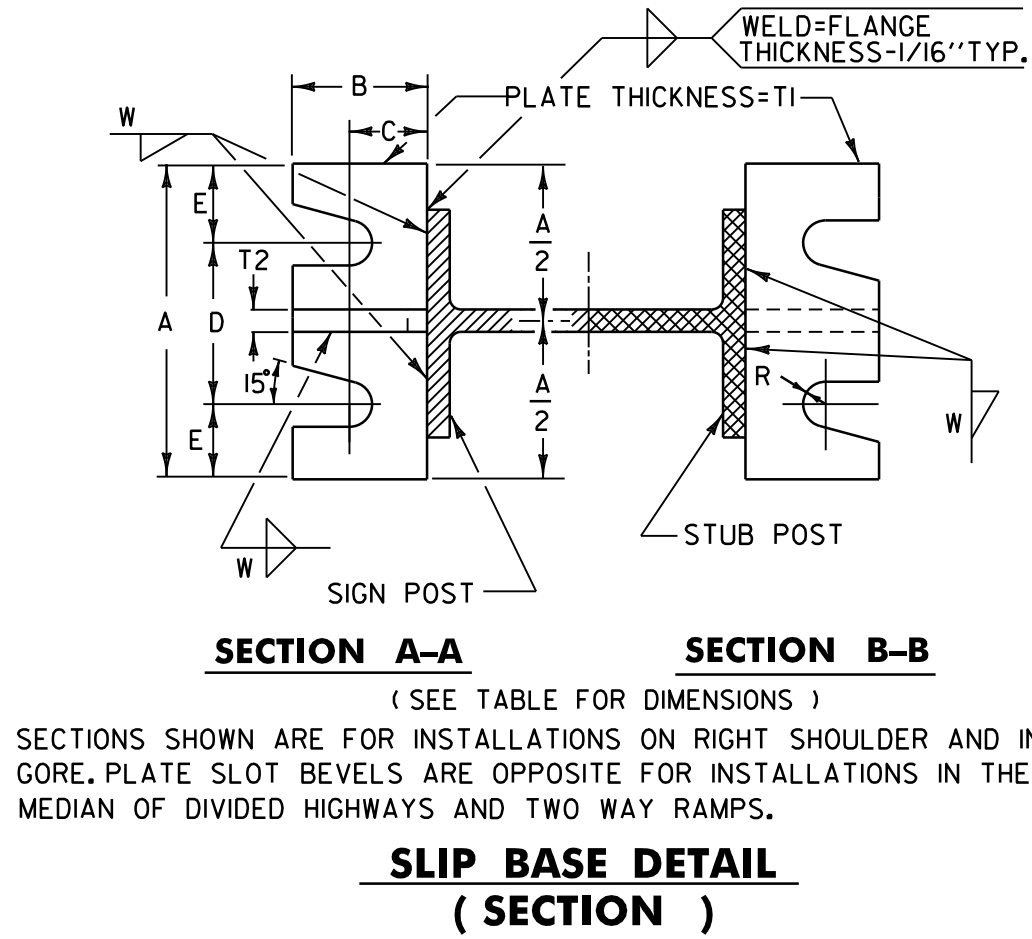
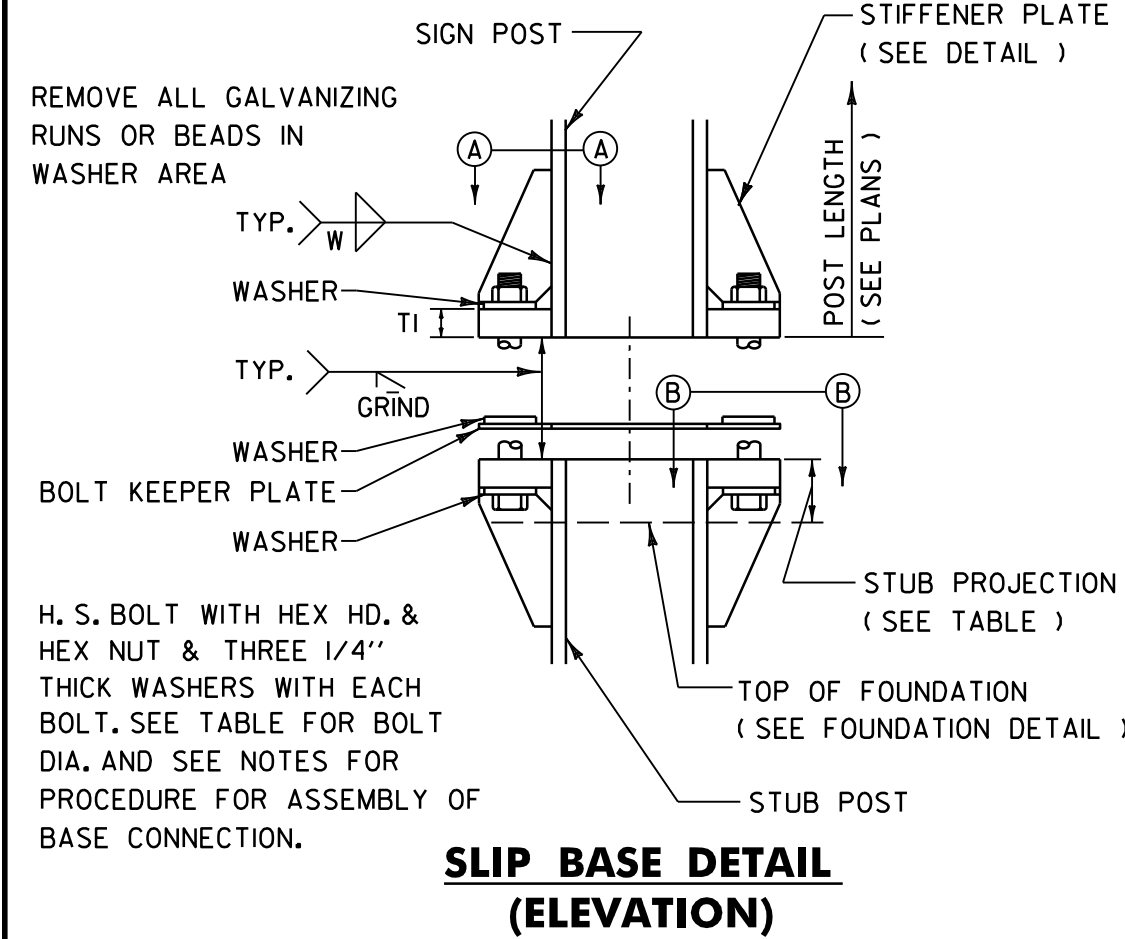
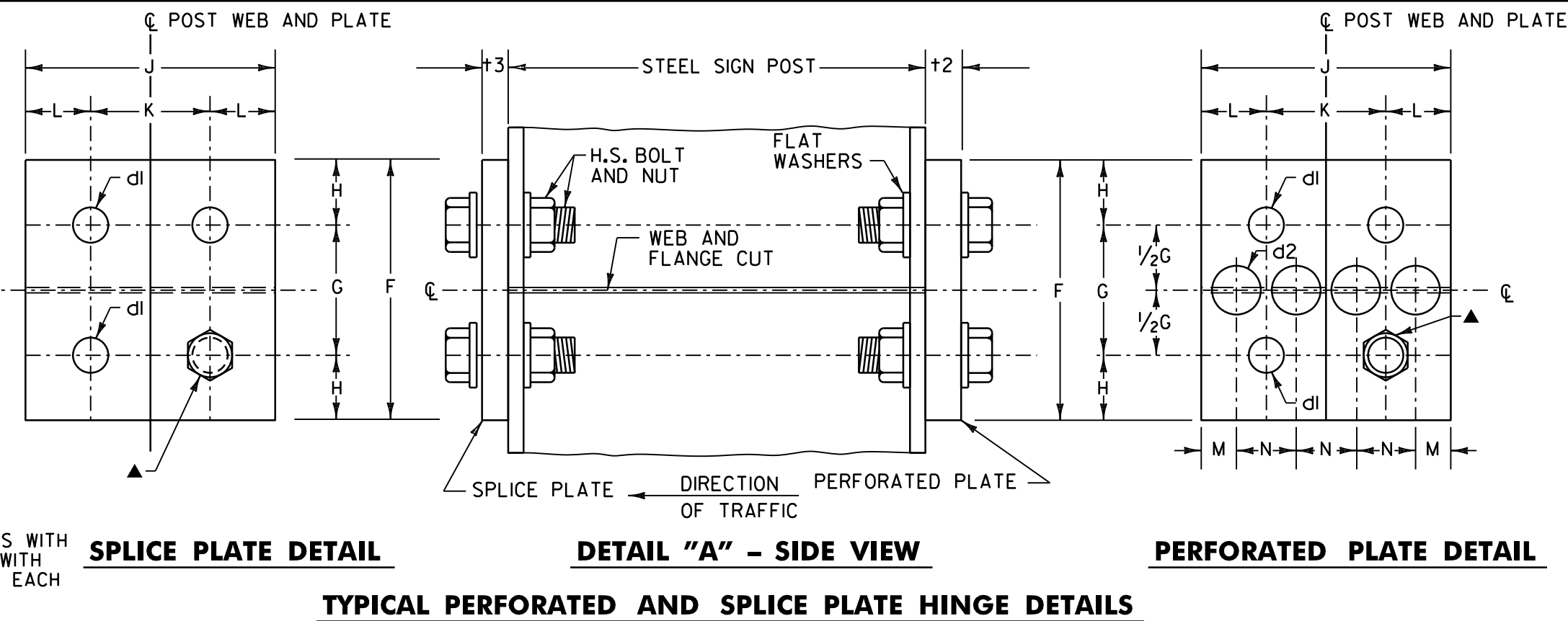




BASE CONNECTION DATA TABLE											PERFORATED PLATE DATA TABLE													BOLT KEEPER DATA				FOUNDATION DATA						
POST SIZE	BOLT SIZE	A	B	C	D	E	T1	T2	W	R	F	G	H	J	K	L	M	N	d1	d2	+t2	+t3	BOLT SIZE		P	S	U	Z	BASE DIA.	BASE DEPTH	MIN. STUB LENGTH	STUB PROJ.	VOLUME OF SINGLE BASE	
W6X12	5/8" Ø X 3 1/2"	5"	2"	1 1/4"	2 3/4"	1 1/8"	3/4"	1/2"	1/4"	1 1/32"	4 1/4"	2"	1 1/8"	4"	2 1/4"	7/8"	1/2"	1"	3/16"	3/4"	1/4"	1/4"	1/2" Ø X 1 3/4"		8 1/2"	1"	10"	3/4" Ø	24"	6'-0"	3'-0"	2 1/2"	0.70 C.Y.	
W6X15											5"	2 1/2"	1 1/4"	6"	3 1/2"	1 1/4"	3/4"	1 1/2"	1/16"	1 1/4"	3/8"	1/4"	5/8" Ø X 2 1/2"		8 1/2"									10 5/8"
W8X18											5"	2 1/2"	1 1/4"	5 1/4"	2 3/4"	1 1/4"	3/4"	1 1/4"	1/16"	1 1/6"	3/8"	3/8"	5/8" Ø X 2 1/2"		10 5/8"									12 1/8"
W8X21											5 1/2"	2 1/2"	1 1/2"	5 1/4"	2 3/4"	1 1/4"	3/4"	1 1/4"	1/8"	1"	1/2"	3/8"	3/4" Ø X 2 1/2"		11"									12 3/4"
W10X22											6"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	1 3/8"	1 1/8"	1/2"	3/8"	3/4" Ø X 2 1/2"		12 7/8"	14 5/8"										
W10X26	6"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	1 3/8"	1 1/8"	1/2"	7/16"	3/4" Ø X 2 1/2"		13 1/8"	14 7/8"																				

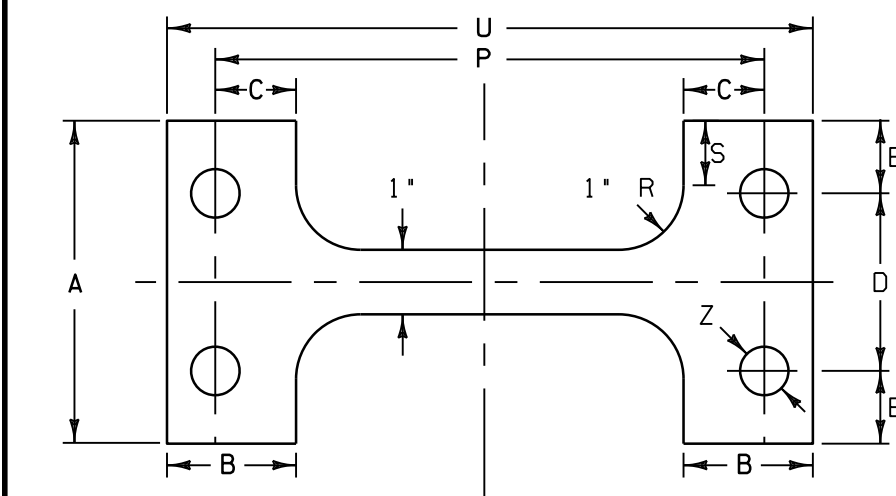
- 5/8" BOLTS SHALL HAVE A MINIMUM THREAD LENGTH OF 2 INCHES
- 3/4" BOLTS SHALL HAVE A MINIMUM THREAD LENGTH OF 2 1/4 INCHES
- THESE BOLTS SHALL BE FURNISHED WITH TWO NUTS FOR EACH BOLT.



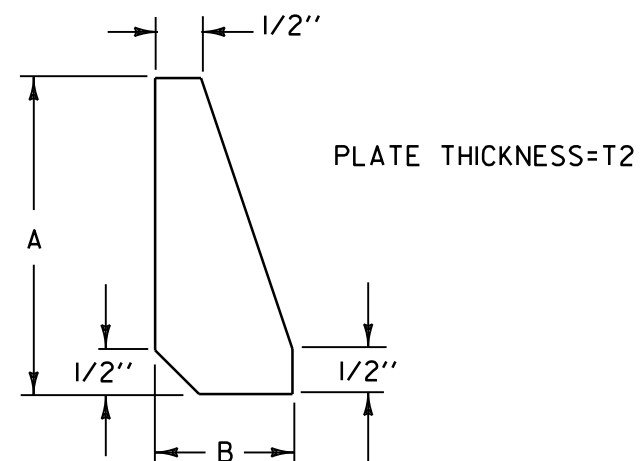
PROCEDURE FOR ASSEMBLY OF BASE CONNECTION

1. MAKE SURE ALL BOLTS ARE FROM THE SAME STOCK.
2. TRY NUTS ON BOLT THREADS MAKING SURE THEY TURN EASILY BY HAND.
3. ASSEMBLE SIGN POST AND BOLT KEEPER PLATE TO STUB POST WITH BOLTS AND THREE 1/4" FLAT WASHERS.(ONE EACH UNDER HEAD OF BOLT, BETWEEN BOLT KEEPER PLATE AND SIGN POST, AND UNDER NUT.)
4. SHIM AS REQUIRED TO PLUMB POST.
5. TIGHTEN ALL BOLTS TO THE MAXIMUM POSSIBLE BY HAND WITH A 12" TO 15" WRENCH TO BED WASHERS AND SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE.
6. THE BASE PLATE BOLTS WILL BE TORQUED TO PRESCRIBED BOLT TORQUE SHOWN BELOW. AFTER THE INITIAL TORQUING USE A SECOND NUT TO INSURE THAT THE FIRST NUT WILL NOT BACK OFF. THE CONTRACTOR WITH THE AGENCY INSPECTOR WILL RETURN TO THE SIGN TWO MORE TIMES AT INTERVALS OF 30 DAYS FOR THE PURPOSE OF CHECKING AND RE-ESTABLISHING THE PRESCRIBED TORQUE BELOW. THE SECOND NUT SHALL REMAIN AS A LOCK NUT.
7. SLIP BASE BOLT TORQUE

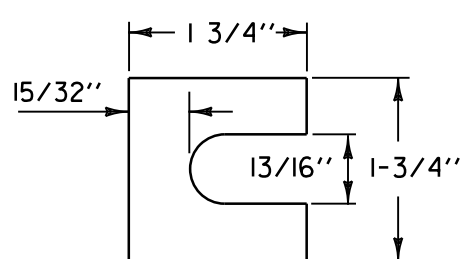
BOLT SIZE	BOLT TORQUE
5/8" DIA.	29 FT-LB
3/4" DIA.	46 FT-LB



BOLT KEEPER PLATE
30-GAGE GALVANIZED SHEET METAL
(SEE TABLE FOR DIMENSIONS)

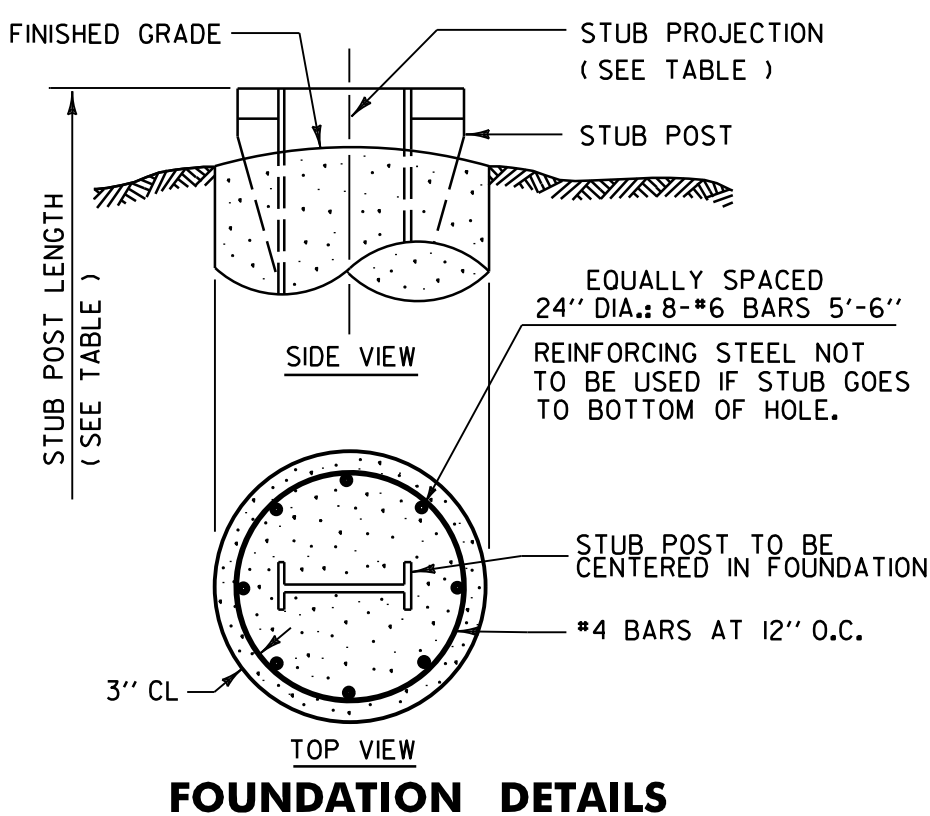
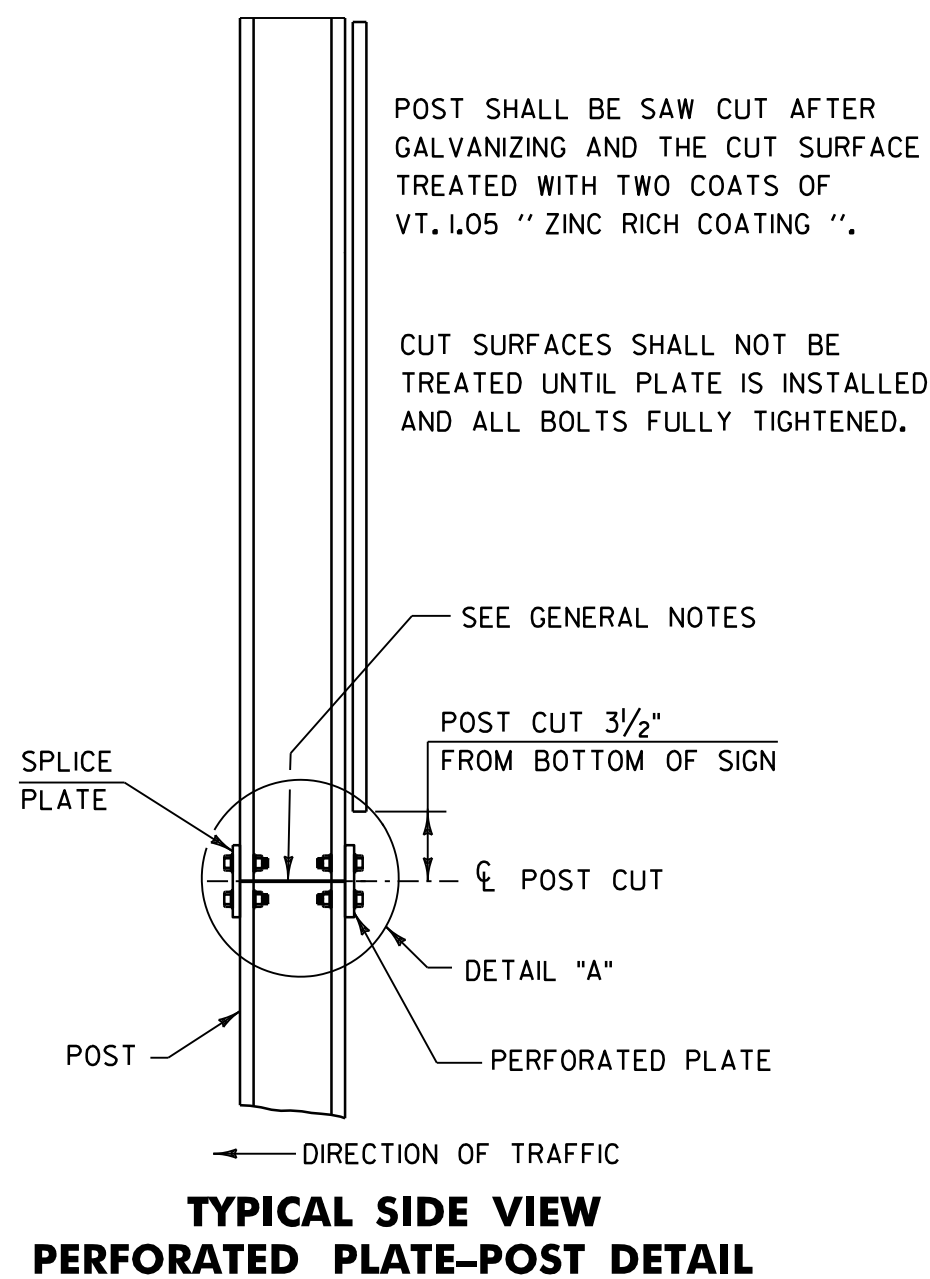


STIFFENER PLATE
(SEE TABLE FOR DIMENSIONS)



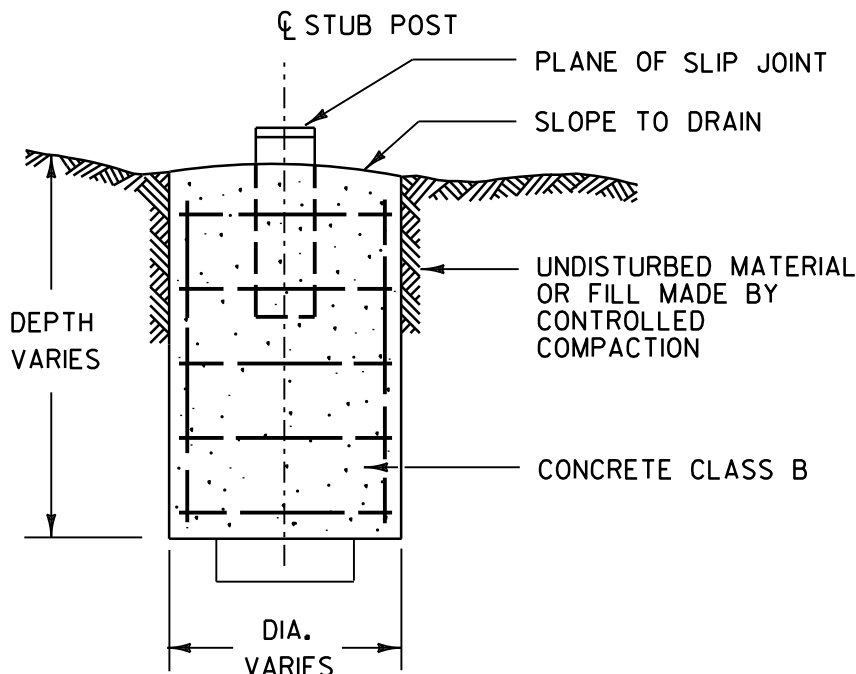
FURNISH TWO .012" ± THICK AND TWO .032" ± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO A.S.T.M. B-36.

SHIM DETAIL

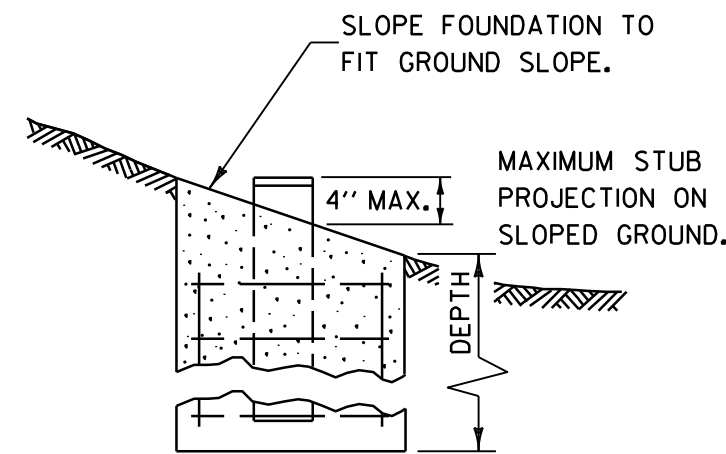


PERFORATED PLATE AND SPLICE PLATE MOUNTING BOLTS TO BE TIGHTENED TO THE MAXIMUM POSSIBLE BY HAND WITH A 12" TO 15" WRENCH, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE FOLLOWING MINIMUM TORQUE VALUES FOR EACH BOLT SIZE:
1/2" Ø: 50 FT-LBS
5/8" Ø: 100 FT-LBS
3/4" Ø: 175 FT-LBS

▲ HOLE DIAMETER = d1
USE HIGH STRENGTH BOLTS WITH HEX HEAD AND HEX NUT WITH ONE FLAT WASHER UNDER EACH



FLAT GROUND FOUNDATION DETAILS



SLOPING GROUND FOUNDATION DETAILS

POST SPACING

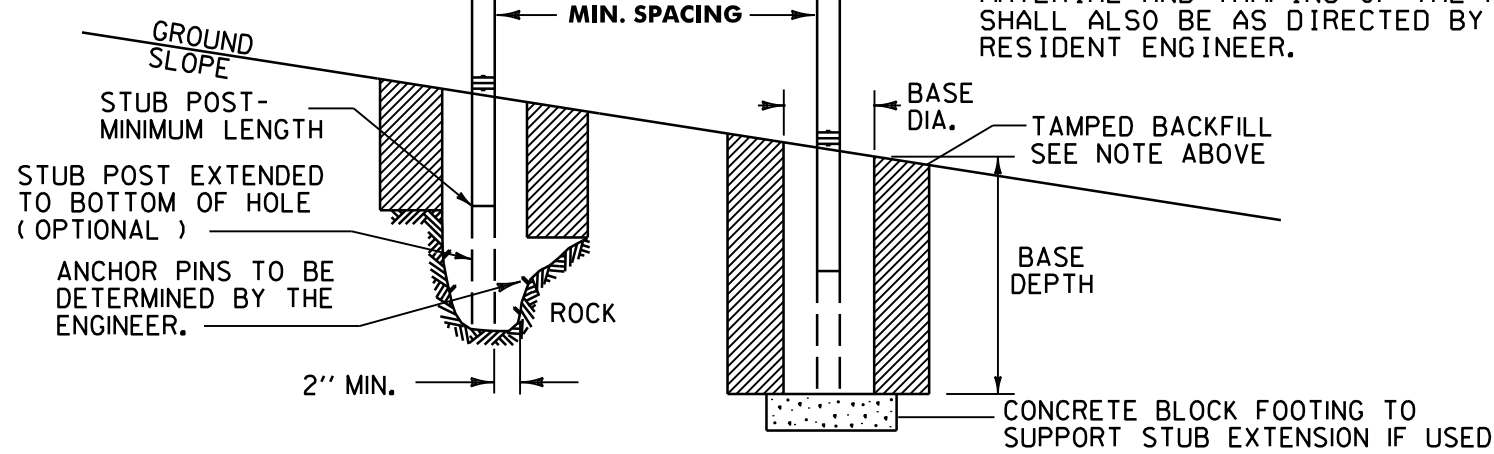
3' - 2' MINIMUM FOR POST SIZES W6 X 12 THRU W8 X 18
7' - 0' MINIMUM FOR POST SIZES W8 X 21 THRU W10 X 26.

SIGN CLEARANCES

HORIZONTAL AND VERTICAL SIGN CLEARANCES SHALL BE AS SHOWN ON THE PLANS OR THE APPROPRIATE STD. SHEETS, HOWEVER A 7' - 0" MIN. CLEARANCE SHALL EXIST BETWEEN THE PERFORATED PLATE AND BASE CONNECTION.

TAMPED BACKFILL

THE DUG HOLE INSTALLATION SHALL BE USED IN AREAS OF POOR SOIL AS DIRECTED BY THE ENGINEER. BACKFILL MATERIAL AND TAMPING OF THE MATERIAL SHALL ALSO BE AS DIRECTED BY THE RESIDENT ENGINEER.

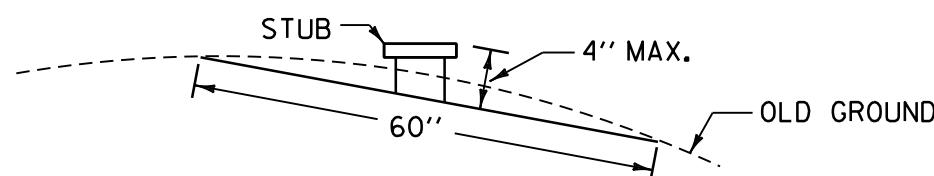


CONSTRUCTION METHOD

HOLES FOR POST FOOTINGS MAY BE AUGERED OR DUG. THE HOLES MAY BE LEFT WITH EARTH SIDES. IF THE MATERIAL IS FIRM, AND ALL DISTURBED SOIL AROUND THE CIRCUMFERENCE OF THE AUGERED HOLE IS REMOVED, IF NOT, A SUITABLE FORM APPROVED BY THE ENGINEER SHALL BE USED. CORRUGATED METAL CULVERT PIPE OR PAPER FORMS MANUFACTURED FOR USE AS CONCRETE COLUMN FORMS WILL BE ACCEPTABLE, IF THE STUB IS EXTENDED TO THE BOTTOM OF THE HOLE. A CONCRETE BLOCK FOOTING SHALL BE UTILIZED TO SUPPORT THE POST AND THE POST SHALL BE HELD SECURELY IN PLACE AT THE BOTTOM. THIS MAY BE DONE BY EMBEDDING THE POST AND CONCRETE BLOCK FOOTING IN WET CONCRETE AND ALLOWING TO SET WITH THE POST SECURED IN POSITION, PLUMBED AND PROPERLY BRACED. THE REMAINING FOOTING MAY BE POURED. THE TIME BETWEEN POURS FOR THE CURING OF THE CONCRETE SHALL BE AS DETERMINED BY THE ENGINEER. NO PART OF THE FORM SHALL SHOW ABOVE THE GROUND LINE WHEN THE WORK IS COMPLETED.

GENERAL NOTES

1. DESIGN CONFORMS WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.
2. MATERIAL AND FABRICATION SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SHEETS AND SPECIFICATIONS.
3. ALL STRUCTURAL STEEL INCLUDING PERFORATED AND SPLICE PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 AFTER FABRICATION. STEEL POSTS SHALL BE STAMPED WITH THEIR SIZE.
4. THE POST CUT SHALL BE A SAW CUT ONLY. ALL OTHER CUTS EXCLUDING POST CUTS MAY BE FLAME CUT PROVIDED ALL EDGES ARE GROUND SMOOTH. METAL PROJECTING BEYOND THE PLATE FACE WILL NOT BE PERMITTED.
5. ALL HOLES IN PERFORATED PLATE AND POST FLANGE HOLES ON WHICH IT MOUNTS SHALL BE DRILLED. ALL OTHERS MAY BE PUNCHED. BURR THREADS AT JUNCTION WITH NUT TO PREVENT NUT LOOSENING.
6. ALL SAW CUTS SHALL BE PAINTED WITH AN APPROVED COATING.
7. EXTREME CARE SHOULD BE TAKEN TO KEEP THE SLIP BASE JOINT FREE OF ANY FOREIGN MATERIAL, EITHER BY WRAPPING THE JOINT OR THOROUGH CLEANING IMMEDIATELY AFTER POURING OF CONCRETE.
8. THE TOTAL WEIGHT OF TWO (2) POSTS WITH 3' - 2' SPACING OR A SINGLE POST OF A TWO (2) POSTS INSTALLATION WITH 7' - 0' SPACING SHALL NOT EXCEED 600 POUNDS BELOW THE PERFORATED PLATE.
9. ALL DIMENSIONS REFERRING TO STUB HEIGHT IN THE VARIOUS TABLES AND FOUNDATION DETAILS SHALL BE ADJUSTED AS REQUIRED TO RESULT IN A TOTAL STUB HEIGHT WHICH IS NOT MORE THAN FOUR INCHES ABOVE A 60-INCH CHORD ALIGNED RADIALY TO THE CENTERLINE OF THE HIGHWAY AND CONNECTING ANY POINT, WITHIN THE LENGTH OF THE CHORD, ON THE GROUND SURFACE ON ONE SIDE OF THE SUPPORT TO A POINT ON THE GROUND SURFACE ON THE OTHER SIDE.



REV.	DATE	DESCRIPTION
0	JUN. 24, 2025	ORIGINAL APPROVAL
OTHER STANDARDS REQUIRED: NONE		
APPROVALS ON FILE WITH VTRANS STANDARD DRAWING COMMITTEE		

W-SHAPED STEEL BEAM SIGN POST



STANDARD
T-161