

POST SIZE	BOLT SIZE BOLT FORCE LB	BASE CONNECTION DATA TABLE										FUSE PLATE DATA TABLE																			
		A	B	C	D	E	T1	T2	W	R	F	G	H	J	K	L	N	DI	T3	BOLT DIA.	WT OF EA. FUSE #										
6 BL 8.5	5/8" Ø X 3 1/2"																				3 5/8"	2"	1 1/8"	4"	2 1/4"	7/8"	1 1/2"	9 1/16"	1/4"	1/2"	0.94 #
6 BL 12	5/8" Ø X 3 1/2"	5"	2"	1 1/4"	2 3/4"	1 1/8"	3/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	3 5/8"	2"	1 1/8"	4"	2 1/4"	7/8"	1 1/2"	9 1/16"	1/4"	1/2"	0.94 #
6 WF 15.5	2660 *																				4 3/8"	2 1/2"	1 1/4"	6"	3 1/2"	1 1/4"	5/8"	1 1/8"	3/8"	5/8"	2.58 #
8 WF 17																					4 3/8"	2 1/2"	1 1/4"	5 1/4"	2 3/4"	1 1/4"	5/8"	1 1/8"	3/8"	5/8"	2.24 #
8 WF 20																					4 3/8"	2 1/2"	1 1/2"	5 1/4"	2 3/4"	1 1/4"	3/4"	1 1/8"	1/2"	3/4"	2.95 #
10 WF 21	3440 X 4 1/2"	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	5 1/4"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	3/4"	1 3/8"	1/2"	3/4"	3.88 #
10 WF 25	3600 **																				5 1/4"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	3/4"	1 3/8"	1/2"	3/4"	3.88 #
12 WF 27		7"			4"	1 1/2"															5 1/4"	3"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	3/4"	1 3/8"	1/2"	3/4"	4.44 #

* 5/8" BOLTS SHALL HAVE AT LEAST A THREAD LENGTH OF (2) INCHES.
 ** 3/4" BOLTS SHALL HAVE AT LEAST A THREAD LENGTH OF 2 1/4 INCHES.
 THESE BOLTS SHALL BE FURNISHED WITH 2 NUTS FOR EACH BOLT.

POST SIZE	BASE DIA.	BASE DEPTH	MIN. STUB LENGTH	STUB PROJ.
6 BL 8.5	18"	5'-0"	2'-0"	3"
6 BL 12	18"	5'-0"	2'-0"	3"
6 WF 15.5	18"	5'-0"	2'-6"	3"
8 WF 17	18"	5'-6"	2'-6"	3"
8 WF 20	18"	5'-6"	3'-0"	2 1/2"
10 WF 21	24"	5'-6"	3'-0"	2 1/2"
10 WF 25	24"	6'-0"	3'-0"	2 1/2"
12 WF 27	30"	6'-0"	3'-0"	2 1/2"

TYPE "A" FOOTINGS

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.
3. Place (3) bolts in Skidmore - Wilhelm device. Torque to proper tension in device. Calibrate torque wrench by checking torque on these three bolts when under proper tension in device.
4. The testing and calibration shall be done at the Vermont Highway Department's Materials Laboratory or at such place designated by them.
5. Use the average of the three torques on similar bolts in the real support.
6. Assemble posts to stub with bolts and with three 1/4" flat washers, one each, under head of bolt, between plates, and under nut.
7. Shim as required to plumb post.
8. Tighten all bolts the maximum possible 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 tension.
9. Then base plate bolts will be torqued to prescribed bolt tension on the plans. After the initial torquing use a second nut to insure that the first nut will not back off. The contractor with the Department inspector will return to the sign two more times at intervals of 30 days for the purpose of checking and reestablishing the prescribed torque. The second nut shall remain as a lock nut.

FABRICATION NOTE

All friction fuse bolts shall be tightened by the fabricator to the prescribed bolt tension mentioned below. The contractor will be held responsible to check and certify that the below residual tensions are obtained.

BOLT SIZE	MIN. RESIDUAL BOLT TENSION
1/2" Ø	12050 LBS
5/8" Ø	19200 LBS
3/4" Ø	28400 LBS
7/8" Ø	36050 LBS

CONSTRUCTION METHOD.

HOLES FOR POST FOOTINGS MAY BE AUGERED OR DUG IF THE MATERIAL IS FIRM, THE HOLES MAY BE LEFT WITH EARTH SIDES, 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. FIRST EXCAVATE HOLE AND POUR CONCRETE BASE, A SOLID CONCRETE BLOCK PROPERLY EMBEDDED IN WET CONCRETE MAY BE SUBSTITUTED AS A BASE. THEN SECURE THE POST IN POSITION, PLUMBED AND PROPERLY BRACED BEFORE POURING THE FOOTING. THE TIME BETWEEN POURS FOR THE CURING OF THE CONCRETE SHALL BE AS DETERMINED BY THE ENGINEER. THE FORM SHALL BE LEFT IN PLACE AND THE HOLE PROPERLY BACKFILLED. NO PART OF THE FORM SHALL SHOW ABOVE THE GROUND LINE WHEN THE WORK IS COMPLETED.

IF A THREE POST MOUNTING IS USED, THE SPACING SHALL BE L/6, 2L/6, 2L/6, AND L/6

GENERAL NOTES

DESIGN CONFORMS WITH A.A.S.H.O. SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGN.
 MATERIAL AND FABRICATION SHALL CONFORM TO THE REQUIREMENTS OF STATE OF VERMONT DEPARTMENT OF HIGHWAYS, STANDARD SHEETS AND SPECIFICATIONS.
 ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A 36
 ALL STRUCTURAL STEEL, BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AS PER A.S.T.M. A-123 EXCEPT AS NOTED.

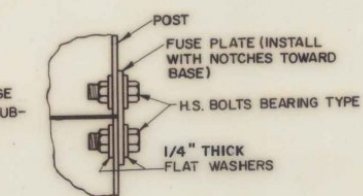
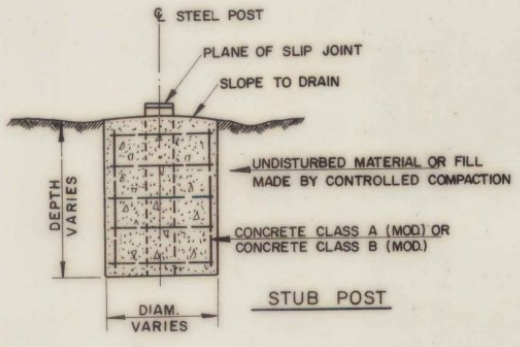
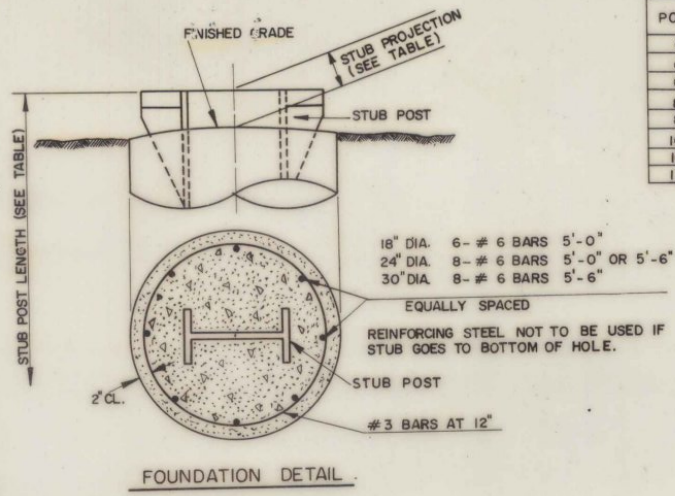
ALL HIGH STRENGTH BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AS PER A.S.T.M. A-153 HOLES SHALL BE DRILLED.
 THE POST CUT SHALL BE A SAW CUT ONLY. ALL OTHER CUTS EXCLUDING POST CUTS MAY BE FLAME CUT PROVIDED ALL EDGES ARE GROUND. METAL PROJECTING BEYOND THE PLATE FACE WILL NOT BE PERMITTED.

ALL HIGH STRENGTH BOLTS, NUTS, AND WASHERS SHALL CONFORM TO A.S.T.M. A-325 PAINT FOR SAW CUT SHALL BE A SINGLE COMPONENT ZINC-RICH COMPOUND YIELDING A DRIED FILM OF AT LEAST 85% PURE ZINC. IT SHALL MEET OR EXCEED THE REQUIREMENT OF MIL-P-21035

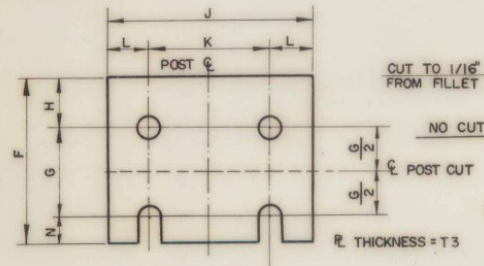
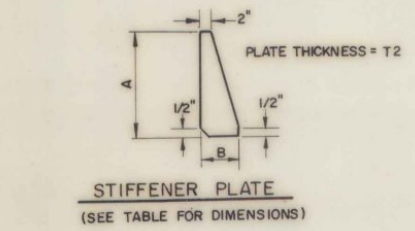
SEE SIGN STANDARD SHEET E-21 FOR POST SPACING

ALL SIGNS MOUNTED ON STEEL POSTS SHALL BE ERECTED A MINIMUM OF 7' ABOVE EDGE OF PAVEMENT TO BOTTOM OF SIGN AND THE INSIDE EDGE OF THE SIGN POSITIONED A MINIMUM OF 30" FROM EDGE OF PAVEMENT UNLESS OTHERWISE INDICATED ON THE PLANS.

EXTREME CARE SHOULD BE TAKEN TO KEEP THE SLIP JOINT FREE OF ANY FOREIGN MATERIAL, EITHER BY WRAPPING THE JOINT OR THOROUGH CLEANING IMMEDIATELY AFTER POURING OF CONCRETE.
 ALL POSTS SHALL BE PAINTED 2 COATS OF PAINT AFTER THE POST IS ERECTED. THE FIRST COAT SHALL BE A ZINC RICH PAINT APPLIED EVENLY AND SMOOTHLY. THE SECOND COAT SHALL BE A GOOD GRADE OF ALUMINUM PAINT APPLIED EVENLY AND SMOOTHLY.



NOTE: CUT SURFACES WILL NOT BE TREATED UNTIL PLATE IS INSTALLED AND ALL BOLTS FULLY TIGHTENED.



FRICITION FUSE PLATE

POST SHALL BE SAW CUT AFTER GALVANIZING AND THE CUT SURFACE TREATED WITH AN APPROVED ZINC SOLDER MEETING THE FEDERAL SPEC. 0-6-93 (STICK ONLY) OR 2 COATS ZINC RICH PRIME MIL-P-21035 SEE GENERAL NOTES

BOTTOM OF SIGN TO CLEAR FUSE PLATE 1" MAX.

NO CUT

POST CUT

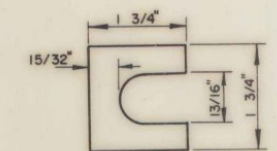
SEE "DETAIL A"

CUT FLANGE AND WEB.

POST

CUT TO 1/16" FROM FILLET

R THICKNESS = T3



FURNISH 2- .012± THICK AND 2- .032± THICK SHIMS PER POST SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO A.S.T.M. B 36

REVISIONS AND CORRECTIONS

SEPT. 16, 1968 DELETED 12" DIA FOOTING ADDED NOTE ON FLAME CUTTING OF POST... ADDITION OF NOTES ON FIELD PAINTING AND PROTECTION OF SLIP JOINT, AND POST SPACING

SEPT. 16, 1970R ADDED 1/4" THICK WASHERS. REVISED BOLTS AND ASSEMBLY PROCEDURE PER REQUEST OF THE FEDERAL HIGHWAY ADMINISTRATION

APPROVED DATE Feb 16/68

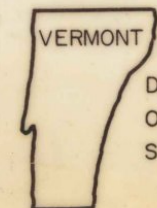
CHIEF ENGINEER

ASST. CHIEF ENGINEER

TRAFFIC ENGINEER

HIGHWAY ENGINEER

TRAFFIC SIGNS
 BREAKAWAY TYPE GALVANIZED STRUCTURAL STEEL
 SIGN SUPPORTS



DEPARTMENT OF HIGHWAYS STANDARD

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