

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70/55		MADISON	19	1

DIST 8 ITS 2007-4A, 4B

D-98-014-07



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

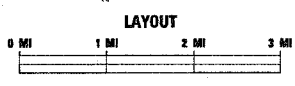
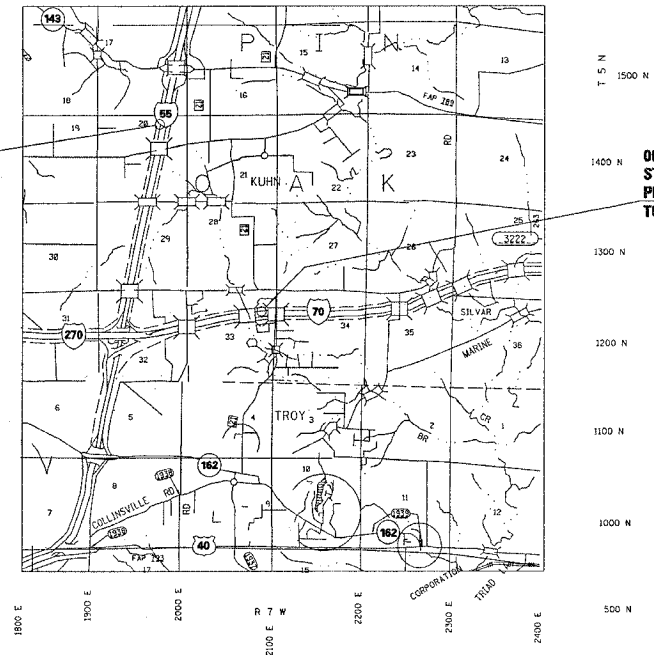
**PROPOSED
HIGHWAY PLANS**

FAI ROUTE 70/FAI ROUTE 55
SECTION DIST 8 ITS 2007-4A, 4B
MADISON COUNTY

PROJECT: ITS-0317(109)

1. SIGN TRUSS AND DMS ON SB I-55 N OF I-70 AT STA 1148 + 69
2. SIGN TRUSS AND DMS ON WB I-70 E OF I-55 AT STA 1032 + 00

C-75-005-07



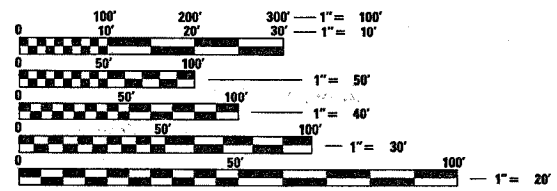
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15. BUTTERFLY SIGN STRUCTURES DRILLED SHAFT ALUMINUM TRUSS & STEEL POST
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18. IMPACT ATTENUATOR DETAILS
19. BORING LOGS

STANDARDS

000001-04	701101-01	701106-01
701400-02	701406-04	702001-06
814006-01	878001-05	

MICROFILMED _____
REEL NUMBER _____
AWARDED _____
RESIDENT ENGINEER _____
AS BUILT CHANGES WERE MADE ON THE FOLLOWING SHEETS



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

CONTRACT NO. 76A41

PROJECT ENGINEER: PATTI LEBEAU (618) 346 3179
SQUAD LEADER: MICHAEL PRESTON (618) 346 3143
LIAISON ENGINEER: BRIAN SNEED (618) 346 3118

PLOT DATE = 5/1/2007
FILE NAME = c:\p07016\va\005522\005522.dwg
PLOT SCALE = 1" = 20'
REFERENCE = MREF

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED May 10 20 07

Man C. Francis
DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER

June 29, 20 07
Eric E. Harvat
ENGINEER OF DESIGN AND ENVIRONMENT

June 29, 20 07
William R. Seese, P.E.
DIRECTOR, DIVISION OF HIGHWAYS

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OF THE STATE OF ILLINOIS**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70/55	*	MADISON	19	3
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____		ILLINOIS FED. AID PROJECT		
* DIST 8 ITS 2007-4A, 4B				

LEGEND

ALUM	ALUMINUM
EP	EDGE OF PAVEMENT
TW SH	TWISTED SHIELDED
PWR CBL	POWER CABLE
F.O.	FIBER OPTIC
J.B.	JUNCTION BOX
GSC	GALVANIZED STEEL CONDUIT
PVCC	POLYVINYL CHLORIDE CONDUIT
	EXISTING HANDHOLE
	EXISTING DOUBLE HANDHOLE
	EXISTING CONTROLLER
	EXISTING SERVICE INSTALLATION
	EXISTING GALVANIZED STEEL CONDUIT
	EXISTING JUNCTION BOX
	EXISTING SIGN TRUSS
	EXISTING HIGHWAY LIGHTING UNIT
	EXISTING UNDERGROUND LIGHTING CABLES
	PROPOSED HANDHOLE
	PROPOSED DOUBLE HANDHOLE
	PROPOSED CONTROLLER
	PROPOSED CONDUIT: "T" TRENCH, "P" PUSH
	PROPOSED SERVICE INSTALLATION
	PROPOSED CCTV CAMERA
	PROPOSED JUNCTION BOX, SIZE SPECIFIED
	PROPOSED LIGHT POLE, SIZE SPECIFIED
	PROPOSED CHANGEABLE MESSAGE SIGN

GENERAL NOTES

- CCTV ARE LOCATION SENSITIVE. PROPOSED EQUIPMENT LOCATIONS ARE APPROXIMATE TO ENSURE THE OPTIMUM FIELD OF VIEW. ACTUAL LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR, PER THE MANUFACTURER REPRESENTATIVES' RECOMMENDATIONS AND THE ENGINEER'S APPROVAL. MR. BRIAN SNEED OF BUREAU OF OPERATIONS SHALL BE CONTACTED FOR ACTUAL CAMERA LOCATION VERIFICATION.
- ALL MATERIALS SUPPLIED SHALL CONFORM TO SECTION 106 OF THE STANDARD SPECIFICATIONS FOR CONTROL OF MATERIALS.
- THE CONTROLLER CABINETS AND JUNCTION BOXES SHALL BE UNPAINTED ALUMINUM SHEET METAL UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- UNDERGROUND CABLE MARKING TAPE SHALL BE INSTALLED WITH ALL TRENCH AND BACKFILL FOR ELECTRICAL WORK ACCORDING TO ARTICLES 819.05 AND 1066.05 OF THE STANDARD SPECIFICATIONS.
- 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.
- ALL GROUND RODS SUPPLIED FOR THIS PROJECT SHALL BE ACCORDING TO 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 SHALL NOT BE ALLOWED.
- COORDINATION WITH THE DEPARTMENT'S BUREAU OF OPERATIONS IS REQUIRED BEFORE ANY TRENCHING SHALL BE DONE IN ORDER TO LOCATE HIGHWAY LIGHTING/PUMP STATION/ITS FACILITIES AND TO COORDINATE OTHER FIELD ACTIVITIES.
- BENDING RADIUS OF FIBER OPTIC CABLE SHALL NOT EXCEED SIX (6) INCHES.
- NO OVERNIGHT LANE CLOSURES SHALL BE PERMITTED ON THIS PROJECT.
- ANY GROUND AREA THAT THE CONTRACTOR DISTURBS SHALL BE SEEDED AT THE END OF EACH WEEK WITH CLASS 7 TEMPORARY EROSION CONTROL SEEDING W/MULCH. FOR PERMANENTSEEDING USE CLASS 2A ROADSIDE MIXTURE ALONG THE INTERSTATE. TEMPORARY EROSION CONTROL SEEDING SHALL BE APPLIED AT A RATE OF 100 LBS PER ACRE. MULCH METHOD 1 AS APPLIED TO TEMPORARY SEEDING SHALL CONFORM TO SECTION 251 OF THE STANDARD SPECIFICATIONS. MULCH WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE UNIT PRICE FOR TEMPORARY SEEDING.
- ALL HANDHOLES SHALL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE PER SECTION 814. THE LEGEND ON THE COVER SHALL BE "ITS". SLOPE HANDHOLE TO MATCH FINAL GRADE ELEVATION.
- ALL UTILITIES AND DRAINAGE STRUCTURES SHALL BE LOCATED IN THE FIELD PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE COST FOR LOCATING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR TRENCH AND BACKFILL FOR ELECTRICAL WORK.
- 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:
 - AMEREN IP (GAS AND ELECTRIC)
 - AT&T ILLINOIS (COMMUNICATIONS)
 - BOND MADISON WATER COMPANY (WATER)
 - CITY OF TROY (WATER AND SANITARY SEWER)
 - CHARTER COMMUNICATIONS, INC. (CABLE TV)
 - CONOCOPHILLIPS COMPANY (PIPELINE)
 - LEVEL 3 COMMUNICATIONS (COMMUNICATIONS)
 - SOUTHWESTERN ELECTRIC COOPERATIVE, INC. (ELECTRIC)

(MEMBER OF J.U.L.I.E. (800-892-0123) ARE INDICATED BY "*". NON J.U.L.I.E. MEMBERS MUST BE NOTIFIED INDIVIDUALLY.)
- A 9-1-1 ADDRESS MUST BE OBTAINED FROM THE MADISON 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 618-692-6200, EXT. 5911 FOR MADISON COUNTY.

TRAFFIC CONTROL AND PROTECTION STANDARDS	TOTAL	LOCATION	LOCATION
		0055 MP22.0	0055 MP22.0
701101*	NA	X	X
701106*	NA	X	X
701400*	NA	X	X
701406**	L SUM	0.4	0.2
702001*	NA	X	X

- * NOT MEASURED FOR PAYMENT
- ** MUST ALWAYS BE USED IN COMBINATION WITH STANDARD 701400

LOCATION	YEAR	ADT (ESTIMATED)	SU%Z	MU%Z
0055 MP22.0	2007	15400	3.8%	24.2%
0070 MP16.7	2007	14200	3.6%	33.1%

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

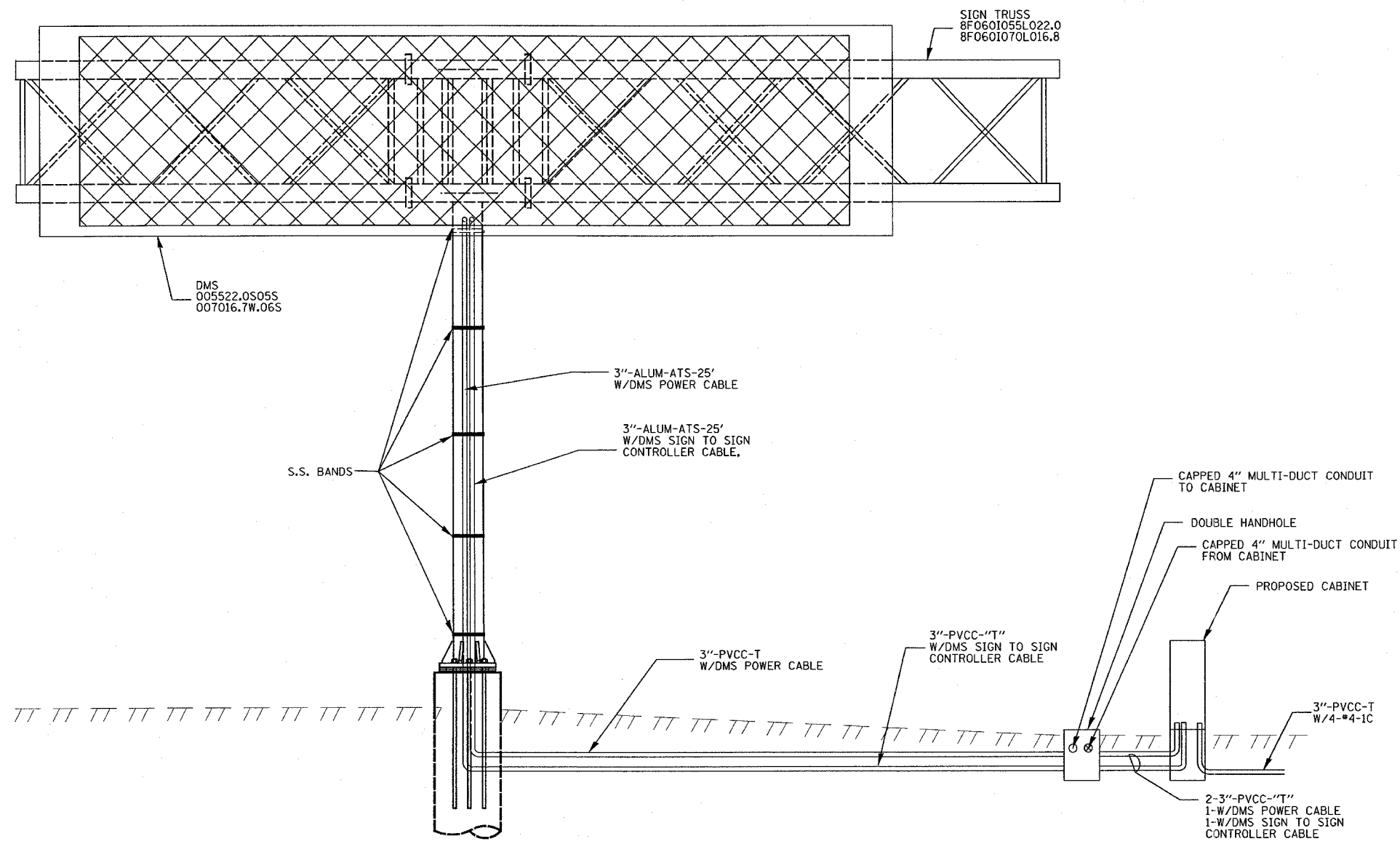
ELEMENTS	LOCATION	STA.	ITS PLAN SHEET X OF 2
DMS			
005522.0S05S	SB I-55 2.7 MILES NORTH OF THE 55/70/270 INTERCHANGE	1148+69	1
007016.7W.06S	EB I-55/70 2.2 MILES EAST OF THE I-55/70/270 INTERCHANGE	1032+00	2

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
**LEGENDS, SCHEDULES
 & GENERAL NOTES**
 FAI 70/FAI 55
 SECTION DIST 8 ITS 2007-4A, 4B
 MADISON COUNTY

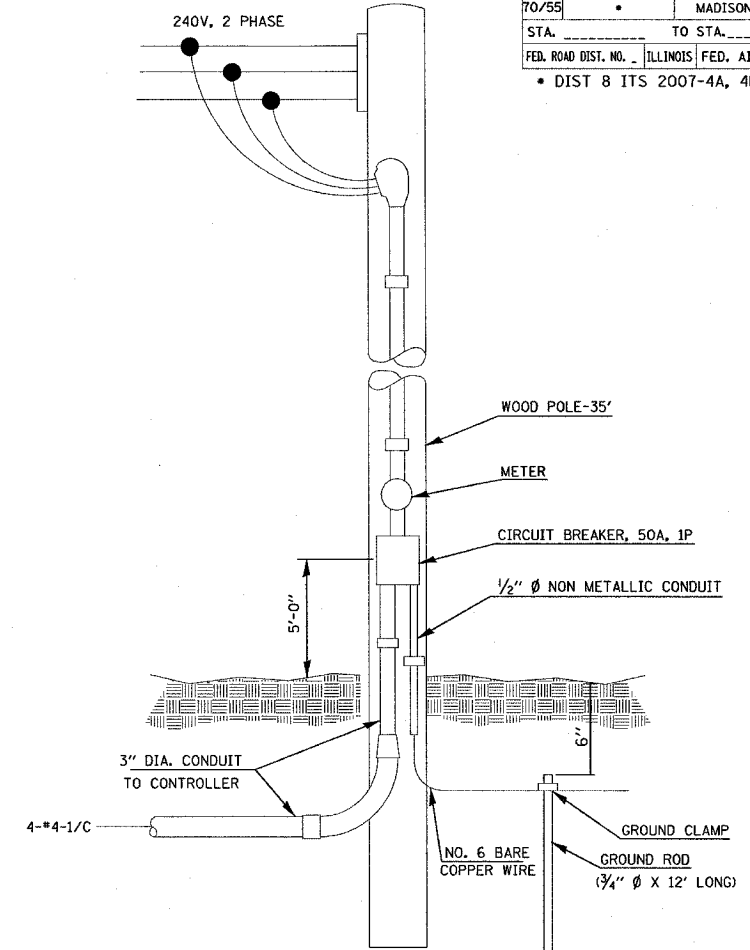
DATE 5/9/2007

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70/55		MADISON	19	4
STA. TO STA.		FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT		
		• DIST 8 ITS 2007-4A, 4B		

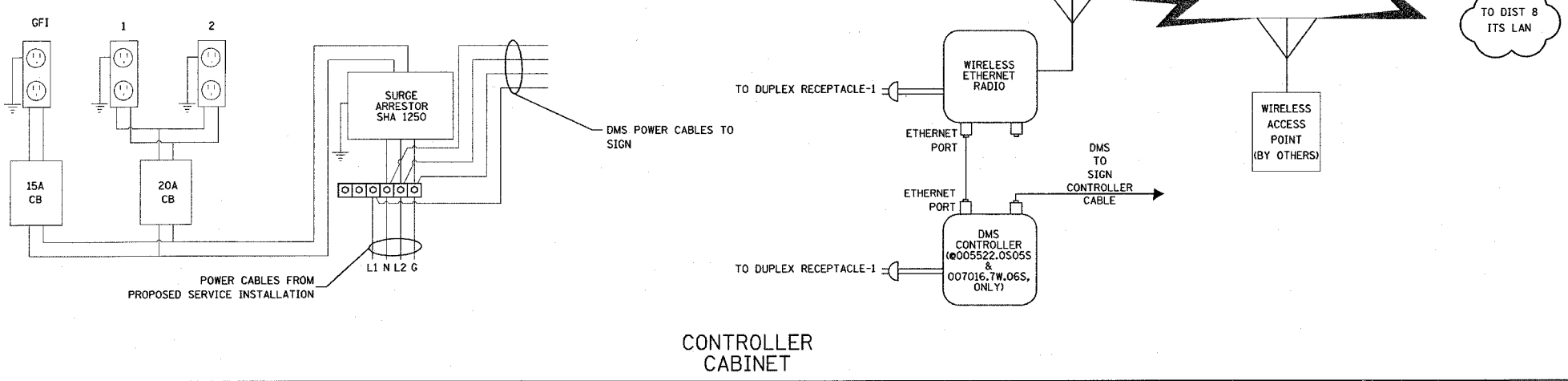


I-55 STA. 1148+69
I-70 STA. 1032+00

NOTE:
ALL MEASUREMENTS ARE ARBITRARY AND
NEED TO BE FIELD VERIFIED



SERVICE INSTALLATION, TYPE A
FOR MPO05522.0 & MPO07016.7
INSTALLATIONS
NOT TO SCALE
AT
I-55 STA. 1164+52, 64' RT
I-70 STA. 1014+20, 70' LT



CONTROLLER
CABINET

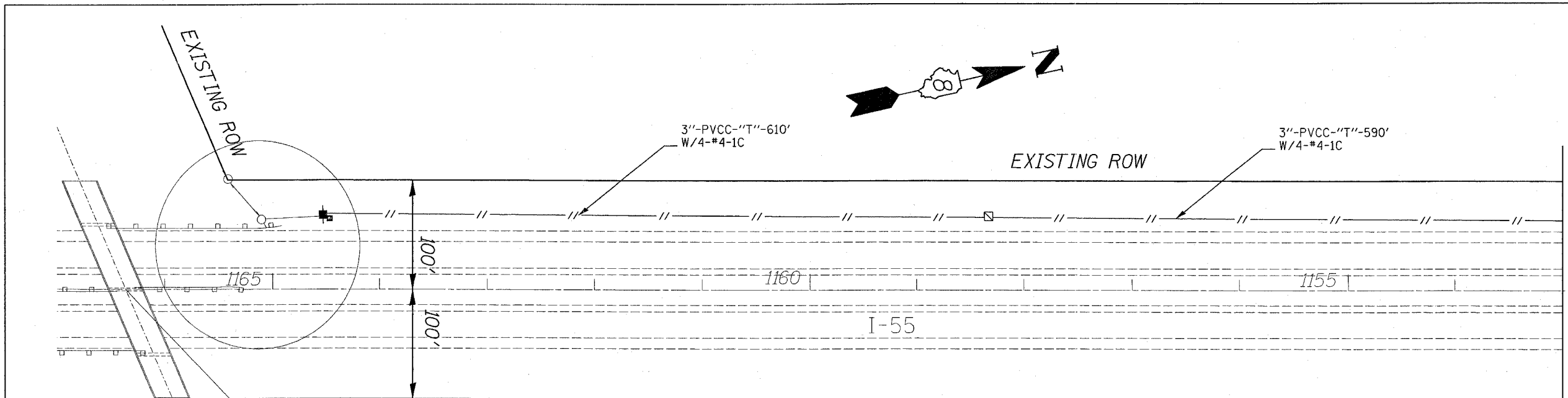
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
**DMS/TRUSS CONDUIT DETAILS,
SERVICE INSTALLATION DETAILS
AND CONTROLLER SCHEMATICS**
FAI 70/FAI 55
SECTION DIST 8 ITS 2007-4A, 4B
MADISON COUNTY

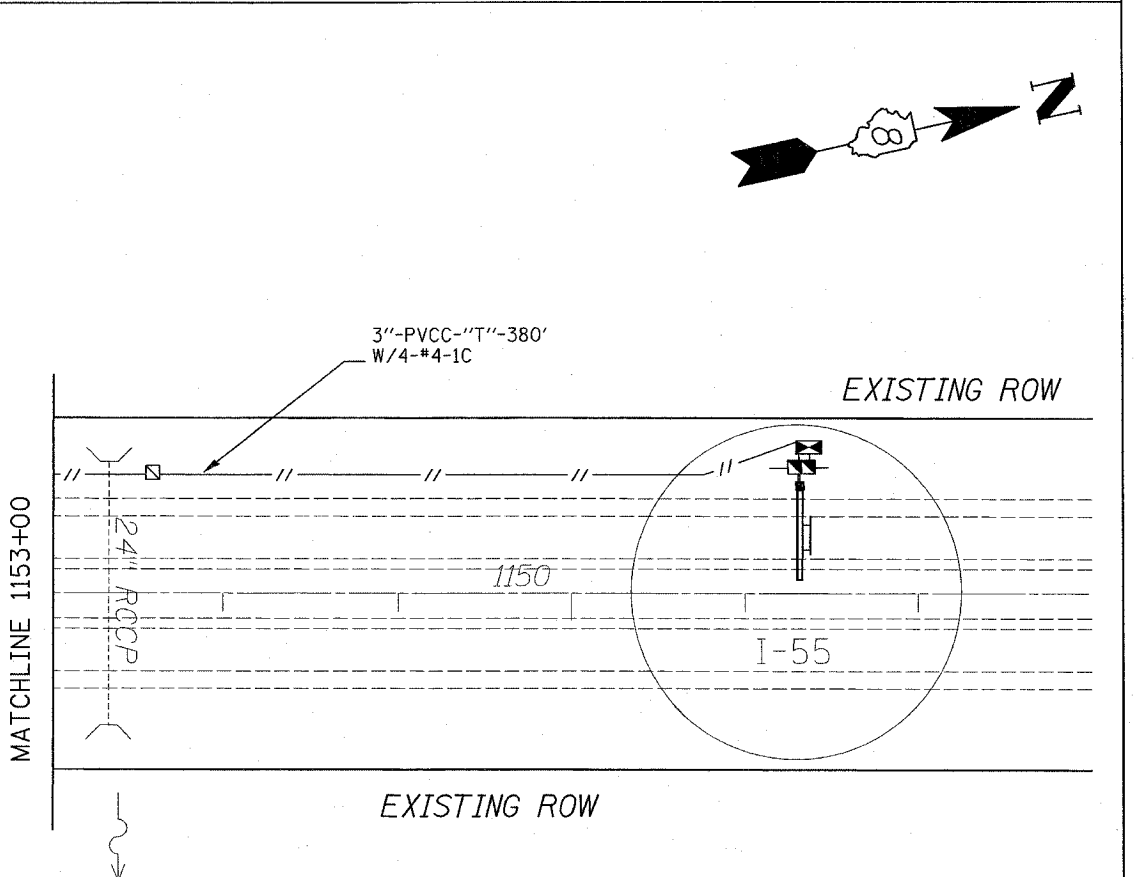
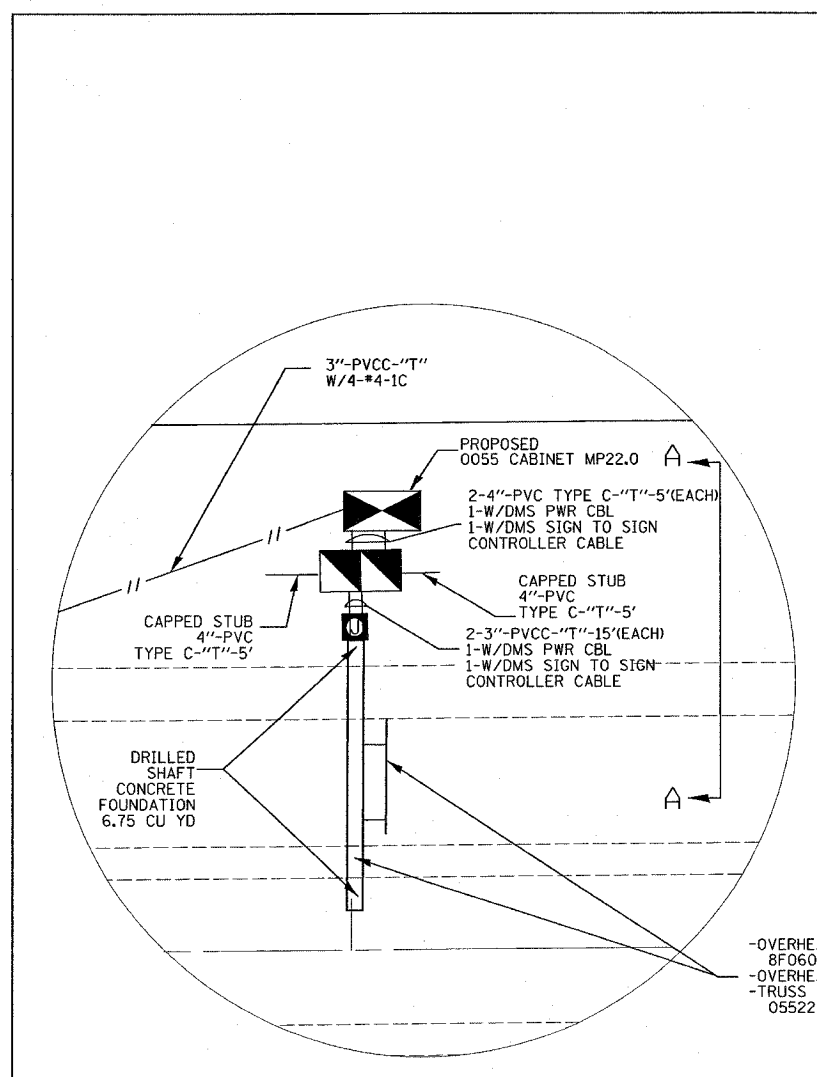
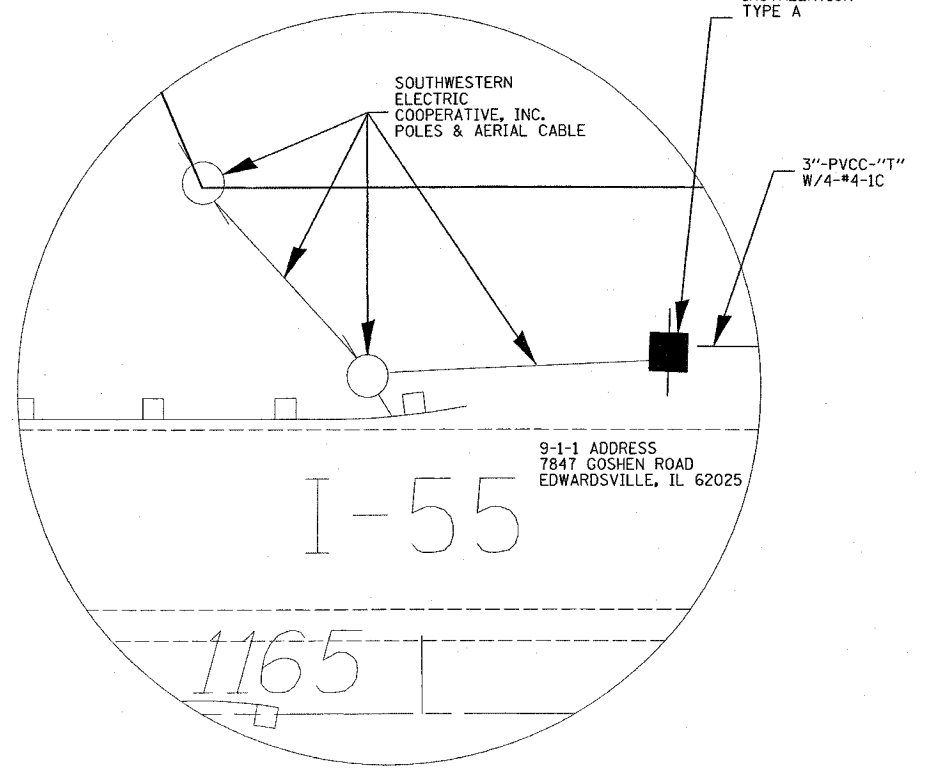
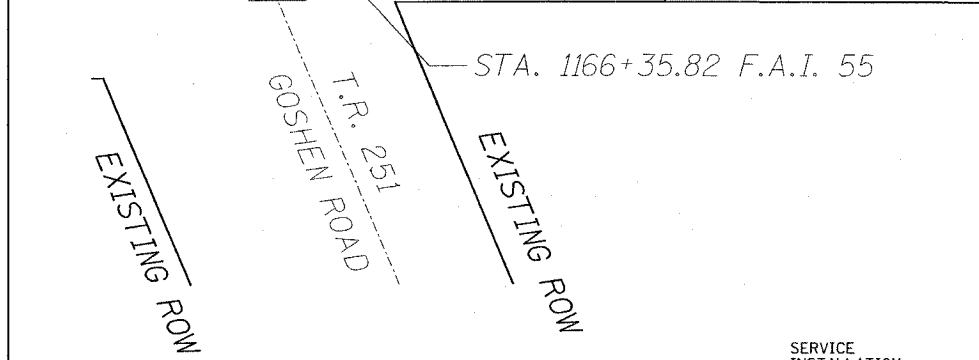
DATE 5/9/2007

PLOT DATE = 5/9/2007
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 REFERENCE = 0REF

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70/55		MADISON	19	5
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT				
• DIST 8 ITS 2007-4A, 4B				



MATCHLINE 1153+00



- OVERHEAD SIGN STRUCTURE - BUTTERFLY, TYPE III-F-A 8'0601055L022.0-38.25' FT
- OVERHEAD SIGN STRUCTURE WALKWAY, TYPE A-6.75 FT
- TRUSS MOUNTED DYNAMIC MESSAGE SIGN 05522.0S055-1 EACH

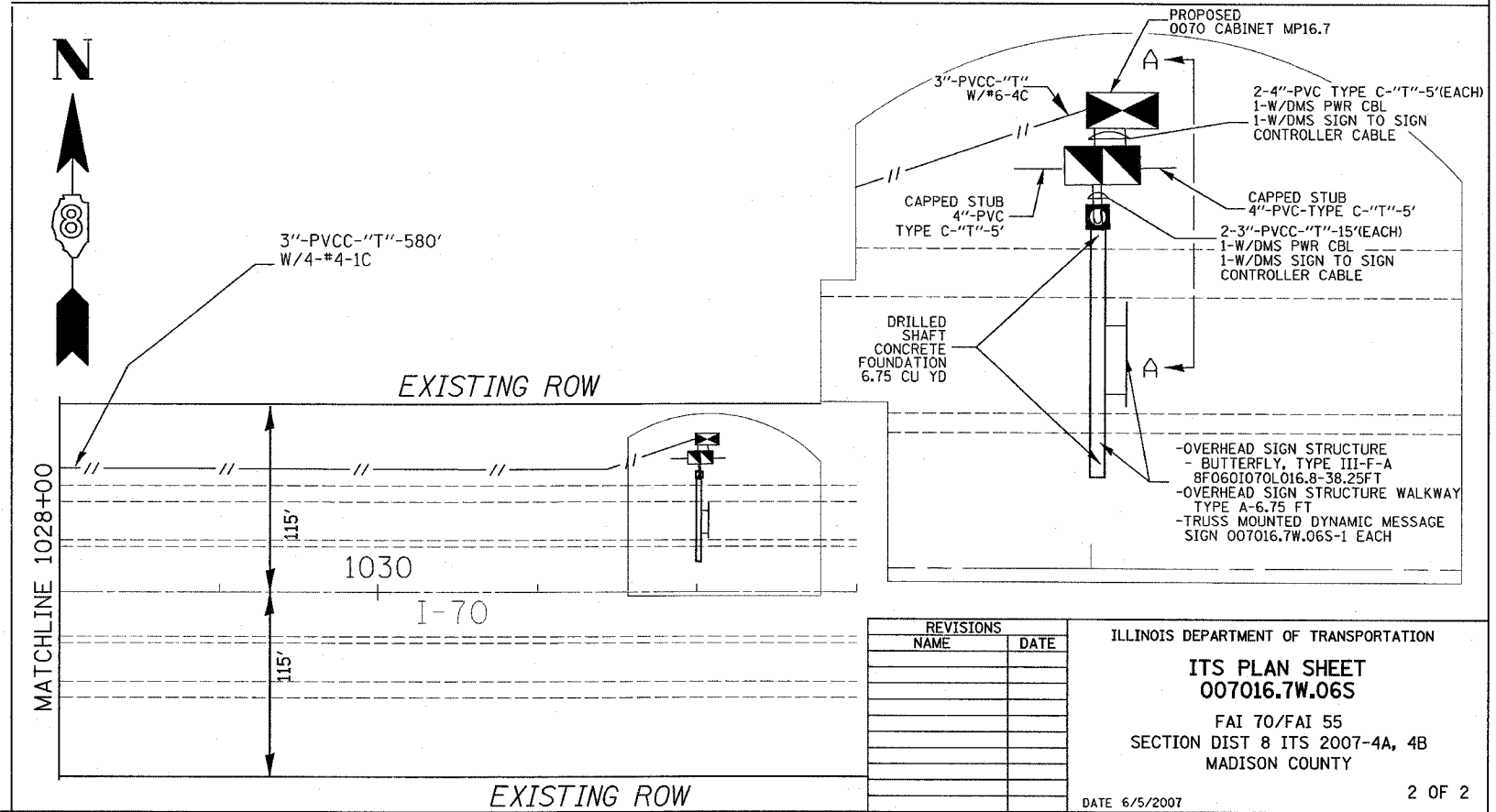
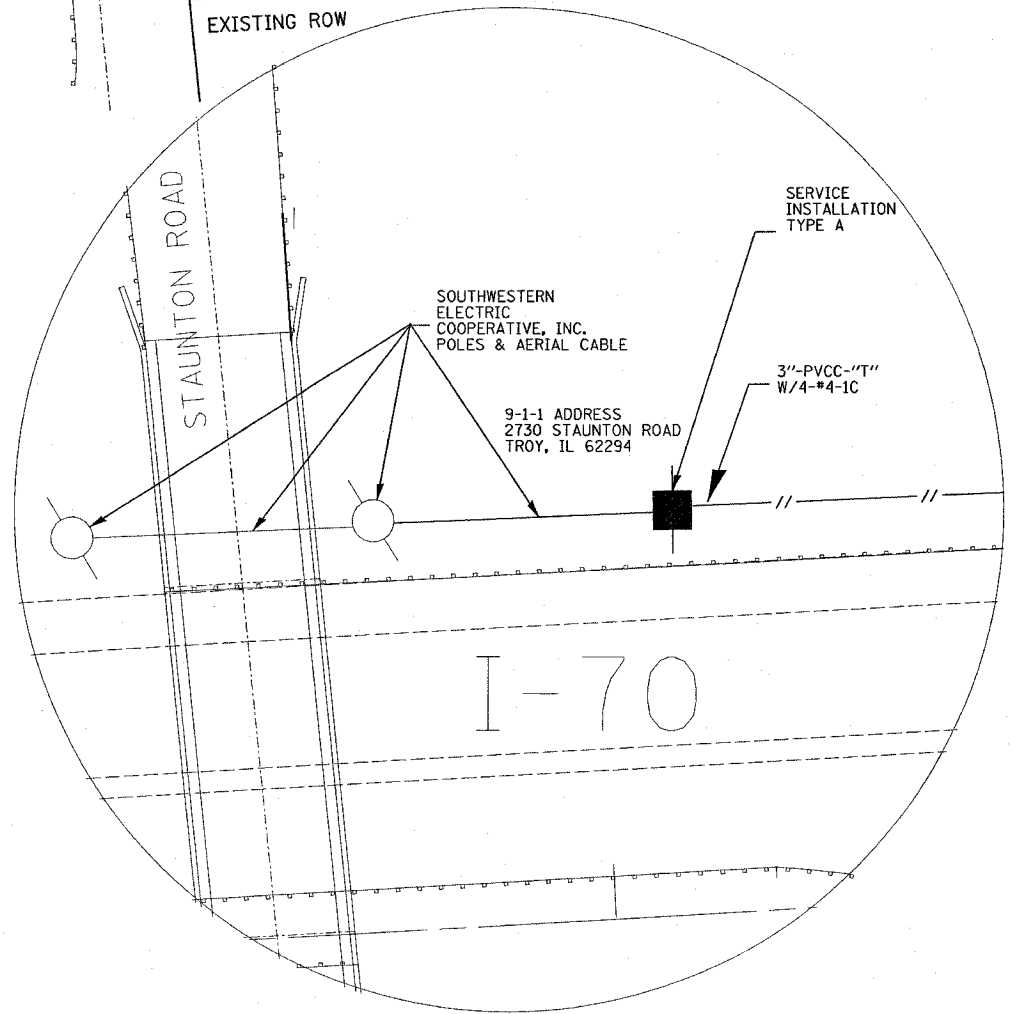
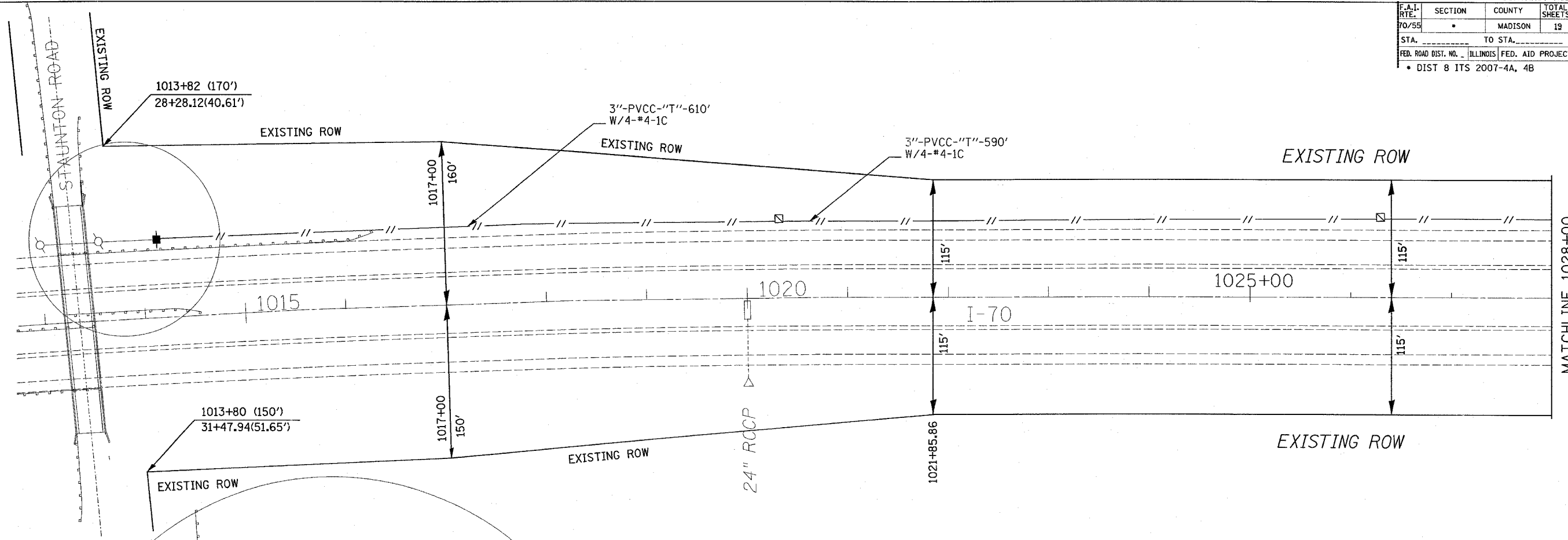
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
ITS PLAN SHEET
05522.0S055
 FAI 70/FAI 55
 SECTION DIST 8 ITS 2007-4A, 4B
 MADISON COUNTY

DATE 6/5/2007

PLOT DATE = 6/5/2007
 PLOT SCALE = 5/8"=1'-0"
 REFERENCE = #REF#

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70/55		MADISON	19	6
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT				
• DIST 8 ITS 2007-4A, 4B				



PLOT DATE = 6/5/2007
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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
ITS PLAN SHEET
007016.7W.06S
 FAI 70/FAI 55
 SECTION DIST 8 ITS 2007-4A, 4B
 MADISON COUNTY
 DATE 6/5/2007 2 OF 2

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70		MADISON	19	7
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

GENERAL NOTES

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

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

LOADING: 90 M.P.H. WIND VELOCITY
 WIND LOADING: 30 p.s.f. normal to DMS Cabinet Area and truss elements not behind sign Loading Diagram.
 WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

DESIGN STRESSES
 FIELD UNITS
 f'c = 3,500 p.s.i.
 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 with a minimum yield of 35,000 p.s.i., or A500 Grade B or C with a minimum yield of 46,000 p.s.i. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.

All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W* (M183, M223 Gr. 50, or M222). Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer.

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

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

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

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

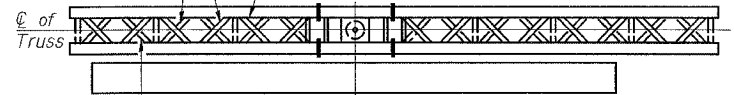
ANCHOR RODS: Shall conform to AASHTO M314 Gr. 105 with a minimum Charpy V-Notch (CVN) energy of 15 lb.-ft. at 10° F.

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.

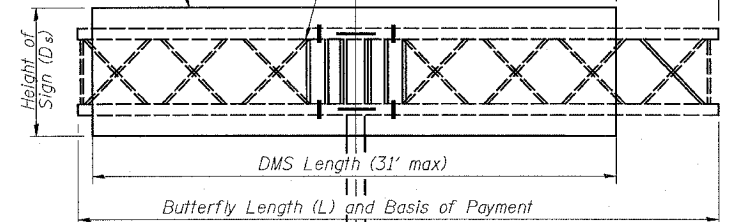
* If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.

Alternate Direction of Horizontal Diagonals for Each Bay in Planes of Upper and Lower Chords



TYPICAL PLAN
(Walkway not shown)

Alternate Vertical Diagonal Bracing for Each Bay in Planes of Front and Back Chords Sign Cabinet



TYPICAL ELEVATION
Looking in Direction of Traffic

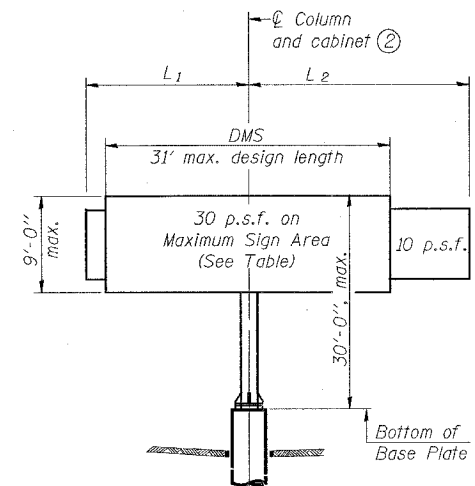
Elev. A = Elevation at point of minimum clearance to sign, walkway support or truss.

** Elevation A2 and dimension D2 not used when butterfly structure is mounted on right side of the shoulder.

Sign support structures may be subject to damaging vibrations and oscillations when signs 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.

TRUSS TYPE	MAXIMUM TOTAL DMS SIGN CABINET AREA
III-F-A	300 Sq. Ft.

Maximum DMS weight = 5000 LB.



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.

NUMBER	REVISION	DATE

- ① After adjustments to level truss and insure adequate vertical clearance, all top and bottom 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.
- ② Centerline cabinet must be located at centerline of column.

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.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE BUTTERFLY TYPE III-F-A	Foot	76.5
OVERHEAD SIGN STRUCTURE WALKWAY, TYPE A	Foot	13.5
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	20.3

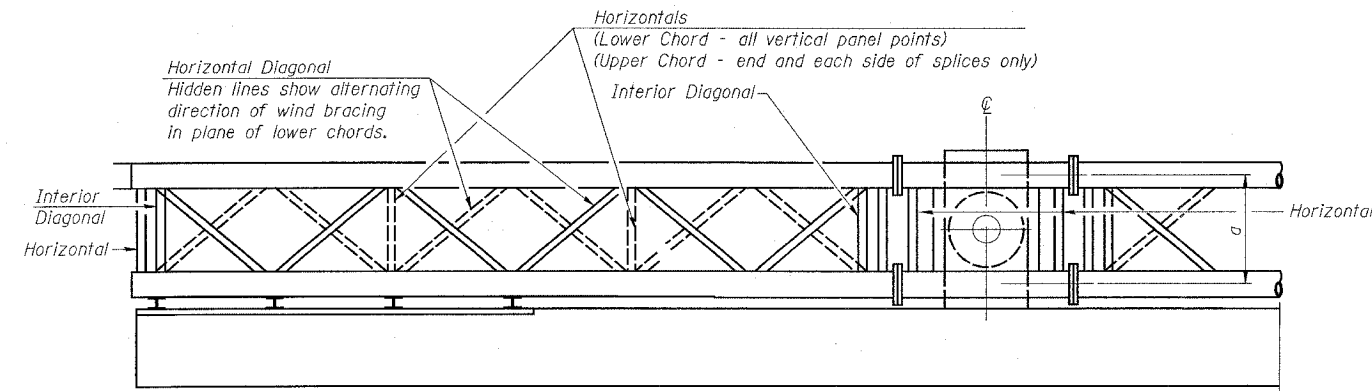
Structure Number	Station	Total Butterfly Length (L)	Elev. A ₁	Elev. A ₂	Dim. D ₁	Dim. D ₂	D _s	Total Sign Area	Access door and walkway location (Right or Left end)
8F0601055L022.0	1148+74	38.25	568.051		16.0		9	279	RIGHT
8F0601070L016.8	1032+00	38.25	518.644		16.0		9	279	RIGHT

**BUTTERFLY SIGN STRUCTURES
 ALTERNATE PLAN & ELEVATION FOR DMS
 ALUMINUM TRUSS & STEEL POST**

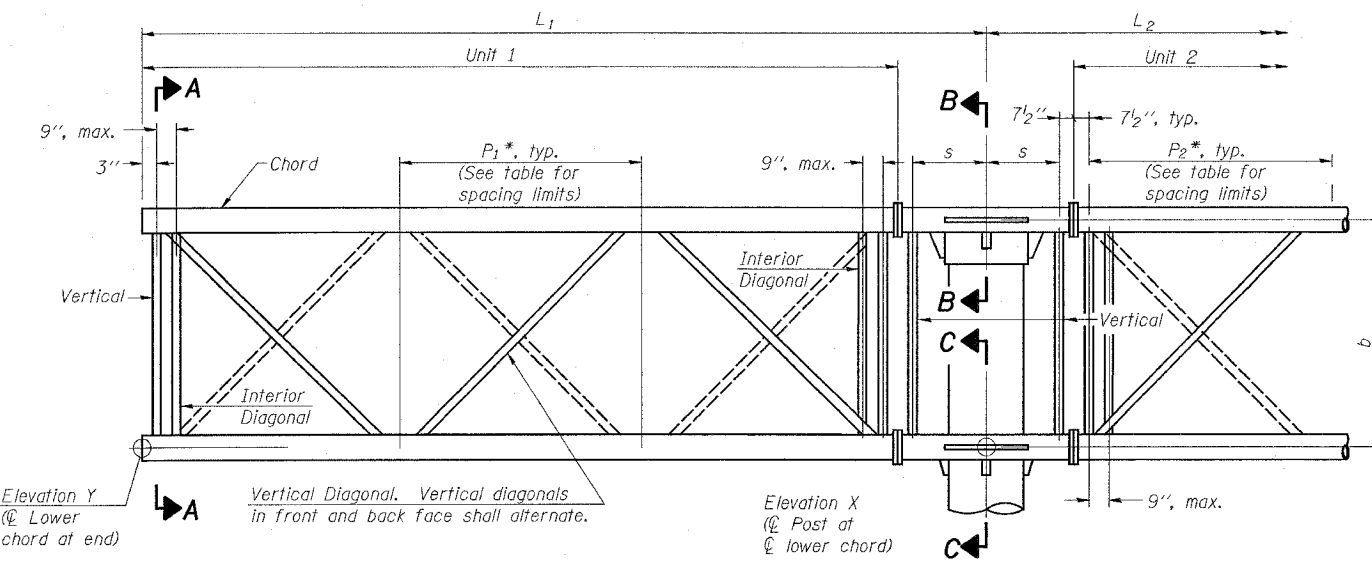
FAI ROUTE 70/55
 DIST 8 ITS 2007-4a, 4b
 MADISON COUNTY

PLOT DATE = 5/9/2007
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 USER NAME = jprattone

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70	*	MADISON	19	8
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
DIST 8 ITS 2007-4a, 4b				



Note: There are twice as many horizontal diagonals as there are vertical diagonals. (Walkway not shown)



ELEVATION

(Sign and walkway omitted for clarity)

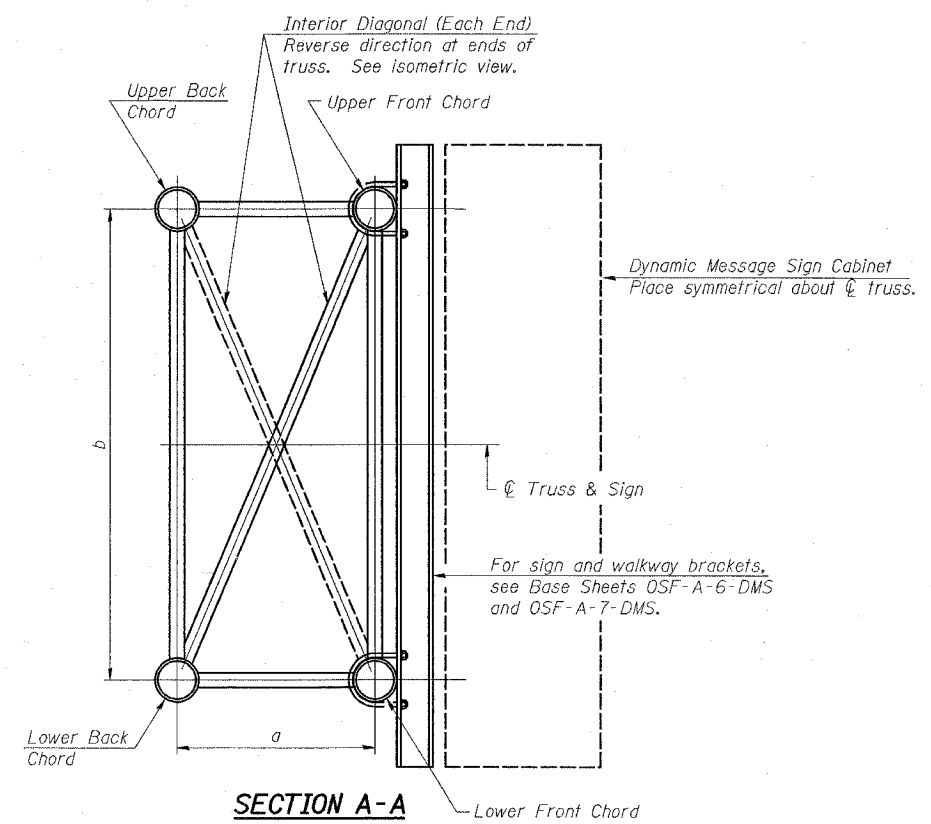
TYPICAL TRUSS UNIT

For Section B-B and Section C-C, see Base Sheet OSF-A-3-DMS

TRUSS UNIT TABLE

Truss Type	Dimension "a"	Dimension "b"	Dimension "s"	Limits for Panel Spacing (P)*	Up. & Low. Chord O.D. Wall	Verticals; Horizontals; Vertical Horizontals; and Interior Diagonals	
III-F-A	36"	84"	21"	48" min. to 66" max.	7" 3/8"	3 1/2"	3/8"

*P = L-s-1'-6"
Panels



SECTION A-A

Structure Number	Station	Truss Type	L ₁	L ₂	Number of Panels Unit 1	Panel Length (P ₁)*	Number of Panels Unit 2	Panel Length (P ₂)*
8F0601055L022.0	1148+74	III-F-A	16.0	22.25	3	4.25	4	4.75
8F0601070L016.8	1032+00	III-F-A	16.0	22.25	3	4.25	4	4.75

NUMBER	REVISION	DATE

**BUTTERFLY SIGN STRUCTURES
ALTERNATE TRUSS DETAILS FOR DMS
ALUMINUM TRUSS & STEEL POST**

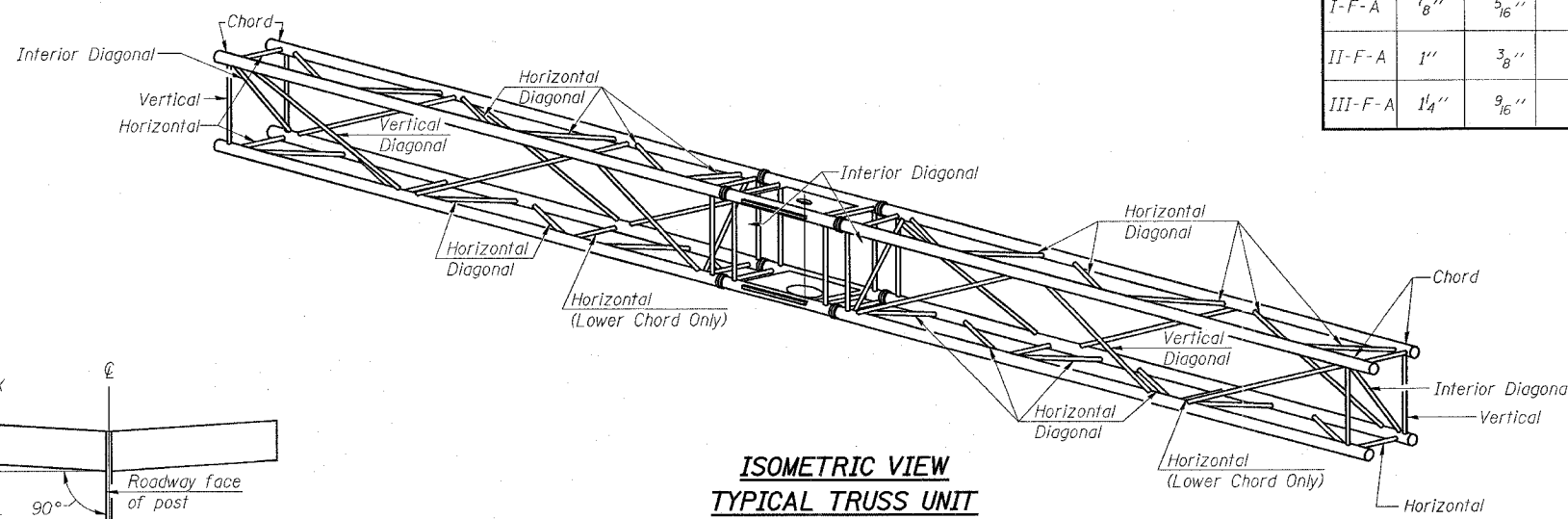
FAI ROUTE 70/55
DIST 8 ITS 2007-4a, 4b
MADISON COUNTY

PLOT DATE = 5/9/2007
 FILE NAME = c:\projects\14871\electrical\truss\truss.dgn
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70	•	MADISON	19	9
STA.		TO STA.		
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				

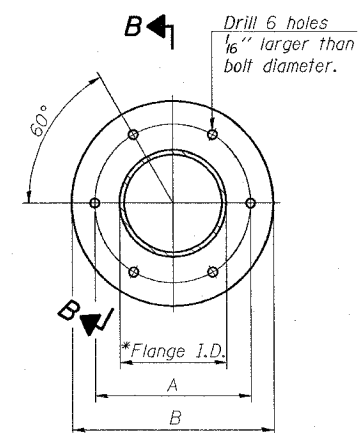
SHOP CAMBER TABLE

Unit Length L ₁ or L ₂	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"

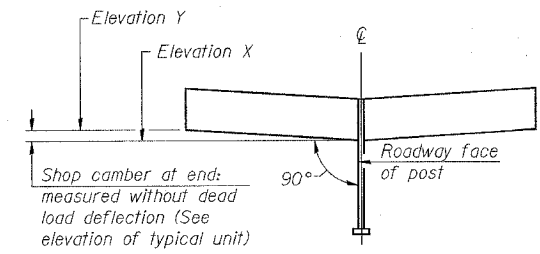


**ISOMETRIC VIEW
TYPICAL TRUSS UNIT**
ASTM B221 Alloy 6061 Temper T6

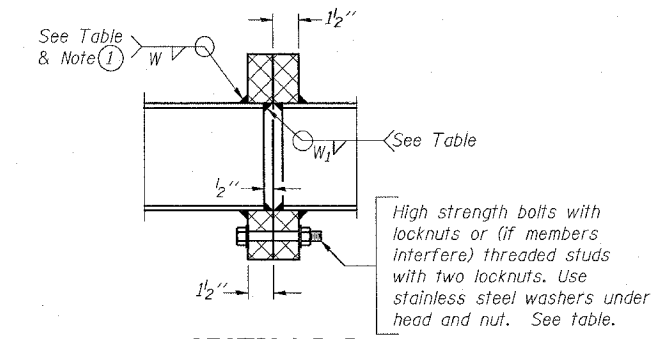
Truss Type	Bolts Dia.	Weld Sizes		A	B
		W	W ₁		
I-F-A	7/8"	5/16"	1/4"	8 3/4"	11 3/4"
II-F-A	1"	3/8"	1/4"	11"	14 1/2"
III-F-A	1 1/4"	9/16"	5/16"	11 1/2"	15"



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

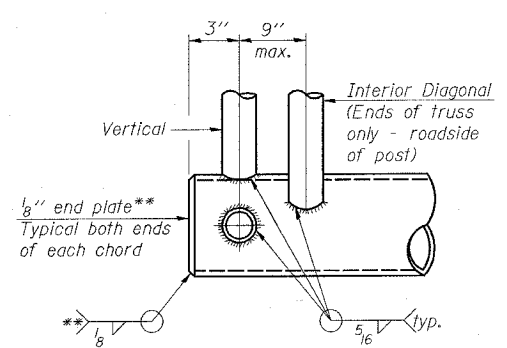


CAMBER DIAGRAM
(For Fabrication Only)



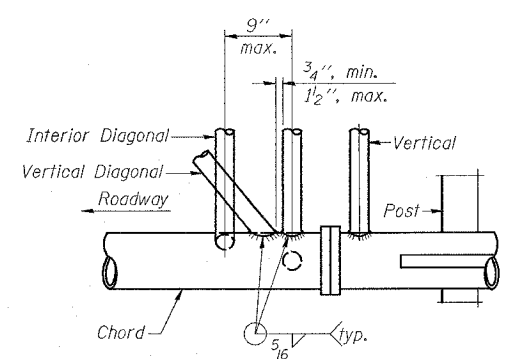
SECTION B-B

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.

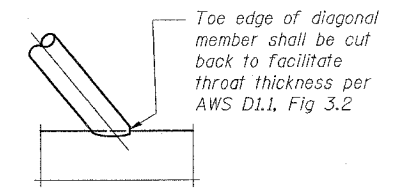


BUTTERFLY END JOINT DETAIL

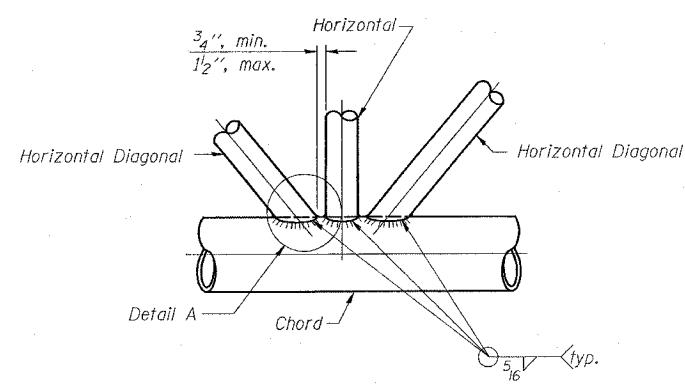
** Contractor may alternatively use standard aluminum drive-fit cap to close ends.



POST END JOINT DETAIL



DETAIL A



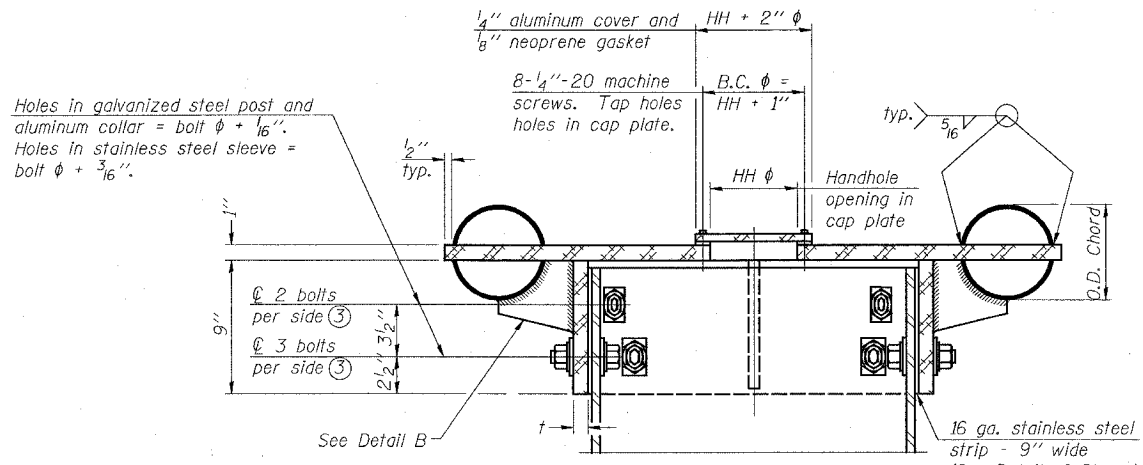
TRUSS INTERIOR JOINT DETAIL

**BUTTERFLY SIGN STRUCTURES
TRUSS DETAILS
ALUMINUM TRUSS & STEEL POST**

FAI ROUTE 70/55
DIST 8 ITS 2007-4a, 4b
MADISON COUNTY

PLOT DATE = 5/9/2007
FILE NAME = C:\projects\76a41\electrical\truss\truss.dgn
PLOT SCALE = 49.5/88.7 IN.
USER NAME = preststone

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70		MADISON	19	10
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

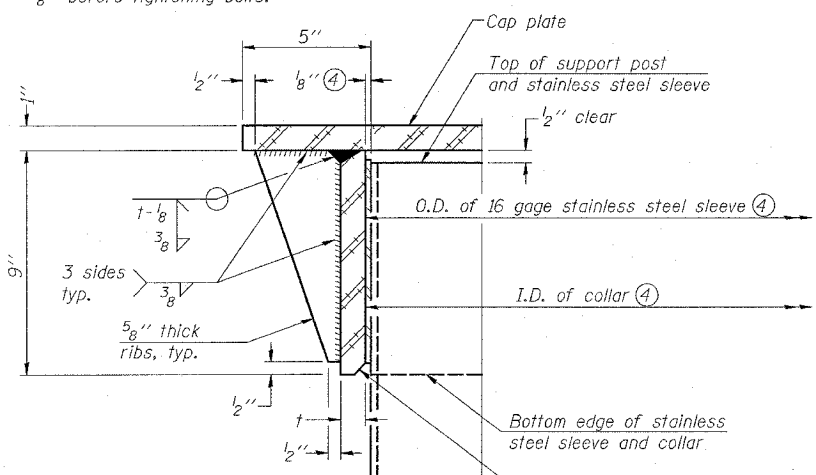


Holes in galvanized steel post and aluminum collar = bolt $\phi + \frac{1}{16}$ ".
Holes in stainless steel sleeve = bolt $\phi + \frac{3}{16}$ ".

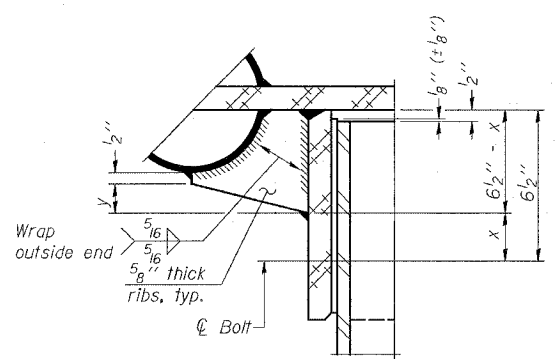
SECTION B-B

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 $\frac{1}{8}$ " ($\pm \frac{1}{16}$ "). Maximum gap between post and collar at any location equals $\frac{1}{8}$ " before tightening bolts.

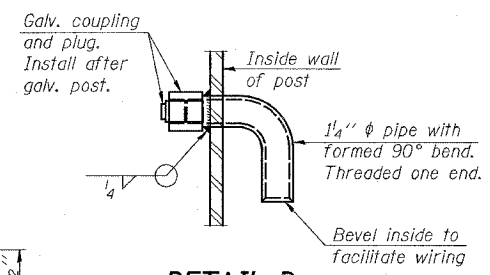


DETAIL A
(Two locations)

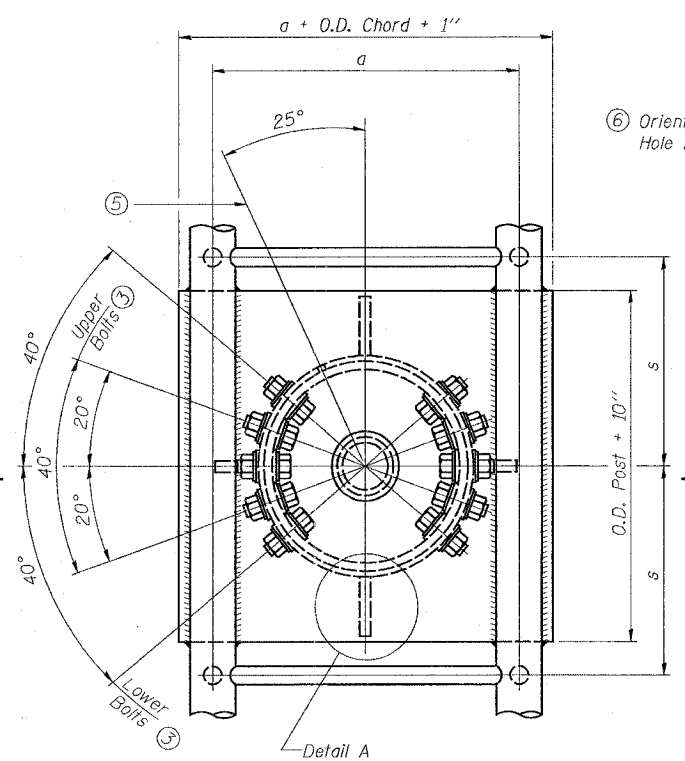


DETAIL B

Two locations
(For details not shown, see Detail C)

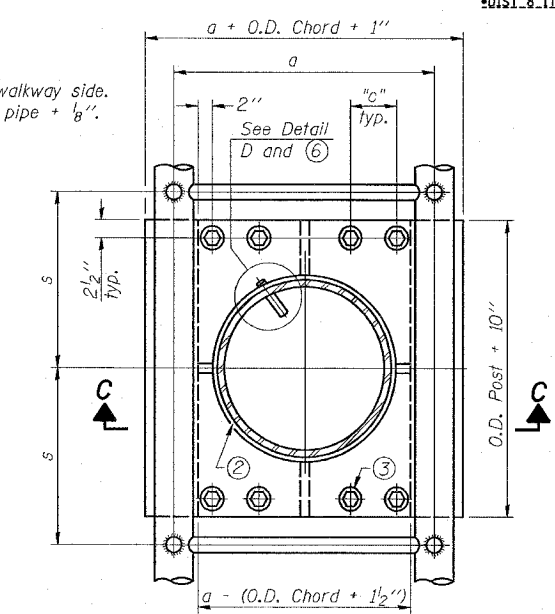


DETAIL D



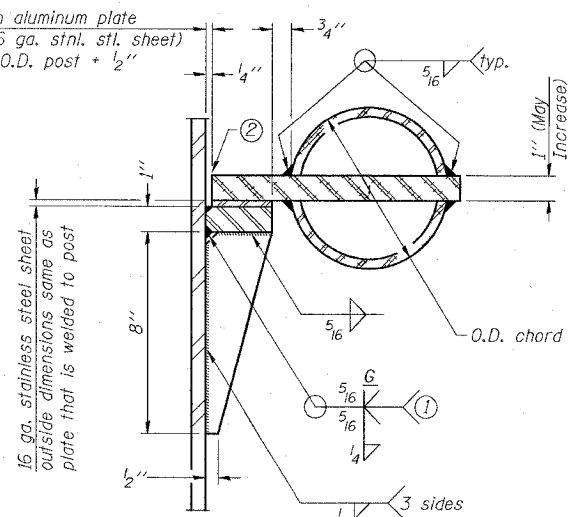
PLAN VIEW - TOP OF COLUMN

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



SECTION THRU POST ABOVE LOWER CHORDS

Hole in aluminum plate (and 16 ga. stnl. stl. sheet) to be O.D. post + 1/2"



DETAIL C

- 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 Butterfly.

CONTOURED WASHERS

Bolt Size	Contoured Washers	
	Hole Dia.	B
7/8"	1"	2 1/2"
1"	1 1/8"	3"
1 1/4"	1 3/8"	3 1/4"

DETAIL OF STAINLESS STEEL SLEEVE

Weld to post after galvanizing.
(Prepare post surface to insure tight, uniform fit and allow welding.)
Welds to be 1/2" long at 6" cts. along top edge and at 1/4" opening.

NUMBER	REVISION	DATE

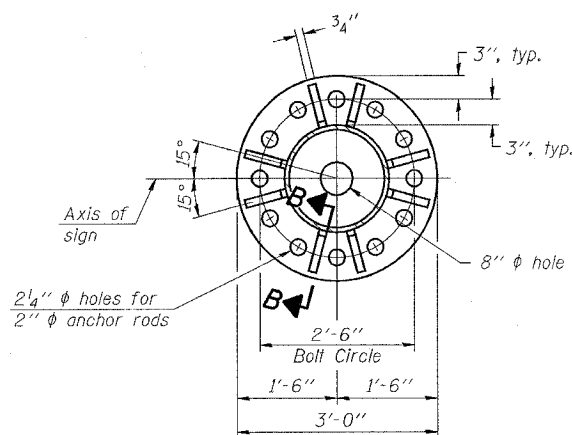
Truss Type	Post Size	Upper & Lower Connection Bolt Diameter ③	Lower Juncture Bolt Spacing Dimension "c" ③	Opening in Cap Plate "HH"	Collar Thickness (t)	Side Ribs	
						x	y
I-F-A	16" ϕ (83#/')	7/8"	3 1/4"	8"	5/8"	1 3/4"	2 1/4"
II-F-A	24" ϕ (102#/')	1"	3 1/2"	12"	7/8"	2"	1 1/4"
III-F-A	24" ϕ (125#/')	1 1/4"	3 1/2"	12"	7/8"	2"	1"

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

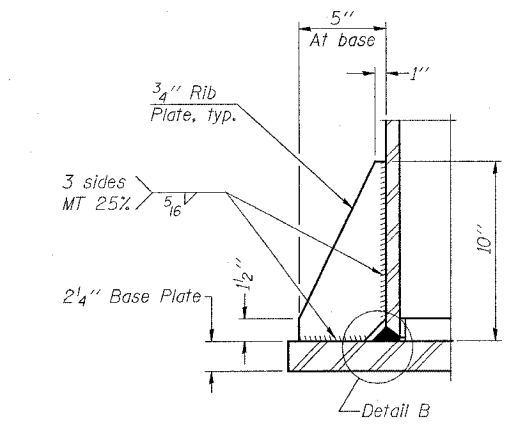
**BUTTERFLY SIGN STRUCTURES
JUNCTURE DETAILS
ALUMINUM TRUSS & STEEL POST**

FAI ROUTE 70/55
DIST 8 ITS 2007-4a, 4b
MADISON COUNTY

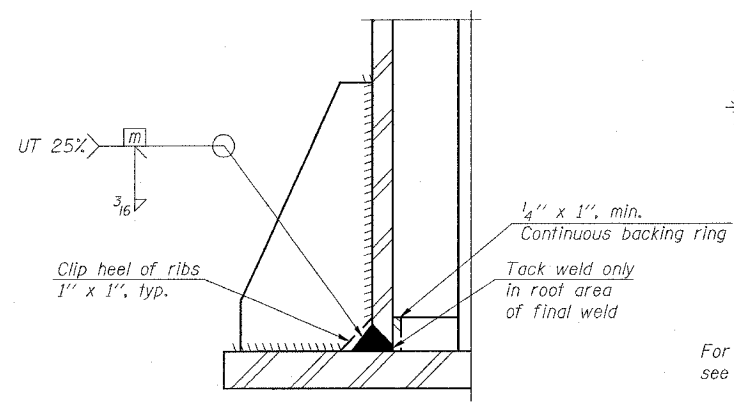
PLOT DATE = 5/9/2007
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 USER NAME = prestone



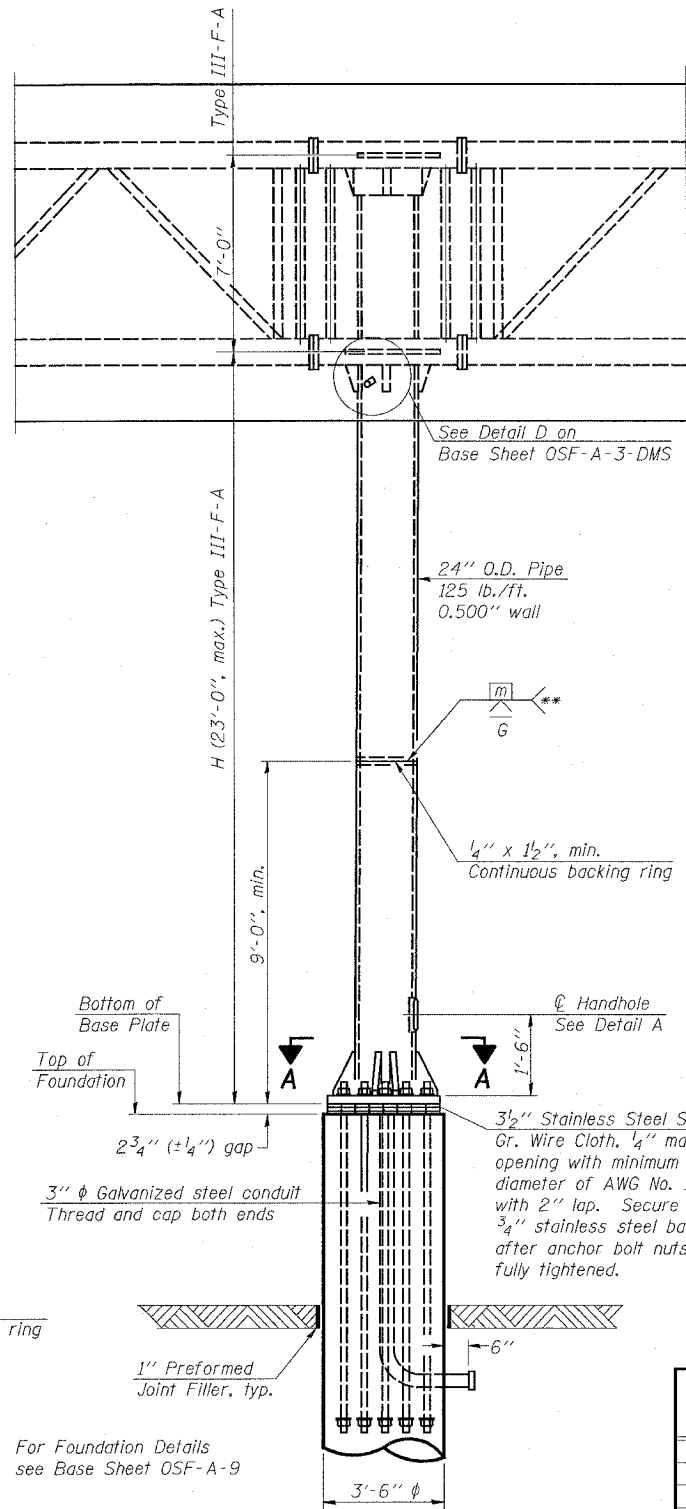
SECTION A-A



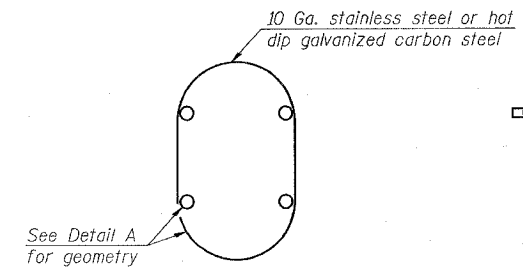
SECTION B-B



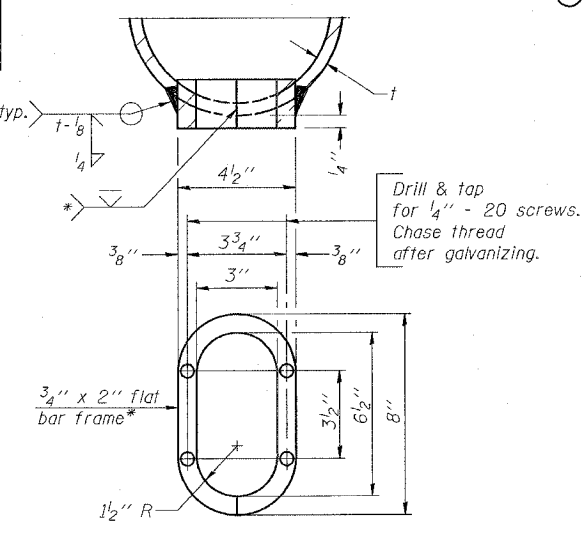
DETAIL B
(Typical rib)



FRONT ELEVATION



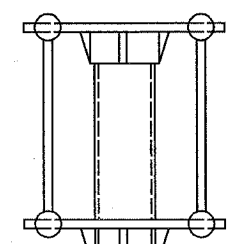
HANDHOLE COVER



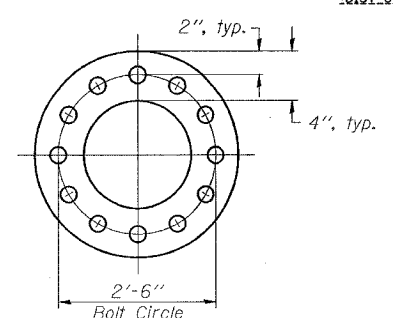
DETAIL A

* 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 min or less.

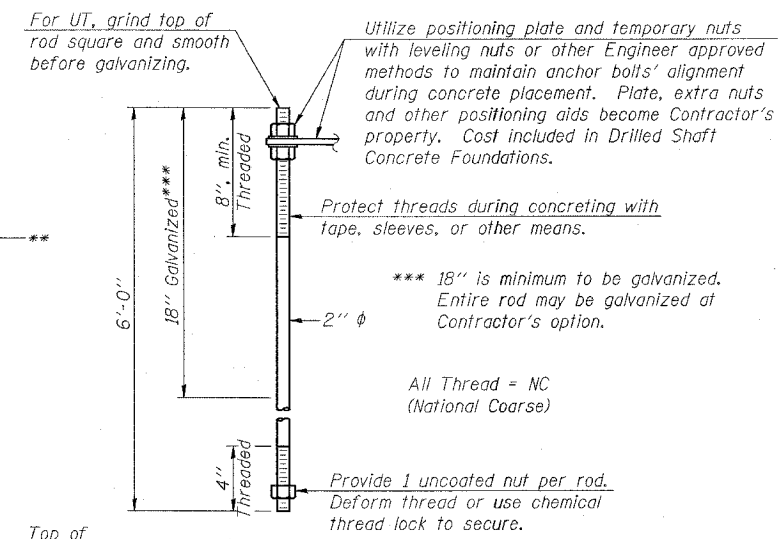
** Butt welded joint in post is only allowed for post heights (H) over 20 ft. in length. If used, weld procedure must be preapproved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.



SIDE ELEVATION



SUGGESTED POSITIONING PLATE



ANCHOR ROD DETAIL

Anchor rods shall conform to AASHTO M314 Grade 55 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, 1/2" 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.

**BUTTERFLY SIGN STRUCTURES
TYPE III-F-A TRUSS SUPPORT POST FOR DMS
ALUMINUM TRUSS & STEEL POST**

FAI ROUTE 70/55
DIST 8 ITS 2007-4a, 4b
MADISON COUNTY

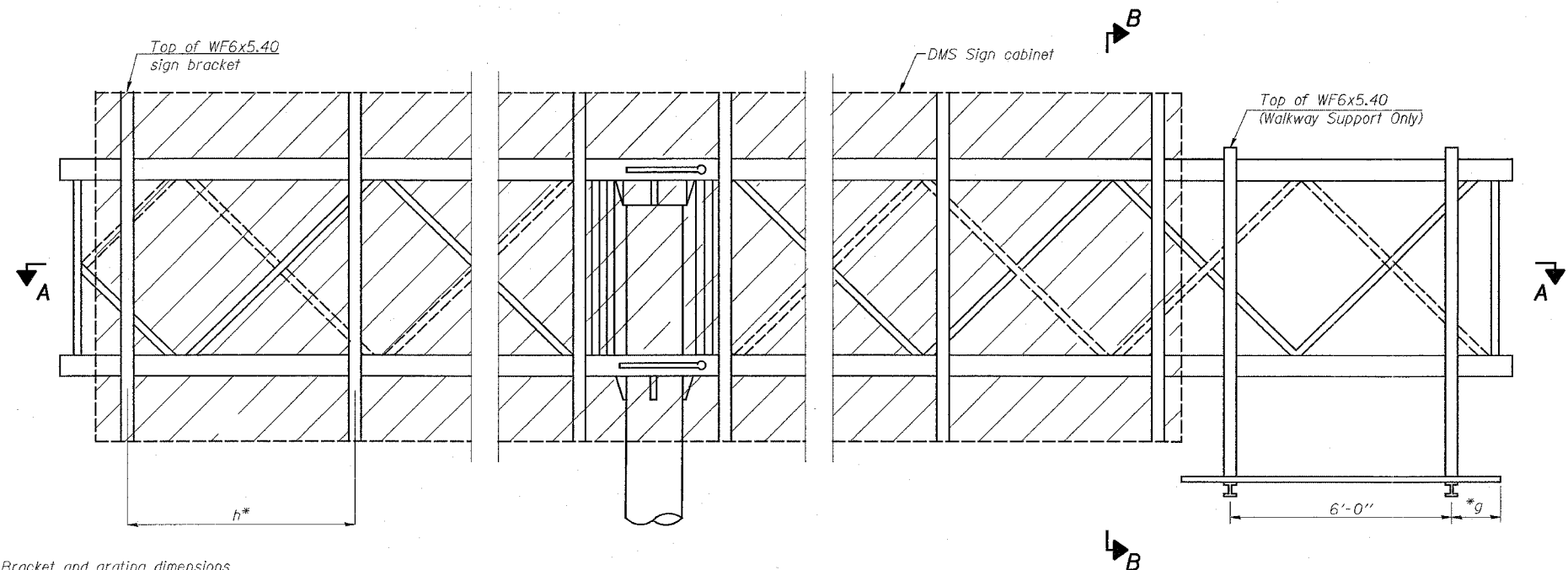
Structure Number	Station	H
BF0601055L022.0	1148+74	17.4
BF0601070L016.8	1032+00	17.465

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

NUMBER	REVISION	DATE

PLOT DATE = 11/01/2007
FILE NAME = c:\projects\1107\electrical\top\dr1107.dgn
PLOT SCALE = 1/8" = 1'-0"
USER NAME = prestonne

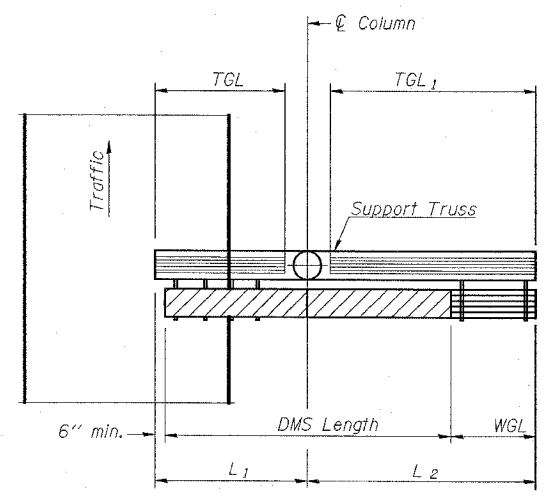
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70		MADISON	19	12
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____		ILLINOIS FED. AID PROJECT		



Bracket and grating dimensions are nominal and will vary based on actual DMS cabinet dimensions plus manufacturer's mounting devices.

TYPICAL FRONT ELEVATION

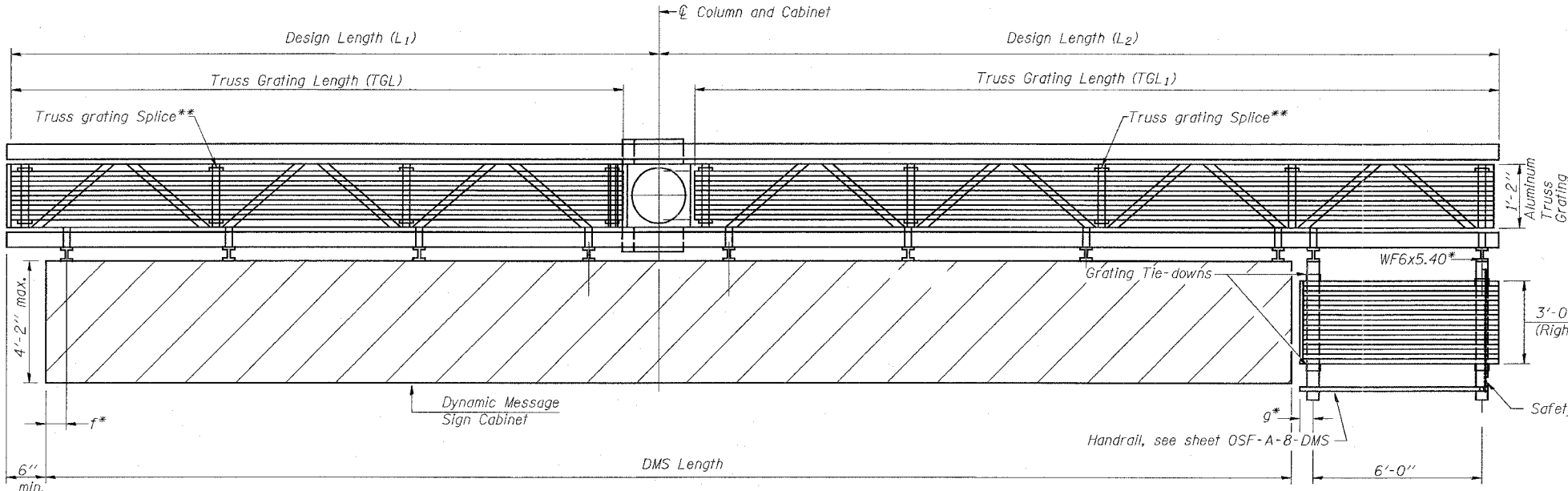
With handrail omitted for clarity.
For section B-B see base sheet OSF-A-7-DMS



PLAN WALKWAY AND HANDRAIL SKETCH

(Road plan beneath truss varies)
Butterfly may be located in shoulder area.
Walkway may be located at right or left end of truss.

Notes:
Space walkway brackets and sign 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 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 OSF-A-7-DMS.
For Handrail Splice Details, see Base Sheet OSF-A-8
Walkway and truss grating width dimensions are nominal and may vary ± 1/2" based on available standard width.



SECTION A-A

Handrail and walkway shall span a minimum of three brackets between splices and/or gap joints. Place all sign and walkway brackets as close to panel points as practical.
** Grating splices and handrail joints placed as needed.
Truss grating to facilitate inspection shall run full length (center to center of support frames) ±12" on overhead trusses. Cost of truss grating is included in Butterfly Sign Structure.

$TGL = L_1 \text{ (or } L_2) - (\frac{Post\ O.D.}{2} + 6")$

BRACKET TABLE

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

Structure Number	Station	DMS Length	TGL	TGL ₁	Walkway Location (Right or Left end of Truss)
8F0601055L022.0	1148+74	31	14.5	20.75	RIGHT
8F0601070L016.8	1032+00	31	14.5	20.75	RIGHT

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

FAI ROUTE 70/55
DIST 8 ITS 2007-4a, 4b
MADISON COUNTY

PLOT DATE = 5/9/2007
 FILE NAME = c:\projects\801487\electrical\aspl\801487.dgn
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 USER NAME = preststone

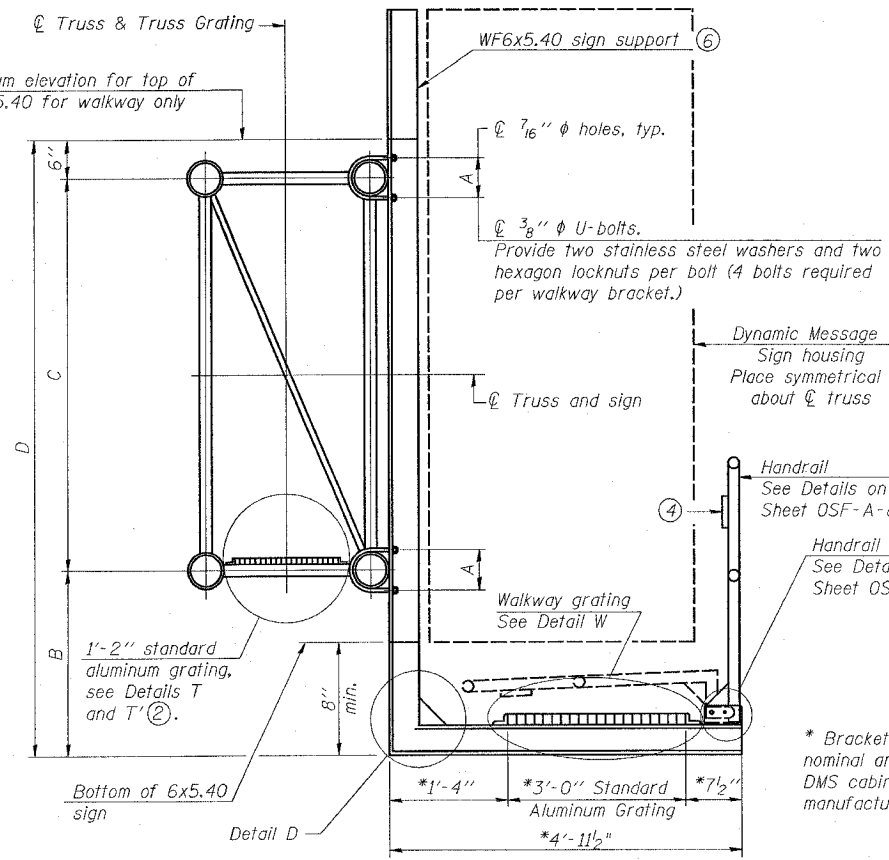
F.A.I. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70		MADISON	19	13
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
=DISI_8_ITS_2007-4a..4b				

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

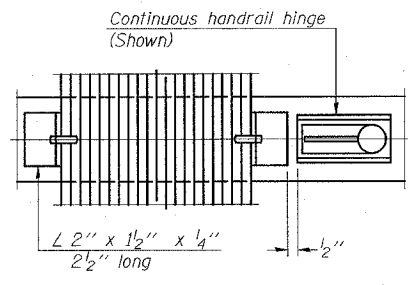
Main Bearing Bars (MBB) shall be 3/16" x 1 1/2" on 1 3/16" centers and conform to ASTM B211 Alloy 6061-T6.
 Cross bars (CB) shall be 3/16" x 1 1/2" on 4" centers and conform to ASTM B221 Alloy 6063-T5 or 6061-T6.

OR

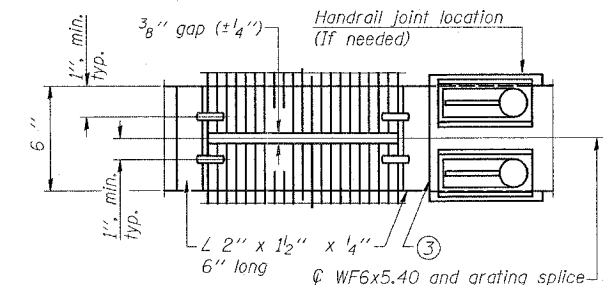
Aluminum Grating with modified "T" sections for main bearing bars shall meet the following requirements:
 Main bars shall conform to ASTM B221 Alloy 6061-T6 and have a minimum section modulus equal to 0.0705 in.³ per bar, a depth of 1 1/2", spaced on 1 3/16" centers.
 Cross bars shall conform to ASTM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



SECTION B-B

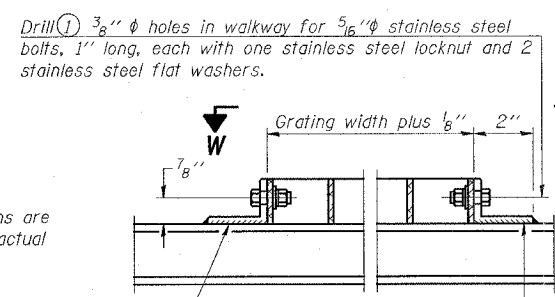


(CONTINUOUS WALKWAY GRATING)



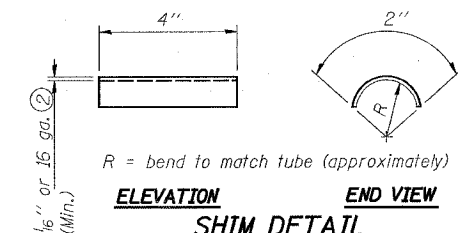
(AT WALKWAY GRATING SPLICE)

SECTION W-W



DETAIL W

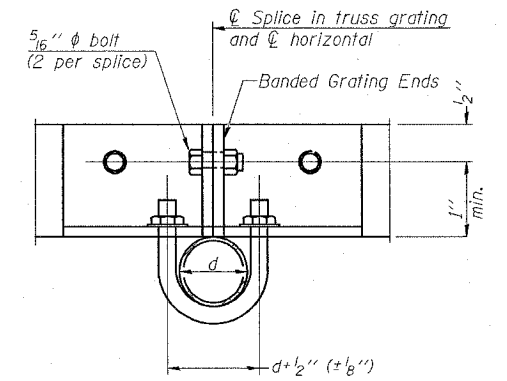
(Walkway grating)



ELEVATION

END VIEW

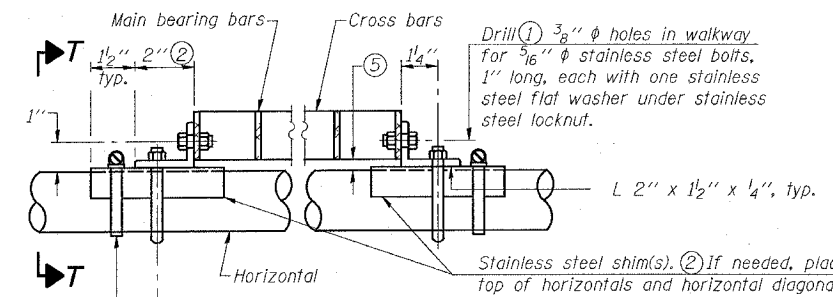
SHIM DETAIL



SECTION T'-T'

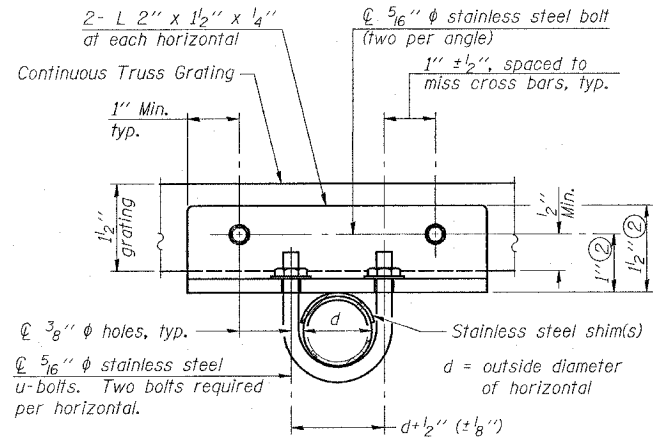
DETAIL T'

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



DETAIL T

(Continuous Truss grating)



SECTION T-T

Screw type stainless steel tube clamp at shim location
 3/8" holes in angles for 5/16" stainless steel u-bolts. Two stainless steel washers and nuts required per bolt. U-bolt and angle connections required at horizontals only.

Stainless steel shim(s) (2) If needed, place on top of horizontals and horizontal diagonals. Secure with one stainless steel clamp per side. See "Shim Detail".

2- L 2" x 1 1/2" x 1/4" at each horizontal
 5/16" stainless steel bolt (two per angle)
 1" spaced to miss cross bars, typ.
 1" Min. typ.
 1/2" grating
 1/2" Min.
 1" (2)
 1/2" Min.
 3/8" holes, typ.
 5/16" stainless steel u-bolts. Two bolts required per horizontal.
 d = outside diameter of horizontal
 d + 1/2" (+1/8")

Stainless Steel Shim, if needed, full width (one clamp each end).
 No back gauge

DETAIL D

SECTION D-D

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 OSF-A-8.)
- L 1/2" x 1/2" x 2" welded to handrail posts to protect locations that contact grating.
- Tube to grating gap may vary from 0 to 1/2" max. to align walkway, allow for camber, etc.
- 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.

Structure Number	Station	A	B	C	D
8F0601055L022.0	1148+74	7.5"	1' 8"	7'	9' 2"
8F0601070L016.8	1032+00	7.5"	1' 8"	7'	9' 2"

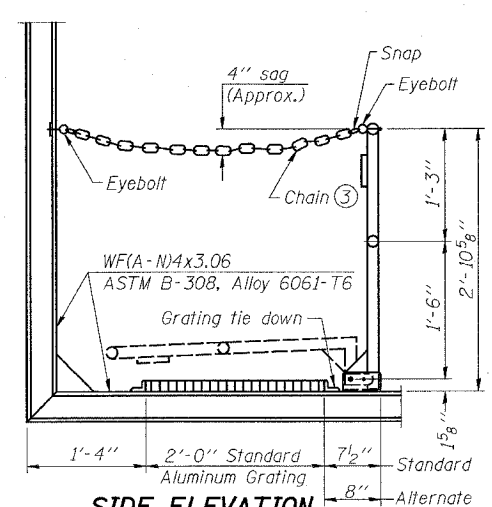
**BUTTERFLY SIGN STRUCTURES
 ALTERNATE WALKWAY DETAILS FOR DMS
 ALUMINUM TRUSS & STEEL POST**

FAI ROUTE 70/55
 DIST 8 ITS 2007-4a, 4b
 MADISON COUNTY

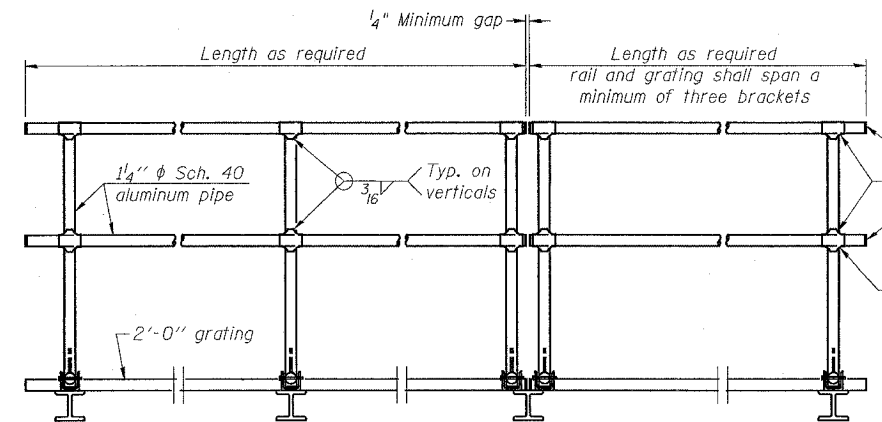
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70		MADISON	19	14

STA. _____ TO STA. _____
 FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT
 *DIST. 8 ITS 2007-4a, 4b



SIDE ELEVATION
 (Showing Safety Chain W/O Sign)

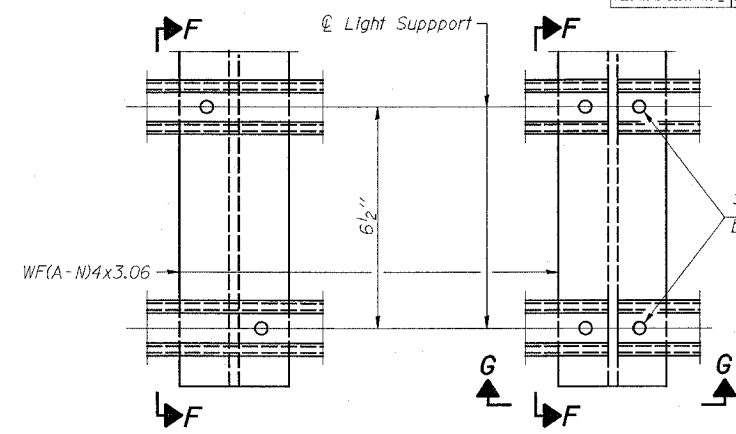


FRONT ELEVATION

HANDRAIL DETAILS

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

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



DETAIL F

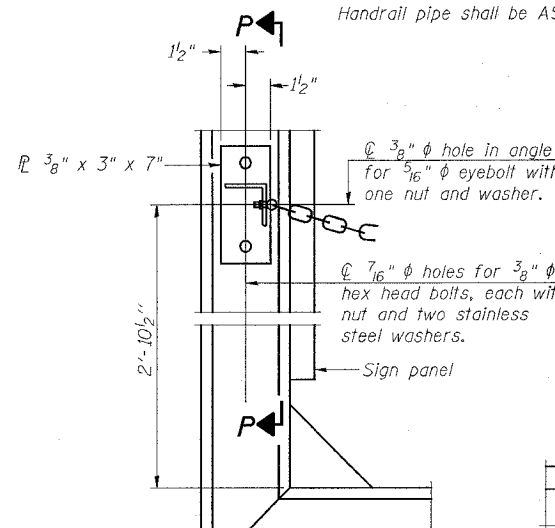
DETAIL G

SECTION F-F

SECTION G-G

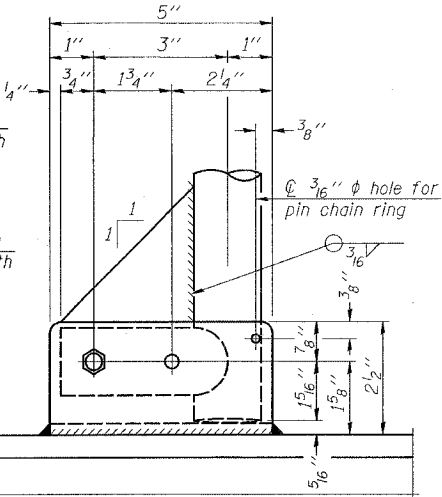
LIGHTING FIXTURE MOUNTS (IF REQUIRED)

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

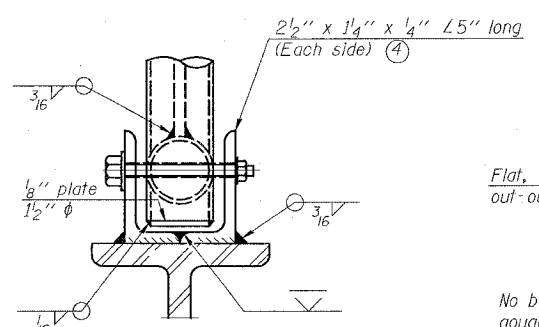


ALTERNATE SAFETY CHAIN ATTACHMENT

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



SIDE ELEVATION

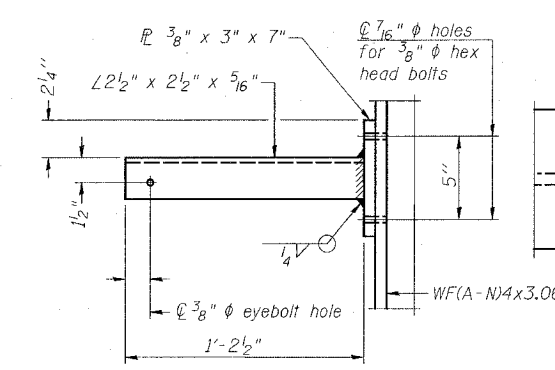


FRONT ELEVATION

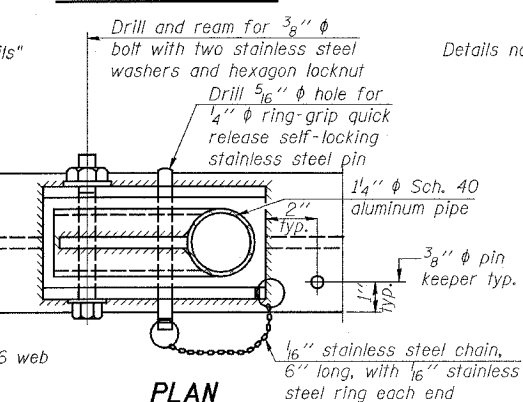
Details not shown same as "ELEVATION" at right.

ELEVATION AT HANDRAIL JOINT ④

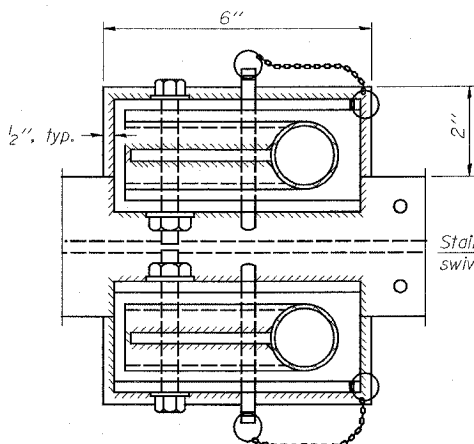
Details not shown same as "FRONT ELEVATION"



SECTION P-P

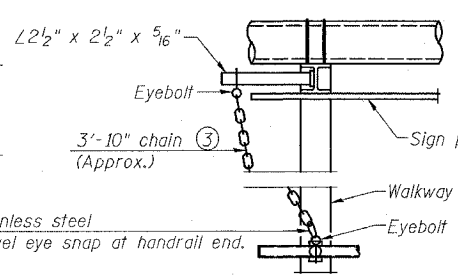


PLAN
DETAIL E HANDRAIL HINGE



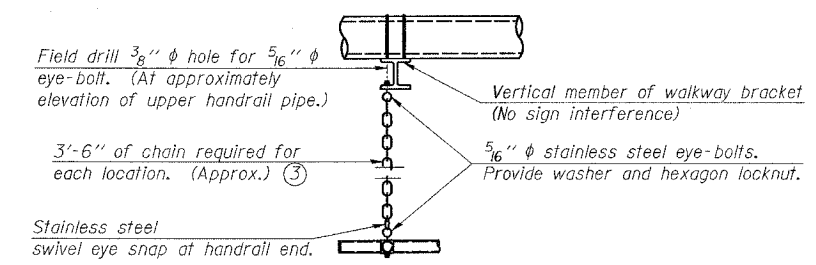
PLAN AT HANDRAIL JOINT

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.

BUTTERFLY SIGN STRUCTURES
HANDRAIL DETAILS
ALUMINUM TRUSS & STEEL POST

FAI ROUTE 70/55
 DIST 8 ITS 2007-4a, 4b
 MADISON COUNTY

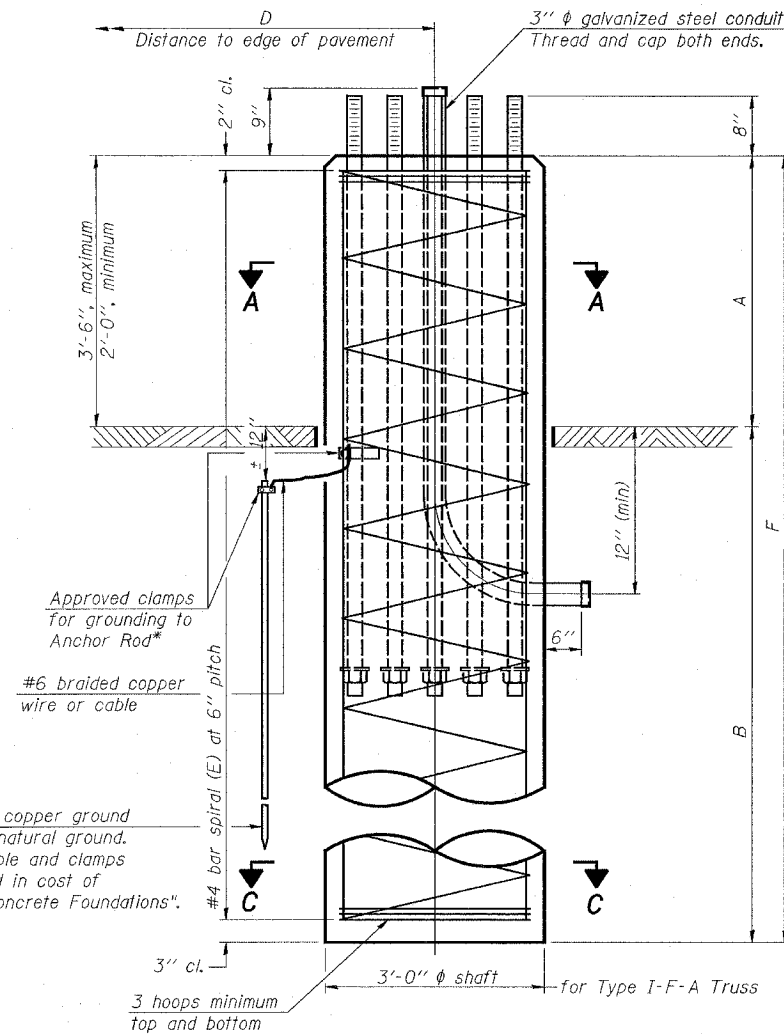
NUMBER	REVISION	DATE

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 USER NAME = prestome

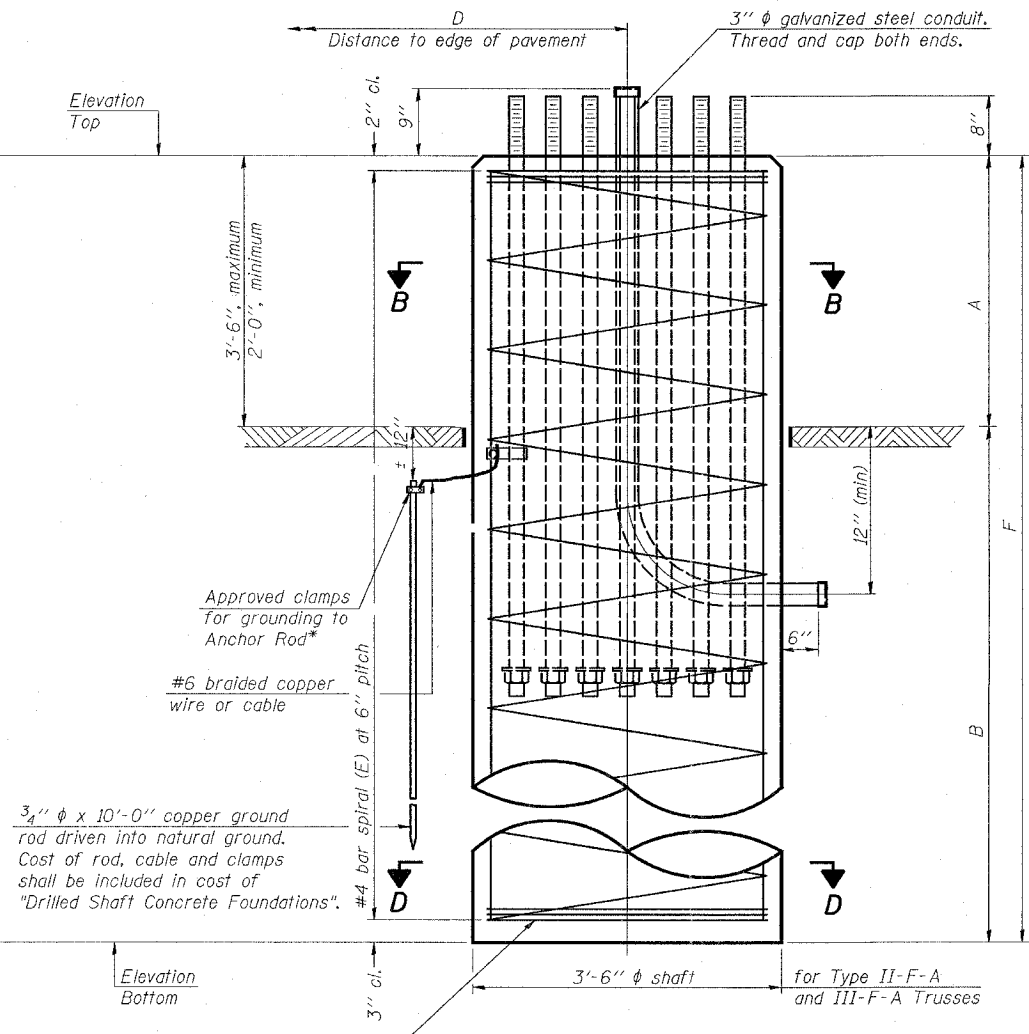
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70		MADISON	19	15

STA.	TO STA.
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT

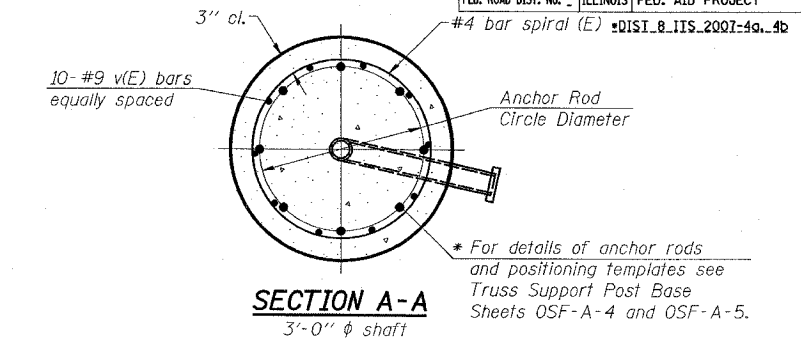
* Grind anchor rod to bright finish at ground clamp location before installing clamp.



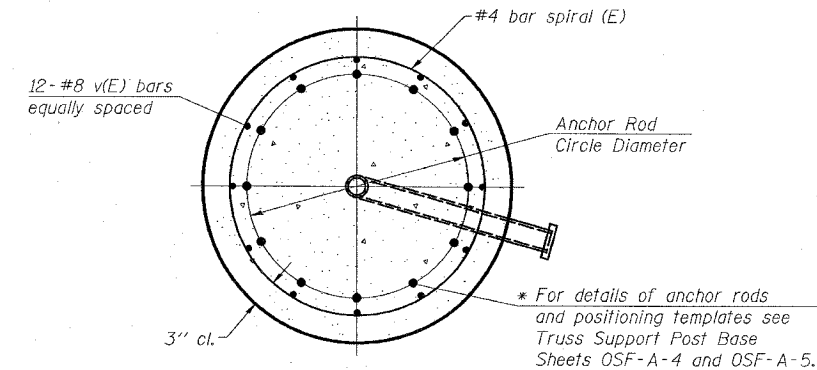
ELEVATION



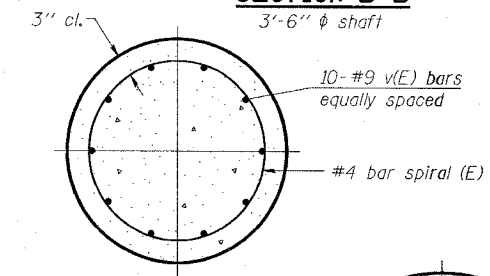
ELEVATION



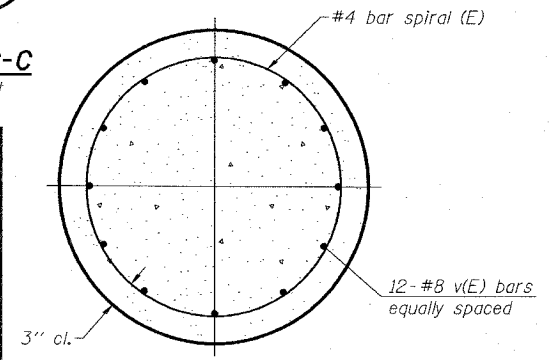
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

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 (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 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".

Structure Number	Station	Truss Type	Shaft Diameter	Elevation Top	Elevation Bottom	A	B	F	Class SI Concrete Cubic Yards
8F0601055L022.0	1148+74	III-F-A	3.5'	570.318	540.318	3'	27'	30'	10.7
8F0601070L016.8	1032+00	III-F-A	3.5'	520.846	493.846	3'	24'	27'	9.6

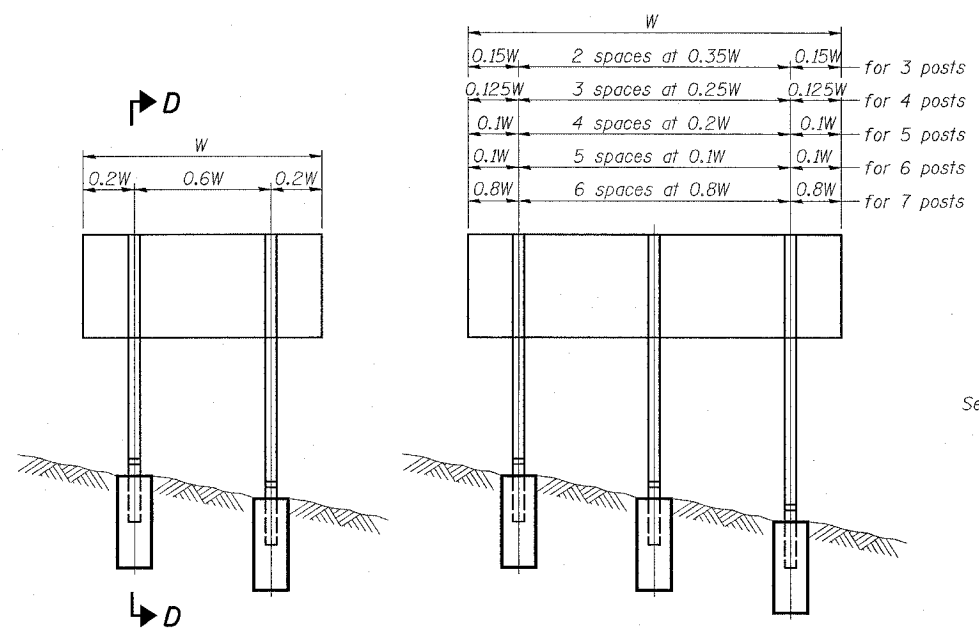
Truss Type	Post Base Sheet	Maximum Cantilever Length (ft)	Maximum Total Sign Area (sq ft)	Shaft Diameter (ft)	"B" Depth (ft)	Anchor Rods		Anchor Rod Circle Diameter (in)
						No.	Diameter (in)	
I-F-A	OSF-A-4	25	200	3.0	17'-6"	8	2	22
II-F-A	OSF-A-5	30	400	3.5	22'-0"	12	2	30
III-F-A	OSF-A-5	35	400	3.5	24'-0"	12	2	30
III-F-A	OSF-A-5-DGN	35	400	3.5	24'-0"	12	2	30

NUMBER	REVISION	DATE

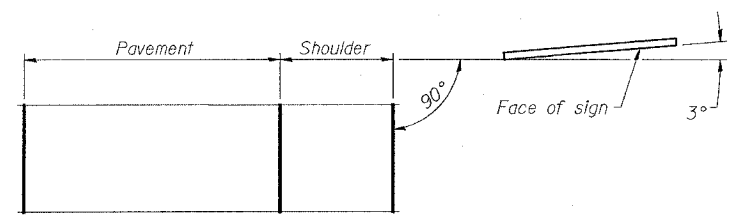
**BUTTERFLY SIGN STRUCTURES
DRILLED SHAFT
ALUMINUM TRUSS & STEEL POST**

FAI ROUTE 70/55
DIST 8 ITS 2007-4a, 4b
MADISON COUNTY

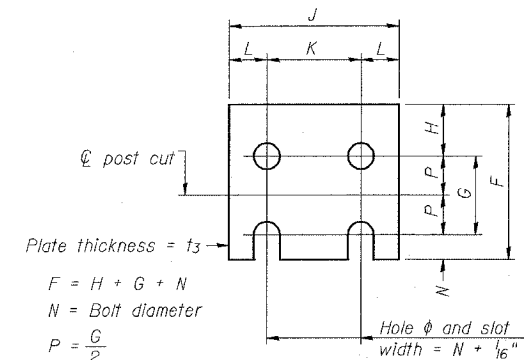
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 USER NAME = prestomms



ELEVATION

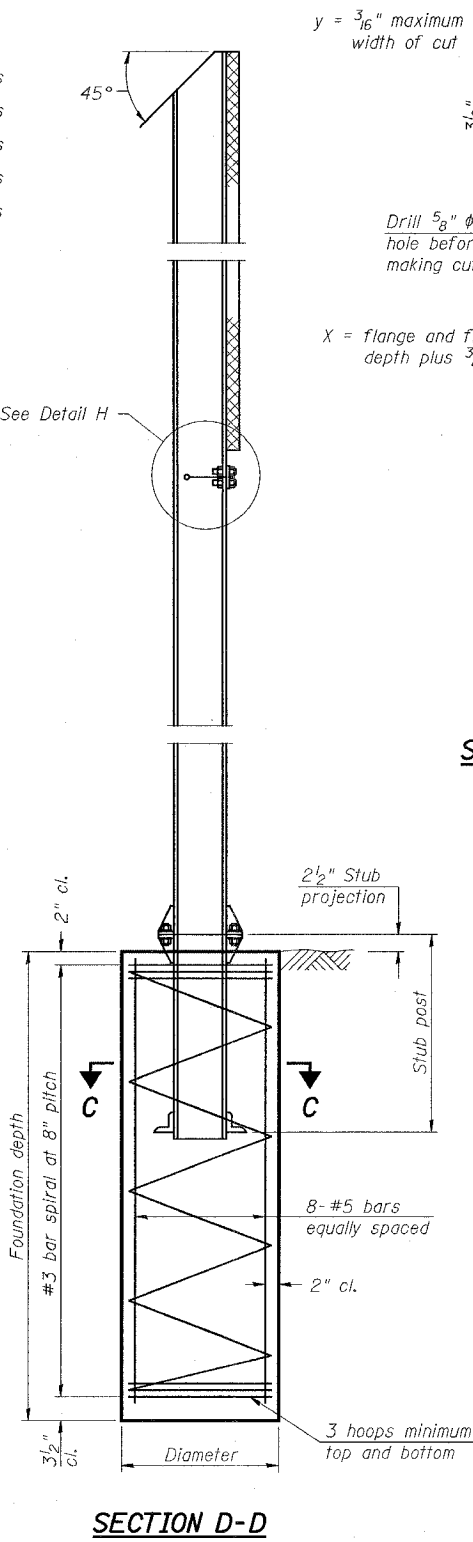


LOCATION SKETCH

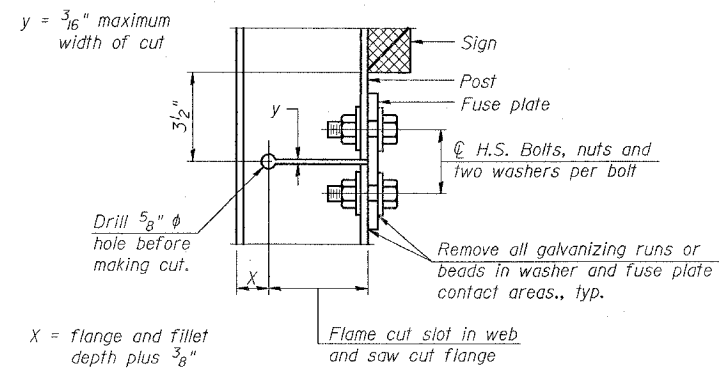


FUSE PLATE DETAIL
 (Install with notches down.)

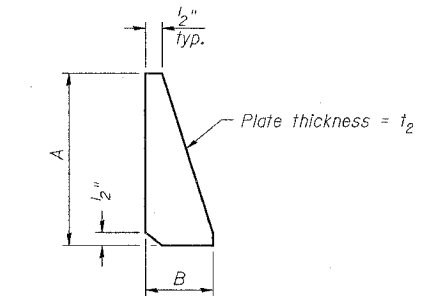
N = Bolt Diameter	G	H
1/2"	2"	1 1/8"
5/8"	2 1/4"	1 1/4"
3/4"	2 1/2"	1 3/8"
7/8"	2 3/4"	1 1/2"
1"	3"	1 5/8"
1 1/8"	3 1/4"	1 3/4"
1 1/4"	3 1/2"	1 7/8"



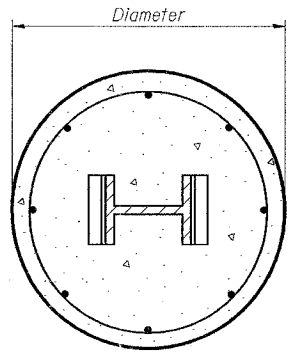
SECTION D-D



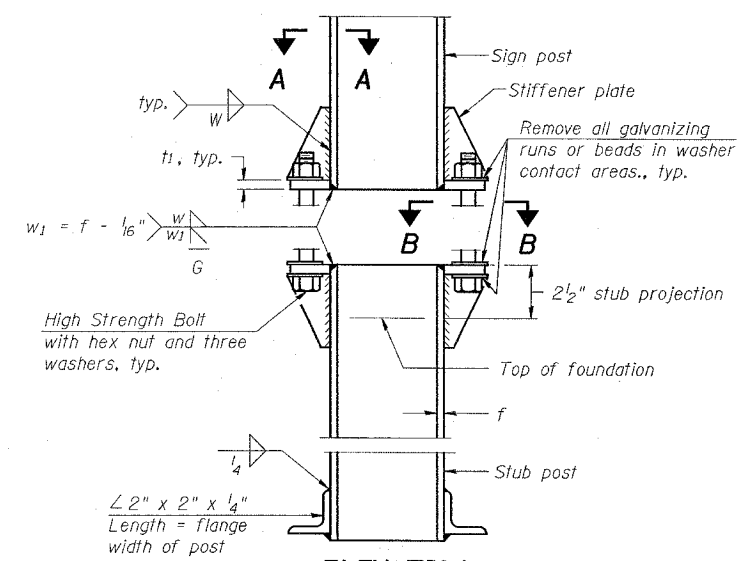
DETAIL H



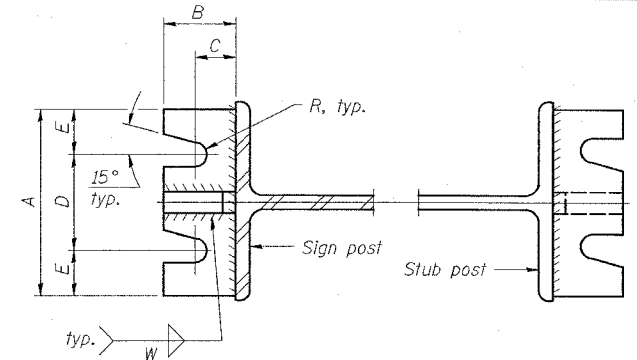
STIFFENER PLATE DETAIL
 (See table for dimensions.)



SECTION C-C

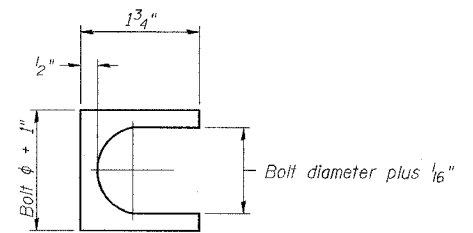


ELEVATION
 SIGN POST & STUB POST



SECTION A-A

SECTION B-B



SHIM DETAIL

GENERAL NOTES

Posts shall be plumbed by using shims with post-to-stub post connection bolts snug tight only. Final tightening of all High Strength Bolts shall be in accordance with Article 727.05 and threads at the junction of the bolt and nut shall be burred or center punched to prevent the nut from loosening.

LOADING: 80 m.p.h. wind with 30% gust factor, normal to sign.

DESIGN STRESSES:
 Structural steel - 20,000 p.s.i.
 Reinforcing steel - 20,000 p.s.i.
 Concrete - 1,400 p.s.i.
 Footing soil pressure - 2,000 p.s.f.

After fabrication, the post, fuse plate and upper 6", min. of the stub post shall be hot-dip galvanized in accordance with AASHTO M111. All bolts, nuts and washers shall be hot-dip galvanized in accordance with AASHTO M232.

Work this sheet with Base Sheet BAW-A-2.

BREAK-AWAY WIDE FLANGE
 STEEL SIGN POST DETAILS

FAI ROUTE 70/55
 DIST 8 ITS 2007-4a, 4b
 MADISON COUNTY

PLOT DATE = 5/9/2007
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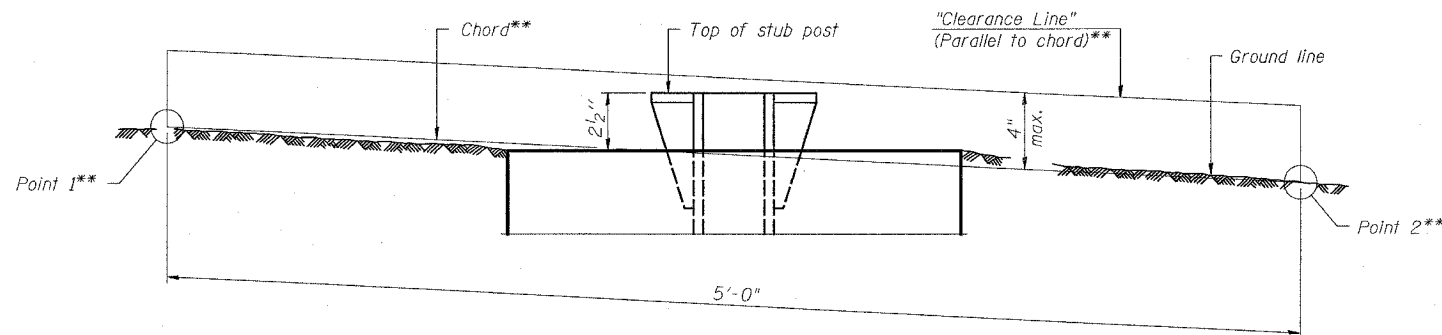
NUMBER	REVISION	DATE

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70		MADISON	19	17
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____		ILLINOIS FED. AID PROJECT		
DISI_8_ITS_2007-4a_4b				

POST	CONCRETE FOUNDATION TABLE							POST TO STUB POST CONNECTION DATA										FUSE PLATE DATA				
	Foundation			Reinforcement			Stub Post Length	Bolt Size	A	B	C	D	E	t ₁	t ₂	R	W	J	K	L	t ₃	
	Diameter	* Minimum Depth	Concrete (1) cu. yds.	Vertical Bars Length	Bar Spirals Diameter	Bar Spirals Length																lbs. (2)
W6x9	2'-0"	6'-0"	0.70	5'-9"	1'-8 1/2"	79'-0"	78	2'-3"	5/8" x 3/4"	6"	2 1/4"	1 1/4"	3 1/2"	1 1/4"	3/4"	1/2"	1 1/2"	1/4"	4"	2 1/4"	7/8"	1/4"
W6x15	2'-0"	6'-0"	0.70	5'-9"	1'-8 1/2"	79'-0"	78	2'-6"	5/8" x 3/4"	6"	2 1/4"	1 1/4"	3 1/2"	1 1/4"	3/4"	1/2"	1 1/2"	1/4"	6"	3 1/2"	1 1/4"	3/8"
W8x18	2'-0"	6'-0"	0.70	5'-9"	1'-8 1/2"	79'-0"	78	2'-6"	3/4" x 3 3/4"	6"	2 1/2"	1 3/8"	3 1/4"	1 3/8"	1"	1/2"	1 3/2"	5/16"	5 1/4"	2 3/4"	1 1/4"	3/8"
W10x22	2'-6"	6'-6"	1.18	6'-3"	2'-2 1/2"	105'-0"	92	3'-0"	3/4" x 3 3/4"	6"	2 1/2"	1 3/8"	3 1/4"	1 3/8"	1"	1/2"	1 3/2"	5/16"	5 3/4"	2 3/4"	1 1/2"	1/2"
W10x26	2'-6"	7'-0"	1.27	6'-9"	2'-2 1/2"	112'-0"	98	3'-0"	7/8" x 4"	7"	2 3/4"	1 1/2"	4"	1 1/2"	1"	3/4"	5/32"	3/8"	5 3/4"	2 3/4"	1 1/2"	5/8"
W12x26	2'-6"	7'-9"	1.41	7'-6"	2'-2 1/2"	119'-0"	107	3'-0"	7/8" x 4"	7"	2 3/4"	1 1/2"	4"	1 1/2"	1"	3/4"	5/32"	3/8"	6 1/2"	3 1/2"	1 1/2"	5/8"
W14x30	3'-0"	7'-3"	1.90	7'-0"	2'-8 1/2"	145'-0"	113	3'-0"	7/8" x 4"	7"	2 3/4"	1 1/2"	4"	1 1/2"	1"	3/4"	5/32"	3/8"	6 3/4"	3 1/2"	1 5/8"	1/2"
W14x38	3'-0"	8'-0"	2.09	7'-9"	2'-8 1/2"	153'-0"	122	3'-6"	1" x 4 1/2"	7 1/2"	3"	1 3/4"	4"	1 3/4"	1 1/4"	3/4"	11/32"	3/8"	6 3/4"	3 1/2"	1 5/8"	1/2"
W16x45	3'-0"	8'-6"	2.23	8'-3"	2'-8 1/2"	162'-0"	130	3'-6"	1" x 4 1/2"	7 1/2"	3"	1 3/4"	4"	1 3/4"	1 1/4"	3/4"	11/32"	3/8"	7"	3 1/2"	1 3/4"	1/2"

*Dimensional changes required for varying site conditions shall be approved by the Engineer.

POST	FUSE PLATE BOLT SIZE																				
	Sign Height																				
	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"
W6x9	1/2" x 1 1/2"	1/2" x 1 1/2"	1/2" x 1 1/2"	5/8" x 1 3/4"	5/8" x 1 3/4"	5/8" x 1 3/4"	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
W6x15	1/2" x 1 3/4"	1/2" x 1 3/4"	5/8" x 2"	5/8" x 2"	3/4" x 2"	3/4" x 2"	3/4" x 2"	3/4" x 2"	7/8" x 2"	7/8" x 2"	---	---	---	---	---	---	---	---	---	---	---
W8x18	1/2" x 1 3/4"	1/2" x 1 3/4"	1/2" x 1 3/4"	5/8" x 2"	5/8" x 2"	3/4" x 2"	3/4" x 2"	3/4" x 2"	7/8" x 2 1/4"	7/8" x 2 1/4"	7/8" x 2 1/4"	7/8" x 2 1/4"	7/8" x 2 1/4"	7/8" x 2 1/4"	---	---	---	---	---	---	---
W10x22	1/2" x 2"	1/2" x 2"	1/2" x 2"	5/8" x 2"	5/8" x 2"	3/4" x 2 1/4"	3/4" x 2 1/4"	3/4" x 2 1/4"	7/8" x 2 1/4"	7/8" x 2 1/4"	7/8" x 2 1/2"	1" x 2 1/2"	1" x 2 3/4"	1" x 2 3/4"	1" φ x 2 3/4"	1" φ x 2 3/4"	1" φ x 2 3/4"	1" φ x 2 3/4"	---	---	---
W10x26	1/2" x 2"	1/2" x 2"	1/2" x 2"	5/8" x 2 1/4"	5/8" x 2 1/4"	3/4" x 2 1/2"	3/4" x 2 1/2"	3/4" x 2 1/2"	7/8" x 2 1/2"	7/8" x 2 1/2"	1" x 2 3/4"	1" x 2 3/4"	1" x 2 3/4"	1 1/8" x 3"	1 1/8" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"
W12x26	---	---	---	---	---	5/8" x 2 1/4"	---	---	7/8" x 2 1/2"	7/8" x 2 1/2"	1" x 2 1/2"	1" x 2 3/4"	1" x 2 3/4"	1 1/8" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"
W14x30	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	5/8" x 2"	3/4" x 2 1/4"	3/4" x 2 1/4"	3/4" x 2 1/4"	7/8" x 2 1/2"	1" x 2 1/2"	1" x 2 3/4"	1" x 2 3/4"	1 1/8" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"
W14x38	---	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	5/8" x 2 1/4"	3/4" x 2 1/4"	3/4" x 2 1/2"	3/4" x 2 1/2"	7/8" x 2 1/2"	7/8" x 2 1/2"	1" x 2 1/2"	1" x 2 3/4"	1 1/8" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"
W16x45	---	---	---	1/2" x 2"	1/2" x 2"	5/8" x 2 1/4"	5/8" x 2 1/4"	3/4" x 2 1/4"	3/4" x 2 1/2"	3/4" x 2 1/2"	7/8" x 2 1/2"	7/8" x 2 1/2"	1" x 2 3/4"	1 1/8" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"	1 1/4" φ x 3"



ELEVATION
GROUND LINE & STUB POST

** For all "Point 1" and "Point 2" locations, "Clearance Line" must be at or above top of stub post.

- ① Quantity includes all concrete necessary for one foundation.
- ② Includes reinforcement bars and spiral hooping for one foundation.

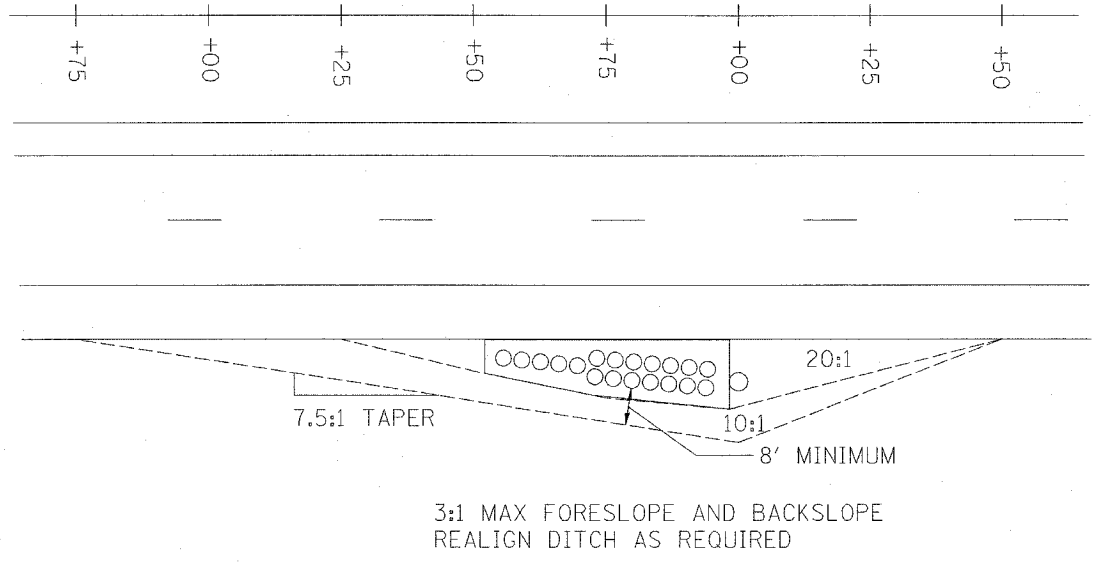
NUMBER	REVISION	DATE

**BREAK-AWAY WIDE FLANGE
STEEL SIGN POST TABLES**

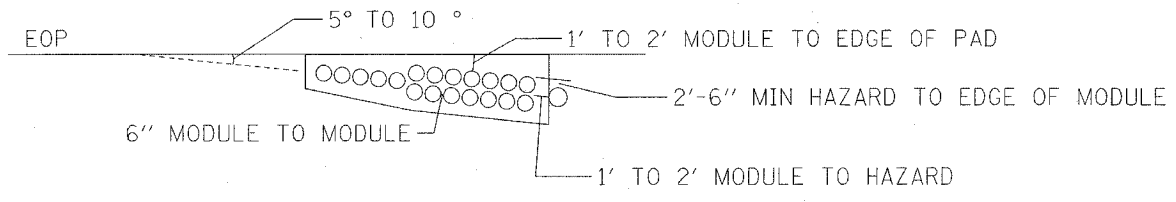
FAI ROUTE 70/55
DIST 8 ITS 2007-4a, 4b
MADISON COUNTY

(Sheet 2 of 2)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70	#	MADISON	19	18
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT				
DIST 8 ITS 2007-4a, 4b				



LOCATION	EARTH EXCAVATION	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD
FAI 55				
STA 1147+50 TO STA 1147+75	0.0	0.0	0.4	-0.4
STA 1147+75 TO STA 1148+00	0.0	0.0	1.4	-1.4
STA 1148+00 TO STA 1148+25	0.0	0.0	4.7	-4.7
STA 1148+25 TO STA 1148+50	0.0	0.0	10.5	-10.5
STA 1148+50 TO STA 1148+75	0.9	0.7	18.4	-17.7
STA 1148+75 TO STA 1149+00	0.9	0.7	17.1	-16.4
STA 1149+00 TO STA 1149+25	0.0	0.0	5.8	-5.8
FAI 70				
STA 1031+50 TO STA 1031+75	0.8	0.6	9.4	-8.8
STA 1031+75 TO STA 1032+00	3.8	2.9	24.1	-21.3
STA 1032+00 TO STA 1032+25	4.7	3.5	26.4	-22.9
STA 1032+25 TO STA 1032+50	4.1	3.1	19.9	-16.8
STA 1032+50 TO STA 1032+75	0.5	0.4	11.8	-11.4
STA 1032+75 TO STA 1033+00	0.0	0.0	5.0	-5.0
STA 1033+00 TO STA 1033+25	0.0	0.0	1.4	-1.4
TOTALS	15.7	11.8	156.3	-144.5



LOCATION	SEEDING	MULCH
	ACRE	ACRE
FAI 55		
STA 1147+50 TO STA 1149+25	0.0	0.0
FAI 70		
STA 1031+50 TO STA 1033+25	0.8	0.6
TOTALS	0.8	0.6

LOCATION	REINFORCEMENT BARS	RELOCATE SIGN PANEL-TYPE 3	STRUCTURAL STEEL SIGN SUPPORT-BREAKAWAY	CONCRETE FOUNDATIONS	RELOCATE GROUND-MOUNTED SIGN SUPPORT	REMOVE GROUND CONCRETE FOUNDATION - GROUND MOUNT	IMPACT ATTENUATORS (NON-REDIRECTIVE), TEST LEVEL 3
	POUND	SO FT	POUND	CU YD	EACH	EACH	EACH
FAI 55							
STA 1148+75							
BUTTERFLY DMS							1
REMOVE "PAUL SIMON" SIGN STA 1068+00	156.0	77.5	75	1.4	2	2	
RELOCATE "PAUL SIMON" SIGN							
FAI 70							
STA 1032+00							
BUTTERFLY DMS							1
TOTALS	156.0	77.5	75.0	1.4	2.0	2.0	2.0

IMPACT ATTENUATOR DETAILS

FAI ROUTE 70/55
DIST 8 ITS 2007-4a, 4b
MADISON COUNTY

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70	4	MADISON	19	19

STA. _____ TO STA. _____
 FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT

*DIST. 8 ITS 2007-4a, 4b

Illinois Department of Transportation
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 Date 12/15/06

ROUTE FAI 55 / FAI 70 DESCRIPTION Sign Truss Foundation on I-70 Westbound, East of Staunton Road LOGGED BY S. Wiszkon
 SECTION Dist 8 ITS 2007-4a, 4b, 4c LOCATION N 12, SEC. 34, TWP. 4N, RNG. 7W, 3 PM

STRUCT. NO.	Station	B	U	M	Surface Water Elev.	D	B	U	M
SOIL		Blow	Penetration	Penetration	ft	Blow	Penetration	Penetration	ft
		(ft)	(%)	(%)		(ft)	(%)	(%)	
Dark Gray Silt LOAM	96.0	5	0.85	25	79.0	4	1.48	24	
Mottled Silty Clay LOAM	93.5	3	0.81	28					
Gray Silt LOAM	91.0	5	1.24	25					
Gray Mottled Silty Clay LOAM	88.5	3	0.81	26					
Gray SILT	86.0	5	1.14	23					
Gray Silty CLAY		4	1.17	24					
Mottled Silty Clay LOAM		4							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
 SPS, from 137 (Rev. 8-99)

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ROUTE FAI 55 / FAI 70 DESCRIPTION Sign Truss Foundation on I-55 Southbound, South of IL 143 LOGGED BY S. Wiszkon
 SECTION Dist 8 ITS 2007-4a, 4b, 4c LOCATION NE 14, SEC. 20, TWP. 4N, RNG. 7W, 3 PM

STRUCT. NO.	Station	B	U	M	Surface Water Elev.	D	B	U	M
SOIL		Blow	Penetration	Penetration	ft	Blow	Penetration	Penetration	ft
		(ft)	(%)	(%)		(ft)	(%)	(%)	
Brown Silty Clay LOAM	86.0	5	1.79	29	79.0	4	1.27	23	
Mottled Silty CLAY		3	0.81	29					
Brown Silt LOAM	91.0	4	1.17	27					
Brown Silty Clay LOAM	83.5	3	0.65	23					
Mottled Clay TILL		3							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
 SPS, from 137 (Rev. 8-99)

5/9/2007
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BUTTERFLY SIGN STRUCTURES
DRILLED SHAFT
ALUMINUM TRUSS & STEEL POST

FAI ROUTE 70/55
 DIST 8 ITS 2007-4a, 4b
 MADISON COUNTY