ORIGINATION FORM

Proposed Revisions to a Design Standards Index

(Please provide all information – Incomplete forms will be returned)

Contact Information:

Date: April 26, 2017
Originator: **Ed Cashman**
Phone: (850) 414-4314
Email: edward.cashman@dot.state.fl.us

Design Standards:

Index Number: **11200**
Sheet Number (s): 1 and 3
Index Title: MULTI-COLUMN GROUND SIGN

Summary of the changes:

Sheet 1: Deleted "8'0" (Max.)" from travel way to sign panel dimension; Added "7'0" (Min.)" for sign post length; Clarified Note 3.C and 3.D.
Sheet3: Clarified the callouts for bolt type in the SIGN PANEL SPLICE and in DETAIL 'A'.

Commentary / Background:

These changes are being made to address sign posts, particularly on backslopes, that are too short and will prevent the breakaway from properly working.

Other Affected Offices / Documents: (Provide name of responsible personnel)

Yes	No	
☐	☑	Other Design Standards –
☐	☑	Plans Preparation Manual –
☐	☑	Basis of Estimates Manual –
☐	☑	Standard Specifications –
☐	☑	Approved Product List –
☐	☑	Construction –
☐	☑	Maintenance –

Origination Package Includes: (Email or hand deliver package to Derwood Sheppard)

Yes	N/A	
☑	☐	Redline Mark-ups
☐	☑	Proposed IDS
☐	☑	Revised IDS
☐	☑	Other Support Documents

Implementation:

☐ Design Bulletin (DSR) ☐ DCE Memo ☐ Program Mgmt. Bulletin ☑ Design Standards e-Booklet (Next Release)

Contact the Roadway Design Office for assistance in completing this form

GENERAL NOTES:

1. Verify Column lengths in the field prior to fabrication.

2. Shop drawings:

   A. Column/Sign Posts: Sign Support Shop drawings are not required when fabricated in accordance with this Index and support posts do not exceed the length shown in the plans by more than 2'-0".

   B. Sign Panels: Horizontal panel splices are allowed at interior wind beams for sign panels with a depth ("D") greater than 10 feet. Shop drawings required for panel splice details.

   C. When shop drawings are required; obtain approval prior to fabrication.

3. Materials:

   A. Sign Panel Mounting Materials:
      a. Aluminum Bars, and Extruded Shapes: ASTM B221, Alloy 6061-T6 or Alloy 6351-T5
      b. Aluminum Structural Shapes: ASTM B308, Alloy 6061-T6
   B. Sign Support Structure Materials:
      a. Steel Plates and Structural Shapes: ASTM A36 or ASTM A709, Grade 36
      b. Steel Weld Metal: E70XX
      c. Brass Shims: ASTM B36
   C. Aluminum Bolts, Nuts and Washers:
      a. Flat Head ~~Machine Screws~~ and Button Head Bolts: ASTM F 468, Alloy 2024-T4
      b. Hex Nuts: ASTM F467, 2024-T4
      c. Washers: ASTM B221, Alloy 7075-T6
   D. Stainless Steel Bolts, Nuts and Washers Alloy Group 2, Condition A, may be substituted for the Aluminum bolts ~~and screws~~ as follows:
      a. Bolts: ASTM F593, CW1 or SH1
      b. Nuts: ASTM F594,
   E. High Strength (H.S.) Steel Bolts, Nuts and Washers:
      a. Galvanized Hex Head Bolts: ASTM F3125, Grade A325, Type 1
      b. Galvanized Nuts: ASTM A563 Hex, Grade DH
      c. Galvanized Washers: ASTM F436
   F. Concrete: Class I.
   G. Reinforcing Bars or Welded Wire Reinforcement (WWR): Specification Section 415

4. Coatings:

   A. Aluminum Fasteners: Anodic coating (0.0002 inches min.) and chromate sealed
   B. Galvanize High Strength Steel Bolts Nuts and Washers: ASTM F2329
   C. Galvanize all other steel items (excluding stainless steel): Hot-dip ASTM A123
   D. Treat damaged galvanizing in accordance with Specification Section 562

5. Fabrication:

   A. All Base Connections and Stub Column materials are steel unless otherwise specified.
   B. Drill or sub-punch and ream holes in Fuse Plates and Hinge Plates
   C. Weld Base Plate to Post & Stub or if using the Alternate Connection Detail weld Base Plate and Stiffeners to Post and Stub (Sheet 2)
   D. Hot dip galvanize after fabrication; Remove all drips, runs or beads on base plate within washer contact areas (Including saw cuts)

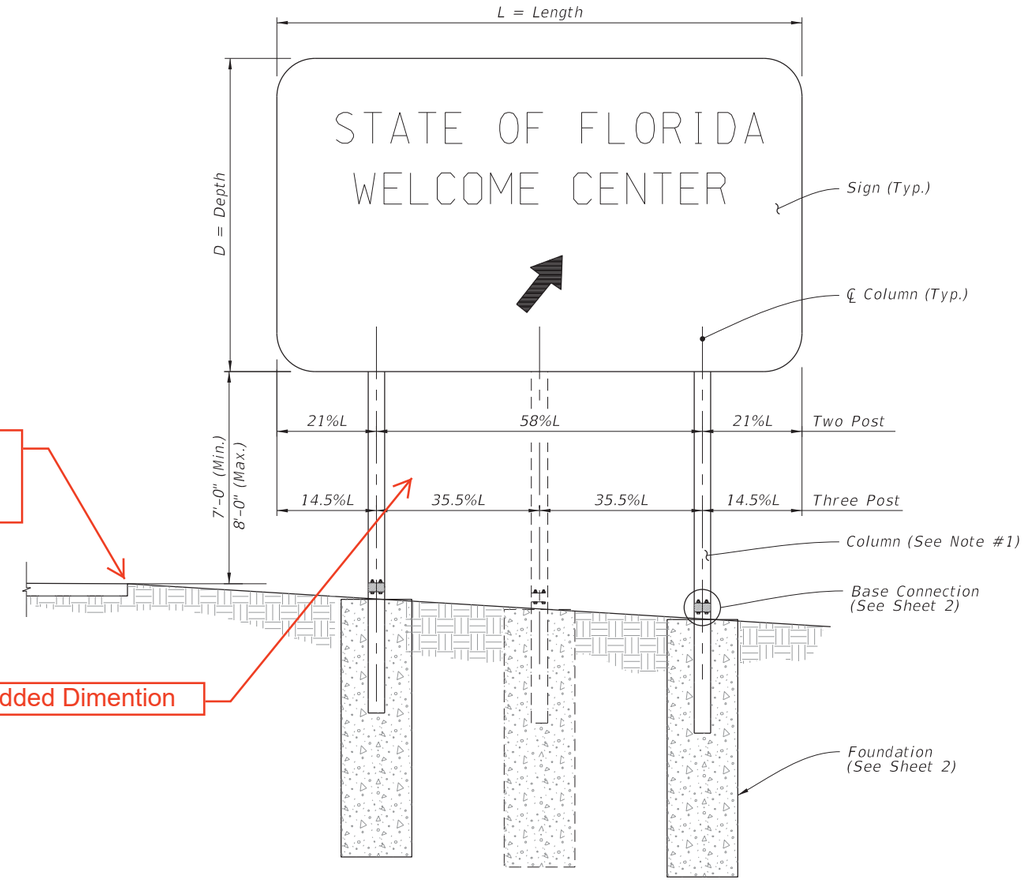
6. Construction:

   A. Install the Sign Structure foundation in accordance with Specification Section 455. Orient Stub Post according to direction of traffic (Sheet 2)
   B. Tighten all high strength bolts except Base Bolts in accordance with Specification Section 700.
   C. Assemble Post to Stub with Base Bolts and three flat washers per bolt (See Base Connection Details, Sheet 2). Tighten Base Bolts in accordance with Instructions Notes on Sheet 2.

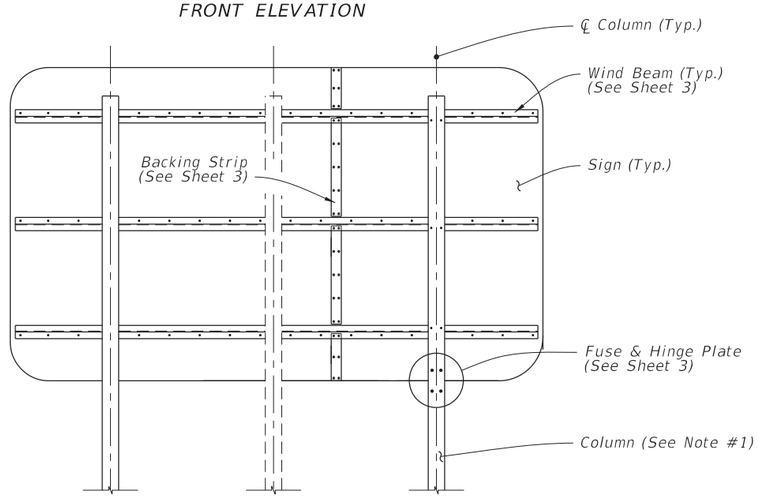
Deleted

ADDED: Edge Of Travelway Elevation

Added Dimention



FRONT ELEVATION



BACK ELEVATION

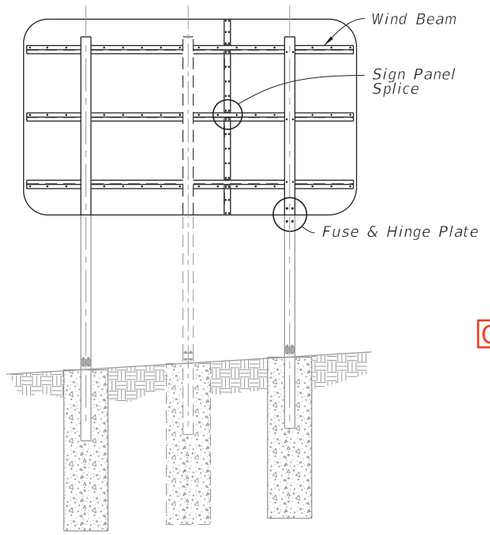
MULTI-COLUMN SIGN ASSEMBLY

700-020

11/01/17

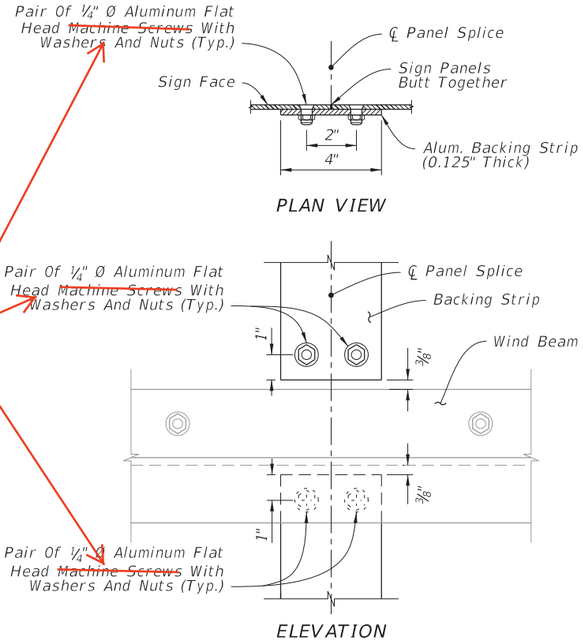
10/14/2016 7:54:59 AM

LAST REVISION	REVISION	DESCRIPTION:			
~~11/01/16~~			FY 2017-18 DESIGN STANDARDS	MULTI-COLUMN GROUND SIGN	INDEX NO. ~~11200~~



BACK ELEVATION

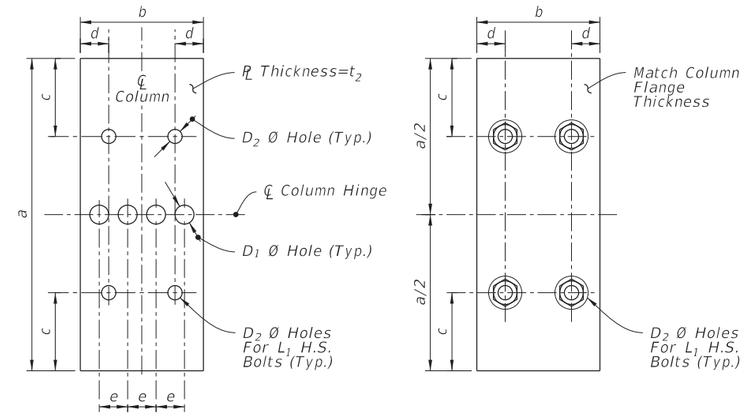
MULTI-COLUMN SIGN ASSEMBLY



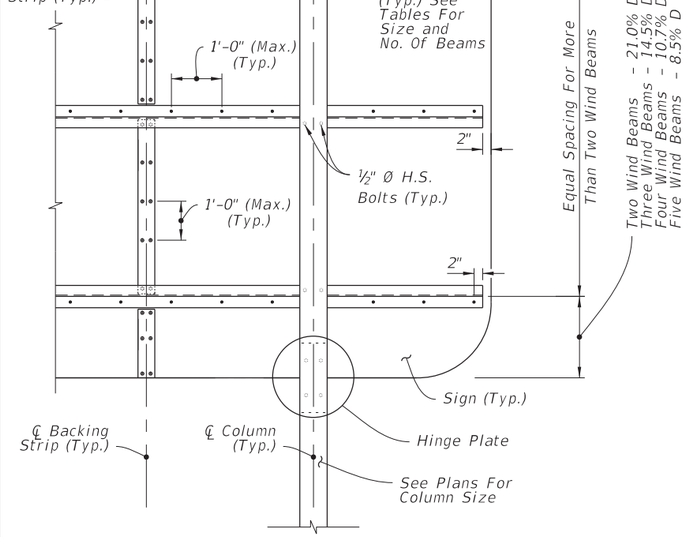
SIGN PANEL SPLICE

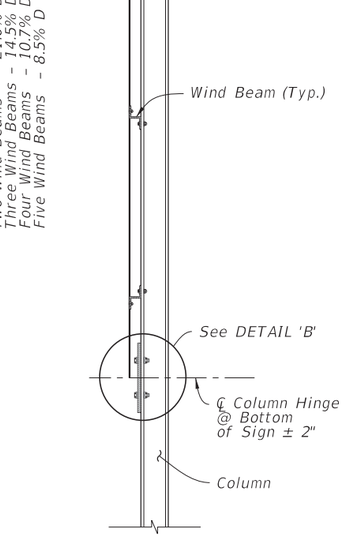
FUSE (HINGE) PLATE DATA									
Section*	a	b	c	d	e	t_2	D_1	D_2	L_1
S 3x5.7	7-1/4"	2-3/8"	1-1/4"	1/2"	9/16"	3/8"	7/16"	9/16"	1/2"
W 6x12	7-1/4"	4"	1-1/4"	7/8"	15/16"	3/8"	13/16"	11/16"	5/8"
W 8x18	8-1/4"	5-1/4"	1-3/8"	1-1/8"	1-1/4"	3/8"	1"	13/16"	3/4"
W 8x24	8-1/4"	6-1/2"	1-3/8"	1-1/2"	1-1/2"	1/2"	1"	13/16"	3/4"
W 10x33	9-1/4"	8"	2"	1-3/4"	1-3/4"	5/8"	1-1/8"	1-1/16"	1"
W 12x45	11"	8"	2"	1-3/4"	1-3/4"	3/4"	1-5/16"	1-1/16"	1"

* Designations: Normal Depth in inches.



FUSE & HINGE PLATE



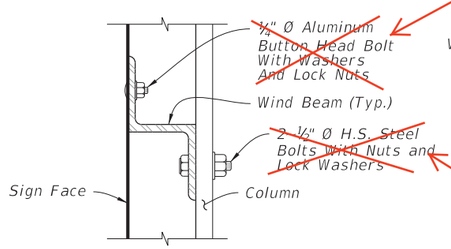


MULTI-COLUMN SIGN BACK PANEL

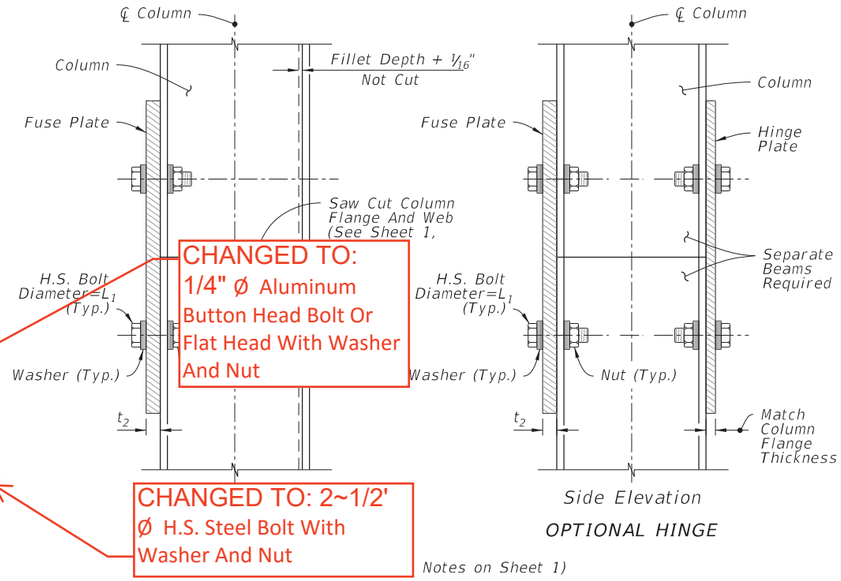
NUMBER OF WIND BEAMS FOR GIVEN DEPTH	
No. Beams	Max. Depth
2	7'-0"
3	12'-0"
4	16'-4"
5	20'-8"

SIZE OF WIND BEAMS		
Size Of Zee**	Length Of Sign (Feet)	
	2 Posts	3 Posts
Zee 1¾" x 1¾" x 1.09	0 to 11'-0"	0 to 17'-4"
Zee 3 x 2 11/16" x 2.33	11'-1" to 19'-0"	17'-5" to 29'-6"
Zee 3 x 2 11/16" x 3.38	19'-1" to 31'-0"	29'-7" to 40'-0"

** Zee Beams are aluminum. No steel equivalent available
Designation gives (Member Depth) x (Flange Width) x (lb/ft)



DETAIL 'A'



DETAIL 'B'

WIND BEAM, BACKING STRIP & FUSE/HINGE PLATE DETAILS

10/14/2016 7:55:05 AM

LAST REVISION	REVISION	DESCRIPTION
11/01/16		11/01/17

FDOT FY 2017-18 DESIGN STANDARDS

MULTI-COLUMN GROUND SIGN

INDEX NO. 11200 → 700-020

SHEET NO. 3 of 3

GENERAL NOTES:

1. Verify Column lengths in the field prior to fabrication.

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B. Sign Panels: Horizontal panel splices are allowed at interior wind beams for sign panels with a depth ("D") greater than 10 feet. Shop drawings required for panel splice details.

C. When shop drawings are required; obtain approval prior to fabrication.

3. Materials:

A. Sign Panel Mounting Materials:
   a. Aluminum Bars, and Extruded Shapes: ASTM B221, Alloy 6061-T6 or Alloy 6351-T5
   b. Aluminum Structural Shapes: ASTM B308, Alloy 6061-T6
B. Sign Support Structure Materials:
   a. Steel Plates and Structural Shapes: ASTM A36 or ASTM A709, Grade 36
   b. Steel Weld Metal: E70XX
   c. Brass Shims: ASTM B36
C. Aluminum Bolts, Nuts and Washers:
   a. Flat Head and Button Head Bolts: ASTM F 468, Alloy 2024-T4
   b. Hex Nuts: ASTM F467, 2024-T4
   c. Washers: ASTM B221, Alloy 7075-T6
D. Stainless Steel Bolts, Nuts and Washers Alloy Group 2, Condition A, may be substituted for the Aluminum bolts as follows:
   a. Bolts: ASTM F593, CW1 or SH1
   b. Nuts: ASTM F594,
E. High Strength (H.S.) Steel Bolts, Nuts and Washers:
   a. Galvanized Hex Head Bolts: ASTM F3125, Grade A325, Type 1
   b. Galvanized Nuts: ASTM A563 Hex, Grade DH
   c. Galvanized Washers: ASTM F436
F. Concrete: Class I.
G. Reinforcing Bars or Welded Wire Reinforcement (WWR): Specification Section 415

4. Coatings:

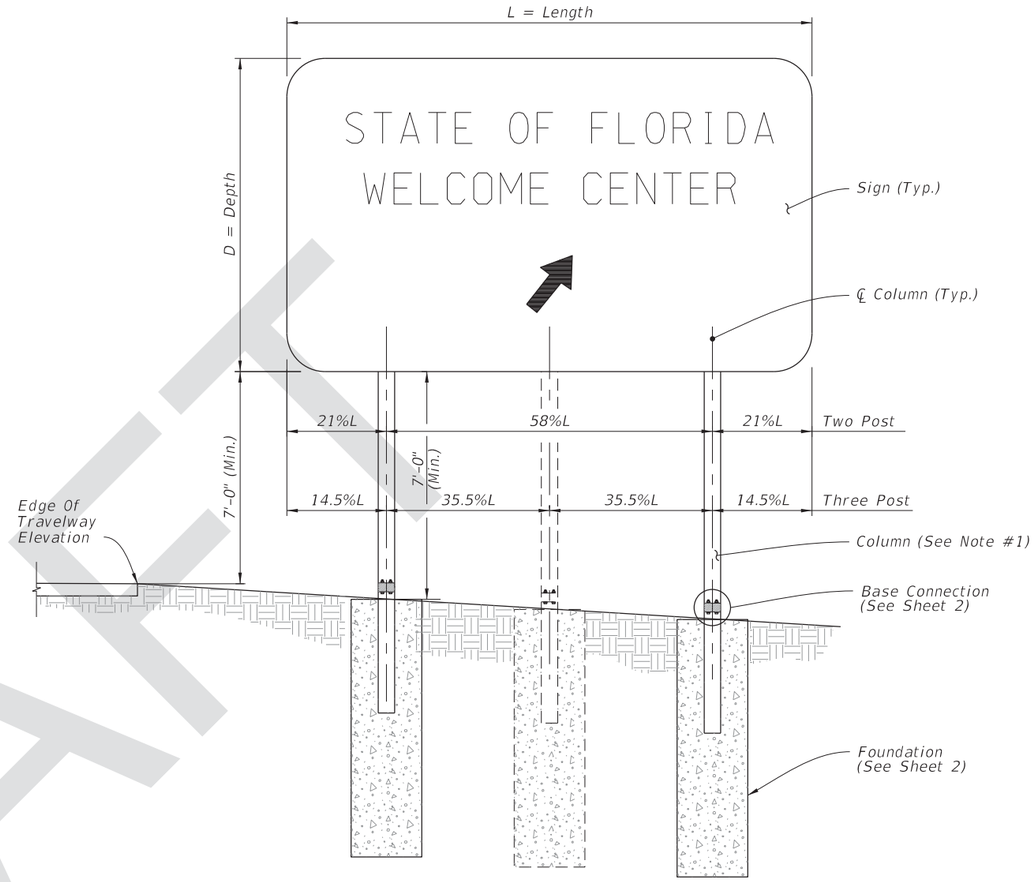
A. Aluminum Fasteners: Anodic coating (0.0002 inches min.) and chromate sealed
B. Galvanize High Strength Steel Bolts Nuts and Washers: ASTM F2329
C. Galvanize all other steel items (excluding stainless steel): Hot-dip ASTM A123
D. Treat damaged galvanizing in accordance with Specification Section 562

5. Fabrication:

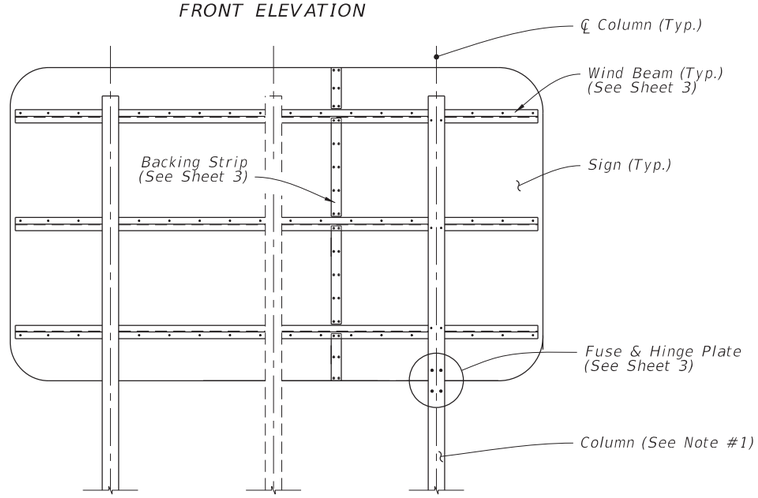
A. All Base Connections and Stub Column materials are steel unless otherwise specified.
B. Drill or sub-punch and ream holes in Fuse Plates and Hinge Plates
C. Weld Base Plate to Post & Stub or if using the Alternate Connection Detail weld Base Plate and Stiffeners to Post and Stub (Sheet 2)
D. Hot dip galvanize after fabrication; Remove all drips, runs or beads on base plate within washer contact areas (Including saw cuts)

6. Construction:

A. Install the Sign Structure foundation in accordance with Specification Section 455. Orient Stub Post according to direction of traffic (Sheet 2)
B. Tighten all high strength bolts except Base Bolts in accordance with Specification Section 700.
C. Assemble Post to Stub with Base Bolts and three flat washers per bolt (See Base Connection Details, Sheet 2). Tighten Base Bolts in accordance with Instructions Notes on Sheet 2.



FRONT ELEVATION



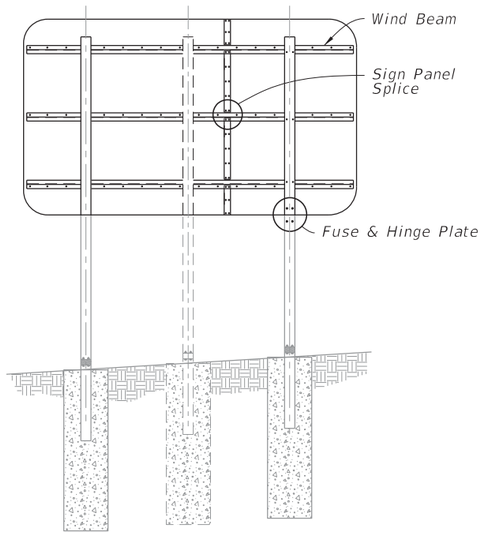
BACK ELEVATION

MULTI-COLUMN SIGN ASSEMBLY

DRAFT

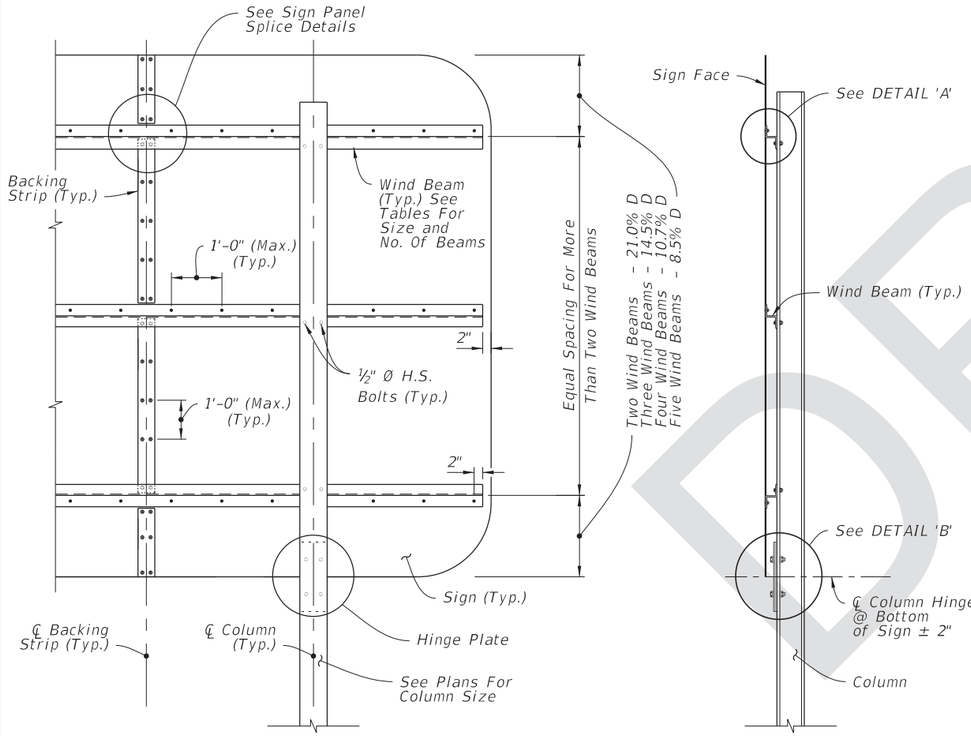
8/29/2017 3:10:58 PM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2018-19 STANDARD PLANS	MULTI-COLUMN GROUND SIGN	INDEX	SHEET
11/01/17						700-020	1 of 3



BACK ELEVATION

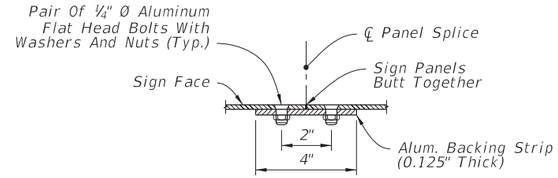
MULTI-COLUMN SIGN ASSEMBLY



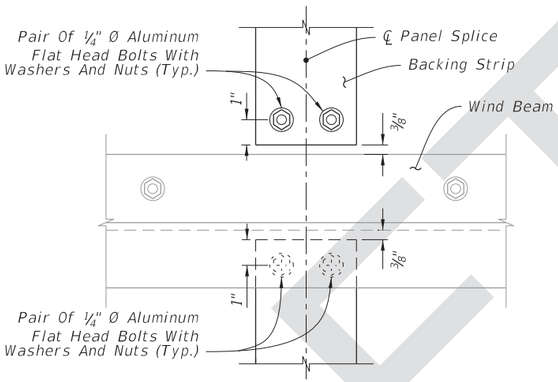
BACK ELEVATION

SIDE ELEVATION

MULTI-COLUMN SIGN BACK PANEL



PLAN VIEW



ELEVATION

SIGN PANEL SPLICE

NUMBER OF WIND BEAMS FOR GIVEN DEPTH

No. Beams	Max. Depth
2	7'-0"
3	12'-0"
4	16'-4"
5	20'-8"

SIZE OF WIND BEAMS

Size Of Zee**	Length Of Sign (Feet)	
	2 Posts	3 Posts
Zee 1¾" x 1¾" x 1.09	0 to 11'-0"	0 to 17'-4"
Zee 3 x 2 11/16" x 2.33	11'-1" to 19'-0"	17'-5" to 29'-6"
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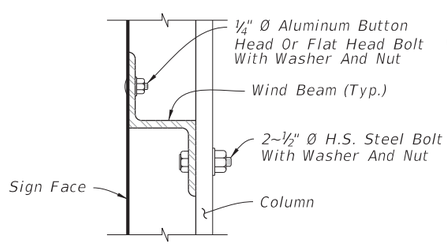
Designation gives (Member Depth) x (Flange Width) x (lb/ft)



DETAIL 'A'

FUSE (HINGE) PLATE DATA

Section*	a	b	c	d	e	t_2	D_1	D_2	L_1
S 3x5.7	7-1/4"	2-3/8"	1-1/4"	1/2"	9/16"	3/8"	7/16"	9/16"	1/2"
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W 8x18	8-1/4"	5-1/4"	1-3/8"	1-1/8"	1-1/4"	3/8"	1"	13/16"	3/4"
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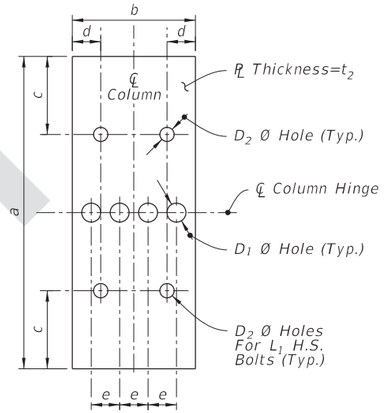
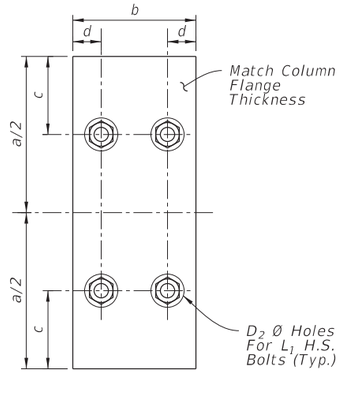
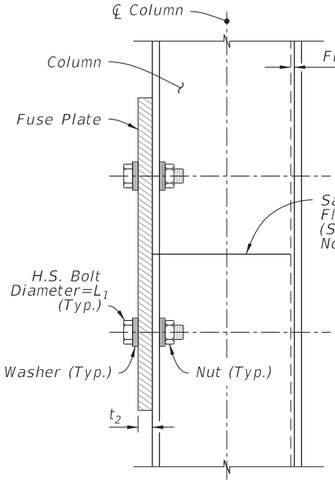


FUSE PLATE

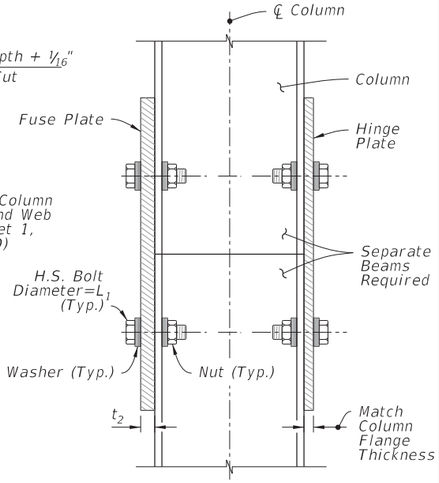


HINGE PLATE

FUSE & HINGE PLATE



Side Elevation
TYPICAL HINGE



Side Elevation
OPTIONAL HINGE

(See Fabrication Notes on Sheet 1)

DETAIL 'B'

WIND BEAM, BACKING STRIP & FUSE/HINGE PLATE DETAILS

DRAFT

8/29/2017 3:11:00 PM

LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/17			FY 2018-19 STANDARD PLANS	MULTI-COLUMN GROUND SIGN	700-020	3 of 3