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09-21-12 LETTING ITEM 003 STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

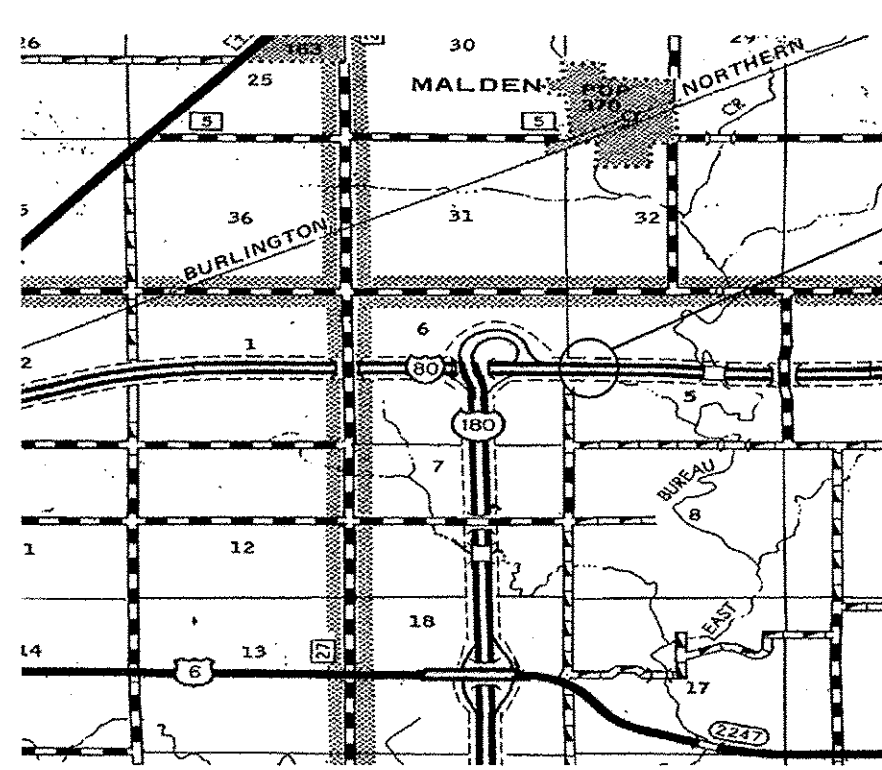
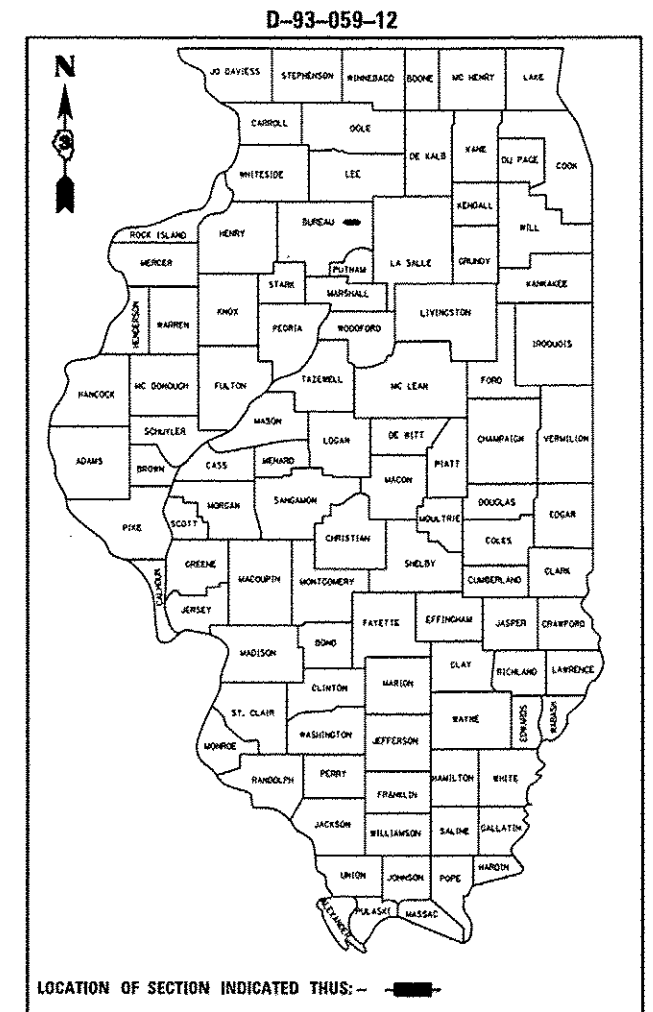
**PROPOSED
HIGHWAY PLANS**

**F.A.I. ROUTE 80 (I-80)
SECTION D3 OVD SIN STR REPL 13-07**

**OVERHEAD SIGN TRUSS REMOVAL AND REPLACEMENT.
BUREAU COUNTY**

C-60-007-13

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-80	D3 OVD SIN STR REPL 13-07	BUREAU	18	1
		ILLINOIS	CONTRACT NO. 46220	



FAI ROUTE 80
OVERHEAD SIGN STRUCTURE
S.N.# 3S0061080L061.5
I-80
(EXISTING STA. 1398 + 00 WBL)
(PROPOSED STA. 1398 + 25 WBL)
0.48 MI. EAST of I-180 / I-80 INTERCHANGE

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

FUNCTIONAL CLASSIFICATION
RURAL - INTERSTATE
FAL ROUTE 80
 2011 ADT = 38500
 P.V. = 75.71%
 M.U. = 18.18%
 S.U. = 6.10%

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

SUBMITTED PASSED 5-22-2012
Justin Man
 ENGINEER OF OPERATIONS

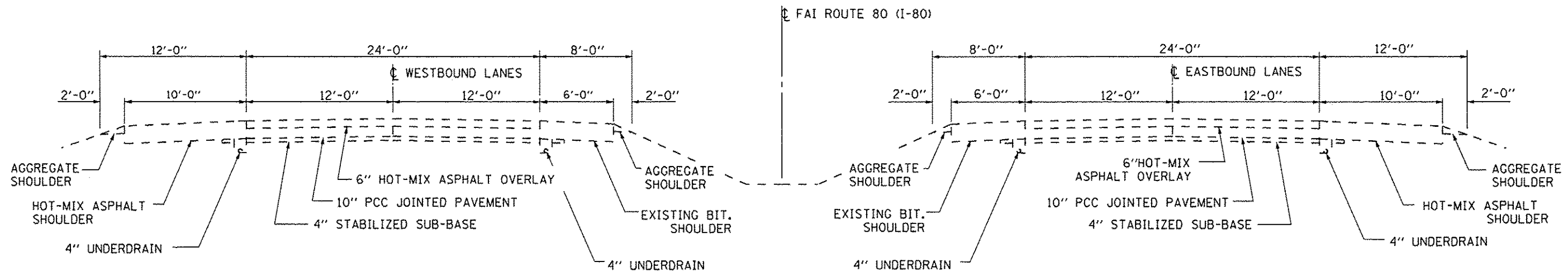
August 17, 2012
John D. Baramelli, P.E.
 acting ENGINEER OF DESIGN AND ENVIRONMENT

APPROVED August 17, 2012
William R. Frey, Jr.
 acting DIRECTOR DIVISION OF HIGHWAYS

DISTRICT 3 NO. (815) 434-6131
 PROJECT ENGINEER: JOE KANNEL, P.E.
 UNIT CHIEF: RON WOODSHANK
CONTRACT NO. 46220

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE
				STATE FUNDS 100% STATE STRUCTURE 0040 RURAL
64300450	IMPACT ATTENUATORS (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2
64301090	ATTENUATOR BASE	SQ YD	52	52
67100100	MOBILIZATION	L SUM	1	1
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1	1
73300200	OVERHEAD SIGN STRUCTURE - SPAN, TYPE II-A (4'-6" X 5'-3")	FOOT	102	102
73301810	OVERHEAD SIGN STRUCTURE WALKWAY, TYPE A	FOOT	38	38
73400200	DRILLED SHAFT CONCRETE FOUNDATIONS	CU YD	24	24
73600100	REMOVE OVERHEAD SIGN STRUCTURE - SPAN	EACH	1	1
73700300	REMOVE CONCRETE FOUNDATION - OVERHEAD	EACH	2	2
X0325265	REMOVE ELECTRIC SERVICE	EACH	1	1
X0325969	PORTABLE, VEHICLE MOUNTED, CHANGEABLE MESSAGE BOARD	CAL DA	30	30
X0326880	MESSAGE BOARD VEHICLE DRIVER	HOUR	240	240
X7200052	REMOVE, STORE AND RE-ERECT SIGN PANEL	SQ FT	281	281
Z0029999	IMPACT ATTENUATOR REMOVAL	EACH	2	2

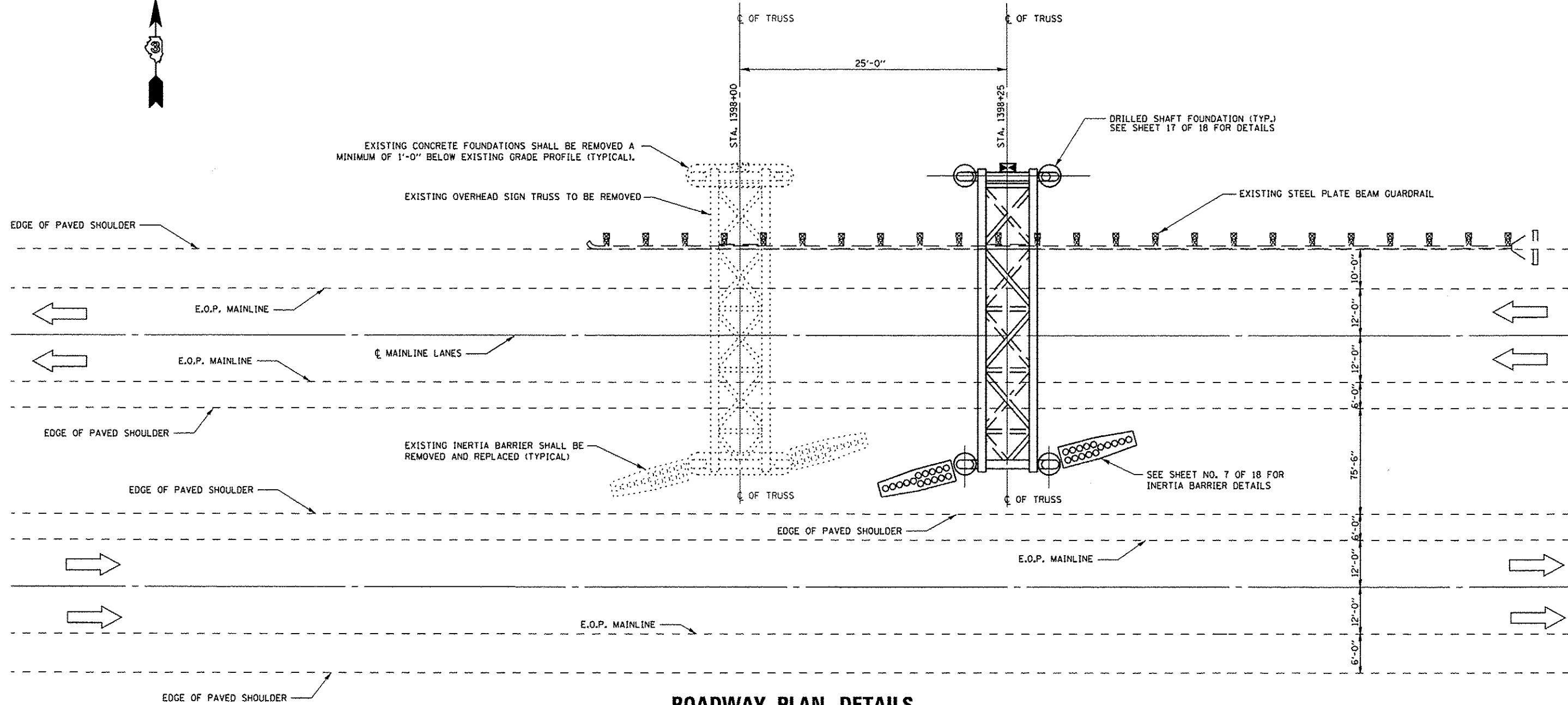
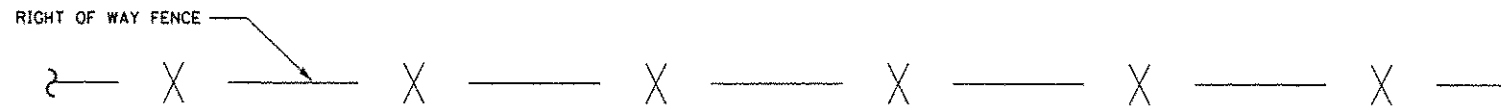


TYPICAL SECTION
FAI ROUTE 80 (I-80)

TITLE NAME USER NAME * woodshankr PLOT SCALE * 99,9999 / in. PLOT DATE * 5/18/2012	DESIGNED - YOGESH PATEL DRAWN - YOGESH PATEL CHECKED - RON WOODSHANK DATE -	REVISED - REVISED - REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TYPICAL SECTIONS	F.A.I. RTE. I-80	SECTION D3 OVD SIN STR REPL 13-07	COUNTY BUREAU	TOTAL SHEETS 18	SHEET NO. 4		
					SCALE:	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	ILLINOIS	CONTRACT NO. 46220	

LOCATION NO.	1	STATE I.D. NO.	3S006I080L061.5				
COUNTY	BUREAU	ROUTE	FAI 80	STA.	1398+00	DIRECTION	WB
DESCRIPTION OF WORK				UNIT		QUANTITY	
REMOVE ELECTRIC SERVICE				EACH		1	
REMOVE OVERHEAD SIGN STRUCTURE - SPAN				EACH		1	
REMOVE CONCRETE FOUNDATION - OVERHEAD				EACH		2	
REMOVE, STORE AND RE-ERECT SIGN PANEL				SQ FT		281	

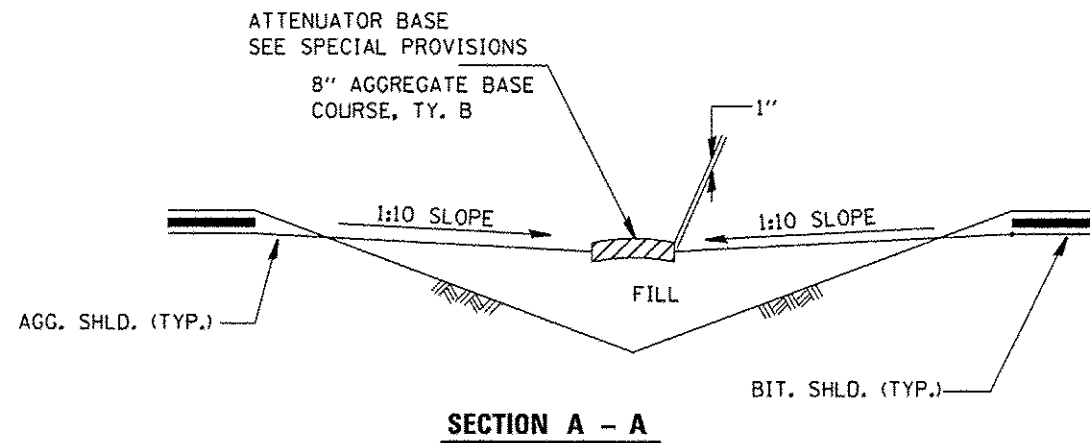
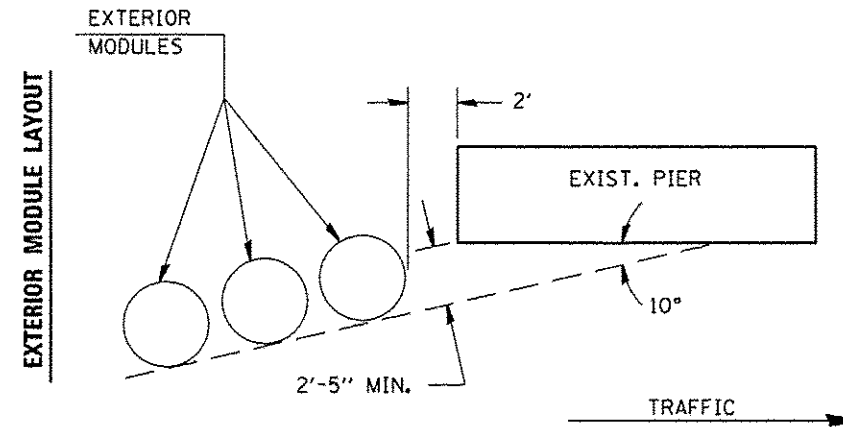
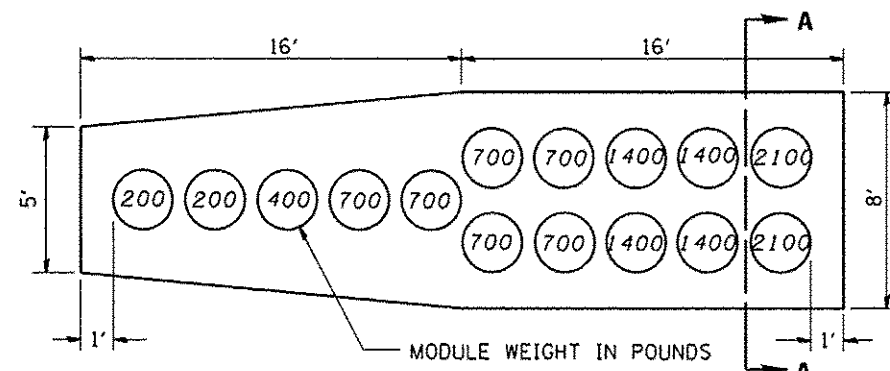
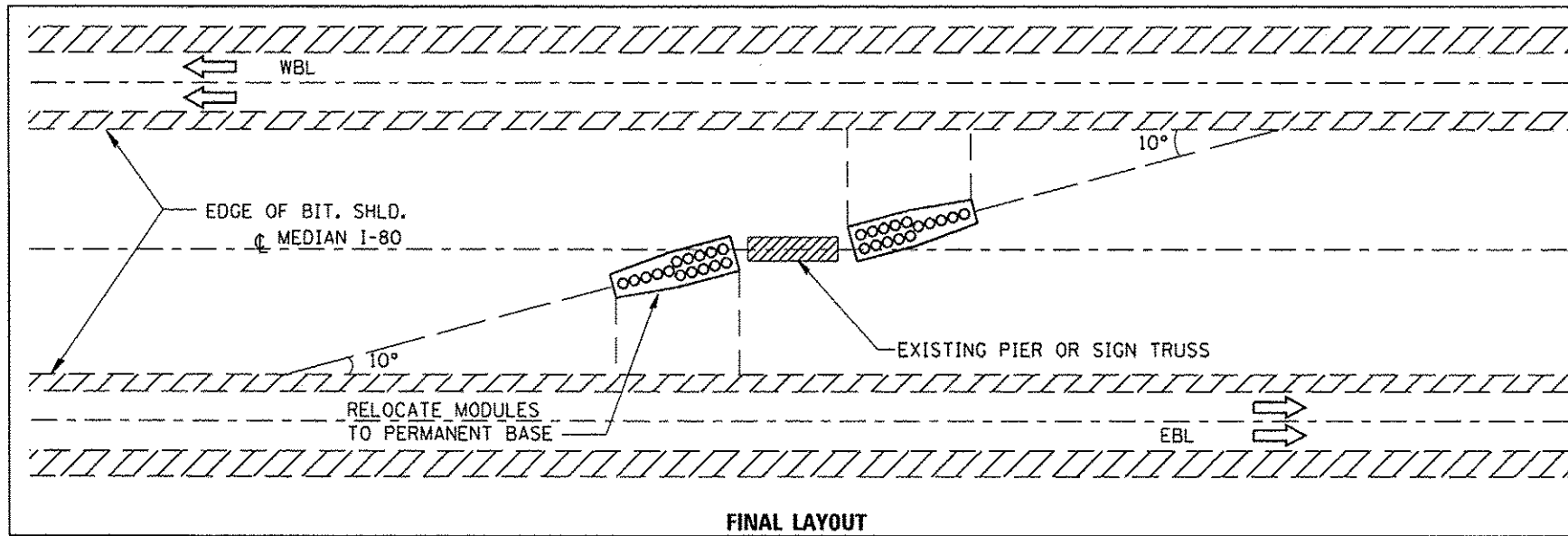
LOCATION NO.	2	STATE I.D. NO.	3S006I080L061.5				
COUNTY	BUREAU	ROUTE	FAI 80	STA.	1398+25	DIRECTION	WB
DESCRIPTION OF WORK				UNIT		QUANTITY	
DRILLED SHAFT CONCRETE FOUNDATION				CU. YD.		23.6	
OVERHEAD SIGN STRUCTURE - SPAN, TYPE II-A (4'-6" X 5'-3")				FOOT		102	
OVERHEAD SIGN STRUCTURE WALKWAY				FOOT		38	
RE-ERECT SIGN PANEL				SQ. FT.		281	



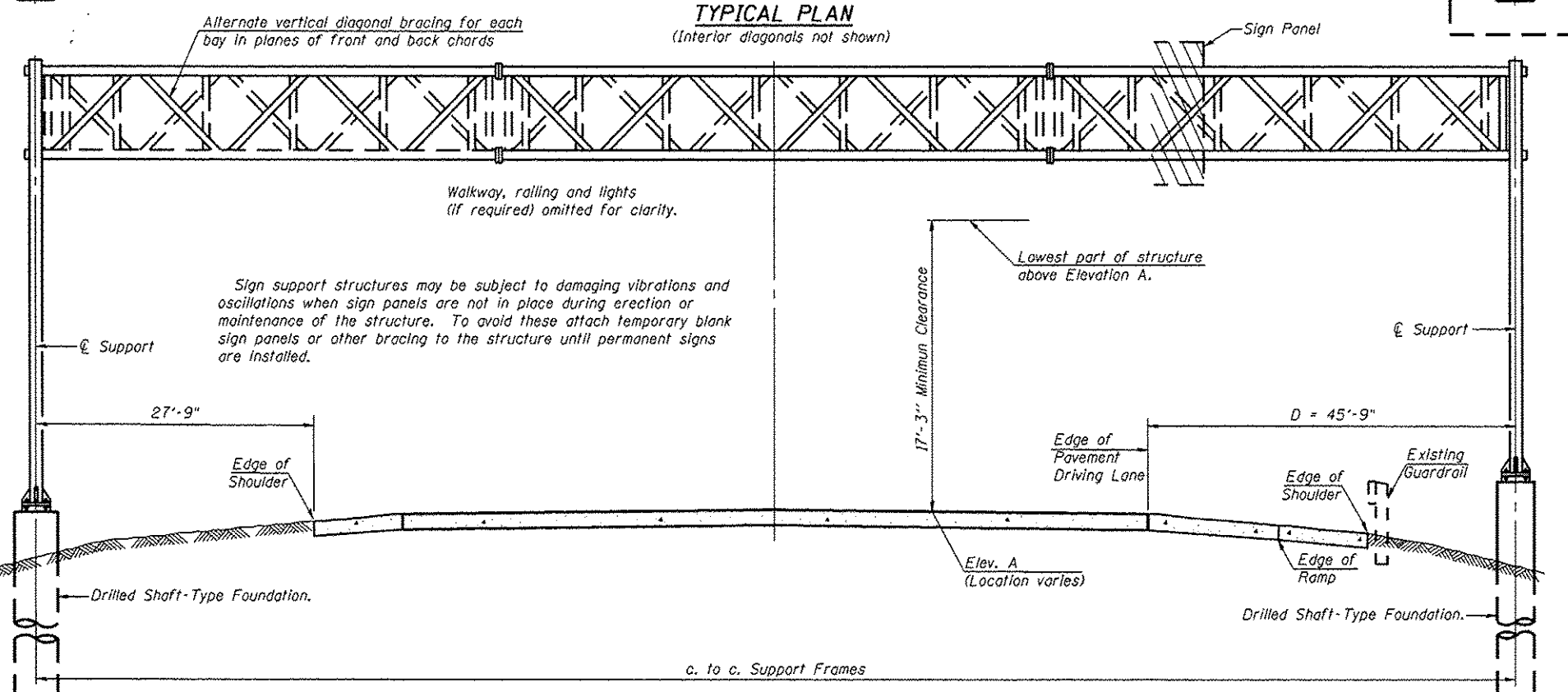
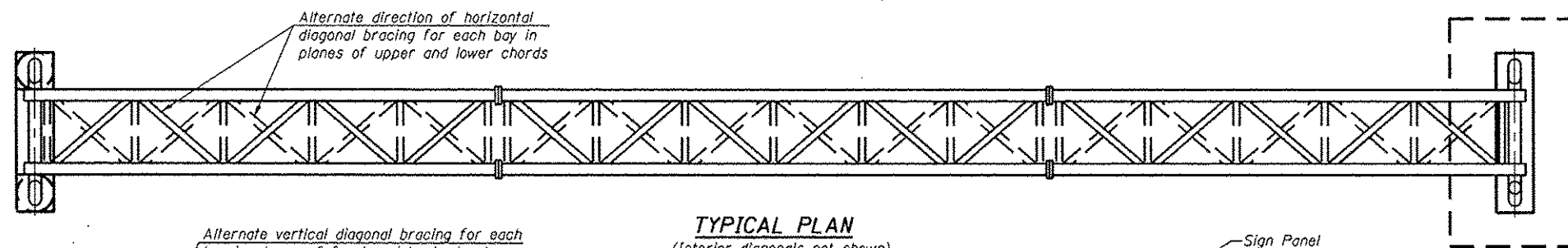
ROADWAY PLAN DETAILS

EXISTING: I-80 WB M.P. 61.50 STA. 1398 + 00
 PROPOSED: I-80 WB M.P. 61.50 STA. 1398 + 25

FILE NAME =	USER NAME = woodshankr1	DESIGNED - YOGESH PATEL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ROADWAY PLAN DETAILS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
o:\p\work\p\dot\woodshankr1\d8382439	D346220-ahd-detailed.dgn	DRAWN - YOGESH PATEL	REVISED -			I-80	D3 QVD SIN STR REPL 13-07	BUREAU	18	6	
	PLOT SCALE = 99.9999 / / in.	CHECKED - RON WOODSHANK	REVISED -			CONTRACT NO. 46220					
	PLOT DATE = 5/18/2012	DATE -	REVISED -			[ILLINOIS]					
				SCALE:		SHEET NO. 1 OF 1 SHEETS		STA.		TO STA.	



FILE NAME *	USER NAME * woodshankr1	DESIGNED - YOGESH PATEL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INERTIAL BARRIER LAYOUT DETAILS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ci:\pwr_work\pvidot\woodshankr1\030243\0346220-shd*details.dgn	DRAWN - YOGESH PATEL	REVISED -	1-80			03 OVD SIN STR REPL 13-07	BUREAU	18	7	
PLOT SCALE * 99.9999 / in.	CHECKED - RON WOODSHANK	REVISED -					CONTRACT NO. 46220			
PLOT DATE * 5/18/2012	DATE -	REVISED -								
SCALE:					SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	[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)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 ASTM F1554 Gr. 105.

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 Concrete Foundations and Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

TOTAL BILL OF MATERIAL

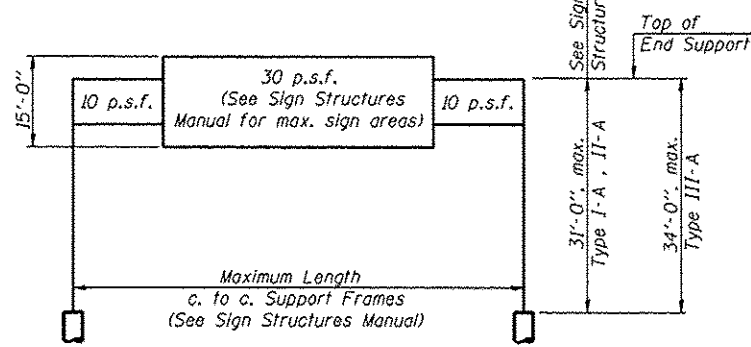
ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE SPAN TYPE I-A	Foot	
OVERHEAD SIGN STRUCTURE SPAN TYPE II-A	Foot	102'-0"
OVERHEAD SIGN STRUCTURE SPAN TYPE III-A	Foot	
OVERHEAD SIGN STRUCTURE WALKWAY TYPE A	Foot	38'-0"
CONCRETE FOUNDATIONS	Cu. Yds.	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	23.6

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
3S0061080L061.5	1398+25	II-A	102'-0"	686.40	45'-9"	8.5'	281 Sq. Ft.

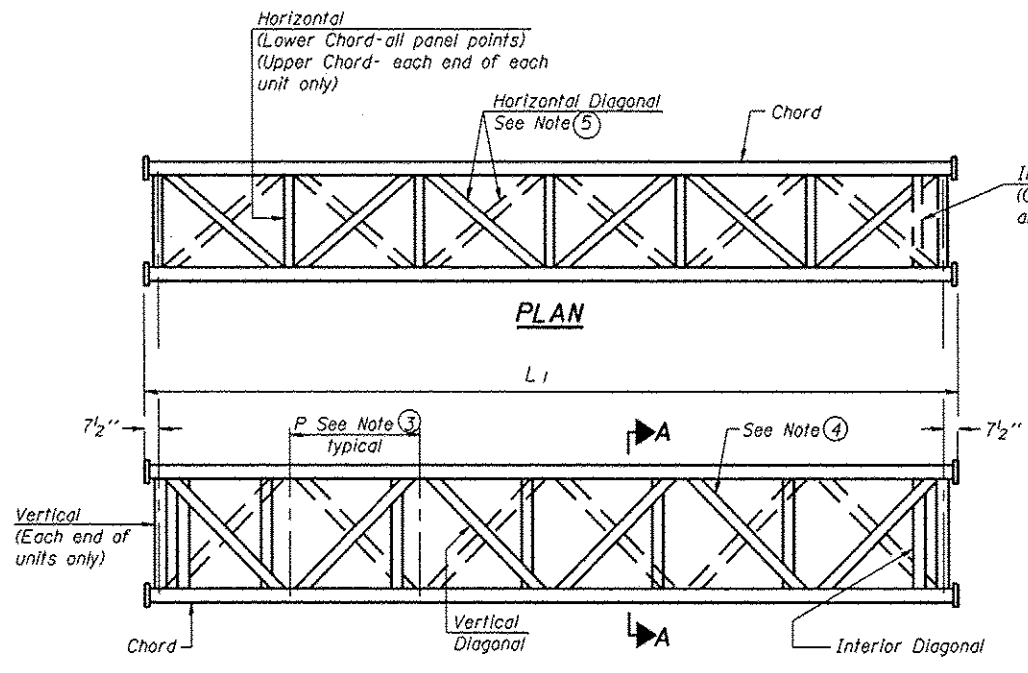
**Looking upstation for structures with signs both sides.

* 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.

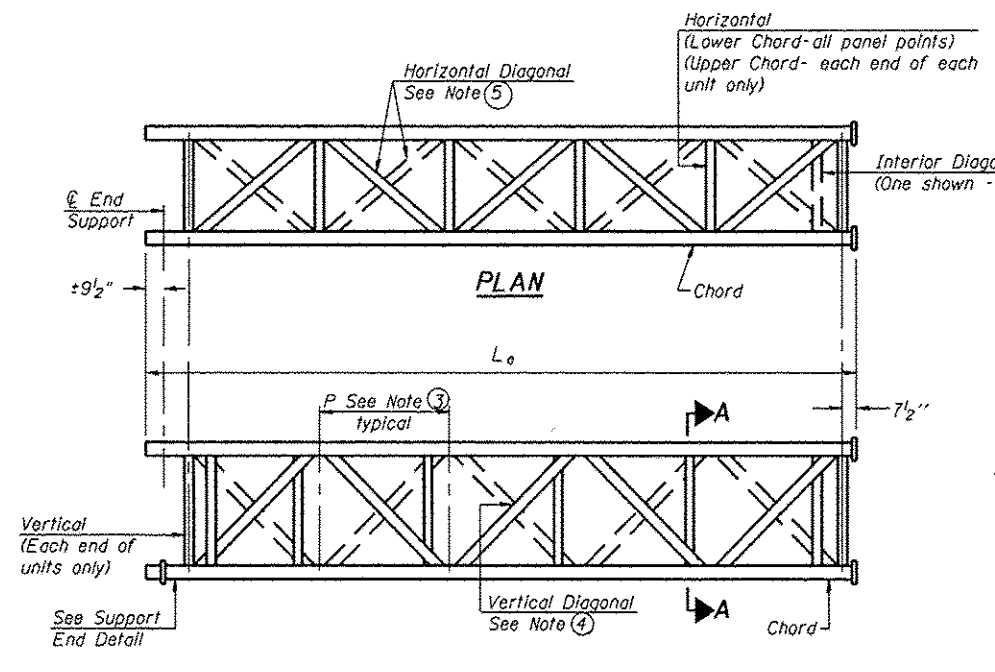


DESIGN WIND LOADING DIAGRAM

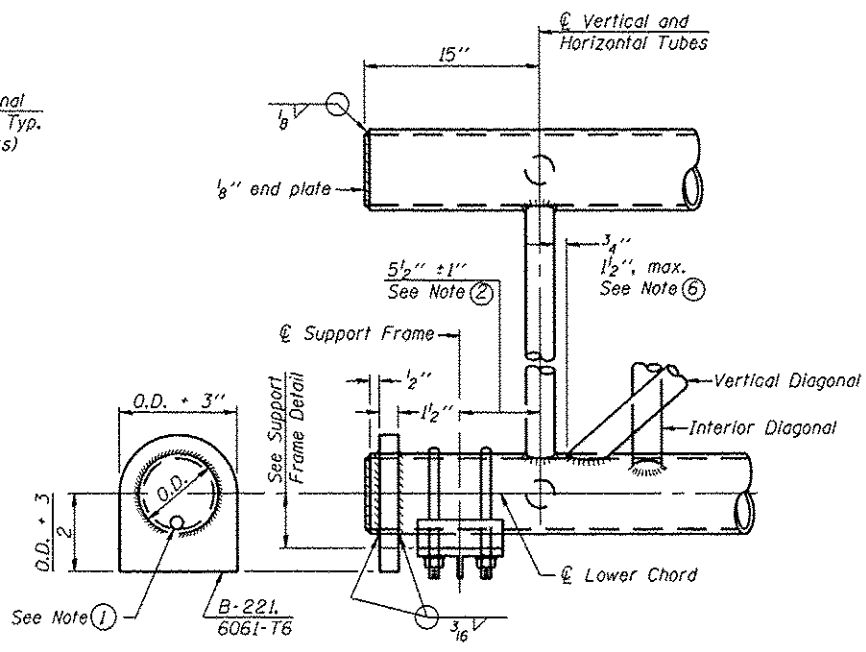
Parameters shown are basis for I.D.O.T. Standards and Sign Manual Tables. Installations not within dimensional limits shown require special analysis for all components.



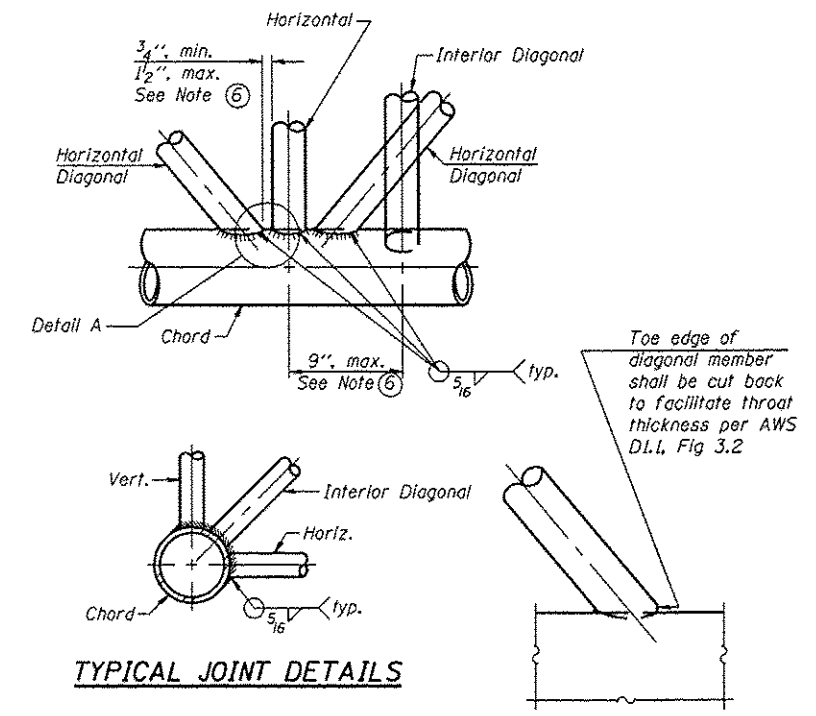
ELEVATION
TYPICAL INTERIOR UNIT
Even number of panels/interior unit required.



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

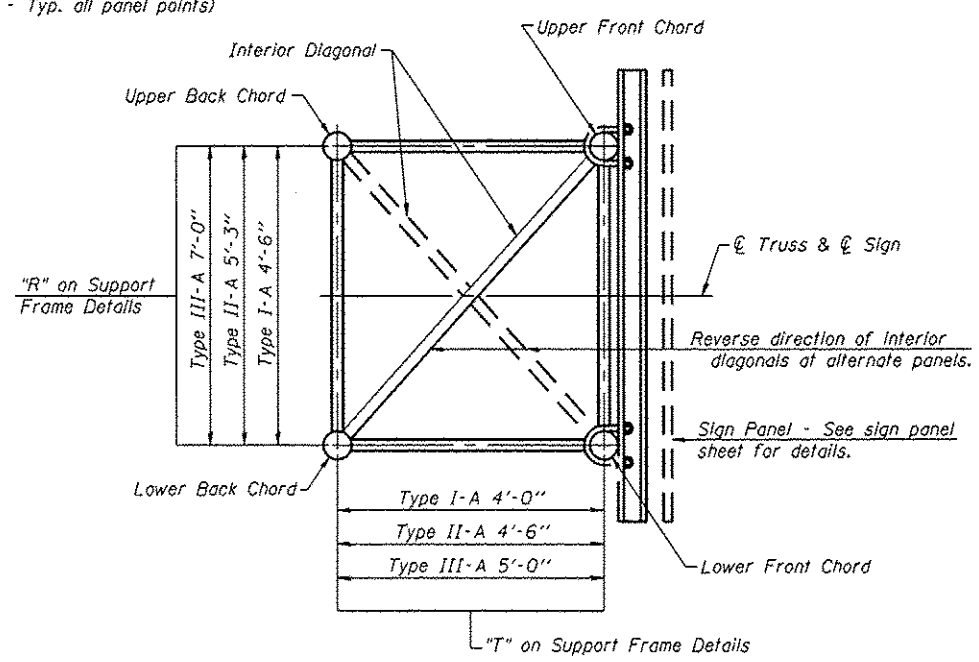


SUPPORT END DETAIL FOR EXTERIOR UNIT



TYPICAL JOINT DETAILS

DETAIL A



SECTION A-A

- ① Contractor may alternatively use standard aluminum drive-fit cap to close end. 1/2" Ø 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 1/2" maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walkway brackets.

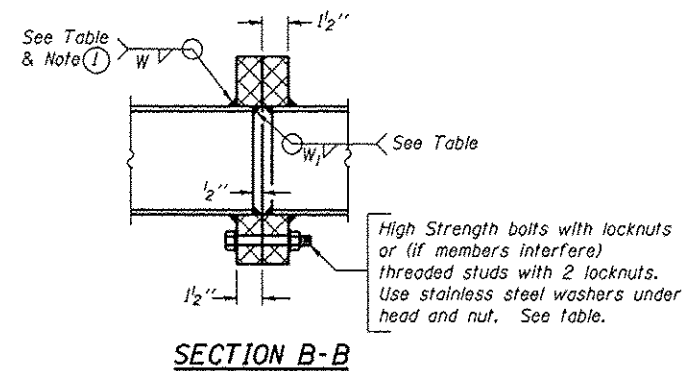
OS-A-2

1-20-11

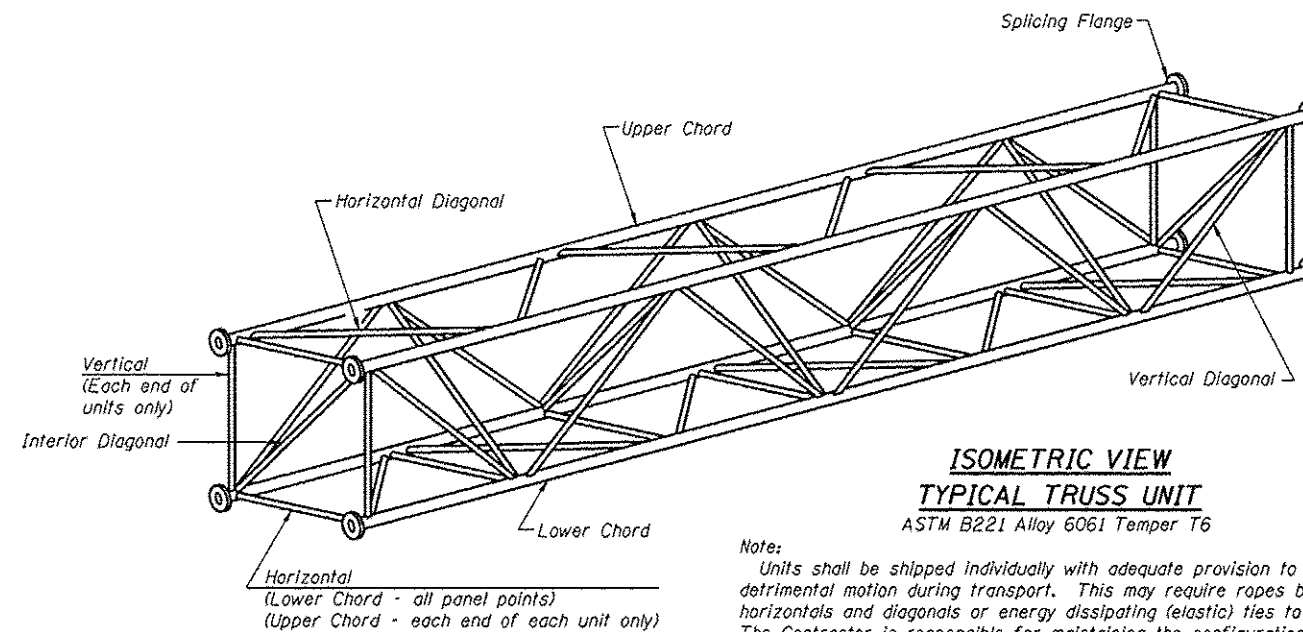
FILE NAME	USER NAME	DESIGNED	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		OVERHEAD SIGN STRUCTURES - ALUMINUM TRUSS DETAILS FOR TRUSS TYPES I-A, II-A AND III-A		F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
o:\p\work\p\ridat\woodshankr\1\48382439\0346228-shd-detailed.dgn	woodshankr	YOGESH PATEL		SCALE:		SHEET NO. 2 OF 11 SHEETS		1-80	D3 QVD SIN STR REPL 13-07	BUREAU	18	9
PLOT SCALE = 99.9999 / 1 in.		DRAWN	REVISED	STA.		TO STA.						CONTRACT NO. 46220
PLOT DATE = 5/18/2012		CHECKED	REVISED	[ILLINOIS]								
		DATE	REVISED									

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		No./Splice	Bolts Dia.	Weld Sizes W	W ₁	A	B
3S0061080L061.5	1398+25	II-A	7	36'-5 1/4"	4'-11 1/4"	1	6	30'-10 1/2"	4'-11 1/4"	6 1/2"	5/16"	3"	5/16"	3.15"	6	1"	3/8"	1/4"	11"	14 1/2"

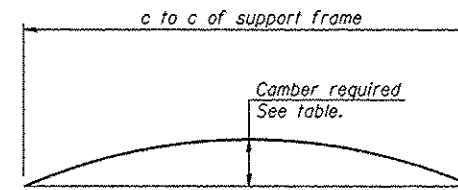


- (1) Splicing Flanges shall be attached to each truss unit with the truss shop assembled to camber shown. Truss units shall be in proper alignment and flange surfaces shall be shop bolted into full contact before welding. Sufficient external welds or tacks shall be made to secure flanges until remaining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



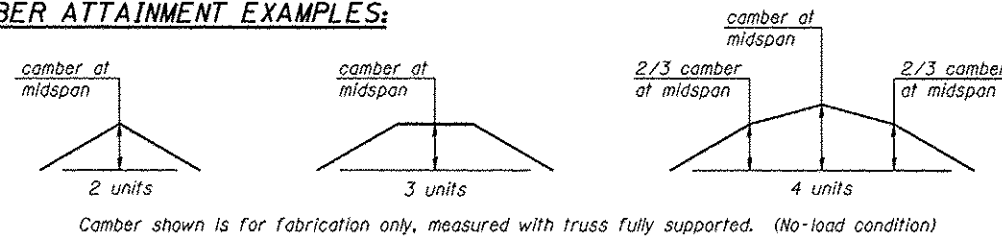
**ISOMETRIC VIEW
TYPICAL TRUSS UNIT**
ASTM B221 Alloy 6061 Temper T6

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

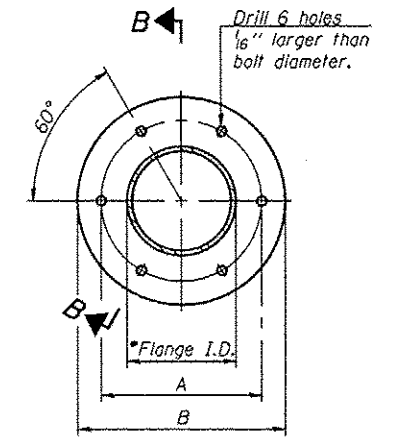


CAMBER DIAGRAM
Camber curve shown is theoretical. Actual camber attained by slope changes at splices between units.

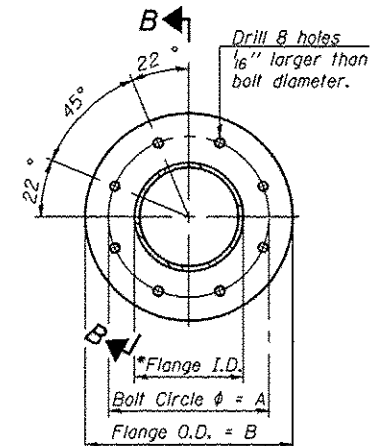
CAMBER ATTAINMENT EXAMPLES:



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



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



**TRUSS TYPES II-A & III-A
SPlicing FLANGES**

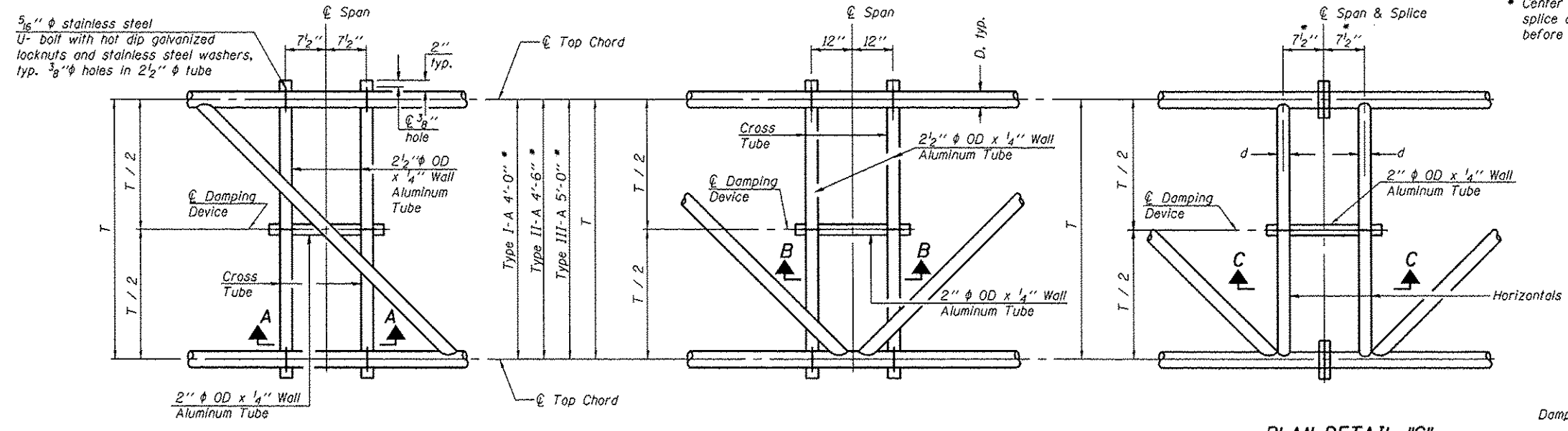
ASTM B221, Alloy 6061-T6
or ASTM B209, Alloy 6061-T651
*To fit O.D. of Chord with maximum gap of 1/16".

0S4-A-2

1-20-11

FILE NAME:	USER NAME: woodshankr	DESIGNED: YOGESH PATEL	REVISED: -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES - ALUMINUM TRUSS DETAILS FOR TRUSS TYPES I-A, II-A AND III-A	F.A.I. RITE:	SECTION:	COUNTY:	TOTAL SHEETS:	SHEET NO.:	
cr:\pwork\prip\dtd\woodshankr\140302439	02452220-sh1-detailed.dgn	DRAWN: YOGESH PATEL	REVISED: -			1-80	D3 OVD SIN STR REPL 13-07	BUREAU	18	10	
	PLOT SCALE: 99.9999 / in.	CHECKED: RON WOODSHANK	REVISED: -			SCALE:	SHEET NO. 3 OF 11 SHEETS	STA.	TO STA.	ILLINOIS	CONTRACT NO. 46220
	PLOT DATE: 5/18/2012	DATE: -	REVISED: -								

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

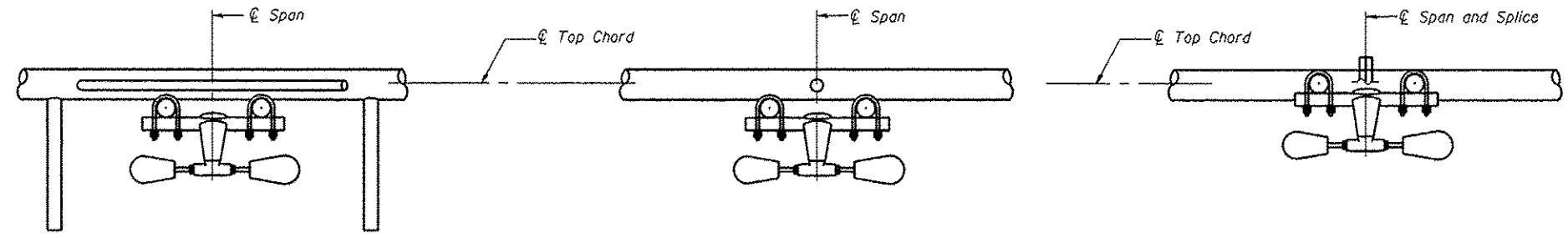


PLAN DETAIL "A"
Span between Panel Points

PLAN DETAIL "B"
Span at Panel Point

PLAN DETAIL "C"
Span at Chord Splice

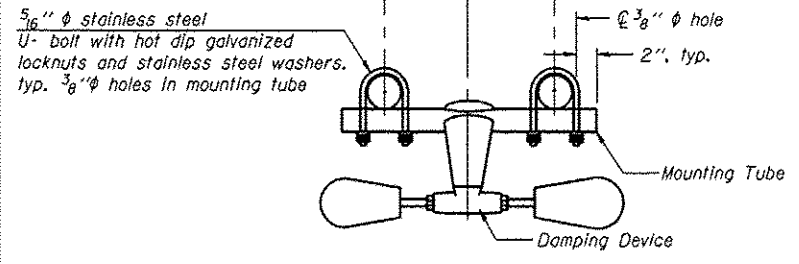
NOTES
 Damper: One damper per truss. (31 lbs. minimum Stackbridge-Type Aluminum - 29" minimum between ends of weights) Cost included in Overhead Sign Structure...
 Materials: Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6. Cost included in Overhead Sign Structure...



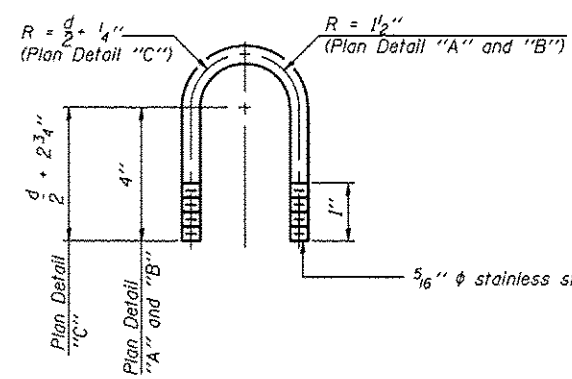
SECTION A-A

SECTION B-B

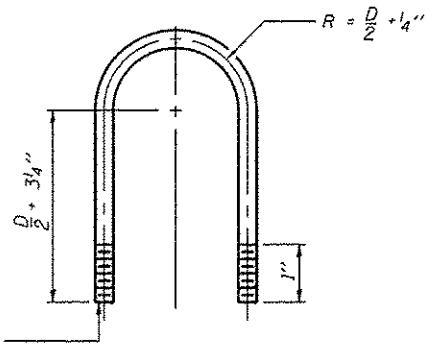
SECTION C-C



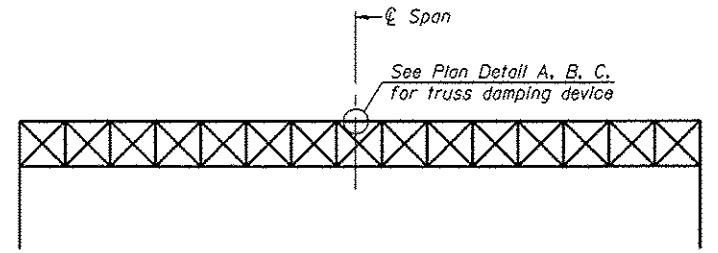
TRUSS DAMPING DEVICE CONNECTION DETAIL
(Typical)



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL
(Typical)



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



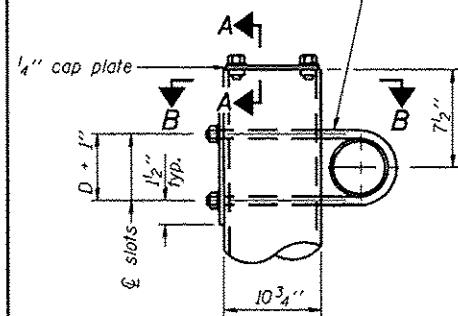
ELEVATION
Aluminum Overhead Sign Truss

OS-A-D

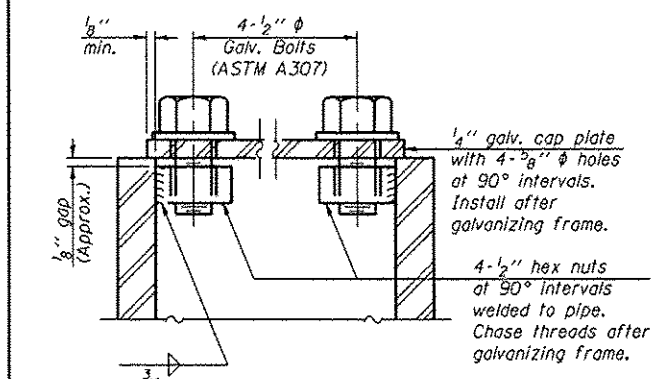
1-20-11

FILE NAME =	USER NAME = woodshankr1	DESIGNED - YOGESH PATEL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURE DAMPING DEVICE	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
c:\pwork\p\pidot\woodshankr1\08302439\0346220-shl-detailed.dgn	DRAWN - YOGESH PATEL	REVISED -	1-80			D3 QVD SIN STR REPL 13-07	BUREAU	18	11	
PLOT SCALE = 99.9999' / in.	CHECKED - RON WOODSHANK	REVISED -								
PLOT DATE = 5/18/2012	DATE -	REVISED -							CONTRACT NO. 46220	
SCALE:						SHEET NO. 4 OF 11 SHEETS		STA.	TO STA.	
						[ILLINOIS]				

3/4" φ stainless steel U-bolt.
Provide two washers and two hexagon locknuts. (4)
1 3/16" x 2" slots on 10" φ pipe.
(4 slots required per pipe)

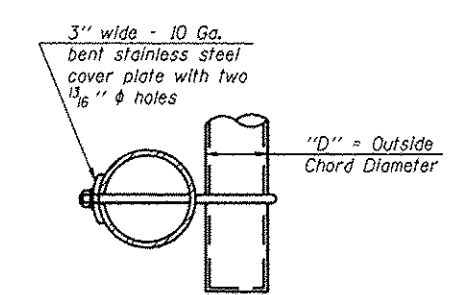


DETAIL A

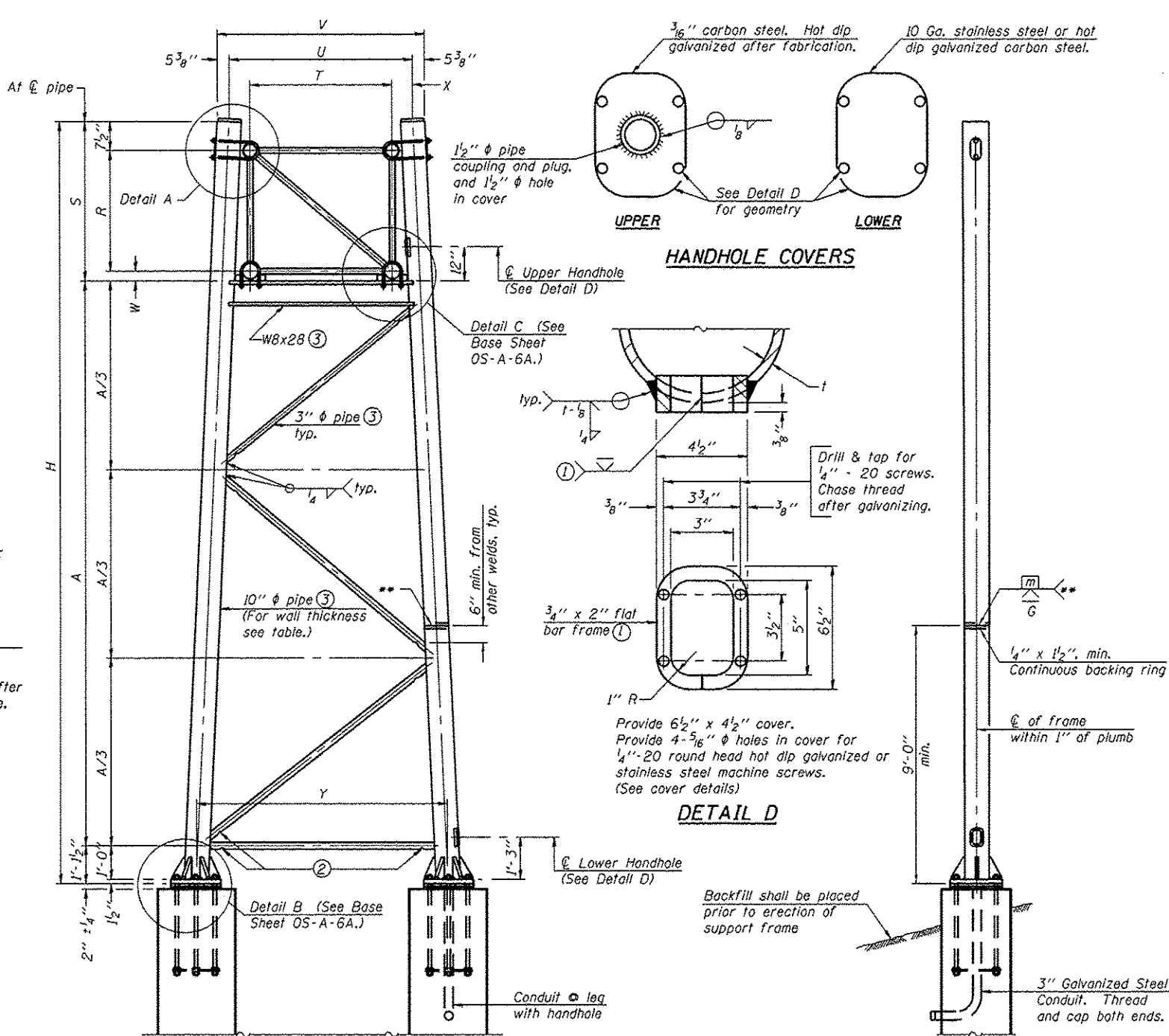


SECTION A-A

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



SECTION B-B



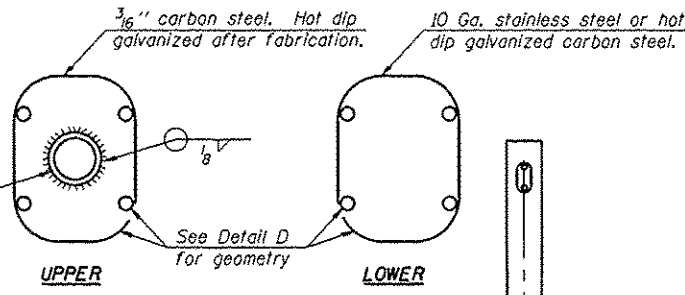
For Foundation Details, see base sheet OS4-F3 (Drilled Shaft).

SIDE ELEVATION

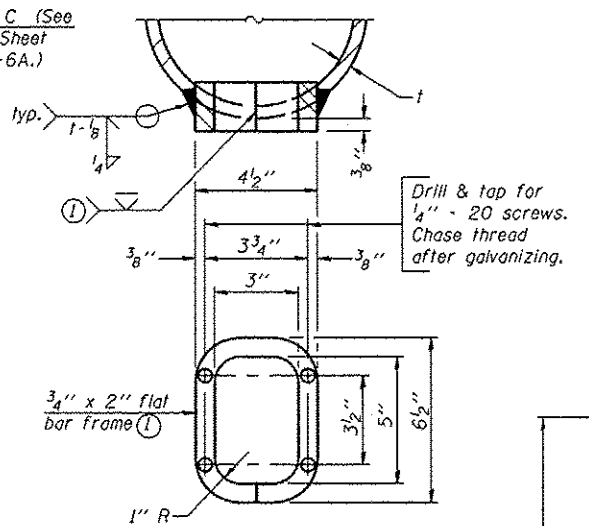
10" φ PIPE TRUSS SUPPORT FRAME

One butt welded joint is allowed only on one post per support frame. If used, weld procedure must be pre-approved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.

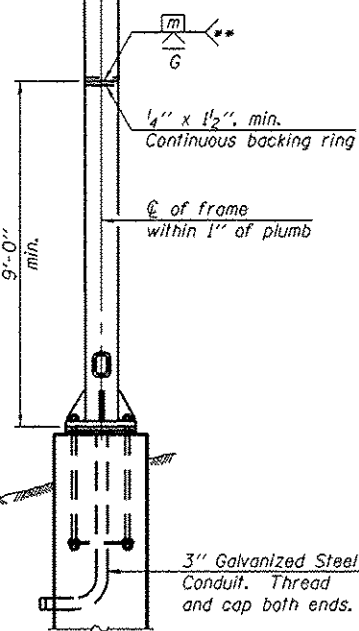
Truss Type	Dimensions							
	R	S	T	U	V	W	X	Y
I-A	4'-6"	5'-5 1/2"	4'-0"	5'-6"	6'-4 3/4"	4"	9"	8'-3"
II-A (5)	5'-3"	6'-3 1/4"	4'-6"	6'-1"	6'-11 3/4"	4 3/4"	9 1/2"	8'-3"



HANDHOLE COVERS



DETAIL D



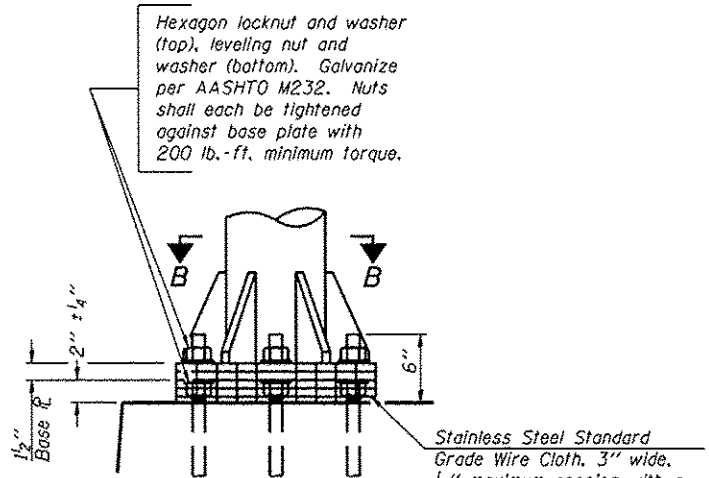
END ELEVATION

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

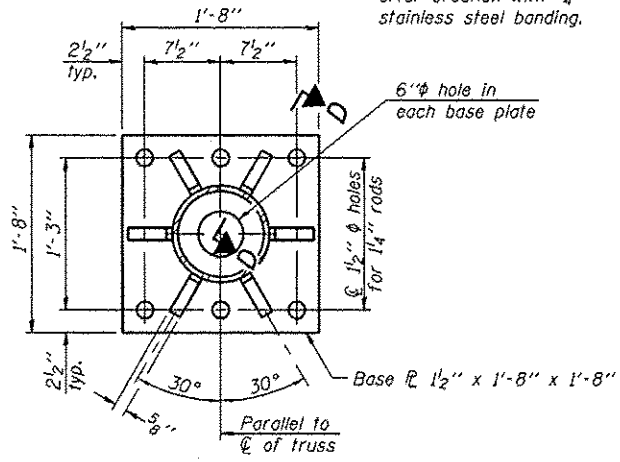
- In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 μin or less.
- Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided 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				
350061080L0615	1398+25	X		II-A	0.500"	29'-5"	23'-2"
350061080L0615	1398+25		X	II-A	0.500"	31'-2"	24'-11"

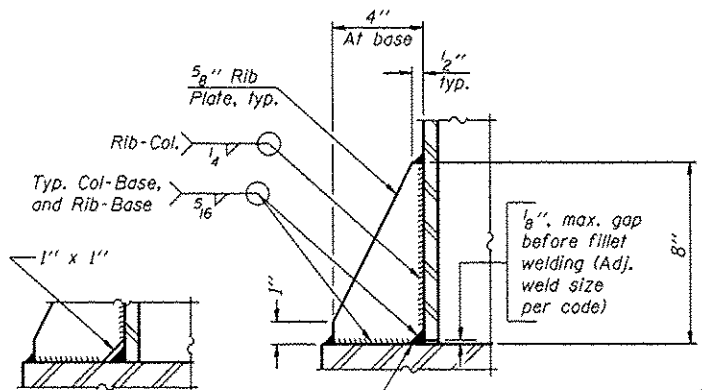


DETAIL B

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.

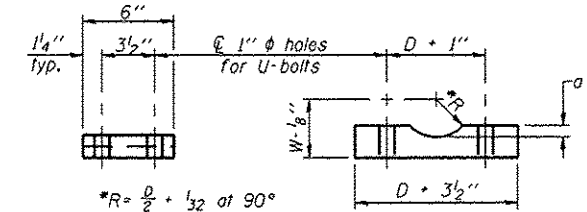


SECTION B-B



SECTION D-D

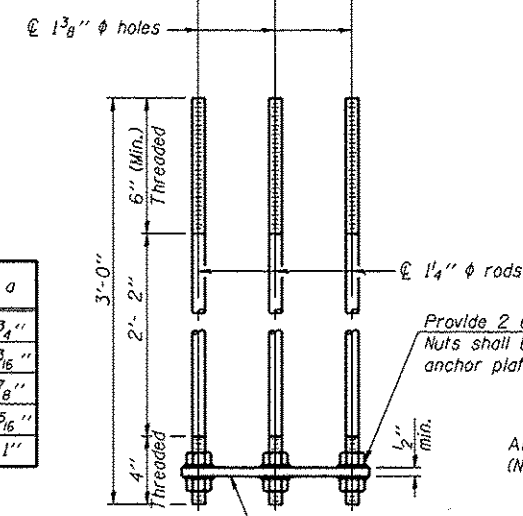
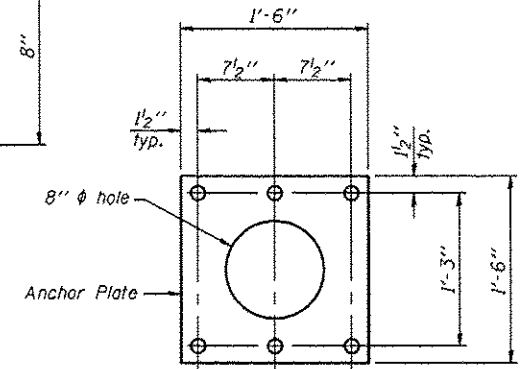
** Alternate detail if welding col. to base plate first, then snip inside corner of ribs. Terminate weld on rib 1/4" from snip.



SADDLE SHIM DETAIL

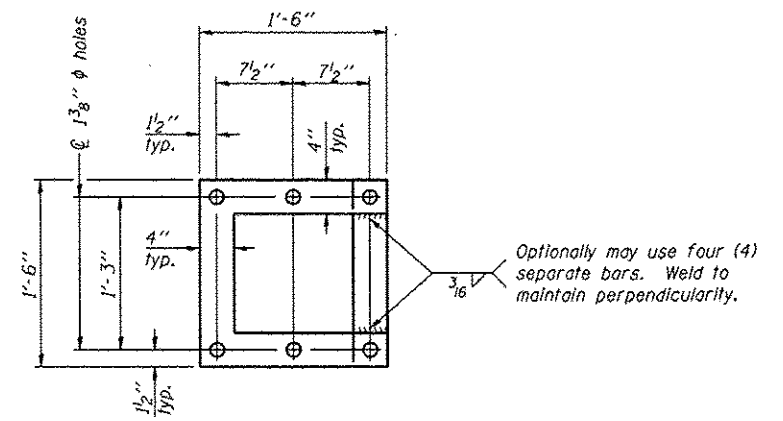
ASTM B26 Alloy 356-F
or
ASTM B209 Alloy 6061-T651
(4 required per sign truss)

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



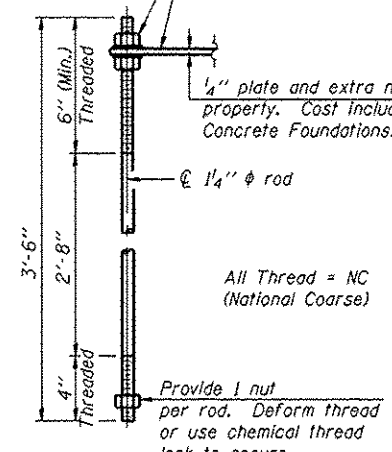
ANCHOR ROD DETAIL
Spread Footing Foundation

Anchor rods shall conform to ASTM F1554 Grade 105. Galvanize upper 12" minimum per AASHTO M232. No welding shall be permitted on rods.

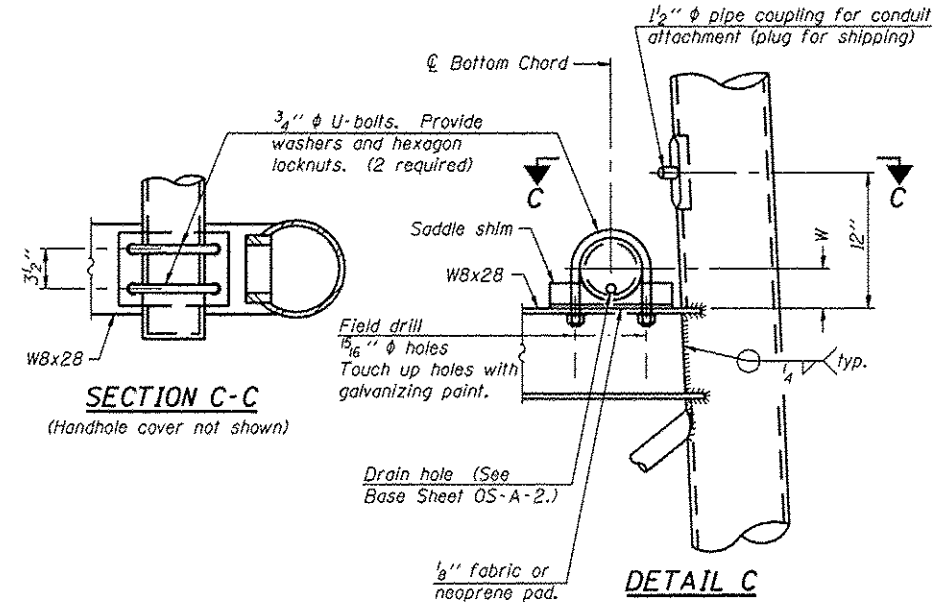


POSITIONING PLATE(S)

At each location, provide 1/4" thick positioning plate(s) and six (6) additional nuts to be used with leveling nuts to maintain anchor bolts position during concrete placement.
1/4" plate and extra nuts become Contractor's property. Cost included in Drilled Shaft Concrete Foundations.



ANCHOR ROD DETAIL
Drilled Shaft Foundation



SECTION C-C
(Handhole cover not shown)

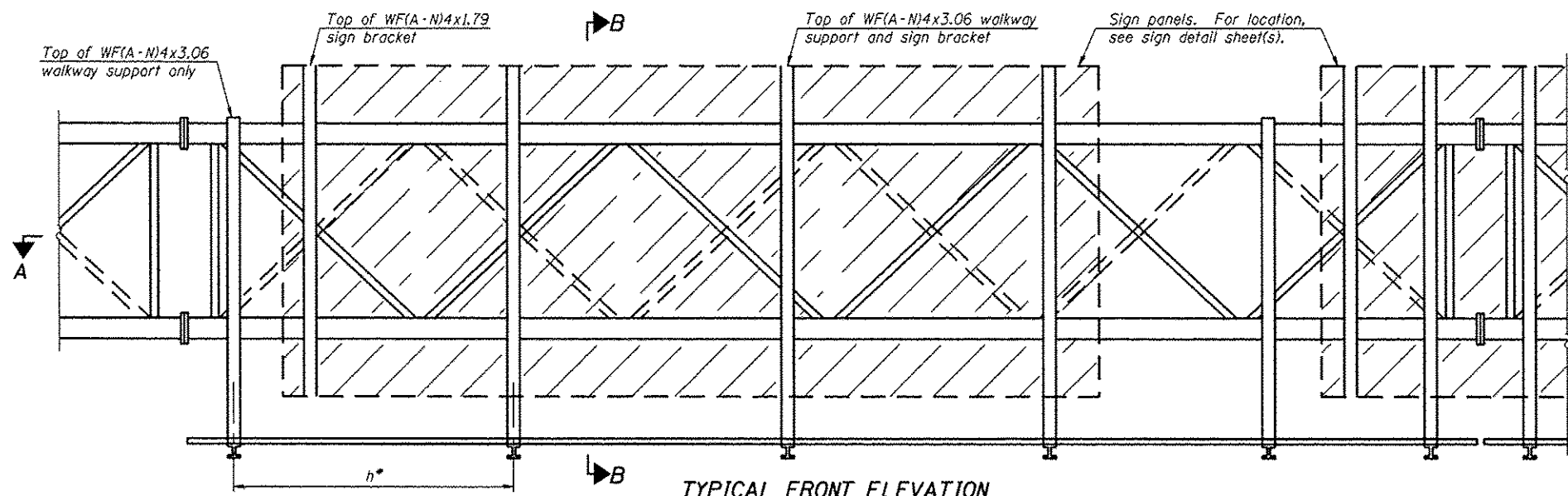
DETAIL C

10" PIPE SUPPORT FRAME DETAILS

OS-A-6A

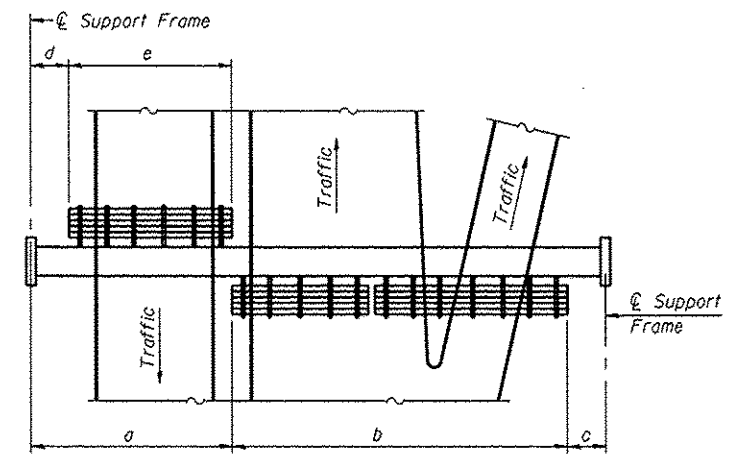
1-20-11

FILE NAME =	USER NAME = woodshankr1	DESIGNED - YOGESH PATEL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES SUPPORT FRAME DETAILS - ALUMINUM TRUSS		F.A.I. RTE. I-80	SECTION D3 OVD SIN STR REPL 13-07	COUNTY BUREAU	TOTAL SHEETS 18	SHEET NO. 13	
ci:\pwork\p\ridat\woodshankr1\d9302439\246228-shf-detailed.dgn	PLOT SCALE = 99.9999 1/16"	DRAWN - YOGESH PATEL	REVISED -		SCALE:	SHEET NO. 6 OF 11 SHEETS	STA. TO STA.	ILLINOIS				
	PLOT DATE = 5/18/2012	CHECKED - RON WOODSHANK	REVISED -									
		DATE -	REVISED -									



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)

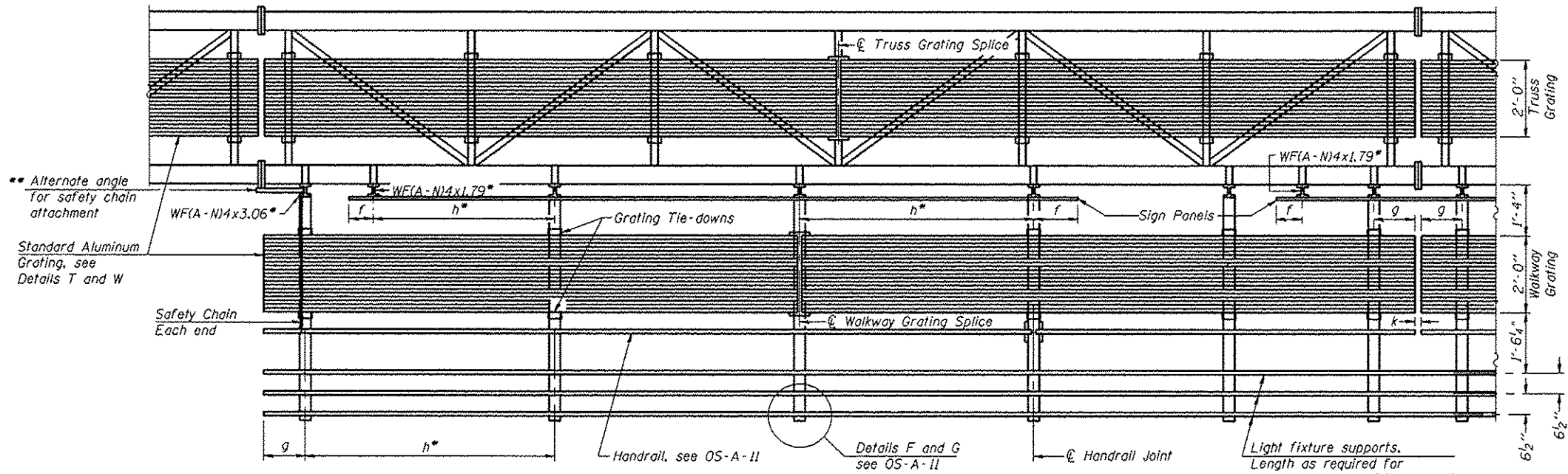
BRACKET TABLE

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

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 ϕ of nearest bracket)
 $g = 12''$ maximum, $4''$ minimum (End of walkway grating to ϕ of nearest support bracket)
 $h = 6'-0''$ maximum (ϕ to ϕ 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.



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.

Structure Number	Station	a	b	c	d	e	Walkway Grating and Handrail Lengths
3S0061080L061.5	1398+25	22'-3"	38'-0"	41'-9"	38'-0"

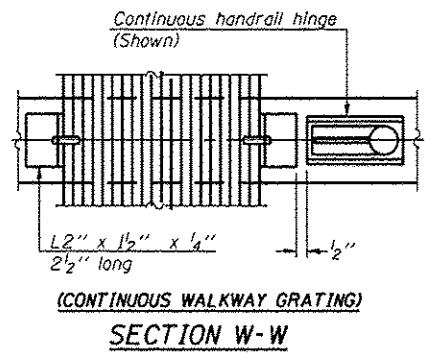
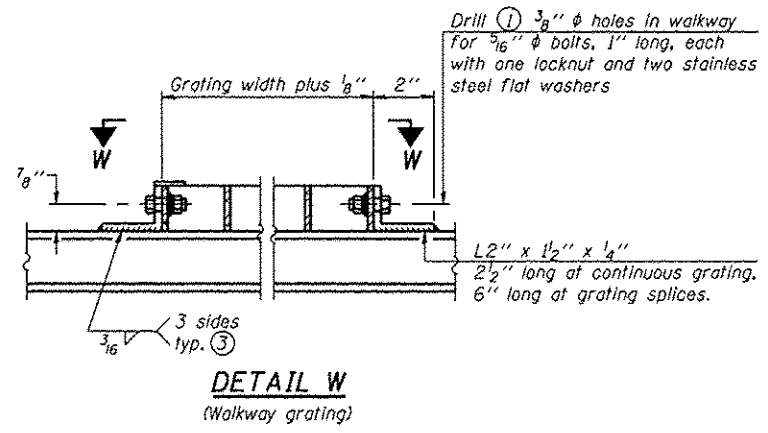
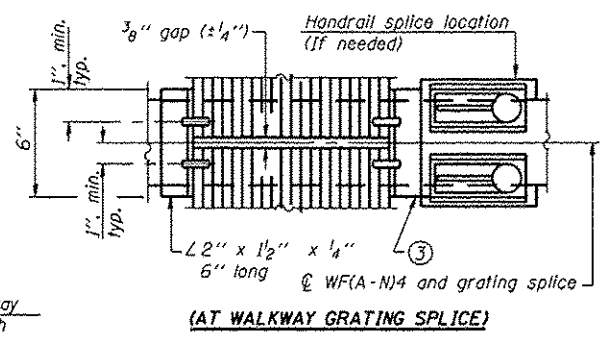
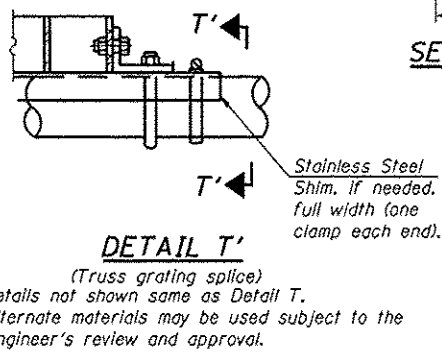
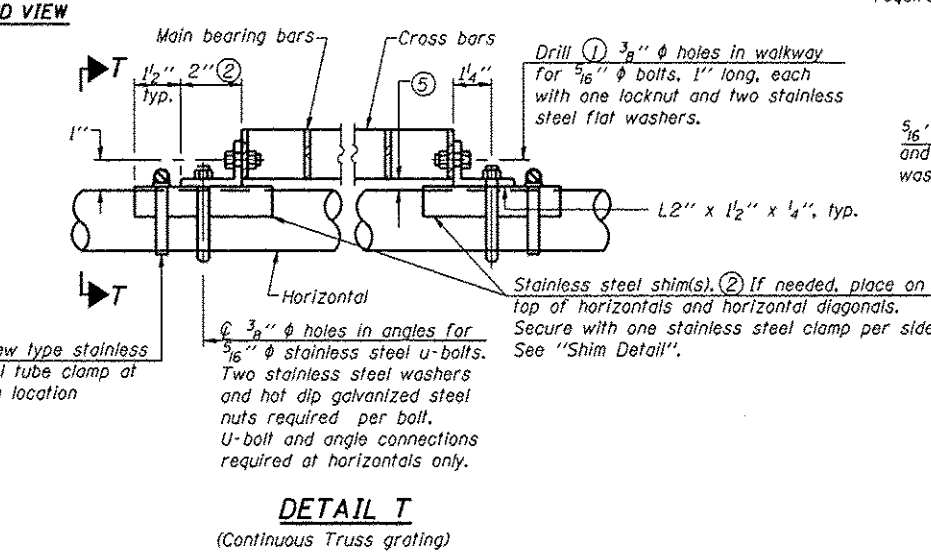
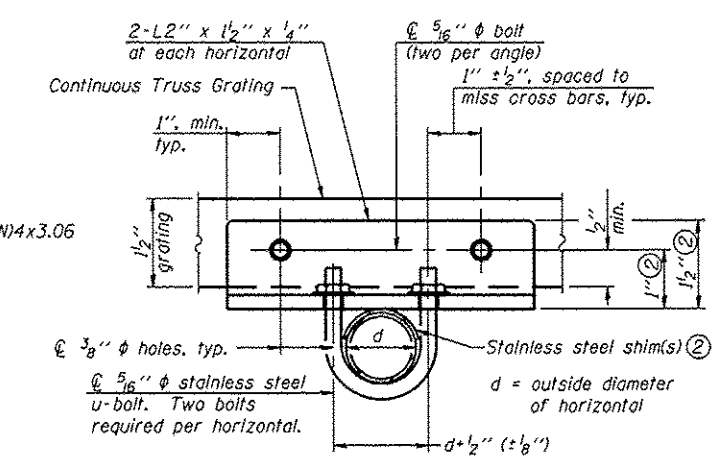
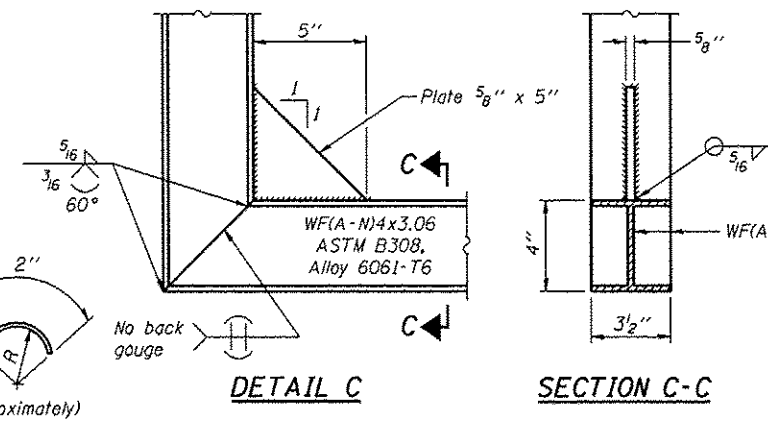
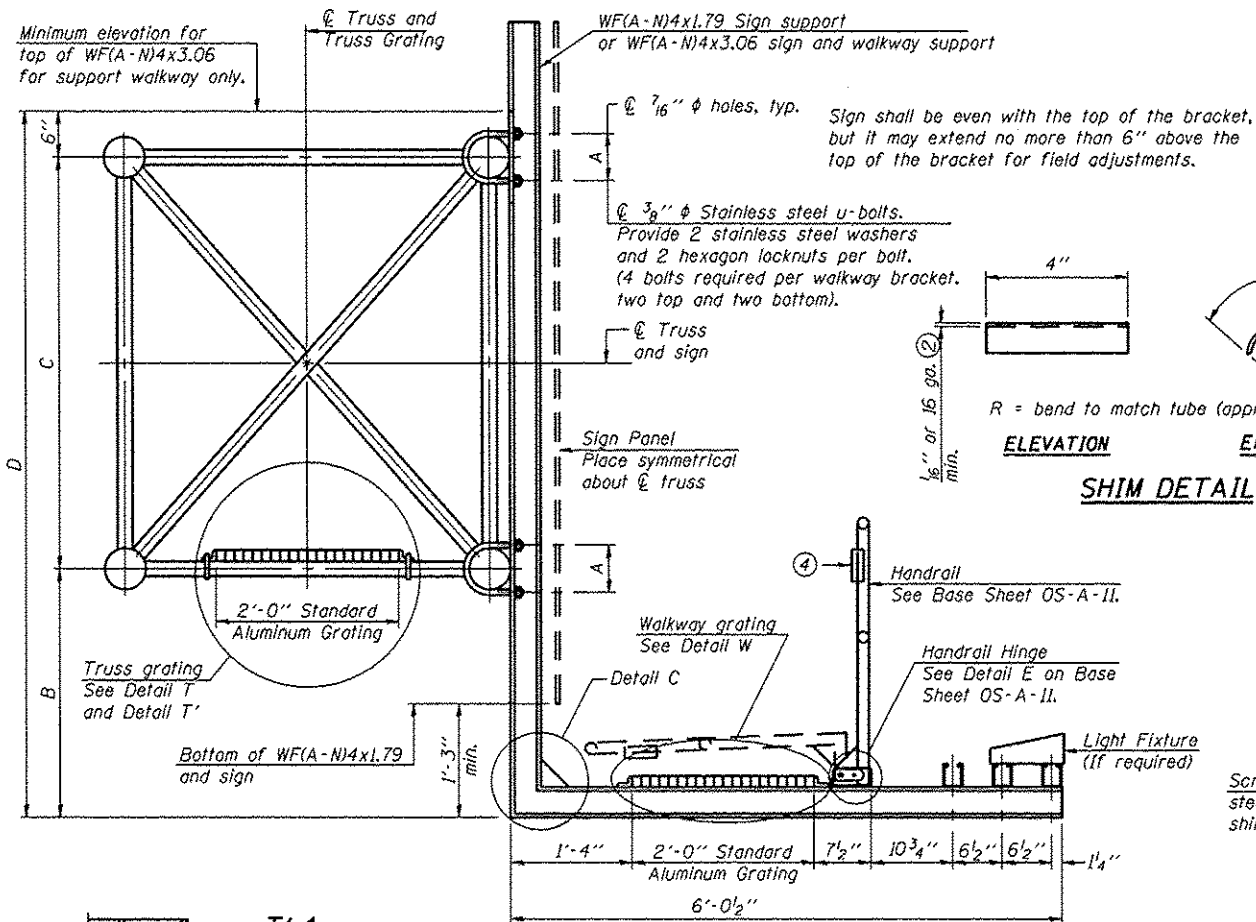
Truss grating to facilitate inspection shall run full length (center to center of support frames) $\pm 12''$ on overhead trusses. Cost of truss grating is included in "Overhead Sign Structure".

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

OS-A-9

1-20-11

FILE NAME =	USER NAME = woodshank-r	DESIGNED - YOGESH PATEL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES ALUMINUM WALKWAY DETAILS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
os:\p\work\p\ridos\woodshank-r\0302439	0346220-sht-details.dgn	DRAWN - YOGESH PATEL	REVISED -			1-80	D3 OVD SIN STR REPL 13-07	BUREAU	18	14
PLOT SCALE = 99.9999 / in.		CHECKED - RON WOODSHANK	REVISED -			SCALE:	SHEET NO. 7 OF 11 SHEETS	STA.	TO STA.	CONTRACT NO. 46220
PLOT DATE = 5/18/2012		DATE -	REVISED -							[ILLINOIS]



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.

Structure Number	Station	A	⑤ B	C	⑥ D
350061080L061.5	1398+25	7"	2'-6"	5'-3"	8'-3"

- 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-II.)
- 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-II.

OS-A-10

1-20-11

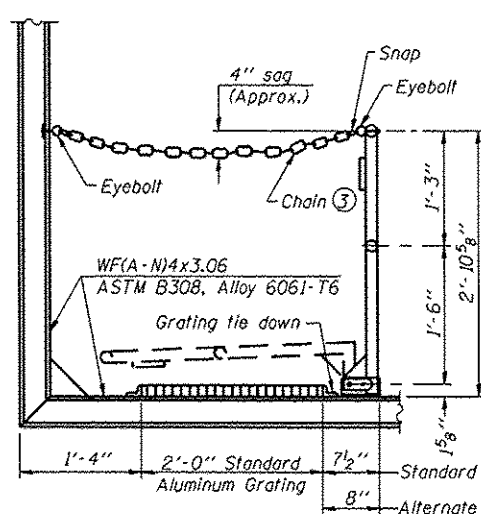
FILE NAME =	USER NAME = woodshank1	DESIGNED - YOGESH PATEL	REVISED -
c:\pwork\p\p\woodshank1\0830243\	346228-ahd-details.dgn	DRAWN - YOGESH PATEL	REVISED -
	PLOT SCALE = 99.9999 / 1 in.	CHECKED - RON WOODSHANK	REVISED -
	PLOT DATE = 9/18/2012	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

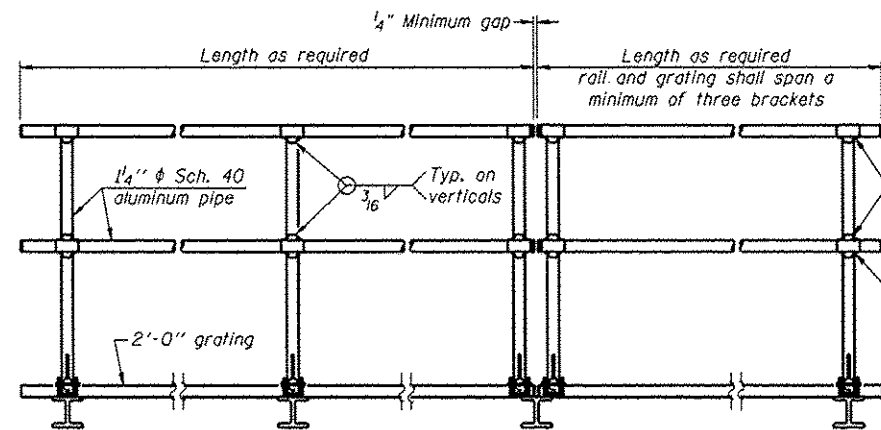
OVERHEAD SIGN STRUCTURES
 ALUMINUM WALKWAY DETAILS

SCALE: SHEET NO. 8 OF 11 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-80	03 OVD SIN STR REPL 13-07	BUREAU	18	15
CONTRACT NO. 46220			ILLINOIS	



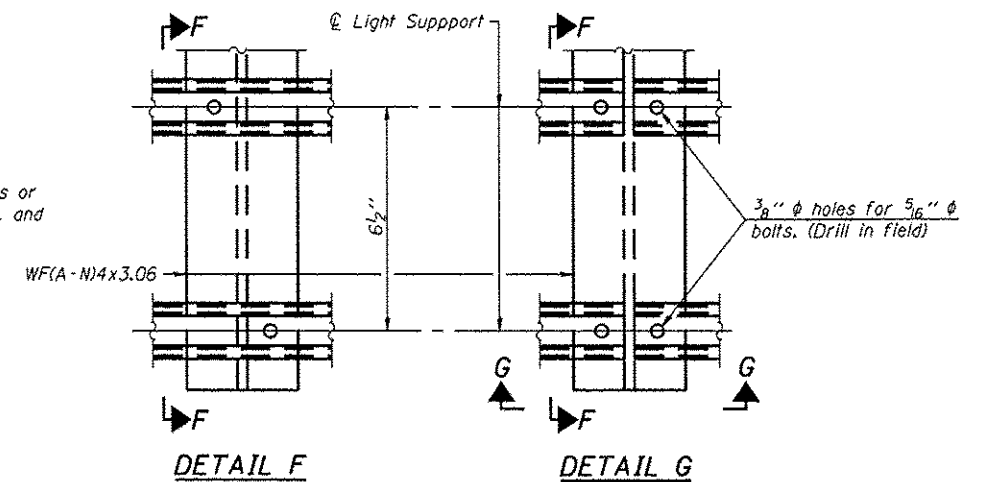
SIDE ELEVATION
(Showing safety chain w/o sign)



HANDRAIL DETAILS

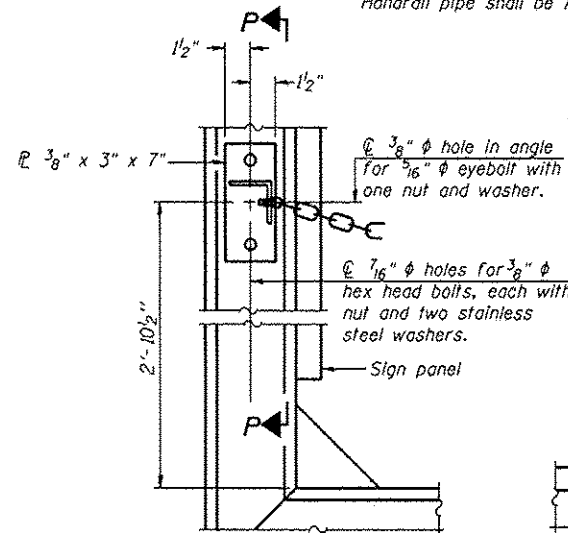
Handrail pipe shall be ASTM B241 or B429, Alloy 6063-T6 or Alloy 6061-T6.

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



DETAIL F

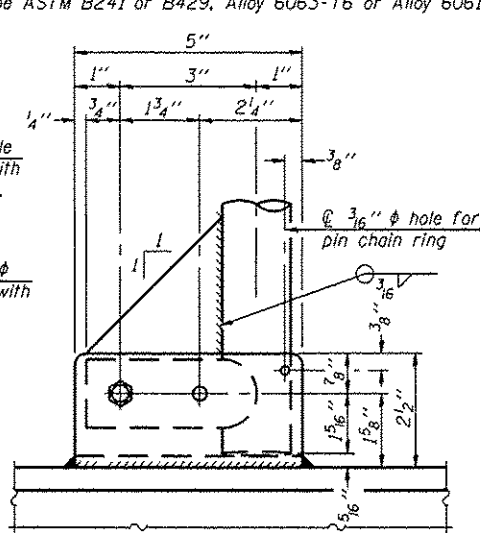
DETAIL G



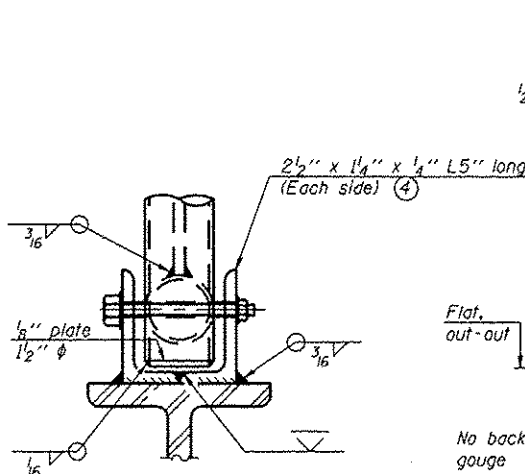
ALTERNATE SAFETY CHAIN ATTACHMENT

(With Sign Present)

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



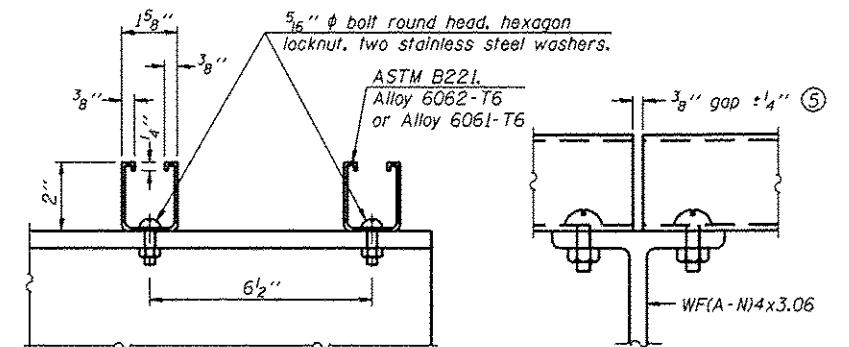
SIDE ELEVATION



FRONT ELEVATION

See "Elevation" at right for dimensions.

ELEVATION AT HANDRAIL JOINT ④

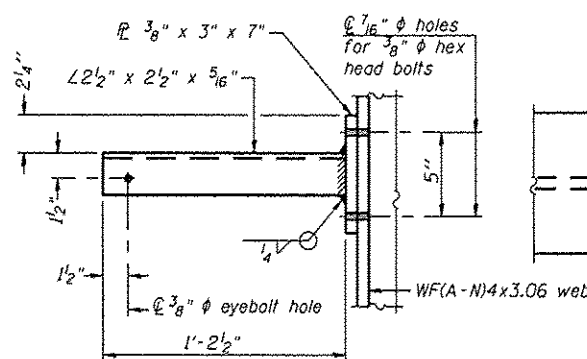


SECTION F-F

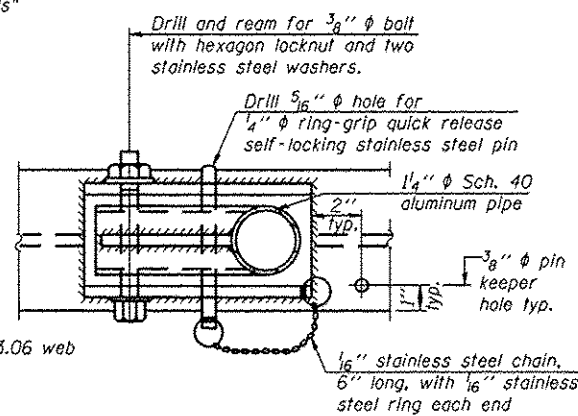
SECTION G-G

LIGHTING FIXTURE MOUNTS (IF REQUIRED)

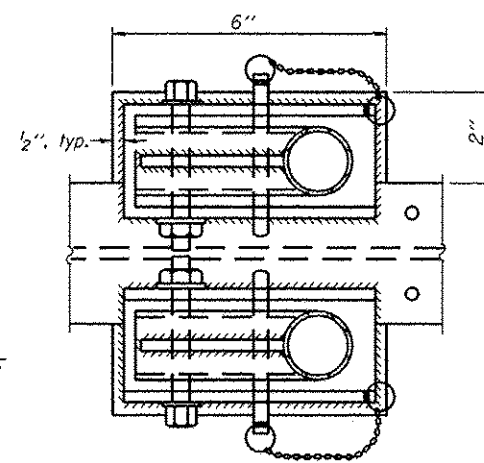
- ⑤ Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.



SECTION P-P

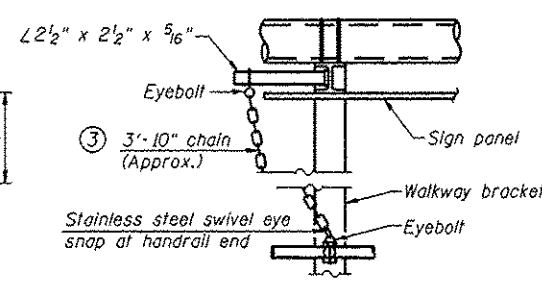


PLAN
DETAIL E HANDRAIL HINGE



PLAN AT HANDRAIL JOINT

Details not shown same as "PLAN"

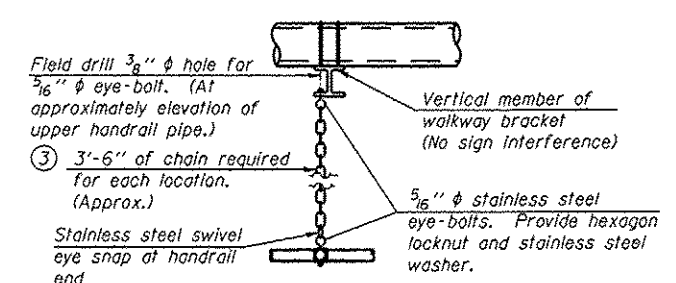


ALTERNATE SAFETY CHAIN ATTACHMENT

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.

OS-A-II

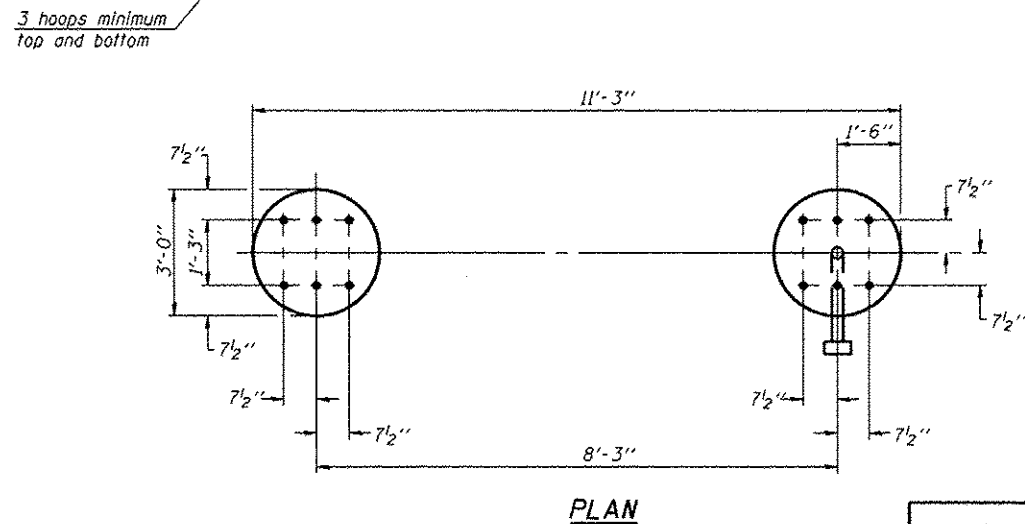
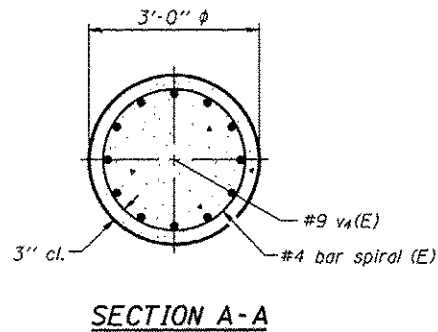
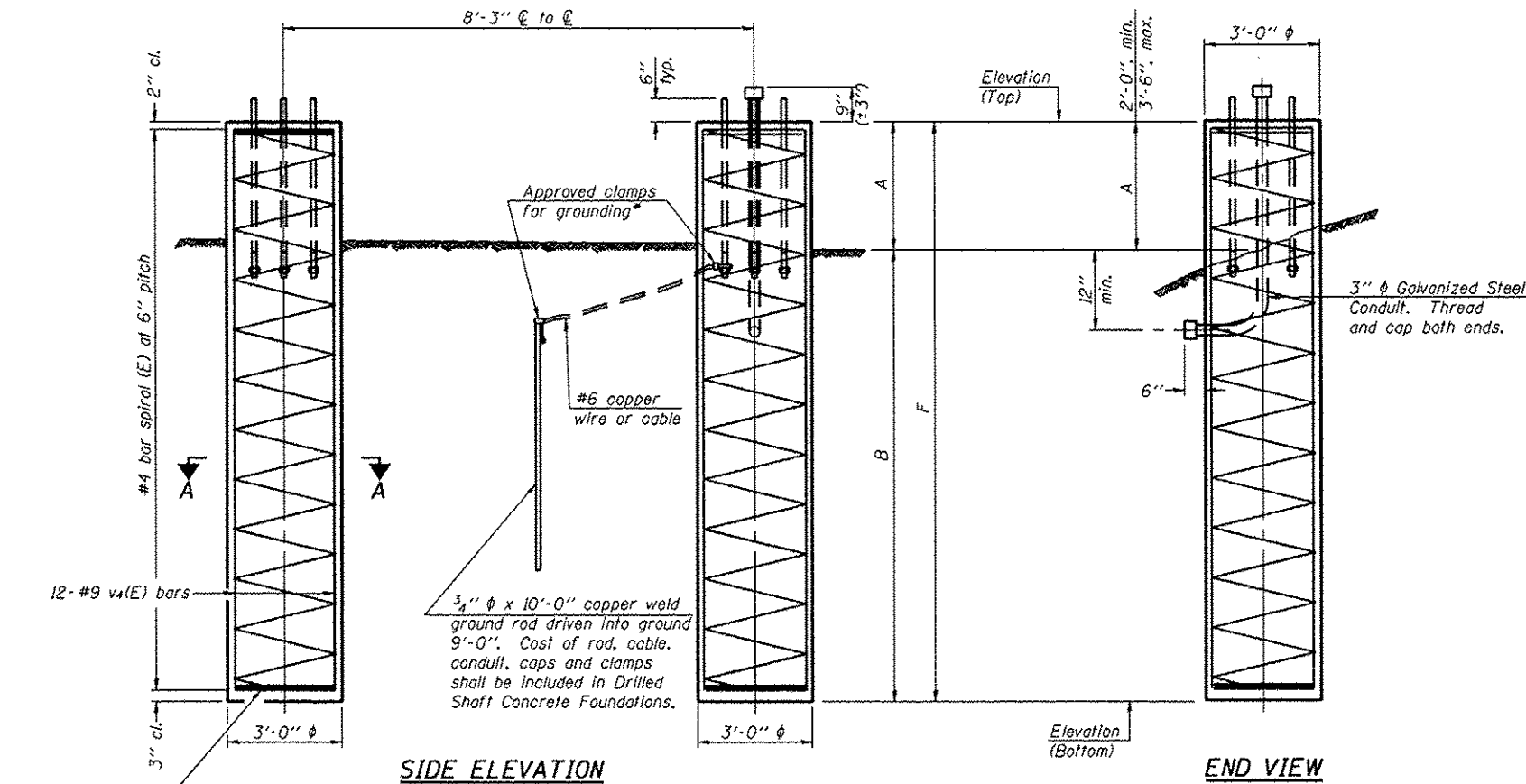
1-20-11

FILE NAME =	USER NAME = woodshankr1	DESIGNED - YOGESH PATEL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES ALUMINUM HANDRAIL DETAILS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
al:\pwork\pvidat\woodshankr1\0302439	0346220\shd\details.dgn	DRAWN - YOGESH PATEL	REVISED -			I-80	D3 OVD SIN STR REPL 13-07	BUREAU	18	16	
PLOT SCALE = 99.9999 / in.		CHECKED - RON WOODSHANK	REVISED -								CONTRACT NO. 46220
PLOT DATE = 5/18/2012		DATE -	REVISED -			SCALE:	SHEET NO. 9 OF 11 SHEETS	STA.	TO STA.	[ILLINOIS]	

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 (Q_u) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.
 If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.
 No sonotubes or decomposable forms shall be used below the lower conduit entrance.
 Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.
 Concrete shall be placed monolithically, without construction joints.
 Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.
 A normal surface finish followed by a Bridge Seat Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in Drilled Shaft Concrete Foundation.



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.

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

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	
35C061080L061.5	1398+25	686.42	663.92	2.0	20'-6"	22'-6"	683.15	660.65	2'-0"	20'-6"	22'-6"	23.6

OS4-F3

1-20-11

USER NAME: woodshankr1 DESIGNED: YOGESH PATEL DRAWN: YOGESH PATEL CHECKED: RON WOODSHANK PLOT DATE: 5/18/2012	REVISIONS: REVISION NO. DATE BY DESCRIPTION 1 5/18/2012 YP Initial Design 2 5/18/2012 RW Revisions	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES DRILLED SHAFT DETAILS	F.A.I. RTE. 1-80 SECTION 03 OVD SIGN STR REPL 13-07 COUNTY BUREAU 18 17 CONTRACT NO. 46220 [ILLINOIS]
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SOIL BORING LOG

ROUTE FAI 80 DESCRIPTION Sign Truss on West Bound I-80 at I-180 Exit Ramp LOGGED BY Larry Myers

SECTION D3 OVD Sin Str Repl 13-07 LOCATION NE 1/4, SEC. 6, TWP. 16N, RNG. 10E

COUNTY Bureau DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 3S0061080L061.5	D E P T H	B L O W S	U C S	M O I S T U R E	Surface Water Elev. _____ ft	D E P T H	B L O W S	U C S	M O I S T U R E
Station 1398+25 (Prop.)					Stream Bed Elev. _____ ft				
BORING NO. 1					Groundwater Elev.: First Encounter _____ ft				
Station 1397+86					Upon Completion _____ ft				
Offset 85.00ft Lt.					After _____ Hrs. _____ ft				
Ground Surface Elev. _____ ft	(ft)	(/6")	(tsf)	(%)		(ft)	(/6")	(tsf)	(%)

Augered Black Silty Clay Loam Topsoil Fill, Brown Silty Clay Loam Fill 682.67					Very Stiff to Hard Brown & Gray Silty Clay Loam Till (continued)				
	4					4			
	5	4.2		16.2		5	4.2		16.2
	6	B				6	B		
	3					5			
Very Stiff to Hard Brown & Gray Silty Clay Loam Till Fill and Brown & Gray Silt Fill 682.67	5	3.5		19.4		6	4.8		13.7
	7	P				8	B		
	4					8			
	5	4.0		21.5		7	4.6		16.0
	7	P				8	B		
Very Stiff Black Silty Clay Loam Topsoil 678.17	4								
	4	3.5		24.3		5	4.0		15.2
	5	S				6	B		
Stiff Blueish Gray Silty Clay with Silt Layers 676.17	1					5			
	1	1.5		28.9		6	4.2		15.2
	2	P				6	B		
Medium to Stiff Gray & Brown Silty Clay & Silt 673.17	1				End of Boring				
	1	1.0		25.6					
	2	P							
Very Stiff to Hard Brown & Gray Silty Clay Loam Till 670.17	1								
	4	3.5		15.6					
	5	B							
	3	3.3		16.3					
	5	B							

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

BBS, form 137 (Rev. 8-99)

SOIL BORING LOG

ROUTE FAI 80 DESCRIPTION Sign Truss on West Bound I-80 at I-180 Exit Ramp LOGGED BY Larry Myers

SECTION D3 OVD Sin Str Repl 13-07 LOCATION SE 1/4, SEC. 6, TWP. 16N, RNG. 10E

COUNTY Bureau DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 3S0061080L061.5	D E P T H	B L O W S	U C S	M O I S T U R E	Surface Water Elev. _____ ft	D E P T H	B L O W S	U C S	M O I S T U R E
Station 1398+25 (Prop.)					Stream Bed Elev. _____ ft				
BORING NO. 2					Groundwater Elev.: First Encounter _____ ft				
Station 1398+18					Upon Completion _____ ft				
Offset 26.00ft Rt.					After _____ Hrs. _____ ft				
Ground Surface Elev. _____ ft	(ft)	(/6")	(tsf)	(%)		(ft)	(/6")	(tsf)	(%)

Augered Black Silty Clay Loam & Brown Silty Clay Loam Fill 683.01					Very Stiff Gray Silty Clay Loam Till (continued)				
	4					4			
	5	4.1		14.3		5	4.1		14.3
	6	B				6	B		
Hard Brown Silty Clay Loam Till Fill 680.51	4					4			
	5	4.5		20.5		5	4.3		15.7
	6	P				5	B		
Very Stiff Black Silty Clay Loam Topsoil 678.51	4					4			
	3	3.5		31.2		6	4.1		15.1
	4	P				7	B		
Stiff Blueish Gray & Brown Silty Clay with Silt Layers 676.01	2					5			
	3	2.0		29.3		6	4.1		15.2
	2	P				7	B		
Medium to Stiff Gray & Brown Silt & Silty Clay 676.01	1					5			
	2	1.0		27.5		5	4.1		13.9
	1	P				7	B		
Very Stiff to Hard Brown Silty Clay Loam Till 671.51	4				End of Boring				
	4	2.0		16.8					
	3	P							
Very Stiff to Hard Brown Silty Clay Loam Till 668.01	3								
	3	3.7		15.4					
	4	B							
	5	B							
Very Stiff Gray Silty Clay Loam Till 668.01	3								
	4	3.5		14.7					
	5	B							

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

BBS, form 137 (Rev. 8-99)

FILE NAME: <	USER NAME: woodshankr1	DESIGNED: YOGESH PATEL	REVISED: -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORINGS			F.A.I. RTE. I-80	SECTION D3 OVD SIN STR REPL 13-07	COUNTY BUREAU	TOTAL SHEETS 18	SHEET NO. 18
		DRAWN: YOGESH PATEL	REVISED: -		SCALE:	SHEET NO. 11	OF 11 SHEETS	STA.	TO STA.	CONTRACT NO. 46220		
		CHECKED: RON WOODSHANK	REVISED: -									
		DATE: -	REVISED: -									