11-5-10 LETTING ITEM 001

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

VARIOUS ROUTES
D1 OVD SIN STR REPL 11-30
VARIOUS COUNTIES
C-60-030-11

INDEX OF SHEETS

STANDARDS

701006-03
701101-02
701106-02
701201-03
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701406-05
701411-06
701446-01
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720021-02

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED / PASSED July 26 2010

ENGINEER OF OPERATIONS

October 1 2010

Scott E. Stitt, P.E. /for
acting ENGINEER OF DESIGN AND ENVIRONMENT

APPROVED October 1 2010

Christine M. Reed /for
DIRECTOR DIVISION OF HIGHWAYS

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

FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	---	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
		CHECKED - ---	REVISED - ---		---	Var	D1 OVD SIN STR REPL11-30	Various	1 / 26
	PLOT SCALE =	DRAWN - ---	REVISED - ---		SHEET NO. -- OF --- SHEETS			CONTRACT NO. 46153	
	PLOT DATE =	CHECKED - ---	REVISED - ---				ILLINOIS FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Summary and Schedule of Quantities

CODE NUMBER	PAY ITEM	UNIT	Y002 - 1C 100% STATE TOTAL QUANTITY	URBAN	
67100100	MOBILIZATION	LSUM	1.00	1.00	
70101700	TRAFFIC CONTROL AND PROTECTION	L SUM	1.00	1.00	
73300200	OVERHEAD SIGN STRUCTURE - SPAN, TYPE II-A (4'-6" X 5'-3")	FOOT	216.00	216.00	
73300300	OVERHEAD SIGN STRUCTURE - SPAN, TYPE III-A (5'-0" X 7'-0")	FOOT	35.00	35.00	
73305000	OVERHEAD SIGN STRUCTURE WALKWAY	FOOT	413.5	413.5	
73400200	DRILLED SHAFT CONCRETE FOUNDATIONS	CU YD	3.30	3.30	
73600100	REMOVE OVERHEAD SIGN STRUCTURE - SPAN	EACH	3.00	3.00	
73600200	REMOVE OVERHEAD SIGN STRUCTURE - CANTILEVER	EACH	1.00	1.00	
73700300	REMOVE CONCRETE FOUNDATION - OVERHEAD	EACH	1.00	1.00	
73800100	STRUCTURAL STEEL SUPPORT FOR OVERHEAD SIGN STRUCTURE - SPAN	EACH	8.00	8.00	
73801100	REMOVE AND REERECT OVERHEAD SIGN STRUCTURE-SPAN	EACH	4.00	4.00	
T9992700	REMOVE AND REINSTALL SIGN PANEL	SQ FT	1,523.12	1,523.12	
T9995400	FURNISH AND INSTALL SADDLE SHIM BLOCK	EACH	16.00	16.00	
T9996205	REBUILD CONCRETE FOUNDATION FOR OVERHEAD SIGN STRUCTURE	EACH	6.00	6.00	
T9996300	OVERHEAD SIGN SUPPORT GROUT REPAIR	EACH	8.00	8.00	
T9997255	FURNISH AND INSTALL TRUSS DAMPER	EACH	3.00	3.00	
T9998820	FURNISH AND INSTALL HAND RAIL	FOOT	1,250.00	1,250.00	

Rev.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. -- OF --- SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	D1 OVD SIN STR REPL11-30	Various	2	26

CONTRACT NO. 46153
ILLINOIS FED. AID PROJECT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

District 1
Schedule of Overhead Sign Structure Repair & Replacement

Location No.:	1-01	State I.D. No.:	1C016I094R034.0 (CLE-2) M2		
County:	Cook	Route:	I-94	M.P.:	34.0

Direction:	SB

Description of Work	Unit	Quantity
Remove Overhead Sign Structure – Cantilever	Each	1.00
Remove Concrete Foundation – Overhead	Each	1.00
Overhead Sign Structure – Cantilever Type III	FT	35.00
Overhead Sign Structure Walkway	FT	33.50
Concrete Foundation	CU YD	3.30
Remove & Reinstall Sign Panel	SQ FT	196.00

Location No.:	1-02	State I.D. No.:	1S049U41L000.0 (TDR-1) LP2		
County	Lake	Route:	US-41	M.P.:	0.0

Direction:	SB

Description of Work	Unit	Quantity
Remove Overhead Sign Structure Span	Each	1.00
Overhead Sign Structure Span Type II-A	Foot	61.00
Rebuild Concrete Foundation for Overhead Sign Structure	Each	2.00
Remove & Reinstall Sign Panel	SQ FT	331.12
Overhead Sign Support Grout Repair	Each	4.00
Overhead Sign Structure Walkway (internal)	Foot	35.50

Location No.:	1-03	State I.D. No.:	1S016I094R000.0 (S3) T1		
County	Cook	Route:	I 94	M.P.:	0.0

Direction:	

Description of Work	Unit	Quantity
Remove & Re-erect Overhead Sign Span	Each	1.00
Structural Steel Sign Support Overhead Sign Structure	Each	2.00
Furnish & Install Saddle Shim Block	Each	4.00
Furnish & Install Internal Truss Damper	Each	1.00
Overhead Sign Structure Walkway (internal)	Foot	60.00
Overhead Sign Support Grout Repair	Each	4.00

Location No.:	1-04	State I.D. No.:	1S016I094R028.8 (TRS-2) T4		
County	Cook	Route:	I-94	M.P.:	28.8

Direction:	SB

Description of Work	Unit	Quantity
Remove & Re-erect Overhead Sign Structure-Span	Each	1.00
Structural Steel Sign Support Overhead Sign Structure	Each	2.00
Saddle Shim Block	Each	4.00
Furnish & Install Internal Truss Damper	Each	1.00
Overhead Sign Structure Walkway(internal)	Foot	90.00

Location No.:	1-05	State I.D. No.:	1S016I094R040.8 (TRE-1) D2		
County	Cook	Route:	I-94	M.P.:	40.8

Direction:	SB

Description of Work	Unit	Quantity
Remove & Re-erect Overhead Sign Structure-Span	Each	1.00
Structural Steel Sign Support Overhead Sign Structure	Each	2.00
Furnish & Install Saddle Shim Block	Each	4.00
Furnish & Install Internal Truss Damper	Each	1.00
Overhead Sign Structure Walkway(internal)	Foot	77.00

Location No.:	1-06	State I.D. No.:	1S016I094R041.4 (RS-14) C2		
County	Cook	Route:	I-94	M.P.:	41.4

Direction:	SB

Description of Work	Unit	Quantity
Remove Overhead Sign Structure-Span	Each	1.00
Overhead Sign Structure Span Type II-A	Foot	73.00
Rebuild Concrete Foundation for Overhead Sign Structure	Each	2.00
Remove & Reinstall Sign Panel	SQ FT	444.00
Overhead Sign Structure Walkway(internal)	Foot	58.00

Location No.:	1-07	State I.D. No.:	1S016I094R039.7 (ETS-11) E2		
County	Cook	Route:	I-94	M.P.:	39.7

Direction:	SB

Description of Work	Unit	Quantity
Remove Overhead Sign Structure - Span-Type II A	Foot	1.00
Overhead Sign Structure Span Type II-A	Foot	82.00
Remove & Reinstall Sign Panel	SQ FT	552.00
Overhead Sign Structure Walkway (internal)	Foot	59.50

Location No.:	1-08	State I.D. No.:	1S016U045L000.0-002 A2		
County	Cook	Route:	US 45	M.P.:	0.9

Direction:	

Description of Work	Unit	Quantity
Remove & Re-erect Overhead Sign Structure - Span	EACH	1.00
Structural Steel Support Overhead Sign Structure	EACH	2.00
Furnish & Install Saddle Shim Block	EACH	4.00

Location No.:	1-09	State I.D. No.:	1S016S053L000.0-000 (TN-1) R3		
County	Cook	Route:	IL 53	M.P.:	0.0

Direction:	NB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	59.00

Location No.:	1-10	State I.D. No.:	1S016S053L000.0-001 (TN-2) R5		
County	Cook	Route:	IL 53	M.P.:	0.0

Direction:	NB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	55.00

Location No.:	1-11	State I.D. No.:	IS016S053L000.0-002 (TN-3) U1		
County	Cook	Route:	IL 53	M.P.:	0

Direction:	NB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	59.00

Location No.:	1-12	State I.D. No.:	1S016S053L000.0-003 (TN-4) U3		
County	Cook	Route:	IL 53	M.P.:	0

Direction:	NB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	59.00

Location No.:	1-13	State I.D. No.:	1C016S053L000.0-000 (CN-1) V1		
County	Cook	Route:	IL 53	M.P.:	0.0

Direction:	NB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	22.50

Location No.:	1-14	State I.D. No.:	1S016S053L000.0-004 (TN-5) V3		
County	Cook	Route:	IL 53	M.P.:	0.9

Direction:	NB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	59.00

Location No.:	1-15	State I.D. No.:	1C016S053L000.0-001 (CN-2)		
County	Cook	Route:	IL 53	M.P.:	0

Direction:	NB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	20.50

Location No.:	1-16	State I.D. No.:	1S016S053L000.0-005 (TN-6)		
County	Cook	Route:	IL 53	M.P.:	0

Direction:	NB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	59.00

Location No.:	1-17	State I.D.No	1C016S053L000.0-002 (CN-3)		
County	Cook	Route:	IL 53	M.P.:	0

Direction:	NB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	24.00

Location No.:	1-18	State I.D. No.:	1S016S053L000.0-006 (TN-1)		
County	Cook	Route:	IL 53	M.P.:	0

Direction:	NB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	58.00

Location No.:	1-19	State I.D. No.:	1S016S053L000.0-007 (TN-2)		
County	Cook	Route:	IL 53	M.P.:	0.0

Direction:	NB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	57.00

Location No.:	1-20	State I.D. No.:	1S016S053L000.0-009 (TN-4) Z3		
County	Cook	Route:	IL 53	M.P.:	0

Direction:	NB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	54.00

Location No.:	1-21	State I.D. No.:	1C016S053L000.0-003 (CW-1)		
County	Cook	Route:	IL 53	M.P.:	0

Direction:	NB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	23.00

Location No.:	1-22	State I.D. No.:	1C016S053R000.0-000 (CE-1)		
County	Cook	Route:	IL 53	M.P.:	0

Direction:	SB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	23.00

Location No.:	1-23	State I.D. No.:	1C016S053R000.0-001 (CS-2)		
County	Cook	Route:	IL 53	M.P.:	0

Direction:	SB

Description of Work	Unit	Quantity
Furnish & Install Handrail	Foot	24.00

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

SHEET NO. -- OF --- SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	01 OVD SIN STR REPL11-30	Various	3	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

District 1
Schedule of Overhead Sign Structure Repair & Replacement

Location No.:	1-24	State I.D. No.:	1C016S053R000.0-002 (CS-3)				
County	Cook	Route:	IL 53	M.P.:	0	Direction:	SB
Description of Work						Unit	Quantity
Furnish & Install Handrail						Foot	22.50

Location No.:	1-25	State I.D. No.:	1S016S053R000.0-002 (TS-1)				
County	Cook	Route:	IL 53	M.P.:	0.0	Direction:	
Description of Work						Unit	Quantity
Furnish & Install Handrail						Foot	61.00

Location No.:	1-26	State I.D. No.:	1S016S053R000.0-003 (TS-2) V2				
County	Cook	Route:	IL 53	M.P.:	0.0	Direction:	
Description of Work						Unit	Quantity
Furnish & Install Handrail						Foot	59.00

Location No.:	1-27	State I.D. No.:	1S016S053R000.0-004 (TS-3) V4				
County	Cook	Route:	IL 53	M.P.:	0	Direction:	
Description of Work						Unit	Quantity
Furnish & Install Handrail						Foot	43.00

Location No.:	1-28	State I.D. No.:	1S016S053R000.0-005 (TS-4) U2				
County	Cook	Route:	IL 53	M.P.:	0	Direction:	
Description of Work						Unit	Quantity
Furnish & Install Handrail						Foot	59.00

Location No.:	1-29	State I.D. No.:	1C016S053R000.0-007 (CS-3) U6				
County	Cook	Route:	IL 53	M.P.:	0	Direction:	
Description of Work						Unit	Quantity
Furnish & Install Handrail						Foot	22.50

Location No.:	1-30	State I.D. No.:	1S016S053R000.0-006 (TS-5) U8				
County	Cook	Route:	IL 53	M.P.:		Direction:	SB
Description of Work						Unit	Quantity
Furnish & Install Handrail						Foot	55.00

Location No.:	1-31	State I.D. No.:	1C016S053R000.0-003 (CS-4) R2				
County	Cook	Route:	IL	M.P.:	0	Direction:	SB
Description of Work						Unit	Quantity
Furnish & Install Handrail						Foot	22.50

Location No.:	1-32	State I.D. No.:	1S016I290R000.0-002 (TS-6)				
County	Cook	Route:	I 29	M.P.:	0.0	Direction:	SB
Description of Work						Unit	Quantity
Furnish & Install Handrail						Foot	67.00

Location No.:	1-33	State I.D. No.:	1S016S053R000.0-007 (TS-7) R6				
County	Cook	Route:	I 53	M.P.:	0	Direction:	SB
Description of Work						Unit	Quantity
Furnish & Install Handrail						Foot	35.50

Location No.:	1-34	State I.D. No.:	1S016S053R000.0-008 (TS-8) R8				
County	Cook	Route:	IL 53	M.P.:	0	Direction:	SB
Description of Work						Unit	Quantity
Furnish & Install Handrail						Foot	47.00

Location No.:	1-35	State I.D. No.:	1S01600000000.0				
County	Cook	Route:		M.P.:		Direction:	
Description of Work						Unit	Quantity
Furnish & Install Handrail						Foot	100.00

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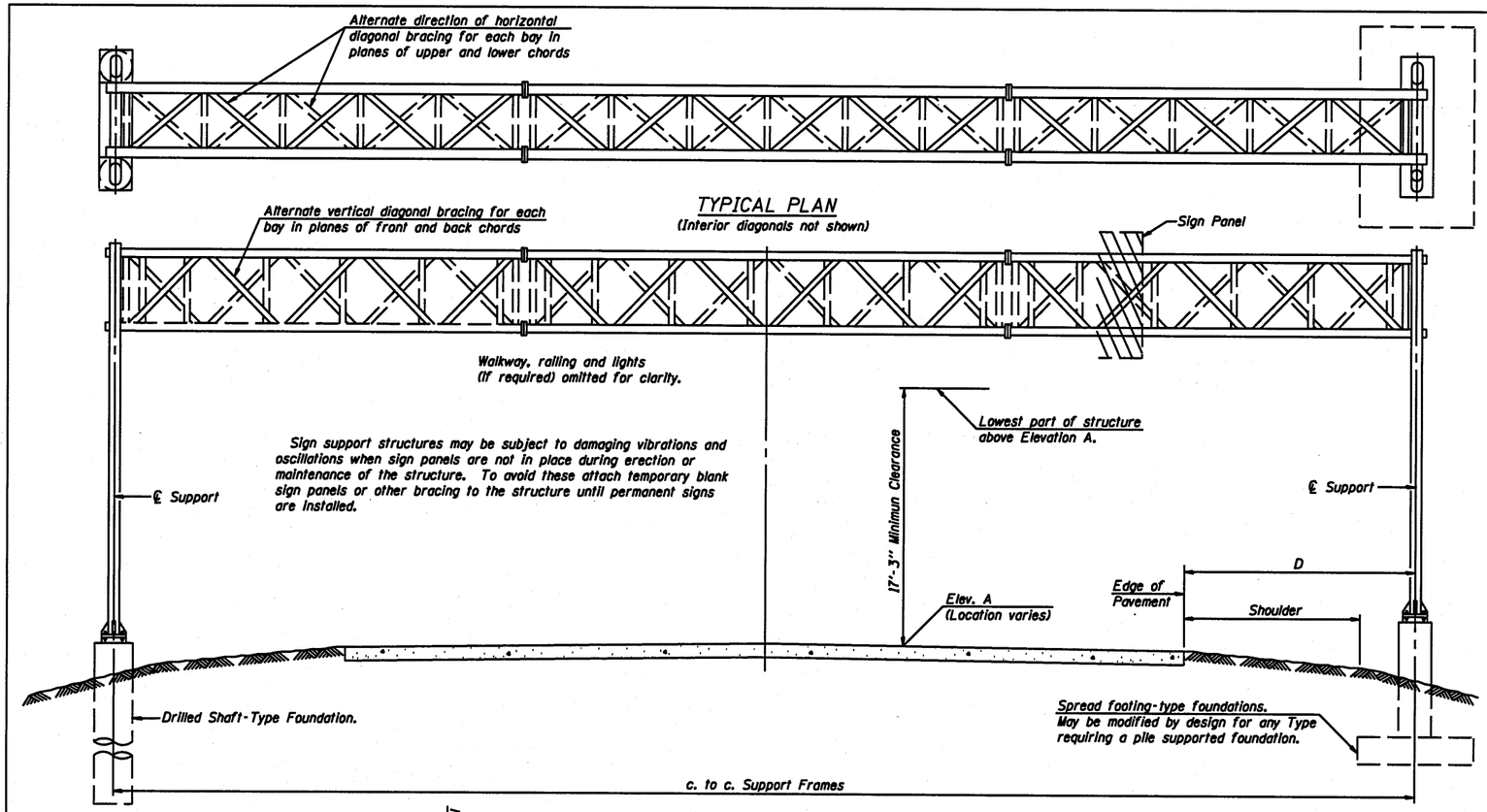

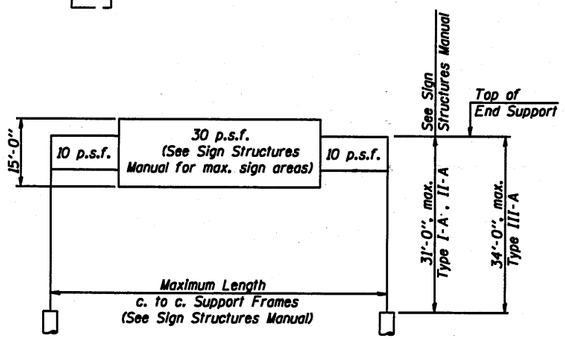

DESIGN WIND LOADING DIAGRAM

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.

TYPICAL ELEVATION

(Looking at Face of Signs**)

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

Structure Number	Station	Design Truss Type	c. to c. Supports	Elev. A	Dim. D	Height of Tallest Sign	Total Sign Area
IS049U041L000.0	26 + 00	II-A	61'-0"	110.19	13'-0"	7'-6"	331.25
IS0161094R039.7-000	90 + 87	II-A	82'-0"	611.35	24'-6"	12'-0"	552.00
IS0161094R041.4-000	3 + 10	II-A	73'-0"	605.89	16'-0"	12'-0"	444.00

**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.

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.
fy = 60,000 p.s.i. (reinforcement)

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

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

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (2)d of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing of bolts will not be required.

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

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

ANCHOR RODS: Shall conform to AASHTO M314 Gr. 36, 55 or 105 with a minimum Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F.

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

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

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

TOTAL BILL OF MATERIAL

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

OS-A-1 7-1-10

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

SHEET NO. __ OF ___ SHEETS

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Var	01 OVD SIN STR REPL11-30	Various	5	26
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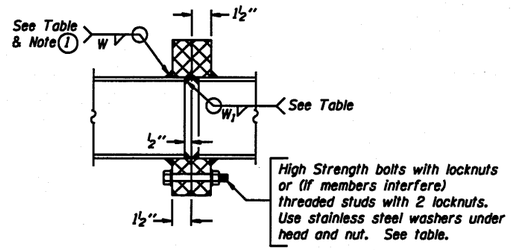
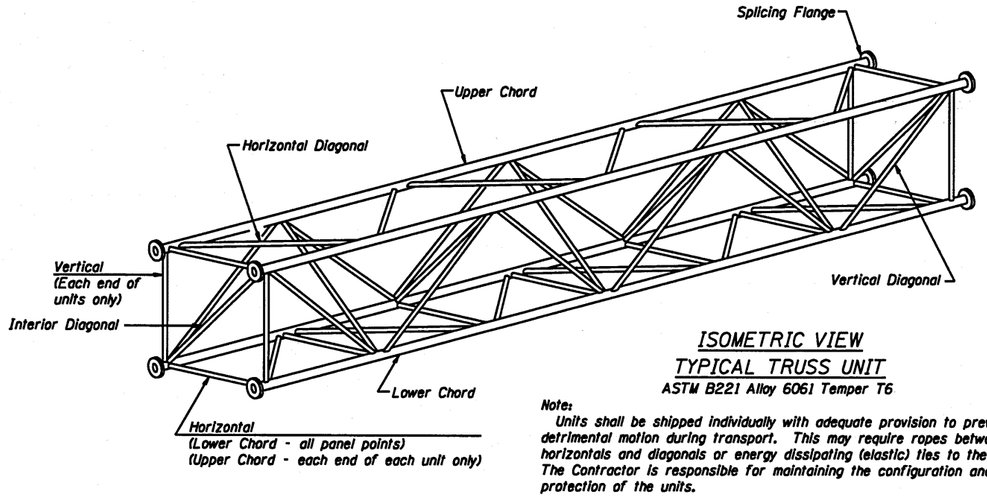
TRUSS UNIT TABLE

Structure Number	Station	Design Truss Type	Exterior Units (2)			Interior Unit				Upper & Lower Chord		Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals		Camber at Midspan	Splicing Flange					
			No. Panels per Unit	Unit Lgth.(L_e)	Panel Lgth.(P)	No. Req'd.	No. Panels per Unit	Unit Lgth.(L_i)	Panel Lgth.(P)	O.D.	Wall	O.D.	Wall		Bolts		Weld Sizes		A	B
															No./Splice	Dia.	W	W_1		
IS049U041L000.0	26 + 00	II-A	6	31'-4 1/2"	4'-11"					5 1/2"	5/16"	3"	5/16"	1 1/4"	6	7/8"	3/8"	1/4"	9 1/4"	12 1/4"
IS016I094R039.7-000	90 + 87	II-A	5	26'-5 1/2"	4'-11"	1	6	30'-9"	4'-11"	5 1/2"	5/16"	3"	5/16"		6	7/8"				
IS016I094R041.4-000	3 + 10	II-A	7	37'-3 3/4"	5'-0 3/4"					5 1/2"	5/16"	3"	5/16"		6	7/8"				



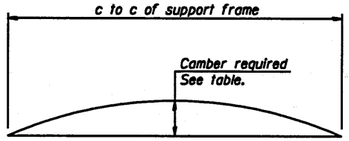
SECTION B-B

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



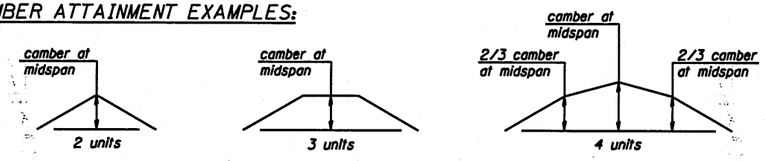
ISOMETRIC VIEW
TYPICAL TRUSS UNIT
ASTM B221 Alloy 6061 Temper T6

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

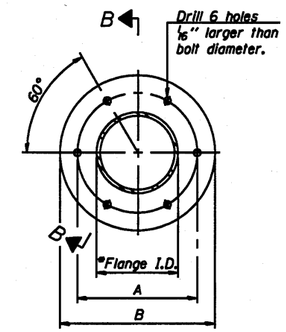


CAMBER DIAGRAM
Camber curve shown is theoretical. Actual camber attained by slope changes at splices between units.

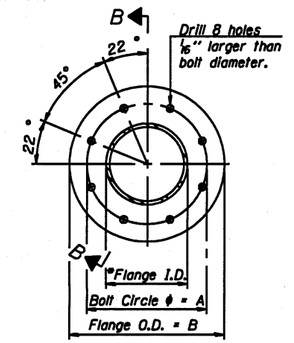
CAMBER ATTAINMENT EXAMPLES:



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



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



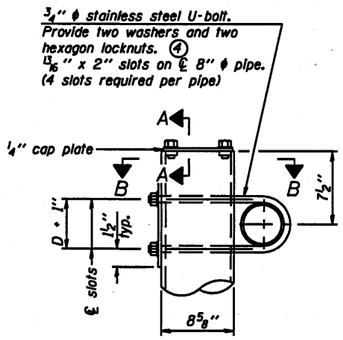
TRUSS TYPES II-A & III-A

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

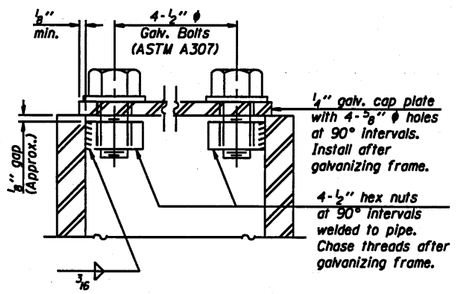
OS4-A-2 7-1-10

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
		CHECKED - ---	REVISED - ---		SHEET NO. __ OF ___ SHEETS
	PLOT SCALE =	DRAWN - ---	REVISED - ---		
	PLOT DATE =	CHECKED - ---	REVISED - ---		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	01 OVD SIN STR REPL11-30	Various	6	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			

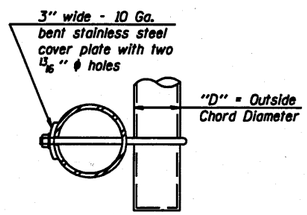


DETAIL A

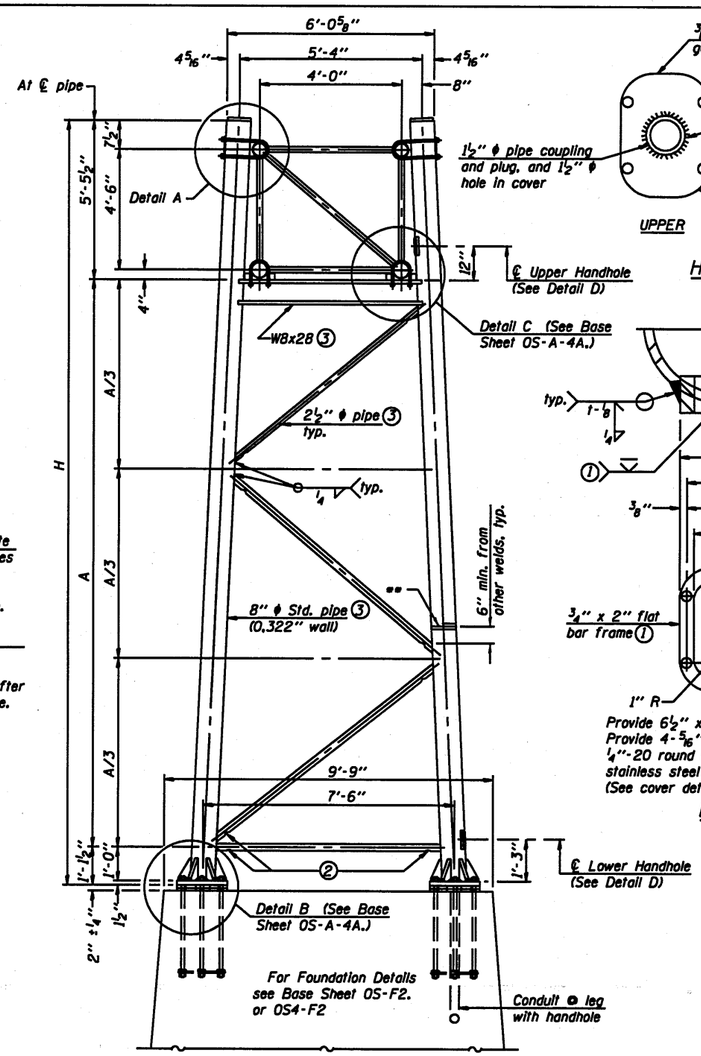


SECTION A-A

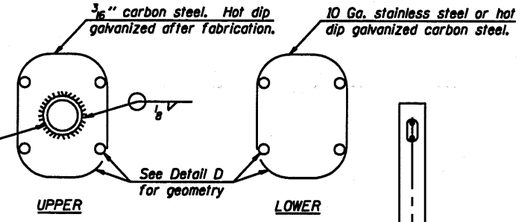
As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.



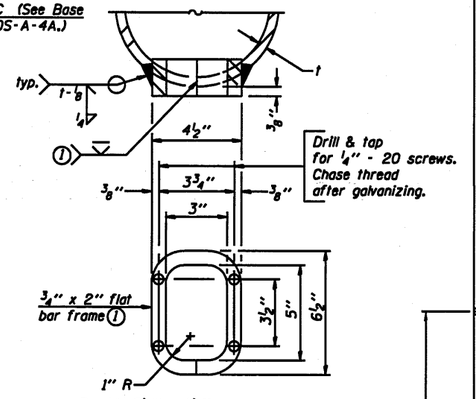
SECTION B-B



SIDE ELEVATION

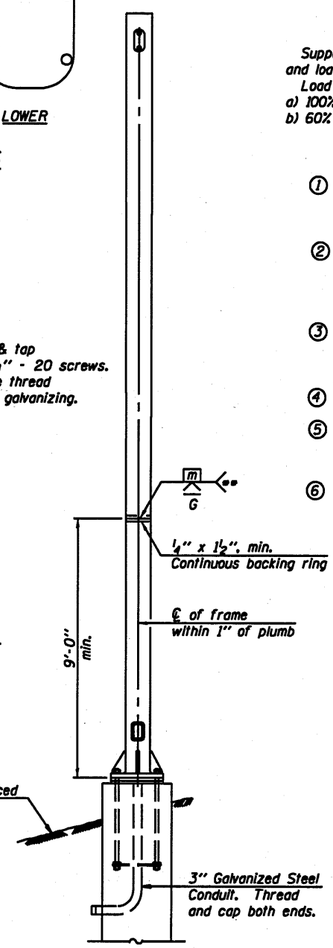


HANDHOLE COVERS



Provide 6 1/2" x 4 1/2" cover.
Provide 4-5/16" ϕ holes in cover for 1/4"-20 round head hot dip galvanized or stainless steel machine screws.
(See cover details)

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 μin 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.

8" 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.

Structure Number	Station	Support Left	Support Right	H (6)	A
IS0161094R039.7-000	90 + 87	X		26'-10 7/16"	19'-5 3/4"
IS0161094R041.4-000	3 + 10	X		21'-1 13/16"	19'-9 1/16"
IS0161l094R040.8000	31 + 75	X		26'-8"	20'-2"

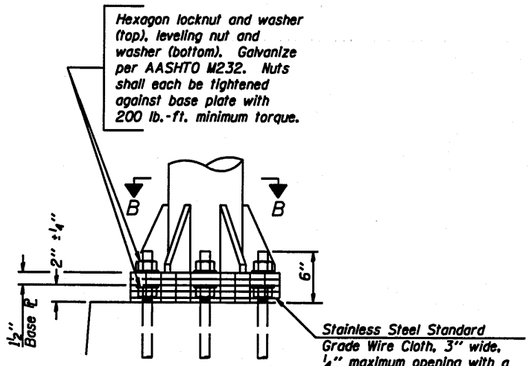
OS-A-4 7-1-10

FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---
		CHECKED - ---	REVISED - ---
	PLOT SCALE =	DRAWN - ---	REVISED - ---
	PLOT DATE =	CHECKED - ---	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

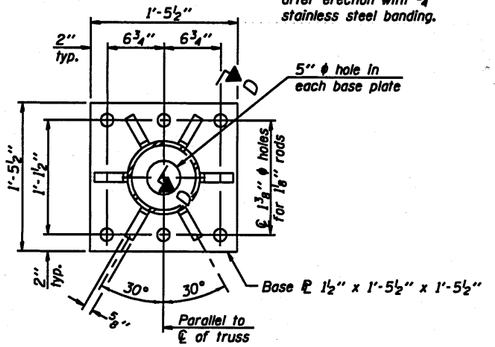
OVERHEAD SIGN STRUCTURES
SUPPORT FRAME FOR TYPE I-A ALUMINUM TRUSS
SHEET NO. -- OF --- SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	D1 OVD SIN STR REPL(1)-30	Various	7	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			

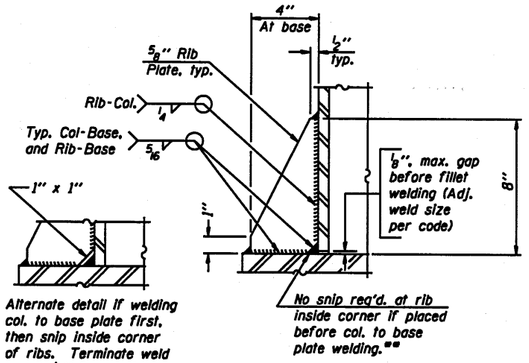


DETAIL B

Ribs shall be cut to fit slope of pipe.

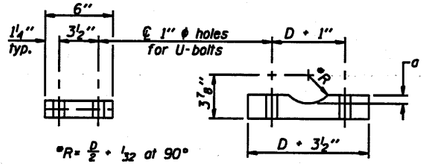


SECTION B-B



** 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

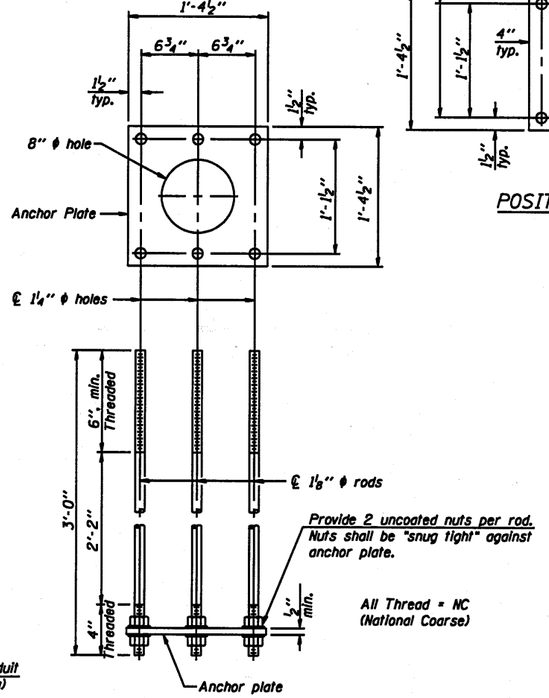


*R = D/2 + 1/32 at 90°
D = Outside Diameter of Chord.

SADDLE SHIM DETAIL

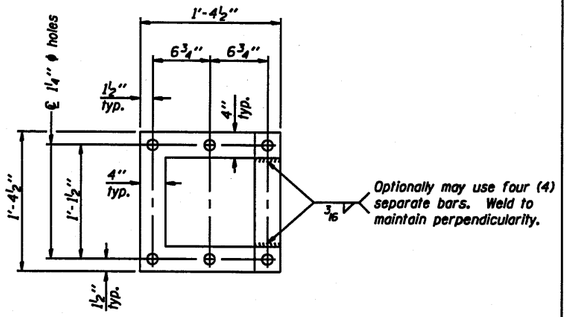
ASTM B26 Alloy 356-F
or
ASTM B209 Alloy 6061-T651
(4 required per sign truss)

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

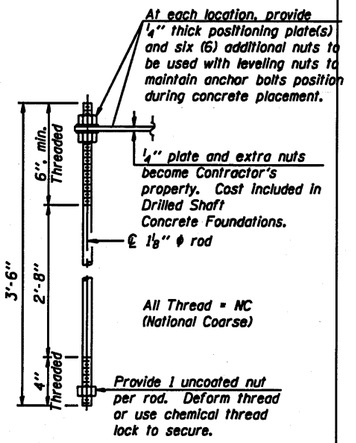


ANCHOR ROD DETAIL

Spread Footing Foundation



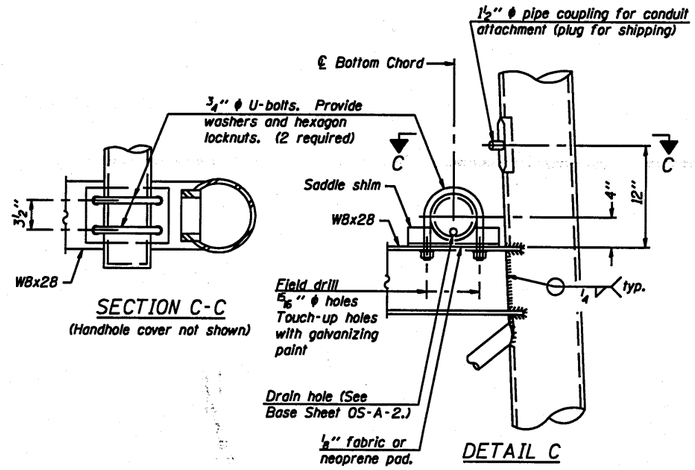
POSITIONING PLATE(S)



ANCHOR ROD DETAIL

Drilled Shaft Foundation

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



SECTION C-C

(Handhole cover not shown)

DETAIL C

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

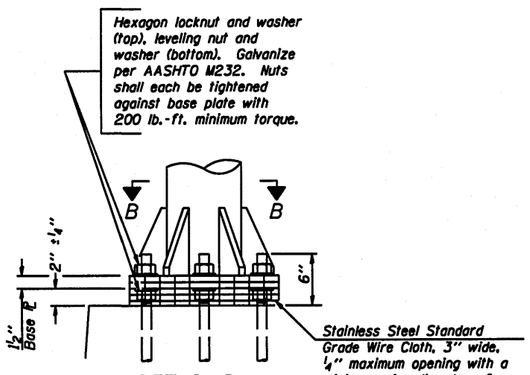
OS-A-4A 7-1-10

FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---
		CHECKED - ---	REVISED - ---
	PLOT SCALE =	DRAWN - ---	REVISED - ---
	PLOT DATE =	CHECKED - ---	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

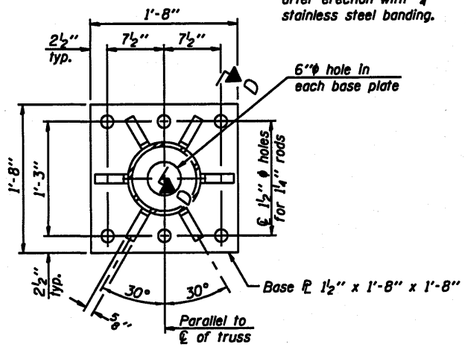
OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS – ALUMINUM TRUSS
SHEET NO. -- OF --- SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	01 OVD SIN STR REPL11-30	Various	8	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			

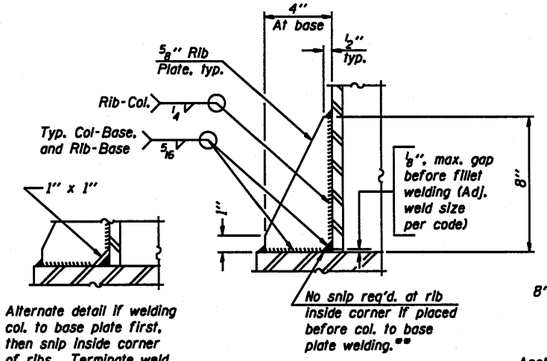


DETAIL B

Ribs shall be cut to fit slope of pipe.

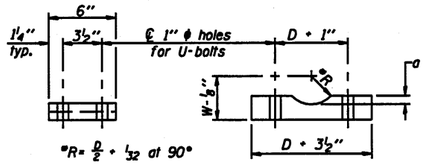


SECTION B-B



** 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



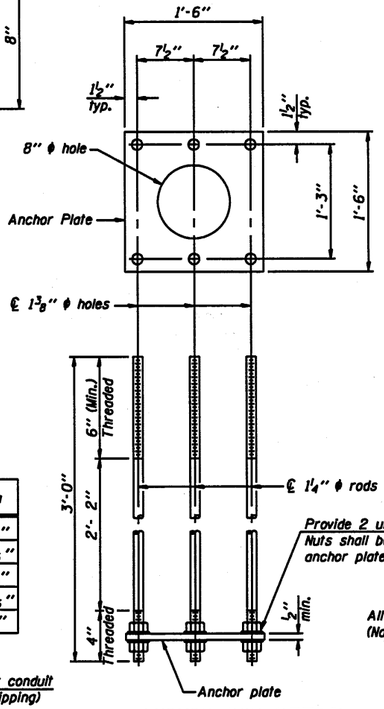
*R = D/2 + 1/32 at 90°

D = Outside Diameter of Chord.
For W. see Base Sheet OS-A-6.

SADDLE SHIM DETAIL

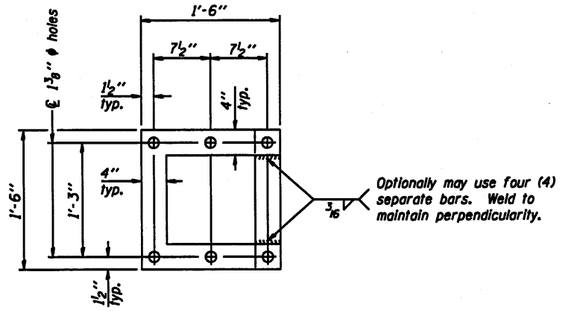
ASTM B26 Alloy 356-F
or
ASTM B209 Alloy 6061-T651
(4 required per sign truss)

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

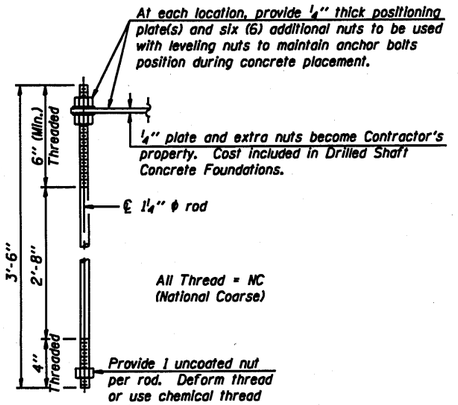


ANCHOR ROD DETAIL
Spread Footing Foundation

All Thread = NC
(National Coarse)

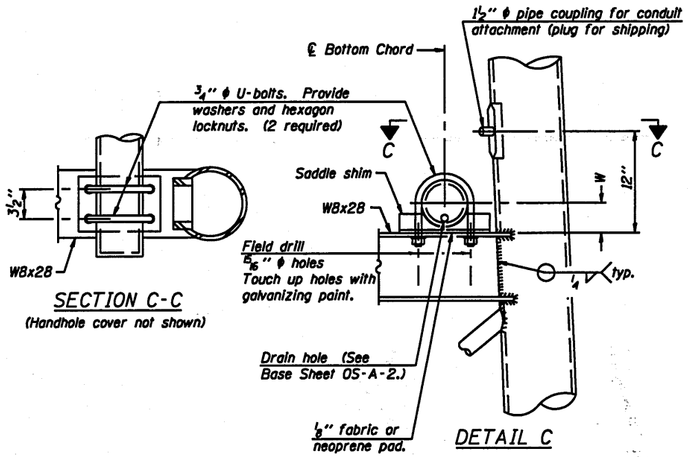


POSITIONING PLATE(S)



ANCHOR ROD DETAIL
Drilled Shaft Foundation

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.



SECTION C-C
(Handhole cover not shown)

DETAIL C

10" ϕ PIPE SUPPORT FRAME DETAILS

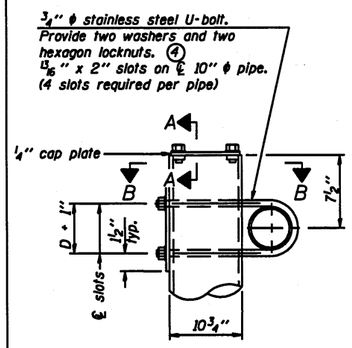
OS-A-6A 7-1-10

FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---
		CHECKED - ---	REVISED - ---
	PLOT SCALE =	DRAWN - ---	REVISED - ---
	PLOT DATE =	CHECKED - ---	REVISED - ---

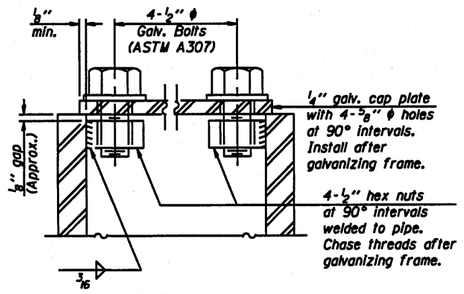
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS – ALUMINUM TRUSS
SHEET NO. __ OF ___ SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	D1 OVD SIN STR REPL11-30	Various	9	26
		CONTRACT NO. 46153		
		ILLINOIS FED. AID PROJECT		

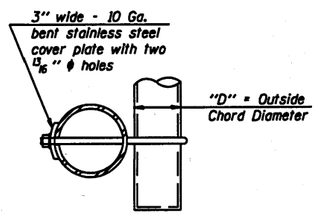


DETAIL A

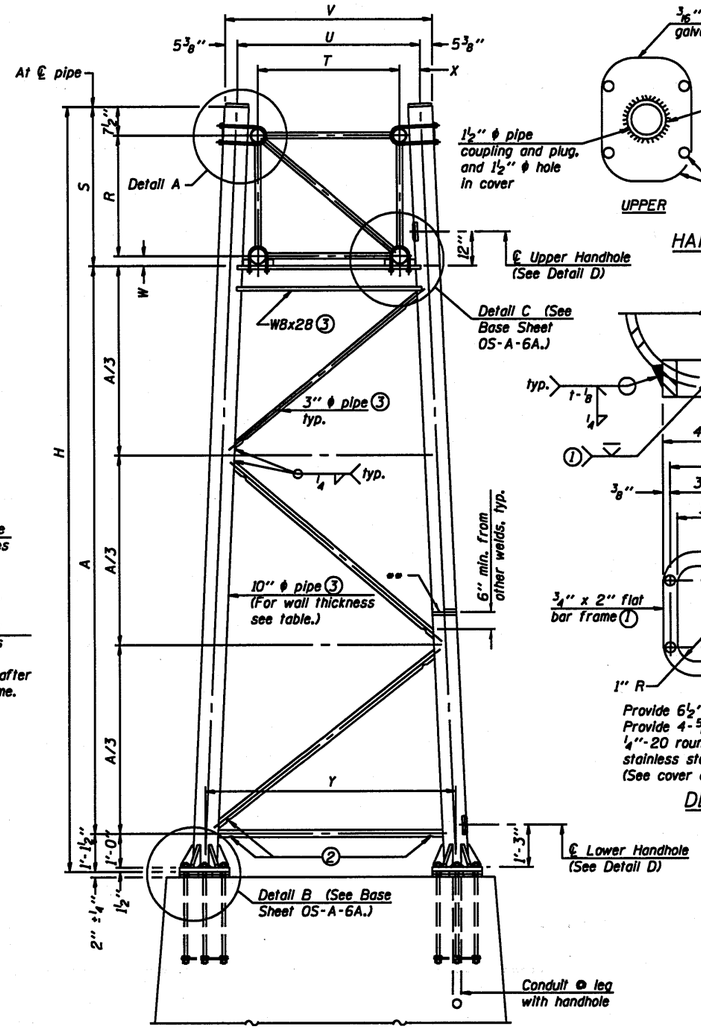


SECTION A-A

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

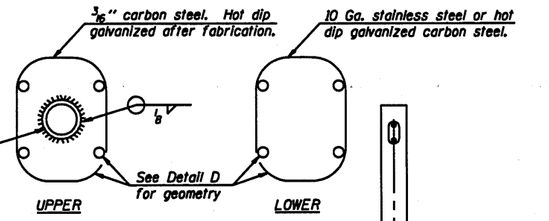


SECTION B-B

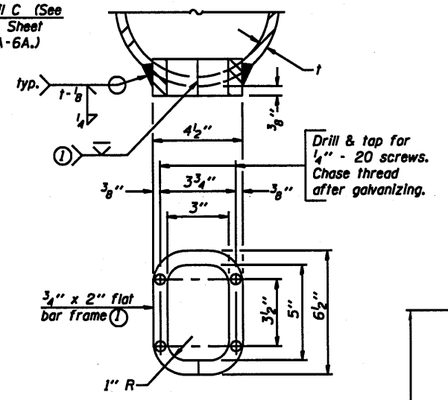


SIDE ELEVATION

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

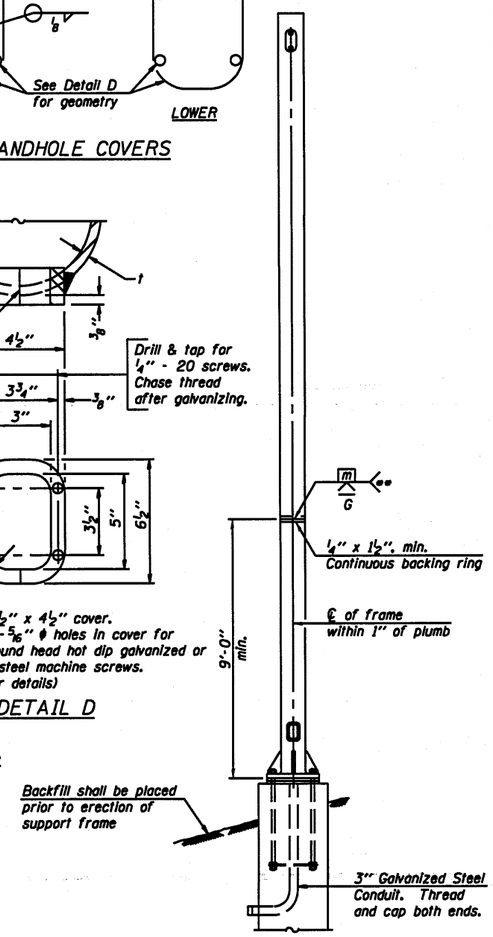


HANDHOLE COVERS



Provide 6½" x 4½" cover.
Provide 4-5/16" ϕ holes in cover for ¼"-20 round head hot dip galvanized or stainless steel machine screws.
(See cover details)

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 μin 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.

Truss Type	Dimensions							
	R	S	T	U	V	W	X	Y
I-A	4'-6"	5'-5½"	4'-0"	5'-6"	6'-4 3/4"	4"	9"	8'-3"
II-A (5)	5'-3"	6'-3¼"	4'-6"	6'-1"	6'-11 3/4"	4 3/4"	9½"	8'-3"

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.

Structure Number	Station	Support Left	Support Right	Truss Type	Pipe Wall Thickness	H (6)	A
IS049U041L000.0	26 + 00			II-A	0.365"(Std)	28'-0"	20.825'
IS0161094R039.7-000	90 + 87		X	II-A	0.365"(Std)	27'-5 3/8"	26'-10 1/16"
IS0161094R041.4-000	3 + 10		X	II-A	0.365"(Std)	27'-1 13/16"	15'-9 1/16"
IS0161104R040.8000	31 + 75		X	I-A	0.279"	30'-10 1/16"	24'-4 1/16"
IS0161094R000.0	23 + 50	X	X	II-A	0.322"	26'-7"	15'-3 1/4"
IS0161094R028.8-0000	661 + 55		X	II-A	0.365"(Std)	30'-1 1/2"	22'-9 3/4"
		X		II-A	0.322"	26'-9 3/16"	15'-5 5/16"

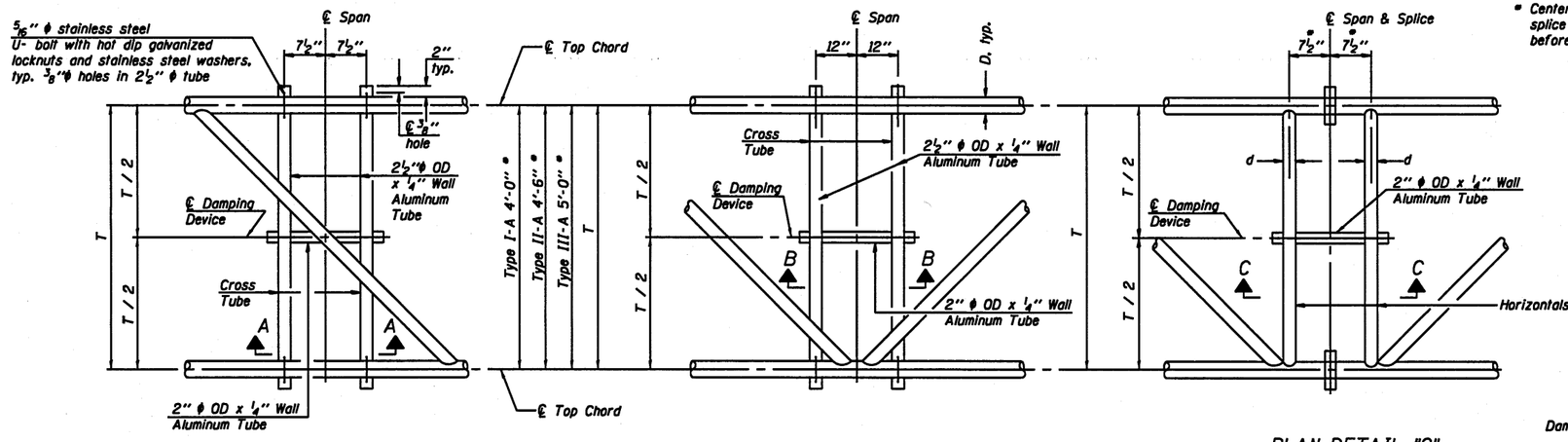
OS-A-6 7-1-10

FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---
		CHECKED - ---	REVISED - ---
	PLOT SCALE =	DRAWN - ---	REVISED - ---
	PLOT DATE =	CHECKED - ---	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME FOR ALUMINUM TRUSS
SHEET NO. -- OF --- SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	01 OVD SIN STR REPL11-30	Various	10	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			



PLAN DETAIL "A"
℄ Span between Panel Points

PLAN DETAIL "B"
℄ Span at Panel Point

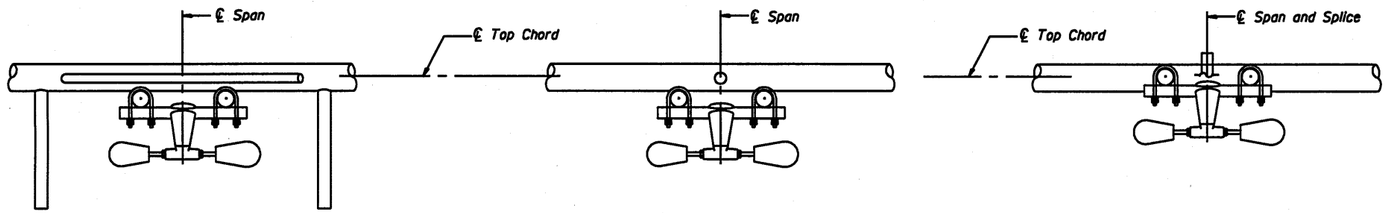
PLAN DETAIL "C"
℄ Span at ℄ Chord Splice

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

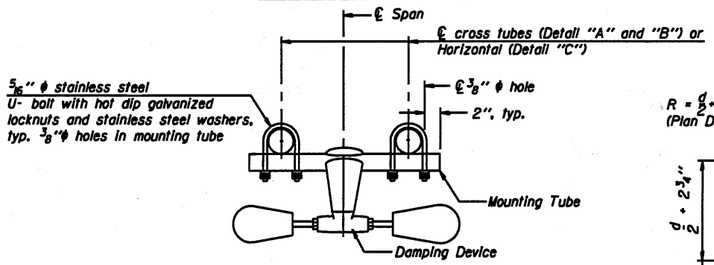
NOTES

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

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

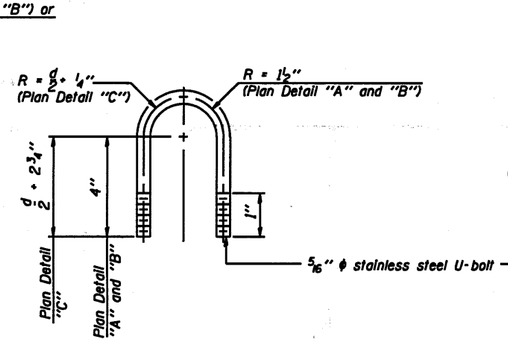


SECTION A-A



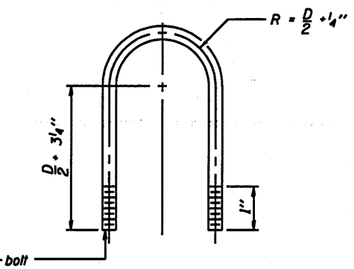
TRUSS DAMPING DEVICE CONNECTION DETAIL
(Typical)

SECTION B-B

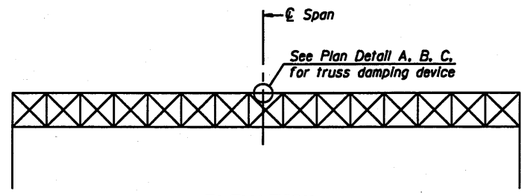


DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL
(Typical)

SECTION C-C



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



ELEVATION
Aluminum Overhead Sign Truss

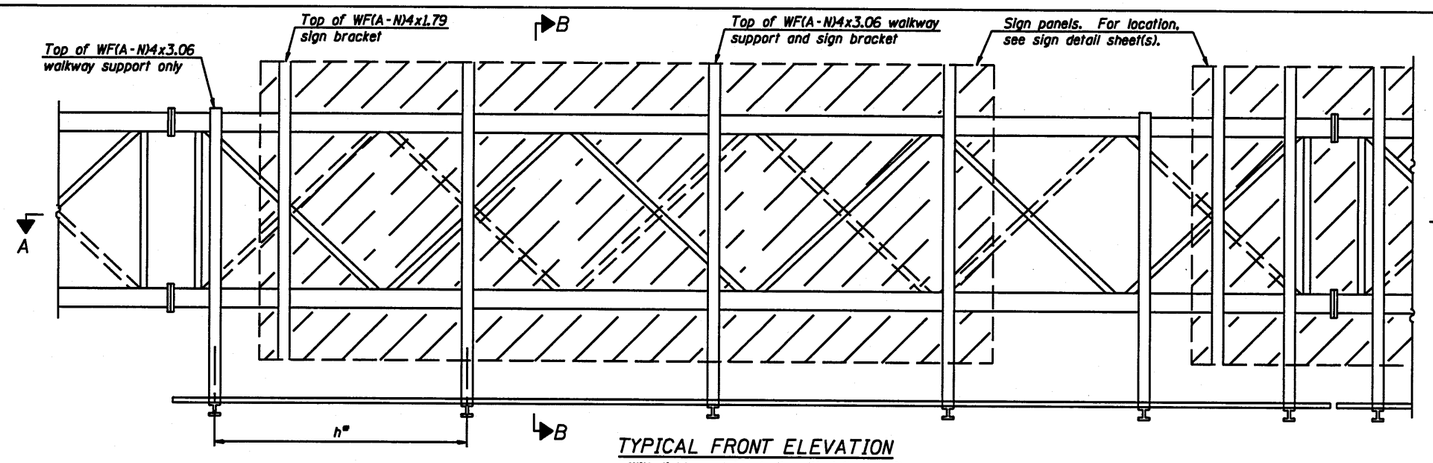
OS-A-D 7-1-10

FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---
		CHECKED - ---	REVISED - ---
	PLOT SCALE =	DRAWN - ---	REVISED - ---
	PLOT DATE =	CHECKED - ---	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

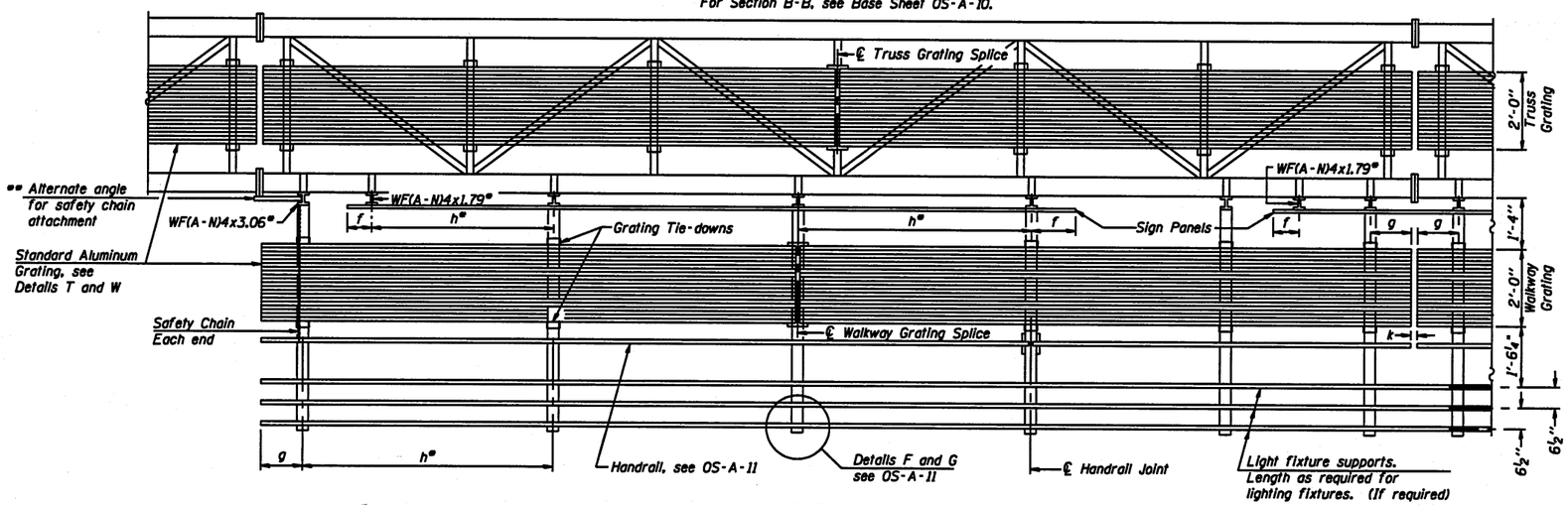
OVERHEAD SIGN STRUCTURE
DAMPING DEVICE
SHEET NO. -- OF --- SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	D1 OVD SIN STR REPL11-30	Various	11	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			



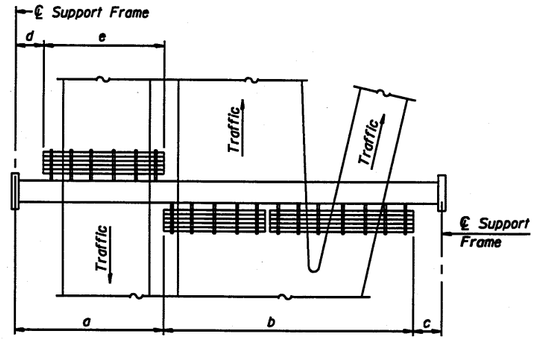
TYPICAL FRONT ELEVATION

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.



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

Structure Number	Station	a	b	c	d	e	Walkway Grating and Handrail Lengths
IS049U041L000.0	26 + 00	18'-0"	35'-6"	7'-6"			
IS016I094R039.7-000	90 + 87						
IS016I094R041.4-000	3 + 10						

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.

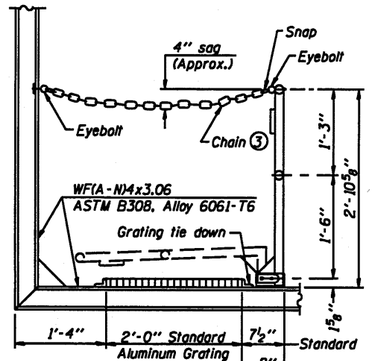
OS-A-9 7-1-10

FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---
		CHECKED - ---	REVISED - ---
	PLOT SCALE =	DRAWN - ---	REVISED - ---
	PLOT DATE =	CHECKED - ---	REVISED - ---

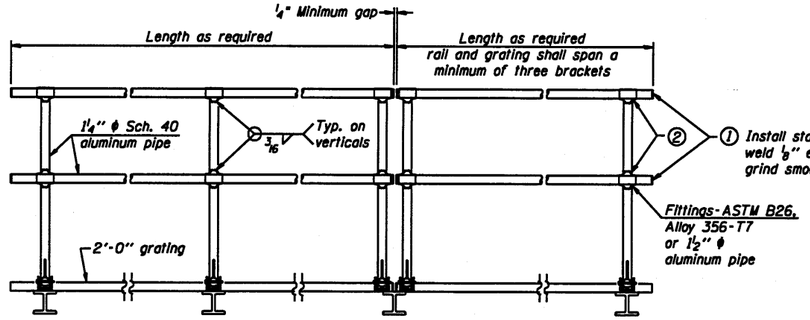
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS
SHEET NO. __ OF ___ SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	01 OVD SIN STR REPL11-30	Various	12	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			



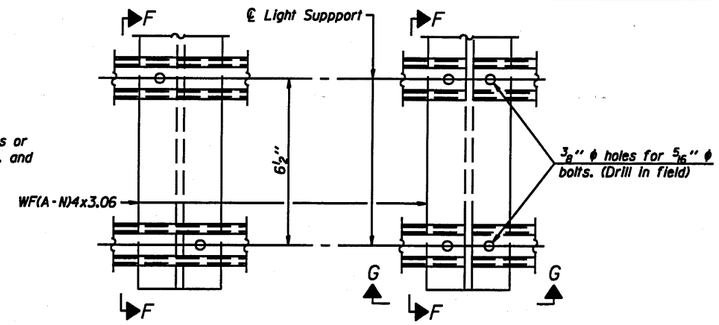
SIDE ELEVATION
(Showing safety chain w/o sign)



FRONT ELEVATION

① Install standard force-fit end caps or weld ⅛" end plates with ⅛" c.f.w. and grind smooth. (All rail ends)

② Horizontal handrail member shall be continuous thru fitting. Provide 7/16" ϕ hole in fitting for ⅜" ϕ bolt. Field drill 7/16" ϕ hole in horizontal rail member. Provide locknut and two stainless steel washers for bolt. (Use 5/16" eyebolts in 7/16"ϕ holes on top rail at ends only.)

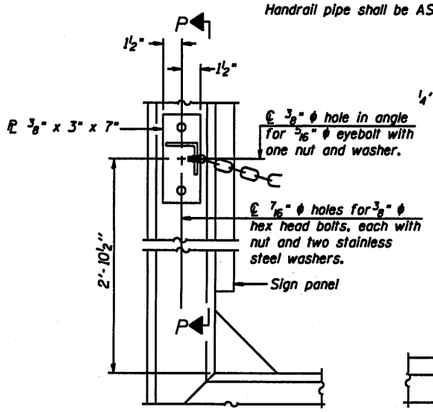


DETAIL F

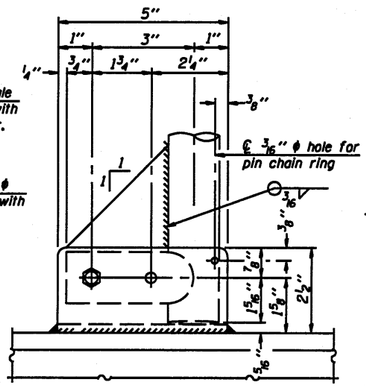
DETAIL G

HANDRAIL DETAILS

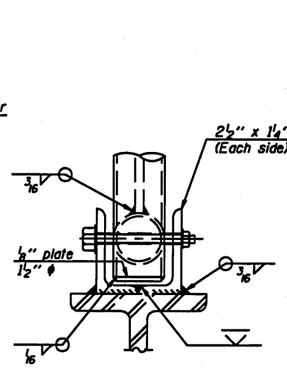
Handrail pipe shall be ASTM B241 or B429, Alloy 6063-T6 or Alloy 6061-T6.



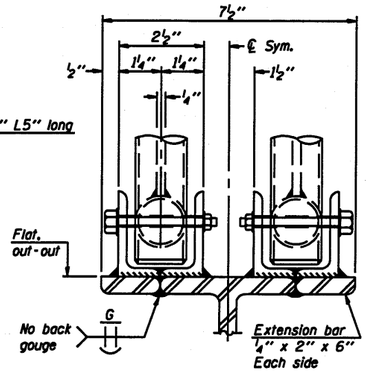
ALTERNATE SAFETY CHAIN ATTACHMENT
(With Sign Present)
Items not shown same as "Side Elevation" of "Handrail Details"



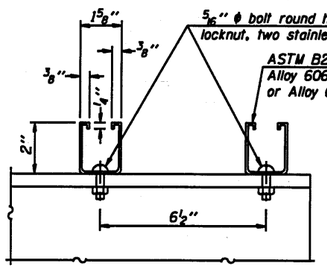
SIDE ELEVATION



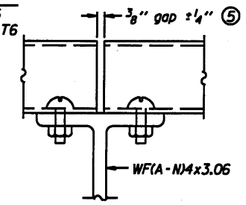
FRONT ELEVATION
See "Elevation" at right for dimensions.



ELEVATION AT HANDRAIL JOINT ④



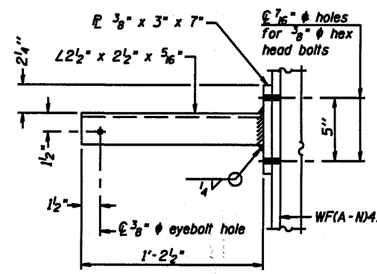
SECTION F-F



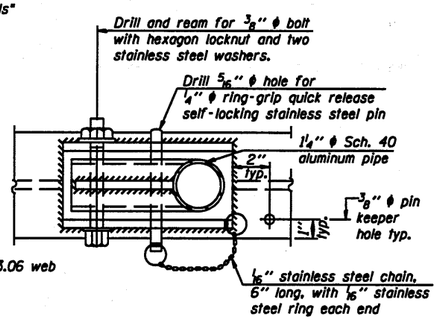
SECTION G-G

LIGHTING FIXTURE MOUNTS (IF REQUIRED)

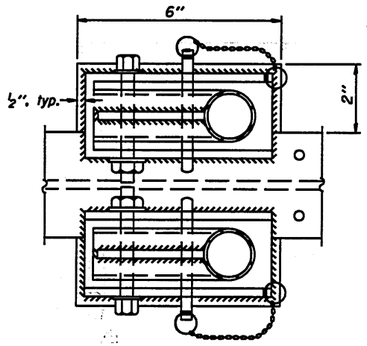
⑤ Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.



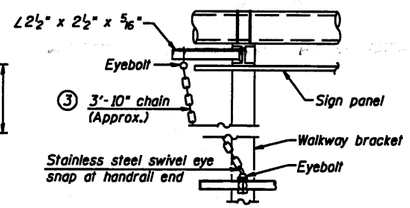
SECTION P-P



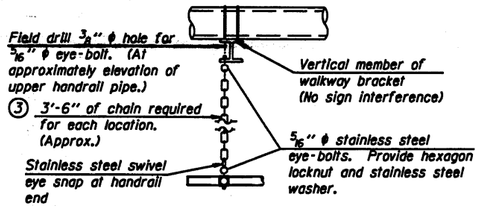
PLAN
DETAIL E HANDRAIL HINGE



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)



SAFETY CHAIN
One required for each end of each walkway.

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.

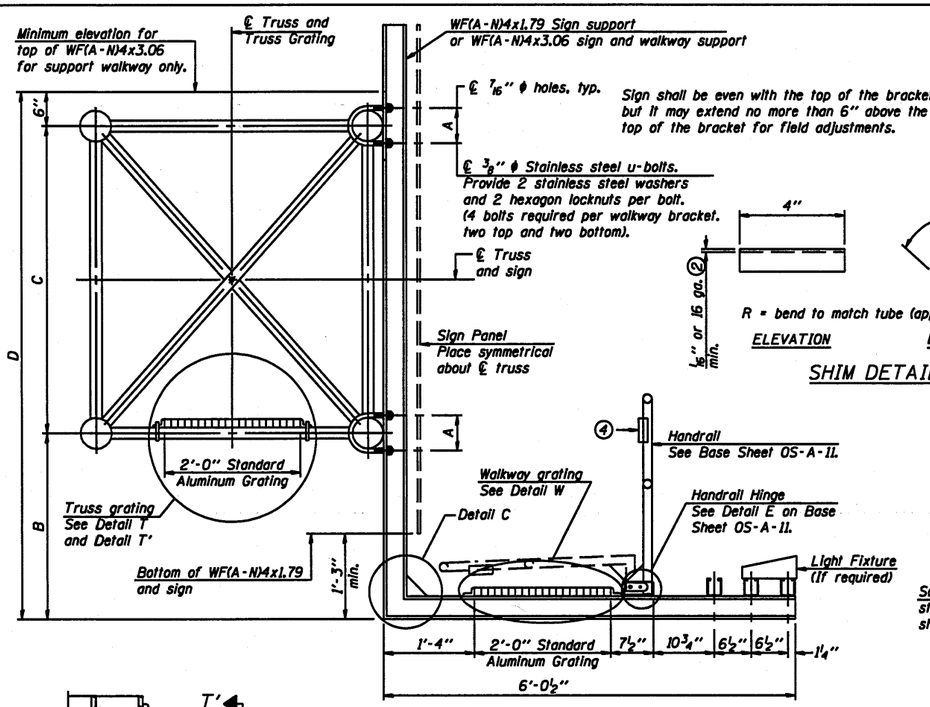
OS-A-11 7-1-10

FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---
		CHECKED - ---	REVISED - ---
	PLOT SCALE =	DRAWN - ---	REVISED - ---
	PLOT DATE =	CHECKED - ---	REVISED - ---

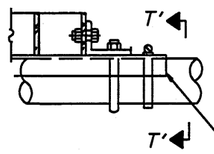
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
ALUMINUM HANDRAIL DETAILS
SHEET NO. -- OF --- SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	01 OVD SIN STR REPL11-30	Various	13	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			



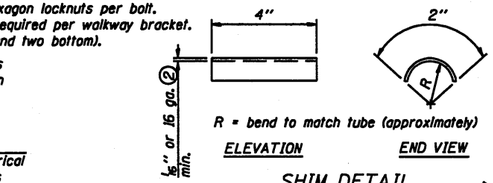
SECTION B-B



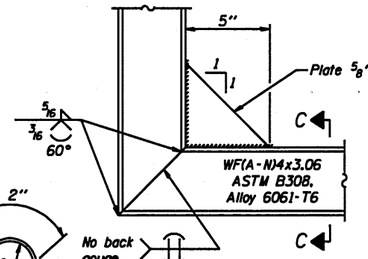
DETAIL T'

(Truss grating splice)

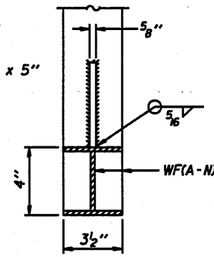
Details not shown same as Detail T. Alternate materials may be used subject to the Engineer's review and approval.



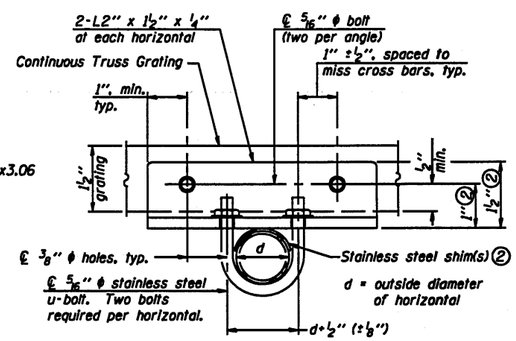
SHIM DETAIL



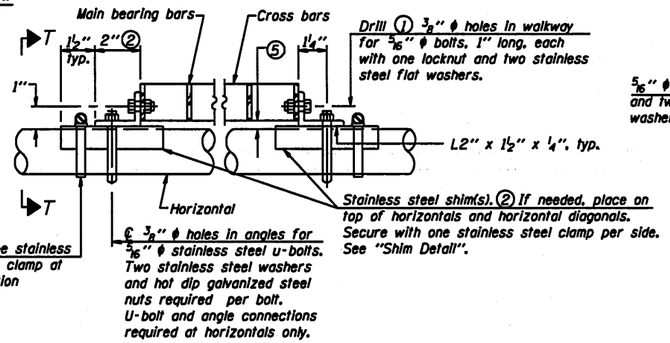
DETAIL C



SECTION C-C

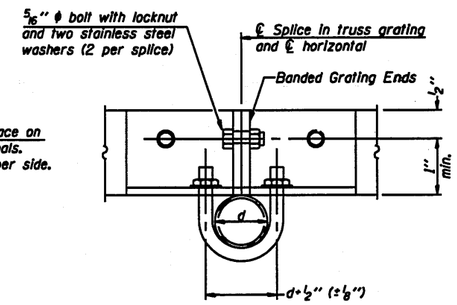


SECTION T-T

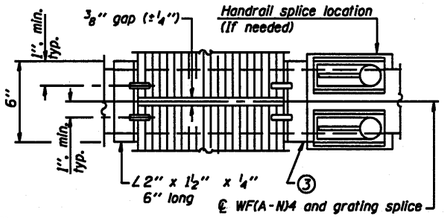


DETAIL T

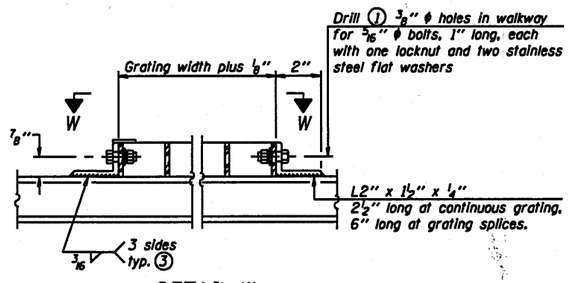
(Continuous Truss grating)



SECTION T'-T'

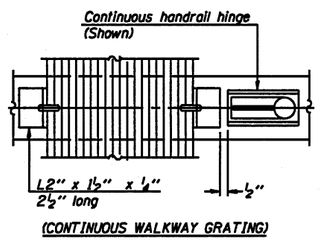


(AT WALKWAY GRATING SPLICE)



DETAIL W

(Walkway grating)



(CONTINUOUS WALKWAY GRATING)

SECTION W-W

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

Main Bearing Bars shall be 3/16" x 1½" on 1 3/16" centers and conform to ASTM B221 Alloy 6061-T6.

Cross bars shall be 3/16" x 1½" 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 1½", 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	⑥ B	C	⑥ D
IS049U041L000.0	26 + 00	6"	2'-4 1/2"	5' - 3"	9'-3"
IS0161094R039.7-000	90 + 87	6"	10'-4 1/2"	5' - 3"	10'-4 1/2"
IS0161094R041.4-000	3 + 10	6"	4'-7 1/2"	5' - 3"	10'-4 1/2"

(1) Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.

(2) 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.

(3) If Handrail Joint present, weld angle to WF(A-N)4 and ¼" extension bars. (See Base Sheet OS-A-11.)

(4) ℄ ⅛" x ½" x 2" welded to handrail posts to protect locations that contact grating.

(5) Tube to grating gap may vary from 0 to ½", max. to align walkway, allow for camber, etc.

(6) Based on actual height of tallest sign given on OS-A-1.

OS-A-10 7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

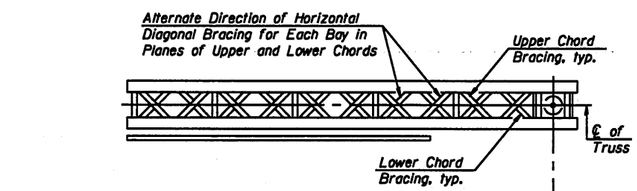
OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS

SHEET NO. __ OF ___ SHEETS

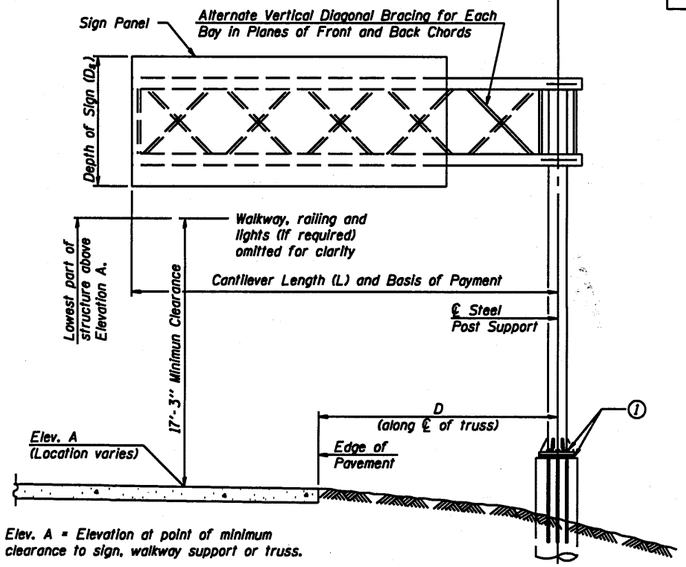
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	DI OVD SIN STR REPL(1)-30	Various	14	26

CONTRACT NO. 46153

ILLINOIS FED. AID PROJECT



TYPICAL PLAN
(Walkway not shown)



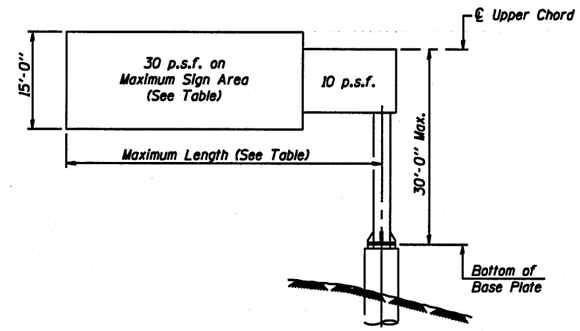
Elev. A = Elevation at point of minimum clearance to sign, walkway support or truss.

TYPICAL ELEVATION
Looking in Direction of Traffic

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

Structure Number	Station	Design Truss Type	Cantilever Length (L)	Elev. A	Dim. D	D_s	Total Sign Area
IC016I094R034.0-000		III-C-A	35'	630.1	23'-0"	11'-6"	196 Sq. Ft.

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



DESIGN WIND LOADING DIAGRAM

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

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

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

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

GENERAL NOTES

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

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

LOADING: 90 M.P.H. WIND VELOCITY

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

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

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

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

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (2)d of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing of bolts will not be required.

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

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

ANCHOR RODS: Shall conform to AASHTO M314 Gr. 105 with a minimum Charpy V-Notch (CVN) energy of 15 lb.-ft. at 10° F.

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

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

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

TOTAL BILL OF MATERIAL

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

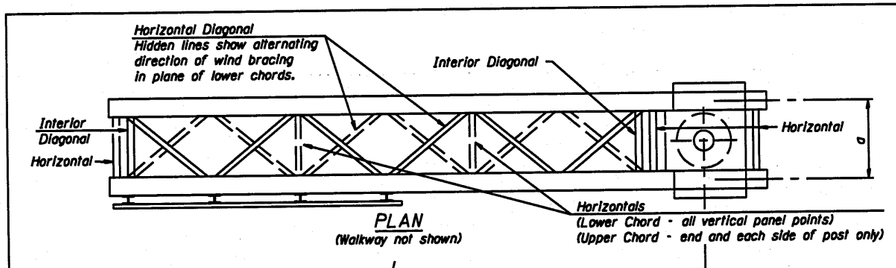
OSC-A-1 7-1-10

FILE NAME =	USER NAME =	DESIGNED - ___	REVISED - ___
		CHECKED - ___	REVISED - ___
	PLOT SCALE =	DRAWN - ___	REVISED - ___
	PLOT DATE =	CHECKED - ___	REVISED - ___

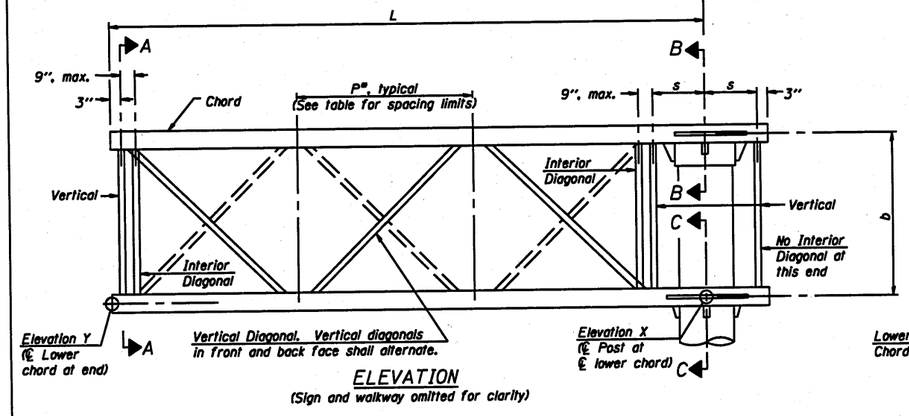
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES -- GENERAL PLAN & ELEVATION
ALUMINUM TRUSS & STEEL POST
SHEET NO. __ OF ___ SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	D1 OVD SIN STR REPL11-30	Various	15	26
		CONTRACT NO. 46153		
		ILLINOIS FED. AID PROJECT		



PLAN
(Walkway not shown)

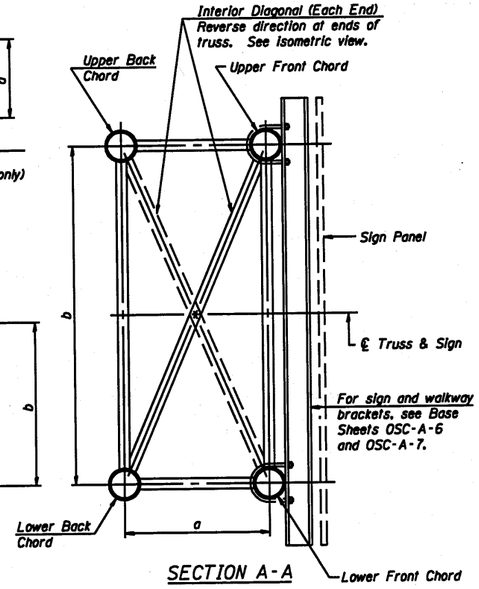


ELEVATION
(Sign and walkway omitted for clarity)

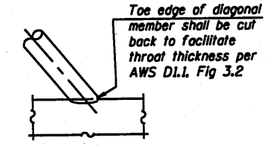
TYPICAL TRUSS UNIT

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

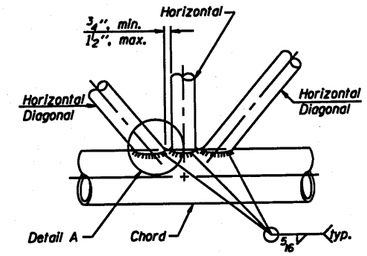
Note:
There are twice as many horizontal diagonals as there are vertical diagonals.



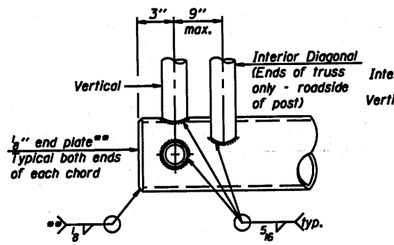
SECTION A-A



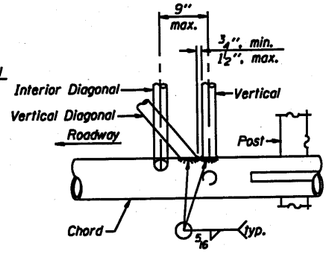
DETAIL A



TRUSS INTERIOR JOINT DETAIL

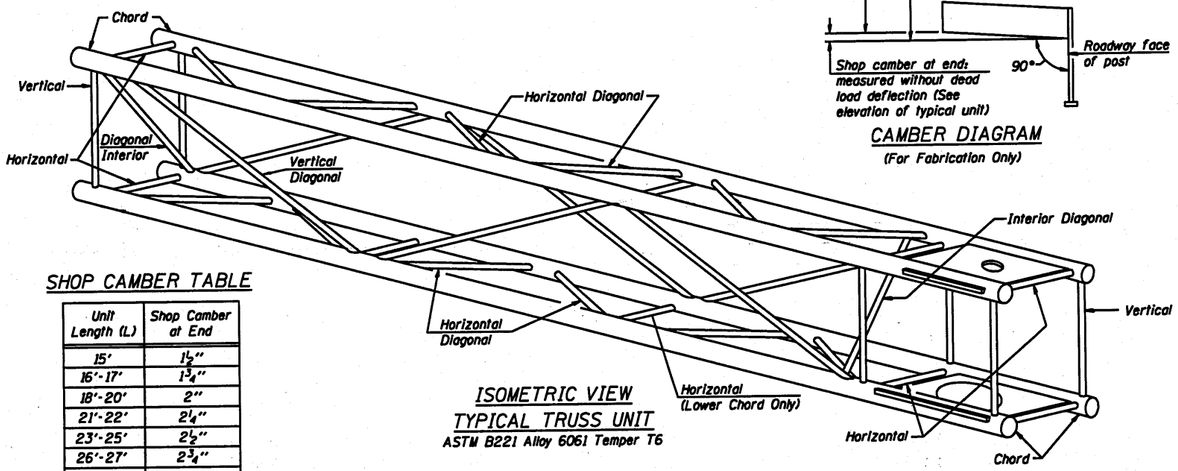


CANTILEVER END JOINT DETAIL
** Contractor may alternatively use standard aluminum drive-fit cap to close ends.



POST END JOINT DETAIL

CAMBER DIAGRAM
(For Fabrication Only)



ISOMETRIC VIEW
TYPICAL TRUSS UNIT
ASTM B221 Alloy 6061 Temper T6

TRUSS UNIT TABLE

Truss Type	Dimension "a"	Dimension "b"	Dimension "s"	Limits for Panel Spacing (P)*	Up. & Low. Chord O.D.	Up. & Low. Chord Wall	Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals O.D.	Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals Wall
I-C-A	24"	54"	15"	36" min. to 48" max.	5"	5/16"	2 1/2"	5/16"
II-C-A	36"	66"	21"	42" min. to 54" max.	6 1/2"	5/16"	3 1/4"	5/16"
III-C-A (35' Max.)	36"	84"	21"	48" min. to 66" max.	7"	3/8"	3 1/2"	3/8"
III-C-A (>35' to 40')	36"	84"	21"	48" min. to 66" max.	8"	3/8"	3 1/2"	3/8"

$$*P = \frac{L - s - 3"}{\#\ Panels}$$

Structure Number	Station	Truss Type	Design Length (L)	Number of Panels Per Unit	Panel Length (P)*
IC0161094R034.0-000		III-C-A	35'	6	5'-6"

SHOP CAMBER TABLE

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

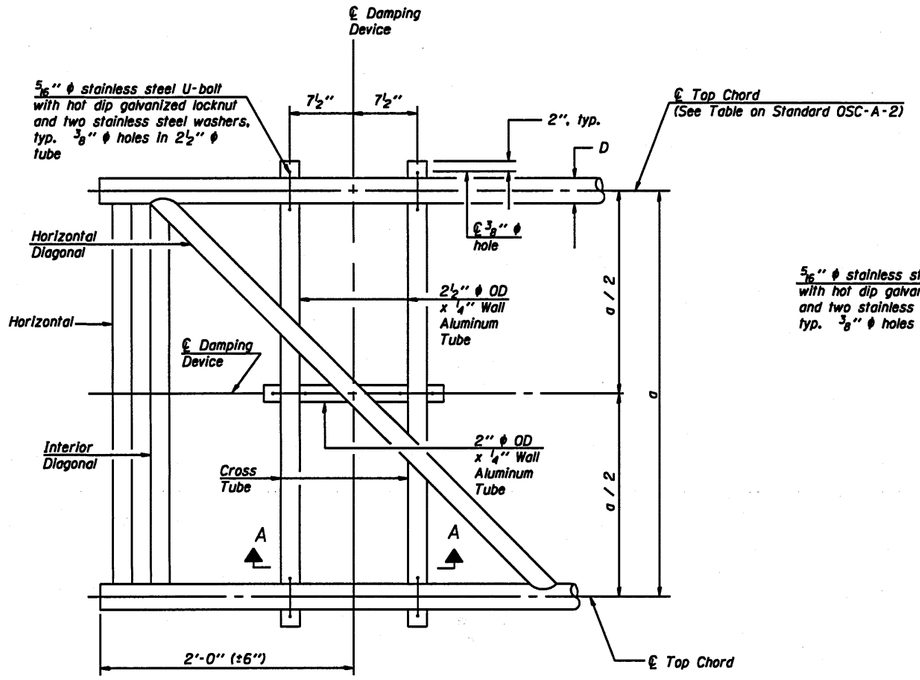
OSC-A-2 7-1-10

FILE NAME =
USER NAME =
PLOT SCALE =
PLOT DATE =
DESIGNED - ---
CHECKED - ---
DRAWN - ---
CHECKED - ---
REVISED - ---
REVISED - ---
REVISED - ---
REVISED - ---

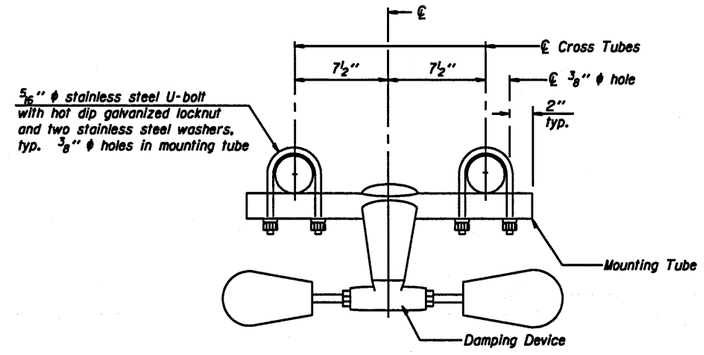
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES – TRUSS DETAILS
ALUMINUM TRUSS & STEEL POST
SHEET NO. -- OF --- SHEETS

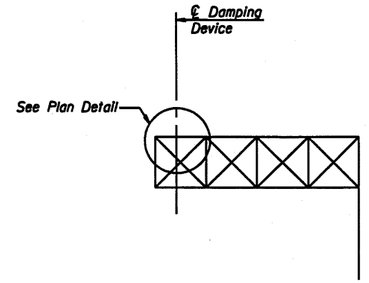
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	D1 OVD SIN STR REPL11-30	Various	16	26
		CONTRACT NO. 46153		
		ILLINOIS FED. AID PROJECT		



PLAN DETAIL



TRUSS DAMPING DEVICE CONNECTION DETAIL



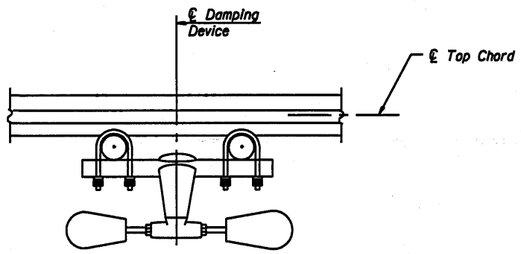
ELEVATION

Aluminum Cantilever Sign Structure

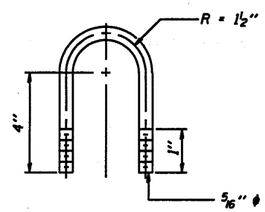
GENERAL NOTES

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

Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6

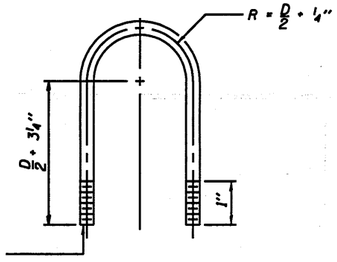


SECTION A-A



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL

(Typical)



TOP CHORD TO CROSS TUBE U-BOLT DETAIL

(Typical)

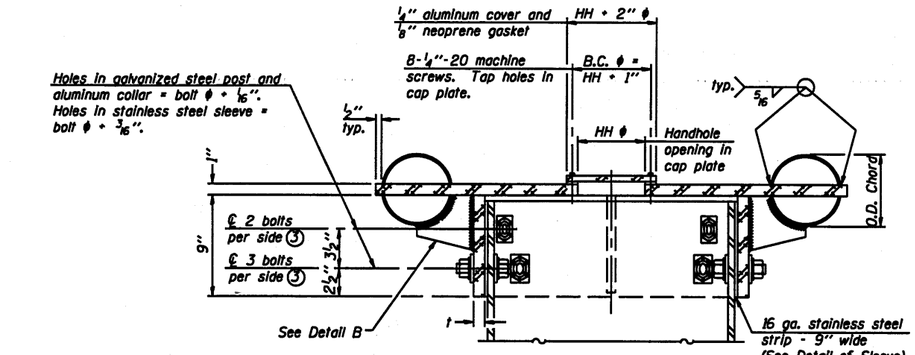
OSC-A-D 7-1-10

FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---
		CHECKED - ---	REVISED - ---
	PLOT SCALE =	DRAWN - ---	REVISED - ---
	PLOT DATE =	CHECKED - ---	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURE
DAMPING DEVICE
SHEET NO. __ OF ___ SHEETS

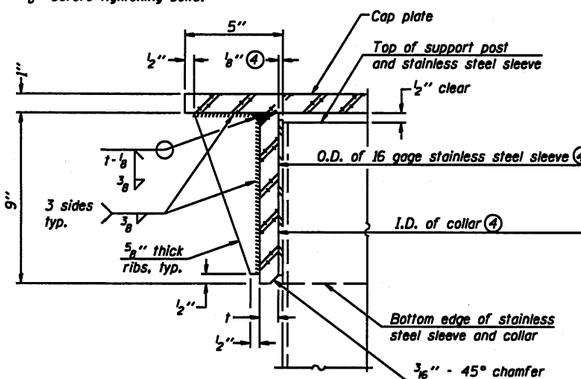
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	D1 OVD SIN STR REPL11-30	Various	17	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			



SECTION B-B

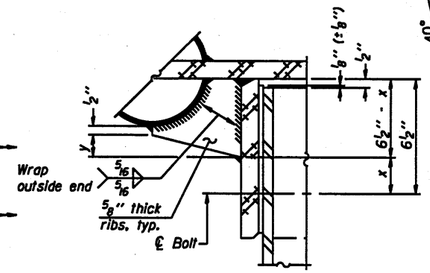
Bolts, washers (including contoured washers), and locknuts shall be stainless steel.

④ Collar I.D. shall be manufactured to correspond to O.D. of actual galvanized post and stainless steel sleeve plus ⅛" (±1/16"). Maximum gap between post and collar at any location equals ⅛" before tightening bolts.



DETAIL A

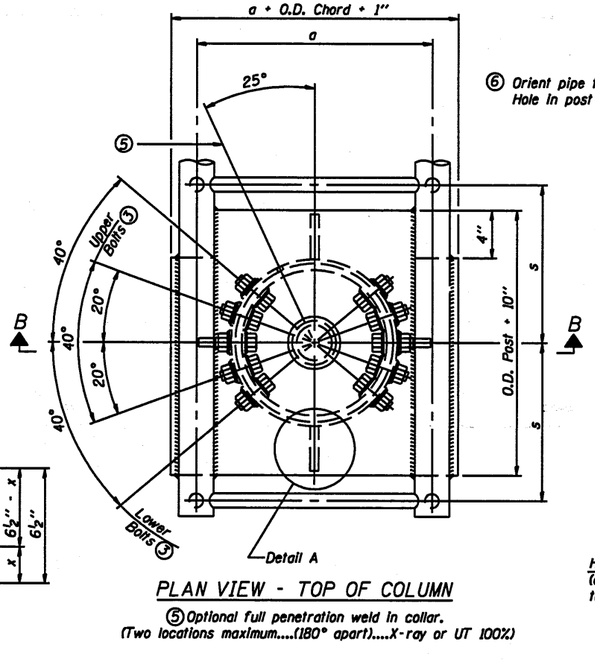
(Two locations)



DETAIL B

Two locations

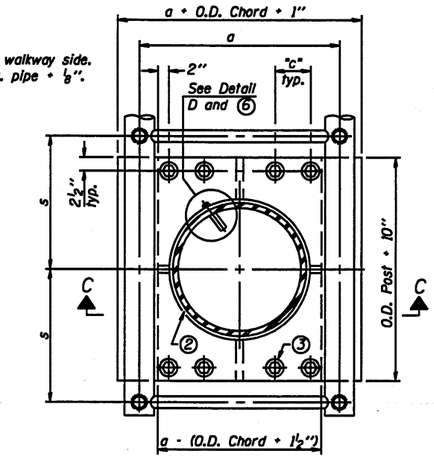
(For details not shown, see Detail C)



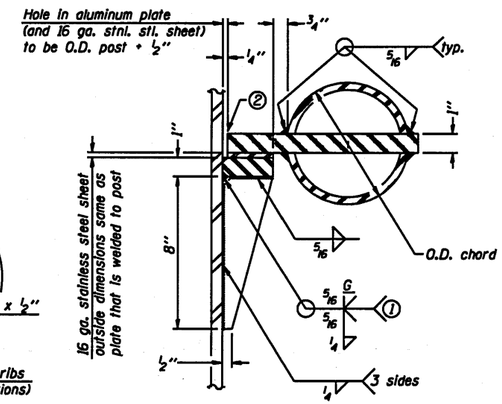
PLAN VIEW - TOP OF COLUMN

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

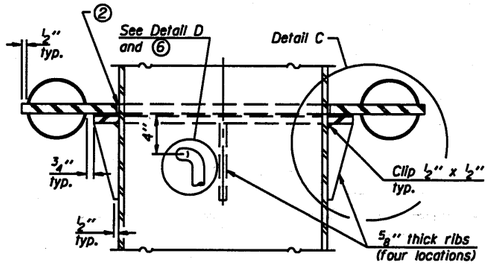
⑥ Orient pipe toward walkway side. Hole in post = O.D. pipe + ⅛".



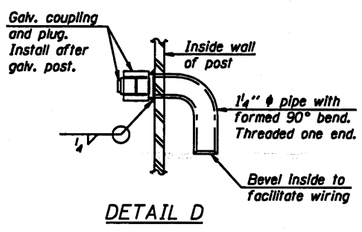
SECTION THRU POST ABOVE LOWER CHORDS



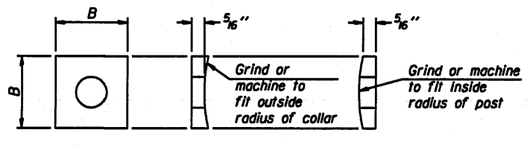
DETAIL C



SECTION C-C

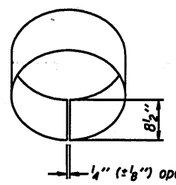


DETAIL D



CONTOURED WASHERS

Bolt Size	Contoured Washers	
	Hole Dia.	B
⅞"	1"	2½"
1"	1⅛"	3"
1¼"	1⅜"	3¼"



DETAIL OF STAINLESS STEEL SLEEVE

Weld to post after galvanizing. (Prepare post surface to insure tight, uniform fit and allow welding.) Welds to be 1½" long at 6" cts. along top edge and at ¼" opening.

Truss Type	Post Size	Upper & Lower Connection Bolt Diameter ③	Lower Juncture Bolt Spacing Dimension "c" ③	Opening in Cap Plate "HH"	Collar Thickness (t)	Side Ribs	
						x	y
I-C-A	16" ϕ (83#/')	⅞"	3¼"	8"	⅝"	1¾"	2¼"
II-C-A	24" ϕ (125#/')	1"	3½"	12"	⅞"	2"	1¼"
III-C-A (35' max.)	24" ϕ (125#/')	1¼"	3½"	12"	⅞"	2"	1"
III-C-A (>35' to 40')	24" ϕ (171#/')	1¼"	3½"	12"	⅞"	2"	1"

① Grind top if required to fully seat aluminum plate and stainless steel sheet.

② After tightening lower connection bolts, fill gap with non-hardening, silicone caulk suitable for exterior exposure and acceptable to the Engineer. Cost is included in Overhead Sign Structure Cantilever.

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

OSC-A-3 7-1-10

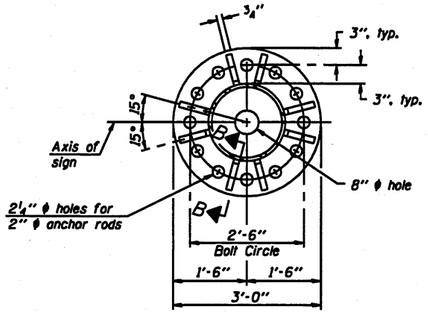
FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---
		CHECKED - ---	REVISED - ---
	PLOT SCALE =	DRAWN - ---	REVISED - ---
	PLOT DATE =	CHECKED - ---	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

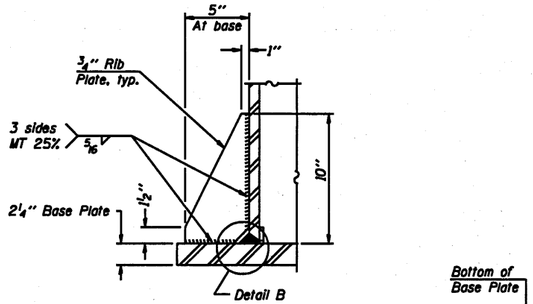
CANTILEVER SIGN STRUCTURES – JUNCTURE DETAILS
ALUMINUM TRUSS & STEEL POST

SHEET NO. -- OF --- SHEETS

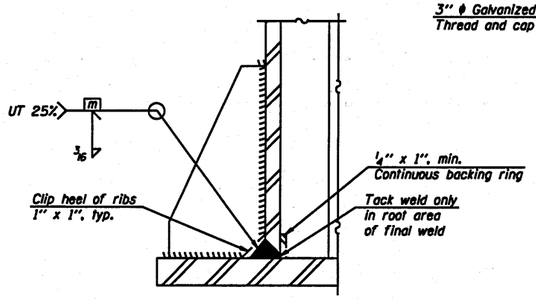
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	D1 OVD SIN STR REPL11-30	Various	18	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			



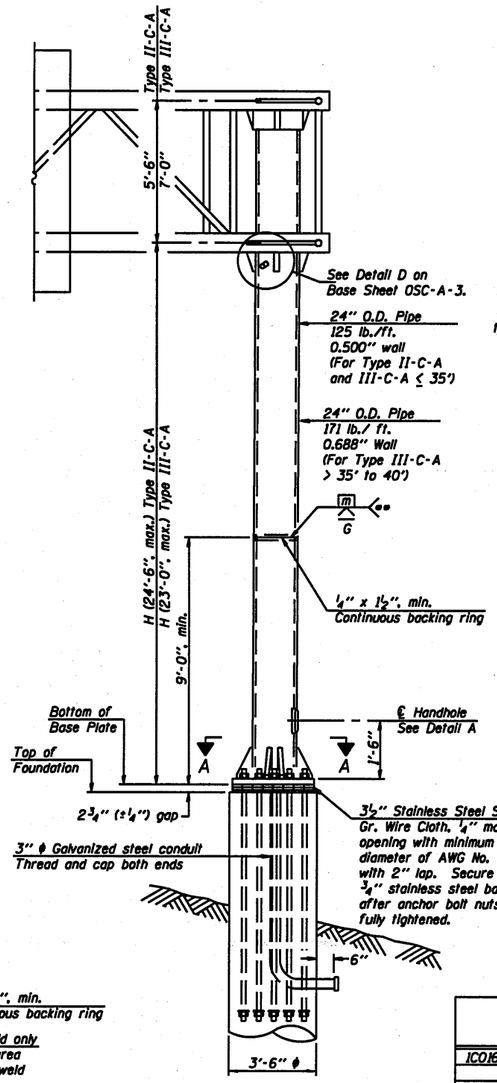
SECTION A-A



SECTION B-B

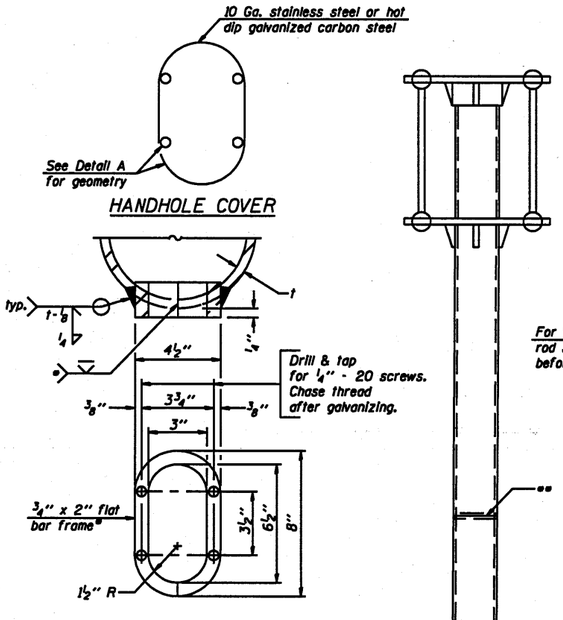


DETAIL B
(Typical rib)



FRONT ELEVATION

For Foundation Details see Base Sheet OSC-A-9.

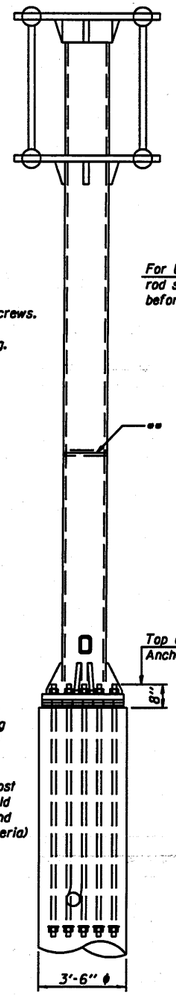


Provide 8" x 4½" cover. Outside corners = 2¼" radius. Provide 4-5/16" ϕ holes in cover for ¼" - 20 round head hot dip galvanized or stainless steel machine screws. (See cover details.)

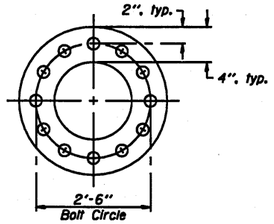
DETAIL A

* Bent bars may be butt welded top and bottom or bottom only. In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 μin or less.

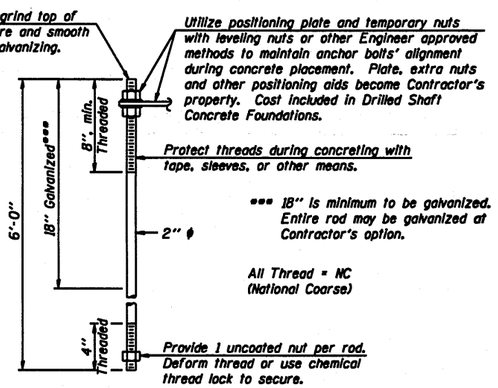
** Butt welded joint in post is only allowed for post heights (H) over 20 ft. in length. If used, weld procedure must be preapproved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.



SIDE ELEVATION



SUGGESTED POSITIONING PLATE



ANCHOR ROD DETAIL

Anchor rods shall conform to AASHTO M314 Grade 105 and meet Charpy V-Notch (CVN) energy of 15 lb.-ft. at 10° F. before galvanizing. Galvanize the upper 18" (minimum***) and associated M291, Grade A, C or DH heavy hex nuts and hardened washers per AASHTO M232. No welding shall be permitted on rods. Provide an unfinished nut at bottom, a hexagon locknut and washer above base plate and a leveling nut and washer below base plate. Nuts shall each be tightened with 200 lb.-ft. minimum torque against base plate. Before or after threading, but before galvanizing, each anchor rod shall be ultrasonically tested (UT) by a Level II or III Inspector, qualified in accord with ANSI guidelines, using a straight beam, ½" ϕ 3.5 mhz. transducer, to insure no rejectable flaws exist in the upper 18" (tension criteria). Cost of testing included in Drilled Shaft Concrete Foundations.

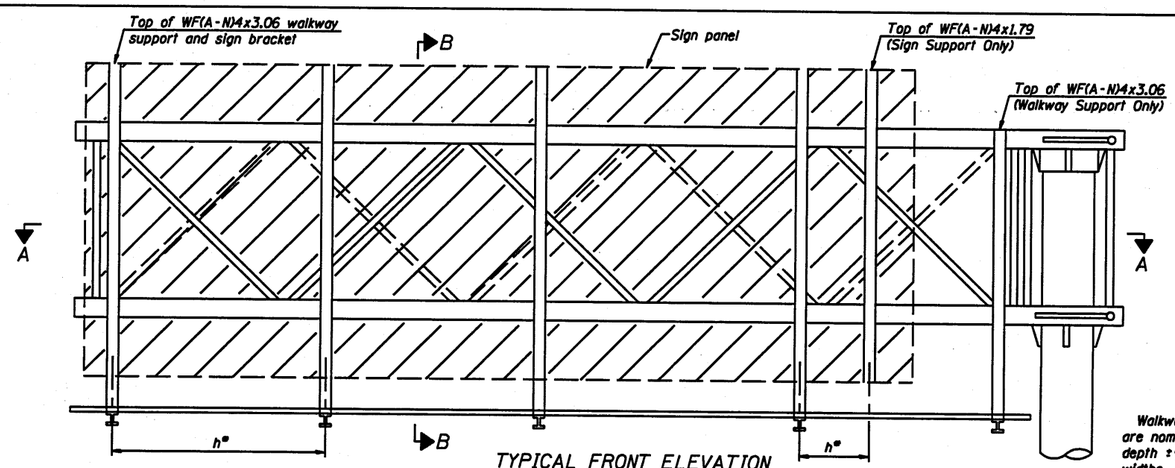
Structure Number	Station	H
IC0161094R034.0-000		23'-10 5/16"

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

OSC-A-5 7-1-10

FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CANTILEVER SIGN STRUCTURES – TYPE II-C-A & III-C-A TRUSS SUPPORT POST – ALUMINUM TRUSS & STEEL POST
		CHECKED - ---	REVISED - ---		SHEET NO. -- OF --- SHEETS
	PLOT SCALE =	DRAWN - ---	REVISED - ---		
	PLOT DATE =	CHECKED - ---	REVISED - ---		

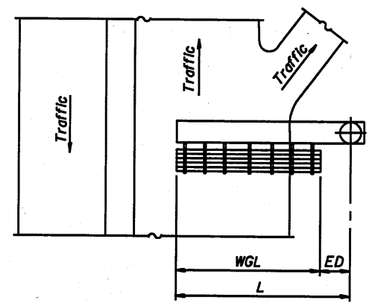
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	01 OVD SIN STR REPL11-30	Various	19	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			



TYPICAL FRONT ELEVATION

With lights and handrail omitted for clarity.

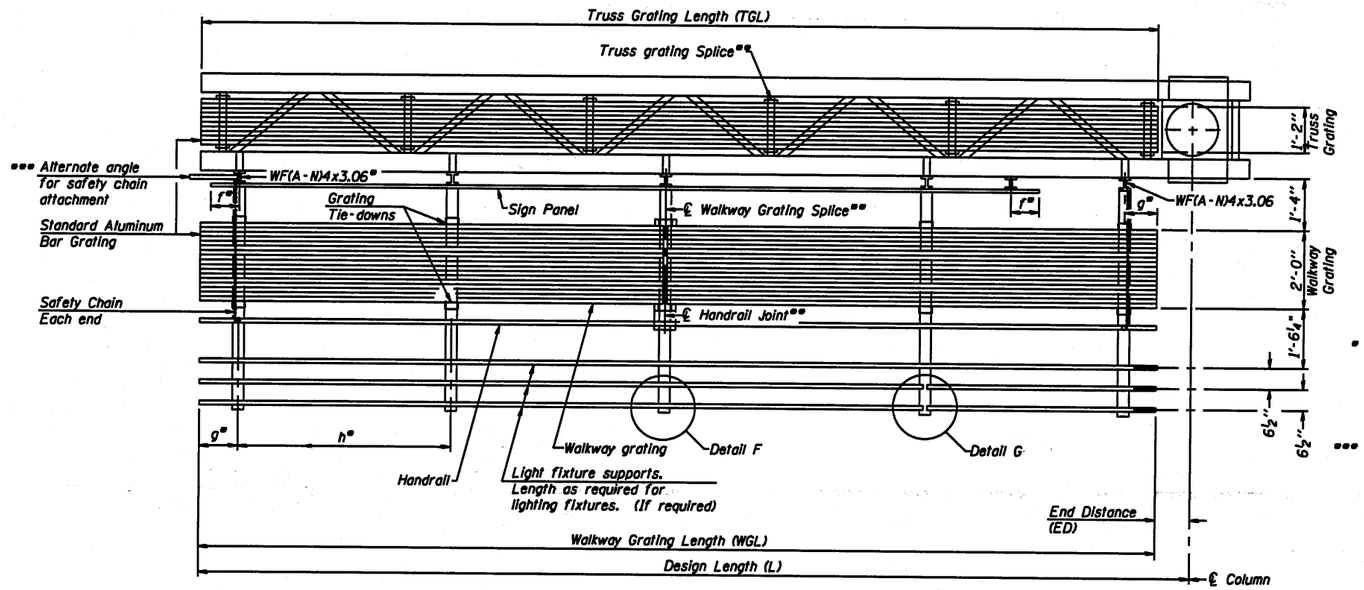
Walkway and truss grating dimensions are nominal and may vary (width ±½", depth ±½") based on available standard widths.



PLAN

WALKWAY AND HANDRAIL SKETCH

(Road plan beneath truss varies)



SECTION A-A

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

Handrail and walkway grating shall span a minimum of three brackets between splices.

** Use and location of handrail joints or grating splices are optional, based on lengths needed and material availability.

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

Structure Number	Station	WGL	ED	TGL
IC016I094R034.0-000		28' - 0"	1' - 6"	33' - 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 ℄ of nearest bracket)
  g = 12" maximum, 4" minimum (End of walkway to ℄ of nearest bracket)
  h = 6'-0" maximum (℄ to ℄ sign and/or walkway support brackets. WF(A-N)4x1.79 or WF(A-N)4x3.06)

*** If walkway bracket at safety chain location is behind sign, add angle to bracket. See alternate safety chain attachment on base sheet OSC-A-8

For details of sign placement, sign/walkway brackets, truss and walkway gratings, grating splices and Section B-B, see Base Sheet OSC-A-7.

For details of handrail, handrail joint, safety chain and Details F and G, see Base Sheet OSC-A-8.

BRACKET TABLE

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

OSC-A-6 7-1-10

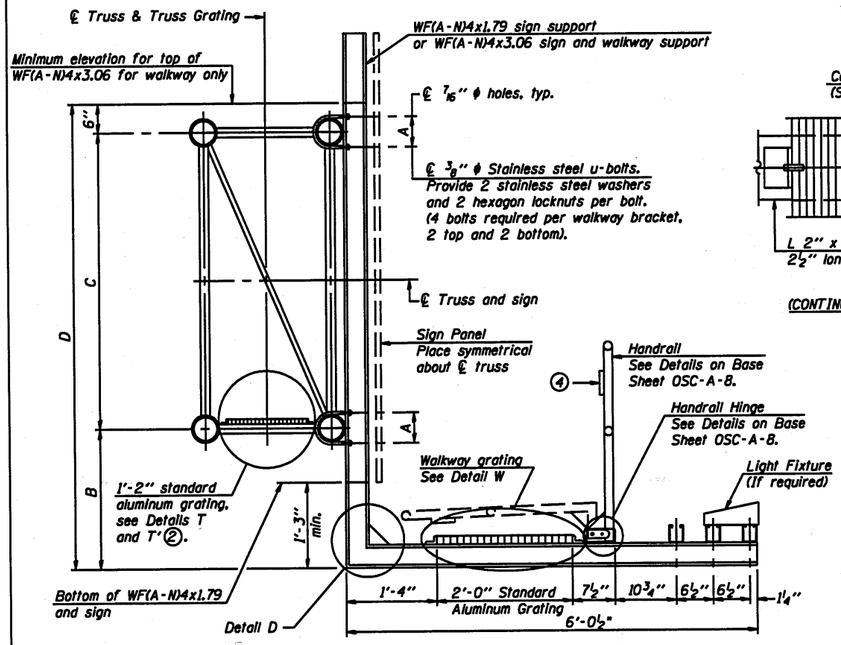
FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---
		CHECKED - ---	REVISED - ---
	PLOT SCALE =	DRAWN - ---	REVISED - ---
	PLOT DATE =	CHECKED - ---	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

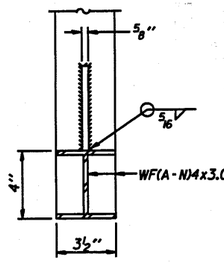
SHEET NO. __ OF ___ SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	01 OVD SIN STR REPL11-30	Various	20	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			

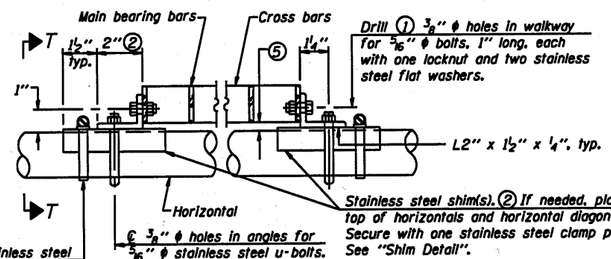


SECTION B-B

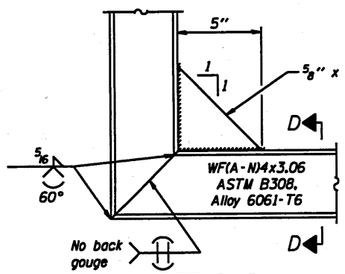
Sign shall be even with the top of the bracket, but it may extend no more than 6" above the top of the bracket for field adjustments.



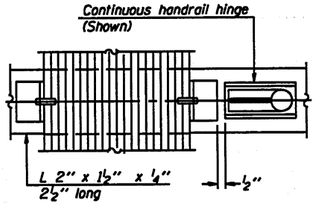
SECTION D-D



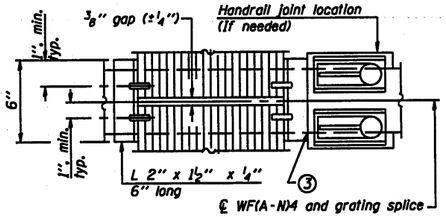
DETAIL T
(Continuous Truss grating)



DETAIL D

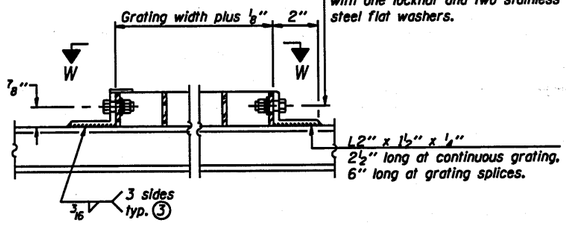


(CONTINUOUS WALKWAY GRATING)

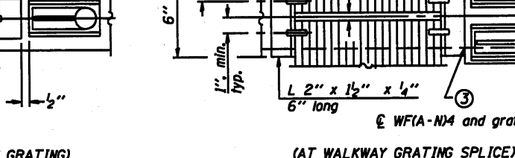


(AT WALKWAY GRATING SPLICE)

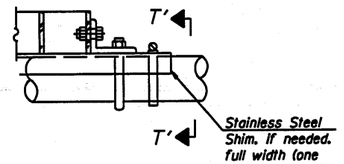
SECTION W-W



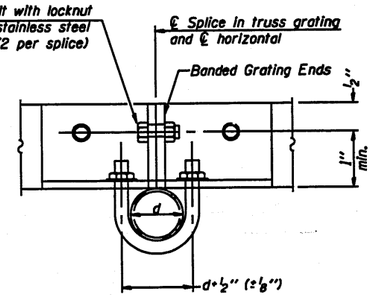
DETAIL W
(Walkway grating)



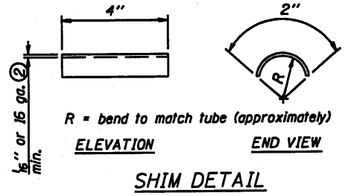
SECTION T-T



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'



SHIM DETAIL

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

Main Bearing Bars (MBB) shall be 5/16" x 1½" on 1 3/16" centers and conform to ASTM B211 Alloy 6061-T6.

Cross bars (CB) shall be 3/16" x 1½" 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 1½", spaced on 1 3/16" centers.

Cross bars shall conform to ASTM B221 Alloy 6063-T5 or T-42 and spaced on 4" centers.

① Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.

② 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.

③ If Handrail Joint present, weld angle to WF(A-N)4 and ¼" extension bars. (See Base Sheet OSC-A-8.)

④ ℄ ⅛" x ½" x 2" welded to handrail posts to protect locations that contact grating.

⑤ Tube to grating gap may vary from 0 to ½", max. to align walkway, allow for camber, etc.

⑥ Based on actual sign height, D_S, given on OSC-A-1.

Structure Number	Station	A	⑥ B	C	⑥ D
IC0161094R034.0-000		7 1/2"	3'-6"	7'-0"	11'-0"

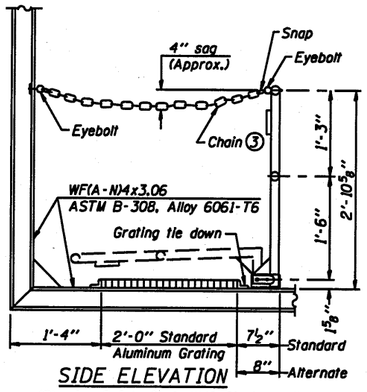
OSC-A-7 7-1-10

FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---
		CHECKED - ---	REVISED - ---
	PLOT SCALE =	DRAWN - ---	REVISED - ---
	PLOT DATE =	CHECKED - ---	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

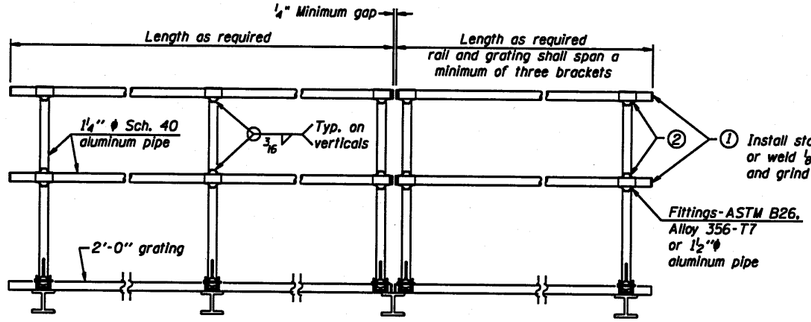
CANTILEVER SIGN STRUCTURES - WALKWAY DETAILS
ALUMINUM TRUSS & STEEL POST
SHEET NO. __ OF ___ SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	01 OVD SIN STR REPL11-30	Various	21	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			



SIDE ELEVATION

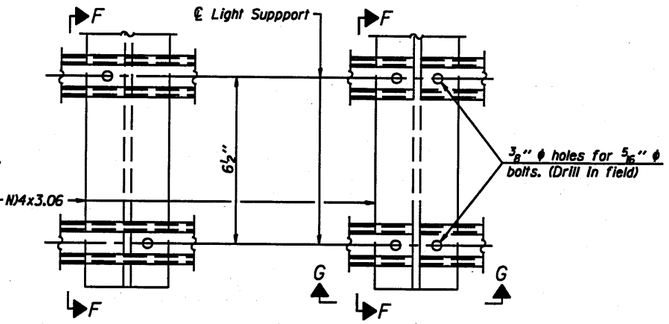
(Showing Safety Chain W/O Sign)



FRONT ELEVATION

① Install standard force-fit end caps or weld ⅛" end plates with ⅛" c.f.w. and grind smooth. (All rail ends)

② Horizontal handrail member shall be continuous thru fitting. Provide 7/16" ϕ hole in fitting for ⅜" ϕ bolt. Field drill 7/16" ϕ hole in horizontal rail member. Provide locknut and two stainless steel washers for bolt. (Use 5/16" eyebolts in 7/16" ϕ holes on top rail at ends only.)

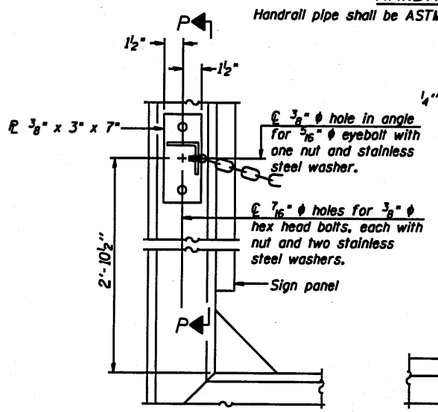


DETAIL F

DETAIL G

HANDRAIL DETAILS

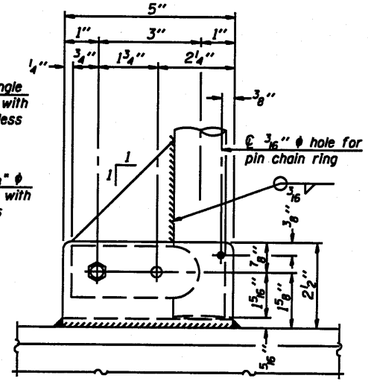
Handrail pipe shall be ASTM B241 or B429, Alloy 6063-T6 or Alloy 6061-T6.



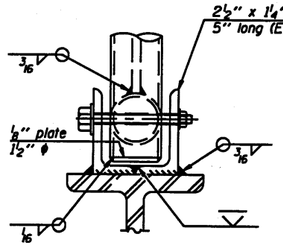
ALTERNATE SAFETY CHAIN ATTACHMENT

(With Sign Present)

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

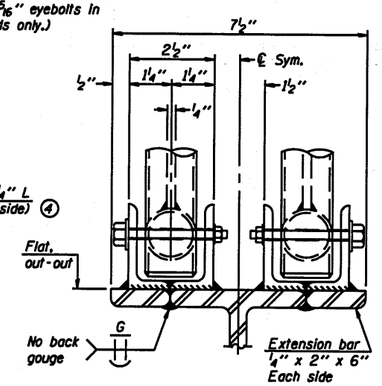


SIDE ELEVATION



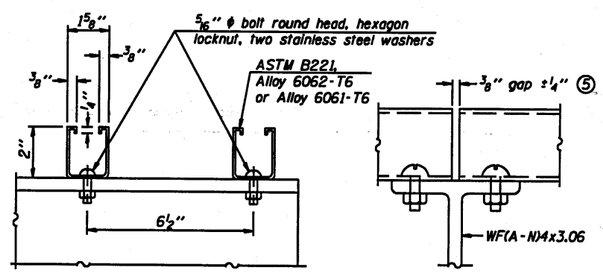
FRONT ELEVATION

Details not shown same as "ELEVATION" at right.



ELEVATION AT HANDRAIL JOINT ④

Details not shown same as "FRONT ELEVATION"

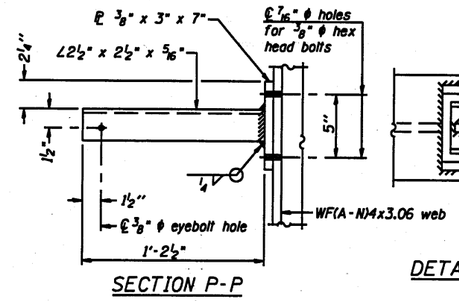


SECTION F-F

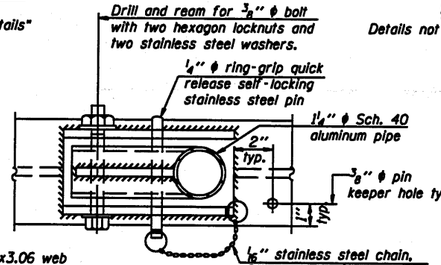
SECTION G-G

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.

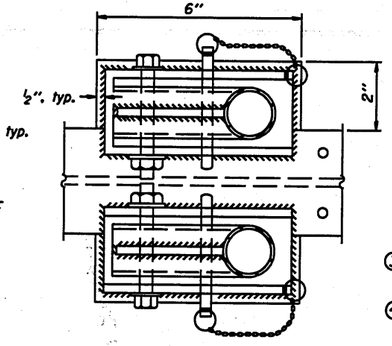


SECTION P-P



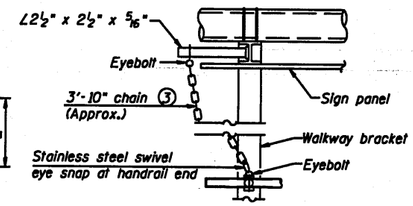
PLAN

DETAIL E HANDRAIL HINGE



PLAN AT HANDRAIL JOINT

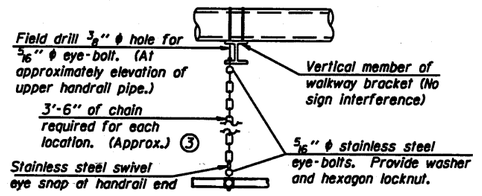
Details not shown same as "PLAN"



ALTERNATE SAFETY CHAIN ATTACHMENT

Details not shown similar to "Safety Chain" Details

(Walkway omitted for clarity)



SAFETY CHAIN

One required for each end of each walkway.

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.

OSC-A-8 7-1-10

FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---
		CHECKED - ---	REVISED - ---
	PLOT SCALE =	DRAWN - ---	REVISED - ---
	PLOT DATE =	CHECKED - ---	REVISED - ---

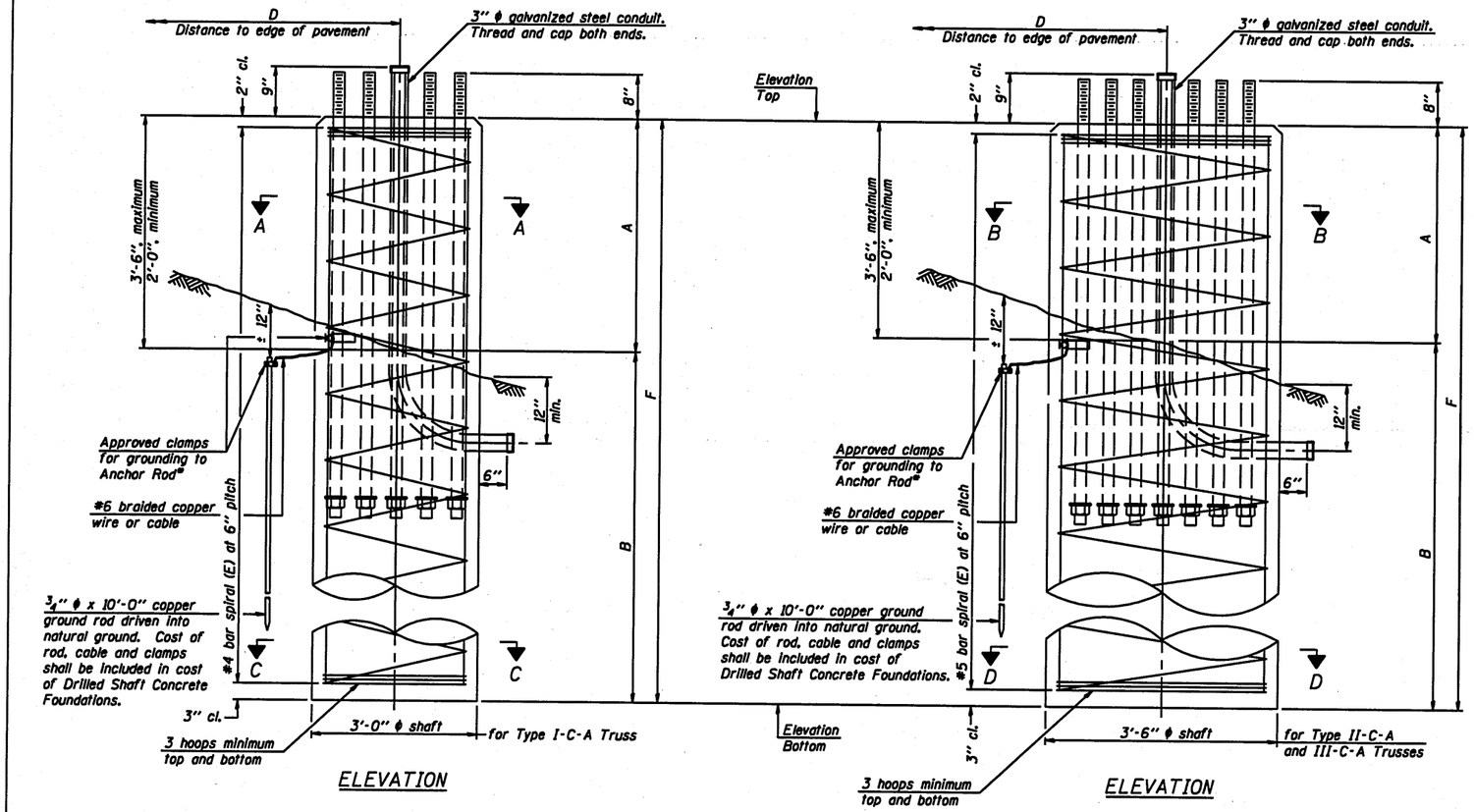
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES - HANDRAIL DETAILS
ALUMINUM TRUSS & STEEL POST

SHEET NO. -- OF --- SHEETS

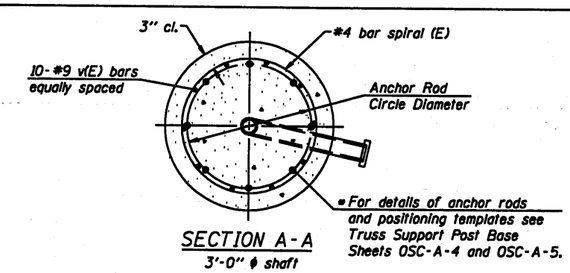
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	01 OVD SIN STR REPL11-30	Various	22	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			

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

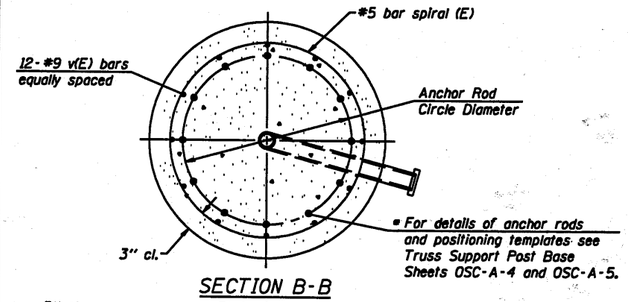


ELEVATION

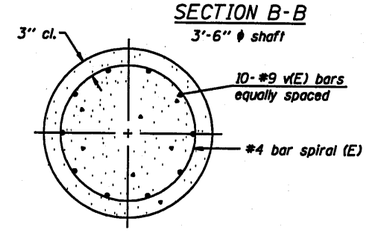
ELEVATION



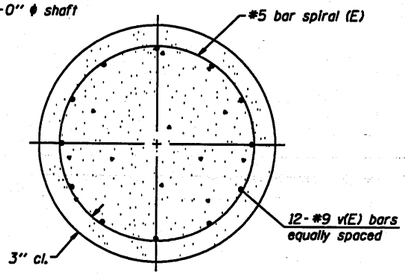
SECTION A-A
3'-0" ϕ shaft



SECTION B-B
3'-6" ϕ shaft



SECTION C-C
3'-0" ϕ shaft



SECTION D-D
3'-6" ϕ shaft

NOTES:

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

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".

FOUNDATION DESIGN TABLE

Truss Type	Post Base Sheet	Maximum CantileverLength (ft)	Maximum Total Sign Area (sq ft)	Shaft Diameter (in)	"B" Depth (ft)	Anchor Rods No.	Anchor Rods Diameter (in)	Anchor Rod Circle Diameter (in)
I-C-A	OSC-A-4	25	170	3.0	16.0	8	2	22
II-C-A	OSC-A-5	30	170	3.5	17.0	12	2	30
II-C-A	OSC-A-5	30	340	3.5	21.5	12	2	30
III-C-A	OSC-A-5	35	170	3.5	19.0	12	2	30
III-C-A	OSC-A-5	35	250	3.5	22.5	12	2	30
III-C-A	OSC-A-5	35	400	3.5	26.5	12	2	30
III-C-A	OSC-A-5	40	400	3.5	32.0	12	2	30

FOUNDATION DATA TABLE

Structure Number	Station	Truss Type	Shaft Diameter	Elevation Top	Elevation Bottom	Qu	A	B	F	Class DS Concrete Cubic Yards
IC0161094R034.0-000		III-C-A	3'-6"	628.41	603.41		2'-6"	22'-6"	25'-0"	33

OSC-A-9 7-1-10

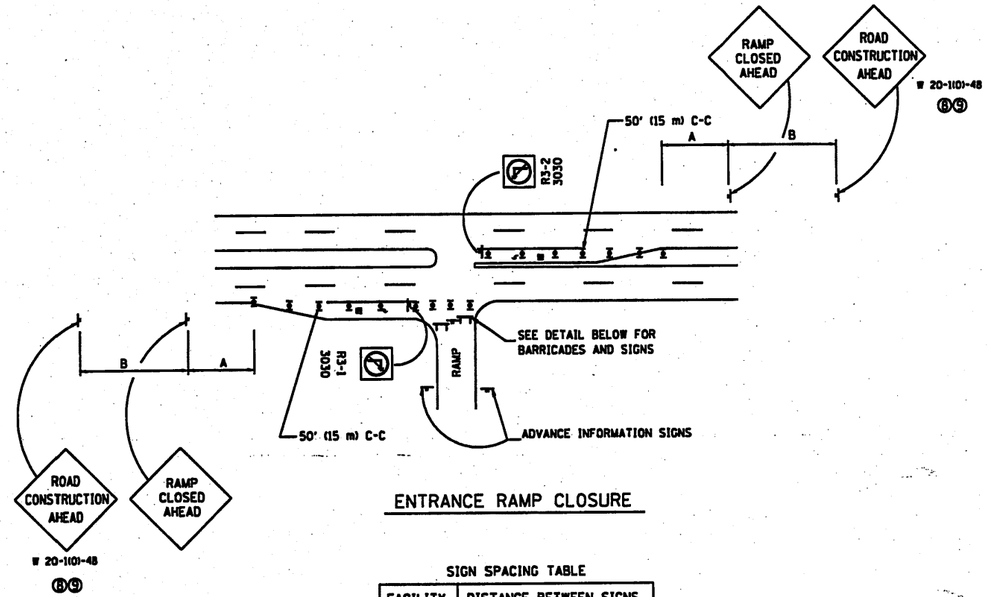
FILE NAME =	USER NAME =	DESIGNED - ---	REVISED - ---
		CHECKED - ---	REVISED - ---
	PLOT SCALE =	DRAWN - ---	REVISED - ---
	PLOT DATE =	CHECKED - ---	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES - DRILLED SHAFT
ALUMINUM TRUSS & STEEL POST

SHEET NO. -- OF --- SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	01 OVD SIN STR REPL11-30	Various	23	26
		CONTRACT NO. 46153		
	ILLINOIS FED. AID PROJECT			

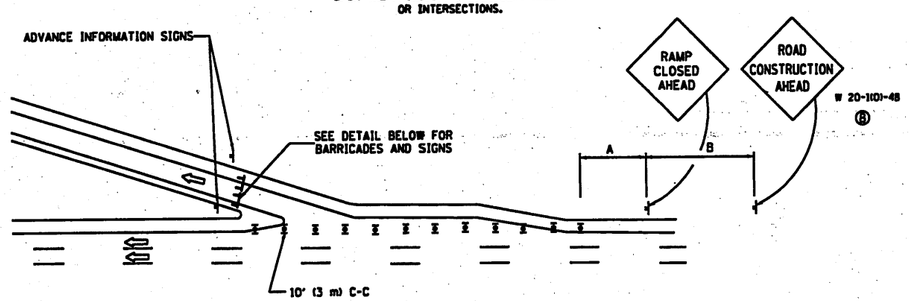


ENTRANCE RAMP CLOSURE

SIGN SPACING TABLE

FACILITY	DISTANCE BETWEEN SIGNS A	DISTANCE BETWEEN SIGNS B
EXPRESSWAY >24 HOURS	1000' (300 m)	1500' (450 m)
EXPRESSWAY ≤24 HOURS	500' (150 m)	500' (150 m)
ARTERIAL ≥45 MPH	350' (100 m)	350' (100 m)
ARTERIAL <45 MPH	150' (45 m)	150' (45 m)

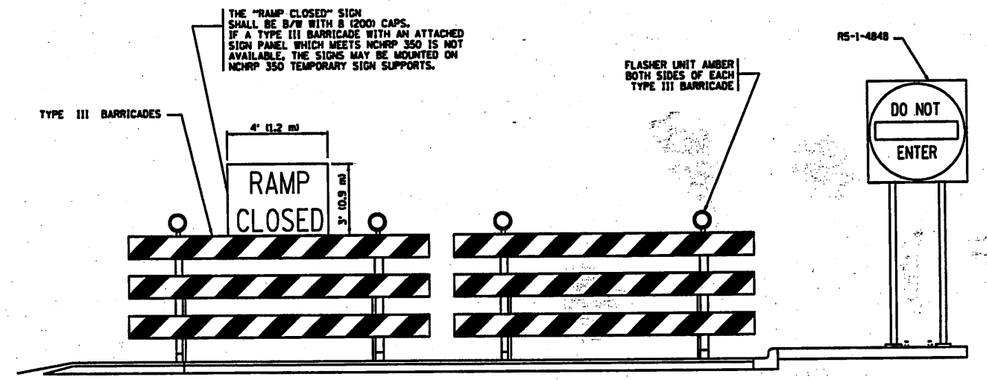
DISTANCES MAY BE SHORTENED DEPENDING UPON THE PROXIMITY OF ADJACENT RAMPS OR INTERSECTIONS.



EXIT RAMP CLOSURE

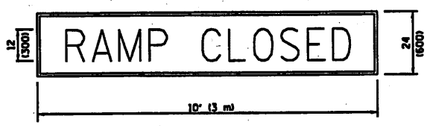
SYMBOLS

- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT
- TYPE III BARRICADE WITH FLASHING LIGHT



DETAIL FOR REQUIRED BARRICADES & SIGNS

RAMP CLOSURE ADVANCE WARNING SIGN

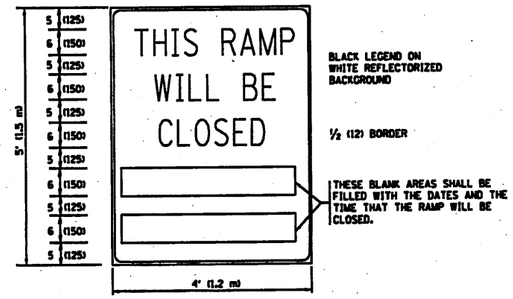


BLACK LEGEND ON ORANGE REFLECTORIZED BACKGROUND

1 (25) BORDER

THESE SIGNS ARE REQUIRED ON ALL THE EXIT GUIDE SIGNS FOR THE CLOSED EXIT RAMPS.

RAMP CLOSURE ADVANCE INFORMATION SIGN



THESE SIGNS ARE REQUIRED ON BOTH SIDES OF THE RAMP, MINIMUM OF 1 WEEK IN ADVANCE OF THE CLOSURE.

GENERAL NOTES:

1. CONES MAY BE SUBSTITUTED FOR DRUMS OR TYPE II BARRICADES DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (700) HIGH.
2. STEADY BURN LIGHTS WILL NOT BE REQUIRED FOR DAY OPERATIONS.
3. A FLAGGER SHALL BE POSITIONED AT EACH CLOSED RAMP THAT IS OPEN TO CONSTRUCTION VEHICLES.
4. ALL ROUTE MARKERS AND TRAILBLAZER ASSEMBLIES WHICH DIRECT MOTORISTS TO A CLOSED ENTRANCE RAMP SHALL BE COVERED.
5. THE SIGNING AND BARRICADING WHICH IS REQUIRED BY THIS DETAIL SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS).
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL RAMP CLOSURES.
7. THE RAMP CLOSURE ADVANCE INFORMATION SIGNS SHALL BE ERECTED IF THE CLOSURE TIME EXCEEDS TWENTY- FOUR 24 HOURS. ADDITIONAL ADVANCE WARNING SIGNS ON EXIT GUIDE SIGNING WILL BE REQUIRED FOR EXIT RAMP CLOSURES THAT EXCEED TWENTY FOUR 24 HOURS IN LENGTH.
8. ROAD CONSTRUCTION AHEAD SIGNS MAY BE OMITTED WHEN THIS DETAIL IS USED IN CONJUNCTION WITH OTHER TRAFFIC CONTROL THAT ALREADY INCLUDES A ROAD CONSTRUCTION AHEAD SIGN.
9. ARTERIAL ROAD CONSTRUCTION AHEAD SIGNS MAY BE OMITTED ON CLOSURES LESS THAN 24 HOURS IN DURATION.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

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		DRAWN - ---	REVISED - JAE.02-06	
	PLOT SCALE = #SCALE0	CHECKED - ---	REVISED - SEB.01-07	
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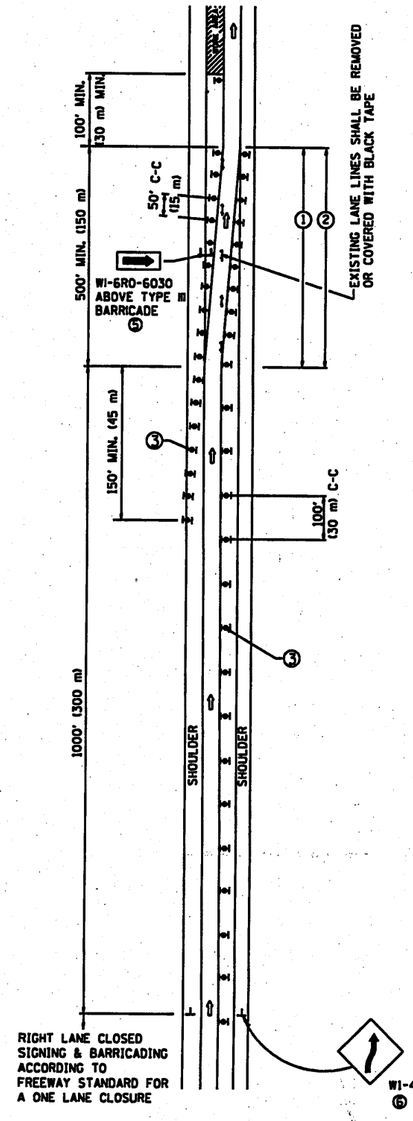
FREEWAY ENTRANCE AND EXIST RAMP CLOSURE DETAILS

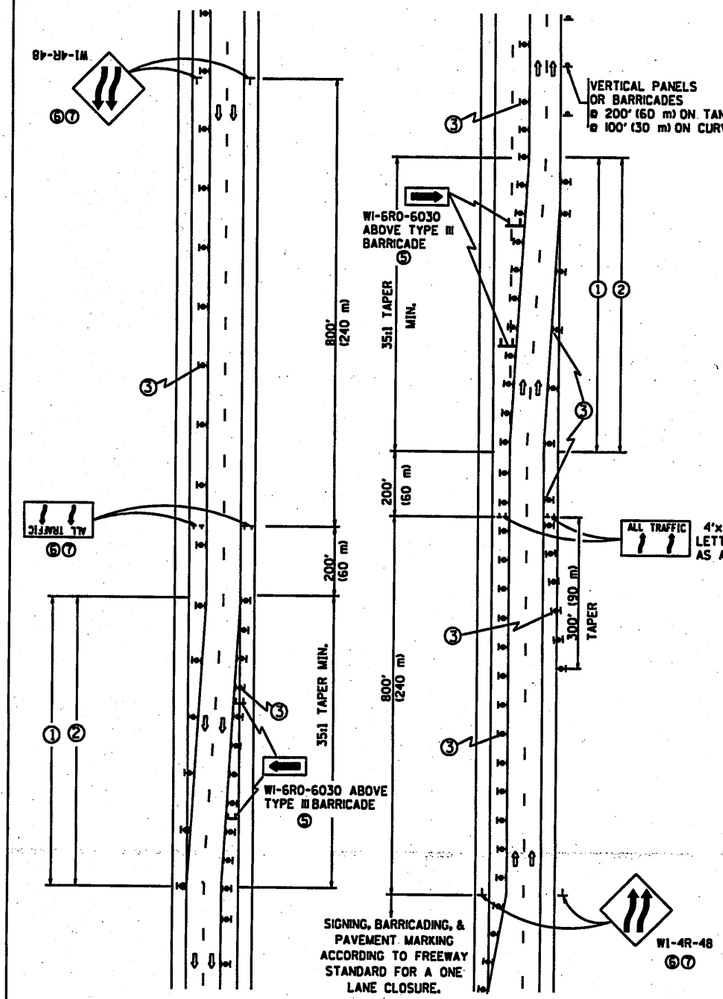
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	01 OVD SIN STR REPL11-30	Various	24	26
	TC-08	CONTRACT NO. 46153		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

SINGLE LANE WEAVE



MULTI-LANE WEAVE



GENERAL NOTES

① EXISTING CONFLICTING PAVEMENT MARKING LINES SHALL BE REMOVED. PAVEMENT MARKING REMOVAL SHALL NOT BE REQUIRED FOR SINGLE LANE WEAVES UNDER 24 HOURS IN DURATION.

② CONTINOUS REFLECTIVE TEMPORARY PAVEMENT MARKING TAPE SHALL BE PLACED THROUGHOUT THE TAPER AND FOR 300' (90 m) ALONG SIDE THE WORK AREA WHERE THE CLOSURE TIME IS GREATER THAN FOURTEEN DAYS. THE LEFT EDGE LINE SHALL BE YELLOW AND THE RIGHT EDGE LINE SHALL BE WHITE. FOR MULTI-LANE WEAVES LANE LINES SHALL BE 5 INCH, 10'-30' (3 m-9 m) SKIP DASH, WHITE.

③ PLASTIC DRUMS WITH STEADY BURN LIGHTS AT 50' (15 m) C-C SPACING IN TAPERS AND 100' (30 m) C-C SPACING IN TANGENTS.

④ ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.

⑤ IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 IS NOT AVAILABLE, THE SIGNS MAY BE MOUNTED ON NCHRP 350 TEMPORARY SIGN SUPPORTS. TYPE III BARRICADES MAY BE OMMITTED FOR SINGLE-LANE WEAVES UNDER 24-HOURS IN DURATION. W1-6 SIGNS WILL STILL BE REQUIRED. IF THE WIDTH OF OFFSET IS LESS THAN 6' THEN THE TYPE III BARRICADE WITH ATTACHED ARROW SIGN PANEL CAN BE ELIMINATED IN THE TAPER AREAS.

⑥ WHEN THE LENGTH OF THE SHIFTED SEGMENT (DISTANCE BETWEEN WEAVE POINTS) IS LESS THAN 1500', DOUBLE REVERSE CURVE SIGNS (W24-1) SHOULD BE USED INSTEAD OF THE REVERSE CURVE (W1-4) SIGNS. ARROWS ON THE 4'X8' "ALL TRAFFIC" SIGNS SHALL BE THE SAME SHAPE.

⑦ THE NUMBER OF ARROWS ON THESE SIGNS SHALL MATCH THE NUMBER OF LANES OPEN TO TRAFFIC.

ALL TRAFFIC 4'x 8' (1.2 m x 2.4 m); 1 (25) BORDER; 10 (250) CAPITAL LETTERS BACKGROUND SHEETING SHALL BE THE SAME AS ALL DIAMOND SHAPED CONSTRUCTION SIGNS.

SYMBOLS

- DIRECTION OF TRAFFIC
- WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- TYPE II BARRICADE OR DRUM WITH MONO-DIRECTIONAL STEADY BURNING LIGHT

W24-1-48 ⑦

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

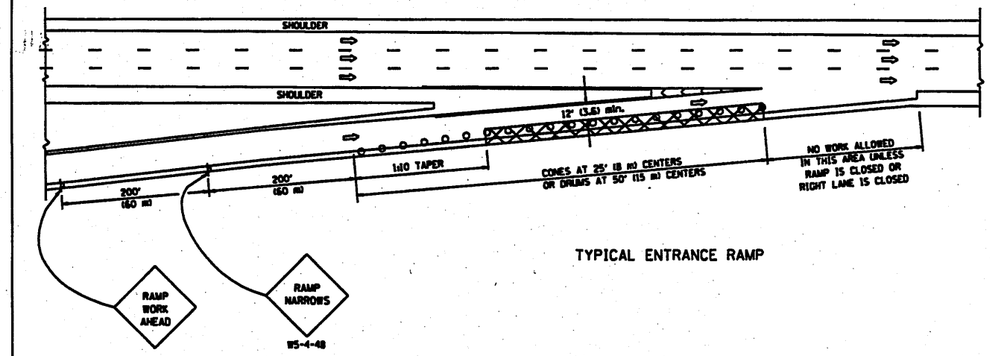
FILE NAME = #FILE#	USER NAME = #USER#	DESIGNED - DBS	REVISED - JAE_01:03	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN - ---	REVISED - JAE_02:06	
	PLOT SCALE = #SCALE#	CHECKED - ---	REVISED - SEB_01:07	
	PLOT DATE = #DATE#	DATE - 02:07	REVISED - SEB_12:09	

TRAFFIC CONTROL DETAILS FOR FREEWAY SINGLE & MULTI-LANE WEAVE

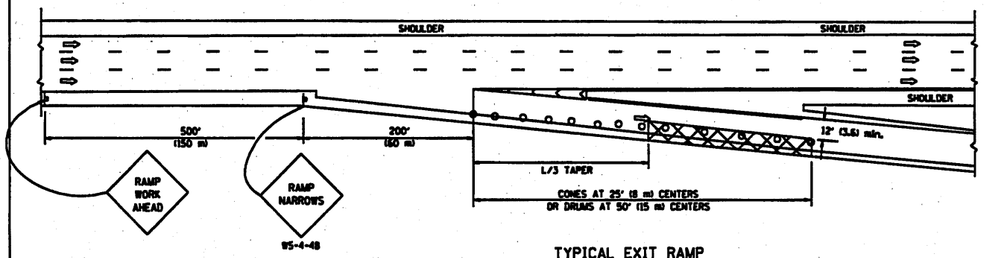
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	01 OVD SIN STR REPL(1-30	Various	25	26
	TC-09	CONTRACT NO. 46153		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

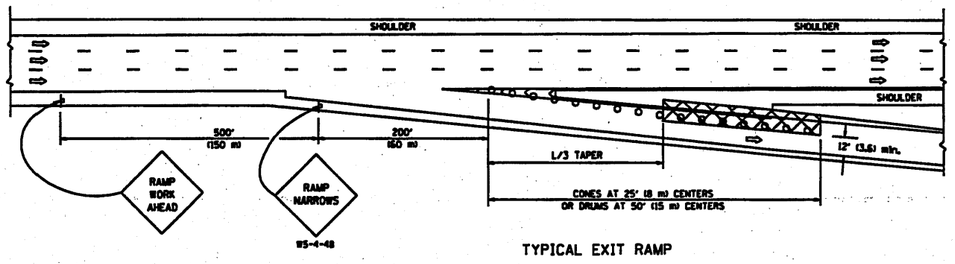
PARTIAL RAMP CLOSURE DETAILS



TYPICAL ENTRANCE RAMP

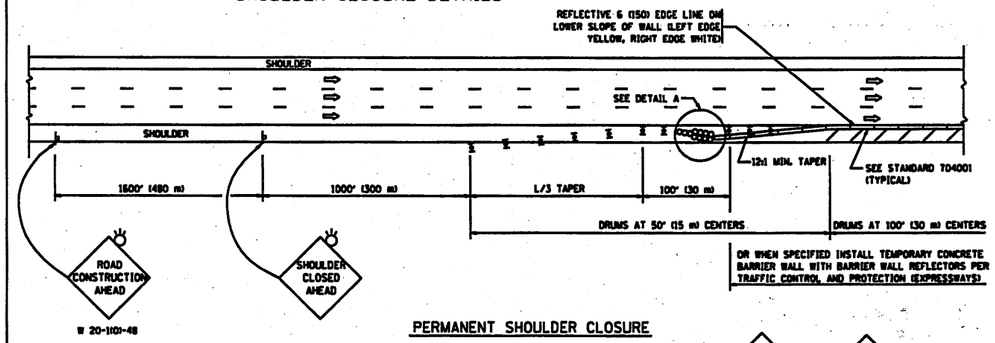


TYPICAL EXIT RAMP

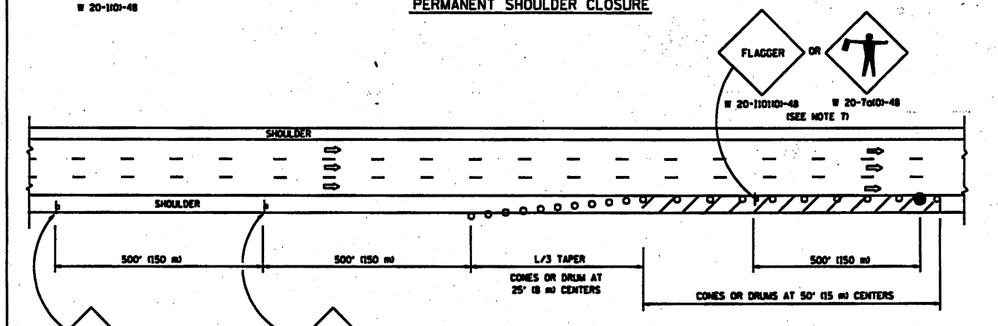


TYPICAL EXIT RAMP

SHOULDER CLOSURE DETAILS



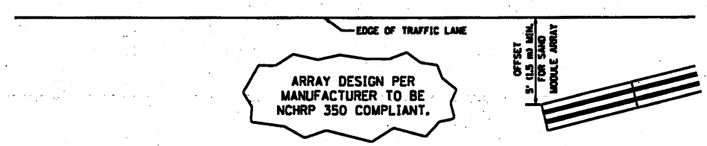
PERMANENT SHOULDER CLOSURE



THIS DETAIL IS USED WHERE:

1. VEHICLES, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH IN AN AREA CLOSER THAN 15' (4.5 m) TO THE EDGE OF PAVEMENT FOR A PERIOD IN EXCESS OF 15 MINUTES.

DAYTIME SHOULDER CLOSURE



DETAIL "A"
IMPACT ATTENTUATOR, TEMPORARY
(SEE NOTE 5)

SYMBOLS

- ACTIVE WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- FLAGGER WITH CONTROL SIGN
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT
- CONE, DRUM OR BARRICADE

GENERAL NOTES

1. THE "L" DISTANCE EQUALS:

SPEED LIMIT	FORMULAS	
	METRIC	ENGLISH
45 mph (80 km/h) OR GREATER:	L=0.65(WXS)	L=WXS

W = WIDTH OF OFFSET IN FEET (METERS)
S = NORMAL POSTED SPEED MPH (KM/H)

2. PLASTIC DRUMS WITH HIGH PERFORMANCE REFLECTIVE SHEETING AND STEADY-BURNING LIGHTS ARE REQUIRED FOR ALL NIGHTIME CLOSURES.
3. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
4. FLASHING LIGHTS SHALL BE USED DURING THE HOURS OF DARKNESS AND SHALL BE INSTALLED ABOVE THE FIRST TWO SETS OF SIGNS.
5. THE IMPACT ATTENTUATOR, TEMPORARY IS NOT REQUIRED WHEN THE TEMPORARY CONCRETE BARRIER WALL IS PROTECTED BY OR IS TIED INTO THE EXISTING GUARDRAIL. IF OFFSET IS LESS THAN 5 FEET USE NARROW USE TYPE DEVICE TO MEET NCHRP350.
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL FREEWAY CLOSURES.
7. THE FLAGGER AND FLAGGER SIGN ARE REQUIRED AT THE ABOVE WORK SITES WHEN:
   a. FOUR OR MORE WORK VEHICLES ENTER THE TRAFFIC LANES IN A ONE HOUR PERIOD.
   b. THE WORK ACTIVITY REQUIRES FREQUENT ENCROACHMENT INTO THE LANE OPEN TO TRAFFIC.

   THE FLAGGER SHALL BE STATIONED APPROXIMATELY 100' (30 m) TO 200' (60 m) IN ADVANCE OF THE WORKERS.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC CONTROL DETAILS FOR FREEWAY SHOULDER CLOSURES AND PARTIAL RAMP CLOSURES
		DRAWN - D.W.S.	REVISED - J.A.E. 12:06		
	PLOT SCALE =	CHECKED -	REVISED - S.P.B. 01:07		SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.
	PLOT DATE =	DATE - 11:96	REVISED - S.P.B. 12:09		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Var	01 DVD SIN STR REPL(1)-30	Various	26	26
	TC-17	CONTRACT NO. 46153		
	FED. ROAD DIST. NO. 7 ILLINOIS	FED. AID PROJECT		