

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

**VARIOUS ROUTES
REGION 1 SIGN MAINTENANCE 22-22
VARIOUS COUNTIES
M-60-024-22**

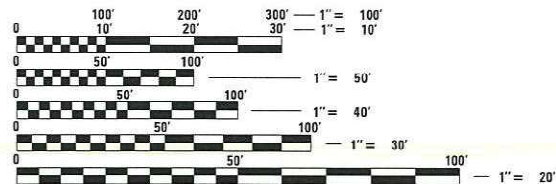
F.A. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIOUS		VARIOUS	62	1

INDEX OF SHEETS

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STANDARDS

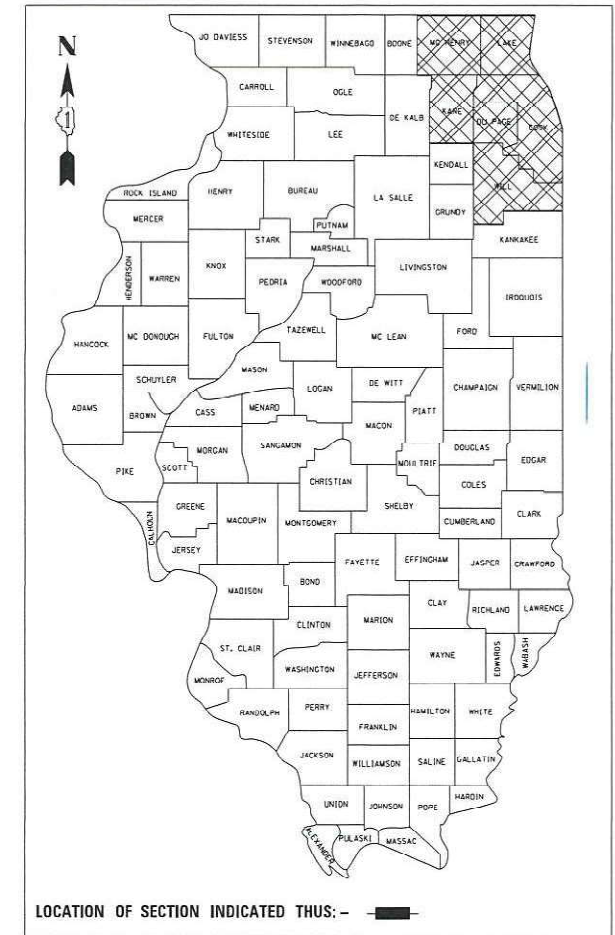
- 701006-05
- 701101-05
- 701106-02
- 701201-05
- 701301-04
- 701400-11
- 701401-13
- 701406-13
- 701411-09
- 701426-09
- 701901-08
- 720021-03



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. 46586



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Nov. 9 20 21
Ay Eln. Koa REGIONAL ENGINEER

December 10 20 21
[Signature] ENGINEER OF DESIGN AND ENVIRONMENT

December 10 20 21
[Signature] DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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

CODE NUMBER	ITEM	UNIT	0021 100% STATE TOTAL QUANTITY URBAN
X0301032	SIGN FRAME - SERIES 325 (DOUBLE)	FOOT	5
X0301033	SIGN FRAME - SERIES 325 (SINGLE)	FOOT	5
X0301036	BASE PLATE - SERIES 325	EACH	5
X0301037	BASE PLATE - SERIES 218	EACH	5
* X0325265	REMOVE ELECTRIC SERVICE	EACH	2
X0325749	FIBER WRAP	SQ FT	50
X0326718	INSTALL REST AREA SIGN	EACH	5
X0326998	FURNISH AND INSTALL HANDRAIL	FOOT	80
X0327303	REMOVAL OF EXISTING SIGN LIGHTING UNIT WITH NO SALVAGE	EACH	20
X2600014	FURNISH AND INSTALL SADDLE SHIM BLOCK	EACH	5
X2600017	REPLACE HANDRAIL LOCKING PIN CONNECTION	EACH	5
X5090098	REPLACE HANDRAIL SUPPORT	EACH	20
X5210005	TIGHTEN SUPPORT ANCHOR BOLT	EACH	40
X7200050	TEMPORARY SIGN SUPPORT REPAIR	EACH	15
X7200060	FURNISH AND ERECT GRAFFITI RESISTANT SIGN PANEL	SQ FT	120
X7200065	SIGN PANEL BACKPLATE	SQ FT	100
X7200070	REPAIR SIGN PANEL	EACH	50
X7200075	REMOVE AND REINSTALL SIGN PANEL	SQ FT	2500
X7200080	RE-ERECT SIGN PANEL	SQ FT	5000
X7200085	REPLACE AND TIGHTEN SIGN MOUNTING CLIPS PER EACH SIGN	EACH	10
X7200096	FURNISH AND ERECT SIGN PANEL - LOGO	SQ FT	5000
X7240205	REMOVE SIGN COMPLETE	EACH	100
X7270005	RE-ERECT EXISTING STRUCTURAL STEEL SIGN SUPPORT - BREAKAWAY	EACH	150
X7270006	BREAKAWAY SLIP BASE CONNECTION BOLT SET	EACH	5
X7270010	STRUCTURAL STEEL SIGN SUPPORT - BREAKAWAY COUPLING TYPE	POUND	500
X7270015	FURNISH BREAKAWAY COUPLING SET	EACH	5
X7270020	FURNISH HINGE PLATE SET	EACH	30

* SPECIALTY ITEM

FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ESTIMATED SUMMARY OF QUANTITIES				F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - -		SCALE: _____	SHEET NO. 1 OF 1 SHEET	STA. _____	TO STA. _____	VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	2
		CHECKED -	REVISED - -						CONTRACT NO. 46586				
		PLOT DATE = 10/27/2021	DATE -		REVISED - -					ILLINOIS FED. AID PROJECT			

CODE NUMBER	ITEM	UNIT	0021 100% STATE TOTAL QUANTITY URBAN
X7270025	REMOVE EXISTING SIGN SUPPORT	EACH	75
X7301034	SIGN POST - SERIES 325	FOOT	20
X7301035	SIGN POST - SERIES 218	FOOT	20
X7330066	REP HDRL LOC PIN CON	EACH	20
X7330068	TIGHTEN CANTILIVER CONN	EACH	2
X7330069	TIGHTEN END SUPPORT CONNECTION	EACH	5
X7330070	OVERHEAD SIGN SUPPORT GROUT REPAIR	EACH	20
X7330072	OVERHEAD SIGN STRUCTURE - END SUPPORT	EACH	2
X7330076	BRIDGE MOUNTED SIGN SUPPORT	EACH	6
X7330078	REPLACE WALKWAY SUPPORT BRACKET	EACH	5
X7330080	REPLACE WALKWAY SUPPORT BRACKET-BOLT	EACH	2
X7330082	MOUNTING BRACKET - TYPE B	EACH	5
X7330084	MOUNTING BRACKET TYPE B REPAIR	EACH	2
X7330087	F & I WALKY TIE DN BOLTS	EACH	16
X7330090	METAL SCREEN	EACH	10
X7330093	INTERNAL MEMBER TRUSS CLAMP	EACH	4
X7330094	INTERNAL TRUSS DAMPER	EACH	4
X7330102	REPLACE OVERHEAD SIGN WALKWAY	FOOT	200
X7330112	SAFETY CHAIN	EACH	20
X7330120	REPLACE SPLICE FLANGE BOLT	EACH	2
X7330210	OSS T1 TRUSS ONLY	FOOT	15
X7330220	OSS T2 TRUSS ONLY	FOOT	15
X7330230	OSS T3 TRUSS ONLY	FOOT	15
X7350005	SIGN SUPPORT REPAIR	EACH	75
X7350010	SIGN SUPPORT BRACKET	EACH	75
73800900	REMOVE OVERHEAD SIGN STRUCTURE - WALKWAY	FOOT	300
* X8040310	ELECTRICAL SERVICE DISCONNECT	EACH	4

* SPECIALTY ITEM

FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ESTIMATED SUMMARY OF QUANTITIES			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - -		SCALE: _____	SHEET NO. 1 OF 1 SHEET	STA. _____ TO STA. _____	VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	3
		CHECKED -	REVISED - -					CONTRACT NO. 46586				
		DATE -	REVISED - -					ILLINOIS FED. AID PROJECT				

CODE NUMBER	ITEM	UNIT	0021 100% STATE TOTAL QUANTITY URBAN
* X8040510	RELOCATE ELECTRIC SERVICE	EACH	2
* X8140232	REPLACE HAND HOLE COVER BOLT	EACH	12
* X8140234	REPLACE HAND HOLE COVER	EACH	5
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	5
Z0012755	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQ FT	5
Z0030902	TIGHTEN FUSE AND BASE PLATE	EACH	5
Z0030904	TIGHTEN SPLICE FLANGE	EACH	2
Z0030905	INSTALL SERVICE SIGN OR MILE PLATE	EACH	20
Z0030907	REMOVE SERVICE OR MILEAGE PLATE	EACH	15
Z0030910	TRANSFER SERVICE SIGN	EACH	180
Z0049792	RELO SADDLE SHIM BLCK	EACH	1
Z0051398	REMOVE EXISTING SIGN POST	EACH	70
Z0052394	REPL U-BOLT	EACH	5
Z0052395	TIGHTEN U-BOLT	EACH	5
Z0077598	DRILL WEEP HOLE	EACH	5
Z0077802	TEMPORARY WOOD POST	EACH	4
67100100	MOBILIZATION	L SUM	1
70200100	NIGHTTIME WORK ZONE LIGHTING	L SUM	1
72000100	SIGN PANEL - TYPE 1	SQ FT	100
72000200	SIGN PANEL - TYPE 2	SQ FT	100
72000300	SIGN PANEL - TYPE 3	SQ FT	3000
72100100	SIGN PANEL OVERLAY	SQ FT	100
72300100	INSTALL EXISTING SIGN PANEL	SQ FT	1500
72400100	REMOVE SIGN PANEL ASSEMBLY - TYPE A	EACH	5
72400200	REMOVE SIGN PANEL ASSEMBLY - TYPE B	EACH	5
72400310	REMOVE SIGN PANEL - TYPE 1	SQ FT	100
72400320	REMOVE SIGN PANEL - TYPE 2	SQ FT	100

FILE NAME =	USER NAME = oisonmw	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ESTIMATED SUMMARY OF QUANTITIES			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -		SCALE: _____	SHEET NO. 1 OF 1 SHEET	STA. _____ TO STA. _____	VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	4
		CHECKED -	REVISED -					CONTRACT NO. 46586				
		DATE -	REVISED -					ILLINOIS FED. AID PROJECT				

CODE NUMBER	ITEM	UNIT	0021 100% STATE TOTAL QUANTITY URBAN
72400330	REMOVE SIGN PANEL - TYPE 3	SQ FT	4000
72400500	RELOCATE SIGN PANEL ASSEMBLY - TYPE A	EACH	2
72400600	RELOCATE SIGN PANEL ASSEMBLY - TYPE B	EACH	2
72400710	RELOCATE SIGN PANEL - TYPE 1	SQ FT	100
72400720	RELOCATE SIGN PANEL - TYPE 2	SQ FT	100
72400730	RELOCATE SIGN PANEL - TYPE 3	SQ FT	100
72700100	STRUCTURAL STEEL SIGN SUPPORT - BREAKAWAY	POUND	7000
72700200	TUBULAR STEEL SIGN SUPPORT - BREAKAWAY	POUND	100
72800100	TELESCOPING STEEL SIGN SUPPORT	FOOT	100
73000100	WOOD SIGN SUPPORT	FOOT	30
73300100	OVERHEAD SIGN STRUCTURE - SPAN, TYPE I-A (4'-0" X 4'-6")	FOOT	30
73300200	OVERHEAD SIGN STRUCTURE - SPAN, TYPE II-A (4'-6" X 5'-3")	FOOT	30
73300300	OVERHEAD SIGN STRUCTURE - SPAN, TYPE III-A (5'-0" X 7'-0")	FOOT	30
73301810	OVERHEAD SIGN STRUCTURE WALKWAY, TYPE A	FOOT	50
73302110	OVERHEAD SIGN STRUCTURE - CANTILEVER, TYPE I-C-A (24" X 4'-6")	FOOT	25
73302150	OVERHEAD SIGN STRUCTURE - CANTILEVER, TYPE II-C-A (24" X 5'-6")	FOOT	25
73302190	OVERHEAD SIGN STRUCTURE - CANTILEVER, TYPE III-C-A (24" X 7'-0")	FOOT	25
73303000	OVERHEAD SIGN STRUCTURE-MONOTUBE	FOOT	10
73304000	OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	FOOT	50
73400100	CONCRETE FOUNDATION	CU YD	250
73400200	DRILLED SHAFT CONCRETE FOUNDATIONS	CU YD	80
73500020	REMOVE OVERHEAD SIGN STRUCTURE - MONOTUBE	EACH	1
73600100	REMOVE OVERHEAD SIGN STRUCTURE - SPAN	EACH	4
73600200	REMOVE OVERHEAD SIGN STRUCTURE - CANTILEVER	EACH	2
73602000	REMOVE OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	EACH	4
73700100	REMOVE GROUND MOUNTED SIGN SUPPORT	EACH	20
73700200	REMOVE CONCRETE FOUNDATION - GROUND MOUNT	EACH	75
73700300	REMOVE CONCRETE FOUNDATION - OVERHEAD	EACH	20

FILE NAME -	USER NAME - olsonmw	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 98.3432' / in.	CHECKED -	REVISED -
	PLOT DATE = 10/27/2021	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

ESTIMATED SUMMARY OF QUANTITIES

SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	5
CONTRACT NO. 46586			ILLINOIS FED. AID PROJECT	

WORK ORDER

Region 1 Sign Maintenance 22-22

Sheet 1 of 3

WORK ORDER NO. _____ Date of Issue _____ ROUTE _____
 LOCATION DESCRIPTION _____
 CONTRACT NO. 46586 CLAIM NO.: _____

CODE NUMBER	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	ITEM COST
72000100	SIGN PANEL T1	SQ FT			
72000200	SIGN PANEL T2	SQ FT			
72000300	SIGN PANEL T3	SQ FT			
72100100	SIGN PANEL OVERLAY	SQ FT			
72300100	INSTALL EX SIGN PANEL	SQ FT			
72400100	REMOV SIN PAN ASSY TA	EACH			
72400200	REMOV SIN PAN ASSY TB	EACH			
72400310	REMOV SIGN PANEL T1	SQ FT			
72400320	REMOV SIGN PANEL T2	SQ FT			
72400330	REMOV SIGN PANEL T3	SQ FT			
72400500	RELOC SIN PAN ASSY TA	EACH			
72400600	RELOC SIN PAN ASSY TB	EACH			
72400710	RELOC SIGN PANEL T1	SQ FT			
72400720	RELOC SIGN PANEL T2	SQ FT			
72400730	RELOC SIGN PANEL T3	SQ FT			
72700100	STR STL SIN SUP BA	POUND			
72700200	TUB STL SN SUPPORT BA	POUND			
72800100	TELES STL SIN SUPPORT BA	FOOT			
73000100	WOOD SIN SUPPORT	FOOT			
73300100	OVHD SIN STR-SPAN T1	FOOT			
73300200	OVHD SIN STR-SPAN T2	FOOT			
73300300	OVHD SIN STR-SPAN T3	FOOT			
73301810	OSS WALKWAY TYA	FOOT			
73302110	OSS CANT 1CA 2-0X4-6	FOOT			
73302150	OSS CANT 2CA 2-0X5-6	FOOT			
73302190	OSS CANT 3CA 2-0X7-0	FOOT			
73303000	OH SN STR-MOTUBE	FOOT			
73304000	OVHD SIN STR BR MT	FOOT			
73400100	CONC FOUNDATION	CU YD			
73400200	DRILL SHAFT CONC FDN	CU YD			
73500020	REM OH SIN STR MONO	EACH			
73600100	REMOV OH SIN STR-SPAN	EACH			
73600200	REMOV OH SIN STR-CANT	EACH			
73602000	REM OVHD SN STR-BR MT	EACH			
73700100	REM GR MT SIN SUPPORT	EACH			
73700200	REM CONC FDN-GR MT	EACH			
73700300	REM CONC FDN-OVHD	EACH			
X0301032	SIGN FRAME S-325 DBL	FOOT			
X0301033	SIGN FRAME S-325 SING	FOOT			
X0301036	BASE PLATE S-325	EACH			
X0301037	BASE PLATE S-218	EACH			
X0325265	REMOVE ELEC SERVICE	EACH			
X0325749	FIBER WRAP	SQ FT			
X0326718	INSTAL REST AREA SIGN	EACH			
X0326998	FUR & INSTL HANDRAIL	FOOT			
X0327303	REM EX SIGN LT UNT NS	EACH			
X2600014	F & I SADDLE SHIM BL	EACH			

SAMPLE

CODE NUMBER		UNIT	QUANTITY	UNIT PRICE	ITEM COST
X2600017	RPL HNDRL LCK PIN CON	EACH			
X5090098	REPLACE HDRL SUPPORT	EACH			
X5210005	TIGHTEN SUP ANCH BOLT	EACH			
X7200050	TEMP SIGN SUP REP	EACH			
X7200060	F & E GRAFFI RES S PL	SQ FT			
X7200065	SIGN PANEL BACKPLATE	SQ FT			
X7200070	REPAIR SIGN PANEL	EACH			
X7200075	REM & REIN SIGN PANEL	SQ FT			
X7200080	RE-ERECT SIGN PANEL	SQ FT			
X7200085	RPL/TIGH CLP PER SIGN	EACH			
X7200096	F & E SIGN PAN - LOGO	SQ FT			
X7240205	REMOV SIGN COMPLETE	EACH			
X7270005	RE-E STR ST SN SUP BA	EACH			
X7270006	BREAK SLIP B CON BOLT	EACH			
X7270010	STR STL SN SUP-COUP T	POUND			
X7270015	FUR BRKWAY COUP SET	EACH			
X7270020	FUR HINGE PLATE SET	EACH			
X7270025	REM EX SIGN SUPPORT	EACH			
X7301034	SIGN POST S-325	FOOT			
X7301035	SIGN POST S-218	FOOT			
X7330066	REP HDRL LOC PIN CON	EACH			
X7330068	TIGHTEN CANT CONN	EACH			
X7330069	TIGHTEN END SUP CONN	EACH			
X7330070	OVHD SN SUP GROUT REP	EACH			
X7330072	OVHD SIN STR-END SUP	EACH			
X7330076	BR MOUNT SIGN SUPPORT	EACH			
X7330078	REPL WLKWY SUP BRCKT	EACH			
X7330080	REPL WLKWY S BRKT BLT	EACH			
X7330082	MTNG BRCKT TY B	EACH			
X7330084	MTNG BRCKT TYB REPAIR	EACH			
X7330087	F&I WLKY TIE DN BOLTS	EACH			
X7330090	METAL SCREEN	EACH			
X7330093	INT MEMBR TRUSS CLAMP	EACH			
X7330094	INTERNAL TRUSS DAMPER	EACH			
X7330102	REPL OVHD SIN WALKWAY	FOOT			
X7330112	SAFETY CHAIN	EACH			
X7330120	REPL SPL FLANGE BOLT	EACH			
X7330210	OSS T1 TRUSS ONLY	FOOT			
X7330220	OSS T2 TRUSS ONLY	FOOT			
X7330230	OSS T3 TRUSS ONLY	FOOT			
X7350005	SIGN SUPPORT REPAIR	EACH			
X7350010	SIGN SUPPORT BRACKET	EACH			
X7360300	REM OH SIN STR-WLKWAY	FOOT			
X7370001	REM OSS END SUPPORT	EACH			
X8040310	ELECT SERV DISCONNECT	EACH			
X8040510	RELOC ELECT SERVICE	EACH			
X8140232	REPL HH COVER BOLT	EACH			
X8140234	REPL HH COVER	EACH			
Z0012754	STR REP CON DP = < 5	SQ FT			

SAMPLE

CLEAR HEIGHT DETAIL

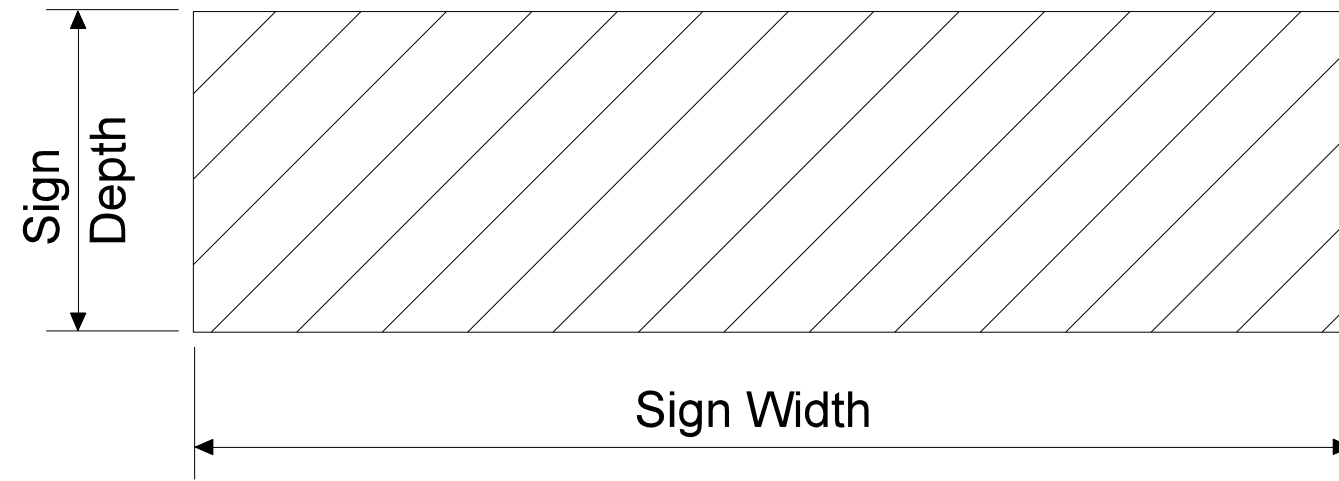


Figure 1

- * May be reduced to 6' 0" when a supplemental panel is mounted below the main panel.
- ** Between top of stud post and fuse plate. May be reduced to 5' 0" when D = 30' 0" and the slope is 2:1 or steeper or where it would be unlikely for an out of control vehicle to reach the post.

The criteria illustrated in Figure 2 above is for expressways or fully access controlled freeways. All mounting heights shall be in accordance with the latest edition of the Illinois Manual on Uniform Traffic Control Devices.

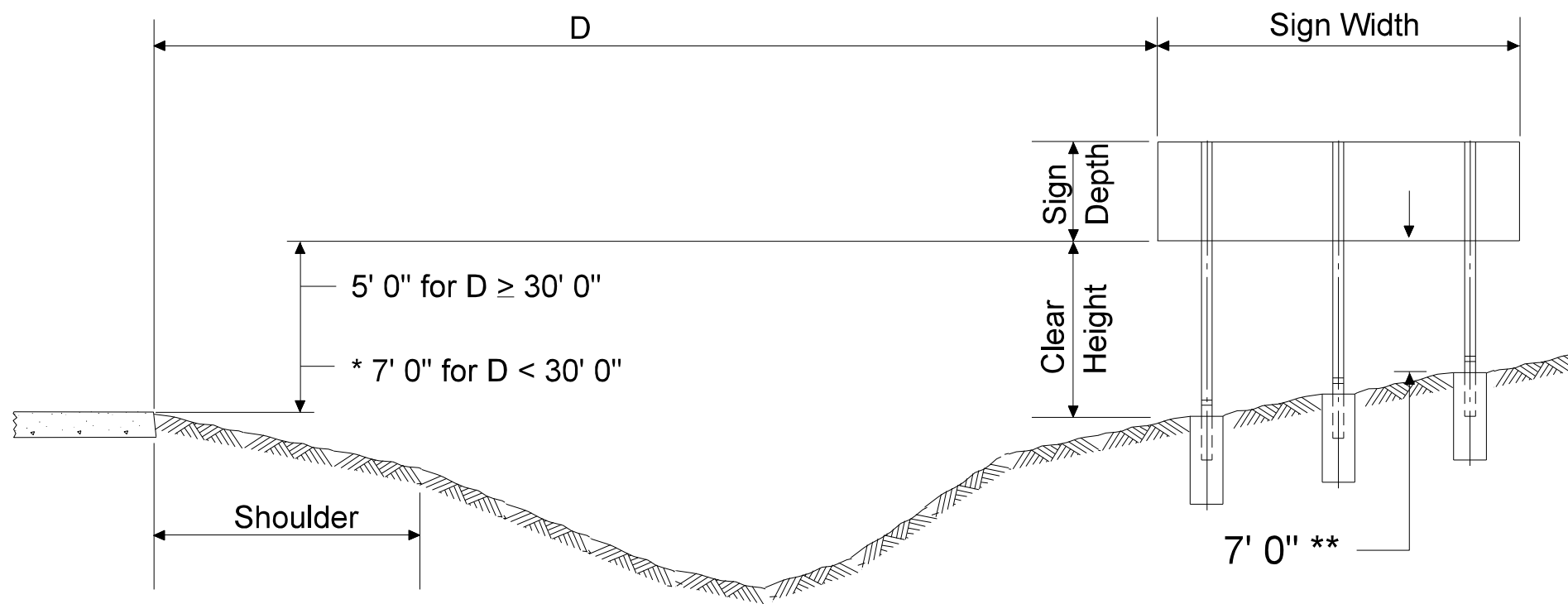
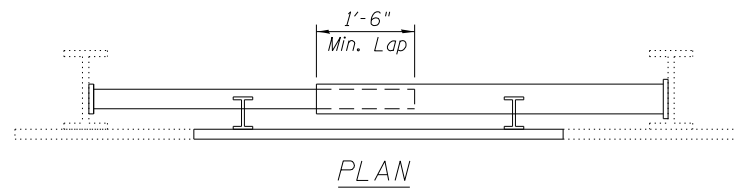
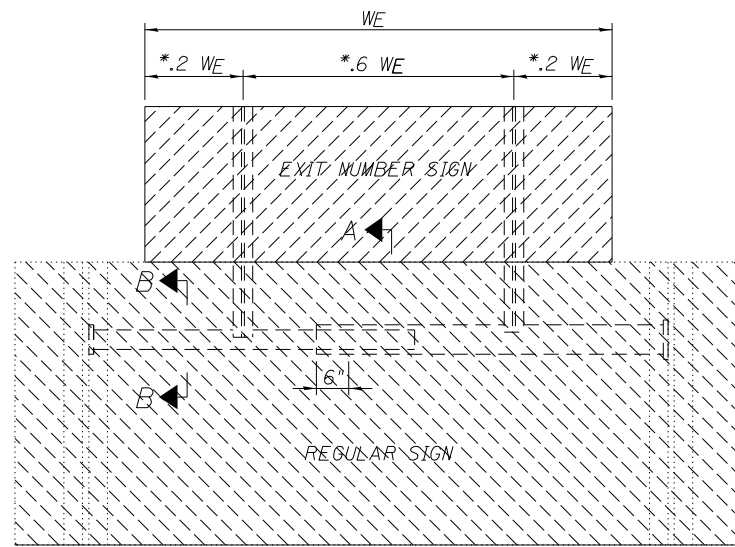


Figure 2

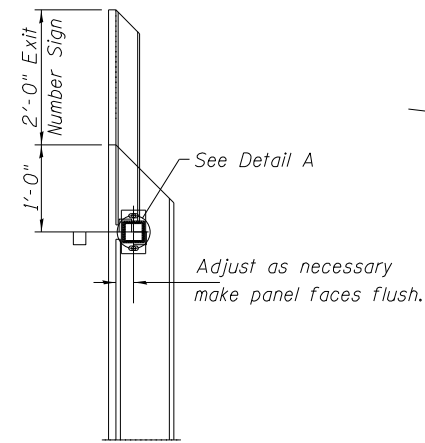
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



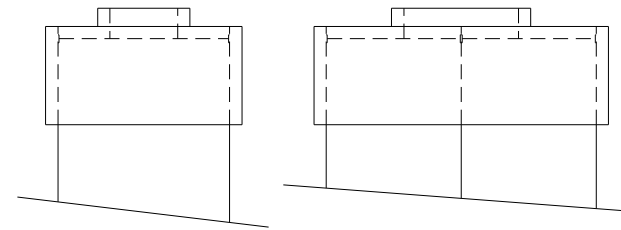
PLAN



FRONT VIEW

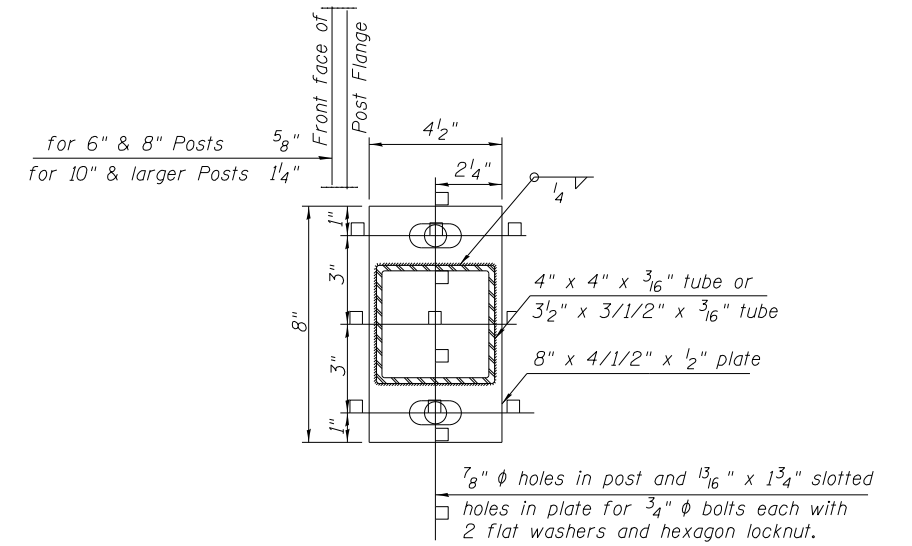


SECTION A-A

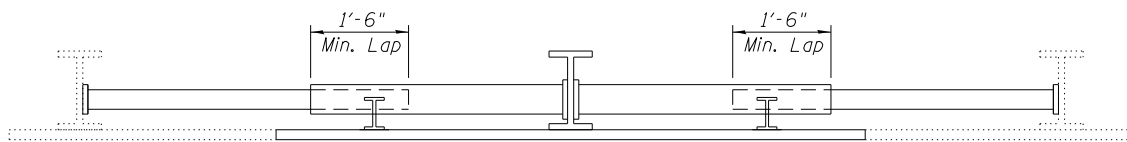


New or Existing Structures which have been designed for the additional 2' Exit Number Sign.

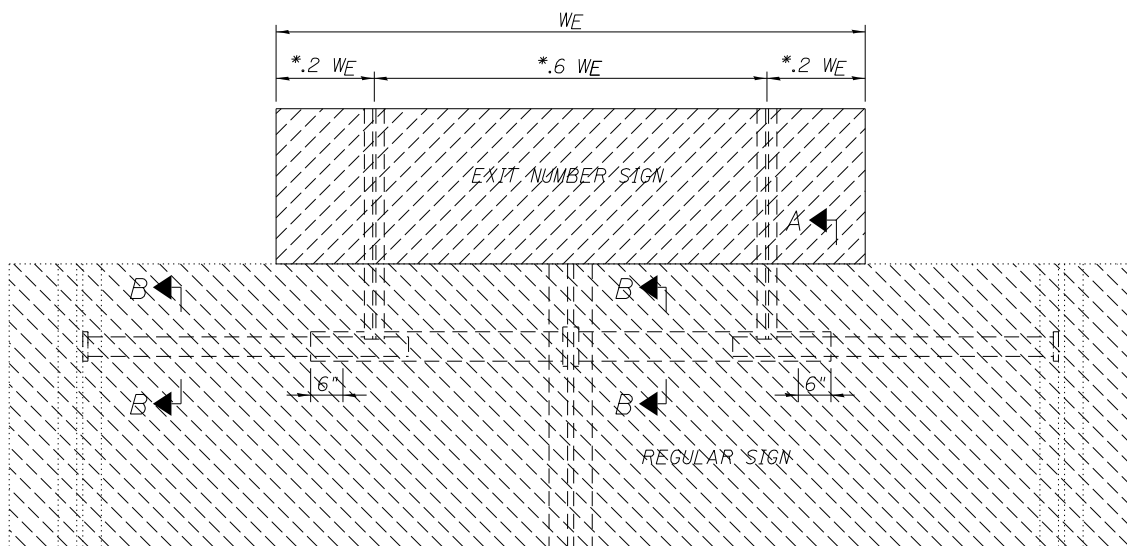
TYPICAL INSTALLATIONS



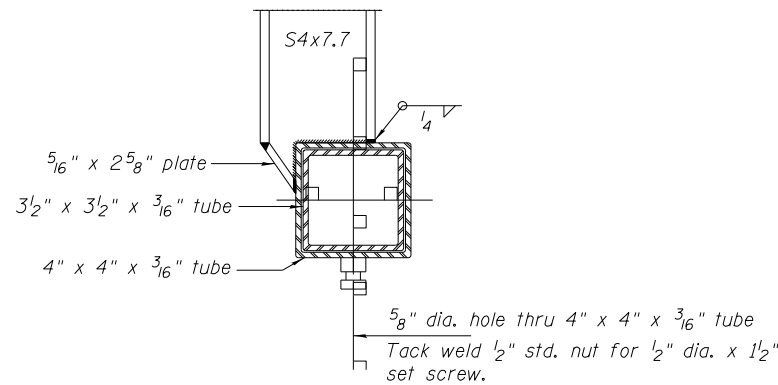
SECTION B-B



PLAN



FRONT VIEW



DETAIL A

General Notes

It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to ordering of materials and construction.

Hollow structural steel shapes and plates shall conform to the requirements of ASTM designation A-500 Grade B or A-501 structural steel tubing.

All structural steel shapes and plates shall conform to the requirements of ASTM designation A-36.

All bolts, nuts, cap screws, washers, lockwashers and locknuts shall conform to ASTM A-325 and shall be galvanized in accordance with ASTM designation A-153.

All field drilled holes shall be coated with an approved zinc rich paint before erection.

All welding shall be done in accordance with current AWS Specifications.

METHOD OF MEASUREMENT: The Exit Panel Mounting Bracket Type B shall consist of the telescoping tubes, one or two stub posts, bracing plates, end plates and hardware.

Two posts installations will require one bracket; three or more posts installations will require two brackets. Special cases of four, six and eight posts installations may require one bracket, depending on the width of the Exit Panel and spacing of main posts.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for Exit Panel Mounting Bracket Type B for shoulder mounted sign posts.

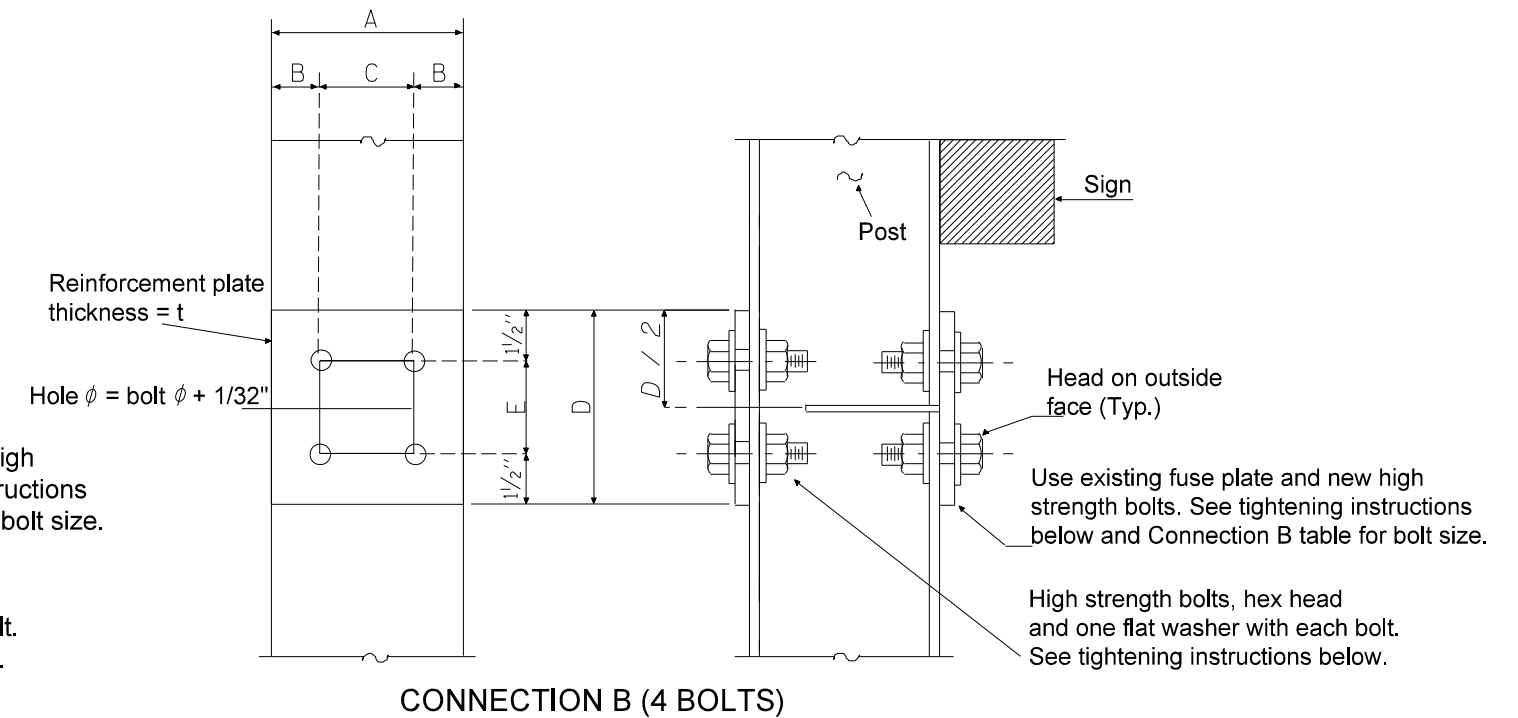
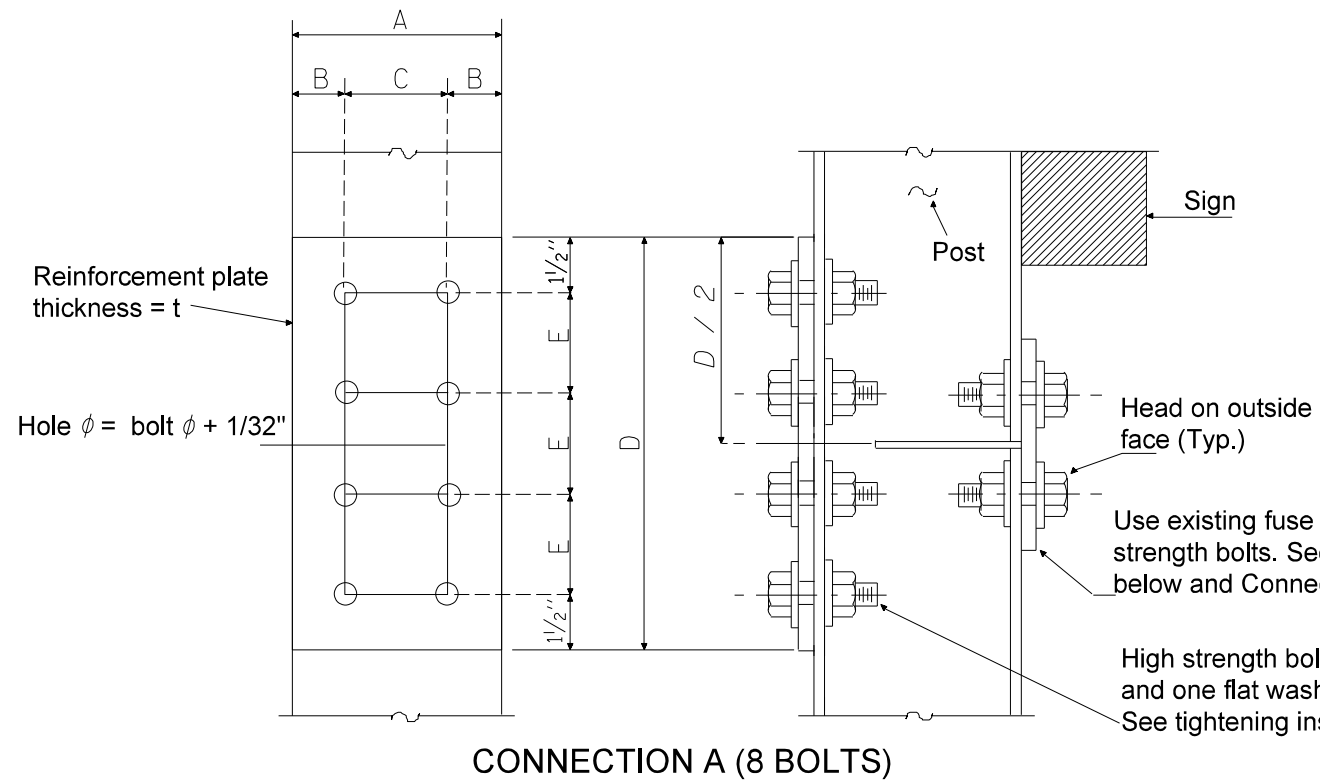
BILL OF MATERIAL

EXIT PANEL MOUNTING BRACKET TYPE B	EACH	2
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SEE SIGN SCHEDULE FOR LOCATIONS

* THIS DIMENSION MAY VARY BY ±06 WE.

FILE NAME =	USER NAME = olsonmw	DESIGNED =	REVISED =	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAILS FOR MOUNTING EXIT NUMBER SIGN PANELS ON SHOULDER MOUNTED SIGN POSTS (MOUNTING BRACKET TYPE B)	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 98.3432' / in.	DRAWN =	REVISED =	VAR			REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	10	
PLOT DATE = 10/27/2021	CHECKED =	REVISED =	CONTRACT NO. 46586							
	DATE =	REVISED =	ILLINOIS FED. AID PROJECT							



POST	CONNECTION A (8 BOLTS)						
	A	B	C	D	E	t	Bolt ϕ
W 6 X 9							
W 6 X 15	6"	1 1/4"	3 1/2"	10 1/2"	2 1/2"	1/4"	1/2"
W 8 X 18	5 1/4"	1 1/4"	2 3/4"	10 1/2"	2 1/2"	3/8"	1/2"
W 10 X 22	5 3/4"	1 1/2"	2 3/4"	12"	3"	3/8"	5/8"
W 10 X 26	5 3/4"	1 1/2"	2 3/4"	12"	3"	1/2"	5/8"
W 12 X 26	6 1/2"	1 1/2"	3 1/2"	12"	3"	1/2"	5/8"
W 14 X 30	6 3/4"	1 5/8"	3 1/2"	12"	3"	1/2"	5/8"
W 14 X 38	6 3/4"	1 5/8"	3 1/2"	12"	3"	1/2"	5/8"
W 16 X 45	7"	1 3/4"	3 1/2"	12"	3"	1/2"	5/8"

POST	CONNECTION B (4 BOLTS)						
	A	B	C	D	E	t	Bolt ϕ
W 6 X 9	4"	7/8"	2 1/4"	3"	2"	1/4"	1/2"
W 6 X 15	6"	1 1/4"	3 1/2"	3 1/2"	2 1/2"	1/4"	3/4"
W 8 X 18	5 1/4"	1 1/4"	2 3/4"	3 1/2"	2 1/2"	3/8"	3/4"
W 10 X 22	5 3/4"	1 1/2"	2 3/4"	6"	3"	3/8"	7/8"
W 10 X 26	5 3/4"	1 1/2"	2 3/4"	6"	3"	1/2"	7/8"
W 12 X 26	6 1/2"	1 1/2"	3 1/2"	6"	3"	1/2"	7/8"
W 14 X 30	6 3/4"	1 5/8"	3 1/2"	6"	3"	1/2"	7/8"
W 14 X 38	6 3/4"	1 5/8"	3 1/2"	6"	3"	1/2"	7/8"
W 16 X 45	7"	1 3/4"	3 1/2"	6"	3"	1/2"	7/8"

INSTRUCTIONS FOR INSTALLING REINFORCEMENT PLATE AND FUSE PLATE WITH HIGH STRENGTH BOLTS

If the beam flanges are not in full contact with the reinforcement plate due to burrs, galvanizing runs or misalignment of the flanges, the plate or plates shall be removed and flanges ground, straightened or corrected until full contact is obtained.

The bolts shall be brought to a "snug tight" condition to insure that the reinforcement or fuse plate is in full contact with the flange of the post. "Snug tight" shall be obtained by a few impacts on an impact wrench or the full effort of a man using an ordinary spud wrench. After all the bolts are "snug tight", each shall be tightened by an additional one - third rotation. The hardened washer specified shall be under the bolt head which shall be turned in the tightening process rather than the nut.

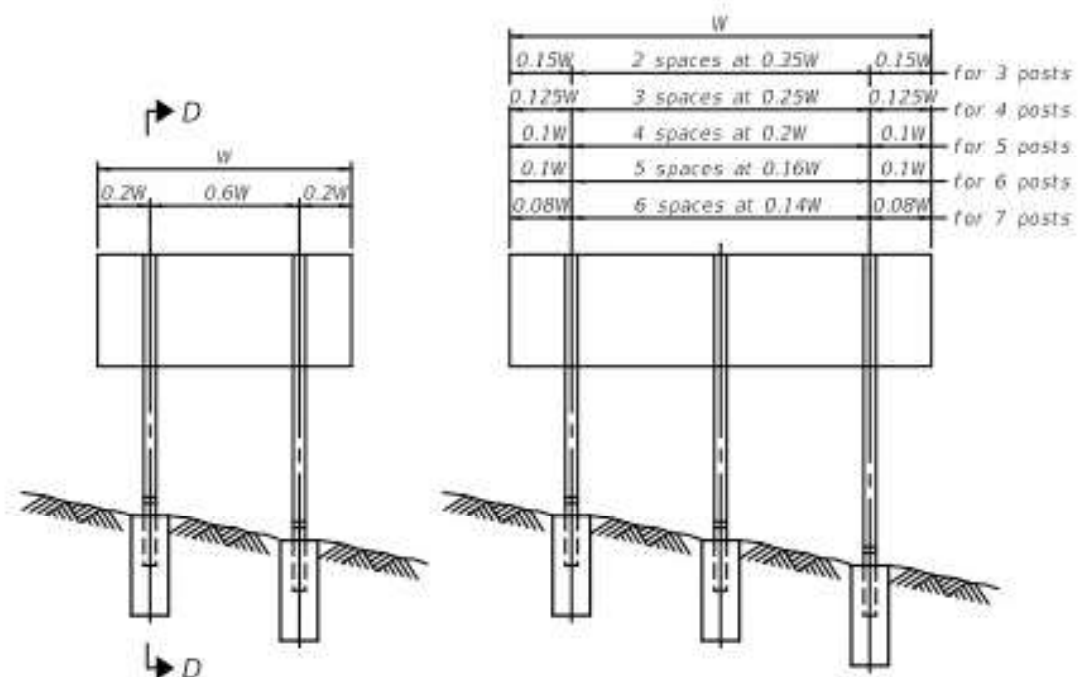
GENERAL NOTES

The Contractor shall have the choice of using the eight (8) bolt Connection A or the four (4) bolt Connection B for the reinforcement plate, unless specified.

The steel reinforcement plate shall conform to AASHTO M270 Gr. 36. (CVN not required).

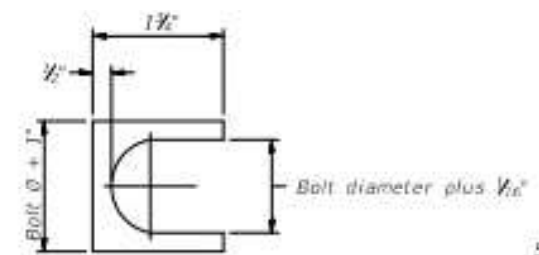
High strength bolts, nuts, and washers shall conform to AASHTO M164.

The steel reinforcement plate, new high strength bolts, nuts, and hardened washers and areas of damaged or missing paint on fuse plates shall be painted with an approved zinc rich paint (two coats) after assembly.



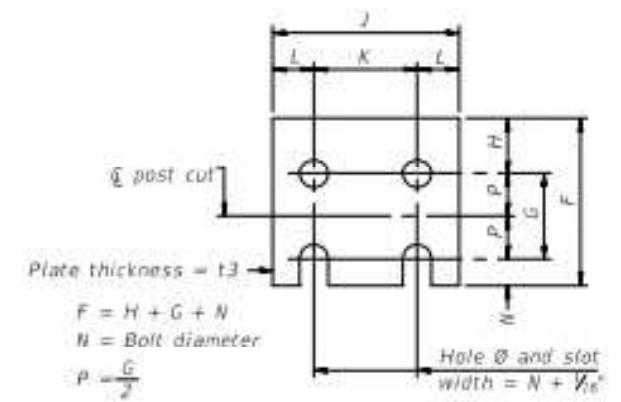
ELEVATION

0.15W	2 spaces at 0.25W	0.15W	for 3 posts
0.125W	3 spaces at 0.25W	0.125W	for 4 posts
0.1W	4 spaces at 0.2W	0.1W	for 5 posts
0.1W	5 spaces at 0.16W	0.1W	for 6 posts
0.08W	6 spaces at 0.14W	0.08W	for 7 posts



SHIM DETAIL

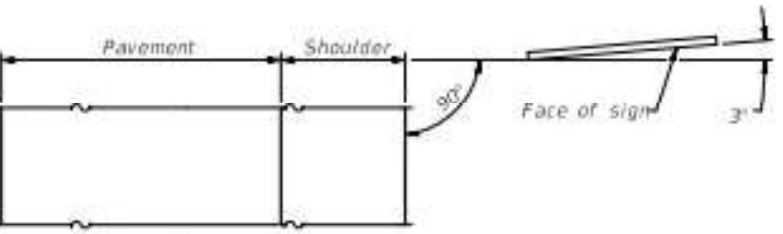
Furnish two 0.01" thick and two 0.03" thick stainless steel or brass (ASTM B36) shims per post.



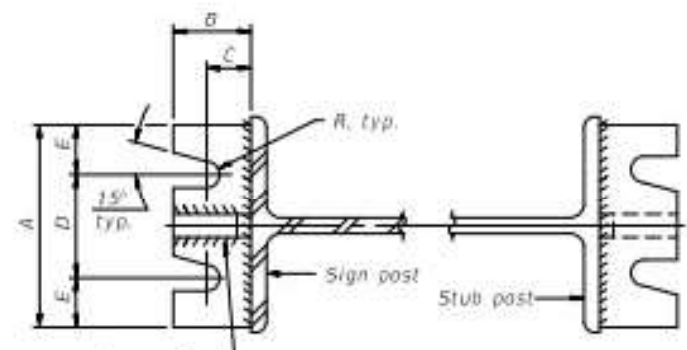
FUSE PLATE DETAIL

(Install with notches down.)

N = Bolt Diameter	G	H
1/2"	2"	1 1/2"
3/8"	2 1/2"	1 1/2"
7/16"	2 1/2"	1 1/2"
1/2"	2 1/2"	1 1/2"
1"	3"	1 1/2"
1 1/8"	3 1/2"	1 1/2"
1 1/4"	3 1/2"	1 1/2"

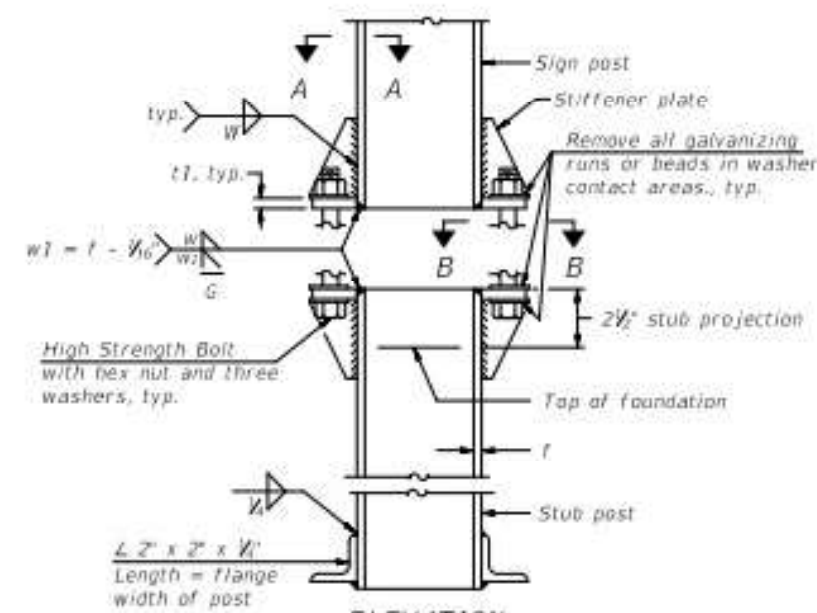


LOCATION SKETCH

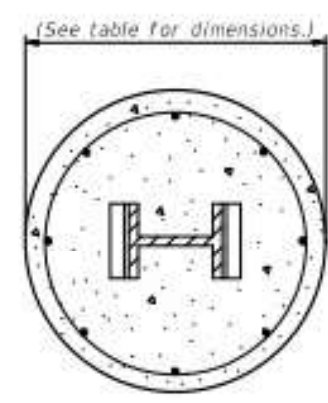


SECTION A-A

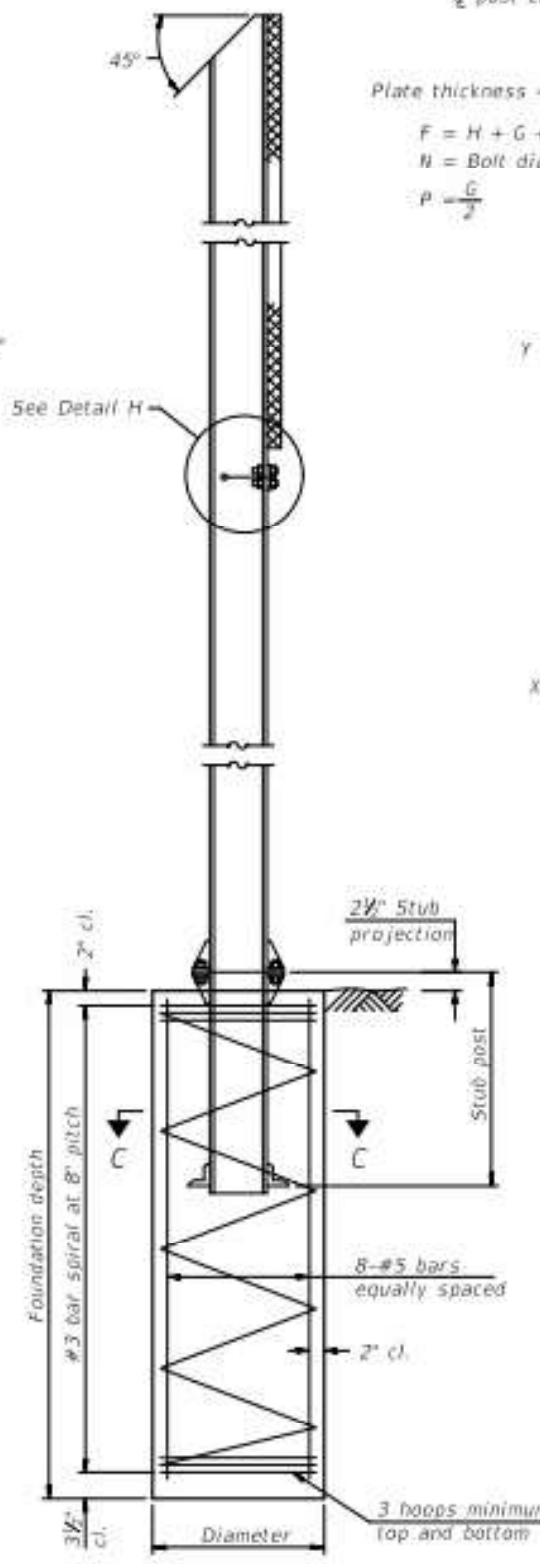
SECTION B-B



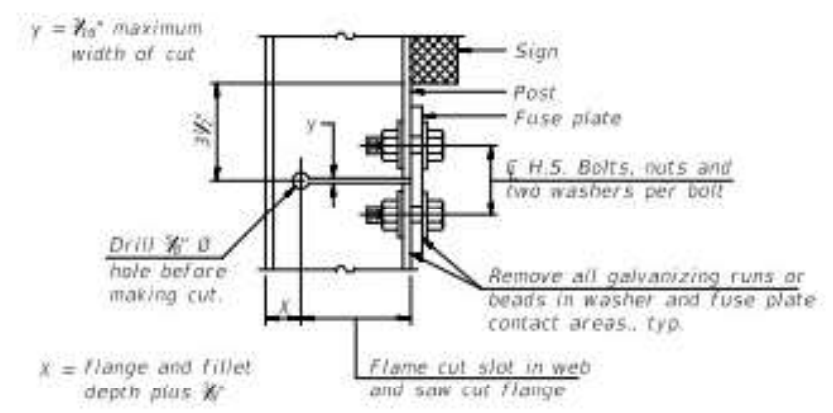
ELEVATION SIGN POST & STUB POST



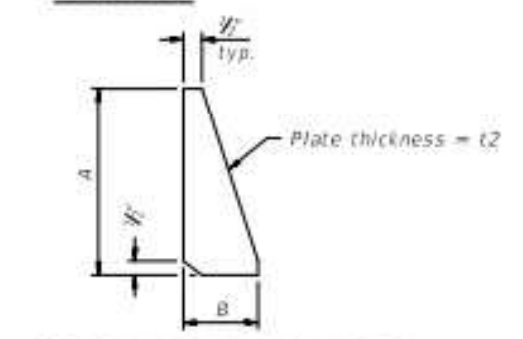
SECTION C-C



SECTION D-D



DETAIL H



STIFFENER PLATE 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.
 Floating 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.

BAW-A-1 2-17-2017

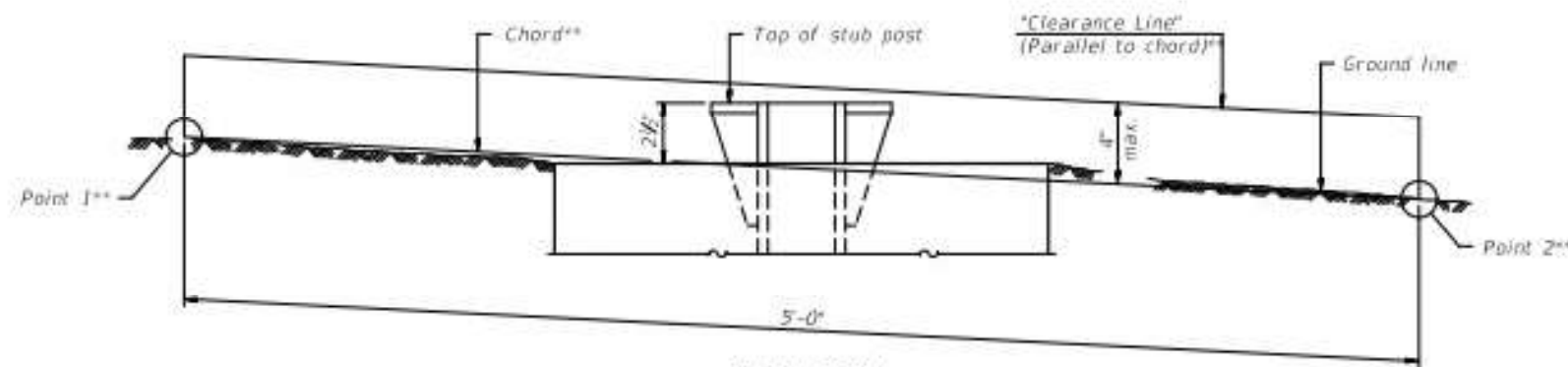
(Sheet 1 of 2)

FILE NAME -	USER NAME - olsonmw	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BREAK-AWAY WIDE FLANGE STEEL SIGN POST TABLES	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE - 98.3432' / in.	DRAWN -	REVISED -	VAR			REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	12	
PLOT DATE - 10/27/2021	CHECKED -	REVISED -	CONTRACT NO. 46586							
	DATE -	REVISED -	ILLINOIS FED. AID PROJECT							

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	11	12	R	W	J	K	L	13	
	Diameter	Minimum Depth	Concrete (cu. yds.)	Vertical Bars Length	Bar Spirals Diameter	Bar Spirals Length																lbs.
W6x9	2'-0"	6'-0"	0.70	5'-9"	1'-8 1/2"	79'-0"	78	2'-3"	3/4" x 3 1/2"	6"	2 1/2"	1 1/2"	3 1/2"	1 1/2"	1/2"	1 1/2"	1/2"	4"	2 1/2"	1 1/2"	1/2"	
W6x15	2'-0"	6'-0"	0.70	5'-9"	1'-8 1/2"	79'-0"	78	2'-6"	3/4" x 3 1/2"	6"	2 1/2"	1 1/2"	3 1/2"	1 1/2"	1/2"	1 1/2"	1/2"	6"	3 1/2"	1 1/2"	1/2"	
W8x18	2'-0"	6'-0"	0.70	5'-9"	1'-8 1/2"	79'-0"	78	2'-6"	3/4" x 3 1/2"	6"	2 1/2"	1 1/2"	3 1/2"	1 1/2"	1/2"	1 1/2"	1/2"	5 1/2"	2 1/2"	1 1/2"	1/2"	
W10x22	2'-6"	6'-6"	1.18	6'-3"	2'-2 1/2"	105'-0"	92	3'-0"	3/4" x 3 1/2"	6"	2 1/2"	1 1/2"	3 1/2"	1 1/2"	1/2"	1 1/2"	1/2"	5 1/2"	2 1/2"	1 1/2"	1/2"	
W10x26	2'-6"	7'-0"	1.27	6'-9"	2'-2 1/2"	112'-0"	98	3'-0"	3/4" x 4"	7"	2 1/2"	1 1/2"	4"	1 1/2"	1/2"	1 1/2"	1/2"	5 1/2"	2 1/2"	1 1/2"	1/2"	
W12x26	2'-6"	7'-9"	1.41	7'-6"	2'-2 1/2"	119'-0"	107	3'-0"	3/4" x 4"	7"	2 1/2"	1 1/2"	4"	1 1/2"	1/2"	1 1/2"	1/2"	6 1/2"	3 1/2"	1 1/2"	1/2"	
W14x30	3'-0"	7'-3"	1.90	7'-0"	2'-8 1/2"	145'-0"	113	3'-0"	3/4" x 4"	7"	2 1/2"	1 1/2"	4"	1 1/2"	1/2"	1 1/2"	1/2"	6 1/2"	3 1/2"	1 1/2"	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 1/2"	4"	1 1/2"	1/2"	1 1/2"	1/2"	6 1/2"	3 1/2"	1 1/2"	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 1/2"	4"	1 1/2"	1/2"	1 1/2"	1/2"	7"	3 1/2"	1 1/2"	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"	1/2" x 1 1/2"	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
W6x15	1/2" x 1 1/2"	1/2" x 1 1/2"	1/2" x 1 1/2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	---	---	---	---	---	---	---	---	---	---	---	---
W8x18	1/2" x 1 1/2"	1/2" x 1 1/2"	1/2" x 1 1/2"	1/2" x 1 1/2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	---	---	---	---	---	---	---	---	---	---	---
W10x22	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	---	---	---	---	---	---	---	---
W10x26	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	---	---	---	---	---	---	---
W12x26	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	---	---	---	---	---	---
W14x30	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"
W14x38	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"
W16x45	---	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"	1/2" x 2 1/2"



**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.

BAW-A-2

2-17-2017

(Sheet 2 of 2)

FILE NAME -	USER NAME - olsonmw	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

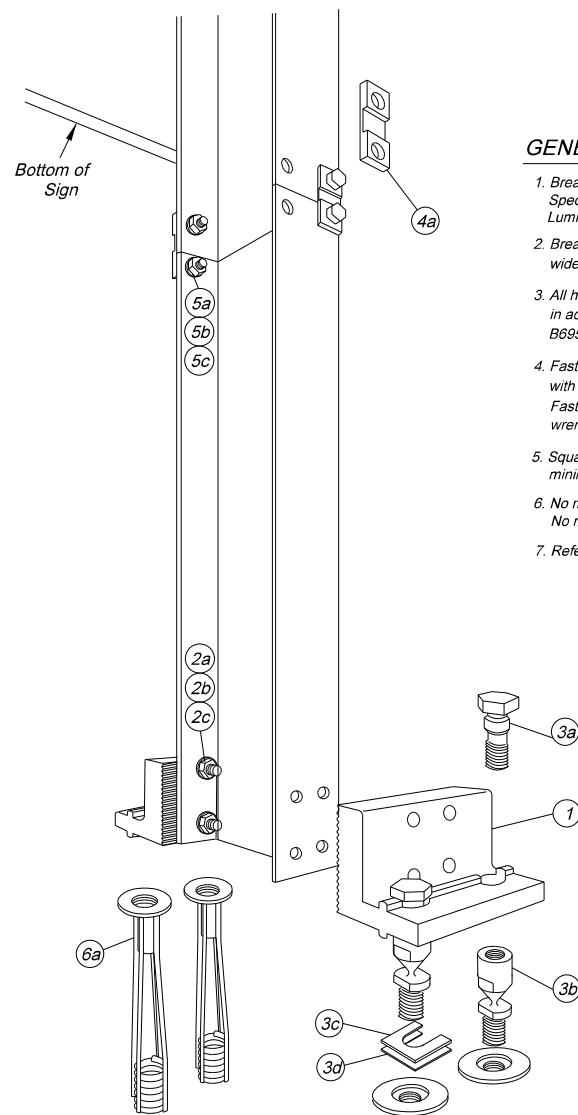
BREAK-AWAY WIDE FLANGE
STEEL SIGN POST TABLES

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	13
SCALE: _____			SHEET NO. 1 OF 1 SHEET	
STA. _____ TO STA. _____			ILLINOIS FED. AID PROJECT	

CONTRACT NO. 46586

PARTS LIST

ITEM	DESCRIPTION	SIZE/SPECIFICATIONS	QTY/ POST	PART NUMBER
2a	Bolt	12.7mm(1/2")-13UNCx57.2mm(2-1/4"), Hex Head, ASTM A325, Galv. ASTM A153	8	
2b	LockWasher	12.7mm(1/2"), ANSI B18-21-1, Galv. ASTM A153	8	
2c	Nut	12.7mm(1/2")-13UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A153	8	
3a	Special Bolt	15.9mm(5/8")-11UNC, ASTM A449, Galv. ASTM A153/B695	4	
3b	Coupling	15.9mm(5/8")-11UNC, LP, AMS 6378D, Galv. ASTM A153, Polyester Coat	4	
3c	Shim	15.9mm(5/8") Horseshoe, 14 Gauge, Galv. Steel Sheet	2	
3d	Shim	15.9mm(5/8") Horseshoe, 18 Gauge, Galv. Steel Sheet	2	
4a	Hinge Plate	Type A, AISI 4130 Steel, Galv. ASTM A123	4	
5a	Bolt	12.7mm(1/2")-13UNCx37.2mm(1-1/2"), Hex Head, ASTM A325, Galv. ASTM A153	8	
5b	LockWasher	12.7mm(1/2"), ANSI B18-21-1, Galv. ASTM A153	8	
5c	Nut	12.7mm(1/2")-13UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A153	8	
6a	Anchor	15.9mm(5/8")-11UNC, 304 S.S. Ferrule, AISI 1045 Rod, AISI 1008 Coil	4	



GENERAL NOTES:

1. Break-Safe meets all requirements of "AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals."
2. Break-Safe Model AI6 is designed to fit W150x14 (W6x9) wide-flange steel I-Beam signposts.
3. All hardware items are American Standard sizes, galvanized in accordance with ASTM A153 (hot dipped) or ASTM B695 (mechanically applied).
4. Fasteners, except for special bolt and coupling, are installed with lockwashers, and do not have specific torque requirements. Fasteners should be secured as tight as possible with conventional wrenches, unless noted otherwise.
5. Square-up and level individual components, particularly Anchors to minimize the need for shimming between the Couplings and Anchors.
6. No more than two shims shall be placed under any one coupling. No more than three shims underneath any pair of couplings.
7. Refer to other side of page for complete installation instructions.

W6 X 9

Break-Safe Model AI6
Breakaway Support System for Sign Posts

Scale: Not To Scale	Date: July 2000
Drawing No. BS-AI6-1	Sheet: 1 of 2

Patent Nos. 4,528,786 and 5,596,845

INSTALLATION INSTRUCTIONS

ANCHOR ASSEMBLY:

Note: Precise positioning of the anchors is critical to proper assembly of the system. It is recommended that actual posts be used to locate the correct position of the anchors.

1. Fabricate a flat, rigid template with four (4) 16mm (5/8") diameter holes located to match the specified anchor pattern of the Break-Safe Brackets attached to the signpost. See diagram below.
2. Attach four (4) Transpo Type A Female Anchors to the template using four (4) 16mm (5/8") diameter bolts. Ensure that each Anchor Washer is snug against the bottom of the template.
3. Lower Anchor Assembly into fresh concrete foundation, and vibrate into position such that the tops of the Anchor Washers are flush with the finished top surface of the foundation. Support the template such that all Anchors are level and in their proper locations.
4. Allow concrete to cure, and then remove the bolts and template from the top of the foundation.

HINGE ASSEMBLY:

1. Butt upper and lower post sections together on a flat surface.
2. Drill eight (8) 14.3mm (9/16") holes in the flanges of the post sections as shown.
3. Place Hinge Plates on outer surface of the post flanges and secure with bolts, lock washers, and nuts. Ensure that upper and lower post sections are in alignment, and then tighten all nuts 1/2 turn beyond snug.

BRACKET ASSEMBLY:

1. Drill eight (8) 14.3mm (9/16") diameter holes in the flanges of the lower post section as shown.
2. Place Brackets squarely on outer surface of the post flanges, and secure with bolts, lock washers, and nuts. Then, tighten all 1/2 turn beyond snug.

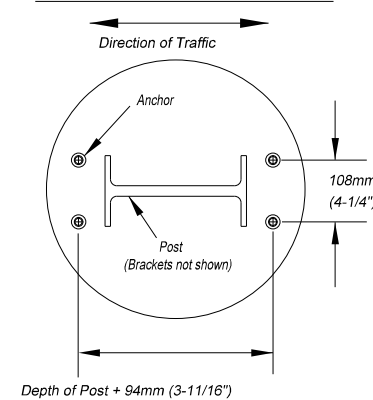
COUPLING ASSEMBLY:

1. Thread four (4) Break-Safe Couplings into Anchors. Do not tighten.
2. Suspend post assembly over foundation, insert Special Bolts through holes in the Brackets, and thread them snug into the Couplings.
3. If post is not plumb, insert Shims (14g and/or 18g) between the Couplings and Anchors, where needed.
4. Use lower wrench flats to tighten Couplings into Anchors as tight as possible using a conventional wrench. Do not use a pipe wrench. Couplings must be seated squarely.
5. Tighten Special Bolts while holding Couplings by the upper wrench flats with an additional wrench to prevent an induced torque stress across the necked portion of the Coupling. All Special Bolts shall also be tightened as tight as possible using conventional wrenches.

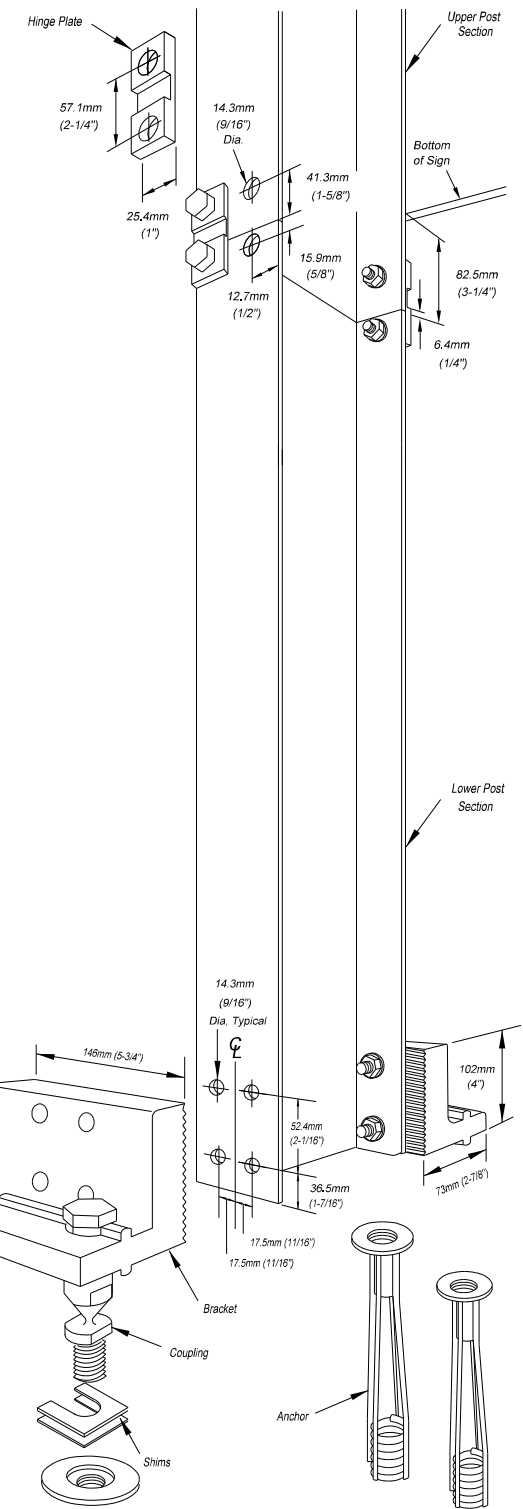
SIGN PANEL ASSEMBLY:

1. After all signposts are secured in place, attach sign panel assembly to posts in accordance with the sign manufacturer's recommendations.

PLAN VIEW OF TYPICAL FOUNDATION



Patent Nos. 4,528,786 and 5,596,845



W6 X 9

Break-Safe Model AI6
Breakaway Support System for Sign Posts

Scale: Not To Scale	Date: July 2000
Drawing No. BS-AI6-2	Sheet: 2 of 2

FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 98.3432 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 10/27/2021	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BREAKAWAY COUPLING DEVICES

SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	14
				CONTRACT NO. 46586
ILLINOIS FED. AID PROJECT				

PARTS LIST

ITEM	DESCRIPTION	SIZE/SPECIFICATIONS	QTY/ POST	PART NUMBER
2a	Bolt	15.9mm(5/8")-11UNCx69.9mm(2-3/4"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2b	Bolt	15.9mm(5/8")-11UNCx76.2mm(3"), Hex Head, ASTM A325, Galv. ASTM A153		
2c	Bolt	15.9mm(5/8")-11UNCx82.6mm(3-1/4"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2d	Cap Screw	15.9mm(5/8")-11UNCx31.7mm(1-1/4"), Hex Head, ASTM A307, Galv. ASTM A153	4	
2e	LockWasher	15.9mm(5/8"), ANSI B18-21-1, Galv. ASTM A153	16	
2f	Nut	15.9mm(5/8")-11UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A153	12	
3a	Special Bolt	25.4mm(1")-8UNC, ASTM A449, Galv. ASTM A153/B695	4	
3b	Coupling	25.4mm(1")-8UNC, LP, AMS 6378D, Galv. ASTM A153, Polyester Coat	4	
3c	Shim	25.4mm(1") Horseshoe, 14 Gauge, Galv. Steel Sheet	2	
3d	Shim	25.4mm(1") Horseshoe, 18 Gauge, Galv. Steel Sheet	2	
4a	Hinge Plate	Type B650, AISI 4130 Steel, Galv. ASTM A123	4	
5a	Bolt	19.0mm(3/4")-10UNCx57.1mm(2-1/4"), Hex Head, ASTM A325, Galv. ASTM A153	8	
5b	LockWasher	19.0mm(3/4"), ANSI B18-21-1, Galv. ASTM A153	8	
5c	Nut	19.0mm(3/4")-10UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A153	8	
6a	Anchor	25.4mm(1")-8UNC, 304 S.S. Ferrule, AISI 1045 Rod, AISI 1008 Coil	4	

BRACKET SELECTION TABLE

Select correct Break-Safe bracket number from table, using 'L' value from the longest post. Use figure to the left to determine 'L'.

WIDE FLANGE I-BEAM POST SIZE	BRACKET No. 1		BRACKET No. 2		BRACKET No. 3	
	Min. 'L'	Max. 'L'	Min. 'L'	Max. 'L'	Min. 'L'	Max. 'L'
250mm(10")	4.9m(16')	8.8m(29')	3.3m(11')	4.9m(16')	0	3.3m(11')
310mm(12")	5.5m(18')	8.8m(29')	4.0m(13')	5.5m(18')	0	4.0m(13')
360mm(14")	5.8m(19')	8.8m(29')	4.3m(14')	5.8m(19')	0	4.3m(14')
410mm(16")	6.4m(21')	8.8m(29')	4.6m(15')	6.4m(21')	0	4.6m(15')
460mm(18")	7.0m(23')	8.8m(29')	4.9m(16')	7.0m(23')	0	4.9m(16')
530mm(21")	7.6m(25')	8.8m(29')	5.5m(18')	7.6m(25')	0	5.5m(18')

GENERAL NOTES:

- Break-Safe meets all requirements of "AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals."
- Break-Safe Model B650 is designed to fit 250mm (10") through 530mm (21") Wide Flange I-Beam, and 178mm (7") and 203mm (8") Square Tube signposts.
- Select proper Bracket Number by referring to Bracket Selection Table.
- All hardware items are American Standard sizes, galvanized in accordance with ASTM A153 (hot dipped) or ASTM B695 (mechanically applied).
- Fasteners, except for special bolt and coupling, are installed with lockwashers, and do not have specific torque requirements. Fasteners should be secured as tight as possible with conventional wrenches, unless noted otherwise.
- Square-up and level individual components, particularly Anchors to minimize the need for shimming between the Couplings and Anchors.
- No more than two shims shall be placed under any one coupling. No more than three shims underneath any pair of couplings.
- Refer to other side of page for complete installation instructions.

W10 through W21

Break-Safe Model B650
Breakaway Support System for Sign Posts

Scale: Not To Scale	Date: July 2000
Drawing No. BS-B650-1, -2, -3	Sheet: 1 of 2

Patent Nos. 4,528,786 and 5,596,845

INSTALLATION INSTRUCTIONS

ANCHOR ASSEMBLY:

Note: Precise positioning of the anchors is critical to proper assembly of the system. It is recommended that actual posts be used to locate the correct position of the anchors.

- Determine proper Break-Safe Bracket Number from the Bracket Selection Table. All posts within a sign structure shall use the same Bracket Number, determined by the length of the longest post.
- Fabricate a flat, rigid template with four (4) 25mm (1") diameter holes located to match the specified anchor pattern of the Break-Safe Brackets attached to the signpost. See diagram below.
- Attach four (4) Transpo Type B Female Anchors to the template using four (4) 25mm (1") diameter bolts. Ensure that each Anchor Washer is snug against the bottom of the template.
- Lower Anchor Assembly into fresh concrete foundation, and vibrate into position such that the tops of the Anchor Washers are flush with the finished top surface of the foundation. Support the template such that all Anchors are level and in their proper locations.
- Allow concrete to cure, and then remove the bolts and template from the top of the foundation.

HINGE ASSEMBLY:

- Butt upper and lower post sections together on a flat surface.
- Drill eight (8) 20.6mm (13/16") holes in the flanges of the post sections as shown.
- Place Hinge Plates on outer surface of the post flanges and secure with bolts, lock washers, and nuts. Ensure that upper and lower post sections are in alignment, and then tighten all nuts 1/2 turn beyond snug.

BRACKET ASSEMBLY:

- Drill sixteen (16) 17.5mm (11/16") diameter holes in the flanges of the lower post section as shown.
- Place Brackets squarely on outer surface of the post flanges, and secure with bolts, lock washers, nuts, and cap screws. Then, tighten all 1/2 turn beyond snug.

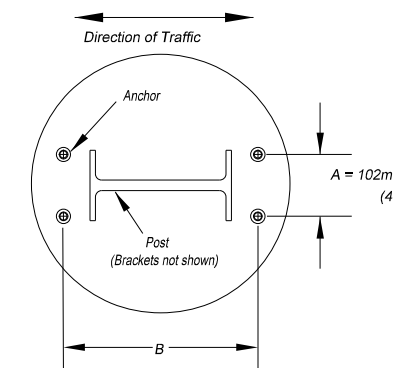
COUPLING ASSEMBLY:

- Thread four (4) Break-Safe Couplings into Anchors. Do not tighten.
- Suspend post assembly over foundation, insert Special Bolts through holes in the Brackets, and thread them snug into the Couplings.
- If post is not plumb, insert Shims (14g and/or 18g) between the Couplings and Anchors, where needed.
- Use lower wrench flats to tighten Couplings into Anchors as tight as possible using a conventional wrench. Do not use a pipe wrench. Couplings must be seated squarely.
- Tighten Special Bolts while holding Couplings by the upper wrench flats with an additional wrench to prevent an induced torque stress across the necked portion of the Coupling. All Special Bolts shall also be tightened as tight as possible using conventional wrenches.

SIGN PANEL ASSEMBLY:

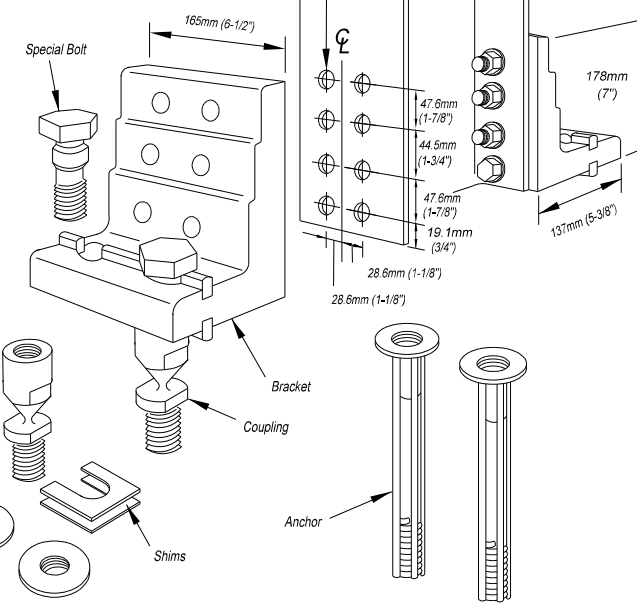
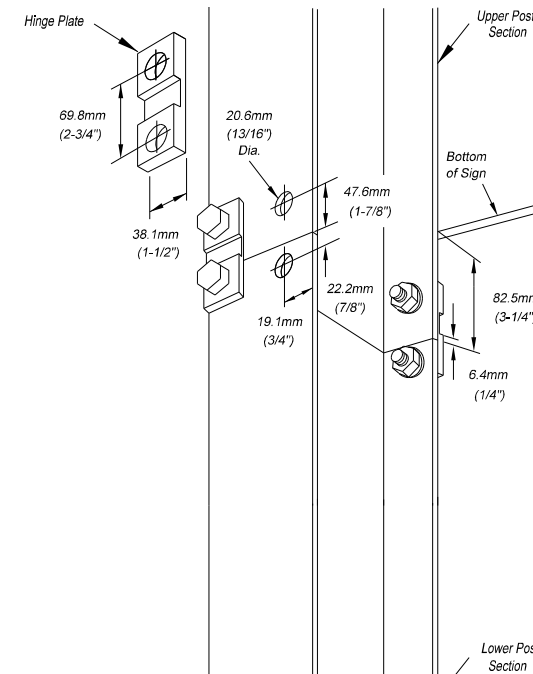
- After all signposts are secured in place, attach sign panel assembly to posts in accordance with the sign manufacturer's recommendations.

PLAN VIEW OF TYPICAL FOUNDATION



- B (Bracket No. 1) = Depth of Post + 202mm (7-15/16")
- B (Bracket No. 2) = Depth of Post + 205mm (8-1/16")
- B (Bracket No. 3) = Depth of Post + 207mm (8-1/8")

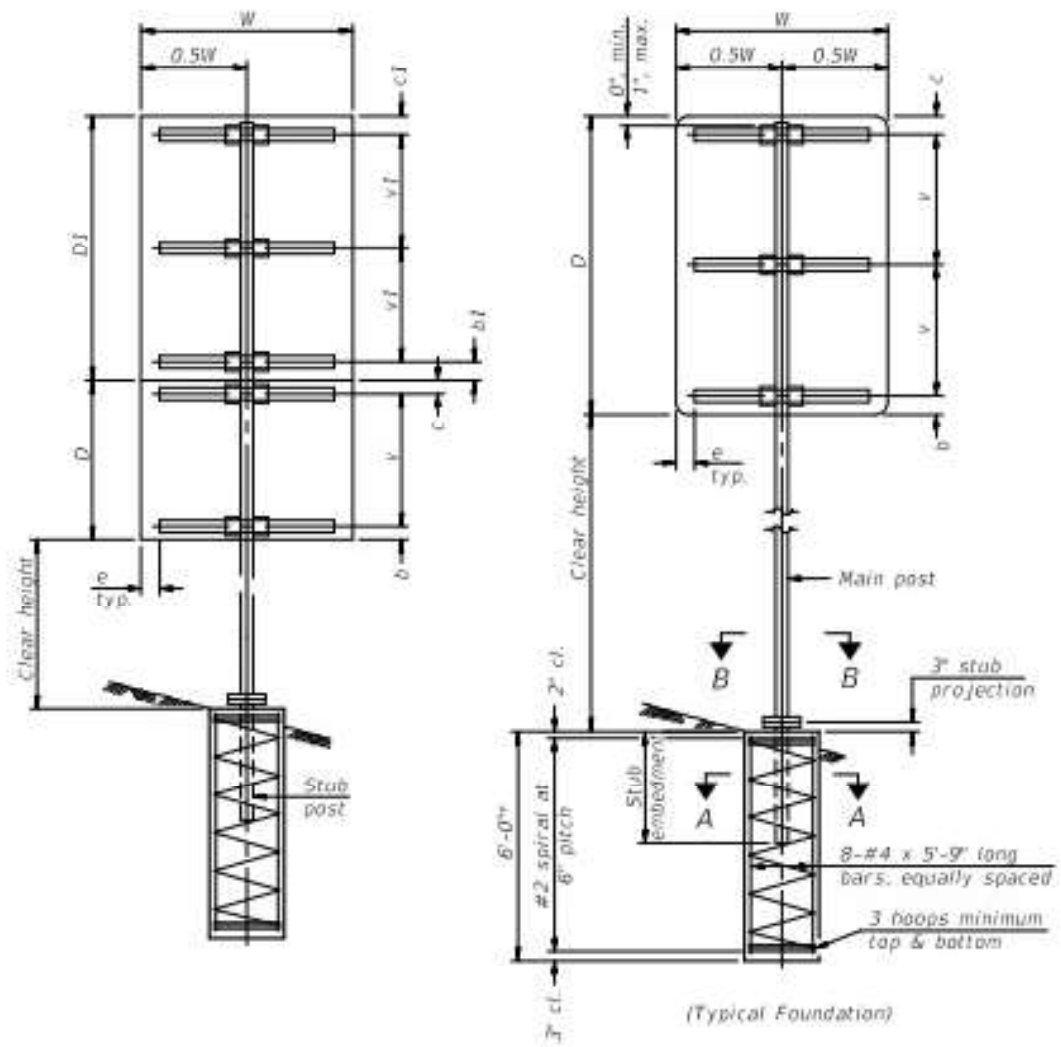
Patent Nos. 4,528,786 and 5,596,845



W10 through W21

Break-Safe Model B650
Breakaway Support System for Sign Posts

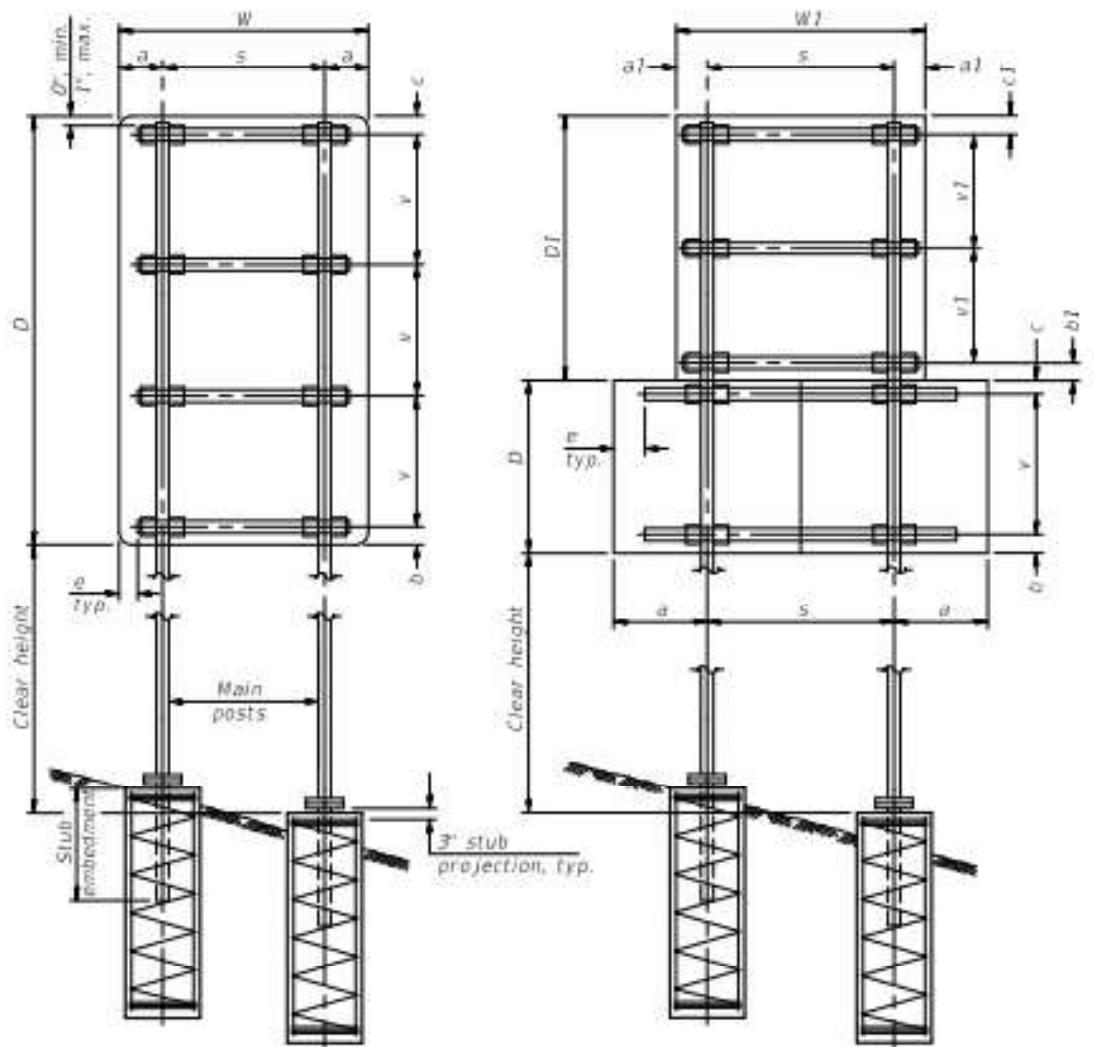
Scale: Not To Scale	Date: October 2004
Drawing No. BS-B650-1, -2, -3	Sheet: 2 of 2



SINGLE POST ASSEMBLY EXAMPLES

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

a or a1 = 6" min. to 2'-0" max. (Approximately 0.2W or 0.2W)
 b or b1 = 3" min. to 4" max
 c or c1 = 3" min. to 4" max
 e = 0" min. to 6" max.
 s = 3'-0" min. to 6'-0" max. (Approximately 0.6W or 0.6W)
 v or v1 = 2'-0" min. to 2'-11" max.



DUAL POST ASSEMBLY EXAMPLES

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.

One foundation requires 0.7 cubic yards of concrete and 46 pounds of reinforcement bars and spiral hoops.

LOADING: 80 mph wind with 30% gust factor, normal to sign.

DESIGN STRESSES:
 Structural steel - 20,000 psi
 Reinforcing steel - 20,000 psi
 Concrete - 1,400 psi
 Footing soil pressure - 2,000 psf

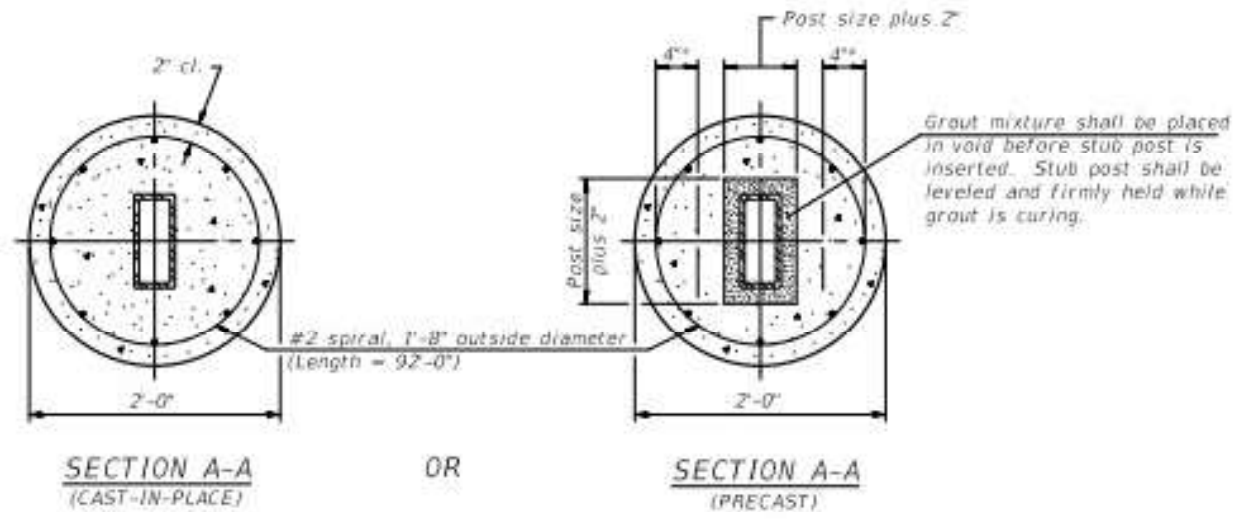
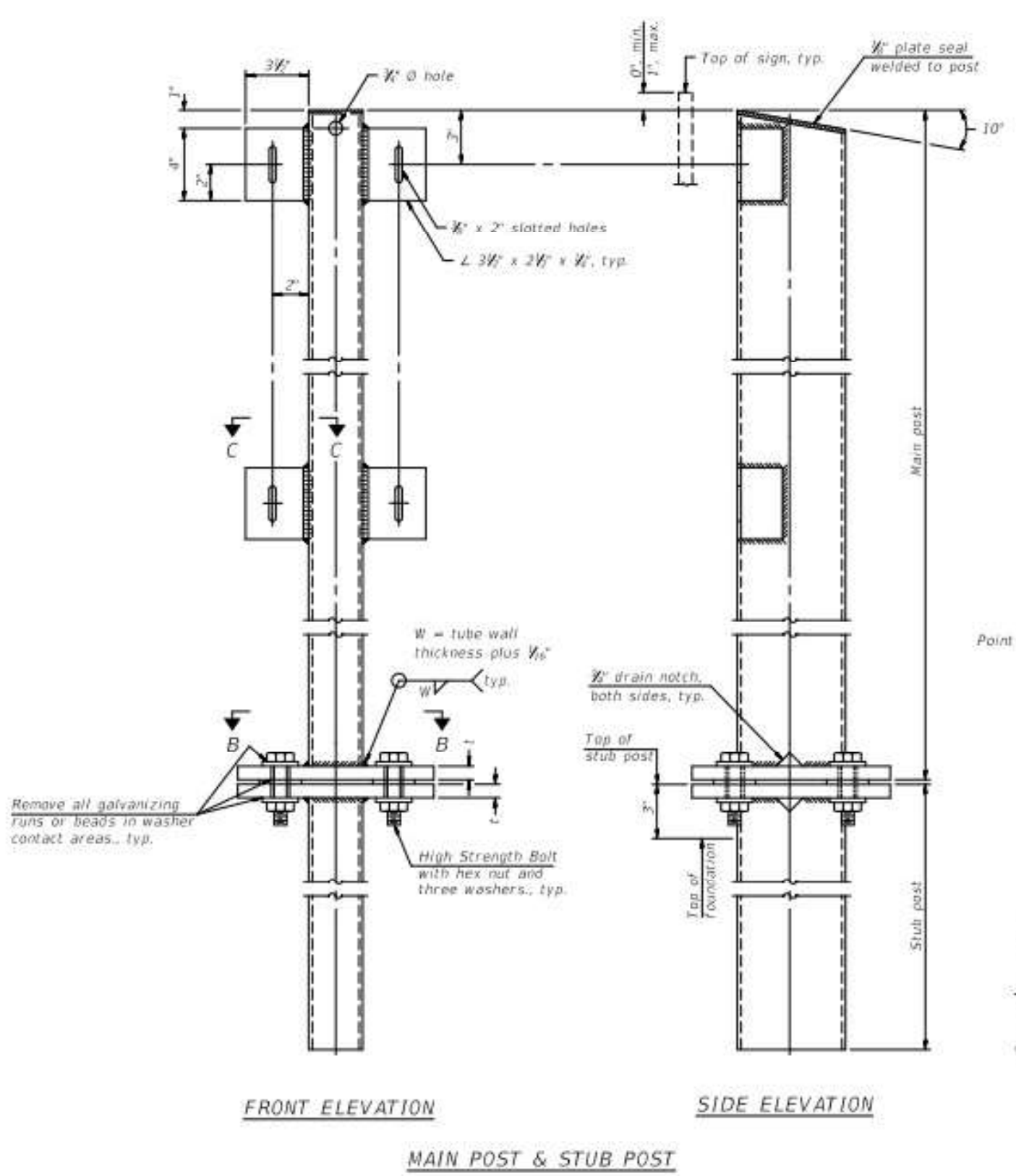
After fabrication, the post, fuse plate, base plate and upper 6", min. of the stub post shall be hot-dip galvanized in accordance with AASHTO M111. All bolts, nuts and washers shall be hot-dip galvanized in accordance with AASHTO M232.

For Sections A-A and B-B, see Base Sheet BAT-A-2.

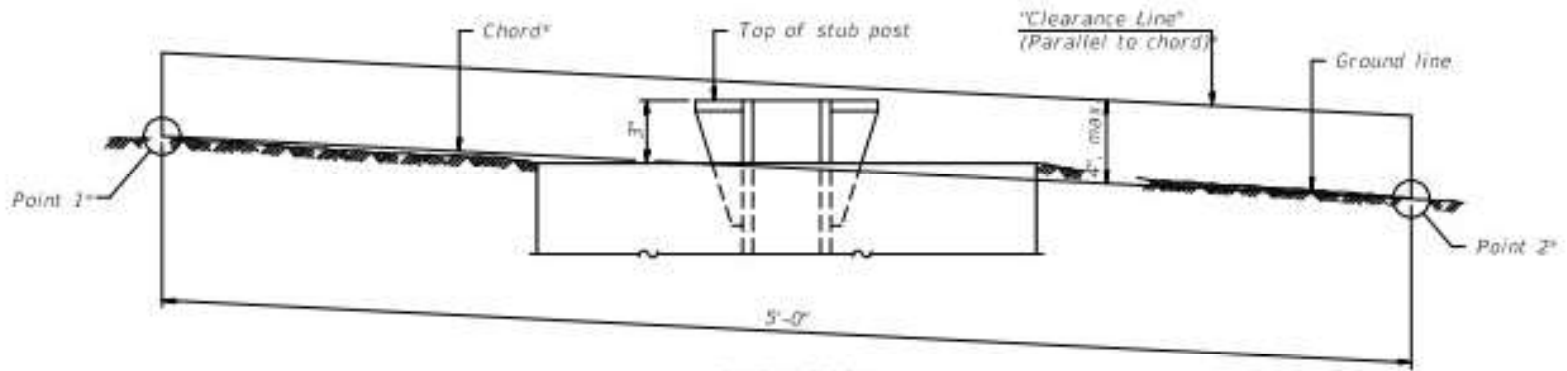
FOUNDATIONS:
 All necessary excavation or drilling (except in rock); backfilling with excavated material; disposal of unsuitable or surplus material; formwork; and furnishing and placing the Class SI Concrete and reinforcement bars, shall be included in the pay item used for foundations.

The measurement of the tubular steel shall be computed on the basis of the weight per foot of the support, multiplied by the combined length of the main posts and stub posts.

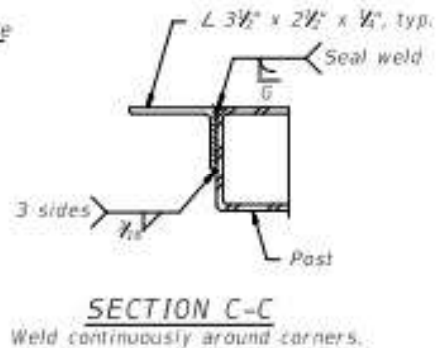
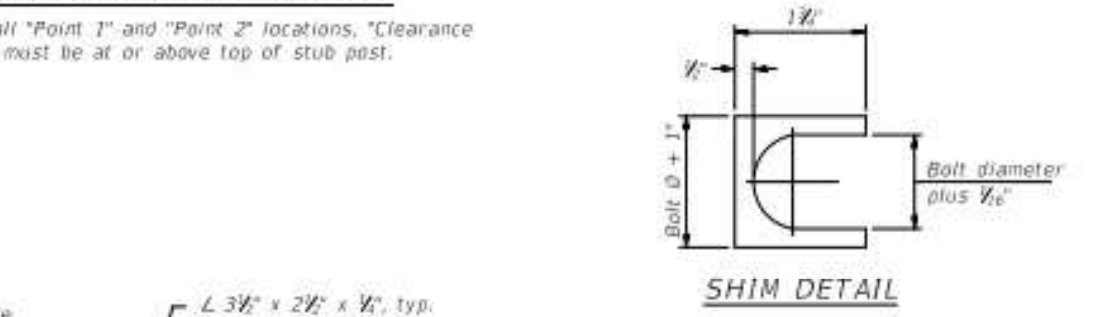
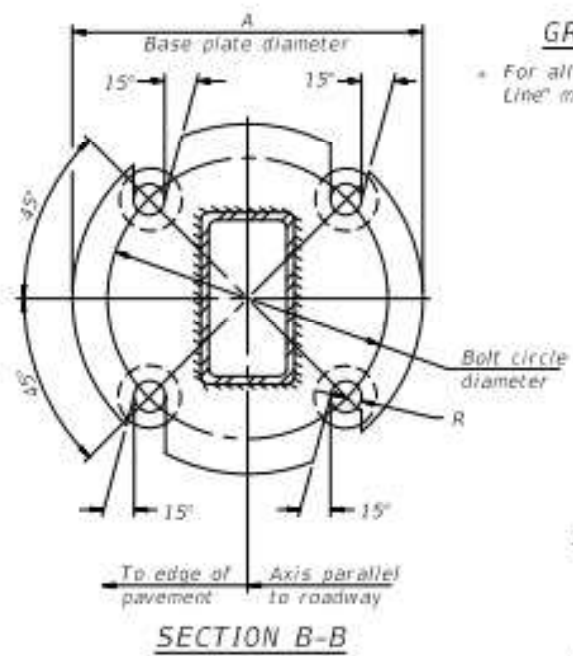
MAIN POST STEEL TUBING	WEIGHT PER FOOT (POUND)	STUB POST TABLE		MAIN POST TABLE				
		Stub Embedment	Stub Post Length	Bolt Size	A	t	R	Bolt Circle
3" x 2" x 1/8"	7.11	2'-0"	2'-3"	1/2" x 2 1/2"	8 1/2"	1/8"	1/2"	6 1/2"
4" x 2" x 1/8"	8.81	2'-0"	2'-3"	1/2" x 2 1/2"	8 1/2"	1/8"	1/2"	6 1/2"
4" x 3" x 1/8"	10.51	2'-3"	2'-6"	1/2" x 3 1/2"	10"	1/8"	1 1/2"	8"
5" x 3" x 1/8"	12.21	2'-3"	2'-6"	1/2" x 3 1/2"	10"	1/8"	1 1/2"	8"
6" x 3" x 1/8"	13.91	2'-3"	2'-6"	1/2" x 3 1/2"	11 1/2"	1/8"	1 1/2"	9 1/2"
6" x 4" x 1/8"	15.62	2'-3"	2'-6"	1/2" x 3 1/2"	11 1/2"	1/8"	1 1/2"	9 1/2"
6" x 4" x 3/16"	19.08	2'-3"	2'-6"	1/2" x 3 1/2"	11 1/2"	1/8"	1 1/2"	9 1/2"
7" x 5" x 1/8"	19.02	2'-6"	2'-9"	1/2" x 3 1/2"	1'-2"	1/8"	1 1/2"	1'-0"
8" x 4" x 1/8"	19.02	2'-6"	2'-9"	1/2" x 3 1/2"	1'-2"	1/8"	1 1/2"	1'-0"
8" x 6" x 1/8"	22.42	2'-6"	2'-9"	1/2" x 3 1/2"	1'-2"	1/8"	1 1/2"	1'-0"



* Hot dip galvanized lifting loops or inserts may be placed in precast foundation inside the spiral reinforcement but not within 6" of the long axis of the post. Inserts must be adequate for safely lifting a total of 3,000 pounds and must not interfere with installation of the stub post or proper functioning of the slip base.



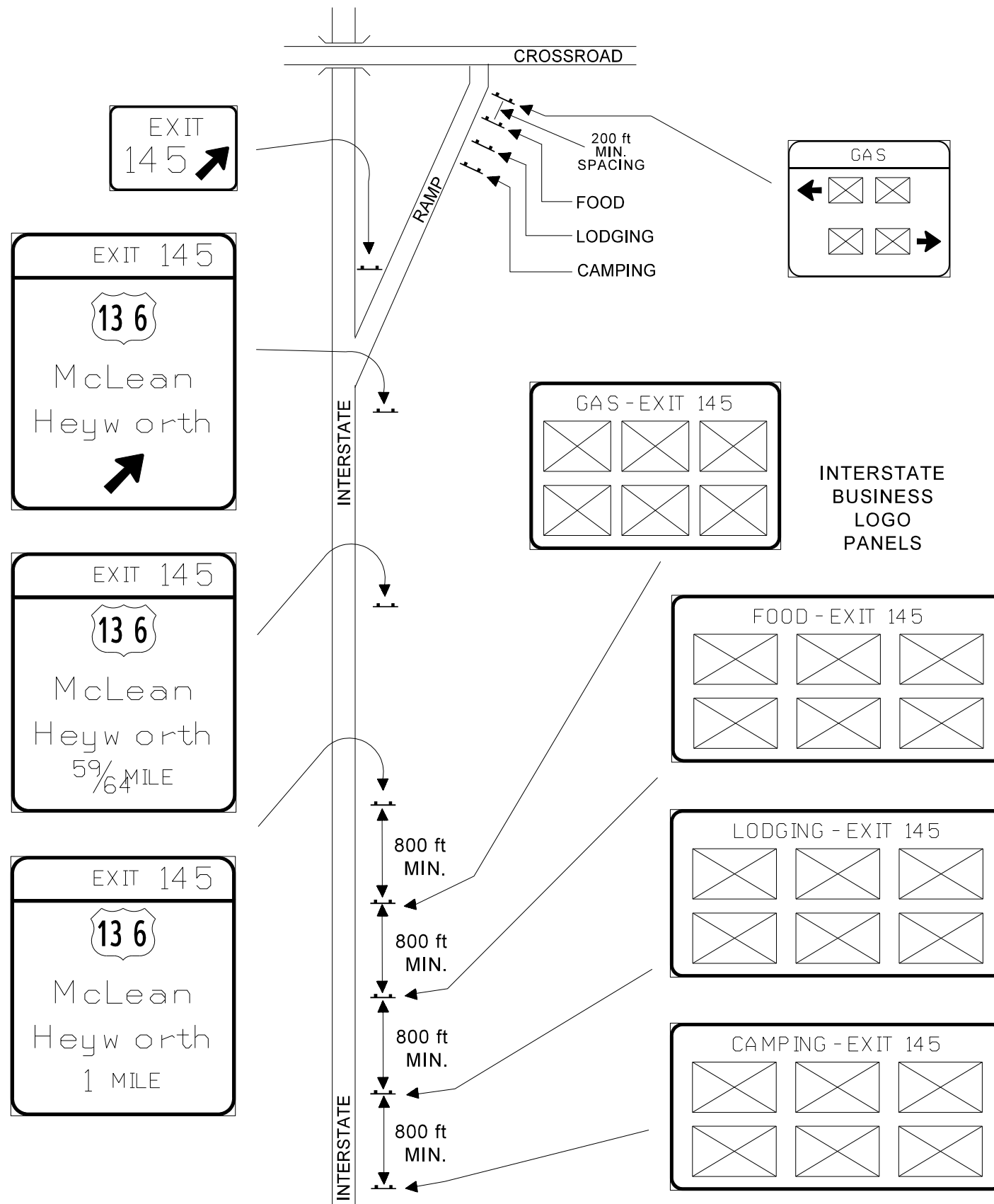
* For all "Point 1" and "Point 2" locations, "Clearance Line" must be at or above top of stub post.



BAT-A-2 2-17-2017

(Sheet 2 of 2)

FILE NAME :	USER NAME : olsonmw	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BREAK-AWAY TUBULAR STEEL SIGN POSTS AND FOUNDATIONS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 98.3432' / 1" in.	DRAWN -	REVISED -			VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	18
	PLOT DATE = 10/27/2021	CHECKED -	REVISED -			CONTRACT NO. 46586				
	DATE -	REVISED -		SCALE: _____	SHEET NO. 1 OF 1 SHEET	STA. _____	TO STA. _____	ILLINOIS FED. AID PROJECT		



FILE NAME -	USER NAME - olsonmw	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 98.3432' / in.	CHECKED -	REVISED -
	PLOT DATE = 10/27/2021	DATE -	REVISED -

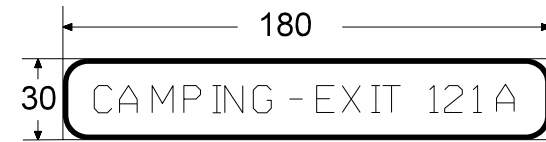
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

TYPICAL LOGO SIGNING SIGN LAYOUT

SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	19
CONTRACT NO. 46586			ILLINOIS FED. AID PROJECT	

MAINLINE SUPPLEMENTAL SERVICE SIGN DETAILS



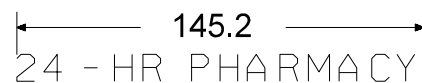
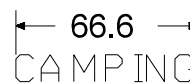
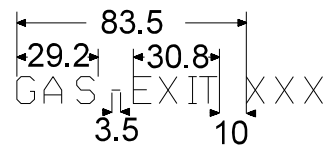
MAINLINE SUPPLEMENTAL SERVICE SIGNS ONLY USED FOR THE FOLLOWING SERVICES.

GAS, FOOD, LODGING, AND CAMPING

MAINLINE SUPPLEMENTAL SERVICE SIGN NOTES:

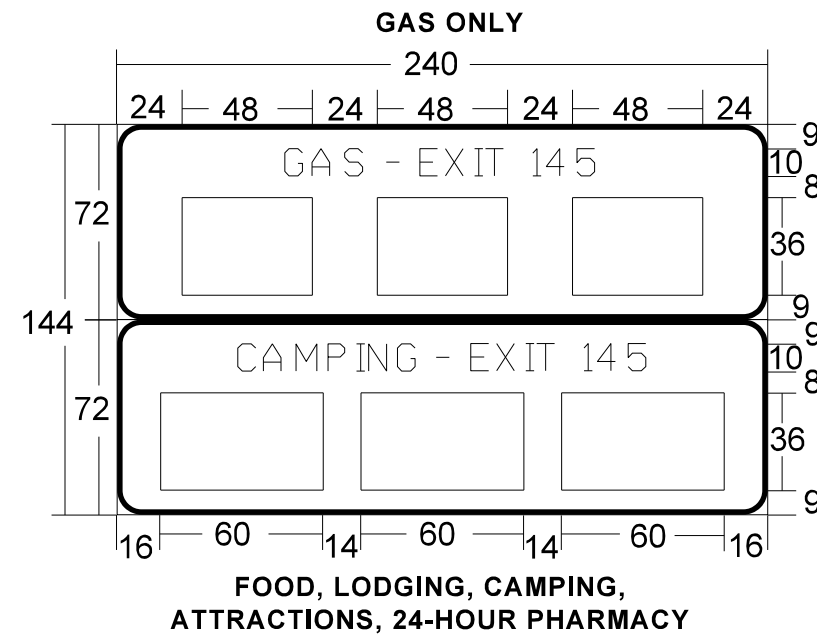
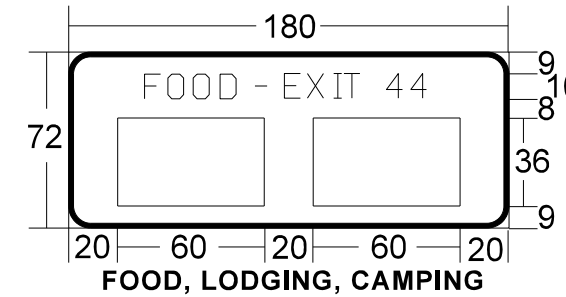
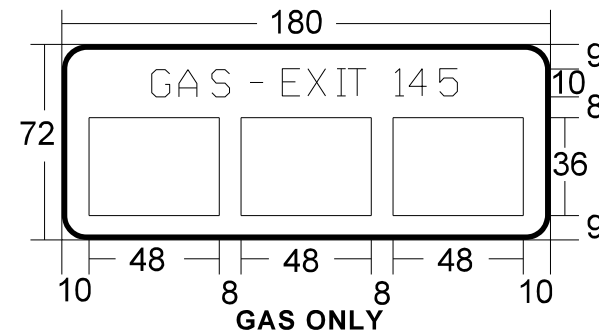
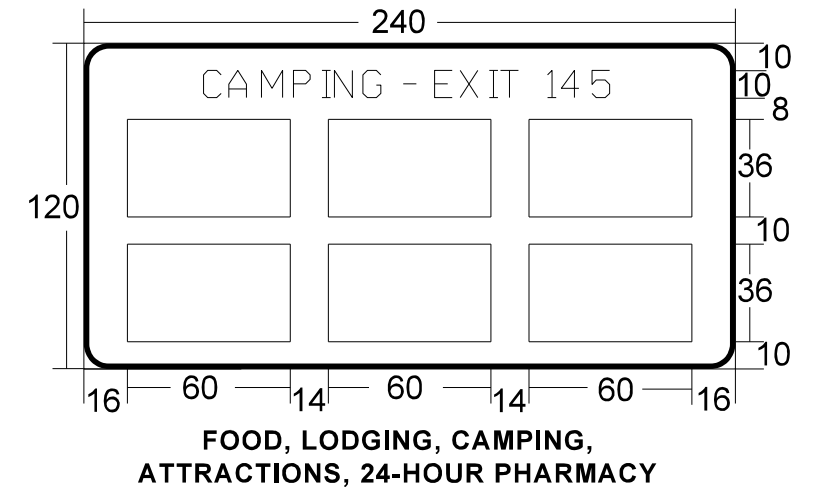
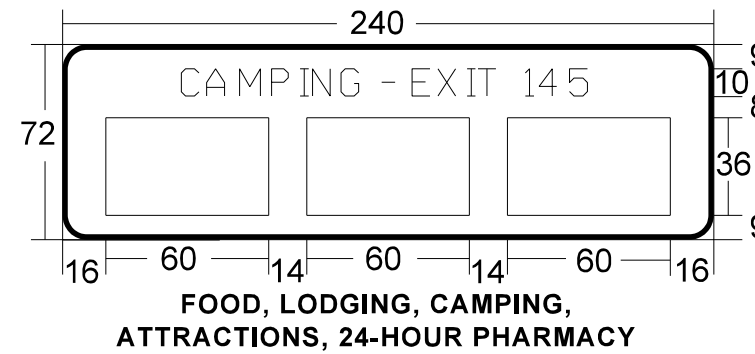
- To be placed beneath Logo Service Signs where indicated.
- Same general notes and legend sizes apply here as to other mainline Logo Service Signs.

MAINLINE SIGN WORD SPACING



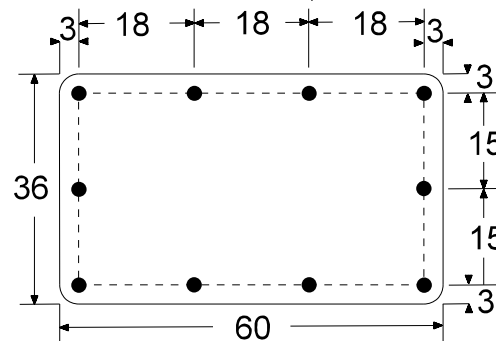
GENERAL NOTES FOR MAINLINE SIGNS:

- All legends are 10 inch E Modified.
- All borders are 2 inches wide.
- All corners have a 9 inch radius.
- Background is Blue.
- Legend and border is white.
- All dimensions are shown in inches.
- Multiple services on a single panel shall be listed by priority, from left to right or top to bottom. Priority order is GAS, FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY.

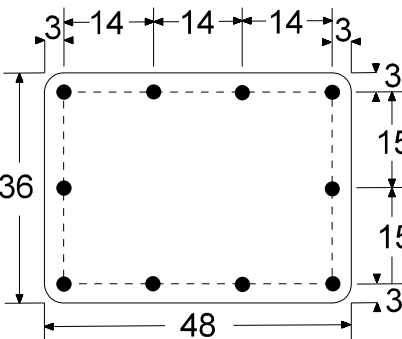


MAINLINE SERVICE PLATE HOLE SPACING DETAILS (PLATES FURNISHED BY OTHERS)

Hole spacing for 60" wide by 36" high FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HR PHARMACY logos.

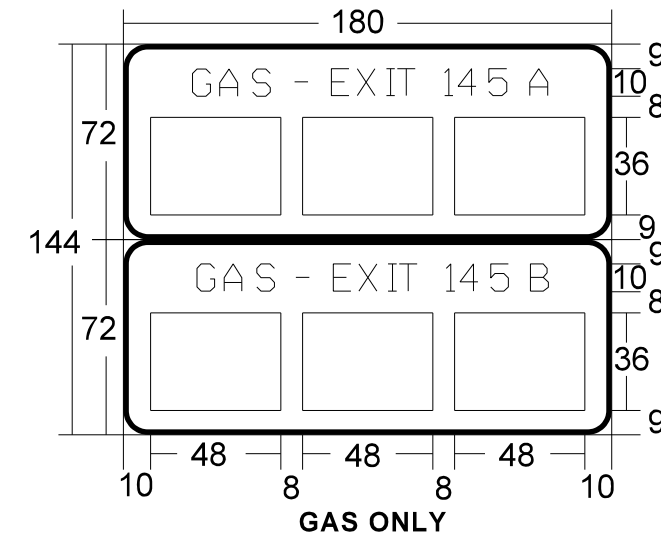
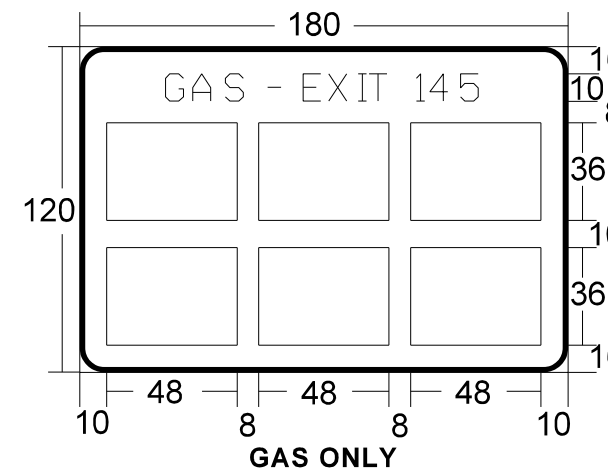
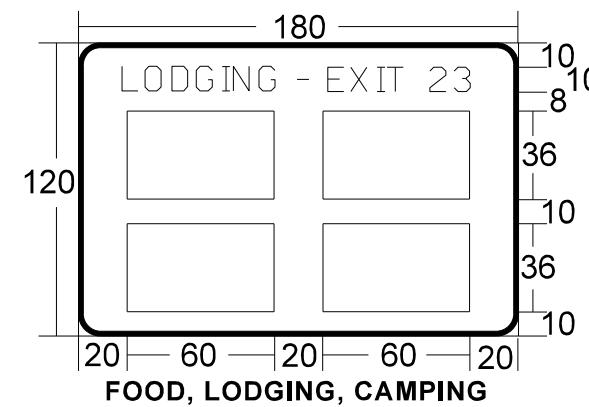


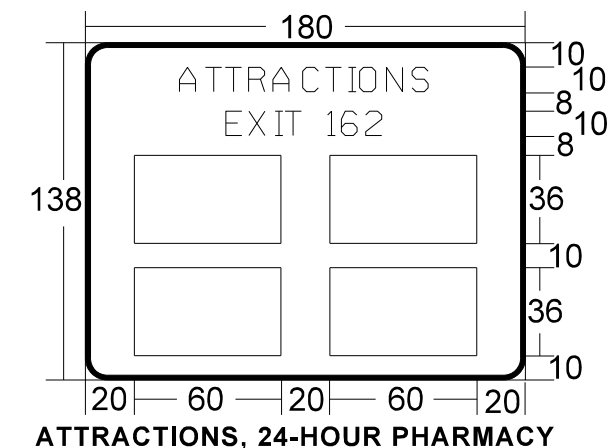
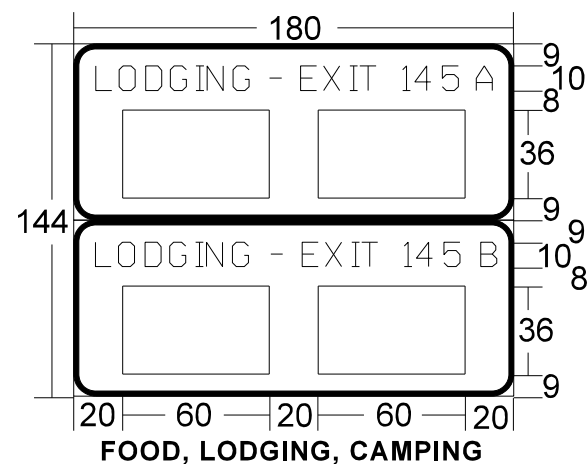
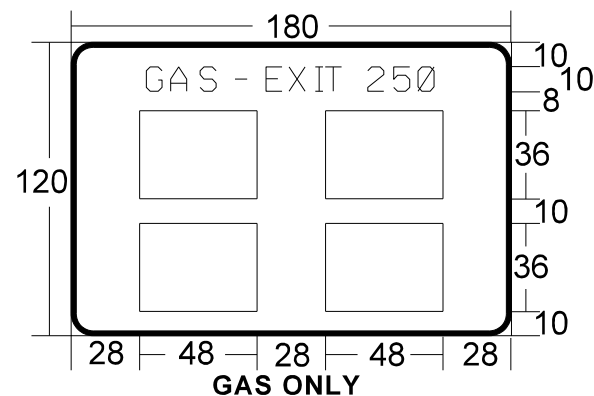
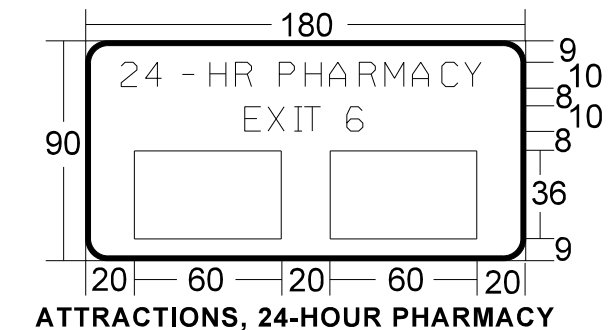
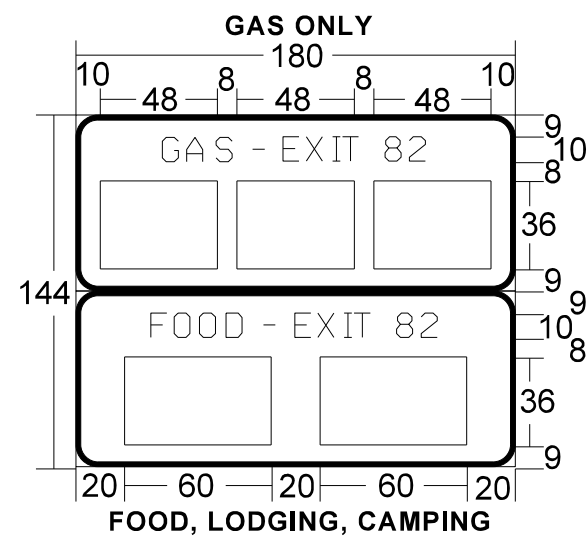
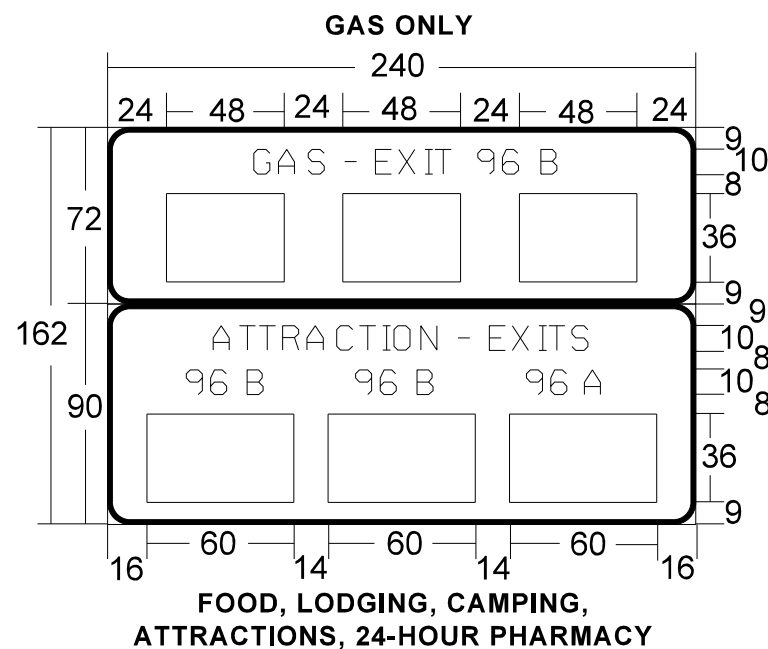
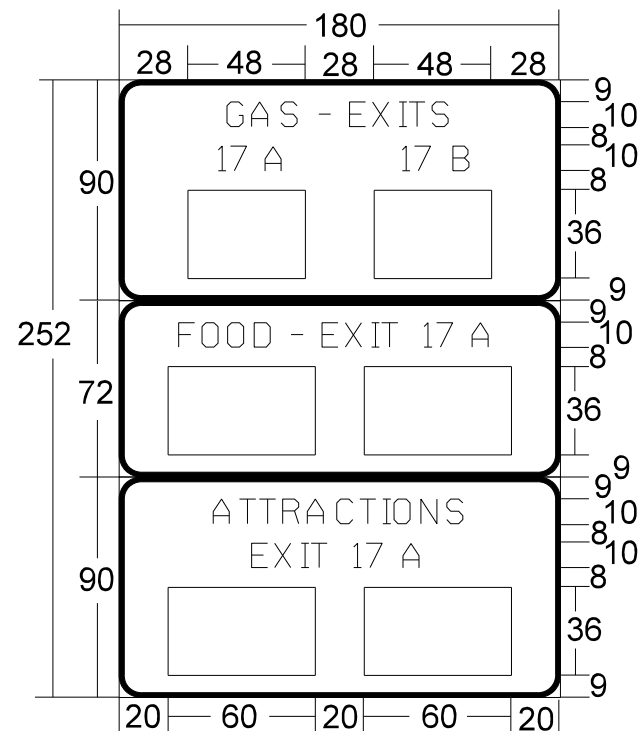
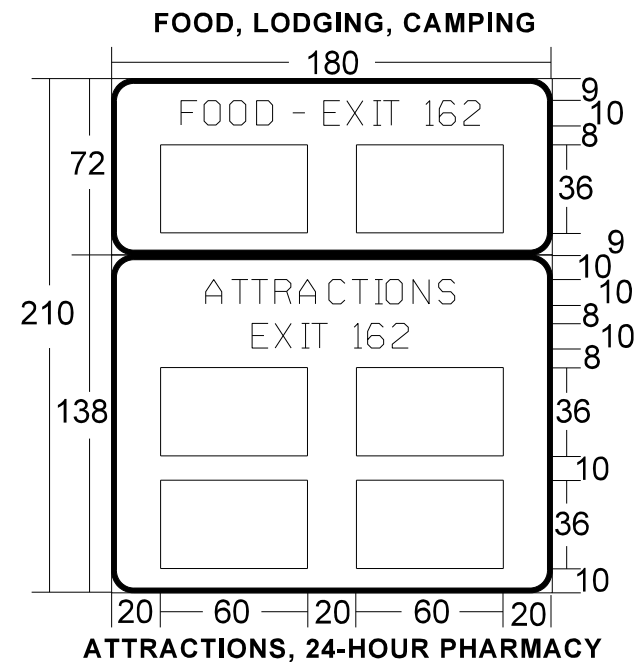
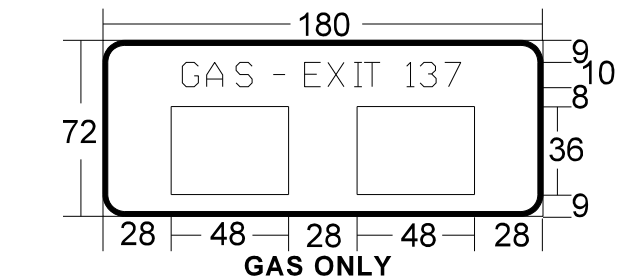
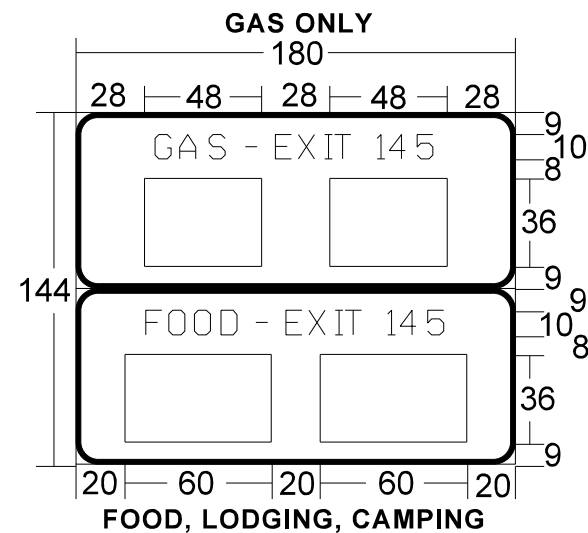
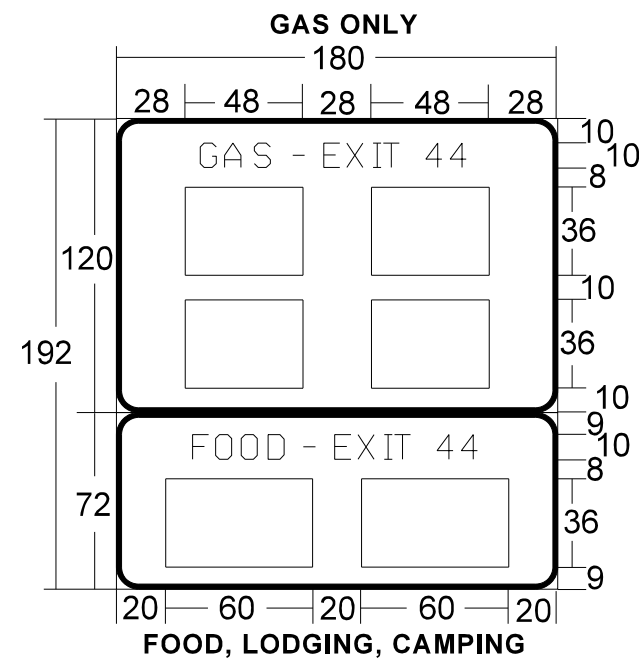
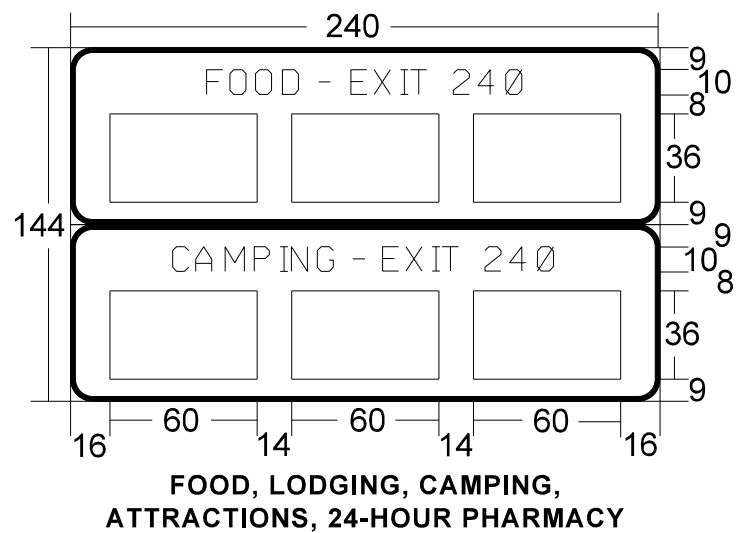
Hole spacing for 48" wide by 36" high GAS logo.



SERVICE PLATE NOTES:

- Holes must be 3/16" (0.1875 in. dia.).
- All Service Plate corners have a 3 inch radius.





GENERAL NOTES FOR MAINLINE SIGNS:

1. All legends are 10 inch E Modified.
2. All borders are 2 inches wide.
3. All corners have a 9 inch radius.
4. Background is Blue.
5. Legend and border is white.
6. All dimensions are shown in inches.
7. Multiple services on a single panel shall be listed by priority, from left to right or top to bottom. Priority order is GAS, FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY.

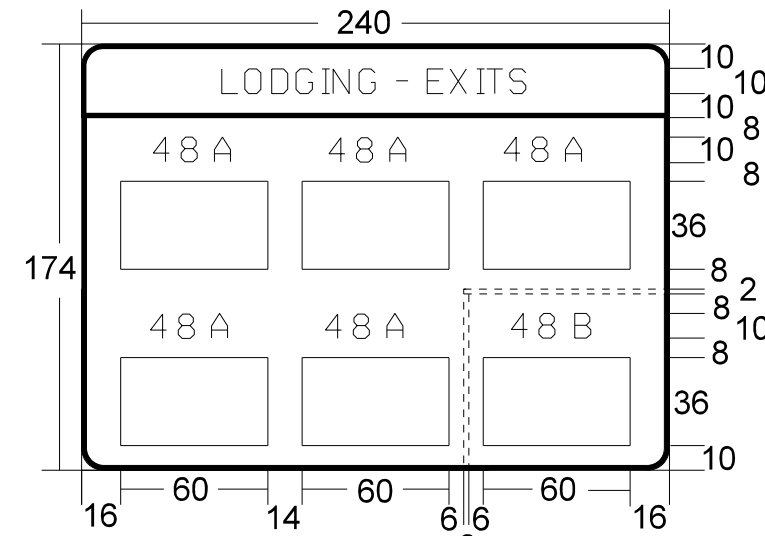
DETACHABLE BORDER



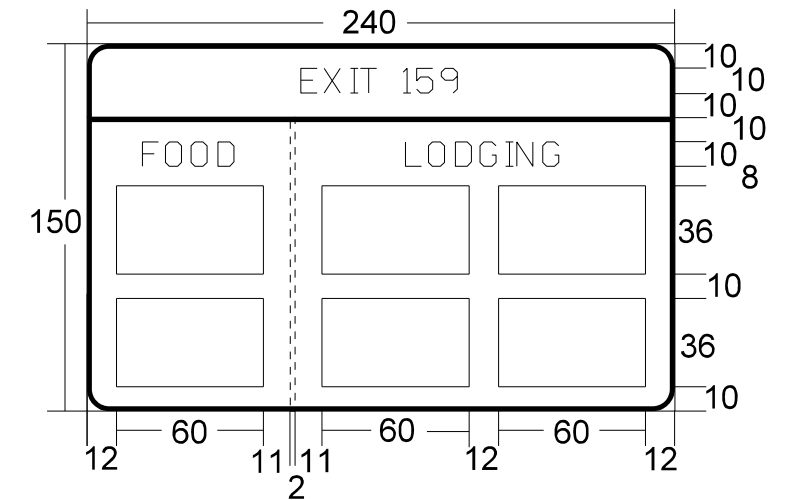
When using a detachable border, secure with a rivet at the beginning, end and every 2 feet in between.

GENERAL NOTES FOR MAINLINE SIGNS:

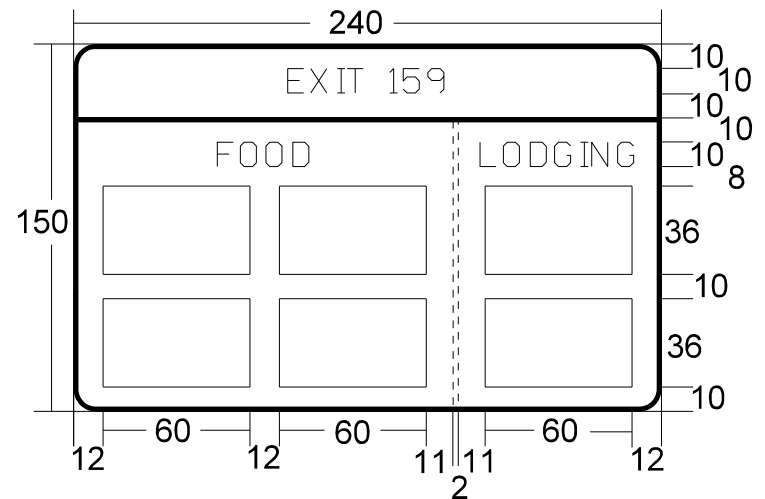
1. All legends are 10 inch E Modified.
2. All borders are 2 inches wide.
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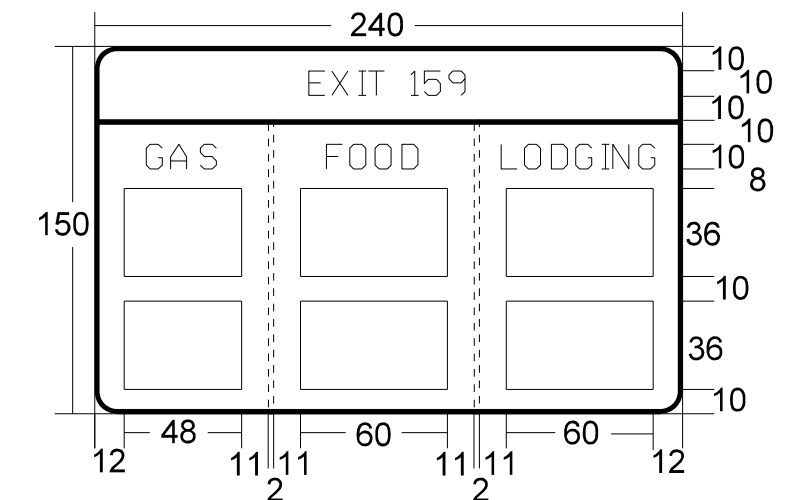
**FOOD, LODGING, CAMPING,
ATTRACTIONS, 24-HOUR PHARMACY**



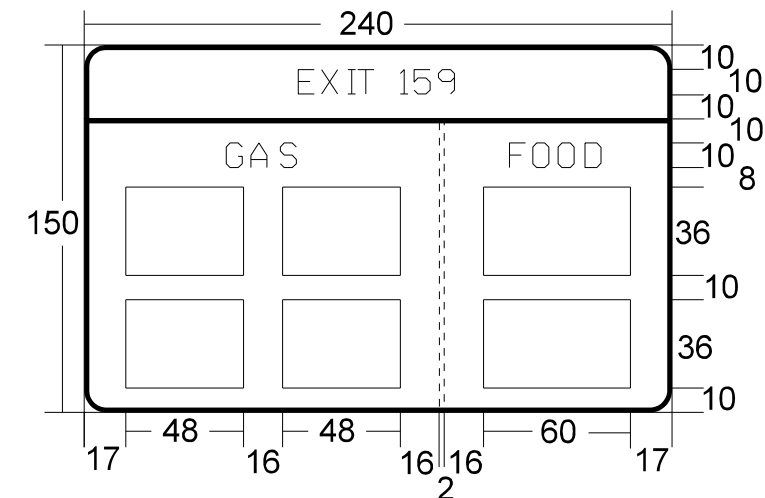
FOOD, LODGING, CAMPING



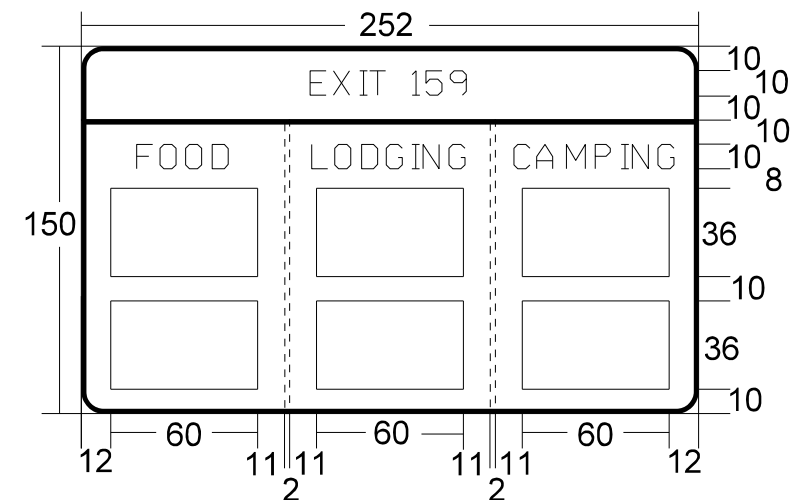
FOOD, LODGING, CAMPING



GAS, FOOD, LODGING, CAMPING

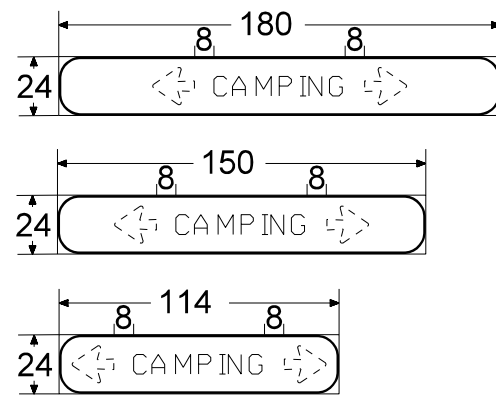


GAS, FOOD, LODGING, CAMPING



FOOD, LODGING, CAMPING

RAMP SUPPLEMENTAL SERVICE SIGN DETAILS



RAMP SUPPLEMENTAL SERVICE SIGNS ONLY USED FOR THE FOLLOWING SERVICES. GAS, FOOD, LODGING, AND CAMPING

RAMP SUPPLEMENTAL SERVICE SIGN NOTES:

- To be placed beneath Logo Service Signs where indicated.
- Same general notes and legend sizes apply here as to other ramp Logo Service Signs.

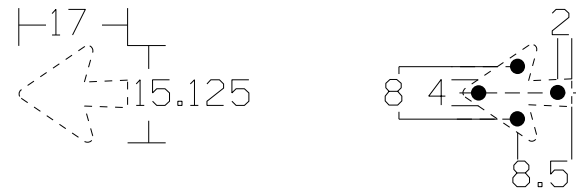
RAMP SIGN WORD SPACING



GENERAL NOTES FOR RAMP SIGNS:

- All legends are 8 inch E Modified.
- All borders are 1 inches wide.
- All corners have a 9 inch radius.
- Background is Blue.
- Legend and border is white.
- All dimensions are shown in inches.
- Multiple services on a single panel shall be listed by priority, from left to right or top to bottom. Priority order is GAS, FOOD, LODGING, CAMPING, USER ACTIONS, 24-HOUR PHARMACY.

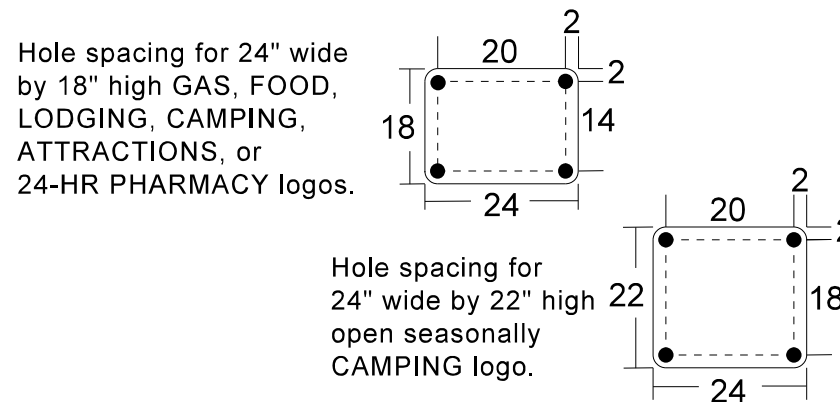
ARROW HOLE SPACING DETAILS:



RAMP SERVICE PLATE NOTES:

- Holes must be 3/16" (0.1875 in. dia.).
- All Ramp Service Plate corners have a 2 inch radius.

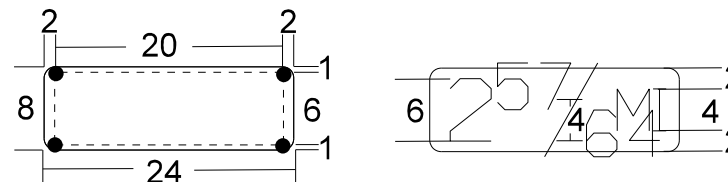
RAMP SERVICE PLATE HOLE SPACING DETAILS (PLATES FURNISHED BY OTHERS)



RAMP SERVICE PLATE NOTES:

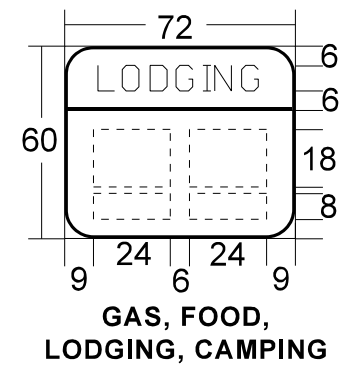
- Holes must be 3/16" (0.1875 in. dia.).
- All Ramp Service Plate corners have a 2 inch radius.

MILEAGE PLATE HOLE SPACING DETAIL

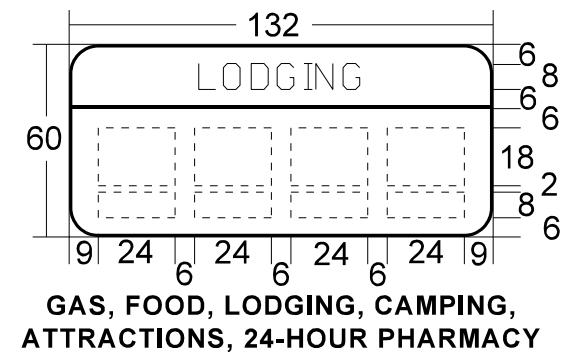


MILEAGE PLATE NOTES:

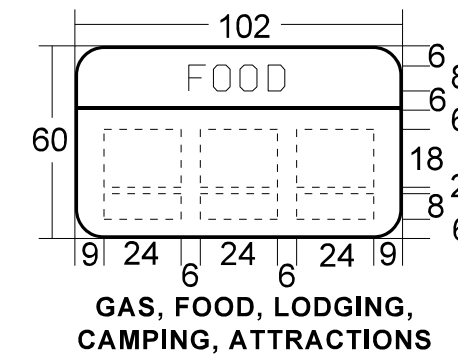
- Holes must be 3/16" (0.1875 in. dia.).
- All legends are C series.
- All legends are centered.
- All dimensions are shown in inches.
- Legend is white.
- Background is Blue.



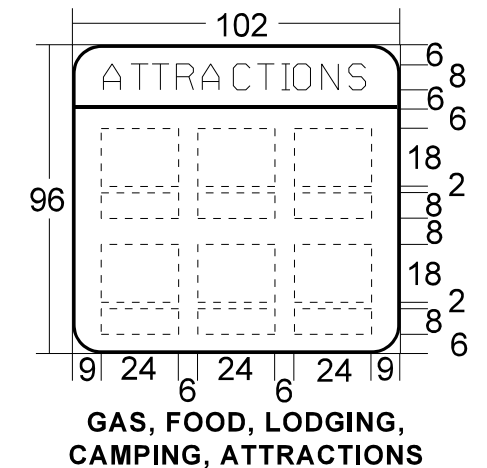
GAS, FOOD, LODGING, CAMPING



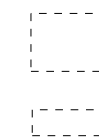
GAS, FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY



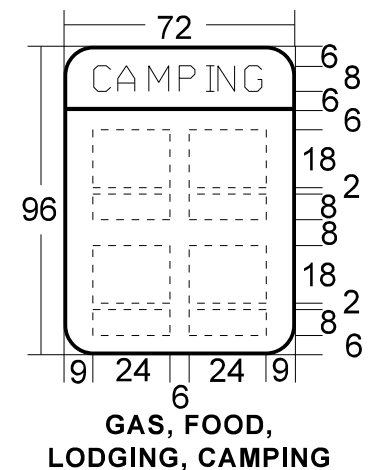
GAS, FOOD, LODGING, CAMPING, ATTRACTIONS



GAS, FOOD, LODGING, CAMPING, ATTRACTIONS

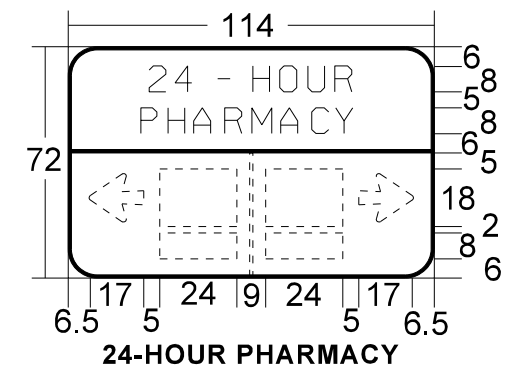
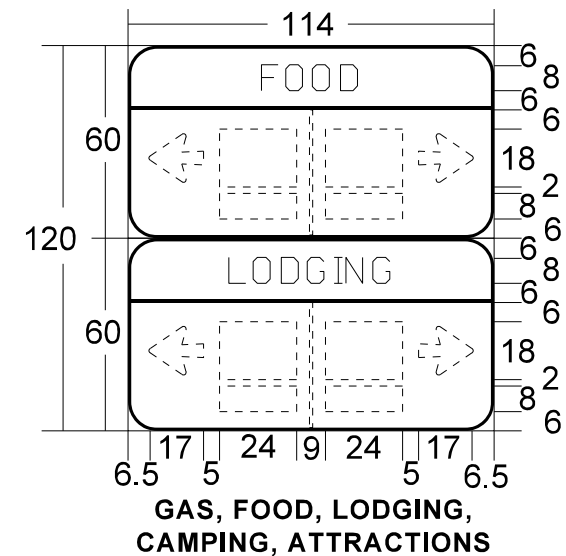
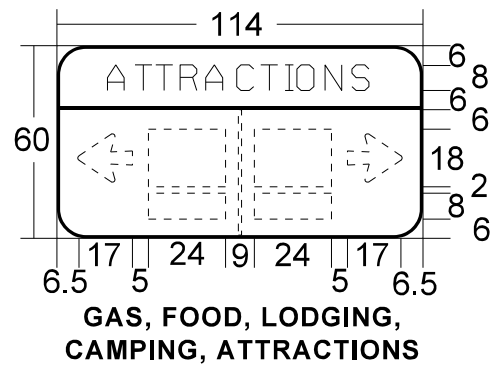
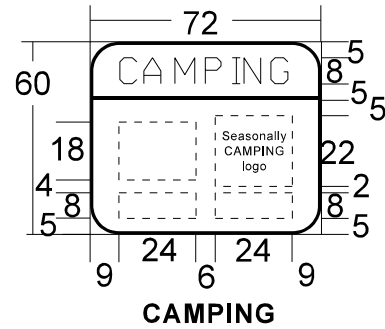
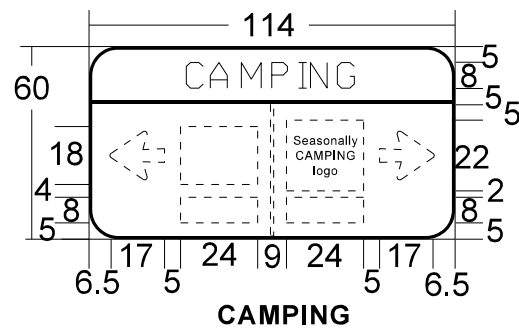
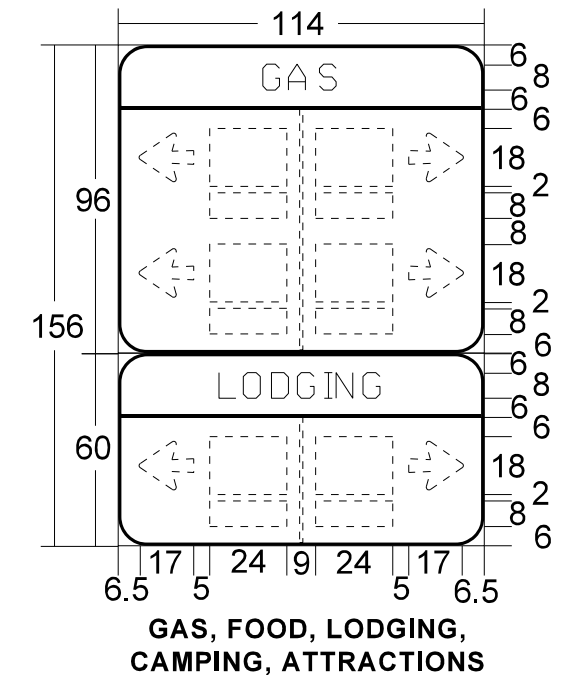
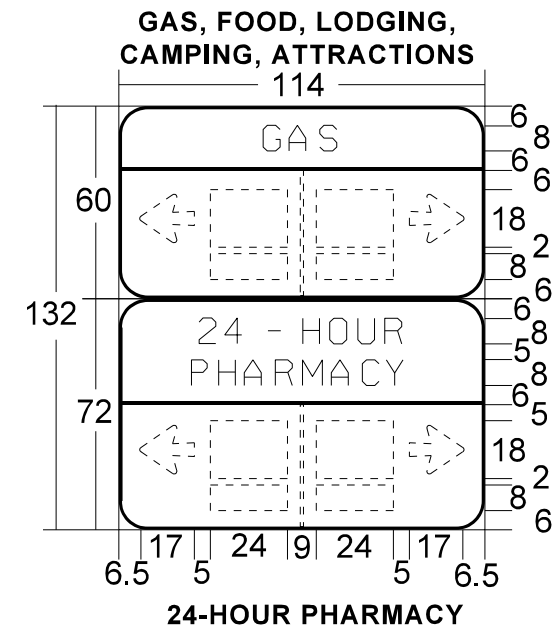
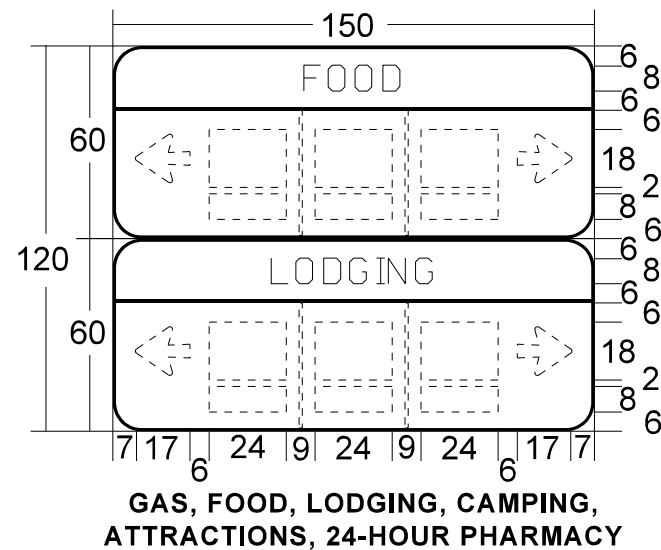
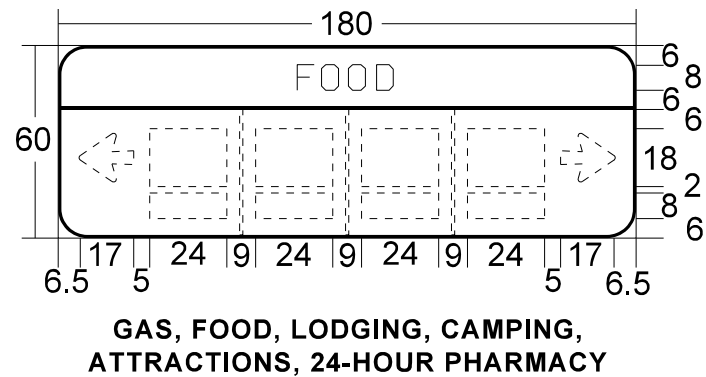
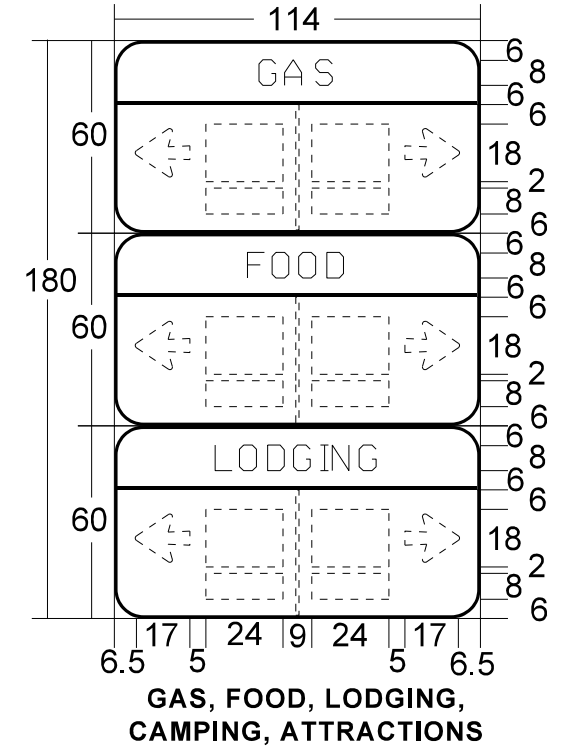
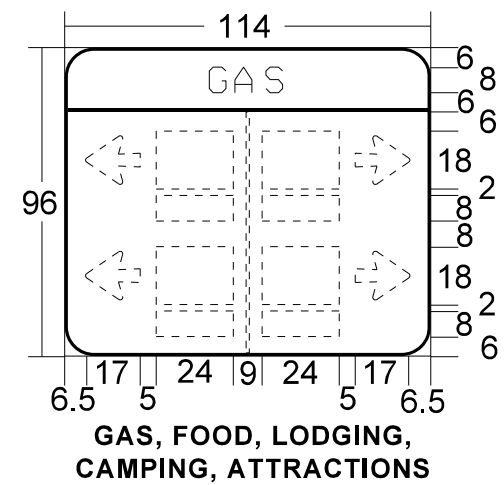
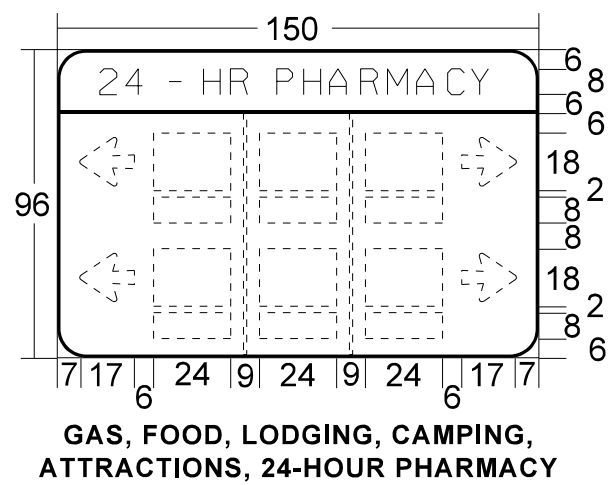
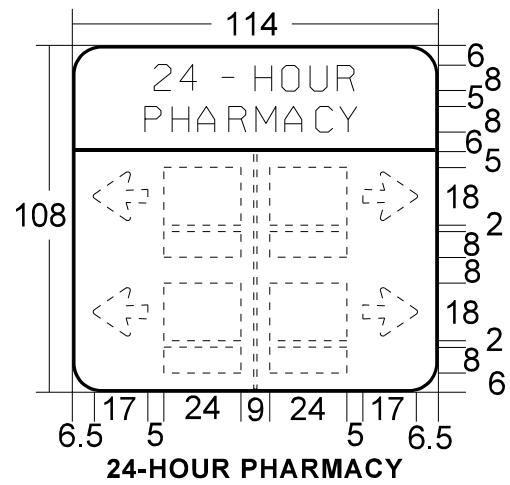
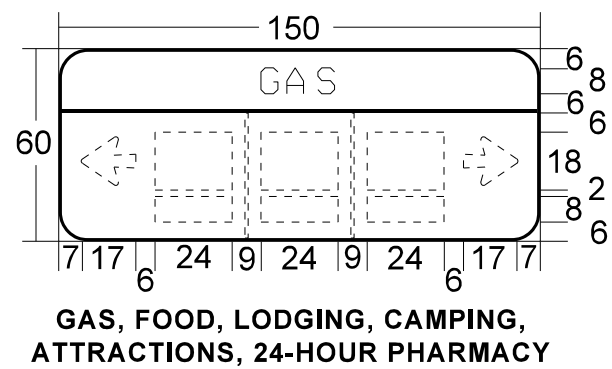


POSSIBLE RAMP SERVICE PLATE LOCATIONS
POSSIBLE RAMP MILEAGE PLATE LOCATIONS



GAS, FOOD, LODGING, CAMPING

FILE NAME =	USER NAME = oisonmw	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	RAMP SIGN SPECIFICATIONS AND EXAMPLES			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -					VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	23
		CHECKED -	REVISED -		SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____			CONTRACT NO. 46586				
		DATE -	REVISED -		ILLINOIS FED. AID PROJECT							



GENERAL NOTES FOR RAMP SIGNS:

1. All legends are 8 inch E Modified.
2. All borders and vertical bars are 1 inch wide.
3. All corners have a 9 inch radius.
4. Background is Blue.
5. Legend and border is white.
6. All dimensions are shown in inches.
7. Multiple services on a single panel shall be listed by priority, from left to right or top to bottom. Priority order is GAS, FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY.

POSSIBLE VERTICAL BAR LOCATIONS

POSSIBLE RAMP SERVICE PLATE LOCATIONS

POSSIBLE RAMP MILEAGE PLATE LOCATIONS

POSSIBLE ARROW LOCATIONS

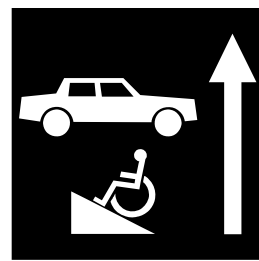
FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAMP SIGN EXAMPLES

SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	24
			CONTRACT NO. 46586	
ILLINOIS FED. AID PROJECT				



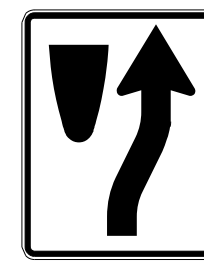
A
48" X 48"
White on Brown
Arrow on left
of symbols
where noted



F
12" X 24"
Std. R7-8/
Std. R7-1101
combined



K
12" X 18"
White on Brown



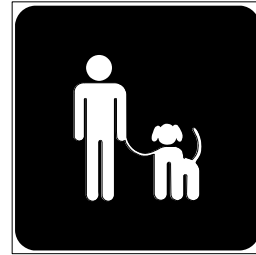
P
24" X 30"
Std. R4-7



U
18" X 24"
Std. R6-2
Arrow direction
as noted



B
48" X 48"
White on Brown



G
24" X 24"
White on Brown



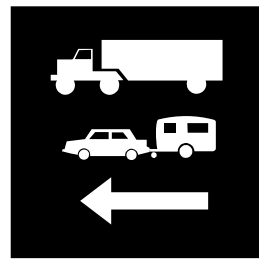
L
CLICK IT
OR
TICKET



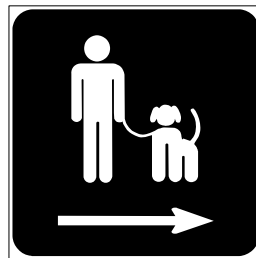
Q
36" X 36"
Std. 30" X 30"
R1-1
← Brown



V
48" X 48"
White on
brown



C
48" X 48"
White on Brown



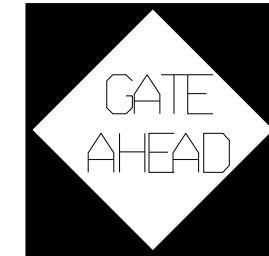
H
24" X 24"
White on Brown



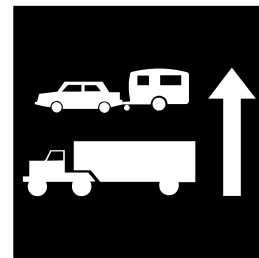
M
36" X 36"
White on Brown



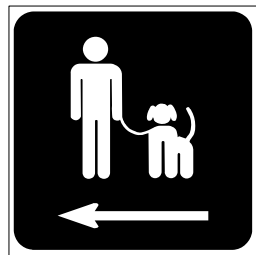
R
36" X 24"
White on
brown



W
36" X 36"
with
24" X 24"
black/yellow
warning sign
← Brown



D
48" X 48"
White on Brown
Arrow on left
of symbols
where noted



I
24" X 24"
White on Brown



N
36" X 24"
White on
Brown



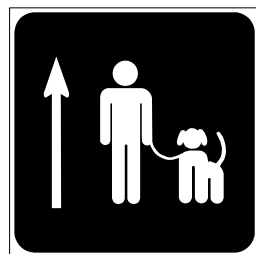
S
18" X 24"
Std. R2-1
Speed as
noted



X
36" X 24"
White on
brown



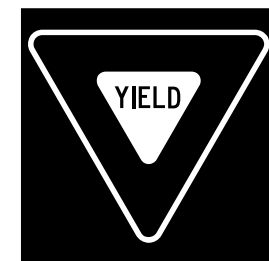
E
48" X 48"
Std. 36" X 36"
R5-1
or
36" X 36"
overall
with Std 36" X 36"
R5-1 where noted



J
24" X 24"
White on Brown



O
24" X 18"
White on
Brown



T
36" X 36"
Std. 30" R1-2
← Brown



Y
36" X 36"
with Std.
24" X 24"
W6-1
← Brown

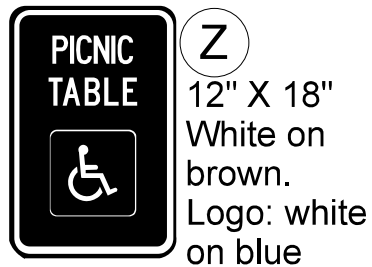
FILE NAME -	USER NAME - olsonmw	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 98.3432 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 10/27/2021	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

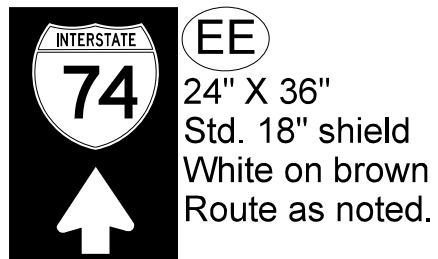
REST AREA SIGNS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	25
			CONTRACT NO. 46586	
ILLINOIS FED. AID PROJECT				

SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____



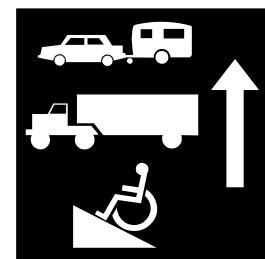
Z
12" X 18"
White on brown.
Logo: white on blue



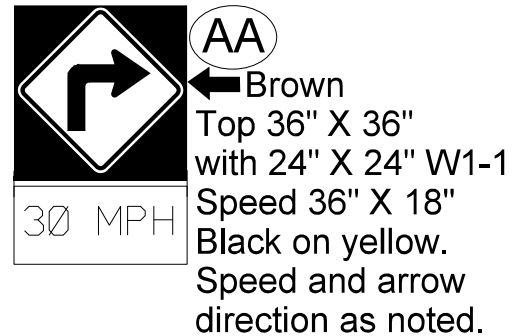
EE
24" X 36"
Std. 18" shield
White on brown
Route as noted.



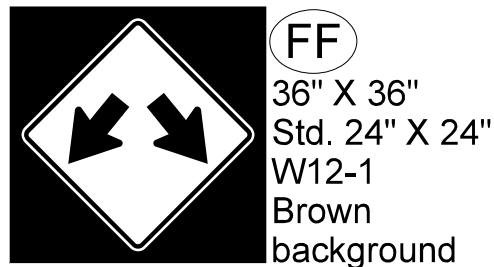
JJ
18" X 36"
Upper: White on red
Lower: Black on white



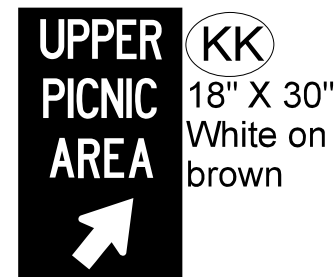
OO
48" X 48"
White on Brown
Arrow on left of symbols where noted



AA
Brown
Top 36" X 36" with 24" X 24" W1-1
Speed 36" X 18" Black on yellow.
Speed and arrow direction as noted.



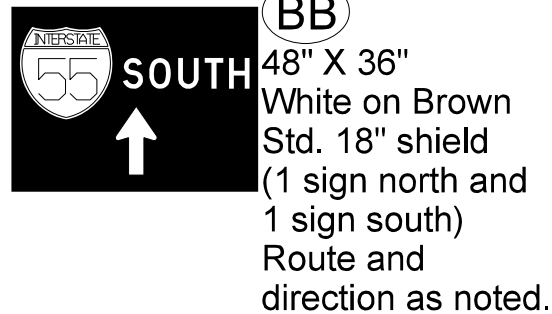
FF
36" X 36"
Std. 24" X 24" W12-1
Brown background



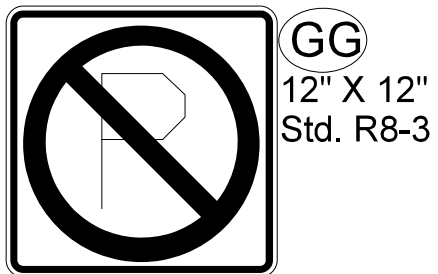
KK
18" X 30"
White on brown



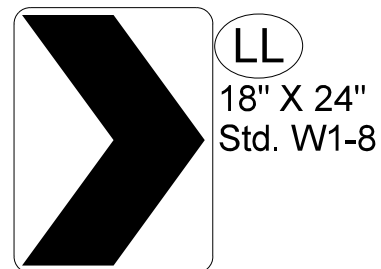
PP
48" X 48"
White on Brown



BB
48" X 36"
White on Brown
Std. 18" shield (1 sign north and 1 sign south)
Route and direction as noted.



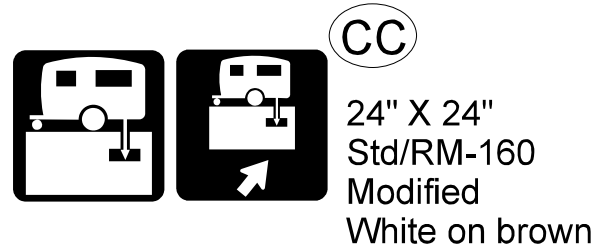
GG
12" X 12"
Std. R8-3



LL
18" X 24"
Std. W1-8



QQ
48" X 48"
Std. W11-2
Brown background



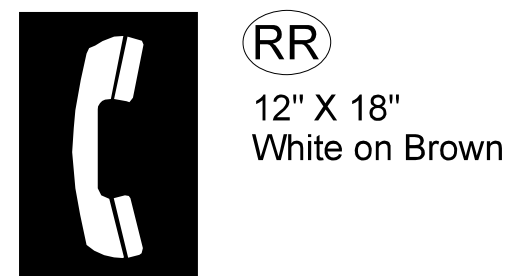
CC
24" X 24"
Std/RM-160 Modified
White on brown



HH
24" X 24"
Std. R3-1
Direction as noted



MM
12" X 18"
White on brown.
Logo: White on blue



RR
12" X 18"
White on Brown



DD
36" X 24"
White on brown



II
30" X 24"
Black on white



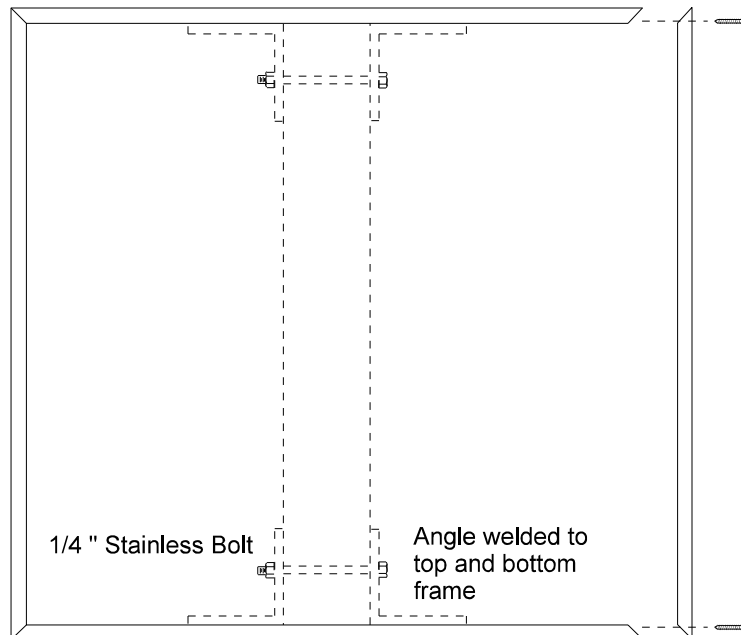
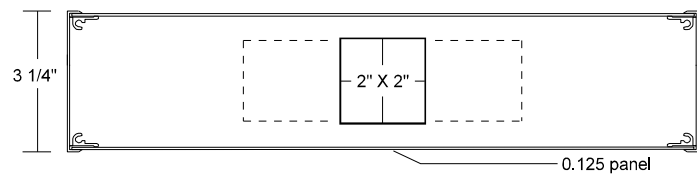
NN
72" X 24"
White on Brown

FILE NAME -	USER NAME - olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 98.3432 ' / in.	CHECKED -	REVISED - -
	PLOT DATE = 10/27/2021	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REST AREA SIGNS

SCALE: _____	SHEET NO. 1 OF 1 SHEET	STA. _____ TO STA. _____	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	26
			CONTRACT NO. 46586		ILLINOIS FED. AID PROJECT		



NOTES

All posts and frames shall be manufactured from heavy duty 6063 alloy aluminum extrusions. Posts shall be temper T6 and frames temper T5.

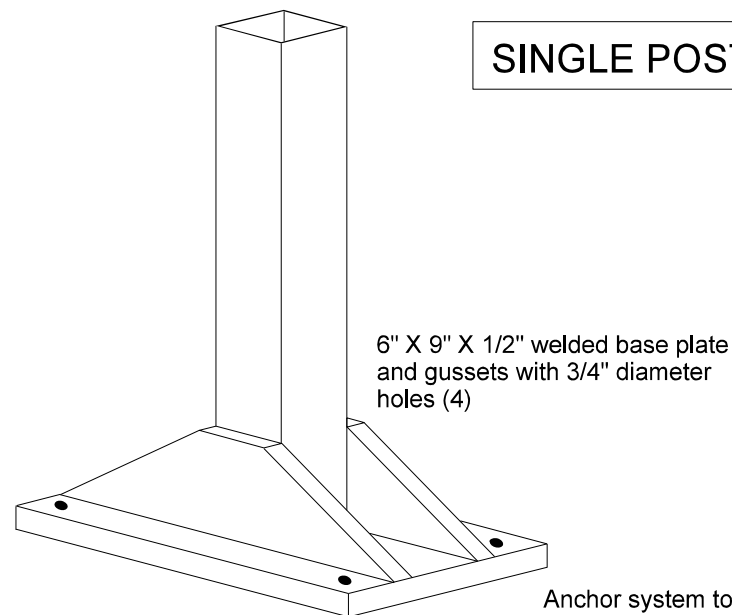
All extrusions shall be produced to Aluminum Association standards and ASTM B221.

All hardware shall be stainless steel. All fasteners shall be tamper resistant.

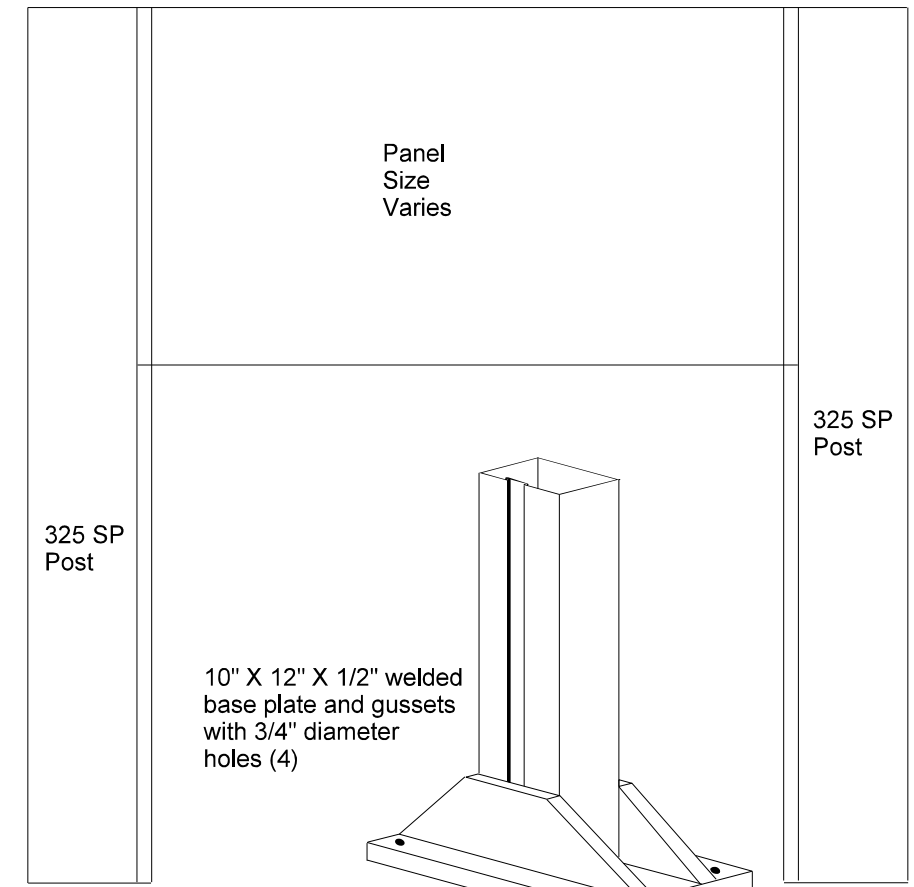
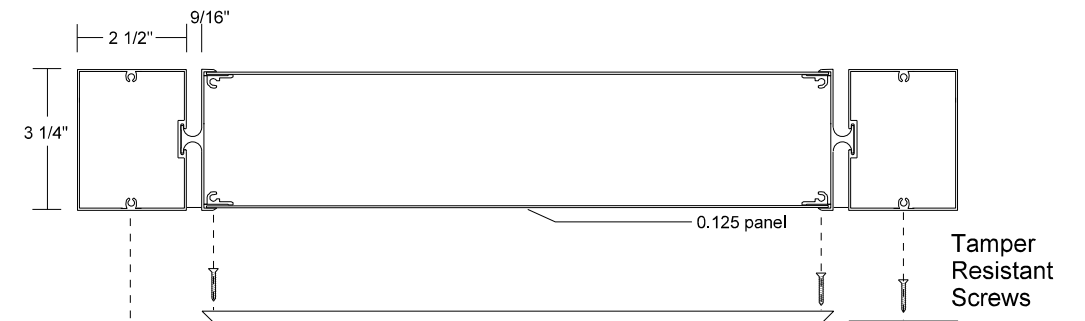
Frames and posts shall be finished in dark bronze meeting the approval on the Engineer. Color samples shall be furnished prior to fabrication. The finish is to be acrylic polyurethane, electrostatically applied to pretreated and primed surfaces and oven baked.

218 - 2" square post (.156 wall)
Surface mount with base plate or direct burial as specified.

SINGLE POST INSTALLATIONS

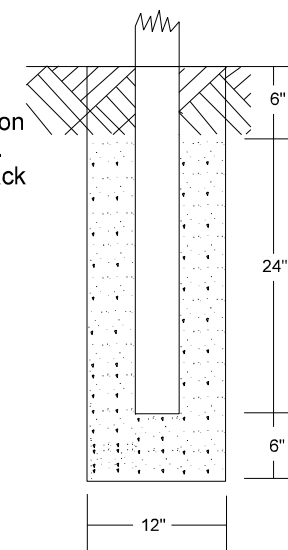


Anchor system to meet the approval of the Engineer.



DOUBLE POST INSTALLATIONS

Top of foundation 6" below grade. Backfill with black dirt and seed.



Anchor system to meet the approval of the Engineer.

NOTES

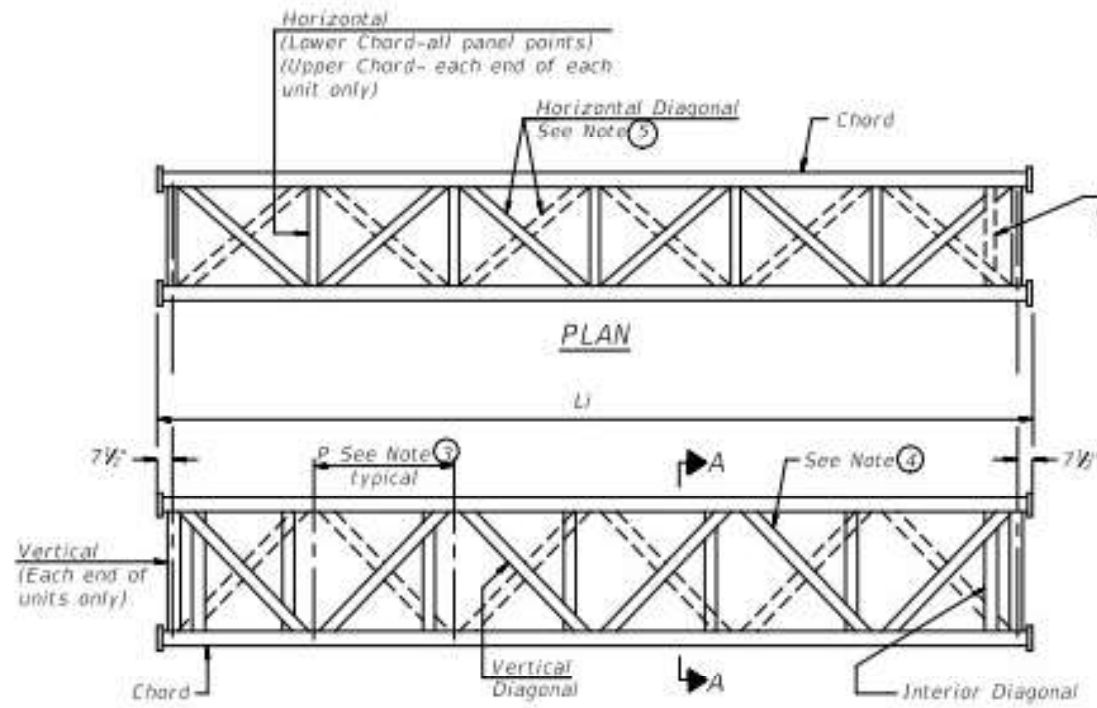
All posts and frames shall be manufactured from heavy duty 6063 alloy aluminum extrusions. Posts shall be temper T6 and frames temper T5.

All extrusions shall be produced to Aluminum Association standards and ASTM B221.

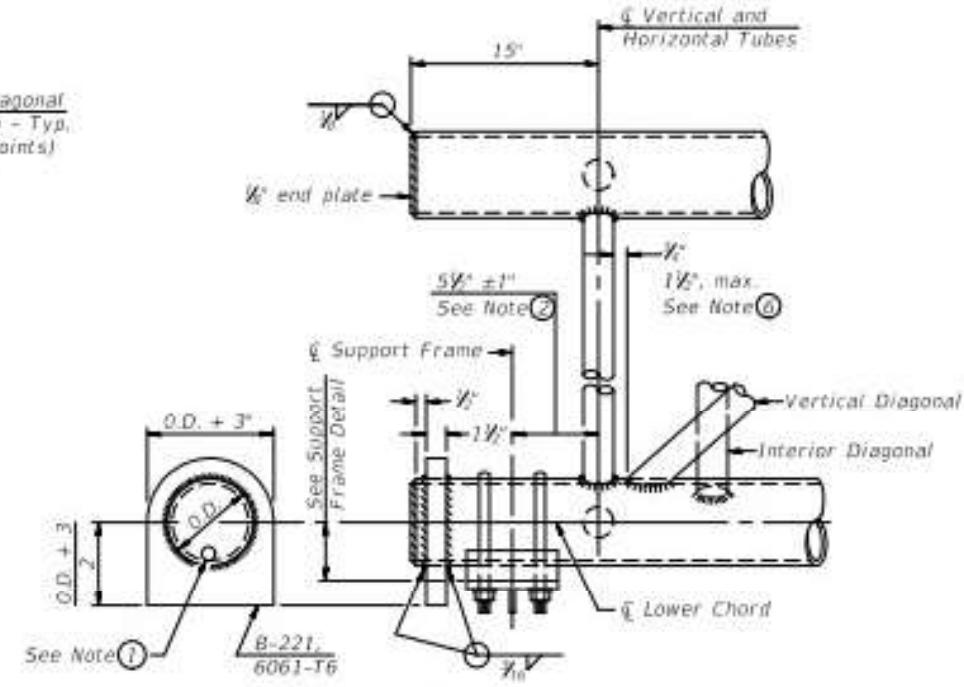
All hardware shall be stainless steel. All fasteners shall be tamper resistant.

Frames and posts shall be finished in dark bronze meeting the approval on the Engineer. Color samples shall be furnished prior to fabrication. The finish is to be acrylic polyurethane, electrostatically applied to pretreated and primed surfaces and oven baked.

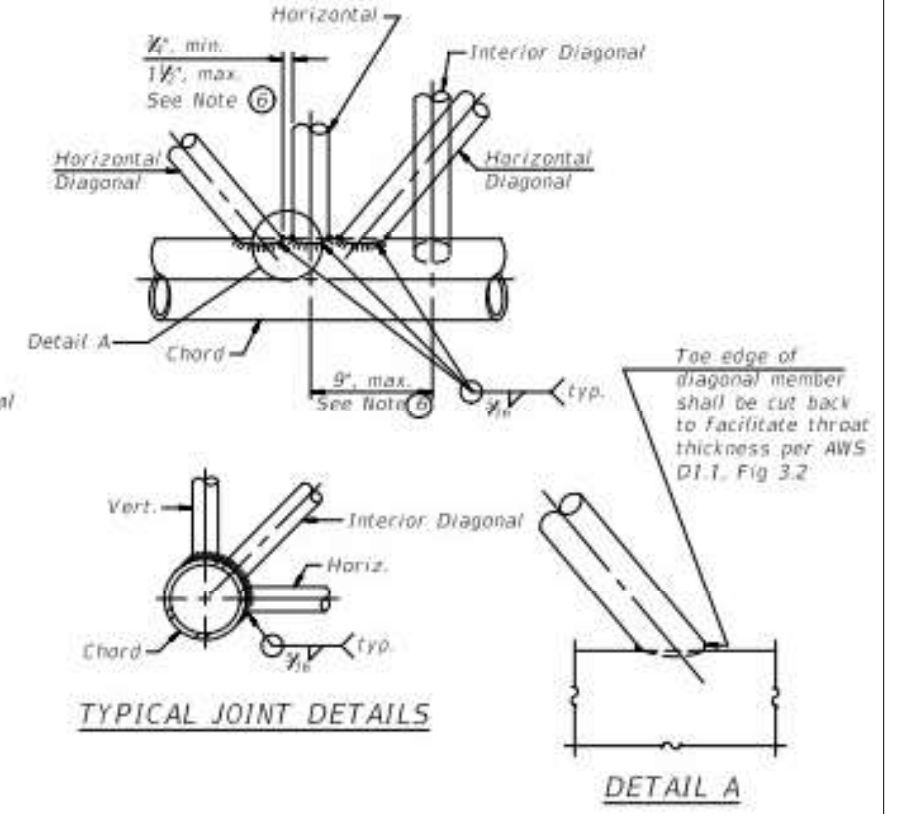
FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SINGLE AND DOUBLE POST INSTALLATIONS			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 98.3432' / in.	DRAWN -	REVISED - -		VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	27			
	PLOT DATE = 10/27/2021	CHECKED -	REVISED - -		CONTRACT NO. 46586							
		DATE -	REVISED - -		ILLINOIS FED. AID PROJECT							



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

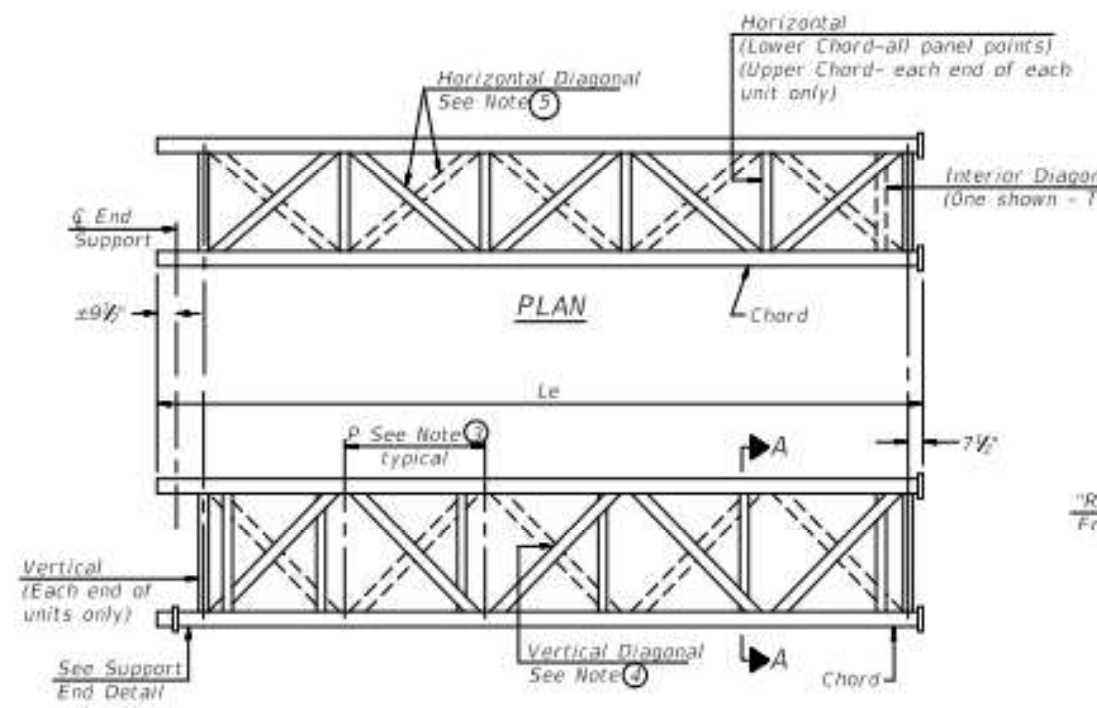


SUPPORT END DETAIL FOR EXTERIOR UNIT

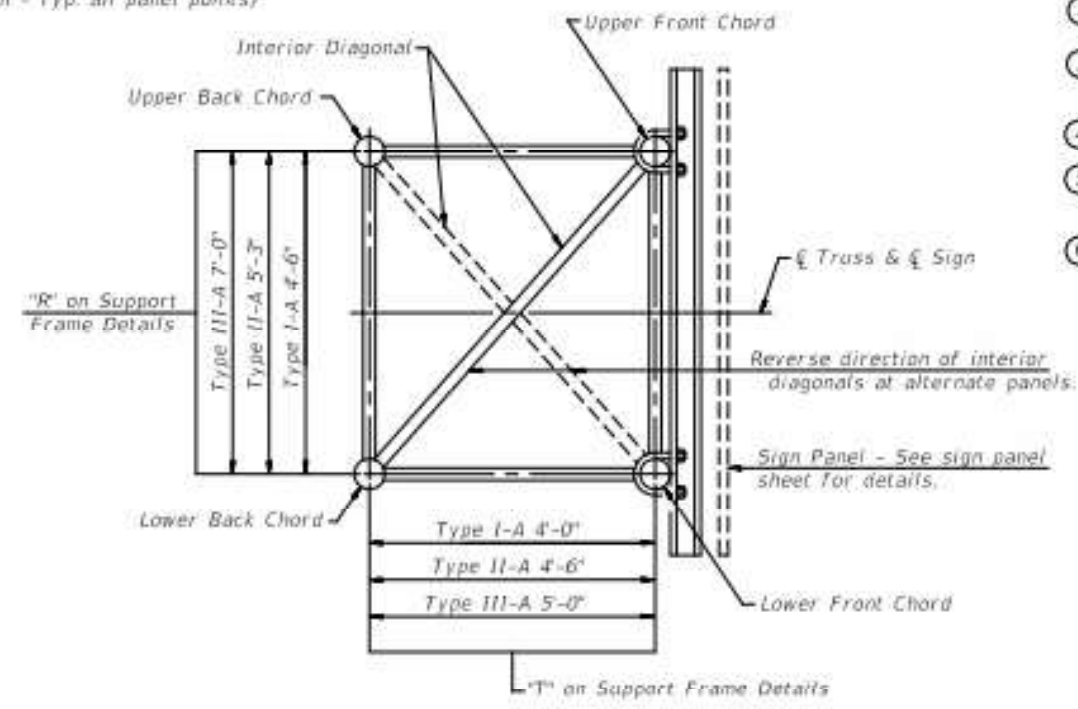


TYPICAL JOINT DETAILS

DETAIL A



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



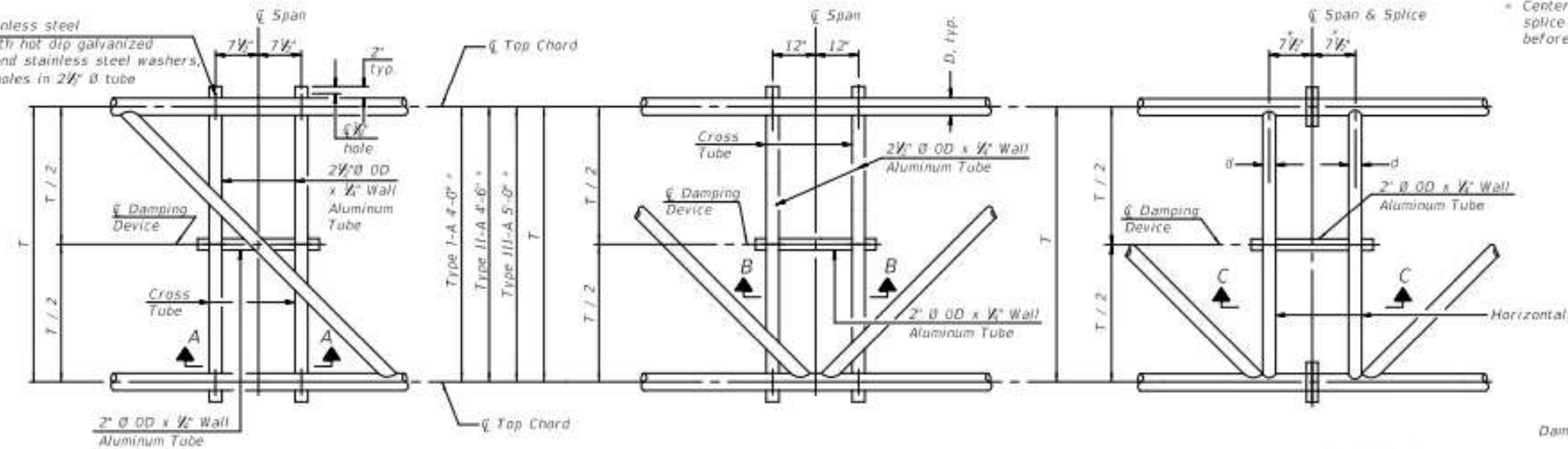
SECTION A-A

- ① Contractor may alternatively use standard aluminum drive-fit cap to close end. 1/2" Ø drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)
- ② 5 1/2" end dimension may vary by ±1" to provide uniform panel spacing (P)
- ③ Panel spacing (P) shall be uniform for entire truss and between 4'-0" and 5'-0" for Type I-A or 4'-0" and 5'-6" for Types II-A and III-A.
- ④ Vertical Diagonals in front and back face shall alternate.
- ⑤ Hidden lines show wind bracing alternates direction between planes of top and bottom chords.
- ⑥ All diagonals shall be detailed for minimum offset from the panel point based on the following: Offset shall be such as to provide a 3/8" 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.

05-A-2 2-17-2017

FILE NAME :	USER NAME : olsonnw	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. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 98.3432 1/16 in.	DRAWN -	REVISED -	VAR			REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	29	
PLOT DATE = 10/27/2021	CHECKED -	REVISED -	CONTRACT NO. 46586							
	DATE -	REVISED -	ILLINOIS FED. AID PROJECT							

$\frac{3}{16}$ " ϕ stainless steel
U-bolt with hot dip galvanized locknuts and stainless steel washers, typ. $\frac{3}{8}$ " ϕ holes in $2\frac{1}{2}$ " ϕ tube



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

PLAN DETAIL "A"
Span between Panel Points

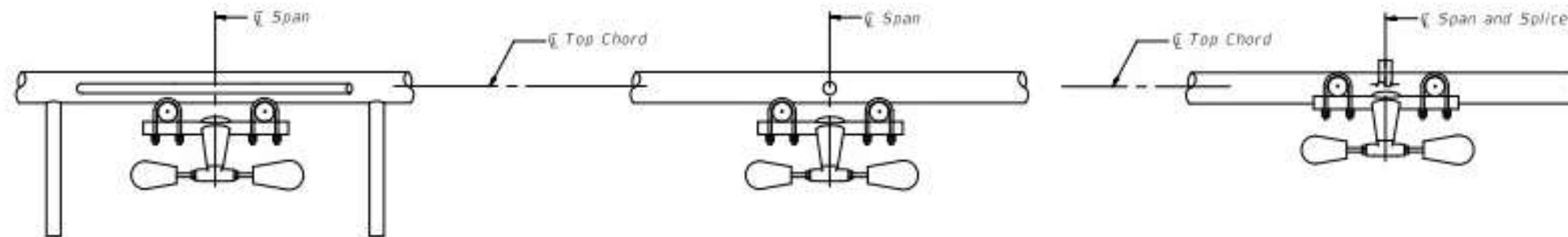
PLAN DETAIL "B"
Span at Panel Point

PLAN DETAIL "C"
Span at Chord Splice

NOTES

Damper: One damper per truss. (31 lbs. minimum 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...

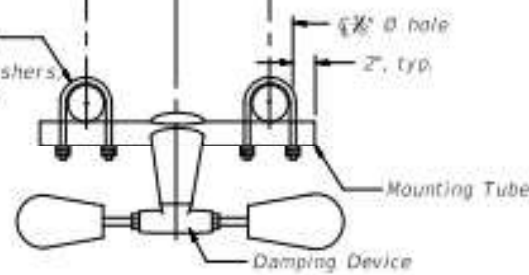


SECTION A-A

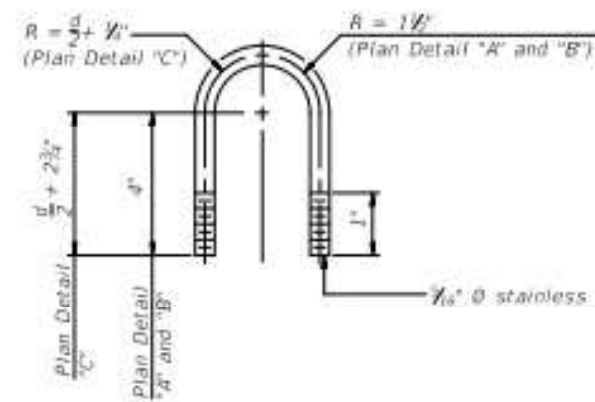
SECTION B-B

SECTION C-C

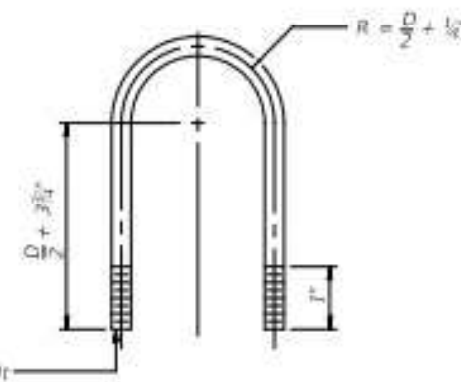
$\frac{3}{16}$ " ϕ stainless steel
U-bolt with hot dip galvanized locknuts and stainless steel washers, typ. $\frac{3}{8}$ " ϕ holes in mounting tube



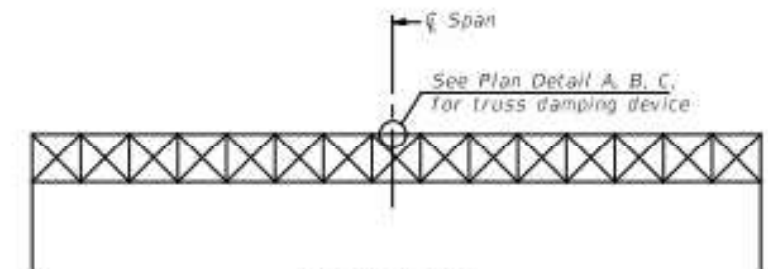
TRUSS DAMPING DEVICE CONNECTION DETAIL
(Typical)



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL
(Typical)



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



ELEVATION
Aluminum Overhead Sign Truss

OS-A-D

2-17-2017

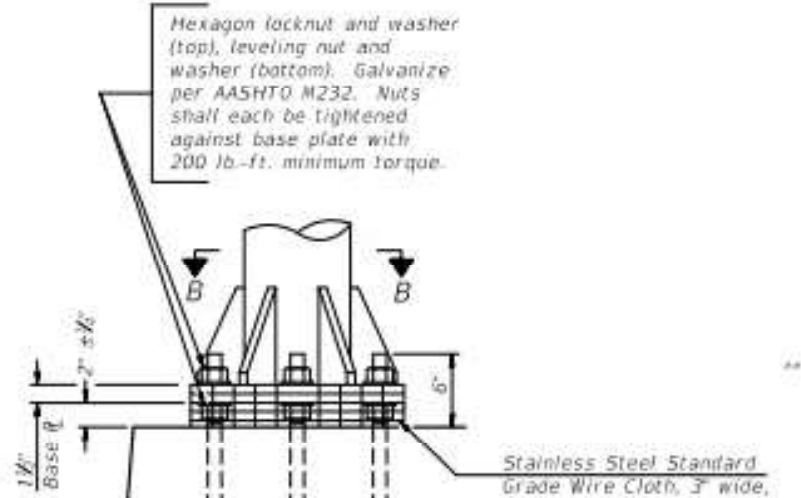
FILE NAME -	USER NAME - olsonmw	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

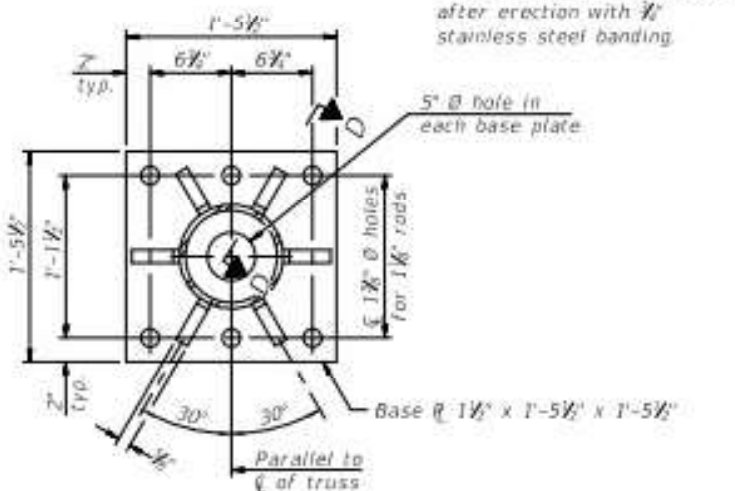
OVERHEAD SIGN STRUCTURE
DAMPING DEVICE

SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____

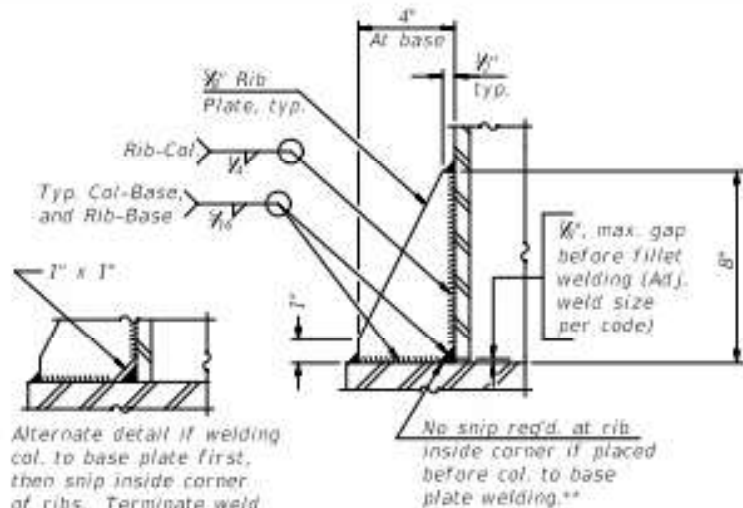
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	31
			CONTRACT NO. 46586	
ILLINOIS FED. AID PROJECT				



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

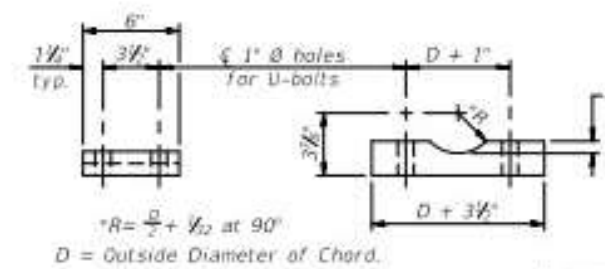


SECTION B-B



SECTION D-D

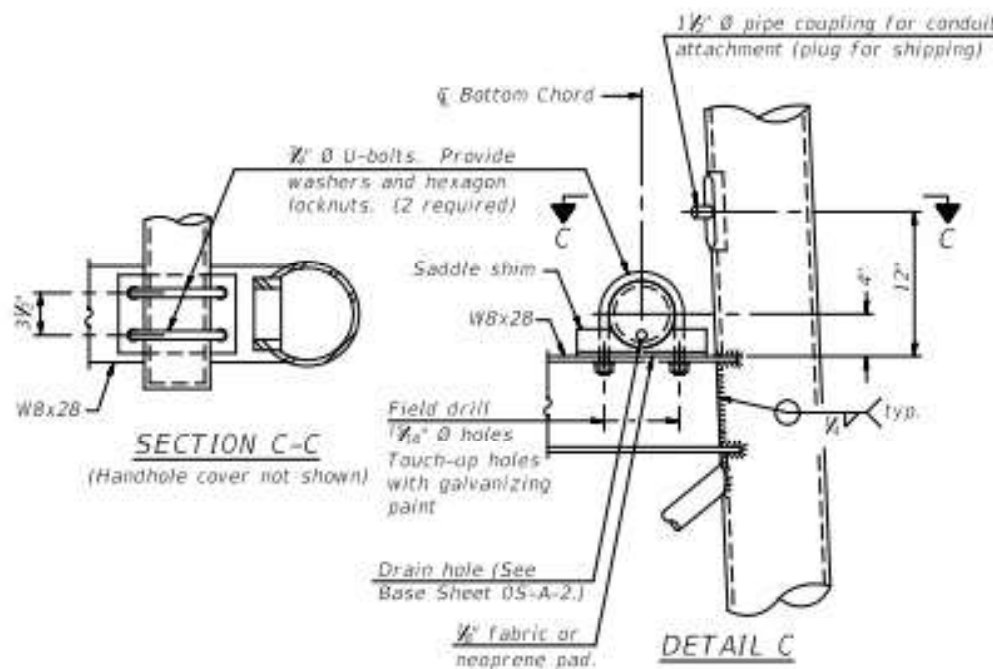
Alternate detail if welding col. to base plate first, then snip inside corner of ribs. Terminate weld on rib 1/4\"/>



SADDLE SHIM DETAIL

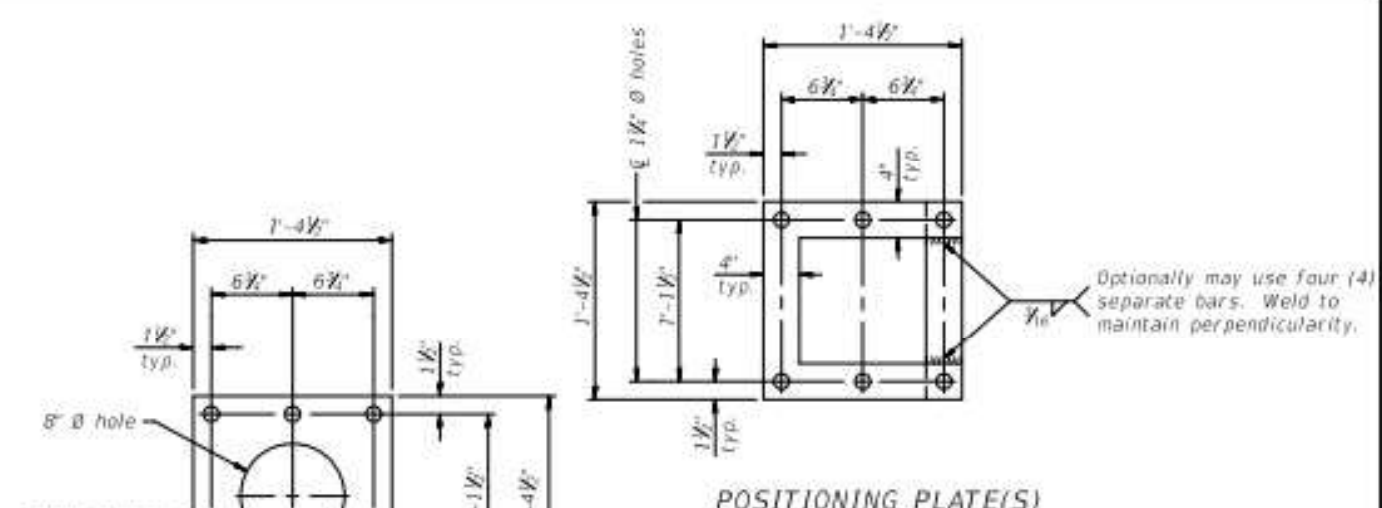
ASTM B26 Alloy 356-F
or
ASTM B209 Alloy 6061-T651
(4 required per sign truss)

Truss Chord Nominal Dia.	a
5"	1/2"
5 1/2"	3/8"
6"	1/2"
6 1/2"	3/8"

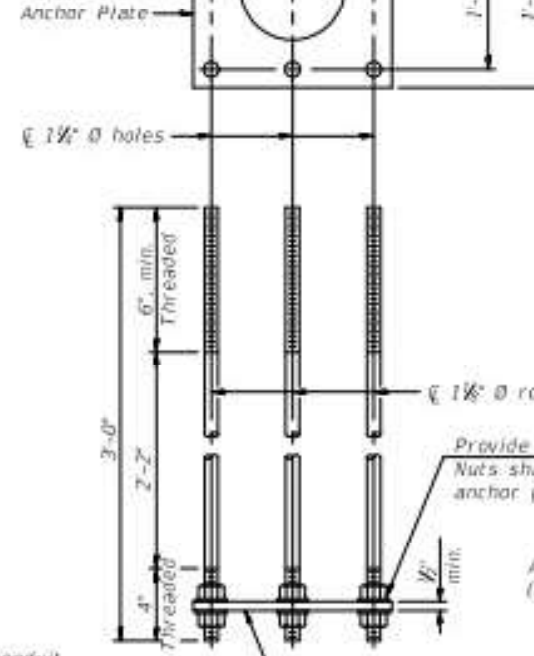


SECTION C-C

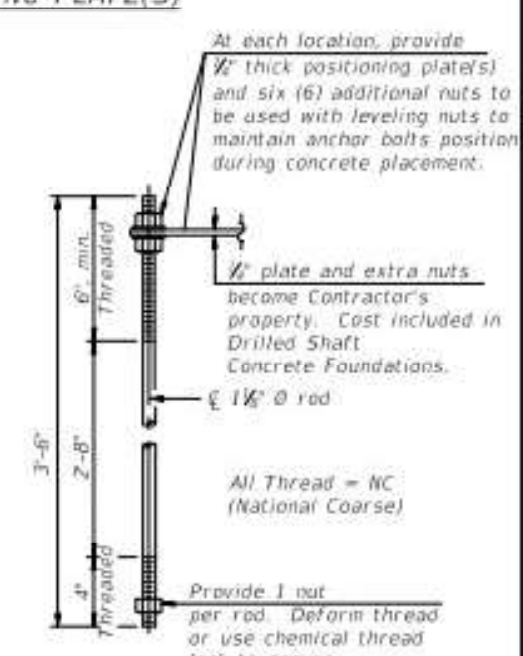
DETAIL C



POSITIONING PLATE(S)



ANCHOR ROD DETAIL
Spread Footing Foundation



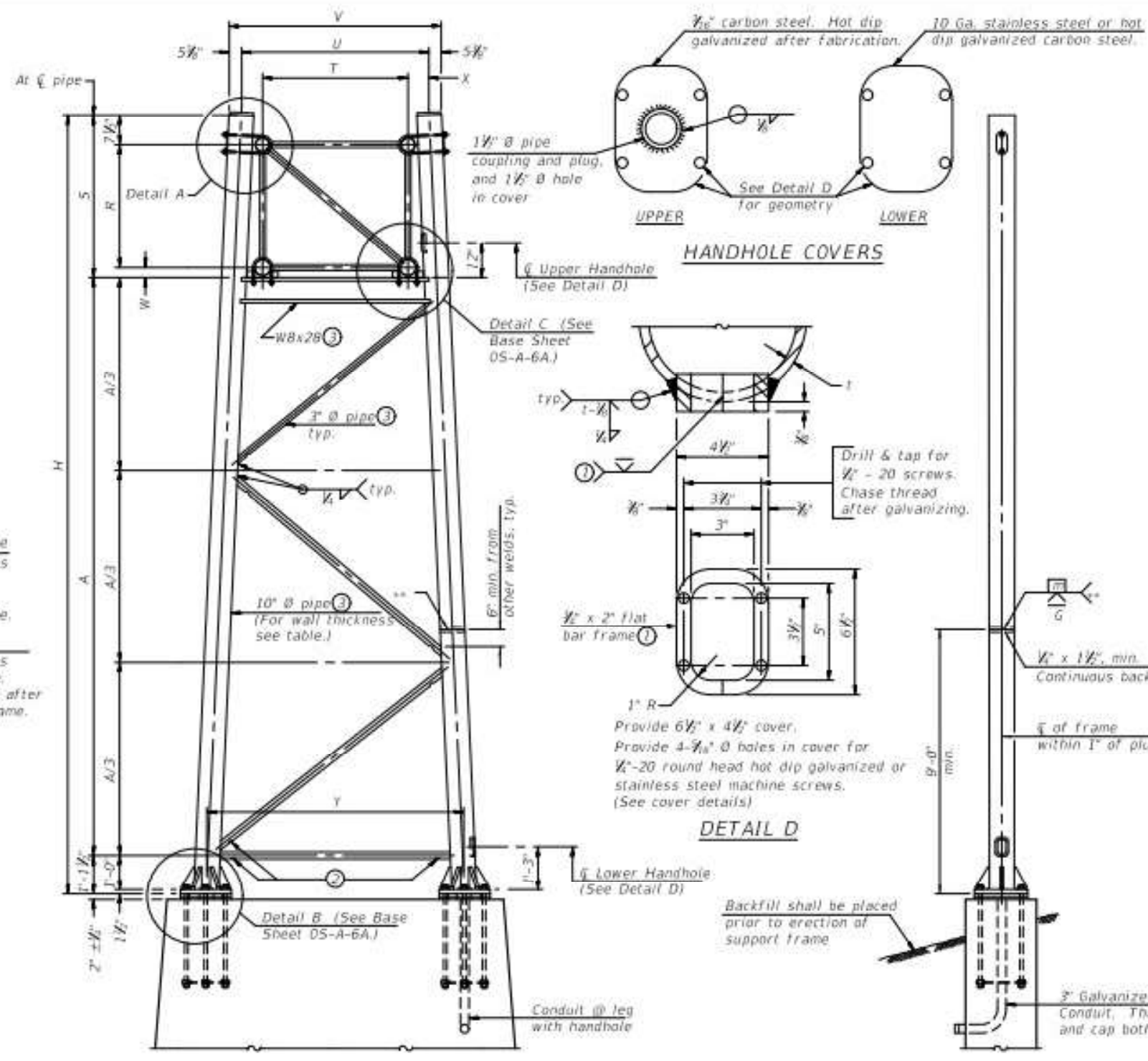
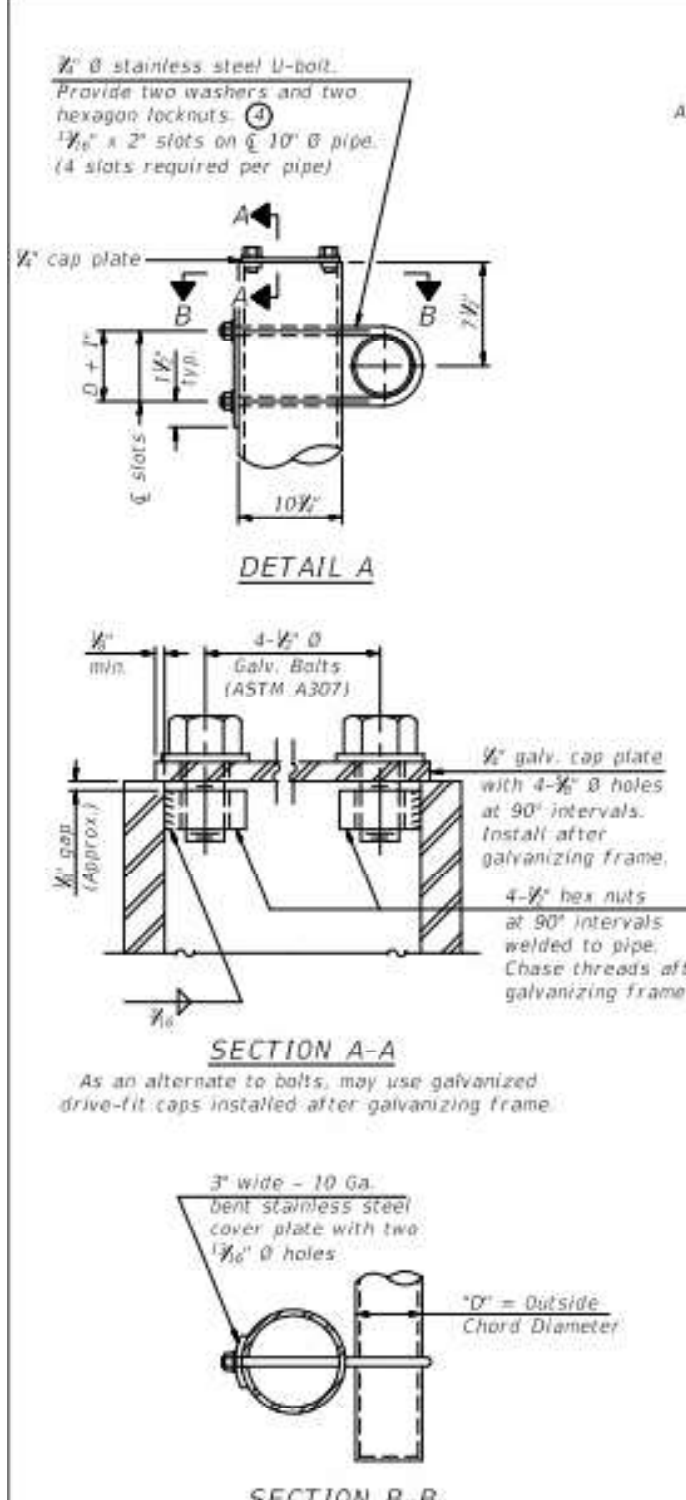
ANCHOR ROD DETAIL
Drilled Shaft Foundation

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

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

FILE NAME -	USER NAME - olsonm	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	33
			CONTRACT NO. 46586	
ILLINOIS FED. AID PROJECT				



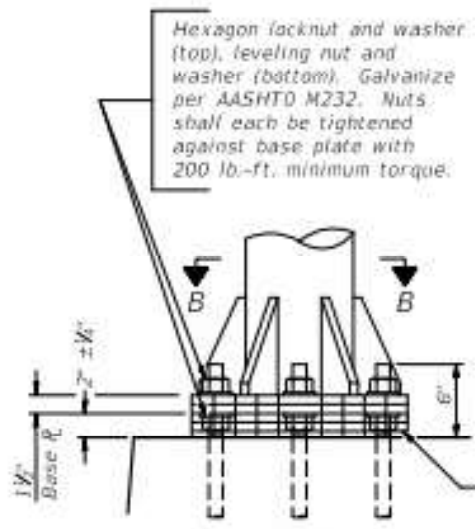
- Support Design Loads: See Base Sheet 05-A-1 for design and loading criteria.
 Load combinations checked include deadload plus:
 a) 100% wind normal to sign, 20% parallel to sign
 b) 60% wind normal to sign, 30% parallel to sign
- In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 μ in or less.
 - Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred, typ.
 - Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet 05-A-1.
 - See General Notes for fasteners.
 - Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.
 - "H" based on 15'-0" or actual sign height, whichever is greater.

For Foundation Details, see base sheet 05-F3 (Spread Footing) or 054-F3 (Drilled Shaft).

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

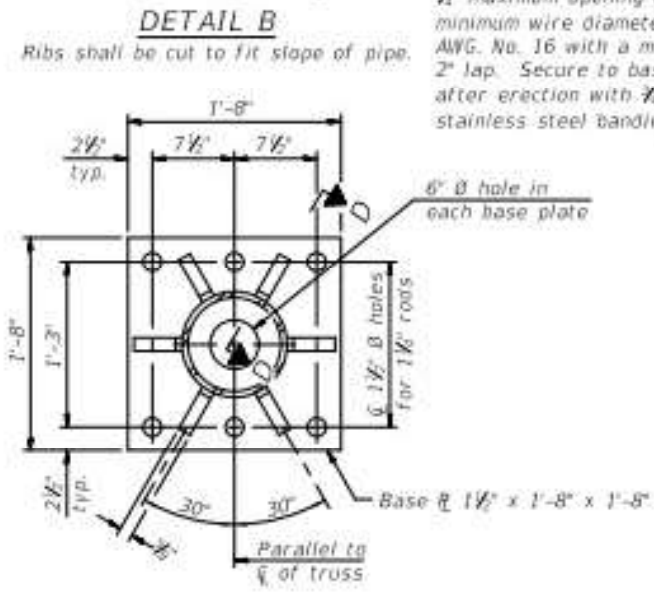
Truss Type	Dimensions							
	R	S	T	U	V	W	X	Y
I-A	4'-6"	5'-5 1/2"	4'-0"	5'-6"	6'-4 1/2"	4'	9'	8'-3"
II-A	5'-3"	6'-3 1/2"	4'-6"	6'-1"	6'-11 1/2"	4 1/2"	9 1/2"	8'-3"

Structure Number	Station	Support		Truss Type	Pipe Wall Thickness	H	A
		Left	Right				

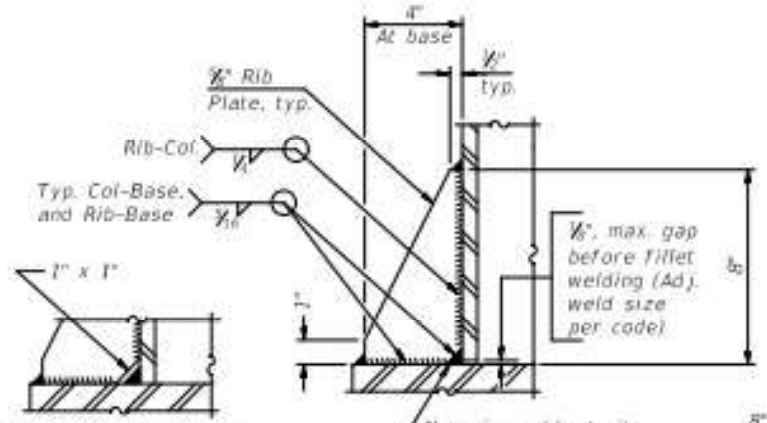


Hexagon locknut and washer (top), leveling nut and washer (bottom). Galvanize per AASHTO M232. Nuts shall each be tightened against base plate with 200 lb.-ft. minimum torque.

Stainless Steel Standard Grade Wire Cloth, 3" wide, 1/2" maximum opening with a minimum wire diameter of AWG. No. 16 with a minimum 2" lap. Secure to base plate after erection with 1/8" stainless steel banding.



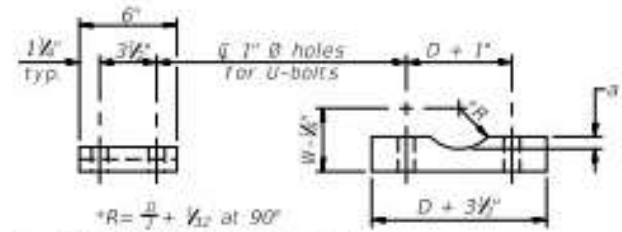
SECTION B-B



SECTION D-D

Alternate detail if welding col. to base plate first, then snip inside corner of ribs. Terminate weld on rib 1/2" from snip.

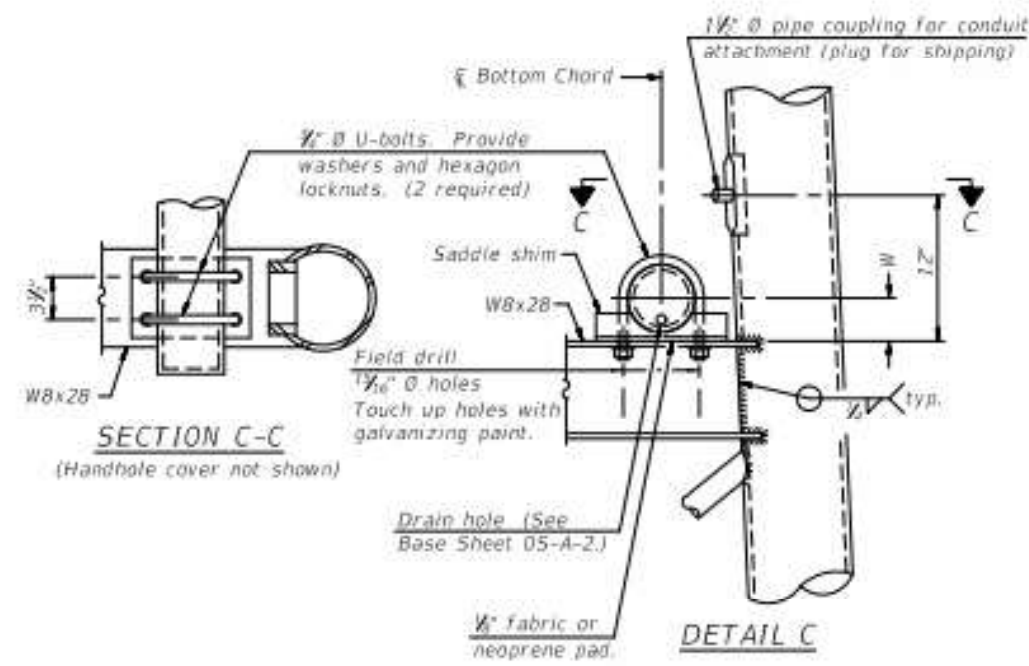
No snip req'd. at rib inside corner if placed before col. to base plate welding.



SADDLE SHIM DETAIL

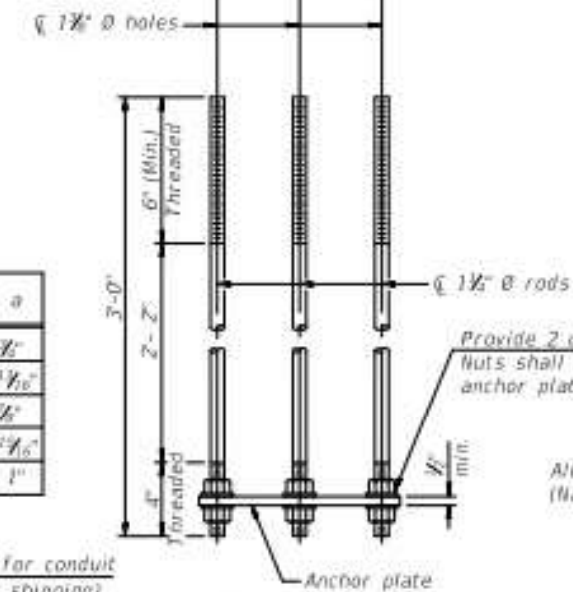
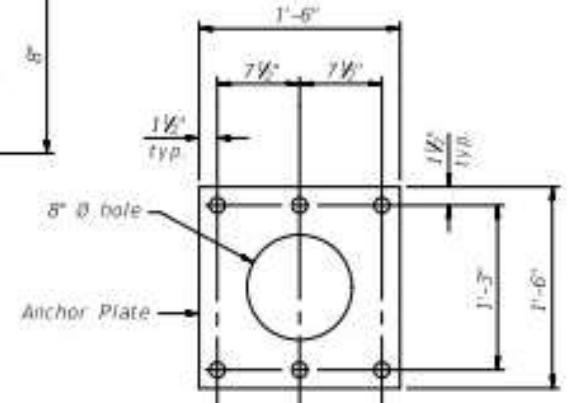
ASTM B26 Alloy 356-F or ASTM B209 Alloy 6061-T651 (4 required per sign truss)

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



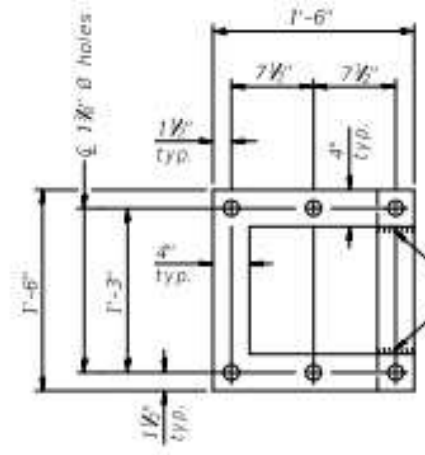
SECTION C-C

DETAIL C



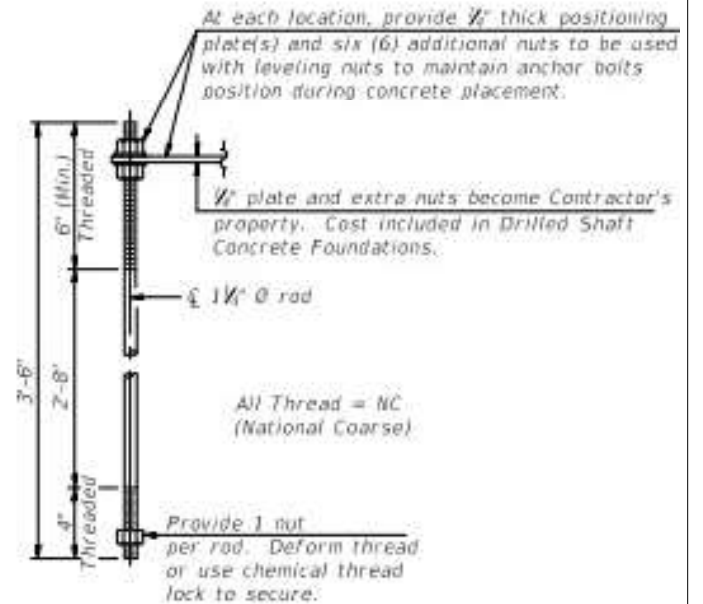
ANCHOR ROD DETAIL

Spread Footing Foundation



POSITIONING PLATE(S)

Optionally may use four (4) separate bars. Weld to maintain perpendicularity.



ANCHOR ROD DETAIL

Drilled Shaft Foundation

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

10" Ø PIPE SUPPORT FRAME DETAILS

05-A-6A 2-17-2017

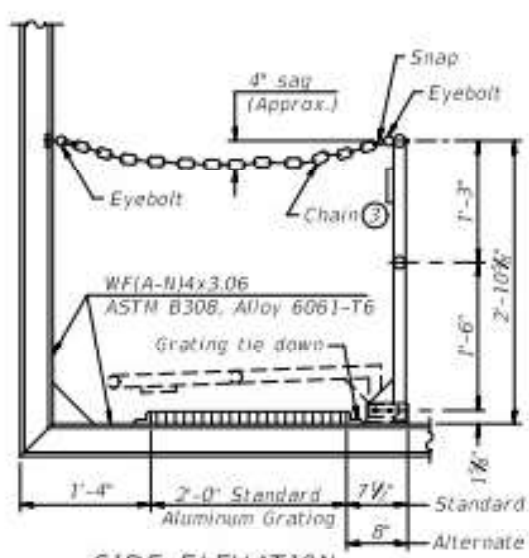
FILE NAME :	USER NAME : oisonmw	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

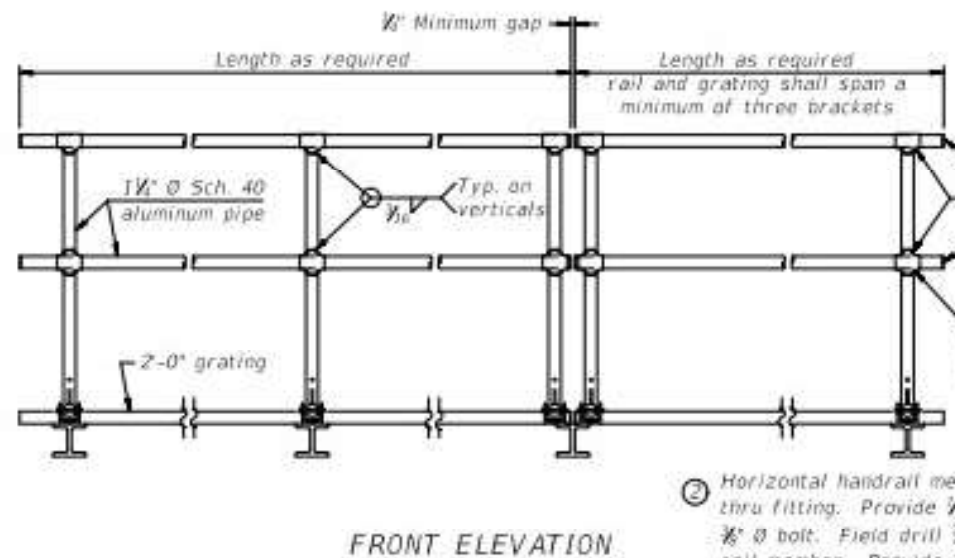
OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS - ALUMINUM TRUSS

SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	35
			CONTRACT NO. 46586	
ILLINOIS FED. AID PROJECT				



SIDE ELEVATION
(Showing safety chain w/o sign)

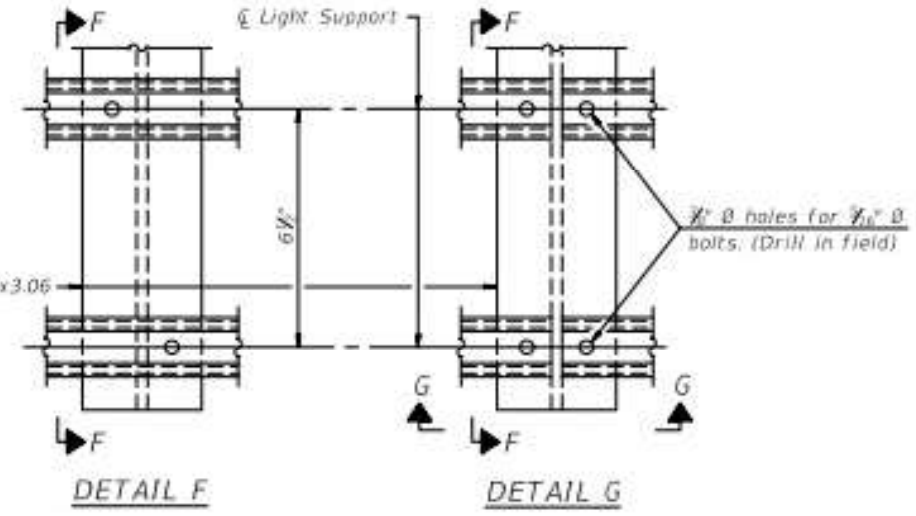


FRONT ELEVATION

HANDRAIL DETAILS

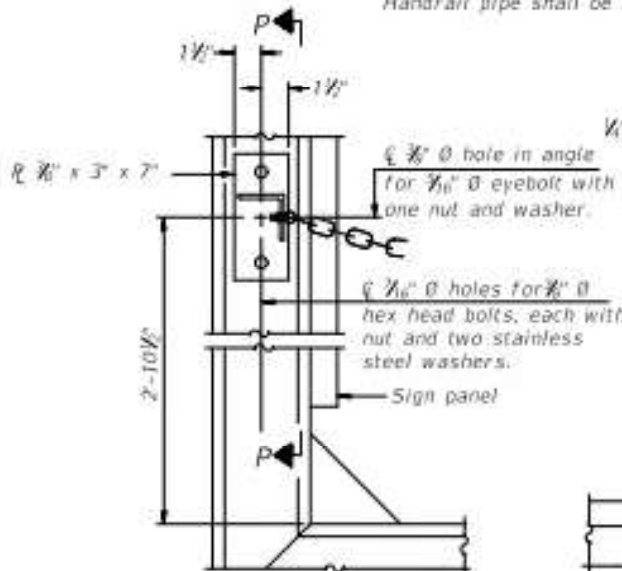
Handrail pipe shall be ASTM B241 or B429, Alloy 6063-T6 or Alloy 6061-T6.

- ① Install standard force-fit end caps or weld 1/2" end plates with 1/2" 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 1/2" bolt. Field drill 1/16" hole in horizontal rail member. Provide locknut and two stainless steel washers for bolt. (Use 1/4" eyebolts in 1/4" holes on top rail at ends only.)

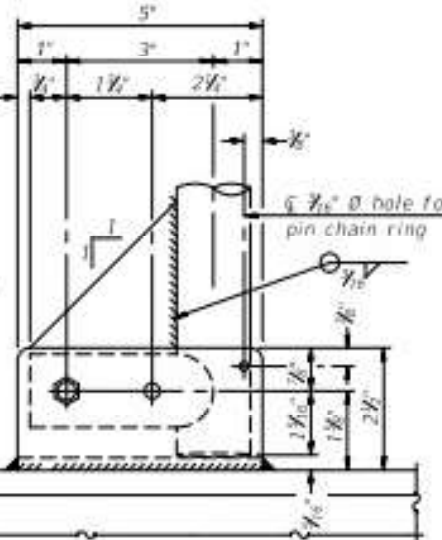


DETAIL F

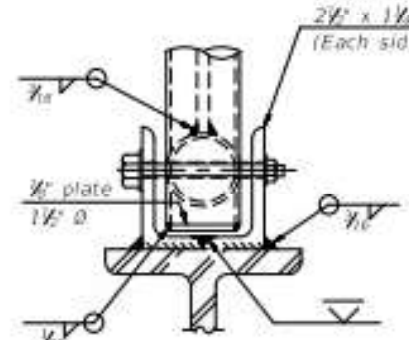
DETAIL G



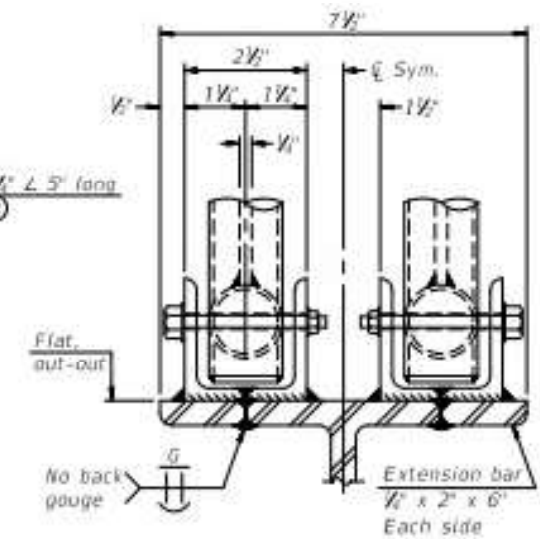
ALTERNATE SAFETY CHAIN ATTACHMENT
(With Sign Present)
Items not shown same as "Side Elevation" of "Handrail Details"



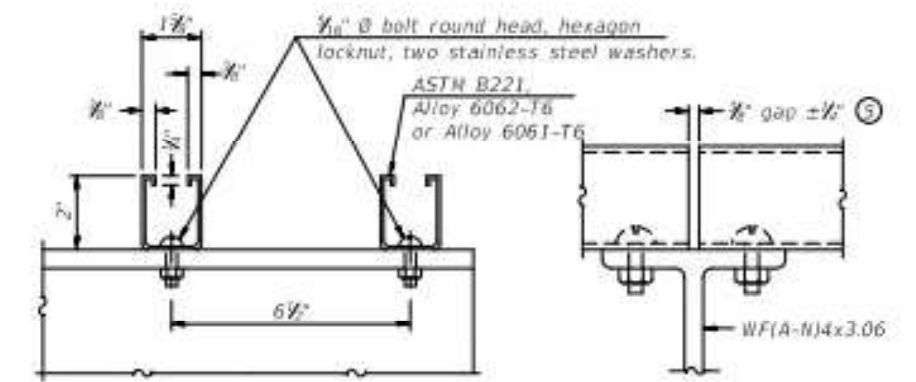
SIDE ELEVATION



FRONT ELEVATION
See "Elevation" at right for dimensions.



ELEVATION AT HANDRAIL JOINT ④

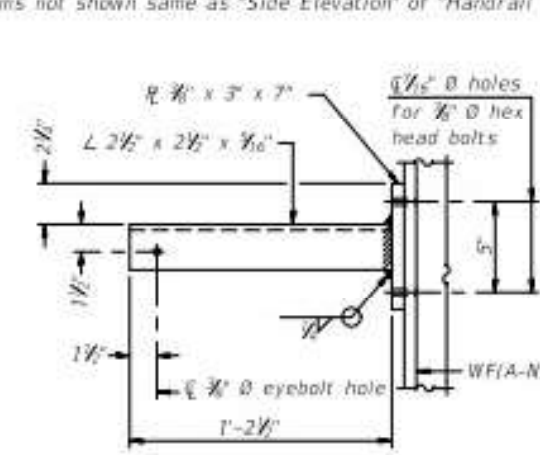


SECTION F-F

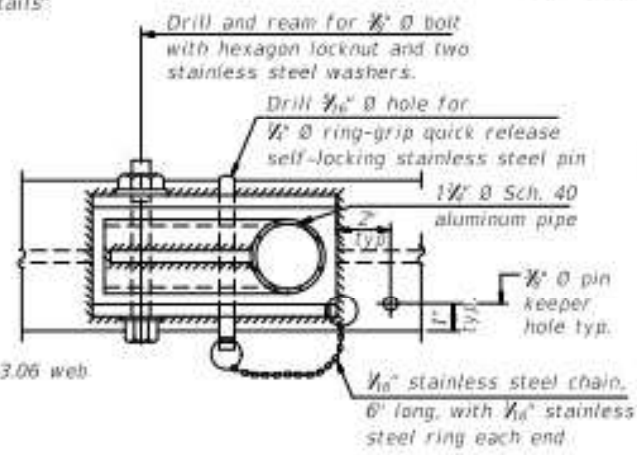
SECTION G-G

LIGHTING FIXTURE MOUNTS (IF REQUIRED)

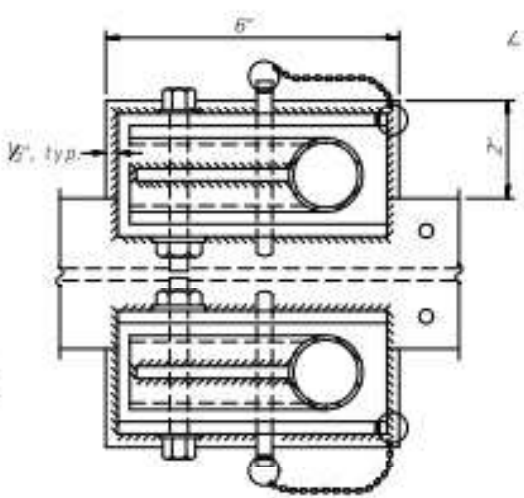
- ⑤ Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.



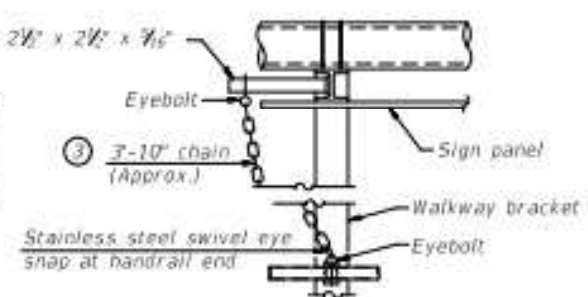
SECTION P-P



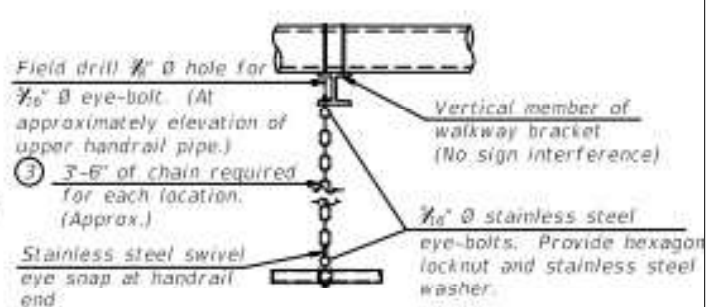
PLAN DETAIL E HANDRAIL HINGE



PLAN AT HANDRAIL JOINT
Details not shown same as "PLAN"



ALTERNATE SAFETY CHAIN ATTACHMENT
Details not shown similar to "Safety Chain" Details (Walkway omitted for clarity)



SAFETY CHAIN
One required for each end of each walkway.

- ③ 1/2" Type 304L stainless steel chain, approximately 12 links per foot.
- ④ Extrusions may be used in lieu of the details shown, with approval of the Engineer.

OS-A-11 2-17-2017

FILE NAME -	USER NAME - olsonm	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
ALUMINUM HANDRAIL DETAILS

SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	38
			CONTRACT NO. 46586	
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

SPECIFICATIONS:

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.

MINIMUM CLEARANCE: 3' greater than bridge members at all locations. (All Obstructions)

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

MATERIALS: 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 (M183, M223 Gr. 50.)

HIGH STRENGTH BOLTS: All bolts, washers, nuts and locknuts shall satisfy the requirements of ASTM designation A307 unless noted as "H.S." which shall require AASHTO M164 (A325), ASTM A449, or approved alternate. All fasteners shall be hot dip galvanized per AASHTO M232 unless otherwise specified.

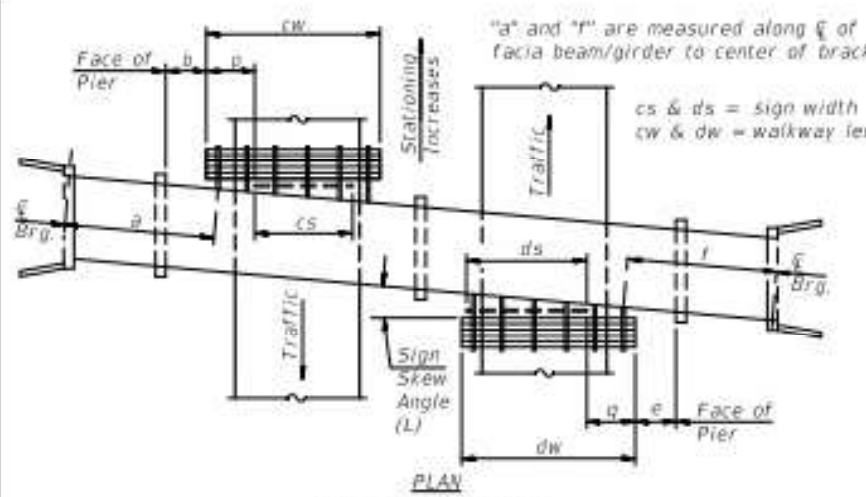
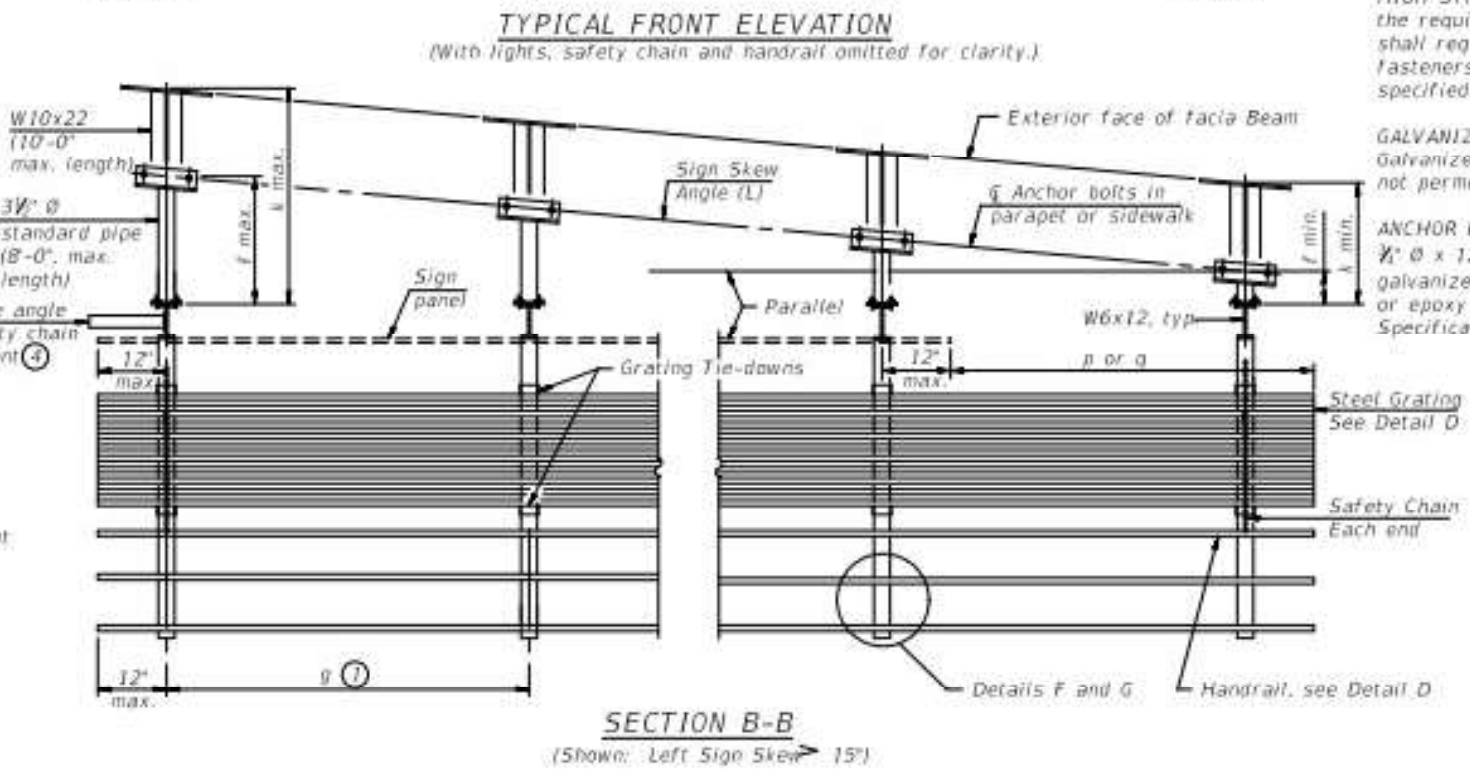
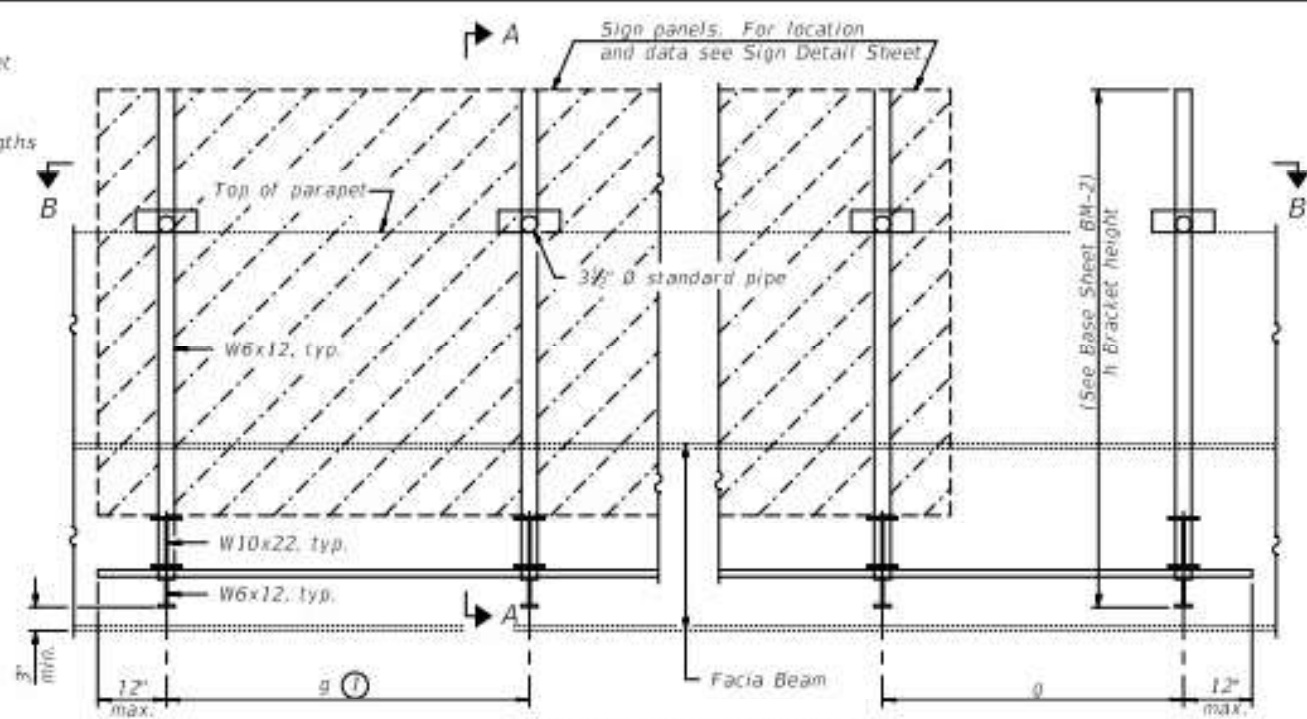
GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: All-threaded rod shall conform to ASTM F1554 Grade 105, 3/4" ϕ x 12" long, each with one plate washer and locknut and be hot dip galvanized per AASHTO M232. They shall be either cast into the concrete or epoxy grouted in accordance with Section 584 of the Standard Specifications. Minimum embedment in concrete shall be 9".

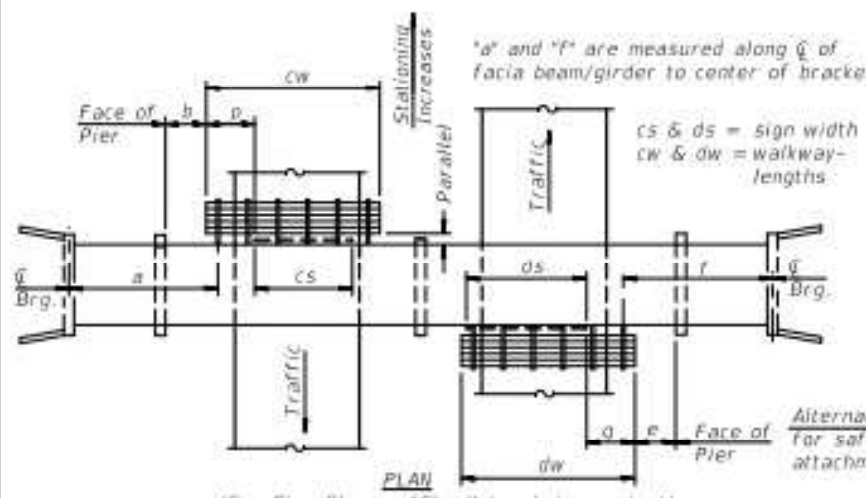
- ① Bracket spacing $g \leq 6'-0"$, max. Spacing shall be uniform if possible but may vary $\pm 6"$ to miss existing obstruction (rail post, light poles, web stiffeners, splice plates, etc.). Adjust bracket lengths accordingly on skewed structures.
- ② Any design modifications shall be based on the current version of applicable specifications and submitted for the Engineer's approval.
- ③ Unit price includes grating, handrail, brackets, supports, anchor bolts, fasteners, fabrication, delivery, erection, field drilling and other necessary items. Limits of payment are based on grating length (cw, dw) unless otherwise specified. For Safety Chain Details and Details D, F, and G, see Base Sheet BM-4.
- ④ If walkway bracket at safety chain location is behind sign, add angle to bracket. See detail on Base Sheet BM-4.

TOTAL BILL OF MATERIAL

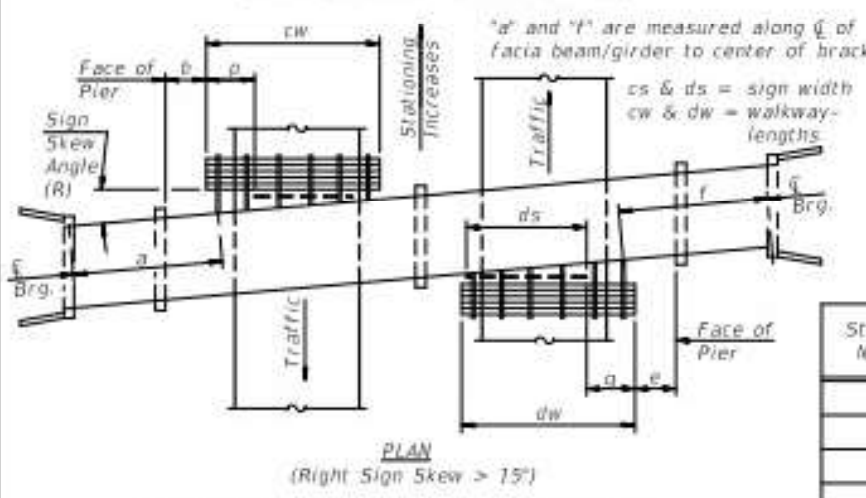
③ OVERHEAD SIGN STRUCTURE-BRIDGE MOUNTED	Foot
--	------



WALKWAY AND HANDRAIL SKETCH
(Road plan beneath structure varies.)



WALKWAY AND HANDRAIL SKETCH
(Road plan beneath structure varies.)



WALKWAY AND HANDRAIL SKETCH
(Road plan beneath structure varies.)

Structure Number	Sign Skew Angle (L) or (R)	Bridge Station	Bridge Structure Number	Contract Route Designation	a	b	cs	cw	ds	dw	e	f	g	No. of Brackets (Total)	p	q	Total Grating/Hndrl. Lengths (cw + dw)

Dimensions a, b, e, f & g may vary as approved by the Engineer, see ①. When cw < cs and/or dw < ds, use alternate brackets without walkway supports where applicable, see ③.

BM-1 2-17-2017

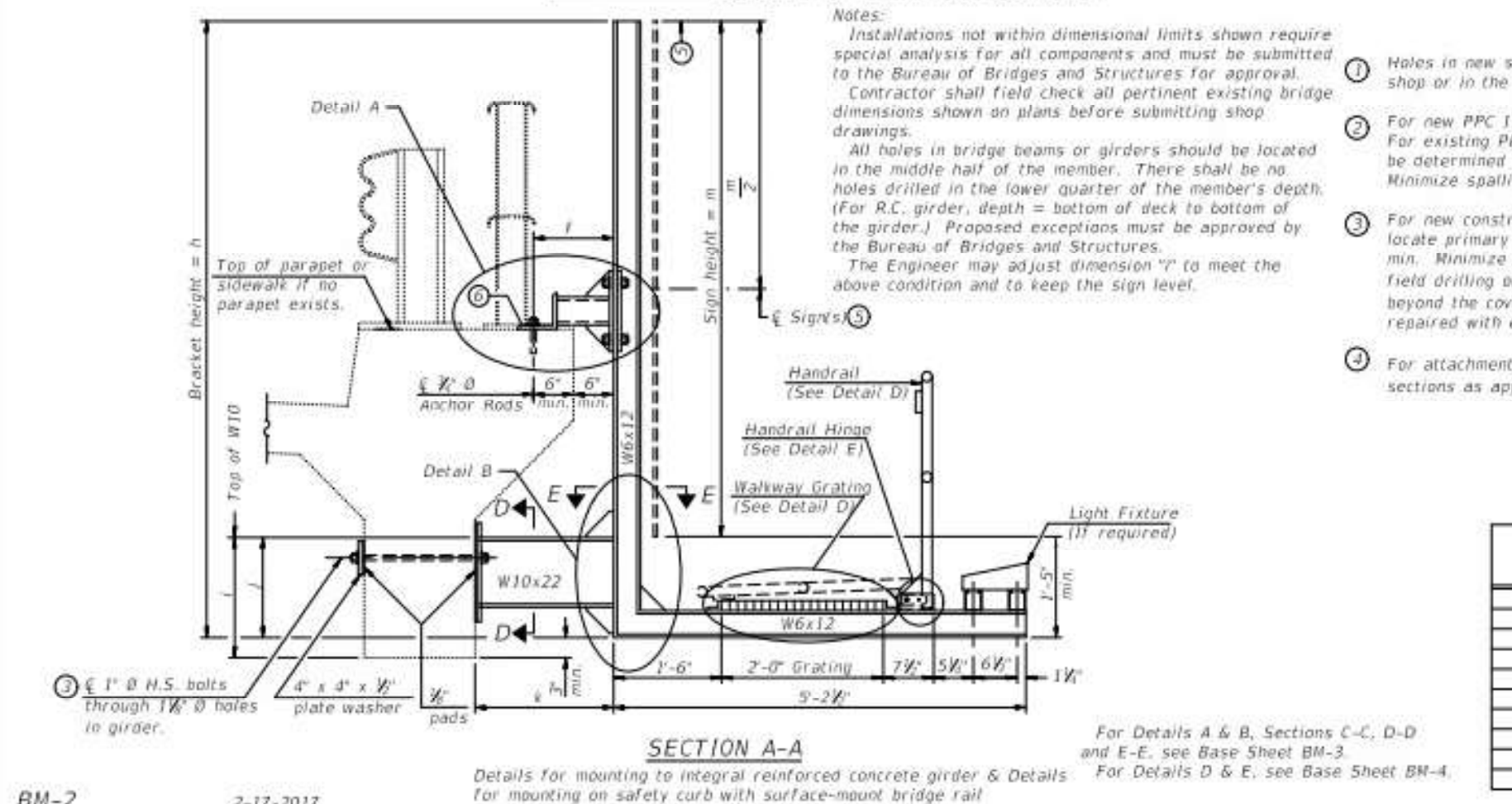
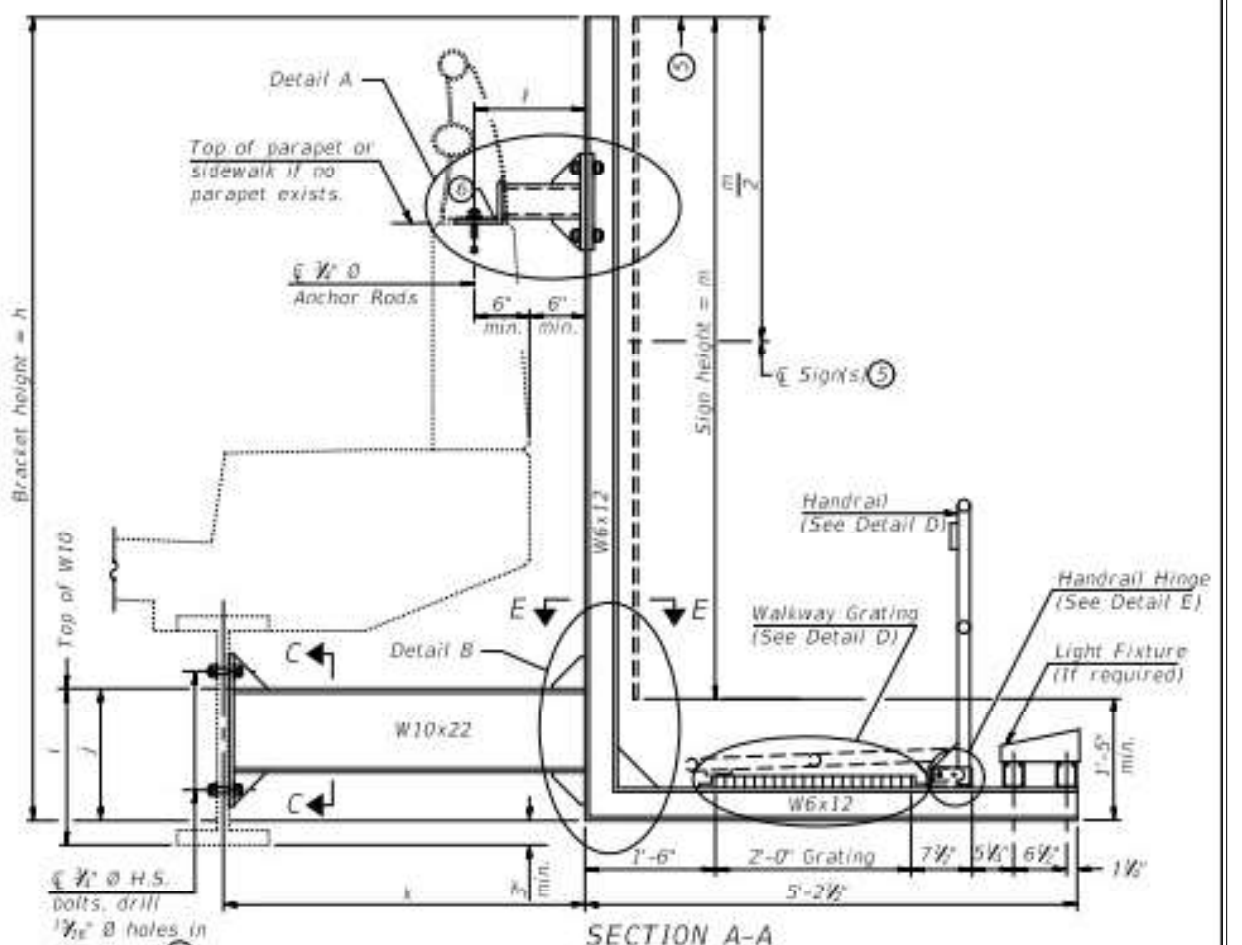
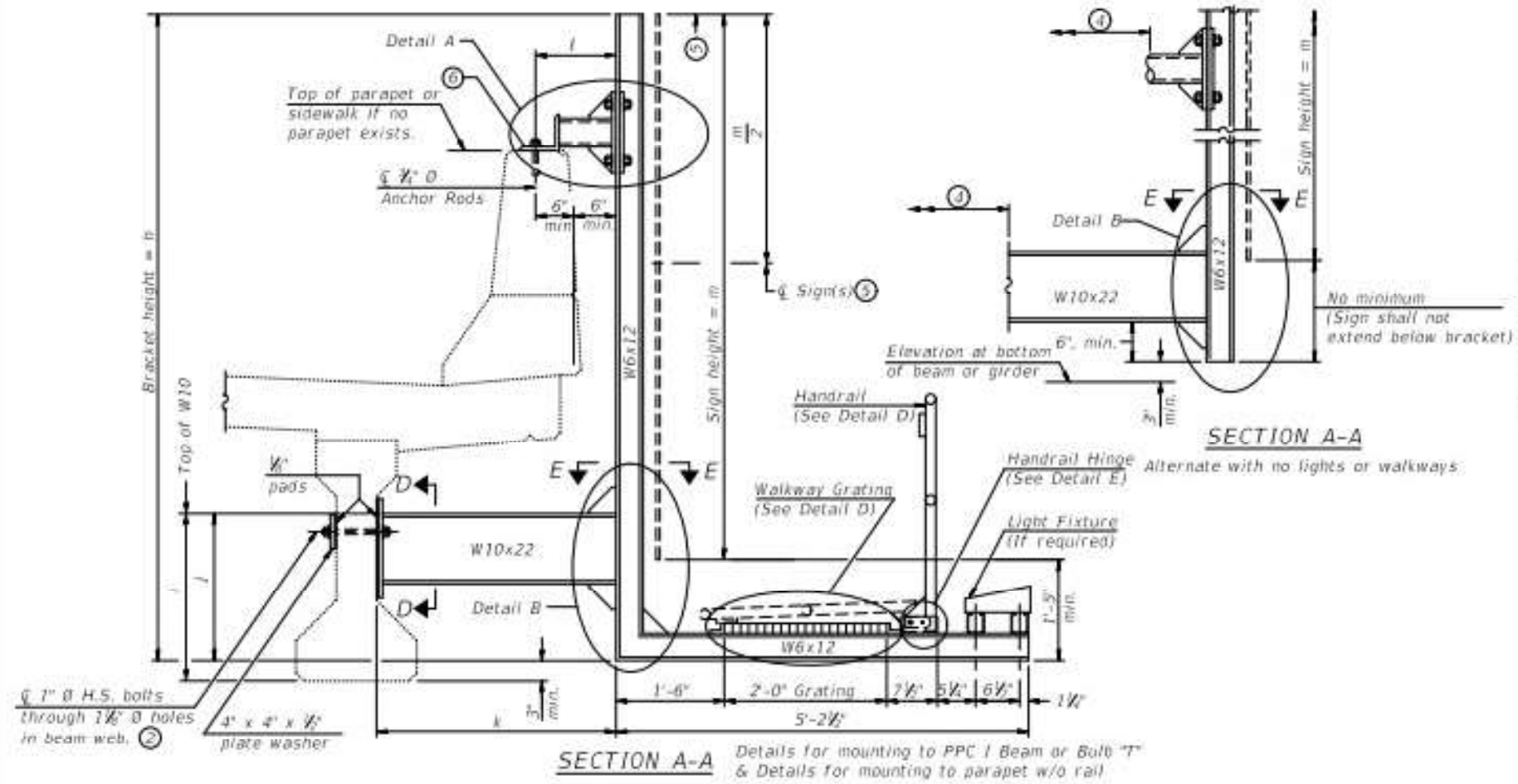
FILE NAME -	USER NAME - olsonw	DESIGNED -	REVISED -
PLOT SCALE - 98.3432' / in.		DRAWN -	REVISED -
PLOT DATE - 10/27/2021		CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE MOUNT SIGN STRUCTURES
GENERAL PLAN AND ELEVATION

SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	39
			CONTRACT NO. 46586	
ILLINOIS FED. AID PROJECT				



Notes:
 Installations not within dimensional limits shown require special analysis for all components and must be submitted to the Bureau of Bridges and Structures for approval.
 Contractor shall field check all pertinent existing bridge dimensions shown on plans before submitting shop drawings.
 All holes in bridge beams or girders should be located in the middle half of the member. There shall be no holes drilled in the lower quarter of the member's depth. (For R.C. girder, depth = bottom of deck to bottom of the girder.) Proposed exceptions must be approved by the Bureau of Bridges and Structures.
 The Engineer may adjust dimension 'i' to meet the above condition and to keep the sign level.

- ① Holes in new steel members may be drilled in the fabrication shop or in the field. Field drill existing members.
- ② For new PPC I beams, holes shall be formed during casting. For existing PPC I beams, prestressing strand locations shall be determined and spaced to miss strands by 6", min. Minimize spalling during field drilling of existing beams.
- ③ For new construction, form holes. For existing RC beams, locate primary reinforcement and space holes to miss by 6", min. Minimize spalling and concrete fracturing/damage during field drilling of existing concrete. Spalls over 1/2" deep or beyond the coverage of the 4x4 plate washer shall be repaired with epoxy mortar before installing washer.
- ④ For attachment details of 3/4" pipe and W10x22, see other sections as applicable.
- ⑤ Sign shall not extend more than 6" above top of bracket, and this dimension may vary to keep sign level if bridge is on grade or vertical curve. Multiple signs of various heights shall share a common horizontal centerline and use equal bracket heights. If no sign is attached to a W6x12 vertical (bracket only supporting walkway), dimension h shall be the same as an adjacent bracket with a sign attached, unless Engineer specifically directs shorter brackets due to locational restraints on future uses. (See Detail A for minimum bracket height.)
- ⑥ For bridge mounted sign structures installed on new bridges with railing, during design, bracket spacing must be coordinated with railing post spacing and the Contractor must install upper brackets prior to railing installation. For bridge mounted sign structures installed on existing bridges with railing, during design, brackets spacing must be coordinated with railing post spacing and the Contractor must temporarily remove sections of railing to facilitate upper bracket installation. If it is determined during design that existing railings can't be removed, alternate upper connection details must be developed for the contract plans and approved by the Bureau of Bridges and Structures.

Structure Number	Station	h	i	j	k max. (10'-0" max.)	l max. (8'-0" max.)	m (15'-0" max.)

BM-2 2-17-2017

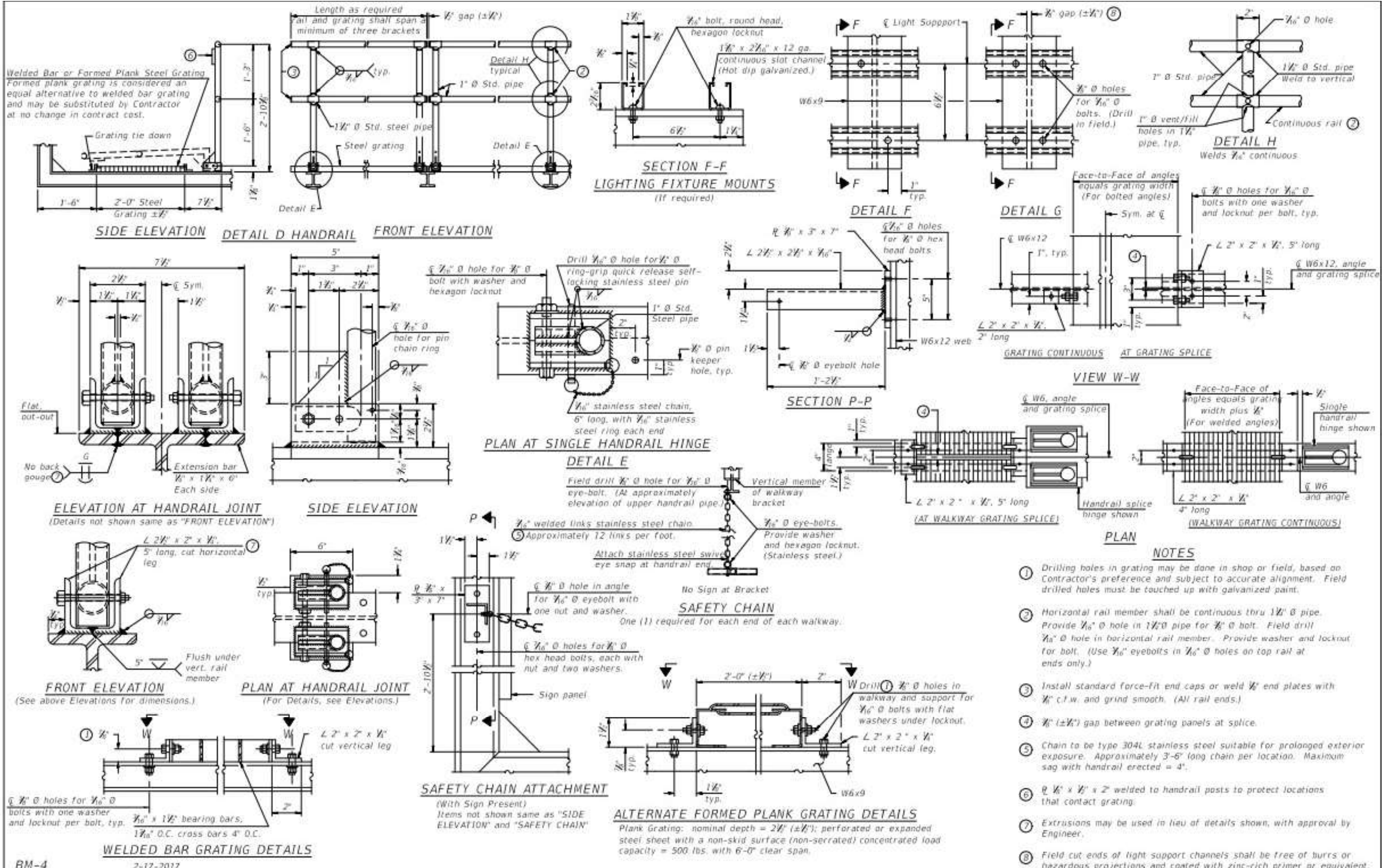
Details for mounting to integral reinforced concrete girder & Details for mounting on safety curb with surface-mount bridge rail. For Details A & B, Sections C-C, D-D and E-E, see Base Sheet BM-3. For Details D & E, see Base Sheet BM-4.

FILE NAME :	USER NAME : olsonmw	DESIGNED -	REVISED -
PLOT SCALE : 98.3432 ' / in.	DRAWN -	REVISED -	REVISED -
PLOT DATE : 10/27/2021	CHECKED -	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BRIDGE MOUNT SIGN STRUCTURES
 WALKWAY AND CONNECTION DETAILS

SCALE: _____	SHEET NO. 1 OF 1 SHEET	STA. _____ TO STA. _____	F.A. RTE. _____	SECTION _____	COUNTY _____	TOTAL SHEETS _____	SHEET NO. _____
			VAR _____	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	40
						CONTRACT NO. 46586	
ILLINOIS FED. AID PROJECT							



BM-4 2-17-2017

FILE NAME :	USER NAME : olsonmw	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

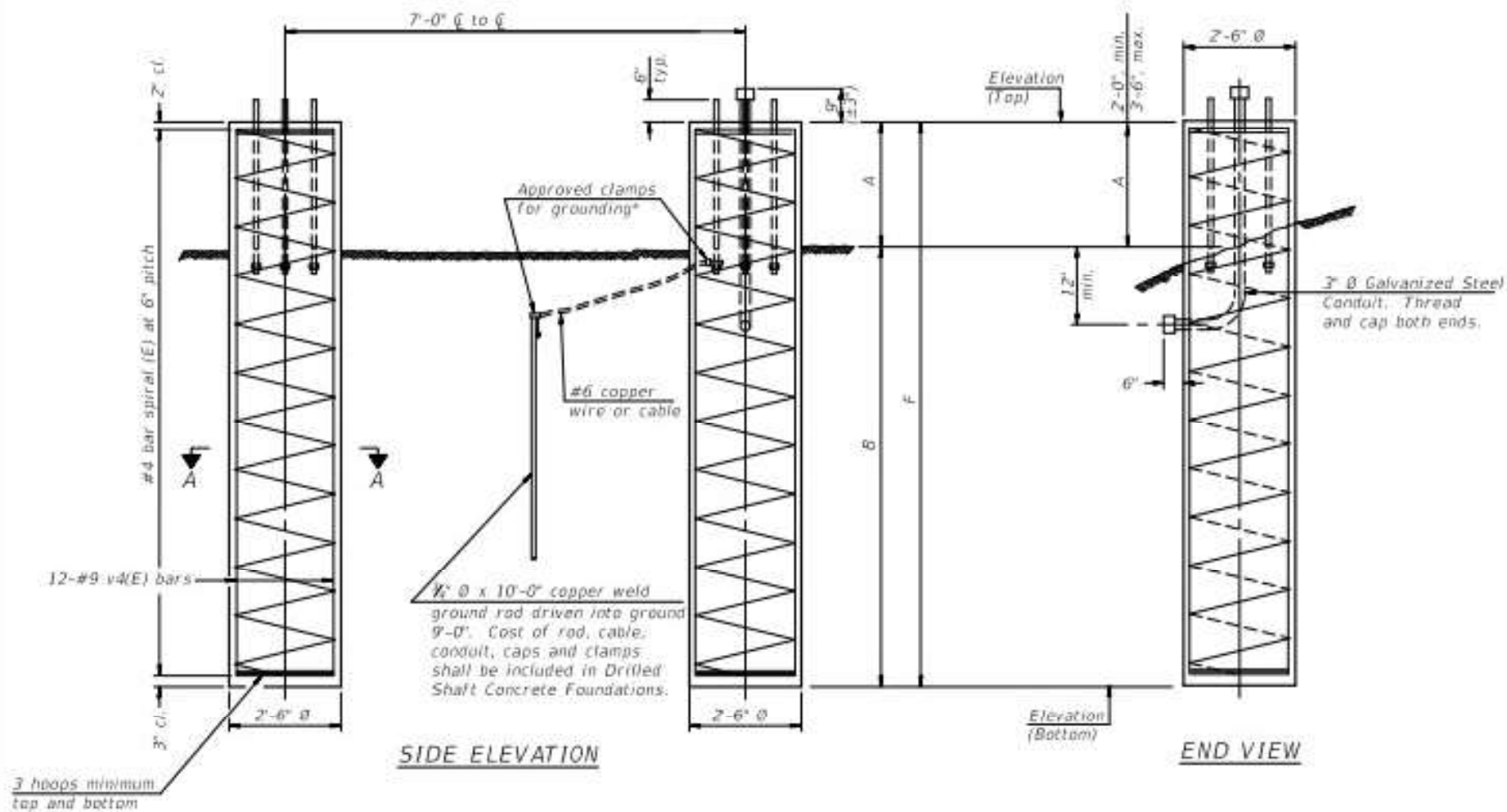
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE MOUNT SIGN STRUCTURES
WALKWAY DETAILS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	42
SCALE: _____			CONTRACT NO. 46586	
SHEET NO. 1 OF 1 SHEET			ILLINOIS FED. AID PROJECT	

BAR LIST - EACH FOUNDATION

Bar	Number	Size	Length	Shape
v4(E)	16	#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.

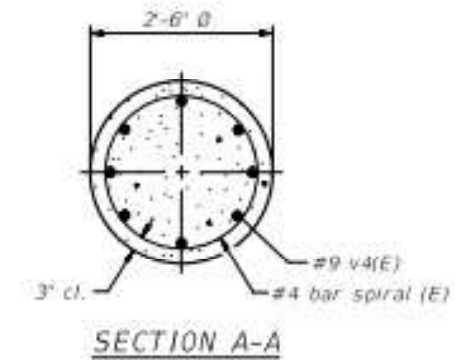
If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District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

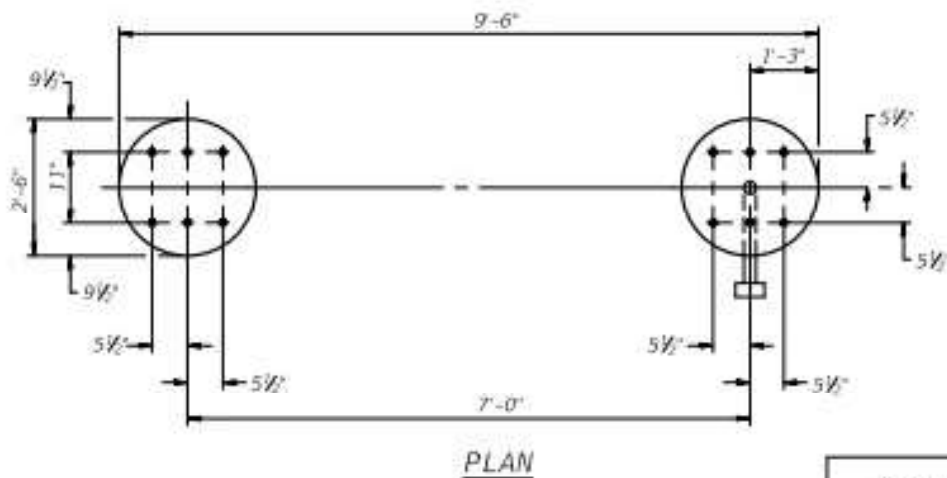
A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in Drilled Shaft Concrete Foundation.



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

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

DETAILS FOR 6" Ø SUPPORT FRAME TYPE I-A TRUSS

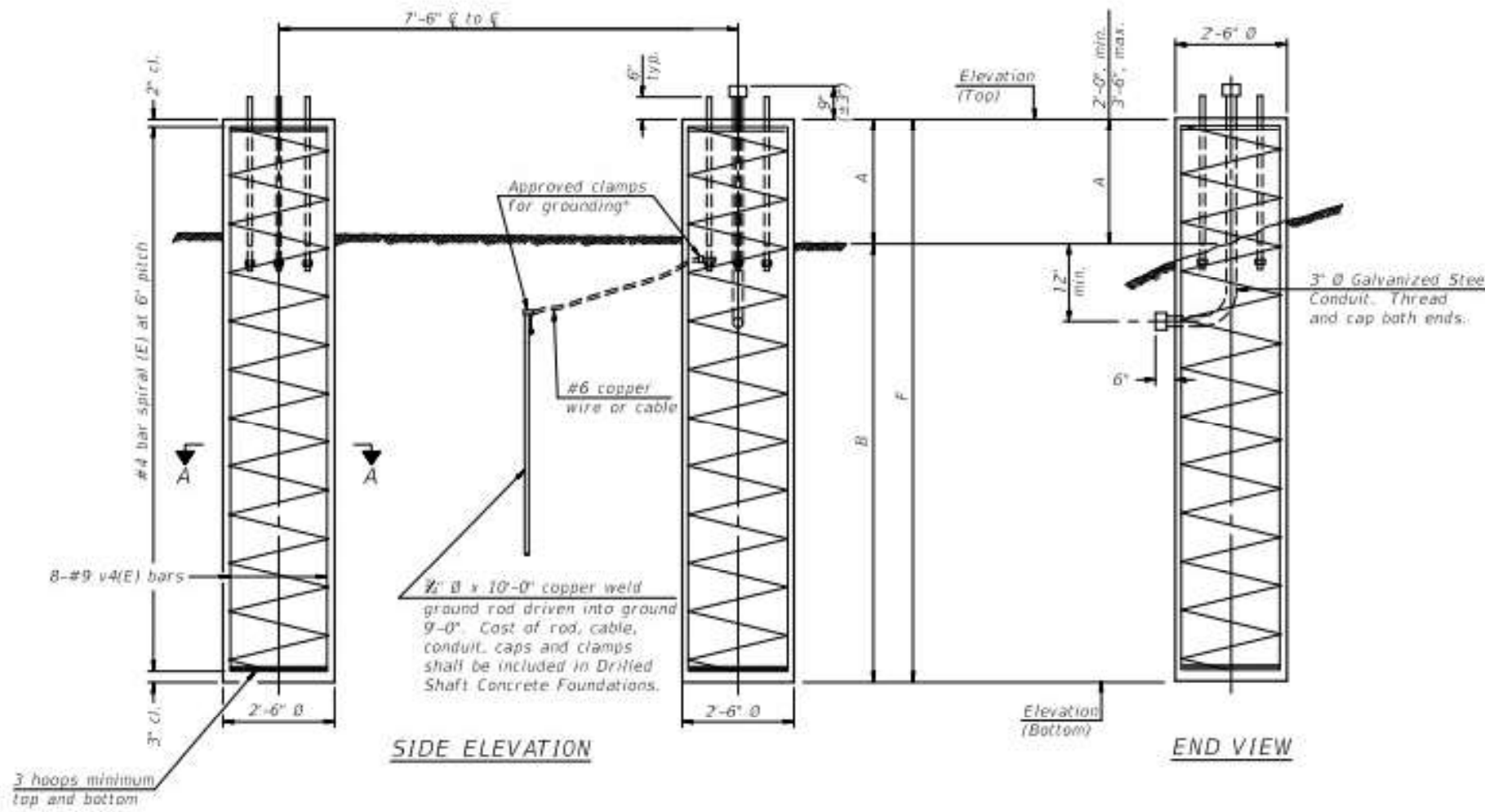


Structure Number	Station	Left Foundation				Right Foundation				Class DS Concrete (Cu. Yds.)		
		Elevation Top	Elevation Bottom	A	B	F	Elevation Top	Elevation Bottom	A		B	F

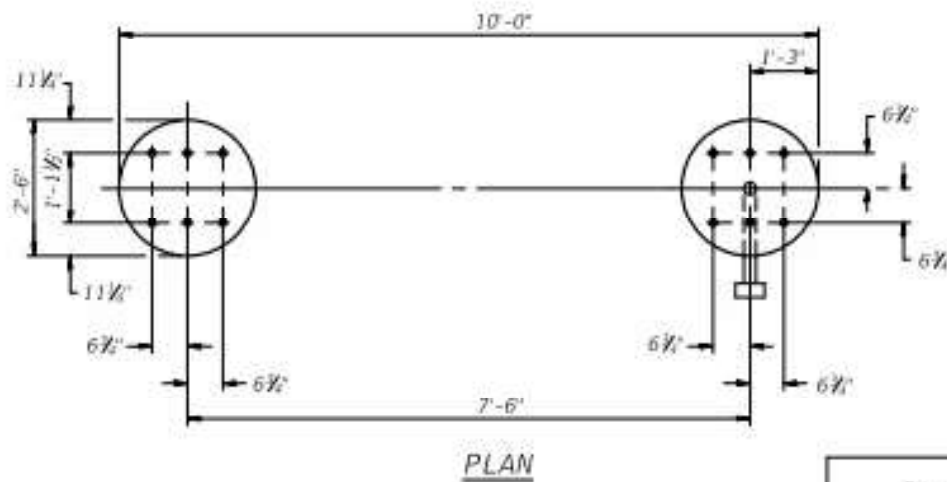
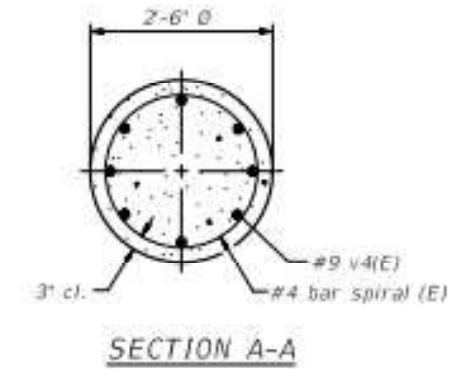
054-F1 2-17-2017

BAR LIST - EACH FOUNDATION

Bar	Number	Size	Length	Shape
v4(E)	16	#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 Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6' below finished ground line. Cost included in Drilled Shaft Concrete Foundation.



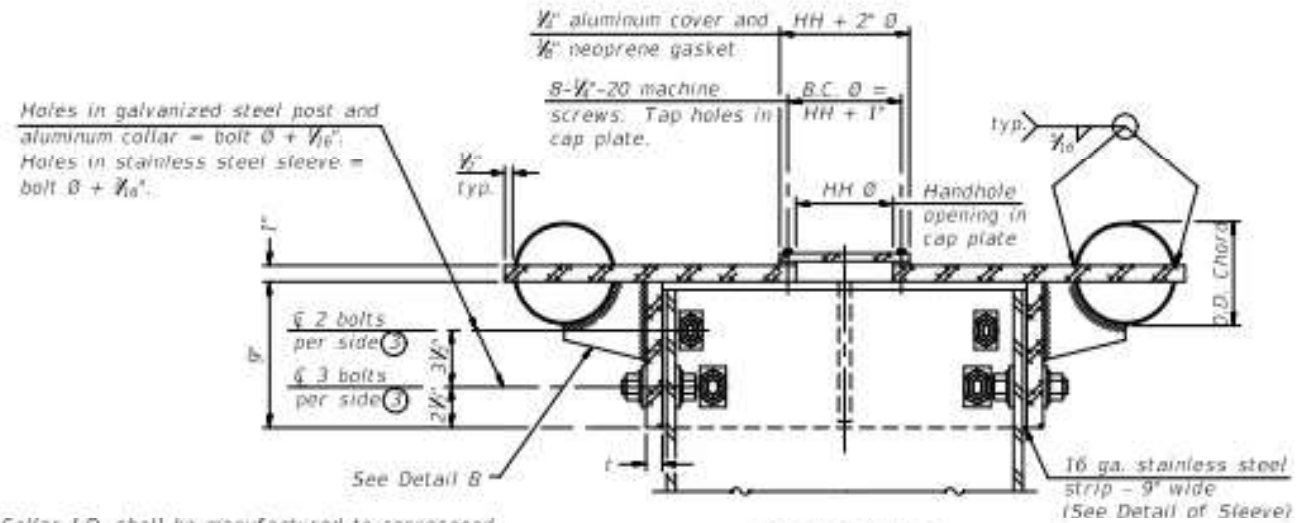
For anchor rod size and placement, see Support Frame Detail Sheet.

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

**DETAILS FOR 8" Ø SUPPORT FRAME
TYPE I-A TRUSS**

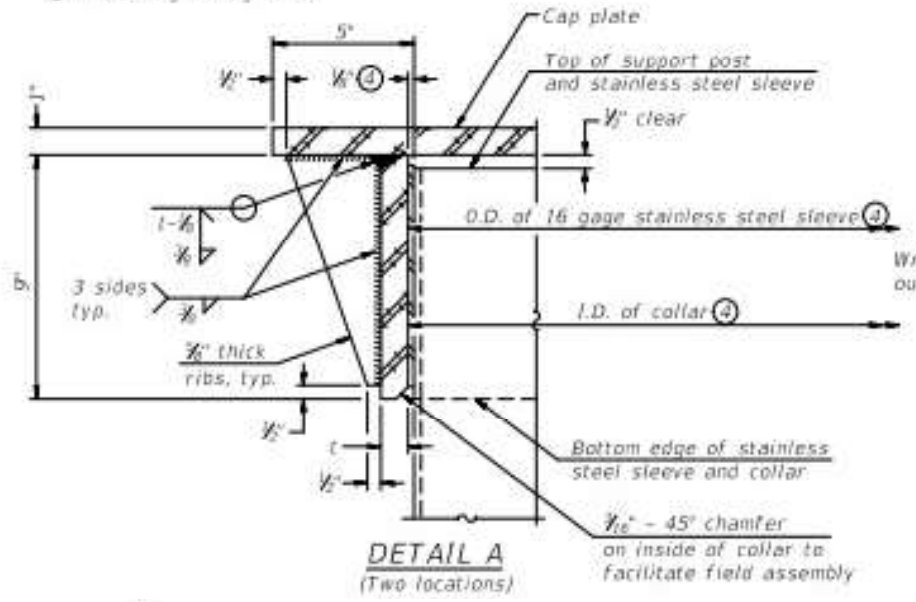
Structure Number	Station	Left Foundation					Right Foundation					Class DS Concrete (Cu. Yds.)
		Elevation Top	Elevation Bottom	A	B	F	Elevation Top	Elevation Bottom	A	B	F	

054-F2 2-17-2017

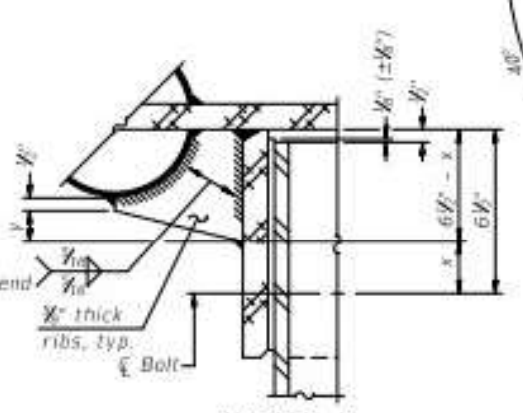


④ Collar I.D. shall be manufactured to correspond to O.D. of actual galvanized post and stainless steel sleeve plus 1/8" (±1/16"). Maximum gap between post and collar at any location equals 1/8" before tightening bolts.

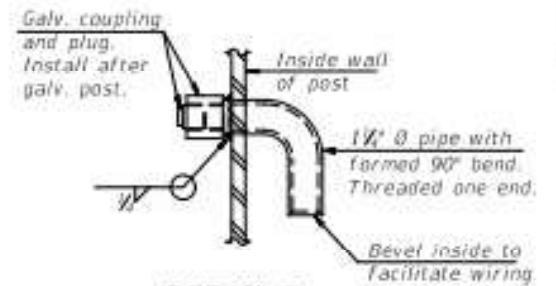
SECTION B-B
Bolts, washers (including contoured washers), and locknuts shall be stainless steel.



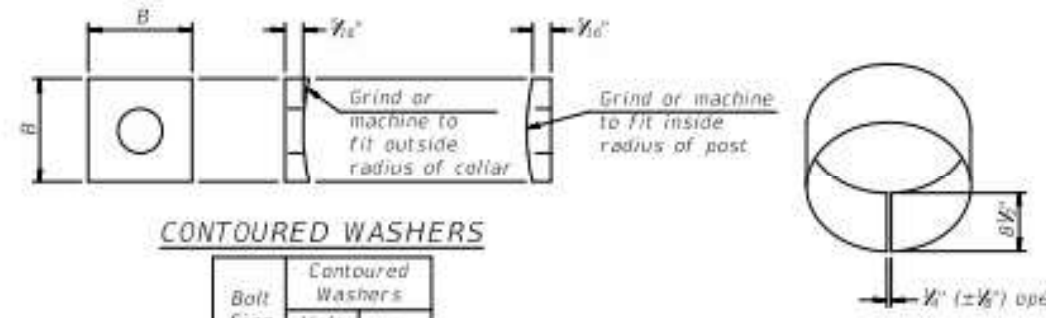
DETAIL A
(Two locations)



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



DETAIL D

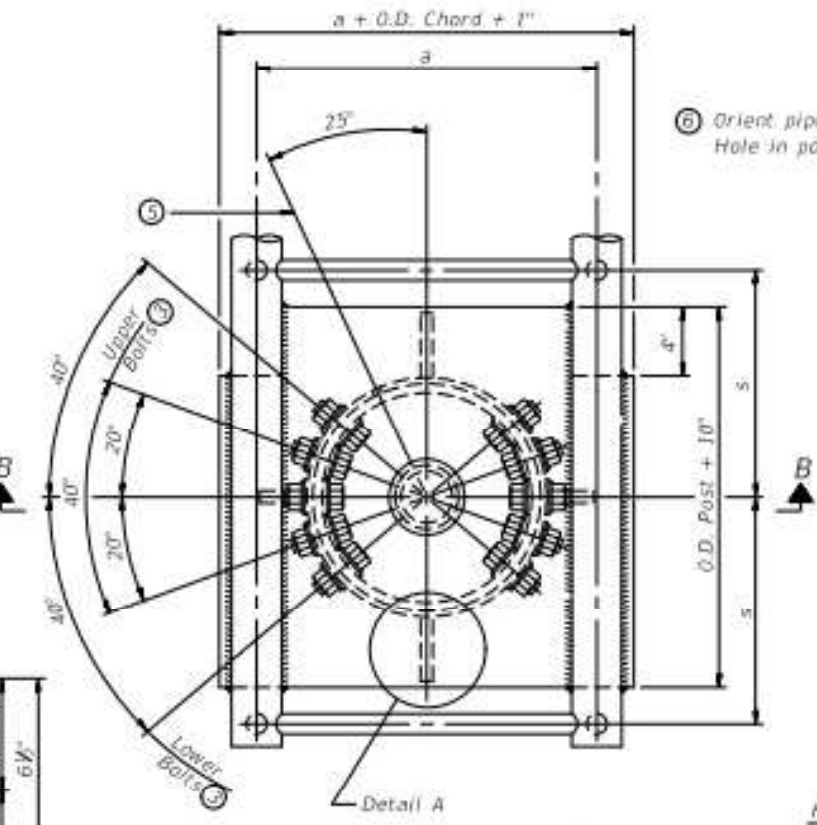


CONTOURED WASHERS

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

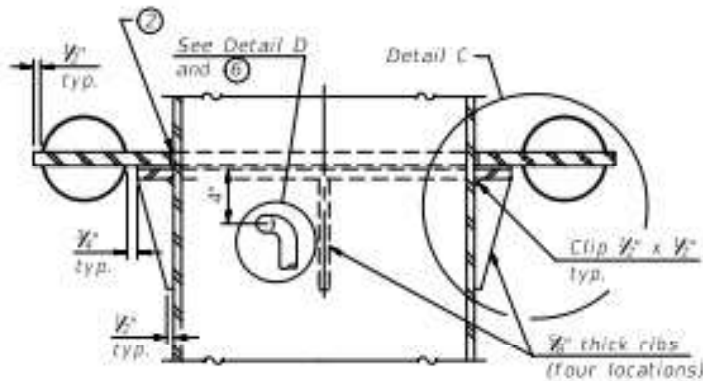
DETAIL OF STAINLESS STEEL SLEEVE

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

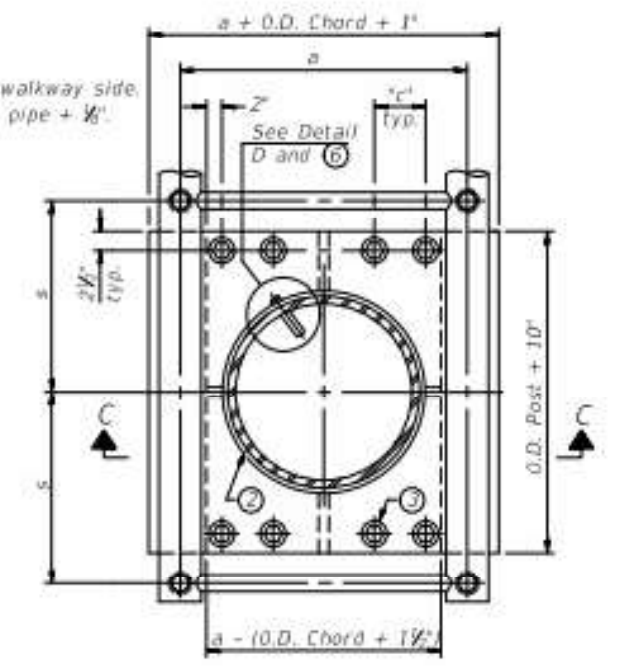


PLAN VIEW - TOP OF COLUMN

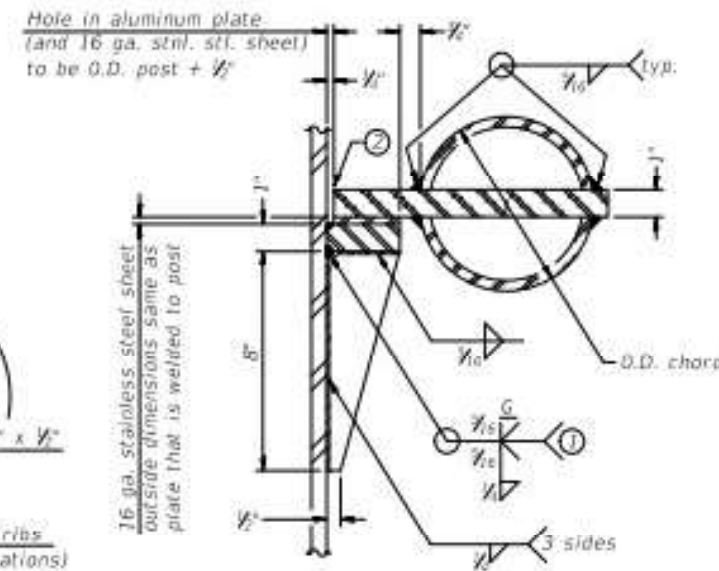
⑤ Optional full penetration weld in collar. (Two locations maximum... (180° apart)... X-ray or UT 100%)



SECTION C-C



SECTION THRU POST ABOVE LOWER CHORDS



DETAIL C

Truss Type	Post Size	Upper & Lower Connection Bolt Diameter ③	Lower Juncture Bolt Spacing Dimension "c" ③	Opening in Cap Plate "HH"	Collar Thickness (t)	Side Ribs	
						x	y
I-C-A	16" Ø (83#f)	3/4"	3 1/2"	8"	1/2"	1 1/2"	2 1/2"
II-C-A	24" Ø (125#f)	1"	3 1/2"	12"	1/2"	2"	1 1/2"
III-C-A (35' max.)	24" Ø (125#f)	1 1/4"	3 1/2"	12"	1/2"	2"	1"
III-C-A (>35' to 40')	24" Ø (171#f)	1 1/4"	3 1/2"	12"	1/2"	2"	1"

- Grind top if required to fully seat aluminum plate and stainless steel sheet.
- After tightening lower connection bolts, fill gap with non-hardening silicone caulk suitable for exterior exposure and acceptable to the Engineer. Cost is included in Overhead Sign Structure Cantilever.
- Upper and lower connection bolts in collar and bolts at lower chord connection shall be high strength with matching locknuts. Connection bolts shall have 2 stainless steel flat washers each.

OSC-A-3 2-17-2017

FILE NAME -	USER NAME - olsonm	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

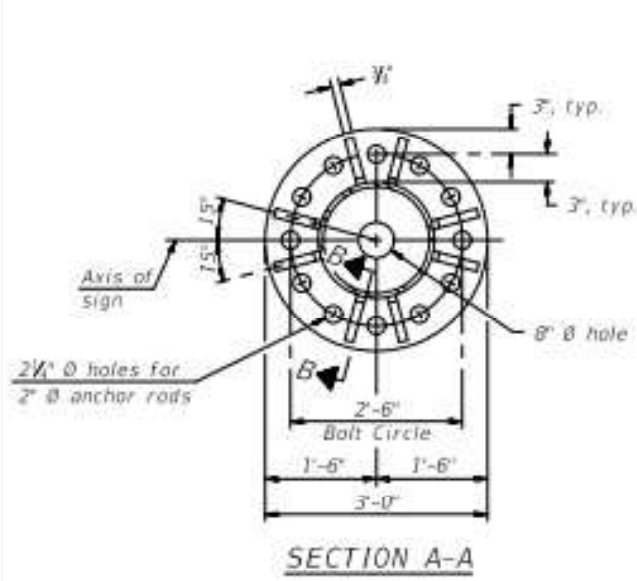
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES - JUNCTURE DETAILS
ALUMINUM TRUSS & STEEL POST

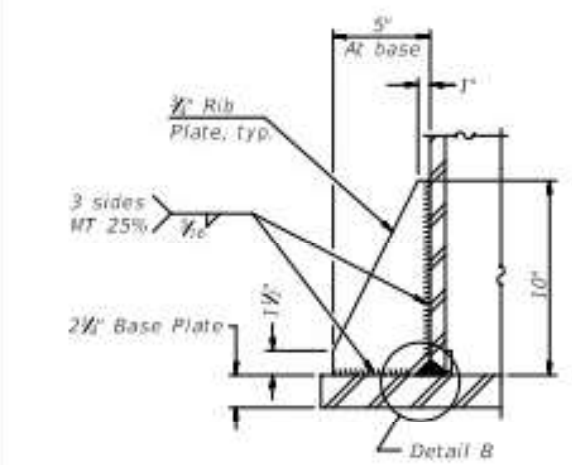
SCALE: SHEET NO. 1 OF 1 SHEET

STA. TO STA.

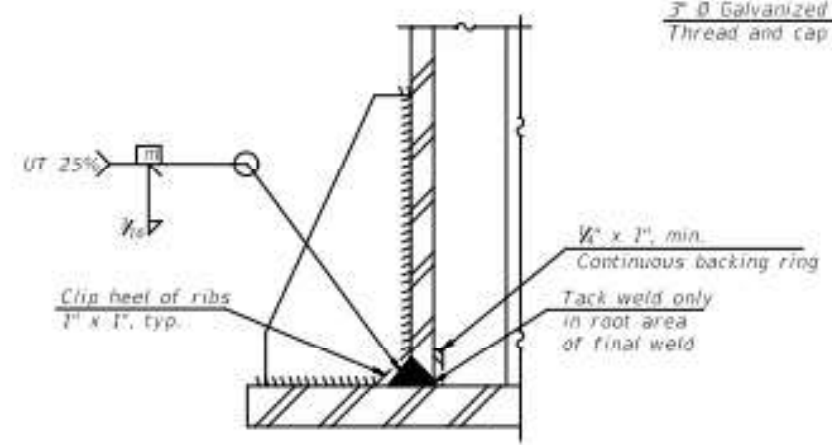
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	55
			CONTRACT NO. 46586	
ILLINOIS FED. AID PROJECT				



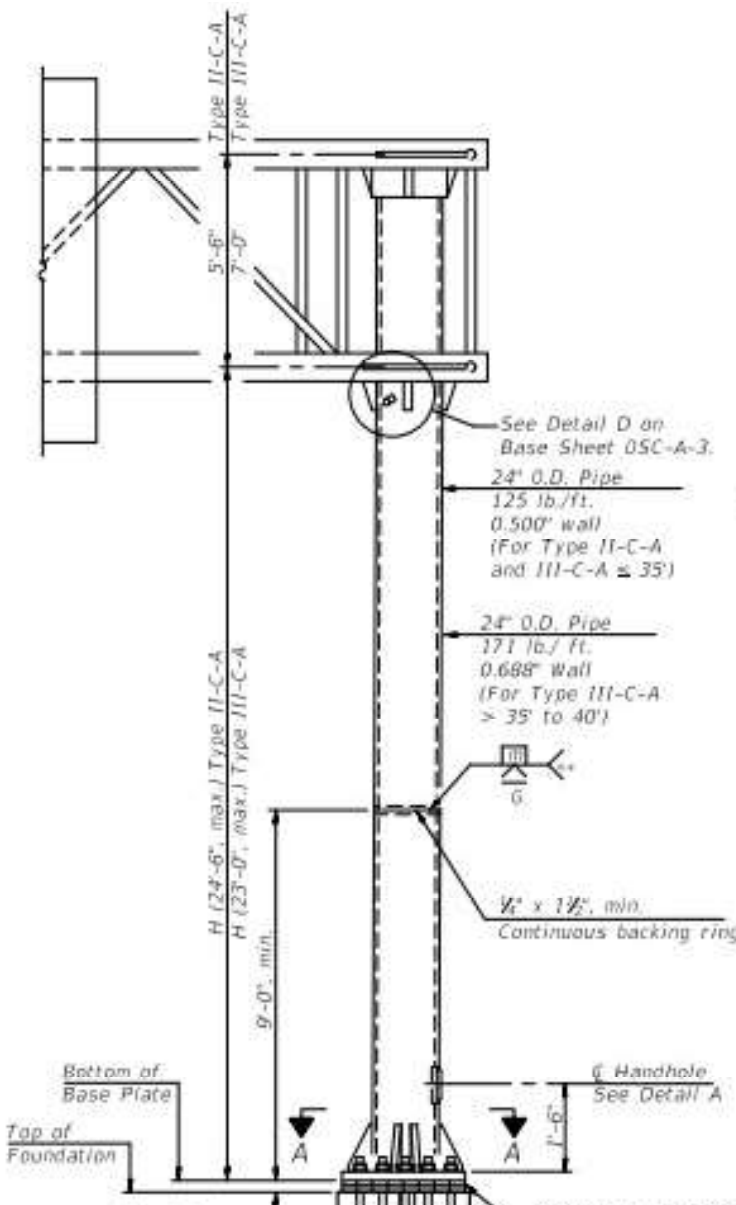
SECTION A-A



SECTION B-B

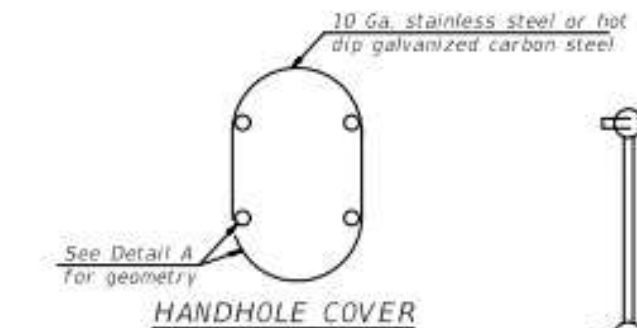


DETAIL B
(Typical rib)

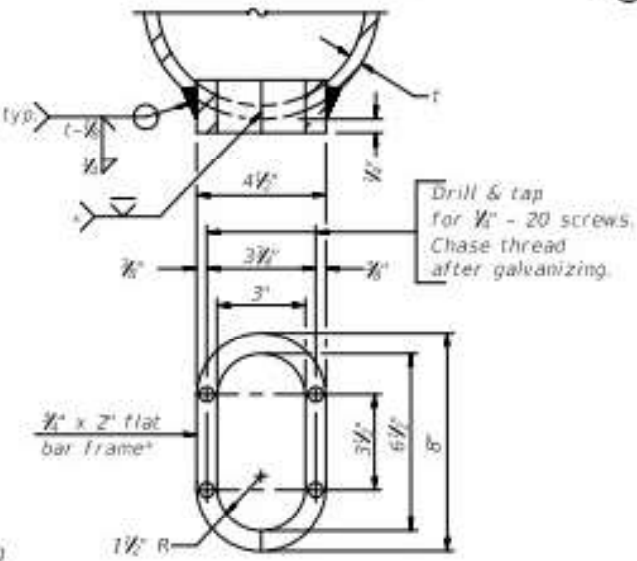


FRONT ELEVATION

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

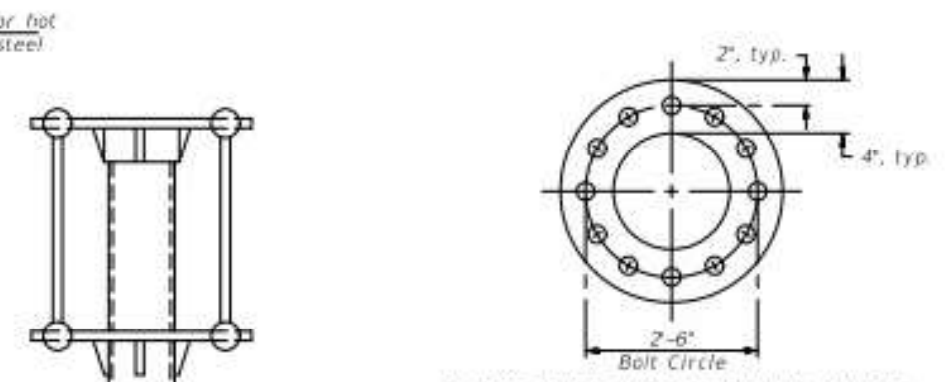


HANDHOLE COVER

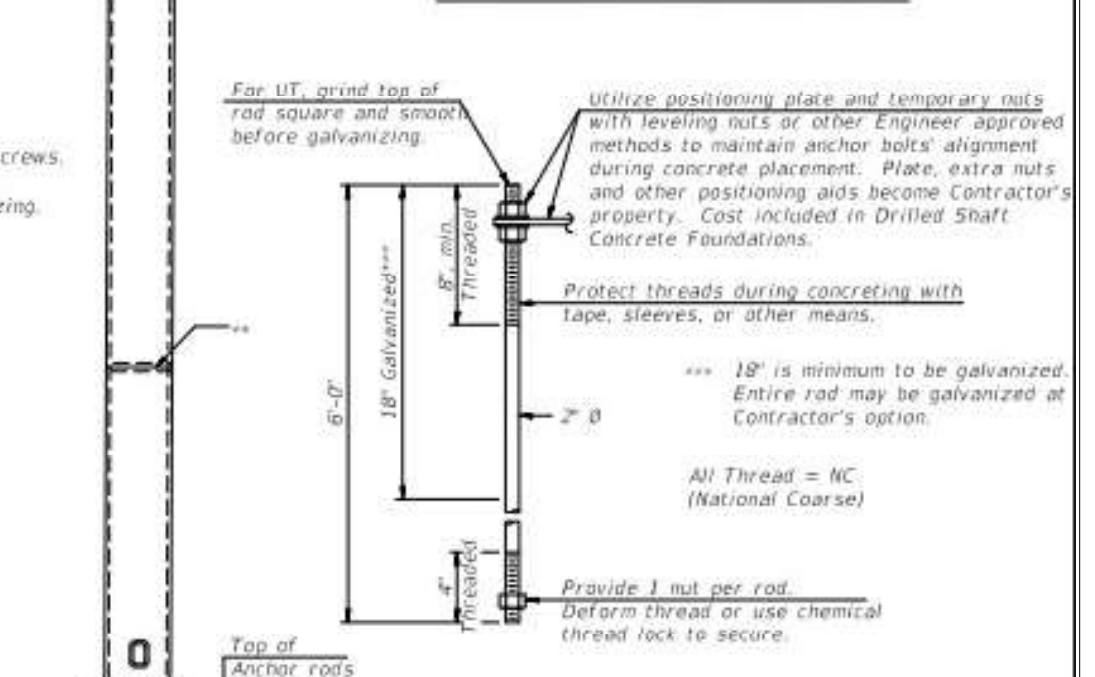


DETAIL A

- * 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 500µ in 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.



SUGGESTED POSITIONING PLATE



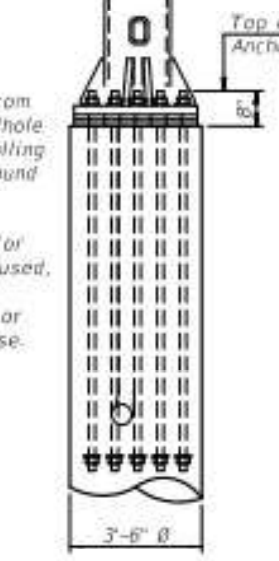
ANCHOR ROD DETAIL

Anchor rods shall conform to ASTM F1554 Grade 105. Galvanize the upper 18" (minimum^{***}) and associated AASHTO M291, Grade A, C or DH heavy hex nuts and hardened washers per AASHTO M232. No welding shall be permitted on rods. Provide a 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, to insure no rejectable flaws exist in the upper 18" (tension criteria). Cost of testing included in Drilled Shaft Concrete Foundations.

*** 18" is minimum to be galvanized. Entire rod may be galvanized at Contractor's option.

All Thread = NC (National Coarse)

Provide 1 nut per rod. Deform thread or use chemical thread lock to secure.

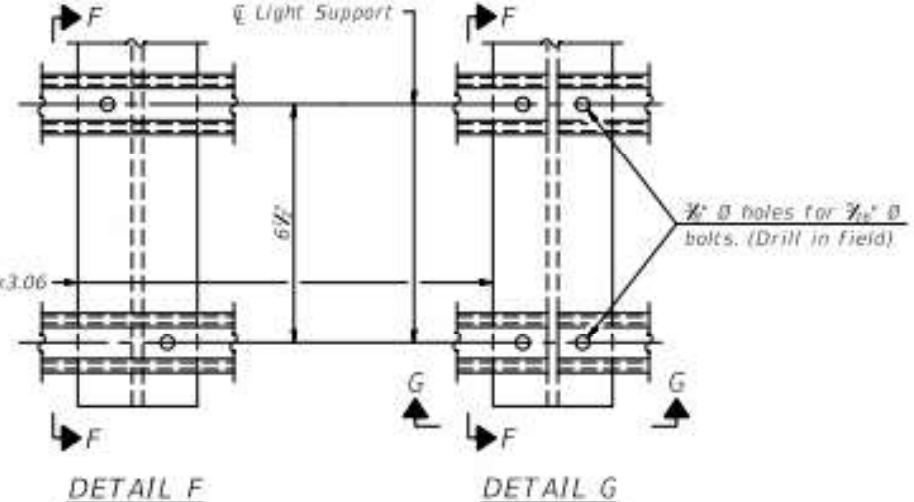
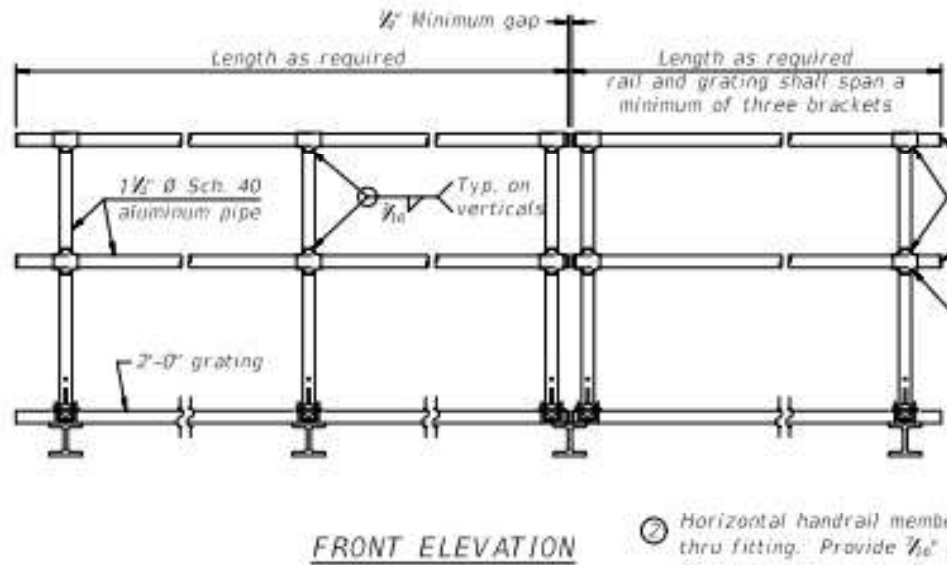
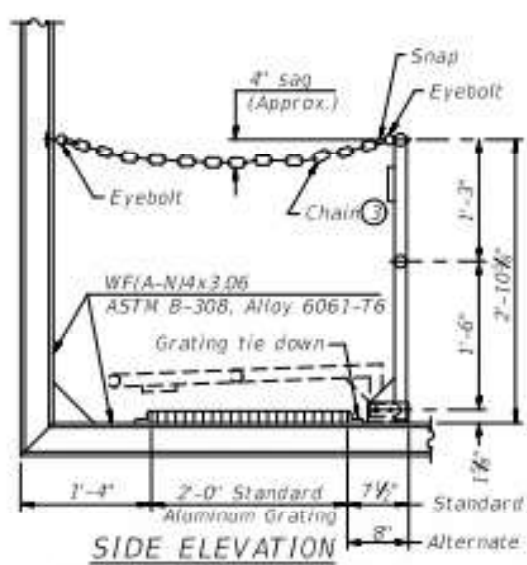


SIDE ELEVATION

Structure Number	Station	H

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

OSC-A-5 2-17-2017

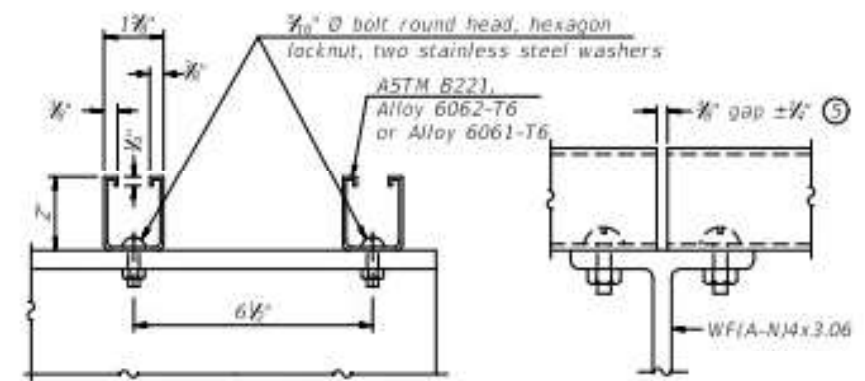
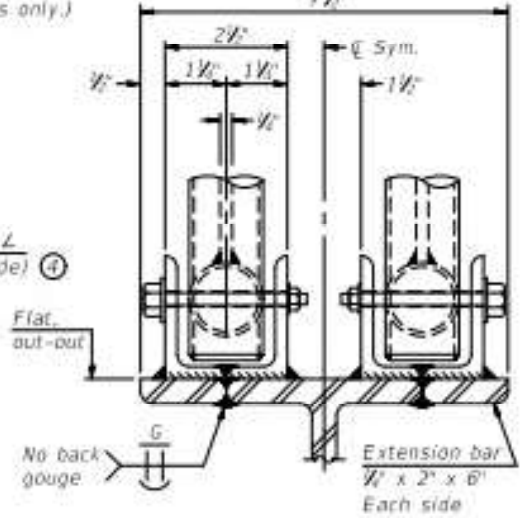
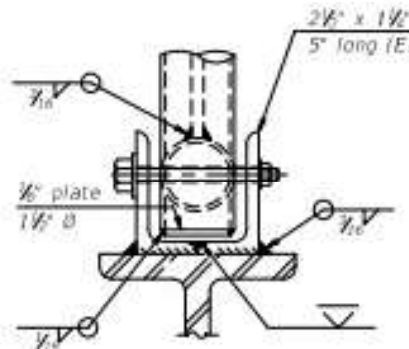
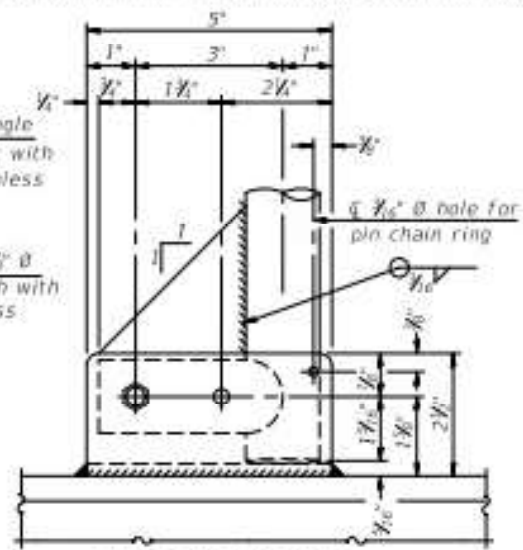
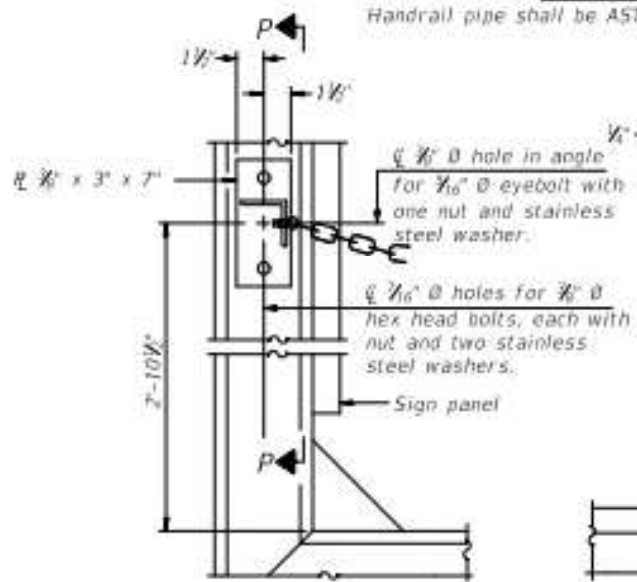


HANDRAIL DETAILS

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

① Install standard force-fit end caps or weld 1/2" end plates with 1/2" c.f.w. and grind smooth. (All rail ends)

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

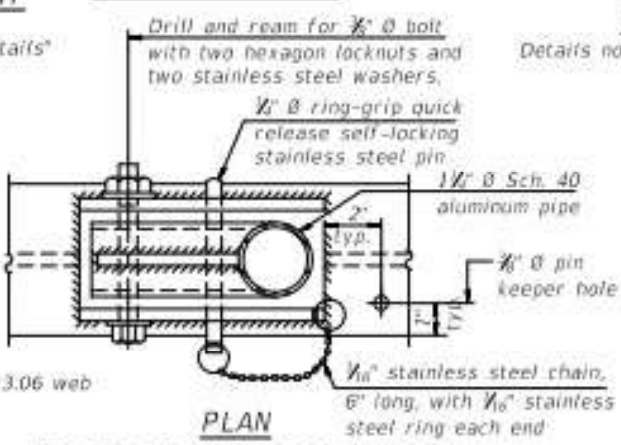
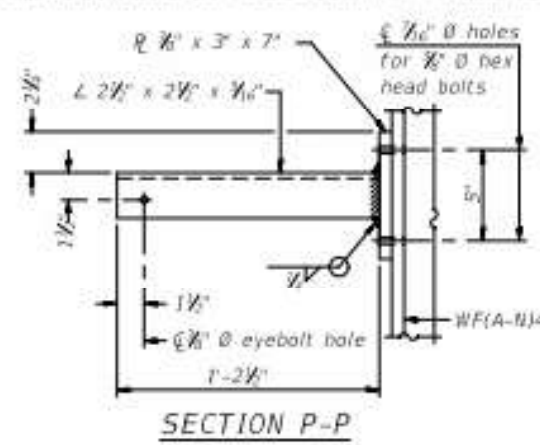


LIGHTING FIXTURE MOUNTS (IF REQUIRED)

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

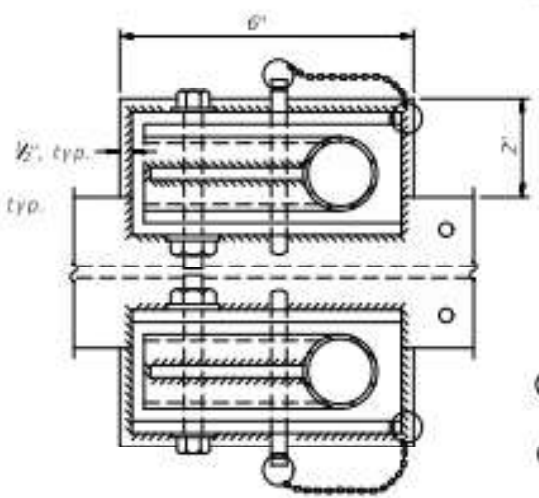
ALTERNATE SAFETY CHAIN ATTACHMENT (With Sign Present)

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



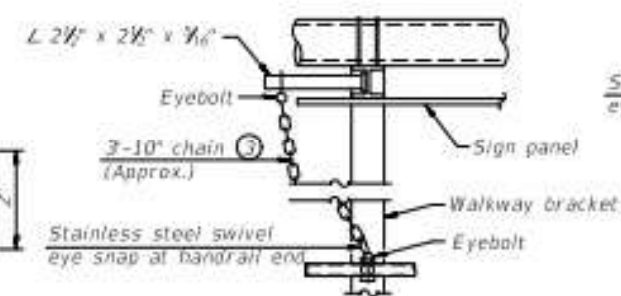
DETAIL E HANDRAIL HINGE

Details not shown same as "ELEVATION" at right.



PLAN AT HANDRAIL JOINT

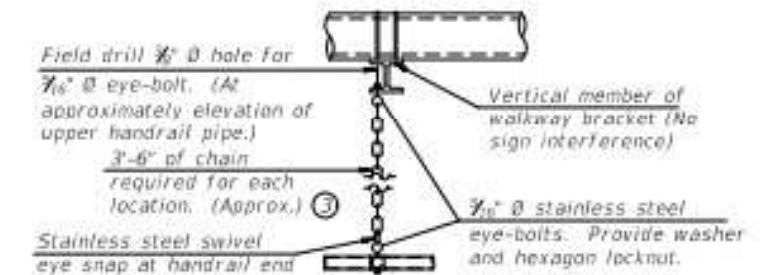
Details not shown same as "FRONT ELEVATION"



ALTERNATE SAFETY CHAIN ATTACHMENT

③ 3/8" Type 304L stainless steel chain, approximately 12 links per foot.

④ Extrusions may be used in lieu of the detail's shown, with approval of the Engineer.



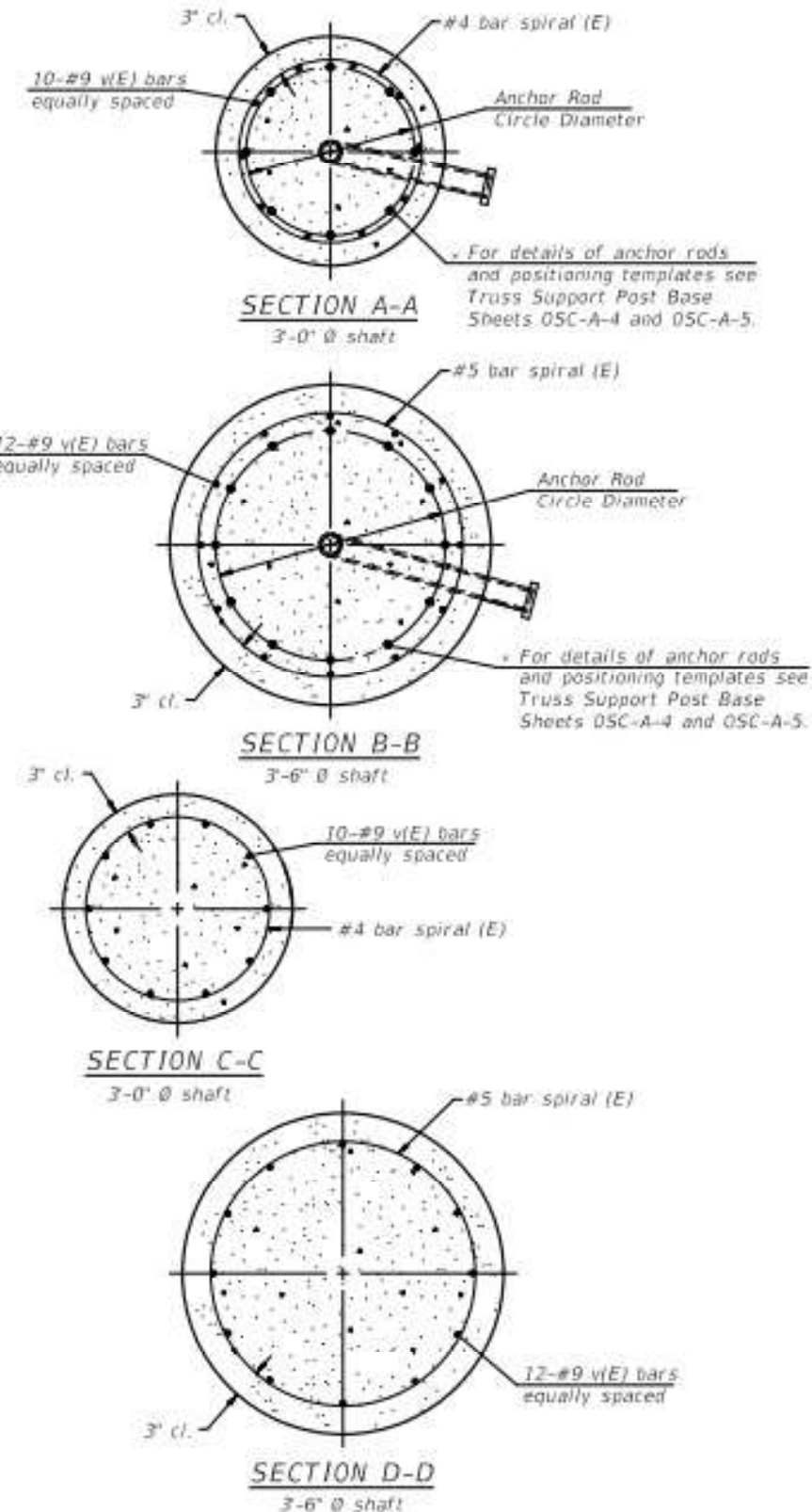
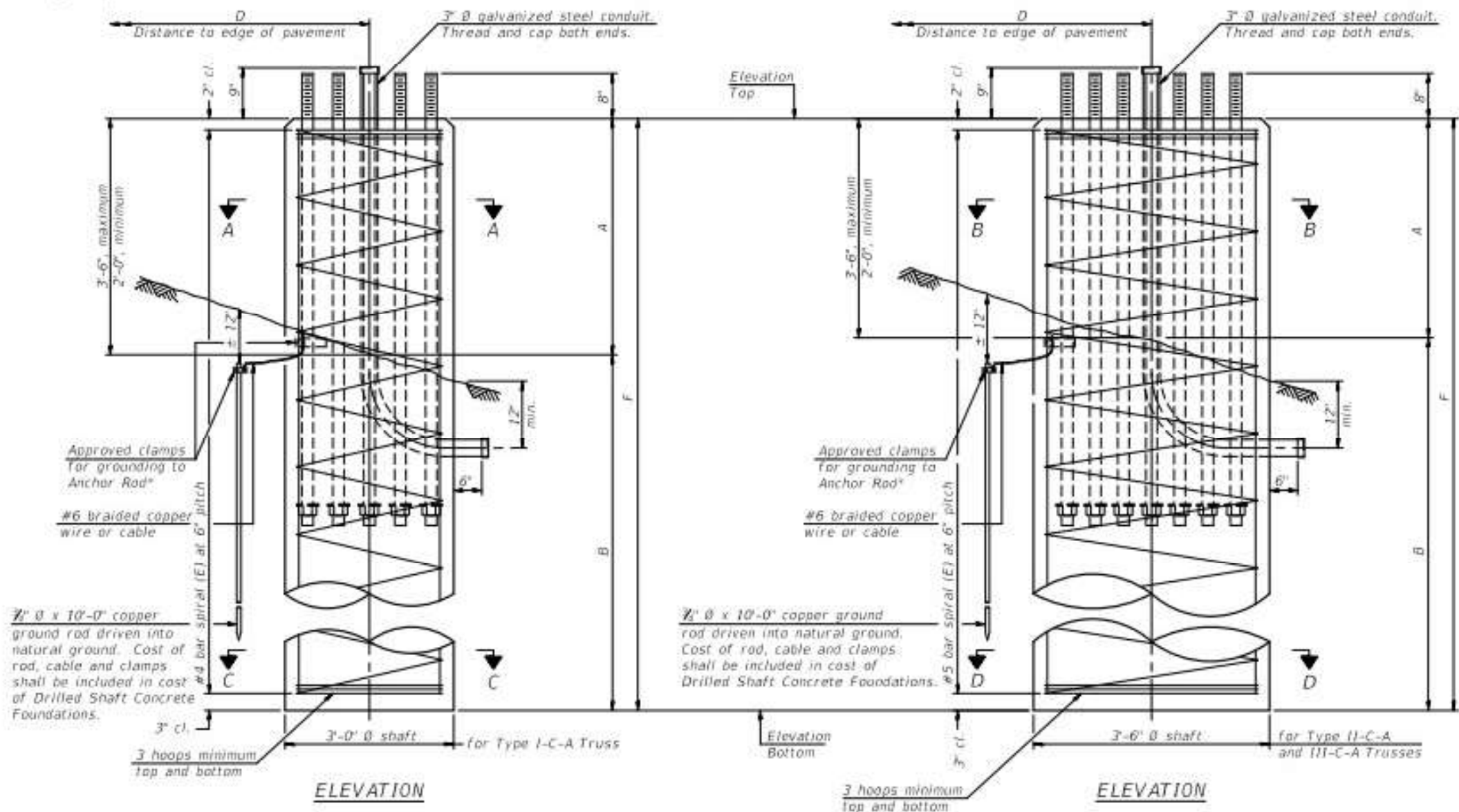
SAFETY CHAIN

One required for each end of each walkway.

OSC-A-8 2-17-2017

FILE NAME :	USER NAME : oisonmw	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CANTILEVER SIGN STRUCTURES - HANDRAIL DETAILS ALUMINUM TRUSS & STEEL POST	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE : 98.3432 ' / in.	DRAWN -	REVISED -	VAR			REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	60	
PLOT DATE : 10/27/2021	CHECKED -	REVISED -	CONTRACT NO. 46586							
	DATE -	REVISED -	ILLINOIS FED. AID PROJECT							
SCALE: _____		SHEET NO. 1 OF 1 SHEET		STA. _____ TO STA. _____						

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

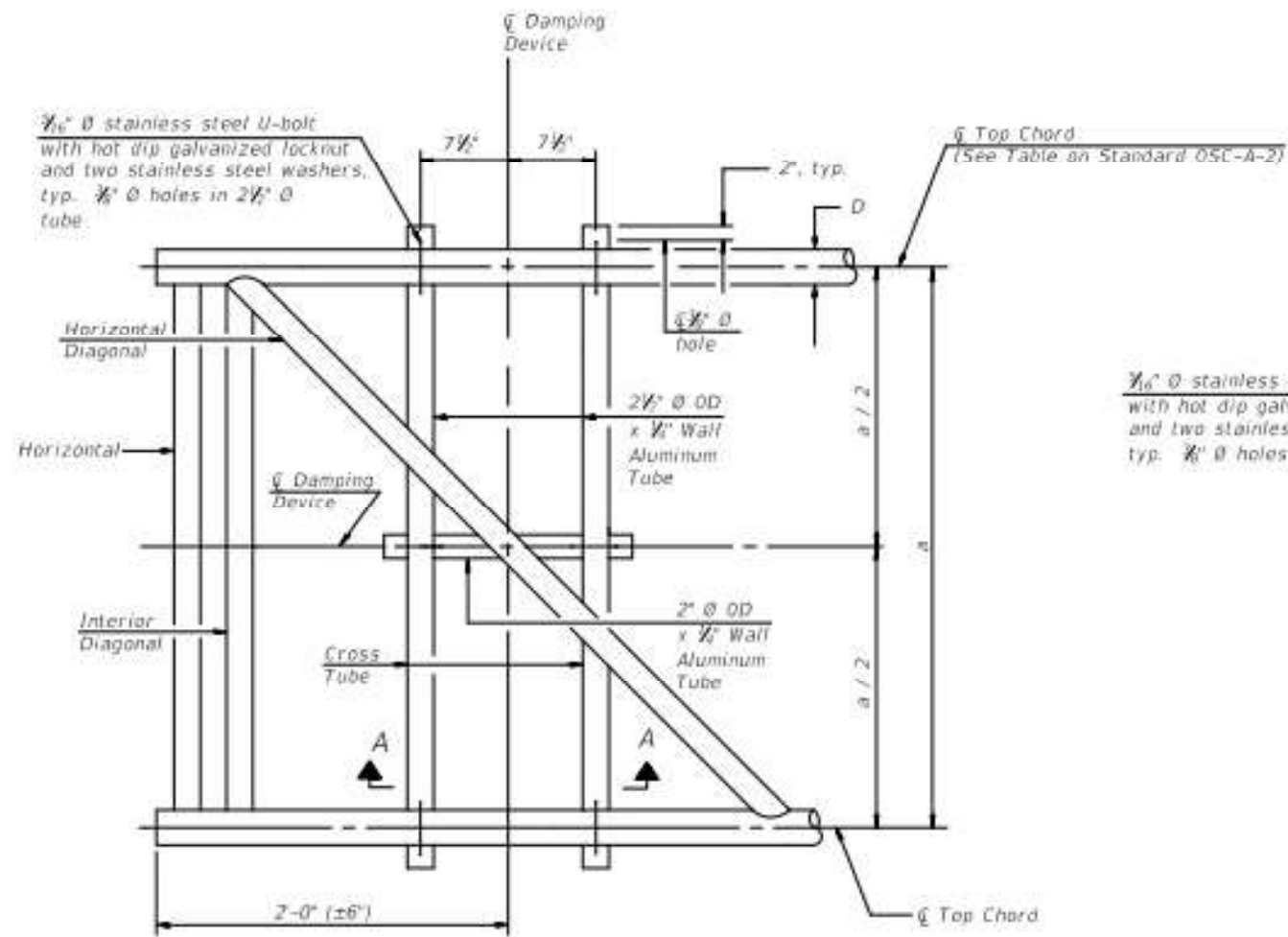


NOTE 5:
 The foundation dimensions shown in the Foundation Design Table are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Q_u) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, 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 Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in "Drilled Shaft Concrete Foundation".

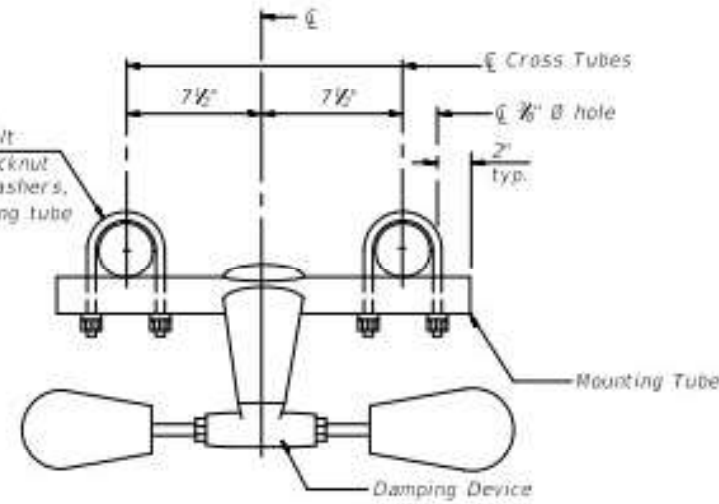
Truss Type	Post Base Sheet	Maximum Cantilever Length (ft)	Maximum Total Sign Area (sq ft)	Shaft Diameter (in)	'B' Depth (ft)	Anchor Rods		Anchor Rod Circle Diameter (in)
						No.	Diameter (in)	
I-C-A	OSC-A-4	25	170	3.0	16.0	8	2	22
II-C-A	OSC-A-5	30	170	3.5	17.0	12	2	30
II-C-A	OSC-A-5	30	340	3.5	21.5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

Structure Number	Station	Truss Type	Shaft Diameter	Elevation Top	Elevation Bottom	Q_u	A	B	F	Class D5 Concrete Cubic Yards

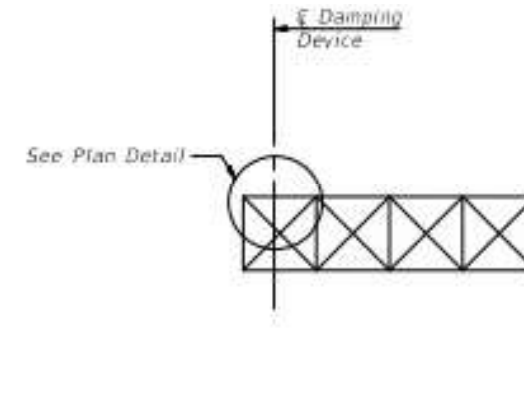
OSC-A-9 2-17-2017



PLAN DETAIL



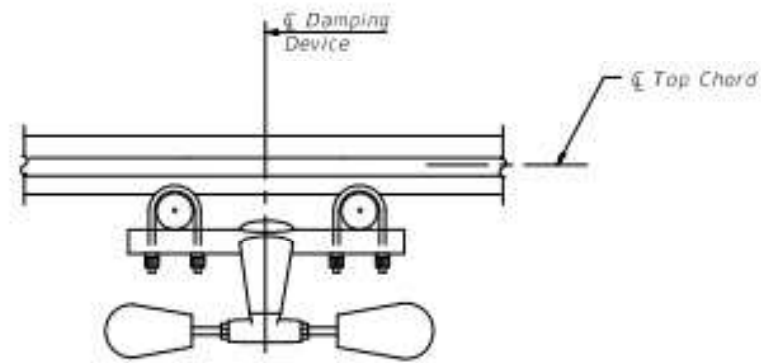
TRUSS DAMPING DEVICE CONNECTION DETAIL



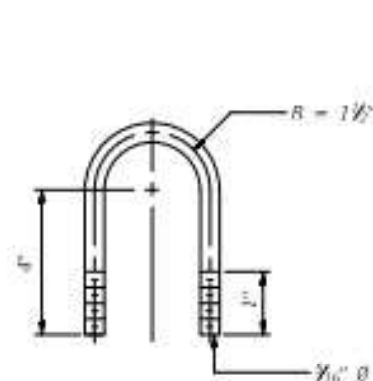
ELEVATION
Aluminum Cantilever
Sign Structure

GENERAL NOTES

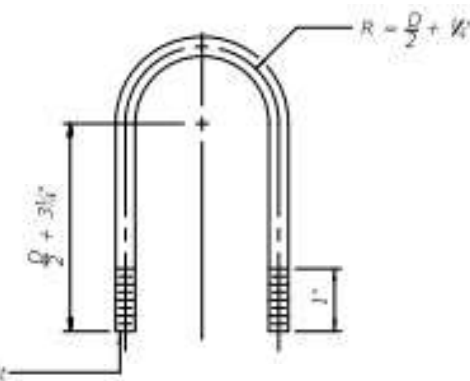
- Damper: One damper per truss. (31 lbs. Stockbridge-Type Aluminum-29" minimum between ends of weights)
- Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6



SECTION A-A



DAMPING DEVICE MOUNTING
TUBE U-BOLT DETAIL
(Typical)



TOP CHORD TO CROSS TUBE
U-BOLT DETAIL
(Typical)

OSC-A-D

2-17-2017

FILE NAME :	USER NAME : olsonmw	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CANTILEVER SIGN STRUCTURE DAMPING DEVICE	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE : 98.3432 ' / in.	DRAWN -	REVISED -			VAR	REGION 1 SIGN MAINTENANCE 22-22	VARIOUS	62	62
	PLOT DATE : 10/27/2021	CHECKED -	REVISED -			CONTRACT NO. 46586				
	DATE -	REVISED -		SCALE: _____	SHEET NO. 1 OF 1 SHEET	STA. _____ TO STA. _____	ILLINOIS FED. AID PROJECT			