Sign Identification Number	SIGN PROFILE - SIZE	SQ. FT.	TYPE OF SIGN BRACKET WIND ZONE 60	70	80	90
1	24 x 24	1.7	2 - I	2 - I	2 - I	2 - I
2	30 x 30	2.7	2 - I	2 - I	2 - I	2 - I
3	36 x 36	3.9	2 - I	2 - I	2 - I	2 - I
4	48 x 48	6.9	1 -II & 1 -I	1-II & 1 -I	1-II & 1 -I	1-II & 1 -I
5	60 x 60	10.8	DO NOT USE SINGLE COLUMN			
6	36 Ø	7.1	2 - I	2 - I	2 - I	2 - I
7	48 Ø	12.6	2 - II	2 - II	2 - II	2 - II
8	18 x 18	1.9	2 - I	2 - I	2 - I	2 - I
9	24 x 24	3.3	2 - I	2 - I	2 - I	2 - I
10	30 x 30	5.2	2 - I	2 - I	2 - I	2 - I
11	36 x 36	7.5	2 - I	2 - I	2 - I	2 - I
12	48 x 48	13.3	2 - II	2 - II	2 - II	2 - II
13	12 x 24 24 x 24	5.4	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
14	15 x 30 24 x 24	6.5	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
15	12 x 24 24 x 30	6.3	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
16	15 x30 24 x 30	7.4	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
17	15 x 30 36 x 36	10.8	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
18	15 x 30 36 x 45	12.6	1 - I 2- I	1 - I 2- II	1 - I 2- II	1 - I 2- II
19	15 x 30 48 x 48	16.7	1 - I 2- II	1 - I 2- II	1 - I 2- II	1 - I 2- II
20	15 x 30 48 x 60	20.1	DO NOT USE SINGLE COLUMN			
21	12 x 24 24 x 24 15 x 21	7.6	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
22	15 x 30 24 x 24 15 x 21	8.7	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
23	12 x 24 24 x 30 15 x 21	8.5	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
24	15 x 30 24 x 30 15 x 21	9.6	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
25	12 x 24 24 x 24	6.0	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
26	24 x 24 15 x 21	6.2	2- I 1- I	2- I 1- I	2- I 1- I	2- I 1- I
27	15 x 30 24 x 24	7.1	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
28	12 x 24 24 x 30	7.0	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
29	24 x 30 15 x 21	7.2	2- I 1 - I	2- I 1 - I	2- I 1 - I	2- I 1 - I

Sign Identification Number	SIGN PROFILE - SIZE	SQ. FT.	TYPE OF SIGN BRACKET WIND ZONE 60	70	80	90
30	15 x 30 24 x 30	8.1	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
31	15 x 21 36 x 30	9.7	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
32	15 x 30 36 x 30	10.6	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
33	12 x 24 24 x 24 15 x 21	8.2	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
34	15 x 30 24 x 24 15 x 21	9.3	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
35	12 x 24 24 x 30 15 x 21	9.2	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
36	15 x 30 24 x 30 15 x 21	10.3	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
37	12 x 24 , 12 x 24 24 x 24 , 24 x 24 15 x 21	13.6	1 - II 2- II 1 - I	1 - II 2- II 1 - I	1 - II 2- II 1 - I	1 - II 2- II 1 - I
38	12 x 24 , 12 x 24 24 x 24 , 24 x 24 15 x 21 , 15 x 21	15.2	1 - II 2- II 1 - II	1 - II 2- II 1 - II	1 - II 2- II 1 - II	1 - II 2- II 1 - II
39	12 x 24 , 12 x 24 24 x 24 , 24 x 24 15 x 21 , 15 x 21	16.4	1 - II 2- II 1 - II	1 - II 2- II 1 - II	1 - II 2- II 1 - II	1 - II 2- II 1 - II
40	15 x 30 , 15 x 30 24 x 30 , 24 x 30 15 x 21 , 15 x 21	19.2	DO NOT USE SINGLE COLUMN			
41	12 x 24 , 12 x 24 12 x 24 , 12 x 24 24 x 24 , 24 x 24 15 x 21 , 15 x 21	20.4	1 - II 1 - II 2- II 1 - II	1 - II 1 - II 2- II 1 - II	1 - II 1 - II 2- II 1 - II	1 - II 1 - II 2- II 1 - II
42	15 x 21 24 x 24 12 x 24 , 12 x 24 24 x 24 , 24 x 24 15 x 21 , 15 x 21	22.6	1 - I 2- I 1 - II 2- II 1 - II	1 - I 2- I 1 - II 2- II 1 - II	1 - I 2- I 1 - II 2- II 1 - II	1 - I 2- I 1 - II 2- II 1 - II
43	12 x 24 24 x 30 15 x 21 12 x 24 , 12 x 24 24 x 24 , 24 x 24 15 x 21 , 15 x 21	25.6	DO NOT USE SINGLE COLUMN			
44	18 x 12	1.5	1 - I	1 - I	1 - I	1 - I
45	12 x 36	3.0	1 - I	1 - I	1 - I	1 - I
46	18 x 24	3.0	2- I	2- I	2- I	2- I
47	24 x 18	3.0	2- I	2- I	2- I	2- I
48	18 x 18 9 x 12	3.0	2- I 1 - I	2- I 1 - I	2- I 1 - I	2- I 1 - I
49	18 x 30	3.8	2- I	2- I	2- I	2- I
50	30 x 40	3.9	2- I	2- I	2- I	2- I
51	24 x 24	4.0	2- I	2- I	2- I	2- I
52	24 x 24	4.0	2- I	2- I	2- I	2- I
53	18 x 36	4.5	2- I	2- I	2- I	2- I
54	30 x 30	4.7	2- I	2- I	2- I	2- I

Sign Identification Number	SIGN PROFILE - SIZE	SQ. FT.	TYPE OF SIGN BRACKET WIND ZONE 60	70	80	90
55	30 x 24	5.0	2- I	2- I	2- I	2- I
56	36 x 48	5.6	2- II	2- II	2- II	2- II
57	24 x 36	6.0	2- I	2- I	2- I	2- I
58	36 x 24	6.0	2- I	2- I	2- I	2- I
59	30 x 30	6.3	2- I	2- I	2- I	2- I
60	30 x 30	6.3	2- I	2- I	2- I	3- I
61	36 x 36	6.75	2- I	2- I	2- I	2- I
62	30 x 36	7.5	2- I	2- I	2- I	2- I
63	36 x 30	7.5	2- I	2- I	2- I	2- I
64	24 x 48	8.0	2- II	2- II	2- II	2- II
65	12 x 36 30 x 30	8.2	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
66	30 x 42	8.8	2- I	2- I	2- II	2- II
67	36 x 36	9.0	2- I	2- I	2- I	2- I
68	36 x 36	9.0	2- I & 1 - II	2- I & 1 - II	2- I & 1 - II	2- I & 1 - II
69	12 x 36 30 x 30	9.3	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
70	30 x 30 18 x 24	9.3	2- I 2- I	2- I 2- I	2- I 2- I	3- I 2- I
71	48 x 64	9.9	DO NOT USE SINGLE COLUMN			
72	30 x 48	10.0	2- II	2- II	2- II	2- II
73	12 x 36 36 x 36	10.5	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
74	30 x 54	11.3	DO NOT USE SINGLE COLUMN			
75	36 x 48	12.0	2- II	2- II	2- II	2- II
76	48 x 36	12.0	2- I	2- I	2- I	2- I
77	36 x 36 18 x 24	12.0	2-I& 1 -II 2- I	2-I& 1 -II 2- I	2-I& 1 -II 2- I	2-I& 1 -II 2- I
78	48 x 48	12.0	1 - I & 1 - II	1 - I & 1 - II	1 - I & 1 - II	1 - I & 1 - II
79	30 x 60	12.5	DO NOT USE SINGLE COLUMN			
80	48 x 48	16.0	2- II	2- II	2- II	2- II
81	48 x 48	16.0	2- I & 1 - II	2- I & 1 - II	2- I & 1 - II	2- I & 1 - II
82	30 x 78	16.3	DO NOT USE SINGLE COLUMN			
83	30 x 84	17.5	DO NOT USE SINGLE COLUMN			
84	48 x 54	18.0	DO NOT USE SINGLE COLUMN			
85	42 x 66	19.3	DO NOT USE SINGLE COLUMN			
86	60 x 48	20.0	3- II	3- II	3- II	3- II
87	66 x 48	22.0	3- II	3- II	3- II	3- II
88	60 x 72	30.0	SEE NOTE			
89	96 x 48	32.0	DO NOT USE SINGLE COLUMN			
90	24 x 78	13.0	DO NOT USE SINGLE COLUMN			
91	36 x 78	19.5	DO NOT USE SINGLE COLUMN			

NOTE:

The Gore Exit Panel (E5-1a) detailed in the Standards Highway Signs Manual 2002 edition, Sign Identification Number 88, can be installed on a single column with the following stipulations:

1. Maximum height to bottom of sign is 14'.
2. Column size is 6" aluminum round tube with $\frac{1}{4}$" wall.
3. 3 Type II Brackets required for attachment.
4. For Type II Bracket details, Attachment and General Notes see sheet 3 of 4.
5. Footing shall be 2'-0" Ø x 5'-0" deep.
6. For Slip Base Details, see sheet 4 of 4.

Sign size is in Inches unless other wise specified.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

SINGLE COLUMN GROUND SIGNS

	Names	Dates
Designed By	RES	10/94
Drawn By	DDDS	10/94
Checked By	DER	11/94

Approved By
State Structures Design Engineer

Revision	Sheet No.	Index No.
04	1 of 4	11860

GENERAL NOTES

GENERAL SPECIFICATIONS : Florida Department of Transportation Standard Specifications for Road and Bridge Construction and Supplements thereto.

DESIGN SPECIFICATIONS : Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, AASHTO 1994.

ALUMINUM : Except as noted below, Aluminum Materials shall meet the requirements of Aluminum Association Alloy 6061-T6 (ASTM B209 , B221, or B308).

1. Permitted Alternate for Sheets and Plates--- Alloy 5154-H38 (ASTM-B209)

CONCRETE : All concrete shall be Class I (Special), the specified compressive strength at 28 days (f'c) shall be 3 ksi min.

SIGN PANELS : Sign Panels shall be 0.08 inches min. thick Aluminum Plate with all corners rounded. See sign layout sheet. Panels are to be degreased, etched, neutralized and treated with Alodine 1200, Iridine 14-2, Bonderite 721 or equal. No stenciling permitted on panels.

ALUMINUM BOLTS, NUTS & LOCKWASHERS : Aluminum bolts shall meet the requirements of ASTM F468, Alloy 2024-T4. The Bolts shall have an Andoic Coating of at least 0.0002 inches thick and be chromate sealed . Lockwashers shall meet the requirements of Aluminum Association Alloy 7075-T6 (ASTM B221). Nuts shall meet the requirements of ASTM F-467, Alloy 6061-T6 or 6262-T9.

STAINLESS STEEL BOLTS, NUTS AND LOCKWASHERS : Stainless Steel Bolts, Nuts and Lockwashers conforming to ASTM F593 Alloy Group 2 Condition A, CW2, or SH4 may be provided in lieu of Aluminum Bolts, Nuts and Washers.

U-BOLTS, NUTS & LOCKWASHERS : U-Bolts,Nuts and Lockwashers shall meet the requirements of ASTM A307, Grade A and shall be galvanized in accordance with ASTM A153.

INSTALLING FRANGIBLE COLUMN SUPPORTS : Columns (Posts) may be installed by driving the columns in accordance with index Nos. 11861 thru 11865, or as an alternate method the contractor may set the columns (Posts) to the depth indicated in preformed holes backfilled with suitable material tamped in layers not thicker than 6" to provide adequate compaction.

SHOP DRAWINGS : When Type C ground sign supports are furnished and fabricated in accordance with these plans, shop drawings will NOT be required for approval by the Engineer.

HOW TO USE THIS TABLE : Select the appropriate Sign Profile and Size to determine the Sign Identification Number. If the exact Sign Size of all Components are not listed, select the appropriate profile and larger Component Sizes. This table also gives the Quantity and Type of Sign Brackets required for each Sign for each Wind Zone. Where the Sign Size is given as a Vertical and Horizontal Dimension, the Vertical Dimension (Depth) is given first and the Horizontal Dimension (Length) is given last. For Column Sizes, Heights and Footings see appropriate (Wind Zone or Height =14' Max.) sheets titled "Column Sizes, Column Heights and Footings " Index Numbers 11861 thru 11865. No Shop or Field Splice is allowed in Sign Panels. All Panels shall be furnished in one piece.

WIND SPEEDS BY COUNTY

ZONE NO. 1 (60 M.P.H.)

Alachua, Baker, Bay, Bradford, Calhoun, Clay, Columbia, Escambia, Gadsden, Gilchrist, Hamilton, Holmes, Jackson, Jefferson, Lafayette, Lake, Leon, Liberty, Madison, Marion, Okaloosa, Putnam, Santa Rosa, Sumter, Suwannee, Union, Walton and Washington Counties.

ZONE NO. 2 (70 M.P.H.)

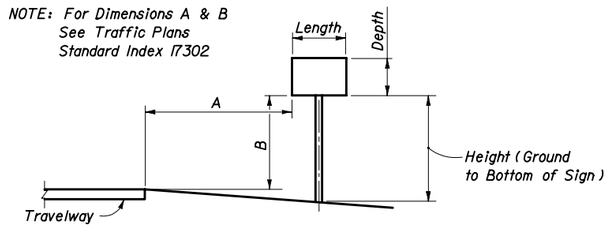
Citrus, De Soto, Dixie, Duval, Flagler, Franklin, Glades, Gulf, Hardee, Hendry, Hernando, Highlands, Hillsborough, Levy, Nassau, Okeechobee, Orange, Osceola, Pasco, Pinellas, Polk, Seminole, St. Johns, Taylor and Wakulla Counties.

ZONE NO. 3 (80 M.P.H.)

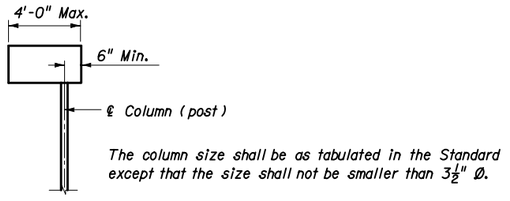
Brevard, Charlotte, Collier, Indian River, Lee, Manatee, Martin, Palm Beach, Sarasota, St. Lucie and Volusia Counties.

ZONE NO. 4 (90 M.P.H.)

Broward, Dade and Monroe Counties.



TYPICAL SECTION



Note: All cantilever sign installations shall comply with standard Index 17302. The sign shall be supported by an aluminum round column with concrete footing and breakaway support. All sign brackets shall be Type II.

CANTILEVER SIGN

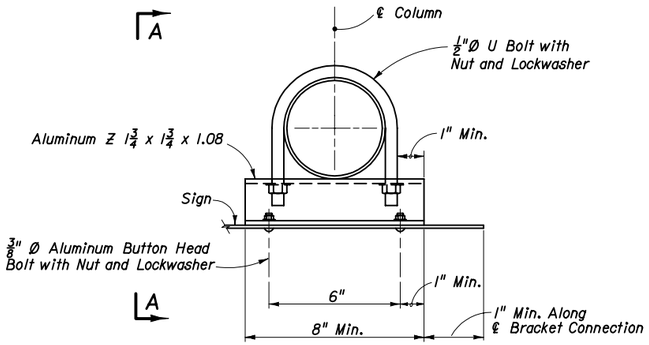
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

SINGLE COLUMN GROUND SIGNS

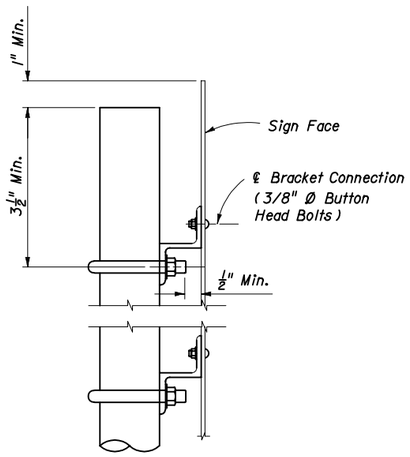
	Names	Dates
Designed By	RES	10/94
Drawn By	DDDS	10/94
Checked By	DER	11/94

Approved By: W. J. Watt
State Structures Design Engineer

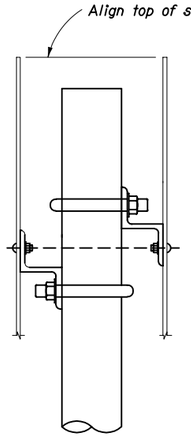
Revision	Sheet No.	Index No.
04	2 of 4	11860



TYPE I BRACKET

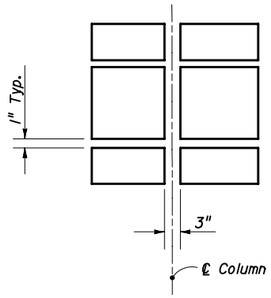


VIEW AA

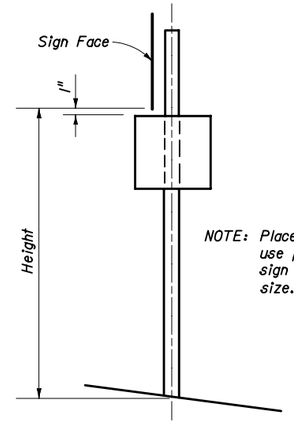


NOTE: Use profile of largest sign and height to bottom of largest sign to determine column size.

SIGNS BACK-TO-BACK

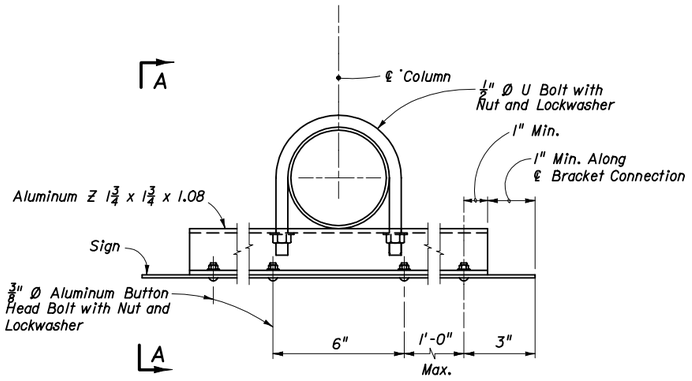


SIGN CLEARANCE

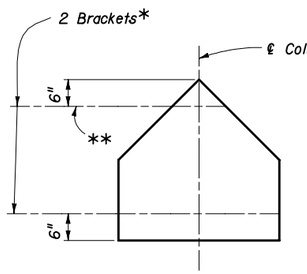


NOTE: Place largest sign on top, use profile of largest sign to determine column size.

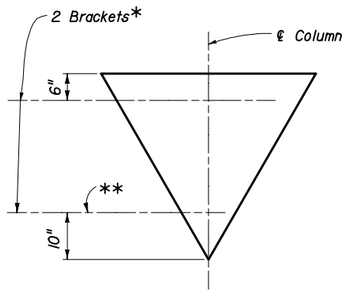
SIGNS AT 90°



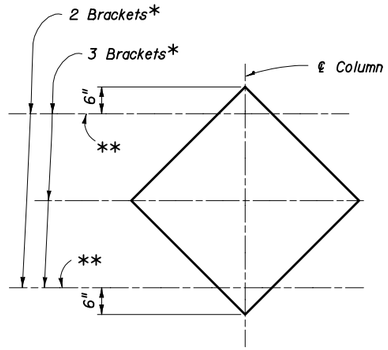
TYPE II BRACKET (SINGLE SIGN)



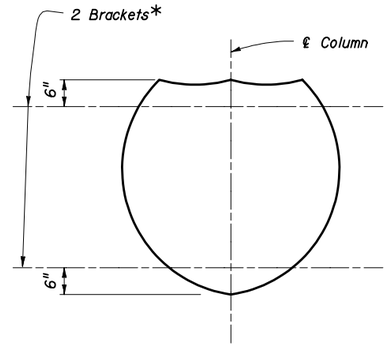
SCHOOL



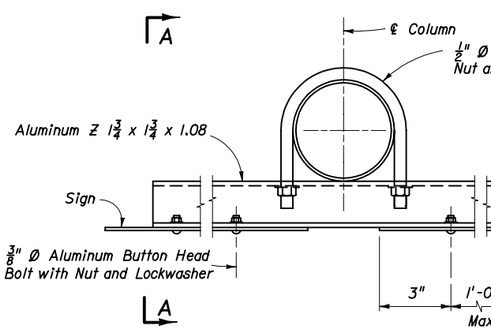
YIELD



DIAMOND

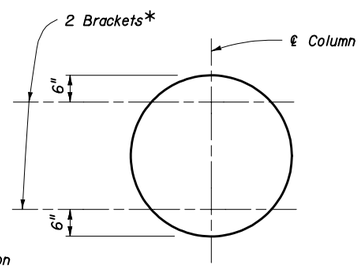


SHIELD

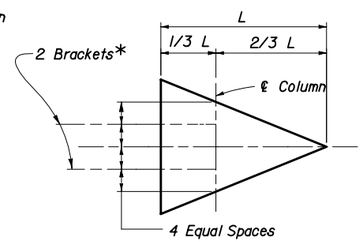


TYPE II BRACKET (DOUBLE SIGNS)

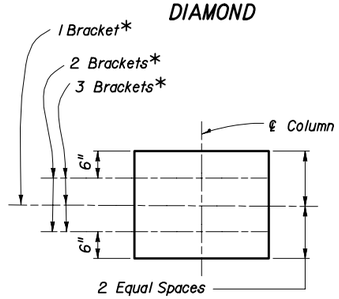
NOTE: 5/16" Ø Stainless Steel Hex Head Bolts with Flat Washer Under Head and Lockwasher under Nut may be used in lieu of ⅜" Ø Aluminum Button Head Bolts.



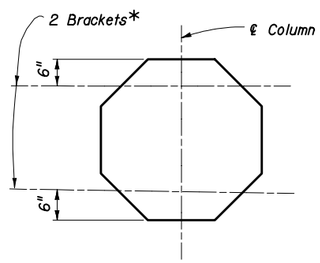
RAILROAD



PENNANT



RECTANGLE



STOP

NOTE:

Nylon washers provided by the sheeting supplier shall be used on all ground mounted signs. The washers shall be installed under the sign bolt head to protect the sheeting.

BRACKET LOCATIONS (SEE VIEW AA)

* NOTE : The above Bracket locations apply at the ℄ of Bracket-Sign Connection (3/8" Ø Button Head Bolts). See View AA. The locations also apply at Double Signs configurations. When installing back-to-back signs the topmost bracket location of one of the signs will require adjustment as shown on the above detail.

** NOTE : Use Type I Bracket at the apex location (always).

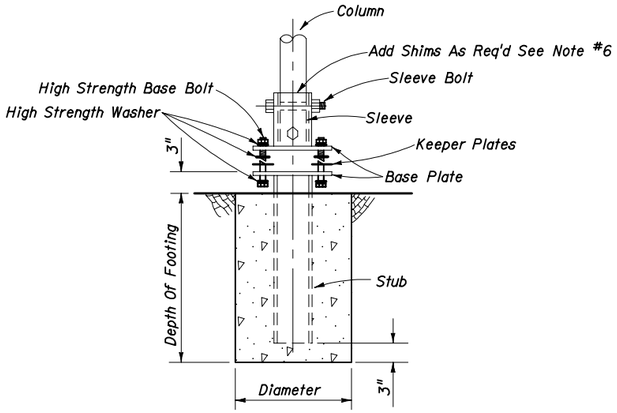
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

SINGLE COLUMN GROUND SIGNS

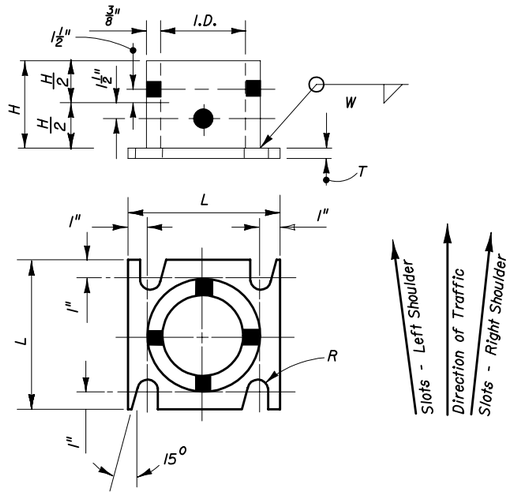
	Names	Dates
Designed By	RES	10/94
Drawn By	DDDS	10/94
Checked By	DER	11/94

Approved By W. V. Hall
State Structures Design Engineer

Revision	Sheet No.	Index No.
00	3 of 4	11860

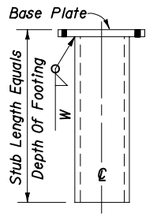


SLIP BASE AND FOOTING DETAIL



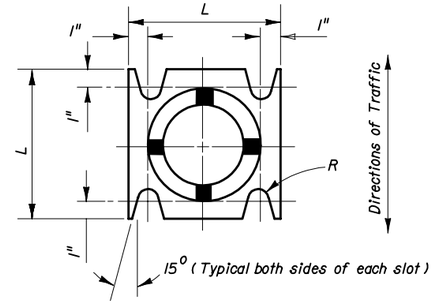
SLEEVE & BASE PLATE DETAILS (SINGLE BEVELED SLOT)

(Right Shoulder Shown)
For Left Shoulder, Plate Slot Bevels are opposite hand from that shown.



Stub Size Equals Min. Sleeve Size Or Longer

STUB DETAIL



SLEEVE & BASE PLATE DETAILS (DOUBLE BEVELED SLOTS)

(Right Shoulder Shown)
For Left Shoulder, Plate Slot Bevels are opposite hand from that shown.

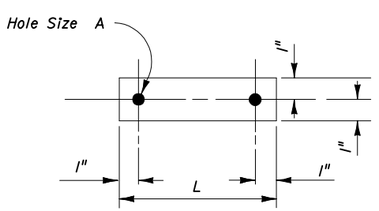
SLIP BASE NOTES :

1. The Inside Diameter (I.D.) of the sleeve shall be no more than $\frac{1}{16}$" larger than the Outside Diameter (O.D.) of the Column.
2. The sleeve bolts shall be $\frac{1}{2}$" Ø with locknuts. The bolts shall be galvanized steel (ASTM A-307) or Aluminum Association Alloy 2024-T4 or 6061-T6 (ASTM B-211).
3. The base bolts, nuts and washers shall be high strength ASTM A-325 and shall have an electroplated zinc coating SC3, Type II applied in accordance with ASTM B633.
4. An alternate cast base of aluminum alloy 356 and T6 temper in lieu of the fabricated base may be submitted for approval by the Engineer. If a cast base is used the stub will be the same as the column and will be bolted to the casting.
5. Assemble the slip base connection in the following manner :
   Connect column to sleeve using two (2) $\frac{1}{2}$" Ø machine bolts.
   Assemble top base plate to stub base plate using high strength bolts with three (3) hardened washers per bolt. One (1) washer per bolt and two (2) bolt keeper plates go between the base plates.
   Use shim stock as required to plumb the column.
   Tighten all bolts the maximum possible with a 12" to 15" wrench to bed the washers and shims and to clear the bolt threads. Loosen each bolt one (1) turn and retighten to the prescribed torque (see table). Bolts shall be tightened with properly calibrated wrenches under the supervision of the project engineer.
   Burr threads at junction with nut using a center punch to prevent nut loosening.
6. Use galvanized steel shims to obtain a tight fit between the column face and the sleeve. Place shims in all quadrants between the $\frac{1}{2}$" Ø sleeve bolts. The shim length shall be 1" shorter than the height of the sleeve.
7. Base plates may be either fabrications or castings and may have either single or double beveled slots.
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 DETAILS

Note: Unless noted otherwise, all dimensions are in inches

Column Size	Sleeve I.D. (Max)	Sleeve Height H	Weld W	Base Plate L	Base Plate T	Radius R	Base Bolt Size	Base Bolt Length	Base Bolt Torque Ft-lbs	Base Bolt Torque In-lbs	Hole Size A
4 x $\frac{1}{4}$	$4\frac{1}{16}$	6	$\frac{5}{8}$	8	$\frac{3}{4}$	$\frac{11}{32}$	$\frac{5}{8}$	3	29	355	$\frac{11}{16}$
$4\frac{1}{2}$ x $\frac{1}{4}$	$4\frac{9}{16}$	6	$\frac{5}{8}$	8	$\frac{7}{8}$	$\frac{11}{32}$	$\frac{5}{8}$	$3\frac{1}{4}$	29	355	$\frac{11}{16}$
5 x $\frac{1}{4}$	$5\frac{1}{16}$	7	$\frac{5}{8}$	8	$\frac{7}{8}$	$\frac{11}{32}$	$\frac{5}{8}$	$3\frac{1}{4}$	29	355	$\frac{11}{16}$
6 x $\frac{1}{4}$	$6\frac{1}{16}$	8	$\frac{11}{16}$	9	1	$\frac{7}{16}$	$\frac{3}{4}$	$3\frac{1}{2}$	48	580	$\frac{13}{16}$
8 x $\frac{5}{16}$	$8\frac{1}{16}$	10	$\frac{3}{4}$	11	1	$\frac{1}{2}$	$\frac{7}{8}$	$3\frac{3}{4}$	53	640	$\frac{15}{16}$



0.0149" Thick Alum. Strip-2 Req'd Per Base

BOLT KEEPER DETAIL

COLUMN SIZE, COLUMN HEIGHT & COLUMN FOOTINGS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

SINGLE COLUMN GROUND SIGNS

	Names	Dates
Designed By	DER	10/94
Drawn By	DDDS	10/94
Checked By	RES	11/94

Approved By: W. V. Phillips
State Structures Design Engineer

Revision	Sheet No.	Index No.
04	4 of 4	11860