ORIGINATION FORM

Proposed Revisions to a Standard Plans Index

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

Contact Information:

Date: May 2, 2023
Originator: Joshua Turley
Phone: (850) 414-4475
Email: joshua.turley@dot.state.fl.us

Standard Plans:

Index Number: 700-020
Sheet Number (s): 1, 2, & 3
Index Title: MULTI-COLUMN GROUND SIGN

Summary of the changes:

Sheet 1: Revised bolts in the Hanger Beams to show correctly.

Sheet 2: Added Foundation Notes to allow for precast concrete foundation with an octagon shape as a substitute for the circular shaped foundation shown.

Sheet 3: Revised bolts in the Hanger Beams to show correctly.

Commentary / Background:

Sheets 1 & 3: The bolts were not showing correctly in the elevation details.

Sheet 2: A non-circular, octagon shaft option was requested by industry to simplify formwork. (Revision by Richard Stepp)

Other Affected Offices / Documents: **(Provide name of person contacted)**

Yes	No	
☑	☐	Other Standard Plans – 700-030
☐	☑	FDOT Design Manual –
☐	☑	Basis of Estimates Manual –
☐	☑	Standard Specifications –
☐	☑	Approved Product List –
☐	☑	Construction –
☐	☑	Maintenance –

Origination Package Includes: (Submit package to Rick Jenkins)

Yes	N/A	
☑	☐	Redline Mark-ups
☐	☐	Revised or Proposed Standard Plan Instruction (SPI)
☐	☐	Other Support Documents

Implementation:

- ☐ Design Bulletin (Interim)
- ☐ DCE Memo
- ☐ Program Mgmt. Bulletin
- ☑ FY-Standard Plans (Next Release)

Contact the Roadway Design Office for assistance in completing this form

Email to: Rick Jenkins rick.jenkins@dot.state.fl.us and Darren Martin darren.martin@dot.state.fl.us

ORIGINATION FORM

Proposed Revisions to a Standard Plans Index

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

Contact Information:

Date: June 29, 2023
Originator: Dana Knox
Phone: (850) 410-5413
Email: Dana.Knox@dot.state.fl.us

Standard Plans:

Index Number: 700-020
Sheet Number (s): 1 and 3
Index Title: Multi-Column Ground Sign

Summary of the changes:

On both sheets changed all reference of length to width and all reference to depth to height.

Commentary / Background:

The change is to be consistent with how the MUTCD dimensions signs. Section 700 and 995 will also need to be updated to be consistent with MUTCD.

Other Affected Offices / Documents: **(Provide name of person contacted)**

Yes	No	
☐	☑	Other Standard Plans –
☐	☑	FDOT Design Manual –
☐	☑	Basis of Estimates Manual –
☑	☐	Standard Specifications – Daniel Strickland
☐	☑	Approved Product List –
☐	☑	Construction –
☐	☑	Maintenance –

Origination Package Includes: (Submit package to Rick Jenkins)

Yes	N/A	
☑	☐	Redline Mark-ups
☐	☐	Revised or Proposed Standard Plan Instruction (SPI)
☐	☐	Other Support Documents

Implementation:

- ☐ Design Bulletin (Interim)
- ☐ DCE Memo
- ☐ Program Mgmt. Bulletin
- ☑ FY-Standard Plans (Next Release)

Contact the Roadway Design Office for assistance in completing this form

Email to: Rick Jenkins rick.jenkins@dot.state.fl.us and Darren Martin darren.martin@dot.state.fl.us

GENERAL NOTES:

1. Meet the requirements of Specification 700.

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

3. Shop drawings:

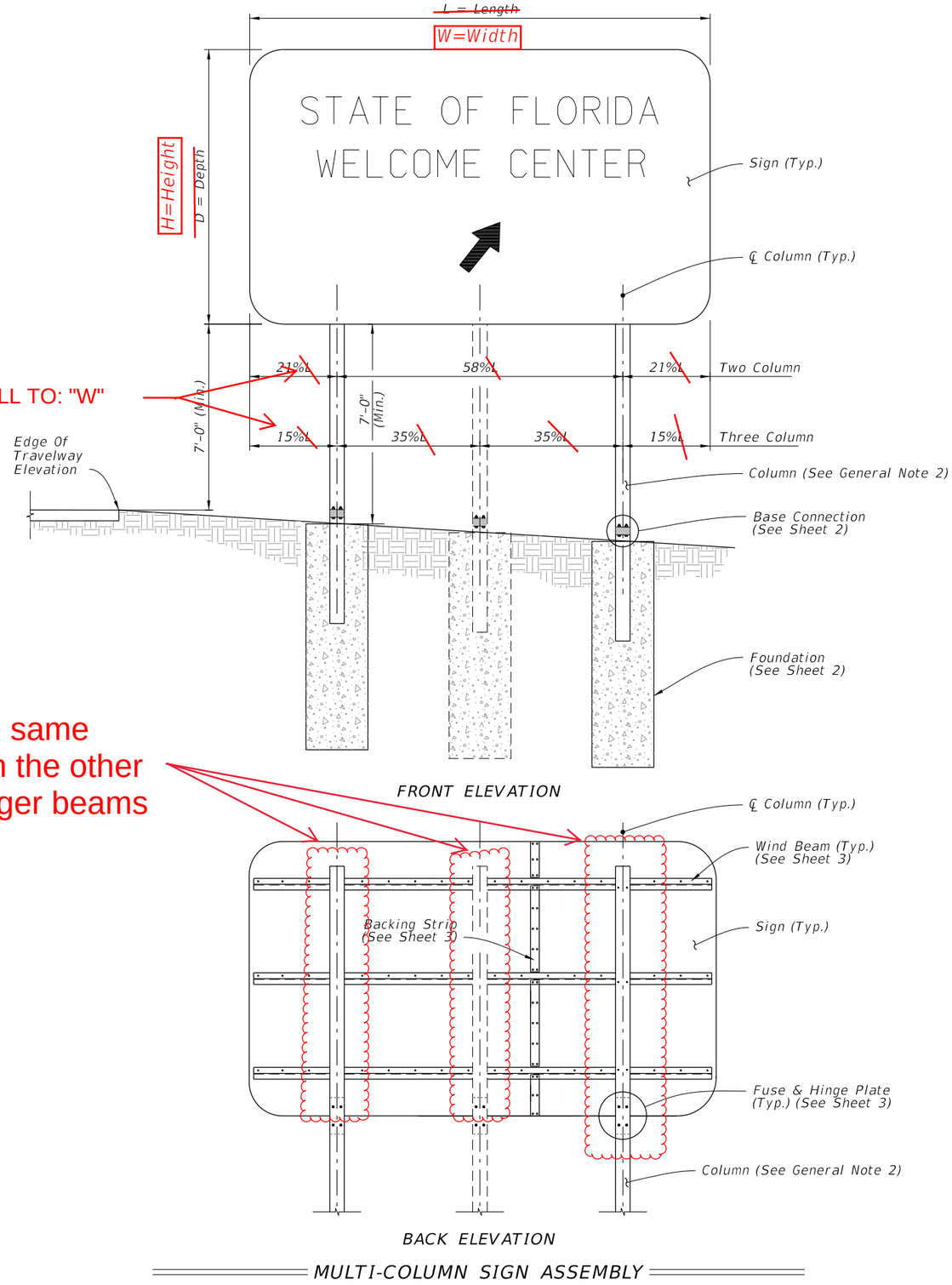
   A. Sign Support Shop drawings are not required when fabricated in accordance with this Index and support columns do not exceed the ~~length~~ width shown in the plans by more than 2'-0".

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

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

CHANGED TO: width ("W")

CHANGE TO: height ("H")



CHANGED ALL TO: "W"

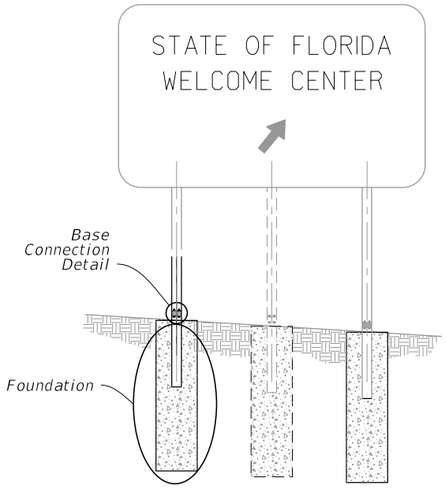
Show the same bolting on the other wind hanger beams

MULTI-COLUMN SIGN ASSEMBLY

10/13/2022 9:26:07 AM

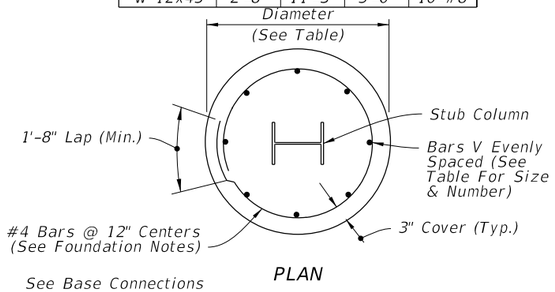
11/01/23

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	MULTI-COLUMN GROUND SIGN	INDEX	SHEET
~~11/01/22~~						700-020	1 of 3

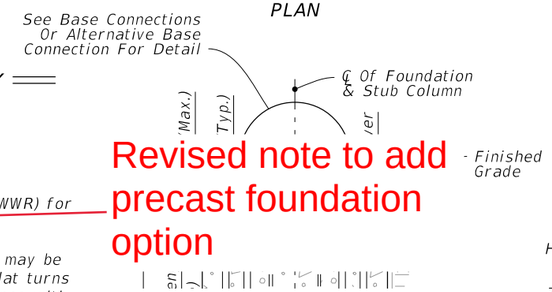


MULTI-COLUMN SIGN ASSEMBLY

FOUNDATION DATA				
Steel Post & Stub Section*	Dia.	Depth	Stub Column Length	Reinf. Bars V
S 3x5.7	2'-0"	4'-0"	3'-0"	10-#6
W 6x12	2'-0"	6'-0"	3'-0"	10-#6
W 8x18	2'-4"	7'-6"	4'-0"	8-#8
W 8x24	2'-4"	8'-6"	4'-0"	8-#8
W 10x33	2'-4"	10'-3"	4'-0"	8-#8
W 12x45	2'-8"	11'-3"	5'-0"	10-#8



PLAN



FOUNDATION NOTES:

The Contractor may use Welded Wire Reinforcement (WWR) for foundation reinforcing.

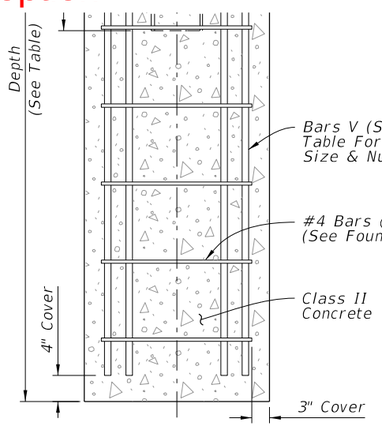
At the Contractors option, the #4 tie bars at 12" o.c. may be replaced by D10 Spiral Wire @ 6" pitch, with three flat turns at the top and one flat turn at the bottom in accordance with Specification 415.

BASE CONNECTION NOTES:

1. Assembly of Base Instructions:
   - A. Place one washer on each Base Bolt between the Bottom Base Plate and the head of high strength Base Bolt; place the next washer between the Bottom Base Plate and the Bolt Keeper Plate; add the Top Base Plate section and place the third washer between the Top Base Plate and the Nut.
   - B. Shim as required to plumb column. Provide 2-0.0149" thick (28 gauge) and 2-0.0329" thick (21 gauge) shims per column.
2. H.S. Base Bolt L Tightening Instructions:
   - A. Tighten Base Bolts to the maximum possible with a 12" to 15" wrench (this will bed the washers and shims and clear the bolt threads).
   - B. Loosen each Base Bolt one turn.
   - C. Under the supervision of the Engineer, use a calibrated wrench to tighten bolts to the torque prescribed in the Table. Over tightened Base Bolts will not be permitted.
   - D. Burr threads at junction with nut to prevent nut loosening. Treat damaged galvanizing.
3. Assemble Post to Stub with Base Bolts and three flat washers per bolt (See Base Connection Details). Tighten Base Bolts in accordance with Instructions with Note 2.
4. Weld Base Plate to Post & Stub or if using the Alternate Connection Detail weld Base Plate and Stiffeners to Post and Stub.
5. Orient Stub Post according to direction of traffic.

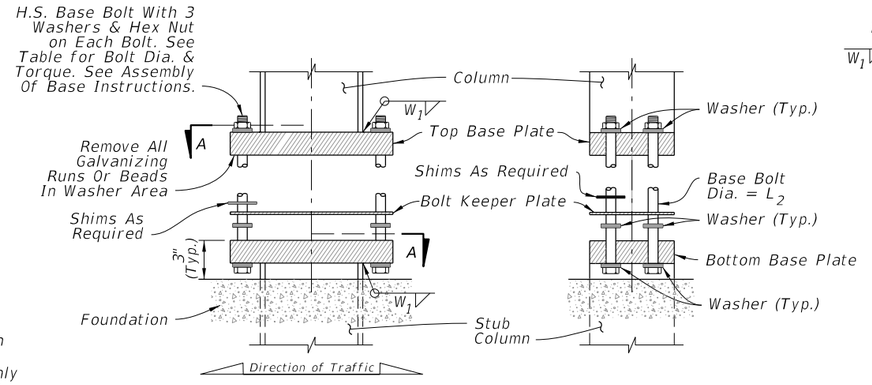
Revised note to add precast foundation option

Added note to explain the precast octagon shape option

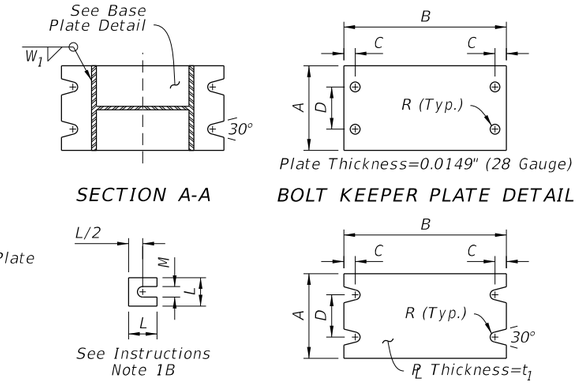


ELEVATION

FOUNDATION



SIDE ELEVATION FRONT ELEVATION



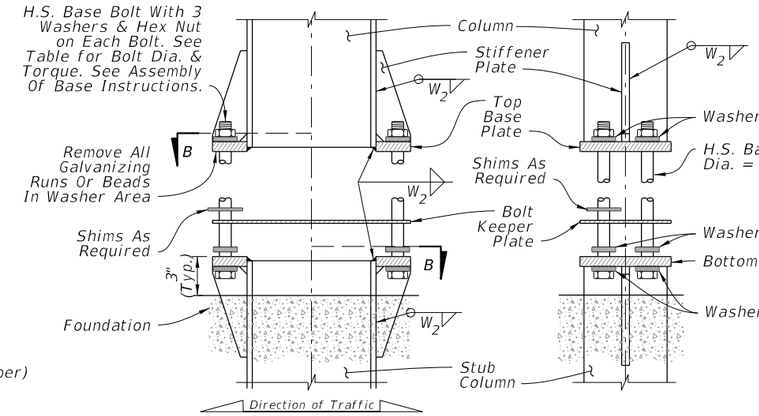
SECTION A-A BOLT KEEPER PLATE DETAIL

SHIM DETAIL BASE PLATE DETAIL

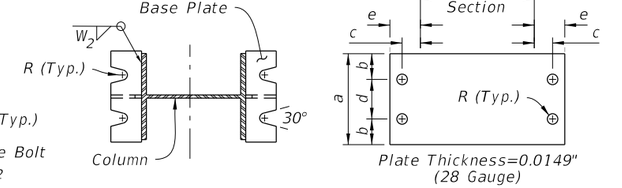
BASE CONNECTION DATA										SHIM	
Steel Post & Stub Section*	A	B	C	D	R	t_1	L_2	W_1	Torque (lbf*in)	L	M
S 3x5.7	4"	7"	3/4"	2"	5/16"	1"	1/2"	1/4"	90 ± 20	1-1/4"	9/16"
W 6x12	4"	10"	3/4"	2"	3/8"	1-5/8"	5/8"	1/4"	270 ± 45	1-3/8"	11/16"
W 8x18	5-1/4"	12-1/2"	7/8"	2-3/4"	7/16"	1-3/4"	3/4"	3/8"	445 ± 75	1-3/4"	13/16"
W 8x24	6-1/2"	12-1/2"	7/8"	3-1/4"	7/16"	1-3/4"	3/4"	3/8"	445 ± 75	2-1/8"	13/16"
W 10x33	8"	16"	1-1/4"	4-3/4"	9/16"	2"	1"	1/2"	580 ± 90	2-3/8"	1-1/16"
W 12x45	10"	18"	1-1/4"	6"	9/16"	2"	1"	1/2"	580 ± 90	2-3/4"	1-1/16"

* Designations: (Nominal Depth in inches) x (weight in pounds per linear foot).

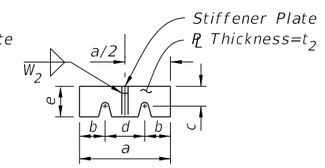
BASE CONNECTION



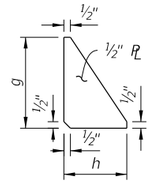
SIDE ELEVATION FRONT ELEVATION



SECTION B-B BOLT KEEPER PLATE DETAIL



BASE PLATE DETAIL



STIFFENER PLATE DETAIL

ALTERNATIVE BASE CONNECTION DATA												
Steel Section*	a	b	c	d	e	t_2	L_2	R	Torque (lbf*in)	g	h	W_2
W 6x12	4-3/4"	1-1/8"	1-3/16"	2-1/2"	2"	1/2"	5/8"	3/8"	270±45	5-1/8"	2"	1/4"
W 8x18	5-3/4"	1-1/2"	1-3/8"	2-3/4"	2-3/16"	5/8"	3/4"	7/16"	445±75	6-1/4"	2-3/16"	1/4"
W 8x24	7"	1-3/4"	1-3/8"	3-1/2"	2-3/8"	3/4"	3/4"	7/16"	445±75	8"	2-3/8"	5/16"
W 10x33	8"	2"	1-9/16"	4"	2-3/4"	3/4"	1"	9/16"	580±90	8"	2-3/4"	5/16"
W 12x45	8"	2"	1-9/16"	4"	3"	3/4"	1"	9/16"	580±90	8"	3"	5/16"

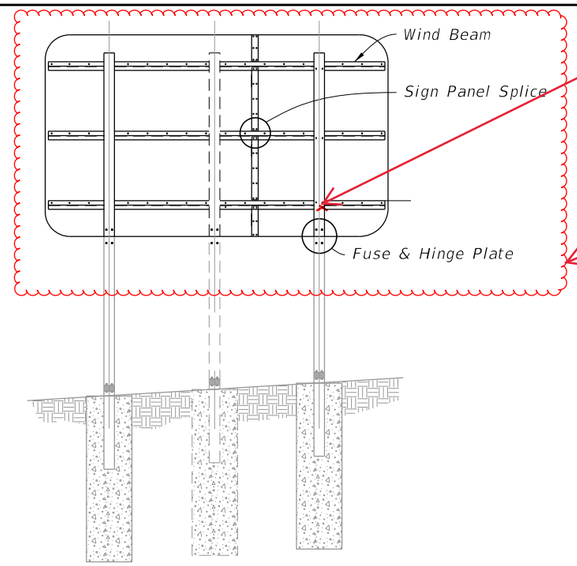
* Designations: (Nominal Depth in inches) x (weight in pounds per linear foot).

ALTERNATIVE BASE CONNECTION

FOUNDATION AND BASE CONNECTION DETAILS

10/6/2022 2:36:28 PM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	MULTI-COLUMN GROUND SIGN	INDEX	SHEET
11/01/22 ~~21~~ 23						700-020	2 of 3



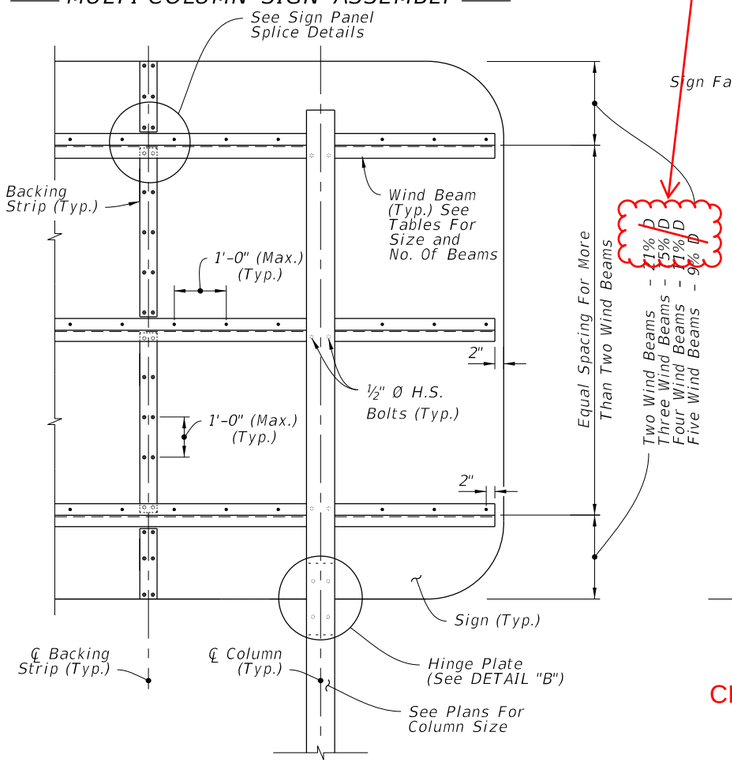
Only 2 bolts per intersection

Added the bolts to the other beams as well

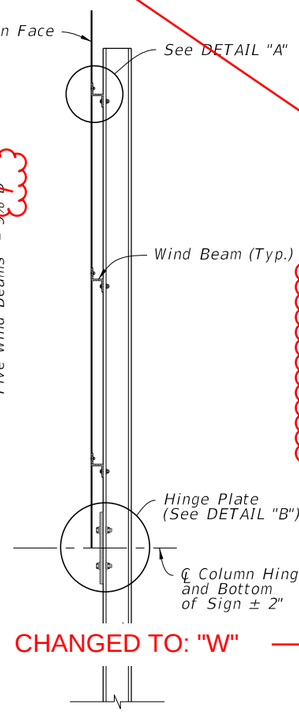
BACK ELEVATION

CHANGED TO: "H"

MULTI-COLUMN SIGN ASSEMBLY

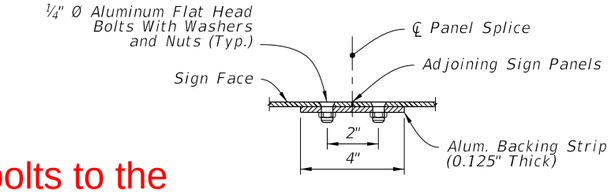


BACK ELEVATION

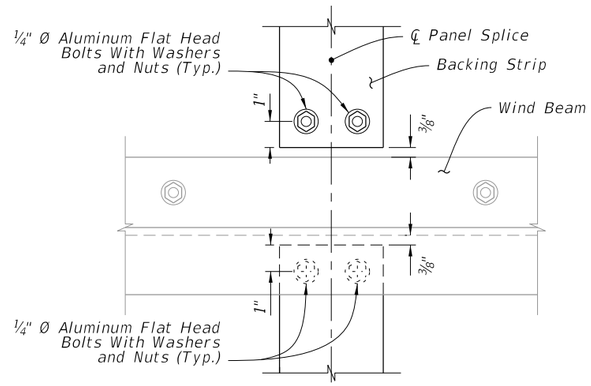


SIDE ELEVATION

MULTI-COLUMN SIGN BACK PANEL



PLAN VIEW



ELEVATION

SIGN PANEL SPLICE

NUMBER OF WIND BEAMS BASED ON SIGN DEPTH (D)

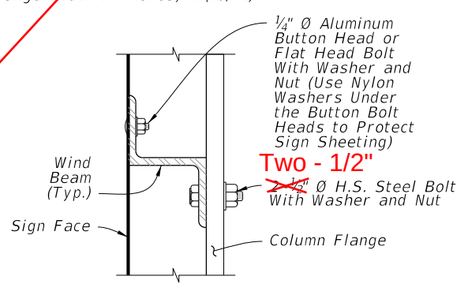
2 Beams	3 Beams	4 Beams	5 Beams
D ≤ 8'	8' < D ≤ 12'	12' < D ≤ 16'	16' < D ≤ 20'

WIND BEAM SIZE BASED ON SIGN LENGTH (L)

2 Columns	3 Columns	Aluminum Beam Size **
L ≤ 12'	L ≤ 18'	Z 1-¾ x 1-¾ x 1.09
12' < L ≤ 20'	18' < L ≤ 30'	Z 3 x 2-$^{11}/_{16}$ x 2.33
20' < L ≤ 25'	30' < L ≤ 39'	Z 4-$^{1}/_{16}$ x 3-⅛ x 3.57

**Designation gives (Member Depth in inches) x (Flange Width in inches) x (lb/ft)

CHANGED TO: "W"

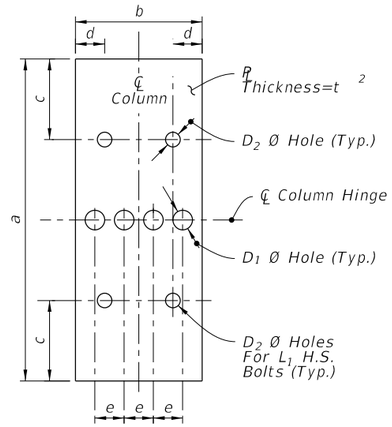


DETAIL "A"

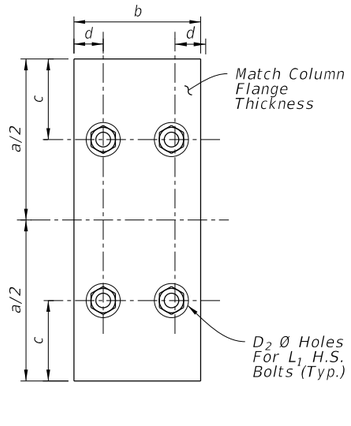
FUSE (HINGE) PLATE DATA

Steel 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: (Nominal Depth in inches) x (Weight in Pounds Per Linear Foot)

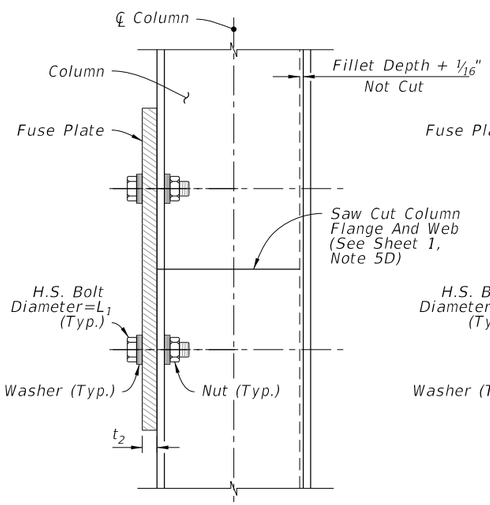


FUSE PLATE



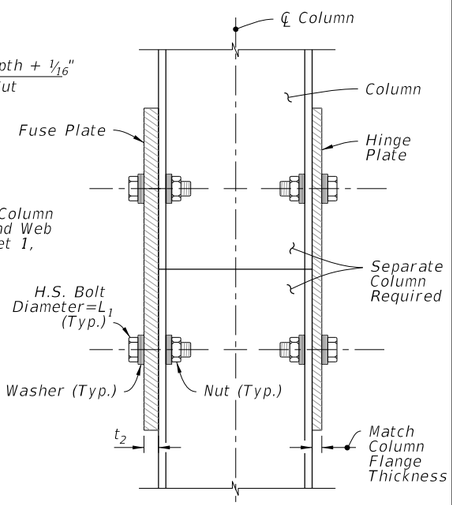
HINGE PLATE

FUSE & HINGE PLATE



Side Elevation

TYPICAL HINGE



Side Elevation

OPTIONAL HINGE

DETAIL "B"

WIND BEAM, BACKING STRIP & FUSE/HINGE PLATE DETAILS

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LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	MULTI-COLUMN GROUND SIGN	INDEX	SHEET
11/01/~~22~~ 23						700-020	3 of 3

GENERAL NOTES:

1. Meet the requirements of Specification 700.

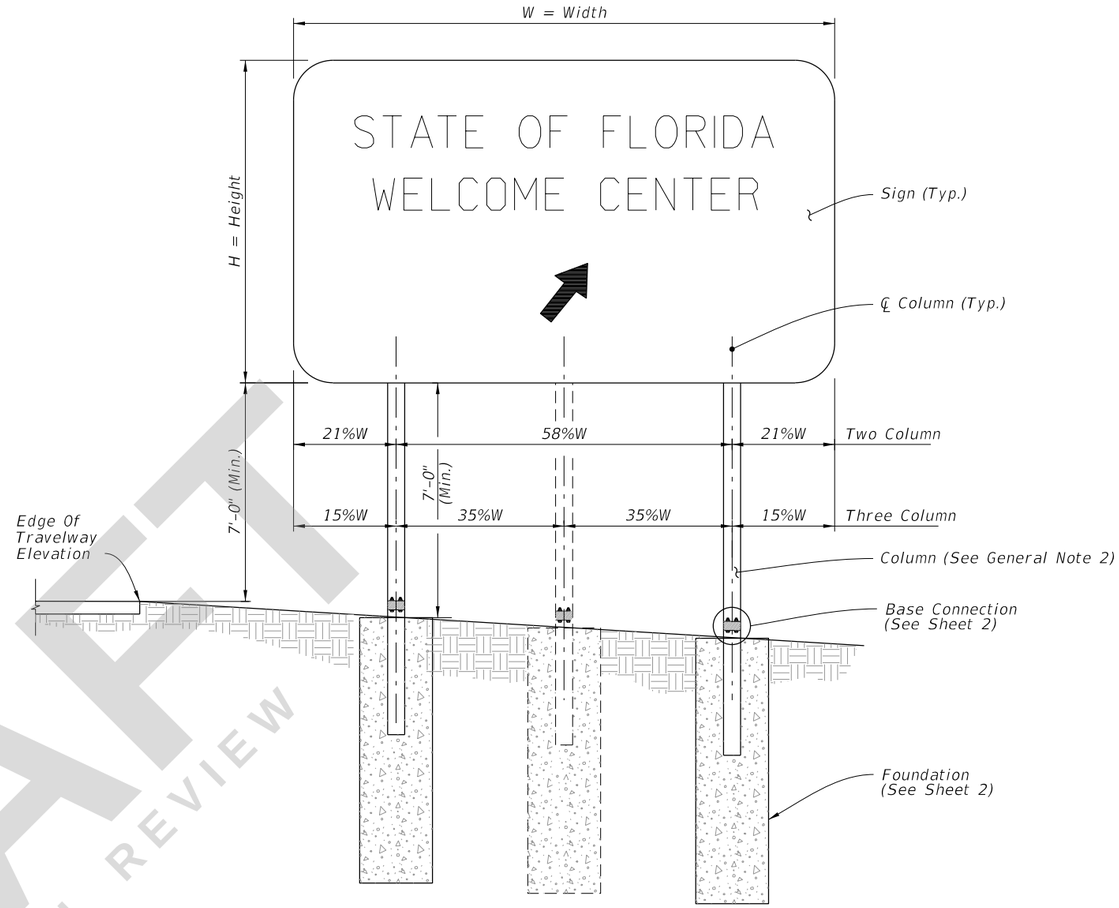
2. Verify Column lengths in the field prior to fabrication.

3. Shop drawings:

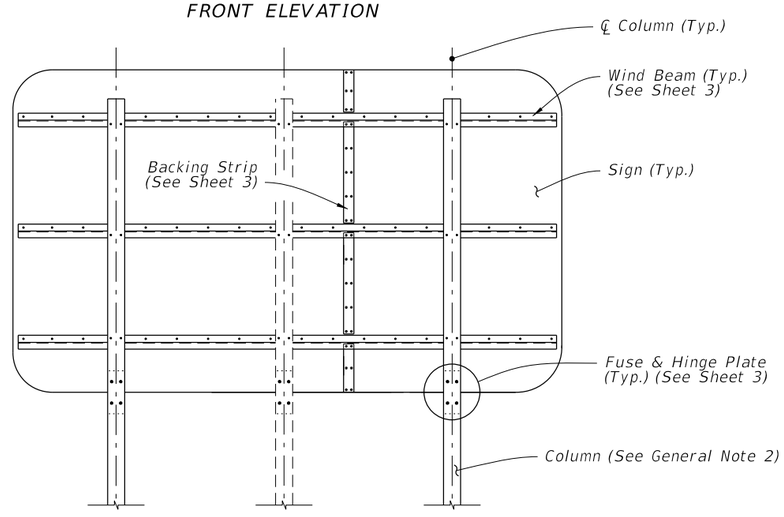
   A. Sign Support Shop drawings are not required when fabricated in accordance with this Index and support columns do not exceed the width ("W") shown in the plans by more than 2'-0".

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

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



FRONT ELEVATION

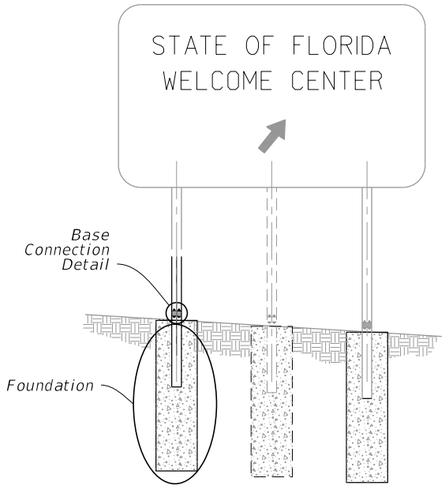


BACK ELEVATION

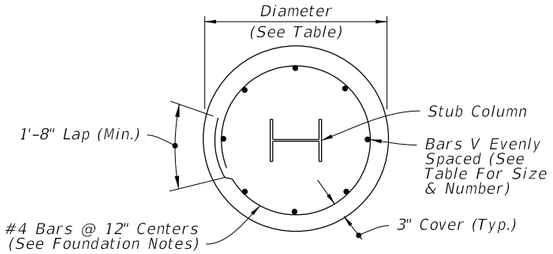
MULTI-COLUMN SIGN ASSEMBLY

8/3/2023 8:28:47 AM

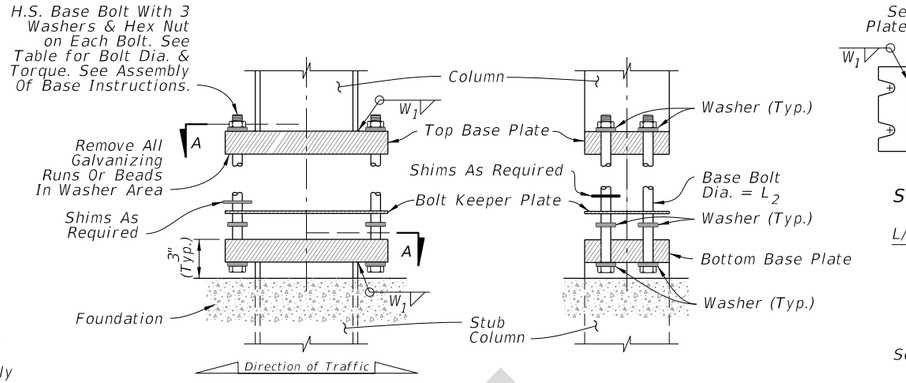
LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2024-25 STANDARD PLANS	MULTI-COLUMN GROUND SIGN	INDEX	SHEET
11/01/23						700-020	1 of 3



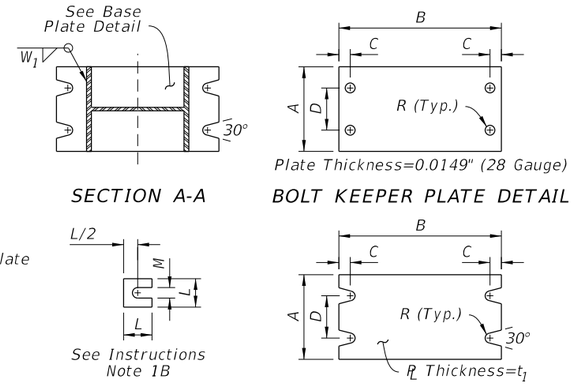
FOUNDATION DATA				
Steel Post & Stub Section*	Dia.	Depth	Stub Column Length	Reinf. Bars V
S 3x5.7	2'-0"	4'-0"	3'-0"	10-#6
W 6x12	2'-0"	6'-0"	3'-0"	10-#6
W 8x18	2'-4"	7'-6"	4'-0"	8-#8
W 8x24	2'-4"	8'-6"	4'-0"	8-#8
W 10x33	2'-4"	10'-3"	4'-0"	8-#8
W 12x45	2'-8"	11'-3"	5'-0"	10-#8



PLAN



SIDE ELEVATION FRONT ELEVATION



BASE CONNECTION DATA										SHIM	
Steel Post & Stub Section*	A	B	C	D	R	t_1	L_2	W_1	Torque (lbf*in)	L	M
S 3x5.7	4"	7"	3/4"	2"	5/16"	1"	1/2"	1/4"	90 ± 20	1-1/4"	9/16"
W 6x12	4"	10"	3/4"	2"	3/8"	1-5/8"	5/8"	1/4"	270 ± 45	1-3/8"	11/16"
W 8x18	5-1/4"	12-1/2"	7/8"	2-3/4"	7/16"	1-3/4"	3/4"	3/8"	445 ± 75	1-3/4"	13/16"
W 8x24	6-1/2"	12-1/2"	7/8"	3-1/4"	7/16"	1-3/4"	3/4"	3/8"	445 ± 75	2-1/8"	13/16"
W 10x33	8"	16"	1-1/4"	4-3/4"	9/16"	2"	1"	1/2"	580 ± 90	2-3/8"	1-1/16"
W 12x45	10"	18"	1-1/4"	6"	9/16"	2"	1"	1/2"	580 ± 90	2-3/4"	1-1/16"

* Designations: (Nominal Depth in inches) x (weight in pounds per linear foot).

MULTI-COLUMN SIGN ASSEMBLY

FOUNDATION NOTES:

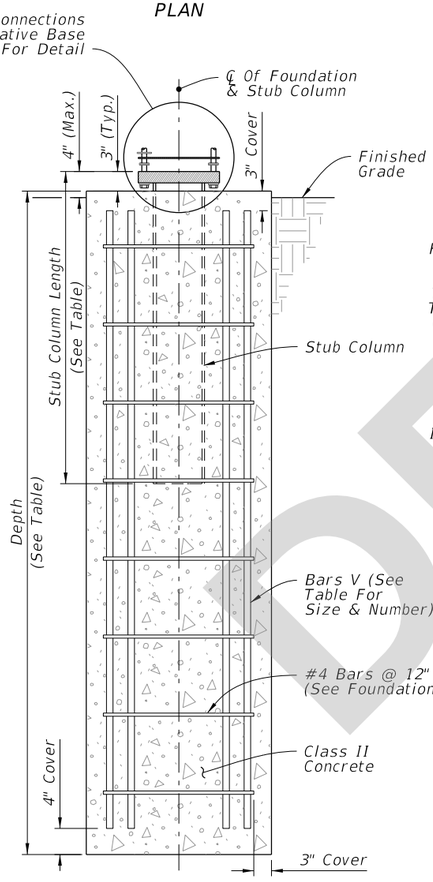
The foundation may be either precast or cast-in-place. Use Reinforcing bars or equivalent Welded Wire Reinforcement.

At the Contractor's option, the #4 tie bars at 12" o.c. may be replaced by D10 Spiral Wire @ 6" pitch, with three flat turns at the top and one flat turn at the bottom in accordance with Specification 415.

For precast foundations, the circular cross section shown may be substituted with an octagon shape. The out-to-out distance between parallel edges must be greater than or equal to the diameter in the Foundation Data table. Use the same reinforcing diameter with centered placement and a minimum 3" cover.

BASE CONNECTION NOTES:

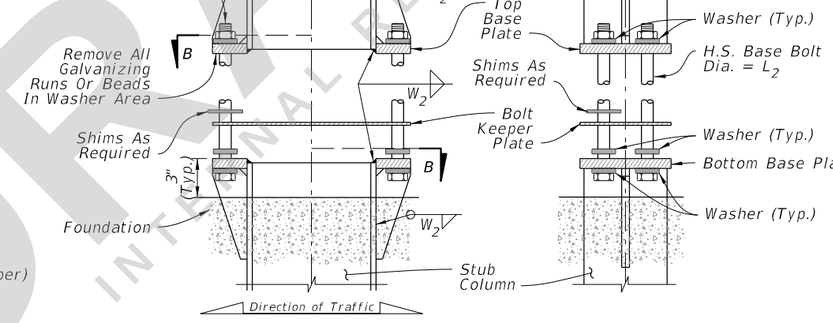
1. Assembly of Base Instructions:
   A. Place one washer on each Base Bolt between the Bottom Base Plate and the head of high strength Base Bolt; place the next washer between the Bottom Base Plate and the Bolt Keeper Plate; add the Top Base Plate section and place the third washer between the Top Base Plate and the Nut.
   B. Shim as required to plumb column. Provide 2-0.0149" thick (28 gauge) and 2-0.0329" thick (21 gauge) shims per column.
2. H.S. Base Bolt L Tightening Instructions:
   A. Tighten Base Bolts to the maximum possible with a 12" to 15" wrench (this will bed the washers and shims and clear the bolt threads).
   B. Loosen each Base Bolt one turn.
   C. Under the supervision of the Engineer, use a calibrated wrench to tighten bolts to the torque prescribed in the Table. Over tightened Base Bolts will not be permitted.
   D. Burr threads at junction with nut to prevent nut loosening. Treat damaged galvanizing.
3. Assemble Post to Stub with Base Bolts and three flat washers per bolt (See Base Connection Details). Tighten Base Bolts in accordance with Instructions with Note 2.
4. Weld Base Plate to Post & Stub or if using the Alternate Connection Detail weld Base Plate and Stiffeners to Post and Stub.
5. Orient Stub Post according to direction of traffic.



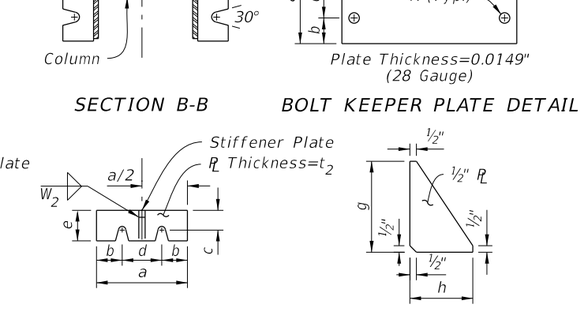
ELEVATION

FOUNDATION

BASE CONNECTION



SIDE ELEVATION FRONT ELEVATION



ALTERNATIVE BASE CONNECTION DATA												
Steel Section*	a	b	c	d	e	t_2	L_2	R	Torque (lbf*in)	g	h	W_2
W 6x12	4-3/4"	1-1/8"	1-3/16"	2-1/2"	2"	1/2"	5/8"	3/8"	270±45	5-1/8"	2"	1/4"
W 8x18	5-3/4"	1-1/2"	1-3/8"	2-3/4"	2-3/16"	5/8"	3/4"	7/16"	445±75	6-1/4"	2-3/16"	1/4"
W 8x24	7"	1-3/4"	1-3/8"	3-1/2"	2-3/8"	3/4"	3/4"	7/16"	445±75	8"	2-3/8"	5/16"
W 10x33	8"	2"	1-9/16"	4"	2-3/4"	3/4"	1"	9/16"	580±90	8"	2-3/4"	5/16"
W 12x45	8"	2"	1-9/16"	4"	3"	3/4"	1"	9/16"	580±90	8"	3"	5/16"

* Designations: (Nominal Depth in inches) x (weight in pounds per linear foot).

ALTERNATIVE BASE CONNECTION

FOUNDATION AND BASE CONNECTION DETAILS

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8/3/2023

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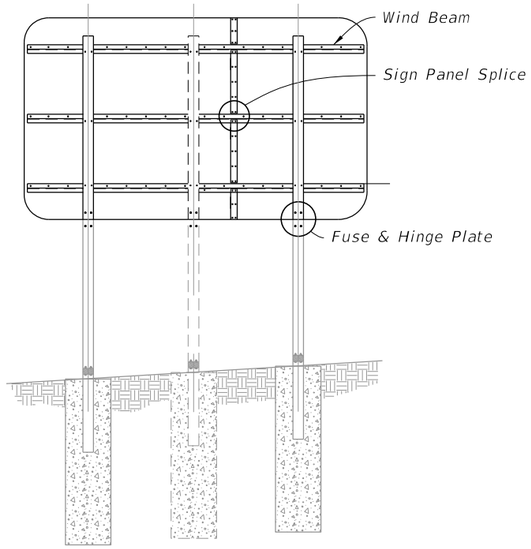
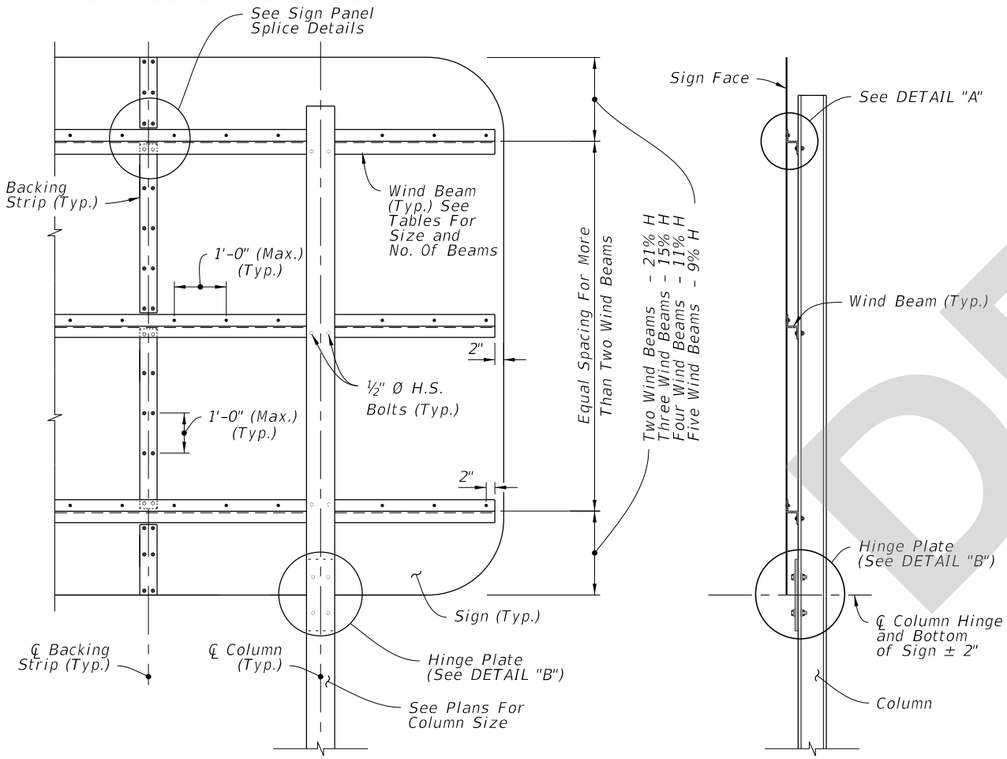


BACK ELEVATION

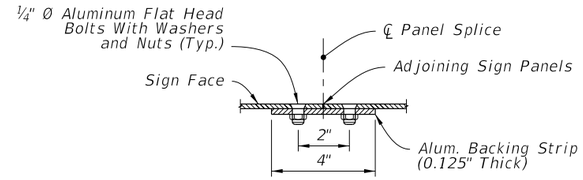
MULTI-COLUMN SIGN ASSEMBLY



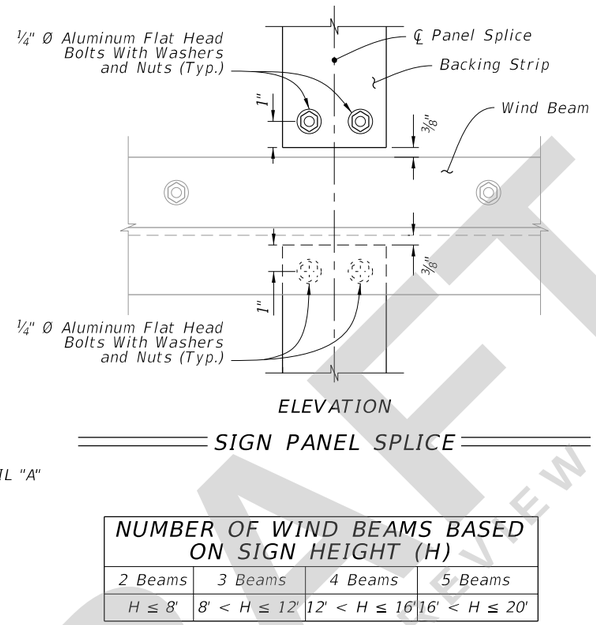
BACK ELEVATION

SIDE ELEVATION

MULTI-COLUMN SIGN BACK PANEL



PLAN VIEW



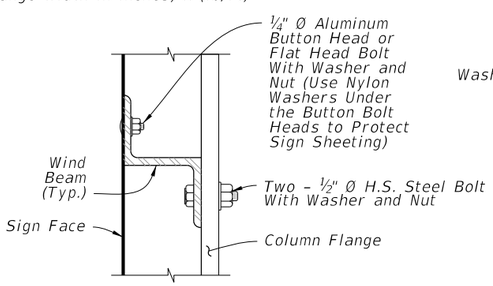
ELEVATION

SIGN PANEL SPLICE

NUMBER OF WIND BEAMS BASED ON SIGN HEIGHT (H)			
2 Beams	3 Beams	4 Beams	5 Beams
H ≤ 8'	8' < H ≤ 12'	12' < H ≤ 16'	16' < H ≤ 20'

WIND BEAM SIZE BASED ON SIGN WIDTH (W)		
2 Columns	3 Columns	Aluminum Beam Size **
W ≤ 12'	W ≤ 18'	Z 1-¾ x 1-¾ x 1.09
12' < W ≤ 20'	18' < W ≤ 30'	Z 3 x 2-$^{11}/_{16}$ x 2.33
20' < W ≤ 25'	30' < W ≤ 39'	Z 4-$^{1}/_{16}$ x 3-⅛ x 3.57

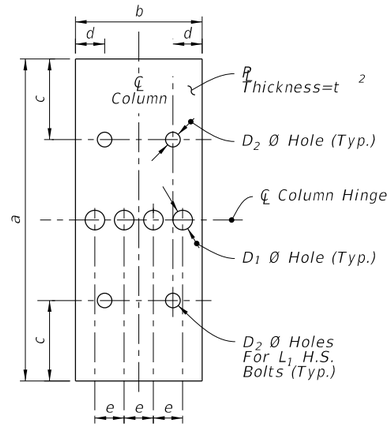
**Designation gives (Member Depth in inches) x (Flange Width in inches) x (lb/ft)



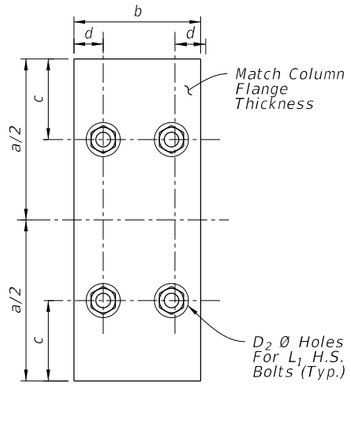
DETAIL "A"

FUSE (HINGE) PLATE DATA									
Steel 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: (Nominal Depth in inches) x (Weight in Pounds Per Linear Foot)

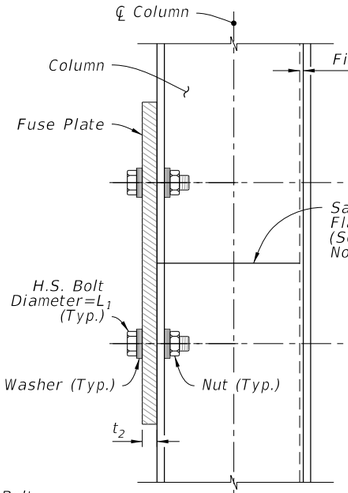


FUSE PLATE



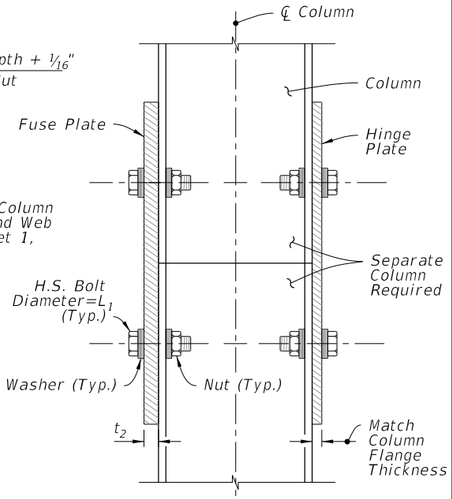
HINGE PLATE

FUSE & HINGE PLATE



Side Elevation

TYPICAL HINGE



Side Elevation

OPTIONAL HINGE

DETAIL "B"

WIND BEAM, BACKING STRIP & FUSE/HINGE PLATE DETAILS

8/3/2023 8:28:58 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2024-25 STANDARD PLANS	MULTI-COLUMN GROUND SIGN	INDEX	SHEET
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