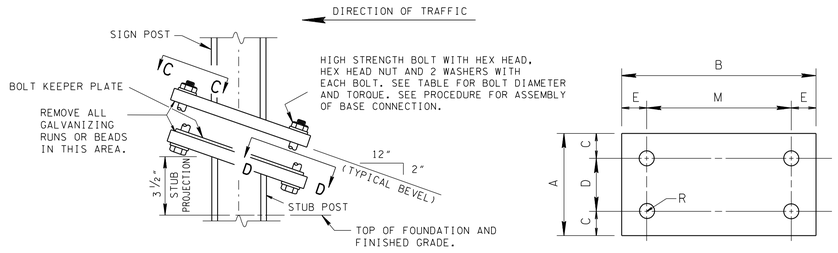
POST SIZE	BASE CONNECTION DIMENSIONS									FUSE PLATE DIMENSIONS										HINGE PLATE DIMENSIONS										FOUNDATION
	BOLT SIZE & TORQUE	A	B	C	D	E	M	†	W	F	G	H	J	K	L	N	d_1	† 1	BOLT DIA.	S	U	V	X	Y	Z	d_2	† 4	BOLT DIA.	DIAMETER OF TYPE 5 FOOTING
S3 X 5.7	½"Ø x 2½" TORQUE=95 in. lbs. TO 142 in. lbs.	3"	6½"	¾"	1½"	¾"	5"	⅝"	3/16"	3⅛"	1½"	1⅛"	2⅝"	1½"	⅜"	½"	9/16"	¼"	½"Ø	3¾"	2⅝"	1⅛"	1½"	1½"	9/16"	9/16"	5/16"	½"Ø	1'-3"
S4 X 7.7		3"	7½"	¾"	1½"	¾"	6"	⅝"	3/16"	3⅛"	1½"	1⅛"	2⅝"	1½"	⅜"	½"	9/16"	¼"	½"Ø	3¾"	2⅝"	1⅛"	1½"	1½"	9/16"	9/16"	5/16"	½"Ø	
S5 X 10.0	⅝"Ø x 2¾" TORQUE=226 in. lbs. TO 345 in. lbs.	3½"	8½"	¾"	2"	¾"	7"	¾"	¼"	3⅝"	2"	1⅛"	3"	1¼"	⅞"	½"	9/16"	¼"	½"Ø	4¼"	3"	1⅛"	2"	1¼"	⅞"	9/16"	5/16"	½"Ø	
S6 X 12.5		4"	9½"	¾"	2½"	¾"	8"	¾"	¼"	3¾"	2"	1⅛"	3⅜"	1⅝"	⅞"	⅝"	11/16"	⅜"	⅝"Ø	4¼"	3⅜"	1⅛"	2"	1⅝"	⅞"	11/16"	5/16"	⅝"Ø	



SIGN POST AND STUB POST BASE CONNECTION DETAIL
ELEVATION VIEW

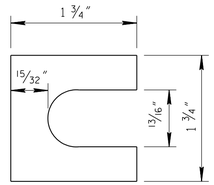
(FOR I-SHAPED SUPPORT POSTS)

BOLT KEEPER PLATE

(28 GAUGE GALVANIZED STEEL)

PROCEDURE FOR ASSEMBLY OF BASE CONNECTION

1. ASSEMBLE POST TO STUB WITH BOLTS AND ONE BOLT KEEPER PLATE BETWEEN THEM.
2. SHIM AS REQUIRED TO PLUMB POST.
3. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" TO 15" WRENCH TO BED WASHERS AND SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN.
4. RETIGHTEN BOLTS IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE (SEE TABLE).
5. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.



SHIM DETAIL

THE THICKNESS OF SHIMS SHALL NOT BE MORE THAN 0.032" NOR LESS THAN 0.012" AT ANY SINGLE BOLT. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO ASTM-B36.

GENERAL NOTES

- (A) THE DESIGN CONFORMS WITH THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (CURRENT EDITION).
- (B) THE MATERIALS AND FABRICATION SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION.
- (C) ALL STEEL SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH STANDARD SPECIFICATION ASTM-A123 FOR SIGN SUPPORTS.
- (D) ALL HIGH STRENGTH BOLTS AND WASHERS SHALL CONFORM TO STANDARD SPECIFICATION ASTM-A325 OR SAE GRADE 5.
- (E) ALL HIGH STRENGTH NUTS SHALL BE OF SUCH CAPACITY AS TO DEVELOP THE BOLT STRENGTH.
- (F) TIGHTEN THE HIGH STRENGTH BOLTS IN THE BASE CONNECTION ONLY TO THE TORQUE SHOWN. CAUTION - DO NOT OVERTIGHTEN.
- (G) ALL BOLT, NUTS AND WASHERS OTHER THAN LABELED HIGH STRENGTH SHALL CONFORM TO STANDARD SPECIFICATION ASTM-A307, CLASS A.
- (H) THE WELDING SHALL BE DONE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (CURRENT EDITION).
- (I) ALL BOLTS AND NUTS SHALL BE COATED WITH A SUITABLE LUBRICANT.
- (J) THE MATERIAL USED FOR STRUCTURAL SHAPES AND PLATES SHALL BE ASTM-A36 GRADE STEEL.
- (K) ALL HIGH STRENGTH BOLTS, NUTS AND WASHERS MAY BE CADMIUM PLATED IN ACCORDANCE WITH STANDARD SPECIFICATION ASTM-A165 OR GALVANIZED IN ACCORDANCE WITH STANDARD SPECIFICATION ASTM-A153.
- (L) FLANGE HOLES FOR HINGE AND FUSE PLATES SHALL BE DRILLED OR SUB-PUNCHED AND REAMED.
- (M) CLASS "A" CONCRETE CONSTRUCTION AND MATERIALS SHALL MEET THE REQUIREMENTS OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION, SECTION 604".
- (N) CLASS "A" CONCRETE AND REINFORCING STEEL USED IN CONJUNCTION WITH INSTALLATION OF THE SIGN SUPPORT POSTS IS TO BE PAID FOR UNDER ITEM NO. 713-01.01, CLASS "A" CONCRETE (FOUNDATION FOR SIGN SUPPORTS) PER CUBIC YARD, AND 713-01.02, STEEL BAR REINFORCEMENT (FOUNDATION FOR SIGN SUPPORTS) PER POUND.
- (O) CLASS "A" CONCRETE FOOTING SHALL BE PLACED ONLY ON UNDISTURBED MATERIAL OR IN FILL MATERIAL PLACED BY CONTROLLED COMPACTION AT DEPTHS UNAFFECTED BY FROST.
- (P) MATERIALS SURROUNDING FOOTING SHALL BE CAPABLE OF CARRYING A MINIMUM BEARING OF 2,500 POUNDS PER SQUARE FOOT. WHERE SOLID ROCK IS ENCOUNTERED, FOOTING SHALL BE LENGTH SHOWN ON THE SIGN SCHEDULE SHEET OR EXTEND A MINIMUM OF TWO FEET INTO THE ROCK.

FOUNDATION AND FOOTING ELEVATION
DETAIL FOR I-BEAM POST SUPPORTS

TYPE 5 FOOTING

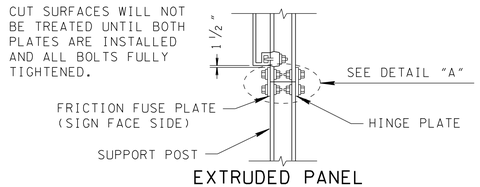
SECTION C-C SECTION D-D

(SEE TABLE FOR DIMENSIONS)

SECTIONS SHOWN ARE FOR INSTALLATIONS ON RIGHT SHOULDER AND IN GORE AREAS. PLATE SLOT BEVELS ARE OPPOSITE HAND FROM THAT SHOWN FOR INSTALLATIONS ON LEFT SHOULDER.

NOTE:

CUT SURFACES WILL NOT BE TREATED UNTIL BOTH PLATES ARE INSTALLED AND ALL BOLTS FULLY TIGHTENED.

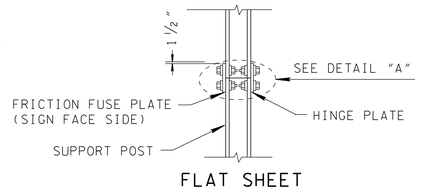


EXTRUDED PANEL

-NOTES-

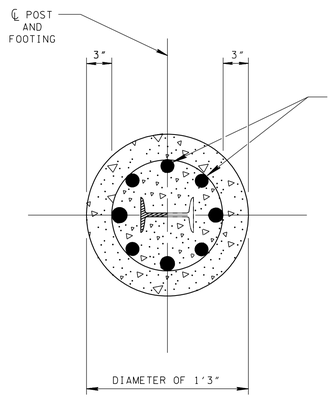
THE HOLES FOR THE HINGE AND FUSE PLATE SHALL BE DRILLED BEFORE THE SAW CUTTING AND GALVANIZING OF THE POST. THE POST SHALL BE SAW CUT COMPLETELY THRU BEFORE OR AFTER GALVANIZING. IF THE POST IS CUT AFTER GALVANIZING THEN THE CUT SURFACE SHALL BE TREATED WITH AN APPROVED ZINC SOLDER MEETING THE FEDERAL SPECIFICATION O-G-93 (STICK ONLY).

USE HIGH STRENGTH BOLTS WITH HEX HEAD, HEX HEAD NUT AND ONE FLAT WASHER UNDER EACH BOLT HEAD AND BEVEL OR FLAT WASHER (WHERE REQUIRED) UNDER NUT.



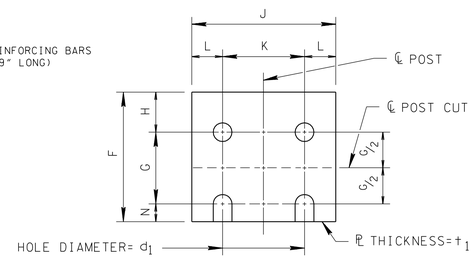
FLAT SHEET

TYPICAL SIDE VIEW



SECTION F-F

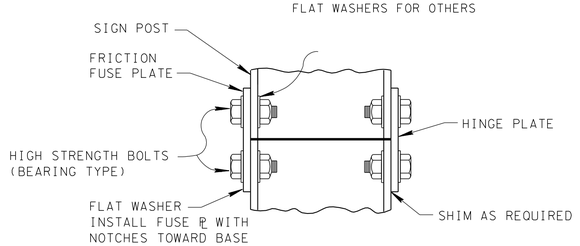
TYPE 5 FOOTING



FUSE PLATE DETAIL

(SEE TABLE FOR DIMENSIONS)

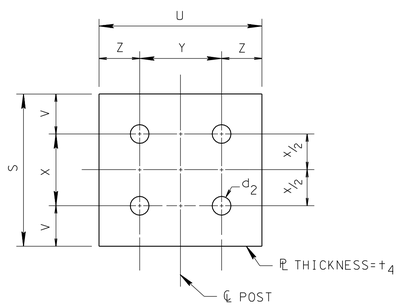
BEVELED WASHERS FOR ALL I-SHAPED POSTS, FLAT WASHERS FOR OTHERS



DETAIL "A"

FABRICATOR NOTE: IMPORTANT- ALL FRICTION FUSE AND HINGE BOLTS SHALL BE TIGHTENED IN THE SHOP FOLLOWING A METHOD APPROVED BY THE ENGINEER. TIGHTENING SHALL BE TO SUCH A DEGREE AS TO OBTAIN THE FOLLOWING MINIMUM RESIDUAL TENSION IN EACH BOLT:

BOLT SIZE	MIN. RESIDUAL BOLT TENSION
½" Ø	12,050 LBS.
⅝" Ø	19,200 LBS.
¾" Ø	28,400 LBS.



HINGE PLATE DETAIL

(SEE TABLE FOR DIMENSIONS)

REV. 10-6-66: BOLT LENGTH AND NOTE.

REV. 10-27-66: FOUNDATION BEARING REVISED.

REV. 10-30-66: 3½", 4" & 5" TUBES ELIMINATED.

REV. 1-19-72: TORQUE FOR DETAIL "A".

REV. 7-1-72: CHANGED DEPARTMENT NAME.

REV. 5-1-73: REVISED SHIM NOTE.

REV. 3-12-74: REVISED GENERAL NOTES.

REV. 10-3-75: TORQUE ON BOLTS AND POST SIZE.

REV. 1-1-76: CHANGED DWG. NO. FROM RD-S-13 TO T-S-13.

REV. 7-29-76: NEW AASHTO SPECIFICATION.

REV. 4-12-77: BOLTS AT FUSE PLATES & ADDED BOLT KEEPER PLATES.

REV. 6-30-88: ADDED HINGE PLATE.

REV. 3-14-90: CHANGED SLIP BASE TORQUE IN TABLE.

REV. 12-7-90: REDREW AND RENAMED DRAWING. PLACED MATERIAL AND INFORMATION REGARDING STANDARD STEEL GROUND MOUNTED SIGNS WITH BREAK-AWAY TYPE FOOTINGS USING SQUARE TUBES ON DRAWING NO. T-S-12. ELIMINATED S7 x 15.3 SUPPORT POST SIZE FROM THE TABLE.

☐ REV. 10-26-96: CHANGED PAY ITEM NO. IN GENERAL NOTE (N).

☐ REV. 5-27-01: CHANGED NOTE UNDER SHIM DETAIL.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD STEEL GROUND MOUNTED SIGNS, BREAK-AWAY TYPE POST FOOTING DETAILS, I-BEAMS

T-S-13