06-14-2019 LETTING ITEM 140

140

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIOUS		VARIOUS	37	1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

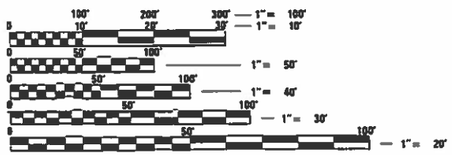
VARIOUS ROUTES
STWDE FRWY SIGN MAINT 20–09
STATEWIDE FREEWAY SIGN MAINTENANCE
VARIOUS COUNTIES
M–60–003–20

D-6

LOCATION OF SECTION INDICATED THUS:- ▬

STANDARDS

701006–05
701101–05
701106–02
701201–05
701301–04
701400–09
701401–12
701406–12
701411–09
701426–09
701901–08
720021–02



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

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

CONTRACT NO. 46518

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED May 10 20 19
REGIONAL ENGINEER

May 10 20 19
ENGINEER OF DESIGN AND ENVIRONMENT

May 10 19
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

REV. - MS

CODE NUMBER	ITEM	UNIT	0021 TOTAL QUANTITY	100% STATE 0021 QUANTITY	100% S MCHD 0021 QUANTITY
X0301032	SIGN FRAME - SERIES 325 (DOUBLE)	FOOT	5	5	0
X0301033	SIGN FRAME - SERIES 325 (SINGLE)	FOOT	5	5	0
X0301036	BASE PLATE - SERIES 325	EACH	5	5	0
X0301037	BASE PLATE - SERIES 218	EACH	5	5	0
X0326718	INSTALL REST AREA SIGN	EACH	5	5	0
X0327303	REMOVAL OF EXISTING SIGN LIGHTING UNIT WITH NO SALVAGE	EACH	25	20	5
X5210005	TIGHTEN SUPPORT ANCHOR BOLT	EACH	40	40	0
X7200050	TEMPORARY SIGN SUPPORT REPAIR	EACH	5	4	1
X7200060	FURNISH AND ERECT GRAFFITI RESISTANT SIGN PANEL	SQ FT	120	120	0
X7200065	SIGN PANEL BACKPLATE	SQ FT	8	8	0
X7200070	REPAIR SIGN PANEL	EACH	15	10	5
X7200075	REMOVE AND REINSTALL SIGN PANEL	SQ FT	600	400	200
X7200080	RE-ERECT SIGN PANEL	SQ FT	2000	1500	500
X7200085	REPLACE AND TIGHTEN SIGN MOUNTING CLIPS PER EACH SIGN	EACH	5	5	0
X7200096	FURNISH AND ERECT SIGN PANEL - LOGO	SQ FT	9500	6,000	3,500
X7240205	REMOVE SIGN COMPLETE	EACH	70	50	20
X7270005	RE-ERECT EXISTING STRUCTURAL STEEL SIGN SUPPORT - BREAKAWAY	EACH	150	100	50
X7270006	BREAKAWAY SLIP BASE CONNECTION BOLT SET	EACH	25	25	0
X7270010	STRUCTURAL STEEL SIGN SUPPORT - BREAKAWAY COUPLING TYPE	POUND	400	400	0
X7270015	FURNISH BREAKAWAY COUPLING SET	EACH	30	15	15
X7270020	FURNISH HINGE PLATE SET	EACH	6	6	0
X7270025	REMOVE EXISTING SIGN SUPPORT	EACH	85	30	55
X7301034	SIGN POST - SERIES 325	FOOT	5	5	0
X7301035	SIGN POST - SERIES 218	FOOT	5	5	0
X7330072	OVERHEAD SIGN STRUCTURE - END SUPPORT	EACH	2	2	0
X7330076	BRIDGE MOUNTED SIGN SUPPORT	EACH	6	2	4
X7330078	REPLACE WALKWAY SUPPORT BRACKET	EACH	10	5	5
X7330082	MOUNTING BRACKET – TYPE B	EACH	17	15	2
X7330084	MOUNTING BRACKET TYPE B REPAIR	EACH	2	0	2
X7330090	METAL SCREEN	EACH	5	5	0
X7330093	INTERNAL MEMBER TRUSS CLAMP	EACH	1	1	0
X7330094	INTERNAL TRUSS DAMPER	EACH	2	2	0
X7330102	REPLACE OVERHEAD SIGN WALKWAY	FOOT	70	50	20
X7330210	OSS T1 TRUSS ONLY	FOOT	15	10	5
X7330220	OSS T2 TRUSS ONLY	FOOT	15	10	5
X7330230	OSS T3 TRUSS ONLY	FOOT	15	10	5
X7350005	SIGN SUPPORT REPAIR	EACH	50	30	20
X7350010	SIGN SUPPORT BRACKET	EACH	75	75	0
X7360300	REMOVE OVERHEAD SIGN STRUCTURE - WALKWAY	FOOT	200	175	25
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	10	10	0
Z0012755	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQ FT	10	10	0
Z0030902	TIGHTEN FUSE AND BASE PLATE	EACH	50	50	0

REV. - MS

CODE NUMBER	ITEM	UNIT	0021 TOTAL QUANTITY	100% STATE 0021 QUANTITY	100% S MCHD 0021 QUANTITY
Z0030905	INSTALL SERVICE SIGN OR MILEAGE PLATE	EACH	60	50	10
Z0030907	REMOVE SERVICE OR MILEAGE PLATE	EACH	60	50	10
Z0030910	TRANSFER SERVICE SIGN	EACH	200	175	25
Z0051398	REMOVE EXISTING SIGN POST	EACH	30	20	10
Z0052395	TIGHTEN U-BOLT	EACH	10	10	0
Z0077598	DRILL WEEP HOLE	EACH	5	5	0
Z0077802	TEMPORARY WOOD POST	EACH	16	12	4
67100100	MOBILIZATION	L SUM	1	0.91	0.09
70200100	NIGHTTIME WORK ZONE LIGHTING	L SUM	1	0.91	0.09
72000100	SIGN PANEL - TYPE 1	SQ FT	200	200	0
72000200	SIGN PANEL - TYPE 2	SQ FT	200	200	0
72000300	SIGN PANEL - TYPE 3	SQ FT	30000	25,000	5,000
72100100	SIGN PANEL OVERLAY	SQ FT	200	200	0
72300100	INSTALL EXISTING SIGN PANEL	SQ FT	1500	1,500	0
72400100	REMOVE SIGN PANEL ASSEMBLY - TYPE A	EACH	5	4	1
72400200	REMOVE SIGN PANEL ASSEMBLY - TYPE B	EACH	5	4	1
72400310	REMOVE SIGN PANEL - TYPE 1	SQ FT	200	150	50
72400320	REMOVE SIGN PANEL - TYPE 2	SQ FT	300	250	50
72400330	REMOVE SIGN PANEL - TYPE 3	SQ FT	30000	29,500	500
72400500	RELOCATE SIGN PANEL ASSEMBLY - TYPE A	EACH	5	5	0
72400600	RELOCATE SIGN PANEL ASSEMBLY - TYPE B	EACH	5	5	0
72400710	RELOCATE SIGN PANEL - TYPE 1	SQ FT	100	100	0
72400720	RELOCATE SIGN PANEL - TYPE 2	SQ FT	100	100	0
72400730	RELOCATE SIGN PANEL - TYPE 3	SQ FT	100	100	0
72700100	STRUCTURAL STEEL SIGN SUPPORT – BREAKAWAY	POUND	115000	95,000	20,000
72800100	TELESCOPING STEEL SIGN SUPPORT	FOOT	125	125	0
73000100	WOOD SIGN SUPPORT	FOOT	42	30	12
73300100	OVERHEAD SIGN STRUCTURE - SPAN, TYPE I-A (4'-0" X 4'-6")	FOOT	15	0	15
73300200	OVERHEAD SIGN STRUCTURE - SPAN, TYPE II-A (4'-6" X 5'-3")	FOOT	15	0	15
73300300	OVERHEAD SIGN STRUCTURE - SPAN, TYPE III-A (5'-0" X 7'-0")	FOOT	10	0	10
73301810	OVERHEAD SIGN STRUCTURE WALKWAY, TYPE A	FOOT	50	25	25
73304000	OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	FOOT	20	10	10
73400100	CONC FOUNDATION	CU YD	350	300	50
73400200	DRILLED SHAFT CONCRETE FOUNDATIONS	CU YD	25	15	10
73600100	REMOVE OVERHEAD SIGN STRUCTURE - SPAN	EACH	2	1	1
73600200	REMOVE OVERHEAD SIGN STRUCTURE - CANTILEVER	EACH	2	1	1
73602000	REMOVE OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	EACH	3	1	2
73700100	REMOVE GROUND MOUNTED SIGN SUPPORT	EACH	65	50	15
73700200	REMOVE CONCRETE FOUNDATION - GROUND MOUNT	EACH	225	200	25
73700300	REMOVE CONCRETE FOUNDATION - OVERHEAD	EACH	8	4	4

WORK ORDER

STWDE FRWY SIGN MAINT 2020-09

Sheet 1 of 2

WORK ORDER NO. _____ Date of Issue _____ ROUTE _____

LOCATION DESCRIPTION _____

CONTRACT NO. 46518 CLAIM NO.: _____

HIGHWAY LIGHTING CABLE PRESENT (YES) (NO) (N/A) JOB NO. M-60-003-20

CODE NUMBER		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			
72800100	TELES STL SIN SUPPORT	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 TY A	FOOT			
73304000	OVHD SIN STR BR MT	FOOT			
73400100	CONC FOUNDATION	CU YD			
73400200	DRILL SHAFT CONC FDN	CU YD			
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			
X0326718	INSTAL REST AREA SIGN	EACH			
X0327303	REM EX SIGN LT UNT NS	EACH			
X5210005	TIGHTEN SUP ANCH BOLT	EACH			
X7200050	TEMP SIGN SUP REP	EACH			
X7200060	F & E GRAFFI RES S PL	SQ FT			

Sheet 2 of 2

WORK ORDER NO.

CODE NUMBER		UNIT	QUANTITY	UNIT PRICE	ITEM COST
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			
X7330072	OVHD SIN STR-END SUP	EACH			
X7330076	BR MOUNT SIGN SUPPORT	EACH			
X7330078	REPL WLKWY SUP BRCKT	EACH			
X7330082	MTNG BRCKT TY B	EACH			
X7330084	MTNG BRCKT TYB REPAIR	EACH			
X7330090	METAL SCREEN	EACH			
X7330093	INT MEMBR TRUSS CLAMP	EACH			
X7330094	INTERNAL TRUSS DAMPER	EACH			
X7330102	REPL OVHD SIN WALKWAY	FOOT			
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			
Z0012754	STR REP CON DP = < 5	SQ FT			
Z0012755	STR REP CON DP OVER 5	SQ FT			
Z0030902	TIGHTEN FUSE & BSE PL	EACH			
Z0030905	INS SER SN OR MILE PL	EACH			
Z0030907	REM SER OR MILE PLATE	EACH			
Z0030910	TRANSFER SERVICE SIGN	EACH			
Z0051398	REM EX SIGN POST	EACH			
Z0052395	TIGHTEN U-BOLT	EACH			
Z0077598	DRILL WEEP HOLE	EACH			
Z0077802	TEMP WOOD POST	EACH			
				Total	

DISTRICT CONTACT

NAME: _____

TELEPHONE: _____

CELL PHONE: _____

EMAIL ADDRESS: _____

SUBMITTED BY: _____

Deputy Director, Division of Highways, Regional Engineer

DATE: _____

APPROVED BY: _____

Traffic Operations Engineer, Central Office

DATE: _____

FILE NAME =	USER NAME = olsonmw	DESIGNED - MO	REVISED - -
		DRAWN - MO	REVISED - -
	PLOT SCALE = 104.8994 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE - 12/27/2018	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SAMPLE WORK ORDER

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	4
		CONTRACT NO. 46518		
		ILLINOIS FED. AID PROJECT		

CLEAR HEIGHT DETAIL

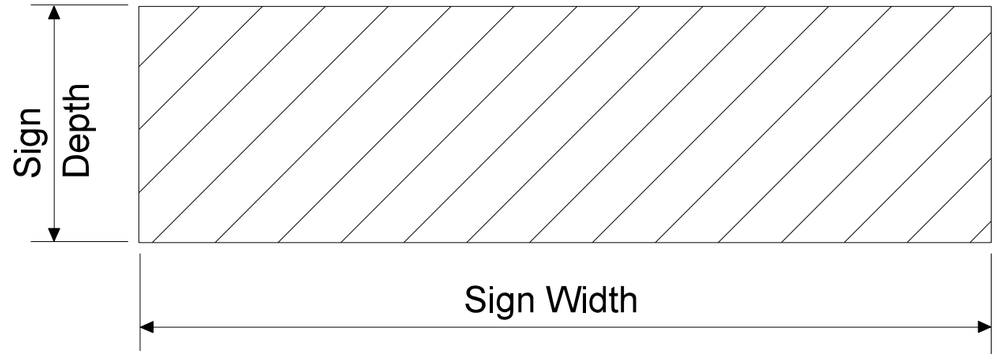


Figure 1

* 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.

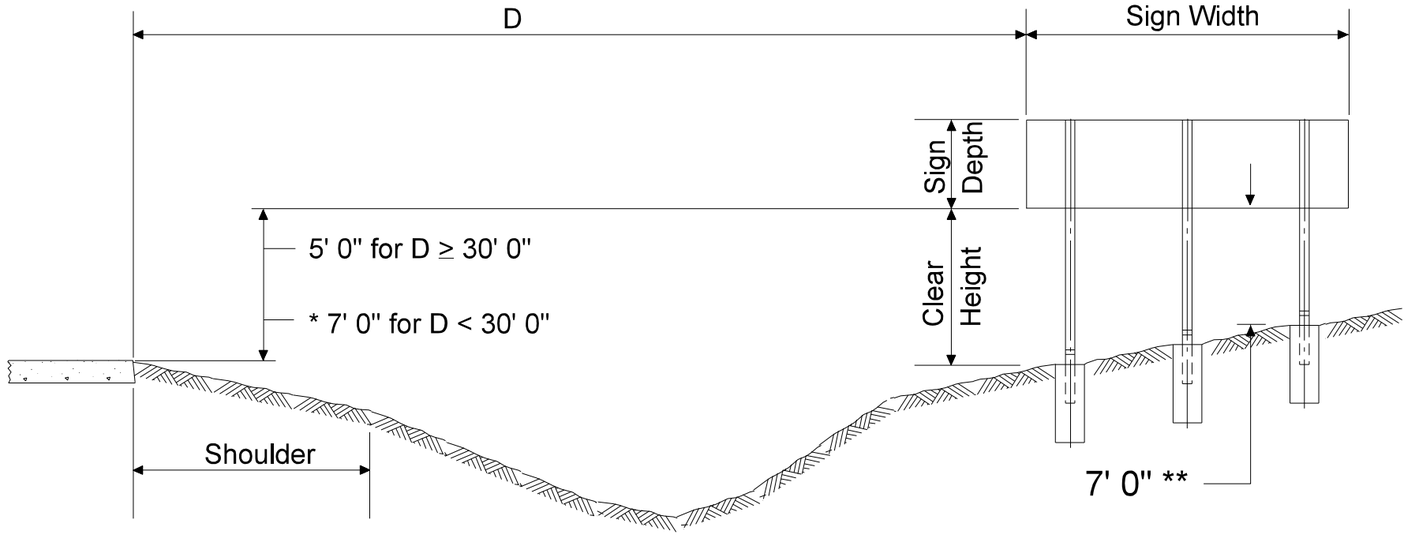
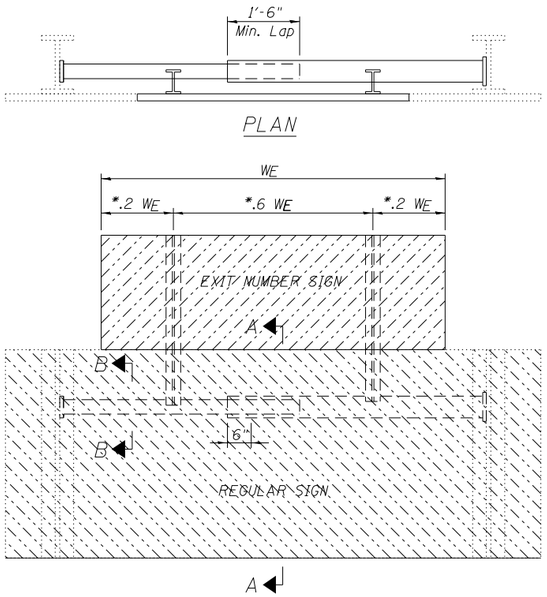


Figure 2

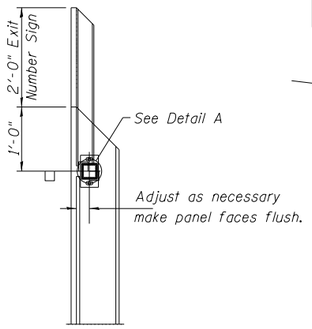
FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CLEAR HEIGHT DETAIL	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - -			VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	5
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -					CONTRACT NO. 46518		
	PLOT DATE = 3/27/2019	DATE -	REVISED - -		SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____			ILLINOIS	FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

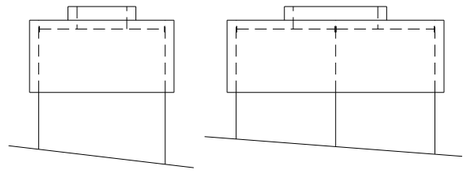


PLAN

FRONT VIEW

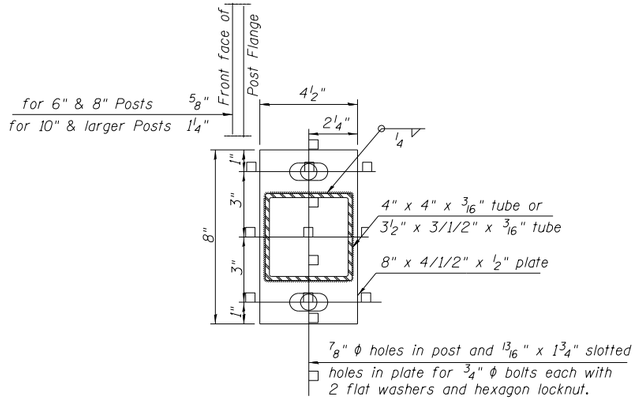


SECTION A-A

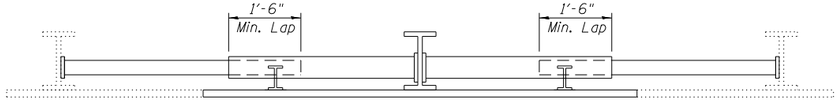


New or Existing Structures which have been designed for the additional 2' Exit Number Sign.

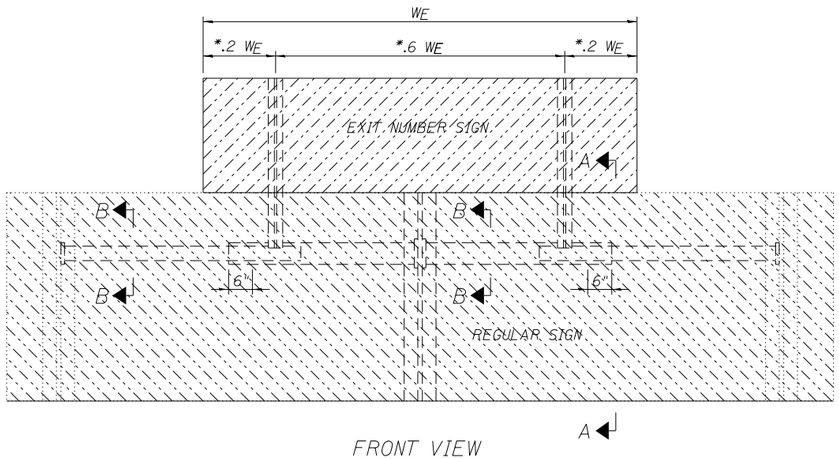
TYPICAL INSTALLATIONS



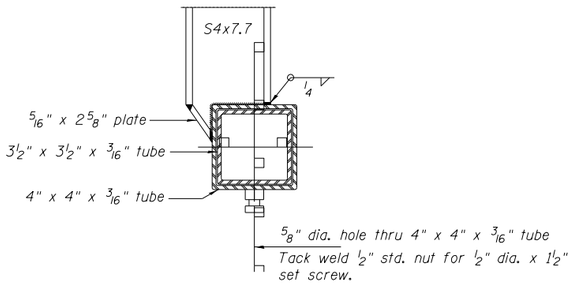
SECTION B-B



PLAN



FRONT VIEW



DETAIL A

BILL OF MATERIAL

EXIT PANEL MOUNTING BRACKET TYPE B	EACH	2

SEE SIGN SCHEDULE FOR LOCATIONS

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 braket: 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.

* THIS DIMENSION MAY VARY BY ±06 W_E.

FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

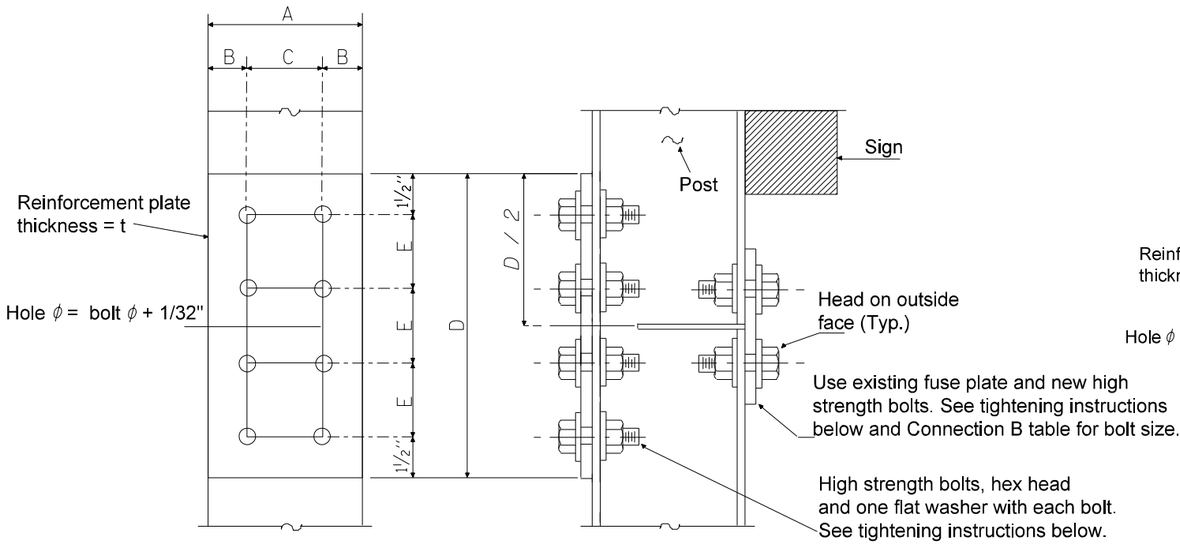
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS FOR MOUNTING EXIT NUMBER SIGN PANELS ON SHOULDER MOUNTED SIGN POSTS (MOUNTING BRACKET TYPE B)

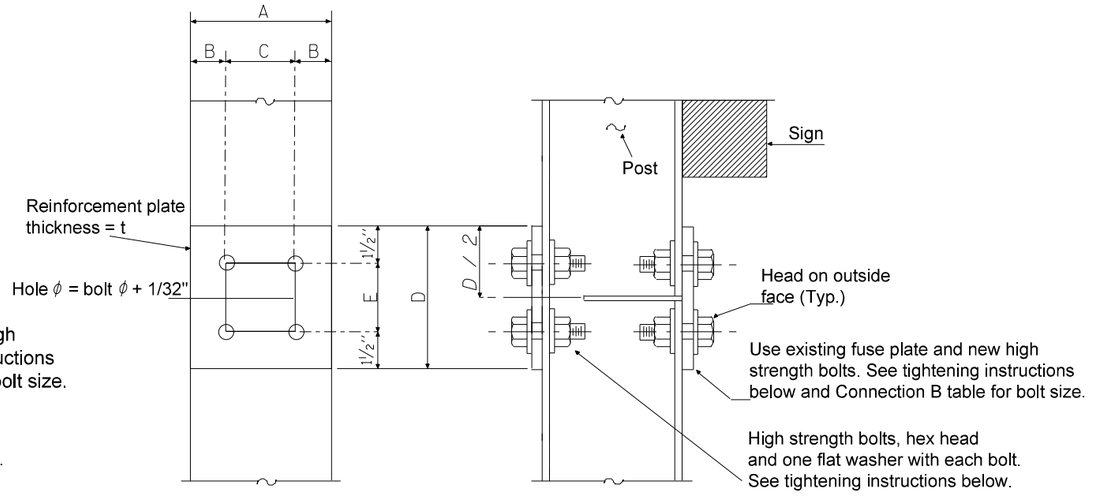
SCALE: _____ | SHEET NO. 1 OF 1 SHEET | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	6
		CONTRACT NO. 46518		
	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



CONNECTION A (8 BOLTS)



CONNECTION B (4 BOLTS)

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, galvening runs or misallignment 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 bults are "snug tight", each shall be tightened by an additional one - third roatation. 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.

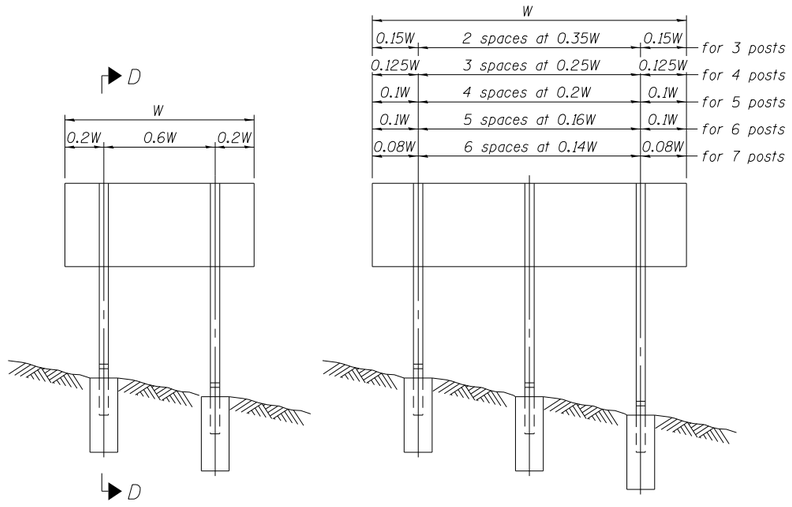
FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

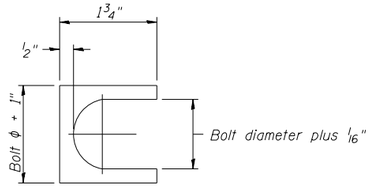
REINFORCEMENT PLATE DETAILS
"BREAK-AWAY" SIGN POSTS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	7
		CONTRACT NO. 46518		
	ILLINOIS	FED. AID PROJECT		

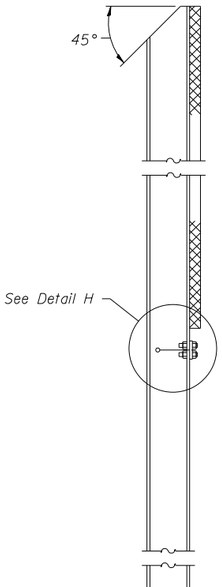


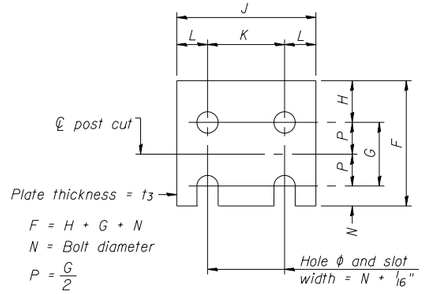
ELEVATION



SHIM DETAIL

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

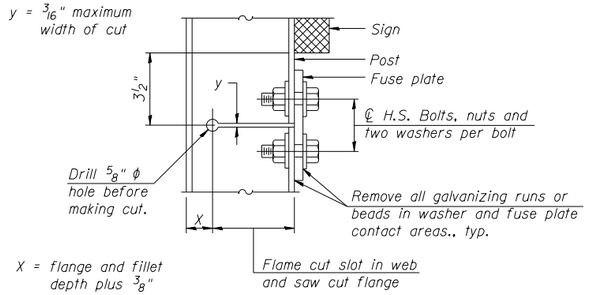




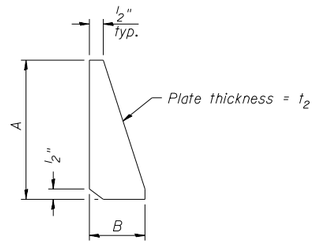
FUSE PLATE DETAIL

(Install with notches down.)

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

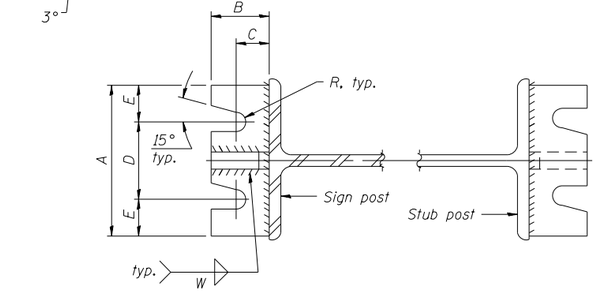


DETAIL H

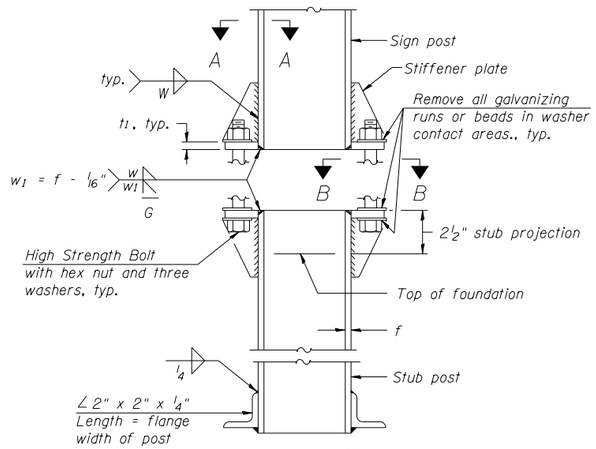


STIFFENER PLATE DETAIL

Diameter



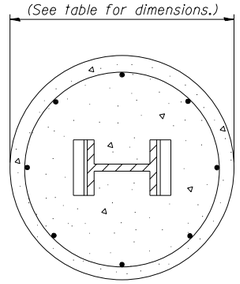
SECTION A-A SECTION B-B



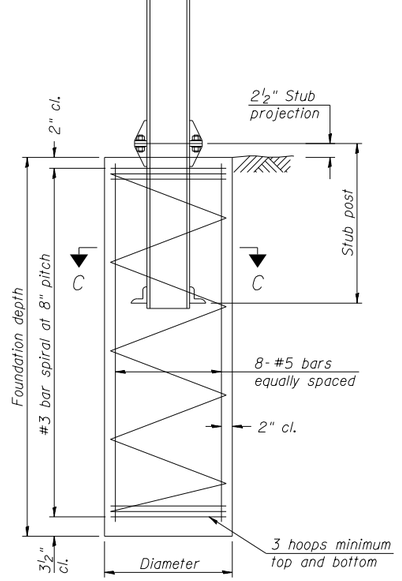
LOCATION SKETCH

ELEVATION

SIGN POST & STUB POST



SECTION C-C



SECTION D-D

GENERAL NOTES

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

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

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

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

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

BAW-A-1 6-1-12

FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BREAK-AWAY WIDE FLANGE STEEL SIGN POST DETAILS

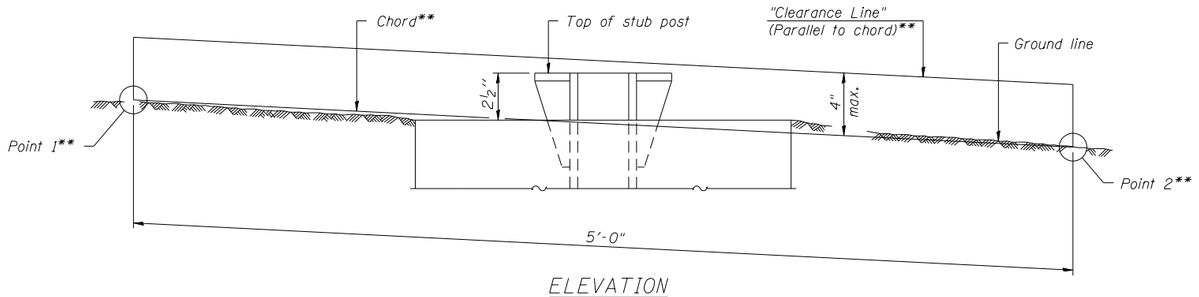
SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	8
		CONTRACT NO. 46518		
	ILLINOIS FED. AID PROJECT			

POST	CONCRETE FOUNDATION TABLE							POST TO STUB POST CONNECTION DATA										FUSE PLATE DATA			
	Foundation			Reinforcement																	
	Diameter	* Minimum Depth	Concrete (1) cu. yds.)	Vertical Bars Length	Bar Spirals Diameter	Bar Spirals Length	lbs. (2)	Stub Post Length	Bolt Size	A	B	C	D	E	t_1	t_2	R	W	J	K	L	t_3
W6x9	2'-0"	6'-0"	0.70	5'-9"	1'-8 1/2"	79'-0"	78	2'-3"	5/8" x 3 1/4"	6"	2 1/4"	1 1/4"	3 1/2"	1 1/4"	3/4"	1/2"	11/32"	1/4"	4"	2 1/4"	7/8"	1/4"
W6x15	2'-0"	6'-0"	0.70	5'-9"	1'-8 1/2"	79'-0"	78	2'-6"	5/8" x 3 1/4"	6"	2 1/4"	1 1/4"	3 1/2"	1 1/4"	3/4"	1/2"	11/32"	1/4"	6"	3 1/2"	1 1/4"	3/8"
W8x18	2'-0"	6'-0"	0.70	5'-9"	1'-8 1/2"	79'-0"	78	2'-6"	3/4" x 3 3/4"	6"	2 1/2"	1 3/8"	3 1/4"	1 3/8"	1"	1/2"	13/32"	5/16"	5 1/4"	2 3/4"	1 1/4"	3/8"
W10x22	2'-6"	6'-6"	1.18	6'-3"	2'-2 1/2"	105'-0"	92	3'-0"	3/4" x 3 3/4"	6"	2 1/2"	1 3/8"	3 1/4"	1 3/8"	1"	1/2"	13/32"	5/16"	5 3/4"	2 3/4"	1 1/2"	1/2"
W10x26	2'-6"	7'-0"	1.27	6'-9"	2'-2 1/2"	112'-0"	98	3'-0"	7/8" x 4"	7"	2 3/4"	1 1/2"	4"	1 1/2"	1"	3/4"	15/32"	3/8"	5 3/4"	2 3/4"	1 1/2"	5/8"
W12x26	2'-6"	7'-9"	1.41	7'-6"	2'-2 1/2"	119'-0"	107	3'-0"	7/8" x 4"	7"	2 3/4"	1 1/2"	4"	1 1/2"	1"	3/4"	15/32"	3/8"	6 1/2"	3 1/2"	1 1/2"	5/8"
W14x30	3'-0"	7'-3"	1.90	7'-0"	2'-8 1/2"	145'-0"	113	3'-0"	7/8" x 4"	7"	2 3/4"	1 1/2"	4"	1 1/2"	1"	3/4"	15/32"	3/8"	6 3/4"	3 1/2"	1 5/8"	1/2"
W14x38	3'-0"	8'-0"	2.09	7'-9"	2'-8 1/2"	153'-0"	122	3'-6"	1" x 4 1/2"	7 1/2"	3"	1 3/4"	4"	1 3/4"	1 1/4"	3/4"	17/32"	3/8"	6 3/4"	3 1/2"	1 5/8"	1/2"
W16x45	3'-0"	8'-6"	2.23	8'-3"	2'-8 1/2"	162'-0"	130	3'-6"	1" x 4 1/2"	7 1/2"	3"	1 3/4"	4"	1 3/4"	1 1/4"	3/4"	17/32"	3/8"	7"	3 1/2"	1 3/4"	1/2"

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

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



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 6-1-12

(Sheet 2 of 2)

FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

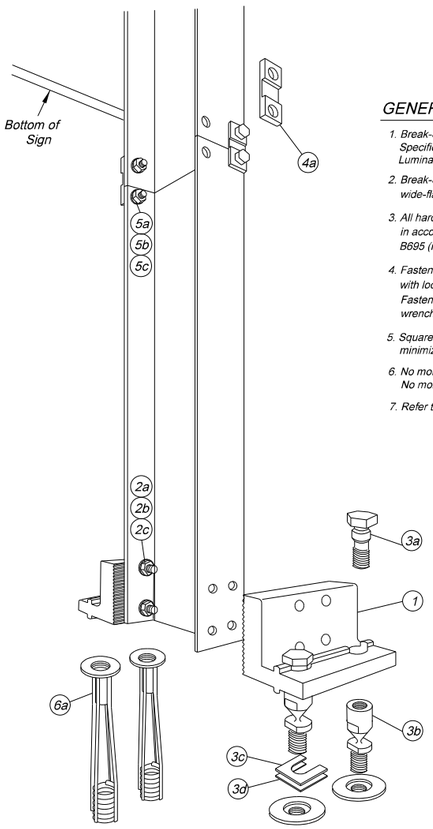
BREAK-AWAY WIDE FLANGE STEEL SIGN POST TABLES

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	9
		CONTRACT NO. 46518		
	ILLINOIS FED. AID PROJECT			

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.

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

W6X9

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

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:

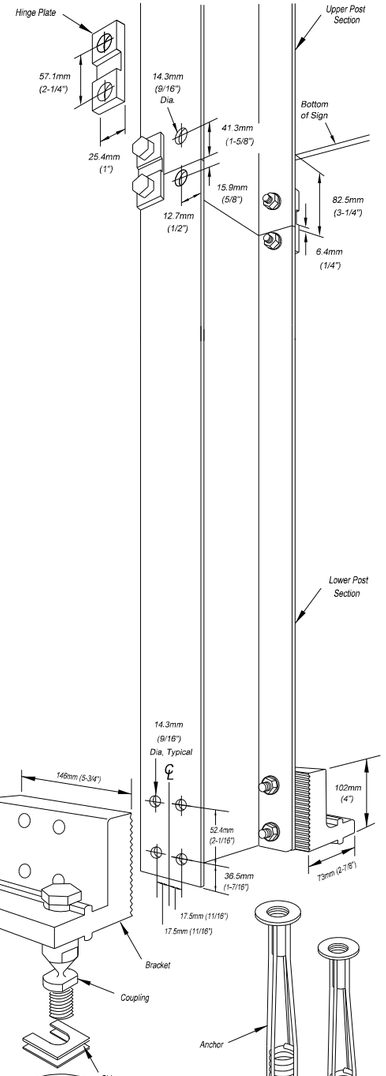
1. Drill eight (8) 14.3mm (9/16") diameter holes in the flanges of the lower post section as shown.
2. Place Brackets squarely on outer surface of the post flanges, and secure with bolts, lock washers, and nuts. Then, tighten all 1/2 turn beyond snug.

COUPLING ASSEMBLY:

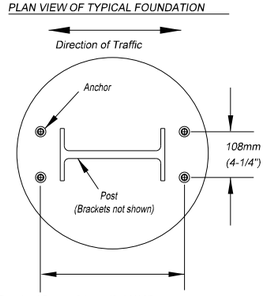
1. Thread four (4) Break-Safe Couplings into Anchors. Do not tighten.
2. Suspend post assembly over foundation, insert Special Bolts through holes in the Brackets, and thread them snug into the Couplings.
3. If post is not plumb, insert Shims (14g and/or 18g) between the Couplings and Anchors, where 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

W6X9

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 = 104.8994 '/ in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

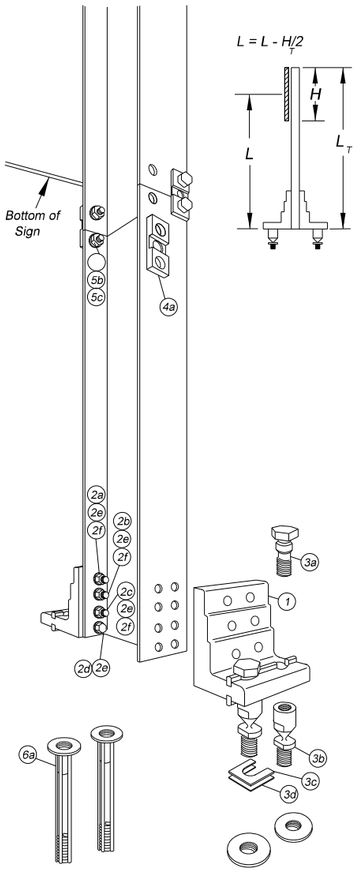
ESTIMATED SUMMARY OF QUANTITIES

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	10
		CONTRACT NO. 46518		
	ILLINOIS FED. AID PROJECT			

PARTS LIST

ITEM	DESCRIPTION	SIZE/SPECIFICATIONS	QTY/ POST	PART NUMBER
2a	Bolt	12.7mm(1/2")-13UNCx63.5mm(2-1/2"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2b	Bolt	12.7mm(1/2")-13UNCx69.8mm(2-3/4"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2c	Bolt	12.7mm(1/2")-13UNCx76.2mm(3"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2d	Cap Screw	12.7mm(1/2")-13UNCx31.7mm(1-1/4"), Hex Head, ASTM A307, Galv. ASTM A153	4	
2e	LockWasher	12.7mm(1/2"), ANSI B18-21-1, Galv. ASTM A153	16	
2f	Nut	12.7mm(1/2")-13UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A1531	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 B525, 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 1038 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'.

POST SIZE	BRACKET No. 1		BRACKET No. 2		BRACKET No. 3	
	Min. 'L'	Max. 'L'	Min. 'L'	Max. 'L'	Min. 'L'	Max. 'L'
152mm (6")	3.6m(12')	8.8m(29')	2.7m(9')	3.6m(12')	0	2.7m(9')
203mm (8")	4.3m(14')	8.8m(29')	3.0m(10')	4.3m(14')	0	3.0m(10')

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 B525 is designed to fit 150mm (6") and 200mm (8") Wide Flange I-Beam, and 127mm (5") and 150mm (6") Square Tube signposts.
3. Select proper Bracket Number by referring to Bracket Selection Table.
4. All hardware items are American Standard sizes, gavanized in accordance with ASTM A153 (hot dipped) or ASTM B695 (mechanically applied).
5. 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.
6. Square-up and level individual components, particularly Anchors to minimize the need for shimming between the Couplings and Anchors.
7. No more than two shims shall be placed under any one coupling. No more than three shims underneath any pair of couplings.
8. Refer to other side of page for complete installation instructions.

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

W6 & W8

Break-Safe Model B525

Breakaway Support System for Sign Posts

Scale: Not To Scale	Date: July 2000
Drawing No. BS-B525-1, -2, -3	Sheet: 1 of 2

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 postion of the anchors.

1. 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.
2. 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.
3. 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.
4. 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.
5. 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) 20.6mm (13/16") 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:

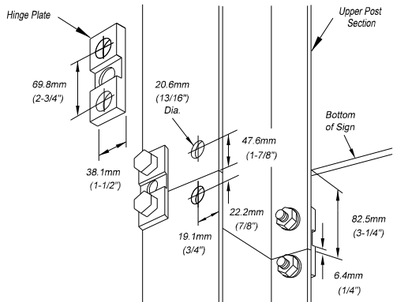
1. Drill sixteen (16) 14.3mm (9/16") diameter holes in the flanges of the lower post section as shown.
2. Place Brackets squarely on outer surface of the post flanges, and secure with bolts, lock washers, nuts, and cap screws. Then, tighten all 1/2 turn beyond snug.

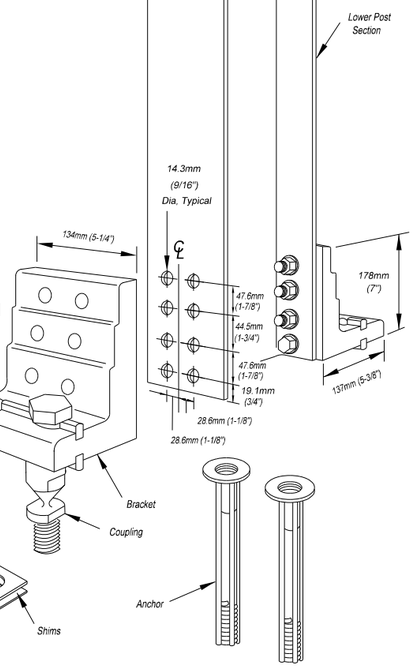
COUPLING ASSEMBLY:

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 convensional 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 convensional wrenches.

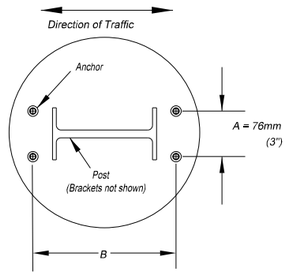
SIGN PANEL ASSEMBLY:

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



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

W6 & W8

Break-Safe Model B525

Breakaway Support System for Sign Posts

Scale: Not To Scale	Date: July 2000
Drawing No. BS-B525-1, -2, -3	Sheet: 2 of 2

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.
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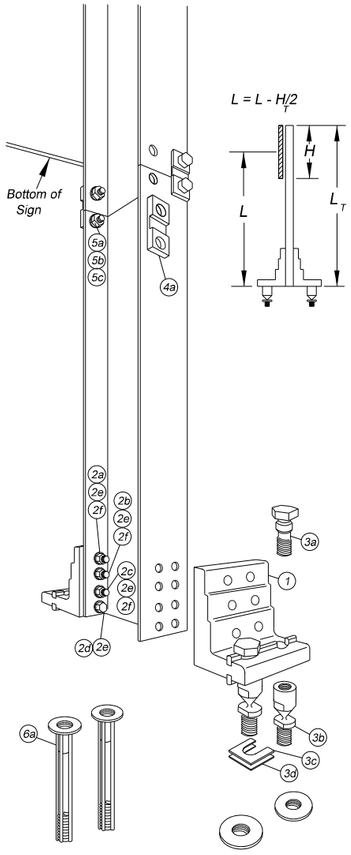
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -						CONTRACT NO. 46518	
	PLOT DATE = 3/27/2019	DATE -	REVISED - -		SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____			ILLINOIS	FED. AID PROJECT	

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:

1. Break-Safe meets all requirements of "AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals."
2. 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.
3. Select proper Bracket Number by referring to Bracket Selection Table.
4. All hardware items are American Standard sizes, galvanized in accordance with ASTM A153 (hot dipped) or ASTM B695 (mechanically applied).
5. 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.
6. Square-up and level individual components, particularly Anchors to minimize the need for shimming between the Couplings and Anchors.
7. No more than two shims shall be placed under any one coupling. No more than three shims underneath any pair of couplings.
8. Refer to other side of page for complete installation instructions.

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: July 2000
Drawing No. BS-B650-1, -2, -3	Sheet: 1 of 2

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 postion of the anchors.

1. 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.
2. 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.
3. 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.
4. 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.
5. 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) 20.6mm (13/16") 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 sixteen (16) 17.5mm (11/16") 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, nuts, and cap screws. Then, tighten all 1/2 turn beyond snug.

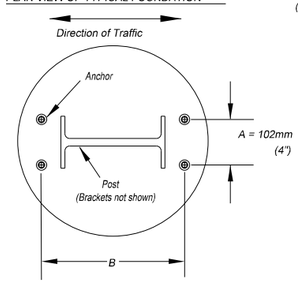
COUPLING ASSEMBLY:

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.

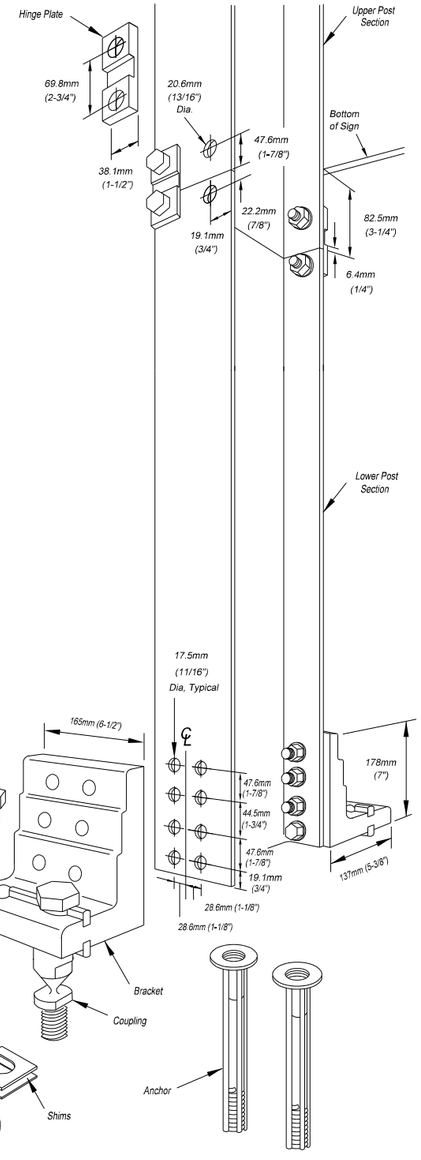
SIGN PANEL ASSEMBLY:

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



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

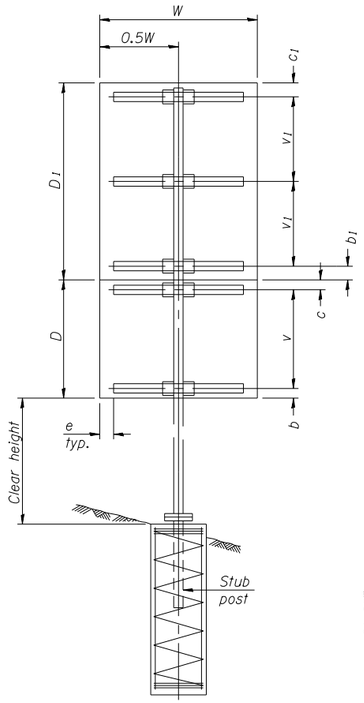
W10 through W21

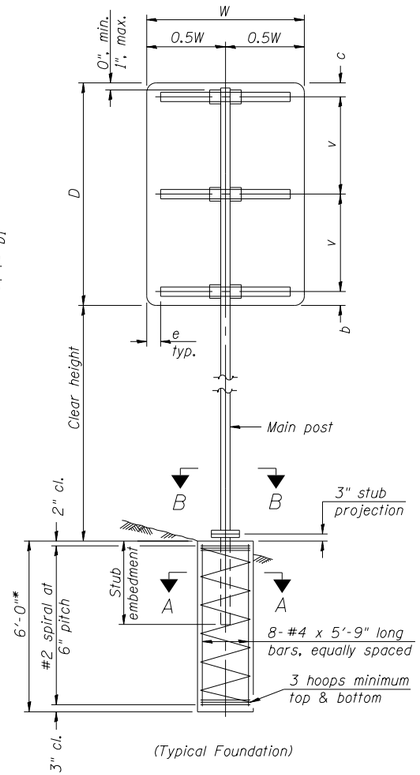
Break-Safe Model B650

Breakaway Support System for Sign Posts

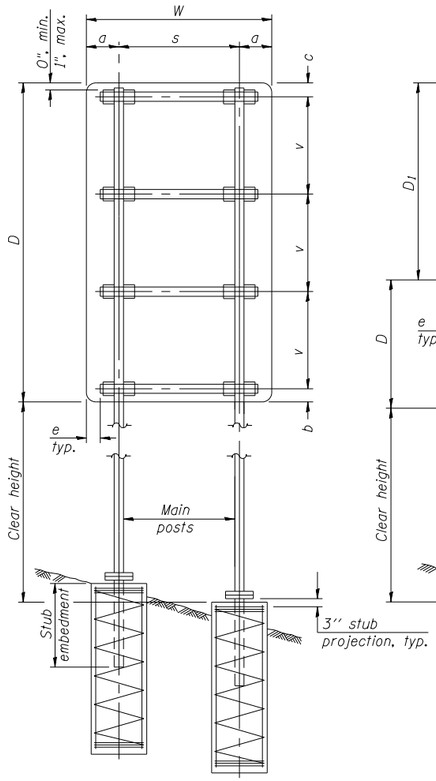
Scale: Not To Scale	Date: October 2004
Drawing No. BS-B650-1, -2, -3	Sheet: 2 of 2

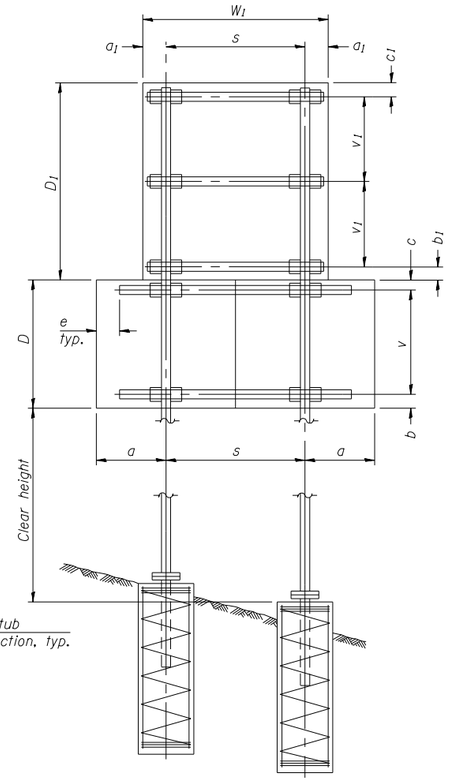
FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ESTIMATED SUMMARY OF QUANTITIES	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - -			VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	12
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -						CONTRACT NO. 46518	
	PLOT DATE = 3/27/2019	DATE -	REVISED - -		SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____			ILLINOIS	FED. AID PROJECT	





(Typical Foundation)





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.

SINGLE POST ASSEMBLY EXAMPLES

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

a or a_1 = 6" min. to 2'-0" max. (Approximately 0.2W or 0.2W_1)
b or b_1 = 3" min. to 4" max
c or c_1 = 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_1)
v or v_1 = 2'-0" min. to 2'-11" max.

DUAL POST ASSEMBLY EXAMPLES

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 1/4"	7.11	2'-0"	2'-3"	1/2" x 2 3/4"	8 1/4"	5/8"	9/32"	6 1/2"
4" x 2" x 1/4"	8.81	2'-0"	2'-3"	1/2" x 2 3/4"	8 1/4"	5/8"	9/32"	6 1/2"
4" x 3" x 1/4"	10.51	2'-3"	2'-6"	5/8" x 3 1/4"	10"	3/4"	11/32"	8"
5" x 3" x 1/4"	12.21	2'-3"	2'-6"	5/8" x 3 1/4"	10"	3/4"	11/32"	8"
6" x 3" x 1/4"	13.91	2'-3"	2'-6"	5/8" x 3 1/4"	11 1/2"	3/4"	11/32"	9 1/2"
6" x 4" x 1/4"	15.62	2'-3"	2'-6"	3/4" x 3 1/2"	11 1/2"	3/4"	13/32"	9 1/2"
6" x 4" x 5/16"	19.08	2'-3"	2'-6"	3/4" x 3 1/2"	11 1/2"	3/4"	13/32"	9 1/2"
7" x 5" x 1/4"	19.02	2'-6"	2'-9"	3/4" x 3 1/2"	1'-2"	3/4"	13/32"	1'-0"
8" x 4" x 1/4"	19.02	2'-6"	2'-9"	3/4" x 3 1/2"	1'-2"	3/4"	13/32"	1'-0"
8" x 6" x 1/4"	22.42	2'-6"	2'-9"	7/8" x 3 1/2"	1'-2"	3/4"	15/32"	1'-0"

BAT-A-1 6-1-12

FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BREAK-AWAY TUBULAR STEEL SIGN POSTS AND FOUNDATIONS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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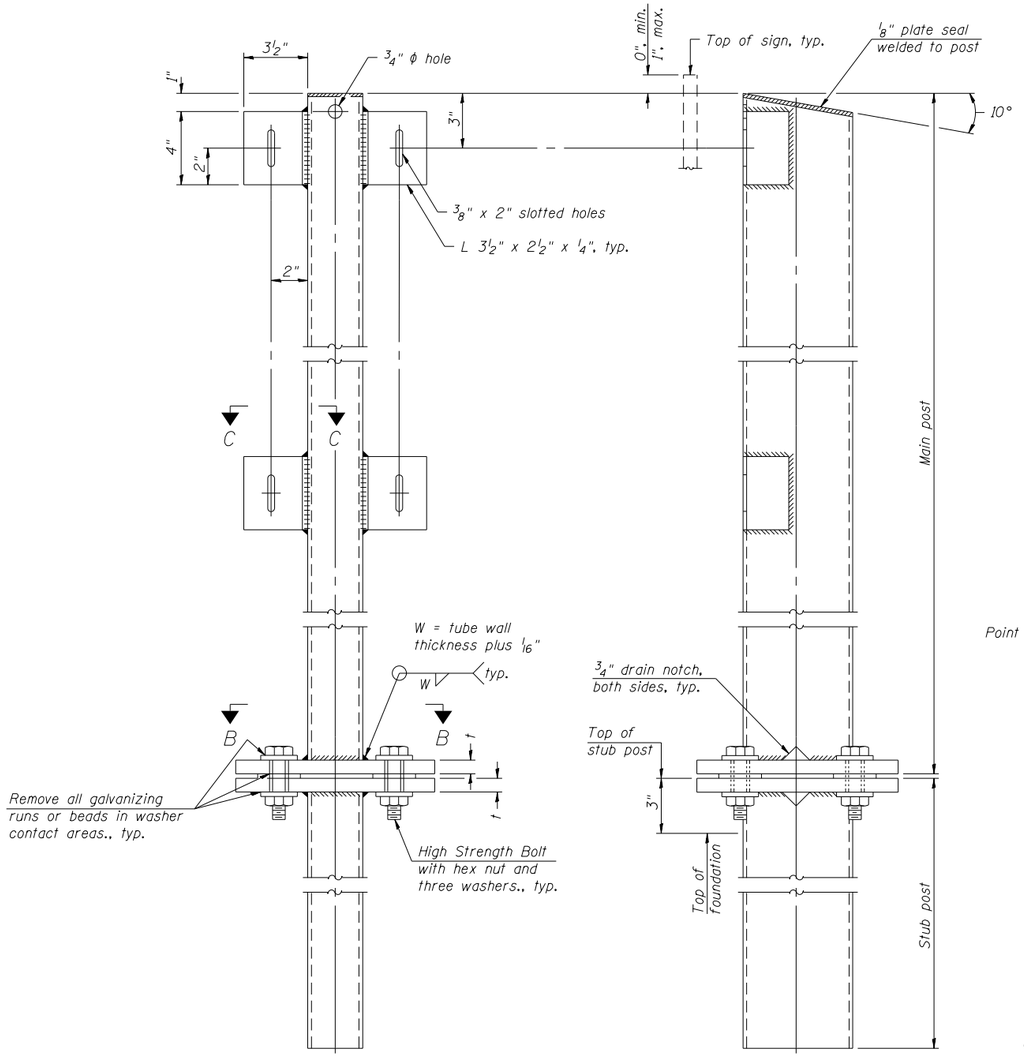
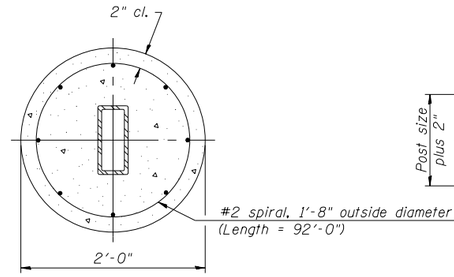
		CONTRACT NO. 46518		
	ILLINOIS FED. AID PROJECT			



FRONT ELEVATION

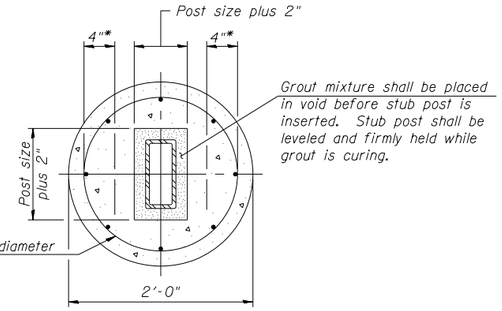
SIDE ELEVATION

MAIN POST & STUB POST



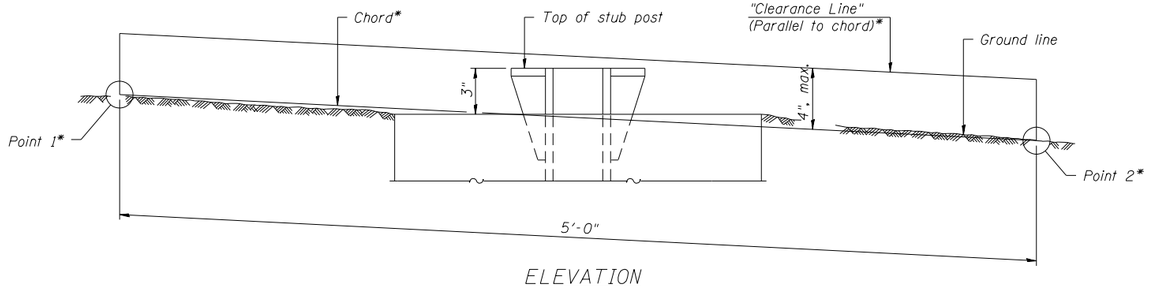
SECTION A-A
(CAST-IN-PLACE)

OR



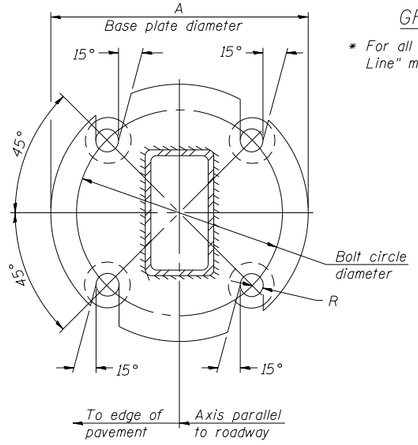
SECTION A-A
(PRECAST)

* 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.

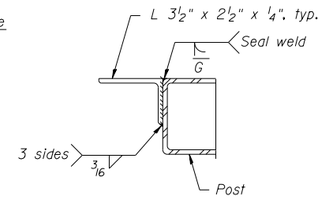


ELEVATION
GROUND LINE & STUB POST

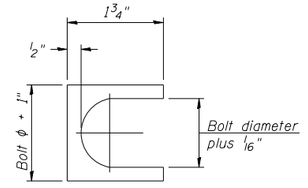
* For all "Point 1" and "Point 2" locations. "Clearance Line" must be at or above top of stub post.



SECTION B-B



SECTION C-C
Weld continuously around corners.



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

BAT-A-2 6-1-12

(Sheet 2 of 2)

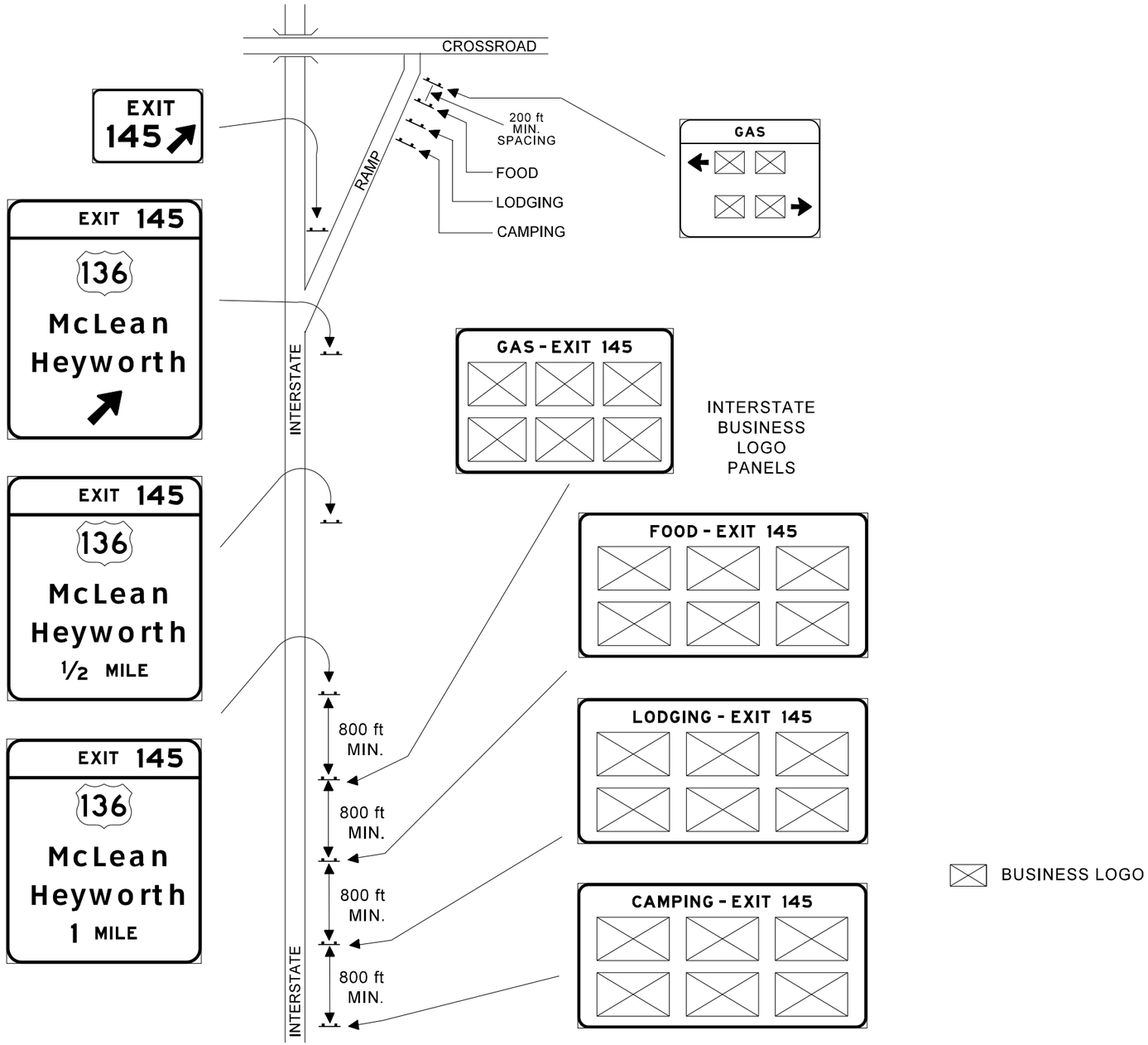
FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BREAK-AWAY TUBULAR STEEL SIGN POSTS AND DETAILS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	14
		CONTRACT NO. 46518		
		ILLINOIS FED. AID PROJECT		



FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 104.8994 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

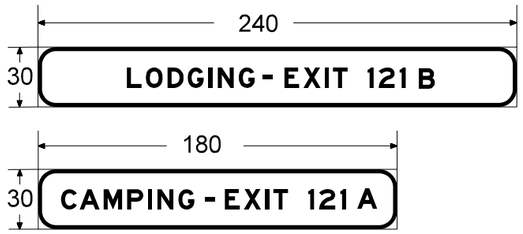
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	15
		CONTRACT NO. 46518		
		ILLINOIS FED. AID PROJECT		

MAINLINE SUPPLEMENTAL SERVICE SIGN DETAILS



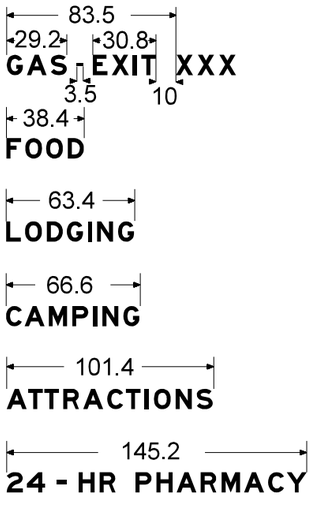
MAINLINE SUPPLEMENTAL SERVICE SIGNS ONLY USED FOR THE FOLLOWING SERVICES.

GAS, FOOD, LODGING, AND CAMPING

MAINLINE SUPPLEMENTAL SERVICE SIGN NOTES:

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

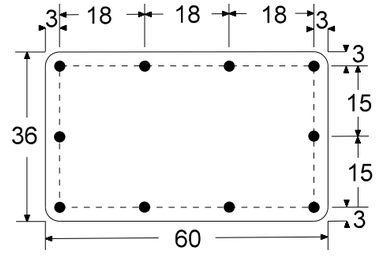
MAINLINE SIGN WORD SPACING



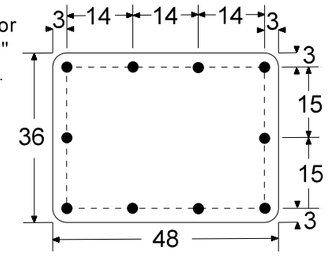
MAINLINE SERVICE PLATE HOLE SPACING DETAILS

(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.

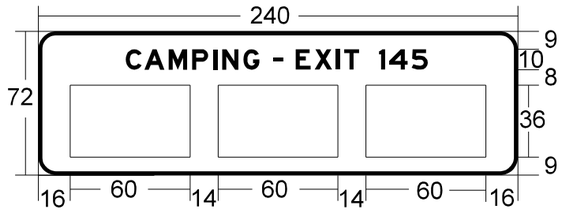


SERVICE PLATE NOTES:

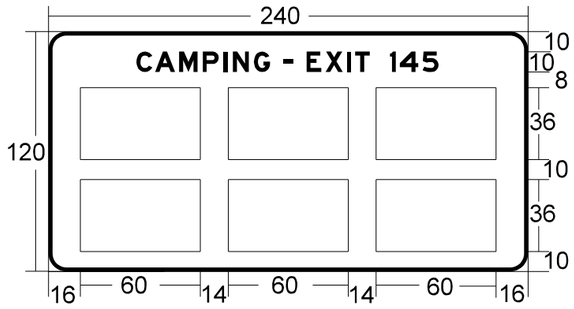
1. Holes must be $^{3}/_{16}$" (0.1875 in. dia.).
2. All Service Plate corners have a 3 inch radius.

GENERAL NOTES FOR MAINLINE SIGNS:

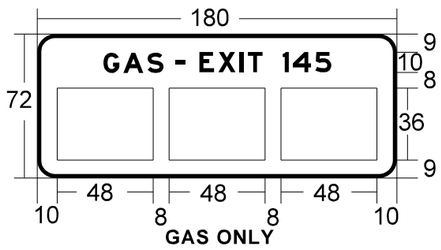
1. All legends are 10 inch E Modified.
2. All borders are 2 inches wide.
3. All corners have a 9 inch radius.
4. Background is Blue.
5. Legend and border is white.
6. All dimensions are shown in inches.
7. Multiple services on a single panel shall be listed by priority, from left to right or top to bottom.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



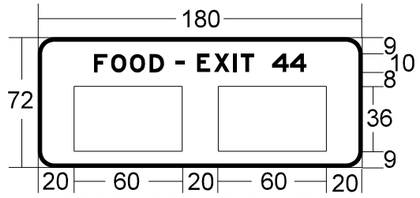
FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY



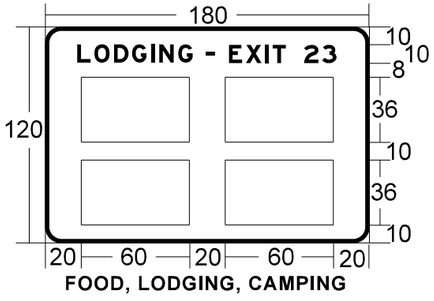
FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY



GAS ONLY

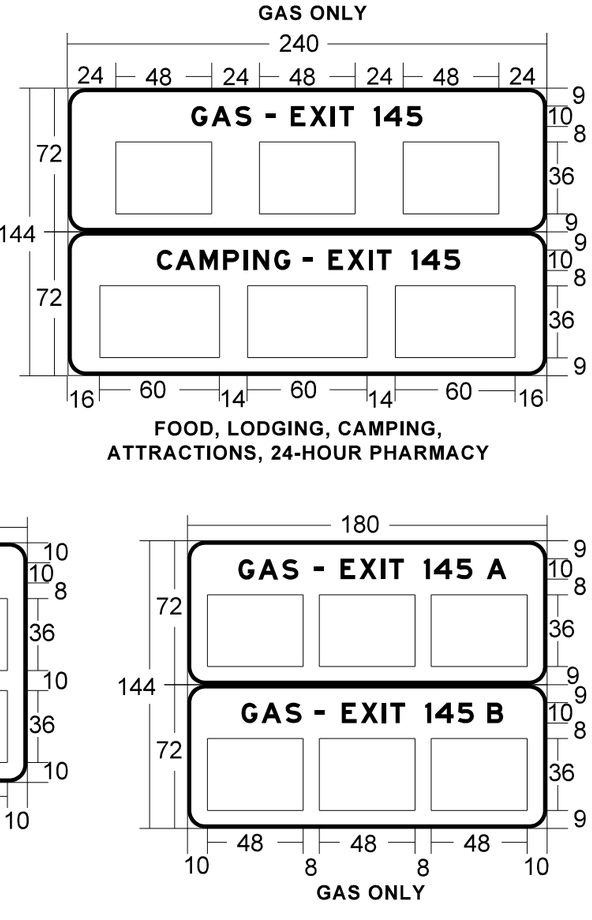


FOOD, LODGING, CAMPING

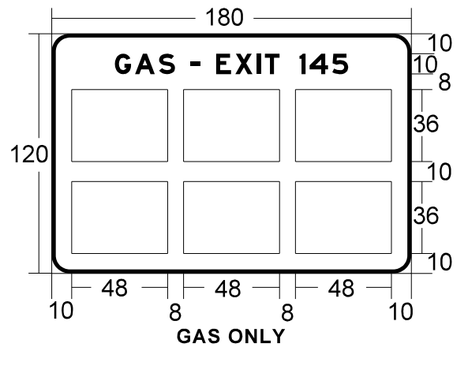


FOOD, LODGING, CAMPING

GAS ONLY



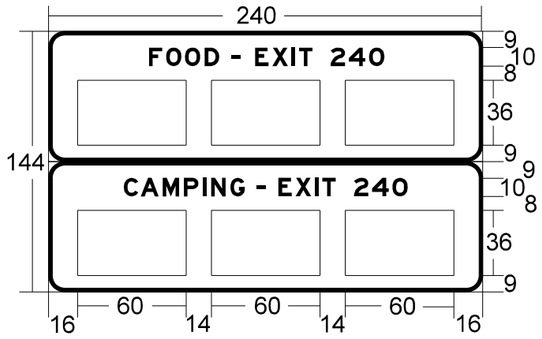
FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY



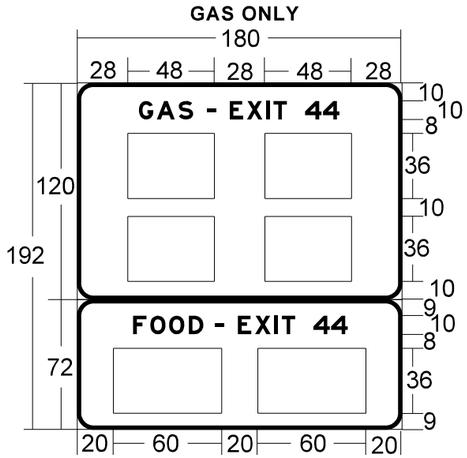
GAS ONLY

GAS ONLY

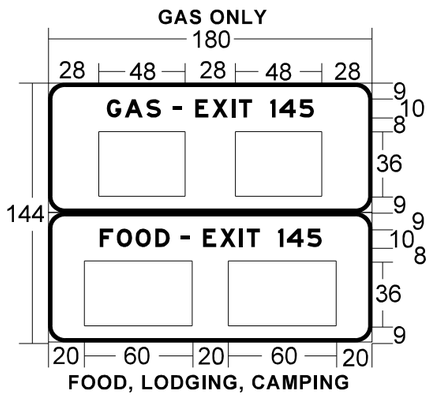
FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**MAINLINE SIGN EXAMPLES AND LOGO SERVICE SIGN DETAILS**	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - -			VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	16
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -							
	PLOT DATE = 3/27/2019	DATE -	REVISED - -		SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____			CONTRACT NO. 46518		
								ILLINOIS FED. AID PROJECT		



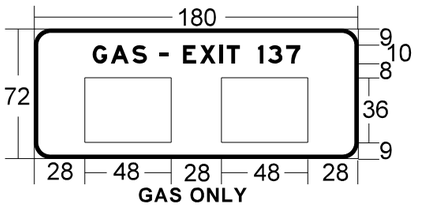
FOOD, LODGING, CAMPING,
ATTRACTIONS, 24-HOUR PHARMACY



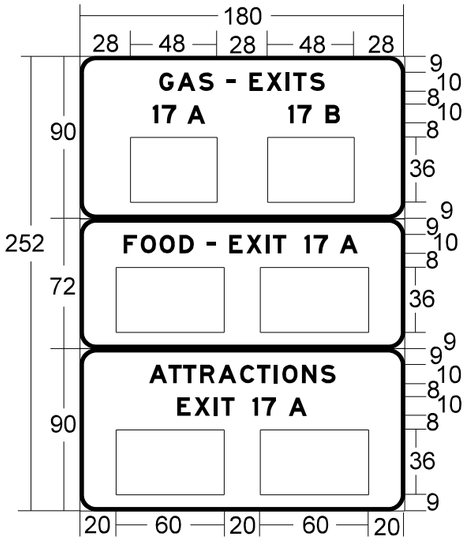
FOOD, LODGING, CAMPING

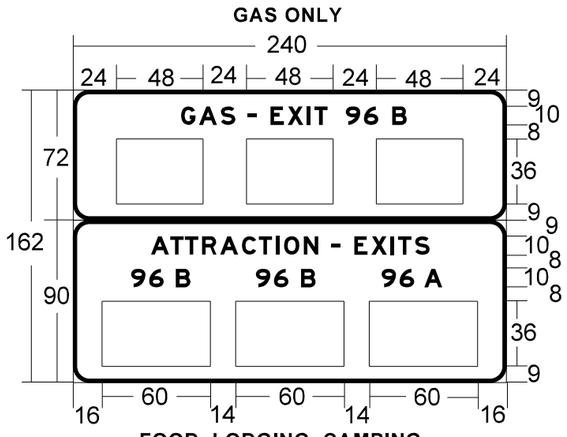


FOOD, LODGING, CAMPING

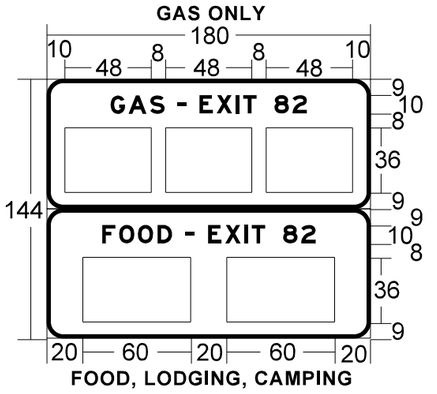


GAS ONLY

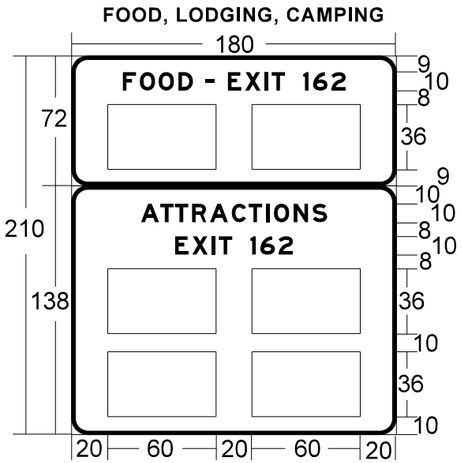




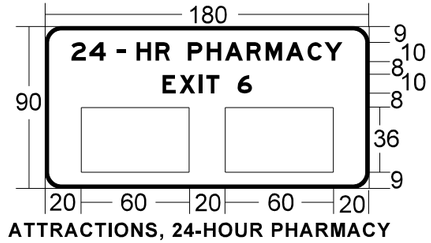
FOOD, LODGING, CAMPING,
ATTRACTIONS, 24-HOUR PHARMACY



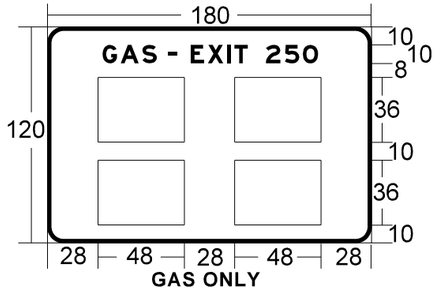
FOOD, LODGING, CAMPING



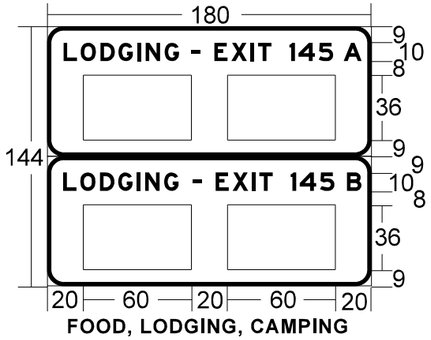
ATTRACTIONS, 24-HOUR PHARMACY



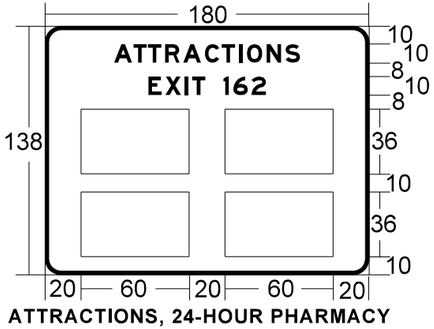
ATTRACTIONS, 24-HOUR PHARMACY



GAS ONLY



FOOD, LODGING, CAMPING



ATTRACTIONS, 24-HOUR PHARMACY

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.

FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

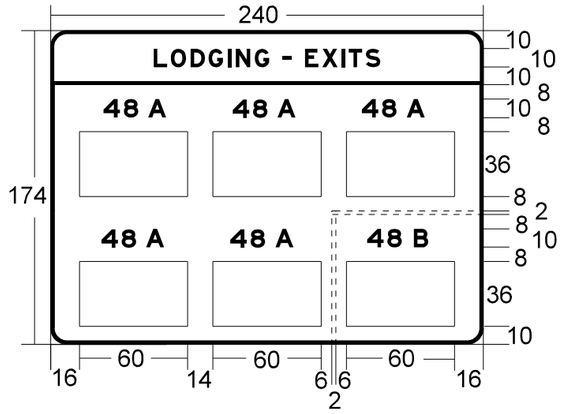
MAINLINE SIGN EXAMPLES

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

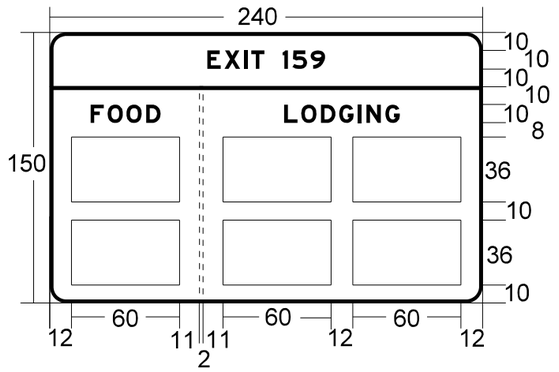
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	17
		CONTRACT NO. 46518		
		ILLINOIS FED. AID PROJECT		

DETACHABLE BORDER

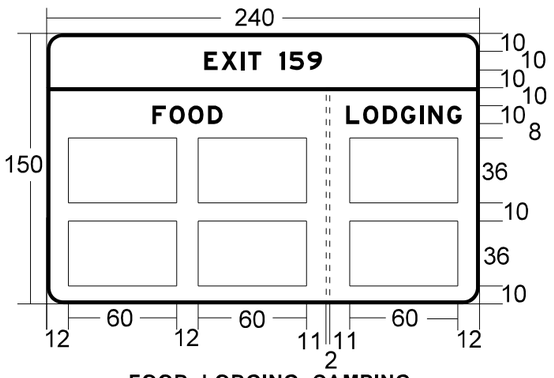
When using a detachable border, secure with a rivet at the beginning, end and every 2 feet in between.



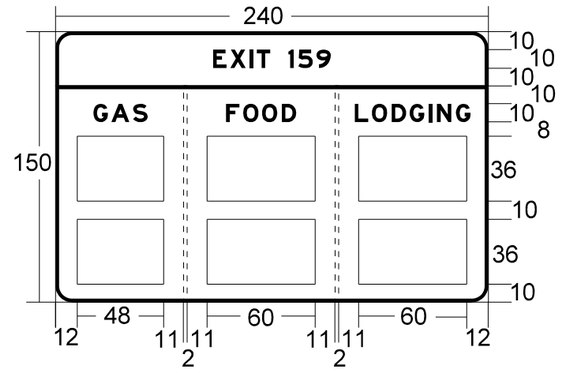
FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY



FOOD, LODGING, CAMPING



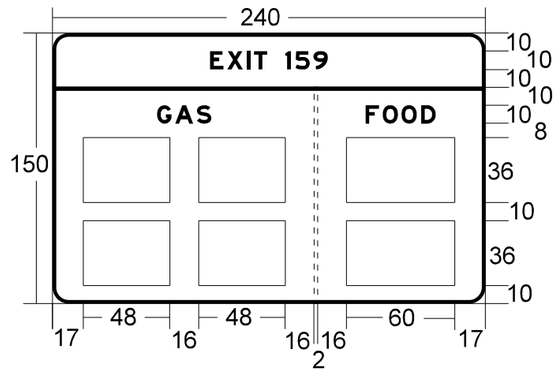
FOOD, LODGING, CAMPING



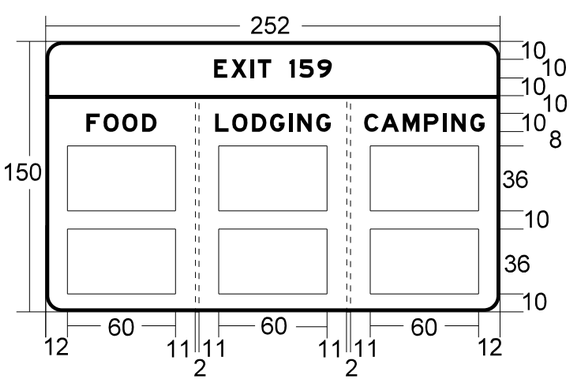
GAS, FOOD, LODGING, CAMPING

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.



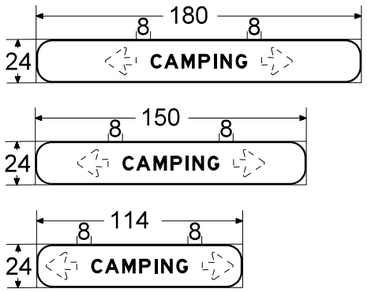
GAS, FOOD, LODGING, CAMPING



FOOD, LODGING, CAMPING

FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	MAINLINE SIGN EXAMPLES	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
		DRAWN -	REVISED - -			VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	49 / 2
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -						CONTRACT NO. 46518
	PLOT DATE = 3/27/2019	DATE -	REVISED - -		SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____			ILLINOIS	FED. AID PROJECT

RAMP SUPPLEMENTAL SERVICE SIGN DETAILS

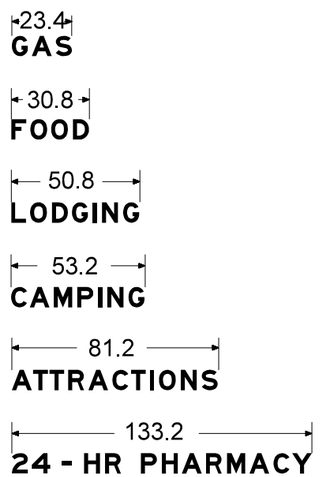


RAMP SUPPLEMENTAL SERVICE SIGNS ONLY USED FOR THE FOLLOWING SERVICES. GAS, FOOD, LODGING, AND CAMPING

RAMP SUPPLEMENTAL SERVICE SIGN NOTES:

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

RAMP SIGN WORD SPACING



ARROW HOLE SPACING DETAILS:

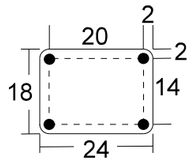
RAMP SERVICE PLATE NOTES:

1. Holes must be $^{3}/_{16}$" (0.1875 in. dia.).
2. All Ramp Service Plate corners have a 2 inch radius.

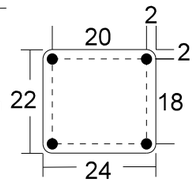
RAMP SERVICE PLATE HOLE SPACING DETAILS

(PLATES FURNISHED BY OTHERS)

Hole spacing for 24" wide by 18" high GAS, FOOD, LODGING, CAMPING, ATTRACTIONS, or 24-HR PHARMACY logos.



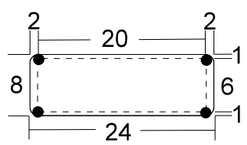
Hole spacing for 24" wide by 22" high open seasonally CAMPING logo.

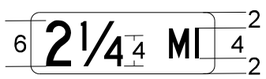


RAMP SERVICE PLATE NOTES:

1. Holes must be $^{3}/_{16}$" (0.1875 in. dia.).
2. All Ramp Service Plate corners have a 2 inch radius.

MILEAGE PLATE HOLE SPACING DETAIL



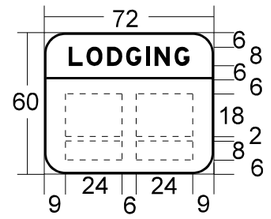


MILEAGE PLATE NOTES:

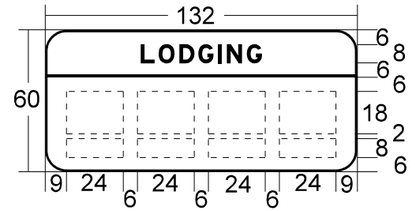
1. Holes must be $^{3}/_{16}$" (0.1875 in. dia.).
2. All legends are C series.
3. All legends are centered.
4. All dimensions are shown in inches.
5. Legend is white.
6. Background is Blue.

GENERAL NOTES FOR RAMP SIGNS:

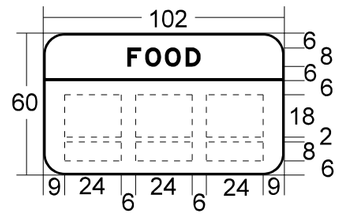
1. All legends are 8 inch E Modified.
2. All borders are 1 inches wide.
3. All corners have a 9 inch radius.
4. Background is Blue.
5. Legend and border is white.
6. All dimensions are shown in inches.
7. Multiple services on a single panel shall be listed by priority, from left to right or top to bottom.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



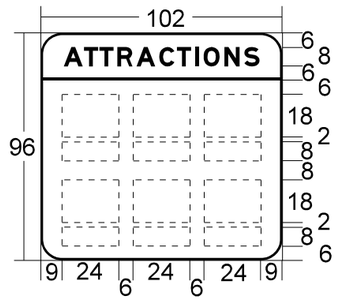
GAS, FOOD, LODGING, CAMPING



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



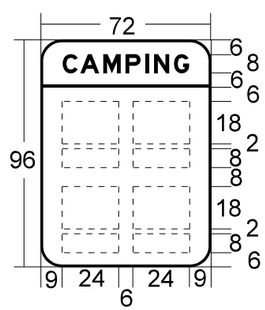
GAS, FOOD, LODGING, CAMPING, ATTRACTIONS



GAS, FOOD, LODGING, CAMPING, ATTRACTIONS

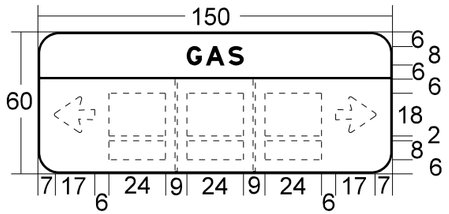
POSSIBLE RAMP SERVICE PLATE LOCATIONS

POSSIBLE RAMP MILEAGE PLATE LOCATIONS

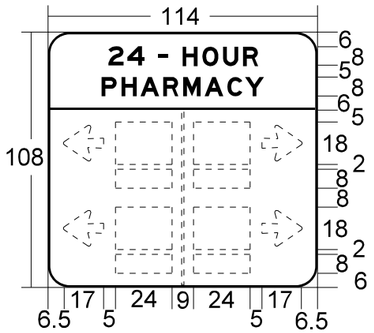


GAS, FOOD, LODGING, CAMPING

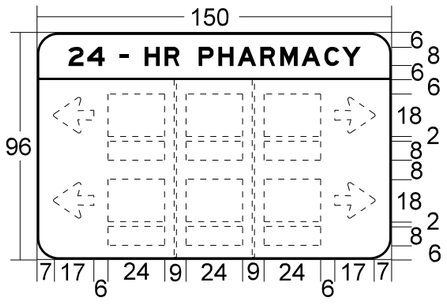
FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	RAMP SIGN SPECIFICATIONS AND EXAMPLES	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - -			VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	49	2
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -						CONTRACT NO. 46518	
	PLOT DATE = 3/27/2019	DATE -	REVISED - -		SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____			ILLINOIS	FED. AID PROJECT	



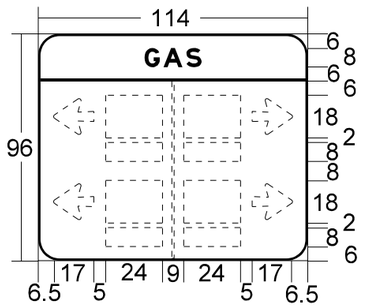
GAS, FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY



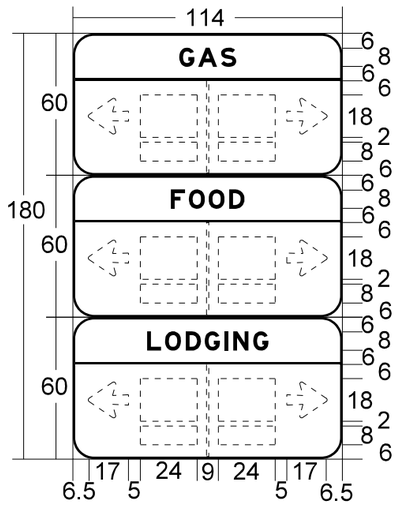
24-HOUR PHARMACY



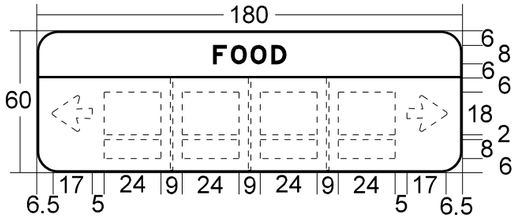
GAS, FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY



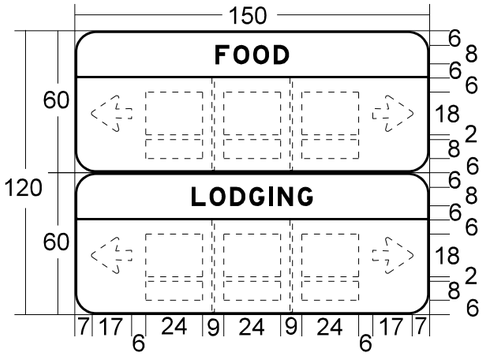
GAS, FOOD, LODGING, CAMPING, ATTRACTIONS



GAS, FOOD, LODGING, CAMPING, ATTRACTIONS

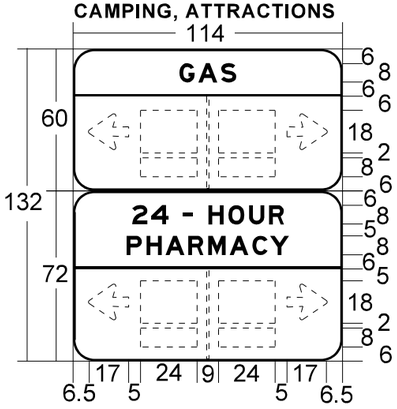


GAS, FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY

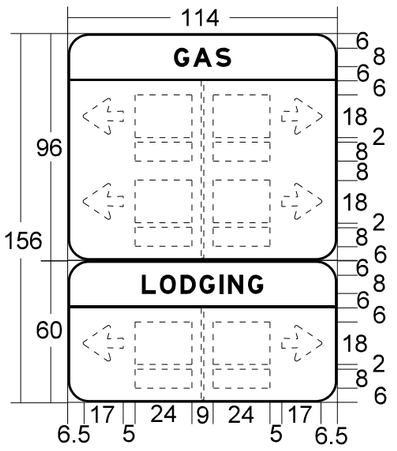


GAS, FOOD, LODGING, CAMPING, ATTRACTIONS, 24-HOUR PHARMACY

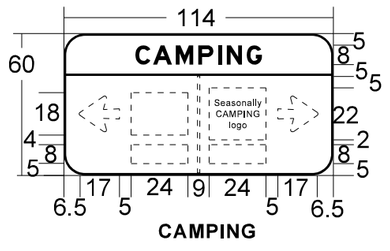
GAS, FOOD, LODGING, CAMPING, ATTRACTIONS



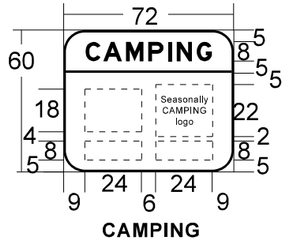
24-HOUR PHARMACY



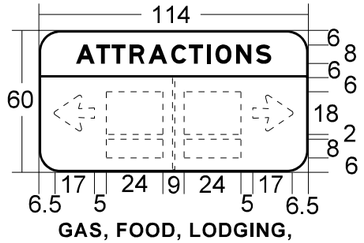
GAS, FOOD, LODGING, CAMPING, ATTRACTIONS



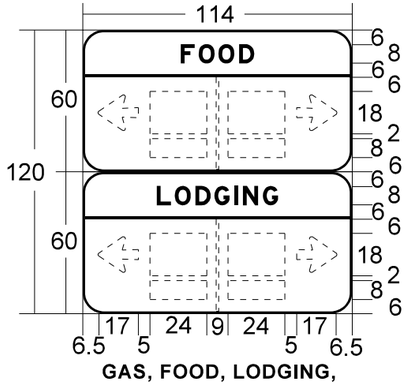
CAMPING



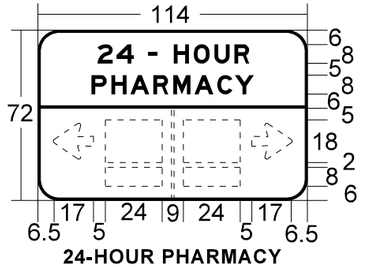
CAMPING



GAS, FOOD, LODGING, CAMPING, ATTRACTIONS



GAS, FOOD, LODGING, CAMPING, ATTRACTIONS



24-HOUR PHARMACY

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 - -
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

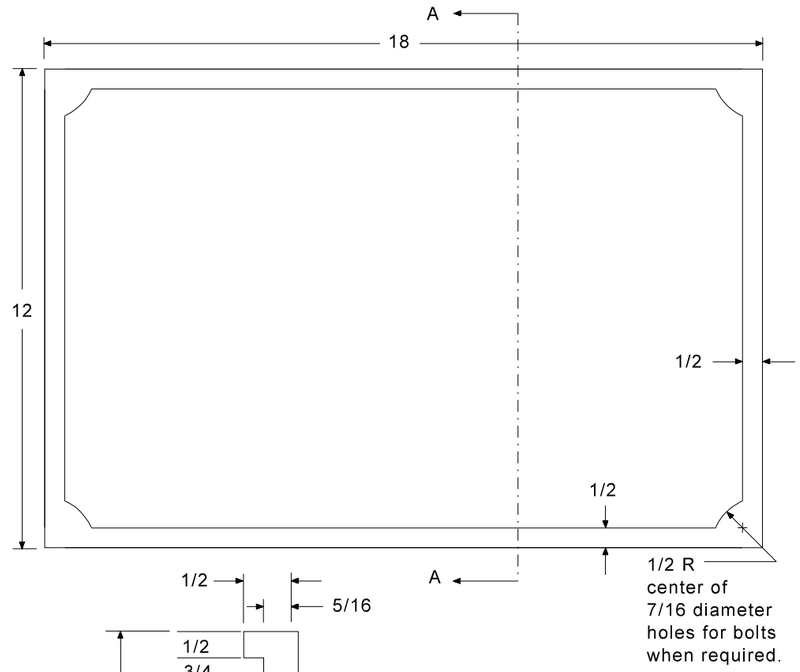
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAMP SIGN EXAMPLES

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	20
		CONTRACT NO. 46518		
		ILLINOIS FED. AID PROJECT		

MEMORIAL PLAQUE DETAIL

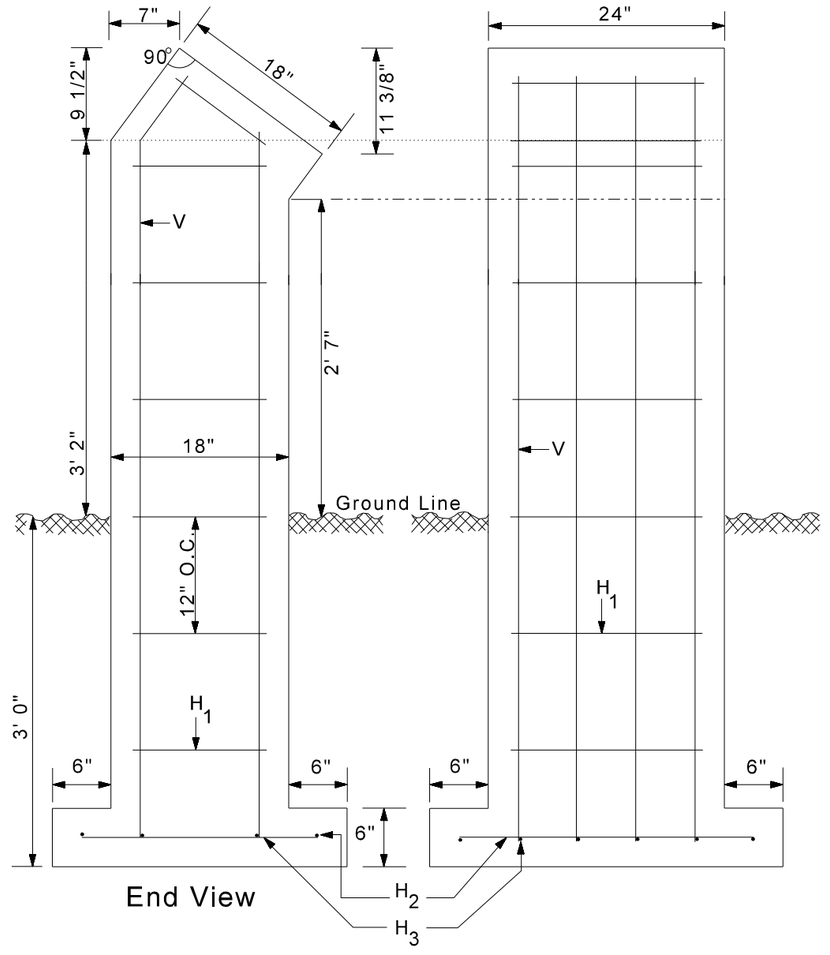


View A-A

Notes:

1. All dimensions are in inches.
2. Material to be best quality brass or bronze.
3. Border and lettering raised 1/8 inch ribbon letters.
4. Top surface polished with brown background.
5. For fastening in concrete, use six (6) lugs at least 3-inches long cast on the back of the plaque. Drill concrete and place lugs in epoxy/grout mix.
6. For fastening on steel, bolt four (4) 3/8-inch by 1-inch stainless steel or brass cap screws. Screws may be self-tapping or steel may be drilled and tapped in the field.

TYPICAL MONUMENT



Note:
Use Number 3 rebar.
Monument may be cast-in-place or prefabricated.
Backfill with existing material thoroughly tamped in 12-inch lifts.

Bar	Size	Type
V	#3	
H_1	#3	4 1/2"
H_2	#3	
H_3	#3	

FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MEMORIAL PLAQUE AND TYPICAL MONUMENT DETAILS

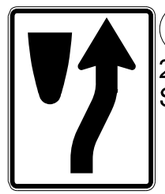
SCALE: _____ | SHEET NO. 1 OF 1 SHEET | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	21
			CONTRACT NO. 46518	
		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-I101
combined

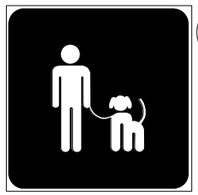
K
12" X 18"
White on Brown



P
24" X 30"
Std. R4-7

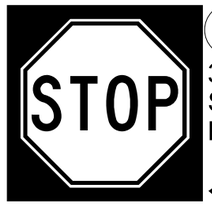
U
18" X 24"
Std. R6-2
Arrow direction
as noted

B
48" X 48"
White on Brown



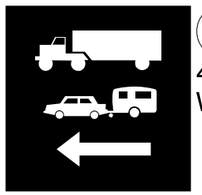
G
24" X 24"
White on Brown

L
CLICK IT
OR
TICKET

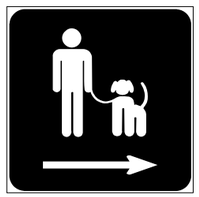


Q
36" X 36"
Std. 30" X 30"
R1-1
⬅ Brown

V
48" X 48"
White on
brown



C
48" X 48"
White on Brown

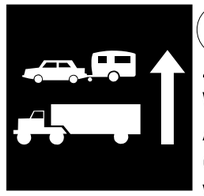


H
24" X 24"
White on Brown

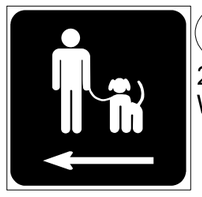
M
36" X 36"
White on Brown

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

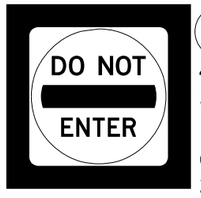


I
24" X 24"
White on Brown

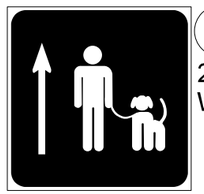
N
36" X 24"
White on
Brown

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

X
36" X 24"
White on
brown

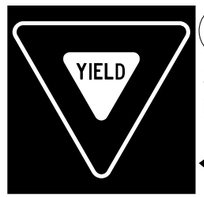


E
48" X 48"
Std. 36" X 36"
R5-1
or
36" X 36"
overall
with Std 36" X 36"
R5-1 where noted



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 - -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REST AREA SIGNS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - -			VAR	STWDE FRWY SIGN MAINT 20-09	various	37	22
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -						CONTRACT NO. 46518	
	PLOT DATE = 3/27/2019	DATE -	REVISED - -		SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____			ILLINOIS	FED. AID PROJECT	

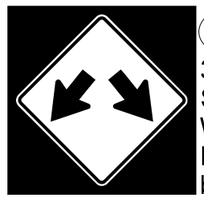
Z
12" X 18"
White on brown.
Logo: white on blue

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.



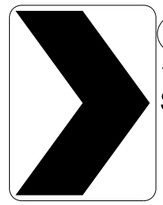
FF
36" X 36"
Std. 24" X 24"
W12-1
Brown background

KK
18" X 30"
White on brown

PP
48" X 48"
White on Brown

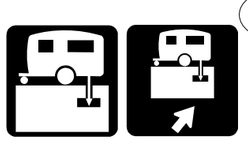
BB
48" X 36"
White on Brown
Std. 18" shield
(1 sign north and 1 sign south)
Route and direction as noted.

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

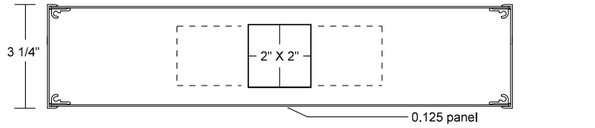
RR
12" X 18"
White on Brown

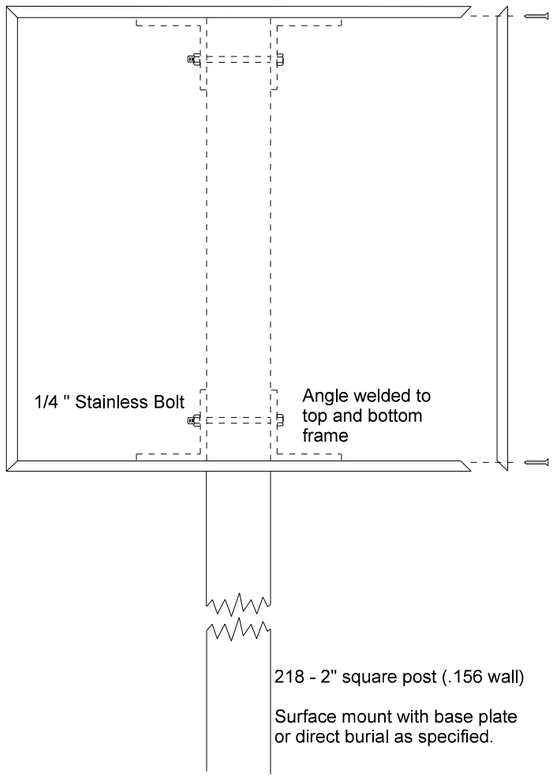
DD
36" X 24"
White on brown

II
30" X 24"
Black on white

NN
72" X 24"
White on Brown

FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REST AREA SIGNS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - -			VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	23
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -						CONTRACT NO. 46518	
	PLOT DATE = 3/27/2019	DATE -	REVISED - -		SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____			ILLINOIS	FED. AID PROJECT	





NOTES

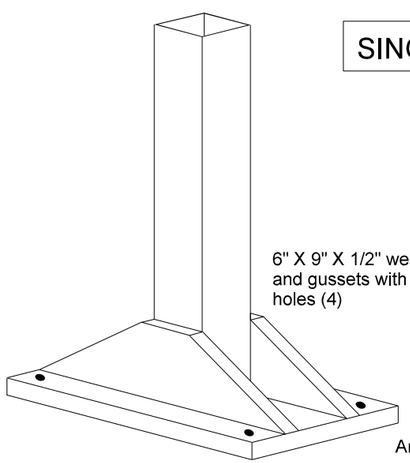
All posts and frames shall be manufactured from heavy duty 6063 alloy aluminum extrusions. Posts shall be temper T6 and frames temper T5.

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

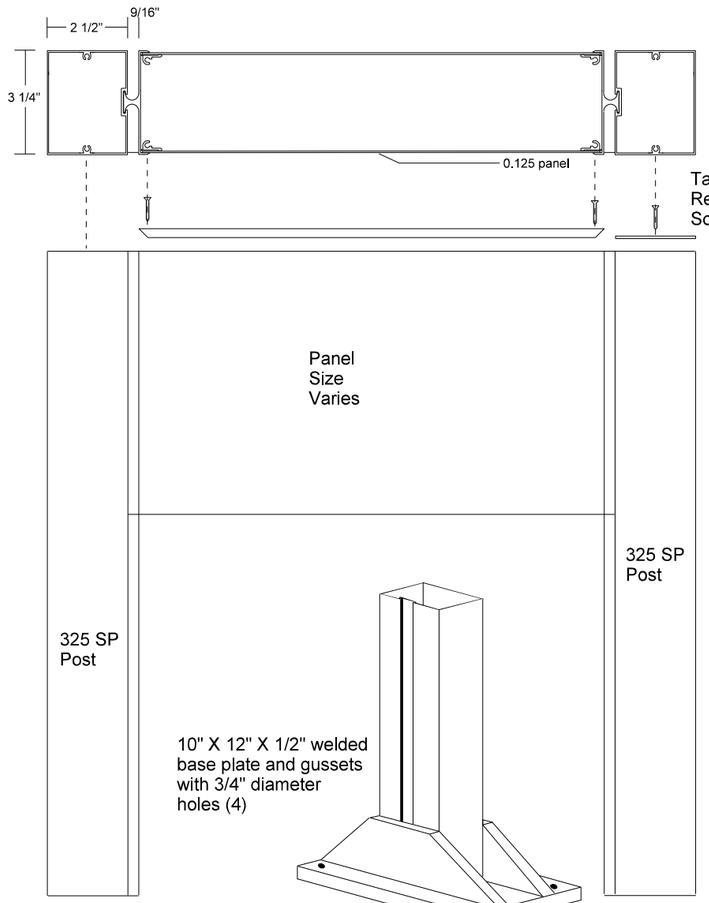
All hardware shall be stainless steel. All fasteners shall be tamper resistant.

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.

SINGLE POST INSTALLATIONS

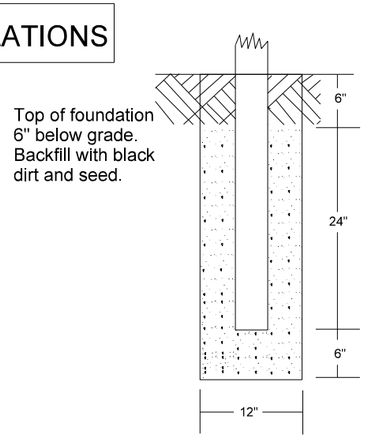


Anchor system to meet the approval of the Engineer.



Anchor system to meet the approval of the Engineer.

DOUBLE POST INSTALLATIONS



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.

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		DRAWN -	REVISED - -
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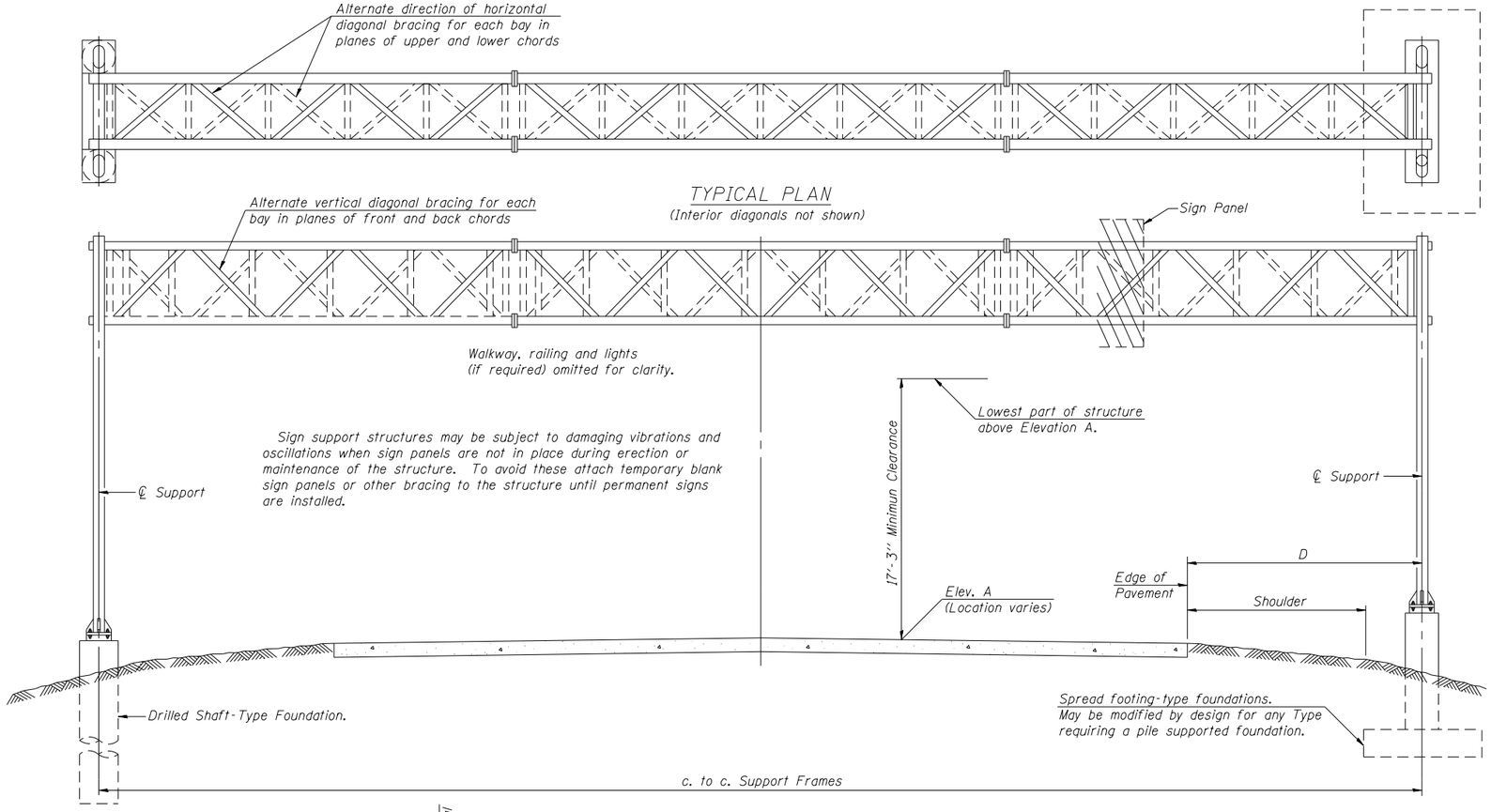
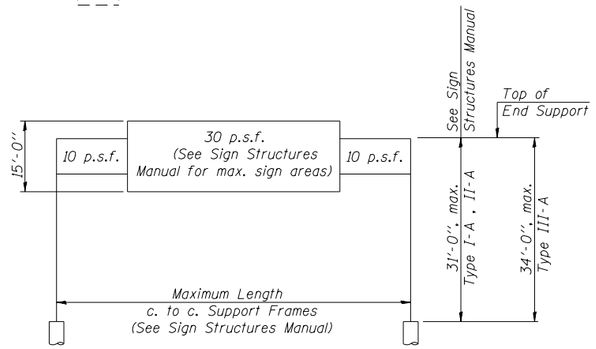
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SINGLE AND DOUBLE POST INSTALLATIONS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	24
		CONTRACT NO. 46518		
		ILLINOIS FED. AID PROJECT		





DESIGN WIND LOADING DIAGRAM

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

TYPICAL ELEVATION

(Looking at Face of Signs**)

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

Structure Number	Station	Design Truss Type	c. to c. Supports	Elev. A	Dim. D	Height of Tallest Sign	Total Sign Area

**Looking upstation for structures with signs both sides.

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

GENERAL NOTES

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

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

LOADING: 90 M.P.H. WIND VELOCITY

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

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

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

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

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

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

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

ANCHOR RODS: Shall conform to ASTM F1554 Gr. 105.

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

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

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

TOTAL BILL OF MATERIAL

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

OS-A-1 8-21-13

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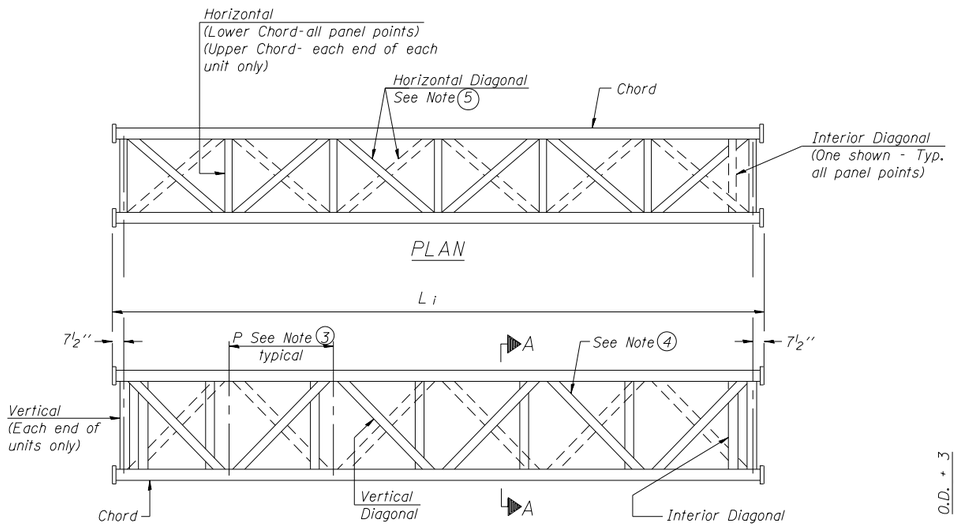
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

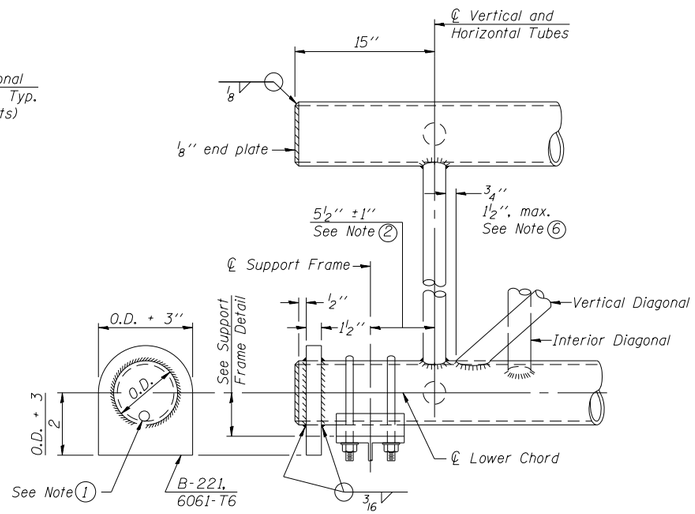
SCALE: _____ | SHEET NO. 1 OF 1 SHEET | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	25
		CONTRACT NO. 46518		
		ILLINOIS FED. AID PROJECT		

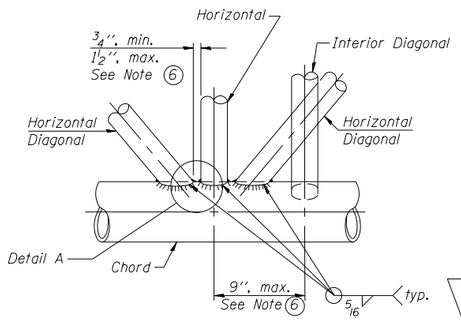


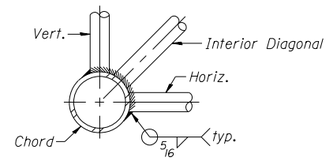
ELEVATION
TYPICAL INTERIOR UNIT

Even number of panels/interior unit required.

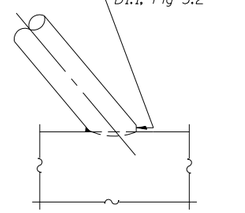


SUPPORT END DETAIL FOR EXTERIOR UNIT

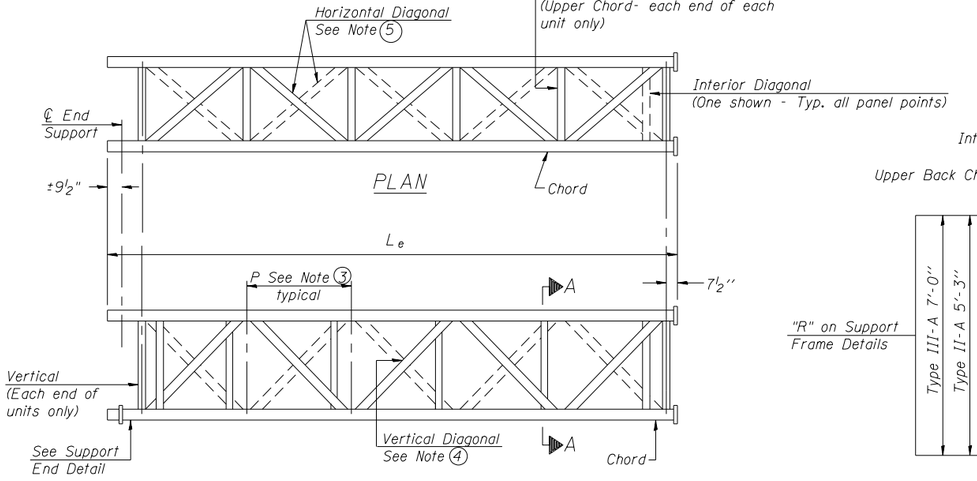




TYPICAL JOINT DETAILS

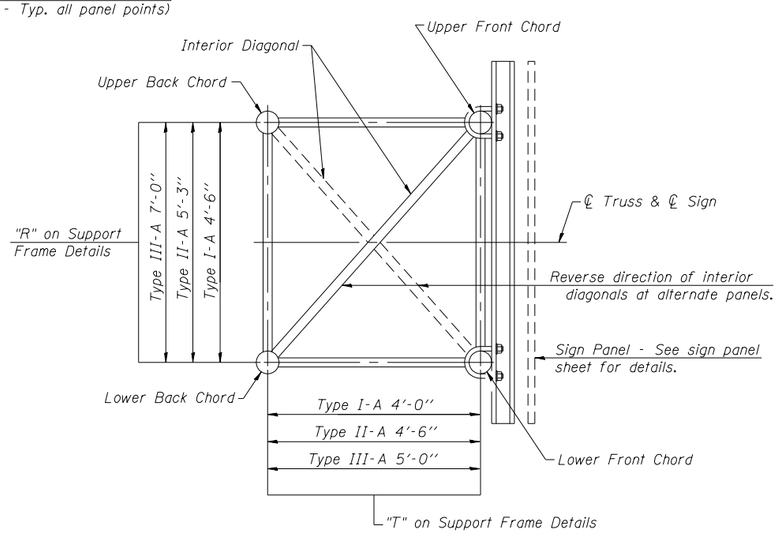


DETAIL A



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. ½" ϕ drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)

(2) 5½" 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 ¾" minimum to 1½" maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walkway brackets.

OS-A-2 6-1-12

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

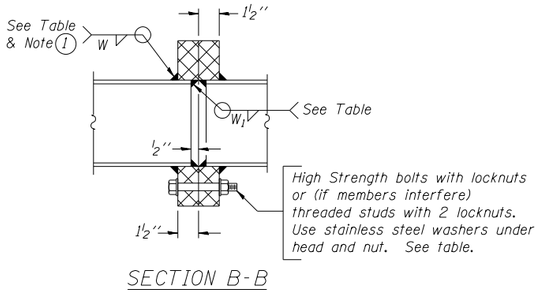
OVERHEAD SIGN STRUCTURES – ALUMINUM TRUSS
DETAILS FOR TRUSS TYPES I–A, II–A AND III–A

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	26
		CONTRACT NO. 46518		
	ILLINOIS FED. AID PROJECT			

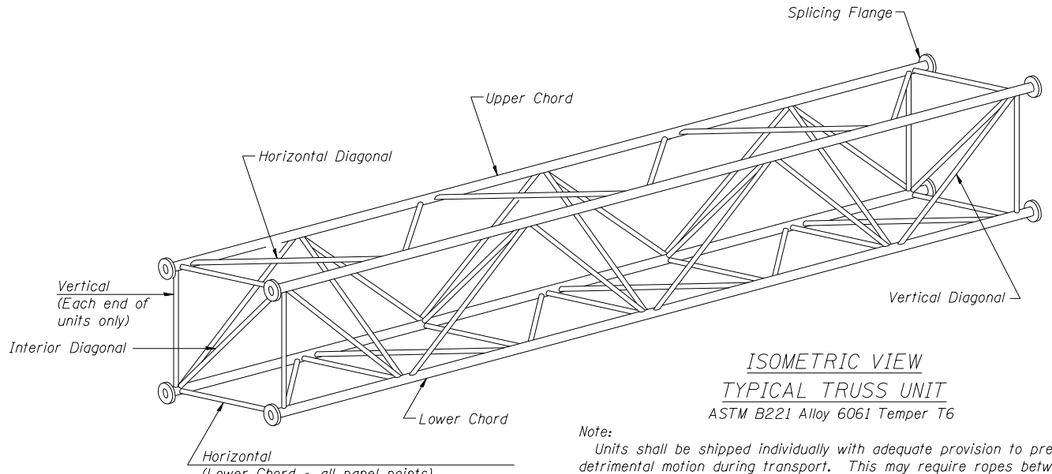
TRUSS UNIT TABLE

Structure Number	Station	Design Truss Type	Exterior Units (2)			Interior Unit				Upper & Lower Chord		Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals		Camber at Midspan	Splicing Flange					
			No. Panels per Unit	Unit Lgth.(L_e)	Panel Lgth.(P)	No. Req'd.	No. Panels per Unit	Unit Lgth.(L_i)	Panel Lgth.(P)	O.D.	Wall	O.D.	Wall		Bolts		Weld Sizes		A	B
															No./Splice	Dia.	W	W_1		



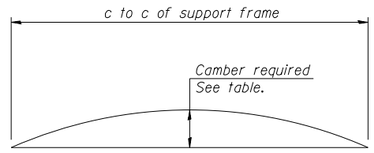
SECTION B-B

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



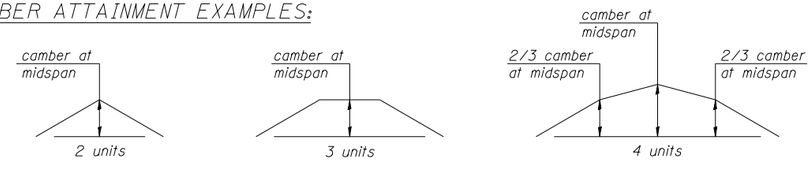
ISOMETRIC VIEW
TYPICAL TRUSS UNIT
ASTM B221 Alloy 6061 Temper T6

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

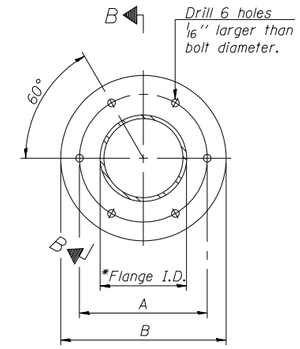


CAMBER DIAGRAM
Camber curve shown is theoretical. Actual camber attained by slope changes at splices between units.

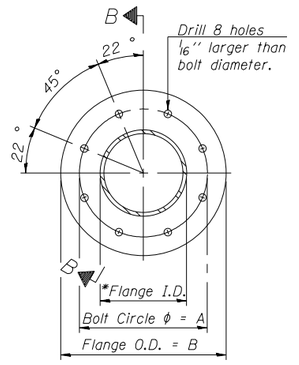
CAMBER ATTAINMENT EXAMPLES:



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



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



TRUSS TYPES II-A & III-A

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

OS4-A-2 6-1-12

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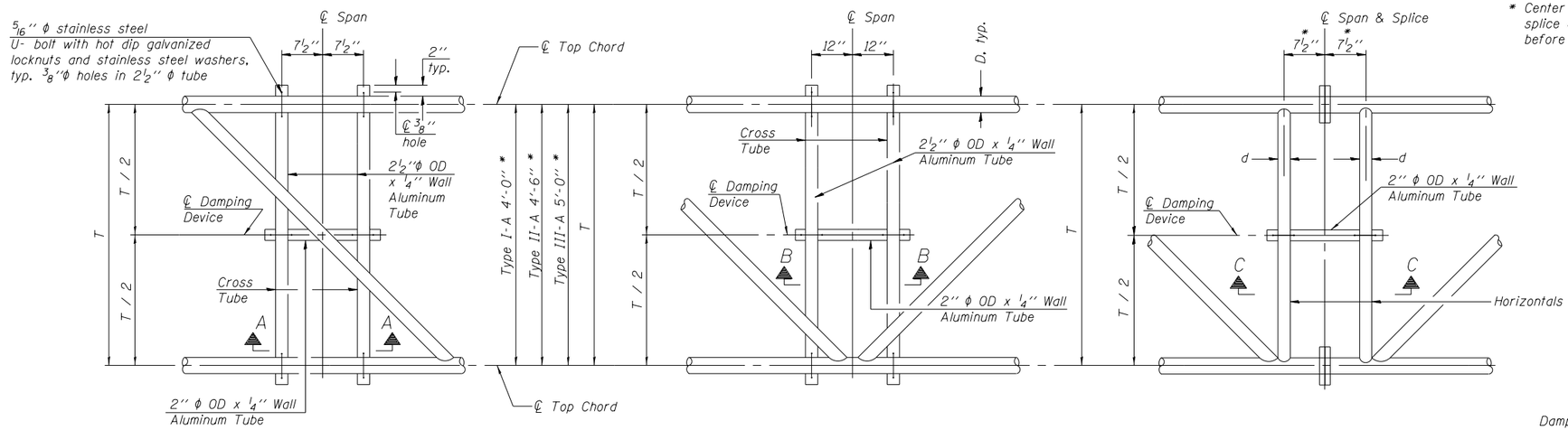
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	27
			CONTRACT NO. 46518	
		ILLINOIS	FED. AID PROJECT	



* 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

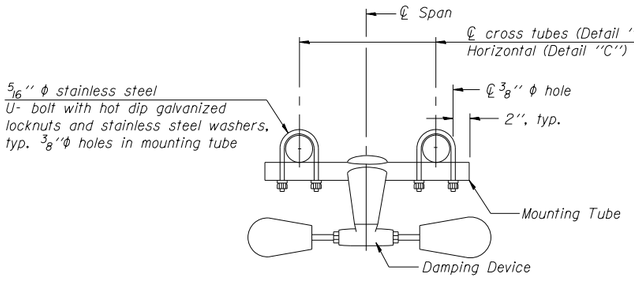
PLAN DETAIL "C"
℄ Span at ℄ Chord Splice

NOTES

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

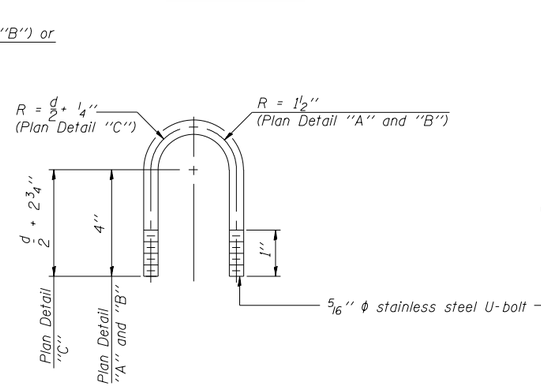
Materials: Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6. Cost included in Overhead Sign Structure...

SECTION A-A



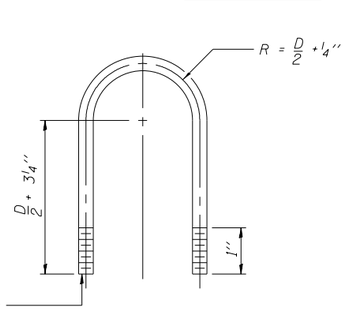
TRUSS DAMPING DEVICE CONNECTION DETAIL
(Typical)

SECTION B-B

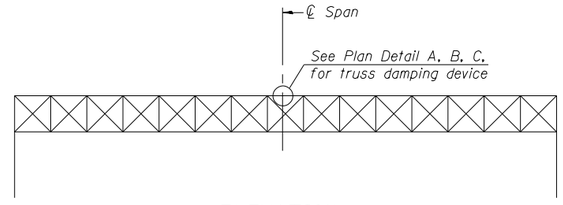


DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL
(Typical)

SECTION C-C



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



ELEVATION
Aluminum Overhead Sign Truss

OS-A-D 6-1-12

FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURE DAMPING DEVICE
		DRAWN -	REVISED - -		
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -		SCALE: _____ SHEET NO. 1 OF 1 SHEET STA. _____ TO STA. _____
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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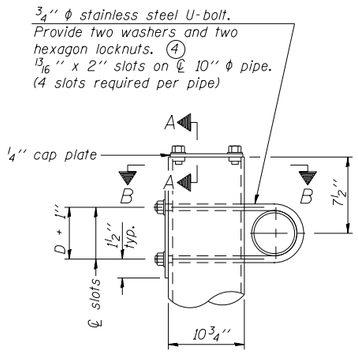
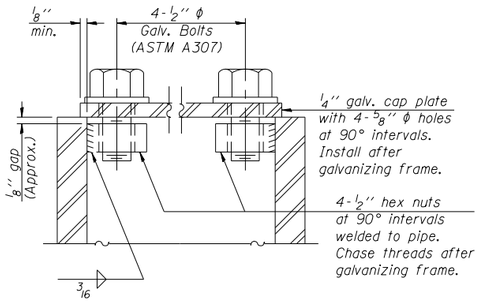
			CONTRACT NO. 46518	
		ILLINOIS	FED. AID PROJECT	

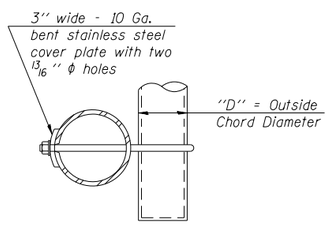


DETAIL A

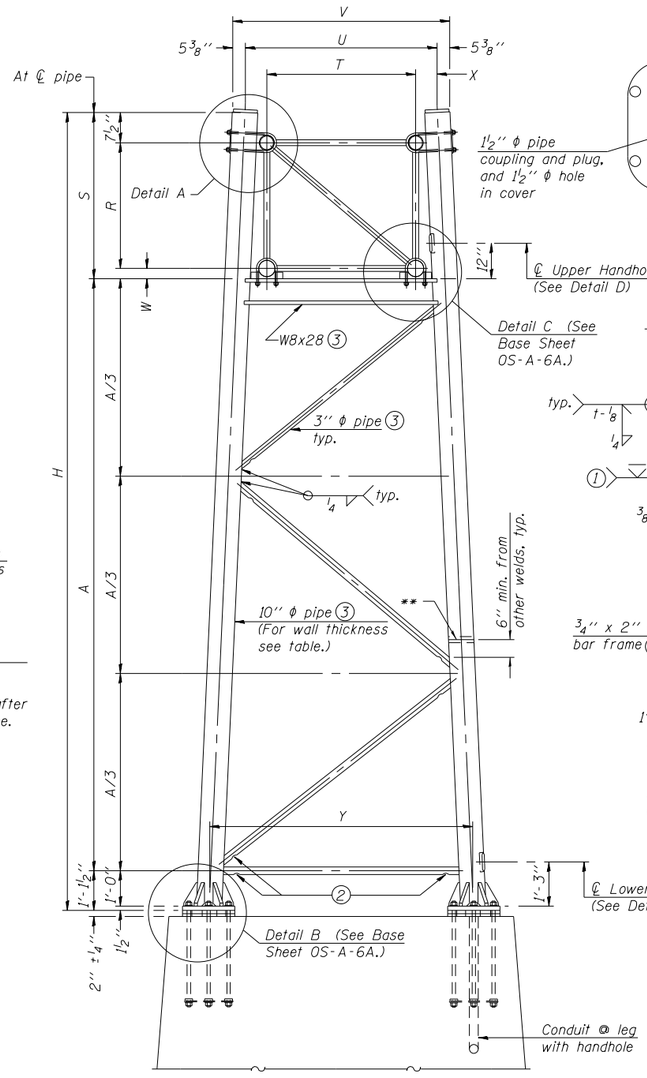


SECTION A-A

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

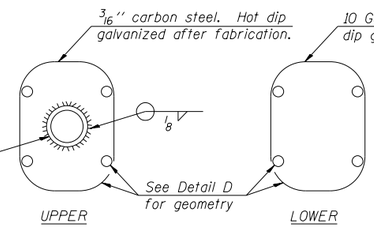


SECTION B-B

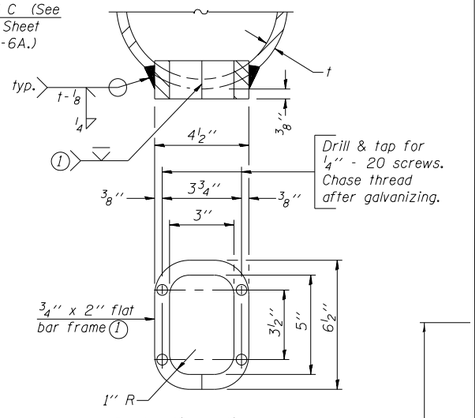


For Foundation Details, see base sheet OS-F3 (Spread Footing) or OS4-F3 (Drilled Shaft).

SIDE ELEVATION

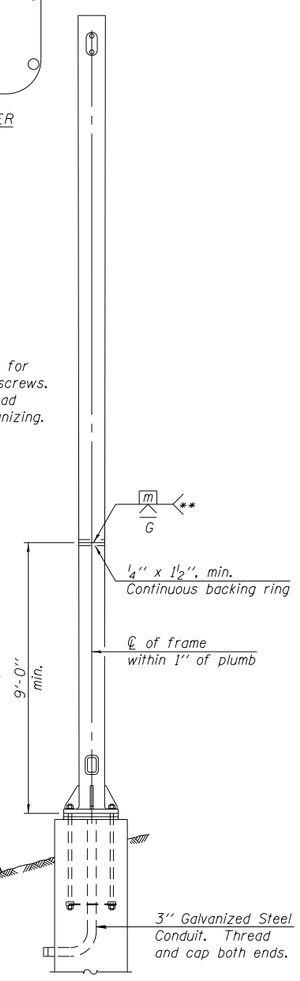


HANDHOLE COVERS



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

DETAIL D



END ELEVATION

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

(1) In lieu of fabricated handhole frame as shown, may cut from 2'' plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 μin or less.

(2) Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred, typ.

(3) Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet OS-A-1.

(4) See General Notes for fasteners.

(5) Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.

(6) "H" based on 15'-0'' or actual sign height, whichever is greater.

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

10'' ϕ PIPE TRUSS SUPPORT FRAME

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

Structure Number	Station	Support		Truss Type	Pipe Wall Thickness	H (6)	A
		Left	Right				

OS-A-6 6-1-12

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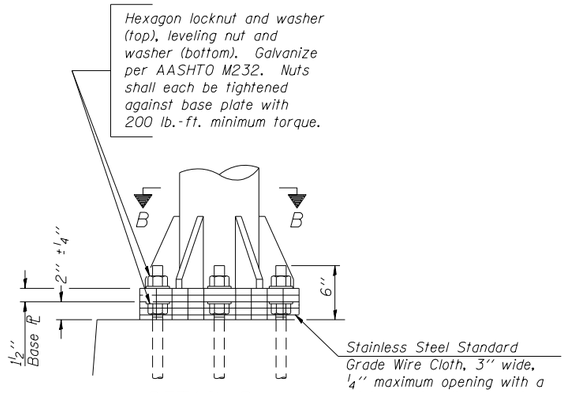
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME FOR ALUMINUM TRUSS

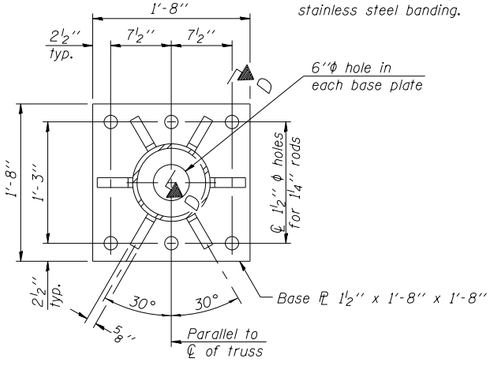
SCALE: _____ | SHEET NO. 1 OF 1 SHEET | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	29
		CONTRACT NO. 46518		
		ILLINOIS FED. AID PROJECT		

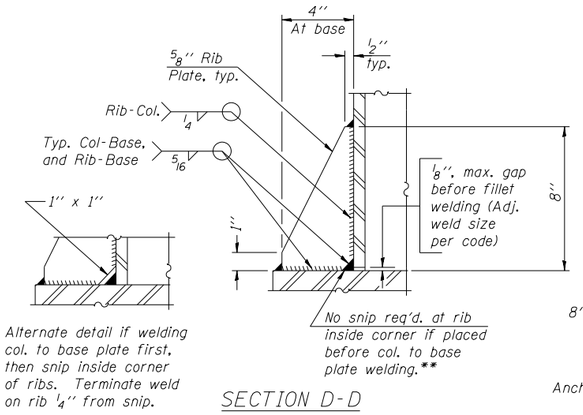


DETAIL B

Ribs shall be cut to fit slope of pipe.

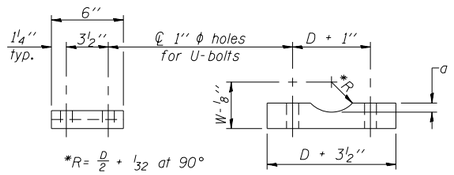


SECTION B-B



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

SECTION D-D



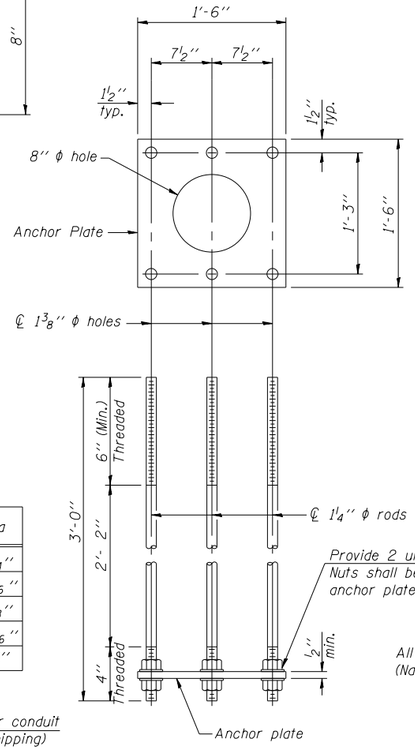
*R = D/2 + 1/32 at 90°

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

SADDLE SHIM DETAIL

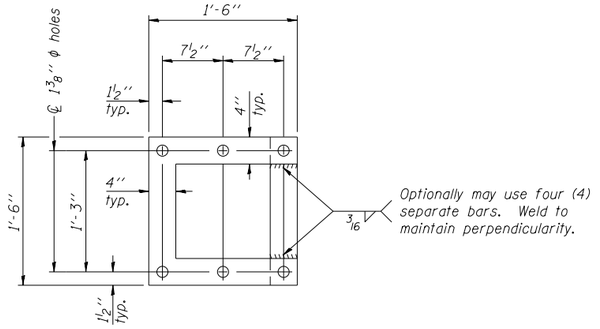
ASTM B26 Alloy 356-F
or
ASTM B209 Alloy 6061-T651
(4 required per sign truss)

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

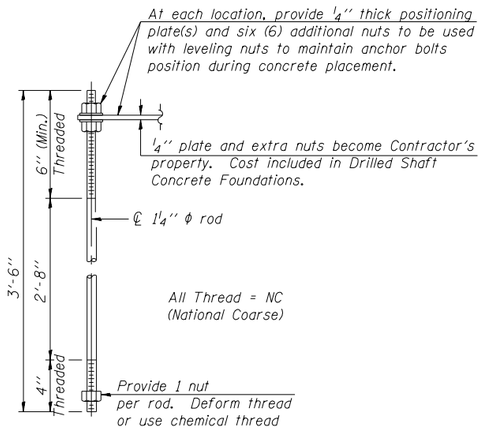


ANCHOR ROD DETAIL

Spread Footing Foundation



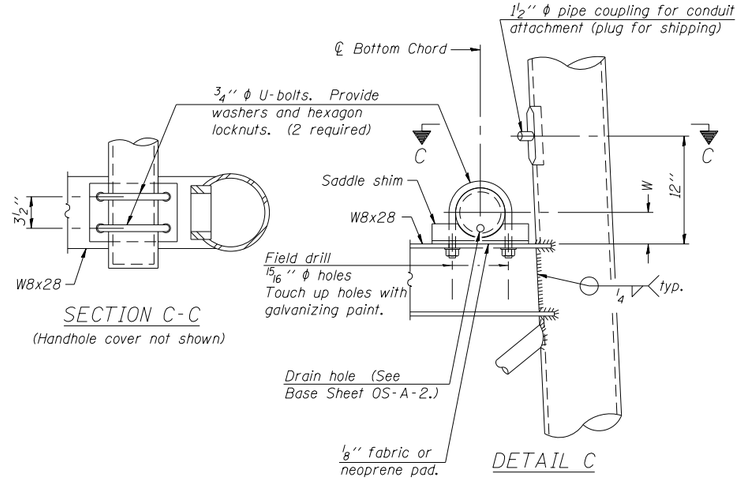
POSITIONING PLATE(S)



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.



SECTION C-C

(Handhole cover not shown)

DETAIL C

10" ϕ PIPE SUPPORT FRAME DETAILS

OS-A-6A 6-1-12

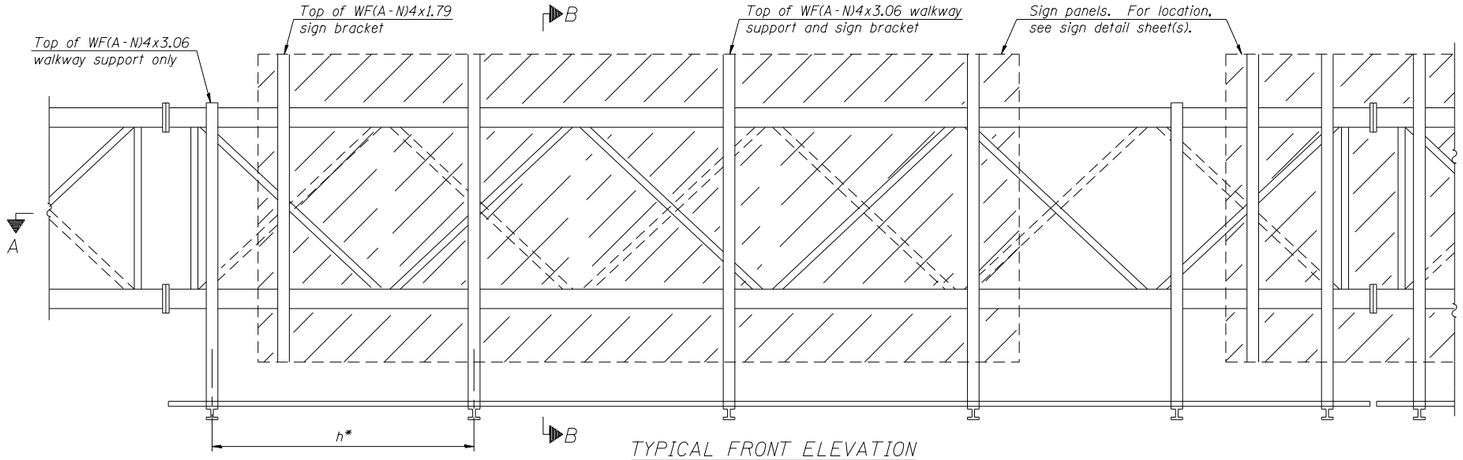
FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 104.8994 '/ in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS – ALUMINUM TRUSS

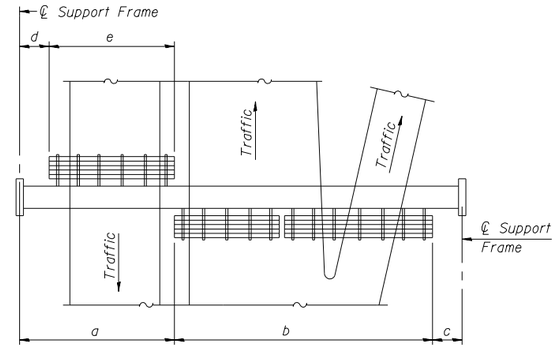
SCALE: _____ | SHEET NO. 1 OF 1 SHEET | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	30
		CONTRACT NO. 46518		
	ILLINOIS FED. AID PROJECT			



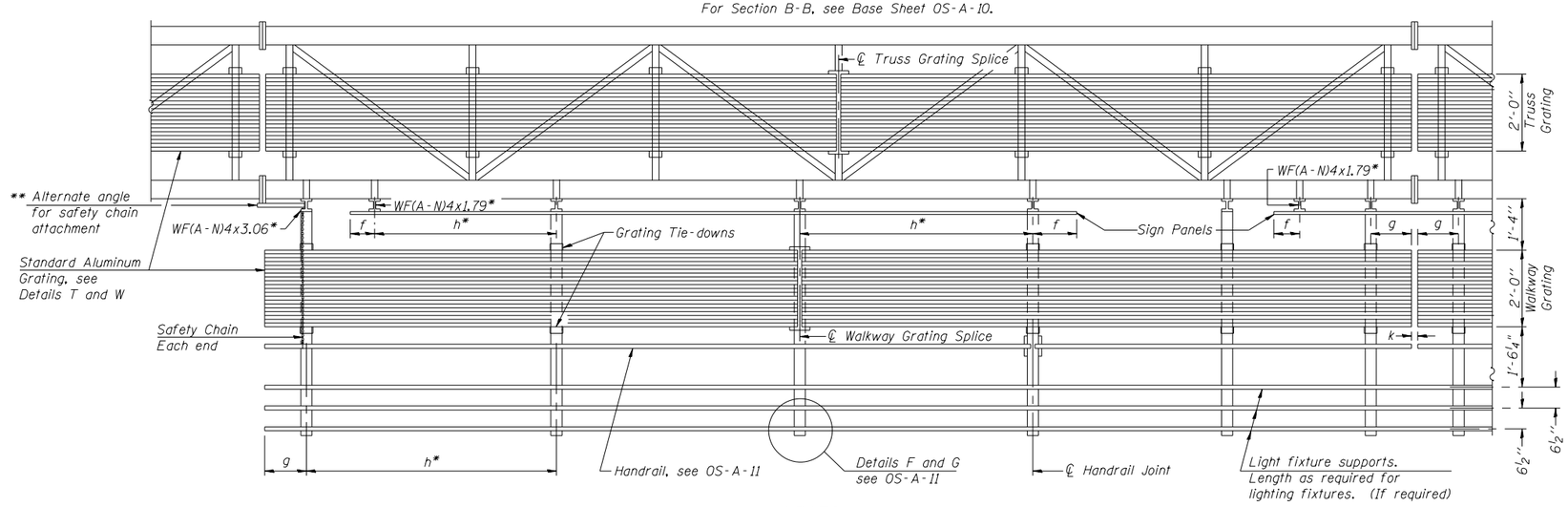
TYPICAL FRONT ELEVATION

With lights and handrail omitted for clarity.
For Section B-B, see Base Sheet OS-A-10.



PLAN
WALKWAY AND HANDRAIL SKETCH

(Road plan beneath truss varies)



SECTION A-A

Handrail and walkway shall span a minimum of three brackets between splices and/or gap joints.
Place all sign and walkway brackets as close to panel points as practical.
Handrail joints, grating, and light support splices placed as needed.

BRACKET TABLE

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

Notes:
* Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within limits shown:

f = 12" maximum, 4" minimum (End of sign to ℄ of nearest bracket)
g = 12" maximum, 4" minimum (End of walkway grating to ℄ of nearest support bracket)
h = 6'-0" maximum (℄ to ℄ sign and/or walkway support brackets, WF(A-N)4x1.79 or WF(A-N)4x3.06)
k = 2" maximum gap between adjacent walkway grating sections and handrail ends

** If walkway bracket at safety chain location is behind sign, add angle to bracket, see Alternate Safety Chain Attachment on Base Sheet OS-A-11.

For Details T and W, Section B-B and Grating Splice Details see Base Sheet OS-A-10.
For Handrail Details see Base Sheet OS-A-11.

Structure Number	Station	a	b	c	d	e	Walkway Grating and Handrail Lengths

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

Walkway and Truss Grating width dimensions are nominal and may vary ±½" based on available standard widths.

OS-A-9 6-1-12

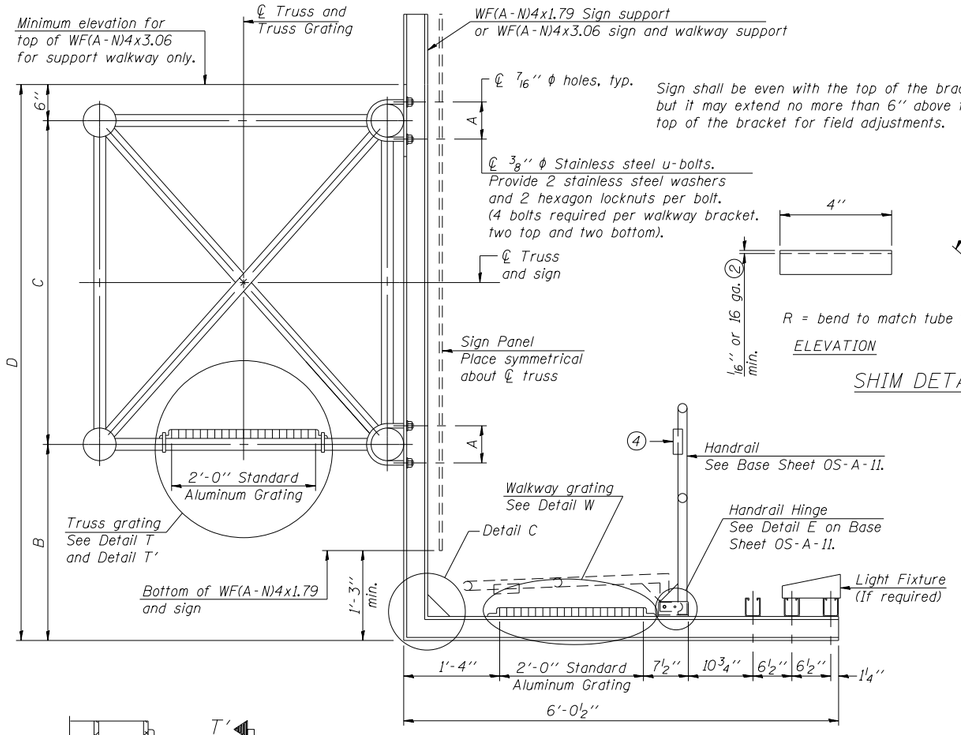
FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 105.3989 '/ in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

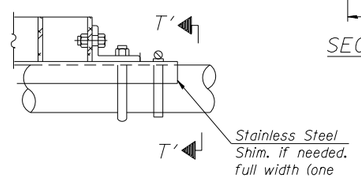
OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	31
		CONTRACT NO. 46518		
	ILLINOIS FED. AID PROJECT			



SECTION B-B

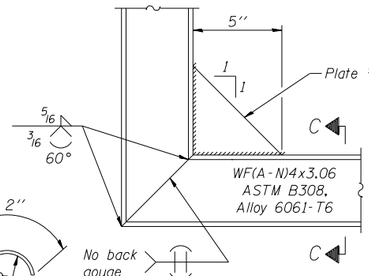


DETAIL T'

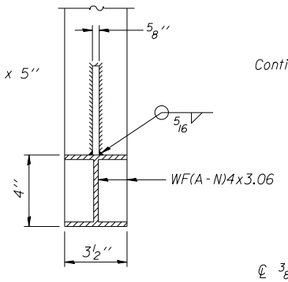
(Truss grating splice)

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

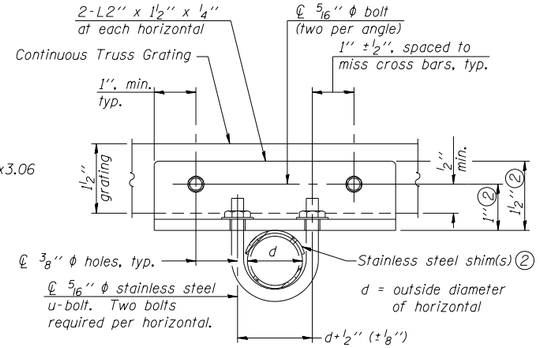
SHIM DETAIL



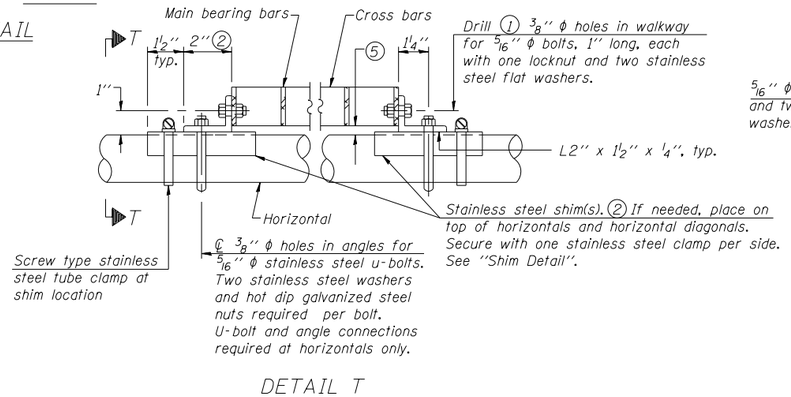
DETAIL C



SECTION C-C

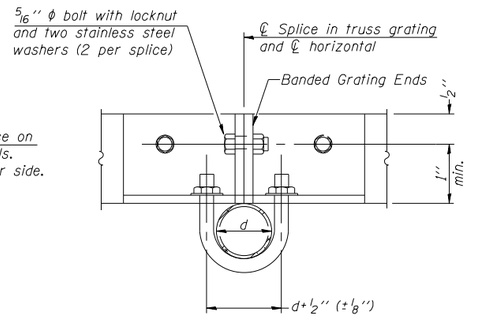


SECTION T-T

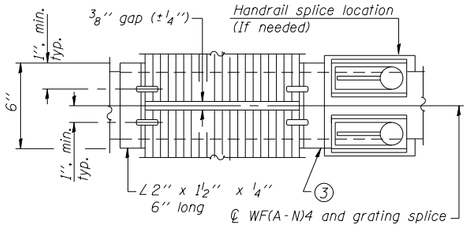


DETAIL T

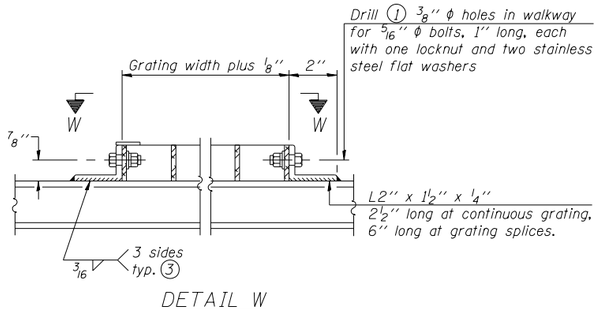
(Continuous Truss grating)



SECTION T'-T'

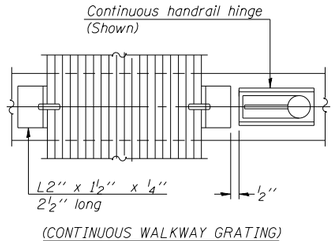


(AT WALKWAY GRATING SPLICE)



DETAIL W

(Walkway grating)



(CONTINUOUS WALKWAY GRATING)

SECTION W-W

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

Main Bearing Bars shall be 3/16" x 1 1/2" on 1 3/16" centers and conform to ASTM B221 Alloy 6061-T6.

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

OR

Aluminum Grating with modified "I" sections for main bearing bars shall meet the following requirements:

Main bars shall conform to ASTM B221 Alloy 6061-T6 and have a minimum section modulus equal to 0.0705 in.^{3} per bar, a depth of 1 1/2", spaced on 1 3/16" centers.

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

Structure Number	Station	A	(6) B	C	(6) D

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

(2) Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.

(3) If Handrail Joint present, weld angle to WF(A-N)4 and 1/4" extension bars. (See Base Sheet OS-A-11.)

(4) ℄ 1/8" x 1/2" x 2" welded to handrail posts to protect locations that contact grating.

(5) Tube to grating gap may vary from 0 to 1/2", max. to align walkway, allow for camber, etc.

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

OS-A-10

6-1-12

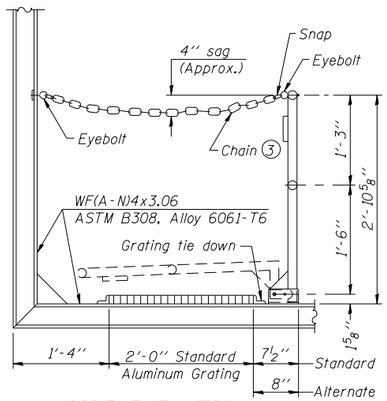
FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 105.3989 '/ in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS

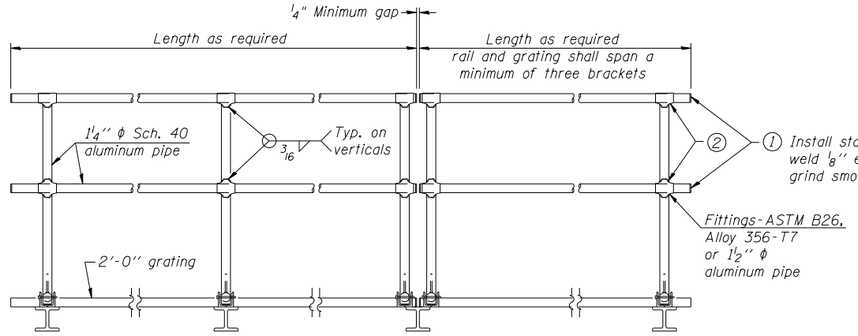
SCALE: _____ | SHEET NO. 1 OF 1 SHEET | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	32
		CONTRACT NO. 46518		
		ILLINOIS FED. AID PROJECT		



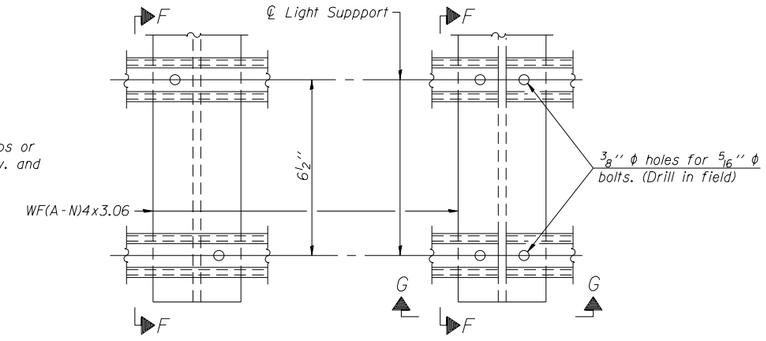
SIDE ELEVATION

(Showing safety chain w/o sign)



FRONT ELEVATION

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

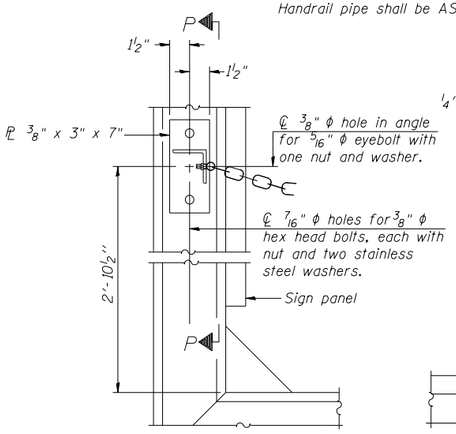


DETAIL F

DETAIL G

HANDRAIL DETAILS

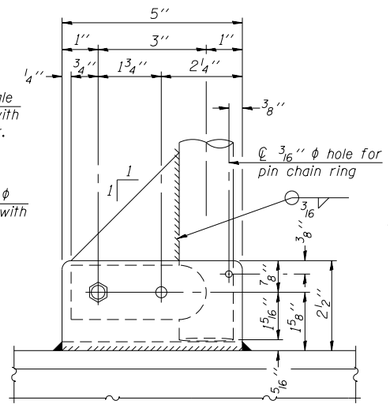
Handrail pipe shall be ASTM B241 or B429, Alloy 6063-T6 or Alloy 6061-T6.



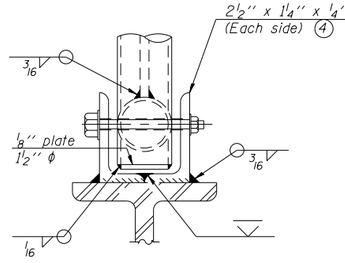
ALTERNATE SAFETY CHAIN ATTACHMENT

(With Sign Present)

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

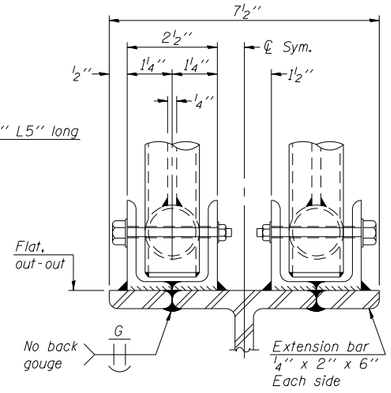


SIDE ELEVATION

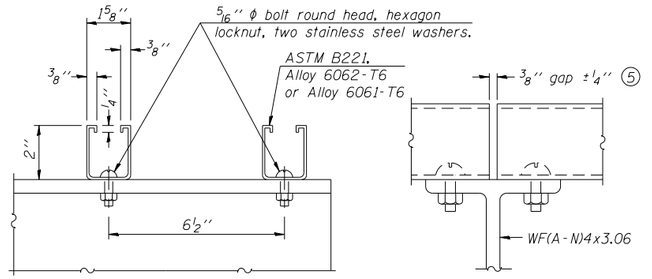


FRONT ELEVATION

See "Elevation" at right for dimensions.



ELEVATION AT HANDRAIL JOINT (4)

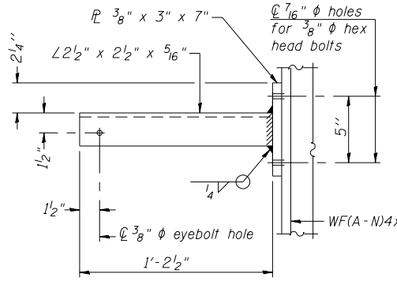


SECTION F-F

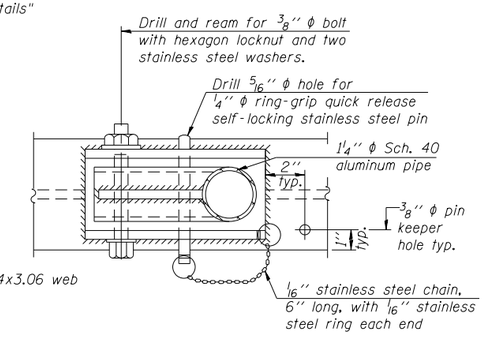
SECTION G-G

LIGHTING FIXTURE MOUNTS (IF REQUIRED)

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

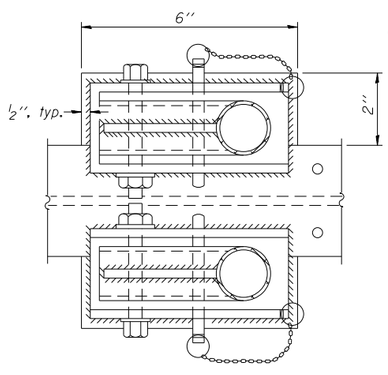


SECTION P-P



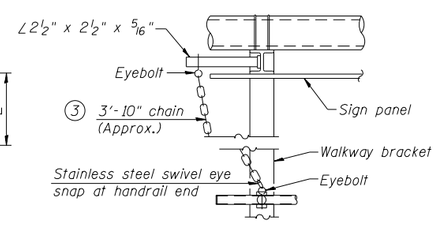
PLAN

DETAIL E HANDRAIL HINGE



PLAN AT HANDRAIL JOINT

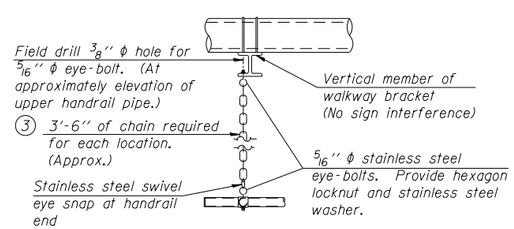
Details not shown same as "PLAN"



ALTERNATE SAFETY CHAIN ATTACHMENT

Details not shown similar to ''Safety Chain'' Details

(Walkway omitted for clarity)



SAFETY CHAIN

One required for each end of each walkway.

(3) 3/16'' Type 304L stainless steel chain, approximately 12 links per foot.

(4) Extrusions may be used in lieu of the details shown, with approval of the Engineer.

OS-A-11 6-1-12

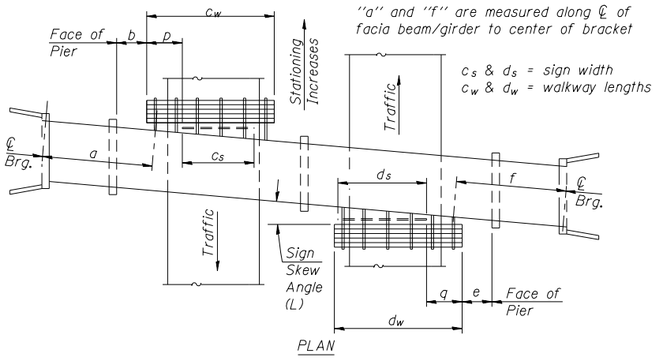
FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

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	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	33
		CONTRACT NO. 46518		
		ILLINOIS FED. AID PROJECT		



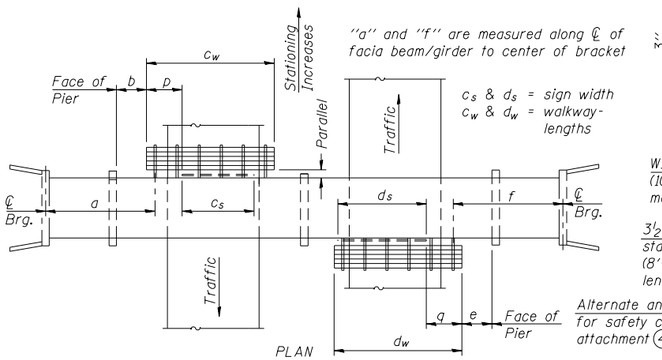
"a" and "f" are measured along ℄ of facia beam/girder to center of bracket

PLAN

(Left Sign Skew > 15°)

WALKWAY AND HANDRAIL SKETCH

(Road plan beneath structure varies.)



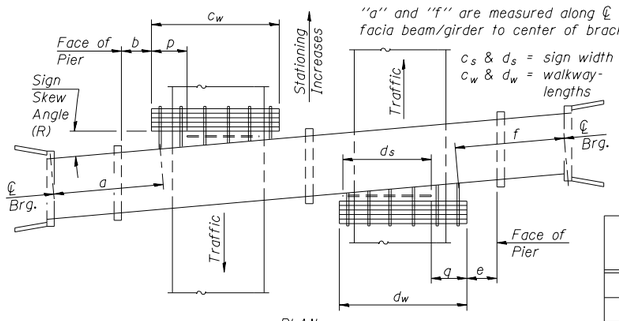
"a" and "f" are measured along ℄ of facia beam/girder to center of bracket

PLAN

(For Sign Skew ≤ 15°, all brackets constant)

WALKWAY AND HANDRAIL SKETCH

(Road plan beneath structure varies.)



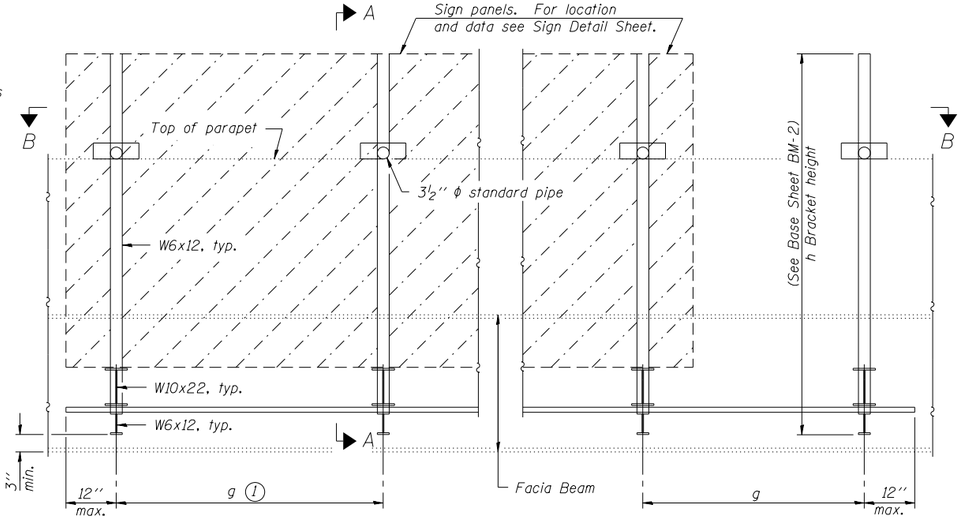
"a" and "f" are measured along ℄ of facia beam/girder to center of bracket

PLAN

(Right Sign Skew > 15°)

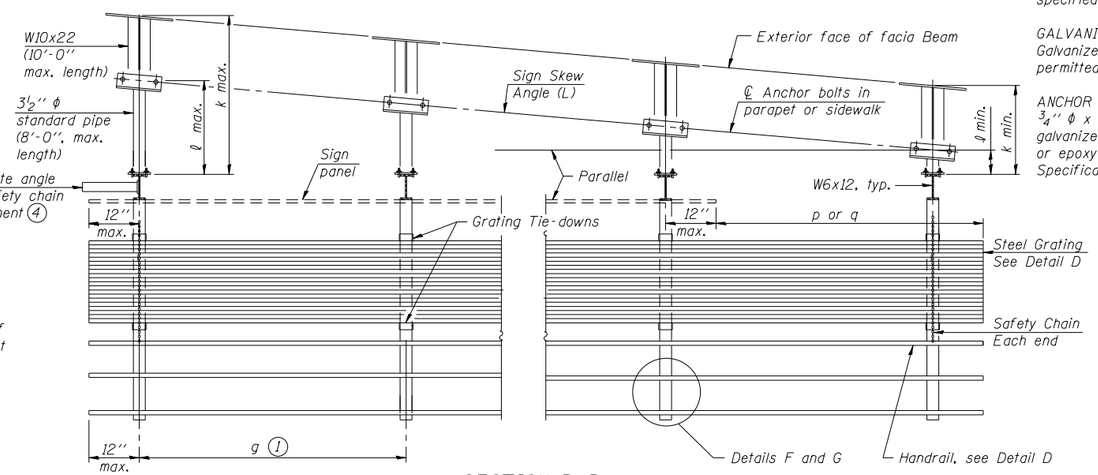
WALKWAY AND HANDRAIL SKETCH

(Road plan beneath structure varies.)



TYPICAL FRONT ELEVATION

(With lights, safety chain and handrail omitted for clarity.)



SECTION B-B

(Shown: Left Sign Skew > 15°)

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

Dimensions a, b, e, f & g may vary as approved by the Engineer, see (1).
When c_w < c_s and/or d_w < d_s, use alternate brackets without walkway supports where applicable, see (3).

GENERAL NOTES

SPECIFICATIONS:

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications") (2)

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 Specificiations.

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, $\frac{3}{4}$" 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 ≤ 6'-0", max. Spacing shall be uniform if possible but may vary ±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	

BM-1

6-1-12

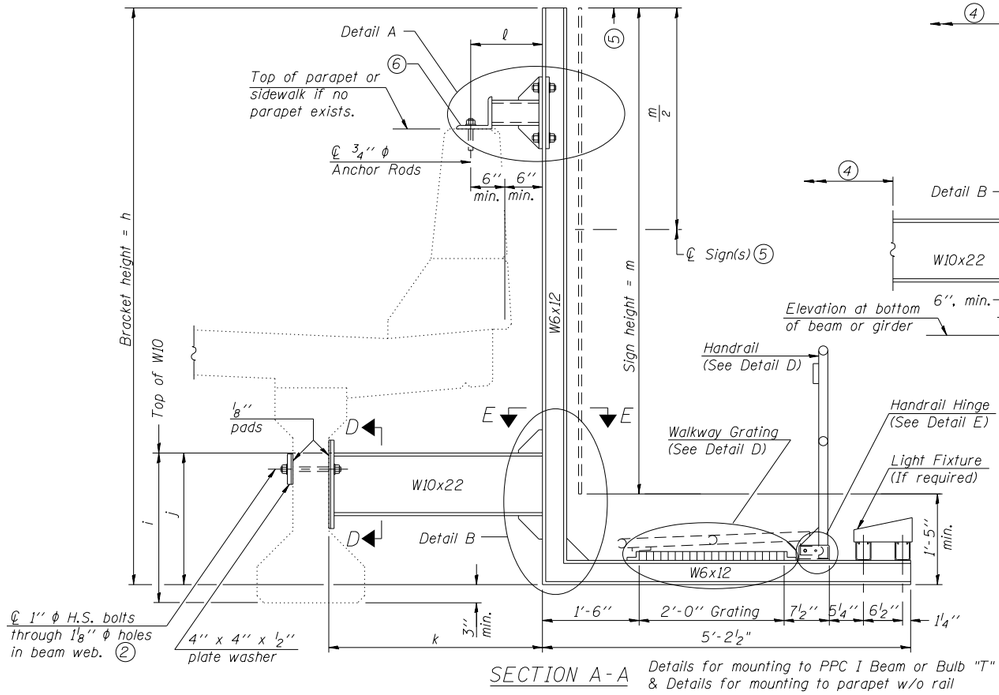
FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 104.8994 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE MOUNT SIGN STRUCTURES
GENERAL PLAN AND ELEVATION

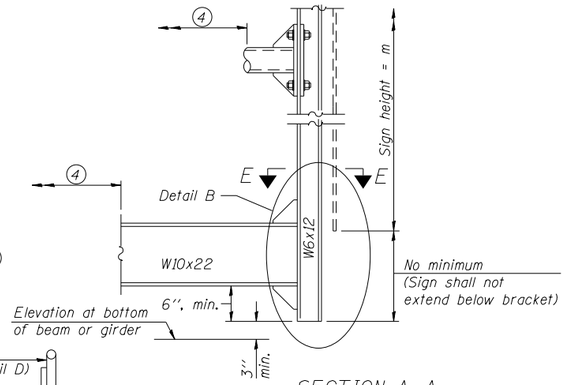
SCALE: _____ | SHEET NO. 1 OF 1 SHEET | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	34
		CONTRACT NO. 46518		
	ILLINOIS FED. AID PROJECT			



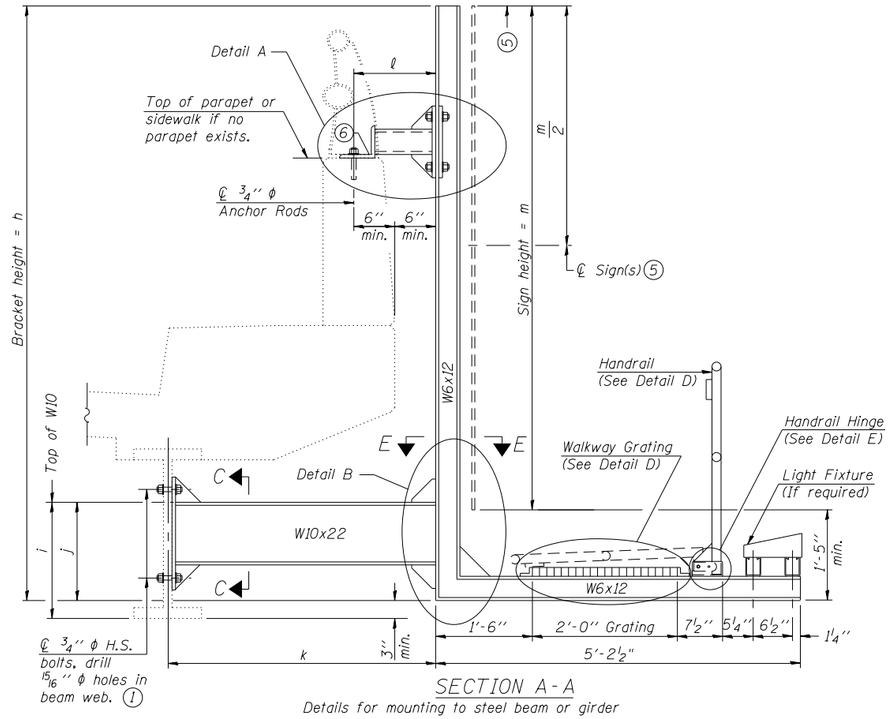
SECTION A-A

Details for mounting to PPC I Beam or Bulb "T" & Details for mounting to parapet w/o rail



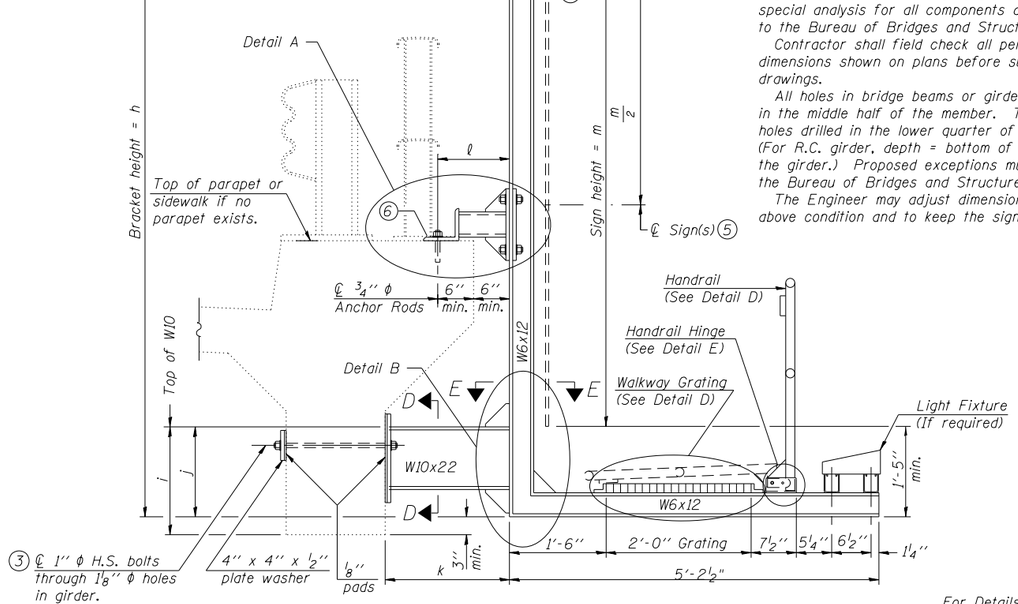
SECTION A-A

Alternate with no lights or walkways



SECTION A-A

Details for mounting to steel beam or girder & Details for mounting with existing parapet mounted rail



SECTION A-A

Details for mounting to integral reinforced concrete girder & Details for mounting on safety curb with surface-mount bridge rail

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 1/4" 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 1/2" 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.)

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.

BM-2 6-1-12

FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	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.
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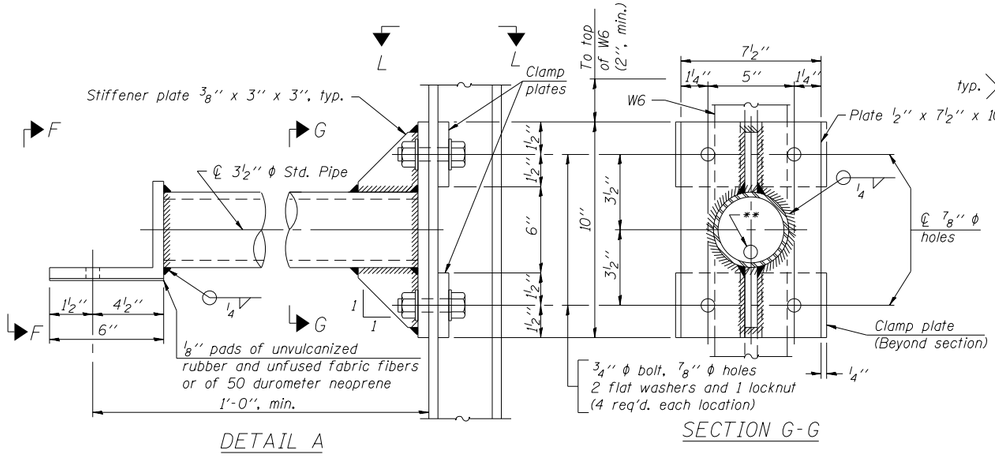
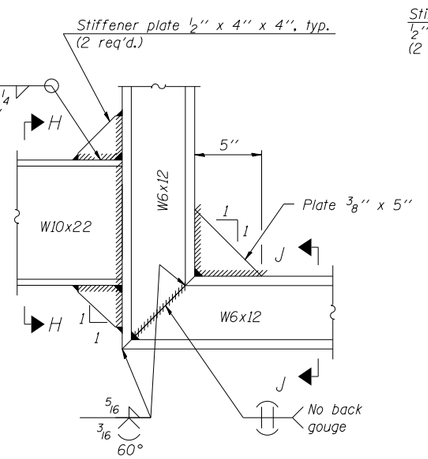
		CONTRACT NO. 46518		
	ILLINOIS FED. AID PROJECT			

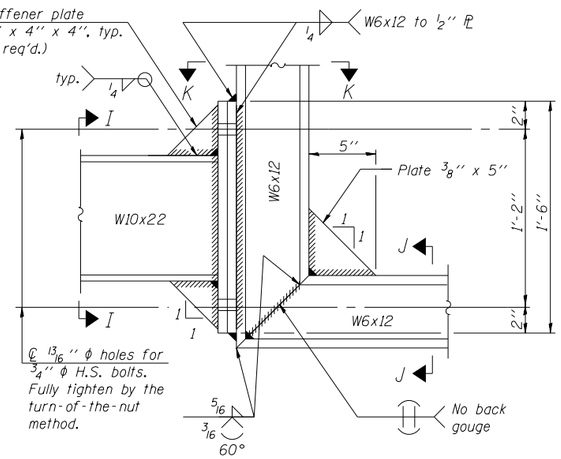


DETAIL A

SECTION G-G

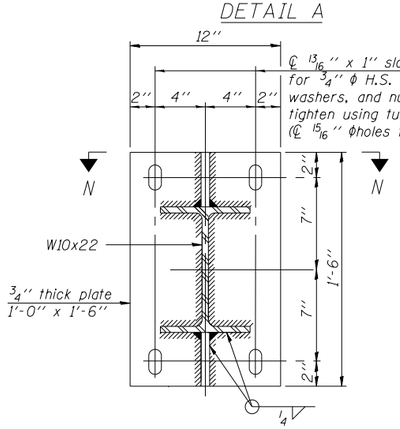


DETAIL B - WELDED W10x22 TO W6x12 CONNECTION



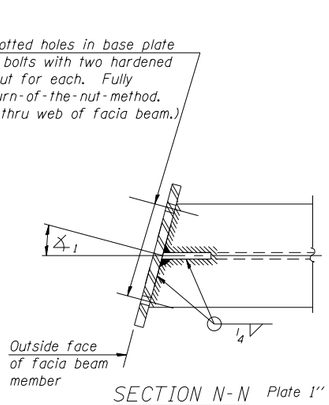
DETAIL B - ALTERNATE BOLTED W10x22 TO W6x12 CONNECTION

Alternate may be substituted by contractor to facilitate construction or galvanizing, especially on long struts for skewed bridges.



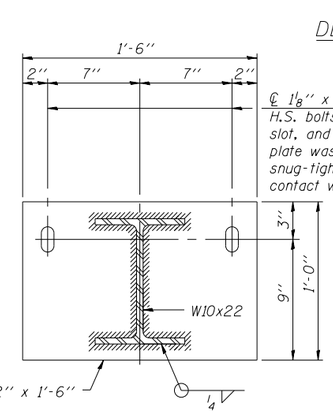
SECTION C-C

Steel beam or girder connection plate details



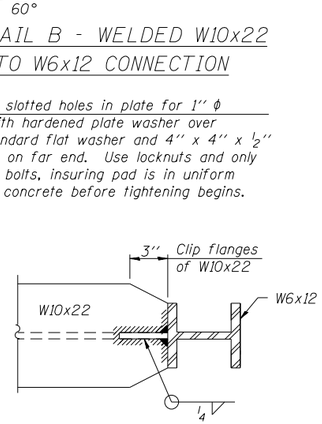
SECTION N-N

Skewed connection detail for W10x22 to facia beam.

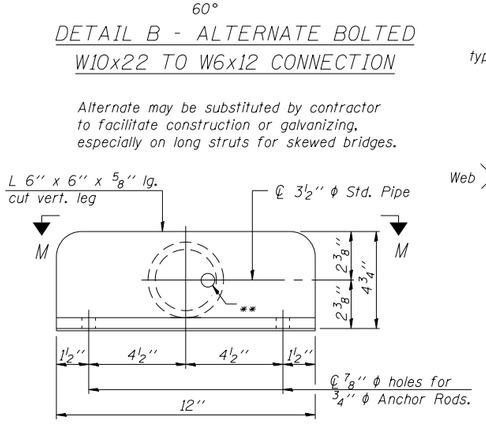


SECTION D-D

Concrete beam or girder connection plate details.

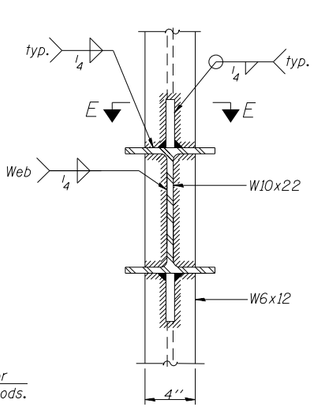


SECTION E-E

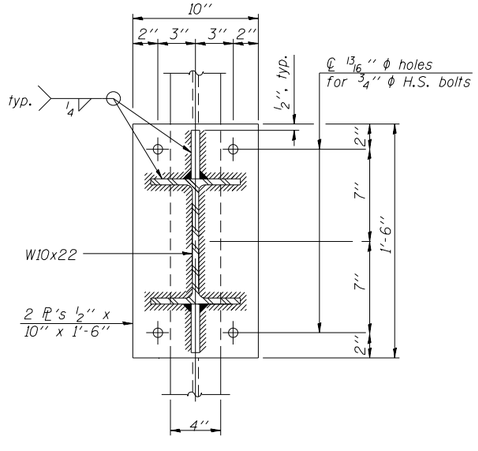


VIEW F-F

** 13/16" ϕ holes for galvanizing. After galvanizing, install 7/8" ϕ A307 hot-dip galvanized bolt to close hole in angle. (No bolt required in 1/2" plate.)

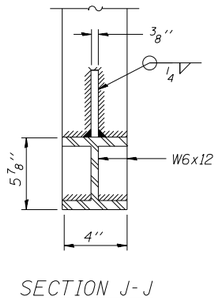


SECTION H-H

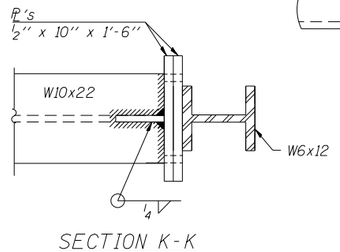


SECTION I-I

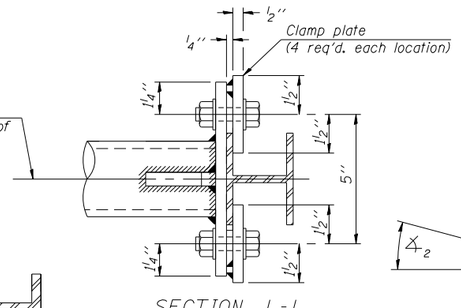
Note: For constant slab overhang at facia beam, ∠1 = ∠2 = sign angle. For flared beams or other special cases where ∠1 ≠ ∠2, ∠1 = sign angle.



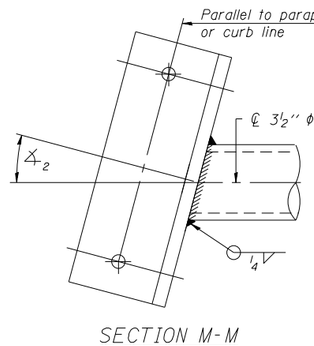
SECTION J-J



SECTION K-K

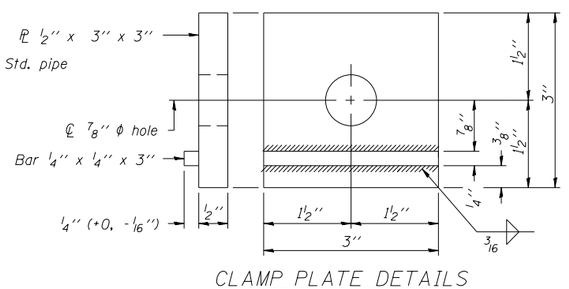


SECTION L-L



SECTION M-M

Skewed connection detail for 3 1/2" ϕ pipe to parapet.



CLAMP PLATE DETAILS

BM-3

6-1-12

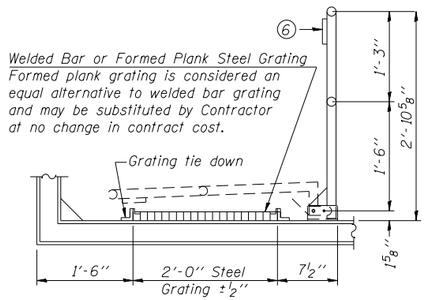
FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 104.8994 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

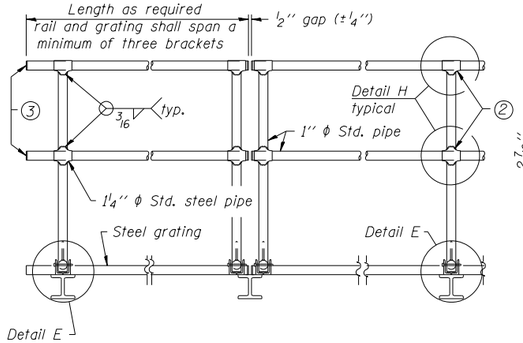
BRIDGE MOUNT SIGN STRUCTURES
CONNECTION DETAILS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	36
			CONTRACT NO. 46518	
		ILLINOIS	FED. AID PROJECT	

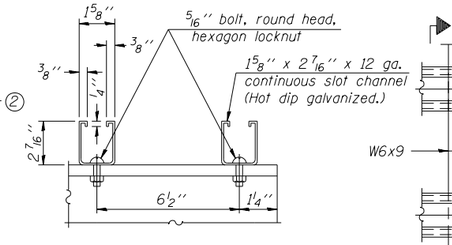


SIDE ELEVATION



DETAIL D HANDRAIL

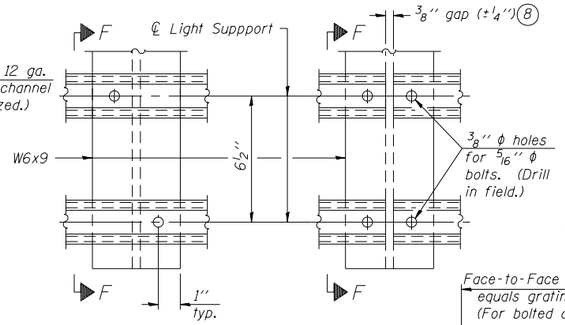
FRONT ELEVATION



SECTION F-F

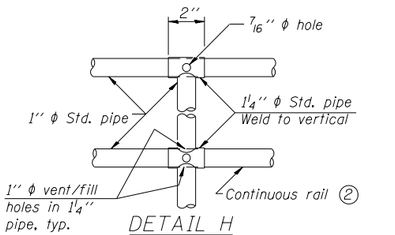
LIGHTING FIXTURE MOUNTS

(If required)



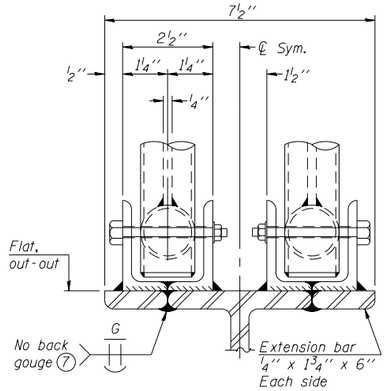
DETAIL F

DETAIL G



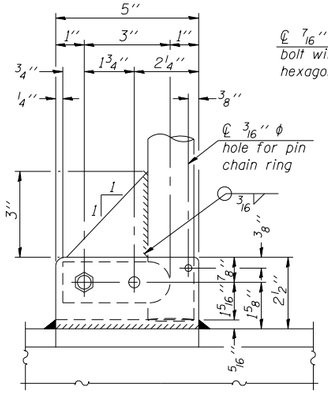
DETAIL H

Welds 3/16" continuous

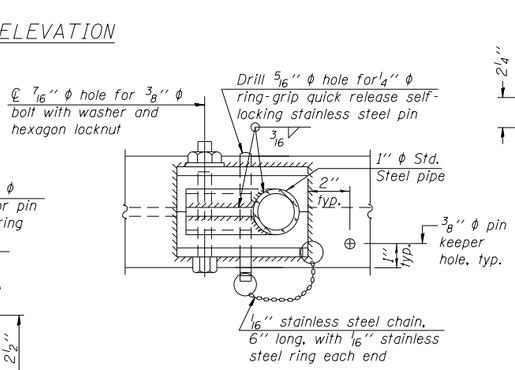


ELEVATION AT HANDRAIL JOINT

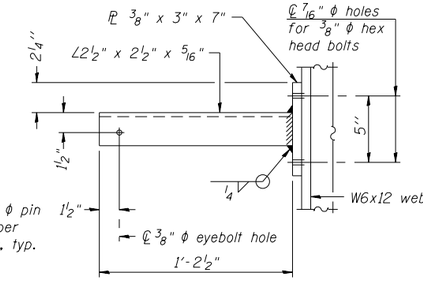
(Details not shown same as "FRONT ELEVATION")



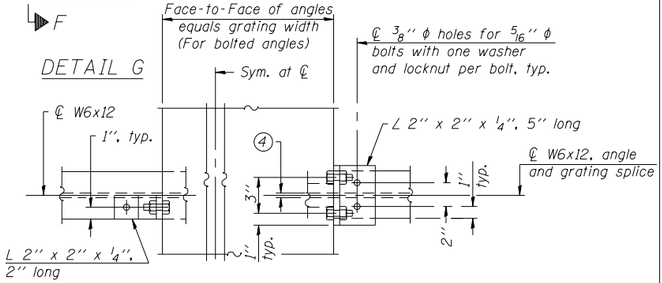
SIDE ELEVATION



PLAN AT SINGLE HANDRAIL HINGE

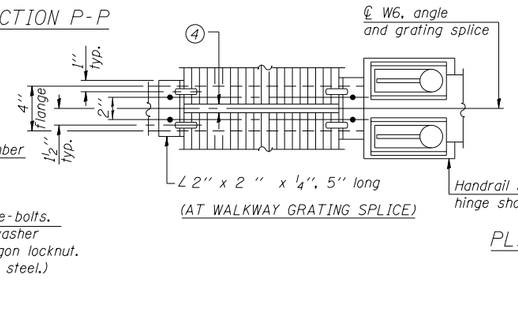


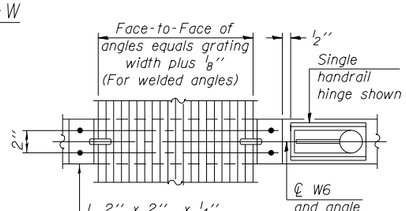
SECTION P-P



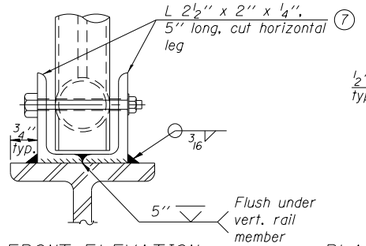
GRATING CONTINUOUS AT GRATING SPLICE

VIEW W-W



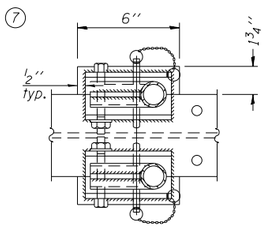


PLAN



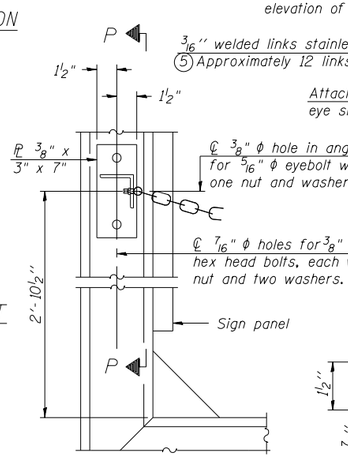
FRONT ELEVATION

(See above Elevations for dimensions.)



PLAN AT HANDRAIL JOINT

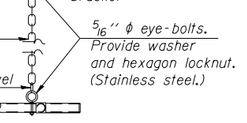
(For Details, see Elevations.)



SAFETY CHAIN ATTACHMENT

(With Sign Present)

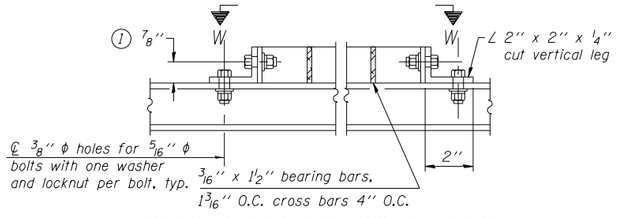
Items not shown same as "SIDE ELEVATION" and "SAFETY CHAIN"



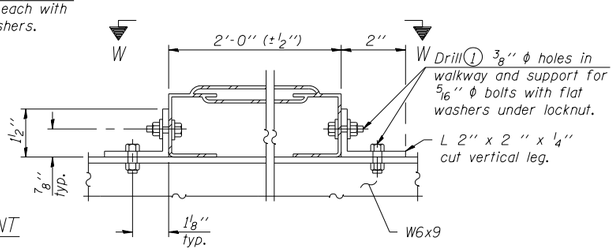
No Sign at Bracket

SAFETY CHAIN

One (1) required for each end of each walkway.



WELDED BAR GRATING DETAILS



ALTERNATE FORMED PLANK GRATING DETAILS

Plank Grating: nominal depth = 2½" (±½"); perforated or expanded steel sheet with a non-skid surface (non-serrated) concentrated load capacity = 500 lbs. with 6'-0" clear span.

NOTES

1. Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment. Field drilled holes must be touched up with galvanized paint.
2. Horizontal rail member shall be continuous thru 1¼" ϕ pipe. Provide 7/16" ϕ hole in 1¼"ϕ pipe for ⅜" ϕ bolt. Field drill 7/16" ϕ hole in horizontal rail member. Provide washer and locknut for bolt. (Use 5/16" eyebolts in 7/16" ϕ holes on top rail at ends only.)
3. Install standard force-fit end caps or weld ⅛" end plates with ⅛" c.f.w. and grind smooth. (All rail ends.)
4. ⅜" (±¼") gap between grating panels at splice.
5. Chain to be type 304L stainless steel suitable for prolonged exterior exposure. Approximately 3'-6" long chain per location. Maximum sag with handrail erected = 4".
6. PL ⅛" x ½" x 2" welded to handrail posts to protect locations that contact grating.
7. Extrusions may be used in lieu of details shown, with approval by Engineer.
8. Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.

BM-4

6-1-12

FILE NAME =	USER NAME = olsonmw	DESIGNED -	REVISED - -
		DRAWN -	REVISED - -
	PLOT SCALE = 105.3989 ' / in.	CHECKED - ___	REVISED - -
	PLOT DATE = 3/27/2019	DATE -	REVISED - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE MOUNT SIGN STRUCTURES
WALKWAY DETAILS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	STWDE FRWY SIGN MAINT 20-09	VARIOUS	37	37
		CONTRACT NO. 46518		
	ILLINOIS FED. AID PROJECT			