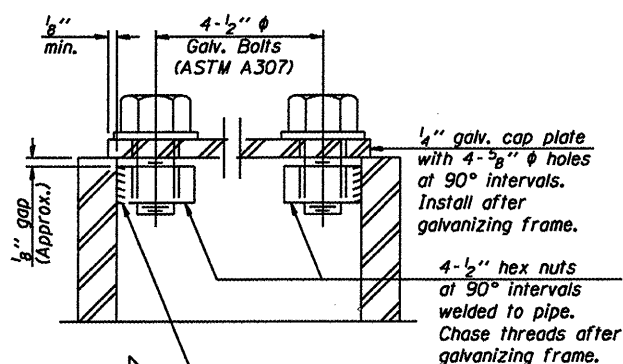
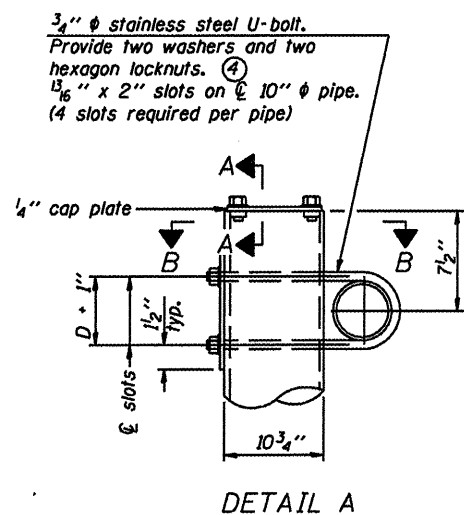


SECTION C-C
(Handhole cover not shown)

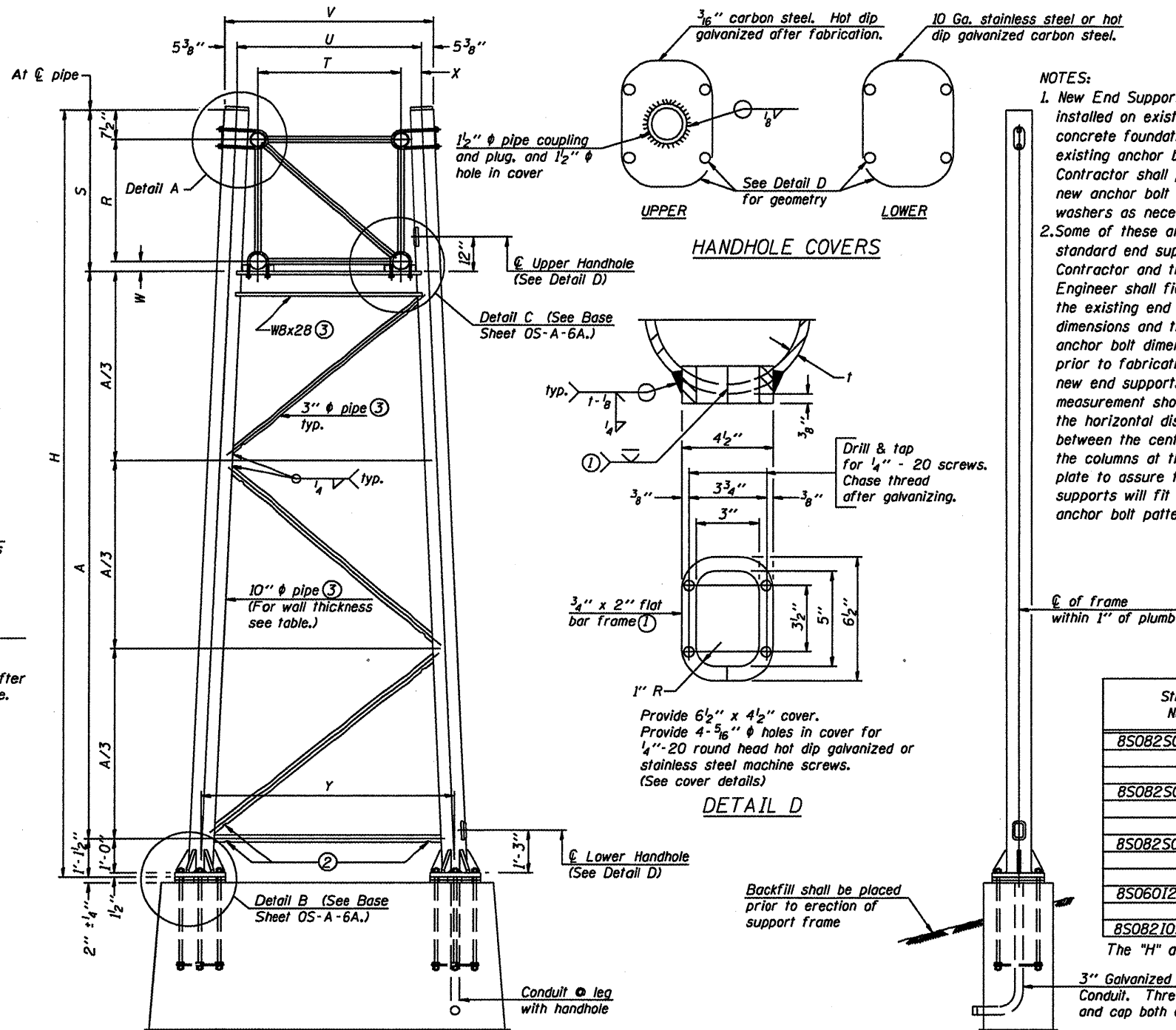
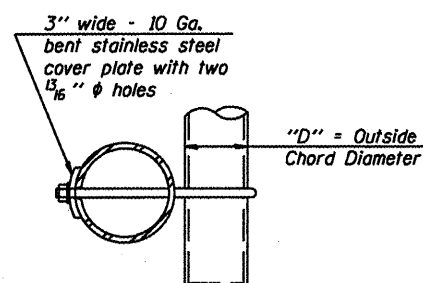
DETAIL C

NUMBER	REVISION	DATE

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



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



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

NOTES:

1. New End Supports to be installed on existing concrete foundations with existing anchor bolts. The Contractor shall provide new anchor bolt nuts and washers as necessary.
2. Some of these are non standard end supports the Contractor and the Engineer shall field verify the existing end support dimensions and the existing anchor bolt dimensions prior to fabrication of the new end supports. This measurement should include the horizontal distance between the center lines of the columns at the base plate to assure the new supports will fit the existing anchor bolt pattern.

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 μ m 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.
6. "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				
BS082S013L002.5	45 + 70	X		III-A	0.365	32'-11"	23'-4 1/2"
			X		0.365	30'-10 1/2"	21'-3 3/4"
BS082S015R007.7	329 + 05	X		II-A	0.279	26'-9 1/2"	19'-1 1/2"
			X		0.279	26'-10 3/4"	19'-3"
BS082S015R007.6	353 + 20	X		III-A	0.279	31'-0 1/2"	21'-6"
			X		0.279	29'-11"	20'-3 3/4"
BS0601270R013.2	782 + 00	X		II-A	0.279	30'-4 3/4"	22'-9"
			X		0.279	28'-8 3/4"	21'-1"
BS082I055R003.7	100 + 30	X	X	II-A	0.279	27'-9 1/4"	20'-1 1/2"

The "H" and "A" dimensions shown were taken from the existing end support details.

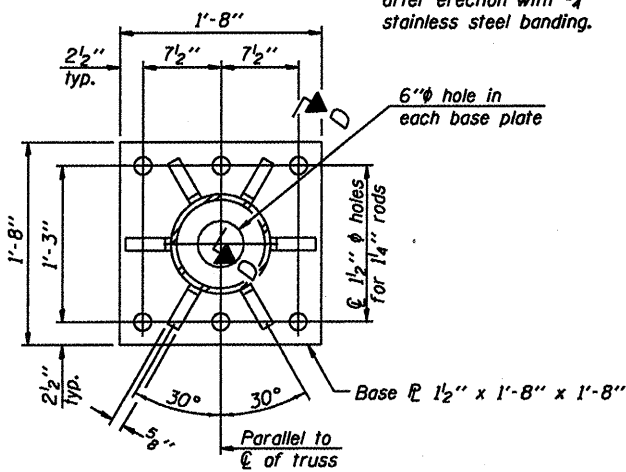
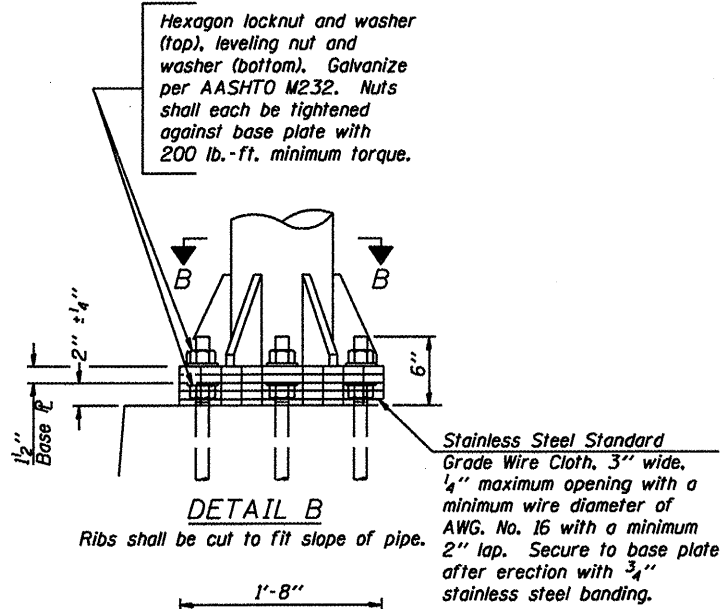
DESIGNED -	20
CHECKED -	EXAMINED
DRAWN -	PASSED
CHECKED -	

NUMBER	REVISION	DATE

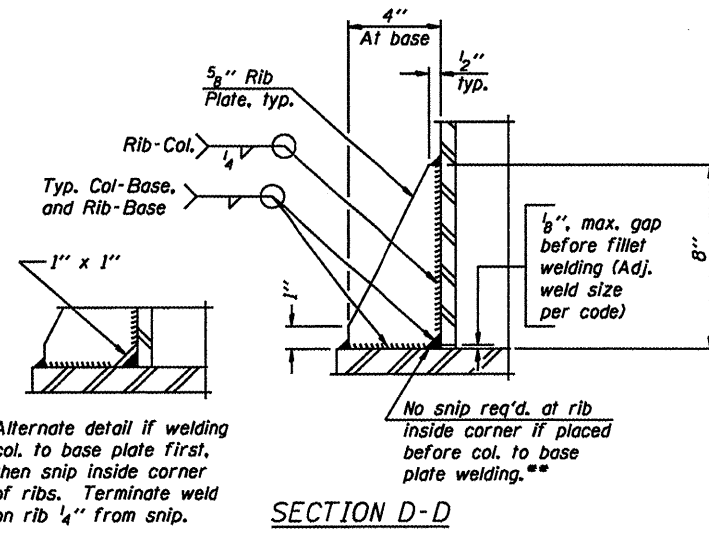
Truss Type	Dimensions							
	R	S	T	U	V	W	X	Y
I-A	4'-6"	5'-5 1/2"	4'-0"	5'-6"	6'-4 3/4"	4"	9"	8'-3"
II-A (6)	5'-3"	6'-3 1/4"	4'-6"	6'-1"	6'-11 3/4"	4 3/4"	9 1/2"	8'-3"

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME for ALUMINUM TRUSS

District 8
Sign Structure Replacement

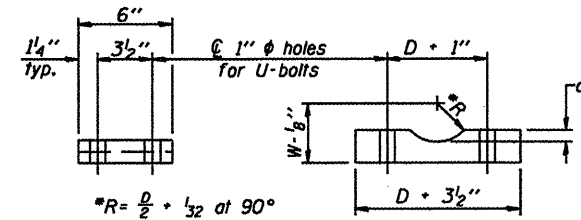


SECTION B-B



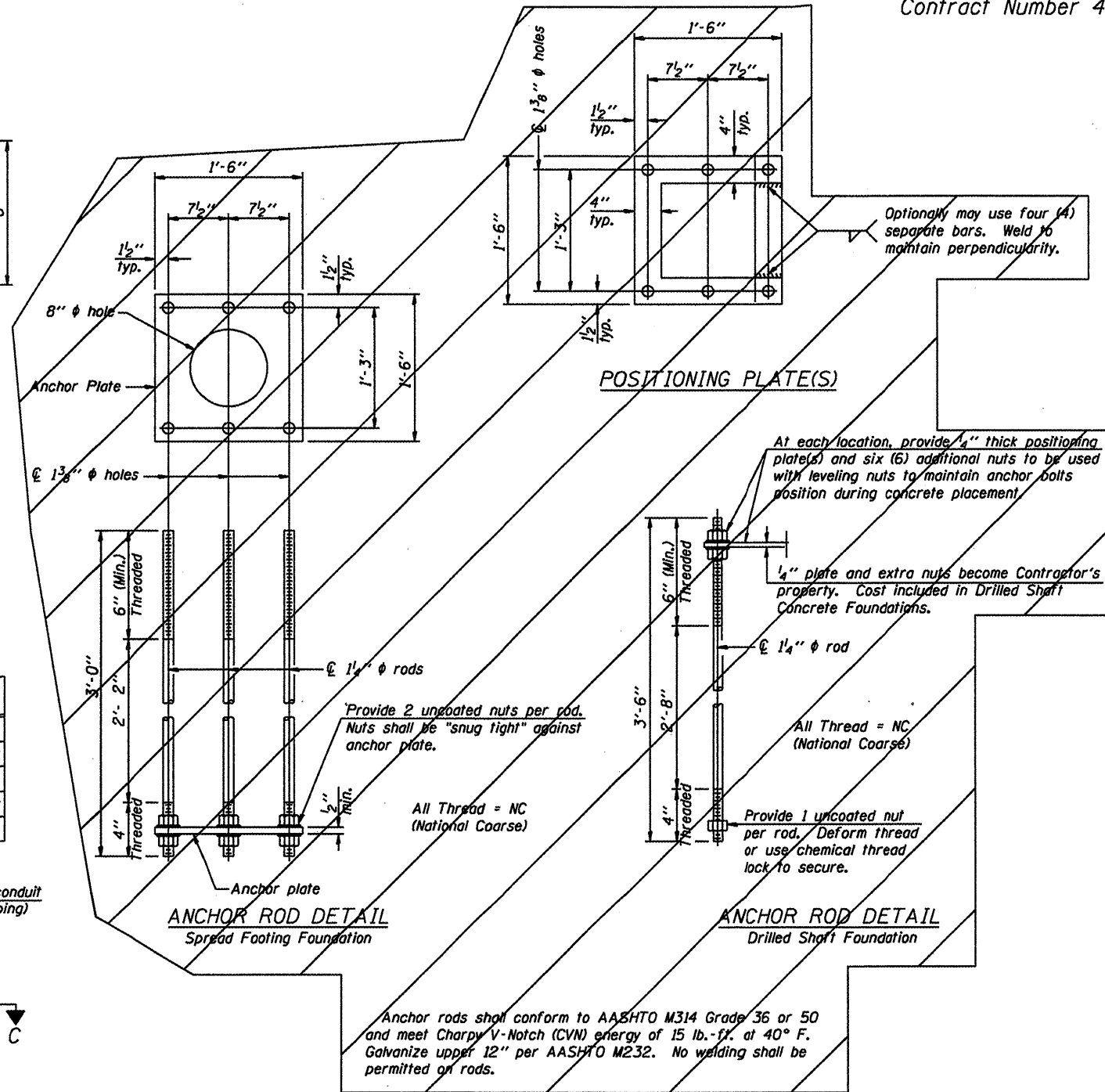
SECTION D-D

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



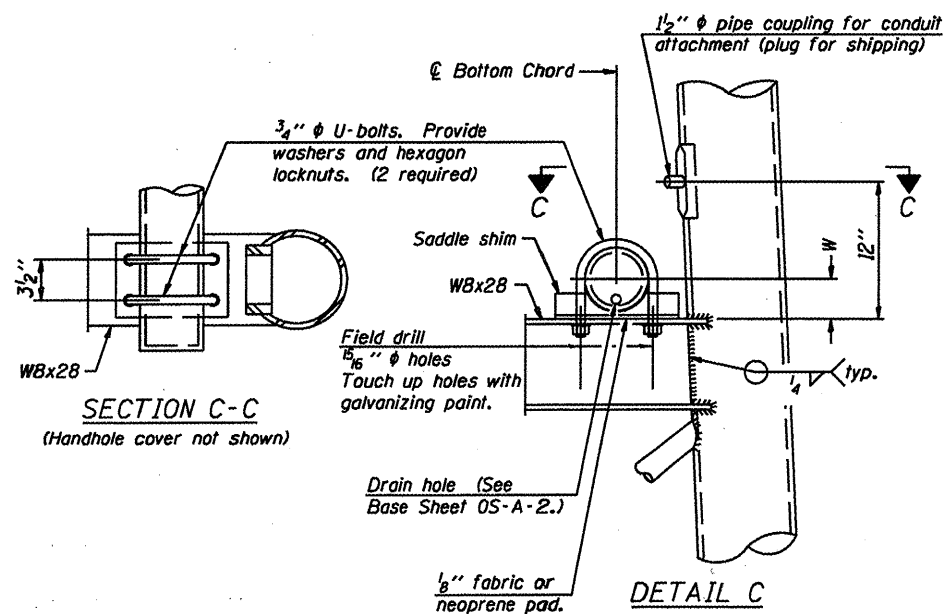
SADDLE SHIM DETAIL
ASTM B26 Alloy 356-F
or
ASTM B209 Alloy 6061-T651
(4 required per sign truss)

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



10" φ PIPE SUPPORT FRAME DETAILS

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS ALUMINUM TRUSS



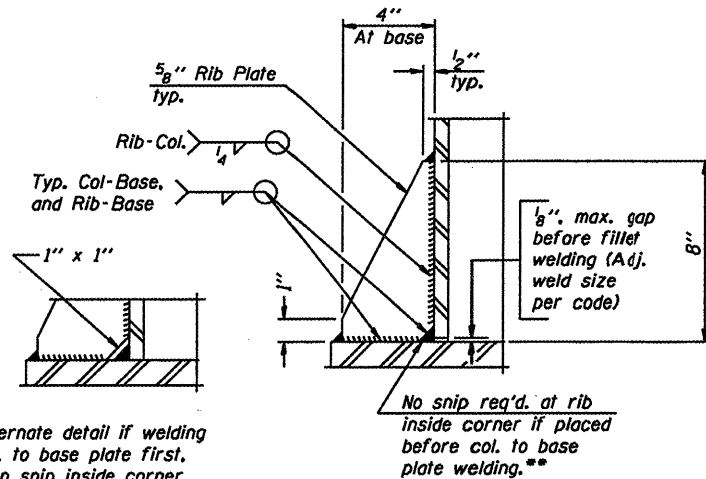
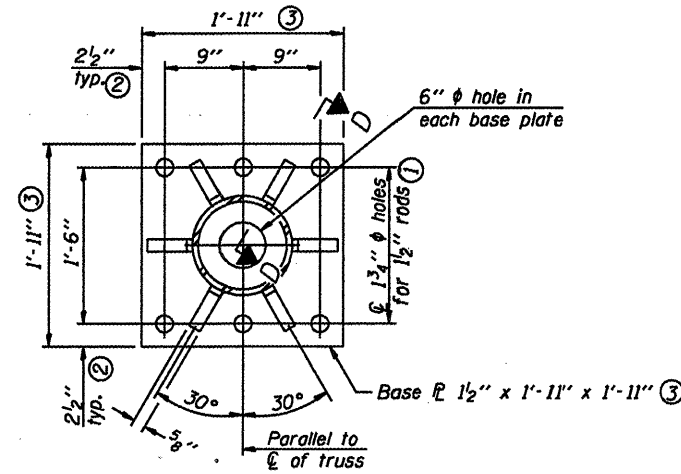
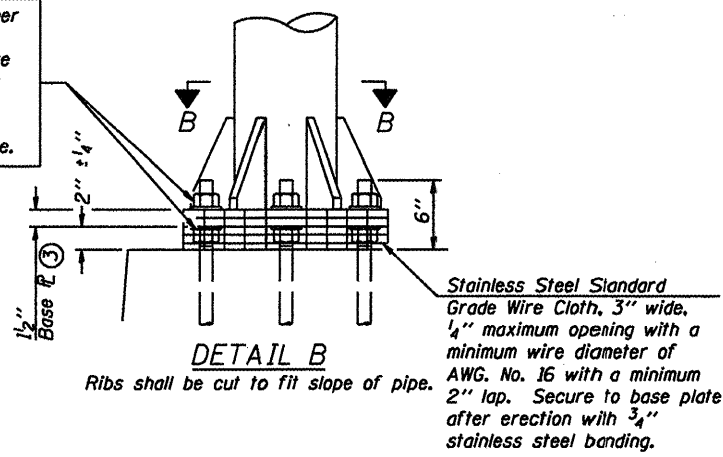
SECTION C-C
(handhole cover not shown)

DETAIL C

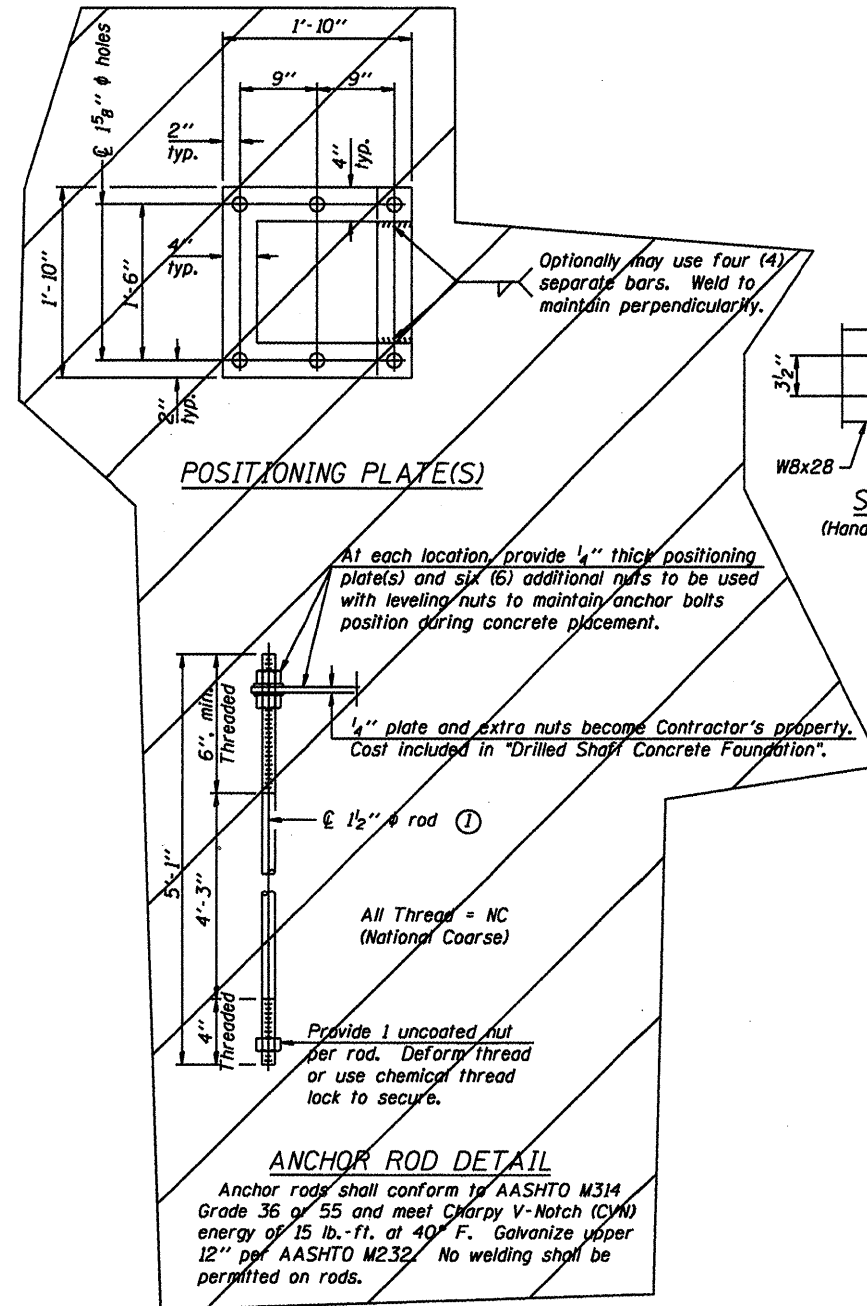
NUMBER	REVISION	DATE

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

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.

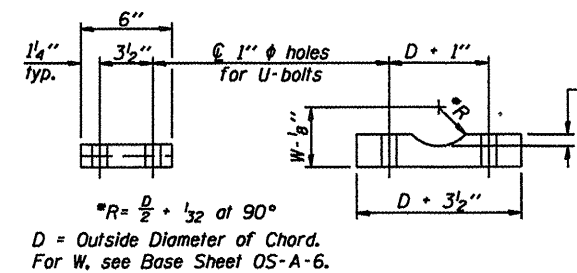
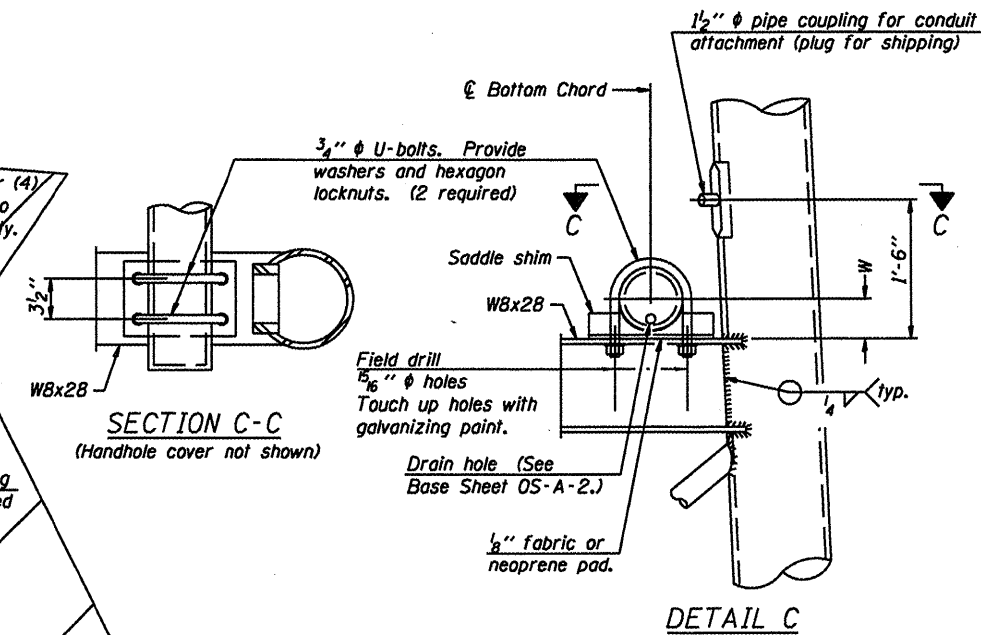


TYPE III-A TRUSS

12" ϕ PIPE SUPPORT FRAME DETAILS

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 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"

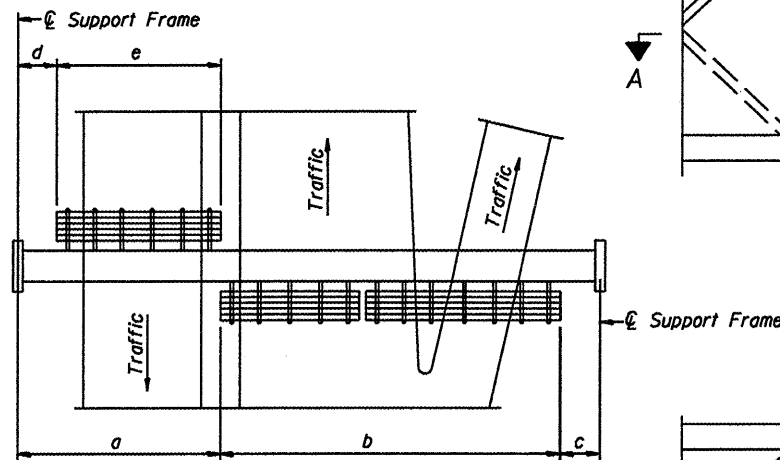
OVERHEAD SIGN STRUCTURES
SUPPORT FRAME for TYPE III-A ALUMINUM TRUSS

District 8
Sign Structure Replacement

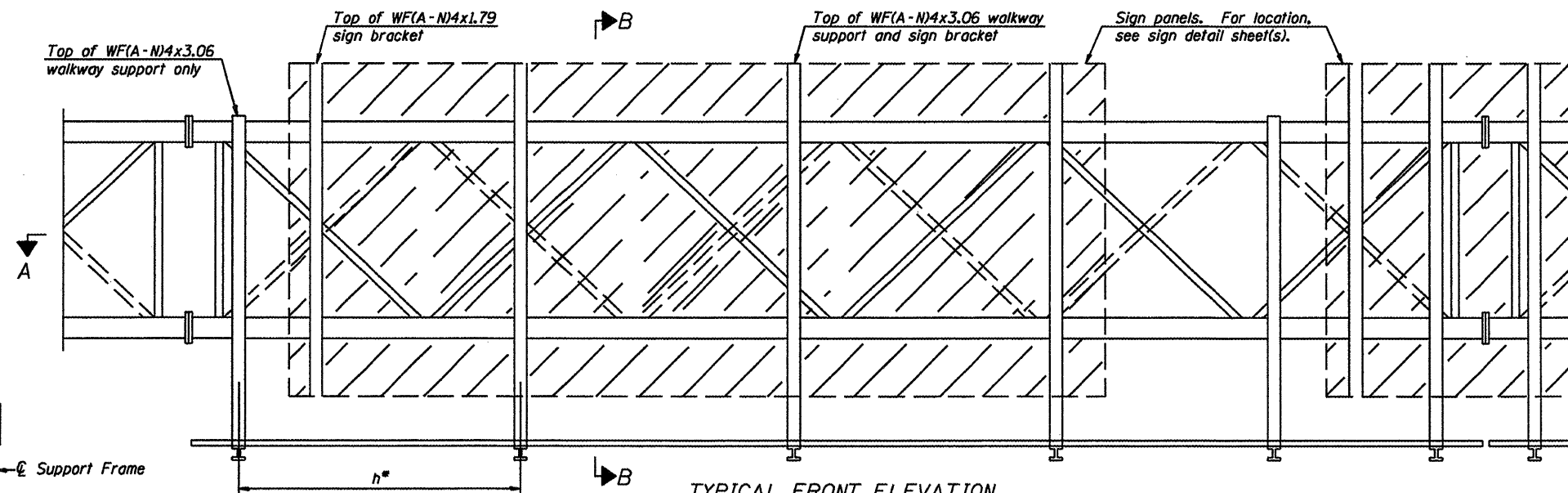
DESIGNED -	20
CHECKED -	EXAMINED
DRAWN -	PASSED
CHECKED -	ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

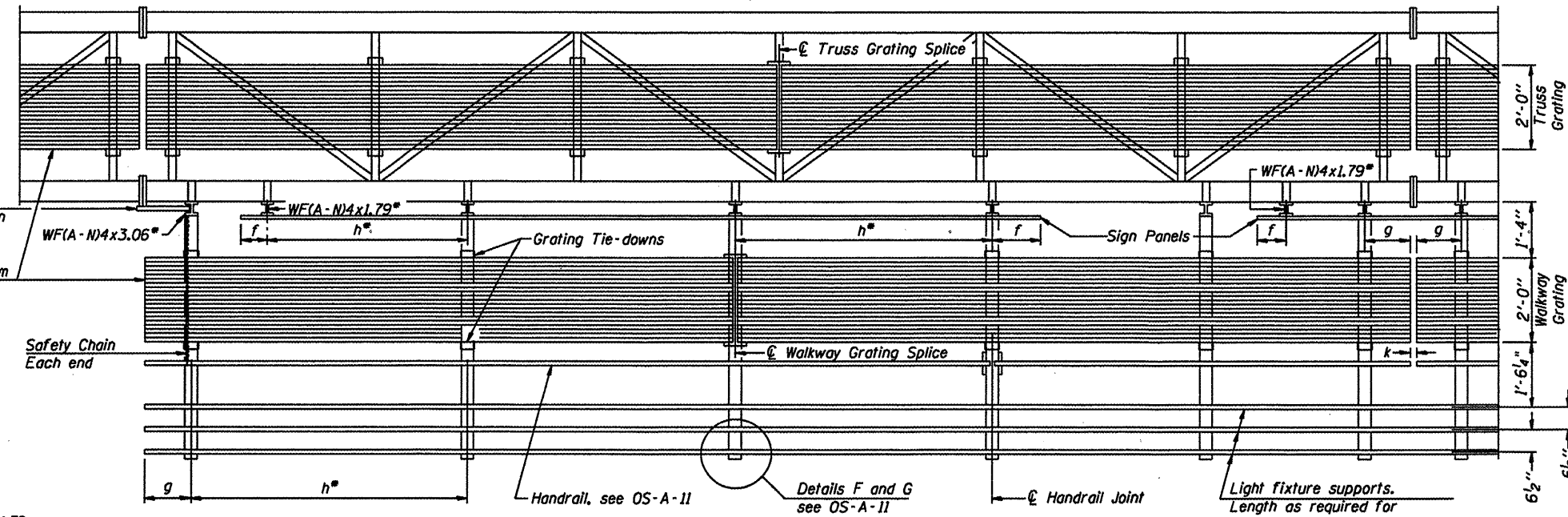
NUMBER	REVISION	DATE



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.
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".

Walkway and Truss Grating width dimensions are nominal and may vary ±½" based on available standard widths.

BRACKET TABLE

Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
8'-0"	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 Handrail Details see Base Sheet OS-A-11.

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

OS-A-9

5/16/08

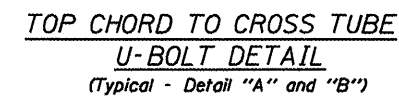
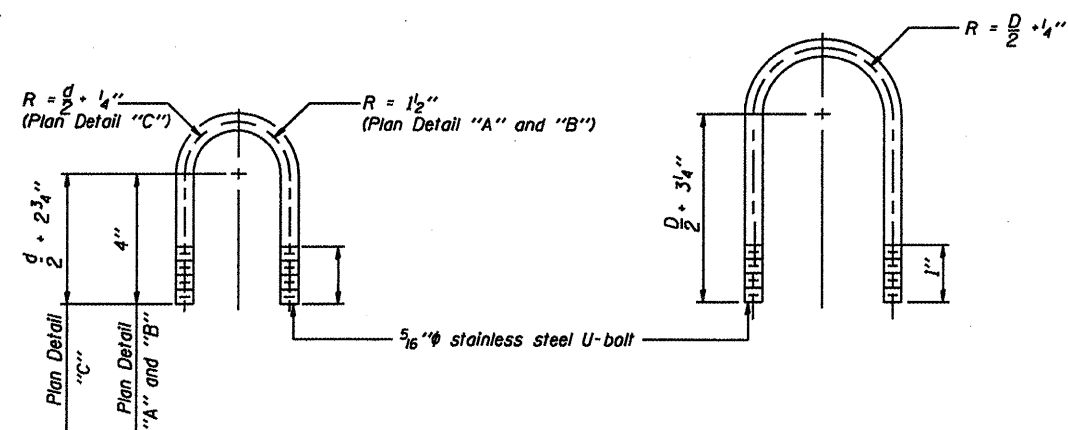
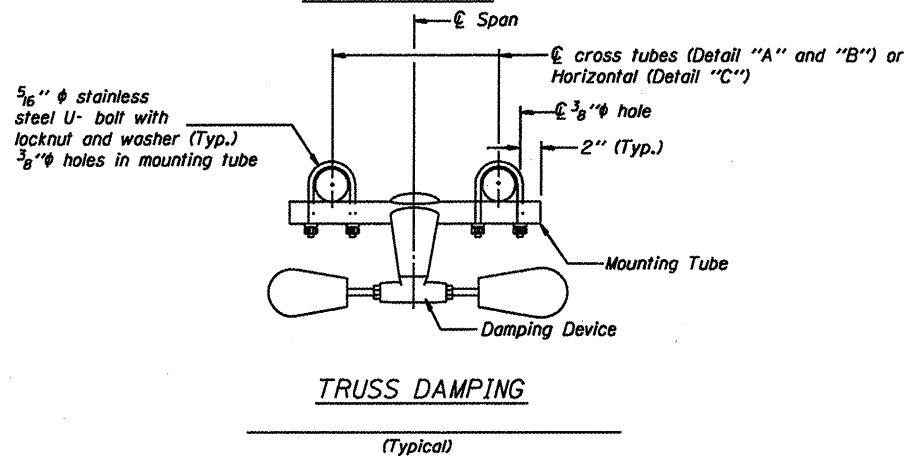
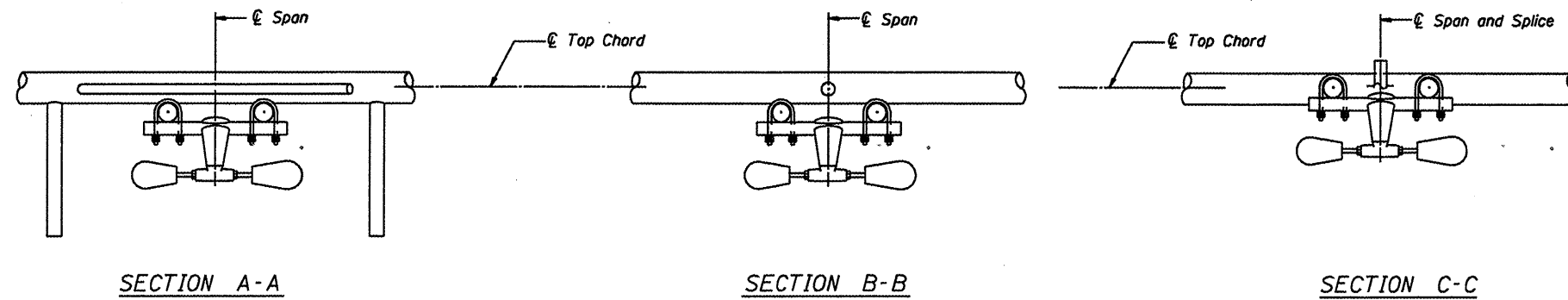
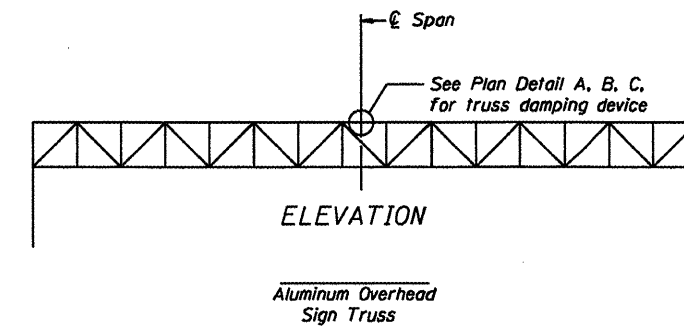
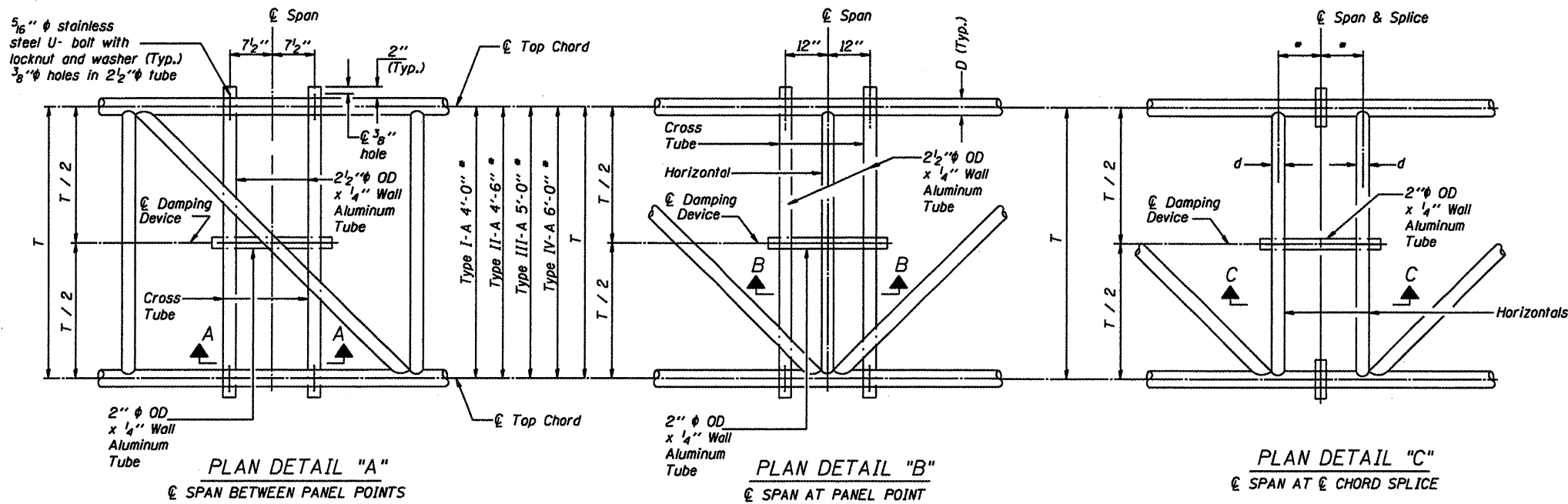
Structure Number	Station	a	b	c	d	e	Walkway Grating and Handrail Lengths
BS082S013L002.5	45 + 70	N/A	N/A	N/A	N/A	N/A	139' - 0" *
BS082S015R007.7	329 + 05	N/A	N/A	N/A	N/A	N/A	95' - 0" *
BS082S015R007.6	353 + 20	N/A	N/A	N/A	N/A	N/A	78' - 0" *
BS0601270R013.2	782 + 00	N/A	N/A	N/A	N/A	N/A	87' - 0" *
BS0821055R003.7	100 + 30	N/A	N/A	N/A	N/A	N/A	98' - 0" *
BS060S003R015.3	1020 + 00	N/A	N/A	N/A	N/A	N/A	52' - 0" *

* Length shown is for internal truss grating to be installed.

OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS

District 8
Sign Structure Replacement

Verify before drilling holes in mounting tube and cross tubes.



GENERAL NOTES

- Damper:** One damper per truss. (31 lbs. Stockbridge-Type Aluminum)
- Materials:** Aluminum tubes shall be ASTM B221 alloy 6061 temper T6
- Fasteners:** U-bolts shall be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finish, or an equivalent material acceptable to the Engineer. All nuts shall be stainless steel conforming to ASTM A194, Grade B (AISI Type 304) or Grade BF (AISI Type 303). The nuts shall be "locknuts" with nylon or steel inserts and semifinished hexagonal heads equivalent to the finished hex series of the American National Standards. All washers shall be stainless steel conforming to ASTM A240, Type 302 or 304.

DESIGNED -	2D
CHECKED -	EXAMINED
DRAWN -	PASSED
CHECKED -	ENGINEER OF BRIDGES AND STRUCTURES

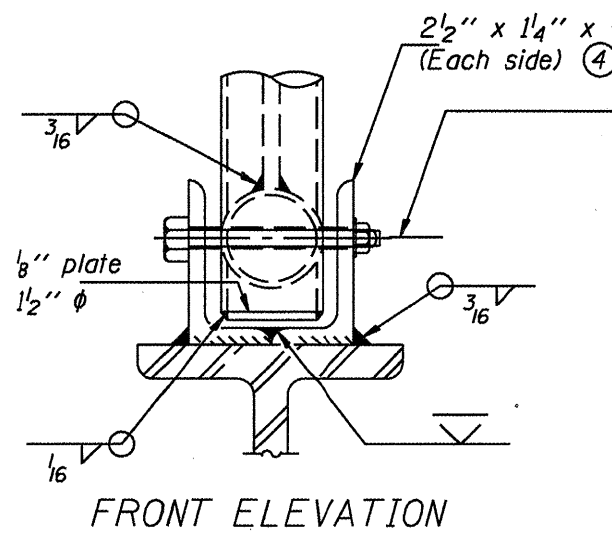
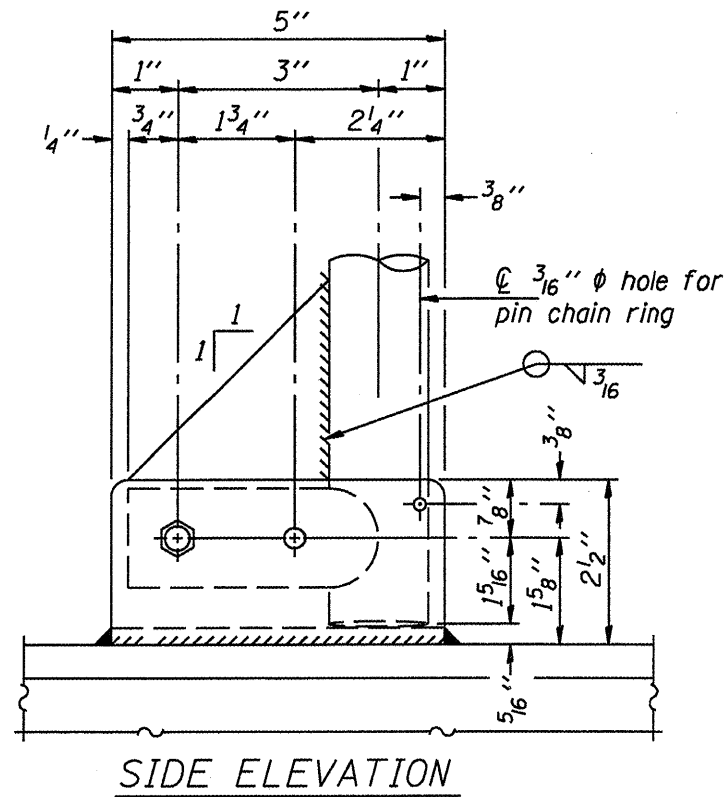
TRUSS DAMPER RETROFIT 07-01-2001

OVERHEAD SIGN STRUCTURE
DAMPING DEVICE

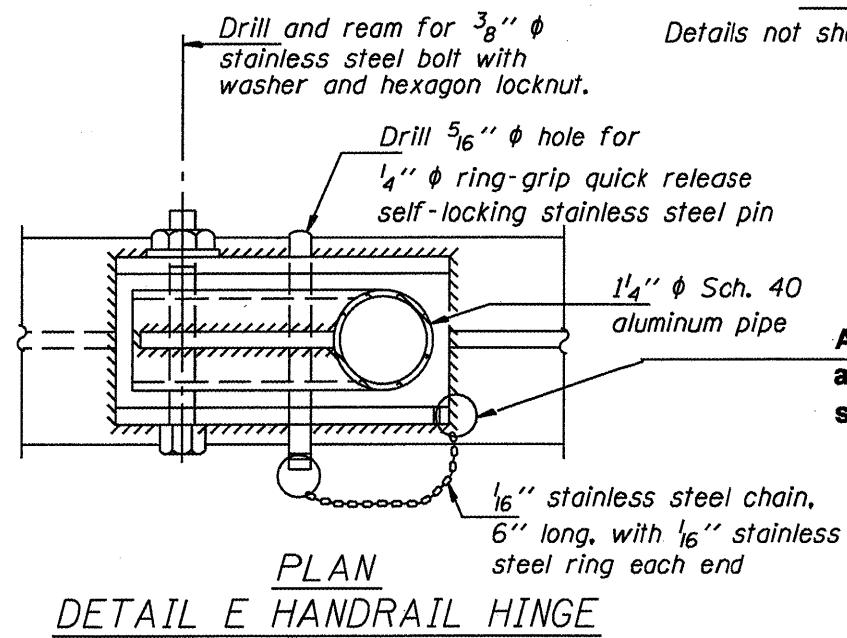
District 8
Sign Structure Replacement

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

Various Routes
D 8 OVD SIN STR REPL 2010-45
Madison & St. Clair Counties
Sheet 16 of 16
Contract Number 46109



Details not shown same as "ELEVATION" at right.



A new stainless steel chain shall be attached to the angle with a 1/16" stainless steel ring.

OVERHEAD SIGN STRUCTURES
HANDRAIL HINGE REPAIR DETAIL

District 8
Sign Structure Replacement