

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 SIGN TRUSS REPAIR	KNOX	11	1

PROJECT ENGINEER: RANDY LANUNGA (309) 671-4477

DESIGNER: SHIRLEY KECK (309) 671-4476

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

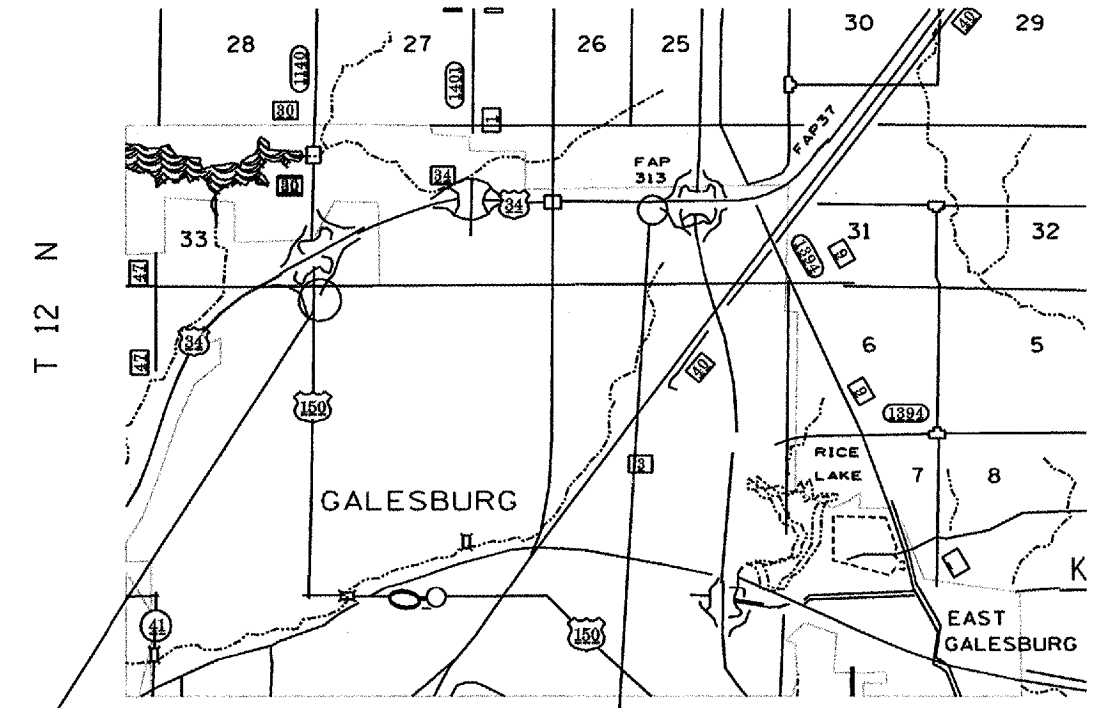
VARIOUS (VARIOUS) ROUTES
D4 SIGN TRUSS REPAIR 2006
KNOX COUNTY
C-94-079-06

R 1 E

FOR INDEX OF SHEETS, SEE SHEET NO. 2

STANDARDS

- 701101-01
- 701106-01
- 701400-02
- 701401-03
- 701406-04
- 701411-03
- 701606-04
- 702001-06
- 720021-01



PROJECT LOCATION #2
4S048U150L012.1

PROJECT LOCATION #1
4S048U034R007.5

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

CONTRACT NO. 68597
CATALOG NO. 033273-00D



LOCATION OF IMPROVEMENT
VARIOUS LOCATIONS IN
KNOX COUNTY

DESCRIPTION OF WORK
SIGN TRUSS REPAIR AND REPLACEMENT
ON VARIOUS ROUTES IN KNOX COUNTY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Feb 20 06

[Signature]
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

March 24, 20 06
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

March 24, 20 06
[Signature]
DIRECTOR OF HIGHWAYS/CHIEF ENGINEER

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OF THE STATE OF ILLINOIS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 SIGN TRUSS REPAIR	KNOX	14	2
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____		ILLINOIS FED. AID PROJECT		

INDEX OF SHEETS

1. COVER SHEET, SIGNATURE BLOCK
2. INDEX OF SHEETS, COMMITMENTS
3. SUMMARY OF QUANTITIES
4. OVERHEAD SIGN STRUCTURE SCHEDULE OF LOCATIONS
- 5-13. OVERHEAD SIGN TRUSS STRUCTURE & SUPPORT DETAILS
14. HANDRAIL HINGE REPAIR DETAIL

COMMITMENTS

COMMITMENTS ARE NOT TO BE ALTERED WITHOUT THE WRITTEN APPROVAL OF ALL PARTIES TO WHICH THE COMMITMENTS WERE MADE.

NO COMMITMENTS WERE MADE IN CONJUNCTION WITH THIS PROJECT.

PLOT DATE = 3/1/2006
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 USER NAME = keatam

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NAME	DATE	INDEX OF SHEETS & COMMITMENTS	

SCALE: VERT. _____
 HORIZ. _____
 DATE _____

DRAWN BY _____
 CHECKED BY _____

Summary of Quantities

CONTRACT NO. 58997				
F.A. - RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 SIGN TRUSS REPAIR	KNOX	14	3
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				

CONSTRUCTION TYPE CODE

CODE No.	ITEM	UNIT	Tot.QT	CONSTRUCTION TYPE CODE	
				Y002 - 1C 100 % STATE US 34 MP 7.5	Y002 - 1C 100 % STATE US 150 MP 12.1
67100100	MOBILIZATION	L SUM	1	0.5	0.5
70101700	TRAFFIC CONTROL AND PROTECTION	L SUM	1	0.5	0.5
73800100	STRUCTURAL STEEL SUPPORT FOR OVERHEAD SIGN STRUCTURE - SPAN	EACH	4	2	2
73801100	REMOVE AND REERECT OVERHEAD SIGN STRUCTURE-SPAN	EACH	2	1	1
T9992300	OVERHEAD SIGN STRUCTURE WALKWAY	FOOT	173	94	79
T9995400	FURNISH AND INSTALL SADDLE SHIM BLOCK	EACH	8	4	4
T9997255	FURNISH AND INSTALL TRUSS DAMPER	EACH	2	1	1
T9997700	FURNISH AND INSTALL SAFETY CHAIN	EACH	4	2	2
T9998815	REPAIR HANDRAIL LOCKING PIN CONNECTION	EACH	20	10	10
T9998897	REPLACE HANDRAIL SUPPORT	EACH	1	1	
T9998995	DISCONNECT AND RECONNECT ELECTRIC SERVICE	EACH	2	1	1

SUMMARY OF QUANTITIES

F.A. - RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 SIGN TRUSS REPAIR	KNOX	14	4
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				

LOCATION NO.:	4-01	STATE I. D. NO.:	4S048U034R007.5		
COUNTY:	KNOX	ROUTE:	US 34	M. P.:	7.5
				DIRECTION:	EB
DESCRIPTION OF WORK				UNIT	QUANTITY
OVERHEAD SIGN STRUCTURE WALKWAY				FOOT	94.00
FURNISH & INSTALL SADDLE SHIM BLOCK				EACH	4.00
FURNISH & INSTALL INTERNAL TRUSS DAMPER				EACH	1.00
FURNISH & INSTALL SAFETY CHAIN				EACH	2.00
REPAIR HANDRAIL LOCKING PIN CONNECTION				EACH	10.00
REPLACE HANDRAIL SUPPORT				EACH	1.00
DISCONNECT / RECONNECT ELECTRIC SERVICE				EACH	1.00
STRUCTURAL STEEL SUPPORT FOR OVERHEAD SIGN STRUCTURE-SPAN				EACH	2.00
REMOVE & RE-ERECT OVERHEAD SIGN STRUCTURE - SPAN				EACH	1.00

LOCATION NO.:	4-02	STATE I. D. NO.:	4S048U150L012.10		
COUNTY:	KNOX	ROUTE:	US 150	M. P.:	12.10
				DIRECTION:	EB
DESCRIPTION OF WORK				UNIT	QUANTITY
OVERHEAD SIGN STRUCTURE WALKWAY				FOOT	79.00
FURNISH & INSTALL SADDLE SHIM BLOCK				EACH	4.00
FURNISH & INSTALL INTERNAL TRUSS DAMPER				EACH	1.00
FURNISH & INSTALL SAFETY CHAIN				EACH	2.00
REPAIR HANDRAIL LOCKING PIN CONNECTION				EACH	10.00
DISCONNECT / RECONNECT ELECTRIC SERVICE				EACH	1.00
STRUCTURAL STEEL SUPPORT FOR OVERHEAD SIGN STRUCTURE-SPAN				EACH	2.00
REMOVE & RE-ERECT OVERHEAD SIGN STRUCTURE - SPAN				EACH	1.00

PLOT DATE = 3/9/2006
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REVISIONS	
NAME	DATE

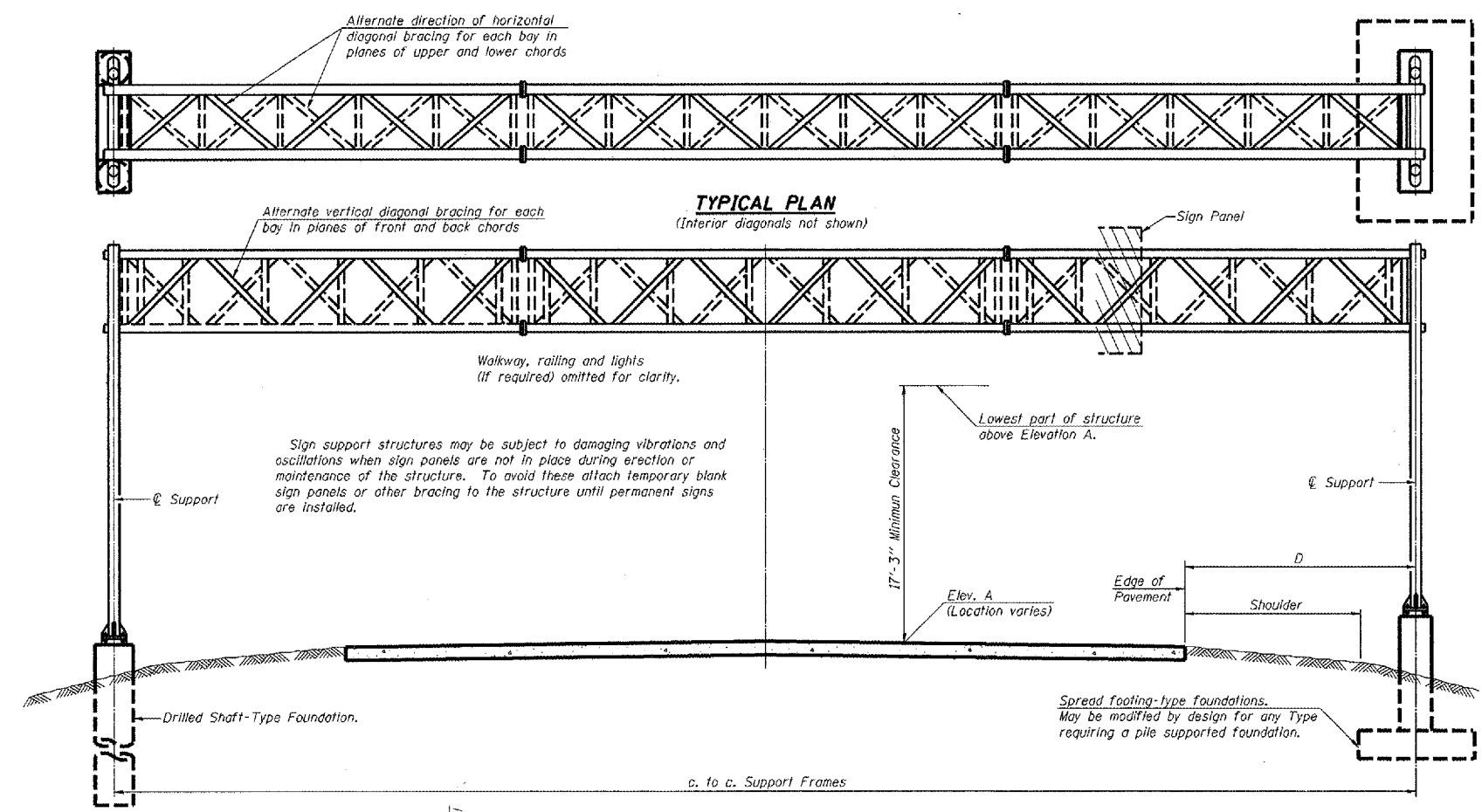
ILLINOIS DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS &
COMMITMENTS

SCALE: VERT.
DATE: _____ HORIZ.
DATE: _____

DRAWN BY
CHECKED BY

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 SIGN TRUSS REPAIR	KNOX	14	5
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____		ILLINOIS FED. AID PROJECT		



GENERAL NOTES

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

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

LOADING: 90 M.P.H. WIND VELOCITY

WIND LOADING: 30 p.s.f. normal to Sign Panel Area and Truss elements not behind sign Loading Diagram.

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

DESIGN STRESSES:
Field Units
F_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 with a minimum yield of 35,000 p.s.i., or A500 Grade B or C with a minimum yield of 46,000 p.s.i. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.

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

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

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (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 or 55 with a minimum Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F.

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

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

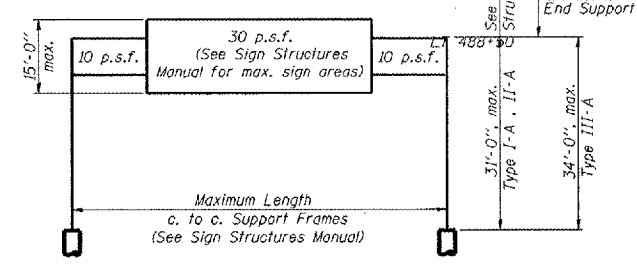
* If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.

TYPICAL ELEVATION
(Looking at Face of Signs)**

Structure Number	Station	Design Truss Type	c. to c. Supports	Elev. A	Dim. D	Height of Tallest Sign	Total Sign Area
4S048U034R007.5	RT. 615+00	IIA	94' - 0"	809.20	29' - 0"	10.5	162.75
4S048U150L012.1	LT 488+50	IA	77' - 0"	787.03	24' - 0"	8.0	92.00

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

**Looking upstation for structures with signs both sides.



DESIGN WIND LOADING DIAGRAM

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

TOTAL BILL OF MATERIAL

NUMBER	REVISION	DATE

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

This Sheet For Information Only

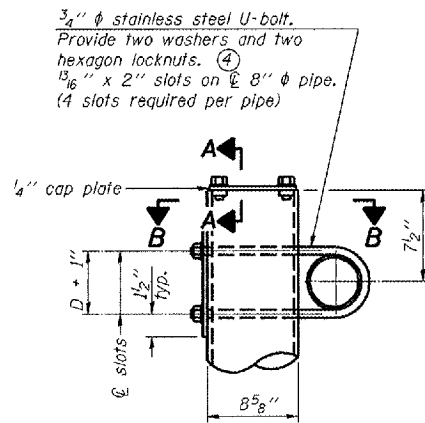
**OVERHEAD SIGN STRUCTURES
GENERAL PLAN & ELEVATION
ALUMINUM TRUSS & STEEL SUPPORTS**

D4 SIGN
TRUSS REPAIR 2006

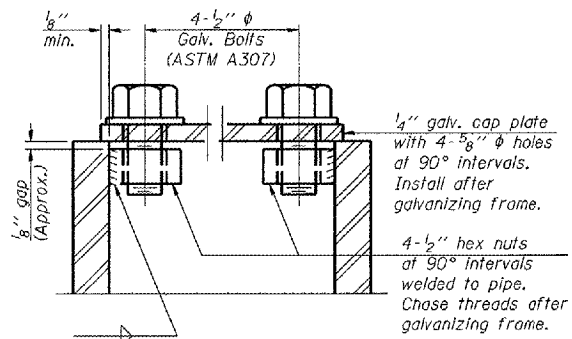
OS-A-1 1-7-05

PLOT DATE = 2/9/2006
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 USER NAME = heston

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 SIGN TRUSS REPAIR	KNOX	14	6
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____		ILLINOIS FED. AID PROJECT		

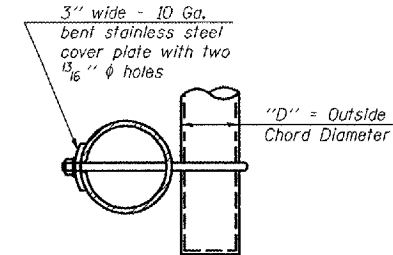


DETAIL A

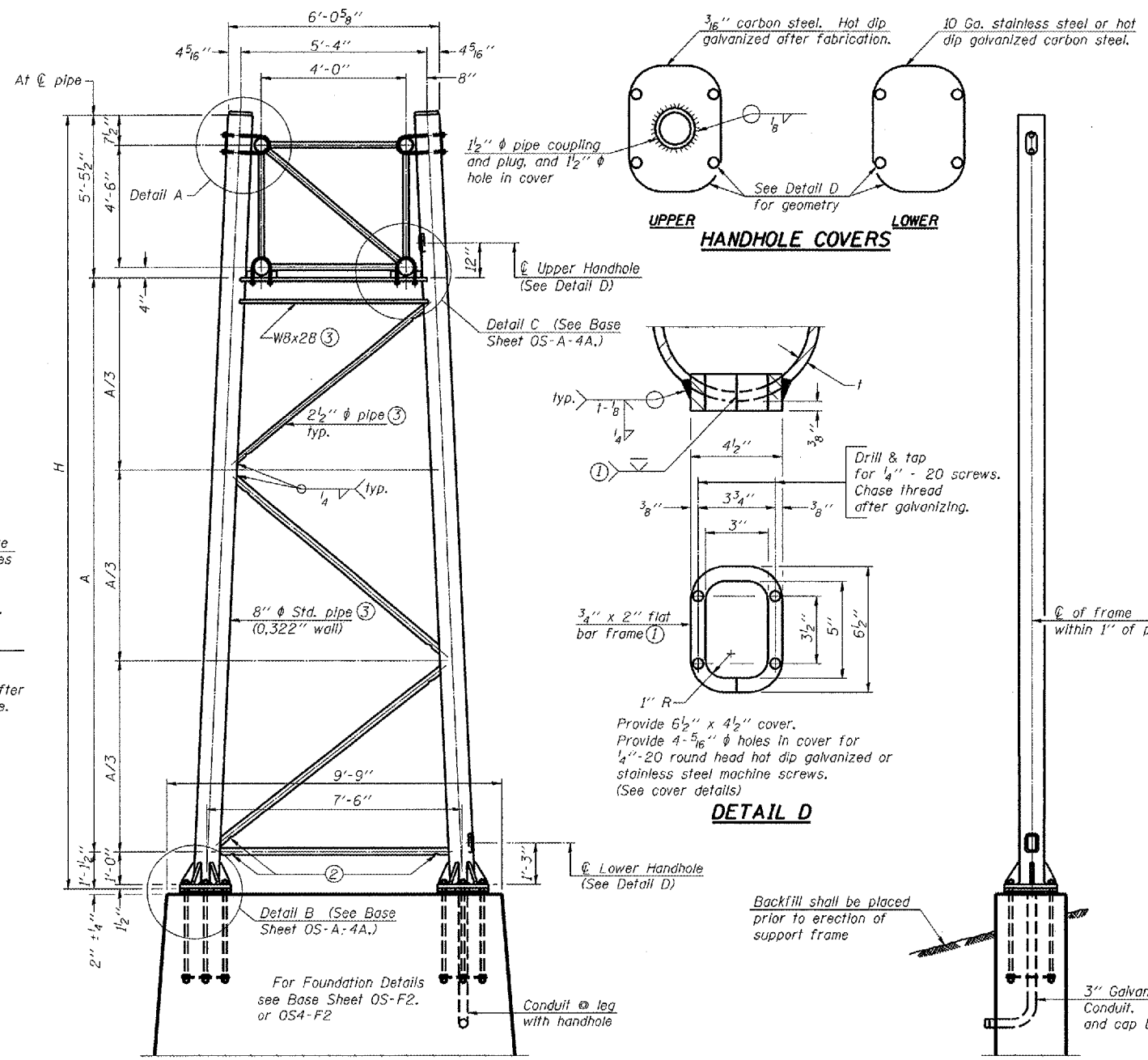


SECTION A-A

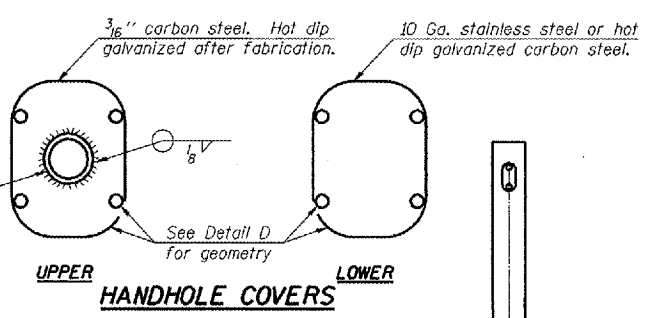
As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.



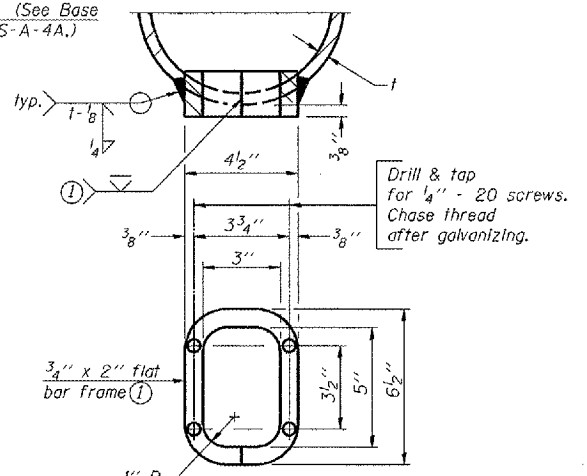
SECTION B-B



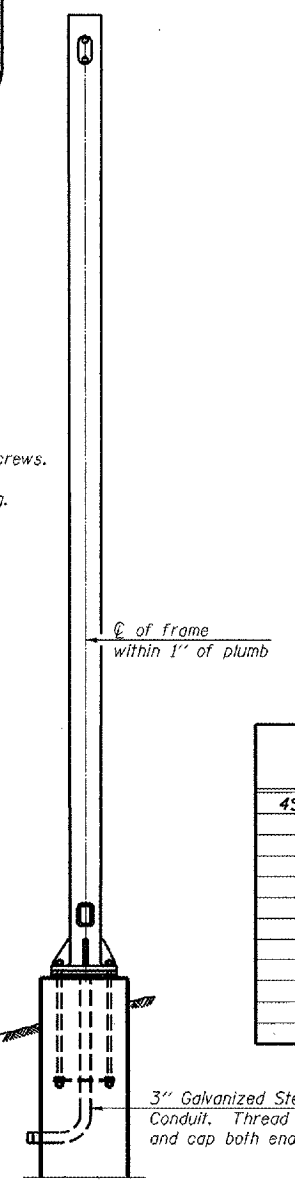
SIDE ELEVATION



UPPER LOWER HANDHOLE COVERS



DETAIL D



END ELEVATION

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

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

Structure Number	Station	Support		H	A
		Left	Right		
4S048UI50L012.1	488+50	X	X	27'-0"	20'-5"

8" Ø PIPE TRUSS SUPPORT FRAME

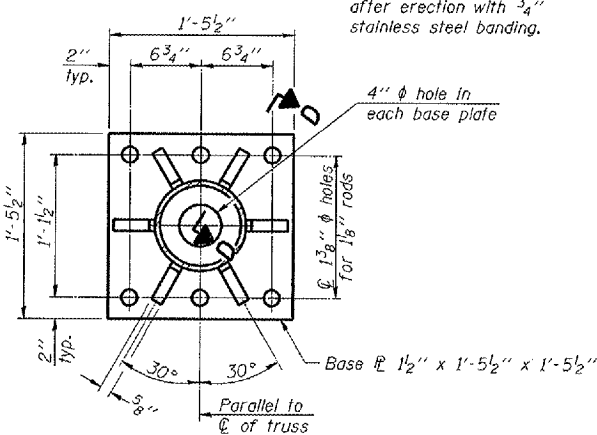
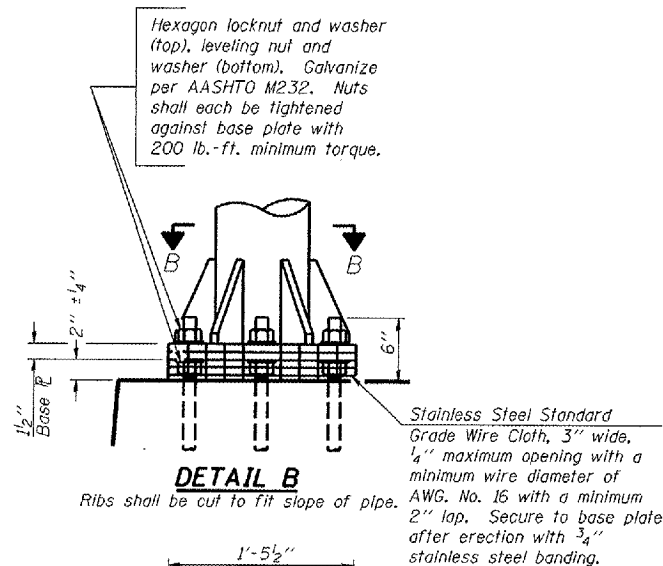
NUMBER	REVISION	DATE

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

STRUCTURE # 4S048UI50L012.1

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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 SIGN TRUSS REPAIR	KNOX	14	7
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

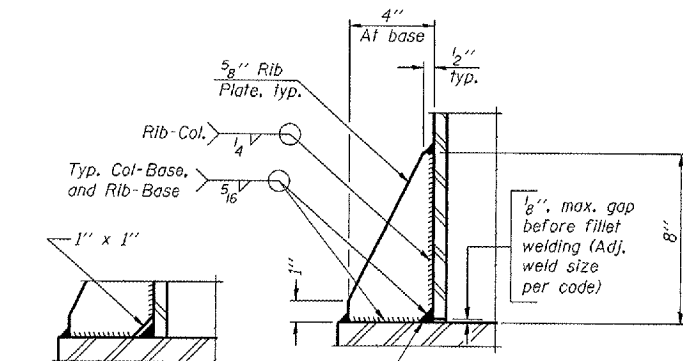


SECTION B-B

NUMBER	REVISION	DATE

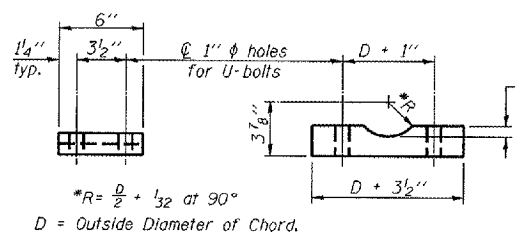
OS-A-4A

1-7-05



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

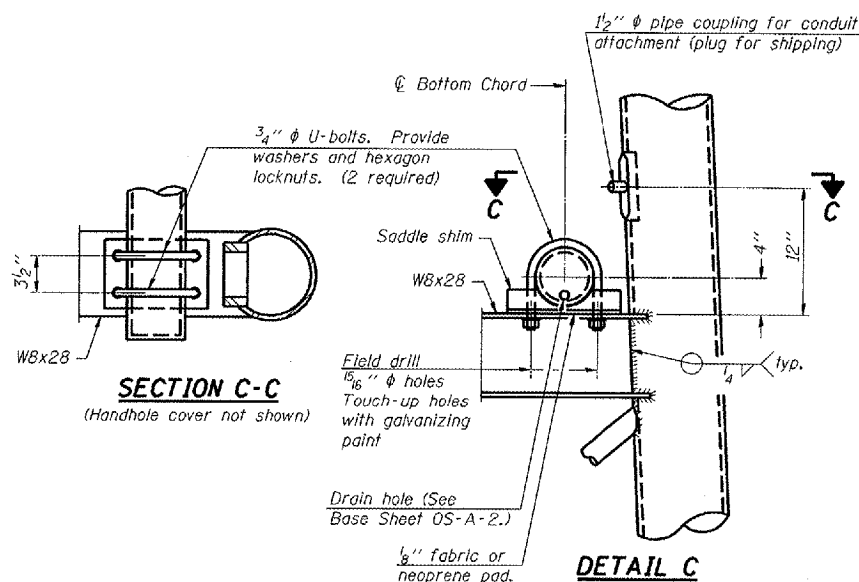
SECTION D-D



SADDLE SHIM DETAIL

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

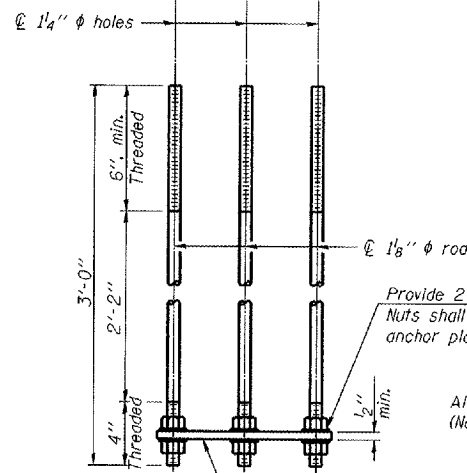
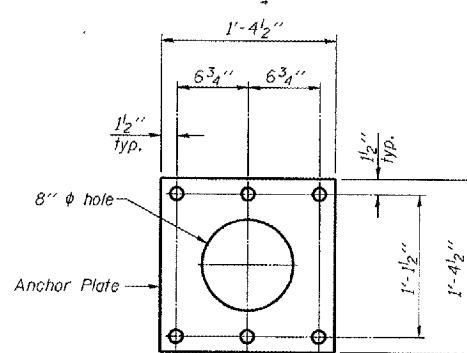
Truss Chord Nominal Dia.	a
5"	3/4"
5 1/2"	13/16"
6"	7/8"
6 1/2"	15/16"



SECTION C-C

(Handhole cover not shown)

DETAIL C

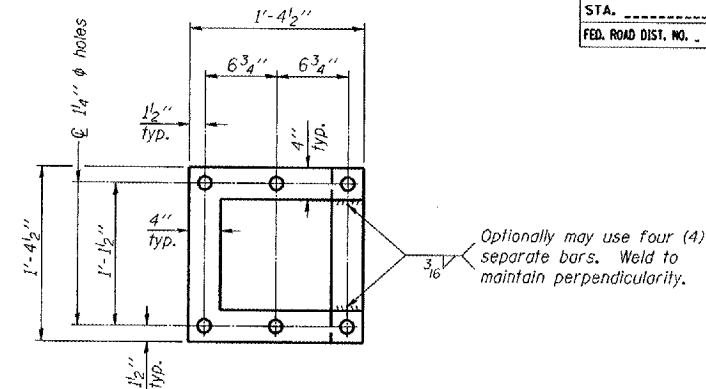


ANCHOR ROD DETAIL

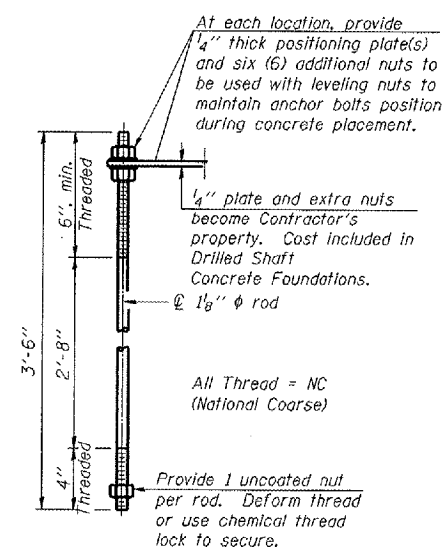
Spread Footing Foundation

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

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



POSITIONING PLATE(S)



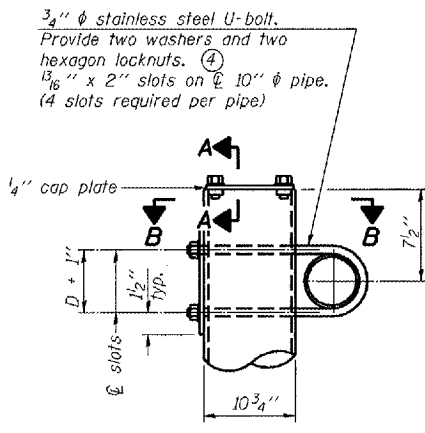
ANCHOR ROD DETAIL

Drilled Shaft Foundation

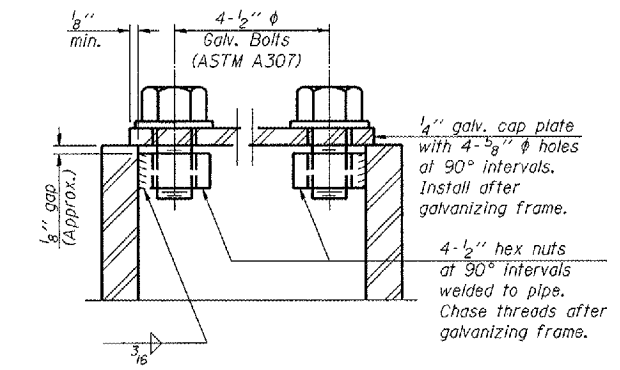
OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS ALUMINUM TRUSS

STRUCTURE # 4S048U150L012.1
D4 SIGN
TRUSS REPAIR 2006

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 SIGN TRUSS REPAIR	KNOX	14	8
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

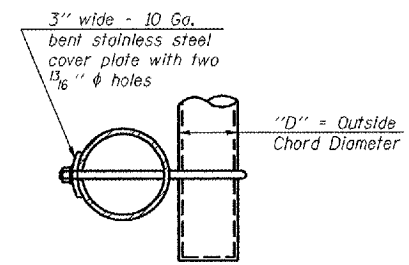


DETAIL A

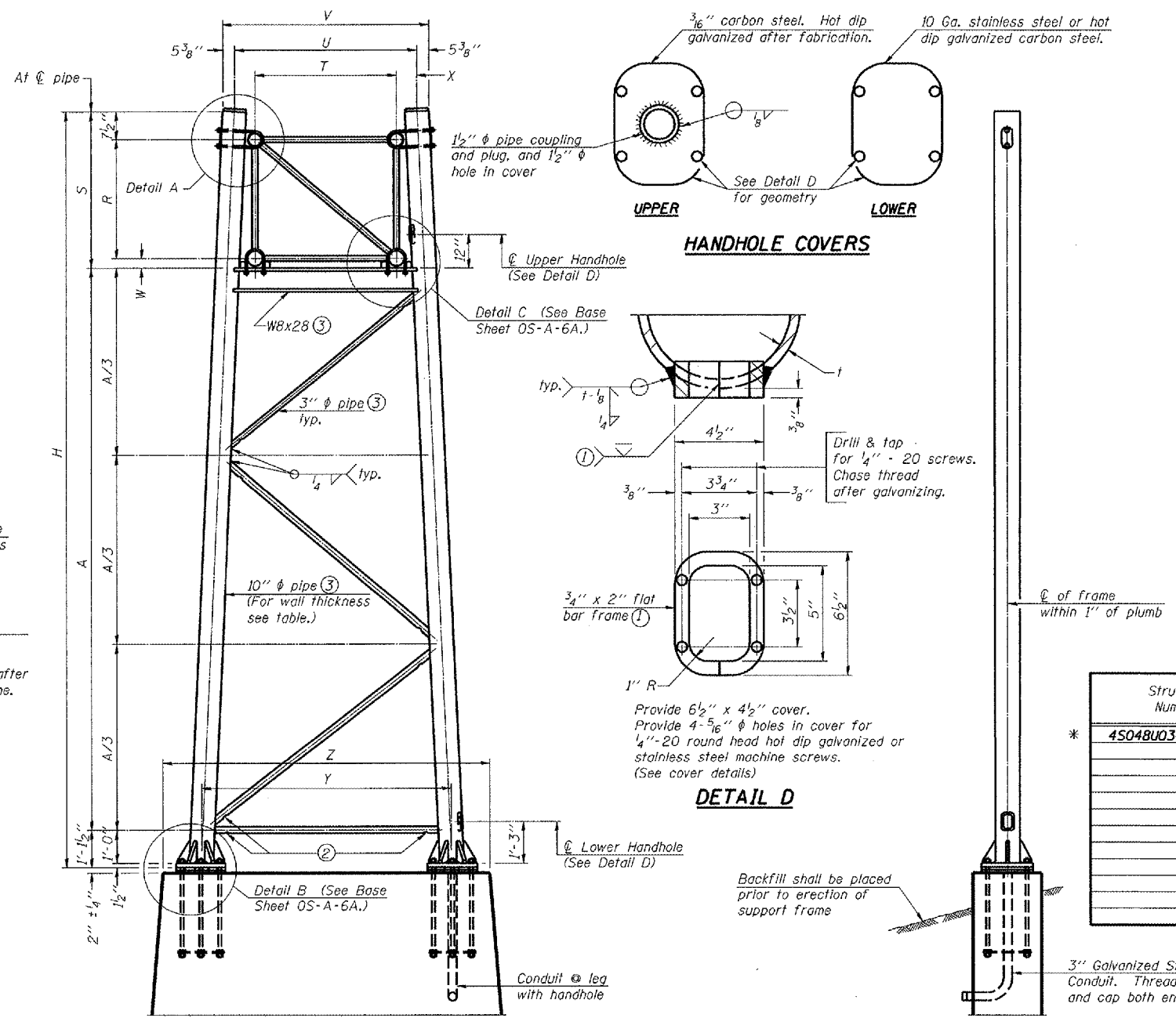


SECTION A-A

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



SECTION B-B



For Foundation Details, see base sheet OS-F3 (Spread Footing) or OS4-F3 (Drilled Shaft).

SIDE ELEVATION

10" Ø PIPE TRUSS SUPPORT FRAME

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

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.

* New end support to be installed on existing foundation with existing anchor bolts. Provide new anchor bolt nuts and washers as necessary. The contractor and the engineer shall field verify the existing end support dimensions prior and the existing anchor bolts dimensions prior to fabrication of the end support.

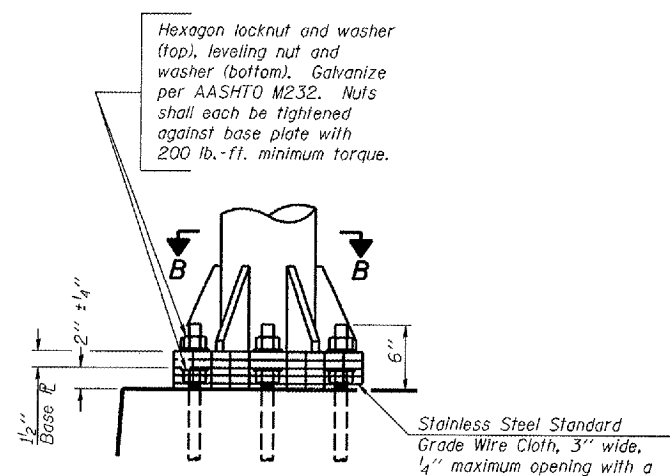
Structure Number	Station	Support		Truss Type	Pipe Wall Thickness	H	A
		Left	Right				
* 4S048U034R007.5	615+00	X	X	II-A	.365	29'-0"	21'-7 1/4"
				II-A	.365	30'-11 5/8"	23'-6 5/8"

END ELEVATION

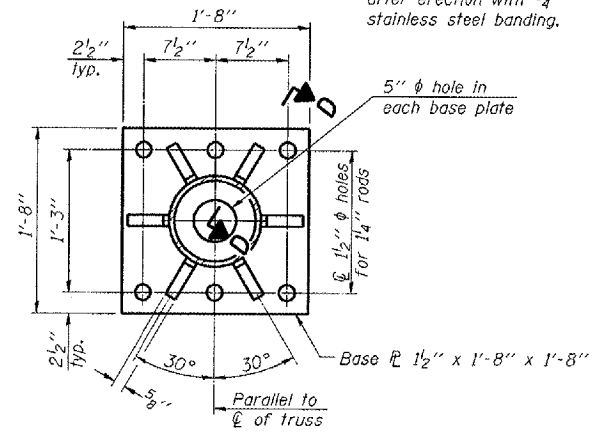
**OVERHEAD SIGN STRUCTURES
SUPPORT FRAME for ALUMINUM TRUSS**

STRUCTURE # 4S048U034R007.5

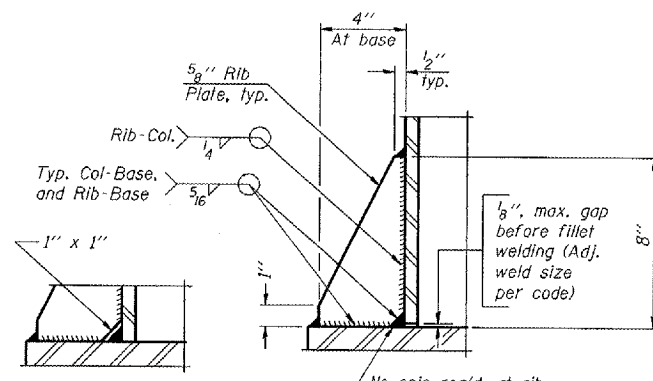
D4 SIGN TRUSS REPAIR 2006



DETAIL B
Ribs shall be cut to fit slope of pipe.

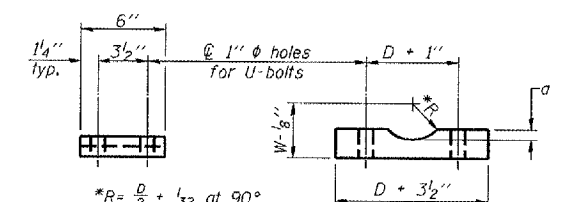


SECTION B-B



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

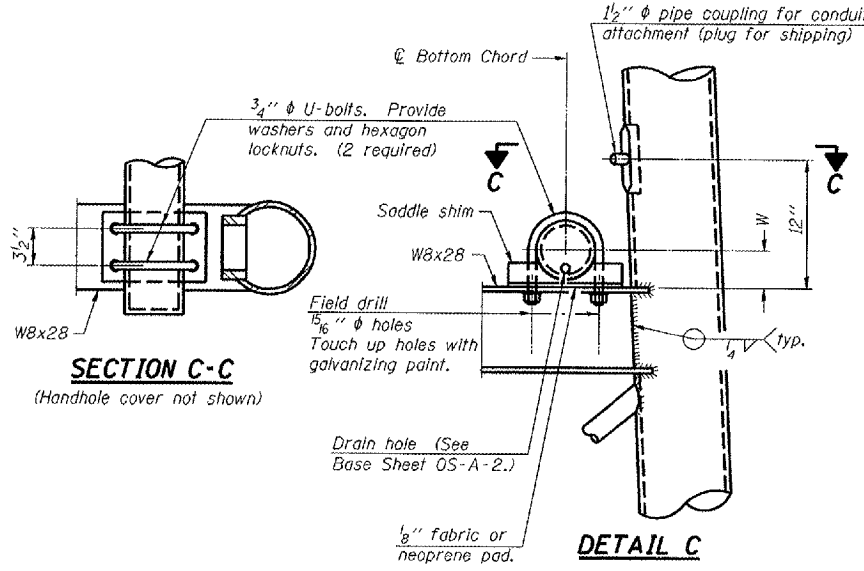
SECTION D-D



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

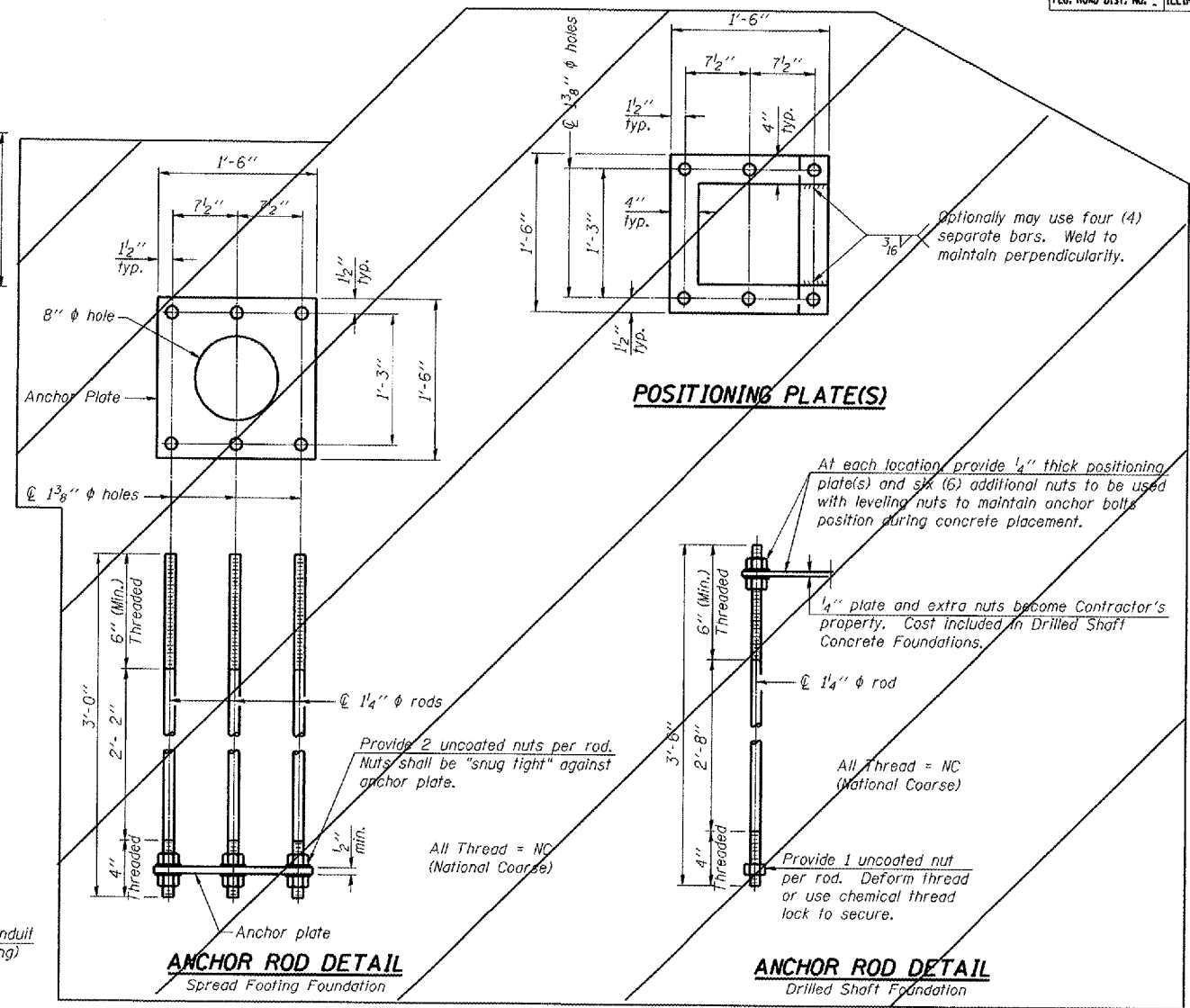
Truss Chord Nominal Dia.	a
5"	3/4"
5 1/2"	13/16"
6"	7/8"
6 1/2"	15/16"
7"	1"

NUMBER	REVISION	DATE



SECTION C-C
(Handhole cover not shown)

DETAIL C



ANCHOR ROD DETAIL
Spread Footing Foundation

ANCHOR ROD DETAIL
Drilled Shaft Foundation

10" PIPE SUPPORT FRAME DETAILS

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

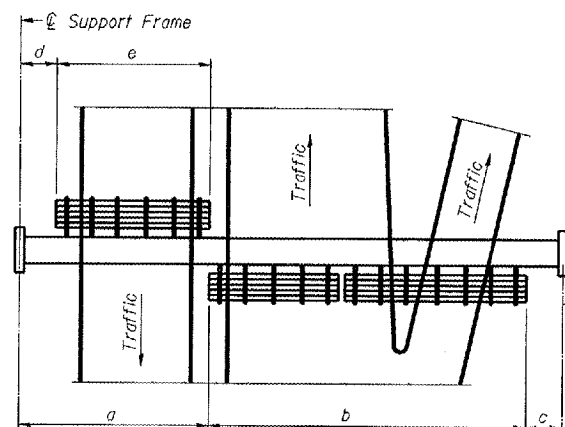
**OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS ALUMINUM TRUSS**

STRUCTURE # 4S048U034R007.5

OS-A-6A

1-7-05

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 SIGN TRUSS REPAIR	KNOX	14	10
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



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

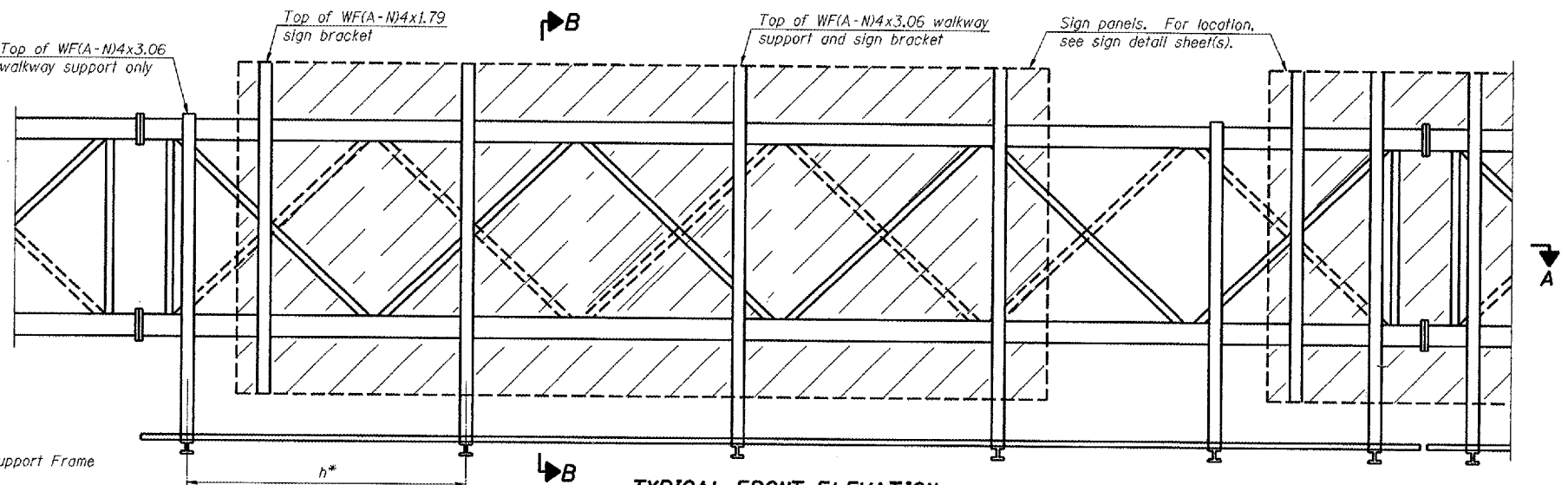
BRACKET TABLE

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

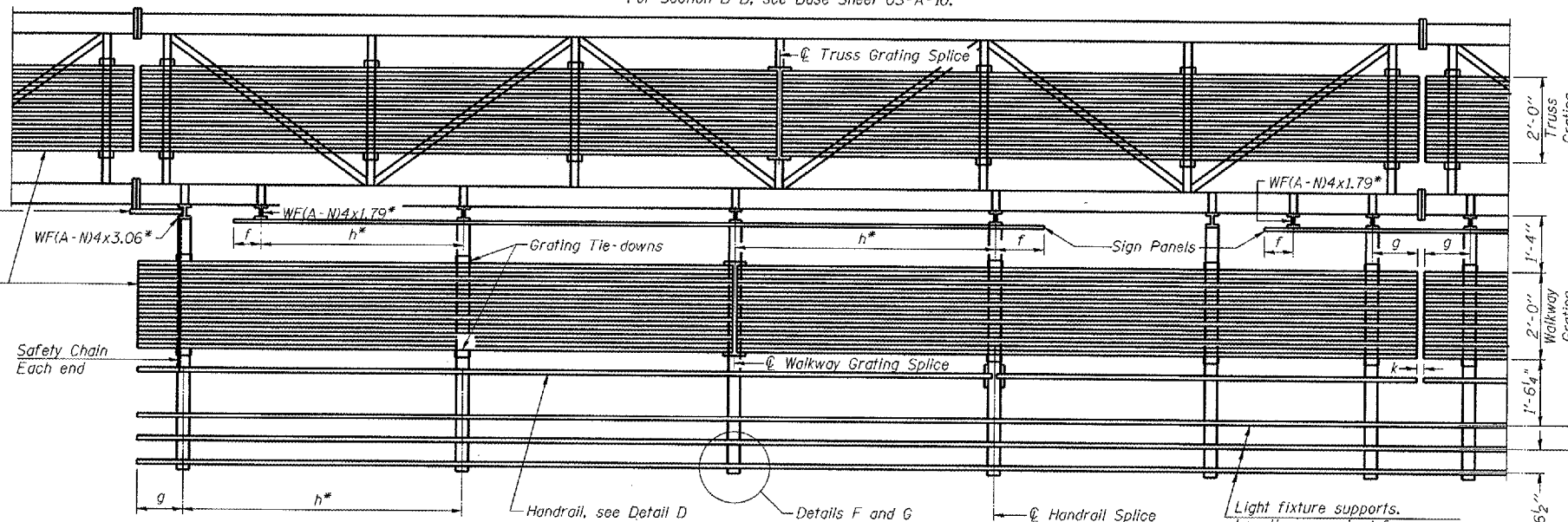
Notes:

- * Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within limits shown:
 - f = 12" maximum, 4" minimum (End of sign to C of nearest bracket)
 - g = 12" maximum, 4" minimum (End of walkway grating to C of nearest support bracket)
 - h = 6'-0" maximum (C to C sign and/or walkway support brackets, WF(A-N)4x1.79 or WF(A-N)4x3.06)
 - k = 2" maximum gap between adjacent walkway grating sections and handrail ends
 - ** If walkway bracket at safety chain location is behind sign, add angle to bracket, see Alternate Safety Chain Attachment on Base Sheet OS-A-11.
- For Details T and W, Section B-B and Grating Splice Details, see Base Sheet OS-A-10.
For Details D, F, G and P and Handrail Splice Details, see Base Sheet OS-A-11.

** Alternate angle for safety chain attachment
Standard Aluminum Grating, see Details T and W



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



SECTION A-A

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

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".

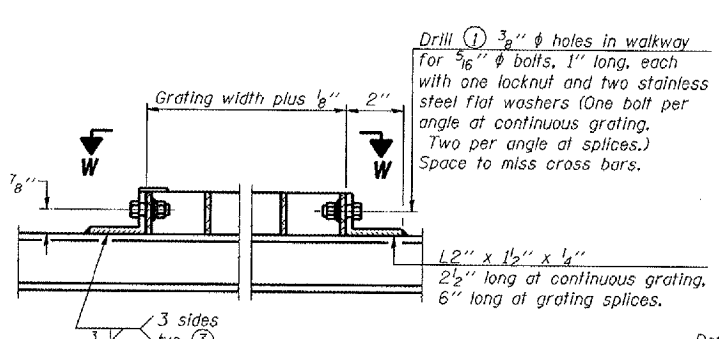
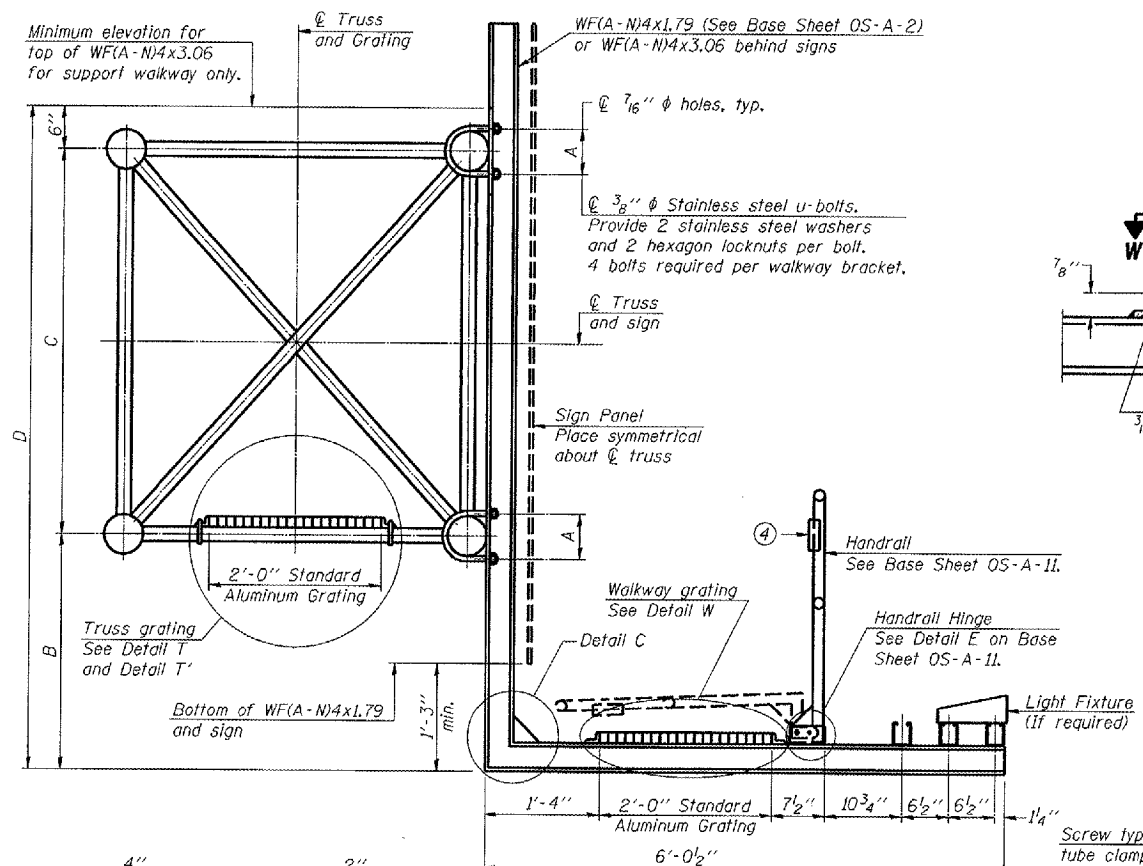
Structure Number	Station	a	b	c	d	e	Walkway Grating and Handrail Lengths
4S048U034R007.5	615+00	-	-	-	-	-	94' - 0" *
4S048U150L012.1	488+50	-	-	-	-	-	79' - 0" *
							* Truss Grating Length

NUMBER	REVISION	DATE

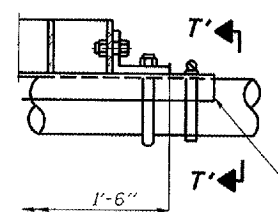
OVERHEAD SIGN STRUCTURES ALUMINUM WALKWAY DETAILS

STRUCTURE # 4S048U034R007.5
STRUCTURE # 4S048U150L012.1
D4 SIGN TRUSS REPAIR 2006

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 SIGN TRUSS REPAIR	KNOX	14	11
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

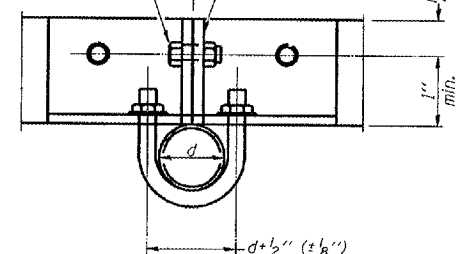


DETAIL W
(Walkway grating)

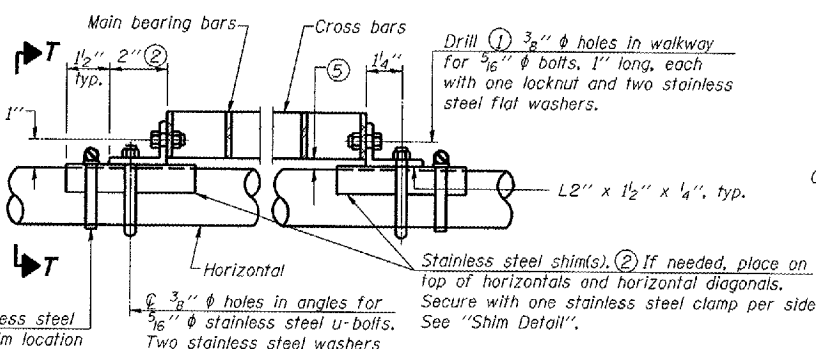


DETAIL T'

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

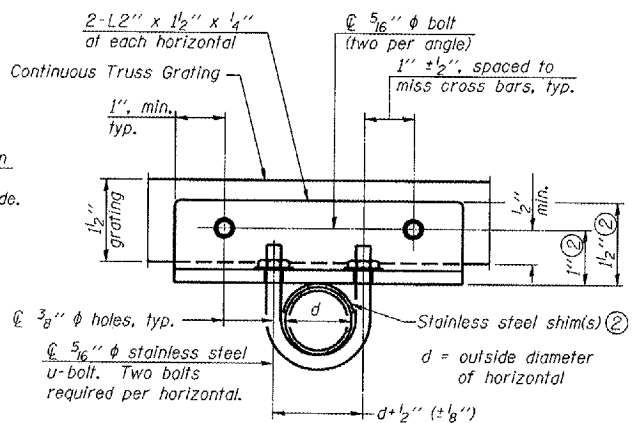


SECTION T'-T'



DETAIL T

(Continuous Truss grating)



SECTION T-T

- 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 WFA(N)-N4 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.

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

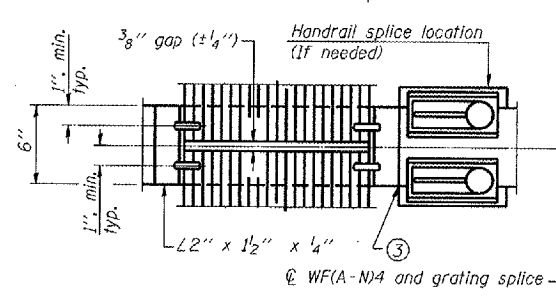
Main Bearing Bars shall be 3/16" x 1 1/2" on 1 3/8" centers and conform to ASTM B221 Alloy 6061-T6.
Cross bars shall be 3/16" x 1 1/2" on 4" centers and conform to ASTM B221 Alloy 6063-T5 or 6061-T6.

OR

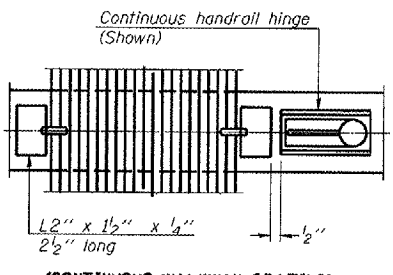
Aluminum Grating with modified "T" sections for main bearing bars shall meet the following requirements:
Main bars shall conform to ASTM B221 Alloy 6061-T6 and have a minimum section modulus equal to 0.0705 in.³ per bar, a depth of 1 1/2", spaced on 1 3/8" centers.
Cross bars shall conform to ASTM B221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

Structure Number	Station	A	B	C	D

SECTION B-B

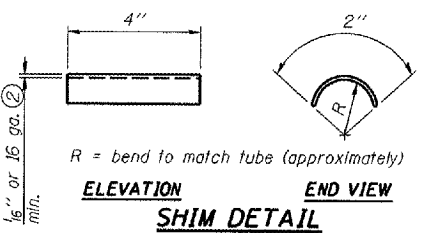
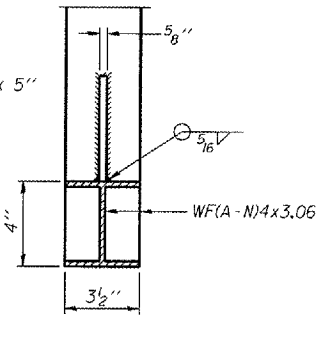


(AT WALKWAY GRATING SPLICE)



SECTION W-W
(CONTINUOUS WALKWAY GRATING)

SECTION C-C



DETAIL C

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

NUMBER	REVISION	DATE

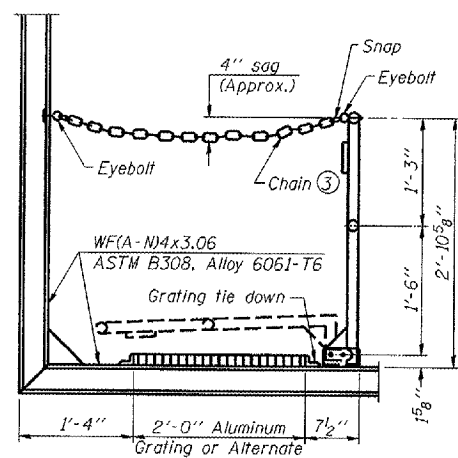
This Sheet For Information Only

**OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS**

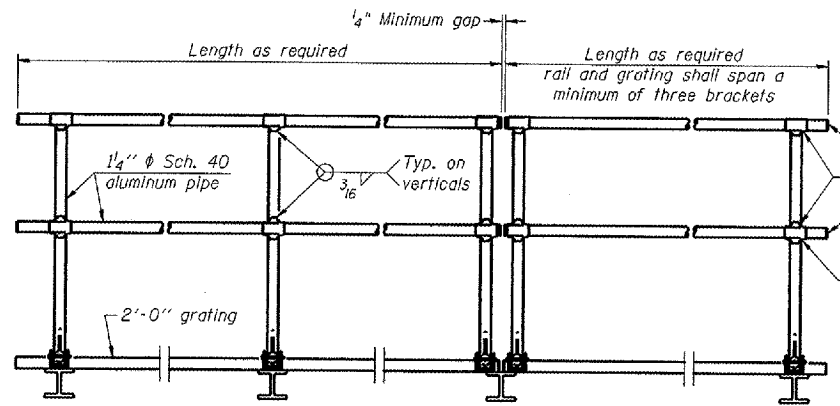
STRUCTURE # 4S048U034R007.5
STRUCTURE # 4S048U150L012.1

PLOT DATE = 3/9/2005
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 USER NAME = jlb

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 SIGN TRUSS REPAIR	KNOX	14	12
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



SIDE ELEVATION
(Showing safety chain w/o sign)

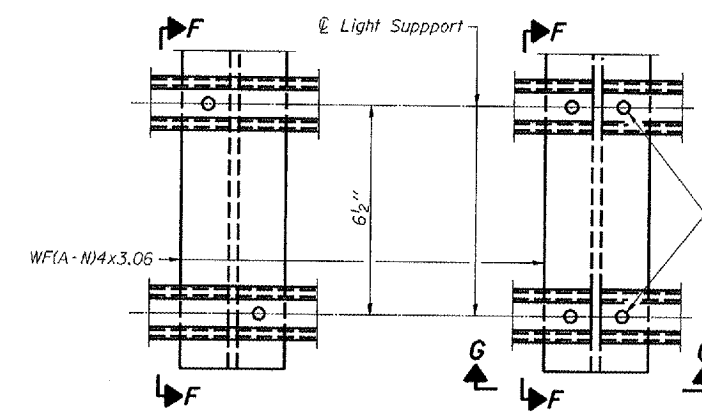


FRONT ELEVATION

HANDRAIL DETAILS

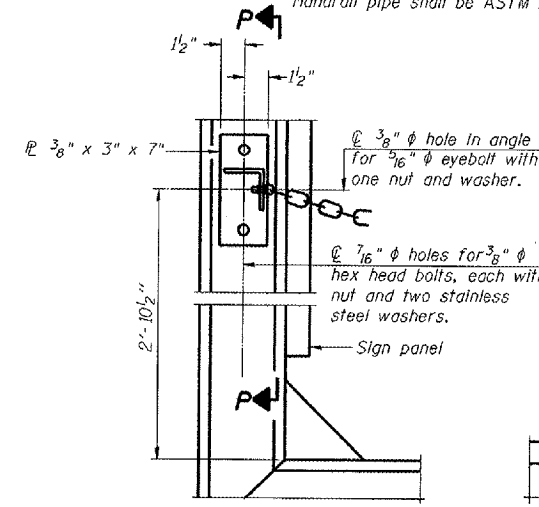
Handrail pipe shall be ASTM B241, Alloy 6063-T6 or Alloy 6061-T6.

- ① Install standard force-fit end caps or weld 1/8" end plates with 1/8" c.f.w. and grind smooth. (All rail ends)
- ② Horizontal handrail member shall be continuous thru fitting. Provide 1/16" hole in fitting for 3/8" bolt. Field drill 1/16" hole in horizontal rail member. Provide locknut and two stainless steel washers for bolt. (Use 5/16" eyebolts in 7/16" holes on top rail at ends only.)



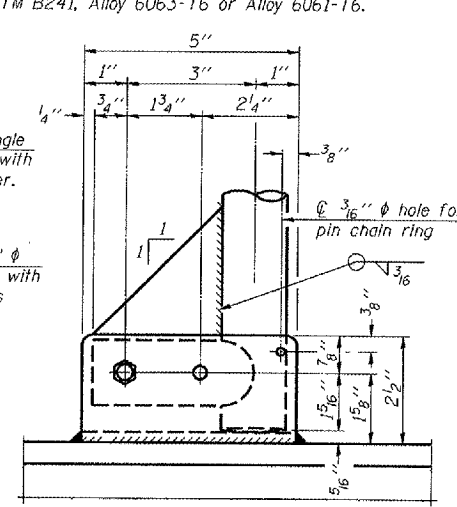
DETAIL F

DETAIL G

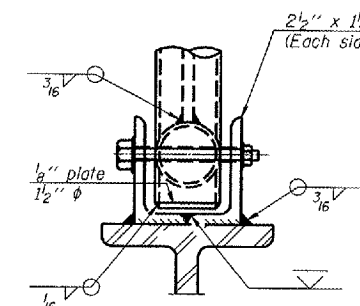


ALTERNATE SAFETY CHAIN ATTACHMENT
(With Sign Present)

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

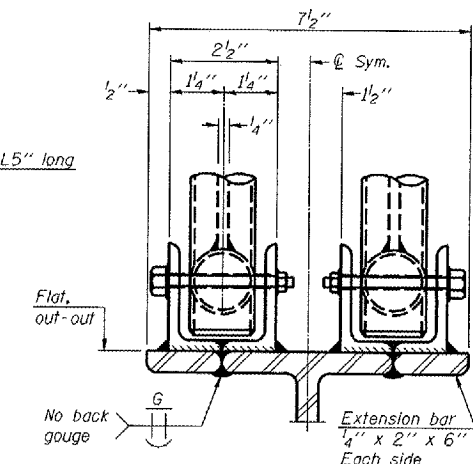


SIDE ELEVATION

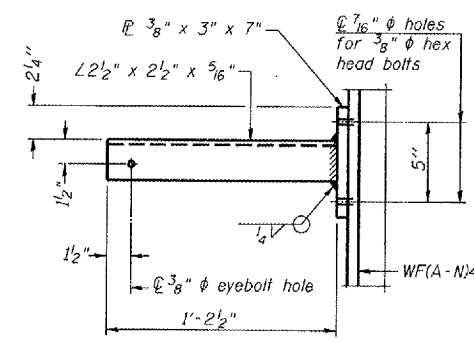


FRONT ELEVATION

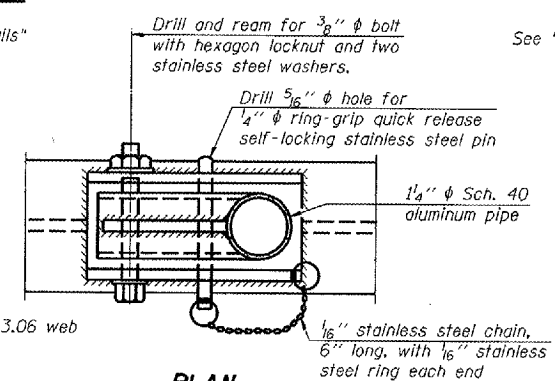
See "Elevation" at right for dimensions.



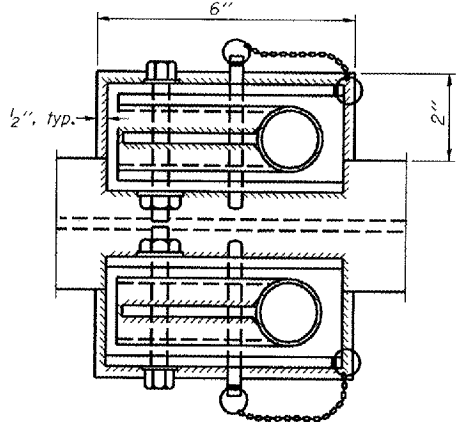
ELEVATION AT HANDRAIL JOINT ④



SECTION P-P

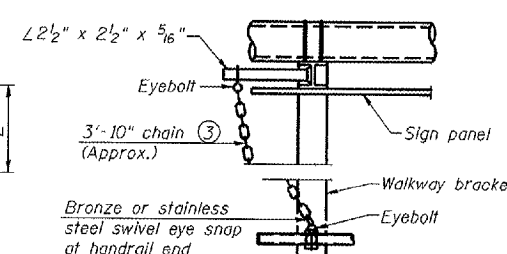


PLAN
DETAIL E HANDRAIL HINGE



PLAN AT HANDRAIL JOINT

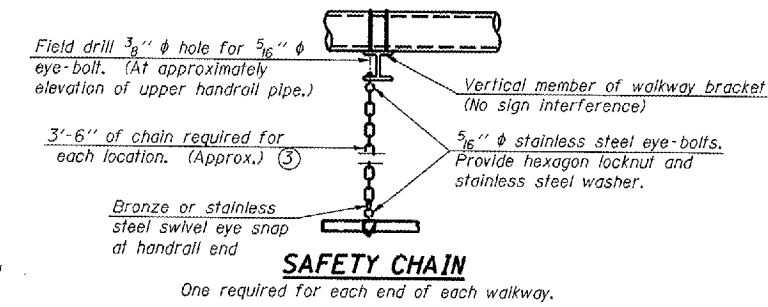
Details not shown same as "PLAN"



ALTERNATE SAFETY CHAIN ATTACHMENT

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

- ③ 3/16" galvanized steel chain, approximately 12 links per foot. Chain to be hot dip galvanized after manufacture and suitable for prolonged exterior exposure. Alternate materials may be substituted with the Engineer's approval.
- ④ Extrusions may be used in lieu of the details shown, with approval of the Engineer.



SAFETY CHAIN

One required for each end of each walkway.

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.

This Sheet For Information Only

OVERHEAD SIGN STRUCTURES
ALUMINUM HANDRAIL DETAILS

STRUCTURE # 4S048U034R007.5
STRUCTURE # 4S048U150L012.1
D4 SIGN
TRUSS REPAIR 2006

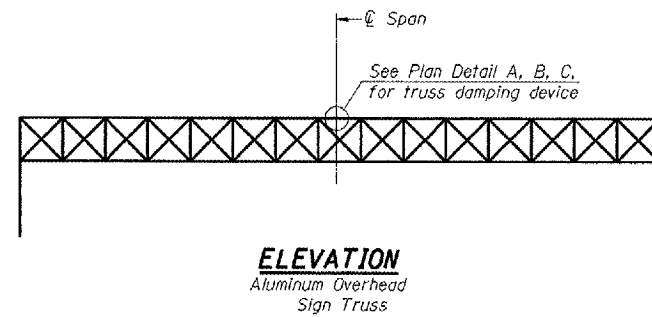
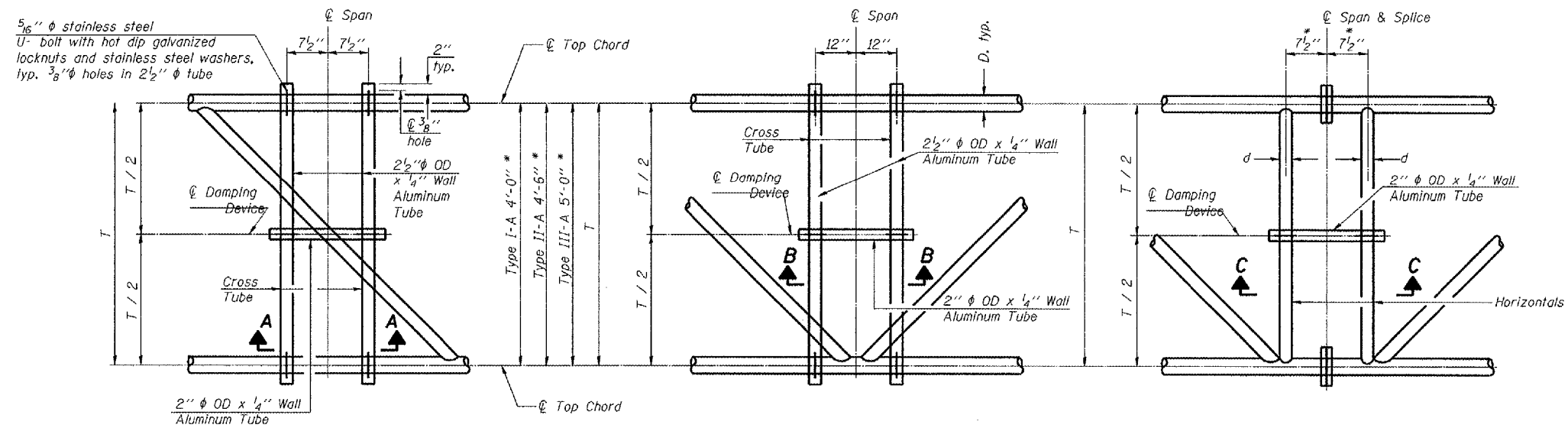
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USER NAME: f.kochan

OS-A-11 1-7-05

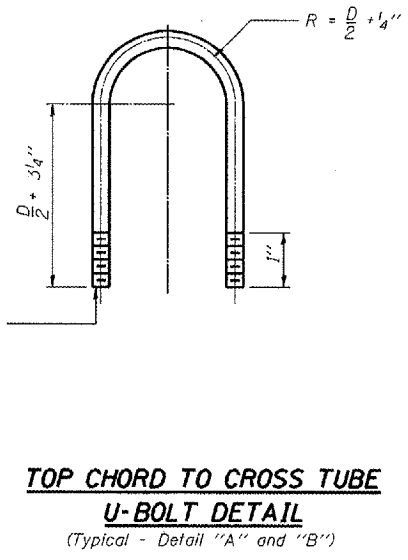
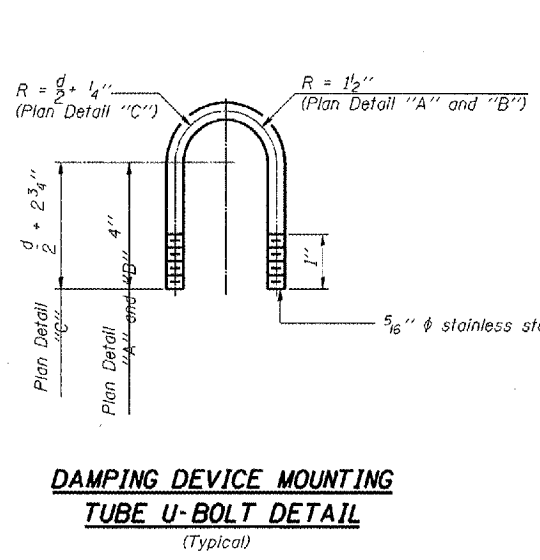
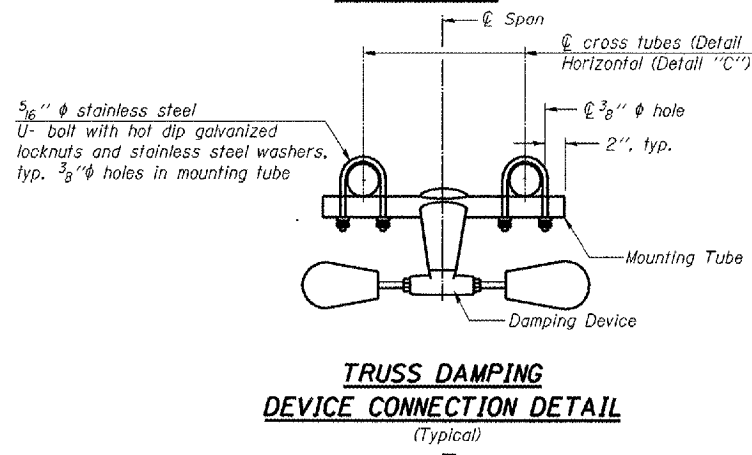
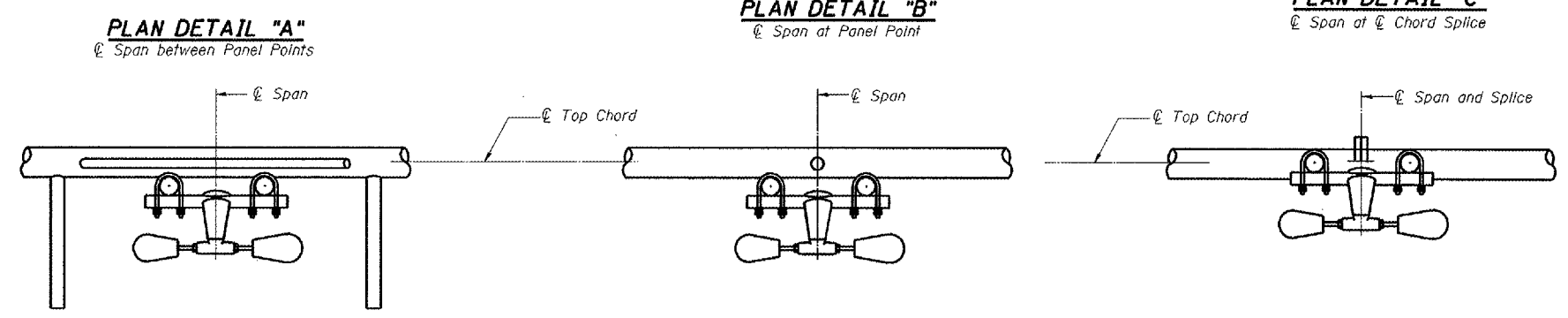
NUMBER	REVISION	DATE

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 SIGN TRUSS REPAIR	KNOX	14	13
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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



NOTES
 Damper: One damper per truss. (31 lbs. Stockbridge-Type Aluminum)
 Cost included in Overhead Sign Structure...
 Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6. Cost included in Overhead Sign Structure...



OVERHEAD SIGN STRUCTURE DAMPING DEVICE

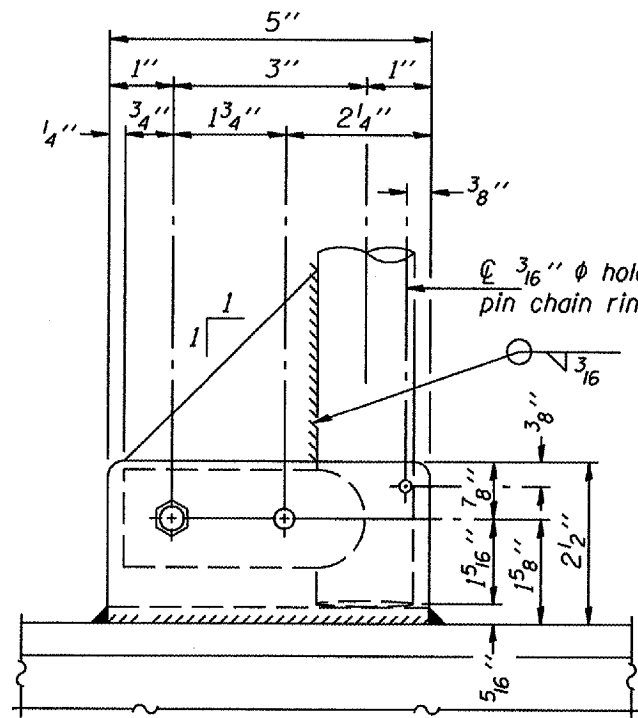
STRUCTURE # 4S048U034R007.5
 STRUCTURE # 4S048U150L012.1

D4 SIGN TRUSS REPAIR 2006

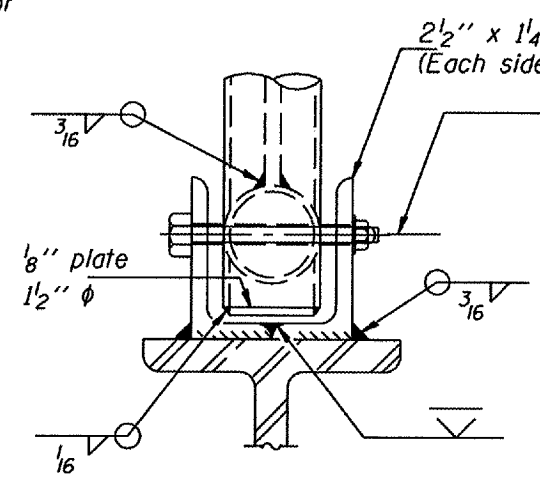
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CONTRACT NO. 68937		TOTAL SHEETS	SHEET NO.
F.A. RTE.	SECTION	COUNTY	
DATE	DA SIGN	PROJECT	14
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

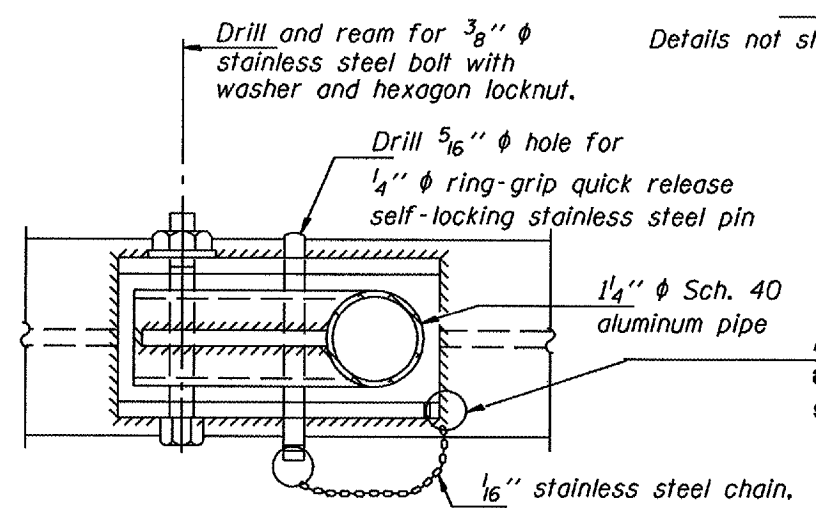


SIDE ELEVATION



FRONT ELEVATION

The existing locking pin hole to be reamed for proper alignment and a new oversized stainless steel pin to be installed.



PLAN
DETAIL E HANDRAIL HINGE

Drill and ream for 3/8" ϕ stainless steel bolt with washer and hexagon locknut.
Drill 5/16" ϕ hole for 1/4" ϕ ring-grip quick release self-locking stainless steel pin

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