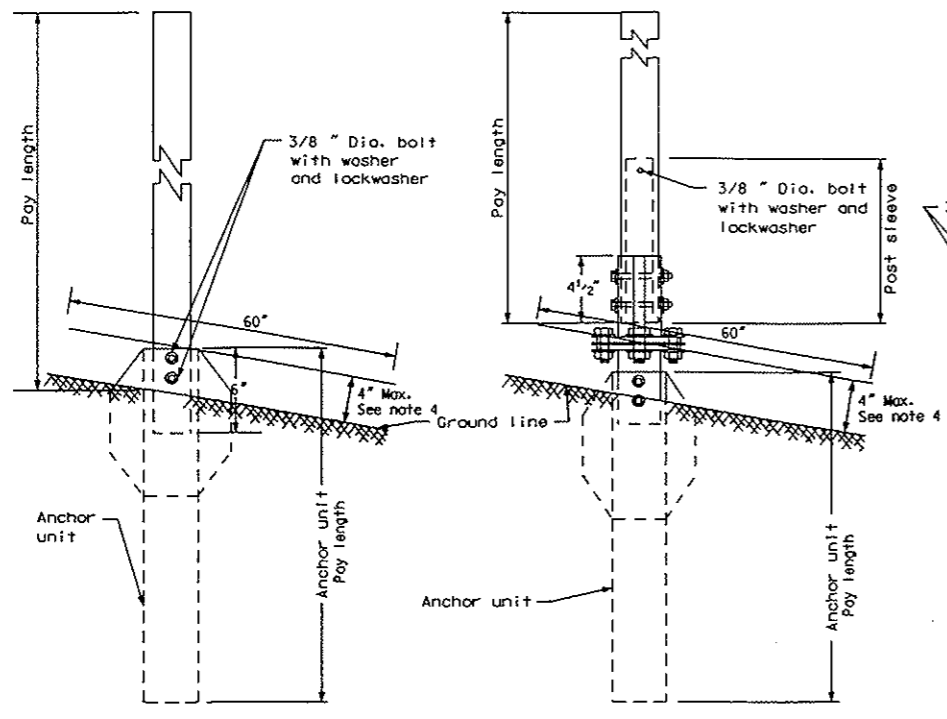
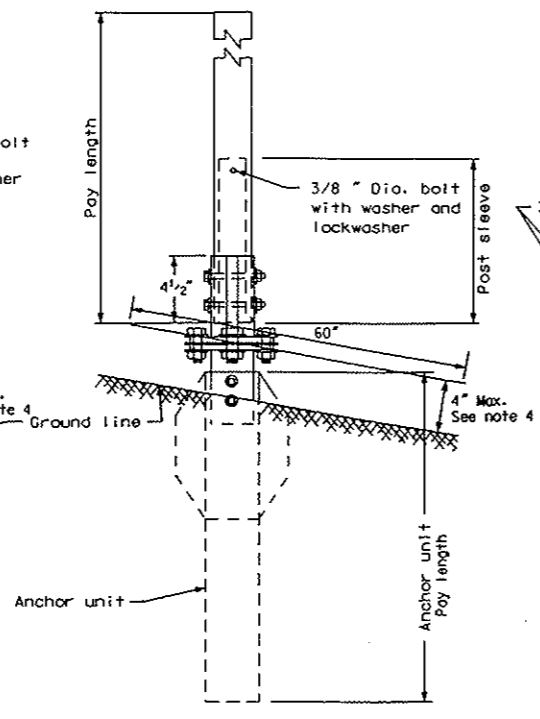


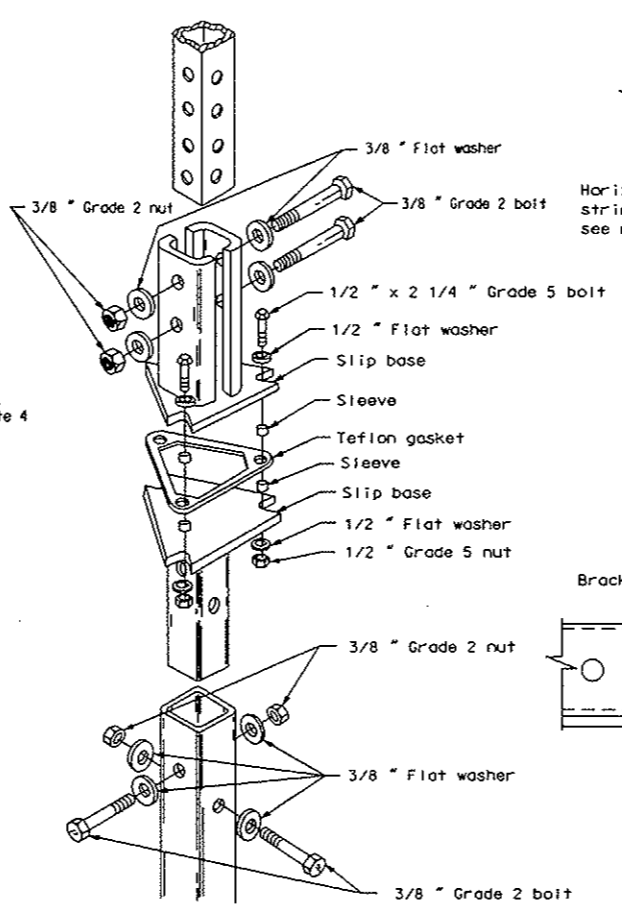
MOUNTING DETAILS PERFORATED TUBE



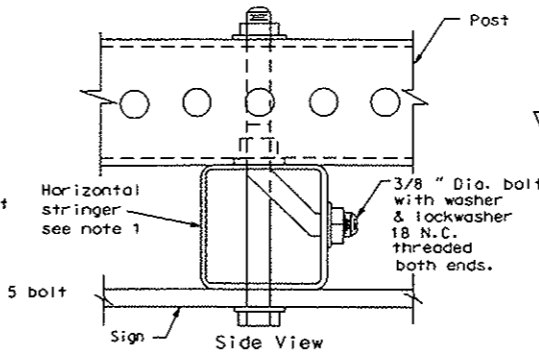
ANCHOR UNIT AND POST ASSEMBLY



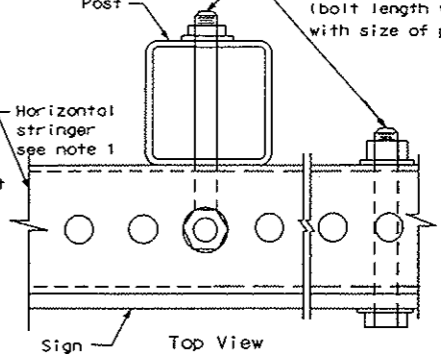
SLIP BASE ANCHOR UNIT AND POST SLEEVE ASSEMBLY



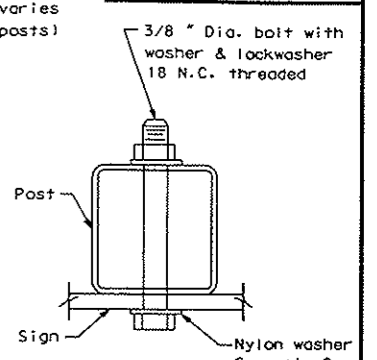
SLIP BASE ASSEMBLY DETAILS
Note: Slip base bolts shall be torqued as specified by the manufacturer.



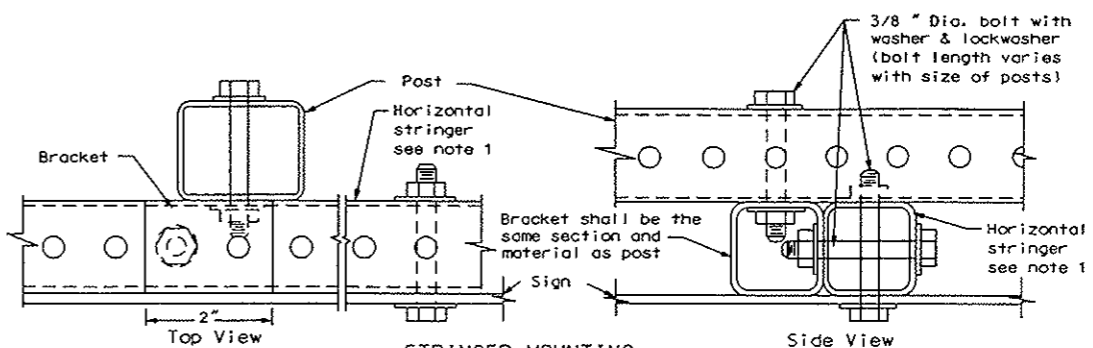
STRINGER MOUNTING (WITH STRINGER IN FRONT OF POST)



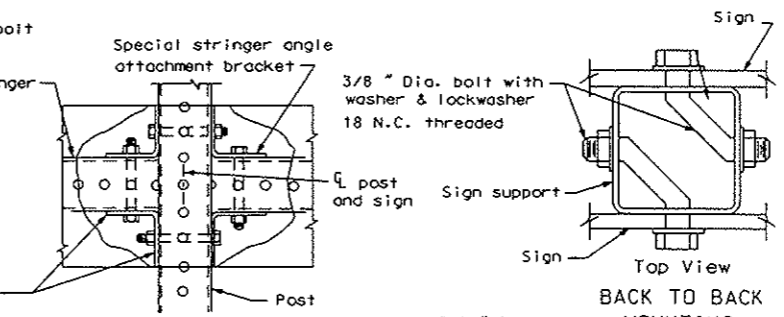
Top View



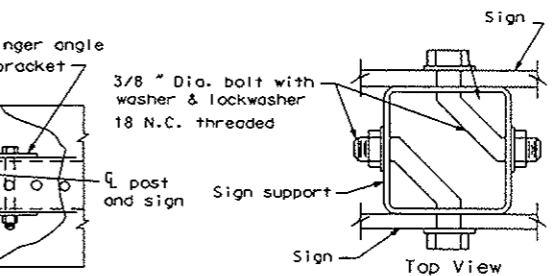
BOLT MOUNTING



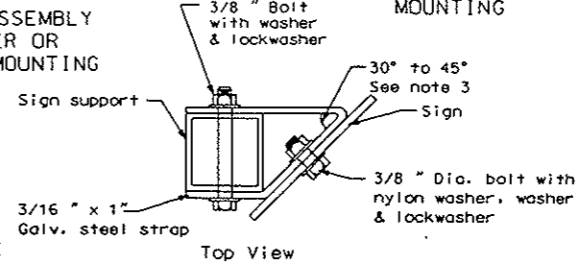
STRINGER MOUNTING (WITH STRINGER IN FRONT OF POST) ALTERNATE



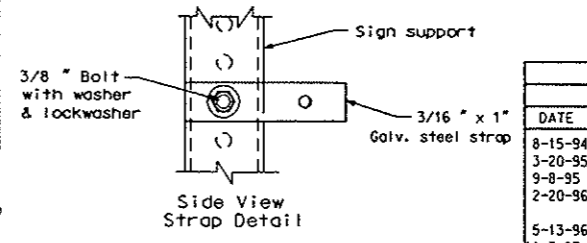
SINGLE POST ASSEMBLY ONE STRINGER OR BACK TO BACK MOUNTING



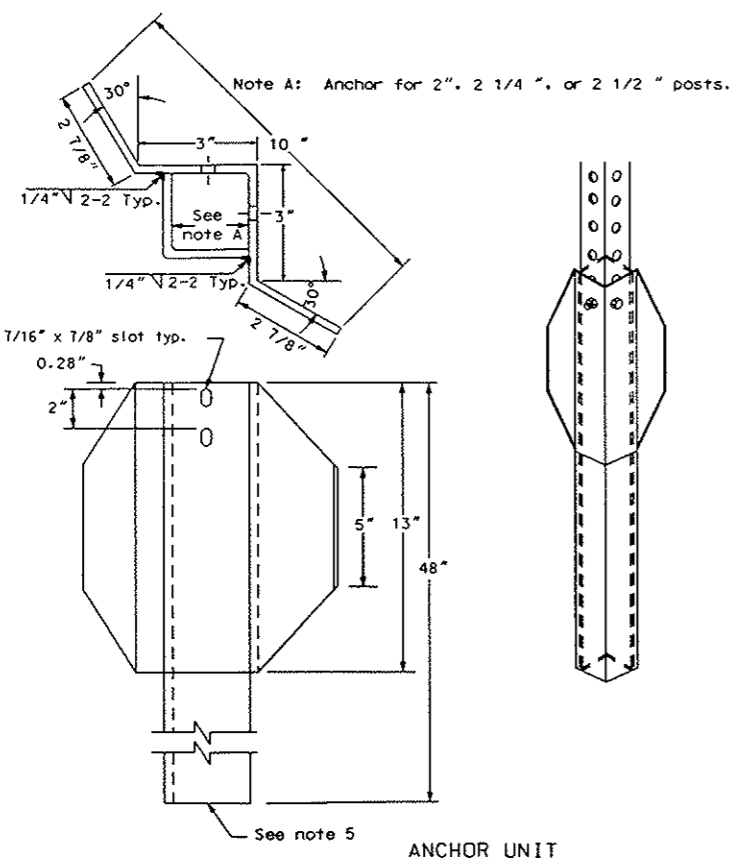
BACK TO BACK MOUNTING



Top View



Side View Strap Detail



Note A: Anchor for 2", 2 1/4", or 2 1/2" posts.

ANCHOR UNIT

Telescoping Perforated Tube					
Number of Posts	Post Size In.	Wall Thickness Gauge	Sleeve Size In.	Wall Thickness Gauge	Slip Base
1	2	12		12	No
1	2 1/4	12		12	No
1	2 1/2	12		3/4	B
1	2 1/2	10		3/4	Yes
1	2 1/4	12	2	12	Yes
1	2 1/2	12	2 1/4	12	Yes
2	2	12		12	No
2	2 1/4	12		12	No
2	2 1/2	12		12	Yes
2	2 1/2	10		3/4	Yes
2	2 1/4	12	2	12	Yes
2	2 1/2	12	2 1/4	12	Yes
3 & 4	2 1/2	12		12	Yes
3 & 4	2 1/2	10		3/4	Yes
3 & 4	2 1/4	12	2 1/4	12	Yes
3 & 4	2 1/2	12	2	12	Yes
3 & 4	2 1/2	10	2 3/8	3/4	Yes

B - The 2 1/2" 12 gauge posts do not need slip bases when placed in standard soils. The breakaway base is required when the support is placed in weak soils. The Engineer shall determine if the soils are weak. Weak soils are defined as boggy, wet, or loose soil areas.

Telescoping Perforated Tubes						
Tube Size In.	Wall Thickness In.	U.S. Standard Gauge	Weight Per Foot Lbs.	Moment of Inertia In. ⁴	Cross Sect. Area In. ²	Section Modulus In. ³
1 1/2 x 1 1/2	0.105	12	1.702	0.129	0.380	0.172
2 x 2	0.105	12	2.416	0.372	0.590	0.372
2 1/4 x 2 1/4	0.105	12	2.773	0.561	0.695	0.499
2 3/8 x 2 3/8	0.135	10	3.432	0.605	0.841	0.590
2 1/2 x 2 1/2	0.105	12	3.141	0.804	0.803	0.643
2 1/2 x 2 1/2	0.135	10	4.006	0.979	1.010	0.785
4 x 4	0.250	1/4	6.600	3.040	1.940	1.050

The 2 3/16" size 10 gauge is shown as 2.19" size on the plans. The 2 1/2" size 10 gauge is shown as 2.51" size on the plans.

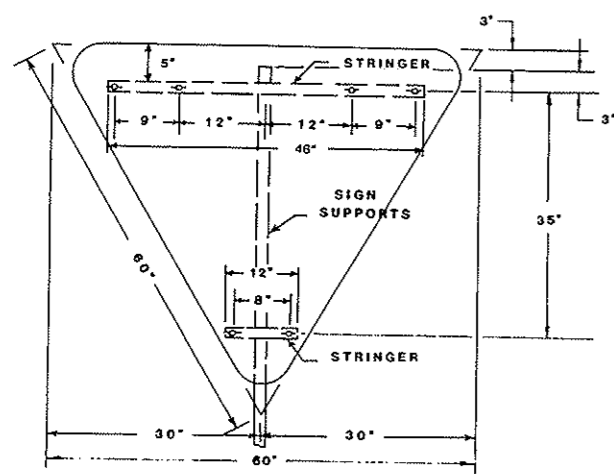
- Note:
- Horizontal stringers - In lieu of perforated tubes, the contractor may substitute z bar stringers. The z bar stringers shall be 1 3/4" x 3/16" thick, 1.08 lbs./ft. aluminum or 3.16 lbs./ft. steel.
 - Metal washer and nylon washers used on sign face shall have a minimum outside diameter of 15/16" ± 1/16" and 10 gauge thickness.
 - No Parking Signs: All no parking signs with directional arrows shall be placed at a 30 to 45 degree angle with the line of traffic flow. No parking signs required of the above angles may have the support turned to the correct angle. If the no parking sign is placed with another sign that has to be placed at a 90 degree angle with the line of traffic flow, the detailed angle strap should be used to mount the no parking sign. Material used for the attachment strap shall be included in the price bid flat sheet for signs. Flat washers and lockwashers shall be used with all nylon washers.
 - 4" Vertical clearance of anchor or breakaway base. The 4" x 60" measurement shall be made above and below post location and also back and ahead of post.
 - Anchor material shall be 7 gauge (.179-.188) H.R.P.D. Commercial quality ASTM A569.

10-1-86 REVISIONS	
DATE	CHANGE
8-15-94	Anchor detail
3-20-95	Rev. 4x4 post
9-8-95	Pay length
2-20-96	Perforated tube table
5-13-96	B note
11-3-97	Anchor unit

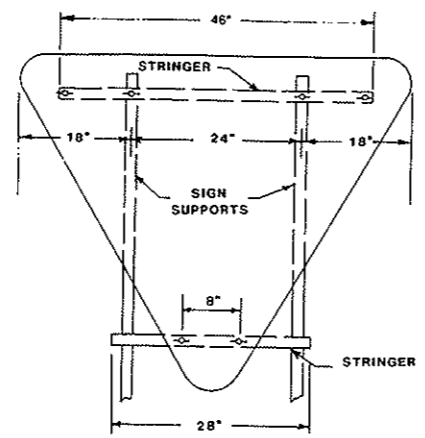
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
APPROVED: *Kent E. Bied*
DESIGN ENGINEER

**SIGN PUNCHING, STRINGER AND SUPPORT LOCATION DETAILS
REGULATORY, WARNING, AND GUIDE SIGNS**

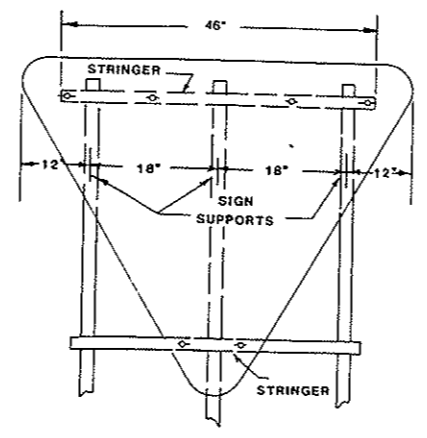
D-754-27



1 POST

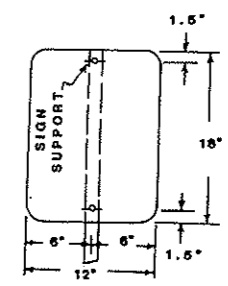


2 POSTS



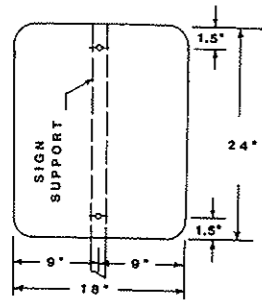
3 POSTS

ASSEMBLY NO. 6



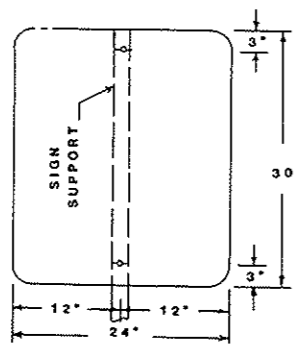
1 POST

ASSEMBLY NO. 7



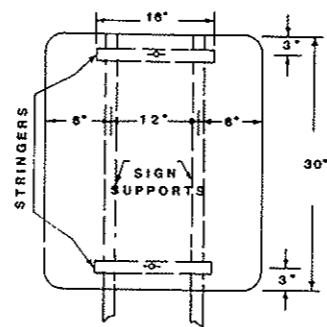
1 POST

ASSEMBLY NO. 8

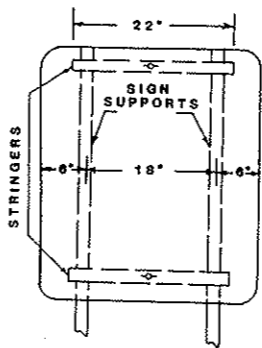


1 POST

ASSEMBLY NO. 9

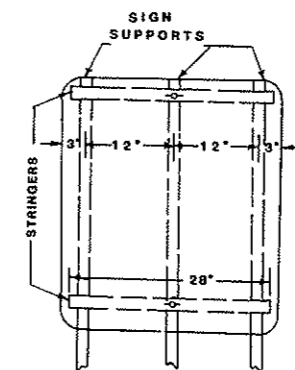


2 POSTS



2 POSTS

ASSEMBLY NO. 10



3 POSTS

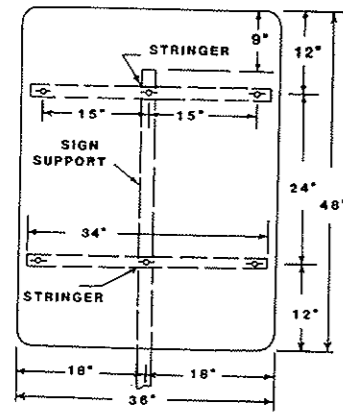
NOTE:
Material:
 Sign Backing: The sign backing material thickness shall be as follows.

 Aluminum: Aluminum Alloy 6061-T6 and 6052-H38 shall have the following minimum thickness: All signs shall be 0.100 inch.

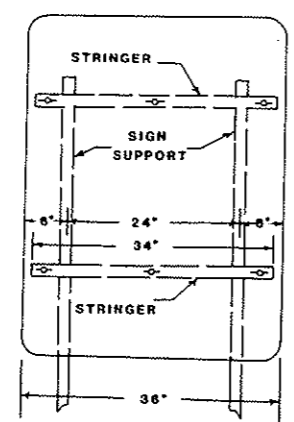
Stringers:
 Flange Channel: All stringers shall be flange channel 1.12" per foot and of the length shown.
 Square Tube, Perforated: All stringers shall be square tube, perforated 1 1/2" x 1 1/2" and of the length shown.

Holes:
 Flange Channel: All holes shall be punched round for 3/8" diameter bolts.
 Square Tube, Perforated: All holes shall be punched round for 3/8" diameter bolts.

General:
 See plans for sign numbers to be used at each location.
 See Std. D-754-24 square tube, perforated mounting details.
 See Std. D-754-25 for flange channel mounting details.

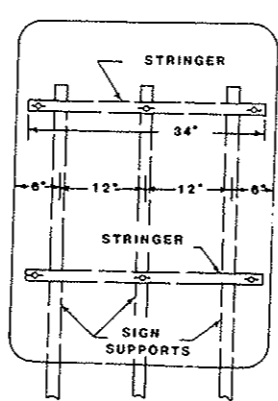


1 POST



2 POSTS

ASSEMBLY NO. 11



3 POSTS

10-1-86		NORTH DAKOTA DEPARTMENT OF TRANSPORTATION APPROVED: <i>David K. Bear</i> DESIGN ENGINEER
DATE	REVISIONS	
5-1-92	GENERAL REVISIONS	
7-14-95	48" Stringer	