

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	DIST 8 ITS 2010-3	ST. CLAIR	14	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 76C64		

INDEX OF SHEETS

- 1. COVER SHEET
- 2. SUMMARY OF QUANTITIES AND GENERAL NOTES
- 3. DMS/TRUSS CONDUIT AND SERVICE INSTALLATION DETAILS AND CONTROLLER SCHEMATICS
- 4. OVERHEAD SIGN STRUCTURES GENERAL PLAN & ELEVATION-ALUMINUM TRUSS & STEEL SUPPORTS
- 5 & 6. OVERHEAD SIGN STRUCTURES ALUMINUM TRUSS DETAILS FOR TRUSS TYPES I-A, II-A AND III-A
- 7. OVERHEAD SIGN STRUCTURES DAMPING DEVICE
- 8 & 9. OVERHEAD SIGN STRUCTURES SUPPORT FRAME FOR TYPE III-A ALUMINUM TRUSS
- 10 & 11. OVERHEAD SIGN STRUCTURES ALTERNATIVE ALUMINUM WALKWAY DETAILS FOR DMS
- 12. OVERHEAD SIGN STRUCTURES ALTERNATIVE ALUMINUM HANDRAILS DETAILS FOR DMS
- 13. OVERHEAD SIGN STRUCTURES DRILLED SHAFT DETAILS
- 14. SOIL BORING LOG

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

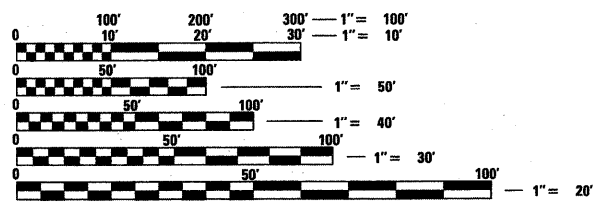
**PROPOSED
HIGHWAY PLANS**

**F.A.I. ROUTE 64
SECTION DIST 8 ITS 2010-3
PROJECT: ACHSIP-064-1(124)001
ST. CLAIR COUNTY
C-98-008-09**

**ITS - DYNAMIC MESSAGE BOARD
WB I-64 NE OF 37TH STREET BRIDGE**

STANDARDS

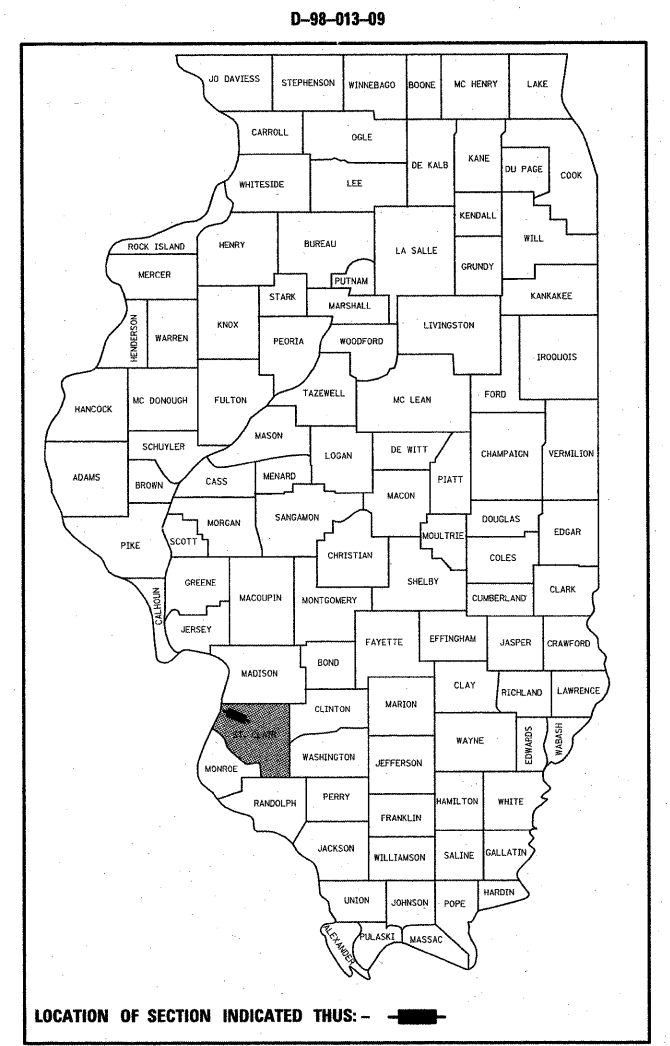
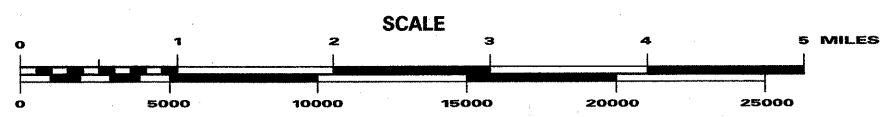
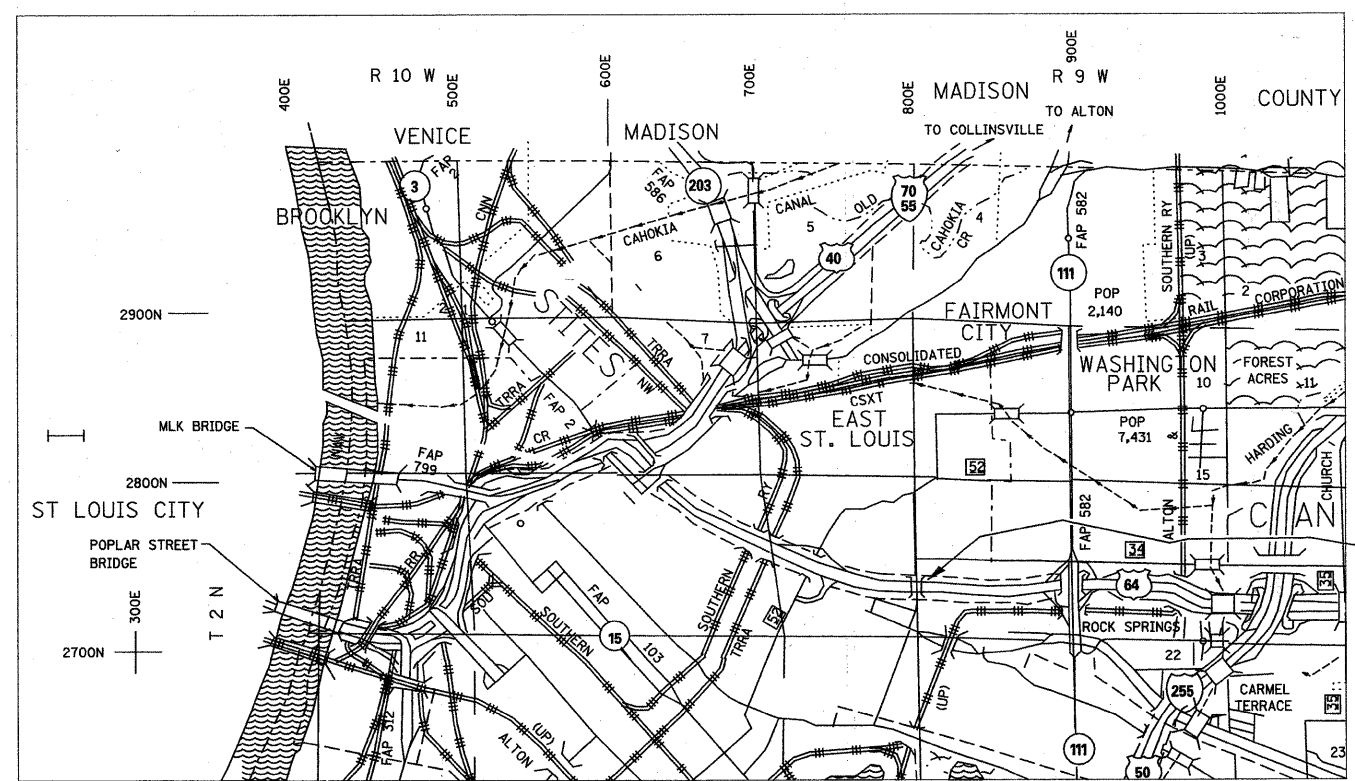
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- 701101-02 701106-02 701400-04
- 701406-05 701446-01 701901-01
- 878001-08 814006-02



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

**PROJECT ENGINEER: PATTI LEBEAU 618-346-3179
SQUAD LEADER: MICHAEL PRESTON 618-346-3143
LIAISON ENGINEER: JEFF ABEL 618-346-3283
CONTRACT NO. 76C64**



LOCATION OF SECTION INDICATED THIS: - [black rectangle] -

PROJECT LOCATION
I-64 WB, STA. 161 + 00
006404.8W.7S
EAST SAINT LOUIS TOWNSHIP

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

SUBMITTED Oct. 14, 2009
Mar. C. Hamis
DEPUTY DIRECTOR OF HIGHWAYS, REGION 5 ENGINEER

December 4, 2009
Charles G. Ingersoll, P.E.
ENGINEER OF DESIGN AND ENVIRONMENT

December 4, 2009
Christina M. Reed, P.E.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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

SUMMARY OF QUANTITIES

SUMMARY OF QUANTITIES			URBAN 90% FED./10% STATE TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		Y032-1F	-----	-----
66410400	CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED	FOOT	100	100		
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	6	6		
67100100	MOBILIZATION	L SUM	1	1		
70100815	TRAFFIC CONTROL AND PROTECTION, STANDARD 701446	L SUM	1	1		
73300300	OVERHEAD SIGN STRUCTURE - SPAN, TYPE III-A (5'-0" X 7'-0")	FOOT	70	70		
73305000	OVERHEAD SIGN STRUCTURE WALKWAY	FOOT	36	36		
73400200	DRILLED SHAFT CONCRETE FOUNDATIONS	CU YD	21.7	21.7		
80300100	LOCATING UNDERGROUND CABLE	FOOT	100	100		
80500100	SERVICE INSTALLATION, TYPE A	EACH	1	1		
81012800	CONDUIT IN TRENCH, 3" DIA., PVC	FOOT	115	115		
81702500	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 4/C NO. 6	FOOT	110	110		
81900200	TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	110	110		
86300305	CONTROLLER CABINET TYPE III, SPECIAL	EACH	1	1		
87800210	CONCRETE FOUNDATION, TYPE D (SPECIAL)	FOOT	3.5	3.5		
X0323228	FURNISH AND INSTALL TRUSS DAMPER	EACH	1	1		
X0325470	CONDUIT ATTACHED TO STRUCTURE, 3" DIA., ALUMINUM	FOOT	120	120		
X7015015	TRUSS MOUNTED CHANGEABLE MESSAGE SIGNS	EACH	1	1		
X0325922	CELLULAR MODEM	EACH	1	1		
X2010510	CLEARING AND GRUBBING	L SUM	1	1		
X7010600	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406, SPECIAL	L SUM	1	1		
X8100065	CONDUIT IN TRENCH, 4" DIA., PVC TYPE C	FOOT	15	15		
B1400720	DOUBLE HANDHOLE, PORTLAND CEMENT CONCRETE	EACH	1	1		
B1012500	CONDUIT IN TRENCH, 1 1/2" DIA., PVC	FOOT	80	80		

GENERAL NOTES

1. ALL MATERIALS SUPPLIED SHALL CONFORM TO SECTION 106 OF THE STANDARD SPECIFICATIONS FOR CONTROL OF MATERIALS.
2. THE CONTROLLER CABINETS SHALL BE UNPAINTED ALUMINUM SHEET METAL UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3. UNDERGROUND CABLE MARKING TAPE SHALL BE INSTALLED WITH ALL TRENCH AND BACKFILL FOR ELECTRICAL WORK IN ACCORDANCE WITH ARTICLES 819.05 AND 1066.05 OF THE STANDARD SPECIFICATIONS.
4. A 1/4" DIA. NYLON ROPE SHALL BE INSTALLED IN ALL CONDUIT RUNS. THE COST OF PULL ROPE SHALL BE INCLUDED IN THE PROPOSED ELECTRIC CABLE INSTALLATION AND OR FIBER OPTIC IN THAT CONDUIT.
5. ALL GROUND RODS SUPPLIED FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH ARTICLE 1087.01 EXCEPT THAT THEY SHALL BE 3/4" DIAMETER X 12'-0" LONG. ALL CONNECTIONS TO GROUND RODS SHALL BE MADE VIA EXOTHERMIC WELD. COMPRESSION CLAMPS WILL NOT BE ALLOWED.
7. COORDINATION WITH THE DEPARTMENT'S BUREAU OF OPERATIONS IS REQUIRED BEFORE ANY TRENCHING SHALL BE DONE TO LOCATE HIGHWAY LIGHTING/PUMP STATION/ITS FACILITIES AND TO COORDINATE OTHER FIELD ACTIVITIES.
8. BENDING RADIUS OF FIBER OPTIC CABLE SHALL NOT EXCEED SIX (6) INCHES.
9. NO OVERNIGHT PERMANENT LANE CLOSURES SHALL BE PERMITTED ON THIS PROJECT.

THE CONTRACTOR SHALL GIVE THE ENGINEER TWO (2) WEEKS NOTICE PRIOR TO ANY INTERSTATE ROADWAY LANE CLOSURE.
10. ANY GROUND AREA THAT THE CONTRACTOR COMPACTS OR DISTURBS SHOULD BE SEEDED AT THE END OF EACH WEEK WITH CLASS 7 TEMPORARY EROSION CONTROL SEEDING W/MULCH PER APPLICABLE PORTIONS OF SECTION 250 OF THE STANDARD SPECIFICATIONS. FOR PERMANENT SEEDING USE CLASS 2 LAWN MIXTURE IN EAST SAINT LOUIS CITY LIMITS OR CLASS 2 ROADSIDE MIXTURE ALONG THE INTERSTATE.

THE PRICE FOR THIS SEEDING SHALL BE INCLUDED IN THE UNIT COST FOR THE PAY ITEM ASSOCIATED WITH THE GROUND AREA COMPACTION OR DISTURBANCE.(I.E DRILLED SHAFT CONCRETE FOUNDATION TRENCH AND BACKFILL FOR ELECTRICAL WORK, CONCRETE FOUNDATION, TYPE DISPECIAL, ETC.)
11. ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE BE GIVEN TO UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. OR FOR NON-MEMBERS, THE UTILITY COMPANY DIRECTLY. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:
(MEMBER OF J.U.L.I.E. (800-892-0123) ARE INDICATED BY "•". NON J.U.L.I.E. MEMBERS MUST BE NOTIFIED INDIVIDUALLY.)

 - AMEREN CIPS (ELECTRIC & GAS)
 - AT & T ILLINOIS (COMMUNICATIONS)
 - BUCKEYE PARTNERS L.P.-WOODRIVER PIPELINE (PIPELINE)
 - CENTERPOINT ENERGY (PIPELINE)
 - CITY OF EAST ST. LOUIS (LIGHTING)
 - ILLINOIS AMERICAN WATER CO. (WATER)
 - METRO (COMMUNICATIONS)
12. A 9-1-1 ADDRESS MUST BE OBTAINED FROM THE ST. CLAIR COUNTY 9-1-1 COORDINATOR PRIOR TO OBTAINING ELECTRIC/ TELEPHONE SERVICE AT THE PROJECT LOCATIONS. THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER/TECHNICIAN A MINIMUM OF SIX WEEKS IN ADVANCE OF THE ANTICIPATED DATE THAT ELECTRIC/TELEPHONE SERVICE WILL BE REQUIRED IN ORDER THAT THE NECESSARY ADDRESS CAN BE OBTAINED. IF THERE ARE ANY QUESTIONS REGARDING THE ABOVE, CONTACT THE 9-1-1 COORDINATOR AT 618-277-7316 EXT. 104 FOR ST. CLAIR COUNTY
13. THE CONTRACTOR SHALL PAY SPECIAL ATTENTION TO SECTION 107. "LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC OF THE STANDARD SPECIFICATIONS". IN PARTICULAR 107.01 "LAWS TO BE OBSERVED" AND "107.04 PERMITS AND LICENSES".
14. ALL HANDHOLES SHALL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE PER SECTION 814 OF THE STANDARD SPECIFICATIONS. THE LEGEND ON THE COVER SHALL BE "ITS". SLOPE HANDHOLE TO MATCH FINAL ELEVATION.

TRAFFIC VOLUME SCHEDULE				
LOCATION	YEAR	ADT (ESTIMATED)	SU%Z	MU%Z
I-64 (25TH ST. TO IL 111)	2010	68,000	2.6	10.2

FIELD EQUIPMENT NUMBERING SYSTEM	
EXAMPLE: 006402.8W.11D	
0064	DESIGNATES HIGHWAY WHERE FIELD EQUIPMENT IS LOCATED.
006402.8	DESIGNATES MILE MARKER WHERE FIELD EQUIPMENT IS LOCATED.
006402.8W	DESIGNATES DIRECTION VIDEO DETECTOR IS MONITORING TRAFFIC OR DIRECTION TRAFFIC IS TRAVELLING TO RECEIVE DMS MESSAGE.
006402.8W.11	NUMBER ASSIGNED TO THAT FIELD EQUIPMENT
006402.8W.11D	A = ALL DIRECTIONS D = VEHICLE DETECTION C = CAMERA (P/T/Z SURVEILLANCE) H = HAR SIGNAGE WITH BEACON R = RADAR DETECTION

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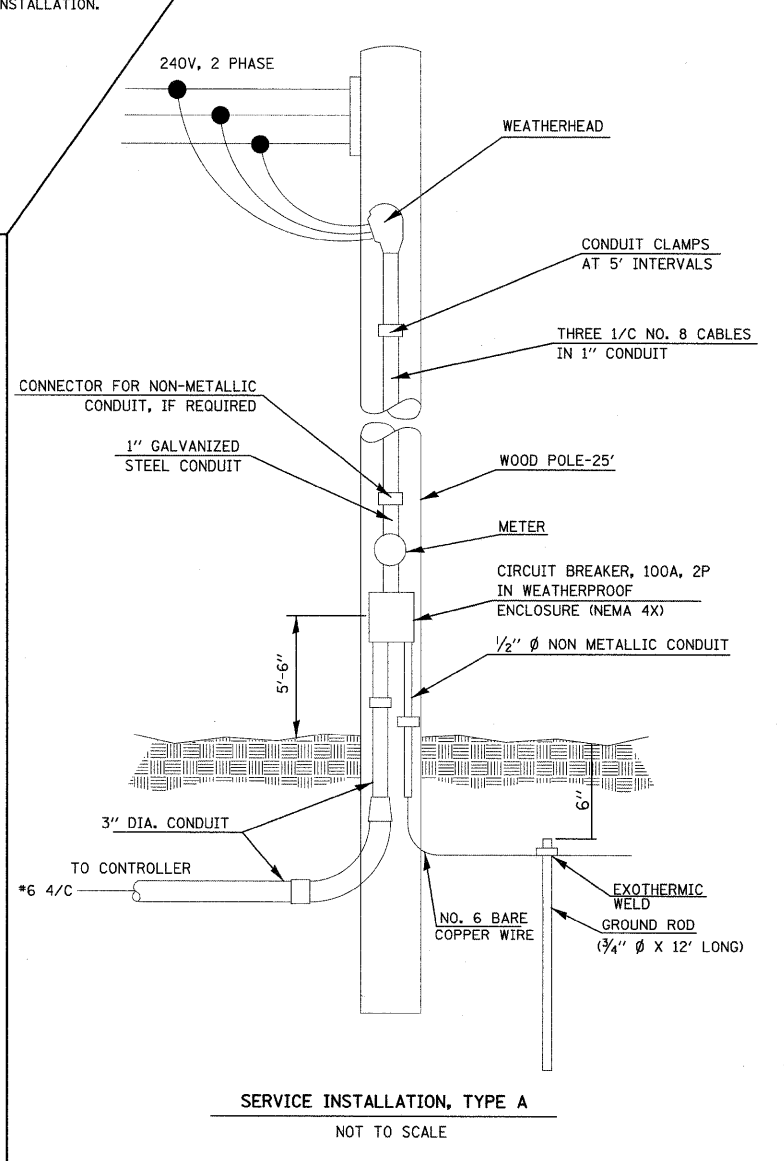
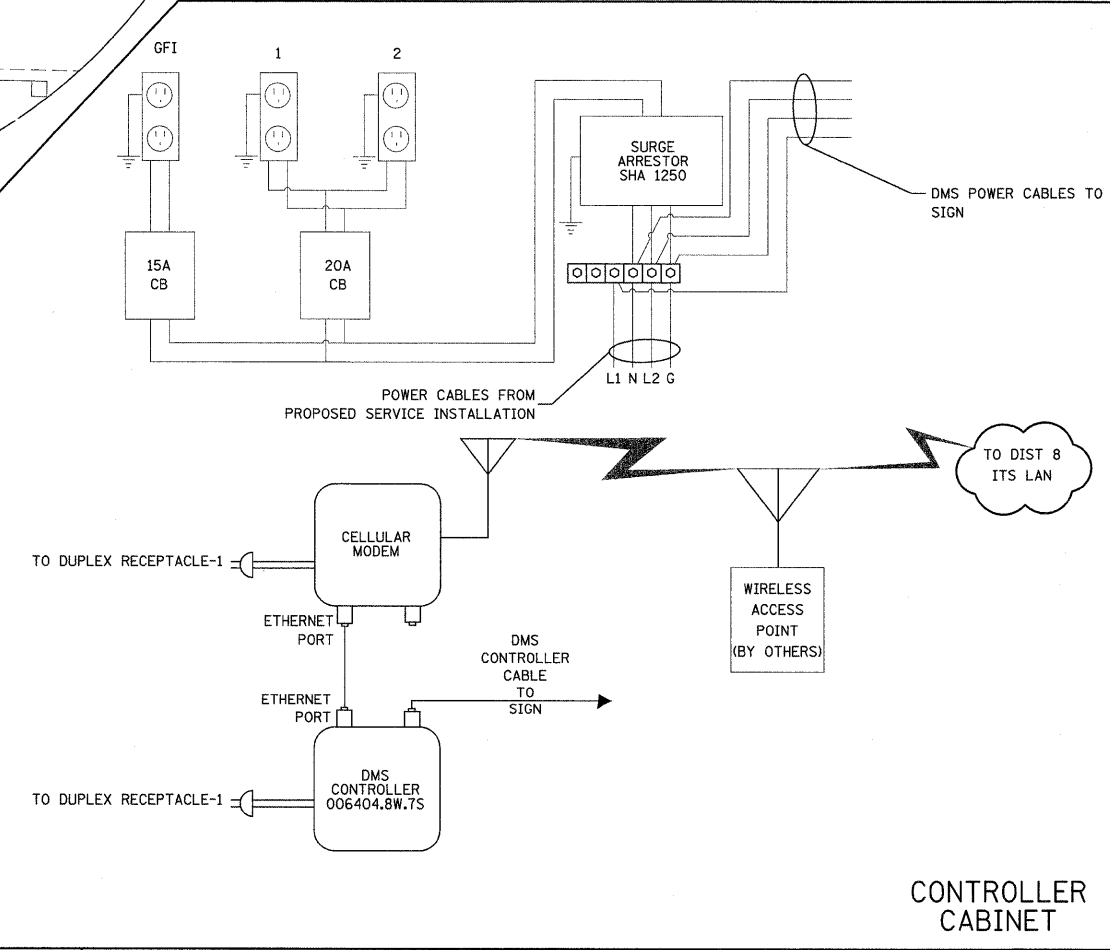
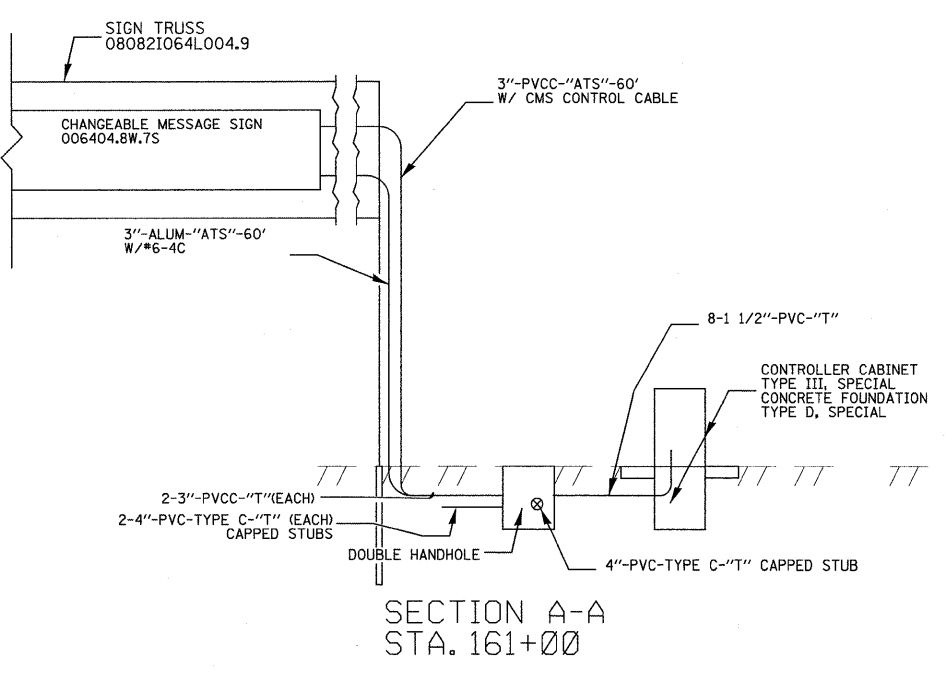
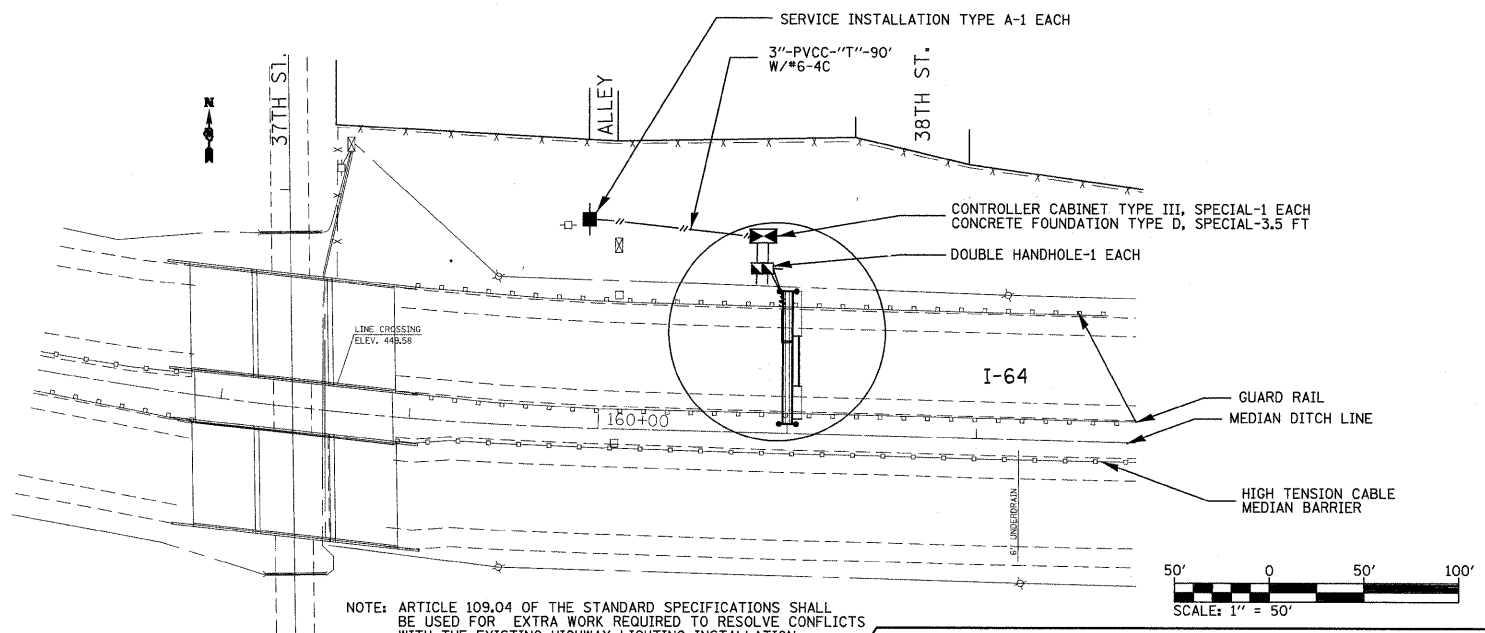
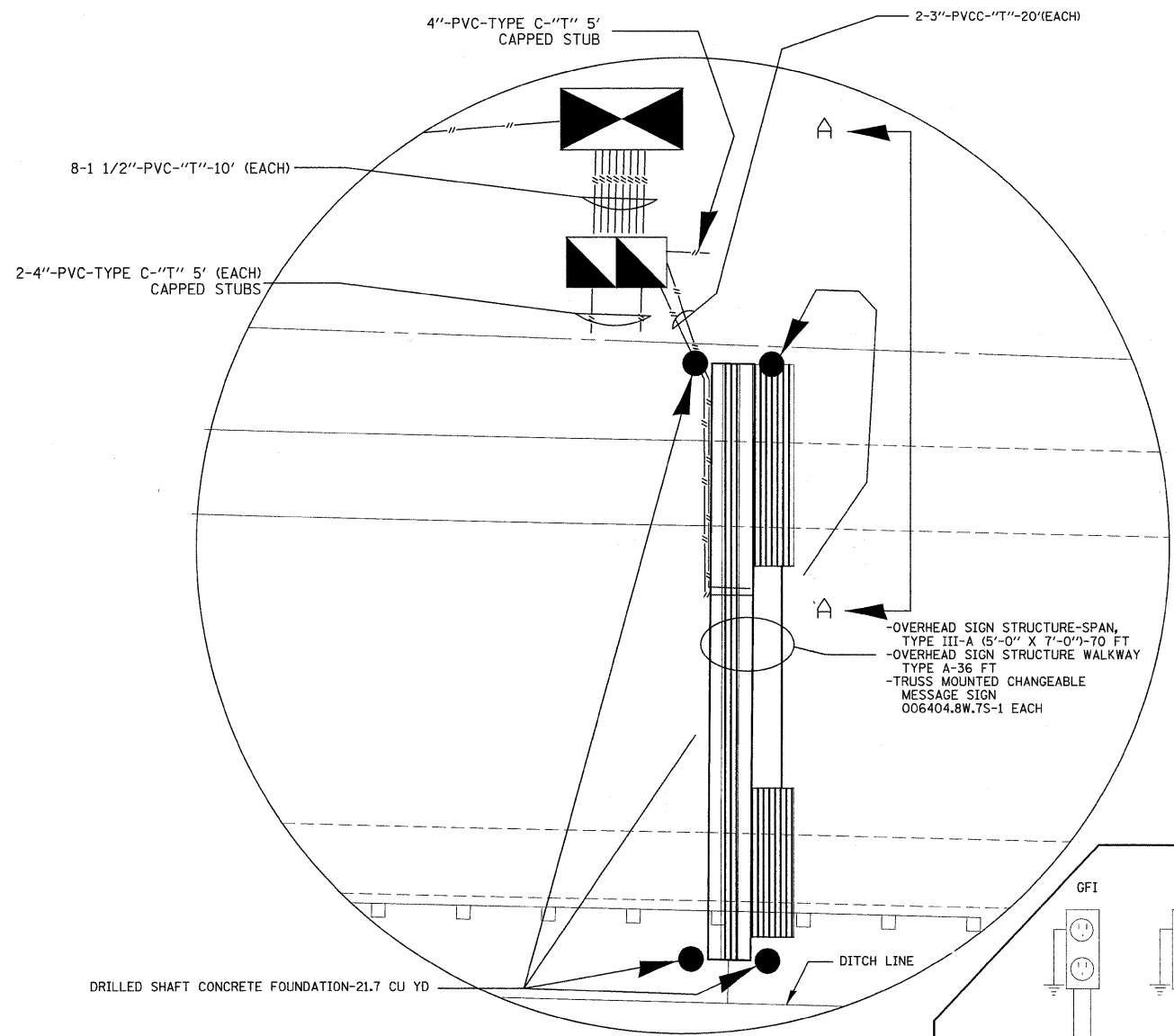
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF QUANTITIES
AND GENERAL NOTES**

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	DIST 8 'S 2010-3	ST. CLAIR	14	2
CONTRACT NO. 76C64				
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				

Rev.



GENERAL NOTES

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

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

LOADING: 90 M.P.H. WIND VELOCITY

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

DESIGN STRESSES:

Field Units
 $f'_c = 3,500$ p.s.i.
 $f_y = 60,000$ p.s.i. (reinforcement)

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

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B or A500 Grade B or C. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.

All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W*. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer. The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. (Zone 2) before galvanizing.

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

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

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

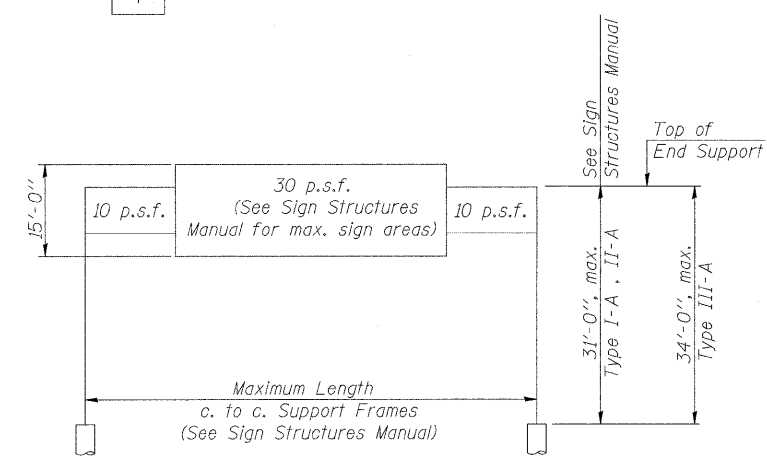
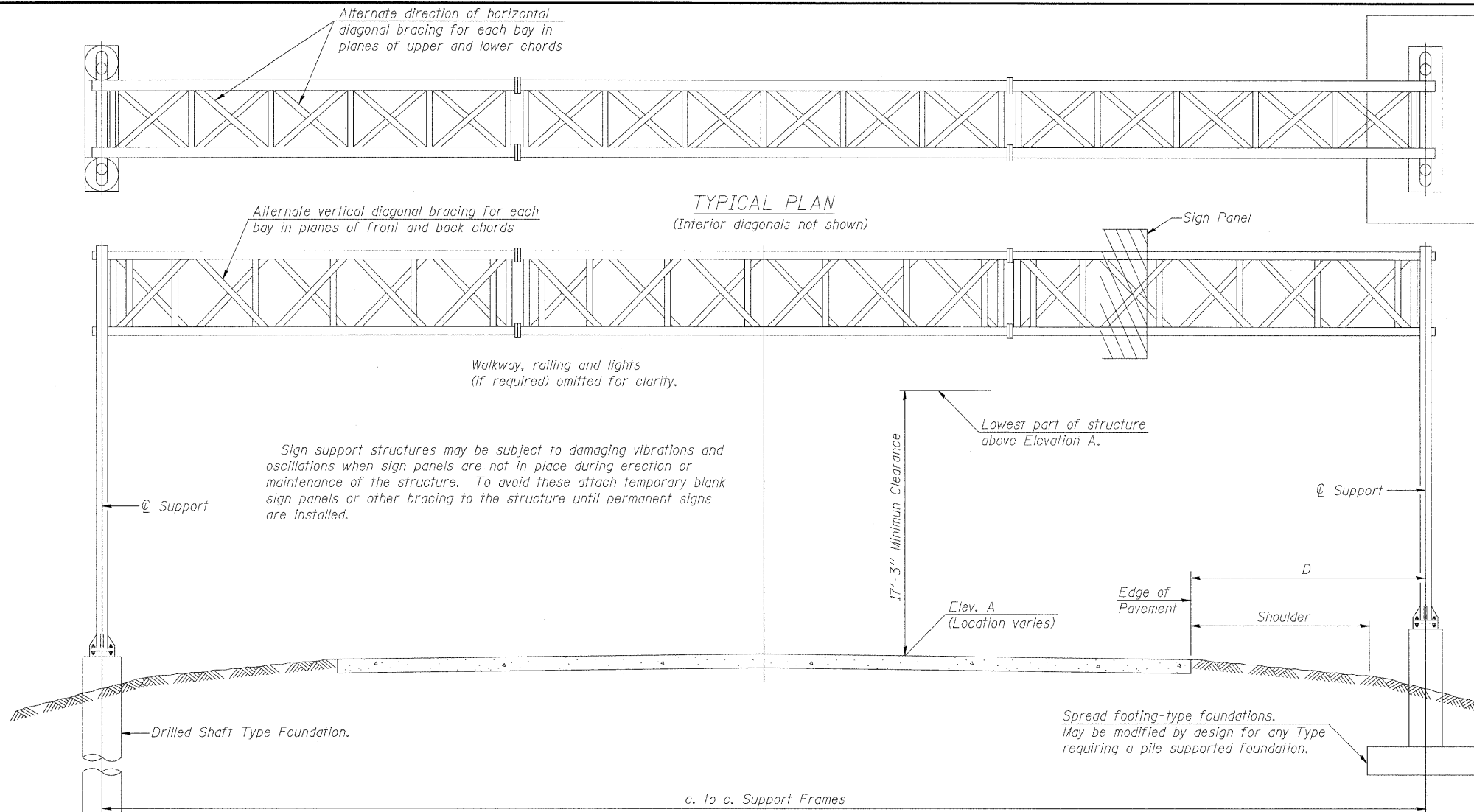
ANCHOR RODS: Shall conform to AASHTO M314 Gr. 36, 55 or 105 with a minimum Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F.

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

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

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

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



TYPICAL ELEVATION
 (Looking at Face of Signs)**

Structure Number	Station	Design Truss Type	c. to c. Supports	Elev. A	Dim. D	Height of Tallest Sign	Total Sign Area
8S0821064L004.9	161+00	IIIA	70'	426.993	17.7'		

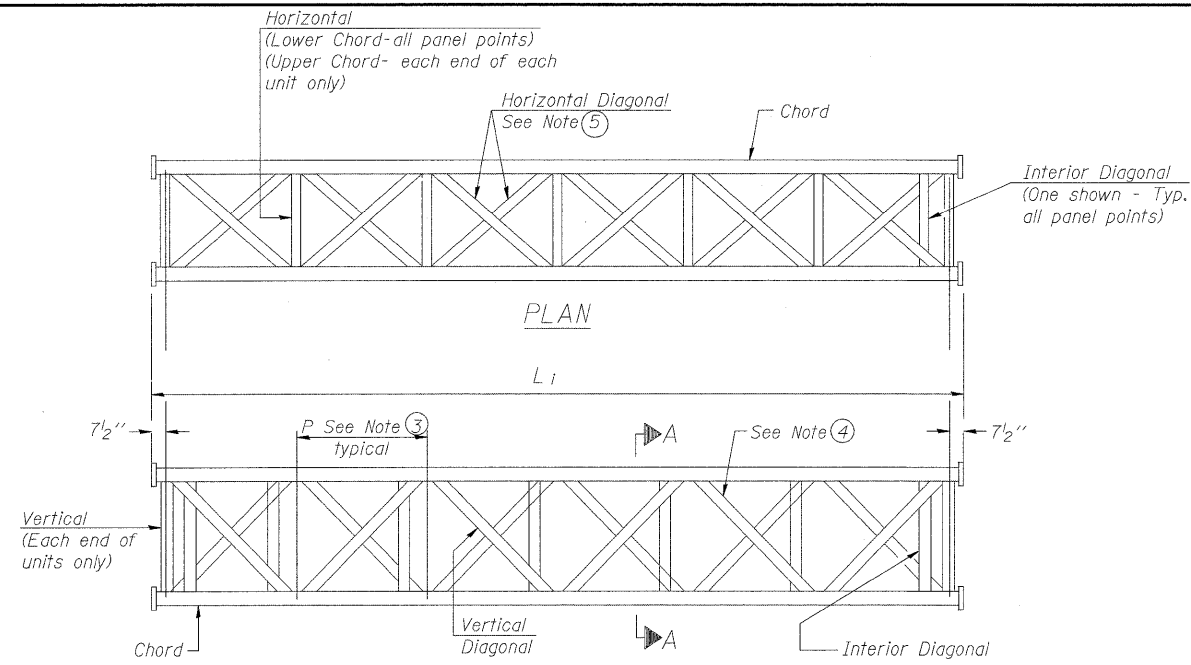
**Looking upstation for structures with signs both sides.

TOTAL BILL OF MATERIAL

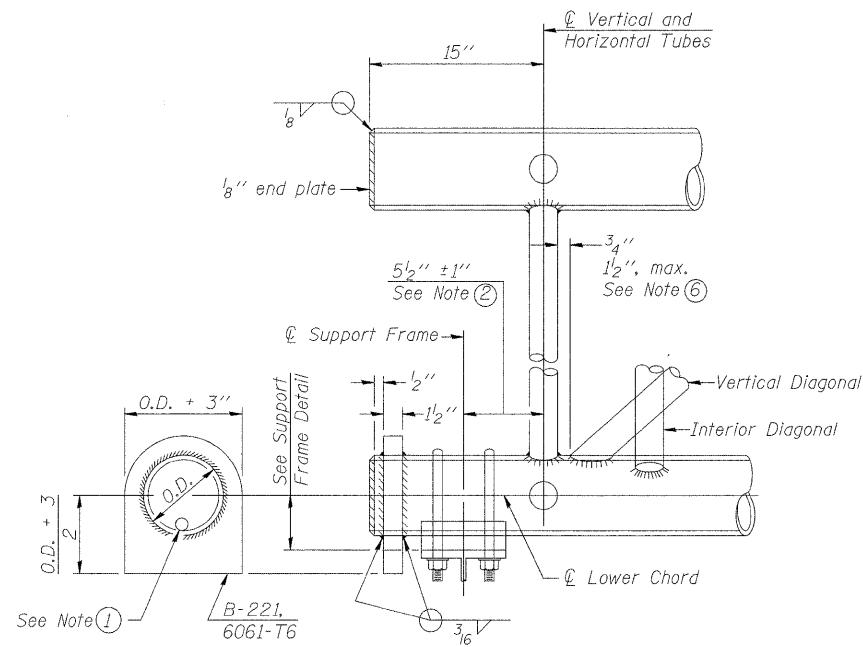
NUMBER	REVISION	DATE

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	70'
OVERHEAD SIGN STRUCTURE WALKWAY TYPE A	Foot	36'
CONCRETE FOUNDATIONS	Cu. Yds.	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	21.7

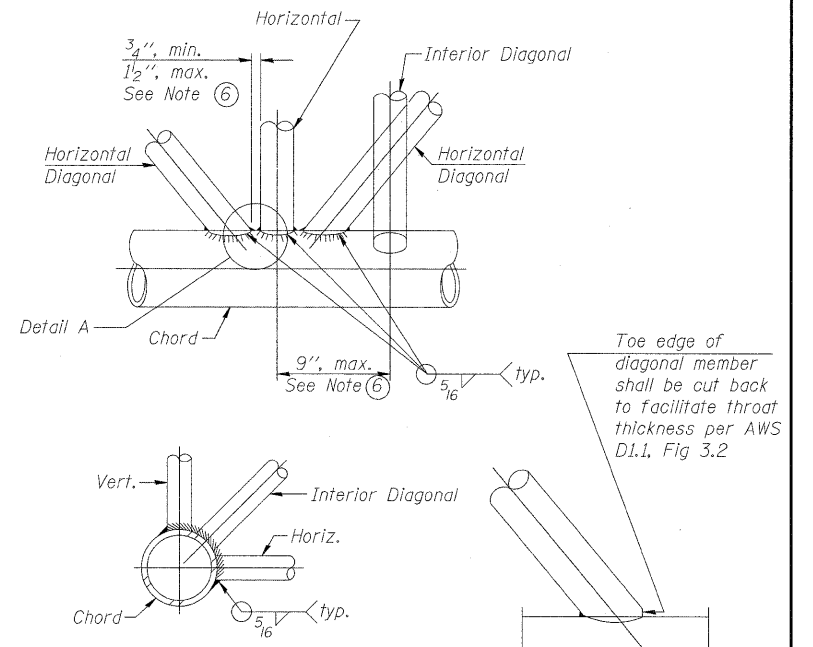
**OVERHEAD SIGN STRUCTURES
 GENERAL PLAN & ELEVATION
 ALUMINUM TRUSS & STEEL SUPPORTS**



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



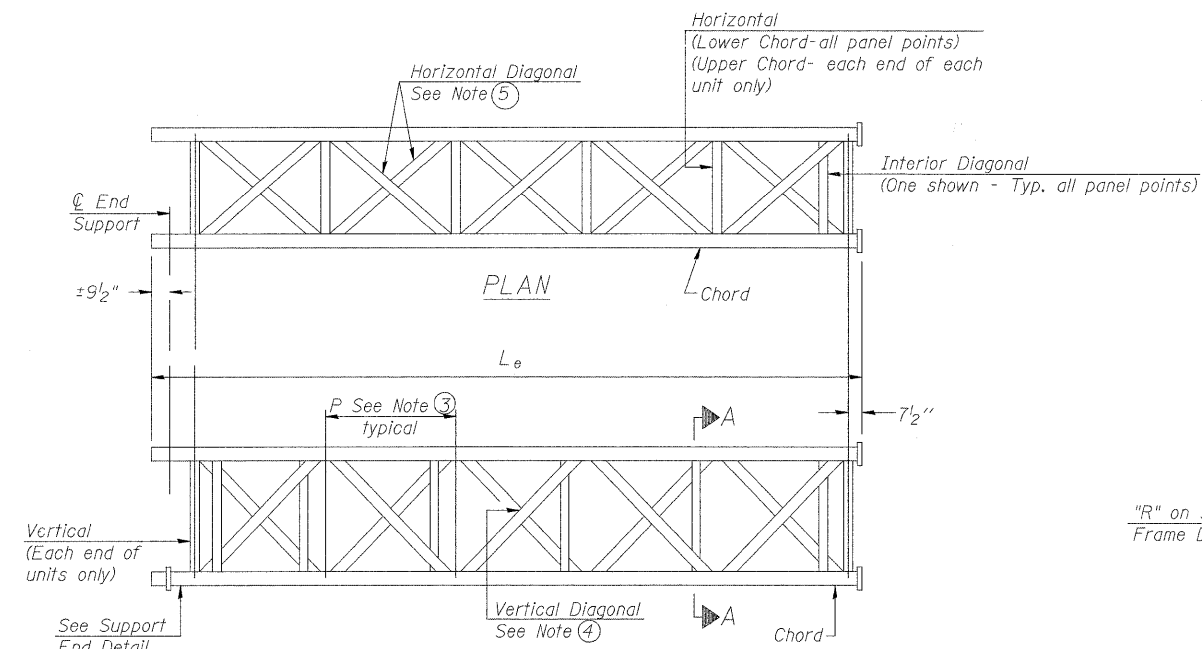
SUPPORT END DETAIL FOR EXTERIOR UNIT



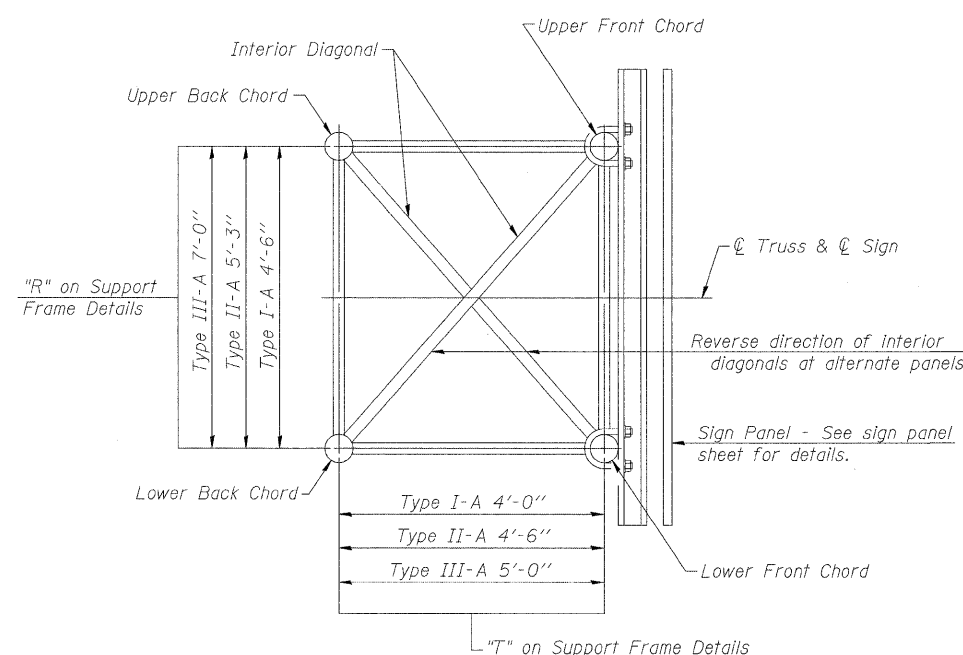
TYPICAL JOINT DETAILS

DETAIL A

- ① Contractor may alternatively use standard aluminum drive-fit cap to close end. 1/2" φ drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)
- ② 5 1/2" end dimension may vary by ±1" to provide uniform panel spacing (P).
- ③ Panel spacing (P) shall be uniform for entire truss and between 4'-0" and 5'-0" for Type I-A or 4'-0" and 5'-6" for Types II-A and III-A.
- ④ Vertical Diagonals in front and back face shall alternate.
- ⑤ Hidden lines show wind bracing alternates direction between planes of top and bottom chords.
- ⑥ All diagonals shall be detailed for minimum offset from the panel point based on the following: Offset shall be such as to provide a 3/4" minimum to 1 1/2" maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walkway brackets.



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



SECTION A-A

NUMBER	REVISION	DATE

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

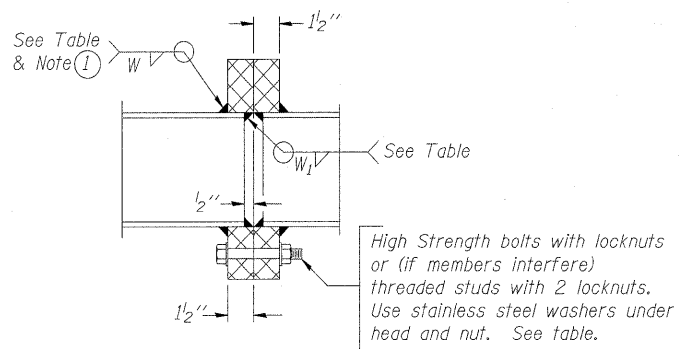
OS-A-2

12-1-08

FILE NAME = #FILE#	USER NAME = #USER#	DESIGNED - ---	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES ALUMINUM TRUSS DETAILS FOR TRUSS TYPES I-A, II-A AND III-A	F.A.I. RTE. 64	SECTION Dist 8 ITS 2010-3	COUNTY ST CLAIR	TOTAL SHEETS 14	SHEET NO. 5
PLOT SCALE = #SCALE#	DRAWN - ---	REVISED - ---	SCALE: _____			SHEET NO. _____ OF _____ SHEETS	STA. _____ TO STA. _____	CONTRACT NO. 16C64		FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT
PLOT DATE = #DATE#	CHECKED - ---	REVISED - ---								
	DATE - ---	REVISED - ---								

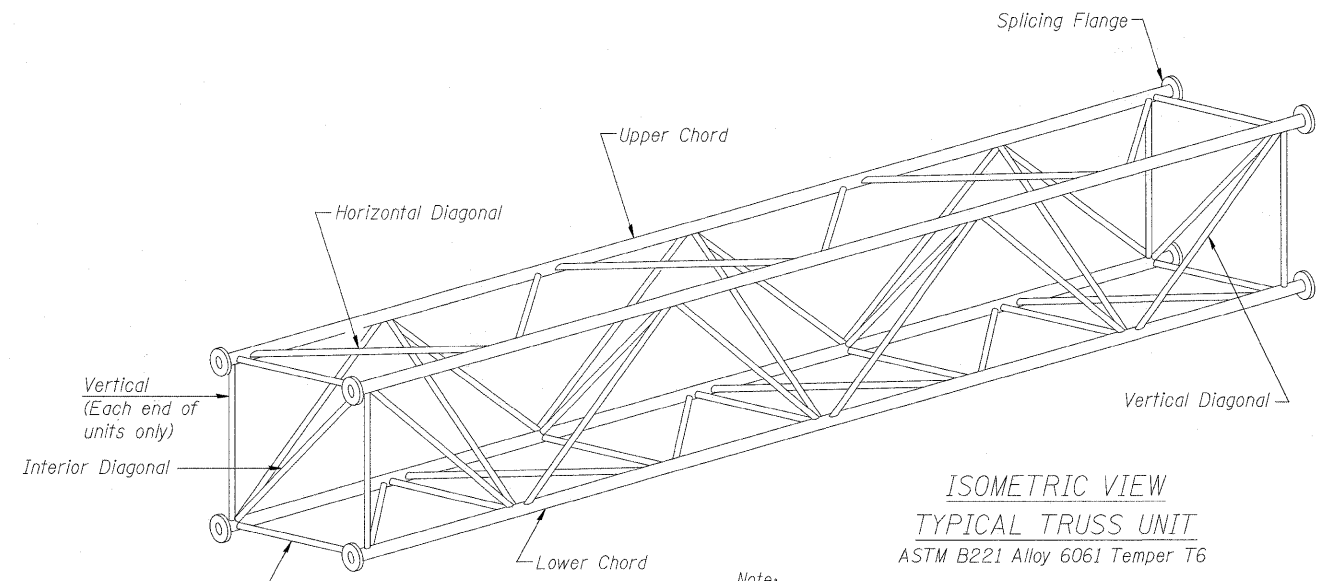
TRUSS UNIT TABLE

Structure Number	Station	Design Truss Type	Exterior Units (2)			Interior Unit			Upper & Lower Chord		Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals		Camber at Midspan	Splicing Flange						
			No. Panels per Unit	Unit Lgth.(L _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 _i		
8S0821064L004.9	161+00	IIIA	7	35' 8.5"	4' 10"				7"	5/16"	3 1/4"	5/16"	0.8"	6	1"	7/16"	5/16"	11.5"	15"	



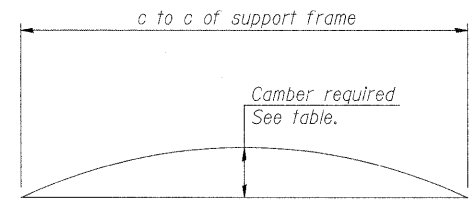
SECTION B-B

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.



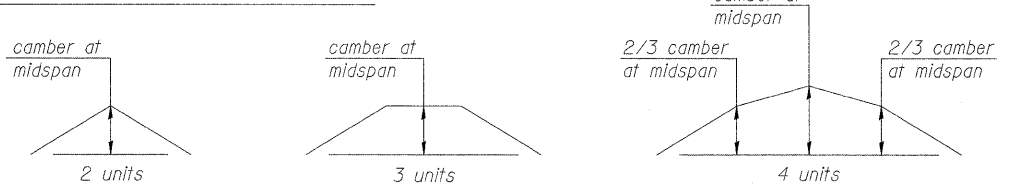
**ISOMETRIC VIEW
TYPICAL TRUSS UNIT
ASTM B221 Alloy 6061 Temper T6**

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.

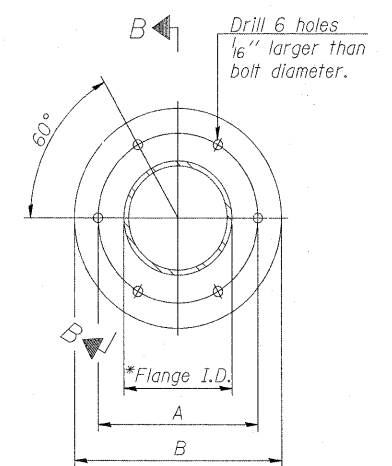


CAMBER DIAGRAM
Camber curve shown is theoretical. Actual camber attained by slope changes at splices between units.

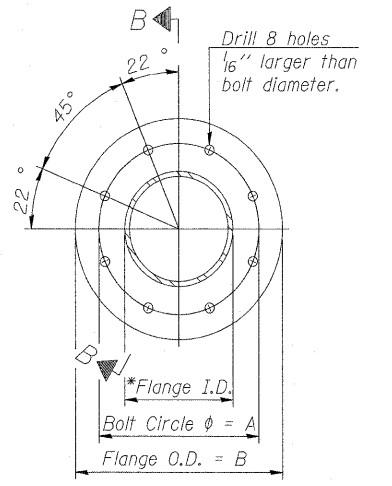
CAMBER ATTAINMENT EXAMPLES:



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

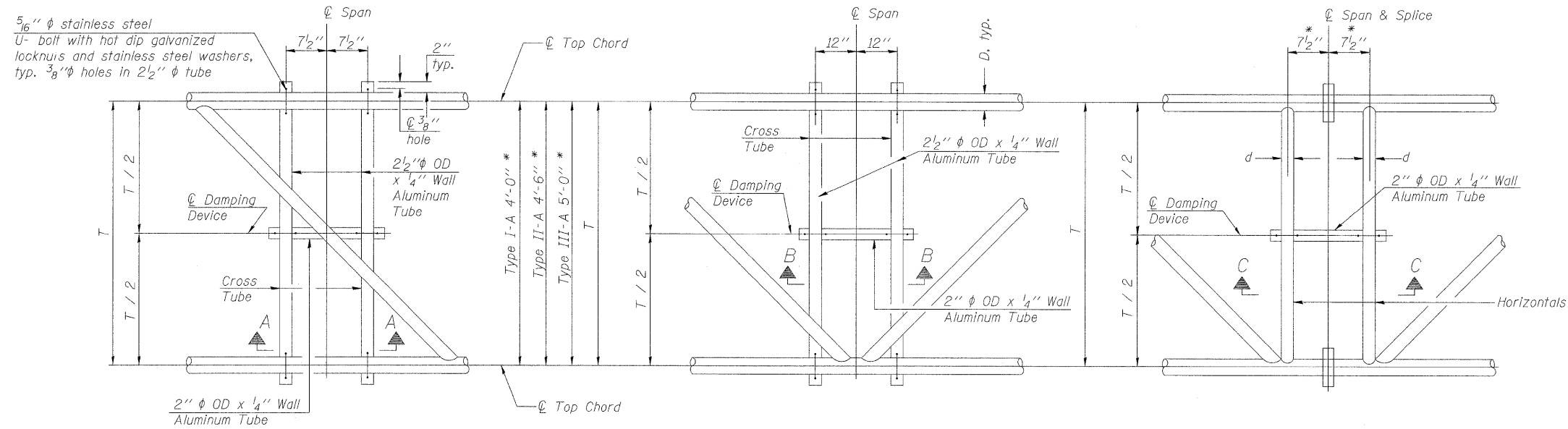
SPLICING FLANGES
ASTM B221, Alloy 6061-T6
or ASTM B209, Alloy 6061-T651
*To fit O.D. of Chord with maximum gap of 1/16".

NUMBER	REVISION	DATE

OS4-A-2

12-1-08

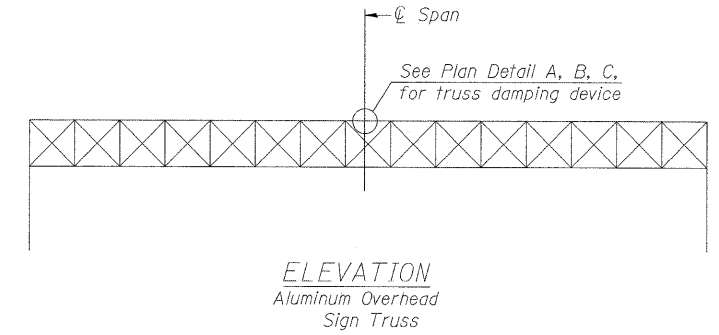
* Center of horizontal to center of splice dimension may vary. Verify before drilling holes in mounting tube.



PLAN DETAIL "A"
Span between Panel Points

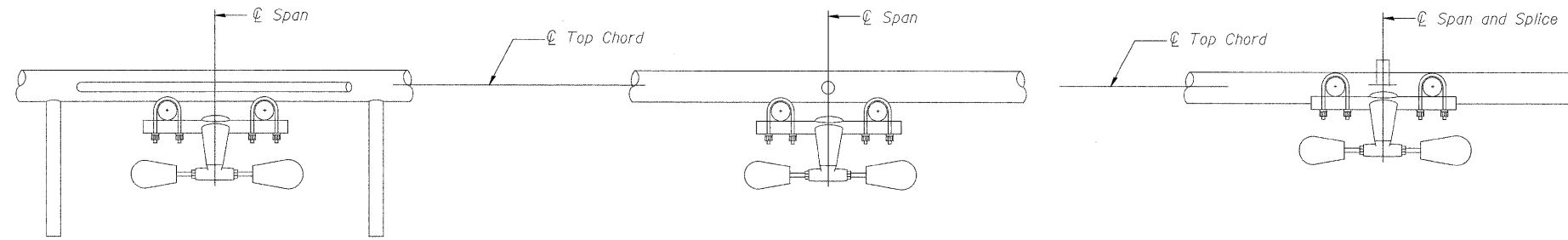
PLAN DETAIL "B"
Span at Panel Point

PLAN DETAIL "C"
Span at Chord Splice



ELEVATION
Aluminum Overhead
Sign Truss

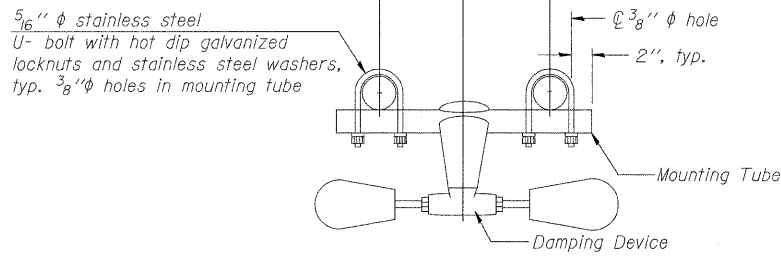
NOTES
 Damper: One damper per truss. (31 lbs. minimum Stockbridge-Type Aluminum - 29" minimum between ends of weights) Cost included in Overhead Sign Structure...
 Materials: Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6. Cost included in Overhead Sign Structure...



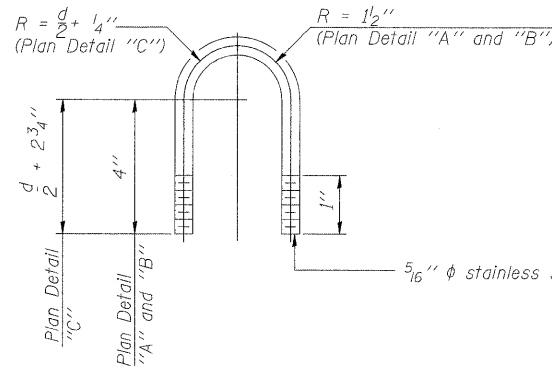
SECTION A-A

SECTION B-B

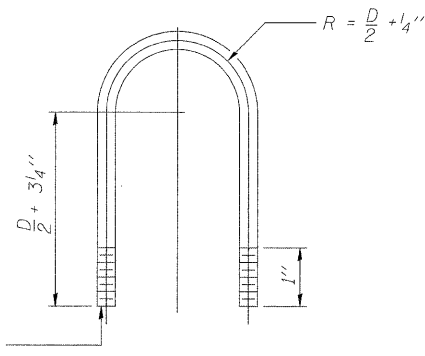
SECTION C-C



TRUSS DAMPING
DEVICE CONNECTION DETAIL
(Typical)



DAMPING DEVICE MOUNTING
TUBE U-BOLT DETAIL
(Typical)



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

OS-A-D

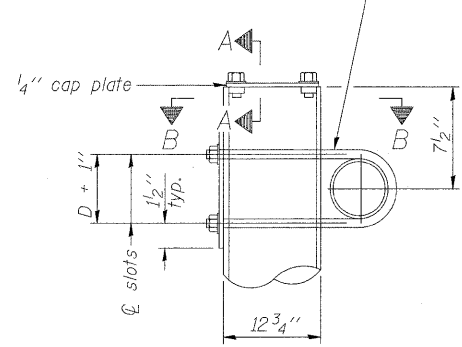
12-1-08

FILE NAME = #FILE#	USER NAME = #USER#	DESIGNED - DRAWN - CHECKED - DATE -	REVISED - REVISED - REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURE DAMPING DEVICE	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = #SCALE#	DATE				64	Dist 8 IST 2010-3	ST CLAIR	14	7
	PLOT DATE = #DATE#			SCALE: _____ SHEET NO. ___ OF ___ SHEETS STA. _____ TO STA. _____		FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				

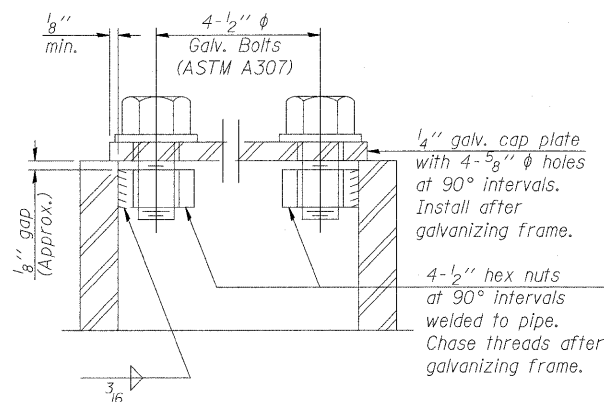
OVERHEAD SIGN STRUCTURE
DAMPING DEVICE

CONTRACT NO. 16C64

$\frac{3}{4}$ " ϕ stainless steel U-bolt.
Provide two washers and two hexagon locknuts. (4)
 $\frac{13}{16}$ " x 2" slots on ϕ 12" pipe.
(4 slots required per pipe)

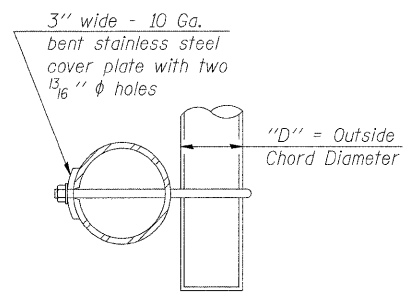


DETAIL A

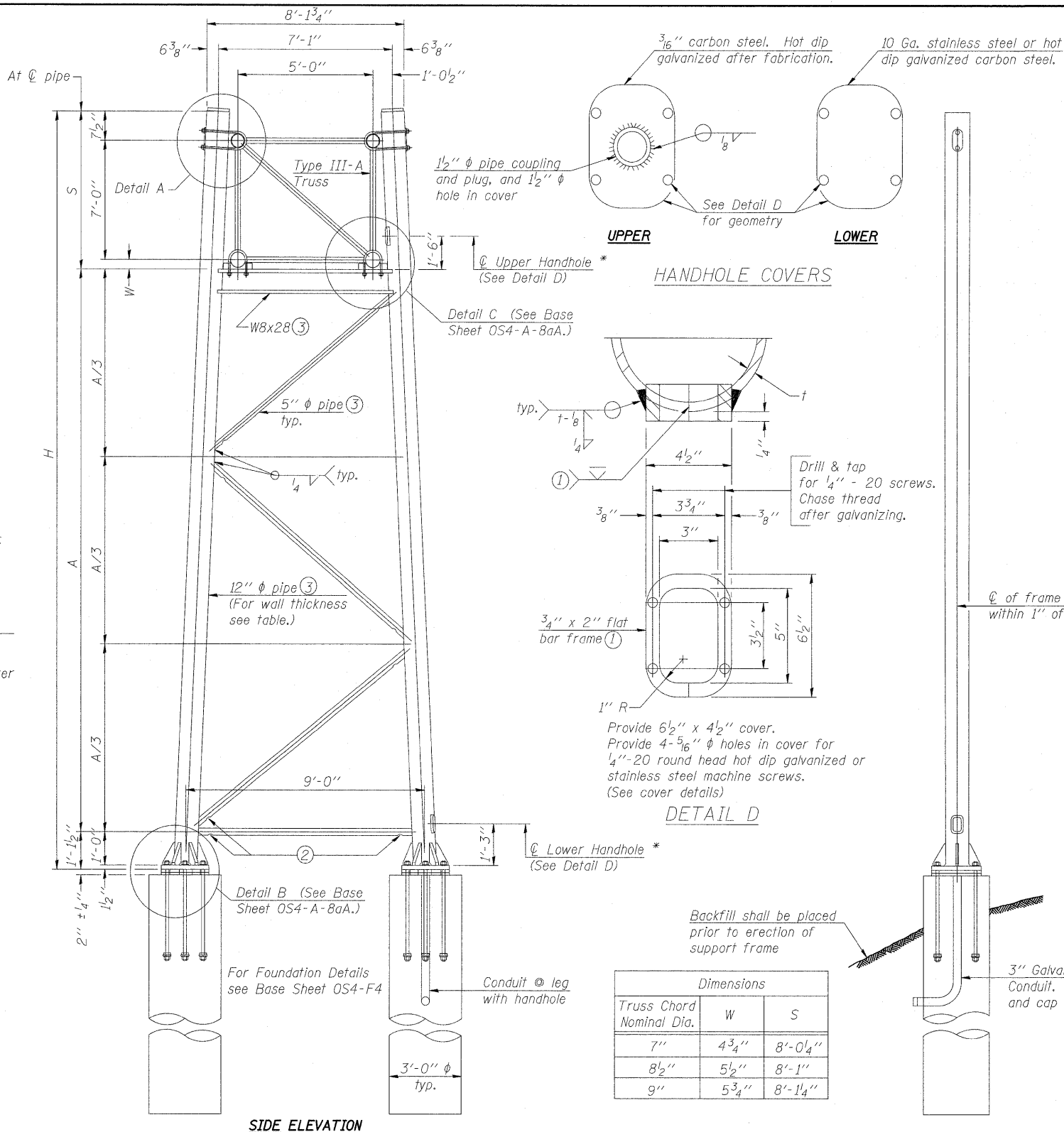


SECTION A-A

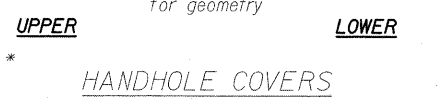
As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.



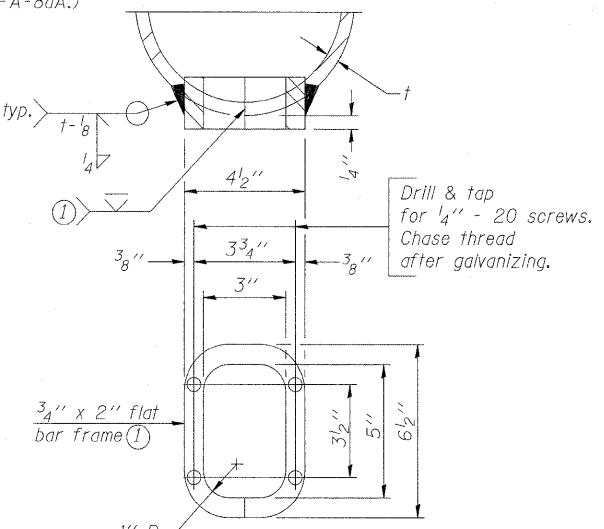
SECTION B-B



SIDE ELEVATION



HANDHOLE COVERS



DETAIL D

Dimensions		
Truss Chord Nominal Dia.	W	S
7"	4 3/4"	8'-0 1/4"
8 1/2"	5 1/2"	8'-1"
9"	5 3/4"	8'-1 1/4"

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

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

- ① In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 μ m or less.
 - ② Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred, typ.
 - ③ Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet OS-A-1.
 - ④ See General Notes for fasteners.
 - ⑤ Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.
 - ⑥ "H" based on 15'-0" or actual sign height, whichever is greater
- * For dynamic message sign installations, provide upper and lower handholes in both legs of each support frame.

Structure Number	Station	Support		Pipe Wall Thickness	H (6)	A
		Left	Right			
8S082I064L004.9	161+00	X	X	0.33"	30.431	22.285
				0.33"	29.802	21.656

OS4-A-8a

12-1-08

FILE NAME = #FILE#	USER NAME = #USER#	DESIGNED - ---	REVISED - ---
		DRAWN - ---	REVISED - ---
		CHECKED - ---	REVISED - ---
		DATE - ---	REVISED - ---

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

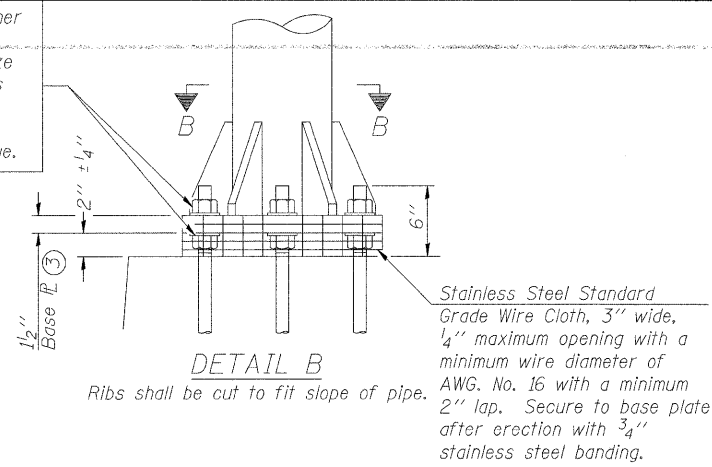
**OVERHEAD SIGN STRUCTURES SUPPORT FRAME
FOR TYPE III-A ALUMINUM TRUSS**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	Dist 8 ITS 2010-3	ST CLAIR	14	8
				CONTRACT NO. 76C64

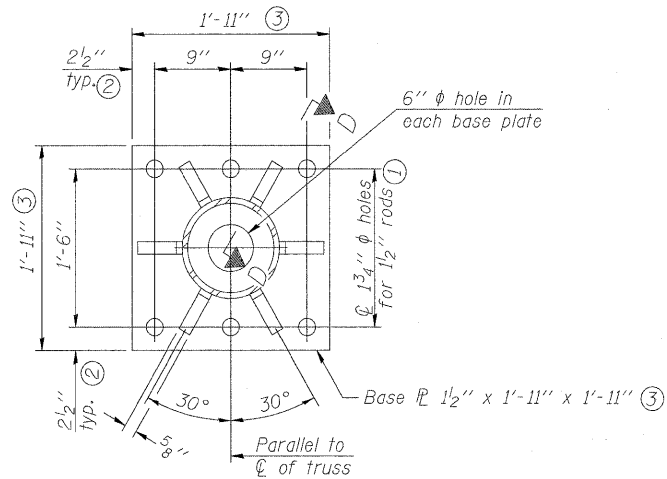
SCALE: _____ SHEET NO. ____ OF ____ SHEETS STA. _____ TO STA. _____

FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT

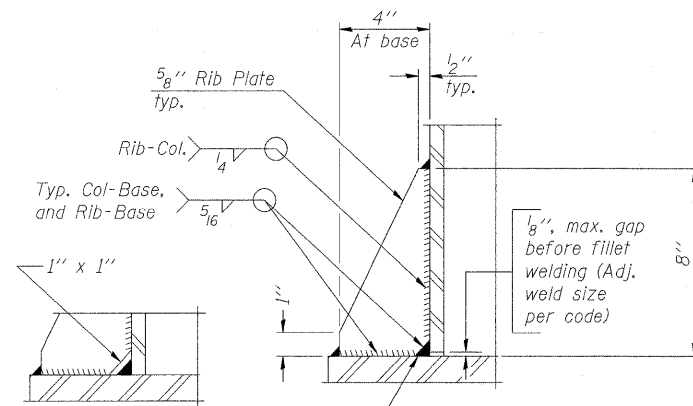
Hexagon locknut and washer (top), leveling nut and washer (bottom). Galvanize per AASHTO M232. Nuts shall each be tightened against base plate with 200 lb.-ft. minimum torque.



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

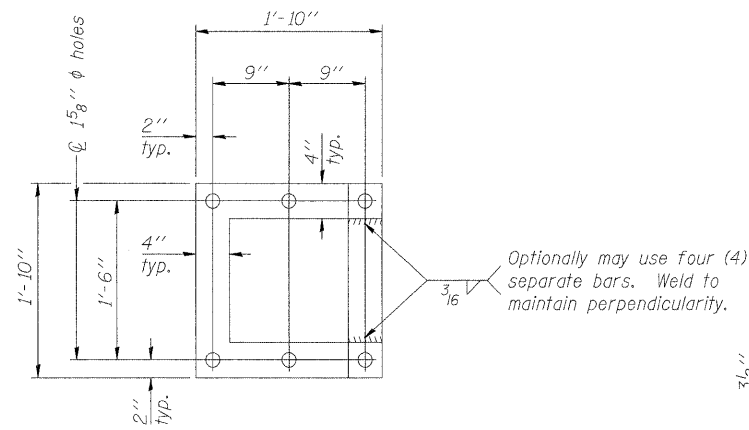


SECTION B-B

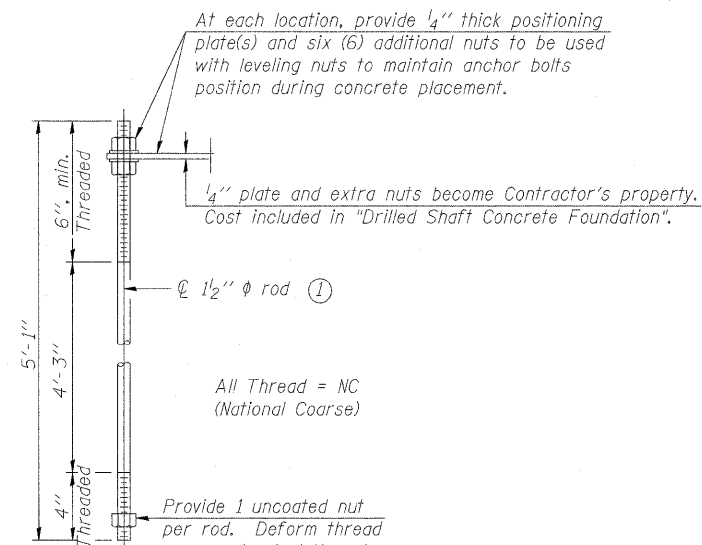


** Alternate detail if welding col. to base plate first, then snip inside corner of ribs. Terminate weld on rib 1/4 inch from snip.

SECTION D-D



POSITIONING PLATE(S)



ANCHOR ROD DETAIL

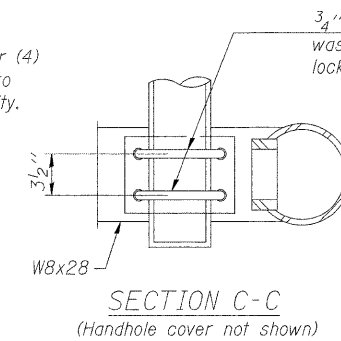
Anchor rods shall conform to AASHTO M314 Grade 36 or 55 and meet Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. Galvanize upper 12 inch per AASHTO M232. No welding shall be permitted on rods.

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

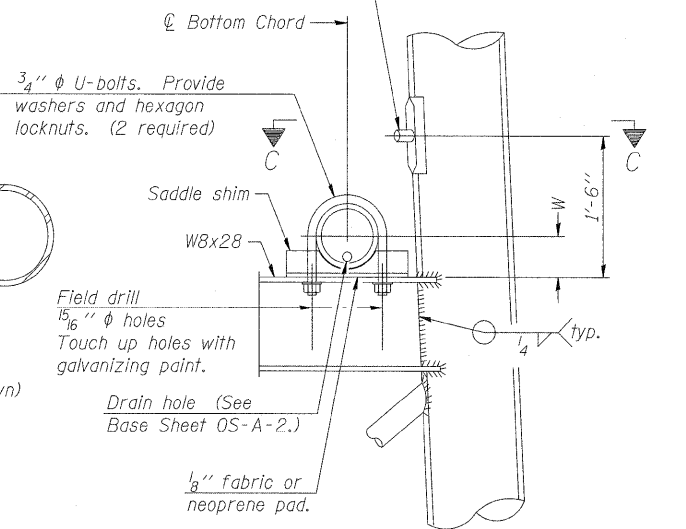
Notes:
For Type III-A Truss spans greater than 150 ft. and up to 160 ft.:

- ① 1 3/4" Ø rod, 2" Ø holes
- ② 2 3/4" edge distance
- ③ Base Pl. 1 5/8" x 1'-11 1/2" x 1'-11 1/2"

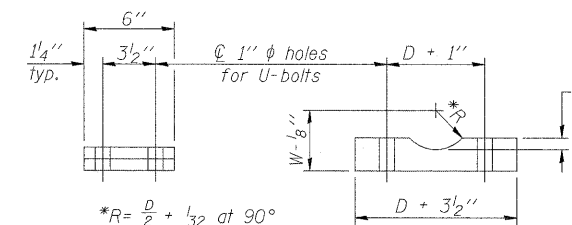
NUMBER	REVISION	DATE



SECTION C-C
(Handhole cover not shown)



DETAIL C



Truss Chord Nominal Dia.	a
7"	1"
8 1/2"	1 1/4"
9"	1 3/8"

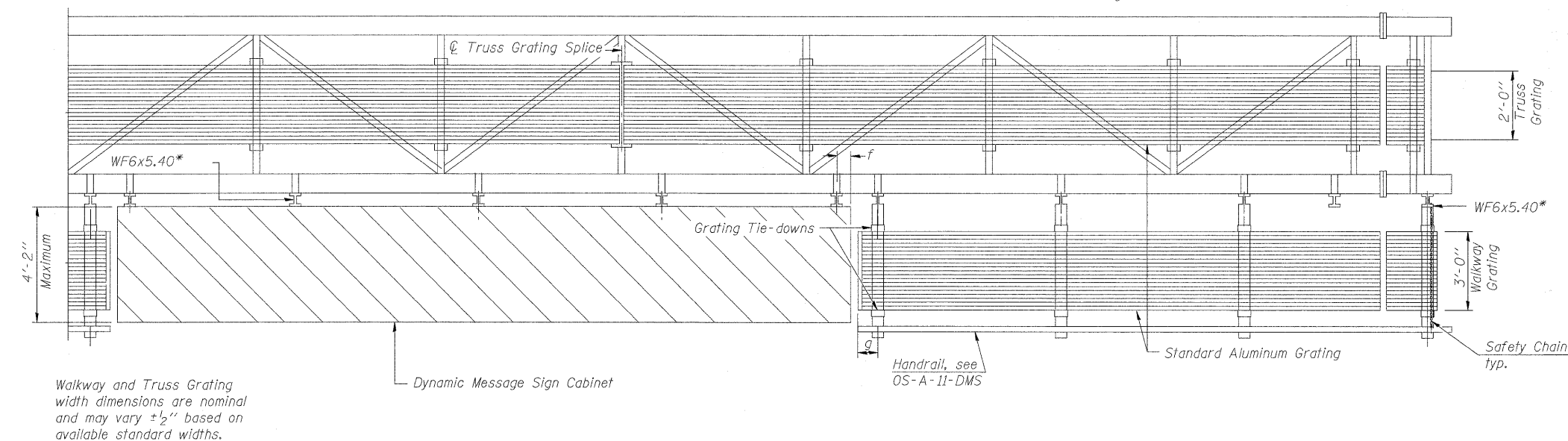
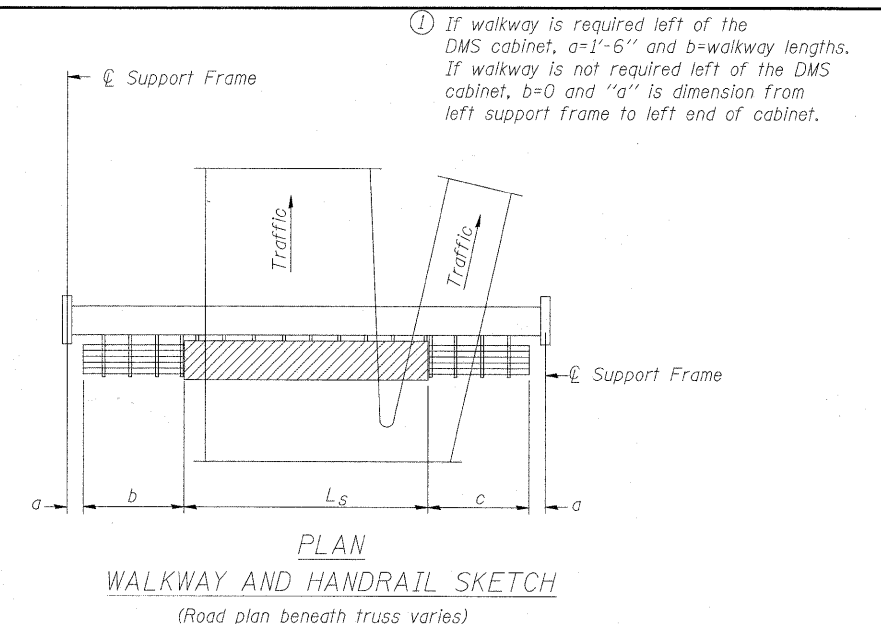
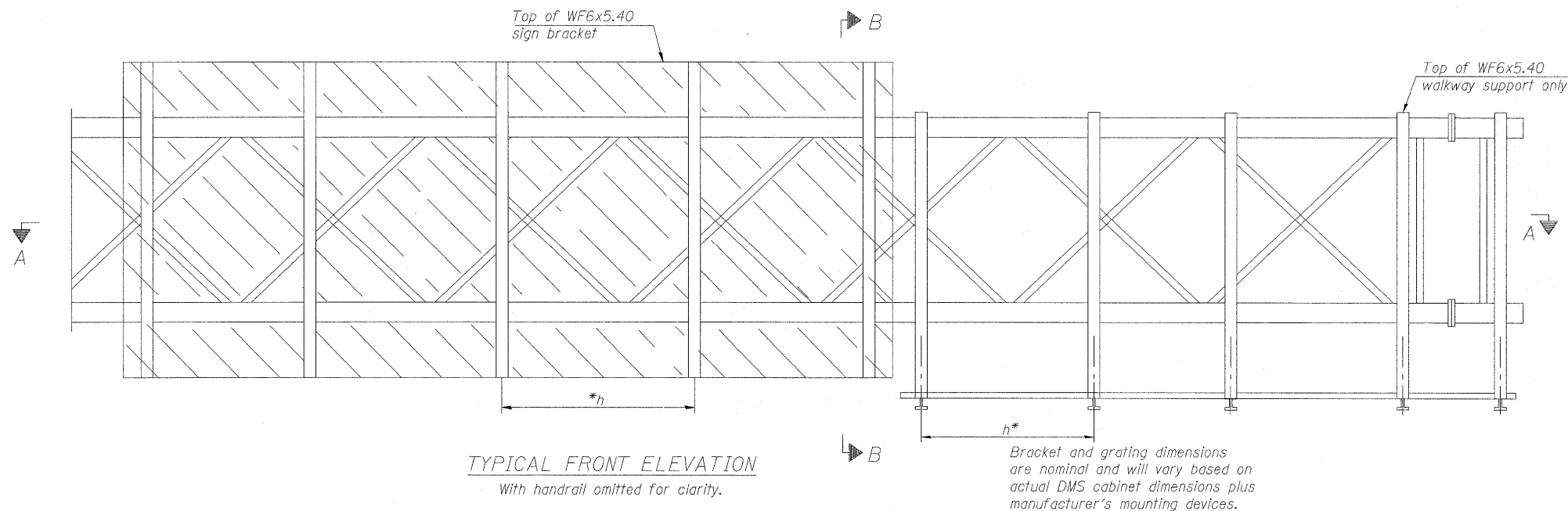
SADDLE SHIM DETAIL

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

OS4-A-80A

12-1-08

FILE NAME = #FILE#	USER NAME = #USER#	DESIGNED - ---	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES SUPPORT FRAME FOR TYPE III-A ALUMINUM TRUSS	F.A.I. RTE. 64	SECTION Dist 8 ITS 2010-3	COUNTY ST CLAIR	TOTAL SHEETS 14	SHEET NO. 9	
PLOT SCALE = #SCALE#	CHECKED - ---	REVISED - ---	SCALE: _____			SHEET NO. _____ OF _____ SHEETS	STA. _____ TO STA. _____	FED. ROAD DIST. NO. _____	ILLINOIS FED. AID PROJECT	CONTRACT NO. 76C64	
PLOT DATE = #DATE#	DATE - -----	REVISED - ---									



BRACKET TABLE

WF6x5.40 ASTM B308, Alloy 6061-T6		
Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
8'-0"	8'-0"	2
14'-0"	14'-0"	3
20'-0"	20'-0"	4
26'-0"	26'-0"	5
32'-0"	32'-0"	6

Notes:
 * Space walkway brackets WF6x5.40 for efficiency and within limits shown:
 f = 12" maximum, 4" minimum (End of sign to center of nearest bracket)
 g = 12" maximum, 4" minimum (End of walkway grating to center of nearest support bracket)
 h = 6'-0" maximum (center to center of sign and/or walkway support brackets, WF6x5.40)

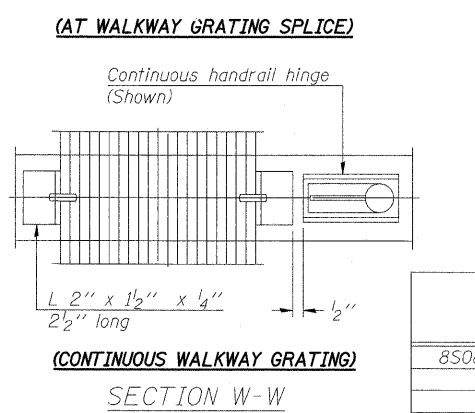
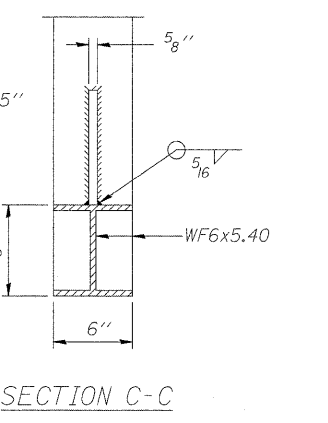
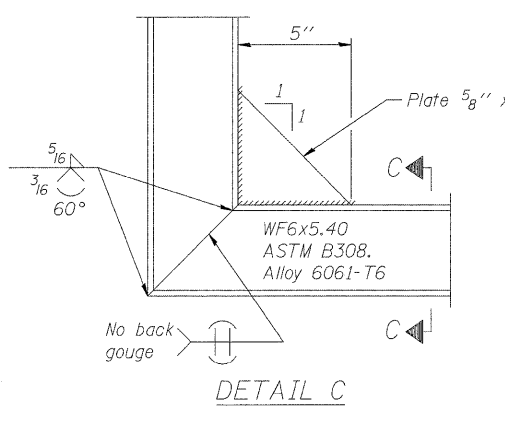
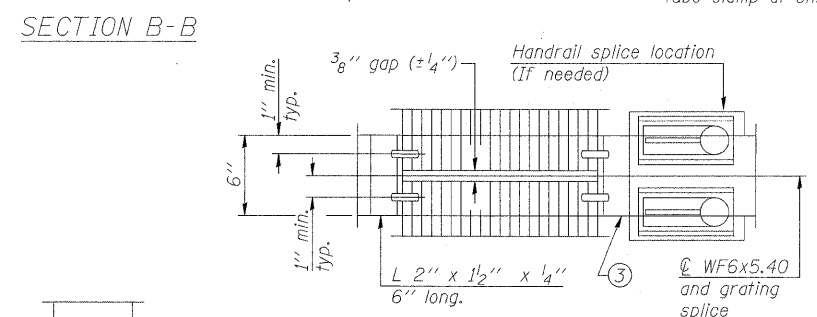
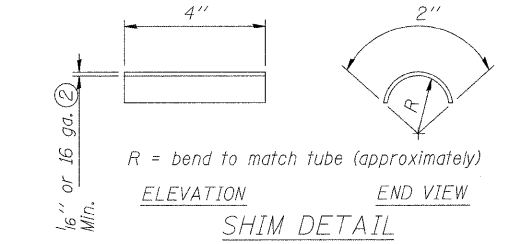
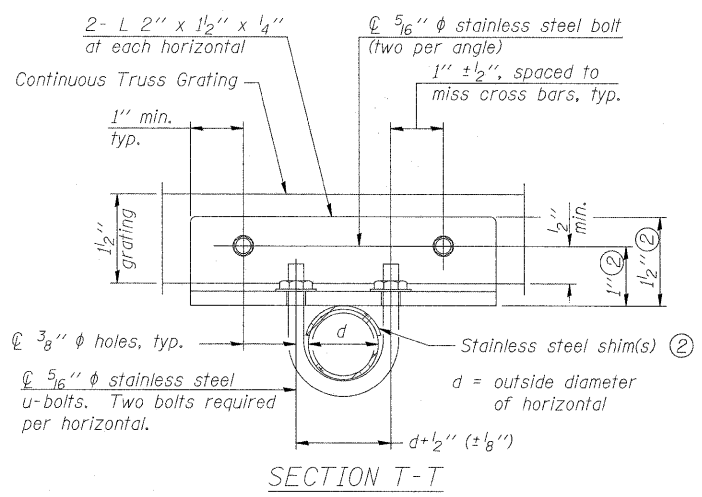
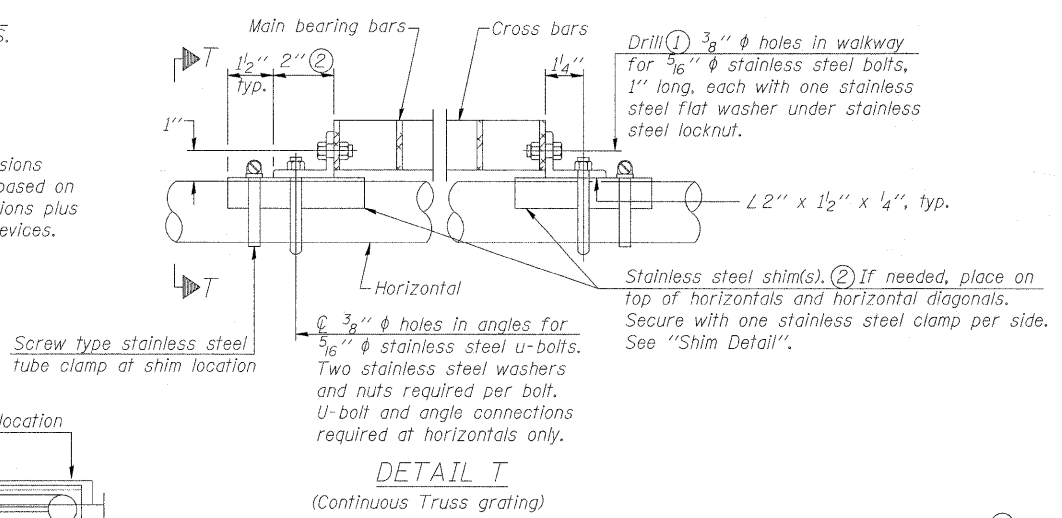
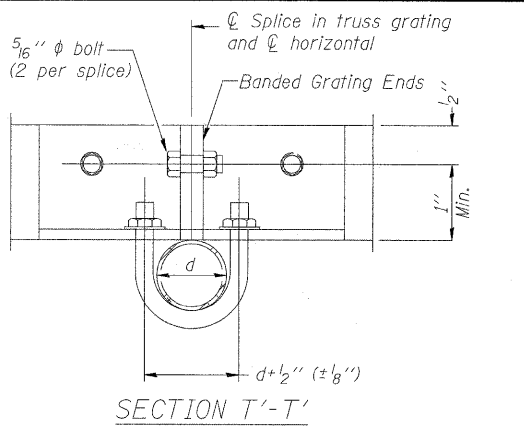
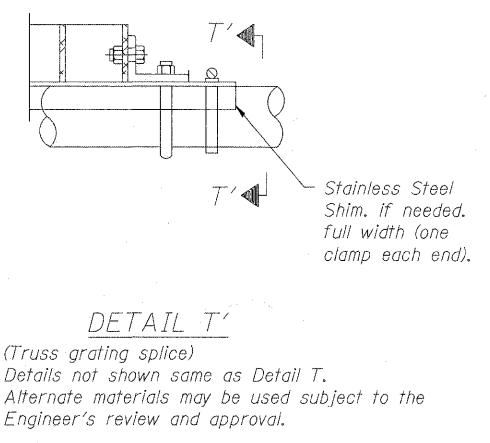
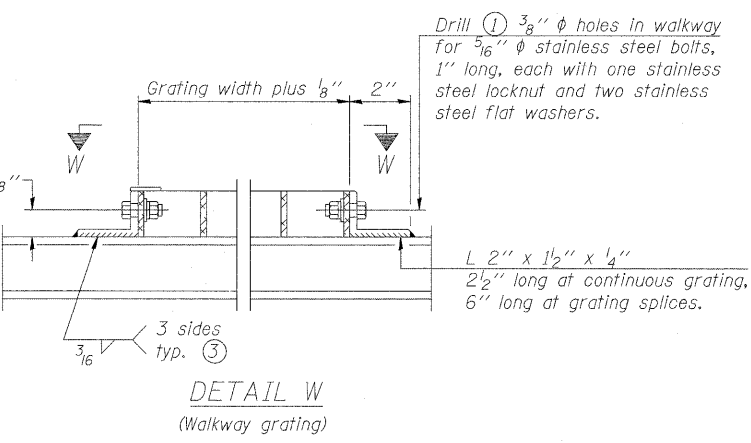
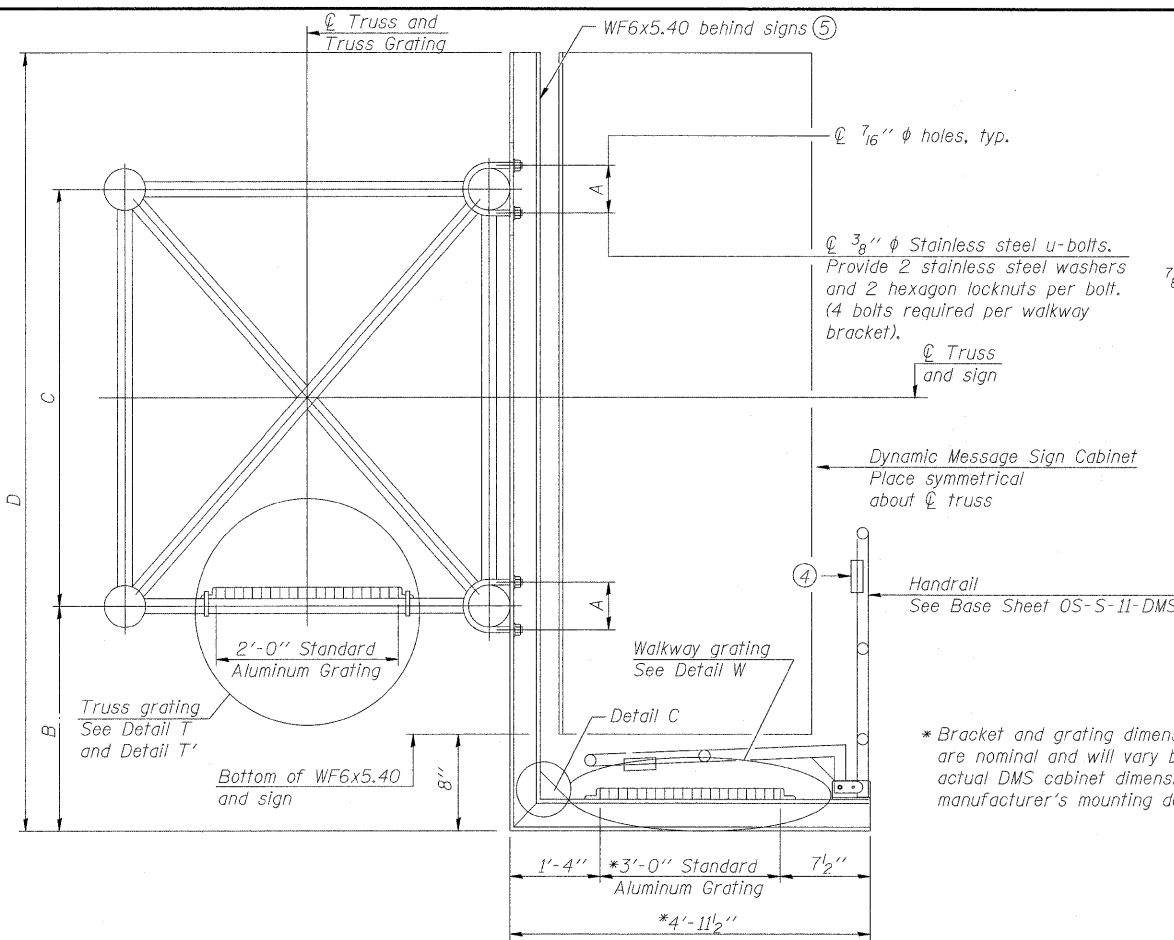
Maximum DMS weight = 5000 lbs. 4'-2" maximum cabinet depth includes depth of cabinet plus connection to WF6x5.40.
 For Section B-B and Grating Splice Details, see Base Sheet OS-A-10-DMS.
 For Handrail Splice Details, see Base Sheet OS-A-11-DMS.

NUMBER	REVISION	DATE

Structure Number	Station	a	b	c	L _s	Walkway Grating and Handrail Lengths
8S082I064L004.9	161+00	1' 6"	17.5'	18.5'	31'	36'

OS-A-9-DMS 12-1-08

OVERHEAD SIGN STRUCTURES
 ALTERNATE ALUMINUM WALKWAY DETAILS
 FOR DMS



SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

Main Bearing Bars shall be 3/16" x 1/2" on 1 3/16" centers and conform to ASTM B211 Alloy 6061-T6.
 Cross bars shall be 3/16" x 1/2" on 4" centers and conform to ASTM B221 Alloy 6063-T5 or 6061-T6.

OR

Aluminum Grating with modified "T" sections for main bearing bars shall meet the following requirements:
 Main bars shall conform to ASTM B221 Alloy 6061-T6 and have a minimum section modulus equal to 0.0705 in. per bar, a depth of 1 1/2", spaced on 1 3/16" centers.
 Cross bars shall conform to ASTM B221 Alloy 6063-T5 or T-42 and spaced on 4" centers.

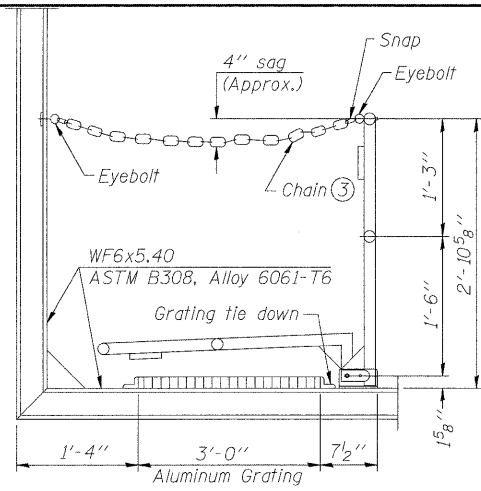
Structure Number	Station	A	⑥ B	C	⑥ D
850821064L004.9	161+00	7.5"	1' 8"	7'	9' 8"

NUMBER	REVISION	DATE

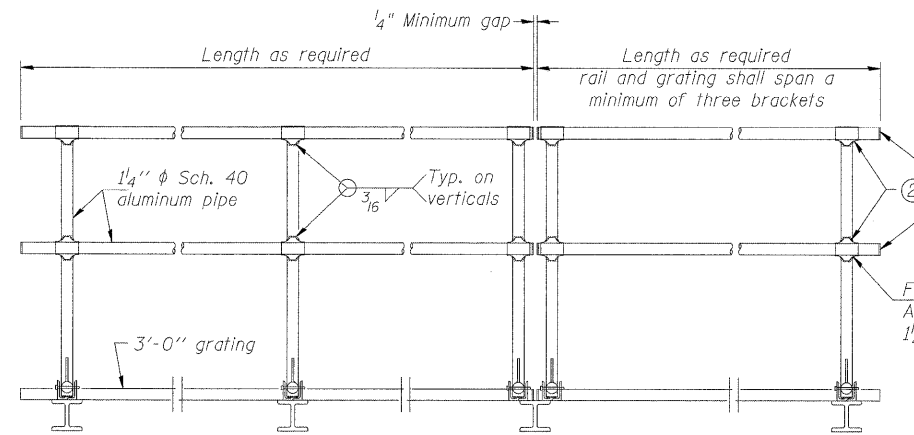
- Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
- Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.
- If Handrail Joint present, weld angle to WF(A-N)4 and 1/4" extension bars. (See Base Sheet OS-A-11.)
- 1/8" x 1/2" x 2" welded to handrail posts to protect locations that contact grating.
- Cabinet manufacturer must design and supply hardware for connection of cabinet to WF6's. Bolts must be stainless steel or hot dip galvanized high strength per IDOT specifications.
- Based on actual height of tallest sign given on OS-A-1.

OS-A-10-DMS 6-1-09

**OVERHEAD SIGN STRUCTURES
 ALTERNATE ALUMINUM WALKWAY DETAILS
 FOR DMS**



SIDE ELEVATION
(Showing safety chain w/o sign)

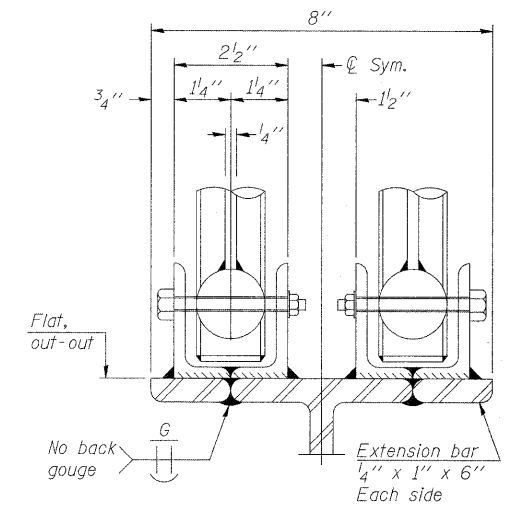


FRONT ELEVATION

② Horizontal handrail member shall be continuous thru fitting. Provide 7/16" diameter hole in fitting for 3/8" diameter bolt. Field drill 7/16" diameter hole in horizontal rail member. Provide washer and locknut for bolt. (Use 5/16" eyebolts in 7/16" diameter holes on top rail at ends only.)

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

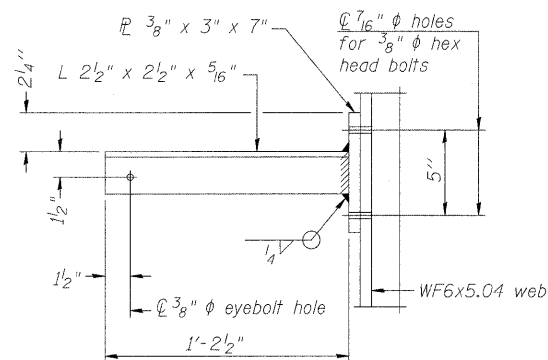
Fittings-ASTM B26, Alloy 356-T7 or 1/2" diameter aluminum pipe



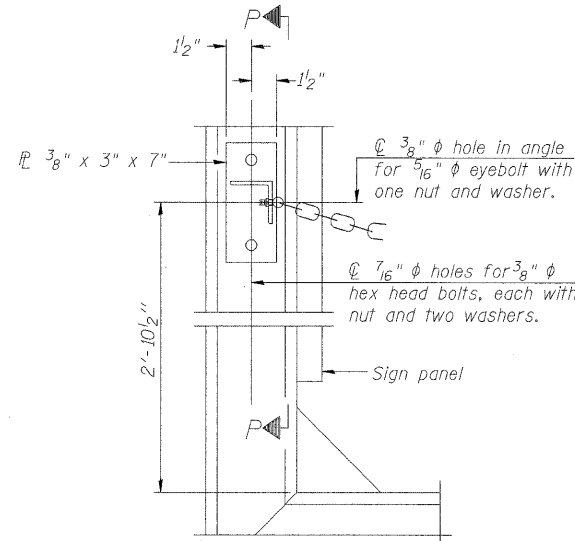
ELEVATION AT HANDRAIL JOINT (4)

HANDRAIL DETAILS

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

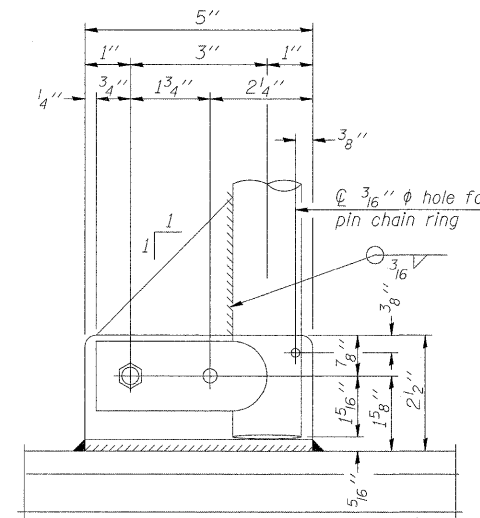


SECTION P-P

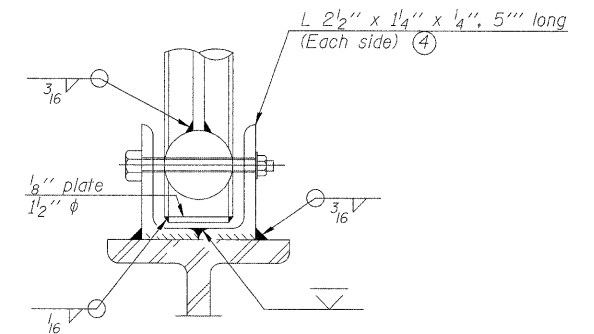


ALTERNATE SAFETY CHAIN ATTACHMENT

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

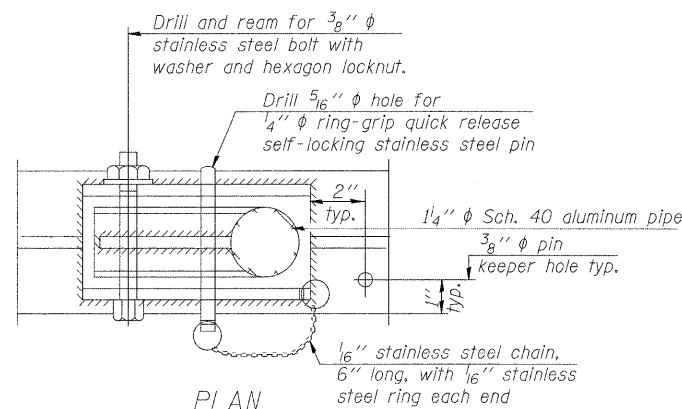


SIDE ELEVATION

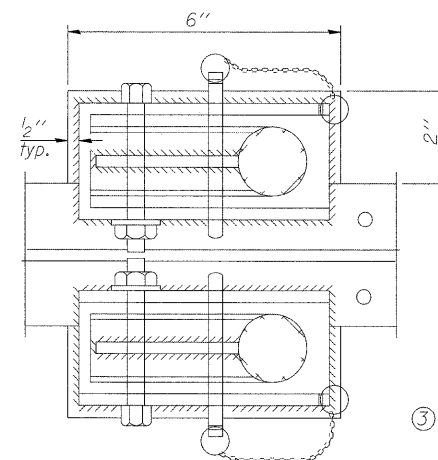


FRONT ELEVATION

See "ELEVATION" at right for dimensions.

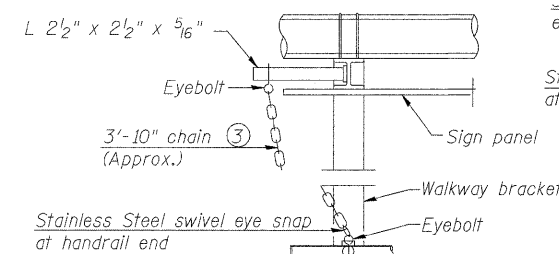


PLAN DETAIL E HANDRAIL HINGE



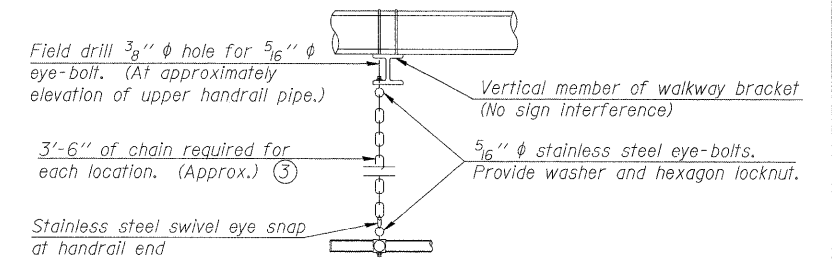
PLAN AT HANDRAIL JOINT

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.

NUMBER	REVISION	DATE

OS-A-11-DMS

12-1-08

FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISOR -
#FILE#		DRAWN -	REVISOR -
	PLOT SCALE = #SCALE#	CHECKED -	REVISOR -
	PLOT DATE = #DATE#	DATE -	REVISOR -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

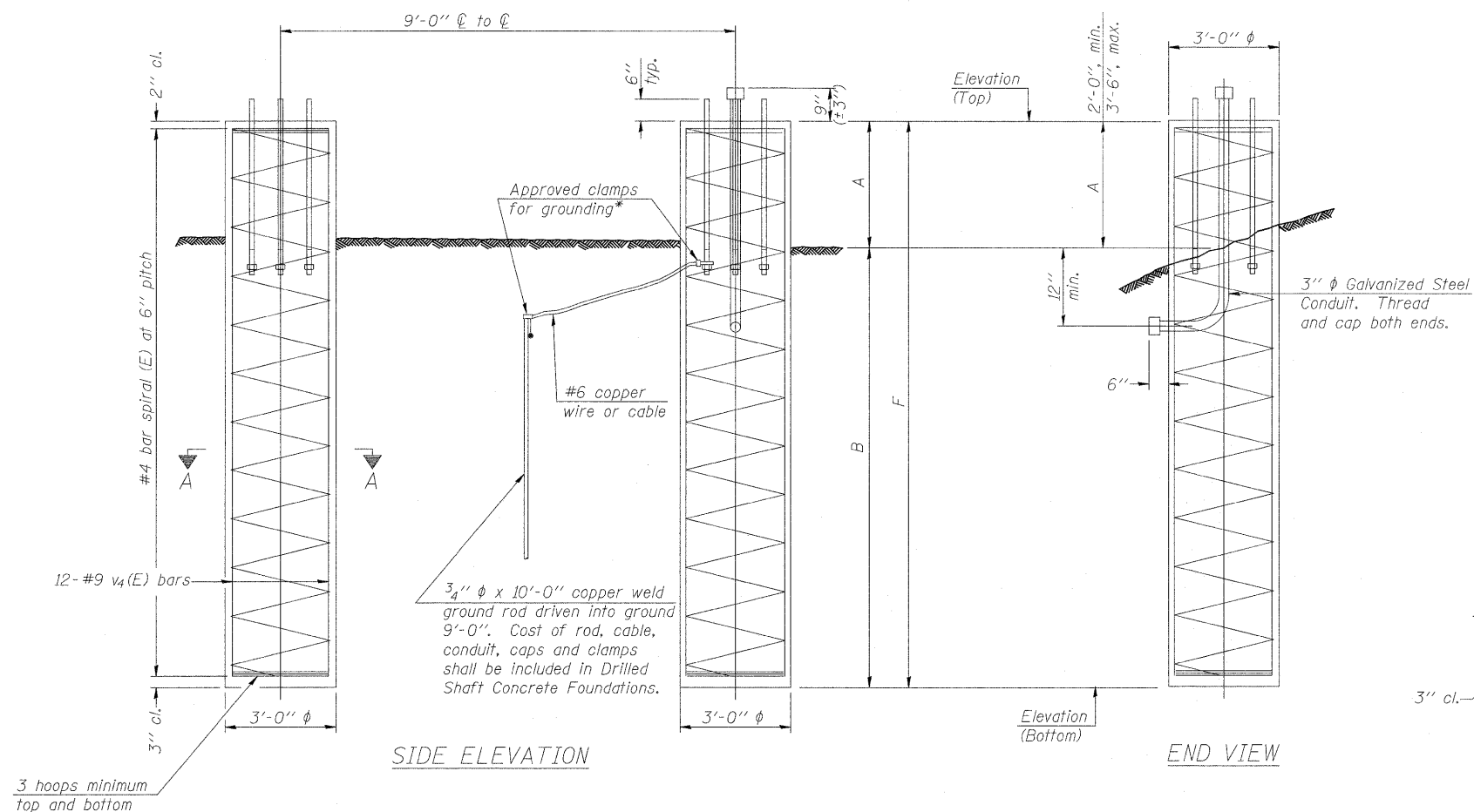
OVERHEAD SIGN STRUCTURES ALTERNATE
ALUMINUM HANDRAIL DETAILS FOR DMS

OVERHEAD SIGN STRUCTURES
ALTERNATE ALUMINUM HANDRAIL DETAILS
FOR DMS

SCALE: _____	SHEET NO. _____ OF _____ SHEETS	STA. _____ TO STA. _____	F.A.I. RTE. 64	SECTION Dist 8 ITS 2010-3	COUNTY ST CLAIR	TOTAL SHEETS 14	SHEET NO. 12
			FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT		CONTRACT NO. 76C64		

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

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



BAR LIST - EACH FOUNDATION

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

NOTES:

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

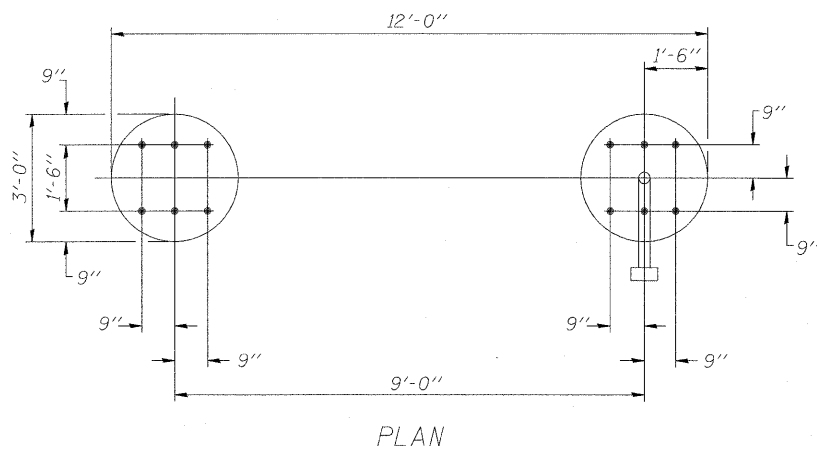
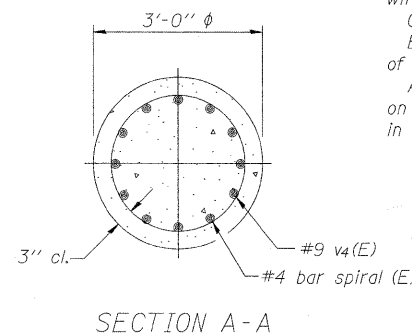
If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

No sonotubes or decomposable forms shall be used below the lower conduit entrance. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Bridge Seat Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in Drilled Shaft Concrete Foundation.



Structure Number	Station	Left Foundation			Right Foundation			Class DS Concrete (Cu. Yds.)				
		Elevation Top	Elevation Bottom	A	B	F	Elevation Top		Elevation Bottom	A	B	F
8S082I064L004.9	161+00	426.687	408.687	2.75	18.00	20.75	427.316	409.316	2.75	18.00	20.75	21.7

NUMBER	REVISION	DATE

DETAILS FOR 12" φ SUPPORT FRAME TYPE III-A TRUSS

OVERHEAD SIGN STRUCTURES DRILLED SHAFT DETAILS

OS4-F4

12-1-08

FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES DRILLED SHAFT DETAILS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
#FILE#		DRAWN -	REVISED -			64	Dist 8 ITS 2010-3	ST CLAIR	14	13	
		CHECKED -	REVISED -			CONTRACT NO. 76064					
		DATE -	REVISED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

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ROUTE FAI 64 (I-64) DESCRIPTION Sign Truss Boring - I-64 West Bound Lane at Mile Marker 4.8 LOGGED BY SCI Date 03/20/09

SECTION District 8 - ITS 2010-3 LOCATION East St. Louis; SW 14, SEC. 16, TWP. 2N, RNG. 9W

COUNTY St. Clair DRILLING METHOD CME 55 LGHSA HAMMER TYPE Automatic

STRUCT. NO. Station	D E P T H S	B U L G E S	U N D E R S T R U C T U R E	M O D E L	Surface Water Elev. _____ ft		D E P T H S	B U L G E S	U N D E R S T R U C T U R E
					ft	ft			
BORING NO. <u>B-1</u> Station <u>161+00</u> Offset _____ Ground Surface Elev. <u>99.2</u> ft	(ft)	(%)	(tbf)	(%)					
	5	1.8	21				3		8
	8						4		
	11	S/10					4		
Boring approximately 19 feet north of white line of WB Lane. Temporary benchmark located at the center of the east abutment (Structure 082-0165) between the two bridges crossing 37th Street.									
	6						4		23
	11	4.0	20				3		
	10	P					6		
	-5						-25		
	6						3		23
	10	2.8	17				6		
	9	S/10					6		
Wash bore drilling started at 27.5 feet.									
	9						4		21
	14	4.5	17				4		
	9	P					3		
	-10						-30		
	88.7								
FILL: Dark brown and gray, low plastic sandy clay, trace coal (A-7) LL - 42 PL - 23 PI - 19 86.2									
	4						3		19
	6	3.5	21				5		
	6	S/15					7		
Becomes gray 86.6									
FILL: Gray, low plastic sandy clay (A-6) 85.1									
	3						3		23
	2						9		
	3						4		
	-15						-35		
SANDY SILT: Brown, low plastic (A-4) 84.7									
SILT: Brown, fine (A-2) 83.7									
	2						4		21
	7						9		
	11						6		
	5						4		31
	8						6		
	8						6		
	-20						-40		
	59.2						40		

Boring terminated at 40.0 ft.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
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SOIL BORING LOG

Page 1 of 1

ROUTE FAI 64 (I-64) DESCRIPTION Sign Truss Boring - I-64 West Bound Lane at Mile Marker 4.8 LOGGED BY SCI Date 03/20/09

SECTION District 8 - ITS 2010-3 LOCATION East St. Louis; SW 14, SEC. 16, TWP. 2N, RNG. 9W

COUNTY St. Clair DRILLING METHOD CME 55 LGHSA HAMMER TYPE Automatic

STRUCT. NO. Station	D E P T H S	B U L G E S	U N D E R S T R U C T U R E	M O D E L	Surface Water Elev. _____ ft		D E P T H S	B U L G E S	U N D E R S T R U C T U R E
					ft	ft			
BORING NO. <u>B-2</u> Station <u>161+00</u> Offset _____ Ground Surface Elev. <u>98.8</u> ft	(ft)	(%)	(tbf)	(%)					
	4						6		8
	4	1.6	21				7		
	5	B					5		
Boring approximately 20 feet south of yellow line of WB Lane. Temporary benchmark located at the center of the east abutment (Structure 082-0165) between the two bridges crossing 37th Street.									
	7						5		20
	8	4.5	18				4		
	9	P					5		
	-5						-25		
FILL: Dark brown and gray, low plastic sandy clay, trace slag (A-7) LL - 27 PL - 25 PI - 3 87.6									
	4						3		20
	6	1.8	17				5		
	10	S/10					8		
Wash bore drilling started at 27.5 feet.									
	6						4		20
	10	4.5	17				9		
	14	P					11		
	-10						-30		
	89.1								
FILL: Dark brown and gray, low plastic sandy clay, trace slag (A-7) LL - 42 PL - 23 PI - 19 86.2									
	3						3		19
	5	4.0	19				5		
	7	S/15					7		
Becomes gray 86.6									
FILL: Gray, low plastic sandy clay (A-6) 85.1									
	3						5		23
	3	1.3	15				8		
	4	S/10					4		
	-15						-35		
SANDY SILT: Brown, low plastic (A-4) 84.7									
SILT: Brown, fine (A-2) 83.7									
	4						4		26
	6						6		
	6						6		
	2						9		
	7						11		
	11						10		
	5						4		31
	8						6		
	8						6		
	-20						-40		
	58.8						40		

Boring terminated at 40.0 ft.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

FILE NAME =	USER NAME = prestonne	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOG	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
ct:\pw\work\PWIDOT\PRESTONME\dms79769\076C64-shr\tsplan.dgn	PLOT SCALE = 50.0000' / IN.	DRAWN -	REVISED -			64	DIST 8 ITS 2010-3	ST. CLAIR	14	14	
	PLOT DATE = 12/14/2009	CHECKED -	REVISED -			CONTRACT NO. 76C64					
		DATE -	REVISED -			FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT					