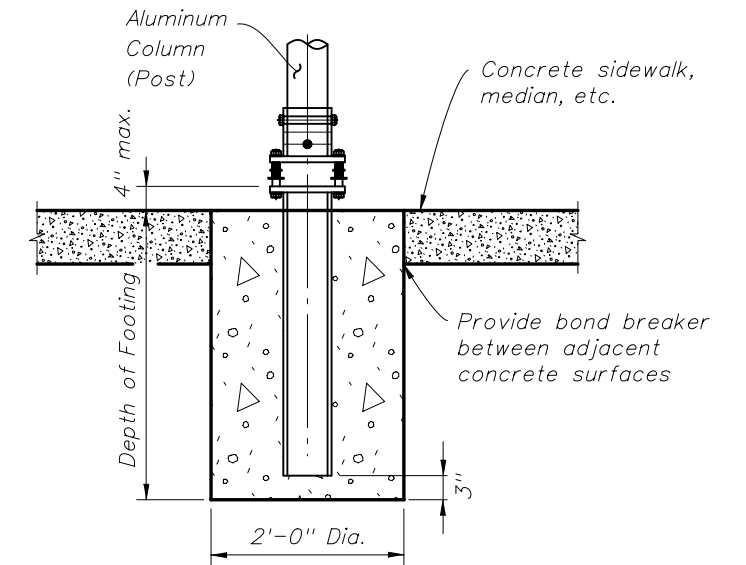


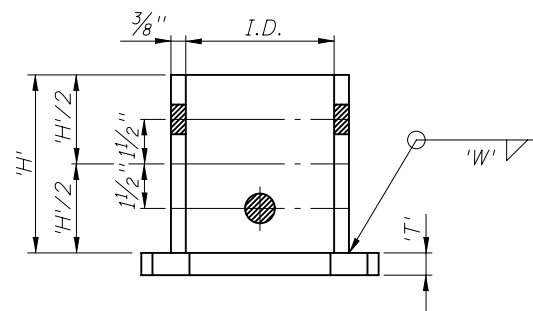
SLIP BASE AND FOOTING DETAIL  
(non-frangible post)

**SLIP BASE NOTES:**

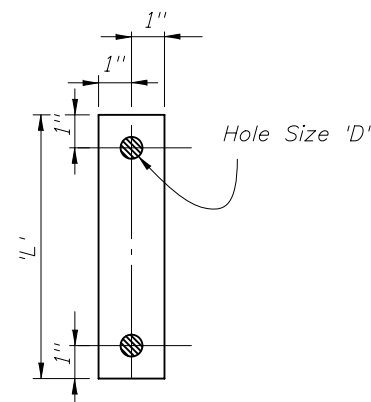
1. Use sleeves with an inside diameter (I.D.) no more than  $\frac{1}{16}$ " larger than the outside diameter (O.D.) of the column.
2. Sleeve Bolts: ASTM A-307,  $\frac{1}{2}$ "  $\Phi$  galvanized steel bolt (with lock nuts) or Alloy 2024-T4 or 6061-T6 (ASTM B-211).
3. Base bolts, Nuts, and Washers: high strength ASTM A-325 with ASTM B633 SC3, Type II electroplated zinc coating.
4. Base plates may have either single or double beveled slots.
5. An alternate cast base plate of aluminum alloy 356 and T6 temper in lieu of the fabricated base plate may be submitted for approval. If a cast base plate is used, the stub will be the same size as the column and will be bolted to the casting.
6. Assemble the slip base connection in the following manner:
  - a. Connect column to sleeve using two  $\frac{1}{2}$ "  $\Phi$  machine bolts.
  - b. Assemble top base plate to stub base plate using high strength bolts with three hardened washers per bolt. One of the three washers per bolt and two bolt keeper plates go between the base plates. Orient the bolt keeper plates in the Directions of Traffic.
  - c. Use shim stock as required to plumb the column.
  - d. Tighten all bolts to the maximum possible with a 12" to 15" wrench. (This will bed the washers and shims and clear the bolt threads.)
  - e. Loosen each bolt one turn and using a calibrated wrench retighten to the prescribed torque (see table) under the supervision of the Project Engineer.
  - f. Burr threads at junction with nut using a center punch to prevent nut loosening.
7. Use galvanized steel shims to obtain a tight fit between the column face and the sleeve. Place shims in all quadrants between the  $\frac{1}{2}$ "  $\Phi$  sleeve bolts. Use shims that are 1" shorter than the height of the sleeve.
8. Both fabricated and cast base assemblies were impact tested by the Texas Transportation Institute, College Station, TX on February 10, 2003, and both alternate assemblies were determined to be compliant with the performance recommendations of the National Cooperative Highway Research Program (NCHRP) report 350.



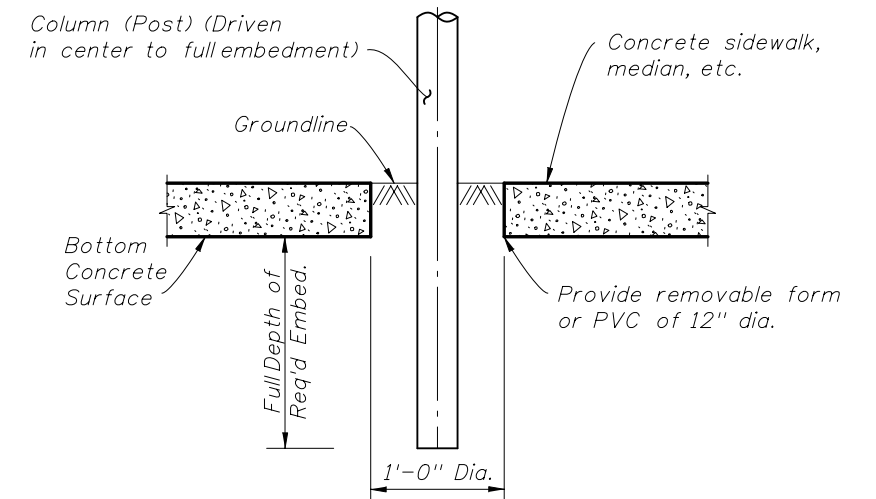
SLIP BASE AND FOOTING DETAIL IN CONCRETE  
(non-frangible post in crossovers, medians, & sidewalks)



ALUMINUM SLEEVE & BASE PLATE DETAILS  
(DOUBLE BEVELED SLOTS)



0.0149" Thick Alum. Strip - 2 Req'd Per Base  
BOLT KEEPER PLATE DETAIL



DRIVEN POST DETAIL IN CONCRETE  
(frangible post in crossovers, medians, & sidewalks)

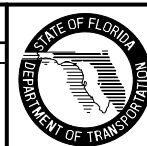
**SLIP BASE DETAILS**

Column Size	Sleeve I.D. (Max)	Sleeve Height 'H'	Weld 'W'	Base Plate		Radius 'R'	Base Bolt Size	Base Bolt Length	Base Plate Torque		Hole Size 'D'
				'L'	'T'				Ft-lbs	In-lbs	
4 x 1/4	4 1/16	6	5/8	8	3/4	1 1/32	5/8	3	29	345	1 1/16
4 1/2 x 1/4	4 9/16	6	5/8	8	7/8	1 1/32	5/8	3 1/4	29	345	1 1/16
5 x 1/4	5 1/16	7	5/8	8	7/8	1 1/32	5/8	3 1/4	29	345	1 1/16
6 x 1/4	6 1/16	8	1 1/16	9	1	1 3/32	3/4	3 1/2	46	554	1 3/16

Note: Unless notes otherwise, all dimensions are in inches.

**BASE AND FOUNDATION DETAILS**

REVISIONS			
DATE	BY	DESCRIPTION	
01/01/10	DYW	Changed Note 6.b.	



2010 Interim Design Standard

**SINGLE COLUMN GROUND SIGNS**

Interim Date	Sheet No.
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