FUSE PLATE DIMENSIONS **FOUNDATION** BASE CONNECTION DIMENSIONS HINGE PLATE DIMENSIONS DIAMETER OF TYPE 5 & TORQUE FOOTING S3 X 5. DRQUE=95 in. S4 X 7.7 TO 142 in. lbs. 1'-3" ORQUE=226 in. lbs TO 345 in. lbs.

DIRECTION OF TRAFFIC SIGN POST -HIGH STRENGTH BOLT WITH HEX HEAD, HEX HEAD NUT AND 2 WASHERS WITH EACH BOLT. SEE TABLE FOR BOLT DIAMETER **BOLT KEEPER PLATE** AND TORQUE. SEE PROCEDURE FOR ASSEMBLY OF BASE CONNECTION. REMOVE ALL GALVANIZING RUNS OR BEADS IN THIS AREA. TOP OF FOUNDATION AND FINISHED GRADE.

SIGN POST AND STUB POST BASE CONNECTION DETAIL **ELEVATION VIEW**

FOUNDATION AND FOOTING ELEVATION

DETAIL FOR I-BEAM POST SUPPORTS

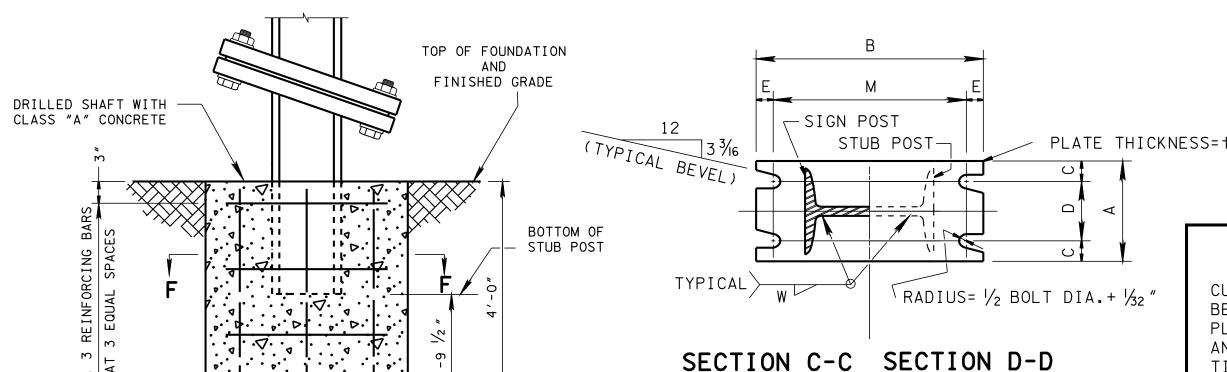
TYPE 5 FOOTING

SECTION F-F

TYPE 5 FOOTING

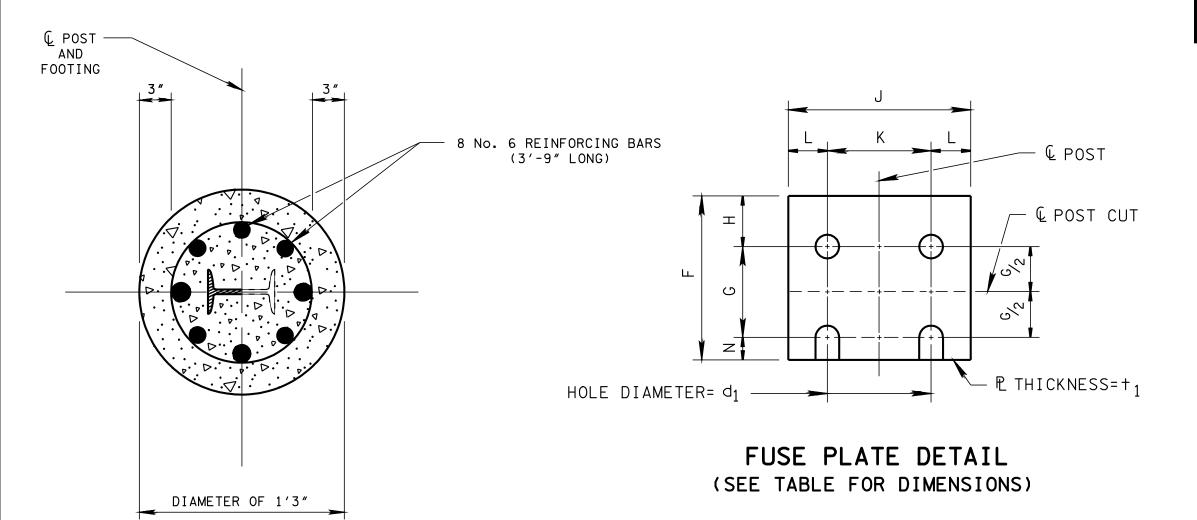
BOLT KEEPER PLATE (28 GAUGE GALVANIZED STEEL)

(FOR I-SHAPED SUPPORT POSTS)



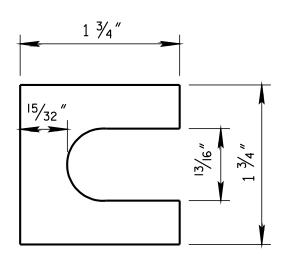
(SEE TABLE FOR DIMENSIONS)

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.



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

NOTE:

CUT SURFACES WILL NOT

BE TREATED UNTIL BOTH

FRICTION FUSE PLATE

SUPPORT POST

(SIGN FACE SIDE)

PLATES ARE INSTALLED

AND ALL BOLTS FULLY

TIGHTENED.

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.

SEE DETAIL "A"

HINGE PLATE

GENERAL NOTES

- 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
- $oxedsymbol{igl(}$ 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.
- THE WELDING SHALL BE DONE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (CURRENT EDITION).
- lacksquare (i) all bolts and nuts shall be coated with a suitable lubricant.
- ① 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".
- 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.
- (0) CLASS "A" CONCRETE FOOTING SHALL BE PLACED ONLY ON UNDISTURBED MATERIAL OR IN FILL MATERIAL PLACED BY CONTROLLED COMPACTION AT DEPTHS UNAFFECTED BY
- 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.

REV. 10-6-66: BOLT LENGTH AND NOTE. REV. 10-27-66: FOUNDATION BEARING

REVISED. REV. 10-30-66: $3\frac{1}{2}$ ", 4" & 5"

TUBES ELIMINATED. REV. 1-19-72: TORQUE FOR DETAIL

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 SPECIFICA-

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 \times 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.
- REV. 7-20-12: REVISED DIMENSION K AND Y FOR S5X10.0.

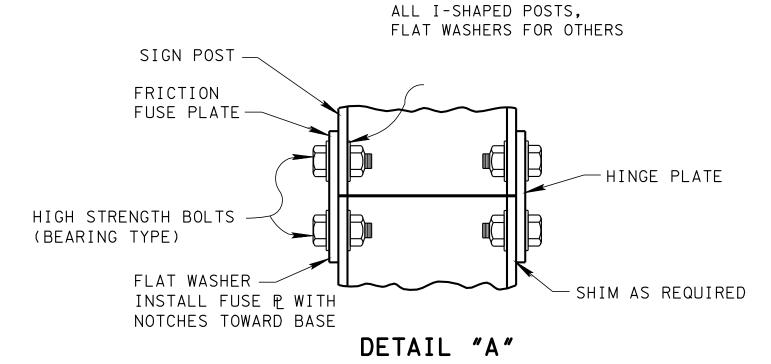
-NOTES-

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.

SEE DETAIL "A" FRICTION FUSE PLATE - HINGE PLATE (SIGN FACE SIDE) SUPPORT POST FLAT SHEET

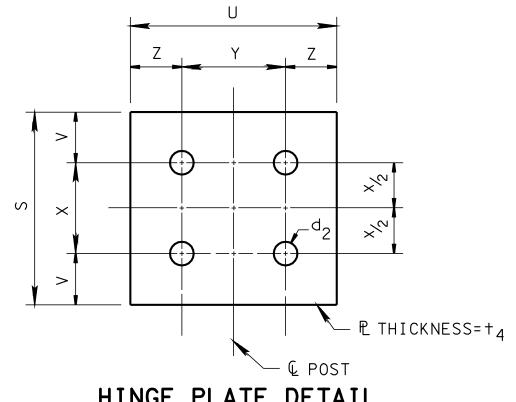
TYPICAL SIDE VIEW



EXTRUDED PANEL

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. % " Ø ______ 19,200 LBS. ______ 28,400 LBS.



HINGE PLATE DETAIL (SEE TABLE FOR DIMENSIONS) ■ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATIO

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

T-S-13